

CONSTRUCTION

MISCELLANEOUS REPAIRS & IMPROVEMENTS

PROJECT ADDRESS	12027 N 28th DRIVE, PHOENIX AZ 85029
PN	149-17-139C, 149-17-140B, 149-17-141C
CURRENT ZONING	COMMERCIAL C-1 DISTRICT-NEIGHBOHOOD RETAIL
CURRENT LAND USE	group home
PROPOSED LAND USE	group home
loor area ratio	0.61
.OT COVERAGE	+/- 22%
DVERALL SITE AREA	148,450 SQ. FT. (3.41 ACRES)
PROPOSED FLOOR AREA	742 SQ. FT.
BUILDING HEIGHT	45'-6"

(4

AE DESIGN & CONSTRUCTION TEAM

ARCHITECT: GENSLER PATRICK MAGNESS 2575 E. CAMELBACK ROAD SUITE 175 PHOENIX AZ 85016 TELEPHONE: 602.53.4904 PATRICK_MAGNESS@GENSLER.COM MEP: IMEG ENGINEERING CONSULTANTS **BRETT C. CASPERSON** 7878 N 16th STREET SUITE 140 PHOENIX AZ 85020 DIRECT: 602.371.1333 MOBILE: 602.292.6911 BRETT.C.CASPERSON@IMEGCORP.COM

STRUCTURAL ENGNEERS: PK ASSOCIATES **STEVEN C. SLONAKER** 7434 E. MCDONALD DRIVE SCOTTSDALE, AZ 85250 DIRECT: 480.922.8854 MOBILE: 602.820.6620

N DOCUMENTS JULY 2, 2024	
PROJECT DESCRIPTION / SCOPE OF WORK ADDITION OF A SMALL VOLUME ON THE LOW ROOF AT THE WEST END OF THE EXISTNG BUILDING TO ENCLOSE ELECTRICAL CONDUITS & PULL BOXES. NEW ROOFING ON HIGH AND LOW ROOFS OF BUILDINGS REPLACEMENT OF DOOR INTO IDF ROOM & REMOVAL OF EXTERIOR LOUVERS & REPAIR TO EXTERIOR FACADE UPGRADES TO SANITARY WASTE AND VENT SYSTEMS	2024
PROJECT DESCRIPTION 2 IECC COMPLIANCE SUMMARY	MAYOR KATE GALLEGO CITY COUNCIL DISTRICT NO. 1 - ANN O'BRIEN DISTRICT NO. 2 - JIM WARING DISTRICT NO. 3 - DEBRA STARK DISTRICT NO. 4 - LAURA PASTOR DISTRICT NO. 5 - BETTY GUARDADO DISTRICT NO. 6 - KEVIN ROBINSON DISTRICT NO. 7 - CARLOS GALINDO-EL DISTRICT NO. 8 - KESHA HODGE WASHINGTON CITY ENGINEER ERIC J. FROBERG, PE APPROVALS
SHEET 01 OF 4	(CLIENT DEPARTMENT) DATE



GRAPHIC SYMBOLS

NOTE: NOT ALL SYMBOLS REPRESENTED IN THE FOLLOWING DOCUMENTS

REFLECTED CLG

POWER & COMM. CONT CONSTRUC

COUS CLG AND GRID		
		DEVICES EURN SYS MTD DEVICES
		FLUSH FLR MTD DEVICES
LG HEIGHT CHANGE		FLUSH FLR MTD, POKE THRU,
IN CLG HEIGHT SYMBOL		DEVICES SURF FLR MTD DEVICES
RID STARTPOINT SYMBOL		
LG FINISH TAG		NON SYMBOLS
IOTION SENSOR	\bigcirc	SINGLE RECPT
LG MTD SPEAKER	Ψ	DUPLEX RECPT
CLG MTD CAMERA	_₩ #J \	
LG MTD SPRINKLER HEAD	₩V	VOICE/DATA RECPT
	⊕ av v ∕	& VOICE/DATA RECPTS COMBINATION DUPLEX, AUDIO
LG MID STROBE LI		VISUAL AND VOICE/DATA RECP
ELG MTD EXIT SIGNS	-∰AV V ▼7	COMBINATION QUADRAPLEX, AV & VOICE/DATA RECPTS
VALL MTD EXIT	\mathbf{V}	
IGNS - PARALLEL	▼ ▼	
VALL MTD EXIT	AV	AV RECPT
	Р	SYS WORKSTATION PANEL
ENOTES EXISTING TO EMAIN	V	POWER INFEED SYS WORKSTATION PANEL
ENOTES EXIST TO BE ELOCATED		VOICE INFEED SINGLE RECPT
CCESS DOOR		DUPLEX RECPT
	#	QUADRAPLEX RECPT
	Y	VOICE/DATA RECPT
LORESCENT LT FXTR	$\overline{\gamma}$	DATA RECPT
MERGENCY CIRCUIT	Ť	VOICE RECPT
	PP	FURN SYSTEM ELECTRIC PIGTAIL
LORESCENT STRIP FXTR		FURN MTD, POWER POLE
	¢	SINGLE RECPT
ECES ADJUSTABLE DN LT	•	DUPLEX RECPT
ECES WALL WASHER	-	QUADRAPLEX RECEPT
URFACE MTD LT FXTR	$\bigoplus \nabla$	COMBINATION DUPLEX & VOICE/DATA RECPT
VALL SCONCE		COMBINATION QUADRAPLEX & VOICE/DATA RECPTS
T SWITCH	¶ AV V	AUDIO VISUAL AND
IMMER SWITCH	₩AV	COMBINATION QUADRAPLEX, AV & VOICE/DATA RECPTS
	PVD	COMBINATION POWER, VOICE/DATA
ETURN AIR		RAISED FLR BOX, COMBINATION POWER,
UPPLY AIR	AV	VOICE/DATA, A/V RAISED FLR BOX, AV
	•	
XHAUST FAN	$\overline{\mathbf{V}}$	CONDUIT STUB UP.
	v	VOICE/DATA
NDICATION		
GLASS SYMBOL		EQUIP TAG (REFER TO EQUIP SCHEDULE) WALL MTD FIRE ALARM
	FA	STROBE FIRE ALARM PULL
IASONRY COURSING	FW	FIRE WARDEN STATION
	(T)	THERMOSTAT
VOOD VENEER	CTV	CABLE TV RECPT
	AV	AV RECPT
TONE	AVT	AV TROUGH
	(\mathbf{j})	ELECTRICAL JUNCTION BOX
	\bigvee	VOICE/DATA JUNCTION BOX
		POWER INFEED
VALL FINISH TAG	\mathbf{v}	VOICE/DATA INFEED CONDUIT STUB-OUT POWER
XTENT OF FINISH TYP.	\downarrow	CONDUIT STUB-OUT VOICE
VALL FINISH TAG		AND DATA CONDUIT STUB-OUT A/V
PECIAL FINISH TAG		PLUG MOLD
		CAMERA
	CR	CARD READER
EILING FINISH TAG	В	ELECTRIC DOOR BELL PUSH
HANGE IN FLOOR FINISH	(B)	ELECTRIC DOOR BELL
		REMOTE DOOR RELEASE
	MS	BUTTON MOTION SENSOR
	(IA)	INTRUSION ALARM
	EH	ELECTRIC DOOR HINGE
	Η	ELECTRICAL DOOR HOLD
	DR	ELECTRICAL DOOR RELEASE
	DC	ELECTRICAL DOOR MONITOR CONTACT
		DOUBLE DOOR MONITOR CONTACT
		ELECTRICLOCKSET

KS ELECTRIC KEY SWITCH

ES ELECTRIC STRIKE

ML MAGNETIC LOCKSET

PB PANIC BUTTON

			<u> </u>				
	(x'-x)	,"					
,	X						
)	(X'-X)	("					
\bigcirc	X'-X"	\supset					
~	\mathbf{P}						
	AT1						
	MS	XX					
	3	XX					
	_K	XX					
	₩	\ \					
·	\/ ***						
A	İ €)Í	t 16	∂ †				
\bigotimes			3				
\mathbf{X}							
Ŷ	Ý	-	ľ N				
$_{\bot}$			J				
\bigotimes_{\perp}	Î	(\mathbb{P}				
	Е						
	R						
		1					
		_					
LIGHT FIX	KTUF	RES					
<u>ب</u>							
ب ــــــــــــــــــــــــــــــــــــ							
⊢●	0	-•-1					



 \bigcirc

ELEVATION IN

 \bigcirc

FINISH



〔1**`**〕 ------_____ _____ _ - - - - _ ____ ´ xx 🗡 XX.XXX A11.XX NAME 1234 01 1 A3A $\langle XXX \rangle$ $\left\langle \begin{array}{c} XX \\ XX \\ \end{array} \right\rangle$ XX (MW01) \frown +6" MATCH LINE SEE XX/XX ALIGN + + WALL MOUNTED LIFE HFEC \bigcirc SECTION IN . 4 2 _____

CTION	ACCE ACOU AFF AL ALT ANNU ANOE
NUMBER COLUMN GRID LINES AND REFERENCE NUMBER EXISTING CONSTRUCTION TO REMAIN EXISTING CONSTRUCTION	APPL AUTC AVG
TO BE DEMOLISHED NEW PARTITION 1 HR. RATED PARTITION 2 HR. RATED PARTITION 3 HR. RATED PARTITION 4 HR. RATED PARTITION SMOKE PARTITION EGRESS PATH PRIMARY EGRESS PATH SECONDARY	B BLDG BLKG BOLL BRDL BU
 MILLWORK MILLWORK ABOVE DETAIL NUMBER SHEET NUMBER DESCRIPTION OF SIMILAR OR OPPOSITE AREA TO BE DETAILED LOCATION ON SHEET WHERE ELEVATION IS 	C CAB CEM CER CLG CMU COAT COILC
SHOWN DIRECTION OF ELEVATION SHEET NUMBER WHERE ELEVATION IS SHOWN INTERIOR AND EXTERIOR ELEVATION MARKER REVISION REFERENCE	CONS CONT CONT COV CPT
NUMBER — REVISION CLOUD DEPICTING AREA REVISED ROOM NAME ROOM NUMBER SHEETNOTE REFERENCE	D DBL DEPT DES DET DF DIA
 WALL TYPE REFERENCE FIRE RATING DOOR REFERENCE NUMBER (REFER TO DOOR SCHEDULE) DOOR NUMBER DOOR TYPE DOOR NUMBER DOOR TYPE HARDWARE TYPE WINDOW REFERENCE NUMBER (REFER TO 	DIFF DIM DISP DIV DN DR DSCC DWR
WINDOW SCHEDULE) MILLWORK REFERENCE NUMBER (REFER TO MILLWORK SCHEDULE) ELEVATION DATUM REFERENCE FLOOR ELEVATION TRANSITION X MATCH LINE SYMBOL	e (e) elas elec embe engf entr
ALIGN WITH ESTABLISHED / ADJACENT SURFACES E SAFETY EQUIPMENT AND DEVICES FIRE WARDEN STATION SYMBOL WALL MOUNTED FIRE	EQ EQUII EXP J EXPS EXT
ALARM STROBE SYMBOL FIRE ALARM PULL SYMBOL WALL MOUNTED, FIRE EXTINGUISHER CABINET WALL MOUNTED FIRE EXTINGUISHER WALL MOUNTED FIRE HOSE CABINET WALL MOUNTED FIRE VALVE WALL MOUNTED FIRE VAL VE CABINET	F FAB FD FE FE&C FHC FIN FLDG
NDICATIONS ACOUSTICAL CEILING TILE	FLR FPLC FR FRMC FURN FWC FXD
ALUMINUM BRICK	FXTR G GA
CARPET	GFRG
CONCRETE MASONRY UNIT	GL GR GYP
EARTH FABRIC WRAPPED PANEL	H HD HDWI HDWI
GLASS GRAVEL	hm Horiz Hp Hvac
GYPSUM PLASTER INSULTATION (LOOSE OR BATT)	i Infil ⁻ Info Instf
INSULATION (RIGID) METAL	INSUL INT INTLK J
PLASTIC PLYWOOD	JAN K KIT
PRE-CAST PANELS SAND OR GROUT STONE	L LAV LB LL LOUV LP
WOOD (FINISHED)	
WOOD (INTERRUPTED MEMBER	

ABBREVIATIONS

А

ACCES

ACOUS

ANNUNC

ANOD

BLDG

BLKG

BOLLD

BRDLM

COATG

COILG

CONC

CONSTR

CONT

CONTR

DSCON

DWR

(E) ELAST

ELEC

EMBED

ENGR

ENTR

EQUIP

EXP JT

EXPS

FE&C

FLDG

FPLC

FRMG

FURN

GFRC

GFRG

GFRP

HDWD

HDWE

HORIZ

HVAC

INFILTR

INFO

INSUL

KIT

LOUVER

INTLK

FXTR

AUTO

ACCESSORY ACOUSTIC(AL) ABOVE FINISHED FLOOR ALUMINUM ALTERNATE ANNUNCIATOR ANODIZED APPLIANCE AUTOMATIC AVERAGE BOARD BUILDING BLOCKING BOLLARD BROADLOOM BUILT UP CABINET CEMENT(ITIOUS) CERAMIC CEILING COATING COILING CONCRETE CONSTRUCTION CONTINUOUS(ATION) CONTRACT(OR) COVER CARPET DOUBLE DEPARTMENT DESIGN(ED) DETAIL DRINKING FOUNTAIN DIAMETER DIFFUSER DIMENSION DISPENSER DIVISION DOWN DOOR DISCONNECT DRAWER EXISTING ELASTOMERIC ELECTRICAL EMBEDD(ED)(ING) ENGINEER(ED) ENTRANCE EQUAL EQUIPMENT EXPANSION JOINT EXPOSE(D) EXTERIOR FABRICATION FLOOR DRAIN FIRE EXTINGUISHER FIRE EXTINGUISHER AND CABINET FIRE HOSE CABINET FINISH FOLDING FLOOR(ING) FIREPLACE FIRE RAT(ING)(ED) FRAMING FURNITURE FABRIC WALL COVERING FIXED FIXTURE GAUGE GENERAL CONTRACTOR CONCRETE GYPSUM PLASTER GLASS GRAD(E)(ING) GYPSUM HEAD HARDWOOD HARDWARE HOLLOW METAL HORIZONTAL HIGH POINT HEATING, VENTILATING, AND AIR CONDITIONING INFILTRATION INFORMATION INSTRUM INSTRUMENT(ATION) INSULATION INTERIOR INTERLOCK(ING)

POUND LOUVER

CONCRETE MASONRY UNIT GLASS FIBER REINFORCED GLASS FIBER REINFORCED GLASS FIBER REINFORCED

JANITOR

KITCHEN

LAVATORY LEASE LINE LOW POINT

MAX MECH MEMB MET MEZZ MFD MFR MIN MISC MLWK MOIST MOT MTD NIC NO NTS 000 OH OPNG OPR ORNA OVFL OVHD PBD PEDTR PLAM PLAS PLSTC PLYWD PNL POLYST PORT PREFAB PREFIN PRTECN PTN RDR RECES RECPT REF REFL REFR REQD RESIS RFG RM RN RO

> SCR SECUR SF SGL SHORG SIM SST STD STL STRFR STRUCT SURF SUSP SYS T&G THK TLT TOS TRAF TRANS TRTD TYP UNDRLY

UTIL VEH VERT VIF W/O WC WD WDW WT

WTRPRF

UNO

LIGHT LEVELING

LVLG

MAXIMUM MECHANICAL MEMBRANE METAL MEZZANINE MANUFACTURED MANUFACTURER MINIMUM MISCELLANEOUS MILLWORK MOISTURE MOTOR(IZED) MOUNTED

NOT IN CONTRACT NUMBER NOT TO SCALE

OCCUPANT OPPOSITE HAND OPENING(S) OPERABLE ORNAMENTAL OVERFLOW OVERHEAD

PARTICLE BOARD PEDESTRIAN PLASTIC LAMINATE PLASTER PLASTIC PLYWOOD PANEL POLYSTYRENE PORTABLE PREFABRICATED PREFINISHED PROTECTION PARTITION

READER RECESS(ED) RECEPTACLE REFER(ENCE) REFLECTED REFRIGERATOR REQUIRED RESIST(ANT)(IVE) ROOFING ROOM **ROOF DRAIN** ROUGH OPENING

SCRIBE SECURITY SQUARE FEET SINGLE SHORING SIMILAR STAINLESS STEEL STANDARD STEEL STOREFRONT STRUCTURAL SURFACE SUSPENDED SYSTEM(S)

TONGUE AND GROOVE THICK TOILET TOP OF STEEL TRAFFIC TRANSPARENT TREATED TYPCIAL

UNDERLAYMENT UNLESS NOTED OTHERWISE UTILITY

VEHICLE VERTICLE VERIFY IN FIELD

WITH WITHOUT WATER CLOSET WOOD WINDOW WEIGHT WATERPROOFING

PROJECT INFORMATION

BUILDING ADDRE

ZONING: CURRENT USE:

PROPOSED OCCUI TYPE OF CONSTRU

FIRE PROTECTION

LOT NUMBER: **GROSS SITE ARE**

BUILDING FOOTPI LOT COVERAGE: EXISTING BUILDIN

EXISTING BUILDIN SCOPE OF WORK:

DEFERRED SUBMI

JURISDICTION:

CODE INFORMATION

APPLICABLE BUILDIN BUILDING CODE: EXISTING BUILDING ELECTRICAL CODE: MECHANICAL CODE: PLUMBING CODE: ENERGY CODE: FUEL CODE: **RESIDENTIAL CODE:** SUSTAINABILITY COL ACCESSIBILITY CODE

PER IBC TABLE 601 F BUILDING ELEMENT TYPE OF CONSTRUCT

PRIMARY STRUCTUR BEARING WALLS EXTERIOR INTERIOR: NONBEARING WALLS EXTERIOR: INTERIOR:

INFORMATION

DRAWING INDEX

SS:	12027 N 28 [™] DRIVE PHOENIX, AZ 85029
	COMMERCIAL C-1 DISTRICT-NEIGHBORHOOD RETAIL
	GROUP HOME
IPANCY TYPE:	SINGLE STORY BUILDING OCCUPANCY IS A-2 MULTISTORY OCCUPANCY IS R-2
UCTION:	TYPE II A
N:	FIRE ALARM AND SPRINKLER SYSTEM.
	149-17-139C, 149-17-140b, 149-17-141C
A:	148,450 SQ. FT (3.41 ACRES)
RINT:	± 32,600 SQ.FT.
	± 22%
IG AREA:	1 ST FLOOR= 32,600 SQ.FT. 2 ND FLOOR=19,467 SQ.FT. 3 RD FLOOR =19,467 SQ. FT. 4 TH FLOOR=19,467 SQ.FT. TOTAL BUILDING SQ.FT.= 91,007 SQ.FT.
NG HEIGHT:	4 STORIES
:	ADDITION OF A SMALL VOLUME ON THE LOW ROOF AT THE WEST END OF THE EXISTNG BUILDING TO ENCLOSE ELECTRICAL CONDUITS & PULL BOXES. NEW ROOFING ON HIGH AND LOW ROOFS OF BUILDINGS REPLACEMENT OF DOOR INTO IDF ROOM & REMOVAL OF EXTERIOR LOUVERS & REPAIR TO EXTERIOR FACADE UPGRADES TO SANITARY WASTE AND VENT SYSTEMS
ITTALS:	
	ANT MODIFICATIONS TO EXISTING FIRE SPRINKLER AND FIRE ALARM PLANS TO BE DEFERRED SUBMITTAL.
	CITY OF PHOENIX BUILDING DEPARTMENT

SHEET NUMBER	SHEET NAME
00	·
G0.00	COVER SHEET
G0.10	PROJECT INFORMATION AND DRAWING INDEX
G1.00	GENERAL NOTES
G6.00	DOOR SCHEDULE, EXTERIOR ASSEMBLIES & MATERIAL SCHEDULE
00: 4	
01	
A2.00	OVERALL ROOF PLAN
A2.10	ENLARGED PLANS & SECTIONS CONDUIT ENCLOSURE
A2.11	ENLARGED PLANS IDF ROOM / DEMO
A2.12	ENLARGED PLANS IDF ROOM
A3.00	CONDUIT ENCLOSURE / BUILDING ELEVATIONS
A6.00	CONDUIT ENCLOSURE / EXTERIOR ENVELOPE DETAILS
A6.02	IDF ROOM DETAILS
A10.00	CONDUIT ENCLOSURE / 3D VIEWS
01:8	
02	
S1.00	GENERAL STRUCTURAL NOTES
S1.01	GENERAL STRUCTURAL NOTES
S2.00	STRUCTURAL FRAMING PLANS
S3.00	TYPICAL DETAILS
S3.01	TYPICAL DETAILS
S4.00	FRAMING DETAILS
02:6	
03	
M0.00.CE	VENTILATION COP COVER SHEET
M1.01.CE	MECHANICAL SPECIFICATIONS
M1.02.CE	MECHANICAL SPECIFICATIONS
M1.03.CE	MECHANICAL SCHEDULES
M2.00.CE	MECHANICAL ENLARGED PLANS
M2.01.CE	MECHANICAL ENLARGED PLANS
03: 6	
03.1	
M0.00.IT	VENTILATION COVER SHEET
M0.01.IT	MECHANICAL SPECIFICATIONS
M0.02.IT	MECHANICAL SPECIFICATIONS
M0.03.IT	MECHANICAL SPECIFICATIONS
M2.00.IT	MECHANICAL ENLARGED PLANS
M4.00.IT	MECHANICAL SCHEDULES
03.1:6	
04	
E0.00.CE	ELECTRICAL COVER SHEET
E0.02.CE	ELECTRICAL SPECIFICATIONS
E2.01.CE	ELECTRICAL ENLARGED PLANS
E4.00.CE	ELECTRICAL ONE-LINE & SCHEDULES
04: 4]
04.1	
E0.00.IT	ELECTRICAL COVER SHEET
E0.01.IT	ELECTRICAL SPECIFICATIONS
E2.00.IT	ELECTRICAL ENLARGED PLANS
E4.00.IT	ELECTRICAL ONE-LINE & SCHEDULES
04.1:4	
05	
P0.01	PLUMBING COVER SHEET
P1.01	PLUMBING SITE PLAN
P2.01	OVERALL PLUMBING PLAN - LEVEL 01 & 02
P2.02	OVERALL PLUMBING PLAN - LEVEL 03 & 04
P3.01	ENLARGED WASTE PIPING PLAN - UNDERSLAB- LEVEL 01
P4.01	ENLARGED PLUMBING PLAN - TYPE A, B, C, C, I & H
P4.02	ENLARGED PLUMBING PLAN - TYPE D & D.1
P4.03	ENLARGED PLUMBING PLAN - TYPE D.2. G & LAUNDRY ROOM
P5.01	PLUMBING DETAILS
P5.02	PLUMBING ISOMETRIC DIAGRAMS
05: 10	
48	

VICINITY MAP



LOCATION MAP



NG CODES:	
	2018 INTERNATIONAL BUILDING CODE
CODE:	2018 INTERNATIONAL EXISTING BUILDING CODE
	2018 INTERNATIONAL ELECTRICAL CODE
	2018 INTERNATIONAL MECHANICAL CODE
	2018 INTERNATIONAL PLUMBING CODE
	2018 INTERNATIONAL ENERGY CONSERVATION CODE
	2018 INTERNATIONAL FUEL GAS CODE
	2018 INTERNATIONAL RESIDENTIAL CODE AMENDMENTS
DE:	2018 INTERNATIONAL GREEN CONSTRUCTION CODE
E:	ICC A117.1-2009, 2010 ADA STANDARDS FOR ACCESIBLE DESIGN
FIRE-RESIST	ANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS) -
	REQUIRED RATING
TION: TYPE	IIB
RAL FRAME:	0 HR
	0 HR

	UHR
	0 HR
S & PARTITIONS	
	0 HR
	0 HR

FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0 HR ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0 HR

REFER TO OCCUPANCY, EGRESS AND PLUMBING CALCULATIONS SHEET SERIES G03 FOR ADDITIONAL



PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

Date Description 05.31.24 ISSUE FOR PERMIT

KIVA #

SDEV #

Note:

NORTH

 \rightarrow

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 your contract with the City of Phoenix.

Seal / Signature رچ 37927 PATRICK K. MAGNESS Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description PROJECT INFORMATION AND DRAWING INDEX Scale As indicated G0.10 SHEET 2 OF 48 © 2015 Gensler

POWER & COMM. NOTES REFLECTED CEILING NOTES GENERAL NOTES

- BEFORE CORING SLAB, COORDINATE CORE LOCATIONS WITH OWNER, FURNITURE INSTALLER AND ARCHITECT. VERIFY EQUIPMENT POWER AND INSTALLATION
- REQUIREMENTS WITH MANUFACTURER BEFORE INSTALLATION TO ENSURE PROPER FIT AND FUNCTION IN NEW CONSTRUCTION. INSTALL OUTLETS ON OPPOSITE SIDES OF
- PARTITIONS IN SEPARATE STUD CAVITIES. DO NOT INSTALL OUTLETS BACK TO BACK.
- IDENTIFY DEDICATED OR ISOLATED GROUND ELECTRICAL OUTLETS WITH A RED DOT. VERIFY WITH ARCHITECT STYLE AND FINISH OF COVER PLATES FOR SWITCHES, DEVICES, AND DATA OUTLETS. PROVIDE ONE-PIECE GANG COVER PLATES UNO.
- CONFIRM LOCATIONS OF STROBES AND EXIT SIGNS WITH ARCHITECT BEFORE INSTALLATION. CONFIRM DEVICE LOCATIONS WITH ARCHITECT BEFORE ROUGH-IN.
- INSTALL ABOVE-COUNTER OUTLETS HORIZONTALLY. REFER TO TYPICAL MOUNTING LOCATION DETAILS AND ELEVATIONS FOR MORE INFORMATION.
- ALIGN DEVICES VERTICALLY WHERE SHOWN STACKED ON PLAN.
- PROVIDE PULL STRINGS IN EMPTY CONDUIT AND
- J-BOXES. INDICATED DIMENSION ARE TO THE CENTERLINE OF THE DEVICE OR CLUSTER OF DEVICES UNO EXCEPT THE TOP-MOST OPERABLE PORTION OF SUCH DEVICES SHALL NOT EXCEED 44" AFF. PROVIDE WRITTEN NOTIFICATION OF CONDITIONS REQUIRING CUSTOM COVER PLATES.

FIRE PROTECTION NOTES

- PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2A 10B/C (WITH APPROPRIATE CLASS RATINGS AS REQUIRED FOR THE HAZARD) WITHIN 75 FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR WHERE QUICK RESPONSE HEADS ARE NOT PROVIDED, AND ADDITIONAL EXTINGUISHERS AS REQUIRED BY FIRE DEPARTMENT FIELD INSPECTOR OR BUILDING DEPARTMENT INSPECTOR.
- PROVIDE EXIT SIGN WITH 6" LETTERS OVER REQUIRED EXITS, WHERE SHOWN ON DRAWINGS, AND ADDITIONAL SIGNS AS REQUIRED BY BUILDING DEPARTMENT INSPECTOR OR FIRE DEPARTMENT FIELD INSPECTOR. CONNECT EXIT SIGNS TO EMERGENCY POWER CIRCUITS. COMPLY WITH BUILDING CODES.
- PROVIDE EMERGENCY LIGHTING OF ONE FOOT-CANDLE AT FLOOR LEVEL. COMPLY WITH BUILDING CODES.
- MAINTAIN AISLES AT LEAST 44" WIDE AT PUBLIC AREAS, UNO. EVERY EXIT DOOR SHALL BE OPERABLE FROM
- THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. SPECIAL LOCKING DEVICES SHALL BE OF AN APPROVED TYPE. DOORS SHALL HAVE APPROVED LEVER HANDLES.
- RATED DOOR JAMBS TO BE TIGHT-FITTING. SMOKE AND DRAFT CONTROLLED.
- DOORS OPENING INTO REQUIRED 1-HOUR. FIRE-RESISTIVE CORRIDORS SHALL BE PROTECTED WITH A SMOKE OR DRAFT STOP ASSEMBLY HAVING A XX-MINUTE RATING AND SHALL BE SELF-CLOSING.
- EXIT DOORS SHALL SWING IN THE DIRECTION OF TRAVEL WHEN SERVING 50 OR MORE OCCUPANTS AND IN ANY HAZARDOUS AREA. FIRE RATED DOOR JAMBS TO BE TIGHT-FITTING,
- SMOKE AND DRAFT CONTROLLED. INTERIOR WALL AND CEILING FINISHES FOR EXIT ENCLOSURES SHALL HAVE A FLAME SPREAD RATING OF 'B' OR BETTER WITH A FLAME
- SPREAD INDEX 26-75, SMOKE DEVELOPED INDEX 0-450. INTERIOR WALL AND CEILING FINISHES FOR CORRIDORS IN A 'B' OR 'S' OCCUPANCY SHALL HAVE A FLAME SPREAD RATING OF 'C' OR BETTER WITH A FLAME SPREAD INDEX 76-200, SMOKE DEVELOPED INDEX 0-450. INTERIOR WALL AND CEILING FINISHES FOR ROOMS AND ENCLOSED SPACES IN 'B', 'S', AND 'A-2' OCCUPANCIES SHALL HAVE A FLAME SPREAD RATING OF 'C' OR BETTER WITH A FLAME SPREAD INDEX 76-200, SMOKE DEVELOPED INDEX 0-450. INTERIOR FLOOR FINISHES TO BE OF CLASS I OR CLASS II MATERIALS AND
- CLASSIFIED IN ACCORDANCE WITH NFPA 253. DECORATIONS (CURTAINS, DRAPES, SHADES, HANGINGS, ETC.) SHALL BE NON-COMBUSTIBLE OR MEET NFPA 701.
- PROVIDE FIRE DAMPERS OR DOORS WHERE AIR DUCTS PENETRATE FIRE-RATED WALLS OR CEILINGS IN ACCORDANCE WITH IBC SECTION 710.
- STORAGE, DISPENSING OR USE OF ANY FLAMMABLE OR COMBUSTIBLE LIQUIDS, FLAMMABLE GAS AND HAZARDOUS SUBSTANCES SHALL COMPLY WITH ADOPTED BUILDING CODE REGULATIONS.
- WOOD BLOCKING AND SHEATHING SHALL BE FIRE RETARDANT TREATED IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS
- EXTEND OR MODIFY EXISTING FIRE/LIFE SAFETY SYSTEM AS REQUIRED TO PROVIDE AN APPROVED FIRE/ LIFE SAFETY SYSTEM. SUBMIT PLANS TO FIRE DEPARTMENT WITH COMPLETE DESCRIPTION OF SEQUENCE OF OPERATION, AND OBTAIN APPROVAL PRIOR TO INSTALLATION.
- LOCATE THE TOP-MOST OPERABLE PORTION OF FIRE ALARM INITIATING DEVICES NO MORE THAN 48" ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE OR SIDEWALK.
- EMERGENCY WARNING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE
- EXTEND OR MODIFY EXISTING AUTOMATIC FIRE EXTINGUISHING SYSTEM AS REQUIRED TO PROVIDE AN APPROVED AUTOMATIC FIRE EXTINGUISHING SYSTEM. SUBMIT PLANS TO FIRE DEPARTMENT AND OBTAIN APPROVAL PRIOR TO INSTALLATION
- AUTOMATIC SPRINKLER SYSTEMS SHALL BE SUPERVISED BY AN APPROVED CENTRAL, PROPRIETARY OR REMOTE STATION SERVICE WHICH WILL GIVE AN AUDIBLE SIGNAL AT A CONSTANTLY ATTENDED LOCATION.
- FIRE ALARM SYSTEM SHALL BE MONITORED BY A UL LISTED SUPERVISING STATION. EXISTING AND NEW SLAB PENETRATIONS FOR PIPING SHALL BE FULLY PACKED AND SEALED
- WITH FIRE-RATED MATERIALS IN ACCORDANCE WITH APPLICABLE BLDG AND FIRE CODES. CONFIRM LOCATIONS OF STROBES AND EXIT
- SIGNS WITH ARCHITECT BEFORE INSTALLATION.

- A. REVIEW GENERAL NOTES BEFORE COMMENCING WORK.
- SURVEY FIELD CONDITIONS AND VERIFY WORK IS BUILDABLE AS SHOWN. REFER TO MECHANICAL, ELECTRICAL AND FIRE SPRINKLER DRAWINGS AND SPECIFICATIONS FOR DESIGN OF THESE SYSTEMS (DUCT SIZE, CIRCUITING, ETC.). CONTACT THE ARCHITECT IN WRITING FOR CLARIFICATION WHERE DISCREPENCIES BETWEEN MECHANICAL, ELECTRICAL AND FIRE SPRINKLER ITEMS OCCUR. IN CASE WHERE CONFLICTS ARISE BETWEEN THE LIGHTING AND THE DUCTWORK, THE GENERAL CONTRACTOR

SHALL OBTAIN WRITTEN CLARIFICATION FROM

THE ARCHITECT PRIOR TO PROCEEDING WITH

- THE WORK IN QUESTION OR ANY RELATED WORK. VERFIY FIELD CONDITIONS AND LOCATIONS OF ELECTRICAL, MECHANICAL, PLUMBING AND STRUCTURAL ELEMENTS. IN ADDITION TO OTHER APPLICABLE ITEMS. ARRANGE AND MODIFY NON-VISIBLE ITEMS TO ENSURE ADEQUATE CLEARANCES FOR CEILING LAYOUT AS SHOWN BEFORE RELATED ELEMENTS ARE CONSTRUCTED. IF THERE ARE QUESTIONS REGARDING THESE OR OTHER COORDINATION PROBLEMS, THE CONTRACTOR SHALL OBTAIN A WRITTEN CLARIFICATION FROM THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK IN
- QUESTION OR WITH RELATED WORK. VERIFY ACCESS PANEL LOCATIONS AND STYLES WITH ARCHITECT BEFORE LAYOUT OF WORK REQUIRING ACCESS.
- WHERE EXISTING ACCESS PANELS CONFLICT WITH NEW CONSTRUCTION, CONFIRM RELOCATION OF EXISTING PANELS WITH ARCHITECT BEFORE PROCEEDING WITH WORK. CEILING TILE/ GRID/ HANGERS ARE NOT
- DESIGNED TO SUPPORT THE WEIGHT OF ADDITIONAL EQUIPMENT OR MATERIALS. CABLES, CONDUIT, FIXTURES, ETC. SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE.
- SUBMIT FIRE SPRINKLER LAYOUT FOR COORDINATION/ REVIEW BY ARCHITECT. PATTERN OF SPRINKLER LAYOUT SHALL COORDINATE WITH PATTERN OF LIGHTING LAYOUT AND SHALL COORDINATE WITH OTHER CEILING COMPONENTS.
- VERFIY CLEARANCE OF ALL CEILING ELEMENTS PRIOR TO INSTALLATION OF ADJACENT ELEMENTS. CONTRACTOR SHALL FULLY COORDINATE CLEARANCE WITH CEILING. PLUMB ALL STEM, AIRCRAFT CABLE, AND APPURTENANCES USED TO SUPPORT
- SUSPENDED LIGHT FIXTURES.

FINISH NOTES

- ENSURE SURFACES TO RECEIVE FINISHES ARE CLEAN, TRUE, AND FREE OF IRREGULARITIES. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN
- CORRECTED. PROTECT FLOORING FROM DAMAGE DURING CONSTRUCTION.
- PROVIDE LEVEL 4 FINISH ON PARTITIONS UNO. PROVIDE 3-COAT PAINT SYSTEMS MIN FOR EA SUBSTRATE UNO.
- REPAIR EXISTING SURFACES TO REMAIN AS REQUIRED FOR APPLICATION OF NEW FINISHES.
- PAINT TO BE LOW V.O.C. UNLESS NOTED OTHERWISE.
- PREPARE SLAB AS REQUIRED TO RECEIVE SPECIFIED FINISH PER MANUFACTURES RECOMENDATIONS. REFER TO FINISH PLAN AND SCHEDULE FOR FINISH LOCATION AND INFORMATION.

EQUIPMENT NOTES

- VERIFY WITH EACH MANUFACTURER OF EQUIPMENT FOR ALL SPECIAL REQUIREMENTS (IE. PROVIDING AND INSTALLING SPECIAL RECEPTACLES, ATTACHING END CONNECTORS ON CABLES OR CABLES TO MACHINES, ETC.) IF NOT SPECIFICALLY EXCLUDED FROM CONTRACT AGREEMENT. CONNECTIONS SHALL BE CONSIDERED TO BE INCLUDED IN THE WORK OF THE ELECTRICAL CONTRACTOR.
- SHOULD DISCREPANCIES IN EQUIPMENT INFORMATION OCCUR, NOTIFY DESIGNER AND CONSULT MANUFACTURER'S INSTALLATION INFORMATION.
- PROVIDE ELECTRICAL AND PLUMBING HOOK-UPS FOR EQUIPMENT AS REQUIRED PER THE EQUIPMENT, MANUFACTURER AND CODE.
- REFER TO ELECTRICAL DRAWINGS TO DETERMINE EQUIPMENT REQUIRING SOLE DEDICATION OF A CIRCUIT (I.E., EQUIPMENT IN
- PRIVATE OFFICES AND WORKSTATIONS). SEE REFLECTED CEILING PLAN DRAWINGS FOR ADDITIONAL INFORMATION, SPECIAL EQUIPMENT LOCATED IN CEILINGS (IE. PROJECTION SCREENS), ETC., TYPICAL.

MILLWORK NOTES

- PROVIDE GROMMET HOLES W/COVER PLATES WHERE INDICATED ON DRAWINGS, EXACT LOCATIONS TO BE DETERMINED ON SHOP DRAWINGS.
- SHIM MILLWORK INSTALLED AGAINST NON-MILLWORK CONSTRUCTION.
- COORDINATE LOCATIONS OF ELECTRICAL AND VOICE/DATA DEVICES, PLUMBING, ETC., MOUNTED WITHIN AND /OR ON MILLWORK WITH ELECTRICAL, PLUMBING, ETC., CONTRACTORS
- AND MILLWORKER. DIMENSIONS SHOWN FOR FURNITURE AND EQUIPMENT (BY OWNER AND/OR CONTRACTOR) ARE FOR REFERENCE ONLY. COORDINATE WITH FURNITURE/EQUIPMENT INSTALLER AND PROVIDE OPENINGS AS REQUIRED TO ENSURE PROPER FIT AND
- FUNCTION WITH MILLWORK. PROVIDE FINISHED END PANELS TO MATCH CABINET FACE AT EXPOSED CABINET END SURFACES.

A. COMPLY WITH CODES, LAWS, ORDINANCES, RULES, AND REGULATIONS OF PUBLIC

- AUTHORITIES GOVERNING THE WORK. B. REVIEW DOCUMENTS, VERIFY DIMENSIONS AND FILED CONDITIONS AND CONFIRM THAT WORK IS BUILDABLE AS SHOWN. REPORT ANY CONFLICTS OR OMISSIONS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO
- PERFORMING ANY WORK IN QUESTION. С SUBMIT REQUESTS FOR SUBSTITUTIONS, **REVISIONS, OR CHANGES TO ARCHITECT FOR** REVIEW PRIOR TO PURCHASES, FABRICATION OR INSTALLATION.
- COORDINATE WORK WITH THE OWNER/ LANDLORD/ LANDLORD'S REPRESENTATIVE/ MALL OPERATION MANAGER, INCLUDING SCHEDULING TIME AND LOCATIONS FOR DELIVERIES, BUILDING ACCESS, USE OF BUILDING SERVICES AND FACILITIES, AND USE OF ELEVATORS. MINIMIZE DISTURBANCE OF BUILDING/ MALL FUNCTIONS AND OCCUPANTS
- COORDINATE TELECOMMUNICATIONS, DATA AND SECURITY SYSTEM INSTALLATIONS MAINTAIN EXITS, EXIT LIGHTING, FIRE PROTECTIVE DEVICES, AND ALARMS IN CONFORMANCE WITH CODES AND
- ORDINANCES. PROTECT AREA OF WORK AND ADJACENT G. AREAS FROM DAMAGE MAINTAIN WORK AREAS SECURE AND LOCKABLE DURING CONSTRUCTION.
- COORDINATE WITH OWNER AND LANDLORD TO ENSURE SECURITY. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT,
- CONSULT THE ARCHITECT. OBTAIN AND PAY FOR PERMITS AND INSPECTIONS REQUIRED BY PUBLIC
- AUTHORITIES GOVERNING THE WORK. OWNER WILL PROVIDE WORK NOTED "BY K. OTHERS" OR "NIC" UNDER SEPARATE CONTRACT. INCLUDE SCHEDULE REQUIREMENTS IN CONSTRUCTION PROGRESS SCHEDULE AND COORDINATE TO ASSURE ORDERLY SEQUENCE OF
- INSTALLATION. WHERE EXISTING ACCESS PANELS CONFLICT WITH NEW CONSTRUCTION, CONFIRM RELOCATION OF EXISTING PANELS WITH ARCHITECT BEFORE PROCEEDING WITH WORK
- M. DIMENSIONS ARE FROM FACE OF FINISH UNO. MAINTAIN DIMENSIONS MARKED "CLEAR". ALLOW FOR THICKNESSES AND MOUNTING OF FINISHES.
- N. DIMENSIONS NOTED "CLEAR" OR "CLR' MUST ALLOW FOR THICKNESS OF WALL FINISHES BE ACCURATELY MAINTAINED AND SHALL NOT CARRY MORE THAN 1/8" WITHOUT WRITTEN APPROVAL FROM ARCHITECT.
- DIMENSIONS MARKED +/- MEAN A TOLERANCE NOT GREATER NOR SMALLER THAN 2 INCHES FROM INDICATED DIMENSIONS. NOTIFY ARCHITECTS OF ANY DIMENSIONS EXCEEDING **TOLERANCE & OBTAIN WRITTEN APPROVAL**
- FROM ARCHITECT BEFORE PROCEEDING P. "ALIGN" MEANS TO ACCURATELY LOCATE FINISHED FACES IN THE SAME PLANE.
- Q. WORK SHALL BE ERECTED AND INSTALLED PLUMB, LEVEL, SQUARE, TRUE AND IN PROPER ALIGNMENT.
- MAINTAIN THE RATING OF EXISTING RATED R ASSEMBLIES
- PROVIDE CONTROL JOINTS AS NEEDED TO AVOID CRACKING ON WALLS AND CEILINGS COORDINATE WITH ARCHITECT LOCATION CONFIRM REQUIRED CLEARANCES WITH
- SPECIFIED APPLIANCES. COORDINATE CLEARANCES WITH NEW CONSTRUCTION.

DEMOLITION NOTES

- COORDINATE DEMOLITION WORK WITH INTERIOR DESIGN DEMOLITION DRAWINGS. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS. MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK. COORDINATE NEW WORK AND DEMOLITION W/ OTHER DISCIPLINES EXISTING CONDITIONS PRIOR
- TO CONSTRUCTION. COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS PERTAINING TO SAFETY OF PERSONS, PROPERTY AND ENVIRONMENTAL PROTECTION.
- ERECT AND MAINTAIN DUSTPROOF PARTITIONS AS REQUIRED TO PREVENT SPREAD OF DUST, FUMES, AND SMOKE, ETC. TO OTHER PARTS OF THE BUILDING. ON COMPLETION, REMOVE PARTITIONS AND REPAIR DAMAGED SURFACES TO
- MATCH ADJACENT SURFACES. PROVIDE ALL NECESSARY DEMOLITION PRIOR TO CONSTRUCTION. IF DEMOLITION IS PERFORMED IN EXCESS OF THAT REQUIRED, RESTORE EFFECTED AREAS AT NO COST TO THE OWNER.
- REMOVE FROM SITE DAILY AND LEGALLY DISPOSED OF REFUSE, DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS.
- FIRE AND LIFE SAFETY SYSTEMS TO REMAIN OPERABLE DURING DEMOLITION. REMOVE FIRE EXTINGUISHER CABINETS IN WALLS SCHEDULED FOR DEMOLITION. MAINTAIN TEMPORARY FIRE EXTINGUISHERS AT A DISTANCE REQUIRED BY ADOPTED CODE DURING CONSTRUCTION. SALVAGE FOR POSSIBLE REUSE.
- REFER TO MECHANICAL, ELECTRICAL, PLUMBING & STRUCTURAL DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION FOR THOSE TRADES. EXISTING STRUCTURAL FIREPROOFING IS TO
- REMAIN UNDISTURBED, UNO. DO NOT ALTER LANDLORD'S STRUCTURE THE ARCHITECT HAS CONDUCTED NO TEST FOR, AND MADE NO DETERMINATION OF THE PRESENCE OR LACK OF ASBESTOS OR OTHER HAZARDOUS OR TOXIC SUBSTANCES OR
- POLLUTANTS. LAYOUT DEMOLITION AND CONFIGURATION IS BASED ON OWNER PROVIDED PARTIAL DOCUMENTS AND LIMITED FIELD OBSERVATION. ACTUAL CONFIGURATION MAY VARY AND **CRITICAL DIMENSIONS & EXISTING CONDITIONS** SHOULD BE VERIFIED BY CONTRACTOR PRIOR TO DEMOLITION.
- M. COMPLETE FINAL CLEAN UP AND WIPE-DOWN OF BUILDING AREAS AFFECTED BY DEMOLITION WHEN WORK IS COMPLETE.
- PROVIDE AND MAINTAIN BARRICADES, LIGHTING, AND GUARDRAILS AS REQUIRED BY APPLICABLE CODES AND REGULATIONS TO PROTECT OCCUPANTS OF MALL AND OTHER WORKERS.
- COORDINATE WITH LANDLORD OF ANY RELOCATION OF (E) SERVICE LINES, SUCH AS WATER LINE, GAS LINE, DOMESTIC WATER, ETC. COORDINATE WITH LANDLORD ON CORE DRILLING OR SLAB TRENCHING PER NEW WORK. DO NOT START WORK WITHOUT APPROVAL FROM

LANDLORD



PHOENIX. A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.









TYPE A1 - HM DOOR & HM FRAME

DOOR TYPES

DOOR ASSEMBLY					FF	RAME ASSEMBLY	ASSEMBLY RATING				
				DIMENSIO	NS					FIRE	HARI
MBER	LOCATION	TYPE	WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	MATERIAL	FINISH	RATING	5
01		A1	3'-0"	7' - 6"	1 3/4"	НМ	PT	HM	PT	N/A	
02	(E) ELEC	A1	3'-0"	6' - 8"	1-3/4"	НМ	PT	HM	PT		



RDWARE SET REMARKS CONDUIT ENCLOSURE + IDF ROOM CONDUIT ENCLOSURE + IDF ROOM 3" 3 5/8" - 07 24 00 EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) - 09 29 13.A00 EXTERIOR GYPSUM SHEATHING 05 40 00.A00 COLD-FORMED METAL FRMG

SYMBOL	MANUFACTURER/DESCRIPTION
	EXTERIOR PAINT
PT01	09 91 23 INTERIOR PAINT CODE: PT01 LOCATION: EXTERIOR WALLS MANUFACTURER: SHERWIN-WILLIAMS MODEL NAME: TBD MODEL NUMBER: TBD SIZE: N/A COLOR: MATCH COLOR @ EXISTING EXTERIOR WALLS FINISH: - NOTE: - CONTACT: -
PT02	09 91 13 EXTERIOR PAINT CODE: PT02 LOCATION: DOOR & FRAME @ DOOR # 01 MANUFACTURER: SHERWIN-WILLIAMS MODEL NAME: TBD MODEL NUMBER: TBD SIZE: N/A COLOR: MATCH COLOR @ EXISTING EXTERIOR WALLS FINISH: EGGSHELL NOTE: - CONTACT: -

06 WALL ASSEMBLY WA-02 SCALE: 1 1/2" = 1'-0"

FINISH SCHEDULE

SHEET NOTES

GENERAL NOTES

- A. DOORS SHALL BE 1 3/4" THICK, UNLESS OTHERWISE NOTED
- B. DOORS SHALL BE TRIMMED AT THRESHOLD TO PROVIDE 3/4" MINIMUM CLEARANCE (UNO) ABOVE FLOOR FINISH MATERIAL TO ALLOW FOR FULL
- DOOR SWING VERIFY ACTUAL DOOR HEIGHT TO PROPERLY SIZE THE OPENINGS
- . COORDINATE OPENING SIZES WITH FIXTURE VENDOR AND ASSIST WITH INSTALLATION ON DOORS & FRAMES WHICH ARE PROVIDED BY FIXTURE VENDOR.
- EXIT DOORS TO HAVE SIGN WHICH READS: "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS." VERIFY WITH ARCHITECT ON SIGN MOUNTING LOCATION
- . PROVIDE LABELS FOR DOORS AND FRAMES IN RATED WALLS TO SATISFY FIRE RATING REQUIREMENT
- G. DOOR AT FULLY OPEN POSITION SHALL NOT PROJECT MORE THAN 7 INCHES INTO THE REQUIRED PATH OF EGRESS TRAVEL WIDTH
- H. POWER OPERATED HORIZONTAL SLIDING DOORS (AS PART OF A COMPONENT OF A MEANS OF EGRESS) SHALL BE OPENABLE BY A SIMPLE METHOD FROM BOTH SIDES WITHOUT SPECIAL KNOWLEDGE OR EFFORT. THE FORCE REQUIRED
- TO OPERATE THE DOOR SHALL NOT EXCEED 30 POUNDS TO SET THE DOOR IN MOTION AND 15 POUNDS TO CLOSE THE DOOR OR OPEN IT TO THE MINIMUM REQUIRED WIDTH.
- MANUALLY OPERATED HORIZONTAL SLIDING DOORS ARE PERMITTED IN A MEANS OF EGRESS FROM SPACES WITH AN OCCUPANT LOAD OF 10 OR LESS. REFER TO ACCESSIBILITY NOTES FOR
- ACCEBILITY REQUIREMENTS AT DOORS K. DOOR GLAZING ASSEMBLIES SHALL COMPLY WITH SAFETY GLAZING REQUIREMENTS PER IBC 2018 SECTIONS 2406.4.1 AND 2604.4.2
- PER IBC 2406.4.1 AND 2406.4.2 GLAZING IN DOORS AND GLAZING ADJACENT TO DOORS ARE TO BE TEMPERATE. COMPLY WITH IBC SECTION 2406 AND PROJECT MANUAL SECTION 08 80 00 -GLAZING SAFETY GLASS REQUIREMENTS.

LEGEND

AL 3S CL E) FH FR	=ALUMINUM =BLDG STANDARD =CLEAR =EXISTING =FULL HEIGHT =FIRE RATED	
FR GL HC	=FIRE RATED =GLASS =HOLLOW CORE	

HM =HOLLOW METAL NR =NON FIRE RATED PG =PAINT GRADE PT =PAINT SC =SOLID CORE

ST =STAIN T = TEMPERED GLASS WD =WOOD



PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note:

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 your contract with the City of Phoenix.

Seal / Signature PATRICK K. MAGNESS Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description DOOR SCHEDULE, EXTERIOR ASSEMBLIES & MATERIAL SCHEDULE Scale As indicated G6.00 SHEET 4 OF 48 © 2015 Gensler



KEY PLAN

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA # SDEV # Note: 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 your contract with the City of Phoenix. 1 of xx?

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

SHEET NOTES

- 01 SPRAYFOAM BASE, SEE WALL SECTIONS & DETAILS
- 03 EIFS ENCLOSURE TO SIT ABOVE EXISTING ROOF WEB
- 07 ENCLOSURE FOR CONDUITS ABOVE CEILING
- 08 CAPPING FOR CONDUIT ENCLOSURE
- 09 EXISTING DOOR TO THE ROOF 12 EXISTING ROOF DECK
- 16 EXISTING ROOF STRUCTURE
- 18 EXISTING PARAPET / CORNICE

GENERAL NOTES

20 SCORE JOINT IN EIFS SYSTEM 26 SCORE JOINT IN EIFS TO ALIGN WITH TOP OF DOOR

KEY PLAN

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

Seal / Signature PATRICK K. MAGNESS Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description CONDUIT ENCLOSURE / BUILDING ELEVATIONS Scale 1/4" = 1'-0" A3.00 SHEET 9 OF 48 © 2015 Gensler

06 TYP. DETAIL @ WALL BASE SCALE: 1 1/2" = 1'-0"

SHEET NOTES

- 01 SPRAYFOAM BASE, SEE WALL SECTIONS & DETAILS
- 02 EXISTING ELECTRICAL CONDUITS
- 12 EXISTING ROOF DECK
- 16 EXISTING ROOF STRUCTURE 17 2" MIN. SPRAYFOAM IN WALL (BETWEEN
- VERTICAL METAL STUDS)
- 18 EXISTING PARAPET / CORNICE 19 EXISTING WALL

GENERAL NOTES

KEY PLAN

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note:

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 your contract with the City of Phoenix.

Seal / Signature PATRICK K. MAGNESS Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description CONDUIT ENCLOSURE / EXTERIOR ENVELOPE DETAILS Scale 1 1/2" = 1'-0" A6.00 SHEET 10 OF 48 © 2015 Gensler

04 VIEW OF IDF ROOM CEILING (LOOKING SOUTH)

01 VIEW OF IDF ROOM (LOOKING NORTH WEST)

05 VIEW OF IDF ROOM - SERVER CONNECTIONS

02 VIEW OF METAL SHELF FOR SERVER UNITS (LOOKING SOUTH EAST)

06 VIEW OF BLOCKED OFF DOOR AND VENTILATION (NORTH)

07 VIEW OF AC UNIT ABOVE DOOR (SOUTH)

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

01 VIEW OF EXISTING CONDUITS (LOOKING WEST)

SHEET NOTES

- 01 SPRAYFOAM BASE, SEE WALL SECTIONS & DETAILS
- 02 EXISTING ELECTRICAL CONDUITS
- 07 ENCLOSURE FOR CONDUITS ABOVE CEILING 10 EXISTING CONDUITS & PULL BOXES
- 15 NEW SPRAYFOAM ROOFING
 - 18 EXISTING PARAPET / CORNICE
 - 19 EXISTING WALL 25 ROOF CRICKET

02 VIEW BETWEEN PULL BOXES AND EXTERIOR WALL

05 VIEW OF EXISTING CONDUITS AND PULL BOXES (LOOKING EAST)

KEY PLAN

GENERAL NOTES

PHOENIX, A 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4904 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

BUILDING CODE:

2018 EDITION OF THE INTERNATIONAL BUILDING CODE, WITH CITY OF PHOENIX AMENDMENTS.

LOADS:

EXISTING ROOF LIVE LOAD = 20 PSF (REDUCIBLE). EXISTING ROOF DEAD LOAD = 15 PSF. NEW ENCLOSURE ROOF LIVE LOAD = 20 PSF (REDUCIBLE). NEW ENCLOSURE ROOF DEAD LOAD = 15 PSF. STEEL STUD WALL WEIGHT = 10 PSF.

WIND:

THE STRUCTURE AND ITS COMPONENTS ARE DESIGNED FOR WIND LOADS AS DEFINED BY THE BUILDING CODE, WHERE:

BASIC WIND SPEED 105 MPH. RISK CATEGORY: II.

WIND EXPOSURE: C.

INTERNAL PRESSURE COEFFICIENT (GCpi) = ± 0.18 .

VELOCITY PRESSURE, qz = 14.6 PSF AT h = 38 FT. (MEAN ROOF HEIGHT). DESIGN WIND PRESSURES COMPONENTS AND CLADDING:

LOCATION	ZONE	EFFECTIVE WIND AREA (SF)	DESIGN WIND PRESSURE SERVICE
		10	+12.5 -33.0
	1	20	+12.0 -31.1
		50	+11.4 -28.7
		100	+11.0 -26.9
		10	+15.8 -41.7
ROOF	2	20	+15.1 -39.4
		50	+14.2 -36.3
		100	+13.5 -34.0
		10	+15.8 -41.7
	3	20	+15.1 -39.4
		50	+14.2 -36.3
		100	+13.5 -34.0
		10	+21.2 -22.6
WALLS	4	20	+20.5 -21.9
		50	+19.6 -20.9
		100	+18.9 -20.2
		500	+17.3 -18.6
		10	+21.2 -26.5
		20	+20.5 -25.1
	5	50	+19.6 -23.3
		100	+18.9 -21.9
		500	+17.3 -18.6

ZONE1: INTERIOR AREA OF ROOF AWAY FROM BUILDING EXTERIOR WALLS.

ZONE2: ROOF AREAS WITHIN 21'-0" OF EXTERIOR WALLS.

ZONE3: ROOF AREAS WITHIN 42'-0" OF BUILDING CORNERS.

ZONE4: EXTERIOR WALLS AWAY FROM BUILDING CORNERS. ZONE5: EXTERIOR WALLS WITHIN 21'-0" OF BUILDING CORNERS.

-DESIGN WIND PRESSURES - PLUS AND MINUS SIGNS SIGNIFY PRESSURE ACTING TOWWARD

AND AWAY FROM EXTERIOR SURFACE. -LINEAR INTERPOLATION BETWEEN VALUES OF TRIBUTARY AREA IS PERMISSIBLE.

-COMPONENT AND CLADDING LOADS ARE SERVICE (ASD) WIND LOADS, FOR FACTORED (LRFD) PRESSURES MULTIPLY VALUE BY 1.67.

SEISMIC:

RISK CATEGORY = II.

Seismic Importance Factor: Ie = 1.0.

DESIGN CATEGORY = B.

SITE CLASS D. Ss = 0.195, S1 = 0.068, R = 2.0.

Sds = 0.208, Sd1 = 0.109.

BASIC SEISMIC-FORCE-RESISTING SYSTEM (LIGHT FRAMED WALLS WITH SHEAR PANELS OF ALL OTHER MATERIALS). ANALYSIS PROCEDURE USED (EQUIVALENT LATERAL FORCE). Cs = 0.1040 (FACTORED/WORKING STRESS).

STRUCTURAL STEEL:

STEEL SECTIONS - MINIMUM GRADE AND STRENGTH

STEEL ANGLES

ALL CONSTRUCTION PER LATEST AISC HANDBOOK. ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC. SHALL CONTRACT DOCUMENTS SHALL BE FLAGGED UPON HIS REVIEW. BE INSTALLED WITH STEEL WASHERS AT FACE OF WOOD OR AT SLOTTED HOLES IN STEEL SECTIONS. ALL HIGH STRENGTH BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY. ALL WELDING SHALL BE VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND ALL FINISHED GRADE WITH CIVIL DRAWINGS. PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE CLOUDED BY TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR MANUFACTURER OR FABRICATOR. ANY OF THE AFOREMENTIONED WHICH ARE NOT CLOUDED OR FLAGGED BY GRADE 60 REINFORCING BARS, USE E90 SERIES. AT MOMENT CONNECTIONS, REMOVE ALL WELD BACKING AND SUBMITTING PARTIES, SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW. UNLESS NOTED RUN-OFF TABS AND BACKGOUGE TO SOUND WELD METAL. BACKWELD WITH A MINIMUM 5/16" FILLET. ALL ACCORDINGLY. WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS: THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. SHOP WELDS THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO CONTRACT DOCUMENTS AT AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. WHEN STRUCTURAL ANYTIME BEFORE OR AFTER SHOP DRAWING REVIEW. STEEL IS FURNISHED TO A SPECIFIED MINIMUM YIELD POINT GREATER THAN 36 KSI, THE ASTM OR OTHER SPECIFICATION DESIGNATION SHALL BE INCLUDED NEAR THE ERECTION MARK ON EACH SHIPPING ASSEMBLY OR THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY IMPORTANT CONSTRUCTION COMPONENT, OVER ANY SHOP COAT OF PAINT, PRIOR TO SHIPMENT FROM THE AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT ARE NOT TO BE CONSIDERED CHANGES FABRICATOR'S PLANT. STRUCTURAL STEEL COMPONENTS, AND FASTENERS AT ALL EXTERIOR CONDITIONS SHALL TO CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE ITEMS ARE BE GALVANIZED OR PROTECTED AGAINST CORROSION USING APPROVED METHOD PUBLISHED BY AISC OR ANSI. CONSTRUCTED PER THE CONTRACT DOCUMENTS. WELDS ON GALVANIZED STEEL SHALL FOLLOW AWS D-19.0 SPECIFICATIONS.

STEEL DECKING:

ROOF DECK:

DECK SHALL BE 1 1/2" DEEP, 36" WIDE, 20 GAGE PAINTED (GALVANIZED) STEEL, WITH MINIMUM YIELD STRESS OF 50 KSI, WITH MINIMUM S = 0.23 IN3 AND I = 0.231 IN4 PER FOOT OF WIDTH. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 3 SPAN MINIMUM AND SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF ____ PLF USING THE FOLLOWING MINIMUM ATTACHMENTS:

FASTEN DECK TO SUPPORTING MEMBERS WITH #10 TEK SCREWS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAMS AND OPENING EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE PUNCHLOK II AT 12" O.C.

COLD FORMED STRUCTURAL STEEL FRAMING:

ALL COLD-FORMED STEEL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AMERICAN IRON AND STEEL INSTITUTE.

STEEL FOR 14 AND 16 GAGE STUDS AND JOISTS, AND FOR ALL DIAGONAL TENSION STRAPS SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL FOR ALL 18 AND 20 GAGE STUDS AND JOISTS, AND FOR ALL GAGES OF TRACK, ACCESSORIES AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI. STEEL SHALL BE GALVANIZED AT LOCATIONS EXPOSED TO WEATHER AND WHEREVER NOTED.

ALL STUD FRAMING (BOTH INTERIOR AND EXTERIOR) SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE VERTICAL DEFLECTION OF THE STRUCTURE OF UP TO 1/2" LIVE LOAD DEFLECTION, UNLESS GREATER VALUE IS NOTED ON PLANS OR DETAILS. UTILIZE SLIP TRACK OR OTHER SIMILAR MEANS.

ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BEAM BEARINGS AND JOIST BEARINGS. BRIDGING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION WITH THE FOLLOWING MINIMUM REQUIREMENTS.

FOR WALLS WITH NO AXIAL LOAD, PROVIDE BRIDGING AT MID-HEIGHT FOR WALLS LESS THAN OR EQUAL TO 10'-0" HIGH, AND 5'-0" O.C. MAXIMUM FOR WALLS GREATER THAN 10'-0" HIGH. FOR AXIAL LOAD BEARING WALLS, PROVIDE BRIDGING EQUALLY SPACED AT 4'-0" MAXIMUM. IN ADDITION, BRIDGING SHALL BE PROVIDED AT ROOF LINES AND ELSEWHERE AS NOTED ON THE DRAWINGS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON THE DRAWINGS.

STEEL STUD DETAILS AND GAGES DEPICTED ON STRUCTURAL DRAWINGS SHOW GENERAL STRUCTURAL REQUIREMENTS AND ARE FOR SCHEMATICS PURPOSE ONLY. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT COMPREHENSIVE DESIGN AND CALCULATIONS FOR ALL STEEL STUD WALLS. ANY ADDITIONAL FRAMING MATERIALS REQUIRED FOR COMPLETE DESIGN SHALL BE INCORPORATED IN COMPREHENSIVE DESIGN AND CALCULATIONS, INCLUDING BUT NOT LIMITED TO TUBE STEEL FRAMING FOR JAMBS, HEADERS, AND SILLS.

GENERAL:

ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAGE STRUCTURAL STEEL FRAMING WORK. DO NOT NOTCH FLANGES OF JOISTS OR STUDS. DOUBLE UP FLOOR JOISTS AND BLOCKING UNDER PARTITIONS. PROVIDE BLOCKING AT SUPPORTS OF ALL JOISTS. DOUBLE UP STUDS AT JAMBS AND AS REQUIRED UNDER BEAMS IN BEARING WALLS.

EXPANSION AND SCREW ANCHORS:

USE STUD TYPE EXPANSION ANCHOR WITH A SINGLE PIECE WEDGE ONLY WHERE NOTED ON PLANS. IF USE IS REQUESTED FOR OTHER THAN WHERE NOTED CONTACT STRUCTURAL ENGINEER THROUGH ARCHITECT FOR APPROVAL

CONTRACTOR SHALL SUBMIT MANUFACTURER'S SIZE AND STRENGTH DATA TO ENGINEER THROUGH ARCHITECT PRIOR TO CONSTRUCTION. INSTALL ALL BOLTS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL, CLEANING HOLE, DRIVING AND TIGHTENING BOLT. IN MASONRY:

ANCHORS USED MUST HAVE ICC APPROVAL AND INCLUDE HILTI KWIK BOLT 3 (ESR-1385), AND SIMPSON STRONG BOLT-2 (ES-240), DEWALT POWER-STUD+SD1 (ESR-2966), HILTI KWIK HUS-EZ (ESR-3056) AND SIMPSON TITEN HD (ESR-1056), AND DEWALT SCREW-BOLT+ (ESR-4042) OR APPROVED EQUAL.

EPOXY ANCHORS IN CONCRETE AND MASONRY:

INJECTABLE ADHESIVE SHALL BE USED FOR INSTALLATION OF REINFORCING STEEL DOWELS OR THREADED ANCHOR RODS AND INSERTS INTO NEW OR EXISTING CONCRETE OR SOLID GROUTED CONCRETE MASONRY UNITS ONLY WHERE SPECIFIED ON PLANS. IF USE IS REQUESTED FOR OTHER THAN WHERE NOTED CONTACT STRUCTURAL ENGINEER THROUGH ARCHITECT FOR APPROVAL. ADHESIVE SHALL BE FURNISHED IN SIDE BY SIDE PACKS WHICH KEEP COMPONENT A AND COMPONENT B SEPARATE. USE ONLY INJECTION TOOLS AND STATIC MIXING NOZZLES RECOMMENDED BY MANUFACTURER. MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED.

IN MASONRY:

ANCHORS USED MUST HAVE ICC APPROVAL AND INCLUDE SIMPSON SET (ESR-1772) AND HILTI HIT-HY 270 MAX (ESR-4143) AND DEWALT AC100+GOLD (ESR-3200) OR APPROVED EQUIVALENT. THE USE OF ANY EPOXY ANCHOR MUST BE APPROVED BY THE ENGINEER OR RECORD PRIOR TO INSTALLATION.

- COMMENCEMENT OF INSTALLATION.
- D.2.2) / (ACI 318-14 17.1.2) / (ACI 318-19 17.2.2).
- NOTE B).

GENERAL STRUCTURAL NOTES APPLY UNLESS NOTED OTHERWISE

SHOP DRAWINGS:

= ASTM A36 (36KSI)

1. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION TO SUPPORT SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI (ACI 318-11 D.9.2.2) / (ACI 318-14 17.8.2.2) / (ACI 318-19 17.2.3) PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO

ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS (ACI 318-11

THE REMOVAL AND RESETTING OF POST INSTALLED ANCHORS IS PROHIBITED (ACI 318-19 17.3.1). PROVIDE SPECIAL INSPECTION FOR ALL MECHANICAL AND ADHESIVE ANCHORS PER THE APPLICABLE BUILDING CODE AND PER THE CURRENT ICC-ES REPORT (IBC 2012, 2015, 2018 TABLE 1705.3 TYPE 4, SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY ARCHITECTURAL SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH

THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY.

REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.

EXISTING STRUCTURE:

EXISTING STRUCTURAL DIMENSIONS AND MEMBER SIZES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATION. THE CONTRACTOR SHALL VERIFY THE ACTUAL CONFIGURATION OF EXISTING CONSTRUCTION AND THE CONDITION OF THE STRUCTURE BEFORE BEGINNING WORK. ANY DISCREPANCIES OR UNSOUND CONDITIONS SHALL BE REPORTED TO THE ARCHITECT FOR RESOLUTION BEFORE BEGINNING WORK. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS. EMBEDMENTS, AND OPENINGS NOT SHOWN. REFER TO MECHANICAL AND ELECTRICAL PLANS FOR DUCTS, PIPING, EMBEDMENTS, AND OPENINGS NOT SHOWN.

TEMPORARY SHORING AND BRACING MAY BE NECESSARY IN ORDER TO PERFORM THE NECESSARY STRUCTURAL MODIFICATIONS TO THE EXISTING STRUCTURE SHOWN ON THE STRUCTURAL AND ARCHITECTURAL PLANS AND DETAILS. THE CONTRACTOR MUST RETAIN A LICENSED STRUCTURAL ENGINEER WHO SHALL INVESTIGATE WHERE THIS TEMPORARY SHORING/BRACING IS REQUIRED. AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING.

GENERAL:

ENTIRE CONTRACT DOCUMENTS SHALL BE USED TO CONSTRUCT BUILDING. SOME CRITICAL ITEMS REQUIRED BY OTHER DISCIPLINES MAY NOT BE SHOWN ON STRUCTURAL DRAWING (i.e. WALL, FLOOR AND ROOF OPENINGS, ARCHITECTURAL, MECHANICAL AND PLUMBING LOADS, SUPPORT PLATES ETC.)

ITEMS SHOWN BY OTHER DISCIPLINES WITH REFERENCE TO STRUCTURAL DRAWING BUT NOT SHOWN ON THESE STRUCTURAL DOCUMENT SHALL BE CONSIDERED DESIGN BUILD ITEMS. CONTRACTOR SHALL SUBMIT DESIGN BY OTHERS FOR REVIEW.

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF THE CONTRACTOR CHOOSES AN OPTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

ALL DIMENSIONS SHOWN (INCLUDING ELEVATIONS) ON STRUCTURAL DRAWINGS ARE TO ASSIST CONTRACTOR IN VERIFICATION. SCALING DIMENSIONS FROM DRAWINGS IS NOT PERMITTED. LOCATION OF ALL ITEMS SHALL BE DETERMINED BY DIMENSIONS OR NOTES ONLY; DO NOT USE GRAPHIC APPEARANCE TO ASSUME SPECIFIC LOCATIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL AND FINISHED GRADE WITH CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF JURISDICTION.

SUPPLIER OF ENGINEERED STRUCTURAL COMPONENTS SHALL BE RESPONSIBLE FOR COMPLETE DESIGN AND SHALL USE ENTIRE CONTRACT DOCUMENTS TO INCLUDE ALL LOADS AND DETAIL REQUIREMENTS FROM ALL DISCIPLINES. SUPPLIER SHALL PROVIDE ADDITIONAL MATERIAL REQUIRED TO MEET ALL THEIR REQUIREMENTS FOR INSTALLATION (i.e. WIDER BEARING PLATES, SHIMS, ERECTION BOLTS ETC.).

STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS FOR OSHA CONNECTIONS (SEE DRAWINGS FOR DETAILS). WALL SHORING SHALL BE INSTALLED PRIOR TO BACKFILLING BEHIND ALL BUILDING RETAINING WALLS,

UNLESS ALL RESTRAINING SLABS ARE INSTALLED. USE HANDTAPPING ONLY WHEN WITHIN 8'-0", OR WITHIN HALF THE WALL HEIGHT OF BACKFILLED WALL.

CONTINUOUS FOUNDATION DRAIN PIPES (FRENCH DRAINS) OR WEEP HOLES SHALL BE PROVIDED BEHIND ALL EXTERIOR RETAINING WALLS THAT RETAIN MORE THAN 3'-0" OF SOIL. WEEP HOLES WHERE USED SHALL BE 2" IN DIAMETER AT 6'-0" O.C. MAXIMUM.

BUILDING TOLERANCES:

STANDARD TOLERANCES SHALL BE BASED ON THE REQUIREMENTS OF THE AISC CODE OF STANDARD PRACTICE AND ACI 117, STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.

MISCELLANEOUS:

REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, ELEVATOR, OR OTHER SPECIALTY ENGINEERING DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING BUT NOT LIMITED TO: SIZE AND LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL AND FLOOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, ANCHOR BOLTS, EMBEDDED ITEMS, ARCHITECTURAL TREATMENT, ETC. CONTRACTOR SHALL VERIFY DIMENSIONS AND RESOLVE DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION. WHERE SECTIONS ARE INDICATED ON THE PLAN BY A NUMBER AND A DRAWING NUMBER THUS, 1/S5.01, THE INDICATED SECTION (1) IS SHOWN ON STRUCTURAL DRAWING S5.01.

ALL WINDOW SYSTEMS SHALL BE DESIGNED TO ACCOMMODATE VERTICAL DEFLECTION OF THE STRUCTURE OF 3/4" MINIMUM LIVE LOAD DEFLECTION, UNLESS GREATER VALUE IS NOTED ON PLANS OR DETAILS.

FLOOR FLATNESS/LEVELNESS SHALL MEET ARCHITECTURAL SPECIFICATIONS (1/4" IN 10 FOOT MINIMUM LEVELNESS UNLESS TIGHTER REQUIREMENT IN SPECIFICATIONS) IN HEIGHT FOR ALL STRUCTURAL SYSTEMS. CONTRACTOR SHALL INCLUDE COST FOR LEVELING ALL FLOORS. FOR ESTIMATING PURPOSES ONLY, ASSUME 1/2" THICK LEVELING AGENT OVER 15% OF FLOOR AREA.

SHEET S1.00 S1.01 S2.00 S3.00 S3.01 S4.00 CHECKED CHECKED E CHECKED B

THESE DRAWINGS HAVE BEEN PREPARED FOR CITY SUBMITTAL, AND ARE NOT TO BE CONSIDERED 100% CONSTRUCTION DOCUMENTS UNTIL CITY PLAN REVIEW HAS BEEN COMPLETED AND FINAL BUILDING PERMIT HAS BEEN ISSUED. IF THESE DOCUMENTS ARE TO BE USED FOR PRICING, BID, OR STEEL MILL ORDER, THE CONTRACTOR SHALL PROVIDE IN THE PROJECT BUDGET AN ALLOWANCE FOR POTENTIAL CHANGES BETWEEN THE CITY SUBMITTAL DRAWINGS AND THE FINAL APPOVED SUBMITTAL AND CONSTRUCTION DOCUMENTS. ADDITIONALLY, MISCELLANEOUS ITEMS MAY NOT BE SHOWN ON THESE DRAWINGS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, ELEVATOR AND EQUIPMENT SUPPORTS, BLOCKOUTS, ETC. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND OTHER SPECIALTY DRAWINGS FOR ADDITIONAL INFORMATION. THE CONSTRUCTION BUDGET SHALL INCLUDE THESE ITEMS. THE STRUCTURAL ENGINEER WILL NOT BE RESPONSIBLE FOR CHANGE ORDER COSTS INCURRED (INCLUDING DISCARDED MATERIAL COSTS) DUE TO BIDDING OR STEEL MILL ORDER FROM THESE DRAWINGS. CONTACT STRUCTURAL ENGINEER FOR CLARIFICATION IF THE SCOPE AND QUANTITY OF ALLOWANCE TO BE CARRIED IS NOT CLEAR.

NOTE TO CONTRACTOR REGARDING PRICING/BIDDING OF CITY SUBMITTAL DRAWINGS:

Gensler Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States	Tel 602.523.4904 Fax 602.523.4949
PK A 7434 E. Scottsda Phone: Fax: (48 Email: c Website Proj Nur	Associates, L.L.C. McDonald Drive ale, Arizona 85250 (480) 922-8854 0) 922-3739 add@pkastructural.com :: www.pkastructural.com n: 21360
△ Date Description	
Seal / Signature	Engineer- Gruchurol S5 N C. KER 24 U.S.
Project Name	EC
US Vets - 12027 Phoenix AZ 8502 Project Number	N 28th Drive, 29
U57.8221.100 Description	
057.8221.100 Description GENERAL STRUCTU	IRAL NOTES

	SHEET INDEX
	GENERAL STRUCTURAL NOTES
	GENERAL STRUCTURAL NOTES
	STRUCTURAL FRAMING PLANS
	TYPICAL DETAILS
	TYPICAL DETAILS
	FRAMING DETAILS
3Y: _ 3Y: _	

SHEET 13 OF 48

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE

SPECIAL INSPECTION:								
PER IBC CHAPTER 17, SPECIAL INSPECTION IS REQUIRED FO	OR THE FOLLOWING	ITEMS:						
STEEL:			R	EFERENCED	IBC			
VERIFICATION AND INSPECTION	CONTINUOUS	PER	IODIC	(NOTE1)	REFERENCE			
 Material verification of structural steel: a. Identification markings to conform to ASTM standards specified in the approved construction documents. b. Manufacturers' certified mill test reports. 	-	-	AISC ASTM ASTM	360, SEC. M2.5 A 6 OR A 568				
 2. Material verification of weld filler materials: a. Identification markings to conform to AWS specification in the approved construction documents. b. Manufacturer's certificate of compliance required. 		-	AISC	360, SEC. A3.5				
 3. Inspection of welding: a. Structural steel: 1) Complete and partial penetration groove welds. 2) Multipass fillet welds. 3) Single-pass fillet welds > 5/16" 4) Single-pass fillet welds = 5/16" 5) Floor and roof deck welds. b. Reinforcing steel: 1) Verification of weld ability of reinforcing steel other than ASTM A 706. 2) Reinforcing steel-resisting flexural and Axial forces in intermediate and special Moment frames, and boundary elements of Special reinforcement. 3) Shear reinforcement. 4) Other reinforcing steel. 4. Inspection of steel frame joint details for compliance with approved construction documents a. Details such as bracing and stiffening. b. Member locations. c. Application of joint details at each connection. NOTES: WHERE APPLICABLE SEE ALSO SECTION 1701.1, SPECIAL TABLES TAKEN DIRECTLY FROM IBC FOR REFERENCE. 	- X X X - - - - - - - - - - - - - - - -		CE.	WS D1.1 WS D1.1 WS D1.1 WS D1.3 WS D1.4 Cl 318: 3.5.2				
 EXPANSION, SCREW, AND EPOXY BOLTS: 1. During placemet of all expansion, screw, & epoxy bolts, for visual verification of hole diameter and depth and placement of bolt and/or epoxy. 	-	x						
DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPE	CTOR:							
A) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK THE APPROVED DESIGN DRAWINGS AND SPECIFICATION	ASSIGNED TO BE C	CERTAIN IT CONFO	orms with					
B) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION TO THE ENGINEER.	Reports to the	BUILDING OFFICIA	L, AND					
C) UPON COMPLETION OF THE ASSIGNED WORK THE ENGI SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO IN CONFORMANCE WITH THE APPROVED PLANS AND S WORKMANSHIP PROVISIONS OF THE CODE.	NEER OR ARCHITED THE BEST OF HIS PECIFICATIONS AND	CT SHALL COMPL KNOWLEDGE THE D THE APPLICABL	ete and Work Is .e					

1	
	-

INTERPRETATION OF DRAWINGS

LOCATION OF INFORMATION							
ITEM	INFORMATION	LOCATION					
FRAMING MEMBERS	SIZE, TYPE, AND CONNECTION	SEE PLANS/DETAILS					
PLAN LEGEND							
SYMBOL	DESCRIPTION	REMARKS					
101 SM	DETAIL CUTS SHOWN ON PLANS	TYPICAL DETAILS ARE TWO DIGIT SERIES NUMBERS FOUNDATION DETAILS ARE 100 SERIES DETAILS FRAMING DETAILS ARE 200 SERIES NUMBERS					
7//////////////////////////////////////	8" MASONRY WALL	SEE PLANS & SCHEDULES FOR REINFORCINGS					
	MECHANICAL EQUIPMENT	SEE PLANS FOR UNIT WEIGHTS					
\boxtimes	OPENING IN FRAMING						

ABBREVIATIONS							
A.B.C. — — — — — —	AGGREGATE BASE COURSE						
ABV. — — — — — —	- ABOVE						
A/C							
A.F.F. — — — — — — — — — — — — — — — — —	- ABOVE FINISHED FLOOR - ALTERNATE						
A.B. — — — — — — —	- ANCHOR BOLT						
©	AT (MEASUREMENT)						
A.O — — — — — — — — — — — — — — — — — — —	- AS OCCURS - REAM						
B.F.F — — — — — —	BELOW FINISHED FLOOR						
B.O.B. — — — — — —	BOTTOM OF BEAM						
B.O.D. — — — — — — — — — — — — — — — — — —	-BOTTOM OF DECK						
BRG — — — — — —	BEARING						
C.I.P	CAST IN PLACE						
CLB —————	CENTERLINE CENTERLINE OF BEAM						
C.L.C. — — — — — — —	CENTERLINE OF COLUMN						
C.L.F. — — — — — — —	CENTERLINE OF FOOTING						
C.L.W. — — — — — — — — — — — — — — — — — —	- CENTERLINE OF WALL						
CONC	- CONCRETE						
CONC C.J	CONCRETE CONTROL JOINT						
CONC S.J	- CONCRETE SAWCUT JOINT						
CONN — — — — — — —	- CONNECTION						
CONT	- CONTINUOUS						
U.L. — — — — — — — — — — — — — — — — — —	- DEAD LOAD - DIAMETER						
DN	- DOWN						
DWG(S)							
E.0.S	-EDGE OF SLAB -FOLIAI						
	- EQUIPMENT						
EXP. BOLT — — — —	EXPANSION BOLT						
EXP. JI (E.J.)	EXPANSION JOINT						
F.F. — — — — — — — — — — — — — — — — — —	-FINISHED FLOOR						
F.O.M. — — — — — —	FACE OF MEMBER						
F.O.S. — — — — — — — — — — — — — — — — — —	FACE OF STEEL						
GA	- GAGE						
GALV	GALVANIZED						
G.S.N	GENERAL STRUCTURAL NOTES						
I.F.W	-INSIDE FACE OF WALL						
HORIZ	HORIZONTAL						
K(KIP)	-1000 POUNDS						
LBS (#)	- POUNDS						
LLH	LONG LEG HORIZONTAL						
LLV	-LONG LEG VERTICAL						
MAS C.J. $$	MANONACTORER 3)						
MECH'L	MECHANICAL						
N/A	NOT APPLICABLE						
0.C	-ON CENTER						
0.F.W	OUTSIDE FACE OF WALL						
	- OPPOSITE						
P.J. – – – – – – –	-PANEL JOINT						
PLF	POUNDS PER LINEAR FOOT						
PSF	-POUNDS PER SQUARE FOOT						
PSI	POUNDS PER SQUARE INCH						
REINF							
SLH	-SHORT LEG HORIZONTAL						
SIM	SIMILAR						
SQ	- SQUARE						
STL	- STEEL						
T.L	TOTAL LOAD						
T.O.B	TOP OF BEAM						
T.O.F. – – – – – – – –	TOP OF FOOTING						
T.O.L	TOP OF LEDGER						
T.O.M	TOP OF MASONRY						
T.O.S. – – – – – – – – – – – – – – – – – –	TOP OF PLATE						
T.O.W	TOP OF WALL						
	TYPICAL						
VERT	- VERTICAL						
W.W.F	WELDED WIRE FABRIC						
W/	- WITH - WITHOUT						
··/··							

ROOF FRAMING NOTES

- VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. ROOF ELEVATIONS, WHERE SHOWN, ARE TO BE PROVIDED AND VERIFIED BY THE ARCHITECT.
- 2. SCHEDULED MARK DESIGNATIONS ARE TYPICAL TO THE PROJECT AND MAY NOT NECESSARILY BE FOUND ON THIS PLAN.
- 3. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
- 4. FOR CLARITY, ALL ROOF OPENINGS MAY NOT BE SHOWN ON ROOF FRAMING PLAN. FOR EXACT SIZE, NUMBER AND LOCATION OF OPENINGS, SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL DETAILS.

(##) EXISTING ROOF FRAMING KEYNOTES

- A EXISTING COLUMN GENERAL CONTRACTOR TO VERIFY SIZE IN FIELD. B EXISTING 1 1/2" ROOF DECK - GENERAL CONTRACTOR TO VERIFY IN FIELD.
- C EXISTING MASONRY WALL.

******* NEW ROOF FRAMING KEYNOTES

- 01 NEW 600S200-68 EXTERIOR STEEL WALL STUDS AT 16" O.C. MAX.
- 02 NEW 1000S200-68 COLD-FORMED STEEL JOISTS AT 24" O.C. MAX. PROVIDE BLOCKING MID-SPAN PER TYPICAL DETAIL 206.
- 03 NEW 1 1/2"x20 GA STEEL DECK, ATTACH PER GSN. 04 COLD-FORMED HEADER AND JAMBS PER TYPICAL DETAIL.
- 05 NEW 10" DEEP x14 GA MIN. CONTINUOUS TRACK.
- 06 5/8" GYPBOARD ONE SIDE OF WALL WITH #12 TEK SCREWS AT 4" O.C. PROVIDE BLOCKING PER GSN. 3- 600S200-68 STEEL JAMB STUDS AT EACH END WITH STEEL HOLDOWN ATTACHMENTS TO NEW BOX HEADER BELOW.
- 07 NEW 3- 800S200-68 STEELBOX BEAM BELOW DECK AT BASE OF WALL SUPPORTING STEEL STUD WALL ABOVE. SPANNING FULL LENGTH OF WALL. 08 NEW 3- 800S200-54 STEEL BOX BEAM ABOVE THE EXISTING BEAM AND BELOW EXISTING DECK. BOX BEAM TO SPAN IN BETWEEN EXISTING Z PURLIN BEARING LOCATIONS TO SUPPORT WALL
- ABOVE TYPICAL. 09 NEW L3x2x1/2 (LLV) EXISTING MEMBER REINFORCEMENT EACH SIDE OF WEB FOR LENGTH SHOWN ON PLAN. INSTALLED ABOVE THE BOTTOM FLANGE AND WELDED TO EXISTING MEMBER.
- 10 NEW 14 GA MINIMUM COLD-FORMED DOUBLE ANGLE CLIP CONNECTION AT MASONRY WALL. ATTACH TO WALL WITH 3/4"Ø POST-INSTALLED HILTI SCREW ANCHORS INTO GROUTED MASONRY CELLS.
- 11 EXTENT OF NEW MEP CONDUIT ON EXISTING ROOF COORDINATE EXACT EXTENTS WITH MEP AND ARCHITECTURAL DRAWINGS..

NOTE:

GENERAL CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND NOTIFY E.O.R. OF DISCREPANCIES OR CONFLICTS NOT SHOWN ON PLAN.

SIZES SHOWN ARE APPROXIMATIONS FROM VISUAL INSPECTION

NOTE

 $\left\langle \right\rangle$

GENERAL CONTRACTOR TO COORDINATE NEW STEEL STUD WALL PLACEMENT IN FIELD WITH E.O.R. / ARCHITECT. WALLS ARE TO BE LOCATED DIRECTLY ABOVE EXISTING STEEL MEMBERS WHERE SHOWN ON PLANS.

© 2015 Gensler

- 12" O.C. STAGGERED THROUGH
- 3. #12 TEK SCREWS AT 12" O.C.,
- 4. 2 (FULL HEIGHT) JAMB STUDS MIN. REFER TO SCHEDULE BELOW
- 5. STEEL HEADER PER SCHEDULE. SCHEDULE FOR HEAVIER GAGE
- DOUBLE TRIMMER STUD, 16 GAGE MIN. (ADD ONE ADDITIONAL STUDS
- 8. TYPICAL PINS OR SCREWS AT 2" O.C. EACH SIDE FOR EVERY

- FOR OPENING LARGER THAN SHOWN - SEE FRAMING PLAN TRACKS SHALL BE UNPUNCHED

	IN TERIOR	WALLS
IDS L)	HEADER SIZE (6" WALL)	JAMB STUDS (6"WALL)
2–54	2– 600S200–54 2– 600T162–68 TRACKS	2– 600S162–43
0-54	2– 800S200–68 2– 600T200–68 TRACKS	2– 600S162–54
0–68	2– 1000S200–97 2– 600T200–97 TRACKS	2– 600S200–54
0–68	3– 1000S200–97 2– 600T200–97 TRACKS	2- 600S200-54
0–68	3- 1200S200-97 2- 600T200-97	2– 600S200–54

<u>NOTES:</u>

1. NO PUNCHOUT SHALL OCCUR WITHIN 12" FROM END OF

- STUDS (EDGE OF PUNCHOUT) 2. STUDS MUST BE FULLY SEATED AGAINST TRACK (1/8" MAX. GAP BETWEEN BOTTOM OF
- STUD AND TRACK). 3. 16 GAGE TOP TRACK WITH 1 1/2" WIDE FLANGES. FOR PENETRATION IN TRACK SEE
- DETAIL 59. 4. #10 TEK SCREW ATTACHMENT EACH SIDE.
- 5. 16 GAGE BOTTOM TRACK WITH 2" FLANGE WIDTH.

<u>NOTE:</u>

THIS DETAIL APPLIES TO TOP AND BOTTOM TRACK OF ALL STRUCTURAL STUDS.

NO SCALE

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED OTHERWISE COLD FORMED STRUCTURAL STEEL FRAMING (I.C.B.O. #2274)

ALL COLD-FORMED STEEL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AMERICAN IRON AND STEEL INSTITUTE.

STEEL FOR ALL STUDS AND FOR ALL GAGES OF TRACK, ACCESSORIES AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI.

ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BRIDGING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION.

ALLOWABLE WALL HEIGH	TS FOR FULL F ARTITIONS	HEIGHT	MINIMUM STUD PROPERTIES		BRACING SPACING
	SPACING				WHERE UCCURS
STUD SIZE	16" O.C.	24" O.C.	Sx(in3)	lxx(in4)	
3 5/8" X 18 GAGE	25'-0"	21'-4"	.411	.744	12' — 0" O.C.
3 5/8" X 20 GAGE	21'–5"	18'-7"	.270	.490	10'—0" O.C.
3 5/8" X 25 GAGE	17'–8"	15'–5"	.155	.281	8'-0" O.C.
2 1/2" X 18 GAGE	17'-6"	13'-4"	.261	.314	9'–0" O.C.
2 1/2" X 20 GAGE	15'—10"	13'–10"	.160	.200	8'—0" O.C.
2 1/2" X 25 GAGE	13'—1"	11'-6"	.092	.115	6'-0" O.C.

VALUES SHOWN BASED ON STUDS SUPPLIED BY WESTERN METAL LATH STEEL FRAMING PRODUCTS. OTHER STUDS OF EQUAL TO OR GREATER STRENGTH MAY BE USED WITH CURRENT I.C.B.O. APPROVAL.

VALUES BASED ON NO AXIAL LOAD AND DEFLECTION LIMIT OF h/120 (VERIFY WITH ARCHITECTURAL SPECIFICATIONS FOR SPECIAL REQUIREMENT).

BRACING (SPACING) DESIGN BASED ON MAXIMUM WALL HEIGHT (TO CEILING) OF 10'-0" IF TOP TRACK FOR EACH WALL TYPE WERE INCREASED TO THE NEXT STANDARD GAGE, THE BRACING

SPACING REQUIRED CAN BE INCREASED TO THE NEXT HIGHEST INCREMENT SHOWN. TOP AND BOTTOM TRACK TO BE SAME GAGE, Sx AND Ixx AS STUD WITH 1 1/2" DEEP FLANGES.

NON BEARING CEILING HEIGHT INTERIOR PARTITION BRACING (SS02) TO FLOOR/ROOF

© 2015 Gensler

- EXISTING STEEL BEAM.
 L3x2x1/2 (LLV) EACH SIDE
- BY LENGTH SHOWN ON PLAN.

NO SCALE

3. 12" STARTER WELD AT EACH END.

NOTES:

STEEL STUD WALL.

2. STEEL JOIST.

- TRACK FLANGE WITH #10 TEK SCREWS EACH STUD, TYP. ADJACENT STEEL DECK. 4. 2- #10 TEK SCREWS AT
- 16" Ö.C. TYP.
- 5. 16 GAx1 1/2" FLANGE CONT. TRACK – WIDTH TO MATCH STUD WITH #10 TEK SCREWS EACH FLANGE EACH STUD. 6. CONT. 16GA.x2 1/2" FLANGE
- LEDGER STEEL TRACK. 7. 2" FLANGE CONT. STEEL BOTTOM TRACK - GAUGE AND DEPTH TO MATCH STUD GAUGE WITH #10 TEK EACH
- FLANGE EACH STUD U.N.O., PROVIDE 3 1/2" FLANGE WIDTH AT ALL SHEARWALL LOCATIONS TO ALLOW SCREW ATTACHMENT PER SHEARWALL SCHEDULE. 8. EDGE ATTACHMENT.
- 9. ROOF DECK SEE PLAN FOR DIRECTION. 10. #12 TEK SCREWS AT 8" O.C. – STEEL LEDGER TO TOP
- TRACK SCREWS PER SHEARWALL SCHEDULE AS SHEARWALL OCCURS.
- 11. L3x3x16GA x 8" LONG AT EACH JOIST WITH 5- #12 TEK SCREWS.
- 12. DOUBLE 18 GA. BLOCKING AT
- SHEARWALLS. 13. SHEATHING AS OCCURS.

NO SCALE

NOTES: 1. STEEL JOIST. 2. NOTCH BLOCKING AS REQUIRED. 3. 16GA.x1 5/8" FLANGE FULL HEIGHT BLOCKING BEND WEB AT EACH END TO FORM TAB AND CONNECT W/ 3 #10 TEK SCREWS EACH JOIST. ALTERNATE AT CONTRACTORS OPTION, USE L2x2x16GA. 0'-8" LONG CLIP EACH END OF BLOCKING WITH 3- #10 TEK SCREWS EACH LEG EACH CLIP.

TYPICAL JOIST BLOCKING DETAIL (206

^{© 2015} Gensler

	VII
• NAME - 10'-0" -	LEVEL NAME HEIGHT ABOVE PROJECT 0'-0"
NORT	VIE 1 1/8" = 1'-0"
	SIM IN MULTIPLE DETAIL REF M101-SHEET DETA
	<u>O TAG KEY:</u> (THIS CONTRACTOR (WIDE NEW EXISTING TO BE REMOVEI NEW UNDERFLOOR OR UI
EXISTING TO R	REMAIN OR WORK BY OTHE EXISTING EXISTING TO BE REMOVEI EXISTING UNDERFLOOR C
	DOES NOT MODIFY SCOPE.
TAG-1	
<u></u>	INFORMATION IS AVAILAB
•	INDICATES AN EXISTING S
CONTRAC	
	INCLUDING, BUT NOT
ECHANICAL COI	DE:
ECTRICAL COD	E:
IERGY CONSEF	RVATION CODE:
EALTH DEPARTI	MENT CODE:
CAL BUILDING	CODE:

	VIE	W KEY			VENTILATION SYMBOL LIST] ME	
			DICATES NOTE USED TO		NOT ALL SYMBOLS MAY APPLY.		
10'-0"	HEIGHT ABOVE PROJECT 0'-0"	DESCRIBE A ABOUT WOF TO THE SHE	DDITIONAL INFORMATION RK REQUIRED, SPECIFIC ET AND/OR DETAIL	SYMBOL:	DESCRIPTION:	CONTROL. 1. EXISTING CON	
					DIRECTION OF AIR FLOW	SURVEYS, EXI REPORT ANY	
		- PLAN OR DETAIL NUMBE	R		FLEXIBLE DUCT	3. EACH CONTRA	
		- PLAN OR DETAIL NAME				SHALL NOTIFY REMOVED OR	
						4. THE GENERAL ROOFS, WALL	
	1/8" = 1'-0"				RISE IN DIRECTION OF AIR FLOW	CONTRACTOR 5. THE GENERAL	
NO	RTH	- PLAN OR DETAIL SCALE			DROP IN DIRECTION OF AIR FLOW	CEILINGS, CEIL CONTRACTOR BIDDING	
	/ INDICATES SIN	MILAR DETAIL REFERENCE	D		DUCT CAP	6. WHERE EXIST NEW EQUIPME	
1		OCATIONS	SIM		DUCT DOWN	EITHER ARRAN DOES NOT CO	
			4 2		DUCT UP	SYSTEMS TO A 7. PROVIDE TEM	
	SHEET DETAIL	IS LOCATED ON			SUPPLY/OUTSIDE AIR DUCT SECTION		
LINE TYPE	AND TAG KEY:					8. OBTAIN PERM REASON. MAIN SYSTEMS ARE	
NEW WOR	K BY THIS CONTRACTOR (WIDE L	INE)			RETURN AIR DUCT SECTION	9. MAINTAIN EXIS TIE IN AND SW	
	EXISTING TO BE REMOVED (NEW UNDERFLOOR OR UND	SHORT DASHED PATTERN ERGROUND (LONG DASHE) ED PATTERN)		EXHAUST/RELIEF AIR DUCT SECTION	CONNECTIONS DRAINING SYS	
EXISTING T	O REMAIN OR WORK BY OTHERS	S (NARROW LINE)			4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION	10. DISCONNECT THAT HAS BEE	
	 EXISTING EXISTING TO BE REMOVED E 			SD-1		11. PROPERLY RE REFRIGERANT	
	IG DOES NOT MODIEY SCOPE	UNDERGROUND (LONG D	ASHED PATTERIN)	6/115	AIR TERMINAL PROPERTIES OF NECK SIZE/CFM	REQUIRED BY	
'TAG'-E	TAGS WITH DASH 'E' INDICA	TES THE REFERENCED OB	JECT IS EXISTING		TERMINAL AIR BOX (REFER TO SCHEDULE)	AT	
<u>TAG-1</u>	UNDERLINED TAG INDICATE	S OBJECT IS IN-SCOPE. IF	NEW, ADDITIONAL		TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)	1. AFTER CONST	
•	INFORMATION IS AVAILABLE	IN A SCHEDULE, MATERIA	L LIST, OR SYMBOL LIST		FAN POWERED TERMINAL AIR BOX w/REHEAT COIL	REQUIRED TO DRAWINGS	
•	INDICATES AN EXISTING SYS	STEM'S POINT OF CONNEC	TION/REMOVAL		(REFER TO SCHEDULE)	2. AREAS SERVE BALANCED TO	
				H V V V	HUMIDIFIER	(REFER TO TH 3. IF DUCT TRAV	
CONTE					OPPOSED BLADE DAMPER (REFER TO SCHEDULE)	MEASUREMEN LOCATION OR	
	INCLUDING, BUT NOT L	IMITED TO, THE FOLLOWIN	IG:	///////	PARALLEL BLADE DAMPER (REFER TO SCHEDULE)	ALTERNATE LO	
	JE:			• — •	DIFFERENTIAL PRESSURE SENSOR	4. A DUCT STATION	
PLUMBING CC	DE:	IPC 2018 EDITION		©	CARBON MONOXIDE SENSOR	TAB REPORT. 5. TAB CONTRAC	
/IECHANICAL	CODE:	IMC 2018 EDITION			CARBON DIOXIDE SENSOR	CONSTRUCTIO 6. THE FINAL POS	
	CODE:	NFPA 70 (NEC) 2017 EDITIO	N	\square^2	CARBON DIOXIDE SENSOR HUMIDISTAT SENSOR	SPECIFICATIO	
	SERVATION CODE:	IECC 2018		H	HUMIDISTAT/SENSOR (DUCT MOUNTED)		
IEALTH DEPA	RTMENT CODE:	CURRENT EDITION		0	OCCUPANCY SENSOR		
OCAL BUILDI	NG CODE:	CURRENT EDITION		(୩) ା	PRESSURE SENSOR/MONITOR		
					THERMOSTAT/SENSOR		
	CONTRACTOR A	BBREVIATION	NKEY		TEMPERATURE SENSOR (DUCT MOUNTED)	CFSD C	
ABBR:	DESCRIPTION:				THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE		
C.C.	CIVIL CONTRACTOR			XX-Y	AIRFLOW MEASUREMENT SYMBOL	DPG (0-2) D DPS D	
C.M.	CONSTRUCTION MANAGER				Y - SEQUENTIAL NUMBER	FD FI	
E.C.	ELECTRICAL CONTRACTOR			L			
<u></u> М.С.	MECHANICAL CONTRACTOR			-			
T.C.	TECHNOLOGY CONTRACTOR				NECHANICAL DESIGN CONDITIONS:	N.C. N	
				DESIGN CO	DNDITIONS: BASED ON WEATHER DATA FOR: PHOENIX, ARIZONA	NIC N	
			=Y	SUMMER: WINTER:	34°F DRY BULB, 74°F WET BULB	SCCR SI	
SHEET	VLIVILATIO			TYPICAL R	OOM SETPOINTS:	SD SI	
		NUMBER REV	VISION NAME DATE	SUMMER DES	IGN: 75°F DRY BULB, NO HUMIDITY REQUIREMENT	TAB TH	
12.00.CE MEC	CHANICAL ENLARGED PLANS			WINTER DESIG	JN: /U°F DRY BULB, NO HUMIDITY REQUIREMENT BACK: 80°F DRY BULB, NO HUMIDITY REQUIREMENT ADDITION ADDITION		
14.01.CE MEC 11.01.CE MEC	HANICAL SCHEDULES					UC-1 D	
11.02.CE MEC	CHANICAL SPECIFICATIONS						

	VIE	EW KEY			VENTILATION SYMBOL LIST		ME
		T KEYNO	TE: INDICATES NOTE USED TO		NOT ALL SYMBOLS MAY APPLY.	THESE NOT TO. FIRE PR	ES APPL
10'-0"	HEIGHT ABOVE PROJECT 0'-0"	ABOUT TO THE	IBE ADDITIONAL INFORMATION WORK REQUIRED, SPECIFIC SHEET AND/OR DETAIL	SYMBOL:	DESCRIPTION:	CONTROL. 1. EXISTIN	IG COND
					DIRECTION OF AIR FLOW	SURVEY REPORT	/S, EXIST T ANY CC
		— INDICATES DIRECTION	MBER			2. NOT ALL BEFORE 3. FACH C	EXISTIN ESTARTI ONTRAC
		PLAN OR DETAIL NA	ME			SHALL N REMOV	
		N NAME			MANUAL VOLUME DAMPER	4. THE GE ROOFS,	NERAL C , WALLS,
	1 1 1 /8" = 1'-0"			→ R →	RISE IN DIRECTION OF AIR FLOW	CONTRA 5. THE GE	ACTORS
NO		— PLAN OR DETAIL SC	ALE	- D -	DROP IN DIRECTION OF AIR FLOW	CEILING CONTRA	;S, CEILIN ACTORS.
					DUCT CAP	6. WHERE	. EXISTIN
	SIM IN MULTIPLE	LOCATIONS	SIM	-	DUCT DOWN	EITHER DOES N	
	1 DETAIL REFE	ERRED TO BY SECTION	CUT 44 2		DUCT UP	SYSTEM 7. PROVID	/IS TO AL
	M101 /- SHEET DETA	AIL IS LOCATED ON	─── T101-⁄~•			CONSTF REMAIN	RUCTION
LINE TYPE	AND TAG KEY:				SUPPLY/OUTSIDE AIR DUCT SECTION	8. OBTAIN REASON	PERMIS
NEW WOR		LINE)			RETURN AIR DUCT SECTION	9. MAINTA	IS ARE IN
) (SHORT DASHED PAT	IERN) ASHED PATTERN)		EXHAUST/RELIEF AIR DUCT SECTION		CTIONS.
EXISTING T	O REMAIN OR WORK BY OTHER	RS (NARROW LINE)				10. DISCON THAT H	INECT AN
	EXISTING EXISTING TO BE REMOVED	BY OTHERS (SHORT D	ASHED PATTERN)		4-WAT DIFFUSER WITH BLANKOFF IN ONE DIRECTION	11. PROPEF REFRIG	RLY RECI
		R UNDERGROUND (LON	NG DASHED PATTERN)	<u>5D-1</u> 6/115	AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM	REQUIR	ED BY TH
	TAGS WITH DASH 'E' INDIC	ATES THE REFERENCE			TERMINAL AIR BOX (REFER TO SCHEDULE)		TAE
TAG-L		ES OBJECT IS IN-SCOP	E. IF NEW, ADDITIONAL		TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)	1. AFTER (CONSTRI
	INFORMATION IS AVAILABL	E IN A SCHEDULE, MAT	ERIAL LIST, OR SYMBOL LIST		FAN POWERED TERMINAL AIR BOX w/REHEAT COIL	BALANC REQUIR	CON CED TO A
•	INDICATES AN EXISTING SY	YSTEM'S POINT OF CON	INECTION/REMOVAL		(REFER TO SCHEDULE)	2. AREAS	SERVED
					HUMIDIEIER	(REFER 3. IF DUCT	TO THE
	APPLICA	ABLE CODE	5			MEASUF	REMENT, ON OR SI
CONTE	RACTOR SHALL COMPLY WITH A INCLUDING, BUT NOT	APPLICABLE CODES AN LIMITED TO, THE FOLL	D LOCAL AMENDMENTS OWING:		PARALLEL BLADE DAMPER (REFER TO SCHEDULE)	REQUIR ALTERN	ED TO DI
BUILDING CO	DE:	IBC 2018 EDITION				4. A DUCT	ONS WHE
				©	CARBON MONOXIDE SENSOR	TAB REF	(SE REAL PORT.
				0 Ö	CARBON DIOXIDE SENSOR	CONSTR 6. THE FIN	
	CODE:	NFPA 70 (NEC) 2017 E	DITION	\bigcirc	CARBON DIOXIDE SENSOR	SPECIFI	CATIONS
ENERGY CON	SERVATION CODE:	IECC 2018		U 田	HUMIDISTAT/SENSOR HUMIDISTAT/SENSOR (DUCT MOUNTED)		
IEALTH DEPA	ARTMENT CODE:	CURRENT EDITION		Image: Constraint of the second secon	OCCUPANCY SENSOR		
OCAL BUILDI	NG CODE:	CURRENT EDITION		l Ø	PRESSURE SENSOR/MONITOR	ABBR:	DE
					THERMOSTAT/SENSOR	AD AFF	ACC
	CONTRACTOR A	ABBREVIAT	ION KEY		TEMPERATURE SENSOR (DUCT MOUNTED)	CFSD	CON
ABBR:	DESCRIPTION:				THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE		
C.C.	CIVIL CONTRACTOR			ХХ-Ү	AIRFLOW MEASUREMENT SYMBOL	DPG (0-2) DPS	DIF
C.M.	CONSTRUCTION MANAGER				Y - SEQUENTIAL NUMBER	FD	FIRE
E.C.	ELECTRICAL CONTRACTOR					FOB	FLA
G.C.	GENERAL CONTRACTOR					FOT	FLA
M.C.	MECHANICAL CONTRACTOR	8		N	MECHANICAL DESIGN CONDITIONS:	FSD	FIRE
T.C.	TECHNOLOGY CONTRACTO	R				N.C.	NOF
				WINTER:	34°F DRY BULB	SCCR	SHC
QUEET				TVDICAL D		SD	SMC
NUMBER	SHEET NAME	NUMBER	REVISION NAME DATE			ТАВ	TER
10.00.CE VEN				WINTER DESI	GN: 70°F DRY BULB, NO HUMIDITY REQUIREMENT	TD	TRA
14.01.CE MEC	CHANICAL EINLARGED PLANS			SUMMER SET	BACK: 80°F DRY BULB, NO HUMIDITY REQUIREMENT BACK: 65°F DRY BULB, NO HUMIDITY REQUIREMENT	TYP	TYP
11.01.CE MEC	CHANICAL SPECIFICATIONS					UC-1	DOC
14 00 OF 1	The second se			_			1

CHANICAL RENOVATION NOTES:

Y TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED ON, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE

ITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD TING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND

- ONFLICTS BEFORE PROCEEDING. IG DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS NG WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. TOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND HE ENGINEER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE ELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK. ONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING ONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF NG TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO
- G MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH T, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL SE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT FLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL LOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK. DRARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING . MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT
- SION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY AIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW NSTALLED.
- NG SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR CHOVER, DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY EM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE. ND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT REMOVED.
- LAIM AND DISPOSE OF ALL REFRIGERANT IN REMOVED EQUIPMENT/ PIPING. RECLAIMED REFRIGERANT SHALL HAVE DOCUMENTATION AS THE AUTHORITY HAVING JURISDICTION (AHJ).

B POST-CONSTRUCTION NOTES:

JCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND NTRACTOR SHALL REBALANCE AIR HANDLING UNITS AND EXHAUST FANS AS CHIEVE THE NEW AIRFLOW VALUES SHOWN ON THE CONSTRUCTION

- BY THIS EQUIPMENT WHICH WERE NOT RENOVATED SHALL BE RE-HE AIRFLOW RATES MEASURED BEFORE THE RENOVATION OCCURRED FINAL PRE- DEMOLITION REPORT). RSE LOCATION AS MARKED ON THE DRAWINGS IS INACCESSIBLE FOR THE TAB CONTRACTOR SHALL PERFORM THE TRAVERSE AT AN ALTERNATE
- HALL TAKE MULTIPLE DUCT TRAVERSES AND/OR GRILLE READINGS AS ETERMINE THE FLOW RATE. IN THE EVENT TRAVERSES ARE TAKEN AT AN CATION(S), TAB CONTRACTOR SHALL INCLUDE A DRAWING THAT SHOWS THE ERE THE ACTUAL MEASUREMENTS WERE TAKEN. PRESSURE READING SHALL BE TAKEN AT EACH LOCATION WHERE A DUCT DING IS TAKEN AND SHALL BE INCLUDED IN THE FINAL POST-CONSTRUCTION OR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-
- I TAB REPORT AS REQUIRED BY SECTION 23 05 93. CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE

ENTILATION ABBREVIATION KEY

SCRIPTION:

ESS DOOR

- OVE FINISHED FLOOR NTROL/FIRE/SMOKE DAMPER
- ٧N
- FERENTIAL PRESSURE GAUGE (RANGE)

FERENTIAL PRESSURE SWITCH E DAMPER

- T ON BOTTOM
- T ON TOP
- E/SMOKE DAMPER
- RMALLY CLOSED
- IN CONTRACT
- RMALLY OPEN ORT CIRCUIT CURRENT RATING
- OKE DAMPER
- RMINAL AIR BOX
- ANSFER DUCT
- PICAL
- OR UNDERCUT BY OTHERS (1" TYPICAL) **LESS OTHERWISE NOTED**

VENTILATION GENERAL NOTES:

- 1. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6 FEET IN
- LENGTH, IN WHICH CASE THE BRANCH DUCT SHALL BE SIZED AT A PRESSURE DROP OF 0.07" W.C. PER 100' OF DUCTWORK.
- 2. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO AN AIR TERMINAL SHALL MATCH THE INLET SIZE. 3. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO EACH OTHER.
- 4. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT. 5. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE
- VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS. 6. CONTRACTOR MAY REUSE PORTIONS OF EXISTING DUCT PROVIDED SIZES AND PRESSURE CLASSES ARE CORRECT, DUCT IS THOROUGHLY CLEANED AND FREE OF DEFECTS, AND ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS ARE SEALED AS SPECIFIED FOR NEW DUCTWORK.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE
- INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. 2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE
- MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN. 3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY
- DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN. 4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE, REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
- 5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
- 6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER
- ACCESS. 7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- 8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN 9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES. OTHER THAN SPRINKLERS. 10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH
- 11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
- 12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE. 13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL
- PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS. 14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED
- OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES, COORDINATE WITH LAYOUT OF EQUIPMENT PADS. PIPING, DUCTWORK, ETC.
- 16. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 17. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS. TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS. 18. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH
- OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC. 19. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND

ELECTRICAL PANELS.

PODO E PIMA CENTER PARKWA SUITE 320 SCOTTSDALE, AZ 85258 P: 602.943.8424 IMEG RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG. ©2024 IMEG CONSULTANTS CORP. REF. SCALE IN INCHES PROJECT #22000173 01

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 FAT J. EXP. 03-31-2026
ARPA U. S. Vets Miscellaneous Repairs &
Improvements
Project Number
057.8221.100
Description
VENTILATION COVERSHEET
Scale
As indicated
M0.00.CE

23 05 00 BASIC MECHANICAL REQUIREMENTS

SCOPE OF WORK

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW MATERIALS AS INDICATED ON THE DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE ASSOCIATED PORTION OF THE MECHANICAL WORK A FINISHED AND WORKING SYSTEM.

BIDDING PROCESS.

HVAC WORK SHALL INCLUDE BUT IS NOT NECESSARILY LIMITED TO: a, HEATING, VENTILATING, AIR-CONDITIONING, AIR DISTRIBUTION DEVICES. AND TEMPERATURE CONTROL SYSTEMS

THE GENERAL CONTRACTOR AND/OR OWNER. IF THE MECHANICAL CONTRACTOR DOES NOT HAVE PRIOR DOCUMENTED EXPERIENCE IN b. MECHANICAL INTERNATIONAL ENERGY CONSERVATION CODE (IECC) CALCULATIONS AND VERIFIED COMPLIANCE WITH ENERGY CONSERVATION RIGGING AND LIFTING SIMILAR EQUIPMENT, HE/SHE SHALL CONTRACT WITH A QUALIFIED LIFTING AND RIGGING SERVICE THAT HAS SIMILAR STANDARDS DOCUMENTED EXPERIENCE. FOLLOW ALL EQUIPMENT LIFTING AND SUPPORT GUIDELINES FOR HANDLING AND MOVING.

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER/LANDLORD, SHALL BE SCHEDULED WITH THE OWNER/LANDLORD. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS. THE OWNER/LANDLORD RESERVES THE RIGHT TO DETERMINE WHEN RESTRICTED CONSTRUCTION HOURS WILL BE REQUIRED. CONTRACTOR SHALL COORDINATE WITH THE LANDLORD DURING THE

ALL CONTRACTORS SHALL ESTABLISH UTILITY ELEVATIONS PRIOR TO FABRICATION AND SHALL COORDINATE THEIR MATERIAL AND EQUIPMENT WITH OTHER TRADES.

PROVIDE MINIMUM ONE-YEAR WARRANTY COMMENCING ON DATE OF FINAL ACCEPTANCE FOR ALL FIXTURES, EQUIPMENT, MATERIALS, AND WORKMANSHIP. WARRANTY REQUIREMENTS SHALL EXTEND TO THE MECHANICAL CONTRACTOR (FIRE CORRECTION, WITHOUT COST TO OWNER, OF ALL WORK FOUND TO BE PROTECTION/PLUMBING/HVAC/TEMPERATURE CONTROLS CONTRACTOR) DEFECTIVE OR NONCONFORMING TO THE CONTRACT DOCUMENTS. REFER SHALL TO SUBSECTIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.

BE RESPONSIBLE FOR ALL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS BUT REQUIRED FOR MECHANICAL SYSTEMS. VERIFY ALL EXISTING EQUIPMENT SIZES AND CAPACITIES WHERE UNITS ARE TO BE MODIFIED, MOVED, OR REPLACED. CONTRACTOR SHALL NOTIFY WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING NEW MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS UNITS OR REPLACEMENT UNITS.

QUALITY ASSURANCE

SUBJECT TO HUMAN INTERPRETATION. THIS REPRESENTATION MAY

DISCOVERED

INSTRUCTIONS FROM THE DESIGN TEAM WILL BE DONE AT THE CONTRACTOR'S RISK.

WORKERS SKILLED IN THEIR TRADES.

OBSERVATION OF WORK CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING AUTOCAD MEP. CONTRACTORS AND SUBCONTRACTORS MAY REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS. THE THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR PREPARATION OF THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION MAY AND CHASES AND INSTALLING HARD OR SUSPENDED CEILINGS AND NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT. SOFFITS

CODES AND STANDARDS

CONFORM TO ALL REQUIREMENTS OF THE CITY OF PHOENIX CODES, LAWS. CONDENSATE PIPING ORDINANCES AND OTHER REGULATIONS HAVING JURISDICTION. CONFORM TO ALL STATE CODES.

IF THE CONTRACTOR NOTES, AT THE TIME OF BIDDING, THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES JOB IS READY FOR THE FINAL JOBSITE OBSERVATION. OR REGULATIONS, CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING, REQUESTING A CLARIFICATION. IF THERE IS INSUFFICIENT TIME FOR THIS PROCEDURE, CONTRACTOR SHALL SUBMIT WITH THE PROPOSAL A SEPARATE PRICE TO MAKE THE SYSTEM

COMPLY WITH THE CODES AND REGULATIONS. ALL CHANGES TO THE SYSTEM MADE AFTER LETTING OF THE CONTRACT, TO COMPLY WITH CODES OR REQUIREMENTS OF INSPECTORS, SHALL BE MADE BY THE CONTRACTOR WITHOUT COST TO THE OWNER. IF THERE IS A DISCREPANCY BETWEEN MANUFACTURER'S

RECOMMENDATIONS SHALL GOVERN. ALL ROTATING SHAFTS AND/OR EQUIPMENT SHALL BE COMPLETELY GUARDED FROM ALL CONTACT. PARTIAL GUARDS AND/OR GUARDS THAT DO NOT MEET ALL APPLICABLE OSHA STANDARDS ARE NOT ACCEPTABLE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THIS GUARDING IF IT IS NOT PROVIDED WITH THE EQUIPMENT SUPPLIED.

PERMITS AND FEES

PROCURE ALL APPLICABLE PERMITS AND LICENSES. ABIDE BY LOCAL AND STATE LAWS, REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES. PAY ALL FEES AND TAXES IMPOSED BY STATE, MUNICIPAL, AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED AGENCY/CONSULTANT.

UTILITY COMPANY REQUIREMENTS

SECURE FROM THE APPROPRIATE PRIVATE OR PUBLIC UTILITY COMPANY ALL APPLICABLE REQUIREMENTS. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. MAKE APPLICATION FOR AND PAY FOR SERVICE CONNECTIONS, SUCH AS GAS. MAKE APPLICATION FOR AND PAY FOR ALL METERS AND METERING SYSTEMS REQUIRED BY THE UTILITY COMPANY.

SUBMITTALS

SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR MANUFACTURE OR SHIPMENT.

THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP CONSTRUCTION FROM THE PREMISES. DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS BASED ON APPLICABLE SPECIFICATION SECTION. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER. WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET, CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK. REFER TO SUBSECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS

OPERATING SYSTEMS. THE CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT

INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION TO ORDERING MATERIAL AND STARTING INSTALLATION. THE CONTRACTOR ARCHITECT/ENGINEER VIA ADDENDUM. AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DEFICIENCIES THE CONTRACTOR MAY DISCOVER. THE CONTRACTOR FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES

THE CONTRACTOR SHALL RESOLVE ALL REPORTED DEFICIENCIES WITH THE ARCHITECT/ENGINEER PRIOR TO AWARDING ANY SUBCONTRACTS, ORDERING MATERIAL, OR STARTING ANY WORK WITH THE CONTRACTOR'S OWN EMPLOYEES. ANY WORK PERFORMED PRIOR TO RECEIPT OF

ONLY PRODUCTS OF REPUTABLE MANUFACTURERS ARE ACCEPTABLE. ALL CONTRACTORS AND SUBCONTRACTORS SHALL EMPLOY ONLY

ELECTRONIC COPIES OF EACH SHOP DRAWING FOR REVIEW BY THE

PRODUCT DELIVERY, STORAGE, AND HANDLING

EXERCISE CARE IN TRANSPORTING AND HANDLING TO AVOID DAMAGE TO MATERIALS. STORE MATERIALS ON THE SITE TO PREVENT DAMAGE. KEEP MATERIALS CLEAN. DRY AND FREE FROM HARMFUL CONDITIONS. IMMEDIATELY REMOVE ANY MATERIALS THAT BECOME WET OR THAT ARE SUSPECTED OF BECOMING CONTAMINATED WITH MOLD OR OTHER ORGANISMS.

KEEP ALL BEARINGS PROPERLY LUBRICATED AND ALL BELTS PROPERLY TENSIONED AND ALIGNED. COORDINATE THE INSTALLATION OF HEAVY AND LARGE EQUIPMENT WITH

CONTRACTOR IS RESPONSIBLE FOR MOVING EQUIPMENT INTO THE BUILDING AND/OR SITE. CONTRACTOR SHALL REVIEW SITE PRIOR TO BID FOR PATH LOCATION AND ANY REQUIRED BUILDING MODIFICATIONS TO ALLOW MOVEMENT OF EQUIPMENT. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADES.

WARRANTY

MATERIAL SUBSTITUTION

OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND FIT IN THE ALLOCATED SPACE. THE THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ANY MATERIAL, ARTICLE OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR USED IF APPROVAL IS SECURED IN WRITING FROM THE

DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY EXCAVATION, FILL, BACKFILL, COMPACTION

JNDERGROUND PIPE SHALL BE LAID IN DRY TRENCHES MAINTAINED FREE OF ACCUMULATED WATER ON A BED OF 6" SAND [OR CA6]FILL. SAND [OR CA61SHALL BE FILLED AROUND PIPE TO A LEVEL OF 6" ABOVE PIPE. BACKFILL ABOVE UTILITIES SHALL BE NATIVE SOIL MATERIALS IF APPROVED BY THE GEOTECHNICAL ENGINEER. BACKFILL MATERIAL SHALL BE FREE OF ROCK OR GRAVEL LARGER THAN 3" IN ANY DIMENSION AND SHALL BE FREE OF DEBRIS. WASTE. FROZEN MATERIALS. VEGETATION, HIGH VOID CONTENT, AND OTHER DELETERIOUS MATERIALS, PROVIDE AND OPERATE SUFFICIENT PUMPING EQUIPMENT TO MAINTAIN EXCAVATIONS, TRENCHES, AND PITS FREE OF WATER. DISPOSE OF PUMPED WATER SO OPERATION AREAS AND OTHER FACILITIES ARE NOT FLOODED.

ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES. BUT IS NOT LIMITED TO:

REFRIGERANT PIPING IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT THE

PROJECT CLOSEOUT

SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS, RECORD DOCUMENTS INCLUDING REPRODUCIBLE DRAWINGS COMPLETED IN REVIT 2023. SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, AND INSPECTION BY STATE BOILER INSPECTOR.

RECOMMENDATIONS AND THESE SPECIFICATIONS, THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS

SUBMIT AN ELECTRONIC COPY OF THE O&M MANUALS TO THE OWNER. OPERATION AND MAINTENANCE DATA SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS. INSTRUCTION BOOKS, CARDS, MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE INCLUDED. ALL TEXT SHALL BE SEARCHABLE AND BOOKMARKS SHALL BE USED,

RECORD DOCUMENTS

DIVIDING INFORMATION BY SPECIFICATION SECTION.

MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF MECHANICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS; CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME. UPON COMPLETING THE JOB, AND BEFORE FINAL PAYMENT IS MADE, PROVIDE REPRODUCIBLE DRAWINGS COMPLETED IN AUTOCAD TO THE ARCHITECT/ENGINEER.

CLEANING

SPECIFICATIONS OR ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING

23 05 05 MECHANICAL DEMOLITION FOR REMODELING

THE DRAWINGS ARE INTENDED TO INDICATE THE GENERAL SCOPE WORK AND DO NOT SHOW EVERY PIPE, DUCT, OR PIECE OF EQUIPM THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE VERIFY CONDITIONS PRIOR TO SUBMITTING A BID.

WHERE WALLS, CEILINGS, ETC., ARE SHOWN AS BEING REMOVED O GENERAL DRAWINGS, THE CONTRACTOR SHALL REMOVE ALL MECH EQUIPMENT, DEVICES, FIXTURES, PIPING, DUCTS, SYSTEMS, ETC., F THE REMOVED AREA.

WHERE CEILINGS, WALLS, PARTITIONS, ETC., ARE TEMPORARILY RE AND REPLACED BY OTHERS. THIS CONTRACTOR SHALL REMOVE, ST AND REPLACE EQUIPMENT, DEVICES, FIXTURES, PIPES, DUCTS, SYS

VERIFY THAT ABANDONED UTILITIES SERVE ONLY ABANDONED EQU OR FACILITIES. EXTEND SERVICES TO FACILITIES OR EQUIPMENT TH

SHALL REMAIN IN OPERATION FOLLOWING DEMOLITION. COORDINATE WORK WITH ALL OTHER CONTRACTORS AND THE LANDLORD/OWNER. SCHEDULE REMOVAL OF EQUIPMENT TO AVOID CONFLICTS.

THIS CONTRACTOR SHALL VERIFY ALL EXISTING EQUIPMENT SIZES CAPACITIES WHERE EQUIPMENT IS SCHEDULED TO BE REPLACED O MODIFIED, PRIOR TO ORDERING NEW EQUIPMENT.

BID SUBMITTAL SHALL MEAN THE CONTRACTOR HAS VISITED THE PF SITE AND VERIFIED EXISTING CONDITIONS AND SCOPE OF WORK.

PREPARATION

OPERATIONS.

DISCONNECT MECHANICAL SYSTEMS IN WALLS, FLOORS, AND CEILI SCHEDULED FOR REMOVAL. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTE SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORM OPERATING EQUIPMENT, USE PERSONNEL EXPERIENCED IN SUCH

DEMOLITION AND EXTENSION OF **EXISTING MECHANICAL WORK**

DEMOLISH AND EXTEND EXISTING MECHANICAL WORK UNDER PRO OF DIVISION 2 AND THIS SECTION. REMOVE, RELOCATE, AND EXTEN EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION. REMOVE ABANDONED DUCTS AND PIPING TO SOURCE OF SUPPLY A MAIN LINES.

REMOVE EXPOSED ABANDONED PIPES AND DUCTS, INCLUDING ABANDONED PIPES AND DUCTS ABOVE ACCESSIBLE CEILINGS. CUT FLUSH WITH WALLS AND FLOORS, CAP DUCT THAT REMAINS, AND P SURFACES. CUT PIPES ABOVE CEILINGS, BELOW FLOORS AND BEHI WALLS. CAP REMAINING LINES. REPAIR BUILDING CONSTRUCTION T MATCH ORIGINAL. REMOVE ALL CLAMPS, HANGERS, SUPPORTS, ETC ASSOCIATED WITH PIPE AND DUCT REMOVAL.

REMOVE UNUSED SECTIONS OF SUPPLY AND RETURN AIR DUCTWO BACK TO MAINS, PATCH OPENING WITH SHEET METAL AND SEAL AIR PATCH EXISTING INSULATION TO MATCH EXISTING. WHERE EXISTING DUCTWORK IS TO BE CAPPED AND REUSED, LOCATE THE END CAP 6" OF THE LAST BRANCH. END CAPS SHALL BE 3" PRESSURE CLASS SEAL CLASS "A".

DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT THAT HAS BEEN REMOVED. MAINTAIN ACCESS EXISTING MECHANICAL INSTALLATIONS WHICH REMAIN. MODIFY INSTALLATION OR PROVIDE ACCESS PANELS AS APPROPRIATE. REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK.

EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING INSTALLATIONS, OR AS SPECIFIED. PROPERLY RECLAIM AND DISPOSE OF ALL REFRIGERANT IN DEMOL EQUIPMENT AND AS REQUIRED FOR EXTENSION OF EXISTING EQUIP

CUTTING AND PATCHING

THIS CONTRACTOR IS RESPONSIBLE FOR ALL PENETRATIONS OF EX CONSTRUCTION REQUIRED TO COMPLETE THE WORK OF THIS PRO PENETRATIONS IN EXISTING CONSTRUCTION SHOULD BE REVIEWED CAREFULLY PRIOR TO PROCEEDING WITH ANY WORK. PENETRATIONS SHALL BE NEAT AND CLEAN WITH SMOOTH AND/OR

FINISHED EDGES. CORE DRILL WHERE POSSIBLE FOR CLEAN OPENI REPAIR EXISTING CONSTRUCTION AS REQUIRED AFTER PENETRATION COMPLETE TO RESTORE TO ORIGINAL CONDITION. USE SIMILAR MA AND MATCH ADJACENT CONSTRUCTION UNLESS OTHERWISE NOTE AGREED TO BY THE ARCHITECT/ENGINEER PRIOR TO START OF WO

FLOOR SLABS MAY CONTAIN CONDUIT SYSTEMS. THIS CONTRACTO RESPONSIBLE FOR TAKING ANY MEASURES REQUIRED TO ENSURE CONDUITS OR OTHER SERVICES ARE DAMAGED. THIS INCLUDES X-R SIMILAR NON-DESTRUCTIVE MEANS.

THIS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURRED IN F RELOCATIONS, OR REPLACEMENT OF ANY CABLES, CONDUITS, OR C SERVICES IF DAMAGED WITHOUT PROPER INVESTIGATION.

CLEANING AND REPAIR

CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT WHICH R OR ARE TO BE REUSED. CLEAN ALL SYSTEMS ADJACENT TO PROJEC WHICH ARE AFFECTED BY THE DUST AND DEBRIS CAUSED BY THIS CONSTRUCTION.

MECHANICAL ITEMS REMOVED AND NOT RELOCATED REMAIN THE PROPERTY OF THE LANDLORD/OWNER. CONTRACTOR SHALL PLACE RETAINED BY THE LANDLORD/OWNER IN A LOCATION COORDINATEI THE LANDLORD/OWNER. THE CONTRACTOR SHALL DISPOSE OF MA THE LANDLORD/OWNER DOES NOT WANT TO REUSE OR RETAIN FOR MAINTENANCE PURPOSES.

REVIEW LOCATIONS OF ALL NEW PENETRATIONS IN EXISTING FLOOI SLABS OR WALLS. DETERMINE CONSTRUCTION TYPE AND REVIEW F POSSIBLE INTERFERENCES. BRING ALL CONCERNS TO THE ATTENTI THE ARCHITECT/ENGINEER BEFORE PROCEEDING.

23 05 29 SUPPORTS AND ANCHORS SECTION INCLUDES

HANGERS, SUPPORTS, AND ASSOCIATED ANCHORS EQUIPMENT BASES AND SUPPORTS CUTTING OF OPENINGS

J	HANGER RODS	b. PIPES SUBJECT TO EXPANSION A
	HANGER RODS FOR SINGLE ROD HANGERS SHALL CONFORM TO THE	ACCEPTABLE PRODUCTS BARE STE
OF	FOLLOWING: PIPE SIZE HANGER ROD DIAMETER	UNISTRUT FIG. P1100 OR P2500
1ENT AND	COLUMN #1 COLUMN #2 2" AND SMALLER 3/8" 3/8"	COOPER/B-LINE FIG. B2000 OR B240
N	2-1/2" THROUGH 3-5/8" 1/2" 1/2"	UNLESS OTHERWISE SHOWN, UPPE
IANICAL ROM	4" AND 5" 5/8" 1/2" 6" 3/4" 5/8"	OR SUPPORT STRUTS SHALL BE AS
MOVED	8" THROUGH 12" 7/8" 3/4"	ACCEPTABLE PRODUCTS
TORE, TEMS,	14" 1" 7/8" 16" AND 18" 1" N/A	ANVIL - FIG. 228, 292 COOPER/B-LINE - FIG. B3054
	20" AND 24" 1_1/4" N/A	ERICO - MODEL 360
IAT	COLUMN #2: COPPER, PLASTIC AND FIBERGLASS REINFORCED PIPE.	CONCRETE INSERTS, SINGLE ROD (
	RODS FOR DOUBLE ROD HANGERS MAY BE REDUCED ONE SIZE. MINIMUM ROD DIAMETER IS 3/8 INCHES.	
	HANGER RODS AND ACCESSORIES USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL HAVE ASTM B633 ELECTRO-PLATED ZINC FINISH.	COOPER/B-LINE - FIG. B3014 ERICO - MODEL 355
	PIPE HANGERS AND SUPPORTS	NIBCO/TOLCO - FIG. 310 CONCRETE INSERTS, CONTINUOUS
ROJECT	ALL PIPE HANGERS, CLAMPS, AND SUPPORTS SHALL CONFORM TO MANUFACTURERS STANDARDIZATION SOCIETY MSS_SP_58 AND 127 (WHERE APPLICABLE).	ACCEPTABLE PRODUCTS: UNISTRUT CORP - P3200 SERIES
NGS	OVERSIZE ALL HANGERS, CLAMPS, AND SUPPORTS ON INSULATED PIPING TO ALLOW INSULATION AND JACKET TO PASS THROUGH UNBROKEN. THIS APPLIES TO BOTH HOT AND COLD PIPES.	ERICO - CONCT CONCRETE ANCHORS: FASTEN TO (
EMS IN /IED ON	FERROUS HOT PIPING 2-1/2 INCHES AND LARGER SHALL HAVE STEEL SADDLES TACK WELDED TO THE PIPE AT EACH SUPPORT AT A DEPTH NOT LESS THAN THE SPECIFIED INSULATION. FACTORY FABRICATED INSERTS	INSTALLED ANCHORS DESIGNED PE OF ACI 318-05. POST-INSTALLED AN IN CRACKED CONCRETE BY ACI-355
	MAY BE USED.	MASONRY ANCHORS: FASTEN TO C EXPANSION ANCHORS OR SELF_TA
	ANVIL - FIG. 160, 161, 162, 163, 164, 165	ANCHORS DESIGNED FOR THE SPE MASONRY JOINTS DO NOT USE PO
/ISIONS	COOPER/B-LINE - FIG. 3160, 3161, 3162, 3163, 3164, 3165 ERICO - MODEL 630, 631, 632, 633, 634, 635	WOODEN PLUGS, OR PLASTIC INSE
D ND/OR	NIBCO/TOLCO - FIG. 260-1, 261-1 1/2, 262-2, 263-2 1/2, 264-3, 265-4 ON ALL INSULATED PIPING, PROVIDE A SEMI-CYLINDRICAL METALLIC SHIELD	WALL SUPPORTS SHALL BE USED W STRUCTURE EXCEEDS MINIMUM SP SUPPORTS AT SAME SPACING AS H VERTICAL LENGTH OF PIPE RUNS.
	AND FIRE RESISTANT VAPOR BARRIER JACKET. AS AN ALTERNATIVE TO SEPARATE PIPE INSULATION INSERT AND SADDLE,	WELDING
DUCTS ATCH	PROPERLY SIZED INTEGRAL RIGID INSULATION SECTIONS MAY BE USED FOR THIS APPLICATION.	UNLESS OTHERWISE NOTED, HANG
ND O		STEEL MAY BE WELDED IN LIEU OF THE BUILDING STRUCTURAL FRAME
J.	PIPE SHIELDS - A1000, A2000	PROTECTING WALLS AND CEILINGS
RK RTIGHT.	ERICO - MODEL 124, 127 SUPPORT AND LATERALLY BRACE VERTICAL PIPES AT EVERY ELOOR LEVEL	FOUNDATIONS, BA
9 WITHIN AND	IN MULTI_STORY STRUCTURES, AND MORE FREQUENTLY WHEN REQUIRED BY APPLICABLE CODES (THE ILLINOIS PLUMBING CODE REQUIRES 10 FOOT	SUPPORTS
6 ТО	MAXIMUM SPACING FOR SUPPORT OF COPPER RISERS), BUT NEVER AT INTERVALS OVER 15 FEET. SUPPORT VERTICAL PIPES WITH RISER CLAMPS INSTALLED BELOW HUBS, COUPLINGS OR LUGS. PROVIDE SUFFICIENT FLEXIBILITY TO ACCOMMODATE EXPANSION AND CONTRACTION WITHOUT	FURNISH AND INSTALL FOUNDATION SPECIFICALLY INDICATED ON THE D OF EITHER THE GENERAL CONSTRU PROVIDED BY ANOTHER CONTRACT
	COMPROMISING FIRE BARRIER PENETRATIONS AND OTHER FIXED TAKE- OFF LOCATIONS.	ALL CONCRETE FOUNDATIONS, BAS
G	ACCEPTABLE PRODUCTS: ANVIL - FIG. CT121	COAT OF ZINC CHROMATE OR RED WORK, GIVE STEEL SUPPORTS A FI
6	COOPER/B-LINE - FIG. B3373CT	EQUIPMENT ROOF
	ERICO - MODEL 510NIBCO/TOLCO - FIG. 82 PLACE RESTRAINED NEOPRENE MOUNTS BENEATH VERTICAL PIPE RISER	AND RAILS)
	CLAMPS TO PREVENT SWEATING OF COLD PIPES. INSULATE OVER MOUNTS. ACCEPTABLE PRODUCTS: MASON RBA. RCA. OR BR.	ROOFTOP EQUIPMENT SUCH AS PA HOODS AND ROOFTOP EXHAUST FA BY THE UNIT MANUFACTURER.
(ISTING JECT.)	HANGERS IN DIRECT CONTACT WITH COPPER PIPE SHALL BE COATED WITH PLASTIC WITH APPROPRIATE TEMPERATURE RANGE. HYDRA-ZORB CLAMPS ARE PERMITTED FOR THIS APPLICATION FOR BARE PIPES WITHIN THEIR	WHERE NOT FURNISHED WITH ROO PREFABRICATED CURBS OR RAILS a. 12" HIGH ABOVE THE TOP SURFA
NG	UNLESS OTHERWISE INDICATED, HANGERS SHALL BE AS FOLLOWS:	STRUCTURE). b. 14 OR 18 GAUGE GALVANIZED SH
ON IS	CLEVIS TYPE:	EQUIPMENT WEIGHT. c. INTERNAL REINFORCING.
D OR	SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE, INSULATED HOT PIPE - 3 INCHES & SMALLER	d. PRESSURE TREATED WOOD NAIL
R IS	ACCEPTABLE PRODUCTS BARE STEEL, PLASTIC, INSULATED PIPE BARE COPPER PIPE	f. FACTORY INSULATED WITH RIGID
NO RAY OR	ANVIL FIG. 260 COOPER/B-LINE FIG. 3100 FIG. B3100C	MATCH UNITS TO THE BUILDING RO MATCH ROOF INSULATION (FOR BUI
REPAIR,		SINGLE_PLY ROOFS).
OTHER	CONTINUOUS CHANNEL WITH CLEVIS TYPE:	18" LONG.
	SERVICE: PLASTIC TUBING, FLEXIBLE HOSE, SOFT COPPER TUBING	ACCEPTABLE MANUFACTURERS: TH SYSTEMS OR PORTALS PLUS.
	COOPER/B-LINE - FIG. B3106, WITH FIG. B3106V	EQUIPMENT REQUIRING CURBS OR
	ERICO - MODEL 104, WITH MODEL 104V NIBCO/TOLCO - FIG. 1V	
	ADJUSTABLE SWIVEL RING TYPE:	
e items d with ferial	SERVICE: BARE METAL PIPE - 4 INCHES AND SMALLER ACCEPTABLE PRODUCTS BARE STEEL PIPE BARE COPPER PIPE	INSTALLED ON THE ROOF. SUPPORT SHALL GUIDE AND ALIGN
Υ.	COOPER/B-LINE FIG. B3170NF FIG. B3170CTC	EXPANSION. THE BASE SHALL BE ROUNDED TO F
R FOR ION OF	ERICO MODEL FCN 102A0 SERIES NIBCO/TOLCO FIG. 200 FIG. 203 SUPPORT MAY BE FABRICATED FROM LICHANNEL STRUT OR SIMILAR	DRAINAGE HOLES SHALL PREVENT SUPPORT SHALL BE UV, CORROSIO
5	SHAPES. PIPING LESS THAN 4" IN DIAMETER SHALL BE SECURED TO STRUT WITH CLAMPS OF PROPER DESIGN AND CAPACITY AS REQUIRED TO	SUPPORT SHALL INCLUDE ORANGE ACCENTS OR SIMILAR MARKINGS FO
-	MAINTAIN SPACING AND ALIGNMENT. STRUT SHALL BE INDEPENDENTLY SUPPORTED FROM HANGER DROPS OR BUILDING STRUCTURE. SIZE AND SUPPORT SHALL BE PER MANUFACTURER'S INSTALLATION REQUIREMENTS FOR STRUCTURAL SUPPORT OF PIPING. CLAMPS SHALL NOT INTERPLIPT	THE STRUT SYSTEM SHALL HAVE G STEEL 316 STAINLESS STEEL PVC C TRIVALENT CHROMIUM FINISH.
	PIPING INSULATION.	ACCEPTABLE PRODUCTS: ANVIL INT COOPER B-LINE DURA BLOK, ERICO
	1. STRUT USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL HAVE ASTM B633 ELECTRO-PLATED ZINC FINISH. 2. STRUT USED IN DAMP AREAS LISTED IN HANGER RODS SHALL HAVE	(TO MATCH LOAD), MIRO INDUSTRIE

ASTM A123 HOT-DIP GALVANIZED FINISH APPLIED AFTER FABRICATION. UNLESS OTHERWISE INDICATED, PIPE SUPPORTS FOR USE WITH STRUTS SHALL BE AS FOLLOWS: CLAMP TYPE:

SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE, INSULATED HOT PIPE - 3 INCHES AND SMALLER a. CLAMPS IN DIRECT CONTACT WITH COPPER PIPE SHALL BE PLASTIC COATED

AND CONTRACTION SHALL HAVE CLAMPS IMITED PIPE MOVEMENT. EEL, PLASTIC, INSULATED PIPE BARE

00 FIG. BVT

ER ATTACHMENTS FOR HANGER RODS S FOLLOWS:

GALVANIZED:

STRIP GALVANIZED

CONCRETE USING CAST-IN OR POST-ER THE REQUIREMENTS OF APPENDIX D NCHORS SHALL BE QUALIFIED FOR USE

CONCRETE MASONRY UNITS WITH PPING MASONRY SCREWS. FOR W CONCRETE BLOCK. USE SLEEVE-TYPE ECIFIC APPLICATION. DO NOT FASTEN IN WDER ACTUATED FASTENERS, ERTS.

WHERE VERTICAL HEIGHT OF PACING REQUIREMENTS. INSTALL WALL HANGERS OR STRUT SUPPORTS ALONG

GERS, CLIPS, AND AUXILIARY SUPPORT BOLTING, CLAMPING, OR RIVETING TO . TAKE ADEQUATE PRECAUTIONS S FOR FIRE PREVENTION AND FOR FROM BEING DAMAGED BY SMOKE.

ASES, AND

NS, BASES, AND SUPPORTS (NOT DRAWINGS OR IN THE SPECIFICATIONS UCTION OR MECHANICAL WORK AS TOR) FOR MECHANICAL EQUIPMENT. SES AND SUPPORTS, SHALL BE

ND SUPPORTS SHALL RECEIVE A PRIME METAL PRIMER, AFTER COMPLETION OF NAL COAT OF GRAY ENAMEL

F SUPPORT (CURBS

ACKAGED AIR HANDLING UNITS, ROOF ANS SHALL BE PROVIDED WITH CURBS

OFTOP EQUIPMENT, PROVIDE AS FOLLOWS:

CE OF THE ROOF (NOT THE ROOF HEET METAL, AS REQUIRED FOR THE

I FR COMPLETELY COVERING NAILER.

FIBERGLASS. OOF WITH EITHER A RAISED CANT TO ILT_UP ROOFS), OR WITH NO CANT (FOR

T ON RAILS, PROVIDE 1/4" BENT PLATES

HY, PATE, UNITED, ROOF PRODUCTS

R RAILS IS AS FOLLOWS:

ORTS

PIPE SUPPORTS FOR ALL PIPING I PIPE WHILE PERMITTING LONGITUDINAL

PREVENT DAMAGE TO THE ROOF. AND

PONDING OF WATER IN THE SUPPORT. ON AND FREEZE/THAW RESISTANT. E PAINT, REFLECTIVE SAFETY ORANGE OR INCREASED VISIBILITY.

GALVANIZED ALUMINUM 302 STAINLESS COATED POWDER COATED ZINC

TERNATIONAL HBS-BASE SERIES, CADDY PYRAMID 50, 150, 300, OR 600 ES 1.5, 3-R, 4-R OR 5-R (TO MATCH PIPE).

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. 160 178-200 EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
M1.01.CE

SHEET 20 OF 48

SUPPORTS

PROVIDE SUFFICIENT CLIPS, INSERTS, HANGERS, RACKS, RODS, AND AUXILIARY STEEL TO SECURELY SUPPORT ALL SUSPENDED MATERIAL, EQUIPMENT AND CONDUIT WITHOUT SAG. HANG HEAVY EQUIPMENT FROM CONCRETE FLOORS OR CEILINGS WITH

ARCHITECT/ENGINEER APPROVED CONCRETE INSERTS, FURNISHED AND INSTALLED BY THE CONTRACTOR WHOSE WORK REQUIRES THEM. EXCEPT WHERE INDICATED OTHERWISE.

GROUT

GROUT SHALL BE NON-SHRINKING PREMIXED (MASTER BUILDERS COMPANY "EMBECCO"), UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR APPROVED BY THE ARCHITECT/ENGINEER. USE MIX NO. 1 FOR CLEARANCES OF 1" OR LESS, AND MIX NO. 2 FOR ALL LARGER CLEARANCES. GROUT UNDER EQUIPMENT BASES, AROUND PIPES, AT PIPE SLEEVES,

ETC., AND WHERE SHOWN ON THE DRAWINGS. **OPENINGS IN FLOORS, WALLS AND** CEILINGS

EXACT LOCATIONS OF ALL OPENINGS FOR THE INSTALLATION OF MATERIALS SHALL BE DETERMINED BY THE CONTRACTOR AND GIVEN TO THE GENERAL CONTRACTOR FOR INSTALLATION OR CONSTRUCTION AS THE STRUCTURE IS BUILT.

COORDINATE ALL OPENINGS WITH OTHER CONTRACTORS.

HIRE THE PROPER TRADESMAN AND FURNISH ALL LABOR. MATERIAL AND EQUIPMENT TO CUT OPENINGS IN OR THROUGH EXISTING STRUCTURES. OR OPENINGS IN NEW STRUCTURES THAT WERE NOT INSTALLED, OR ADDITIONAL OPENINGS. REPAIR ALL SPALLING AND DAMAGE TO THE SATISFACTION OF THE ARCHITECT/ENGINEER. MAKE SAW CUTS BEFORE BREAKING OUT CONCRETE TO ENSURE EVEN AND UNIFORM OPENING EDGES.

SAID CUTTING SHALL BE AT THE COMPLETE EXPENSE OF EACH CONTRACTOR. FAILURE TO COORDINATE OPENINGS WITH OTHER CONTRACTORS SHALL NOT EXEMPT THE CONTRACTOR FROM PROVIDING OPENINGS AT CONTRACTORS EXPENSE. DO NOT CUT STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL OF

THE ARCHITECT OR STRUCTURAL ENGINEER.

ROOF PENETRATIONS

SEAL PIPES WITH SURFACE TEMPERATURE BELOW 150F PENETRATING SINGLE-PLY ROOFS WITH CONICAL STEPPED PIPE FLASHINGS AND STAINLESS STEEL CLAMPS EQUAL TO PORTALS PLUS PIPE BOOTS. MATERIAL SHALL MATCH ROOFING MEMBRANE. BREAK INSULATION ONLY AT THE CLAMP FOR PIPES BETWEEN 60F AND 150F. SEAL OUTDOOR INSULATION EDGES WATERTIGHT.

SLEEVES AND LINTELS

FACH CONTRACTOR SHALL PROVIDE SLEEVES AND LINTELS FOR ALL DUCT AND PIPE OPENINGS REQUIRED FOR THE CONTRACTOR'S WORK IN MASONRY WALLS AND FLOORS, UNLESS SPECIFICALLY SHOWN AS BEING BY OTHERS.

FABRICATE ALL SLEEVES FROM STANDARD WEIGHT BLACK STEEL PIPE OR AS INDICATED ON THE DRAWINGS. PROVIDE CONTINUOUS SLEEVE. CUT OR SPLIT SLEEVES ARE NOT ACCEPTABLE FABRICATE ALL LINTELS FOR MASONRY WALLS FROM STRUCTURAL STEEL

SHAPES OR AS INDICATED ON THE DRAWINGS. HAVE ALL LINTELS APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER. SLEEVES THROUGH THE FLOORS ON EXPOSED RISERS SHALL BE FLUSH WITH THE CEILING, WITH PLANED SQUARED ENDS EXTENDING 1" ABOVE

THE FLOOR IN UNFINISHED AREAS, AND FLUSH WITH THE FLOOR IN FINISHED AREAS, TO ACCEPT SPRING CLOSING FLOOR PLATES. SLEEVES SHALL NOT PENETRATE STRUCTURAL MEMBERS OR MASONRY WALLS WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. SLEEVES

SHALL THEN COMPLY WITH THE ARCHITECT/ENGINEER'S DESIGN. OPENINGS THROUGH UNEXCAVATED FLOORS AND/OR FOUNDATION WALLS BELOW THE FLOOR SHALL HAVE A SMOOTH FINISH WITH SUFFICIENT

ANNULAR SPACE AROUND MATERIAL PASSING THROUGH OPENING SO SLIGHT SETTLING WILL NOT PLACE STRESS ON THE MATERIAL OR BUILDING STRUCTURE.

INSTALL ALL SLEEVES CONCENTRIC WITH PIPES. SECURE SLEEVES IN CONCRETE TO WOOD FORMS. THIS CONTRACTOR IS RESPONSIBLE FOR SLEEVES DISLODGED OR MOVED WHEN POURING CONCRETE. WHERE PIPES RISE THROUGH CONCRETE FLOORS THAT ARE ON EARTHEN GRADE, PROVIDE 3/4" RESILIENT EXPANSION JOINT MATERIAL (ASPHALT AND CORK) WRAPPED AROUND THE PIPE, THE FULL DEPTH OF CONCRETE, AT THE POINT OF PENETRATION. SECURE TO PREVENT SHIFTING DURING CONCRETE PLACEMENT AND FINISHING.

SIZE SLEEVES LARGE ENOUGH TO ALLOW EXPANSION AND CONTRACTION MOVEMENT, PROVIDE CONTINUOUS INSULATION WRAPPING.

WALL SEALS ("LINK-SEALS")

WHERE SHOWN ON THE DRAWINGS, PIPES PASSING THROUGH WALLS, CEILINGS, OR FLOORS SHALL HAVE THEIR ANNULAR SPACE (SLEEVE OR DRILLED HOLE NOT TAPERED HOLE MADE WITH KNOCKOUT PLUG) SEALED BY PROPERLY SIZED SEALING ELEMENTS CONSISTING OF A SYNTHETIC RUBBER MATERIAL COMPOUNDED TO RESIST AGING, OZONE, SUNLIGHT, WATER AND CHEMICAL ACTION.

SLEEVES, IF USED, SHALL BE STANDARD WEIGHT STEEL WITH PRIMED FINISH AND WATERSTOP/ANCHOR CONTINUOUSLY WELDED TO SLEEVE. IF PIPING CARRIES ONLY FLUIDS BELOW 120F, SLEEVES MAY BE THERMOPLASTIC WITH INTEGRAL WATER SEAL AND TEXTURED SURFACE. SLEEVES SHALL BE AT LEAST 2 PIPE SIZES LARGER THAN THE PIPES.

PRESSURE SHALL BE MAINTAINED BY STAINLESS STEEL BOLTS AND OTHER PARTS. PRESSURE PLATES MAY BE OF COMPOSITE MATERIAL FOR MODELS S AND OS

SEALING ELEMENT SHALL BE AS FOLLOWS:

MODEL SERVICE ELEMENT MATERIAL TEMPERATURE RANGE S STANDARD (STAINLESS) EPDM -40F TO 250F

T HIGH/LOW TEMPERATURE [STEAM] SILICONE -67F TO 400F T FIRE SEALS (1 HOUR) SILICONE -67F TO 400F

FS FIRE SEALS (3 HOURS) SILICONE -67F TO 400F

OS OIL RESISTANT/STAINLESS NITRILE -40F TO 210F

ACCEPTABLE MANUFACTURERS: THUNDERLINE CORPORATION "LINK SEALS", O Z/GEDNEY COMPANY, CALPICO, INC., INNERLYNX, OR METRAFLEX COMPANY (COLD SERVICE ONLY).

ESCUTCHEON PLATES AND TRIM

FIT ESCUTCHEONS TO ALL INSULATED OR UNINSULATED EXPOSED PIPES PASSING THROUGH WALLS. FLOORS. OR CEILINGS OF FINISHED ROOMS. ESCUTCHEONS SHALL BE HEAVY GAUGE, COLD ROLLED STEEL, COPPER COATED UNDER A CHROMIUM PLATED FINISH, HEAVY SPRING CLIP, RIGID PIPE MATERIAL MAXIMUM SPACING

PIPE MATERIAL MAXIMUM SPACING

PIPE MATERIAL MAXIMUM SPACING

PIPE MATERIAL MAXIMUM SPACING

STEEL (STD. WEIGHT OR HEAVIER - VAPOR SERVICE):

HARD DRAWN COPPER & BRASS (LIQUID SERVICE):

HARD DRAWN COPPER & BRASS (VAPOR SERVICE):

FLEXIBLE PLASTIC PIPE, FLEXIBLE HOSE, AND SOFT COPPER TUBING:

6. INSTALLATION OF HANGERS SHALL CONFORM TO MSS SP-58 AND THE

23 05 93 TESTING, ADJUSTING, AND

a. CONTINUOUS CHANNEL WITH HANGERS MAXIMUM 8'-0" O.C.

TESTING, ADJUSTING, AND BALANCING OF AIR SYSTEMS

HYDRONIC BALANCER, OR TABB CERTIFIED SUPERVISOR.

OF THE REFERENCES LISTED AT THE START OF THIS SECTION.

ADC - TEST CODE FOR GRILLES, REGISTERS, AND DIFFUSERS.

AABC - NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE, 2002.

QUALITY ASSURANCE

TESTING, ADJUSTING, AND BALANCING OF COOLING SYSTEMS

MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS

AGENCY SHALL BE A COMPANY SPECIALIZING IN THE ADJUSTING AND

BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION WITH MINIMUM

THREE YEARS EXPERIENCE. PERFORM WORK UNDER SUPERVISION OF

BALANCING AND ADJUSTING SUPERVISOR, SMARTA CERTIFIED AIR AND

AABC CERTIFIED TEST AND BALANCE ENGINEER. NEBB CERTIFIED TESTING.

WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS

AMCA - PUBLICATION 203-90; FIELD PERFORMANCE MEASUREMENT OF FAN

ASHRAE - 2003 HVAC APPLICATIONS HANDBOOK; CHAPTER 37, TESTING,

TESTING, ADJUSTING AND BALANCING OF BUILDING HVAC&R SYSTEMS.

SMACNA HVAC SYSTEMS; TESTING, ADJUSTING AND BALANCING, THIRD

SUBMIT COPIES OF REPORT FORMS, BALANCING PROCEDURES, AND THE

NAME AND QUALIFICATIONS OF TESTING AND BALANCING AGENCY FOR

ARCHITECT/ENGINEER FOR APPROVAL IN SOFT COVER, 3-HOLE BINDER

MANUALS, WITH COVER IDENTIFICATION. INCLUDE INDEX PAGE AND

SUBMIT REPORTS ON AABC. SMACNA OR NEBB FORMS. USE CUSTOM

FORMS APPROVED BY THE ARCHITECT/ENGINEER WHEN NEEDED TO

SYSTEM COMPONENT, INCLUDING BALANCING DEVICES, FOR EACH

INCLUDE IN THE FINAL REPORT A SCHEMATIC DRAWING SHOWING EACH

SYSTEM. EACH DRAWING SHALL BE INCLUDED WITH THE TEST REPORTS

THE TAB CONTRACTOR SHALL INCLUDE AN EXTENDED WARRANTY OF 90

TERMINALS, OR RESETTING OF ANY OUTLET, COIL, OR DEVICE LISTED IN

MANHOURS OF ON SITE SERVICE TIME. IF IT IS DETERMINED THAT THE NEW

WARRANTY/GUARANTEE MUST MEET ONE OF THE FOLLOWING PROGRAMS:

THE TEST REPORT. THIS WARRANTY SHALL PROVIDE A MINIMUM OF 24

TEST RESULTS ARE NOT WITHIN THE DESIGN CRITERIA. THE BALANCER

TABB INTERNATIONAL QUALITY ASSURANCE PROGRAM, AABC NATIONAL

COORDINATE SCHEDULE WITH OTHER TRADES, PROVIDE A MINIMUM OF

SEVEN DAYS NOTICE TO ALL TRADES AND THE ARCHITECT/ENGINEER

SHALL REBALANCE THE SYSTEM ACCORDING TO DESIGN CRITERIA.

PROJECT PERFORMANCE GUARANTEE, NEBB'S CONFORMANCE

DAYS AFTER OWNER RECEIPT OF A COMPLETED BALANCING REPORT.

DURING WHICH TIME THE OWNER MAY REQUEST A RECHECK OF

ALL TESTING POINTS AND CROSS-REFERENCE THESE POINTS TO THE

REQUIRED FOR THAT SYSTEM. THE SCHEMATIC DRAWINGS SHALL IDENTIFY

APPROVAL WITHIN 30 DAYS AFTER AWARD OF CONTRACT.

SUBMIT FOUR (4) CERTIFIED COPIES OF TEST REPORTS TO THE

TABB - INTERNATIONAL STANDARDS FOR ENVIRONMENTAL SYSTEMS

ASHRAE/ANSI - STANDARD 111-1988; PRACTICES FOR MEASUREMENT,

NEBB - PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND

BALANCING OF ENVIRONMENTAL SYSTEMS, SIXTH EDITION, 1998.

1_1/4"& UNDER 7'_0"

4" & LARGER 12'_0"

2" & LARGER 12' 0"

3/4" AND UNDER 5'_0"

1_1/4" AND UNDER 9'_0"

1_1/2" 9'_0"

2_1/2" 11'_0"

1 1/2" 12' 0"

1" 6'_0"

1_1/4" 7'_0"

1_1/2" 8'_0'

2 1/2" 9' 0'

3" 10'_0"

4" 12'_0"

6" 12'_0"

1" 8'_0"

2" 11'_0"

GENERAL

REFERENCES

SYSTEMS

EDITION, 2002.

INDEXING TABS.

CERTIFICATION.

SCHEDULING

PRIOR TO PERFORMING EACH TEST

BALANCE.

ADJUSTING AND BALANCING.

SUBMITTALS

REPORT FORMS

SUPPLY SPECIFIED INFORMATION.

REPORT FORMS AND PROCEDURES.

WARRANTY/GUARANTEE

1_1/4" 9'_0"

1_1/2" 10'_0"

3/4" & UNDER 7'_0"

2_1/2" & LARGER 12'_0"

APPLICABLE PLUMBING CODE.

BALANCING

2" 8'_0"

2" 10'_0"

3" 12'_0"

HINGE AND LATCH. INSTALL GALVANIZED STEEL (UNLESS OTHERWISE INDICATED) TRIM STRIP TO COVER VACANT SPACE AND RAW CONSTRUCTION EDGES OF ALL

RECTANGULAR OPENINGS IN FINISHED ROOMS. THIS INCLUDES PIPE OPENINGS.

PIPE PENETRATIONS SEAL ALL PIPE PENETRATIONS. SEAL NON-RATED WALLS AND FLOOR

PROVIDE ALL ITEMS NEEDED TO ALLOW ADEQUATE EXPANSION AND

CONTRACTION OF ALL PIPING. ALL PIPING SHALL BE SUPPORTED, GUIDED,

REPAIR ALL PIPING LEAKS AND ASSOCIATED DAMAGE. PIPES SHALL NOT

PRIME COAT EXPOSED STEEL HANGERS AND SUPPORTS. HANGERS AND

SUPPORTS IN CRAWL SPACES, PIPE SHAFTS, AND SUSPENDED CEILING

INSTALL ALL ITEMS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE

THE LOCATION AND METHOD OF SUPPORT OF PIPING SYSTEMS WITH ALL

WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING

FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH

MANUFACTURER'S RECOMMENDATIONS. METHOD OF SECURING BASE TO

WHERE BUILDING STRUCTURAL STEEL IS FIREPROOFED, ALL HANGERS,

HVAC SUPPORTS AND ANCHORS

INSTALLATIONS UNDER OTHER DIVISIONS AND SECTIONS OF THE

INSTALL ROOF PIPE SUPPORTS TO RESIST WIND MOVEMENT PER

CLAMPS, AUXILIARY STEEL, ETC., WHICH ATTACH TO IT SHALL BE

RODS, BOLTS, COUPLINGS, SWIVELS, INSERTS AND REQUIRED

TRAPS AND OTHER SPECIALTIES AND ACCESSORIES TO AVOID

CLEANING, TESTING AND NORMAL OPERATION OF THE SYSTEMS.

SUPPORT PIPING AT EQUIPMENT AND VALVES SO THEY CAN BE

SHALL BE SUPPORTED WITH INDIVIDUAL HANGERS.

END STEEL PIPE WITH MECHANICAL COUPLINGS.

INSTALLED PRIOR TO APPLICATION OF FIREPROOFING. REPAIR ALL

SET ALL CONCRETE INSERTS IN PLACE BEFORE POURING CONCRETE.

FURNISH. INSTALL AND PRIME ALL AUXILIARY STRUCTURAL STEEL FOR

SUPPORT OF PIPING SYSTEMS THAT ARE NOT SHOWN ON THE DRAWINGS

INSTALL HANGERS AND SUPPORTS COMPLETE WITH LOCK NUTS, CLAMPS,

HANGERS FOR HORIZONTAL PIPING SHALL HAVE ADEQUATE MEANS OF

SUPPORT ALL PIPING AND EQUIPMENT, INCLUDING VALVES, STRAINERS,

OBJECTIONABLE OR EXCESSIVE STRESS, DEFLECTION, SWAYING, SAGGING

OR VIBRATION IN THE PIPING OR BUILDING STRUCTURE DURING ERECTION.

DO NOT, HOWEVER, RESTRAIN PIPING TO CAUSE IT TO SNAKE OR BUCKLE

BETWEEN SUPPORTS OR TO PREVENT PROPER MOVEMENT DUE TO

DISCONNECTED AND REMOVED WITHOUT FURTHER SUPPORTING THE

PIPING SHALL NOT INTRODUCE STRAINS OR DISTORTION TO CONNECTED

PARALLEL HORIZONTAL PIPES MAY BE SUPPORTED ON TRAPEZE HANGERS

MADE OF STRUCTURAL SHAPES AND HANGER RODS; OTHERWISE, PIPES

TRAPEZE HANGERS MAY BE USED WHERE DUCTS INTERFERE WITH

PROVIDE ADDITIONAL SUPPORTS WHERE PIPE CHANGES DIRECTION,

PROVIDE AT LEAST ONE HANGER ADJACENT TO EACH JOINT IN GROOVED

REQUIREMENTS OF TRUSS AND JOIST MANUFACTURERS, THE FOLLOWING

1. LOADS OF 100 LBS. OR LESS MAY BE ATTACHED ANYWHERE ALONG THE

2. LOADS GREATER THAN 100 LBS. MUST BE HUNG CONCENTRICALLY AND

MAY BE HUNG FROM TOP OR BOTTOM CHORD, PROVIDED ONE OF THE

3. IT IS PROHIBITED TO CANTILEVER A LOAD USING AN ANGLE OR OTHER

STRUCTURAL COMPONENT THAT IS ATTACHED TO A TRUSS OR JOIST IN

4. IF CONDITIONS CANNOT BE MET, COORDINATE INSTALLATION WITH

TRUSS OR JOIST MANUFACTURER AND CONTACT ARCHITECT/ENGINEER.

CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT

SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS

ACHIEVED. SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL NEED TO

DO NOT EXCEED THE MANUFACTURER'S RECOMMENDED MAXIMUM LOAD

SPACING OF HANGERS SHALL NOT EXCEED THE COMPRESSIVE STRENGTH

HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE

OF THE INSULATION INSERTS, AND IN NO CASE SHALL EXCEED THE

STEEL AND FIBERGLASS (STD. WEIGHT OR HEAVIER - LIQUID SERVICE):

DO NOT EXCEED 25 LBS. PER HANGER AND A MINIMUM SPACING OF 2'-0" ON

REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0"

a. THE HANGER IS ATTACHED WITHIN 6" FROM A WEB/CHORD JOINT.

b. ADDITIONAL L2X2X1/4 WEB REINFORCEMENT IS INSTALLED PER

SUCH A FASHION THAT A TORSIONAL FORCE IS APPLIED TO THAT

TOP OR BOTTOM CHORDS OF TRUSSES OR JOISTS WITH A MINIMUM 3'

ADJACENT TO FLANGED VALVES AND STRAINERS, AT EQUIPMENT

PROVIDED THE INSTALLATION COMPLIES WITH ALL LOADING

SUPPORT REQUIREMENTS

ROOF SHALL BE COMPATIBLE WITH ROOFING MATERIALS.

FIREPROOFING DAMAGED DURING PIPE INSTALLATION.

VERTICAL ADJUSTMENT FOR ALIGNMENT.

PIPE REQUIREMENTS

EXPANSION AND CONTRACTION.

PENETRATIONS WITH GROUT OR CAULK. BACKING MATERIAL MAY BE USED. SEAL FIRE RATED WALL AND FLOOR PENETRATIONS WITH FIRE SEAL

ALIGNED, AND ANCHORED AS REQUIRED.

SPACES ARE NOT CONSIDERED EXPOSED.

RUB ON ANY PART OF THE BUILDING.

SYSTEM AS SPECIFIED.

FINISH

PIPE ANCHORS

INSTALLATION

SPECIFICATIONS.

PRIMER TO WELDING.

AS BEING BY OTHERS.

ACCESSORIES

PIPING.

EQUIPMENT

NORMAL PIPE HANGING.

CONNECTIONS AND HEAVY FITTINGS.

PRACTICES ARE ACCEPTABLE:

FOLLOWING CONDITIONS IS MET:

MANUFACTURER'S REQUIREMENTS.

SPACING BETWEEN LOADS

STRUCTURAL MEMBER.

FOR ANY HANGER OR SUPPORT

BE ADDED.

FOLLOWING:

GENERAL REQUIREMENTS

ALL PROCEDURES MUST CONFORM TO ONE OF THE PUBLISHED STANDARDS LISTED IN REFERENCES. ALL EQUIPMENT SHALL BE ADJUSTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, ANY SYSTEM NOT LISTED IN THIS SPECIFICATION BUT INSTALLED UNDER THE CONTRACT DOCUMENTS SHALL BE BALANCED USING A PROCEDURE FROM A PUBLISHED STANDARD LISTED IN REFERENCES.

THE BALANCING CONTRACTOR SHALL INCORPORATE ALL PERTINENT DOCUMENTED CONSTRUCTION CHANGES (E.G. SUBMITTALS/SHOP DRAWINGS, CHANGE ORDERS, RFIS, ASIS, ETC.) AND INCLUDE IN THE BALANCING REPORT

RECORDED DATA SHALL REPRESENT ACTUAL MEASURED OR OBSERVED CONDITIONS.

CUT INSULATION, PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY TO ALLOW ADEQUATE PERFORMANCE OF PROCEDURES. AFTER TESTING AND BALANCING IS COMPLETE. PATCH INSULATION WITH NEW MATERIALS AS SPECIFIED. RESTORE VAPOR BARRIER AND FINISH AS SPECIFIED.

LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.

EXAMINATION

BEFORE BEGINNING WORK, VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE. ENSURE THE FOLLOWING:

GENERAL EQUIPMENT REQUIREMENTS: A. EQUIPMENT IS SAFE TO OPERATE AND IN NORMAL CONDITION.

- B. EQUIPMENT WITH MOVING PARTS IS PROPERLY LUBRICATED.
- C. TEMPERATURE CONTROL SYSTEMS ARE COMPLETE AND OPERABLE. D. PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR
- ELECTRICAL EQUIPMENT. E. DIRECTION OF ROTATION OF ALL FANS AND PUMPS IS CORRECT.
- F. ACCESS DOORS ARE CLOSED AND END CAPS ARE IN PLACE.
- PIPE SYSTEM REQUIREMENTS: A. COIL FINS HAVE BEEN CLEANED AND COMBED.

REPORT ANY DEFECTS OR DEFICIENCIES TO ARCHITECT/ENGINEER PROMPTLY REPORT ITEMS THAT ARE ABNORMAL OR PREVENT PROPER

BALANCING. IF, FOR DESIGN REASONS, SYSTEM CANNOT BE PROPERLY BALANCED, REPORT AS SOON AS OBSERVED.

BEGINNING OF WORK MEANS ACCEPTANCE OF EXISTING CONDITIONS.

PREPARATION

PROVIDE INSTRUMENTS REQUIRED FOR TESTING, ADJUSTING, AND BALANCING OPERATIONS. MAKE INSTRUMENTS AVAILABLE TO THE ARCHITECT/ENGINEER FOR SPOT CHECKS DURING TESTING. INSTRUMENTS SHALL BE CALIBRATED WITHIN SIX MONTHS OF TESTING PERFORMED FOR PROJECT. OR MORE RECENTLY IF RECOMMENDED BY THE INSTRUMENT MANUFACTURER.

INSTALLATION TOLERANCES ± 10% OF SCHEDULED VALUES:

1. ADJUST AIR INLETS AND OUTLETS TO ± 10% OF SCHEDULED VALUES. 2. ADJUST PIPING SYSTEMS TO ± 10% OF DESIGN VALUES.

± 5% OF SCHEDULED VALUES: 2. ADJUST SUPPLY AIR-HANDLING SYSTEMS FOR SPACE PRESSURIZATION TO ± 5% OF SCHEDULED VALUES, AND TO PROVIDE PROPER

PRESSURIZATION. ADJUST SUPPLY AIR-HANDLING SYSTEMS TO ± 5% OF SCHEDULED VALUES.

ADJUSTING

AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR THAT DISRUPTION HAS BEEN RECTIFIED. AFTER TESTING, ADJUSTING AND BALANCING ARE COMPLETE, OPERATE EACH SYSTEM AND RANDOMLY CHECK MEASUREMENTS TO VERIFY

SYSTEM IS OPERATING AS REPORTED IN THE REPORT. DOCUMENT ANY DISCREPANCIES. CONTRACTOR RESPONSIBLE FOR EACH MOTOR SHALL ALSO BE

RESPONSIBLE FOR REPLACEMENT SHEAVES. COORDINATE WITH CONTRACTOR.

CONTRACTOR RESPONSIBLE FOR PUMP SHALL TRIM IMPELLER TO FINAL DUTY POINT AS INSTRUCTED BY THIS CONTRACTOR ON ALL PUMPS NOT DRIVEN BY A VFD. COORDINATE WITH CONTRACTOR.

DESIGN CONDITIONS: SUMMER: 115 F DB 74 F WB

WINTER: 34 F DB

ARCHITECT/ENGINEER WILL DIRECT ALL TEST LOCATIONS. REPORT OF TEST RESULTS SHALL INCLUDE ORIGINAL RECORDING AND THREE REPRODUCTIONS.

SUBMISSION OF REPORTS

FILL IN TEST RESULTS ON APPROPRIATE FORMS.

COMPLETE ALL APPLICABLE TESTS, CERTIFICATIONS, FORMS, AND MATRICES LISTED IN THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH (IDPH) FINAL OCCUPANCY CHECKLIST CERTIFICATIONS FOR REQUEST OF INSPECTION.

SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED

SYSTEMS TO BE PRE-BALANCED ARE AS FOLLOWS:

DUCTLESS SPLIT CONDENSER UNITS INTERIOR DUCTLESS SPLITS

REFER TO NEW WORK SYSTEM/EQUIPMENT BALANCING CRITERIA WITHIN THIS SPECIFICATION FOR BALANCING DATA TO OBTAIN AS PART OF PRE-BALANCING.

REPORT FINDINGS TO ARCHITECT/ENGINEER ON STANDARD FORMS. PROVIDE ONE ELECTRONIC COPY OF THE REPORT.

GENERAL REQUIREMENTS

TITLE PAGE:

- 1. PROJECT NAME. 2. PROJECT LOCATION.
- 3. PROJECT ARCHITECT.
- 4. PROJECT ENGINEER (IMEG CORP.)
- 5. PROJECT GENERAL CONTRACTOR 6. TAB COMPANY NAME, ADDRESS, PHONE NUMBER.
- 7. TAB SUPERVISOR'S NAME AND CERTIFICATION NUMBER.
- 8. TAB SUPERVISOR'S SIGNATURE AND DATE. 9. REPORT DATE.

REPORT INDEX.

GENERAL INFORMATION:

- 1. TEST CONDITIONS.
- 2. NOMENCLATURE USED THROUGHOUT REPORT. 3. NOTABLE SYSTEM CHARACTERISTICS/DISCREPANCIES FROM DESIGN.
- 4. TEST STANDARDS FOLLOWED.
- 5. ANY DEFICIENCIES NOTED. 6. QUALITY ASSURANCE STATEMENT.
- INSTRUMENT LIST:
- 1. INSTRUMENT.
- 2. MANUFACTURER, MODEL, AND SERIAL NUMBER. 3. RANGE.

4. CALIBRATION DATE.

AIR SYSTEMS

A. AIR MOVING EQUIPMENT:

GENERAL REQUIREMENTS:

DRAWING SYMBOL.

1 LOCATION.

2 MANUFACTURER, MODEL, ARRANGEMENT, CLASS, DISCHARGE. 3 FAN RPM.

4 MULTIPLE RPM FAN CURVE WITH OPERATING POINT MARKED. (OBTAIN

FROM EQUIPMENT SUPPLIER). FINAL FREQUENCY OF MOTOR AT MAXIMUM FLOW RATE (ON FANS DRIVEN BY VFD).

B. FLOW RATE:

1.SUPPLY FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL. 2.RETURN FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.

3.OUTSIDE FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL. 4.EXHAUST FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.

C. PRESSURE DROP AND PRESSURE:

- 1.FILTER PRESSURE DROP: SPECIFIED AND ACTUAL.
- 2.TOTAL STATIC PRESSURE: SPECIFIED AND ACTUAL. (INDICATE IF ACROSS FAN OR EXTERNAL TO UNIT).
- 3.INLET PRESSURE.

4.DISCHARGE PRESSURE. 5.FAN DATA:

6.DRAWING SYMBOL.

- 7.LOCATION.
- 8.MANUFACTURER AND MODEL 9.FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL
- 10.TOTAL STATIC PRESSURE: SPECIFIED AND ACTUAL. (INDICATE
- MEASUREMENT LOCATIONS). 11.INLET PRESSURE.
- 12.DISCHARGE PRESSURE.
- 13.FAN RPM.

D. ELECTRIC MOTORS:

- 1.DRAWING SYMBOL OF EQUIPMENT SERVED.
- 2.MANUFACTURER, MODEL, FRAME. 3.NAMEPLATE: HP (KW), PHASE, SERVICE FACTOR, RPM, OPERATING AMPS, EFFICIENCY.

4.MEASURED: AMPS IN EACH PHASE.

23 07 19 HVAC PIPING INSULATION

SECTION INCLUDES

PIPING INSULATION

QUALITY ASSURANCE

APPLICATOR: COMPANY SPECIALIZING IN PIPING INSULATION APPLICATION WITH FIVE YEARS MINIMUM EXPERIENCE. MATERIALS: FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 IN

ACCORDANCE WITH ASTM E84, NFPA 255, OR UL 723 (WHERE REQUIRED). SUBMITTALS SUBMIT SHOP DRAWINGS PER SECTION 23 05 00. INCLUDE PRODUCT

DESCRIPTION, LIST OF MATERIALS AND THICKNESS FOR EACH SERVICE, AND LOCATIONS.

INSULATION MATERIALS

TYPE A: GLASS FIBER; ANSI/ASTM C547; 0.24 MAXIMUM 'K' VALUE AT 75F; NON-COMBUSTIBLE. ALL PURPOSE, WHITE KRAFT JACKET BONDED TO ALUMINUM FOIL AND REINFORCED WITH FIBERGLASS YARN, 25/50 FLAME SPREAD/SMOKE DEVELOPED RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84 (UL 723).

REFRIGERANT PIPE COUPLING

INSULATION COUPLING: MOLDED THERMOPLASTIC ASTM D1525, -65F TO 275F, SIZES UP TO 4-1/8" O.D., AND RECEIVE INSULATION THICKNESS UP TO 1". SUITABLE FOR USE INDOORS OR OUTDOORS WITH UV STABILIZERS. ACCEPTABLE MANUFACTURERS: KLO-SHURE OR EQUAL.

CITY OF PHOENIX **OFFICE OF THE CITY ENGINEER** HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. B. 07-03-24 P. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
M1.02.CE

SHEET 21 OF 48

PREPARATION

INSTALL INSULATION AFTER PIPING HAS BEEN TESTED. PIPE SHALL BE CLEAN, DRY AND FREE OF RUST BEFORE APPLYING INSULATION.

GENERAL INSTALLATION REQUIREMENTS

INSTALL MATERIALS PER MANUFACTURER'S INSTRUCTIONS, BUILDING CODES AND INDUSTRY STANDARDS. CONTINUE INSULATION WITH VAPOR BARRIER THROUGH PENETRATIONS. THIS APPLIES TO ALL INSULATED PIPING. MAINTAIN FIRE RATING OF ALL PENETRATIONS. NEATLY FINISH INSULATION AT SUPPORTS, PROTRUSIONS, AND

INTERRUPTIONS ON ALL INSULATED PIPING, PROVIDE AT EACH SUPPORT AN INSERT OF SAME THICKNESS AND CONTOUR AS ADJOINING INSULATION, BETWEEN THE PIPE AND INSULATION JACKET, TO PREVENT INSULATION FROM SAGGING AND CRUSHING. THE INSERT SHALL BE SUITABLE FOR PLANNED TEMPERATURES, BE SUITABLE FOR USE WITH SPECIFIC PIPE MATERIAL, AND SHALL BE A 180 CYLINDRICAL SEGMENT THE SAME LENGTH AS METAI SHIELDS. INSERTS SHALL BE A CELLULAR GLASS (FOR ALL TEMPERATURE RANGES) OR MOLDED HYDROUS CALCIUM SILICATE (FOR PIPE WITH OPERATING TEMPERATURES ABOVE 70F. WITH A MINIMUM COMPRESSIVE STRENGTH OF 50 PSI. POLYISOCYANURATE INSULATION WITH A MINIMUM COMPRESSIVE STRENGTH OF 24 PSI IS ACCEPTABLE FOR PIPE SIZES 3"

300F. FACTORY FABRICATED INSERTS MAY BE USED. RECTANGULAR BLOCKS, PLUGS, OR WOOD MATERIAL ARE NOT ACCEPTABLE. TEMPORARY WOOD BLOCKING MAY BE USED BY THE PIPING CONTRACTOR FOR PROPER HEIGHT; HOWEVER, THESE MUST BE REMOVED AND REPLACED WITH PROPER INSERTS BY THE INSULATION CONTRACTOR.

PIPE INSULATION. SHIELDS SHALL BE GALVANIZED SHEET METAL, HALF ROUND WITH FLARED EDGES. ADHERE SHIELDS TO INSULATION. ON COLD PIPING, SEAL THE SHIELDS VAPOR-TIGHT TO THE INSULATION AS REQUIRED TO MAINTAIN THE VAPOR BARRIER, OR ADD SEPARATE VAPOR BARRIER JACKET.

SHIELDS SHALL BE AT LEAST THE FOLLOWING LENGTHS AND GAUGES: PIPE SIZE: SHIELD SIZE:

1/2" TO 3" PIPE 12" LONG X 18 GAUGE

4" PIPE 12" LONG X 16 GAUGE

5" TO 6" PIPES 8" LONG X 16 GAUGE 8" TO 14" PIPES 24" LONG X 14 GAUGE

16" TO 24" PIPES 24" LONG X 12 GAUGE

ALL PIPING AND INSULATION THAT DOES NOT MEET 25/50 THAT IS LOCATED IN AN AIR PLENUM SHALL HAVE WRITTEN APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND THE LOCAL FIRE DEPARTMENT FOR AUTHORIZATION AND MATERIALS APPROVAL. IF APPROVAL HAS BEEN ALLOWED. THE NON-RATED MATERIAL SHALL BE WRAPPED WITH A PRODUCT THAT HAS PASSED ASTM E84 AND/OR NFPA 255 TESTING WITH A RATING OF 25/50 OR BELOW.

INSULATED PIPING OPERATING BELOW 60F INSULATE FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, FLEXIBLE HOSES, AND EXPANSION JOINTS. SEAL ALL PENETRATIONS OF VAPOR BARRIER.

ALL BALANCE VALVES WITH FLUID OPERATING BELOW 60F SHALL BE INSULATED WITH A REMOVABLE PLUG WRAPPED WITH VAPOR BARRIER TAPE TO ALLOW READING AND ADJUSTING OF THE VALVE INSULATED PIPING OPERATING BETWEEN 60F AND 140F DO NOT INSULATE FLANGES AND UNIONS, BUT BEVEL AND SEAL ENDS OF

INSULATION AT SUCH LOCATIONS, INSULATE ALL FITTINGS, VALVES AND STRAINERS. INSULATED PIPING OPERATING ABOVE 140F

INSULATE FITTINGS, VALVES, FLANGES, AND STRAINERS. ALL BALANCE VALVES WITH FLUID OPERATING ABOVE 140F SHALL BE INSULATED AND AN OPENING SHALL BE LEFT IN THE INSULATION TO ALLOW FOR READING AND ADJUSTING THE VALVE.

REFRIGERANT PIPING ON REFRIGERANT PIPING (25F AND ABOVE) AND NOT REQUIRED TO MEET THE 25/50 FLAME/SMOKE. PROVIDE AT EACH STRUT OR CLEVIS SUPPORT AN INSULATION COUPLING TO SUPPORT PIPE AND TO ACCEPT INSULATION

THICKNESS OF ADJOINING INSULATION, TO PREVENT INSULATION FROM SAGGING AND CRUSHING. THE COUPLING SHALL BE SUITABLE FOR PLANNED TEMPERATURES, USE WITH SPECIFIED PIPE MATERIAL, AND SHALL BE A 360, ONE-PIECE CYLINDRICAL SEGMENT. USE MECHANICAL FASTENERS WHERE COUPLING CANNOT BE INSTALLED ON PIPE DURING INSTALLATION. CONTRACTOR SHALL APPLY ADHESIVE TO ENDS OF INSULATION ENTERING INSULATION COUPLING TO MAINTAIN VAPOR BARRIER.

EXPOSED PIPING

LOCATE AND COVER SEAMS IN LEAST VISIBLE LOCATIONS. WHERE EXPOSED INSULATED PIPING EXTENDS ABOVE THE FLOOR, PROVIDE A SHEET METAL GUARD AROUND THE INSULATION EXTENDING 12" ABOVE THE FLOOR. GUARD SHALL BE 0.016" CYLINDRICAL SMOOTH OR STUCCO ALUMINUM AND SHALL FIT TIGHTLY TO THE INSULATION.

INSULATION INSTALLATION

TYPE A INSULATION: 1. ALL SERVICE JACKETS: SEAL ALL LONGITUDINAL JOINTS WITH SELF SEAL LAPS USING A SINGLE PRESSURE SENSITIVE ADHESIVE SYSTEM. DO NOT

STAPLE. 2. INSULATION WITHOUT SELF-SEAL LAP MAY BE USED IF INSTALLED WITH BENJAMIN FOSTER 85_20 OR EQUIVALENT CHICAGO MASTIC, 3M OR

CHILDERS LAP ADHESIVE. 3. APPLY INSULATION WITH LAPS ON TOP OF PIPE.

4. FITTINGS, VALVE BODIES AND FLANGES: FOR 4" AND SMALLER PIPES, INSULATE WITH 1 LB.DENSITY INSULATION WRAPPED UNDER COMPRESSION TO A THICKNESS EQUAL TO THE ADJACENT PIPE INSULATION. FOR PIPES OVER 4", USE MITERED SEGMENTS OF PIPE INSULATION. FINISH WITH PREFORMED PLASTIC FITTING COVERS. SECURE FITTING COVERS WITH PRESSURE SENSITIVE TAPE AT EACH END. OVERLAP TAPE AT LEAST 2" ON ITSELF. FOR PIPES OPERATING BELOW 60F, SEAL FITTING COVERS WITH VAPOR RETARDER MASTIC IN ADDITION TO TAPE.

AND BELOW, MINIMUM 60 PSI FOR PIPE SIZES 4", AND OPERATE BELOW

INSTALL METAL SHIELDS BETWEEN ALL HANGERS OR SUPPORTS AND THE

JACKET COVER INSTALLATION

METAL COVERING: 1. PROVIDE VAPOR BARRIER AS SPECIFIED FOR INSULATION TYPE. COVER WITH ALUMINUM STAINLESS STEEL JACKET COVERING WITH SEAMS LOCATED ON THE BOTTOM OF HORIZONTAL PIPING. INCLUDE FITTINGS. JOINTS AND VALVES. 2. SEAL ALL INTERIOR AND EXTERIOR BUTT JOINTS WITH METAL DRAW

BANDS AND SEALANT. SEAL ALL EXTERIOR JOINTS WATERTIGHT. 3. INTERIOR JOINTS DO NOT NEED TO BE SEALED. PLASTIC COVERING:

1. PROVIDE VAPOR BARRIER AS SPECIFIED FOR INSULATION TYPE. COVER WITH PLASTIC JACKET COVERING. POSITION SEAMS TO SHED WATER. 2. SOLVENT WELD ALL JOINTS WITH MANUFACTURER RECOMMENDED CEMENT

3. OVERLAP ALL LAPS AND BUTT JOINTS 1-1/2" MINIMUM. REPAIR ANY LOOSE ENDS THAT DO NOT SEAL SECURELY. SOLVENT WELD ALL FITTING COVERS IN THE SAME MANNER. FINAL INSTALLATION SHALL BE WATERTIGHT

5. USE PLASTIC INSULATION COVERING ON ALL EXPOSED PIPES INCLUDING BUT NOT LIMITED TO: a. ALL EXPOSED PIPING IN AREAS NOTED ON DRAWINGS.

INSULATION SCHEDULE

c. ALL EXPOSED PIPING BELOW 8'-0" ABOVE FLOOR.

PIPING SYSTEM: INSULATION TYPE/THICKNESS:

CONDENSATE DRAINAGE A/ 1/2" **SECTION 23 81 26 - SPLIT SYSTEM AIR CONDITIONING UNITS**

WARRANTY

PROVIDE FIVE (5) YEAR MANUFACTURER'S WARRANTY ON ALL COMPRESSORS.

SPLIT SYSTEM WALL AND CEILING-MOUNTED UNITS

ACCEPTABLE MANUFACTURERS: CARRIER/TOSHIBA; PANASONIC; LG;

SANYO; SAMSUNG; DAIKIN APPLIED; MITSUBISHI MANUFACTURED UNITS: PROVIDE PACKAGED, AIR-COOLED, FACTORY ASSEMBLED, PRE-WIRED, AND PRE-PIPED UNIT CONSISTING OF CABINET, FANS, FILTERS, REMOTE CONDENSING UNIT, AND CONTROLS. WALL-MOUNTED UNITS SHALL BE FURNISHED WITH INTEGRAL WALL MOUNTING BRACKET AND MOUNTING HARDWARE. ASSEMBLE UNIT FOR WALL-MOUNTED OR CEILING INSTALLATION WITH SERVICE ACCESS

REQUIRED. PERFORMANCE SHALL BE AS SCHEDULED ON THE DRAWINGS. UNIT SHALL BE RATED PER AHRI STANDARDS 210/240 AND LISTED IN THE AHRI DIRECTORY AS A MATCHED SYSTEM. PROVIDE UNIT WITH FACTORY-SUPPLIED CLEANABLE AIR FILTERS. THE UNITS SHALL BE LISTED BY ELECTRICAL LABORATORIES (ETL) IN ACCORDANCE WITH UL-1995 CERTIFICATION AND BEAR THE ETL LABEL. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).

EVAPORATOR CABINET AND FRAME

CABINET: REFER TO SCHEDULE ON DRAWINGS FOR MOUNTING TYPE WALL-MOUNTED EXPOSED UNITS SHALL HAVE A FINISHED APPEARANCE WITH CONCEALED REFRIGERANT PIPING, CONDENSATE DRAIN PIPING, AND WIRING CONNECTIONS, AIR DISTRIBUTION PANEL (FOR CEILING-MOUNTED UNITS): HEAVY MOLDED PLASTIC 4-WAY DISCHARGE PLENUM WITH RETURN AIR GRILLE AND UNIT FILTER.

EVAPORATOR FANS AND MOTORS: THE EVAPORATOR FAN SHALL BE DIRECT DRIVE WITH A SINGLE MOTOR HAVING PERMANENTLY LUBRICATED BEARINGS. THE FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED. THE INDOOR FAN SHALL HAVE AT LEAST THREE SPEEDS. EVAPORATOR MOTOR: DIRECT DRIVEN, DIGITALLY CONTROLLED WITH MULTIPLE SPEEDS. PERMANENTLY LUBRICATED WITH INTERNAL OVERLOAD PROTECTION.

EVAPORATOR COILS (DIRECT EXPANSION): DIRECT EXPANSION COOLING COIL OF SEAMLESS COPPER TUBES EXPANDED INTO ALUMINUM FINS. SINGLE REFRIGERATION CIRCUIT WITH EXTERNALLY EQUALIZED EXPANSION VALVE. COILS SHALL BE PRESSURE TESTED AT THE FACTORY. A SLOPED, CORROSION-RESISTANT CONDENSATE PAN WITH DRAIN SHALL

BE PROVIDED UNDER THE COIL. ELECTRICAL PANEL: SERVICE CONNECTIONS, WIRING, AND DISCONNECT REQUIREMENTS: CONFORM TO THE NATIONAL ELECTRICAL CODE AND LOCAL ELECTRICAL CODES.

CONTROL: THE UNIT SHALL HAVE A HARD-WIRED 7-DAY PROGRAMMABLE REMOTE CONTROLLER TO OPERATE THE SYSTEM. PROVIDE WALL MOUNTING BRACKET FOR CONTROLLER. REMOTE CONTROLLER SHALL HAVE "AUTOMATIC". "DRY" (DEHUMIDIFICATION), AND "FAN ONLY" OPERATING MODES. THE REMOTE CONTROLLER SHALL HAVE THE FOLLOWING FEATURES: ON/OFF POWER SWITCH. MODE SELECTOR TO OPERATE THE SYSTEM IN AUTO, COOL, HEAT, FAN, OR DEHUMIDIFICATION (DRY) OPERATION. FAN SETTING TO PROVIDE MULTIPLE FAN SPEEDS. SWING LOUVER FOR ADJUSTING SUPPLY LOUVER DISCHARGE. ON/OFF TIMER FOR AUTOMATICALLY SWITCHING THE UNIT OFF OR ON. TEMPERATURE ADJUSTMENT ALLOWS FOR THE INCREASE OR DECREASE OF THE DESIRED TEMPERATURE. POWERFUL OPERATION TO ALLOW QUICK COOL DOWN OR HEATING UP IN THE DESIRED SPACE TO ACHIEVE MAXIMUM DESIRED TEMPERATURE IN THE SHORTEST ALLOWABLE TIME.

THE REMOTE CONTROLLER SHALL PERFORM FAULT DIAGNOSTIC FUNCTIONS THAT MAY BE SYSTEM RELATED. INDOOR OR OUTDOOR UNIT RELATED DEPENDING ON THE FAULT CODE. TEMPERATURE RANGE ON THE REMOTE CONTROLLER SHALL BE 64°F TO 90°F IN COOLING MODE AND 50°F TO 86°F IN HEATING MODE. THE INDOOR UNIT MICROPROCESSOR SHALL HAVE THE CAPABILITY TO RECEIVE AND PROCESS COMMANDS VIA RETURN AIR TEMPERATURE AND INDOOR COIL TEMPERATURE SENSORS ENABLED

BY COMMANDS FROM THE REMOTE CONTROLLER.

OUTDOOR UNIT

GENERAL: THE OUTDOOR UNIT SHALL BE SPECIFICALLY MATCHED TO THE CORRESPONDING INDOOR UNIT SIZE. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED AND PRE-WIRED WITH ALL NECESSARY ELECTRONIC AND REFRIGERANT CONTROLS. CABINET: THE OUTDOOR UNIT SHALL BE FABRICATED OF GALVANIZED

STEEL, BONDERIZED, AND COATED WITH A BAKED ENAMEL FINISH FOR CORROSION PROTECTION. FAN: THE FAN SHALL BE DIRECT DRIVE, PROPELLER TYPE FAN WITH FAN

GUARD. FAN BLADES SHALL BE STATICALLY AND DYNAMICALLY BALANCED. THE FAN SHALL HAVE PERMANENTLY LUBRICATED TYPE BEARINGS. MOTOR SHALL BE PROTECTED BY INTERNAL THERMAL OVERLOAD PROTECTION. AIRFLOW SHALL BE HORIZONTAL DISCHARGE.

COIL: THE OUTDOOR COIL SHALL BE NONFERROUS CONSTRUCTION WITH CORRUGATED FIN TUBE. THE COIL SHALL BE PROTECTED WITH AN INTERNAL GUARD. REFRIGERANT FLOW FROM THE CONDENSER SHALL BE CONTROLLED VIA A METERING DEVICE.

COMPRESSOR: HERMETIC OR SCROLL REFRIGERANT COMPRESSORS WITH RESILIENT SUSPENSION SYSTEM, INVERTER DRIVEN, OIL STRAINER, SIGHT GLASS/MOISTURE INDICATOR, INTERNAL MOTOR PROTECTION, HIGH PRESSURE SWITCH, AND CRANKCASE HEATER. THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR AND FOUR-WAY REVERSING VALVE.

REFRIGERANT: UNIT SHALL USE R-410A. THE USE OF CHLOROFLUOROCARBON (CFC)-BASED REFRIGERANTS IS PROHIBITED.

INTEGRAL CONDENSATE PUMP: PACKAGED UNIT MATCHED TO EVAPORATOR UNIT INCLUDING FLOAT SWITCH, PUMP, MOTOR ASSEMBLY CHECK VALVE, AND RESERVOIR. PROVIDE ALARM TO INDICATE HIGH LEVEL RESERVOIR. UNIT SHALL BE POWERED FROM EVAPORATOR UNIT WITH APPROPRIATE FIELD CONNECTIONS AVAILABLE. CONDENSATE PUMP:

REFRIGERANT PIPING: DESIGN PRESSURE: 450 PSIG. MAXIMUM DESIGN TEMPERATURE: 250 F. PIPING - 4" AND UNDER. TUBING: TYPE ACR SEAMLESS COPPER TUBE LINESETS, ASTM B1003, SIZES INDICATED ARE NOMINAL DESIGNATION. JOINTS: BRAZED WITH SILVER SOLDER. FITTINGS: WROUGHT COPPER SOLDER JOINT, ANSI B16.22. SPECIAL REQUIREMENTS: ALL TUBING SHALL BE CLEANED, DEHYDRATED, PRESSURIZED WITH DRY NITROGEN, PLUGGED, AND TAGGED BY MANUFACTURER "FOR REFRIGERATION SERVICE". DURING BRAZING OPERATIONS, CONTINUOUSLY PURGE THE INTERIOR OF THE PIPE WITH NITROGEN TO PREVENT OXIDE FORMATION. REFRIGERANT LINESETS ARE PERMITTED PROVIDE REFRIGERANT LINESETS AND ACCESSORIES OF SIZES NEEDED FOR INSTALLATION. VERIFY LENGTHS OF PIPING REQUIRED FOR

INSTALLATION. INSULATION: EPDM (NBR/PVC BLEND IS NOT PERMITTED) ELASTOMERIC CELLULAR FOAM; ANSI/ASTM C534; FLEXIBLE PLASTIC; 0.25 MAXIMUM 'K' VALUE AT 75°F, 25/50 FLAME SPREAD/SMOKE DEVELOPED RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84 (UL 723). MINIMUM 1/2" THICK FOR

PIPE SIZES < 1-1/4" AND 3/4" THICK FOR PIPE SIZES 1-1/4" AND ABOVE.

INSTALLATION

GENERAL INSTALLATION REQUIREMENTS: VERIFY THAT PROPER POWER SUPPLY IS AVAILABLE. INSTALL UNITS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL ALL UNITS LEVEL AND PLUMB. INDOOR UNITS SHALL BE INSTALLED USING MANUFACTURER'S STANDARD MOUNTING HARDWARE SECURELY FASTENED TO BUILDING STRUCTURE. REFER TO SECTION 23 05 29 FOR ROOF SUPPORT RAILS FOR OUTDOOR

COORDINATE THE EXACT MOUNTING LOCATION OF ALL INDOOR AND ITDOOR UNITS WITH ARCHITECTURAL AND ELECTRICAL WOR COORDINATE INSTALLATION OF CEILING-MOUNTED UNITS WITH CEILING GRID LAYOUT. PROVIDE ADDITIONAL CEILING GRID REINFORCEMENT OR MODIFICATION AS REQUIRED AND COORDINATE THE WORK WITH THE GC. LOCATE THE INDOOR UNIT WHERE IT IS READILY ACCESSIBLE FOR MAINTENANCE AND FILTER CHANGES. WHERE OUTDOOR UNITS ARE LOCATED ON THE ROOF, LOCATE AT LEAST 10' FROM THE ROOF EDGE.

VERIFY LOCATIONS OF WALL-MOUNTED REMOTE CONTROLLERS WITH DRAWINGS AND ROOM DETAILS BEFORE INSTALLATION. COORDINATE MOUNTING HEIGHTS TO BE CONSISTENT WITH OTHER WALL-MOUNTED DEVICES. HEIGHT ABOVE FINISHED FLOOR SHALL NOT EXCEED 48".

REFRIGERANT PIPING: INSTALL REFRIGERANT PIPING FROM THE INDOOR UNIT(S) TO THE CONDENSING UNIT. REFRIGERANT PIPE SIZES, LENGTHS, SPECIALTIES AND CONFIGURATIONS SHALL BE AS RECOMMENDED BY THE MANUFACTURER. EVACUATE REFRIGERANT PIPING AND FULLY CHARGE SYSTEM WITH REFRIGERANT PER MANUFACTURER'S REQUIREMENTS. PROVIDE WEATHERTIGHT INSULATED ROOF CURB TO ACCOMMODATE REFRIGERANT PIPING AND CONDUIT ROOF PENETRATIONS. INSULATE ALL REFRIGERANT PIPING. BOTH LIQUID AND SUCTION LINES SHALL BE INSULATED BETWEEN THE INDOOR AND OUTDOOR UNITS.

INSULATION: INSULATE ALL REFRIGERANT PIPES BETWEEN THE HEAT PUMP AND INDOOR UNITS. THIS INCLUDES THE LIQUID PIPE, THE SUCTION PIPE, THE HOT GAS PIPE, AND THE HIGH/LOW PRESSURE GAS PIPE. ALL FITTINGS, VALVES, AND SPECIALTY REFRIGERANT COMPONENTS IN THE PIPING BETWEEN THE INDOOR AND HEAT PUMP UNITS SHALL ALSO BE INSULATED. THE INSULATION SHALL HAVE A CONTINUOUS VAPOR BARRIER AND SHALL PASS THROUGH HANGERS AND SUPPORTS UNBROKEN. ALL EXTERIOR INSULATED PIPING SHALL BE PAINTED WITH MINIMUM OF ONE (1) COAT OF UV RESISTANT PAINT. OVERSIZE HANGERS AND SUPPORTS TO ALLOW THE INSULATION TO PASS THROUGH UNBROKEN. FOLLOWING ARE THE MINIMUM INSULATION THICKNESSES UNLESS NOTED OTHERWISE IN THE MANUFACTURER'S LITERATURE OR REQUIRED BY LOCAL AHJ:

ASHRAE MOST CURRENT VERSION

PIPE SYSTEM INSULATION THICKNESS REFRIGERANT SUCTION (40°F & BELOW) UP TO 1" 1/2"

1" AND UP 1"

REFRIGERANT SUCTION (41°F TO 60°F) UP TO 1-1/2" 1/2" 1-1/2" AND UP 1"

REFRIGERANT LOW-PRESSURE GAS (141°F61°C-200°F93°C)

UP TO 1-1/2" 1-1/2" 1-1/2" AND UP 2"

REFRIGERANT HIGH-PRESSURE GAS (201°F94°C-250°F121°C) UP TO 4" 2-1/2"

REFRIGERANT LIQUID

UP TO 1-1/2" 1" 1-1/2" AND UP 1-1/2"

CONDENSATE REMOVAL: INSTALL CONDENSATE PIPING WITH TRAP AND ROUTE FROM DRAIN PAN TO NEAREST DRAIN. DISCHARGE TO NEAREST CODE-APPROVED RECEPTOR OR TO A PROPERLY VENTED INDIRECT WASTE FITTING, FLUSH ALL PIPING BEFORE MAKING FINAL CONNECTIONS TO UNITS.

COMB ALL COILS TO REPAIR BENT FINS. INSTALL NEW FILTERS IN THE UNIT AT SUBSTANTIAL COMPLETION. A FACTORY-AUTHORIZED SERVICE AGENT SHALL ASSIST IN COMMISSIONING THE UNIT AND INSPECTING THE INSTALLATION PRIOR TO STARTUP. SUBMIT STARTUP REPORT WITH O&M MANUALS.

CITY OF PHOENIX **OFFICE OF THE CITY ENGINEER** HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. R ERT J. ES 0.07-03-24 PAPIEORA EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
M1.03.CE

KEYNOTES:

- I. INSULATED MANUFACTURER'S 7-DAY PROGRAMMABLE THERMOSTAT.
- PROVIDE MANUFACTUER'S REFRIGERANT PIPING LINE SET AND ROUTE TO ASSOCIATED OUTDOOR UNIT. SIZE, ROUTE, AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE PIPING INSULATION ON ALL REFRIGERANT PIPING AS PER
- MANUFACTURER'S RECOMMENDATIONS. ROUTE 3/4" CONDENSATE DRAIN PIPING UP
- FROM CONDENSATE PUMP AND WYE INTO TOP OF GRAVITY DRAIN.
- 4. MANUFACTURER'S REFRIGREANT PIPING LINE SET. SIZE, ROUT AND INSTALL AS PERM MANUFACTURER'S RECOMMENDATIONS. COORDINATE ROUTING OF REFRIGERANT PIPING TO CORRESPONDING UNIT WITH GENERAL CONTRACTOR. PROVIDE VAPR BARRIER AND ALUMAGUARD (OR EQUAL). ALUMINUM JACKET ON PIPING ON BUILDING EXTERIOR.
- 5. CONDENSATE DRAIN ROUTED DOWN ON WALL TO MOP SINK. TERMINATE WITH REQUIRED AIR GAP.
- . CONDENSATE UP FROM INTEGRAL PUMP TO GRAVITY FEED.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. B. 07-03-24 PALLONA, U.S. N. EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100 Description
MECHANICAL ENLARGED PLANS
Scale
$1/4 = 1-0^{-1}$
M2.00.CE

2 RAIL NO SCALE

L. IF NOT PROVIDED INTEGRAL WITH UNIT, CONTRACTOR SHALL PROVIDE SEPARATE CONDENSATE PUMP. CONDENSATE PUMP SHALL BE POWERED BY UNI	T. IF NO

8. ROUTE 3/4" CONDENSATE DRAIN PIPING WITH INSULATION DOWN ALONG WALL AND TERMINATE AT LAVATORY SINK OR OTHER ACCEPTABLE PLUMBING EQUIPMENT WITH MINIMUM 1" AIR GAP.

		OUTDOOR UNIT								ELECTRICAL				
нт		MAX. DIMENSIONS		NS	WEIGHT						DISC	ONNECT]	
.)	MODEL	SEER	HEIGHT	LENGTH	WIDTH	(LB.)	MODEL	VOLTAGE	PHASE	MCA	MOCP	BY (NOTE A)	TYPE (NOTE B)	MANUFACTURER
6	RNS24ABT	18	3'-3 1/4"	1'-1"	3'-1"	150.4	RNS24YBT	208	1	20.0	30	EC	F	SAMSUNG
Mcheck Software Version COMcheckWeb									A II N F	A. DISCONNECT AND CONTROLLER STARTER FURNISHED AND INSTALLED BY: MFR = MANUFACTURER				
ion	2 U P 2 N	018 IEC IS Vets C hoenix, . b lew Cons	C Conduit Packa Arizona	iance	UCIU	nuale	Ŧ			AC = FURIELECTRICAFR/EC =ELECTRICTCC = TEMB. DISCONCB = CIRCF = FUSEENF = NON-PLUG = PL	NISHED B CAL CONTI FURNISHI CAL CONTI MPERATUI NNECT TYI CUIT BREA D FUSED	Y MECHANICA RACTOR. ED LOOSE BY RACTOR. RE CONTROL PE: KER	L CONTRACTOR, MANUFACTURER CONTRACTOR	INSTALLED BY
ems	Package(roposed List	Owner, (s)	/Agent:		Desigr	er/Contractor	:		C F V S M V S E	C. CONTR V = FULL VYE = WY SS = SOLI /SS = MAN /FD = VAF /FD/B = V, /D = WYE ECM = ELE	OLLER ST VOLTAGE (E-DELTA D STATE (UAL STAF RIABLE FR ARIABLE F - DELTA ECTRONIC	ARTER TYPE: (SOFT START) RTER REQUENCY DR FREQUENCY D CALLY COMMU	IVE PRIVE WITH BYPA TATED MOTOR	SS
/pe & Description Zone): ach - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economizer Efficiency = 18.00 SEER, Required Efficiency = 13.00 SEER Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes							E F	D. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE, WITH THE SCHEDULED WHEEL TYPE. SUBSTITUTION OF BI OR BIA FANS FOR FC IS ACCEPTABLE IF EFFICIENCY IS NOT LOWER. E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.						
pply, (7.0 de pliar : The er calc :018 II ts liste	Constant Volu esign fan effic nce Stater proposed me ulations subn ECC requirem ed in the Insp	ime, 400 (iency , fa nent (chanical) nitted wit ents in Co ection Ch	CFM, 0.1 moto in exception: S design represe h this permit a OMcheck Versi ecklist.	r nameplate hj ingle fan <= 5 inted in this do ipplication. The on COMcheckV	p, 85.0 fan ef HP cument is co proposed m Veb and to co	ficiency grade nsistent with t echanical syst omply with any	t, 90.0 total fan the building pla tems have beer y applicable	ns, 1	F C N C S	G. CURB T MFR = STA GC = BY G SAC = SOI	E WITHIN TYPE: ANDARD (GENERAL (UND ATTE	+/- 10% OF SC CURB BY MANU CONTRACTOR ENUATOR CUR	UFACTURER	

Report date: 05/28/24 Page 4 of 12

> PODO E PIMA CENTER PARKWAY SUITE 320 SCOTTSDALE, AZ 85258 P: 602.943.8424 www.imegcorp.com IMEG RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG. ©2024 IMEG CONSULTANTS CORP. 0 1 2 3 REF. SCALE IN INCHES PROJECT #22000173.01

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 FACTOR Signed TAP/ZONA, U.S.N. EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SCHEDULES
Scale
12" = 1'-0"
M4.01.CE SHEET 24 OF 48

	VI
NAME	LEVEL NAME HEIGHT ABOVE PROJECT 0'-0"
N _{OR} T	1 VIE 1/8" = 1'-0"
	SIM INDICATES IN MULTIPLI DETAIL REF M101-SHEET DET
LINE TYPE AND	D TAG KEY:
	Y THIS CONTRACTOR (WIDE NEW EXISTING TO BE REMOVE NEW UNDERFLOOR OR U REMAIN OR WORK BY OTHE
	EXISTING EXISTING TO BE REMOVE EXISTING UNDERFLOOR (
	DOES NOT MODIFY SCOPE.
'TAG'-E	TAGS WITH DASH 'E' INDIC
<u>TAG-1</u>	UNDERLINED TAG INDICA INFORMATION IS AVAILAB
•	INDICATES AN EXISTING S

CONTRACTOR SHALL COMPLY INCLUDING, BU
JILDING CODE:
RE CODE:
LUMBING CODE:
ECHANICAL CODE:
LECTRICAL CODE:
NERGY CONSERVATION CODE:

	VIE	W KEY		VENTILATION SYMBOL LIST			
	E LEVEL NAME	(1)	ED TO	NOT ALL SYMBOLS MAY APPLY.		S APF	
10'-0"	HEIGHT ABOVE PROJECT 0'-0"	DESCRIBE ADDITIONAL INFORM ABOUT WORK REQUIRED, SPEC	ATION IFIC SYMBOL	: DESCRIPTION:	CONTROL.		
		TO THE SHEET AND/OR DETAIL			I. EXISTING SURVEY REPORT	S, EXIS	
		- INDICATES DIRECTION OF TRUE NORTH			2. NOT ALL BEFORE	EXIST	
		- PLAN OR DETAIL NUMBER		FLEXIBLE DUCT	3. EACH CO SHALL N)NTRA OTIFY	
					REMOVE 4. THE GEN	D OR IERAL	
		/ NAME		RISE IN DIRECTION OF AIR FLOW	ROOFS, CONTRA	NALLS CTOR	
Ako.	1/8" = 1'-0"	- PLAN OR DETAIL SCALE			5. THE GEN CEILING	ERAL	
•0	R1				BIDDING 6 WHERE		
	SIM INDICATES SIM	AILAR DETAIL REFERENCED			NEW EQ EITHER		
	DETAIL REFER	RED TO BY SECTION CUT			DOES NO SYSTEM)T COI S TO A	
-	M101-SHEET DETAIL	IS LOCATED ON - T101-3			7. PROVIDE CONSTR REMAIN		
LINE TYPE	AND TAG KEY:			SUPPLY/OUTSIDE AIR DUCT SECTION	8. OBTAIN REASON	PERMI	
NEW WORK	K BY THIS CONTRACTOR (WIDE LI	NE)		RETURN AIR DUCT SECTION	SYSTEM 9. MAINTAI TIE IN AN	3 ARE N EXIS	
 — — ·	EXISTING TO BE REMOVED (NEW UNDERFLOOR OR UND	SHORT DASHED PATTERN) ERGROUND (LONG DASHED PATTERN)		EXHAUST/RELIEF AIR DUCT SECTION	CONNEC	TIONS G SYS	
EXISTING T	O REMAIN OR WORK BY OTHERS	(NARROW LINE)		4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION	10. DISCONI THAT HA 11. PROPER	IECT A S BEE LY RF	
	 EXISTING TO BE REMOVED B EXISTING UNDERFLOOR OR 	BY OTHERS (SHORT DASHED PATTERN) UNDERGROUND (LONG DASHED PATTERN)	<u>SD-1</u>	AIR TERMINAL PROPERTIES SYMBOL	REFRIGE	RANT	
HALFTONIN	NG DOES NOT MODIFY SCOPE.		0/115 (////////////////////////////////////				
'TAG'-E	TAGS WITH DASH 'E' INDICAT	ES THE REFERENCED OBJECT IS EXISTING		TERMINAL AIR BOX (REHEAT COIL (REFER TO SCHEDULE)		ТА	
<u>TAG-1</u>	UNDERLINED TAG INDICATES	S OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL IN A SCHEDULE, MATERIAL LIST, OR SYMBOL			1. AFTER C	ONST	
•	INDICATES AN EXISTING SYS	TEM'S POINT OF CONNECTION/REMOVAL		(REFER TO SCHEDULE)		NG CO ED TO	
					2. AREAS S BALANC	ERVE	
					(REFER 3. IF DUCT	TO THE	
CONTE				OPPOSED BLADE DAMPER (REFER TO SCHEDULE)	MEASUR	EMEN	
CONTR	INCLUDING, BUT NOT LI	MITED TO, THE FOLLOWING:		PARALLEL BLADE DAMPER (REFER TO SCHEDULE)	REQUIRE	ED TO	
BUILDING COE	DE: II	BC 2018 EDITION		DIFFERENTIAL PRESSURE SENSOR	4. A DUCT	NS W STATIO	
IRE CODE:	I	FC 2018 EDITION			TRAVER TAB REF	SE RE. ORT.	
LUMBING CO	DDE: II	PC 2018 EDITION		CARBON DIOXIDE SENSOR	5. TAB CON CONSTR	UCTIC	
/IECHANICAL	CODE: II	MC 2018 EDITION	\mathbb{D}^2	HUMIDISTAT SENSOR	6. THE FINA SPECIEI		
	CODE: N	NFPA 70 (NEC) 2017 EDITION		HUMIDISTAT/SENSOR (DUCT MOUNTED)			
	SERVATION CODE:	ECC 2018		OCCUPANCY SENSOR			
IEALTH DEPA	ARTMENT CODE: C	CURRENT EDITION	P	PRESSURE SENSOR/MONITOR			
	NG CODE [.]		P	PRESSURE SENSOR (DUCT MOUNTED)			
				THERMOSTAT/SENSOR			
				TEMPERATURE SENSOR (DUCT MOUNTED)	ABBR:	D	
	CONTRACTOR A	BBREVIATION KEY		THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE	AD	AC	
ABBR:	DESCRIPTION:		₩	Y AIRFLOW MEASUREMENT SYMBOL XX - AHU SYMBOL	AFF CFSD	AE C	
			—	Y - SEQUENTIAL NUMBER	DN		
C.C.	CIVIL CONTRACTOR				DPG (0-2")		
C.M.					DPS	DI	
E.C.	ELECTRICAL CONTRACTOR			MECHANICAL DESIGN CONDITIONS	FD	FIF	
G.C.	GENERAL CONTRACTOR				FOB	FL	
M.C.	MECHANICAL CONTRACTOR			CONDITIONS: BASED ON WEATHER DATA FOR: PHOENIX, ARIZONA	FOT	FL	
T.C.	TECHNOLOGY CONTRACTOR		SUMMER:	115°F DRY BULB, 74°F WET BULB 34°F DRY BULB	FSD	FIF	
					N.C.	N	
			TYPICAL	ROOM SETPOINTS:	NIC	N	
			SUMMER DE	ESIGN: 75°F DRY BULB, NO HUMIDITY REQUIREMENT	N.O.	N	
	VENTLATION		WINTER DES	SIGN: 70°F DRY BULB, NO HUMIDITY REQUIREMENT ETBACK: 80°F DRY BULB. NO HUMIDITY REQUIREMENT	SCCR	SF	
JHEET UMBER	SHEET NAME	REVISION REVISION REVISION NAME	ATE WINTER SET	TBACK: 65°F DRY BULB, NO HUMIDITY REQUIREMENT	SD	SN	
0.00.IT VENT	TILATION COVERSHEET				ТАВ	TE	
	HANICAL SPECIFICATIONS				TD	TF	
0.03.IT MECH	HANICAL SPECIFICATIONS		———		TYP	רד	
2.00.IT MECH	HANICAL ENLARGED PLANS						

VIEW KEY			VENTILATION SYMBOL LIST			ME
	(1) KEYNO	TE: INDICATES NOTE USED TO		NOT ALL SYMBOLS MAY APPLY.		ES APPL
HEIGHT ABOVE PROJECT 0'-0"	DESCRI ABOUT	BE ADDITIONAL INFORMATION WORK REQUIRED, SPECIFIC	SYMBOL:	DESCRIPTION:	CONTROL.	GCOND
	TOTHE	SHEET AND/OR DETAIL			SURVEY	'S, EXIST Γ ANY CC
					2. NOT ALL BEFORE	_ EXISTIN E STARTI
	PLAN OR DETAIL NU PLAN OR DETAIL NA	MBER			3. EACH CO SHALL N	ONTRAC
				MANUAL VOLUME DAMPER	4. THE GEI	-D OR RI NERAL C
$(1)^{1/8"} = 1'-0"$			R -	RISE IN DIRECTION OF AIR FLOW	CONTRA 5 THE GEI	ACTORS
	PLAN OR DETAIL SC.	ALE		DROP IN DIRECTION OF AIR FLOW	CEILING CONTRA	S, CEILIN
				DUCT CAP	BIDDING 6. WHERE	; EXISTIN
SIM IN MULTIPL	SIMILAR DETAIL REFERE E LOCATIONS			DUCT DOWN	NEW EG EITHER	UIPMEN ARRANG
DETAIL REF	ERRED TO BY SECTION				DOES N SYSTEM	OT CONF IS TO AL
M101-SHEET DET	AIL IS LOCATED ON	──── T101-×3			7. PROVID CONSTR REMAIN	
ND TAG KEY:				SUPPLY/OUTSIDE AIR DUCT SECTION	8. OBTAIN REASON	
BY THIS CONTRACTOR (WID	E LINE)			RETURN AIR DUCT SECTION	SYSTEM 9. MAINTA	IS ARE IN IN EXIST
NEW EXISTING TO BE REMOVE	D (SHORT DASHED PATT			EXHAUST/RELIEF AIR DUCT SECTION	TIE IN AI CONNEC	ND SWIT
NEW UNDERFLOOR OR U	NDERGROUND (LONG D)	ASHED PATTERN)			DRAININ 10. DISCON THAT HA	NECT AN
 EXISTING EXISTING TO BE REMOVE 	D BY OTHERS (SHORT D	ASHED PATTERN)		4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION	11. PROPER REFRIG	RECI REANT P
	OR UNDERGROUND (LON	IG DASHED PATTERN)	<u>SD-1</u> 6/115	AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM	REQUIR	ED BY TH
TAGS WITH DASH 'E' INDI	CATES THE REFERENCE	D OBJECT IS EXISTING		TERMINAL AIR BOX (REFER TO SCHEDULE)		
UNDERLINED TAG INDICA	TES OBJECT IS IN-SCOP	E. IF NEW, ADDITIONAL		TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)		TAE
INFORMATION IS AVAILAB	LE IN A SCHEDULE, MAT			FAN POWERED TERMINAL AIR BOX w/REHEAT COIL	1. AFTER C BALANC	CONSTRU
				(REFER TO SCHEDULE)		ED TO A IGS.
			H V V V	HUMIDIFIER	Z. AREAS BALANC (REFER	ED TO T
APPLIC	ABLE CODE	S		OPPOSED BLADE DAMPER (REFER TO SCHEDULE)	3. IF DUCT MEASUF	TRAVER REMENT
ACTOR SHALL COMPLY WITH	APPLICABLE CODES AN	D LOCAL AMENDMENTS	<u> </u>	PARALLEL BLADE DAMPER (REFER TO SCHEDULE)		DN OR SÍ ED TO D
E:	I LIMITED TO, THE FOLLO	JWING:	→	DIFFERENTIAL PRESSURE SENSOR		ATE LOC
	IFC 2018 EDITION		©	CARBON MONOXIDE SENSOR	4. A DUCT TRAVER	STATIC I SE REAL
DE:	IPC 2018 EDITION			CARBON DIOXIDE SENSOR	5. TAB COL	NTRACT
ODE:	IMC 2018 EDITION		\bigcirc		6. THE FIN	AL POST
ODE:	NFPA 70 (NEC) 2017 EI	DITION		HUMIDISTAT SENSOR HUMIDISTAT/SENSOR (DUCT MOUNTED)	SPECIFI	CATIONS
ERVATION CODE:	IECC 2018			OCCUPANCY SENSOR		
RTMENT CODE:	CURRENT EDITION		• ®	PRESSURE SENSOR/MONITOR		
G CODE:	CURRENT EDITION		P	PRESSURE SENSOR (DUCT MOUNTED)		
				THERMOSTAT/SENSOR		
				TEMPERATURE SENSOR (DUCT MOUNTED)	ABBR:	DE
CONTRACTOR	ABBREVIATI	ON KEY		THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE	AD	ACC
DESCRIPTION			🗩 — ХХ-Ү	AIRFLOW MEASUREMENT SYMBOL	AFF	ABC
				Y - SEQUENTIAL NUMBER	DN	
			L		DPG (0-2")	DIFF
	2				DPS	DIF
GENERAL CONTRACTOR	x			MECHANICAL DESIGN CONDITIONS:	FD	FIRE
MECHANICAL CONTRACTO	R		DESIGN CO	ONDITIONS: BASED ON WEATHER DATA FOR: PHOENIX, ARIZONA	FOB	FLA
			SUMMER:	115°F DRY BULB, 74°F WET BULB	FOT	
	JK		WINTER:	34°F DRY BULB	N C	
				COM SETPOINTS:	NIC	
\/EXITII & TI/		DEV	SUMMER DES	IGN: 75°F DRY BULB, NO HUMIDITY REQUIREMENT	N.O.	NOF
VENTLATI			WINTER DESI	GN: 70°F DRY BULB, NO HUMIDITY REQUIREMENT BACK: 80°F DRY BULB, NO HUMIDITY REQUIREMENT	SCCR	SHC
SHEET NAME	REVISION NUMBER	REVISION NAME DATE		BACK: 65°F DRY BULB, NO HUMIDITY REQUIREMENT	SD	SMC
					ТАВ	TER
ANICAL SPECIFICATIONS			L		TD	TRA
ANICAL SPECIFICATIONS					TYP	TYP

SHEET NUMBER	SHEET NAME	REVISION NUMBER	F	
M0.00.IT	VENTILATION COVERSHEET			
M0.01.IT	MECHANICAL SPECIFICATIONS			
M0.02.IT	MECHANICAL SPECIFICATIONS			
M0.03.IT	MECHANICAL SPECIFICATIONS			
M2.00.IT	MECHANICAL ENLARGED PLANS			
M4.00.IT	MECHANICAL SCHEDULES			
GRAND TOTAL: 6				

CHANICAL RENOVATION NOTES:

PLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED ION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE DITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD

TING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND ONFLICTS BEFORE PROCEEDING. ING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS TING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. CTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND

HE ENGINEER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK. CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF . AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF ING TILES. AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL 3. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO

G MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL GE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT FLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL LOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK. ORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING . MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT SSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY

TAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW INSTALLED. ING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR CHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND

OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY EM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE. ND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT REMOVED. LAIM AND DISPOSE OF ALL REFRIGERANT IN REMOVED EQUIPMENT/ PIPING. RECLAIMED REFRIGERANT SHALL HAVE DOCUMENTATION AS THE AUTHORITY HAVING JURISDICTION (AHJ).

AB POST-CONSTRUCTION NOTES:

UCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND NTRACTOR SHALL REBALANCE AIR HANDLING UNITS AND EXHAUST FANS AS CHIEVE THE NEW AIRFLOW VALUES SHOWN ON THE CONSTRUCTION

D BY THIS EQUIPMENT WHICH WERE NOT RENOVATED SHALL BE RE-HE AIRFLOW RATES MEASURED BEFORE THE RENOVATION OCCURRED FINAL PRE- DEMOLITION REPORT).

RSE LOCATION AS MARKED ON THE DRAWINGS IS INACCESSIBLE FOR , THE TAB CONTRACTOR SHALL PERFORM THE TRAVERSE AT AN ALTERNATE HALL TAKE MULTIPLE DUCT TRAVERSES AND/OR GRILLE READINGS AS ETERMINE THE FLOW RATE. IN THE EVENT TRAVERSES ARE TAKEN AT AN CATION(S), TAB CONTRACTOR SHALL INCLUDE A DRAWING THAT SHOWS THE IERE THE ACTUAL MEASUREMENTS WERE TAKEN. PRESSURE READING SHALL BE TAKEN AT EACH LOCATION WHERE A DUCT DING IS TAKEN AND SHALL BE INCLUDED IN THE FINAL POST-CONSTRUCTION

OR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-I TAB REPORT AS REQUIRED BY SECTION 23 05 93. CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE

ENTILATION ABBREVIATION KEY

SCRIPTION:

CESS DOOR OVE FINISHED FLOOR

NTROL/FIRE/SMOKE DAMPER NΝ

FERENTIAL PRESSURE GAUGE (RANGE)

FERENTIAL PRESSURE SWITCH

E DAMPER AT ON BOTTOM

AT ON TOP

E/SMOKE DAMPER RMALLY CLOSED

T IN CONTRACT

RMALLY OPEN ORT CIRCUIT CURRENT RATING

OKE DAMPER

RMINAL AIR BOX ANSFER DUCT

PICAL

UON

DOOR UNDERCUT BY OTHERS (1" TYPICAL) UNLESS OTHERWISE NOTED

VENTILATION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6 FEET IN LENGTH, IN WHICH CASE THE BRANCH DUCT SHALL BE SIZED AT A PRESSURE DROP OF

- 0.07" W.C. PER 100' OF DUCTWORK. 2. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO AN AIR TERMINAL SHALL MATCH THE INLET SIZE.
- 3. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO EACH OTHER. 4. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT. 5. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING
- DRAWINGS. AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS.
- 6. CONTRACTOR MAY REUSE PORTIONS OF EXISTING DUCT PROVIDED SIZES AND PRESSURE CLASSES ARE CORRECT, DUCT IS THOROUGHLY CLEANED AND FREE OF DEFECTS, AND ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS ARE SEALED AS SPECIFIED FOR NEW DUCTWORK.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
- 2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN.
- 3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN. 4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM
- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES
- OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS. 6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS 7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO
- COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS. 8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL
- CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN. 9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS. 10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND
- FINISH 11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING. 12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING,
- AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE. 13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL. PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE
- TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS. 14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS,
- PIPING, DUCTWORK, ETC. 16. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 17. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS. 18. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE
- EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC. 19. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND ELECTRICAL PANELS.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 FAP TONA, U.S.N. EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
VENTILATION COVERSHEET
Scale
As indicated
MO.OO.IT

23 05 00 BASIC MECHANICAL REQUIREMENTS

SCOPE OF WORK

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW MATERIALS AS INDICATED ON THE DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE ASSOCIATED PORTION OF THE MECHANICAL WORK A FINISHED AND WORKING SYSTEM.

HVAC WORK SHALL INCLUDE BUT IS NOT NECESSARILY LIMITED TO: a. HEATING, VENTILATING, AIR-CONDITIONING, AIR DISTRIBUTION DEVICES, AND TEMPERATURE CONTROL SYSTEMS b. MECHANICAL INTERNATIONAL ENERGY CONSERVATION CODE (IECC) CALCULATIONS AND VERIFIED COMPLIANCE WITH ENERGY CONSERVATION RIGGING AND LIFTING SIMILAR EQUIPMENT, HE/SHE SHALL CONTRACT WITH STANDARDS

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER/LANDLORD, SHALL BE SCHEDULED WITH THE OWNER/LANDLORD. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS. THE OWNER/LANDLORD RESERVES THE RIGHT TO DETERMINE WHEN RESTRICTED CONSTRUCTION HOURS WILL BE REQUIRED. CONTRACTOR SHALL COORDINATE WITH THE LANDLORD DURING THE **BIDDING PROCESS.**

WITH OTHER TRADES. THE MECHANICAL CONTRACTOR (FIRE

SHALL BUT REQUIRED FOR MECHANICAL SYSTEMS.

VERIFY ALL EXISTING EQUIPMENT SIZES AND CAPACITIES WHERE UNITS UNITS OR REPLACEMENT UNITS.

QUALITY ASSURANCE

FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES

INSTRUCTIONS FROM THE DESIGN TEAM WILL BE DONE AT THE CONTRACTOR'S RISK.

DISCOVERED.

WORKERS SKILLED IN THEIR TRADES.

NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT.

CODES AND STANDARDS

CONFORM TO ALL STATE CODES. OR REGULATIONS, CONTRACTOR SHALL INFORM THE

COMPLY WITH THE CODES AND REGULATIONS.

ALL ROTATING SHAFTS AND/OR EQUIPMENT SHALL BE COMPLETELY GUARDED FROM ALL CONTACT. PARTIAL GUARDS AND/OR GUARDS THAT DO NOT MEET ALL APPLICABLE OSHA STANDARDS ARE NOT ACCEPTABLE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THIS GUARDING IF IT IS NOT PROVIDED WITH THE EQUIPMENT SUPPLIED.

PERMITS AND FEES

PROCURE ALL APPLICABLE PERMITS AND LICENSES. ABIDE BY LOCAL AND STATE LAWS, REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES. PAY ALL FEES AND TAXES IMPOSED BY STATE, MUNICIPAL, AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED AGENCY/CONSULTANT.

SECURE FROM THE APPROPRIATE PRIVATE OR PUBLIC UTILITY COMPANY ALL APPLICABLE REQUIREMENTS. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. MAKE APPLICATION FOR AND PAY FOR SERVICE CONNECTIONS, SUCH AS GAS. MAKE APPLICATION FOR AND PAY FOR ALL METERS AND METERING SYSTEMS REQUIRED BY THE UTILITY COMPANY.

SUBMITTALS

MANUFACTURE OR SHIPMENT. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP CONSTRUCTION FROM THE PREMISES. REFER TO SUBSECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS

ALL CONTRACTORS SHALL ESTABLISH UTILITY ELEVATIONS PRIOR TO FABRICATION AND SHALL COORDINATE THEIR MATERIAL AND EQUIPMENT

PROTECTION/PLUMBING/HVAC/TEMPERATURE CONTROLS CONTRACTOR)

BE RESPONSIBLE FOR ALL WIRING NOT SHOWN ON ELECTRICAL DRAWINGS

OPERATING SYSTEMS. THE CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT. SUBJECT TO HUMAN INTERPRETATION. THIS REPRESENTATION MAY INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION TO ORDERING MATERIAL AND STARTING INSTALLATION. THE CONTRACTOR ARCHITECT/ENGINEER VIA ADDENDUM. AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DEFICIENCIES THE CONTRACTOR MAY DISCOVER. THE CONTRACTOR

THE CONTRACTOR SHALL RESOLVE ALL REPORTED DEFICIENCIES WITH THE ARCHITECT/ENGINEER PRIOR TO AWARDING ANY SUBCONTRACTS. ORDERING MATERIAL, OR STARTING ANY WORK WITH THE CONTRACTOR'S OWN EMPLOYEES, ANY WORK PERFORMED PRIOR TO RECEIPT OF

ONLY PRODUCTS OF REPUTABLE MANUFACTURERS ARE ACCEPTABLE ALL CONTRACTORS AND SUBCONTRACTORS SHALL EMPLOY ONLY

CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING AUTOCAD MEP. CONTRACTORS AND SUBCONTRACTORS MAY

CONFORM TO ALL REQUIREMENTS OF THE CITY OF PHOENIX CODES, LAWS, CONDENSATE PIPING ORDINANCES AND OTHER REGULATIONS HAVING JURISDICTION.

IF THE CONTRACTOR NOTES, AT THE TIME OF BIDDING, THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES JOB IS READY FOR THE FINAL JOBSITE OBSERVATION. ARCHITECT/ENGINEER IN WRITING, REQUESTING A CLARIFICATION. IF THERE IS INSUFFICIENT TIME FOR THIS PROCEDURE, CONTRACTOR SHALL **PROJECT CLOSEOUT** SUBMIT WITH THE PROPOSAL A SEPARATE PRICE TO MAKE THE SYSTEM

ALL CHANGES TO THE SYSTEM MADE AFTER LETTING OF THE CONTRACT, TO COMPLY WITH CODES OR REQUIREMENTS OF INSPECTORS, SHALL BE MADE BY THE CONTRACTOR WITHOUT COST TO THE OWNER.

IF THERE IS A DISCREPANCY BETWEEN MANUFACTURER'S RECOMMENDATIONS SHALL GOVERN.

UTILITY COMPANY REQUIREMENTS

SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE ELECTRONIC COPIES OF EACH SHOP DRAWING FOR REVIEW BY THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR

DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS BASED ON APPLICABLE SPECIFICATION SECTION. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER. WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET. CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK.

PRODUCT DELIVERY, STORAGE, AND HANDLING

EXERCISE CARE IN TRANSPORTING AND HANDLING TO AVOID DAMAGE TO MATERIALS. STORE MATERIALS ON THE SITE TO PREVENT DAMAGE. KEEP MATERIALS CLEAN, DRY AND FREE FROM HARMFUL CONDITIONS. IMMEDIATELY REMOVE ANY MATERIALS THAT BECOME WET OR THAT ARE SUSPECTED OF BECOMING CONTAMINATED WITH MOLD OR OTHER ORGANISMS.

KEEP ALL BEARINGS PROPERLY LUBRICATED AND ALL BELTS PROPERLY TENSIONED AND ALIGNED. COORDINATE THE INSTALLATION OF HEAVY AND LARGE EQUIPMENT WITH

THE GENERAL CONTRACTOR AND/OR OWNER. IF THE MECHANICAL CONTRACTOR DOES NOT HAVE PRIOR DOCUMENTED EXPERIENCE IN A QUALIFIED LIFTING AND RIGGING SERVICE THAT HAS SIMILAR DOCUMENTED EXPERIENCE. FOLLOW ALL EQUIPMENT LIFTING AND SUPPORT GUIDELINES FOR HANDLING AND MOVING.

CONTRACTOR IS RESPONSIBLE FOR MOVING EQUIPMENT INTO THE BUILDING AND/OR SITE. CONTRACTOR SHALL REVIEW SITE PRIOR TO BID FOR PATH LOCATION AND ANY REQUIRED BUILDING MODIFICATIONS TO ALLOW MOVEMENT OF EQUIPMENT. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADES.

WARRANTY

PROVIDE MINIMUM ONE-YEAR WARRANTY COMMENCING ON DATE OF FINAL ACCEPTANCE FOR ALL FIXTURES, EQUIPMENT, MATERIALS, AND WORKMANSHIP. WARRANTY REQUIREMENTS SHALL EXTEND TO CORRECTION, WITHOUT COST TO OWNER, OF ALL WORK FOUND TO BE DEFECTIVE OR NONCONFORMING TO THE CONTRACT DOCUMENTS. REFER TO SUBSECTIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.

MATERIAL SUBSTITUTION

ARE TO BE MODIFIED, MOVED, OR REPLACED. CONTRACTOR SHALL NOTIFY WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING NEW MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, AND FIT IN THE ALLOCATED SPACE. THE THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ANY MATERIAL, ARTICLE OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR USED IF APPROVAL IS SECURED IN WRITING FROM THE

DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY EXCAVATION, FILL, BACKFILL, COMPACTION

UNDERGROUND PIPE SHALL BE LAID IN DRY TRENCHES MAINTAINED FREE OF ACCUMULATED WATER ON A BED OF 6" SAND [OR CA6]FILL. SAND [OR CA6]SHALL BE FILLED AROUND PIPE TO A LEVEL OF 6" ABOVE PIPE. BACKFILL ABOVE UTILITIES SHALL BE NATIVE SOIL MATERIALS IF APPROVED BY THE GEOTECHNICAL ENGINEER. BACKFILL MATERIAL SHALL BE FREE OF ROCK OR GRAVEL LARGER THAN 3" IN ANY DIMENSION AND SHALL BE FREE OF DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, HIGH VOID CONTENT. AND OTHER DELETERIOUS MATERIALS. PROVIDE AND OPERATE SUFFICIENT PUMPING EQUIPMENT TO MAINTAIN EXCAVATIONS, TRENCHES, AND PITS FREE OF WATER. DISPOSE OF PUMPED WATER SO OPERATION AREAS AND OTHER FACILITIES ARE NOT FLOODED.

OBSERVATION OF WORK

REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS. THE THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR PREPARATION OF THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION MAY AND CHASES AND INSTALLING HARD OR SUSPENDED CEILINGS AND SOFFITS

> ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES, BUT IS NOT LIMITED TO: REFRIGERANT PIPING

IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT THE

SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS. RECORD DOCUMENTS INCLUDING REPRODUCIBLE DRAWINGS COMPLETED IN REVIT 2023. SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, AND INSPECTION BY STATE BOILER INSPECTOR.

RECOMMENDATIONS AND THESE SPECIFICATIONS, THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS

SUBMIT AN ELECTRONIC COPY OF THE O&M MANUALS TO THE OWNER. OPERATION AND MAINTENANCE DATA SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS. INSTRUCTION BOOKS, CARDS, MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE INCLUDED.

ALL TEXT SHALL BE SEARCHABLE AND BOOKMARKS SHALL BE USED, DIVIDING INFORMATION BY SPECIFICATION SECTION.

RECORD DOCUMENTS

MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF MECHANICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS; CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME. UPON COMPLETING THE JOB, AND BEFORE FINAL PAYMENT IS MADE, PROVIDE REPRODUCIBLE DRAWINGS COMPLETED IN AUTOCAD TO THE

CLEANING

ARCHITECT/ENGINEER.

SPECIFICATIONS OR ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING

23 05 05 MECHANICAL DEMOLI FOR REMODELING

THE DRAWINGS ARE INTENDED TO INDICATE THE GENERAL S WORK AND DO NOT SHOW EVERY PIPE, DUCT, OR PIECE OF E THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THI VERIFY CONDITIONS PRIOR TO SUBMITTING A BID.

WHERE WALLS, CEILINGS, ETC., ARE SHOWN AS BEING REMC GENERAL DRAWINGS, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, DEVICES, FIXTURES, PIPING, DUCTS, SYSTEMS, THE REMOVED AREA.

WHERE CEILINGS, WALLS, PARTITIONS, ETC., ARE TEMPORAR AND REPLACED BY OTHERS, THIS CONTRACTOR SHALL REMO AND REPLACE EQUIPMENT, DEVICES, FIXTURES, PIPES, DUCT

VERIFY THAT ABANDONED UTILITIES SERVE ONLY ABANDONE OR FACILITIES. EXTEND SERVICES TO FACILITIES OR EQUIPME SHALL REMAIN IN OPERATION FOLLOWING DEMOLITION. COORDINATE WORK WITH ALL OTHER CONTRACTORS AND TH LANDLORD/OWNER. SCHEDULE REMOVAL OF EQUIPMENT TO

CONFLICTS. THIS CONTRACTOR SHALL VERIFY ALL EXISTING EQUIPMENT CAPACITIES WHERE EQUIPMENT IS SCHEDULED TO BE REPLA

MODIFIED, PRIOR TO ORDERING NEW EQUIPMENT. BID SUBMITTAL SHALL MEAN THE CONTRACTOR HAS VISITED SITE AND VERIFIED EXISTING CONDITIONS AND SCOPE OF WO

PREPARATION

OPERATIONS.

DISCONNECT MECHANICAL SYSTEMS IN WALLS, FLOORS, AND SCHEDULED FOR REMOVAL. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PE **OPERATING EQUIPMENT, USE PERSONNEL EXPERIENCED IN S**

DEMOLITION AND EXTENSION **EXISTING MECHANICAL WORK**

DEMOLISH AND EXTEND EXISTING MECHANICAL WORK UNDER OF DIVISION 2 AND THIS SECTION. REMOVE, RELOCATE, AND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRU REMOVE ABANDONED DUCTS AND PIPING TO SOURCE OF SU MAIN LINES.

REMOVE EXPOSED ABANDONED PIPES AND DUCTS, INCLUDIN ABANDONED PIPES AND DUCTS ABOVE ACCESSIBLE CEILING FLUSH WITH WALLS AND FLOORS. CAP DUCT THAT REMAINS. SURFACES. CUT PIPES ABOVE CEILINGS, BELOW FLOORS ANI WALLS. CAP REMAINING LINES. REPAIR BUILDING CONSTRUC MATCH ORIGINAL. REMOVE ALL CLAMPS, HANGERS, SUPPOR ASSOCIATED WITH PIPE AND DUCT REMOVAL.

REMOVE UNUSED SECTIONS OF SUPPLY AND RETURN AIR DU BACK TO MAINS. PATCH OPENING WITH SHEET METAL AND SE PATCH EXISTING INSULATION TO MATCH EXISTING. WHERE EX DUCTWORK IS TO BE CAPPED AND REUSED, LOCATE THE END 6" OF THE LAST BRANCH. END CAPS SHALL BE 3" PRESSURE (SEAL CLASS "A".

DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUI SERVING EQUIPMENT THAT HAS BEEN REMOVED. MAINTAIN A EXISTING MECHANICAL INSTALLATIONS WHICH REMAIN. MODI INSTALLATION OR PROVIDE ACCESS PANELS AS APPROPRIAT REPAIR AD. ACENT CONSTRUCTION AND FINISHES DAMAGED

DEMOLITION AND EXTENSION WORK. EXTEND EXISTING INSTALLATIONS USING MATERIALS AND ME COMPATIBLE WITH EXISTING INSTALLATIONS, OR AS SPECIFIE

PROPERLY RECLAIM AND DISPOSE OF ALL REFRIGERANT IN D EQUIPMENT AND AS REQUIRED FOR EXTENSION OF EXISTING

CUTTING AND PATCHING

THIS CONTRACTOR IS RESPONSIBLE FOR ALL PENETRATIONS CONSTRUCTION REQUIRED TO COMPLETE THE WORK OF THI PENETRATIONS IN EXISTING CONSTRUCTION SHOULD BE REV CAREFULLY PRIOR TO PROCEEDING WITH ANY WORK.

PENETRATIONS SHALL BE NEAT AND CLEAN WITH SMOOTH AN FINISHED EDGES. CORE DRILL WHERE POSSIBLE FOR CLEAN REPAIR EXISTING CONSTRUCTION AS REQUIRED AFTER PENE COMPLETE TO RESTORE TO ORIGINAL CONDITION. USE SIMIL

AND MATCH ADJACENT CONSTRUCTION UNLESS OTHERWISE AGREED TO BY THE ARCHITECT/ENGINEER PRIOR TO START FLOOR SLABS MAY CONTAIN CONDUIT SYSTEMS. THIS CONTR RESPONSIBLE FOR TAKING ANY MEASURES REQUIRED TO EN CONDUITS OR OTHER SERVICES ARE DAMAGED. THIS INCLUE

SIMILAR NON-DESTRUCTIVE MEANS. THIS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURR RELOCATIONS, OR REPLACEMENT OF ANY CABLES, CONDUIT SERVICES IF DAMAGED WITHOUT PROPER INVESTIGATION.

CLEANING AND REPAIR

CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT WI OR ARE TO BE REUSED. CLEAN ALL SYSTEMS ADJACENT TO F WHICH ARE AFFECTED BY THE DUST AND DEBRIS CAUSED BY CONSTRUCTION.

MECHANICAL ITEMS REMOVED AND NOT RELOCATED REMAIN PROPERTY OF THE LANDLORD/OWNER. CONTRACTOR SHALL RETAINED BY THE LANDLORD/OWNER IN A LOCATION COORD THE LANDLORD/OWNER. THE CONTRACTOR SHALL DISPOSE THE LANDLORD/OWNER DOES NOT WANT TO REUSE OR RET MAINTENANCE PURPOSES.

REVIEW LOCATIONS OF ALL NEW PENETRATIONS IN EXISTING SLABS OR WALLS. DETERMINE CONSTRUCTION TYPE AND RE POSSIBLE INTERFERENCES. BRING ALL CONCERNS TO THE A THE ARCHITECT/ENGINEER BEFORE PROCEEDING

23 05 29 SUPPORTS AND ANCH SECTION INCLUDES

HANGERS, SUPPORTS, AND ASSOCIATED ANCHORS EQUIPMENT BASES AND SUPPORTS CUTTING OF OPENINGS

ΓΙΟΝ	HANGER RODS	b. PIPES SUBJECT TO EXPANSION AND CONTRACTION SHALL HAVE SUGHTLY OVERSIZED TO ALLOW LIMITED PIPE MOVEMENT
	HANGER RODS FOR SINGLE ROD HANGERS SHALL CONFORM TO THE	ACCEPTABLE PRODUCTS BARE STEEL, PLASTIC, INSULATED PIPE B
COPE OF	FOLLOWING: PIPE SIZE HANGER ROD DIAMETER	COPPER PIPE UNISTRUT FIG. P1100 OR P2500
EQUIPMENT IE SITE AND	COLUMN #1 COLUMN #2	COOPER/B-LINE FIG. B2000 OR B2400 FIG. BVT
	2" AND SMALLER 3/8" 3/8" 2-1/2" THROUGH 3-5/8" 1/2" 1/2"	UNI ESS OTHERWISE SHOWN, UPPER ATTACHMENTS FOR HANGER
L MECHANICAL	4" AND 5" 5/8" 1/2"	OR SUPPORT STRUTS SHALL BE AS FOLLOWS:
	6" 3/4" 5/8" 8" THROUGH 12" 7/8" 3/4"	BEAM CLAMPS: ACCEPTABLE PRODUCTS
RILY REMOVED OVE, STORE,	14" 1" 7/8"	ANVIL - FIG. 228, 292
FS, SYSTEMS,	16" AND 18" 1" N/A 20" AND 24" 1 1/4" N/A	COOPER/B-LINE - FIG. B3054 ERICO - MODEL 360
ED EQUIPMENT	COLUMN #1: STEEL PIPE.	NIBCO/TOLCO - FIG. 329
	COLUMN #2: COPPER, PLASTIC AND FIBERGLASS REINFORCED PIPE.	CONCRETE INSERTS, SINGLE ROD GALVANIZED:
HE AVOID	ROD DIAMETER IS 3/8 INCHES.	ACCEPTABLE PRODUCTS: ANVIL - FIG. 282
	HANGER RODS AND ACCESSORIES USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL HAVE ASTM B633 ELECTRO-PLATED ZINC	COOPER/B-LINE - FIG. B3014
ACED OR	FINISH.	ERICO - MODEL 355 NIBCO/TOLCO - FIG. 310
THE PROJECT	PIPE HANGERS AND SUPPORTS	CONCRETE INSERTS, CONTINUOUS STRIP GALVANIZED:
ORK.	ALL PIPE HANGERS, CLAMPS, AND SUPPORTS SHALL CONFORM TO MANUFACTURERS STANDARDIZATION SOCIETY MSS_SP_58 AND 127 (WHERE APPLICABLE).	ACCEPTABLE PRODUCTS: UNISTRUT CORP - P3200 SERIES COOPER/B_LINE - FIG. B22-J
D CEILINGS	OVERSIZE ALL HANGERS, CLAMPS, AND SUPPORTS ON INSULATED PIPING TO ALLOW INSULATION AND JACKET TO PASS THROUGH UNBROKEN. THIS	ERICO - CONCT
	APPLIES TO BOTH HOT AND COLD PIPES.	CONCRETE ANCHORS: FASTEN TO CONCRETE USING CAST-IN OR F INSTALLED ANCHORS DESIGNED PER THE REQUIREMENTS OF APP
RFORMED ON SUCH	FERROUS HOT PIPING 2-1/2 INCHES AND LARGER SHALL HAVE STEEL SADDLES TACK WELDED TO THE PIPE AT EACH SUPPORT AT A DEPTH NOT LESS THAN THE SPECIFIED INSULATION. FACTORY FABRICATED INSERTS MAY BE USED	OF ACI 318-05. POST-INSTALLED ANCHORS SHALL BE QUALIFIED FO IN CRACKED CONCRETE BY ACI-355.2. MASONRY ANCHORS: FASTEN TO CONCRETE MASONRY UNITS WIT
OF	ACCEPTABLE PRODUCTS:	EXPANSION ANCHORS OR SELF_TAPPING MASONRY SCREWS. FOR EXPANSION ANCHORS INTO HOLLOW CONCRETE BLOCK, USE SLEE
	ANVIL - FIG. 160, 161, 162, 163, 164, 165	ANCHORS DESIGNED FOR THE SPECIFIC APPLICATION. DO NOT FA MASONRY JOINTS. DO NOT USE POWDER ACTUATED FASTENERS,
R PROVISIONS	COOPER/B-LINE - FIG. 3160, 3161, 3162, 3163, 3164, 3165 ERICO - MODEL 630, 631, 632, 633, 634, 635	WOODEN PLUGS, OR PLASTIC INSERTS.
EXTEND JCTION.	NIBCO/TOLCO - FIG. 260-1, 261-1 1/2, 262-2, 263-2 1/2, 264-3, 265-4	STRUCTURE EXCEEDS MINIMUM SPACING REQUIREMENTS. INSTAL
IPPLY AND/OR	ON ALL INSULATED PIPING, PROVIDE A SEMI-CYLINDRICAL METALLIC SHIELD AND FIRE RESISTANT VAPOR BARRIER JACKET.	VERTICAL LENGTH OF PIPE RUNS.
	AS AN ALTERNATIVE TO SEPARATE PIPE INSULATION INSERT AND SADDLE,	WELDING
	FOR THIS APPLICATION.	UNLESS OTHERWISE NOTED, HANGERS, CLIPS, AND AUXILIARY SUF
TION TO		STEEL MAY BE WELDED IN LIEU OF BOLTING, CLAMPING, OR RIVETI THE BUILDING STRUCTURAL FRAME. TAKE ADEQUATE PRECAUTION
	PIPE SHIELDS - A1000, A2000	PROTECTING WALLS AND CEILINGS FROM BEING DAMAGED BY SM
JCTWORK EAL AIRTIGHT.	ERICO - MODEL 124, 127	FOUNDATIONS, BASES, AND
XISTING D CAP WITHIN	IN MULTI_STORY STRUCTURES, AND MORE FREQUENTLY WHEN REQUIRED	SUPPORTS
CLASS AND	MAXIMUM SPACING FOR SUPPORT OF COPPER RISERS), BUT NEVER AT	FURNISH AND INSTALL FOUNDATIONS, BASES, AND SUPPORTS (NO
PMENT ACCESS TO	INSTALLED BELOW HUBS, COUPLINGS OR LUGS. PROVIDE SUFFICIENT	SPECIFICALLY INDICATED ON THE DRAWINGS OR IN THE SPECIFICA OF EITHER THE GENERAL CONSTRUCTION OR MECHANICAL WORK
IFY TE.	COMPROMISING FIRE BARRIER PENETRATIONS AND OTHER FIXED TAKE-	PROVIDED BY ANOTHER CONTRACTOR) FOR MECHANICAL EQUIPM
DURING	ACCEPTABLE PRODUCTS:	REINFORCED. ALL STEEL BASES AND SUPPORTS SHALL RECEIVE A COAT OF ZINC CHROMATE OR RED METAL PRIMER. AFTER COMPLE
THODS	ANVIL - FIG. CT121	WORK, GIVE STEEL SUPPORTS A FINAL COAT OF GRAY ENAMEL.
ED.	ERICO - MODEL 510NIBCO/TOLCO - FIG. 82	EQUIPMENT ROOF SUPPORT (CUF
DEMOLISHED GEQUIPMENT.	PLACE RESTRAINED NEOPRENE MOUNTS BENEATH VERTICAL PIPE RISER	AND RAILS)
	MOUNTS.	ROOFTOP EQUIPMENT SUCH AS PACKAGED AIR HANDLING UNITS, I HOODS AND ROOFTOP EXHAUST FANS SHALL BE PROVIDED WITH (
S OF EXISTING	ACCEPTABLE PRODUCTS: MASON RBA, RCA, OR BR.	
IS PROJECT. VIEWED	PLASTIC WITH APPROPRIATE TEMPERATURE RANGE. HYDRA-ZORB CLAMPS	PREFABRICATED CURBS OR RAILS AS FOLLOWS:
	TEMPERATURE LIMITS OF -65F TO +275F.	a. 12" HIGH ABOVE THE TOP SURFACE OF THE ROOF (NOT THE ROO STRUCTURE).
OPENING.	UNLESS OTHERWISE INDICATED, HANGERS SHALL BE AS FOLLOWS:	b. 14 OR 18 GAUGE GALVANIZED SHEET METAL, AS REQUIRED FOR EQUIPMENT WEIGHT.
ETRATION IS AR MATERIALS	CLEVIS TYPE: SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE,	c. INTERNAL REINFORCING.
E NOTED OR OF WORK.	INSULATED HOT PIPE - 3 INCHES & SMALLER	d. PRESSURE TREATED WOOD NAILER. e. 18 GAUGE COUNTER FLASHING COMPLETELY COVERING NAILER
		f. FACTORY INSULATED WITH RIGID FIBERGLASS.
DES X-RAY OR	COOPER/B-LINE FIG. 3100 FIG. B3100C	MATCH UNITS TO THE BUILDING ROOF WITH EITHER A RAISED CAN MATCH ROOF INSULATION (FOR BUILT_UP ROOFS), OR WITH NO CA
RED IN REPAIR,		SINGLE_PLY ROOFS).
S, OR OTHER	CONTINUOUS CHANNEL WITH CLEVIS TYPE:	18" LONG.
	SERVICE: PLASTIC TUBING, FLEXIBLE HOSE, SOFT COPPER TUBING	ACCEPTABLE MANUFACTURERS: THY, PATE, UNITED, ROOF PRODU SYSTEMS OR PORTALS PLUS.
HICH REMAIN	ACCEPTABLE PRODUCTS: COOPER/B-LINE - FIG. B3106, WITH FIG. B3106V	EQUIPMENT REQUIRING CURBS OR RAILS IS AS FOLLOWS:
PROJECT	ERICO - MODEL 104, WITH MODEL 104V	a. CONDENSING UNITS
	NIBCO/TOLCO - FIG. 1V	ROOF PIPE SUPPORTS
	SERVICE: BARE METAL PIPE - 4 INCHES AND SMALLER	PROVIDE PRE-FABRICATED ROOF PIPE SUPPORTS FOR ALL PIPING
	ACCEPTABLE PRODUCTS BARE STEEL PIPE BARE COPPER PIPE	SUPPORT SHALL GUIDE AND ALIGN PIPE WHILE PERMITTING LONG
AIN FOR	COOPER/B-LINE FIG. B3170NF FIG. B3170CTC	EXPANSION.
G FLOOR EVIEW FOR	ERICO MODEL FCN 102A0 SERIES	DRAINAGE HOLES SHALL PREVENT PONDING OF WATER IN THE SU
TTENTION OF	SUPPORT MAY BE FABRICATED FROM U-CHANNEL STRUT OR SIMILAR	SUPPORT SHALL BE UV, CORROSION AND FREEZE/THAW RESISTAN
ORS	SHAPES. PIPING LESS THAN 4" IN DIAMETER SHALL BE SECURED TO STRUT WITH CLAMPS OF PROPER DESIGN AND CAPACITY AS REQUIRED TO	ACCENTS OR SIMILAR MARKINGS FOR INCREASED VISIBILITY.
	MAINTAIN SPACING AND ALIGNMENT. STRUT SHALL BE INDEPENDENTLY SUPPORTED FROM HANGER DROPS OR BUILDING STRUCTURE. SIZE AND	THE STRUT SYSTEM SHALL HAVE GALVANIZED ALUMINUM 302 STAI STEEL 316 STAINLESS STEEL PVC COATED POWDER COATED ZINC
	SUPPORT SHALL BE PER MANUFACTURER'S INSTALLATION REQUIREMENTS FOR STRUCTURAL SUPPORT OF PIPING. CLAMPS SHALL NOT INTERRUPT	
	PIPING INSULATION. 1. STRUT USED IN MECHANICAL SPACES OR OTHERWISE DRY AREAS SHALL	ACCEPTABLE PRODUCTS: ANVIL INTERNATIONAL HBS-BASE SERIES COOPER B-LINE DURA_BLOK, ERICO CADDY PYRAMID 50, 150, 300, ((TO MATCH LOAD) MIDD INDUCTDING 4.5, 2.5, 4.5, 4.5, 4.5, 4.5, 4.5, 4.5, 4.5, 4
	HAVE ASTM B633 ELECTRO-PLATED ZINC FINISH.	(TO IVIATOR LOAD), IVINO INDUSTRIES 1.5, 3-R, 4-R OR 5-R (TO MATC
	2. STRUT USED IN DAMP AREAS LISTED IN HANGER RODS SHALL HAVE ASTM A123 HOT-DIP GALVANIZED FINISH APPLIED AFTER FABRICATION.	
	UNLESS OTHERWISE INDICATED, PIPE SUPPORTS FOR USE WITH STRUTS SHALL BE AS FOLLOWS:	

CLAMP TYPE: SERVICE: BARE METAL PIPE, RIGID PLASTIC PIPE, INSULATED COLD PIPE, **INSULATED HOT PIPE - 3 INCHES AND SMALLER** a. CLAMPS IN DIRECT CONTACT WITH COPPER PIPE SHALL BE PLASTIC COATED

ISION AND CONTRACTION SHALL HAVE CLAMPS LOW LIMITED PIPE MOVEMENT. RE STEEL, PLASTIC, INSULATED PIPE BARE

N. UPPER ATTACHMENTS FOR HANGER RODS BE AS FOLLOWS:

EN TO CONCRETE USING CAST-IN OR POST-NED PER THE REQUIREMENTS OF APPENDIX D LED ANCHORS SHALL BE QUALIFIED FOR USE ACI-355.2

EN TO CONCRETE MASONRY UNITS WITH ELF TAPPING MASONRY SCREWS. FOR HOLLOW CONCRETE BLOCK, USE SLEEVE-TYPE HE SPECIFIC APPLICATION. DO NOT FASTEN IN USE POWDER ACTUATED FASTENERS, IC INSERTS.

USED WHERE VERTICAL HEIGHT OF MUM SPACING REQUIREMENTS. INSTALL WALL IG AS HANGERS OR STRUT SUPPORTS ALONG RUNS.

, HANGERS, CLIPS, AND AUXILIARY SUPPORT IEU OF BOLTING, CLAMPING, OR RIVETING TO FRAME. TAKE ADEQUATE PRECAUTIONS ATIONS FOR FIRE PREVENTION AND FOR EILINGS FROM BEING DAMAGED BY SMOKE.

5, BASES, AND

IDATIONS, BASES, AND SUPPORTS (NOT N THE DRAWINGS OR IN THE SPECIFICATIONS ONSTRUCTION OR MECHANICAL WORK AS NTRACTOR) FOR MECHANICAL EQUIPMENT.

SES AND SUPPORTS SHALL RECEIVE A PRIME OR RED METAL PRIMER. AFTER COMPLETION OF TS A FINAL COAT OF GRAY ENAMEL. OOF SUPPORT (CURBS

AS PACKAGED AIR HANDLING UNITS, ROOF AUST FANS SHALL BE PROVIDED WITH CURBS

SURFACE OF THE ROOF (NOT THE ROOF IZED SHEET METAL, AS REQUIRED FOR THE

ING ROOF WITH EITHER A RAISED CANT TO FOR BUILT_UP ROOFS), OR WITH NO CANT (FOR

T REST ON RAILS, PROVIDE 1/4" BENT PLATES

ERS: THY, PATE, UNITED, ROOF PRODUCTS

IPPORTS

ALIGN PIPE WHILE PERMITTING LONGITUDINAL

ED TO PREVENT DAMAGE TO THE ROOF, AND EVENT PONDING OF WATER IN THE SUPPORT. RROSION AND FREEZE/THAW RESISTANT.

RANGE PAINT, REFLECTIVE SAFETY ORANGE INGS FOR INCREASED VISIBILITY. HAVE GALVANIZED ALUMINUM 302 STAINLESS

PVC COATED POWDER COATED ZINC NVIL INTERNATIONAL HBS-BASE SERIES,

C, ERICO CADDY PYRAMID 50, 150, 300, OR 600 USTRIES 1.5, 3-R, 4-R OR 5-R (TO MATCH PIPE).

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
M0.01.IT

SHEET 26 OF 48

SUPPORTS

PROVIDE SUFFICIENT CLIPS, INSERTS, HANGERS, RACKS, RODS, AND AUXILIARY STEEL TO SECURELY SUPPORT ALL SUSPENDED MATERIAL, EQUIPMENT AND CONDUIT WITHOUT SAG.

HANG HEAVY EQUIPMENT FROM CONCRETE FLOORS OR CEILINGS WITH ARCHITECT/ENGINEER APPROVED CONCRETE INSERTS, FURNISHED AND INSTALLED BY THE CONTRACTOR WHOSE WORK REQUIRES THEM, EXCEPT WHERE INDICATED OTHERWISE.

GROUT

GROUT SHALL BE NON-SHRINKING PREMIXED (MASTER BUILDERS COMPANY "EMBECCO"), UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR APPROVED BY THE ARCHITECT/ENGINEER. USE MIX NO. 1 FOR CLEARANCES OF 1" OR LESS, AND MIX NO. 2 FOR ALL LARGER CLEARANCES.

GROUT UNDER EQUIPMENT BASES, AROUND PIPES, AT PIPE SLEEVES, ETC., AND WHERE SHOWN ON THE DRAWINGS.

OPENINGS IN FLOORS, WALLS AND CEILINGS

EXACT LOCATIONS OF ALL OPENINGS FOR THE INSTALLATION OF MATERIALS SHALL BE DETERMINED BY THE CONTRACTOR AND GIVEN TO THE GENERAL CONTRACTOR FOR INSTALLATION OR CONSTRUCTION AS THE STRUCTURE IS BUILT.

COORDINATE ALL OPENINGS WITH OTHER CONTRACTORS.

HIRE THE PROPER TRADESMAN AND FURNISH ALL LABOR, MATERIAL AND EQUIPMENT TO CUT OPENINGS IN OR THROUGH EXISTING STRUCTURES. OR OPENINGS IN NEW STRUCTURES THAT WERE NOT INSTALLED, OR ADDITIONAL OPENINGS. REPAIR ALL SPALLING AND DAMAGE TO THE SATISFACTION OF THE ARCHITECT/ENGINEER. MAKE SAW CUTS BEFORE BREAKING OUT CONCRETE TO ENSURE EVEN AND UNIFORM OPENING EDGES.

SAID CUTTING SHALL BE AT THE COMPLETE EXPENSE OF EACH CONTRACTOR. FAILURE TO COORDINATE OPENINGS WITH OTHER CONTRACTORS SHALL NOT EXEMPT THE CONTRACTOR FROM PROVIDING OPENINGS AT CONTRACTORS EXPENSE.

DO NOT CUT STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER.

ROOF PENETRATIONS

SEAL PIPES WITH SURFACE TEMPERATURE BELOW 150F PENETRATING SINGLE-PLY ROOFS WITH CONICAL STEPPED PIPE FLASHINGS AND STAINLESS STEEL CLAMPS EQUAL TO PORTALS PLUS PIPE BOOTS. MATERIAL SHALL MATCH ROOFING MEMBRANE.

150F. SEAL OUTDOOR INSULATION EDGES WATERTIGHT.

SLEEVES AND LINTELS EACH CONTRACTOR SHALL PROVIDE SLEEVES AND LINTELS FOR ALL DUCT

AND PIPE OPENINGS REQUIRED FOR THE CONTRACTOR'S WORK IN MASONRY WALLS AND FLOORS, UNLESS SPECIFICALLY SHOWN AS BEING BY OTHERS.

FABRICATE ALL SLEEVES FROM STANDARD WEIGHT BLACK STEEL PIPE OR AS INDICATED ON THE DRAWINGS. PROVIDE CONTINUOUS SLEEVE. CUT OR SPLIT SLEEVES ARE NOT ACCEPTABLE. FABRICATE ALL LINTELS FOR MASONRY WALLS FROM STRUCTURAL STEEL

SHAPES OR AS INDICATED ON THE DRAWINGS. HAVE ALL LINTELS APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER. SLEEVES THROUGH THE FLOORS ON EXPOSED RISERS SHALL BE FLUSH

WITH THE CEILING. WITH PLANED SQUARED ENDS EXTENDING 1" ABOVE THE FLOOR IN UNFINISHED AREAS, AND FLUSH WITH THE FLOOR IN FINISHED AREAS, TO ACCEPT SPRING CLOSING FLOOR PLATES.

SLEEVES SHALL NOT PENETRATE STRUCTURAL MEMBERS OR MASONRY WALLS WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. SLEEVES SHALL THEN COMPLY WITH THE ARCHITECT/ENGINEER'S DESIGN. OPENINGS THROUGH UNEXCAVATED FLOORS AND/OR FOUNDATION WALLS BELOW THE FLOOR SHALL HAVE A SMOOTH FINISH WITH SUFFICIENT ANNULAR SPACE AROUND MATERIAL PASSING THROUGH OPENING SO SLIGHT SETTLING WILL NOT PLACE STRESS ON THE MATERIAL OR BUILDING

INSTALL ALL SLEEVES CONCENTRIC WITH PIPES. SECURE SLEEVES IN CONCRETE TO WOOD FORMS. THIS CONTRACTOR IS RESPONSIBLE FOR

SLEEVES DISLODGED OR MOVED WHEN POURING CONCRETE.

WHERE PIPES RISE THROUGH CONCRETE FLOORS THAT ARE ON EARTHEN GRADE, PROVIDE 3/4" RESILIENT EXPANSION JOINT MATERIAL (ASPHALT AND CORK) WRAPPED AROUND THE PIPE, THE FULL DEPTH OF CONCRETE, AT THE POINT OF PENETRATION. SECURE TO PREVENT SHIFTING DURING CONCRETE PLACEMENT AND FINISHING.

MOVEMENT, PROVIDE CONTINUOUS INSULATION WRAPPING.

STRUCTURE.

WALL SEALS ("LINK-SEALS")

WHERE SHOWN ON THE DRAWINGS, PIPES PASSING THROUGH WALLS. CEILINGS, OR FLOORS SHALL HAVE THEIR ANNULAR SPACE (SLEEVE OR DRILLED HOLE NOT TAPERED HOLE MADE WITH KNOCKOUT PLUG) SEALED BY PROPERLY SIZED SEALING ELEMENTS CONSISTING OF A SYNTHETIC RUBBER MATERIAL COMPOUNDED TO RESIST AGING, OZONE, SUNLIGHT, WATER AND CHEMICAL ACTION.

SLEEVES, IF USED, SHALL BE STANDARD WEIGHT STEEL WITH PRIMED FINISH AND WATERSTOP/ANCHOR CONTINUOUSLY WELDED TO SLEEVE. IF PIPING CARRIES ONLY FLUIDS BELOW 120F, SLEEVES MAY BE THERMOPLASTIC WITH INTEGRAL WATER SEAL AND TEXTURED SURFACE. SLEEVES SHALL BE AT LEAST 2 PIPE SIZES LARGER THAN THE PIPES.

PRESSURE SHALL BE MAINTAINED BY STAINLESS STEEL BOLTS AND OTHER PARTS. PRESSURE PLATES MAY BE OF COMPOSITE MATERIAL FOR MODELS S AND OS.

SEALING ELEMENT SHALL BE AS FOLLOWS: MODEL SERVICE ELEMENT MATERIAL TEMPERATURE RANGE

S STANDARD (STAINLESS) EPDM -40F TO 250F

T HIGH/LOW TEMPERATURE [STEAM] SILICONE -67F TO 400F

T FIRE SEALS (1 HOUR) SILICONE -67F TO 400F FS FIRE SEALS (3 HOURS) SILICONE -67F TO 400F

OS OIL RESISTANT/STAINLESS NITRILE -40F TO 210F

ACCEPTABLE MANUFACTURERS: THUNDERLINE CORPORATION "LINK SEALS", O Z/GEDNEY COMPANY, CALPICO, INC., INNERLYNX, OR METRAFLEX COMPANY (COLD SERVICE ONLY).

BREAK INSULATION ONLY AT THE CLAMP FOR PIPES BETWEEN 60F AND

SIZE SLEEVES LARGE ENOUGH TO ALLOW EXPANSION AND CONTRACTION

ESCUTCHEON PLATES AND TRIM

FIT ESCUTCHEONS TO ALL INSULATED OR UNINSULATED EXPOSED PIPES PASSING THROUGH WALLS, FLOORS, OR CEILINGS OF FINISHED ROOMS. ESCUTCHEONS SHALL BE HEAVY GAUGE, COLD ROLLED STEEL, COPPER COATED UNDER A CHROMIUM PLATED FINISH, HEAVY SPRING CLIP, RIGID HINGE AND LATCH.

INSTALL GALVANIZED STEEL (UNLESS OTHERWISE INDICATED) TRIM STRIP TO COVER VACANT SPACE AND RAW CONSTRUCTION EDGES OF ALL RECTANGULAR OPENINGS IN FINISHED ROOMS. THIS INCLUDES PIPE OPENINGS.

PIPE PENETRATIONS

SEAL ALL PIPE PENETRATIONS. SEAL NON-RATED WALLS AND FLOOR PENETRATIONS WITH GROUT OR CAULK. BACKING MATERIAL MAY BE USED. SEAL FIRE RATED WALL AND FLOOR PENETRATIONS WITH FIRE SEAL SYSTEM AS SPECIFIED.

PIPE ANCHORS

PROVIDE ALL ITEMS NEEDED TO ALLOW ADEQUATE EXPANSION AND CONTRACTION OF ALL PIPING. ALL PIPING SHALL BE SUPPORTED, GUIDED, ALIGNED, AND ANCHORED AS REQUIRED. REPAIR ALL PIPING LEAKS AND ASSOCIATED DAMAGE. PIPES SHALL NOT RUB ON ANY PART OF THE BUILDING.

FINISH

PRIME COAT EXPOSED STEEL HANGERS AND SUPPORTS. HANGERS AND SUPPORTS IN CRAWL SPACES, PIPE SHAFTS, AND SUSPENDED CEILING SPACES ARE NOT CONSIDERED EXPOSED.

HVAC SUPPORTS AND ANCHORS

INSTALLATION INSTALL ALL ITEMS PER MANUFACTURER'S INSTRUCTIONS. COORDINATE THE LOCATION AND METHOD OF SUPPORT OF PIPING SYSTEMS WITH ALL INSTALLATIONS UNDER OTHER DIVISIONS AND SECTIONS OF THE

SPECIFICATIONS. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDING.

SUPPORT REQUIREMENTS

INSTALL ROOF PIPE SUPPORTS TO RESIST WIND MOVEMENT PER MANUFACTURER'S RECOMMENDATIONS. METHOD OF SECURING BASE TO ROOF SHALL BE COMPATIBLE WITH ROOFING MATERIALS. WHERE BUILDING STRUCTURAL STEEL IS FIREPROOFED, ALL HANGERS, CLAMPS, AUXILIARY STEEL, ETC., WHICH ATTACH TO IT SHALL BE INSTALLED PRIOR TO APPLICATION OF FIREPROOFING. REPAIR ALL

FIREPROOFING DAMAGED DURING PIPE INSTALLATION. SET ALL CONCRETE INSERTS IN PLACE BEFORE POURING CONCRETE. FURNISH, INSTALL AND PRIME ALL AUXILIARY STRUCTURAL STEEL FOR SUPPORT OF PIPING SYSTEMS THAT ARE NOT SHOWN ON THE DRAWINGS

AS BEING BY OTHERS. INSTALL HANGERS AND SUPPORTS COMPLETE WITH LOCK NUTS, CLAMPS, RODS, BOLTS, COUPLINGS, SWIVELS, INSERTS AND REQUIRED

ACCESSORIES HANGERS FOR HORIZONTAL PIPING SHALL HAVE ADEQUATE MEANS OF VERTICAL ADJUSTMENT FOR ALIGNMENT.

PIPE REQUIREMENTS

SUPPORT ALL PIPING AND EQUIPMENT, INCLUDING VALVES, STRAINERS, TRAPS AND OTHER SPECIALTIES AND ACCESSORIES TO AVOID OBJECTIONABLE OR EXCESSIVE STRESS, DEFLECTION, SWAYING, SAGGING OR VIBRATION IN THE PIPING OR BUILDING STRUCTURE DURING ERECTION, CLEANING, TESTING AND NORMAL OPERATION OF THE SYSTEMS.

DO NOT, HOWEVER, RESTRAIN PIPING TO CAUSE IT TO SNAKE OR BUCKLE BETWEEN SUPPORTS OR TO PREVENT PROPER MOVEMENT DUE TO EXPANSION AND CONTRACTION.

SUPPORT PIPING AT EQUIPMENT AND VALVES SO THEY CAN BE DISCONNECTED AND REMOVED WITHOUT FURTHER SUPPORTING THE PIPING.

PIPING SHALL NOT INTRODUCE STRAINS OR DISTORTION TO CONNECTED EQUIPMENT. PARALLEL HORIZONTAL PIPES MAY BE SUPPORTED ON TRAPEZE HANGERS

MADE OF STRUCTURAL SHAPES AND HANGER RODS; OTHERWISE, PIPES SHALL BE SUPPORTED WITH INDIVIDUAL HANGERS.

TRAPEZE HANGERS MAY BE USED WHERE DUCTS INTERFERE WITH NORMAL PIPE HANGING. PROVIDE ADDITIONAL SUPPORTS WHERE PIPE CHANGES DIRECTION,

ADJACENT TO FLANGED VALVES AND STRAINERS, AT EQUIPMENT CONNECTIONS AND HEAVY FITTINGS PROVIDE AT LEAST ONE HANGER ADJACENT TO EACH JOINT IN GROOVED

END STEEL PIPE WITH MECHANICAL COUPLINGS. PROVIDED THE INSTALLATION COMPLIES WITH ALL LOADING REQUIREMENTS OF TRUSS AND JOIST MANUFACTURERS, THE FOLLOWING

PRACTICES ARE ACCEPTABLE: 1. LOADS OF 100 LBS. OR LESS MAY BE ATTACHED ANYWHERE ALONG THE TOP OR BOTTOM CHORDS OF TRUSSES OR JOISTS WITH A MINIMUM 3' SPACING BETWEEN LOADS.

2. LOADS GREATER THAN 100 LBS. MUST BE HUNG CONCENTRICALLY AND MAY BE HUNG FROM TOP OR BOTTOM CHORD, PROVIDED ONE OF THE FOLLOWING CONDITIONS IS MET:

a. THE HANGER IS ATTACHED WITHIN 6" FROM A WEB/CHORD JOINT. b. ADDITIONAL L2X2X1/4 WEB REINFORCEMENT IS INSTALLED PER MANUFACTURER'S REQUIREMENTS.

3. IT IS PROHIBITED TO CANTILEVER A LOAD USING AN ANGLE OR OTHER STRUCTURAL COMPONENT THAT IS ATTACHED TO A TRUSS OR JOIST IN SUCH A FASHION THAT A TORSIONAL FORCE IS APPLIED TO THAT STRUCTURAL MEMBER.

4. IF CONDITIONS CANNOT BE MET. COORDINATE INSTALLATION WITH TRUSS OR JOIST MANUFACTURER AND CONTACT ARCHITECT/ENGINEER. DO NOT EXCEED 25 LBS. PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0" SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL NEED TO

BE ADDED. DO NOT EXCEED THE MANUFACTURER'S RECOMMENDED MAXIMUM LOAD FOR ANY HANGER OR SUPPORT

SPACING OF HANGERS SHALL NOT EXCEED THE COMPRESSIVE STRENGTH OF THE INSULATION INSERTS, AND IN NO CASE SHALL EXCEED THE FOLLOWING:

STEEL AND FIBERGLASS (STD. WEIGHT OR HEAVIER - LIQUID SERVICE):

PIPE MATERIAL MAXIMUM SPACING 1_1/4"& UNDER 7'_0" 1_1/2" 9'_0" 2" 10'_0" 2_1/2" 11'_0" 3" 12' 0" 4" & LARGER 12' 0" STEEL (STD. WEIGHT OR HEAVIER - VAPOR SERVICE): PIPE MATERIAL MAXIMUM SPACING 1_1/4" AND UNDER 9'_0" 1_1/2" 12'_0" 2" & LARGER 12' 0" HARD DRAWN COPPER & BRASS (LIQUID SERVICE): PIPE MATERIAL MAXIMUM SPACING 3/4" AND UNDER 5'_0" 1" 6'_0" 1_1/4" 7'_0" 1_1/2" 8'_0" 2" 8'_0" 2_1/2" 9'_0 3" 10'_0" 4" 12'_0"

6" 12'_0" HARD DRAWN COPPER & BRASS (VAPOR SERVICE):

PIPE MATERIAL MAXIMUM SPACING 3/4" & UNDER 7'_0

1" 8'_0" 1 1/4" 9' 0"

1_1/2" 10'_0" 2" 11'_0"

2_1/2" & LARGER 12'_0"

FLEXIBLE PLASTIC PIPE, FLEXIBLE HOSE, AND SOFT COPPER TUBING: a. CONTINUOUS CHANNEL WITH HANGERS MAXIMUM 8'-0" O.C. 6. INSTALLATION OF HANGERS SHALL CONFORM TO MSS SP-58 AND THE

APPLICABLE PLUMBING CODE. 23 05 93 TESTING, ADJUSTING, AND BALANCING

GENERAI

TESTING, ADJUSTING, AND BALANCING OF AIR SYSTEMS TESTING, ADJUSTING, AND BALANCING OF COOLING SYSTEMS MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS

QUALITY ASSURANCE

AGENCY SHALL BE A COMPANY SPECIALIZING IN THE ADJUSTING AND BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS EXPERIENCE, PERFORM WORK UNDER SUPERVISION OF AABC CERTIFIED TEST AND BALANCE ENGINEER. NEBB CERTIFIED TESTING. BALANCING AND ADJUSTING SUPERVISOR, SMARTA CERTIFIED AIR AND HYDRONIC BALANCER, OR TABB CERTIFIED SUPERVISOR.

WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE REFERENCES LISTED AT THE START OF THIS SECTION. REFERENCES

AABC - NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE, 2002.

ADC - TEST CODE FOR GRILLES, REGISTERS, AND DIFFUSERS AMCA - PUBLICATION 203-90; FIELD PERFORMANCE MEASUREMENT OF FAN SYSTEMS ASHRAE - 2003 HVAC APPLICATIONS HANDBOOK: CHAPTER 37, TESTING,

ADJUSTING AND BALANCING. ASHRAE/ANSI - STANDARD 111-1988; PRACTICES FOR MEASUREMENT, TESTING, ADJUSTING AND BALANCING OF BUILDING HVAC&R SYSTEMS. NEBB - PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND

BALANCING OF ENVIRONMENTAL SYSTEMS, SIXTH EDITION, 1998. SMACNA HVAC SYSTEMS; TESTING, ADJUSTING AND BALANCING, THIRD EDITION, 2002.

TABB - INTERNATIONAL STANDARDS FOR ENVIRONMENTAL SYSTEMS

SUBMITTALS

SUBMIT COPIES OF REPORT FORMS, BALANCING PROCEDURES, AND THE NAME AND QUALIFICATIONS OF TESTING AND BALANCING AGENCY FOR APPROVAL WITHIN 30 DAYS AFTER AWARD OF CONTRACT

SUBMIT FOUR (4) CERTIFIED COPIES OF TEST REPORTS TO THE ARCHITECT/ENGINEER FOR APPROVAL IN SOFT COVER. 3-HOLE BINDER MANUALS, WITH COVER IDENTIFICATION. INCLUDE INDEX PAGE AND INDEXING TABS.

REPORT FORMS

SUBMIT REPORTS ON AABC, SMACNA OR NEBB FORMS. USE CUSTOM FORMS APPROVED BY THE ARCHITECT/ENGINEER WHEN NEEDED TO SUPPLY SPECIFIED INFORMATION.

INCLUDE IN THE FINAL REPORT A SCHEMATIC DRAWING SHOWING EACH SYSTEM COMPONENT, INCLUDING BALANCING DEVICES, FOR EACH SYSTEM. EACH DRAWING SHALL BE INCLUDED WITH THE TEST REPORTS REQUIRED FOR THAT SYSTEM. THE SCHEMATIC DRAWINGS SHALL IDENTIFY ALL TESTING POINTS AND CROSS-REFERENCE THESE POINTS TO THE REPORT FORMS AND PROCEDURES.

WARRANTY/GUARANTEE

THE TAB CONTRACTOR SHALL INCLUDE AN EXTENDED WARRANTY OF 90 DAYS AFTER OWNER RECEIPT OF A COMPLETED BALANCING REPORT. DURING WHICH TIME THE OWNER MAY REQUEST A RECHECK OF TERMINALS, OR RESETTING OF ANY OUTLET, COIL, OR DEVICE LISTED IN THE TEST REPORT. THIS WARRANTY SHALL PROVIDE A MINIMUM OF 24 MANHOURS OF ON SITE SERVICE TIME. IF IT IS DETERMINED THAT THE NEW TEST RESULTS ARE NOT WITHIN THE DESIGN CRITERIA, THE BALANCER SHALL REBALANCE THE SYSTEM ACCORDING TO DESIGN CRITERIA.

WARRANTY/GUARANTEE MUST MEET ONE OF THE FOLLOWING PROGRAMS: TABB INTERNATIONAL QUALITY ASSURANCE PROGRAM, AABC NATIONAL PROJECT PERFORMANCE GUARANTEE, NEBB'S CONFORMANCE CERTIFICATION.

SCHEDULING

COORDINATE SCHEDULE WITH OTHER TRADES. PROVIDE A MINIMUM OF SEVEN DAYS NOTICE TO ALL TRADES AND THE ARCHITECT/ENGINEER PRIOR TO PERFORMING EACH TEST

BAI ANCE

GENERAL REQUIREMENTS

ALL PROCEDURES MUST CONFORM TO ONE OF THE PUBLISHED STANDARDS LISTED IN REFERENCES. ALL EQUIPMENT SHALL BE ADJUSTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, ANY SYSTEM NOT LISTED IN THIS SPECIFICATION BUT INSTALLED UNDER THE CONTRACT DOCUMENTS SHALL BE BALANCED USING A PROCEDURE FROM A PUBLISHED STANDARD LISTED IN REFERENCES.

THE BALANCING CONTRACTOR SHALL INCORPORATE ALL PERTINENT DOCUMENTED CONSTRUCTION CHANGES (E.G. SUBMITTALS/SHOP DRAWINGS, CHANGE ORDERS, RFIS, ASIS, ETC.) AND INCLUDE IN THE BALANCING REPORT

RECORDED DATA SHALL REPRESENT ACTUAL MEASURED OR OBSERVED CONDITIONS.

CUT INSULATION. PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY TO ALLOW ADEQUATE PERFORMANCE OF PROCEDURES. AFTER TESTING AND BALANCING IS COMPLETE, PATCH INSULATION WITH NEW MATERIALS AS SPECIFIED. RESTORE VAPOR BARRIER AND FINISH AS SPECIFIED.

LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS, CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.

EXAMINATION

BEFORE BEGINNING WORK. VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE. ENSURE THE FOLLOWING:

- GENERAL EQUIPMENT REQUIREMENTS:
- A. EQUIPMENT IS SAFE TO OPERATE AND IN NORMAL CONDITION. B. EQUIPMENT WITH MOVING PARTS IS PROPERLY LUBRICATED.
- C. TEMPERATURE CONTROL SYSTEMS ARE COMPLETE AND OPERABLE D. PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR
- ELECTRICAL EQUIPMENT. E. DIRECTION OF ROTATION OF ALL FANS AND PUMPS IS CORRECT. F. ACCESS DOORS ARE CLOSED AND END CAPS ARE IN PLACE.
- PIPE SYSTEM REQUIREMENTS:
- A. COIL FINS HAVE BEEN CLEANED AND COMBED.

REPORT ANY DEFECTS OR DEFICIENCIES TO ARCHITECT/ENGINEER. PROMPTLY REPORT ITEMS THAT ARE ABNORMAL OR PREVENT PROPER BALANCING.

IF. FOR DESIGN REASONS, SYSTEM CANNOT BE PROPERLY BALANCED, REPORT AS SOON AS OBSERVED.

BEGINNING OF WORK MEANS ACCEPTANCE OF EXISTING CONDITIONS.

PREPARATION

PROVIDE INSTRUMENTS REQUIRED FOR TESTING, ADJUSTING, AND BALANCING OPERATIONS. MAKE INSTRUMENTS AVAILABLE TO THE ARCHITECT/ENGINEER FOR SPOT CHECKS DURING TESTING. INSTRUMENTS SHALL BE CALIBRATED WITHIN SIX MONTHS OF TESTING PERFORMED FOR PROJECT, OR MORE RECENTLY IF RECOMMENDED BY THE INSTRUMENT MANUFACTURER.

INSTALLATION TOLERANCES ± 10% OF SCHEDULED VALUES:

1. ADJUST AIR INLETS AND OUTLETS TO ± 10% OF SCHEDULED VALUES. 2. ADJUST PIPING SYSTEMS TO ± 10% OF DESIGN VALUES.

± 5% OF SCHEDULED VALUES: 2. ADJUST SUPPLY AIR-HANDLING SYSTEMS FOR SPACE PRESSURIZATION TO ± 5% OF SCHEDULED VALUES, AND TO PROVIDE PROPER PRESSURIZATION.

ADJUST SUPPLY AIR-HANDLING SYSTEMS TO ± 5% OF SCHEDULED VALUES.

ADJUSTING

AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR THAT DISRUPTION HAS BEEN RECTIFIED. AFTER TESTING, ADJUSTING AND BALANCING ARE COMPLETE, OPERATE

EACH SYSTEM AND RANDOMLY CHECK MEASUREMENTS TO VERIEY SYSTEM IS OPERATING AS REPORTED IN THE REPORT. DOCUMENT ANY DISCREPANCIES.

CONTRACTOR RESPONSIBLE FOR EACH MOTOR SHALL ALSO BE RESPONSIBLE FOR REPLACEMENT SHEAVES. COORDINATE WITH CONTRACTOR.

CONTRACTOR RESPONSIBLE FOR PUMP SHALL TRIM IMPELLER TO FINAL DUTY POINT AS INSTRUCTED BY THIS CONTRACTOR ON ALL PUMPS NOT DRIVEN BY A VFD. COORDINATE WITH CONTRACTOR.

DESIGN CONDITIONS: SUMMER: 115 F DB 74 F WB

WINTER: 34 F DB

ARCHITECT/ENGINEER WILL DIRECT ALL TEST LOCATIONS. REPORT OF TEST RESULTS SHALL INCLUDE ORIGINAL RECORDING AND THREE REPRODUCTIONS.

SUBMISSION OF REPORTS

FILL IN TEST RESULTS ON APPROPRIATE FORMS

COMPLETE ALL APPLICABLE TESTS, CERTIFICATIONS, FORMS, AND MATRICES LISTED IN THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH (IDPH) FINAL OCCUPANCY CHECKLIST CERTIFICATIONS FOR REQUEST OF INSPECTION.

SYSTEMS TO BE TESTED, ADJUSTED AND BALANCED

SYSTEMS TO BE PRE-BALANCED ARE AS FOLLOWS: DUCTLESS SPLIT CONDENSER UNITS

INTERIOR DUCTLESS SPLITS

REFER TO NEW WORK SYSTEM/EQUIPMENT BALANCING CRITERIA WITHIN THIS SPECIFICATION FOR BALANCING DATA TO OBTAIN AS PART OF PRE-BALANCING.

REPORT FINDINGS TO ARCHITECT/ENGINEER ON STANDARD FORMS. PROVIDE ONE ELECTRONIC COPY OF THE REPORT.

GENERAL REQUIREMENTS

TITLE PAGE: 1. PROJECT NAME.

- 2. PROJECT LOCATION.
- 3. PROJECT ARCHITECT
- 4. PROJECT ENGINEER (IMEG CORP.) 5. PROJECT GENERAL CONTRACTOR.
- 6. TAB COMPANY NAME, ADDRESS, PHONE NUMBER.
- 7. TAB SUPERVISOR'S NAME AND CERTIFICATION NUMBER.
- 8. TAB SUPERVISOR'S SIGNATURE AND DATE. 9. REPORT DATE.

REPORT INDEX.

GENERAL INFORMATION:

- 1. TEST CONDITIONS. 2. NOMENCLATURE USED THROUGHOUT REPORT
- 3. NOTABLE SYSTEM CHARACTERISTICS/DISCREPANCIES FROM DESIGN.
- 4. TEST STANDARDS FOLLOWED.
- 5. ANY DEFICIENCIES NOTED 6. QUALITY ASSURANCE STATEMENT
- INSTRUMENT LIST:
- 1. INSTRUMENT. 2. MANUFACTURER, MODEL, AND SERIAL NUMBER.
- 3. RANGE.

4. CALIBRATION DATE **AIR SYSTEMS**

A. AIR MOVING EQUIPMENT:

GENERAL REQUIREMENTS:

1.DRAWING SYMBOL.

2.LOCATION.

- 3.MANUFACTURER, MODEL, ARRANGEMENT, CLASS, DISCHARGE. 4.FAN RPM.
- 5.MULTIPLE RPM FAN CURVE WITH OPERATING POINT MARKED. (OBTAIN
- FROM EQUIPMENT SUPPLIER). 6.FINAL FREQUENCY OF MOTOR AT MAXIMUM FLOW RATE (ON FANS DRIVEN BY VFD).

B. FLOW RATE:

1.SUPPLY FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL 2.RETURN FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.

- 3.OUTSIDE FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.
- 4.EXHAUST FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.
- C. PRESSURE DROP AND PRESSURE:
- 1.FILTER PRESSURE DROP: SPECIFIED AND ACTUAL 2.TOTAL STATIC PRESSURE: SPECIFIED AND ACTUAL. (INDICATE IF
- ACROSS FAN OR EXTERNAL TO UNIT).
- 3.INLET PRESSURE. **4.DISCHARGE PRESSURE**
- 5.FAN DATA:
- 6.DRAWING SYMBOL.
- 7.LOCATION.
- 8.MANUFACTURER AND MODEL 9.FLOW RATE (CFM (L/S)): SPECIFIED AND ACTUAL.
- 10.TOTAL STATIC PRESSURE: SPECIFIED AND ACTUAL. (INDICATE
- MEASUREMENT LOCATIONS). 11.INLET PRESSURE.
- 12.DISCHARGE PRESSURE.
- 13.FAN RPM.
- D. ELECTRIC MOTORS:
- 1.DRAWING SYMBOL OF EQUIPMENT SERVED
- 2.MANUFACTURER, MODEL, FRAME. 3.NAMEPLATE: HP (KW), PHASE, SERVICE FACTOR, RPM, OPERATING
- AMPS, EFFICIENCY. 4.MEASURED: AMPS IN EACH PHASE.

23 07 19 HVAC PIPING INSULATION

SECTION INCLUDES

PIPING INSULATION

QUALITY ASSURANCE

APPLICATOR: COMPANY SPECIALIZING IN PIPING INSULATION APPLICATION WITH FIVE YEARS MINIMUM EXPERIENCE. MATERIALS: FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 IN

ACCORDANCE WITH ASTM E84, NFPA 255, OR UL 723 (WHERE REQUIRED). SUBMITTALS

SUBMIT SHOP DRAWINGS PER SECTION 23 05 00. INCLUDE PRODUCT DESCRIPTION, LIST OF MATERIALS AND THICKNESS FOR EACH SERVICE, AND LOCATIONS.

INSULATION MATERIALS

TYPE A: GLASS FIBER; ANSI/ASTM C547; 0.24 MAXIMUM 'K' VALUE AT 75F; NON-COMBUSTIBLE. ALL PURPOSE, WHITE KRAFT JACKET BONDED TO ALUMINUM FOIL AND REINFORCED WITH FIBERGLASS YARN, 25/50 FLAME SPREAD/SMOKE DEVELOPED RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84 (UL 723).

REFRIGERANT PIPE COUPLING

INSULATION COUPLING: MOLDED THERMOPLASTIC ASTM D1525, -65F TO 275F, SIZES UP TO 4-1/8" O.D., AND RECEIVE INSULATION THICKNESS UP TO 1". SUITABLE FOR USE INDOORS OR OUTDOORS WITH UV STABILIZERS. ACCEPTABLE MANUFACTURERS: KLO-SHURE OR EQUAL.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
MO 02 IT

PREPARATION

INSTALL INSULATION AFTER PIPING HAS BEEN TESTED. PIPE SHALL BE CLEAN. DRY AND FREE OF RUST BEFORE APPLYING INSULATION.

GENERAL INSTALLATION REQUIREMENTS

INSTALL MATERIALS PER MANUFACTURER'S INSTRUCTIONS, BUILDING CODES AND INDUSTRY STANDARDS. CONTINUE INSULATION WITH VAPOR BARRIER THROUGH PENETRATIONS. THIS APPLIES TO ALL INSULATED PIPING. MAINTAIN FIRE RATING OF ALL PENETRATIONS

NEATLY FINISH INSULATION AT SUPPORTS, PROTRUSIONS, AND INTERRUPTIONS.

ON ALL INSULATED PIPING, PROVIDE AT EACH SUPPORT AN INSERT OF SAME THICKNESS AND CONTOUR AS ADJOINING INSULATION, BETWEEN THE PIPE AND INSULATION JACKET, TO PREVENT INSULATION FROM SAGGING AND CRUSHING. THE INSERT SHALL BE SUITABLE FOR PLANNED TEMPERATURES, BE SUITABLE FOR USE WITH SPECIFIC PIPE MATERIAL, AND SHALL BE A 180 CYLINDRICAL SEGMENT THE SAME LENGTH AS METAL SHIELDS. INSERTS SHALL BE A CELLULAR GLASS (FOR ALL TEMPERATURE RANGES) OR MOLDED HYDROUS CALCIUM SILICATE (FOR PIPE WITH OPERATING TEMPERATURES ABOVE 70F, WITH A MINIMUM COMPRESSIVE STRENGTH OF 50 PSI. POLYISOCYANURATE INSULATION WITH A MINIMUM COMPRESSIVE STRENGTH OF 24 PSI IS ACCEPTABLE FOR PIPE SIZES 3" AND BELOW, MINIMUM 60 PSI FOR PIPE SIZES 4", AND OPERATE BELOW 300F. FACTORY FABRICATED INSERTS MAY BE USED. RECTANGULAR BLOCKS, PLUGS, OR WOOD MATERIAL ARE NOT ACCEPTABLE. TEMPORARY

WOOD BLOCKING MAY BE USED BY THE PIPING CONTRACTOR FOR PROPER HEIGHT: HOWEVER. THESE MUST BE REMOVED AND REPLACED WITH PROPER INSERTS BY THE INSULATION CONTRACTOR. INSTALL METAL SHIELDS BETWEEN ALL HANGERS OR SUPPORTS AND THE

PIPE INSULATION. SHIELDS SHALL BE GALVANIZED SHEET METAL. HALF ROUND WITH FLARED EDGES. ADHERE SHIELDS TO INSULATION. ON COLD PIPING. SEAL THE SHIELDS VAPOR-TIGHT TO THE INSULATION AS REQUIRED TO MAINTAIN THE VAPOR BARRIER, OR ADD SEPARATE VAPOR BARRIER JACKET.

SHIELDS SHALL BE AT LEAST THE FOLLOWING LENGTHS AND GAUGES: PIPE SIZE: SHIELD SIZE:

1/2" TO 3" PIPE 12" LONG X 18 GAUGE 4" PIPE 12" LONG X 16 GAUGE

5" TO 6" PIPES 8" LONG X 16 GAUGE

8" TO 14" PIPES 24" LONG X 14 GAUGE 16" TO 24" PIPES 24" LONG X 12 GAUGE

ALL PIPING AND INSULATION THAT DOES NOT MEET 25/50 THAT IS LOCATED IN AN AIR PLENUM SHALL HAVE WRITTEN APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND THE LOCAL FIRE DEPARTMENT FOR AUTHORIZATION AND MATERIALS APPROVAL. IF APPROVAL HAS BEEN ALLOWED, THE NON-RATED MATERIAL SHALL BE WRAPPED WITH A PRODUCT THAT HAS PASSED ASTM E84 AND/OR NFPA 255 TESTING WITH A RATING OF 25/50 OR BELOW.

INSULATED PIPING OPERATING BELOW 60F

INSULATE FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, FLEXIBLE HOSES, AND EXPANSION JOINTS. SEAL ALL PENETRATIONS OF VAPOR BARRIER.

ALL BALANCE VALVES WITH FLUID OPERATING BELOW 60F SHALL BE INSULATED WITH A REMOVABLE PLUG WRAPPED WITH VAPOR BARRIER TAPE TO ALLOW READING AND ADJUSTING OF THE VALVE. INSULATED PIPING OPERATING BETWEEN 60F AND 140F DO NOT INSULATE FLANGES AND UNIONS, BUT BEVEL AND SEAL ENDS OF INSULATION AT SUCH LOCATIONS. INSULATE ALL FITTINGS, VALVES AND

INSULATED PIPING OPERATING ABOVE 140F

INSULATE FITTINGS, VALVES, FLANGES, AND STRAINERS. ALL BALANCE VALVES WITH FLUID OPERATING ABOVE 140F SHALL BE INSULATED AND AN OPENING SHALL BE LEFT IN THE INSULATION TO ALLOW

FOR READING AND ADJUSTING THE VALVE. REFRIGERANT PIPING

ON REFRIGERANT PIPING (25F AND ABOVE) AND NOT REQUIRED TO MEET THE 25/50 FLAME/SMOKE, PROVIDE AT EACH STRUT OR CLEVIS SUPPORT AN INSULATION COUPLING TO SUPPORT PIPE AND TO ACCEPT INSULATION THICKNESS OF ADJOINING INSULATION. TO PREVENT INSULATION FROM SAGGING AND CRUSHING. THE COUPLING SHALL BE SUITABLE FOR PLANNED TEMPERATURES, USE WITH SPECIFIED PIPE MATERIAL, AND SHALL BE A 360, ONE-PIECE CYLINDRICAL SEGMENT. USE MECHANICAL FASTENERS WHERE COUPLING CANNOT BE INSTALLED ON PIPE DURING INSTALLATION, CONTRACTOR SHALL APPLY ADHESIVE TO ENDS OF INSULATION ENTERING INSULATION COUPLING TO MAINTAIN VAPOR BARRIER.

EXPOSED PIPING

STRAINERS.

LOCATE AND COVER SEAMS IN LEAST VISIBLE LOCATIONS. WHERE EXPOSED INSULATED PIPING EXTENDS ABOVE THE FLOOR, PROVIDE A SHEET METAL GUARD AROUND THE INSULATION EXTENDING 12" ABOVE THE FLOOR. GUARD SHALL BE 0.016" CYLINDRICAL SMOOTH OR STUCCO ALUMINUM AND SHALL FIT TIGHTLY TO THE INSULATION.

INSULATION INSTALLATION

TYPE A INSULATION: 1. ALL SERVICE JACKETS: SEAL ALL LONGITUDINAL JOINTS WITH SELF SEAL LAPS USING A SINGLE PRESSURE SENSITIVE ADHESIVE SYSTEM. DO NOT

STAPLE 2. INSULATION WITHOUT SELF-SEAL LAP MAY BE USED IF INSTALLED WITH BENJAMIN FOSTER 85 20 OR EQUIVALENT CHICAGO MASTIC, 3M OR

CHILDERS LAP ADHESIVE. 3. APPLY INSULATION WITH LAPS ON TOP OF PIPE.

4. FITTINGS, VALVE BODIES AND FLANGES: FOR 4" AND SMALLER PIPES, INSULATE WITH 1 LB. DENSITY INSULATION WRAPPED UNDER COMPRESSION TO A THICKNESS EQUAL TO THE ADJACENT PIPE INSULATION. FOR PIPES OVER 4", USE MITERED SEGMENTS OF PIPE INSULATION. FINISH WITH PREFORMED PLASTIC FITTING COVERS. SECURE FITTING COVERS WITH PRESSURE SENSITIVE TAPE AT EACH END. OVERLAP TAPE AT LEAST 2" ON ITSELF. FOR PIPES OPERATING BELOW 60F, SEAL FITTING COVERS WITH VAPOR RETARDER MASTIC IN ADDITION TO TAPE

JACKET COVER INSTALLATION

METAL COVERING: 1. PROVIDE VAPOR BARRIER AS SPECIFIED FOR INSULATION TYPE. COVER WITH ALUMINUM STAINLESS STEEL JACKET COVERING WITH SEAMS LOCATED ON THE BOTTOM OF HORIZONTAL PIPING. INCLUDE FITTINGS, JOINTS AND VALVES.

2. SEAL ALL INTERIOR AND EXTERIOR BUTT JOINTS WITH METAL DRAW BANDS AND SEALANT. SEAL ALL EXTERIOR JOINTS WATERTIGHT. 3. INTERIOR JOINTS DO NOT NEED TO BE SEALED. PLASTIC COVERING:

1. PROVIDE VAPOR BARRIER AS SPECIFIED FOR INSULATION TYPE. COVER WITH PLASTIC JACKET COVERING. POSITION SEAMS TO SHED WATER. 2. SOLVENT WELD ALL JOINTS WITH MANUFACTURER RECOMMENDED CEMENT.

3. OVERLAP ALL LAPS AND BUTT JOINTS 1-1/2" MINIMUM. REPAIR ANY LOOSE ENDS THAT DO NOT SEAL SECURELY. SOLVENT WELD ALL FITTING COVERS IN THE SAME MANNER. FINAL INSTALLATION SHALL BE WATERTIGHT.

5. USE PLASTIC INSULATION COVERING ON ALL EXPOSED PIPES INCLUDING, BUT NOT LIMITED TO: a. ALL EXPOSED PIPING IN AREAS NOTED ON DRAWINGS. c. ALL EXPOSED PIPING BELOW 8'-0" ABOVE FLOOR.

INSULATION SCHEDULE

PIPING SYSTEM: INSULATION TYPE/THICKNESS:

CONDENSATE DRAINAGE A/ 1/2" SECTION 23 81 26 - SPLIT SYSTEM AIR **CONDITIONING UNITS**

WARRANTY

COMPRESSORS.

PROVIDE FIVE (5) YEAR MANUFACTURER'S WARRANTY ON ALL

SPLIT SYSTEM WALL AND CEILING-MOUNTED UNITS

ACCEPTABLE MANUFACTURERS: CARRIER/TOSHIBA; PANASONIC; LG; SANYO; SAMSUNG; DAIKIN APPLIED; MITSUBISHI

MANUFACTURED UNITS: PROVIDE PACKAGED, AIR-COOLED, FACTORY ASSEMBLED, PRE-WIRED, AND PRE-PIPED UNIT CONSISTING OF CABINET. FANS, FILTERS, REMOTE CONDENSING UNIT, AND CONTROLS. WALL-MOUNTED UNITS SHALL BE FURNISHED WITH INTEGRAL WALL MOUNTING BRACKET AND MOUNTING HARDWARE. ASSEMBLE UNIT FOR WALL-MOUNTED OR CEILING INSTALLATION WITH SERVICE ACCESS REQUIRED.

PERFORMANCE SHALL BE AS SCHEDULED ON THE DRAWINGS. UNIT SHALL BE RATED PER AHRI STANDARDS 210/240 AND LISTED IN THE AHRI DIRECTORY AS A MATCHED SYSTEM. PROVIDE UNIT WITH FACTORY-SUPPLIED CLEANABLE AIR FILTERS. THE UNITS SHALL BE LISTED BY ELECTRICAL LABORATORIES (ETL) IN ACCORDANCE WITH UL-1995 CERTIFICATION AND BEAR THE ETL LABEL. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).

EVAPORATOR CABINET AND FRAME

CABINET: REFER TO SCHEDULE ON DRAWINGS FOR MOUNTING TYPE WALL-MOUNTED EXPOSED UNITS SHALL HAVE A FINISHED APPEARANCE WITH CONCEALED REFRIGERANT PIPING, CONDENSATE DRAIN PIPING, AND WIRING CONNECTIONS. AIR DISTRIBUTION PANEL (FOR CEILING-MOUNTED UNITS): HEAVY MOLDED PLASTIC 4-WAY DISCHARGE PLENUM WITH RETURN

AIR GRILLE AND UNIT FILTER. EVAPORATOR FANS AND MOTORS: THE EVAPORATOR FAN SHALL BE DIRECT DRIVE WITH A SINGLE MOTOR HAVING PERMANENTLY LUBRICATED BEARINGS. THE FAN SHALL BE STATICALLY AND DYNAMICALLY BALANCED.

THE INDOOR FAN SHALL HAVE AT LEAST THREE SPEEDS. EVAPORATOR MOTOR: DIRECT DRIVEN, DIGITALLY CONTROLLED WITH MULTIPLE SPEEDS. PERMANENTLY LUBRICATED WITH INTERNAL OVERLOAD PROTECTION. EVAPORATOR COILS (DIRECT EXPANSION): DIRECT EXPANSION COOLING COIL OF SEAMLESS COPPER TUBES EXPANDED INTO ALUMINUM FINS. SINGLE REFRIGERATION CIRCUIT WITH EXTERNALLY EQUALIZED EXPANSION VALVE. COILS SHALL BE PRESSURE TESTED AT THE FACTORY. A SLOPED, CORROSION-RESISTANT CONDENSATE PAN WITH DRAIN SHALL BE PROVIDED UNDER THE COIL.

ELECTRICAL PANEL: SERVICE CONNECTIONS, WIRING, AND DISCONNECT REQUIREMENTS: CONFORM TO THE NATIONAL ELECTRICAL CODE AND LOCAL ELECTRICAL CODES.

CONTROL: THE UNIT SHALL HAVE A HARD-WIRED 7-DAY PROGRAMMABLE REMOTE CONTROLLER TO OPERATE THE SYSTEM. PROVIDE WALL MOUNTING BRACKET FOR CONTROLLER. REMOTE CONTROLLER SHALL HAVE "AUTOMATIC", "DRY" (DEHUMIDIFICATION), AND "FAN ONLY" OPERATING MODES. THE REMOTE CONTROLLER SHALL HAVE THE FOLLOWING FEATURES: ON/OFF POWER SWITCH. MODE SELECTOR TO OPERATE THE SYSTEM IN AUTO, COOL, HEAT, FAN, OR DEHUMIDIFICATION (DRY) OPERATION. FAN SETTING TO PROVIDE MULTIPLE FAN SPEEDS. SWING LOUVER FOR ADJUSTING SUPPLY LOUVER DISCHARGE. ON/OFF TIMER FOR AUTOMATICALLY SWITCHING THE UNIT OFF OR ON. TEMPERATURE ADJUSTMENT ALLOWS FOR THE INCREASE OR DECREASE OF THE DESIRED TEMPERATURE. POWERFUL OPERATION TO ALLOW QUICK COOL DOWN OR HEATING UP IN THE DESIRED SPACE TO ACHIEVE MAXIMUM DESIRED TEMPERATURE IN THE SHORTEST ALLOWABLE TIME. THE REMOTE CONTROLLER SHALL PERFORM FAULT DIAGNOSTIC FUNCTIONS THAT MAY BE SYSTEM RELATED, INDOOR OR OUTDOOR UNIT RELATED DEPENDING ON THE FAULT CODE. TEMPERATURE RANGE ON THE REMOTE CONTROLLER SHALL BE 64°F TO 90°F IN COOLING MODE AND 50°F TO 86°F IN HEATING MODE. THE INDOOR UNIT MICROPROCESSOR SHALL

HAVE THE CAPABILITY TO RECEIVE AND PROCESS COMMANDS VIA RETURN

AIR TEMPERATURE AND INDOOR COIL TEMPERATURE SENSORS ENABLED

BY COMMANDS FROM THE REMOTE CONTROLLER.

OUTDOOR UNIT

GENERAL: THE OUTDOOR UNIT SHALL BE SPECIFICALLY MATCHED TO THE CORRESPONDING INDOOR UNIT SIZE. THE OUTDOOR UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED AND PRE-WIRED WITH ALL NECESSARY ELECTRONIC AND REFRIGERANT CONTROLS.

CABINET: THE OUTDOOR UNIT SHALL BE FABRICATED OF GALVANIZED STEEL, BONDERIZED, AND COATED WITH A BAKED ENAMEL FINISH FOR CORROSION PROTECTION

FAN: THE FAN SHALL BE DIRECT DRIVE, PROPELLER TYPE FAN WITH FAN GUARD. FAN BLADES SHALL BE STATICALLY AND DYNAMICALLY BALANCED. THE FAN SHALL HAVE PERMANENTLY LUBRICATED TYPE BEARINGS. MOTOR SHALL BE PROTECTED BY INTERNAL THERMAL OVERLOAD

PROTECTION. AIRFLOW SHALL BE HORIZONTAL DISCHARGE. COIL: THE OUTDOOR COIL SHALL BE NONFERROUS CONSTRUCTION WITH CORRUGATED FIN TUBE. THE COIL SHALL BE PROTECTED WITH AN INTERNAL GUARD. REFRIGERANT FLOW FROM THE CONDENSER SHALL BE CONTROLLED VIA A METERING DEVICE.

COMPRESSOR: HERMETIC OR SCROLL REFRIGERANT COMPRESSORS WITH RESILIENT SUSPENSION SYSTEM, INVERTER DRIVEN, OIL STRAINER, SIGHT GLASS/MOISTURE INDICATOR, INTERNAL MOTOR PROTECTION, HIGH PRESSURE SWITCH, AND CRANKCASE HEATER. THE OUTDOOR UNIT SHALL HAVE AN ACCUMULATOR AND FOUR-WAY REVERSING VALVE.

REFRIGERANT: UNIT SHALL USE R-410A. THE USE OF CHLOROFLUOROCARBON (CFC)-BASED REFRIGERANTS IS PROHIBITED. INTEGRAL CONDENSATE PUMP: PACKAGED UNIT MATCHED TO

EVAPORATOR UNIT INCLUDING FLOAT SWITCH, PUMP, MOTOR ASSEMBLY CHECK VALVE, AND RESERVOIR, PROVIDE ALARM TO INDICATE HIGH LEVEL RESERVOIR. UNIT SHALL BE POWERED FROM EVAPORATOR UNIT WITH APPROPRIATE FIELD CONNECTIONS AVAILABLE. CONDENSATE PUMP:

REFRIGERANT PIPING: DESIGN PRESSURE: 450 PSIG. MAXIMUM DESIGN TEMPERATURE: 250 F. PIPING - 4" AND UNDER. TUBING: TYPE ACR SEAMLESS COPPER TUBE LINESETS, ASTM B1003. SIZES INDICATED ARE NOMINAL DESIGNATION. JOINTS: BRAZED WITH SILVER SOLDER. FITTINGS: WROUGHT COPPER SOLDER JOINT, ANSI B16.22. SPECIAL REQUIREMENTS ALL TUBING SHALL BE CLEANED. DEHYDRATED. PRESSURIZED WITH DRY NITROGEN, PLUGGED, AND TAGGED BY MANUFACTURER "FOR **REFRIGERATION SERVICE**". DURING BRAZING OPERATIONS, CONTINUOUSLY PURGE THE INTERIOR OF THE PIPE WITH NITROGEN TO PREVENT OXIDE FORMATION. REFRIGERANT LINESETS ARE PERMITTED PROVIDE REFRIGERANT LINESETS AND ACCESSORIES OF SIZES NEEDED FOR INSTALLATION. VERIFY LENGTHS OF PIPING REQUIRED FOR INSTALLATION.

INSULATION: EPDM (NBR/PVC BLEND IS NOT PERMITTED) ELASTOMERIC CELLULAR FOAM; ANSI/ASTM C534; FLEXIBLE PLASTIC; 0.25 MAXIMUM 'K' VALUE AT 75°F, 25/50 FLAME SPREAD/SMOKE DEVELOPED RATING WHEN TESTED IN ACCORDANCE WITH ASTM E84 (UL 723), MINIMUM 1/2" THICK FOR PIPE SIZES < 1-1/4" AND 3/4" THICK FOR PIPE SIZES 1-1/4" AND ABOVE.

INSTALLATION

GENERAL INSTALLATION REQUIREMENTS: VERIFY THAT PROPER POWER SUPPLY IS AVAILABLE. INSTALL UNITS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL ALL UNITS LEVEL AND PLUMB INDOOR UNITS SHALL BE INSTALLED USING MANUFACTURER'S STANDARD MOUNTING HARDWARE SECURELY FASTENED TO BUILDING STRUCTURE. REFER TO SECTION 23 05 29 FOR ROOF SUPPORT RAILS FOR OUTDOOR UNIT.

COORDINATE THE EXACT MOUNTING LOCATION OF ALL INDOOR AND OUTDOOR UNITS WITH ARCHITECTURAL AND ELECTRICAL WORK. COORDINATE INSTALLATION OF CEILING-MOUNTED UNITS WITH CEILING GRID LAYOUT. PROVIDE ADDITIONAL CEILING GRID REINFORCEMENT OR MODIFICATION AS REQUIRED AND COORDINATE THE WORK WITH THE GC. LOCATE THE INDOOR UNIT WHERE IT IS READILY ACCESSIBLE FOR MAINTENANCE AND FILTER CHANGES. WHERE OUTDOOR UNITS ARE LOCATED ON THE ROOF, LOCATE AT LEAST 10' FROM THE ROOF EDGE.

VERIFY LOCATIONS OF WALL-MOUNTED REMOTE CONTROLLERS WITH DRAWINGS AND ROOM DETAILS BEFORE INSTALLATION. COORDINATE MOUNTING HEIGHTS TO BE CONSISTENT WITH OTHER WALL-MOUNTED DEVICES. HEIGHT ABOVE FINISHED FLOOR SHALL NOT EXCEED 48".

REFRIGERANT PIPING: INSTALL REFRIGERANT PIPING FROM THE INDOOR UNIT(S) TO THE CONDENSING UNIT. REFRIGERANT PIPE SIZES, LENGTHS, SPECIÁLTIES AND CONFIGURATIONS SHALL BE AS RECOMMENDED BY THE MANUFACTURER. EVACUATE REFRIGERANT PIPING AND FULLY CHARGE SYSTEM WITH REFRIGERANT PER MANUFACTURER'S REQUIREMENTS. PROVIDE WEATHERTIGHT INSULATED ROOF CURB TO ACCOMMODATE REFRIGERANT PIPING AND CONDUIT ROOF PENETRATIONS. INSULATE ALL REFRIGERANT PIPING. BOTH LIQUID AND SUCTION LINES SHALL BE INSULATED BETWEEN THE INDOOR AND OUTDOOR UNITS.

INSULATION: INSULATE ALL REFRIGERANT PIPES BETWEEN THE HEAT PUMP AND INDOOR UNITS. THIS INCLUDES THE LIQUID PIPE, THE SUCTION PIPE, THE HOT GAS PIPE, AND THE HIGH/LOW PRESSURE GAS PIPE. ALL FITTINGS, VALVES, AND SPECIALTY REFRIGERANT COMPONENTS IN THE PIPING BETWEEN THE INDOOR AND HEAT PUMP UNITS SHALL ALSO BE INSULATED. THE INSULATION SHALL HAVE A CONTINUOUS VAPOR BARRIER AND SHALL PASS THROUGH HANGERS AND SUPPORTS UNBROKEN. ALL EXTERIOR INSULATED PIPING SHALL BE PAINTED WITH MINIMUM OF ONE (1) COAT OF UV RESISTANT PAINT. OVERSIZE HANGERS AND SUPPORTS TO

ALLOW THE INSULATION TO PASS THROUGH UNBROKEN. FOLLOWING ARE

THE MINIMUM INSULATION THICKNESSES UNLESS NOTED OTHERWISE IN

ASHRAE MOST CURRENT VERSION

THE MANUFACTURER'S LITERATURE OR REQUIRED BY LOCAL AHJ:

PIPE SYSTEM INSULATION THICKNESS REFRIGERANT SUCTION (40°F & BELOW) UP TO 1" 1/2"

1" AND UP 1"

REFRIGERANT SUCTION (41°F TO 60°F) UP TO 1-1/2" 1/2"

1-1/2" AND UP 1" REFRIGERANT LOW-PRESSURE GAS (141°F61°C-200°F93°C)

UP TO 1-1/2" 1-1/2"

1-1/2" AND UP 2" REFRIGERANT HIGH-PRESSURE GAS (201°F94°C-250°F121°C)

UP TO 4" 2-1/2"

REFRIGERANT LIQUID

UP TO 1-1/2" 1" 1-1/2" AND UP 1-1/2"

CONDENSATE REMOVAL: INSTALL CONDENSATE PIPING WITH TRAP AND ROUTE FROM DRAIN PAN TO NEAREST DRAIN. DISCHARGE TO NEAREST CODE-APPROVED RECEPTOR OR TO A PROPERLY VENTED INDIRECT WASTE FITTING. FLUSH ALL PIPING BEFORE MAKING FINAL CONNECTIONS TO UNITS.

COMB ALL COILS TO REPAIR BENT FINS. INSTALL NEW FILTERS IN THE UNIT AT SUBSTANTIAL COMPLETION, A FACTORY-AUTHORIZED SERVICE AGENT SHALL ASSIST IN COMMISSIONING THE UNIT AND INSPECTING THE INSTALLATION PRIOR TO STARTUP. SUBMIT STARTUP REPORT WITH O&M MANUALS.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 Philode EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SPECIFICATIONS
Scale
M0.03.IT

KEYNOTES:

MANUFACTURER'S 7-DAY PROGRAMMABLE THERMOSTAT.

- PROVIDE MANUFACTUER'S REFRIGERANT PIPING LINE SET AND ROUTE TO ASSOCIATED OUTDOOR UNIT. SIZE, ROUTE, AND INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE PIPING INSULATION ON ALL REFRIGERANT PIPING AS PER MANUFACTURER'S RECOMMENDATIONS.
- 3. ROUTE 3/4" CONDENSATE DRAIN PIPING UP FROM CONDENSATE PUMP AND WYE INTO TOP OF GRAVITY DRAIN.
- MANUFACTURER'S REFRIGREANT PIPING LINE SET. SIZE, ROUT AND INSTALL AS PERM MANUFACTURER'S RECOMMENDATIONS. COORDINATE ROUTING OF REFRIGERANT PIPING TO CORRESPONDING UNIT WITH GENERAL CONTRACTOR. PROVIDE VAPR BARRIER AND ALUMAGUARD (OR EQUAL). ALUMINUM JACKET ON PIPING ON BUILDING EXTERIOR.
- 5. ROUTE 3/4" CONDENSATE DOWN IN WALL TO CONNECT TO LAVATORY TAILPIECE.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES p. 07-03-24 EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL ENLARGED PLANS
Scale
1/2" = 1'-0"
M2.00.IT
SHEET 29 OF 48

Mecchanical Compliance Certificate Project Information Emerge Code::::::::::::::::::::::::::::::::::::	Mechanical Compliance Certificate Figure 10	JAP COMERC		
Project Information Energy Code: 2018 IECC Project Tifte: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List QuantitySystem Type & Description 1 Ss-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiza Proposed FifCiency = 0.00, Required FifCiency = 0.00 Required FifCiency = 0.00 Proposed FifCiency = 0.00, Required FifCiency = 0.00 Required FifCiency = 0.00 Fam: FAN 1 Supply, Constant Volume. 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency, fan exception: Single fan <= SHP Mechanical Compliance Statement Compliance Statement: Compliance Statement: The proposed mechanical design represented in this document is consistent with ti specifications, and other calculations submitted with this permit application. The proposed mechanical syste designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Project Information Energy Code: 2018 IECC Project Title: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Sile: Owner/Agent: Designer/Contractor Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List QuantitySystem Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Britcinery = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 3:0 design fan efficiency is in exception: Single fan <= 5HP Mechanical Compliance Statement: Compliance Statement: The proposed mechanical design represented in this document is consistent with 1 specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to mechanical Sist Compliance CMcheckVersion COMcheckVeb and to comply with an mandatory requirements listed in the Inspection Checklist.	Mech	anical Compliar	nce Certificate
Energy Code: 2018 IECC Project Title: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List QuantitySystem Type & Description 1 \$5:1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Efficiency = 21.80 SEER, Required Efficiency = 1.300 SEER Proposed Proposed Efficiency = 0.00, Required Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency 87.0 design fan efficiency 0, fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with th specifications, and other calculations submitted with this permit application. The proposed mechanical syste designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Energy Code: 2018 IECC Project Title: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List QuantitySystem Type & Description 1 \$5:1 (Single Zone): Cooling: 1 acch - Spit System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Pricinency 9 2.103 SEER, Required Efficiency = 1.3.00 SEER Proposed Pricinency 9 2.103 SEER, Required Efficiency = 0.00 Fan System: Fan 1 ~ Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with th specifications, and other calculations Submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Project Information		
Project Title: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economize Proposed Efficiency = 0.00, Required Efficiency = 1.3.00 SEER Proposed Efficiency = 0.00, Required Fifticiency = 0.00 Fan System: Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with til specifications, and other calculations submitted with this permit application. The proposed mechanical systu designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Project Title: US Vets IDF Package Location: Phoenix, Arizona Climate Zone: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List QuantitySystem Type & Description 1 \$5:1 (Single Zone): Cooling: 1 each - Spit System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Pricinency 21.20 SEER, Required Efficiency = 1.3.00 SEER Proposed Pricinency 21.00 SEER, Required Efficiency = 0.00 Fan System: Fan 1 ~ Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= SHP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with t specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Energy Code:	2018 IECC	
Location: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical System List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Efficiency = 21.50 SEER, Required Efficiency = 13.00 SEER Proposed Efficiency = 21.50 SEER, Required Efficiency = 0.00 Fan System: Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with til specifications, and other calculations submitted with this permit application. The proposed mechanical syste designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Location: 2b Project Type: 2b Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 ach - Split System, Capacity = 11 kBtu/n, Air-Cooled Condenser, Unknown Economiz Proposed Efficiency = 20.0 Required Path Load Efficiency = 0.00 Fan System: Fan 1 ~ Compliance (Motor nameplate HP and fan efficiency restod) : Passes Fans: FAN1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with 1 specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 ECC requirements in COM/check Version COMcheckWeb and to comply with an mandatory requirements listed in the Inspection Checklist.	roject Title:	US Vets IDF Package	
Clinical Exploration 20 Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor: Additional Efficiency Package(s) Credits: 1.0 Required: 0.0 Proposed Mechanical Systems List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiza Proposed Briticiency = 0.00, Required Efficiency = 13.00 SEER Proposed Friciency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency, fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with th specifications, and other calculations submitted with this perimit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Construction 20 Project Type: New Construction Construction Site: Owner/Agent: Designer/Contractor Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical System Type & Description 1 S5-1 (Single Zone): Cooling:: 1 ac.h - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Efficiency = 1.00 SEER, Required Efficiency = 1.3.00 SEER Proposed Tificiency = 21.00 SEER, Required Efficiency = 1.3.00 SEER Proposed Part Load Efficiency = 1.0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 ~ Compliance (Motor nameplate HP and fan efficiency method) : Passes Fan: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency, fan exception: Single fan <= 5HP Mechanical Compliance Statement Composed mechanical design represented in this document is consistent with 1 Specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	location:	Phoenix, Arizona	
Construction Site Owner/Agents: Designer/Contracts: Additional Efficiency Package(s) Credits: 1.0 Required: 0.0 Proposed Matching System Type & Description 1 S.S.I (Single Zone): Construction System: Fan 1.2.S0 SEER, Required Efficiency = 1.3.00 SEER Proposed Efficiency = 21.30 SEER, Required Efficiency = 1.3.00 SEER Proposed Efficiency = 0.00, Required Efficiency = 0.00 SEER Proposed Efficiency = 0.00, Required Part Load Efficiency method): Passes Fan: PAI Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, B5.0 fan efficiency grade, efficiency, 87.0 design fan efficiency, 1 motor nameplate hp, B5.0 fan efficiency grade, efficiency, 87.0 design fan efficiency, 1 motor nameplate hp, B5.0 fan efficiency areade, efficiency, 87.0 design fan efficiency, 1 motor nameplate hp, B5.0 fan efficiency areade, efficiency, 87.0 design fan efficiency areade, efficie	Construction Site: Owner/Construction Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Matching System Type & Description 1 0.55.1 (Single Zone): Conding: 1.extrements Proposed Efficiency = 21.50 SEER, Required Efficiency = 1.00 SEER Proposed Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System:: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method): Passes Fan: FAN 11 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency: Single fan <= 5HP Mchanical Compliance Statement : Compliance Statement: The proposed mechanical design represented in this document is consistent with 1 specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COM/check Version COM/checkWeb and to comply with any modatory requirements listed in the Inspection Checklist.	Project Type:	New Construction	
Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Spili System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Efficiency = 1.300 SEER Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with th specifications, and other calculations submitted with this permit application. The proposed mechanical syste designed to meet the 2018 IECC requirements in COM/check Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed Mechanical Systems List Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Efficiency = 13.00 SEER Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= SHP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with 1 specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with an mandatory requirements listed in the Inspection Checklist.	Construction Site:	Owner/Agent:	Designer/Contractor:
Mechanical Systems List QuantitySystem Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz, Proposed Efficiency = 21.50 SEER, Required Efficiency = 13.00 SEER Proposed Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fan: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP	Mechanical Systems List QuantitySystem Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Efficiency = 21.50 SEER, Required Efficiency = 13.00 SEER Proposed Part Load Efficiency = 0.00. Required Part Load Efficiency = 0.00. Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency -, fan exception: Single fan <= 5HP	Additional Efficiency Pi	ackage(s)	
Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 13.00 SEER Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 15 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP	Quantity System Type & Description 1 SS-1 (Single Zone): Cooling: 1 each - Spilt System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economia Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP	Mechanical Systems Li	st	
 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 15 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with t specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist. 	 SS-1 (Single Zone): Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 15 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: Compliance Statement: The proposed mechanical design represented in this document is consistent with 1 specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist. 	QuantitySystem Type & f	Description	
Cooling: 1 each - Split System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with th specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COM/check Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Cooling: 1 each - Spilt System, Capacity = 11 kBtu/h, Air-Cooled Condenser, Unknown Economiz Proposed Part Load Efficiency = 0.00, Required Part Load Efficiency = 0.00 Fan System: Fan 1 - Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with t specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	1 SS-1 (Single Zone):		
Fans: PAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade, efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement: Compliance Statement: The proposed mechanical design represented in this document is consistent with t specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Fans: FAN 1 Supply, Constant Volume, 400 CFM, 0.1 motor nameplate hp, 85.0 fan efficiency grade efficiency, 87.0 design fan efficiency , fan exception: Single fan <= 5HP Mechanical Compliance Statement <i>Compliance Statement:</i> The proposed mechanical design represented in this document is consistent with I specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COM <i>check</i> Version COM <i>checkWeb</i> and to comply with any mandatory requirements listed in the Inspection Checklist.	Cooling: 1 each - Spi Proposed Efficienc Proposed Part Loa Fan System: Fan 1 -	it System, Capacity = 11 kBtu/n, Air-Cot y = 21.50 SEER, Required Efficiency = 1 d Efficiency = 0.00 , Required Part Load - Compliance (Motor nameplate HP and	bled Condenser, Unknown Economiz L3.00 SEER Efficiency = 0.00 fan efficiency method) : Passes
Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with the specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Mechanical Compliance Statement Compliance Statement: The proposed mechanical design represented in this document is consistent with I specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any mandatory requirements listed in the Inspection Checklist.	Fans: FAN 1 Supply, Con efficiency, 87.0 desig	nstant Volume, 400 CFM, 0.1 motor nam gn fan efficiency , fan exception: Single :	eplate hp, 85.0 fan efficiency grade, fan <= 5HP
Compliance Statement: The proposed mechanical design represented in this document is consistent with t specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COM <i>check</i> Version COM <i>checkWeb</i> and to comply with any mandatory requirements listed in the Inspection Checklist.	Compliance Statement: The proposed mechanical design represented in this document is consistent with I specifications, and other calculations submitted with this permit application. The proposed mechanical syst designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with an mandatory requirements listed in the Inspection Checklist.	Mechanical Compliance	e Statement	
		Compliance Statement: The pro pecifications, and other calcula lesigned to meet the 2018 IECC nandatory requirements listed	pposed mechanical design represented lations submitted with this permit applica C requirements in COM <i>check</i> Version CO in the Inspection Checklist.	n this document is consistent with t ition. The proposed mechanical syst McheckWeb and to comply with any

ECM = ELECTRONICALLY COMMUTATED MOTOR D. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE, WITH THE SCHEDULED WHEEL TYPE. SUBSTITUTION OF BI OR BIA FANS FOR FC IS ACCEPTABLE IF EFFICIENCY IS NOT LOWER. E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.

	13.0	20	EC	F	SAMSUNG
_					
	<u>SC</u>	CHED	ULE GE	ENERAL	NOTES:
A II	DISCO NSTALLE	NNECT AN ED BY:	D CONTROLLE	ER STARTER FUR	NISHED AND
M	IFR = MA	ANUFACTU	IRER CONTRACTOR		
M		RNISHED B	Y MECHANICA	L CONTRACTOR,	INSTALLED BY
N	IFR/EC =	= FURNISH	ED LOOSE BY	MANUFACTUREF	R INSTALLED BY
T	CC = TE	CAL CONTI MPERATU	RACTOR. RE CONTROL	CONTRACTOR	
В			PE:		
F	F = FUSED				
P	NF = NON-FUSED PLUG = PLUG AND CORD				
C	. CONTR	ROLLER ST	ARTER TYPE:		
V	VYE = W	YE-DELTA			
5 N	S = SOL 1S = MAN	NUAL STATE ((SOFT START) RTER		
V	VFD = VARIABLE FREQUENCY DRIVE				
Ŷ	D = WYE	E - DELTA			

F. MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

MFR = STANDARD CURB BY MANUFACTURER GC = BY GENERAL CONTRACTOR

SAC = SOUND ATTENUATOR CURB

G. CURB TYPE:

DISCONNECT

ELECTRICAL

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

<u>Note:</u> 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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. Bar Signed FR J. EXP. 03-31-2026
Project Name
ARPA U. S. Vets Miscellaneous Repairs & Improvements
Project Number
057.8221.100
Description
MECHANICAL SCHEDULES
Scale
12" = 1'-0"
M4.00.IT

© 2023 Gensler

	VIEW	' K
• NAME - 10'-0" -	LEVEL NAME HEIGHT ABOVE PROJECT 0'-0"	Ć
	IN Pl	DIC LAN LAN
NORT	VIEW 1 1/8" = 1'-0" PI	N Lan
	INDICATES SIMILA IN MULTIPLE LOC DETAIL REFERRE M101-SHEET DETAIL IS	AR I ATI D T
	<u>O TAG KEY:</u> Y THIS CONTRACTOR (WIDE LINE NEW EXISTING TO BE REMOVED (SH NEW UNDERFLOOR OR UNDER) ORT
EXISTING TO F	REMAIN OR WORK BY OTHERS (N EXISTING EXISTING TO BE REMOVED BY (EXISTING UNDERFLOOR OR UN	ARI DTH DEF
HALFTONING [DOES NOT MODIFY SCOPE.	
'TAG'-E	TAGS WITH DASH 'E' INDICATES	; TH
<u>TAG-1</u>	UNDERLINED TAG INDICATES O INFORMATION IS AVAILABLE IN	BJE A S
•	INDICATES AN EXISTING SYSTE	M'S

W KEY		ELEC	TRICAL	SYMBOL LIST	
KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION	SYMBO	L: TAG:	SPEC SECTION:	DESCRIPTION:	
ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL	GB	GB	26 05 26	GROUND BUS	
	IBT	<u>IBT</u>	26 05 26	INTERSYSTEM BONDING TERM	INATION
- INDICATES DIRECTION OF TRUE NORTH - PLAN OR DETAIL NUMBER		ECONN	26 05 33	ELECTRICAL CONNECTION	
		JB	26 05 33	JUNCTION BOX	
/ NAME					
		<u>PANEL '###'</u>	26 24 16	PANELBOARD - RECESS MOUN	Т
PLAN OR DETAIL SCALE		<u>PANEL '###'</u>	26 24 16	PANELBOARD - SURFACE MOU	NT
IILAR DETAIL REFERENCED		<u>TR-#/DTR-#</u>	26 22 00	TRANSFORMER. REFER TO TRANSFORMER SCHEDULE	
RED TO BY SECTION CUT					
IS LOCATED ON - T101		DS-#/FDS-#/DSS-#	26 28 16	DISCONNECT SWITCH FUSED DISCONNECT SWITCH. REFER TO DISC/STA SCHEDULE	E
	⇒	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V	
		REC-SIM-620R	26 27 26	RECEPTACLE, 6-20R, 250V	
HORT DASHED PATTERN) RGROUND (LONG DASHED PATTERN)	_⊕	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V	
(NARROW LINE)	\$ ₀	<u>SW-OC-P-O</u>	26 09 33	SWITCH - OCCUPANCY SENSOR WALL SWITCH	२
Y OTHERS (SHORT DASHED PATTERN) INDERGROUND (LONG DASHED PATTERN)	S	<u>SW-1P</u>	26 09 33	SWITCH - SINGLE POLE	
		ELECTR	CAL EQ	UIPMENT TAGS	
TES THE REFERENCED OBJECT IS EXISTING	TAG: C	ESCRIPTION:			RELATED SPECIFICATION
3 OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST	<u>СТ-#</u> С	ABLE TRAY			26 05 36
TEM'S POINT OF CONNECTION/REMOVAL	<u>DP-#</u> D	ISTRIBUTION PANEL			26 24 16

TRANSFORMER - DISTRIBUTION TYPE

REFER TO TRANSFORMER SCHEDULE

DTR-#

T.C.	TECHNOL
	ELEC
ABBR:	DESCR
ABV	ABOVE
AFC	ABOVE F
AFF	ABOVE F
С	CONDUIT
CO	CONDUIT
EG	EQUIPME
EGC	EQUIPME
ITR	IT RACK I
NEMA #	NEMA RA
SM	SURFACE
TYP	TYPICAL
UG	UNDERG
UON	UNLESS

C.C.

C.M.

E.C.

G.C.

M.C.

26 12 19

CONTRACTOR SI
BUILDING CODE:
FIRE CODE:
PLUMBING CODE:
MECHANICAL CODE:
ELECTRICAL CODE:
ENERGY CONSERVATIO
HEALTH DEPARTMENT (
LOCAL BUILDING CODE:

ELECTRICAL RENOVATION NOTES:

TES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED ING. POWER. FIRE ALARM. AND OTHER LOW VOLTAGE SYSTEMS. NG CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD YS, EXISTING BUILDING DOCUMENTS. CONTRACTOR SHALL REVIEW EXISTING TIONS AND REPORT CONFLICTS. L EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. CONTRACTOR REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS. RACTOR SHALL REVIEW EXISTING CONDITIONS PRIOR TO FABRICATION OF CABLE BUSWAY, CONDUIT RACKS, AND OTHER SYSTEMS. RISES AND DROPS MAY BE SARY BECAUSE OF EXISTING FIELD CONDITIONS.

RICAL CONTRACTOR SHALL REVIEW EXISTING CONDITIONS TO VERIFY ACCESSIBILITY AREAS OF THEIR WORK INCLUDING WALLS, FLOOR, CEILINGS, CEILING TILES/GRID, OOF. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CUTTING, REMOVAL, ING, AND REINSTALLATION OF AFFECTED AREAS ASSOCIATED WITH THEIR WORK BY DINATING WITH THE GENERAL CONTRACTOR OR QUALIFIED CONTRACTOR. E EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW MENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER NGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES ONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

ELECTRICAL PHASING NOTES:

TES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED ING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS. TO **ARCHITECTURAL** DRAWINGS FOR GENERAL DESCRIPTION OF PHASES.

JCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT MECHANICAL. ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF NAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING

V PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. AFFECTED ADJACENT AREAS. DE TEMPORARY LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE MS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF

CONTRACTOR ABBREVIATION KEY

DESCRIPTION:

CIVIL CONTRACTOR

CONSTRUCTION MANAGER ELECTRICAL CONTRACTOR

GENERAL CONTRACTOR MECHANICAL CONTRACTOR

LOGY CONTRACTOR

CTRICAL ABBREVIATION KEY

RIPTION:

INISHED CEILING

FINISHED FLOOR (BRANCH CIRCUIT OR FEEDER CONTEXT)

AND BOX ROUGH-IN ONLY (ROUGH-IN ONLY)

ENT GROUND ENT GROUNDING CONDUCTOR

MOUNTED RECEPTACLE

ATING

E MOUNTED

ROUND

OTHERWISE NOTED

APPLICABLE CODES

SHALL COMPLY WITH A INCLUDING, BUT NOT	PPLICABLE CODES AND LOCAL AMENDMENTS LIMITED TO, THE FOLLOWING:
	IBC 2018 EDITION
	IFC 2018 EDITION
	IPC 2018 EDITION
	IMC 2018 EDITION
	NFPA 70 (NEC) 2017 EDITION
ON CODE:	IECC 2018
CODE:	CURRENT EDITION

CURRENT EDITION

ELECTRICAL INSTALLATION NOTES:

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. 2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE
- WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
- 3. EMERGENCY BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.
- 4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. 5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM
- FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE. 6. CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED
- DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO BE INSTALLED. 7. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION)
- EXCEPT WHERE OTHERWISE NOTED. 8. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
- 9. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS, CARBON MONOXIDE DETECTORS, AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. CARBON MONOXIDE DETECTORS SHALL BE LOCATED
- 10 PLUS FT FROM FIRE PLACES, COOKING, AND SIMILAR FUEL-BURNING APPLIANCES 10. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE
- FURNITURE AND/OR EQUIPMENT. 11. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS. 13. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE
- WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH. 14. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS. 15. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

	RECEPTACLE S	UBSC	RIPT KEY:	
DEVICE K	EY:			
DEVICE	<pre># = MOUNTING (IF APPLICABLE) 1 = CIRCUIT NUMBER</pre>			
	*IF LABEL IS ORIENTED HORIZONT/ INFORMATION. EX: A / 1	ALLY A SLAS	H WILL SEPARATE THIS	
ELECTRIC A C H L M O R S W WG WP	CAL MOUNTING SUBSCRIPT KEY: MOUNT AT +6" TO CENTERLINE ABOV MOUNT AT CEILING (DEVICE OR ROU MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK MOUNT IN MODULAR FURNITURE WIRING DEVICE, OCCUPANCY CONTF MOUNT IN SURFACE RACEWAY SURFACE MOUNTED WEATHERPROOF WIRING DEVICE, NI WIRE GUARD WEATHERPROOF	/E COUNTER GH-IN CONT ROLLED EMA 3R WHII	E OR BACKSPLASH EXT) LE-IN-USE COVER, WR LIS	STED
	ELECTRICAL	SHEE		
SHEET NUMBER	SHEET NAME	REVISION NUMBER	REVISION NAME	REVISION DATE
E0.00.CE	ELECTRICAL COVERSHEET			
E0.02.CE	ELECTRICAL SPECIFICATIONS			
E2.01.CE	ELECTRICAL ENLARGED PLANS			
E4.01.CE	ELECTRICAL ONE-LINE & SCHEDULES			

GRAND TOTAL: 4

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

Note:

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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number

057.8221.100 Description ELECTRICAL COVERSHEET

Scale As indicated

26 05 00 BASIC ELECTRICAL REQUIREMENTS

SCOPE OF WORK

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW MATERIALS AS INDICATED ON THE DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE THE ASSOCIATED PORTION OF THE ELECTRICAL WORK A FINISHED AND WORKING SYSTEM.

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER, SHALL BE SCHEDULED WITH THE OWNER. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS.

CODES AND STANDARDS

AND OTHER REGULATIONS HAVING JURISDICTION OVER THIS INSTALLATION. CONFORM TO ALL PUBLISHED STANDARDS OF NATIONAL ELECTRICAL CODE NEC. IF THE CONTRACTOR NOTES, AT THE TIME OF BIDDING, THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES OR REGULATIONS, CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING, REQUESTING A CLARIFICATION.

PERMITS AND FEES

REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES. PAY ALL FEES AND TAXES IMPOSED BY STATE, MUNICIPAL, AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED AGENCY/CONSULTANT.

WHERE APPLICABLE, ALL FIXTURES, EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC., OR A NATIONALLY RECOGNIZED TESTING ORGANIZATION.

DRAWINGS

THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF THE WORK AND TO INDICATE THE GENERAL ARRANGEMENTS AND LOCATIONS OF EQUIPMENT, OUTLETS, ETC., AND THE APPROXIMATE SIZES OF EQUIPMENT.

CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF EQUIPMENT AND ROUGH-INS, AND THE EXACT ROUTING OF RACEWAYS SO AS TO BEST FIT THE LAYOUT OF THE JOB. CONDUIT ENTRY POINTS FOR ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, PANELBOARDS, SWITCHBOARDS, SWITCHGEAR AND UNIT SUBSTATIONS, SHALL BE DETERMINED BY THE CONTRACTOR UNLESS NOTED IN THE CONTRACT DOCUMENTS.

CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING REVIT. CONTRACTORS AND SUBCONTRACTORS' MAY REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS. THE ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR PREPARATION OF SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION

VERIFY ALL PERTINENT DIMENSIONS AT THE JOB SITE BEFORE ORDERING ANY CONDUIT, CONDUCTORS, WIREWAYS, BUS DUCT, FITTINGS, ETC.

SUBMITTALS

DRAWINGS. THE CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF EACH SHOP DRAWING FOR REVIEW BY THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR MANUFACTURE OR SHIPMENT.

THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS, SUCH AS PANELBOARDS, FIRE ALARM, LIGHTING, OR

ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER. WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET, CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK. REFER TO SUBSECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS.

NETWORK / INTERNET CONNECTED EQUIPMENT THESE SPECIFICATIONS MAY REQUIRE CERTAIN EQUIPMENT OR SYSTEMS TO HAVE

NETWORK, INTERNET AND/OR REMOTE ACCESS CAPABILITY ("NETWORK CAPABILITY"). ANY REQUIREMENT FOR NETWORK CAPABILITY SHALL BE INTERPRETED ONLY AS A FUNCTIONAL CAPABILITY AND IS NOT TO BE CONSTRUED AS AUTHORITY TO CONNECT OR ENABLE ANY NETWORK CAPABILITY. NETWORK CAPABILITY MAY ONLY BE CONNECTED OR ENABLED WITH THE EXPRESS WRITTEN CONSENT OF THE OWNER.

<u>WARRANTY</u> PROVIDE MINIMUM ONE-YEAR WARRANTY FOR ALL FIXTURES, EQUIPMENT, MATERIALS, AND WORKMANSHIP. REFER TO SUBSECTIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.

MATERIAL SUBSTITUTION

WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND FIT IN THE ALLOCATED SPACE. THE ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ANY MATERIAL, ARTICLE, OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE USED IF APPROVAL IS SECURED IN WRITING FROM THE ARCHITECT/ENGINEER VIA ADDENDUM.

OBSERVATION OF WORK

THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS AND CHASES AND INSTALLING HARD OR SUSPENDED CEILINGS AND SOFFITS. ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES BUT IS NOT LIMITED TO: ALL JUNCTION BOXES ARE CLOSED AND IDENTIFIED (CONDUIT INCLUDED) IN ACCORDANCE WITH ELECTRICAL IDENTIFICATION, FIRE ALARM JUNCTION BOXES ARE PAINTED RED,

OPERATIONAL, FLEXIBLE CONDUIT IS SUPPORTED ABOVE AND INDEPENDENTLY OF THE CEILING, AND ALL WALL PENETRATIONS ARE SEALED. IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT THE JOB IS READY FOR THE FINAL JOBSITE OBSERVATION.

PROJECT CLOSEOUT

INCLUDED.

SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS, RECORD DOCUMENTS. SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, INSPECTION AND TESTING REPORT BY THE FIRE ALARM SYSTEM MANUFACTURER. PROVIDE CUSTOM UPDATED/NEW TYPED CIRCUIT DIRECTORY FOR EACH EXISTING/NEW BRANCH CIRCUIT PANELBOARD INCLUDED IN THE SCOPE OF WORK, LABEL SHALL INCLUDED EQUIPMENT NAME OR FINAL APPROVED ROOM NAME, ROOM NUMBER, AND LOAD TYPE FOR EACH CIRCUIT (EXAMPLES: SUMP PUMP SP-1 OR ROOM 101 RECEPT). PRINTED COPIES OF THE BID DOCUMENT PANEL SCHEDULES ARE NOT ACCEPTABLE AS

CIRCUIT DIRECTORIES. **OPERATION AND MAINTENANCE INSTRUCTIONS** OPERATION AND MAINTENANCE DATA SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS.

CONFORM TO ALL REQUIREMENTS OF THE CITY OF LOCAL CODES, LAWS, ORDINANCES,

PROCURE ALL APPLICABLE PERMITS AND LICENSES. ABIDE BY LOCAL AND STATE LAWS,

MAY NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT.

SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE SPECIFICATIONS OR ON THE

MOTOR CONTROL. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS

LUMINAIRES INCLUDING EXIT AND EMERGENCY FIXTURES ARE INSTALLED AND

INSTRUCTION BOOKS, CARDS, AND MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE

PROVIDE BOUND MANUALS WITH COPIES OF APPROVED SHOP DRAWINGS WITH TITLE PAGE AND INDEX SYSTEM SIMILAR TO OPERATION AND MAINTENANCE MANUAL. RECORD DOCUMENTS

MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF ELECTRICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS, CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS, AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME.

CLEANING THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING CONSTRUCTION FROM THE PREMISES.

26 05 03 THROUGH PENETRATION FIRESTOPPING QUALITY ASSURANCE

MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION. INSTALLER: INDIVIDUALS PERFORMING WORK SHALL BE CERTIFIED BY THE

MANUFACTURER OF THE SYSTEM SELECTED FOR INSTALLATION. PERFORMANCE REQUIREMENTS

THROUGH-PENETRATION FIRESTOP SYSTEMS WITH RATINGS DETERMINED PER UL 1479. PROVIDE AT FIRE-RESISTANCE-RATED WALLS INCLUDING FIRE PARTITIONS, FIRE BARRIERS, AND SMOKE BARRIERS.

PROVIDE AT FIRE-RESISTANCE-RATED HORIZONTAL ASSEMBLIES INCLUDING FLOORS, FLOOR/CEILING ASSEMBLIES, AND CEILING MEMBRANES OF ROOF/CEILING ASSEMBLIES. FOR FIRESTOP SYSTEMS EXPOSED TO LIGHT, TRAFFIC, MOISTURE, OR PHYSICAL DAMAGE,

PROVIDE PRODUCTS THAT, AFTER CURING, DO NOT DETERIORATE WHEN EXPOSED TO THESE CONDITIONS BOTH DURING AND AFTER CONSTRUCTION. FOR FIRESTOP SYSTEMS EXPOSED TO VIEW, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 450, AS DETERMINED PER ASTM

E 84. FOR FIRESTOP SYSTEMS IN AIR PLENUMS, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 50, AS DETERMINED PER ASTM E 84.

WARRANTY WARRANTY SHALL COVER REPAIR OR REPLACEMENT OF FIRESTOP SYSTEMS WHICH FAIL IN JOINT ADHESION, COHESION, ABRASION RESISTANCE, WEATHER RESISTANCE, EXTRUSION RESISTANCE, MIGRATION RESISTANCE, STAIN RESISTANCE, GENERAL DURABILITY, OR APPEAR TO DETERIORATE IN ANY MANNER NOT CLEARLY SPECIFIED BY THE MANUFACTURER AS AN INHERENT QUALITY OF THE MATERIAL. APPROVED MANUFACTURERS

3M, HILTI, RECTORSEAL METACAULK, TREMCO, JOHNS-MANVILLE, sti, SPEC SEAL, AD, LEGRAND FLAMESTOPPER.

<u>PRODUCTS</u> ALL FIRESTOPPING MATERIALS SHALL BE FREE OF ASBESTOS, LEAD, PCB'S, AND OTHER MATERIALS THAT WOULD REQUIRE HAZARDOUS WASTE REMOVAL. FIRESTOPPING SHALL BE FLEXIBLE TO ALLOW FOR NORMAL PENETRATING ITEM

MOVEMENT DUE TO EXPANSION AND CONTRACTION. PROVIDE FIRESTOPPING SYSTEMS CAPABLE OF SUPPORTING FLOOR LOADS WHERE

SYSTEMS ARE EXPOSED TO POSSIBLE FLOOR LOADING OR TRAFFIC. PROVIDE FIRESTOPPING SYSTEMS CLASSIFIED BY UL OR LISTED BY WARNOCK HERSEY FOR PENETRATIONS THROUGH ALL FIRE RATED CONSTRUCTION. FIRESTOPPING SYSTEMS SHALL BE SELECTED FROM THE UL OR LISTED BY WARNOCK HERSEY FIRE RESISTANCE DIRECTORY CATEGORY XHEZ BASED ON SUBSTRATE CONSTRUCTION AND PENETRATING ITEM SIZE AND MATERIAL

IN EXISTING CONSTRUCTION, PROVIDE FIRESTOPPING OF OPENINGS PRIOR TO AND AFTER INSTALLATION OF PENETRATING ITEMS. CLEAN EXCESS FILL MATERIALS ADJACENT TO OPENINGS AS WORK PROGRESSES BY

METHODS AND WITH CLEANING MATERIALS THAT ARE APPROVED IN WRITING BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURERS AND THAT DO NOT CAUSE DAMAGE.

ALL PENETRATIONS SHALL BE INSPECTED BY THE MANUFACTURER'S REPRESENTATIVE TO ENSURE PROPER INSTALLATION.

PROVIDE AND INSTALL LABELS AD JACENT TO EACH FIRESTOPPING LOCATION. LABEL SHALL BE PROVIDED BY THE FIRESTOP SYSTEM SUPPLIER AND CONTAIN THE FOLLOWING INFORMATION IN A CONTRASTING COLOR: 1. THE WORDS "WARNING - THROUGH PENETRATION FIRESTOP SYSTEM - DO NOT

DISTURB. NOTIFY BUILDING MANAGEMENT OF ANY DAMAGE. 2. FIRESTOP SYSTEM SUPPLIER; UL OR LISTED BY INTERTEK / WARNOCK HERSEY SYSTEM NUMBER; DATE INSTALLED; CONTRACTOR NAME AND PHONE NUMBER; MANUFACTURER'S REPRESENTATIVE NAME, ADDRESS, AND PHONE NUMBER. 26 05 05 ELECTRICAL DEMOLITION FOR REMODELING

THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS.

WHERE WALLS, CEILINGS, STRUCTURES, ETC., ARE INDICATED AS BEING REMOVED ON GENERAL OR ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ELECTRICAL EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING, SYSTEMS, ETC., FROM THE REMOVED AREA.

WHERE CEILINGS, WALLS, STRUCTURES, ETC., ARE TEMPORARILY REMOVED AND REPLACED BY OTHERS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL. STORAGE, AND REPLACEMENT OF EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING, SYSTEMS, ETC.

26 05 13 WIRE AND CABLE FEEDERS AND BRANCH CIRCUITS 8 AWG AND LARGER SHALL BE COPPER, STRANDED, 600

VOLT INSULATION, THHN. UNDERGROUND OR IN SLABS ON GRADE SHALL BE THWN or XHHW-2 FEEDERS AND BRANCH CIRCUITS 10 AWG AND SMALLER: COPPER, SOLID OR STRANDED.

600 VOLT INSULATION, THHN/THWN. NOTED ON THE DRAWINGS. MINIMUM SIZE #12 AWG. USE # 10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET, AND FOR 20 AMPERE, 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.

ALL WIRES IN OUTLET BOXES NOT CONNECTED TO FIXTURES OR OTHER DEVICES SHALL BE ROLLED UP, SPLICED IF CONTINUITY OF CIRCUIT IS REQUIRED, AND INSULATED. 26 05 26 GROUNDING AND BONDING

COMPLY WITH UL 467 GROUNDING AND BONDING EQUIPMENT.

CONDUCTORS SHALL BE COPPER IN ACCORDANCE WITH 26 05 13 CONNECTORS SHALL BE HYDRAULIC COMPRESSION TYPE OR EXOTHERMIC-WELDED

INSTALL EQUIPMENT GROUNDING CONDUCTORS IN ALL FEEDERS AND CIRCUITS.

INSULATION WITH YELLOW STRIPE. BONDING

BONDING CONDUCTORS SHALL BE NO. 6 AWG, STRANDED COPPER CONDUCTOR. BONDING JUMPER SHALL BE BARE COPPER TAPE, TERMINATED WITH COPPER FERRULES. BOND TO COLUMNS OR BEAMS AT BUILDING EXPANSION JOINTS. ISOLATE DESIGNATED EQUIPMENT ENCLOSURES VIA BONDING JUMPER. BOND TO METALLIC WATER PIPE USING A SUITABLE GROUND CLAMP AT STREET SIDE OF FLANGE AND PROVIDE BONDING JUMPER AROUND WATER METER. FOR TELEPHONE, ALARM, VOICE AND DATA, AND OTHER COMMUNICATION SYSTEMS, PROVIDE NO. 6 AWG INSULATED BONDING CONDUCTOR IN RACEWAY FROM GROUNDING

ELECTRODE SYSTEM TO EACH SERVICE AND CENTRAL EQUIPMENT LOCATION. FIELD QUALITY CONTROL MEASURE GROUND RESISTANCE FROM SYSTEM NEUTRAL CONNECTION AT SERVICE ENTRANCE TO CONVENIENT GROUND REFERENCE POINTS USING SUITABLE GROUND TESTING EQUIPMENT. RESISTANCE SHALL NOT EXCEED 5 OHMS. NOTIFY ARCHITECT/ENGINEER PROMPTLY AND INCLUDE RECOMMENDATIONS TO REDUCE GROUND RESISTANCE.

PROVIDE GROUND TESTING IN ACCORDANCE WITH IEEE STANDARDS. 26 05 27 SUPPORTING DEVICES

APPROVED MANUFACTURERS: ALLIED, COOPER B-LINE, ERICO, HILTI, POWER FASTENERS. SUPPORT CHANNELS SHALL BE PAINTED STEEL, PROVIDE GALVANIZED OR STAINLESS STEEL FOR WET/DAMP LOCATIONS. ALL HARDWARE TO BE CORROSION RESISTANT.

CONDUIT SLEEVES PENETRATIONS BELOW GRADE LEVEL SHALL BE WATERTIGHT. PENETRATIONS AT EXTERIOR WALLS SHALL BE WEATHERPROOF, ROOF PENETRATIONS SHALL BE FLASHED

AND COUNTER FLASHED. 26 05 33 CONDUIT AND BOXES <u>CONDUIT</u>

CO, O-Z GEDNEY. KILLARK

ELECTRICAL METALLIC TUBING (EMT), MINIMUM 3/4" SHALL BE USED IN FINISHED SPACES FOR ALL BRANCH CIRCUITS, TELECOMMUNICATIONS SYSTEMS PUMP FEEDERS' ELECTRICAL DISTRIBUTION AND PANEL BOARDS. INTERMEDIATE METALLIC CONDUIT (IMC), MINIMUM 3/4", SHALL BE USED FOR EXPOSED

RIGID METALLIC CONDUIT (RMC) SHALL BE USED IN WET OR DAMP LOCATIONS, SUBJECT TO VEHICULAR TRAFFIC.

POLYVINYL CHLORIDE (PVC), SCHEDULE 40 SCHEDULE 80, SHALL BE USED IN SLAB ON-VEHICULAR TRAFFIC FOR LOW VOLTAGE SERVICE SYSTEMS. FLEXIBLE METALLIC CONDUIT (FMC) SHALL BE USED FOR CONNECTIONS TO MOTORS AND

CONDUIT SHALL NOT EXCEED 6'. NATIONAL ELECTRICAL CODE **BOXES**

OUTLET BOXES FOR LUMINAIRES TO BE MINIMUM 1-1/2" DEEP. CAST BOXES SHALL BE USED IN EXTERIOR LOCATIONS, HAZARDOUS LOCATIONS, WET LOCATIONS, CONCRETE SLAB ON GRADE. RECEPTACLE OUTLET BOXES SHALL BE 4 INCHES SQUARE WITH RAISED COVER TO FIT FLUSH WITH FINISHED WALL LINE. GALVANIZED STEEL BOXES MAY BE USED IN CONCEALED OR EXPOSED INTERIOR LOCATIONS, ABOVE CEILINGS, AND MIN RECESSED STUDDED PARTITIONS.

26 05 53 ELECTRICAL IDENTIFICATIONS

EQUIPMENT WITH ENGRAVED NAMEPLATES. BOXES SHALL BE MARKED WITH PANEL AND CIRCUIT NUMBERS (PERMANENT PEN ACCEPTABLE ABOVE CEILING). NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED. CONDUCTORS SHALL BE TAGGED WITH CIRCUIT NUMBERS AT SOURCE, JUNCTION BOXES. AND ALL OUTLET BOXES WITH PERMANENT ADHESIVE MARKER STRIP. CONDUIT IDENTIFICATION: SELF-ADHESIVE VINYL LABELS AT 20 FOOT INTERVALS TO IDENTIFY ALL CONDUITS EXPOSED OR LOCATED ABOVE ACCESSIBLE CEILINGS. WHERE CONDUIT LEAVES A SWITCHBOARD OR PANELBOARD, IDENTIFY EACH CONDUIT

INDICATING LOAD SERVED. CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS: 208Y/120 VOLT, 4_WIRE:

A PHASE - BLACK B PHASE - RED C PHASE - BLUE

NEUTRAL - WHITE GROUND BOND - GREEN

PROVIDE ENGRAVED IDENTIFICATION ON THE FRONT OF ALL POWER DISTRIBUTION AND CONTROL EQUIPMENT, SUCH AS PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, VFD'S, STARTERS, DISCONNECTS, ETC. LABELING SHALL INCLUDE: EQUIPMENT DESIGNATION, VOLTAGE, UPSTREAM SOURCE OF ORIGIN, RATING, AND TYPE OF THE OVERCURRENT PROTECTION DEVICE SERVING THE EQUIPMENT. A SEPARATE NAMEPLATE FOR THE SERVICE ENTRANCE EQUIPMENT SHALL BE LABELED

THE ONE-LINE DIAGRAM. 26 09 33 LIGHTING CONTROL SYSTEMS PERFORMANCE STATEMENT: THIS SPECIFICATION SECTION AND THE ACCOMPANYING LIGHTING DESIGN DOCUMENTS DESCRIBE THE MINIMUM MATERIAL QUALITY, REQUIRED FEATURES, AND OPERATIONAL REQUIREMENTS OF THE LIGHTING CONTROL SYSTEM (LCS). THESE DOCUMENTS DO NOT CONVEY EVERY WIRE THAT MUST BE INSTALLED AND EVERY EQUIPMENT CONNECTION THAT MUST BE MADE. BASED ON THE PERFORMANCE REQUIRED OF THE SYSTEM, AS PRESENTED IN THESE DOCUMENTS, THE CONTRACTOR AND SYSTEM MANUFACTURER/VENDOR ARE SOLELY RESPONSIBLE FOR DETERMINING

ALL EQUIPMENT, WIRING, AND PROGRAMMING REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

TYPE EQUIPMENT GROUNDING

EQUIPMENT GROUNDING CONDUCTORS: INSULATED WITH GREEN-COLORED INSULATION. ISOLATED GROUND CONDUCTORS SHALL BE INSULATED WITH GREEN-COLORED

PENETRATIONS OF ALL SURFACES SHALL BE PROVIDED WITH SLEEVES THAT SHALL BE SEALED WITH LIKE MATERIALS AND SHALL BE FINISHED WITH ESCUTCHEON PLATES.

ACCEPTABLE CONDUIT MANUFACTURERS: ALLIED, LTV, STEELDUCT, WHEATLAND TUBE

ACCEPTABLE FITTINGS MANUFACTURERS: APPLETON ELECTRIC, O-Z GEDNEY, ELECTROLINE, RACO, BRIDGEPORT, MIDWEST, REGAL, THOMAS & BETTS, CROUSE-HINDS,

MECHANICAL AND PUMP FEEDERS, AND ELECTRICAL DISTRIBUTION EQUIPMENT.

HAZARDOUS LOCATIONS SLAB ON-GRADE AND ABOVE-GRADE UNDERGROUND WHERE

GRADE AND ABOVE-GRADE UNDERGROUND CONCRETE ENCASED WERE SUBJECT TO

LIGHT FIXTURES. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) WITH WATERTIGHT FITTINGS SHALL BE USED IN EXTERIOR OR WET/DAMP LOCATIONS. THE LENGTH OF THE

EMT AND IMC CONDUIT FITTINGS SHALL BE COMPRESSION STEEL SET-SCREW TYPE. CONDUIT AND CONDUCTOR SIZING SHALL BE COORDINATED TO LIMIT CONDUCTOR FILL TO LESS THAN 40%, MAINTAIN CONDUCTOR AMPERE CAPACITY AS REQUIRED BY THE

[JB]: PULL AND JUNCTION BOXES, GALVANIZED STEEL, SIZED PER NEC.

IDENTIFY ALL EQUIPMENT, SWITCHBOARD CIRCUITS AND ELECTRICALLY- CONNECTED

WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND DATE OF CALCULATION GIVEN ON

PROVIDE AN INTEGRATED LIGHTING CONTROLS SYSTEM CONSISTING OF PANELS, POWER SUPPLIES, CONTROLLERS, SENSORS, RELAYS, SWITCHES, DEVICES, WIRING, ETC. NECESSARY TO PERFORM THE LIGHTING CONTROL SEQUENCE OF OPERATION, AS DEFINED ON THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT ALL COMPONENTS AND LUMINAIRES INTEROPERATE AS A SINGLE SYSTEM.

SEQUENCE OF OPERATION: DESCRIBES THE REQUIRED OPERATION AND PERFORMANCE FOR LIGHTING CONTROL IN EACH SPACE. SEQUENCES OF OPERATION ARE INDICATED ON THE DRAWINGS.

DRAWINGS: THE DRAWINGS INCLUDE SEQUENCES OF OPERATION, LOCATIONS OF CONTROL INTERFACE DEVICES, SENSORS, AND CONTROL ZONES. WIRING AND ADDITIONAL EQUIPMENT TO MAKE A COMPLETE AND FUNCTIONING SYSTEM HAS NOT BEEN SHOWN BUT SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

SUBMIT SHOP DRAWING PRODUCT DATA INCLUDING ALL DEVICES, FLOOR PLAN DRAWINGS INCLUDING SENSOR COVERAGE AND ACCESSORIES. SUBMIT PROJECT SPECIFIC CONTROL WIRING DIAGRAMS SHOWING ALL EQUIPMENT, LINE VOLTAGE AND CONTROL WIRING REQUIREMENTS FOR ALL COMPONENTS. CONTRACTOR SHALL VERIFY THAT WALL DIMMER RATINGS ARE ACHIEVED WHERE A

GANGED INSTALLATION IS USED. WALL SWITCHES

[SW-1P]: SINGLE POLE SWITCH: HUBBELL HBL1221, LEVITON 1221-2, PASS & SEYMOUR PS20AC1, COOPER AH1221. HUBBELL DS120, LEVITON 5621, PASS & SEYMOUR 2621, COOPER 7601.

INDOOR OCCUPANCY AND VACANCY SENSORS

OCCUPANCY AND VACANCY SENSORS SHALL HAVE AN ADJUSTABLE OFF TIME DELAY OF 1-30 MINUTES. SENSORS SHALL COMPLY WITH UL773A AND HAVE A 5-YEAR WARRANTY. RELAY UNIT: DRY CONTACTS RATED FOR 20 A BALLAST LOAD AT 120 AND 277 VACS, FOR 13 AMP TUNGSTEN AT 120 VACS, AND FOR 1 HP AT 120 VAC. POWER SUPPLY TO SENSOR SHALL BE 24 V DC, 150-MA, CLASS 2 POWER SOURCE AS DEFINED BY NFPA 70.

[SW-OC-D]: DUAL TECHNOLOGY 360 DEGREE COVERAGE PATTERN: APPROVED MANUFACTURERS: WATTSTOPPER DT 305 SERIES, HUBBELL OMNI-DT2000 OR ATD2000C, GREENGATE OAC-DT, LEVITON OSC##-MOW, SENSOR SWITCH CM PDT 10. 26 27 26 WIRING DEVICES

SUBMIT SHOP DRAWING PRODUCT DATA INCLUDING ALL DEVICES AND ACCESSORIES.

ALL SWITCH, RECEPTACLE, OUTLET, AND COVERPLATE COLORS SHALL BE WITH ARCHITECT, UNLESS INDICATED OTHERWISE.

ALL SWITCHES, RECEPTACLES, AND OUTLET FACEPLATES SHALL BE COMPLETE WITH UNBREAKABLE THERMOPLASTIC COVERPLATES IN FINISHED SPACES WHERE WALLS ARE FINISHED. PROVIDE #302 STAINLESS STEEL COVERPLATES IN UNFINISHED SPACES FOR FLUSH BOXES, AND GALVANIZED STEEL COVERPLATES IN UNFINISHED SPACES FOR SURFACE MOUNTED BOXES.

<u>RECEPTACLES</u>

REFER TO ELECTRICAL SYMBOLS LIST FOR DEVICE TYPE.

[REC-DUP]: NEMA 5-20R DUPLEX RECEPTACLE: HUBBELL 5352A, LEVITON, 5362-S, PASS & SEYMOUR 5362, COOPER 5352.

<u>26 51 00 LIGHTING</u>

SUBMIT PRODUCT DATA SHEETS FOR LUMINAIRES, LED LAMPS, LED LIGHTING ENGINES, DRIVERS, AND POLES. INCLUDE COMPLETE PRODUCT MODEL NUMBER WITH ALL OPTIONS AS SPECIFIED. SUBMITTAL SHALL BE ARRANGED WITH LUMINAIRES LISTED IN ASCENDING ORDER, AND WITH EACH LUMINAIRE'S ASSOCIATED LED LIGHT ENGINE, DRIVER, OR POLE INFORMATION FOLLOWING LUMINAIRE'S PRODUCT DATA.

SUBMIT LIGHTING CONTROL CAPABILITY DATA FOR EACH LUMINAIRE. THE SUBMITTAL SHALL CLEARLY IDENTIFY DEVICE DATA PROPOSED BY THE CONTRACTOR AND APPROVED BY THE LUMINAIRE MANUFACTURER FOR DIMMING, SWITCHING, ADDRESSABLE, WIRELESS, AND SIMILAR CONTROL CHARACTERISTICS.

DELIVER PRODUCTS TO SITE. PROTECT LUMINAIRE FINISHES, LENSES, AND TRIMS FROM DAMAGE DURING STORAGE AND INSTALLATION DO NOT REMOVE PROTECT UNTIL CONSTRUCTION CLEANUP WITHIN EACH AREA IS COMPLETE.

CITY OF PHOENIX **OFFICE OF THE CITY ENGINEER** HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number

057.8221.100 Description **ELECTRICAL SPECIFICATIONS**

Scale

KEYNOTES: #

INDOOR UNIT POWERED FROM OUTDOOR UNIT. DISCONNECT PROVIDE BY MANUFACTURER.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description ELECTRICAL ENLARGED PLANS Scale 1/4" = 1'-0"

E2.01.CE

ELECTRICAL F	AULT CURREN	IT SCHEI
ITEM	VOLTAGE	MAINS RATING / RATING
L►SES	480/277V, 3Ø4W	2,000 A MCC
L►XFMR M	480/277:120/208V, 3Ø4W	500 kVA
L► MA	120/208V, 3Ø4W	800 A MCB

MOUNTING: SURFACE

FED FROM: 800 A/3P @ XFMR M

ENCLOSURE: NEMA 1

ĸ					\	NIR	=		
EY		I OAD DESCRIPTION		P P	н	SIZE	G	VD	
• 	1	EXISTING R-N1	100 A	3				70	0
	3								
	5								
	7	EXISTING R-N2	100 A	3					C
	9								
	11								
	13	EXISTING R-N3	100 A	3					
	15	-							
	17	 EXISTING R-N4	100 A	3					C
	21								
	23								
	25	EXISTING R-N5	100 A	3					0
-	27								
	29								
	31	EXISTING R-N6	100 A	3					0
	33								
	35								
	37	EXISTING R-N7	100 A	3					0
	39								
-	41								
-	43	EXISTING R-N10	100 A	3					0
-	45								
-	47								
-	49	EXISTING R-N20	100 A	3					0
-	51								<u> </u>
-	53								
-	55	EXISTING R-N19	100 A	2					
-	50		 100 A						
-	61		100 A	2					0
_	63	 EXISTING R-S9	 100 A	2					
	65								
-	67	EXISTING R-S21	100 A	2					0
-	69								
-	71	EXISTING PANEL MD	100 A	3					
-	73								0
-	75	-							
1	77	SS-1	30 A	2	10		10	1.04	
-	79								1.9
2	81	SS-2	30 A	2	12		12	2	
-	83								
						Т	otal I	_oad:	2.
						То	tal A	mps:	
~				0					DE
		AJJIFICATIUN				155	בט L גייא	UAD	
iah	nting			+	. <i>۲</i>	195	κνΑ (\/Δ		+
iyi er	entacl	les		-	0	364			+
	opiaul			-	0	.50 P	V A		+
									<u> </u>
							<u>, 17 i</u>	015	

NAME CONTROL C	S	CH	ED	UL	Ε																					
Space in the intervent of the set of the se	INS	RATII RATI	NG / X NG	FMR	UP	STREA			R TEF	RWIN		ON			FEEDER	WIRE		ACE		C			ESTIM		SC	
No. No. <td>2,0</td> <td>00 A</td> <td>MCCB</td> <td>3</td> <td>•</td> <td></td> <td></td> <td>2,000</td> <td>A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>EXISTIN</td> <td>G FEEDI</td> <td>ER F</td> <th>S</th> <td></td> <td>96'-0"</td> <td></td> <td>33</td> <td>.21 kA</td> <td></td> <td></td>	2,0	00 A	MCCB	3	•			2,000	A							EXISTIN	G FEEDI	ER F	S		96'-0"		33	.21 kA		
	6	500 k 00 A I	VA MCB					A 000 800 A	\ \				-			2 S (3) \$	SETS OF SETS OF	5 3#3 F 4#			122'-0" 20'-7"	22.69 kA	PRIMARY, 23	25.94 k .16 kA	A SECC	NDAR
I IV	ITNC	FLOA	D, U.N	PA	SOL GR	EL N NGLE - ID NEU OUND	IA TUB JTRAL BUS	-						MAI VOLT PHAS WIR SCC IS	N: 800 A MCB S: 120/208 Wye E: 3 E: 4 R: 42 kA C: 23.16 kA				DISCONNI FU - FUSE NF - NON- CB - CIRC	ECT TYPE: ED FUSED EUIT BREAKER	AND S	TART NOTE: AL	ERS ACCE SA - S *CT - (*EO - *HA - 1 *RP - 1	CHE INECTS SSORIE TANDA CONTRO ELECTF HAND-C RED (RU	EDU (EXCE S & OP RD ACC OL TRAN RONIC C DFF-AUT JN) PILC	TIONS TIONS ESSOI NSFOR VERLO TO IN D OT LIGI
N A B C Note: Size: Properties of the size: Properies of the size: Properties of the properis of the properties of the properties of the properise. Properi																			YD - WYE	- DELTA			* I A - S/N - I	NSULA		UTRAL
- 0	G 	VD %	0	A 0	E	B	C	;	VD %	G 	WIR SIZE N 	E E H 	0 P 3 	CPD AMPS 100 A	EXISTING R-S1	RIPTION	CKT NO. 2 4	K E Y 	RE - REVE TW - 2 SP SW - 2 SP RV - REDU SS - SOLII	ERSING EED, 2 WINDING EED, 1 WINDING JCED VOLTAGE A D STATE	UTOXFMR					
	 		0	0	0	0	0	0	 	 	 	 	 3 	 100 A 	 A EXISTING R-S2 		6 8 10 12	 	MS - MAN MX - MAN FS - FUSE AMS-ASSE	UAL STARTER UAL SWITCH ED SWITCH EMBI ED MOTOR S	STARTER					
- -	 		0	0	0	0	0	0		 	 	 	3 3	100 A 100 A	A EXISTING R-S3 A EXISTING R-S4		14 16 18 20	 		DISCONNECT TYPE & RATING			STA NEMA	RTER		
- - 0 0 - - - 28 - - 0 <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>22 24</td> <td></td> <th>ITEM FDS-SS-2</th> <td>FU 30 A</td> <td>S VOLTAG 208 V</td> <td>E POLES</td> <td>SIZE</td> <td>TYP</td> <td>E ENG</td> <td>CLOSU</td>					0	0	0	0									22 24		ITEM FDS-SS-2	FU 30 A	S VOLTAG 208 V	E POLES	SIZE	TYP	E ENG	CLOSU
Image: bit is bit bit bit is bit is bit bit bit is bit is bit is bit b			0	0	0	0							3	100 A	EXISTING R-S5		26 28									
			0	0			0	0									30									
			0	0	0	0											34			UMINAIR	E SCH	IEDUL	E			
- -			0	0			0	0					 3	 100 A	 A EXISTING R-S7		36 38		(DESC) DOO		C					BEA
- 0 0 -					0	0	0	0									40		FS - F	LAT STEEL		- ANSI/IES	TYPE 3 DI	STRIBU	JTION	SP ·
			0	0	0	0	-						3	100 A	EXISTING R-S10		44		RA - R RS - R	REGRESSED ALUN REGRESSED STEE	AINUM IN EL V	/ - ANSI/IES - ANSI/IES	TYPE 4 D TYPE 5 DI	ISTRIBL STRIBU	JTION TION	MD WD
					0	0	0	0									40		FINIS							VW
- - - - - - - - - - 54 - - - 0 <td></td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> <td>100 A</td> <td>EXISTING R-S14</td> <td></td> <td>50 52</td> <td></td> <th>CFSA</th> <td>- COLOR-FINISH</td> <td>SELECTION</td> <td>BY ARCHIT</td> <td>ECT</td> <td></td> <td></td> <td>VV VV</td>			0	0	0	0							3	100 A	EXISTING R-S14		50 52		CFSA	- COLOR-FINISH	SELECTION	BY ARCHIT	ECT			VV VV
- -			0	0			0	0									54		(MTG) MOUN	ITING:	F		SED			
- -			0	0	0	0											58		CV - C	COVE	S	U - SURFAC	CE			
- - 0 0 - - - - 64 - - 0 0 0 - - - - 66 - - 0 0 - - - - - 66 - - 0 0 - - - 3 100 A EXISTING R-S18 68 - - 0 0 0 - - - 3 100 A EXISTING R-S18 68 - - 0 0 0 - - - - - - 72 - - 0 0 - - - - - - 72 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74 - 74<			0	0			0	0					 3	 100 A	 A EXISTING R-S17		60 62		FR-F	LANGED RECESS	SED L	C - UNDER	CABINET			
- - - - - - - - - - - - 00 0 - - - - - 00 0 - - - - - 00 0 - - - - - - 00 0 - - - - - - 00 0 - - - - - - - 70 - - - - - - 772 - - - - - - - 772 - - - - - - - - 772 - <					0	0		0									64		PL - P	OLE	C	- OTHER (SEE DESC	RIPTIO	N)	
			0	0			U	U					3	 100 /	 A EXISTING R-S18		68		(TYPE) DRIV	ER: - 0-10V DIMMING	F	B - ELECTR	ONIC			HI.
Image: book with the set of the set					0	0	0	0									70 72		DALI -	DIGITAL ADDRES	SABLE E	LV - ELECT	RONIC LO		TAGE	LIN
Image: bold bold bold bold bold bold bold bold			0	0			-	-					3	100 A	EXISTING R-S22		74		DMX - CATALOG NI	DIGITAL MULTIPI	LEX E	M - EMERG	ENCY BAT	TERY	TERIAL	ML · SHALL
1.91 0.36 0.36 0.63 12	 10	 1.04			0	0	1.91	0									76		AND THE SP LISTED IS TH	ECIFICATION SHA	ALL BE COO IGN.	RDINATED	WITH THE	CATAL	OG NUN	/BER T
al Amps: 19.27 16.87 30.13 al Amps: 19.27 16.87 30.13 LOAD SUMMARY ED LOAD DEMAND FACTOR ESTIMATED DEMAND TOTALS* VA 100.00% 7.155 kVA TOTAL CONNECTED LOAD: 7.88 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA E TOTAL CONNECTED LOAD:: 7.875 kVA DESCRIPTION L/L MTG WATT VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA B 4' UNIVERSAL MOUNTED STRIP LIGHT. SU 48 W FIX X1 COMBINATION EXIT SIGN/EM UNIT WL 5 W	 12 tal L	 2 oad:	2.27	0.36 kVA	2.02	0.36 kVA	1.66	 kVA	0.63	12 12 	12 12 	12 12 	1 1 1	20 A 20 A 	LTG - ROOF ENCLOSU RCPT - IDF ROOM/LOV SPACE	JRE W ROOF	80 82 84	2 2 	VERIFY AND CONFIRM AL UNLESS IND LUMINAIRE M	COORDINATE AL L COLORS AND F ICATED ON LIGHT MOUNTING HEIGH	L CEILING T INISHES OF ING PLANS ITS.	YPES WITH ALL LUMIN OR BELOW	I LUMINAII IAIRE COM /, REFER 1	RE MOL IPONEN O ARC	INTING ITS WIT HITECT	AND TI TH ARC URAL A
INTERIOR CORRELATED COLOR TEMPERATURE 3500K, COLOR RENDERING INDEX DLOAD DEMAND FACTOR ESTIMATED DEMAND TOTALS* VA 100.00% 7.155 kVA TOTAL CONNECTED LOAD: 7.88 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA VA 100.00% 0.36 kVA TOTAL ESTIMATED DEMAND AMPS: 21.9 A X1 COMBINATION EXIT SIGN/EM UNIT WL 5 W	al A	nps:	19.	.27	16	.87	30.	.13			_								REFER TO S	PECIFICATION SE	ECTIONS [LE	DLIGHTIN	G 26 51 19]	[AND E	MERGE	ENCY L
TOTALS* TOTALS* TOTALS* MIT MIT MIT MIT MIT VA 100.00% 0.36 kVA TOTAL CONNECTED LOAD: 7.88 kVA 7.875 kVA ANSI	DL	DAD	DEMA		AD SU	JMMA	RY TIMAT		EMAN	ID											OR TEMPER	ATURE 350				
VA 100.00 // 0.30 KVA TOTAL CONNECTED LOAD. 7.80 KVA VA 100.00 // 0.36 kVA TOTAL ESTIMATED DEMAND LOAD: 7.875 kVA Image: Connected AMPS: 21.86 A 21.9 A X1 COMBINATION EXIT SIGN/EM UNIT VL MTG VA	<va< td=""><td></td><td>/</td><td>100.00</td><td>)%)%</td><td></td><td>7.1</td><td>155 kV</td><td>A</td><td></td><td>יסד</td><td>ГЛІ (</td><td>201</td><td>NECTO</td><td>TOTALS*</td><td>7 90 1//</td><td></td><td></td><th></th><td></td><td></td><td></td><td></td><td></td><td>ΔΝς</td><td></td></va<>		/	100.00)%)%		7.1	155 kV	A		יסד	ГЛІ (201	NECTO	TOTALS*	7 90 1//									ΔΝς	
IDIAL CONNECTED AWPS: 21.80 A IDIAL CONNECTED AWPS: 21.9 A X1 COMBINATION EXIT SIGN/EM UNIT WL 5 W	VA			100.00)%		0.	36 kV/	۰ ۱		TO		STI	MATE	DEMAND LOAD:	7.875 kVA			B 4' UN	DESC	ED STRIP L	GHT.	L/L	MTG SU	WATT 48 W	S PE
											TOT		STI	MATE	DEMAND AMPS:	21.80 A 21.9 A			X1 COM	BINATION EXITS	IGN/EM LINI	Г	_	WI	5 W	_

1) RISER DIAGRAM

	SCCR	LEVEL	LOCATION	COMMENTS
	42 kA	LEVEL 01		
ARY		LEVEL 01		
	42 kA	LEVEL 01		

MANUAL STARTERS) SHAL	L BE HEAVY DUTY TYPE.
NS	
SORIES (INCLUDES * ITEMS	PF - PHASE LOSS PROTECTION (5 HP OR GREATER, 3 PHASE
ORMER, FUSED 120V	TO - MELTING THERMAL OVERLOADS (1 PHASE)
RLOAD (3 PHASE MOTORS)	TS - 2 SPEED SELECTOR SWITCH IN DOOR
N DOOR	GP - GREEN (OFF) PILOT LIGHT IN DOOR
LIGHT IN DOOR	FA - 4-CONVERTIBLE AUXILIARY CONTACTS
E AUXILIARY CONTACTS	EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C.
RAL ASSEMBLY	SS - START-STOP PUSHBUTTON IN DOOR
	HL - HANDLE PADLOCK HASP
REQUIRED ACCESSORIES & OSURE OPTIONS	COMMENTS

BEAMW	/IDTH:		(L/L) LENS/LOUVER		K19 - KSH19 .156" ACRYLIC
NSP - V	ERY NA	RROW S	SPOT A	125" ACRYLIC		M - MATTE DIFFUSE CLEAR
SP - SP	от		B - E	BAFFLE/LOUVER		N - NONE
MD - ME	DIUM		C - 0	CLEAR ALZAK		P - POLYCARBONATE
WD - W	IDE		F - F	ROSTED ACRYL	IC	R - HIGH IMPACT DR ACRYLIC
vwd - \	/ERY WI	DE	G - ⁻	EMPERED GLAS	SS	SS - SEMI-SPECULAR CLEAR
WW - W	ALL WA	SH	K - ł	(SH12 .125" ACR	YLIC	O - OTHER (SEE DESCRIPTION)
						[DESIGN SPECIFIC BLANKS]
			(WA	TT) PER:	FIX - FIX	TURE, FT - FOOT, LAMP
			(TYI	PE) LED		RGB - COLOR CHANGING LED
			LED	- LIGHT EMITTIN	IG DIOD	E RGBW - COLOR CHANGING + WHITE
			TLE	D - TUBULAR LE	D LAMP	RGBA - COLOR CHANGING + AMBER
			OLE	D - ORGANIC LE	D	RLED - RETROFIT LED
			DLE	D - DYNAMIC TU	NABLE I	ED WLED - WARM DIM LED
			L			
HL - HIG	GH/LOW	(100%/5	0%) STE			MV - MULTI-VOLTAGE ELECTRONIC
LINE - L	INE VOL	TAGE D	IMMING			REM - REMOTE
ML - ML	ILTI-LEV	EL SWI	TCHING			O - OTHER (SEE DESCRIPTION)
ALL NO R TO D	T BE OF ETERMI	NE THE	BY MANUFACT EXACT MATER	URER AND CATA	ALOG NU SORIES	JMBER ONLY. THE COMPLETE DESCRIPTION TO BE ORDERED. THE FIRST MANUFACTURER
) TRIM (RCHITI AL AND	REQUIR ECT ANI INTERIC	EMENT D INTER DR DESI	S PRIOR TO TH IOR DESIGNER GN ELEVATION	E RELEASE OF T PRIOR TO THE F S, SECTIONS AN	THE LUM RELEASE ID DETA	IINAIRE ORDER. E OF THE LUMINAIRE ORDER. ILS FOR ALL SUSPENDED AND WALL MOUNTE[
Y LIGH EX (CR	TING IN I) AT OR	VERTER ABOVE	26 52 15] FOR / 80, UNLESS NO	ADDITIONAL INF	ORMATI SE.	ON AND REQUIREMENTS.
Т		LE	Ð	DRIVER	<u> </u>	
PER	TYPF	ΟΤΥ	DELIVERED LUMENS (MIN)		TYPF	
	LED	1	7000 LM	120 V	0-10V	LITHONIA LIGHTING.
						ZL1D-L48-7000LM-FST-MVOLT-35K-80CRI-WH

120 V

EM HALCO LIGHTING, EMG-EXC-WH-RG-RC, EV-RH-2-IND

LED 0 L.E.D.

170 LM

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description ELECTRICAL ONE-LINE & SCHEDULES Scale 12" = 1'-0" E4.01.CE

VIEW KEY			ELEC.	TRICAL	SYMBOL LIST	
	SYMB	OL:	TAG:	SPEC SECTION:	DESCRIPTION:	
ABOUT WORK REQUIRED, SPECIFIC	GB		<u>GB</u>	26 05 26	GROUND BUS	
	IBT]	<u>IBT</u>	26 05 26	INTERSYSTEM BONDING TERMI	NATION
INDICATES DIRECTION OF TRUE NORTH	E		<u>ECONN</u>	26 05 33	ELECTRICAL CONNECTION	
	J		JB	26 05 33	JUNCTION BOX	
IEVV NAME		г	<u>PANEL '###'</u>	26 24 16	PANELBOARD - RECESS MOUN	Т
PLAN OR DETAIL SCALE		I	<u>PANEL '###'</u>	26 24 16	PANELBOARD - SURFACE MOUI	ЛТ
CATES SIMILAR DETAIL REFERENCED]	<u>TR-#/DTR-#</u>	26 22 00	TRANSFORMER. REFER TO TRANSFORMER SCHEDULE	
AIL REFERRED TO BY SECTION CUT		I	<u>DS-#/FDS-#/DSS-#</u>	26 28 16	DISCONNECT SWITCH FUSED DISCONNECT SWITCH. REFER TO DISC/STA SCHEDULE	E
			REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V	
R (WIDE LINE)	— — —		REC-SIM-620R	26 27 26	RECEPTACLE, 6-20R, 250V	
EMOVED (SHORT DASHED PATTERN) R OR UNDERGROUND (LONG DASHED PATTERN)	-#		REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V	
Y OTHERS (NARROW LINE)	\$c		<u>SW-OC-P-O</u>	26 09 33	SWITCH - OCCUPANCY SENSOF WALL SWITCH	र
EMOVED BY OTHERS (SHORT DASHED PATTERN) LOOR OR UNDERGROUND (LONG DASHED PATTERN)	S		<u>SW-1P</u>	26 09 33	SWITCH - SINGLE POLE	
SCOPE.			ELECTRI	CAL EQ	UIPMENT TAGS	
E' INDICATES THE REFERENCED OBJECT IS EXISTING	TAG:	DES	CRIPTION:			REL
INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL	СТ-#	CABL		26 0		
STING SYSTEM'S POINT OF CONNECTION/REMOVAL	<u>DP-#</u>	DP-# DISTRIBUTION				26 2
	DTR-#	TRANSFORMER - DISTRIBUTION TYPE REFER TO TRANSFORMER SCHEDUI F				26 1

IATION T	TH TO 1. 2. 3. 4. 5.	ESE NOTES , LIGHTING, EXISTING C SURVEYS, CONDITION NOT ALL EX SHALL REV CONTRACT TRAY, BUS NECESSAR ELECTRICA TO THE AR AND ROOF PATCHING, COORDINA WHERE EX EQUIPMEN ARRANGE NOT CONF ALLOW FO	APPLY 1 POWER CONDITIC EXISTING IS AND F KISTING (IEW EXI TOR SHA WAY, CO RY BECA LONT EAS OF ALCONT EAS OF ALCONT RING WI ISTING F T, PIPING NEW EQ LICT WI R INSTA
	TH TO 1. 2. 3. 4.	ESE NOTES , LIGHTING, REFER TO FOR CONC DEPICT TH TECHNOLC REQUIREM REVIEW PF WITH AFFE PROVIDE T SYSTEMS, PROJECT.	EL POWER ARCHIT ARCHIT URRENT E INTEN OGY DRA ENTS O ROJECT CTED AI EMPORA ETC. AS
RELATED SPECIFICATION			CON
26 05 36		ABBR:	DES
26 24 16			

C.C.

C.M.

E.C.

G.C.

M.C.

26 12 19

T.C.	TEC
	EL
ABBR:	DE
ABV	ABC
AFC	ABC
AFF	ABC
С	CON
CO	CON
EG	EQL
EGC	EQL
ITR	IT R
NEMA #	NEM
SM	SUR
TYP	TYP
UG	UNE
UON	UNL

CONTRACTOR SH
BUILDING CODE:
FIRE CODE:
PLUMBING CODE:
MECHANICAL CODE:
ELECTRICAL CODE:
ENERGY CONSERVATION
HEALTH DEPARTMENT C
LOCAL BUILDING CODE:

ELECTRICAL RENOVATION NOTES:

- (TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED R, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS. FIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD NG BUILDING DOCUMENTS. CONTRACTOR SHALL REVIEW EXISTING REPORT CONFLICTS. G EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. CONTRACTOR XISTING CONDITIONS AND REPORT CONFLICTS. HALL REVIEW EXISTING CONDITIONS PRIOR TO FABRICATION OF CABLE CONDUIT RACKS, AND OTHER SYSTEMS. RISES AND DROPS MAY BE AUSE OF EXISTING FIELD CONDITIONS. ITRACTOR SHALL REVIEW EXISTING CONDITIONS TO VERIFY ACCESSIBILITY
- THEIR WORK INCLUDING WALLS, FLOOR, CEILINGS, CEILING TILES/GRID, TRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CUTTING, REMOVAL, EINSTALLATION OF AFFECTED AREAS ASSOCIATED WITH THEIR WORK BY (ITH THE GENERAL CONTRACTOR OR QUALIFIED CONTRACTOR. ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW IG, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER QUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES ITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

LECTRICAL PHASING NOTES:

- Y TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED ER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS. ITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. ITECT'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND NT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS ENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND RAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE
- OF THE PHASING CRITERIA. CT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. DADJACENT AREAS.
- RARY LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF

NTRACTOR ABBREVIATION KEY

SCRIPTION:

- CIVIL CONTRACTOR
- ELECTRICAL CONTRACTOR
- GENERAL CONTRACTOR
- CHNOLOGY CONTRACTOR

LECTRICAL ABBREVIATION KEY

- SCRIPTION:
- OVE
- OVE FINISHED FLOOR
- ONDUIT (BRANCH CIRCUIT OR FEEDER CONTEXT)
- NDUIT AND BOX ROUGH-IN ONLY (ROUGH-IN ONLY) UIPMENT GROUND
- UIPMENT GROUND
- RACK MOUNTED RECEPTACLE
- MA RATING
- RFACE MOUNTED
- DERGROUND LESS OTHERWISE NOTED

APPLICABLE CODES

OR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

CURRENT EDITION

IBC 2018 EDITION IFC 2018 EDITION IPC 2018 EDITION IPC 2018 EDITION DE: IMC 2018 EDITION E: NFPA 70 (NEC) 2017 EDITION VATION CODE: IECC 2018 MENT CODE: CURRENT EDITION

ELECTRICAL INSTALLATION NOTES:

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
- 2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH
- PHASE.
 3. EMERGENCY BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.
- FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED.
 FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT
- EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE.
 6. CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO
- BE INSTALLED.
 7. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
 8. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED
- FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
 9. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS, CARBON MONOXIDE DETECTORS, AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. CARBON MONOXIDE DETECTORS SHALL BE LOCATED 10 PLUS FT FROM FIRE PLACES, COOKING, AND SIMILAR FUEL-BURNING APPLIANCES
- CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
 ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF,
- OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR
- SEALED INTO OPENINGS. 13. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE
- IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH. 14. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
- AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
 15. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

RECEPTACLE SUBSCRIPT KEY: DEVICE KEY: DEVICE # = MOUNTING (IF APPLICABLE) 1 = CIRCUIT NUMBER *IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1 ELECTRICAL MOUNTING SUBSCRIPT KEY: MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH MOUNT AT CEILING (DEVICE OR ROUGH-IN CONTEXT) MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK MOUNT IN MODULAR FURNITURE WIRING DEVICE, OCCUPANCY CONTROLLED MOUNT IN SURFACE RACEWAY SURFACE MOUNTED WEATHERPROOF WIRING DEVICE, NEMA 3R WHILE-IN-USE COVER, WR LISTED W WG WIRE GUARD WP WEATHERPROOF **ELECTRICAL SHEET INDEX**

SHEET NUMBER	SHEET NAME	REVISION NUMBER	REVISION NAME	REVISION DATE
E0.00.IT	ELECTRICAL COVERSHEET			
E0.01.IT	ELECTRICAL SPECIFICATIONS			
E2.00.IT	ELECTRICAL ENLARGED PLANS			
E4.00.IT	ELECTRICAL ONE-LINE & SCHEDULES			
GRAND TO	OTAL: 4			•

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date

Description

KIVA #

SDEV #

Note:

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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number

057.8221.100
Description
ELECTRICAL COVERSHEET

Scale As indicated

E0.00.IT

26 05 00 BASIC ELECTRICAL REQUIREMENTS

SCOPE OF WORK THE ASSOCIATED PORTION OF THE ELECTRICAL WORK A FINISHED AND WORKING SYSTEM

CODES AND STANDARDS

CLARIFICATION.

PERMITS AND FEES

AGENCY/CONSULTANT.

UNDERWRITER'S LABORATORIES, INC., OR A NATIONALLY RECOGNIZED TESTING ORGANIZATION.

DRAWINGS

FOUIPMENT

CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING REVIT.

CONDUCTORS, WIREWAYS, BUS DUCT, FITTINGS, ETC.

SUBMITTALS

DRAWING FOR REVIEW BY THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR MANUFACTURE OR SHIPMENT.

SPECIFIC SUBMITTAL REQUIREMENTS.

NETWORK / INTERNET CONNECTED EQUIPMENT

WARRANTY

REQUIREMENTS.

MATERIAL SUBSTITUTION

ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ADDENDUM.

OBSERVATION OF WORK

INSTALLING HARD OR SUSPENDED CEILINGS AND SOFFITS ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE

CEILING, AND ALL WALL PENETRATIONS ARE SEALED.

PROJECT CLOSEOUT

TESTING REPORT BY THE FIRE ALARM SYSTEM MANUFACTURER.

PROVIDE CUSTOM UPDATED/NEW TYPED CIRCUIT DIRECTORY FOR EACH EXISTING/NEW CIRCUIT DIRECTORIES.

OPERATION AND MAINTENANCE INSTRUCTIONS OPERATION AND MAINTENANCE DATA SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR INCLUDED.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW MATERIALS AS INDICATED ON THE DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER, SHALL BE SCHEDULED WITH THE OWNER. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS.

CONFORM TO ALL REQUIREMENTS OF THE CITY OF LOCAL CODES, LAWS, ORDINANCES, AND OTHER REGULATIONS HAVING JURISDICTION OVER THIS INSTALLATION. CONFORM TO ALL PUBLISHED STANDARDS OF NATIONAL ELECTRICAL CODE NEC. IF THE CONTRACTOR NOTES. AT THE TIME OF BIDDING. THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES OR REGULATIONS, CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING, REQUESTING A

PROCURE ALL APPLICABLE PERMITS AND LICENSES. ABIDE BY LOCAL AND STATE LAWS. REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES. PAY ALL FEES AND TAXES IMPOSED BY STATE. MUNICIPAL. AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED

WHERE APPLICABLE, ALL FIXTURES, EQUIPMENT AND MATERIALS SHALL BE LISTED BY

THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF THE WORK AND TO INDICATE THE GENERAL ARRANGEMENTS AND LOCATIONS OF EQUIPMENT, OUTLETS, ETC., AND THE APPROXIMATE SIZES OF

CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF EQUIPMENT AND ROUGH-INS. AND THE EXACT ROUTING OF RACEWAYS SO AS TO BEST FIT THE LAYOUT OF THE JOB. CONDUIT ENTRY POINTS FOR ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, PANELBOARDS, SWITCHBOARDS, SWITCHGEAR AND UNIT SUBSTATIONS, SHALL BE DETERMINED BY THE CONTRACTOR UNLESS NOTED IN THE CONTRACT DOCUMENTS.

CONTRACTORS AND SUBCONTRACTORS' MAY REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS. THE ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR PREPARATION OF SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION MAY NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT. VERIFY ALL PERTINENT DIMENSIONS AT THE JOB SITE BEFORE ORDERING ANY CONDUIT,

SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE SPECIFICATIONS OR ON THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF EACH SHOP

THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS. SUCH AS PANELBOARDS, FIRE ALARM, LIGHTING, OR MOTOR CONTROL. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER. WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET. CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK. REFER TO SUBSECTIONS FOR

THESE SPECIFICATIONS MAY REQUIRE CERTAIN EQUIPMENT OR SYSTEMS TO HAVE NETWORK, INTERNET AND/OR REMOTE ACCESS CAPABILITY ("NETWORK CAPABILITY"). ANY

REQUIREMENT FOR NETWORK CAPABILITY SHALL BE INTERPRETED ONLY AS A FUNCTIONAL CAPABILITY AND IS NOT TO BE CONSTRUED AS AUTHORITY TO CONNECT OR ENABLE ANY NETWORK CAPABILITY. NETWORK CAPABILITY MAY ONLY BE CONNECTED OR ENABLED WITH THE EXPRESS WRITTEN CONSENT OF THE OWNER.

PROVIDE MINIMUM ONE-YEAR WARRANTY FOR ALL FIXTURES, EQUIPMENT, MATERIALS, AND WORKMANSHIP. REFER TO SUBSECTIONS FOR ADDITIONAL WARRANTY

WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND FIT IN THE ALLOCATED SPACE. THE

ANY MATERIAL, ARTICLE, OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE USED IF APPROVAL IS SECURED IN WRITING FROM THE ARCHITECT/ENGINEER VIA

THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS AND CHASES AND

ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES BUT IS NOT LIMITED TO: ALL JUNCTION BOXES ARE CLOSED AND IDENTIFIED (CONDUIT INCLUDED) IN ACCORDANCE WITH ELECTRICAL IDENTIFICATION, FIRE ALARM JUNCTION BOXES ARE PAINTED RED. LUMINAIRES INCLUDING EXIT AND EMERGENCY FIXTURES ARE INSTALLED AND OPERATIONAL, FLEXIBLE CONDUIT IS SUPPORTED ABOVE AND INDEPENDENTLY OF THE

IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT THE JOB IS READY FOR THE FINAL JOBSITE OBSERVATION.

SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS, RECORD DOCUMENTS. SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, INSPECTION AND

BRANCH CIRCUIT PANELBOARD INCLUDED IN THE SCOPE OF WORK. LABEL SHALL INCLUDED EQUIPMENT NAME OR FINAL APPROVED ROOM NAME, ROOM NUMBER, AND LOAD TYPE FOR EACH CIRCUIT (EXAMPLES: SUMP PUMP SP-1 OR ROOM 101 RECEPT). PRINTED COPIES OF THE BID DOCUMENT PANEL SCHEDULES ARE NOT ACCEPTABLE AS

THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS. INSTRUCTION BOOKS, CARDS, AND MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE PROVIDE BOUND MANUALS WITH COPIES OF APPROVED SHOP DRAWINGS WITH TITLE PAGE AND INDEX SYSTEM SIMILAR TO OPERATION AND MAINTENANCE MANUAL. RECORD DOCUMENTS

MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF ELECTRICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS, CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS, AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME.

CLEANING THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL, DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING CONSTRUCTION FROM THE PREMISES.

26 05 03 THROUGH PENETRATION FIRESTOPPING QUALITY ASSURANCE

MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION.

INSTALLER: INDIVIDUALS PERFORMING WORK SHALL BE CERTIFIED BY THE MANUFACTURER OF THE SYSTEM SELECTED FOR INSTALLATION. PERFORMANCE REQUIREMENTS

THROUGH-PENETRATION FIRESTOP SYSTEMS WITH RATINGS DETERMINED PER UL 1479. PROVIDE AT FIRE-RESISTANCE-RATED WALLS INCLUDING FIRE PARTITIONS, FIRE BARRIERS, AND SMOKE BARRIERS.

PROVIDE AT FIRE-RESISTANCE-RATED HORIZONTAL ASSEMBLIES INCLUDING FLOORS. FLOOR/CEILING ASSEMBLIES, AND CEILING MEMBRANES OF ROOF/CEILING ASSEMBLIES. FOR FIRESTOP SYSTEMS EXPOSED TO LIGHT. TRAFFIC. MOISTURE. OR PHYSICAL DAMAGE.

PROVIDE PRODUCTS THAT, AFTER CURING, DO NOT DETERIORATE WHEN EXPOSED TO THESE CONDITIONS BOTH DURING AND AFTER CONSTRUCTION. FOR FIRESTOP SYSTEMS EXPOSED TO VIEW. PROVIDE PRODUCTS WITH FLAME-SPREAD

AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 450, AS DETERMINED PER ASTM E 84.

FOR FIRESTOP SYSTEMS IN AIR PLENUMS, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 50, AS DETERMINED PER ASTM E 84. WARRANTY

WARRANTY SHALL COVER REPAIR OR REPLACEMENT OF FIRESTOP SYSTEMS WHICH FAIL IN JOINT ADHESION, COHESION, ABRASION RESISTANCE, WEATHER RESISTANCE, EXTRUSION RESISTANCE, MIGRATION RESISTANCE, STAIN RESISTANCE, GENERAL DURABILITY, OR APPEAR TO DETERIORATE IN ANY MANNER NOT CLEARLY SPECIFIED BY THE MANUFACTURER AS AN INHERENT QUALITY OF THE MATERIAL

APPROVED MANUFACTURERS 3M, HILTI, RECTORSEAL METACAULK, TREMCO, JOHNS-MANVILLE, sti, SPEC SEAL, AD, LEGRAND FLAMESTOPPER.

PRODUCTS ALL FIRESTOPPING MATERIALS SHALL BE FREE OF ASBESTOS, LEAD, PCB'S, AND OTHER MATERIALS THAT WOULD REQUIRE HAZARDOUS WASTE REMOVAL.

FIRESTOPPING SHALL BE FLEXIBLE TO ALLOW FOR NORMAL PENETRATING ITEM MOVEMENT DUE TO EXPANSION AND CONTRACTION. PROVIDE FIRESTOPPING SYSTEMS CAPABLE OF SUPPORTING FLOOR LOADS WHERE

SYSTEMS ARE EXPOSED TO POSSIBLE FLOOR LOADING OR TRAFFIC. PROVIDE FIRESTOPPING SYSTEMS CLASSIFIED BY UL OR LISTED BY WARNOCK HERSEY FOR PENETRATIONS THROUGH ALL FIRE RATED CONSTRUCTION, FIRESTOPPING SYSTEMS SHALL BE SELECTED FROM THE UL OR LISTED BY WARNOCK HERSEY FIRE RESISTANCE DIRECTORY CATEGORY XHEZ BASED ON SUBSTRATE CONSTRUCTION AND PENETRATING ITEM SIZE AND MATERIAL.

IN EXISTING CONSTRUCTION, PROVIDE FIRESTOPPING OF OPENINGS PRIOR TO AND AFTER INSTALLATION OF PENETRATING ITEMS. CLEAN EXCESS FILL MATERIALS ADJACENT TO OPENINGS AS WORK PROGRESSES BY

METHODS AND WITH CLEANING MATERIALS THAT ARE APPROVED IN WRITING BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURERS AND THAT DO NOT CAUSE DAMAGE

ALL PENETRATIONS SHALL BE INSPECTED BY THE MANUFACTURER'S REPRESENTATIVE TO ENSURE PROPER INSTALLATION. PROVIDE AND INSTALL LABELS ADJACENT TO EACH FIRESTOPPING LOCATION. LABEL

SHALL BE PROVIDED BY THE FIRESTOP SYSTEM SUPPLIER AND CONTAIN THE FOLLOWING INFORMATION IN A CONTRASTING COLOR: 1. THE WORDS "WARNING - THROUGH PENETRATION FIRESTOP SYSTEM - DO NOT

DISTURB. NOTIFY BUILDING MANAGEMENT OF ANY DAMAGE." 2. FIRESTOP SYSTEM SUPPLIER: UL OR LISTED BY INTERTEK / WARNOCK HERSEY SYSTEM NUMBER; DATE INSTALLED; CONTRACTOR NAME AND PHONE NUMBER; MANUFACTURER'S REPRESENTATIVE NAME. ADDRESS. AND PHONE NUMBER. 26 05 05 ELECTRICAL DEMOLITION FOR REMODELING

THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS.

WHERE WALLS, CEILINGS, STRUCTURES, ETC., ARE INDICATED AS BEING REMOVED ON GENERAL OR ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ELECTRICAL EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING, SYSTEMS, ETC., FROM THE REMOVED AREA.

WHERE CEILINGS, WALLS, STRUCTURES, ETC., ARE TEMPORARILY REMOVED AND REPLACED BY OTHERS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, STORAGE, AND REPLACEMENT OF EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING, SYSTEMS, ETC.

26 05 13 WIRE AND CABLE

FEEDERS AND BRANCH CIRCUITS 8 AWG AND LARGER SHALL BE COPPER, STRANDED, 600 VOLT INSULATION, THHN. UNDERGROUND OR IN SLABS ON GRADE SHALL BE THWN or XHHW-2.

FEEDERS AND BRANCH CIRCUITS 10 AWG AND SMALLER: COPPER, SOLID OR STRANDED, 600 VOLT INSULATION, THHN/THWN. NOTED ON THE DRAWINGS. MINIMUM SIZE #12 AWG. USE # 10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET, AND FOR 20 AMPERE, 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.

ALL WIRES IN OUTLET BOXES NOT CONNECTED TO FIXTURES OR OTHER DEVICES SHALL BE ROLLED UP, SPLICED IF CONTINUITY OF CIRCUIT IS REQUIRED, AND INSULATED. 26 05 26 GROUNDING AND BONDING

COMPLY WITH UL 467 GROUNDING AND BONDING EQUIPMENT.

CONDUCTORS SHALL BE COPPER IN ACCORDANCE WITH 26 05 13. CONNECTORS SHALL BE HYDRAULIC COMPRESSION TYPE OR EXOTHERMIC-WELDED TYPE.

EQUIPMENT GROUNDING

INSTALL EQUIPMENT GROUNDING CONDUCTORS IN ALL FEEDERS AND CIRCUITS.

BONDING

FIELD QUALITY CONTROL

GROUND RESISTANCE.

CONDUIT SLEEVES

AND COUNTER FLASHED. 26 05 33 CONDUIT AND BOXES CONDUIT ACCEPTABLE CONDUIT MANUFACTURERS: ALLIED, LTV, STEELDUCT, WHEATLAND TUBE

CO, O-Z GEDNEY. KILLARK

EMT AND IMC CONDUIT FITTINGS SHALL BE COMPRESSION STEEL SET-SCREW TYPE. CONDUIT AND CONDUCTOR SIZING SHALL BE COORDINATED TO LIMIT CONDUCTOR FILL TO LESS THAN 40%, MAINTAIN CONDUCTOR AMPERE CAPACITY AS REQUIRED BY THE NATIONAL ELECTRICAL CODE

BOXES

FLUSH WITH FINISHED WALL LINE.

INDICATING LOAD SERVED. CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS: 208Y/120 VOLT, 4 WIRE:

A_PHASE - BLACK B PHASE - RED C PHASE - BLUE **NEUTRAL - WHITE GROUND BOND - GREEN**

THE ONE-LINE DIAGRAM.

OPERATIONAL SYSTEM.

EQUIPMENT GROUNDING CONDUCTORS: INSULATED WITH GREEN-COLORED INSULATION. ISOLATED GROUND CONDUCTORS SHALL BE INSULATED WITH GREEN-COLORED INSULATION WITH YELLOW STRIPE.

BONDING CONDUCTORS SHALL BE NO. 6 AWG, STRANDED COPPER CONDUCTOR. BONDING JUMPER SHALL BE BARE COPPER TAPE, TERMINATED WITH COPPER FERRULES. BOND TO COLUMNS OR BEAMS AT BUILDING EXPANSION JOINTS.

ISOLATE DESIGNATED EQUIPMENT ENCLOSURES VIA BONDING JUMPER. BOND TO METALLIC WATER PIPE USING A SUITABLE GROUND CLAMP AT STREET SIDE OF

FLANGE AND PROVIDE BONDING JUMPER AROUND WATER METER. FOR TELEPHONE, ALARM, VOICE AND DATA, AND OTHER COMMUNICATION SYSTEMS, PROVIDE NO. 6 AWG INSULATED BONDING CONDUCTOR IN RACEWAY FROM GROUNDING ELECTRODE SYSTEM TO EACH SERVICE AND CENTRAL EQUIPMENT LOCATION.

MEASURE GROUND RESISTANCE FROM SYSTEM NEUTRAL CONNECTION AT SERVICE ENTRANCE TO CONVENIENT GROUND REFERENCE POINTS USING SUITABLE GROUND

TESTING EQUIPMENT. RESISTANCE SHALL NOT EXCEED 5 OHMS. NOTIFY ARCHITECT/ENGINEER PROMPTLY AND INCLUDE RECOMMENDATIONS TO REDUCE PROVIDE GROUND TESTING IN ACCORDANCE WITH IEEE STANDARDS.

26 05 27 SUPPORTING DEVICES

APPROVED MANUFACTURERS: ALLIED, COOPER B-LINE, ERICO, HILTI, POWER FASTENERS. SUPPORT CHANNELS SHALL BE PAINTED STEEL. PROVIDE GALVANIZED OR STAINLESS STEEL FOR WET/DAMP LOCATIONS. ALL HARDWARE TO BE CORROSION RESISTANT.

PENETRATIONS OF ALL SURFACES SHALL BE PROVIDED WITH SLEEVES THAT SHALL BE SEALED WITH LIKE MATERIALS AND SHALL BE FINISHED WITH ESCUTCHEON PLATES. PENETRATIONS BELOW GRADE LEVEL SHALL BE WATERTIGHT. PENETRATIONS AT EXTERIOR WALLS SHALL BE WEATHERPROOF. ROOF PENETRATIONS SHALL BE FLASHED

ACCEPTABLE FITTINGS MANUFACTURERS: APPLETON ELECTRIC, O-Z GEDNEY,

ELECTROLINE, RACO, BRIDGEPORT, MIDWEST, REGAL, THOMAS & BETTS, CROUSE-HINDS,

ELECTRICAL METALLIC TUBING (EMT), MINIMUM 3/4" SHALL BE USED IN FINISHED SPACES FOR ALL BRANCH CIRCUITS, TELECOMMUNICATIONS SYSTEMS PUMP FEEDERS' ELECTRICAL DISTRIBUTION AND PANEL BOARDS.

INTERMEDIATE METALLIC CONDUIT (IMC). MINIMUM 3/4". SHALL BE USED FOR EXPOSED MECHANICAL AND PUMP FEEDERS, AND ELECTRICAL DISTRIBUTION EQUIPMENT. RIGID METALLIC CONDUIT (RMC) SHALL BE USED IN WET OR DAMP LOCATIONS.

HAZARDOUS LOCATIONS SLAB ON-GRADE AND ABOVE-GRADE UNDERGROUND WHERE SUBJECT TO VEHICULAR TRAFFIC. POLYVINYL CHLORIDE (PVC), SCHEDULE 40 SCHEDULE 80, SHALL BE USED IN SLAB ON-

GRADE AND ABOVE-GRADE UNDERGROUND CONCRETE ENCASED WERE SUBJECT TO VEHICULAR TRAFFIC FOR LOW VOLTAGE SERVICE SYSTEMS. FLEXIBLE METALLIC CONDUIT (FMC) SHALL BE USED FOR CONNECTIONS TO MOTORS AND

LIGHT FIXTURES. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) WITH WATERTIGHT FITTINGS SHALL BE USED IN EXTERIOR OR WET/DAMP LOCATIONS. THE LENGTH OF THE CONDUIT SHALL NOT EXCEED 6'.

OUTLET BOXES FOR LUMINAIRES TO BE MINIMUM 1-1/2" DEEP.

CAST BOXES SHALL BE USED IN EXTERIOR LOCATIONS, HAZARDOUS LOCATIONS, WET LOCATIONS, CONCRETE SLAB ON GRADE. RECEPTACLE OUTLET BOXES SHALL BE 4 INCHES SQUARE WITH RAISED COVER TO FIT

GALVANIZED STEEL BOXES MAY BE USED IN CONCEALED OR EXPOSED INTERIOR LOCATIONS, ABOVE CEILINGS, AND MIN RECESSED STUDDED PARTITIONS.

[JB]: PULL AND JUNCTION BOXES, GALVANIZED STEEL, SIZED PER NEC.

26 05 53 ELECTRICAL IDENTIFICATIONS

IDENTIFY ALL EQUIPMENT, SWITCHBOARD CIRCUITS AND ELECTRICALLY- CONNECTED EQUIPMENT WITH ENGRAVED NAMEPLATES. BOXES SHALL BE MARKED WITH PANEL AND CIRCUIT NUMBERS (PERMANENT PEN ACCEPTABLE ABOVE CEILING). NAMEPLATES SHALL

BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED. CONDUCTORS SHALL BE TAGGED WITH CIRCUIT NUMBERS AT SOURCE, JUNCTION BOXES, AND ALL OUTLET BOXES WITH PERMANENT ADHESIVE MARKER STRIP. CONDUIT IDENTIFICATION: SELF-ADHESIVE VINYL LABELS AT 20 FOOT INTERVALS TO IDENTIFY ALL CONDUITS EXPOSED OR LOCATED ABOVE ACCESSIBLE CEILINGS.

WHERE CONDUIT LEAVES A SWITCHBOARD OR PANELBOARD, IDENTIFY EACH CONDUIT

PROVIDE ENGRAVED IDENTIFICATION ON THE FRONT OF ALL POWER DISTRIBUTION AND CONTROL EQUIPMENT. SUCH AS PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, VFD'S, STARTERS, DISCONNECTS, ETC. LABELING SHALL INCLUDE: EQUIPMENT DESIGNATION, VOLTAGE, UPSTREAM SOURCE OF ORIGIN, RATING, AND TYPE OF THE OVERCURRENT PROTECTION DEVICE SERVING THE EQUIPMENT.

A SEPARATE NAMEPLATE FOR THE SERVICE ENTRANCE EQUIPMENT SHALL BE LABELED WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND DATE OF CALCULATION GIVEN ON

26 09 33 LIGHTING CONTROL SYSTEMS

PERFORMANCE STATEMENT: THIS SPECIFICATION SECTION AND THE ACCOMPANYING LIGHTING DESIGN DOCUMENTS DESCRIBE THE MINIMUM MATERIAL QUALITY, REQUIRED FEATURES, AND OPERATIONAL REQUIREMENTS OF THE LIGHTING CONTROL SYSTEM (LCS). THESE DOCUMENTS DO NOT CONVEY EVERY WIRE THAT MUST BE INSTALLED AND EVERY EQUIPMENT CONNECTION THAT MUST BE MADE. BASED ON THE PERFORMANCE REQUIRED OF THE SYSTEM, AS PRESENTED IN THESE DOCUMENTS, THE CONTRACTOR AND SYSTEM MANUFACTURER/VENDOR ARE SOLELY RESPONSIBLE FOR DETERMINING ALL EQUIPMENT, WIRING, AND PROGRAMMING REQUIRED FOR A COMPLETE AND

PROVIDE AN INTEGRATED LIGHTING CONTROLS SYSTEM CONSISTING OF PANELS, POWER SUPPLIES, CONTROLLERS, SENSORS, RELAYS, SWITCHES, DEVICES, WIRING, ETC. NECESSARY TO PERFORM THE LIGHTING CONTROL SEQUENCE OF OPERATION, AS DEFINED ON THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT ALL COMPONENTS AND LUMINAIRES INTEROPERATE AS A SINGLE

SEQUENCE OF OPERATION: DESCRIBES THE REQUIRED OPERATION AND PERFORMANCE FOR LIGHTING CONTROL IN EACH SPACE. SEQUENCES OF OPERATION ARE INDICATED ON THE DRAWINGS.

DRAWINGS: THE DRAWINGS INCLUDE SEQUENCES OF OPERATION, LOCATIONS OF CONTROL INTERFACE DEVICES, SENSORS, AND CONTROL ZONES. WIRING AND ADDITIONAL EQUIPMENT TO MAKE A COMPLETE AND FUNCTIONING SYSTEM HAS NOT BEEN SHOWN BUT SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

SUBMIT SHOP DRAWING PRODUCT DATA INCLUDING ALL DEVICES, FLOOR PLAN DRAWINGS INCLUDING SENSOR COVERAGE AND ACCESSORIES, SUBMIT PROJECT SPECIFIC CONTROL WIRING DIAGRAMS SHOWING ALL EQUIPMENT, LINE VOLTAGE AND CONTROL WIRING REQUIREMENTS FOR ALL COMPONENTS. CONTRACTOR SHALL VERIFY THAT WALL DIMMER RATINGS ARE ACHIEVED WHERE A GANGED INSTALLATION IS USED.

WALL SWITCHES [SW-1P]: SINGLE POLE SWITCH: HUBBELL HBL1221, LEVITON 1221-2, PASS & SEYMOUR PS20AC1, COOPER AH1221. HUBBELL DS120, LEVITON 5621, PASS & SEYMOUR 2621, COOPER 7601.

INDOOR OCCUPANCY AND VACANCY SENSORS OCCUPANCY AND VACANCY SENSORS SHALL HAVE AN ADJUSTABLE OFF TIME DELAY OF 1-30 MINUTES. SENSORS SHALL COMPLY WITH UL773A AND HAVE A 5-YEAR WARRANTY. RELAY UNIT: DRY CONTACTS RATED FOR 20 A BALLAST LOAD AT 120 AND 277 VACS, FOR 13

AMP TUNGSTEN AT 120 VACS, AND FOR 1 HP AT 120 VAC. POWER SUPPLY TO SENSOR SHALL BE 24 V DC, 150-MA, CLASS 2 POWER SOURCE AS DEFINED BY NFPA 70. [SW-OC-D]: DUAL TECHNOLOGY 360 DEGREE COVERAGE PATTERN: APPROVED

MANUFACTURERS: WATTSTOPPER DT 305 SERIES, HUBBELL OMNI-DT2000 OR ATD2000C, GREENGATE OAC-DT, LEVITON OSC##-MOW, SENSOR SWITCH CM PDT 10. 26 27 26 WIRING DEVICES

SUBMIT SHOP DRAWING PRODUCT DATA INCLUDING ALL DEVICES AND ACCESSORIES. ALL SWITCH, RECEPTACLE, OUTLET, AND COVERPLATE COLORS SHALL BE WITH ARCHITECT, UNLESS INDICATED OTHERWISE.

ALL SWITCHES, RECEPTACLES, AND OUTLET FACEPLATES SHALL BE COMPLETE WITH UNBREAKABLE THERMOPLASTIC COVERPLATES IN FINISHED SPACES WHERE WALLS ARE FINISHED. PROVIDE #302 STAINLESS STEEL COVERPLATES IN UNFINISHED SPACES FOR FLUSH BOXES, AND GALVANIZED STEEL COVERPLATES IN UNFINISHED SPACES FOR SURFACE MOUNTED BOXES.

RECEPTACLES

SYSTEM.

REFER TO ELECTRICAL SYMBOLS LIST FOR DEVICE TYPE. [REC-DUP]: NEMA 5-20R DUPLEX RECEPTACLE: HUBBELL 5352A, LEVITON, 5362-S, PASS & SEYMOUR 5362, COOPER 5352.

<u>26 51 00 LIGHTING</u>

SUBMIT PRODUCT DATA SHEETS FOR LUMINAIRES, LED LAMPS, LED LIGHTING ENGINES, DRIVERS, AND POLES. INCLUDE COMPLETE PRODUCT MODEL NUMBER WITH ALL OPTIONS AS SPECIFIED. SUBMITTAL SHALL BE ARRANGED WITH LUMINAIRES LISTED IN ASCENDING ORDER, AND WITH EACH LUMINAIRE'S ASSOCIATED LED LIGHT ENGINE, DRIVER, OR POLE INFORMATION FOLLOWING LUMINAIRE'S PRODUCT DATA.

SUBMIT LIGHTING CONTROL CAPABILITY DATA FOR EACH LUMINAIRE. THE SUBMITTAL SHALL CLEARLY IDENTIFY DEVICE DATA PROPOSED BY THE CONTRACTOR AND APPROVED BY THE LUMINAIRE MANUFACTURER FOR DIMMING, SWITCHING, ADDRESSABLE, WIRELESS, AND SIMILAR CONTROL CHARACTERISTICS.

DELIVER PRODUCTS TO SITE. PROTECT LUMINAIRE FINISHES, LENSES, AND TRIMS FROM DAMAGE DURING STORAGE AND INSTALLATION. DO NOT REMOVE PROTECTIVE FILMS UNTIL CONSTRUCTION CLEANUP WITHIN EACH AREA IS COMPLETE.

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number

057.8221.100 Description

ELECTRICAL SPECIFICATIONS

Scale

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description ELECTRICAL ENLARGED PLANS Scale 1/2" = 1'-0"

E2.00.IT

DI	SCONNI	ECT A	ND ST	ARTE	ER SC	HED	ULE						ED	LUMINAIRE SC	HEDI	JLE							
FU FU NF CE	NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL DISCONNECT TYPE: ACCESSORIES & OPTIONS FU - FUSED SA - STANDARD ACCESSORIES (INCLUDES * ITEMS) NF - NON-FUSED *CT - CONTROL TRANSFORMER, FUSED 120V CB - CIRCUIT BREAKER *EO - ELECTRONIC OVERLOAD (3 PHASE MOTORS) *HA - HAND-OFF-AUTO IN DOOR			BE HEAVY DUTY TY PF - PHASE LOSS F TO - MELTING THE TS - 2 SPEED SELE GP - GREEN (OFF)	(PE. PROTECTION (5 HP RMAL OVERLOADS ECTOR SWITCH IN I PILOT LIGHT IN DC	P OR GREATER, 3 PHASI S (1 PHASE) DOOR DOR		(DESC) DOOR:DISTRIBUTION:FA - FLAT ALUMINUMII - ANSI/IES TYPE 2 DISTRIEFS - FLAT STEELIII - ANSI/IES TYPE 3 DISTRIERA - REGRESSED ALUMINUMIV - ANSI/IES TYPE 4 DISTRIERS - REGRESSED STEELV - ANSI/IES TYPE 5 DISTRIEFINISH:PAF - PAINT AFTER						BEAMWIDTH:(L/L)'NNSP - VERY NARROW SPOTA12DNSP - SPOTB - B/DNMD - MEDIUMC - CDNWD - WIDEF - FFVWD - VERY WIDEG - TWW - WALL WASHK - K									
51 FV YC	- FULL VOLTA	GE			*TA - TV S/N - IN	ED (RUN) VO CONV SULATED	ERTIBLE AUX	IN DOOR (ILIARY CONTACTS SSEMBLY	EI - ELECTRICAL IN SS - START-STOP F	NTERLOCK (2)-N.O. PUSHBUTTON IN D	& (2)-N.C. OOR	(M ⁻	TG) M CI	OUNTING: L - CEILING SURFACE	RE - REC SP - SUSI	ESSED PENDED						(WA (TYF	Ē
RE TV SV	- REVERSING / - 2 SPEED, 2 V / - 2 SPEED, 1 V								HL - HANDLE PADL	LOCK HASP			C ^V FF P	V - COVE R - FLANGED RECESSED - PERIMETER	SU - SUR UC - UND WL - WAL	FACE ER CABINE ⁻ L						LED TLE OLE	- כ ס
RV SS MS	- SOLID STATE - SOLID STATE - MANUAL STA		TOXEMR									(TY	Ρι (PE) D 0-	DE POLE PRIVER: 10V - 0-10V DIMMING ALL- DIGITAL ADDRESSABLE	EB - ELEC				HL - HIG	GH/LOW (1	00%/50%	DLE 6) STE	<u>ן</u>
FS AN	- FUSED SWIT	CH MOTOR ST	ARTER	1										MX - DIGITAL ADDICESSABLE MX - DIGITAL MULTIPLEX G NUMBER SHALL NOT BE COI	EM - EME NSIDERED	RGENCY BA	ATTERY		ML - MU ALL NO	LTI-LEVEL T BE ORD	SWITC	HING Y MANUFACT	_ JI A
I FDS-	Disc 1 F F TEM TYP SS-1	E RATING 30 A	VOLTAGE 208 V	POLES 3	STAR NEMA SIZE	TER TYPE	ENCLOSURE NEMA 3R	E REQUIRED ACCESSORIES & OPTIONS	FUSED PER EQUIPM	COMMENT: MENT MANUFACTUI	S RER NAMEPLATE RATIN	G.	TED I RIFY A NFIRM ILESS	S THE BASIS OF DESIGN. AND COORDINATE ALL CEILING M ALL COLORS AND FINISHES INDICATED ON LIGHTING PLAN RE MOUNTING HEIGHTS.	G TYPES W OF ALL LUI NS OR BEL	ITH LUMINA MINAIRE CC OW, REFER	IRE MOU MPONEN TO ARCI	INTING AN ITS WITH HITECTUF	ID TRIM ARCHITE RAL AND	REQUIRE ECT AND I INTERIOF	MENTS I NTERIO	PRIOR TO THE R DESIGNER N ELEVATION	י וי איך איך
												RE	FER T	O SPECIFICATION SECTIONS R CORRELATED COLOR TEMP	LED LIGHT	ING 26 51 1 3500K, COL	9] [AND E DR REND		CY LIGH DEX (CR	TING INVE I) AT OR A	RTER 20 BOVE 8	6 52 15] FOR A 0, UNLESS NO	 Л
												ІТ	ЕМ	DESCRIPTION		L/L	MTG	ANSI WATTS	TT PER	TYPE		DELIVERED LUMENS (MIN)	_
												A	4	18" LED STRIP LIGHT, BAKED W	HITE ENAI	MEL.	SU	30 W	FIX	LED	1 30	000 LM	

ELECTRICAL	ELECTRICAL FAULT CURRENT SCHEDULE											
		MAINS RATING / XFMR		FEEDER	CIRCUIT							
ITEM	VOLTAGE	RATING	UPSTREAM OCPD OR TERMINATION	WIRE AND RACEWAY	LENGTH	ESTIMATED ISC	SCCR	LEVEL	LOCATION	COMMENTS		
L⊨SES	480/277V, 3Ø4W	2,000 A MCCB	2,000 A	EXISTING FEEDER PER APS	96'-0"	33.21 kA	42 kA	LEVEL 01				
L► XFMR M	480/277:120/208V, 3Ø4W	500 kVA	600 A	2 SETS OF 3#350	122'-0"	22.69 kA PRIMARY, 25.94 kA SECONDARY		LEVEL 01				
L► MA	120/208V, 3Ø4W	800 A MCB	800 A	(3) SETS OF 4#300	20'-7"	23.16 kA	42 kA	LEVEL 01				

										PA	NE		ЛA											
	ENCLOSURE: NEMA 1 FED FROM: 800 A/3P @ XFMR M LOCATION:									SOLID NEUTRAL GROUND BUS										VOLT PHAS WIF SCC IS				
١	NOTES	S: ALL THE EXISTIG CIRCUI	T BREAKI	ER W	/ITH	EXIS	BITN	G LOA	\D, U.1	N.O.														
K E Y	CKT NO.	LOAD DESCRIPTION		PD S P	Н	WIRE SIZE H N G		VD %	Α		В		С		VD %	G	WIRE SIZE N	E H	P	CPD				
	1	EXISTING R-N1	100 A	3					0	0									3	100				
	3										0	0												
	5	 EXISTING R-N2	 100 A						0	0			0	0						100				
	9	-									0	0												
	11												0	0										
	13	EXISTING R-N3	100 A	3					0	0	0	0							3	100				
	17										0	0	0	0										
	19	EXISTING R-N4	100 A	3					0	0									3	100				
	21										0	0	0	0										
	23	 EXISTING R-N5	 100 A						0	0			0	0						100				
	27	-									0	0												
	29												0	0										
	31	EXISTING R-N6	100 A	3					0	0	0	0							3	100				
	35										0	0	0	0										
	37	EXISTING R-N7	100 A	3					0	0									3	100				
	39										0	0	0	0										
	41	 EXISTING R-N10	 100 A						0	0			0	0						100				
	45	-									0	0												
	47												0	0										
	49	EXISTING R-N20	100 A	3					0	0	0	0							3	100				
	53										0	0	0	0										
	55	EXISTING R-N19	100 A	2					0	0									3	100				
	57										0	0												
	59 61	EXISTING R-S8	100 A	2					0	0			0	0						100				
	63	EXISTING R-S9	100 A	2							0	0												
	65												0	0										
	67	EXISTING R-S21	100 A	2					0	0	0	0							3	100				
	71	EXISTING PANEL MD	100 A	3							0	0	0	0										
	73	-							0	0									3	100				
	75										0	0	4.04											
	79		30 A	2	10		10	1.04	1 91	0.36			1.91	0		 12	 12	 12	 1	20.4				
2	81	SS-2	30 A	2	12		12	2	1.01	0.00	1.66	0.36			0.39	12	12	12	1	20 /				
	83												1.66						1					
							otal	Load:	2.27	kVA	2.02	kVA	3.58	kVA										
						10		amps:	19	.21	10.0	57	30	.13										
										LC	DAD SU	MMA	RY											
LO		ASSIFICATION		C				.OAD	DEM	AND F		R ES				١D								
Liah	≺∪ ntina				. <i>۲</i> ۱	. 100),36 I	кvА kVA			100.00)%			36 kV	н 4		тот			IECT				
Rec	eptacl	les			0).36 I	kVA			100.00)%		0.	36 kV	A		тот	AL E	STIN	IATE				
																	тот	AL C	ONN	NECT				
							<u> </u>	045			4411						TOT							
[CIRC	UIT KEY NOTES: 1. IT PROJEC	T SCOPF				EW	BREAK	KER T		CHEX	ISITIN	IG ST	YLE AI				SS		ס. דרו .כ				
		2. ENCLOSU	RE PROJE	ECTS	SCO	PE: F	PRO		NEW E	BREAK	ER TO	MATO	CHEX	ISITIN	G STY	LE /	١ND	AIC	RATI	NGS.				

1_US Vets-Conduit - IDF Rm_(
2027 N 28th Dr/MEP23_22000173.0
Autodesk Docs://057.8221.000 - US Vets - 1:
2024 1:27:19 PM

ENS/LOUVER:		K19 - KSH19 .156" ACRYLIC
" ACRYLIC		M - MATTE DIFFUSE CLEAR
FLE/LOUVER		N - NONE
AR ALZAK		P - POLYCARBONATE
STED ACRYL	.IC	R - HIGH IMPACT DR ACRYLIC
IPERED GLAS	SS	SS - SEMI-SPECULAR CLEAR
112 .125" ACR	YLIC	O - OTHER (SEE DESCRIPTION)
		[DESIGN SPECIFIC BLANKS]
PER:	FIX - FIX	TURE, FT - FOOT, LAMP
LED		RGB - COLOR CHANGING LED
IGHT EMITTIN	IG DIOD	E RGBW - COLOR CHANGING + WHITE
TUBULAR LEI	D LAMP	RGBA - COLOR CHANGING + AMBEF
ORGANIC LE	D	RLED - RETROFIT LED
DYNAMIC TU	NABLE L	ED WLED - WARM DIM LED
		MV - MULTI-VOLTAGE ELECTRONIC REM - REMOTE O - OTHER (SEE DESCRIPTION)
FR AND CATA		
AND ACCESS	SORIES	TO BE ORDERED. THE FIRST MANUFACTUREF
ELEASE OF T IOR TO THE F SECTIONS AN	HE LUM RELEASE D DETA	INAIRE ORDER. E OF THE LUMINAIRE ORDER. ILS FOR ALL SUSPENDED AND WALL MOUNTE
DITIONAL INFO	ORMATIO SE.	ON AND REQUIREMENTS.
DRIVER		
VOLTS	TYPE	MANUFACTURER AND MODEL
120 V	0-10V	
		22172-140-3000Elvi-1 31-1VIVOE1-33K-60CRI-VVH

- SCOPE OF WORK

EXISTING PANEL LOAD FROM RECORD DRAWINGS: 265KVA ADDED LOAD FROM THIS PROJECT: 7.8KVA TOTAL LOAD: 272.8KVA OR 757A @208V/3P

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note:

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 your contract with the City of Phoenix.

Seal / Signature

Project Name ARPA U. S. Vets Miscellaneous Repairs & Improvements Project Number 057.8221.100 Description ELECTRICAL ONE-LINE & SCHEDULES Scale 12" = 1'-0" E4.00.IT

PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

- POINT OF CONNECTION TO DEMO BACK TO POINT OF CONNECTION OF NEW TO EXISTING
- PIPE SERVING FIXTURE ON FLOOR ABOVE

PLUMBING ABBREVIATION KEY

ABBR:	DESCRIPTION:
CO	CLEANOUT
Е	EXISTING
FCO	FLOOR CLEANOUT
LAV	LAVATORY
SH	SHOWER
VTR	VENT THROUGH ROOF
WC	WATER CLOSET

WCO WALL CLEANOUT

PLUMBING SHEET INDEX

P 0.01	PLUMBING COVERSHEET.
P 1.01	PLUMBING SITE PLAN.
P 2.01	OVERALL PLUMBING PLAN - LEVEL 01 & 02.
P 2.02	OVERALL PLUMBING PLAN - LEVEL 03 & 04.
P 3.01	ENLARGED WASTE PIPING PLAN - UNDERSLAB - LEVEL 01
P 4.01	ENLARGED PLUMBING PLAN - TYPE A, B, C, C.1 & H.
P 4.02	ENLARGED PLUMBING PLAN - TYPE D & D.1
P 4.03	ENLARGED PLUMBING PLAN - TYPE D.2, G, & LAUNDRY ROOM
P 5.01	PLUMBING DETAILS.
P 5.02	PLUMBING ISOMETRIC DIAGRAMS.
GRAND TOTAL: 10	

PLUMBING PHASING NOTES:

PHASE 1:	SITE SANITARY SEWER MAIN, BUILDING UNDERSLAB WASTE MAIN AND
	UNDERSLAB WASTE STACK LATERALS.
PHASE 2:	WASTE AND VENT STACKS SERVING LEVEL 01 THROUGH LEVEL 04 AND VENT
	STACKS UP THROUGH ROOF.
PHASE 3:	LEVEL 04 RESIDENT ROOMS WASTE AND VENT REPLACEMENT. RESIDENT ROOM ON
-	LEVEL 04 MADE READY FOR MOVE-IN.
PHASE 4:	LEVEL 03 RESIDENT ROOMS WASTE AND VENT REPLACEMENT. RESIDENT ROOM ON
	LEVEL 03 MADE READY FOR MOVE-IN.
PHASE 5:	LEVEL 02 RESIDENT ROOMS WASTE AND VENT REPLACEMENT. RESIDENT ROOM ON
	LEVEL 02 MADE READY FOR MOVE-IN.
PHASE 6:	LEVEL 01 RESIDENT ROOMS WASTE AND VENT REPLACEMENT, RESIDENT ROOM ON
	LEVEL 01 MADE READY FOR MOVE-IN

PLUMBING FIXTURE ROUGH-IN SCHEDULE (WASTE AND VENT)

TAG NAME	DESCRIPTION	SANITARY	VENT
BT/SH	BATHTUB / SHOWER	2"	1 1/2"
FD	SHOWER (FLOOR DRAIN)	2"	1 1/2"
FD	FLOOR DRAIN	2"	1 1/2"
LAV	LAVATORY	2"	1 1/2"
SK	SINK (BAR)	2"	1 1/2"
WB	UTILITY BOX (WASHING MACHINE)	2"	1 1/4"
WC	WATER CLOSET	4"	2"
NOTES: 1. PROVID RESIDE MFR. AN	DE MISSING PLUMBING FIXTURES AT NT ROOM LOCATIONS, COORDINAT ND MODEL NUMBER IN ORDER TO N	THE FOLLO E WITH OW MATCH EXIS	owing Ner For Ting.
<u>FLOOK 1</u> WC, UNIT # 117, 118, 119, 120, & 124 LAV WITH TRIM AND VANITY, UNIT # 117, 118, 119, & 124 SH TRIM, UNIT # 117, 118, 119, 120, & 124 SK WITH TRIM, UNIT # 117, 118, 119, 120, & 124			
<u>FLOOR 2</u> WC, UNIT # LAV WITH T SH TRIM, UI SK WITH TF	217 RIM AND VANITY, UNIT # 223 & 228 NIT # 223 & 228 RIM, UNIT # 223 & 228		
<u>FLOOR 3</u> WC, UNIT # 323 LAV WITH TRIM AND VANITY, UNIT # 323 & 325 SH TRIM, UNIT # 323 SK WITH TRIM, UNIT # 323, 325 & 328			
FLOOR 4 WC, UNIT # LAV WITH T SH TRIM, UI SK WITH TF	423 RIM AND VANITY, UNIT # N/A NIT # N/A RIM, UNIT # 425		
2. REMOV WATER STOP A MCGUIF	E AND REPLACE ALL ANGLE STOPS CLOSETS, LAVATORIES AND SINKS S ALL BRASS, 1/4 TURN, CHROME P RE, CHICAGO OR EQUAL.	AT RESIDE 9. PROVIDE I 9.LATED, APC	NT ROOM NEW ANGLE)LLO,

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

- PLUMBING GENERAL NOTES: THE SYMBOLS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT. CONTRACTOR SHALL VERIFY THAT ALL PLUMBING FIXTURES ARE OPERATIONAL AND NO LEAKS ARE EVIDENT PRIOR TO TURN-OVER OF PROJECT TO OWNER. ALL PLUMBING FIXTURES CURRENTLY NOT INSTALLED SHALL BE INSTALLED AS A PART OF THIS PROJECT SCOPE AND MADE OPERATIONAL. 1. IN THE EVENT PLUMBING FIXTURE IS DAMAGED AND IN NEED OF REPLACEMENT, NOTIFY OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF REPLACEMENT FIXTURE TO MATCH EXISTING. VERIFY PIPE SIZES. REPLACEMENT SIZE SHALL MATCH EXISTING. . EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS
- AND REPORT ANY CONFLICTS BEFORE PROCEEDING. NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 10. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND
- SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO AREA OF WORK. 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE DAMAGED TO MATCH EXISTING CONDITIONS.

KEYNOTES: #

WORK AS COMPLETE.

SCOPE OF WORK AREA FOR RE-PIPE AND LINING OF WASTE AND VENT SYSTEM. REFER TO ENLARGED SCALE PLANS FOR ADDITIONAL INFORMATION WATER JET FLUSH EXISTING SANITARY WASTE MAIN IN BUILDING AND SEWER MAIN OUTSIDE OF BUILDING CLEAN OF DEBRIS UP TO PROPERTY LINE AT POINT OF CONNECTION TO CITY MAIN. CAMERA VIDEO TAPE MAIN PRIOR TO TURN-OVER OF

PROJECT AND SUBMIT TO OWNER FOR REVIEW AND SIGNATURE OF ACCEPTANCE OF

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

2 PLUMBING PLAN - LEVEL 02.

PLUMBING GENERAL NOTES:

- THE SYMBOLS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS,
- WHETHER SPECIFIED OR NOT. CONTRACTOR SHALL VERIFY THAT ALL PLUMBING FIXTURES ARE OPERATIONAL AND NO LEAKS ARE EVIDENT PRIOR TO TURN-OVER OF PROJECT TO OWNER.
- ALL PLUMBING FIXTURES CURRENTLY NOT INSTALLED SHALL BE INSTALLED AS A PART OF THIS PROJECT SCOPE AND MADE OPERATIONAL. IN THE EVENT PLUMBING FIXTURE IS DAMAGED AND IN NEED OF REPLACEMENT, NOTIFY
- OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF REPLACEMENT FIXTURE TO MATCH EXISTING. VERIFY PIPE SIZES, REPLACEMENT SIZE SHALL MATCH EXISTING.
- EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS
- AND REPORT ANY CONFLICTS BEFORE PROCEEDING. NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 0. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR
- RELOCATED TO ALLOW ACCESS TO AREA OF WORK. 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING. 2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS,

DAMAGED TO MATCH EXISTING CONDITIONS.

CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

PLUMBING GENERAL NOTES:

- THE SYMBOLS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS,
- WHETHER SPECIFIED OR NOT. CONTRACTOR SHALL VERIFY THAT ALL PLUMBING FIXTURES ARE OPERATIONAL AND NO
- LEAKS ARE EVIDENT PRIOR TO TURN-OVER OF PROJECT TO OWNER. ALL PLUMBING FIXTURES CURRENTLY NOT INSTALLED SHALL BE INSTALLED AS A PART
- OF THIS PROJECT SCOPE AND MADE OPERATIONAL. IN THE EVENT PLUMBING FIXTURE IS DAMAGED AND IN NEED OF REPLACEMENT, NOTIFY OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF
- REPLACEMENT FIXTURE TO MATCH EXISTING. VERIFY PIPE SIZES, REPLACEMENT SIZE SHALL MATCH EXISTING. EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF
- ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK.
- EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
- NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 0. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR
- RELOCATED TO ALLOW ACCESS TO AREA OF WORK. 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING. 2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS,
- CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE DAMAGED TO MATCH EXISTING CONDITIONS.

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

Note

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 your contract with the City of Phoenix.

Seal / Signature
R ERT J. IES 07-03-24 FRIEND EXP. 03-31-2026
Project Name
ARPA U.S. VETS Miscellaneous Repairs & Improvements
Project Number
57.8221.000
Description
OVERALL PLUMBING PLAN - LEVEL 03 & 04.
Scale
As indicated
P 2.02

© 2023 Gensler

2 WASTE PIPING PLAN - UNDERSLAB - AREA B.

OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF REPLACEMENT FIXTURE TO MATCH EXISTING. VERIFY PIPE SIZES, REPLACEMENT SIZE SHALL MATCH EXISTING.

PLUMBING GENERAL NOTES:

- . EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR
- DEMOLITION WORK. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING. . NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING
- WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 0. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO AREA OF WORK.
- 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING. 2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE DAMAGED TO MATCH EXISTING CONDITIONS.

KEYNOTES:

- EXISTING BUILDING WASTE MAIN, WATER JET FLUSH PIPE CLEAN OF DEBRIS. EXISTING WASTE STACK LATERAL, WATER JET FLUSH PIPE CLEAN OF DEBRIS AND
- LINE PIPING INTERIOR. ADD ALTERNATE NO. 1: REMOVE LATERAL WASTE AND STACK RISE UP TO ABOVE SLAB AND REPLACE WITH NEW PIPING. EXISTING WASTE STACK TO REMAIN AND RECONDITION WITH NEW INTERNAL TO PIPE
- LINING. ADD ALTERNATE NO. 2: REMOVE WASTE STACK IN IT'S ENTIRETY AND REPLACE WITH NEW PIPING.
- REMOVE EXISTING UNDERSLAB WASTE PIPING SERVING RESIDENT ROOM PLUMBING FIXTURES AND REPLACE WITH NEW PIPING UP TO POINT OF CONNECTION TO EXISTING FIXTURE.
- EXISTING WASTE AND VENT PIPING WITHIN WALLS TO BE REMOVED AND REPLACED WITH NEW PIPING, INCLUSIVE OF FIXTURE P-TRAPS AND WALL CLEANOUTS.

TYPICAL WASTE & VENT RESIDENT ROOM UNDERSLAB & 3 ABOVE SLAB SECTION

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

Note

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 your contract with the City of Phoenix.

NEW WORK PLAN - WASTE & VENT

PLUMBING GENERAL NOTES:

- THE SYMBOLS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS,
- WHETHER SPECIFIED OR NOT. CONTRACTOR SHALL VERIFY THAT ALL PLUMBING FIXTURES ARE OPERATIONAL AND NO
- LEAKS ARE EVIDENT PRIOR TO TURN-OVER OF PROJECT TO OWNER. ALL PLUMBING FIXTURES CURRENTLY NOT INSTALLED SHALL BE INSTALLED AS A PART OF THIS PROJECT SCOPE AND MADE OPERATIONAL. IN THE EVENT PLUMBING FIXTURE IS DAMAGED AND IN NEED OF REPLACEMENT, NOTIFY
- OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF REPLACEMENT FIXTURE TO MATCH EXISTING. VERIFY PIPE SIZES, REPLACEMENT SIZE SHALL MATCH EXISTING.
- EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS
- FOR ADDITIONAL INFORMATION. PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR
- DEMOLITION WORK. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
- NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 0. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR
- RELOCATED TO ALLOW ACCESS TO AREA OF WORK. 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING. 12. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE

KEYNOTES:

DAMAGED TO MATCH EXISTING CONDITIONS.

- EXISTING WASTE STACK TO REMAIN AND RECONDITION WITH NEW INTERNAL TO PIPE LINING. ADD ALTERNATE NO. 2: REMOVE WASTE STACK IN IT'S ENTIRETY AND REPLACE WITH NEW PIPING. EXISTING VENT STACK TO REMAIN AND RECONDITIONED WITH NEW INTERNAL TO PIPE LINING. ADD. ALTERNATE NO. 3: REMOVE VENT STACK IN IT'S ENTIRETY AND REPLACE
- WITH NEW PIPING AND TERMINATE UP THROUGH ROOF. MODIFY ROOFING AS REQUIRED, PROVIDE NEW VENT FLASHING TERMINATION, AND WATER SEAL ROOF PENETRATION.
- EXISTING WASTE AND VENT PIPING WITHIN WALL, BELOW FLOOR AND ABOVE CEILING TO BE REMOVED.
- EXISTING WASTE AND VENT PIPING SERVING PLUMBING FIXTURE ROUGH-IN TO BE REMOVED.
- NEW WASTE AND VENT PIPING WITHIN WALL, BELOW FLOOR AND ABOVE CEILING. NEW WASTE AND VENT PIPING ROUGH-IN TO EXISTING PLUMBING FIXTURE. PROVIDE NEW SHOWER FLOOR DRAIN, MATCH EXISTING STYLE AND FINISH.
- CONNECT NEW WASTE PIPING TO EXISTING OR NEW WASTE STACK. CONNECT NEW VENT PIPING TO EXISTING OR NEW VENT STACK.

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

DEMOLITION PLAN - WASTE & VENT

3

DEMOLITION PLAN - WASTE & VENT

NEW WORK PLAN - WASTE & VENT

NEW WORK PLAN - WASTE & VENT

PLUMBING GENERAL NOTES:

- . THE SYMBOLS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT.
- . CONTRACTOR SHALL VERIFY THAT ALL PLUMBING FIXTURES ARE OPERATIONAL AND NO LEAKS ARE EVIDENT PRIOR TO TURN-OVER OF PROJECT TO OWNER.
- 3. ALL PLUMBING FIXTURES CURRENTLY NOT INSTALLED SHALL BE INSTALLED AS A PART OF THIS PROJECT SCOPE AND MADE OPERATIONAL. IN THE EVENT PLUMBING FIXTURE IS DAMAGED AND IN NEED OF REPLACEMENT, NOTIFY
- OWNER OF COST AND SUBMIT DOCUMENTATION IN WRITING AND ANY SUPPORTING PHOTOGRAPHS. OWNER SHALL PROVIDE MANUFACTURER AND MODEL NUMBER OF REPLACEMENT FIXTURE TO MATCH EXISTING. 5. VERIFY PIPE SIZES, REPLACEMENT SIZE SHALL MATCH EXISTING.
- EXISTING CONDITIONS ON PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED AND NEW WORK TO BE INSTALLED, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD
- SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING. D. NOT ALL EXISTING PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING
- WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 10. CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE OWNER IF OBSTRUCTIONS ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO AREA OF WORK.
- 1. CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK TO MATCH EXISTING CONDITIONS. COORDINATE WITH OWNER TO OBTAIN FINISHES STOCK/MANUFACTURER DATA IN ORDER TO MATCH EXISTING. 12. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK AND REPLACE DAMAGED TO MATCH EXISTING CONDITIONS.

KEYNOTES:

- EXISTING WASTE STACK TO REMAIN AND RECONDITION WITH NEW INTERNAL TO PIPE LINING. <u>ADD ALTERNATE NO. 2</u>: REMOVE WASTE STACK IN IT'S ENTIRETY AND REPLACE WITH NEW PIPING.
- EXISTING VENT STACK TO REMAIN AND RECONDITIONED WITH NEW INTERNAL TO PIPE LINING. ADD. ALTERNATE NO. 3: REMOVE VENT STACK IN IT'S ENTIRETY AND REPLACE
- WITH NEW PIPING AND TERMINATE UP THROUGH ROOF. MODIFY ROOFING AS REQUIRED, PROVIDE NEW VENT FLASHING TERMINATION, AND WATER SEAL ROOF PENETRATION.
- EXISTING WASTE AND VENT PIPING WITHIN WALL, BELOW FLOOR AND ABOVE CEILING TO BE REMOVED.
- EXISTING WASTE AND VENT PIPING SERVING PLUMBING FIXTURE ROUGH-IN TO BE REMOVED. NEW WASTE AND VENT PIPING WITHIN WALL, BELOW FLOOR AND ABOVE CEILING.
- NEW WASTE AND VENT PIPING ROUGH-IN TO EXISTING PLUMBING FIXTURE. PROVIDE NEW SHOWER DRAIN, MATCH EXISTING STYLE AND FINISH.
- CONNECT NEW WASTE PIPING TO EXISTING OR NEW WASTE STACK. CONNECT NEW VENT PIPING TO EXISTING OR NEW VENT STACK.

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

DEMOLITION PLAN - WASTE & VENT

NEW WORK PLAN - WASTE & VENT

WASTE & VENT PLAN - LEVEL 01 -

WASTE AND VENT LAUNDRY **ROOM - LVL 1 UNDERSLAB &** 4 ABOVE SLAB SECTION

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

Date Description

KIVA #

SDEV #

Note: 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 your contract with the City of Phoenix.

- CLEVIS HANGER

1. COORDINATE REPLACEMENT OF VENT PIPE WITH NEW UNDER ADD. ALT. NO.3

TYPICAL UNIT TYPE C & C.1 -WASTE & VENT ISOMETRIC

PODO E PIMA CENTER PARKWAY SUITE 320 SCOTTSDALE, AZ 85258 P: 602.943.8424 www.imegcorp.com IMEG RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF IMEG AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF IMEG. ©2024 IMEG CONSULTANTS CORP. 0 1 2 3 REF. SCALE IN INCHES PROJECT #24002328.00

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

∆ Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

& VENT ISOMETRIC DIAGRAM

TYPICAL UNIT TYPE "D" - WASTE &

TYPICAL UNIT TYPE "D1" - WASTE

TYPICAL UNIT "G" - WASTE & 4 VENT ISOMETRIC DIAGRAM

Phoenix AZ 85029

CITY OF PHOENIX OFFICE OF THE CITY ENGINEER HOUSING DEPARTMENT Project Number: AH10010002

Gensler

Patrick Magness 2575 E Camelback Rd Suite 175 Phoenix, AZ 85016 United States

Tel 602.523.4900 Fax 602.523.4949

△ Date Description

KIVA #

SDEV #

<u>Note</u>: 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 your contract with the City of Phoenix.

Seal / Signature EXP. 03-31-2026 Project Name ARPA U.S. VETS Miscellaneous Repairs & Improvements Project Number 57.8221.000 Description PLUMBING ISOMETRIC DIAGRAMS. Scale P 5.02