

**CITY OF PHOENIX, ARIZONA
OFFICE OF THE CITY ENGINEER
ACTING ON BEHALF OF ML I HOUSING, LLC (OWNER)**



**DESIGN-BID-BUILD
PROJECT SPECIFICATIONS AND CONTRACT DOCUMENTS**

THE MORELAND I - REBID

PROJECT NO. AH20620004



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CALL FOR BIDS

**CITY OF PHOENIX
THE MORELAND I
DESIGN-BID-BUILD
REBID**

PROJECT NO. AH20620004

**PROCUREPHX PRODUCT CATEGORY CODE 912000000
RFx 6000001465**

**BIDS WILL BE DUE: TUESDAY, SEPTEMBER 19, 2023 AT 2:00 P.M.
SUBMITTED INTO THE DESIGN AND CONSTRUCTION PROCUREMENT BID BOX
LOCATED ON THE 1ST FLOOR LOBBY OF THE PHOENIX CITY HALL BUILDING,
200 W. WASHINGTON STREET, PHOENIX, ARIZONA, 85003**

**BIDS WILL BE READ: TUESDAY, SEPTEMBER 19, 2023, AT 2:00 P.M.
ON 5TH FLOOR, ROOM 5 WEST
PHOENIX CITY HALL
200 W. WASHINGTON STREET
PHOENIX, AZ 85003-1611
AND**

VIA MS TEAMS / PHONE ACCESS

***All times are local Phoenix time**

SCOPE OF WORK

The ML I Housing, LLC is seeking a qualified contractor to provide construction services for the project listed below.

The Moreland I is a new construction project and will consist of 131 units of affordable multi-family housing, one manager unit, and a structured parking garage situated on approximately 2.72 acres of the former Deck Park Vista Apartments site. The project will be constructed in conformance with architect specifications and City of Phoenix approved plans. This includes construction of one five-story wood framed residential building that contains 132 studio to three-bedroom units ranging from 405 to 1,130 square feet, and a structured parking garage. Five percent of the units will be fully accessible, two percent of units will include improvements for the hearing and visually impaired, and all ground floor units will be fully adaptable.

The 132 units will include 131 Low Income Housing Tax Credit ("LIHTC") units and one manager unit (non-LIHTC unit). The 131 LIHTC units will have Department of Housing and Urban Development project-based Section 8 voucher ("PBV") subsidies.

Lot 1 will consist of a 5-story wood framed residential building (Group R-2, Type IIIA Construction). Lot 2 will consist of a 4-tier parking garage at grade (Group S-2, Type IB Construction).

On-site improvements will include a clubhouse and interior and exterior amenity spaces, and pedestrian connectivity spaces. All parking will be located within a structured parking garage on-site. Off-Site improvements will include street front landscaping and pedestrian connectivity spaces along 3rd Street and Moreland Street, the existing alley located south of the Project will also include improvements for service and fire/safety circulation and access.

General Contractor shall provide improvements as described in the plans and specifications on the lots shown as Lots 1 & 2.

This is a federal-aided project. Construction and operation of the Project must comply with applicable federal law, including Davis-Bacon and Related Acts and Section 3 of the Housing and Urban Development Act of 1968. The prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed, or working on the site, to perform the Contract.

This project will utilize a mix of private and federal funds and is subject to the requirements of 49 Code of Federal Regulations Part 26 and the U.S. Department of Transportation DBE Program.

No goal has been established for this project.

The City of Phoenix, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252.42 U.S.C. §§ 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

REQUEST FOR BID PACKET

On Thursday, August 31, 2023, the bid packet may be downloaded from the City of Phoenix's eProcurement site at:

<https://eprocurement.phoenix.gov/irj/portal>

(OR)

the City of Phoenix's "Solicitations" web page as. The web address is:

<https://solicitations.phoenix.gov>

Firms receiving a copy of the bid packet through any other means are strongly encouraged to download the bid packet from the City webpage.

Firms must be registered in eProcurement <https://www.phoenix.gov/finance/vendorsreg> as a vendor.

BID OPENING MS TEAMS MEETING INSTRUCTIONS:

The public will be able to access the meeting via Microsoft Teams and listen to the Bid Opening live, as follows:

Join on your computer, mobile app or room device

[Click here to join the meeting](#)

Meeting ID: 236 785 351 634

Passcode: 6m4tcj

GENERAL INFORMATION

The City reserves the right to award the contract to the lowest responsible responsive bidder or all bids will be rejected, as soon as practicable after the date of opening bids.

The City of Phoenix will provide reasonable accommodations for alternate formats of the bid packet by calling Kandi Kawolsky at (602) 256-4108 or calling TTY 711. Requests will only be honored if made within the first week of the advertising period. Please allow a minimum of seven calendar days for production.

Questions pertaining to process or contract issues should be directed to Kandi Kawolsky (602) 256-4108 or kandi.kawolsky@phoenix.gov.

Jeffrey Barton
City Manager

Eric J. Froberg, PE
City Engineer

Published: Arizona Business Gazette
Date: August 31, 2023
Date: September 7, 2023
District: 8

INFORMATION FOR BIDDERS

1. QUESTIONS ON PLANS AND SPECIFICATIONS

Neither the Owner nor any person or entity acting on behalf of Owner shall be held responsible for any oral instructions. Any changes to the plans and specifications will be in the form of an addendum. All addenda will be posted online within the bid folder at the following website:

<https://solicitations.phoenix.gov>

For additional information prior to submitting your bid, contact:

Plans, Technical/Special Provisions, Proposal or Specifications:

NAME: Kandi Kawolsky, Design and Construction Procurement

ADDRESS: 200 W. Washington Street, 5th Floor, Phoenix, AZ 85003-1611

PHONE: (602) 256-4108 E-MAIL: kandi.kawolsky@phoenix.gov

Federal Labor Standards/Davis-Bacon and related Acts contact:

Housing Department Labor Compliance Office: (602) 262-6017

All questions regarding the plans and specifications must be received (in writing) at a minimum seven calendar days prior to bid opening. Questions received after that time may not be given any consideration.

2. REQUEST FOR SUBSTITUTIONS

Paragraph A, B, and C of MAG Section 106.4 are deleted, and the following paragraphs substituted:

- A. The Owner will consider written request(s), by a prime bidder only, for substitution(s) which is/are considered equivalent to the item(s) specified in the Contract documents. The written request will be considered only if it is received at least twelve calendar days prior to the established bid date. Notification of acceptable substitutions will be made by addendum issued no fewer than seven calendar days prior to the established bid date. (A.R.S. 34-104)
- B. The prime bidder, at his own expense, shall furnish the necessary data of substitution and validate that the physical, chemical, and operational qualities of each substitute item is such that this item will fulfill the originally specified required function.
- C. The substitution, if approved, will be authorized by a written addendum to the Contract documents and will be made available to all bidders. The bid date and the scheduled completion time will not be affected by any circumstances developing from this substitution.
- D. The request will be submitted or delivered to the following address: Design and Construction Procurement, Attention Kandi Kawolsky, Phoenix City Hall, 200 W. Washington Street, 5th Floor, Phoenix, Arizona 85003-1611 or sent via email to kandi.kawolsky@phoenix.gov.

3. BID BOND

Bidders must submit a properly completed proposal guarantee in the form of a certified check, cashier's check, or surety bond on the form provided, for an amount not less than ten percent of the total bid amount included in the proposal as a guarantee that the contractor will enter into a contract to perform the proposal in accordance with the plans and specifications. Surety bonds submitted for this project must be provided by a company which has been rated "A- or better for the prior four quarters" by the A.M. Best Company. ***A bid will be deemed non-responsive if not accompanied by this guarantee.***

The surety bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona, issued by the Director of the Department of Insurance pursuant to Title 20, Chapter 2, Article 1. The surety bond shall not be executed by an individual surety or sureties even if the requirements of Section 7-101 are satisfied. The certified check, cashiers check, or surety bond will be returned to the contractors whose proposals are not accepted, and to the successful contractor upon the execution of a satisfactory bond and contract.

When providing a Surety Bond, **failure to provide an "A- or better for the prior four quarters" bond will result in bid rejection.**

4. LIST OF MAJOR SUBCONTRACTORS AND SUPPLIERS & LIST OF ALL SUBCONTRACTORS AND SUPPLIERS

A bid will be deemed non-responsive if not accompanied by a properly completed and signed L.O.S.-1 "List of Major Subcontractors and Suppliers" form.

To assist in eliminating the practice of bid shopping on City construction projects, the Bidder shall list all Major Subcontractors and Suppliers to whom the Bidder intends to contract with that are equal to or greater than 5% of the base bid. The list of Major Subcontractors and Suppliers will be provided on the L.O.S.-1 "List of Major Subcontractors" form. **Failure to properly complete and sign this form will result in bid rejection.** This form is due with the bid.

If substantial evidence exists that bid shopping occurred on this project, the Bidder will be ineligible to bid on City or City-affiliated construction projects for a period of one year.

The list of All Subcontractors and Suppliers shall be provided on the L.O.S.-2 "**List of All Subcontractors and Suppliers**" form. **This form is due three calendar days after bid opening by 5:00 p.m.** All bidders will be required to submit the L.O.S.-1 form. The three lowest bidders will be required to submit the L.O.S.-2 form. If the L.O.S.-2 form is not submitted by the post-bid deadline, the Bidder will still be required to submit the document prior to award. If the Bidder fails to submit the required L.O.S.-2 form by the post-bid deadline, the Bidder's bid bond may be placed in jeopardy because the City may make a claim against the Bidder's bid bond for the cost difference between the lowest responsive and responsible Bidder's bid and the next lowest bid (and any additional costs involved in awarding the contract to the next lowest responsive and responsible bidder).

5. BID WITHDRAWALS

MAG Section 102-10, Withdrawal or Revision of Proposal, is hereby deleted and the following paragraph is submitted:

"No bidder may withdraw or revise a proposal after it has been deposited with the City except as provided in Phoenix City Code Chapter 2, Section 188. Proposals, read or unread, will not be returned to the bidders until after determination of award has been made.

6. ADDENDA

Acknowledge all addenda; a bid will be deemed non-responsive if all issued addenda for this project are not acknowledged in writing on Page P. -1.

Neither the Owner nor any person acting on behalf of the Owner shall be responsible for any oral responses or instructions made by any person regarding the bidding instructions, plans, drawings, specifications, or contract documents. A verbal reply to an inquiry does not constitute a modification of the Invitation for Bid (IFB). Any changes to the plans, drawings and specifications will be in the form of an addendum.

It shall be the responsibility of the prospective bidder to determine, prior to the submittal of its bid, if any addenda to the project have been issued by Design and Construction Procurement. All addenda issued shall be acknowledged by bidder on Page P.-1. All addenda (if any) will be available online within each project's folder at the following website:

<https://solicitations.phoenix.gov>

The contractors and/or consultants are responsible for ensuring they have all addenda and/or notifications for all projects they are submitting on. Prospective bidders are strongly encouraged to check the Solicitations website to ascertain if any addenda have been issued for this project.

7. BID SUBMITTAL

The properly completed bid documents along with the ten percent bid guarantee shall be submitted in a sealed envelope. The outside of the envelope shall be marked as follows:

Bid of (Firm's Name, Address, and Phone Number)

Project Name: Moreland I

Project Number: AH20620004

Sealed bids shall be submitted to the bid box located at City Hall, 200 W. Washington Street, First Floor, Phoenix, AZ 85003, prior to the time and date specified for bid opening.

8. BID SUBMITTAL CHECK LIST

All firms must be registered in the City's Vendor Management System prior to submitting a bid. For new firms – the City will send an email to your firm with a vendor number within two days of submitting the request. The vendor number needs to be included on the cover of the bid proposal package/envelope. Information on how to register with the City is available at:

<https://www.phoenix.gov/finance/vendorsreg>

BID SUBMITTAL CHECKLIST

This checklist is provided to remind bidders of several of the required elements of the bid packages. It is not intended to be a comprehensive list of all the contract documents. Bidders are encouraged to review all the Bid Instructions to determine compliance therein.

- Acknowledge all addenda. (Page P.-1)
- Complete all Bid Proposal forms. (Pages P.-1 to P.-2 and P.S.-1)
- Include your Bid Bond (rated A- or better for the prior four quarters) or Guarantee Cashier's Check. (Page S.B.-1)
- Complete List of Major Subcontractors and Suppliers form. (Page L.O.S.-1)
- Verification of Experience Modification Rate (EMR) – provide current rating; the awarded company will be required to provide verification upon contract execution.
- HUD 2530 Previous Participation Certification (Pages HUD 2530-1 to 5)
- Completed HUD 2992 – Certificate Regarding Debarment and Suspension (Pages H2992-1 to H2992-2)

- Completed HUD 5369–A Certifications, Representations and Other Statements of Bidders forms. (Pages H5369A-1 to H5369A-3)
- Certification of Non-Segregated Facilities (Pages NSF-1 to NSF-2)
- Non-Collusion Affidavit (NCA-1)
- Previous Contracts Equal Opportunity Clause (EOC-1)

PLEASE DO NOT SUBMIT THE ENTIRE SPECIFICATION BOOK WHEN SUBMITTING YOUR BID, INCLUDE ONLY THE REQUIRED BIDDING DOCUMENTS.

9. POST-BID REQUIREMENTS

The three lowest bidders must submit completed contracts documents listed below no later than three calendar days after bid opening by 5:00 p.m. The documents must be submitted to Design and Construction Procurement, 5th Floor, or can be sent by email to kandi.kawolsky@phoenix.gov.

POST-BID SUBMITTAL CHECKLIST

- Completed List of **All** Subcontractors and Suppliers form. (Page L.O.S.-2)
- Submit Affidavit of Identity. (A.O. I.-1) if you are a sole proprietor
- Bidders Disclosure Statement. (Pages B.D.S.-1 to B.D.S.-4)
- Section 3 Compliance – submit Section 3 Business Concern Certification for Contracting. (Page 9)

PRIOR TO CONTRACT EXECUTION

- Contractor must provide proof of license required to perform the work
- Verification of Experience Modification Rate (EMR) – the awarded company will be required to provide an EMR verification letter from the insurance company prior to contract execution.

10. PERMITS

OWNER RESPONSIBILITY – The Owner will be responsible for City of Phoenix review and permit(s) fees for building and demolition permits. The Owner will also pay review fees for grading and drainage, water, sewer, and landscaping. The Owner shall also pay for utility design fees for permanent services. The City of Phoenix Building Safety Log Number is 21-2416 / SDEV Number is 2100253.

CONTRACTOR RESPONSIBILITY – The Contractor will be responsible for all other permits and review fees not specifically listed above. The Contractor is responsible for the cost of water meter(s), water and sewer taps, fire lines and taps, and all water bills on the project meters until the project is accepted. Arrangements for construction water are the Contractor's responsibility.

The Contractor may elect to use a City fire hydrant for its source of construction water only if an existing water service connection is unavailable or inadequate. The Contractor will be required to comply with Phoenix City Code Section 37-13A.

The Contractor is specifically reminded of the need to obtain the necessary environmental permits or file the necessary environmental notices. Copies of these permits and notices must be provided to the Owner's Project Manager prior to starting the permitted activity. In the case of Fire Department permits, a copy of the application for permit shall also be provided to the Project Manager. This provision does not constitute an assumption by the Owner or the City of an obligation of any kind for violation of said permit or notice requirements.

11. CONTRACT AWARD

Contract award will be made to the responsive and responsible bidder based on the low total base bid. If unit pricing is required in the proposal, the extensions and additions will be verified to assure correctness. Award will be based on the revised total if any errors are found. The Owner expressly reserves the right to cancel this agreement without recourse or prejudice to Contractor until all parties have executed the agreement in full.

Any bidder that currently contracts with the City must be in good standing for its proposal to be considered responsive. For this Invitation to Bid, good standing means compliance with all contractual provisions, including payment of financial obligations.

12. CANCELLATION OF CONTRACT FOR CONFLICT OF INTEREST

All parties hereto acknowledge that this Agreement is subject to cancellation by the Owner pursuant to the provisions of Section 38-511, Arizona Revised Statutes.

13. TERMINATION FOR CONVENIENCE

The Owner for its own convenience has the right for any reason and at any time to terminate the contract and require the Contractor to cease work hereunder. Such termination shall be effective at the time and in the manner specified in the notification to the Contractor of the termination. Such termination shall be without prejudice to any claims which the Owner may have against the Contractor. In the event of a termination for convenience, the Contractor shall be paid only the direct value of its completed work and materials supplied as of the date of termination, and Contractor shall not be entitled to anticipated profit or anticipated overhead or any other claimed damages from the Owner, Architect, or the Engineer. If the City is found to have improperly terminated the Agreement for cause or default, the termination shall be converted to a termination for convenience in accordance with the provisions of this Agreement.

14. SURVEY

The Contractor shall set the construction stakes establishing lines, grades, and elevations to include necessary utilities and appurtenances and shall be responsible for their conformance with plans and specifications. Construction staking shall be done in accordance with the applicable provisions of the Public Works Department Design and Construction Management Division's "Standard Requirements for Staking, As-Builts, and Quantity Calculations", dated January 1, 1980. The Project Manager will establish or designate a control line and benchmark of known location and elevation for use as a reference.

The Contractor shall furnish the Project Manager a certified set of calculations and measurements to fully support the derivation of all pay quantities. This information will be prepared by a registrant of the Arizona State Board of Technical Registration.

The Contractor shall furnish the Project Manager a set of "Record Drawings" on mylar tracings. Record drawings shall be certified by a registrant of the Arizona State Board of Technical Registration.

15. RECORD DRAWINGS

The Contractor shall maintain a record set of plans at the job site. These shall be kept legible and current and shall show all changes or work added in a contrasting, reproducible color. When the project is substantially complete, the Contractor shall submit these plans to the Owner for approval. When landscaping is included, the Contractor shall submit, prior to final inspection, corrected landscape drawings showing the location of all utility services, controller, pipe, valves, and wiring. The Owner shall be the sole judge as to the acceptability of the record plans and receipt of an acceptable set is a pre-requisite for final payment.

16. CONFIDENTIALITY OF PLANS & SPECIFICATIONS

Any plans generated for this project must include the following statement in the Title Block on every page: "Per City of Phoenix City Code Chapter 2, Section 2-28, these plans are for official use only and may not be shared with others except as required to fulfill the obligations of Contractor's contract with the City of Phoenix."

17. TESTINGS

All required testing in the construction and specification documents such as concrete, soils backfill, pad, welding, and roofing should be included in the contractor's proposal/price. Copies of all testing reports need to be simultaneously sent via email or messenger to the Owner.

18. PRECONSTRUCTION CONFERENCE

After the Contract documents are successfully completed, to include bonds, insurance, and signatures, and prior to the commencement of any work on the project, the Project Manager, will schedule a Pre-Construction Conference.

The purpose of this conference is to establish a working relationship between the Owner, Contractor, utility firms, and various City agencies. The agenda will include critical elements of the work schedule, submittal schedule, cost breakdown of major lump sum items, payment application and processing, coordination with the involved utility firms, emergency telephone numbers for all representatives involved during construction, and establishment of the notice to proceed date.

Minimum attendance by the Contractor shall be a responsible company/corporate official, who is authorized to execute and sign documents on behalf of the firm, the job superintendent, and the Contractor's safety officer.

19. IMMIGRATION REFORM AND CONTROL ACT

Compliance with Federal Laws Required. Contractor understands and acknowledges the applicability of the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act to it. Contractor agrees to comply with these Federal Laws in performing under this Agreement and to permit Owner and HUD inspection of its personnel records to verify such compliance.

20. LEGAL WORKER REQUIREMENTS

The Owner is prohibited by A.R.S. § 41-4401 from awarding a contract to any Contractor who fails, or whose subcontractors fail, to comply with A.R.S. § 23-214(A). Therefore, Contractor agrees that:

A. Contractor and each subcontractor it uses warrants their compliance with all federal immigration laws and regulations that relate to their employees and their compliance with A.R.S. § 23-214, subsection A.

B. A breach of a warranty under paragraph A shall be deemed a material breach of the contract that is subject to penalties up to and including termination of the contract.

C. The Owner retains the legal right to inspect the papers of any Contractor or subcontractor employee who works on the contract to ensure that the Contractor or subcontractor is complying with the warranty under paragraph A.

21. CONTRACTOR AND SUBCONTRACTOR WORKER BACKGROUND SCREENING

CONFIDENTIALITY AND DATA SECURITY: All data, regardless of form, including originals, images and reproductions, prepared by, obtained by, or transmitted to Contractor in connection with this Agreement is confidential, proprietary information owned by the City, unless otherwise agreed upon within this Agreement. Except as specifically provided in this Agreement, the Contractor shall not disclose data generated in the performance of the service to any third person without the prior written consent of the City Manager or his/her designee.

Contractor agrees to abide by all current applicable legal and industry data security and privacy requirements and to notify the City immediately if the scope of work changes or personal identifying information or information subject to Payment Card Industry Standards becomes part of the Agreement.

Contractor agrees to comply with all City information security and technology policies, standards, and procedures when accessing City networks and computerized systems whether onsite or remotely.

A violation of this Section may result in immediate termination of this Agreement without notice. The obligations of Contractor under this Section shall survive the termination of this Agreement.

22. LAWFUL PRESENCE REQUIREMENT

Pursuant to A.R.S. §§ 1-501 and 1-502, the Owner is prohibited from awarding a contract to any natural person who cannot establish that such person is lawfully present in the United States. To establish lawful presence, a person must produce qualifying identification and sign an Owner-provided affidavit affirming that the identification provided is genuine. This requirement will be imposed at the time of contract award. This requirement does not apply to business organizations such as corporations, partnerships, or limited liability companies.

23. BUSINESS AND OPERATION LICENSES, PERMITS AND CERTIFICATIONS REQUIRED

On or before the submission of a bid for this project, bidder must possess all federal, state, county and City licenses, permits, certifications and any other legal authorizations required by law to transact business and to perform the services set forth in this Agreement (collectively "Business Licenses"). Bidder shall submit a completed Bidder's Disclosure Statement as set forth in Pages B.D.S.-1 to B.D.S.-4, to be submitted within three days of bid opening by 5:00 p.m. and provide the following Business License information: (i) proper State of Arizona contractor's license classification and number; (ii) City of Phoenix transaction privilege license number; (iii) federal tax identification number; and (iv) any special use or other zoning permits required for Bidder's operation and performance of the services under this Agreement. Unless provided otherwise in this solicitation, Bidder **will be deemed non-responsive and the bid rejected if Bidder fails to possess the proper Business Licenses at the time of bid or fails to submit a substantially completed Bidder's Disclosure Statement**, as specified in this paragraph.

24. TAX LIABILITIES; DISCLOSURE OF CONVICTIONS AND BREACH(S) OF CONTRACT

On or before the award of the contract for this project, the successful bidder shall: (i) file all applicable tax returns and shall make payment for all applicable State of Arizona and Maricopa County Transaction Taxes (A.R.S. § 41-1305) and City of Phoenix Privilege License Taxes (Phoenix City Code Sec.14-415); (ii) disclose any civil fines, penalties or any criminal convictions, other than for traffic related offenses, for violation of federal, state, county or city laws, rules or regulations including, but not limited to, environmental, OSHA, or labor compliance laws (collectively "Laws") by Bidder, Bidder's directors, managing members, responsible corporate officers or party who will be responsible for overseeing and administering this project (collectively "Bidder"); and (iii) disclose any material breach(s) of an agreement with the City, any termination for cause or any litigation involving the City occurring within the past three calendar years. Unless provided otherwise in this solicitation, the successful bidder shall be deemed non-responsible and the bid rejected for any of the following: (i) Bidder's civil or criminal conviction, other than for traffic related offenses, for a violation of Laws within the past three calendar years; (ii) liability or culpability resulting in payment of fines or penalties in the cumulative total amount of \$100,000 or greater for a violation of "Laws" within the past three calendar years; (iii) material breach of a City agreement, termination for cause or litigation with the City within the past three calendar years; and (iv) Bidder's failure to disclose the information as required by this provision. Further, after award of contract, in addition to any other remedy, Bidder's failure to remit proper taxes to the City may result in the Owner withholding payment pursuant to Phoenix City Charter Chapter XVIII, Section 14 until all delinquent taxes, interest, and penalties have been paid.

State and Local Transaction Privilege Taxes:

In accordance with applicable state and local law, transaction privilege taxes may be applicable to this transaction. The state and local transaction privilege (sales) tax burden is on the person who is conducting business in Arizona and the City of Phoenix. The legal liability to remit the tax is on the person conducting business in Arizona. Any failure by the Contractor to collect applicable taxes from the City will not relieve the Contractor from its obligation to remit taxes.

It is the responsibility of the prospective bidder to determine any applicable taxes. The City will review the price or offer submitted and will not deduct, add or alter pricing based on taxes.

If you have questions regarding tax liability, seek advice from a tax professional prior to submitting a bid. Once your bid is submitted, the Offer is valid for the time specified in this Solicitation, regardless of mistake or omission of tax liability.

If the City finds over payment of a project due to tax consideration that was not due, the Contractor will be liable to the City for that amount, and agrees to remit any overpayments back to the City for miscalculations on taxes included in a bid price.

For purposes of A.R.S. § 42-5075(P), this contract is subject to A.R.S. Title 34.

Tax Indemnification:

Contractor will, and require the same of all subcontractors, pay all federal, state and local taxes applicable to its operation and any persons employed by the Contractor. Contractor will, and require the same of all subcontractors, hold the City harmless from any responsibility for taxes, damages and interest, if applicable, contributions required under federal, and/or state and local laws and regulations and any other costs including transaction privilege taxes, unemployment compensation insurance, Social Security and Worker's Compensation.

Tax Responsibility Qualification:

Contractor may be required to establish, to the satisfaction of City, that any and all fees and taxes due to the City or the State of Arizona for any License or Transaction Privilege taxes, Use Taxes or similar excise taxes, are currently paid (except for matters under legal protest).

Contractor agrees to a waiver of the confidentiality provisions contained in the City Finance Code and any similar confidentiality provisions contained in Arizona statutes relative to State Transaction Privilege Taxes or Use Taxes.

Contractor agrees to provide written authorization to the City Finance Department and to the Arizona State Department of Revenue to release tax information relative to Arizona Transaction Privilege Taxes or Arizona Use Taxes in order to assist the Department in evaluating Contractor's qualifications for and compliance with contract for duration of the term of contract.

25. LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

The Contractor shall provide an easily accessible area to serve the construction site that is dedicated to the separation, collection, and storage of materials for recycling including (at a minimum) paper, glass, plastics, metals, and designate an area specifically for construction and demolition waste recycling. The contractor must provide documentation that the materials have been taken to a Maricopa County approved recycling facility.

26. PROTEST PROCEDURES

A bidder wishing to file a protest for the subject project shall comply with Phoenix City Code Chapter 2, Section 188.

27. UTILITY-RELATED CONSTRUCTION DELAY DAMAGES CLAIM PROCEDURES

The following procedure is intended to provide a fair and impartial process for the settlement of construction delay claims associated with unknown or improperly located utility facilities.

The Contractor shall immediately notify, in writing, the Project Manager of any potential utility-related delay claim.

The Contractor shall immediately notify the appropriate liaison of the affected utility verbally, followed by a written notification.

The Contractor shall coordinate an investigation of the situation with the affected utility and the City's Utility Coordinator. After resolution, the Contractor will provide written notification of the settlement of the claim to all affected parties.

If the affected utility makes a decision to handle negotiations for a claim, their personnel will be responsible for monitoring the project and all negotiations with the Contractor regarding the claim.

The Contractor shall determine to document requirements of the affected utility for their acceptance of responsibility for the claims. The Contractor shall provide four copies of the required documentation to the utility involved and two copies of this documentation to the Project Engineer. The Contractor shall obtain written confirmation from the utility company involved of their documentation requirements.

28. PROMPT PAYMENT

The Owner adheres to the prompt payment provisions of A.R.S. § 34-221. The Owner's prompt payment clause, which must be included in every subcontract, reads as follows:

- A. **Contractor Payment to Subcontractor or Supplier.** Contractor shall pay to its subcontractors or material suppliers and each subcontractor shall pay to its subcontractor or material supplier, within seven (7) days of receipt of each progress payment, the amounts attributable to the Contractor, subcontractor, or material supplier for work performed or materials supplied. In addition, any reduction of retainage to the Contractor must also result in a like reduction to subcontractors for their work successfully completed within 14 days of the reduction of the

retainage to the Contractor. No contract between Contractor and its contractors, subcontractors, and material suppliers may materially alter the rights of any contractor, subcontractor, or material supplier to receive prompt and timely payment as provided herein. Any diversion by Contractor, or any subcontractor, of payments received for work performed on a contract, or failure to reasonably account for the application or use of such payments, constitutes sufficient grounds for Owner to take any one or more of the following actions: 1) withhold future payments including retainage until proper disbursement has been made; 2) refusal of all future bids or offers from the Contractor for a period not to exceed one year; or 3) cancellation of the Contract.

- B. **Alternate Dispute Resolution.** If entitlement to the payment is in dispute, the parties to the dispute shall submit the matter to either: a) binding arbitration, b) to some other binding alternative dispute resolution (ADR), or c) a City facilitated mediation process within a reasonable period of time, not to exceed fourteen calendar days. Once an ADR determination has been made on any disputed claim, the determination shall be implemented by the disputing parties within seven calendar days of that determination.
- C. **Inspection and Audit.** The provisions of A.R.S. § 35-214, shall apply to this Agreement. Owner shall perform the inspection and audit function specified therein and such inspection and audit may include, at Owner's option, sole and unfettered discretion, the prompt payment requirements contained in Paragraph 1, above.
- D. **Non-waiver.** Should Owner fail or delay in exercising or enforcing any right, power, privilege or remedy under this Section, such failure or delays shall not be deemed a waiver, release or modification of the requirements of this Section or of any of the terms or provisions thereof.
- E. **Inclusion of this Provision in Subcontracts.** Contractor shall include the provisions of these paragraphs A, B, C, D, E, and F in every subcontract, including procurement of materials and leases of equipment.
- F. **No Subcontractor Claim.** Nothing contained in this Section shall provide a basis for any subcontractor to assert any claim against the Owner for its administration, enforcement or waiver of the provisions of this Prompt Payment provision.

As this is a federally assisted project, it is subject to the requirements of Executive Order 11246 pertaining to Equal Employment Opportunity.

29. CHANGE ORDERS

Owner reserves the right to decrease adjustments made in any change order if, upon audit of Contractor's records, the audit discloses Contractor provided false or inaccurate cost and pricing data in negotiating the change order. In enforcing this provision, the parties shall follow the procedure provided in the Federal Acquisition Regulation (FAR) clause 52.214-27, found in 48 CFR Part 52. All Change Orders must comply with HUD Cost Control and Safe Harbor Standards and must be reviewed for cost reasonableness.

30. ADA AND ANSI ACCESS OF PREMISES DURING CONSTRUCTION

Contractor shall maintain ADA and ANSI accessibility requirements during construction activities in an occupied building or facility. ADA and ANSI accessibility requirements shall include, but not be limited to, parking, building access, entrances, exits, restrooms, areas of refuge, and emergency exit paths of travel. Contractor shall be responsible for the coordination of all work to minimize disruption to building occupants and facilities.

31. PROJECT MANAGEMENT INFORMATION SYSTEM

The Project Manager may determine that use of a project management information system (PM/System) will be required during this contract. The following information provides a guideline for utilization. Any questions related to the requirements of the PM/System should be directed to the Project Manager.

- A. The Contractor will be required to maintain all project records in electronic format. The Owner provides an Application Service Provider (ASP) web-based project management database which the Contractor will be required to utilize in the fulfillment of the contract requirements. Although this electronic platform does not fulfill this requirement in its entirety, the contractor will be required to utilize this platform as the basis for this work.
- B. The Contractor can expect to use this ASP to process all primary level tri-partite contract documents related to the design or construction phase of the Project including but not limited to: requests for interpretation/information, potential change orders, construction meeting minutes, submittals, design professional's supplemental instructions and Payment Requests.
- C. The Contractor will be required to process information into electronic digital form. In order to fulfill this requirement, the Contractor shall provide all necessary equipment to perform the functions necessary to generate, convert, store, maintain, connect to web-based ASP and transfer electronic data.
- D. The Contractor shall provide a computerized networked office platform with broadband internet connectivity. Wired or wireless is acceptable. This platform shall function well in a web-based environment utilizing an internet browser compatible with the Owners PM/System and ASP system.

PM/System and ASP system training will be provided by the Owner, if necessary. Contact information will be provided to the firms under contract, to establish the set up with a log-in and password.

32. PAYMENT RETENTION

At the start of construction, ten percent of all pay requests shall be retained by the Owner to guarantee complete performance of the contract. When the work is fifty percent complete, this amount may be reduced to five percent provided construction progress and quality of work is acceptable to the Owner and there are no outstanding issues. Any funds, which are withheld from the Contractor, will be paid no later than sixty days after completion of the Contract and settlement of all claims.

33. FAIR TREATMENT OF WORKERS

The Contractor shall keep fully informed of all Federal and State laws, County and City ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the work. Contractor shall at all times observe and comply with all such laws, ordinances, regulations, codes, orders and decrees; this includes, but is not limited to laws and regulations ensuring fair and equal treatment for all employees and against unfair employment practices, including OSHA and the Fair Labor Standards Act (FLSA). The contractor shall protect and indemnify the Contracting Agency and its representatives against any claim or liability arising from or based on the violation of such, whether by himself or his employees.

34. CITY OF PHOENIX EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENT

- A. In order to do business with the City, Contractor must comply with Phoenix City Code, 1969, Chapter 18, Article V, as amended, Equal Employment Opportunity Requirements. Contractor will direct any questions regarding these requirements to the Equal Opportunity Department, (602) 262-6790.

- B. *For a Contractor with 35 employees or fewer:* Contractor in performing under this Contract shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, color, religion, sex, national origin, age, or disability, nor otherwise commit an unfair employment practice. The Contractor will ensure that applicants are employed, and employees are dealt with during employment without regard to their race, color, religion, sex, national origin, age, or disability. Such action shall include but not be limited to the following: employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training; including apprenticeship. The Contractor further agrees that this clause will be incorporated in all subcontracts related to this Agreement that involve furnishing skilled, unskilled and union labor, or who may perform any such labor or services in connection with this Contract. Contractor further agrees this clause will be incorporated in all subcontracts, Contractor agreements or subleases of this agreement entered into by supplier/lessee.

For a Contractor with more than 35 employees: Contractor in performing under this Contract shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, color, religion, sex, national origin, age, or disability, nor otherwise commit an unfair employment practice. The Contractor will ensure that applicants are employed, and employees are dealt with during employment without regard to their race, color, religion, sex, national origin, age, or disability, and shall adhere to a policy to pay equal compensation to men and women who perform jobs that require substantially equal skill, effort, and responsibility, and are performed within the same establishment under similar working conditions. Such action shall include but not be limited to the following: employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training; including apprenticeship. The Contractor further agrees this clause will be incorporated in all subcontracts with all labor organizations furnishing skilled, unskilled and union labor, or who may perform any such labor or services in connection with this Contract. Contractor further agrees this clause will be incorporated in all subcontracts, job-Contractor agreements or subleases of this Contract entered into by supplier/lessee. The Contractor further agrees not to discriminate against any worker, employee or applicant, or any member of the public, because of sexual orientation or gender identity or expression and shall ensure that applicants are employed, and employees are dealt with during employment without regard to their sexual orientation or gender identity or expression.

- C. *Documentation:* Suppliers and lessees may be required to provide additional documentation to the Equal Opportunity Department affirming that a nondiscriminatory policy is being utilized.
- D. *Monitoring.* The Equal Opportunity Department shall monitor the employment policies and practices of suppliers and lessees subject to this article as deemed necessary. The Equal Opportunity Department is authorized to conduct on-site compliance reviews of selected firms, which may include an audit of personnel and payroll records, if necessary.

35. PROJECT STAFFING

Key Personnel: Before starting work, Contractor must submit detailed résumés of key personnel involved in that work for City's approval (which City will not unreasonably withhold). If Contractor later desires to change key personnel involved in that work, Contractor must submit detailed résumés of the new personnel for City's approval (which City will not unreasonably withhold).

Qualified Staff: Contractor must maintain an adequate and competent staff of qualified persons—as City may determine in its sole discretion—during performance of this Master Agreement. If City

in its sole discretion determines that any of Contractor's staff is objectionable, Contractor must take prompt corrective action or replace that staff with new personnel, subject to City's approval.

Third-Party Employment Brokers: Contractor and Subcontractors will not utilize a third-party labor broker for any construction worker under this Agreement. The Contractor and Subcontractors must be the employers of record for its construction staff under this Agreement.

36. WAGE DETERMINATION

In the event that a wage determination decision of the Secretary of Labor, is required for a project (attached hereto on pages G.W.D.-1 to 8 and made a part hereof) has been superseded by any subsequent wage determination decision(s) published up to and including ten (10) days prior to bid opening, the most recent applicable wage decision shall be incorporated by reference, and the successful bidder agrees to be bound by it, regardless of what is contained in the specifications. State or local wage rates will not apply if the state or local wage rate exceeds the corresponding Federal Wage Determination rate.

37. WORKFORCE REPORTING REQUIREMENTS

The contractor shall submit payrolls electronically through the internet to the City Housing Department web-based certified payroll tracking system. The City uses the "LCP Tracker" website to track the certified payroll information. Additional information regarding the use of this system is available at <https://lcptracker.net>. Each contractor and every lower-tier subcontractor and supplier is required to submit certified payrolls and labor compliance documentation electronically at the discretion of and in the manner specified by the City Housing Department. Each contractor and subcontractor will be given a Log On identification and password to access the LCP Tracker reporting system. Use of the system may entail additional data entry of weekly payroll information including; employee identification, labor classification, total hours worked and hours worked on this project, wage and benefit rates paid, etc. The contractor's payroll and accounting software might be capable of generating a 'comma delimited file' that will interface with the software. This requirement will be 'flowed down' to every lower-tier subcontractor and vendor required to provide labor compliance documentation.

38. PAYMENT WITHHOLDING

Payrolls, including subcontractor's payrolls, must be submitted weekly no later than seven (7) days after each pay period ending date. Payments may be withheld in part or in full until payrolls are received and reviewed to assure compliance of the Federal Labor Standards.

Failure to clarify, when requested, discrepancies between hourly wages paid individual workers and the minimum hourly wages required by the Federal Wage Decisions contained in the Contract documents may also affect the complete or timely release of payments.

39. LABOR COMPLIANCE AND PRECONSTRUCTION CONFERENCE

On all federally assisted projects, a Labor Compliance and Pre-Construction Conference must be held after project award and prior to the established Notice to Proceed.

The successful bidder shall schedule the conference by calling Alex Rivera at 602-262-6017 or by email at alex.rivera.iii@phoenix.gov. Minimum attendance shall be a corporate officer, who is authorized to execute and sign documents for the firm and the payroll representative of the prime, sub and lower-tier Contractors.

40. SECTION 3 REQUIREMENTS

The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (“Section 3”), updates effective July 1, 2021. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, including persons who are recipients of HUD assistance for housing, with preference for both targeted workers living in the service area or neighborhood of the Project and Youthbuild participants, as defined at 24 CFR Part 75 (“**Section 3 Regulations**”). Contractor will be required to comply with all Section 3 reporting requirements, including 24 CFR 75.25, in a form acceptable to the City.

Prior to Contract award, the Contractor will complete the Section 3 Business Concern Certification for Contracting page 9. A copy of this form is included in the specification for information only.

On and after execution of the Contract, Contractor will fulfill all Section 3 requirements and submit to Owner all required Section 3 reports sufficient to establish compliance with applicable Section 3 requirements as generally described in pages 1-11 and as may otherwise be requested by Owner.

41. HAUL PERMIT

On any project, when the quantity of fill or excavation to be hauled exceeds 10,000 C.Y. or when the duration of the haul is for more than twenty (20) working days, the Contractor shall:

- A. Obtain a written (no fee) haul permit from the City’s Planning and Development Department.
- B. Obtain approval of the proposed haul route, number of trucks, etc., by the City Street Transportation Department.

NOTE: Obtaining the haul permit and the approval by Street Transportation Department does not release the Contractor from strict compliance with MAG Subsection 108.5, Limitation of Operations.

42. MODIFICATIONS TO MAG SPECIFICATIONS AND OTHER DOCUMENTS AND FORMS

In all Contract Documents, including forms prescribed by the MAG Specifications (e.g., surety bond forms prescribed by Arizona Revised Statutes) Owner’s name should be inserted in the place where the name of Project Owner or Sponsor would be inserted.

43. SPECIAL NOTICE TO CONTRACTOR; HUD COST CONTROL

All Bids must comply with HUD Cost Control and Safe Harbor Standards and must be determined by the Owners to be cost reasonable.

44. SPECIAL NOTICE TO CONTRACTOR; ADDITIONAL REQUIREMENTS

This project is required to meet strict Arizona Department of Housing (ADOH) Low Income Housing Tax Credit program regulations and deadlines, ADOH Design Guidelines, Fair Housing Act, and LEED Requirements and must comply with Davis Bacon Act and Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) that is regulated by the provisions of 24 CFR 75.

45. CONTRACT PERFORMANCE DATES:

- 1. Notice to Proceed will be issued on or about September 1, 2023.

2. Project Completion Deadline is 600 calendar days after issuance of Notice to Proceed. Liquidated damages for delay will begin to accrue if project is not completed within 600 calendar days after Notice to Proceed is issued.
3. The Owner must meet strict Arizona Department of Housing low Income Housing Tax Credit Program and HUD requirements and deadlines. The Contractor understands and agrees that the Moreland I must be completed by the Project Completion Date, as evidenced by a Certificate of Occupancy, or be subject to liquidated damages as stated in General Conditions Section 9.8.7.

46. NO ISRAEL BOYCOTT

If this Contract is valued at \$100,000 or more and requires Contractor (a company engaging in for-profit activity and having ten or more full-time employees) to acquire or dispose of services, supplies, information technology, or construction, then Contractor must certify and agree that it does not and will not boycott goods or services from Israel, pursuant to Title 35, Chapter 2, Article 9 of the Arizona Revised Statutes. Provided that these statutory requirements are applicable, Contractor by entering this Contract now certifies that it is not currently engaged in and agrees for the duration of the Contract to not engage in, a boycott of goods or services from Israel.

47. NO FORCED LABOR OF ETHNIC UYGHURS

If this Contract requires Contractor (a company engaging in for-profit activity and having ten or more full-time employees) to acquire or dispose of services, supplies, information technology, goods, or construction, then pursuant to Title 35, Chapter 2, Article 10 of the Arizona Revised Statutes Contractor must certify and agree that it and any contractors, subcontractors, or suppliers it utilizes do not and will not use the forced labor of ethnic Uyghurs in the People's Republic of China or any goods or services produced by such forced labor. Provided these statutory requirements are applicable, Contractor, by entering this Contract, now certifies it is not currently engaged in, and agrees for the duration of the Contract to not engage in, (a) the use of forced labor of ethnic Uyghurs in the People's Republic of China; (b) the use of any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China; or (c) the use of any contractors, subcontractors, or suppliers that use the forced labor or any goods or services produced by the forced labor of ethnic Uyghurs in the People's Republic of China.

48. ARCHAEOLOGICAL MONITORING AND DISCOVERIES

Archaeological monitoring may be required within the limits of the project during construction. The Contractor must coordinate all ground disturbing work with the archaeologist(s) and provide a current work schedule to facilitate the archaeologist's investigation and monitoring of all ground disturbing work within the area(s) of interest. When archaeological materials are discovered, the Contractor must stop work immediately within a 10-meter zone of the discovery, secure the area, and immediately notify the on-site archaeologist(s) who must then contact the City Archaeology Office at 602-495-0901 or the Street Transportation Environmental Section at 602-534-3747, who will coordinate with the City Archaeology Office. The Contractor must not recommence work in the area of discovery until directed in writing by the City Archaeology Office.

If suspected archaeological materials are discovered during construction without an archaeologist present, the Contractor must stop work immediately within a 10-meter zone of the discovery, secure the area, and immediately notify the City Archaeology Office (602-495-0901). The Contractor must not recommence work in the area of discovery until directed in writing by the City Archaeology Office.

In 1990, the Arizona legislature amended two state laws (Arizona Antiquities Act & State Historic Preservation Act) that protect human burials and associated artifacts on both private and state land. As specified in these laws and rephrased below:

1) A person shall not knowingly excavate in or upon any historic or prehistoric archaeological site, except when acting as a duly authorized agent of an institution or corporation organized for scientific, research or land use planning purposes. [A.R.S. § 41-841(A) - Archaeological Discoveries] Any person, institution or corporation violating any provision of this article is guilty of a class 2 misdemeanor. [A.R.S. § 41-846 - Violation]

2) A person who knowingly excavates in violation of A.R.S. § 41-841 is guilty of a class 5 felony pursuant to Arizona Criminal Code- Title 13. A second or subsequent violation under this subsection is a class 3 felony. [A.R.S. 17 .OJ - Excavating Certain Sites].

A class 5 felony carries potential penalties of up to two years in prison. If a City project may impact historic or pre-historic archaeological resources, the guidelines described above must be adhered to. Therefore, no subsurface disturbance activities related to this without having an archaeological consultant on-site prior to and during this project's ground disturbance activities.

The Office of the City Engineer is requesting that the Project Archaeological Requirements Acknowledgment Form is completed for all City sponsored or managed projects involving ground subsurface disturbance activities in areas that may include archaeological resources, as determined by the City Archaeology Office (CAO). If archaeological monitoring is required on a project, a City Archaeological Monitoring Acknowledgment form will be provided for your review and signature. The guidelines and the provisions in the Terms and Conditions of the Archaeological Monitoring Form must be followed as prescribed on the form and referenced above in this section. Penalties for non-compliance are detailed on the Archaeological Monitoring Form. Failure to comply with the requirements of this acknowledgment form and the City contract may constitute a breach of contract.

49. COMPLIANCE WITH LAWS

Contractor must comply with all existing and subsequently enacted federal, state and local laws, ordinances and codes, all applicable ADA requirements, and regulations that are, or become applicable to this Agreement. If a subsequently enacted law imposes substantial additional costs on Contractor, a request for an amendment may be submitted pursuant to this Agreement. Contractor is also required to certify its compliance with all applicable laws and Contractor must pass along these requirements to its Subcontractors. If any of Contractor's certifications are found to be false, the City may terminate this Agreement or impose other remedies due to the false certification.

50. CONTRACT DOCUMENTS

The successful bidder will be required to execute Contract Documents substantially in the form attached hereto, including the Construction Contract Design, Bid, Build (also known as the Master Contract Documents), the General Conditions of the Contract for Construction, (modified version of AIA Document A 201-2017) and all Supplementary and Other Conditions of the Contract described in Section 2.2.3 of the Master Contract Document. A draft Master Agreement for Contractors reference is attached.

for the following PROJECT:

(Name and location or address)

Deck Park Vista Apartments
1125 North 3rd Street
Phoenix, Arizona 85004

<< >>
<< >>

THE OWNER:

(Name, legal status and address)

ML I Housing, LLC
251 West Washington Street, 4th Floor
Phoenix, Arizona 85003

<< >><< >>
<< >>

THE ARCHITECT:

(Name, legal status and address)

Native American Connections
4520 North Central Avenue, Suite 600
Phoenix, Arizona 85012

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the agreement between the Owner and Contractor (hereinafter the "Agreement") and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case, the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 If the Contractor observes errors, discrepancies or omissions in the Contract Documents, Contractor shall promptly notify the Architect and request clarification. If the Contractor proceeds with the Work affected by such errors, discrepancies, or omissions, without receiving such clarifications, it does so at its own risk. Adjustments involving such circumstances made by the Contractor prior to clarification by the Architect shall be at the Contractor's risk and settlements of complications. Claims or disputes arising therefrom shall be at the Contractor's sole expense.

§ 1.2.5 Except as specifically provided in the Contract in the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, Specifications take precedence over Plans. The special provisions specifications take precedence over the technical specifications. The cited federal provisions take precedence over the general provision specifications. The general provision specifications shall have precedence over the plans.

§ 1.2.6 In the even conflicts occur between the Drawings and Specifications, the Contractor is deemed to have estimated for the more expensive method, unless the Contractor has asked for and received, prior to the bid, a written decision from the Architect determining which method or material will be required.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 Data Confidentiality

1. As used in the Contract, "data" means all information, whether written or verbal, including plans. Photographs, studies, investigations, audits, analysis, samples, reports, calculations, internal memos, meeting minutes, data filed notes, work product, proposals, correspondence and any other similar documents or information prepared by, obtained by, or transmitted to the Contractor or its subcontractors in the performance of this Contract.
2. The Parties agree that all data, regardless of form, including originals, images and reproductions, prepared by, obtained by, or transmitted to the Contractor or its subcontractors in connection with the Contractor's or its subcontractor's performance of this Contract is confidential and proprietary information belonging to the Owner.
3. Except as specifically provided in this Contract, the Contractor or its subcontractors shall not divulge data to any third party without prior written consent of the Owner. The Contractor or its subcontractors shall not use

the data for any purposes except to perform the services required under this Contract. These prohibitions shall not apply to the following data, provided the Contractor or its subcontractors have first given the required notice to the Owner:

- a. Data which was known to the Contractor or its subcontractors prior to its performance under this Contract unless such data was acquired in connection with work performed for the Owner,
 - b. Data which was acquired by the Contractor or its subcontractors in its performance under this Contract and which was disclosed to the Contractor or its subcontractors by a third party, who to the best of the Contractor's or its subcontractor's knowledge and belief, had the legal right to make such disclosure and the Contractor or its subcontractors are not otherwise required to hold such Data in confidence, or
 - c. Data which is required to be disclosed by virtue of law, regulation, or court order, to which the Contractor or its subcontractors subject.
4. In the event the Contractor or its subcontractors are required or requested to disclose data to a third party, or any other information to which the Contractor or its subcontractors became privy because of any other contract with the Owner, the Contractor shall first notify the Owner, as set forth in this Section, of the request or demand for the data. The Contractor or its subcontractors shall give the Owner sufficient facts so the Owner can be given an opportunity to first provide its consent or take such action the Owner may deem appropriate to protect such data or other information from disclosure.
 5. The Contract, unless prohibited by law, within ten calendar days after completion of services for a third party on real or personal property owned or leased by the Owner, the Contractor or its subcontractors shall promptly deliver, as set forth in this Section, a copy of all data to the Owner. All data shall continue to be subject to the confidentiality agreements of this Contract.
 6. The Contractor or its subcontractors assume all liability for maintaining the confidentiality of the data in its possession and agrees to compensate the Owner if any of the provisions of this Section are violated by the Contractor, its employees, agents, or subcontractors. Solely for the purposes of seeking injunctive relief, it is agreed a breach of this Section shall be deemed to cause irreparable harm that justifies injunctive relief in court. Contractor agrees the requirements of Section shall be incorporated into all subcontracts entered by Contractor. A violation of this Section may result in immediate termination of this Contract without notice.
 7. Personal identifying information – data security. Personal identifying information, financial account information, or restricted Owner information, whether electronic format or hard copy, must be secured and protected at all times. At a minimum, Contractor must encrypt and/or password protect electronic files. This includes data saved to laptop computers, computerized devices, or removable storage devices. When personal identifying information, financial account information, or restricted Owner information, regardless of its format, is no longer necessary, the information must be redacted or destroyed through appropriate and secure methods that ensure the information cannot be viewed, accessed, or reconstructed.
 8. If data collected or obtained by Contractor or its subcontractors in connection with this Contract is believed to have been compromised, Contractor or its subcontractors shall immediately notify the Owner. Contractor agrees to reimburse the Owner for any costs incurred by the Owner to investigate potential breaches of this Section and, where applicable, the cost of notifying individuals who may be impacted by the breach.
 9. Contractor agrees the requirements of this Section shall be incorporated into all subcontracts entered by Contractor. It is further agreed a violation of this Section shall be deemed to cause irreparable harm that justifies injunctive relief in court. A violation of this Section may result in immediate termination of this Contract without notice.
 10. The obligation of the Contractor or its subcontractors under this Section shall survive the termination of this Contract.

§ 1.5.3 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract, only if: (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay, and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments, and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall furnish surveys describing physical characteristics, legal limitations, and utility locations for the Project site and a legal description. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.3.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's and other consultants additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of

discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Parties will negotiate a Change Order in accordance with the requirements of this Contract, or if a Change Order cannot be negotiated, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Article 15, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, unless the Contractor recognized such error, inconsistency or omission and knowingly failed to report it to the Architect. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction.

§ 3.2.5 The Contractor shall establish and maintain all building and construction grades, lines, levels, and benchmarks, and shall be responsible for accuracy and protection of same. This Work shall be performed by a licensed civil engineer or surveyor.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences, or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect's administration of the Contract, or by tests, inspections, or approvals required or performed by persons other than that Contractor.

§ 3.3.5 The Contractor shall file with the Architect the names, addresses, and telephone numbers of representatives who can be contacted, at any time, in case of emergency. These representatives must be fully authorized and equipped to correct unsafe or excessively inconvenient conditions on short notice.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. When equipment is no longer required for the Work, it shall be removed promptly from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements shall be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The warranty shall remain in effect for a period of 2 years from the date of Substantial Completion of the Project.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 The Contractor shall complete repairs of any problems or defects within 7 calendar days. In case of an emergency, the Contractor shall repair any construction problems or defects within 24 hours. Emergency problems or defects shall include but not be limited to roofing, plumbing, electrical, cooling and heating, and any item that endangers the health and safety of residents.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded. In all cases, the Contractor shall notify the appropriate permitting agency to permit proper instructions by the agency concerned.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. The Contractor shall protect and indemnify the Owner against any claim or liability arising from or based on the violation of such, whether by himself or his employees.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 7 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect and comply with the National Historic Preservation Act of 1966 (as revised: Public Law 89-665, October 15, 1966; 16 U.S.C. 470 et seq.) Section 106, the Arizona Antiquities Act (A.R.S. Section 41-841 et seq.) and the Arizona State Burial Law (A.R.S. Section 41-844). Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be at the Project site during the performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the

Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. All necessary safety and security equipment or personnel shall be provided by the Contractor at the Contractor's sole expense and included within the bid and the Contract price. Before commencing construction, the Contractor must submit a safety plan to the Owner for approval in accordance with generally accepted construction practices and principles, and throughout the term of the Contract must comply with the safety requirements established in Article 10 hereof.

§ 3.13.1 The site may be partially occupied by residents during the Contract. At all times Contractor must maintain adequate and safe ingress and egress to and from the property for residents. Contractor's employees, subcontractors, visitors, and all other persons and property.

§ 3.13.2 Work hours to follow City of Phoenix Ordinance Construction start and stop times. No work may be performed on the site on weekend, holidays or at times other than during the specified work hours unless an extended work hours permit is obtained through the City of Phoenix Planning and Development Department

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a Separate Contractor its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 Because the site may be occupied during construction, daily clean-up is extremely important to ensure the health and safety of residents. If the Contractor fails to clean the Project site within 24 hours after written notice from the Owner or Architect, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor to twice the cost thereof, which will be deducted from the next pay request.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Architect and City of Phoenix with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the maximum extent allowed by law, including Title 34 A.R.S., Contractor ("Indemnitor") agrees to defend, indemnify, and hold harmless the City of Phoenix and its officers, officials (elected or appointed), agents and employees (and any jurisdiction or agency issuing permits for any work included in the project, and its officers, agents and employees) ("Indemnitee") from any and all claims, actions, liabilities, damages, losses or expenses, (including but not limited to court costs, attorney fees, expert fees, and costs of claim processing, investigation and litigation) of any nature or kind whatsoever ("Losses") caused or alleged to be caused, in whole or in part, by the wrongful, negligent or willful acts, or errors or omissions of Indemnitor or any of its owners, officers, directors, members, managers, agents, employees, or subcontractors ("Indemnitor's Agents") arising out of or in connection with this Contract. This defense and indemnity obligation includes holding Indemnitee harmless for any Losses or other amount arising out of or recovered under any state's workers' compensation law or arising out of the failure of Indemnitor or Indemnitor's Agents to conform to any federal, state or local law, statute, ordinance, rule, regulation, or court decree. Indemnitor's duty to defend Indemnitee accrues immediately at the time a claim is threatened or a claim is made against Indemnitee, whichever is first. Indemnitor's duty to defend exists regardless of whether Indemnitor is ultimately found liable. Indemnitor must indemnify Indemnitee from and against any and all Losses, except where it is proven that those Losses are solely as a result of Indemnitee's own negligent or willful acts or omissions. Indemnitor is responsible for primary loss investigation, defense and judgment costs where this indemnification applies. In consideration of the City's award of this Contract, Indemnitor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to any work performed by Indemnitor or Indemnitor's Agents for the City of Phoenix under this Contract. The obligations of Indemnitor under this provision survive the termination or expiration of this Contract.

§ 3.18.2

Contractor ("Indemnitor") must defend, indemnify, and hold harmless the City of Phoenix and its officers, officials (elected or appointed), agents, and employees ("Indemnitee") from and against any and all demands, claims, complaints, losses, damages, actions or causes of action, assessments, liabilities, costs or expenses including, without limitation, interest, penalties and reasonable attorney fees, expert fees, and reasonable expenses of investigation and remedial work (including but not limited to investigations and remediation by engineers, environmental consultants and similar technical personnel) asserted against or imposed upon or incurred by Indemnitee arising in connection

with, or resulting from, any Environmental Law, including but not limited to, any use, generation, storage, spill, release, discharge or disposal of any Hazardous Substance that is now or comes to be located on, at, about or under the property or because of, or in connection with, the violation of any Environmental Law (hereinafter collectively referred to as “Losses”) to the extent that such Losses are caused by the fault of Indemnitor, its officers, officials, members, managers, agents, employees, contractors, volunteers, tenants, subtenants, invitees or licensees. Indemnitor’s duty to defend Indemnitee accrues immediately at the time a claim is threatened or a claim is made against Indemnitee, whichever is first. Indemnitor’s duty to defend exists regardless of whether Indemnitor is ultimately found liable. As used in this section: (a) “Hazardous Substances” are those substances defined as toxic or hazardous substances, pollutants, or wastes by Environmental Law and the following substances: gasoline, kerosene, or other petroleum products, toxic pesticides and herbicides, volatile solvents, materials containing asbestos or formaldehyde, and radioactive materials; (b) “Environmental Law” means federal, state or local laws and regulations, including common law, that relate to health, safety or environmental protection; and (c) “Fault” means those nonculpable acts or omissions giving rise to strict liability under any Environmental Law pertaining to Hazardous Substances, as well as culpable conduct (negligence or willful misconduct). In consideration of the award of this Contract, Indemnitor agrees to waive all rights of subrogation against Indemnitee for losses arising from or related to any work performed by Indemnitor or Indemnitor’s Agents for the City of Phoenix. The obligations of Indemnitor under this provision survive the termination or expiration of this Contract.

§ 3.18.3 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.19 Materials Containing Asbestos and/or Lead

§ 3.19.1 Materials containing asbestos and/or lead in any form are unacceptable to incorporate into the Project unless formally accepted in writing by the Owner. This written approval shall take place prior to the material being incorporate into the Project and/or brought to the Site.

§ 3.19.2 Repair kits or touch-up materials, materials that include asbestos and/or lead introduced into the product at the factory or applied as the assembly plant are all unacceptable. Any and all field applied products that are comprised of asbestos and/or lead containing materials are also unacceptable.

§ 3.19.3 If asbestos and/or lead are installed without written approval by Owner, the Contractor will remove these materials at its expense and dispose of these materials in accordance with all state and federal laws and pay for the supervision and reporting costs in addition to the cost to properly remove them.

§ 3.20 DISPOSAL OF SURPLUS MATERIAL WHICH DOES NOT CONTAIN ASBESTOS

§ 3.20.1 All surplus and/or waste material may be disposed of at the Contractor’s discretion subject to the following conditions:

- a. If the City of Phoenix landfills are used, the Contractor shall pay the normal dumping fee.
- b. If private property within the City of Phoenix limits is used, the Contractor shall obtain written permission from the property owner and deliver a copy of this Agreement to the Owner and the City of Phoenix Housing Department prior to any hauling or dumping. All disposal and grading shall be in strict conformance with the City of Phoenix Grading and Drainage Ordinance. The Contractor shall obtain and pay for the necessary permit(s).
- c. If the surplus material is disposed of outside the City of Phoenix limits, the Contractor shall comply with all applicable laws/ordinances of the agency concerned and be responsible for all cost incurred.

§ 3.20.2 No measurement or direct payment will be made for the hauling and disposal of surplus and/or waste material, the cost shall be incidental to the cost of the Project.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations

regarding concealed and unknown conditions as provided in Section 3.7.4. The City of Phoenix Housing Department must approve all changes to the Work, including change orders and all other changes.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities, and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Sub-contractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.1 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation may be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Articles 3, 6, 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities, or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work, or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to be completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive, or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, City of Phoenix, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 Change order markups are limited to a maximum of 6% profit, 6% general conditions, and 2% overhead subject to the Guaranteed Maximum Price.

§ 7.1.5 All changes must be determined cost reasonable. The Contractor must submit satisfactory evidence the cost is reasonable. Satisfactory evidence includes obtaining 2 bids or providing a printout from RS Means identifying the labor and materials for each piece of the work necessary to complete the Work in the change order or change directive. All changes must comply with HUD Cost Control and Safe Harbor Standards. All requests for changes must be submitted in a form that permits a cost reasonableness analysis with a breakdown of labor and materials and markup.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect and approved by the City of Phoenix Housing Department and, if required by Owner's amended and restated operating agreement or loan documents, approved by **BANK** stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Change Order Request Markups

The Contractor shall conform to the following markups for change order work self-performed or performed by subcontractor. The General Contractor shall justify and support General Contractor and subcontractor costs. All change order costs must be determined to be cost reasonable. For all change orders new bond and insurance, reflecting the Change Order amounts should be sent by Contractor to ML I Housing, LLC's authorized representative.

- a. Contractor self-performed work and subcontractor work markups-Overhead and profit-the actual or approved costs for equipment, material, and labor shall be marked up by the percentages reflected in the Contractor's original bid and approved in the initial Contract, and by no more than 14%.
- b. Contractor markups of subcontractor work – The Contractor shall be allowed to approve subcontractor costs for equipment, material, and labor (excluding subcontractor overhead and profit) by the profit percentage reflected in the Contractor's original bid and approved in the initial Contract, and by no more than 5%.
- c. Bond – The Contractor shall be allowed to markup the cost for change order work for payment and performance bonds utilizing the same percentage used on the initial Contract and shall submit verification of this percentage, from the bonding company, with the initial change order request.
- d. Insurance – The Contractor shall be allowed to markup the cost for change order work plus bond costs for property damage/public liability insurance, utilizing the same percentage used on the initial Contract. Verification, from insurance carriers, of this percentage shall be submitted with the initial change order request.
- e. Sales Tax – The Contractor shall be allowed to markup the cost for change order work plus bond and insurance costs by the current, approved sales tax multiplier.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Notice to Proceed.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, , or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation; and (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. Contractor shall provide a completed AIA from G702 and shall provide backup documentation with each payment application including but not limited to; signed subcontractor and supplier invoices, an accounting of the Schedule of Values quantities previously completed and completed during the current pay application period for each Schedule of Values line item along with the associated total cost and cost for the current pay period, and Unconditional Waiver and Release for the previous pay application payment, and a Conditional Waiver and Release for the current pay application payment amount. The Contractor shall provide the Section 3 Monthly Report with each Payment Application. Wage information must be completed in LCP Tracker prior to payment.

§ 9.3.1.1 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay. Progress payments shall be made in accordance with A.R.S. Title 32, except that retainage amounts shall be required in accordance with federal funding requirements and Contractor may not substitute securities for retainage.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored offsite at a location agreed upon in writing. Payment for materials and equipment stored on or offsite shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored offsite. All bonds and insurance required for stored

materials shall be in the Owner's name. Stored materials must be stored within Maricopa County and be accessible for Owner's inspection. Payment for stored materials will not be made unless construction progress is in reasonable conformance with the approved schedule. Payments will be made for special order items stored on the site or within Maricopa County and accessible for Owner's inspection.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work. The Contractor shall be responsible for all materials delivered to the site for which the Owner has title. The Contractor shall be responsible for care, custody and control of such material until it is incorporated into the Project.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within 7 days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence the Work will not be completed within the Contract Time, and the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Arizona Revised Statutes, including Title 32, Chapter 10, Article 5 thereof, except that retainage amounts shall be required in accordance with federal funding requirements and Contractor may not substitute securities for retainage.

§ 9.6.2 The Contractor shall pay each Subcontractor in accordance with Arizona Revised Statutes the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage, or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within 7 days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within the time allotted by the Arizona Revised Statutes Title 32, Chapter 10, Article 5, the Contractor will have recourse in accordance with Arizona Revised Statutes Title 32, Chapter 10, Article 5.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion of a Phase is the state of progress when the Work is sufficiently complete that Owner or its tenants can occupy and use the residential buildings in the Phase for their intended purposes. This may include, but is not limited to; (i) all systems within and servicing the residential buildings in place, functional, and displayed to Owner or Owner's Representative; (ii) all materials and equipment installed and operational in the interior and on the

exterior of the residential buildings; (iii) all appliances and improvements installed within the residential buildings reviewed and accepted by the Owner; (iv) cleaning of the residential buildings and outside areas around each building in order for residents to occupy the site without unreasonable inconvenience; and (v) residential buildings compliant with the Uniform Physical Condition Standards, Housing Quality Standards for the U.S. Department of Housing and Urban Development and Arizona Registrar of Contractors Minimum Workmanship Standards. In general, the remaining work shall be minor in nature, so that the Owner of the Owner's tenants could occupy the residential buildings in the Phase on that date and the completion of the Work by the Contractor would not materially interfere with or hamper the Owner's or the Owner's tenants' use of the building.

§ 9.8.2 When the Contractor considers the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will inspect to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.6 Contractor acknowledges and agrees that timely completion of the Work is of the essence of the Contract Documents. Contractor acknowledges that Owner will incur substantial damages if the date for Substantial Completion of the Work and the Project is not met. Among other things, Owner may incur additional financing costs, may be required to pay additional amounts to Architects or other consultants and to Owner's own personnel for assistance on the Project, and will suffer actual economic loss in the form of lost rental income, reduced equity, and operations costs that will not be recoverable from the Project's income. In addition, if the Work is not completed on or before certain specific calendar dates set forth in this section (Tax Credit Completion Deadlines), Owner will suffer additional damages, because in such event Owner may lose certain Low Income Housing Tax Credits allocated to the Project (the "Tax Credits") and other financial incentives that are essential to Owner's funding of the Project. With respect to such Tax Credits that the Owner intends to use to finance the Project, the Contractor acknowledges that if such Tax Credits are not allocated or awarded in full amounts requested by the Owner, the Owner's equity in the Project will be reduced. Because the exact amount of these damages cannot be readily ascertained as of the date of this Contract, and because both the Owner and Contractor desire certainty with respect to their rights and obligations in the event the Work is not completed by the Tax Credit Completion Deadlines, the Contractor shall pay the Owner, as agreed and special liquidated damages for each and every calendar day that Work shall remain uncompleted after the time specified for the completion of the Work in the Contract, or as adjusted by the Owner's Project Manager, in addition to the tax credit damages described in § 9.8.7, the sum per calendar day shown in § 9.8.7, unless otherwise specified in the proposal form, may be deducted from monies due to or to become due to the Contractor, not as forfeit or penalty but as liquidated damages. This sum is fixed and agreed upon between the parties because the actual loss to the Owner caused by delay in completion will be impractical and extremely difficult to ascertain and determine and shall be as tabulated in § 9.8.7. Permitting the Contractor to continue and finish the Work or any part of it after the time fixed for its completion or after the date to which the time fixed for its completion may have been extended, will in no way operate as a waiver on the part of the contracting agency of any of its rights under the Contract.

§ 9.8.7 Liquidated Damages

Daily charges for each day substantial completion of the Project is delayed beyond the date specified in the Completion Schedule is \$1,500/day. Daily charges are aggregated, i.e., a separate daily charge applies to each day substantial

completion of the project is delayed.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Contractor must provide and keep in force insurance on the Property until all Work is finally complete, whether portions of the property are occupied by Owner or Owner's tenants, and Contractor must secure appropriate acknowledgements from any insurer providing such insurance coverage confirming such insurance will remain in effect until the Work is finally complete. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Project shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except it shall not constitute a waiver of Claims.

- § 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:
- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
 - .2 failure of the Work to comply with the requirements of the Contract Documents;
 - .3 terms of special warranties required by the Contract Documents; or
 - .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. In accordance with generally accepted construction practices the Contractor will be solely and completely responsible for conditions of the jobsite, including the safety of all persons and property during the performance of the Work. This requirement will apply continuously and will not be limited to normal work hours.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or offsite, under the care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement during construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards. The Contractor shall also be responsible, at the Contractor's expense, for all measures necessary to protect any property and improvements adjacent to the Project. Damages to such property or improvements shall be promptly repaired by the Contractor.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. If the Contractor uses explosives, Contractor shall conform to MAG 107.8.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts Contractor may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. Contractor has been provided certain reports indicating the presence of asbestos and lead at the Project site. If the Contractor encounters a hazardous material or substance not addressed in environmental reports, including but not limited to polychlorinated biphenyl ("PCB"), the Contractor shall, upon recognizing the condition, immediately stop Work and report the condition to the Owner, Architect and City of Phoenix Housing Department in writing. If the material is found to contain PCB, the Contractor shall not resume Work in the affected area until the material has been abated or rendered harmless. If the materials are found to contain PCB, the Contractor and Owner, with the concurrence of the City of Phoenix Housing Department, may agree, in writing, to continue work in non-affected areas onsite. An extension of time may be granted in accordance with the General Conditions. The Contractor will comply with all applicable laws/ordinances and regulations and take all appropriate health and safety precautions upon discovery of such material.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and Architect will promptly reply to the Owner in writing stating whether either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and Architect have no reasonable objection. The Architect and Contractor acknowledge that regardless of any objections, Owner will only obtain the services of environmental remediation and monitoring contractors that are on the City of Phoenix's approved contractor list. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner, Architect and Contractor. By Change Order, the Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.3.7 Upon completion of all demolition and site preparation activities, if applicable, Contractor will provide to the Owner and the City of Phoenix Housing Department a certification(s) that all hazardous materials were remediated

and disposed of safely and in accordance with all local, state, and federal requirements. Contractor shall submit such backup documentation as necessary to support the certification(s).

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents. Contractor and subcontractors shall procure and maintain until all their obligations have been discharged, including any warranty periods under this Contract are satisfied, insurance against claims which may arise from or in connection with the performance of the Work hereunder by the Contractor, agents, representatives, employees or subcontractors. These insurance requirements are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The Owner in no way warrants that the minimum limits stated in this action are sufficient to protect the Contractors, agent's representative, employees, or subcontractors, Contractor is free to purchase such additional insurance as may be determined necessary.

I. GENERAL REQUIREMENTS APPLICABLE TO ALL COVERAGES UNLESS OTHERWISE STATED.

- a. **Minimum Scope and Limits of Insurance**-Contractor shall provide coverage with limits of liability not less than those stated below. An excess liability policy and umbrella liability policy may be used to meet the minimum liability requirements provided the coverage is written on a "following form" basis.
- b. **Adjustments to Insurance Requirements**-The insurance and indemnification requirements specified in General Conditions §3.18 and §11.1 are minimum required coverages. Owner reserves the right to require Contractor to provide different or additional insurance coverages if such additional coverages are required by a Project lender and/or investor.
- c. **Additional Insurance Requirements**-Required insurance policies shall include, or be endorsed to include the following provisions:
 1. On insurance policies where ML I Housing, LLC., Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, any and all subsidiaries, as the interest may appear, their successors and assigns are named as additional insureds, they shall be additional insureds to the full limits of liability purchased by the Contractor even if those limits are liability are in excess of those required by this Contract.
 2. The Contractors insurance coverage shall be primary insurance and non-contributory with respect to all other available sources.
 3. If the "Named Insured" on any insurance policy is different from the name of the Project, then the Certificate of Insurance/Evidence of Property should state, in the "Description" section, both: (1) the name of the Project; and (2) the name of the operating entity that owns the Project (ML I Housing, LLC).
 4. The Property address/location must be clearly stated on each certificate/evidence.
- d. **Notice of Cancellation**-All Project insurance policies must have a thirty (30) days notices of cancellation, except for non-payment of premium, in which case, ten (10) days' notice must be given. For each insurance policy required by the insurance provisions of this Contract, the Contractor must provide to the Owner, within 2 business days of receipt, a notice of a policy is suspended, voided, or cancelled for any reason. Such notice shall be mailed, emailed, hand delivered or sent by facsimile transmission to the Owner, City of Phoenix Housing Department, 251 West Washington St, 4th Floor, Phoenix, AZ 85003, Attn: Project Manager for the Moreland, BANK NAME, at the addresses stated in Section I (F) below,
- e. **Acceptability of Insurers**-Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Arizona and with an "A.M. Best" rating of not less than A/VII. Owner is no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor and its subcontractors from potential insurer insolvency.
- f. **Verification of Coverage**-Contractor shall furnish the Owner, City of Phoenix Housing Department and BANK, entities with certificates of insurance ("ACORD") form or equivalent approved by the Owner as

required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Policy numbers and effective dates must be evidenced on the certificates prior to closing.

- g. **Subcontractors**-Contractor's certificate(s) shall include all subcontractors as additional insureds under its policies or Contractor shall furnish to the Owner separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to the minimum requirements identified above.
- h. **Approval**-Any modification or variation from the insurance requirements in this Agreement must have approval of the Owner, with the consent of the City of Phoenix Housing Department, whose decision is final.
- i. **Blanket Policies**-A schedule of values of all properties covered under the policy must be provided with the blanket policy.
- j. **Third Party Review**-Insurance policies may be subject to third party review at the customer's expense.
- k. **Deductible**-The deductible or self-insured retention on insurance policies shall not exceed \$10,000.

II. All certificates and any required endorsements are to be received and approved by the Owner, City of Phoenix and BANK NAME entities before Work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of Work under this Contract and remain in effect for the duration of the Project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of contract. All certificates required by this Contract shall be sent directly to the Owner, City of Phoenix Housing Department and BANK NAME. The Project/contract number and Project description shall be noted on the certificate of insurance. The Owner reserves the right to required complete, certified copies of all insurance policies required by the Contract at any time. Certificates shall be sent to the following addresses:

BANK

ML I Housing, LLC

City of Phoenix, Housing Department
251 West Washington Street, 4th Floor
Phoenix, Arizona 85003

III. TYPES OF COVERAGES REQUIRED FOR SITE PREPARATION AND CONSTRUCTION PHASE

During the design and construction phase of the Project, the Contractor shall maintain insurances coverage and limits as described below. The insurance requirements may be satisfied with a Contractor Controlled Insurance Program ("CCIP"); however, those coverage and/or limits not provided by the CCIP must be provided by the Contractor.

- a. **Commercial General Liability-Occurrence Form**-Contractor's policy shall include bodily injury, broad form contractual liability, independent subcontractors' liability, broad form property damage liability, personal and advertising liability, products and completed operations (coverage to apply for two years following completion of construction), XCU coverage, and waiver of subrogation against all parties' names additional insured, and shall carry limits as follows:
 - i. General Aggregate \$5,000,000
 - ii. Products/Completed Operations Aggregate \$5,000,000
 - iii. Contractual Liability \$1,000,000
 - iv. Personal and Advertising Injury \$5,000,000
 - v. Each Occurrence \$5,000,000
 - vi. Fire Damage \$ 50,000
 - vii. Maximum deductible or retention \$ 10,000
 - viii. General liability limits must apply on a "per location" basis (each location separately). Please be sure to check the "LOC" box indicating such. Should the limits apply on a "Policy" or shared basis a schedule of locations must be produced and additional liability may be required.
 - ix. Contractors liability policies shall be endorsed to include the following additional insureds language: ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, Native American Connections, Inc., and BANK, any and all subsidiaries, as their interest may appear ("ATIMA"), its successors and assigns ("ISAOA") are named as additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including completed operations.
 - x. The policy must include coverage for pollution arising from products liability for environmental contractor equipment, manufacturers, and distributors.
- b. **Automobile Liability**-Any Contractor using an owned, hired, or non-owned vehicle to perform services under this Contract shall provide insurance including bodily injury and property damage coverage.
 - i. Combined Single Limit (CSL) \$1,000,000

- ii. This policy shall be endorsed to include the following additional insured language: ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, any and all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”) shall be named as additional insureds.
- c. **Worker’s Compensation and Employers’ Liability**-If the Contractor has employees, evidence of Workers’ Compensation insurance as described shall be provided. All Contractors providing services during the site preparation and construction phase must also provide Worker’s Compensation insurance.
 - i. Each Accident \$1,000,000
 - ii. Disease-Each Employee \$ 100,000
 - iii. Disease-Policy Limit \$ 500,000
 - iv. Policy shall contain a waiver of subrogation in favor of ML I Housing, LLC, , Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, any and all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”).
 - v. This requirement shall not apply when a Contractor is exempt under A.R.S. 23-901, AND when such Contractor executes the appropriate sole proprietor waiver form.
- d. **Professional Liability (Errors and Omissions Liability)**-The policy must cover professional misconduct or lack of ordinary skills for those positions defined in the Scope of Services of this Contract.
 - i. Each Claim \$1,000,000
 - ii. Annual Aggregate \$1,000,000
 - iii. If the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants any retroactive date under the policy must precede the effective date of this Contract; and either continuous coverage will be maintained, or an extended discovery period will be exercise for a period of two (2) years beginning at the time Work under this Contract is completed.
- e. **Contractor’s Pollution Liability (Including Errors and Omissions)**-For losses caused by pollution conditions arising from the operations performed by or on behalf of the Contractor as described in the Scope of Services section of this Contract.
 - i. Per Occurrence \$1,000,000
 - ii. General Aggregate \$2,000,000
 - iii. The policy shall be written on an "occurrence" basis with no sunset clause or if written on a "claims-made" basis, it must be maintained for a period of not less than 8 years with the retroactive date to be prior to or held constant with the date of this Contract.
 - iv. Such insurance must name ML I Housing LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, BANK NAME, any and all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”) as additional Insureds with respect to liability arising out of the activities performed by, or on behalf of the Contractor.
 - v. The policy must provide coverage of pollution conditions arising from the operations of the Contractor described under the scope of services of the Contract. The policy shall include the following coverage:
 1. Bodily injury, sickness, disease, mental anguish, or shock sustained by any person, including death and medical monitoring costs.
 2. Property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, cleanup costs, and the loss of use of tangible property that has not been physically injured or destroyed including diminution in value.
 3. Environmental damage including physical damage to soil, surface water or groundwater, or plant or animal life, caused by Pollution Conditions and giving rise to clean-up costs.
 4. Defense including costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensation damages.
 5. Asbestos or lead-no exclusion.
 6. Mold coverage.
 7. Transportation cargo.
 8. Non-owned disposal site coverage.
 9. Should any of the work involve treatment, storage or disposal of hazardous wastes from the jobsite, Contractor must furnish an insurance certificate from the designated disposal facility establishing the facility operator maintains current

pollution legal liability insurance in the amount of not less than \$1,000,000 per occurrence/\$2,000,000 annual aggregate and will cover sudden and gradual pollution losses arising from the facility, associated with the Work performed under this Contract.

- f. **Excess/Umbrella Liability**-Contractor shall provide Excess/Umbrella liability insurance in the amount stated below:
- i. General Aggregate-Per Occurrence \$10,000,000
 - ii. Such insurance must name ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”) as additional insured.
- g. **Builder’s Risk**-In an amount equal to the initial Contract amount plus additional coverage equal to Contract amount for all subsequent change orders.
- i. Such insurance must name ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”), the Contractor and subcontractors, must be named insureds on the policy
 - ii. Coverage must be written on all risk, replacement costs basis and must include coverage for soft costs, flood and earth movement.
 - iii. Policy must be maintained until whichever of the following must first occur: (1) final payment has been made; or (2) until no person or entity, other than ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, Native American Connections, Inc., the City of Phoenix, BANK, any and all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”), has an insurable interest in the property required to be covered.
 - iv. Policy must be endorsed such that the insurance must not be canceled or lapse because of any partial use or occupancy.
 - v. Policy must provide coverage from the time any covered property becomes the responsibility of the Contractor, and continue without interruption during construction, renovation, or installation, including any time during which the covered property is being transported to the construction installation site, or awaiting installation, whether on or off site.
 - vi. Policy must contain a waiver of subrogation in favor of ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, BANK NAME, any and all subsidiaries, as their interest may appear (“ATIMA”), its successors and assigns (“ISAOA”),
 - vii. Contractor is responsible for the payment of all policy deductibles.
 1. A standard lender’s loss payable endorsement naming the Owner shall be endorsed onto the policy.

§ 11.1.2 Contractor shall obtain, at its own expense performance and payment bonds. A copy of the Certificate of Authority shall accompany the bonds. The Certificate shall have been issued or updated within two years prior to the execution of the Contract. The bonds shall be made payable and acceptable to the Owner. The bonds shall be written or countersigned by an authorized representative of the surety who is either a resident of the state of Arizona or whose principal office is maintained in this state, as by law required, and the bonds shall have attached thereto a certified copy of Power of Attorney of the signing official. If one Power of Attorney is submitted, it shall be for twice the total Contract amount. If two Powers of Attorney are submitted, each shall be for the total Contract amount. Personal or individual bonds are not acceptable. Failure to comply with these provisions will be cause for rejection for the bidder’s proposal. All bonds submitted for this Project shall be provided by a company which has an A.M. Best rating of "A- or better for the prior four quarters" by the A.M. Best Company. Failure to provide an "A- or better for the prior four quarters" bond will result in bid rejection.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor’s Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or

expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies shall provide such waivers of subrogation by endorsement or otherwise. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Contract shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within 2 years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The warranty will be 2 years, in accordance with the Arizona Registrar of Contractors, except in the case of latent defects. The Owner shall give such notice promptly after discovery of the condition. During the two-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

§ 13.2 Successors and Assigns

§ 13.2.1 Contractor shall not assign the Contract in whole or part without the written consent of the Owner.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction, shall be made at an appropriate time. Unless otherwise provided, the Contractor shall arrange for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such

failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest per Arizona Revised Statutes.

§ 13.6 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time specified by applicable law.

§ 13.7 Definitions and Interpretations

All personal pronouns used in this Contract, whether used in the masculine, feminine, or neuter gender, shall include all other genders, and the singular shall include the plural and vice versa. Titles of articles, sections, divisions, and subdivisions are for convenience only, and neither limit nor amplify the provisions of this Contract in itself. The use herein of the word "including, when following a general statement, term or matter, shall not construed to limit such statement, term or matter to the specific items or matters set forth immediately following such or to similar terms or matters to the specific items or matters set forth immediately following such work or to similar items or matters, whether or not non-limiting language (such words as "without limitation", or "but not limited to" or words of similar import) is used with the reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such a general statement, term, or matter.

§ 13.8 Underground Facilities

§ 13.8.1 The Contractor will make whatever investigation it deems necessary to verify the location of underground utility facilities. If such facilities are not in the location shown in the drawings, then (regardless of whether this is discovered prior to or during construction) the Contractor's remedies, if any, pursuant to Article 6.3, Chapter 2, Title 40, A.R.S. (A.R.S. 40-360.21 – .32, "Underground Facilities), shall be the Contractor's sole remedy for extra work, delays, and disruption of the job, or any other claim based on the location of utility facilities. Locations of utility facilities shown on drawings furnished by Owner are to be regarded as preliminary information only, subject to further investigation by the Contractor. The Owner does not warrant the accuracy of these locations, and the Contractor, by entering this Contract, expressly waives and disclaims any claim or action against the Owner under any theory for damage resulting from location of utility facilities.

§ 13.8.2 The Contractor shall be responsible for obtaining all Blue Stake utility location information, and for performing all requirements as prescribed in A.R.S. 40.360.21 – .29, for all underground facilities, including those that have been installed on the current Project, until the Project is accepted by the Owner.

§ 13.8.3 At least 2 working days prior to commencing any excavation, the Contractor shall call the Arizona 811 (formerly Blue Stake) between the hours of 7:00a.m. and 4:30p.m., Monday through Friday, for information relative to the location of buried utilities. The numbers to be called is 811.

§ 13.9 Audit and Records

§ 13.9.1 Records of the Contractor's direct personnel payroll, reimbursable expenses pertaining to this Project, and records of accounts between the Owner and Contractor shall be kept on a generally recognized accounting basis. The Owner, its authorized representative, and/or the appropriate federal agency, reserves the right to audit the Contractor's records to verify the accuracy and appropriateness of all pricing data, including data used to negotiate this Contract and any change orders. The Owner reserves the right to decrease Contract price and/or payments made on this Contract if, upon audit of the Contractor's records, the audit discloses the Contractor has provided false, misleading, or inaccurate cost and pricing data.

§ 13.9.2 The Contractor shall include a similar provision in all its Agreement with subcontractors providing services under this Contract to ensure the Owner, its authorized representative, and/or the appropriate federal agency, has access to the subcontracting records to verify the accuracy of cost and pricing data. The Owner reserves the right to decrease Contract price and/or payments made on this Contract if the above provision is not included in subcontracting contracts, and one or more subcontractors do not allow the Owner to audit their records to verify the accuracy and appropriateness or pricing data.

§ 13.10 Dust Control & Prevention

§ 13.10.1 To facilitate and encourage strict compliance with the Maricopa County Air Pollution Control Regulations pertaining to fugitive dust control. Contractor shall submit the following documentation to Owner and the City of Phoenix Housing Department at the preconstruction meeting prior to conducting any earth moving or dust generating activities under the Contract.

- a. Copy of a valid Maricopa County Earth Moving Dust Control Permit applicable to the work or services under the Contract.
- b. Copy of the Dust Control Plan applicable to the work or services under the Contract.
- c. Documentation of basic dust control training as required by Maricopa County Rule 310 based on project disturbed acres.

§ 13.10.2 For construction sites where 5-acres or more are disturbed, Contractor shall designate and identify to the Owner and the City of Phoenix Housing Department an individual who has completed the dust control training set forth in § 13.10.1 above as the site dust control coordinator. The dust control coordinator shall be present on-site all times that earth moving or dust generating activities are occurring and until all ground surfaces at the site have been stabilized.

§ 13.10.3 For Construction sites less than 1-acres, the Contractor shall designate an individual who has completed basic training to always be on site when earth moving or dust generating activities are occurring.

§ 13.10.4 Contractor shall notify the Owner and City of Phoenix Housing Department within 24 hours of any inspection, notice of violation, or other contact by the Maricopa County Air Quality Department with it or any of its subcontractors regarding the work or services under the Contract. A copy of any written communications, notices or citations issued to Contractor or any of its subcontractors regarding the Work or services under the Contract shall likewise be transmitted to the Owner and City of Phoenix Housing Department within 24 hours.

§ 13.10.5 The Contractor shall prevent any dust nuisance due to construction operations in accordance with MAG Specifications, Section 104.1.3, Cleanup and Dust Control. The Contractor shall use a power pickup broom as part of the dust control effort. No separate measurement or payment will be made for cleanup or dust control, or for providing a power pick-up broom on the job.

§ 13.10.6 The Contractor may be instructed by the Owner or City of Phoenix Housing Department to provide additional pavement cleaning (in parking lots, or other locations) above and beyond the normal expected cleanup and dust control required by MAG Section 104.1.3. If requested, the Contractor shall clean the requested areas with a power pick-up broom.

§ 13.10.7 Use of the power pick-up broom in the special requested areas only. Shall be measured and paid for on an hourly basis under the bid item, "POWER BROOM". The number of hours listed in the bid proposal is only an estimate. Actual hours requested for this Project may vary.

§ 13.10.8 Contractor agrees to indemnify and reimburse the Owner and City of Phoenix Housing Department for any fine, penalty, fee or monetary sanction imposed on the Owner by Maricopa County arising out of or caused by the performance of work or services under the Contract. Contractor shall remit payment of the reimbursable sum to the Owner and/or City of Phoenix Housing Department within 30 days of being presented with a demand for payment.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Owner for Cause

§ 14.1.1 If the Owner provides the Contractor with a written order to provide adequate maintenance of traffic, adequate cleanup, adequate dust control or to correct deficiencies or damage resulting from abnormal weather conditions, and the Contractor fails to comply in a time frame specified, the Owner may have work accomplished by other sources at the Contractor's expense.

§ 14.1.2 If Contractor persistently fails to (i) provide a sufficient numbers of skilled workers, (ii) supply the materials

required by the Contract documents, (iii) comply with applicable legal requirements, (iv) timely pay, without cause, sub-consultants and/or subcontractors, (v) prosecute the Contract services with promptness and diligence to ensure that the Contract services are completed by the Contract time, as such times may be adjust, or (vi) perform material obligations under the Contract documents, then Owner, in addition to any other rights and remedies provided in the Contract documents or by law, shall have the rights set forth below.

§ 14.1.3 Upon the occurrence of an event set forth above, Owner may provide written notice to Contractor it intends to terminate the Contract unless the problem sites is cured, or commenced to be cured, within 7 days of Contractor's receipt of such notice.

§ 14.1.4 If Contractor fails to cure, or reasonably commence to cure, such problem, then Owner may give a second written notice to Contractor of its intent to terminate within an additional 7 day period.

§ 14.1.5 If Contractor, within such second 7 day period, fails to cure, or reasonably commence to cure, such problem, then Owner may declare the Contract terminated for default by providing written notice to Contractor of such declaration.

§ 14.1.6 Upon declaring the Contract terminated pursuant to the above, Owner may enter upon the premises and take possession, for the purpose of completing the Work, of all materials, equipment, scaffolds, tools, appliance, and other items thereon, which have been purchased or provided for the performance of the Work, all of which Contractor hereby transfers, assigns and sets over to Owner for such purpose, and to employ any person or persons to complete the Work and provide all of the required labor, services, materials, equipment and other items.

§ 14.1.7 In the event of such termination, Contractor shall not be entitled to receive any further payments under the Contract Documents until the Work shall be finally completed in accordance with the Contract Documents. At such time, the Contractor will only be entitled to be paid for Work performed and accepted by the Owner to its default.

§ 14.1.8 If Owner's cost and expense of completing the Work exceeds the unpaid balance of the Contract price, then Contractor shall be obligated to pay the difference to Owner. Such costs and expense shall include not only the cost of completing the Work, but also losses, damages, costs and expense, including attorney's fees and expenses incurred by Owner in connection with the re-procurement and defense of claims arising from Contractor's default. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner.

§ 14.1.9 If Owner improperly terminates the Contract for cause, the termination for cause shall be converted to a termination for convenience in accordance with the provisions below.

§ 14.2 Suspension by the Owner for Convenience

§ 14.2.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such time as the Owner may determine.

§ 14.2.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.2.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.3 Termination by the Owner for Convenience

§ 14.3.1 The Owner may terminate this contract in whole, or from time to time in part, for the Owner's convenience or the failure of the Contractor to fulfill the contract obligations (cause/default). The Owner shall terminate by delivering to the Contractor a written Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall: (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Owner all information, reports, papers, and other materials accumulated or generated in performing the contract, whether completed or in process.

§ 14.3.2 If the termination is for the convenience of the Owner, the Owner shall be liable only for payment for services rendered before the effective date of the termination.

§ 14.3.3 If the termination is due to the failure of the Contractor to fulfill its obligations under the contract (cause/default), the Owner may (1) require the Contractor to deliver to it, in the manner and to the extent directed by

the Owner, any work described in the Notice of Termination; (2) take over the work and prosecute the same to completion by contract or otherwise, and the Contractor shall be liable for any additional cost incurred by the Owner; and (3) withhold any payments to the Contractor, for the purpose of set-off or partial payment, as the case may be, of amounts owned by the Owner by the Contractor. In the event of termination for cause/default, the Owner shall be liable to the Contractor for reasonable costs incurred by the Contractor before the effective date of the termination. Any dispute shall be decided by the Contracting Officer.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Contract and within the period specified by applicable law.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party, the City of Phoenix Housing Department and the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker. All claims for additional cost are subject to a cost reasonableness review.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4. No extended overhead will be paid for weather or Act of God delays. All claims for additional cost are subject to a cost reasonableness review.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within 10 days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data

from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner and Contractor to authorize retention of such persons at the Owner's and Contractor's expense, splitting said cost equally.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within 10 days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim or indicating the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation. The initial decision maker will provide a copy of the initial decision to the City of Phoenix Housing Department.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then the party demanding the mediation may file for mediation - with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, shall be subject to mediation.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation. A request for mediation shall be made in writing, delivered to the other party to the Contract. The parties will then agree on an entity to administer mediation.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

ARTICLE 16 LABOR COMPLIANCE

§ 16.1 DAVIS BACON CONSTRUCTION PHASE

§ 16.1.1 Davis Bacon and Related Acts. The prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provision of the Davis Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed, or working on the site, to perform the Contract.

§ 16.1.2 A labor standards conference must be held after selection of Subcontracts and prior to establishment of the Notice to Proceed. The Contractor shall schedule the conference by calling Rachel Puchi at 602-262-4417. Minimum attendance shall be corporate officer, who is authorized to execute and sign documents for the firm and the payroll representative(s) responsible for preparing, reviewing, and certifying weekly payroll reports. This requirement applies to all prime, sub and lower-tiered contractors expected to perform work on the project.

§ 16.1.3 Payrolls, including subcontractors' payrolls, must be submitted weekly no later than 7 days after each pay period ending date. The Contractor shall upon request, clarify discrepancies between hourly wages paid individual workers and the minimum hourly wages required by the applicable federal wage decision for the Project. Failure to provide payrolls or clarification of discrepancies may affect the timely release of payments and cause the withholding payment to the Contractor in accordance with Title 29, CFR Part 5.29 CFR Parts 3,5 and wage decision including in labor compliance.

ARTICLE 17 COMPLIANCE WITH FEDERAL LAWS

§ 17.1 Contractor shall comply with all existing and subsequently enacted federal, state and local laws, ordinances, codes and regulations that are, or become applicable to this Agreement. If a subsequently enacted law imposes substantial additional costs on Contractor, a request for an amendment may be submitted. Contractor is also required to certify its compliance with specified laws and in some cases, Contractor shall pass along these requirements to its subcontractors. If any of Contractor's certifications are found to be false, the Owner may terminate this Contract or impose other remedies due to the false certification. If there is a conflict in interpretation between provisions in this Contract and stated Federal Provisions, the Federal Provisions shall prevail.

SPECIAL PROVISIONS

1. TRAFFIC CONTROL

Add the following to City of Phoenix Supplement to MAG, Subsection 401.10, Payment:

Payment for traffic control will be on a lump sum basis for Traffic Control Devices.

2. TRAFFIC REGULATIONS

A. The following shall be considered major streets:

NONE

B. All traffic and/or traffic control devices on this project shall be provided, maintained and/or controlled as specified in the City of Phoenix Traffic Barricade Manual, most recent edition and addendums thereof, collectively referred to as ("Traffic Barricade Manual").

C. Permission to restrict City streets, sidewalks and alleys (street closure permits) shall be requested as specified in Chapter 3 of the Traffic Barricade Manual.

D. Unless otherwise provided for in the following "Special Traffic Regulations", all traffic on this project shall be regulated as specified in Chapter 4 of the Traffic Barricade Manual,.

E. No deviation to the "Special Traffic Regulations will be allowed or implemented unless submitted to the Engineer for review and approval two weeks prior to proposed work.

F. Only City of Phoenix certified contractors can set, move, or remove temporary traffic control devices (signs, barricades, etc.). This annual certification can be scheduled by calling Gigi, 602-534-5369.

G. Civil sanctions for temporary traffic control violations apply as follows:

Civil Sanction Per Day	Violation Description
\$1,500	Presenting an imminent risk of death or injury to the public within the public right-of-way
\$1,000	Restricting the right-of-way without proper certification or a right-of-way temporary use permit
\$1,000	Restricting traffic during peak traffic hours as described in the <i>traffic barricade manual</i> without authorization
\$1,000	Failing to correct or cure a violation, as listed in this table, within the time period stated on the warning notice
\$500	Closing a sidewalk improperly or without proper certification and/or a right-of-way temporary use permit
\$500	Violating the restriction limits, times and locations, of the right-of-way temporary use permit
\$250	Leaving advanced warning signs facing traffic after restriction has been removed – one direction
\$250	Leaving traffic control devices in the right-of-way twenty-four hours after temporary right-of-way use permit expires

H. Parking Meter Fees: To take a parking meter out of service requires a \$35 application fee and \$10 per meter per day.

- I. The City has the authority to remove and store temporary traffic control devices in emergency situations or as a last resort if the barricade owner will not pick them up. The City will assess removal and storage fees accordingly.

3. SPECIAL TRAFFIC REGULATIONS

3rd Street from Portland Street to Moreland Street Moreland Street from 3rd Street to 5th Street

Moreland Street and 3rd Street can be reduced, when construction requires, during the times indicated below:

Two lanes (one each way) plus left-turn lanes at signalized intersections from 7:00 p.m. to 6:00 a.m. weeknights, and from 7:00 p.m. Friday to 6:00 a.m. Monday on weekends.

Four lanes (two each way) plus left-turn lanes at signalized intersections from 8:30 a.m. to 4:00 p.m. weekdays, and other times determined necessary as directed by the Engineer.

All lanes shall remain open from 6:00 a.m. to 8:30 a.m., and 4:00 p.m. to 7:00 p.m. weekdays.

Moreland from 3rd Street to 5th Street 3rd Street from Portland Street to Moreland Street 5th Street from Portland Street to Moreland Street

All lanes on 3rd Street, Moreland Street, and 5th Street at the intersection of East Moreland Street shall remain open at all times during construction.

Police Officer Requirements

Off-duty police officers are required for construction projects as defined in the most recent edition of the Traffic Barricade Manual and TRACS permit. The Contractor must competitively procure off-duty police with vendors who are Authorized Traffic Coordinators with the City Police Department or Phoenix Police Department off-duty detail.

The following requirements must be included in the procurement:

1. Hourly fees charged
2. Administrative fees (administrative fees to be charged as a part of the hourly rate, not billed separately)
 - a. Pay applications requesting reimbursement for Off Duty Police hours worked will be accompanied with itemized documentation indicating officer name, date worked, hours worked, time of day worked and location.
 - b. For audit purposes, contractor's files will contain documentation from the successful off-duty vendor that the above items are accounted for in the vendor's price proposal.

The Contractor shall provide one off-duty police officer, as defined in the Traffic Barricade Manual, at signalized intersections affected from 6:00 a.m. to 7:00 p.m. weekdays, and during working hours nights and weekends when traffic is restricted (as described in the Traffic Barricade Manual).

When construction activities do not restrict traffic through the intersections, police officer hours may be reduced or suspended at the direction of the Engineer.

Signalized Intersection Requirements

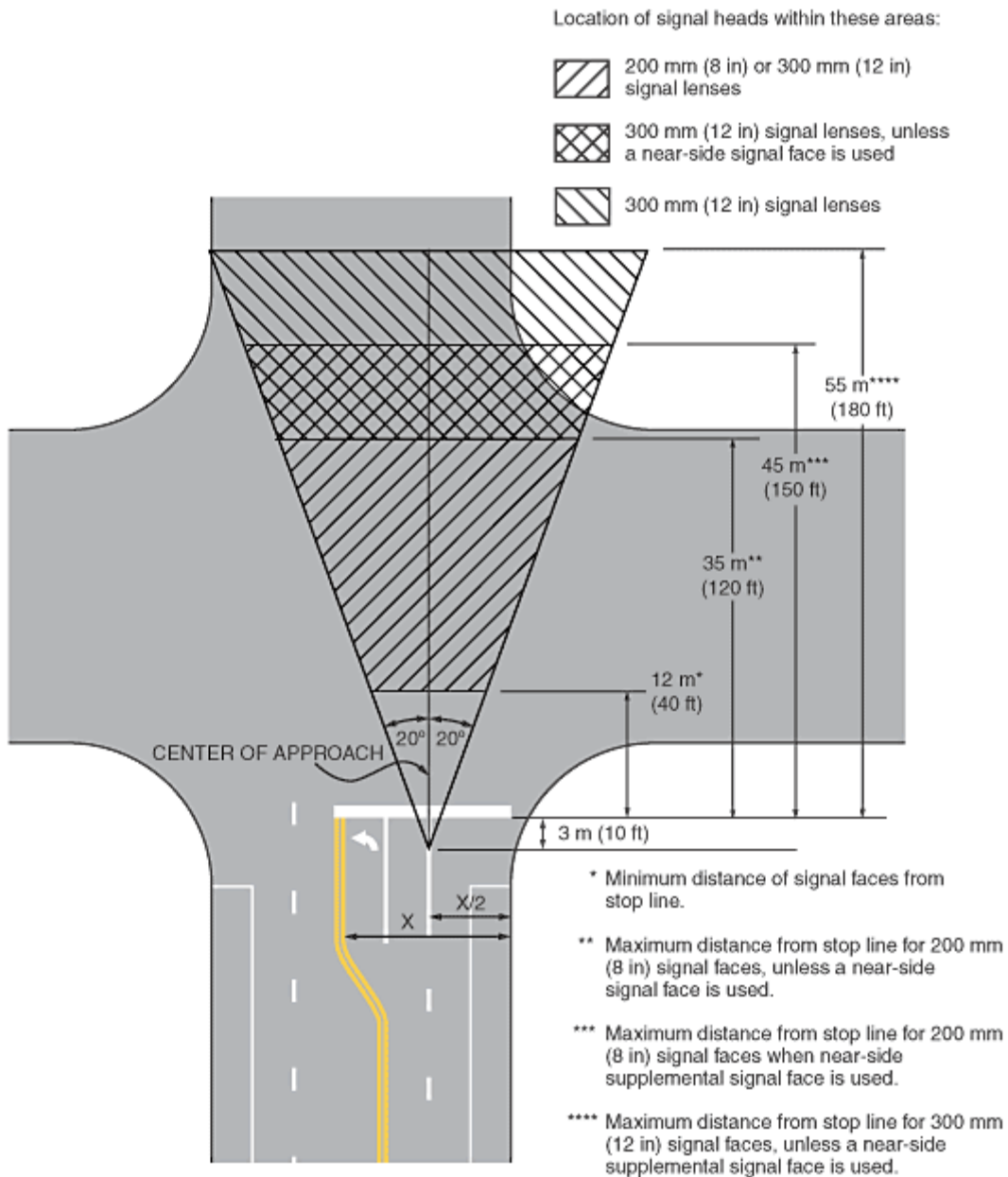
When left turns are prohibited at signalized intersections with left-turn arrow indications or when working in vicinity of a signalized intersection, the project inspector shall notify the City Traffic Signal Shop (602-262-6021) at least 72 hours in advance to make arrangements for arrow indications to be turned off or to coordinated signals being affected by the construction.

The project inspector shall provide the Traffic Signal Shop a written schedule indicating days, times and specific locations where left turns will be prohibited or where signals will be interrupted. **When the work has been completed the inspector shall immediately notify the Traffic Signal Shop so they can reactivate the left-turn arrow.**

Traffic Signal Head Visibility Requirements

The contractor shall maintain a "40-degree Cone-of-Vision" at all intersections, for full view of the intended traffic. If during construction, traffic will be positioned in such a manner that the driver cannot see a minimum of two (2) traffic signal head indications within 20-degrees either side of straight ahead (40-degree Cone-of-Vision), immediately contact the Signal Engineer at 602-262-4693 prior to the start of any work.

Figure 4D-2. Horizontal Location of Signal Faces



Note: This figure illustrates the horizontal location of signal faces.

Local Access Requirements

The Contractor shall maintain local access to all side streets, access roads driveways, alleys, and parking lots at all times and shall notify residents 72 hours in advance of any restrictions which will affect their access. The Contractor shall restore the access as soon as possible. If the primary access cannot be restored in a timely manner, the Contractor shall provide an alternative which shall be pre-determined with the residents prior to imposing any restrictions. Any local street restrictions imposed shall be such that local area traffic circulation is maintained.

Business Access Requirements

Access shall be maintained to adjacent businesses at all times during their hours of operation. Access may be maintained by such measures as constructing driveways in half sections, or by providing bridging over new concrete. Properties having more than one point of access shall not have more than one access restricted for more than fourteen calendar days at any given time. Access to adjacent driveways shall be provided during all non-working hours. Any business restrictions shall be coordinated with the affected business in writing at least fourteen days prior to imposing restrictions.

Pedestrian Access Requirements

The Contractor shall ensure that all sidewalks on this project remain in compliance with all the issues outlined by the American Disabilities Act of 1990. All pedestrian-walking areas, whether paved or unpaved, shall be maintained open and safely usable at all times. Such measures as backfilling or ramping at a 12:1 slope to existing sidewalks or providing alternate sidewalk areas adjacent to existing sidewalks may be used. In high pedestrian use areas, the Engineer may request temporary hard-surface walkways, and/or covered pedestrian walkways to be installed at no additional cost to the City.

Frontage Road Access Requirements

Local access shall be maintained at all times on frontage roads. Frontage roads shall not be used for through traffic, equipment parking, material storage, or spoil stockpile area. Frontage road closures shall follow the same special provisions as described in "Local Access Requirements".

School Access Requirements

The Contractor shall provide clean and safe school zones, crosswalks, and walkways for students attending nearby schools during all hours of school use.

This may require backfilling trenches, temporary pavement, shoring, plating, or pedestrian bridges with handrails across open trenches.

In addition to school zones and crosswalks, the Contractor shall maintain accessibility to all school bus routes during all hours of school use. The Contractor shall notify the school Principal(s) and the school Transportation Director at least fourteen days prior to any restrictions and shall restore access as soon as possible.

Church Access Requirements

The Contractor shall maintain a high level of access to churches during all hours of church use. The Contractor shall coordinate any access restrictions with the clergy at least fourteen days prior to any restrictions and shall restore access as soon as possible.

Fire Station Access Requirements

The Contractor shall maintain emergency vehicle access to and from the fire station at all times. The Contractor shall coordinate with the Fire Station Commander at least seven days prior to any restrictions and shall restore access as soon as possible.

Police Station Access Requirements

The Contractor shall maintain emergency vehicle access to and from the police station at all times. The Contractor shall coordinate with the Police Station Commander at least seven days prior to any restrictions and shall restore access as soon as possible.

Coordination with Other Agency Projects

The Contractor shall coordinate and schedule work to minimize disruption or conflicts with the following other Agency projects:

Arizona Public Service Contact: TBD
Cox Communications Contact: TBD
Century Link Contact: TBD
SW Gas Contact: TBD

Any work that may affect this project shall be coordinated with the appropriate Agency contact at least fourteen working days in advance.

Sanitation Pick-up

The Contractor shall provide sanitation pick-up for affected residents by relocating trash containers, or by providing alternative measures acceptable to the Sanitation Division of the City Public Works Department (602-256-3310).

Special Events

There are special events scheduled to take place during the construction of this project. The Contractor shall coordinate these events with the construction schedule.

Special Sign Requirements

The Contractor shall provide, install, and maintain advance notification, public informational and directional access signs (for businesses, churches, hospitals, schools, etc.) that may be required by the Engineer. These signs may include, but are not limited to, portable changeable message signs, radar/speed sensing trailers, and other applicable Intelligent Transportation System type devices. The cost shall be included in the bid item for Traffic Control Devices.

Bus Stops

The Contractor shall maintain all existing bus stop locations on this project in a safe manner or provide alternate bus stop locations and related directional signage as required by the Engineer.

Flagging of Traffic

No flagging of traffic will be permitted during the peak traffic hours of 6:00 a.m. to 8:30 a.m. and 4:00 p.m. to 7:00 p.m. weekdays. If construction requires, intermittent flagging will be allowed from 8:30 a.m. to 4:00 p.m., if approved by City project inspector, to facilitate access for heavy construction equipment.

Traffic Control Plans

The Contractor shall submit a traffic control plan for approval, showing placement of all traffic control devices, including all conflicting signs to be covered/removed or relocated, or other features that may conflict with the placement of temporary signage. This plan shall be professionally drawn on a reproducible medium and shall be submitted to the Engineer two weeks prior the contract start time or at the Pre-Construction conference, whichever occurs first.

Temporary Traffic Control Zone and Safety

At the Pre-Construction conference, the Contractor shall designate an employee, other than the Project Superintendent, who is knowledgeable in the principles and methods of proper traffic control and safety. This employee is to be available on the project site, during all periods/phases of construction to coordinate and maintain safe, acceptable, and effective temporary barricading whenever the construction affects traffic. This individual shall be authorized to receive and fulfill instructions from the Engineer and shall supervise and direct traffic control. Instructions and information given by the Engineer to this individual shall be considered as having been given to the Contractor.

Failure to maintain temporary traffic control devices in accordance with the City of Phoenix Traffic Barricade Manual and the approved project plans and specifications shall result in suspension of the work and/or Civil Sanctions until deficiencies are corrected to the satisfaction of the Engineer.

Safety Fencing Requirement for Trenches and Excavations

The Contractor shall provide safety construction fencing around all open trenches and excavations during all non-working hours.

The Contractor shall provide for the safety and welfare of the general public by adequately fencing all excavations and trenches that are permitted by the Engineer to remain open when construction is not in progress.

Fencing shall be securely anchored to approved steel posts located six feet on centers, having a minimum height of six feet, and shall consist of wire mesh fabric of sufficient weight and rigidity to adequately span a maximum supporting post separation of six feet.

The fencing, when installed about the periphery of excavations and trenches, shall form an effective barrier against intrusion by the general public into areas of construction. Fencing shall not create sight distance restrictions and/or visual obstructions for road users. The Contractor, when construction is not in progress, shall be responsible for maintaining the fencing in good repair, and upon notification by the Engineer, shall take immediate action to rectify any deficiency. Prior to the start of any excavating or trenching required for the execution of the proposed work, the Contractor shall submit to the Engineer for approval, detailed plans showing types of materials and methods of fabrication for the protective fencing.

There will be no separate measurement or payment for furnishing, installing, or maintaining protective fencing. The cost shall be considered incidental to the cost of the pipe and/or structures.

Final Signing and Striping of Roadway

The Contractor, through the City project inspector, shall notify the Street Transportation Department, Traffic Operations Division (602-262-6456), at least thirty days prior to desired completion of final roadway signing and lane striping. This will allow adequate time for City crews to schedule and complete the task on time.

This content is from the eCFR and is authoritative but unofficial.

Title 24 –Housing and Urban Development

Subtitle A –Office of the Secretary, Department of Housing and Urban Development

Part 75 Economic Opportunities for Low- and Very Low-Income Persons

Subpart A General Provisions

§ 75.1 Purpose.

§ 75.3 Applicability.

§ 75.5 Definitions.

§ 75.7 Requirements applicable to HUD NOFAs for Section 3 covered programs.

Subpart B Additional Provisions for Public Housing Financial Assistance

§ 75.9 Requirements.

§ 75.11 Targeted Section 3 worker for public housing financial assistance.

§ 75.13 Section 3 safe harbor.

§ 75.15 Reporting.

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Subpart C Additional Provisions for Housing and Community Development Financial Assistance

§ 75.19 Requirements.

§ 75.21 Targeted Section 3 worker for housing and community development financial assistance.

§ 75.23 Section 3 safe harbor.

§ 75.25 Reporting.

§ 75.27 Contract provisions.

Subpart D Provisions for Multiple Funding Sources, Recordkeeping, and Compliance

§ 75.29 Multiple funding sources.

§ 75.31 Recordkeeping.

§ 75.33 Compliance.

PART 75—ECONOMIC OPPORTUNITIES FOR LOW- AND VERY LOW- INCOME PERSONS

Authority: 12 U.S.C. 1701u; 42 U.S.C. 3535(d).

Source: 85 FR 61562, Sept. 29, 2020, unless otherwise noted.

Subpart A—General Provisions

§ 75.1 Purpose.

This part establishes the requirements to be followed to ensure the objectives of Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (Section 3) are met. The purpose of Section 3 is to ensure that economic opportunities, most importantly employment, generated by certain HUD financial assistance shall be directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing or residents of the community in which the Federal assistance is spent.

§ 75.3 Applicability.

- (a) **General applicability.** Section 3 applies to public housing financial assistance and Section 3 projects, as follows:
- (1) **Public housing financial assistance.** Public housing financial assistance means:
 - (i) Development assistance provided pursuant to section 5 of the United States Housing Act of 1937 (the 1937 Act);
 - (ii) Operations and management assistance provided pursuant to section 9(e) of the 1937 Act;
 - (iii) Development, modernization, and management assistance provided pursuant to section 9(d) of the 1937 Act; and
 - (iv) The entirety of a mixed-finance development project as described in 24 CFR 905.604, regardless of whether the project is fully or partially assisted with public housing financial assistance as defined in paragraphs (a)(1)(i) through (iii) of this section.
 - (2) **Section 3 projects.**
 - (i) Section 3 projects means housing rehabilitation, housing construction, and other public construction projects assisted under HUD programs that provide housing and community development financial assistance when the total amount of assistance to the project exceeds a threshold of \$200,000. The threshold is \$100,000 where the assistance is from the Lead Hazard Control and Healthy Homes programs, as authorized by Sections 501 or 502 of the Housing and Urban Development Act of 1970 (12 U.S.C. 1701z-1 or 1701z-2), the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4801 *et seq.*); and the Residential Lead-Based Paint Hazard Reduction Act of 1992 (42 U.S.C. 4851 *et seq.*). The project is the site or sites together with any building(s) and improvements located on the site(s) that are under common ownership, management, and financing.
 - (ii) The Secretary must update the thresholds provided in paragraph (a)(2)(i) of this section not less than once every 5 years based on a national construction cost inflation factor through FEDERAL REGISTER notice not subject to public comment. When the Secretary finds it is warranted to ensure compliance with Section 3, the Secretary may adjust, regardless of the national construction cost factor, such thresholds through FEDERAL REGISTER notice, subject to public comment.
 - (iii) The requirements in this part apply to an entire Section 3 project, regardless of whether the project is fully or partially assisted under HUD programs that provide housing and community development financial assistance.
- (b) **Contracts for materials.** Section 3 requirements do not apply to material supply contracts.

- (c) **Indian and Tribal preferences.** Contracts, subcontracts, grants, or subgrants subject to Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5307(b)) or subject to tribal preference requirements as authorized under 101(k) of the Native American Housing Assistance and Self-Determination Act (25 U.S.C. 4111(k)) must provide preferences in employment, training, and business opportunities to Indians and Indian organizations, and are therefore not subject to the requirements of this part.
- (d) **Other HUD assistance and other Federal assistance.** Recipients that are not subject to Section 3 are encouraged to consider ways to support the purpose of Section 3.

§ 75.5 Definitions.

The terms *HUD*, *Public housing*, and *Public Housing Agency (PHA)* are defined in 24 CFR part 5. The following definitions also apply to this part:

1937 Act means the United States Housing Act of 1937, 42 U.S.C. 1437 *et seq.*

Contractor means any entity entering into a contract with:

- (1) A recipient to perform work in connection with the expenditure of public housing financial assistance or for work in connection with a Section 3 project; or
- (2) A subrecipient for work in connection with a Section 3 project.

Labor hours means the number of paid hours worked by persons on a Section 3 project or by persons employed with funds that include public housing financial assistance.

Low-income person means a person as defined in Section 3(b)(2) of the 1937 Act.

Material supply contracts means contracts for the purchase of products and materials, including, but not limited to, lumber, drywall, wiring, concrete, pipes, toilets, sinks, carpets, and office supplies.

Professional services means non-construction services that require an advanced degree or professional licensing, including, but not limited to, contracts for legal services, financial consulting, accounting services, environmental assessment, architectural services, and civil engineering services.

Public housing financial assistance means assistance as defined in § 75.3(a)(1).

Public housing project is defined in 24 CFR 905.108.

Recipient means any entity that receives directly from HUD public housing financial assistance or housing and community development assistance that funds Section 3 projects, including, but not limited to, any State, local government, instrumentality, PHA, or other public agency, public or private nonprofit organization.

Section 3 means Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701u).

Section 3 business concern means:

- (1) A business concern meeting at least one of the following criteria, documented within the last six-month period:
 - (i) It is at least 51 percent owned and controlled by low- or very low-income persons;
 - (ii) Over 75 percent of the labor hours performed for the business over the prior three-month period are performed by Section 3 workers; or

- (iii) It is a business at least 51 percent owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.
- (2) The status of a Section 3 business concern shall not be negatively affected by a prior arrest or conviction of its owner(s) or employees.
- (3) Nothing in this part shall be construed to require the contracting or subcontracting of a Section 3 business concern. Section 3 business concerns are not exempt from meeting the specifications of the contract.

Section 3 project means a project defined in § 75.3(a)(2).

Section 3 worker means:

- (1) Any worker who currently fits or when hired within the past five years fit at least one of the following categories, as documented:
 - (i) The worker's income for the previous or annualized calendar year is below the income limit established by HUD.
 - (ii) The worker is employed by a Section 3 business concern.
 - (iii) The worker is a YouthBuild participant.
- (2) The status of a Section 3 worker shall not be negatively affected by a prior arrest or conviction.
- (3) Nothing in this part shall be construed to require the employment of someone who meets this definition of a Section 3 worker. Section 3 workers are not exempt from meeting the qualifications of the position to be filled.

Section 8-assisted housing refers to housing receiving project-based rental assistance or tenant-based assistance under Section 8 of the 1937 Act.

Service area or the neighborhood of the project means an area within one mile of the Section 3 project or, if fewer than 5,000 people live within one mile of a Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census.

Small PHA means a public housing authority that manages or operates fewer than 250 public housing units.

Subcontractor means any entity that has a contract with a contractor to undertake a portion of the contractor's obligation to perform work in connection with the expenditure of public housing financial assistance or for a Section 3 project.

Subrecipient has the meaning provided in the applicable program regulations or in 2 CFR 200.93.

Targeted Section 3 worker has the meanings provided in §§ 75.11, 75.21, or 75.29, and does not exclude an individual that has a prior arrest or conviction.

Very low-income person means the definition for this term set forth in section 3(b)(2) of the 1937 Act.

YouthBuild programs refers to YouthBuild programs receiving assistance under the Workforce Innovation and Opportunity Act (29 U.S.C. 3226).

§ 75.7 Requirements applicable to HUD NOFAs for Section 3 covered programs.

All notices of funding availability (NOFAs) issued by HUD that announce the availability of funding covered by § 75.3 will include notice that this part is applicable to the funding and may include, as appropriate for the specific NOFA, points or bonus points for the quality of Section 3 plans.

Subpart B—Additional Provisions for Public Housing Financial Assistance

§ 75.9 Requirements.

(a) *Employment and training.*

- (1) Consistent with existing Federal, state, and local laws and regulations, PHAs or other recipients receiving public housing financial assistance, and their contractors and subcontractors, must make their best efforts to provide employment and training opportunities generated by the public housing financial assistance to Section 3 workers.
- (2) PHAs or other recipients, and their contractors and subcontractors, must make their best efforts described in paragraph (a)(1) of this section in the following order of priority:
 - (i) To residents of the public housing projects for which the public housing financial assistance is expended;
 - (ii) To residents of other public housing projects managed by the PHA that is providing the assistance or for residents of Section 8-assisted housing managed by the PHA;
 - (iii) To participants in YouthBuild programs; and
 - (iv) To low- and very low-income persons residing within the metropolitan area (or nonmetropolitan county) in which the assistance is expended.

(b) *Contracting.*

- (1) Consistent with existing Federal, state, and local laws and regulations, PHAs and other recipients of public housing financial assistance, and their contractors and subcontractors, must make their best efforts to award contracts and subcontracts to business concerns that provide economic opportunities to Section 3 workers.
- (2) PHAs and other recipients, and their contractors and subcontractors, must make their best efforts described in paragraph (b)(1) of this section in the following order of priority:
 - (i) To Section 3 business concerns that provide economic opportunities for residents of the public housing projects for which the assistance is provided;
 - (ii) To Section 3 business concerns that provide economic opportunities for residents of other public housing projects or Section-8 assisted housing managed by the PHA that is providing the assistance;
 - (iii) To YouthBuild programs; and
 - (iv) To Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the metropolitan area (or nonmetropolitan county) in which the assistance is provided.

§ 75.11 Targeted Section 3 worker for public housing financial assistance.

- (a) **Targeted Section 3 worker.** A Targeted Section 3 worker for public housing financial assistance means a Section 3 worker who is:
- (1) A worker employed by a Section 3 business concern; or
 - (2) A worker who currently fits or when hired fit at least one of the following categories, as documented within the past five years:
 - (i) A resident of public housing or Section 8-assisted housing;
 - (ii) A resident of other public housing projects or Section 8-assisted housing managed by the PHA that is providing the assistance; or
 - (iii) A YouthBuild participant.
- (b) [Reserved]

§ 75.13 Section 3 safe harbor.

- (a) **General.** PHAs and other recipients will be considered to have complied with requirements in this part, in the absence of evidence to the contrary, if they:
- (1) Certify that they have followed the prioritization of effort in § 75.9; and
 - (2) Meet or exceed the applicable Section 3 benchmarks as described in paragraph (b) of this section.
- (b) **Establishing benchmarks.**
- (1) HUD will establish Section 3 benchmarks for Section 3 workers or Targeted Section 3 workers or both through a document published in the FEDERAL REGISTER. HUD may establish a single nationwide benchmark for Section 3 workers and a single nationwide benchmark for Targeted Section 3 workers, or may establish multiple benchmarks based on geography, the type of public housing financial assistance, or other variables. HUD will update the benchmarks through a document published in the FEDERAL REGISTER, subject to public comment, not less frequently than once every 3 years. Such notice shall include aggregate data on labor hours and the proportion of PHAs and other recipients meeting benchmarks, as well as other metrics reported pursuant to § 75.15 as deemed appropriate by HUD, for the 3 most recent reporting years.
 - (2) In establishing the Section 3 benchmarks, HUD may consider the industry averages for labor hours worked by specific categories of workers or in different localities or regions; averages for labor hours worked by Section 3 workers and Targeted Section 3 workers as reported by recipients pursuant to this section; and any other factors HUD deems important. In establishing the Section 3 benchmarks, HUD will exclude professional services from the total number of labor hours as such hours are excluded from the total number of labor hours to be reported per § 75.15(a)(4).
 - (3) Section 3 benchmarks will consist of the following two ratios:
 - (i) The number of labor hours worked by Section 3 workers divided by the total number of labor hours worked by all workers funded by public housing financial assistance in the PHA's or other recipient's fiscal year.

- (ii) The number of labor hours worked by Targeted Section 3 workers, as defined in § 75.11(a), divided by the total number of labor hours worked by all workers funded by public housing financial assistance in the PHA's or other recipient's fiscal year.

§ 75.15 Reporting.

(a) Reporting of labor hours.

- (1) For public housing financial assistance, PHAs and other recipients must report in a manner prescribed by HUD:
 - (i) The total number of labor hours worked;
 - (ii) The total number of labor hours worked by Section 3 workers; and
 - (iii) The total number of labor hours worked by Targeted Section 3 workers.
- (2) Section 3 workers' and Targeted Section 3 workers' labor hours may be counted for five years from when their status as a Section 3 worker or Targeted Section 3 worker is established pursuant to § 75.31.
- (3) The labor hours reported under paragraph (a)(1) of this section must include the total number of labor hours worked with public housing financial assistance in the fiscal year of the PHA or other recipient, including labor hours worked by any contractors and subcontractors that the PHA or other recipient is required, or elects pursuant to paragraph (a)(4) of this section, to report.
- (4) PHAs and other recipients reporting under this section, as well as contractors and subcontractors who report to PHAs and recipients, may report labor hours by Section 3 workers, under paragraph (a)(1)(ii) of this section, and labor hours by Targeted Section 3 workers, under paragraph (a)(1)(iii) of this section, from professional services without including labor hours from professional services in the total number of labor hours worked under paragraph (a)(1)(i) of this section. If a contract covers both professional services and other work and the PHA, other recipient, contractor, or subcontractor chooses not to report labor hours from professional services, the labor hours under the contract that are not from professional services must still be reported.
- (5) PHAs and other recipients may report on the labor hours of the PHA, the recipient, a contractor, or a subcontractor based on the employer's good faith assessment of the labor hours of a full-time or part-time employee informed by the employer's existing salary or time and attendance based payroll systems, unless the project or activity is otherwise subject to requirements specifying time and attendance reporting.

(b) Additional reporting if Section 3 benchmarks are not met. If the PHA's or other recipient's reporting under paragraph (a) of this section indicates that the PHA or other recipient has not met the Section 3 benchmarks described in § 75.13, the PHA or other recipient must report in a form prescribed by HUD on the qualitative nature of its Section 3 compliance activities and those of its contractors and subcontractors. Such qualitative efforts may, for example, include but are not limited to the following:

- (1) Engaged in outreach efforts to generate job applicants who are Targeted Section 3 workers.
- (2) Provided training or apprenticeship opportunities.
- (3) Provided technical assistance to help Section 3 workers compete for jobs (e.g., resume assistance, coaching).

- (4) Provided or connected Section 3 workers with assistance in seeking employment including: drafting resumes, preparing for interviews, and finding job opportunities connecting residents to job placement services.
 - (5) Held one or more job fairs.
 - (6) Provided or referred Section 3 workers to services supporting work readiness and retention (e.g., work readiness activities, interview clothing, test fees, transportation, child care).
 - (7) Provided assistance to apply for/or attend community college, a four-year educational institution, or vocational/technical training.
 - (8) Assisted Section 3 workers to obtain financial literacy training and/or coaching.
 - (9) Engaged in outreach efforts to identify and secure bids from Section 3 business concerns.
 - (10) Provided technical assistance to help Section 3 business concerns understand and bid on contracts.
 - (11) Divided contracts into smaller jobs to facilitate participation by Section 3 business concerns.
 - (12) Provided bonding assistance, guaranties, or other efforts to support viable bids from Section 3 business concerns.
 - (13) Promoted use of business registries designed to create opportunities for disadvantaged and small businesses.
 - (14) Outreach, engagement, or referrals with the state one-stop system as defined in Section 121(e)(2) of the Workforce Innovation and Opportunity Act.
- (c) **Reporting frequency.** Unless otherwise provided, PHAs or other recipients must report annually to HUD under paragraph (a) of this section, and, where required, under paragraph (b) of this section, in a manner consistent with reporting requirements for the applicable HUD program.
- (d) **Reporting by Small PHAs.** Small PHAs may elect not to report under paragraph (a) of this section. Small PHAs that make such election are required to report on their qualitative efforts, as described in paragraph (b) of this section, in a manner consistent with reporting requirements for the applicable HUD program.

§ 75.17 Contract provisions.

- (a) PHAs or other recipients must include language in any agreement or contract to apply Section 3 to contractors.
- (b) PHAs or other recipients must require contractors to include language in any contract or agreement to apply Section 3 to subcontractors.
- (c) PHAs or other recipients must require all contractors and subcontractors to meet the requirements of § 75.9, regardless of whether Section 3 language is included in contracts.

Subpart C—Additional Provisions for Housing and Community Development Financial Assistance

§ 75.19 Requirements.

- (a) **Employment and training.**

- (1) To the greatest extent feasible, and consistent with existing Federal, state, and local laws and regulations, recipients covered by this subpart shall ensure that employment and training opportunities arising in connection with Section 3 projects are provided to Section 3 workers within the metropolitan area (or nonmetropolitan county) in which the project is located.
- (2) Where feasible, priority for opportunities and training described in paragraph (a)(1) of this section should be given to:
 - (i) Section 3 workers residing within the service area or the neighborhood of the project, and
 - (ii) Participants in YouthBuild programs.

(b) Contracting.

- (1) To the greatest extent feasible, and consistent with existing Federal, state, and local laws and regulations, recipients covered by this subpart shall ensure contracts for work awarded in connection with Section 3 projects are provided to business concerns that provide economic opportunities to Section 3 workers residing within the metropolitan area (or nonmetropolitan county) in which the project is located.
- (2) Where feasible, priority for contracting opportunities described in paragraph (b)(1) of this section should be given to:
 - (i) Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the service area or the neighborhood of the project, and
 - (ii) YouthBuild programs.

§ 75.21 Targeted Section 3 worker for housing and community development financial assistance.

- (a) **Targeted Section 3 worker.** A Targeted Section 3 worker for housing and community development financial assistance means a Section 3 worker who is:
- (1) A worker employed by a Section 3 business concern; or
 - (2) A worker who currently fits or when hired fit at least one of the following categories, as documented within the past five years:
 - (i) Living within the service area or the neighborhood of the project, as defined in § 75.5; or
 - (ii) A YouthBuild participant.
- (b) [Reserved]

§ 75.23 Section 3 safe harbor.

- (a) **General.** Recipients will be considered to have complied with requirements in this part, in the absence of evidence to the contrary if they:
- (1) Certify that they have followed the prioritization of effort in § 75.19; and
 - (2) Meet or exceed the applicable Section 3 benchmark as described in paragraph (b) of this section.
- (b) **Establishing benchmarks.**

- (1) HUD will establish Section 3 benchmarks for Section 3 workers or Targeted Section 3 workers or both through a document published in the FEDERAL REGISTER. HUD may establish a single nationwide benchmark for Section 3 workers and a single nationwide benchmark for Targeted Section 3 workers, or may establish multiple benchmarks based on geography, the nature of the Section 3 project, or other variables. HUD will update the benchmarks through a document published in the FEDERAL REGISTER, subject to public comment, not less frequently than once every 3 years. Such notice shall include aggregate data on labor hours and the proportion of recipients meeting benchmarks, as well as other metrics reported pursuant to § 75.25 as deemed appropriate by HUD, for the 3 most recent reporting years.
- (2) In establishing the Section 3 benchmarks, HUD may consider the industry averages for labor hours worked by specific categories of workers or in different localities or regions; averages for labor hours worked by Section 3 workers and Targeted Section 3 workers as reported by recipients pursuant to this section; and any other factors HUD deems important. In establishing the Section 3 benchmarks, HUD will exclude professional services from the total number of labor hours as such hours are excluded from the total number of labor hours to be reported per § 75.25(a)(4).
- (3) Section 3 benchmarks will consist of the following two ratios:
 - (i) The number of labor hours worked by Section 3 workers divided by the total number of labor hours worked by all workers on a Section 3 project in the recipient's program year.
 - (ii) The number of labor hours worked by Targeted Section 3 workers as defined in § 75.21(a), divided by the total number of labor hours worked by all workers on a Section 3 project in the recipient's program year.

§ 75.25 Reporting.

(a) Reporting of labor hours.

- (1) For Section 3 projects, recipients must report in a manner prescribed by HUD:
 - (i) The total number of labor hours worked;
 - (ii) The total number of labor hours worked by Section 3 workers; and
 - (iii) The total number of labor hours worked by Targeted Section 3 workers.
- (2) Section 3 workers' and Targeted Section 3 workers' labor hours may be counted for five years from when their status as a Section 3 worker or Targeted Section 3 worker is established pursuant to § 75.31.
- (3) The labor hours reported under paragraph (a)(1) of this section must include the total number of labor hours worked on a Section 3 project, including labor hours worked by any subrecipients, contractors and subcontractors that the recipient is required, or elects pursuant to paragraph (a)(4) of this section, to report.
- (4) Recipients reporting under this section, as well as subrecipients, contractors and subcontractors who report to recipients, may report labor hours by Section 3 workers, under paragraph (a)(1)(ii) of this section, and labor hours by Targeted Section 3 workers, under paragraph (a)(1)(iii) of this section, from professional services without including labor hours from professional services in the total number of labor hours worked under paragraph (a)(1)(i) of this section. If a contract covers

both professional services and other work and the recipient or contractor or subcontractor chooses not to report labor hours from professional services, the labor hours under the contract that are not from professional services must still be reported.

- (5) Recipients may report their own labor hours or that of a subrecipient, contractor, or subcontractor based on the employer's good faith assessment of the labor hours of a full-time or part-time employee informed by the employer's existing salary or time and attendance based payroll systems, unless the project or activity is otherwise subject to requirements specifying time and attendance reporting.

(b) **Additional reporting if Section 3 benchmarks are not met.** If the recipient's reporting under paragraph (a) of this section indicates that the recipient has not met the Section 3 benchmarks described in § 75.23, the recipient must report in a form prescribed by HUD on the qualitative nature of its activities and those its contractors and subcontractors pursued. Such qualitative efforts may, for example, include but are not limited to the following:

- (1) Engaged in outreach efforts to generate job applicants who are Targeted Section 3 workers.
- (2) Provided training or apprenticeship opportunities.
- (3) Provided technical assistance to help Section 3 workers compete for jobs (e.g., resume assistance, coaching).
- (4) Provided or connected Section 3 workers with assistance in seeking employment including: drafting resumes, preparing for interviews, and finding job opportunities connecting residents to job placement services.
- (5) Held one or more job fairs.
- (6) Provided or referred Section 3 workers to services supporting work readiness and retention (e.g., work readiness activities, interview clothing, test fees, transportation, child care).
- (7) Provided assistance to apply for/or attend community college, a four-year educational institution, or vocational/technical training.
- (8) Assisted Section 3 workers to obtain financial literacy training and/or coaching.
- (9) Engaged in outreach efforts to identify and secure bids from Section 3 business concerns.
- (10) Provided technical assistance to help Section 3 business concerns understand and bid on contracts.
- (11) Divided contracts into smaller jobs to facilitate participation by Section 3 business concerns.
- (12) Provided bonding assistance, guaranties, or other efforts to support viable bids from Section 3 business concerns.
- (13) Promoted use of business registries designed to create opportunities for disadvantaged and small businesses.
- (14) Outreach, engagement, or referrals with the state one-stop system as defined in Section 121(e)(2) of the Workforce Innovation and Opportunity Act.

(c) **Reporting frequency.** Unless otherwise provided, recipients must report annually to HUD under paragraph (a) of this section, and, where required, under paragraph (b) of this section, on all projects completed within the reporting year in a manner consistent with reporting requirements for the applicable HUD program.

§ 75.27 Contract provisions.

- (a) Recipients must include language applying Section 3 requirements in any subrecipient agreement or contract for a Section 3 project.
- (b) Recipients of Section 3 funding must require subrecipients, contractors, and subcontractors to meet the requirements of § 75.19, regardless of whether Section 3 language is included in recipient or subrecipient agreements, program regulatory agreements, or contracts.

Subpart D—Provisions for Multiple Funding Sources, Recordkeeping, and Compliance

§ 75.29 Multiple funding sources.

- (a) If a housing rehabilitation, housing construction or other public construction project is subject to Section 3 pursuant to § 75.3(a)(1) and (2), the recipient must follow subpart B of this part for the public housing financial assistance and may follow either subpart B or C of this part for the housing and community development financial assistance. For such a project, the following applies:
 - (1) For housing and community development financial assistance, a Targeted Section 3 worker is any worker who meets the definition of a Targeted Section 3 worker in either subpart B or C of this part; and
 - (2) The recipients of both sources of funding shall report on the housing rehabilitation, housing construction, or other public construction project as a whole and shall identify the multiple associated recipients. PHAs and other recipients must report the following information:
 - (i) The total number of labor hours worked on the project;
 - (ii) The total number of labor hours worked by Section 3 workers on the project; and
 - (iii) The total number of labor hours worked by Targeted Section 3 workers on the project.
- (b) If a housing rehabilitation, housing construction, or other public construction project is subject to Section 3 because the project is assisted with funding from multiple sources of housing and community development assistance that exceed the thresholds in § 75.3(a)(2), the recipient or recipients must follow subpart C of this part, and must report to the applicable HUD program office, as prescribed by HUD.

§ 75.31 Recordkeeping.

- (a) HUD shall have access to all records, reports, and other documents or items of the recipient that are maintained to demonstrate compliance with the requirements of this part, or that are maintained in accordance with the regulations governing the specific HUD program by which the Section 3 project is governed, or the public housing financial assistance is provided or otherwise made available to the recipient, subrecipient, contractor, or subcontractor.
- (b) Recipients must maintain documentation, or ensure that a subrecipient, contractor, or subcontractor that employs the worker maintains documentation, to ensure that workers meet the definition of a Section 3 worker or Targeted Section 3 worker, at the time of hire or the first reporting period, as follows:
 - (1) For a worker to qualify as a Section 3 worker, one of the following must be maintained:
 - (i) A worker's self-certification that their income is below the income limit from the prior calendar year;

- (ii) A worker's self-certification of participation in a means-tested program such as public housing or Section 8-assisted housing;
 - (iii) Certification from a PHA, or the owner or property manager of project-based Section 8-assisted housing, or the administrator of tenant-based Section 8-assisted housing that the worker is a participant in one of their programs;
 - (iv) An employer's certification that the worker's income from that employer is below the income limit when based on an employer's calculation of what the worker's wage rate would translate to if annualized on a full-time basis; or
 - (v) An employer's certification that the worker is employed by a Section 3 business concern.
- (2) For a worker to qualify as a Targeted Section 3 worker, one of the following must be maintained:
- (i) For a worker to qualify as a Targeted Section 3 worker under subpart B of this part:
 - (A) A worker's self-certification of participation in public housing or Section 8-assisted housing programs;
 - (B) Certification from a PHA, or the owner or property manager of project-based Section 8-assisted housing, or the administrator of tenant-based Section 8-assisted housing that the worker is a participant in one of their programs;
 - (C) An employer's certification that the worker is employed by a Section 3 business concern; or
 - (D) A worker's certification that the worker is a YouthBuild participant.
 - (ii) For a worker to qualify as a Targeted Section 3 worker under subpart C of this part:
 - (A) An employer's confirmation that a worker's residence is within one mile of the work site or, if fewer than 5,000 people live within one mile of a work site, within a circle centered on the work site that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census;
 - (B) An employer's certification that the worker is employed by a Section 3 business concern; or
 - (C) A worker's self-certification that the worker is a YouthBuild participant.
- (c) The documentation described in paragraph (b) of this section must be maintained for the time period required for record retentions in accordance with applicable program regulations or, in the absence of applicable program regulations, in accordance with 2 CFR part 200.
- (d) A PHA or recipient may report on Section 3 workers and Targeted Section 3 workers for five years from when their certification as a Section 3 worker or Targeted Section 3 worker is established.

§ 75.33 Compliance.

- (a) **Records of compliance.** Each recipient shall maintain adequate records demonstrating compliance with this part, consistent with other recordkeeping requirements in 2 CFR part 200.
- (b) **Complaints.** Complaints alleging failure of compliance with this part may be reported to the HUD program office responsible for the public housing financial assistance or the Section 3 project, or to the local HUD field office.

- (c) **Monitoring.** HUD will monitor compliance with the requirements of this part. The applicable HUD program office will determine appropriate methods by which to oversee Section 3 compliance. HUD may impose appropriate remedies and sanctions in accordance with the laws and regulations for the program under which the violation was found.

PART 3—CONTRACTORS AND SUBCONTRACTORS ON PUBLIC BUILDING OR PUBLIC WORK FINANCED IN WHOLE OR IN PART BY LOANS OR GRANTS FROM THE UNITED STATES

Contents

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Authority: R.S. 161, sec. 2, 48 Stat. 848; Reorg. Plan No. 14 of 1950, 64 Stat. 1267; 5 U.S.C. 301; 40 U.S.C. 3145; Secretary's Order 01-2014 (Dec. 19, 2014), 79 FR 77527 (Dec. 24, 2014).

Source: 29 FR 97, Jan. 4, 1964, unless otherwise noted.

§3.1 Purpose and scope.

This part prescribes “anti-kickback” regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with federally assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No. 14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

§3.2 Definitions.

As used in the regulations in this part:

(a) The terms *building* or *work* generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, powerlines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies,

or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a *building* or *work* within the meaning of the regulations in this part.

(b) The terms *construction*, *prosecution*, *completion*, or *repair* mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.

(c) The terms *public building* or *public work* include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.

(d) The term *building or work financed in whole or in part by loans or grants from the United States* includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Federal agency. The term includes building or work for which the Federal assistance granted is in the form of loan guarantees or insurance.

(e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or building or work financed in whole or in part by loans or grants from the United States is *employed* and receiving *wages*, regardless of any contractual relationship alleged to exist between him and the real employer.

(f) The term *any affiliated person* includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary, or otherwise, and an officer or agent of such corporation.

(g) The term *Federal agency* means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies, and instrumentalities.

[29 FR 97, Jan. 4, 1964, as amended at 38 FR 32575, Nov. 27, 1973]

§3.3 Weekly statement with respect to payment of wages.

(a) As used in this section, the term *employee* shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.

(b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by this part 3 and part 5 of this title during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, and shall be on the back of Form WH 347, "Payroll (For Contractors Optional Use)" or on any form with identical wording. Copies of WH 347 may be obtained from the Government contracting or sponsoring agency or from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/index.htm> or its successor site.

(c) The requirements of this section shall not apply to any contract of \$2,000 or less.

(d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

[29 FR 97, Jan. 4, 1964, as amended at 33 FR 10186, July 17, 1968; 47 FR 23679, May 28, 1982; 73 FR 77511, Dec. 19, 2008; 82 FR 2224, Jan. 9, 2017]

§3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.

(a) Each weekly statement required under §3.3 shall be delivered by the contractor or subcontractor, within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the site of the building or work, or, if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.

(b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting officer or his authorized representative, and by authorized representatives of the Department of Labor.

(Reporting and recordkeeping requirements in paragraph (b) have been approved by the Office of Management and Budget under control number 1235-0008)

[29 FR 97, Jan. 4, 1964, as amended at 47 FR 145, Jan. 5, 1982; 82 FR 2224, Jan. 9, 2017]

§3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor:

(a) Any deduction made in compliance with the requirements of Federal, State, or local law, such as Federal or State withholding income taxes and Federal social security taxes.

(b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A *bona fide prepayment of wages* is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.

(c) Any deduction of amounts required by court process to be paid to another, unless the deduction is in favor of the contractor, subcontractor, or any affiliated person, or when collusion or collaboration exists.

(d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide

any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: *Provided, however,* That the following standards are met:

(1) The deduction is not otherwise prohibited by law;

(2) It is either:

(i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or

(ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees;

(3) No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and

(4) The deductions shall serve the convenience and interest of the employee.

(e) Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.

(f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.

(g) Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.

(h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.

(i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: *Provided, however,* That a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.

(j) Any deduction not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and part 531 of this title. When such a deduction is made the additional records required under §516.25(a) of this title shall be kept.

(k) Any deduction for the cost of safety equipment of nominal value purchased by the employee as his own property for his personal protection in his work, such as safety shoes, safety glasses, safety gloves, and hardhats, if such equipment is not required by law to be furnished by the employer, if such deduction is not violative of the Fair Labor Standards Act or prohibited by other law, if the cost on which the deduction is based does not exceed the actual cost to the employer where the equipment is purchased from him and does not include any direct or indirect monetary return to the employer where the equipment is purchased from a third person, and if the deduction is either

(1) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance; or

(2) Provided for in a bona fide collective bargaining agreement between the contractor or subcontractor

and representatives of its employees.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9770, May 28, 1971]

§3.6 Payroll deductions permissible with the approval of the Secretary of Labor.

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any deduction not permitted under §3.5. The Secretary may grant permission whenever he finds that:

(a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;

(b) The deduction is not otherwise prohibited by law;

(c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and

(d) The deduction serves the convenience and interest of the employee.

§3.7 Applications for the approval of the Secretary of Labor.

Any application for the making of payroll deductions under §3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

(a) The application shall be in writing and shall be addressed to the Secretary of Labor.

(b) The application need not identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions on all current and future contracts of the applicant for a period of 1 year. A renewal of permission to make such payroll deduction will be granted upon the submission of an application which makes reference to the original application, recites the date of the Secretary of Labor's approval of such deductions, states affirmatively that there is continued compliance with the standards set forth in the provisions of §3.6, and specifies any conditions which have changed in regard to the payroll deductions.

(c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of §3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.

(d) The application shall include a description of the proposed deduction, the purpose to be served thereby, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.

(e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9771, May 28, 1971]

§3.8 Action by the Secretary of Labor upon applications.

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of §3.6; and shall notify the applicant in writing of his decision.

§3.9 Prohibited payroll deductions.

Deductions not elsewhere provided for by this part and which are not found to be permissible under §3.6 are prohibited.

§3.10 Methods of payment of wages.

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

§3.11 Regulations part of contract.

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see §5.5(a) of this subtitle.

Title 29: Labor

PART 5—LABOR STANDARDS PROVISIONS APPLICABLE TO CONTRACTS COVERING FEDERALLY FINANCED AND ASSISTED CONSTRUCTION (ALSO LABOR STANDARDS PROVISIONS APPLICABLE TO NONCONSTRUCTION CONTRACTS SUBJECT TO THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT)

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Authority: 5 U.S.C. 301; R.S. 161, 64 Stat. 1267; Reorganization Plan No. 14 of 1950, 5 U.S.C. appendix; 40 U.S.C. 3141 et seq.; 40 U.S.C. 3145; 40 U.S.C. 3148; 40 U.S.C. 3701 et seq.; and the laws listed in 5.1(a) of this part; Secretary's Order No. 01-2014 (Dec. 19, 2014), 79 FR 77527 (Dec. 24, 2014); 28 U.S.C. 2461 note (Federal Civil Penalties Inflation Adjustment Act of 1990); Pub. L. 114-74 at §701, 129 Stat 584.

Source: 48 FR 19541, Apr. 29, 1983, unless otherwise noted.

Subpart A—Davis-Bacon and Related Acts Provisions and

ProceduresSource: 48 FR 19540, Apr. 29, 1983, unless

otherwise noted.

Editorial Note: Nomenclature changes to subpart A of part 5 appear at 61 FR 19984, May 3, 1996.

§5.1 Purpose and scope.

(a) The regulations contained in this part are promulgated under the authority conferred upon the Secretary of Labor by Reorganization Plan No. 14 of 1950 and the Copeland Act in order to coordinate the administration and enforcement of the labor standards provisions of each of the following acts by the Federal agencies responsible for their administration and of such additional statutes as may from time to time confer upon the Secretary of Labor additional duties and responsibilities similar to those conferred upon the Secretary of Labor under Reorganization Plan No. 14 of 1950:

1. The Davis-Bacon Act (sec. 1-7, 46 Stat. 1949, as amended; Pub. L. 74-403, 40 U.S.C. 276a-276a-7).
2. Copeland Act (40 U.S.C. 276c).
3. The Contract Work Hours and Safety Standards Act (40 U.S.C. 327-332).
4. National Housing Act (sec. 212 added to c. 847, 48 Stat. 1246, by sec. 14, 53 Stat. 807; 12 U.S.C. 1715c and repeatedly amended).
5. Housing Act of 1950 (college housing) (amended by Housing Act of 1959 to add labor provisions, 73 Stat. 681; 12 U.S.C. 1749a(f)).
6. Housing Act of 1959 (sec. 401(f) of the Housing Act of 1950 as amended by Pub. L. 86-372, 73 Stat. 681; 12 U.S.C. 1701q(c)(3)).
7. Commercial Fisheries Research and Development Act of 1964 (sec. 7, 78 Stat. 199; 16 U.S.C. 779e(b)).
8. Library Services and Construction Act (sec. 7(a), 78 Stat. 13; 20 U.S.C. 355c(a)(4), as amended).
9. National Technical Institute for the Deaf Act (sec. 5(b)(5), 79 Stat. 126; 20 U.S.C. 684(b)(5)).
10. National Foundation on the Arts and Humanities Act of 1965 (sec. 5(k), 79 Stat. 846 as amended; 20 U.S.C. 954(j)).
11. Elementary and Secondary Education Act of 1965 as amended by Elementary and Secondary and other Education Amendments of 1969 (sec. 423 as added by Pub. L. 91-230, title IV, sec. 401(a)(10), 84 Stat. 169, and renumbered sec. 433, by Pub. L. 92-318; title III, sec. 301(a)(1), 86 Stat. 326; 20 U.S.C. 1232(b)). Under the amendment coverage is extended to all programs administered by the Commissioner of Education.
12. The Federal-Aid Highway Acts (72 Stat. 895, as amended by 82 Stat. 821; 23 U.S.C. 113, as amended by the Surface Transportation Assistance Act of 1982, Pub. L. 97-424).
13. Indian Self-Determination and Education Assistance Act (sec. 7, 88 Stat. 2205; 25 U.S.C. 450e).

14. Indian Health Care Improvement Act (sec. 303(b), 90 Stat. 1407; 25 U.S.C. 1633(b)).
15. Rehabilitation Act of 1973 (sec. 306(b)(5) 87 Stat. 384, 29 U.S.C. 776(b)(5)).
16. Comprehensive Employment and Training Act of 1973 (sec. 606, 87 Stat. 880, renumbered sec. 706 by 88 Stat. 1845; 29 U.S.C. 986; also sec. 604, 88 Stat. 1846; 29 U.S.C. 964(b)(3)).
17. State and Local Fiscal Assistance Act of 1972 (sec. 123(a)(6), 86 Stat. 933; 31 U.S.C. 1246(a)(6)).
18. Federal Water Pollution Control Act (sec. 513 of sec. 2, 86 Stat. 894; 33 U.S.C. 1372).
19. Veterans Nursing Home Care Act of 1964 (78 Stat. 502, as amended; 38 U.S.C. 5035(a)(8)).
20. Postal Reorganization Act (sec. 410(b)(4)(C); 84 Stat. 726 as amended; 39 U.S.C. 410(b)(4)(C)).
21. National Visitors Center Facilities Act of 1966 (sec. 110, 32 Stat. 45; 40 U.S.C. 808).
22. Appalachian Regional Development Act of 1965 (sec. 402, 79 Stat. 21; 40 U.S.C. App. 402).
23. Health Services Research, Health Statistics, and Medical Libraries Act of 1974 (sec. 107, see sec. 308(h)(2) thereof, 88 Stat. 370, as amended by 90 Stat. 378; 42 U.S.C. 242m(h)(2)).
24. Hospital Survey and Construction Act, as amended by the Hospital and Medical Facilities Amendments of 1964 (sec. 605(a)(5), 78 Stat. 453; 42 U.S.C. 291e(a)(5)).
25. Health Professions Educational Assistance Act (sec. 303(b), 90 Stat. 2254; 42 U.S.C. 293a(g)(1)(C); also sec. 308a, 90 Stat. 2258, 42 U.S.C. 293a(c)(7)).
26. Nurse Training Act of 1964 (sec. 941(a)(1)(C), 89 Stat. 384; 42 U.S.C. 296a(b)(5)).
27. Heart Disease, Cancer, and Stroke Amendments of 1965 (sec. 904, as added by sec. 2, 79 Stat. 928; 42 U.S.C. 299d(b)(4)).
28. Safe Drinking Water Act (sec. 2(a) see sec. 1450e thereof, 88 Stat. 1691; 42 U.S.C. 300j-9(e)).
29. National Health Planning and Resources Act (sec. 4, see sec. 1604(b)(1)(H), 88 Stat. 2261, 42 U.S.C. 300o-3(b)(1)(H)).
30. U.S. Housing Act of 1937, as amended and recodified (88 Stat. 667; 42 U.S.C. 1437j).
31. Demonstration Cities and Metropolitan Development Act of 1966 (secs. 110, 311, 503, 1003, 80 Stat. 1259, 1270, 1277, 1284; 42 U.S.C. 3310; 12 U.S.C. 1715c; 42 U.S.C. 1437j).
32. Slum clearance program: Housing Act of 1949 (sec. 109, 63 Stat. 419, as amended; 42 U.S.C. 1459).
33. Farm housing: Housing Act of 1964 (adds sec. 516(f) to Housing Act of 1949 by sec. 503, 78 Stat. 797; 42 U.S.C. 1486(f)).
34. Housing Act of 1961 (sec. 707, added by sec. 907, 79 Stat. 496, as amended; 42 U.S.C. 1500c-3).
35. Defense Housing and Community Facilities and Services Act of 1951 (sec. 310, 65 Stat.

307; 42 U.S.C. 1592i).

36. Special Health Revenue Sharing Act of 1975 (sec. 303, see sec. 222(a)(5) thereof, 89 Stat. 324; 42 U.S.C. 2689j(a)(5)).

37. Economic Opportunity Act of 1964 (sec. 607, 78 Stat. 532; 42 U.S.C. 2947).

38. Headstart, Economic Opportunity, and Community Partnership Act of 1974 (sec. 11, see sec. 811 thereof, 88 Stat. 2327; 42 U.S.C. 2992a).

39. Housing and Urban Development Act of 1965 (sec. 707, 79 Stat. 492 as amended; 42 U.S.C. 3107).

40. Older Americans Act of 1965 (sec. 502, Pub. L. 89-73, as amended by sec. 501, Pub. L. 93-29; 87 Stat. 50; 42 U.S.C. 3041a(a)(4)).

41. Public Works and Economic Development Act of 1965 (sec. 712; 79 Stat. 575 as amended; 42 U.S.C. 3222).

42. Juvenile Delinquency Prevention Act (sec. 1, 86 Stat. 536; 42 U.S.C. 3884).

43. New Communities Act of 1968 (sec. 410, 82 Stat. 516; 42 U.S.C. 3909).

44. Urban Growth and New Community Development Act of 1970 (sec. 727(f), 84 Stat. 1803; 42 U.S.C. 4529).

45. Domestic Volunteer Service Act of 1973 (sec. 406, 87 Stat. 410; 42 U.S.C. 5046).

46. Housing and Community Development Act of 1974 (secs. 110, 802(g), 88 Stat. 649, 724; 42 U.S.C. 5310, 1440(g)).

47. Developmentally Disabled Assistance and Bill of Rights Act (sec. 126(4), 89 Stat. 488; 42 U.S.C. 6042(4); title I, sec. 111, 89 Stat. 491; 42 U.S.C. 6063(b)(19)).

48. National Energy Conservation Policy Act (sec. 312, 92 Stat. 3254; 42 U.S.C. 6371j).

49. Public Works Employment Act of 1976 (sec. 109, 90 Stat. 1001; 42 U.S.C. 6708; also sec. 208, 90 Stat. 1008; 42 U.S.C. 6728).

50. Energy Conservation and Production Act (sec. 451(h), 90 Stat. 1168; 42 U.S.C. 6881(h)).

51. Solid Waste Disposal Act (sec. 2, 90 Stat. 2823; 42 U.S.C. 6979).

52. Rail Passenger Service Act of 1970 (sec. 405d, 84 Stat. 1337; 45 U.S.C. 565(d)).

53. Urban Mass Transportation Act of 1964 (sec. 10, 78 Stat. 307; renumbered sec. 13 by 88 Stat. 715; 49 U.S.C. 1609).

54. Highway Speed Ground Transportation Study (sec. 6(b), 79 Stat. 893; 49 U.S.C. 1636(b)).

55. Airport and Airway Development Act of 1970 (sec. 22(b), 84 Stat. 231; 49 U.S.C. 1722(b)).

56. Federal Civil Defense Act of 1950 (50 U.S.C. App. 2281i).

57. National Capital Transportation Act of 1965 (sec. 3(b)(4), 79 Stat. 644; 40 U.S.C. 682(b)(4)).

Note. Repealed December 9, 1969, and labor standards incorporated in sec. 1-1431 of the District of Columbia Code).

58. Model Secondary School for the Deaf Act (sec. 4, 80 Stat. 1027, Pub. L. 89-694, but not in the United States Code).

59. Delaware River Basin Compact (sec. 15.1, 75 Stat. 714, Pub. L. 87-328) (considered a statute for purposes of the plan but not in the United States Code).

60. Energy Security Act (sec. 175(c), Pub. L. 96-294, 94 Stat. 611; 42 U.S.C. 8701 note).

(b) Part 1 of this subtitle contains the Department's procedural rules governing requests for wage determinations and the issuance and use of such wage determinations under the Davis-Bacon Act and its related statutes as listed in that part.

§5.2 Definitions.

(a) The term Secretary includes the Secretary of Labor, the Deputy Under Secretary for Employment Standards, and their authorized representatives.

(b) The term Administrator means the Administrator of the Wage and Hour Division, U.S. Department of Labor, or authorized representative.

(c) The term Federal agency means the agency or instrumentality of the United States which enters into the contract or provides assistance through loan, grant, loan guarantee or insurance, or otherwise, to the project subject to a statute listed in §5.1.

(d) The term Agency Head means the principal official of the Federal agency and includes those persons duly authorized to act in the behalf of the Agency Head.

(e) The term Contracting Officer means the individual, a duly appointed successor, or authorized representative who is designated and authorized to enter into contracts on behalf of the Federal agency.

(f) The term labor standards as used in this part means the requirements of the Davis-Bacon Act, the Contract Work Hours and Safety Standards Act (other than those relating to safety and health), the Copeland Act, and the prevailing wage provisions of the other statutes listed in §5.1, and the regulations in parts 1 and 3 of this subtitle and this part.

(g) The term United States or the District of Columbia means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the foregoing departments, establishments, agencies, instrumentalities, and including non-appropriated fund instrumentalities.

(h) The term contract means any prime contract which is subject wholly or in part to the labor standards provisions of any of the acts listed in §5.1 and any subcontract of any tier thereunder, let under the prime contract. A State or local Government is not regarded as a contractor under statutes providing loans, grants, or other Federal assistance in situations where construction is performed by its own employees. However, under statutes requiring payment of prevailing wages to all laborers and mechanics employed on the assisted project, such as the U.S. Housing Act of 1937, State and local recipients of Federal-aid must pay these employees according to Davis-Bacon labor standards.

(i) The terms building or work generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways,

parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, canals, dredging, shoring, rehabilitation and reactivation of plants, scaffolding, drilling, blasting, excavating, clearing, and landscaping. The manufacture or furnishing of materials, articles, supplies or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a building or work within the meaning of the regulations in this part unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, or under the United States Housing Act of 1937 and the Housing Act of 1949 in the construction or development of the project.

(j) The terms construction, prosecution, completion, or repair mean the following:

(1) All types of work done on a particular building or work at the site thereof, including work at a facility which is deemed a part of the site of the work within the meaning of (paragraph (l) of this section by laborers and mechanics employed by a construction contractor or construction subcontractor (or, under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996, all work done in the construction or development of the project), including without limitation—

(i) Altering, remodeling, installation (where appropriate) on the site of the work of items fabricated off-site;

(ii) Painting and decorating;

(iii) Manufacturing or furnishing of materials, articles, supplies or equipment on the site of the building or work (or, under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996 in the construction or development of the project);

(iv)(A) Transportation between the site of the work within the meaning of paragraph (l)(1) of this section and a facility which is dedicated to the construction of the building or work and deemed a part of the site of the work within the meaning of paragraph (l)(2) of this section; and

(B) Transportation of portion(s) of the building or work between a site where a significant portion of such building or work is constructed, which is a part of the site of the work within the meaning of paragraph (l)(1) of this section, and the physical place or places where the building or work will remain.

(2) Except for laborers and mechanics employed in the construction or development of the project under the United States Housing Act of 1937; the Housing Act of 1949; and the Native American Housing Assistance and Self-Determination Act of 1996, and except as provided in paragraph (j)(1)(iv)(A) of this section, the transportation of materials or supplies to or from the site of the work by employees of the construction contractor or a construction subcontractor is not “construction, prosecution, completion, or repair” (see Building and Construction Trades Department, AFL-CIO v. United States Department of Labor Wage Appeals Board (Midway Excavators, Inc.), 932 F.2d 985 (D.C. Cir. 1991)).

(k) The term public building or public work includes building or work, the construction, prosecution, completion, or repair of which, as defined above, is carried on directly by authority of or with funds of a Federal agency to serve the interest of the general public regardless of whether title thereof is in a Federal agency.

(l) The term site of the work is defined as follows:

(1) The site of the work is the physical place or places where the building or work called for in the contract will remain; and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project;

(2) Except as provided in paragraph (l)(3) of this section, job headquarters, tool yards, batch plants, borrowpits, etc., are part of the site of the work, provided they are dedicated exclusively, or nearly so, to performance of the contract or project, and provided they are adjacent or virtually adjacent to the site of the work as defined in paragraph (l)(1) of this section;

(3) Not included in the site of the work are permanent home offices, branch plant establishments, fabrication plants, tool yards, etc., of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular Federal or federally assisted contract or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, tool yards, etc., of a commercial or material supplier, which are established by a supplier of materials for the project before opening of bids and not on the site of the work as stated in paragraph (l)(1) of this section, are not included in the site of the work. Such permanent, previously established facilities are not part of the site of the work, even where the operations for a period of time may be dedicated exclusively, or nearly so, to the performance of a contract.

(m) The term laborer or mechanic includes at least those workers whose duties are manual or physical in nature (including those workers who use tools or who are performing the work of a trade), as distinguished from mental or managerial. The term laborer or mechanic includes apprentices, trainees, helpers, and, in the case of contracts subject to the Contract Work Hours and Safety Standards Act, watchmen or guards. The term does not apply to workers whose duties are primarily administrative, executive, or clerical, rather than manual. Persons employed in a bona fide executive, administrative, or professional capacity as defined in part 541 of this title are not deemed to be laborers or mechanics. Working foremen who devote more than 20 percent of their time during a workweek to mechanic or laborer duties, and who do not meet the criteria of part 541, are laborers and mechanics for the time so spent.

(n) The terms apprentice, trainee, and helper are defined as follows:

(1) Apprentice means (i) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Bureau, or (ii) a person in the first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice;

(2) Trainee means a person registered and receiving on-the-job training in a construction occupation under a program which has been approved in advance by the U.S. Department of Labor, Employment and Training Administration, as meeting its standards for on-the-job training programs and which has been so certified by that Administration.

(3) These provisions do not apply to apprentices and trainees employed on projects subject to 23 U.S.C. 113 who are enrolled in programs which have been certified by the Secretary of Transportation in accordance with 23 U.S.C. 113(c).

(4) A distinct classification of "helper" will be issued in wage determinations applicable to work performed on construction projects covered by the labor standards provisions of the Davis-Bacon and Related Acts only where:

(i) The duties of the helper are clearly defined and distinct from those of any other classification on the wage determination;

(ii) The use of such helpers is an established prevailing practice in the area; and

(iii) The helper is not employed as a trainee in an informal training program. A “helper” classification will be added to wage determinations pursuant to §5.5(a)(1)(ii)(A) only where, in addition, the work to be performed by the helper is not performed by a classification in the wage determination.

(o) Every person performing the duties of a laborer or mechanic in the construction, prosecution, completion, or repair of a public building or public work, or building or work financed in whole or in part by loans, grants, or guarantees from the United States is employed regardless of any contractual relationship alleged to exist between the contractor and such person.

(p) The term wages means the basic hourly rate of pay; any contribution irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a bona fide fringe benefit fund, plan, or program; and the rate of costs to the contractor or subcontractor which may be reasonably anticipated in providing bona fide fringe benefits to laborers and mechanics pursuant to an enforceable commitment to carry out a financially responsible plan of program, which was communicated in writing to the laborers and mechanics affected. The fringe benefits enumerated in the Davis-Bacon Act include medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing; unemployment benefits; life insurance, disability insurance, sickness insurance, or accident insurance; vacation or holiday pay; defraying costs of apprenticeship or other similar programs; or other bona fide fringe benefits. Fringe benefits do not include benefits required by other Federal, State, or local law.

(q) The term wage determination includes the original decision and any subsequent decisions modifying, superseding, correcting, or otherwise changing the provisions of the original decision. The application of the wage determination shall be in accordance with the provisions of §1.6 of this title.

[48 FR 19541, Apr. 29, 1983, as amended at 48 FR 50313, Nov. 1, 1983; 55 FR 50149, Dec. 4, 1990; 57 FR 19206, May 4, 1992; 65 FR 69693, Nov. 20, 2000; 65 FR 80278, Dec. 20, 2000; 82 FR 2225, Jan. 9, 2017]

§5.3-5.4 [Reserved]

§5.5 Contract provisions and related matters.

(a) The Agency head shall cause or require the contracting officer to insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in §5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, Provided, That such modifications are first approved by the Department of Labor):

(1) Minimum wages. (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or

mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in §5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH- 1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefits stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account

assets for the meeting of obligations under the plan or program.

(2) Withholding. The (write in name of Federal Agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records. (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees—(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in

accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their

representatives.

(10) Certification of eligibility. (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(b) Contract Work Hours and Safety Standards Act. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or §4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$26 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in §5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor

shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

(The information collection, recordkeeping, and reporting requirements contained in the following paragraphs of this section were approved by the Office of Management and Budget:

Paragraph	OMB Control No.
(a)(1)(ii)(B)	1235-0023
(a)(1)(ii)(C)	1235-0023
(a)(1)(iv)	1235-0023
(a)(3)(i)	1235-0023
(a)(3)(ii)(A)	1235-0023
	1235-0008
(c)	1235-0023

[48 FR 19540, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 55 FR 50150, Dec. 4, 1990; 57 FR 28776, June 26, 1992; 58 FR 58955, Nov. 5, 1993; 61 FR 40716, Aug. 5, 1996; 65 FR 69693, Nov. 20, 2000; 73 FR 77511, Dec. 19, 2008; 81 FR 43450, July 1, 2016; 82 FR 2225, 2226, Jan. 9, 2017; 83 FR 12, Jan 2, 2018]

§5.6 Enforcement.

(a)(1) It shall be the responsibility of the Federal agency to ascertain whether the clauses required by §5.5 have been inserted in the contracts subject to the labor standards provisions of the Acts contained in §5.1. Agencies which do not directly enter into such contracts shall promulgate the necessary regulations or procedures to require the recipient of the Federal assistance to insert in its contracts the provisions of §5.5. No payment, advance, grant, loan, or guarantee of funds shall be approved by the Federal agency unless the agency ensures that the clauses required by §5.5 and the appropriate wage determination of the Secretary of Labor are contained in such contracts. Furthermore, no payment, advance, grant, loan, or guarantee of funds shall be approved by the Federal agency after the beginning of construction unless there is on file with the agency a certification by the contractor that the contractor and its subcontractors have complied with the provisions of §5.5 or unless there is on file with the agency a certification by the contractor that there is a substantial dispute with respect to the required provisions.

(2) Payrolls and Statements of Compliance submitted pursuant to §5.5(a)(3)(ii) shall be preserved by the Federal agency for a period of 3 years from the date of completion of the contract and shall be produced at the request of the Department of Labor at any time during the 3-year period.

(3) The Federal agency shall cause such investigations to be made as may be necessary to assure compliance with the labor standards clauses required by §5.5 and the applicable statutes listed in §5.1. Investigations shall be made of all contracts with such frequency as may be necessary to assure

compliance. Such investigations shall include interviews with employees, which shall be taken in confidence, and examinations of payroll data and evidence of registration and certification with respect to apprenticeship and training plans. In making such examinations, particular care shall be taken to determine the correctness of classifications and to determine whether there is a disproportionate employment of laborers and of apprentices or trainees registered in approved programs. Such investigations shall also include evidence of fringe benefit plans and payments thereunder. Complaints of alleged violations shall be given priority.

(4) In accordance with normal operating procedures, the contracting agency may be furnished various investigatory material from the investigation files of the Department of Labor. None of the material, other than computations of back wages and liquidated damages and the summary of back wages due, may be disclosed in any manner to anyone other than Federal officials charged with administering the contract or program providing Federal assistance to the contract, without requesting the permission and views of the Department of Labor.

(5) It is the policy of the Department of Labor to protect the identity of its confidential sources and to prevent an unwarranted invasion of personal privacy. Accordingly, the identity of an employee who makes a written or oral statement as a complaint or in the course of an investigation, as well as portions of the statement which would reveal the employee's identity, shall not be disclosed in any manner to anyone other than Federal officials without the prior consent of the employee. Disclosure of employee statements shall be governed by the provisions of the "Freedom of Information Act" (5 U.S.C. 552, see 29 CFR part 70) and the "Privacy Act of 1974" (5 U.S.C. 552a).

(b) The Administrator shall cause to be made such investigations as deemed necessary, in order to obtain compliance with the labor standards provisions of the applicable statutes listed in §5.1, or to affirm or reject the recommendations by the Agency Head with respect to labor standards matters arising under the statutes listed in §5.1. Federal agencies, contractors, subcontractors, sponsors, applicants, or owners shall cooperate with any authorized representative of the Department of Labor in the inspection of records, in interviews with workers, and in all other aspects of the investigations. The findings of such an investigation, including amounts found due, may not be altered or reduced without the approval of the Department of Labor. Where the underpayments disclosed by such an investigation total \$1,000 or more, where there is reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act, that the contractor has disregarded its obligations to employees and subcontractors), or where liquidated damages may be assessed under the Contract Work Hours and Safety Standards Act, the Department of Labor will furnish the Federal agency an enforcement report detailing the labor standards violations disclosed by the investigation and any action taken by the contractor to correct the violative practices, including any payment of back wages. In other circumstances, the Federal agency will be furnished a letter of notification summarizing the findings of the investigation.

§5.7 Reports to the Secretary of Labor.

(a) Enforcement reports. (1) Where underpayments by a contractor or subcontractor total less than \$1,000, and where there is no reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act that the contractor has disregarded its obligations to employees and subcontractors), and where restitution has been effected and future compliance assured, the Federal agency need not submit its investigative findings and recommendations to the Administrator, unless the investigation was made at the request of the Department of Labor. In the latter case, the Federal agency shall submit a factual summary report detailing any violations including any data on the amount of restitution paid, the number of workers who received restitution, liquidated damages assessed under the Contract Work Hours and Safety Standards Act, corrective measures taken (such as "letters of notice"), and any information that may be necessary to review any recommendations for an appropriate adjustment in liquidated damages under §5.8.

(2) Where underpayments by a contractor or subcontractor total \$1,000 or more, or where there is reason to believe that the violations are aggravated or willful (or, in the case of the Davis-Bacon Act, that the

contractor has disregarded its obligations to employees and subcontractors), the Federal agency shall furnish within 60 days after completion of its investigation, a detailed enforcement report to the Administrator.

(b) Semi-annual enforcement reports. To assist the Secretary in fulfilling the responsibilities under Reorganization Plan No. 14 of 1950, Federal agencies shall furnish to the Administrator by April 30 and October 31 of each calendar year semi-annual reports on compliance with and enforcement of the labor standards provisions of the Davis-Bacon Act and its related acts covering the periods of October 1 through March 31 and April 1 through September 30, respectively. Such reports shall be prepared in the manner prescribed in memoranda issued to Federal agencies by the Administrator. This report has been cleared in accordance with FPMR 101-11.11 and assigned interagency report control number 1482-DOL-SA.

(c) Additional information. Upon request, the Agency Head shall transmit to the Administrator such information available to the Agency with respect to contractors and subcontractors, their contracts, and the nature of the contract work as the Administrator may find necessary for the performance of his or her duties with respect to the labor standards provisions referred to in this part.

(d) Contract termination. Where a contract is terminated by reason of violations of the labor standards provisions of the statutes listed in §5.1, a report shall be submitted promptly to the Administrator and to the Comptroller General (if the contract is subject to the Davis-Bacon Act), giving the name and address of the contractor or subcontractor whose right to proceed has been terminated, and the name and address of the contractor or subcontractor, if any, who is to complete the work, the amount and number of the contract, and the description of the work to be performed.

§5.8 Liquidated damages under the Contract Work Hours and Safety Standards Act.

(a) The Contract Work Hours and Safety Standards Act requires that laborers or mechanics shall be paid wages at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in any workweek. In the event of violation of this provision, the contractor and any subcontractor shall be liable for the unpaid wages and in addition for liquidated damages, computed with respect to each laborer or mechanic employed in violation of the Act in the amount of \$26 for each calendar day in the workweek on which such individual was required or permitted to work in excess of forty hours without payment of required overtime wages. Any contractor or subcontractor aggrieved by the withholding of liquidated damages shall have the right to appeal to the head of the agency of the United States (or the territory of District of Columbia, as appropriate) for which the contract work was performed or for which financial assistance was provided.

(b) Findings and recommendations of the Agency Head. The Agency Head has the authority to review the administrative determination of liquidated damages and to issue a final order affirming the determination. It is not necessary to seek the concurrence of the Administrator, but the Administrator shall be advised of the action taken. Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, and the amount of the liquidated damages computed for the contract is in excess of \$500, the Agency Head may make recommendations to the Secretary that an appropriate adjustment in liquidated damages be made or that the contractor or subcontractor be relieved of liability for such liquidated damages. Such findings with respect to liquidated damages shall include findings with respect to any wage underpayments for which the liquidated damages are determined.

(c) The recommendations of the Agency Head for adjustment or relief from liquidated damages under paragraph (a) of this section shall be reviewed by the Administrator or an authorized representative who shall issue an order concurring in the recommendations, partially concurring in the recommendations, or rejecting the recommendations, and the reasons therefor. The order shall be the final decision of the Department of Labor, unless a petition for review is filed pursuant to part 7 of this title, and the Administrative Review Board in its discretion reviews such decision and order; or, with respect to

contracts subject to the Service Contract Act, unless petition for review is filed pursuant to part 8 of this title, and the Administrative Review Board in its discretion reviews such decision and order.

(d) Whenever the Agency Head finds that a sum of liquidated damages administratively determined to be due under section 104(a) of the Contract Work Hours and Safety Standards Act for a contract is \$500 or less and the Agency Head finds that the sum of liquidated damages is incorrect or that the contractor or subcontractor violated inadvertently the provisions of the Contract Work Hours and Safety Standards Act notwithstanding the exercise of due care upon the part of the contractor or subcontractor involved, an appropriate adjustment may be made in such liquidated damages or the contractor or subcontractor may be relieved of liability for such liquidated damages without submitting recommendations to this effect or a report to the Department of Labor. This delegation of authority is made under section 105 of the Contract Work Hours and Safety Standards Act and has been found to be necessary and proper in the public interest to prevent undue hardship and to avoid serious impairment of the conduct of Government business.

[48 FR 19541, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 51 FR 13496, Apr. 21, 1986; 81 FR 43450, July 1, 2016; 83 FR 12, Jan. 2, 2018]

§5.9 Suspension of funds.

In the event of failure or refusal of the contractor or any subcontractor to comply with the labor standards clauses contained in §5.5 and the applicable statutes listed in §5.1, the Federal agency, upon its own action or upon written request of an authorized representative of the Department of Labor, shall take such action as may be necessary to cause the suspension of the payment, advance or guarantee of funds until such time as the violations are discontinued or until sufficient funds are withheld to compensate employees for the wages to which they are entitled and to cover any liquidated damages which may be due.

§5.10 Restitution, criminal action.

(a) In cases other than those forwarded to the Attorney General of the United States under paragraph (b), of this section, where violations of the labor standards clauses contained in §5.5 and the applicable statutes listed in §5.1 result in underpayment of wages to employees, the Federal agency or an authorized representative of the Department of Labor shall request that restitution be made to such employees or on their behalf to plans, funds, or programs for any type of bona fide fringe benefits within the meaning of section 1(b)(2) of the Davis-Bacon Act.

(b) In cases where the Agency Head or the Administrator finds substantial evidence that such violations are willful and in violation of a criminal statute, the matter shall be forwarded to the Attorney General of the United States for prosecution if the facts warrant. In all such cases the Administrator shall be informed simultaneously of the action taken.

§5.11 Disputes concerning payment of wages.

(a) This section sets forth the procedure for resolution of disputes of fact or law concerning payment of prevailing wage rates, overtime pay, or proper classification. The procedures in this section may be initiated upon the Administrator's own motion, upon referral of the dispute by a Federal agency pursuant to §5.5(a)(9), or upon request of the contractor or subcontractor(s).

(b)(1) In the event of a dispute described in paragraph (a) of this section in which it appears that relevant facts are at issue, the Administrator will notify the affected contractor and subcontractor(s) (if any), by registered or certified mail to the last known address, of the investigation findings. If the Administrator determines that there is reasonable cause to believe that the contractor and/or subcontractor(s) should also be subject to debarment under the Davis-Bacon Act or §5.12(a)(1), the letter will so indicate.

(2) A contractor and/or subcontractor desiring a hearing concerning the Administrator's investigative findings shall request such a hearing by letter postmarked within 30 days of the date of the Administrator's letter. The request shall set forth those findings which are in dispute and the reasons therefor, including any affirmative defenses, with respect to the violations and/or debarment, as appropriate.

(3) Upon receipt of a timely request for a hearing, the Administrator shall refer the case to the Chief Administrative Law Judge by Order of Reference, to which shall be attached a copy of the letter from the Administrator and response thereto, for designation of an Administrative Law Judge to conduct such hearings as may be necessary to resolve the disputed matters. The hearing shall be conducted in accordance with the procedures set forth in 29 CFR part 6.

(c)(1) In the event of a dispute described in paragraph (a) of this section in which it appears that there are no relevant facts at issue, and where there is not at that time reasonable cause to institute debarment proceedings under §5.12, the Administrator shall notify the contractor and subcontractor(s) (if any), by registered or certified mail to the last known address, of the investigation findings, and shall issue a ruling on any issues of law known to be in dispute.

(2)(i) If the contractor and/or subcontractor(s) disagree with the factual findings of the Administrator or believe that there are relevant facts in dispute, the contractor or subcontractor(s) shall so advise the Administrator by letter postmarked within 30 days of the date of the Administrator's letter. In the response, the contractor and/or subcontractor(s) shall explain in detail the facts alleged to be in dispute and attach any supporting documentation.

(ii) Upon receipt of a response under paragraph (c)(2)(i) of this section alleging the existence of a factual dispute, the Administrator shall examine the information submitted. If the Administrator determines that there is a relevant issue of fact, the Administrator shall refer the case to the Chief Administrative Law Judge in accordance with paragraph (b)(3) of this section. If the Administrator determines that there is no relevant issue of fact, the Administrator shall so rule and advise the contractor and subcontractor(s) (if any) accordingly.

(3) If the contractor and/or subcontractor(s) desire review of the ruling issued by the Administrator under paragraph (c)(1) or (2) of this section, the contractor and/or subcontractor(s) shall file a petition for review thereof with the Administrative Review Board within 30 days of the date of the ruling, with a copy thereof to the Administrator. The petition for review shall be filed in accordance with part 7 of this title.

(d) If a timely response to the Administrator's findings or ruling is not made or a timely petition for review is not filed, the Administrator's findings and/or ruling shall be final, except that with respect to debarment under the Davis-Bacon Act, the Administrator shall advise the Comptroller General of the Administrator's recommendation in accordance with §5.12(a)(1). If a timely response or petition for review is filed, the findings and/or ruling of the Administrator shall be inoperative unless and until the decision is upheld by the Administrative Law Judge or the Administrative Review Board.

§5.12 Debarment proceedings.

(a)(1) Whenever any contractor or subcontractor is found by the Secretary of Labor to be in aggravated or willful violation of the labor standards provisions of any of the applicable statutes listed in §5.1 other than the Davis-Bacon Act, such contractor or subcontractor or any firm, corporation, partnership, or association in which such contractor or subcontractor has a substantial interest shall be ineligible for a period not to exceed 3 years (from the date of publication by the Comptroller General of the name or names of said contractor or subcontractor on the ineligible list as provided below) to receive any contracts or subcontractors subject to any of the statutes listed in §5.1.

(2) In cases arising under contracts covered by the Davis-Bacon Act, the Administrator shall transmit to the Comptroller General the names of the contractors or subcontractors and their responsible officers, if any (and any firms in which the contractors or subcontractors are known to have an interest), who have been found to have disregarded their obligations to employees, and the recommendation of the Secretary

of Labor or authorized representative regarding debarment. The Comptroller General will distribute a list to all Federal agencies giving the names of such ineligible person or firms, who shall be ineligible to be awarded any contract or subcontract of the United States or the District of Columbia and any contract or subcontract subject to the labor standards provisions of the statutes listed in §5.1.

(b)(1) In addition to cases under which debarment action is initiated pursuant to §5.11, whenever as a result of an investigation conducted by the Federal agency or the Department of Labor, and where the Administrator finds reasonable cause to believe that a contractor or subcontractor has committed willful or aggravated violations of the labor standards provisions of any of the statutes listed in §5.1 (other than the Davis-Bacon Act), or has committed violations of the Davis-Bacon Act which constitute a disregard of its obligations to employees or subcontractors under section 3(a) thereof, the Administrator shall notify by registered or certified mail to the last known address, the contractor or subcontractor and its responsible officers, if any (and any firms in which the contractor or subcontractor are known to have a substantial interest), of the finding. The Administrator shall afford such contractor or subcontractor and any other parties notified an opportunity for a hearing as to whether debarment action should be taken under paragraph (a)(1) of this section or section 3(a) of the Davis-Bacon Act. The Administrator shall furnish to those notified a summary of the investigative findings. If the contractor or subcontractor or any other parties notified wish to request a hearing as to whether debarment action should be taken, such a request shall be made by letter postmarked within 30 days of the date of the letter from the Administrator, and shall set forth any findings which are in dispute and the reasons therefor, including any affirmative defenses to be raised. Upon receipt of such request for a hearing, the Administrator shall refer the case to the Chief Administrative Law Judge by Order of Reference, to which shall be attached a copy of the letter from the Administrator and the response thereto, for designation of an Administrative Law Judge to conduct such hearings as may be necessary to determine the matters in dispute. In considering debarment under any of the statutes listed in §5.1 other than the Davis-Bacon Act, the Administrative Law Judge shall issue an order concerning whether the contractor or subcontractor is to be debarred in accordance with paragraph (a)(1) of this section. In considering debarment under the Davis-Bacon Act, the Administrative Law Judge shall issue a recommendation as to whether the contractor or subcontractor should be debarred under section 3(a) of the Act.

(2) Hearings under this section shall be conducted in accordance with 29 CFR part 6. If no hearing is requested within 30 days of receipt of the letter from the Administrator, the Administrator's findings shall be final, except with respect to recommendations regarding debarment under the Davis-Bacon Act, as set forth in paragraph (a)(2) of this section.

(c) Any person or firm debarred under paragraph (a)(1) of this section may in writing request removal from the debarment list after six months from the date of publication by the Comptroller General of such person or firm's name on the ineligible list. Such a request should be directed to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210, and shall contain a full explanation of the reasons why such person or firm should be removed from the ineligible list. In cases where the contractor or subcontractor failed to make full restitution to all underpaid employees, a request for removal will not be considered until such underpayments are made. In all other cases, the Administrator will examine the facts and circumstances surrounding the violative practices which caused the debarment, and issue a decision as to whether or not such person or firm has demonstrated a current responsibility to comply with the labor standards provisions of the statutes listed in §5.1, and therefore should be removed from the ineligible list. Among the factors to be considered in reaching such a decision are the severity of the violations, the contractor or subcontractor's attitude towards compliance, and the past compliance history of the firm. In no case will such removal be effected unless the Administrator determines after an investigation that such person or firm is in compliance with the labor standards provisions applicable to Federal contracts and Federally assisted construction work subject to any of the applicable statutes listed in §5.1 and other labor statutes providing wage protection, such as the Service Contract Act, the Walsh-Healey Public Contracts Act, and the Fair Labor Standards Act. If the request for removal is denied, the person or firm may petition for review by the Administrative Review Board pursuant to 29 CFR part 7.

(d)(1) Section 3(a) of the Davis-Bacon Act provides that for a period of three years from date of

publication on the ineligible list, no contract shall be awarded to any persons or firms placed on the list as a result of a finding by the Comptroller General that such persons or firms have disregarded obligations to employees and subcontractors under that Act, and further, that no contract shall be awarded to "any firm, corporation, partnership, or association in which such persons or firms have an interest." Paragraph (a)(1) of this section similarly provides that for a period not to exceed three years from date of publication on the ineligible list, no contract subject to any of the statutes listed in §5.1 shall be awarded to any contractor or subcontractor on the ineligible list pursuant to that paragraph, or to "any firm, corporation, partnership, or association" in which such contractor or subcontractor has a "substantial interest." A finding as to whether persons or firms whose names appear on the ineligible list have an interest (or a substantial interest, as appropriate) in any other firm, corporation, partnership, or association, may be made through investigation, hearing, or otherwise.

(2)(i) The Administrator, on his/her own motion or after receipt of a request for a determination pursuant to paragraph (d)(3) of this section may make a finding on the issue of interest (or substantial interest, as appropriate).

(ii) If the Administrator determines that there may be an interest (or substantial interest, as appropriate), but finds that there is insufficient evidence to render a final ruling thereon, the Administrator may refer the issue to the Chief Administrative Law Judge in accordance with paragraph (d)(4) of this section.

(iii) If the Administrator finds that no interest (or substantial interest, as appropriate) exists, or that there is not sufficient information to warrant the initiation of an investigation, the requesting party, if any, will be so notified and no further action taken.

(iv)(A) If the Administrator finds that an interest (or substantial interest, as appropriate) exists, the person or firm affected will be notified of the Administrator's finding (by certified mail to the last known address), which shall include the reasons therefor, and such person or firm shall be afforded an opportunity to request that a hearing be held to render a decision on the issue.

(B) Such person or firm shall have 20 days from the date of the Administrator's ruling to request a hearing. A detailed statement of the reasons why the Administrator's ruling is in error, including facts alleged to be in dispute, if any, shall be submitted with the request for a hearing.

(C) If no hearing is requested within the time mentioned in paragraph (d)(2)(iv)(B) of this section, the Administrator's finding shall be final and the Administrator shall so notify the Comptroller General. If a hearing is requested, the ruling of the Administrator shall be inoperative unless and until the administrative law judge or the Administrative Review Board issues an order that there is an interest (or substantial interest, as appropriate).

(3)(i) A request for a determination of interest (or substantial interest, as appropriate), may be made by any interested party, including contractors or prospective contractors and associations of contractor's representatives of employees, and interested Government agencies. Such a request shall be submitted in writing to the Administrator, Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210.

(ii) The request shall include a statement setting forth in detail why the petitioner believes that a person or firm whose name appears on the debarred bidders list has an interest (or a substantial interest, as appropriate) in any firm, corporation, partnership, or association which is seeking or has been awarded a contract of the United States or the District of Columbia, or which is subject to any of the statutes listed in §5.1. No particular form is prescribed for the submission of a request under this section.

(4) Referral to the Chief Administrative Law Judge. The Administrator, on his/her own motion under paragraph (d)(2)(ii) of this section or upon a request for hearing where the Administrator determines that relevant facts are in dispute, will by order refer the issue to the Chief Administrative Law Judge, for designation of an Administrative Law Judge who shall conduct such hearings as may be necessary to render a decision solely on the issue of interest (or substantial interest, as appropriate). Such proceedings

shall be conducted in accordance with the procedures set forth at 29 CFR part 6.

(5) Referral to the Administrative Review Board. If the person or firm affected requests a hearing and the Administrator determines that relevant facts are not in dispute, the Administrator will refer the issue and therecord compiled thereon to the Administrative Review Board to render a decision solely on the issue of interest (or substantial interest, as appropriate). Such proceeding shall be conducted in accordance with the procedures set forth at 29 CFR part 7.

[48 FR 19541, Apr. 29, 1983, as amended at 48 FR 50313, Nov. 1, 1983; 82 FR 2226, Jan. 9, 2017]

§5.13 Rulings and interpretations.

All questions relating to the application and interpretation of wage determinations (including the classifications therein) issued pursuant to part 1 of this subtitle, of the rules contained in this part and in parts 1 and 3, and of the labor standards provisions of any of the statutes listed in §5.1 shall be referred to the Administrator for appropriate ruling or interpretation. The rulings and interpretations shall be authoritative and those under the Davis-Bacon Act may be relied upon as provided for in section 10 of the Portal-to-Portal Act of 1947 (29 U.S.C. 259). Requests for such rulings and interpretations should be addressed to the Administrator, Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210.

[82 FR 2226, Jan. 9, 2017]

§5.14 Variations, tolerances, and exemptions from parts 1 and 3 of this subtitle and this part.

The Secretary of Labor may make variations, tolerances, and exemptions from the regulatory requirements of this part and those of parts 1 and 3 of this subtitle whenever the Secretary finds that such action is necessary and proper in the public interest or to prevent injustice and undue hardship. Variations, tolerances, and exemptions may not be made from the statutory requirements of any of the statutes listed in §5.1 unless the statute specifically provides such authority.

§5.15 Limitations, variations, tolerances, and exemptions under the Contract Work Hours and Safety Standards Act.

(a) General. Upon his or her own initiative or upon the request of any Federal agency, the Secretary of Labor may provide under section 105 of the Contract Work Hours and Safety Standards Act reasonable limitations and allow variations, tolerances, and exemptions to and from any or all provisions of that Act whenever the Secretary finds such action to be necessary and proper in the public interest to prevent injustice, or undue hardship, or to avoid serious impairment of the conduct of Government business. Any request for such action by the Secretary shall be submitted in writing, and shall set forth the reasons for which the request is made.

(b) Exemptions. Pursuant to section 105 of the Contract Work Hours and Safety Standards Act, the following classes of contracts are found exempt from all provisions of that Act in order to prevent injustice, undue hardship, or serious impairment of Government business:

(1) Contract work performed in a workplace within a foreign country or within territory under the jurisdiction of the United States other than the following: A State of the United States; the District of Columbia; Puerto Rico; the Virgin Islands; Outer Continental Shelf lands defined in the Outer Continental Shelf Lands Act (ch. 345, 67 Stat. 462); American Samoa; Guam; Wake Island; Eniwetok Atoll; Kwajalein Atoll; and Johnston Island.

(2) Agreements entered into by or on behalf of the Commodity Credit Corporation providing for the storing in or handling by commercial warehouses of wheat, corn, oats, barley, rye, grain sorghums, soybeans,

flaxseed, rice, naval stores, tobacco, peanuts, dry beans, seeds, cotton, and wool.

(3) Sales of surplus power by the Tennessee Valley Authority to States, counties, municipalities, cooperative organization of citizens or farmers, corporations and other individuals pursuant to section 10 of the Tennessee Valley Authority Act of 1933 (16 U.S.C. 8311).

(c) Tolerances. (1) The "basic rate of pay" under section 102 of the Contract Work Hours and Safety Standards Act may be computed as an hourly equivalent to the rate on which time-and-one-half overtime compensation may be computed and paid under section 7 of the Fair Labor Standards Act of 1938, as amended (29 U.S.C. 207), as interpreted in part 778 of this title. This tolerance is found to be necessary and proper in the public interest in order to prevent undue hardship.

(2) Concerning the tolerance provided in paragraph (c)(1) of this section, the provisions of section 7(d)(2) of the Fair Labor Standards Act and §778.7 of this title should be noted. Under these provisions, payments for occasional periods when no work is performed, due to vacations, and similar causes are excludable from the "regular rate" under the Fair Labor Standards Act. Such payments, therefore, are also excludable from the "basic rate" under the Contract Work Hours and Safety Standards Act.

(3) See §5.8(c) providing a tolerance subdelegating authority to the heads of agencies to make appropriate adjustments in the assessment of liquidated damages totaling \$500 or less under specified circumstances.

(4)(i) Time spent in an organized program of related, supplemental instruction by laborers or mechanics employed under bona fide apprenticeship or training programs may be excluded from working time if the criteria prescribed in paragraphs (c)(4)(ii) and (iii) of this section are met.

(ii) The apprentice or trainee comes within the definition contained in §5.2(n).

(iii) The time in question does not involve productive work or performance of the apprentice's or trainee's regular duties.

(d) Variations. (1) In the event of failure or refusal of the contractor or any subcontractor to comply with overtime pay requirements of the Contract Work Hours and Safety Standards Act, if the funds withheld by Federal agencies for the violations are not sufficient to pay fully both the unpaid wages due laborers and mechanics and the liquidated damages due the United States, the available funds shall be used first to compensate the laborers and mechanics for the wages to which they are entitled (or an equitable portion thereof when the funds are not adequate for this purpose); and the balance, if any, shall be used for the payment of liquidated damages.

(2) In the performance of any contract entered into pursuant to the provisions of 38 U.S.C. 620 to provide nursing home care of veterans, no contractor or subcontractor under such contract shall be deemed in violation of section 102 of the Contract Work Hours and Safety Standards Act by virtue of failure to pay the overtime wages required by such section for work in excess of 40 hours in the workweek to any individual employed by an establishment which is an institution primarily engaged in the care of the sick, the aged, or the mentally ill or defective who reside on the premises if, pursuant to an agreement or understanding arrived at between the employer and the employee before performance of the work, a work period of 14 consecutive days is accepted in lieu of the workweek of 7 consecutive days for the purpose of overtime compensation and if such individual receives compensation for employment in excess of 8 hours in any workday and in excess of 80 hours in such 14-day period at a rate not less than 1 1/2 times the regular rate at which the individual is employed, computed in accordance with the requirements of the Fair Labor Standards Act of 1938, as amended.

(3) Any contractor or subcontractor performing on a government contract the principal purpose of which is the furnishing of firefighting or suppression and related services, shall not be deemed to be in violation of section 102 of the Contract Work Hour and Safety Standards Act for failing to pay the overtime compensation required by section 102 of the Act in accordance with the basic rate of pay as defined in

paragraph (c)(1) of this section, to any pilot or copilot of a fixed-wing or rotary-wing aircraft employed on such contract if:

(i) Pursuant to a written employment agreement between the contractor and the employee which is arrived at before performance of the work.

(A) The employee receives gross wages of not less than \$300 per week regardless of the total number of hours worked in any workweek, and

(B) Within any workweek the total wages which an employee receives are not less than the wages to which the employee would have been entitled in that workweek if the employee were paid the minimum hourly wage required under the contract pursuant to the provisions of the Service Contract Act of 1965 and any applicable wage determination issued thereunder for all hours worked, plus an additional premium payment of one-half times such minimum hourly wage for all hours worked in excess of 40 hours in the workweek;

(ii) The contractor maintains accurate records of the total daily and weekly hours of work performed by such employee on the government contract. In the event these conditions for the exemption are not met, the requirements of section 102 of the Contract Work Hours and Safety Standards Act shall be applicable to the contract from the date the contractor or subcontractor fails to satisfy the conditions until completion of the contract.

(Reporting and recordkeeping requirements in paragraph (d)(2) have been approved by the Office of Management and Budget under control numbers 1235-0023 and 1235-0018. Reporting and recordkeeping requirements in paragraph (d)(3)(ii) have been approved by the Office of Management and Budget under control number 1235-0018)

[48 FR 19541, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 61 FR 40716, Aug. 5, 1996; 82 FR 2226, Jan. 9, 2017]

§5.16 Training plans approved or recognized by the Department of Labor prior to August 20, 1975.

(a) Notwithstanding the provisions of §5.5(a)(4)(ii) relating to the utilization of trainees on Federal and federally assisted construction, no contractor shall be required to obtain approval of a training program which, prior to August 20, 1975, was approved by the Department of Labor for purposes of the Davis-Bacon and Related Acts, was established by agreement of organized labor and management and therefore recognized by the Department, and/or was recognized by the Department under Executive Order 11246, as amended. A copy of the program and evidence of its prior approval, if applicable shall be submitted to the Employment and Training Administration, which shall certify such prior approval or recognition of the program. In every other respect, the provisions of §5.5(a)(4)(ii)—including those relating to registration of trainees, permissible ratios, and wage rates to be paid—shall apply to these programs.

(b) Every trainee employed on a contract executed on and after August 20, 1975, in one of the above training programs must be individually registered in the program in accordance with Employment and Training Administration procedures, and must be paid at the rate specified in the program for the level of progress. Any such employee listed on the payroll at a trainee rate who is not registered and participating in a program certified by ETA pursuant to this section, or approved and certified by ETA pursuant to §5.5(a)(4)(ii), must be paid the wage rate determined by the Secretary of Labor for the classification of work actually performed. The ratio of trainees to journeymen shall not be greater than permitted by the terms of the program.

(c) In the event a program which was recognized or approved prior to August 20, 1975, is modified, revised, extended, or renewed, the changes in the program or its renewal must be approved by the Employment and Training Administration before they may be placed into effect.

§5.17 Withdrawal of approval of a training program.

If at any time the Employment and Training Administration determines, after opportunity for a hearing, that the standards of any program, whether it is one recognized or approved prior to August 20, 1975, or a program subsequently approved, have not been complied with, or that such a program fails to provide adequate training for participants, a contractor will no longer be permitted to utilize trainees at less than the predetermined rate for the classification of work actually performed until an acceptable program is approved.

Subpart B—Interpretation of the Fringe Benefits Provisions of the Davis-Bacon Act Source: 29 FR

13465, Sept. 30, 1964, unless otherwise noted.

§5.20 Scope and significance of this subpart.

The 1964 amendments (Pub. L. 88-349) to the Davis-Bacon Act require, among other things, that the prevailing wage determined for Federal and federally-assisted construction include: (a) The basic hourly rate of pay; and (b) the amount contributed by the contractor or subcontractor for certain fringe benefits (or the cost to them of such benefits). The purpose of this subpart is to explain the provisions of these amendments. This subpart makes available in one place official interpretations of the fringe benefits provisions of the Davis-Bacon Act. These interpretations will guide the Department of Labor in carrying out its responsibilities under these provisions. These interpretations are intended also for the guidance of contractors, their associations, laborers and mechanics and their organizations, and local, State and Federal agencies, who may be concerned with these provisions of the law. The interpretations contained in this subpart are authoritative and may be relied upon as provided for in section 10 of the Portal-to-Portal Act of 1947 (29 U.S.C. 359). The omission to discuss a particular problem in this subpart or in interpretations supplementing it should not be taken to indicate the adoption of any position by the Secretary of Labor with respect to such problem or to constitute an administrative interpretation, practice, or enforcement policy.

Questions on matters not fully covered by this subpart may be referred to the Secretary for interpretation as provided in §5.12.

§5.21 [Reserved]

§5.22 Effect of the Davis-Bacon fringe benefits provisions.

The Davis-Bacon Act and the prevailing wage provisions of the related statutes listed in §1.1 of this subtitle confer upon the Secretary of Labor the authority to predetermine, as minimum wages, those wage rates found to be prevailing for corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the area in which the work is to be performed. See paragraphs (a) and (b) of §1.2 of this subtitle. The fringe benefits amendments enlarge the scope of this authority by including certain bona fide fringe benefits within the meaning of the terms “wages”, “scale of wages”, “wage rates”, “minimum wages” and “prevailing wages”, as used in the Davis-Bacon Act.

§5.23 The statutory provisions.

The fringe benefits provisions of the 1964 amendments to the Davis-Bacon Act are, in part, as follows:

(b) As used in this Act the term “wages”, “scale of wages”, “wage rates”, “minimum wages”, and “prevailing wages” shall include—

(1) The basic hourly rate of pay; and

(2) The amount of—

(A) The rate of contribution irrevocably made by a contractor or subcontractor to a trustee or to a third

person pursuant to a fund, plan, or program; and

(B) The rate of costs to the contractor or subcontractor which may be reasonably anticipated in providing benefits to laborers and mechanics pursuant to an enforceable commitment to carry out a financially responsible plan or program which was communicated in writing to the laborers and mechanics affected,

for medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, for unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, for vacation and holiday pay, for defraying costs of apprenticeship or other similar programs, or for other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other Federal, State, or local law to provide any of such benefits * * *.

§5.24 The basic hourly rate of pay.

“The basic hourly rate of pay” is that part of a laborer's or mechanic's wages which the Secretary of Labor would have found and included in wage determinations prior to the 1964 amendments. The Secretary of Labor is required to continue to make a separate finding of this portion of the wage. In general, this portion of the wage is the cash payment made directly to the laborer or mechanic. It does not include fringe benefits.

§5.25 Rate of contribution or cost for fringe benefits.

(a) Under the amendments, the Secretary is obligated to make a separate finding of the rate of contribution or cost of fringe benefits. Only the amount of contributions or costs for fringe benefits which meet the requirements of the act will be considered by the Secretary. These requirements are discussed in this subpart.

(b) The rate of contribution or cost is ordinarily an hourly rate, and will be reflected in the wage determination as such. In some cases, however, the contribution or cost for certain fringe benefits may be expressed in a formula or method of payment other than an hourly rate. In such cases, the Secretary may in his discretion express in the wage determination the rate of contribution or cost used in the formula or method or may convert it to an hourly rate of pay whenever he finds that such action would facilitate the administration of the Act. See §5.5(a)(1)(i) and (iii).

§5.26 “* * * contribution irrevocably made * * * to a trustee or to a third person”.

Under the fringe benefits provisions (section 1(b)(2) of the Act) the amount of contributions for fringe benefits must be made to a trustee or to a third person irrevocably. The “third person” must be one who is not affiliated with the contractor or subcontractor. The trustee must assume the usual fiduciary responsibilities imposed upon trustees by applicable law. The trust or fund must be set up in such a way that in no event will the contractor or subcontractor be able to recapture any of the contributions paid in or any way divert the funds to his own use or benefit. Although contributions made to a trustee or third person pursuant to a benefit plan must be irrevocably made, this does not prevent return to the contractor or subcontractor of sums which he had paid in excess of the contributions actually called for by the plan, as where such excess payments result from error or from the necessity of making payments to cover the estimated cost of contributions at a time when the exact amount of the necessary contributions under the plan is not yet ascertained. For example, a benefit plan may provide for definite insurance benefits for employees in the event of the happening of a specified contingency such as death, sickness, accident, etc., and may provide that the cost of such definite benefits, either in full or any balance in excess of specified employee contributions, will be borne by the contractor or subcontractor. In such a case the return by the insurance company to the contractor or subcontractor of sums paid by him in excess of the amount required to provide the benefits which, under the plan, are to be provided through contributions by the contractor or subcontractor, will not be deemed a recapture or diversion by the employer of contributions made pursuant to the plan. (See Report of the Senate Committee on Labor and Public

Welfare, S. Rep. No. 963, 88th Cong., 2d Sess., p. 5.)

§5.27 “* * * fund, plan, or program”.

The contributions for fringe benefits must be made pursuant to a fund, plan or program (sec. 1(b)(2)(A) of the act). The phrase “fund, plan, or program” is merely intended to recognize the various types of arrangements commonly used to provide fringe benefits through employer contributions. The phrase is identical with language contained in section 3(1) of the Welfare and Pension Plans Disclosure Act. In interpreting this phrase, the Secretary will be guided by the experience of the Department in administering the latter statute. (See Report of Senate Committee on Labor and Public Welfare, S. Rep. No. 963, 88th Cong., 2d Sess., p. 5.)

§5.28 Unfunded plans.

(a) The costs to a contractor or subcontractor which may be reasonably anticipated in providing benefits of the types described in the act pursuant to an enforceable commitment to carry out a financially responsible plan or program, are considered fringe benefits within the meaning of the act (see 1(b)(2)(B) of the act). The legislative history suggests that these provisions were intended to permit the consideration of fringe benefits meeting, among others, these requirements and which are provided from the general assets of a contractor or subcontractor. (Report of the House Committee on Education and Labor, H. Rep. No. 308, 88th Cong., 1st Sess., p. 4.)

(b) No type of fringe benefit is eligible for consideration as a so-called unfunded plan unless:

(1) It could be reasonably anticipated to provide benefits described in the act;

(2) It represents a commitment that can be legally enforced;

(3) It is carried out under a financially responsible plan or program; and

(4) The plan or program providing the benefits has been communicated in writing to the laborers and mechanics affected. (See S. Rep. No. 963, p. 6.)

(c) It is in this manner that the act provides for the consideration of unfunded plans or programs in finding prevailing wages and in ascertaining compliance with the Act. At the same time, however, there is protection against the use of this provision as a means of avoiding the act's requirements. The words “reasonably anticipated” are intended to require that any unfunded plan or program be able to withstand a test which can perhaps be best described as one of actuarial soundness. Moreover, as in the case of other fringe benefits payable under the act, an unfunded plan or program must be “bona fide” and not a mere simulation or sham for avoiding compliance with the act. (See S. Rep. No. 963, p. 6.) The legislative history suggests that in order to insure against the possibility that these provisions might be used to avoid compliance with the act, the committee contemplates that the Secretary of Labor in carrying out his responsibilities under Reorganization Plan No. 14 of 1950, may direct a contractor or subcontractor to set aside in an account assets which, under sound actuarial principles, will be sufficient to meet the future obligation under the plan. The preservation of this account for the purpose intended would, of course, also be essential. (S. Rep. No. 963, p. 6.) This is implemented by the contractual provisions required by §5.5(a)(1)(iv).

§5.29 Specific fringe benefits.

(a) The act lists all types of fringe benefits which the Congress considered to be common in the construction industry as a whole. These include the following: Medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, vacation and holiday pay, defrayment of costs of apprenticeship or other similar

programs, or other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other Federal, State, or local law to provide any of such benefits.

(b) The legislative history indicates that it was not the intent of the Congress to impose specific standards relating to administration of fringe benefits. It was assumed that the majority of fringe benefits arrangements of this nature will be those which are administered in accordance with requirements of section 302(c)(5) of the National Labor Relations Act, as amended (S. Rep. No. 963, p. 5).

(c) The term "other bona fide fringe benefits" is the so-called "open end" provision. This was included so that new fringe benefits may be recognized by the Secretary as they become prevailing. It was pointed out that a particular fringe benefit need not be recognized beyond a particular area in order for the Secretary to find that it is prevailing in that area. (S. Rep. No. 963, p. 6).

(d) The legislative reports indicate that, to insure against considering and giving credit to any and all fringe benefits, some of which might be illusory or not genuine, the qualification was included that such fringe benefits must be "bona fide" (H. Rep. No. 308, p. 4; S. Rep. No. 963, p. 6). No difficulty is anticipated in determining whether a particular fringe benefit is "bona fide" in the ordinary case where the benefits are those common in the construction industry and which are established under a usual fund, plan, or program. This would be typically the case of those fringe benefits listed in paragraph (a) of this section which are funded under a trust or insurance program. Contractors may take credit for contributions made under such conventional plans without requesting the approval of the Secretary of Labor under §5.5(a)(1)(iv).

(e) Where the plan is not of the conventional type described in the preceding paragraph, it will be necessary for the Secretary to examine the facts and circumstances to determine whether they are "bona fide" in accordance with requirements of the act. This is particularly true with respect to unfunded plans. Contractors or subcontractors seeking credit under the act for costs incurred for such plans must request specific permission from the Secretary under §5.5(a)(1)(iv).

(f) The act excludes fringe benefits which a contractor or subcontractor is obligated to provide under other Federal, State, or local law. No credit may be taken under the act for the payments made for such benefits. For example, payment for workmen's compensation insurance under either a compulsory or elective State statute are not considered payments for fringe benefits under the Act. While each situation must be separately considered on its own merits, payments made for travel, subsistence or to industry promotion funds are not normally payments for fringe benefits under the Act. The omission in the Act of any express reference to these payments, which are common in the construction industry, suggests that these payments should not normally be regarded as bona fide fringe benefits under the Act.

§5.30 Types of wage determinations.

(a) When fringe benefits are prevailing for various classes of laborers and mechanics in the area of proposed construction, such benefits are includable in any Davis-Bacon wage determination. Illustrations, contained in paragraph (c) of this section, demonstrate some of the different types of wage determinations which may be made in such cases.

(b) Wage determinations of the Secretary of Labor under the act do not include fringe benefits for various classes of laborers and mechanics whenever such benefits do not prevail in the area of proposed construction. When this occurs the wage determination will contain only the basic hourly rates of pay, that is only the cash wages which are prevailing for the various classes of laborers and mechanics. An illustration of this situation is contained in paragraph (c) of this section.

(c) Illustrations:

Classes	Basic hourly rates	Health and welfare	Pensions	Vacations	Apprenticeship program	Others
Laborers	\$3.25					
Carpenters	4.00	\$0.15				
Painters	3.90	.15	\$0.10	\$0.20		
Electricians	4.85	.10	.15			
Plumbers	4.95	.15	.20		\$0.05	
Ironworkers	4.60			.10		

(It should be noted this format is not necessarily in the exact form in which determinations will issue; it is for illustration only.)

§5.31 Meeting wage determination obligations.

(a) A contractor or subcontractor performing work subject to a Davis-Bacon wage determination may discharge his minimum wage obligations for the payment of both straight time wages and fringe benefits by paying in cash, making payments or incurring costs for “bona fide” fringe benefits of the types listed in the applicable wage determination or otherwise found prevailing by the Secretary of Labor, or by a combination thereof.

(b) A contractor or subcontractor may discharge his obligations for the payment of the basic hourly rates and the fringe benefits where both are contained in a wage determination applicable to his laborers or mechanics in the following ways:

(1) By paying not less than the basic hourly rate to the laborers or mechanics and by making the contributions for the fringe benefits in the wage determinations, as specified therein. For example, in the illustration contained in paragraph (c) of §5.30, the obligations for “painters” will be met by the payment of a straight time hourly rate of not less than \$3.90 and by contributing not less than at the rate of 15 cents an hour for health and welfare benefits, 10 cents an hour for pensions, and 20 cents an hour for vacations; or

(2) By paying not less than the basic hourly rate to the laborers or mechanics and by making contributions for “bona fide” fringe benefits in a total amount not less than the total of the fringe benefits required by the wage determination. For example, the obligations for “painters” in the illustration in paragraph (c) of §5.30 will be met by the payment of a straight time hourly rate of not less than \$3.90 and by contributions of not less than a total of 45 cents an hour for “bona fide” fringe benefits; or

(3) By paying in cash directly to laborers or mechanics for the basic hourly rate and by making an additional cash payment in lieu of the required benefits. For example, where an employer does not make payments or incur costs for fringe benefits, he would meet his obligations for “painters” in the illustration in paragraph (c) of §5.30, by paying directly to the painters a straight time hourly rate of not less than \$4.35 (\$3.90 basic hourly rate plus 45 cents for fringe benefits); or

(4) As stated in paragraph (a) of this section, the contractor or subcontractor may discharge his minimum wage obligations for the payment of straight time wages and fringe benefits by a combination of the methods illustrated in paragraphs (b)(1) thru (3) of this section. Thus, for example, his obligations for “painters” may be met by an hourly rate, partly in cash and partly in payments or costs for fringe benefits which total not less than \$4.35 (\$3.90 basic hourly rate plus 45 cents for fringe benefits). The payments in such case may be \$4.10 in cash and 25 cents in payments or costs in fringe benefits. Or, they may be \$3.75 in cash and 60 cents in payments or costs for fringe benefits.

[30 FR 13136, Oct. 15, 1965]

§5.32 Overtime payments.

(a) The act excludes amounts paid by a contractor or subcontractor for fringe benefits in the computation of overtime under the Fair Labor Standards Act, the Contract Work Hours and Safety Standards Act, and the Walsh-Healey Public Contracts Act whenever the overtime provisions of any of these statutes apply concurrently with the Davis-Bacon Act or its related prevailing wage statutes. It is clear from the legislative history that in no event can the regular or basic rate upon which premium pay for overtime is calculated under the aforementioned Federal statutes be less than the amount determined by the Secretary of Labor as the basic hourly rate (i.e. cash rate) under section 1(b)(1) of the Davis-Bacon Act. (See S. Rep. No. 963, p. 7.) Contributions by employees are not excluded from the regular or basic rate upon which overtime is computed under these statutes; that is, an employee's regular or basic straight-time rate is computed on his earnings before any deductions are made for the employee's contributions to fringe benefits. The contractor's contributions or costs for fringe benefits may be excluded in computing such rate so long as the exclusions do not reduce the regular or basic rate below the basic hourly rate contained in the wage determination.

(b) The legislative report notes that the phrase "contributions irrevocably made by a contractor or subcontractor to a trustee or to a third person pursuant to a fund, plan, or program" was added to the bill in Committee. This language in essence conforms to the overtime provisions of section 7(d)(4) of the Fair Labor Standards Act, as amended. The intent of the committee was to prevent any avoidance of overtime requirements under existing law. See H. Rep. No. 308, p. 5.

(c)(1) The act permits a contractor or subcontractor to pay a cash equivalent of any fringe benefits found prevailing by the Secretary of Labor. Such a cash equivalent would also be excludable in computing the regular or basic rate under the Federal overtime laws mentioned in paragraph (a). For example, the *W* construction contractor pays his laborers or mechanics \$3.50 in cash under a wage determination of the Secretary of Labor which requires a basic hourly rate of \$3 and a fringe benefit contribution of 50 cents. The contractor pays the 50 cents in cash because he made no payments and incurred no costs for fringe benefits. Overtime compensation in this case would be computed on a regular or basic rate of \$3.00 an hour. However, in some cases a question of fact may be presented in ascertaining whether or not a cash payment made to laborers or mechanics is actually in lieu of a fringe benefit or is simply part of their straight time cash wage. In the latter situation, the cash payment is not excludable in computing overtime compensation. Consider the examples set forth in paragraphs (c)(2) and (3) of this section.

(2) The *X* construction contractor has for some time been paying \$3.25 an hour to a mechanic as his basic cash wage plus 50 cents an hour as a contribution to a welfare and pension plan. The Secretary of Labor determines that a basic hourly rate of \$3 an hour and a fringe benefit contribution of 50 cents are prevailing. The basic hourly rate or regular rate for overtime purposes would be \$3.25, the rate actually paid as a basic cash wage for the employee of *X*, rather than the \$3 rate determined as prevailing by the Secretary of Labor.

(3) Under the same prevailing wage determination, discussed in paragraph (c)(2) of this section, the *Y* construction contractor who has been paying \$3 an hour as his basic cash wage on which he has been computing overtime compensation reduces the cash wage to \$2.75 an hour but computes his costs of benefits under section 1(b)(2)(B) as \$1 an hour. In this example the regular or basic hourly rate would continue to be \$3 an hour. See S. Rep. No. 963, p. 7.

"General Decision Number: AZ20230031 06/09/2023

Superseded General Decision Number: AZ20220031

State: Arizona

Construction Type: Building

County: Maricopa County in Arizona.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/20/2023

2	02/03/2023
3	05/05/2023
4	06/09/2023

ASBE0073-002 08/01/2022

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 46.31	15.05

BOIL0627-001 01/01/2023

	Rates	Fringes
BOILERMAKER.....	\$ 36.49	32.42

BRAZ0003-009 07/01/2022

	Rates	Fringes
BRICKLAYER.....	\$ 31.53	6.05

ZONE PAY:

(Radius miles from the intersection of Central Ave. and Washington St., Phoenix, AZ)

- Zone A: 0-60 miles- Base Rate
- Zone B: 61-75 miles- Base Rate plus \$2.00 per hour
- Zone C: 75-100 miles- Base Rate plus \$3.00 per hour
- Zone D: 101-200 miles- Base Rate plus \$3.50 per hour
- Zone E: Over 200 miles- Base Rate plus \$6.50 per hour

CARP0408-009 07/01/2022

	Rates	Fringes
CARPENTER (Excludes Acoustical Ceiling Installation, Drywall Finishing/Taping, Drywall Hanging, Form Work, and Metal Stud Installation).....	\$ 31.95	13.62

CARP1327-001 07/01/2019

	Rates	Fringes
CARPENTER (Drywall Hanging Only).....	\$ 26.24	8.86

ELEC0640-005 01/01/2023

	Rates	Fringes
ELECTRICIAN (Includes Low Voltage Wiring; Excludes Installation of Alarms and Sound and Communication Systems).....	\$ 33.10	13.58

* ENGI0428-012 06/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Oiler.....	\$ 31.69	13.52
(2) Crane under 15 tons.....	\$ 34.96	13.52
(3) Crane,15 tons to 100 tons, Tower Crane.....	\$ 36.04	13.52
(4) Crane, 100 tons and over.....	\$ 37.07	13.52

IRON0075-011 08/01/2022

	Rates	Fringes
IRONWORKER, STRUCTURAL AND ORNAMENTAL.....	\$ 28.50	18.16

Zone 1: 0 to 50 miles from City Hall in Phoenix or Tucson
 Zone 2: 050 to 100 miles - Add \$4.00
 Zone 3: 100 to 150 miles - Add \$5.00
 Zone 4: 150 miles & over - Add \$6.50

* LAB01184-010 06/01/2023

	Rates	Fringes
LABORER (MASON TENDER-BRICK).....	\$ 24.18	7.59

PAIN0086-006 06/30/2021

	Rates	Fringes
DRYWALL FINISHER/TAPER		
ZONE A.....	\$ 23.55	7.49
ZONE B.....	\$ 27.05	7.49

ZONE PAY:

ZONE A: Free Zone: A distance of 0 to 100 miles from the old Phoenix courthouse.

ZONE B: A distance of 101 miles and over from the old Phoenix courthouse: \$3.50 per hour over ZONE A

PLAS0394-001 07/01/2019

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.08	8.57

PLUM0469-002 07/01/2022

	Rates	Fringes
PLUMBER/PIPEFITTER		
Coconino, Maricopa, and Yuma.....	\$ 42.35	17.75
Pima.....	\$ 42.35	17.75

SFAZ0669-001 04/01/2023

	Rates	Fringes
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SPRINKLER FITTER (Fire Sprinklers).....	\$ 39.06	26.14

SHEE0359-002 07/01/2022		

	Rates	Fringes
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SHEET METAL WORKER: (HVAC Duct Installation Only) Zone 1.....	\$ 40.82	19.04

* SUAZ2012-020 05/30/2012

	Rates	Fringes
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ACOUSTICAL CEILING MECHANIC.....	\$ 21.14	3.14
CARPENTER (Form Work Only).....	\$ 19.67	5.45
CARPENTER (Metal Stud Installation).....	\$ 16.23	0.00
CAULKER.....	\$ 16.01 **	0.00
ELECTRICIAN (Alarm Installation).....	\$ 18.31	4.68
ELECTRICIAN (Installation of Sound and Communication Systems).....	\$ 17.20	2.87
FIREPROOFER.....	\$ 15.00 **	0.00
GLAZIER.....	\$ 18.67	1.44
INSTALLER - SIGN.....	\$ 19.16	3.58
INSULATOR - BATT.....	\$ 11.96 **	3.06
IRONWORKER, REINFORCING.....	\$ 14.92 **	0.00
LABORER: Asphalt Raker.....	\$ 15.18 **	1.30
LABORER: Common or General.....	\$ 13.80 **	2.24
LABORER: Concrete Saw (Hand Held/Walk Behind).....	\$ 21.00	7.37
LABORER: Fence Erection.....	\$ 19.73	0.00
LABORER: Landscape & Irrigation.....	\$ 11.33 **	0.43
LABORER: Mason Tender - Cement/Concrete.....	\$ 15.24 **	3.90
LABORER: Pipelayer.....	\$ 15.10 **	0.85
LABORER: Plaster Tender.....	\$ 12.00 **	0.00
LABORER: Power Tool Operator....	\$ 14.85 **	4.20
LATHER.....	\$ 16.15 **	0.00
MASON - STONE.....	\$ 18.48	0.82

MILLWRIGHT.....	\$ 20.00	2.87
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 19.20	2.47
OPERATOR: Bulldozer.....	\$ 21.12	6.14
OPERATOR: Drill Rig Caissons....	\$ 19.06	2.39
OPERATOR: Drill.....	\$ 19.16	0.00
OPERATOR: Forklift.....	\$ 17.36	0.00
OPERATOR: Grader/Blade.....	\$ 21.00	7.07
OPERATOR: Loader (Front End)....	\$ 18.55	0.95
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 21.09	3.96
OPERATOR: Roller.....	\$ 25.00	0.00
OPERATOR: Scraper.....	\$ 21.41	0.00
OPERATOR: Screed.....	\$ 22.17	4.42
OPERATOR: Trencher.....	\$ 15.01 **	0.58
PAINTER: Brush, Roller, Spray and Steel.....	\$ 16.53	2.63
PLASTERER.....	\$ 16.71	0.00
ROOFER, Includes Waterproofing, and Installation of Metal Roofs.....	\$ 16.71	1.67
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 18.85	2.79
TERRAZZO WORKER/SETTER.....	\$ 21.13	0.00
TILE FINISHER.....	\$ 12.50 **	0.00
TILE SETTER.....	\$ 15.00 **	0.00
TRUCK DRIVER: Dump Trucks.....	\$ 15.55 **	1.42
TRUCK DRIVER: Pickup Truck.....	\$ 11.00 **	0.87
TRUCK DRIVER: Water Truck.....	\$ 17.72	4.21
TRUCKDRIVER: 3 and 4 Axle.....	\$ 19.29	1.36

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all

rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

Supplementary Conditions of the Contract for Construction

U.S. Department of Housing
and Urban Development
Office of Housing
Federal Housing Commissioner

OMB Approval No. 2502-0470
(Expires 12/31/201) □□

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This information is required to obtain benefits and voluntary. HUD may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

This information collection is necessary to ensure that viable projects are developed. It is important to obtain information from applicants to assist HUD in determining if nonprofit organizations initially funded continue to have the financial and administrative capacity needed to develop a project and that the project design meets the needs of the residents. The Department will use this information to sets forth the obligations of the contractor or subcontractor performing under the covered contract. This information is required in order to obtain benefits. This information is considered non-sensitive and no assurance of confidentiality is provided.

Article 1 – Labor Standards

Instructions

Whenever only FHA mortgage insurance is involved, use paragraph (A) and (C) of Article 1 – Labor Standards. Whenever any direct form of assistance (Section 8, Section 202/811 Capital Advance, grants etc.) is involved, use paragraphs (A) and (B) and (C) of Article 1 – Labor Standards.

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted or insured by the United States of America and the following Federal Labor Standards Provisions are included in this Contract or related instrument pursuant to the provisions applicable to such Federal assistance or insurance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification

requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs A.1.(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the

same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1)** That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;
- (2)** That each laborer or mechanic (including each

helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph A.3.(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. (i) Apprentices and Trainees. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau

of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may be appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm

ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages, liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

3. Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. The Contractor will be required to execute FHA Form No. 2403-A, Contractor's Prevailing Wage Certificate, as a condition precedent to insurance by the Federal Housing Administration of that certain mortgage loan, or an advance thereof, made or to be made by the mortgagee in connection with the construction of the project.

Article 2 – Equal Employment Opportunity

The applicant hereby agrees that it will incorporate or cause to be

incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

C. The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

E. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

F. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations or order of the Secretary of Labor, or as otherwise provided by law.

G. The Contractor will include the portion of the sentence immediately preceding paragraph A and the provisions of paragraphs A through G in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. *Provided, however,* that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Secretary of Housing and Urban Development or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

H. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work:

Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

I. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

J. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Article 3 – Equal Opportunity for Businesses and Lower Income Persons Located Within the Project Area

(Applicable to Section 236 projects, where the estimated replacement cost of the project as determined by the Secretary of Housing and Urban Development exceeds \$500,000, and to all projects, including Section 236 regardless of estimated replacement cost, receiving rent supplement assistance under Title I, Section 101 of the Housing and Urban Development Act of 1965.)

A. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the unit of local government or the metropolitan area (or nonmetropolitan county) as determined by the Secretary of Housing and Urban Development in which the projects located and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the same metropolitan area (or nonmetropolitan county) as the project.

Article 4 – Health and Safety

A. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

B. The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).

C. The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development of the Secretary of Labor shall direct as a means of enforcing such provisions.

A. APPLICABILITY

The Project or Program to which the construction work covered by this Contract pertains is being assisted by the United States of America, and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

(1) MINIMUM WAGES

- (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment, computed at rates not less than those contained in the wage determination of the Secretary of Labor (which is attached hereto and made a part hereof), regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH1321)) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place, where it can be easily seen by the workers.

(ii) Additional Classifications.

- (A) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination;
 - (2) The classification is utilized in the area by the construction industry; and
 - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor, the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division ("Administrator"), Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget ("OMB") under OMB control number 1235-0023.)
- (C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, or HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1235-0023.)

(D) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (1)(ii)(B) or (C) of this paragraph, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1235-0023.)

(2) **Withholding.** HUD or its designee shall, upon its own action or upon written request of an authorized representative of the U.S. Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Department of Labor shall make such disbursements in the case of direct Davis-Bacon Act contracts.

(3) **Payrolls and basic records.**

(i) **Maintaining Payroll Records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification(s), hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid.

Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1235-0023 and 1215-0018)

(ii) **Certified Payroll Reports.**

(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/agencies/whd/forms> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the U.S. Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1235-0008.)

- (B)** Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (1)** That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;
 - (2)** That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
 - (3)** That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract; and
- (C)** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by subparagraph (a)(3)(ii)(b).
- (D)** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph (a)(3)(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the U.S. Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency (where appropriate), to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman’s hourly rate) specified in the contractor’s or subcontractor’s registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice’s level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination.

Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program.

If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed, unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (iii) **Equal employment opportunity.** The utilization of apprentices, trainees, and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

- (5) **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this Contract.
- (6) **Subcontracts.** The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs (1) through (11) in this paragraph (a) and such other clauses as HUD or its designee may, by appropriate instructions, require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.
- (7) **Contract termination; debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) **Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this Contract.
- (9) **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.
- (10) **Certification of Eligibility.**
- (i) By entering into this Contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) Anyone who knowingly makes, presents, or submits a false, fictitious, or fraudulent statement, representation or certification is subject to criminal, civil and/or administrative sanctions, including fines, penalties, and imprisonment (e.g., 18 U.S.C. §§ 287, 1001, 1010, 1012; 31 U.S.C. §§ 3729, 3802).

(11) Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic, to whom the wage, salary, or other labor standards provisions of this Contract are applicable, shall be discharged or in any other manner discriminated against by the contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The provisions of this paragraph (b) are applicable where the amount of the prime contract exceeds **\$100,000**. As used in this paragraph, the terms “laborers” and “mechanics” include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work, which may require or involve the employment of laborers or mechanics, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek, unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph B(1) of this paragraph, the contractor, and any subcontractor responsible therefor, shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph B(1) of this paragraph, in the sum of **\$27** for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph B(1) of this paragraph. In accordance with the Federal Civil Penalties Inflation Adjustment Act of 1990 (28 U.S.C. § 2461 Note), the Department of Labor adjusts this civil monetary penalty for inflation no later than January 15 each year.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the U.S. Department of Labor, withhold or cause to be withheld from any moneys payable on account of work performed by the contractor or subcontractor under any such contract, or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages, as provided in the clause set forth in subparagraph B(2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph B(1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs B(1) through (4) of this paragraph.

C. HEALTH AND SAFETY

The provisions of this paragraph (c) are applicable where the amount of the prime contract exceeds **\$100,000**.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his or her health and safety, as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to 29 CFR Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96), 40 U.S.C. § 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract, so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

**U.S. Department of Housing and
Urban Development**
Office of Public and Indian Housing

**Instructions to Bidders for Contracts
Public and Indian Housing Programs**

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work** of the *General Conditions of the Contract for Construction*). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

- (1) Integrity;
- (2) Compliance with public policy;
- (3) Record of past performance; and
- (4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

(b) If the apparent low bid received in response to this solicitation exceeds the PHA's/IHA's available funding for the proposed contract work, the PHA/IHA may either accept separately priced items (see 8(e) below) or use the following procedure to determine contract award. The PHA/IHA shall apply in turn to each bid (proceeding in order from the apparent low bid to the high bid) each of the separately priced bid deductible items, if any, in their priority order set forth in this solicitation. If upon the application of the first deductible item to all initial bids, a new low bid is within the PHA's/IHA's available funding, then award shall be made to that bidder. If no bid is within the available funding amount, then the PHA/IHA shall apply the second deductible item. The PHA/IHA shall continue this process until an evaluated low bid, if any, is within the PHA's/IHA's available funding. If upon the application of all deductibles, no bid is within the PHA's/IHA's available funding, or if the solicitation does not request separately priced deductibles, the PHA/IHA shall follow its written policy and procedures in making any award under this solicitation.

(c) In the case of tie low bids, award shall be made in accordance with the PHA's/IHA's written policy and procedures.

(d) The PHA/IHA may reject any and all bids, accept other than the lowest bid (e.g., the apparent low bid is unreasonably low), and waive informalities or minor irregularities in bids received, in accordance with the PHA's/IHA's written policy and procedures.

(e) Unless precluded elsewhere in the solicitation, the PHA/IHA may accept any item or combination of items bid.

(f) The PHA/IHA may reject any bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(g) A written award shall be furnished to the successful bidder within the period for acceptance specified in the bid and shall result in a binding contract without further action by either party.

9. Bid Guarantee (applicable to construction and equipment contracts exceeding \$25,000)

All bids must be accompanied by a negotiable bid guarantee which shall not be less than five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. In the case where the work under the contract will be performed on an Indian reservation area, the bid guarantee may also be an irrevocable Letter of Credit (see provision 10, Assurance of Completion, below). Certified checks and bank drafts must be made payable to the order of the PHA/IHA. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. Failure to submit a bid guarantee with the bid shall result in the rejection of the bid. Bid guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening.

10. Assurance of Completion

(a) Unless otherwise provided in State law, the successful bidder shall furnish an assurance of completion prior to the execution of any contract under this solicitation. This assurance may be [Contracting Officer check applicable items] —

[] (1) a performance and payment bond in a penal sum of 100 percent of the contract price; or, as may be required or permitted by State law;

[] (2) separate performance and payment bonds, each for 50 percent or more of the contract price;

[] (3) a 20 percent cash escrow;

[] (4) a 25 percent irrevocable letter of credit; or,

[] (5) an irrevocable letter of credit for 10 percent of the total contract price with a monitoring and disbursements agreement with the IHA (applicable only to contracts awarded by an IHA under the Indian Housing Program).

(b) Bonds must be obtained from guarantee or surety companies acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. Individual sureties will not be considered. U.S. Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing Government contracts, the maximum underwriting limits on each contract bonded, and the States in which the company is licensed to do business. Use of companies listed in this circular is mandatory. Copies of the circular may be downloaded on the U.S. Department of Treasury website <http://www.fms.treas.gov/c570/index.html>, or ordered for a minimum fee by contacting the Government Printing Office at (202) 512-2168.

(c) Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

(d) Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the PHA/IHA may grant based upon reasons determined adequate by the PHA/IHA, shall render the bidder ineligible for award. The PHA/IHA may then either award the contract to the next lowest responsible bidder or solicit new bids. The PHA/IHA may retain the ineligible bidder's bid guarantee.

11. Preconstruction Conference (applicable to construction contracts)

After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the PHA/IHA and its architect/engineer, and other interested parties convened by the PHA/IHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract (e.g., Equal Employment Opportunity, Labor Standards). The PHA/IHA will provide the successful bidder with the date, time, and place of the conference.

12. Indian Preference Requirements (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

(a) HUD has determined that the contract awarded under this solicitation is subject to the requirements of section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e(b)). Section 7(b) requires that any contract or subcontract entered into for the benefit of Indians shall require that, to the greatest extent feasible

(1) Preferences and opportunities for training and employment (other than core crew positions; see paragraph (h) below) in connection with the administration of such contracts or subcontracts be given to qualified "Indians." The Act defines "Indians" to mean persons who are members of an Indian tribe and defines "Indian tribe" to mean any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians; and,

(2) Preference in the award of contracts or subcontracts in connection with the administration of contracts be given to Indian organizations and to Indian-owned economic enterprises, as defined in section 3 of the Indian Financing Act of 1974 (25 U.S.C. 1452). That Act defines "economic enterprise" to mean any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, except that the Indian ownership must constitute not less than 51 percent of the enterprise; "Indian organization" to mean the governing body of any Indian tribe or entity established or recognized by such governing body; "Indian" to mean any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act; and Indian "tribe" to mean any Indian tribe, band, group, pueblo, or community including Native villages and Native groups (including

corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

(b) (1) The successful Contractor under this solicitation shall comply with the requirements of this provision in awarding all subcontracts under the contract and in providing training and employment opportunities.

(2) A finding by the IHA that the contractor, either (i) awarded a subcontract without using the procedure required by the IHA, (ii) falsely represented that subcontracts would be awarded to Indian enterprises or organizations; or, (iii) failed to comply with the contractor's employment and training preference bid statement shall be grounds for termination of the contract or for the assessment of penalties or other remedies.

(c) If specified elsewhere in this solicitation, the IHA may restrict the solicitation to qualified Indian-owned enterprises and Indian organizations. If two or more (or a greater number as specified elsewhere in the solicitation) qualified Indian-owned enterprises or organizations submit responsive bids, award shall be made to the qualified enterprise or organization with the lowest responsive bid. If fewer than the minimum required number of qualified Indian-owned enterprises or organizations submit responsive bids, the IHA shall reject all bids and readvertise the solicitation in accordance with paragraph (d) below.

(d) If the IHA prefers not to restrict the solicitation as described in paragraph (c) above, or if after having restricted a solicitation an insufficient number of qualified Indian enterprises or organizations submit bids, the IHA may advertise for bids from non-Indian as well as Indian-owned enterprises and Indian organizations. Award shall be made to the qualified Indian enterprise or organization with the lowest responsive bid if that bid is -

(1) Within the maximum HUD-approved budget amount established for the specific project or activity for which bids are being solicited; and

(2) No more than the percentage specified in 24 CFR 905.175(c) higher than the total bid price of the lowest responsive bid from any qualified bidder. If no responsive bid by a qualified Indian-owned economic enterprise or organization is within the stated range of the total bid price of the lowest responsive bid from any qualified enterprise, award shall be made to the bidder with the lowest bid.

(e) Bidders seeking to qualify for preference in contracting or subcontracting shall submit proof of Indian ownership with their bids. Proof of Indian ownership shall include but not be limited to:

(1) Certification by a tribe or other evidence that the bidder is an Indian. The IHA shall accept the certification of a tribe that an individual is a member.

(2) Evidence such as stock ownership, structure, management, control, financing and salary or profit sharing arrangements of the enterprise.

(f) (1) All bidders must submit with their bids a statement describing how they will provide Indian preference in the award of subcontracts. The specific requirements of that statement and the factors to be used by the IHA in determining the statement's adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement shall be rejected as nonresponsive. The IHA may require that comparable statements be provided by subcontractors to the successful Contractor, and may require the Contractor to reject any bid or proposal by a subcontractor that fails to include the statement.

(2) Bidders and prospective subcontractors shall submit a certification (supported by credible evidence) to the IHA in any instance where the bidder or subcontractor believes it is infeasible to provide Indian preference in subcontracting. The acceptance or rejection by the IHA of the certification shall be final. Rejection shall disqualify the bid from further consideration.

(g) All bidders must submit with their bids a statement detailing their employment and training opportunities and their plans to provide preference to Indians in implementing the contract; and the number or percentage of Indians anticipated to be employed and trained. Comparable statements from all proposed subcontractors must be submitted. The criteria to be used by the IHA in determining the statement(s)'s adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement(s), or that includes a statement that does not meet minimum standards required by the IHA shall be rejected as nonresponsive.

(h) Core crew employees. A core crew employee is an individual who is a bona fide employee of the contractor at the time the bid is submitted; or an individual who was not employed by the bidder at the time the bid was submitted, but who is regularly employed by the bidder in a supervisory or other key skilled position when work is available. Bidders shall submit with their bids a list of all core crew employees.

(i) Preference in contracting, subcontracting, employment, and training shall apply not only on-site, on the reservation, or within the IHA's jurisdiction, but also to contracts with firms that operate outside these areas (e.g., employment in modular or manufactured housing construction facilities).

(j) Bidders should contact the IHA to determine if any additional local preference requirements are applicable to this solicitation.

(k) The IHA [] does [] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders**
Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

_____ [insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)2 above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

[] [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

- (a) Result in an unfair competitive advantage to the bidder; or,
- (b) Impair the bidder's objectivity in performing the contract work.

[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|------------------------|------------------------------|
| [] Black Americans | [] Asian Pacific Americans |
| [] Hispanic Americans | [] Asian Indian Americans |
| [] Native Americans | [] Hasidic Jewish Americans |

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

- (1) Obtain identical certifications from the proposed subcontractors;
- (2) Retain the certifications in its files; and
- (3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [] is, [] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" [] is, [] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

General Conditions for Construction Contracts - Public Housing Programs

U.S. Department of Housing and Urban Development
 Office of Public and Indian Housing
 OMB Approval No. 2577-0157 (exp. 11/30/2023)

Applicability. This form is applicable to any construction/development contract greater than \$150,000.

Public reporting burden for this collection of information is estimated to average 1 hour. This includes the time for collecting, reviewing, and reporting the data. The information requested is required to obtain a benefit. This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135. The form is required for construction contracts awarded by Public Housing Agencies (PHAs). The form is used by Housing Authorities in solicitations to provide necessary contract clauses. If the form were not used, PHAs would be unable to enforce their contracts.. There are no assurances of confidentiality. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number.

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1. Definitions

- (a) "Architect" means the person or other entity engaged by the PHA to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When a PHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.
 - (b) "Contract" means the contract entered into between the PHA and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor, any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.
 - (c) "Contracting Officer" means the person delegated the authority by the PHA to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of the PHA in all dealings with the Contractor.
 - (d) "Contractor" means the person or other entity entering into the contract with the PHA to perform all of the work required under the contract.
 - (e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.
 - (f) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Terms and Conditions (ACC), to provide financial assistance to the PHA, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to the PHA for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.
 - (g) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.
 - (h) "PHA" means the Public Housing Agency organized under applicable state laws which is a party to this contract.
 - (i) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.
 - (l) "Work" means materials, workmanship, and manufacture and fabrication of components.
- (a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the PHA pursuant to the clause entitled Availability and Use of Utility Services herein.
 - (b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least [] (12 percent unless otherwise indicated) of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the PHA.
 - (c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.
 - (d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save the PHA, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.
 - (e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.
 - (f) The Contractor shall confine all operations (including storage of materials) on PHA premises to areas authorized or approved by the Contracting Officer.
 - (g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the PHA and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.
 - (h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

- (a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.

2. Contractor's Responsibility for Work

- (b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.
- (c) The Architect's duties and responsibilities may include but shall not be limited to:
- (1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to the PHA which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;
 - (2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;
 - (3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,
 - (4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

The PHA may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with PHA employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by PHA employees

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

- (a) Within ten calendar days of contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of the PHA, its Architect, and other interested parties convened by the PHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The PHA will provide the Contractor with the date, time, and place of the conference.
- (b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice.

6. Construction Progress Schedule

- (a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring labor, materials, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments or take other remedies under the contract until the Contractor submits the required schedule.
- (b) The Contractor shall enter the actual progress on the chart as required by the Contracting Officer, and immediately deliver three copies of the annotated schedule to the Contracting Officer. If the Contracting Officer determines, upon the basis of inspection conducted pursuant to the clause entitled Inspection and Acceptance of Construction, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the PHA. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.
- (c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the Default clause of this contract.

7. Site Investigation and Conditions Affecting the Work

- (a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

reasonably ascertainable from an inspection of the site, including all exploratory work done by the PHA, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the PHA.

- (b) The PHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the PHA. Nor does the PHA assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

8. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to the PHA within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.
- (c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- (d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

9. Specifications and Drawings for Construction

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be

promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

- (b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.
- (c) Where "as shown" "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" that is "furnished and installed".
- (d) "Shop drawings" means drawings, submitted to the PHA by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The PHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the PHA's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.
- (f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.
- (g) It shall be the responsibility of the Contractor to make timely requests of the PHA for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which shall be

required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

- (h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the PHA and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.
- (i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

10. As-Built Drawings

- (a) "As-built drawings," as used in this clause, means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the contract. "As-built drawings" shall be synonymous with "Record drawings."
- (b) As required by the Contracting Officer, the Contractor shall provide the Contracting Officer accurate information to be used in the preparation of permanent as-built drawings. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.
- (c) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all as-built drawings prepared by subcontractors are submitted to the Contracting Officer.

11. Material and Workmanship

- (a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.
- (b) Approval of equipment and materials.
 - (1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the

machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

- (2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
- (3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
- (4) Approval of a sample shall not constitute a waiver of the PHA right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
- (5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.
- (6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- (c) Requirements concerning lead-based paint. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35.

12. Permits and Codes

- (a) The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any

waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

- (b) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where the PHA can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

13. Health, Safety, and Accident Prevention

- (a) In performing this contract, the Contractor shall:
- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
 - (2) Protect the lives, health, and safety of other persons;
 - (3) Prevent damage to property, materials, supplies, and equipment; and,
 - (4) Avoid work interruptions.
- (b) For these purposes, the Contractor shall:
- (1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
 - (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.
- (c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.
- (d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.
- (e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as the PHA, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

14. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the PHA in the condition and at the time required by the specifications.

15. Availability and Use of Utility Services

- (a) The PHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the PHA or, where the utility is produced by the PHA, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.
- (b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the PHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

16. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

- (a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.
- (b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- (c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- (d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.
- (e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this contract.

- (f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.
- (g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.
- (h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- (i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.
- (j) The Contractor shall indemnify and save harmless the PHA from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which the PHA may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- (k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

17. Temporary Buildings and Transportation of Materials

- (a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the PHA. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- (b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

18. Clean Air and Water

The contractor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

20. Inspection and Acceptance of Construction

- (a) Definitions. As used in this clause -
 - (1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.
 - (2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.
 - (3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.
- (c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.
- (d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.
- (e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

- (f) The PHA may conduct routine inspections of the construction site on a daily basis.
- (g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.
- (i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA's right under any warranty or guarantee.

21. Use and Possession Prior to Completion

- (a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The PHA's possession or use shall not be deemed an acceptance of any work under the contract.
- (b) While the PHA has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the PHA's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas

occupied without proper remuneration therefore. If prior possession or use by the PHA delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

22. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

23. Warranty of Construction

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of _____ (one year unless otherwise indicated) from the date of final acceptance of the work. If the PHA takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the PHA takes possession.
- (b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to PHA-owned or controlled real or personal property when the damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defects of equipment, material, workmanship or design furnished by the Contractor.
- (c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.
- (d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- (e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the PHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:
 - (1) Obtain all warranties that would be given in normal commercial practice;
 - (2) Require all warranties to be executed in writing, for the benefit of the PHA; and,
 - (3) Enforce all warranties for the benefit of the PHA.
- (g) In the event the Contractor's warranty under paragraph (a) of this clause has expired, the PHA may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

- (h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the PHA nor for the repair of any damage that results from any defect in PHA furnished material or design.
- (i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
- (j) This warranty shall not limit the PHA's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

24. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers.

Administrative Requirements

25. Contract Period

this contract within _____ calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

26. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

27. Payments

- (a) The PHA shall pay the Contractor the price as provided in this contract.
- (b) The PHA shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. The PHA may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
- (c) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a

basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to HUD. If the contract covers more than one project, the Contractor shall furnish a separate breakdown for each. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.

- (d) The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved submitted not later than _____ days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.
- (e) Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made: I hereby certify, to the best of my knowledge and belief, that:
 - (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
 - (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and,
 - (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

Name:

Title:

Date:

- (f) Except as otherwise provided in State law, the PHA shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the PHA shall reinstate the ten (10) percent (or other percentage as provided in State law) retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.
- (g) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments.

Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the PHA's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the PHA.

- (h) All material and work covered by progress payments made shall, at the time of payment become the sole property of the PHA, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of the PHA to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the PHA in the course of their employment, the Contractor shall restore such damaged work without cost to the PHA and to seek redress for its damage only from those who directly caused it.
- (i) The PHA shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against the PHA arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
- (j) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
- (k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

- (a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.
- (b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or

responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

- (c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

29. Changes

- (a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) PHA-furnished facilities, equipment, materials, services, or site; or,
 - (4) Directing the acceleration in the performance of the work.
- (b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.
- (f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

- (1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.
- (2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.
- (3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change. The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.
- (g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.
- (h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.
- (i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.
- (j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

30. Suspension of Work

- (a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the PHA.
- (b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment shall be made for any increase in the cost of performance of the contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have

been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

- (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and, (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

31. Disputes

- (a) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- (b) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
- (d) The Contracting Officer shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- (e) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) days after receipt of the Contracting Officer's decision.
- (f) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

32. Default

- (a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to

proceed with the work (or separable part of the work) that has been delayed. In this event, the PHA may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.

- (b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—
- (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of the PHA or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with the PHA, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and
 - (2) The Contractor, within days (10 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract.
- (c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of the PHA.

33. Liquidated Damages

- (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor shall pay to the PHA as liquidated damages, the sum of \$ _____ [Contracting Officer insert amount] for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due the PHA. The Contractor remains liable for damages caused other than by delay.
- (b) If the PHA terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final

completion of the work together with any increased costs occasioned the PHA in completing the work.

- (c) If the PHA does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

34. Termination for Convenience

- (a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
- (b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
- (c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
- (d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

35. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the PHA under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

36. Insurance

- (a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:
- (1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.
 - (2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than \$ _____ [Contracting Officer insert amount]

per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

- (3) Automobile Liability on owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$ _____ [Contracting Officer insert amount] per occurrence.
- (b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.
- (c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

37. Subcontracts

- (a) Definitions. As used in this contract -
- (1) "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.

- (2) "Subcontractor" means any supplier, vendor, or firm that furnishes supplies, materials, equipment, or services to or for the Contractor or another subcontractor.
- (b) The Contractor shall not enter into any subcontract with any subcontractor who has been temporarily denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or of the state in which the work under this contract is to be performed.
- (c) The Contractor shall be as fully responsible for the acts or omissions of its subcontractors, and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.
- (d) The Contractor shall insert appropriate clauses in all subcontracts to bind subcontractors to the terms and conditions of this contract insofar as they are applicable to the work of subcontractors.
- (e) Nothing contained in this contract shall create any contractual relationship between any subcontractor and the PHA or between the subcontractor and HUD.

38. Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms

The Contractor shall take the following steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

- (a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;
- (c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and
- (e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

39. Equal Employment Opportunity

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, disability, or national origin.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, disability, or national origin. Such action shall include, but not be limited to, (1) employment, (2) upgrading, demotion, (4) transfer, (5) recruitment or recruitment advertising, (6) layoff or termination, (7) rates of pay or other forms of compensation, and (8) selection for training including apprenticeship.

(c) The Contractor agrees to post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor/Seller, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(h) In the event of a that the Contractor is in non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor/seller may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(i) The contractor/seller will include the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each sub[contractor/seller] or vendor. The [contractor/seller] will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the [contractor/seller] becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the [contractor/seller] may request the United States to enter into such litigation to protect the interests of the United States.

(j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

(g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

41. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

42. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the PHA, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the PHA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

43. Limitations on Payments made to Influence Certain Federal Financial Transactions

- (a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

44. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the PHA harmless from loss on account thereof; except that the PHA shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

45. Examination and Retention of Contractor's Records

- (a) The PHA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the PHA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

46. Labor Standards - Davis-Bacon and Related Acts

If the total amount of this contract exceeds \$2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

- (a) Minimum Wages.
 - (1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall

be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.
- (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the

amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.
- (c) Payrolls and basic records.
- (1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)
- (ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;
- (B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
- (C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.
- (iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.
- (3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to

make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

- (d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- (e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.
- (f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- (g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.
- (i) Certification of eligibility.
 - (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.
- (j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.
 - (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.
 - (3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.
 - (k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

47. Non-Federal Prevailing Wage Rates

- (a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
 - (1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
- (b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or
- (c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

48. Procurement of Recovered Materials.

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

Schedule of Amounts for Contract Payments

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(Exp. 11/30/2023)

No progress payments shall be made to the contractor unless a schedule of amounts for contract payments in accordance with the construction contract is received.

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number. Construction practices and HUD administrative requirements establish the need that HAs maintain certain records or submit certain documents in conjunction with the oversight of the award of construction contracts for the construction of new low-income housing developments or modernization of existing developments. These forms are used by HAs to provide information on the construction progress schedule and schedule of amounts for contract payments. Responses to the collection of information are required to obtain a benefit or to retain a benefit. The information requested does not lend itself to confidentiality.

Project Name and Location	Project Number
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Name, Address, and Zip Code of Contractor

Nature of Contract	Contract Number
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Approved for Contractor by	Title	Date (mm/dd/yyyy)
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Approved for Architect by	Title	Date (mm/dd/yyyy)
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Approved for Owner by	Title	Date (mm/dd/yyyy)
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Item No. (1)	Description of Item (2)	Quantity (3)	Unit of Measure (4)	Unit Price in Place (5)	Amount of Sub-Item (6)	Amount of Principal Item (7)

Total Amount of Contract or Carried Forward	\$
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To the best of my knowledge, all the information stated herein, as well as any information provided in the accompaniment herewith, is true and accurate.
Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

Signature of authorized representative	Date signed (mm/dd/yyyy)
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Instructions for Preparation of form HUD-51000

1. A separate breakdown is required for each project and prime contract instructions for preparation are given below.
 - a. **Heading.** Enter all identifying information required for both forms.
 - b. **Columns 1 and 2.** In column 1, enter the item numbers starting with No. 1, and in column 2 enter each principal division of work incorporated in the contract work.
 - (1) **Master List.** The Master list contains the basic items into which any construction contract may be subdivided for the purpose of preparing the Construction Progress Schedule and the Periodical Estimates for Partial Payments. Only those items shall be selected which apply to the particular contract. To ensure uniformity, no change shall be made in the item numbers. Generally, about 25 to 40 major items appear in a contract.
 - (2) **Items Subdivided.** In the Contractor's breakdown, against which all periodical estimates will be checked prior to payment, each major item must be subdivided into sub-items pertinent to the project involved and in agreement with the Contractor's intended basis for requesting monthly payments.
 - c. **Column 3.** Enter the total quantity for each sub-item of each principal division of work listed in the breakdown.
 - d. **Column 4.** Enter the appropriate unit of measure for each sub-item of work opposite the quantities described in column 3, such as "sq. ft.," "cu. yd.," "tons," "lb.," "lumber per M/BM," "brickwork per M," etc., applicable to the particular sub-item. Items shown on "lump sum" or equivalent basis will be paid for only on completion of the whole item and not on a percentage of completion basis.
 - e. **Column 5.** Enter the unit price, in place, of each sub-item of work.
 - f. **Column 6.** Enter the amount of each sub-item obtained by multiplying the quantities in column 3 by the corresponding unit prices in column 5.
 - g. **Column 7.** Enter the amount of principal item only, obtained by adding the amounts of all sub-items of each principal division of work listed in column 6. Continue with the breakdown on form HUD-51000.
 - h. The "Schedule of Amounts for Contract Payments" shall be signed and dated in the space provided at the bottom of each sheet of the form by the individual who prepared the breakdown for the Contractor.
2. The minimum number of copies required for each submission for approval is an original and two copies. When approved, one fully approved copy will be returned to the Contractor.

Master List of Items

Item No.	Division of Work	Item No.	Division of Work	Item No.	Division of Work
1	Bond	20	Rough Carpentry		
2	General Conditions	21	Metal Bucks	44	Site Improvements Retaining Walls
3	Demolition & Clearing	22	Caulking	45	Storm Sewers
	Structures	23	Weatherstripping	46	Sanitary Sewers
4	General Excavation	24	Lath & Plastering-Drywall	47	Water Distribution System
5	Footing Excavation	25	Stucco	48	Gas Distribution System
6	Backfill	26	Finish Carpentry	49	Electrical Distribution System
7	Foundation Piles & Caissons	27	Finish Hardware	50	Street & Yard Lighting
8	Concrete Foundations	28	Glass & Glazing	51	Fire & Police Alarm System
9	Concrete Superstructures	29	Metal Doors	52	Fire Protection System
10	Reinforcing Steel	30	Metal Base & Trim	53	Street Work
11	Waterproofing & Dampproofing	31	Toilet Partitions	54	Yard Work
12	Spandrel Waterproofing	32	Floors	55	(Other)
13	Structural Steel	33	Painting & Decorating	56	(Other)
14	Masonry	34	Screens		
15	Stonework	35	Plumbing		Equipment
16	Miscellaneous & Ornamental Metal	36	Heating	57	Shades & Drapery Rods
17	Metal Windows	37	Ventilating System	58	Ranges
18	Roofing	38	Electrical	59	Refrigerators
19	Sheet Metal	39	Elevators	60	Kitchen Cabinets & Work Tables
		40	Elevator Enclosures—Metal	61	Laundry Equipment
		41	Incinerators—Masonry & Parts	62	(Other)
		42	(Other)		
		43	(Other)	63	Punch List ¹ / ₂
				64	Lawns & Planting

1 General Conditions should be 3% to 5% of contract amount.

2 Punch List should be approximately 1/2 of 1% or \$30 per dwelling unit, whichever is greater.

Periodic Estimate for Partial Payment

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(exp. 11/30/2023)

Submit original and one copy to the Public Housing Agency.
Complete instructions are on the back of this form.

Public reporting burden for this collection of information is estimated to average 3.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number. This information is collected under the authority of Section 6(c) of the U.S. Housing Act of 1937 and HUD regulations. HAs are responsible for contract administration to ensure that the work for project development is done in accordance with State laws and HUD requirements. The contractor/subcontractor reports provide details and summaries on payments, change orders, and schedule of materials stored for the project. The information will be used to ensure that the total development costs, identified in the ACC, are kept as low as possible and consistent with HUD construction requirements. Responses to the collection are necessary to obtain a benefit. The information requested does not lend itself to confidentiality.

Name of Public Housing Agency	Periodic Estimate Number	Period From (mm/dd/yyyy) To (mm/dd/yyyy)
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Location of Project	Project Number
---------------------	----------------

Name of Contractor	Contract Number
--------------------	-----------------

Item Number (1)	Description of Item (2)	Completed to Date (3)
		\$

Value of Contract Work Completed to Date (Transfer this total to line 5 on back of this sheet)	\$
---	-----------

Instructions

Headings. Enter all identifying data required. Periodic estimates must be numbered in sequence beginning with the number 1.

Columns 1 and 2. The "Item Number" and "Description of Item" must correspond to the number and descriptive title assigned to each principal division of work in the "Schedule of Amounts for Contract Payments", form HUD-51000.

Column 3. Enter the accumulated value of each principal division of work completed as of the closing date of the periodic estimate. Enter the total in the space provided.

Certifications. The certification of the contractor includes the analysis of amounts used to determine the net balance due. In the first paragraph, enter the name of the Public Housing Agency, the contractor, and the date of the contract. Enter the calculations used in arriving at the "Balance Due This Payment" on lines 1 through 16.

Enter the contractor's name and signature in the certification following line 16.

The latter portion of this certification relating to payment of legal rates of wages, is required by the contract before any payment may be made. However, if the contractor does not choose to certify on behalf of his/her subcontractors to wage payments made by them, he/she may modify the language to cover only himself /herself and attach a list of all subcontractors who employed labor on the site during the period covered by the Periodic Estimate, together with the individual certifications of each.

Certification of the Contractor or Duly Authorized Representative

According to the best of my knowledge and belief, I certify that all items and amounts shown on the other side of this form are correct; that all work has been performed and material supplied in full accordance with the items and conditions of the contract between the (name of owner)

_____ and (contractor) _____

dated (mm/dd/yyyy) _____, and duly authorized deviations, substitutions, alterations, and additions; that the following is a true and correct statement of the Contract Account up to and including the last day of the period covered by this estimate, and that no part of the "Balance Due This Payment" has been received.

1. Original Contract Amount \$ _____

Approved Change Orders:

2. Additions (Total from Col. 3, form HUD-51002) \$ _____
3. Deductions (Total from Col. 5, form HUD-51002) \$ _____ (net) \$ _____
4. Current Adjusted Contract Amount (line 1 plus or minus net) \$ _____

Computation of Balance Due this Payment

5. Value of Original Contract work completed to date (from other side of this form) \$ _____

Completed Under Approved Change Orders

6. Additions (from Col. 4, form HUD-51002) \$ _____
7. Deductions (from Col.5, form HUD-51002) \$ _____ (net) \$ _____
8. Total Value of Work in Place (line 5 plus or minus net line 7) \$ _____
9. **Less:** Retainage, _____ % \$ _____
10. Net amount earned to date (line 8 less line 9) \$ _____
11. **Less:** Previously earned (line 10, last Periodic Estimate) \$ _____
12. Net amount due, work in place (line 10 less line 11) \$ _____

Value of Materials Properly Stored

13. At close of this period (from form HUD-51004) \$ _____
14. **Less:** Allowed last period \$ _____
15. Increase (decrease) from amount allowed last period \$ _____
16. **Balance Due This Payment** \$ _____

I further certify that all just and lawful bills against the undersigned and his/her subcontractors for labor, material, and equipment employed in the performance of this contract have been paid in full in accordance with the terms and conditions of this contract, and that the undersigned and his/her subcontractors have complied with, or that there is an honest dispute with respect to, the labor provisions of this contract.

Name of Contractor _____ Signature of Authorized Representative _____ Title _____ Date (mm/dd/yyyy) _____

Certificate of Authorized Project Representative and of Contracting Officer

Each of us certifies that he/she has checked and verified this Periodic Estimate No. _____; that to the best of his/her knowledge and belief it is a true statement of the value of work performed and material supplied by the contractor; that all work and material included in this estimate has been inspected by him/her or by his/her authorized assistants; and that such work has been performed or supplied in full accordance with the drawings and specifications, all applicable accessibility requirements (including Section 504 and Title II of the Americans with Disabilities Act; and the Fair Housing Act and Title III of the Americans with Disabilities Act, if applicable), the terms and conditions of the contract, and duly authorized deviations, substitutions, alterations, and additions, all of which have been duly approved.

We, therefore, approve as the "Balance Due this Payment" the amount of \$ _____

Authorized Project Representative _____ Date (mm/dd/yyyy) _____ Contracting Officer _____ Date (mm/dd/yyyy) _____

I certify the information on this form and in any accompanying documentation is true and accurate. I acknowledge making, presenting, or submitting a false, fictitious, or fraudulent statement, representation, or certification may result in criminal, civil, and/or administrative sanctions, including fines, penalties, and confinement for up to 5 years, (18 U.S.C. §§ 287, 1001 and 31 U.S.C. §3729)

Schedule of Change Orders

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(exp. 11/30/2023)

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number.

This information is collected under the authority of Section 6(c) of the U.S Housing Act of 1937 and HUD regulations. HAs are responsible for contract administration to ensure that the work for project development is done in accordance with State laws and HUD requirements. The contractor/subcontractor reports provide details and summaries on payments, change orders, and schedule of materials stored for the project. The information will be used to ensure that the total development costs, identified in the ACC, are kept as low as possible and consistent with HUD construction requirements. Responses to the collection are necessary to obtain a benefit. The information requested does not lend itself to confidentiality.

Instructions: Contractors use this form for reporting the details of approved Change Orders. Attach an original (or a copy) to each copy of the Periodic Estimate for Partial Payment (form HUD-51001) submission, and send to the Public Housing Agency. Complete all entries. Only Change Orders which bear the signatures required by the contract are to be recorded.

Name of Public Housing Agency	Supporting Periodic Estimate for Partial Payment Number	Period From (mm/dd/yyyy) to (mm/dd/yyyy)
Location of Project		Project Number
Name of Contractor		Contract Number

Approved Change Orders		Additions		Deductions
Change Order Number (1)	Dated (mm/dd/yyyy) (2)	Total Amount of Change Order (3)	Value of Work Completed to Date (4)	Total Amount of Change Order (5)
		\$	\$	\$
Totals		\$	\$	\$

Authorized Project Representative	Date (mm/dd/yyyy)
-----------------------------------	-------------------

I certify that the information provided on this form and in any accompanying documentation is true and accurate. I acknowledge that making, presenting, or submitting a false, fictitious, or fraudulent statement, representation, or certification may result in criminal, civil, and/or administrative sanctions, including fines, civil penalties, and confinement for up to 5 years. (18 U.S.C. §§ 287, 1001 and 31 U.S.C. §3729)

Schedule of Materials Stored

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(exp. 11/30/2023)

Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number. This information is collected under the authority of Section 6(c) of the U.S Housing Act of 1937 and HUD regulations. HAs are responsible for contract administration to ensure that the work for project development is done in accordance with State laws and HUD requirements. The contractor/subcontractor reports provide details and summaries on payments, change orders, and schedule of materials stored for the project. The information will be used to ensure that the total development costs, identified in the ACC, are kept as low as possible and consistent with HUD construction requirements. Responses to the collection are necessary to obtain a benefit. The information requested does not lend itself to confidentiality.

Instructions: This form is to be used to support the Periodic Estimate for Partial Payment (form HUD-51001). The contractor must prepare a separate schedule for his/her materials and for those of his/her subcontractors. Attach an original (or a copy) to each copy of the Summary of Materials Stored (form HUD-51004). Enter all identifying data and list materials stored. The listing of materials stored must correspond to the arrangement established on the Schedule of Contract Payments (form HUD-51000) and each item will be keyed by corresponding item number. This form must be signed as noted.

Name of Public Housing Agency	Supporting Periodic Estimate for Partial Payment Number	Period From (mm/dd/yyyy) To (mm/dd/yyyy)
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Name and Location of Project	Project Number
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Name of General Contractor	Contract Number
----------------------------	-----------------

Name of Subcontractor	Subcontract Number
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Item Number*	Description and Quality	Quantity	Unit of Measure	Unit Price at Site	Total Price
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Amount Carried Forward	\$
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Item Number*	Description and Quality	Quantity	Unit of Measure	Unit Price at Site	Total Price

Total Amount or Amount Carried Forward	\$
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Prepared by (Contractor's Representative)	Date (mm/dd/yyyy)	Checked by (Owner's Representative)	Date (mm/dd/yyyy)
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I certify that the information provided on this form and in any accompanying documentation is true and accurate. I acknowledge that making, presenting, or submitting a false, fictitious, or fraudulent statement, representation, or certification may result in criminal, civil, and/or administrative sanctions, including fines, penalties, and imprisonment.

As identified in Schedule of Amounts for Contract Payments, form HUD-51000.

Previous Editions are Obsolete

Summary of Materials Stored

U.S. Department of Housing
and Urban Development
Office of Public and Indian Housing

OMB Approval No. 2577-0157
(exp. 11/30/2023)

Public reporting burden for this collection of information is estimated to average 2.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number. This information is collected under the authority of Section 6(c) of the U.S Housing Act of 1937 and HUD regulations. HAs are responsible for contract administration to ensure that the work for project development is done in accordance with State laws and HUD requirements. The contractor/subcontractor reports provide details and summaries on payments, change orders, and schedule of materials stored for the project. The information will be used to ensure that the total development costs, identified in the ACC, are kept as low as possible and consistent with HUD construction requirements. Responses to the collection are necessary to obtain a benefit. The information requested does not lend itself to confidentiality.

Instructions: This form is for the Contractor to summarize the value of materials stored at the site (as shown on the schedule, form HUD-51003). Use a separate line for the contractor and each of his/her subcontractors. Prepare an original and one copy, attach form HUD-51003, and send to the Public Housing Agency with the Periodic Estimate for Partial Payment, form HUD-51001. **Payment Value.** No more than 90 percent of the estimated value of the stored materials will be allowed, and only the net amount will be carried to line 13 on the back of the Periodic Estimate for Partial Payment, form HUD-51001. **Signatures.** This form must be signed by those employees of the contractor and of the Public Housing Agency who prepare and check the Schedule of Materials Stored, form HUD-51003.

Name of Public Housing Agency	Supporting Periodic Estimate for Partial Payment Number	Period From (mm/dd/yyyy)	To (mm/dd/yyyy)
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Location of Project	Project Number
---------------------	----------------

Name of General Contractor	Contract Number
----------------------------	-----------------

Name of General Contractor or Subcontractor	Amounts
General Contractor	\$

Subcontractors	\$
----------------	----

	Total	\$
	Less 10%	\$
	Net	\$

Prepared by	Date (mm/dd/yyyy)	Checked by	Date (mm/dd/yyyy)
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I certify that I or my authorized representatives have examined and checked in detail the invoices representing the cost of materials set forth in appended "Schedule of Materials Stored", form HUD-51003, dated (mm/dd/yyyy) _____ submitted by _____ consisting of _____ sheets with an indicated cost of \$ _____, and find that the net unit prices set forth in the schedule are the same or less than the invoices examined, and that such materials were suitably stored at the site of the development as of (date)(mm/dd/yyyy) _____.

Name of Owner	By (Authorized Representative)	Title	Date (mm/dd/yyyy)
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Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

Cost Control and Safe Harbor Standards for Rental Mixed-Finance Development

Revised: April 9, 2003

In order to expedite the mixed-finance review process and control costs, HUD is instituting safe harbor and maximum fee ranges for a number of costs. In addition, HUD has provided guidance on several development issues. Unless otherwise noted, the cost controls and safe harbors apply to those phases for which a mixed-finance proposal is submitted after January 1, 2000. Any terms previously approved by HUD through approval of a pre-development agreement, development agreement, or program manager contract will not be reviewed again. This guidance is specific to rental developments, and does not apply to homeownership phases.

These policies were developed in consultation with housing authorities, HUD staff, and industry representatives, over the course of more than a year. Once drafted, they were circulated for public review, and the final cost controls included here reflect the many valuable comments received. HUD will continue to review the policies, based on experiences reported by housing authorities and other program participants, and may make alterations to the standards in the future.

Changes from the revised Cost Control and Safe Harbor Standards (January 2, 2002) are italicized in this alert and include the following:

- HOPE VI or other public housing funds may be used, on a case-by-case basis, to pay for up to 15% of the total developer fee/overhead amount to the developer prior to closing. A loan is not required.
- Operating subsidy and tenant rents used to fund a reserve must be used for eligible operating subsidy expenses.
- The property management fee for the public housing units may be calculated as 6% of imputed tax credit rents.

HUD's cost controls and safe harbors are contained in the following chart. The chart provides a brief definition of each term, lists the safe harbor and maximum allowable fees, and briefly describes the risk factors or circumstances that may result in a fee above the safe harbor standards. These guidelines should be used by housing authorities, developers, and consultants when negotiating terms and drafting documents for HUD review.

HUD will review the project terms when receiving Predevelopment and Development Agreements, Program Manager contracts, mixed-finance proposals, and/or other documents that contain negotiated terms. If a project is at or below a safe harbor standard, no further review will be required by HUD. If a project is above a safe harbor standard, additional review by HUD will be necessary. In order to approve terms above the safe harbor, the housing authority must demonstrate to HUD in writing that the negotiated terms are appropriate for the level of risk involved in the project, the scope of work, any specific circumstances of the development, and the local or national market for the services provided.

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
<p>Net Developer Fee for Rental Mixed-Finance Developments</p> <p>(Developer Fee and Overhead)</p>	<p>The safe harbor and maximum standards apply to the net developer fee, i.e., the portion of the developer fee received by the developer to cover overhead and profit.*</p> <p>Net developer fee is expressed as a percentage of the project costs. Project costs are defined as all hard and soft costs of constructing a particular component with the exclusion of the following:</p> <ul style="list-style-type: none"> • Third-party costs paid by the PHA under contracts entered into directly by PHA and third parties, which will not be reimbursed to PHA at a mixed-finance closing (e.g., where the PHA contracts separately for demolition services); • The developer fee itself; • All costs related to family self-sufficiency and resident relocation activities; and, • All reserve accounts regardless of how characterized, including start-up reserves, operating deficit reserves, capital improvement reserves, initial operating period reserve, etc. <p>Payments to developers such as “deferred developer fee” are considered part of the fee/overhead amount.</p> <p>Developers may receive up to a 1% additional fee (with a cap of 12% developer fee) if cost savings are realized. This 1% incentive fee must be paid from non-public housing funds.</p>	<p>9% or less of the project costs (profit and overhead); projects that do not have both LIHTC and public housing financing should have fees well below 9%.</p>	<p>12% of the project costs (profit and overhead).</p> <p>Fees above 12% will be considered only if allowed by the State Housing Finance Agency and with significant justification from the PHA and developer demonstrating the increased risk.</p>

* The safe harbor and maximum guidelines assume the net developer fee excludes any portion of the fee received by the developer or co-developer (including a PHA) that is returned to the project to fund operating reserves or to cover project costs.

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
	<p>Developers with fees above the safe harbor standard should meet most or all of the following risk factors:</p> <ul style="list-style-type: none"> • Developer guarantees are for large dollar amounts in proportion to project size and/or long terms; • Developer independently obtains financing, including tax credits (fee increases with both amount of financing and number of sources); • Developer obtains site control from an entity other than a PHA or PHA affiliate (fee increases with number of sites); • Project is small (i.e., 50 units or less); • Project is complex (e.g., in financial, legal, environmental, and/or political terms); • Project contains units without operating subsidy (i.e., market-rate or LIHTC-only units); • Developer bears more than 25% of the predevelopment costs (until reimbursement at closing); and/or • The Developer Fee is deferred (paid out of positive cash flow from market-rate units). <p>All criteria apply to both for-profit and non-profit developers.</p> <p>PHAs or PHA affiliates that act as developer can only receive fees if they are first returned to the project and, to the extent that funds are remaining, subsequently classified as program income and used for low-income housing purposes.</p>		

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
<p>Pay-Out Schedule for Developer Fee/Overhead</p>	<p>Public housing funds may not be used for payment of developer fee/overhead. HUD recommends the following limit on the pay-out schedule, to the extent that non-public housing funds are available, by phase:</p> <ul style="list-style-type: none"> • Closing: Not to exceed 50% of the fee/overhead amount. • Construction Completion: 25% of the fee/overhead amount. • Stabilized Occupancy: 25% of the fee/overhead amount. <p>A portion of the fee can be further deferred.</p> <p><i>On a case-by-case basis, HUD will consider advancing the developer funds where there is an extended predevelopment period caused by such external factors as environmental remediation, consent orders, etc. If HUD determines such an advance is warranted, HUD will advance up to 15% of the total developer fee/overhead amount to the developer prior to closing using HOPE VI or other public housing funds.</i></p>	<p>Within recommended pay-out schedule.</p>	<p>Payments of greater than 50% at closing or less than 25% at stabilized occupancy will be closely scrutinized.</p>
<p>Contractor Fee</p>	<ul style="list-style-type: none"> • Percentages are based on hard construction cost. • General Conditions includes the bond premium. 	<p>Overhead: 2% Profit: 6% General Conditions: 6%</p>	<p>14% is the maximum for these combined costs provided that the PHA justifies why the 2/6/6 percentages for the individual costs cannot be met.</p>

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
PHA Administrative/ Consultant Costs	<ul style="list-style-type: none"> • Costs should reflect only actual documented expenditure of time and overhead cost (supplies, equipment, telephone, etc.) • Such costs include both in-house staff time and outside consultants (program manager, development advisors, relocation specialists, etc.), but exclude outside legal and community and supportive services costs. On the HUD budgets, these costs may be captured under multiple BLIs. • This cap applies to HOPE VI grantees awarded funds in 1998 or later, as well as to any non-HOPE VI mixed-finance projects with proposals submitted after January 1, 2000; HUD will evaluate earlier grants on a case-by-case basis. HUD will continue to evaluate whether this cap provides helpful guidance and controls costs without hampering the PHA's ability to implement the grant. 	3% of the total project budget (basis includes all hard and soft development costs excluding CSS expenses).	6% of the total project budget
Sharing of Third-party Pre-development Costs	<p>HUD recommends the following cost-sharing schedule:</p> <ul style="list-style-type: none"> • PHA and Developer split third-party costs 75/25. • Developer's share of third-party costs (25%) will be reimbursed at closing out of available sources. <p>Costs to be shared are all third-party costs under the developer's scope of work (e.g., A/E, market study, financing fees, etc.) incurred during the predevelopment period. Public housing funds may not be used to reimburse developer legal counsel prior to closing, and developer legal costs do not contribute to the developer's share of third-party costs.</p> <p>Exceptions to the schedule may be made for small, local, non-profit, and/or minority/disadvantaged firms on a case-by-case basis.</p>	Costs are shared up to 75% by the PHA and at least 25% by the Developer.	N/A
Equity Raise and Pay-In Schedule	HUD will not adopt a safe harbor equity raise or standard pay-in schedule, as these are highly competitive, market-driven numbers.	Current market standard.	N/A

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
Identity of Interest Parties	<ul style="list-style-type: none"> • Identity of interest parties are those that share an ownership interest. Identity of interest relationships are most common between a developer/owner and construction management, general contractor (GC), private management firm, and/or investor. • PHAs are required to ensure cost competitiveness to the extent possible. • Where a developer and GC have an identity of interest, the PHA needs to show the GC was the lowest bidder in response to a public request for bids or request a waiver from HUD under 24 C.F.R. 941.606(n)(1)(ii)(B). • While the use of related or preferred entities as investors is permitted, HUD encourages PHAs to have their procured developer “shop around” to ensure they are getting a competitive yield. 	N/A	N/A

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
Property Management Fees	<ul style="list-style-type: none"> • Can be defined on a percentage of gross income or per-unit per month (PUM) basis. • If using the PUM basis for fee, fees should drop for vacant units. • PHAs and PHA Affiliates cannot earn a fee for property management of public housing units, but can cover their associated administrative expenses. • Fees may increase with higher-risk projects. • Different types of risk are associated both with mixed-income and solely public housing projects. 	<p>a) 6% effective gross income or,</p> <p>b) a flat PUM fee for occupied units that is supported by the local project-based Section 8 program in the area (use Field Office guidelines) or,</p> <p><i>c) 6% of imputed tax credit rent for the public housing units (assume public housing units are tax credit units, charge up to maximum tax credit rent, and take 6% of that amount).</i></p>	Proposals above the safe harbor will be closely scrutinized; higher fees will require significant justification and market support.
Price for Program Management Services	<ul style="list-style-type: none"> • Typically a fixed-price contract. • Contracts must be performance-based with payments fixed to milestones (or monthly if tied to milestones). • Size of fee should be related to the specific scope and role PM is expected to play. • Costs for program management (either a full team or independently procured consultants) must be included in the PHA's Administrative Cost Cap. • PHAs must comply with the provision of the procurement regulations that requires a PHA to prepare a cost estimate for procured services prior to receipt of bids. 	N/A; the fee must be contained within the PHA's overall Administrative Cost Cap. Use checklist of responsibilities and clearly defined scope to limit costs.	N/A

Cost Control and Safe Harbor Standards

Item	Defining Criteria	Safe Harbor	Maximum
Legal Fees	<ul style="list-style-type: none"> • Largely independent of the size of the phase. • Attorneys should be used for legal functions. • Legal fees should be tied to a scope of work, which should be monitored. HUD will review PHA legal costs when reviewing HOPE VI development budgets. • In order to reduce costs and provide an incentive to reach closing, public housing funds may not be used to pay developer legal costs prior to closing. • HUD intends to produce further guidance on how PHAs should utilize their attorneys. • The procurement regulations state that for any RFP, the PHA must undertake a cost or price analysis prior to receipt of proposals. 	No express limit; public housing funds may not be used to reimburse developer legal counsel prior to closing. All legal costs will be reviewed by HUD.	N/A
Operating Deficit Reserve and Operating Subsidy Reserve	<ul style="list-style-type: none"> • HUD is not establishing maximum or minimum levels of reserves to be maintained, as appropriate reserve levels depend upon the specific project and investor requirements. • Both reserves must be established with non-public housing funds, but may be replenished with public housing funds (i.e., operating subsidy or tenant rents from PHA-assisted units). • <i>If public housing funds are contributed to a reserve at any time, those funds in the reserve must be dedicated to the project or returned to the PHA to be used for eligible purposes.</i> • <i>The portion of the reserve funded with public housing funds may not be used to pay for partnership exit taxes, debt repayment, or any other expense that is not an eligible use of public housing funds.</i> 	N/A	N/A

Certification Regarding Determination of Responsible Bidder

The undersigned, who is the President of ML I HOUSING, LLC and the Contracting Officer for The Moreland I project, hereby certifies that _____, the lowest responsive bidder (“Bidder”), has determined on the basis of information submitted by Bidder and satisfactory to the Contracting Officer to be responsible, as determined by the following criteria:

1. Bidder has adequate financial resources to perform the contract, or the ability to obtain them;
2. Bidder has the necessary organization, experience, accounting, construction supervision, operational controls, and technical skills necessary to successfully complete project;
3. Bidder has the necessary production, construction, and technical equipment and facilities, or the ability to obtain them;
4. Bidder is able to comply with the required or proposed delivery or performance schedule, taking into consideration all the bidder’s/offer’s existing commercial and governmental business commitments;
5. Bidder has not employed or retained any company or person (other than full-time bona fide employee working solely for the Bidder) to solicit or secure a contract for this project;
6. Bidder has not paid or agreed to pay any company or person (other than full-time bona fide employee working solely for the Bidder) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of contract for this project.
7. Bidder has a satisfactory performance record with City of Phoenix and Register of Contractors AZ;
8. Bidder has a satisfactory record of integrity and business ethics; and
9. Bidder is otherwise qualified and eligible to receive an award under applicable laws and regulations, including not be suspended, debarred or under a HUD-imposed Limited Denial Participation list.

DATED: _____, 2023.

ML I HOUSING, LLC

By _____
Kathleen Gitkin, President



SECTION 3 CONTRACTOR BOOK

City of Phoenix



August 2022

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WHAT IS SECTION 3?

Section 3 is a provision of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) that is regulated by the provisions of 24 CFR 75. Section 3 regulations ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons.

The City of Phoenix ("City") is the recipient of certain HUD financial assistance for public housing and housing and community development activities. These programs require compliance with Section 3 of the Housing and Urban Development Act of 1968. Section 3 requires that employment and other economic opportunities be directed toward low- and very-low income persons, particularly those who are recipients of federal assistance for housing, and to business concerns that employ these residents.

This handbook is provided as a guide to understanding Section 3 of the Housing and Urban Development Act of 1968, and the business and employment goals related to this project. It is intended to assist contractors in complying with Section 3 requirements, but does not supersede the contract provisions.



Section 3 requirements do not apply to:

- 1) Material Supply Contracts - § 75.3(b),
- 2) Indian and Tribal Preferences - § 75.3(c), and
- 3) Other HUD assistance and other Federal assistance not subject to Section 3 §75.3 (d).

CONTRACTOR RESPONSIBILITY

The General Contractor and all subcontractors on this project are subject to compliance with Section 3 requirements as outlined in the Section 3 Clause of each contract, and the implementation of the regulations as outlined in 24 CFR part 75.

The General Contractor is required to incorporate the Section 3 Clause into all subcontracts.

The contractor and subcontractors agree **to the greatest extent feasible**, meet or exceed the following numerical goal:

- 1) Twenty-five (25) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Section 3 workers;

Section 3 Labor Hours/Total Labor Hours = 25%

And

- 2) Five (5) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Targeted Section 3 workers, as defined at 24 CFR Part 75.21 or 24 CFR Part 75.11.

Targeted Section 3 Labor Hours/Total Labor Hours = 5%

Monthly the subcontractors will report Section 3 hours worked, training, and subcontracting activities to the General Contractor. The General Contractor will compile all Section 3 reports for the month (and add their own if applicable) and turn in one monthly report to the project manager at the City. The report must be submitted for a pay application to be processed.

PRIOR TO BEGINNING WORK ON THE SITE

Prior to begging work on the site all contractors and subcontractors must complete the following:

1. Include Section 3 language in all contracts and subcontracts
2. Complete the Section 3 Business Concern Form
3. Have all employees complete Section 3 Employee Certification Form

MONTHLY REPORTING

Davis Bacon

If the project **IS** Davis Bacon monthly hours will be tracked in LCP Tracker to avoid duplicate reporting requirements for hours worked.

Non-Davis Bacon

If the project **IS NOT** Davis Bacon, monthly hours will be reported using the Section 3 Reporting spreadsheet. Each contractor or subcontractor will submit a monthly Section 3 Summary spreadsheet to the City of Phoenix Project Manager assigned to the project. This form will be provided by City of Phoenix staff. The City of Phoenix Project Manager will use the Section 3 Summary spreadsheet to tally the hours worked on the project.

Monthly Reporting Workflow

Subcontractor -> General Contractor/Subrecipient -> City of Phoenix project manager

PRIORITIZATION OF EFFORT FOR EMPLOYMENT, TRAINING, AND CONTRACTING

Contractors and subcontractors should make best efforts to provide employment and training opportunities to Section 3 workers in the priority order listed below:

PUBLIC HOUSING FINANCIAL ASSISTANCE

1. To residents of the public housing projects for which the public housing financial assistance is expended;

2. To residents of other public housing projects managed by the PHA that is providing the assistance or for residents of Section 8-assisted housing managed by the PHA;
3. To participants in YouthBuild programs; and
4. To low- and very low-income persons residing within the metropolitan area (or nonmetropolitan county) in which the assistance is expended.

HOUSING AND COMMUNITY DEVELOPMENT FINANCIAL ASSISTANCE

Provide employment and training opportunities to Section 3 workers within the metropolitan area in which the project is located in the priority order listed below:

1. Section 3 workers residing within the service area or the neighborhood of the project, and
2. Participants in YouthBuild programs.

Contractors and subcontractors will be required to certify that they will and have made best efforts to follow the prioritization of effort requirements prior to the beginning work and after work is completed.

CONTRACTING

Under the City of Phoenix’s Section 3 Program, contractors and subcontractors must make their best efforts to award contracts and subcontracts to business concerns that provide economic opportunities to Section 3 workers in the following order or priority:

PUBLIC HOUSING FINANCIAL ASSISTANCE

- 1) Section 3 business concerns that provide economic opportunities for residents of public housing projects for which the assistance is provided;
- 2) Section 3 business concerns that provide economic opportunities for residents of other public housing projects or Section-8 assisted housing managed by the PHA that is providing assistance;
- 3) YouthBuild programs; and
- 4) Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the metropolitan area (or nonmetropolitan county) in which the assistance is provided.

HOUSING AND COMMUNITY DEVELOPMENT FINANCIAL ASSISTANCE

- 1) Business concerns that provide economic opportunities to Section 3 workers residing within the metropolitan area (or nonmetropolitan county) in which assistance is located in the following order of priority (where feasible):
 - a. Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the service area or the neighborhood of the project; and
 - b. YouthBuild programs.

Contractors and subcontractors will be required to certify that they will and have made best efforts to follow the prioritization of effort requirements prior to the beginning work and after work is completed.

SECTION 3 CLAUSE

Must include the following language in all contracts and subcontracts:

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (“Section 3”). The purpose of Section 3 is to ensure that training, employment, contracting, and other economic opportunities generated by Section 3 covered financial assistance are directed to low- and very low-income persons, including persons who are recipients of HUD assistance for housing, with preference for both targeted workers living in the service area or neighborhood of the Project and Youthbuild participants, as well as to businesses that are either owned by low-income residents of the neighborhood where the financial assistance is spent, or substantially employ these persons, as defined at 24 CFR Part 75 (“Section 3 Regulations”).

The parties to this contract agree to comply with HUD’s Section 3 regulations in 24 CFR 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Section 3 Regulations.

Contractor agrees to notify potential contractors and subcontractors that are associated with Section 3 covered projects and activities about the requirements of Section 3, to include this Section 3 clause in every contract and subcontract subject to compliance with regulations in 24 CFR part 75, and to ensure that any subcontractors also include this Section 3 clause in their subcontracts for work performed on the project.

- A. Contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.
- B. Contractor agrees to maintain hiring and contracting practices to the greatest extent feasible so that 25 percent of the total labor hours expended on the project are by Section 3 Workers, of which 5 percent are by Targeted Section 3 Workers as defined in 24 CFR part 75. As part of these practices, Contractor agrees to provide priority consideration to eligible residents and businesses in accordance with 24 CFR Part 75, as applicable. If the Contractor is not able to meet this benchmark goal, it must provide a narrative of efforts taken and supporting documentation explaining why it was unable to meet that goal, despite greatest extent feasible efforts taken.
- C. If applicable, the Contractor agrees to notify each labor organization or representative of workers with which the Contractor has a collective bargaining or similar labor agreement or other understanding about its obligation to comply with the requirements of Section 3 and ensure that new collective bargaining or similar labor agreements provide employment, registered apprenticeship, training, subcontracting, or other economic opportunities to Section 3 Workers and businesses, and to post notices in conspicuous places at the work site advising the labor union, organization, or workers’ representative of the Contractor’s commitments under this part.
- D. The Contractor agrees to comply with all monitoring, reporting, recordkeeping, and other procedures specified the City and the HUD. The Contractor is responsible for providing Section

3 performance metrics and supporting documentation for all its subrecipients, contractors, and subcontractors, as applicable.

- E. Noncompliance with HUD's regulations in 24 CFR part 75 and the City's Section 3 policies may result in sanctions, penalties, termination of this contract for default, and debarment or suspension from future HUD-assisted contracts.

DEFINITIONS AND GOALS

SECTION 3 WORKER

In accordance with the regulation, a Section 3 worker is a worker who **currently fits** or **when hired within the past five years fits** at least one of the following categories:

1. Is a low- or very low-income worker that fell below HUD income limits for the previous or annualized calendar year. Low- and very-low-household income limits may be obtained from: <http://www.huduser.org/portal/datasets/il.html>
2. Is employed by a Section 3 business concern (defined in Section C).
3. Is a Youthbuild participant. YouthBuild is a community-based pre-apprenticeship program administered by the U.S. Department of Labor that provides job training and educational opportunities for at-risk youth ages 16-24 who have previously dropped out of high school.

TARGETED SECTION 3 WORKER

As the City of Phoenix serves as both an Entitlement Jurisdiction as well as a Public Housing Authority, there are two possible definitions for Targeted Section 3 worker which may apply. Which definition is applicable will depend on what program the activity is done under. If you are unsure of which definition applies, please contact the City of Phoenix Project Manager assigned to your project.

CPD Programs (HOME, CDBG, ESG, NSP, HOPWA,	PUBLIC HOUSING
<ol style="list-style-type: none"> 1. Employed by a Section 3 business or 2. Currently fits or when hired fit at least one of the following categories as documented within the past five years: <ul style="list-style-type: none"> • Living within the service area or the neighborhood of the project, as defined in 24 CFR 75.5 (typically 1 mile) • A YouthBuild participant 	<ol style="list-style-type: none"> 1. Employed by a Section 3 business or 2. Currently fits or when hired fit at least one of the following categories as documented within the past five years: <ul style="list-style-type: none"> • A resident of public housing or Section 8-assisted housing • A resident of other public housing projects or Section 8-assisted housing managed by the PHA that is providing the assistance • A YouthBuild participant

SECTION 3 BUSINESS CONCERN

Section 3 business concern preference by demonstrating that it meets one or more of the following criteria:

- 1) At least 51 percent of the business is owned and controlled by low- or very low-income persons; or
- 2) At least 51 percent of the business is owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing; or

- 3) Over 75 percent of the labor hours performed for the business over the prior three-month period are performed by Section 3 workers. Businesses that seek Section 3 preference shall certify, or demonstrate to City of Phoenix, contractors or subcontractors, that they meet the definitions provided in the above. Businesses may demonstrate eligibility by submitting the Section 3 Business Concern Certification Form.

SECTION 3 GOALS

Section 3 goals are based on the percentage of project hours worked by Section 3 workers. They are:

- 1) Twenty-five (25) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Section 3 workers;

Section 3 Labor Hours/Total Labor Hours = 25%

And

- 2) Five (5) percent or more of the total number of labor hours worked by all workers on a Section 3 project are Targeted Section 3 workers, as defined at 24 CFR Part 75.21.

Targeted Section 3 Labor Hours/Total Labor Hours = 5%

FORMS

The reporting forms listed below are included on the subsequent pages:

Section 3 Business Concern Form – This form is to be completed by all contractors and subcontractors working on the project. This form confirms that the contractor is aware of the Section 3 requirements of this project and will be used to identify if any businesses qualify as a Section 3 Business Concern.

Section 3 Employee Affidavit Form – This form is to be completed by all employees prior to working on the jobsite. It will be used to identify both regular and targeted Section 3 worker status.

Spanish Section 3 Employee Affidavit Form – This is a Spanish language version of the Section 3 Employee Affidavit Form



City of Phoenix

Section 3 Business Concern Certification for Contracting

Instructions: Enter the following information and select the criteria that applies to certify your Section 3 Business Concern* status.

Business Information

Project Name:			
Name of Business:			
Address of Business:			
Business Owner:			
Preferred Contact:			
Phone Number:		Email Address:	
Business Type:	Corporation	Partnership	Sole Proprietorship
			Joint Venture

Select from ONE of the following options below that applies:

At least 51 percent of the business is owned and controlled by low- or very low-income persons.

At least 51 percent of the business is owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

Over 75 percent of the labor hours performed for the business over the prior three-month period are performed by Section 3 workers.

Not a Section 3 Business Concern.

Affirmation

I affirm that the above statements are true, complete, and correct to the best of my knowledge and belief. I understand that businesses who misrepresent themselves as Section 3 business concerns and report false information to City of Phoenix may have their contracts terminated as default and be barred from ongoing and future considerations for contracting opportunities. I hereby certify**, under penalty of law, that the following information is correct to the best of my knowledge.

Additionally, I affirm that I have read and understand the HUD Section 3 requirements and responsibilities listed in the Section 3 Clause (24 CFR 75).

Print Name: _____ Signature: _____

Date: _____

FOR ADMINISTRATIVE USE ONLY		
Is the business a Section 3 business concern based upon their certification?	YES	NO

*Information regarding Section 3 Business Concerns can be found at 24 CFR 75.5.

**Certification expires within six months of the date of signature.

EMPLOYERS MUST RETAIN THIS FORM IN THEIR SECTION 3 COMPLIANCE FILE FOR FIVE YEARS.



City of Phoenix

Section 3 Worker and Targeted Section 3 Worker Self-Certification

The purpose of HUD’s Section 3 program is to provide employment, training, and contracting opportunities to low-income individuals, particularly those who are recipients of government assistance for housing or other public assistance programs. Your response is voluntary, confidential, and has no effect on your employment. A Section 3 worker seeking certification shall self-certify and submit this form to the recipient contractor or subcontractor, that the person is a Section 3 worker or Targeted Section 3 Worker as defined in 24 CFR Part 75.

Eligibility for Section 3 Worker or Targeted Section 3 Worker Status

Instructions: Enter/select the appropriate information to confirm your Section 3 worker or Targeted Section 3 Worker status.

Name:		Hire Date	
Address:			
Are you a resident of public housing or a Choice Neighborhoods?	YES	NO	
Are you a resident of the City of Phoenix?	YES	NO	
Is your individual income equal to or less than \$49,500 per year?	YES	NO	
Do you live within 1 mile of the project site(s)?	YES	NO	

Employee Affirmation

I affirm that the above statements are true, complete, and correct to the best of my knowledge and belief. I hereby certify, under penalty of law, that the following information is correct to the best of my knowledge.

Print Name: _____ Signature: _____

Date: _____

FOR ADMINISTRATIVE USE ONLY			
Is the employee a Section 3 worker based upon their self-certification?	YES	NO	
Is the employee a Targeted Section 3 worker based upon their self-certification?	YES	NO	
Was this an applicant who was hired as a result of the Section 3 project?	YES	NO	
If yes, Name of Company		Hire Date:	

EMPLOYERS MUST RETAIN THIS FORM IN THEIR SECTION 3 COMPLIANCE FILE FOR FIVE YEARS.



Ciudad de Phoenix

Autocertificación del trabajador de la Sección 3 y del trabajador de la Sección 3 con estatus específico

El propósito del programa de la Sección 3 de HUD es brindar oportunidades de empleo, capacitación y contratación a personas de bajos ingresos, en particular a quienes reciben asistencia del gobierno para vivienda u otros programas de asistencia pública. Su respuesta es voluntaria, confidencial y no tiene ningún efecto sobre su empleo. Un trabajador de la Sección 3 que busque la certificación deberá autocertificarse y enviar este formulario al contratista o subcontratista receptor, de que la persona es un trabajador de la Sección 3 o un Trabajador de la Sección 3 con estatus específico como se define en 24 CFR Parte 75.

Instrucciones para elegibilidad de trabajador de la Sección 3 o trabajador de la Sección 3 con estatus específico. Ingrese/seleccione la información adecuada para confirmar su estado de trabajador de la Sección 3 o Trabajador de la Sección 3 con estatus específico

Nombre		Fecha de Inicio	
Dirección			
¿Es usted residente de una vivienda pública o de una elección de vivienda?	SI	NO	
¿Es usted residente de la Ciudad de Phoenix?	SI	NO	
¿Su ingreso individual es igual o menor a \$49,500 por año?	SI	NO	
¿Vive dentro de 1 milla del sitio(s) del proyecto?	SI	NO	

Afirmación del Empleado

Afirmo que las declaraciones anteriores son verdaderas, completas y correctas a mi leal saber y entender. Por la presente certifico, bajo pena de ley, que la siguiente información es correcta a mi leal saber y entender.

Nombre : _____

Firma : _____

Fecha: _____

SOLO PARA USO ADMINISTRATIVO			
¿Es el empleado un trabajador de la Sección 3 según su autocertificación?	SI	NO	
¿Es el empleado un trabajador de la Sección 3 con estatus específico en función de su autocertificación?	SI	NO	
¿Era este un solicitante que fue contratado como resultado del proyecto de la Sección 3?	SI	NO	
Si es así nombre de la Empresa		Fecha de Contratación	

LOS EMPLEADORES DEBEN CONSERVAR ESTE FORMULARIO EN SU ARCHIVO DE CUMPLIMIENTO DE SECCIÓN 3 DURANTE CINCO AÑOS

Section 3 Project Monthly Summary Report

Complete this report and include with each monthly application for payment.

Use additional pages as necessary.

Contractor Name:	
Business Address:	
Contact Person:	
Phone Number:	
Project Name & Number:	
Amount of original contract award:	\$

SECTION 3 ACTIVITIES REPORT FOR MONTH ENDING _____ (month & year)

Are you a Section 3 Business? (Yes or No): _____

PART I: EMPLOYMENT AND TRAINING

Job Category	# Open/Posted Positions	# of New Hires	# New Hires that are Sec. 3 Residents
Professional or Clerical			
General Labor			
Rental/Lease Management			
Building Trades (list)			

PART II: CONTRACTS AWARDED

Construction Contracts:	Dollars
Total dollar amount of construction contract for this project	\$
Non-Construction Contracts (Accounting, Bookkeeping, Architecture):	
Total dollar amount of non-construction contract for this project:	\$

PART III: NARRATIVE OF SUPPORTING DETAIL

<p>Employment and Training Opportunities Describe contractor and subcontractor <u>hiring activity</u> during the reporting period.</p>
<p>Contracts Awarded (Part 2 Supporting Detail) <u>List the contracts awarded</u> during the reporting period/month. Include contractor name, value of contract award, and if they are a Section 3 business.</p>

Part IV: Other Section 3 Outreach and Opportunities

Please list any outreach activities performed (advertising, outreach, contacting Youthbuild offices, etc) to hire Section 3 residents or Section 3 businesses during the reporting period, even if they did not result in hiring of Section 3 employees.

--

ML I Housing, LLC
Phoenix, Arizona

MORELAND I
MULTI-FAMILY HOUSING

CONSTRUCTION CONTRACT
Design, Bid, Build

PROJECT NO.: _____

CONTRACT NO. _____

Law Dept. Doc. No. _____

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**MORELAND I MULTI-FAMILY HOUSING
CONSTRUCTION CONTRACT (MASTER CONTRACT DOCUMENT)**

Project No. _____

Contract No. _____

THIS CONSTRUCTION CONTRACT (MASTER CONTRACT DOCUMENT) (“**Master Contract Document**”) is made and entered into this ____ day of _____, 2023, by and between, _____, an Arizona corporation (“**Contractor**”) and, ML I Housing, LLC, an Arizona limited liability company (“**Owner**”) (collectively, the “**Parties**” and individually “**Party**”) to incorporate and integrate all Contract Documents into a comprehensive agreement governing the terms and conditions of all agreements between Owner and Contractor relating to construction of the project described herein (“**Construction Contract**”).

RECITALS

A. Owner leases the City of Phoenix (“**City**”) real property known as Moreland Lot 1, located along E. Moreland Street between 3rd Street and 5th Street, Phoenix, Arizona, which is more particularly described in the attached **Exhibit A** attached hereto (“**Property**”).

B. Owner intends to construct 132 housing units on the Property as is more fully described in the attached **Exhibit B** (“**Project**”) using various funding sources including Low Income Housing Tax Credit (“**LIHTC**”) equity and proceeds of loans from federal and City funds.

C. On or about January 8, 2020, the City issued a Request for Proposals for the Deck Park Vista Redevelopment (“**RFP**”) seeking a co-developer to assist in the redevelopment of Deck Park Vista Apartments into a new mixed-use, mixed-income multifamily rental project.

D. On or about March 6, 2020, Native American Connections, Inc. (“**Co-Developer**”) submitted its response to the RFP including related submission documents (“**RFP Submission Document**”).

E. In reliance upon the information contained in the RFP Submission Document, the City selected the Co-Developer to assist in its redevelopment efforts, subject to the Master Development Agreement.

F. Phoenix Housing Development Corporation, an Arizona nonprofit corporation (“**Developer**”), is an instrumentality of the City. Together, Developer and Co-Developer will construct a new 132-unit family development as Phase I of the revitalization of the former Deck Park Vista community, now known as The Moreland.

D. Developer is authorized and empowered by provisions of Owner’s operating agreement to manage, operate and control Owner’s business and to execute contracts on behalf of Owner.

E. The President of Developer is authorized and empowered to execute all agreements and contracts on behalf of the Owner with respect to the Project.

F. To undertake the design and construction administration of the Project, the Co-Developer has entered a contract with SPS+ Architects, LLP, an Arizona limited liability partnership (“**Architect**” or “**Design Professional**”), and Architect has prepared certain plans and specifications detailing the construction requirements for the Project (“**Construction Documents**”).

G. Contractor acknowledges and agrees time is of the essence with respect to the dates and times set forth in the Contract Documents. Contractor acknowledges Owner will incur substantial damages if the schedule for Substantial Completion (as defined below) of the Project is not met. Owner requires Contractor to strictly adhere to the Construction Schedule defined below, or Contractor may be required to pay liquidated damages for every calendar day Work remains incomplete in accordance with General

Conditions § 9.8.6.

H. Contractor has represented to the Owner that Contractor is able to construct and complete the Project in accordance with the Plans and Specifications, within the timeframe and on the terms and conditions stated herein.

I. Based upon Contractor's bid and representations to Owner, Contractor was selected by Owner to serve as the general contractor for construction of the Project pursuant to an Invitation for Bids issued on _____, ___, 2023.

J. The Parties are entering into this Master Contract Document to establish the terms and conditions on which the Contractor will provide labor and materials for the construction of the Project.

AGREEMENT

NOW THEREFORE, for and in consideration of the mutual covenants and considerations hereinafter contained, the Parties hereby agree as follows:

Article 1 - Definitions

Terms used in this Master Contract Document have the meanings ascribed to them in this Article 1. Terms not specifically defined in this Article 1 that are defined in the MAG Specifications, the HUD General Conditions, the AIA General Conditions, or the Supplementary Conditions have the meanings stated in those documents unless otherwise specifically stated.

"Addendum" means any document issued by or on behalf of the Owner prior to the execution of the Construction Contract or any relevant portion thereof which modifies, clarifies, or interprets the bid documents by additions, deletions, clarifications, or corrections.

"AIA General Conditions" or **"General Conditions"** means the General Conditions of the Contract for Construction, AIA Document A201-2017, as modified by Owner and incorporated in the Contract Documents.

"Alternate Bid" means an amount stated in the Bid to be added to the Base Bid amount if a change in the Work or alternate methods and materials as described in the Bid Documents, is accepted.

"Apartment Complex" means the 132-unit affordable housing complex located on the Property, known as Moreland I located along East Moreland Street between 3rd Street and 5th Street in Phoenix, Arizona, as is more fully described in the attached **Exhibit A**.

"Application for Payment" means the document prepared by the Contractor in accordance with the Schedule of Values and in compliance with the requirements of General Conditions § 9.3.

"Approved for Construction" means the Construction Documents are approved by the Design and Construction Management Division of the Public Works Department of the City of Phoenix and by the Owner, and are acceptable for permitting should the Project require permits.

"As-Built Drawings" or **"Record Drawings"** means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the Contract.

“Base Bid” means the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bid Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids, if applicable.

“Bid” means a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bid Documents.

“Bid Addendum” means a written or graphic document or plans issued by the Owner or Owner’s Representative prior to the execution of the Contract or any relevant portion thereof which modifies, clarifies or interprets the Bid Documents by additions, deletions, clarifications or corrections.

“Bid Documents” means the Invitation for Bids, Instructions to Bidders, Supplementary Instructions to Bidders, bid form, the Contract Documents, and any sample bid and contract documents or forms.

“Bid Form” means the form on which bidders enter their Bid.

“Change Directive” means a written order prepared and signed by Owner, directing a change in the Work prior to agreement on an adjustment in the Contract Price and the Contract Time.

“Change Order” means a contract amendment issued after execution of this Master Contract Document, signed by Owner, Architect, and Contractor, agreeing to changes to the Master Contract Document. A Change Order must state the following: the addition, deletion or revision in the Scope of Work; the amount of any adjustment to the Contract Price; and the extent of the adjustment to the Contract Times or other modifications to any other contract terms. **All Change Orders must comply with HUD Cost Control and Safe Harbor Standards, and will be reviewed for cost reasonableness.**

“City” means the City of Phoenix, a municipal corporation.

“City of Phoenix MAG Supplement” means the City of Phoenix Supplement to the MAG Specifications as published in 2009. On June 8, 2012, the City of Phoenix MAG Supplement was available for viewing at <https://www.phoenix.gov/streets/reference-material/2012maguniformstd>

“Commencement Date” means the date of commencement of the Work for the specified Project as provided in the Construction Schedule.

“Commencement Date of the Project” means the date of commencement of the Work as established in the Notice to Proceed.

“Construction Contract” means all documents comprising of the agreement between Owner and Contractor with respect to the construction of the Apartment Complex, including this Master Contract Document and all attachments, exhibits, Contract Documents and other documents incorporated by reference, signed by the Owner and Contractor following Owner’s acceptance of Contractor’s bid for the performance of Work on the Project, which establishes the terms and conditions upon which the Contractor will construct the Apartment Complex for Owner.

“Construction Documents” means the plans, specifications, and drawings issued as approved for construction.

“Construction Schedule” means the schedule established by Owner and General Contractor for commencement and completion of the Work, a copy of which is attached hereto as **Exhibit C**. The Construction Schedule remains the same whether or not alternates are included in the Contract.

“Consultant” means any architect, engineer, design professional, or other consultant or sub consultant engaged by Owner to assist Owner with design, construction, or implementation of the Rehabilitation.

“Contract” or **“Construction Contract”** means this Master Contract Document and the other documents referenced in or attached to and made part of the Contract by reference.

“Contract Documents” has the meaning defined in the General Conditions § 1.1.1, and includes all documents listed in Article 2 of this Master Contract Document.

“Contract End Date” means the date upon which all Work must be completed. The Contract End Date is _____.

“Contract Price” or **“Contract Sum”** means the amount Owner will pay Contractor, in current funds, for the Contractor’s performance of the Contract. The Contract Price, established in accordance with the Bid Documents and Contractor’s Bid will be \$_____ subject to additions and deletions as provided in the Contract Documents.

“Contract Time” has the meaning defined in the General Conditions § 8.1.1.

“Contracting Officer” means the President of ML I Housing, LLC.

“Contractor” means _____, the company selected by the Owner to provide construction services as detailed in this Master Contract Document.

“Contractor’s Representative” means the person designated by Contractor to represent Contractor in dealings with the Owner and/or the Owner’s Representative relating to the Project.

“Contractor’s Senior Representative” means the person designated in § 3.10.1.

“Cost of the Work” means the direct and other defined costs necessarily incurred by the Contractor in the proper performance of the Work. The Cost of the Work includes direct and other defined labor costs, subcontract costs, costs of materials and equipment incorporated in the completed construction, costs of other materials and equipment, temporary facilities, permit and license fees, materials testing, and related items. The Cost of the Work also includes deductibles under the Builder’s Risk insurance, provided, however, the Cost of Work does not include deductibles arising from losses related to the Contractor’s supplies and materials that are not being incorporated into the Work, tools and construction trailer, or the negligence or omissions of the Contractor or those under the Contractor’s control.

“Critical Path” means the sequence of activities from the start of the Work to the Substantial Completion of the Project. Any delay in the completion of these activities will delay the Substantial Completion Date-Project.

“Davis-Bacon Act” means the Davis–Bacon Act of 1931, Act of Mar. 3, 1931, ch. 411, 46 Stat. 1494, 40 U.S.C. § 3141, et seq.

“Day(s)” has the meaning defined in the General Conditions § 8.1.4.

“Differing Site Conditions” means concealed or latent physical conditions or subsurface conditions at the Site that, (i) materially differ from the conditions indicated in the Contract Documents, or (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work.

“Drawings” has the meaning defined the General Conditions § 1.1.5, as applicable.

“Float” means the number of Days by which an activity can be delayed without lengthening the Critical Path and extending the Substantial Completion Date.

“Form HUD-2554” means the current version of the form prescribed by HUD titled Supplementary Conditions for the Contract of Construction.

“Form HUD-4010” means the current version of the form prescribed by HUD titled Federal Labor Standards Provisions.

“Form HUD-5369” means the current version of the form prescribed by HUD titled Instructions to Bidders for Contract, Public and Indian Housing Programs (construction).

“Form HUD-5369-A” means the current version of the form prescribed by HUD titled Representations, Certifications, and Other Statements of Bidders, Public and Indian Housing Programs (construction).

“Form HUD-5370” means the current version of the form prescribed by HUD titled General Conditions of the Contract for Construction, along with any appropriate Davis-Bacon or HUD wage decision for construction and maintenance work.

“Form HUD-51000” means the current version of the form prescribed by HUD titled Schedule of Amounts for Contract Payments.

“Form HUD-51001” means the current version of the form prescribed by HUD titled Periodic Estimate for Partial Payment.

“Form HUD-51002” means the current version of the form prescribed by HUD titled Schedule of Change Orders.

“Form HUD-51003” means the current version of the form prescribed by HUD titled Schedule of Materials Stored.

“Form HUD-51004” means the current version of the form prescribed by HUD titled Summary of Materials Stored.

“General Conditions” means the General Conditions of the Contract for Construction, AIA Document A201-2017, as modified by Owner and incorporated in the Contract Documents.

“General Conditions Costs” includes, but is not limited to, the following types of costs for the Contractor during the construction phase: (i) payroll costs for Contractor’s project manager or Contractor for Work only related to the Project, (ii) payroll costs for the superintendent and full-time general foremen, (iii) payroll costs for other management personnel only related to the Project, (iv) workers not included as direct labor costs engaged in support (e.g. clean-up, etc.), (v) costs of offices and temporary facilities including office materials, office supplies, office equipment and minor expenses, (vi) cost of utilities, fuel, sanitary facilities, telephone and data services at the site, (vii) costs of liability insurance premiums not included in labor burdens for direct labor costs, (viii) costs of bond premiums; and (ix) costs associated with City of Phoenix background screening and badging requirements.

“HUD” means the United States Department of Housing and Urban Development.

“HUD Cost Control and Safe Harbor Standards” means the Cost Control and Safe Harbor Standards for Rental Mixed-Finance Development published by HUD and revised on April 9, 2003, available at: http://portal.hud.gov/hudportal/documents/huddoc?id=DOC_9880.pdf.

“Legal Requirements” means all applicable federal, state and local laws, codes, ordinances, rules, regulations, orders and decrees of any government or quasi-government entity having jurisdiction over the Project or Site, the practices involved in the Project or Site, or any Work.

“MAG Specifications” means the Uniform Standard Specifications for Public Works Construction Sponsored and Distributed by the Maricopa Association of Governments (1998 Edition with 2011 revisions). Unless otherwise stated the term MAG Specifications as used herein includes the modifications stated in the City of Phoenix MAG Supplement.

“Master Contract Document” means this document, including exhibits, executed on the date first written above, which is intended to take the place of the AIA Standard Form of Agreement Between Owner and Contractor (AIA A-101). The Master Contract Document is intended to coordinate and incorporate all Contract Documents into a single comprehensive Construction Contract.

“ML I Housing, LLC” means the Arizona limited liability company that is the Owner of the Project.

“Notice to Proceed” or “NTP” means the written directive issued by the Owner, authorizing the Contractor to start Work. Such notice must be provided to the Contractor at least seven (7) days prior to the commencement date stipulated therein and after the Bid and all the required documentation stipulated as a prior condition to the Notice to Proceed is received by the Owner. Owner anticipates, but does not guaranty, that the Notice to Proceed will be issued on or about _____.

“Overhead” means Contractor’s general and administrative expenses, including: office rent, heat, air conditioning, and other utilities; computer software and hardware; office supplies, furnishings, and equipment; executive and administrative salaries and expenses, accounting fees and expenses, legal fees and expenses, subscriptions, advertising, non-job insurance, interest and other financing costs; depreciation; and similar items not allocable to the Project.

“Owner” means ML I Housing, LLC, an Arizona limited liability company, which is the entity with whom Contractor has entered into this Contract and for whom the services are to be provided pursuant to this Contract.

“Owner’s Representative” means the Project Manager, and/or any Consultant designated by the Owner in § 3.10.1 hereof or in a writing delivered to Contractor, to act on behalf of the Owner with respect to the Project.

“Owner’s Senior Representative” means the person designated in § 3.10.1. The Owner’s Senior Representative will serve as the Initial Decision Maker as described in General Conditions § 1.1.8.

“Payment Request” means the Owner-accepted form used by the Contractor to request progress payments pursuant to Ariz. Rev. Stat. § 34-607 for Work in accordance with Article 9 of the General Conditions.

“PDD” means the City of Phoenix Planning and Development Department.

“Performance Period” means the period of time allotted in the Contract Documents to substantially complete the Work encompassed by the Final Bid. The Performance Period must be stated with each Bid and shown on the Project Schedule.

“Phase” means a designated portion of the Project that includes a specified group of residential buildings which are to be constructed within the specific time frame as detailed in the bid documents. As more fully described in the Construction Schedule, the Moreland I Project is comprised of one (1) construction Phase.

“Plans” means the plans and technical specifications approved by the Owner and Owner’s Representative.

“Pre-Purchased Materials” means certain materials purchased and stored by Contractor as required by § 3.5 hereof.

“Product Data” has the meaning defined in the General Conditions § 3.12.2.

“Project” means the Work to be completed upon the execution of this Master Contract Document, as described in the Recitals above and in the attached **Exhibit B**. Project also has the meaning defined in the General Conditions § 1.1.4, as used in that document.

“Project Lender” means any bank, financial institution, government agency or other entity, including the City of Phoenix providing funds to the Owner for the development of the Project.

“Project Manager” means the person or persons designated as such by the Contracting Officer, in § 3.9.1 hereof or in a writing delivered to Contractor, who has delegated authority to represent the Contracting Officer, the Developer and the Owner in dealings with the Contractor relating to the Project, and to oversee and manage the Project or specified aspects of the Project on a day-to-day basis.

“Project Record Documents” means the documents created pursuant to § 5.10 hereof.

“Recommendation for Payment” means a document prepared by the Owner’s Representative after receipt of an Application for Payment, in accordance with General Conditions § 9.4, to notify the Contractor and Owner of Owner’s Representative’s recommendations that payment be made as provided in General Conditions § 9.4.

“Samples” has the meaning defined in the General Conditions § 3.12.3.

“Schedule of Values” has the meaning defined in the General Conditions § 9.2.

“Section 3” means Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, 12 U.S.C. 1701u, implemented by HUD at 24 CFR Part 75.

“Shop Drawings” has the meaning defined in the General Conditions § 3.12.1.

“Site” means the land or premises on which the Project is located at 1125 N. 3rd Street, Phoenix, AZ 85004.

“Specifications” means the part(s) of the Contract Documents for the construction phase consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto as listed in the Bid. This definition takes precedence over the definition of the term contained in the General Conditions § 1.1.6.

“Subcontractor” has the meaning defined in the General Conditions § 5.1.1.

“Sub-subcontractor” has the meaning defined in the General Conditions § 5.1.2.

“Substantial Completion” means the Work is sufficiently complete so that Owner’s tenants can occupy and use the Project for its intended purposes. This may include, but is not limited to: (i) approval by City Fire Marshall and local authorities having jurisdiction over the Project (including, the Certificate of Occupancy for the entire Project); (ii) all systems in place, functional, and displayed to the Owner or its representative; (iii) all materials and equipment installed and operational; (iv) all systems reviewed and accepted by the Owner; (v) Owner operation and maintenance training complete and accepted by the Owner or Owner’s Representative; (vi) HVAC test and balance completed; (vii) landscaping and site work; (viii) cleaning of the residential buildings and outside areas around each building in order for residents to occupy the site without unreasonable inconvenience; and (xi) Residential buildings compliant with the **Uniform Physical Condition Standards** (UPCS) and Housing Quality Standards (HQS) for the U.S. Department of Housing and Urban Development as well as the **Arizona Registrar of Contractors Minimum Workmanship Standards**. In general, the remaining work must be minor in nature, so that the

Owner or the Owner's tenants could occupy the building(s) on that date and the completion of the Work by the Contractor would not materially interfere with or hamper the Owner's or the Owner's tenants' use of the building(s). The Owner will pay for one (1) inspection and one (1) re-inspection per unit. Contractor will pay all costs of any additional unit inspections that may be required at the rate of \$100 per unit, per inspection. Additional inspection fees payable by Contractor will be assessed through the use of a Change Order to be prepared as provided in the General Conditions.

"Substantial Completion Date – Project" means, with the date certified by the Owner and Owner's Representative as the date on which the entire Project was substantially complete in accordance with General Conditions § 9.8.

"Supplementary Conditions" means the conditions, changes, or requirements to the Contract Documents established by Owner, if any, incorporated in a document titled Supplementary Conditions for the Moreland I. The Supplementary Conditions, if any, will be deemed to be incorporated in § 5 of this Master Contract Document and unless otherwise stated therein will have precedence over other Contract Documents as stated in § 2.3 hereof.

"Supplier" means a manufacturer, fabricator, supplier, distributor, material man or vendor having a direct contract with Owner, Contractor or any Subcontractor to furnish materials or equipment to be incorporated in the construction phase Work by Contractor or any Subcontractor.

"Wage Decision" means the appropriate Davis-Bacon or HUD wage decision applicable to the Contract and the Work.

"Work" has the meaning defined in General Conditions § 1.1.3.

Article 2 – The Contract Documents, Enumeration and Precedence

2.1 The Contract Documents consist of this Master Contract Document and all documents referenced in this Master Contract Document, including the Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Master Contract Document, other documents enumerated in Article 2.2 of this Contract, and Modifications issued after execution of this Master Contract Document, all of which form the Contract, and are as fully a part of the Contract as if attached to or repeated in this Master Contract Document. The Contract represents the entire and integrated agreement between the Parties and supersedes any prior negotiations, representations or agreements, either written or oral.

2.2 **The Contract Documents**, except for Modifications issued after execution of this Master Contract Document, are enumerated in the sections below.

2.2.1 **The Master Contract Document** is this agreement executed by the Owner and the Contractor.

2.2.2 **The General Conditions** are the General Conditions of the Contract for Construction, AIA Document A201-2017, as modified by Owner and incorporated in the Contract Document.

...

2.2.3 The Supplementary and other Conditions of the Contract include the following:

2.2.3.1 State and Local Supplementary Documents

<u>Document</u>	<u>Title</u>	<u>Pages</u>
CB	Call for Bids	C.B.-1 to 2
IB	Information for Bidders	I.B.-1 to 18
ADD	Portions of Addenda relating to Bidding Requirements (if any) made applicable by inclusion on list	
	Addendum 1	Pages 1 – 6
	Addendum 2	Pages 1 – 12
	Addendum 3	Pages 1 – 25
	Addendum 4	Pages 1 – 15
BP	Bid Proposal	P.-2
PS	Proposal Submittal (signature required)	P.S.-1
RCB	Representations and Certifications of Bidders	H5369A-1 to 3
SB	Surety Bond (bid bond)	S.B.-2
LOMS	List of Major Subcontractors and Suppliers	L.O.S.-2
LOAS	List of all Subcontractors and Suppliers	L.O.S.-4
BDS	Bidder's Disclosure Statement	B.D.S.-1 to 4
AOI	Affidavit of Identity (N/A)	N/A
MAG	Uniform Standards and Specifications For Public Works Construction published by Maricopa Association of Governments (1998 with 2012 revisions) (per City of Phoenix Public Works web site)	Web Site
PMAG	City of Phoenix Supplement to MAG Specifications (2009 revisions) (per City of Phoenix Public Works web site)	Web Site
AFC	Asbestos Free Certificate	A.F.C. -1
NC	Non-Collusive Affidavit	N.C.A.-1
CQS	Contractor's Qualifications Statement (AIA A305-1986)	C.Q.S.-1 to 6

2.2.3.2 Federal Supplementary Documents for HUD-Funded Public Housing Activities*

<u>Document</u>	<u>Title</u>	<u>Pages</u>
HUD 4010	Federal Labor Standard Provisions	H4010-1 to 5
CFR	Title 29, Parts 3 & 5, Code of Federal Regulations	C.F.R.-1 to 36
GWD	Davis-Bacon Wage Decision (Updated Addenda 1)	G.W.D.-1 to 4
S3	City of Phoenix Section 3 for Contractors Handbook	S3-1 to 17
HUD 2554	Supplementary Conditions of the Contract of Construction	H2554-1 to 4
HUD 5369	Instructions to Bidders	H5369-1 to 4
HUD 5369A	Certifications, Representations and Other Statements Of Bidders	H5369A-1 to 3
HUD 5370	General Conditions for Construction Contract	H5370-1 to 19
HUD 51000	Schedule of Amounts for Contract Payments	H51000-1 to 2
HUD 51001	Periodic Estimate for Partial Payment	H51001-1 to 2
HUD 51002	Schedule of Change Orders	H51002-1
HUD 51003	Schedule of Materials Stored	H51003-1
HUD 51004	Summary of Materials Stored	H51004-1
CCSH	Cost Control and Safe Harbor Standards Mixed Finance Projects	CCSH-1 - 9

<u>Document</u>	<u>Title</u>	<u>Date</u>	<u>Pages</u>
BTUS	Bid Tabulation Unit Sheet		
BTSS	Bid Tabulation Summary Sheet Scope of Work / Product Specifications		SOW/PS

2.2.3.3 Additional Documents. Additional Documents, if any, forming part of the Contract Documents are listed below:

- Construction Schedule “Exhibit C”

2.3 Precedence of Documents. In the event of any inconsistency, conflict, or ambiguity between or among the Contract Documents, the Contract Documents will take precedence in the following order unless expressly stated to the contrary in this Master Contract Document:

2.3.1 Federal Law and Contract Documents. Documents identified in § 2.2.3.2 (“**Federal Supplementary Documents**”) will take precedence over all other Contract Documents, except as follows:

2.3.1.1 Contractor must comply with all conditions precedent to payment specified in the Federal Supplementary Documents in such time and manner as to permit Owner to make timely payments to Contractor consistent with Arizona Revised Statutes.

2.3.1.2 In the event of a conflict between the Construction Contract and any applicable state or local law or regulation, the state or local law or regulation will prevail; provided such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. If a conflicting state or local law or regulation is less restrictive than applicable federal law, regulation, or Executive Order, the applicable federal law, regulation or Executive Order will prevail.

2.3.2 Other Law and Contract Documents.

2.3.2.1 Provisions specifically stated in the Master Contract Document will take precedence over all documents other than federal law and Federal Supplementary Documents. Unless the Owner agrees in writing to specific modifications proposed by a bidder in the Bid Proposal and Proposal Submittal incorporated by reference in or attachment to the Master Contract Document any such modifications will be deemed to be rejected.

2.3.2.2 The Special Conditions, if any, will take precedence over all documents other than federal law and Federal Supplementary Documents and the Master Contract Document.

2.3.2.3 The Call for Bids, Information for Bidders, and any Addenda will take precedence over all documents other than federal law and Federal Supplementary Documents, the Master Contract Document, and the Special Conditions.

2.3.2.4 The City of Phoenix Supplement to the MAG Specifications and Details will take precedence over all documents other than federal law and Federal Supplementary Documents, the Master Contract Document, and the Special Conditions, the Call for Bids, Information for Bidders, and any Addenda.

2.3.2.5 The MAG Specifications and Details will take precedence over all documents other than federal law and Federal Supplementary Documents and the Special

Conditions, the Call for Bids, Information for Bidders, any Addenda, and the City of Phoenix Supplement to the MAG Specifications.

2.3.2.6 Conflicts, inconsistencies or ambiguities between and among the Plans, Drawings, and Specifications will be resolved as provided in the General Conditions §1.2. In the event of conflicts inconsistencies or ambiguities between and among the Plans, Drawings and Specifications and other Contract Documents, Contractor must call such conflicts or questions to the attention of Owner and Owner will make a determination as to which documents take precedence.

2.4 Modifications to MAG Specifications. All forms prescribed by the MAG Specifications (e.g., surety bond forms prescribed by Arizona Revised Statutes) must be modified to substitute Owner's name in the places indicated where the City or other governmental entity is identified as the Project owner or sponsor.

Article 3 – Covenants and Representations of the Parties

3.1 The Work of this Contract. The Contractor agrees to furnish all necessary labor, materials, equipment, tools, and services to perform and complete in a workmanlike manner, to the satisfaction of the Owner, and in strict and full accord with the specifications prepared by the Owner, all Work required to carry out the Project, in strict compliance with the Contract Documents, and under the penalties expressed in the bonds provided, except as otherwise specifically provided in the Contract Documents.

3.2 Date of Commencement and Substantial Completion. The Contractor agrees Work under the Construction Contract will commence upon receipt of a written Notice to Proceed, and the Commencement Date will be the date for commencement of the Work as stated in the Notice to Proceed. Owner anticipates the site will be delivered to Contractor and a Notice to Proceed will be issued on or about _____. The Contract Time will be measured from the Commencement Date. The Contractor must commence construction and achieve Substantial Completion by _____, subject to adjustments of the Contract Time as provided in the Contract Documents. If Contractor fails to achieve Substantial Completion by the Substantial Completion Date, Contractor agrees to pay Owner liquidated damages as provided in the General Conditions § 9.8.6. No payment or compensation of any kind will be made to the Contractor because of hindrance or delay from any cause in the progress of the Work, whether such delay is avoidable or unavoidable and extensions of time will only be granted as provided in the Contract Documents.

3.3 Subcontractors. The Contractor agrees to bind every subcontractor to the terms of the Contract Documents. The Contract Documents may not be construed as creating any contractual or other relationship between any subcontractor and the Owner.

3.4 Contract Sum. For the Contractor's performance of the Construction Contract, Owner agrees to pay and Contractor agrees to accept as full compensation for complete performance of the Contract Sum in current funds. The Contract Sum is: \$_____ subject to additions and deletions as provided in the Contract Documents. Progress payments will be made in accordance with the General Conditions of the Contract. Note that due to constraints resulting from federal funding Contractor may not substitute securities in lieu of retention under the Construction Contract. Contractor must hold the Contract Price and all components thereof until Project Completion.

3.4.1 Alternates. The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

Alternates 1 – N/A

3.4.2 Unit Prices. Unit prices, if any, will be as specified in the bid documents and are set forth below:

<u>Item:</u>	<u>Price</u>
Schedule of Values	TBD

3.4.3 Allowances. Allowances included in the Contract Sum, if any will be as specified in the bid documents and are set forth below:

<u>Item</u>	<u>Price</u>
Dry Utility Infrastructure	\$ _____

3.4.4 Contingency Allowances. The Owner will provide contingency allowances in the following amounts for the purpose of addressing the described conditions, which are expected to be encountered, but the scope and extent of which is not presently determinable. These allowances will be included in all General Contractor's proposals. Funds will be drawn from a Contingency Allowance only by Change Order authorizing expenditure of funds from each Contingency Allowance. Contractors must provide unit pricing for Work that might be required in each category, and change orders will be based on the unit pricing bid by Contractor to the greatest extent practicable, Where Work is required that is not the subject of the unit price bid, the Change Order will be based on Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit. At closeout of the Contract, funds remaining in a Contingency Allowance will be credited to Owner by Change Order.

<u>Item</u>	<u>Price</u>
N/A	N/A

3.5 Purchase and Storage of Materials. As determined by Owner, Contractor may be required to purchase materials to be incorporated in the Work, excluding appliances and any other materials with manufacturer warranties ("**Pre-Purchased Materials**"). Contractor will be responsible for loading and unloading the Pre-Purchased Materials, security of the Pre-Purchased Materials, transporting stored Pre-Purchased Materials from warehouse to Project site, and providing insurance for all Pre-Purchased Materials. Contractor is responsible for any required storage at the Project on and off-site. Materials purchased with the intent of meeting this requirement must be stored within Maricopa County and available for inspection at least ten (10) calendar days prior to the Contractor's submission of the request for payment and must be reported on a timely submitted Schedule of Materials Stored (HUD Form 51003) and the Summary of Materials Stored (HUD Form 51004).

All materials, whether stored on-site or off-site, must be separated from other materials, labeled for this Project, and Contractor must provide sufficient proof the Materials are reserved for this Project. Contractor is responsible for having all inventory materials organized for quick inventory counts by the Owner's representative. Stored materials must be verified by Owner's Representative prior to payment along with any other requirements outlined in Section 3.8 of this Master Contract Document. Contract price includes the purchase, transportation, insurance, and storage on and off-site of all materials, and all associated costs, including but not limited to security and protection of the materials.

3.6 Liability for Dislocation of Tenants. Contractor will be responsible for all costs involved, if Owner must temporarily relocate individual tenants from particular units and buildings while their units are undergoing repairs or service from contracted Work after substantial completion and or occupancy.

These costs include and are not limited to relocation expenses, hotel accommodations and meals if they cannot be prepared by the resident. If resident is displaced from using their apartment for four (4) hours or more the contractor will be responsible for the cost of meal vouchers. Contractor must maintain the units in a condition (including with heating and/or air conditioning, as appropriate) to be occupied by tenants. If Contractor fails to do so, Contractor will be responsible to pay or reimburse Owner's actual costs incurred to provide hotel accommodations for the affected tenants.

3.7 Site and Right of Way. Contractor agrees to keep the Site and right-of-way free and clear of weeds, trash, debris, unauthorized materials, any unauthorized uses, control dust throughout construction and maintain the Site in accordance with City Codes. Contractor will be responsible for all costs involved and must include this expense as part of their bid proposal.

3.8 Meetings at the Site. Owner, Contractor, and Architect shall establish a mutually acceptable day and time to meet at the Site on a weekly basis unless the Owner determines otherwise. Owner reserves the right to change the location of the meeting as long as Contractor and Architect are given 48-hour notice. Contractor shall be responsible for taking accurate meeting minutes and tracking and distributing relevant project records as outlined below.

Contractor shall provide the following materials in the form of hard copies and electronic copies to Owner and Architect at each site meeting or before:

- Meeting minutes from the previous job site meeting (Must be submitted to Owner at least 48 hours prior to meeting)
- Updated Project schedule and phasing schedule if applicable
- Three week look ahead schedule
- Submittal schedule/submittal log
- RFI log
- Potential change order log
- Change order log
- Subcontractor list
- Other Project data required by Owner

3.9 Additional Meetings. Owner may request for Contractor to attend other meetings related to the Project, which may include outreach to area residents, stakeholders, business owners and service providers.

3.10 Payments. For and in consideration of faithful performance of the Work as set forth in the Contract Documents, and in accordance with the directions of the Owner, and to its satisfaction, the Owner agrees to pay Contractor the amount earned, computed from actual quantities of work performed and accepted or materials furnished at the unit bid price on the Base Bid of the Proposal, which is made a part hereof, based upon Applications for Payment submitted to the Owner's Representative by the Contractor and Recommendations for Payment issued by the Owner's Representative and approved by Owner. Owner agrees to make progress payments and final payment on account of the Contract Sum to the Contractor as provided elsewhere in the Contract Documents, with final payment to be due within sixty (60) days after final inspection and acceptance of the Work and reconciliation of prior payments and change orders.

3.10.1 Schedule of Amounts for Contract Payments. Upon execution of the Contract, Contractor must prepare a schedule of amounts of payments using form HUD-51000, Schedule of Amounts for Contract Payments.

3.10.2 Periodic Payment Requests. Contractor must submit requests for payment on form HUD-51001, Periodic Estimate for Partial Payment and AIA G702. The request shall be accompanied by the Contractor's written designation of a certifying officer.

3.10.3 Other Forms. Contractor should submit the following forms or other appropriate forms, if applicable, with each periodical estimate for partial payment: form HUD-51002, Schedule of Change Orders; form HUD-51003, Schedule of Materials Stored; and form HUD-51004, Summary of Materials Stored; ACH instructions for Vendor Payment; Electronic Fund Transfer letter signed by an authorized agent of Contractor on company letterhead; Certified signed pay application from the Contractor; Line item descriptions and backup for percentage completion; Unconditional and conditional lien releases; Section 3 report for the month in which the Work was completed; and any other documents required by Owner.

3.11 Designated Representatives. Each Party must have a designated project manager. The Parties hereby designate the following persons to serve as their representatives in connection with the Project for matters other than dispute resolution:

3.11.1 Owner's Representatives:

Housing Development Manager
Moreland I
251 W. Washington Street, 4th Floor
Phoenix, AZ 85003
Office Phone: (602) 256-3338

Project Manager
Moreland I
251 W. Washington Street, 4th Floor
Phoenix, AZ 85003
Office Phone: (602) _____

3.11.2 Contractor's Representative:

(NAME)
(POSITION)
(COMPANY NAME)
(ADDRESS)
Office Phone: _____
Cell Phone: _____
(EMAIL)

3.12 Designated Senior Representatives. The Parties hereby designate the following persons to serve as their Senior Representatives in connection with the Project, each of whom has the authority and responsibility for avoiding and resolving disputes:

3.12.1 Owner's Senior Representative:

Director
City of Phoenix Housing Department
251 W. Washington Street, 4th Floor
Phoenix, AZ 85003
Office Phone: (602) 262-6794

3.12.2 Contractor's Senior Representative:

(NAME)
(POSITION)
(COMPANY NAME)
(ADDRESS)
Office Phone: _____
Cell Phone: _____
(EMAIL)

3.13 Role of Owner. All Work will be done under the general supervision of the Owner or its designated representatives. The Owner will decide any and all questions which may arise as to the quality and acceptability of the materials furnished, Work performed, rate of progress of the Work, interpretation of the Contract Documents, and all questions as to the acceptable fulfillment and performance of the Contract by the Contractor.

3.14 Contractor Representations and Warranties. Contractor hereby represents and warrants:

3.14.1 Contractor is financially solvent, experienced in and competent to perform the type of Work contemplated by this Contract, the facts stated or shown in the papers accompanying its Bid Proposal are true, and Contractor is authorized to do business in the State of Arizona.

3.14.2 Contractor has carefully examined the Contract Documents and the Project Site and has satisfied itself from its own investigations as to the nature and location of the Work and facilities needed for the performance of the Work, the general and local conditions, and all other matters which may in any way affect the Work.

3.15 Owner Right to Withhold Payment. The Owner may, consistent with the Contract Documents, withhold from the Contractor so much of the payments due to Contractor as may in the judgment of the Owner be necessary:

3.15.1 To protect the Owner from loss due to defective work not remedied.

3.15.2 To protect the Owner from loss due to injury to persons or damage to property caused by the act or neglect of the Contractor.

The foregoing provisions must be construed solely for the benefit of the Owner and must not require the Owner to determine or adjust any claims or disputes between the Contractor and its subcontractors or material men, or to withhold any monies for their protection unless Owner elects to do so. The failure or refusal of the Owner to withhold any monies from the Contractor will in no way impair the obligations of any surety or sureties under any bonds furnished under this Contract.

3.16 Schedule of Change Orders. Contractor must report the details of all approved Change Orders by completing, certifying, and delivering to Owner a completed Schedule of Change Orders using form HUD-51002, Schedule of Change Orders.

3.17 Bids for Change Order Items. Where unit prices are established by Contractor's bid and accepted by the Owner, the unit prices will apply to change orders for the duration of the contract. If a unit price has not been established for labor or materials to be provided or performed pursuant to a Change Order, Contractor must supply Owner's Representative with a minimum of three bids for proposed Change Order work. All Change Orders must comply with HUD Cost Control and Safe

Harbor Standards and must be determined by Owner to be cost reasonable. Information about the HUD Cost Control and Safe Harbor Standards can be found at:

http://www.hud.gov/offices/pih/programs/ph/hope6/grants/admin/safe_harbor.pdf

Article 4 – Additional Terms - General Provisions

- 4.1 Amendments.** The Contract Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each Party.
- 4.2 Time is of the Essence.** Owner and Contractor mutually agree time is of the essence with respect to the dates and times set forth in the Contract Documents.
- 4.3 Mutual Obligations.** Owner and Contractor commit at all times to cooperate fully with each other and proceed on the basis of trust and good faith, to permit each Party to realize the benefits afforded under the Contract Documents.
- 4.4 Cooperation and Further Documentation.** The Contractor agrees to provide the Owner such other duly executed documents as may be reasonably requested by the Owner to implement the intent of the Contract Documents.
- 4.5 Assignment.** Neither Contractor nor Owner may, without the written consent of the other assign, transfer or sublet any portion of the Construction Contract or part of the Work or the obligations required by the Contract Documents.
- 4.6 Successorship.** Contractor and Owner intend the provisions of the Contract Documents are binding upon the Parties, their employees, agents, heirs, successors, and assigns.
- 4.7 Third Party Beneficiary.** Nothing under the Contract Documents may be construed to give any rights or benefits in the Contract Documents to anyone other than the Owner and Contractor, and all duties and responsibilities undertaken pursuant to the Contract Documents will be for the sole and exclusive benefit of Owner and Contractor and not for the benefit of any other party.
- 4.8 Governing Law.** This Contract and all Contract Documents will be deemed to be made under and construed in accordance with and governed by the laws of the State of Arizona without regard to the conflicts or choice of law provisions thereof. Any action to enforce any provision of this Master Contract Document or to obtain any remedy with respect hereto must be brought in the Superior Court, Maricopa County, Arizona, and for this purpose, each Party hereby expressly and irrevocably consents to the jurisdiction and venue of such Court.
- 4.9 Severability.** If any provision of the Contract Documents or the application thereof to any person or circumstance is determined to be invalid, illegal or unenforceable to any extent, the remainder of the Contract Documents and the application thereof will not be affected and will be enforceable to the fullest extent permitted by law.
- 4.10 Compliance with Laws.**
- 4.10.1 Legal Requirements in General.** Contractor must perform all Work in accordance with all Legal Requirements and must provide all notices applicable to the Work as required by the Legal Requirements. It is not the Contractor's responsibility to ascertain the Construction Documents are in accordance with applicable laws, statutes, ordinances, building codes, rules, and regulations. However, if the Contractor recognizes portions of the Construction Documents are at variance therewith, the Contractor must promptly notify the Owner's Representative and Owner in writing,

describing the apparent variance or deficiency. Changes to the Contract Documents to comply with Legal Requirements must be by Change Order. In the event of a Change Order, the Contract Price and Contract Time may be equitably adjusted if approved by the Owner. Such approval may not be unreasonably withheld.

4.10.2 Americans with Disabilities Act and Architectural Barriers Act. Contractor understands and acknowledges the applicability to the Construction Contract of the Americans with Disabilities Act (42 U.S.C. § 12131, 47 U.S.C. §§ 155, 201, 218, and 225) and the Architectural Barriers Act of 1968 (42 USC § 4151-4157) and 24 C.F.R. Part 570.614 as applicable, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989. The Contractor must comply with these federal laws in performing the Work and must permit the Owner to verify such compliance.

4.10.3 Byrd Anti-Lobbying Amendment. Contractor understands and must comply with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352). Contractor must timely file the required certifications. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

4.10.4 Contractor Certifications - Lobbying. The Contractor hereby provides the following certifications to the Owner and HUD in connection with this Contract, and agrees to include provisions similar to this Section in all contracts with all sub consultants, Subcontractors and Supplier:

a. No federal appropriated funds have been paid or will be paid, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the execution of this Contract

b. If any funds other than federal appropriated funds have been paid or will be paid to any person influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Contract, the Contractor will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

c. The Contractor has not paid or given, and will not pay or give, any third person any money or other consideration for obtaining this Contract, other than normal costs of conducting business and costs of professional services such as architects, engineers and attorneys.

d. Contractor must provide the required certificates regarding their exclusion status and that of their principal employees. No contract may be made with parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Non procurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension," as set forth at 24 C.F.R. Part 24. This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small

purchase threshold may provide the required certification regarding their exclusion status and that of their principal employees.

e. The Contractor will require the language in this Section 4.10.4 (a), (b), and (c): Compliance with Laws be included in the award documents for all subcontracts and all subcontractors will certify and disclose accordingly.

4.10.5 Contractor Certifications – Debarment and Suspension. Contractor is required to have an active registration with the System for Award Management (“SAM”) (<https://www.sam.gov>) pursuant to 2 CFR Part 25. Contractor certifies neither it, nor its principals is presently debarred, suspended proposed for debarment, declared ineligible, or voluntarily excluded from participation in the transaction evidenced by this Contract by any federal department, and agrees to comply with the requirements of 2 CFR 180 and 24 CFR 2424.

4.10.6 Conflicts of Interest. In addition to the conflicts of interest requirements in OMB Circular A-110:

- a. The Contractor shall maintain a written code or standards of conduct that shall govern the performance of its officers, employees or agents engaged in the award and administration of contracts supported by federal funds.
- b. No employee, officer, or agent of the Contractor shall participate in the selection, or in the award, or administration of, a contract supported by federal funds if a conflict of interest, real or apparent would be involved. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a company considered for a contract.
- c. The standards of conduct must provide for disciplinary actions to be applied for violations of such standards by officers, employees, or agents of the Contractor.

The Contractor agrees to comply with the conflict of interest provisions set forth in the City guidelines and procedures, and in 24 C.F.R. 85.36 and 24 C.F.R. 84.42.

4.10.7 Fair Treatment of Workers. The Contractor must keep fully informed of all Federal and State laws, County and City ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the Work. The Contractor must always observe and comply with all such laws, ordinances, regulations, codes, orders, and decrees; this includes, but is not limited to laws and regulations ensuring fair and equal treatment for all employees and against unfair employment practices, including Occupational Safety and Health Act (“**OSHA**”) and the Fair Labor Standards Act (“**FLSA**”). The Contractor must protect and indemnify the Owner, Developer and City, and their representatives against any claim or liability arising from or based on the violation of such, whether by itself or its employees.

4.10.8 Other Federal Laws. The Contractor must comply with all other applicable federal laws, regulations, Executive Orders, standards, orders, requirements and policies, including, but not limited to: Borrower hereby agrees to comply with Executive Order 11246, as amended by Executive Orders 11375, 11478, 12086, and 12107 (3 C.F.R., 1964-1965 Comp., p.339; 3 C.F.R., 1966-1970 Comp., p. 684; 3 C.F.R., 1966-1970 Comp., p. 803; 3 CFR, 1978 Comp., p. 230; and 3 C.F.R. 1978 Comp., p. 264) (EEO) and the implementing regulations at 41 CFR chapter 60, and Section 3 of the Housing

and Urban Development Act of 1968 (12 U.S.C. 1701u) and implementing regulations at 24 CFR part 135, as supplemented in Department of Labor (“**DOL**”) regulations set forth in 41 C.F.R. chapter 60; Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. § 1701u); the Copeland “Anti-Kickback” Act (18 U.S.C. § 874), as supplemented in DOL regulations set forth in 29 C.F.R. part 3; the FLSA of 1938, as amended (29 USC 201, et. seq.); the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7), as supplemented by DOL regulations set forth in 29 C.F.R. part 5; Sections 103 and 107 of the Contract Work Hours, and Safety Standards Act (40 U.S.C. §§ 327-330), as supplemented by DOL regulations set forth in 29 C.F.R. part 5; Section 504 of the Rehabilitation Act of 1973 29 U.S.C. § 700 et. seq.; 24 C.F.R. Part 92.354; HUD Handbook 1344.1; and all laws relating to health and safety and the environment, including, but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et. seq., the Toxic Substances Control Act, 15 U.S.C. § 2601 et. seq.; Section 306 of the Clean Air Act (42 U.S.C. § 1867(h)) and § 7401 et. seq.), Section 508 of the Clean Water Act (33 U.S.C. § 1368), Executive Order 11738, and Environmental Protection Agency regulations set forth in 40 C.F.R. part 15; the National Historic Preservation Act of 1966 (as revised Public Law 89-665, October 15, 1966; U.S.C. 470 et. seq., Section 106); the Resource Conservation and Recovery Act; OSHA; the Energy and Conservation Act (Pub. L. 94-163, 89 Stat. 871); and any similar or implementing state law or regulations, including but not limited to Ariz. Rev. Stat. § 49-201 et. seq.; U.S.C. §§ 327-332; and any similar or implementing state law or regulations, including but not limited to Ariz. Rev. Stat. § 49-201 et. seq.

4.10.9 Special Program Requirements. The Contractor must comply with all federal program requirements, laws and regulations made applicable to the Project using American Rescue Plan Act (“**ARPA**”) or other federal funds. The Contractor must indemnify and hold harmless the City, the Owner and the Owner’s Representative from and against any and all claims, demands, causes of action, proceedings, liability, loss, damage, costs and expenses (including reasonable attorneys’ fees and court costs) arising from or as a result of the Contractor’s failure to strictly comply with such laws or regulations.

4.10.10 State and Local Laws. The Contractor agrees to comply with all applicable state and local laws, regulations, codes, and ordinances including but not limited to the Arizona Antiquities Act (Ariz. Rev. Stat. § 841 et. seq.), and the Arizona State Burial Law (Ariz. Rev. Stat. § 41-844).

If applicable, all contractors, subcontractors and such are required to attend a City specified cultural sensitivity training session at least fourteen (14) calendar days prior to working on the site which will occur prior to the commencement of construction.

4.11 Independent Contractor. The Contractor is and will be an independent contractor. Any provisions in the Contract Documents that appear to give the Owner the right to direct the Contractor as to the details of accomplishing the Work or to exercise a measure of control over the Work means the Contractor must follow the wishes of the Owner as to the results of the Work only. These results must comply with all applicable laws and ordinances.

4.12 Owner’s Right of Cancellation. The Parties hereto acknowledge the Construction Contract is subject to cancellation by the Owner pursuant to the provisions of Section 38-511, Arizona Revised Statutes.

4.13 Survival. All warranties, representations and indemnifications by the Contractor will survive the completion or termination of the Construction Contract.

4.14 Covenants against Contingent Fees. The Contractor warrants no person has been employed or

retained to solicit or secure the Construction Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, and no member of the Phoenix City Council, the Owner's Board of Directors, the Owner, or any employee of the City or Owner has any interest, financially, or otherwise, in the company. For breach or violation of this warrant, the Owner will have the right to annul the Construction Contract without liability or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

4.15 No Waiver. The failure of either Party to enforce any of the provisions of the Contract Documents or to require performance of the other Party of any of the provisions hereof may not be construed to be a waiver of such provisions, nor may it affect the validity of the Contract Documents or any part thereof, or the right of either Party to thereafter enforce each and every provision.

4.16 Notice.

4.16.1 Unless otherwise specifically provided in the Contract Documents, any notice, request, instruction or other document to be given under the Construction Contract by any Party to any other Party must be in writing and must be delivered (i) in person, (ii) by courier, or (iii) mailed by certified mail, postage prepaid, return receipt requested and will be deemed given upon (a) confirmed delivery by hand or standard overnight mail or (b) upon the expiration of three (3) business days after the day mailed by certified mail, as follows:

To Contractor:

(NAME)
(POSITION)
(COMPANY NAME)
(ADDRESS)
Office Phone: _____
Cell Phone: _____
(EMAIL)

With copies to:

N/A

To Owner:

ML I Housing, LLC
251 W. Washington Street, 4th Floor
Phoenix, Arizona 85003-1611
Attn: Director, City of Phoenix Housing Department
Office Phone: (602) 262-6794

With copies to:

Moreland I
Attn: Project Manager
251 W. Washington Street, 4th Floor
Phoenix, AZ 85003
Office Phone: (602) 256-3338

City Attorney

200 W. Washington Street, 13th Floor
Phoenix, AZ 85003

Or, to such other place and with such other copies as either Party may designate as to itself by written notice to the other Party. Rejection, any refusal to accept or the inability to deliver because of changed address of which no notice was given will be deemed to be receipt of the notice as of the date of such rejection, refusal or inability to deliver.

4.16.2 Notices Related to Payment, Bonds. Any notice, request, instruction or other document to be given under the Construction Contract by any Party to any other Party related to payment, bonds or other instrument securing the performance of the Construction Contract, including but not limited to, bid bonds, performance bonds, or payment bonds, must be in writing and must be delivered (i) in person, (ii) by courier, or (iii) mailed by certified mail, postage prepaid, return receipt requested and will be deemed given upon (a) confirmed delivery by hand or standard overnight mail or (b) upon the expiration of three (3) business days after the day mailed by certified mail, as follows:

To Contractor:

(NAME)
(POSITION)
(COMPANY NAME)
(ADDRESS)
Office Phone: _____
Cell Phone: _____
(EMAIL)

With copies to:

(NAME)
(POSITION)
(COMPANY NAME)
(ADDRESS)
Office Phone: _____
Cell Phone: _____
(EMAIL)

To Owner:

ML I Housing, LLC
251 W. Washington Street, 4th Floor
Phoenix, Arizona 85003-1611
Attn: Director, City of Phoenix Housing Department
Office Phone: (602) 262-6794

With a copy to:

Moreland I
Attn: Project Manager
251 W. Washington Street, 4th Floor
Phoenix, AZ 85003
Office Phone: (602) 256-3338

Or, to such other place and with such other copies as either Party may designate as to itself by written notice to the other Party. Rejection, any refusal to accept or the inability to deliver because of changed address of which no notice was given will be deemed to be receipt of the notice as of the date of such rejection, refusal or inability to deliver.

4.17 City Equal Opportunity and Nondiscrimination Requirements.

4.17.1 Required contract language. The following clause is required to appear in all contracts between the Owner and prime contractors and contracts between the prime and subcontractors:

Any contractor in performing under this contract shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, color, religion, sex, sexual orientation, gender identity, gender expression, marital status, national origin, age, or disability nor otherwise commit an unfair employment practice. The contractor shall ensure that applicants are employed, and employees are dealt with during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, gender expression, marital status, national origin, age, or disability. Such action shall include but not be limited to the following: Employment, promotion, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rate of pay or other forms of compensation; and selection for training; including apprenticeship. The contractor further agrees this clause will be incorporated in all subcontracts with all labor organizations furnishing skilled, unskilled and union labor, or who may perform any such labor or services in connection with this contract.

4.17.2 Documentation. Contractors may be required to provide additional documentation to the Housing and/or Equal Opportunity Department verifying a nondiscriminatory employment policy is being utilized.

4.17.3 Monitoring. The Equal Opportunity Department will monitor the employment policies and practices of contractors subject to this article as deemed necessary. The City's Equal Opportunity Department is authorized to conduct on-site compliance reviews of selected Contractors, which may include an audit of personnel and payroll records, if deemed necessary.

4.17.4 Exception for Federal Monies. In the event the federal government is requiring reporting, outreach, or affirmative action goals to establish or maintain eligibility for federal programs; and failure to adhere to these requirements would result in a loss of federal monies to the City, the federal requirements will prevail.

4.18 Federal Nondiscrimination Requirements. Any and all contractors, subcontractors, independent contractors, suppliers, facilitators or any person participating in any program or activity receiving federal financial assistance shall:

- a. Prohibit discrimination based on race, color or national origin under Title VI of the Civil Rights Act of 1964;
- b. Prohibit discrimination on the basis of sex under Title VII of the Civil Rights Act of 1964 and amended by the Equal Employment Opportunity Act of 1972;
- c. Prohibit discrimination on the basis of age under the Age Discrimination Act of 1975;
- d. Prohibit discrimination on the basis of disability under Section 504 of the

Rehabilitation Act of 1973;

- e. Take affirmative action to employ and advance qualified disabled people under Section 503 of the Rehabilitation Act of 1973;
- f. Promote and insure equal opportunity for all persons, without regard to race, color, religion, sex, or national origin under Executive Order 11246 as Amended;
- g. Display posters which summarize the Federal laws prohibiting job discrimination based on race, color, sex, national origin, religion, age, equal pay and disability;
- h. Prohibit discrimination based on disability under the Americans with Disabilities Act of 1990;
- i. Assure all buildings assigned for public use be designed, constructed, and altered to be accessible to and usable by persons with physical disabilities under the Architectural Barriers Act of 1968; and
- j. Avoid maintaining or providing any segregated facilities.

4.19 Federal Equal Opportunity Requirements. (Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.) Equal employment opportunity (“EEO”) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the Contractor’s project activities under this contract. The Equal Opportunity Construction Contractor Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.D. 12101 et. seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this Contract. In the execution of this Contract, Contractor agrees to comply with the following minimum specific requirement activities of EEO. During the performance of this Contract, the Contractor agrees as follows:

4.19.1 The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin, age, and disability. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

4.19.2 The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, national origin, age, and disability.

4.19.3 The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers’ representatives of the Contractor’s commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

- 4.19.4** The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- 4.19.5** The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, documents, papers, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 4.19.6** In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- 4.19.7** The Contractor will include the last sentence in Section 4.19 and the provisions of paragraphs 4.19.1 through 4.19.7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, in the event a Contractor becomes involved in, or is threatened with, litigation by a subcontractor or vendor because of such direction by the administering agency the Contractor may request the United States to enter such litigation to protect the interests of the United States.
- 4.19.8** The Contractor will work with the awarding agency and the Federal Government in carrying out EEO obligations and in their review of its activities under the Contract. The Contractor will accept as its operating policy the following statement:
- “It is the policy of this Company to assure applicants are employed, and employees are treated during employment, without regard to their race, religion, sex, color, national origin, age, or disability. Such action shall include: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training.”
- 4.19.9** The Contractor will designate and make known to the City, Owner and HUD an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active Contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
- 4.19.10** All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment.
- 4.19.11** To ensure the above agreement will be met, the following actions will be taken as a minimum: Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months,

at which time the Contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO officer. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO officer, covering all major aspects of the Contractor's EEO obligations within thirty days following their reporting for duty with the Contractor. All personnel who are engaged in direct recruitment for the Project will be instructed by the EEO officer in the Contractor's procedures for locating and hiring minority employees.

- 4.19.12** Notices and posters identifying the Contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees. The Contractor's EEO policy and procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
- 4.19.13** When advertising for employees, the Contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the Project work force would normally be derived.
- 4.19.14** The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the Contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the Contractor for employment consideration.
- 4.19.15** In the event the Contractor has a valid bargaining agreement providing for exclusive hall referrals, it is expected to observe the provisions of that agreement to the extent the system permits the Contractor's compliance with EEO contract provisions. (The DOL has held that where implementations of such agreements have the effect of discriminating against minorities or women, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended.)
- 4.19.16** The Contractor will encourage its present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.
- 4.19.17** The Contractor must not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
- 4.19.18** The Contractor must notify all potential subcontractors and suppliers of its EEO obligations under this Contract. Disadvantaged business enterprises ("**DBE**") as defined in 49 C.F.R. 23, shall have equal opportunity to compete for and perform subcontracts which the Contractor enters pursuant to this Contract. The Contractor must use its best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. The Contractor must use its best efforts to ensure subcontractor compliance with their EEO obligations.
- 4.19.19** The Contractor must keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the Contract Work and shall be available at reasonable times and places for inspection by authorized representatives. The records kept by the Contractor must document the following:

- The number of minority and non-minority group members and women employed in each work classification on the Project;
- The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
- The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
- The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

4.19.20 Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more. Consummation of this material supply agreement or purchase order, all Parties certify the Contractor does not maintain or provide for its employees any segregated facilities at any of its establishments, and the Contractor does not permit its employees to perform their services at any location under its control, where segregated facilities are maintained. The Contractor agrees a breach of this certification is a violation of the EEO provisions of this Contract. The Contractor further certifies no employee will be denied access to adequate facilities on the basis of sex or disability. As used in this certification, the term “segregated facilities” refers to facilities provided for employees which are segregated by explicit directive, or on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override, (e.g. disabled parking). The Contractor agrees it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

4.19.21 The falsification of any of the above certifications may subject the Contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

4.19.22 The Contractor or subcontractor must make the records required available for inspection, copying, or transcription by authorized representatives of the City, HUD, Owner, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the awarding agency, HUD or DOL, or all may, after written notice to the Contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds of debarment action pursuant to 29 C.F.R. 5.12.

4.20 Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, Recently Separated Veterans, and Other Protected Veterans.

4.20.1 The Contractor will not discriminate against any employee or applicant for employment because he or she is a special disabled veteran, veteran of the Vietnam era, recently separated veteran, or other protected veteran in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals without discrimination based on their status as a special disabled veteran, veteran of the Vietnam era, recently separated veteran, or other protected veteran in all employment practices, including the following:

- i. Recruitment, advertising, and job application procedures;
- ii. Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;
- iii. Rates of pay or any other form of compensation and changes in compensation;
- iv. Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
- v. Leaves of absence, sick leave, or any other leave;
- vi. Fringe benefits available by virtue of employment, whether or not administered by the Contractor;
- vii. Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;
- viii. Activities sponsored by the Contractor including social or recreational programs; and
- ix. Any other term, condition, or privilege of employment.

4.20.2 Contractor agrees to immediately list all employment openings which exist at the time of the execution of this Contract and those which occur during the performance of this Contract, including those not generated by this Contract and including those occurring at an establishment of the Contractor other than the one wherein the Contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local employment service office of the state employment security agency wherein the opening occurs. Further, listing employment openings with the state workforce agency job bank where the opening occurs or with the local employment service delivery system where the opening occurs will satisfy the requirement to list jobs with the appropriate employment service office.

4.20.3 Listing of employment openings with the local employment service office pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicants or from any particular group of job applicants, and nothing herein is intended to relieve the Contractor from any requirements in Executive orders or regulations regarding nondiscrimination in employment.

4.20.4 Whenever Contractor becomes contractually bound to the listing provisions in paragraphs 4.20.2 and 4.20.3, it shall advise the state employment security agency in each state where it has establishments of the name and location of each hiring location in the state, provided, this requirement shall not apply to state and local governmental contractors. As long as the Contractor is contractually bound to these provisions and has so advised the state agency, there is no need to advise the state agency of subsequent contracts. The Contractor may advise the state agency when it is no longer bound by this Contract clause.

4.20.5 The provisions of paragraphs 4.20.2 and 4.20.3 of this Contract do not apply to the listing of employment openings which occur and are filled outside of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

4.20.6 As used in this § 4.20:

- i. All employment openings include all positions except executive and top management, those positions will be filled from within the Contractor's organization, and positions lasting three days or less. This term includes full-time employment, temporary employment of more than three days' duration, and part-time employment.
- ii. Executive and top management means any employee: (a) Whose primary duty consists of the management of the enterprise in which he or she is employed or of a customarily recognized department or subdivision thereof; (b) who customarily and regularly directs the work of two or more other employees therein; (c) who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight; (d) who customarily and regularly exercises discretionary powers; and (e) who does not devote more than 20 percent, or, in the case of an employee of a retail or service establishment who does not devote as much as 40 percent, of his or her hours of work in the work week to activities which are not directly and closely related to the performance of the work described in (a) through (d) of this paragraph 4.20.6. ii.; provided, that (e) of this paragraph 6.ii. shall not apply in the case of an employee who is in sole charge of an independent establishment or a physically separated branch establishment, or who owns at least a 20-percent interest in the enterprise in which he or she is employed.
- iii. Positions will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings which the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of his or her own organization.

4.20.7 The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Vietnam Era Veteran's Readjustment Assistance Act of 1974, as amended ("Act").

4.20.8 In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

- 4.20.9** The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Deputy Assistant Secretary for Federal Contract Compliance, provided by or through the Contracting Officer. Such notices shall state the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, recently separated veterans, or other protected veterans. The Contractor must ensure applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual or may lower the posted notice so it might be read by a person in a wheelchair).
- 4.20.10** The Contractor will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding, the Contractor is bound by the terms of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, and is committed to take affirmative action to employ and advance in employment qualified special disabled veterans, veterans of the Vietnam era, recently separated veterans, and other protected veterans.
- 4.20.11** The Contractor will include the provisions of this clause in every subcontract or purchase order of \$25,000 or more, unless exempted by the rules, regulations, or orders of the Secretary issued pursuant to the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, so such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Deputy Assistant Secretary for Federal Contract Compliance may direct to enforce such provisions, including action for noncompliance.

4.21 Equal Opportunity for Workers with Disabilities

- 4.21.1** The Contractor will not discriminate against any employee or applicant for employment because of physical or mental disability regarding any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with disabilities without discrimination based on their physical or mental disability in all employment practices, including the following:
- i. Recruitment, advertising, and job application procedures;
 - ii. Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;
 - iii. Rates of pay or any other form of compensation and changes in compensation;
 - iv. Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
 - v. Leaves of absence, sick leave, or any other leave;
 - vi. Fringe benefits available by virtue of employment, whether or not administered by the Contractor;
 - vii. Selection and financial support for training, including apprenticeship, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

viii. Activities sponsored by the Contractor including social or recreational programs; and

ix. Any other term, condition, or privilege of employment.

4.21.2 The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the act.

4.21.3 In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973, Pub. L. 93-112 (29 U.S.C. 706 and 793), as amended by sec. 111, Pub. L. 93-516; sec. 103(d)(2)(B), Pub. L. 99-506; sec. 9, Pub. L. 100-259; sec. 512, Pub. L. 101-336; and secs. 102 and 505, Pub. L. 102-569.

4.21.4 The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, provided by or through the Contracting Officer. Such notices shall state the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants with disabilities. The Contractor must ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual or may lower the posted notice so it might be read by a person in a wheelchair).

4.21.5 Contractor will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding, the Contractor is bound by the terms of § 503 of the Rehabilitation Act of 1973, as amended, and is committed to take affirmative action to employ and advance in employment individuals with physical or mental disabilities.

4.21.6 Contractor will include the provisions of this clause in every subcontract or purchase order in excess of \$10,000, unless exempted by the rules, regulations, or orders of the Secretary issued pursuant to § 503 of the Rehabilitation Act of 1973, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Deputy Assistant Secretary for Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

4.22 Federal Affirmative Action Requirements. The "Standard Federal Equal Employment Opportunity Construction Contract Specifications" which are found at 41 CFR 60-4.3 are incorporated herein by reference, and Contractor must incorporate those provisions in all subcontracts. The specifications describe the affirmative action obligations and set forth the specific affirmative action steps the construction contractor must implement in order to make a good faith effort to achieve the goals for minority and female participation that were listed in the bid solicitation. Additional information regarding OFCCP Compliance may be found at:

www.dol.gov/esa/OFCCP or, at 1-800-397-6251.

4.23 Affirmative Action for Handicapped Workers (Section 503, Rehabilitation Act of 1973).

4.23.1 The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped

individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

- 4.23.2 The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973.
- 4.23.3 In the event of the Contractor's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973.
- 4.23.4 The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the City provided by or through the Contracting Officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
- 4.23.5. The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, the Contractor is bound by the terms of § 503 of Rehabilitation Act of 1973 and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.
- 4.23.6. The Contractor will include the provisions of this clause in every subcontract or issued pursuant to § 503 of the Rehabilitation Act of 1973, so such provisions will be binding upon each subcontractor with respect to any subcontract or purchase order as the Director of the Office of Federal contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

4.24 Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms. Pursuant to national and City policy to award a fair share of contracts to small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises, Contractor shall take affirmative steps to assure that small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises are utilized when possible as sources of supplies, equipment, construction, and services. Such affirmative steps shall include the following:

1. Include qualified small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises on solicitation lists.
2. Assure that small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises are solicited whenever they are potential sources.
3. When economically feasible, divide total requirements into small tasks or quantities to permit maximum participation from small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises.
4. Where the requirement permits, establish delivery schedules which encourage participation by small and minority businesses, women's business enterprises, and Disadvantaged Business Enterprises.

5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce and the Community Services Administration as required.
6. Comply with the applicable requirements of the Small and Disadvantaged Business Enterprise Policy Plan for the City of Phoenix.
7. Include affirmative steps, one through six in any subcontract.

Article 5 – Additional Terms - Special Provisions

- 5.1 This Section is Intentionally Left Blank.**
- 5.2 Temporary Certificate of Occupancy / Completion / Final Inspection.** To facilitate lease-up of the Property, if a Certificate of Occupancy / Completion / Final Inspection will be required for all or any portion of the Project, Owner may require Contractor to apply to PDD for a Temporary Certificate of Occupancy / Completion / Final Inspection at the earliest possible opportunity, if applicable, in keeping with guidance published by PDD. Obtaining a Temporary Certificate of Occupancy / Completion / Final Inspection will not relieve the Contractor of its obligation to substantially complete the Project in accordance with the Construction Schedule.
- 5.3 Davis-Bacon Act Compliance.** Contractor is required by several Contract provisions to comply with the Davis-Bacon Act and with the applicable Wage Decision. Owner has included in the Contract Documents the Wage Decision applicable at the time the Invitation for Bids was issued. A new or different Wage Decision may become applicable between the date the Invitation for Bids is issued and the date on which the Notice to Proceed is issued. Information about modifications to the Wage Decision is published in the Federal Register. To facilitate preparation of a correct bid, Contractor is encouraged to check the Federal Register periodically.
- 5.4 Contract Work Hours and Safety Standards Act, as amended (40 USC 327-333).** Contractor is required to pay mechanics and laborers employed on federally assisted construction jobs time and one-half for work in excess of 40 hours per week. Contractor will be required to pay liquidated damages for any and all violations.
- 5.5 Copeland (Anti-Kickback) Act (40 USC 276c).** Contractor acknowledges it is a criminal offense to induce anyone employed on a federally assisted project to relinquish any compensation to which he/she is entitled and requires all contractors to submit weekly payrolls and statements of compliance.
- 5.6 Section 3 of the Housing and Urban Development Act of 1968, as amended.** Contractor is required to provide opportunities for training and employment to low-income persons residing in the program service area to the greatest extent feasible and consistent with federal, state, and local laws and regulations. Contracts must be awarded to businesses that provide economic opportunities for low and very low-income persons residing in the area. Further guidance regarding this requirement is set forth in the Brochure titled "Section 3 for Contractors," Document S3 in the IFB.
- 5.7 Section 504 of the Rehabilitation Act of 1973.** Contractor must not exclude an otherwise qualified individual solely by reason of his or her disability from participation (including employment) and the individual must not be subjected to discrimination under any program or activity receiving Federal Funding assistance.
- 5.8 General Reporting Requirements.** Contractor must complete and submit all reports in such form

and according to such schedule, as may be required by the State of Arizona, the City, or HUD. Further, Contractor agrees to require any subcontractors to submit reports that may be required and to incorporate language requiring same into its agreement with subcontractors.

5.9. Project Record Documents.

5.9.1 During the construction period, the Contractor must maintain at the jobsite a set of blueline or blackline prints of the Construction Documents, Drawings and Shop Drawings (if any) for Project Record Document purposes.

5.9.2 The Contractor must mark these Drawings, if any, and/or the Construction Documents to indicate the actual installation where the installation varies appreciably from the original Construction Documents. Contractor shall give particular attention to information on concealed elements, which would be difficult to identify or measure and record later. Items required to be marked, if applicable, include but are not limited to:

- Dimensional changes to the Drawings.
- Revisions to details shown on Drawings.
- Depths of foundations below first floor.
- Locations and depths of underground utilities.
- Revisions to routing of piping and conduits.
- Revisions to electrical circuitry.
- Actual equipment locations.
- Duct size and routing.
- Locations of concealed internal utilities.
- Changes made by Change Order.
- Details not on original Contract Drawings.

5.9.3 Mark completely and accurately Project Record Drawing prints of Construction Documents or Shop Drawings, whichever is the most capable of indicating the actual physical condition. Where Shop Drawings are marked, show cross-reference on the Construction Documents location.

5.9.4 Mark Project Record Drawings sets with red erasable colored pencil.

5.9.5 Note RFI Numbers, ASI Numbers and Change Order numbers, etc., as required to identify the source of the change to the Construction Documents or Shop Drawings.

5.9.6 Contractor must as a condition of Substantial Completion, submit Project Record Drawing and Shop Drawings prints to the Owner or its representative for review and comment.

5.9.7 Upon receipt of the reviewed Project Record Drawings from the Owner, the Contractor must correct any deficiencies and/or omissions to the Drawings and prepare the following for submission to the Owner within 14 Days:

5.9.7.1 A complete set of electronic Project Record Drawings prepared in a similar format to and compatible with the original Construction Documents provided by the Owner to the Contractor. The Owner's Representative will provide files of the original Construction Documents to the Contractor for the use of preparing these final Project Record Drawings at no cost to the Contractor. Each drawing must be clearly marked with "As-Built Document."

5.9.7.2 The original copy of the Project Record Drawings (redline mark-ups).

- 5.9.7.3 The Contractor must, as a condition of Substantial Completion, submit Project Record Drawing and Shop Drawings prints to the Owner or its representative for review and comment.
- 5.9.7.4 Upon receipt of the reviewed Project Record Drawings from the Owner, the Contractor must correct any deficiencies and/or omissions to the drawings and prepare the following for submission to the Owner within fourteen (14) Calendar Days.
- 5.9.7.5 A complete set of electronic Project Record Drawings prepared in a similar format to and compatible with the original Construction Documents provided by the Owner to the Contractor. The Owner's Representative will provide files of the original Construction Documents to the Contractor for the use of preparing these final Project Record Drawings at no cost to the Contractor. Each drawing must be clearly marked with "As-Built Document."
- 5.9.7.6 The original copy of the Project Record Drawings (redline mark-ups).

5.10 Construction Schedule; Liquidated Damages. Contractor acknowledges this Contract requires Contractor to commence and complete performance of the Work according to the Construction Schedule. (**Exhibit C**). The Construction Schedule is the same whether or not the Contract includes any Alternates. Contractor further acknowledges and agrees Contractor's failure to strictly adhere to the Construction Schedule will result in assessment of liquidated damages as provided in General Conditions § 9.8.6.

5.11 Availability and Use of Funds. Contractor understands and acknowledges any and all payment of funds or the continuation thereof is contingent upon Owner's receipt of Project funds. Contractor agrees not to undertake or make progress toward any activity using HUD funds that will lead to the development of such activities as casinos or other gambling establishments, aquariums, zoos, golf courses, swimming pools, or any other activity specifically prohibited by HUD.

5.12 Federal, State and Local Tax Obligations. By submission of a proposal, Contractor and subcontractors assert and self-certify all federal, state and local tax obligations have been or will be satisfied prior to receiving recovery funds.

5.13 Lead Based Paint Encapsulation and Asbestos Remediation. Owner has obtained certain reports regarding Owner's prior investigations as to lead based paint and asbestos, which should be carefully reviewed by Contractor before proceeding with the Work. Removal of asbestos from the site may not be required, but Contractor should make its own assessment of the requirements applicable to the handling and remediation of asbestos. Contractor must comply with the requirements of applicable federal, state, and local laws regarding abatement of lead based paint and maintenance of safe work practices, including but not limited to the Lead Based Paint Poisoning Prevention Act, 42 U.S.C. §§ 4821-4846, the Residential Lead-Based Paint Hazard Reduction Act of 1992, 42 U.S.C. § 4851, et seq., and the regulations implementing such acts ("**Lead Safe Housing Rule**") at 24 C.F.R. Part 35, including 24 C.F.R. § 35, subparts A, B, J, L, and R. Contractor must comply with the requirements of applicable federal, state, and local laws regarding abatement of asbestos and associated safe work practices, including the Clean Air Act of 1970, and the Asbestos NESHAP Regulations for Renovation and Demolition at 40 C.F.R. Part 61, Subpart M, and the Toxic Substances Control Act, 15 U.S.C. § 2601, and the regulations implementing that act, 40 C.F.R. Part 763, and the OSHA standards applicable to asbestos remediation, including 29 C.F.R. Part 1910.

5.14 Asbestos Free Certificate. Contractor will not be entitled to receive final payment until Contractor

has submitted a certificate in the form prescribed by the Owner certifying all materials used in the Project are 100% free of asbestos.

5.15 Energy Efficiency. The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163) for the State in which the Work under the Contract is performed. The Contractor shall also incorporate and comply with the LEED requirements outlined in the Scope of Work/Product Specifications to achieve certification and satisfy Project requirements. Additional information pertaining to the LEED requirements can be found in the Scope of Work/ Product Specifications.

5.16 Termination for Convenience.

5.16.1 The Owner may terminate this Contract in whole, or in part, whenever the Owner determines such termination is in the best interest of the Owner. Any such termination must be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the Contract is terminated, and the date upon which such termination becomes effective.

5.16.2 If the performance of the Work is terminated, either in whole or in part, the Owner will be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the Owner of a properly presented claim setting out in detail: (1) the total cost of the Work performed to date of termination less the total amount of Contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for Work performed and materials and supplies delivered to the site, payment for which has not been made by the Owner to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the Work already performed until the Owner or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the Owner; and (5) an amount constituting a reasonable profit on the value of the Work performed by the Contractor.

5.16.3 The Owner will act on the Contractor's claim within sixty (60) days of receipt of the Contractor's claim unless otherwise indicated.

5.16.4 Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of the Construction Contract.

5.17 Interest of Members of Congress. No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this Contract or to any benefit that may arise there from.

5.18 Interest of Members, Officers, or Employees and Former Members, Officers, or Employees. No member, officer, or employee of the City or Owner, and no other public official of the City or the State of Arizona, who exercises any functions or responsibilities with respect to the Project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

5.19 Royalties and Patents. The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof; except the Owner will be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe any design, process or product specified is an infringement of a patent; the Contractor shall promptly notify the Owner. Failure to give such notice will make the Contractor responsible for resultant loss.

5.20 Procurement of Recovered Materials.

5.20.1 In accordance with § 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (“EPA”) at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor must procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.

5.20.2 Paragraph 5.23.1 of this clause shall apply to items purchased under this Contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this Contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

5.21 Warranty of Title. The Contractor warrants good title to all materials, supplies, and equipment incorporated in the Work and agrees to deliver the Property together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the Property or anything appurtenant thereto.

5.22 Warranty of Construction.

5.22.1 In addition to any other warranties in this Contract, the Contractor warrants Work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of two years from the date of final acceptance of the Work as required and noted by the Arizona Registrar of Contractors minimum workmanship standards. If the Owner takes possession of any part of the Work before final acceptance, this warranty shall continue for a period of (two years unless otherwise indicated) from the date the Owner takes possession.

5.22.2 The Contractor must remedy, at the Contractor’s expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor’s expense, any damage to real or personal property owned or controlled by Owner when the damage is the result of (1) Contractor’s failure to conform to Contract requirements; or (2) any defects of equipment, material, workmanship or design furnished by the Contractor.

5.22.3 The Contractor must restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor’s warranty with respect to work repaired or replaced will run

for (two years unless otherwise indicated) from the date of repair or replacement.

- 5.22.4** The Owner must notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- 5.22.5** If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- 5.22.6** With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for Work performed and materials furnished under this Contract, the Contractor must: (1) obtain all warranties that would be given in normal commercial practice; (2) require all warranties to be executed in writing, for the benefit of the Owner; and, (3) enforce all warranties for the benefit of the Owner.
- 5.22.7** In the event Contractor's warranty under paragraph 5.22.1 has expired, Owner may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.
- 5.23 Right in Data and Patent Rights (Ownership and Proprietary Interest).** Owner will have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials, and documents discovered or produced by Contractor pursuant to the terms of this Contract, including, but not limited to, reports, memoranda or letters concerning the research and reporting tasks of the Contract.
- 5.24 Fly Ash Certification.** The undersigned is fully aware this Contract is wholly or partially federally funded, and further by submission of this bid certifies the percentage of fly ash in the concrete or cement is or will be consistent with the amounts required by the EPA Guidelines and/or Code of Federal Register 9 CFR) for federal procurement of cement and concrete containing fly ash.
- 5.25 Sanctions.** If Contractor fails or refuses to comply with the provisions set forth herein, Owner may take any or all the following actions: cancel, terminate or suspend in whole or in any part the Contract, or refrain from extending any further funds to the Contractor until such time as the Contractor is in full compliance.
- 5.26 Site Access.** Contractor agrees to work with Owner in an effort to provide site access in the event of early lease up.
- 5.27 Utility Coordination.** Contractor is required to coordinate utility infrastructure work with all associated utility entities. Coordination with the utility entities is critical in preventing unnecessary delays, conflicts, and added project expense. The utilities may require special provisions due to the proximity of existing equipment on or adjacent to the site. Pot-holing and/or monitoring of exposed utility lines may be required. Contractor is responsible for contacting the utilities for their construction requirements. The utilities shall be notified immediately of any damage to their equipment.
- 5.28 Arizona Public Service (APS) Public Safety Packet.** Contractor understands APS requires Contractor to read the APS Public Safety Packet which includes an introductory Safety Letter, Applicant Safety Acknowledgement Form (for signature) and Public Safety Brochure. Owner will provide this information to Contractor prior to commencement of construction.
- 5.29 Access to Records.** Owner, HUD, the Comptroller General of the United States, the Government Accounting Office or any of their duly authorized representatives shall have access to any books, documents, papers and records of the Contractor which are pertinent to any activity performed under this Contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor shall keep and maintain such books, documents, papers, and records in accordance with 2 CFR 200.333 et. seq. and for a period of at least five (5) years after the expiration or

termination of this Contract or three (3) years after the submission of the annual performance and evaluation report as prescribed in 24 CFR 91.520. The Contractor shall permit independent auditors access to its records and financial statements as necessary to comply with federal audit requirements.

5.30 BYRD Anti-Lobbying Certification (31 U.S.C. 1351). In all contracts over \$100,000 Contractor hereby certifies, to the best of its knowledge and belief, that:

5.30.1 No Federal appropriated funds have been paid or will be paid, by or on behalf of Contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of and Federal contract, grant, loan, or cooperative agreement.

5.30.2 Each Contractor tier must certify to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization or influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352.

5.30.3 If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions. Such disclosures are forwarded from tier to tier up to the non-Federal award.

5.31 Clean Air Act and Federal Water Pollution Control Act. Applicable to all contracts above \$150,000. Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 USC 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 USC 1251-1387). Violations must be reported to the Owner, HUD, and the San Francisco Regional Office of the Environmental Protection Agency ("**EPA**").

5.32 Procurement of Recovered Materials.

5.32.1 In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless Contractor determines such items: (1) are not reasonably available in a reasonable time period; (2) fail to meet reasonable performance standards, which shall be determined the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item, or (3) are only available at an unreasonable price.

5.32.2 Paragraph 5.32.1 of this Section shall apply to items purchased under this Contract where: (1) Contractor purchases in excess of \$10,000 of the item under this Contract; or (2) during the preceding Federal fiscal year, Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

5.33 Contractor Employee Whistleblower Rights and Requirements to Inform Employees of Whistleblower Rights (APR 2014).

5.33.1 This contract and employees working on this contract will be subject to the whistleblower rights and remedies in the pilot program on Contractor employee whistleblower protections established at 41 U.S.C. 4712 by section 828 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112-239) and FAR 3.908.

5.33.2 The Contractor shall inform its employees in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. 4712, as described in section 3.908 of the Federal Acquisition Regulation.

5.33.3 The Contractor shall insert the substance of this clause, including this paragraph (c), in all subcontracts over the simplified acquisition threshold.

5.34 Audit. The Contractor shall submit a financial audit within ninety (90) days after the close of any Contractor fiscal year in which the aggregate of federal grant funds expended from all sources both inclusive and exclusive of this agreement is Seven Hundred-Fifty Thousand Dollars (\$750,000) or more. The audit shall be in conformance with the audit requirements of 2 CFR Part 200.501. No funds resulting from this Contract shall be expended for the purpose of an audit without the prior written consent of the City. The decision to provide such consent shall be in the sole discretion of the City.

5.35 Drug-Free Workplace Act of 1988. Contractor must comply with drug-free workplace requirements in Subpart B of 2 CFR 2429, which adopts the government-wide implementation (2 CFR part 182) of sections 5152-5158 of the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D; 41 U.S.C. 701-707).

Article 6 – Insurance Requirements

6.1 INDEMNIFICATION OF OWNER AGAINST LIABILITY

6.1.1 The Contractor agrees to indemnify, save, and hold harmless ML I Housing LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City, and their respective members, officers and employees, (LENDER) _____ its successors and assigns, (INVESTOR) _____, any and all subsidiaries, as their interest may appear (ATIMA), its successors and assigns (ISAOA) , their officers, agents and employees, and any jurisdiction or agency issuing permits for any work included in the Project, their officers, agents and employees, hereinafter referred to as Indemnitee, from all suits and claims, including attorney's fees and cost of litigation, actions, low, damage, expense, cost or claims of any character or any nature arising out of the work done in fulfillment of the terms of this Contract or on account of any act, claim or amount arising or recovered under workers' compensation law or arising out of the failure of the Contractor to conform to any statutes, ordinances, regulation, law or court decree. It is agreed the Contractor will be responsible for primary loss investigation, defense, and judgment costs where this contract of indemnity applies. In consideration of the award of this Contract, the Contractor agrees to waive all rights of subrogation against the City, its officers, officials, agents and employees for losses arising from the work performed by the Contractor for ML I Housing, LLC.

6.1.2. Contractor ("Indemnitor") shall indemnify, defend, save and hold harmless ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City, and their respective members, officers, officials, agents and employees, (LENDER) _____ its successors and assigns, (INVESTOR) _____, any and all subsidiaries, as their interest may appear, (ATIMA), its successors and assigns (ISAOA) (hereinafter referred to as "Indemnitee") from and

against any and all claims, actions, liabilities, damages, losses, or expenses (including court costs, attorneys' fees, and costs of claim processing, investigation and litigation) (hereinafter referred to as "**Claims**") for bodily injury or personal injury (including death), or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of Indemnitor or any of its owners, officers, directors, agents, employees or subcontractors. This indemnity includes any claim or amount arising out of or recovered under the Workers' Compensation Law or arising out of the failure of such contractor to conform to any federal, state, or local law, statute, ordinance, rule, regulation or court decree. It is the specific intention of the Parties that the Indemnitee must, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of the Indemnitee, be indemnified by Indemnitor from and against any and all Claims. It is agreed Indemnitor will be responsible for primary loss investigation, defense, and judgment costs where this indemnification is applicable. In consideration of the award of this Contract, the Contractor agrees to waive all rights of subrogation against the City, its officers, officials, agents, and employees for losses arising from the Work performed by Contractor for Owner.

Indemnitor agrees to indemnify, defend, save and hold harmless Indemnitee from and against any and all demands, claims, complaints, losses, damages, actions or causes of action, assessments, liabilities, costs or expenses including, without limitation, interest, penalties and reasonable attorney's fees and reasonable expenses of investigation and remedial work (including investigations and remediation by engineers, environmental consultants and similar technical personnel) asserted against or imposed upon or incurred by Indemnitee arising in connection with, or resulting from, any Environmental Law, including but not limited to, any use, generation, storage, spill, release, discharge or disposal of any Hazardous Substance that is now or comes to be located on , at, about or under the Property or because of, or in connection with, the violation of any Environmental Law (hereinafter collectively referred to as "**Environmental Claims**") to the extent such Environmental Claims are caused by the Fault of the Indemnitor, its officers, officials, agents, employees, contractors, volunteers, tenants, subtenants, invitees or licensees. As used in this section: (a) "Hazardous Substances" are those substances defined as toxic or hazardous substances, pollutants, or wastes by Environmental Law and the following substances: gasoline, kerosene, or other petroleum products, toxic pesticides and herbicides, volatile solvents, materials containing asbestos or formaldehyde, and radioactive materials; (b) "Environmental Law" means federal, state or local laws and regulations, including common law, relating to health, safety, or environmental protection; and (c) "Fault" means those non-culpable acts or omissions giving rise to strict liability under any Environmental Law pertaining to Hazardous Substances, as well as culpable conduct (negligence or willful misconduct). In consideration of the award of this Contract, Contractor agrees to waive all rights of subrogation against Indemnitee.

6.2 CONTRACTOR'S INSURANCE REQUIREMENTS

Contractor and subcontractors shall procure and maintain until all of their obligations have been discharged, including any warranty periods under this Contract are satisfied, insurance against Claims which may arise from or in connection with the performance of the Work hereunder by the Contractor, its agents, representatives, employees or subcontractors. These insurance requirements are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract.

Owner in no way warrants the minimum limits stated in this section are sufficient to protect Contractor from liabilities that might arise out of the performance of the Work under this Contract by the Contractor, its agents, representatives, employees, or subcontractors. Contractor is free to purchase such additional insurance as may be determined necessary.

I. GENERAL REQUIREMENTS APPLICABLE TO ALL COVERAGES UNLESS OTHERWISE STATED.

A. Minimum Scope and Limits of Insurance

Contractor shall provide coverage with limits of liability not less than those stated below. An excess

liability policy or umbrella liability policy may be used to meet the minimum liability requirements provided the coverage is written on a "following form" basis.

B. Adjustments to Insurance Requirements. The insurance and indemnification requirements specified in Sections 6.1 and 6.2 are minimum required coverages. Owner reserves the right to require Contractor to provide different or additional insurance coverages if such additional coverage is required by a Project Lender and/or Investor.

C. Additional Insurance Requirements: Required insurance policies shall include, or be endorsed to include, the following provisions:

1. On insurance policies where ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, and the City, and their respective members, officers, officials, agents and employees, (LENDER) _____ its successors and assigns, (INVESTOR) _____, any and all subsidiaries, as their interest may appear, (ATIMA), its successors and assigns (ISAOA) are named as additional insureds, they shall be additional insureds to the full limits of liability purchased by the Contractor even if those limits of liability are in excess of those required by this Master Contract Document.

2. The Contractors' insurance coverage shall be primary insurance and non-contributory with respect to all other available sources.

3. For coverage applicable to (LENDER) _____ its successors and assigns, (INVESTOR) _____ the Certificate Holder's rights of direct notice must be listed as (INVESTOR) _____ and each Certificate or Binder must set forth the name of a producer and his or her telephone number.

4. If the "Named Insured" on any insurance policy is different from the name of the Project, then the Certificate of Insurance/Evidence of Property should state, in the "Description" section, both: (1) the name of the Project; and (2) the name of the operating entity that owns the Project (ML I Housing, LLC).

5. The property address/location must be clearly stated on each Certificate/Evidence.

D. Notice of Cancellation: All Project insurance policies must have a thirty (30) days' notice of cancellation, except for non-payment of premium, in which case, ten (10) days' notice must be given. For each insurance policy required by the insurance provisions of this Contract, Contractor must provide to Owner, within 2 business days of receipt, a notice if a policy is suspended, voided or cancelled for any reason. Such notice shall be mailed, emailed, or hand delivered to the Owner c/o City of Phoenix Housing Department, 251 West Washington St., 4th Floor, Phoenix, AZ 85003, Attn: Project Manager (for ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation and the City of Phoenix), and to (LENDER) _____, (INVESTOR) _____, at the addresses stated in Section I (F) below.

E. Acceptability of Insurers: Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Arizona and with an "A.M. Best" rating of not less than A/VIII. Owner in no way warrants the above-required minimum insurer rating is sufficient to protect the Contractor and its subcontractors from potential insurer insolvency.

F. Verification of Coverage: Contractor shall furnish the Owner, (INVESTOR) _____, and (LENDER) _____ with certificates of insurance (ACORD form or equivalent approved by the Owner) as required by this Master Contract Document. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Policy numbers and effective dates must be evidenced on the certificates prior to closing.

All certificates and any required endorsements are to be received and approved by the Owner, (INVESTOR)_____, and (LENDER)_____. before work commences. Each insurance policy required by this Master Contract Document must be in effect at or prior to commencement of Work under this Master Contract Document and remain in effect for the duration of the Project. Failure to maintain the insurance policies as required by this Master Contract Document or to provide evidence of renewal is a material breach of contract.

All certificates required by this Master Contract Document shall be sent directly to the Project Manager (for ML I Housing, LLC) and to (INVESTOR)_____, and (LENDER)_____, at the addresses stated below. The Project/contract number and project description shall be noted on the certificate of insurance. Owner reserves the right to require complete, certified copies of all insurance policies required by this Master Contract Document at any time. DO **NOT** SEND CERTIFICATES OF INSURANCE TO THE CITY OF PHOENIX RISK MANAGEMENT DIVISION.

Certificates shall be sent to the following addresses:

(LENDER NAME)
(LENDER ADDRESS)

(INVESTOR NAME)
(INVESTOR ADDRESS)

Care of (INVESTOR ATTORNEY NAME)
ML I Housing, LLC
Project Manager
251 W. Washington St., 4th Floor
Phoenix, AZ 85003

G. **Subcontractors:** Subcontractor's policy shall include bodily injury, broad form contractual liability, independent subcontractor's liability, broad form property damage liability, personal and advertising liability, products and completed operations (coverage to apply for two years following completion of construction), XCU coverage, and waiver of subrogation against all parties named Additional Insured and shall carry limits as follows.

Per Occurrence	\$1,000,000
Aggregate	\$2,000,000

Contractor shall furnish to Owner separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to the minimum requirements identified above.

Subcontractor's liability policies shall name ML I Housing, LLC as an additional assured with respect to liability arising out of the activities performed by, or on behalf of, the Subcontractor, including completed operations.

H. **Approval:** Any modification or variation from the insurance requirements in this Master Contract Document must have approval of the City's Law Department, whose decision is final. Such action will not require a formal contract amendment, but may be made by administrative action.

I. **Blanket Policies:** A schedule of values of all properties covered under the policy must be provided with the blanket policy.

J. **Third Party Review:** Insurance policies may be subject to third party review at the third party's expense.

K. **Deductible:** The deductible on insurance policies shall not exceed \$5,000.

II. TYPES OF COVERAGES REQUIRED FOR SITE PREPARATION AND CONSTRUCTION PHASE:

During the design and construction phase of the Project, the Contractor shall maintain insurance coverage and limits as described below. The insurance requirements may be satisfied with a Contractor Controlled Insurance Program ("**CCIP**"); however, those coverage and/or limits not provided by the CCIP must be provided by the Contractor.

A.. Builders' Risk Insurance

Policy must be in an amount equal to the initial Contract Amount plus additional coverage equal to Contract Amount for all subsequent change orders.

- The City of Phoenix, ML I Housing LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the Contractor and subcontractors, must be named insureds on the policy.
- Special Causes of Loss coverage must be written on a replacement cost basis and must include coverage for soft costs, flood and earth movement.
- Policy must be maintained until whichever of the following must first occur: (1) final payment has been made; or, (2) until no person or entity, other than the City of Phoenix, has an insurable interest in the property required to be covered.
- Policy must be endorsed such that the insurance must not be canceled or lapse because of any partial use or occupancy by the City.
- Policy must provide coverage from the time any covered property becomes the responsibility of the Contractor, and continue without interruption during construction, renovation, or installation, including any time during which the covered property is being transported to the construction installation site, or awaiting installation, whether on or off site.
- Policy must contain a waiver of subrogation against the City of Phoenix.
- Contractor is responsible for the payment of all policy deductibles.

B. Commercial General Liability – Occurrence Form

Contractor's policy shall include bodily injury, broad form contractual liability, independent subcontractor's liability, broad form property damage liability, personal and advertising liability, products and completed operations (coverage to apply for two years following completion of construction), XCU coverage, and waiver of subrogation against all parties named Additional Insured, and shall carry limits as follows.

- | | |
|---|-------------|
| • General Aggregate | \$5,000,000 |
| • Products/Completed Operations Aggregate | \$5,000,000 |

- Contractual Liability \$1,000,000
- Personal and Advertising Injury \$5,000,000
- Each Occurrence \$5,000,000
- Fire Damage \$50,000

Maximum \$5,000 deductible or retention

XCU (Explosion/Collapse/Underground)

General Liability Limits must apply on a "Per Location" basis (each location separately). Please be sure to check the "LOC" box indicating such. Should the limits apply on a "Policy" or shared basis a schedule of locations must be produced and additional liability may be required.

1. Contractor's liability policies shall be endorsed to include the following additional insured language: "ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, (INVESTOR)_____, (LENDER)_____, any and all subsidiaries, as their interest may appear (ATIMA) its successors and assigns (ISAOA) are named as additional insureds with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including completed operations."

2. The policy must include coverage for pollution arising from products liability for environmental control equipment, manufacturers and distributors.

C. Automobile Liability

Any Contractor using an owned, hired, or non-owned vehicle to perform services under this phase of this Master Contract Document shall provide insurance including bodily injury and property damage coverage.

Combined Single Limit (CSL) \$1,000,000

1. The policy shall be endorsed to include the following additional insured language: "ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, (INVESTOR)_____, (LENDER)_____, any and all subsidiaries, as their interest may appear (ATIMA), its successors and assigns (ISAOA) shall be named as additional insureds."

D. Worker's Compensation and Employers' Liability

If Contractor has employees, evidence of Workers' Compensation insurance as described shall be provided. All Contractors providing services during the site preparation and construction phase must also provide Workers' Compensation insurance.

Workers' Compensation: Statutory

Employers' Liability:

Each Accident	\$1,000,000
Disease – Each Employee	\$100,000
Disease – Policy Limit	\$500,000

1. Policy shall contain a waiver of subrogation in favor of ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, (INVESTOR)_____, (LENDER)_____, any and all subsidiaries, as their interest may appear (ATIMA), its successors and assigns (ISAOA).

2. This requirement shall not apply when a Contractor is exempt under Ariz. Rev. Stat. 23-901, AND when such Contractor executes the appropriate sole proprietor waiver form.

E. Professional Liability (Errors and Omissions Liability)

The policy must cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this Contract.

Each Claim	\$1,000,000
Annual Aggregate	\$1,000,000

1. In the event the professional liability insurance required by this Master Contract Document is written on a claims-made basis, Contractor warrants any retroactive date under the policy must precede the effective date of this Master Contract Document ; and either continuous coverage will be maintained or an extended discovery period will be exercised for a period of two (2) years beginning at the time work under this Contract is completed.

F. Contractor’s Pollution Liability (Including Errors and Omissions)

For losses caused by pollution conditions arising from the operations performed by or on behalf of the Contractor as described in the Scope of Services section of this Contract.

Per Occurrence	\$1,000,000
General Aggregate	\$2,000,000

1. The policy shall be written on an “occurrence” basis with no sunset clause or if written on a “claims-made” basis, it must be maintained for a period of not less than 8 years with the retroactive date to be prior to or held constant with the date of this Contract.
2. Such insurance must name ML I Housing, LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, and its subsidiaries and affiliates, (INVESTOR)_____, (LENDER)_____, any and all subsidiaries, as their interest may appear (ATIMA), its successors and assigns (ISAOA) as Additional Insureds with respect to liability arising out of the activities performed by, or on behalf of the Contractor.
3. The policy must provide coverage for pollution conditions that arise from the operations of the Contractor described under the scope of services of the Contract.
The policy shall include the following coverage:
 - a. Bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death and medical monitoring costs.
 - b. Property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, cleanup costs, and the loss if use of tangible property that has not been physically injured or destroyed including diminution in value.
 - c. Environmental damage including physical damage to soil, surface water or groundwater, or plant or animal life, caused by Pollution Conditions and giving rise to Clean-Up Costs.
 - d. Defense including costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensation damages.
 - e. Asbestos or lead – no exclusion.
 - f. Mold coverage
 - g. Transportation cargo

- h. Non-Owned Disposal Site coverage
- 4. Should any of the work involve treatment, storage, or disposal of hazardous wastes from the job site, Contractor must furnish an insurance certificate from the designated disposal facility establishing the facility operator maintains current Pollution Legal Liability Insurance in the amount of not less than \$1,000,000 per occurrence/ \$2,000,000 annual aggregate and will cover sudden and gradual pollution losses arising from the facility, associated with work performed under this Contract.

G. Excess/Umbrella Liability

Contractor shall provide Excess/Umbrella Liability insurance in the amount stated below:

	Minimum Limit
Per Occurrence	\$10,000,000
General Aggregate	\$10,000,000

Such insurance must name ML I Housing LLC, Moreland I Housing Corporation, Phoenix Housing Development Corporation, the City of Phoenix, and its subsidiaries and affiliates, (INVESTOR)_____, (LENDER)_____, any and all subsidiaries, as their interest may appear (ATIMA), its successors and assigns (ISAOA) as Additional Insureds.

6.3 Adjustments to Insurance Requirements. The insurance and indemnification requirements specified in General Conditions §§ 11.1 and 11.2 are minimum required coverages. Owner reserves the right to require Contractor to provide different or additional insurance coverages if such additional coverage is required by a Project Lender and/or Investor.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, two (2) identical counterparts of this Master Contract Document each of which will for all purposes be deemed an original thereof, have been duly executed by the Parties herein above named, on the date and year first above written.

The Contractor agrees that the Construction Contract, as awarded, is for the stated Work and understands that payment for the total work will be made on the basis of the indicated amount(s), per the terms and conditions of the Construction Contract.

CONTRACTOR:

By: _____

Name: _____

Title: _____

Arizona License Number: _____

Date: _____

OWNER:

ML I Housing, LLC, an Arizona limited liability company

BY: Moreland I Housing Corporation, an Arizona non-profit corporation, its managing member

By: _____

Date: _____

Attachments:

- Exhibit A, Legal Description
- Exhibit B, Description of Project
- Exhibit C, Construction Schedule
- Exhibit D, Schedule of Values

Exhibit A
Legal Description of Property

A PORTION OF LOT 1, DECK PARK VISTA UNIT 1, ACCORDING TO BOOK 341 OF MAPS, PAGE 12, RECORDS OF MARICOPA COUNTY, SITUATED IN THE NORTHEAST QUARTER OF SECTION 5, TOWNSHIP 1 NORTH, RANGE 3 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A 3" CITY OF PHOENIX BRASS CAP FLUSH AT THE CENTERLINE INTERSECTION OF 3RD STREET AND MORELAND STREET, FROM WHICH A 3" CITY OF PHOENIX BRASS CAP FLUSH AT THE CENTERLINE INTERSECTION OF 5TH STREET AND MORELAND STREET BEARS NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST (BASIS OF BEARING), 606.23 FEET;

THENCE ALONG THE CENTERLINE OF MORELAND STREET, EAST, 88.42 FEET;

THENCE SOUTH, 23.15 FEET TO THE POINT OF BEGINNING;

THENCE EAST, 385.93 FEET;

THENCE SOUTH, 206.86 FEET;

THENCE NORTH 89 DEGREES 59 MINUTES 41 SECONDS WEST, 263.83 FEET;

THENCE NORTH 0 DEGREES 09 MINUTES 27 SECONDS WEST, 90.50 FEET;

THENCE NORTH 89 DEGREES 59 MINUTES 47 SECONDS WEST, 55.00 FEET;

THENCE NORTH 29 DEGREES 59 MINUTES 48 SECONDS WEST, 16.17 FEET;

THENCE NORTH 89 DEGREES 59 MINUTES 47 SECONDS WEST, 76.82 FEET;

THENCE NORTH 0 DEGREES 09 MINUTES 59 SECONDS WEST, 83.97 FEET;

THENCE NORTH 44 DEGREES 55 MINUTES 13 SECONDS EAST, 25.92 FEET TO THE POINT OF BEGINNING.

SAID OVERALL PORTION OF LAND CONTAINS 69,601 SQUARE FEET OR 1.5978 ACRES, MORE OR LESS, AND BEING SUBJECT TO ANY EASEMENTS, RESTRICTIONS, AND/OR RIGHTS-OF-WAYS OF RECORD OR OTHERWISE.

Exhibit B
Project Description

The newly constructed development will consist of 131 units of affordable multi-family housing, one manager unit, and a structured parking garage situated on approximately 2.72 acres of the former Deck Park Vista Apartments site and will be constructed in conformance with architect specifications and City of Phoenix approved plans. This includes construction of one (1) five-story wood framed residential building that contains 132 studio to three-bedroom units ranging from 405 to 1,130 square feet, and a structured parking garage. Five percent (5%) of the units will be fully accessible, 2% of units will include improvements for the hearing and visually impaired, and all ground floor units will be fully adaptable.

The 132 units will include a mix of 131 Low Income Housing Tax Credit ("LIHTC") units and one manager unit. The 131 LIHTC units will have project-based Section 8 voucher ("PBV") subsidies.

Lot 1 will consist of a 5-story wood framed residential building (Group R-2, Type IIIA Construction). Lot 2 will consist of a 4-tier parking garage at grade (Group S-2, Type IB Construction).

On-site improvements will include a clubhouse and interior amenity spaces, outdoor amenity spaces and pedestrian connectivity spaces. All on-site parking will be located within a structured parking garage on-site. Off-Site improvements will include street front landscaping and pedestrian connectivity spaces along 3rd Street and Moreland Street, the existing alley located south of the Project will also include improvements for service and fire/safety circulation and access.

General Contractor shall provide improvements as described in the plans and specifications on the lots shown as Lots 1 & 2.

This is a federal-aided project. Construction and operation of the Project must comply with applicable federal law, including Davis-Bacon and Related Acts and Section 3 of the Housing and Urban Development Act of 1968. The prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed, or working on the site, to perform the Contract.

CITY OF PHOENIX, ARIZONA
OFFICE OF THE CITY ENGINEER
ON BEHALF OF ML I HOUSING, LLC ("OWNER")

PROPOSAL to ML I HOUSING, LLC ("Owner").

In compliance with the Advertisement for Bids by the City Engineer, acting on behalf of Owner, the undersigned bidder:

(Print or type contractor name)

Having examined the contract documents, site of work and being familiar with the conditions to be met, hereby submits the following proposal for furnishing the material, equipment, labor and everything necessary for the completion of the work listed and agrees to execute the contract documents and furnish the required bonds and certificates of insurance for the completion of said work, at the locations and for the prices set forth on the inside pages of this form.

Understands that construction of this project shall be in accordance with all applicable Maricopa Association of Governments' (MAG) Uniform Standard Specifications and Uniform Standard Details, latest edition and the City of Phoenix Supplements to the MAG Uniform Standard Specifications and Details, latest edition, except as otherwise required by the project plans and specifications.

Understands that construction of this project shall be in accordance with the written construction contract between Contractor and Owner, including the American Institute of Architects (AIA) Document 201-2017 as modified by the Owner, in the form of the Draft attached hereto, except as otherwise required by the project plans and specifications.

No proposal may be withdrawn for a period of fifty days after opening without consent of the Owner through the body or agent duly authorized to accept or reject the proposal except as may otherwise be provided in the case of federally-assisted projects.

Understands that this proposal shall be submitted with a proposal guarantee of certified check, cashier's check, or surety bond for an amount not less than ten (10) percent of the amount bid, as referenced in the Call for Bids.

Agrees that upon receipt of Notice of Award, from the Owner, he will execute the contract documents within ten calendar days.

Work shall be completed in 600 calendar days, beginning with the day following the starting date specified in the Notice to Proceed. The time allowed for completion of the work includes lead time for obtaining the necessary materials and/or equipment and approvals.

The bidder shall acknowledge all addenda in writing. By writing the addenda number(s) below, the bidder agrees that this proposal is computed with consideration of the specification book(s) plus any and all addenda.

<u>ADDENDA NO.</u>	<u>DATE</u>	<u>ADDENDA NO.</u>	<u>DATE</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

This is a lump sum project

For _____ & /100 DOLLARS
Written Words

PROJECT NO.: AH20620004

CITY OF PHOENIX, ARIZONA
DESIGN AND CONSTRUCTION PROCUREMENT

THE MORELAND I, LLC - REBID

CONSTRUCTION BID PROPOSAL

BASE BID

The undersigned agrees to perform the work as described in the Contract Documents for the following lump sum:

Item No.	Description	Unit	Quantity	Total
1	Moreland Construction	LS	1	
2	Dry Utility Allowance	LS	1	\$500,000
3	Signage Allowance	LS	1	\$100,000
4	Low Voltage Allowance	LS	1	\$200,000

Base Bid (Items 1 through 4 inclusive)

_____ Dollars and _____ Cents
(Written Word)
(\$ _____.)

FIRM NAME: _____

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____

THIS PROPOSAL IS SUBMITTED BY _____

a corporation organized under the laws of the state of _____

partnership consisting of _____

a joint venture of _____

or individual trading as _____

of the City of _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

PHONE _____ FAX _____

EMAIL ADDRESS: _____

BY _____

Officer and Title (signature)

Date

WITNESS: If Contractor is an individual
(signature)

ATTEST: If Contractor is Corporation or Partnership
(signature and title)

SURETY BOND

That we, _____, as Principal, (hereinafter called the Principal) and the _____, a corporation duly organized under the laws of the state of _____, a Surety, (hereinafter called Surety) are held and firmly bound unto the ML I HOUSING, LLC as Obligee, in the sum of ten percent of the total amount of the bid of Principal, submitted by him to the ML I HOUSING, LLC for the work described below, for the payment of which sum, well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents and in conformance with A.R.S. 34-201.

WHEREAS, the said Principal is herewith submitting its proposal for The Moreland I Design-Bid-Build.

NOW, THEREFORE, if the ML I HOUSING, LLC accepts the proposal of the Principal and the Principal enters into a Contract with the ML I HOUSING, LLC in accordance with the terms of the proposal and gives the Bonds and Certificates of Insurance as specified in the Standard Specifications with good and sufficient Surety for the faithful performance of the Contract and for the prompt payment of labor and material furnished in the prosecution of the Contract, or in the event of the failure of the Principal to enter into the Contract and give the Bonds and Certificates of Insurance, if the Principal pays to the ML I HOUSING, LLC the difference not to exceed the penalty of the Bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith Contract with another party to perform the work covered by the proposal, then this obligation is void. Otherwise it remains in full force and effect provided, however, that this Bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this Bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

Signed and sealed the _____ day of _____, 2023

Principal

TITLE

Surety

WITNESS

A.M. BEST RATING:

**ML I HOUSING, LLC (OWNER)
LIST OF MAJOR SUBCONTRACTORS AND SUPPLIERS**

PROJECT NO.: AH20620004 PROJECT DESCRIPTION: Moreland I

DESCRIPTION OF WORK OR MATERIALS (CONTRACTOR TO ENTER TRADE/SUPPLIER AREAS)	SELF-PERFORMED BY PRIME CONTRACTOR	SUBCONTRACTOR/SUPPLIER COMPANY NAME (IF NOT SELF-PERFORMED)	CONTACT PERSON	PHONE NUMBER	DOLLAR VALUE OF WORK OR MATERIALS IN BID
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				

I hereby certify by signing below that the above listed companies will be utilized to perform work on this project for an **equal to or greater than 5% of the base bid**. These companies will not be removed or replaced without prior written approval by the City of Phoenix Project Manager. The City requires that ALL vendors providing work equal to or greater than 5% of the base bid are listed or you will be disqualified. If you are self-performing work, you must still list any suppliers for materials or list any subcontractors with whom you will directly contract.

COMPANY NAME _____ SIGNATURE _____

NAME & TITLE _____ PHONE NUMBER _____ DATE _____

EMAIL ADDRESS _____

**ML I HOUSING, LLC (OWNER)
LIST OF ALL SUBCONTRACTORS AND SUPPLIERS**

PROJECT NO.: AH20620004 PROJECT DESCRIPTION: Moreland I

DESCRIPTION OF WORK OR MATERIALS (CONTRACTOR TO ENTER TRADE/SUPPLIER AREAS)	SELF-PERFORMED BY PRIME CONTRACTOR	SUBCONTRACTOR/SUPPLIER COMPANY NAME (IF NOT SELF-PERFORMED)	CONTACT PERSON	PHONE NUMBER	DOLLAR VALUE OF WORK OR MATERIALS IN BID
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				
	<input type="checkbox"/> YES <input type="checkbox"/> NO				

I hereby certify by signing below that the above listed companies will be utilized to perform work on this project. These companies shall not be removed or replaced without prior written approval by the City of Phoenix Project Manager. The City requires ALL vendors providing work are listed or you will be disqualified. If you are self-performing work, you must still list any suppliers for materials or list any subcontractors with whom you will directly contract.

COMPANY NAME _____ SIGNATURE _____

NAME & TITLE _____ PHONE NUMBER _____ DATE _____

EMAIL ADDRESS _____

BIDDER'S DISCLOSURE STATEMENT

Authorized Contact for this Disclosure Statement

Name: _____

Title: _____

E-mail: _____

Phone number: _____

List any EIN, DBA, trade name, or other identity, in the last five years, the state or country where filed, and the status (active or inactive): (if applicable): _____

Business Characteristics

Business entity type – Please check appropriate box and provide additional information:

- | | | | |
|--------------------------|-------------------------------|------------------------------|-------|
| <input type="checkbox"/> | Corporation | Date of incorporation: | _____ |
| <input type="checkbox"/> | Limited Liability Company | Date organized: | _____ |
| <input type="checkbox"/> | Limited Liability Partnership | Date of registration: | _____ |
| <input type="checkbox"/> | Limited Partnership | Date established: | _____ |
| <input type="checkbox"/> | General Partnership | Date established: | _____ |
| <input type="checkbox"/> | Sole Proprietor | How many years in business?: | _____ |
| <input type="checkbox"/> | Other (explain) | Date established: | _____ |

Was the business entity formed in the State of Arizona? Yes _____ No _____

If no, indicate jurisdiction where Business Entity was formed: _____

Business License Number and Classification: _____

Business Transaction Privilege License Number: _____

Special Use or other zoning permits required for Bidder's operation and performance of the services under this Agreement:

Is the Business Entity currently registered to do business in Arizona with the Arizona Corporation Commission? Yes_____ No_____ Not required _____ (if sole proprietor or general partnership)

Does the Business Entity have a City of Phoenix business privilege license? Yes_____ No_____ If "no" explain and provide detail such as "not required" or "application in progress" or other reason.

Is the Business Entity publicly traded? Yes_____ No_____

Is the responding Business Entity a Joint Venture? Note: If the Submitting Business entity is a Joint Venture, also submit a questionnaire for each Business Entity comprising the Joint Venture. Yes_____ No_____

Is the Business Entity's Principal Place of Business/Executive office in Phoenix? If "no" does the Business Entity maintain an office in Phoenix? Yes_____ No_____

Provide the address and phone number for the Phoenix office. _____

Is the business certified by Phoenix as a Small Business Enterprise?

Identify Business Entity Officials and principal Owners:

Name(s) _____ Title _____ Percentage ownership ____%(Enter 0% if not applicable).

Name(s) _____ Title _____ Percentage ownership ____%(Enter 0% if not applicable).

Name(s) _____ Title _____ Percentage ownership ____%(Enter 0% if not applicable).

Name(s) _____ Title _____ Percentage ownership ____%(Enter 0% if not applicable).

Affiliates and Joint Venture Relationships

Does the Business entity have any Affiliates? Yes_____ No_____ Attach additional pages if necessary.

Affiliate name: _____

Affiliate EIN (if available):_____.

Affiliate's primary Business Activity:_____

Explain relationship with Affiliate and indicate percent ownership, if applicable. _____

Are there any Business Entity Officials or Principal Owners that the Business Entity has in common with this Affiliate? _____

Individual's name:_____

Position/Title with Affiliate:_____

Has the Business Entity participated in any joint Ventures within the past three years? Yes _____ No _____
(Attach additional pages if necessary)

Joint Venture Name: _____

Joint venture EIN (if applicable): _____

Identify parties to the Joint Venture: _____

Contract History

Has the Business Entity held any contracts with the City of Phoenix in the last three years? Yes _____ No _____ If "yes" attach a list.

Integrity – Contract Bidding

Within the past three years, has the Business Entity or any Affiliate been suspended or debarred from any government contracting process or been disqualified on any government procurement? Yes _____ No _____

Been subject to a denial or revocation of a government prequalification? Yes _____ No _____

Been denied a contract award or had a bid rejected based upon a finding of a non-responsibility by a government entity? Yes _____ No _____

Agreed to a voluntary exclusion from bidding/contracting with a government entity? Yes _____ No _____

Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity? Yes _____
No _____

Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity? Yes _____
No _____

For each "Yes" answer above, provide an explanation of the issues.

Integrity – Contract Award

Within the past three years has the Business Entity or any Affiliate been suspended, cancelled, or terminated for cause on any government contract? Yes _____
No _____

Been subject to an administrative proceeding or civil action seeking specific performance or restitution in connection with any government contract? Yes _____
No _____

For each "yes" answer, provide an explanation. (Attach explanation on a separate sheet of paper).

Certifications/Licenses

Within the past three years, has the Business Entity or Affiliate had a revocation, suspension, or disbarment of any business or professional permit and/or license?
Yes _____ No _____

If “yes” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the government entity involved, and any remedial or corrective action(s) taken and the current status of the issues.

Legal Proceedings

Within the past three years, has the Business Entity of any Affiliate:

Been the subject of an investigation, whether open or closed, by any government entity for a civil or criminal violation? Yes _____ No _____

Been the subject of an indictment, grant of immunity, judgment or conviction, (including entering into a plea bargain for conduct constituting a crime)? Yes _____
No _____

Received any OSHA citation and Notification of Penalty containing a violation classified as serious or willful? Yes _____ No _____

Had a government entity find a willful prevailing wage or supplemental payment violation? Yes _____ No _____

Been involved in litigation as either a plaintiff or a defendant involving a copyright or patent infringement violation or an anti-trust violation? Yes _____ No _____

Other than previously disclosed, for the past three years:

(i) Been subject to the imposition of a fine or penalty in excess of \$1000 imposed by any government as a result of the issuance of citation, summons or notice of violation, or pursuant to any administrative, regulatory, or judicial determination? Yes _____ No _____

(ii) Been charged or convicted of a criminal offense pursuant to any administrative and/or regulatory action taken by any government entity? Yes _____ No _____

If “yes” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the government entity involved, and any remedial or corrective action(s) taken and the current status of the issues.

Leadership Integrity

If the Business Entity is a joint Venture Entity, answer “N/A – Not Applicable” to questions below:

Within the past three years has any individual previously identified, or any other Business Entity Leader not previously identified, or any individual having the authority to sign, execute, or approve bids, proposals, contracts or supporting documentation with the city of Phoenix been subject to: Yes _____ No _____

A sanction imposed relative to any business or professional permit and/or license? Yes _____ No _____

An investigation, whether open or closed, by any government entity for a civil or criminal violation for any business-related conduct? Yes _____ No _____



City of Phoenix

AFFIDAVIT OF IDENTITY

Your completion of this form is required by Arizona state law. A.R.S. §§ 1-501 and -50 only if you are a sole proprietor.

I, _____ (print full name exactly as on document), hereby affirm, upon penalty of perjury, that I presented the document marked below to the City of Phoenix, that I am lawfully present in the United States, and that I am the person stated on the document. (select one category only)

- Arizona driver license issued after 1996. Print first four numbers/letters from license: [] [] [] []
Arizona non-operating identification card. Print first four numbers/letters: [] [] [] []
Birth certificate or delayed birth certificate issued in any state, territory, or possession of the U.S. Year of birth: _____; Place of birth: _____
United States Certificate of Birth Abroad. Year of birth: _____; Place of birth: _____
United States Passport. Print first four numbers/letters on Passport: [] [] [] []
Foreign Passport with United States Visa. Print first four numbers/letters on Passport: [] [] [] []
Print first four numbers/letters on Visa: [] [] [] []
I-94 Form with a photograph. Print first four numbers on I-94: [] [] [] []
USCIS Employment Authorization Document (EAD). Print first four numbers/letters on EAD: [] [] [] []
or Perm. Resident Card (acceptable alternative): [] [] [] []
Refugee Travel Document. Date of issuance: _____; Refugee country: _____
U.S. Certificate of Naturalization. Print first four digits of CIS Reg. No.: [] [] [] []
U.S. Certificate of Citizenship. Date of issuance: _____; Place of issuance: _____
Tribal Certificate of Indian Blood. Date of issuance: _____; Name of tribe: _____
Tribal or Bureau of Indian Affairs Affidavit of Birth. Year of birth: _____; Place of birth: _____

Signed: _____ Dated: _____

US Department of Housing and Urban Development
Office of Housing/Federal Housing Commissioner

US Department of Agriculture
Farmers Home Administration

Part I to be completed by Controlling Participant(s) of Covered Projects <i>(See instructions)</i>		For HUD HQ/FmHA use only	
Reason for submission:			
1. Agency name and City where the application is filed		2. Project Name, Project Number, City and Zip Code	
3. Loan or Contract amount \$	4. Number of Units or Beds	5. Section of Act	6. Type of Project (check one) <input type="checkbox"/> Existing <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Proposed (New)

7. List all proposed Controlling Participants and attach complete organization chart for all organizations showing ownership %

Name and address (Last, First, Middle Initial) of controlling participant(s) proposing to participate	8 Role of Each Principal in Project	9. SSN or IRS Employer Number (TIN)

1. Schedule A contains a listing, for the last ten years, of every project assisted or insured by HUD, USDA FmHA and/or State and local government housing finance agencies in which the controlling participant(s) have participated or are now participating.
 2. For the period beginning 10 years prior to the date of this certification, and except as shown on the certification:
 - a. No mortgage on a project listed has ever been in default, assigned to the Government or foreclosed, nor has it received mortgage relief from the mortgagee;
 - b. The controlling participants have no defaults or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
 - c. There are no known unresolved findings as a result of HUD audits, management reviews or other Governmental investigations concerning the controlling participants or their projects;
 - d. There has not been a suspension or termination of payments under any HUD assistance contract due to the controlling participant's fault or negligence;
 - e. The controlling participants have not been convicted of a felony and are not presently the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
 - f. The controlling participants have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency;
 - g. The controlling participants have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond;
 3. All the names of the controlling participants who propose to participate in this project are listed above.
 4. None of the controlling participants is a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part 0 and USDA's Standard of Conduct in 7 C.F.R. Part 0 Subpart B.
 5. None of the controlling participants is a participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification, have not been filed with HUD or FmHA.
 6. None of the controlling participants have been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105(a). (If any controlling participants have been found to be in noncompliance with any requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any).
 7. None of the controlling participants is a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
 8. Statements above (if any) to which the controlling participant(s) cannot certify have been deleted by striking through the words with a pen, and the controlling participant(s) have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances.
- I/We, the undersigned, certify under penalty of perjury that the information provided above is true and correct. WARNING: Anyone who knowingly submits a false claim or makes a false statement is subject to criminal and/or civil penalties, including confinement for up to 5 years, fines, and civil and administrative penalties. (18 U.S.C. §§ 287, 1001, 1010, 1012, 1014; 31 U.S.C. §3729, 3802).

Name of Controlling Participant	Signature of Controlling Participant	Certification Date (mm/dd/yyyy)	Area Code and Tel. No.
This form prepared by (print name)			Area Code and Tel. No.

Schedule A: List of Previous Projects and Section 8 Contracts. Below is a complete list of the controlling participants' previous participation projects and participation history in covered projects as per 24 CFR, part 200 §200.214 and multifamily Housing programs of FmHA, State and local Housing Finance Agencies, if applicable. **Note:** Read and follow the instruction sheet carefully. Make full disclosure. Add extra sheets if you need more space. Double check for accuracy. If no previous projects, write by your name, **"No previous participation, First Experience"**.

1. Controlling Participants' Name (Last, First)	2. List of previous projects (Project name, project ID and, Govt. agency involved)	3. List Participants' Role(s) (indicate dates participated, and if fee or identity of interest participant)	4. Status of loan (current, defaulted, assigned, foreclosed)	5. Was the Project ever in default during your participation Yes No If yes, explain		6. Last MOR rating and Physical Insp. Score and date

Part II- For HUD Internal Processing Only

Received and checked by me for accuracy and completeness; recommend approval or refer to Headquarters after checking appropriate box.

Date (mm/dd/yyyy)	Tel No. and area code	<input type="checkbox"/> A. No adverse information; form HUD-2530 approval recommended. <input type="checkbox"/> C. Disclosure or Certification problem <input type="checkbox"/> B. Name match in system <input type="checkbox"/> D. Other (attach memorandum)	
Staff	Processing and Control		
Signature of authorized reviewer	Signature of authorized reviewer	Approved <input type="checkbox"/> Yes <input type="checkbox"/> No	Date (mm/dd/yyyy)

Instructions for Completing the Previous Participation Certificate, form HUD-2530

Carefully read these instructions and the applicable regulations. A copy of the regulations published at 24 C.F.R. part 200, subpart H, § 200.210-200.222 can be obtained on-line at www.gpo.gov and from the Account Executive at any HUD Office. Type or print neatly in ink when filling out this form. Incomplete form will be returned to the applicant.

Attach extra sheets as you need them. Be sure to indicate "Continued on Attachments" wherever appropriate. Sign each additional page that you attach if it refers to you or your record. **Carefully read the certification before you sign it.** Any questions regarding the form or how to complete it can be answered by your HUD Account Executive.

Purpose: This form provides HUD/USDA FmHA with a certified report of all previous participation in relevant HUD/USDA programs by those parties submitting the application. The information requested in this form is used by HUD/USDA to determine if you meet the standards established to ensure that all controlling participants in HUD/USDA projects will honor their legal, financial and contractual obligations and are of acceptable risks from the underwriting standpoint of an insurer, lender or governmental agency. HUD requires that you certify and submit your record of previous participation, in relevant projects, by completing and signing this form, before your participation can be approved.

HUD approval of your certification is a necessary precondition for your participation in the project and in the capacity that you propose. If you do not file this certification, do not furnish the information requested accurately, or do not meet established standards, HUD will not approve your certification.

Note that approval of your certification does not obligate HUD to approve your project application, and it does not satisfy all other HUD program requirements relative to your qualifications.

Who Must Sign and File Form HUD-2530: Form HUD-2530 must be completed and signed by all Controlling Participants of Covered Projects, as such terms are defined in 24 CFR part 200 §200.212, and as further clarified by the Processing Guide (HUD notice H 2016-15) referenced in 24 CFR §200.210(b) and available on the HUD website at: http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfh/prevparticipation.

Where and When Form HUD-2530 Must Be Filed: The original of this form must be submitted to the HUD Office where your project application will be processed at the same time you file your initial project application. This form must be filed with applications for projects listed in 24 CFR §200.214 and for the Triggering Events listed at 24 CFR §200.218.

Review of Adverse Determination: If approval of your participation in a HUD project is denied, withheld, or conditionally granted on the basis of your record of previous participation, you will be notified by the HUD Office. You may request reconsideration in accordance with 24 CFR §200.222 and further clarified by the Processing Guide. Request must be made in writing within 30 days from your receipt of the notice of determination.

The Department of Housing and Urban Development (HUD) is authorized to collect this information by law 42 U.S.C. 3535(d) and by regulation at 24 CFR 200.210. This information is needed so that principals applying to participate in multifamily programs can become HUD-approved controlling participants. The information you provide will enable HUD to evaluate your record with respect to established standards of performance, responsibility and eligibility. Without prior approval, a controlling participant may not participate in a proposed or existing multifamily or healthcare project. HUD uses this information to evaluate whether or not controlling participants pose an unsatisfactory underwriting risk. The information is used to evaluate the potential controlling participants and approve only individuals and organizations that will honor their legal, financial and contractual obligations.

Privacy Act Statement: The Housing and Community Development Act of 1987, 42 U.S.C. 3543 requires persons applying for a Federally-insured or guaranteed loan to furnish his/her Social Security Number (SSN). HUD must have your SSN for identification of your records. HUD may use your SSN for automated processing of your records and to make requests for information about you and your previous records with other public agencies and private sector sources. HUD may disclose certain information to Federal, State and local agencies when relevant to civil, criminal, or regulatory investigations and prosecutions. It will not be otherwise disclosed or released outside of HUD, except as required and permitted by law. You must provide all of the information requested in this application, including your SSN. Failure to provide any of the information will result in your disapproval of participation in this HUD program. APPS SORN could be accessed in Federal Register / Vol. 81, No. 146 / Friday, July 29, 2016 / Notices ([Docket No. FR-5921-N-10] Implementation of the Privacy Act of 1974, as Amended; Amended System of Records Notice, Active Partners Performance System).

PRA Statement: The public reporting burden is estimated at 3 hours per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed, and completing and reviewing the collection of information.

Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions to reduce this burden, to the Reports Management Officer, Paperwork Reduction Project, to the Office of Information Technology, US. Department of Housing and Urban Development, Washington, DC 20410-3600. When providing comments, please refer to OMB Approval No. 2502-0118. HUD may not conduct and sponsor, and a person is not required to respond to, a collection of information unless the collection displays a valid control number.

The collection is authorized by 12 U.S.C 1702-1715z; 42 U.S.C. 3535(d). HUD form 2530 is created to collect information as mandated by 24 CFR Part 200. The HUD-2530 form is used to protect HUD's Multifamily Housing and Healthcare programs by comprehensively assessing industry participants' risk. It is the Department's policy that participants in its housing programs honor their legal, financial, and contractual obligations. Accordingly, uniform standards are established for approvals, disapprovals, or withholding actions on principals in projects, based upon their past performances as well as other relevant information. Respondents such as owners, management agents, master tenants, general contractors, and nursing home operators are subject to review. The information on this form needs to be collected by the Department to evaluate participants' previous performance and compliance with contracts, regulations, and directives.

Certification Regarding Debarment and Suspension

Certification A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief that its principals;

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal debarment or agency;

b. Have not within a three-year period preceding this proposal, been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

d. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Certification (A)

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms **covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded**, as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of these regulations.

6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines this eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph (6) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

Certification B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Certification (B)

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms **covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded**, as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of these regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph (5) of these instructions, if a participant in a lower covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies including suspension and/or debarment.

Applicant		Date
Signature of Authorized Certifying Official	Title	

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he/she has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He/She further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated this ___ day of _____, _____

(Name of Organization)

(Title of Person Signing)

(Signature)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF _____)

Before me, a Notary Public, personally appeared the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me this _____ day of _____, _____.

Notary Public Signature

My Commission Expires: _____

CERTIFICATION OF NON-SEGREGATED FACILITIES

_____ assures Government Contractors and concerned Federal, State and Local Agencies that we do not and will not maintain or provide for our employees any segregated facilities at any of our establishments, and that we do not and will not permit our employees to perform their services at any location under or control where segregated facilities are maintained.

_____ understands that the phrase "Segregated Facilities" includes facilities which are, in fact, segregated on a basis of race, color, creed, or national origin, because of habit, local custom or otherwise.

_____ understands and agrees that maintaining or providing segregated facilities for our employees or permitting our employees to perform their services at any location under our control, where segregated facilities are maintained is a violation of the Equal Opportunity Clause required by Executive Order 12246 of September 24, 1955.

_____ further understand and agrees that a breach of the assurance herein contained subjects us to the provisions of the Orders of the Secretary of Labor and the provisions of the Equal Opportunity Clause enumerated in contracts or referenced on purchase orders by the government and government contractors.

Finally, _____ is aware that whoever knowingly and willingly makes any false, fictitious representation may be liable to criminal prosecution under 18 U.S.X. #1001.

(Signature)

Corporate Seal

(Printed Name and Title)

Company Name

Company Address

CERTIFICATION OF NON-SEGREGATED FACILITIES - 41 CFR PART 60-1.8

Notice to Prospective Federally Assisted Construction Contractors

1. A Certification of Non-segregated Facilities shall be submitted prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
2. Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Notice to Prospective Sub-Contractors of Requirements for Certification of Non-Segregated Facilities

1. A Certification of Non-Segregated Facilities shall be submitted prior to the award of a subcontract exceeding \$10,000, which is not exempt from the provisions of the Equal Opportunity Clause.
2. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause. NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The federally-assisted construction contractor certifies that she or he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that she or he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that she or he will not maintain or provide, for his or her employees, segregated facilities at any of his or her establishments and that she or he will not permit his or her employees to perform their services at any location under his or her control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time-clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are, in fact, segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally-assisted construction contractor agrees that (except where she or he has obtained identical certifications from proposed subcontractors for specific time periods) she or he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that she or he will retain such certifications in his files.

Application

Incorporate in all construction contracts and subcontracts that exceed \$10,000. The notices should be placed within the solicitation for proposals. The actual certification should be incorporated in the contract agreement.

Reference

Executive Order 11246
41 CFR Part 60 -1.8
AC 150/5100-15, Para. 22.b.

**CERTIFICATION WITH REGARD TO THE PERFORMANCE OF
PREVIOUS CONTRACTS OR SUBCONTRACTS SUBJECT TO THE
EQUAL OPPORTUNITY CLAUSE AND THE FILING OF REQUIRED REPORTS
APRIL 1969**

The bidder _____, proposed subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has _____, has not _____, filed with the Joint Reporting committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(Company)

By: _____

(Title)

Date: _____

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7b (1),) and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Information concerning Standard Form 100 (EEO-1) is available from:

Joint Reporting Committee P.O.
Box 19100
Washington, D.C. 20036-9100

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

R7/03



Project Specification Manual:

The Moreland
Native American Connections

Project No: 2091

January 12, 2022

CONSTRUCTION DOCUMENT SET



SPS+ Architects LLP
8681 East Via de Negocio | Scottsdale, AZ 85258-3330
P 480.991.0800 F 480.991.2623
www.spsplusarchitects.com

**SECTION 00 0103
PROJECT DIRECTORY**

ARCHITECT

SPS + Architects LLP
8681 East Via de Negocio
Scottsdale, Arizona 85258-3330
Telephone: 480.991.0800
Contact: Richard Begay
Email: Richard.begay@spsplusarchitects.com

STRUCTURAL ENGINEER

Wright Engineering Corp.
165 E Chilton Drive
Chandler, AZ 85225
Telephone: 480.483.6111
Contact: Paul Krizan
Email: pkrizan@wrightengineers.com

MPE ENGINEERING

Solutions AEC
8222 S. 48th St.
Ste. 265
Phoenix, AZ 85044
Telephone: 480.566.1582
Contact: Joe Remson
Email: jremson@solutions-aec.com

CIVIL ENGINEER

EPS Group Inc.
1130 N Alma School Road, #120
Mesa, AZ 85201
Telephone: 623.547.4661
Contact: Dan "Ox" Auxier
Email: dan.auxier@epsgruopinc.com

LANDSCAPE ARCHITECT

Logan Simpson Design, Inc.
51 West Third Street #450
Tempe, AZ 85281
Telephone: 480.967.1343
Contact: Jerry Moar
Email: jmoar@logansimpson.com

END OF SECTION

PROJECT SPECIFICATIONS MANUAL
CONSTRUCTION DOCUMENTS
January 12, 2022

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**DOCUMENT 00 4325
SUBSTITUTION REQUEST
(During Procurement)**

Project: The Moreland
1125 N. 3rd St Phoenix, AZ

To: SPS+ Architects, LLP
8681 E. Via de Negocio
Scottsdale, Arizona 85258

Substitution Request Number: _____
From: _____
Date: _____
A/E Project Number: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____

Attached data includes sufficient information, descriptive brochures, drawings, performance and test data, samples or other data as is necessary for complete evaluation and indicates by direct comparison how the proposed substitution differs from that specified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation. **The Contractor shall provide for redesign necessitated by the substitution.**

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs by the substitution.

Submitted by: Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

A/E's REVIEW AND ACTION

- Substitution approved (Include in Addendum).
- Substitution approved as noted (Include in Addendum with notation).
- Substitution rejected due to lack of information.
- Substitution rejected due to evaluation that it is not equivalent to specified product.
- Substitution Request received too late.

Signed by: _____ Date: _____

ASBESTOS STATEMENT

State of Arizona)
) ss.
County of)

Title of Bid _____

Bid Number

CONTRACTOR

The persons, corporation, or company who makes the accompanying Proposal, having first been duly sworn, disposes and says:

All materials used in the above-referenced project are free of asbestos.

(Title)

Subscribed and sworn before me

This _____ day of _____, 20____.

Signature of Notary Public in and for

the County of _____

State of _____

END OF SECTION

DOCUMENT 00 6313
REQUEST FOR INTERPRETATION FORM

Project: The Moreland
1125 N. 3rd ST, Phoenix, AZ

R.F.I. Number: _____

From: _____

To: SPS+ Architects, LLP
8681 E. Via de Negocio
Scottsdale, Arizona
85258

Date: _____

A/E Project Number: 2091

Specification Section:	Paragraph:	Drawing Reference:	Detail
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Request:

* Requested Date/Time for Response:

Signed by:

Response:

Attachments

Response From:	To:	* Date Rec'd:	* Date Returned:
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Signed by: _____

Copies: Owner Consultants File

* Contractor shall allow up to 5 working days review and response time for RFI'S, unless review is required of multiple consultants, then the review and response period shall be 7 working days. (See Section 01 2613.

**DOCUMENT 00 6325
SUBSTITUTION REQUEST
(After the Bidding Phase)**

Project: The Moreland
1125 N. 3rd St., Phoenix, AZ

Substitution Request Number: _____
From: _____

To: SPS+ Architects
8681 E. Via de Negocio
Scottsdale, Arizona 85258

Date: _____
A/E Project Number: **2091**

Re: _____
Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____
Installer: _____ Address: _____ Phone: _____
History: New product 2-5 years old 5-10 years old More than 10 years old
Differences between proposed substitution and specified product: _____

Point-by point comparative data attached – REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect: _____
Address: _____ Owner: _____
Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____).
Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: Attachments: _____

A/E's REVIEW AND ACTION

- Substitution approved – Make submittals in accordance with Specification Section 01 3300.
- Substitution approved as noted – Make submittals in accordance with Specification Section 01 3300.
- Substitution rejected – Use specified materials.
- Substitution Request received too late – Use specified materials.

Signed by: _____ Date: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer A/E _____

**SECTION 00 8000
SUPPLEMENTARY CONDITIONS**

1.0 GENERAL CONDITIONS: Articles 1 is a part of this contract, and is incorporated herein as fully as if here set forth.

2.0 MODIFICATIONS: The following supplements modify, change, delete from or add to the Contract for Construction. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

2.1 ARTICLE 1 – GENERAL PROVISIONS:

- A. Add the following to Section 00 8000:
“Exhibit F WATER INTRUSION PREVENTION AND REMEDIATION”

END OF SECTION

EXHIBIT F

WATER INTRUSION PREVENTION AND REMEDIATION

During the construction of the Project and until the receipt of the final certificate of occupancy, the Co-Developer shall comply with the provisions of this Exhibit F (the “**Water Intrusion Provisions**”) and shall (1) ensure that those Subcontractors which the Co-Developer determines should be responsible for the Project’s incurrence of mold, including without limitation all construction managers, contractors, and subcontractors comply with the Water Intrusion Provisions and (2) replicate these Water Intrusion Provisions in all contracts with such subcontractors. As used in this Agreement, “**mold**” shall mean any furry growth of minute fungi occurring in moist conditions including any indoor mold growth capable of creating toxins that can cause pulmonary, respiratory, neurological or other major illnesses after minimal exposure, as such exposure is defined by the Environmental Protection Agency, Center for Disease Control, National Institute of Health, the Institute of Inspections, Cleaning and Restoration Standard and Reference Guide for Professional Mold Remediation (IICRC S520), or other Federal, State or local agency organized in part to study and/or protect human health.

Water Intrusion Program

(A) Retention of a Water Management Professional. No less than thirty (30) days prior to the Closing of each Component, the Co-Developer shall identify and arrange for the retention of a Water Management Professional trained to (A) inspect and identify leaks and water intrusion issues in buildings in the State and (B) develop defined water inspection protocols and monitoring programs. This professional (the “Water Management Professional”) shall be qualified to do so and shall be reasonably acceptable to the City.

(B) Duties of the Water Management Professional.

(I) The Water Management Professional shall (A) inspect and identify leaks and water intrusion issues or mold growth in buildings, (B) develop defined water inspection protocols and monitoring programs, and (C) identify materials to be dried out and/or removed and any related remedial measures resulting from leaks and water intrusion or mold growth. In the event remedial measures are necessary, the remediation shall be conducted pursuant to the protocol that the Water Management Professional, utilizing his expertise and business judgment, deems appropriate and consistent with the guidelines produced by the New York City Department of Health and Mental Hygiene, the Environmental Protection Agency, IICRC S520 and the Occupational Safety and Health Administration

(II) During construction or renovation, the Water Management Professional shall inspect the project to identify areas of water intrusion or mold growth and any materials that may need drying or replacement. Such inspections shall be unannounced and shall occur no less frequently than monthly. During the ordinary course of operation of the Project, the Co-Developer or the Owner Entity shall arrange for an annual inspection of the Project by the Water Management Professional.

(C) Protocols. The Co-Developer shall follow the Water Intrusion Program including complying with all protocols, compliance programs and monitoring programs developed by the Water Management Professional.

SECTION 01 1100
SUMMARY OF WORK

1.1 WORK COVERED BY CONTRACT DOCUMENTS

Project: Native American Connections (NAC – Developer) has been awarded the contract to re-develop the existing multifamily property located at 1125 N. 3rd Street by the City of Phoenix Housing Department; to be called **The Moreland** (Project). The Project will be an affordable Multifamily complex located on approximately 3.2 Gross Acres (2.1 Net Acres) at 1125 North 3rd Street, downtown Phoenix. On-site improvements will include clubhouse & interior amenity spaces, outdoor amenity spaces, and pedestrian connectivity spaces. All on-site parking will be located within a structured parking garage on-site. Off-site improvements will include street front landscape and pedestrian connectivity spaces along 3rd Street and Moreland Street. The existing alley located of the project will also include improvements for service and fire /safety circulation and access. The property is part of the City of Phoenix (City) Downtown core, and the Project is currently zoned under the Downtown Code-Evans Churchill East Character Area.

The overall development scope will include preparing site plans and building construction documents to construct new multi-family housing consisting of total of 216 residential units and amenity space conveniently located for tenants. Project will be planned in two project construction phases – Phase One will consist of 5-story wood framed residential floors and a multistory concrete parking structure; Parking structure will be part of Phase One; number of garage floors will be determined in Phase 1. All structures will be at grade.

Phase Two will consist of 4-story wood framed residential floor located on the east portion of the site. There will be a lot split to allow each phase to be separately financed with cross-access agreement for parking and for service access. Utility connections, landscaping, stormwater drain & retention will be constructed per phase to meet requirements.

The building(s) are organized to effectively distribute the number of units and with circulation access and with resident connectivity in mind, promoting safety, identity, pedestrian common areas, and accessibility. The building's exterior will be articulated to reinforce compatibility to surrounding neighborhood by using simple materials, color, and massing. Elevations will be essential for the architectural character intended for Evans Churchill East Character Area.

This package includes associated Site Work.

- A Arizona Prompt Payment Act: Work of this Contract will be subject to The Arizona Prompt Payment Act (A.R.S. § 32-1129.02), which governs the timing of payment from the Owner to the General Contractor, from the general to subcontractor, and from subcontractors to suppliers and other rights as outlined in the Act.

1.2 DEFINITIONS PERTAINING TO THE CONTRACT DOCUMENTS

- A Furnish: To purchase and deliver.
- B Install: To place into final position and connect.
- C Provide: To furnish and install.
- D Connect: To make the complete necessary utility connection (water, sewer, gas, electricity, etc.) from the building utility to the piece of equipment to allow that piece of equipment to function as intended (e.g., a gas connection for an oven or cooktop).
- E "As shown", "as detailed", "as indicated" or words of similar import mean as indicated on the drawings
- F "As selected", "as approved" or words of similar import mean as selected by, as approved by, or as accepted by the Architect and Owner.
- G "Approved equal", "or equal" shall mean as approved and accepted by the Architect and Owner.

- H. "Shall" means mandatory.
- I. "As required" means as required by the contract documents.
- J. "As necessary" means essential to the completion of the work.
- K. "Concealed" means not visible in the finished work.
- L. "Exposed" means visible in the finished work.
- M. "Days" means calendar days.
- N. "Working Days" means work days and does not include legal holidays.
- O. Substantial Completion: That stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

1.3 CONTRACTOR USE OF SITE

- A. General: Contractor shall have full use of the site within Contract Limit Lines indicated for construction operations during the construction period.
- B. Construction Operations: Limited to areas noted on Drawings including storage of materials and equipment.
- C. Utility Outages and Shutdown: Interruption of utility services to the existing building(s) is not permitted.
- D. Smoking Restrictions: Smoking, including electronic smoking devices, is not permitted on the property during and after construction or within 25 feet of entrances, operable windows, or outdoor air intakes.

1.4 PERMITS, FEES AND NOTICES

- A. Plan check fees have been paid by the Owner.
- B. The Owner will secure and pay for the building permit and for other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required at the time the bids are received or negotiations concluded. This shall include, but not be limited to:
 - 1. Building Permit from the City of Phoenix, Arizona.
 - 2. Inspections and Certificates from State Fire Marshal.
- C. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authority bearing on the performance of the Work.
- D. It is not the responsibility of the Contractor to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Architect and Owner in writing, and any necessary changes shall be accomplished by appropriate Modification.
- E. If the Contractor performs Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Architect and Owner, the

Contractor shall assume full responsibility therefor and shall bear attributable costs.

1.5 SPECIAL SITE CONDITIONS

- A The Contractor shall be completely responsible for protecting existing site and street improvements indicated to remain and adjacent to new construction from damage and/or injury due to this Work and shall repair at his expense and to the Architect's satisfaction, all areas damaged as a result of his Work.

1.6 ARCHITECTURAL BARRIERS

- A It is the desire of the Owner that the facilities and improvements constructed under this Contract meet or exceed the intent of applicable public law concerning prohibition of discrimination, and that no individual be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of this completed Project.
- B The designers and drafters of these Documents have intended to incorporate those Owner's intentions into these Documents.
- C It is recognized that there may be products not incorporated into these Documents that may more nearly meet the Owner's desires than those included.
- D The Owner hereby solicits those providing elements of this Project to bid and contract for the Project as required by these Documents, but at the time of submitting Shop Drawings, or sooner when appropriate, and without causing delay in the Project, to also submit proposals for improving the accessibility of the Project to physically or mentally impaired persons.

1.7 REPRODUCTION OF DRAWINGS

- A Contractor shall not alter the size of Drawings when making or ordering reproductions.
- B Only full-size, current Drawings shall be maintained at the Project Site.

1.8 COMMUNICATIONS

- A All communications with the Architect shall be copied to the Owner's Representative.
- B All communications with the Architect's consultants shall be through the Architect.

1.9 FEDERAL LABOR STANDARDS PROVISIONS

END OF SECTION

**SECTION 01 2613
REQUESTS FOR INTERPRETATION**

PART 1- GENERAL

1.1 SUMMARY

- A Section Includes: Administrative requirements for requests for information / interpretation.

1.2 DEFINITIONS

- A Request For Information / Interpretation (RFI):
1. A document submitted by the Contractor requesting clarification of a portion of the Contract Documents, hereinafter referred to as RFI.
 2. A properly prepared request for information / interpretation shall include a detailed written statement that indicates the specific Drawings or Specification in need of clarification and the nature of the clarification requested.
 - a. Drawings shall be identified by drawing number and location on the drawing sheet.
 - b. Specifications shall be identified by Section number, page and paragraph.
 3. Requests for Information: Request made by Contractor concerning items not indicated on Drawings or contained in the Project Manual that is necessary to properly perform the Work.
 4. Requests for Interpretation: Request made by Contractor in accordance with Owner's Representative's third party obligations to the contract for construction.
- B Improper RFI's:
1. RFI's that are not properly prepared.
 2. Improper RFI's will be processed by the Architect at the Architect's standard hourly rate and Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor. The Contractor will be notified by the Architect prior to the processing of improper RFI's.
- C Frivolous RFI's:
1. RFI's that request information that is clearly shown on the Contract Documents.
 2. Frivolous RFI's may be returned unanswered or may be processed by the Architect at the Architect's standard hourly rate and Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor. The Contractor will be notified by the Architect prior to the processing of frivolous RFI's.

1.3 CONTRACTOR'S REQUESTS FOR INFORMATION

RFI's shall be submitted on Document 00 6313 included in the Project Manual, or similar form prepared by the Contractor and approved by the Architect prior to use.

1. Forms shall be completely filled in, and if prepared by hand, shall be fully legible.
2. RFI's shall be submitted in numerical order with no breaks in the consecutive numbering.
3. Each page of attachments to RFI's shall bear the RFI number and shall be consecutively numbered in chronological order.

4. RFI's shall be submitted by E-Mail or digital file transfer.
 - a. Address for E-Mail will be distributed by the Architect at the Pre-Construction Conference.
 - b. An electronic version of Document 00 6313 will be provided upon request.

- B. When the Contractor is unable to determine from the Contract Documents, the material, process or system to be installed, the Architect shall be requested to make a clarification of the indeterminate item.
 1. Whenever possible, such clarification shall be requested at the next appropriate Project Meeting, with the response entered into the meeting minutes. When clarification at the meeting is not possible, either because of the urgency of the need, or the complexity of the item, Contractor shall prepare and submit an RFI to the Architect.
 2. RFI's may not be sent directly to the Architect's Consultants. All RFI's shall be sent directly to the Architect.

- C. Contractor shall endeavor to keep the number of RFI's to a minimum. In the event that the process becomes unwieldy, in the opinion of the Architect, because of the number and frequency of RFI's submitted, the Architect may require the Contractor to abandon the process and submit future requests as either submittals, substitutions or requests for change.

- D. RFI's shall be originated by the Contractor.
 1. RFI's from subcontractors or material suppliers shall be submitted through, reviewed by, and signed by the Contractor prior to submittal to the Architect.
 2. RFI's from subcontractors or material suppliers sent directly to the Owner's Representative, Architect or the Architect's consultants shall not be accepted and will be returned unanswered.

- E. Contractor shall carefully study the Contract Documents to assure that the requested information is not available therein. RFI's which request information available in the Contract Documents will be deemed either "improper" or "frivolous" as noted above.

- F. In cases where RFI's are issued to request clarification of coordination issues, for example, pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items, the Contractor shall fully lay out a suggested solution using drawings or sketches drawn to scale, and submit same with the RFI. RFI's which fail to include a suggested solution will be returned unanswered with a requirement that the Contractor submit a complete request.

- G. RFI's shall not be used for the following purposes:
 1. To request approval of submittals
 2. To request approval of substitutions,
 3. To request changes which are known to entail additional cost or credit. (A Change Order Request form shall be used.)
 4. To request different methods of performing work than those drawn and specified.

- H. In the event the Contractor believes that an RFI response by the Architect results in additional cost or time, Contractor shall not proceed with the work indicated by the RFI until a Change Order (or Construction Change Directive, if applicable to the Project) is prepared and approved. RFI's shall not automatically justify a cost increase in the work or a change in the Project schedule.
 1. Answered RFI's shall not be construed as approval to perform extra work.
 2. Unanswered RFI's will be returned with a stamp or notation "Not Reviewed".

- I. Contractor shall prepare and maintain a log of RFI'S, and at any time requested by the

Architect, Contractor shall furnish copies of the log showing outstanding RFI'S. Contractor shall note unanswered RFI's in the log.

- J. Contractor shall allow up to 5 working days review and response time for RFI'S, unless review is required of multiple consultants, then the review and response period shall be 7 working days.
 - 1. The Architect will endeavor to respond to RFI's in a timely manner.
 - 2. RFI shall state requested date/time for response, however, this requested date/time for response is not a guarantee that the RFI will be answered by that date/time if that date/time is too expeditious.
 - 3. Architect may request additional time when deemed necessary.

1.4 ARCHITECT'S RESPONSE TO RFI'S

- A. Architect will respond to RFI's on one of the following forms:
 - 1. Answers to properly prepared RFI's will be made directly upon the RFI form and will be returned via E-Mail or digital file transfer.
 - 2. Improper or Frivolous RFI's
 - a. Notification of Processing Fee(s).
 - b. Unanswered RFI's will be returned with a stamp or notation: "Not Reviewed."
- B. Architect may opt to retain RFI's for discussion during regularly scheduled project meetings for inclusion of responses in meeting minutes in lieu of responding on a written form.

END OF SECTION

**SECTION 01 2900
PAYMENT PROCEDURES**

1.1 SCHEDULE OF VALUES

- A With first Application for Payment, submit three (3) copies of completed AIA Document G703 Continuation Sheet indicating the scheduled value of major categories and subcontracts for the Work, for approval of the Architect.

- B For each item, provide a column for listing:
 - 1. Item number
 - 2. Description of Work
 - 3. Scheduled Value
 - 4. Previous Applications
 - 5. Work in Place and Stored Materials under this Application
 - 6. Authorized Change Orders
 - 7. Total Completed and Stored to Date of Application
 - 8. Percentage of Completion
 - 9. Balance to Finish
 - 10. Retainage.

1.2 PAY REQUEST

- A The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by approved AIA Document G703, Continuation Sheet. A minimum of three (3) original copies of these forms shall be submitted for each application. Submit additional copies if requested by the Owner or Architect.
 - 1. Present required information in typewritten form or on electronic media printout.
 - 2. Execute certification by signature of authorized officer.
 - 3. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
 - 4. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

- B With each Application for Payment submit lien releases for the previous payment, substantiation for stored materials, monthly progress reports and updates, and any other pertinent items required by the Owner or Architect and identified during the Pre-Construction Conference.
 - 1. AIA Documents G706, Contractor's Affidavit of Payment of Debts and Claims, G706-A, Contractor's Affidavit of Release of Liens, Documents G707, Consent of Surety Company to Final Payment shall be used.
 - 2. If appropriate, G707-A, Consent of Surety to Reduction in or Partial Release of Retainage shall be used.

- C When acceptable to the Owner, the Contractor may submit for payment on properly stored materials not yet incorporated into the work. Materials stored on the site must be in a secured area and be protected from damage, weather, theft or vandalism. The Contractor shall be responsible for replacing any damaged or missing materials.

- D Materials stored off the job site must be in the supplier's storage area, separated from other materials, and clearly labeled for this particular project. Insurance certificates for the material naming the Owner as an additional insured, loss payee shall be delivered with the pay request.

END OF SECTION

**SECTION 01 3119
PROJECT MEETINGS**

PART 1 GENERAL

1.1 PRECONSTRUCTION CONFERENCE

- A. A Preconstruction Conference to discuss the Project work will be held at a time and location designated by the Architect.
- B. Contractor, and representatives of major Subcontractors, shall meet with Owner and Architect. The purpose of this conference is to discuss the Project in detail, including scheduling of Work, and to answer questions. Unless followed up in writing, verbal authorizations or acknowledgement of those present are not binding.
- C. Meeting minutes will be taken by the Contractor for distribution to all attendees within 48 hours of conference.

1.2 PROGRESS MEETINGS

- A. At day and time designated by Architect, weekly Progress Meetings or Bi-weekly Meetings will be held at Project site.
- B. Contractor and representatives of major Subcontractors shall meet with Owner and Architect.
- C. Contractor is responsible for notifying Subcontractors of their required attendance. These meetings will address progress of the Work and problems that may have developed since the previous meeting.
- D. Unless followed up in writing, verbal authorizations or acknowledgements by those present are not binding.
- E. Meeting minutes will be taken by the Contractor for distribution to all attendees within 48 hours of each meeting.

END OF SECTION

**SECTION 01 3300
SUBMITTAL PROCEDURES**

PART 1 GENERAL

1.1 CONSTRUCTION SCHEDULE

- A. Submit 3 copies of the Construction Schedule, broken down by Trade or Material, to the Architect for approval prior to the first Pay Request. Schedule shall be by CPM or bar graph type, and shall show proposed starting and completion dates for each Trade and activity for the Work. Submit 3 copies of updated schedule at each Pay Request field review to the Architect.
- B. Submit completed construction schedule to Architect no later than 15 calendar days after date of Agreement and update monthly during construction. Submit current schedule with each application for payment.
- C. Submit completed material delivery schedule to the Architect no later than 20 calendar days after the date of the Agreement. Identify material critical to the progress of the Project and those for which long lead time in procurement is anticipated. Indicate projected dates for submittal, order and delivery of such material.

1.2 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Submit the completed schedule of submittals to the Architect no later than 15 calendar days after date of Agreement and update monthly during construction. Submit current schedule with each application for payment.
- B. Shop Drawings:
 - 1. Following Contractor's review and approval, submit to the Architect three black on white prints of each Drawing for review.
 - 2. The Architect will review the Drawings and affix a stamp to the indicating the findings of the review, and will return same to the Contractor.
 - 3. Comments, if any, will be noted directly on the drawing.
 - 4. The Contractor shall then print and distribute the appropriate number of copies to the various Trades and to Contractor's job personnel as required.
 - 5. If a drawing is indicated to be corrected and resubmitted, correct and resubmit as outlined above.
 - 6. Fire Alarm System/Fire Sprinklers System Shop Drawings shall be submitted to the state and local Fire Marshal and obtain approval prior to installation. Fire Marshal inspection, test and approval of completed installations shall be obtained prior to acceptance of the systems and Substantial Completion of the Project. These Drawings may be submitted to permit issuing Agency for approval prior to installation.
- C. Product Data:
 - 1. Following Contractor's review and approval, submit to the Architect four (4) copies of Manufacturer's catalogs and brochures, or PDF format electronic copy of Manufacturer's catalogs and brochures as required by the Specifications. If electronic copy product data are furnished, all files shall be full size PDF only. Resubmit corrected copies for approval in accordance with original submittal.
- D. Samples:
 - 1. Following Contractor's review and approval, submit to the Architect samples of materials in quantities and sizes as required by the Specifications. No electronic copy of samples will be considered for review.

2. Submit a minimum of four (4) samples of each required material, one each for Architect, Owner, Contractor and Subcontractor.
 3. Submittals required other than for selection of color, texture, fabric or finish shall be given to the Architect at a time determined by the Contractor, which will allow for resubmittal and which will not cause and delay in the Work.
 4. Corrected samples shall be resubmitted for approval as per the original submittal.
- E. Color Selection: Within 30 days of the date of Agreement, or Owner's approval of final color selections, submit to the Architect for approval, samples and appropriate information required for the selection of colors, textures, fabric and finishes for the entire Project. Physical samples shall be submitted for color or material selections. Electronic samples will not be reviewed. Final selection of color, textures, fabrics or finishes will not be made until all applicable and related submittals have been provided. If the Contractor fails to provide the required samples and related information within the time period, the Architect shall have the option of selecting colors, textures, fabric, finishes or specific materials from those specified or approved and the Contractor shall be obligated to provide the material selected by the Architect.
- F. Submit Shop Drawings, Product Data and Samples for only those items specifically mentioned in the Specifications and or Addenda. Contractor shall be responsible for obtaining Shop Drawings required for the progress of the Work, even though such Shop Drawings may not require the Architect's review.
- G. Partial Submittals: Submittals which are partial or contain only a portion of the data required to describe the item or installation will be rejected, unless such partial submittal is coordinated with the Architect prior to submittal, and final approval of all such items will be withheld pending receipt of all required information.
- H. Deviations: All deviations from the Contract Documents shall be clearly identified in the submittal. Submittal shall include only items included in the specifications or which have been approved in advance by the Architect in accordance with requirements of Section 01600. Submittals containing items which have not been approved in advance by the Architect will be rejected.

1.3 QUALITY CONTROL SUBMITTALS

- A. Equipment Lists: Following Contractor's review and approval, submit to the Architect 6 complete lists of major items of mechanical, plumbing and electrical equipment and materials, within 30 calendar days after date of Agreement. Submit all items at one time. Partial list will not be acceptable. Submittals shall include the Manufacturer's Specifications, weights, space requirements, physical dimensions, rating of equipment and supplemental information requested by the Architect. Submit performance curves for pumps and fans. Where a submittal sheet describes items in addition to that item being submitted, delete such items. Clearly note equipment and materials which deviate from those shown or specified in size, weight, required clearances, and location of access. Modifications to the Work as shown or specified in submittals shall be indicated and shall be provided by the Contractor as a part of the Work.
- B. Manufacturer's Instructions: Where Specifications require Work to be furnished, installed or performed in accordance with a specified product Manufacturer's instructions, distribute copies of such instructions to concerned parties.

1.4 REVIEW PROCESS

- A. All Shop Drawings will be reviewed and returned within 7 working days to the Contractor for distribution to the applicable trades. Shop Drawings for major components of the Work (i.e. Structural Steel) shall be returned within 14 working days.
- B. Shop Drawings are to be submitted to the Architect in a reasonable sequenced manner as not to overburden the reviewing discipline. If the Architect feels as though the review of the Submittal is not on the critical path of the Project, then the review may exceed indicated review times.
- C. If the corrections identified on the Shop Drawings are not corrected and the review of the same Submittal exceeds two (2) reviews, the Contractor will be billed for additional reviews at the current hourly rate charged by the Architect or his Consultants. This process will require that the Contractor be notified of the charges and an additional Service Work Order be signed prior to the review commencing.

END OF SECTION

**SECTION 01 3600
DIGITAL / ELECTRONIC DRAWING FILES**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section describes the limitations of use of any digital or electronic files furnished to the Contractor.

1.2 DRAWING FILES

- A. Drawing files are the original work of the professional Architect and his consultants to which the Owner (Trellis) retains all ownership rights. As such, they may not be used or reproduced beyond the limits hereinafter described without the expressed written permission of the Architect.
- B. The Owner has no contractual obligation to provide electronic files, however such files may be furnished for the convenience of the Contractor to use in the preparation of shop drawings or to coordinate the work of different trades. Owner may withhold permission to use any or all, electronic files at the sole discretion of the Owner.
- C. Electronic drawing files to be made available to the Contractor shall be limited to background plan type information. Detail drawings and similar files will not be furnished electronically.
- D. At the request of the Contractor, the Architect will furnish a single copy of digital files to the Contractor in a recent AutoCAD version on appropriate media.
 - 1. The general contractor shall make a single request for files and indicate all files desired for all trades. Requests received from subcontractors will be directed to the General Contractor.
 - 2. Contractor shall be responsible for converting files to other formats and for making and distributing copies to subcontractors.
 - 3. The Architect shall be entitled to reasonable reimbursement from the Contractor for time and materials expended to reproduce more than one copy of the files, or if the Contractor requests additional files not included in the original request.
- E. The Architect and his consultants make no warranty as to the accuracy, reliability or usefulness of Digital files or information. Contractor use of files shall result in assumption of all risks associated with their use.
- F. Limitations of use:
 - 1. Contractor shall not use or rely upon digital or electronic files as contractual documents. Contractor shall independently field verify and measure all as-built and field conditions and shall not rely upon digital files for determining clearances and dimensions, for preparing material take-offs, or other critical elements of work.
 - 2. Contractor shall transfer files to his own title block drawing sheets. Contractor shall not use or print any title blocks, logos or other marks that identify or imply authorship of the Architect or his consultants on any documents created or used by the Contractor. Such use is a violation of the Business and Professions Code and is subject to fines and other legal consequences. Documents produced by the Contractor that contain such information shall be immediately destroyed.
 - 3. Contractor may use electronic files to prepare shop drawings or to coordinate the work of different trades. Any use of electronic files in a manner that simply reproduces the electronic files for submittal as shop drawings will be rejected without review.

END OF SECTION

**SECTION 01 4200
REFERENCES**

1.1 QUALITY ASSURANCE

- A For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes. Such Reference Standards are made part of the Contract Documents by reference.
- B Conform to reference standard by date of issue current on date of Contract Documents.
- C Obtain copies of standards when required by Contract Documents.
- D Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- E The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.2 SCHEDULE OF REFERENCES

- A The following is a partial list of agencies, councils, institutions, associations, and so forth that may be referred to in the Contract Documents. This list is not to be interpreted as being complete.

AA	Aluminum Association	www.aluminum.org
AABC	Associated Air Balance Council	www.aabchq.com
AAMA	American Architectural Manufacturers Association	www.aamanet.org
AASHTO	American Association of State Highway	www.aashto.org
ACI	American Concrete Institute	www.aci-int.org
ADC	Air Diffusion Council	www.flexibleduct.org
AFPA	American Forest and Paper Association	www.afandpa.org
AI	Asphalt Institute www.asphaltinstitute.org	
AIA	American Institute of Architects	www.aia.org
AISC	American Institute of Steel Construction	www.aisc.org
AISI	American Iron and Steel Institute	www.steel.org
AITC	American Institute of Timber Construction	www.aitc-glulam.org
AMCA	Air Movement and Control Association	www.amca.org
AMG	Arizona Masonry Guild	www.masonryforlife.com
ANSI	American National Standards Institute	www.ansi.org

APA	Engineered Wood Association	www.apawood.org
API	American Petroleum Institute	www.api.org
ARI	Air-Conditioning and Refrigeration Institute	www.ari.org
ASHRAE	American Society of Heating, Refrigerating	www.ashrae.org
ASME	American Society of Mechanical Engineers	www.asme.org
ASTM	American Society for Testing and Materials	www.astm.org
AWI	Architectural Woodwork Institute	www.awinet.org
AWPA	American Wood Preservers Association	www.awpa.com
AWS	American Welding Society	www.aws.org
AWWA	American Water Works Association	www.awwa.org
BHMA	Builders Hardware Manufacturer's Association	www.buildershardware.com
BIA	Brick Industry Association	www.brickinfo.org
CDA	Copper Development Association	www.copper.org
CISCA	Ceilings and Interior Systems Construction Association	www.cisca.org
CLFMI	Chain Link Fence Manufacturers Institute	www.chainlinkinfo.org
CRI	The Carpet and Rug Institute	www.carpet-rug.com
CRSI	Concrete Reinforcing Steel Institute	www.crsi.org
CSSB	Cedar Shingle and Shake Bureau	www.cedarbureau.org
DHI	Door and Hardware Institute	www.dhi.org
EJMA	Expansion Joint Manufacturers Association	www.ejma.org
FMG	FM Global	www.allendale.com
GA	Gypsum Association	www.gypsum.org
GANA	Glass Association of North America	www.glasswebsite.com
ICC	International Code Council	http://www.iccsafe.org/
IEEE	Institute of Electrical and Electronics Engineers	www.ieee.org
IGMA	Insulating Glass Manufacturers Alliance	www.igmaonline.org
MAG	Maricopa Association of Governments	www.mag.maricopa.gov
MBMA	Metal Building Manufacturer's Association	www.mbma.com

MIL	Military Specification	http://dodssp.daps.dla.mil/
ML/SFA	Metal Lath/Steel Framing Association	www.naamm.org
NAAMM	National Association of Architectural	www.naamm.org
NCMA	National Concrete Masonry Association	www.ncma.org
NEBB	National Environmental Balancing Bureau	www.nebb.org
NEMA	National Electrical Manufacturers Association	www.nema.org
NFPA	National Fire Protection Association	www.nfpa.org
NRCA	National Roofing Contractors Association	www.nrca.net
NTMA	National Terrazzo and Mosaic Association	www.ntma.com
PCA	Portland Cement Association	www.cement.org
PCI	Precast/Prestressed Concrete Institute	www.pci.org
PDCA	Painting and Decorating Contractors of America	www.pdca.com
PS	Product Standard U. S. Department of Commerce	http://ts.nist.gov/Standards/Conformity/sccg.cfm
RIS	Redwood Inspection Service	www.redwoodinspection.com
RFCI	Resilient Floor Covering Institute	www.rfci.com
SDI	Steel Deck Institute	www.sdi.org
SDI	Steel Door Institute	www.steeldoor.org
SIGMA	Sealed Insulating Glass Manufacturers Association	Refer to IGMA
SJI	Steel Joist Institute	www.steeljoist.org
SMACNA	Sheet Metal and Air Conditioning	www.smacna.org
SSPC	The Society for Protective Coatings	www.sspc.org
TCA	Tile Council of America, Inc.	www.tileusa.com
UL	Underwriters' Laboratories, Inc.	www.ul.com
WCLIB	West Coast Lumber Inspection Bureau	www.wclib.org
WDMA	Window and Door Manufacturing Association	www.wdma.com
WWPA	Western Wood Products Association	www.wwpa.org

END OF SECTION

**SECTION 01 4500
QUALITY CONTROL**

PART 1 GENERAL

1.1 TESTING LABORATORY SERVICES

- A. Special Inspections and Testing: Owner will employ and pay for the services of an independent testing agency to perform Special Inspections and Testing called for in the Contract Documents and as required by Code or authorities having jurisdiction.
- B. Quality Control Testing and Inspections: Contractor shall retain an independent testing laboratory, acceptable to Architect and Owner, to perform quality control testing Work called for in the Contract Documents, and pay cost of services.
- C. Contractor shall cooperate with Testing Laboratory personnel and provide access to the Work as required to perform testing or inspections called for in the Construction Documents.
- D. Contractor shall furnish samples for such tests and deliver them to the Testing Laboratory in quantities as required by the Contract Documents.
- E. Contractor shall provide Testing Laboratory 24 hours minimum notice in advance of Work being performed that requires testing and/or inspection services.
- F. The Testing Laboratory(s) shall, within 24 hours of performing a test or inspection, distribute digital copies of reports as follows:
 - 1. Architect
 - 2. Structural Engineer or other Engineering Consultant
 - 3. Contractor
 - 4. Owner
 - 5. Code authorities or authorities having jurisdiction as they may require.
- G. All costs for additional inspections and/or retesting required when initial testing indicates Work does not comply with Contract Documents, shall be paid for by the Contractor.
- H. Refer to individual specification Sections and General Notes on Drawings for specific requirements for Testing and/or Inspections. The following lists are intended as a guide to the Contractor to aid in determining testing requirements for the Project, however, the requirements specified in the Technical Sections shall take precedence over these lists and these lists are not to be interpreted as being complete.
 - 1. Special Inspections and Testing:
 - a. Special Inspections and Testing required by the General Structural Notes on the Drawings.
 - a. 03 3000 - Cast-In-Place Concrete: Test cylinders, slump test(s)
 - b. 04 0515 - Mortar and Masonry Grout: Test of grout mix
 - c. 04 2200 - Concrete Unit Masonry: Prism testing
 - d. 05 1000 - Structural Metal Framing: Welded connection tests, inspection of high strength bolts.
 - e. 31 0000 - Earthwork: Test imported fill materials if required, observation of earthwork by Geotechnical Engineer, density and moisture testing of trench backfill, field density tests of underslab fill and backfill.

2. Quality Control Testing and Inspections:
 - a. 03 3000 - Cast-In-Place Concrete: Floor flatness, calcium chloride moisture testing.
 - b. 04 2200 - Concrete Unit Masonry: Water penetration and leakage
 - c. 05 4100 - Load-Bearing Metal Stud System: Steel framing properties, when required.
 - d. 07 9200 - Joint Sealers: Field adhesion testing and stain testing.
 - e. Division 09 Flooring Sections: Moisture content of concrete sub-floors.
 - f. 31 3100 - Soil treatment: Field test termite treatment
 - g. 32 12 6 - Asphaltic Concrete Paving: Smoothness tests

1.2 CONTRACTOR'S QUALITY CONTROL

- A. Where Contract Documents require that a particular product be installed and/or applied by an applicator approved by the Manufacturer, it is the Contractor's responsibility to ensure that the subcontractor employed for such work is approved in writing by the Manufacturer of the product. Such subcontractor(s) shall provide evidence of being approved to the Owner and Architect prior to being awarded the Subcontract for the Work.
- B. Work shall be executed by persons skilled in the work required and shall conform to the highest methods, standards and accepted practices of the Trade or Trades involved.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 GENERAL

- A Comply with codes and regulations regarding potable drinking water, sanitation, dust control, fire protection, and other temporary controls.
- B Remove temporary office facilities, toilets, storage sheds and other construction of temporary nature from the site as soon as, in the opinion of the Architect, the progress of the work will permit. Recondition and restore to a condition acceptable to the Architect, areas of the site occupied by temporary facilities.
- C Obtain written approval from the Owner a minimum of 72 hours prior to disconnection or shutting off service or utility.

1.2 TEMPORARY ELECTRICITY

- A Provide and pay for power service required from Utility and make arrangements for such service. Where available and adequate for new construction, connect to existing electric service locations at existing building(s) as necessary. Power consumption shall not disrupt ongoing electrical power service needs of existing building and facilities during length of construction. Where necessary to provide adequate electrical service for construction, provide and pay for electrical service from Utility and make arrangements for such service.
- B Provide temporary electric feeder from existing building electrical service location(s) or new electrical service location as directed by the Utility Owner or as indicated on Drawings.
- C Provide power outlets for construction operations, with branch wiring and distribution boxes. Provide flexible power cords as necessary.
- D Provide main service disconnect and overcurrent protection at convenient location.
- E Permanent convenience receptacles which are GFI protected may be utilized during construction after appropriate approvals and permits for temporary use. Existing electrical receptacle used during construction shall be left in a new condition without damage at final completion.
- F Provide adequate distribution equipment, wiring, and outlets to provide branch circuits for power and lighting.

1.3 TEMPORARY LIGHTING

- A Provide incandescent lighting for construction operations to achieve a minimum lighting level of 2 watts/sq. ft.
- B Provide adequate floodlights, clusters and spot illumination to work areas after dark.
- C Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

- D. Maintain lighting and provide routine repairs.
- E. Replace all lamps used during the construction period immediately prior to issuance of Certificate of Substantial Completion.

1.4 TEMPORARY HEATING/COOLING AND VENTILATING

- A. Provide and pay for heating/cooling devices and heat as required to maintain appropriate and specified conditions for construction operations. Contractor may utilize existing mechanical systems where available and adequate within existing areas and with prior approval by Owner. Owner will pay cost of energy used. Exercise measures to conserve energy.
- B. Prior to operation of permanent equipment for temporary heating or cooling purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.
 - 1. All ducts shall be vacuumed and all filters shall be replaced immediately prior to issuance of Certificate of Substantial Completion.
- C. Maintain minimum/maximum ambient temperature and humidity conditions required by individual specification sections for installation of materials and finishes required to have specific environmental conditions.
- D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.5 COMMUNICATIONS

- A. At time of Project mobilization, or before, provide Architect and Owner with Project team directory, including the following:
 - 1. General Contractor's home office.
 - 2. Contractor's superintendent mobile telephone number.
 - 3. Other major subcontractors and Project Team members.
- B. Provide superintendent with mobile telephone throughout construction period.
- C. Computer and Internet Access: Provide computer with internet access in field office.
 - 1. Provide DSL or Cable modem access with 1.5 Mbps minimum.
 - 2. Computer shall be made available to Owner and Architect for use throughout construction.
 - 3. Provide account/address reserved for project use.

1.6 TEMPORARY WATER SERVICE

- A. Provide, maintain and pay for suitable quality water service required for construction operations.
- B. Extend branch piping throughout the site to provide outlets for hoses with threaded connections.

1.7 TEMPORARY SANITARY FACILITIES

- A Provide and maintain required facilities and enclosures. Existing facilities in existing building(s) are not available for use unless specifically authorized by Owner.
 - 1. Where authorized by Owner, existing facilities used during construction operations shall be cleaned and returned at same or better condition than originally found.

1.8 TEMPORARY FIRE PROTECTION

- A Provide adequate number of fire extinguishers to protect the Work.
- B Comply with fire insurance and governing regulations.
- C Provide UL labeled ABC all-purpose fire extinguishers adequate in size and number.
- D Provide temporary office and storage areas with fire extinguishers.

1.9 BARRIERS

- A Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C Provide protection for plant life designated to remain. Replace damaged plant life.
- D Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.10 FENCING

- A Construction: Commercial grade chain link fence with adequate support to remain in place during storm winds.
- B Provide 6'-0" high fence around construction site, including parking lot, landscape area, and retention areas as necessary to protect Work; equip with vehicular and pedestrian gates with locks.
- C Locate gates for access to work areas, as required. Close and lock after working hours.

1.11 ENVIRONMENT PROTECTION AND CONTROLS

- A Exercise controls to keep noise and dust during construction to a minimum. Traffic or construction areas shall be sprinkled with water or chemicals as required and in accordance with applicable regulatory requirements.
- B Environmental Protection: Conduct construction operations and operate equipment and machinery using methods complying with environmental regulations to avoid or minimize pollution or contamination to air, water, waterways, soil, groundwater, or other natural resources.
 - 1. Prevent creation of air pollution from dust and particulate matter.
 - 2. Store volatile liquids, including fuels and solvents, in closed containers.

3. Properly maintain equipment to reduce gaseous pollutant emissions.
4. Properly dispose of hazardous or contaminated debris in compliance with environmental regulations.
5. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment as may be necessary.
6. Stockpile and protect disturbed topsoil from erosion (for reuse).
7. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
8. Comply with local requirements for storm water pollution prevention.
 - Protect on-site storm sewer inlets, streams, and lakes with straw bales, silt fencing, silt sacks, rock filters, or comparable measures.
9. Control the path and velocity of runoff with silt fencing or comparable measures.
10. Provide swales to divert surface water from hillsides.
11. Use tiers, erosion blankets, compost blankets, filter socks, berms, or comparable measures to stabilize soils in any area with a slope of 15% (6.6:1) or more that is disturbed during construction.

1.12 EXTERIOR ENCLOSURES

- A. Provide temporary weather-tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification Sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.13 PROTECTION OF INSTALLED WORK

- A. Protect all installed work. Provide the special protection features where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to avoid damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with plywood sheets and waterproof covering.
- E. Prohibit traffic or storage directly on waterproofed or roofed surfaces. If traffic or activity is necessary, provide protection in accordance with material and or system manufacturer's printed instructions.
- F. Prohibit traffic from landscaped areas.
- G. Follow Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) procedures for the protection of installed work..
- H. Adhere to the no smoking policy within 25 ft of building or vent

1.14 SECURITY

- A. Coordinate with Owner's existing security services (if any) to protect Work and existing facilities, and Owner's operations from unauthorized entry, vandalism or theft. Where necessary, provide additional security and facilities to protect Work and existing

facilities, and Owner's operations from unauthorized entry, vandalism or theft.

- B. Provide and pay for watchman service if necessary for adequate protection.

1.15 SITE ACCESS, PARKING AND STAGING

- A. Coordinate site access and parking to accommodate construction personnel with Owner. Restrict site access and parking to areas allowed by Owner.
- B. Comply with Contractor Use of Site requirements of Section 01 1100 – Summary of Work.
- C. Maintain access to fire hydrants, free of obstructions.
- D. Provide fenced area with secure locking gates as may be necessary for construction staging throughout the construction period at location authorized by Owner.

1.16 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition on a daily basis.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Regularly remove waste materials, debris, and rubbish from site and dispose off-site. Do not allow to accumulate.
 - 1. Waste Management Requirements: On or off-site separation of recyclable materials shall be provided by the Contractor. Document percent of diverted waste from landfill.

1.17 PROJECT IDENTIFICATION

- A. General Contractor is limited to one (1) sign located on their construction trailer. Additional signage must be approved by Owner's Representative. Subcontractors, suppliers, manufacturers, consultants, etc., shall not furnish company information banners unless approved by Owner's Representative.
- B. Project Information Sign: Provide 8 foot wide x 4 foot high project sign of exterior grade plywood and wood frame construction, painted to Architect's design and colors.
 - 1. List title of Project, Names of Owner, Architect, and General Contractor.
 - 2. Erect on site at location established by Architect and Owner.
 - 3. Allow 7 working days for Architect to provide electronic graphic image.
- C. Contractor shall obtain all required City of Phoenix approvals and sign permits and pay all fees required for installation of temporary construction signs.
- D. No other signs are allowed without Owner's permission except those required by law.

1.18 FIELD OFFICES AND SHEDS

- A. Office: Weather-tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture, drawing rack and drawing

display table.

- B. Provide space for project meetings, with table and chairs to accommodate the entire Project Team.
- C. Locate offices and sheds as approved by Owner.

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.1 DELIVERY, STORAGE AND HANDLING

- A. Deliver manufactured materials in original packages, containers or bundles, with the seals unbroken, identified by the name and mark of the Manufacturer, the product name, color, number, and so forth.
- B. Deliver fabrications in as large assemblies as practicable. Fabrications specified to be shop-primed or shop-finished shall be packaged or crated as required to preserve such priming or finish intact and free from damage.
- C. The Contractor shall be responsible for protecting all materials and equipment furnished under the Contract including materials and equipment furnished by the Owner for the Contractor to install and for the materials and equipment furnished and installed by the Owner's separate contractors in the completed or partially completed Work.
- D. Store materials in a manner to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt or other cause will not be acceptable and are to be removed from the site. Replace such materials immediately so as not to delay the Work.
 - 1. Follow Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) procedures for the protection of materials during storage.
- E. Store materials so as to cause no obstructions. Store off sidewalks, roadways, and underground services.
- F. When a room in the Project is used as a shop or store room, the Contractor shall be responsible for all repairs, patching or cleaning necessary due to such use. Location of such storage space shall be subject to approval of the Architect.

1.2 SUBSTITUTIONS AND PRODUCT OPTIONS

- A. Whenever a product is specified by using a proprietary name or the name of a particular Manufacturer or Vendor, the specific item mentioned shall be understood as establishing type, function, dimension, appearance, and quality desired.
- B. Other manufacturers' products will be accepted provided sufficient information is submitted to allow the Architect to determine that products proposed are equivalent to those named.
- C. Prior Approvals:
 - 1. Substitutions will be considered when written request has been submitted to the Architect for approval.
 - 2. Contractor shall request approval of such substitution, in writing, to the Architect using Document 00 4325 – Substitution Request (During the Bidding Phase) form contained in the Project Manual.
 - 3. Each such request shall include all information requested below for Requests for approval after award of a Contract. If the Owner approves any proposed substitution, such approval shall be set forth in an Addendum.

- D. Requests for approval after award of a Contract:
1. Requests shall be made only under one of the following conditions:
 - a. Specified product or material is not available.
 - b. Extensive revisions to the Contract Documents are not required.
 - c. Proposed changes are consistent with intent of the Contract Documents.
 - d. Request is timely and properly submitted.
 - e. Specified product or material cannot be provided within the Contract Time.
 - f. Request relates to an "or equal" clause.
 - g. Proposed substitution offers Owner a substantial advantage in cost, time, or other considerations.
 - h. Specified product or material cannot receive regulatory approval.
 - i. Specified product or material is incompatible with other materials.
 - j. Specified product or material cannot be coordinated with other materials.
 - k. Specified product or material manufacturer cannot provide the specified warranty.
 2. Requests shall be submitted to the Architect a minimum of 10 working days prior to date Contractor is required to place an order for the product.
 3. Contractor shall request approval of such substitution, in writing, to the Architect using Section 00 6325 – Substitution Request (After the Bidding Phase) form contained in the Project Manual.
 4. The request shall specifically state the reason that the product is unavailable with evidence to substantiate the reason.
 5. Requests made directly to Architect by suppliers, subcontractors and distributors that are not from the Contractor will not be accepted by the Architect or Owner.
 6. Architect will approve or reject substitution in writing.
 7. Substitutions will not be considered if they are indicated or implied on Shop Drawings.
- E. Contractor shall submit descriptive brochures, drawings, samples and other data as is necessary to provide direct comparison to the specified materials after reviewing and determining that product meets specified requirements. Submittals shall be well marked and identified as to types and kind of the items being submitted for approval. Lack of sufficient information will be cause for rejection. Reference to catalogs will not be acceptable unless catalog is submitted with approval request and the specific product or material and its components are clearly identified.
- F. In submitting a substitution, the Contractor makes the following representations:
1. Proposed substitution has been fully investigated and determined to be equal or superior to specified product or material.
 2. The same warranty will be furnished for proposed substitution as for specified product or material.
 3. The same maintenance service and source of replacement parts, as applicable, is available.
 4. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
 5. Cost data included on the substitution request is complete. Claims for additional costs related to accepted substitution and its impact on other portions of the Work which may subsequently become apparent are waived.
 6. Proposed substitution does not affect dimensions and functional clearances.

7. Payment for costs for additional services of Architect caused by the substitution shall be paid by Contractor. The Contractor will be billed for additional services at the current hourly rate charged by the Architect. The Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor.
8. Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

END OF SECTION

**SECTION 01 6116
VOC CONTENT RESTRICTIONS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The requirement for installer certification that they did not use any non-compliant products.

1.2 DEFINITIONS

- A. Interior of Building: Anywhere inside the exterior weather barrier.
- B. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- C. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

1.3 REFERENCE STANDARDS

- A. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Carpet and Rug Institute; Current Edition.
- B. GreenSeal GS-36 - Commercial Adhesives; Green Seal, Inc.; 2011.
- C. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of his products, or 2) that such products used to comply with these requirements.

PART 2 EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Owner reserves the right to reject non-compliant products, whether installed or not and require their removal and replacement with compliant products at no extra cost to Owner. Additional costs to restore indoor air quality due to the installation of non-compliant products will be borne by Contractor.

END OF SECTION

**SECTION 01 7300
EXECUTION REQUIREMENTS**

PART 1 GENERAL

1.1 EXAMINATION AND COORDINATION OF WORK

- A. Verification of Conditions: Examine and verify surfaces, sub-surfaces, condition, and serviceability of previous work to receive subsequent work and report detrimental conditions in writing to the Architect.
- B. Commencement of work acknowledges acceptance and serviceability of previous work.
- C. Coordination: Coordinate with other work which affects, connects with, or will be concealed by subsequent work.
 - 1. Work within concealed ceiling and plenum spaces shall be coordinated with all other work within these spaces to assure a coordinated assembly.
 - 2. Coordinate location and layout of mechanical, electrical, and other systems located within suspended ceilings.
 - 3. Utilize Revit Model to create fully coordinated model and Shop Drawings of Project infrastructure.
 - 4. Notify Architect immediately if conflicts are found.
 - 5. Adjust work in place in concealed ceiling spaces as required to allow installation of other work which cannot be adjusted.
- D. Any remedial work required to be performed on previously placed work after new work has commenced shall be by and at the expense of the Contractor and/or sub-contractor having commenced the new work.

1.2 TOLERANCES

- A. Certain tolerances are listed in the various specification sections and on the Drawings. In addition, other tolerance limits are set forth below. These tolerances are the maximum variation allowed on the Project.
- B. Each of the Contractors shall review the tolerance limits established for their work as they relate to the other work on the Project. Should the tolerance limits established for their work be in conflict with those limits established for other adjoining work, the Architect and Owner shall be notified before proceeding.
- C. It is the intention of the Contract Documents that, assuming work in place is within the tolerance limits established, or has been accepted by following contractor(s), subsequent work shall be adjusted as required.
- D. Tolerances:
 - 1. Concrete: 1/8 inch plus or minus in any 10 feet and 3/4 inch total overall in any direction.
 - 2. Masonry: 1/8 inch plus or minus in any 10 feet and 1/4 inch total overall in any direction.
 - 3. Structural Steel: 1/8 inch plus or minus in 60 feet and 1/2 inch total overall in any direction.
 - 4. Miscellaneous Metal: 1/8 inch plus or minus in 20 feet and 1/4 inch total overall in any direction.
 - 5. Ornamental Metal: 1/8 inch total overall in any direction.

6. Drywall: 1/16 inch plus or minus in any 12 feet and 1/8 inch total overall in any direction.
 7. Acoustic Tile: 1/8 inch maximum variation overall in any direction.
 8. Granite and Marble: 1/16 inch maximum variation overall in any direction.
 9. Millwork: 1/16 inch Maximum overall in any direction.
 10. Ceramic Tile: 1/16 inch maximum overall in any direction.
- E. All materials such as Stone tile and veneers, acoustic tile, lay-in acoustical panel and decorative ceilings, ceramic tile, VCT, wood flooring, and so forth, are to meet flush with adjacent pieces of the same material.

1.3 APPROVED APPLICATORS

- A. Where specific instructions in the Specifications require that a particular product and/or material be applied and/or installed by an "approved applicator" it shall be the Contractor's responsibility to insure that any subcontractor or sub-subcontractor used for such Work is in fact currently certified by the particular Manufacturer for this type of installation or application.

1.4 APPROVED MANUFACTURERS

- A. Each Section includes a list of Manufacturers whose equipment is acceptable as to manufacture, subject to conformance with the Contract Documents. Careful checking must be completed by the Contractor and the manufacturer or equipment supplier to verify that the equipment will meet all capacities, requirements, space allocations and is suitable for the intended purpose specified.

1.5 REFERENCE DATA

- A. Reference data made available to the Contractor is for the Contractor's information only, and neither the Owner nor the Architect assume any responsibility for the Contractor's conclusions.
- B. The Contractor shall establish and maintain all building and construction grades, lines, levels, and bench marks. This Work shall be performed by a licensed Civil Engineer or Surveyor under the employ of the Contractor, who shall certify to the Owner that he has performed this service.
- C. The Contractor shall not remove any fixed property line markers, monuments, or data.

END OF SECTION

**SECTION 01 7329
CUTTING AND PATCHING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A Cutting, fitting and patching, including attendant excavation and backfill required to complete Work, and for:
1. Making several parts fit together properly.
 2. Uncovering portions of Work to provide for installation of ill-timed Work.
 3. Removing and replacing defective and non-conforming Work.
 4. Removing samples of installed Work required for testing, as directed by Architect.
 5. Providing routine penetrations of non-structural surfaces for installation of piping electrical conduit, and similar items.
 6. Attaching new materials to existing.

1.02 SUBMITTALS

- A In advance of executing any cutting or alterations, submit written request to Architect requesting consent to proceed with cutting which affects:
1. Work of Owner or other trades.
 2. Structural value or integrity of any element of Project.
 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
 4. Efficiency, operational life, maintenance, or safety of operational elements.
 5. Visual qualities of sight-exposed elements.
- B. Include in request:
1. Identification of Project.
 2. Description of affected Work.
 3. Necessity for cutting, alteration or excavation.
 4. Effect of Work of Owner or other trades, or structural or weatherproof integrity of Project.
 5. Description of proposed Work:
 - a. Scope of cutting, patching, alteration, or excavation.
 - b. Trades which will execute Work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be done.
 6. Alternatives to cutting and patching.
 7. Cost proposal, when applicable.
 8. Written permission of trades whose Work will be affected.
- C. Submit written notice to Architect designating time work will be uncovered and when work will be performed to provide for observation when necessary.

1.03 PAYMENT FOR COSTS

- A Payment caused by ill-timed or defective work or work not conforming to Contract Documents, including costs for additional services of Architect and Engineer shall be paid by Contractor. The Contractor will be billed for additional services at the current hourly rate charged by the Architect. The Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor.

- B. Payment of work done on written instructions of Architect, other than defective or nonconforming work, will be paid by Owner on approval of a written Change Order. Provide written cost proposal prior to proceeding with cutting and patching instructed by Architect for other than defective or nonconforming work. All work shall be approved by Architect and Owner prior to commencement.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Provide for replacement of Work removed. Comply with Contract Documents for type of Work standards and Specification requirements for each specific product involved.

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions of Work, including elements subject to movement or damage during cutting and patching, and excavating and backfilling. After uncovering Work, inspect conditions affecting installation of new products and verify procedures with Architect.
- B. Report unsatisfactory or questionable conditions in writing to Architect/Engineer. Do not proceed with Work until further instructions are received.

3.2 PREPARATION

- A. Provide shoring, bracing and supports as necessary to maintain structural integrity of work. Design of shoring, bracing and supports shall be performed by an Engineer registered in the State of Arizona.
- B. Provide devices and methods to protect other portions of Work from damage, including elements which may be exposed by cutting and patching Work. Maintain excavations free from water.

3.3 ERECTION, INSTALLATION AND APPLICATION

- A. Performance:
 - 1. Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.
 - 2. Execute cutting and demolition by methods which prevent damage to other Work to provide proper surfaces to receive installation of repairs and new Work.
 - 3. Execute excavating and backfilling by methods which prevent damage to other Work and settlement as specified in Section 31 0100.
- B. Employ original installer or fabricator to perform cutting and patching for:
 - 1. Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants and waterproofing.
 - 2. Sight-exposed finished surfaces.
- C. Execute fitting and adjustment of products to provide a finished installation to comply

with specified products, functions, tolerances and finishes as shown on Drawings and as specified.

- D. Fit Work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces. Conform to fire code requirements for penetrations and maintain integrity of fire walls and ceilings.
- E. Restore Work which has been cut or removed. Install new products to provide completed Work in accordance with requirements of Contract Documents and as required to match surrounding areas and surfaces.
- F. Refinish entire surfaces as necessary to provide an even, matching finish as follows:
 - 1. Painted Walls or Ceilings: To nearest intersection with another finish or corner.
 - 2. Where applied finishes occur (i.e wallcovering, tile, wood paneling): To nearest intersection of finish without damage to adjacent material. Where match of pattern, grain, texture, or similar finish cannot be made, refinish area to intersection with other finish or internal corner.
 - 3. Manufactured or shop fabricated materials: Replace entire affected surface or entire component.

END OF SECTION

**SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 1. Salvaging, recycling, and disposing of nonhazardous construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Site Demolition Waste: Site improvement materials resulting from demolition or selective site demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 25 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:
 1. Construction Waste:
 - a. Masonry and CMU.
 - b. Miscellaneous lumber.
 - c. Metals.
 - d. Roofing.
 - e. Insulation.
 - f. Carpet and pad.
 - g. Gypsum board.
 - h. Piping.
 - i. Electrical conduit.
 - j. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

1.4 ACTION SUBMITTALS

- A. Waste Management Plan: Submit 3 copies of plan within 30 days of date of the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit reports documenting the following:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end- of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. General Contractor shall provide list of local recycling receivers and processors of recyclable materials along with submittal of Construction Waste Management Plan. Include names and telephone numbers.
- C. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.
- D. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

- E. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.2 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.
 - 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.3 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

**SECTION 01 7700
CLOSEOUT PROCEDURES**

PART 1 GENERAL

1.1 FINAL CLEANING

- A Perform the following special cleaning for trades at completion of Work. Employ experienced workmen or professional cleaners for the final cleaning:
 - 1. Remove marks, stains, fingerprints, soil and dirt from paint, stain and wall covering.
 - 2. Remove spots, soil, paint and mastic from tile work and wash same.
 - 3. Clean fixtures, equipment and piping; remove stains, paint, dirt and dust.
 - 4. Remove temporary floor protections; clean and polish floors.
 - 5. Clean concrete walks and slabs of plaster or cement droppings, paint and other objectionable materials to present a neat, clean appearance.
 - 6. Clean exterior and interior metal surfaces, including doors and windows and their frames.
 - 7. Remove oil, stains, dust, dirt, paint and the like from items required to have a polished finish; polish and leave without fingermarks or other blemishes.
 - 8. Wash interior and exterior glazing, inside and outside.
 - 9. Polish mirrors.
- B Make building(s) ready for occupancy in every respect. Lay heavy building paper in main circulation areas to protect the floors until final inspection and acceptance.
- C Existing improvements, inside or outside the property which are disturbed, damaged or destroyed by the Work under the Contract shall be restored to their original condition unless as part of the Work, improvements were required.

1.2 PROJECT RECORD DOCUMENTS

- A As the work progresses, the Contractor shall maintain a complete and accurate record of changes or deviations from the Contract Documents and Submittals, indicating the Work as actually installed. Document information by daily corrections and/or additions in the appropriate locations on a PDF or other suitable electronic copy of the Construction Documents and Submittals and PDF or other suitable electronic copy of the Specifications which shall be maintained by the Contractor solely for the purpose of this documentation. Contractor shall maintain this electronic set of Construction Documents and Submittals at the Project site for review by the Owner and Architect.
- B Information contained in the Record Documents shall include, but not be limited to:
 - 1. Modifications made by Addenda, Bulletins, Change Orders, Construction Change Directives and Architect's Supplemental Instructions.
 - 2. Location of site underground pipes, conduits, ducts, cables and similar work, dimensioned horizontally to permanent points of reference and located vertically by indicating depth of burial and invert elevations. Dimensions shall be accurate within 2 inches.
 - 3. Location of building plumbing piping, sprinkler piping, control valves, shut-off valves, heating and air conditioning equipment, mechanical piping, ductwork, major conduit runs, power, control and alarm wiring, etc., dimensioned horizontally to permanent points of reference. Dimensions shall be accurate within 2 inches. By notation, describe the vertical location of the item such as "below slab," "above ceiling," etc.

4. Modifications made to accommodate field conditions.
 5. Location and function of mechanical and electrical control devices and shut-off valves.
 6. Panel schedules showing final circuiting of electrical fixtures and equipment.
- B. The Architect will provide PDF or other suitable electronic copy of the complete original bidding documents, at Contractor's expense. Seals and signatures of Registrants shall be completely removed and/or permanently obscured. Contractor shall provide the following on the Drawings:
1. Changes in the Contract Documents, secured with prior approval of the Architect, recorded on the PDF copy utilizing PDF writing software mark-up features, by a competent drafter. Deletions shall be made by electronic cross-out or other indication clearly indicating information deleted. Record information in adequate size lettering and notations to be legible at half size reproduction.
- C. Upon Substantial Completion of the Work, deliver the complete electronic set of Record Documents including Shop Drawings and annotated Specifications to the Architect for approval.
- D. Permit Record Set, as approved by all governing agencies shall be kept in secure location by the Contractor.

1.3 OWNERS MANUAL

- A. Owner's Manual: Prior to final payment, provide 1 digital copy and Three (3) hard-back, loose-leaf binders, suitably typed, indexed and labeled, containing the following:
1. Subcontractors and major suppliers list with companies names, addresses, email addresses and telephone numbers.
 2. Warranties and certifications.
 3. Affidavit from general and subcontractors on use of asbestos free materials.
 4. Maintenance/operation instructions.
 5. Parts list.
 6. List of Extra Materials delivered to Owner; signed for by Owner's representative.
 7. Other items required by the Specifications.

1.4 OPERATION AND MAINTENANCE DATA

- A. Submittals: Submit two (2) draft copies of Operation and Maintenance Manuals for systems and equipment, including electrical and control items, and parts lists, a minimum of 14 days prior to requesting inspection for Substantial Completion, or scheduled Substantial Completion Date, whichever is earlier. Furnish separate copies for each Division.
1. Architect will review Manuals for general scope and content and return one copy of draft manuals with required action.
- B. Operating instructions shall include complete operating sequence, control diagrams, description of method of operating machinery, machine serial numbers, factory order numbers, parts, tests, instruction books, suppliers phone numbers, addresses, email addresses, and individual equipment guarantees. Parts lists shall be complete in every respect, showing parts and part numbers for ready reference.

- C. Maintenance instructions shall include a written list of required and suggested maintenance for mechanical, plumbing, electrical or other equipment or features in the project. Each item shall contain a brief description of the maintenance required as well as the recommended time frame or period for the maintenance. Include lists of filter sizes for air handling equipment, indicated "washable" or "disposable" and for which unit the filter is for.
- D. Provide operating and maintenance instructions on DVD, memory key or similar electronic media, either prepared by the Contractor or where available, manufacturers prepared operations and maintenance videos and/or instructions for each specific equipment item or system.
- E. Assemble maintenance manual and operating instructions in hard back loose leaf binders. Suitably label and index material for ready reference.
- F. Upon substantial completion of the Project Work, submit one copy of the Operation and Maintenance Manual and Parts Lists to the Architect for approval. Upon receipt of Notice of Approval, deliver the additional copy to the Owner. Include CD and/or DVD disks of materials in electronic format.

1.5 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Deliver spare parts, tools, extra stocks of material and similar physical items required by individual specification sections to the Owner with a copy of the transmittal to the Architect. Obtain signed receipts from the Owner for all items.
- B. Change over construction locks to permanent keying system. Deliver required number of keys to the Owner with a copy of the transmittal to the Architect. Obtain receipts from the Owner for delivered items.

1.6 ELECTRONIC COPIES OF IMAGE DOCUMENTS

- A. Upon completion provide CD, DVD, or memory key containing image copies in JPEG, PDF or other appropriate electronic format of all record and maintenance documents.

1.7 WARRANTIES

- A. Submit warranties required by individual specification Sections in duplicate, assembled in durable binders with a Table of Contents and a digital copy of same on DVD, memory key or other current electronic media.
- B. The date of commencement of warranties shall be the date of Substantial Completion except as may be modified by AIA Document G-704, Certificate of Substantial Completion, or by other written agreement with the Owner.

END OF SECTION

**SECTION 01 7836
WARRANTIES AND BONDS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including Division 01 General Requirements, apply to this Section.

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties. Contractor will review guarantee/warranty to verify compliance with Contract Documents.
 - 1. Refer to the General Conditions and the separate Guaranty of workmanship and materials.
 - 2. General closeout requirements are included in General Requirements Section - Project Closeout.
 - 3. Specific requirements for warranties of the Work and products and installations that are specified to be warranted, are included in the individual Sections of Division - 02 through Division -48. If no specific information is included in individual sections of the specifications, warranty period shall be as follows: Manufacturer's warranties notwithstanding, warrant the entire Work against defects in materials and workmanship for twelve (12) months from date of Notice of Completion
 - 4. Certifications and other commitments and agreements for continuing services to the Owner are specified elsewhere in the Contract Documents.
 - 5. The Contractor shall not be responsible for defects due to misuse, negligence, willful damage, improper maintenance, or accident caused by others, nor shall he be responsible for defective parts whose replacement is necessitated by failure of the Owner's maintenance forces to properly clean and service them, provided the Contractor has furnished complete maintenance instructions to the Owner.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 BOND REQUIREMENTS

- A. Each bond specified in this Article (faithful performance bond, payment bond) shall meet the requirements of all applicable statutes, including but not limited to those specified in Arizona State Codes.
- B. Each bond specified in this Article shall be issued by a surety company designated as an admitted surety insurer in good standing with and authorized to transact business in this state by the Arizona Department of Insurance, and acceptable to the Owner. Bidders are cautioned that representations made by surety companies will be verified with the Arizona Department of Insurance. Additionally, the Owner, in its discretion, when determining the sufficiency of a proposed surety company, may require the surety company to provide additional information supported by documentation. The Owner generally requires such information and documentation whenever the proposed surety company has either a Best's Key Rating Guide of less than B+ or a financial size designation of less than VIII. Provided,

however, that the Owner expressly reserves its right to require all information and

documentation to which the Owner is legally entitled from any proposed surety company.

- C. Payment and Performance Bonds. The successful bidder shall furnish a faithful performance bond in the amount of 100 percent of the Contract Amount and a payment bond in the amount of 100 percent of the Contract Amount.
- D. Pursuant to Article 8 of the Agreement, Contractor shall furnish Owner with performance and labor and material payment bonds, as applicable, covering the faithful performance and payment obligations under the Contract documents of Contractor or any Subcontractor as required by Owner. All such bonds shall be in an amount, form and from a surety satisfactory to the Owner and Funding source. All such bonds shall remain in full force and effect during the term of any warranty arising under the Contract Documents.

1.4 DEFINITIONS RE: WARRANTIES

- A. Standard Product Warranties are pre-printed written warranties published by individual manufacturers for products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.5 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranty Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranty Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Costs: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- F. Contractor agrees to correct any Non-conforming Work that is discovered within a period of Two (2) years from the date of Final Completion, or within such longer period to the extent required by the Contract documents. Contractor shall bear all costs and expenses related to correcting such Non-confirming Work, including those related to remedying all work of the Owner or separate contractors destroyed or damaged by such correction, additionally testing and inspections, and compensation for the Design Professional's services and expenses made necessary thereby.
- G. The two (2) year warranty applies only to Contractor's obligation to correct Non-conforming Work and is not intended to constitute a period of limitations for any other rights of remedies

Owner may have regarding Contractor's other obligations under the Contract Documents.

H. Contractor shall take meaningful steps to commence correction of Non-conforming Work, before or after Final Completion, including the correction, removal or replacement of the Non-conforming Work and any damage caused to other parts of the Work affected by the Non-conforming Work, within seven (7) days of receipt of Owners written notice that the Work is not in conformance with the contract documents. If Contractor fails to commence the necessary steps within such seven (7) day period, Owner, in addition to any other remedies provided under the Contract Documents, may provide contractor with written notice that Owner will commence correction of such Non-confirming Work with its own forces. If Owner does perform such corrective Work, Contractor shall be responsible for all reasonable costs incurred by the Owner in performing such correction. If the Non-conforming Work creates an emergency requiring an immediate response, the seven (7) day periods identified herein shall be deemed inapplicable and any required emergency corrective Work shall be performed by Contractor within twenty-four (24) hours of Owner's notice; if such corrective Work is not performed within such time, Owner may perform such Work as provided in this paragraph.

1.6 SUBMITTALS RE: WARRANTIES

- A. Submit written warranties to the Owner upon request of the Owner, and in any event prior to any request by Contractor for final acceptance of the Work. The commencement date for warranties applicable to the Work shall be the date of acceptance of the Work as specified in the Notice of Completion, unless otherwise noted in the Contract Documents (e.g., as to manufacturer's warranties for equipment).
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Project Coordinator within ten (10) days of completion of that designated portion of the Work.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
- B. When special warranties are required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.
 - 1. Refer to individual Sections of Divisions for specific content requirements, and particular requirements for submittal of special warranties.
 - 2. Submit the Guarantee/Warranty typed on the Contractor's letterhead if for the entire Work, or on the Subcontractor's letterhead if for the Work of a Specification Section.
- C. Form of Submittal: At Final Completion compile two (2) copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- D. Bind warranties into heavy-duty, commercial quality, durable three (3)-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive eight and one half inch by eleven-inch (8-1/2" by 11") paper.
 - 1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name address and telephone number of the installer.
 - 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES," the Project title or name, and the name of the Contractor.

3. When warranty construction requires operating and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each manual.
 4. Provide separate binders for the each building.
 - E. Time of Submittal
 1. Submit guarantees/warranties within ten (10) days after date of Notice of Completion, and prior to request for Final Payment.
 2. For items of Work where acceptance is delayed materially beyond the date of Notice of Completion, furnish updated submittal within ten (10) days after such delayed acceptance, listing the date of delayed acceptance as the start of the guarantee/warranty period.
- 1.7 REVIEW MEETING
- A. Eleven (11) months following date of acceptance of the Work, hold a meeting for the purpose of review of, and action upon, guarantees/ warranties, and service and maintenance contracts, as specified in General Requirements Section – Project Meetings.
- 1.8 SERVICE AND MAINTENANCE CONTRACTS
- A. Compile, review, and transmit specified service and maintenance contracts as specified for guarantees/warranties.
- 1.9 PREPARATION FOR FINAL INSPECTION
- A. Perform final cleaning as specified hereinbefore.
 - B. Assemble guarantees/warranties, service and maintenance contracts, operating and maintenance instructions, and other items as specified, and transmit to the Architect, who will forward them to the Owner after final acceptance of the Work.
- 1.10 RESTORATION OF DAMAGED WORK
- A. Restore or replace, as specified or determined by the Architect, material and finishes damaged from construction activities at no additional expense to the Owner.
 - B. Restoration shall be equal to the original Work, and finishes shall match the appearance of existing adjacent Work.
- 1.11 REMEDIAL WORK
- A. Remedial Work necessary owing to faulty workmanship or materials shall be at no additional expense to the Owner.
 - B. Work shall be coordinated with the Owner and performed at such time and in such manner to cause minimal interruption and inconvenience to the Owner's operations.
- 1.12 EXTRA MATERIALS
- A. Where required in the individual Specification SECTIONS, furnish extra materials in the quantities and manners specified. Prior to submitting any materials submit a list of all extra material required in the specification sections.
 - B. Delivery and certification of such extra materials shall be a prerequisite to Notice of Completion.
 - C. Deliver to Owner for sign-off.
 - D. Package in clearly identifiable boxes.
 - E. Indicate manufacturer's name, part name, and stock number.
 - F. Indicate piece of equipment part or tool is for.
 - G. Indicate name, address and phone number of closest supplier.
- 1.13 MISCELLANEOUS RECORD SUBMITTALS
- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and
- WARRANTIES AND BONDS

submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Architect for the Owner's records.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

01 8113.29

Sustainable Design Requirements

ADOH Prerequisites

- i. Implement an Erosion and Sedimentation Control (ESC) plan that conforms to the requirements of the 2021 U.S. EPA Construction General permit.
- ii. Wherever possible native plants should be used.
- iii. Hot water heaters must be installed with floor drains or catch pans with drains piped to the exterior of the dwelling.
- iv. All appliances where ENERGY STAR rating is available shall be ENERGY STAR.
- v. Exhaust conventional clothes dryers directly outside.
- vi. For local exhaust systems:
 - a. Install ENERGY STAR labeled bathroom fans that exhaust to the outdoors and are connected to a switch or timer.
 - b. Exhaust local exhaust systems directly outside.
- vii. For Whole Unit Mechanical Ventilation
 - a. Meet ASHRAE Standard 62.2-2021 Sections 4 and 7 or local equivalent.
 - b. In non-unit spaces:
 - i. Meet ASHRAE Standard 62.2-2021 Sections 4 and 7 or local equivalent.
- viii. If space and water heating equipment involving combustion are installed, install power-vented exhaust.
- ix. Measured envelope leakage shall be less than or equal to one (1) CFM50 per ft² of CFA.

**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Demolition of existing buildings and site improvements as indicated on Drawings, and as follows:
 - a. Demolition of existing structures indicated, including footings and foundations.
 - b. Removal and abatement of hazardous material, if encountered during demolition operations, including compliance with governing regulations for abatement and legal disposal.
 - c. Demolition of existing site improvements indicated to be removed to accommodate new construction including pavements, curbs and gutters, drainage structures, signage and landscaping.
 - d. Disconnecting, capping or sealing, and removing identified utilities indicated to be removed, or in-place abandonment.
 - e. Protection of existing utilities indicated to remain.
 - f. Filling voids in subgrade created as a result of removals or demolition.
 - g. Removal from site and legal disposal of demolition materials.
 - h. Protection of adjacent site improvements, public right-of-ways, buildings and other improvements from damage from demolition operations.
 2. Removal from site and legal disposal of demolition materials.
- B. Related Sections:
1. Section 01 7419 – Construction Waste Management and Disposal.
 2. Section 31 0000 – Earthwork, for site preparation and grading, including site stripping, removal of any structural remnants encountered which were not removed during demolition operations, and removal of existing fill, vegetation, debris, loose soil, etc., from the building site

1.2 SUBMITTALS

- A. Permits and Notices: Submit copies of permits and notices authorizing building demolition as may be required by law, including permits to transport and dispose of debris.
- B. Submit project record documents which accurately record actual locations of capped utilities and subsurface obstructions that will remain after demolition. Provide copies of Contractor's notes and drawings for "As-Built" drawings to Owner and appropriate governing agencies.

1.3 QUALITY ASSURANCE

- A. Demolition Firm Qualifications:
1. Specializing in performing the Work required by this Section.
 2. Minimum 5 years documented experience.
 3. Utilizing workers experienced in disconnecting and capping utilities, as applicable.
- B. Regulatory Requirements:
1. Conform to 2018 IBC and the City of Phoenix and/or State of Arizona

- regulations for demolition of structures, safety of adjacent structures, dust control, and runoff control.
2. Cooperate with local authorities and local utility companies affected by the demolition operations and notify affected utility companies in sufficient time, prior to removal or capping operations. Ascertain the rules, regulations and requirements of these authorities that affect the demolition process. Disconnect or arrange for disconnections of utility services as necessary.
 3. Comply fully with all provisions of the local codes, laws and ordinances applicable to work of this Section and obtain required licenses and permits from the City of Phoenix and other authorities required for demolition operations and transport and legal disposal of all debris, including hazardous materials and waste. Pay all associated fees including disposal charges, at no additional cost to Owner.
 4. Construction and demolition debris or waste shall be disposed of in a licensed landfill, recycled, reused, or otherwise disposed of as allowed by the City of Phoenix and/or State of Arizona and Federal solid waste disposal laws and regulations.
 6. Test soils around buried tanks (if any) for contamination.
- C. Provide storm water pollution control and provide a Storm Water Pollution Prevention Plan (SWPPP) as required by the City of Phoenix and the State of Arizona.

1.4 PROJECT CONDITIONS AND PERFORMANCE REQUIREMENTS

- A. Owner assumes no responsibility for actual condition of areas of selective demolition. Conditions existing at time of bidding will be maintained by Owner as far as practical.
- B. Use of the existing buildings and site will be discontinued with full access available to the Contractor.
- C. Areas of demolition and selective demolition may contain hazardous materials, such as propane, fuels, refrigerants, fluorescent light tubes, ballasts, transformers, etc.
 1. The Contractor is responsible for removal and legal disposal of all hazardous waste within existing building and structures to be demolished.
- D. All materials resulting from building demolition and selective demolition, including hazardous materials, except where specifically indicated to be returned to Owner, shall become the property of the contractor and removed from the site and disposed of in a legal manner.
- E. Items of salvageable value to Contractor shall be removed from site and structures. Storage or sale of removed items or materials on site will not be permitted and shall not interfere with other work specified in Contract Documents.
- F. Use of explosives are not allowed in demolition operations

PART 2 PRODUCTS

2.1 MATERIALS

- A. Unless specifically scheduled for reuse or returned to Owner, demolished materials shall become the possession of the Contractor and shall be immediately removed from the site.
- B. Carefully remove (in whole or in part as indicated or required) and handle existing products, finishes, accessories, equipment, and other materials which are indicated to be salvaged for re-installation in the final Work.

1. Items indicated to be relocated or installed in the new Work shall be carefully removed, including installation hardware, and stored in protected location until time for re-installation. Any existing damage shall be documented with adequate written description and photographs and reported to Architect prior to removal. Items damaged during removal and storage shall be repaired and or replaced at no additional expense to Owner.
- C. Fill materials at excavations: As specified in Section 31 0000.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions and notify the Architect in writing of discrepancies before proceeding with the work.
- B. Employ a private utility-locator service to verify locations of existing utilities.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with the intended demolition work are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
- D. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.
- E. Perform periodic surveys as work progresses to detect hazards resulting from demolition operations.
- F. Perform periodic surveys as work progresses to detect hazardous materials.

3.2 PREPARATION

- A. Obtain required environmental permits from the State of Arizona, the City of Phoenix, and the EPA as may be required.
- B. Identify, disconnect, remove and seal or cap designated utilities within demolition areas as indicated on Drawings.
 1. Notify public utility companies serving the buildings in sufficient time, prior to removal operations, to permit them to shut-off, disconnect and remove their facilities.
- C. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, paints, coatings, or other dangerous materials before proceeding with demolition operations.
- D. Protect adjacent site improvements, landscape materials, and structures indicated to remain immediately to site. Where existing materials indicated to remain are disturbed or damaged by selective demolition operations, remove damaged materials and replace with new materials to match existing at no additional cost to Owner.
- E. Mark location of utilities. Protect and maintain in safe and operable condition utilities within public right-of-ways or property easements that are to remain. Prevent interruption of existing utility service to adjacent properties, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities and Owner.

- F. Provide protection of adjacent properties, buildings, site improvements, etc. from damage or disturbance from demolition operations.
- G. Protect existing bench marks from damage and/or displacement.
- H. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- I. During demolition operations do not close or obstruct streets, walks, or other public rights- of-way without permission of Owner and authorities having jurisdiction.
- J. Comply with requirements of Section 01 5000 – Temporary Facilities and Controls, for environmental protection during demolition operations, temporary barriers, temporary security devices, and other temporary facilities and controls.
- K. Rough grade and compact areas affected by demolition to maintain site grades and contours in accordance with Civil Drawings and as required for construction of new site improvements.

3.3 CLEANING, MATERIAL DISPOSAL AND CONSTRUCTION WASTE MANAGEMENT

- A. Do not burn demolished materials.
- B. Keep site clean of dust and debris. Limit dust to lowest practicable level by sprinkling with water. Comply with Section Division 01 Temporary Controls.
- C. Material Disposal:
 - 1. Remove materials from site and dispose of in a legal manner off-site to areas that are approved for disposal by governing authorities at no additional expense to Owner. Leave areas of Work in clean, neat condition.
 - 2. No materials are to be sold on, or adjacent to, the site. Signs advertising the sale of materials shall not be allowed.
 - 3. Burning of materials on site is not permitted.
 - 4. Break concrete and masonry into sections less than 3 feet in any dimension.
 - 5. Remove from site, contaminated, vermin infested, or dangerous materials encountered and dispose of by safe means so as not to endanger health of workers and public in accordance with applicable regulations.
 - 6. Debris from the demolition shall not be allowed to accumulate within the building or on the site.
 - 7. Arrange and pay for all required hauling, storage, collection and disposal. Contractor is responsible for any waste characterization that may be required by waste receiver.
 - 8. Transport demolished materials using appropriate vehicles.
 - 9. Provide documentation as to proper handling, transport, and disposal of material removed from demolished structures to Owner.
 - 10. Construction Waste Management and Disposal: Dispose of materials in accordance with the goals of the Construction Waste Management Plan for percentage of the materials to be diverted from the landfill.
- D. Clean adjacent properties, buildings and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

END OF SECTION

**SECTION 03 0505
FLY ASH**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Fly ash admixture for incorporation into concrete mixes specified in the following specification sections:
1. Section 03 30 00 - Cast-In Place Concrete.
 2. Section 04 05 15 - Mortar and Masonry Grout.
 3. Section 32 16 00 - Concrete Curbs, Gutters, Sidewalks, and Driveways.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Coal Fly Ash and Raw or Calcined Natural Pozzolan
1. Sampled and tested in accordance with the current edition of ASTM C311, Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland-Cement Concrete.
 2. Conform to the requirements of the current edition of ASTM C618, Standard Specification of Coal Fly Ash and Raw and Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete, as follows:
 - a. Meet the requirements of ASTM C618, Table 1 Chemical Requirements and Table 1A Supplementary Optional Chemical Requirements.
 - b. Meet the requirements of ASTM C618, Table 2 Physical Requirements and Table 2A Supplementary Optional Physical Requirements in the following areas:
 - 1) Effectiveness in Controlling Alkali-Silica Reaction.
 - 2) Effectiveness in Contributing to Sulfate Resistance, Procedure A.
 - 3) Uniformity Requirements when air-entraining concrete is specified:
 3. Source Quality Control:
 - a. Fly ash shall come from sources with an established quality control program to demonstrate that the fly ash consistently conforms to ASTM C618 specification and uniformity requirements. The quality history shall include a minimum of 40 test results representing a minimum of the previous 6 months production of fly ash.
 - b. Per the current edition of ACI 232, Use of Fly Ash in Concrete, section 5.6, the fly ash quality history shall be available that demonstrates at least monthly ASTM C618 certification results from a Cement and Concrete Reference Laboratory (CCRL) accredited laboratory. A minimum of 20 reports representing at least 6 months of fly ash production is required.

2.2 MIXES

- A. Provide fly ash admixture for incorporation into concrete mixes as specified in the following specification sections:
1. Section 03 30 00 - Cast-In Place Concrete.
 2. Section 04 05 15 - Mortar and Masonry Grout.
 3. Section 32 16 00 - Concrete Curbs, Gutters, Sidewalks, and Driveways.

- B. Proportioning:
1. Per ACI 232, Use of Fly Ash in Concrete, section 4.1, the most effective method for proper proportioning of concrete for a specific application is by use of a trial batch and testing program per ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete. When necessary, a series of mixtures shall be prepared and tested to determine the proper proportions for the specific project requirements.
 2. Fly ash, when used, shall be proportioned in accordance with the General Structural Notes on the Structural Drawings.

PART 3 EXECUTION (Not Used)

END OF SECTION

**SECTION 03 1000
CONCRETE FORMWORK**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Formwork for cast-in-place concrete, including, but not limited to:
 1. Installation of embedded items.
 2. Shoring, Bracing and Anchorage, including openings for other Work
 3. Form Accessories
 4. Form Stripping.

1.2 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.

1.3 SUBMITTALS

- A. Shop Drawings: Show form construction including jointing and other items that affect exposed concrete visually. The Architect's review is for general architectural applications and features only. Designing formwork for structural stability and efficiency is the Contractor's responsibility.
- B. Product Data: Provide data on accessory materials and installation requirements.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347R - Guide to Formwork for Concrete.

1.5 QUALIFICATIONS

- A. Design formwork under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Arizona.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site to prevent deterioration and damage.
- B. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

1.7 COORDINATION

- A. Coordinate this Section with other Sections of Work which require attachment of components to formwork.
- B. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, request instructions from Architect's Structural Engineer before proceeding.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A Forms for Concealed Concrete: Plywood, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit. For use in below grade concrete or concrete covered by another finish. Not for use where finished concrete is exposed to view.
1. Plywood, Douglas Fir species; APA grade-trademarked; BB Plyform, Class 1, Exterior Grade as per PS1.
 2. Lumber: Spruce, Pine or Fir species; construction grade, with grade stamp clearly visible.
 3. Plywood shall have mill applied release agent and edge seal.
- B Forms for Exposed Concrete: Plywood, MDO, tempered concrete-form-grade hardboard, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surface. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system where shown on Drawings. For use in exposed to view concrete that is not covered by another finish.
1. MDO (medium density overlay), class 1 or better, with mill applied release agent and edge seal.
 2. Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C of B-B High Density Overlaid Concrete Form," Class I.
 3. Tempered concrete-form-grade hardboard, with applied release agent and edge seal.
 4. MDO, plywood, and hardboard forms shall have mill applied release agent and edge seal.
- C Forms for Cylindrical Columns and Supports. Metal, glass-fiber-reinforced plastic, or paper or fiber tubes that will produce smooth surfaces without joint indications. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.
- D PVC Sleeves: ASTM D1758, PVC 1120 compound, Schedule 40.

2.2 FORMWORK ACCESSORIES

- A Form Ties: Removable or snap-off type, free of defects that could leave holes larger than one inch in concrete surface.
- B Form Release Agent: 100 percent biodegradable, zero VOC, vegetable base, colorless, which will not stain concrete, or impair natural bonding or color characteristics of coating intended for use on concrete.
1. Do not use petroleum-based agents. Paraffin and waxes shall not be used when a concrete finish is required.
- C Corners: Chamfered wood strip type or vinyl bead; 3/4 inch x 3/4 inch size; maximum possible lengths.
- D Flashing Reglets: Galvanized steel 22 gauge thick, longest possible lengths, with alignment splines for joints, foam filled, release tape sealed slots, anchors for securing to concrete formwork.
- E Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings.

3.2 ERECTION - FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Arrange formwork for exposed concrete in an orderly and symmetrical manner to produce smooth concrete finish indicated.
- C. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- D. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping.
- E. Align joints and make watertight. Keep form joints to a minimum.
- F. Obtain approval from Architect before framing openings in structural members which are not indicated on Drawings.
- G. Provide chamfer strips on external vertical wall corners where exposed in the finished Work. Chamfer strip is not required on exposed foundation corners where exposed less than 12 inches. Slab edges shall be tooled (eased) as specified in Section 03 30 00.
- H. PVC Sleeves: Set PVC sleeves in proper alignment and position. End of sleeves shall be flush with finished concrete surface.

3.3 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with Manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive applied coverings which are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.4 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work.
- B. Locate and set in place items which will be cast directly into concrete.
- C. Coordinate Work of other Sections in forming and placing openings, slots, reglets, recesses, chases, sleeves, bolts, anchors, and other inserts.

- D. Install accessories in accordance with Manufacturer's instructions, straight, level and plumb. Ensure items are not disturbed during concrete placement.
- E. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- F. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.5 FORM CLEANING

- A. Clean and remove foreign matter within forms as erection proceeds.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

3.6 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 301.
- B. Construct formwork as required to produce concrete members of size, shape, configuration, alignment, elevation and position indicated on Drawings within tolerance limits of ACI 301.
- C. Surface Irregularities: Construct and maintain formwork to produce concrete having the following formed finish Class and permitted abrupt or gradual irregularities as designated by ACI 347-04.
 - 1. Vertical and horizontal exterior exposed surfaces: Class B, 1/4 inch.
 - 2. Other surfaces prominently exposed to public view: Class B, 1/4 inch.
 - 3. Concealed surfaces where covered by another finish: Class C, 1/2 inch, except abrupt irregularities shall be limited to 1/4 inch.
- D. Camber slabs and beams 1/4 inch per 10 feet in accordance with ACI 117.

3.7 FIELD QUALITY CONTROL

- A. Inspect erected formwork, shoring, and bracing to ensure that Work is in accordance with formwork design, and that support, fastenings, wedges, ties and items are secure.
- B. Do not reuse wood formwork more than 3 times for concrete surfaces to be exposed to view. Do not patch formwork.

3.8 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads. Forms shall be removed in accordance with the requirements of the General Structural Notes.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

- D. Formwork for stem walls and other parts not supporting the weight of the concrete may be removed as soon as the concrete has hardened sufficiently to resist damage.
- E. Cure exposed concrete in accordance with Section 03 30 00 whenever the formwork is removed during the curing period.

3.9 REMOVAL STRENGTH

- A. When formwork removal is based on the concrete reaching its specified 28 day strength (or a specified percentage thereof), the concrete shall be presumed to have strength when either of the following conditions has been met:
 - 1. When test cylinders, field cured under the most unfavorable conditions prevailing for any portion of the concrete represented, have reached the required strength.
 - 2. When the concrete has been cured for the same length of time as the age, at test, of laboratory cured cylinders which reach the required strength. The length of time concrete has been cured in the field shall be determined by the cumulative number of days or fractions thereof, not necessarily consecutive, during which the temperature of the air in contact with the concrete is above 50 degrees F. and the concrete has been damp or thoroughly sealed from evaporation and loss of moisture.

END OF SECTION

**SECTION 03 2000
CONCRETE REINFORCING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Concrete reinforcement as shown on the Drawings and as specified.

1.2 QUALITY ASSURANCE

- A. Comply with ACI-301, Chapter 5, except where more exacting requirements are specified.
- B. Comply with requirements in AWS-D12.1, except where more exacting requirements are specified in the Contract Documents.

1.3 SUBMITTALS

- A. Shop Drawings: Submit Drawings showing bending and placing of reinforcing. Include diagrammatic elevations of walls at a scale sufficiently large to show clearly the position and erection marks of marginal bars and their dowels and splices and bar arrangement for more than one layer of reinforcing steel in concrete sections.
- B. Certificates: Submit certified mill test reports for review prior to fabrication.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Shipping: Deliver reinforcement to the Project site bundled, tagged and marked to facilitate sorting and placing. Tags shall indicate bar sizes, lengths, grade and other information corresponding to markings shown on placement diagrams.
- B. Storage and Protection: Store reinforcement at the site off the ground and in a manner to prevent damage to the materials.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Reinforcing Steel: New billet-steel, deformed bars conforming to ASTM A615, Grade 60, with a minimum yield of 60 ksi for all bars, unless noted otherwise. Reinforcing for slabs- on-grade may be ASTM A615, Grade 40, with a minimum yield stress of 40 ksi for all bars No. 4 and smaller. Grade 60 bars indicated to be welded shall be ASTM A706.
- B. Welded Wire Fabric: ASTM A185 using bright steel wire meeting the requirements of ASTM A82. Gauges and dimensions as noted on the Drawings.
- C. Chairs: Galvanized steel or plastic tipped.
- D. Tie Wire: ASTM A82, 16 gauge or heavier, black annealed.

2.2 FABRICATION

- A Shop fabricate bars as far as is practical. Bend bars cold. Make bends for stirrups and ties around pins having diameters at least 2 times the thickness of the bars; for other bars 1 inch diameter and smaller, 6 times the thickness; for larger bars 8 times the thickness.

PART 3 EXECUTION

3.1 EXAMINATION

- A Determine weldability of reinforcing steel by laboratory chemical analysis of steel. Only steel conforming to chemical requirements specified in AWS D12.1 may be welded.

3.2 PLACING REINFORCEMENT

- A General:
1. Place in accordance with ACI 318 and as shown.
 2. Accurately place reinforcement and securely tie at intersections with 16 gauge black annealed wire.
 3. Maintain reinforcing in proper position by chairs, bar supports or other approved devices.
 4. Bars in footings shall be supported on precast concrete blocks.
 5. The bending or field cutting of bars around openings or sleeves will not be permitted.
- B Splices shall conform to ACI 318, Section 12, or lap scheduled on Structural Drawings. All splice locations are subject to approval by the Structural Engineer.
- C Concrete protection of reinforcing shall be not less than the following:
1. Concrete is poured against and permanently exposed to ground: 3 inches.
 2. Concrete is poured against forms but may be in contact with ground:
 - a. #5 and under: 1-1/2 inches.
 - b. #6 and larger: 2 inches.
- D Clear distance between bars shall be not less than 1-1/2 times the maximum size of coarse aggregate unless noted otherwise.
- E Bars may be moved as necessary to avoid interference with other reinforcing steel, conduits or embedded items. If bars are moved more than one bar diameter or enough to exceed code tolerances, resulting arrangement of bars shall be subject to review of Architect.
- F Bars with kinks or bends not indicated shall not be used. Reinforcement shall not be bent or be straightened in a manner that will weaken the material, or be bent after being partially embedded in hardened concrete.
- G Wire mesh in slabs: Laps in welded wire fabric shall be made so that the overlap, measured between outermost cross wires of each fabric sheet, is not less than the spacing of cross wires plus 2 inches.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section
CONCRETE REINFORCING

01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.

- B. During the course of the Work and on completion, remove excess materials, equipment and debris and dispose of off premises. Leave Work in clean condition.

END OF SECTION

**SECTION 03 3000
CAST-IN-PLACE CONCRETE**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Cast-in-place concrete including, but not limited to, the following:
 - 1. Building footings, foundations, and slabs-on-grade.
 - 2. Site structures including, but not limited to, footings and foundations for site structures, site walls, site lighting supports, electrical and mechanical equipment support pads, and other site furnishing and equipment requiring cast-in-place concrete items.
 - 3. Abrasive blast (sand blasted) finished concrete.
 - 4. Other items as indicated on Drawings.

- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Formwork
 - 2. Section 03 20 00 – Concrete Reinforcement
 - 3. Section 03 35 33 – Decorative Concrete Finishes, for acid etched and stained concrete finishes.
 - 4. Section 32 16 00 – Concrete Curbs, Gutters, Sidewalks, and Driveways

1.2 SYSTEM DESCRIPTION

- A. Performance Requirements: Interior slabs on grade scheduled to receive applied floor finishes (resilient plank, VCT, resilient sheet flooring, carpet, etc.) shall be tested as specified herein under Field Quality Control Calcium chloride test requirements. Moisture vapor from the floor must be less than 3 pounds per 1,000 square feet per 24 hours.

1.3 SUBMITTALS

- A. Mix Design: Submit mix design for each class of concrete to the Architect for review. Review of mix designs by Architect and/or Engineer shall in no way relieve the Contractor of responsibility for the performance of the concrete.

- B. Product Data: Submit Manufacturer's Specifications and performance data for accessory products.

- C. Shop Drawings: Submit shop drawing showing proposed location of construction joints, expansion/contraction joints and control joints and obtain approval of same from Architect prior to construction.

- D. Samples of materials, including names, sources and descriptions, of the following:
 - 1. ~~Vapor Barrier.~~
 - 2. 4 inch long samples of expansion/contraction joint and control joint.

1.4 QUALITY ASSURANCE

- A. Standards:
 - 1. Standard for measuring, mixing, transporting and placing of concrete shall be ACI-301 and ACI-304.

2. Standard for measuring, mixing and delivery of ready mixed shall be ASTM C94, except that time in mixer after water has been added at batch plant is limited to 1-1/2 hours.
 3. Job-mixed concrete shall be subject to Architect's review of design, mixing and handling procedures.
- B. Field Samples:
1. Provide on-site sample(s) of each type of exposed flatwork concrete finish showing texture and color before proceeding with finish to be used on this Project.
 2. Sample(s) shall be minimum 4'-0" square and have at least one longitudinal and one transverse joint.
 3. Construct sample panels in ample time to allow for finishing and curing before requesting Architect to review.
 4. Construct where directed by Architect and prepare successive sample panels as required until finish acceptable to Architect is produced.
 5. Since sample panels will constitute a basis of acceptance or rejection of the completed Work, do not remove sample panels until authorized in writing by the Architect. Dispose of sample panels in a legal manner when authorized.
- C. Pre-Installation Conference:
1. Contractor shall conduct a meeting at Project site to review proposed mix designs and discuss required methods and procedures to achieve required concrete construction.
 2. Contractor shall distribute meeting agenda to all attendees a minimum of 7 days prior to the scheduled date meeting.
 3. Attendees: Responsible representatives of every party who is concerned with the concrete work to attend the conference, including but not limited to the following:
 - a. Contractor's superintendent.
 - b. Laboratory responsible for concrete design mix.
 - c. Laboratory responsible for field quality control.
 - d. Concrete subcontractor.
 - e. Ready-mix concrete producer.
 - f. Admixture manufacturer(s).
 - g. Concrete placement equipment manufacturer(s).
 4. Meeting minutes will be taken by the Contractor for distribution to all attendees within 5 days of meeting. Contractor shall also distribute copy of meeting minutes to Owner, Structural Engineer, and Architect.
 5. Minutes shall include statement by concrete subcontractor indicating proposed mix design, placement, finishing and curing procedures can produce the concrete quality required by these specifications.
- D. Static Coefficient of Friction: Sealed concrete floors shall have a tested coefficient of friction of 0.71 minimum dry, 0.6 minimum wet for level surfaces and treads of stairs and 0.8 minimum wet or dry for ramp surfaces when tested in accordance with ASTM D2047 / UL410.

1.5 PROJECT CONDITIONS

- A. Rain protection: Do not place concrete during rain unless adequate protection has been provided.
- B. Cold weather protection: Comply with ACI-306R.
- C. Hot weather protection: Comply with ACI-305R and 305.1-06.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type II, alkali content not to exceed 0.6 percent. Use one brand and type of cement throughout Project unless otherwise specified.
- B. Aggregate - Regular Weight Structural Concrete: Clean, coarse aggregate and gravel, free from foreign matter, conforming to ASTM C33. Aggregate shall be graded from coarse to fine in accordance with ASTM C33, Size 67.
- C. Admixtures:
1. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures. Provide one of the following:
 - a. AEA-92 and Air 40, Euclid Chemical Co. www.euclidchemical.com
 - b. Sika AER, Sika Corp. www.sikaconstruction.com
 - c. Master Builders MB-VR or MB-AE, BASF Admixtures www.basf-admixtures.com
 2. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.05 percent chloride ions. Provide one of the following:
 - a. Eucon NW or Eucon WR 91, Euclid Chemical Co.
 - b. Master Builders Pozzoloth 322N, BASF Admixtures
 - c. Plastocrete 160, Sika Chemical Corp.
 3. High-Range Water-Reducing Admixture (Superplasticizer): ASTM C494, Type F or Type G and containing not more than 0.05 percent chloride ions. Provide one of the following:
 - a. Eucon 37/Eucon 1037, or Plastol Series, Euclid Chemical Co.
 - b. Daracem 100 or ADVA Flow, W.R. Grace & Co.
 - c. Master Builders Rheobuild 1000 or Glenium 3030, BASF Admixtures.
 4. High-Range, Water-Reducing, and Retarding (Superplasticizer): ASTM C 494, Type G. Provide one of the following:
 - a. Eucon 537, Euclid Chemical Company
 - b. Daracem 100, W.R. Grace & Co.
 - c. Master Builders Rheobuild 916, BASF Admixtures
 5. Non-Chloride, Non-Corrosive Accelerating Admixture: The admixture shall conform to ASTM C494, Type C or E, and not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Provide one of the following:
 - a. Accelguard 80, 90 or NCA, Euclid Chemical Co.
 6. Water-Reducing, Retarding Admixture: ASTM C494, Type D, and contain not more than 0.05 percent chloride ions. Provide one of the following:
 - a. Eucon NR or Eucon Retarder 100, Euclid Chemical Co.
 - b. Master Builders Pozzoloth Retarder, BASF Admixtures.
 - c. Plastiment, Sika Chemical Co.
 7. Fly ash admixture: In accordance with Section 03 05 05. Fly ash is not allowed in flatwork concrete or architecturally exposed concrete.
 8. Use set-retarding admixtures during hot weather only when approved by Architect.
 9. Prohibited Admixtures: Calcium chloride, thiocyanates or admixtures containing more than 0.05 percent chloride ions are not permitted.
- D. Water: Potable.

2.2 ACCESSORIES

- A. Bonding Agents and Repair Products:
1. VOC Content: All interior bonding and repair products shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Interior Only (PVA): L&M Construction Chemicals EVERWELD www.lmcc.com; EucoWeld, Euclid Chemical Company www.euclidchemical.com; US Spec Bondcoat PVA www.usspec.com; or Larsens' Weld Crete www.larsenproducts.com
 3. Interior Only for Bonding Existing Concrete to Fresh Concrete (Epoxy): Sikadur 32, Hi-Mod, Sika www.sikausa.com; Euco 452 Series, Euclid Chemical Company www.euclidchemical.com; Maxi-Bond 2500, US Spec www.usspec.com; or Rezi-Weld, W.R. Meadows www.wrmeadows.com.
 4. Exterior and Interior Bonding Admixture (acrylic latex): SBR Latex or Flexcon Euclid Chemical Company www.euclidchemical.com; Intralok, W.R. Meadows www.wrmeadows.com; Acylcoat, US Spec www.usspec.com; or Dayton Bond J40, Dayton Superior www.daytonsuperior.com.
 5. Polymer Repair Compounds: Polymer and microsilica modified cementitious based compounds.
 - a. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - b. Horizontal Locations:
 - 1) Sikatop 121 or 122, Sika Chemical www.sikausa.com
 - 2) Thin Top Supreme, Concrete Top Supreme, Euclid Chemical Company www.euclidchemical.com
 - 3) TP Mortar, US Spec www.usspec.com
 - c. Vertical or Overhead Locations:
 - 1) Sikatop 123, Sika Chemical
 - 2) V/O Patch, US Spec
 - 3) Verticoat, Verticoat Supreme, Concrete Top Supreme, Euclid Chemical Company
 6. Underlayment Topping: Free-flowing, self-leveling, pumpable cementitious base compound.
 - a. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - 1) Ardex K-15, Ardex Inc.
 - 2) Flo-Top or Super Flo-Top, Euclid Chemical Company
 - 3) Self-Leveling Underlayment, US Spec
 - 4) Underlayment 110, BASF
 7. Repair Topping: Latex modified, sandless cementitious mortar topping with bond strength meeting or exceeding requirements of ASTM C1059.
 - a. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - 1) Thin Top Supreme, Euclid Chemical Company
 - 2) TP Mortar, US Spec
 - 3) As approved by Architect.
- B. Non-Shrink Grout:
1. Premixed or prepackaged, non-metallic, non-gaseous, bleed free compound; non-shrink when tested in accordance with ASTM C 1107, Grade B at a fluid (flow cone) consistency of 20 to 30 seconds.
 2. Attain minimum compressive strength of 7,000 psi in 28 days at above fluid consistency.
 3. Fluid grouts: Remain workable, flow through flow cone after 20 minutes with slight agitation, in temperatures from 40 to 70 degrees F.

- a. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - 1) Suregrip High Performance, Dayton Superior, www.daytonsuperior.com
 - 2) SikagROUT 212, Sika www.sikausa.com
 - 3) Master Builders (Masterflow 713) www.masterbuilders.com
 - 4) W.R. Meadows No. 588 Grout www.wrmeadows.com
 - 5) L&M Construction Chemicals (DURAGROUT) www.lmcc.com
 - 6) US Spec "GP Grout" www.usspec.com
 - 7) Euclid N-S Grout www.euclidchemical.com.
4. High Flow Fluid Grouts: High flow grout shall achieve 95 percent contact when placed under an 18 inch x 36 inch base plate, remain workable, and flow through cone after 60 minutes in temperature from 70 to 90 degrees F.
 - a. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - 1) Hi-Flo Grout, Euclid Chemical Company, www.euclidchemical.com
 - 2) US Spec "MP Grout" www.usspec.com
 - 3) Chemrex Masterflow 928, BASF www.chemrex.com
- C. Epoxy Anchoring Adhesive: 2-component, high modulus, 100 percent solids epoxy gel adhesive complying with ASTM C881.
 1. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - a. Hilti HIT-RE 500-SD www.hilti.com
 - b. Simpson Strong-Tie Co. Set-XP www.simpsonanchors.com.
- D. Formed Construction Joint: Standard design plastikey, tongue and groove key joint; 3-1/2 inch vertical dimension for 4 inch slabs. For use only in slabs not exposed to vehicular traffic.
- E. Preformed Expansion Joint Filler: ASTM D1751.
- F. Liquid Curing and Sealing Compound:
 1. VOC Content: Interior liquid floor treatments shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Verify that specified curing compound is compatible with the floor finish material(s) and adhesive(s) that will be applied to floor surface prior to delivery of curing compound to jobsite. If it is determined that the curing compound is not compatible with the floor finish material(s) and adhesive(s) that will be applied to floor surface, Contractor shall immediately notify Architect.
 3. Dissipating Hydrocarbon Resin Curing Compound: ASTM C309, VOC compliant, 350 g/l, for use on slabs receiving subsequent applied finishes and where noted on Drawings. Subject to compliance with requirements, provide one of the following:
 - a. Kurez DR VOX or Kurez W VOX, Euclid Chemical Company, www.euclidchemical.com
 - b. Maxcure Resin Clear HS, US Spec www.usspec.com
 4. Clear Curing and Sealing Compound (Voc Compliant, 350 g/l): Liquid type membrane-forming curing compound, clear styrene acrylate type, complying with ASTM C1315, Type I, Class A, 25% solids content minimum. Moisture loss shall be not more than 0.40 Kg/m² when applied at 300 sq. ft./gal. Manufacturer's certification is required. Subject to project requirements provide one of the following products:
 - a. Chemrex Kure 1315, BASF Construction Chemicals www.chemrex.com.

- b. Lumiseal WB, L&M Construction Chemicals www.lmcc.com
 - c. Radiance UV-25, US Spec www.usspec.com
 - d. Super Diamond Clear VOX, Euclid Chemical Company, www.euclidchemical.com
 - e. VOCCOMP-30, W.R. Meadows www.wrmeadows.com
- G. Sealer: VOC compliant, acrylic copolymer type.
- 1. VOC Content: Interior liquid floor treatments shall have a VOC content of 200g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Interior: ASTM C1315, Class A. Subject to requirements, Provide one of the following:
 - a. VOCCOMP-30, W. R. Meadows.
 - b. Euclid Super Aqua Cure VOX, Euclid Chemical Company.
 - c. Dress & Seal WB #30, L&M Construction Chemicals.
 - d. J-19, Dayton Superior.
 - 3. Exterior: ASTM C1315, Class A. Provide one of the following:
 - a. Euclid Super Diamond Clear VOX, Euclid Chemical Company.
 - b. Lumiseal WB, L&M Construction Chemicals.
 - c. VOCCOMP-30, W. R. Meadows.
 - d. Radiance UV-25, US Spec.
 - 4. Sealer for Stained Concrete: As specified in Section 03 35 33.
- H. Leveling Agent: Sonneborn Sonoflow, Euclid Flo-Top, Ardex K-15, L&M Construction Chemicals Levelex, US Spec "Self-Leveling Underlayment, or Dayton-Superior Levelayer 1 are acceptable products.
- I. Concrete Accessories: Gateway Engineering Company, Dayton-Superior Corporation, or Burke Concrete Accessories.
- J. Evaporation Retarder:
- 1. Type: Monomolecular film, compatible with subsequent coatings and floor finishes.
 - 2. Acceptable Manufacturer and Products: L&M Construction Chemicals (E-Con), Master Builders (Confilm), Sika (Sika Film), W.R. Meadows (Evapre), US Spec (Monofilm ER), or Dayton Superior (Surefilm J-74)."
- K. Vapor Barrier: ~~ASTM E1745, Meets or exceeds Class A, manufactured from prime virgin resins and complying with the following:~~
- 1. ~~Permeance Rating:~~
 - a. ~~New Material: Less than 0.01 perms (gr/ft²/hr/in-Hg) when tested in accordance to ASTM E96 or ASTM F1249.~~
 - b. ~~After Mandatory Conditioning: Less than 0.01 perms (gr/ft²/hr/in-Hg) when tested in accordance with ASTM E154, Sections 8, 11, 12 and 13.~~
 - 2. ~~Minimum Thickness: 15 mils in accordance with ACI 302.2R-06.~~
 - 3. ~~Puncture Resistance: Minimum 2200 grams when tested in accordance with ASTM D1709.~~
 - 4. ~~Tensile Strength: Minimum 45.0 lbf/in when tested in accordance with ASTM D882.~~

- 5. ~~Acceptable Products:~~
 - a. ~~Stego Wrap (15 mil) vapor Barrier, Stego Industries, L.L.C., (877) 464-7834 www.stegoindustries.com~~
 - b. ~~Vaporguard, Reef Industries www.reefindustries.com~~
- 6. ~~Accessories:~~
 - a. ~~Seam Tape and Mastic: Provide manufacturer's recommended seam tape and vapor proofing mastic with WVTR of 0.3 perms or lower when tested in accordance with ASTM E96.~~
 - b. ~~Pipe Boots: Construct boots from vapor barrier material, pressure sensitive tape and/or mastic in accordance with manufacturer's instructions.~~
 - c. ~~Termination Bars: As recommended by manufacturer for terminating vapor barrier on vertical foundation walls.~~

2.3 MIXES

- A. Design of Mixes: All mix designs shall be prepared in accordance with ACI 318-05, "Building Code Requirements for Structural Concrete", Section 5.3, "Proportioning on the Basis of Field Experience or Trial Mixtures".
- B. Selection of proportions for normal weight concrete: ACI 301.
- C. Mix and deliver ready-mixed concrete in accordance with requirements of ASTM C94, Option A.
 - 1. Not more than 90 minutes shall elapse from time water is introduced into the concrete mixture until completion of placement.
 - 2. Do not add water to mix that has stiffened to increase its workability.
 - 3. At no time shall concrete mix exceed a bulb thermometer reading of 90 degrees F. or over.
 - 4. Use ice or other method as reviewed by Architect, to keep concrete below 90 degrees F. temperature.
- D. All concrete must contain the specified water-reducing admixture or the specified high-range water-reducing admixture (superplasticizer). All thin concrete slabs, less than 8 inches in thickness placed at air temperatures below 50 degrees F shall contain the specified non-corrosive, non-chloride accelerator. All concrete slabs placed at air temperatures above 90 degrees F may require the use of a water reducing retarding admixtures.
- E. All concrete required to be air entrained shall contain an approved air entraining admixture. All pumped concrete, concrete for industrial slabs, synthetic fiber concrete, architectural concrete, self-consolidating concrete, concrete required to be watertight or concrete with a water/cement ratio below 0.50 shall contain the specified high-range water-reducing admixture (superplasticizer).
- F. Durability Requirements - Water/Cementitious Ratio:
 - 1. All concrete subject to freezing and thawing shall have a maximum water/cementitious ratio of 0.50 (4000 psi at 28 days or more).
 - 2. All concrete subjected to deicers, sulfates, and/or required to be watertight shall have a maximum water/cementitious ratio of 0.45 (4500 psi at 28 days or more).
 - 3. All reinforced concrete subjected to brackish water, salt spray or deicers shall have a maximum water/cementitious ratio of 0.40 (5000 psi at 28 days or more).
 - 4. Water-cement ratio for concrete used for interior slab on grade construction: 0.40 to 0.45.

- G. Air Entraining Admixture: All concrete exposed to freezing and thawing and/or required to be watertight shall have an air content of 4.5 to 7.5 percent in accordance with ACI 212.3R. All interior, slabs subject to vehicular abrasion, shall have a maximum air content of 3 percent.
- H. Compressive strength (28 day): As shown on Structural Drawings.
- I. Slump - for consolidation by vibration: As shown on Drawings.

PART 3 EXECUTION

3.1 PREPARATION

- A. Prior to placing concrete:
 - 1. Clean equipment involved.
 - 2. Remove debris and foreign material from the forms.
 - 3. Remove concrete laitance from reinforcing steel.
 - 4. Wet wood forms and masonry units in contact with concrete.
- B. No wood will be permitted to remain permanently inside the forms.
- C. Coordinate the necessary Trades as required to provide the sleeves, bolts, anchors, holes, etc., to be built in.
- D. Place vapor retarder over subbase immediately prior to placing of floor slab.
 - 1. At locations indicated on Drawings, Install vapor retarder in accordance with ASTM E1643-11 and manufacturer's printed instructions.
 - 2. Unroll vapor barrier/retarder with the longest dimension parallel with the direction of the pour.
 - 3. Lap vapor barrier/retarder over footings or seal to foundation walls.
 - 4. Vapor barrier/retarder shall be continuous over entire floor area and turned up a minimum of 2 inches at perimeter walls and penetrations and sealed with termination bar.
 - 5. Overlap joints 6 inches and seal with manufacturer's tape.
 - 6. Seal all penetrations (including pipes) per manufacturer's instructions.
 - 7. No penetration of the vapor barrier/retarder is allowed except for reinforcing steel, structural members and permanent utilities.
 - 8. Repair damaged areas by cutting patches of vapor barrier/retarder, overlapping damaged area 6 inches and taping all four sides with tape.
 - 9. Vapor barrier/retarder installation shall be approved by the vapor barrier manufacturer prior to concrete placement.

3.2 PLACING OF CONCRETE

- A. Concrete Work shall be performed in accordance with ACI-301 except as amended by this Section.
- B. Convey concrete from the mixer to place of final deposit by methods which will prevent segregation of aggregate or loss of material. Place concrete at such a rate that concrete is at all times plastic and to insure a practically continuous flow of concrete. Concrete not in place 1-1/2 hours after water has been added at batch plant may be rejected by Architect.

- C. Place concrete as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Do not deposit concrete that has partially hardened or been retempered.
- D. Do not place concrete during rain unless adequate protection has been provided.
- E. Thoroughly compact concrete by suitable means during the placing, and work around the reinforcement and embedded items into the corners of the forms.
 - 1. Use vibrators to aid in the placement of the concrete, operated by experienced personnel.
 - 2. Keep at least one spare operating vibrator on the job at all times during the concrete operations.
- F. Self-Consolidation concrete does not require vibration.
- G. Set reinforcing dowels connecting new concrete construction to existing with epoxy anchoring adhesive as indicated on Structural Drawings.

3.3 CONSTRUCTION, EXPANSION, AND CONTRACTION JOINTS

- A. Construction Joints: Provide as required to facilitate construction in accordance with reviewed shop drawings.
- B. Expansion and Contraction Joints: Place expansion and contraction joints where required to ensure that undesirable thermal and shrinkage cracking of slabs is minimized.
 - 1. See Drawings for locations of expansion and contraction joints in slabs-on-grade and in topping pours.
 - 2. If drawings do not indicate locations, verify with Architect prior to placement of slabs-on-grade and topping pours.
 - 3. Utilize early entry saw-cutting techniques using specialized equipment and procedures in accordance with the manufacturer of the saw-cutting equipment to saw-cut all joints in interior and exterior slabs within 2 hours of final finishing of the floor slabs while the concrete is still in its early greenstate.
 - a. Acceptable Equipment: Soff-Cut International, Inc., Corona, CA 1-800-776-3328 www.soffcut.com
 - 4. At exterior slabs-on-grade provide a 1/2 inch wide expansion joint wherever slabs abut vertical construction elements whether indicated or not.
- C. Additional reinforcing may be required at some construction, expansion/contraction and control joints, and shall be supplied and installed at no additional cost.
- D. Reinforcing shall be continuous through construction joints of reinforced slabs, unless otherwise indicated on Drawings. Placement schedule shall be submitted for approval.
- E. For slabs-on-grade, no concrete pour shall be longer than 100 feet or more than 4,000 square feet in area, unless early entry saw-cutting techniques are utilized for placement of joints in the slab while the concrete is still in a green state and prior to the slab developing expansion/contraction cracking at random location. Provide shear keys as detailed.
- F. Provide support of formed construction joint materials by means that does not puncture or otherwise damage under floor vapor retarder at interior floor slabs on grade.

3.4 FINISHING VERTICAL (FORMED) SURFACES

- A. Formed surface finishes:
 - 1. Pits, tunnels, mechanical rooms and concealed surfaces: Remove fins, patch tie holes.
 - 2. Interior and exterior exposed surfaces: Remove fins, patch tie holes, stone joint marks, out-of-plane surfaces and other projections to produce uniform, smooth, dense concrete having the following formed finish Class and permitted abrupt or gradual irregularities as designated by ACI 347-04:
 - a. Vertical and horizontal exterior exposed surfaces: Class A Smooth Finish, 1/8 inch, except abrupt irregularities shall be removed.
 - b. Other surfaces prominently exposed to public view: Class A Smooth Finish, 1/8 inch, except abrupt irregularities shall be removed.
 - c. Concealed surfaces where covered by another finish: Class C, 1/2 inch, except abrupt irregularities shall be limited to 1/4 inch.

3.5 FINISHING HORIZONTAL SURFACES

- A. Rake concrete into place, screed and compact with a light tamp, except do not tamp topping and slabs not on grade. Screed with sawing motion and float surface to bring fines to the top.
- B. Mix and apply evaporation retarder in accordance with manufacturer's printed instructions immediately after floating. In extreme drying conditions, apply additional material as needed. Apply lightly on hard to trowel floor areas.
- C. Concrete Flatwork (Slab) Finishes:
 - 1. Interior Flatwork Concrete:
 - a. Smooth steel trowel finish.
 - b. Acid etched add stained concrete as specified in Section 03 35 33.
 - 2. Exterior Flatwork: As follows, unless otherwise indicated on Drawings:
 - a. Broom finish with 3 inch smooth finish picture frame edge between walk joints and at edges as detailed on Drawings.
 - b. Sandblast finish concrete.
 - c. Broom finish concrete as scheduled on Drawings.
- D. When concrete has hardened sufficiently so that excess fines will not be brought to the surface, trowel slab with a steel trowel to a smooth surface free of pinholes and other imperfections. A mechanical trowel with rotating steel blades, approved by Architect, shall be used for this operation.
- E. After the surface has hardened sufficiently to ring under a trowel, trowel again with a steel trowel to a hard, burnished surface free of blemishes.
- F. Concrete slabs scheduled to receive ceramic or stone tile, concrete topping or similar finishes shall have a screeded finish but true and even to plane with no sharp projections or ridges.
- G. Use a 1/8 inch radius edger on edges of exposed Work. Use a deep cutting, 1/8 inch radius scoring tool or sawcutting to provide scoring for control joints as indicated unless otherwise noted or directed.

- H. Finish floors shall meet requirements of ACI 302.1R for a Flat (3/16 in 10'-0") Classification. Floors scheduled to receive thin-set tile and athletic flooring shall meet Very Flat (1/8 inch in 10'-0") Classification.

3.6 SLABS

- A. Saw cut or score contraction joint pattern indicated on Drawings. Use thick blade or scoring tool. Early entry saw shall be used immediately after final finishing and to a depth of 1-1/4 inches. A conventional saw or scoring tool shall cut 1/4 of the depth of slab thickness.
- B. Slope to drains to drains as indicated on Drawings, but not less than 1/4 inch per foot nominal across entire room or area to be drained.

3.7 DECORATIVE CONCRETE FINISHES

- A. Abrasive Blast (Sand Blasted) Finish Concrete:
 - 1. Blasting Operations and Requirements:
 - a. Apply sand blast finish to exposed exterior concrete surfaces indicated.
 - b. Coordinate with concrete placement schedule to ensure that surfaces to be blast finished are blasted at the same age for uniform results.
 - c. Determine type of nozzle, nozzle pressure, and blasting techniques required to match the Architect's sample or desired finished appearance.
 - d. Abrasive blast corners and edge of patterns carefully, using back-up boards, to maintain uniform corner or edge line.
 - 2. Depths of Cut: Use an abrasive grit of proper type and gradation to expose aggregate and surrounding matrix surface to match Architect's samples as follows:
 - a. Light Sand Blast Finish: Remove surface irregularities and indications of formwork and expose fine aggregates; maximum 1/16 inch reveal, or as otherwise acceptable to Architect.
 - 3. Surface Continuity: Perform sand blast finishing in as continuous an operation as possible, utilizing the same work crew and nozzleman to maintain continuity of finish on each surface or area of work. Maintain patterns of variances in depths of cuts as indicated.
 - 4. Construction Joints: Use technique acceptable to the Architect to achieve uniform treatment of construction joints.

3.8 REPAIR OF SURFACE DEFECTS

- A. Modify or replace concrete not conforming to required lines, detail and elevations. Grind high spots and fill low areas as required to provide finished floor tolerances as required for application of finish floor materials.
- B. Repair or replace concrete not properly placed, resulting in excessive honeycombing and other defects. Do not patch, repair or replace exposed architectural concrete except upon express direction of Architect.
- C. After forms are removed, fill tie rod holes, correct honeycomb spots, remove fins and clean and finish damaged surfaces. Wipe off excess mortar and rub to match adjoining surfaces.

- D. When excessive honeycombing is revealed, remove the defective material immediately after stripping forms to a depth of 3/4 inch to 1 inch. Cut edge of area perpendicular to surface to avoid feathered edges. Repair using the following method or submit method of repair and patching material to Architect and Structural Engineer for approval.
 - 1. Saturate with water for several inches beyond cutout and brush-in a grout consisting of equal parts Portland cement and sand. Follow immediately with the patching mortar. Leave the patch slightly higher than the surrounding surface. After an hour or two, finish flush with the adjoining surface. Wipe and rub patch to match adjoining surfaces. Keep patches moist for 7 days.
 - 2. Patching mortar shall consist of the same materials and proportions as the original concrete except that the coarse aggregate shall be omitted. When color match is required, adjust mixture to produce a finished color to match the adjoining concrete surfaces.
- E. Cracks caused by expansion, shrinkage and the like that occur in natural color concrete up through final acceptance of building shall be carefully repaired by epoxy injection or other method approved by the Architect.

3.9 CURING

- A. Protect freshly deposited concrete from premature drying and maintain without drying at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.
- B. Curing Methods: Cure concrete surfaces receiving finish materials, including, but not limited to; cementitious toppings, paint, and flooring, using one of the following two methods immediately after finishing operations. Consideration shall be given to the construction schedule impact and the compatibility of finish materials with the concrete when selecting a method.
 - 1. Keep concrete continuously moist for at least 7 days using polyethylene film, liquid membrane forming curing compound, or other acceptable covering. Interior floor slabs on grade shall be continuously moist cured for a minimum of 7 days in accordance with ACI standards.
 - 2. Liquid curing compounds shall not be acceptable unless it has been demonstrated that curing compound can satisfactorily serve as a base for finish materials or removed, resulting in a satisfactory base for adhesion of finish materials.
 - 3. Where approved for use, apply liquid curing compound in accordance with the Manufacturer's printed instructions.
 - 4. Refer to Structural Drawings for other acceptable curing procedures.
- C. Prevent rapid drying of the concrete at the end of the curing period.
- D. During the curing period, protect the concrete from damaging mechanical disturbances, particularly load stresses, heavy shock, and excessive vibrations. Protect finished concrete surfaces from damage caused by construction equipment, materials or methods.

3.10 UNDERLAYMENT OR REPAIR TOPPING

- A. Apply underlayment or repair topping to correct unsatisfactory floor surface due to undue settlement or failure to meet tolerance requirements.
- B. Slab surface preparation and placing procedures shall be approved by the underlayment and/or repair topping manufacturer and Architect prior to start of installation.

- C. Installation: Install underlayment and/or repair topping materials in accordance with Manufacturer's published instructions and recommendations.

3.11 FLOOR SEALER

- A. At areas indicated on Drawings, provide 2 coats of sealer.
- B. Surface must be clean, dry and free of loose dirt, oil, wax, curing and parting compounds and other foreign matter.
- C. Apply each coat in accordance with Manufacturer's printed instructions.

3.12 FIELD QUALITY CONTROL

- A. Tests: Inspection and testing of concrete mix will be performed by a testing laboratory in accordance with Section 01 45 00.
 1. Provide free access to Work and cooperate with appointed firm.
 2. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
 3. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 4. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
 5. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
 6. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
 7. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. plus additional sets for each 50 cu. yd. more than the first 25 cu. yd. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 8. Take one additional test cylinder during cold weather concreting, and cure on job site under same conditions as concrete it represents.
 9. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed. .
 10. Concrete which does not meet the compressive strength requirement at 28 days will be rejected and removed from the Project, and disposed of in a legal manner.
- B. Calcium chloride test requirements:
 1. Two weeks before installation of the ceramic tile, VCT, vinyl, wood, carpet, epoxy flooring and/or other finish flooring systems over the interior concrete slabs, provide calcium chloride test to determine the level of water vapor transmission in the slab.
 2. Conduct testing in accordance with ASTM F1869 or ASTM E1907 (quantitative anhydrous calcium chloride test).
 3. Conduct calcium chloride tests after HVAC system has been in continuous use for 36 hours with a minimum ambient temperature of 72 degrees F. Water vapor transmission levels are directly affected by ambient room temperature and readings conducted without a sustained ambient temperature is NOT acceptable.

4. Document test results and provide copy to Architect with a marked up floor finish plan showing test results.
5. Provide a written clarification on status of HVAC system before and during the test and the length of time the ambient air temperature was maintained before the tests.

3.13 PROTECTION

- A. Protect finished surfaces from stains or abrasions. Protect surfaces or edges by leaving forms in place or by providing temporary covers. Protect concrete from rain, flowing water or mechanical injury.
- B. Protect floor slabs from the droppings of plaster, paint, dirt, and other marring by covering with polyethylene plastic sheet, or other acceptable floor protection covering, well lapped and sealed.
 1. Where concrete slabs are scheduled to be the finished floor surface, or where slab is treated with a special concrete finish serving as the finished floor surface, provide a continuous covering of 1/2 inch particle board, joints tightly butted and cut to sizes tight to wall construction, over entire floor area over polyethylene plastic sheet, or other acceptable floor protection sheeting. Maintain covering (polyethylene and particleboard) in good condition until danger of damage is past.

3.14 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

**SECTION 03 4100
PRECAST STRUCTURAL CONCRETE**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Structural precast concrete members, some of which require the application of an architectural finish, including supports, anchors and attachments as shown on the drawings and as specified.

1.2 DESIGN REQUIREMENTS

- A. Design units to withstand design loads and erection forces. Calculate structural properties of units in accordance with ACI 301 and ACI 318.
- B. Design units to accommodate construction tolerances, deflection of building structural members and clearances of intended openings.
- C. Design component connections to accommodate building movement and thermal movement. Provide adjustment to accommodate misalignment of structure without unit distortion or damage.

1.3 SUBMITTALS

- A. Shop drawings: Submit drawings indicating layout, unit locations, unit identification marks, reinforcement, connection details, support items, dimensions, openings, and relationship to adjacent materials, sealed by a Structural Engineer registered in the State of Arizona.
- B. Samples: Submit two panels, 24" x 24" in size illustrating surface finish treatment.
- C. Calculations: Submit design calculations and concrete design mix.

1.4 QUALITY ASSURANCE

- A. Standards: Perform work in accordance with PCI MNL-116, PCI MNL-117 PCI-MNL-120, PCI MNL-123, PCI MNL-124, PCI MNL-127 and ACI-301 and ACI-318.
- B. Welding: ANSI/AWS D1.1
- C. Qualifications:
 - 1. Fabricator: Company specializing in performing the work of this section with minimum 5 years documented experience.
 - 2. The precast manufacturing plant shall be certified under the Precast/Prestressed Concrete Institute Plant (PCI) Certification Program. The manufacturer shall be certified in the following product groups and categories:
 - a. C1A—Precast concrete products with architectural finish
 - b. C2A—Prestressed Hollowcore and repetitive products
 - c. C3A—Prestressed straight strand structural members
 - d. C4S—Prestressed deflected strand structural members
 - 3. Welder: Qualified within previous 12 months in accordance with ANSI/AWS D1.1 and ANSI/AWS D1.4,
 - 4. Erector: Precast Manufacturer and erector shall be qualified by PCI prior to beginning work at the jobsite. Erector shall submit a Letter of Qualification furnished by PCI. Erector shall be qualified in structural categories S2 and A.
- D. Design units under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Arizona.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Handle precast units to position, consistent with their shape and design. Lift and support only from support joints.

- B. Lifting or Handling Equipment: Capable of maintaining units during manufacture, storage, transportation, and erection and in position of fastening.
- C. Blocking and Lateral Support During Transport and Storage: Clean, non-staining, without causing harm to exposed surfaces. Provide temporary lateral support to prevent bowing and warping.
- D. Protect units to prevent staining, shipping, or spalling of concrete.
- E. Mark units with date of production in location not visible to view when in final position in structure.

1.6 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on Shop Drawings.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Portland Type II or III.
- B. Aggregate: ASTM C33 or C330
- C. Water: Portable or free from foreign materials in amounts harmful to concrete and embedded steel.
- D. Reinforcing Steel: ASTM A615 deformed steel bars, ASTM A185, welded steel wire fabric, ASTM 416, prestressing strand; plain finish, strength, and size commensurate with precast unit design.
- E. Tensioning Steel Tendons uncoated 7-wire strand: ASTM A416, Grade 270K as required for member design.
- F. Admixtures: Water reducing, retarding, accelerating ASTM C494 and air-entraining ASTM C260, as recommended by the precast manufacturer.
- G. Grout: non-shrink minimum 5,000 psi, 28-day strength.

2.2 SUPPORT DEVICES

- A. Connecting and Support Devices: ASTM A36 weldable steel.
- B. Bolts, Nuts and Washers: ASTM A307 and ASTM A325, high strength steel as indicated on drawings.
- C. Finish of steel units: exposed units painted with rust inhibitive primer.

2.3 ACCESSORIES

- A. Bearing Pads: Vulcanized elastomeric compound molded to size
- B. Recessed Reglets: shaped and flanged to remain in place once cast, foam plastic filled to eliminate wet concrete intrusion.

2.4 MIX

- A. Concrete: Minimum 5,000 psi, 28-day strength.

2.5 FABRICATION

- A. Fabrication procedure to conform to PCI MNL-116.
- B. Maintain plant records and quality control program during production of precast units. Make records available upon request.
- C. Use rigid molds constructed to maintain precast unit uniform in shape, size, and finish. Maintain consistent quality during manufacture.
- D. Fabricate connecting devices, plates, angles, items fit to steel framing members, inserts, bolts, and accessories. Fabricate to permit initial placement and final attachment.

- E. Embed reinforcing steel, anchors, insert plates, angles, and other cast-in items as indicated on shop drawings.
- F. Maintain temporary bracing in place until final support is provided. Protect members from staining.
- G. Provide temporary lateral support to prevent bowing, twisting, or warping of members.
- H. Adjust differential camber between precast members to tolerance before final attachment.
- I. Level differential elevation of adjoining horizontal members with grout to maximum slope of 1:12.
- J. Grout underside of columns and horizontal wall panel joints.
- K. Secure units in place. Perform welding in accordance with ANSI/AWS D1.1
- L. Cure units to develop concrete quality, and to minimize appearance blemishes such as non-uniformity, staining or surface cracking.
- M. Minor patching in plant or field is acceptable, providing structural adequacy and appearance of units is not impaired.
- N. Tension reinforcement tendons as required to achieve design load criteria.

2.6 FINISHING

- A. Special Finish: Exterior structural precast wall units require architectural finish: PC-1 finish is integral color concrete with light sandblast. PC-2 finish is integral color concrete with chemically retarded-water wash-exposed aggregate.
- B. Structural concrete units with architectural finish shall match approved mock-ups.
- C. Cure members under identical conditions to develop required concrete quality, and minimize appearance blemishes such as non-uniformity, staining or surface cracking.
- D. Finish structural members to PCI MNL-116, Commercial grade. Architectural finish to conform to PCI MNL-117.
- E. Clean surfaces of rust, scale, grease, and foreign matter.

2.7 FABRICATION TOLERANCES

- A. Conform to PCI MNL-116

2.8 SOURCE QUALITY CONTROL

- A. Plant Quality Control Program: Sampling testing and inspections shall be conducted by the precast concrete manufacturer's plant and personnel currently certified by the PCI Plant Certification Program.
- B. Testing shall be in compliance with applicable testing provisions in MNL-116. Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products.
- C. Copies of test reports shall be submitted to Architect in accordance with Section 01430.

2.9 TESTS

- A. Provide testing and analysis of stressing tendons under provisions of Section 01430.
- B. Test samples in accordance with applicable ASTM standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that building structure, anchors, devices, and openings are ready to receive work of this Section.

3.2 PREPARATION

- A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.
- B. Provide necessary hoisting equipment.

3.3 ERECTION

- A. Installation of precast, prestressed concrete shall be performed by a PCI Certified Erector.
- B. Erect units without damage to shape or finish. Replace or repair damaged panels.
- C. Erect units level and plumb within allowable tolerance of MNL-127.
- D. Align and maintain uniform horizontal and vertical joints as erection progresses.
- E. When units require adjustment beyond design or tolerance criteria, discontinue affected work; advise Architect
- F. Fasten and weld units in place. Perform welding in accordance with ANSI/AWS D1.1.
- G. Touch-up field welds and scratched or damaged galvanized surfaces.
- H. Set vertical units dry, without grout, attaining joint dimension with lead or plastic spacers. Pack grout to base of unit.

3.4 PROTECTION

- A. Protect units from damage.
- B. Provide non-combustible shields during welding operations.

3.5 PATCHING

- A. Shall be acceptable providing the structural adequacy of the product and the appearance are not impaired.

3.6 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment, and debris away from premises. Leave Work in clean condition.
- B. Clean weld marks, dirt, or blemishes from surface of exposed precast concrete units.
- C. Remove stains in accordance with manufacturer's recommendations.
- D. General Contractor to provide final cleaning of building exterior.

END OF SECTION

**SECTION 03 5413
GYPSUM CONCRETE UNDERLAYMENT**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Gypsum cement underlayment.
 - 2. Acoustical mat sound deadening pad installed under gypsum concrete underlayment.

1.2 SUBMITTALS

- A. Product Data: Submit product physical characteristics, limitations and installation details.
- B. Certificate: Submit manufacturer's certification that product meets or exceeds specified requirements.
- C. Test Results: Submit certified test results of field quality control testing indicating compliance with specified requirements.

1.3 QUALITY ASSURANCE

- A. Qualifications: Applicator shall be company specializing in performing the work of this Section, with minimum 3 years documented experience, and approved or licensed by the manufacturer.
- B. Regulatory Requirements: Conform with the following:
 - 1. Fire Hazard Classification: 0/0/0 (Flame/Fuel/Smoke).
- C. Compressive Strength: 2,000 psi minimum.

1.4 SCHEDULING

- A. Do not install underlayment until floor penetrations and peripheral work is complete. Installation of gypsum underlayment shall be installed after installation of drywall.
- B. Coordination: Coordinate installation of acoustical underlayment with installation of setting beds and flooring products specified in other specification sections.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Before during and after installation of gypsum concrete underlayment, building interior shall be ventilated and heated to a minimum temperature of 50 degrees F to assure drying.
- B. During the curing process, provide mechanical ventilation and adequate heat to rapidly remove moisture from the area until gypsum concrete is dry.

1.6 DELIVERY, STORAGE AND HANDLING

- A. General Requirements: Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements. Damaged or deteriorated materials shall be removed from the premise.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Basis of Design – GSL K2.6 Standard Gypsum Self Leveling Underlayment as manufactured by Dependable, LLC, or equivalent as prior approved by Architect as judged solely by the Architect.
- B. Water: Potable, free of impurities and not detrimental to underlayment mix materials. C. Sand: ASTM C33, 1/8 inch or less, washed masonry or concrete sand, as approved by the underlayment manufacturer.
- C. Primer: Manufacturer's recommended type.

1. VOC Content: Primer shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24)
- D. Joint and Crack Filler: Latex based.
- E. Sealer or Top Spray: Manufacturer's standard sealer/top spray material.
 1. VOC Content: Interior liquid floor treatments shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.2 ACOUSTICAL MAT

- A. Sound Control Mat: Quiet Qurl 55/025 Impact Sound Control Matting as manufactured by Keene Building Products www.keenebuilding.com
 1. Composition: Polypropylene.
 2. Thickness: 0.25 inch.
- B. Accessories:
 1. Acoustical Sealant: As specified in Section 07 9200.
 2. Adhesive: PL Premium as manufactured by OSI, or Liquid Nails subfloor adhesive as manufactured by ICI.
 3. Duct Tape or Cellophane Tape: 2 inch.
 4. Perimeter Isolation: Manufacturer's standard.
 5. Spray Adhesive: Super 77 as manufactured by 3M.

2.3 MIXING

- A. Site mix materials in accordance with manufacturer's guidelines by manufacturer's trained installers:
 1. 1.4 to 2.1 cu. ft. of sand with 4.5 to 6.5 gal of water per 80 Lb. bag to achieve 8.5 to 9.5 slump (inches).
 2. Compressive Strength (psi, in accordance with ASTM C472): 2,000 minimum. B. Mix to consistency to achieve medium flow with flattening consistency. with

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces are clean, dry, unfrozen, structural sound (L/360), broom clean, dry and free from oil, grease, paraffin, laitance, or other contaminants.
- B. Examine wood subfloor for proper nailing and replace weakened material.
- C. Do not install underlayment until floor penetrations and peripheral work is complete.

3.2 PREPARATION

- A. Remove substrate surface irregularities. All cracks and voids shall be fill with a quicksetting patching or taping compound or equal to prevent leakage. Finish smooth. B. Vacuum clean surfaces.
- B. Prime substrate in accordance with manufacturer's instructions. Multiple coats may be necessary as recommended by the gypsum concrete underlayment manufacturer. Allow to dry.

3.3 INSTALLATION

- A. Acoustical Mat: Install acoustical mat in accordance with manufacturer's instruction and specifications, as follows:
 1. Acoustical mat shall be installed at floor areas to receive resilient plank flooring. Mat is not required at carpet areas.
- B. Do not begin installation of gypsum concrete underlayment until building is enclosed, including roof, windows, doors, and other openings and areas where underlayment will be installed comply with environmental requirements.

- C. Priming Sound Deadening Pad: Prime sound deadening pad using manufacturer's recommended floor primer to bond the gypsum concrete underlayment to the pad.
- D. Install gypsum concrete underlayment in accordance with manufacturer's instructions. E. Pump gypsum cement underlayment to achieve minimum finished thickness indicated on Drawings, but not less than 1 inch minimum thickness over wood floor construction, or as otherwise required or allowed by gypsum concrete underlayment manufacturer. Pump properly mixed underlayment onto floor areas, spreading and screeding to a smooth surface. Except at authorized joints, place underlayment as continuously as possible until installation is complete. Avoid placing underlayment against underlayment material that has obtained initial set.
 - 1. Provide additional thickness of gypsum underlayment under bathtub locations as indicated on Drawings for support of tubs.
- E. Maintain top surface level to 1/8 inch in 10 feet. G. Provide continuous ventilation and adequate heat to rapidly remove moisture from the area until underlayment is dry. Provide mechanical ventilation as necessary.

3.4 PROTECTION

- A. Do not permit traffic over unprotected floor surface.
- B. Installed underlayment shall be protected from wheeled or concentrated loads and other construction activities that could damage installed material by placing temporary wood planking, or other protective material acceptable to underlayment manufacturer, over installed underlayment.

3.5 PREPARATION FOR INSTALLATION OF FLOOR COVERINGS

- A. Do not install finished floor coverings until the gypsum concrete underlayment is tested for dryness in accordance with flooring manufacturer's procedures.
- B. Sealing: Seal all areas that receive glue down floor goods with Manufacturer's recommended overspray sealer in accordance with manufacturer's specifications. Any floor areas where the surface has been damaged shall be cleaned and sealed regardless of floor covering to be used. Where floor goods manufacturers require special adhesive or installation systems, their requirements supersede these recommendations.
- C. Floor Goods Procedures: Refer to manufacturer's published procedures for attaching finished floor goods to underlayment for guidelines for installing finished floor goods. Comply additionally with recommended procedures of ASTM F2419.

3.6 FIELD QUALITY CONTROL

- A. Slump Test: Underlayment mix shall be tested for slump as it is being pumped at the beginning of each installation using a 2 inch by 4 inch cylinder resulting in a patty size of 8 inches plus or minus 1/2 inch diameter. Take slump tests periodically during installation to verify that required slump is maintained.
- B. Field Samples: Cubes shall be tested as recommended by the manufacturer in accordance with modified ASTM C472 testing procedures, using 2 inch split brass molds. Contact underlayment manufacturer prior to testing to ensure that proper ASTM testing procedures are followed. At least one set of 3 molded cube samples shall be taken from each day's pour during underlayment application. Test results shall be available to architect and/or contractor upon request from applicator.

3.7 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

SECTION 04 0120.52
UNIT MASONRY CLEANING

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

- A. Performance Requirements: The application of chemical cleaner shall leave the finished surfaces uniform in color and shall not alter the natural texture of the masonry units.

1.2 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Engaged in producing materials with a satisfactory performance record for at least 5 years.
2. Applicator: Trained, approved and accepted by the cleaning compound manufacturer. Application personnel shall have at least 2 years experience with the particular materials being applied.

B. Field Samples:

1. A test area of wall surface from 10 to 20 square feet in size shall be cleaned with the chemical cleaner recommended by the cleaning compound manufacturer for acceptance by the Architect.
2. Test samples of adjacent non-masonry materials for possible reaction with the diluted cleaning materials. Samples to be available for review by the Architect.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Delivery shall be made to the job site in manufacturer's original containers with seals unbroken and labeled with manufacturer's batch number.

B. Storage and Protection:

1. Store materials in original, unopened containers in compliance with manufacturer's printed instructions.
2. Do not store in areas where temperature will fall below 20 degrees F. or rise above 100 degrees F..

1.4 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Temperature and relative humidity conditions for a period before, during and after application shall be as recommended by the manufacturer.

PART 2 PRODUCTS

2.1 MATERIALS

A. Chemical Cleaner:

1. Cleaner shall be a solution of blended liquid acids, heavily inhibited and emulsified and in combination with special wetting systems.
2. Specific product selection shall be dependent upon substrate as recommended by the chemical cleaner manufacturer.
3. Cleaner shall be acceptable to the masonry unit manufacturer.

4. Muriatic acid shall not be acceptable as a chemical cleaner for new masonry.
5. Subject to compliance with specification requirements, Sure-Klean Vana Trol, Sure-Klean No. 600 Detergent and Sure-Klean 101 Lime Solvent as manufactured by ProSoCo, Inc., www.prosoco.com or 202V Vana-Stop, 202 New Masonry Detergent and 200 Lime Solve as manufactured by Diedrich Technologies www.diedrichtechnologies.com are acceptable products.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
1. Prior to start of work, carefully inspect the installed work of other trades, and verify that such work is complete to the point where this work may commence.
 2. The chemical cleaner manufacturer's representative shall verify that the chemical cleaner may be applied in accordance with the manufacturer's recommended methods.
 3. In the event of discrepancy, immediately notify the Architect.
 4. Commencement of system application constitutes acceptance of surfaces by applicator.

3.2 PREPARATION

- A. Protection:
1. Use all means necessary to protect the installed work of other trades.
 2. Concrete sidewalks shall be protected from runoff by soaking with water immediately prior to application on adjacent walls.
 3. Adjoining glass, metal and painted surfaces shall be protected from overspray and splash of chemical cleaner. Inadvertent splashes shall be removed in an approved manner before the solution has damaged the surface.
 4. In the event of damage, immediately make all repairs and replacements necessary to the approval of Architect and at no additional cost to Owner.
- B. Surface Preparation for Chemical Cleaner:
1. In strict accordance with manufacturer's printed instructions.
 - a. Masonry walls shall be cleaned within 14 to 28 days after installation.
 - b. Walls shall be free of excess mortar.
 - c. Cracks, other than hairline cracks, shall be pointed up.
 - d. Defective mortar joints shall be routed out, pointed with mortar and tooled.
 2. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
- C. Presoaking Hoses:
1. Adequate water supply shall be made available to assure thorough presoaking and thorough rinsing of the wall before undertaking general cleaning.
 2. Two water hoses shall be used by the cleaning crew.
 3. One hose shall be attached to a length of lawn soaker hose placed along the top of the wall to provide a uniform and complete saturation of the entire wall area.
 4. The second hose shall provide a copious flow of water for thorough flushing of excess mortar and dirt from the scrubbed areas.

5. The lawn soaker hose is later to be placed at the face of the scaffold or stage to provide a continuous spray of wall areas below the working area.

3.3 APPLICATION

- A. Chemical Cleaner: Application to be in strict accordance with manufacturer's printed instructions and as follows:
 1. Surfaces shall be thoroughly pre-soaked with clean water to prevent the absorption of the cleaning solution within the pores of the masonry.
 2. Cleaning solution shall be diluted with clear water and applied to pre-soaked wall areas with a long handled stiff fibered masonry wall washing brush, or other brush as recommended by the cleaning compound manufacturer. The cleaning solution may also be applied with a garden-type low pressure sprayer having a maximum nozzle pressure of 50 psi (3.5kg/cm²). Allow the solution to remain on the wall 5 to 10 minutes, or as recommended by the cleaning solution manufacturer. Wooden paddles or other non-metallic tools may be used to remove stubborn particles. Cleaning shall be restricted to small areas of up to 20 square feet at a time.
 3. After washing a given area, the wall shall be flushed with a copious amount of clear water, working from top to bottom, before the solution dries on the wall surface. All of the cleaning solution shall be completely rinsed off of the wall.
 4. Rinsing water may be applied with a high-pressure hose system with a maximum nozzle pressure of 700 psi . The high-pressure nozzle tips shall have a fan spray angle of from 15 to 45 degrees. The high-pressure system shall have a waterflow rate of 3 to 8 gallons per minute. Care shall be taken to avoid damaging the brick unit or the mortar joints with the high-pressure water spray.
 5. Repeat the procedure on spots which require additional cleaning.
 6. Clean roof side and top of parapet walls.

END OF SECTION

**SECTION 04 0515
MORTAR AND MASONRY GROUT**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Mortar and masonry grout used in concrete unit masonry construction as shown on Drawings and as specified.

1.2 SUBMITTALS

- A. Mix Designs:
1. Submit mix designs and samples to the Architect for review prior to delivering materials to the site or commencing the Work.
 - a. Mortar Mix Design: Furnish in accordance with ASTM C270.
 - b. Grout Mix Design: Furnished by either the grout supplier or an independent testing laboratory. Submit comprehensive strength data with mix design submittals when pozzolans are used.
 2. Submit written colored mortar proportions for each color of mortar to be supplied for review by the Architect.
- B. Samples: Submit mortar channels for color selection.
- C. Product Data: If alternative mortar materials are to be provided, submit current instructions stating the actual quantities and mixing instructions for alternative mortar materials to conform to specified requirements.
1. Submit test report data substantiating compliance with specified performance requirements.
 2. Submit current ICC Evaluation Report.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Storage and Protection: Cementitious materials shall be stored off the ground, under cover and shall be kept dry.
- B. Preblended Mortar Mix Delivery System: The use of dry preblended mortar silos and bulk bags shall be acceptable. Bulk bags and silos shall be sealed to prohibit contamination of the ingredients and to keep the materials dry until mixed.

1.4 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
1. Hot Weather Requirements: Wet mortar board before loading and cover mortar to retard drying when not being used.
 2. Cold Weather Requirements: In accordance with "Recommended Practices and Guide Specifications for Cold Weather Masonry Construction" by IMIAC; provide adequate equipment for heating the mortar and grout materials, when air temperature is below 40 degrees F.. Temperatures of the separate materials, including water, shall not exceed 140 degrees F. when placed in the mixer. When air temperature is below 32 degrees F., maintain mortar temperature on boards above freezing.

PART 2 PRODUCTS

2.1 MATERIALS

A. Mortar:

1. Cement: Type II Portland cement conforming to ASTM C150.
2. Aggregate: Clean, sharp and well graded and free from injurious amounts of dust, lumps, shale, alkali, surface coatings and organic matter, conforming to ASTM C144, except that no less than 3 percent nor more than 10 percent shall pass a No. 100 sieve.
3. Hydrated Lime: ASTM C207, Type S.
4. Water: Clean and potable.
5. Admixtures:
 - a. Chemical: The use of accelerator admixtures, water reducing plasticizers and other chemical admixtures shall not be allowed.
 - b. Mineral: In accordance with Section 03 05 05.
 - c. Water-Repellent Admixture: In accordance with Section 04 05 26.
 - d. Alternative Plasticizer: Pozzolanic formulation consisting of a combination of hydroxy aluminum silicates and diatomite:
 - 1) Alternative Plasticizer Manufacturer: Engaged in producing materials with a satisfactory performance record for at least 5 years.
 - 2) Mortar mix design shall be in accordance with ICC Evaluation Report, in accordance with the mortar type specified elsewhere in this specification.
 - 3) Provide alternative plasticizer in accordance with manufacturer's printed instructions, including specific mixing instruction.
 - 4) No other admixtures shall be used in conjunction with the alternative plasticizer unless approved in writing by the alternative plasticizer manufacturer.
 - 5) Packing and Shipping: Mortar admixture(s) shall be delivered to the job site in manufacturer's original containers with seals unbroken and labeled with manufacturer's batch number.
6. Mortar Color:
 - a. Color: Matching integral colored masonry units as approved by Architect.
 - b. Provide limeproof, inorganic compounds which shall not exceed 15 percent by weight of the cement, unless otherwise directed by Manufacturer.
 - c. Carbon black shall not exceed 3% by weight of the cement.
 - d. Factory blend color for full color saturation of mortar joint and factory package for unitized jobsite mixing at a ratio of one unit of color per sack of cementitious material, (portland cement, lime, or masonry cement).

B. Grout:

1. Cement: Type II Portland cement conforming to ASTM C150.
2. Aggregate: ASTM C404 and as follows:
 - a. Sand: Size No. 1 for fine aggregate.
 - b. Pea Gravel: Size No. 8 for coarse aggregate.
3. Water: Clean and potable.

2.2 MIXES

- A. Mortar: ASTM C 270, Type S.
1. Measurement: Accurately measure materials by ASTM C270 by the Property Method per Table 2.
 2. Mix cementitious materials and aggregates 3 to 5 minutes in a mechanical mixer. Small amounts of mortar may be mixed by hand. Adjust consistency of the mortar depending on the absorptive quality of the units being laid, and to the satisfaction of the mason.
 3. If mortar begins to stiffen, it may be retempered by adding water within a basin formed by the mortar, and remixing.
 4. Use within 2-1/2 hours of initial mixing and no mortar shall be used after it has begun to set or after it has become harsh or non-plastic.
 5. Mix color in a specific and exacting ratio in accordance with the Architect's reviewed submittals.
 6. Water-Repellent Admixture: In accordance with Section 04 05 26.
 7. Preblended Mortar Mix: Provide mortar as specified herein, except that dry ingredients may be preblended and bulk packaged for delivery to a jobsite silo (which loads into batch mixer) or bagged for hand loading into mixer. Moisture shall be extracted from sands. Digital printouts displaying the proportions of each batch shall be submitted to the Architect upon request. Mixing shall be accomplished by mechanical mixer in accordance with instructions provided by Preblended Mortar Mix Distributor.
- B. Grout:
1. Job-Site Mixed: In accordance with ASTM C476.
 2. Transit-Mixed:
 - a. Designed by the supplier or an independent testing laboratory with a minimum compressive strength of 2000 psi (140mPa) in 28 days, unless higher strength is required by the Structural Drawings and Notes.
 - b. Slump: Not to exceed 8 inches, unless otherwise noted on Drawings.
 - c. Use within 1-1/2 hours of initial mixing and use no grout after it has begun to set or after it has become harsh or non-plastic.
 - d. Course grout may be used in cavity walls with a horizontal dimension of 2 inches or more, and in hollow cell construction 4 inches or more in both horizontal directions.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Installation of mortar and grout shall be as specified under each of the following Sections and in accordance with AMG Standard 108:
1. Section 04 2200 – Concrete Unit Masonry
- B. Colored Mortar: Consistency of appearance shall be maintained throughout the Project.
- C. Temperature: Mortar and grout shall have a temperature between 50 degrees F. and 90 degrees F. while being used.
- D. Grout may be poured by hand bucket, concrete hopper or through a grout pump. Grout spaces shall not be wet down prior to pouring grout.

3.2 FIELD QUALITY CONTROL

- A. General: Tests and inspections as necessary to verify quality and strength of mortar and grout. Laboratory tests shall conform to applicable ASTM standards and tests.
- B. Tests:
 - 1. Frequency: As determined by the Architect based upon total time for construction of masonry with not less than two tests per each level of masonry construction, foundation to roof or floors.
 - 2. Testing Laboratory: Inspection and testing of mortar and grout will be performed by a testing laboratory in accordance with Section 01 45 00. The testing laboratory, in addition to meeting requirements of ASTM E329, must be an approved laboratory competent to perform cement physical testing.
 - 3. Distribution of Results of Tests: Within 24 hours of results of tests, copies of the results shall be submitted to the Architect, Contractor, masonry contractor, and the grout supplier if applicable.
- C. Mortar:
 - 1. Property Specification (ASTM C270): Testing in accordance with ASTM C780.
 - 2. For determining hardened mortar properties, prepare 3 test specimens for each test age and property. A strength test shall be the average of the strengths of the specimens tested at the age specified. Specimens shall be tested at 7 and 28 days.
- D. Grout:
 - 1. Testing per ASTM C1019.
 - 2. Three test specimens shall constitute one sample. A strength test shall be the average of the strengths of the specimen tested at the age specified.
 - 3. Specimens shall be tested at 7 and 28 days.
 - 4. The compression strength will be considered satisfactory if the average of three consecutive tests of the grout is equal to or greater than the specified strength and no individual strength test falls below the specified strength by more than 500 psi.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

SECTION 04 0526
CMU INTEGRAL WATER REPELLENT

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

- A. Performance Requirements: Water repellent admixture shall be provided in both the masonry units and mortar used in all exterior exposed CMU wall construction, and shall constitute a complete integral water repellent system for exterior above grade walls meeting the following requirements:
1. Admixture shall leave the finished surfaces water repellent and shall not alter the natural texture or color of the masonry units.
 2. Admixture shall provide wind driven rain resistance equivalent to Class E Rating as measured by ASTM E514-74.
 3. Bond strength as determined by ASTM E72 shall not be reduced using the water repellent admixture.

1.2 QUALITY ASSURANCE

- A. Qualifications:
1. Water Repellent Manufacturer: Engaged in producing materials with a satisfactory performance record for at least 5 years.
 2. Masonry Unit Fabricator/Manufacturer: Trained, approved and accepted by the manufacturer.
- B. Regulatory Requirements: Use of water repellent admixtures shall be in strict accordance with applicable Federal, State and local requirements, including, but not limited to, environmental regulations.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Mortar admixture shall be delivered to the job site in manufacturer's original unopened containers and packaging, with labels clearly identifying product name, manufacturer, and batch number.
- B. Store admixture in clean, dry area indoors in accordance with manufacturer's instructions; keep containers sealed until ready for use, keep from freezing, do not use admixture once frozen.
- C. Protect admixture during handling to prevent damage or contamination.

1.4 WARRANTY

- A. Water Repellent Manufacturer: Water-repellent shall be warranted by Admixture manufacturer to be free of defects and to meet manufacturer's published physical and chemical properties.
- B. CMU producer shall warrant that Integral Polymeric CMU Water-repellent has been provided at appropriate dosage rate in all units shipped to this project for use in exterior walls.

- C. Masonry Installer shall warrant that only CMUs and mortar containing Integral Polymeric CMU Water-repellent have been placed in exterior walls and that admixture was included in the mortar mix in accordance with water repellent manufacturer's printed instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Water-Repellent Admixture: The following shall be included in exterior masonry units.
1. Liquid polymeric admixture(s) formulated for mixing with mortar mix and formulated for mixing with concrete during production of concrete masonry units to cross link and provide resistance to water penetration to achieve a Class E Rating when tested in accordance with ASTM E514.
 2. Admixture shall not reduce flexural and compressive strength of mortar when tested in accordance with ASTM C1072 and C780.
 3. Concrete Masonry Unit Manufacturer: Acceptable to integral water repellent manufacturer and qualified by integral water repellent manufacturer to comply with ASTM E514 for water permeance testing.
 4. Acceptable Products include the following:
 - a. Dry Block Mortar Admixture as manufactured by W.R. Grace & Co. - Conn., Cambridge, MA (800) 558-7066. www.grace.com
 - b. Eucon Blocktite Mortar Admixture as manufactured by The Euclid Chemical Company, Cleveland, Ohio (800) 321-7628. www.euclidchemical.com
 - c. RainBloc admixture as manufactured by ACM Chemistries, Inc. www.acmchem.com

PART 3 EXECUTION

3.1 ERECTION, INSTALLATION, APPLICATION

- A. In accordance with Sections 04 0515 and 04 2200 and manufacturers recommendations.

END OF SECTION

**SECTION 04 2200
CONCRETE UNIT MASONRY**

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

1. Concrete masonry units including setting materials and accessories.
2. Construction of site bench seats and planters from Owner Furnished precast concrete stair treads using masonry mortar and reinforcing.

1.2 SUBMITTALS

A. Samples: Submit samples to Architect for review prior to delivering materials to Site or commencing Work in this Section.

1. Provide 2 samples of each type and weight classification of concrete masonry units, (stretcher units), to be used on Project showing range of texture and/or color variations of exposed surfaces for units.
2. Units provided to Project shall match these samples.

B. Shop Drawings: Submit Shop Drawings showing proposed location of control joints and obtain approval of same from Architect and Structural Engineer prior to construction.

C. Certificates: Submit certification to the Architect prior to delivery of concrete masonry units to jobsite, signed by Concrete Masonry Unit Manufacturer, stating that the concrete masonry units to be supplied: 1) shall meet the specified requirements for concrete masonry units for exterior building wall construction, and; 2) are suitable for proposed usage.

D. Test Reports:

1. Submit test results for concrete masonry units for exterior building wall construction to be used to Architect in accordance with Section 01 45 00.
2. Test results shall clearly indicate:
 - a. Types of materials and composition, including integral water repellent.
 - b. Classification of concrete masonry unit in accordance with ASTM C90 requirements.
 - c. Water penetration and leakage in accordance with testing specified under Source Quality Control specified in this section.
3. Testing laboratory shall notify Architect of non-conforming material submittals.

1.3 QUALITY ASSURANCE

A. Standards:

1. The "Levels of Quality", Standard 107 of Arizona Masonry Guild (AMG) shall apply and by reference is hereby made a part of this Specification. Reference to Custom, Standard or Economy in this Specification shall be as defined in latest edition of AMG Standard 107.
2. Comply with the requirements of ACI 530.1/ASCE 6 "Specifications for Masonry Structures", except as otherwise indicated.

B. Regulatory Requirements: Masonry materials and workmanship shall meet requirements of building codes which are applicable to jurisdiction in which Project is located.

- C. Certifications: Concrete masonry units shall be supplied by a manufacturer participating in the Certified Block Program of the Arizona Masonry Guild.
- D. Installer Qualifications: The Masonry Subcontractor shall have a supervisor on the jobsite, whenever masonry work is being performed, who is Certified by the Arizona Masonry Contractors Association. Proof of certification shall be submitted to the Architect prior to start of masonry work.
- E. Mock-Ups: Prior to start of Work, construct a sample panel from approved materials, containing each different kind or color of concrete masonry units, approximately 4 feet high x 6 feet long or as required to illustrate wall design under direction of Architect.
 - 1. Sample wall shall provide a standard of workmanship, bond, thickness and tooling of joints.
 - 2. Construct successive sample panels until standard is approved.
 - 3. When accepted, sample wall shall be standard of comparison for remainder of masonry Work.
 - 4. This sample, when accepted by the Architect, will function as a reference base for acceptance or rejection of final work.
 - 5. Sample wall shall be reviewed by the specification writer or Architect's contract administrator for acceptance.
 - 6. Sample wall shall receive water repellent as specified in Section 07 1900.
 - 7. Upon completion of Project, remove sample wall from site and dispose of in a legal manner.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Transport and handle masonry units in such a manner as to prevent chipping and breakage.
- B. Deliver and store materials in dry, protected areas.
- C. Keep free of stain or other damage.
- D. Locate storage piles, pallets, stacks or bins to avoid or protect material from heavy or unnecessary traffic.
- E. Segregate storage piles, pallets, stacks or bins of fire-rated units from non-rated units and maintain clear identification of the rating of the units.
- F. Replace damaged material at no cost to Owner.

1.5 PROJECT/SITE CONDITIONS

- A. Hot Weather Requirements:
 - 1. When ambient air temperature exceeds 100 degrees F., or when ambient air temperature exceeds 90 degrees F. and wind velocity is greater than 8 mph, Masonry Contractor shall implement hot weather protection procedures as submitted to Architect.
 - 2. Do not spread mortar beds more than 4 feet ahead of placing block units.
 - 3. Place block units within one minute of spreading mortar.
- B. Cold Weather Requirements:
 - 1. Fully protect concrete masonry units against freezing by a weather-tight covering which shall also prevent accumulation of ice.

2. Do not lay concrete masonry units when temperature of surrounding atmosphere is below 40 degrees F. or is likely to fall below 40 degrees F. in the 24 hour period after laying, unless adequate protection is provided.

1.6 SCHEDULING AND SEQUENCING

- A. Coordination: Coordinate with other Trades whose Work relates to concrete masonry unit installation for placing required blocking, backing, furring, conduits and other items.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General Requirements for Concrete Masonry Units:
 1. Concrete masonry units shall meet ASTM C90 requirements except that when CMU will be exposed in final construction, ASTM C90-00, paragraph 7.2.1 shall be modified to read: "Three percent of a shipment containing chips not larger than 1/2 inch in any dimension, or cracks not wider than 0.02 in. and not longer than 10 percent of the nominal height of the unit is permitted." Linear shrinkage of units shall not exceed 0.065 percent.
 2. Units shall be in the same condition in wall as they were upon delivery.
 3. Unit sizes shall be 8 by 8 by 16 inches, 8 by 1 by 16 inches, and other sizes as may be indicated on Drawings.
 4. Texture and color shall be consistent for all units provided for exposed walls. Range of texture and color shall be within that shown by samples reviewed by Architect.
 5. Surface of units shall be clean and free from dirt when laid in walls.
 6. Units not complying with the appropriate ASTM Standards and AMG Standard 107 shall not be laid in the wall where exposed to view. Any unit that is chipped in excess of the requirements of AMG Standard 107 will be rejected and shall be removed and replaced.
 7. Provide special block sizes and shapes required or as shown on Drawings.
 8. CMU may be used for construction of building walls exposed to the exterior if they comply with requirements specified under Source Quality Control.
 9. Water-Repellent Admixture: In accordance with Section 04 05 26. Concrete masonry units used to construct exterior building walls shall contain the recommended amount of integral water repellent admixture, as per manufacturer's certification program.
- B. Hollow CMU Classifications: The following requirements shall apply to all shapes, colors, textures and sizes of CMU provided.
 1. Medium weight units: Weighing 105 lbs. per cubic foot to less than 125 lbs. per cubic foot and manufactured from a combination of volcanic scoria aggregate conforming to ASTM C331 and sand conforming to ASTM C33.
 2. Normal weight units: Weighing 125 lbs. per cubic foot or more and manufactured with sand conforming to ASTM C33.
- C. Standard Smooth Faced CMU: Manufacturer's standard smooth faced units.
 1. Provide manufacturer's standard gray units, unless indicated to be integrally colored.
 2. Integral Color: As scheduled on Drawings.

- D. Accessory Units: Provide units as required for window sills and jambs, doors, control joints, bond beams, lintels, pilaster, caps and other locations as indicated on Drawings with a minimum of block cutting. Accessory units shall match adjacent unit color and texture unless noted otherwise.

2.2 ACCESSORIES

- A. Joint Reinforcing: Joint reinforcing in accordance with requirements of IBC 2018, Chapter 21.
- B. Reinforcing Steel: As specified under Section 03 2000.
- C. Control Joints:
 - 1. Rubber: Extruded, solid section, ASTM D2000 2AA-805 with a durometer hardness of 70 or 80 when tested per ASTM D2240.
 - 2. Polyvinyl Chloride (PVC): ASTM D2287, Type PVC 654-4 with a durometer hardness of 85 (+5) when tested per ASTM D2240, minimum tensile strength of 1750 psi with minimum 300 percent elongation per ASTM D638, and cold crack brittleness of 50 degrees F per ASTM D746.
 - 3. Sizes and Profiles: As indicated on Drawings.
- D. Mortar and Grout: As specified under Section 04 0515. Provide water-repellent admixture in accordance with Section 04 0526.
- E. Sheet Metal Flashings: See Section 07 6000. Furnish shapes in accordance with project requirements and NCMA TEK 19-2A, 19-4A and 19-5A.
- F. Steel Lintels: As indicated or scheduled on Structural Drawings.

2.3 SOURCE QUALITY CONTROL

- A. Concrete masonry units to be provided for exterior exposed building wall construction shall be tested by manufacturer using a spray bar test as follows:
 - 1. Testing shall be performed at no additional cost to Owner.
 - 2. Individual concrete masonry units shall be placed on a rack where water is sprayed at a rate of 140 gallons per hour for a minimum of 4 hours.
 - 3. Testing shall be made upon concrete masonry units prior to application of post-applied water repellent.
 - 4. Test results for units regularly manufactured using a standard mix design within the previous 6 months shall be acceptable. Test results shall meet or exceed the following:

Location	Results
Inside front face shell	<20% damp (no running water or sheen)
Center web	Dry
Inside outer web	<10% damp
Inside of back face shell	Dry
Outside of back face shell	Dry

- 5. Submit test reports as specified herein under "Submittals."

PART 3 EXECUTION

3.1 EXAMINATION

- A Installer shall examine supporting structure and conditions under which unit masonry is to be installed, and notify Contractor, in writing, conditions detrimental to proper and timely completion of Work. Do not proceed with the installation of unit masonry Work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- B Do not use units with chips, cracks, or other defects which might be visible in the finished Work unless otherwise acceptable to the Architect.
- C Do not build on frozen Work; remove and replace unit masonry Work damaged by frost or freezing.
- D Do not use frozen materials or materials mixed or coated with ice or frost. Do not lower freezing point of mortar by use of admixtures or anti-freeze agents, and do not use calcium chloride in mortar or grout.

3.2 PREPARATION

- A Protection: Protect sills, ledges, offsets and other projections from dropping of mortar and grout.

3.3 ERECTION, INSTALLATION, APPLICATION

- A General Requirements for Concrete Masonry Walls: Construction shall comply with IBC 2018 Section 2104, referenced standards, and the following:
 - 1. Workmanship:
 - a. Provide Standard Level workmanship as defined by AMG Standard 107.
 - b. Concrete masonry units which will be exposed in the finished work shall be treated as an architectural finish and shall be handled carefully to ensure that chippages do not occur during handling and laying. Handling shall be minimized on the jobsite to eliminate chances for chippage.
 - 2. Lay units in uniform and true courses, level and plumb to height indicated on Drawings.
 - 3. Lay concrete unit masonry in such a way that cracks are not formed at time unit is placed in wall.
 - 4. Units shall not be wetted before being used and shall be laid dry.
 - 5. Adjusting Units:
 - a. Units shall be adjusted to be level, plumb and straightened into final position in wall while mortar is still soft and plastic enough to ensure a good bond.
 - b. Avoid over-plumbing and pounding of corners and jambs to fit stretcher units after they are set in position.
 - c. If position of unit is shifted after mortar has stiffened, or bond is broken or cracks are formed, re-lay unit in new mortar.
 - 6. Bearings on Walls: Provide 3 courses of solid units or grouted hollow masonry units below steel bearing plates or beams bearing on walls. Extend bearings each side of contact with load as required to properly transfer loads into wall.
 - 7. Openings: Provide openings in masonry walls where required or indicated. Steel lintels shall be provided unless otherwise noted.
 - 8. Flashings: Surface of masonry shall be smooth and free from projections which will puncture flashing materials. All sheet metal flashings shall have hemmed edges.

9. Weep Holes: If required, shall be provided in the head joints of the first course and be at a maximum of 24 inches on center.
10. Cutting of masonry: When required, exposed block units shall be cut with a power driven Carborundum or diamond disc blade saw. When using "wet" cutting methods, clean water shall be used on exposed units.
11. Where fresh masonry joins masonry that is partially or totally set, the exposed surface of the set masonry shall be cleaned and lightly wetted so as to obtain the best possible bond with the new Work. Loose brick and mortar shall be removed.
12. If it becomes necessary for construction purposes to "stop-off" a horizontal run of masonry, this shall be done by racking back on half a CMU veneer unit length in each course and , if grout is used, stopping the grout 4 inches back of the rack. Tothing will not be permitted, except upon written approval of the Architect.

B. Bonding:

1. Bond pattern shall be regular running bond unless indicated otherwise on the drawings.
2. Bond shall be plumb throughout face of wall.
3. No pieces shorter than 4 inches shall be used at corners or jambs.

C. Bearing Wall Intersections:

1. Intersecting block bearing walls shall not be tied together in a masonry bond, except at corners.
2. One wall shall terminate at face of other wall with a control joint at intersection.
3. Tie intersecting wall together with a metal tie bar, 1/4 inch x 1-1/4 inches x 2'-4" long with a 2 inch right angle bend at each end of bar, spaced vertically at 2 feet on center.
4. Bends at ends of tie bars shall be embedded in grouted cells.
5. Rake out vertical joint between intersecting walls to a depth of 3/4 inch after mortar has stiffened.
6. Provide sealing of control joint as specified in Section 07 9200.

D. Non-Bearing Wall Intersections:

1. Tie non-bearing wall together with strips of metal lath or galvanized 1/4 inch mesh hardware cloth placed across joint between 2 walls placed in alternate horizontal block courses.
2. Rake out vertical joint between intersecting walls to a depth of 3/4 inch after mortar has stiffened.
3. Provide sealing of control joint as specified in Section 07 9200.

E. Joining of Work:

1. Where fresh masonry joins partially set masonry the exposed surface of the set masonry shall be cleaned and lightly wetted so as to obtain the best possible bond.
2. Remove loose concrete block and mortar. Stop-off a horizontal run of masonry by racking back 1/2 brick length in each course and, if grout is used, stopping the grout 4 inches back of the rack.
3. Tothing will not be permitted, except upon written approval of the Architect.

F. Precast Concrete Stair Tread Planters and Bench Seats: Lay precast tread units in stacked pattern and arrangement detailed on Drawings using mortar, reinforcing pins and ladder type masonry wall reinforcing in mortar bed courses.

1. Tool joints between units using same method used for CMU.
2. Clean completed work using same methods used for CMU.

G. Mortar Joints:

1. Joints shall be straight, clean and a uniform 3/8 inch thickness on exposed wall face and in accordance with NCMA TEK 19-2A.
 2. Exposed vertical and horizontal joints shall be tooled when mortar is "thumbprint" hard with round or other approved jointer, slightly larger than the width of the joints to produce a dense, slightly concave tooled surface which is well bonded to block at edges.
 3. Joints shall be tooled flush at:
 - a. Below grade and planter surfaces to receive waterproofing.
 - b. Interior or exterior surfaces to receive ceramic tile, furred wall construction, stucco systems, or other finishes requiring flush joints that are to be concealed.
 4. Solidly fill joints from face of unit to depth of face shell, except where specified otherwise.
 5. Full bedding to be provided for first course on foundation and wherever maximum strength is required.
 6. Butter vertical head joints well and shove these joints tight so that mortar bonds well to both units.
 7. Full coverage to be provided on bed of face shells and webs surrounding cells to be filled.
 8. Bee-holes or other open joints shall be filled and tooled with mortar while mortar is still fresh.
- H. Control Joints:
1. Provide control joints, as detailed, at vertical masonry walls where such walls exceed 40 feet in length. In long length of walls, provide joints at approximately 24 feet on center or as detailed.
 2. Control joints shall be continuous full height of walls.
 3. At bond beams, control joints shall separate both block and grout; however, steel reinforcing shall be continuous.
 4. Horizontal wire reinforcing shall not run through control joint.
 5. Control joints shall not occur at wall corners, intersections, ends, within 24 inches of concentrated points of bearing or jambs or over openings unless specifically indicated on Structural Drawings.
 6. Control joint materials shall be held back from finished surface as required to allow for sealant and back-up materials.
- I. Horizontal Joint Reinforcing:
1. Place horizontal joint reinforcing every 16 inches vertically throughout wall construction.
 2. Continuously reinforce first bed joint immediately above and below openings. Provide reinforcing in second bed joint above and below openings which extends 2 feet beyond each side of opening.
 3. Lap splices in reinforcing in accordance with Structural Drawings.
 4. Cut and bend reinforcing at corners.
- J. Vertical Reinforcing and Bond Beam Reinforcing:
1. Place in accordance with requirements of Drawings.
 2. Vertical Reinforcement: Provide continuous reinforcing full height of wall at wall ends, corners, intersections, jambs of openings and each side of control joints. Vertical reinforcing shall match and lap dowels which are at top of foundation walls and precast concrete beams.
 3. Bond Beams: Provide horizontal reinforcing of 2 bars in minimum 8 inch deep grouted continuous bond beam at roof and elevated floor lines.
 4. Parapets: Provide horizontal reinforcing of 1 bar in minimum 8 inch deep grouted continuous bond beam at top of parapets.
 5. Bond Beam and Parapet Reinforcing at Vertical Control Joints: Place bars continuous through control joint and wrap mastic tape around bars for 18

inches each side of control joint.

6. Bond Beam and Parapet Reinforcing at Corners and Wall Intersections: Provide bent bars to match reinforcing at corners and wall intersections.
7. Lap splices in reinforcing in accordance with Structural Drawings.
8. Use spacers to position reinforcing steel in center of grout at center of wall as required by code.

K Grouting:

1. Reinforcing steel is to be in place and inspected before grouting starts.
2. Vertical cells to be filled shall have vertical alignment to maintain a continuous cell area.
3. Keep cell to be grouted free from mortar.
4. Fill cells solidly with grout in lifts not to exceed 5 feet.
5. Grout may be poured by hand bucket, concrete hopper or through a grout pump.
6. Do not wet down grout space prior to pouring of grout.
7. Stop pours 1-1/2 inches below top of cell to form a key at pour points.
8. Grout shall be consolidated by mechanical vibration during placing before loss of plasticity in a manner to fill grout space. Grout pours greater than 12 inches shall be reconsolidated by mechanical vibration to minimize voids due to water loss. Grout pours 12 inches or less in height shall be mechanically vibrated, or rodded.
9. Grout barrier below bond beams shall be continuous wire lath or other approved material.
10. Grout beams over openings and bond beams in a continuous operation.
11. Solidly grout in place bolts, anchors and other items within wall construction.
12. Fully grout jambs and head of metal door frames connected to masonry. Filling of frames shall be done as each 2 feet of masonry is laid.
13. Use extreme care to prevent grout or mortar from staining face of the masonry.
14. Immediately remove grout or mortar which is visible on face of masonry.

L Provisions for Other Trades and Built-in Items:

1. Build in items required and indicated, including; but not limited to, reinforcing steel, anchors, flashings, sleeves, frames, structural steel, loose lintels, anchor bolts, nailing blocks, door and window frames and miscellaneous iron.
2. Enclosures for pipes, stacks, ducts and conduits:
 - a. Construct slots, chases, cavities, and similar spaces as required.
 - b. Where masonry is to enclose conduit or piping, bring it to proper level indicated and as directed.
 - c. Cover no pipe, conduit chases or enclosures until advised that Work has been inspected and approved.

M. Standard Level of Quality: In accordance with AMG Standard 107.

N. Joint and Crack Control: In accordance with NCMA TEK 10-1.

O. Flashing: In accordance with NCMA TEK 19-2A, 19-4A and 19-5A and 19-4, and as detailed on Drawings.

P. Weep holes shall be provided above lintels and vertical obstructions as per manufacturer's flashing and weep hole diagrams, and as detailed on Drawings.

3.4 FIELD QUALITY CONTROL

A. Masonry Tests: Inspection and testing of masonry will be performed by a testing laboratory in accordance with Section 01 45 00.

1. Provide free access to Work and cooperate with appointed firm.
2. Water testing of CMU exterior building walls shall be provided as

specified in Section 07 19 00.

3.5 ADJUSTING

- A Pointing of Mortar Joints:
1. Point and fill holes and cracks in exposed mortar joints.
 2. Cut out defective mortar joints to a depth of at least 1/4 inch.
 3. When cutting is complete, remove dust and loose material by brushing or vacuuming.
 4. Prehydrate mortar for pointing by mixing dry ingredients with only sufficient water to produce a damp mass of such consistency that it will retain its form when it is pressed into a ball with hands, but will not flow under trowel.
 5. Allow mortar to stand for a period of not less than one hour nor more than 2 hours, after which remix with addition of sufficient water to produce satisfactory workability.
 6. Pointing mortars shall be identical to adjacent mortar in similar joints and finish results shall match and be indistinguishable from original mortar used.
 7. Premoisten joint and apply mortar tightly.
 8. Tool to match adjacent joints.
 9. Moist cure for 72 hours.
- B Patching: If approved by Architect, patching of exposed masonry walls shall be done at conclusion of general Work and shall conform as closely as possible to similar surrounding or adjoining Work.

3.6 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B Daily Cleaning: Keep walls clean. Soiled masonry from mortar and grout spills which will be exposed to view at completion of Project shall be cleaned immediately with stiff fiber brushes until wall is free of dropped or spattered mortar.
- C Walls indicated to be painted shall be cleaned with stiff fiber brushes until wall is free of all surface free of all dropped and splattered mortar and irregular surfaces that would telegraph through the painted finish or interfere with paint adhesion.
- D Clean walls to be exposed in the finished work in accordance with Section 04 0120.52. Do not clean walls by sand blasting.
- E Remove scaffolding and equipment used in Work.
- F Clean up debris, refuse and surplus material and remove from premises.

3.7 PROTECTION

- A Furnish temporary protection for exposed masonry corners subject to injury.
- B Carefully cover tops of walls left incomplete at conclusion of day's Work with tarpaulins or other approved covering.
- C In hot and dry weather, protect masonry against too rapid drying.

- D. Protect finished Work against freezing for a period of not less than 48 hours by means of enclosures, artificial heat, or such other protective methods as may be required.

END OF SECTION

**SECTION 05 1000
STRUCTURAL METAL FRAMING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Structural steel framing including, but not limited to:
 - 1. Columns
 - 2. Beams
 - 3. Anchor Bolts
 - 4. Bearing Plates
 - 5. Steel tube supports and framing for lean-to structures and ramada structures.
 - 6. Other Miscellaneous Structural Steel Items.
- B. Related Sections:
 - 1. Section 05 5000 – Metal Fabrications, for miscellaneous metal fabrications and other non-structural steel fabrications.

1.2 SUBMITTALS

- A. Shop Drawings: Submit shop and erection Drawings clearly showing each piece required for fabrication and erection. Drawings shall include material grade, camber, holes and other pertinent data. Indicate welds by standard AWS symbols showing size, length, and type of each weld.
- B. Test Reports: Submit reports for welded connection tests.
- C. Submit anchor setting drawings clearly showing location of all anchor bolts and embedded plates to be anchored in concrete and masonry construction. Provide templates for anchor bolts.

1.3 QUALITY ASSURANCE

- A. Welding:
 - 1. Performed by certified welders in compliance with AWS D.1 Structural Welding Code.
 - 2. Welders shall be duly qualified within the last 12 months in the position in which they are to weld and the qualifications and Specifications for workmanship shall comply with the AWS requirements "AWS Structural Welding Code -Steel."
- B. Certifications:
 - 1. Prior to fabrication or shipment of material to the job site, furnish certification of the Manufacturer of the structural steel that material furnished meets or exceeds requirements of ASTM standards specified or noted on Drawings, for each type of material.
 - 2. Prior to site welding operation, submit welders' written certifications and qualifications, including date of each welder's certification performing work on the Project.
- C. Tolerances: All steel exposed to view shall be architectural steel, and tolerances as a minimum shall comply with section 10 of AISC code of standard practice.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Exercise care during unloading, storage and erection to avoid damage. Dumping on the ground is not permitted.
- B. Support material stored at the site completely free of the ground, and cover to avoid damage from the elements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Materials shall be new, of uniform quality, suitable and without defects affecting the strength or service of the structure.
- B. Structural Steel:
 - 1. Rolled Wide Flange Sections: ASTM A992 (Fy = 50 ksi), unless otherwise indicated.
 - 2. Other Standard Shapes and Rolled Sections: ASTM A36 (Fy = 36ksi), unless otherwise indicated
 - 3. Plates, Bars and Rods: ASTM A36 (Fy = 36ksi), or ASTM A572, Grade 50 where noted, unless otherwise indicated.
 - 4. All structural rolled members with Fy greater than 36 ksi shall be identified with an ASTM specification mark or tag in accordance with IBC Section 2203.1.
- C. Steel Pipe: ASTM A53, Type E or S, Grade B (Fy = 35ksi).
- D. HSS:
 - 1. Square or Rectangular: ASTM A500, Grade B, or ASTM A1085 (Fy = 46 ksi) (minimum).
 - 2. Round: ASTM A500, Grade B, or ASTM A1085 (Fy = 42 ksi)(minimum).
- E. Bolts: ASTM A325 or A490 where noted.
 - 1. Nuts: ASTM A563.
 - 2. Washers: ASTM F436.
- F. Anchor Rods: ASTM F1554, Grade 36, or Grade 55 (Fy = 55 ksi) where noted. Grade 55 rods shall comply with weldability Supplement S1. Washers at anchor rods shall comply with requirements of the General Structural Notes on Structural Drawings.
- G. Welded Anchors and Shear Connectors: ICC approved, as manufactured by KSM or Nelson. Substitutions must have ICC approval and be of equivalent capacity for the intended use.
- H. Welding Rods: AWS A5.0, E70 series, low hydrogen type.
- I. Prefinished, Perforated, Corrugated Steel Sheet Panels (for lean-to structures and ramadas): As specified in Section 05 5000 – Metal Fabrications.
- J. Grouts: As specified in Section 03 3000.

- K. Metal Primer: VOC compliant.
 - 1. Interior Steel (where indicated to be painted): Tnemec 88HS-0559 Gray, www.tnemec.com, modified short oil alkyd; or Tnemec 10-99 modified alkyd, chemically active, rust-inhibitive primer, or equivalent from Sherwin Williams, www.sherwin-williams.com, PPG Paints www.ppg.com, or as standard with fabricator.
 - 2. Exterior Steel (All exterior steel is hot-dip galvanized): Tnemec Tneme-Zinc 90- 97 aromatic urethane, two-component, moisture-cured, zinc-rich primer.

2.2 FABRICATION

- A. Workmanship and details of construction (except as otherwise indicated or specified) shall be in conformity with applicable articles of the latest AISC Manual, Parts 1 through 4; AISC Specifications; except Section A7 (Design Documents) and Chapter N (Plastic Design); and the applicable building codes. Sections 3.1, 3.4 and 4.2 of AISC code of Standard Practice are specifically excluded from this work.
 - 1. Sections shall be of dimensions, weight and design as indicated, assembled complete at the shop, with base plates and other detailed materials attached.
 - 2. Furnish shims at columns where base plates are shop fabricated to columns.
 - 3. Make connections as indicated or detailed, on the Drawings and the reviewed shop and erection Drawings.
 - 4. Exposed steel shall have smooth, clean surfaces with no identifying trade marks, names etc., exposed to view.
 - 5. Leave in condition for finish painting.
- B. Bolted connections shall be as detailed or shall conform to AISC standard bolted connections with maximum number of 3/4-inch diameter bolts. See Framed Beam Connections Tables II, III, or IV of AISC Manual of Steel Construction.
- C. Where bolt holes in steel members are enlarged to more than 1/16 inch diameter oversize, provide 3/16 inch x 2-1/2 inch x 2-1/2 inch plate washers to steel members with 3/16 inch fillet weld all around.
- D. Loose Bearing Plates: Provide loose bearing plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required.

2.3 SHOP WELDING

- A. Make welds by the electric-arc process.
- B. Grind exposed welds smooth.
- C. Where weld size is not indicated, it shall develop full strength of member and connection.

2.4 PAINTING - SHOP COAT

- A. Shop prime all structural steel, except as follows:
 - 1. Steel that is not exposed to weather shall not be painted.
 - 2. Items of steel and iron Work indicated or specified to be encased in concrete. Partially embedded steel shall have primer applied to area embedded in concrete to a depth of 2 inches.
 - 3. Surfaces to be welded.
 - 4. Surfaces to be high-strength bolted with slip-critical connections.

- B. Clean steel Work by wire brushing, or by other means selected by the fabricator, of loose mill scale, loose rust, accessible weld slag, or flux deposit, dirt and other matter before shop coat of paint is applied. Clean in accordance with SSPC SP-6 as required. Remove oil, grease and similar contaminants in accordance with SSPC SP-1.
- C. After cleaning, give steel Work one coat of metal primer. Apply primer thoroughly and evenly to dry surfaces by brush, spray, roller coating, flow coating or dipping at the selection of the fabricator.
- D. Apply primer to provide a wet film of 2.0 mils.
- E. Paint erection marks on painted surfaces. Touch-up surfaces where welding, grinding of welds, joints, etc. are done in the field.
- F. The paint shall be thoroughly dry before the members are handled or loaded.

2.5 SOURCE QUALITY CONTROL

- A. Tests: Where a welded splice is fabricated in beams or columns other than those detailed, fabricator shall have splice connection tested using one of the following methods: magnetic particle, radiographic, or ultrasonic. Testing shall be conducted by an independent testing laboratory and a report submitted to the Architect. The costs of this testing shall be borne by the fabricator.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Verify anchor bolt locations, grouting and elevation of base and setting plates, and other material set by other Trades before commencing Work.
 - 2. Notify Architect of Work set by others which does not comply with specified tolerances. Do not erect material upon such Work until it has been satisfactorily corrected.
 - 3. Start of Work implies acceptance of Work of other Trades affecting structural frame erection.

3.2 ERECTION

- A. Erect Work to the proper lines and levels, plumb and true, and in correct relation to other Work maintain this condition to completion.
- B. Connections:
 - 1. Machine Bolting:
 - a. Fair-up holes with pins to align holes before bolting.
 - b. Ream unfair holes to obtain alignment or drill new holes.
 - c. Enlargement of holes with drift pins or burning of new holes is not permitted.
 - d. Draw bolts up tight after members are aligned and leveled, and set or deform threads to prevent loosening.
 - e. All high strength bolts shall be installed as bearing type connections with threads included in the shear plane.

2. Welding:
 - a. Welds shall be per AWS standards and procedures.
 - b. Submit certification that welders have passed AWS code qualification tests.
 - c. Refer to Shop Drawings for weld size and dimensions.
 - d. Close joints exposed to weathering with continuous 1/8 inch weather welds.
 - e. Grind smooth exposed welds, but grinding shall not reduce weld strength or required cross section.
 - f. Protect finish material from damage due to welding.
 - g. Remove unsatisfactory welds by chipping or arc air method.
 3. Connect members temporarily and align completely before making permanent connections.
 - a. Temporary conditions shall consist of bolts in no less than 1/3 of the holes and in no case less than 3 bolts in any single connection.
 - b. Surfaces in contact shall be thoroughly clean when assembled.
 - c. Provide necessary temporary bracing and guying to align the structure properly for permanent connections, and safely resist erection, dead load and wind stress.
 - d. Take particular care to have the Work plumb and level (maximum slope ratio tolerance 1 to 500 for interior members, 0 to 1000 for exterior members) before making permanent connections.
 - e. Remove bracing and guys only after permanent alignment and assembly and structure is capable of completely sustaining design and temporary construction loads.
- C. Exposed Steel:
1. Verify the condition of exposed steel after erection.
 2. Exert particular care to provide a neat, accurate installation with members straight and true, corners and edges square, sharp and free from burrs and irregularities, adjacent members perfectly matched and no bolts or rivets exposed.
 3. Remove erection bolts and seats and plug weld and grind holes smooth.
- D. Touch-up Primer Painting:
1. Remove temporary guys, bracing and bracing clips, and grind flush remaining burrs, before painting. Remove welding slag, spatter, rust and burnt paint and wire brush clean welds before touch-up.
 2. Touch-up Primer Painting: Touch-up welds, abrasions, bolted connections, and other areas where shop prime paint has been removed or is damaged with specified prime paint.
- E. Grout Placement: Comply with the manufacturer's instructions.
- F. Tighten anchor bolts after supported members have been positioned and plumbed.
- 3.3 FIELD QUALITY CONTROL
- A. Field inspections and testing shall be performed by an independent testing and inspection agency in accordance with Section 01 45 00. Refer to general Structural Notes on Drawings for detailed testing requirements.
- 3.4 CLEANING AND CONSTRUCTION WASTE MANAGEMENT

- A. Construction Waste Management and Disposal: Comply with requirements of Section 017419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises.

END OF SECTION

**SECTION 05 5000
METAL FABRICATIONS**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Metal fabrications, including items fabricated from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems in other Sections of these Specifications. Types of metal items include, but are not limited to, the following:
1. Carpenter's ironwork.
 2. Pipe bollards.
 3. Ladders and Ships Ladders. Option for prefabricated aluminum units.
 4. Miscellaneous framing and supports including, but not limited to the following:
 - a. Supports for suspended ceiling suspended finishes, fixtures and other items as necessary.
 - b. Countertop support brackets.
 - c. Applications where framing and supports are not specified in other sections.
 - d. Other items as indicated.
 5. Steel tube and/or angle framed screen walls, gates, including gate hardware.
 6. Metal plate landscape edging and stakes.
 7. Other items as indicated or required.
- B Related Sections:
1. Division 03 Concrete, for concrete fill for steel pipe bollards and concrete footings for steel framed screen walls and gates.

1.2 SUBMITTALS

- A Shop Drawings: Submit Drawings for the fabrication and erection of ladders, screen walls and gates, and other items requested by Architect.
1. Include plans and elevations at not less than 1 inch to 1'-0" scale, and include details of sections and connections at not less than 3 inches to 1'-0" scale.
 2. Show anchorage and accessory items.

1.3 QUALITY ASSURANCE

- A Standards: Comply with the following, except as otherwise shown and specified:
1. AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings."
 2. AISI "Specifications for the Design of Cold-Formed Steel Structural Members."
 3. AWS "Structural Welding Code-Steel."
 4. ASTM A6 "General Requirements for Rolled Steel Plates Shapes, Sheet Piping and Bars for Structural Use."
- B Qualifications: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure."

1.4 DELIVERY, STORAGE AND HANDLING

- A Exercise care during unloading, storage and erection to avoid damage. Dumping on the ground is not permitted.

- B. Support material stored at the site completely free of the ground, and cover to avoid damage from the elements.

1.5 PROJECT/SITE CONDITIONS

- A. Field Measurements: Take field measurements prior to preparation of Shop Drawings and fabrication, where possible, to ensure proper fitting of the Work. Allow for trimming and fitting wherever the taking of field measurements before fabrication might delay the Work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Steel Shapes, Plates, Rod, Bars and Bar-size Shapes: ASTM A36.
- B. Steel Pipe: ASTM A501 (Fy = 36 ksi), or ASTM A53, Type E or S, Grade B (Fy = 35 ksi).
- C. Steel Tube: ASTM A500 (Fy = 46 ksi).
- D. Cold-Finished Carbon Steel Bars: ASTM A108, Grade as selected by fabricator.
- E. Hot-rolled Carbon Steel Sheets and Strips: ASTM A568 and ASTM A1011, pickled and oiled.
- F. Cold-rolled Carbon Steel Sheets: ASTM A1008.
- G. Hot-dip Galvanized Steel Sheets: ASTM A653, with G90 zinc coating.
- H. Cold-drawn Steel Tubing: ASTM A512, sunk drawn, butt welded, cold-finished and stress-relieved.
- I. Iron Castings:
 - 1. Gray Iron Castings: ASTM A 48, Class 30.
 - 2. Malleable Iron Castings: ASTM A 47, Grade 32510.
- J. Prefinished, Perforated, Corrugated Steel Sheet Panels: Perforated Metal Siding Panels, 7/8 inch deep, standard perforation pattern .127 inch round holes at 7/32 inch stagger, 30.5 percent open area, 20 gauge Galvalume, as manufactured by Western States Metal Roofing www.perforatedroofing.com, or equivalent prior approved by Architect.
 - 1. Finish: Galvalume or manufacturers standard Cool-Tech 500-WT (Kynar 500/Hylar 5000) finish.
 - 2. Color: Galvalume or Weathered Copper as scheduled on Drawings.
 - 3. Provide solid, unperforated panels at lean-to and ramada structure locations, unless otherwise indicated on Drawings.
- K. Steel Gratings: Comply with standard specifications of the Metal Bar Grating Manual as published by NAAMM for use and span intended.
 - 1. Grating shall be electro-pressure welded or press-locked construction.
 - 2. Galvanize after fabrication.
 - 3. Sump Pits and Drains: Welded bar grating with 3 inch x 1/4 inch bearing bars at 1 inch centers with cross bars at 4 inch centers.
 - 5. Furnish perimeter support angles with welded anchors as detailed.
 - 6. Acceptable Manufacturers:
 - a. Borden Metal Products www.bordengratings.com

- b. IKG Industries www.lkgindustries.com
 - c. McNichols Co. www.mcnichols.com.
 - d. United McGill Corp. www.unitedmcgill.com
 - e. All current members of NAAMM
 - f. Equivalent gratings products as approved by Architect before installation.
- L. Slotted Channel Framing (Unistrut): 1-5/8 inch by 1-5/8 inch slotted channel framing system as manufactured by Unistrut, or as approved. Galvanized G90, cold-formed metal channels with flange edges returned toward web with 9/16 inch wide slotted holes in webs at 2 inches o.c.
1. Provide Manufacture's standard connectors, fasteners and other miscellaneous accessories as required for a complete installation and connection to supporting structure and as necessary for support of ceiling elements and other items supported.
- M. Anchors:
1. Toggle bolts: Tumble-wing type, FS FF-B-588; type, class and style as required.
 2. Chemical Type Anchors: 2-component chemically curing anchors for concrete or masonry construction, capsule or injection type, designed to accept Manufacturer's galvanized anchor rod.
 3. Threaded-type concrete inserts: Galvanized ferrous castings, internally threaded to receive 3/4 inch diameter machine bolts; either malleable iron complying with ASTM A47 or cast steel complying with ASTM A27; hot-dip galvanized in compliance with ASTM A153.
 4. Wedge-type concrete inserts: Galvanized box-type ferrous castings, designed to accept 3/4 inch diameter bolts having special wedge-shaped heads, either malleable iron complying with ASTM A47 or cast steel complying with ASTM A27; hot-dip galvanized in compliance with ASTM A153.
 5. Provide carbon steel bolts having special wedge-shaped heads, nuts washers and shims; all galvanized in compliance with ASTM A153.
- N. Fasteners: Provide zinc-coated fasteners with galvanizing complying with ASTM A153 for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required for the installation of miscellaneous metal items.
1. Bolts and nuts: ASTM A307, Grade A, regular hexagon head.
 2. Bolts, hexagon and square: ANSI B-18.2.1.
 3. Bolts, round head: ANSI B-18.5.
 4. Lag bolts: Square head type.
 5. Wood screws: ANSI B-18.6.1, flat head carbon steel.
 6. Plain washers: ASTM F844 helical spring type carbon steel.
- O. Metal Primer: VOC compliant.
1. Interior Steel: Tnemec 88HS-0559 Gray www.tnemec.com, modified short oil alkyd; or Tnemec 10-99 modified alkyd, chemically active, rust-inhibitive primer, or equivalent as standard with fabricator.
 2. Exterior Steel (exposed, where indicated to be painted):
 - a. Exterior Steel: Tnemec Tneme-Zinc 90-97 aromatic urethane, two-component, moisture-cured, zinc-rich primer.
 3. Exterior screen walls, gates, and Similar Items: Comply with Section 09 91 00 for primer used as part of high performance paint system applied to exposed exterior steel canopies, gates and gate supports, lattice structures, and similar items indicated to receive high performance paint system.

2.2 ACCESSORIES

- A. Inserts and Anchorages: Furnish inserts and anchoring devices to be set in concrete or METAL FABRICATIONS

built into masonry for installation of Miscellaneous Metal Work. Provide setting Drawings, templates, instructions and directions for installation of anchorage devices.

- B. Concrete Fill (for concrete filled pipe bollards): Comply with requirements of Section 03 3000 for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi.
- C. Swing Gate Hardware:
 - 1. Hinges: Exterior grade heavy-duty stainless-steel butt hinges complying with Section 08 7100.
 - 2. Exit Devices: Heavy-duty stainless-steel exit devices complying with requirements of Section 08 7100.
- D. Reflective Traffic Tape for Bollards: As specified in Section 10 1400.

2.3 FABRICATION

- A. General: For fabrication of Miscellaneous Metal Work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding or by welding and grinding, prior to cleaning, treating and application of surface finishes, including zinc coatings.
- B. Shop Assembly: Preassemble items in shop, when possible, to minimize field splicing and assembly of units at the site. Disassemble units only to extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- C. Workmanship:
 - 1. Use materials of the size and thickness shown, or if not shown, of the required size and thickness to produce adequate strength and durability of the finished product for the intended use. Work to the dimensions of fabrication and support. Use type of materials shown or specified for various components of Work.
 - 2. Form exposed Work true to line and level with accurate angles, surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32 inch unless otherwise shown. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing the Work.
 - 3. Weld corners and seam continuously and in accordance with the recommendations of AWS. Grind exposed welds smooth and flush to match and blend with adjoining surfaces.
 - 4. Form exposed connections with hairline joints which are flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of the type shown, or if not shown, use Phillips flat-head (countersunk) screws or bolts.
 - 5. Provide for anchorage of type shown, coordinated with supporting structure and the progress schedule. Fabricate as required to provide adequate support for the intended use of the Work.
 - 6. Cut, reinforce, drill and tap Miscellaneous Metal Work as may be required to receive finish hardware and similar items of Work.
 - 7. Use hot-rolled steel bars for Work fabricated from bar stock, unless Work is indicated to be fabricated from cold-rolled, or cold-finished stock.
- D. Carpenter's Iron Work:
 - 1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing

- and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware are specified in Division 6 Sections.
2. Manufacture or fabricate items of sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.
- E. Fabricate pipe bollards from steel pipe of diameter indicated on Drawings.
- F. Ladders:
1. Fabricate ladders for the locations shown, with dimensions, spacings, details and anchorages as required. Comply with requirements of ANSI A14.3, except as otherwise shown.
 2. Fit rungs into punched holes in centerline of side rails, plug weld and grind smooth on outer rail faces.
 3. Support each ladder at top and bottom and at intermediate points spaced not more than 5 feet o.c. Use welded or bolted steel brackets, designed for adequate support and anchorage, and to hold the ladder 7 inches clear of the wall surface and other obstructing construction. Extend rails 42 inches above top rung, and return rails to wall or structure unless other secure handholds are provided. If the adjacent structure does not extend above the top rung, gooseneck the extended rails back to the structure to provide secure ladder access.
 4. Provide non-slip surfaces on the top of each rung, either by coating the rung with aluminum oxide granules set in epoxy resin adhesive, or by using a type of manufactured rung which is filled with aluminum oxide grout.
 5. Exterior ladders shall have hot-dipped galvanized finish.
- G. Option for Prefabricated Roof Ladders: At contractor's option, provide prefabricated ladders as follows in lieu of fabricated units detailed on Drawings. Provide units of size and type indicated on Drawings for shop fabricated units and complying with requirements indicated below:
1. Provide Model 562 Fixed Wall Ladder with Roof Return or similar as required by location and type of ladder shown on Drawings, of height indicated on Drawings as manufactured by Alaco Ladder Company www.alacoladder.com, Precision Ladders, LLC www.precisionladders.com, FS Industries www.fsindustries.com, or ladder Industries www.ladderindustries.com, or equivalent as approved by Architect.
 2. Fabricated from 6061 –T6 aluminum alloy. Includes side rails with 1-1/8 inch serrated round rungs secured with cast aluminum connectors, 4 solid rivets and 3/8 inch thick brackets mounted to walls.
 3. Comply with requirements of ANSI A-14.3 American National Standard for Ladders– Fixed – Safety requirements.
 4. Provide units with locking security gates where indicated on Drawings or required by Code.
 5. Finish: Mill aluminum.
- H. Prefabricated Aluminum Ships Ladder: At contractor's option, provide prefabricated ships ladder as follows or shop fabricated units complying with Drawings, requirements indicated below for prefabricated units, and Performance Requirements for steel stairs specified in Section 05 51 00.
1. Provide Model 335, 375, or 385 Fixed Ships Ladder of height and angle indicated on Drawings, as manufactured by Alaco Ladder Company www.alacoladder.com, Precision Ladders, LLC www.precisionladders.com, FS Industries www.fsindustries.com, or ladder Industries www.ladderindustries.com, or equivalent as approved by Architect.
 2. Fabricated from 6061 –T6 aluminum alloy.

3. Comply with requirements of ANSI A-14.3 American National Standard for Ladders– Fixed – Safety requirements.
 4. Finish: Mill aluminum.
- I. Miscellaneous Framing and Supports:
1. Provide miscellaneous steel framing and supports which are not a part of the structural steel framework, or other metal systems in other Sections of these Specifications, whether indicated or not as necessary to complete Work.
 2. Fabricate miscellaneous units to sizes, shapes and profiles shown, or if not shown, of the dimensions required to receive adjacent grating, plates, doors or other Work to be retained by the framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars of all welded construction using mitered corners, welded brackets and splice plates, and a minimum number of joints for field connection. Cut, drill and tap units to receive hardware and similar items to be anchored to the Work.
 3. Equip units with integrally welded anchor straps for casting into concrete or building into masonry wherever possible. Furnish inserts if units must be installed after concrete is poured. Except as otherwise shown, space anchors 24 inches o.c., and provide minimum anchor units of 1-1/4 inch x 1/3 inch x 8 inch steel straps.
 4. Countertop Supports: Fabricate countertop supports from steel tube and shapes as detailed on Drawings. Continuously weld all joints and grind smooth where exposed.
- J. Screen Walls, Gates, Canopies, and Roof Mechanical Screens: Fabricate to sizes and shapes indicated using steel tube frames with prefinished, perforated, corrugated steel sheet panel faces as detailed.
1. Fabricate with continuously welded joints, and smooth exposed edges.
 2. Miter corners and use concealed field splices wherever possible.
 3. Weld hinges to frame.
- K. Unless otherwise indicated on Drawings, fabricate landscape edging from steel or aluminum plate as indicated and of thickness indicated on Drawings with stake connectors welded to plate edging as indicated for anchorage as detailed with stakes. Provide bar stakes with pointed dull point for embedment in soil or as otherwise necessary for attachment to supporting structure.
- L. Sump Pit Grating Covers:
1. Fabricate with steel angle frames as detailed on Drawings to sizes and configurations indicated.
 2. Provide stud anchors for embedding into concrete.
 3. Fabricate grating covers of sizes indicating for setting into steel angle frames as detailed.
 4. Fabricate with continuously welded joints, and smooth exposed edges.
 5. Miter corners and use concealed field splices wherever possible.
- M. Miscellaneous Steel Trim: Provide shapes and sizes as required for the profiles shown. Except as otherwise noted, fabricate units from structural steel shapes and plates and steel bars, with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation with other Work.
1. Edge and Sill Angles: Fabricate from steel angles of size indicated> Provide with integral anchors for casting into concrete where applicable.
- N. Prevent galvanic action and other forms of corrosion by insulating contact points between metals and incompatible metals or materials. Provide separation of resilient gasket or other appropriate material to separate aluminum bar gratings and angles

where units are attached to steel.

2.4 FINISHING

- A. Galvanizing: Gratings, grating frames, bollards, roof parapet stairs, and all metal fabrications which will be exposed to the exterior in the finished Work, including steel indicated to be painted, shall be hot-dip galvanized after fabrication, including bolts and nuts. Galvanizing shall comply with ASTM A123 and A153 for the hot-dip process after fabrication.
- B. Shop Painting:
 - 1. Shop paint Miscellaneous Metal Work, except those members or portions of members to be embedded in concrete or masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise indicated.
 - 2. Remove scale, rust and other deleterious materials before shop coat of paint is applied. Clean in accordance with SSPC SP-2, SP-3, or SP-7, as required. Remove oil, grease and similar contaminants in accordance with SSPC SP-1.
 - 3. Apply one shop coat of metal primer paint to fabricated metal items, except apply 2 coats of paint to surfaces which are inaccessible after assembly or erection.
 - 4. Immediately after surface preparation, brush or spray on metal primer paint in accordance with Manufacturer's instructions, and to provide a uniform dry film thickness of 2 mils for each coat.
 - 5. Comply with Section 09 91 00 for application of high performance paint system primer applied to exposed exterior screen walls, gates, and roof mechanical screens, and similar items indicated to receive high performance paint system. Do not paint corrugated steel sheet panels which are prefinished or indicated to be left as natural Galvalume finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates to appropriate Trades.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on Shop Drawings.

- D. Perform field welding in accordance with AWS D1.1.
 - E. Install pipe bollards in concrete footings plumb and level, accurately fitted, free from distortion or defects. Provide adequate bracing as required to hold bollard in position until concrete has been placed and cured.
 - 1. Fill bollards solidly with concrete and mound top surface to shedwater.
 - F. Gates:
 - 1. Securely anchor gates and erect plumb, level, and true, with smooth operating hardware.
 - 2. Secure for full opening without interference.
 - 3. Attach hardware by means which will prevent unauthorized removal.
 - G. Obtain Architect approval prior to site cutting or making adjustments not scheduled.
 - H. Prevent galvanic action and other forms of corrosion by insulating contact points between metals and incompatible metals or materials. Provide separation of resilient gasket or other appropriate material to separate aluminum bar gratings and angles where units are attached to steel.
 - I. Touch-up Painting: Touch-up welds, abrasions, and other areas where shop prime paint has been removed or is damaged with specified prime paint or galvanizing repair paint.
- 3.4 ERECTION TOLERANCES
- A. Maximum Variation from Plumb: 1/4 inch per story, non-cumulative.
 - B. Maximum Offset from True Alignment: 1/4 inch
- 3.5 ADJUSTMENT
- A. Lubricate hinges and adjust gates to operate freely. Adjust hardware for smooth operation.
- 3.6 CLEANING AND CONSTRUCTION WASTE MANAGEMENT
- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
 - B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

**SECTION 05 5200
METAL RAILINGS**

PART 1 GENERAL

1.1 SUMMARY

- A Section includes standard steel pipe and tube handrails and railings as shown on Drawings and as specified herein.
- B Related Sections:
 - 1. Section 32 3119 – Decorative Metal Fences and Gates, for decorative welded tube steel fencing and gates for exterior locations.

1.2 SYSTEM DESCRIPTION

- A Engineering Responsibility: The railing fabricator shall be responsible for structural design and engineering required for Work of this Section to meet specified performance requirements within physical and aesthetic requirements established, including anchorage of handrails and railings to supporting construction.
- B Structural Performance of Handrails and Railings. Handrails and railings shall be designed, fabricated, and anchored to withstand the following structural loads without exceeding allowable design working stress of materials for handrails, railings, anchors, and connections, in accordance with 2018 IBC Chapter 16.
 - 1. Top Rail of Guards: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf applied at any point and in any direction.
 - b. Uniform load of 50 lb. per linear foot applied horizontally and concurrently with uniform load of 50 lb. per linear foot applied vertically downward.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 2. Handrails Not Servicing as Top Rails: Capable of withstanding the following loads applied as indicated:
 - a. Concentrated load of 200 lbf applied at any point and in any direction.
 - b. Uniform load of 50 lbf/ft. applied in any direction.
 - c. Concentrated and uniform loads above need not be assumed to act concurrently.
 - 3. Infill area of Guards: Capable of withstanding a horizontal concentrated load of 50 lb. applied to 1 sq. ft. at any point in system, including panels, intermediate rails, balusters, or other elements composing infill area.
 - a. Load above need not be assumed to act concurrently with loads on top rails in determining stress on guard.

1.3 SUBMITTALS

- A Shop Drawings: Submit Drawings showing dimensions, details, erection diagrams and connections with other work. Include structural design analysis showing compliance with Code and Performance Requirements.
 - 1. Shop Drawings and structural design analysis shall be sealed and signed by a qualified engineer responsible for their design.

1.4 QUALITY ASSURANCE

- A Regulatory Requirements: Comply with local code and regulatory agency requirements for handrail and railing design and the following:

1. ANSI A117.1, 2009 "Accessible and Usable Buildings and Facilities."
2. Public Law 101-336 "The Americans with Disabilities Act of 1990 (ADA).
3. 2010 ADA Accessibility Guidelines (ADAAG).
4. The Arizonans with Disabilities Act of 1992 Administrative Rules (AzDAAG)

B. Engineer Qualifications: A qualified engineer who is registered in the State of Arizona and who is experienced in providing engineering services of the kind indicated for metal handrails and railing similar to those of this Project in material, design, and extent.

C. Welding: Conforming to AWS D1.1 and performed by certified welders.

1.5 DELIVERY, STORAGE AND HANDLING

A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.

B. Storage: Adequately protect against damage while stored at the site.

C. Handling: Comply with manufacturer's instructions.

1.6 PROJECT/SITE CONDITIONS

A. Field Measurements: Verify existing conditions by taking field measurements.

PART 2 PRODUCTS

2.1 MATERIALS

A. Structural Steel Shapes, Plates, Bars and Bar-size Shapes: ASTM A36.

B. Steel Tubing: ASTM A500, Grade B (Fy = 46 ksi).

C. Gray Iron Castings: ASTM A48, Class 30.

D. Malleable Iron Castings: ASTM A47, Grade as selected.

E. Steel Pipe: ATM A53, type as selected, Grade A standard weight (Schedule 40).

F. Wall Bracket (Pipe Handrails): Julius Blum #382 www.juliusblum.com, or equivalent as approved by Architect, with appropriate fasteners and anchor plate.

G. Corrugated Metal Panels: As specified in Section 05 50 00 – Metal Fabrications.

H. Anchoring Cement: Prepackaged, erosion-resistant, non-shrink hydraulic controlled anchoring cement recommended for exterior use.

I. Nonshrink, Nonmetallic Grout: Prepackaged, non-shrink, nonstaining grout complying with ASTM C1107 and recommended for interior and exterior use as applicable.

J. Metal Primer: VOC compliant.

1. Interior Steel: Tnemec 88HS-0559 Gray www.tnemec.com, modified short oil alkyd; or Tnemec 10-99 modified alkyd, chemically active, rust-inhibitive primer, or equivalent as standard with fabricator.

2. Exterior Steel (exposed, where indicated to be painted): Tnemec Tneme-Zinc 90- 97 aromatic urethane, two-component, moisture-cured, zinc-rich primer.

K. Finish Painting: In accordance with Section 09 91 00.

2.2 FABRICATION

A. Shop Assembly:

1. Conform with AISC Standard Specifications, Rules and Practice in the "Steel Construction Manual."
2. Preassemble items in shop to the greatest extent possible to largest practicable sizes to minimize field splicing/welding and assembly of units at the site.
3. Limit size of shop assembled units only to extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
4. Form and fabricate the Work to meet installation conditions.
5. Include accessories to adequately secure the Work in place.
6. Make provisions to connect with or to receive abutting construction.

B. Galvanizing: Galvanize all exterior railings, sleeves, brackets and flanges after fabrication to comply with ASTM A123 and ASTM A153, as applicable.

C. Make connections between members, unless otherwise indicated by welding.

1. Cope and cut components for hairline fit prior to welding.
2. Accurately align members.
3. Fabricate joints watertight for exterior applications.
4. Welds shall be flush type, with fillets dressed to uniform radius, using the shielded arc method or flux-cored arc welding (FCAW).

D. Where bolted or screw connections are indicated or necessary, use round or oval head bolts and tamper-resistant screws and conceal in the finished work to the greatest extent possible.

E. Fabricate railings with no open end conditions. Handrails shall turn back to itself, floor surface or wall surface and terminate with 1/4 inch maximum gap between finished floor, railing or wall surface and end of rail in accordance with IBC 2018 requirements. Close end of pipe/tube rails at terminations with end cap or welded plate ground smooth.

F. Fabricate guard railings with minimum height of 42 inches above the final finish floor surface (coordinate with depth of scheduled finish flooring materials). Fabricate guard railings with intermediate rails spaced such that a 4 inch sphere cannot pass through at any location in accordance with IBC 2018.

G. Where indicated, provide guard railings with corrugated metal panels as detailed and as specified in Section 05 50 00.

H. Grind welds, projections and corners in finished surfaces smooth. No identifying marks shall remain exposed.

I. Shop/Factory/Finishing: Clean surfaces of grease, rust, mill scale, and other foreign matter, and apply coat of primer.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work, including blocking requirements.

3.2 INSTALLATION

- A Install steel railings and handrails at locations indicated.
- B Install items anchored in concrete in the formwork, where practicable.
- C Install items to be built into masonry so masonry can be built up to them.
- D Where indicated, anchor posts in concrete with core drilled holes or pre-set sleeves of diameter at least 3/4 inch more than diameter of post being anchored and not less than 5" deep. Fill space with non-shrink, non-metallic grout or anchoring cement.
- E Install posts and vertical members plumb within 1/8 inch of vertical. Install longitudinal members parallel with each other and to floor surfaces or slope of stairs to within 1/8 inch per 10 running feet.
- F Wall brackets shall be welded to supporting steel structure or securely anchored to other supporting structure with screws or bolts to solid backing as detailed on Drawings and as required to comply with performance requirements.
- G Grind welds in finished surfaces smooth with no identifying marks remaining exposed.
- H Touch-Up Painting: After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- I Finish Painting: In accordance with Section 09 9100.

3.3 CLEANING

- A During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 06 1000
ROUGH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Rough carpentry including, but not limited to:
 - 1. Dimensional lumber framing.
 - 2. Wall and roof sheathing
 - 3. Plywood telephone and electrical backer boards.
 - 4. Miscellaneous backing, blocking, nailers, sleepers and curbs.
 - 5. Other items as shown on the Drawings and as specified herein.

1.2 SUBMITTALS

- A. Product Data: Submit technical data for wood preservative and fire retardant products.

1.3 QUALITY ASSURANCE

- A. Identify each piece of lumber or plywood used for structural framing with grade and trade mark of a lumber grading organization. Trade mark of manufacturer shall also appear on each piece.
- B. Grading Rules: Conform with applicable requirements of American Lumber Standards "Simplified Practice Recommendation R-16" and to grading rules of manufacturer's association under whose rules the lumber is produced.
- C. Standards: Conform with requirements of The Engineered Wood Association, U. S. Dept. of Commerce Commercial Standards and American Wood Preservers Institute Standards (www.preservedwood.com), as they apply.
- D. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact.
- B. Storage: Store off ground to assure adequate ventilation, and protect against damage while stored at the site.
- C. Handling: Comply with manufacturer's instructions.

1.5 PROJECT CONDITIONS

- A. Environmental Requirements: Store materials for which a maximum moisture is specified in areas where humidity can be controlled.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Species: Douglas Fir – Larch, Hem Fir graded in accordance with Standard Grading

and Dressing Rules of WCLIB. Framing lumber shall be stress grade. All sides shall be surfaced. Provide Redwood for use at exposed curbing and supports for roof mounted equipment.

- B. Lumber Grades: Provide dimensional lumber framing of grades indicated on General Structural Notes on Drawings, and the following:
 - 1. One inch boards: Construction.
 - 2. Misc. blocking, bridging, etc: Utility.
 - 3. Grounds and furring: Construction Grade Douglas Fire or No. 2 White Pine.
- C. Finger jointed studs may be used if grade stamped to meet Grade(s) indicated on Structural Drawings and in accordance with Standard Grading Rules specified herein.
- D. Moisture Content:
 - 1. Lumber shall be air-dried or kiln-dried.
 - 2. At time of installation, moisture content, expressed as a percentage of the weight of the oven-dry wood, shall not exceed 19 percent for lumber of up to two inches nominal thickness and 15 percent for exterior trim and siding.
 - 3. Moisture content of lumber over two inches nominal thickness shall conform to the rules of the association under which it is graded.
- E. Engineered Lumber (LVL, PSL, and LSL): As specified in Section 06 17 00.
- F. Glue-Laminated Beams: As specified in Section 06 18 13.

2.2 SHEATHING MATERIALS

- A. General:
 - 1. Panel thickness and identification index shall be as shown on the Drawings and as specified and shall also be stamped on each piece of sheathing.
 - 2. Design of project is based upon plywood sheathing, however, OSB Board may be substituted for plywood if it conforms to all requirements for plywood installed in like locations.
 - 3. Plywood (or OSB Board where allowed) which has an edge or surface permanently exposed to the weather shall be exterior type.
- B. Plywood: Each panel of softwood plywood shall be identified with the APA grade- trademark and shall meet the requirements of PS-1-83 for softwood plywood.
- C. Plywood Backing Panels: For mounting of telephone and electrical equipment, provide Grade C-D Exposure 1 plywood panels, 15/16 inch thick, unless otherwise indicated.
- D. OSB Board:
 - 1. Raw materials used in panel shall be manufactured from wood products conforming to ANSI A201.1.
 - 2. Each piece shall be stamped in accordance with American Plywood Associations (APA) grade rules and shall meet requirements of latest edition of U.S. Product standard for Softwood Plywood.
 - 3. Provide Grade 2-M-W or 2-M-F as required for thickness and application.
 - 4. Fabricate without formaldehyde.

2.3 FACTORY WOOD TREATMENT

- A. Preservative Treatment:

1. Materials:
 - a. Chromated copper arsenate (CCA) shall not be allowed.
 - b. Provide ammoniacal copper quaternary (ACQ) or copper boron azole (CBA) as produced by the following manufacturers:
 - 1) Lonza Wood Protection www.wolmanizedwood.com or www.naturalse
 - 2) Viance Treated Wood Solutions; Viance, LLC www.treatedwood.com
 - 3) Osmose, Inc., Wood Preserving Division, www.osmosewood.com.
 2. Locations Required:
 - a. Wood sillplates and ledgers bolted in direct contact with concrete foundations and slabs-on-grade or masonry located at or below grade only shall be pressure treated lumber.
 - b. Blocking occurring on top of or above the roof deck, including the nailer beneath the flashing at parapet caps, shall be treated lumber.
 - c. Other locations as required by Code.
- B. Fire-Retardant Treatment: Lonza Wood Protection www.wolmanizedwood.com Dricon FRTW, or Hoover Treated Wood Products www.frtw.com, Pyro-Guard; in accordance with UL label.
1. Where required by code or indicated on Drawings, wood framing, plates, sheathing, blocking, etc., shall be fire-retardant treated.
 2. All wood utility backer panels shall be fire-retardant treated.
 3. Dimensioned lumber shall be kiln dried to a maximum moisture content of 18 percent before and after milling and fire protective treatment.

2.4 ACCESSORIES

- A. Nails: Common wire, galvanized for exterior Work, meeting ASTM F1667 of the sizes indicated on the Drawings.
- B. Screws: Standard domestic manufacture, bright steel, except galvanized for exterior use and of brass, bronze, aluminum or stainless steel when used to attach items made of those materials. Screws used for attaching interior trim and finish to drywall partitions shall be Type S self-drilling, self-tapping corrosion resistant coated steel drywall screws of required lengths as specified in Section 09 29 00.
1. Screws used for attaching preservative treated wood shall be Type S self-drilling, self-tapping corrosion resistant coated steel screws. Acceptable products include the following:
 - a. DEC-KING Exterior Wood Screw with Climacoat.
 - b. Tapcon Concrete Anchor with Blue Climaseal or White UltraShield.
 - c. Wood-To-Metal TEKS with Grey Spex.
 - d. Roofgrip with Spex or Blue Climaseal.
 - e. GY-FAST Nail with Climacoat.
 - f. Maxi-Set Tapcon White UltraShield.
- C. Bolts: Standard mild steel, square head machine bolts with square nuts and malleable iron or steel plate washers or carriage bolts with square nuts and cut washers as indicated. Bolts, nuts and washers, wholly or partially exposed on exterior shall be galvanized.
- D. Structural Bolts: Machine bolts, or carriage bolts, of structural grade steel with square nuts, conforming to ASTM A307.
- E. Steel plates and angles: ASTM A36, galvanized after fabrication.
- F. Lag screws, shear plates and split ring connectors: Conform to requirements of the

"National Design Specifications for Stress Grade Lumber and its Fastenings" of National Forest Products Association.

- G. Framing anchors and joist hangers: Simpson Company products or similar devices as approved by Structural Engineer through Architect and noted on Drawings.
- H. Power driven inserts: Ramset, or as approved by Structural Engineer through Architect meeting FS GGG-D-777a. Install as per manufacturer's printed directions. Charge shall be powerful enough to prevent spalling of concrete.
- I. Galvanizing: ASTM A653.
- J. Toggle Bolts: FS FF-B-588.
- K. Fabricated Connections:
 - 1. Sheet metal galvanized of size and type shown on Drawings.
 - 2. Structural Steel: ASTM A36. Welding by qualified welders in conformance with AWS D1. One shop coat of paint per Federal Specification TT-P-86, Type II to parts not embedded.
- L. Sill Sealer Gasket: Owners Corning "FoamSealR" or GreenGuard Sill Sealer; 1/4 inch foam sill plate gasket, or equivalent as approved by Architect.
- M. Joint Sealant: Silicone sealant complying with Section 07 9200.

PART 3 EXECUTION

3.1 FRAMING

- A. Coordination: Install wood framing making proper provisions for Work of other trades. Cut wood required to accommodate plumbing, heating and ventilating, electrical and other trades. Fit neatly around exposed items, as outlet boxes, conduit, pipes and ducts. Protect adjacent Work. Before proceeding with rigid sheathing, make certain required inspections have been made by Building Official.
- B. Structural Members: No cutting, notching or drilling without prior approval of the Structural Engineer through the Architect.
- C. Wood Backing: Provide wood backing, furring, stripping or blocking indicated or required for installation and attachment of work of other trades. Provide fire-proofed wood backing approved by Building Official where required by Code in noncombustible or fire-rated construction.
- D. Connections: Subdrill where necessary to avoid splitting.
- E. Bolts: Drill bolt holes 1/32 inch larger than bolt diameter. Use square plate or malleable iron washers under heads and nut where they bear against wood. Re-tighten bolts immediately prior to concealing with finish materials. Re-tighten exposed bolts immediately prior to final inspection by Building Official.
- F. Lag Screws and Screws: Subdrill, use square plate or malleable iron washer under lag screw heads when they bear on wood.
- G. Exterior base plates or sills resting on concrete: Set sill plates on sill sealer gasket. Size plates or sills and set level and true to line. Bolt down with bolts of size, length and spacing indicated with a bolt not more than 9 inches from the end of any piece.

- H. Apply a continuous bead of joint sealant at interior side of top of sill plate and exterior wall sheathing. Clean sill plate and wall cavity area of all dirt and debris before applying joint sealant.
 - I. Rough Framing: Fit closely, set accurately to required lines and levels, and secure rigidly in place. Set horizontal and inclined members with crown edge up. Reinforce cut members as directed by Structural Engineer through Architect. Bolt, nail and spike in a thorough manner with not less than the sizes and quantities indicated or specified. Structural members shall provide full contact at bearing surfaces.
 - J. Studs: Wall and partitions shall be nominal 2x4 and 2x6 studs 16 inches on center unless otherwise noted or unless they are required to be larger to accommodate mechanical or electrical equipment, piping and fixtures or equipment of any other Trade. Unless otherwise detailed, panels, valve covers, cleanouts, devices, access doors, recessed cabinet boxes, etc., shall be mounted flush with the adjacent wall surface. When any such item is of a depth where it is not practical to use solid studding to the full thickness of the wall, then the wall shall be furred. When furring is required, it shall extend the full width and from floor to roof or ceiling joists. The studs comprising interior partitions and the wall material affixed thereto shall extend from floor to roof or ceiling joist framing except as shown. Staggered stud walls shall be constructed where shown on plans and as detailed.
 - K. Top plates in bearing partitions: Shall be doubled and lapped at each intersection with walls or partitions. Stagger joints in upper and lower members of top plate not less than 4 feet.
 - L. Provide blocking not less than 2 inches in thickness of same width as stud as follows:
 - 1. Stud partitions or walls more than 8 feet , but not more than 14 feet in height: One row of blocking fitted snugly and nailed into mid-height of stud.
 - 2. Walls or partitions over 14 feet in height: 2 or more rows of blocking. Locate rows of blocking so that in no case will the distance between sole or top plates and blocking or between lines of blocking exceed 8 feet.
 - 3. Provide solid fire blocking at ceiling line at dropped ceilings and at other locations indicated on Drawings or required by Code.
 - M. Frame corners solid where stud walls or partitions meet or as shown on the Structural Drawing.
 - N. Provide double joists under partitions parallel to joists, and for headers and side members at openings larger than 4 feet in dimension.
 - O. Joist framing into headers and header joists shall be supported on joist hangers.
- 3.2 At roofs: Provide crickets, cants, equipment curbs (except where indicated to be a pre-manufactured curb specified elsewhere, wood saddles, cant strips, curbs for plywood at parapet walls; other miscellaneous backing, blocking, curbing, and wood nailers bolted to tops of concrete or masonry and at expansion joints, as specified or required.
- 3.3 PLYWOOD SHEATHING
- A. General: Comply with applicable recommendations contained in APA Form No.E30, "APA Engineered Wood Construction Guide," for types of structural use panels and applications indicated.
 - 1. Comply with "Code Plus" of the above-referenced guide.
 - B. Securely attach to substrate by fastening as indicated, complying with the following:

1. ICC NER-272 for power-driven fasteners.
 2. IBC Table 2304.9.1, Fastening Schedule.”
- C. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- D. Sheathing and subflooring shall have edges blocked and nailed for diaphragm or shear wall stresses as shown on the Drawings.
- E. At non-tongue and groove sheathing, provide plywood clips at 24 inches O.C. maximum at unsupported or unblocked edges.
- 3.4 PLYWOOD BACKING PANELS
- A. Plywood Backing Panels: Install with the “C” or best face on exposed side.
- 3.5 CONSTRUCTION WASTE MANAGEMENT AND CLEANING
- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove excess materials, equipment and debris and dispose of away from premises.

END OF SECTION

**SECTION 06 1643
EXTERIOR GYPSUM SHEATHING**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Glass-mat faced water-resistant exterior gypsum sheathing used for soffit applications as shown on Drawings and as specified herein.

1.2 DEFINITIONS

- A. Gypsum Board Construction Terminology Standard: Refer to ASTM C1177 and GA 505 for definitions of terms for gypsum board construction not otherwise defined in this Section or other referenced standards.

1.3 SUBMITTALS

- A. Product Data: Submit Manufacturer's data sheets including product specifications, material composition, thickness, sizing, design data and installation instructions.
- B. Copy of Warranty.

1.4 QUALITY ASSURANCE

- A. Comply with applicable specification recommendations of GA-216 and GA-600 as published by the Gypsum Association.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging, containers, and bundles with Manufacturer's brand, product identification markings and brand intact.
- B. Storage: Store panels flat and level in an enclosed shelter providing protection from damage and exposure to the elements. Insure adequate air circulation is allowed around material stacks.
- C. Handling: When loading, unloading, and moving materials use care not to cause breakage or edge damage.

1.6 SEQUENCING AND SCHEDULING

- A. Sequence installation of exterior gypsum sheathing so sheathing will not be left exposed longer than recommended by manufacturer or 180 days, whichever is less, prior to installation of exterior cladding.

1.7 WARRANTY

- A. Furnish Manufacturer's standard 10 year limited warranty covering defects in manufacturing and materials and maximum 1 year exposure warranty stating that product will remain free of defects and suitable for its intended use after installation, but before the exterior weather-resistive barrier or cladding is installed on the building, regardless of exposure to normal weather conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as approved otherwise by the Architect, subject to compliance with Specification requirements:
 1. CertainTeed Corp., Saint Gobain www.certainteedcorp.com

2. Georgia-Pacific Gypsum (GP) www.buildgp.com
3. National Gypsum Company www.nationalgypsum.com
4. Pabco Gypsum www.pabco gypsum.com
5. USG www.usg.com

2.2 MATERIALS

- A. Glass Mat Faced Exterior Sheathing Board: Glass-mat faced exterior gypsum sheathing complying with ASTM C1177.
1. Thickness: 5/8 inch.
 2. Acceptable Products: Subject to compliance with requirements, provide one of the following:
 - a. DensGlass Sheathing, G-P Gypsum Corporation.
 - b. GlasRoc Sheathing, CertainTeed Corp.
 - c. Gold Bond BRAND eXP Sheathing, National Gypsum Company d PABCO GLASS Sheathing, Pabco Gypsum e Securock Brand Glass-Mat Sheathing, USG

2.3 ACCESSORIES

- A. Fasteners: Type S-12, bugle head, self-tapping, with organic-polymer or other protective coating having a salt-spray resistance of more than 800 hours as tested in accordance with ASTM B117, and as follows:
1. Length: As recommended to penetrate wood or metal framing minimum depth as recommended by sheathing Manufacturer.
- B. Joint Treatment Materials:
1. Joint Sealant: Silicone emulsion sealant complying with ASTM C834 and compatible with sheathing and sheathing tape as recommended by the sheathing Manufacturer. Provide one of the following:
 - a. Dow Corning 795 Building Sealant.
 - b. Pecora 895.
 2. Glass Fiber Sheathing Tape: Provide self-adhering glass-fiber tape, 2 inch minimum width, 10 x 10 or 10 x 20 threads/inch mesh, of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing board with a history of successful in-service use.
 3. Setting Type Joint Compound: ANSI/ASTM C475; setting-type joint compound, adhesive, and water as recommended by Board Manufacturer.
- C. Soffit Vents: Continuous linear soffit vent, width as indicated on Drawings by depth to suite soffit sheathing and indicated finish; 6063 T5 extruded aluminum or electrogalvanized steel, baked-on primer finish. Provide product(s) indicated on Drawings as manufactured by Fry Reglet, Superior, or equivalent as approved by Architect. 1. Provide manufacturers standard end/termination caps at all ends.
- D. Edge Trim: GA216; Type L bead; electro-galvanized steel and Type LC rolled-formed zinc. with

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Verify that surface of framing members do not vary more than 1/4 inch from the plane of faces of adjacent members.
- C. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

EXTERIOR GYPSUM SHEATHING

- A. Glass Mat Exterior Sheathing Board:
1. Install in accordance with GA-253, ASTM C1280, IBC requirements and manufacturer's printed instructions.
 2. Verify that surface of framing members do not vary from more than 1/4 inch from the plane of faces of adjacent members.
 3. Install glass mat gypsum sheathing with logo side out.
 4. Panels of the maximum length possible shall be used to minimize the number of joints. Edge joints must be located parallel to and with vertical orientations on framing. End joints of adjacent lengths of sheathing must be staggered.
 5. Cut boards at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated. a. Install boards with 3/8 inch setback where abutting structural elements. b. Install boards with 1/4 inch setback where they abut masonry or similar materials that might retain moisture, to prevent wicking. c. Allow no joints greater than 3/8 inch.
 6. Install fasteners so screw heads bear tightly against and flush with surface of sheathing but do not cut into facing. Fasteners must not be countersunk.
 7. Do not bridge building expansion joints with sheathing; cut and space edges to match spacing of structural support elements.
- B. Ceiling/Soffit Applications: Install with long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of stud flanges and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each stud.
1. Space fasteners a maximum of 8 inches o.c., or tighter where recommended by the sheathing Manufacturer, and a minimum of 3/8 inch from edges and ends of boards.
 2. Place edge trim where gypsum sheathing abuts dissimilar materials and as indicated on Drawings.
 3. Apply joint tape over joints and embed in setting type joint compound. Skim coat entire surface with setting type joint compound for smooth finish equivalent to Level 3 finish in accordance with the Gypsum Association "Recommended Specification: Levels of Gypsum Board Finish", except where ceiling of soffit board serves as a base to another applied finish.
 4. Finished surface to be coated with Drywall Primer prior to application of paint system specified in Section 09 91 00.

3.3 CLEANING

- A. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 06 1700
MANUFACTURED STRUCTURAL WOOD**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Laminated Strand Lumber (LSL), Parallel Strand Lumber (PSL), and/or Laminated Veneer Lumber (LVL) headers, beams, headers, rim joists and similar members indicated on Drawings or used at contractors option to sawn lumber indicated.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings for review before fabrication begins, conforming to the design load criteria shown on the Drawings.
- B. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.
- C.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Members shall be stored in a vertical position, in a dry place, completely protected from the weather. Members shall be handled with care to prevent damage.

1.4 PROJECT CONDITIONS

- A. Verify dimensions shown on Drawings by taking field measurements; proper fit and attachment of members is required.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Furnish products of one of the following manufacturers, except as approved by the Architect, subject to compliance with specifications requirements:
 - 1. Georgia-Pacific Wood Products; www.buildgpp.com
 - 2. Louisiana-Pacific Corporation; www.lpcorp.com
 - 3. RedBuilt Engineered Wood Products; www.redbuilt.com
 - 4. Roseburg Forest Products www.roseburg.com
 - 5. Weyerhaeuser – TrussJoist Engineered Wood Products; www.woodbywy.com

2.2 MATERIALS

- A. Engineered LSL, PSL, and LVL Lumber: Factory manufactured beams, headers and similar members composed of wood strand elements arranged with grain generally parallel to member length, Laminated Strand Lumber (LSL), Parallel Strand Lumber (PSL), and/or Laminated Veneer Lumber (LVL), pressure laminated with adhesive to form composite beam members.
 - 1. Adhesive: Exterior type complying with ASTM D2559.

2. Design: Beams and Engineered Lumber shall be sized and detailed to fit the dimensions and loads indicated on the plans. Designs shall be in accordance with allowable values and section properties assigned and approved by the building code. Verification of design of the beams by complete calculations is to be available upon request.
3. Fabricate without formaldehyde.

PART 3 EXECUTION

3.1 ERECTION

- A. Where shown on Drawings, wood I-joists and engineered lumber beams, headers, rim joists, and similar members shall be erected in accordance with the drawings and fabricators installation suggestions. Temporary construction loads which cause member stresses beyond design limits are not permitted.
- B. Erection bracing and blocking in addition to that specified bridging is to be provided to keep the joists straight and plumb as required to assure adequate lateral support for the individual joists and the entire system until the sheathing material has been applied.
- C. Contractor shall notify the Architect prior to enclosing joists to provide the opportunity for inspection of the installation.
- D. Temporarily removing web members, drilling or cutting chords or webs will not be permitted without written permission from Architect.
- E. Coordinate with other trades whose Work relates to beam or joist member installation.

3.2 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. After erection, remove unused materials, tools, scaffolding and debris and leave broom clean.

END OF SECTION

**SECTION 06 1753
SHOP-FABRICATED WOOD TRUSSES**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Prefabricated wood trusses as shown on the Drawings and as specified. Miscellaneous fastening devices, except for connector plates, are specified elsewhere.

1.2 SUBMITTALS

- A Shop Drawings: Submit engineering drawings conforming with the design load and deflection criteria shown on the Drawings for review before fabrication begins. These drawings shall bear the seal of a registered professional Engineer. See structural drawings for additional requirements.

1.3 QUALITY ASSURANCE

- A Design: Trusses shall conform with applicable provisions of the following:
 1. NDS-2012 for lumber.
 2. TPI-85 for criteria.
 3. IBC for code compliance.

- B Report: Submit ICC report for metal connectors.

- C Use of non-FSC Certified (Tropical Wood) products is not allowed. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.

1.4 DELIVERY, STORAGE AND HANDLING

- A Handling: Handle fabricated trusses and subassemblies with care so that they are not subject to damage. During the construction period, provide means for adequate distribution of concentrated loads so that the carrying capacity of any one truss or other component is not exceeded.
- B Storage: If the trusses are to be stockpiled or stored prior to erection, set in vertical positions and rest upon temporary bearing supports and brace so they will not be subject to unusual bending or tip over.

1.5 PROJECT CONDITIONS

- A Field Measurements: Verify dimensions shown on Drawings by taking field measurements and checking shop drawings details before proceeding with fabrications.

1.6 SCHEDULING

- A Time delivery and installation of trusses to avoid delaying other trades whose work is dependent on or affected by the carpentry work and to comply with protection and storage requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Fabricate trusses in accordance with approved engineering drawings.
- B. Moisture Content: The average moisture content of lumber 2 inches or less in thickness shall be 19 percent or less at time of enclosure.
- C. Lumber defects such as wane or knots occurring in the connector plate area shall not affect more than ten percent of required plate area, or number of effective teeth required for each truss member.
- D. Connector Plates: Minimum of 0.036 inch thick and manufactured from ASTM A653 Grade A steel, hot dip galvanized to meet Coating Designation G60. In highly corrosive environments or when fire retardant lumber is specified, furnish stainless steel connector plates in lieu of hot dip galvanized.

2.2 FABRICATION

- A. Cut members accurately to length, angle and true to line to assure tight joints for the finished truss. Place members and connector plates in special jigs with the members tightly clamped in place and maintain in that position until the connector plates have been pressed into the lumber simultaneously on both sides of the joints. Do not permit open joints which depend on the stiffness of the metal connector plates to transmit stresses or improperly fitting joints. Build camber into the member, as noted, by properly positioning the members in the fabricating jig.
- B. Apply connector plates to both faces of truss at each joint to provide firm even contact between the plate and the wood. Wood members shall be accurately cut and fabricated so that members have good bearing and completed truss units are uniform. See Truss Plate Institute Quality Standard for Metal Plate Connected Wood Trusses QST-88 for tolerances and other special requirements.

PART 3 EXECUTION

3.1 ERECTION

- A. Coordinate with other trades whose work relates to truss installation.
- B. Securely brace and block trusses both during erection and after permanent installation, in a building in accordance with Commentary and Recommendations (BWT-80) as published by the Truss Plate Institute and the manufacturer's written instructions. Erection bracing and blocking shall hold trusses straight and plumb and in safe condition until decking and permanent truss bracing has been fastened forming a structurally sound roof framing system.
- C. Install erection and permanent bracing and blocking and permanently fasten trusses before application of loads. Permanent structural cross bracing to ensure overall rigidity of the roof system shall be in accordance with the project Structural Drawings. Check truss design drawings for additional special bracing or blocking requirements.
- D. Unless otherwise indicated on the Drawings, nailing shall be as required to assemble and secure wood construction, but in no case less than that required by applicable building codes. Connectors shall have current ICC approval.

- E. Unless specifically shown, wood plugs or nailing blocks shall not be used. Powder cartridge driven units may not be used on structural members without prior approval. Provide nails, strikes, screws, straps and similar items of suitable type and sizes to attach and hold members securely in place as may be necessary.
- F. Bridging: Install a continuous line of 2 inches x 4 inches bridging connected to each member at the web or chord member during the erection stage. Provide one line along the top and one line along the bottom chord.
- G. Alignment: Erect members with the top and bottom chords in true vertical alignment. Align top chords of trusses parallel to each other and straight with no point in the plane on the top chords more than 3/8 inch out of true horizontal.

3.2 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 06 1813
GLUE-LAMINATED BEAMS**

PART 1 GENERAL

1.1 SUBMITTALS

- A. Shop Drawings: Submit drawings showing materials, dimensions and erection details.

1.2 QUALITY ASSURANCE

- A. Standards: Design, fabrication and construction of structural glue-laminated timber shall conform to applicable requirements of the following:
 - 1. ANSI/AITC A190.1.
 - 2. CS-253.
- B. Laminator shall have minimum 5 years of continuous experience immediately prior to fabricating beams of this project.
- A. Use of non-FSC Certified (Tropical Wood) products is not allowed. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.
- C.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Store members on supports not less than 12 inches above ground or 1-1/2 inches above subfloors, as applicable.
- B. Individually wrap members for protection during shipment, storage and erection with Sisalkraft or resin sized paper. Contractor shall continue to protect members after erection and until acceptance of Work.
- C. Protect members during unloading, hauling and erection. Field-trimmed ends or surfaces shall receive a coat of penetrating type sealer prior to erection.

1.4 PROJECT/SITE CONDITIONS

- A. Measurements: Verify dimensions shown on Drawings by taking field measurements; proper fit and attachment of members is required.

1.5 SCHEDULING

- A. Contractor and fabricator shall coordinate construction and delivery schedules. Members shall not be delivered to site until adequate preparation for storage has been made and not erected until preparations to receive members are complete, including miscellaneous metal and connecting hardware embedded in concrete.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Lumber:
 - 1. Lumber for laminating shall be of such stress grade to provide glue-

- laminated members with normal working stress values of 2400 p.s.i. in bending.
2. Moisture Content: At time of gluing, moisture content of lumber shall not be less than 7 percent and shall not exceed 11 percent. The range of moisture content of various laminations assembled into a single member shall not exceed 5 percent.
- B. Adhesive:
1. Mixing, spreading, storage life, pot life, working life and assembly life of adhesive shall be per manufacturer's recommendations. Use exterior type adhesives.
 2. Comply with ANSI/AITC A190.1 for wet-use (dry-use) adhesive.
 3. Adhesives shall not contain urea formaldehyde.

2.2 FABRICATION

- A. Fabricate with adequate plant and equipment and under supervision of properly qualified personnel.
- B. Laminations shall be machine finished, but not sanded, to a smooth finish and to a uniform thickness with a maximum allowable variation of 1/64 inch.
- C. Provide members conforming to AITC Architectural appearance grade where exposed to view and Industrial appearance grade where concealed from view in the final construction in accordance with AITC-110.
- D. Warp, twist or other characteristics which prevent contact of adjacent glued faces or interfere with uniform bending when under clamping pressure not permitted. Surfaces to be glued shall be clean and free from oil, dust and other foreign material detrimental to gluing.
- E. Identification: Each completed member shall bear a specific identification, for location and shall be accompanied by an AITC Inspection Certificate provided by the fabricator.
- F. Connecting Hardware:
 1. Connecting hardware indicated on Drawings shall be furnished by fabricator of glue-laminated members.
 2. Steel plates, angles and other shapes: Conform to ASTM A36.
 3. Bolts: Conform to ASTM A307. Make bolt lengths such that threads are excluded from bearing on wood or steel. Provide standard malleable iron or equivalent steel plate washers under bolt heads or nuts bearing on wood.
 4. Lag screws, shear plates and split ring connectors: Conform to "National Design Specifications for Stress Grade Lumber and Its Fastenings" of National Forest Products Association.
 5. Accurately locate bolt holes and drill with a bit 1/16 inch larger in diameter than bolt. Install lag screws, shear plates and split ring connectors per National Design Specifications.
 6. Galvanizing: Fabricated steel base assemblies shall be by hot-dip process per ASTM A123 after fabrication.
 7. Shop paint: Coat connecting hardware except galvanized base, not embedded in concrete, with one coat of primer per Federal Specification TT-P-645.

PART 3 EXECUTION

3.1 ERECTION

GLUE-LAMINATED BEAMS

- A. Erect members in accordance with AITC-105 and the instructions of the fabricator.
- B. Handling or erection of tools, equipment and methods shall avoid scarring corners and faces or otherwise injuring the member. Sharp instruments or unprotected wire rope or chain slings not permitted.
- C. Erect laminated wood members true and plumb. Install temporary bracing wherever necessary to take care of loads to which structure may be subjected, including erection equipment, and to keep structure and members in alignment.
- D. Leave temporary bracing in place as long as required for safety and until no longer required to maintain position. As erection progresses, securely bolt up to take care of dead loads, lateral forces and erection stresses. Tie temporary bracing to adequate support.

3.2 FIELD QUALITY CONTROL

- A. Inspection and Testing:
 - 1. Inspection of beams and their connections prior to erection and after erection, at the jobsite, shall be by an ICC certified independent inspector with minimum five (5) years of experience in inspecting glulam beams and their framing.
 - 2. Where, as cautioned by AITC, tension may occur perpendicular to grain due to wood shrinkage restrained by connection or other reasons, the laminator shall install vertical dowels in glued holes to arrest cracks.
 - 3. Size of dowels and the spacing shall be determined by the laminator for each specific occurrence, regardless of when such cracks occur.
 - 4. Tension lamination finger joints shall be proofload tested and test results submitted for review.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 06 20 00
FINISH CARPENTRY**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Interior finish carpentry items indicated on Drawings and as specified, including but not limited to the following:
1. Wood (MDF) wall base, trim, and similar items.
 2. Closet, coat, linen and pantry shelving and supports including clothesrods.
 3. Wood door frames, casing and trim.
 4. Other items as indicated.
- B Related Sections:
1. Division 08 Door Sections, for pre-hung doors on wood frames specified in this Section.
 2. Section 12 32 00 – Manufactured Casework, for wood casework.

1.2 SUBMITTALS

- A Samples: Submit two samples of each type/profile of exposed finish carpentry item required for Project. Samples shall be minimum 12 inch lengths of actual base, molding, trim, etc.

1.3 REFERENCES

- A Reference Standards: Following standards apply to Work of this Section except where more stringent requirements are specified:
1. Architectural Woodwork Standards (AWS), Edition 2.
 2. American Wood Preservers Association (AWPA).
 3. National Particleboard Association (NPA)

1.4 QUALITY ASSURANCE

- A Applicable Standard: Perform work in accordance with AWS "Architectural Woodwork Standards" and the following:
1. Paint Grade Finish Carpentry Items: Custom Grade.
- B Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum of 5 year documented experience.
- A Use of non-FSC Certified (Tropical Wood) products is not allowed. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.

1.5 DELIVERY, STORAGE AND HANDLING

- A Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B Storage: Adequately protect against damage while stored at the site.

1.6 PROJECT CONDITIONS

- A Environmental Requirements: Provide humidity conditions which will not damage woodwork.
- B Measurements: Verify dimensions shown on Drawings by taking field measurement; proper fit and attachment of parts is required.

PART 2 PRODUCTS

2.1 MATERIALS

- A Solid Wood Lumber (Base, Frames, Casing, Trim, and Similar Items): Select lumber to meet the AWS QSI requirements for Grade specified, or MDF, average moisture content of 6 percent.
 - 1. Opaque Finish (Paint Grade): MDF or AWI Custom Opaque Softwood, Maple, Poplar or Pine, unless otherwise indicated on Drawings.
 - 2. Lengths: Use maximum lengths possible, but not required to exceed 10 feet without joints.
 - a. No joints closer than 6 feet in straight run.
 - b. No joints permitted in door casings or door moldings, except miter joint at corners.
 - 3. Provide standing and running trim of size, profile and/or carved shape as indicated on Drawings.
- B Medium Density Fiberboard (MDF): Medite II as manufactured by Roseburg www.roseburg.com
- C Manufactured MDF Wall Base: Size, profile / model number scheduled on Drawings as manufactured by Orepac Building products www.orepac.com , or equivalent as approved by Architect.
- D Grounds, Blocking, Cleats, and Furring Strips: #2 White Pine, construction grade Douglas Fir or other sound softwood. Fire treated lumber as required by codes or construction type.
- E Fasteners:
 - 1. Size and Type: Use fasteners designed for wood trim (thinner shank, blunt point, full round head), hot dipped galvanized finish in concealed locations and stainless steel finish in exposed locations.
 - 2. Concealed joint fasteners: Threaded steel.
 - 3. Fasteners shall be long enough to penetrate a solid wood substrate a minimum of 1-1/2 inches.
 - 4. Panel Fasteners: Panelclip as manufactured by Brooklyn Hardware, Portland OR www.panelclip.com ; or Panel Z Clips as manufactured by Monarch Metal Fabrication, Inc. Bohemia, NY www.monarchmetals.com
- F Shelf and Rod Supports: Knappe and Vogt #1195 www.knappeandvogt.com, or as otherwise selected by Architect and/or Owner.
- G Shelf Standards and Supports: Knappe and Vogt #255 and 256, or #87 and #187, or as otherwise selected by Architect and/or Owner. Finish as selected by Architect.
- H Adhesives:
 - 1. Wood Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue

- recommended by manufacturer for general carpentry use.
- 2 Paneling Adhesive: As recommended by the paneling manufacturer.
- 3 Multipurpose Construction Adhesive: Formulation complying with ASTM D3498 that is recommended for indicated use by adhesive manufacturer.

- I Sealants: Use urethane, polyurethane or acrylic based sealants without silicone as specified in Section 07 92 00.
- J Prime Paint: As specified in Section 09 91 00.

2.2 FABRICATION

- A Fabrication shall be in accordance with applicable standard specified herein under "Quality Assurance," for grade of work specified.
- B Shop prepare and identify components for matching during site erection.
- C When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- D Wood Wall Base, Trim, and Similar Items: Comply with applicable requirements of the AWS standard for the type of woodwork being fabricated, and the following:
 - 1 Provide wood wall base, rails, and trim members in longest lengths practical to minimize splices and in compliance with AWS requirements for grade indicated.
 - 2 Backout or groove backs of flat trim wood members and kerf backs of other wide, flat members. Terminate kerf or groove short of end of members with ends exposed in finished work.
- E Closet Shelving: Fabricate closet shelving from MDF with rounded front edge and eased sides and back edges in accordance with applicable AWS requirements.
 - 1 Thickness: 3/4 inch minimum.
- F Wood Frames, Casing and Trim: Comply with AWS requirements for fabrication of interior door frames, casing and trim, and the following:
 - 1 Match finish, finishing system, and color of door installed in frame.
 - 2 Kerf edges of door jambs as indicated on Drawings.
- G Prime Paint: Shop prime wall base, casings, shelving, trim, similar items in accordance with Section 09 91 00.

2.3 SHOP FINISHING

- A Shop finish interior carpentry indicated to receive transparent or stain finish to the greatest extent possible.
 - 1 Sand work smooth and set exposed nails and other fasteners.
 - 2 Apply wood filler in exposed nail and fastener indentations. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and types recommended for applied finishes.
 - 3 Finish work in the factory in accordance with AWS Manual, Section 5, System 2 - Lacquer, Precatalyzed or System 12 - Polyurethane, Water-Based, unless otherwise indicated on Interior Drawings.
 - 4 Seal surfaces in contact with cementitious materials.
 - 5 Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end- grain surfaces.

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 PREPARATION

- A. Priming: Back-prime wood surfaces inaccessible and unexposed after installation before delivery with an approved linseed oil and aluminum primer. Prime coat unfinished metal parts prior to installation.

3.03 INSTALLATION

- A. Installation shall be in accordance with applicable standard specified herein under "Quality Assurance," for grade of work specified.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- D. Wood Base, Frames, Casing, and Trim Members:
 - 1. Install members longest lengths practical to avoid end to end splices/joints.
 - 2. Miter external corners and cope internal corners.
 - 3. Where unavoidable in the finished Work, splices shall be cut at a 22.5 degree angle (not square butted).
 - 4. Stagger joints in adjacent and related members.
 - 5. Fasten with concealed fasteners to the greatest extent possible. When exposed fastening is required to complete installation, exposed fasteners shall be set in quirks, reveals, and reliefs (to be least visible when installation is complete).
 - a. Where blind nailing is not possible, drill pilot holes at locations best hidden in finished work.
 - b. Use only finish or casing nails. Set nails for putty stopping in surfaced members.
- E. Painted MDF Shelving: All exposed fasteners shall be recessed flush and covered with matching plastic self-adhesive covers.
- F. Make end splices exposed in finished members bevel splices and not square butted. Install members in as long lengths as possible.
- G. Tolerances: As follows:
 - 1. Plumb and level: 1/16 inch in 96-inches maximum.
 - 2. Vertical cup and bow for flush wood members and panel products: 1/16 inch in 96-inch maximum.
 - 3. Horizontal variation from true plane: 1/8 inch in 96-inches maximum.
 - 4. Variation in reveal width: 1/32 inch maximum.
 - 5. Alignment of reveals and joints between members: 1/32 inch maximum offset.
 - 6. Gaps between moldings and Wall: 1/32 inch maximum.
- H. Complete the finishing work specified in this Section to the extent not completed at shop or before installation of woodwork. Fill nail holes with matching filler where

exposed prior to finishing.

- I. Painted Woodwork: Touch-up shop-applied prime paint and prepare woodwork as required to receive paint finish specified in Section 09 91 00.

3.04 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

SECTION 06 4000
ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Architectural woodwork as shown on Drawings and as specified herein, including, but not limited to, the following:
 - 1. Plastic laminate faced cabinets and countertops.
 - 2. Other items as indicated.
- B. Related Sections:
 - 1. Section 12 3200 – Manufactured Casework, for manufactured kitchen, linen, and bathroom casework for Residential Units.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings showing layout, dimensioned plans and elevations, adjacent conditions, large-scale details, hardware, attachment devices, and schedule of finishes. Field verify critical dimensions.
 - 1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - 2. Show locations and cutouts and holes for plumbing fixtures, faucets, and other items.
- B. Samples:
 - 1. Submit four Samples of each specified or scheduled plastic laminate for verification purposes.
 - 2. Submit four Samples of each type of hardware specified or required.
- C. Qualification Data: For fabricator.

1.3 REFERENCES

- A. Reference Standards: Comply with the following:
 - 1. Architectural Woodwork Standards (AWS), Edition 2.
 - 2. ANSI/NEMA LD3 for laminates.

1.4 QUALITY ASSURANCES

- A. Qualifications: Manufacturer shall be company specializing in manufacturing the products specified in this Section with minimum 5 years documented experience.
- B. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork.
- C. Quality Standard: Unless otherwise indicated, comply with AWS's "Architectural Woodwork Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
 - 1. Provide AWI Quality Certification Program certificates indicating that woodwork, including installation, complies with requirements of grades specified.
 - 2. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality

standard. Comply with such selections and requirements in addition to the quality standard.

3. Standard of Quality: Comply with the following, unless otherwise indicated on Drawings:
 - a. Custom Grade, unless otherwise indicated.
- D. Use of non-Forest Stewardship Council Certified (FSC) products is not allowed. For FSC requirements, comply with Chain-of-Custody Certificates for certified wood products. Include statement of costs; and comply with Chain of Custody Qualification data for manufacturer and vendor.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.
- B. Storage: Adequately protect against damage and moisture while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 43 and 70 percent during the remainder of the construction period.
- B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.

1.7 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 PRODUCTS

2.1 MANUFACTURERS - PLASTIC LAMINATE

- A. Furnish high pressure decorative laminate products of one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
 1. Formica www.formica.com
 2. Wilsonart www.wilsonart.com
 3. Nevamar www.nevamar.com
 4. Lamin-Art www.laminart.com
 5. Pionite www.pionite.com

6. As approved by Architect.

2.2 MATERIALS -GENERAL

A Provide materials that comply with requirements of AWS's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

2.3 WOOD MATERIALS

A Softwood Lumber (Concealed Locations): Graded in accordance with applicable standard specified herein under "Quality Assurance," for grade of work specified, Douglas Fir species, plain sawn, moisture content of 6-8 percent, with flat grain, of quality suitable for transparent finish. Thicknesses as indicated on Drawings.

2.4 SHEET MATERIALS

A Environmental Requirements: Fabricate sheet and composite sheet wood panel products without urea formaldehyde.

B Softwood Plywood: DOC PS 1, MDO (Medium Density Overlay), or other overlay plywood product suitable for application of plastic laminate as approved by the Architect.

C Thermofused Decorative Overlay (Melamine): Roseburg Thermally Fused Melamine Panels as manufactured by Roseburg Forest Products (800) 245-1115 www.rfpco.com.

1. Substrate: Roseburg Ultrablend, Roseburg Pine Particleboard or Medium Density Fiberboard (MDF).

a. Color: As scheduled on Drawings, or as selected by Architect.

D Prefinished Particleboard: Thermofused Roseburg Melamine on core material of 45 lb. particleboard as manufactured by Roseburg Forest Products (800) 245-1115.

E Wood Particleboard: Standard in accordance with applicable standard specified herein under "Quality Assurance," for grade of work specified, composed of wood chips, 45 lb. density, made with water resistant adhesive; of grade to suit application; sanded faces for drawer construction and shelving.

F Baltic Birch Plywood: Manufactured in accordance with Russian Export GOST 3916.1-96 Standards, Type II Glue; Grade B where visible on the exterior of the cabinet, Grade BB at cabinet interior locations.

G Medium Density Fiberboard (MDF): Medite II (or Medite FR as applicable) as manufactured by SierraPine, Roseville, CA, 800-676-3339 www.sierrapine.com, or equal as manufactured by Roseburg Forest Products www.rfpco.com, complying with the following:

1. Water-Resistant MDF: Provide Medex in lieu of Medite II at all wet areas or within 2 feet of any sink or source of water.

H Hardboard: Pressed wood fiber with resin binder, tempered grade, 1/4 inch thick, smooth one side, for drawer bottoms, gables and backs.

I Marine Grade Plywood: APA 3/4 inch B-B Marine Grade pressure preservative treated plywood to be utilized for sub-tops and countertop cores in wet areas.

2.5 LAMINATE MATERIALS

- A Plastic Laminate: High pressure decorative type. Adhesives used in manufacturing of laminate shall not contain urea formaldehyde.
 - 1. Horizontal Grade: NEMA LD-3, Grade GP50, .050 inch thickness.
 - 2. Vertical Grade: NEMA LD-3, Grade GP28, (.028 inch thickness).
 - 3. Post Forming Grade: NEMA LD-3, Grade PF 42.
 - 4. Cabinet Liner Grade: NEMA LD-3, Grade CL-20, (.020 inch thickness).
This grade of laminate shall be counterbalanced.
 - 5. Backer: NEMA LD-3, Grade BK-20 (.020 inch thickness).
 - 6. Finishes, Colors and Patterns: As scheduled on Drawings, or as selected by Architect.

2.6 ACCESSORIES

- A Adhesives:
 - 1. Environmental Requirements:
 - a. Adhesive shall have a VOC content of 50 g/L or less when calculated according to 40CFR 59, Subpart D (EPA Method 24).
 - b. Wood glue shall have a VOC content of 30g/L or less when calculated according to 40CFR 59, Subpart D (EPA Method 24).
 - 2. Laminate Adhesive: 3M Fastbond 30, or equivalent to suit application.
 - 3. Wall Panel Adhesive: Cartridge type compatible with paneling and wall substrate.
 - 4. Wood Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
 - 5. Multipurpose Construction Adhesive: Formulation complying with ASTM D3498 that is recommended for indicated use by adhesive manufacturer.
- B Edge Trim for Plastic Laminate Casework: One of the following as selected by Architect:
 - 1. Moisture-curing reactive polyurethane hot melt adhesive (PUR) applied 3mm PVC banding with eased corner. Color shall be as selected by Architect from manufacturer's full range of colors and finishes.
 - 2. Self edge to match laminate finish.
- C Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application. Threaded steel for concealed joints.

2.7 HARDWARE

- A Shelf Standard and Brackets for Wall Mounted Shelving: K&V 85 Double-Slot Wall Standard and No. 185 Double-Flange Wall Brackets.
- B Shelf pins: Where shelves are indicated to be supported from pins, provide the following: Shelf Support Pins: K&V 333, 7/32 inch diameter shelf pins.
- C Drawer and Door Pulls: Trimco 562-4 or Stanley 4485, or as otherwise approved by Architect.
- D Catches: Stanley 41 or K&V 43.
- E Hinges: Other function hinges may be submitted for approval for special circumstances.
 - 1. Typical Door Hinges: ANSI-A156.9, B01612 – concealed hinge, self-closing with soft close, 120 to 125 degree of opening, full overlay type for screw attachment complete with mounting plates. Blum Clip Top m120 deg.+ with Add-On Blumotion Soft Close, or equal as manufactured by Grass www.grassusa.com, Salice www.saliceamerica.com, or Hettich www.hettich.com.
 - 2. Other function hinges may be submitted for approval for special circumstances.

- F. Drawer Slides: All drawer glides shall be Accuride 3135EC Eclipse Easy-Close, 3017 full extension , 100 lb. capacity minimum for all applications.
 - 1. Finish: Clear zinc.
- G. Locks: CompX National C8183 and C8188 Advantage Plus pin tumbler cam door and drawer cabinet locks. C8183 assembled for door function; C8188 assembled for drawer function.
- H. Grommets: Doug Mockett & Company, Inc. www.mockett.com, size as indicated on Drawings, clear anodized aluminum, or as otherwise selected and approved by Architect.
- I. Provide other hardware as necessary to fulfill function of architectural woodwork and cabinets as shown on Drawings, subject to approval by Architect.
- J. Finish: Dull chrome, brushed Stainless Steel or Nickel, as selected and approved by Architect.

2.8 FABRICATION

- A. Fabricate architectural woodwork and cabinets in conformance with AWS Grade specified herein under "Quality Assurance."
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges of solid wood lumber to 1/16 inch radius, unless otherwise indicated on Drawings.
- D. Exposed fasteners are not allowed in the finish Work on exposed and semi-exposed surfaces.
- E. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.
- F. Exposed Edges: Cap exposed edges of plastic laminate casework with moisture-curing reactive polyurethane hot melt adhesive (PUR) applied 3mm PVC banding with eased corners, or self edge as detailed or as selected by Architect. Use one piece for full length only.
- G. Shelves: Fabricate shelves with 3/4 inch thick MDF, unless otherwise indicated.
 - 1. Laminate, Shelves within Casework: Melamine, thermally fused, at all shelf edges, unless otherwise indicated.
 - 2. Shelf Pin Holes: Provide pin holes at 1 inch center to center in-line spacing with "zero" horizontal tolerance between adjacent holes supporting same shelf.
- H. Drawer Boxes: Fabricate drawer boxes from thermofused decorative overlay (Melamine) or Baltic birch plywood.
 - 1. Fabricate sides and back from minimum 1/2 inch (9-ply) plywood Melamine.
 - 2. Fabricate bottoms from minimum 3/8 inch (7-ply) plywood or Melamine.
 - 3. Fabricate with dovetail joinery only and reinforce corners as necessary to prevent racking.

- I. Door and Drawer Fronts: 3/4 inch thick flush overlay design as indicated on Drawings or as selected by Architect.
- J. Semi-exposed Surfaces (Interior surfaces of wood and plastic laminate casework): Melamine, thermally fused, unless otherwise indicated on Drawings.
- K. When necessary to cut and fit on site, provide materials with ample allowance for cutting and scribing to walls.
- L. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arrises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- M. Plastic Laminate Faced Countertops: Plastic laminate faced with separate back and side splashes with integral scribe for fitting to wall.
 - 1. Fabricate countertops located within wet areas or within 4 feet of sinks with marine grade plywood core material.
- N. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces regardless of thickness or location.
- O. Provide cutouts, rough openings, and recesses for appliances, outlet boxes, lighting fixtures, plumbing components, fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal contact surfaces of cut edges.

2.9 SHOP FINISHING

- A. Baltic Birch Drawer Boxes: Where Baltic Birch construction drawer boxes are provided, provide clear finish as follows:
 - 1. Sand Work smooth.
 - 2. Apply wood filler in exposed nail and fastener indentations. Use wood filler that matches surrounding surfaces and types recommended for applied finishes.
 - 3. Finish work in the factory in accordance with AWS Manual, Section 5, or System 5 – Conversion Varnish, or System 11 - Polyurethane, Catalyzed, unless otherwise indicated on Interior Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.3 INSTALLATION

- A. Set and secure cabinetry and other woodwork in place; rigid, plumb and level, and in accordance with applicable standard specified herein under "Quality Assurance" for grade of work specified.
- B. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Secure and align adjoining cabinet units and counter tops with concealed jointfasteners.
- E. Scribe casework abutting walls and other components, including walls with variable decorative finishes, with maximum gaps of 1/32 inch (0.80 inch). Do not use trim or additional overlay trim for this purpose.
- F. Secure cabinet and bases to floor using appropriate angles and anchorages.
- G. Exposed fasteners are not allowed in the finish Work except at field applied moldings and trim. When exposed fastening is required to complete installation, exposed fasteners shall be set in quirks, reveals, and reliefs (to be least visible when installation is complete). Fasteners in concealed locations shall be countersink and concealed with plugs to match surrounding materials; finish flush with surrounding surfaces.
- H. Install trims and fillers in single lengths without splices where possible.
 - 1. Splices should be cut at a 22.5 degree angle. Miter external corners and cope internal corners.
 - 2. Fasten with concealed fasteners to the greatest extent possible. When exposed fastening is required to complete installation, exposed fasteners shall be set in quirks, reveals, and reliefs (to be least visible when installation is complete).
 - 3. Where blind nailing is not possible, drill pilot holes at locations best hidden in finished work.
 - 4. Use only finish or casing nails. Set nails for putty stopping in surfaced members.

3.4 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

SECTION 07 1426
FLUID-APPLIED ELASTOMERIC WATERPROOFING

PART 1 GENERAL

1.1 SUMMARY

- A Section includes fluid-applied elastomeric waterproofing and protection board for use in the following locations:
1. Planters.
 2. Site retaining walls.

1.2 SUBMITTALS

- A Product Data: Submit Manufacturer's data, installation instructions, limitations and recommendations. Include certification of data indicating VOC content of components.
1. Include Manufacturer's installation details showing edge, penetration, transition, and termination details of each type of condition expected in the Work.
- B Samples: Submit samples of membrane, protection board and composite drainage material.

1.3 QUALITY ASSURANCE

- A Applicator Qualifications:
1. Minimum 3 years experience with Projects of similar scope and complexity.
 2. Applicator shall be approved by Membrane Manufacturer.
 3. Applicator shall furnish written evidence that applicator is currently approved by manufacturer to install the products required or specified for this project.
- B Fluid applied elastomeric waterproofing material shall be two-part synthetic rubber based system free of isocyanates and bitumen.
- C Single Source Responsibility: Obtain primary materials of fluid-applied elastomeric waterproofing used for this project through one source from a single Manufacturer.
- D Pre-Installation Conference: When required by Architect and/or Owner, a pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this Work with related and adjacent Work. Agenda for meeting shall include review of special details and flashing.
- E Manufacturer's Representative: Make arrangements necessary to have a trained employee of the Manufacturer on-site periodically to review waterproofing installation procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- A Materials shall be delivered in Manufacturer's original unopened packages with Manufacturer's labels intact.

- B. Store and handle materials in strict compliance with Manufacturer's instructions, recommendations and material safety data sheets. Material shall be protected from rain and physical damage. Store materials away from sparks or flames. Store membrane where it will not receive high temperature exposure for extended periods of time.
- C. Outdoors, place cartons on raised pallets and cover completely on top and all sides allowing for adequate ventilation. Do not double-stack pallets of waterproofing material. Follow Manufacturer's directions.

1.5 PROJECT/SITE CONDITIONS

- A. Perform Work only when existing and forecasted weather conditions are within the limits established by the Manufacturer of the materials and products used.
- B. Proceed with installation only when substrate construction and preparation Work is complete and in condition to receive sheet membrane waterproofing.

1.6 WARRANTY

- A. Provide Manufacturer's written warranty for a period of 2 years, against failure of waterproofing system to perform in accordance with the terms expressed in the manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Provide products as manufactured by one of the following, subject to conformance with specifications:
 - 1. W.R. Grace, Procor (latex rubber based) www.na.graceconstruction.com
 - 2. Gaco Western, LM-60 (urethane rubber based) www.gaco.com
 - 3. Tremco, Tremproof 250GC (urethane rubber based) www.tremcosealants.com

2.2 MATERIALS

- A. Membrane: 2-component, fluid applied, 100% solids, self-curing, solvent and bitumen free, rubber based waterproofing materials.
 - 1. Vertical applications:
 - a. LM-60V waterproofing membrane.
 - b. Procor 20 waterproofing membrane.
 - c. Tremproof 250 GC waterproofing membrane.
 - 2. Physical Properties:
 - a. Urethane rubber based: Meet or exceed the performance requirements listed.
 - 1) Color: Black.
 - 2) Cured film thickness (ASTM D3767/D3768, Method A): 0.060 inches nominal.
 - 3) Solids Content (ASTM D1644): 90-92 percent.
 - 4) Flexibility (ASTM D746): Pass @ -50 degrees F.
 - 5) Elongation (ASTM D412): 300%

- b. Latex rubber based: Meet or exceed the performance requirements of ASTM C836.
 - 1) Color: Terracotta.
 - 2) Cured film thickness (ASTM D3767, Method A): 0.060 inches nominal.
 - 3) Solids Content (ASTM D1644): 100%.
 - 4) Flexibility (180 degree bend over one inch mandrel at – 25 degrees F, ASTM D1970): Unaffected.
 - 5) Elongation (ASTM D412): 500%
 - 6) Peel adhesion to concrete (ASTM D903 modified): 5 lb./in.
- B. Flashing Sheet/Adhesive (urethane rubber based):
 - 1. Gaco Western NF-621 field-curing neoprene sheet.
 - 2. Gaco Western N-1207 bonding adhesive.
- C. Adhesives/Sealant (latex rubber based):
 - 1. Contact adhesive to bond flashing together - American Hydrotech, Inc., Splicing Cement. www.hydrotechusa.com
 - 2. Contact adhesive to bond flashing to an approved substrate - American Hydrotech, Inc., Bonding Adhesive.
 - 3. Sealant to seal flashing seam edge - American Hydrotech, Inc., Lap Sealant.
- D. Protection Material: As approved by Membrane Manufacturer and as follows.
 - 1. Vertical: 25 mm (1 inch) thick 1.0 lb/cu. ft. density expanded polystyrene with thermal resistance of R-4.
- E. Miscellaneous Materials: Provide other miscellaneous installation materials and accessories, not specifically described but required for a complete and proper installation, in accordance with Manufacturer's specifications or as acceptable to the waterproofing Manufacturer.

2.3 MIXING

- A. Mix 2 parts in accordance with manufacturer's written instructions.
- B. Urethane rubber based: Power mix for a minimum of 5 minutes. Scrape the pail sides thoroughly to aid complete mixing.
- C. Latex rubber based: The mixed product shall have a uniform color, free from any white streaks. Material shall be used during the pot-life. Mixed product that has not been applied that exceeds the pot-life shall be disposed of in a legal manner. Do not cover the material after it is mixed.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work that affects, connects with, or will be concealed by this Work.

3.2 SURFACE PREPARATION

- A Refer to Manufacturer's literature for requirements for preparation of substrates.
1. Surfaces shall be structurally sound and free of dirt, grease, oil, dust and other contaminants.
 2. Surface irregularities greater than 1/2 inch in depth shall be repaired with a lean concrete mix, grout or an application of waterproofing membrane.
 3. Remove windrows, form match lines and high spots greater than 1/16 inch in height.
- B Detailing:
1. Pretreat detail areas with waterproofing membrane.
 2. Install a one inch fillet of waterproofing membrane to inside corners and around penetrations. Extend waterproofing membrane 6 inches in all directions from the corner and penetrations at a minimum thickness of 0.60 inch thickness of waterproofing membrane.

3.3 INSTALLATION

- A General: Install the work of this Section in accordance with manufacturer's written instructions and recommendations.
- B Coordination: Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section. Coordinate schedules for installation of the work of this Section with schedules for other installations, to assure orderly progress of the total construction sequence.
- C Application - General:
1. After detailing in complete, apply a uniform coating of waterproofing membrane at a minimum thickness of 0.060 inch over the entire area to be waterproofed.
 2. At locations noted on drawings, provide a 2-layer system with fabric approved by waterproofing membrane manufacturer
 3. Each layer of fluid-applied waterproofing shall be applied at a 0.060 inch thickness.
- D Vertical Applications:
1. Use pour-and-trowel method.
 2. Pour the mixed material directly from the container onto the vertical surface and follow directly behind it with a 12-inch to 18-inch straight edge steel trowel.
 3. Spread the material uniformly across the surface with only one or 2 passes starting at the bottom of the wall and pulling the material up the wall.
 4. Additional passes with the trowel over the material will cause material to become stringy and difficult to trowel.
 5. Swipe and trowel marks are acceptable as long as the minimum thickness is maintained.
 6. Check the thickness using a wet film thickness gauge.
- E Install protection material the same day the membrane is applied (or immediately after 24 hour testing at horizontal applications). Secure protection material in place by an approved method until concrete or backfill is placed. Nails or other fasteners shall not penetrate through the membrane. Topping slab may be applied immediately upon installation of protection material.

3.4 CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

**SECTION 07 2100
BUILDING INSULATION**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Batt/Blanket thermal building insulation.
 - 2. Fire-safing insulation.
- B. Related Sections:
 - 1. Section 07 8400 – Firestopping.
 - 2. Section 09 8100 – Acoustical Insulation, for sound attenuation insulation.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's data, installation instructions, limitations recommendations. Include certification and test data substantiating R-Values combustibility of each type of insulation.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Conform to applicable code for fire resistance ratings surface burning characteristics.
- B. Provide certificate of compliance acceptable to authorities having jurisdiction indicating conformance to fire-resistance requirements.
- C. Fire safing insulation and assemblies for closure of various voids with fire safing insulation shall comply with IBC Chapter 7 requirements.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Storage: Deliver materials to job in Manufacturer's original unopened packaging. Adequately protect against damage while stored at the site. Deliver so that stocks of materials on the site will permit uninterrupted progress of the Work.
- B. Materials shall be properly identified on each package with the Manufacturer's name and R value.

PART 2 PRODUCTS

2.2 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as approved otherwise by the Architect, subject to compliance with Specification requirements:
 - 1. Fire Safing Insulation:
 - a. Thermafiber, Inc. www.thermafiber.com
 - b. Roxul Inc. www.roxul.com
 - 2. Batt Insulation:
 - a. Johns-Manville www.jm.com
 - b. Owens-Corning Fiberglas Corp. www.owenscorning.com
 - c. CertainTeed Corp., Saint Gobain www.certainteed.com
 - d. Knauf Insulation www.knaufinsulation.com
- B. Materials designated for a specific application shall be the products of one Manufacturer.

2.3 MATERIALS

- A Batt Insulation:
1. Unfaced Glass Fiber Batts: ASTM C665, Type I, unfaced glass fiber batts.
 2. Provide ASTM C553, Type I, unfaced mineral fiber batts manufactured from mineral fiber where used within walls with cement backer board applied to one or both sides or where indicated to be used within shaft wall construction.
 3. Provide batts manufactured from mineral fiber where used within walls with cement backer board applied to one or both sides.
 4. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indices of 25 and 50, respectively when tested in accordance with ASTM E84.
 5. Thickness: Provide minimum thickness as indicated on Drawings for various locations, or minimum thickness to provide the resistance values indicated on Drawings, for various locations. Batts shall be a single thickness to meet the required R value, multiple layers of batts will not be accepted.
- D. Fire Safing Insulation: ASTM C24, E119 and E136, with 4 pcf density. Thickness shall be as required by the Manufacturer to provide a fire rating equal to that of the assembly of which it is a part. Where smoke stop protection also is required, install firestopping sealant complying with Section 07 84 00 as needed to meet UL Standard 1479 and ASTM E814 procedure.
- E. Acoustical Batt Insulation: Sound attenuation batt insulation as specified in Section 09 81 00.
- F. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.
- G. Spindle Anchors, Washers and Shields: Provide copper coated low carbon steel spindles with steel insulation retainer plates, washers and shields that are listed and labeled for use. Protect ends of spindles with capped self-locking washers where exposed to contact.
1. Acceptable Products:
 - a. Stic-Klip Mfg. Co., Type A or B as necessary, with Type S adhesive
 - b. Miracle Adhesive Corp. "Miracle StukUps" with Type HT994 adhesive.
 - c. Goodloe E. Moore Gemco Gemco or Tuff-Weld with G-P Improved or Tuff-Bond Quik-Set Type Adhesive as applicable.
- H. Safing Clips: Galvanized steel safing clips approved by Manufacturer of safing insulation for holding safing insulation in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.02 PREPARATION

- A The substrates to which the insulation is applied must be clean, dry, and free of frost, ice, loose debris, or contaminants.

3.03 INSTALLATION

- A Batt Insulation:
 1. Apply no insulation until such time as the Construction has progressed to the point that inclement weather will not damage or wet the insulation material.
 2. Fully insulate small areas between closely spaced framing members, pipes, conduits or other obstruction by cutting and fitting insulation material as required to maintain the integrity of the insulation.
 3. Installation of insulation of scheduled thickness/R-value is required at all exterior walls, soffits, roofs, projections, etc., whether indicated on Drawings or not.
 4. At wood framing install blankets according to ASTM C1320 and as follows:
 - a. Friction fit unfaced batts between wood members.
secure in place with string wire or other method as approved by Architect.
 5. Cut insulation 1/2-inch wider than gap to be filled to ensure compression fit.
 6. Leave no voids in completed installation.
 7. Place insulation tight to exterior wall or roof substrate without voids.
 8. End match neatly with ends fitting snugly.
 9. Do not cover recessed light fixtures with insulation. Maintain a minimum 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 10. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
- B Fire Safing Insulation: Install in proper sizes on safing clips as needed but not to exceed 24 inches O.C. Leave no voids between walls and edges of slabs.
 1. Install safing clips where required to support insulation as required by Code.
 2. Cut safing insulation 1/2-inch wider than gap to be filled to ensure compression fit. Leave no voids in completed installation.

3.04 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section 017419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.
- C Protection: Take precautions to protect insulation, both during and after installation, from damage of any kind until covered.

END OF SECTION

**SECTION 07 2119
FOAMED-IN-PLACE INSULATION**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Open-cell spray polyurethane foam insulation.
 - 2. Accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Test and Evaluation Reports:
 - 1. Product Test Reports: For each product, for tests performed by qualified testing agency.
 - 2. Research Reports: For spray-applied polyurethane foam-plastic insulation, from an agency acceptable to authorities having jurisdiction showing compliance with the International Building Code and NFPA 285.
- B. Field Quality-Control Submittals:
 - 1. Field quality-control reports.
- C. Qualification Statements: For Installer.
 - 1. Installer shall be trained and certified by manufacturer as an approved installer / applicator. Qualified installers shall be trained in the processing and application of SPF systems, as well as the plural-component polyurethane dispensing equipment required to do so. Contractors and applicators must comply with all applicable and appropriate storage, handling, processing and safety guidelines. The manufacturer shall be consulted in all cases where application conditions are questionable.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved, in writing, by manufacturer.

PART 2 - PRODUCTS

2.1 OPEN-CELL SPRAY POLYURETHANE FOAM INSULATION

- A. Open-Cell Spray Polyurethane Foam: Spray-applied polyurethane foam using water as a blowing agent. Minimum density of 0.5 lb/cu ft and minimum aged R-value at 1-inch (25.4-mm) thickness of 3.9 deg F x h x sq. ft./Btu at 75 deg F (24 K x sq. m/W at 24 deg C).
1. Basis of Design: "ENERTITE G" as manufactured by BASF Corporation 1703 Crosspoint Avenue Houston, TX 77054 (800) 706-0712. www.spf.basf.com.
 2. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 75 or less.
 - b. Smoke-Developed Index: 450 or less.
 3. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
 4. Fire-resistance-rated walls: Where the wall is required to have a fire-resistance rating, data based on tests conducted in accordance with ASTM E119 or UL 263 shall be provided to substantiate that the fire-resistance rating is maintained.

2.2 ACCESSORIES

- A. Primer: Material recommended by insulation manufacturer where required for adhesion of insulation to substrates.
- B. Thermal Barrier: Material barrier intended to prevent flame-source access to foam and delay temperature-rise of foam during a fire event.
1. Gypsum Wallboard: 0.5-inch minimum thickness. Provide as indicated on the drawings.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that substrates are clean, dry, and free of substances that are harmful to insulation.
- B. Priming: Prime substrates where recommended by insulation manufacturer. Apply primer to comply with insulation manufacturer's written instructions. Confine primers to areas to be insulated; do not allow spillage or migration onto adjoining surfaces.

3.2 INSTALLATION

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Spray insulation to envelop entire area to be insulated and fill voids.

- C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.
- D. Framed Construction: Install into cavities formed by framing members to achieve thickness indicated on Drawings.
- E. Cavity Walls: Install into cavities to fully fill void or to thickness shown on the Drawings].
 - 1. Do not cover insulation prior to any required spray foam insulation inspections.
- F. Miscellaneous Voids: Apply according to manufacturer's written instructions.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect spray foam insulation installation, including accessories. Report results in writing.

3.4 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.

END OF SECTION 07 2119

**SECTION 07 2500
WEATHER RESISTIVE BARRIERS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Weather resistive barrier underlayment system installed under stucco systems.
 - 2. Flexible self-adhered flashing installed around window and door openings.
- B. Related Sections:
 - 1. Section 07 2729 – Self-Adhered Water-Resistive Vapor Permeable Air Barrier Sheet Membrane, for fully adhered water-resistive vapor permeable air barrier sheet membrane system installed under metal wall panels.
 - 2. Section 09 2443 – One-Coat Stucco System, for one-coat, polymer-fiber modified insulating stucco system applied to building walls.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications, technical data and installation instructions.
- B. Certificates: Submit manufacturer certification that products furnished meet specification requirements.

1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Provide weather resistive barriers in accordance with the IBC or other ICC approved alternative acceptable to authorities having jurisdiction as a weather resistive barrier under specified stucco systems.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact.
- B. Storage: Store off ground to assure adequate ventilation, and protect against damage while stored at the site.
- C. Handling: Comply with manufacturer's instructions.

1.5 PROJECT/SITE CONDITIONS

- A. Perform Work only when existing and forecasted weather conditions are within the limits established by the Manufacturer of the materials and products used.
- B. Proceed with installation only when substrate construction and preparation Work is complete, dry and in condition to receive weather resistive barrier.

PART 2 PRODUCTS

2.1 WEATHER-RESISTIVE BARRIERS

- A Polyolefin Sheet Weather-Resistive Barrier: Textured, spunbonded polyolefin, non-woven, non-perforated, weather barrier:
1. Performance Characteristics:
 - a. Air Penetration: 0.004 cfm per sq. ft. at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
 - b. Water Vapor Transmission: 50 perms, when tested in accordance with ASTM E96, Method B.
 - c. Water Penetration Resistance: 210 cm when tested in accordance with AATCC Test Method 127.
 - d. Basis Weight: 2.1 oz per sq. yd, when tested in accordance with TAPPI Test Method T-410.
 - e. Air Resistance: 300 seconds, when tested in accordance with TAPPI Test Method T-460.
 - f. Tensile Strength: 30/30 lbs/in., when tested in accordance with ASTM D882, Method A.
 - g. Tear Resistance: 7/9 lbs, when tested in accordance with ASTM D1117.
 - h. Surface Burning Characteristics: Class A per ASTM E84.
 2. Acceptable Products: Furnish one of the following products, except as approved by the Architect, subject to compliance with specification requirements:
 - a. Tyvek StuccoWrap as manufactured by Dupont www.dupont.com
 - b. Equivalent drainage type weather resistive barrier approved for use by ICC-ES under the specified stucco systems.
 3. Weather Resistive Barrier Sealing Tape: Manufacturers standard pressure sensitive seam sealing tape of polyolefin film coated with a permanent acrylic adhesive designed for sealing seams of weather resistive barriers.

2.2 ACCESSORIES

- A Fasteners:
1. Nails: Standard round wire shingle type, hot dipped zinc coated steel, minimum 13/64 inch head diameter, or with plastic washer heads, and 0.080 inch shank diameter, of sufficient length to penetrate into wall studs.
 2. Staples: Standard wide face staples, hot dipped zinc coated steel, minimum 1 inch crown, of sufficient length to penetrate into wall studs.
 3. Screws: Steel drill screws with washers complying with ASTM C1002, Type S, hot dipped zinc coated steel, of sufficient length to penetrate steel framing.
- B Self-Adhering Flashing Tape for Doors, Windows and Other Exterior Wall Openings: Composite self-adhering polyethylene or polyolefin film and butyl rubber adhesive flashing tape designed for use in sealing around window and door openings, corners, and other transitions in weather resistive barriers.
1. Provide Flashing Tapes in the following widths:
 - a. Base Layer: 9 inches.
 - b. Top Layer at Jambs: 6 inches.
 - c. Top layer at Head: 12 inches.
 2. Acceptable Products:
 - a. DuPont FlexWrap flashing tapes; DuPont www.tyvek.com.
- C Joint Sealer: Polyurethane or latex based joint sealer acceptable or recommended by sheet manufacturer and complying with Section 07 92 00.

- D. Adhesive: Polyurethane or latex based adhesive acceptable to sheet manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.
- C. Verify base, sill and other flashing materials are in place prior to installation of weather resistive barrier.

3.02 SELF-ADHERING FLASHING TAPE INSTALLATION

- A. Self-Adhering Flashing Tape for Doors, Windows and Other Exterior Wall Openings: Install self-adhering flashing tapes around door, window and other openings, installing tapes in sequence, wrapping tapes around wall construction and into openings, and providing proper lapping of tape layers, in accordance with manufacturer's printed installation instructions, generally as follows unless otherwise specifically indicated by the flashing tape and weather resistive barrier manufacturer:
 1. Install 9 inch wide strip of base flashing tape flush with bottom of rough opening and extending beyond the jamb flashings to be installed in the next step. Fasten only along the top to allow the weather resistive barrier to be slipped under the flashing in a weather-board fashion.
 2. Install 9 inch wide strips of base flashing tape flush with jambs of rough opening and extending below bottom of sill flashing and above where the head flashing will intersect (approximately 2 inches above the rough opening). Fasten the jamb flashing to the edge of the rough opening leaving the bottom free to allow installation of the weather resistive barrier.
 3. Install windows as specified in Division 08 Section(s). Apply a continuous 3/8 inch bead of sealant to the perimeter of the rough opening or to the backside of the window nailing fin/flange. Install window in accordance with Division 08 Section(s) immediately after application of the sealant bead. If sealant bead develops a skin, sealant must be removed and re-applied.
 4. After window is installed, clean window flange and base layer of flashing prior to application of top self-adhesive flashing.
 5. Cut length of top layer of self-adhesive flashing for each jamb, of length to extend 3 inches beyond window flange top and bottom.
 6. Remove release paper and place flashing tape on top of the window flange, extending 3 inches beyond flange at top and bottom. Apply firm pressure along the entire self adhesive strip to ensure continuous seal.
 7. Cut length of 12 inch flashing tape for head, in length to extend beyond the jamb flashing in place.
 8. Remove release paper and place top head flashing tape on top of the window flange, extending beyond the jamb flashing in place on each side. Apply firm pressure along the entire self adhesive strip to ensure continuous seal.
 9. Door Openings: Install self-adhering flashing tape around door openings, wrapping tapes into openings and properly lapping tape in accordance with manufacturer's printed installation instructions.

3.03 WEATHER- RESISTIVE BARRIER INSTALLATION

- A Installation - General:
1. Begin installation of weather resistive barrier after window flashing system is installed.
 2. Apply membrane in accordance with manufacturer's recommendations, laid smooth without folds or bunches of material.
 3. Integrate weather resistive barrier with installed window and door opening flashings systems.
 4. Place the membrane so that it is tight and flat.
 5. Apply enough fasteners to hold membrane in place until final wall cladding is installed.
 6. Inspect and repair membrane prior to application of finish material over membrane; tape tears, perforations and similar damage.
 7. Completed installation shall be free of holes or breaks.
- B. Polyolefin Sheet Weather-Resistive Barrier Installation:
1. Apply material horizontally starting at outside corner with bottom aligned with foundation or bottom termination and plumb. Leave 6 to 12 inches of material at corner for overlap. Align stud marks on rolls with framing members of exterior wall.
 2. Use material as required to span floor to floor height and lap upper layer over lower layer 6 inches minimum. Lap vertical joints 6 inches minimum.
 3. Secure sheet to foundation with continuous bead of joint sealer.
 4. Wrap sheet 6 inches minimum around all corners lapped over adjacent sheet and taped.
 5. Extend sheet directly over window and door openings, cut and wrap material into opening, or trim material at openings and seal with tape as recommended by manufacturer.
 6. Fasten at 12 to 18 inches on center spacing at each vertical stud using the following fasteners:
 - a. Fasten to sheathed wood frame construction with staples, large head nails, or plastic washer nails.
 - b. Fasten to metal frame construction with steel drill screws with washers.
 - c. Attach to masonry surfaces with adhesive.
 7. Lap upstanding flashing with 4 inch minimum overlap and secure with adhesive.
 8. Tape all seams, window and door penetrations, corners, and torn or damaged areas as recommended by sheet manufacturer.

3.04 CLEANING

- A During the course of the Work and on completion, remove excess materials, equipment and debris and dispose of away from premises.

END OF SECTION

SECTION 07 2729
SELF-ADHERED WATER-RESISTIVE VAPOR PERMEABLE
AIR BARRIER SHEET MEMBRANE

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Fully adhered water-resistive vapor permeable air barrier sheet membrane system as shown on Drawings and as specified herein.
- B Related Sections:
 - 1. Section 06 10 00 – Rough Carpentry, for exterior plywood wall sheathing.
 - 2. Section 07 25 00 – Weather Resistive Barriers, for weather resistive barrier underlayment system installed under one-coat stucco system.
 - 3. Section 07 42 00 – Metal Wall Panels, for metal wall panels installed over adhered water-resistive vapor permeable air barrier membrane.

1.2 SYSTEM DESCRIPTION

- A Self-Adhered Water-Resistive Vapor Permeable Air Barrier Sheet Membrane:
 - 1. Complete system to bridge gaps and seal the water-resistive vapor permeable air barrier membrane against air leakage and water intrusion at all connections, openings and penetrations, including but not limit to the following:
 - a. Connections of the walls to the foundations.
 - b. Expansion joints.
 - c. Around openings and penetrations of window and door frames, store front and similar openings.
 - d. Around piping, conduit, duct and similar penetrations.
 - e. Around screws, bolts and similar penetrations.
 - f. All other air leakage pathways in the building envelope.
 - 2. Install primary water-resistive vapor permeable air barrier, flashing, lap seam tapes, sill pan and ventilation strip accessories to provide a fully sealed vapor permeable air barrier membrane system.

1.3 SUBMITTALS

- A Product Data: Submit manufacturer's specifications, design data and installation instructions for the water-resistive vapor permeable air barrier membrane components and accessories.
- B Submit samples of the following:
 - 1. Manufacturer's sample warranty.
 - 2. Water-resistive vapor permeable air barrier sheet, minimum 8 by 10 inches.
 - 3. Components, minimum 12-inch lengths.
 - 4. Membrane flashings.
 - 5. Fasteners, clips, strapping and other anchors for rainscreen cladding materials.
 - 6. Sealants.
- C Certificates: Submit manufacturer certification that products furnished meet

specification requirements.

1.4 QUALITY ASSURANCE

- A Single Source: Self-adhered water-resistive vapor permeable air barrier membrane components and accessories must be obtained as a single-source membrane system to ensure total system compatibility and integrity.
- B Manufacturer Qualifications:
 - 1. Manufacturer of specified products listed in this Section to have minimum 10 years of continued experience in the manufacture and supply of highly vapor permeable water resistive air barrier products successfully installed in similar project applications.
 - 2. Manufacturer of specified products listed in this Section to have experienced in- house technical and field observation personal qualified to provide expert technical support.
- C Fire Performance Characteristics: Provide water-resistive barrier meeting the following fire-test characteristics.
 - 1. Surface-Burning Characteristics: ASTM E84 Class A Rated.

1.5 DELIVERY, STORAGE AND HANDLING

- A Comply with manufacturer's recommendations for proper storage and handling.
- B Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C Store roll materials on end in original packaging. Protect rolls from direct sunlight and inclement weather until ready for use.

1.6 COORDINATION

- A Ensure continuity and proper shingling of the self-adhered water-resistive vapor permeable air barrier system throughout the scope of this section.

1.7 WARRANTY

- A Provide manufacturer's standard material warranty in which manufacturer agrees to provide replacement material for the self-adhered water-resistive vapor permeable air barrier sheets installed in accordance with manufacturer's instructions that fails due to material defects within 20 years of the date of Purchase.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish products of the following manufacturer, except as otherwise approved by the Architect, subject to compliance with specifications requirements:
 - 1. VaproShield LLC www.vaproshield.com

2. Grace Perm-A-Barrier VPS, GCP Applied Technologies www.gcpat.com
3. Soprema Lastobond Shield HT Self-Adhered Underlayment www.soprema.us
4. Equivalent as approved by Architect.

- B. Basis of Design: WrapShield SA Self-Adhered Water-Resistive Vapor Permeable Air Barrier Sheet by VaproShield.

2.2 MATERIALS

- A Fully self-adhered air barrier sheet membrane shall be WrapShield SA Self-Adhered

Water-Resistive Vapor Permeable Air Barrier sheet membrane by VaproShield, a zero VOC fully self-adhered vapor permeable air barrier sheet membrane consisting of multiple layers of spun-bonded polypropylene tested in accordance with industry standards and the following properties:

1. Color: Orange with allowable UV exposure for 180 days.
2. Adhesive: 100 percent coverage on back or wall side of membrane (not spot applied), vapor permeable, with Zero VOC's.
3. Air Leakage: Less than 0.002 cfm/sq. ft @ 1.57 psf when tested in accordance with ASTM E2357 and less than 0.00002 cfm/sq. ft @ 1.57 psf when tested in accordance with ASTM E2178. Meets Air Barrier Association of America (ABAA) requirements for "Adhesive Backed Commercial Building Wraps".
4. Water Vapor Permeance tested to ASTM E398-13: average of 50 perms.
5. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage.
6. Breaking strength and Elongation to ASTM D 5034: 88 lbf, machine direction; 83 lbf, cross-machine direction.
7. Application Temperature: Ambient temperature must be above 20 degrees F.
8. Surface Burning Characteristics tested to ASTM E 84: Class A, Flame-spread index of less than 5, Smoke-developed index of less than 15.
9. Physical Dimensions: 0.022 inches thick and 59 inches wide and 97.06 oz/sq.ft.

- B. Water-Resistive Vapor Permeable Transition and Flashing Membrane:

1. Self-adhered air barrier transition and flashing membrane shall be VaproFlashing SA by VaproShield, a zero VOC fully self-adhered water-resistive vapor permeable sheet membrane having the following properties:
 - a. VaproFlashing SA Orange: 11-3/4 inches or 19-2/3 inches wide x 164 feet long
 - b. Air Leakage: less than 0.002 cfm/sq. ft @ 1.57 psf when tested in accordance with ASTM E2357 and <0.00002 cfm/sq. ft @ 1.57 psf when tested in accordance with ASTM E2178
 - c. Water Vapor Permeance tested to ASTM E398-13 : average 50 perms.
 - d. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage.

- C. Vapor Permeable Water Resistive Flashing for Rough Openings:

1. Window and door flashing shall be VaproLiqui-Flash by VaproShield, a liquid- applied vapor permeable air barrier flashing material with vapor permeance and resistance to air leakage properties compatible with the primary air barrier membrane.

- D. Penetration Sealant: Provide sealant for penetrations as recommended by

manufacturer and as specified under Section 07 92 00 – Sealants. Acceptable products include the following:

1. Dow 758
2. VaproLiqui-Flash.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine surfaces and conditions are ready to accept Work of this Section and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B All surfaces must be dry, sound, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the water resistive air barrier membrane and flashings. Fill voids and gaps in substrate greater than 7/8 inch in width to provide an even surface. Strike masonry joints full-flush.
- C Minimum application temperature self-adhered membrane and flashings to be above 20 degrees F.
- D Ensure all preparatory Work is complete prior to applying primary self-adhered vapor permeable air barrier sheet membrane.
- E Mechanical fasteners used to secure sheathing boards or penetrate sheathing boards shall be set flush with sheathing and fastened into solid backing.
- F Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION - GENERAL

- A Self-adhered vapor permeable air barrier sheets may be installed vertically or horizontally over the outside face of exterior sheathing board or substrate.
- B Complete detail Work around corners, wall openings, building transitions and penetrations prior to field applications.
- C Install self-adhered vapor permeable air barrier sheet over the outside face of exterior sheathing board or substrate, measure and pre-cut into manageable sized sheets to suit the application conditions.
- D Install fully self-adhered vapor permeable air barrier sheet complete and continuous to substrate in a sequential minimal 3 inch overlapping weatherboard method starting at bottom or base of wall and working up.
- E Stagger all end lap seams.
- F Roll installed membrane with roller to ensure positive contact and adhesion with substrate.

3.3 BUILDING TRANSITION CONDITIONS

- A Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials with self- adhering air barrier transition and flashing membrane.
- B Align and position self-adhered air barrier transition and flashing membrane, remove protective film and press firmly into place. Provide minimum 3 inch lap on to substrates.
- C Ensure minimum 3 inch overlap at side and end laps of membrane and 6 inch at inside and outside corners.
- D Roll membrane and lap seams with roller to ensure positive contact and adhesion.

3.4 MECHANICAL EQUIPMENT PENETRATIONS

- A Mechanical pipe, electrical conduit and/or duct work must be secured solid into position prior to installation of self-adhered vapor permeable air barrier membrane.
- B Electrical services penetrating the wall assembly and self-adhered vapor permeable air barrier membrane must be placed in appropriate conduit and secured solid into position.
- C Install manufactured flanged penetration sleeves as recommended by sleeve manufacturer.
- D For straight sided penetrations, cut and fit self-adhered vapor permeable air barrier to accommodate sleeve, install specified single sided flashing tape to seal the air barrier membrane to ductwork or preformed flange sleeve.
- E For all penetrations, refer to manufacturer's standard details.

3.5 WINDOW, DOOR AND OTHER WALL OPENINGS

- A To avoid waste, predetermine best method and sequence to the install fully self-adhered vapor open air barrier transition and flashing membrane, VaproFlashing SA by VaproShield around window or wall openings subject to the opening size and installation of window, door or louver type.
- B VaproFlashing SA fully self-adhered air barrier transition and flashing membrane installed 2-3/4 inch into rough wall openings for the sill, jambs and head. It is not required to install continuous sheets through corners.
- C Remove release film, align flashing membrane and apply pressure to ensure positive contact. Roll Lap seams to ensure adhesion. Provide lap seams to shedwater.
- D Vapor Permeable Water Resistive Flashing for Rough Openings:
 - 1. Liquid-applied window and door flashing shall be VaproLiqui-Flash by VaproShield, a liquid-applied vapor permeable air barrier flashing material with vapor permeance and resistance to air leakage properties compatible with the primary air barrier membrane.
 - 2. Apply a 12-15 wet mil coating onto the installed VaproFlashing SA, 1 inch onto the face continuing into the rough opening, covering the 2-3/4

inch VaproFlashing SA and the exposed rough opening surface.

3.6 VERTICAL APPLICATIONS

- A For vertical applications, align sheets with an 'inside' or 'outside' corner to avoid wrinkles and mis-alignment of subsequent applications.
- B Measure and pre-cut into manageable sized self-adhered sheets to suit the application conditions.
- C Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.
- D Roll up pre-cut material lengths with release paper facing Outward.
- E Starting at a corner of the roll, peel back approx. 6 inch of release paper from across the width of the pre-cut material roll.
- F Using hand pressure, lightly apply the exposed adhesive surface to the substrate.
- G Allow the rolled up material to drop down the wall, with the remainder of the release paper still attached (facing the wall), and extend down to lowest point of wall, checking for proper alignment, repositioning as necessary.
- H Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.
- I Align and position fully self-adhered membrane, remove release film and press firmly into place. Provide minimum 3 inch overlap at side and end laps of membrane.
- J Continue to remove release film and apply pressure to ensure positive contact onto wall substrate.
- K Install subsequent sheets of fully self-adhered vapor permeable air barrier sheets in overlapping weatherboard format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.
- L Refer to Manufacturer's current internet site for the most current and complete installation instructions.

3.7 HORIZONTAL APPLICATIONS

- A For horizontal applications, align sheets and begin installation of water-resistive weather barrier at bottom or lowest point of wall.
- B To avoid wrinkles and misalignment of subsequent applications, it is recommended to pre- mark or "Snap" a level line to work from.
- C Measure and pre-cut into manageable sized sheets to suit the application conditions.
- D Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.

- E. Align and position fully self-adhered membrane, remove release film and press firmly into place. Provide minimum 3 inch (76.2 mm) overlap at all side and end laps of membrane. Roll membrane and lap seams with roller to ensure contact and adhesion.
- F. Continue to remove release film and apply pressure to ensure positive contact onto wall substrate.
- G. Install subsequent sheets of fully self-adhered vapor permeable air barrier sheets in overlapping weatherboard format. Ensure sheets lay smooth and flat to surfaces. Roll membrane and lap seams with roller to ensure contact and adhesion.
- H. Refer to Manufacturer's current internet site for the most current and complete installation instructions.

3.8 FASTENING CLIPS AND MASONRY TIES

- A. Install clips and masonry ties over primary self-adhered vapor permeable air barrier membrane.
- B. Secure clips and masonry ties with corrosion-resistant, or stainless steel screws with gasketed fasteners.
- C. Consult Manufacturer's Technical Services for recommendations on appropriate masonry tie types and methods to seal penetrations.

3.9 FIELD QUALITY CONTROL

- A. Make notification when sections of work are complete to allow review prior to covering fully self-adhered water-resistive vapor permeable air barrier system.
- B. Owner to engage independent consultant to observe substrate and membrane installation prior to placement of cladding system(s) and provide written documentation of observations.

3.10 PROTECTION

- A. Protect wall areas covered with self-adhered water-resistive vapor permeable air barrier from damage due to construction activities, high wind conditions, and extended exposure to inclement weather.
- B. Review condition of fully self-adhered water-resistive vapor permeable air barrier prior to installation of cladding. Repair, or remove and replace damaged sections with new membrane.
- C. Recommend to cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed fully self-adhered water-resistive vapor permeable air barrier installations.
- D. Remove and replace water-resistive weather barrier membrane affected by chemical spills or surfactants.

3.11 CLEANING

- A. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 4200
METAL WALL PANELS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes metal wall panels of the following types, as indicated on Drawings and as specified herein:
 - 1. Preformed, standing seam metal wall panels and associated flashings and trim.
- B. Related Sections:
 - 1. Section 07 2729 – Self-Adhered Water-Resistive Vapor Permeable Air Barrier Sheet Membrane, for fully adhered water-resistive vapor permeable air barrier sheet membrane system installed under metal wall panels.

1.2 DESIGN REQUIREMENTS

- A. Performance Requirements:
 - 1. Provide panels that have been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.
 - 2. Structural Properties: Metal wall panel system including anchorages and related components shall be engineered to withstand applicable loads including live, dead, positive and suction wind, seismic, etc. Fastener strength and connection strength shall be analyzed and engineered.
 - a. Panels and fasteners shall be designed for component and cladding wind loads determined in accordance with the more stringent of either the local building code or ASCE 7-98, or IBC 2018 for the following:
 - 1) Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall as calculated in accordance with applicable code.
 - a) Design Wind Speed: In accordance with General Structural Notes on Structural Drawings.
 - b) Component and Cladding Wind Loads: In accordance with General Structural Notes on Structural Drawings.
 - 2) Design corners for simultaneous positive design pressures on both surfaces, and simultaneous negative pressures on both surfaces. Partial loading on the surface shall be considered.
 - 3. Water Penetration: No water penetration when tested according to ASTM E331 at a minimum differential pressure of 20 percent of inward-acting, wind-load design pressure of not less than 6.24 lbf/sq. ft. and not more than 12 lbf/sq. ft.
 - 4. Provisions for Thermal Movement: Design the system to provide for such expansion and contraction of component materials caused by an exterior ambient temperature ranging from 20 degrees F to surface temperature of 180 degrees F without causing undue stress on structural elements, damaging loads on fasteners, reduction of performance, or other detrimental effects. The amount of movement that is accommodated in the design shall be identified on Shop Drawings.
 - 5. Maximum Deflection under Design Loads: 1/240 of span.

1.3 SUBMITTALS

- A. Shop Drawings: Submit shop drawings indicating thickness and dimensions of panels, flashing and anchoring methods, and detail and location of joints; including joints necessary to accommodate thermal movement.
- B. Product Data: Submit manufacturer's product literature for panel system and accessory materials.
- C. Samples: Submit two samples, 12 inches x 12 inches minimum, showing type of metal and thickness (gauge).
- D. Test Reports: Submit test reports indicating compliance of products with project requirements.
- E. Installer Qualifications: Submit list of completed projects and name of Architects.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with the following:
 - 1. SMACNA Architectural Sheet Metal Manual.
 - 2. Panel Fabricator/Manufacturer's printed installation instructions.
- B. Qualifications:
 - 1. Manufacturer Qualifications: Wall panels including trims, clips, flashings and other associated materials shall be products of a wall panel manufacturer specializing in design and development of types of wall panels required for this Project for a period of not less than 10 years with documented experience of completed projects similar to size and complexity of this project.
 - 2. Installer Qualifications: Engage an experienced installer who has completed metal wall panel assemblies similar in material, design, attachment method and extent to that indicated for this Project and with a record of successful in-service performance. Provide evidence of installer participation in Manufacturer's installation training courses.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact.
- B. Storage and Handling:
 - 1. Keep panels and accessory items dry.
 - 2. Protect against damage and discoloration.
 - 3. Handle panels with non-marring slings.
 - 4. Do not bend panels.
 - 5. Store panels above ground, with one end elevated for drainage.
 - 6. Protect panels against standing water and condensation between adjacent surfaces.
 - 7. If panels become wet, immediately separate sheets, wipe dry with clean cloth, and keep sheets separate for air-drying.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal wall panels to be performed according to

manufacturers' written instructions and warranty requirements.

1.7 WARRANTY

- A. Contractors Warranty: Warrant panels, fasteners and accessories against defective materials and/or workmanship for two (2) years following Project Substantial Completion date.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish corrugated metal wall panel products of one of the following manufacturers, except as otherwise approved by Architect, subject to compliance with specifications requirements:
1. AEP-SPAN www.aepspan.com
 2. Atas International, Inc. www.atas.com
 3. Berridge Manufacturing Co. www.berridge.com
 4. www.cortenroofing.com
 5. Firestone Metal Products www.firestonemetal.com
 6. MBCI Metal Roof and Wall Systems www.mbcicom
 7. Metal Sales Manufacturing Corp. www.mtlsales.com
 8. Request for substitutions will be considered in accordance with Section 01 6000.
- B. Basis of Design Products: Metal panels are based on products specified as manufactured by Atas International, Inc.

2.2 MATERIALS

- A. Recycled Content: Provide steel products with a postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Regional Materials: To comply with this credit, metal panel components must be extracted, harvested, or recovered, and manufactured assembled within five hundred (500) miles of the jobsite.
- C. Unfinished Metal: ASTM A653 Structural Quality, Grade 40, G90 Coating, hot dipped galvanized.
- D. Prefinished Metal: Hot-dipped galvanized, ASTM A653 Structural Quality, Grade 40, G90 coating 24 gauge core steel.
1. Finish: Full strength Kynar 500/Hylar 5000 Fluorocarbon coating, applied by the Manufacturer on a continuous coil coating line, with top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil.
 - a. Bottom side: Coated with primer with a dry film thickness of 0.25 mil.
 - b. Finish: Conform to all tests for adhesion flexibility, and longevity as specified by the Kynar 500 finish supplier.
 - c. Color: As scheduled on Drawings or as otherwise selected by Architect from manufacturer's full range of colors and finishes.
- E. Strippable film: Liquid applied to top side of painted coil to protect finish

during fabrication, shipping and field handling.

- F. Fasteners: Self-tapping screws and other suitable fasteners designed to withstand design loads. Manufacturer shall provide or authorize all fasteners utilized with the wall panel system.
 - 1. Length of fasteners shall be sufficient to penetrate to structural supports with a minimum of three screw threads, but not less than required to comply with performance requirements.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or screws spaced to resist wind uplift loads.

2.3 METAL WALL PANELS

- A. Integral-Standing-Seam Metal Roof Panels: Formed with integral ribs at panel edges and flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and lapping and interconnecting side edges of adjacent panels.
 - 1. Basis-of-Design Product: ATAS International, Inc.; or a comparable product as approved by the Architect from one of the specified manufacturers.
 - a. Texture: Smooth.
 - b. Pan Coverage: Alternating widths as indicated on Drawings, 11 inches,
 - c. Seam Height: 1-1/2 inches
 - d. Color: to be approved by Architect

2.4 ACCESSORIES

- A. Underlayment: As specified in Section 07 2729.
- B. Sealing Tape: Pressure-sensitive, 100 percent solid polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non-sag, non-toxic, non- staining tape.
- C. Elastomeric Joint Sealant: ASTM C 920, of base polymer, type, grade, class, and use classifications required to produce joints in sheet metal wall panels that will remain weathertight, as specified in Section 07 92 00.
- D. Expansion-Joint Sealant: For hooked-type expansion joints, which must be free to move, provide non-setting, non-hardening, non-migrating, heavy-bodied polyisobutylene sealant.
- E. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15 mil dry film thickness per coat.
- F. Metal Wall Panel Accessories: Provide components required for a complete metal wall panel system including trim, copings, end fold panels, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels, unless otherwise indicated. All trim and flashing components shall be supplied in a minimum of 12'-0" lengths and shall conform to manufacturer's standard part dimensions and details.
 - 1. Flat Clip, 24 ga. Galvanized steel clips designed to withstand negative-load requirements.
 - 2. Closures: Closed-cell, expanded, cellular, rubber or cross linked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight

- construction.
3. Sealants as recommended by manufacturer.

2.5 FABRICATION - GENERAL

- A. Field Measurements: verify prior to fabrication.
- B. General: Fabricate metal wall panels and components to comply with details shown, manufacturers installation details and recommendations in SMACNA's "Architectural Sheet Metal Manual" and NRCA Waterproofing Manual that apply to the design, dimensions (pan width and seam height), geometry, metal thickness, and other characteristics of installation indicated. Fabricate metal wall panels and accessories at the manufacturer's location to the greatest extent possible.
- B. Fabricate metal wall panels to allow for expansion in running work sufficient to prevent leakage, damage, and deterioration of the Work. Form exposed sheet metal work to fit substrates without excessive oil canning, buckling, and tool marks, true to line and levels indicated, and with exposed edges folded back to form hems.
1. Fold and cleat ends as required by manufacturer to insure weathertightness and wind uplift resistance.
- C. Metal Protection: Where dissimilar metals will contact each other, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturers of dissimilar metals or by fabricator.
- D. Sheet Metal Accessories: Custom fabricate flashings and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Obtain field measurements for accurate fit before fabrication.
1. Hem exposed edges on underside 1/2 inch.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal wall supports, and other conditions affecting performance of work.
1. Surfaces to receive panels shall be even, smooth, sound, clean, dry, free of ice and snow, and free from defects.
- B. Examine roughing-in for components and systems penetrating metal wall panels to verify actual locations of penetrations relative to joint locations of metal wall panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Protection:

1. Treat any contacting surfaces of dissimilar materials to prevent electrolytic corrosion.
 2. Protect panels against damage and discoloration from work of other trades.
 3. Do not allow panels to contact treated lumber.
- B. Underlayment: Self-adhered water-resistive, vapor permeable air barrier sheet membrane shall be properly installed as specified in Section 07 2729.

3.3 INSTALLATION

- A. General: Anchor standing seam metal wall panels and accessory components of the Work securely in place, with provisions for thermal and structural movement.
1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required for a complete metal wall panels system and as recommended by the manufacturer of the standing seam metal wall panel system.
 2. Anchor panels in pattern and arrangement indicated on Drawings and approved Shop Drawings.
 3. Install flashing, starter and edge trim before installing wall panels. Install flashing and trim materials in compliance with details on Drawings and approved Shop Drawings.
 4. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb with seams parallel.
 5. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement to comply with performance requirements.
 6. Flash and seal metal wall panels with weather closures at top of panels and at perimeter of all openings. Fasten with self-tapping screws.
 7. Locate splices over, but not attached to, structural supports. Stagger splices and end laps to avoid a four-panel lap splice condition.
 8. Lap metal flashing over metal wall panels to allow moisture to run over and off the material.
 9. Field cutting of metal wall panels by torch is not permitted.
- B. Fasteners: Use fasteners of size and length as required for compatibility with substrate.
- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by fabricator of metal wall panels or manufacturers of dissimilar metals.
1. Separate metal wall panels with bituminous coating where wall panels will contact wood, ferrous metal, or cementitious construction.
- D. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- E. Cutting and Fitting: Comply with manufacturer's recommendations using manufacturer's recommended tools.
1. Neat, square, and true. Provide tight fit to adjacent or penetrating construction with consistent gap of minimum sufficient width to allow thermal and building movement.
 2. Openings 6 inches and larger in any direction: Shop fabricate and reinforce to maintain original load capacity.
 3. Openings less than 6 inches in largest dimension: Made by trade requiring opening.
 4. Field cutting of metal wall panels by torch is not permitted.

- F. Completed system shall be free from overbending, deforming, stretching, distortion, waves, and buckles.
- G. Do not allow panels or trim to come into contact with dissimilar materials.
- H. Protect installed wall panels and trim from damage caused by adjacent construction until completion of installation.

3.4 TOLERANCES

- A. Finished Work Tolerances: Do not exceed the following deviations from level and plumb, and from elevations, locations, and alignments shown:
 - 1. Alignment between adjacent panels: 1/8 inch in 10'-0" in all directions;
 - 2. Lippage: 1/16 inch maximum.
 - 3. Maximum Variation in Joint Width: 1/16 inch over total length of each vertical or horizontal panel joint or cut edge between adjacent finish.

3.5 CONSTRUCTION WASTE MANAGEMENT, REPAIR, CLEANING AND PROTECTION

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. Clean exposed surfaces of panels that are not protected by temporary covering to remove fingerprints and soil during construction period.
 - 1. Clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Protect panels from damage during construction. Use temporary protective coverings where needed as approved by the panel manufacturer.
- D. Touch-up, repair or replace damaged products immediately before Substantial Completion.
- E. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 5713
COATED FOAMED ROOFING**

PART 1 GENERAL

1.1 SUMMARY

- A Section includes sprayed-in-place zero ozone depleting polyurethane foam insulation, acrylic coating, aggregate and cementitious traffic topping for walkways.

1.2 SUBMITTALS

- A Product Data: Submit manufacturer's literature and technical data (specifications, installation instructions and evidence of UL, ICC, CCRC, "Energy Star" and FMG ratings, as applicable) on foam, protective coating, primer and complete system, including manufacturer's Letter of Certification that their products meet and comply with the materials and intent of the Specification, and manufacturer's application or installation instructions.
- B. Certificates:
1. Submit notarized Contractor/Applicator certification from polyurethane foam supplier and/or protective coatings manufacturers as evidence of Contractor/applicator qualification and experience.
 2. Provide manufacturer's certification that products approved are products installed on the Project.
- C. Shop Drawings: Submit shop drawings indicating drainage pattern, slopes, and depth of foam at drain, cants, crickets and other critical locations. Include walkway locations with cementitious coating.
- D. Submit ICC Evaluation Service Report showing compliance with specified requirements, equal to ICC ER-3182.
- E. Submit sample of completed roof system showing surface texture and finished thickness of polyurethane foam, color and thickness of composite roof system products.

1.3 QUALITY ASSURANCE

- A. Qualifications:
1. Foam and Coating Manufacturer Qualifications: 5 years of successful installations on which its products have been used in conjunction with sprayed polyurethane foam roofs.
 2. Foam/Coating Contractor Qualifications:
 - a. Prior experience in handling and spraying polyurethane foam of the type specified and possessing a thorough knowledge in the use of the required spray equipment.
 - b. Approved by the protective coating manufacturer for single component systems and shall qualify for manufacturer's 10 year no leak system warranty.
 3. Applicator Qualifications: Trained by the polyurethane foam manufacturer with minimum of 5 years experience in spray application of polyurethane foam roofing with at least 500,000 square feet of applied roof coating in satisfactory condition.
 - a. Individual mechanics shall be workers experienced and regularly engaged in the spray application of polyurethane foam in roofing

systems.

- B. Regulatory Requirements:
 - 1. Roofing system shall be UL 790 Class A over noncombustible deck and shall conform to ASTM Test Standards, ICC, and FMG requirements.
 - 2. Insulation and foam shall have Class A flame spread in accordance with ASTM E108.
 - 3. Constituent material containers shall be UL labeled in accordance with the system UL follow-up service agreement.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with manufacturer's instructions.

1.5 PROJECT/SITE CONDITIONS

- A. Neither the acrylic roof coating nor the polyurethane foam shall be applied during periods of inclement weather (rain, snow, fog, mist or high humidity).
- B. Do not apply the polyurethane foam when substrate or ambient air temperatures are below 50°F unless specifically approved in writing by the polyurethane foam manufacturer.
- C. Do not apply the polyurethane foam when the substrate surface is less than 5°F above the dew point.
- D. Do not apply acrylic roof coating when weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Do not apply in late afternoon if heavy moisture condensation may appear during the night.
- E. When wind speeds exceed 10 miles per hour at the job site, windscreens shall be used during the application of the surface primer, polyurethane foam and acrylic roof coating to prevent overspray onto surfaces not intended to receive foam and coating. Under no circumstances shall the surface primer, polyurethane foam or acrylic roof coating be applied when wind speeds exceed 25 miles per hour.

1.6 WARRANTY

- A. Provide manufacturer's 20 year full system warranty. Written warranty shall include materials and labor required to repair water leaks in the protective coatings system, including auxiliary materials, caused by deterioration resulting from ordinary weather conditions.

PART 2 PRODUCTS

2.1 MATERIALS

A. Primer/Sealer: Per manufacturer's specific recommendations. Primer shall be formulated to be airless sprayed and designed expressly to enhance adhesion of urethane foams to the substrates applicable to this project.

B. Polyurethane Foam Insulation:

1. Basis of Design: BASF Elastospray 81285
2. The polyurethane foam system must be a two component, Zero-ODP (Ozone Depleting Potential), product.
3. Physical Property Requirements:

Property	Value	Test Method
Density, sprayed-in-place, pcf, min.	2.8	ASTM D-1622
Compressive Strength, psi, min.	50	ASTM D-1621
Closed-cell Content, percent, min.	>90%	ASTM D-2856
K-Factor, aged, max.	.15(R=6.3/in)	ASTM -518
Dimensional Stability, 28 days, 158°F, 100% R.R., percent volume change, max.	+2.5%	ASTM D-2126
Flame Spread, max.	75	ASTM E-84

4. Approved Manufacturers: Provide sprayed foam insulation products by one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
 - a. BaySystems www.baysystemsspray.com
 - b. BASF www.basf.com
 - c. Gaco Western www.gaco.com
 - d. Pro-Tech Products www.pro-techproducts.com
 - e. SWD Urethane Company www.swdurethane.com

C. Acrylic Roof Coating:

1. Basis of Design: United Coatings – Diathon.
2. The acrylic roof coating shall be Energy Star listed, have a Solar Reflective Index value of 107 and meet ASTM D-6083 standards, along with the physical property requirements listed herein.
3. Typical physical properties per ASTM D-6083:

Property	Method	Result
Initial Tensile Strength (psi)	ASTM D-2370	222
Initial Elongation (%)	ASTM D-2370	135
Wet Adhesion (pli)*	ASTM C-749, D-903	5.7
Tear Resistance (lbf/in)	ASTM D-624	87
1000-hr Accelerated Weathering	ASTM D-4798	No Cracking or Checking
Elongation After Accelerated Weathering (%)	ASTM D-2370	161
Low Temperature Flexibility After Accelerated Weathering	ASTM D-522	Pass
Permeance (perms)	ASTM D-1653	13.98

Water Swelling (%)	ASTM D-471	17.05
Fungi Resistance (zero=No Growth)	ASTM G-21	Zero Rating
Volume Solids (%)	ASTM D-2697	52
Weight Solids (%)	ASTM D-1644	65
Viscosity (KU)	ASTM D-562	101
*Measured Over Sprayed Polyurethane Foam		

4. Approved Manufacturers: Provide sprayed foam insulation products by one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
- a. BaySystems www.baysystemsspray.com
 - b. BASF www.basf.com
 - c. Gaco Western www.gaco.com
 - d. Pro-Tech Products www.pro-techproducts.com
 - e. SWD Urethane Company www.swdurethane.com
 - f. United Coatings; Quest Construction Products www.quest-cp.com

- D. Cementitious Traffic Topping and Aggregate (for use at roof walkways):
1. Basis of Design: United Coatings Traffic Guard with an SRI of 98 minimum. Traffic Topping shall be Energy Star Rated.
 2. Aggregate shall be clean and No. 6 in size.

- E. Sealant
1. Basis of Design: United Coatings Roof Mate Buttergrade in a color to best match the topcoat color.

- F. Substrate Primer:
1. Primer shall be a water based epoxy primer for use over concrete.
 2. Approved Primers:
 - a. United Coatings Uniseal Black

- G. Sheet Metal Flashings: In accordance with Section 07 6000.

2.2 EQUIPMENT

- A. Polyurethane foam shall be applied using proportioning equipment which provides thermostatically controlled material temperatures as recommended by the foam manufacturer.
1. Hoses between the proportioner and spray gun shall be temperaturecontrolled.
 2. Contractor shall not change the formulation ratio of the sprayequipment.
 3. Contractor shall not be allowed to use a refrigerant injection system.
 4. When cleaning or servicing spray gun, exercise extreme care so as not to contaminate roof surface with solvents.
- B. Other Equipment: Contractor shall have at all times in close proximity to the spraying operation sufficient buckets to counteract equipment problems without depositing defective material on the deck or on the site.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect.
1. Prior to the application of roofing materials, the Contractor shall examine the

roof deck, flashings, and other surfaces that are to receive roofing materials to ensure that surfaces are true, even, clean, dry, and free of dust, dirt, debris, oil, solvents and all material that may adversely affect the adhesion of the surface primer, polyurethane foam or acrylic coating.

2. All penetrations through roofing including drains, scuppers, miscellaneous pipe and vent penetrations, and electrical conduits shall be completed prior to the starting of work.
3. The Contractor shall report in writing to the Owner anything or condition not to the Contractor's satisfaction prior to proceeding with the work of this section.
4. Application of roofing material shall constitute the roofing Contractor's acceptance of surfaces and flashings to receive the materials.

B. Commencement of Work will be construed as acceptance of subsurfaces.

C. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 SURFACE PREPARATION

A. General Area:

1. Notify construction personnel on site and visitors and protect adjacent construction of fugitive overspray.
2. Cars, etc., shall be moved or covered to prevent inadvertent spraying. Contractor shall coordinate subcontractor traffic during roof operations.
3. Provide barricades as required and place them in a way to be in an adequate and sufficient number so that there is no doubt that the area is completely barricaded off.
4. Use appropriate barricading methods to shelter walking traffic from the work area's equipment and overspray.
5. Any damage caused during this construction process shall be restored to pre-project condition or replaced at the Contractor's expense.
6. Provide protective covering as needed to protect building walls, adjacent structures and vegetation, etc., from the effects of the spraying process.
7. When work is finished, no evidence of re-roofing work shall be visible from the ground level, other than the work on the roofing plane.

B. Roof Deck Surface Preparation:

1. General:
 - a. Free from dust, loose and foreign materials. Provide a clean and smooth surface ready for installation.
 - b. Surface shall be dry before commencement of roofing application.
 - c. Deck shall be kept clean and free of loose and foreign material other than tools and equipment of the roofer.
 - d. Metal surfaces shall be free of moisture, rust, dirt and other foreign materials.
 - e. Oils or other foreign materials, attached to the roof decking that prevent satisfactory adhesion, shall be cleaned for the deck.
2. Wood Surfaces:
 - a. Plywood substrates shall be exterior grade not less than 15/32 inches thick, exterior grade or Exposure 1 plywood. All plywood edges must be supported by blocking or have tongue and groove joints as required by IBC Section 2603.4.1.5. Attachment must meet building code requirements for resistance to wind uplift. Deflections should not exceed 1/240 of the span.
 - b. The plywood shall contain no more than 18 percent moisture by weight, as measured in accordance with ASTM D2016.

- c. All untreated and unpainted surfaces shall be primed with an appropriate, approved primer to minimize moisture absorption and aid in the polyurethane foam adhesion.
 - d. Any joints greater than 1/4 inch shall be caulked or taped prior to the polyurethane foam application.
 - e. Remove all loose dirt, dust and debris using air pressure, a hand or power broom and/ or a vacuum. Power washing is not recommended as it may introduce water into the substrate. Oil, grease and other contaminants must be removed using appropriate cleaning solution.
 - f. Make sure all surfaces are clean and dry prior to polyurethane foam application.
3. Other Surfaces: Contact manufacturer's technical service department for recommendations of surface preparations on other surfaces to receive the acrylic/polyurethane foam roof system.

C. Cants and Crickets

1. The required drainage slope gradients shall be as are required to meet the various drainage sources.
2. Cants shall be formed with the spray polyurethane foam, as it transitions from the deck surface up the parapet wall.
3. Crickets may be constructed as follows:
 - a. Using 1/2 inch CDX plywood and structural lumber adhered mechanically to the substrate and vertical walls.
 - b. With the spray polyurethane foam (within certain sloping requirements). If it is required that the crickets are to be constructed out of polyurethane foam, the details shall be indicated on the Drawings or approved shop drawings to indicate the depth of foam required at the high points and the required drainage slope gradients to the various drainage sources.
 - c. Using tapered insulation board secured to the substrate with an adhesive recommended by the tapered board manufacturer or mechanically fastened. The crickets shall be covered with 1 inch of sprayed polyurethane and the specified coating.

3.3 INSTALLATION — SURFACE PRIMER

- a. Application:
 1. Apply the surface primer in strict accordance with the manufacturer's application instructions.
 2. Confirm primer is cured before installing polyurethane foam insulation.

3.4 POLYURETHANE FOAM APPLICATION

- A Application:
1. Apply the polyurethane foam in accordance with the polyurethane foam manufacturer's specifications and application instructions, using spray equipment recommended by the foam manufacturer.
 2. Polyurethane foam shall be applied in a minimum of 1/2 inch thick and maximum 1-1/2 inch passes.
 3. Thickness: Minimum thickness to achieve minimum R-value OR thickness indicated on Drawings, with additional thickness as required to facilitate drainage as indicated on Drawings.
 4. Apply the full thickness of polyurethane foam in any area on the same day. Phasing of the polyurethane foam is not acceptable.
 5. Polyurethane foam shall be applied to ensure proper drainage resulting in no ponding water. Ponding water is defined as "an area of 100 square feet or

more which holds in excess of 1/2 inch of water as measured 24 hours after rainfall.”

6. The polyurethane foam shall be terminated neatly a minimum of four inches above the finished roof surface at roof penetrations. Foamed-in-place cants shall be applied to allow a smooth transition from the horizontal to vertical surface. Crickets shall be constructed of spray applied polyurethane insulation. The finished polyurethane foam surface texture shall be smooth to orange-peel, free of voids, pinholes and depressions. Verge of popcorn texture is acceptable if it can be thoroughly and completely coated. Popcorn and tree bark textures are not acceptable. Unacceptable foam textures shall be removed and refoamed prior to coating application.

B. Parapets

1. The polyurethane foam shall extend up parapets as indicated on the Drawings.
2. If it is required that the polyurethane extend up to the top of the parapet wall, then the vertical substrate must be fastened in an acceptable manner for wind shear resistance. Foam is to be terminated, via straight line and tapered foam or optional sheet metal flashing that is acceptable to Architect.

3.5 ACRYLIC ROOF COATING, AGGREGATE & TRAFFIC TOPPING APPLICATION

A. Inspection:

1. The polyurethane foam surface shall be free of dust, dirt, debris and other contaminants that would impair the adhesion of the acrylic coating.
2. The polyurethane foam surface must be dry prior to the acrylic coating application.
3. If more than 24 hours elapse between the polyurethane foam application and the start of the acrylic coating application, the coating manufacturer shall thoroughly inspect the polyurethane foam surface for UV degradation and oxidation. If this condition is detected, the polyurethane foam surface shall be mechanically scarified, cleaned, primed and refoamed with 1/2 inch minimum thickness prior to the acrylic basecoat application.
4. Make sure all environmental conditions of Section 1.06 are met prior to acrylic coating application.

B. Application:

1. The acrylic roof coating basecoat shall be applied on the same day as the polyurethane foam application, after the polyurethane foam has been allowed to cure a minimum of one hour and in no case more than 24 hours after the installation of the polyurethane insulation.
2. Apply acrylic roof coating basecoat in a uniform application at 1.5 gallons per 100 square feet or as is required to achieve a dry film thickness of 12 mils.
3. The basecoat shall not be subjected to foot traffic or be disturbed until it is cured.
4. After the basecoat has cured, inspect the coating for pinholes, cracks, thin areas or other deviations. All deviations observed shall be caulked with buttergrade sealant and/or roller coated with additional acrylic roof coating prior to applying subsequent coats.
5. The basecoat must be cured, clean and free of all moisture prior to application of the topcoat. The topcoat shall be installed at 1.5 gallons per 100 square feet or as is required to achieve a 12 dry mil thickness. Total coating system thickness on horizontal surfaces shall be shall be 24 dry mils.
6. Topcoat shall be White Energy Star approved with a Solar Reflective Index of 107. Install a third coat minimum on all vertical surfaces to receive foam and/or coating at 12 dry mils. The total coating thickness on vertical surfaces shall be 36.

7. The acrylic roof coating shall be applied a minimum of two inches beyond all the terminated edges of the polyurethane foam. These terminations should be masked to provide a neat finished appearance.
8. It is the contractor's responsibility to ensure the minimum total dry film thickness specified is achieved throughout the entire roof area.
9. Broadcast No. 6 aggregate into the wet acrylic roof coating topcoat on horizontal roof surfaces at the application rate of 65 lbs. per 100 square feet. Hold back aggregate application one foot from perimeter roof edges, drains and scuppers.
10. Roof Walkways: Once the acrylic topcoat has fully cured, install the cementitious traffic topping into the No. 6 aggregate at an average rate of 1/4 inch to provide a tough reflective final surface in width and locations indicated on Drawings to form traffic walkways to mechanical equipment. Hold back cementitious application one foot from perimeter roof edged, drains and scuppers. Do not install cementitious material on vertical surfaces.

3.6 FIELD QUALITY CONTROL

- A. Inspections by Roofing Manufacturer's Representative:
1. The manufacturer's representative for the materials used on this project shall make inspections as outlined by the manufacturer as required to provide the specified warranty.
 2. In addition to the inspections required for the warranty, the following inspections shall be required:
 - a. Preliminary deck inspection.
 - b. One unannounced spot inspection.
 - c. Final inspection.
- B. Core Sampling:
1. The Owner reserves the right to take core samples to determine if the polyurethane foam meets the minimum density as specified and is properly bonded to the substrate.
 2. Location of core samples shall be as directed by the Owner.
 3. Core samples, if required, shall be cut by the Contractor prior to application of the protective coating and after exothermic heat is gone.
 4. Costs associated with the cutting of core samples, and repairs of cut-out sections shall be borne by the Contractor.
 5. Costs associated with testing the in-place density shall be paid for by the Owner. Tests shall be performed by an independent laboratory in accordance with ASTM D1622.

3.7 CLEANING

- A. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 6000
FLASHING AND SHEET METAL**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Flashings, sheet metal work and related items including, but not limited to:
1. Counterflashing at vertical surfaces.
 2. Flashing at roof penetrations.
 3. Scuppers, conductor heads, gutters, and downspouts.
 4. Metal copings.
 5. Other items as indicated.
- B. Related Sections:
1. Section 07 4200 – Metal Wall Panels, for flashing and trim associated with metal wall panels.
 2. Section 07 6100 – Sheet Metal Roofing, for flashing and trim associated with standing seam metal roofing.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings indicating type of material, gauge, dimensions, profiles, locations where used, fastening and anchoring methods, joints, and provisions of expansion and contraction.
- B. Samples: Submit samples of each type of prefinished metal in selected color.

1.3 QUALITY ASSURANCE

- A. Standards:
1. Comply with design and installation methods of SMACNA Architectural Sheet Metal Manual.
 2. Comply with The NRCA Roofing and Waterproofing Manual installation details.
 3. Comply with ANSI/SPRI, ES I-98.
- B. Performance Requirements: Designed and installed to withstand wind pressures in compliance with ANSI/SPRI, ES I-98, or FMG Loss Prevention Data Sheet 1-49 for Class 1-90 wind rated design, or wind load design criteria indicated on General Structural notes on Drawings, whichever is greater.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site. Do not store materials on ground.
- C. Handling: Comply with Manufacturer's instructions. Handle with care so as not to buckle or warp metal, or damage solder joints.

1.5 WARRANTY

- A. Prefinished Metal: Furnish 25 year warranty against cracking, peeling and fade for paint finish.
- B. Furnish 5 year warranty against flashing and sheet metal failure, in which contractor agrees to repair or replace flashing and sheet metal as necessary to maintain work in watertight condition during the warranty period. Warranty to cover workmanship, materials and repair or replacement of same, at no cost to Owner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Prefinished Metal:
 - 1. Hot-dipped galvanized, ASTM A653 Structural Quality, Grade 40, G90 coating 24 gauge core steel minimum, or prefinished Galvalume - ASTM A792.
 - 2. Aluminum Sheet: ASTM B 209, Alloy 3003, 3004, 3105, or 5005, Temper suitable for forming and structural performance required, but not less than H14.
 - 3. Finish: Full strength Kynar 500/Hylar 5000 Fluorocarbon coating, applied by the Manufacturer on a continuous coil coating line, with top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil.
 - a. Bottom side: Coated with primer with a dry film thickness of 0.25 mil.
 - b. Finish: Conform to all tests for adhesion flexibility, and longevity as specified by the Kynar 500 finish supplier.
 - c. Color: Custom color as indicated on Drawings or as selected by Architect.
 - 4. Strippable film: Liquid applied to top side of painted coil to protect finish during fabrication, shipping and field handling.
- B. Galvanized Steel: ASTM A653, 24 gauge minimum and as indicated, with G-60 coating. Used for sheet metal flashing and trim at concealed from view locations and concealed clips and reinforcements only.

2.2 ACCESSORIES

- A. Reglets and Counterflashings: Fry Reglet Corporation, Type SM at masonry and Concrete, or fabricated as indicated on Drawings. Provide prefabricated inside and outside reglet and counterflashing corners.
- B. Solder: ASTM B32, 50/50 type.
- C. Flux: FS O-F-506.
- D. Sealant: As specified in Section 07 92 00.
- E. Plastic Cement: ASTM D4586.
- F. Roofing Felt: ASTM D226, 15 pound type or 30 pound type.
- G. Bituminous Coating: FS TT-C-494 or SSPC paint - 12, dry film 15 mils per coat.

- H. Sheet Metal Fasteners: Galvanized steel with soft neoprene washers at exposed fasteners. Where exposed in the finished work of prefinished metal, provide fasteners with prefinished heads matching prefinished metal.
- I. Prefinished Metal Seam Sealers and Adhesives: As recommended by prefinished metal manufacturer for waterproof and weather-resistant seaming and adhesive applications of flashing and sheet metal work.
 - 1. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, nonstaining tape.
 - 2. Butyl Sealant: ASTM C1311, single-compound, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
- J. Mesh Scupper Screen: Welded wire mesh or woven wire mesh panels as indicated on Drawings as manufactured by McNichols Co. www.mcnichols.com, or McMaster Carr www.mcmaster.com.
 - 1. Type: Wire spacing as indicated on Drawings.

2.3 FABRICATION

- A. Fabricate Flashing and sheet metal from the following:
 - 1. Fabricate pre-manufactured metal coping and edge system and other exposed to view flashing and sheet metal from prefinished metal sheet.
 - 2. Fabricate flashing and sheet metal concealed from view in the finished work from galvanized steel.
- B. Fabricate sheet metal with lines, arris, and angles sharp and true, and plane surfaces free from objectionable wave, warp or buckle. Form accurate to details.
 - 1. Hem exposed edges to form a 1/2 inch wide hem on the side concealed from view.
 - 2. Provide concealed stiffeners and reinforcements as necessary to provide surfaces free of objectionable wave, warp or buckle.
 - 3. Profiles, bends, and intersections shall be even and true to line.
 - 4. Fabricate flashings as indicated on Drawings. Return and brake edges.
- C. Fabricate scuppers and downspouts in accordance with the following Figure(s) and Table(s) from the SMACNA Architectural Sheet Metal Manual and as indicated on Drawings.
 - 1. Scuppers: Figures 1-26A through 1-30C, as applicable to design indicated.
 - 2. Downspouts: Figures 1-31 through 1-36 and Table 1-9, as applicable to design indicated.
 - 3. Provide wire mesh panels in scuppers where and as detailed on Drawings.
- D. Forming, anchoring, expansion and contraction details shall conform to referenced quality standards.
- E. Provide for thermal expansion of running trim, flashing, expansion joints, and other items exposed for more than 15 feet continuous length.
- F. Fabricate cleats and starter strips of same material as sheet.
- G. Form pieces in longest practical lengths, except form flashing and fascia in 8 to 10 foot units.

- H. Fabricate coping covers and cap flashings with double-lock standing seams in accordance with SMACNA Figure 3-3, Detail No. 25, or with double-lock flat seams in compliance with Figure 3-3, Detail No. 3, per SMACNA Architectural Sheet Metal Manual. Miter all parapet coping corners.
- I. Solder and seal metal joints or use seam sealer/adhesive as recommended by prefinished metal manufacturer. After soldering, remove flux. Wipe and wash solder joints clean.
- J. Fabricate corners from one piece with minimum 18 inch long legs, with mitered corners; solder for rigidity, seal with sealant.
- K. Where prefabricated counterflashing and reglet system is used, form upper edge of counterflashing with an approved snap lock flange to engage reglet receiver and to provide a spring action at bottom edge against built-up flashing.
- L. Flashing Pans: Form sheet metal pans 6 inch nominal square size, with 3 inch upstand, and 4 inch flanges. Fill pans watertight with plastic cement.

2.4 FINISH

- A. Shop prepare and prime exposed ferrous metal surfaces of unfinished galvanized steel sheet as required to received field painted finish specified in Section 09 91 00.
- B. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 1.5 mil.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
 - 1. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
 - 2. Verify membrane termination and base flashings are in place, sealed, and secure.
 - 3. Verify substrate is dry, clean and free of foreign matter.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.
- C. Correct defects prior to installation.

3.2 INSTALLATION

- A. Installation shall conform to NRCA and SMACNA manuals.
 - 1. Slope to provide positive drainage.
 - 2. Provide sufficient hold-down clips to insure true alignment and security against wind.
 - 3. Install with 4 inch minimum overlap.
 - 4. Bed overlap joints in appropriate sealant as specified in Section 07 9200.

5. Form and lap step flashings.
 6. Allow sufficient tolerances for expansion and contraction.
 7. Insulate work to prevent electrolytic action.
- B. Expansion Seams: Maintain a watertight installation at expansion seams. Locate expansion seams as shown or if not shown, at the following maximum spacing for each general flashing use:
1. Flashing, expansion joints, gravel stops, and trim: At 10 foot intervals, 24 inches on each side of corners and intersections.
 2. Sealant-type expansion joints: Where sealant-filled expansion joints are used, embed the hooked flanges of the joint members not less than 1 inch into the sealant. Form joints to completely conceal the sealant. When ambient temperature is moderate at the time of installation (40 to 70 degrees F.), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant type joints at temperatures below 40 degrees F. Installation of sealant is specified in Section 07 92 00.
- C. Where dissimilar materials abut, provide proper separation or protection to minimize the possibility of galvanic action.
- D. Soldering:
1. Solder joints at corner fabrications.
 2. Except where other methods of joining are indicated or specified, solder joints and connections of Sheet Metal Work.
 3. Remove grease and dirt from metal surfaces to be joined.
 4. Remove flux residue by scrubbing, neutralizing with ammonia or a 5 to 10 percent solution of washing soda, followed by a clear water rinse.
 5. Assemble parts and solder using regular non-corrosive resin flux. Heat metal thoroughly to completely sweat solder through full contact area.
- E. Sealed Joints: Form nonexpansion, but movable joints in metal with flat lapped seams to accommodate elastomeric sealant to comply with SMACNA Standards. Fill joint with sealant and form metal to completely conceal sealant.
1. Seal joints at copings and at other movable, non-expansion type joints.
- F. Reglets: Install reglets in masonry, concrete or stucco to receive flashings.
- G. Counterflashing:
1. Provide metal counterflashing at top edges of built-up base flashings and at other locations indicated.
 2. Lap end joints a minimum of 3 inches. Do not solder or weld joints. Make flashing continuous at angles. Counterflashing shall overlap base flashing a minimum of 4 inches, unless otherwise indicated.
 3. Where counterflashing terminates in reglets, fasten flashing with lead wedges every 12 inches. Fill reglets continuously with synthetic rubber type sealant.
- H. Copings:
1. Place self-adhering waterproofing underlayment under coping where indicated on Drawings. Make end laps 4 inches minimum.
 2. Cover top of parapet walls with 20 gauge minimum galvanized coping formed to design shown. Coordinate installation of sheet metal coping with installation of coated foamed roofing self-adhering waterproofing underlayment. Waterproofing membrane shall be completely concealed by metal coping.

3. Extend front edge of coping covering down over the lock into a previously placed continuous cleat. Secure edge strips with nails spaced 6 inches apart.
4. Join rear edge of coping covering to adjacent flashings as indicated.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 7200
ROOF ACCESSORIES**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Roof hatches.
 - 2. Roof hatch safety railing systems.
 - 3. Roof curbs and equipment supports.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's Specifications, design data and installation instructions. B. Shop Drawings: Submit Drawings showing layout, dimensions and construction details. 1.03

1.3 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions shown on Drawings by taking field measurements; proper fit and attachment of parts is required.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specifications requirements:
 - 1. Roof Hatches and Ladder Safety Posts:
 - a. Bilco Co. www.bilco.com
 - b. Bristolite www.bristolite.com
 - c. Babcock-Davis www.babcockdavis.com
 - d. Activar Inc. Construction Products Group www.activarcpg.com
 - e. Nystrom Building Products www.nystrom.com
 - 2. Roof Curbs and Equipment Supports:
 - a. AES Inc. www.aescurb.com
 - b. Pate Co. www.patecurbs.com
 - c. Roof Products, Inc. www.rpicurbs.com
 - d. Roof Products & Systems www.rpscursbs.com
 - 3. Roof Hatch Safety Railing Systems: As specified below.

2.2 MANUFACTURED UNITS

- A. Roof Hatch: Galvanized steel, 14 gauge cover and curb, 22 gauge cover liner. 1 inch thick rigid insulation in curb and cover, 12 inch high curb.
 - 1. Size(s): Provide roof access hatch of size indicated on Drawings, based on the following products as manufactured by Bilco www.bilco.com:
 - a. Ships Ladder Hatch: Bilco Type L, 30 inches x 96 inches, or as otherwise indicated on Drawings. b. 36 x 30 inches for ladder access: Bilco Type S-20.
 - 2. Provide heavy-duty slam-type latching mechanism with heavy-duty padlock hasp.

3. Provide vandal resistant features as available.
4. Finish: Powder coat; standard color as selected.
- B. Roof Hatch Safety Railing System:
 1. Regulatory requirements:
 - a. Local building code.
 - b. OSHA Standards CFR 29 1910.23 and CFR 29 1910.27.
 2. Manufacturer(s), model(s) and description(s):
 - a. Bilco model B-Guard RL-XX, top rail, mid rail, and self closing gate, 42 inch railing height. Bilco Co. www.bilco.com
 - b. Nystrom Model No. RHSR-SS, Top rail, mid rail, and chain gate, with the hatch curb acting as the toe plate, 200-lb test load, 42 inch railing height (minimum). www.nystrom.com
 - c. Nesea Corporation, Mt. Laurel, NJ (856) 235-3111, model as applicable to hatchway ladder mounting location. www.nesea-safetyproducts.com
 - d. KeeHatch Railing System, top rail, mid rail, and chain gate designed for permanent bolt-on curb installation; The Safety Rail Source, Harleysville, PA www.thesafetyrailcourse.com
 - e. RailingReady, top rail, mid rail, and chain gate, 42 inch railing height. Acralight International www.acralight.com
 3. Materials:
 - a. Pipe: Galvanized, 1-1/4 inch ID, A53 Grade B seamed pipe or galvanized, 1-5/8 inch OD A500 seamed tube with weather-resistant plugged ends.
 - b. Flat bar: 2 x 3/8 inch thickness A36 mild steel.
 - c. Weld filler: Metal NR211 E70XX (AWS).
 - d. Chain system: 3/16-inch proof coil ASTM specification, zinc plated with quick link on fixed end. e. Pipe caps: Weather and light resistant vinyl, 1-1/2 inch deep and to fit snugly over pipe ends.
 - e. Bolts and washers: 3/8 x 2-1/2 inch grade Z, zinc plated. Fender washers for inside of hatch curb and standard flat washers outside.
 - f. Railing Clamps: Kee Klamp manufactured model 10-7 and 45-7 for 1-1/4 inch pipe.
 - g. Sealant: As recommended by manufacturer. Brackets shall be sealed per roof manufacturer's approved methods.
 - h. Factory finish: Hot dipped galvanized.
 4. Labels: Safety no hoisting warning label, model and serial # label, manufacturer identification label, patent or patent pending label.
- C. Curbs: Pate Style pc-1b, or equivalent from one of the specified manufacturers, box section design, heavy gauge galvanized steel construction, continuous mitered and welded corner seams, integral base plate, factory installed wood nailer, and insulated with 1-1/2 inch thick rigid fiberglass board insulation.
- D. Equipment Supports: Pate Style es-1, or equivalent from one of the specified manufacturers, monolithic construction, heavy gauge galvanized steel, continuous mitered and welded corner seams, integral base plate, factory installed 2 inch x 4 inch wood nailer, and heavy gauge galvanized steel counterflashing.
- E. Pipe Curb Assemblies: Pate Style pca-1, or equivalent from one of the specified manufacturers, with curb constructed of heavy gauge galvanized steel with continuous welded corner seams, factory installed wood nailer insulated with 1-1/2 inch thick rigid fiberglass board insulation, cover of acrylic clad ABS thermoplastic, including graduated step PVC, boots, adjustable stainless steel clamps and cap fastening screws. Each assembly shall include curb, cap, boots and clamps. See Drawings for size and quantity of pipe penetrations.
- F. Ladder extension (for roof hatches): Bilco Model 1 LadderUP safety post, or Bristolite Grab Bar.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Install roof specialties at locations shown or required in accordance with Manufacturer's instructions and as detailed on Drawings.
- B. Install roof hatches, equipment supports and bases, curbs and curb assemblies, at locations indicated, fastening securely to deck through curb flange.
- C. Set railing brackets in full bed of sealant and securely fasten to roof hatch curbs in compliance with manufacturer's instructions.

3.3 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 8400
FIRESTOPPING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes firestopping as shown on Drawings and as specified herein.
- B. Related Sections:
 - 1. Section 07 2100 – Building Insulation, for fire safing insulation.

1.2 SYSTEM DESCRIPTION

- A. Provide UL Classified or Warnock Hersey Listed firestopping system to prevent the spread of fire, smoke and gasses through penetrations in fire resistive walls, floors and partitions, including; but not limited to; the following areas:
 - 1. Unprotected openings and openings accommodating penetrating items such as cables, cable trays, pipes, ducts, boxes and conduits through fire rated floors, walls and smoke barriers.
 - 2. Head of wall openings between wall and connecting floor or roof deck assemblies.
 - a. Meet requirements for exposure to hose stream test.
 - b. Applicable for use with steel fluted deck floor assemblies.
 - b. Allow deflection of floor or roof above.
- B. Firestop systems shall not be intended to support live loads and traffic unless specifically approved by Testing Agency.
- C. Firestop systems shall be approved by Code Authority.
- D. Firestop products shall remain flexible where subject to movement without affecting the integrity of the product.

1.3 SUBMITTALS

- A. Product Data: Submit Manufacturer's Specifications, performance criteria, Drawings and instructions.
- B. Shop Drawings: Submit Manufacturer's complete Shop Drawings showing proposed material, reinforcement, anchorage, fastenings method of installation and UL or Warnock Hersey listing number.
- C. Test Reports: Submit UL or Warnock Hersey test report description for firestopping system.
- D. Provide certificate of compliance from authority having jurisdiction indicating approval of firestop systems.

1.4 QUALITY ASSURANCE

- A. Qualifications: Applicator with minimum of 5 years experience and approved by the materials manufacturer.

- B. Regulatory Requirements: Conform to applicable code for fire resistance ratings and surface burning characteristics:
 - 1. ASTM E 136, ASTM E 119 and ASTM E 814, as applicable.
 - 2. UL 1479 fire test to achieve required fire-rating as noted on Drawings.
 - 3. Listing:
 - a. UL Fire Resistance Directory (current edition).
 - b. WH International Listings
 - 4. UL 2079, "Test for Fire Resistance of Building Joint Systems."
- C. Pre-Installation Conference:
 - 1. Convene a pre-installation conference to review specifications and procedures with the Architect, Contractor, installer, manufacturer's representative, Owner and other trades relevant to the work, prior to ordering materials.
 - 2. Notify Architect at least 48 hours prior to starting Work.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish firestop systems acceptable to governing Code Authority from one of the following Manufacturers, subject to compliance with Specification requirements:
 - 1. U.S. Gypsum Co. www.usg.com
 - 2. Johns-Manville www.jm.com or www.jmfirestopping.com
 - 3. Tremco, Inc. www.tremcosealants.com or www.tremcofirestop.com
 - 4. RectorSeal Corporation www.rectorseal.com
 - 5. 3M Fire Protection Products www.3m.com
 - 6. Specified Technologies, Inc. www.stfirestop.com
 - 7. HILTI Firestop Systems www.hilti.com
 - 8. Nelson Firestop Products www.nelsonfirestop.com
 - 9. Grace Construction Products – Flamesafe www.grace.com

2.2 MATERIALS

- A. Firestop System Materials - General:
 - 1. Appropriate for penetration.
 - 2. Include every component required for code approved installation, including; but not limited to:
 - a. Firestopping putties or compound.
 - b. Firestopping foams.
 - c. Backing material.
 - d. Wrap strips.
 - e. Primers, clips and collars.
 - f. Forming and damming materials.
 - g. Cleaners.
 - h. Sealant and fireblock

- i. Firestop devices.
- B. Properties:
- 1. Free of asbestos, halogens and volatile components after curing and shall not slump or sag, (except for self-leveling products).
 - 2. Capable of maintaining an effective barrier against flames, heat and smoke in compliance with IBC requirements and the requirements of ASTM E814 and UL 1479 using the "F" or "T" rating to maintain the same rating and integrity as the fire barrier being sealed.
 - 3. Non-combustible per ASTM E136.
 - 4. UV resistant where exposed to sunlight.
 - 5. Water resistant where exposed to moisture.
 - 6. Firestop system shall accommodate movement without adversely affecting fire rating of wall/floor assembly.
 - 7. Shrink resistant.
 - 8. Paintable or capable of receiving finish materials in those areas which are exposed to view and which are scheduled to receive finishes.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- B. Remove incompatible materials which affect bond.
- C. Install backing materials to arrest liquid material leakage, if required.

3.3 INSTALLATION

- A. Installation shall conform to requirements of qualified designs or manufacturer approved modifications as supported by engineering reports, and shall be approved and accepted by the authority having jurisdiction.
 - 1. Apply primer and firestop materials in accordance with Manufacturer's instructions and in accordance with the appropriate UL Fire Resistance Directory or with the appropriate Warnock Hersey International Listing.
 - 2. Apply firestopping material in sufficient thickness to achieve rating, to ensure against the passage of flames, smoke and toxic gases, and to a uniform density and texture.
 - 3. Protect materials from damage on surface subjected to traffic and install cover plates as required on firestop system that will or may be subject to traffic.
 - 4. Tool surfaces of firestop products to provide a smooth and clean appearance.
- B. Provide firestopping for conditions specified whether or not firestopping is indicated, and, if indicated, whether such material is designated as insulation, safing or

otherwise. Insulation types specified in other sections shall not be installed in lieu of firestopping materials.

- C. Interior Walls and Partitions:
 - 1. Construction joints between top of fire rated walls and underside of floors above shall be firestopped.
 - 2. Firestop systems installed shall have been tested by either UL or Warnock Hersey, including exposure to hose stream test and including test for use with steel fluted deck floor assemblies.
 - 3. Firestop system used shall allow for deflection of floor or roof above.

- D. Penetrations:
 - 1. Penetrations include conduit, cable, wire, pipe, duct or other elements which pass through one or both outer surfaces of a fire rated floor, wall, or partition.
 - 2. Provide firestopping to fill spaces in accordance with ASTM E 814 (UL 1479) where a penetration occurs through a structural floor or roof and a space would otherwise remain open between the surfaces of the penetration and the edge of the adjoining structural floor or roof, except at floors on grade.
 - 3. Requirements for penetrations shall apply whether or not sleeves have been provided. Firestop the annular space between sleeve and surrounding surfaces.

3.4 IDENTIFICATION

- A. Where required by 2018 IBC, provide permanent label or tag at each through penetration firestop system installation on both sides of installation in visible location. Include the following on each tag or label:
 - 1. The words "Warning – Through-Penetration Firestop System – Do Not Disturb."
 - 2. UL or other approved testing and inspecting agency listing designation.
 - 3. Date of installation.
 - 4. Manufacturer's name.
 - 5. Contractor's name and contact information.

3.5 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 07 9200
JOINT SEALERS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Joints sealants and installation accessories.
- B. Related Sections:
 - 1. Section 07 92 19 – Acoustical Sealants, for sealants for use in sound isolating partitions between residential units.

1.2 SUBMITTALS

- A. Product Data:
 - 1. Submit Manufacturer's current specifications and recommended installation procedures.
 - 2. Submit sample warranty to be signed jointly by applicator and Manufacturer.
 - 3. Submit Manufacturer's standard color chart.
 - 4. Certification in the form of standard data sheet or letter that each type of compound and sealant to be furnished complies with these specifications.
 - 5. Statement that each product to be furnished is recommended for the application shown for this project.
 - 6. Complete instructions for handling, storage, mixing, priming, installation, curing and protection of each type of sealant.
- B. Shop Drawings: Illustrations in sufficient detail to show installation and interface of the work of this Section with the work of adjacent trades.
- C. Field Adhesion Test and Stain Reports: Submit copies of logs and test reports showing results of field adhesion testing and stain testing.
- D. Submit three (3) samples of each specified product, 12 inch minimum lengths, and installed between representative samples of materials to be sealed for each product. Architect's acceptance will be for color only.
- E. Certifications: Submit certification signed jointly by Contractor and Sealant Manufacturer, certifying that products comply with specification requirements, are proper and adequate for the condition of installation and use, have been properly selected and designed for applications where they are to be installed, and that sealants and accessory materials have been installed in accordance with Manufacturer's printed instructions and recommendations of Manufacturer's field representative.
- F. Provide a procedure detailing the cleaning, priming, taping, tooling and other steps recommended to ensure satisfactory function and appearance.
- G. Contract Closeout: Submit Manufacturer's Warranty.

1.3 QUALITY ASSURANCE

- A. Qualifications: Installers shall be thoroughly trained and experienced in the necessary skills and shall be thoroughly familiar with the specified requirements.

- B. Field Adhesion Testing: Perform preconstruction adhesion testing for each type of sealant and substrate as follows:
1. Arrange for Manufacturer's field technical representative to be present during testing.
 2. Install sealant in test joints in minimum 60 inch lengths.
 3. Test joints by standard field adhesion hand pull test.
 4. For joints with dissimilar substrates, test adhesion to each substrate separately as recommended by sealant Manufacturer.
 5. Conduct number of field adhesion tests for each type of sealant and each type of substrate as follows:
 - a. Not less than 10 tests for the first 1,000 feet of installed sealant and 1 test for each additional 1,000 feet of sealant installed, or 1 test per floor per elevation.
 6. Document results of field adhesion tests and record results in field adhesion test log.
 7. Include in log data on pull distance used to test each joint sealant.
 8. Include data on joints where material connected with pull portion of sealant failed to adhere to joint substrate or tore cohesively.
 9. Inspect joints and record data for the following:
 - a. Complete fill.
 - b. No voids.
 - c. Joint dimensions matching those of Manufacturer's recommended details.
 10. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 11. Do not install joint sealants that fail to adhere to joint substrates during testing.
 12. Repair sealant test areas by removing damaged materials and applying sealant to test area using same procedure used to originally install thesealant.
- C. Stain Testing: Perform Stain testing of natural stone, masonry and other porous substrates proposed for use in the Work. Obtain actual samples of materials proposed for use and test to determine if permanent discoloration of porous surfaces will occur from direct contact with sealants. Perform stain testing in conformance with ASTM C1248 and as follows:
1. Arrange for Manufacturer's field technical representative to be present during examination of test results.
 2. Cut substrate to provide flat surface for application of sealant.
 3. Separate substrate materials by removable shims to create 1/2 x 1/2 x 3 inch joint.
 4. Fill joint with scheduled sealant, tool, and allow to cure for 21 days at room temperature.
 5. After 21 day curing, remove shims, compress joint to 50 percent of original joint width to 1/4 inch, and place in an oven at 158 degrees F. for 14 days.
 6. After 14 days in oven, remove and allow sample to cool to room temperature.
 7. Examine sample to determine presence of discoloration or change in appearance in any way to exposed surfaces.
 8. After visual inspection, cut sample in half to determine presence of discoloration or change in appearance in any way into the sample itself at the adhesive bond line and presence of bleeding into the area around the adhesive bond line.
 9. Document results of stain tests and record results in stain test log.
 10. Do not install sealants that show evidence of staining substrates.
- D. Field Color and Workmanship Samples: Seal a section of joint as directed, under job conditions, at least 7 days prior to start of work for review by Architect. When approved, sample shall be used as a standard of comparison for remainder of work.

- E. Manufacturer and sealants Subcontractor to submit log of testing, on company letterhead for each test performed indicating, but not limited to the following:
 - 1. Date
 - 2. Project identification
 - 3. Sealant identification including name, type and batch number
 - 4. Test performance, i.e., acceptable, marginal, not acceptable
 - 5. Storage conditions
 - 6. Signature of person conducting test
- F. Location where the test was conducted.
- G. If tests indicate sealant material is marginal or not acceptable, sealant is not to be used. Tester is to immediately notify Architect and Contractor of the deficient materials. The sealant Subcontractor is to immediately remove deficient materials from site.
- H. Inspections
 - 1. Coordinate sealant selection and application as necessary for the full and satisfactory compatibility and performance between all sealants used under this section with all other applicable and related sections using sealants that may be in direct contact with work of this section.
 - 2. Take all required steps and precautions to properly isolate and prevent any degree of incompatibility between sealants, all in strict accordance with Manufacturer's specifications, recommendations and instructions.
 - 3. Contractor is to periodically test sealants in place in addition to the Manufacturer's field testing, for adhesion, using methods recommended by sealant Manufacturer. Promptly replace all sealant that does not adhere or fails to cure.
 - 4. Contractor shall arrange to meet the sealant Manufacturer at the jobsite and witness initial installation of sealant on the project with the Contractor, Architect and other Consultants.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site. Maintain product in accordance with Manufacturer's recommendations with proper precautions to ensure fitness of material when installed.
- C. Handling: Comply with Manufacturer's instructions.

1.5 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Observe Manufacturer's temperature service range. Do not apply sealant when weather conditions will inhibit bonding and curing.

1.6 WARRANTY

- A. Provide warranty, in writing and signed jointly by the installer and sealant Manufacturer, to replace sealants which fail at no additional cost to the Owner because of loss of cohesion or adhesion, or do not cure, and which fail to achieve air-tight and water-tight seal as follows:
 - 1. Sealant Types "A" and "B": 5 years.

2. Sealant Types "C1" and "C2": 20 years.
3. Sealant Types "D," "E" and "F": 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following manufacturers, except as approved otherwise by the Architect, subject to compliance with specifications requirements:
 1. Pecora www.pecora.com
 2. Dow Corning Corp. www.dowcorning.com
 3. GE Construction Sealants, Division of Momentive Performance Materials Inc. www.siliconeforbuilding.com
 4. Sonneborn / Chemrex www.chemrex.com
- B. Single Source Responsibility for Joint Sealer Materials:
 1. Obtain joint sealer materials from a single Manufacturer for each different product required.
 2. If sealants from separate Manufacturers must be used and could come in contact with each other, provide written certification from every Manufacturer involved that the sealants are compatible and will adhere to each other.

2.2 MATERIALS

- A. General: Sealants, primers, back-up materials, preformed joint fillers, bond breakers and related materials shall be compatible with adjoining materials.
- B. VOC Content of Interior Sealants: All adhesives and sealants used on the interior of the building (defined as inside of the weatherproofing system and applied on-site) shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 1. Architectural Sealants: 250 g/L.
 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Sealant:
 1. General: The selection of proper sealant for a particular joint shall be in accordance with current published recommendations of the Manufacturer.
 2. Types: See Schedule in Part 3 for the location where each type of sealant is to be provided.
 - a. Type "A": Ultra-low modulus, self-leveling, one-component, silicone sealant conforming to ASTM C920, Type S, Grade SL, Class 100/25, Use T, A, M, and O; Dow Corning SL Parking Structure Sealant (Self Leveling), Pecora 300/310 SL, or Tremco Spectrem 900 SL; OR Low-modulus, non-sag, one-component silicone sealant conforming to ASTM C920, Type S, Grade NS, Class 100/25, Use T, A, M, and O. Dow Corning NS Parking Structure Sealant (Non-Sag), Pecora 301/311 NS, or Tremco Spectrem 800; OR Ultra-low modulus, fast-cure, two-component, neutral-cure silicone sealant conforming to ASTM C920, Type S, Grade FC, Class 100/25, Use T, A, M, and O; Dow Corning FC Parking Structure Sealant (Fast Cure). Pavement joint sealants shall comply with MAG Specifications.
 - b. Type "B": Silicone sealant conforming to ASTM C920, Type M, Grade NS, Class 25, Use NT, M, A, O, and capable of withstanding movement of 50% in extension and compression, and sustained temperatures of 250 degrees F in service. Dow Corning 790, 795, CCS and CWS.

- c. Type "C-1": One-part low modulus moisture cure silicone rubber sealant conforming to FS TT-S-001543A, Class A, FS TT-S-00230C, Type II, Class A and ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, G, A, and O, and capable of withstanding movement of 100% in extension and 50% in compression in service. Dow Corning 790 Silicone Glazing Sealant or Pecora 890.
 - d. Type "C-2": One-part medium modulus neutral cure silicone rubber sealant conforming to FS TT-S-001543A, Class A, FS TT-S-00230C, Type II, Class A and ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, G, A, and O, and capable of withstanding movement of 50% in extension and 50% in compression in service. Pecora 895, Dow Corning 795 or Dow Corning 791 or 756 SMS (non-staining). Provide Dow Corning 756 SMS where sealant with reduced soiling is indicated.
 - e. Type "D": Medium-modulus, single-component, pre-pigmented, neutral- cure silicone sealant conforming to ASTM C920, Type S, Grade NS, Class 50, Use NT, G, M, A, O. Dow Corning 756 SMS Building Sealant.
 - f. Type "E": Silicone rubber sealant with mold inhibitor. General Electric Sanitary 1700, Tremco Tremsil 200, Dow Corning 786, Pecora 898, Sonneborn Omni-Plus.
 - g. Type "F": Refer to Section 07 92 19.
- 3. Sealants at Mechanical Ductwork: As specified in Division 23.
 - 4. Color: Provide standard or custom colors as selected by Architect. In general, colors shall be matching the adjacent materials unless specifically noted otherwise on Drawings.
- D. Primer: Non-staining type, recommended by sealant Manufacturer to suit application.
 - E. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant Manufacturer; compatible with joint forming materials.
 - F. Joint Filler (Backer):
 - 1. Buildings: ASTM C1330, Type B; round bi-cellular or closed cell polyethylene, urethane or neoprene foam rod; oversized 30 to 50 percent; "SofRod" as manufactured by Nomaco.
 - 2. Pavement: ASTM D5249, Type 3, round bi-cellular or closed cell polyethylene, urethane or neoprene foam rod; oversized 30 to 50 percent; "SofRod" as manufactured by Nomaco.
 - G. Bond Breaker: Pressure sensitive tape recommended by sealant Manufacturer to suit application.
 - H. Gloss Reducer: Silica sand No. 20, color to match adjacent surface. Gloss reducer shall be provided at traffic sealant applications.
 - I. Other Materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor and approved by the sealant Manufacturer as compatible, subject to the review by the Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as

acceptance of subsurfaces. Verify, before proceeding with this Work that required inspections of existing conditions have been completed.

- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Clean, prepare, and prime joints in accordance with Manufacturer's instructions. Remove loose materials, dust, oil, grease, water, surface dirt, frost, old caulking material and other foreign matter which may impair adhesion of sealant.
 - 1. Clean porous materials where necessary by grinding, sand or water-blast cleaning, mechanical abrading, acid washing or combination of these methods as required to provide a clean, sound base surface for sealant adhesion. Clean nonporous surfaces, either mechanically or chemically.
 - 2. Remove laitance by acid washing, grinding or mechanical abrading. Remove form oils by sand or water-blast cleaning. Remove all loose particles present or resulting from grinding, abrading or blast cleaning by blowing out joints with oil free compressed air or by vacuuming joint prior to application of primer or sealant.
 - 3. Remove protective coatings from metallic surfaces by two rag solvent wipe method. Use clean white cloths or lint free paper towels for cleaning with solvent and drying. Clean joint areas protected with masking tape or strippable film with solvent after removal of tape or film. Do not allow solvent to air dry without wiping.
- B. Verify that joint shaping materials and release tapes are compatible with sealant.
- C. Examine joint dimensions and size materials to achieve required width/depth ratios.
 - 1. Joint widths, depths, and conditions detailed on shop drawings by related work contractors shall be considered as minimum allowable requirements except where they may conflict with sealant Manufacturer's recommendations. In all cases, joints must be uniform in width. Do not seal joints until they are in compliance with drawings, or meet the accepted control section standard. Notify general Contractor and Architect of Conditions not compliant with Drawings or acceptable standards.
 - 2. Clean out and rake to full width and depth, joints to receive sealant, back-up material or preformed joint filler. Make joints of sufficient width and depth to accommodate specified back-up material or preformed joint filler and sealant.
- D. Use joint filler to achieve required joint depths, to allow sealants to perform properly.
- E. Use bond breaker where required.
- F. Protect adjacent surfaces from damage by masking when necessary.

3.3 INSTALLATION

- A. General:
 - 1. Install sealant in accordance with Manufacturer's instructions.
 - 2. In general, seal openings and other locations which normally require sealant to seal against infiltration from air, water and most insects, including; but not limited to:
 - a. Construction and expansion joints.
 - b. Joints between dissimilar materials.
 - c. Joints around windows, door frames, louvers and other penetrations and openings in the exterior wall.

- d. Interior wall openings.
 - e. Other locations indicated on drawings.
 3. Follow sealant Manufacturer's instruction regarding surface preparation, priming, application life, and application procedure. Consult sealant Manufacturer for recommendation for application procedure. Apply sealant within recommended temperature ranges. Consult Manufacturer when sealant cannot be applied within recommended temperature ranges. Consult sealant Manufacturer for recommendation for application of silicone sealant when air temperature is below 40 degrees F., or surface temperatures of sealant contact surfaces are above 115 degrees F.
 4. Apply masking tape, where required, in continuous strips in alignment with joint edge. Remove tape immediately after joints have been sealed and tooled as directed. Sealant on face of adjacent stone or other materials will not be acceptable.
- B. Joints:
1. Free of air pockets, foreign embedded matter, ridges, and sags.
 2. Tool joints concave.
- C. Apply sealant under pressure with hand or power actuated gun or other appropriate means. Gun shall have nozzle of proper size and provide sufficient pressure to completely fill joints as detailed.
- D. Neatly point or tool joint surfaces to provide slightly concave surfaces, free of wrinkles and skips, uniformly smooth and with perfect adhesion along both sides of joint. All joints to be "Dry tooled". Do not use water-wet tool or tooling solutions.
- E. Sealant applied to joints adjacent to mortar joints shall be sanded to achieve texture similar to that of adjacent mortar joint.
- F. Consult sealant Manufacturer regarding the proper method of installing back-up material or joint filler at proper depth in joint to provide specified sealant dimensions. Compress back-up material 25 to 50 percent into the joints as required. Do not apply sealant without back-up materials. Install bond breaker strip between sealant and non-release type back-up material. Three side adhesion is acceptable only for the sealing at joinery of members that are to be rigidly attached to each other by means of screws or welding restricting all movement.
- G. Install back-up rod stock into the joint to avoid length-wise stretching. Rod stock shall not be twisted or braided. Use bond breaker strip in all joints where sufficient room for back-up does not exist.
- H. Surfaces of joints to be sealed must be dry. Do not attempt sealant work on wet surfaces or where frost is present. Consult sealant Manufacturer regarding the procedures for determining acceptable surface conditions.

3.4 CLEANING

- A. Clean adjacent surfaces of sealant as work progresses.
- B. Use solvent or cleaning agent as recommended by sealant Manufacturer.
- C. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.

3.5 SCHEDULE

- A. Expansion and Control Joints:
 - 1. Horizontal traffic: Type "A" with gloss reducer.
 - 2. Joints around exterior windows and doors, exterior columns, louvers, masonry, concrete to concrete, steel, wall penetrations, connections, parapet caps, other joints to seal off building from exterior air and moisture: Type "B".
 - 3. Glass (except insulating glass or special coated glass), aluminum, E.I.F.S., Natural Stone, and plastics: Type "C-1".
 - 4. Glass (including insulating glass or special coated glass), aluminum and plastics: Type "C-2".
 - 5. Masonry, and Painted Metals: Type "D".

- B. Non-expanding Joints:
 - 1. Glass (except insulating glass or special coated glass), Aluminum, E.I.F.S., Natural Stone, and Plastics: Type "C-1".
 - 2. Glass (including insulating glass or special coated glass), Aluminum and Plastics: Type "C-2".
 - 3. Masonry, and Painted Metals: Type "D".
 - 4. Concrete to Concrete, Stucco, Masonry, Aluminum, Steel, and Wood: Type "C-1".

- C. Mechanical (ductwork and air conditioning): As specified in Division 23, or Type "D" if not indicated in Division 23.

- D. Plumbing Fixtures and other Wet Areas (around toilet, bath, kitchen fixtures, and food service equipment): Type "E".

- E. Acoustical (acoustical applications where sealant is required): Refer to Section 07 9219.

END OF SECTION

**SECTION 07 9219
ACOUSTICAL SEALANTS**

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes sealants for use in sound isolating partitions between residential units and other walls with acoustical insulation or otherwise indicated to be sound rated.

1.2 REFERENCES

- A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- B. ASTM C919 Standard Practice for Use of Sealants in Acoustical Applications.
- C. ASTM E497 Standard Practice for Installing Sound-Isolating Lightweight Partitions.
- D. ASTM C843 Specification for Latex Sealants.
- E. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- F. Federal TT-S-1657 Interim Federal Specification for Sealing Compound – Single Component, Butyl Rubber Based, Solvent Release Type.
- G. UL 263 Fire Tests of Building Construction and Materials.

1.3 SUBMITTALS

- A. Comply with Section 07 9200 – Joint Sealers.

1.4 QUALITY ASSURANCE

- A. Comply with Section 07 9200 – Joint Sealers.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 07 9200 – Joint Sealers.

1.7 FIELD MEASUREMENTS

- A. Verify gap dimensions before installation. Gap width shall not exceed that listed by the Manufacturer of sealant used.

1.8 WARRANTY

- A. Provide Manufacturer's standard 1-year warranty for barrier assembly.

PART 2 PRODUCTS

2.1 ACRYLIC COPOLYMERE (LATEX) SEALANT

- A. Acceptable Products:
 - 1. Owens Corning QuietZone
 - 2. USG Sheetrock Acoustic Sealant
 - 3. Pecora AIS-919
- B. Shall meet or exceed the requirements of ASTM C843.
- C. Shall have a flame spread not greater than 25 and smoked development not greater than 50 when tested in accordance with ASTM E-84.

2.2 BUTYL RUBBER BASED SEALANT

- A. Acceptable Products:
 - 1. Tremco 579.34 Acoustic Sealant
 - 2. Pecora BA-98
- B. Shall meet or exceed the requirements of Federal TT-S-1657

2.3 FIRE RATED SEALANT

- A. Acceptable Products:
 - 1. Pecora AC-20 FTR
 - 2. RectorSeal Biostop 500+

2.4 BACKER ROD & BACKING

- A. Shall be as manufactured by Backer Rod Manufacturing and Supply Company or approved equal.
- B. Shall meet or exceed the requirements of ASTM C843 and applied in accordance with fire stop system UL listing.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with ASTM C919, ASTM E497, or Manufacturer's direction, whichever is most restrictive.
- B. Backer rods shall be used as required to control sealant depth per Manufacturer's instructions.

- C. Surface receiving sealant shall be clean, dry and free of dust or other foreign matter.
- D. Concrete surfaces shall be fully cured, curing aids and form release agents removed.
- E. Metal surfaces shall be wire brushed and solvent cleaned. All oxides, oils and solvent residues shall be removed.
- F. Paint or final finish shall not be applied over sealant until completely cured. Refer to Manufacturer's data for cure times.
- G. Butyl sealant shall not be used where painting is required.
- H. Fire rated sealants shall be installed per fire stop system UL listing.
- I. Butyl rubber based sealant shall be used outdoors only. This type of sealant is typically flammable.
- J. Sealants shall not be applied to building interiors until the building is enclosed and building temperatures are maintained at 55 degrees F minimum. Adequate ventilation shall be provided.
- K. Install acoustical sealants at all locations where indicated on Drawings and as necessary to provide the acoustical ratings indicated, and as follows:
 - 1. Where gypsum board joins other walls or surfaces at sound control partitions.
 - 2. Around penetrating items through demising partitions and other sound rated partitions. Refer to Section 07 84 00 – Firestopping for fire stopping sealers required to be used for sealing around penetrations in fire-rated partitions.
 - 3. Other locations as indicated on Drawings.

END OF SECTION

SECTION 07 9220
WATER INTRUSION PREVENTION AND REMEDIATION

PART 1 GENERAL

A. SUMMARY

During the construction of the Project and until the receipt of the final certificate of occupancy, the Co-Developer shall comply with the provisions of this Exhibit F (the “**Water Intrusion Provisions**”) and shall (1) ensure that those Subcontractors which the Co-Developer determines should be responsible for the Project’s incurrence of mold, including without limitation all construction managers, contractors, and subcontractors comply with the Water Intrusion Provisions and (2) replicate these Water Intrusion Provisions in all contracts with such subcontractors. As used in this Agreement, “**mold**” shall mean any furry growth of minute fungi occurring in moist conditions including any indoor mold growth capable of creating toxins that can cause pulmonary, respiratory, neurological or other major illnesses after minimal exposure, as such exposure is defined by the Environmental Protection Agency, Center for Disease Control, National Institute of Health, the Institute of Inspections, Cleaning and Restoration Standard and Reference Guide for Professional Mold Remediation (IICRC S520), or other Federal, State or local agency organized in part to study and/or protect human health.

B. WATER INTRUSION PROGRAM

Retention of a Water Management Professional. No less than thirty (30) days prior to the Closing of each Component, the Co-Developer shall identify and arrange for the retention of a Water Management Professional trained to (A) inspect and identify leaks and water intrusion issues in buildings in the State and (B) develop defined water inspection protocols and monitoring programs. This professional (the “**Water Management Professional**”) shall be qualified to do so and shall be reasonably acceptable to the City.

C. DUTIES OF THE WATER MANAGEMENT PROFESSIONAL

- I. The Water Management Professional shall (A) inspect and identify leaks and water intrusion issues or mold growth in buildings, (B) develop defined water inspection protocols and monitoring programs, and (C) identify materials to be dried out and/or removed and any related remedial measures resulting from leaks and water intrusion or mold growth. In the event remedial measures are necessary, the remediation shall be conducted pursuant to the protocol that the Water Management Professional, utilizing his expertise and business judgment, deems appropriate and consistent with the guidelines produced by the New York City Department of Health and Mental Hygiene, the Environmental Protection Agency, IICRC S520 and the Occupational Safety and Health Administration
- II. During construction or renovation, the Water Management Professional shall inspect the project to identify areas of water intrusion or mold growth and any materials that may need drying or replacement. Such inspections shall be unannounced and shall occur no less frequently than monthly. During the ordinary course of operation of the Project, the Co-Developer or the Owner Entity shall arrange for an annual inspection of the Project by the Water Management Professional.

D. PROTOCOLS

The Co-Developer shall follow the Water Intrusion Program including complying with all protocols, compliance programs and monitoring programs developed by the Water Management Professional.

END OF SECTION

**SECTION 08 1113
STEEL DOORS AND FRAMES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes hollow metal steel doors and frames, as shown on Drawings and as specified herein.
- B. Related Sections:
 - 1. Section 08 1213 – Prefinished Door Frames, for prefinished knock-down type steel door frames with snap-on aluminum casings.
 - 2. Section 08 1400 – Wood Doors, for flush smooth face paint grade wooddoors.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings showing elevations of each door and frame type, typical and details of construction, location and installation requirements for hardware, size and thickness of material.
- B. Fire Rated Doors and Frames:
 - 1. Installation Instructions: Door and frame manufacturer shall clearly identify the hardware products, other materials and work requirements necessary to maintain compliance with UL 10(c) (positive pressure testing) as required by 2018 IBC Section 714.
 - 2. Certification: Submit certification that fire rated doors (including frames and hardware as a unit) will comply with UL 10(c) (positive pressure testing) as required by 2018 IBC Section 714.
- C. Furnish recognized independent test lab certification that products comply with ANSI A250.4.

1.3 DELIVERY AND STORAGE

- A. Deliver welded frames with spreaders and doors with wrappers.
- B. Store doors and frames under protective cover in dry, enclosed spaces at the site. Place doors and frames on non-staining blocking Raise bottoms of doors at least 4 inches high and provide 1/4 inch air space between stacked doors to avoid metal to metal contact and permit air circulation.

1.4 QUALITY ASSURANCE

- 1.5 Doors and frames shall be certified to comply with ANSI A250.4, Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing, and ANSI A250.8, Recommended Specifications for Standard Steel Doors and Frames.

1.6 WARRANTY

- A. Special Warranty: Furnish the following warranty to Owner:
 - 1. Warrant doors against defects in materials and workmanship for a period of 3 years after date of substantial completion of Project.
 - 2. Replacement under warranty shall include removal of the defective door and hardware, hanging, re-installation of hardware, and painting including adjacent finishes if damaged.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish steel doors and frames from one of the following Manufacturers, except as approved otherwise by the Architect, subject to compliance with specifications requirements:
1. Allegion, Steelcraft Doors www.allegion.com
 2. ASSA ABLOY, Curries Company, CECO Door Products, Fleming Steel Doors and Frames, Security Metal Products www.curries.com
 3. Republic Builders Products www.republicdoor.com
- B Doors and frames shall be furnished by the same Manufacturer.

2.2 MATERIALS

- A Doors: Furnish Level, Model and Physical Performance level in accordance with ANSI A250.8/SDI-100.
1. Level: Level 2, 18 gauge at interior doors and Level 3, 16 gauge at exterior doors, or as otherwise scheduled or indicated on Drawings.
 2. Physical Performance level: Level B at interior doors and Level A at exterior doors, or as otherwise scheduled or indicated on Drawings.
 3. Model: Model 2, Seamless.
- B Core: Honeycomb, Polystyrene, Polyurethane, or Vertical steel stiffener core. Core shall be as allowed by UL 10(c) for fire rated doors. Provide polystyrene or polyurethane core at exterior doors.
- C Steel: ASTM A1008 cold-rolled or ASTM A1011 hot-rolled. Hot-dip galvanized meeting ASTM A653, Grade G60 or Grade A60 galvanized for exterior openings.
1. Recycled Content: Provide steel sheet with a minimum industry average recycled content per the Steel Recycling Institute.
- D Frames: ANSI A250.8/SDI 100, 16 gauge steel at interior frames with 18 gauge doors and 14 gauge steel at exterior frames with 16 gauge doors, or as otherwise scheduled or indicated on Drawings.
- E Glazing Beads: Minimum 20 gauge steel.
- F Rain Drips: Reese A201 A, or equal by Pemko or National Guard.
- G Paint: Non-lifting, rust-inhibitive grey primer meeting ANSI A224.1, compatible with field finish specified in Section 09 91 00, applied after bonderizing.
- H Acoustical Insulation (for door frames): As specified in Section 09 81 00.

2.3 FABRICATION- DOORS

- A Construct hollow metal doors, flush and vision lite types as scheduled on Drawings, in accordance with ANSI A250.8/SDI-100 with core as specified above. Reinforce top and bottom of doors horizontally by 16 gauge steel channels, full width, spot welded to each face at least 3 inches on center. Bevel edge of lock stile.
1. Door Top Edge: Close top of all doors flush as an integral part of the door construction, or by placing end closure channel with web of channel flush with top edge of door (not inverted), or by addition of end cap at top of door, spot welded to each face at least 3 inches on center, filled and dressed smooth.

2. Door Bottom Edge: Close bottom edges of all exterior doors with inverted end closure or end cap to provide channel to accept concealed automatic door bottom or seal.
- B. Door Edge Joint and Treatment: Joints at the edges of doors shall have manufacturer's standard edge construction with factory welded seam, filled and dressed smooth.
- C. Hardware Reinforcement: Provide steel plate reinforcement of the following minimum thickness fabricated from steel of same material as door faces. Coordinate with hardware schedule:
 1. Hinges: 7 gauge by 1-1/2 inch by length of hinge plus 6 inches minimum, securely welded to door edge with a minimum of 6 spot welds.
 2. High Frequency Hinges: 12 gauge channel, full length of door edge.
 3. Lock Faces and Flush Bolts: 12 gauge steel plate. Provide reinforcement at each door face for locks.
 4. All Other Surface Mounted Hardware: 12 gauge steel plate.
- D. Reinforce openings in doors for lites and vents on all sides with 14 gauge steel channel.
- E. Provide solid drip cap at top of exterior out-swinging doors.
- F. Provide non-egress double doors with one-piece Z-astragals of 14 gauge steel unless otherwise indicated or scheduled.
- G. Accurately mortise doors for locks and hinges. Provide adequate box type reinforcement with steel plates welded to the interior reinforcing channels and drilled and tapped. Provide reinforcement for all other items of hardware.
- H. Doors with glass lite openings shall have trim recessed from the face of the door, beveled and attached with screws.
- I. Louvers: Provide sightproof louvers inserted into the panels. Form louver frames of minimum 20-gauge steel. Weld or tenon minimum 24 gauge blades to frame and fasten the entire assembly to the door with moldings. The moldings, when used, shall be an integral part of the louver.
- J. Fire-Rated Doors: Provide fire rated doors investigated and tested as fire door doors, complete with type of hardware to be used. Identify each fire door with recognized testing laboratory labels, indicating applicable fire rating of steel doors. Doors required to meet smoke and draft control assembly requirements shall have labels that identify that the door has been tested and approved for smoke and draft control assemblies (S-label). Construct doors to comply with NFPA Standard No. 80 and UL-10(c).

2.4 FABRICATION - FRAMES

- A. Construct to shapes and sizes shown, meeting various wall thicknesses in accordance with ANSI/SDI-100.
- B. Fully Welded Frames: Continuously weld, fill, grind and dress smooth face frame miters. Continuously back-weld casing, stop, soffit and rabbit.
- C. Mortise, reinforce, drill and tap for standard weight, full mortise template hinges and template strike.
- D. Provide not less than three 18 gauge anchors per jamb, or as shown on Drawings, spaced for maximum stiffness. Provide adjustable 18 gauge floor clips at each jamb,

welded to back face of jamb, punched for securing to floor with two spaced anchors.

- E. Make cutouts for required hardware specified under Section 08 71 00, from templates furnished. Reinforce butt cutouts with minimum 8 gauge thick steel plate drilled and tapped and welded in place. When heavy duty hinges are specified, provide high frequency reinforcing at frames for hinges. Coordinate with hardware vendor. Provide strike stops of frames with holes for three rubber door silencers; on double door frames, provide for two silencers per door at head.
 - 1. Hardware Reinforcement: Provide steel plate reinforcement of the following minimum thickness fabricated from steel of same material as frames. Coordinate with hardware schedule:
 - a. Hinge Cutouts: 7 gauge high frequency steel plate drilled and tapped and fully welded in place top and bottom. 7 gauge at intermediate locations.
 - b. Strikes and Flush Bolts: 12 gauge.
 - c. Surface Mounted Hold-Open Arms and Closers: 7 gauge
 - d. Exit Devices and Corner Reinforcement: 12 gauge
- F. For openings over 42 inches wide and at double openings, reinforce head members full length with a matching profile of 12 gauge steel. Provide anchor at midpoint of door, if practical.
- G. Construct frames for UL labeled doors in accordance with UL requirements and label as scheduled. Frames required to meet smoke and draft control assembly requirements shall have labels that identify that the frame has been tested and approved for smoke and draft control assemblies (S-label).
- H. Rain Drips: Provide rain drip at all exterior hollow metal door frames at exposed exterior walls whether scheduled in hardware sets or not.

2.5 FABRICATION TOLERANCES

- A. Allowable Tolerances for Fabrication: As specified in ANSI/SDI-117, Manufacturing Tolerances Standard Steel Doors and Frames.

2.6 PAINTING

- A. Bonderize and prime doors and frames with one shop coat of rust inhibitive primer.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install metal door frames plumb, level, rigid and in true alignment as recommended in SDI 105 and ANSI/DHI A115.IG, and the following:
 - 1. Cross Site Reveal: Not to exceed 3/16 inch as measured against stop of installed frames and doors. Doors and frames exceeding maximum allowed cross site reveal shall be removed and replaced at no additional expense to Owner.
- B. Install doors and fasten to maintain alignment with frames to achieve maximum operational effectiveness and appearance.
 - 1. Maintain clearances as specified in ANSI A250.8, 2.1.8.
 - 2. Shim as required per NFPA 80, ANSI/A115.IG and SDI 122.
- C. Fill backs of frames solid with mortar at concrete and masonry construction. Hand

trowel a stiff mortar to frames. Pumped mortar slurry is not allowed.

- D. Fill backs of frames with full thickness fiberglass batt insulation specified in Section 07 2100 where indicated at exterior doors, if not otherwise grouted full (masonry construction, and acoustical insulation specified in Section 09 81 00 where indicated at interior doors.
- E. Install fire doors and frames to comply with NFPA 80 and in accordance with Manufacturer's printed instructions.
- F. Prepare and install doors in accordance with ANSI A115 and SDI 122.

3.2 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 08 1213
PREFINISHED DOOR FRAMES**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Prefinished knock-down type steel door frames with snap-on aluminum casings as indicated on Drawings and as specified.
- B Related Sections:
 - 1. Section 08 1113 – Steel Doors and Frames, for hollow metal doors and frames as scheduled.
 - 2. Section 08 1400 – Wood Doors, for flush smooth face paint grade wooddoors.

1.2 SUBMITTALS

- A Product Data: Submit manufacturer's product data and specifications, frame configurations and finishes of each type and or finish required, and recommendations and standard details for installation.
- B Shop Drawings: Indicate frame elevations, reinforcements required and spacing, location of embosses for hardware and finish.

1.3 QUALITY ASSURANCE

- A Standards:
 - 1. Aluminum Casings: Except as otherwise indicated, the requirements for, and the terminology used in this Section, are those of NAAMM, AAMA and AA and in particular, those of the "Entrance Manual" and "Curtain Wall Manual" by NAAMM.
 - 2. Steel Frames: In accordance with SDI.
- B Installer Qualifications: Installers shall be certified by the prefinished steel door frame manufacturer for installation of site assembled door frames.

1.4 JOB CONDITIONS

- A Coordination of fabrication: Whenever possible, check the actual openings in the construction work by accurate field measurement before fabrication, and show recorded measurements on final Shop Drawings. However, coordinate fabrication schedule with construction progress as directed and avoid delays in the Work.
 - 1. Where necessary, proceed with fabrication without field measurements, and coordinate installation tolerances to ensure proper fit of units.
- B Coordinate and sequence work with frame opening construction, door and hardware installation, access control and other security and electrical components.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish products of the following Manufacturer, except as approved by the Architect, subject to compliance with Specifications requirements:
 - 1. Rediframe Products (Division of Dunbarton Corporation) www.rediframe.com

2. Timely Industries, Inc. (Division of SDS Industries, Inc.) www.timelyframes.com

B. Drawings and Specifications are based on Products of Timely Industries, Inc.

2.2 MATERIALS

A. Steel: Cold rolled sheet steel conforming to ASTM A366.

1. Recycled Content: Provide steel sheet with a minimum industry average recycled content per the Steel Recycling Institute.

B. Aluminum Extrusions: Section shall be extruded for 6063-T5 aluminum alloy (ASTM B221 - Alloy G.S. 10A T5).

1. Recycled Content: Provide framing extruded from billets composed of a minimum of 33 percent post-consumer recycled content.

C. Accessories:

1. Reinforcements: Provide Manufacturer's standard reinforcement brackets and plates for closers, exit devices, door guards, and hinges as necessary.
2. Fasteners: Where exposed, shall be aluminum, stainless steel or plated steel in accordance with ASTM A-164. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum.

2.3 FABRICATION

A. Frames and Casings: Timely C Series factory finished door frames.

1. Casing Clips: Fabricate frames with factory applied heat-treated clips.
2. Casing Design/Profile: As indicated on Drawings or as selected by Architect from manufacturer's full range of casing profiles.
3. Fabricate frames with hinge reinforcement plates secured in place.
4. Silencers: Provide three (3) silencers for single door on strike side of frame.

B. Fabrication: Cut, reinforce, drill and tap frames as required to receive hardware, except do not drill and tap for surface-mounted items until the time of installation at the Project site. Comply with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.

C. Finishes:

1. Steel Finishes (Frames): After fabrication, apply manufacturer's standard factory applied impact-resistant, polyester baked enamel finish.
 - a. Color: As selected by Architect from manufacturer's full range of available colors.
2. Aluminum Finishes (Casings):
 - a. After fabrication of casings prepare the aluminum surfaces for finishing in accordance with the aluminum producer's recommendations and standards of the finisher or processor.
 - b. Process components of each assembly simultaneously to attain complete uniformity of color.
 - c. Finish: Factory applied impact resistant, polyester baked enamel finish.
 - 1) Color: As selected by Architect from manufacturer's full range of available colors.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Comply with manufacturer's specifications and recommendations for the installation of frames.
- B. Install prefinished frames near end of Project after completing wall painting, wall covering and other wall finish operations.
- C. Install frames plumb, level, without warp or rack of frame, rigid and in true alignment as recommended in SDI 105 and ANSI/DHI A115.IG, and the following:
 - 1. Cross Site Reveal: Not to exceed 3/16 inch as measured against stop of installed frames and doors. Doors and frames exceeding maximum allowed cross site reveal shall be removed and replaced at no additional expense to Owner.
 - 2. Anchor securely in place.
 - 3. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
 - 4. Fill backs of frames with full thickness fiberglass batt insulation specified in Section 07 2100, where indicated.
- D. Clean aluminum surfaces promptly after installation of frames, exercising care to avoid damage. Remove excess glazing and sealant compounds, dirt and other substances.
- E. Touch-up blemishes and damaged finishes on pre-finished frames.

3.3 CONSTRUCTION WASTE MANAGEMENT, PROTECTION AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. Protect materials against damage and contamination during construction. Clean surfaces as required to remove corrosive substances. At the conclusion of construction, clean surfaces to the satisfaction of the Architect.
- C. Provide written verification that cleaning agents are compatible with finished aluminum, glass, glazing materials and sealants.
- D. Periodically remove from the site debris, excess materials and unused tools and equipment resulting from this work. At the conclusion of construction, leave the premises in a clean condition.

END OF SECTION

**SECTION 08 1400
WOOD DOORS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Paint grade solid core and hollow core wood doors.
 - 2. Pre-fitting and pre-machining of wood doors.
- B. Related Sections:
 - 1. Section 06 2000 – Finish Carpentry, for wood door frames.
 - 2. Section 08 1113 – Steel Doors and Frames, for hollow metal doors and frames.
 - 3. Section 08 1213 – Prefinished Door Frames, for prefinished knock-down type steel door frames with snap-on aluminum casings.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings showing schedule of door sizes and types, door details and elevations. Note discrepancies between the Drawings and door schedules, and the requirements of regulatory and testing agencies.
 - 1. Submit confirmation of specified duty level in accordance with “Performance Duty Level” per WDMA Bulletin I.S.1A (04).
- B. Product Data: Submit Manufacturer's data showing door construction.
- C. Samples: Before fabrication, submit three (3) corner samples of each type of door to be furnished, showing face, edge, core construction and finish for each type specified.
- D. Fire Rated Doors:
 - 1. Installation Instructions: Door manufacturer shall clearly identify the frame, hardware products, other materials and work requirements necessary to maintain compliance with UL 10(c) (positive pressure testing) as required by 2018 IBC Section 716.
 - 2. Certification: Submit certification that fire rated doors (including doors, frames and hardware as a unit) will comply with UL 10(c) (positive pressure testing) as required by 2018 IBC Section 716.

1.3 QUALITY ASSURANCE

- A. Coordination: Contractor shall be responsible for coordinating and obtaining necessary information from Hardware and Metal Frame Manufacturers. Door Manufacturer shall be responsible for coordinating necessary information received by Contractor from Hardware and Metal Frame Manufacturers in order that doors shall be properly prepared to receive hinges and hardware. Contractor shall provide door supplier with approved frame schedule, hardware schedule, and hardware templates. Furnish to door supplier 60 days prior to desired delivery date of doors.
- B. Regulatory Requirements: Fire doors shall be listed and labeled by a nationally recognized testing and certification agency, in accordance with applicable building codes. Doors required to meet smoke and draft control assembly requirements shall have labels that identify that the door has been tested and approved for smoke and draft control assemblies (S-label). The listed doors shall meet or exceed ASTM E2074, UL-

10(b), UL- 10(c) (positive pressure testing), Category A and NFPA 252 (September 1999) with all requirements as part of door construction (no additional edge sealing required). Provide fire labels from Warnock-Hersey International (WHI), or Underwriters Laboratories (UL).

- C. Certification: Provide each fire rated and sound rated door with a label permanently attached at eye level, to the hinge stile or, where interfering hardware such as full length hinges are applied, in a location acceptable to the local Code Authority, indicating the testing agency's approval for the rating required. Do not cover or conceal label.
- D. Performance Duty Level: Provide doors with the following Performance Duty Level per WDMA Bulletin I.S.1A:
 - 1. Performance Duty Level: Heavy Duty for solid core wood doors, standard duty of hollow core wood doors.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Prior to delivery, provide protection compatible with factory finish specified for door edges and faces.
- B. Delivery:
 - 1. Deliver doors to the jobsite only when proper storage site is available.
 - 2. Store doors in an area having controlled temperature and humidity as recommended by the Window & Door Manufacturers Association (WDMA), AWI and the door manufacturer.
 - 3. Store doors flat on factory pallets, or three full 2 x 4's, one centered and the other two 12 inches from each end. Do not stack doors on end, or on their vertical edge.
 - 4. Protect wood doors from construction activity, dirt, and exposure to sunlight.
- C. Handling:
 - 1. Always handle doors with clean hands or gloves.
 - 2. Do not drag doors across one another.
 - 3. Maintain factory packaging or other means of protection on doors, until date of Substantial Completion.

1.5 WARRANTY

- A. Special Warranty: Furnish the following warranty to Owner:
 - 1. Warrant doors from the date of installation against defects in materials and workmanship. Periods of warranty after date of installation:
 - a. Interior solid core and mineral core: Life of installation.
 - b. Interior hollow core: 5 years.
 - 2. Replacement under warranty shall include removal of the defective door, hanging, installation of hardware, and finishing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish doors of one of the following Manufacturers, except as approved otherwise by the Architect, subject to compliance with Specification requirements:
 - 1. Marshfield Door Systems www.marshfielddoors.com
 - 2. Algoma www.algomahardwoods.com
 - 3. Eggers Industries www.egggersindustries.com

4. Lynden Door, Inc. www.lyndendoor.com
5. Oshkosh Architectural Door Company www.oshkoshdoor.com
6. Graham www.grahamdoors.com
7. VT Industries, Inc. www.vtindustries.com

2.2 FLUSH DOORS

- A. Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.
- B. Cores:
 1. Solid Core: Shall conform to ANSI A208.1 1LD2, 32 lbs. per cubic foot density. For doors scheduled to receive closers, provide minimum 5 inch solid wood top rail at doors with closers.
 2. Hollow Core: Expanded honeycomb made of corrugated fiberboard. Meet or exceed the requirements of NWWDA Industry Standards I.S.1 Series.
 3. Provide supplemental hardwood blocking/reinforcement for locksets, closers, existing devices and other mortised and surface mounted hardware items. Through-bolt attachment is not allowed.
- C. Edge Bandings:
 1. Stiles (Dimensions given are minimum sizes allowed after factory trimming to booksize or prefitting).
 - a. Particleboard Core: 1-3/8 inch double banded laminated hardwood stile, laminated strand lumber or structural composite lumber (no finger joints allowed) in inner and outer band to be at least 1/4 inch wide same species lumber as face veneer with the exception of birch doors which will have hard maple stiles.
 - b. Hollow Core: Stile shall be 1-1/2 inch minimum.
 2. Rails (Dimensions given are minimum sizes allowed after factory trimming to booksize or prefitting).
 - a. Particleboard Core: 1-1/8 inch minimum mill option hardwood rail.
 - b. Hollow Core: 1-1/4 inch minimum mill option wood.
- D. Face Veneers, Crossbands and Backers: When wood veneer or medium density overlay faces are specified, doors shall be 5 ply (AWI PC-5), made up of a face veneer, crossbanding and a core unit, all securely bonded together utilizing type 1 (fully waterproof) adhesive and the hot press assembly technique. All plies must be placed at right angles to adjacent plies. Face veneers shall have a minimum thickness of 1/50 inch after factory sanding and the individual pieces of veneer forming the face veneer must be spliced or edge glued together. Doors manufactured by cold-pressing 2 or 3-ply pre-manufactured door skins to multiple cores in the same press shall not be acceptable.
 1. Paint Grade:
 - a. MDO Faces: MDO shall meet PS1-74. Overlay shall be factory primed, readily sandable, weatherproof, and carry a Class "B" Fire Rating. Paint grade Birch hardwood and hardwood surfaced doors shall not be considered as meeting this Specification.
 - b. Hardboard Faces: AHA A135.4, Class 1 (tempered) or Class 2 (Standard).
 - c. Exposed vertical and top Edges: Any closed-grain hardwood.
- E. Glue: Type 1 (waterproof) for face assembly and Type II (water-resistant) for core assembly per WDMA TM-6 1998 (Adhesive Bond Durability Test Method).

2.3 LABELED FLUSH DOORS

- A. Mineral core flush veneered doors, 5-ply, shall be made up of face veneers, crossbanding, and a core unit securely bonded together utilizing Type I (fully waterproof) adhesive and the hot press assembly technique. Provide matching transom panels where scheduled.
- B. Face Veneers and Crossbanding: Same as specified for non-labeled doors.
- C. Core Unit: Asbestos free, noncombustible mineral composite with a minimum of 28 pounds per cubic foot) density when tested in accordance with ASTM C303, with 10 percent maximum absorption by weight with core in equilibrium at 90 percent relative humidity and 70 degrees F.. Provide flame resistant blocking as required by the hardware schedule. The door listing shall not limit the size or location of such blocking.
 - 1. Provide one lock block 5 inches x 12 inches when a bored unit or mortise lock is to be used and two lock blocks when the door is equipped with an exit device.
 - 2. For doors with closers include 5 inch top rail. Provide wide bottom rails for exit, manual and automatic flush bolts and automatic door bottoms.
- D. Rails: Top 1/2 inch minimum, bottom 1-1/2 inches minimum rail (one or two piece) of flame resistant material - salt free. Securely glue rails to core.
- E. Stiles: Manufacturer's standard for receiving a full mortise hinge. No salt treated components shall be used. UL or WH approved for labeled doors meeting the following performance criteria:
 - 1. 5/16 inch inner stile with 1/4 inch outer stile of matching hardwood.
 - 2. Stiles to conform to "Extra Heavy Duty" WDMA Performance Standards.
- F. Vision Frames: Provide one of the following.
 - 1. Furnish metal vision frames primed for field painting for doors with lites. Frames shall meet AWI standard, UL, or WHI approved.
 - 2. Provide Manufacturer's standard solid wood bead options for Architects approval. Provide Manufacturer's approved, veneer-wrapped wood bead for 45, 60 and 90 minute fire doors.
 - 3. Provide glass and glazing at all doors including fire doors. All doors are to be factory glazed. See Section 08 80 00 for glazing requirements.
- G. Manufacture labeled doors to the required size so as to provide proper clearances without field trimming. Machining of labeled doors must be completed before label is applied to assure the full thickness of the edge bands. Machine fire doors to meet NFPA 80 requirements. Provide channels for concealed exit devices specified in Section 08 71 00 and in conformance with UL requirements.
- H. Metal Edges: For pairs of fire doors, no metal edges are allowed. Doors must meet appropriate construction for fire rating without the use of metal at meeting stiles.

2.4 LOUVERS

- A. Material: Match face veneer species, with round edge, flat slat blade and 50 percent free area.

2.5 FINISH

- A. Shop Prime: Factory prime with 1 coat of wood primer to receive paint finish as specified in Section 09 91 00.

PART 3 EXECUTION

3.1 EXAMINATION

- A Examine door frames to assure that jambs are true and plumb. Correct frames which are not true and plumb before doors are hung.

3.2 INSTALLATION

- A Doors shall be hung true and plumb with standard bevel and with uniform 3/32 inch clearance at jambs and head, and 1/2 inch bottom clearance, unless otherwise required. Mortise, drill or otherwise prepare doors for finish hardware specified in Section 08 71 00, Finish Hardware. Pilot drill screw and bolt holes.
- B Doors that are cut or planed for fitting shall be immediately resealed with a transparent wood sealer. Doors shall operate freely without sticking or binding, without hinge-bound conditions and with hardware installed, properly adjusted and functioning.
- C Install fire doors and frames to comply with NFPA 80 and in accordance with manufacturer's printed instructions.
- D Installation Tolerances:
 - 1. Maximum Diagonal Distortion (Warp): 1/4 inch (6 mm) measured with straight edge or taut string, corner to corner, over an imaginary 42 x 84 inch surface area.
 - 2. Maximum Vertical Distortion (Bow): 1/4 inch (6 mm) measured with straight edge or taut string, top to bottom, over an imaginary 42 x 84 inch surface area.
 - 3. Maximum Width Distortion (Cup): 1/4 inch (6 mm) measured with straight edge or taut string, edge to edge, over an imaginary 42 x 84 inch surface area.
 - 4. Cross Site Reveal: Not to exceed 3/16 inch as measured against stop of installed frames and doors. Doors and frames exceeding maximum allowed cross site reveal shall be removed and replaced at no additional expense to Owner.
- E Field Finish: Provide as specified in Section 09 91 00 and in accordance with Door Manufacturer's written instructions.
- F Adjusting: Adjust doors for smooth and balanced door movement.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 08 1423
STEEL CLAD DOORS**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Steel clad insulated exterior doors fabricated with polystyrene, polyurethane or fiberglass cores and patterned steel skin as indicated and specified (unit entrance doors).
- B Related Sections:
 - 1. Section 06 2000 – Finish Carpentry, for wood door frames for steel clad doors.
 - 2. Section 08 1113 – Steel Doors and Frames, for hollow metal doors for exterior locations (public spaces).
 - 3. Section 08 1400 – Wood Doors, for paint grade solid core and hollow core wood doors.

1.2 SUBMITTALS

- A Product Data: Submit manufacturer's product data including description of materials and construction, sizes, model numbers including elevations and profiles, frame types, typical details, requirements for hardware, etc.
- B Fire Rated Doors: Submit certification for fire rated doors (including frames and hardware as a unit) indicating compliance with IBC requirements.

1.3 DELIVERY AND STORAGE

- A Store doors and frames under protective cover in dry, enclosed spaces at the site. Place doors and frames on non-staining blocking. Raise bottoms of doors at least 4 inches high and provide 1/4 inch air space between stacked doors to avoid metal to metal contact and permit air circulation.

1.4 WARRANTY

- A Manufacturer's Warranty: Submit manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish steel doors and frames from one of the following Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements:
 - 1. Masonite International Corporation www.maosinite.com
 - 2. ReliaBilt www.lowes.com
 - 3. Stanley Doors www.stanelydoor.ca
 - 4. Therma-Tru Doors. www.thermatru.com
 - 5. As approved by Architect and/or Owner.

2.2 MATERIALS

- A Door Construction:
1. Wood or laminated lumber stiles and rails.
 2. Pour-in-place polyurethane foam, 1-piece molded polystyrene, or fiberglass core without core voids.
 3. 1 inch laminated veneer lumber (LVL) lock stile and top rail.
 4. 24 to 26 gauge cold-rolled galvanized steel.
 5. Two coats of neutral, low-sheen, baked-on enamel primer on exterior surfaces.
 6. Epoxy primer on the back of the steel skin to prevent corrosion.
 7. PVC door sweep to provide weather seal.
 8. Design: Panel design as indicated on Drawings or as selected by Architect from full range of panel designs.
- B Low-Emitting Materials: Fabricate doors with adhesives and composite wood products that do not contain urea formaldehyde.

2.3 FABRICATION- DOORS

- A Construct steel clad doors to pattern as indicated on the Drawings. Bevel edge of lock stile.
- B Door Edge Joint and Treatment: Joints at the edges of doors shall have manufacturer's standard edge construction.
- C Reinforce openings in doors for lites in accordance with manufacturer's standard details.
- D Accurately mortise doors for locks and hinges. Provide adequate reinforcement for all items of hardware.
- E Fire-Rated Doors: Provide fire rated doors investigated and tested as fire door doors, complete with type of hardware to be used. Identify each fire door with recognized testing laboratory labels, indicating applicable fire rating of steel doors. Refer to code plan sheets and door schedule for rating requirements.

2.4 PAINTING

- A Bonderize and prime doors and frames to receive finish paint as scheduled and in accordance with Section 09 9100.

PART 3 EXECUTION

3.1 INSTALLATION

- A Install doors and fasten to maintain alignment with frames to achieve maximum operational effectiveness and appearance.
1. Maintain clearances as specified in ANSI A250.8, 2.1.8.
 2. Shim as required per ANSI/A115.IG.
- B Prepare and install doors in accordance with ANSI A115.

3.2 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section

01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.

- B. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

SECTION 08 5413 - FIBERGLASS WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes hung fiberglass-framed windows.

1.3 REFERENCES

- A. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Doors.
 - 2. AAMA 623 - Voluntary Performance Requirements and Test Procedures for Organic Coatings on Fiber Reinforced Thermoset Profiles.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 1036 - Flat Glass.
 - 2. ASTM C 1048 - Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass.
 - 3. ASTM D 3656 - Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns.
 - 4. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
 - 5. ASTM E 547 - Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
- C. Screen Manufacturers Association (SMA):
 - 1. SMA 1201 - Specifications for Insect Screens for Windows, Sliding Doors and Swinging Doors.
- D. Window and Door Manufacturers Association (WDMA):
 - 1. ANSI/AAMA/NWDA 101/I.S.2 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.

1.4 PERFORMANCE REQUIREMENTS

- A. Windows shall meet Rating LC specifications in accordance with ANSI/AAMA/NWDA 101/I.S.2/A440-08 or ANSI/AAMA/NWDA 101/I.S.2/A440-11.
- B. Window Air Leakage, ASTM E 283: Window air leakage when tested at 1.57 psf (25 mph) shall be 0.3 cfm/ft² of frame or less.
- C. Window Water Penetration, ASTM E 547: No water penetration through window when tested under static pressure of 4.5 psf (42 mph) after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot.
- D. Structural Performance: No glass breakage, damage to hardware, permanent deformation that would impair operation of the unit, or residual deflection at a positive (inward) and negative (outward) test pressure of 37.5 psf.

1. PSF loads per level as follows (ASD / LRFD)

i	Windows at 2 nd floor:	18.3 / 29.28
ii	Windows at 3 rd floor:	19.8 / 31.68
iii	Windows at 4 th floor:	20.6 / 32.96
iv	Windows at 5 th floor:	21.3 / 34.08
v	Windows at Mezzanine:	21.8 / 34.88

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of fiberglass windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for fiberglass windows.
- B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Samples: For each exposed product and for each color specified, 2 by 4 inches in size.
- D. Samples for Initial Selection: For units with factory-applied color finishes.
 1. Include similar Samples of hardware and accessories involving color selection.
- E. Samples for Verification: For fiberglass windows and components required, prepared on Samples of size indicated below:
 1. Exposed Finishes: 2 by 4 inches
 2. Exposed Hardware: Full-size units.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of fiberglass window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating fiberglass windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.
- B. Installer Qualifications: An installer acceptable to fiberglass window manufacturer for installation of units required for this Project.

- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockup of typical wall area for complete system installation.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Regulatory Requirements:
 - 1 ANSI A117.1, 2009 "Accessible and Usable Buildings and Facilities."
 - 2 Public Law 101-336 "The Americans with Disabilities Act of 1990 (ADA).
 - 3 2010 ADA Accessibility Guidelines (ADAAG).
 - 4 The Arizonans with Disabilities Act of 1992 Administrative Rules (AzDAAG)
 4. Single Source Responsibility: Operable and fixed windows, including finishes, used for this project shall be provided through one source from a single manufacturer.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace fiberglass windows that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, and air infiltration.
 - c. Faulty operation of movable sash and hardware.
 - d. Deterioration of materials and finishes beyond normal weathering.
 - e. Failure of insulating glass.
 2. Warranty Period:
 - a. Window: Manufacturer's standard or 10 years whichever is longer from date of Substantial Completion.
 - b. Glazing Units: Manufacturer's standard or 10 years whichever is longer from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. **Basis-of-Design Product:** Subject to compliance with requirements, provide fiberglass windows by Pella Corporation or a reviewed substitute by one of the following:
 - 1. Fibertec Window and Door Manufacturing.
 - 2. Other as acceptable substitute
- B. **Source Limitations:** Obtain fiberglass windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. **Product Standard:** Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
- B. **Window Certification:** WDMA certified with label attached to each window. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
 - 1. **Minimum Performance Class:** CW.
 - 2. **Minimum Performance Grade 30 .**
 - 1. **Thermal Transmittance:** NFRC 100 maximum whole-window U-factor of As scheduled on Drawings to meet Energy Code requirements.
 - 2. **Solar Heat-Gain Coefficient (SHGC):** NFRC 200 maximum whole-window SHGC of As scheduled on Drawings to meet Energy Code requirements.
- C. **Sound Transmission Class (STC):** Rated for not less than 33 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- D. **Outside-Inside Transmission Class (OITC):** Rated for not less than 30 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332.
- E. **Windborne-Debris Resistance:** Capable of resisting impact from windborne debris based on testing glazed windows identical to those specified, according

to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.

2.3 FIBERGLASS WINDOWS

- A. Operating Types: Provide the following operating types in locations indicated on Drawings:
1. Hung, as indicated.
- B. Frames and Sashes: Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard enamel coating complying with AAMA 613.
1. Exterior Color: White, subject to approval by Architect.
 2. Interior Finish: White, subject to approval by Architect.
 - a. Insulating-Glass Units: Refer to Division 08 Section Glazing for glass requirements. Dual pane.
 3. Filling: Fill space between glass lites with argon
 4. Low-E Coating: Pyrolytic on second surface
 5. Integral Louver Blinds: When required by the Owner, glass manufacturer's standard, horizontal louver blinds with aluminum slats and polyester fiber cords, located in space between glass lites, and operated by hardware located on inside face of sash.
 - a. Operation: Tilt, raising, and lowering.
 - b. Color: As selected by Architect from manufacturer's full range
 - c. Glazing System: Refer to Division 08 Section "Glazing".
- D. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock fiberglass windows, and sized to accommodate sash weight and dimensions.
1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range of metals, and colors..
- E. Hung Window Hardware:
1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.

2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only. Provide custodial locks.
 3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.
- F. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- G. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.
- H. Safety Stops Window Opening Prevention Device. Provide at operable windows.

2.4 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
- B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
 2. Finish for Screens: Baked-on organic coating in color selected by Architect from manufacturer's full range.
- C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch- diameter, coated aluminum wire.

2.5 FABRICATION

- A. Fabricate fiberglass windows in sizes indicated. Include a complete system for installing and anchoring windows.

- B. Glaze fiberglass windows in the factory.
- C. Weather strip each operable sash to provide weathertight installation.
- D. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

2.6 SUN SCREEN

- A. General: Fabricate sun screens to integrate with window frame. Provide screen at all turf facing windows not recessed in a balcony.
- B. Aluminum Frames: UniForm.
 - 1. Model .025
 - 2. Finish: Color selected by Architect from manufacturer's full range.
- C. Sun Screen Shade Fabric: Suntex 90
 - 1. Model Suntex 90
 - 2. Finish: Color selected by Architect from manufacturer's full range.

2.8 SOURCE QUALITY CONTROL

- A. Factory Testing: Factory test individual standard operable windows for air infiltration in accordance with ASTM E 283, to ensure compliance with this specification.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- C. Install windows level, plumb, square, true to line and maintain alignment with adjacent work.
- B. Secure assembly to framed openings, Install windows without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.
- B. Installed windows shall be weather-tight and operate freely and easily without hesitating, binding or dragging, and shall remain in selected opening position level and true without slipping or sagging.
- C. Integrate window system installation with exterior water-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with water-resistant barrier using watershed principles in accordance with window manufacturer's instructions.
- F. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.
- G. Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly.
- H. Leave windows closed and locked.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
 - 1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

- B. Testing Services: Testing and inspecting of installed windows shall take place as follows:
1. Testing Methodology: Testing of windows for air infiltration and water resistance shall be performed according to AAMA 502.
 2. Air-Infiltration Testing:
 - a. Test Pressure: That required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance class indicated.
 - b. Allowable Air-Leakage Rate: 1.5 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for product type and performance class rounded down to one decimal place.
 3. Water-Resistance Testing:
 - a. Test Pressure: Two-thirds times test pressure required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance grade indicated.
 - b. Allowable Water Infiltration: No water penetration.
 4. Testing Extent: 2 windows of each type as selected by Architect and a qualified independent testing and inspecting agency. Windows shall be tested after perimeter sealants have cured.
 5. Test Reports: Prepared according to AAMA 502.
- C. Remove and replace noncomplying windows and retest as specified above.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- E. Prepare test and inspection reports.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
 1. Keep protective films and coverings in place until final cleaning.

- C. Do not use harsh cleaning materials or methods that would damage finish or glass.
- D. Remove labels and visible markings
- E. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.
- F. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 08 5413

**SECTION 08 7100
DOOR HARDWARE**

PART 1 GENERAL

1.1 SUMMARY

- A. SECTION INCLUDES
 - a. Finish hardware for doors.
 - b. Electronic hardware.
 - c. Thresholds & weatherstripping
 - d. Keying System
 - e. Templates
 - f. Hardware schedule

1.2 RELATED SECTIONS

- a. 08 11 00 - Hollow metal doors and frames.
- b. 08 14 00 - Wood doors.
- c. 08 41 00 - Entrances and Storefronts.

1.3 REFERENCES

- A. Publications of agencies and organizations listed below form a part of this specification section to the extent referenced.
 - a. DHI - Recommended Locations for Builders' Hardware.
 - b. NFPA 80 - Standards for Fire Doors and Windows.
 - c. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures.
 - d. UL - Building Material Directory.
 - e. DHI - Door and Hardware Institute
 - f. WHI - Warnock Hersey
 - g. BHMA - Builders Hardware Manufacturers Association
 - h. ANSI – American National Standards Institute
 - i. IBC - International Building Code Edition as adopted and amended by local building code authorities

1.4 SUBMITTALS

- A. Schedules: Submit detailed finish hardware schedule and product data in accordance with section 01 35 00.
 - a. Furnish a typewritten schedule in vertical format complete with catalog cuts. Schedule shall be complete, including type, manufacturers name and number, and finish of each item required. Include complete schedule of keying system.
- B. Samples: If requested, submit sample of each type of finish hardware proposed for the project. If approved, samples may be used on project.
- C. Templates: Furnish templates required for fabrication of hollow metal doors and frames, aluminum and glass doors, or other items related to hardware

1.5 QUALITY ASSURANCE

- A. Supplier: Hardware supplier shall have a minimum of three years experience in supplying hardware for projects of this size and scope and shall have in his employ a certified Architectural Hardware Consultant (AHC) to prepare submittals and coordinate proper preparation for and installation of hardware.

- B. Substitutions: Manufacturers and model numbers listed are to establish a standard of quality. Similar items of approved manufacturers that are equal in design, function and quality will be accepted upon prior approval by the architect and provided required data and physical samples are submitted in accordance with Section 01 25 00.
- C. Regulatory requirements: Conform to code requirements applicable to fire rated doors and frames and to accessibility for the physically handicapped.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Package each item of hardware in original containers and mark each to correspond with heading numbers on the hardware schedule.
- B. Include necessary instructions, templates, drawings and fasteners for proper installation.
- C. Store off the floor in a clean dry area out of the way of work in progress

1.7 WARRANTY

- A. Provide warranty of hardware items for one year.
 - a. Provide a ten year warranty for door Lever locks.
 - b. Provide a ten year warranty for door Exit devices.
 - c. Provide a ten year warranty for door Closers.
 - d. Provide a one year warranty for electrified Lever locks.
 - e. Provide a one year warranty for electrified Exit devices.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- B. Catalog numbers of manufacturers listed in the first column have been used to establish the quality required. Manufacturers listed in the other columns are acceptable. The exception to Division 01 substitution, other manufacturers must be prior bid approval by Owner and Architect. No Substitution.

Hinges	Ives	Bommer
Locks	Falcon	No Substitution
Cylinders/keys	Falcon/Schlage	No Substitution
Closers	Falcon	No Substitution
Flat goods	Ives	Trimco
Exit Device	Falcon	Adams Rite (Aluminum Storefront only)
OH Stops	Glynn Johnson	Rixson
Thresholds.	NGP	
Weatherstrip	NGP	

2.2 MATERIALS

- C. Screws and Fasteners: Furnish all exposed fasteners to match item being secured. Make all fasteners of the same material as item being fastened except provide stainless steel or brass for securing aluminum items.
- D. Project is LEED certification, provide all documents for this requirement.
- E. Hinges:

1. Full mortise template hinges, ball bearing type. Interior of units plain bearing.
 2. Non-removable pin and heavy weight at exterior doors.
 3. Furnish quantity of hinges as follows:
 - a. Doors to 60" high: 2 hinges
 - b. Doors over 60" to 90" high: 3 hinges
 - c. Doors over 90" to 120": 4 hinges
 4. Furnish hinge sizes as follows:
 - a. For 1 3/4" doors to 3'0" wide: 4.5" x 4.5"
 - b. For 1 3/4" doors over 3'0" wide: HW 5 x 4.5"
 - c. For Unit interior 1 3/8" doors to 3'0" wide: per schedule.
 - d. Width of hinges adjusted to clear adjacent trim.
 5. Continuous aluminum geared hinges, 112XY or as specified.
- F. Electric Power Transfer – Common Area
1. EPT-10 CON unless otherwise scheduled.
 2. Locate power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.
- G. Pivot Sets – Common Area
1. Ives 7226 series unless otherwise scheduled.
 2. Provide pivot sets complete with oil-impregnated top pivot, unless indicated otherwise.
 3. Where offset pivots are specified, provide one intermediate pivot for doors less than 91 inches high and one additional intermediate pivot per leaf for each additional 30 inches of height.
 4. Provide pivot sets complete with oil-impregnated top pivot, unless indicated otherwise.
- H. Flush Bolts
1. Ives manual, automatic, constant latching FB Series unless otherwise scheduled.
 2. Provide 12 inches for door up to 90 inches and adjust for taller door for top bolt location.
- I. Locksets and Latchsets – Common Area
1. Bored type locksets complying with ANSI A156.2 Series 4000 Grade 1.
 2. Provide 2 3/4" backsets unless job conditions dictate otherwise.
 3. Provide strikes with extended lip where required to protect trim from damage by latchbolt.
 4. Falcon T series Dane levers specified as the standard of quality.
 5. Bored type locksets complying with ANSI A156.2 Series 4000 Grade 2.
 6. Provide 2 3/4" backsets unless job conditions dictate otherwise.
 7. Provide strikes with extended lip where required to protect trim from damage by latchbolt.
 8. Falcon W series Dane levers specified as the standard of quality.
- J. Locksets and Latchsets – Unit Area
1. Bored type locksets complying with ANSI A156.2 Series 4000 Grade 2.
 2. Provide 2 3/4" or 2 3/8" backsets per job conditions.
 3. Provide strikes with extended lip where required to protect trim from damage by latchbolt.
 4. Schlage F series MNH levers specified as the standard of quality.
 5. Bored type locksets complying with ANSI A156.2 Series 4000 Grade 3.
 6. Provide 2 3/4" or 2 3/8" backsets per job conditions.
 7. Provide strikes with extended lip where required to protect trim from damage by latchbolt.
- K. Electronic Programmable Interconnected Locksets – Unit Area
1. Safelok Insync CM w/ 1" auto deadbolt complying with UL 20 min and 3 Hr, ADA Compliant.
 2. Provide 2 3/4" backsets with 1/2" latch throw latchbolt and 1 inch throw deadbolt.
 3. Provide strikes with extended lip where required to protect trim from damage by latchbolt.
 5. Lever / Rose Design – Gala.
 6. Requirements:
 - a. Time and Date controlled access.
 - b. User per product.
 - c. Audit Trail report.
 7. Provide power by four (4) AA batteries (included).

- L. Exit Devices
 - 1. All to be U.L. approved for casualty. All fire doors to be equipped with rated exit devices meeting fire label requirements. Tested to ANSI A156.3 Grade 1.
 - 2. Provide all exit devices from one manufacturer.
 - 3. Falcon 25 series specified as the standard of quality.
 - 4. Provide cylinders as required by exit device for proper operation.

 - M. Door Closers
 - 1. Bodies to be aluminum with three separate control valves, including backcheck, ANSI A156.4 Grade 1 – Exterior & Common Use Area, Grade 3 at Unit Entry (Grade 1 SC60A).
 - 2. Closers to match adjacent hardware.
 - 3. Provide all closers with thru bolts.
 - 4. All closers to comply with Americans with Disabilities Act requirements.
 - 5. Falcon Series: SC70A – Exterior & Common / High Use Area, SC80A – Interior non-abuse area, and SC60A Unit Entry specified as the standard of quality.

 - N. Protection Plates
 - 1. Kickplates
 - a. Provide .050 x 10" high x 2" less than door width for single doors and 1" less than door width for pairs.
 - b. Provide .050 x 8" high x 2" less than door width for unit entry single doors.
 - c. Provide bevel four edges, countersink fasteners.
 - d. Ives 8400 series specified as the standard of quality.

 - O. Overhead Stops and Stop/holders
 - 1. Glynn-Johnson, 410 / 450 Series per schedule.
 - 2. Glynn-Johnson, 100 / 90 Series per schedule.

 - P. Flush Bolts
 - 1. Flush bolts equal to Ives FB series with 12" rods.
 - 2. Provide extension rods where conditions dictate.

 - Q. Door Stops
 - 1. Wall stops shall be used whenever possible. Use floor stops where wall stops cannot be used.

 - R. Silencers
 - 1. Provide 3 for each single door and 2 for each pair of doors. Not required on door having weatherstripping or gasketing.

 - S. Sliding Door Hardware – hanging, privacy hardware and pulls as listed in hardware sets.

 - T. Thresholds Door Sweeps and Weatherstripping as listed in hardware sets.
- 2.3 FINISHES
- U. Provide matching finishes for hardware items at each door opening to the greatest extent possible, except as otherwise indicated.

 - V. Provide finishes which comply with those established by BHMA listed in "Materials and Finishes Standard 1301".

 - W. Finishes for this project are as follows;
 - a. Hinges 652/630
 - b. Locksets 626
 - c. Exit Devices 626
 - d. Flat Goods 630
 - e. Stops 630

f. Closers 689

2.4 KEYING

- A. Key all locks into new master key system, Schlage conventional in accordance with owner's instructions.
 - 1. Master Keys – 4 ea
 - 2. Change Keys – 3 per lock
- B. Key cabinet to be 150% of capacity, equal to Lund 1200 Series.
- C. Knox Box as directed by Architect, must meet local Fire Dept Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- X. Examine doors, frames and related items for conditions that would prevent proper application of finish hardware. Do not proceed until defects have been corrected.

3.2 INSTALLATION

- Y. Install each item in accordance with manufacturer's instructions and recommendations. Set units level, plumb and true to line and location. Do not install surface mounted items until finishes have been completed on substrate.
- Z. Hardware vendor to coordinate with general contractor on all blocking requirements.
- AA. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- BB. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

3.3 ADJUST AND CLEAN

- CC. At final completion hardware shall be left clean and free from disfigurement. Make a final adjustment to closers and other items of hardware. Where hardware is found defective repair or replace or otherwise correct as required.
- DD. Occupancy Adjustment: Approximately **six** months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.4 HARDWARE SETS













- EE. While the following hardware sets are intended to cover all doors and establish a type and standard of quality, it is the responsibility of the hardware supplier to examine the plans and specifications and furnish proper hardware for all openings. The hardware supplier shall review the entire specification versus the door schedule and notify the architect of any errors, inconsistencies, or omissions during the bid period.

↗ = Hardware Item Requiring Electrical Coordination

HARDWARE GROUP NO. 01

FOR USE ON DOOR #(S):














PROVIDE EACH PR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		630	IVE
1	EA	PANIC HARDWARE	25-C-C-718		626	FAL
1	EA	PANIC HARDWARE	25-C-EO		626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS		626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 10" O		630	IVE
2	EA	SURFACE CLOSER	SC71 SS		689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	EA	DRIP CAP	16A		A	NGP
1	SET	SEALS	700SA		CL	NGP
1	SET	ASTRAGAL	137NA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

HARDWARE GROUP NO. 02

FOR USE ON DOOR #(S):

PROVIDE EACH PR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP		630	IVE
1	SET	AUTO FLUSH BOLT	FB31P		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	STOREROOM LOCK	T581L6 QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	COORDINATOR	COR X FL X MB AS REQUIRED		628	IVE
2	EA	SURFACE CLOSER	SC71 SS		689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	EA	DRIP CAP	16A		A	NGP
1	SET	SEALS	700SA		CL	NGP
1	SET	ASTRAGAL	137NA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

HARDWARE GROUP NO. 03

FOR USE ON DOOR #(S):

PROVIDE EACH PR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP		630	IVE
1	SET	AUTO FLUSH BOLT	FB31P		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	STOREROOM LOCK	T581L6 QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	COORDINATOR	COR X FL X MB AS REQUIRED		628	IVE
2	EA	SURFACE CLOSER	SC81 SS		689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	EA	DRIP CAP	16A		A	NGP
1	SET	SEALS	700SA		CL	NGP
1	SET	ASTRAGAL	137NA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

HARDWARE GROUP NO. 04

FOR USE ON DOOR #(S):

PROVIDE EACH PR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP		630	IVE
1	SET	AUTO FLUSH BOLT	FB31P		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	STOREROOM LOCK	T581L6 QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	COORDINATOR	COR X FL X MB AS REQUIRED		628	IVE
2	EA	SURFACE CLOSER	SC71 SS		689	FAL
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
1	SET	SEALS	700SA		CL	NGP
1	SET	ASTRAGAL	137NA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

HARDWARE GROUP NO. 05

FOR USE ON DOOR #(S):

2-128A	2-223	2-230	2-323	2-330	2-423
2-430	2-523	2-529	15	100A	100B
100C	200A	200B	228	300A	300B
328	400A	400B	428	500A	500B
528	G-03	G-05	G-22B	G-24A	G-233A
G-233B	G-235	G-333B	G-335	G-433B	G-435
G-535					

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-L-BE-QUA	626	FAL
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 06

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY / OFFICE LOCK	W511L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 07

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	W101S QUA	626	FAL
1	EA	SURFACE CLOSER	SC71 DEL RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 08

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRY / OFFICE LOCK	W511L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 09

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	W561L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 10

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	25-R-NL-OP	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 11

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-NL-OP	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 12

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	25-R-NL-OP	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	DRIP CAP	16A	A	NGP
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 13

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-NL-OP	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	DRIP CAP	16A	A	NGP
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 14

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	25-R-L-QUA	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 15

FOR USE ON DOOR #(S):










PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	T581L6 QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	DRIP CAP	16A	A	NGP
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 16

FOR USE ON DOOR #(S):







PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		630	IVE
1	EA	STOREROOM LOCK	T581L6 QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	OH STOP	450S		630	GLY
1	EA	SURFACE CLOSER	SC71 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	SET	SEALS	700SA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

HARDWARE GROUP NO. 17

FOR USE ON DOOR #(S):







PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK	W301S QUA		626	FAL
1	EA	SURFACE CLOSER	SC81 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)		626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 18

FOR USE ON DOOR #(S):








PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	CLASSROOM LOCK	W561L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC71 SS		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 19

FOR USE ON DOOR #(S):








PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	W561L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)		626	IVE
1	SET	SEALS	5050B		BRN	NGP

HARDWARE GROUP NO. 20

FOR USE ON DOOR #(S):







PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	CLASSROOM LOCK	W561L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)		626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 21

FOR USE ON DOOR #(S):








PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	STOREROOM LOCK	W581L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC81 SS		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 22

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:








QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CLASSROOM LOCK	W561L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)		626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 23

FOR USE ON DOOR #(S):

2-132	2-133	2-227	2-228	2-327	2-328
2-427	2-428	2-527	2-528	20	21
231	232	331	332	431	432
531	532				








PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	W581L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	OH STOP	450S		630	GLY
1	EA	SURFACE CLOSER	SC81 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 24

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	STOREROOM LOCK	W581L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)		626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 25

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	W581L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 26

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	W561L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 27

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:









QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	W581L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 28

FOR USE ON DOOR #(S):

A100	A107	B100	C100	C100	D100
D100	E100	F100	G100	H100	J100
K100	L100	L100	M100	N100	P100
Q100	Q107				

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QT Y		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	CARD READER LOCK	INSYNC CM W/ 1" AUTO DB X GALA LEVER		626	SAF
1	EA	SURFACE CLOSER	SC61 REG		689	FAL
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS		630	IVE
1	EA	DOOR STOP	60 / 70 (AS REQ'D BY WALL CONDITIONS) COORDINATE HINGE PIN WITH HINGE		626	IVE
1	SET	SEALS	5050B		BRN	NGP
1	EA	DOOR BOTTOM	36VA		CL	NGP
1	EA	SADDLE THRESHOLD	425		719	NGP
1	EA	VIEWER	U698		626	IVE

NOTE:





1. INSTALL TWO-DOOR VIEWERS FOR ACCESSIBLE DOORS, ONE AT STANDARD HEIGHT AND THE OTHER DOOR VIEWER AT THE ACCESSIBLE HEIGHT WHERE REQ.

HARDWARE GROUP NO. 29

FOR USE ON DOOR #(S):

A102	A103	A109	A110	B104	B105
C103	C103	C104	C104	D104	D104
D105	E102	E103	E104	E105	F103
F104	F105	F106	G103	G104	G105
G106	H104	H105	H106	H107	J104
J105	J106	J107	J108	K104	K105
K106	K107	K108	L101	L101	M101
N101	P101	Q102	Q103	Q109	Q110

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QT Y		DESCRIPTION	CATALOG NUMBER		FINIS H	MFR
3	EA	HINGE	5PB1 3.5 X 3.5		652	IVE
1	EA	PRIVACY LOCK	F40 MNH		626	SCH
1	EA	DOOR STOP	60 / 70 (AS REQ'D BY WALL CONDITIONS) COORDINATE HINGE PIN WITH HINGE		626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED		GRY	IVE

HARDWARE GROUP NO. 30

FOR USE ON DOOR #(S):

A103A	A104	A105	A110A	A111	A112
B101	B102	D101	D101	D102	D102
E106	E107	F102	F106A	G102	G106A
H101	H102	H105A	H106A	J101	J102
K101	K102	L102	L102	L103	L103
M102	N102	P101A	P102	Q103A	Q104
Q105	Q110A	Q111	Q112		

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA HINGE	5PB1 3.5 X 3.5	652	IVE
1	EA PASSAGE SET	F10 MNH	626	SCH
1	EA DOOR STOP	60 / 70 (AS REQ'D BY WALL CONDITIONS) COORDINATE HINGE PIN WITH HINGE	626	IVE
3	EA SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 31

FOR USE ON DOOR #(S):

B104A	C103A	C103A	D104A	D104A	D104B
D104B	E103A	E104A	F104A	G104A	J104A
J105A	J105B	J107A	K105A	K105B	K107A
M103	N104	P104			

PROVIDE EACH BP DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA TRACK BIPASS KIT	134F	AL	JOH
2	EA FLUSH PULL	221	626	IVE

HARDWARE GROUP NO. 32

FOR USE ON DOOR #(S):

A101	A108	B103	C101	C101	C102
C102	D103	D103	E101	F101	G101
H103	J103	K103	K104A	L104	L104
M104	N103	P103	Q101	Q108	

PROVIDE EACH BF DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA TRACK KIT	IN100FLD	AL	JOH
2	EA DOOR KNOB	9566	626	HAG

HARDWARE GROUP NO. 33

FOR USE ON DOOR #(S):

A106	A106A	A113	A113A	B106	B106A
C105	C105	C105A	C105A	D105	D106
D106	D106A	D106A	E108	E108A	F107
F107A	G107	G107A	H108	H108A	J109
J109A	K109	K109A	Q106	Q106A	Q113
Q113A					

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5PB1 3.5 X 3.5	652	IVE
1	EA	PASSAGE SET	F10 MNH	626	SCH
1	EA	SGL CYL DEADBOLT	JD60	626	SCH
1	EA	DOOR STOP	60 / 70 (AS REQ'D BY WALL CONDITIONS) COORDINATE HINGE PIN WITH HINGE	626	IVE
1	SET	SEALS	5050B	BRN	NGP
1	EA	DOOR BOTTOM	36VA	CL	NGP
1	EA	SADDLE THRESHOLD	425	719	NGP

HARDWARE GROUP NO. 34 - NOT USED

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	W581L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC81 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	EA	SILENCER	SR64 / SR65 AS REQUIRED	GRY	IVE

HARDWARE GROUP NO. 35

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-L-QUA	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 36

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PANIC HARDWARE	25-R-L-BE-QUA	626	FAL
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 37

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-L-BE-QUA	626	FAL
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 38

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	W101S QUA	626	FAL
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 39

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	630	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-NL-OP	626	FAL
1	EA	MORTISE CYLINDER	20-001 AS REQUIRED, KEYWAY PER OWNER REQUIREMENTS	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	SC71 SS	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	DRIP CAP	16A	A	NGP
1	SET	SEALS	700SA	CL	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	425HD	AL	NGP

HARDWARE GROUP NO. 40

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	W561L QUA	626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE	626	SCH
1	EA	SURFACE CLOSER	SC71 RW/PA	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP / FLOOR STOP AS REQUIRED	WS402CCV / FS439 (AS REQ'D BY WALL CONDITIONS)	626	IVE
3	SET	SEALS	5050B	BRN	NGP

HARDWARE GROUP NO. 41

FOR USE ON DOOR #(S):

PROVIDE EACH RU DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER
1	EA	BY OTHERS	ALL HARDWARE BY DOOR SUPPLIER

HARDWARE GROUP NO. 42

FOR USE ON DOOR #(S):










PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HARDWARE	ALL HARDWARE BY GATE DOOR SUPPLIER	0	BY

HARDWARE GROUP NO. 43

FOR USE ON DOOR #(S):

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		630	IVE
1	EA	STOREROOM LOCK	W581L QUA		626	FAL
1	EA	K-I-L CYLINDER	TYPE AS REQ'D BY HARDWARE		626	SCH
1	EA	OH STOP	450S		630	GLY
1	EA	SURFACE CLOSER	SC81 RW/PA		689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	SET	SEALS	700SA		CL	NGP
1	EA	DOOR SWEEP	C627A		CL	NGP
1	EA	THRESHOLD	425HD		AL	NGP

**SECTION 08 8000
GLAZING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Glass and glazing for interior and exterior applications.
- B. Related Sections:
 - 1. Section 08 5313 – Polyvinyl Chloride (PVC) Windows, for glass factory glazed into vinyl windows.
 - 2. Section 08 8300 – Mirrors, for wall mounted frameless mirrors.

1.2 PERFORMANCE REQUIREMENTS

- A. Glass and glazing materials shall provide continuity of building enclosure vapor and air barrier.
 - 1. To utilize the inner pane of multiple pane sealed units for the continuity of air and vapor seal.
 - 2. Maintain continuous air and vapor barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.
- B. Glass thickness indicated is minimum and shown for detailing only. Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass as calculated in accordance with IBC Chapter 24, as measured in accordance with ANSI/ASTM E330.
- C. Limit glass deflection to 1/175 or flexure limit of glass, with full recovery of glazing materials, whichever is less.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's Product Data for glass units, including the following:
 - 1. Structural, physical and environmental characteristics.
 - 2. Size limitations.
 - 3. Special handling or installation requirements
 - 4. Special application requirements for glazing materials.
 - 5. Available colors of glass and glazing materials with color selections.
- B. Samples: Submit samples as follows:
 - 1. Two samples 8 x 8 inch in size of each type of glass product required, illustrating coloration, edge treatment and design.
 - 2. Four inch long bead of glazing sealant, color as selected.
- C. Manufacturer's Certificate: Submit Manufacturer's certification that sealed insulated glass meets or exceeds specified requirements.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Conform to 2018 IBC Chapter 24, to local requirements and to State law.

- B. Standards:
 - 1. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 2. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
- C. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, and Laminators Safety Glass Association - Standards Manual for Glazing Installation Methods.
- D. Source Limitations: Obtain each type of glass from a single manufacturer using the same type of glass lights and inner layers for each type of glass type or unit specified. Obtain glazing assemblies from one source for each product and/or installation specified and/or required.
- E. Installer Qualifications: An experienced installer who has successfully completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance for a minimum of 10 years; and who employs glass installers for this project who are certified under the National Glass Association Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).

1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.6 WARRANTY

- A. Provide 5 year Manufacturer's warranty for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Glass Materials: Furnish products of one of the following Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements:
 - 1. Guardian Industries. www.guardian.com .
 - 2. Oldcastle Glass Group. www.oldcastleglass.com .
 - 3. Pilkington LOF. www.pilkington.com .
 - 4. PPG Industries. www.ppgideascapescapes.com .
 - 5. Viracon. www.viracon.com.

2.2 GLASS MATERIALS

- A. Float Glass: ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; 1/4 inch thick minimum.

- B. Safety Glass: ASTM C1048, Kind FT fully tempered with horizontal tempering Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; conforming to ANSI Z97.1; 1/4 inch minimum.

2.3 SEALED INSULATING GLASS MATERIALS

- A Insulating Glass: Units shall comply with ASTM E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation.
1. Units shall be certified for compliance by the IGCC in accordance with the above ASTM test method.
 2. The unit overall thickness tolerance shall be minus 1/16 inch / plus 1/32 inch. Unit constructed with patterned or laminated glass shall be plus or minus 1/16 inch.
 3. Shall comply with ASTM E546 Standard Test Method for Frost Point of Sealed Insulating Glass Units.
 4. Shall comply with ASTM E576 Standard Test Method for Frost Point of Sealed Insulating Glass Units in the Vertical Position
 5. Sealed Insulating Glass Units to be double sealed with a primary seal of polyisobutylene and a secondary seal of silicone.
 - a. The minimum thickness of the secondary seal shall be 1/16 inch.
 - b. The target width of the primary seal shall be 5/32 inch.
 - c. There shall be no voids or skips in the primary seal.
 - d. Gaps or skips between primary and secondary sealant are permitted to a maximum width of 1/16 inch by maximum length of 2 inches with gaps separated by at least 18 inches. Continuous contact between the primary seal and the secondary seal is desired.
 - e. Both primary and secondary sealant adhesion shall exhibit continuous, tenacious adhesion to both glass and spacer contact areas.
 6. To provide a hermetically sealed and dehydrated space, lites shall be separated by an aluminum spacer with three bent corners and one keyed-soldered corner or four bent corners and one straight butyl injected zinc plated steel straight key joint.
 - a. Finish: Bronze anodized to match window frames.
 7. Individual panes of insulated glass units shall be Kind HS (heat strengthened) or Kind FT (fully tempered) where required to resist thermal stress in insulating glass units as determined by the manufacturer, or Kind FT (fully tempered) where indicated or required by Code by location.
- B. Tinted, Low-E Insulated Glass Units: PPG Solarban 60 (2) low-E on Solarbronze insulating glass units complying with ASTM E774 and E773 and as follows or as otherwise approved by the Architect from one of the specified acceptable manufacturers:
1. Pane: Double pane
 2. Edge Seal: Silicone sealant
 3. Outer Pane: 1/4 inch thick, PPG Solarbronze with Solarban 60 on No. 2 surface.
 4. Inner Pane: 1/4 inch thick, clear glass.
 5. Visible Light Transmittance: 42 percent.
 6. Solar Energy Transmittance: 21 percent.
 7. Visible Light Reflectance: 7 percent.
 8. Total Solar Energy Reflectance: 15 percent.
 9. U-Value:
 - a. Winter Night Time: 0.29.
 - b. Summer Day Time: 0.27.
 10. Shading Coefficient: 0.32.
 11. Solar Heat Gain Coefficient: 0.28.

12. Light to Solar Gain (LSG): 1.50
13. Interpane Space: Purged dry air.
14. Total Unit Thickness: 1 Inch.

2.4 GLAZING ACCESSORIES

- A. Setting Blocks: Neoprene or other resilient blocks of 70 to 90 Shore A durometer hardness tested for compatibility with glazing sealant, minimum length 4 inches, sized per GANA guidelines.
- B. Spacers: Neoprene or EPDM blocks of 65+5 Shore A durometer hardness, designed to maintain positioning of glass and prevent shifting of glass in the glazing pocket and tested for compatibility with specified glazing sealant.
- C. Glazing Gaskets: Neoprene or EPDM and silicone compatible, non-cellular dense, 75 +/- 5 Shore A durometer, complying with ASTM C864, option 1 or 2.
 1. Bed all gasket corners, molded or not in elastomeric silicone sealant.
- D. Interior Glazing Compound: Polymerized Butyl Rubber and Inert Fillers (pigments), solvent based with minimum 75% solids, non-sag consistency, tack-free time of 24 hours or less, paintable non-staining.
 1. Glazing compounds used in the inside of the weatherproofing system, shall have a VOC content of not more than 150 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- E. Exterior Glazing Compound: Conforming to ASTM C920, Type S, Grade NS, Use G. Compound shall be paintable, or colored to match frame.
- F. Glazing Tape: Preshimmed 10 percent solids, non-shrinking, butyl rubber tape compatible with sealants. If exposed, tape shall be paintable, or colored to match frame.

2.5 MARKINGS

- A. Tempered glass shall have each light permanently etched with Manufacturer's name and his compliance with ANSI Z-97.1.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Examine framing or glazing channel surfaces, backing, removable stop design, and conditions under which glazing is to be performed.
- C. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Comply with combined recommendations of Glass Manufacturer, aluminum frame manufacturer and manufacturer of sealants and other materials used in glazing, except where more stringent requirements are shown or specified.

- B. Clean the glazing, channel, or other framing members to receive glass, immediately before glazing. Remove coatings which are not firmly bonded to the substrate.
- C. Do not attempt to cut, seam, nip, or abrade glass which is tempered or heat strengthened.
- D. Comply with "Glazing Manual" by GANA, except as shown and specified otherwise by Manufacturers of glass and glazing materials.
- E. Inspect each piece of glass immediately before installation, and discard those which have observable edge damage or face imperfections.
- F. Install setting blocks of proper size at quarter points or eighth points but at no time closer than 6 inches from the end of the horizontal frame in a bead of clear silicone sealant.
- G. Provide spacers inside and out, and of proper size and spacing, for glass sizes larger than 50 united inches. Provide 1/8 inch minimum bite of spacers on glass and use thickness equal to sealant width.
- H. Unify appearance of each series of lights by setting each piece to match others as nearly as possible. Inspect each piece and set with pattern, draw and bow oriented in the same direction as other pieces.
- I. Gasket Glazing:
 - 1. Fabricate gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with stretch allowance during installation.
 - 2. Miter cut and bond ends together at corners where gaskets are used for channel glazing, so that gaskets will not pull away from corners and result in voids or leaks in the glazing system.
 - 3. Insert gasket between glass and frame or fixed stop, securely in place.

3.3 EXTERIOR COMBINATION METHOD (TAPE AND SEALANT)

- A. Clean contact surfaces with solvent.
- B. Cut glazing tape to proper length and set against permanent stops, 3/16 inch below sightline. Weld corners together by butting tape and dabbing with sealant.
- C. Apply bed of sealant along exterior void ensuring full contact with glass.
- D. Place setting blocks at 1/4 points or eighth points, but at a minimum 6 inches from the near edge of block to edge of glass.
- E. Rest glass on setting blocks and push against tape (and heel bead of sealant) with sufficient pressure to ensure full contact and adhesion at perimeter.
- F. Install removable stops, spacer strips inserted between glass, and applied stops at 2-foot intervals, 1/4 inch below sightline. Place glazing tape on glass with tape flush with sightline.
- G. Fill gap between glass and applied stop with sealant to depth equal to bite of frame on glass but not more than 3/8 inch below sightline.
- H. Apply cap bead of sealant along exterior void, to uniform and level line, flush with

sightline. Tool or wipe cap bead surface with solvent for smooth appearance.

3.4 INTERIOR COMBINATION METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to proper length and install against permanent stop, projecting 1/16 inch above sightline.
- B. Place setting blocks at 1/4 point or eighth points, but at a minimum of 6 inches from the near edge of block to edge of glass.
- C. Rest glass on setting blocks and push against tape with sufficient pressure to ensure full contact and adhesion at perimeter.
- D. Install removable stops; spacer strips inserted between glass and applied stops at 2 foot intervals, 1/4 inch below sightline.
- E. Fill gap between glass and applied stop with sealant to depth equal to bite of frame on glass to uniform and level line.
- F. Neatly trim off excess tape to sightline.

3.5 ADJUSTING

- A. Remove and replace glass which is broken, chipped, cracked, abraded or damaged in any other way during the construction period, including natural causes, accidents and vandalism.

3.6 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.
- C. Remove labels after Work is completed.

3.7 PROTECTION

- A. Protect glass from breakage immediately upon installation, by attachment of crossed streamers to framing held away from glass.
- B. Do not apply markers of any type to surfaces of glass.

END OF SECTION

**SECTION 08 8300
MIRRORS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Frameless, custom size wall mounted mirrors as shown on Drawings and as specified.
- B. Related Sections:
 - 1. Section 10 28 13 – Toilet and Bath Accessories.

1.2 SUBMITTALS

- A. Product Data: Submit physical and environmental characteristics, size limitations, and special handling or installation requirements for glass mirror materials.
- B. Samples: Submit samples of mirror support hardware.

1.3 QUALITY ASSURANCE

- A. Standards: ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
- B. Perform Work in accordance with FGMA Glazing Manual.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

PART 2 PRODUCTS

2.1 GLASS MATERIALS

- A. Mirror Glass: ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q1 mirror select; 1/4 inch thick, with successive layers of chemically deposited silver, electrically or chemically deposited copper, and manufacturer's standard organic protective coating applied to second glass surface. Provide fully tempered units where indicated or required by Code by location.
 - 1. Size(s): As indicated on Drawings.
 - 2. Edge Treatment: Square ground edges, painted flat black.
 - 3. Factory seal edges of silvered mirrored glass immediately after edge treatment to prevent chemical or atmospheric penetration of glass coating.
 - 4. Laminated Safety Glass Mirrors: Provide laminated mirrored glass fabricated to produce units complying with ASTM C1172, Kind LM, where required by Code.

2.2 ACCESSORIES

- A Setting Blocks and Gaskets: Neoprene or other resilient blocks of 70 to 90 Shore A durometer hardness tested for compatibility with glazing sealant, minimum length 4 inches.
- B Mirror Mastic: Polymer type mirror mastic resistant to water, shock, cracking, vibration and thermal expansion, compatible with mirror backing paint and approved by mirror manufacturer.
 - 1. Mastic shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59 (EPA Method 24).
- C Mirror Setting Hardware:
 - 1. U-Channel Frames: Stainless steel channel frame as indicated on Drawings as manufactured by C.R. Laurence Co., Inc. www.crlaurence.com, or equivalent as approved by Architect.
 - 2. Finish: Polished stainless steel.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION GENERAL

- A Comply with combined recommendations of Mirror Manufacturer and manufacturer of mirror mastic and other materials used in setting mirrors, except where more stringent requirements are shown or specified.
- B Clean the wall surface, or other substrate to receive mirrors, immediately before installation. Remove coatings which are not firmly bonded to the substrate.
- C Do not attempt to cut, seam, nip or abrade glass which is tempered or heat strengthened.
- D Comply with "Glazing Manual" by FGMA, except as shown and specified otherwise by Manufacturers of mirrors and mirror mastic materials.
- E Inspect each piece of mirror immediately before installation, and discard those which have observable edge damage or face imperfections.

3.3 ADHESIVE INSTALLATION OF MIRRORS

- A Install mirrors by mirror mastic spot method as follows, unless otherwise indicated on Drawings:
 - 1. Apply barrier coat to mirrored glass backing where required by mirror manufacturer prior to application of mirror mastic.
 - 2. Attach mirror bottom support channel frame securely to wall, level and flush with wall surface, with mechanical fasteners, including anchors and inserts as required for supporting wall construction.

3. Apply mirror mastic in spots at equal spacing to cover not more than 25 percent of back of mirror and as required to maintain air circulation between back of mirrored glass and wall substrate.
4. Set mirror in support channel on setting blocks or continuous gasket, and press against substrate to ensure bond of adhesive.
5. Leave open ventilation space, 1/8 inch or more in thickness between mirror and substrate, over 75 percent of mirror area (wherever there is no adhesive).

3.4 ADJUSTING

- A. Remove and replace mirrors which are broken, chipped, cracked, abraded or damaged in any other way during the construction period, including natural causes, accidents and vandalism.

3.5 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.
- C. Remove labels after Work is completed.

END OF SECTION

**SECTION 09 2400
CEMENT PLASTERING**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior vertical plasterwork (stucco) and soffits.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.
- C. Samples: For each type of factory-prepared finish coat and for each color and texture specified.
- D. Store materials inside under cover and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.
- E. Samples for Initial Selection: For each type of factory-prepared finish coat and for each color and texture specified.
- F. Samples for Verification: For each type of factory-prepared finish coat and for each color and texture specified, 12 by 12 inches (305 by 305 mm), and prepared on rigid backing.

1.4 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
1. Build mockups for each substrate and finish texture indicated for cement plastering, including accessories.
 - a. Size: 100 sq. ft. in surface area.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 FIELD CONDITIONS

- A. Comply with ASTM C926 requirements.
- B. Exterior Plasterwork:
 - 1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
 - 2. Apply plaster when ambient temperature is greater than 40 deg F (4.4 deg C).
 - 3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: Where indicated, provide cement plaster assemblies identical to those of assemblies tested for fire resistance according to ASTM E119 by a qualified testing agency.

2.2 METAL LATH

- A. Expanded-Metal Lath: ASTM C847, cold-rolled carbon-steel sheet with ASTM A653/A653M, G60 (Z180), hot-dip galvanized-zinc coating.
 - 1. Diamond-Mesh Lath: [Self-furring, 3.4 lb/sq. yd. (1.8 kg/sq. m).
 - 2. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

2.3 ACCESSORIES

- A. General: Comply with ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Metal Accessories:
 - 1. Foundation Weep Screed: Fabricated from hot-dip galvanized-steel sheet, ASTM A653/A653M, G60 (Z180) zinc coating.
 - 2. Cornerite: Fabricated from metal lath with ASTM A653/A653M, G60 (Z180), hot-dip galvanized-zinc coating.
 - 3. External- (Outside-) Corner Reinforcement: Fabricated from metal lath with ASTM A653/A653M, G60 (Z180), hot-dip galvanized-zinc coating.
 - 4. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.
 - a. Smallnose cornerbead with expanded flanges; use unless otherwise indicated.
 - b. Smallnose cornerbead with perforated flanges; use on curved corners.
 - c. Smallnose cornerbead with expanded flanges reinforced by perforated stiffening rib; use on columns and for finishing unit masonry corners.
 - d. Bullnose cornerbead, radius 3/4 inch (19 mm) minimum, with expanded flanges; use at locations indicated on Drawings.
 - 5. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.

6. Control Joints: Fabricated from zinc-coated (galvanized) steel ; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
7. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
8. Two-Piece Expansion Joints: Fabricated from zinc-coated (galvanized) steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch (6 to 16 mm) wide; with perforated flanges.

2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch (13 mm) long, free of contaminants, manufactured for use in cement plaster.
- C. Bonding Compound: ASTM C932.
- D. Fasteners for Attaching Metal Lath to Substrates: ASTM C1063.
- E. Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch (1.21-mm) diameter unless otherwise indicated.

2.5 PLASTER MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I.
 1. Color for Finish Coats: White.
- B. Masonry Cement: ASTM C91, Type N.
 1. Color for Finish Coats: White.
- C. Lime: ASTM C206, Type S; or ASTM C207, Type S.
- D. Sand Aggregate: ASTM C897.
 1. Color for Job-Mixed Finish Coats: White.
- E. Perlite Aggregate: ASTM C35.
- F. Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.
 1. Color: As selected by Architect from manufacturer's full range.

2.6 PLASTER MIXES

- A. General: Comply with ASTM C926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. (0.6 kg of fiber/cu. m) of cementitious materials.
- B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
 1. Portland Cement Mixes:
 - a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
 - b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.
- C. Job-Mixed Finish-Coat Mixes:
 1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 1-1/2 to 2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material.
- D. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters, comply with manufacturer's written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- B. Prepare smooth, solid substrates for plaster according to ASTM C926.

3.3 INSTALLATION, GENERAL

- A. Fire-Resistance-Rated Assemblies: Install components according to requirements for design designations from listing organization and publication indicated on Drawings.
- B. Sound-Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

3.4 INSTALLING METAL LATH

- A. Metal Lath: Install according to ASTM C1063.
 - 1. On Solid Surfaces, Not Otherwise Furred: Install self-furring, diamond-mesh lath.

3.5 INSTALLING ACCESSORIES

- A. Install according to ASTM C1063 and at locations indicated on Drawings.
- B. Reinforcement for External (Outside) Corners:
 - 1. Install lath-type, external-corner reinforcement or cornerbead at exterior locations.
- C. Control Joints: Locate as approved by Architect for visual effect and as follows:
 - 1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
 - a. Vertical Surfaces: 144 sq. ft. (13.4 sq. m).
 - b. Horizontal and Other Nonvertical Surfaces: 100 sq. ft. (9.3 sq. m).
 - 2. At distances between control joints of not greater than 18 feet (5.5 m) o.c.
 - 3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
 - 4. Where control joints occur in surface of construction directly behind plaster.
 - 5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

3.6 PLASTER APPLICATION

- A. General: Comply with ASTM C926.
 - 1. Do not deviate more than plus or minus 1/4 inch in 10 feet (6 mm in 3 m) from a true plane in finished plaster surfaces when measured by a 10-foot (3-m) straightedge placed on surface.
 - 2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
 - 3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
- B. Walls; Base-Coat Mixes for Use over Metal Lath: For scratch and brown coats, for three-coat plasterwork with 3/4-inch (19-mm) total thickness, as follows:
 - 1. Portland cement mixes.
- C. Ceilings; Base-Coat Mixes for Use over Metal Lath: For scratch and brown coats, for three-coat plasterwork and having 1/2-inch (13-mm) total thickness, unless otherwise noted, as follows:
 - 1. Portland cement mixes.
- D. Plaster Finish Coats: Apply to provide float / smooth, sand finish as approved by Architect.

3.7 PLASTER REPAIRS

- A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.8 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work after plastering is complete. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 09 2400

**SECTION 09 2900
GYPSUM BOARD**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes gypsum board and installation accessories as shown on Drawings and as specified herein.
- B. Related Sections:
 - 1. Section 06 1000 – Rough Carpentry, for wood stud framing.
 - 2. Section 06 1643 – Exterior Gypsum Sheathing, for glass-mat faced exterior gypsum sheathing used for exterior soffit locations.
 - 3. Section 09 2119 – Gypsum Board Shaft Wall Assemblies, for gypsum liner panels used as part of shaft wall construction.
 - 4. Section 09 2216 – Non-Structural Metal Framing, for light gauge metal stud framing and furring.
 - 5. Section 09 3000 – Tile, for tile backer board applied to walls at tubs and showers under tile and extending 12 inches beyond tub and shower edges.

1.2 SYSTEM DESCRIPTION

- A. Acoustical Attenuation for Interior Partitions: Comply with STC rating indicated for Partition Types indicated on Drawings and in accordance with ANSI/ASTME90.
- B. Install outlet box pads (putty pads) over all junction boxes (including electrical power, signal, telephone, cable, thermostats, etc.) within all partitions and gypsum board ceilings containing sound insulation including but not limited to demising walls between residential units, walls and floors/clgs between units and other common, office, corridor, elevator shaft, etc. Use fire rated box pads where required to maintain the fire rating of the partition, wall or ceiling assembly.

1.3 SUBMITTALS

- A. Product Data: Submit data on gypsum board, joint, finish and accessories.
- B. Samples: Submit sample of textured finish prior to application.
- C. Reports: Submit fire test report for fire rated assemblies and acoustical performance test reports for acoustically-rated assemblies.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in Gypsum Board Systems Work with 2 years documented experience and approved by Manufacturer.
- B. Regulatory Requirements: Conform to applicable code for fire rated assemblies as shown on the Drawings.
- C. Comply with applicable specification recommendations of GA-216 and GA-600 as published by the Gypsum Association.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Comply with GA-216 and Manufacturer's directions.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements:
1. Maintain temperature of installed gypsum board spaces in range of 55 degrees F. to 90 degrees F. until building is entirely closed, in accordance with Gypsum Association GA-220 and GA 236.
 2. Ventilate as required to eliminate excessive moisture.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
1. CertainTeed Corp., Saint Gobain www.certainteedcorp.com
 2. Georgia-Pacific Gypsum (GP) www.buildgp.com
 3. National Gypsum Company www.nationalgypsum.com
 4. Pabco Gypsum www.pabco gypsum.com
 5. USG www.usg.com

2.2 GYPSUM BOARD MATERIALS

- A. Standard Gypsum Board: ANSI/ASTM C36 or ASTM C1396; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges. Provide sag-resistant type for ceiling applications.
- B. Fire Rated Gypsum Board: ANSI/ASTM C36 or ASTM C1396; fire resistive type, UL rated; 5/8 inch or 1/2 inch Firecode C as indicated on Drawings, maximum permissible length; ends square cut, tapered edges. Provide sag-resistant type for ceiling applications.
- C. Moisture Resistant Gypsum Board: Mold and moisture resistant gypsum board complying with ANSI/ASTM C630 or ASTM C1177, and resistant to mold and mildew per ASTM D3273 and ASTM G21; 5/8 inch thick, maximum permissible length; tapered edges. 5/8 inch fire-resistant rated units where indicated.
1. Acceptable Products:
 - a. M2Tech mold and moisture resistant gypsum board, CertainTeed Corp.
 - b. DensArmor Plus Interior Guard moisture, mold and mildew resistant coated glass mat faced gypsum core panels, Georgia-PacificGypsum.
 - c. Gold Bond BRAND XP Gypsum Board, National Gypsum Company.
 - d. Pabco Mold cure Plus, Pabco Gypsum.
 - e. USG Sheetrock Brand Mold Tough Gypsum Panels, USG
- D. Glass-Matt Faced Exterior Gypsum Sheathing Board (Soffits): As specified in Section 06 16 43 – Exterior Gypsum Sheathing.
- E. Tile Backer Board: As specified in Section 09 30 00 - Ceramic Tile.

- F. Provide gypsum board panels as long as practical to minimize the number of joints in all partitions and gypsum board ceilings containing sound insulation.
- G. Nonpaper-faced backer board (such as mentioned MOLD-X resistant board) is to be used above and behind any shower or spa wall.

2.3 ACCESSORIES

- A. Adhesive: ASTM C557.
- B. Acoustical Sealant: As specified in Section 07 92 19.
- C. Corner Beads: GA216; Type CB; electro-galvanized steel, square corner.
- D. Edge Trim: GA216; Type L or J bead; electro-galvanized steel and Type LC rolled- formed zinc.
- E. Control Joint: No. 093, roll-formed zinc, as manufactured by U.S.Gypsum, Unimast, or Dietrich.
- F. Joint Materials: ANSI/ASTM C475; reinforcing tape, joint compound, adhesive, water, and fasteners. For coated board and gypsum sheathing, use material recommended by Board Manufacturer.
 - 1. Use 2 inch wide 10 x 10 glass mesh tape at moisture resistant gypsum board.
 - 2. Use only setting type joint compound at moisture resistant gypsum board.
- G. Resilient Furring Channels:
 - 1. ASTM C 645, electro-galvanized to meet ASTM A 591, manufactured from steel supplied in accordance with ASTM A 653, Structural Quality Grade 33; G60 designation galvanized sheet steel.
 - 2. Resilient Furring Channels: RC Deluxe (RCSD) single leg resilient furring channels as manufactured by Dietrich, or approved equivalent.
 - 3. Thickness: 25 MSG, unless otherwise indicated on Drawings.
- H. Screws: Steel drill screws conforming to ASTM C1002.
 - 1. Type G for fastening to gypsum board, Type S for fastening to light gauge steel framing and Type W for fastening to wood framing.
 - 2. Nails are not permitted
- I. Wall Texture: As manufactured by USG, multi-purpose, pre-packaged, non-asbestos type.
- J. Drywall Primer:
 - 1. Paint material specifically formulated to fill the pores and equalize the suction difference between gypsum board surface paper and the compound used on finished joints, angles, fastener heads and accessories and over skimcoatings.
 - 2. Drywall primer which is applied to the finished surface of the work specified in this section shall be provided as specified under Sections 09 91 00 and 09 72 00 as applicable.
 - 3. A good quality, white latex drywall primer formulated with high binder solids, applied undiluted, and shall be applied to gypsum board surfaces prior to the application of texture materials.
- K. Acoustical Putty/Pads:
 - 1. Composition:
 - a. Minimum thickness - 1/8 inch.

- b. Adhesion - adheres readily to metal or plastic.
 - c. Service temperature – 30 deg. to 200 deg. F.
 - d. Shall contain no asbestos.
 - e. Minimum shelf life - 1 year.
2. Acceptable Products:
- a. Non Fire Rated:
 - 1) "Lowry's Outlet Box Pads" as manufactured by Harry A. Lowry & Associates, Inc., 11684 Tuxford Street, Sun Valley, CA 91352 (800) 225-8231.
 - 2) "Sound Pad #68" as manufactured by L.H. Dottie Co., 6131 South Garfield, City of Commerce, CA 90040 (323) 725-1000.
 - b. Fire Rated:
 - 1) "Flamesafe FSP 1077 Putty Pads" as manufactured by W.R. Grace & Co., 1330 Industry Road, Hartfield, PA 19440 (800) 334- 8796.
 - 2) "Putty Pads" as manufactured by Specified Technologies Inc., 200 Evans Way, Suite 2, Somerville, NJ 08876 (800) 992-1180.
 - 3) "Hilti CP617 Putty Pads" as manufactured by Hilti, Tulsa, Oklahoma, (800) 879-6000.
 - 4) "3M Fire Barrier Moldable Putty Pads type MPP-X" to fit box size as manufactured by 3M, St. Paul, MN, (800) 328-1687.
 - 5) "Metacaulk ® Putty Pads" as manufactured by RectorSeal, 2601 Spenwick Drive, Houston, TX 77055 (800) 231-3345.

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify that site conditions are ready to receive Work and opening dimensions are as instructed by the Manufacturer.
- B. Beginning of installation means acceptance of substrate.

3.2 RESILIENT FURRING CHANNELS INSTALLATION

- A. Erect resilient furring channels at locations indicated on Drawings and in accordance with Manufacturer's instructions.

3.3 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with GA-201, GA-216, and ASTM C840 and Manufacturer's instructions as applicable.
 - 1. Coordinate installation with installation of tile backer board specified in Section 09 30 00 indicated to be used under ceramic tile at wet walls and extending out a minimum of 12 inches beyond edge of tub or shower.
- B. Erect single layer standard gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
- D. Ceiling Boards:

1. Install gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 2. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- E. Use screws when fastening gypsum board to metal framing.
- F. Double and Multi-Layer Applications:
1. Place first layer perpendicular to framing or furring members.
 2. Use fire rated gypsum board for fire rated partitions.
 3. Place second layer perpendicular to first layer.
 4. Stagger all joints gypsum drywall where multiple layers occur. Minimum distance between joints of staggered layers shall be equal to the typical distance between framing members.
 5. Do not glue laminate. Screw successive layers of wallboard to framing members only; use screws of sufficient length to penetrate framing members and assure a permanent solid connection thereto.
- G. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- H. Place control joints consistent with lines of building spaces as indicated on Drawings and as recommended by Board Manufacturer.
- I. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials. Use J-metal edge where indicated at unfinished gypsum board edges against other finish materials.

3.4 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.
- C. Taping, filling, and sanding is not required at surfaces behind ceramic tile.
- D. Where single layer of gypsum wallboard occurs, tape all joints. Where multiple layers of wallboard occur, tape outer joints only. Fire tape outer layers of wallboard in ceiling plenums and all other areas hidden from finished view.

3.5 ACOUSTICAL WALLS AND TREATMENT

- A. Install gypsum board in accordance with manufacturer's requirements to achieve required acoustical design rating at ceiling and walls. All gypsum board shall be screwed. Nailing of gypsum board will not be accepted.
- B. Vertical and Horizontal Application: Gypsum board shall be applied with the long edge parallel to the framing members.
1. Joints parallel to framing members: All joints shall occur over framing members.
 2. Where multiple layer of gypsum board construction occur, the joints shall be staggered.
 3. Joints perpendicular to framing members - joints should be avoided where possible.
 4. Screw edge and field spacing shall be in accordance with the

- drywall manufacturer's recommendations.
5. All screws shall penetrate studs or resilient channels, as shown.
 6. The number and type of screws used by the manufacturer to meet requirements shall be used by the Contractor.
- C. Mechanical Contact Between Wall Sections: When more than one set of studs is used in a partition, there shall be no mechanical or structural contact between the various partition wall sections, except as indicated in the Drawings. Complete separation of the two sides of the partition is critical to the acoustical performance of the partition.
- D. Wall Penetrations: Avoid all wall penetrations wherever possible. Any unavoidable penetrations of the gypsum wallboard by piping, conduits, ducts, etc. shall be done in accordance with the Drawings and in such a manner as to maintain the sound and vibration control characteristics inherent in the basic wall or ceiling being penetrated.
- E. Gypsum board gaps at the base, head and sides of the wall shall be no greater than 1/4 inch.
- F. Install acoustical sealant in accordance with Manufacturer's instructions and Section 07 92 19.
- G. Install acoustical sealant at gypsum board perimeter at:
1. Metal framing: Two beads.
 2. Base layer of double layer applications, if applicable.
 3. Face layer.
 4. Seal all around all gypsum board penetrations by conduit, pipe, ductwork, and rough-in electrical/telephone boxes, etc.
- H. Install acoustical sealant where gypsum board joins other walls or surfaces at sound control partitions.
- I. Install acoustical putty pads according to manufacturer's written instructions around all electrical boxes and other penetrating items in all acoustically rated walls or walls with acoustical insulation as detailed.
1. Brush or wipe construction dust and dirt from box surface. If surface is contaminated with oil, etc., wipe with Xylene or Toluene to remove residue.
 2. Center outlet box pad on the back of the junction box. Mold around conduit and cable entering the box. Mold cover around box sides covering all openings and press firmly into place.

3.6 FINISHING OF GYPSUM BOARD SURFACES

- A. Provide finish of gypsum board surfaces in accordance with the Gypsum Association "Recommended Specification: Levels of Gypsum Board Finish" as follows as noted on Room Finish Schedule:
1. Level 0 (Temporary Construction): No taping, finishing, or accessories required.
 2. Level 1 (Fire Taping at plenum areas above ceiling, in attics, in areas where the assembly will be concealed or in building service corridors and other areas not normally open to public view):
 - a. Joints and interior angles shall have tape embedded in joint compound.
 - b. Surface shall be free of excess joint compound.
 - c. Tool marks and ridges are acceptable.
 3. Level 2 (Water resistant gypsum backing for tile) (Areas to receive ceramic tile):
 - a. Joints and interior angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating joint compound over

- joints and interior angles.
 - b. Fastener heads and accessories shall be covered with a coat of joint compound.
 - c. Surface shall be free of excess joint compound.
 - d. Tool marks and ridges are acceptable.
 - e. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.
 - 4. Level 3 (Utility, Equipment, Mechanical, Janitor Rooms, Exterior Soffits, and Similar Spaces) (Appearance areas to receive heavy or medium texture (spray or hand applied) finishes before final painting. This level of finish is not to be used where smooth painted surface is desired.):
 - a. Joints and interior angles shall have tape embedded in joint compound and one additional coat of joint compound applied over joints and interior angles.
 - b. Fastener heads and accessories shall be covered with 2 separate coats of joint compound.
 - c. Joint compound shall be smooth and free of tool marks and ridges.
 - d. Surface to be coated with Drywall Primer as specified herein prior to application of texture.
 - e. Untextured surfaces to be coated with Drywall Primer prior to application of final finish as specified in Section 09 91 00.
 - 5. Level 4: Standard level of finish for all areas, including ceilings, unless otherwise indicated or approved by Architect. (Appearance areas to receive flat paints, light texture, or where backed wall coverings are to be applied:
 - a. Joints and interior angles shall have tape embedded in joint compound and 2 separate coats of joint compound applied over flat joints and one separate coat of joint compound applied over interior angles.
 - b. Fastener heads and accessories shall be covered with 3 separate coats of joint compound.
 - c. Joint compound shall be smooth and free of tool marks and ridges.
 - d. Surface to be coated with Drywall Primer as specified herein prior to application of texture.
 - e. Untextured surfaces to be coated with Drywall Primer prior to application of final finishes as specified in 09 91 00 and 09 72 00, as applicable.
 - 6. Level 5: (Not Used.).
- B. Surfaces shall be free of dust, dirt and oil and shall received Drywall Primer before application of texture or skim coat as required by the manufacturer of the texture or skim coat materials.
- C. Surface Finish: Produce surface finish to match approved sample, type as indicated below.
 - 1. All areas, except where indicated to be light orange peel finish texture: Smooth finish as approved by Architect.
 - 2. Provide light orange peel finish where specifically scheduled.

3.7 IDENTIFICATION

- A. Where required by 2018 IBC, provide permanent label or tag at each fire rated wall on both sides of wall in visible location labeling the wall as a fire rated wall, partition, or smoke barrier in accordance with requirements of IBC Section 703.7. Comply with requirements of Section 10 14 00 – Signage.

3.8 CLEANING

- A. After completion of wallboard installation, taping and texturing, remove rubbish, excess material and equipment from building and job site, leaving floors and other surfaces clean.
- B. Remove overspray from adjoining construction.
- C. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

3.9 PROTECTION

- A. Protect Work from damage until acceptance.
- B. Repair or replace damaged Work.

END OF SECTION

SECTION 09 3000
TILE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes ceramic, mosaic, and similar tile products and installation materials shown on Drawings and as specified herein.
- B. Related Sections:
 - 1. Division 22 – Plumbing, for floor drains at locations to receive ceramic tile.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's data for tile and accessory materials, including recommended procedures for mixing materials and setting tile for each application type.
- B. Samples: Submit a minimum of four samples of each type of ceramic tile required and associated grout type and manufacturers selection of colors, marked with Manufacturer's name and location where tile is to be installed. Tile and Grout color samples shall be submitted within the same submittal package.
- C. Proposed alternate tile setting methods to those specified for review and approval.

1.3 QUALITY ASSURANCE

- A. Comply with applicable requirements of ANSI A-108 Series and the "2018 TCNA Handbook for Ceramic, Glass, and Stone Tile Installation." Tile shall bear the TCNA grade seal.
- B. Subcontractor's Qualifications: The firm executing the work under this Section shall have five (5) years experience in work of similar scope and nature to that specified.
- C. Pre-Installation Meeting: Prior to commencing the work of this Section, schedule and attend a meeting at the job site to discuss conformance with Project requirements.
- D. Blending: Tile Manufacturer to blend tile at the factory.
 - 1. Provide additional blending at the job site as needed to obtain the Architect's approval.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver manufactured materials in original, unbroken containers bearing name of Manufacturer, brand and grade seals. Keep materials dry, clean and protected against deterioration.

1.5 MAINTENANCE

- A. Extra Materials: Furnish one (1) square foot of tile for each 100 square feet of each color and size of tile and grouting materials used in the Project. If less than 100 square feet is installed, provide a minimum of one square foot of extra stock. Extra materials shall be furnished in original packaging.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements.
1. Tile Products: Provide tile products of manufacturer's scheduled on Drawings or as otherwise selected by Architect and/or Owner.
 2. Request for substitutions will be considered in accordance with Section 01 6000.
 3. Setting and Grouting Materials:
 - a. Bostik – Hydroment www.bostik-us.com
 - b. C-Cure, as mfrd by Bonded Materials Company www.c-cure.com
 - c. Custom Building Products www.custombuildingproducts.com
 - d. Laticrete www.laticrete.com
 - e. MAPEI Corporation www.mapei.com
 - f. Tec Specialty Products, Inc., an H.B. Fuller comp. www.tecspecialty.com

2.2 TILE MATERIALS

- A. Tile Products: As scheduled on Drawings or as otherwise selected by Architect.
- B. Trim Shapes: Provide Manufacturer's full selection of trim shapes as required
1. Provide all bases, caps, stops, returns, trimmers, and other shapes indicated or required to produce a completely finished installation.
 2. Base: Provide base of tile, size, color and pattern as scheduled on Drawings or as otherwise selected by Architect and/or Owner.

2.3 INSTALLATION MATERIALS

- A. Mortar for Thin Set Installation: Stain-resistant, latex modified portland cement mortar per A118.4 and applicable TCNA Method.
- B. Mortar Bed for Mud Set Method:
1. Portland cement: ASTM C150, Type 1.
 2. Sand: ASTM C144.
 3. Mortar: One part Portland cement to 6 parts damp sand by volume.
- C. Grout: All grout shall be stain resistant type.
1. Latex grout: Conforming to ANSI 118.6 and the TCNA Handbook, by an approved Manufacturer. Grout shall be sealed as recommended by manufacturer.
 - a. Grout for thin-set installations shall be unsanded, unless otherwise indicated on Drawings.
 2. Epoxy grout: Chemical-resistant per ANSI 118.3, water-cleanable during installation, by an approved Manufacturer. Epoxy grout is required at all wet areas.
 3. Color(s): As scheduled on Finish schedule on Drawings or as otherwise selected by Architect and/or Owner.

2.4 ACCESSORIES

- A. Ceramic Tile Backer Units: Provide one of the following. Furnish units

with manufacturer's recommended joint tape.

1. Cement Backer Board: Provide cementitious backer units complying with ANSI 118.9.
 - a. Thickness: 1/2 inch. Provide 5/8 inch Type X where tile backer units are part of a fire rated partition assembly.
 - b. Subject to compliance with requirements, provide one of the following:
 - 1) C-Cure; C-Cure Board 990.
 - 2) Custom Building Products; Wonderboard.
 - 3) Fin Pan Inc., Util-A-Crete Concrete Backer Board.
 - 4) USG Corporation; DUROCK Cement Board.
 2. Fiberglass-Mat Faced Gypsum Backing Board: ASTM C1178 as follows:
 - a. Thickness: 1/2 inch. Provide 5/8 inch Type X at fire rated assemblies.
 - b. Edges: Square.
 - c. Surfacing: Coated fiberglass mat on face, back, and longedges.
 - d. Mold Resistance (ASTM D3273): 10, in a test as manufactured.
 - e. Permeance (ASTM E96): Not more than 1.0 perms whentiled.
 - f. Acceptable Products: Subject to compliance with requirements, provide products of one of the following:
 - 1) DensShield Tile Backer, 1/2 inch thick or 5/8 inch Fireguard Type X as required, Georgia-Pacific Gypsum (GP) www.buildgp.com.
 - 2) Gold Bond Brand eXP Tile Backer, 1/2 inch thick or 5/8 inch Fire- Shield Type X as required, National Gypsum Company, www.nationalgypsum.com.
 - 3) Diamondback GlasRoc Tile Backer, 1/2 inch thick or 5/8 inch Type X as required, CertainTeed Corp., Saint Gobain, www.certainteed.com
 - 4) USG Durock Brand Glass-Mat Tile Backerboard, 1/2 inch thick or 5/8 inch Type X as required, USG www.usg.com
- B. Welded Wire Fabric Reinforcement:
1. Provide 2 inch x 2 inch mesh of 16/16 gauge wire, or 3 inch x 3 inch mesh of 13/13 gauge wire, or 1-1/2 inch x 2 inch mesh of 16/13 gauge wire, complying with ASTM A185.
 2. Provide mesh in flat sheets, or flatten before installing.
- C. Expansion/Control Joint Sealant: Provide in colors selected by the Architect, complying with requirements of Section 07 92 00.
1. At joints between floors and walls, and at perimeter of metal door frames, provide one-part low modulus moisture cure silicone rubber sealant conforming to FS TT- S-001543A, Class A, FS TT-S-00230C, Type II, Class A and ASTM C 920, Type S, Grade NS, Class 25, Use NT, M, G, A, and O.
- D. Edge and Transition Strips: Solid brass, extruded aluminum, or roll-formed stainless steel edge and transition strips, height and/or size as indicated; with integral perforated anchoring leg for setting the strip into the setting material. Refer to Drawings for locations.
1. Height: As required to suit application, flush with finished floor/wall surface.
 2. Finish: As indicated on Finish Schedule on Drawings, or as selected by Architect.
 3. Products: Subject to compliance with specification requirements, provide one of the following as selected by Architect, unless otherwise indicated on Drawings:
 - a. Schlüter – QUADDEC/-K, SCHIENE, DECO, RENO, or DILEX as indicated on Drawings or as selected by Architect.

- E. Waterproofing and Crack Isolation Membrane: Provide one of the following:
 - 1. Laticrete Blue 92 Anti-Fracture Membrane, or Laticrete Hydro Ban Waterproofing and Crack Isolation Membrane; Laticrete International.
 - 2. RedGard Waterproofing and Crack Prevention Membrane, Custom Building Products.
 - 3. UltraCure 971 Elastomeric Waterproofing and Crack Isolation Membrane, C- Cure.
- F. Tile and Grout Sealer: Colorless, penetrating, stain-resistant sealer recommended tile and grout manufacturers for type of tile and grout indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine subsurfaces to receive Work and report detrimental conditions in writing. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordinate with other Work which affects, connects with or is concealed by this Work. Before proceeding, make certain required inspections have been made.
- C. Where a Portland cement mortar setting will be installed, do not commence installation of the setting bed until substrata are within the following tolerances:
 - 1. Horizontal surfaces: Level within 1/4 inch in 10'-0" in all directions.
- D. Where tile units will be thin-set directly to the substrata, do not commence installation of the tile units until substrata are within the following tolerances:
 - 1. Horizontal surfaces: Level within 1/8 inch in ten feet in all directions;
 - 2. Vertical surfaces: Level within 1/8 inch in eight feet in all directions.
 - 3. Deflection:
 - a. Horizontal Surfaces: Less than 1/360 of the span.
 - b. Vertical Surfaces: Verify that design of the wall or partition will not permit deflection exceeding 1/360 of the span for point and uniform loading. Space wood or metal studs not less than 16 inches on centers.
- E. Fill low spots and grind or sand high spots to provide required tolerances. Use latex modified Portland cement based trowelable leveling and patching compound to fill holes, cracks and depressions in accordance with tile setting materials printed instructions.
- F. Conditions of Surfaces to Receive Tile:
 - 1. Verify that surfaces to receive tile are firm, dry clean, and free from oily or waxy films and curing compounds.
 - 2. Verify that grounds, anchors, plugs, recess frames, bucks, electrical work, mechanical work, and similar items in or behind the tile have been installed before proceeding with installation of tile.
 - 3. Scarify hard steel trowel finish concrete surfaces.
 - 4. Completely remove curing compounds on concrete surfaces by scarification or cleaning methods acceptable to tile setting materials manufacturer.

3.2 PREPARATION

- A. Lay out Work so that no tile of less than half size occurs.

1. For heights stated in feet and inches, maintain full courses to produce nearest attainable heights without cutting tile.
 2. Align joints in wall tile vertically and horizontally except where other patterns are shown or specified. Align joints in walls to conform to patterns selected.
- B. Obtain Architects and/or Owners approval of tile layouts for each area prior to installation, typical for all areas.
- C. Obtain exact locations of expansion joints and accessories before installing tile.
- D. Locate accessories in tile walls as indicated on Drawings or as directed by Architect. Where the size of accessory does not line up with the jointing pattern of adjacent tile, the cutting of tile and arrangement of joints around the accessories shall be as directed by Architect.

3.3 INSTALLATION

- A. Install tile backer board at wet walls and other locations where indicated and as follows:
1. Install cement backer board and treat joints in accordance with ANSI A108.11, manufacturer's recommendations and TCNA Setting methods specified.
 2. Install glass-mat faced gypsum backing board in accordance with ASTM C840, manufacturer's recommendations, and TCNA Setting methods specified.
 3. Extend tile backer board a minimum of 12 inches beyond edge of shower and/or tub on each adjoining wall surface.
- B. Tile –General:
1. Install tile in accordance with ANSI Specifications A108.1 through A118.1 and Manufacturer's recommendations.
 2. Cut and drill neatly as required without marring tile. Rub smooth necessary cuts with a fine stone. Set cut edge against fixture, cabinet or other tile with joint at least 1/16-inch wide.
 3. Joint Widths: Install tile with joint widths indicated on Drawings, or as selected by Architect and/or Interior Designer for various tile types, sizes and applications.
- C. Crack Isolation Membrane: Install waterproofing and crack isolation membrane over cracks and sawcuts up to 1/8 inch in width in concrete slab in accordance with Manufacturer's printed instructions. Sawcut joints over 1/8 inch shall be treated as control joints.
- D. Substrate Construction, Expansion, Control Joints, and Isolation Joints: Do not bridge joints which are designed to experience movement. Carry these types of joints through the mortar and tile installation materials.
1. Where waterproofing is specified, clean the joint and install open or closed cell backer rod to the proper depth as outlined in TCNA EJ171 Guidelines.
 2. Compress sealant as specified in Section 07 92 00 into the joint, coating the sides and leaving it flush with the surface.
 3. After the sealant is dry, place bond breaker tape over the joint.
 4. Apply waterproofing membrane over joint and substrate in accordance with manufacturer's printed instructions.
 5. Install tile onto the membrane, but do not bridge the joint.
 6. After tile is properly set, fill joint as specified herein under Tile Expansion and Control Joint Sealant article.
- E. Waterproofing Membrane: Install waterproofing and crack isolation membrane at all

wet areas and as indicated on Drawings. Install in accordance with Manufacturer's printed instructions. Utilize where membrane is required beneath tile at floors or walls in wet areas. Waterproof coves at wet areas in accordance with Manufacturer's recommendations to a minimum height of 8 inches above floor. Allow membrane to cure before applying bonding materials.

- F. Mortar Bed Set: Where indicated to be thick-set, install tile using TCNA Method for substrate condition and type for mortar bed setting and substrate condition and as follows:
1. Wet Area Floors: TCNA F121, at wet areas indicated to receive waterproof membrane.
 2. Shower Receptors: TCNA B415 or B420 with epoxy grout. Coordinate with shower wall installation method used.
 3. Submit any proposed alternate setting methods to Architect for review and approval prior to installation. Include product and installation instructions for any proposed alternate setting materials.
- G. Thin Set: Where indicated to be thin-set, install tile using TCNA Method for substrate condition and type for latex-Portland cement mortar, and as follows:
1. Floors: TCNA F113 at interior slab on grade construction. TCNA F125 at slab on grade concrete floors with cracks using crack isolation membrane with full or partial isolation membrane coverage as required by extent of cracks.
 2. Wet Area Floors: TCNA F122 at wet area interior slab on grade construction. Use TCNA F125 at wet area floors with cracks using waterproofing and crack isolation membrane.
 3. Gypsum Underlayment Floors (Wet or Dry Areas): TCNA F180-11 using crack isolation and/or waterproofing and/or uncoupling membrane over poured gypsum cement underlayment. Use waterproof underlayment at wet area floors and uncoupling or crack isolation membrane at dry area floors.
 4. Walls (dry): TCNA W243 typical dry area walls.
 5. Walls (wet): TCNA W244C or W245 (as appropriate to type of tile backer board used) with waterproofing membrane at wet area walls over tile backer board ("wet" or plumbing walls such as walls behind toilets, sinks, and similar locations).
 6. Submit any proposed alternate setting methods to Architect for review and approval prior to installation. Include product and installation instructions for any proposed alternate setting materials.
- H. Grout:
1. Mix grout to a creamy consistency.
 2. Mix only as much grout as can be used in one hour.
 3. Thoroughly force into joints, fill entire depth.
 4. Finished surface of joints shall be uniformly smooth, and continuously level with edges of tile.
- I. Expansion and Control Joint Sealant:
1. Workmanship for caulking and sealants shall conform to requirements of Section 07 92 00.
 2. Provide expansion/control joints where indicated on Drawings, and:
 - a. Interior: 20'-0" to 25'-0" in each direction, except provide joints at 8'-0" to 12'-0" in each direction at areas exposed to direct sunlight or moisture and at above ground concrete slab substrates.
 3. Joints between tile and door frames and other metal accessories, tile and ceiling, wall tile and wall tile at inside corners and wall tile and floor tile shall be sealed with silicone rubber sealant.
 4. Provide expansion joints at tile columns, curbs and pipes and fill with sealant.

At building structural joints extend expansion joints through the tile. Seal with sealant. In no case shall tile be carried over expansion joints without a joint in the tile.

- J. Seal tile and grout in accordance with Manufacturer's recommendations.

3.4 CURING

- A. Damp cure all cement based tile installations, including Portland cement grouts, for 72 hours minimum.
 - 1. Cover with clean non-staining 40-pound Kraft paper.
 - 2. Do not use polyethylene sheets directly over tile on horizontal surfaces.
 - 3. Keep all traffic off newly installed floors for at least 72 hours. Protection may be necessary.
- B. Cure epoxy grout tile installations in accordance with recommendations of the epoxy grout manufacturer.

3.5 TOLERANCES

- A. Tile: Do not exceed the following deviations from level and plumb, and from elevations, locations, slopes and alignments shown:
 - 1. Vertical surfaces: 1/8 inch in 8'-0" in all directions.
 - 2. Lippage: 1/8 inch maximum.
 - 3. Maximum Variation of Joint Width: 1/16 inch at tile with joints up to 1/4 inch in width, 1/8 inch at tile with joints over 1/4 inch in width.

3.6 CLEANING

- A. Wipe surfaces clean after grouting, remove traces of mortar and grout. Do not use acid solution for cleaning glazed tile.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

3.7 PROTECTION

- A. Close spaces to traffic or other Work until tile is firmly set. Protect from damage until acceptance. Repair damaged Work at no additional cost to Owner.
- B. Prohibit foot and wheel traffic from using newly tiled floors for at least 7 days. Place large, flat boards in walkways and wheelways where use of newly tiled floor is unavoidable.

END OF SECTION

**SECTION 09 5110
ACOUSTICAL CEILINGS**

PART 1 GENERAL

- 1.01 WORK INCLUDED
- A. Suspended metal grid ceiling system with perimeter trim.
 - B. Acoustical panels.
- 1.02 RELATED WORK
- A. Division 23 – Air Conditioning (air diffusion devices in ceiling system)
 - B. Division 26 – Electrical (light fixtures, speakers, fire alarm components, etc., in ceiling system)
- 1.03 SYSTEM DESCRIPTION
- A. An installed system where indicated.
- 1.04 QUALITY ASSURANCE
- A. Manufacturer: Company specializing in the manufacture of ceiling suspension system and ceiling panels with three (3) years' minimum experience.
 - B. Installer: Company with three (3) years' minimum experience, approved by the manufacturer.
- 1.05 SUBMITTALS
- A. Submit shop drawings and product data under provisions of Section 01 33 00, Submittals.
 - B. Indicate on a shop drawings grid layout and related dimensioning, junctions with other work or ceiling finishes, the interrelation of mechanical and electrical items related to the system.
 - C. Provide product data on metal grid system components, acoustic units.
 - D. Submit manufacturer's installation instructions.
 - E. Submit two (2) samples full size 12x12 inch in size, illustrating material and finish of acoustic units.
 - F. Submit two (2) samples each, 6 inches long, of a suspension system main runner, cross runner, and edge trim and a full range of colors available for Architect selection.
- 1.06 ENVIRONMENTAL REQUIREMENTS
- A. Maintain a uniform temperature of minimum 60 degrees F and humidity of 20 to 40 percent prior to, during and after installation.
 - B. Do not install acoustical ceilings until the building is enclosed, sufficient heat is provided, dust-generating activities have terminated and overhead work is completed, tested and approved.
 - C. Schedule installation of acoustic units after interior wet work is dry.
- 1.07 EXTRA STOCK
- A. Provide one (1) carton of extra panels to Owner or quantity equal to 1% of total quantity installed, whichever is greater, for each type of panel provided.

PART 2 PRODUCTS

- 2.01 ACCEPTABLE MANUFACTURERS – SUSPENSION SYSTEM
- A. Armstrong.

B. Substitutions: Other acceptable manufacturers allowed. See Section 01 6000 Product Requirements.

2.02 SUSPENSION SYSTEM MATERIALS

- A. Grid: ASTM C635, Inverted tee grid, steel, electro-zinc coated, factory finished matte white color to match ceiling panel reveal, baked vinyl, direct hung system, intermediate or better standard, Series Superfine 9/16" exposed grid system as manufactured by Armstrong, providing 24-inch x 48-inch pattern as noted for regular edge panels.
- B. Suspension system shall be compatible with the manufacturer of acoustic panels, suspension requirements for thickness and design of panels.
- C. Accessories: Stabilizer bars, clips, splices, edge moldings, hold down clips required for the suspended grid system.
- D. Support channels and hangers: Galvanized steel; size and type to suit application, to rigidly secure acoustic ceiling system including integral mechanical and electrical components with a maximum deflection of 1/360.

2.03 ACCEPTABLE MANUFACTURERS – ACOUSTIC UNITS

- A. Armstrong, substitutions under provisions of Section 00 2113, Material and Equipment.

2.04 ACOUSTIC PANELS

- A. Acoustic Panels: Per Plans with installation per manufacturer's recommendations
- B. Acoustic Baffles: Per Plans with installation per manufacturer's recommendations
- C. Perimeter Trim: Armstrong white box mold #7830, painted to match grid color

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify that all existing conditions are ready to receive work.
- B. Verify that the layout of hangers will not interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Install the system in accordance with the manufacturer's instructions and this Section.
- B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- C. Install after major above ceiling work is complete. Coordinate the location of hangers with other work. Hang system from roof/ceiling or floor/ceiling assembly, independent of walls, columns, ducts, pipes, and conduit. Where carrying members are spliced, avoid displacement of face plane of adjacent members.
- D. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- E. Center system on room axis leaving equal border units according to reflected plan.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner, also fixtures shall have two supplemental

same gage supports on diagonal corners. Other components shall also be similarly independently supported.

- G. Do not eccentrically load system, or produce rotation of runners.
- H. Install edge molding at the intersection of the ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions. Field rabbet panel edge. Where round obstructions occur, provide preformed closers to match edge molding.
- I. Fit acoustic units in place, free from damaged edges or defects detrimental to appearance.
- J. Lay directional patterned units one way with pattern parallel to longest room axis. Fit border neatly against abutting surfaces.
- K. Install acoustic units level, in the uniform plane and free from the twist, warp, and dents.
- L. Install hold-down clips to retain panels grid system within 10 feet of an exterior door.

3.03 TOLERANCES

- A. Variation from flat to level surface: 1/8 inch in 10 feet.
- B. Variation from plumb of grid members caused by eccentric loads: 2 degrees maximum.

END OF SECTION

**SECTION 09 6813
CARPET TILE**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Carpet tile as scheduled on Drawings.
 2. Installation accessories.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings indicating pattern type and direction, pile direction, cutouts, type and location of edge strips, transition details, type of subfloor and installation, etc., in accordance with Manufacturer's recommendations.
- B. Samples: 1 full size sample of each type of carpet tile required and 1 sample, 6 inches in length of each of edge strip in Manufacturer's standard colors.
- C. Certification:
1. At least 30 days prior to scheduled installation, submit Manufacturer's anticipated shipping date, including certification that carpet tile will conform to Specifications and approved samples.
 2. Provide certification from manufacturer that carpet tile will not display or evidence a significant change in color due to exposure to atmospheric contaminants (Ozone or Oxides of Nitrogen) for 5 years.
- D. Quality Control Submittals:
1. Manufacturer shall furnish dye lot numbers and other information which will enable identification of certified carpet tile. Inspect carpet tile after manufacture for manufacturing defects.
 2. Certificates: Certification that submitted samples conform with Specification requirements.
- E. Contract Closeout Submittals: Submit the following in accordance with Section 01 7700.
1. Maintenance: Submit 2 copies of Manufacturer's instructions for carpet tile care and cleaning. Instructions shall include shampooing and removal of stains and burns.
 2. Warranty. Submit manufacturer's warranty.

1.3 QUALITY ASSURANCE

- A. Carpet Installer Qualifications:
1. Minimum of 5 years commercial installation experience.
 2. Review Manufacturer's recommendations and recommend in writing to Architect variations required to assure installation guarantee.
- B. Standards: Comply with the following:
1. Flammability: Passes (CPSC 16 CFR, Part 1630).
 2. Flame Spread: Critical Radiant Flux Class I, not less than 0.45 Watts per cm² (NFPA 253 or ASTM E-648, in direct glue-down application).
 3. Optical Smoke Density Requirements (ASTM 662-79): Less than 450 (NBS Smoke Density Chamber - NFPA-258).

**SECTION 09 6500
RESILIENT FLOORING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Luxury vinyl tile (LVT).
 2. Resilient base.
 3. Resilient flooring accessories.
 4. Adhesives and other related installation materials as necessary.

1.2 SUBMITTALS

- A. Samples: Submit 3 samples of each material specified illustrating color and pattern.
- B. Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing as part of closeout procedures.

1.3 QUALITY ASSURANCE

- A. Qualifications: Installation shall be by qualified installer approved by the Manufacturer of the materials.
- B. Regulatory Requirements:
1. Critical Radiant Flux Classification: Class I (Not less than 0.45 Watts per sq./cm per ASTM E648).
 2. IBC Section 804 and DOC FF-1 "pill test" (CPSC 16 CFR 1630).
- C. Static Coefficient of Friction: Finished resilient tile flooring shall have a tested coefficient of friction of 0.6 minimum wet or dry for level surfaces and treads of stairs and 0.8 minimum wet or dry for ramp surfaces when tested in accordance with ASTM D2047 / UL410.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.5 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Installation shall not begin until Work of other Trades is substantially completed and the area or rooms where flooring is to be installed has been maintained at a minimum temperature of 70 degrees F. for at least 48 hours.

- B. Moisture content and bondability of concrete sub-floors shall be determined by a field testing method recommended by the flooring manufacturer. Moisture vapor emission of concrete subfloor shall be not more than 3 lb. per 1,000 sq. ft. per ASTM F1869 or ASTM E1907 (quantitative anhydrous calcium chloride test), unless otherwise approved by flooring manufacturer.
- C. Maintain ambient temperature required by Adhesive Manufacturer three days prior to, during, and 24 hours after installation of materials.

1.6 MAINTENANCE

- A. Extra Materials: Provide extra maintenance materials equal to 2 percent of total installed of each type, color and pattern of plank flooring, base and accessory product, but not less than 50 square feet of flooring and 30 lineal feet of base and accessory.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Vinyl Plank Manufacturer: Furnish products of one of the specified Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements.
 - 1. Shaw Property Solutions www.shawhardsurface.com
 - 2. Request for substitutions will be considered in accordance with Section 01 6000.
 - 3. As scheduled on Drawings or otherwise approved by Architect.
- B. Wall Base: Furnish products of one of the specified Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements.
 - 1. Type TP - Thermoplastic Rubber:
 - a. Johnsonite www.johnsonite.com
- C. Flooring Accessories: Furnish products of one of the specified Manufacturers, except as otherwise approved by the Architect, subject to compliance with Specification requirements.
 - 1. Type TP - Thermoplastic Rubber:
 - a. Armstrong World Industries www.armstrong.com
 - b. Burke/Mercer www.burkemerger.com
 - c. Johnsonite www.johnsonite.com
 - d. Marley Flexco, Inc. www.marleyflexco.com
 - e. Mondo Rubber International www.mondousa.com
 - f. Roppe www.roppe.com

2.2 RESILIENT TILE AND PLANK FLOORING

- A. Luxury Vinyl Tile (LVT) Flooring:
 - 1. Pattern/Design: As scheduled on Drawings, or if not indicated, as selected by Architect from Manufacturer's full range of colors and patterns.
 - 2. Size and Thickness: As scheduled on Drawings

2.3 BASE

- A Base: ASTM F1861.
 - 1. Material: Type TS thermoset vulcanized rubber.
 - 2. Height: 4 inch.
 - 3. Thickness: 1/8 inch thick
 - 4. Length: Coils/Rolls in manufacturer's standard lengths. Cut lengths are not acceptable.
 - 5. Type: Top set, coved typical, toeless at carpet.
 - 6. Color: As scheduled on Drawings, or if not indicated, as selected by Architect from Manufacturer's full range of colors and patterns.

- B Base Accessories: Premolded end stops and external corners of same material, size, and color as base.

2.4 ACCESSORIES

- A Adhesives: Suitable for the underfloor substrate conditions involved as recommended by the Manufacturer of the flooring materials. Adhesives shall be waterproof, stabilized type. Asphalt emulsions are not acceptable.
 - 1. Adhesives shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59 (EPA Method 24).

- B Crack and Joint Filler: Waterproof type as recommended by the flooring Manufacturer.

- C Underlayment: Portland cement-latex concrete floor filler for leveling concrete floor as recommended by the resilient flooring Manufacturer.

- D Edge and Transition Strips: 1 inch wide with beveled edge. Material to match flooring.
 - 1. Profile: As indicated on Drawings and required for complete installation.
 - 2. Color: As indicated on Drawings.

- E Sealer: Type recommended by Flooring Manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.

- B Inspect the sub-floor to receive resilient flooring in accordance with ASTM F710. Do not lay floor covering until sub-floors are in proper condition to receive same. Sub-floors shall be broom clean, free of foreign matter and thoroughly clean before installation. Perform moisture testing of concrete subfloors in accordance with ASTM F1869 or other method as acceptable to flooring manufacturer. Verify that moisture vapor emission of subfloor does not exceed 3 lb/1000 sq. ft., or as acceptable to flooring manufacturer.

- C Verify concrete floors are dry and bondable.

3.2 PREPARATION

- A Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

- B. Apply, trowel, and float filler/underlayment to leave a smooth, flat, hard surface and as necessary to transition subfloors.
- C. Prohibit traffic from area until filler is cured.
- D. Vacuum clean substrate.
- E. Apply primer to floor surfaces as recommended by Flooring Manufacturer.

3.3 INSTALLATION – TILE AND LUXURY VINYL TILE FLOORING

- A. Install in accordance with Manufacturers' instructions and in accordance with "Recommended Work Procedures for Resilient Floor Coverings" of the Resilient Floor Covering Institute.
- B. Mix tile from multiple cartons to ensure shade variations are consistent.
- C. Spread only enough adhesive to permit installation of materials before initial set. Spread adhesive using notched trowel as recommended by flooring manufacturer.
- D. Install flooring into wet adhesive, checking periodically for proper adhesive transfer, and immediately roll with heavy (minimum 100 lb.) roller to attain full adhesion.
- E. Lay tile flooring with joints parallel to building lines and with symmetrical tile patterns.
- F. Install luxury vinyl tile (LVT) flooring to running bond pattern with end joints offset from adjacent rows in pattern approved by Architect. Do not place end joints less than 12 inches from room or area perimeters. Lay out tile in long direction to provide not less than 1/2 tile width at room or area perimeter.
- G. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.
- H. Install edge strips at unprotected or exposed edges, and where flooring terminates.
- I. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- J. Install flooring under movable partitions without interrupting floor pattern.
- K. Install edge strips where and of type indicated. Fit joints tightly.

3.4 INSTALLATION - BASE

- A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends use premolded units.
- C. Install base on solid backing. Bond tight to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.5 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. After flooring has become well seated, minimum 72 hours, and just prior to opening

it to traffic, thoroughly clean in accordance with Manufacturer's recommendations.

- B. Remove dirt, debris and adhesive from floor covering and adjacent surfaces using Manufacturers recommended methods and leave installation in a clean, undamaged condition.
- C. Where recommended by manufacturer, apply two coats of manufacturer's recommended wax to tile and plank flooring in accordance with manufacturer's published recommendations.
- D. During the course of the Work and on completion, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.
- E. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.

3.6 PROTECTION

- A. Minimize traffic until flooring has become well seated, at least 72 hours, at a maintained temperature of not less than 70 degrees F., and do not permit fixtures, equipment, trucks, or similar items on flooring.
 - 1. Provide temporary protection materials of underlayment board or other suitable protection sheets over flooring where it is necessary to move heavy or sharp loads across the floor within 72 hours after installation.
 - 2. Protect installed flooring by providing protective coverings or other protection as recommended by manufacturer until time of final completion of Project.

END OF SECTION

**SECTION 09 6813
CARPET TILE**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Carpet tile as scheduled on Drawings.
 2. Installation accessories.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings indicating pattern type and direction, pile direction, cutouts, type and location of edge strips, transition details, type of subfloor and installation, etc., in accordance with Manufacturer's recommendations.
- B. Samples: 1 full size sample of each type of carpet tile required and 1 sample, 6 inches in length of each of edge strip in Manufacturer's standard colors.
- C. Certification:
1. At least 30 days prior to scheduled installation, submit Manufacturer's anticipated shipping date, including certification that carpet tile will conform to Specifications and approved samples.
 2. Provide certification from manufacturer that carpet tile will not display or evidence a significant change in color due to exposure to atmospheric contaminants (Ozone or Oxides of Nitrogen) for 5 years.
- D. Quality Control Submittals:
1. Manufacturer shall furnish dye lot numbers and other information which will enable identification of certified carpet tile. Inspect carpet tile after manufacture for manufacturing defects.
 2. Certificates: Certification that submitted samples conform with Specification requirements.
- E. Contract Closeout Submittals: Submit the following in accordance with Section 01 7700.
1. Maintenance: Submit 2 copies of Manufacturer's instructions for carpet tile care and cleaning. Instructions shall include shampooing and removal of stains and burns.
 2. Warranty. Submit manufacturer's warranty.

1.3 QUALITY ASSURANCE

- A. Carpet Installer Qualifications:
1. Minimum of 5 years commercial installation experience.
 2. Review Manufacturer's recommendations and recommend in writing to Architect variations required to assure installation guarantee.
- B. Standards: Comply with the following:
1. Flammability: Passes (CPSC 16 CFR, Part 1630).
 2. Flame Spread: Critical Radiant Flux Class I, not less than 0.45 Watts per cm² (NFPA 253 or ASTM E-648, in direct glue-down application).
 3. Optical Smoke Density Requirements (ASTM 662-79): Less than 450 (NBS Smoke Density Chamber - NFPA-258).

4. Static Propensity: Under 3.0 KV (AATCC-134).
5. Colorfastness: Carpet tile shall not display or evidence a significant change in color due to exposure to atmospheric contaminants (Ozone or Oxides of Nitrogen) for 5 years.
6. Compliance with the CRI Green Label Plus Indoor Air Quality Carpet Testing program

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with each roll having register number tags attached or register identification stenciled on mill wrappings and intact.
- B. Storage and Protection: Store in well ventilated spaces protected from damage, dirt, stains, moisture and other adverse conditions.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify installation dimensions by making field measurements.

1.6 WARRANTY

- A. Special Project Warranty: Provide special project warranty, signed by Contractor, Installer, and Manufacturer (Carpet Mill) agreeing to repair or replace defective materials and workmanship, during 10 year warranty period following Substantial Completion. Special project warranty includes, but is not limited to, following:
 1. Delamination of adhered carpet tile from substrate.
 2. More than 10 percent loss of face fiber.
 3. Tile curling.
 4. Edge raveling, snags, or runs.
- B. Manufacturer's Warranty: In addition to Special Project Warranty, provide manufacturer's Limited 10 Year Wear Warranty on manufacturer's standard form. Manufacturer's warranty shall include dimensional stability, wear and static resistance.

1.7 MAINTENANCE

- A. Extra Materials: Furnish quantity of full-size units equal to 5 percent of amount installed. Neatly package in small quantities and identify with labels clearly describing contents. Deliver to Owner at Project Closeout.

PART 2 PRODUCTS

2.1 PRODUCTS

- A. Carpet Tile: As scheduled on Drawings or as otherwise selected by Architect and/or Owner.
- B. Request for substitutions will be considered in accordance with Section 01 6000.

2.2 ACCESSORIES

- A. Underlayment: Portland cement-latex concrete floor filler for leveling concrete floor as recommended by Carpet Manufacturer.

- B. Floor Primer: Manufacturer's approved floor primer applied to all areas that are to receive glue-down carpet tile.
 - 1. Floor primer shall comply with the limits for VOC content specified in Section 01 6116 VOC Content Restrictions.
- C. Adhesive: Acceptable to carpet manufacturer, low-odor adhesive without solvent, VOC compliant, and to comply with flammability requirements for installed carpet tile.
 - 1. Adhesives shall comply with the limits for VOC content specified in Section 01 6116 VOC Content Restrictions
- D. Edge and Transition Strips: 1-inch-wide resilient edge and transition strips with beveled edge and profile indicated on Drawings or as selected by Architect. Provide edge and transition strips at all edges and transitions between carpet tile and other flooring materials including bare concrete.
- E. Wood Wall Base: As specified in Section 06 2000.
- F. Resilient Wall Base: As specified in Section 09 6500.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
 - 1. Test concrete for excessive moisture content or hydro-static moisture content. Excessive moisture is defined as no more than 2.5 pounds per 1000 square feet in 24 hours.
 - 2. Test concrete for acidity/alkalinity which shall test in the 6.0 to 8.0 range.
 - 3. Frequency of tests shall comply with manufacturer's guidelines.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Surface Preparation:
 - 1. Inspect surfaces to receive carpet tile, make tests recommended by Carpet Manufacturer, take necessary corrective action.
 - 2. Sand or grind ridges, bumps or protrusions level and smooth.
 - 3. Fill cracks, construction joints and other surface imperfections and level subfloor with latex underlayment compound troweled level with adjacent surfaces to within 1/4 inch in 10 feet, noncumulative, in all directions.
 - 4. Telegraphing of irregularities in subfloor shall be sufficient cause for rejection.
 - 5. Remove foreign and incompatible materials and vacuum clean surfaces immediately prior to installation.
 - 6. Contractor shall be provide written moisture and alkali test results pertaining to the concrete slab prior to installation.

3.3 INSTALLATION

- A. Install carpeting material and adhesive in strict accordance with Manufacturer's

recommendations and CRI 104, Section 13: "Carpet Modules (Tiles)," as published by the Carpet and Rug Institute.

- B. Edge and Transition Strips:
 - 1. Install where carpet tile terminates and it abuts a dissimilar floor material.
 - 2. Securely fasten edge strips with concealed fasteners. Center under doors at doorways.
- C. Lay carpet tile in pattern to comply with Drawings and approved Shop Drawings for pattern and pile direction.
- D. Lay carpet tile tight and free of irregularities. Cut and fit carpeting accurately and smoothly on wall and floor surfaces, permanent fixtures and furniture including cabinets, around projections and into trim strips or binding bars. Make installation continuous under removable portable and/or accordion partitions.
- E. Extend carpet tile into alcoves, closets and other similar concealed openings.

3.4 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Remove and replace individual carpet tile units with spots, smears, stains, and similar defects that cannot be cleaned to an acceptable condition. Thoroughly vacuum and clean carpet tile after other Trades have been completed. Installed carpet tile shall be left free from adhesives, scraps, carpet ripples, scallop and puckers.
- B. Carpet spots shall be cleaned with spot remover approved by Carpet Manufacturer and loose threads removed with sharp scissors. Installed carpet tile shall be free from defects at time of final acceptance by Owner.
- C. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises.
- D. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.

3.5 PROTECTION

- A. Protect installed carpet tile against soiling abuse or damage by other Trades, and cover completed Work as necessary to ensure protection.
- B. Repair or replace damaged Work.

END OF SECTION

**SECTION 09 7733
FRP WALL PANELS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes fiberglass reinforced plastic panels and installation accessories.

1.2 SUBMITTALS

- A. Product Data: Manufacturer's Specifications and installation instructions for each material and accessory.
- B. Submit Manufacturer's full range of color and pattern samples of wall panels and trim pieces for Architect's selection. Submit two samples of selected products.
- C. Submit cleaning and maintenance instructions in accordance with Section 01 7700.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials clearly labeled to identify Manufacturer, brand name, quality or grade and fire hazard classification.
- B. Store horizontally in original undamaged packages.

1.4 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Install materials when temperature and humidity conditions approximate conditions that will exist when building is occupied.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the specified Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements.
 - 1. Crane Composites, Inc. (Kemlite) www.kemlite.com
 - 2. Glasteel www.glasteel.com ; Stabilit / Resolite Company.
 - 3. Marlite, Inc. www.marlite.com
 - 4. Request for substitutions will be considered in accordance with Section 01 6000.

2.2 MATERIALS

- A. FRP Panels: Fiberglass reinforced plastic panels complying with the following:
 - 1. Class: Class I (A) FR panels.
 - 2. Thickness: 0.090.
 - 3. Texture: Embossed texture.
 - 4. Color: White, unless otherwise indicated on Drawings.
- B. Adhesive for panel installation: Manufacturer's recommended type for use with selected materials, waterproof, mildew resistant nonstaining type.
- C. Edge Sealant: Type "E" clear mildew resistant silicone sealant as specified in Section

07 92 00, or mildew resistant sealant recommended by manufacturer for sealing panel edges and moldings. Sealant shall comply with VOC content limits of Section 07 92 00.

- D. Moldings: All molding shall be 1-piece vinyl of the following types, color to match FRP.
1. Panel Edges: "J" type Cap molding.
 2. Panel to Panel: "H" type Division Bar molding.
 3. Inside Corner: "J" type Inside Corner molding with radius edge.
 4. Outside Corner: "J" type Outside Corner molding with extended leg.
 5. Ceiling: "J" type Ceiling molding with radius edge, or use inside corner molding.
- E. Fasteners: Manufacturer's standard nylon drive pins.
- F. Miscellaneous Items: Furnish and install supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation whether or not specified or indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
1. Examine substrate and conditions under which the material is to be installed.
 2. Verify that surfaces, when tested with moisture meter, have proper moisture content.
 3. Verify that nails and screws are recessed, with joints and depressions taped, finish and sealed.
 4. Remove contaminants from areas to be covered.
 5. Do not proceed with Work until Work of other Trades which passes through wall covering has been completed and unsatisfactory conditions have been corrected.
 6. Start of Work indicates acceptance of responsibility for performance and any required remedial Work.

3.2 INSTALLATION

- A. Install panels in accordance with Manufacturer's printed instructions using full sheet mastic coverage method plus nylon fasteners.
- B. Make joints with 1/8 inch space for expansion and use moldings designed for each condition for the Project.
- C. Bevel back edges of panels with block plane to permit proper fit into moldings.
- D. Place a continuous bead of sealant in the receiver channel of all moldings immediately prior to installation of FRP panels. Place continuous bead of sealant at all edges and tool to smooth, slightly concave shape.
- E. If one end of panel must be mechanically fastened, do not fasten the other end.
- F. Remove plumbing escutcheons, switchplates, wall plates, and surface-mounted fixtures, and cut wall paneling evenly to fit. Replace items after completion of Work.
- G. Where applicable, install paneling before installation of plumbing, casings, bases, cabinets and other items to be applied over paneling.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. Remove excess adhesive and smudges with soft cloth and mineral spirits.

END OF SECTION

**SECTION 09 8100
ACOUSTICAL INSULATION**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes acoustical insulation above ceilings and within partitions as shown on Drawings and as specified.

1.2 SUBMITTALS

- A Product data: Submit Manufacturer's data, installation instructions, limitations and recommendations. Include certification and test data substantiating combustibility of each type of insulation.

1.3 QUALITY ASSURANCE

- A Fire-Test-Response Characteristics: Provide insulation and related materials with fire-test- response characteristics as required by code, as determined by testing identical products per ASTM E84 for surface-burning characteristics, by UL or another testing and inspection agency acceptable to authorities having jurisdiction. Identify material with appropriate markings of applicable testing and inspection agency.

1.4 DELIVERY, STORAGE AND HANDLING

- A Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B Storage: Adequately protect against damage while stored at the site.
- C Handling: Comply with Manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish products of one of the specified Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements.
1. CertainTeed Corp., Saint Gobain www.certainteed.com
 2. Johns Manville Building Products Group www.johnsmanville.com
 3. Knauf Insulation www.knaufinsulation.com
 4. Owens Corning Fiberglas www.owenscorning.com

2.2 MATERIALS

- A Sound Attenuation Blankets: ASTM C665, Type 1 (unfaced).
1. Thickness: As indicated on Drawings.
 2. Surface Burning Characteristics: When tested in accordance with ASTM E84.
 - a. Maximum Flame Spread: 25.
 - b. Maximum Smoke Developed: 50.
 3. Fire Resistance Ratings: Passes ASTM E119 as part of a complete fire tested wall assembly.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.
- C. Clean substrates and voids where insulation will be placed of substances harmful to insulation.

3.2 INSTALLATION

- A. Install acoustical insulation batts in sound-rated stud partition walls where indicated on Drawings. Size batts for a friction fit and full depth of stud cavity, and install in accordance with Manufacturer's recommendations.
- B. Install acoustical insulation batts above lay-in ceilings, and other locations as shown on Drawings, in strict accordance with Manufacturer's printed instructions.
- C. Butt ends of batts closely together and fill all voids.

3.3 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 09 9100
PAINTING**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Painting as specified and as noted on Drawings.
 - 2. Surfaces requiring finishing and left unfinished by the requirements of other Sections shall be painted or finished as part of the Work of this Section.
- B. Related Sections:
 - 1. Section 32 1723 – Pavement Markings, for traffic marking and striping for pavement and curbs.

1.2 DEFINITIONS

- A. Touch-Up: Painting of items missed by painter at no additional cost to Owner.
- B. Re-Paint: Repairs to paint work for damages caused by other trades.
- C. Properly Painted Surfaces: Surface that is uniform in appearance, color, and sheen, and free of foreign material, lumps, skins, runs, sags, holidays, misses, strike-through, and insufficient coverage. Surface free of drips, splatters, spills, and overspray caused by Paint Applicator. Compliance will be determined when viewed without magnification at a distance of 5 feet minimum under normal lighting conditions and from normal veiling position (MPI(a), PDCA P1.92).
- D. Damage Caused by Others: Damage caused by individuals other than those under direct control of Painting Applicator (MPI(a), PDCA P1.92).
- E. Latent Damage: Damage or conditions beyond control of Painting Applicator caused by conditions not apparent at time of initial painting or coating work.

1.3 SUBMITTALS

- A. Product Data: Submit schedule of manufacturers of products required for the Work, together with specifications recommended by each manufacturer.
- B. Samples: Submit samples of each type of finish specified.
 - 1. Architect will furnish Contractor a color schedule of colors selected either from manufacturer's stock colors or specially requested color mixes before Work is begun.
 - 2. Submit two 8 inch x 10 inch samples of each color, including the correct sheen and texture, on heavy cardboard or masonry. Submit sealer and stain finishes on material of the same quality and species of wood on which that particular finish shall be used. Rejected samples shall be resubmitted until approved.
 - 3. Samples shall be submitted at least 30 days prior to the start of painting work. Label and identify each sample as to location and application. Upon submittal of color samples, minor variations or changes in color selection may be requested by the Architect and new samples ordered, until final color approval.

1.4 QUALITY ASSURANCE

- A. Standards: Preparation, application and workmanship shall be in accordance with manufacturer's recommendations and applicable provisions of the following:
 - 1. Master Painters Institute (MPI) Architectural Painting Specification Manual.
 - 2. Gypsum Association - GA210, "Gypsum Board for Walls and Ceilings."
- B. MPI Grade: All work shall be performed in accordance with MPI Premium Grade finish requirements.
- C. Design Criteria: Systems specified are in addition to prime coats provided under other Specification Sections of the Project Manual.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's sealed original containers with Manufacturer's original legends and labels intact on each container. Deliver amount of materials necessary to meet Project requirements in singleshipment.
- B. Storage: Store materials in a single location.
 - 1. Adequately protect against damage while stored at site.
 - 2. In no case shall the amount or method of materials stored exceed the amount permitted or the manner allowed by local ordinances, state laws, or fire underwriter regulations.
 - 3. Keep storage area clean and rectify any damage to area at completion of work of this Section. Maintain storage area at 55 deg. F minimum.

1.6 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Do not apply exterior paint in damp or rainy weather or until after the surface has dried thoroughly from the effects of such weather.
 - 1. Perform painting operations at temperature and humidity conditions recommended by Manufacturer for each operation and for each product.
 - 2. Do not apply varnish or paint when temperature is below 50 degrees F.. Avoid painting surfaces exposed to hot sunlight.
 - 3. During interior application, maintain minimum temperature of 65 degrees F. unless otherwise directed by Architect or manufacturer's printed instructions. Hold temperature as constant as possible.
 - 4. Provide adequate ventilation at all times so the humidity cannot rise above the dew point of the coldest surface to be painted.
 - 5. Moisture-containing surfaces, such as concrete, stucco and cement plaster shall have a moisture content of less than 8 percent as measured by moisture meter. Remove surface salt deposits prior to painting. Verify that pH is neutral, or within acceptable limits of Paint Manufacturer. Paint after thoroughly cured.
 - 6. Apply painting systems at lighting level of 540 Lux (50 foot candles) minimum on surfaces to be painted. Inspection of painting work shall take place under same lighting conditions as application. If painting and coating work is applied under temporary lighting, deficiencies discovered upon installation of permanent lighting will be considered latent damage as defined in Article 1.02 of this Section and the MPI Architectural Painting Specification Manual.

1.7 MAINTENANCE

- A. Extra Materials: Provide painting materials in Manufacturer's original containers with original labels intact, in each color and or sheen used. Upon completion of the Work, furnish Owner with one fresh gallon of each type and color of paint and finish used on this Project, including primers and undercoats used. Label containers with manufacturer's name, batch, date, color name, anticipated shelf life, mixture instructions, and cautions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following manufacturers, except as otherwise approved by Architect, subject to compliance with specification requirements.
1. Benjamin Moore www.benjaminmoore.com
 2. Dunn-Edwards Corporation www.dunnedwards.com
 3. Glidden Professional (ICI) www.gliddenprofessional.com
 4. PPG Paints www.ppg.com
 5. Sherwin Williams www.sherwin-williams.com
 6. Tnemec www.tnemec.com

2.2 MATERIALS

- A. Materials used for any painting system shall be from a single manufacturer, unless approved otherwise in writing by painting system manufacturer. Include such approvals in Product Data submittal.
- B. Provide materials in accordance with the Schedule of Paint Products at the end of this Section as applicable to project. Contractor shall provide either waterborne or solventborne products at contractor's option and as follows:
1. Waterborne:
 - a. Provide where low odor and fast dry are desired.
 - b. Non-blocking materials shall be used for doors, door jambs, railings and other locations subject to handling, or where surfaces will come into contact with other painted surfaces or belongings.
 2. Solventborne (for exterior use only):
 - a. Provide where harder finish is required (such as "wet" areas) and odor will not create problems with occupants.
 - b. These products shall not be used where color retention is a concern. Verify with Architect.
 3. All interior and exterior materials used shall comply with applicable Federal and local air pollution regulations, lead content laws, and current VOC requirements. If products listed in Schedule of Paint Products located at the end of this Section are not in compliance with regulations, laws, or requirements, Contractor shall notify Architect and shall provide information regarding substitute products.
 4. VOC Content: Interior paints, coatings, stains and finishes applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - a. Flat Paints and Coatings: 50 g/L.
 - b. Nonflat Paints and Coatings: 150 g/L.
 - c. Dry-Fog Coatings: 400 g/L.

- d. Primers, Sealers, and Undercoaters: 200 g/L.
 - e. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
 - f. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
 - g. Pretreatment Wash Primers: 420 g/L. Floor Coatings: 100 g/L.
 - h. Shellacs, Clear: 730 g/L.
 - i. Shellacs, Pigmented: 550 g/L.
 - j. Sealers, and Undercoaters: 200 g/L.
5. All interior paints and primers must comply with current Green Seal standards for low VOC.
- C. Basic painting materials such as linseed oil, shellac, turpentine, thinners, driers, and other similar products, shall be of highest quality, pure, be compatible with other coating materials, made by reputable, of manufacturer's listed or listed in MPI manuals, and have identifying labels on containers. Paint materials shall be factory fresh.
- D. Alternate materials submitted for prior approval shall have qualities and materials equal to the other listed manufacturer's scheduled, top of the line, first quality products. Materials selected for coating systems for each type of surface shall be the products of a single manufacturer.
- E. Standard Gloss Range: Provide paints in accordance with the following MPI standard ranges as measured in accordance with ASTM D523, and as indicated on the drawings:
- | <u>MPI Gloss and Sheen Standards</u> | <u>Gloss @ 60°</u> | <u>Sheen @ 85° Gloss</u> |
|--|--------------------|--------------------------|
| Level 1 – traditional matte finish – flat | | max. 5 units, and max. |
| 10 units Gloss Level 2 – high side sheen flat – ‘velvet-like’ finish | | max. 10 units, |
| and 10-35 units Gloss Level 3 – traditional ‘eggshell-like’ finish | | 10- |
| 25 units, and | | 10-35 units Gloss Level |
| 4 – ‘satin-like’ finish | | 20-35 units, and min. |
| 35 units | | |
| Gloss Level 5 – traditional semi-gloss | | 35-70 units |
| Gloss Level 6 – traditional gloss | | 70-85 units |
| Gloss Level 7 – a high gloss | | more than 85 units |
- F. Paints shall be ready mixed except for field catalyzed coatings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Before beginning work of this Section, examine and test subsurfaces to be painted or coated for adhesion of painting and coating systems. Report in writing to Architect conditions that will adversely affect adhesion of painting and coating work. Do not apply painting and coating systems until such adverse conditions are corrected by party responsible for adverse conditions. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Report defects in substrates that become apparent after application of primer or first finish coat to Architect in writing and do not proceed with further work on defective substrate until such defects are corrected by party responsible for

defect.

3.2 PROTECTION

- A Before painting, remove hardware, accessories, electrical plates, lighting fixtures and similar items and protect.
1. Provide "Wet-Paint" signs and other barricades and protections as required to protect adjacent surfaces and work of other trades, whether being painted or not.
 2. Mask permanent labels.
 3. Provide, distribute, and maintain a sufficient supply of clean drop cloths and other protective coverings.
 4. Protect foliage and other exterior finished surfaces from contact with cleaning materials and thoroughly flush with water after contact.
 5. On completion of each space, replace above items.
 6. Remove rags and waste used in painting operations from building each night. Take every precaution to avoid danger of fire.

3.3 SURFACE PREPARATION

- A General: Prepare surfaces in accordance with MPI requirements and requirements of Manufacturer for each painting/coating system specified, unless instructed differently in Contract Documents. Bring conflicts to attention of Architect in writing.
1. Surfaces requiring painting or finishing shall be thoroughly dry and cured, free of dirt, dust, rust, stains, scale, mildew, wax, grease, oil, deteriorated substrates, bond-breakers, efflorescence and other foreign matter detrimental to the coating's adhesion and performance. Repair voids, cracks, nicks and other surface defects with appropriate patching material. Finish flush with surrounding surfaces and match adjacent finish texture.
 2. Spot prime marred or damaged shop coats on metal surfaces with appropriate metal primer.
 3. Determine moisture content of plaster, stucco, cementitious materials, wood and other moisture-holding materials by use of a reliable electronic moisture meter.
 4. Determine alkalinity of plaster, stucco and other cementitious materials by performing appropriate tests.
 5. Do not paint surfaces where moisture content or alkalinity exceeds that which is allowed by paint manufacturer.
 6. Do not perform exterior painting while surface is damp, unless recommended by Manufacturer, nor during rainy or frosty weather. Interior surfaces shall be dry before painting.
- B Wood:
1. Sandpaper in direction of grain to smooth and even surface, leaving no sanding marks, and then dust off. After primer or stain coat has been applied, thoroughly fill nail holes, minor holes, cracks and other surface imperfections with putty tinted with primer or stain to match wood or stain color. Bring putty flush with adjoining surfaces. Sand woodwork between coats to a smooth surface. Cover knots and sap streaks with a thin coat of shellac, or seal with a suitable stain blocking sealer.
 2. Finish door edges after final fitting.
 3. Backpriming:
 - a. Backprime interior woodwork, which is to receive paint or enamel finish, with enamel undercoater paint.
 - b. Backprime interior woodwork, which is to receive stain and/or

varnish finish with VOC compliant varnish acceptable to the Architect.

c. Back-prime wood trim before installation.

C. Steel and Iron:

1. Remove grease, oil, mill scale, rust and rust scale and touch-up chipped or abraded places on items that have been shop coated. Remove and reprime incompatible or damaged shop applied primers. Comply with the Steel Structures Painting Council's (SSPC) recommendations for cleaning of uncoated steel and iron surfaces.
2. When area will be exposed to view, sandpaper the entire primed area smooth, feather the edge of surrounding undamaged prime coat and spot prime in a manner to eliminate evidence of repair.

D. Galvanized Metal and Aluminum:

1. Thoroughly clean by wiping surfaces with a non-hydrocarbon solvent that will not leave an oily residue. Apply surface conditioner or vinyl-wash pretreatment as required for proper adhesion if required by paint manufacturer. Prime galvanized metal with galvanized iron primer as recommended by paint manufacturer. A test sample of the complete painting system should be applied and checked for adhesion before final painting begins.
2. Clean visible portions of throats of galvanized steel ductwork with solvent; wipe dry with clean rags and paint flat black.

E. Concrete:

1. Except for steam cured products, cure cement type surfaces from 60 to 90 days in accordance with Paint Manufacturer's recommendations before painting.
2. The method of surface preparation shall be at Contractor's discretion, provided the results are satisfactory to the Architect, and the method is in compliance with applicable codes and requirements.
3. Repair surfaces to be painted prior to application of prime and finish coat(s). Apply a tinted primer to the substrate to help identify surface imperfections. After the primer has thoroughly dried, patch, fill and repair surface imperfections to match and flush-out with adjacent finish texture and profile.
4. Before first paint coat is applied, spot prime nails and other exposed metal occurring in the surfaces with a rust inhibitive primer as recommended by paint manufacturer.

F. Plaster and Gypsum Board Surfaces:

1. Fill cracks, holes or imperfections with compatible patching material and smooth off to match adjoining surfaces. Before painting, surfaces shall be first tested for dryness with a moisture testing device.
2. Apply no paint or sealer on gypsum board or plaster when the moisture content exceeds 8 percent. Test sufficient areas in each space and as often as necessary to determine if the surface has the proper moisture content for painting. If the moisture content is between 8 percent and 12 percent, prime with alkali resistant primer.
3. If 8 percent or less, prime with specified primer. Remove the dry salt deposits from plaster surfaces by brushing with a stiff brush before painting.

3.4 WORKMANSHIP

A Spread materials smoothly and evenly. Apply coats to not less than wet and dry

film thicknesses and at spreading rates for specified products as recommended by Manufacturer, but not less than as specified for each paint system.

- B. Apply each coat of paint evenly and comply with manufacturer's drying time before applying subsequent coats.
- C. Touch up suction spots after application of first finish coat.
- D. Finished work shall be uniform, match approved color, texture and coverage, and free from runs, sags, clogging or excessive flooding. Make edges of paint adjoining other materials or colors sharp and clean, without overlapping. Where varnishes or enamel is used, lightly sand, dust and clean undercoats to obtain a smooth finish coat. Sand carefully between each coat with fine sandpaper as necessary to produce even, smooth surfaces and to provide proper adhesion of subsequent coats.
- E. Where clear finishes are required, ensure tinted fillers match wood. Work fillers well into the grain before set. Wipe excess from the surface.
- F. Where specific mil thicknesses are required, check thickness by the following methods:
 - 1. Over ferrous metal - Elecometer Film Gauge
 - 2. Other surfaces - Tooke Dry Mil Inspection Gauge
- G. Finished work shall be a 'Properly Painted Surface' as defined in this Section.

3.5 APPLICATION

- A. The number of coats scheduled is the minimum number of coats required. Additional coat(s) shall be applied, at no additional cost to the Owner, to completely hide base material, provide uniform color and to produce satisfactory finish results.
- B. Apply coatings without thinning except as specifically required by label directions, or required by these specifications. In such cases, thinning shall be the minimum reduction permitted.
- C. Priming will not be required on items delivered with prime or shop coats, unless otherwise specified, or if shop applied prime coat is not compatible with specified painting system. Touch up prime coats applied by others as required to ensure an even primed surface before applying finish coat.
- D. Block Fillers: Provide level of block fill as scheduled to conform with the following:
 - 1. Level 1 – Regular Fill: Minimum block fill, reduces irregularity in masonry profile. One coat, spray applied.
 - 2. Level 2 – Medium Full Fill: Masonry profile slightly reduced. One coat, spray applied and back-rolled.
 - 3. Level 3 – Full Fill: Minimum block fill required for semi-gloss and gloss finishes. Use where conformance with health regulations is required. Number of coats as required to conceal most of masonry texture, spray applied and back-rolled.
- E. Plumbing, Mechanical and Electrical:
 - 1. Exterior and interior exposed water, gas, waste piping, sprinkler piping, conduit, lighting and electrical panels, telephone terminal boxes, galvanized ducts and insulated ducts, shall be painted in areas other

- than mechanical rooms, unless otherwise scheduled.
2. Paint exposed unfinished fixtures, metal ducts, switch boxes, control panels, devices, starters, junction boxes, vents, drains, and other similar items, as directed by Architect.
- F. Spray paint prime coated (not pre-finished) grilles and registers with enamel or lacquer to match walls and ceilings. Paint materials shall not sag, run or bind movable parts of grilles, registers, louvers, baffles and other similar items.
1. Throats of ducts shall be given one coat of flat black paint, wherever visibility of the interior of the duct is allowed through registers or other similar items. At fiber lined duct, use black latex paint.
 2. Examine the Mechanical and Electrical Drawings and Specifications to determine the amount of exposed work to be painted.
- G. Paint exposed surfaces of every member, paint items inaccessible after installation before installation, if required to be painted. Paint all exposed surfaces of overhead roof or floor structures, including deck, except where specifically indicated not to be painted.
- H. Edges, tops, and bottoms of wood doors shall be sealed and finished with the same finish as the door faces, to meet door manufacturer's warranty requirements. Verify edge color with Architect as different colors may be selected for each face.
- I. Paint items fitted with finish hardware after hardware has been temporarily removed.
- J. Heating and other equipment on or adjacent to walls or surfaces scheduled for painting, shall be disconnected, using workmen skilled in appropriate trades and moved temporarily to permit painting of surface. Following completion of painting, replace and reconnect items.
- K. In multiple coat paint work, tint each succeeding coat with slightly lighter color, but approximating shade of final coat, to facilitate checking application of specified number of coats. Tint final coat to scheduled and approved color. Tint prime and undercoats to a color similar to finish coat. Each coat of material applied must be inspected and approved by the Architect before the application of the succeeding specified coat; otherwise no credit for the concealed coat will be given, and the Contractor shall assume the responsibility to recoat work in question. Contractor shall notify the Architect when each coat is completed.
- L. Brush, wipe or roll stain in 2 coat application. Avoid lap marks by maintaining "wet-edge" continually being merged with existing liquid coverage and stop only at natural edges, turns and breaking places.
- M. Do not paint over Underwriters' Laboratory labels, fusible links, exposed sprinkler heads and other similar items.
- N. Paint piping, electrical or other equipment, conduit, vents and other similar items, on roof or other exterior locations as directed by Architect.
- O. Finish closets with same color as adjoining rooms, unless otherwise specified. Finish other surfaces same as nearest or adjoining surfaces, unless otherwise shown or scheduled.
- P. Paint surface of walls which will be concealed by cabinets and other items mounted on or attached to walls.

3.6 ADJUSTING

- A Correct deficiencies in workmanship required to leave surfaces in conformance with 'Properly Painted Surface' as defined in this Section.

3.7 CLEANING

- A During the course of the Work and upon completion of work, remove misplaced paint and stain spots or spills from floors, walls, glass, or other surfaces and leave work clean, orderly, and in acceptable condition. Remove debris caused by work of this Section from premises. Leave Work in clean condition acceptable to Architect and Owner.
- B Remove oily rags and waste daily, taking precaution to prevent fire.

3.8 SCHEDULES

- A Color Schedule:
 - 1. Architect will provide a complete schedule of colors. Colors may be selected from various manufacturer's color palettes. Manufacturer supplying paint shall match these colors. Contractor shall prepare duplicate set of samples of treatments for major surfaces. If a specific surface or item receiving a paint finish does not have a specific color indicated or selected by the Architect, obtain clarification from the Architect. Do not assume the confirmation of the same color on the adjacent surfaces.
 - 2. Final coat of paint shall be not be applied until colors have been approved by the Architect and Owner.
- B Schedule of Finishes: Refer to the "Finish Schedule" on the Drawing for designated finishes of areas.
- C Finishing of the following listed items and materials will not be required and shall be protected, except where explicitly specified otherwise:
 - 1. Stainless Steel, brass, bronze, copper, nickel, monel metal, chromium, anodized aluminum; specially finished articles such as porcelain enamel, plastic coated fabrics, and baked enamel, unless otherwise indicated.
 - 2. Finished products such as ceramic tile, metal wall panels, glass, resilient flooring, and similar items.
 - 3. Pre-finished products such as wood casework, elevator cabs, pre-finished (powder-coated) metals, and similar items.

3.9 EXTERIOR PAINT FINISHES

- A This schedule uses the generic names listed in the Schedule of Paint Products.
- B System 101 (Ferrous Metals): Apply to exposed steel such as metal doors and frames, grilles, light fixture standards in parking areas, metal handrails, sectional doors that are not otherwise pre-finished, and other exposed miscellaneous ferrous metals that are not pre-finished. Refer to High Performance Finish Systems Article 3.11 for high performance paint finish applied to exposed exterior steel enclosure gates and frames, screen walls, and similar items indicated to be painted.
 - 1. 1st Coat: Ferrous Metal Primer (Red or White color as applicable to finish coats).

2. 2nd Coat: Same material as 3rd coat in accordance with manufacturer's recommendations.
 3. 3rd Coat:
 - a. Flat: Paint - Waterborne (100% Acrylic) (if noted on Drawings). Sheen shall be 4 to 6% per a 85 degree gloss meter.
 - b. Semi-Gloss unless noted otherwise. Enamel, Semi-Gloss - Waterborne (100% Acrylic - Non-Blocking).
 - c. Gloss (if noted on Drawings): Enamel, Gloss - Waterborne (100% Acrylic - Non-Blocking).
- C. System 102 (Galvanized Metals): Apply to exposed galvanized metal such as copings, louvers and metal flashings. Refer to High Performance Finish Systems Article 3.11 for high performance paint finish applied to exposed exterior steel enclosure gates and frames, screen walls, and similar items indicated to be painted.
1. Clean metal to remove foreign matter or any coating applied by the metal manufacturer. Apply Surface Conditioner or Vinyl Wash Pretreatment (if required by paint manufacturer).
 2. 1st Coat: Galvanized Metal Primer.
 3. 2nd Coat: Same material as 3rd coat as recommended by manufacturer.
 4. 3rd Coat:
 - a. Flat: Paint, Flat - Waterborne (100% Acrylic) unless noted otherwise.
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss - Waterborne (100% Acrylic - Non-Blocking).
 - c. Gloss (if noted on Drawings): Enamel, Gloss - Waterborne (100% Acrylic - Non-Blocking).
- D. System 103 (Aluminum): Apply to exterior louvers and other miscellaneous exposed exterior unfinished aluminum surfaces.
1. Clean metal to remove foreign matter or any coating applied by the metal manufacturer. Apply Surface Conditioner or Vinyl Wash Pretreatment.
 2. 1st Coat: Aluminum Primer.
 3. 2nd Coat: Same material as 3rd coat as recommended by manufacturer.
 4. 3rd Coat:
 - a. Flat: Paint, Flat - Waterborne (100% Acrylic) (if noted on Drawings) Sheen shall be less than 10% per a 85 degree gloss meter.
 - b. Semi-Gloss unless noted otherwise. Enamel, Semi-Gloss - Waterborne (100% Acrylic - Non-Blocking).
 - c. Gloss (if noted on Drawings): Enamel, Gloss - Waterborne (100% Acrylic - Non-Blocking).
- E. System 104 (Concrete Masonry Units): Refer to Section 07 19 00 "Water Repellents" for water repellent coating applied to exposed exterior integral colored CMU.
- F. System 105 (Concrete and Stucco): Apply to exterior cementitious surfaces specifically indicated to be painted. Roller apply 2nd or 3rd coat.
1. 1st Coat: Concrete and Masonry Primer.
 2. 2nd Coat: Same material as 3rd coat as recommended by

- manufacturer.
3. 3rd Coat:
- a. Flat: Paint, Flat - Waterborne (100% Acrylic) unless noted otherwise. Sheen shall be 4 to 6% per a 85 degree gloss meter. One of the coats shall be roller applied.
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss - Waterborne (100% Acrylic - Non-Blocking).
 - c. Gloss (if noted on Drawings): Enamel, Gloss – Waterborne (100% Acrylic - Non-Blocking).
- G. System 106 (Exterior Wood): Not Used.
- H. System 107 (Exterior Gypsum Board): Apply to exterior grade gypsum board soffits.
1. 1st Coat: Exterior Gypsum Board Primer/Undercoater – Waterborne unless noted otherwise.
 2. 2nd and 3rd Coats: Flat Paint - Waterborne (100% Acrylic) unless noted otherwise. Sheen shall be 4 to 6% per a 85 degree gloss meter. One of the coats shall be roller applied.
- I. System 108 (Sealer - Masonry Parapet Top Surfaces): Not Used.

3.10 INTERIOR PAINT FINISHES

- A. This schedule uses the generic names listed in the Schedule of Paint Products.
- B. System 201 (Ferrous Metals): Apply to exposed metals such as steel doors, hollow metal frames, metal beam saddles, columns, grilles and registers, stair and hand railings, ladders, and other exposed miscellaneous metals.
1. 1st Coat: Ferrous Metal Primer (Red or White color as applicable to finish coats).
 2. 2nd Coat: Same material as 3rd Coat as recommended by manufacturer.
 3. 3rd Coat:
 - a. Eggshell: Enamel, Eggshell.
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss.
 - c. Gloss (if noted on Drawings): Enamel Gloss.
- C. System 202 (Interior Wood Finishes - Enamel): Apply to wood doors, base, MDO shelving, and other exposed miscellaneous wood and trim indicated to be painted.
1. 1st Coat: Enamel Undercoater.
 2. 2nd and 3rd Coat:
 - a. Eggshell: Enamel, Eggshell
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss
 - c. Gloss (if noted on Drawings): Enamel, Gloss
- D. System 203 (Interior Wood Finish - Flat): Apply to plywood telephone backing boards and other miscellaneous softwood as noted, specified or scheduled.
1. 1st Coat: Enamel Undercoater/Primer.
 2. 2nd and 3rd Coat: Flat Paint, - Waterborne (Vinyl Acrylic)
- E. System 204 (Galvanized Metals): Apply to exposed galvanized metal.
1. Clean metal to remove foreign matter or any coating applied by the metal manufacturer. Apply Surface Conditioner or Vinyl Wash Pretreatment (if required by paint manufacturer)

2. 1st Coat: Galvanized Metal Primer
 3. 2nd and 3rd Coats:
 - a. Eggshell: Enamel, Eggshell
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss
 - c. Gloss (if noted on Drawings): Enamel Gloss
- F. System 205 (Aluminum): Apply to interior louvers and other miscellaneous exposed unfinished aluminum surfaces.
1. Clean metal to remove foreign matter or any coating applied by the metal manufacturer. Apply Surface Conditioner or Vinyl Wash Pretreatment.
 2. 1st Coat: Aluminum Primer
 3. 2nd and 3rd Coats:
 - a. Eggshell: Enamel, Eggshell
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss
 - c. Gloss (if noted on Drawings): Enamel, Gloss
- G. System 206 (Gypsum Board, Plaster and Concrete - Wet Areas): Apply to gypsum board, plaster and concrete surfaces in toilet rooms, janitor rooms, kitchens, and other areas as scheduled.
1. 1st Coat: Enamel Undercoater - Solventborne, unless noted otherwise.
 2. 2nd and 3rd Coats:
 - a. Eggshell (if noted on Drawings): Enamel, Eggshell - Solventborne.
 - b. Semi-Gloss: Enamel, Semi-Gloss - Solventborne or Enamel - Solventborne (Epoxy-Polyester).
- H. System 207 (Gypsum Board, Plaster and Concrete - Non-Wet Areas): Apply to gypsum board, plaster and concrete except for wet areas.
1. 1st Coat: Waterborne Primer/Sealer. (Solventborne {Alkyd} shall be used at new untextured smooth gypsum board surfaces covered with powdery or unstable soft top joint cement)
 2. 2nd and 3rd Coat:
 - a. Eggshell: Enamel, Eggshell
 - b. Semi-Gloss (if noted on Drawings): Enamel, Semi-Gloss
 - c. Flat (if noted on Drawings): Paint, Flat
- I. System 208 (Ferrous Metal - Chemical Resistant Finish): Not Used.
- J. System 209 (Interior Concrete Masonry - Wet Areas): Not Used.
- K. System 210 (Interior Concrete Masonry or Plaster - Extremely Wet Areas): Not Used.
- L. System 211 (Interior Concrete Masonry - Non-Wet Areas): Apply to exposed interior concrete masonry block units except areas specified above for enamel finish.
1. 1st Coat: Block Filler, w/o Aggregate. Provide Level 1, 2 or 3 Fill as required by gloss.
 2. 2nd Coat: Same material as 3rd Coat as recommended by manufacturer.
 3. 3rd Coat: Enamel, Semi-Gloss - Waterborne.

3.11 HIGH PERFORMANCE FINISH SYSTEMS

- A. General: Products included in the following high performance systems are not listed in the Schedule of Paint Products located at the end of this Section.
- B. System 401 (Exterior Steel): Apply to exposed exterior steel enclosure gates and frames, screen walls, and similar items indicated to be painted.
1. Clean steel to SSPC-SP6 (Commercial Blast Cleaning).
 2. 1st Coat: Tnemec Series 27 Typoxy spray applied in shop at 3.0 to 5.0 mils DFT, or Sherwin Williams Macropoxy 646 Fast Cure Epoxy, B58W610/B58V600 or International PC Intergard 345 applied at 4 to 6 mils DFT or PPG Pitt-Guard Rapid Coat D-T-R Epoxy Coating 95-245 Series at 5.0 to 7.0 mils DFT.
 3. Field Spot Prime: Touch-up at any areas damaged during delivery applied at 3.0 to 5.0 mils DFT with same material as 1st Coat. Feather edges to shop applied prime coat to provide smooth transition.
 4. 2nd Coat: Tnemec Series 73 Endura-Shield spray-applied at 2.0 to 3.0 mils DFT, or Sherwin Williams Acrolon 218 HS Polyurethane, or International PC Interthane 990HS Pigmented Gloss applied at 3 to 5 mils DFT, or PPG Pitthane High Build Semi-Gloss Urethane Enamel 95-8800 Series at 2.0 to 5.0 mils DFT.
 5. 3rd Coat: Tnemec Series 76-762 (semi-gloss) or 76-763 (satin) Endura-Clear spray-applied at 1.0 to 1.5 mils DFT (Clear coat required for Tnemec system), or Sherwin Williams Diamond Clad Clearcoat Urethane, or International PC Interthane 990HS Clear Gloss spray-applied at DFT thickness recommended by manufacturer, or PPG Pitthane High Build Semi-Gloss Urethane Enamel 95-8800 Series at 2.0 to 5.0 DFT.

3.12 SCHEDULE OF PAINT PRODUCTS

A. Only those products which are specifically required by this Section shall be provided. Products listed in the following Schedule that are not specified in this Section are for information only.

EXTERIOR PRIMERS/UNDERCOATERS	Benjamin Moore	Dunn-Edwards		Glidden Profess.	PPG	Sherwin Williams	Tnemec
Red Ferrous Metal Primer							
Waterborne	V110.20	BRPR00-1-RO		4020	90-708	B66N00310	18
Solventborne	M06-20	---		4160	7-858	B50NZ3	10-99
Galvanized Metal Primer							
Waterborne	M04	UGPR00-1		4020	90-712	B66W1	18
Solventborne	---	GAPR00		4160	6-209	B50WZ0030	66
Vinyl Wash Pretreatment /Surface Conditioner							
Waterborne	---	ME01		88	---	B71Y1	---
Solventborne	V155	---		---	97-687	N/A	---
Aluminum Metal Primer							
Waterborne	P04	UGPR00-1		4020	90-712	B66W1	18
Solventborne	V131.01	GAPR00		4160	6-204	B50XZ30	66
White Ferrous Metal Primer							
Waterborne	M04-01	BRPR00-1-WH		4020	90-712	B66W00310	18
Solventborne	M07-01	---		4160	7-852	B50WZ004	10-99W
Concrete and Masonry Block Filler							
Waterborne (100% Acrylic)	958.11	SBPR00		4000	16-90	B42W46	54-580
Waterborne (modified Copolymer)	---	SBSL00-1		GP3010	6-7, 6-15	B25W25	130
Solventborne	V163.90	---		---	95-217	B42W00400 B42V00401	54-660
Concrete and Masonry Primer							
Waterborne	068	ESPR00-1		GP3030	4-603, 4-100	A24W08300	151
Solventborne	---	---		---	---	---	66
Waterborne Epoxy (2 component)	V163	SLPR00		2110N Aquapon WB	98 Series	B73A00200 B73V00200	84
Masonry Surface Conditioner							
Waterborne	066	---		GP3030	4-808	A24V01100	151
Solventborne	077	---		Amerlock Sealer	---	---	205
Exterior Gypsum Board Primer/Undercoater							
Waterborne	023	UGPR00-1		GP6001	6-609	B42W08041	6
Solventborne	024	---		GP2110	17-941NF	Y24W08020	36-603

EXTERIOR PRIMERS/UNDERCOATERS (continued)	Benjamin Moore	Dunn-Edwards		Glidden Profess.	PPG	Sherwin Williams	Tnemec
Exterior Wood Primer							
Waterborne (100% acrylic)	023	EZPR00-1		GP6001	6-609	B42W08041	6
Solventborne	094	---		GP2110	17-941NF	Y24W08020	36-603
Multi-Purpose Primer							
Waterborne (100% acrylic)	023	UGPR00-1		GP3210	90 Series	B551W00450	18
Solventborne	024	GAPR00		4160	97-689	---	37H
High Build Polyamide Epoxy Primer (2 Part)							
Waterborne	V440	---		4030	98 Series	B73A200/B73V200	462
Solventborne (ferrous metals)	V400	Carboguard 890		Amerlock 2	97-DTR	B67A5/B67V5	66
Solventborne (galvanized metal)	V400	Carboguard 890		Amerlock 2	97-DTR	B67A5/B67V5	66

EXTERIOR PAINT - FINISH COATS	Benjamin Moore	Dunn-Edwards		Glidden Profess.	PPG	Sherwin Williams	Tnemec
Paint, Flat (Gloss Rating 0-15 @ 85 degree gloss meter)							
Waterborne (Vinyl Acrylic or 100% Acrylic)	183	SSHV10		GP2250	10-Series	C01W00251	---
Waterborne (100% Acrylic)	N447	ACHS10SSH L10		GP2200	6-610XI	A-100/A06W0151	115
Paint, Gloss Level 3 (Eggshell)							
Waterborne (100% Acrylic)	N185	EVSH30		GP2402	6-2045XI	A82W00151	--
Solventborne	P23	---		---	---	---	15
Enamel, Gloss Level 4 (Low Luster)							
Waterborne (100% Acrylic - Non-Blocking)	N448	EVSH40		GP2402	90-474	A82W00151	6
Solventborne	P23	---		---	---	---	--
Enamel, Gloss Level 5 (Semi-Gloss)							
Waterborne (100% Acrylic - Non-Blocking)	N449	EVSH50		GP2406	6-901XI	A76W00051	30
Solventborne	V201	9 Series		4328	---	B54WZ-400	23
Solventborne (Industrial)	V201	9 Series		4328	---	B54WZ-400	23
Solventborne (Acrylic Aliphatic Polyurethane - 2 Component)	V510	Carbothane 133H B		Am450H	95-8800 Series	B65-350/B60V30	73

EXTERIOR PAINT - FINISH COATS (continued)	Benjamin Moore	Dunn- Edward s		Glidden Profess.	PPG	Sherwin Williams	Tnemec
Enamel, Gloss Level 6 (Gloss)							
Waterborne (100% Acrylic - Non-Blocking)	P28	EVSH60		GP3028	90-374/6-8534	A77W00051	---
Solventborne (Quick Dry)	V220	10 Series		4318	7-800/ 95-9000	B54WZ-400	---
Solventborne (Silicone)	P	42-53E		95-5000	Series 95-5000	B56-300	-
Solventborne (Industrial)	21	10 Series		4328	7-284	B54WZ-4--	-
Solventborne (Aliphatic Polyurethane - 2 Component)	P 22	---		Am450H	95-812	B65-300/B60V30	2 H
Solventborne (Acrylic Aliphatic Polyurethane - 2 Component)	V 50 0 V500	Carbothane 134 HG		---	Series ---	B65W00721 B65V00720	1074 1074
Elastomeric (Smooth)							
Waterborne (100% Acylic)	055	Gardner Gibson Shur- Stik		GP2260	4-310 Matte	A05W-400	156
Textured Coating, Smooth							
Waterborne (Vinyl Acrylic)	3194.1	W320		GP2260	4-series	A44W801	180
Solventborne	---	---		---	---	---	---
Textured Coating, Medium							
Waterborne (Vinyl Acrylic)	3196.1	W322		GP3230	4-series	A44W811	181
Solventborne	---	---		---	---	---	---
Textured Coating, Coarse							
Waterborne (Vinyl Acrylic)	3192.1	W323		GP3230	4-series	A44W821	---
Floor Paint (Single or 2-component)							
Waterborne (Acrylic Epoxy)	V440	Sanitile 555		98 Series	98 Series	B90 Series	287
Solventborne	V400	Sanitile 945		GP3118	95-1	B62Z-100	280
Aluminum Paint Solventborne	P22-78	---		4309	6-230	B65S14 (moisture cure)	530
Aluminum Metal							
Waterborne	---	Rust-Oleum 5200 ALumi- Non		4020	90 Series	B71-200	---
Solventborne	P22-78	---		---	---	B65S14 (moisture cure)	1077

INTERIOR PRIMERS/UNDERCOATERS	Benjamin Moore	Dunn- Edwards		Glidden Profess.	PPG	Sherwin Williams	Tnemec
Red Ferrous Metal Primer Waterborne	V110.20	BRPR00-1- R0		4020	90-708	B66N00310	18
White Ferrous Metal Primer Waterborne	P04-01	BRPR0 0-1- WH		4020	90-712	B66W00310	18
Galvanized Metal Primer Waterborne	P04-01	UGPR00-1		4020	90-712	B66W1	18
Aluminum Primer Waterborne	P04	UGPR00-1		4020	90-712	B66W1	18
Primer/Sealer (for drywall, etc.) Waterborne (Vinyl Acrylic) Waterborne (Zero VOC)	253 N534	VNSL0 0 VNSL0 0		GP1030 GP9116	6-4 9-900	B28W08601 B28W02600	51-792 ---
Vinyl Acrylic Wall Sealer Waterborne	253	VNSL00		GP1030	6-2 17-921	B28W08601	51-792
Enamel Undercoater/Primer Waterborne (100% Acrylic)	253	IKPR00-1		GP1020	17-951	B28W08111	18
Block Filler, w/ Aggregate Waterborne	---	MBPR00		---	---	---	130
Block Filler, w/out Aggregate Waterborne Waterborne (100% Acrylic)	958.11 958.11	SBSL00-1 SBPR00		GP3010 4000	6-7 6-15, 16- 90	B25 W25 B42 W46	54-580 130
Epoxy Polyester Primer Waterborne	---	---		Am400 B F	---	B70W100/B601V1 5	462

INTERIOR PRIMERS/UNDERCOATERS (continued)	Benjamin Moore	Dunn- Edward s		Glidden Profess.	PPG	Sher win Willi ams	Tnemec
Vinyl Wash Pretreatment/Surface Conditioner							
Waterborne	---	ME01		88	---	B71Y1	---
Concrete and Masonry Primer							
Waterborne	068	ESPR00-1		GP3030	4-100, 4-603	A24W08300	151

INTERIOR PAINT - FINISH COATS	Benjamin Moore	Dunn- Edward s		Glidden Profess.	PPG	She rwin Willi ams	Tnemec
Acoustic Paint							
Waterborne (Vinyl-Acrylic)	258	W615		GP1210v	50 Series	Procoat ProCoustic Acoustical Tile and Ceiling Coating	180
Paint, Gloss Level 1 (Flat)							
Waterborne (Vinyl Acrylic)	275	SWLL1		GP1210v	6-70	B30W046	180
Waterborne (Low Odor/Low VOC)	N534	0		GP1410	9-110	51	115
Waterborne (Low Odor/Zero VOC)	N534	SWLL1 0 SZRO1 0		GP9110	9-110	B30W026 51 B30W026 51	---
Enamel, Gloss Level 2 (Low Sheen)							
Waterborne (100% Acrylic)	N5	SPMA3		GP1433v	-	---	6
Waterborne (Vinyl Acrylic)	37	0		GP1412	6-510	B24W02651	---
Waterborne (Low Odor/Zero VOC)	27 4 N5 37	SWLL3 0 SZRO3 0		GP9100	9-510	B20W02651	---
Enamel, Gloss Level 3 (Eggshell)							
Waterborne (100% Acrylic)	N5	SPMA40		GP140	**6-411	A75W00051	---
Waterborne (Vinyl-Acrylic)	38	SWLL40		3		B20W4400	---
Waterborne (Low Odor/Zero VOC)	27	---		GP141	9-300XI	B20W02651	---
Waterborne (Non-Blocking - 100% Acrylic)	4 N5 38 N5 38	EVSH4 0		2 GP930 0 GP140 3	**6-411	B75W00051	---

(**Not 100% Acrylic, but is their top of line product)

INTERIOR PAINT - FINISH COATS (continued)	Benjamin Moore	Dunn- Edward s		Glidden Profess.	PPG	She rwin Willi ams	Tnemec
Enamel, Gloss Level 5 (Semi-Gloss)							
Waterborne (100% Acrylic)	N539	SPMA50		GP1416	6-8510	A76W00051	29
Waterborne (Non-Blocking - 100% Acrylic)	N539	EVSH50		GP1407	6-8510	A76W00051	---
Waterborne (Low Odor/Low VOC)	N539	SWLL50		GP1456	9-510	B31W02651	29
Waterborne (Low Odor/Zero VOC)	N539	SZRO50		GP9200	9-510	B31W02651	---
Waterborne (2 Component Epoxy)	V440	Sanitile 255		98 Series	98 Series	B70-200/B60V25	113
Enamel, Gloss Level 6 (Gloss)							
Waterborne (Non-Blocking - 100% Acrylic)	N540	EVSH60		GP3028	90-375	A77W00051	-
Waterborne (2 Component Epoxy)	V440	Sanitile 555		4408 Low- VOC GP3038	98 Series	B73W00300 B73V00300	-
Waterborne (Low Odor/Low VOC)	N540	---			---	---	1
							1
							4
							28
Floor Paint (Single or 2-component)							
Waterborne(Epoxy-Acrylic)	V440	Sanitile 555		---	98 Series	B90 Series	287

END OF SECTION

**SECTION 10 1400
SIGNAGE**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Exterior fabricated reverse pan metal building signage.
 - 2. Interior and exterior code required identification signage.
 - 3. Unit number signs.
 - 4. Code required identification signage for fire walls, barriers, partitions, smoke barriers and similar items as required by IBC Section 703.7.
 - 5. "No Smoking within 25 feet of building" signage around all main entrances
 - 6. Reflective tape for pipe bollards.
- B. Related Sections:
 - 1. Section 10 1453 – Traffic Control Signs, for exterior parking lot and drive traffic control signage.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's brochures indicating materials and finishes.
- B. Shop Drawings: Show sizes of members, method of construction, copy layout, wiring diagrams for illuminated building signage, and mounting details for proper mounting for interior signage, unit number signage, exterior building name and address signage and code required identification signage. Furnish template for mounting metal letters.
- C. Samples: Submit sample letters, panels, and completed signs, fonts and proposed anchorages.

1.3 QUALITY ASSURANCE

- A. Verify addressing requirements, including sizes and locations with governing authority prior to fabricating exterior signage.
- B. Regulatory Requirements: Comply with the following:
 - 1. ANSI A117.1, 2009 "Accessible and Usable Buildings and Facilities."
 - 2. Public Law 101-336 "The Americans with Disabilities Act of 1990(ADA).
 - 3. 2010 ADA Accessibility Guidelines (ADAAG).
 - 4. The Arizonans with Disabilities Act (AzDA) (ARS Section 41-1492.03).
- C. Provide electrical components for back-lighted signage that are listed and labeled by UL and that comply with applicable NEMA standards.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage and Protection: Store items in dry, protected areas. Adequately protect against damage while stored at the site. Keep free of corrosion or other damage.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions shown on Drawings by taking field measurements.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
1. Code Required Interior and Exterior ID Signage:
 - a. ASI-Modulex www.asimodulex.com
 - b. Best Manufacturing Company www.bestsigns.com
 - c. Epic Sign Group www.epicsigngroup.com
 - d. Mountain States Specialties
 - e. Signssource www.signsource.com
 - f. Skyline Signs Inc. www.skylinesigns.net
 - g. Vomar Products, Inc. www.vomarproducts.com
 - h. Other regional source as approved by Architect.
 2. Metal Signage:
 - a. ASI-Modulex www.asimodulex.com
 - b. ARK Ramos Manufacturing Co., Inc. www.arkramos.com
 - c. Matthews. www.matthewsbronze.com
 - d. Southwell. www.southwellco.com
 - e. Spanjer Brothers, Inc.
 - f. Metallic Arts. www.metallicarts.com
 - g. Other regional source as approved by Architect.

2.2 MATERIALS

- A. Materials shall be new stock, free from defects, imperfections strength, durability, and appearance. Types of materials and colors shall be selected by Architect based on final signage design.
- B. Metals - General:
1. For fabrication of exposed metal work, use only materials which are smooth and free of surface blemishes including pitting, roughness, seam marks, roller marks, and trade names.
 2. Do not use materials which have stains and discolorations.
 3. For exposed items of work which include plain flat surfaces in width of more than 50 times the metal thickness, provide sheet stock from mill which has been stretcher leveled to highest standard of flatness commercially available.
 4. Aluminum Sheet: Provide aluminum sheet of alloy and temper recommended by the aluminum producer or finisher for the type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 209 for 5005-H15.
 5. Hot-dip Galvanized Steel Sheets: ASTM A653, with G90 zinc coating.
- C. Cast Acrylic Sheet: Provide cast (not extruded or continuous cast) methyl methacrylate monomer plastic sheet, in sizes and thicknesses indicated, with a minimum flexural strength of 16,000 psi when tested in accordance with ASTM D 790, a minimum allowable continuous service temperature of 176 deg F (80 deg C), and of the following general types:
1. Colored Coatings for Acrylic Plastic Sheet: Use colored coatings, for background colors, that are recommended by acrylic manufacturers for

- optimum adherence to acrylic surface and are nonfading for the application intended. Color(s) as selected by Architect.
2. Transparent Sheet: Where sheet material is indicated as "clear," provide colorless sheet in matte finish, with light transmittance of 92 percent, when tested in accordance with the requirements of ASTM D 1003.
 3. Opaque Sheet: Where sheet material is indicated as "opaque," provide colored opaque acrylic sheet in colors and finishes as selected by Architect from the manufacturer's standards.
- D. Vinyl Film: Opaque reflectorized vinyl film, 0.0035-inch minimum thickness, with pressure-sensitive adhesive backing, suitable for exterior as well as interior applications.
- E. Melamine plastic laminate, 1/8 inch thick, rated non-static, fire retardant and self extinguishing.
- F. Fasteners: Use concealed fasteners fabricated from metals that are not corrosive to the sign material and mounting surface.
- G. Tape: VHB (very high bond) double-stick foam tape as manufactured by 3M.
- H. Adhesive: Liquid silicone adhesive or other adhesive recommended by the sign manufacturer for type of mounting indicated.
- I. Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.
- J. Reflective Tape for Pipe Bollards: Pressure-sensitive, self-adhesive, reflective engineers tape as indicated on Drawings as manufactured by 3M or equivalent as approved by Architect.

2.3 EXTERIOR BUILDING ADDRESS SIGNAGE

- A. Metal Letters:
1. Material: Fabricate reverse pan individual metal letters from galvanized steel or aluminum sheet of gauge recommended by manufacturer for size of characters, but not less than 22 gauge. Fabricate with projected jamb as detailed on Drawings.
 2. Continuously solder or weld all seams to prevent water intrusion. Provide screened weep hole on back bottom of each individual character.
 3. Characters: Size and font style as indicated on Drawings.
 4. Fabricated with stand-off from building façade for back-illumination.
 5. Light Components: LED's spaced as necessary for ample halo/back-light illumination with remote power supplies as necessary per LED count.
 5. Finish: Polyester powder coated or fluoropolymer factory applied finish containing a minimum of 70 percent Penawalt Kynar 500 resin and meeting AAMA's 605.2 high performance specifications. Apply 3 coats including primer coat, color coat, and clear top coat.
 - a. Color: As selected by Architect.
 6. Mounting: Threaded studs set in adhesive, flush mounted or projected with spacers, as indicated.

2.4 PLASTIC SIGNAGE

- A Interior Signage: All interior signage shall comply with applicable ADA requirements.
 - 1. Base: Melamine plastic laminate, 1/8 inch thick, rated non-static, fire retardant and self extinguishing.
 - a. Colors: As selected by Architect and in accordance with local and Federal requirements
 - b. Mounting: Screw attach to wall or door or door frame as indicated by Architect. Minimum 2 screws per sign. Height shall be 60 inches above finish floor to centerline of sign at wall mounted signs..
 - c. Finish and contrast:
 - (1) Matte finish.
 - (2) Characters shall contrast with background by at least 20 percent.
 - 2. Letters and Braille characters:
 - a. Raised 1/32 inch upper case, sans serif or simple serif, and accompanied with Grade 2 Braille. Raised characters shall be at least 5/8 inch high, but not higher than 2 inches.
 - b. Letters and numbers: Width-to-height ratio from 3:5 to 1:1, and stroke width-to-height ratio from 1:5 to 1:10.
 - c. Text: Required quantity of each sign shall be as directed by Architect.
- B Self Adhesive Vinyl: Self-adhesive vinyl letters and numbers as indicated on Drawings. Font type and size as indicated on Drawings or as selected by Architect.
 - 1. Color: As indicated on Drawings or as selected by Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Construction Manager. Commencement of Work will be construed as acceptance of subsurfaces.
- B Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A General: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions.
- B Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.
- C Install plumb and level in accordance with Manufacturer's instructions.
- D Securely fasten wall mounted items to solid backing.
- E Do not field cut any signage members.
- F Clean and polish exposed surfaces.
- G Self-Adhesive Vinyl Letters: Clean glass as recommended by manufacturer and apply letters level and at proper spacing at locations indicated.
- H Wall Mounted Panel Signs: Attach panel signs to wall surfaces using the

methods indicated below:

1. Silicone-Adhesive Mounting: Use liquid silicone adhesive recommended by the sign manufacturer to attach sign units. Use double-sided vinyl tape where recommended by the sign manufacturer to hold the sign in place until the adhesive has fully cured.
 2. Double-Stick Tape Mounting: Clean surfaces to be joined and apply double stick tape to back of wall mounted signage in continuous strips at approximate 2 inch center to center spacing between strips. Apply sign to wall surface taking care to properly align and plumb signage before removing release paper.
- I. Illuminated Individual Characters: Accurately locate anchors using supplied templates and anchor securely in place.
1. Extend and connect conduit and wiring to electrical connection provided by Division 26.
 2. Exposed conduit and/or wiring is not permitted.
 3. All wiring shall be performed by a qualified and licensed Electrician.
- J. All exterior wall penetrations shown on Drawings or otherwise required for signage installation shall be located by using full-size installation templates furnished by the signage fabricator.
- K. Reflective Tape for Pipe Bollards: Install pressure—sensitive, self-adhesive, reflective engineers tape on pipe bollards as indicated on Drawings after finish painting is complete.
- L. Seal, patch and paint all penetrations.
- 3.3 CLEANING
- A. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 10 1453
TRAFFIC CONTROL SIGNS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes traffic control signs and supports.

1.2 SUBMITTALS

- A. Submit product data, shop drawings and samples.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Metals: New stock, free from defects impairing strength, durability or appearance.
1. Steel Shapes, Plates, Rod, Bars and Bar-size Shapes: ASTM A36.
 2. Hot-dip Galvanized Steel Sheets: ASTM A653, with G90 zinc coating.
 3. Steel Tubing: ASTM A500.
 4. Aluminum Sheet: ASTM B209 having strength and durability meeting 5005-H15, .080 inch minimum thickness.
- B. Signage Supports: Provide galvanized steel pipe, tube or u-channel sign support posts as detailed on Drawings, complying with city/town standards. Provide welded steel caps at all hollow pipe or tube supports. Paint with thermoset acrylic polyurethane enamel or polyester powder coated finish in color indicated on Drawings or as selected by Architect.
1. U-Channel Sign Posts: As manufactured by Zumar Industries, Inc., or equivalent www.zumartraffic.com.
- C. Plastics: New stock, free from defects and of the best quality available.
- D. Paints: Type made for the surface material on which it is to be applied and recommended by the manufacturer of the paint. No paint that will fade, discolor or delaminate as a result of proximity to UV light sources or heat therefrom shall be used.
- E. Sign hardware and Accessories: As manufactured by Zumar Industries, Inc. or equivalent www.zumartraffic.com.

2.2 FABRICATION

- A. Fabricate in accordance with the City of Phoenix and MAG Standard Details, and as indicated on Drawings.
- B. Shop/Factory/Finishing:
1. Paint shall be thoroughly and evenly applied and shall be well worked into corners and joints and shall not have edge or joint buildups.
 2. Paint shall be evenly applied and without pinholes, scratches, orange peeling, application marks, etc.
 3. Workmanship in connection with finishes shall conform to the standard of the trade. Prime coats or other surface pre-treatments, where recommended by the manufacturer for paints, shall be included in the work.

PART 3 EXECUTION

3.1 ERECTION, INSTALLATION, APPLICATION

- A Install items square, plumb, true and accurately fitted. Leveling is to be done only by instruments.
- B Embed signage support pipes in concrete filled holes as detailed.

3.2 CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B After installation, surfaces marred during erection, and exposed bolts, bolt heads, etc., shall be retouched with the same paint used previously.

END OF SECTION

**SECTION 10 2600
CORNER GUARD
PART 1 - GENERAL**

1.1 SUMMARY

- A. Section Includes: Corner guards.

1.2 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, impact strength, dimensions of individual components and profiles, and finishes for each impact-resistant wall protection unit.
- B. Shop Drawings: For each impact-resistant wall protection unit showing locations and extent. Include sections, details, and attachments to other work.
- C. Retain subparagraph below if products are required to withstand specific design loads and design responsibilities have been delegated to Contractor or if structural data are required as another way to verify product's compliance with performance requirements. Professional engineer qualifications are specified in Section 01 4000 "Quality Requirements."
- D. Samples for Initial Selection: For each type of impact-resistant wall protection unit indicated.

1.3 INFORMATIONAL SUBMITTALS

- A. Coordinate first paragraph below with qualification requirements in Section 01 4000 "Quality Requirements" and as supplemented in "Quality Assurance" Article.
- B. Qualification Data: For qualified Installer
- C. Retain first paragraph below for material certificates from manufacturers.
- D. Material Certificates: For each impact-resistant plastic material, from the manufacturer.
- E. Retain first paragraph below for material test reports that are Contractor's responsibility.
- F. Material Test Reports: For each impact-resistant plastic material.
- G. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each impact-resistant wall protection unit to include in maintenance manuals.
- B. Include recommended methods and frequency of maintenance for maintaining optimum condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to plastic finishes and performance.
- C. Installer Qualifications: An employer of workers trained and approved by the manufacturer.
- D. Source Limitations: Obtain impact-resistant wall protection units from a single source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store impact-resistant wall protection units in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
- B. Maintain room temperature within storage area at not less than 70 deg F during the period plastic materials are stored.
- C. Keep plastic sheet material out of direct sunlight.

- D. Store plastic wall protection components for a minimum of 72 hours, or until plastic material attains a minimum room temperature of 70 deg F
- E. Store corner-guard covers in a vertical position.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install impact-resistant wall protection units until building is enclosed and weatherproof, wet work is complete and dry, and HVAC system is operating and maintaining temperature at 70 deg F (21 deg C) for not less than 72 hours before beginning installation and for the remainder of the construction period.

1.7 WARRANTY

- A. When warranties are required, verify with Owner's counsel that special warranties stated in this article are not less than remedies available to Owner under prevailing local laws.
- B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of impact-resistant wall protection units that fail in materials or workmanship within the specified warranty period.
- C. Failures include, but are not limited to, the following:
 - 1. Structural failures.
 - 2. Deterioration of plastic and other materials beyond normal use.
 - 3. Verify available warranties and warranty periods for units and components with manufacturers listed in Part 2 articles.
 - 4. Warranty Period: Five years from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CORNER GUARDS

- A. Surface-Mounted, Resilient, Plastic Corner Guards: Assembly consisting of snap-on cover installed over continuous retainer; including mounting hardware; fabricated with the 90-degree turn to match wall condition.
- B. Locations: Provide 90-degree corner guard at corridors, halls, vestibules, common space, office, and Multi-Purpose Room.
 - 1. Manufacturers: Subject to compliance with requirements, provide the product by:
 - a. Korogard Wall Protection Systems; a division of RJF International Corporation.
 - b. Substitutions per section 01 6000.
 - 2. Guard: 48 inches high x 0.110 inches thick; matte finish, pebblette grain extruded, embossed polyvinyl chloride; ASTM D-256 impact rating, 24.1; ASTM D-635 burn rate, self-extinguishing; ASTM E-84 flame spread, 25 or less; U.L. fire hazard classification, flame spread/smoke developed, 25/450; colors as selected by Architect; Type SM-20; manufactured by Construction Specialties.
 - 3. Closure Caps: Same gage, material, and color as a guard; at top and bottom.
 - 4. Subchannel: 0.063 inches thick; continuous, extruded aluminum G063T-5 alloy retainer; heat treated.
 - 5. Accessories, Anchors: Manufacturers standard; suitable for use; all fasteners concealed.
 - 6. Colors as selected by Architect, submittal to provide colors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and wall areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting the performance of work.

- B. Examine walls to which impact-resistant wall protection will be attached for blocking, grounds, and another solid backing that have been installed in the locations required for secure attachment of support fasteners.
 - 1. For impact-resistant wall protection units attached with adhesive or foam tape, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - C. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 PREPARATION
- A. Complete finishing operations, including painting, before installing impact-resistant wall protection system components.
 - B. Before installation, the clean substrate to remove dust, debris, and loose particles.
- 3.3 INSTALLATION
- A. General: Install impact-resistant wall protection units level, plumb, and true to the line without distortions per Manufacturer's installation instructions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
 - 1. Install impact-resistant wall protection units in locations and at mounting, heights indicated on Drawings or, if not indicated, at heights indicated below:
 - 2. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation.
- 3.4 CLEANING
- A. Immediately after completion of installation, clean plastic covers and accessories using a standard, ammonia-based, household cleaning agent.
 - B. Remove excess adhesive using methods and materials recommended in writing by the manufacturer.

END OF SECTION

**SECTION 10 2813
TOILET AND BATH ACCESSORIES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
1. Bath accessories for residential units.
 2. Toilet accessories for clubhouse common and office areas.
 3. Installation of toilet and bath accessories indicated to be furnished by Owner for installation by Contractor (OFCl).

1.2 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with the following:
1. ICC/ANSI A117.1, 2009 "Accessible and Usable Buildings and Facilities."
 2. Public Law 101-336 "The Americans with Disabilities Act of 1990 (ADA)."
 3. 2010 ADA Accessibility Guidelines (ADAAG).
 4. The Arizonans with Disabilities Act of 1992 Administrative Rules (AzDAAG).

1.3 SUBMITTALS

- A. Product Data: Submit Drawings and brochures of toilet accessory items showing sizes, construction and mounting techniques, and installation locations (Plans and Elevations).

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B. Storage: Adequately protect against damage while stored at site.
- C. Handling: Comply with Manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Residential Unit Bath Accessories: To establish function, capacity and quality, bath accessories are based on products of Taymor Industries and other manufacturers as may be scheduled on Drawings. Comparable bath accessories of one of the following Manufacturers may be provided, as approved by the Architect, subject to compliance with Specification requirements.
1. American Standard www.americanstandard-us.com
 2. Kohler www.kohler.com
 3. Liberty Hardware Manufacturing Corp. www.libertyhardware.com
 4. Pamex, Inc. www.pamexinc.com
 5. Taymor Industries www.taymor.com

- B. Office / Common Area Toilet Room Accessories: To establish function, capacity and quality, toilet and bath accessories are based on products of Bobrick and other manufacturers as may be scheduled on Drawings. Comparable toilet accessories of one of the following Manufacturers may be provided, as approved by the Architect, subject to compliance with Specification requirements.
1. Bobrick Washroom Equipment Co., Inc. www.bobrick.com
 2. Bradley Corporation www.bradleycorp.com
 3. GAMCO a division of Bobrick www.gamcousa.com
 4. ASI www.americanspecialties.com

2.2 MATERIALS

- A. Stainless Steel: AISI, Type 302/304, with satin No. 4 finish. Unless specified or indicated, the use of other stainless steel alloys shall not be allowed.
- C. Sheet Steel: Cold rolled, commercial quality, ASTM A1008. Surface preparation and metal pretreatment as required for applied finish.
- D. Chromium Plating: Nickel and chromium electro-deposited on metal, ASTM B456, Type SC 2.
- E. Mirror Glass: FS DD-G-451, Type I, Class 1, Quality 1, 1/4 inch thick, with silver coating, copper protective coating, and non-metallic paint covering.
- F. Galvanized Steel Mounting Devices: ASTM A123, hot-dip galvanized after fabrication.
- G. Locks: Tumbler type, keyed alike unless specified otherwise.
- H. Fasteners: Theft-proof screws. Use no adhesive mountings.
- I. Backing Plates: 16 gage cold-rolled steel for mounting grab bars in studpartitions.
- J. Perimeter Sealant: Type "E" clear mildew resistant silicone sealant as specified in Section 07 92 00.

2.3 RESIDENTIAL UNIT BATH ACCESSORIES

- A. Toilet: No more than 1.1 gpf
- B. Lavatory faucet: No more than 0.5 gpm
- C. Showerhead: No more than 1.5 gpm
- D. Grab Bars at Prefabricated Shower Compartments: Grabs bars are integral to molded fiberglass tub/shower enclosures. Refer to Plumbing Drawings and Specifications.
- E. Residential Bath Accessories: Provide products as indicated on Drawings or as specified, including, but not limited to the following:
1. Towel Bars: Taymor Model #01-A30230 Aluminum Towel Bar, polished chrome finish.
 2. Toilet Paper Holders: Taymor Model #01-301S Paper Holder with White Plastic Roller, polished chrome finish.
 3. Shower Rods with End Flanges: Taymor Model #01-9500SS, 5'-0" long and #01- 9600SS, 6'-0" long as necessary with bright polish finish. Provide Taymor Model #05-PB9661 Rod Flange with polished finish.

- F. Mirrors: As specified in Section 08 8300.

2.4 COMMON AREA TOILET ROOM ACCESSORIES

- A. Grab Bars: Provide units as scheduled on Drawings as manufactured by Bobrick, or equivalent as approved by Architect.
- B. Toilet Room Accessories: Provide products as scheduled on Drawings or as specified, including, but not limited to the following:
 - 1. Toilet Paper Dispensers.
 - 2. Paper Towel Dispensers.
- C. Owner Furnished, Contractor Installed Toilet Accessories:
 - 1. Toilet Seat Cover Dispensers.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination with other Work: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Install items in accordance with Manufacturer's published instructions and approved installation drawings in locations as shown on Drawings, and in compliance with ANSI A117.1 as applicable.
- B. Secure toilet room accessories to adjacent walls and partitions in accordance with the Manufacturer's instructions for each item and each type of substrate construction and as follows:
 - 1. Attachment to Toilet Partitions: Secure at screw attachment point with sheet metal screws furnished by Manufacturer or by 3/16 inch diameter through-bolts.
 - 2. Attachments of Recessed Accessories: Place shims between framing and cabinet at screw attachment points.
 - 3. Attachment of Surface Mounted Accessories: At metal stud walls, provide concealed sheet metal backing plate as indicated on Drawings to allow attachments with No. 18 x 1-1/2 inch sheet metal screws. At solid walls, rawl plugs, expansion shields or toggle bolts shall be provided. Mirrors shall be locked to wall hangers by tightening locking screws concealed in lower frame. Soap dispensers shall be mounted with 4 inch clearance from filler top to underside of any horizontal projection.
- C. Grab Bars:
 - 1. Framed wall construction: Install concealed anchor plates to studs. Attachment to studs must be sufficient to withstand a downward load of at least 300 pounds, when tested according to ASTM F446. Accurately position and fasten before wall finish is applied. After wall surface is finished, secure concealed mounting plate to anchor plate using stainless steel machine screws furnished by the Manufacturer.

- 2 Toilet Compartments: Through-bolted connection to anchors.
 - D. Seal wall penetrations with sealant as specified in Section 07900 to prevent moisture penetration through joints around fixtures.
- 3.3 CONSTRUCTION WASTE MANAGEMENT, ADJUSTING AND CLEANING
- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 74 19 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
 - B. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
 - C. Remove temporary labels and protective coatings just prior to Substantial Completion of Project.
 - D. Clean and polish exposed surfaces according to manufacturer's written recommendations.
 - E. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 10 44 00
FIRE PROTECTION SPECIALTIES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Fire extinguishers mounted in kitchen cabinets of each unit and in cabinets in office common areas.
 - 2. Cabinets for fire extinguishers.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's data and installation instructions for each item, including construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 1. Fire Extinguishers: Include rating and classification.
 - 2. Fire Extinguisher Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
- B. Samples for Initial Selection: For fire extinguisher cabinets with factory-applied color finishes.
- C. Samples for Verification: For each type of exposed factory-applied color finish required for cabinets, prepare 6 inch x 6 inch square Samples.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with ANSI/UL 92 and 711.
- B. Regulatory Requirements: Conform to ANSI/NFPA 10 and the following:
 - 1. ANSI A117.1, 2009 "Accessible and Usable Buildings and Facilities."
 - 2. Public Law 101-336 "The Americans with Disabilities Act of 1990 (ADA)."
 - 3. 2010 ADA Accessibility Guidelines (ADAAG).
 - 4. The Arizona with Disabilities Act of 1992 Administrative Rules (AzDAAG).
 - 5. Fire extinguishers shall be listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.
 - 6. Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
 - 7. Provide fire extinguishers approved, listed, and labeled by FMG.

1.4 COORDINATION

- A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of portable fire extinguishers that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure of hydrostatic test according to NFPA 10.
 - b. Faulty operation of valves or release levers.

- c. Warranty Period: Five years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A Furnish products of one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
1. Activar Inc. Construction Products Group www.activarcpg.com
 2. Amerex (Fire Extinguishers only) www.amerex-fire.com
 3. Larsen's Manufacturing Company www.larsensmfg.com
 4. Kidde www.kidde.com
 5. Potter Roemer Fire Protection Equipment www.potterroemer.com

2.2 EQUIPMENT

- A Multi-Purpose Dry Chemical Extinguisher for Office and Common Areas:
1. Capacity and UL Rating: MP5-A, 3A-40B:C, or as otherwise required by Fire Official.
 2. Rechargeable type.
 3. Tank: DOT approved steel cylinder.
 4. Metal head, handles, valves and siphon tube. Plastic handles, valve assemblies and siphon tubes are not allowed.
 5. Replaceable molded valve stem seal.
 6. Pressure gauge.
- B 2-1/2 lb Residential Kitchen Extinguishers: Kidde Model RESSP orequivalent.
1. Capacity and UL Rating: 2-1/2 lbs.
 2. UL Listed to 711A (residential cooking equipment).
 3. Meets NFPA 10.
 4. Agent: Sodium Bicarbonate.
 5. Complete with wall hanger.
 6. Pressure gauge.
- C. Fire Extinguisher Cabinet:
1. Cosmopolitan Series as manufactured by J.L. Industries, or equivalent as manufactured by one of the specified manufacturers.
 2. Trim Style and Projection: Provide recessed, semi-recessed with 3 inch rolled edge, or as otherwise indicated on Drawings.
 3. Inside box/tub dimensions: 10-1/2 inches x 24 inches x 6 inches.
 4. Door:
 - a. Vertical Duo.
 - b. Trim and Door (Stainless Steel): One piece, constructed of #4 finish, 304 stainless steel. Doors to be tubular, hollow-metal design.
 - c. Door Glazing: Clear tempered glass.
 5. Recessed Box: Heavy gauge, white baked acrylic enamel box.
 6. Cabinet Signage: Vertical lettering "FIRE EXTINGUISHER" on door; color black.
 7. Cabinet Mounting Hardware: Appropriate to cabinet.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as

acceptance of subsurfaces.

- B. Examine fire extinguishers for proper charging and tagging.
 - 1. Remove and replace damaged, defective, or undercharged units.
- C. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 PREPARATION

- A. Prepare recesses for recessed cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

- A. Install items in accordance with Manufacturer's directions. Install cabinets plumb and level at heights shown on Drawings.
- B. Comply with regulatory requirements and anchor securely.
- C. Verify that extinguishers are charged and tagged.
- D. Place extinguishers in kitchen cabinets on brackets in each residential unit as indicated on Drawings.
- E. Please add extinguishers within fire extinguisher cabinets in common areas at locations indicated on Drawings.

3.4 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 10 5500
POSTAL SPECIALTIES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes front-loading mailboxes.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawing indicating sizes, method of construction, and installation details.
- B. Samples: Submit 2 samples of finish.

1.3 REGULATORY REQUIREMENTS

- A. Comply with USPS-STD-4C for wall-mounted centralized mailboxes.
- B. Comply with Americans with Disabilities Act Accessibility Guidelines (ADAAG).

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage and Protection: Adequately protect against damage while stored at the site.

1.5 WARRANTY

- A. Manufacturer's standard warranty to repair or replace components of postal specialties that fail in materials or workmanship within five years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as approved by the Architect, subject to compliance with Specification requirements:
 - 1. Florence Corporation, a Gibraltar Industries Company www.florencemailboxes.com
 - 2. Bommer Industries, Inc. www.bommer.com
 - 3. Jensen Mailboxes www.jensenmailboxes.com

2.2 CENTRALIZED MAIL RECEPTACLES (MAILBOXES)

- A. USPS Approved Front-Loading Mail Boxes: Horizontal style complying with USPS STD- 4C and the following:
 - 1. Model: Auth Florence 4C "Versatile" Series. Provide quantity and type of boxes/grouping as indicated on Drawings including 4CXXX-10, -04, -HOP types, or as otherwise indicated. Include MB1 Tenant Compartments, PL15

- Parcel Compartments, OM1 Outgoing Compartments, 4C Hopper Collection Box, and Trash/Recycling bin, types in arrangement(s) indicated with 4C master size door(s) prepared for Postal Lock.
2. Mounting: Recessed mounted as indicated on Drawings.
 3. Locks: USPS 5 pin cam type locks, 3 keys each lock.
 4. Box Identification: Top to bottom, left to right.
 - a. Standard Engraving (3/4 inch high) identifier with black fill.
 - b. Numerical order.
 5. Finish: Color anodized or powder coated finish in color as selected by Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Install items in accordance with details on Drawings and Manufacturer's printed installation instructions. Securely fasten mailboxes to solid backing, blocking, or supports.
- B. Install units aligned, plumb, and level; anchor in accordance with manufacturer's requirements.

3.3 ADJUSTING

- A. Adjust doors and locks to operate correctly.

3.4 CONSTRUCTION WASTE MANAGEMENT AND CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 11 3100
RESIDENTIAL EQUIPMENT**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Residential kitchen and laundry appliances / equipment as scheduled on Drawings.
- B All appliances shall be Energy Star compliant.

1.2 SUBMITTALS

- A Product Data: Submit Manufacturer's specifications and installation instructions.
- B Shop Drawings: Submit drawings showing space requirements, and piping and wiring rough-in locations for water, power, and for ductwork/vents.
- C Samples: Submit samples or brochures showing color selection.
- D Operating and Maintenance: Submit 2 copies of Manufacturer's instructions for operating and maintaining equipment as part of closeout procedures.

1.3 DELIVERY, STORAGE AND HANDLING

- A Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B Storage: Adequately protect against damage while stored at the site.
- C Handling: Comply with Manufacturer's instructions.

1.4 WARRANTY

- A Furnish Manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 APPLIANCES - EQUIPMENT

- A Provide residential kitchen and laundry appliances and equipment as scheduled on Drawings as manufactured by GE (General Electric) or as otherwise indicated on Drawings, to be Contractor furnished and Contractor installed (CFCI). Appliances and equipment include, but is not limited to the following:
 - 1. Washers and Dryers.
 - 2. Refrigerators / Freezers.
 - 3. Microwave Ovens (countertop or undercounter models as scheduled).
 - 4. Electric Range
 - 5. Range Hood.
 - 6. Other items as scheduled on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A Install equipment at locations shown on Drawings in accordance with Manufacturer's instructions.
- B Connect equipment to power, water and ductwork rough-ins as applicable. Securely fasten built-in items where required.

3.3 FIELD QUALITY CONTROL

- A Tests: Test each item for proper operation. Check and adjust oven thermostats for correct temperature.

3.4 CLEANING

- A During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 12 2100
BLINDS**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Vertical Blinds as specified.

1.2 SUBMITTALS

- A. Samples: Submit samples of blind materials, colors and patterns.
- B. Certification: Submit Manufacturer's certification for flammability of vertical blind vanes.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage and Protection: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions shown on Drawings by taking field measurements; proper fit and attachment of parts is required.

1.5 MAINTENANCE

- A. Extra Materials: Provide additional 5 percent, but not less than one carton of each material used in the project as maintenance material.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish products of one of the following Manufacturers, except as otherwise specified approved by the Architect, subject to compliance with requirements.
 - 1. Levolor Corporation www.levolor.com
 - 2. Hunter Douglas Inc. www.hunterdouglas.com
 - 3. Carey-McFall Corporation (Bali), Div. Springs Industries

2.2 VERTICAL BLINDS

- A. Levolor Excaliber, or as approved.
 - 1. Vanes: 3-1/2 inches wide, extruded PVC, meeting UL 214 and NFPA 701 flammability test.
 - 2. Headrail: Extruded aluminum not less than 0.047 inch wall thickness with clear anodized finish.
 - 3. Valance: Insert to match vanes with valance hangers for attachment to headrail channel.
 - 4. Carriers: Molded of plastic and operate smoothly within headrail. Provide carrier system with housing for minimum stack, field detachable vane hook

- with a geared clutch system for overload protection.
5. Vane Hooks: Clear, high ultra-violet resistant polycarbonate. Field replace vane hooks while headrail is installed.
 6. Tilting Control: Vanes shall be self-aligning with one full cycle of the control chain.
 7. Traversing Control: Traversing cord loop traveling along smooth surfaces and silently around a plastic pulley.
 8. Controls Location: No preference.
 9. Cord Weight: Readily removable without detaching cord from headrail.
 10. Installation Brackets: Spring-tempered steel with a front flange and rear tab to positively engage rails at top of headrail.
 11. Operation: Vanes shall stack one-way draw, split draw, off-center draw, and center stack. Provide track with a stack release lever to allow vanes to be moved aside for easy window cleaning. Light gap no greater than 1/4 inch at control chain with a minimum vane overlap of 3/8 inch.
 12. Color: As selected by Architect from manufacturer's full range of available colors.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B.
- C. Coordination with other Work: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Install window blinds in strict accordance with Manufacturer's instructions. Install straight and plumb, securely fastened, and with horizontal lines level and true with window framing.
- B. Evidence of drilling, cutting and fitting to room finish shall be concealed in the finish work. Provide uniform clearance at edges not to exceed 3/16 inch. Adjust hardware for smooth operation.
- C. Install blinds between vertical window mullions with discontinuous head channel and slats, allowing independent blind operation for separate glazing units.

3.3 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 12 3200
MANUFACTURED CASEWORK**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Manufactured casework and hardware for Residential Apartment Units as shown on Drawings and as specified herein.
 - 2. Plastic laminate faced countertops.
 - 3. Solid Surface countertop

1.2 SUBMITTALS

- A. Shop Drawings: Submit Drawings showing layout, elevations, dimensions, filler panels, cutouts, fixture locations, hardware, construction details, and schedule of finishes.
- B. Samples: Submit samples of plastic laminate(s), wood veneer(s), and actual units of each type of hardware.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with the following:
 - 1. Provide cabinets that are certified by ANSI A161.1 and KCMA (Kitchen Cabinets Manufacturer's Association).
 - 2. Provide plastic laminate countertops that are certified by KCMMA161.2.
 - 3. NEMA for plastic laminates.
- B. Qualifications: Manufacturer shall be company specializing in manufacturing the products specified in this Section with minimum 3 years documented experience.
- C. Mock-up: Provide mock-up of full size base cabinet and upper cabinet for approval.
 - 1. Provide units with specified counter top, with hardware installed.
 - 2. Units will be examined to ascertain quality and conformity to KCMA quality level standards and Specification requirements.
 - 3. Approved mock-up may remain as part of the Work.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage and moisture while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.5 PROJECT CONDITIONS

- A. Environmental Requirements: Provide humidity conditions which will prevent damage to woodwork.
- B. Verify that field measurements are as indicated on Shop Drawings.

1.6 WARRANTY

- A. Warranty: Provide manufacturer's standard 5 year warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Furnish manufactured kitchen casework of one of the following Manufacturers, except as otherwise approved by the Architect and/or Owner, subject to Specification requirements.
1. Bass Cabinet Manufacturing, Inc. www.basscabinet.com
 2. Cabinets To Go www.cabinetsstogo.com
 3. Kraftmaid Cabinetry www.kraftmaid.com
 4. Kitchen Kompact www.kitchenkompact.com
 5. Merillat Industries, LLC www.merillat.com
 6. Normac www.normackitchens.com
 7. Woodstar www.qualitycabinets.com
 8. Republic Industries www.republicind.com
 9. Mid-Continent www.midcontinentcabinetry.com
 10. Mastercraft www.mastercraftcabinets.com
 11. As approved by Architect.
- B. Basis of Design: Cabinets as manufactured by Kitchen Kompact.

2.2 MATERIALS

- A. General: Provide materials that comply with the requirements indicated and with KCMA (Kitchen Cabinets Manufacturer's Association) - ANSI A161.1.
- B. Hardwood Lumber: Average moisture content of 6 percent.
1. Species: As selected by Architect and/or Owner.
 2. Finish: As selected by Architect and/or Owner.
- C. Hardwood Plywood and Face Veneers: HPVA HP-1, core materials of particleboard or MDF, type of glue recommended for application.
1. Species and Grade: As selected by Architect and/or Owner.
- D. Wood Particleboard: ANSI A208.1, Grade M-2, composed of wood chips, high density, made with water resistant adhesive; of grade to suit application; sanded faces for drawer construction and shelving.
- E. Medium Density Fiberboard (MDF): ANSI A208.2, Grade MD, minimum thickness as follows:
1. 5/8 inch thick for Doors, Drawer fronts, wall cabinet top and bottom shelves, adjustable shelves, end panels, and bottoms.
 2. 1/2 inch for drawer sides and backs, wall cabinet backs, base cabinet nailers, and toekicks.
- F. Hardboard: AHA A135.4, pressed wood fiber with resin binder, tempered grade, 1/8 inch thick, smooth both sides, white Melamine faced, for drawer bottoms.
- G. Thermofused Decorative Overlay (Melamine) Substrate: MDF and hardboard as specified above.

2.3 LAMINATE MATERIALS

- A. Plastic Laminate:
 - 1. Horizontal Surfaces: High pressure decorative type complying with NEMA LD-3, Grade HGS.
 - 2. Cabinet Liner Grade: NEMA LD-3, Grade CL-20, (.020 inch thickness). This grade of laminate shall be counterbalanced.
 - 3. Melamine: Cold rolled (80 g.), tested to meet NEMA Test LD-3. This grade of laminate shall be counterbalanced. Prefinished plywood may be used in lieu of melamine laminates.
 - 4. Backer: NEMA LD-3, Grade BK-20 (.020 inch thickness).
 - 5. Finishes, Colors and Patterns: As indicated on Drawings, or if not indicated, as selected from manufacturer's standards by Architect and/or Owner.

2.4 ACCESSORIES

- A. Adhesive: Type recommended by Laminate Manufacturer to suit application.
- B. Edge Trim: Extruded convex or flat shaped plastic as indicated on Drawings; smooth finish; self locking serrated tongue; of width to match component thickness; color as selected or noted on Drawings.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application. Threaded steel for concealed joints.

2.5 HARDWARE

- A. Cabinet Hardware: Manufacturers standard hardware as selected by Architect and/or Owner, as indicated on Drawings.
 - 1. Finish: Pulls and other exposed hardware shall have brushed stainless steel finish, unless otherwise indicated on Drawings or selected by Architect and/or Owner.
- B. Drawer Glides: Manufacturers standard units as approved by Architect and/or Owner, complying with BHMA A156.9, Type B05091, epoxy-coated metal, self-closing, nylon-tired.
- C. Hinges: 110 degree, frameless, 4-way adjustable, easy insert with quick release lever. Brushed nickel finish.
- D. Shelf Supports: 32mm stainless steel shelf pins

2.6 FABRICATION

- A. Cabinet Series/Design: As selected by Architect and/or Owner from manufacturer's standards.
- B. Fabricate architectural woodwork and cabinets in conformance with standard specified herein under "Quality Assurance." Thickness and materials for cabinet components shall comply with KCMA and Manufacturers standards for series of cabinet specified.
- C. Exposed Surfaces: Hardwood faced panel product exposed faces with solid hardwood edges and trim as selected by Architect and/or Owner.
- D. Concealed Surfaces (interior cabinet and drawer surfaces): Melamine, white color unless otherwise indicated.

- E. Door and Drawer Front Face Style: As selected by Architect and/or Owner from manufacturer's standards.
- F. Drill holes for shelf pin supports at 1 inch cent to center spacing starting 6 inches from bottom and 6 inches from top of each cabinet. Locate shelf pin holes 3 inches from front and back of shelves.
- G. Plastic Laminate Faced Countertops: Plastic laminate faced with separate back and side splashes with integral scribe for fitting to wall.
 - 1. Fabricate countertops located within wet areas or within 4 feet of sinks with marine grade plywood core material.
- H. Solid Surfacing Material Countertops: As specified in Section 12 3661.
- I. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- J. Provide cutouts for appliances, outlet boxes, fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal contact surfaces of cut edges.

2.7 FINISHING

- A. Sand Work smooth where applicable, and set exposed fasteners; apply woodfiller.
- B. Use wood filler which matches surrounding surfaces and of types recommended for applied finishes.
- C. Clear Transparent Finish: Provide either Cellulose Acetate Butyrate (CAB) and Water Reducible Acrylic Lacquer finish, or Conversion Varnish finish system as standard with manufacturer that complies with KCMA - ANSI A161.1.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work. Do not commencement of installation until unsatisfactory conditions are corrected. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other Work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Set and secure cabinetry and other woodwork in place; rigid, plumb and level, and in accordance with KCMA - ANSI A161.1 installation standards.
- B. Use fixture attachments in concealed locations for wall mounted components.
- C. Secure and align adjoining cabinet units and counter tops with concealed joint fasteners.
- D. Scribe casework abutting other components, with maximum gaps of 1/32 inch (0.80 inch). Provide filler panels and trims of profile approved by Architect properly scribed and cut to fully fill all gaps and end conditions. No gaps are allowed where cabinets abut walls or other finish materials.

- E. Secure cabinet and bases to floor using appropriate angles and anchorages.
- F. Where exposed anchors or fasteners are unavoidable in the finish Work, countersink anchorage devices at exposed locations and conceal with solid wood plugs of species to match surrounding wood or plastic or laminate faced plugs to match surrounding plastic laminate; finish flush with surrounding surfaces.
- G. Install trim in single lengths without splices where possible. Miter external corners and cope internal corners.
- H. Caulk countertops and backsplashes to adjoining drywall in accordance with Section 07 92 00.
- I. Adjust casework doors and drawers for level and plumb with proper alignment and spacing between adjacent units. Adjust and lubricate hardware to operate smoothly.

3.3 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 12 9300
SITE ACCESSORIES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes the following:
 - 1. Bicycle racks.
 - 2. Backflow preventer security cages.
 - 3. Benches.
 - 4. Ash Urns.
 - 5. Trash Receptacles
 - 6. Picnic Tables and Chairs.
 - 7. Dog Park Dummy Fire Hydrants.
 - 8. Other items as may be indicated on Drawings.
- B. Related Sections:
 - 1. Section 04 2200 – Concrete Unit Masonry, for construction of site bench seats and planters using Owner Furnished precast concrete stair treads.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data showing products selected.
- B. Samples: Submit samples of selected colors for verification purposes.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with manufacturer's instructions.

PART 2 PRODUCTS

2.1 SITE ACCESSORIES

- A. Bike Racks: Provide product scheduled on Drawings as manufactured by Uline www.uline.com.
 - 1. Finish: Powder coated finish in color selected by Architect from manufacturer's full range of colors and finishes.
- B. Backflow Prevention Device Enclosures: Provide enclosure cover of type and size indicated on Drawings, as manufactured by Backflow Prevention Device Inspection, Inc (BPDI) www.bpdiaz.com, or Guardshack Enclosures www.guardshackenclosures.com

- C. Benches, Landscape Grates, Ash urns, Trash Receptacles, Picnic Tables and Chairs, Dummy Fire Hydrants, and other Site Accessories: As scheduled on Drawings and provided by Owner.
- D. BBQs grille unit shall be constructed per "off-the-shelf" manufacturer shown on the project drawings. Contractor shall provide shop drawings showing the color, size, and installation. Measurement for the individual items shall be measured by EACH (EA) item furnished and placed Product Information:
Manufacturer – American Outdoor Grill

Local dealer Information:
ARIZONA GAS PRODUCTS
16050 N 76TH ST
SUITE 104
SCOTTSDALE, AZ 85260
(480) 609-8855

Grill:
BUILT-IN "T" Series Grills
The new "T" series grills feature a push-to-light piezo ignition system that eliminates the need for electricity or batteries. This results in a self-sufficient grill with a clean looking front panel.

MODEL 36NBT
Primary Cooking Surface 648 sq. inches
Cut Out: 37" w x 19 1/2" d x 8 1/2" h

All Built-In Models available in Natural Gas with Propane conversion kit included.
All models also available without backburner and side burner (-00SP)

Door:
Stainless steel tubular handles
Double wall construction
Cut-out is height x width x depth
Most doors can be ordered for either right or left access

MODEL 17-24-SSDR
*Single Access Door
For Left Access Model: 17-24-SSDL
Cut Out: 18" x 24 1/2"

- E. Custom Outdoor BBQ Countertop
1. Custom Outdoor BBQ countertop & base shall be constructed as shown on the drawings, or approved equal. Submit shop drawings for approval prior to ordering/purchasing. The work shall include the counters, foundations and other incidental elements to construct the base and counter complete in place.

2.2 INSTALLATION ACCESSORIES

- A. Installation Accessories: As recommended by or provide by the accessory manufacturer for the type of installation indicated, and as follows:
1. Epoxy Anchor Bolt Adhesive: Commercial grade, 2-component, non-sag, moisture insensitive, high-strength structural epoxy. Acceptable products

include, but are not limited to the following:

- Quikrete Hs Anchor Epoxy.
 - Simpson Strong-Tie Set-XP.
 - ITWRedHead G5 High Strength Epoxy.
2. Mechanical Anchors: In accordance with Section 05 5000. Provide anchors with theft resistant heads.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Handle and install site accessories in accordance with manufacturer's recommendations and installation instructions.
- B. General: Set units in locations indicated on Drawings. Where indicated to anchored in place, secure units in accordance with manufacturer's instructions with theft resistant anchors to supporting concrete pavement.
- C. Bike Racks: Set units with anchor bolts into concrete pavement as detailed on Drawings and in accordance with Manufacturer's instructions.
- D. Backflow Prevention Device Enclosures: Set units at each backflow prevention devise or water valve as indicated on Drawings and in accordance with manufacturer's instructions using theft resistant fasteners to concrete base secured with epoxy anchoring adhesive.

END OF SECTION

**SECTION 14 2100
ELECTRIC TRACTION ELEVATORS**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Electric Traction Elevators.
- B. Products Supplied but Not Installed Under this Section:
 - 1. Hoist Beam
 - 2. Pit Ladder
 - 3. Inserts mounted in block walls for rail attachments
- C. Work Supplied Under Other Sections:
 - 1. Temporary lighting, including temporary lighting in hoistway for machine space with switch located in hoistway on the strike jamb side of top landing door.
 - 2. Main line disconnects for each elevator.
 - a. One fused three phase permanent power in building electrical distribution room
 - 3. Hoistway ventilation shall be in accordance with local and national building code requirements.
 - 4. Guide Rail Support shall be structurally adequate to extend from pit floor to top of hoistway, with spans in accordance with requirements of authority having jurisdiction and final layouts.
 - 5. Removable barricades at all hoistway openings, in compliance with OSHA 29 CFR 1926.502 in addition to any local code requirements.
 - 6. Lifeline attachments capable of withstanding 5000 lb load in accordance with OSHA 29 CFR 1926.502. Provide a minimum of 2 at the top, front of each hoistway.
 - 7. Pit lighting: Fixture with switch and guards. Provide illumination level equal to or greater than that required by ASME A17.1/CSA B44 2000, or applicable version.
 - 8. Control space lighting with switch. Coordinate switch with lighting for machine space as allowable by code.
 - 9. Access Doors: As required for access to governor and/or seismic switch. Access door shall be self-closing, self-locking if necessary and operable from the inside without a key.
- D. Related sections:
 - 1. Section 01 5000 – Temporary Facility and Controls
 - 2. Section 03 3000 - Cast-in-Place Concrete:
 - 3. Section 04 2000 - Unit Masonry
 - 4. Section 05 5000 - Metal Fabrications
 - 5. Section 07 1600 - Cementitious Waterproofing
 - 6. Section 23 0000 - Heating, Ventilating, and Air Conditioning
 - 7. Section 26 0000 - Electrical
 - 8. Section 26 3000 - Electric Power Generating and Storing Equipment
 - 9. Section 27 3000 - Voice Communications
 - 10. Section 28 3100 - Fire Detection and Alarm
 - 11. Section 31 0000 – Earthwork
- E. Industry and government standards:
 - 1. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
 - 2. ADAAG - Accessibility Guidelines for Buildings and Facilities
 - 3. ANSI/NFPA 70, National Electrical Code
 - 4. ANSI/NFPA 80, Standard for Fire Doors and Fire Windows
 - 5. ASME/ANSI A17.1, Safety Code for Elevators and Escalators.

1.2 DESCRIPTION OF ELEVATOR

- A. Elevator Equipment: KONE Machine Room-Less gearless traction elevator
- B. Equipment Control: KCM831
- C. Drive: Regenerative
- D. Quantity of Elevators: 1 Elevator

- E. Landings: 5
- F. Openings: 5 Front Openings, 0 Back Openings
- G. Travel: 45' 0"
- H. Rated Capacity: 4,000 lb
- I. Rated Speed: 150 FPM
- J. Clear Inside Dimensions: (W x D) 5' 7 3/16" x 7' 7 15/16"
- K. Cab Height: 8'
- L. Clear height under suspended ceiling: 7'-6"
- M. Entrance Width and Type: 48" and Left Opening
- N. Entrance Height: 7'-0"
- O. Main Power Supply: 480 V 208 Volts + 5%, three-phase
- P. Operation: Simplex
- Q. Machine Location: Inside the hoistway mounted on car guide rail
- R. Control Space Location: Integrated control
- S. Elevator Equipment shall conform to the requirements of seismic zone: Non-Seismic
- T. Maintenance Service Period: 12 Months

1.3 PERFORMANCE REQUIREMENTS

- A. Car Performance
 - 1. Car Speed \pm 5% of contract speed under any loading condition or direction of travel.
 - 2. Car Capacity: Safely lower, stop and hold (per code) up to 125% of rated load.
- B. System Performance
 - 1. Vertical Vibration (maximum): 15 mg ISO187338/ISO 8041 system pk – pk
 - 2. Horizontal Vibration (maximum): 12 mg ISO187338/ISO 8041 system pk – pk
 - 3. Jerk Rate (maximum): 3.3 ft/sec³
 - 4. Acceleration (maximum): 1.3 ft/sec²
 - 5. In Car Noise: 55 dB(A) Maximum
 - 6. Leveling Accuracy: \pm 0.2 inches
 - 7. Starts per hour (maximum): 240

1.4 SUBMITTALS

- A. Comply with Section 01 3300 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product literature for each proposed system.
 - 1. Cab design, dimensions and layout.
 - 2. Layout, finishes, and accessories and available options.
 - 3. Controls, signals and operating system.
 - 4. Color selection charts for cab and entrances.
- C. Shop Drawings:
 - 1. Clearances and travel of car.
 - 2. Clear inside hoistway and pit dimensions.
 - 3. Location and layout of equipment and signals.
 - 4. Car, guide rails, buffers and other components in hoistway.
 - 5. Maximum rail bracket spacing.
 - 6. Maximum loads imposed on building structure.
 - 7. Hoist beam requirements.
 - 8. Location and sizes of access doors.
 - 9. Location and details of hoistway door and frames.
 - 10. Electrical characteristics and connection requirements.
- D. Operation and maintenance data:
 - 1. Provide manufacturer's standard maintenance and operation manual.
- E. Diagnostic Tools
 - 1. Prior to seeking final acceptance for the completed project as specified by the Contract Documents, the Elevator Contractor shall deliver to the Owner any specialized tool(s) that may be required to perform diagnostic evaluations, adjustments, and/or parametric software

changes and/or test and inspections on any piece of control or monitoring equipment installed.

- a. This shall include any specialized tool(s) required for monitoring, inspection and/or maintenance where the means of suspension other than conventional wire ropes are furnished and installed by the Elevator Contractor. Any and all such tool(s) shall become property of the Owner. Any diagnostic tool provided to the Owner by the Elevator Contractor shall be configured to perform all levels of diagnostics, systems adjustment and parametric software changes which are available to the Elevator Contractor.
- b. In those cases where diagnostic tools provided to the Owner require periodic recalibration/or re-initiation, the Elevator Contractor shall perform such tasks at no additional cost to the Owner for a period equal to the term of the maintenance agreement from the date of final acceptance of the completed project. During those intervals in which the Owner might find it necessary to surrender a diagnostic tool for re-calibration, re-initiation, or repair, the Elevator Contractor shall provide a temporary replacement for the tool at no additional cost to the Owner.
- c. The Elevator Contractor shall deliver to the Owner, printed instructions for the proper use of any tool that may be necessary to perform diagnostic evaluations, system adjustment, and/or parametric software changes on any unit of microprocessor-based elevator control equipment and means of suspension other than standard elevator steel cables furnished and install by the Elevator Contractor.
- d. Accompanying the printed instructions shall be any and all access codes, password, or other proprietary information that is necessary to interface with the microprocessor-control equipment.

1.5 QUALITY ASSURANCE

- A. Manufacturer: Minimum of fifteen years' experience in the fabrication, installation and service of elevators of the type and performance of the specified. The manufacturer shall have a documented quality assurance program.
- B. Installer: The equipment manufacturer shall install the elevator.
- C. Inspection and Testing: In accordance with requirements of local jurisdiction, obtain required permits, inspections and tests.

1.6 DELIVERY, STORAGE AND HANDLING

- A. If the construction site is not prepared to receive the elevator equipment at the agreed ship date, the General Contractor shall be responsible for the cost of storage at an approved facility. Additional labor costs for double handling will be the responsibility of the General Contractor.
- B. Delivered elevator materials shall be stored in a protected environment in accordance with manufacturer recommendations. A minimum storage area of 10 feet by 20 feet is required adjacent to the hoistway.

1.7 WARRANTY

- A. Provide manufacturer warranty for a period of one year. The warranty period is to begin upon Substantial Completion of the Contract. Warranty covers defects in materials and workmanship. Damage due to ordinary use, vandalism, improper or insufficient maintenance, misuse, or neglect do not constitute defective material or workmanship.

1.8 MAINTENANCE SERVICE

- A. The elevator manufacturer shall provide maintenance service consisting of regular examinations and adjustments of the elevator equipment for a period of 12 Months after date of substantial completion.
- B. Predictive maintenance shall be included for the full maintenance period. This service must be capable of using AI-based analytics to identify potential equipment issues and notifying the elevator provider via an internet connection.

- C. Replacement parts shall be produced by the original equipment manufacturer.
- D. Maintenance service be performed during regular working hours of regular working days and shall include emergency 24-hour call back service.
- E. Maintenance service shall not include adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Provide AC gearless machine room-less elevator systems subject to compliance with the design and performance requirements of this specification. Elevator manufacturers may include but are not limited to one of the following:
 - 1. Basis of Design: KONE Machine Room-Less traction elevators by KONE, Inc. (www.kone.com).
 - 2. Other acceptable machine room-less products: manufacturer with minimum 15 years' experience in manufacturing, installing, and servicing elevators of the type required for the project.

2.2 EQUIPMENT: CONTROL COMPONENTS AND CONTROL SPACE

- A. Controller: Provide microcomputer-based control system to perform all functions.
 - 1. All high voltage (110V or above) contact points inside the controller cabinet shall be protected from accidental contact in a situation where the controller doors are open.
 - 2. Controller shall be separated into two distinct halves; Motor Drive side and Control side. High voltage motor power conductors shall be routed and physically segregated from the rest of the controller.
 - 3. Provide a serial cardrack and main CPU board containing a non-erasable EPROM and operating system firmware.
 - 4. Variable field parameters and adjustments shall be contained in a non-volatile memory module.
- B. Drive: Provide Variable Voltage Variable Frequency AC drive system to develop high starting torque with low starting current.
- C. Controller Location: Locate controller{s} in the front wall integrated with the top landing entrance frame, machine side of the elevator. One non-fused three phase permanent power in hoist way at top landing. A separate control space should not be required.

2.3 EQUIPMENT: HOISTWAY COMPONENTS

- A. Machine: AC gearless machine, with permanent magnet synchronous motor, direct current electro-mechanical disc brakes and integral traction drive sheave, mounted to the car guide rail at the top of the hoistway
- B. Governor: Friction type over-speed governor rated for the duty of the elevator specified.
- C. Buffers, Car and Counterweight: Brushed Stainless Steel.
- D. Hoistway Operating Devices:
 - 1. Emergency stop switch in the pit
 - 2. Terminal stopping switches.
 - 3. Emergency stop switch on the machine
- E. Positioning System: System consisting of magnets and proximity switches.
- F. Guide Rails and Attachments: Steel rails with brackets and fasteners.

2.4 EQUIPMENT: HOISTWAY ENTRANCES

- A. Hoistway Entrances
 - 1. Sills: Extruded Aluminum.
 - 2. Doors: Hollow metal construction with vertical internal channel reinforcements.
 - 3. Fire Rating: Entrance and doors shall be UL fire-rated for 1-1/2 hour.

4. Entrance Finish: Brushed Stainless Steel.
5. Entrance Markings Jamb Plates: Provide standard entrance jamb tactile markings on both jambs, at all floors. Plate Mounting: Refer to manufacturer drawings.

2.5 EQUIPMENT: CAR COMPONENTS

- A. Car Frame: Provide car frame with adequate bracing to support the platform and car enclosure.
- B. Car Safeties: Device will be provided and mounted under the car platform, securely bolted to the Car Frame. The safety will be actuated by a centrifugal governor mounted at the top of the hoistway. The Safety is designed to operate in case the car attains excessive descending speed.
- C. Platform: Platform shall be all steel construction.
- D. Car Guides: Provide guide-shoes mounted to top and bottom of both car and counterweight frame. Each guide-shoe assembly shall be arranged to maintain constant contact on the rail surfaces. Provide retainers in areas with Seismic design requirements.
- E. Car Wall Finish:
 1. Side Walls: 441 Brushed Stainless Steel (4SS)
 2. Rear Wall: Asian Sand Laminate (L413)
 3. Car front, Door and Skirting: Brushed Stainless Steel
 4. Ceiling: Round, LED spotlights
 5. Handrails: Brushed Stainless Steel
 - a. Rails to be located on Side Walls of car enclosure.
 6. Sills: Aluminum extruded.
- F. Cab Wall Protection Pads to be included
- G. Flooring: By others. (Not to exceed 6lb/sqft and 1/2" finished depth.)
- H. Emergency Car Signals
 1. Emergency Siren: Siren mounted on top of cab that is activated when the alarm button in the car operating panel is engaged. Siren shall have rated sound pressure level of 80 dB(A) at a distance of three feet from device. Siren shall respond with a delay of not more than one second after activation of alarm button.
 2. Emergency Car Lighting: Provide emergency power unit employing a 12- volt sealed rechargeable battery and totally static circuits shall illuminate the elevator car and provide current to the alarm bell in the event of building power failure.
 3. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.
- I. Ventilation: Manufacturer's standard cab fan

2.6 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

- A. Car Operating Panel: Provide car operating panel with all push buttons, key switches, and message indicators for elevator operation. Fixture finish to be Brushed Stainless Steel
 1. Main Flush mounted car operating panel shall contain a bank of round, mechanical, illuminated buttons marked to correspond to landings served, emergency call button, door open button, door close button, and key switches for lights, inspection, and exhaust fan. Buttons have Amber Dot Matrix illumination (halo). All buttons to have raised text and Braille marking on left hand side. The car operating display panel shall be Amber Dot Matrix. All texts, when illuminated, shall be Amber Dot Matrix. The car operating panel shall have a Brushed Stainless Steel finish.
 2. Additional features of car operating panel shall include:
 - a. Car Position Indicator within operating panel Brushed Stainless Steel
 - b. Elevator Data Plate marked with elevator capacity and car number on car top.
 - c. Help buttons with raised markings.
 - d. In car stop switch per local code.
 - e. Call Cancel Button.
- B. Hall Fixtures: Wall mounted hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Wall mounted hall fixtures shall have a Brushed Stainless Steel finish.

1. Hall fixtures shall feature round, mechanical, buttons in applied mount face frame. Hall fixtures shall correspond to options available from that landing. Buttons shall be in a vertically mounted fixture.
- C. Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel, and a chime will sound. The chime will sound once for up and twice for down. The car riding lantern face plate shall have a Brushed Stainless Steel finish.

2.7 EQUIPMENT: ELEVATOR OPERATION AND CONTROLLER

- A. Elevator Operation
 1. Simplex Collective Operation: Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.
 2. Zoned Car Parking.
 3. Relative System Response Dispatching.
- B. Standard Operating Features to include:
 1. Full Collective Operation
 2. Fan and Light Control.
 3. Load Weighing Bypass.
 4. Ascending Car Uncontrolled Movement Protection
 5. Top of Car Inspection Station.
- C. Additional Operating Features to include:
 1. Independent Service.
 2. Hoistway Access Bottom Landing.
 3. Hoistway Access Top Landing.
 4. Car Secure Access.
 5. Car Wall Protection Pads
 6. Provision for Card Reader in Car (Card Reader provided and Installed by others).
 7. Standby Power
- D. Elevator Control System for Inspections and Emergency
 1. Provide devices within controller to run the elevator in inspection operation.
 2. Provide devices on car top to run the elevator in inspection operation.
 3. Provide within controller an emergency stop switch to disconnect power from the brake and prevents motor from running.
 4. Provide the means from the controller to mechanically lift and control the elevator brake to safely bring car to nearest available landing when power is interrupted.
 5. Provide the means from the controller to reset the governor over speed switch and also trip the governor.
 6. Provide the means from the controller to reset the emergency brake when set because of an unintended car movement or ascending car over speed.
 7. Provide the means for the control to reset elevator earthquake operation.

2.8 EQUIPMENT: DOOR OPERATOR AND CONTROL

- A. Door Operator: A closed loop permanent magnet VVVF high-performance door operator shall be provided to open and close the car and hoistway doors simultaneously. Door movement shall be cushioned at both limits of travel. Electro-mechanical interlock shall be provided at each hoistway entrance to prevent operation of the elevator unless all doors are closed and locked. An electric contact shall be provided on the car at each car entrance to prevent the operation of the elevator unless the car door is closed.
- B. The door operator shall be arranged so that, in case of interruption or failure of electric power, the doors can be readily opened by hand from within the car, in accordance with applicable code. Emergency devices and keys for opening doors from the landing shall be provided as required by local code.
- C. Doors shall open automatically when the car has arrived at or is leveling at the respective landings. Doors shall close after a predetermined time interval or immediately upon pressing of a

car button. A door open button shall be provided in the car. Momentary pressing of this button shall reopen the doors and reset the time interval.

- D. Door hangers and tracks shall be provided for each car and hoistway door. Tracks shall be contoured to match the hanger sheaves. The hangers shall be designed for power operation with provisions for vertical and lateral adjustment. Hanger sheaves shall have polyurethane tires and pre-lubricated sealed-for-life bearings.
- E. Electronic Door Safety Device. The elevator car shall be equipped with an electronic protective device extending the full height of the car. When activated, this sensor shall prevent the doors from closing or cause them to stop and reopen if they are in the process of closing. The doors shall remain open as long as the flow of traffic continues and shall close shortly after the last person passes through the door opening.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Field measure and examine substrates, supports, and other conditions under which elevator work is to be performed.
- B. Do not proceed with work until unsatisfactory conditions are corrected.
- C. Prior to start of work, verify hoistway is in accordance with shop drawings. Dimensional tolerance of hoistway from shop drawings: -0 inches +2 inches. Do not begin work of this section until dimensions are within tolerances.
- D. Prior to start of work, verify projections greater than two inches (four inches if ASME A17.1/CSA B44 2000 applies) must be beveled not less than 75 degrees from horizontal.
- E. Prior to start of work, verify landings have been prepared for entrance sill installation. Traditional sill angle or concrete sill support shall not be required.
- F. Prior to start of work, verify elevator pit has been constructed in accordance with requirements, is dry and reinforced to sustain vertical forces, as indicated in approved submittal. Verify that sumps or sump pumps located within pit will not interfere with installed elevator equipment.
- G. Prior to start of work, verify control space has been constructed in accordance with requirements, with access coordinated with elevator shop drawings, including sleeves and penetrations.
- H. Verify installation of GFCI protected 20-amp in pit and adjacent to each signal control cabinet in control space.

3.2 PREPARATION

- A. Coordinate installation of anchors, bearing plates, brackets and other related accessories.

3.3 INSTALLATION

- A. Install equipment, guides, controls, car and accessories in accordance with manufacturer installation methods and recommended practices.
- B. Properly locate guide rails and related supports at locations in accordance with manufacturer's recommendations and approved shop drawings. Anchor to building structure using isolation system to minimize transmission of vibration to structure.
- C. All hoistway frames shall be securely fastened to fixing angles mounted in the hoistway. Coordinate installation of sills and frames with other trades.
- D. Lubricate operating system components in accordance with manufacturer recommendations.
- E. Perform final adjustments, and necessary service prior to substantial completion.

3.4 CONSTRUCTION

- A. Interface with Other Work:
 - 1. Guide rail brackets attached to steel shall be installed prior to application of fireproofing.
 - 2. Coordinate construction of entrance walls with installation of door frames and sills. Maintain front wall opening until elevator equipment has been installed.
 - 3. Ensure adequate support for entrance attachment points at all landings.

4. Coordinate wall openings for hall push buttons, signal fixtures and sleeves. Each elevator requires sleeves within the hoistway wall.
5. Coordinate emergency power transfer switch and power change pending signals as required for termination at the primary elevator signal control cabinet in each group.
6. Coordinate interface of elevators and fire alarm system.
7. Coordinate interface of dedicated telephone line.

3.5 TESTING AND INSPECTIONS

- A. Perform recommended and required testing in accordance with authority having jurisdiction
- B. Obtain required permits and provide originals to Owner's Representative.

3.6 DEMONSTRATION

- A. Prior to substantial completion, instruct Owner's Representative on the proper function and required daily maintenance of elevators. Instruct personnel on emergency procedures.

END OF SECTION

**SECTION 14 9182
TRASH CHUTES**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Trash chutes.

1.2 RELATED SECTIONS

- A. Section 06 1000 – Rough Carpentry.

1.3 REFERENCES

- A. National Fire Protection Association (NFPA) - Code 82 - Standard on Incinerators and Waste and Linen Handling Systems and Equipment.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 3000 - Administrative Requirements.
- B. Catalog Cuts: Prior to material delivery, submit catalog cut sheets to the Architect in accordance with these specifications, showing all details of installation and assembly and all requirements for work by other trades.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- D. Shop Drawings:
 - 1. Plans: Scale - 1/4 inch to 1 foot; indicate locations, dimensions, and required associated construction activities.
 - 2. Elevations / Sections: Scale - 1/4 inch to 1 foot; indicate locations, dimensions, and required associated required construction activities.
 - 3. Details: Scale - 1/4 inch to 1 foot; indicate:
 - a. Shop drawings specific to project conditions.
 - b. Interface with adjacent construction.
 - c. Dimensions and tolerances.
 - d. Products required for installation of the chute, but not supplied by chute manufacturer.
- E. Close-out Submittals:
 - 1. Manufacturer's printed operation manual.
 - 2. Executed warranty as listed in this section.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years' experience manufacturing products of the same type as listed in this section.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.

1.8 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.
 - 1. Duration: One year from date of installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer/Basis of Design: CHUTES International, which is located at: 4400 Austin Lane; White Plains, MD 20695; Toll-Free Tel: 800-88-CHUTE; Tel: 301-753-4100; Fax: 301-753-4108; Email: request; Web: www.chutes.com
- B. Requests for substitutions will be considered in accordance with provisions of Section 00 2113 – Substitution Request Form and 01 6000 Product Requirements.

2.2 TRASH CHUTES

- A. Dimensions: 24 inches diameter of U.S. # 16-gauge aluminized steel. Lengths and locations as shown on contract drawings
- B. Doors: 15 inches wide by 18 inches high, hand operated hopper type intake doors, self-closing, self-latching, bottom hinged with 1-1/2 hour "UL" label; maximum 30 minutes, 250 degrees F (121 degrees C) temperature rise. Stainless steel with No. 3 type finish. ADA compliant lever handle with 2 keys. Intake door backs must also be stainless steel and have an integral stainless-steel trash deflector to prevent trash build-up from interfering with door operation.
- C. Discharge: Open-end "Accordion Damper Assembly", "UL" labeled, interlocking type blades held open by fusible link assembly for automatic closing with heat rising above 165 F (74 C).
- D. Vent: Full diameter vent of same gauge extending 3 feet above roof with metal safety cap, in accordance with NFPA Code 82, 2008 edition.
- E. Floor Frames: 1-1/2 inch by 1-1/2 inch by 3/16-inch steel angles with 3/16 inch flat stock cross members coated with anti-corrosive alkyd enamel paint.
- F. Flushing Head and Sprinkler: 1/2-inch NPT sprinkler and 3/4 inch NPT flushing head above top intake. In addition, a 1/2-inch sprinkler shall be installed within the chute at alternating floor levels in the building, starting at the top level with a mandatory sprinkler located at the lowest intake level, as required by NFPA Code 82. Furnished ONLY for connection by others.

2.3 CHUTE ACCESSORIES

- A. Factory sprayed on acoustic sound dampening. Factory installed cork neoprene isolator pads for noise reduction to isolate floor frames from the slab.
- B. Electric Interlock: Doors are normally in the locked position. Interlock system prevents other

doors from being opened when one intake is in use, furnished only for connection by others. Manual control provided for connection by others at discharge area to lock out chute doors during routine cleaning of chute or discharge room.

- C. Floor Retainer Flanges: 16 gauge aluminized sheet under the deck at penetration for retainage of firestop material provided by other trades.
- D. Sanitizing Unit: Cleans and disinfects the chute interior. Manually activated. Located on chute above top intake, furnished only.
- E. Pass-Thru Door: Located in the discharge room wall with thru-wall liner, side-hinged, self-closing, self-latching, UL label, maximum 30 minutes, 250 degrees F (121 degrees C) temperature rise. Furnished only.
- F. Access Door: A side hinged, self-closing, self-latching, UL label, maximum 30 minutes, 250 degrees F (121 degrees C) temperature rise stainless steel door 15 inches by 15 inches with "UL" label is included with disinfecting and sanitizing unit, furnished only.
- G. Vent: Metal explosion cap.

2.4 FABRICATION

- A. Factory assembled chute with fully welded joints, except those required to separate the sections for shipment and installation.
- B. Bolt floor intake doors in place on throats formed into the chute.
- C. Flash all chute sections inside the sections below. No bolts, clips, or other projections inside the chute to snag the flow of material.
- D. Assure proper intake levels with pre-positioned 12 gauge chute support clips.
- E. Locate expansion joints in the chute between all support joints.
- F. Any discharge level offsets to be fabricated from 12 gauge aluminized steel.
- G. Offsets require approval from local jurisdictional authority; Fire Marshal or Code Official.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify area in which system is to be located is correct size and location and is prepared for installation of chute and components.
- B. Installer's Examination:
 - 1. Installer will examine conditions under which construction activities of this section are to be performed, then submit written notification if conditions under which construction activities of this section are to be performed are unacceptable.
 - 2. Beginning construction activities of this section before unacceptable conditions have been corrected is prohibited.
 - 3. General Contractor will verify and record chute alignment with installer immediately following installation.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions. Test for proper operation.

3.4 DEMONSTRATION

- A. Arrange a demonstration of system operation, conducted by a manufacturer's representative, to Owner's maintenance personnel.

END OF SECTION

**SECTION 21 0500
FIRE PROTECTION SYSTEM**

PART 1 GENERAL

1.1 SUMMARY

- A. This section describes requirements necessary to design and install an automatic fire sprinkler system. See fire sprinkler drawings for risers, water mains, and fire department connection.

1.2 PERFORMANCE REQUIREMENTS

- A. Design and install a complete automatic wet fire sprinkler system as required by national and local codes that meets the requirements of the Authority Having Jurisdiction (AHJ). Systems shall be full and complete with all components specified for each area protected. The system shall be in accordance with the following NFPA Standards:
 - 1. NFPA, Chapter 13, entitled, "Standard for Installation of Sprinkler Systems for Residential Occupancies"
 - 2. NFPA, Chapter 25 entitled, "Inspection Testing and Maintenance of Water-Based Fire Protection System."
 - 3. NFPA, Chapter 1963, entitled, "Fire Hose Connections."
 - 4. NFPA, Chapter 24, entitled, "Private Fire Service Mains."
 - 5. Refer to other chapters of the NFPA that are applicable.
- B. Provide field verification of all dimensions. No extra charges or Compensation will be allowed for any differences between actual dimensions and measurements indicated.
- C. Contractor shall pay for and perform flow tests on systems prior to completing fire sprinkler calculations and shop drawings.
- D. Hydraulic design of the system shall be based on the following adjustments being made to the flow test results:
 - 1. When flow test records a static pressure of over 100 psi, the static recorded test pressure shall be reduced to 75 psi and the original slope of the water supply curve shall be maintained.
 - 2. When flow test records a static pressure between 100 psi and 60 psi, both the static and residual pressures shall be reduced by 25%.
 - 3. When flow test records a static pressure between 60 psi and 50 psi, the static pressure shall be reduced to 45 psi and the original slope of the water supply curve shall be maintained.
 - 4. When flow test records a static pressure less than 50 psi, then performance engineering is required and a multi-day pressure recording shall be conducted to verify test results.
- E. Water velocity for interior piping should be limited to 10 fps on risers and 27 fps in main and branch line piping.
- F. Securing and payment for all necessary permits and inspections.
- G. Install outside yard piping as indicated on the civil drawings complete, including connection to water main.

1.3 SUBMITTALS

- A. Provide a letter of acceptance from the Owner's fire protection insurer and complete printed Instructions on operation of system to the Owner.
- B. Shop Drawings: Provide PDF electronic file of shop drawings, approved and stamped by the fire protection authority, submitted to the Architect prior to fabrication or installation of sprinkler systems.
- C. Conformance Certificate: Submit a letter of conformance for fire sprinkler system in accordance with National Fire Codes published by National Fire Protection Association (NFPA) and approved by City of Phoenix Fire Department

1.4 QUALITY ASSURANCE

- A. Provide a Contractor's material and test certificate to the Architect stating that the system has been designed and installed according to national standards and state codes.
- B. Prior to connecting the overhead sprinkler piping, flush underground main in the presence of representatives of the regulatory agencies, Architect and Owner and obtain their acceptance.
- C. After completion of the installation, test entire system for acceptance by the AHJ.

1.5 EXTRA MATERIALS

- A. Furnish miscellaneous materials such as brackets, hangers, steel supports for equipment, expansion joints, inspector's test connection, etc.
- B. Provide alarm valves, zone valves, pumper connection, alarm bell and miscellaneous equipment as required.
- C. Provide replacement heads of each type of head with head wrench per the requirements of NFPA 13R, 13D, or 13 for each riser.

PART 2 - PRODUCTS

2.1 SUPPLY CONNECTIONS

- A. Contractor shall coordinate with Contractor installing water mains on final location and connection to water mains serving sprinkler system.

2.2 PIPING

- A. Underground Piping: Underground piping shall conform to NFPA Standard 24 (Standard for Installation of Private Fire Mains). Every pipe and fitting shall be cleaned of all debris, stone and dirt and inspected for cracks and holes before being laid. All underground piping shall be thoroughly flushed in accordance with the requirements of NFPA 13 and 24. The test must be witnessed by a proper authority.
- B. Interior Piping:
- C. CPVC piping systems. CPVC Piping and Fittings to comply with NFPA 13R.
- D. Piping 2" and smaller shall be a minimum of schedule 40 steel pipe. Piping greater than 2" shall be a minimum of schedule 10 steel pipe. All piping shall conform to NFPA 13,

Table 2-3.1.

2.3 SPRINKLER HEADS

- A. Sprinkler heads listed are as manufactured by approved manufacturer or accepted substitute. All heads submitted by Contractor shall be UL listed and FM approved.
 - 1. Upright: TYCO
 - 2. Semi-Recessed: TYCO
 - 3. Full Recessed: TYCO
 - 4. Side Wall: TYCO
- B. Provide sprinkler heads using approved upright, semi-recessed, spray type, regular bronze, of proper degree ratings as required, installed where indicated and in conformity to NFPA.

2.4 FIRE DEPARTMENT CONNECTION (FDC)

- A. Fire department connections shall be internally threaded; having threads compatible with the local responding fire department.

2.5 BUILDING MOUNTED FDC

- A. Provide polished chrome-plated, exposed wall Siamese complete including double clapper checks, chrome-plated plugs and chains. Mount connection not less than 18 inches and not more than 48 inches above level of adjacent grade. Label "AUTOSPKR".

2.6 REMOTE MOUNTED FDC ON YARD DOUBLE-CHECK BACKFLOW PREVENTER

- A. Provide brass Siamese complete with clapper checks, brass plugs and chains, located on the system side of the double-check back flow preventer's isolation valve. Provide brass sign indicating which building is served and labeled "AUTOSPKR".

2.7 REMOTE MOUNTED YARD FDC

- A. Provide brass Siamese complete with clapper checks, brass plugs and chains, associated yard piping and riser as located on the plans. Provide brass sign indicating which building is served and labeled "AUTOSPKR".

2.8 ESCUTCHEONS

- A. Provide floor, wall and ceiling escutcheon flanges on all exposed places where pipe runs through walls, ceiling or floor. Use metal flanges at sprinkler pipe penetrations, painted to match ceiling.
- B. Pendent sprinkler heads in finished ceiling areas shall be chrome-plated with chrome-plated escutcheons.

2.9 ALARM

- A. Provide and install electric alarm bell with all the necessary attachments required to give an alarm.

2.10 VALVES

- A. Provide valves in accordance with the requirements of NFPA 13 or 13R
- B. Test and drain valves shall not be capable of closing in less than five seconds when operated at maximum possible speed from the fully open position.
- C. Provide shutoff valves and provisions for draining at each pressure gauge.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install sprinklers for coverage of building in accordance with the latest edition of the above-referenced standards. After completion of the installation, the entire system shall be tested for acceptance by the AHJ. As required by NFPA 13R, provide suitable receptacle cabinet with extra sprinkler heads with same rating as those installed and one sprinkler wrench, all of which shall be installed at each riser location unless otherwise approved by the AHJ.
- B. Provide excavation and backfilling necessary for installation of underground piping in conformance with appropriate specification section.
- C. Piping shall be installed concealed behind finish walls or ceiling unless plans indicate differently.
- D. Sprinkler heads located in lay-in ceilings shall be centered in the tile in the short dimension and at the 1/2 or 1/4 points in the long dimension.
- E. Provide and install pipe sleeves in floor and walls. Fill the space between sleeve and pipe with an approved sealant to maintain a fire rating equal to the wall or floor. Sealant must be accepted by building official and Architect.
- F. After work has been installed, carefully fit around, close up, repair, patch and paint all chases, holes or openings as directed, to the entire satisfaction of Architect.

3.2 ACCEPTANCE

- A. Provide letter of warranty stating compliance with the required national standards, state and local codes.

3.3 OWNER'S INSTRUCTIONS

- A. Provide a printed sheet next to the sprinkler riser, protected by glass or transparent plastic cover, giving brief instructions regarding control, emergency procedures and other data as deemed necessary.
- B. After completion of installation and tests and prior to the building's final acceptance, instruct the Owner or his designated representative in the operation of the sprinkler system. Comply with Division 01.

END OF SECTION

**SECTION 31 0000
EARTHWORK**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Site clearing, preparation and grading.
 2. Excavation and backfilling for site structures and pump houses/storage buildings.
 3. Trenching, backfilling and compacting for utilities.
 4. Excavation and grading for site paving, curbs and sidewalks.
 5. Finish grading.

1.2 DEFINITIONS

- A. Native or natural soils: Undisturbed soils present at site in their natural state or conditions. Materials which are essentially free of vegetation or organic matter and do not include trash or other deleterious materials.
- B. Existing fill soils: Materials present at site that have been disturbed, possibly transported, and are not in their natural undisturbed state.
- C. Imported fill soils: Materials transported onto site.
- D. Granular material: A sandy type of soil whose particles are coarser than cohesive material and which do not stick to each other.
- F. Finished Grade: Floor level for interior footings, and the lowest adjacent grade (either floor level or outside grade) within 5'-0" of foundations for perimeter wall or exterior column footings.
- G. Building Area: The area within the building footprint plus 5 feet beyond the perimeter of the footprint.
- H. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.3 SUBMITTALS

- A. Test Reports:
1. Submit test results for imported fill materials to be used (if required), directly to the testing laboratory with a copy to Architect in accordance with Section 01 4500.
 2. Test results shall clearly indicate:
 - a. Types of materials and composition.
 - b. Hardness
 - c. Compactability.
 - d. Presence of organic contaminants, whether or not below EPA action levels.
 - e. Presence of hazardous and/or regulated wastes and contaminants, whether or not below EPA action levels.
 - f. Suitability for proposed usage.
 3. Testing laboratory shall notify Architect of non-conforming fill material submittals.

- B. As-Built Drawings:
 - 1. Maintain previously recorded utilities and accurately record location of:
 - a. Newly encountered utilities remaining.
 - b. Rerouted utilities.
 - c. New utilities by horizontal dimensions, elevations or inverts, and slope gradients.
 - 2. Submit in accordance with Section 01 7700.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable Federal, State and local ordinances, including Arizona Highway Department Standard Specifications and MAG Specifications Where geotechnical report, General Structural Notes, or notes on drawings state more restrictive requirements, the requirements of the geotechnical report, General Structural Notes, or notes on drawings shall govern.
- B. Staking: Staking shall be performed by a Civil Engineer or Land Surveyor currently registered in the state where the Project is located. One person only shall be responsible for staking the Project, however, additional staff may be used (under direct supervision of responsible person) for larger projects.
- C. Observation of Geotechnical Engineer: Every phase of the earthwork shall be performed under observation and testing directed by the Geotechnical Engineer.

1.5 SITE CONDITIONS

- A. Soil Report:
 - 1. Soil report provided by the Owner for design of this Project is being prepared by Ricker-Atkinson-McBee-Morman & Associates, Inc., 2105 South Hardy Drive, Suite 13, Tempe, Arizona 85282; is included as Document 00 3132 and is entitled: **Geotechnical Engineering Report, Multifamily Community Phased Development. RAMM Project No. G26950, dated October 30, 2020.**
 - 2. Neither the Owner or Architect guarantees the accuracy of the report nor the continuity of the soil conditions indicated at boring locations.
 - 3. Portions of the soil report incorporated, either by reprint or reference, into these Specifications are those which relate to the quality of materials and workmanship and become a part of the Contract Documents. Quantities of excavation and fill materials shall be as indicated on Drawings, or as required by actual conditions as depicted by the soil borings presented in the Soil Report.
- B. Existing Conditions:
 - 1. Bidders are expected to visit the site to form their own conclusions as to the character of the Work under this Section.
 - 2. Due to previous site development, special attention shall be given to locating and removing existing subsurface remnants of former facilities, backfilled zones, and soils disturbed by demolition operations.
- C. Environmental Requirements: Place, spread or roll fill materials during favorable weather conditions. When the Work is interrupted by rain, do not resume fill operations until evidence is furnished which establishes that moisture content and density of the previously placed fill are as specified.
 - 1. Surface drainage: Provide and maintain positive surface drainage during excavation. Prevent infiltration of water into utility or foundation excavations from whatever sources as may exist.

2. Dust control: Comply with requirements of governing authorities. Use whatever means necessary to control dust on and near the Work and on and near off-site borrow, storage and spoil areas, if such dust is caused by the Contractor's operations during performance of the Work, or if resulting from the conditions in which the Contractor leaves the site. Thoroughly moisten surfaces as required to prevent dust being a nuisance to the public, neighbors, and concurrent performance of other Work on the site.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Fill and Backfill Materials:
 1. Existing surface and near surface site soils and existing milled asphalt concrete and base material may be used as fill in all areas of the site. All materials shall be free of organics, debris, rubble and material greater than 6 inches in size.
 2. Imported Soils: Any additional fills shall be imported soils meeting the requirements of the Geotechnical Engineering Report.
- B. Base Material: Base material used below concrete slabs and pavements shall be Aggregate Base (ABC) conforming with material requirements of MAG Section 702. Existing asphalt concrete and base materials may be used as base material provided it meets base material specifications.
- C. Pipe Bedding Fill: Material used for pipe bedding shall comply with MAG Section 601.4.1
- D. Warning Tape:
 1. Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility.
 2. Provide detectable warning tape with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 2'- 6" deep for non-metallic utility pipes, conduit or other underground services outside of building line.
 3. Tape Colors: Provide tape colors to utilities as follows:
 - a. Red: Electric.
 - b. Yellow: Gas, oil, steam, and dangerous materials.
 - c. Orange: Telephone and other communications.
 - d. Blue: Water systems.
 - e. Green: Sewer systems.

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify survey data. Stake out work and verify as to location and elevation. Carefully maintain bench marks, monuments, and other reference points; if disturbed or destroyed, replace as directed.
- B. The following site preparation recommendations apply to areas within and extending 5 feet beyond the footprint of the building and in exterior slab and pavement areas.

- C. Site Preparation: Clear and grub the site by removing and disposing of all vegetation, debris, rubble and remnants of any former development (pavement) in accordance with recommendations of the Geotechnical Engineering Report.
- D. Strip the site of any fill zones, spread fill, and dumped fill piles, backfill zones, and any unstable soils in accordance with recommendations of the Geotechnical Engineering Report.
- E. Remove any buried debris, vegetation or disturbed materials encountered during stripping in accordance with recommendations of the Geotechnical Engineering Report.
- F. Bench areas steeper than 5H to 1V and widen any depressions to accommodate compaction equipment in accordance with recommendations of the Geotechnical Engineering Report.
- G. Prepare ground surface in fill areas and areas cut to grade by scarifying, moisture conditioning, and properly compacting in accordance with recommendations of the Geotechnical Engineering Report.
- H. Moisture condition and place fill and backfill materials required to achieve specified grades in accordance with recommendations of the Geotechnical Engineering Report.
- I. All fill materials shall be moisture conditioned, placed and compacted in horizontal lifts in accordance with recommendations of the Geotechnical Engineering Report.
- J. Soils which are disturbed, or over-excavated outside of the limits of plans or specifications shall be replaced with properly compacted materials in accordance with recommendations of the Geotechnical Engineering Report.
- K. Pavement Preparation: Scarify, moisture condition, and compact subgrade in accordance with recommendations of the Geotechnical Engineering Report.
- L. Existing Utilities:
 - 1. Identify known below grade utilities. Stake and flag locations.
 - 2. Identify and flag above grade utilities.
 - 3. Maintain, re-route, extend and protect as required existing utilities remaining which pass through Work area as indicated.
 - 4. Notify utility company to remove and relocate utilities obstructing the Work.
 - 5. Pay costs for this Work, except that covered by utility company.
- M. Unknown Utilities and Concealed Conditions:
 - 1. Upon discovery of unknown utility or concealed conditions which are unrecorded on the Contract Documents, discontinue affected Work and notify Architect in writing.
 - 2. Should additional work be required to remove, maintain, re-route, extend or protect unknown utilities or other conditions, the Contractor will be paid for the Work in accordance with the provisions of the General Conditions.

3.2 SUBGRADE

- A. Prepare subgrade at building areas to proper elevation to receive under-slab fill.
- B. Prepare subgrade at paved areas to proper elevation to receive base course materials. See Section 32 2116.

- C. Grade as required to bring entire remainder of site to finished grade as indicated on drawings.

3.3 EXCAVATION - GENERAL

- A. Excavate for foundations and footings to provide vertical walls and corners square. Keep entire excavation free from loose material. Conform to dimensions and elevations indicated with allowances for erection of forms, shoring, waterproofing, and inspection of footings.
- B. Material to be excavated shall be non-classified and shall include earth or other materials encountered in excavating.
- C. The use of explosives will not be permitted.
- D. Drawings show predetermined elevations or depths for bottoms of footings. Should additional depth of excavation be necessary, the Contractor will be paid for the Work in accordance with the provisions of the General Conditions.
- E. Shore and brace excavations if necessary to prevent cave-ins. Remove shoring before backfilling is completed, but not until permanent supports are in place.
- F. If excavation is carried below depth indicated, backfill with properly placed and compacted fill material (material as specified) over properly prepared subgrade, or increase foundation depth as required without extra compensation.
- G. Remove excess excavated material from the grounds and legally dispose of same.
- H. Protect utility services uncovered by excavation.
 - 1. Remove abandoned utility service lines from areas of excavation; cap, plug or seal such lines and identify at grade.
 - 2. Accurately locate and record abandoned and active utility lines rerouted or extended, on Project Record Documents.

3.4 EXCAVATION - UTILITIES

- A. Trenching:
 - 1. General:
 - a. Perform trenching required for the installation of items where the trenching is not specifically described in other Sections of these Specifications.
 - b. Excavate for underground utilities, including water, steam, condensate, natural gas pipelines, fire protection lines, sewers, electrical lines, cables, ducts and other electrical items.
 - 2. Width:
 - a. Make trenches open vertical construction with sufficient width to provide free working space at both sides of the trench and around the installed item as required for caulking, joining, backfilling, and compacting.
 - b. Provide for a minimum net clearance of 6 inches and a maximum net clearance of 12 inches on each side of the barrel of the pipe and to allow the backfill to be placed and properly compacted. Exceptions to these clearances will occur at encasement or special construction.

3. Depth:
 - a. Trench as required to provide the elevations shown on the Drawings.
 - b. Where elevations are not shown on the Drawings or specified in other sections of the specifications, trench to sufficient depth to give a minimum of 18" of fill above the top of the pipe, measured from the adjacent finished grade.
 - c. Where the bottom of excavation is found to be soft and cannot support the pipe, the depth shall be extended until solid bearing is reached. Backfill to pipe foundation grade with granular material or earth fill and thoroughly compact to assure a firm foundation for the pipe.
 - d. Where excavation is in rock, or caliche, cut to depth of at least 8 inches below pipe invert elevations.
4. Trench Bottoms:
 - a. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit.
 - b. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
 - c. Remove stones and sharp objects to avoid point loading.
 - d. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - e. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
5. Do not disturb any portion of or remove support from a piping system that has thrust blocks or other constraints against movement while the system is in service.
6. Correction of faulty grades: Where trench excavation is inadvertently carried below proper elevations, backfill with pipe bedding material and compact to provide a firm and unyielding subgrade or foundation without additional compensation.
7. Trench bracing:
 - a. Properly brace and support trenches in accordance with requirements of governing authorities.
 - b. Brace, sheet, and support trench walls in such a manner that the ground alongside the excavation will not slide or settle, and that existing improvements of every kind, whether on public or private property, will be protected from damage.
 - c. Arrange bracing, sheeting, and shoring so as not to place stress on portions of the completed Work until the general construction thereof has proceeded far enough to provide sufficient strength.
8. Repairs and replacement: In the event of damage to such improvements, immediately make repairs and replacements necessary to the approval of the Architect without additional compensation.
9. Removal of trench bracing: Exercise care in the drawing and removal of sheeting, shoring, bracing, and timbering to prevent collapse and caving of the excavation faces being supported.
10. Grading and stockpiling trenched material: Control the stockpiling of trenched material in a manner to prevent water running into the excavations. Do not obstruct surface drainage, but provide means whereby storm water is diverted into existing gutters, other surface drains, or temporary drains.

- B. Crossing Protection
 - 1. Provide adequate temporary crossover for pedestrian and vehicular traffic including guard rails, lamps and flags, as required by agencies having jurisdiction and as directed.
 - 2. Remove provisions for crossing protection when they are no longer needed.
- C. Underpinning: Where excavation work is required under or adjacent to existing footings, under-pin as required to prevent damaging existing construction.

3.5 FOUNDATION FOR PIPES

- A. General: Grade the trench bottoms to provide a smooth, firm, and stable foundation free from rockpoints throughout the length of the pipe.
- B. Foundation material: Place a minimum of 6" of the specified pipe bedding fill material in the bottom of the trench.
- C. Subsurface conditions: In areas where soft, unstable materials are encountered at the surface upon which cohesionless material is to be placed, remove the unstable material and replace it with material approved by the Architect. Make sufficient depth to develop a firm foundation for the item being installed.
- D. Overexcavation: If the need for such overexcavation has been occasioned by an act or failure to act on the part of the Contractor, make the overexcavation and replacement without additional compensation.
- E. Bearing: At each joint in pipe, recess the bottom of the trench as required into the firm foundation in such a manner as to relieve the bell of the pipe of all load and to ensure continuous bearing of the pipe barrel on the firm foundation.
- F. Shaping: Accurately shape pipe subgrade and fit the bottom of the trench to the pipe shape. Use a drag template shaped to conform to the outer surface of the pipe if other methods do not produce satisfactory results.

3.6 BEDDING FOR PIPES

- A. General: Place the specified pipe bedding fill material in the trench, simultaneously on each side of the pipe for the full width of the trench, to a maximum depth of 3 feet and a minimum depth of one foot above the outside diameter of the pipe barrel. Water consolidation shall not be allowed
- B. Densification: Take special care to provide firm bedding support on the underside of the pipe and fittings for the full length of the pipe.
- C. Alternate bedding: Other bedding procedures and materials may be used if prior written approval has been obtained from the Civil Engineer through the Architect.

3.7 UNDER-SLAB FILL

- A. Place under-slab fill to the thickness and grade indicated, smooth and even, free of voids. Compact to specified density. Grade to a tolerance of 1/4 inch in 10feet.

3.8 BACKFILLING - GENERAL

- A. After completion of the foundations, walls and other construction, and removal of forms, clean the excavations of trash and debris.

- B. Place the backfill symmetrically against each side of the walls to prevent eccentric loading. Place backfill in horizontal 6 inch (150mm) layers with the proper moisture content for the required degree of compaction.

3.9 BACKFILLING - UTILITIES

- A. Backfill pipe and conduit trenches in a manner to prevent disturbance to the pipes or conduits. Fill under and around pipes thoroughly to a point approximately 12 inches above the top of the pipe and compact. Backfill remainder of trench in 6 inch layers and compact.
- B. Backfill utility trenches in accordance with MAG Section 601.
 - 1. Delete references to compaction methods specified in paragraph 6.01.2.5 and 6.01.4.4 of MAG Section 601 and insert the following:
 - a. The compacted density of the trench backfill shall be 95% of ASTM D-1557 (Method A or D) with the percent of density adjusted to compensate for the rock content larger than that which will pass a #4 sieve, by the method provided in the City of Phoenix Chart, Detail No. 35.
 - b. At least one density and moisture content test shall be taken in per 500 lineal feet of trench backfill per layer of backfill. The test must be made prior to any additional formation of backfill
 - 2. Revise paragraph 6.01.4.3, Backfill, as follows: "All backfill shall be granular material. Water settling is not permitted. Backfill for electrical direct burial or concrete encased duct in paved areas under roadway shoulder shall be wet sand slurry.
- C. Backfilling prior to approvals: Do not allow or cause portions of the work performed or installed to be covered up or enclosed by work of this Section prior to required inspections. Should any of the work be so enclosed or covered up before it has been inspected, uncover such work at no additional compensation.
- D. Backfill simultaneously on both sides of utility to prevent displacement.
- E. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18 inches of footings. Place concrete to level of bottom of footings.
- F. Provide 4-inch-thick concrete base slab support for piping or conduit less than 2'-6" below surface of roadways. After installation and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.
- G. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.10 COMPACTION

- A. Place and compact fills in accordance with recommendations of the Geotechnical Engineering Report.
- B. Utilize mechanical compaction equipment in grading operations. In no case shall water settling or "jetting" be employed. Vibratory compaction equipment employed shall be subject to the approval of the Architect to ensure that vibrations will not be created that will affect existing construction or slopes.

3.11 FINISH GRADING

- A. After construction and final clean-up of exterior, and removal of debris, grade building site to slopes and elevations directed.
- B. Leave graded areas raked smooth.
- C. Remove excess material from the site.

3.12 FIELD QUALITY CONTROL

- A. Earthwork, footings depths, and excavations for foundations shall be inspected by the Geotechnical Engineer to verify allowable soil bearing and low settlement and swell potential, and to make any additional recommendations.
- B. Tests: Inspection and testing of earthwork shall be performed by a testing laboratory in accordance with Section 01 4500.
 - 1. Provide free access to Work and cooperate with appointed firm.
 - 2. Tests of materials may be performed to ensure conformance with specified requirements.
 - 3. Provide one field density test of under-slab fill for every 2,000 square feet of building area.
 - 4. Provide two field density tests of backfill at locations and elevations directed.
 - 5. Provide one field density test of prepared subgrade for every 2,000 square feet of site and building area.
 - 6. Soil compaction which does not meet the specified requirements shall be recompacted and reworked as directed by the Geotechnical Engineer through the Architect.
- C. City Special Inspection: Special Inspection may be required by the City of Phoenix Building Safety Division in accordance with the Special Inspection and Observation Manual for use with the 2018 IBC and the City of Phoenix Construction Code Supplements to the IBC.
 - 1. When special inspection is required, the engineer of record shall be responsible for special inspection.
 - 2. Owner and engineer of record shall issue an executed Certificate of Special Inspection prior to, and following Earthwork operations.

3.13 PROTECTION

- A. Protect newly graded areas from traffic and erosion, keep areas free of trash and debris. Repair and establish grades in any areas settled, rutted or eroded.

3.14 CONSTRUCTION WASTE MANAGEMENT

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.

END OF SECTION

**SECTION 31 3100
SOIL TREATMENT**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pretreatment to provide chemical barrier to protect buildings and contents against attack by subterranean termites.
 - 2. Treatment of site and areas as indicated to remove vegetation growth.

1.2 SUBMITTALS

- A. Product Data: Submit label indicating Manufacturer's chemical analysis of treatment materials prior to application. Submit evidence of EPA approval and State registration.
- B. Test Reports: Submit reports of field tests for termite treatment.

1.3 QUALITY ASSURANCE

- A. Applicator Qualifications: Registered applicator with 5 years experience and licensed by the Arizona Structural Pest Control Commission.
- B. Regulatory Requirements: Chemicals shall be approved for use and registered by Environmental Protection Agency (EPA) and the Arizona Structural Pest Control Commission.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Conform to Manufacturer's instructions and Governmental Agencies' requirements.
- B. Deliver materials to Project in original sealed and labeled containers of Manufacturer.

1.5 SITE CONDITIONS

- A. Do not apply chemicals in inclement weather or when there is a possibility of rain.

1.6 WARRANTY

- A. Upon completion of soil treatment, and as a condition of final acceptance, provide Owner with written unlimited warranty providing:
 - 1. Application was made at concentration, rate, and method in compliance with Specifications contained herein.
 - 2. Warrants effectiveness of the soil treatment against subterranean termite infestation for a period of not less than 5 years from acceptance and completion date of Project.
 - 3. Warrants effectiveness of soil treatment against vegetation growth for a period of six (6) months.
- B. Upon evidence of subterranean termite activity within warranty period, re-treat area to stop infestation of affected areas and repair termite caused damage to building at no cost to Owner.
 - 1. Re-treatment under warranty sufficient to prevent termites from attacking building or its contents during remainder of initial warranty period, plus

2. one additional year for each time re-treatment under warranty is required.
 2. Complete re-treatment of the building shall be as specified herein and shall be rendered upon the third recurrence of subterranean termites in the same structure within 5-year period from the date of project acceptance.
 3. Damage caused by infestations and by re-treatment shall be repaired at no cost to the Owner.
- C. Upon evidence of vegetation growth re-treat area at no cost to Owner.
- D. Draft warranty in favor of Owner, successors or assigns.
1. Pre-printed FHA or VA guarantee forms shall not be acceptable.
 2. The Owner and the applicator reserve the option to renew termite protection on an annual basis after the expiration of the warranty.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Termite Treatment: Apply one of the following chemicals as a water emulsion (no oil solutions permitted):
1. Altriset (Chlorantraniliprole) Syngenta www.syngentaprofessionalproducts.com
 2. Demon Max (Cypermethrin) Syngenta www.syngentaprofessionalproducts.com
 3. Dominion 21 (Imidacloprid), Control Solutions Incorporated (CSI) www.controlsolutionsinc.com
 4. Dagnet SFR (Permethrin), FMC Corporation www.fmc.com
 5. Phantom (Chlorfeapyr) BASF - www.termidorhome.com.
 7. Premise (Imidacloprid), or Premise 75, or Premise Pre-Construction; Bayer Environmental Science www.bayerprocentral.com
 8. Prelude (Permethrin); AMVAC www.amvac-chemical.com
 9. Prevail FT (Cypermethrin); FMC Corporation www.fmc.com
 10. Talstar (Bifenthrin), FMC Corporation. www.fmc.com
 11. Termidor HE (Fipronil) BASF - www.termidorhome.com.
 12. Transport (Acetamiprid and Befenthrin); FMC Corporation www.fmc.com
- B. Vegetation Treatment:
1. Pre-Emergent:
 - a. Oryzalin (Surflan).
 2. Post-Emergent:
 - a. Roundup; Monsanto www.roundup.com
 - b. Season Long or Ground Clear; ORTHO www.ortho.com
 - c. SeasonPlus Grass and Weed Killer Plus Preventer; Spectracide www.spectracide.com
- C. Mix solutions in accordance with Manufacturer's directions to highest concentration allowable by label.

PART 3 EXECUTION

3.1 APPLICATION - TERMITE CONTROL

- A. Time of Application:
1. Notify Architect to be present during application, at least 24 hours prior to

- application of materials.
 - 2. Apply chemical treatment during normal working hours in order to be subject to observation.
 - 3. Do not treat soil and fill areas that are excessively wet or after heavy rains to avoid surface flow of toxicants.
- B. Application: In accordance with Manufacturer's recommendations, and local codes and regulations.
- 1. Provide applicator trucks with approved measuring flow meters.
 - 2. Apply chemicals on soils and compacted ABC fill materials under entire subsurfaces of concrete floor slabs and slabs abutting building walls in quantities and locations stated on label.
- C. Do not disturb aggregate base course and treated soil between application of poison and pouring of concrete.
- 1. Re-treat soil or compacted fill which has been disturbed after soil poisoning, due to plumbing and electrical changes or omissions.
 - 2. Should rainy weather occur prior to pouring concrete slab over treated ABC, re- treat the complete area at the discretion of Architect, and at no additional cost to Owner.

3.2 APPLICATION - VEGETATION CONTROL

- A. Apply chemical to on-site landscape areas and landscaped portions of public street right- of-ways of site.
- B. Chemical Control: Prior to planting operations, provide 2 applications over unwanted vegetation.
- C. Pre-emergent: Post landscape planting operations. Comply with manufacturers label for application and protection of existing landscape planting.

3.3 FIELD QUALITY CONTROL

- A. Tests: Chemical analysis tests shall be made of materials used on the basis of one test for each 10,000 square feet of treated area. Samples and test may be taken of both concentrates and the dilute materials as being applied. See Section 01 4500 for provisions covering payment for testing.

3.4 PROTECTION

- A. Adjacent property, trees and plants shall be protected from injury and damage as result of operations in this Section.

END OF SECTION

**SECTION 32 1216
ASPHALTIC CONCRETE PAVING**

PART 1 GENERAL

1.1 SUMMARY

- A Section includes asphaltic concrete paving as indicated on Drawings, including cutting and patching of existing asphaltic concrete paving at street right-of-ways where existing pavement is removed to accommodate new construction.

1.2 SUBMITTALS

- A Design Mix: Submit design mix-formula for asphalt concrete not less than 7 days in advance of actual placement of material.
- B Certificates: Submit Certificate of Compliance indicating that materials to be incorporated in Work meet Specification requirements.

1.3 QUALITY ASSURANCE

- A Comply with Maricopa Association of Governments (MAG) Specifications except as specified otherwise.

1.4 DELIVERY, STORAGE AND HANDLING

- A Transport bituminous mixtures to site in clean trucks and in manner to prevent segregation of materials or inclusion of foreign substances.
- B Mix to consist of specified aggregate and bitumen.
- C Asphalt surface course mixture to have minimum temperature of 285 degrees F. and maximum temperature of 350 degrees F.

1.5 SITE CONDITIONS

- A Environmental Requirements:
 - 1. Conform to applicable requirements of MAG Section 321.
 - 2. Place asphaltic concrete when surface is dry, when the ambient temperature in shade is 40 degrees F. and rising, or above 50 degrees F. if falling.
 - 3. Do not place asphaltic concrete when weather is foggy, rainy, or when base on which material is to be placed is wet or frozen.

PART 2 PRODUCTS

2.1 MATERIALS

- A Aggregate Base Course:
 - 1. Base materials: Conform to MAG Sections 310 and 702 and requirements specified herein. Material to be crushed rock product with a plasticity index not exceeding 5 and comply with grading requirements shown in Table 702.

2. Aggregate: Clean and free of organic matter and of such a nature that it can be compacted to a dense and firm layer capable of supporting loaded trucks and self-propelled pavers without rutting.
 3. Deliver aggregate to site in thoroughly blended condition and handle in manner to prevent excessive segregation. Do not mix underlying soil or subbase with aggregate base material. Do not mix underlying soil or subbase with aggregate base material.
- B. Tack Coat: Mixing type emulsion SS-I-H, as specified in MAG Section 713, diluted in proportion of approximately 50 percent water and 50 percent emulsion. See MAG Section 321.
- C. Asphaltic Concrete Paving:
1. Refer to MAG Section 710.
 2. Asphalt concrete shall be Type 1/2 inch or 3/4 inch single course mix as indicated on Drawings. Percentage asphalt range: 5.0 to 6.0.
 3. When test procedures determine aggregate is subject to stripping, add dry hydrated lime conforming to requirements of ASTM C207, Type N; portland cement conforming to Section 725 of MAG Specifications; or other approved anti-strip agent.
- D. Composition and Grading: Comply with MAG Section 710.3. Aggregates and mix to be incorporated into Work shall show loss in L.A. Rattler (ASTM C131) (after 500 revolutions) of 40 percent max.

2.2 EQUIPMENT

- A. Spreading and Finishing Equipment: Comply with MAG Section 321.5.2.
1. Equipment to be of good condition and capable of performing Work specified in satisfactory manner.
 2. Start finish rolling after pavement has cooled sufficiently to permit removal of roller marks and continue in whatever direction is necessary to produce a pavement surface free of indentations. See MAG Section 321.
 3. Leveling Course: Comply with MAG Section 321.5.3.

2.3 MIXES

- A. Job-mix formula shall indicate percentage passing for each specified sieve size of mineral aggregate and percent of asphalt to be used for each asphalt concrete mixture to be incorporated on Project. Job-mix formula (gradation), with allowable tolerances for a single test, to be used for job control. Single test variation tolerance is shown in following table. In no event shall less than 2 percent of mineral aggregate pass a No. 200 sieve.
1. No. 4 and larger : ± 7
 2. No. 30: ± 5
 3. No. 200: ± 2
 4. Asphalt, percent by weight of mix: ± 4

PART 3 EXECUTION

3.1 PREPARATION

- A. Backfill curbs prior to paving.
- B. Base Preparation: Comply with MAG Section 321.5.1.

3.2 CUTTING AND PATCHING OF ASPHALT CONCRETE PAVING

- A. Cut existing asphalt pavement back a minimum of 4 inches into stable, sound pavement material with stable, undisturbed bases.
 - 1. Remove and recompact existing subgrades and/or base course materials necessarily disturbed, that are loose, or un-bound.
 - 2. Saw-cut existing asphalt vertically to full depth.
 - 3. Saw-cut and remove areas in square, rectangular or trapezoidal shapes. Do not leave irregular or fractured faces of any size.
- B. At patched areas, provide aggregate base course materials to match existing depth and tie into existing. Compact level to existing.

3.3 APPLICATION

- A. Base Course:
 - 1. Construct aggregate base course on subgrade and compact to a minimum of 95 percent of maximum density in accordance with ASTM D1557.
 - 2. Thickness: Place base course materials in minimum compacted thickness indicated on Drawings, or to match existing at patched areas.
- B. Tack Coat:
 - 1. Apply tack coat to vertical surfaces of existing pavement, curbs, gutters and construction joints, against which additional material is to be placed, to a new or old pavement to be overlaid, and to other surfaces as designated by Architect.
 - 2. Tack coat to be slow setting type emulsion as specified. If emulsion is applied undiluted, apply at rate of 0.02 to 0.10 gallons per square yard; if emulsion is applied diluted 1:1 with water, apply at rate of 0.05 to 0.10 gallons per square yard, as directed by Architect.
 - 3. Clean surfaces of loose and foreign material prior to application of tackcoats.
- C. Asphaltic Concrete:
 - 1. Construct asphalt pavement in accordance with applicable requirements of MAG Section 321.
 - 2. Thickness: Place asphalt concrete in minimum compacted thickness indicated on Drawings, or to match existing at patched areas.
 - 3. If pavement is constructed in lifts using an asphalt concrete base in the first lifts, base to be thoroughly cleaned by whatever means necessary prior to application of tack coat and placement of surface layer.
- D. Compaction: Comply with requirements of MAG Section 321.5.4.
 - 1. Compact asphalt concrete surfacing to a density of 95 percent of 75 blows (ASTM D6926).
 - 2. Measure asphalt density by means of a nuclear density gauge, or core testing. Nuclear gauge method will be preferred.
- E. Upon completion, pavement surface to be smooth, dense and of uniform texture and appearance.
 - 1. All areas to properly drain and be free of standing water.
- F. Tolerances:
 - 1. Thickness: Compacted thickness shall be within the following tolerances from thickness indicated.
 - a. Base Course: Plus or minus 1/2 inch .
 - b. Surface Course: Plus or minus 1/4 inch .

2. Surface Smoothness:
 - a. Base Course: Plus or minus 1/2 inch, measured using a 10 foot straight- edge placed in any position on finished surface, except across flow lines.
 - b. Asphalt Concrete Surface Finish: Minus 1/4 inch from the lower edge of a 25 foot straight-edge laid on the finished surface of the asphalt and parallel with the center line of the road or drive.
 - c. Asphalt Concrete Crowned Surface Finish: Plus or minus 1/4 inch, measured with a crowned template.
- G. Corrective Requirements for Deficiencies: Comply with MAG Section 321.6.
- H. Paving Termination
 1. Provide thickened edge at paving terminations that do not have wood header forms or concrete curbs.
 2. Pavement termination to be minimum 12 inches wide x 8 inches deep or as shown on Drawings.

3.4 FIELD QUALITY CONTROL

- A. Smoothness Tests:
 1. Test conformance of crown and grade of pavement as indicated. Finished surface to be smooth and finished within specified tolerances.
 2. Immediately after initial rolling, correct variations by adding or removing material as required. Cut out and replace any spots deficient in thickness with fresh mixture which is properly bonded to existing pavement.
 3. After final rolling, retest surface and correct irregularities in excess of specified tolerance by removing defective Work and replacing with new material.
- B. Water Testing: Perform water testing of streets per MAG Section 321.

3.5 CLEANING

- A. Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

SECTION 32 1600
CONCRETE CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete curbs, gutters, sidewalks and driveways as shown on the Drawings, including cutting and patching of existing concrete curbs, gutters, walks and driveways where removed or modified to accommodate new construction.
- B. Related Sections:
 - 1. Section 32 1726 – Detectable/Tactile Warning Surfaces, for modular tactile/detectable warning surface paver tiles to be set into curb ramps.

1.2 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable Federal, State and local ordinances, including MAG Specifications Where geotechnical report, General Structural Notes, or notes on drawings state more restrictive requirements, the requirements of the geotechnical report, General Structural Notes, or notes on drawings shall govern.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete for Curbs, Gutters, Sidewalks, and Sidewalk Ramps: Class B, complying with applicable requirements of MAG Section 725.
- B. Concrete for Drives: Comply with Section 1006 of the ADOT Standard Specifications and recommendations of the Geotechnical Engineering Report.
- C. Expansion Joint Filler: MAG Section 729.
- D. Epoxy Resin: Sta-Crete Epoxy Resin No. 15-J or 20.
- E. Curing Compound: ASTM C309, Type 1, Class B; acrylic type.
- F. Traffic Joint Sealant: As specified in Section 07 92 00.

PART 3 EXECUTION

3.1 PREPARATION

- A. Cut existing pavements and concrete joined by new construction in accordance with MAG Sections 336 and 350. Saw-cut and remove existing concrete at stable undisturbed material to remain or extend removal to construction joint.
 - 1. Do not disturb existing base course materials at concrete to remain.
 - 2. Remove and recompact existing subgrades and/or base course materials necessarily disturbed, that are loose, or un-bound.

3. Saw-cut existing concrete vertically to full depth.
 4. Saw-cut and remove areas in square, rectangular or trapezoidal shapes. Do not leave irregular or fractured faces of any size.
 5. Remove existing walks and/or drives as indicated or as necessary to tie into and match finished elevations of new Work.
- B. Construct subgrade and compact true to grades and lines shown on Drawings and as specified in MAG Section 301.
- C. Do not disturb previously prepared subgrades and subbase course. Where loose soils are encountered beneath pavements, scarify, moisture condition and properly recompact soils in compliance with Section 32 00 00.
- D. Material displaced during construction shall not be placed on base or surfacing material already in place on roadway. Do not place excavated material in manner as to interfere with access to property or traffic flow in street.
- E. Remove existing walks and/or drives as indicated and as required to tie into and match finished elevations of new Work.

3.2 CONCRETE CONSTRUCTION

- A. Construct concrete curbs, gutters and sidewalks by conventional use of forms, or by means of a curb and gutter machine when approved by Architect.
1. If machines designed specifically for such work and approved by the Architect are used, results must be equal to or better than that produced by use of forms.
 2. If the results are not satisfactory to Architect, discontinue use.
 3. Requirements applicable to use of forms shall apply to use of machines.
- B. Extruded Concrete Curbs Without Gutter: Provide extruded concrete formed-in-place curbs to cross section and locations as shown on Drawings and as specified.
- C. Concrete for Curbs, Gutters and Sidewalks: 40 percent stone by weight and extruded in a zero slump condition.
- D. Jointing: Finish all joint fillers in continuous one-piece lengths.
1. Construct expansion and control joints vertical, and at right angles to centerline of drive and match joints in adjacent pavement or sidewalks.
 2. Concrete drives: Provide expansion joints at maximum 15 feet o.c., unless otherwise indicated on Drawings.
 3. Curbs, Gutters and Walks: Provide expansion joints at maximum 20 feet o.c., unless otherwise indicated on Drawings.
 4. Provide construction joints at all side and end terminations.
 5. Provide isolation joints at all areas abutting curbs, catch basins, manholes and similar civil structures, walks, buildings, and other fixed objects.
 6. Construct expansion joints at radius points, driveways, alley entrances and at adjoining structures.
 7. Construct contraction joints as detailed.
 8. Fill expansion and contraction joints with traffic joint sealant as specified in Section 07 92 00.
- E. Bonding:
1. Bond extruded concrete curbing to asphalt surfacing by use of SS-1-H or CSS-1- H cutback asphalt tack coat conforming to requirements of MAG Section 713.

2. Apply tack coat in a manner approved by Architect to provide a uniform continuous coating 1/8 to 3/16 inch in thickness and a width one inch less than
 3. the base width of curbing.
 4. Take care to prevent spills or running of tack coat over surface of finished asphalt pavement.
 5. Bond extruded concrete curbing to concrete surfaces by use of an epoxy resin.
- F. Forms:
1. Carefully set forms to line and grade, securely staked in position and conforming to dimensions of curbs, gutters, sidewalks, driveways and alley intersections.
 2. Moisten forms and subgrade immediately in advance of placing concrete.
 3. Clean forms thoroughly each time they are used, and coated with a light oil, or other releasing agent of a type which will not discolor concrete.
 4. Thoroughly spade concrete away from forms so that there will be no rock pockets next to forms.
 5. Concrete may be compacted by mechanical vibrators approved by Architect.
 6. Continue tamping or vibrating until mortar flushes to surface, and coarse aggregate is below concrete surface.
- G. Shape edges with tool formed to round edges to radius indicated on standard details.
- H. Form Removal:
1. Do not remove front face form before concrete has taken initial set and has sufficient strength to carry its own weight.
 2. Do not remove gutter forms and rear forms until concrete has hardened sufficiently to prevent damage to the edges.
 3. Take special care to prevent damage.
 4. Repair any portion of concrete damaged while stripping forms. If damage is severe, replace at no additional cost to Owner.
- I. Finishing and Curing:
1. Comply with MAG Section 505 and Specifications Section 03 30 00 for finishes and special finishes, and as indicated on Drawings.
 2. Take care in extruding radiuses and corners to prevent cracking and breaking of concrete curbing.
 3. Finish extruded curbs immediately after placing to achieve a surface comparable to a uniform broom finish.
 4. Where indicated, coordinate installation of concrete at sidewalk ramps as necessary to receive tactile/detectable warning pavers to be set into wet concrete as specified in Section 32 17 26.
 5. Spray extruded curbs with curing agent sealer immediately after placing.
 6. Thoroughly fill, bond, and finish breaks or cracks to match remaining installation in manner approved by Architect.
 7. Curbing found unacceptable by Architect to be replaced at Contractor's expense.
- J. Backfilling: Unless otherwise specified, backfill behind curbs or sidewalk with native soil to lines and grades shown on Drawings.

3.3 FIELD QUALITY CONTROL

- A. Testing:
1. Test face, top, back and flow line of curb and gutter with a 10 foot straightedge or curved template, longitudinally along surface.

2. Correct deviations in excess of 1/4 inch.
3. Test surface of concrete sidewalks with a 5 foot straight edge. Correct deviations in excess of 1/8 inch.
4. Gutters:
 - a. When required by Architect, water test gutters having a slope of 0.8 foot per 100 feet or less, and where unusual or special conditions indicate gutter may not drain satisfactorily.
 - b. Water testing consists of establishing flow in length of gutter to be tested by supplying water from a hydrant, tank truck or other source.
 - c. One hour after supply of water is shut off, inspect gutter for evidence of ponding or improper shape.
 - d. In the event water is found ponded in gutter to a depth greater than 1/2 inch, or on the adjacent pavement, correct defect or defects in a manner acceptable to Architect.
5. Remove and replace sections of Work deficient in depth or not conforming to Drawings or Specifications.

3.4 CLEANING

- A Construction Waste Management and Disposal: Comply with requirements of Section 01 7419 – Construction Waste Management and Disposal, for salvaging, recycling and disposing of nonhazardous construction waste.
- B. During the course of the Work and on completion of the Work, remove and dispose of excess materials, equipment and debris away from premises.

END OF SECTION

**SECTION 32 1723
PAVEMENT MARKINGS**

PART 1 GENERAL

1.1 SUMMARY

- A Section Includes: Traffic marking and striping for pavement and curbs as shown on Drawings.

1.2 SUBMITTALS

- A Product Data: Submit Manufacturer's specifications for paint.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Traffic Surface Paint: Approved products include, but are not limited to the following:
1. Sherwin-Williams, Pro-Park www.sherwin-williams.com Waterborne Traffic Marking Paint B97 Series, or STAR-Brite Latex Traffic Line Paint S11 Series.
 2. PPG Architectural, Ennis www.ppg.com Waterborne Traffic Paint Lead Free Yellow 445017, Waterborne Traffic Paint White 445018, or Zoneline Traffic & Zone Marking Paint 11-53.
 3. Kelly-Moore, Traffic Marking Paint www.kellymoore.com Curb Marking Paint waterborne Semi-Gloss 1473, Zone Marking Paint Lead Free Waterborne 1472.
 4. Benjamin Moore www.benjaminmoore.com, Coronado Super Kote Quick Dry Acrylic Traffic Paint 1406 Line, or Insi-x Traffic Paint Acrylic Latex TP-2200.
 5. Lanco www.lancopaints.com Super traffic waterborne, Super Traffic TL Line, or Painters Marking Coat, Painters traffic VA Line.
 6. Ennis-Flint www.ennisflint.com EF Series Standard Dry Waterborne traffic paint.
 7. Professional Pavement Products, Inc. www.pppcatalog.com Prostripe Plus Waterborne Traffic Paint.
 8. Sealmaster Pavement Products and Equipment www.sealmaster.net Sealmaster Acrylic Traffic Paint.
 9. Products listed in the MAG Uniform Standard Specifications.
- B. Traffic Surface Paint Colors: As follows, unless otherwise indicated on Drawings:
1. Stall Striping and Traffic Markings: Traffic White
 2. Handicap Markings: Traffic Yellow.
 3. Fire Lanes: Red.

PART 3 EXECUTION

3.1 EXAMINATION

- A Prepare chalk layout and obtain Architect's approval prior to start of marking and striping.

3.2 PREPARATION

- A Thoroughly clean surfaces of substances which may inhibit bonding.

3.3 APPLICATION

- A. Apply paint with equipment suited for that purpose in accordance with Manufacturer's directions, in a minimum of two (2) coats.
- B. Paint lines straight and true to pattern layout. Correct errors by sandblasting. Apply paint at manufacturer's recommended rates to obtain a dry film thickness of 8 mils minimum.
- C. Stall Divisions: Provide between standard size parking stalls, a single 4 inch wide stripe, stall width as shown on Drawings.
- D. Arrows and Pavement Signs: Paint directional arrows with stencils or other approved method. Strokes of letters, islands and "No Parking" areas to have 3 inch wide strips.
- E. Handicap Stalls: Provide symbol and other markings as approved by Architect.
- F. Fire Lanes: Provide red painted curbs as required.
- G. Protect completed Work until dry.

END OF SECTION

**SECTION 32 1726
DETECTABLE/TACTILE WARNING SURFACES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Modular tactile/detectable warning surface paver tiles and setting materials.
- B. Related Sections:
 - 1. Section 32 1600 – Concrete Curbs, Gutters Sidewalks and Driveways, for concrete walk ramps where detectable warning tiles will be installed.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.
- B. Samples for Verification Purposes: Submit three (3) tile samples minimum 6 inches by 8 inches of the kind proposed for use.

1.3 QUALITY ASSURANCE

- A. Provide Modular Paver Tactile Tile and accessories as produced by a single manufacturer.
- B. Installer's Qualifications: Engage an experienced Installer certified in writing by tactile manufacturer as qualified for installation, who has successfully completed tile installations similar in material, design, and extent to that indicated for Project.
- C. Americans with Disabilities Act (ADA): Provide Detectable/Tactile Warning Surface Panels which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).

1.4 DELIVERY, STORAGE AND HANDLING

- A. Tiles shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy wrappings. And tile type shall be identified by part number.
- B. Tiles shall be delivered to location at building site for storage prior to installation.

1.5 SITE CONDITIONS

- A. Environmental Conditions and Protection: Temperature shall be minimum of 40 degrees F at location to receive tactile tiles for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation.
- B. Water used for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the public. Provide barricades or screens as required to protect public.

- C. Disposal of any liquids or other materials of possible contamination shall be made in accordance with federal state and local laws and ordinances.
- D. Cleaning materials shall have code acceptable low VOC solvent content and low flammability if used on the site.

1.6 EXTRA STOCK

- A. Deliver extra stock to storage area designated by Architect. Furnish new materials from same manufactured lot as materials installed and enclose in protective packaging with appropriate identification for modular paver tiles. Furnish not less than 2 percent of the supplied materials for each type, color and pattern installed, but not less than 2 tiles.

1.7 GUARANTEE

- A. Modular Paver Tactile Tile shall be guaranteed in writing for a period of five years from date of final completion. The guarantee includes defective work, breakage, deformation, and loosening of tiles.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with ADA and other specified requirements, provide one of the following, subject to approval by Architect:
 - 1. Armor-Tile Vitrified Polymer Composite (VPC) Modular Paver Tactile Tile as manufactured by Engineered Plastics Inc. (800-682-2525) www.armor-tile.com.
 - 2. Tekway Detectable Warning concrete panels as manufactured by StrongGo LLC, Tucson, Arizona www.stronggo.com
 - 3. As approved by the Architect.
- B. Tactile/Detectable Warning Surface Tiles:
 - 1. Precast Concrete Lightweight Panels: High compressive strength lightweight precast concrete containing salt river aggregate and proprietary additives.
 - a. Size: 24 inches x 24 inches x 5/8 inch thickness.
 - 2. Vitrified Polymer Composite (VPC) Modular Paver Tactile Tile: Epoxy polymer composition with ultraviolet stabilized coating employing aluminum oxide particles in the truncated domes.
 - a. Size: 12 inches x 12 inches x 1.4 inch thickness.
- C. Where available from the manufacturer, provide pavers with integral anchors cast into pavers for wet installation into concrete walk.
- D. Color(s): As selected by Architect from manufacturer's full line of colors.
- E. Installation Materials: Provide paver manufacturers recommended thin-set acrylic modified Portland cement thin set mortar and joint grout.
- F. Sealants: Traffic bearing sealant as recommended by paver manufacturer and complying with section 07 9200.
 - 1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install tiles/pavers in accordance with manufacturer's setting and finishing instructions.
- B. During tile installation procedures ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- C. Install sealant and related materials shall be in accordance with paver manufacturer's recommendations and the guidelines of sealant manufacturers.
- D. Layout Modular Pavers/Tiles and joints to fit existing spacing as detailed on the project drawings, or as approved on shop/layout drawings.
- E. Use electronic level or other acceptable devices to verify that the required slope is achieved. Tiles shall be placed true and square to the curb edge in accordance with the contract drawings.
- F. Set tiles into wet concrete or by thin-setting onto cured concrete as recommended by the tile manufacturer, as follows:
 - 1. Setting into Wet Concrete: The Modular Paver/Tiles shall be tamped into substrate to ensure that the field level of tile is flush to the adjacent surfaces and set to permit proper water drainage and eliminate tripping hazards between adjacent finishes.
 - 2. Thin-Set Tile: Set tile into position using manufacturer's recommended mortar and grout materials.
- G. Elevation differences between tiles and between tile and adjacent surfaces shall not exceed 1/16 inch.
- H. Vacuum clean, mechanically abrade and solvent wipe the joints between Modular Paver Tactile Tiles.
- I. Place 3/8 inch diameter foam rope at bottom of all sealant joints.
 - 1. Tape off each side of leading edge groove in preparation for the self leveling urethane sealant.
 - 2. Apply urethane sealant in joints filling flush to top of tiles, then remove tape prior to curing.

3.2 CLEANING AND PROTECTING

- A. Protect Modular Tactile Pavers against damage during construction period to comply with tactile tile manufacturer's specification.
- B. Clean Modular Tactile Pavers prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean Pavers by method specified by the manufacturer.

END OF SECTION

**SECTION 32 3113
CHAIN LINK FENCES AND GATES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes chain link fencing and gates.
- B. Related Sections:
 - 1. Section 01 5000 – Temporary Facilities and Controls, for temporary site construction fences.
 - 2. Section 32 3119 – Decorative Metal fences and Gates, for decorative welded tube steel view fencing and gates.

1.2 SUBMITTALS

- A. Product Data: Submit Manufacturer's data for fencing materials, including details of construction and anchorages.
- B. Shop Drawings showing layout in plan view and details of gates and attachment to floor slab and overhead structure.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Chain Link Fabric:
 - 1. ASTM A392, fabricated with 0.148 inch (9 gauge) nominal uncoated wire diameter woven in a 2 inch diamond mesh.
 - 2. Top and bottom edges shall have a knuckled finish.
 - 3. Fabric shall be continuous width for full height of fence.
 - 4. Splicing of fabric for fence height shall not be permitted.
 - 5. Hot-dip galvanize before fabrication.
 - 6. Supplemental Color Coating: Where indicated to be color coated, fabric, posts, rails, fittings, etc. shall be coated with manufacturer's standard 3-mil minimum PVC in color as selected by Architect.
 - 7. Height(s): As indicated on drawings.
- B. Posts and Rails: Type I shall be Schedule 40 steel pipe conforming to ASTM F1083 or Type II shall be steel pipe conforming to F1043, Group IC, with coating conforming to the requirements of ASTM F1234 Type B exterior and Type B galvanized interior, galvanized before forming.
 - 1. Provide intermediate line posts, terminal and corner posts, gate posts, brace struts, and top rails with pipe size, wall thickness, and weight complying with requirements of ASTM F1043 for Heavy Industrial Fence as required by height of fence and width of gates.
 - 2. Post Tops: Galvanized, heavy malleable iron with base apron to fit over posts, and designed for use with top rail.
- C. Truss Rod: 3/8 inch round steel rod fitted with turnbuckle.
- D. Tension Wire: No. 7 steel wire; ASTM A824 Type II, Class 2 zinc coating.

- E. Fittings: Galvanized, malleable cast iron or pressed steel meeting ASTM F626.
- F. Gate Hardware: Provide the following hardware and accessories for each gate:
 - 1. Hinges: Pressed steel or malleable iron to suit gate size, non-lift-off type, offset to permit 180-degree gate opening.
 - 2. Double Gates: Provide gate stops for double gates, consisting of mushroom type or flush plate with anchors.
 - 3. Latching Hardware: Self-latching gate latch as indicated on Drawings or as approved by Architect.
 - 4. All dog run enclosures shall have spring-loaded hinge with butterfly latch.
- G. Zinc Coating: Hot dip method, using zinc conforming to ASTM B6.
 - 1. Chain link fabric: 1.2 ounces per square foot.
 - 2. Rails, posts and braces: 1.8 ounces per square foot for Type A steel pipe and a minimum weight of 0.90 ounces per square foot for Type B steel pipe. Type B steel pipe shall have an exterior chromate conversion and a minimum of .3 mils clear polymer applied over the zinc coating.
- H. Concrete Footings: 3000 psi unless otherwise noted on Drawings and meet requirements of Section 03 30 00 – Cast-in-Place Concrete.

2.2 FABRICATION

- A. Swing Gates:
 - 1. Fabricate gate frames from 1-1/2 inch, (1.900 inch nominal outside diameter) steel pipe; Type I nominal weight 2.72 pounds per foot or Type II nominal weight 2.28 pounds per foot of welded construction or constructed with heavy malleable iron or pressed steel corner fittings securely riveted. Weld areas shall be cleaned and repaired using 2 coats of zinc rich paint.
 - 2. Install wire fabric to match the fence in frame by means of tension bars and hook bolts.
 - 3. Each frame to be equipped with 3/8 inch diameter adjustable truss rods.
 - 4. Bottom hinges to be ball and socket type designed to carry the weight of the gate on the post.
 - 5. Upper hinge to be wrap around adjustable type.
 - 6. Gate Latching: Fabricate gates with 20 gauge steel sheet faced box to receive latching hardware as detailed on Drawings.
- B. Galvanizing: Except where otherwise noted, materials shall be heavily galvanized after fabrication by hot-dip process.
- C. Welding:
 - 1. Conform to requirements of American Welding Society, "Specification for Iron and Steel Arc-Welding Electrodes".
 - 2. Electrodes shall be suitable for conditions of intended use.
 - 3. Make joint surfaces free from fins and tears and grind rough surfaces smooth.
 - 4. Clean welded surfaces and treat with two coats of galvanized paint applied per paint Manufacturer's directions.

PART 3 EXECUTION

3.1 EXCAVATION AND BACKFILLING

- A. Perform excavation and backfilling required for setting of concrete post

footings. Generally conform to applicable requirements of Section 31 0100.

3.2 CONCRETE FOOTINGS

- A Concrete Footing Sizes shall be as follows:
1. End Gate and Corner Posts: 12 inches diameter by 36 inches deep post embedment minimum.
 2. Line Posts: 9 inches diameter by 36 inches deep post embedment minimum.
 3. Footing Tops: Shall be troweled smooth and beveled or crowned to drain moisture away from posts. Lower edge of bevel shall meet established finish grade.

3.3 ERECTION

- A Securely anchor fencing plumb, true to line, complete with necessary standard fittings specified and recommended by Manufacturer and in accordance with ASTM F567.
- B Posts: Embed in concrete footings, to depths specified and accurately located as to alignment and grade.
- C Line Posts: Space equally at 10 feet on centers maximum, unless otherwise indicated on the Drawings.
- D Install gates in accordance with ASTM F900 and ASTM F1184 and Manufacturer's instructions.
1. Install mushroom type gate stop or flush plate with anchors embedded in concrete pavement.
 2. Drill hole for drop rod or plunger bar.
- E Center and Top Rails: Run mid rails between posts in one-piece lengths, flush with post on fabric side, using offset fitting where required. Pass top rail through top of line posts and provide a continuous brace from end to end of each stretch of fence. Connect lengths of top rail with outside sleeve type couplings at minimum 20 foot on center. Fasten to terminal posts with suitable steel connections.
- F Brace, Struts: Install at mid-point between top of fence and ground, and extend from terminal post with tension return rods.
- G Fencing:
1. Erect in accordance with ASTM F567 so bottom of fabric is 2 inches above finished floor surface and top of fabric is aligned with tops of fence post or top rail.
 2. Stretch fabric and securely attach to framework on secure side of fence or enclosure.
 3. Fabric: Secure to line posts with fabric bands and top rail.
- H Tension Wire: Stretch along bottom of fence in continuous lengths and securely tied to fabric 18 inches on center. Provide turnbuckles as necessary to maintain tension in the wire. Secure ends of tension wire to posts in a manner to prevent slipping and insure proper tension. Secure tension wire shall be secured to fabric with No. 12 gauge galvanized tie wire, double-wrapped at 18 inch intervals.
- I Tie Wires: Double-knuckle so exposed ends will not present a hazard.

3.4 CLEANING

- A During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

**SECTION 32 3119
DECORATIVE METAL FENCES AND GATES**

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes decorative welded tube steel fencing and gates, including swing gates, hardware, and miscellaneous hardware, as shown on Drawings and as specified herein.
- B. Related Sections:
 - 1. Division 03 Concrete Sections for fence and gate footings.
 - 2. Division 04 Masonry Sections for concrete unit masonry walls/piers supporting fences and gates.
 - 3. Section 05 5000 – Metal Fabrications, for steel tube framed screen walls and gates fabricated from steel tube with corrugated metal panel faces.

1.2 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Provide certification that manufacturer has been in business for a minimum of 5 years fabricating and finishing decorative metal fencing comparable to that specified in this Section and as detailed on Drawings.
 - 2. Subcontractor Qualifications: Fabricate and install the work of this Section using a subcontractor having a minimum of 3 years experience and trained in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance and desired aesthetic affect of the work of this Section.
- B. Welder Qualifications: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure."
- C. Reference standards: Except as modified by governing codes and by the Contract Documents, comply with the applicable provisions and recommendations of the following.
 - 1. NAAMM Metal Finishes Manual
 - 2. AWS Structural Welding Code

1.3 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings showing layouts, dimensions, construction details and installation, including fastening devices and connection to adjoining construction and relationship with other work.
- B. Submit manufacturer's color charts or color sample units showing full range of available powder coated finish colors and finishes for initial selection purposes.
- C. Submit samples for verification purposes of powder coated finish in color selected by Architect.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Coordinate delivery of fencing from Fencing Manufacturer.

- B. Storage: Store off ground and under cover, protected from damage in accordance with fencing manufacturer's instructions.
- C. Handling: Handle materials so that surfaces are protected. Prevent distortion or damage to fabricated pieces.

1.5 WARRANTY

- A. Provide manufacturers standard 20 year warranty covering defects in material finish, including cracking, peeling, chipping, blistering or corroding, covering all structural fence components (i.e. rails, pickets, and posts), for a period of 20 years. Warranty covers reimbursement of labor necessary to restore or replace components found to be defective for a period of 5 years.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Steel material for fence panels and posts shall conform to the requirements of ASTM A653, with a minimum yield strength of 45,000 psi and a minimum zinc (hot-dip galvanized) coating weight of 0.60 oz/ sq. ft., Coating Designation G-60.
- B. Material for pickets shall be 3/4 inch square x 17 ga. tubing. The rails shall be steel channel, 1-1/2 inches x 1.4375 inches x 14 Ga. Picket holes in the rail shall be spaced 3-15/16 inches on center. Fence and gate posts shall meet the following minimum size requirements, but not less than tube sizes detailed on Drawings:

Minimum Posts Sizes		
<u>Fence Posts</u>	<u>Panel Height</u>	
2-1/2" x 16 Ga.	Up to & Including 6' Height	
<u>Gate Leaf</u>	<u>Gate Height</u>	
	<u>Up to & Including 4'</u>	<u>Over 4' Up to & Including 6'</u>
Up to 4'	2-1/2" x 14 Ga.	3" x 12 Ga.
4'1" to 6'	3" x 12 Ga.	3" x 12 Ga.
6'1" to 8'	3" x 12 Ga.	4" x 12 Ga.
Over 8'	4" x 12 Ga. minimum as required by length and weight of gate	4" x 12 Ga. minimum as required by length and weight of gate

- C. Rail Attachment Brackets:
 - 1. 90 degree design for straight (plumb and level) fence applications.
 - 2. Adjustable Bracket: Provide ball and socket design capable of 30 degree swivel (up/down – left/right) for angled installations as necessary.
- D. Picket Tops/Caps/Adornments: Provide types and design as indicated on Drawings, matching fence posts and pickets in finish and color. If not indicated, provide manufacturer's standard cap designed for insertion into top of open pickets and posts.
- E. Anchor and Expansion Bolts: ASTM A307 anchor bolts with hot-dipped galvanized finish, unless otherwise noted. Expansion bolts to have I.C.B.O. rating for material into which the installation takes place. Furnish anchor and expansion bolts with steel washers.
- F. Concrete Footings: Normal weight 3,000 psi 28 day compressive strength, 3 inch slump, 1 inch maximum aggregate size concrete complying with Division 03 Concrete Sections, unless otherwise noted on Drawings.

- G. Touch-Up Primer and Finish: Provide manufacturers spray cans or paint pens to touch- up prime and finish exposed surfaces.

2.2 COMPONENTS AND HARDWARE

- A. Pickets, Rails, and Posts: Sizes and designs indicated on Drawings.
- B. Gates: Rails, pickets, and accessories to match fence.
 - 1. Bracing: Welded frame for bracing for structural support of minimum 300 pounds.
 - 2. Swing Gate Hardware: Galvanized steel or malleable steel to suit gate application.
 - a. Lockset: Self-latching, level handled, key-operated, exterior grade latch/lockset complying with requirements of Section 08 7100 and as indicated on Drawings.
 - b. Swing Gate Hinges: Tru Close www.truclose.net Heavy Duty Spring Hinge for Metal Gates, No. TCHD1AL2-MK2, or as otherwise selected by Architect from manufacturer's standard hinges based on application, weight, height, and expected number of gate cycles.
 - c. Exit Hardware: Exterior grade, push-bar exit device complying with requirements of Section 08 7100 and as indicated on Drawings.

2.3 FABRICATION

- A. Fabricate fencing and gates to configurations shown on Drawings.
- B. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.
- C. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection by fusion welding process, thus completing the rigid panel assembly.
- D. Manufactured panels and posts shall be subjected to an inline electrode position coating (E-Coat) process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by duplex application of epoxy primer and acrylic topcoat. Minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils.
 - 1. Color: As selected by Architect from manufacturer's standard available colors.
 - 2. Coated panels and posts shall be capable of meeting or exceeding coating performance criteria of ASTM F2408.
- E. Manufactured fence system shall be capable of meeting vertical load, horizontal load, and infill performance requirements for Industrial weight fences under ASTM F2408.
- F. Post Bases at CMU Walls: Where indicated on CMU stem walls, fabricate posts with welded steel base plates for attachment to concrete unit masonry walls, or with extended post length for embedment into CMU wall construction.
- G. Post Base for Footings: Fabricate posts of length indicated with concrete stud anchors for embedment into concrete footings as detailed.

- H. Gates: Fabricate to sizes and shapes indicated using steel tubing and other miscellaneous steel items as necessary for rigidity.
 - 1. Weld frame units with continuously gas arc welded joints to form rigid one-piece units.
 - 2. Punch rails to receive pickets and weld inside gateframe.
 - 3. Attach pickets rails by welding.
 - 4. Miter corners and use concealed field splices wherever possible.
 - 5. Provide smooth exposed edges.
 - 6. Prepare swing gates as shown or required for hardware specified and as indicated on Drawings. Provide necessary supports and reinforcements required to support hardware.
 - 7. Quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles.
- I. Insulate contact joints between dissimilar materials to prevent electrolytic or corrosive action.

2.4 FINISHES

- A. Powder Coat Finish: Provide multi-step oven cured TGIC powder coated finish consisting of thorough cleaning, pretreatment, powder coat primer and Ultra polyester finish (TGIC) at 2-4 mils.
 - 1. Color: As selected by Architect from Fence Manufacturer's full range of colors.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of subsurfaces.
 - 1. Verify areas to receive fencing are completed to final grades and elevations.
- B. Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A. Posts:
 - 1. Space posts uniformly as shown on Drawings.
 - 2. Anchor post bases to supporting concrete masonry wall construction with anchor bolts set into CMU wall construction as detailed. Check each post for vertical and top alignment, and maintain in position during placement of anchor bolts.
 - 3. Where embedded in concrete, check each post for vertical and top alignment, and maintain in position during placement and concrete curing.
 - 4. Align fence panels between posts. Firmly attach rail brackets to posts.
- B. Posts shall be set in concrete footers having a minimum depth of 36 inches. Provide footing sizes of the following minimum diameter, but not less than diameters and depth of embedment recommended by the fence manufacturer.
 - 1. Refer to Section 31 00 00 – Earthwork and Division 03 Concrete Sections for forming, reinforcement and cast-in-place concrete for footings.

2. Footing Diameters – Minimum:
 - a. End and Corner Posts: 12 inches diameter.
 - b. Line Posts: 10 inches diameter.
 - c. Gate Posts: Size and depth as required by size and weight of gate, 12 inches diameter.
 3. Footing Tops: Shall be troweled smooth and beveled or crowned to drain moisture away from posts. Lower edge of bevel shall meet established finish grade.
- C. Install posts and vertical members plumb within 1/8 inch of vertical. Install longitudinal members parallel with each other and level to within 1/8 inch per 10 running feet.
- D. Comply with the following steps when cutting/drilling rails or posts:
1. Remove all metal shavings from cut area.
 2. Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole and allow to dry.
 3. Apply 2 coats of custom finish paint matching fence color
 4. Failure to seal exposed surfaces per steps 1-3 above will negate warranty.
- D. Gate Installation:
1. Gate posts shall be spaced according to the manufacturers' gate drawings, width of gate indicated on Drawings, and type of hardware selected.
 2. Securely anchor gates and erect plumb, level, and true, with smooth operating hardware installed in accordance with manufacturer's recommendations.
 3. Secure for full opening without interference.
 4. Attach hardware by means which will prevent unauthorized removal.
- 3.3 ADJUSTMENT
- A. Lubricate hinges and adjust gates to swing and operate freely and latch and lock securely. Adjust hardware for smooth operation.
- B. Touch up pre-finished surfaces damaged by installation to perfectly match powder coated finish using compatible touch-up paint recommended by Manufacturer.
- 3.4 CLEANING
- A. During the course of the Work and on completion of the Work, remove excess materials, equipment and debris and dispose of away from premises. Leave Work in clean condition.

END OF SECTION

SECTION 32 3916
MANUFACTURED BARBEQUE GRILLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes installation of Owner Furnished manufactured natural gas burning slide- in barbeque grills, including lockable doors.
- B. Related Sections:
 - 1. Division 22 for natural gas piping, including timed auto shut-off device on supply gas piping installed immediately before BBQ units. (where applicable)

1.2 SUBMITTALS

- A. Submittals indicated herein shall be furnished by the Owner to the Contractor at time of delivery of Owner Furnished BBQ equipment.
- B. Product Data: Submit Manufacturer's specifications and installation instructions.
- C. Shop Drawings: Submit drawings showing space requirements, and piping rough-in locations.
- D. Operating and Maintenance: Submit 2 copies of Manufacturer's instructions for operating and maintaining equipment.

1.3 QUALITY ASSURANCE

- A. Certifications: Provide gas-burning BBQ's that carry the design certification seal of the AGA and that comply with ANSI Z223.1 (NFPA54).

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.
- B. Storage: Adequately protect against damage while stored at the site.
- C. Handling: Comply with Manufacturer's instructions.

1.5 WARRANTY

- A. Furnish Manufacturer's standard warranty with lifetime warranty on burners.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

- A. Manufactured Slide-in Barbeque Grills: Owner Furnished for Installation by Contractor, natural gas burning stainless steel construction BBQ grills as indicated on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION

- A Verification of Conditions: Examine subsurfaces to receive Work and report detrimental conditions in writing to Architect. Verify rough openings are adequate installation. Commencement of Work will be construed as acceptance of subsurfaces.
- B Coordination: Coordinate with other work which affects, connects with, or will be concealed by this Work.

3.2 INSTALLATION

- A Install manufactured units at locations shown on Drawings in accordance with Manufacturer's instructions.
- B Comply with AGA and NFPA requirements for installation of units.
- C Connect equipment to gas rough-ins as applicable. Securely fasten built-in items where required.

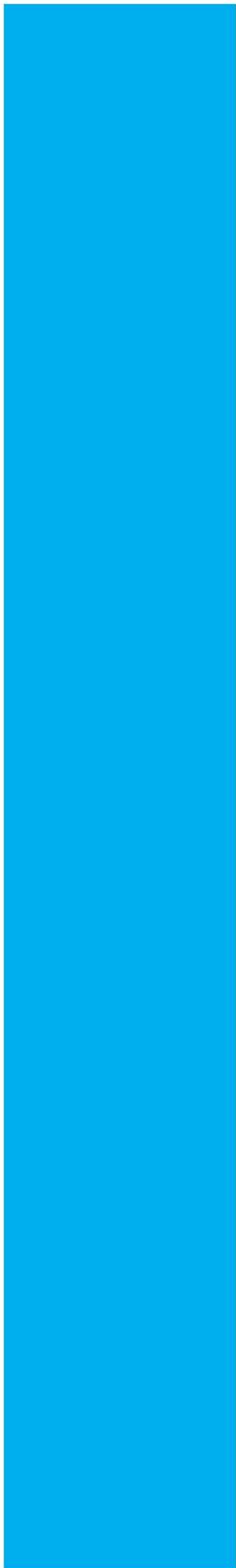
3.3 FIELD QUALITY CONTROL

- A Tests: Test and adjust BBQ grill for proper operation.

3.4 CLEANING

- A During the course of the Work and on completion, remove and dispose of excess materials, equipment and debris away from premises. Leave Work in clean condition.

END OF SECTION





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RICKER • ATKINSON • McBEE • MORMAN & ASSOCIATES, INC.

Geotechnical Engineering • Construction Materials Testing

Native American Connections
4520 North Central Avenue, Suite 600 Administration
Phoenix, Arizona 85012

November 19, 2021
Revised November 30, 2021
Supplement No. 1

Attention: Joe Keeper

Subject: Geotechnical Engineering Report
Multifamily Community Phased Development (The Moreland)
1125 North 3rd Street
Phoenix, Arizona

RAMM Project No. G26950

This letter presents drilled pier and revised lateral earth pressure recommendations for the proposed Multifamily Community Phased Development (The Moreland), to be located in Phoenix, Arizona. We have reviewed structural plans and a distribution of structural loads for the project, prepared by Wright Engineers and discussed with Paul Krizan and Josh Erickson Wright Engineers via email in preparing this letter. The proposed five-story parking structure will have maximum structural loads on the order of 20 to 30 kips per linear foot for bearing walls and 140 to 700 kips for columns. Our drilled pier and revised lateral earth pressure recommendations are presented below:

Drilled Piers:

The proposed parking garage structure may be supported on machine-cleaned straight shaft drilled piers founded on undisturbed silty sand and gravel to sand, gravel and cobbles site soils. The following data contains drilled pier design recommendations based on AASHTO bridge design procedures. The required depth of pier embedment and pier diameter should be calculated for both design axial and design lateral loads to determine the most critical design case. The recommendations presented are based on currently available structure geometry and loads. If structure plans and/or loads change significantly, we should be notified for review and possible supplemental recommendations.

Side Friction (Q_s) on the pier was calculated using the following equation.

$$Q_s = \pi B \sum_N^i \gamma'_i Z_i \beta_i \Delta Z_i$$

- End Bearing (Q_T) was calculated using the following equation.

$$Q_T = q_T A_T$$

- Weight of drilled pier (W) was calculated for each depth and diameter.
- Allowable pier capacity Q_{all} (net pressure) was calculated using the following equation.

$$Q_{all} = \frac{Q_s + Q_T - W}{FS}$$

FS = Composite Factor of Safety (2.5)

The allowable drilled pier capacities shown on the attached capacity charts should be considered allowable maximums for dead plus design live load, and may be increased by one-third when considering total loads including transient wind or seismic forces. Estimated settlements are less than ½ inch for the anticipated loading conditions. Piers should be spaced no closer than 2.5 diameters center-to-center (CTC) between foundation elements.

We recommend that drilled piers extend to a depth of at least 15 feet below existing site grade. Drilled piers should be machine cleaned and inspected from the ground surface. The bottom should be level and contain no piles of drill spoils. A clean out bucket and/or a flat bottom auger may be required to achieve this condition.

Excavation of the drilled piers in the site soils should be possible with conventional drilling equipment. Some raveling or caving will likely occur in the silty sand and gravel to sand, gravel and cobbles site soils. Steel casing or lean mix concrete slurry may be required during drilling to stabilize the areas of raveling and/or caving.

Lateral Earth Pressures:

The following tabulation presents the recommended lateral earth pressures and base friction values which should be used in the lateral design of footings and retaining walls. Lateral capacities of drilled piers should be based on the following p-y curve parameters and a computer program such as L-Pile. The lateral pressures are equivalent fluid pressures for average anticipated conditions.

Backfill Pressures:

Unrestrained Walls -----40 psf/ft
 Restrained Walls -----60 psf/ft

Passive Pressures:

Continuous -----250 psf/ft
 Isolated column footings-----300 psf/ft
 Drilled pier * – (0 to 15 feet)-----350 psf/ft
 Drilled pier * – (greater than 15 feet)-----500 psf/ft

Coefficient of Base Friction:

Concrete to soil----- 0.40
 Plastic membrane to soil ----- 0.25

* Tie beams are not required unless the lateral loads in individual drilled piers exceed the lateral capacity of the drilled pier.

LPILE Parameters

Depth (feet)	Density (γ, pcf)	Soil Type	Phi (Ø, °)	Cohesion (C, psf)	Strain (ε ₅₀)	Soil Modulus (k, pci)
0 to 15	110	Ø,C	10	250	0.020	30
15+	115	Ø	35	0	0.005	400

The above equivalent fluid pressures are for vertical walls with horizontal backfills and do not include temporary loads imposed by compaction equipment or permanent loads resulting from

backfill swell pressures, hydrostatic pressures or surcharge loads. All retaining walls should contain weep holes to reduce the potential for the buildup of hydrostatic pressures.

If you have any questions, please do not hesitate to call. This letter should be attached to and made a part of our original report dated October 30, 2020.

Respectfully submitted,

RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.



By: Kip E. Reese, P.E.

/ker

Copies to: Addressee <j.keeper@nativeconnections.org>
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**Geotechnical Engineering Report
Multifamily Community Phased Development
1125 North 3rd Street
Phoenix, Arizona
RAMM Project No. G26950**



For:
Native American Connections
4520 North Central Avenue, Suite 600 Administration
Phoenix, Arizona 85012



By:
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Geotechnical Engineering • Construction Materials Testing

Native American Connections
4520 North Central Avenue, Suite 600 Administration
Phoenix, Arizona 85012

October 30, 2020

Attention: Joe Keeper

Subject: Geotechnical Engineering Report
Multifamily Community Phased Development
1125 North 3rd Street
Phoenix, Arizona

RAMM Project No. G26950

Attached to this letter is the Geotechnical Engineering Report for the proposed Multifamily Community Phased Development, to be located in Phoenix, Arizona.

The proposed phased development will consist of a four-story and a five-story multifamily buildings of wood frame construction and without basements and a multi-story (five stories or less) parking structure on an approximately two-acre developed parcel. The results of our field explorations; laboratory testing; and engineering analysis, evaluation and recommendations are presented in the report.

The following is a brief summary of selected recommendations.

- A. Foundations (Structural loads should not exceed 8 kips per linear foot for walls and 100 kips for columns):
 - Support on at least 1.5 feet of compacted fill.
 - Found at least 1.5 feet or 2.0 feet below finished grade.
 - Design for allowable bearing pressure of 2000 psf or 2500 psf, respectively.
 - Zone of compaction must extend through any existing fill and/or disturbed soils.
- B. Foundations (Structural loads should not exceed 10 kips per linear foot for walls and 350 kips for columns):
 - Support on at least 1.5 feet of compacted fill.
 - Found at least 3.0 feet or 3.5 feet below finished grade.
 - Design for allowable bearing pressure of 3500 psf or 4000 psf, respectively.
 - Zone of compaction must extend through any existing fill and/or disturbed soils.
- C. Site Soil:
 - Use as fill and backfill in all areas of the site.
 - Must be scarified and compacted at moisture content range of optimum to 3 percent above optimum in building and exterior slab areas.
- D. Pavement Sections:
 - Auto Parking and Drives – 2 inches of asphalt concrete on 6 inches of base material; or 6 inches of Portland cement concrete.

- Truck Drives and Fire Lanes – 3 inches of asphalt concrete on 8 inches of base material; or 7 inches of Portland cement concrete.

The attached report was prepared based on project and site data available at this time and was prepared in a manner and to the standards of the local geotechnical engineering practice. Our services did not include evaluations for the presence of hazardous materials; for concrete durability and corrosion potential with respect to on-site soils and to site use water sources; for area subsidence resulting from groundwater withdrawal; or for other geologic hazards.

If you have any questions, please do not hesitate to call.

Respectfully submitted,

RICKER • ATKINSON • MCBEE • MORMAN & ASSOCIATES, INC.



By: Kip E. Reese, P.E.

Reviewed By: Kenneth L. Ricker, P.E.

/kes

Copies to: Addressee (j.keeper@nativeconnections.org)

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REPORT



R·A·M·M

INTRODUCTION

This report presents the results of our geotechnical engineering services for the proposed Multifamily Community Phased Development, to be located in Phoenix, Arizona. The scope of our services included performing a field exploration program, laboratory analysis and geotechnical engineering evaluation, analysis and recommendations. The geotechnical recommendations presented herein consist of foundation design, site development, material suitability and requirements, pavement thicknesses, and site preparation and grading procedures. We would be pleased to discuss with you any additional recommendations you may require. In addition, we are available to review project specifications and plans for conformance with our recommendations at no charge to you.

This firm should be notified for additional evaluation and recommendations should the building design parameters (locations, types, sizes, structural loads), site use or conditions encountered during construction differ from those presented herein.

PROPOSED CONSTRUCTION

The proposed phased development will consist of a four-story and a five-story multifamily buildings of wood frame construction and without basements and a multi-story (five stories or less) parking structure on an approximately two-acre developed parcel. The maximum structural loads for the building will be on the order of 2 to 10 kips per linear foot for bearing walls and 60 to 300 kips for columns. The concrete slab-on-grade ground-level floors will probably be founded at or slightly above existing site grade.

SITE CONDITIONS

The Multifamily Community Phased Development site is located at 1125 North 3rd Street, in Phoenix Arizona. At the time of the field exploration the site consisted of a relatively flat developed parcel with one- and two-story buildings, canopy covered paved parking and paved parking and drives and a swimming pool. Vegetative cover consisted of landscaping.

FIELD EXPLORATIONS

Subsurface conditions at the site were explored by drilling four test borings to depths of 12.5 to 25.0 feet in the proposed building areas, as shown on the Site Plan in Appendix A. The test borings were drilled with a CME 55 drill rig using 7-inch diameter, hollow-stem auger. The drilling equipment and crew were provided by Wildcat Drilling, Inc. The test boring locations were

determined in the field by a field technician from our firm. During the field exploration, representative disturbed and undisturbed samples were obtained, the test borings logged and soils field classified by our field technician, who also directed the drill crew. The relatively undisturbed samples were obtained by driving a 3-inch diameter, ring-lined, open-end sampler into the soil with a 140-pound hammer dropping 30 inches. The results of the field explorations are presented on the Test Boring Logs in Appendix A.

LABORATORY ANALYSIS

Representative samples obtained during the field exploration were subjected to the following tests in our laboratory.

<u>Type of Test</u>	<u>Type of Sample</u>	<u>Number of Samples Tested</u>
Compression	Undisturbed	2
Swell	Remolded	2
Percent Passing No. 200 Sieve & Atterberg Limits	Representative	2
Moisture Content/Dry Density *	Undisturbed	20

* Reported in the Test Boring Logs

The results of the laboratory tests are presented in Appendix B.

SUBSURFACE CONDITIONS

The subsurface conditions encountered at the test boring locations were relatively uniform. The results of each test boring are presented in Appendix A in the Test Boring Logs. Test Borings 2, 3 and 4, located in paved areas, encountered 2.5 to 3.0 inches of asphalt concrete overlying 3.0 to 5.0 inches of base material. In general, the surface and near surface soils encountered in the test borings in the proposed building areas, and extending to depths of 11.0 to 12.5 feet, consisted of sandy clay containing trace to some gravel. These soils were stiff to very stiff, had medium plasticity and had intermittent light cementation. Underlying these soils and extending for the full depth of exploration (12.5 to 25.0 feet), consisted silty sand containing some to with gravel and occasional to trace amounts of cobbles was encountered. This deposit was medium dense to dense, had non-plastic to low plasticity fines and had zones of silty sand and gravel containing some cobbles. Refusal to auger penetration occurred in this deposit at depths of 14.0 feet, 19.0 feet and 12.5 feet in Test Borings 1, 2 and 4, respectively. Soil moisture contents were described as damp to moist in the sandy clay soils and as slightly damp to damp in the silty sand soils. No groundwater was observed in the test borings during the drilling operations.

DISCUSSIONS OF TEST RESULTS

Remolded samples of the surface soils from the site exhibited low to moderate swell potentials following wetting when tested in the laboratory. Undisturbed samples from anticipated foundation grade were found to undergo some compression during loading to approximate foundation loads. Upon wetting at approximate foundation loads these soils underwent some additional compression (Test Boring 1) or slight expansion (Test Boring 3).

FOUNDATION DESIGN RECOMMENDATIONS

Spread Footings:

The proposed Multifamily Community Phased Development buildings can be supported on shallow spread footings. Due to the past development of the site and in order to provide uniform support, footings for the proposed buildings should be founded on at least a 1.5-foot-thick layer of compacted fill as described in the "Site Preparation and Grading Procedures" section of this report. Footings thus founded and with structural loads not exceeding 8 kips per linear foot for walls and 100 kips for columns may be designed using an allowable bearing pressure of 2000 psf or 2500 psf, provided the bottom of the footings are at least 1.5 feet or 2.0 feet, respectively, below finished grade. Footings with structural loads not exceeding 10 kips per linear foot for walls and 350 kips for columns may be designed using an allowable bearing pressure of 3500 psf or 4000 psf, provided the bottom of the footings are at least 3.0 feet or 3.5 feet, respectively, below finished grade and founded on 1.5 feet of compacted fill. The zone of compaction must extend through any fill and/or disturbed soils. Finished grade is defined as the lowest adjacent finished grade within 5 feet of the perimeter of the building.

The allowable bearing capacity should be applied to maximum, design dead plus live loads and may be increased by one-third when considering temporary loads such as transient wind or seismic loads. A one-third increase may also be used for toe pressures due to eccentric or lateral loadings, assuming the entire footing bearing surface remains in compression. The weight of the footing concrete below grade may be neglected in dead load computations. The recommended minimum footing widths are 2.0 and 1.33 feet for isolated columns and continuous wall footings, respectively. A Site Class of D will apply to the site per the 2012, 2015 and 2018 International Building Code (IBC). Soils properties to a depth of 100 feet are not known in sufficient detail to determine Site Class C.

The estimated total and differential footing settlements for the loading conditions described above are less than ½ inch for wall loads up to 8 kips per linear foot and 100 kips for column loads, and less than ¾ inches for wall loads up to 10 kips per linear foot and 350 kips for column loads, if soils below footing level remain at or below the construction moisture content. Additional post-construction, differential settlement of equal or greater magnitude could occur if bearing soils become wet after construction. Therefore, continuous footings and stem walls should be reinforced and masonry walls constructed with properly designed reinforcement and with frequent expansion/contraction joints. Positive drainage away from the perimeter of the building is essential to minimize the potential for moisture infiltration into bearing soils. Any long-term saturation of the bearing soils could result in damaging differential settlements.

Lateral Earth Pressures:

The following tabulation presents the recommended lateral earth pressures and base friction values which should be used in the lateral design of footings and retaining walls. The lateral pressures are equivalent fluid pressures for average anticipated conditions.

Backfill Pressures:	
Unrestrained walls -----	40 psf/ft
Restrained walls -----	60 psf/ft
Passive Pressures:	
Continuous -----	250 psf/ft
Isolated column footings -----	350 psf/ft
Coefficient of Base Friction:	
Concrete to soil -----	0.40
Plastic membrane to soil -----	0.25

The above equivalent fluid pressures are for vertical walls with horizontal backfills and do not include temporary loads imposed by compaction equipment or permanent loads resulting from backfill swell pressures, hydrostatic pressures or surcharge loads. All retaining walls should contain weep holes to reduce the potential for the buildup of hydrostatic pressures.

SITE DEVELOPMENT RECOMMENDATIONS

Concrete Slab-On-Grade Support:

The site soils are medium in plasticity and, when compacted and wetted, these soils exhibit low to moderate swell potentials. These soils, when scarified and compacted, will provide adequate support for concrete slabs-on-grade when compacted at a moisture content range of optimum to optimum plus 3 percent. Interior slabs should be founded on a minimum 4-inch thickness of base

material. Exterior slabs should be founded on a prepared subgrade. Interior slabs should be founded on a minimum 4-inch thickness of base material. Exterior slabs should be founded on a prepared subgrade. All unreinforced slabs-on-grade should be jointed as per ACI (American Concrete Institute) or PCA (Portland Cement Association) guidelines.

Vapor retarders/barriers such as plastic membranes may be required in vapor-sensitive floor covering areas or in humidity controlled areas. Should plastic vapor retarders/barriers be used, the membrane should be at least 15 mil in thickness, have all seams and penetrations sealed per manufacturer's recommendations and be placed in accordance with ACI 302.2R.

Surface Drainage:

Most soils will undergo some degree of volume change as the result of wetting. The degree of volume change will depend on the type of soil, swell potential, natural soils structure or degree of compaction (if a fill). These volume changes could result in movements in overlying buildings and non-structure elements including sidewalks, planters, retaining walls, floor slabs, etc. Therefore, good site and surface drainage away from these elements is required. In addition, water should not be allowed to pond within 10 feet of the buildings or other elements which are sensitive to movements. The exterior footing excavation backfill must be well compacted to minimize the possibility of moisture infiltration through this zone. All joints in the concrete floor slabs and at walls of the buildings must be sealed with flexible waterproof joint sealer.

Excavatability:

The excavatability of site materials is difficult to evaluate based only on the exploration equipment used during this design report. Therefore, we recommend that the contractor evaluate the excavatability of site materials by performing test excavations with the size and type of equipment the contractor plans on using at the site. For design purposes the following paragraph presents our best analysis as to the excavatability of site soils.

The near surface and underlying soils to depths of 12.5 to 25.0 feet can probably be removed with conventional excavating equipment. Some caving may occur in the silty sand soils and in the silty sand with gravel soil zones. OSHA requires all excavations over five feet in depth, in which personnel are to enter, be either braced or sloped in accordance with OSHA regulations.

Workability:

Wetting site soils such that moisture contents are at or above optimum could result in some soil pumping under dynamic loadings such as heavy construction equipment driving over the area. In the building areas, some pumping is not detrimental to foundation or floor slabs provided the specified percent compaction is achieved. However, in flexible pavement areas where pumping has occurred, and in building areas where severe pumping has damaged subgrade conditions, the area should be allowed to dry until soils are workable without pumping or the wetted areas removed and replaced with drier site soils. The near surface site soils were at or above the plastic limit at the time of our field exploration and will likely require drying.

PAVEMENT DESIGN RECOMMENDATIONS

Asphalt Concrete Pavements:

The following asphalt concrete pavement sections are based on anticipated traffic types and frequencies, site soil conditions and a 20-year design life. Therefore, any material imported to the site and placed in pavement areas should have support characteristics the same as or better than the site soils.

<u>Area of Use</u>	<u>Pavement Section</u>	
	<u>Asphalt Concrete</u>	<u>Base Material</u>
Auto Parking and Drives	2.0 inches	6.0 inches
Truck Drives and Fire Lanes	3.0 inches	8.0 inches

These sections are minimal and will require periodic maintenance (seal coats, overlays or patching) where proper drainage is provided and maintained. Should moisture penetrate to the subgrade soils or ponding occur on or adjacent to the pavement section, a significant reduction in pavement life could occur along with increased maintenance. Therefore, good surface drainage on and adjacent to the pavement is essential to achieving the desired pavement life.

Portland Cement Concrete:

The following Portland cement concrete pavement (PCCP) sections are based on anticipated traffic types and frequencies and site soil conditions. Therefore, any material imported to the site and placed in pavement areas should have support characteristics the same as or better than the site soils.

<u>Area of Use</u>	<u>PCCP Section</u>
Auto Parking and Drives	6.0 inches
Truck Drives and Fire Lanes	7.0 inches

Base material is not required below the PCCP section; however, if construction occurs during the summer months the base material would help reduce the potential for slab curling and shrinkage cracking. A maximum joint spacing of 12 to 15 feet should not be exceeded in either direction and all joints should be designed to provide load transfer. Joint detail, joint layout and concrete batching, placing, curing and observation procedures should be in accordance with the recommendations developed by the Portland Cement Association.

MATERIALS SUITABILITY AND REQUIREMENTS

Site Materials:

The site soils are of medium plasticity and exhibit low to moderate swell potentials when compacted and wetted. These soils may be used as fill in all areas of the site provided they are placed and compacted at a moisture content range of optimum to optimum plus 3 percent in building and exterior slab areas. Existing asphalt pavement, milled or pulverized and base material may be used as fill in all areas of the site. All materials should be free of organics, debris, rubble and material greater than 6 inches in size.

Imported Soils:

Fill required beyond that available from site sources and used to raise the building and exterior slab areas, or for use as retaining wall backfills, should be imported soils meeting the following requirements:

Minimum Percent Passing No. 4 Sieve -----30
Maximum Particle Size -----6 inches
Maximum Swell Potential -----1.5%*

* Based on a sample which is remolded to 95% of the ASTM D698 maximum dry density at a moisture content of 2 percent below optimum, placed under a surcharge load of 100 psf and wetted.

Imported soils should have a low corrosion potential as determined by a corrosion expert and/or material supplier and should meet ACI 318 negligible sulfate exposure durability requirements for concrete.

Base Material:

Base material used below concrete slabs and pavements should conform to the requirements of Maricopa Association of Governments (MAG) Specifications for Aggregate Base (Section 702). Existing asphalt concrete pavement and base materials may be used as base material provided it meets the MAG Specifications.

Asphalt Concrete Pavement:

Asphalt concrete pavement materials should conform to the requirement of MAG Specifications for Asphalt Concrete (Section 710).

Portland Cement Concrete Pavement:

The PCCP should have a minimum compressive strength of 4000 psi at 28 days and a maximum slump of 4 inches at the time of placement. The PCCP should conform to the requirements of MAG Specifications for Portland Cement Concrete (Section 725, Class AA).

SITE PREPARATION AND GRADING PROCEDURES

Building and Pavement Areas:

Recommendations presented in the previous sections of this report are based upon the following site preparation and grading procedures. Therefore, all earthwork should be accomplished with observation and testing by a qualified technician under the direction of a registered geotechnical/materials engineer. The following apply to the areas within and extending 5 feet beyond the footprint of the buildings and in exterior slab and pavement areas.

1. Clear and grub the site by removing and disposing of all vegetation in areas to be developed, any debris or rubble and remnants of any former developments (existing buildings, shade structures, pavement, swimming pool).
2. Strip the site of any existing fill zones, fill piles, backfill zones and unstable soils. During stripping observe the surface for evidence of buried debris, vegetation or disturbed materials which will require additional removal. Areas steeper than 5H to 1V should be benched and any depressions widened to accommodate compaction equipment.
3. Prepare the ground surface in at-grade areas, in fill areas and in areas cut to grade by scarifying, moisture conditioning and compacting the exposed surface soils to a depth of 10 inches.
4. In footing areas remove (and stockpile for future use) soils from beneath and 1.5 feet beyond all footings to a minimum depth of 1.5 feet below the bottom of footings. The exposed surface after removal should be moistened and proof rolled prior to backfilling.

5. Moisture condition and place all fill and backfill materials required to achieve specified grades. Fill materials should be moisture conditioned, placed and compacted in horizontal lifts of thicknesses compatible with the compaction equipment being used.
6. Compact subgrade, fill, backfill, subbase fill or base material to the following minimum percent compaction of the ASTM D698 maximum dry density for each lift.

<u>Material</u>	<u>Minimum Percent Compaction</u>
<u>Soil:</u>	
Deep backfill zones (greater than 5 feet below finished grade) -	100
Below foundations and pavement sections -----	95
Below concrete floor slabs (above footings) -----	90
<u>Base Material:</u>	
Below concrete slabs -----	95
Below pavement sections -----	100
Backfill: * -----	90

* Outside of building, exterior slab and pavement areas.

7. The moisture content of soil and base materials at the time of compaction should be:

<u>Type</u>	<u>Area of Use</u>	<u>Moisture Content</u>
On-Site	Building, Exterior Slabs	Optimum to optimum plus 3%
On-Site	Pavements	2% below optimum or lower
Imported	Building, Exterior Slabs	Optimum plus or minus 3%
Imported	Pavements	2% below optimum or lower
Base Material	Building and Pavements	Optimum plus or minus 3%

8. Any soils which are disturbed or overexcavated by the contractor outside the limits of the plans or specifications should be replaced with materials compacted as specified above. The above compaction requirements will also apply to any disturbance occurring within the construction limits, including but not limited to backfilling of trenches inside and outside of the building pad.

City of Phoenix Special Inspections:

The City of Phoenix Building Safety Division has developed a Special Inspection and Observation Manual for use with the 2018 International Building Code (IBC) and the City of Phoenix Construction Code Supplements to the IBC. In accordance with the manual special inspection may be required for various activities related to foundation support. The foundation designer and

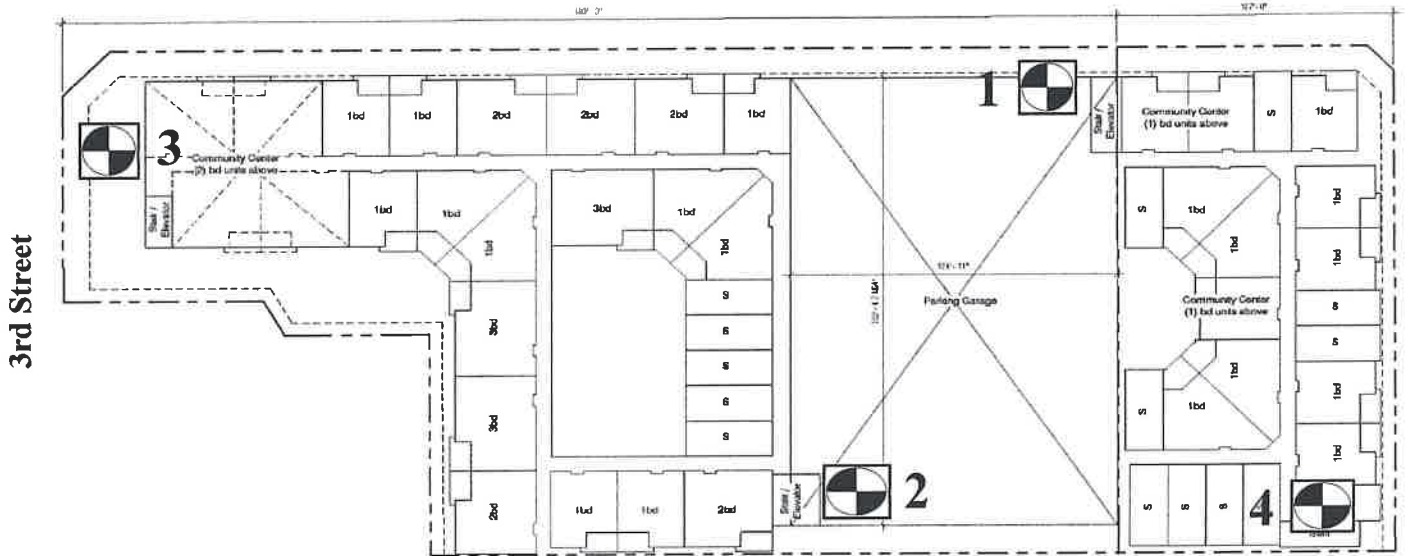
City plan checker should be consulted to determine if these provisions apply to this project. If special inspection is required, then the owner/legal agent must retain the engineer of record to be responsible for the special inspection. Both must execute a certificate of special inspection prior to, and following this phase of the work.

APPENDIX A
FIELD EXPLORATIONS



R·A·M·M

Moreland Street



3rd Street

Ref: Site Plan image, untitled,
provided by Native American Connections, undated.

Note: Site Address - 1125 North 3rd Street, Phoenix, Arizona.



Test Boring Location



Not To Scale

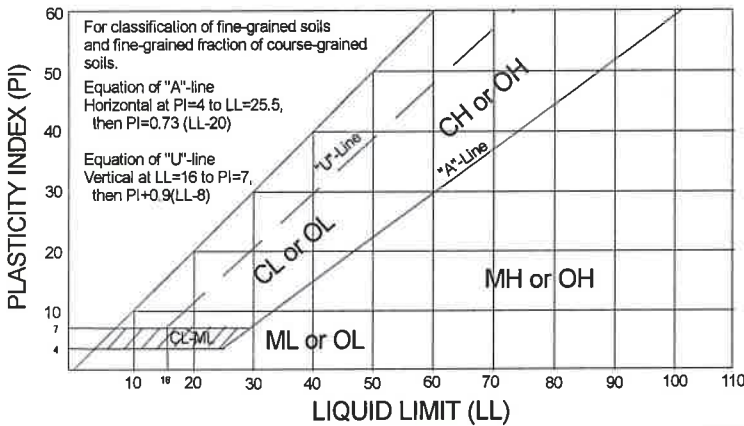
SITE PLAN

LEGEND

CLASSIFICATION OF SOILS

ASTM Designation: D2487-11
(Based on Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests				Soil Classification		
				Group Symbol	Name	
COARSE-GRAINED SOILS More than 50% retained on No. 200 Sieve	Gravels More than 50% coarse fraction retained on No. 4 Sieve	Clean Gravels Less than 5% fines	$Cu > 4$ and $1 < Cc < 3$	GW	Well graded gravel	
			$Cu < 4$ and/or $1 > Cc > 3$	GP	Poorly graded gravel	
		Gravels with Fines More than 12% fines	Fines classify as ML or MH	GM	Silty gravel	
			Fines classify as CL or CH	GC	Clayey gravel	
		Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	$Cu > 6$ and $1 < Cc < 3$	SW	Well-graded sand
			$Cu < 6$ and/or $1 > Cc > 3$	SP	Poorly graded sand	
		Sands with Fines More than 12% fines	Fines classify as ML or MH	SM	Silty sand	
			Fines classify as CL or CH	SC	Clayey sand	
	FINE-GRAINED SOILS 50% or more passes the No. 200 Sieve	Silt and Clays Liquid limit less than 50	Inorganic	$PI > 7$ and plots on or above "A" line	CL	Lean clay
				$PI < 4$ or plots below "A" line	ML	Silt
Organic			$\frac{\text{Liquid Limit} - \text{oven dried}}{\text{Liquid limit} - \text{not dried}} < 0.75$	OL	Organic clay Organic silt	
			PI plots on or above "A" line	CH	Fat clay	
			PI plots below "A" line	MH	Elastic silt Organic clay	
Silt and Clays Liquid limit 50 or more		Inorganic	$\frac{\text{Liquid limit} - \text{oven dried}}{\text{Liquid limit} - \text{not dried}} < 0.75$	OH	Organic silt	
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor			PT	Peat	



TEST BORING LOG DEFINITIONS

Blows per foot using 140 pound hammer with 30 inch free-fall.



C = Continuous Penetration Resistance (2 inch diameter rod)
N = Standard Penetration Resistance (ASTM D1586)
R = Penetration Resistance (3 inch diameter ring line sampler)

SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	GRAIN SIZES				CLEAR SQUARE SIEVE OPENINGS		
	U.S. STANDARD SERIES SIEVE						
	200	40	10	4	3/4"	3"	12"
	SAND			GRAVEL			
	FINE	MEDIUM	COARSE	FINE	COARSE	COBBLES	BOULDERS

MOISTURE CONDITION (INCREASING MOISTURE →)

DRY SLIGHTLY DAMP DAMP MOIST (Plastic Limit) VERY MOIST WET (SATURATED) (Liquid Limit)

CONSISTENCY CORRELATION		RELATIVE DENSITY CORRELATION	
CLAYS & SILTS	BLOWS/FOOT*	SANDS & GRAVELS	BLOWS/FOOT*
VERY SOFT	0-2	VERY LOOSE	0-4
SOFT	2-4	LOOSE	4-10
FIRM	4-8	MEDIUM DENSE	10-30
STIFF	8-16	DENSE	30-50
VERY STIFF	16-32	VERY DENSE	OVER 50
HARD	OVER 32		

*Number of blows of 140 lb hammer falling 30" to drive a 2" O.D. (1-3/8" I.D.) split-spoon sampler (ASTM D1586).

TEST BORING LOG

Project: Multifamily Community Phased Development, Phoenix, Arizona Test Boring: 1
 Elevation: Not Determined Datum: --- Date: 10-7-20

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	C	N/R					
5		19	R	101	7	CL	Sandy Clay, Trace to Some Gravel; brown, damp to moist, stiff to very stiff, medium plasticity, intermittent light cementation.
		10	R	93	10		
		13	R	98	12		
		50/10"	R	98	10		
15						SM	Silty Sand, Some to With Gravel, Occasional to Trace Cobbles, brown, slightly damp to damp, medium dense to dense, non-plastic to low plasticity fines, zones of silty sand and gravel, some cobbles.
20							Refusal to auger penetration at 14.0 feet. No groundwater observed.
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

Project: Multifamily Community Phased Development, Phoenix, Arizona Test Boring: 2
 Elevation: Not Determined Datum: --- Date: 10-7-20

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	C	N/R					
5		11	R	108	13		3.0" Asphalt Concrete on 3.0" Base Material.
		14	R	89	10	CL	Sandy Clay, Trace to Some Gravel; brown, damp to moist, stiff to very stiff, medium plasticity, intermittent light cementation.
		21	R	101	8		
10		50/3"	R	81	8		
15		33	R	107	5	SM	Silty Sand, Some to With Gravel, Occasional to Trace Cobbles, brown, slightly damp to damp, medium dense to dense, non-plastic to low plasticity fines, zones of silty sand and gravel, some cobbles.
20							Refusal to auger penetration at 19.0 feet. No groundwater observed.
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

Project: Multifamily Community Phased Development, Phoenix, Arizona Test Boring: 3
 Elevation: Not Determined Datum: --- Date: 10-7-20

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	C	N/R					
5		13	R	111	13	CL	2.5 Asphalt Concrete on 5.0" Base Material
		8	R	98	11		Sandy Clay, Trace to Some Gravel; brown, damp to moist, stiff to very stiff, medium plasticity, intermittent light cementation.
		12	R	103	13		
10		47	R	114	11		
15		14	R	106	1	SM	Silty Sand, Some to With Gravel, Occasional to Trace Cobbles, brown, slightly damp to damp, medium dense to dense, non-plastic to low plasticity fines, zones of silty sand and gravel, some cobbles.
20		15	R	101	4		
25		50/11"	R	110	5		Stopped drilling at 25.0 feet. No groundwater observed.
							This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

Project: Multifamily Community Phased Development, Phoenix, Arizona Test Boring: 4
 Elevation: Not Determined Datum: --- Date: 10-7-20

Depth, feet	Blows/Foot		Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	C	N/R					
5		23	R	121	3	CL	3.0 Asphalt Concrete on 6.0" Base Material.
		10	R	100	11		Sandy Clay, Trace to Some Gravel; brown, damp to moist, stiff to very stiff, medium plasticity, intermittent light cementation.
		11	R	100	13		
10		50/12"	R	103	10		
15						SM	Silty Sand, Some to With Gravel, Occasional to Trace Cobbles, brown, slightly damp to damp, medium dense to dense, non-plastic to low plasticity fines, zones of silty sand and gravel, some cobbles.
20							Refusal to auger penetration at 12.5 feet. No groundwater observed.
25							

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

APPENDIX B
LABORATORY ANALYSIS



R·A·M·M

LABORATORY TEST RESULTS

Date: 15-Oct-20

SAMPLE SOURCE: 1 @ 5'-6'

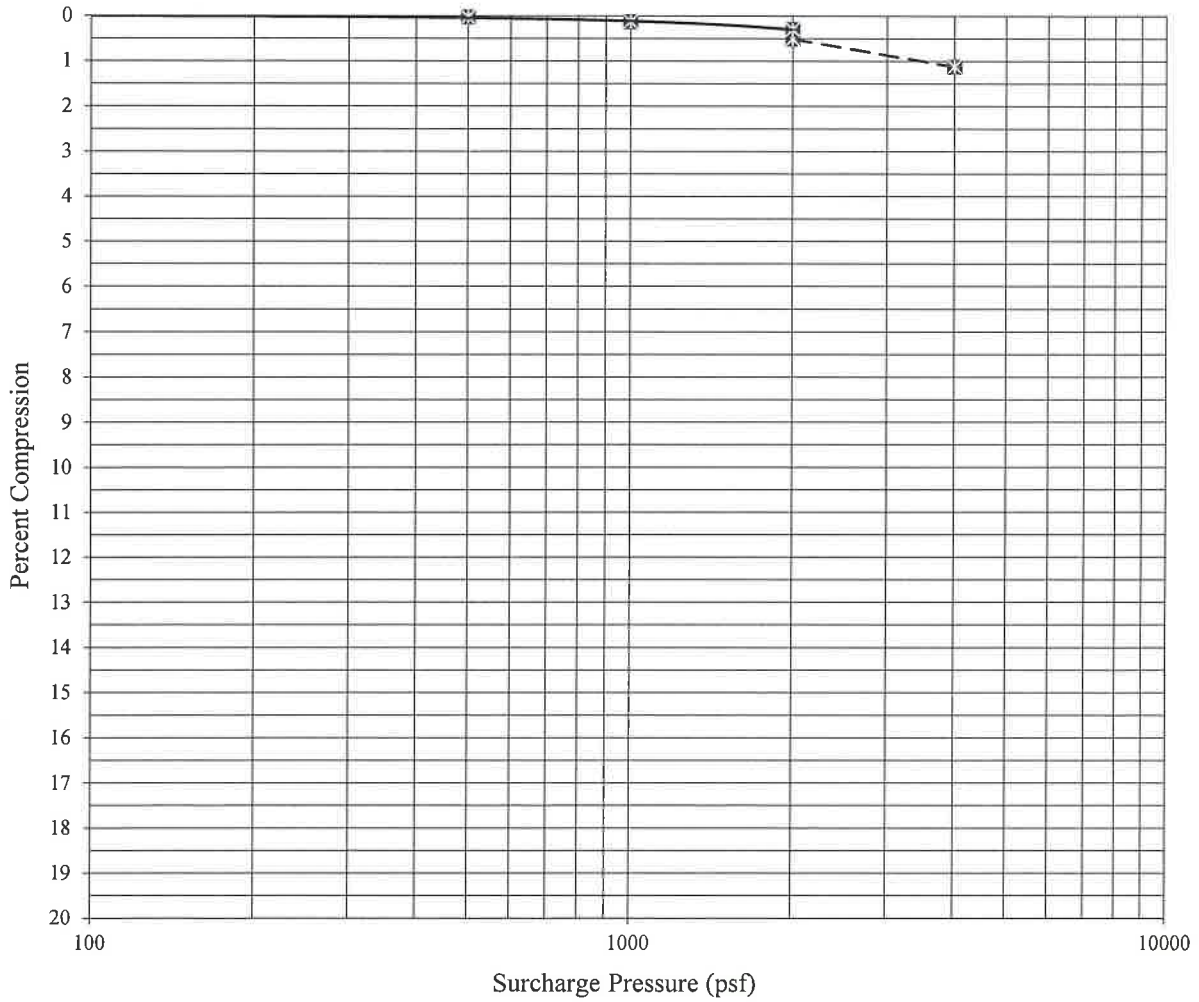
TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAMM/Redman

RESULTS:

Dry Density (pcf): 98

Moisture Content (%): 12



REMARKS: Sample submerged at 2000 psf.

LABORATORY TEST RESULTS

Date: 30-Oct-20

SAMPLE SOURCE: 3 @ 0.5'-1.5'

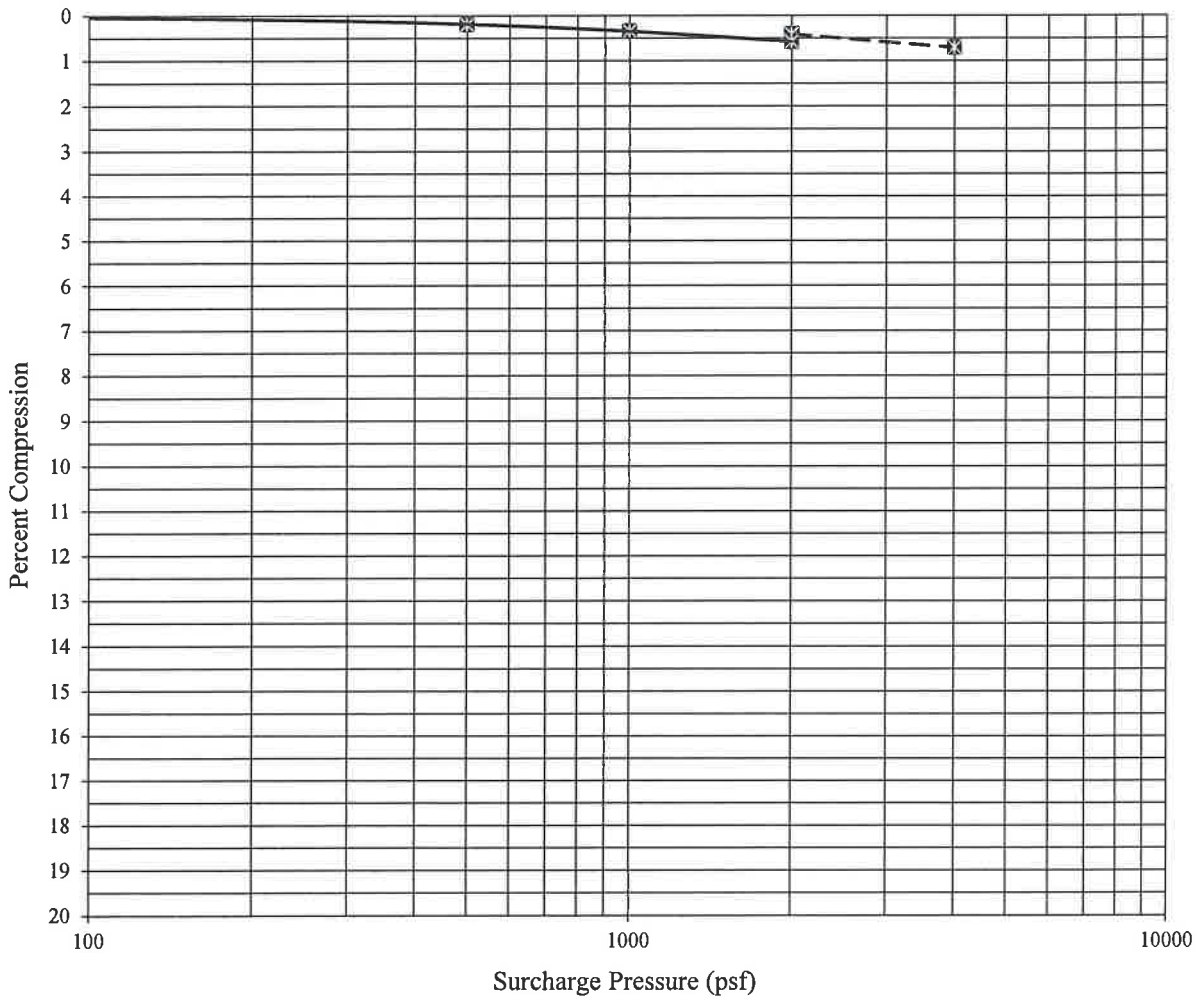
TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAMM/Redman

RESULTS:

Dry Density (pcf): 111

Moisture Content (%): 13



REMARKS: Sample submerged at 2000 psf.

LABORATORY TEST RESULTS

Date: 15-Oct-20

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Percent Passing No. 200 Sieve, Atterberg Limits, Percent Expansion (ASTM D1140, D4318, D4546)

SAMPLED BY: RAMM/Redman

RESULTS:

<u>Sample Source</u>	<u>Percent Retained No. 4 Sieve</u>	<u>Percent Passing No. 200 Sieve</u>	<u>Liquid Limit</u>	<u>Plasticity Index</u>	<u>Percent Expansion*</u>	<u>Remolded Dry Density (pcf)</u>	<u>Remolded Moisture Content (%)</u>
2 @ 0'-3'	3	63	33	17	2.4	105	14
4 @ 0'-3'	24	50	28	12	1.2	113	11

* Based upon sample remolded to 95% of the estimated maximum dry density at 2% below the estimated optimum moisture content, with a surcharge pressure of 100 psf.