



City of Phoenix
DESIGN AND CONSTRUCTION PROCUREMENT
200 W. Washington Street, 5th Floor
Phoenix, Arizona 85003-1611

**WEST ANTHEM LIFT STATION 76 PHASE II EXPANSION
CONSTRUCTION ADMINISTRATION AND INSPECTION SERVICES
WS90400067**

PROCUREPHX PRODUCT CATEGORY CODE 925000000

6000001436

NOTIFICATION LETTER #1

July 27, 2023

This notification letter shall become a part of the Request for Qualifications for the above referenced project.

Questions and Answers from the Pre-Submittal on July 25, 2023

1Q. Will the design drawings be available to look at?

1A. Please see attached.

2Q. Will the City be taking care of material testing or is that something that the consultant will need to provide?

2A. No, the consultant will need to provide.

3Q. Will this project require Public Outreach?

3A. Yes, the consultant will need to provide.

4Q. The CA&I will be in charge of the as-builts, is that also producing CADD record drawings?

4A. Yes, the City would get you the CADD files and then you would send them back to us.

5Q. Will the construction be a design-bid-build?

5A. Yes, it will be a Design-Bid-Build. The low bid project has not been started yet. It will be coming in the next month or two.

6Q. Is the City of Phoenix open on submersible manufacturers to utilize or whom will be deciding on final manufacturer placement?

6A. That's the scope for specifications when the contractor submits for the bid. If they want to use an approved equal or substitute there is paperwork, they'll submit for that, but it will just be based on the specifications for the pump manufacturer.

All other terms and conditions remain unchanged.

A handwritten signature in black ink that reads "Heather Roye". The script is cursive and fluid, with the first name and last name clearly distinguishable.

Heather Roye
Contract Specialist
CITY OF PHOENIX
DESIGN & CONSTRUCTION PROCUREMENT

*****END OF NOTIFICATION*****

MAYOR
KATE GALLEG0
CITY COUNCIL

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- DISTRICT 2 JIM WARING
- DISTRICT 3 DEBRA STARK
- DISTRICT 4 LAURA PASTOR
- DISTRICT 5 BETTY GUARDADO
- DISTRICT 6 SAL DICICCIO
- DISTRICT 7 YASSAMIN ANSARI
- DISTRICT 8 CARLOS GARCIA

CITY MANAGER
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CITY ENGINEER
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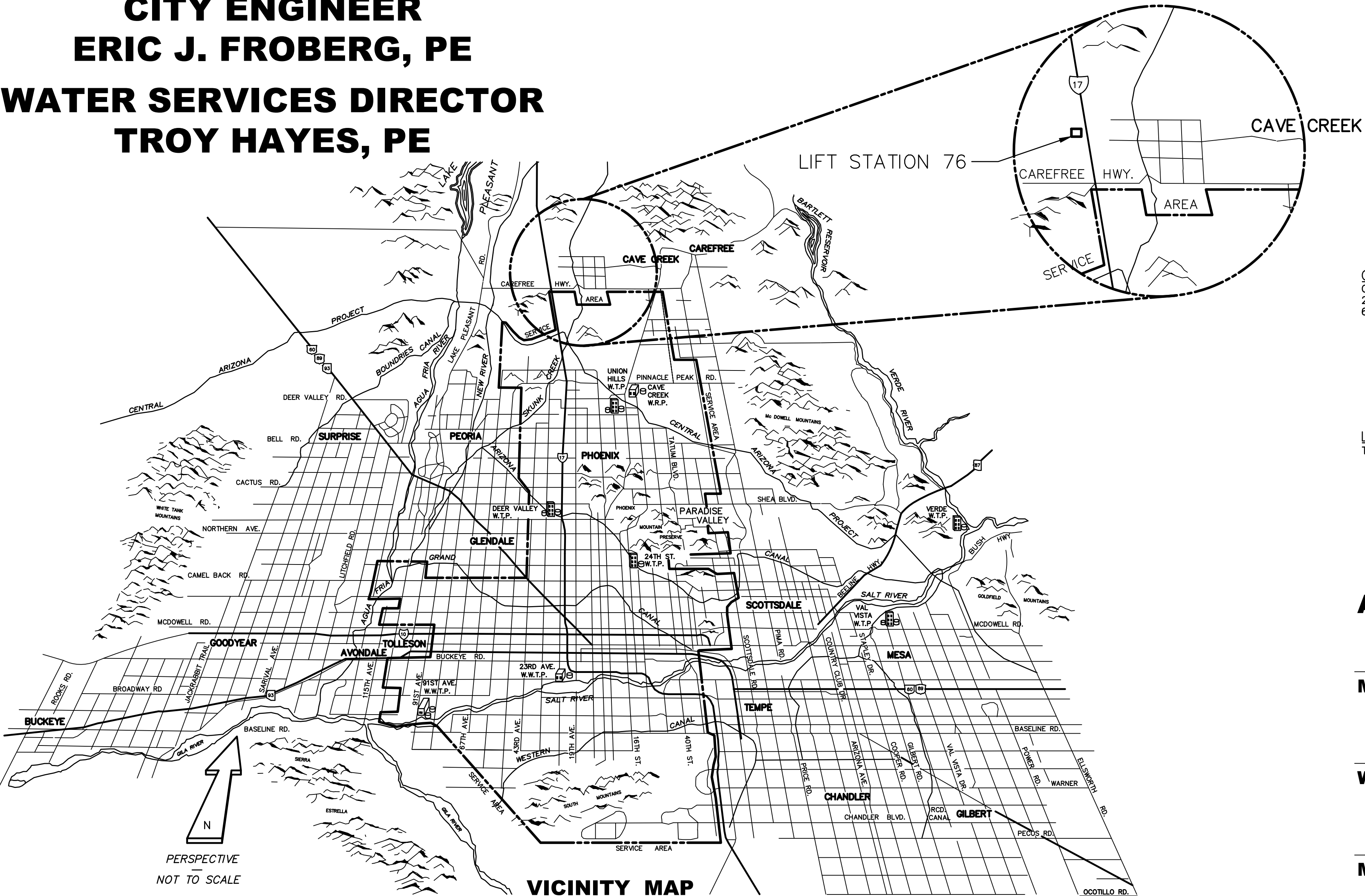
WATER SERVICES DIRECTOR
TROY HAYES, PE



City of Phoenix
WATER SERVICES DEPARTMENT

LIFT STATION 76 PHASE II EXPANSION
PROJECT NO. WS90400067
38107 NORTH PIONEER ROAD

100% SUBMITTAL
JANUARY 2023
VOLUME 3 OF 3
SHEETS 1 TO 41



OWNER CONTACT INFORMATION
CITY OF PHOENIX
200 WEST WASHINGTON STREET
602-262-4053

ENGINEER CONTACT INFORMATION
FERNANDO SARMIENTO
GREELEY AND HANSEN
2800 N. 44TH STREET, SUITE #650
PHOENIX, ARIZONA 85008
602-778-8475
FSARMIENTO@GREELEY-HANSEN.COM

LOCATION FOR AS-BUILT INDEXING
TOWNSHIP 6N RANGE 2E SECTION 27 1/4 SECTION SW

PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE
PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE
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APPROVALS

MARICOPA COUNTY PLANNING AND DEVELOPMENT	DATE
WATER SERVICES DEPARTMENT	DATE
MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT	DATE

BAR SCALES

ARCHITECTURAL UNITS

012

1-1/2" = 1'-0"

012

1" = 1'-0"

012

3/4" = 1'-0"

0124

1/2" = 1'-0"

0124

3/8" = 1'-0"

0248

1/4" = 1'-0"

0248

3/16" = 1'-0"

04816

1/8" = 1'-0"

081632

1/16" = 1'-0"

04816

3/32" = 1'-0"

DECIMAL UNITS

012

1" = 1'

0248

1" = 4'

0510

1" = 5'

051020

1" = 10'

0102040

1" = 20'

0153060

1" = 30'

0204080

1" = 40'

050100

1" = 50'

03060120

1" = 60'

04080160

1" = 80'

MARKERS

#

#

#

#

#

#

#

#

PIPE TAG

DESIGN

EXISTING

FUTURE

12" RW

P 1001

P 1001

* PIPING SYSTEM DESIGNATIONS FOR EXISTING
PIPE INDICATE TYPE OF SERVICE ONLY AND DO
NOT IMPLY PIPE MATERIALS USED.

PULL-DOWN MENU COMMAND: CADD COP > XX > LEADERS > RACETRACK >
OR
COMMAND: TCIRCLE, SELECT TEXT, MTEXT, OR ATTDEF OBJECT: SELECT,
DISTANCE OFFSET FACTOR, 0.05,
ENCLOSE TEXT WITH: (SELECT SLOTS OR RECTANGLES),
CREATE SLOTS OR RECTANGLES WITH: (SELECT VARIABLE FOR TYPE)

PIPING IS CALLED OUT BY SIZE FOLLOWED BY
PIPING SYSTEM, ENCLOSED AS SHOWN:

12" RW

PIPE SIZE

PIPING SYSTEM

EQUIPMENT TAG

X X X X X X X

7-DIGIT SERIALIZED KEY

ASSIGNED TO
PROJECT BY CITY'S
PROJECT MANAGER

APPEARANCE

XXXXXX

XXXXXX

XXXXXX

DESIGN

FUTURE

EXISTING

MEDIUM
LINEWEIGHT

LIGHT LINEWEIGHT
ON A FUTURE
LAYER

SCREENED
LINEWEIGHT ON AN
LAYER FOR EXISTING
ITEMS

ITEMS TO HAVE EQUIPMENT TAGS:
ALL MANUAL VALVES FOUR (4) INCHES AND LARGER, ALL
VALVES ELECTRICAL OPERATED.
ALL INSTRUMENTS, MOTORS, AND EQUIPMENT

WHERE THE SAME ITEM IS SHOWN IN SEVERAL DISCIPLINES,
THEY SHALL REPEAT IN APPEARANCE IN ALL ELECTRICAL,
INSTRUMENTATION, PROCESS MECHANICAL DRAWINGS.

SHEET IDENTIFICATION

A ARCHITECTURAL (ARCHITECTURAL EXTERIORS, INTERIORS, RENDERINGS)
C CIVIL SITE (PAVING AND GRADING, YARD PIPING,)
E ELECTRICAL (POWER DISTRIBUTION AND ELECTRICAL EQUIPMENT WITHIN STRUCTURES OR ON SITE)
F FIRE PROTECTION
G GENERAL (COVER, INDEX, GENERAL ABBREVIATIONS, HYDRAULIC PROCESS)
H HVAC (HEATING, VENTILATION AND AIR CONDITIONING)
I INSTRUMENTATION (P&ID'S, CONTROL PANELS)
L LANDSCAPE (VEGETATION AND HARDSCAPE, IRRIGATION SUPPLY)
M MECHANICAL (PROCESS PIPING & EQUIPMENT)
P PLUMBING (EQUIPMENT DRAINS, ROOF DRAINS, SEWERS, VENTS)
Q EQUIPMENT PURCHASED BY THE OWNER
S STRUCTURAL (STRUCTURE WALLS, SLABS, REINFORCED BUILDING OR CONCRETE ELEMENTS)
T TELECOMMUNICATIONS (ELECTRONIC COMMUNICATIONS EQUIPMENT, CONDUIT)
X OTHER DISCIPLINES
Z CONTRACTOR/SHOP DRAWINGS

DWG INDEX

DWG NO.

DWG NAME

DESCRIPTION

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COVER SHEET

2

G01

LEGEND AND DRAWING INDEX

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I03

ABBREVIATIONS

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I04

NEW WET WELL P&ID

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I05

NEW WET WELL AUTODIALER P&ID

39

I06

BIOFILTER P&ID

40

I07

BIOXIDE P&ID

41

I08

DETAILS

REVISIONS

NO.

BY

DATE

CKD

REMARKS

DES
MT/RP

DWN
RAM

CKD
XXX

City of Phoenix

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

GENERAL

LIFT STATION 76 PHASE II EXPANSION
LEGEND AND DRAWING INDEX

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CITY PROJECT NO. WS90400067-4

DATE: JANUARY 2023

G01 SHEET 2 OF 41

CAD FILE: 04276.05_G01

FOR CITY OF PHOENIX USE ONLY - REFERENCE CID NUMBER: #

REVISION ENGINEERING COMPANY

PROJECT NO.

PROJECT NAME

DATE

CAD FILE NAME

DWG NUMBER

REMARKS

Facility Drawings

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GENERAL SITE NOTES

1. APPROVAL OF THESE PLANS SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE OR OTHER HEALTH/SAFETY ISSUE.
2. ALL CONSTRUCTION SHALL CONFORM TO MAG (MARICOPA ASSOCIATION OF GOVERNMENTS) SPECIFICATIONS AND DETAILS AND THE CITY OF PHOENIX SUPPLEMENTS TO MAG SPECIFICATIONS AND DETAILS, UNLESS MODIFIED ON THE PLANS OR IN THE PROJECT SPECIFICATIONS.
3. A SIX (6) FOOT MINIMUM HORIZONTAL SEPARATION FROM ANY UNDERGROUND UTILITY SHALL BE PROVIDED FOR SEWER MAINS, SEWER SERVICES, WATER MAINS, AND WATER SERVICES. THE MINIMUM HORIZONTAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF UNDERGROUND UTILITY.
4. A ONE (1) FOOT MINIMUM VERTICAL SEPARATION FROM ANY DRY UNDERGROUND UTILITY CROSSING SHALL BE PROVIDED FOR SEWER MAINS AND WATER SERVICES. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF DRY UNDERGROUND UTILITY.
5. A TWO (2) FOOT MINIMUM VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN ANY SEWER MAIN OR STORM DRAIN CROSSING A WATER MAIN. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER MAIN OR STORM DRAIN MAIN. SEE MAG STANDARD DETAIL 404 FOR ADDITIONAL INFORMATION AND/OR PROVISIONS FOR CLEARANCE.
6. EXCEPTIONS OR DEVIATIONS FROM THE ABOVE MINIMUM CLEARANCES MUST BE APPROVED AND SHOWN ON THE APPROVED WATER AND SEWER PLANS. WHEN UTILITY CONFLICTS ARE FOUND DURING CONSTRUCTION, ALL CHANGES AND REVISIONS MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
7. ANY AND ALL MORE STRINGENT SEPARATION REQUIREMENTS REQUIRED BY FEDERAL, STATE, COUNTY OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. TRAFFIC REGULATIONS: ALL WORK MUST COMPLY WITH REQUIREMENTS OF THE CURRENT CITY OF PHOENIX "MCDOT TRAFFIC BARRICADE MANUAL".
9. TRENCH EXCAVATION, BACKFILLING AND COMPACTION SHALL COMPLY WITH MAG SECTION 601 AND COP SUPPLEMENTS.
10. CONCRETE OR ASPHALT DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED IN KIND PRIOR TO FINAL INSPECTION.
11. "PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXCEPT AS REQUIRED FOR THE CONSTRUCTION OF THE PUBLIC WORKS FACILITIES SHOWN HEREON. THE PROJECT OWNER AND THE OWNER'S LENDERS CONSULTANTS, CONTRACTORS AND SUBCONTRACTORS ARE PROHIBITED FROM DISCLOSING THE PLANS AND SPECIFICATIONS TO ANY PERSONS OTHER THAN THOSE WHO HAVE A NEED TO KNOW THE INFORMATION FOR THE PURPOSE OF THE PROJECT".
12. CONTRACTOR WILL NOT PAINT ANY EXPOSED PVC OR CPVC PIPING.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS REQUIRED FOR CONSTRUCTION EXCEPT AS DEFINED IN THE SPECIFICATIONS.

ENGINEERING NOTES

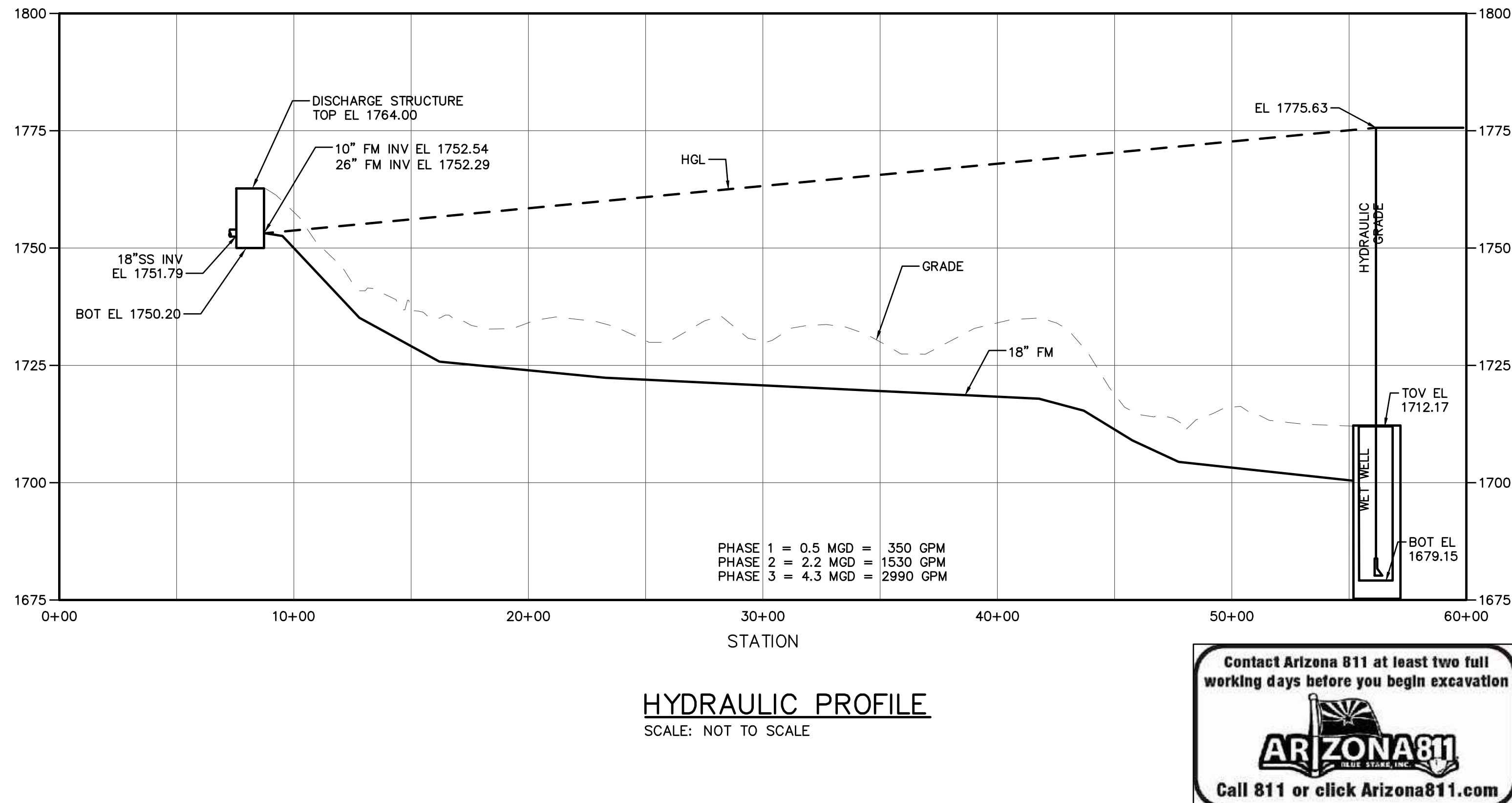
1. A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND CONSTRUCTION AND UTILITY LINES IN THE WORK AREA. HOWEVER THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN ADVANCE OF TRENCHING.
2. THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS. REQUIREMENTS OF THE WORK.
3. THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTORS FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR COORDINATING THE RELOCATION OF UTILITIES, POWER POLES. ETC.
5. THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS A LIE SURVEY TAKEN SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF IN THE OPINION OF THE ENGINEER THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.
6. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE NOR SHALL BE CONSTRUED TO CREATE ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
7. THE ENGINEER WILL MAKE FIELD AS-BUILT MEASUREMENTS OF THE WORK UPON NOTIFICATION OF THE OWNER OR OWNER'S REPRESENTATIVE THAT THE PIPE WORK IS COMPLETE AND READY FOR AS-BUILT SURVEY. IF THE CONTRACTOR DOES NOT LEAVE THE TRENCHES OPEN SO THAT THE ACTUAL PIPE LINES AND SERVICES CAN BE OBSERVED, THE CONTRACTOR WILL EXPOSE THE UNES AND SERVICES TO ALLOW FOR ACCURATE AS-BUILDING. IF THE TRENCHES ARE BACKFILLED AND OBCURED TO THE POINT THAT THE AS-BUILT MEASUREMENTS CANNOT BE PERFORMED. THE ENGINEER WILL NOT BE RESPONSIBLE FOR PROVIDING ACCURATE AS-BUILT MEASUREMENTS.

GENERAL NOTES FOR RIGHT-OF-WAY PERMITS

1. ALL WORK SHALL CONFORM TO THE REVISED EDITION OF THE UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION PUBLISHED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) AS AUTHORIZED AND MODIFIED BY THE MOST CURRENT MCDOT SUPPLEMENT TO THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS AND NON-CONFLICTING PROJECT SPECIAL PROVISIONS. ALL WORK MUST ALSO COMPLY WITH RESOLUTION 2001-01 MARICOPA COUNTY RESOLUTION FOR PERMITS TO WORK IN DEDICATED RIGHT-OF-WAY AND RESOLUTION 2001-02 MARICOPA COUNTY RESOLUTION FOR STREET IMPROVEMENTS, INSTALLATION OF UTILITIES AND TRAFFIC CONTROL. ANY EXCEPTIONS MUST RECEIVE EXPLICIT APPROVAL FROM MCDOT AND SHALL BE IDENTIFIED ON THE PLANS AS HAVING EXPLICIT APPROVAL FROM MCDOT. ALL CLEAR ZONE HAZARDS SHALL BE MITIGATED IN A MANNER APPROVED BY MCDOT AT NO COST TO THE COUNTY.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY MCDOT IN CONCEPT AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY MCDOT. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT MCDOT FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, THE MCDOT ROADWAY DESIGN MANUAL, OR OTHER DESIGN ISSUES.
3. AN APPROVED SET OF PLANS SHALL BE ON THE SITE DURING CONSTRUCTION AND AVAILABLE TO MCDOT AND OTHER INSPECTORS.
4. ALL BOX CULVERTS CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT) LATEST DESIGN SPECIFICATIONS AND STANDARDS. MINIMUM CLEAR HEIGHT OF BOX CULVERT SHALL BE 4 FEET.
5. CONTRACTOR TO OBTAIN MCDOT PERMITS PRIOR TO CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY. AND ALL NECESSARY PERMITS FROM OTHER AGENCIES AND FROM LOCAL GOVERNMENTS FOR WORK WITHIN THEIR JURISDICTION.
6. CONTRACTOR SHALL NOTIFY THE MCDOT INSPECTION DEPT. AT LEAST 24 HOURS IN ADVANCE OF ANY CONSTRUCTION AT (602) 506-8606.
7. CONTRACTOR PERFORMING CONSTRUCTION OR EXCAVATING OPERATIONS IS RESPONSIBLE FOR LOCATING AND RELOCATING ALL UTILITIES IN CONFLICT AT NO EXPENSE TO MARICOPA COUNTY. THE CONTRACTOR SHALL CONTACT "BLUE STAKE" AT (602) 263-1100 PRIOR TO BEGINNING CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY REQUIRED PERMITS FOR EARTH MOVING FROM MARICOPA COUNTY AIR QUALITY DEPARTMENT'S DUST COMPLIANCE DIVISION (602) 506-6010 PRIOR TO CONDUCTING EXCAVATION OPERATIONS. A COPY OF THE PERMIT AND DUST CONTROL PLAN SHALL BE SUBMITTED TO THE COUNTY ENGINEER PRIOR TO COMMENCEMENT OF ANY EARTHMOVING ACTIVITIES.
9. PRIOR TO CONDUCTING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL OBTAIN FROM THE ARIZONA STATE HISTORICAL PRESERVATION OFFICER (602) 542-4009, RECOMMENDATIONS REGARDING THE NEED FOR CULTURAL RESOURCES (ARCHAEOLOGICAL) CLEARANCE. ALL DISCOVERIES OF HUMAN REMAINS, CULTURAL ARTIFACTS, OR PALEONTOLOGICAL REMAINS SHALL BE REPORTED TO THE ARIZONA STATE MUSEUM AND MCDOT. UPON DISCOVERY, CONTRACTOR SHALL CEASE OPERATIONS IN THE VICINITY OF THE FIND AND PROTECT THE DISCOVERY AREA FROM FURTHER DISTURBANCE UNTIL THE FIND CAN BE PROFESSIONALLY INVESTIGATED BY THE ARIZONA STATE MUSEUM AND MCDOT.
10. EXCEPT UNDER EMERGENCY CONDITIONS, ROADS SHALL NOT BE CLOSED FOR CONSTRUCTION ACTIVITY UNLESS PRIOR APPROVAL IS OBTAINED FROM THE MCDOT TRANSPORTATION DIRECTOR OR HIS REPRESENTATIVE.

GENERAL NOTES FOR RIGHT-OF-WAY PERMITS - CONT

11. PRIOR TO MOVING OR DESTROYING PROTECTED NATIVE PLANT SPECIES, THE CONTRACTOR SHALL FILE A FORMAL NOTICE OF INTENT WITH THE ARIZONA DEPARTMENT OF AGRICULTURE NATIVE PLANTS (602) 542-6408.
12. PRIOR TO INSTALLATION OF CURB, GUTTER, SIDEWALK, BASE COURSE AND WEARING SURFACE, SUBMIT SOIL TEST(S) OF SUBGRADE AND REVISED PAVEMENT DESIGN/CALCULATIONS TO MCDOT FOR REVIEW AND APPROVAL. IF SUBGRADE STABILIZATION IS REQUIRED, THE AREA STABILIZED SHALL BE FROM BACK OF SIDEWALK TO BACK OF SIDEWALK AND MATCH THE STABILIZATION DEPTH OF THE PAVEMENT STRUCTURE.
13. ASPHALT MIX DESIGN SHALL BE SUBMITTED TO MCDOT A MINIMUM OF 48 HOURS PRIOR TO PLACING ANY ASPHALT COURSES. (TRENCH WORK EXCLUDED.) ALL PAVED TURNOUTS SHALL HAVE THE SAME ASPHALT AND BASE REQUIREMENTS AS THE ADJACENT ROADWAY UNLESS NOTED OTHERWISE.
14. ALL COMPACTION AND BACKFILL WITHIN COUNTY RIGHT-OF-WAY SHALL CONFORM TO THE MCDOT SUPPLEMENT TO MAG SPECIFICATION SECTION 601. BACKFILL UNDER EXISTING PAVEMENT, CURB AND GUTTER, ROADWAY SHOULDERS, AND UNPAVED ROADWAYS SHALL CONSIST OF ONE-HALF (1/2) OR ONE SACK CLSM. UNPAVED ROADWAY AREAS INCLUDE THE TRAVELED WAY PLUS FIVE FEET BEYOND THE TRAVELED WAY.
15. PAVEMENT WIDENING AND PAVEMENT REPLACEMENT SHALL CONFORM TO REQUIREMENTS OF SPECIFICATION SECTION 336. PAVEMENT CUTS SHALL NOT BE LOCATED WITHIN A LANE WHEEL PATH. THE LANE WHEEL PATH IS THE ENTIRE LANE WIDTH EXCEPT THE AREA WITHIN ONE FOOT OF A LANE LINE STRIPE AND EXCEPT THE CENTER TWO FEET OF THE TRAVEL LANE.
16. ALL EXISTING PAVEMENT MARKINGS, TRAFFIC SIGNS AND SIGNAL EQUIPMENT THAT NEED TO BE REMOVED, REPLACED, RELOCATED OR REPAIRED BECAUSE OF CONTRACTOR'S WORK WILL BE DONE BY THE CONTRACTOR AT HIS EXPENSE. ALL SALVAGED SIGNS SHALL BE DELIVERED TO THE TRAFFIC OPS BUILDING AT 2909 W. DURANGO ST. ARRANGEMENTS CAN BE MADE FOR DELIVERY BY CALLING (602) 506-8662. ALL NEW STREET NAME SIGNS SHALL BE PROVIDED AND INSTALLED BY PERMITTEE AT NO EXPENSE TO MARICOPA COUNTY.
17. PAVEMENT MARKING, SIGNING AND SIGNAL WORK WILL BE INSPECTED AND SHALL MEET COUNTY STANDARDS BEFORE RELEASE OF BOND.
18. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY TO A CONDITION EQUAL TO OR BETTER THAN PRIOR EXISTING CONDITIONS PER MAG 107.9. DISPOSAL OF ALL WASTE MATERIAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.



FOR CITY OF PHOENIX USE ONLY – REFERENCE CID NUMBER: #						FACILITY DRAWINGS	
REVISION	ENGINEERING COMPANY	PROJECT NO.	PROJECT NAME	DATE	CAD FILE NAME	DWG NUMBER	REMARKS
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-

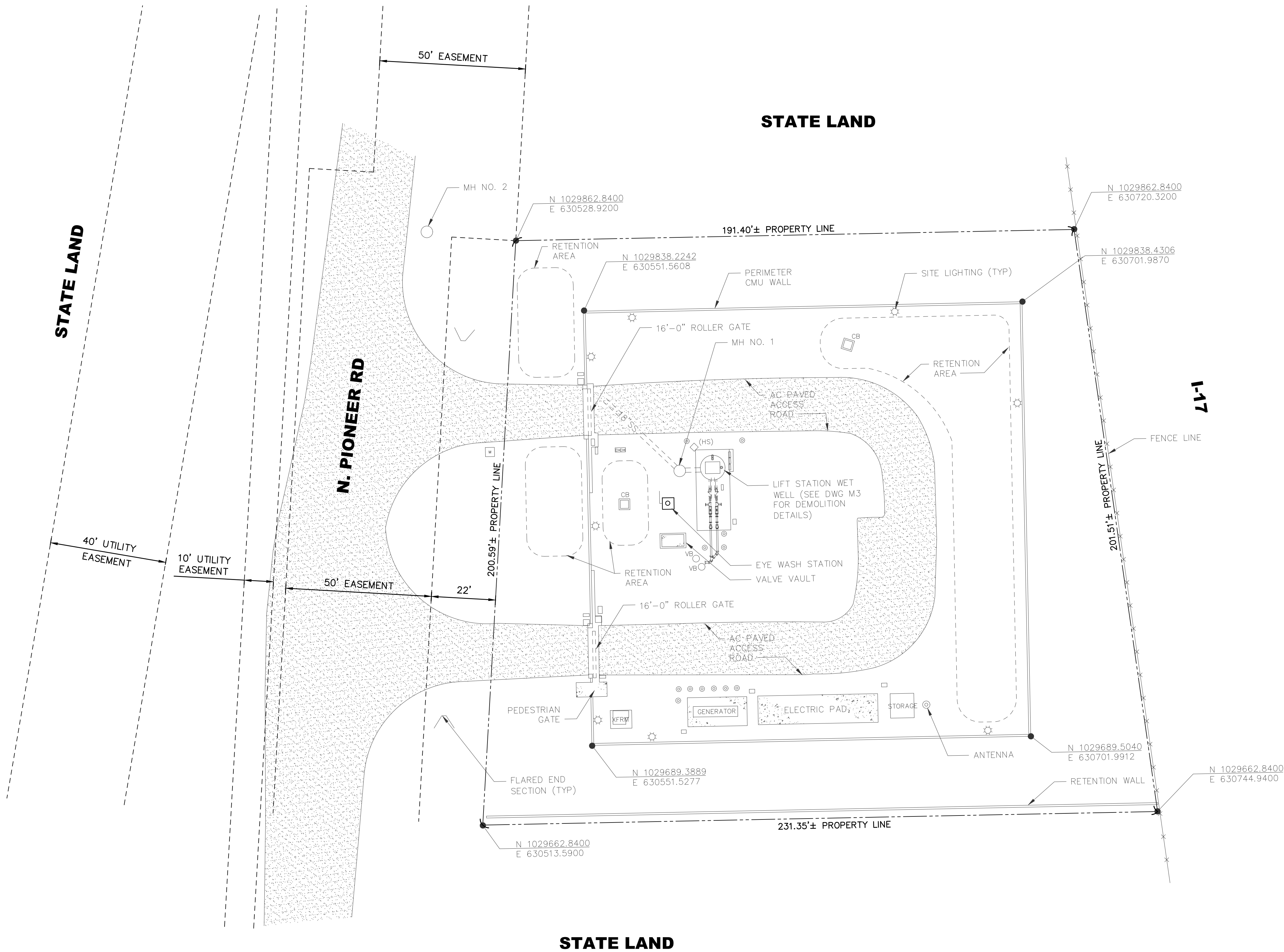
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HORIZONTAL DATUM:
STATE PLANE NAD83 (07EPOCHO ARIZONA CENTRAL ZONE)

VERTICAL DATUM:
PROJECT ELEVATIONS PER CITY OF PHOENIX PUBLISHED BENCHMARKS.
AS INDICATED BELOW.

CITY OF PHOENIX BENCHMARK
W CAREFREE HIGHWAY AND N VIA PUZZOLA
3" BRASS CAP IN HANDHOLE
ELEVATION: 1682.24'

Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811
NEED STAKE, INC.

Call 811 or click Arizona811.com

FOR CITY OF PHOENIX USE ONLY — REFERENCE CID NUMBER: #							FACILITY DRAWINGS
REVISION	ENGINEERING COMPANY	PROJECT NO.	PROJECT NAME	DATE	CAD FILE NAME	DWG NUMBER	REMARKS
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
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[illegible]

DES MT/RP
DWN RAM
CKD XXX




City of Phoenix

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

CIVIL

LIFT STATION 76 PHASE II EXPANSION
EXISTING SITE PLAN WITH GEOMETRIC CONTROL

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DATE: JANUARY 2023
C03 SHEET 7 OF 41
CAD FILE: 04276.05_C03

 **GREELEY AND HANSEN**
2800 N. 44TH STREET, SUITE 650
PHOENIX, AZ 85008

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REQUIRED BY LAW.



1. CONTRACTOR SHALL CAREFULLY REMOVE EXISTING PUMPS, INSTRUMENTATION, PIPING, APPURTENANCES, PIPE STANDS AND AND ANCILLARY EQUIPMENT DURING DEMOLITION SO AS TO NOT DAMAGE EXISTING EQUIPMENT.
2. CONTRACTOR SHALL VERIFY WHICH EQUIPMENT IS TO BE SALVAGED WITH THE CITY FOR STORAGE, PRIOR TO COMMENCING DEMOLITION.
3. EXISTING CONCRETE SLAB AND BOLLARDS SHALL BE REMOVED IN THEIR ENTIRETY AND DISPOSE OF IN ACCORDANCE WITH CITY GUIDELINES AND REQUIREMENTS.
4. DEMOLITION OF EXISTING WET WELL SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTRACTOR SHALL REMOVE ALL FLUIDS AND DEBRIS FROM WITHIN THE STRUCTURE. NO STANDING WATER OR DEBRIS SHALL BE ALLOWED WITHIN THE WET WELL. INSPECTION OF THE WET WELL INTERIOR SHALL BE COMPLETED AND ACCEPTED PRIOR TO BACKFILLING AND COVERING OF THE WET WELL.
5. AT MINIMUM, THE TOP 7-FEET OF EXISTING UTILITIES AND STRUCTURES THAT ARE TO BE DEMOLISHED WILL BE COMPLETE REMOVED IN THEIR ENTIRETY AND DISPOSED OF IN ACCORDANCE WITH CITY GUIDELINES AND REQUIREMENTS.
6. EXISTING PIPELINES THAT ARE TO BE ABANDONED IN PLACE WILL BE CUT AND COMPLETELY CLEANED OF ALL LIQUIDS AND DEBRIS PRIOR TO SEALING THE UTILITY. PIPELINES SHALL BE CAPPED AT BOTH ENDS WITH MINIMUM OF 12-INCHES OF NON-METALLIC GROUT.

FACILITY DRAWINGS

This drawing was supplied by a Consultant Engineer from a past construction project. The original construction drawing was modified based on information provided by the Contractor to provide the Record Drawing. The City does not warrant this drawing to be a complete and accurate portrayal of facilities as they exist in the field.

FOR CITY OF PHOENIX USE ONLY – REFERENCE CID NUMBER: #							REMARKS
REVISION	ENGINEERING COMPANY	PROJECT NO.	PROJECT NAME	DATE	CAD FILE NAME	DWG NUMBER	
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
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74	-	-	-	-	-	-	-
75	-	-	-	-	-	-	-
76	-	-	-	-	-	-	-
77	-	-	-	-	-	-	-
78	-	-	-	-	-	-	-
7							

Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811
ONE STATE, INC.

Call 811 or click Arizona811.com

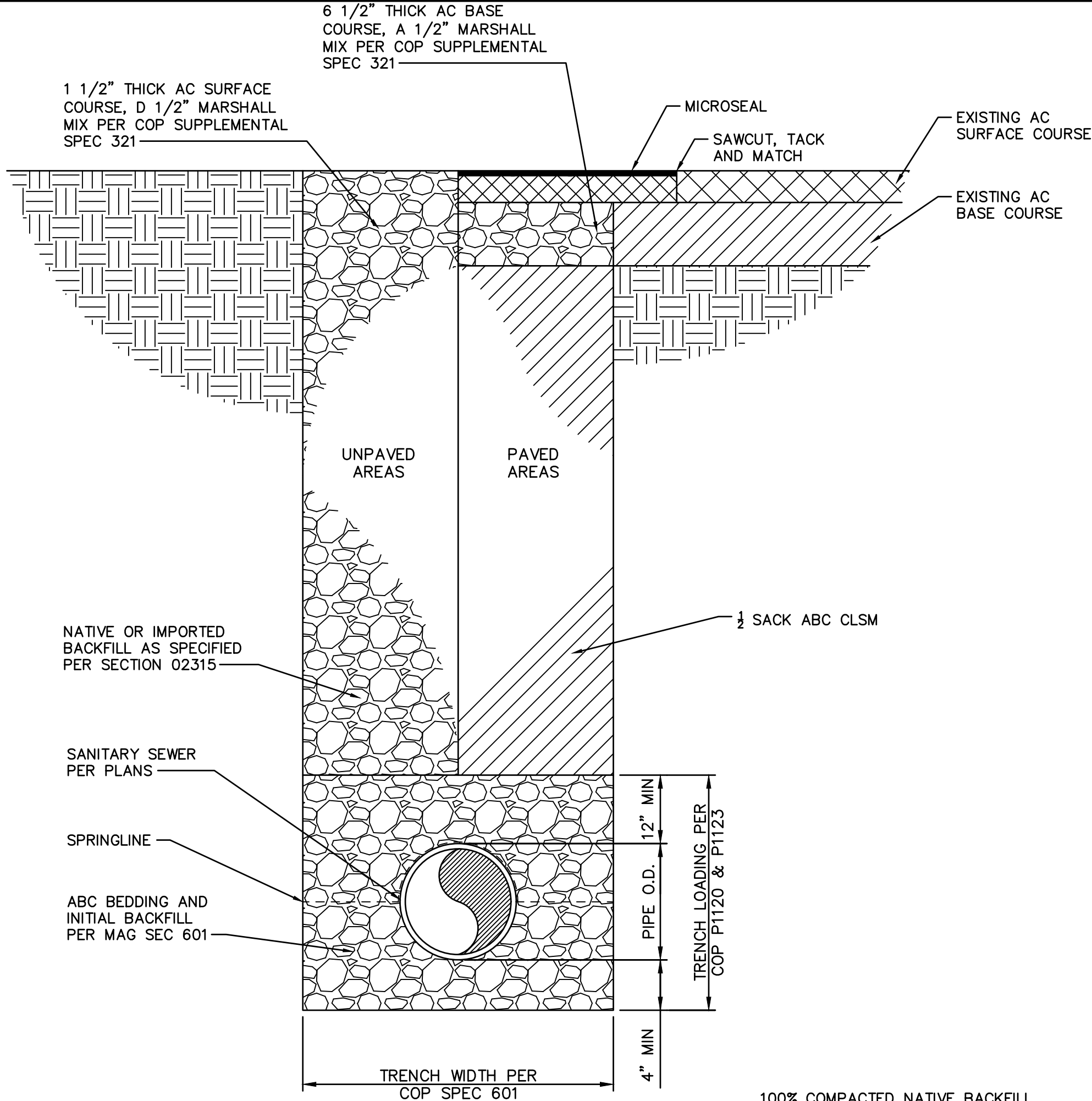
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CITY PROJECT NO. WS90400067—4

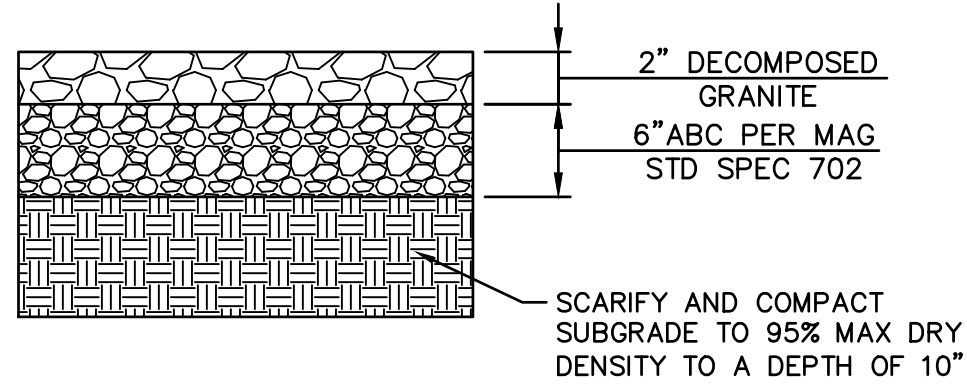
DATE: JANUARY 2023

C04 SHEET 8 OF 41

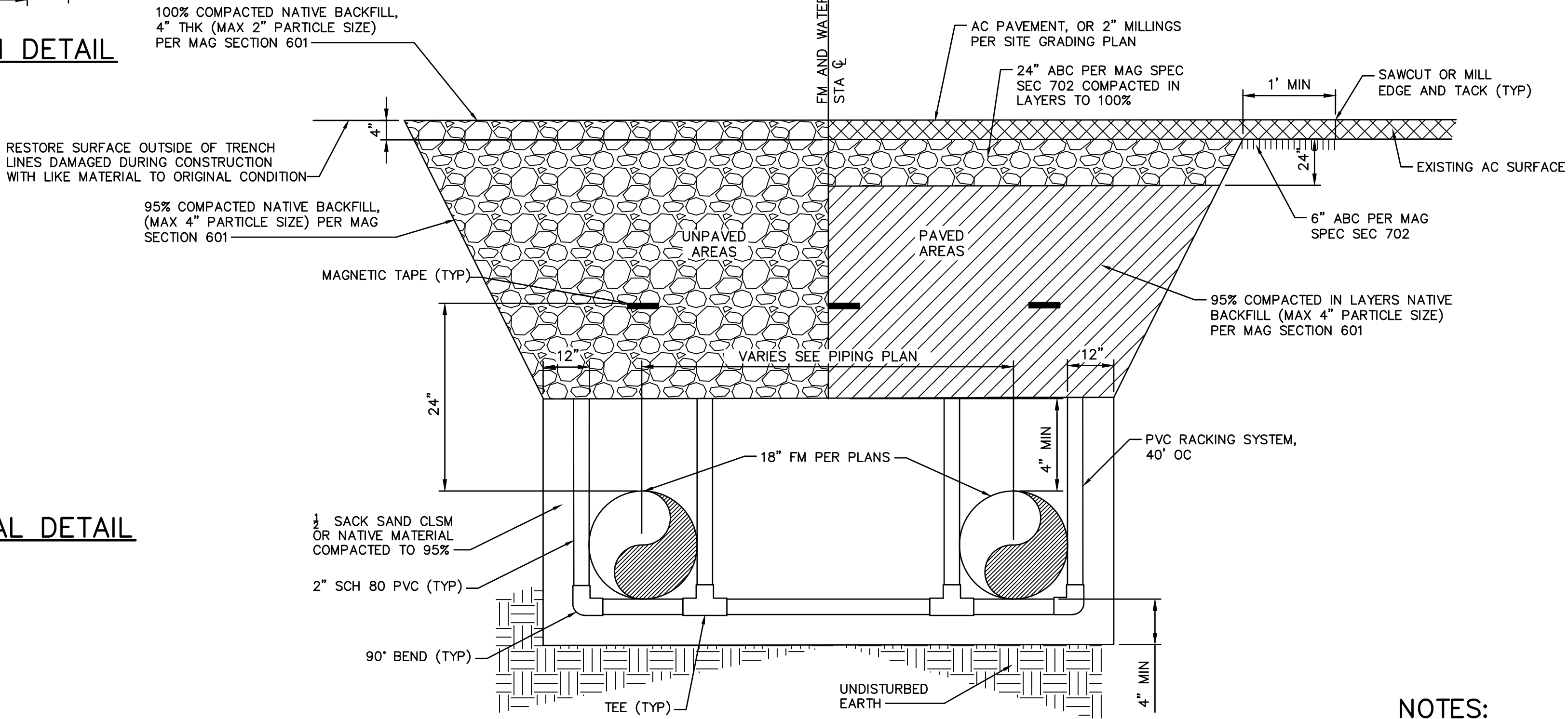
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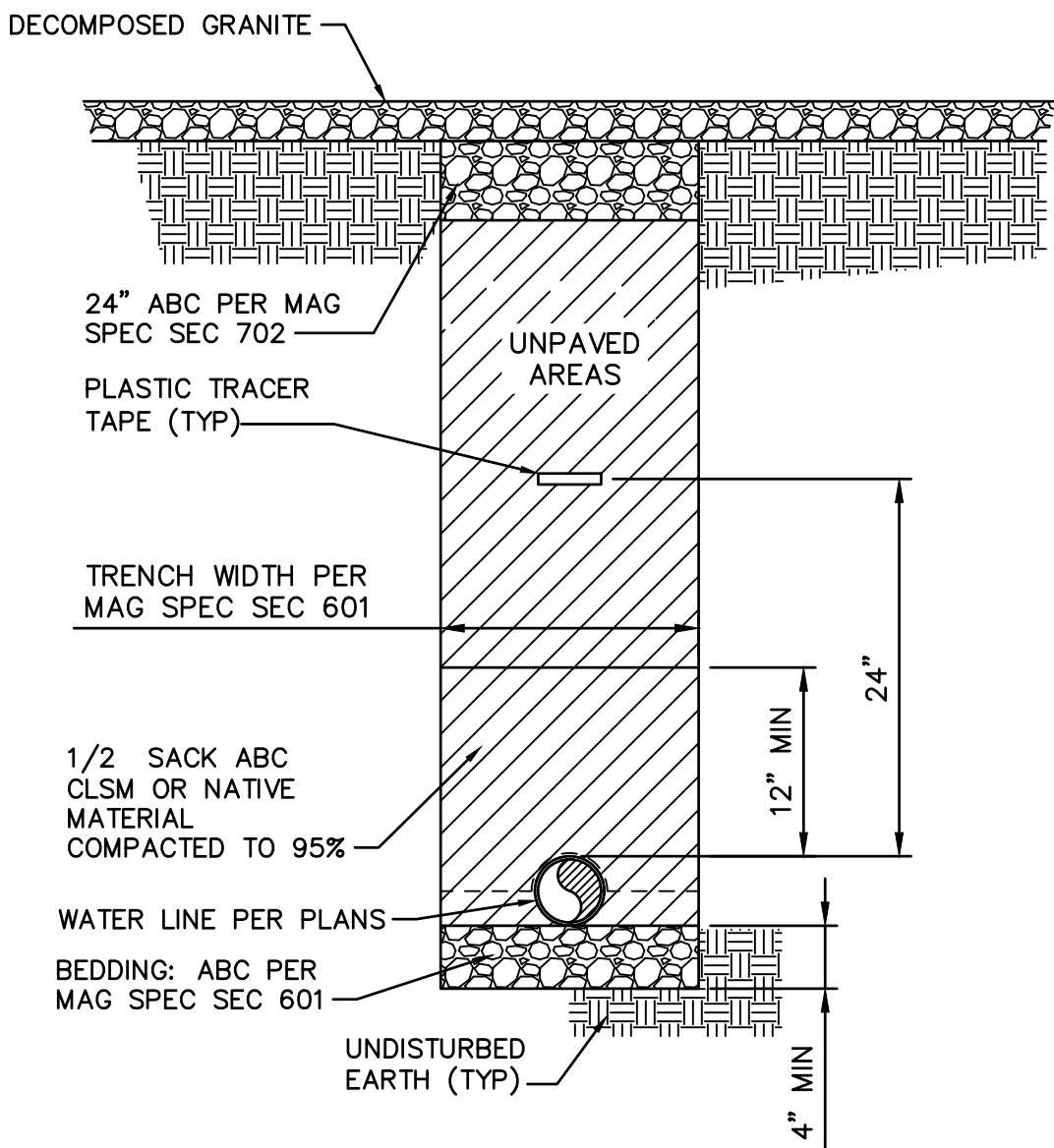
TYPICAL VCP TRENCH DETAIL
SCALE: NTS



DECOMPOSED GRANITE STRUCTURAL DETAIL
SCALE: NTS



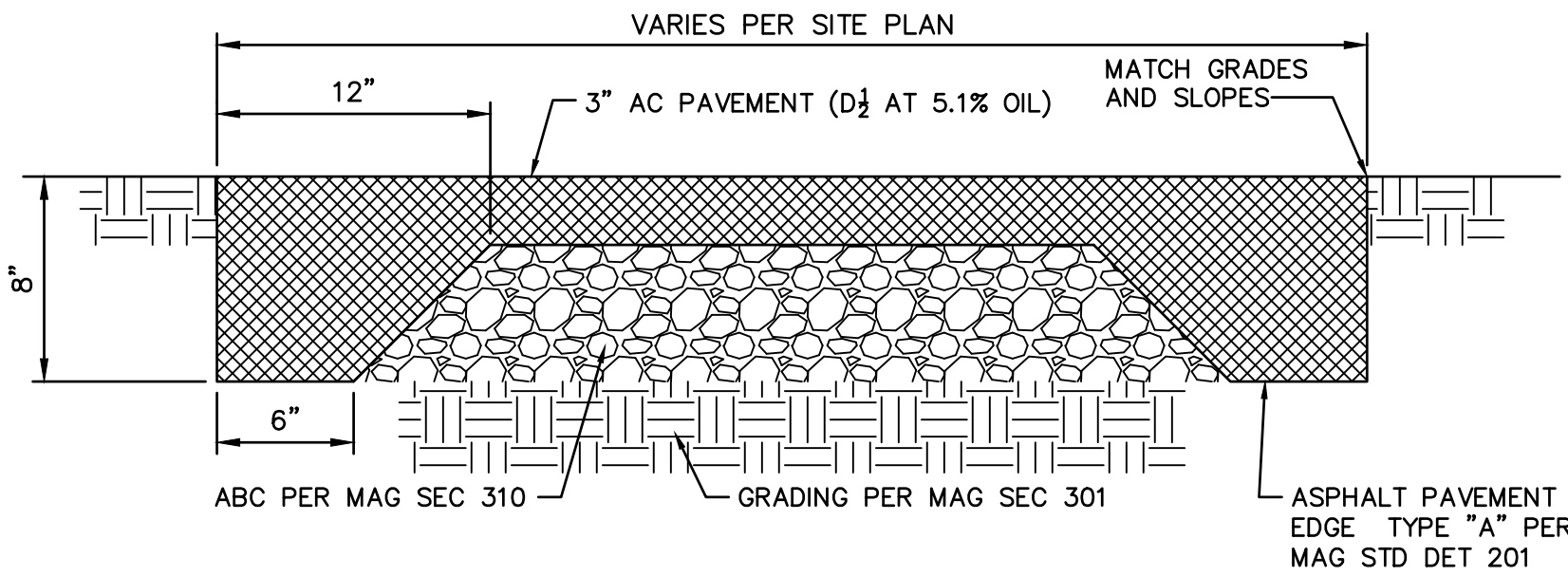
TYPICAL FORCEMAIN TRENCH DETAIL
SCALE: NTS



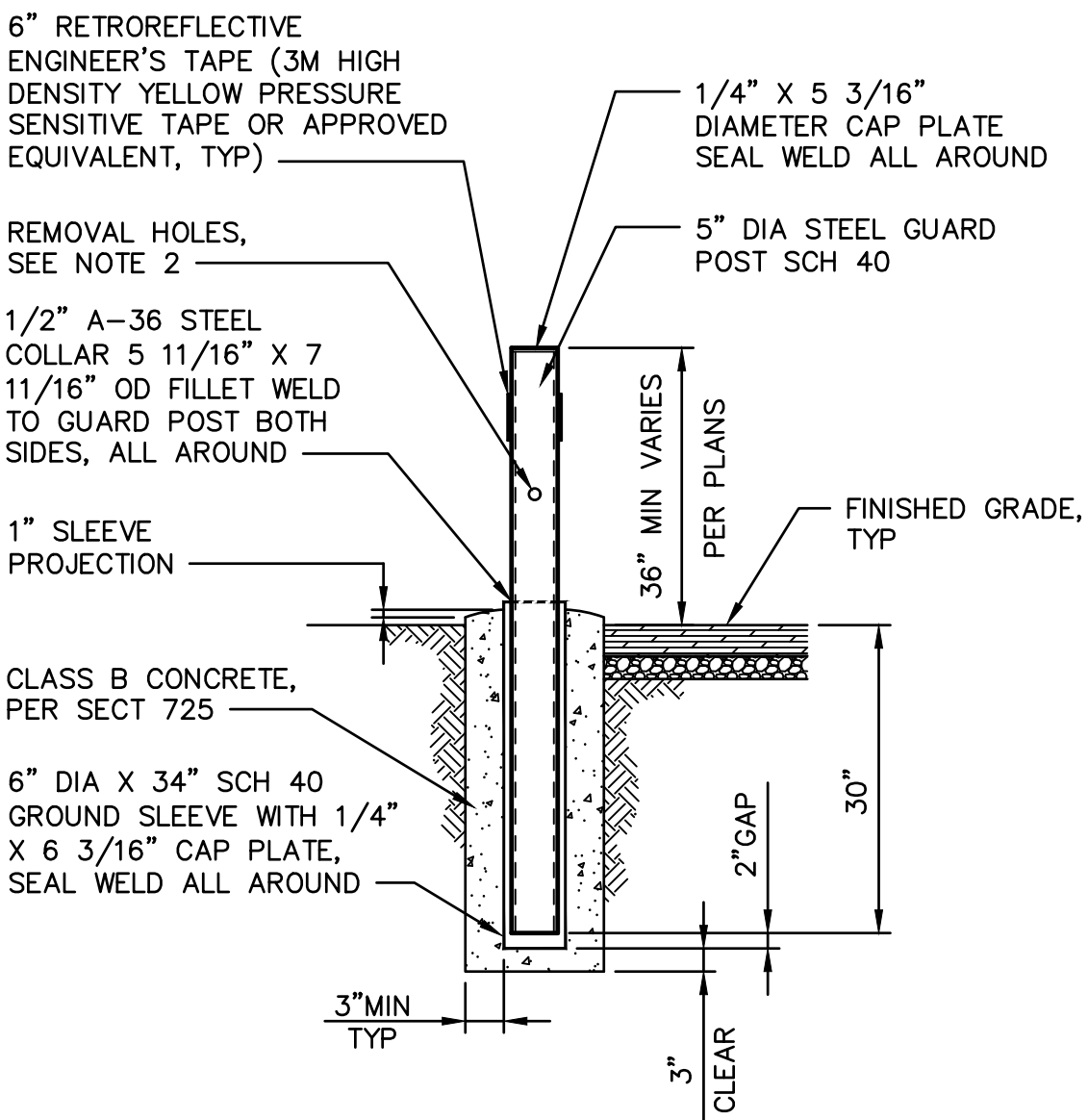
TYPICAL WATERLINE TRENCH DETAIL
SCALE: NTS

NOTES

- WHERE AC PAVEMENT ENDS ADJACENT TO UNPAVED AREAS, CONTRACTOR SHALL PROVIDE ASPHALT PAVEMENT EDGE IN ACCORDANCE WITH MAG STD DETAIL NO. 201 TYPE "A".
- TRENCH IN PAVEMENT MUST BE T-TOP WITH 1/2 SACK CLSM PER MAG STANDARD DETAILS 200 AND 212, MAG SPECIFICATIONS 604, 728, AND MCDOT SUPPLEMENTS TO MAG SECTION 601.
- OUTSIDE OF TRENCH AREA PROVIDE 2.5" AC OVER 6" ABC.
- FOR MILLINGS OUTSIDE OF TRENCH AREA SEE DECOMPOSED GRANITE STRUCTURAL SECTION.



TYPICAL ASPHALT PAVEMENT DETAIL
SCALE: NTS



GUARD POST DETAIL
(TYPE 2 REMOVABLE)
NOT TO SCALE

NOTES:

- REMOVABLE POSTS SHALL HAVE 1" DIA HOLES DRILLED THROUGH AT A DISTANCE 1/3 THE OVERALL POST LENGTH FROM THE TOP.
- REMOVABLE POST - GRIND SMOOTH ALL SHARP EDGES PRIOR TO GALVANIZATION. GALVANIZE PER ASTM A54 AFTER FABRICATION.

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GREELEY AND HANSEN
2800 N. 44TH STREET, SUITE 650
PHOENIX, AZ 85008

REVISIONS					REMARKS
NO.	BY	DATE	CKD		

DES
MT/RP

DWN
RAM

CKD
XXX



CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS

REMOTE FACILITIES

CIVIL

LIFT STATION 76 PHASE II EXPANSION
DETAILS 1

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C06 SHEET 10 OF 41
CAD FILE: 04276.05_C06

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REVISION	ENGINEERING COMPANY	PROJECT NO.	PROJECT NAME	DATE	CAD FILE NAME	REMARKS

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[illegible]


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DATE: JANUARY 2023
C07 SHEET 11 OF 41
CAD FILE: 04276.05_C07

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PIPE FITTING SYMBOLS




DOUBLE LINE




SINGLE LINE



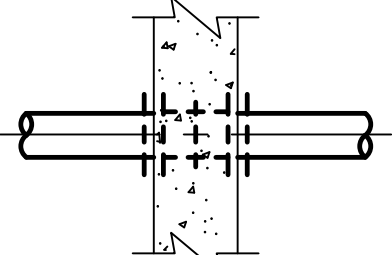
EXISTING PIPE



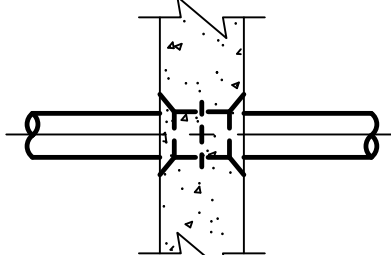
EXISTING PIPE TO BE REMOVED



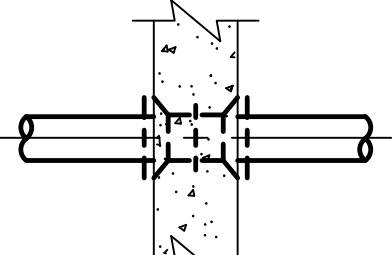
NEW PIPE



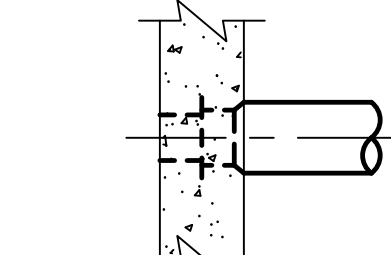
FLANGED JOINT ENDS



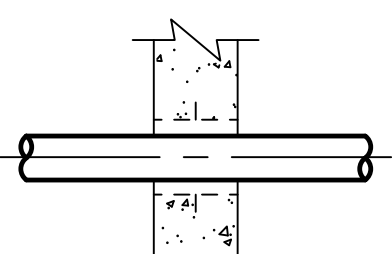
BELL AND SPIGOT JOINT ENDS



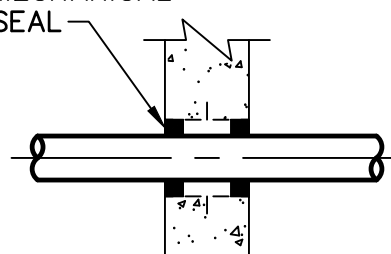
MECHANICAL JOINT ENDS



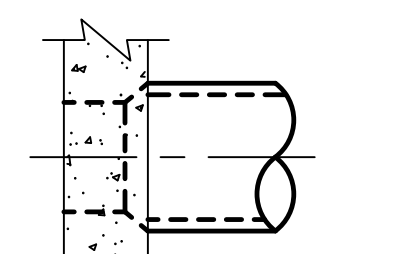
PLAIN END x BELL AND SPIGOT JOINT END



WALL SLEEVE (DRY CONDITION)




WALL SLEEVE (WET CONDITION)




PLAIN END x RCP BELL


VALVE SYMBOLS



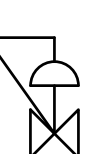
3-WAY VALVE




4-WAY VALVES




BACKFLOW PREVENTER




BACKPRESSURE REGULATOR
SELF CONTAINED




BALL CHECK VALVE




BALL VALVE




BUTTERFLY VALVE




DIAPHRAGM SEAL




DIAPHRAGM VALVE




FLAPPER CHECK VALVE




FLOW STRAIGHTENER




GATE VALVE




GLOBE VALVE




KNIFE VALVE




NEEDLE VALVE



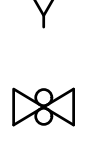
PETCOCK




PINCH VALVE




PLUG VALVE




PRESSURE REGULATING VALVE
SELF CONTAINED




PRESSURE RELIEF VALVE




RUPTURE DISK (PRESSURE RELIEF)



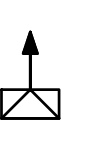
RUPTURE DISK (VACUUM RELIEF)




SWING CHECK VALVE



TELESCOPING VALVE




VACUUM RELIEF VALVE

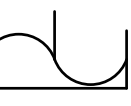


VEE BALL VALVE

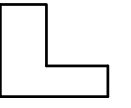
PROCESS FLOW DIAGRAM SYMBOLS



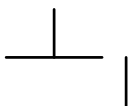
CENTRIFUGAL PUMP



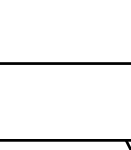
DIAPHRAGM PUMP



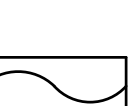
METERING, PERISTALTIC,
OR PROPORTIONING PUMP



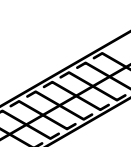
PISTON PUMP



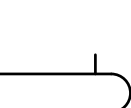
PROGRESSIVE CAVITY PUMP



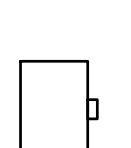
ROTARY PUMP



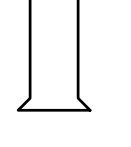
SCREW (LIFT) PUMP
POSITIVE DISPLACEMENT



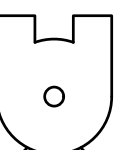
SUBMERSIBLE SUMP PUMP




VERTICAL TURBINE
PUMP



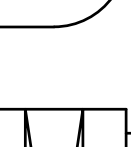
BLOWER



COMPRESSOR

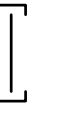


CHLORINATOR




EVAPORATOR

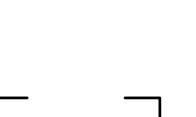
PUMP / EQUIPMENT SYMBOLS



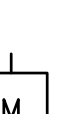
SLIDE GATE




SLUICE GATE




STOP LOG/PLATE GROOVES




INSERT MAGNETIC FLOW
ELEMENT




INLINE MAGNETIC FLOW
ELEMENT




DENSITY FLOW ELEMENT



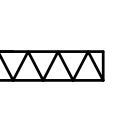
ROTOMETER TYPE FLOW
ELEMENT



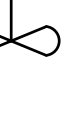
VENTURI TYPE FLOW
ELEMENT




DIFFUSER




STATIC MIXER



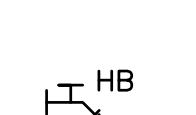
MIXER



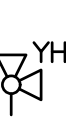
STRAINER




DAMPER




FLEX HOSE




HOSE BIBB



YARD HYDRANT



HIGH PRESSURE AIR HOSE
STATION



DRAIN

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DWN
RAM

CKD
XXX

City of Phoenix

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

MECHANICAL PROCESS
LIFT STATION 76 PHASE II EXPANSION
LEGEND 1

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DATE: JANUARY 2023
M01 SHEET 12 OF 41
CAD FILE: 04276.05_M01

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CONCRETE FITTINGS

TEE

45° ELBOW

90° ELBOW

CONCENTRIC REDUCER

FLANGED FITTINGS

CROSS

CROSS UP

TEE

TEE UP

TEE DOWN

REDUCING TEE

REDUCING TEE UP

LATERAL

LATERAL DOWN

LATERAL UP

22.5° ELBOW

45° ELBOW

45° ELBOW DOWN

45° ELBOW UP

REDUCING ELBOW

90° ELBOW LONG

90° ELBOW LONG DOWN

90° ELBOW LONG UP

MECHANICAL JOINT FITTINGS

90° ELBOW SHORT

90° ELBOW SHORT DOWN

90° ELBOW SHORT UP

CONCENTRIC REDUCER

FLEXIBLE COUPLING

BUTTERFLY VALVE

GATE VALVE

PLUG VALVE

CHECK VALVE

STEEL FITTINGS

CROSS

TEE

45° ELBOW

45° ELBOW DOWN

90° ELBOW

90° ELBOW DOWN

ECCENTRIC REDUCER

CONCENTRIC REDUCER

FLANGE

PVC FITTINGS

TEE

TEE UP

TEE DOWN

45° ELBOW

45° ELBOW DOWN

45° ELBOW UP

90° ELBOW

90° ELBOW DOWN

90° ELBOW UP

REDUCER

ENDJOINT

SINGLE LINE FITTINGS

TEE

TEE UP

TEE DOWN

LATERAL

90° ELBOW

45° ELBOW

90° ELBOW DOWN

90° ELBOW UP

UNION

CONCENTRIC REDUCER

ECCENTRIC REDUCER

CAP PLUG

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PROJECT NAME

DATE

CAD FILE NAME

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REMARKS

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CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

MECHANICAL PROCESS
LIFT STATION 76 PHASE II EXPANSION
LEGEND 2

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CITY PROJECT NO. WS90400067—4

DATE: JANUARY 2023

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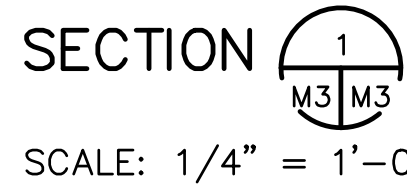
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ABANDON WET WELL IN PLACE
SECTION & DETAIL

1. CONTRACTOR SHALL BACKFILL WET WELL AND MANHOLE WITH A 26 PCF MIXTURE, WITH A MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 60 PSI.
2. CONTRACTOR SHALL USE ONE-HALF SACK CONTROLLED LOW STRENGTH MATERIAL (LSM) PER CITY OF PHOENIX SUPPLEMENT TO MAG STANDARD SPECIFICATIONS AND DETAILS (MOST RECENT EDITION), SECTION 604.
3. CONTRACTOR IS RESPONSIBLE TO BACKFILL THE WET WELL AND MANHOLE COMPLETELY AS DESCRIBED WITHOUT ANY CAVITIES OR VOIDS.
4. PER CITY OF PHOENIX ORDINANCE G-4396, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE SHARED WITH OTHERS EXPECT AS REQUIRED FOR THE CONSTRUCTION OF THE PUBLIC WORKS FACILITIES SHOWN HEREON. THE PROJECT OWNER, AND THE OWNER'S LENDERS, CONSULTANTS, CONTRACTORS AND SUBCONTRACTORS ARE PROHIBITED FROM DISCLOSING THE PLANS AND SPECIFICATIONS TO ANY PERSONS OTHER THAN THOSE WHO HAVE A NEED TO KNOW THE INFORMATION FOR THE PURPOSE OF THE PROJECT.
5. EXISTING WET WELL BOTTOM IS TO BE CORE DRILLED BEFORE BACKFILLING. WET WELL SHALL BE ABANDONED IN PLACE WITH CONTROLLED LOW STRENGTH MATERIAL (LSM) IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MAG STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION, SECTION 604. LOW STRENGTH FLOWABLE FILL DEPTH SHALL NOT BE GREATER THAN 5-FEET BELOW GRADE. THE REMAINING VOLUME SHALL BE BACKFILLED WITH GENERAL FILL MATERIAL TO 95% COMPACTION. GENERAL BACKFILL SHALL MATCH GRADING PLAN.
6. EXISTING MANHOLE NO. 1 IS TO BE CORE DRILLED BEFORE BACKFILLING. THE CONTRACTOR SHALL REMOVE THE COVER AND FRAME, AND SHALL REMOVE THE TOP 6-FT BELOW GRADE OF THE MANHOLE. THE MANHOLE IS TO BE ABANDONED IN PLACE WITH CONTROLLED LOW STRENGTH MATERIAL (LSM) IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MAG STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION, SECTION 604. LOW STRENGTH FLOWABLE FILL DEPTH SHALL NOT BE GREATER THAN 5-FEET BELOW GRADE. THE REMAINING VOLUME SHALL BE BACKFILLED WITH GENERAL FILL MATERIAL TO 95% COMPACTION. GENERAL BACKFILL SHALL MATCH GRADING PLAN.

FACILITY DRAWINGS

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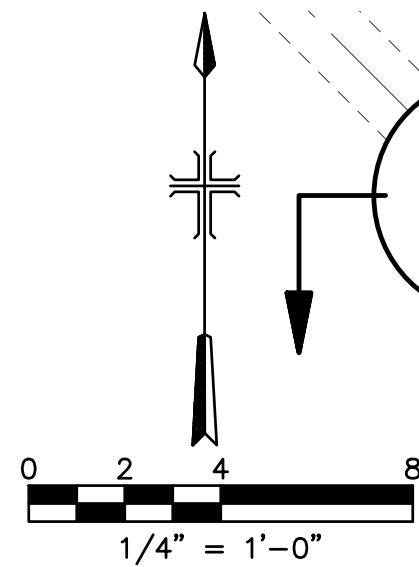
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 <div>GREELEY AND HANSEN 2800 N. 44TH STREET, SUITE 650 PHOENIX, AZ 85008</div>	REVISIONS					DES	 <div>City of Phoenix</div>	CITY OF PHOENIX WATER SERVICES DEPARTMENT COLLECTION SYSTEMS REMOTE FACILITIES	MECHANICAL PROCESS LIFT STATION 76 PHASE II EXPANSION EXISTING LIFT STATION DEMOLITION PLAN & SECTION	COPYRIGHT © 2007—JANUARY
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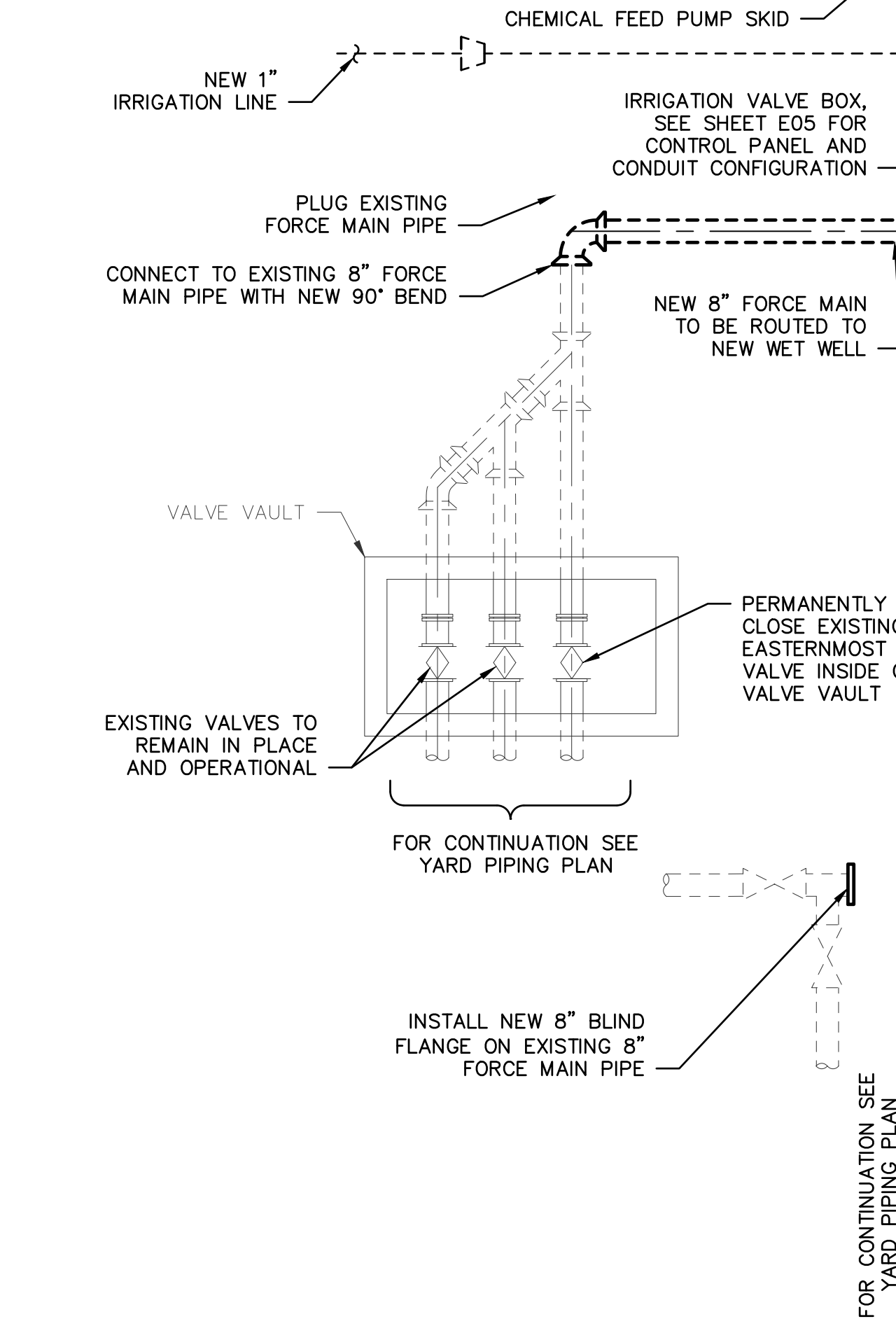
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4,350 GAL. DOUBLE WALL
HIGH DENSITY CROSS-LINKED
POLYETHYLENE STORAGE TANK
(10' DIA. X 10' HIGH)



LIFT STATION TOP PLAN
SCALE: 1/4" = 1'-0"

- CONSTRUCTION NOTES**
1. INSTALL STAINLESS STEEL ADHESIVE MOUNT ANCHOR FALL PROTECTION SOCKET BY 3M DBI/SALA OR APPROVED EQUAL.
- BIOFILTER NOTES**
1. LOCATION OF CLEANOUTS FOR THE BIOFILTER WILL BE FIELD VERIFIED BY THE CONTRACTOR IN FULL COORDINATION WITH THE CITY OF PHOENIX.
 2. BIOFILTER CLEANOUTS SHALL BE INSTALLED USING THE LATEST APPROVED STANDARDS BY THE CITY AND IN STRICT CONFORMANCE WITH THE CITY'S DIRECTION.

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CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

MECHANICAL PROCESS
LIFT STATION 76 PHASE II EXPANSION
NEW LIFT STATION PLAN

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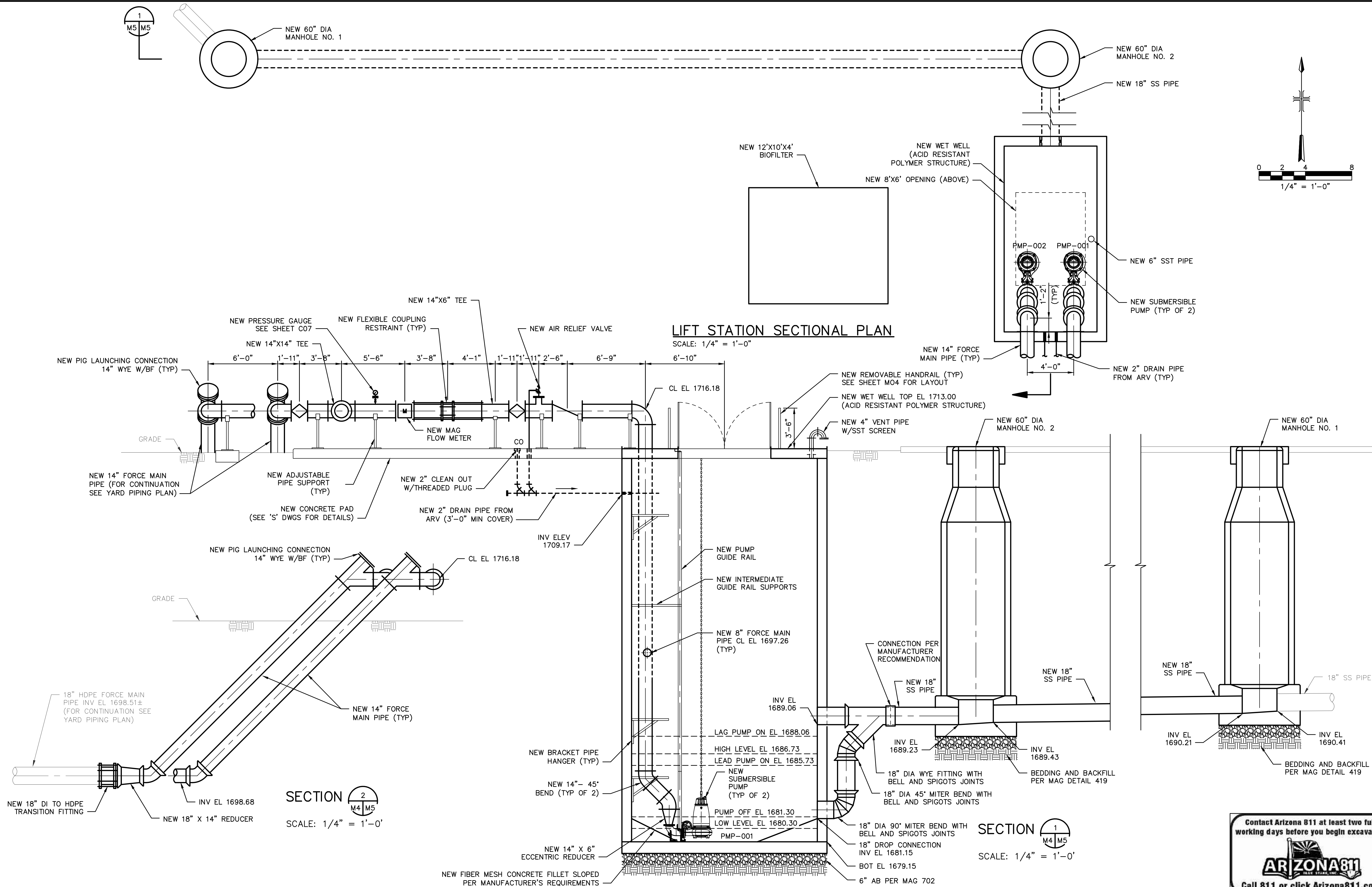
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City of Phoenix

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

MECHANICAL PROCESS

LIFT STATION 76 PHASE II EXPANSION NEW LIFT STATION PLAN & SECTION

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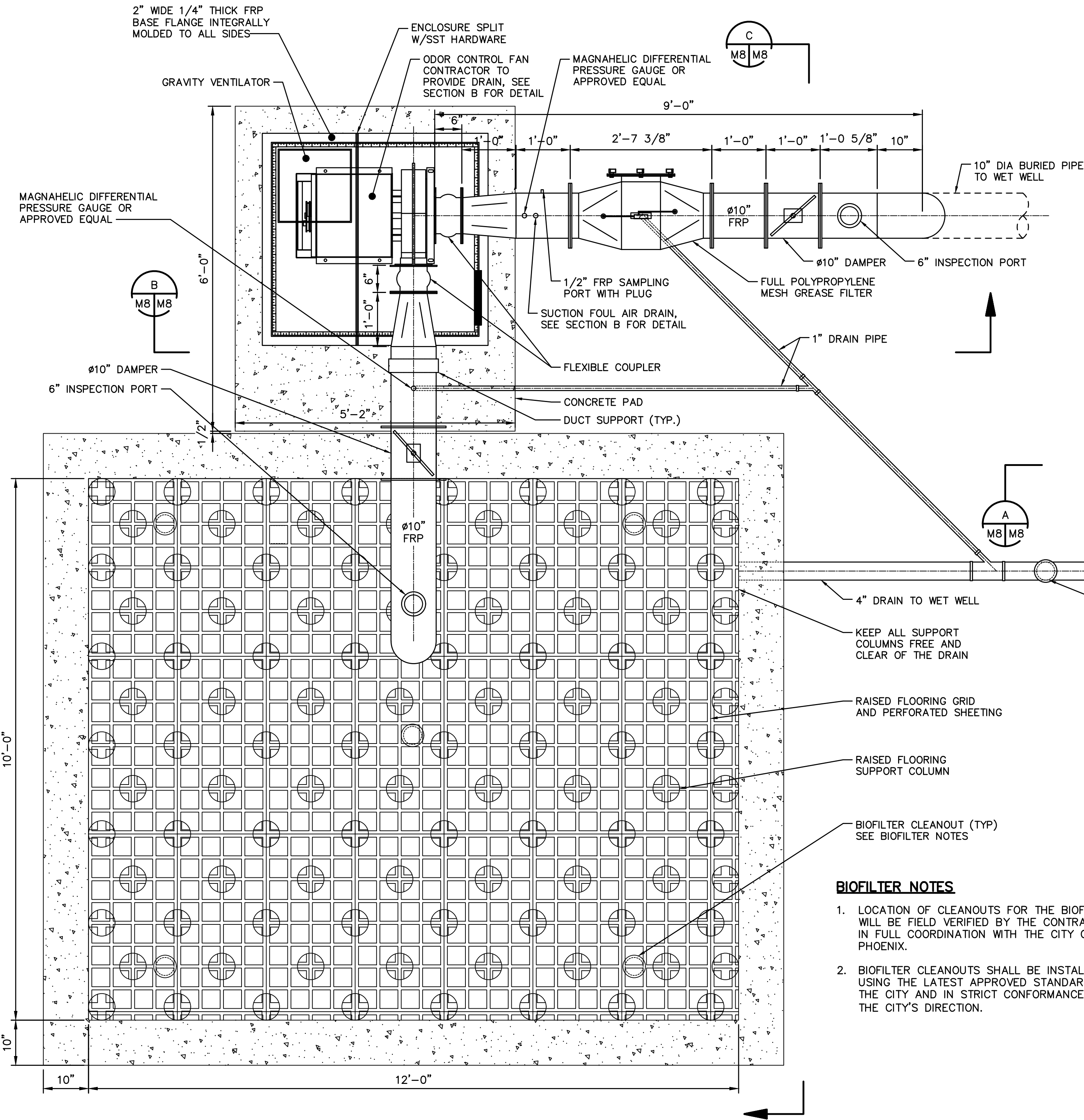
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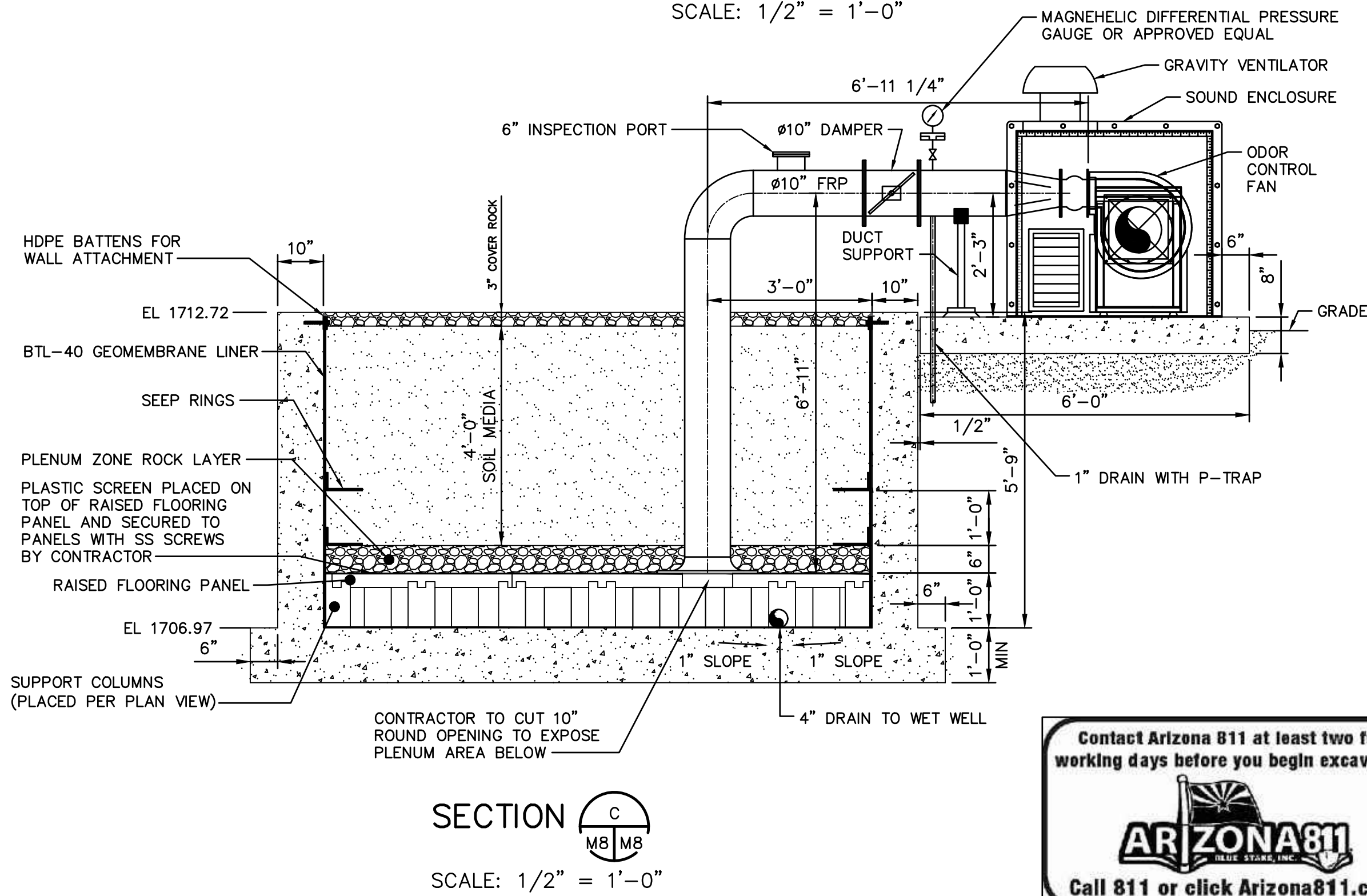
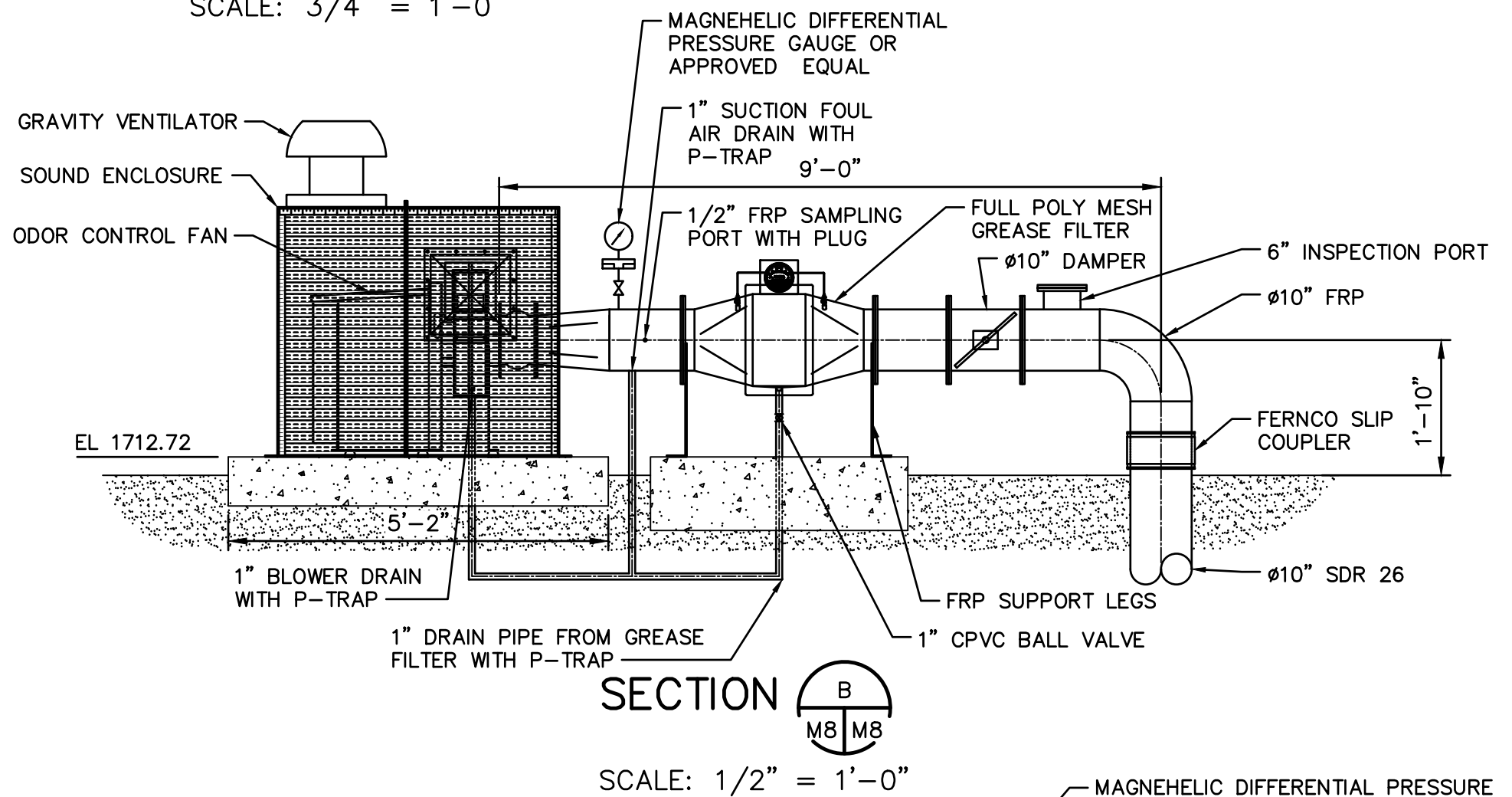
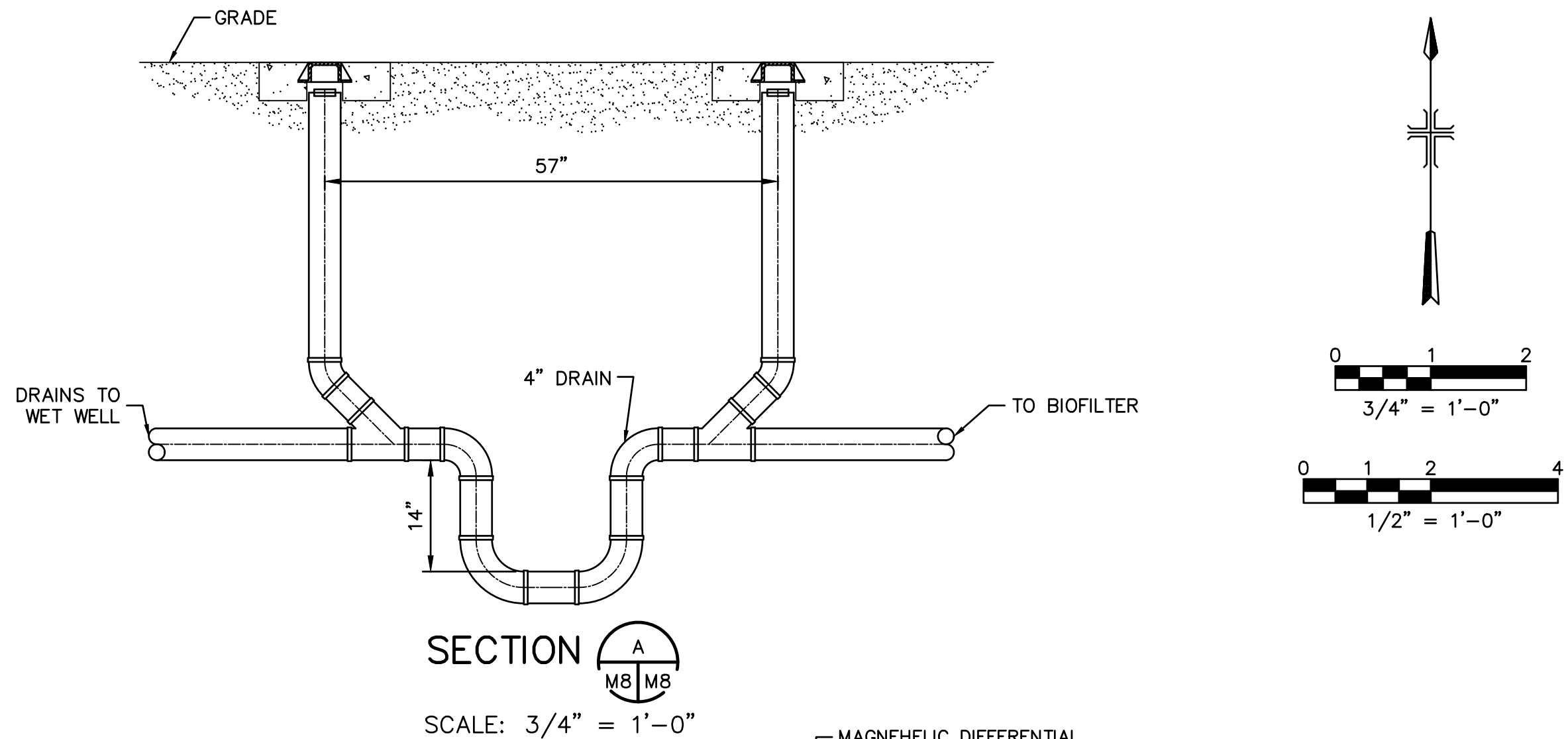
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BIOFILTER PLAN VIEW
SCALE: 3/4" = 1'-0"

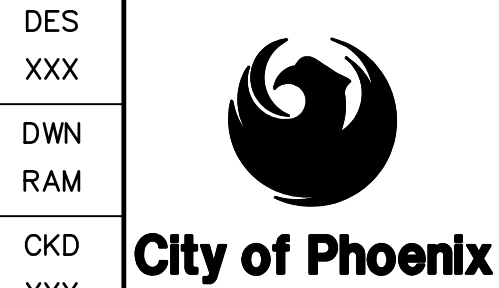


SECTION C
SCALE: 1/2" = 1'-0"



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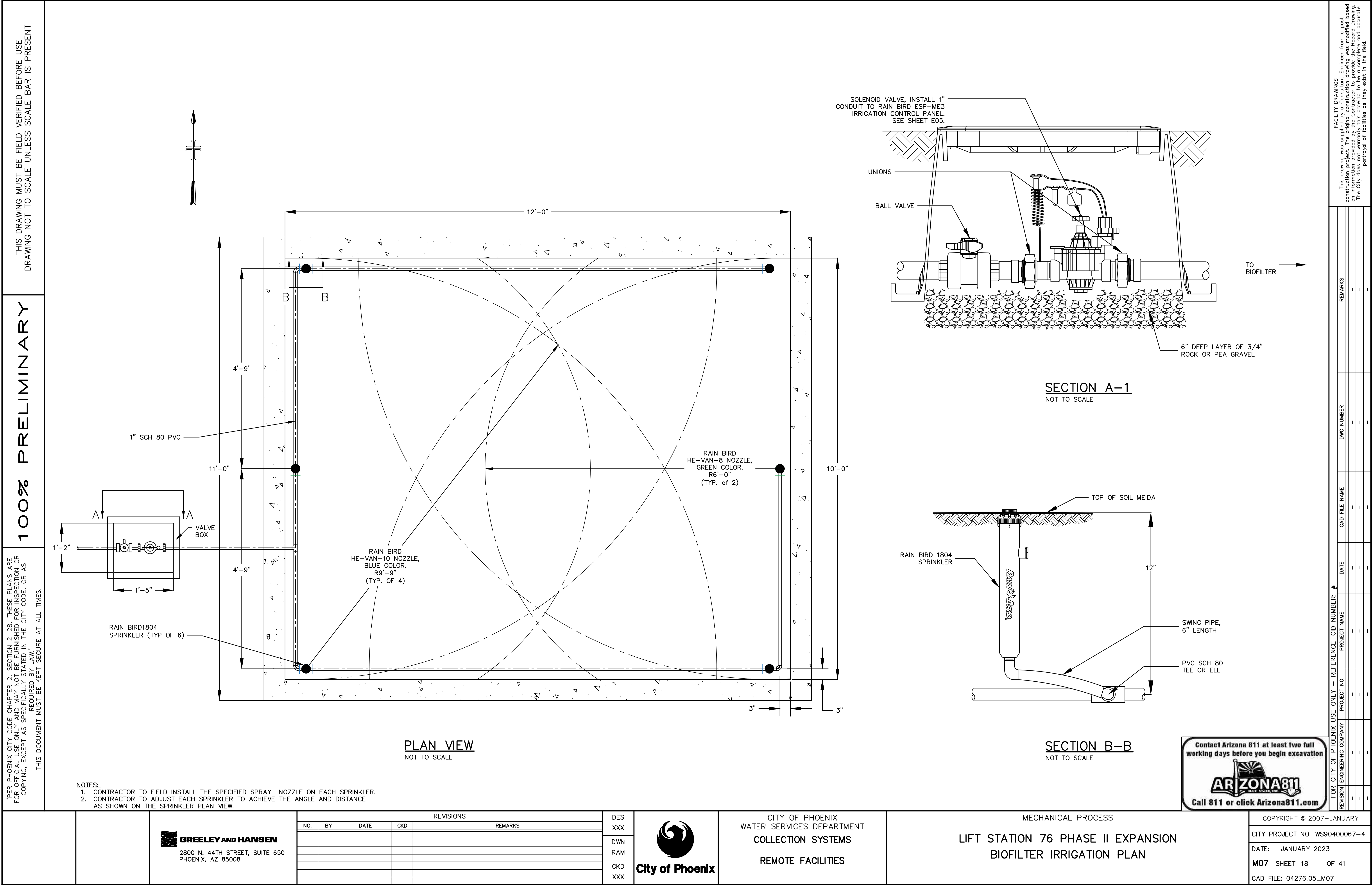
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MECHANICAL PROCESS
LIFT STATION 76 PHASE II EXPANSION
BIOFILTER PLAN AND SECTION

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GENERAL STRUCTURAL NOTES

A. GENERAL

- 1. UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS OR IN SPECIFIED CONTRACT DRAWINGS. WHERE SPECIFIC DETAILS OR NOTES DIFFER FROM TYPICAL DETAILS AND THESE GENERAL NOTES, THE SPECIFIC REQUIREMENTS GOVERN.
- 2. STRUCTURAL DIMENSIONS CONTROLLED BY, AFFECTED BY, OR AFFECTING MECHANICAL OR ELECTRICAL WORK, OR BY EQUIPMENT SUPPLIED, SHALL BE COORDINATED AND VERIFIED BY THE PRIME CONTRACTOR PRIOR TO CONSTRUCTION. IF THIS COORDINATION REQUIRES ANY CHANGE TO THE STRUCTURAL DRAWINGS, SUCH CHANGE SHALL BE SUBMITTED FOR THE ENGINEER'S APPROVAL PRIOR TO WORK.
- 3. MECHANICAL AND ELECTRICAL SUPPORTS, ANCHORAGES, OPENINGS, AND RECESSES NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED TO COMPLETE OTHER PORTIONS OF THE WORK, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND SHALL BE PROVIDED PRIOR TO FINISHED CONCRETE.
- 4. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. UNLESS OTHERWISE INDICATED, CONCRETE TANKS HAVE BEEN DESIGNED FOR TESTING PRIOR TO BACKFILLING, AND CONCRETE STRUCTURES HAVE BEEN DESIGNED FOR DEAD LOADS AT 75% OF SPECIFIED CONCRETE STRENGTH; DURING CONSTRUCTION, ALL OTHER CONSTRUCTION LOADS SHALL BE ACCOMMODATED BY SHORING, BRACING, OR OTHER PROTECTION, BY THE CONTRACTOR.
- 5. ANY CHANGES TO THE DESIGN WHICH ARE PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND COST OF CHANGES TO ANY COMPONENTS OCCASIONED BY SUCH CHANGE. THE COST OF ANY DESIGN WORK NECESSITATED BY SUCH PROPOSAL SHALL BE BORNE BY THE CONTRACTOR.
- 6. THE STRUCTURES HEREIN HAVE BEEN DESIGNED TO THE CODES AND STANDARDS SPECIFIED BELOW. ANY ITEMS DESIGNED BY THE CONTRACTOR SHALL MEET THESE SAME REQUIREMENTS. SUCH DESIGNS SHALL BE PREPARED AND SEALED BY AN ENGINEER REGISTERED TO PRACTICE IN THE STATE OF ARIZONA.
- 7. UNLESS OTHERWISE SHOWN OR SPECIFIED, FINISHED GRADE AROUND STRUCTURES, SHOWN GENERALLY, MAY INDICATE GROUND SURFACE, TOP OF CONCRETE SLABS ON GRADE, OR PAVEMENT. FOR TYPES OF FINISHED SURFACES, REFER TO CIVIL OR ARCHITECTURAL DRAWINGS.
- 8. GUARDBAILS, HANDRAILS, LADDERS, STAIRS, CATWALKS, ELEVATORS, AND SIMILAR SAFETY DEVICES SHALL CONFORM TO THE LATEST FEDERAL AND STATE OSHA REQUIREMENTS, AND TO THE BUILDING CODE.
- 9. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.

B. CODES AND STANDARDS

- 1. THE AGENCY HAVING BUILDING CODE JURISDICTION IS CITY OF PHOENIX, ARIZONA.
- 2. INTERNATIONAL BUILDING CODE, 2018 EDITION (IBC), INCLUDING OTHER CODES & STANDARDS REFERENCED THEREIN, PROVIDES MINIMUM REQUIREMENTS..
- 3. RISK CATEGORY: III
- 4. LOADING:
 - A) DEAD LOADS: ACTUAL LOADS.
 - LOADS FOR EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE THE ACTUAL LOADS, AS PROVIDED BY THE MANUFACTURER OF THE EQUIPMENT.
 - B) LIVE LOADS:
 - ROOF 20 PSF,
 - FLOOR, GRATINGS, STAIRS, SOFFITS, ETC. 100 PSF,
 - SLABS-ON-GRADE & DRAINAGE STRUCTURES H-20,
 - RAILINGS 50 PLF,
 - C) ROOF SNOW LOAD: ZERO.
 - D) WIND LOADING:
 - BASIC WIND SPEED (3-SECOND GUST): 108 MPH,
 - EXPOSURE: C
 - MINIMUM PRESSURE: 16 PSF
 - E) SEISMIC LOADING:
 - SEISMIC IMPORTANCE FACTOR: 1.25
 - MAPPED SPECTRAL RESPONSE ACCELERATION: $S_s = 0.251$, $S_1 = 0.079$
 - SITE CLASS: D
 - SPECTRAL RESPONSE COEFFICIENTS: $S_{Ds} = 0.268$, $S_{D1} = 0.127$
 - SEISMIC DESIGN CATEGORY: B
 - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
 - BASIC SEISMIC FORCE RESISTING SYSTEMS: R = 2.0, $C_s = 0.167$ DESIGN BASE
 - CONCRETE TANKS, NON-SLIDING BASE: V = $C_s W$
 - SHEAR:
- 5. MANHOLES, CATCH BASINS, AND SIMILAR STRUCTURES SHALL BE PER MAG STANDARD DETAILS.

C. EARTHWORK.

- DESIGN IS BASED ON IBC PRESUMPTIVE VALUES FOR SILT (ML)
- 1. PRIOR TO PLACEMENT OF FILL OR FORMING OR REBAR PLACEMENT FOR ANY STRUCTURE, FOOTING, GRADE SLAB OR TANK:
 - A) REMOVE ANY VEGETATION OR TOPSOIL AND DISPOSE OF IT.
 - B) EXCAVATE TO SUBGRADE INDICATED AND SCARIFY TO 12" DEPTH AND RECOMPACT TO 95% MAXIMUM DENSITY WITHIN $\pm 2\%$ OF OPTIMUM MOISTURE CONTENT.
 - C) OBTAIN ENGINEER'S APPROVAL OF SUBGRADE PREPARATION.
- 2. EXCAVATIONS SHALL BE CARRIED OUT TO A 1½:1 SLOPE.
- 3. FILL AND BACKFILL SHALL BE CARRIED OUT IN LIFTS OF A MAXIMUM OF 8" . TESTING SHALL BE PERFORMED AT LEAST EVERY SECOND LIFT.
- 4. GRADE TO DRAIN AWAY FROM STRUCTURES, A MINIMUM GRADE OF 2% FOR A MINIMUM OF 4'-0" FROM STRUCTURE PERIMETER, EXCEPT THAT GRADING AWAY FROM BURIED FOOTERS SHALL BE FOR 4'-0" FROM PIERS FOUNDED ON THESE.
- 5. SOIL VALUES (UNFACTORED):
 - A) BEARING CAPACITY: 1500 LB/FT²
 - B) ACTIVE PRESSURE: 60 LB/FT³
 - C) AT-REST PRESSURE: 100 LB/FT³
 - D) PASSIVE PRESSURE: 200 LB/FT³
 - E) FRICTION FACTOR: 0.25

D. CONCRETE

- 1. ALL CONCRETE TANKS AND CONTAINMENT STRUCTURES ARE "WATER-BEARING", WATER-BEARING CONCRETE STRUCTURES, INCLUDING REINFORCING, SHALL COMPLY WITH ACI "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" (ACI 350-06).
- 2. ALL OTHER CONCRETE CONSTRUCTION, INCLUDING REINFORCING, SHALL COMPLY WITH ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-14).
- 3. NON-STRUCTURAL CONCRETE IS CONCRETE FOR THRUST BLOCKS, ENCASEMENTS, FILL, CURBS AND SIDEWALKS. STRUCTURAL CONCRETE IS ALL OTHER CONCRETE.
- 4. STRUCTURAL CONCRETE:
 - A) MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.
 - B) WATER-CEMENT RATIO SHALL NOT EXCEED 0.45.
 - C) MINIMUM CEMENT CONTENT: 600 lb/yd³
 - D) SLUMP AT POINT OF PLACEMENT SHALL NOT EXCEED 3" $\pm 1"$. IF SUPERPLASTICIZER IS USED, IT SHALL BE ADDED AT THE JOB SITE, AFTER VERIFYING THAT THE SLUMP (BEFORE PLASTICIZING) DOES NOT EXCEED 3" $\pm 1"$. SUPERPLASTICIZED CONCRETE SLUMP SHALL NOT EXCEED 7" $\pm 1"$.
 - E) MAXIMUM AGGREGATE SIZE: 1" (ASTM C-33, SIZE 67).
- 5. NON-STRUCTURAL CONCRETE:
 - A) MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
 - B) WATER-CEMENT RATIO SHALL NOT EXCEED 0.550.
 - C) MINIMUM CEMENT CONTENT: 520 lb/cy
 - D) SLUMP AT POINT OF PLACEMENT SHALL NOT EXCEED 4" $\pm 1"$.
 - E) MAXIMUM AGGREGATE SIZE: 1½" (ASTM C-33, SIZE 467).
- 6. POZZOLANS SHALL BE USED IN WATER-BEARING STRUCTURES AND MAY BE USED IN OTHER CONCRETE: FLY ASH, PER ASTM C618 CLASS F, 10%-20% REPLACEMENT OF CEMENT.
- 7. HIGH-RANGE WATER REDUCER (SUPERPLASTICIZER) SHALL BE USED IN CURBS AND PEDESTALS AND FOR THE FIRST LIFT OF WALLS AND COLUMNS PLACED AGAINST HARDENED CONCRETE. IT MAY BE USED IN SUBSEQUENT LIFTS IN WALLS AND COLUMNS.
- 8. SUBMIT MIX DESIGNS, INCLUDING STRENGTH HISTORY, FOR APPROVAL.
- 9. LOCATION OF ALL CONSTRUCTION, CONTRACTION, AND EXPANSION JOINTS SHALL BE AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER. CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND INTENTIONALLY ROUGHENED FOR BOND. PROVIDE WATER STOPS IN ALL CONSTRUCTION JOINTS IN WATER BEARING SLABS AND WALLS
- 10. EMBEDDED ITEMS SHALL BE FIRMLY HELD INTO POSITION IN THE FORMWORK OR MASONRY AND SHALL NOT BE "WET STABBED" INTO FRESHLY PLACED CONCRETE OR GROUT.
- 11. EXPANSION JOINTS SHALL HAVE EDGES ROUNDED TO 1/4" RADIUS, USE 1/2" CORK OR CANE-FIBER FORM BOARD, EXCAVATED TO 1/2" DEPTH AND FILLED WITH AN APPROVED POLY-SULFIDE CAULK.
- 12. DO NOT PLACE ANY CONCRETE WHOSE TEMPERATURE IS ABOVE 90°F. DO NOT PLACE ANY CONCRETE THAT IS MORE THAN 90 MINUTES OLD, SINCE BATCH TIME.
- 13. UNLESS SELF-CONSOLIDATING CONCRETE IS APPROVED AS SUCH, ALL CONCRETE SHALL BE CONSOLIDATED BY INTERNAL VIBRATION.
- 15. PROVIDE A MINIMUM OF 7 DAYS MOIST CURING OF ALL CONCRETE. IF DAYTIME HIGHS ARE ABOVE 95°F, USE WATER CURE ONLY (NOT MEMBRANE CURE).
- 16. FORMS & SHORES SHALL NOT BE REMOVED FROM SUSPENDED SLABS AND BEAMS UNTIL THEY HAVE ATTAINED AT LEAST 75% OF SPECIFIED STRENGTH.

E. REINFORCING STEEL

- 1. ALL DETAILING, FABRICATION, AND PLACEMENT OF REINFORCING SHALL BE IN ACCORDANCE WITH ACI 318-14, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315-LATEST EDITION.
- 2. REINFORCING STEEL SHALL BE DEFORMED BARS OR WELDED WIRE MESH CONFORMING IN QUALITY TO THE REQUIREMENT FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT, ASTM A615, GRADE 60. WELDED REINFORCING STEEL SHALL BE LOW-ALLOY ASTM A706.
- 3. ALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS, CURBS AND/OR SLABS SHALL BE CONTINUOUS, LAPPED AS SPECIFIED BELOW, OR TERMINATED IN A STANDARD HOOK.
- 4. AT CONSTRUCTION JOINTS, COLUMNS, AND MASONRY GROUT LIFTS, REINFORCING SHALL BE DOWELED. UNLESS SHOWN OTHERWISE, DOWELS SHALL HAVE THE SAME DIAMETER AND SPACING AS REINFORCING WHICH IS TO BE SPLICED TO IT. DOWELS SHALL BE FIRMLY HELD INTO POSITION IN THE FORMWORK OR MASONRY AND SHALL NOT BE "WET STABBED" INTO FRESHLY PLACED CONCRETE OR GROUT.
- 5. CONCRETE COVER OVER REINFORCING SHALL BE AS FOLLOWS:
 - A) SURFACES NOT EXPOSED TO EARTH, WEATHER OR WATER: 1-1/2"
 - B) SURFACES EXPOSED TO EARTH, WEATHER OR WATER: 2"
 - C) CONCRETE PLACED DIRECTLY AGAINST EARTH: 3"
 - D) CONCRETE SHALL BE PLACED WITH A TOLERANCE OF $\pm 1/2"$ OF THE COVER SPECIFIED AND $\pm 3"$ OF THE LATERAL POSITION SPECIFIED.
 - E) WHERE CONCRETE IS PLACED AGAINST THE SIDES OF EXCAVATIONS, EXCAVATIONS MUST BE CAREFULLY TRIMMED SO THAT SIDE COVER IS NO MORE THAN 6". IF THIS REQUIREMENT IS NOT MET, FORMS MUST BE INSTALLED OR SUPPLEMENTAL REINFORCING PROVIDED.
- 6. BAR SUPPORTS AND SPACERS SHALL MEET THE REQUIREMENTS OF THE ACI, AND SHALL BE PLASTIC OR PLASTIC-COATED WIRE IN WALLS AND SUSPENDED SLABS. IN SLABS ON GRADE AND FOOTINGS, THEY SHALL BE 4000 PSI CONCRETE BLOCKS.
- 7. THE MINIMUM LENGTH OF LAPS OF REINFORCING (CLASS B SPLICES) SHALL BE:
 - A) 36 BAR DIAMETERS FOR HORIZONTAL BARS IN CONCRETE WALLS AND TOP BARS IN SLABS > 14" THICK ($\leq \#6$)
 - B) 30 BAR DIAMETERS FOR OTHER BARS IN CONCRETE WALLS & SLABS ($\leq \#6$)

F. REINFORCING STEEL (CONT.)

- 8. SUBMIT SHOP DRAWINGS OF ALL REINFORCING FOR APPROVAL PRIOR TO PLACEMENT. SHOP DRAWINGS SHALL BE PER ACI DETAILING MANUAL, ACI SP.
- 9. SUBMIT MANUFACTURER'S DATA ON ALL COUPLERS, MECHANICAL SPLICERS, REBAR POSITIONERS, DOBIES, CHAIRS, AND OTHER REINFORCEMENT ACCESSORIES FOR APPROVAL PRIOR TO PLACEMENT.
- F. STRUCTURAL STEEL
 - 1. STEEL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS CONTAINED IN THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL. BOLTING SHALL CONFORM TO THE AISC SPECIFICATION FOR BOLTING USING A325 BOLTS. WELDING SHALL CONFORM TO AWS STRUCTURAL WELDING CODE, D1.1.
 - 2. UNLESS OTHERWISE SPECIFIED STEEL SHALL CONFORM TO:
 - A) SHAPES, PLATES, & BARS ASTM A36
 - B) STRUCTURAL TUBING ASTM A500, GRADE B
 - C) PIPE ASTM F1043, GRADE B, 50 KSI YIELD
 - D) WIDE FLANGE SECTIONS ASTM A992
 - E) ANCHOR BOLTS ASTM A307, 3/4" DIA. MINIMUM
 - F) BOLTS ASTM A325, TYPE 1, GALV, 5/8" DIA. MINIMUM
 - G) WELDING E70XX, 3/16" MINIMUM
 - 3. HARDENED, HEAVY-DUTY WASHERS OR PLATE WASHERS SHALL BE USED AT ALL OVERSIZED OR SLOTTED HOLES. WASHERS SHALL NOT BE USED AT STANDARD HOLES, UNLESS PREVIOUSLY APPROVED BY THE ENGINEER.
 - 4. ALL WELDS SHALL BE SLAGGED AND SHALL REMAIN UNPAINTED UNTIL INSPECTION HAS BEEN COMPLETED AND APPROVED.
 - 5. WELDING SHALL BE IN ACCORDANCE WITH PRE-QUALIFIED PROCEDURES, BY WELDERS CERTIFIED FOR THE MATERIAL, WELD, POSITION, AND PROCEDURES EMPLOYED. TUBE WELDING OF T-, Y- AND K- CONNECTIONS (DESIGNATED "TUBE" SHALL BE PER AWS D1.1, FIGURE 3.4, 3.5, OR 3.6, AS APPLICABLE. OTHER WELDING SHALL BE PER AWS D1.1, FIGURE 3.3. EACH WELD SHALL BE FULLY DETAILED ON SHOP DRAWINGS PER AWS A2.4.
 - 6. FIELD WELDING SHALL NOT BE PERFORMED UNLESS SPECIFICALLY SHOWN AS SUCH IN THESE DRAWINGS, OR ON APPROVED SUBMITTALS.
 - 7. STEEL ENCASED IN CONCRETE SHALL NOT BE PAINTED, AND SHALL, AT TIME OF CONCRETE PLACEMENT, BE CLEAN AND FREE OF DELETERIOUS SUBSTANCES.
 - 8. SUBMIT SHOP DRAWINGS, FOR APPROVAL, PRIOR TO FABRICATION.
 - 9. IF FABRICATION, MEASUREMENT OR INSTALLATION ERRORS NECESSITATE FIELD MODIFICATION OF STRUCTURAL STEEL, THE ENGINEER SHALL BE CONSULTED PRIOR TO THE MODIFICATION, AND HIS/HER INSTRUCTIONS SHALL BE FOLLOWED. THIS SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

G. MISCELLANEOUS METALS AND FRP FABRICATIONS.

- 1. CARBON STEEL FABRICATIONS SHALL MEET THE REQUIREMENTS GIVEN ABOVE FOR STRUCTURAL STEEL. SUCH FABRICATIONS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION, UON.
- 2. STAINLESS STEEL SHAPES, PLATES, BARS, AND SHEET SHALL BE PER ASTM A240, TYPE 304 OR 316. STAINLESS STEEL FASTENERS AND ANCHORS SHALL BE PER ASTM A320, TYPE 316. WELDING SHALL BE PER AWS D1.6.
- 3. ALUMINUM CONSTRUCTION SHALL BE PER THE ALUMINUM CONSTRUCTION MANUAL OF THE ALUMINUM ASSOCIATION, LATEST EDITION. SHAPES, PLATES, AND BARS SHALL BE 6061-T6, PER ASTM B221, UON. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.2.
- 4. ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PAINTED WITH HEAVY ALKALI-RESISTANT BITUMINOUS PAINT.
- 5. GRATING, CHECKER PLATE, AND ACCESS DOORS.
 - A) UON, ALL GRATING, FLOOR PLATES, AND HORIZONTAL ACCESS DOORS SHALL BE DESIGNED FOR 100 PSF LIVE LOAD, WITH A MAXIMUM DEFLECTION OF ¼". DESIGN OF GRATING AND FLOOR PLATES SHALL NOT DEPEND UPON FASTENERS TO MEET THESE GRAVITY LOADING REQUIREMENTS.
 - B) GRATING SHALL BE BANDED (METAL) OR SEALED (FRP) ON ALL EDGES. IF CUTTING OF MORE THAN 2 ADJACENT BEARING BARS IS REQUIRED, PROVIDE REINFORCING OR SUPPLEMENTARY SUPPORTS.
 - C) FLOOR PLATES SHALL HAVE A NON-SLIP FINISH. IF CUTTING OF MORE THAN 2½" WIDTH IS REQUIRED, PROVIDE REINFORCING OR SUPPLEMENTARY SUPPORTS.
 - D) UNLESS OTHERWISE SPECIFIED, THESE SHALL BE MADE OF ALUMINUM.

H. MECHANICAL/ELECTRICAL SUPPORT

- 1. EQUIPMENT, PIPE, CONDUIT, AND SIMILAR ITEMS SHALL BE SUPPORTED IN ACCORDANCE WITH THE MECHANICAL/ELECTRICAL SPECIFICATIONS AND DRAWINGS AND THE ADDITIONAL REQUIREMENTS IN THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
- 2. ALL EQUIPMENT, PIPES, CONDUITS, AND CABLE TRAYS SHALL BE ANCHORED AND/OR BRACED PER SMACNA SEISMIC RESTRAINT MANUAL, SEISMIC HAZARD LEVEL (SHL) D.
- 4. MEMBERS, CHANNELS, FITTINGS & FASTENERS IN CHLORINE CONTAINMENT AREAS SHALL BE FRP. IN ALL OTHER CORROSIVE OR WET LOCATIONS THEY SHALL BE STAINLESS STEEL. IN OTHER LOCATIONS, THESE SHALL BE GALVANIZED.
- 5. FASTENERS CONNECTING FITTINGS TO CHANNEL OR CHANNEL TO CHANNEL SHALL BE 1/2" DIAMETER UNLESS OTHERWISE SHOWN.
- 6. ALL HOLES IN FITTINGS SHALL BE UTILIZED FOR FASTENING EXCEPT AS OTHERWISE SHOWN.

I. FASTENERS

- 1. FASTENERS IN SUBMERGED OR CORROSIVE AREAS, AND FOR FASTENING ALUMINUM, STAINLESS STEEL AND FRP FITTINGS SHALL BE TYPE 316 STAINLESS STEEL OTHER FASTENERS SHALL BE CARBON STEEL.

J. TESTING AND INSPECTION

- 1. BUILDING INSPECTION PER THE BUILDING CODE SHALL BE PERFORMED BY THE JURISDICTION. IF NO BUILDING PERMIT IS REQUIRED, THESE INSPECTIONS SHALL BE PERFORMED BY THE ENGINEER.
- 2. SPECIAL INSPECTION AND TESTING SHALL BE PERFORMED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE 24 HOURS' PRIOR NOTICE AND SAFE ACCESS FOR THESE INSPECTIONS AND SHALL ENSURE THAT WORK IS READY FOR INSPECTION AS SCHEDULED.
- 3. PERIODIC (HOLD-POINT) INSPECTION IS REQUIRED FOR THE FOLLOWING WORK:
 - A) COMPLETION OF SUBGRADE PREPARATION, PRIOR TO REBAR INSTALLATION, FOR FOOTINGS AND MATS.
 - B) INSTALLATION OF REBAR AND EMBEDS FOR MASONRY WALLS, AND FOR CONCRETE FOOTINGS, WALLS, ELEVATED SLABS, AND FOUNDATION SLABS. PERFORMED AT LEAST TWO HOURS BEFORE CONCRETE OR GROUT PLACEMENT
 - C) WELDING FOR ALL FILLET WELDS 5/16" AND SMALLER, PERFORMED AT COMPLETION OF ALL WELDING, AFTER WELDS ARE SLAGGED, AND BEFORE PAINTING OR COVERING.
 - D) CONNECTIONS USING A325, A490, GRADE 8, OR OTHER HIGH-STRENGTH BOLTS; PERFORMED AFTER ALL BOLTING IS COMPLETE, AND BEFORE PAINTING OR COVERING.
 - E) ANY WEDGE ANCHORS EXCEEDING 3/8" IN DIAMETER, PERFORMED AFTER ALL SUCH ANCHORS FOR A GIVEN STRUCTURE ARE INSTALLED AND BEFORE TRIMMING.
- 4. CONTINUOUS SPECIAL INSPECTION IS REQUIRED DURING ALL ASPECTS OF THE FOLLOWING:
 - A) CONCRETE PLACEMENT FOR STRUCTURAL CONCRETE.
 - B) DURING WELDING FOR FILLET WELDS LARGER THAN 5/16" & FOR ALL GROOVE WELDING.
 - C) EPOXY ANCHORS EXCEEDING 3/8" DIAMETER, AFTER DRILLING.
- 5. WELDS NEED NOT HAVE SPECIAL INSPECTION WHEN THE WELDING IS DONE IN AN APPROVED FABRICATOR'S SHOP. HOWEVER, THE APPROVED FABRICATOR MUST SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IBC SECTION 1704.2.5.1. NO FABRICATION WORK SHALL BE PERFORMED OFF OF THE PROJECT SITE, EXCEPT IN THE

K. DEFERRED SUBMITTALS.

- 1. THE FOLLOWING STRUCTURAL COMPONENTS SHALL BE DESIGNED AND MANUFACTURED BY AN APPROVED FABRICATOR. DESIGN AND FABRICATION SHALL BE IN ACCORDANCE WITH THE CODES AND STANDARDS CITED IN THESE GENERAL STRUCTURAL NOTES, DRAWINGS, AND/OR CONTRACT SPECIFICATIONS. SUBMIT CALCULATIONS, DRAWINGS, AND MANUFACTURER'S DATA, SUFFICIENT TO DEMONSTRATE COMPLIANCE, TO THE ENGINEER FOR REVIEW. AFTER THE ENGINEER'S REVIEW, THE CONTRACTOR SHALL SUBMIT SAME TO THE BUILDING DEPARTMENT FOR APPROVAL. ALL COSTS AND TIME REQUIRED FOR DEFERRED SUBMITTAL REVIEW AND APPROVAL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- 2. CALCULATIONS AND DESIGN DRAWINGS FOR MANUFACTURED STANDARD PRODUCTS SHALL BE PREPARED AND SEALED BY AN ENGINEER REGISTERED IN ONE OF THE UNITED STATES, PROVIDED THAT THERE IS NO ALTERATION OF SIZE, MATERIAL, OR CODES/STANDARDS BETWEEN THE STANDARD DESIGN AND THAT PROPOSED FOR USE ON THIS PROJECT. ALTERNATIVELY, MANUFACTURED PRODUCTS MAY BE APPROVED BY THE ICC. CALCULATIONS AND DRAWINGS FOR FABRICATED COMPONENTS, OR WHERE VARIATION IS PROPOSED FROM STANDARD SIZE, MATERIAL, OR CODES/ STANDARDS, SHALL BE PREPARED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF ARIZONA.
- 3. ITEMS REQUIRING DEFERRED SUBMITTAL INCLUDE:
 - A) PRE-CAST CONCRETE PRODUCTS (INCLUDING POYMER-CONCRETE).

ABBREVIATIONS

AS	AS SHOWN	IF	INSIDE FACE
AB	ANCHOR BOLT	L.P.	LOW POINT
BLDG	BUILDING	LONG	LONGITUDINAL
CJ	CONTRACTION JOINT	MAX	MAXIMUM
	CONSTRUCTION JOINT	MIN	MINIMUM
CLR	CLEAR	MFR, MANUF	MANUFACTURER
CNR	CORNER	MCJ	MASONRY CONTROL JOINT
CONT	CONTINUOUS	(N)	NEW
CTR	CENTER	OF	OUTSIDE FACE
(E)	EXISTING	OH	OPPOSITE HAND
EA	EACH	OPP	OPPOSITE
EF	EACH FACE	PC	PIECE
EJ	EXPANSION JOINT	PL	PLATE
EL, ELEV	ELEVATION	RB	ROUND BAR
EQ, EQUIP	EQUIPMENT	SCH	SCHEDULE
		SIM	SIMILAR
EW	EACH WAY	SJ	SAWN JOINT
EXIST	EXISTING	STD	STANDARD
FAB	FABRICATED, FABRICATOR	STRUC	STRUCTURAL
FB	FLAT BAR	T&B	TOP & BOTTOM
FF	FINISHED FLOOR	TOC	TOP OF CONCRETE (CURB)
FG	FINISHED GRADE	TOM	TOP OF MASONRY
FJ	FORMED JOINT	TOS	TOP OF STEEL
GB	GRADE BREAK	TOW	TOP OF WALL
GSN	GENERAL STRUCTURAL NOTES	TRANSV	TRANSVERSE
H.P.	HIGH POINT	TYP	TYPICAL
H1E	(STANDARD) HOOK ONE END	UON	UNLESS OTHERWISE NOTED
H2E	(STANDARD) HOOK TWO ENDS	VERT	VERTICAL
HK, HKS	HOOK OR HOOKS		
HORIZ	HORIZONTAL		
HSS	HOLLOW STRUCTURAL SHAPE		

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	 <p>GREELEY and HANSEN 2800 N 44TH STREET, SUITE 650 PHOENIX, ARIZONA 85008</p>	<table><tr><th colspan="5">REVISIONS</th></tr><tr><th>NO.</th><th>BY</th><th>DATE</th><th>CKD</th><th>REMARKS</th></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>	REVISIONS					NO.	BY	DATE	CKD	REMARKS																															<table><tr><td>DES CVH</td><td rowspan="4"><p>City of Phoenix</p></td></tr><tr><td>DWN CVH</td></tr><tr><td>CKD</td></tr><tr><td>CVH</td></tr></table>	DES CVH	 <p>City of Phoenix</p>	DWN CVH	CKD	CVH	<p>CITY OF PHOENIX WATER SERVICES DEPARTMENT</p> <p>COLLECTIONS SYSTEMS REMOTE FACILITIES</p>	<p>STRUCTURAL</p> <p>GENERAL STRUCTURAL NOTES</p>	<p>COPYRIGHT © 2007-JANUARY</p> <p>CITY PROJECT NO. WS90400067-4</p> <p>DATE: JANUARY 2023</p> <p>S01 SHEET 21 OF 41</p> <p>CAD FILE: 2159-S</p>
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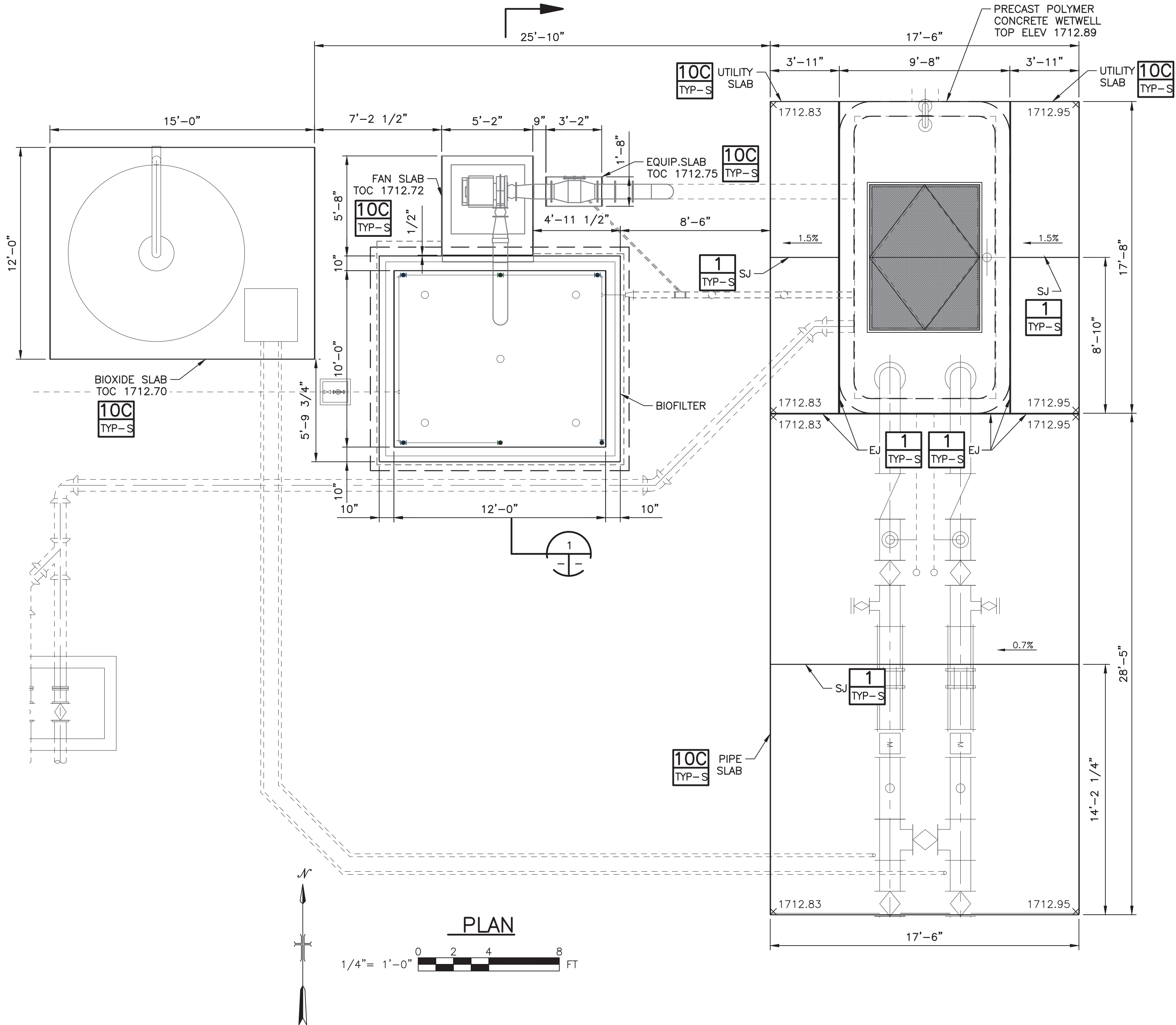
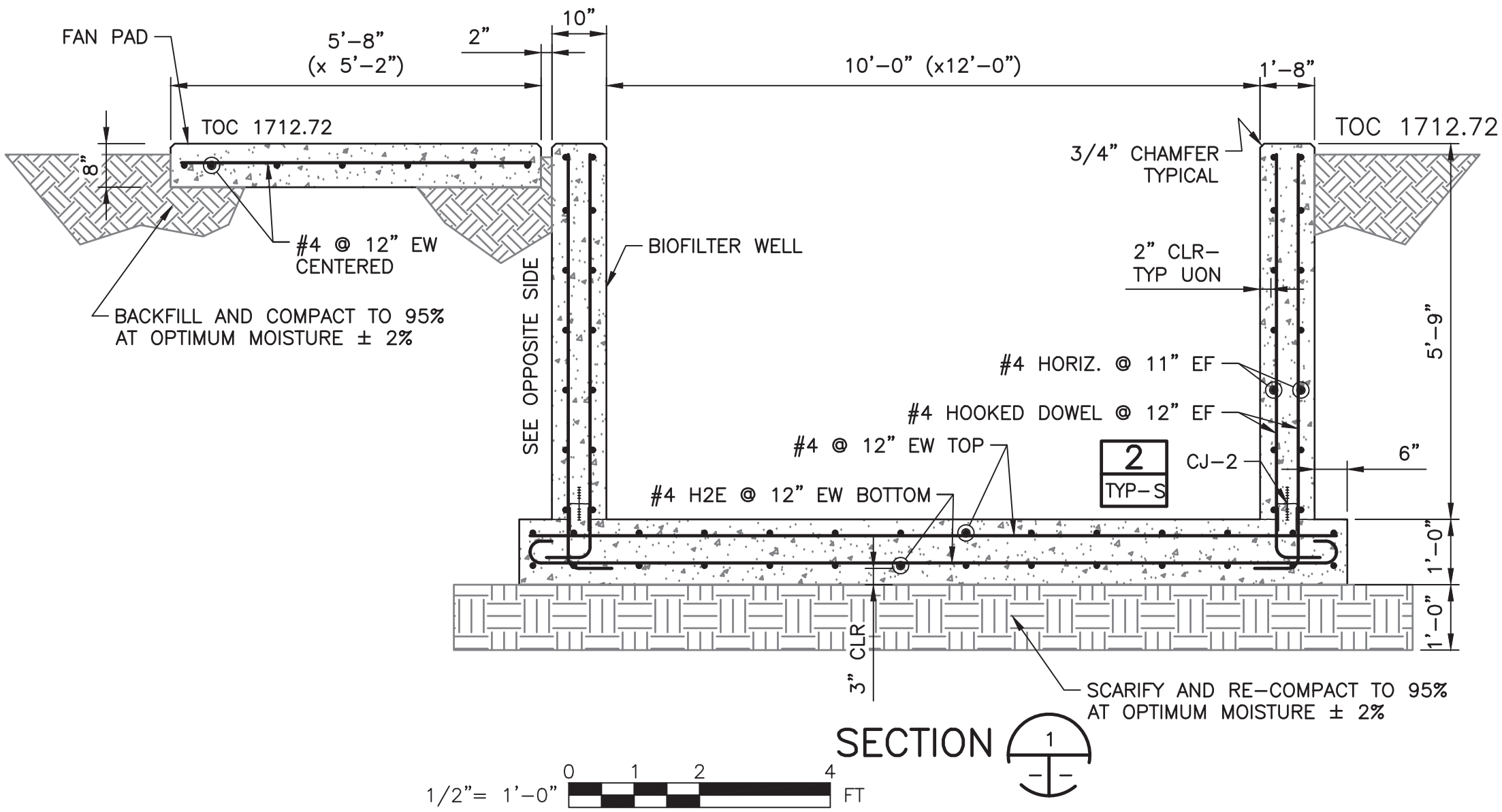
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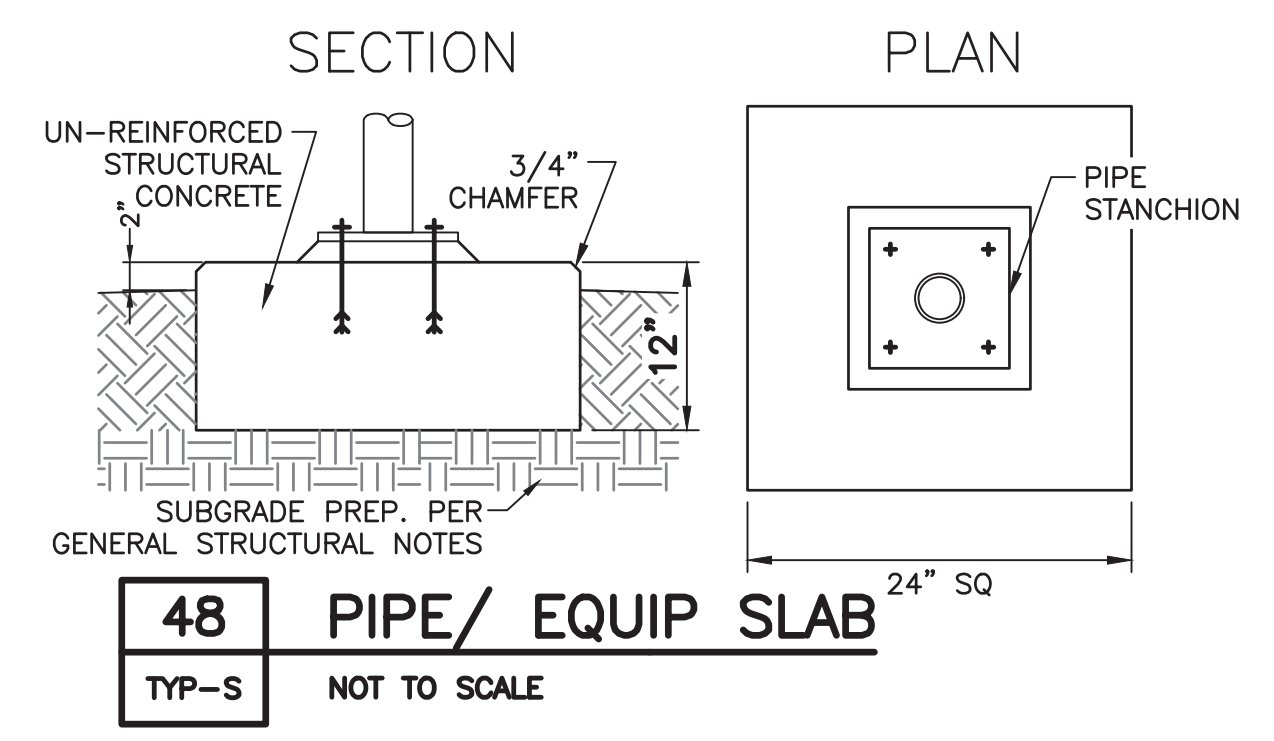
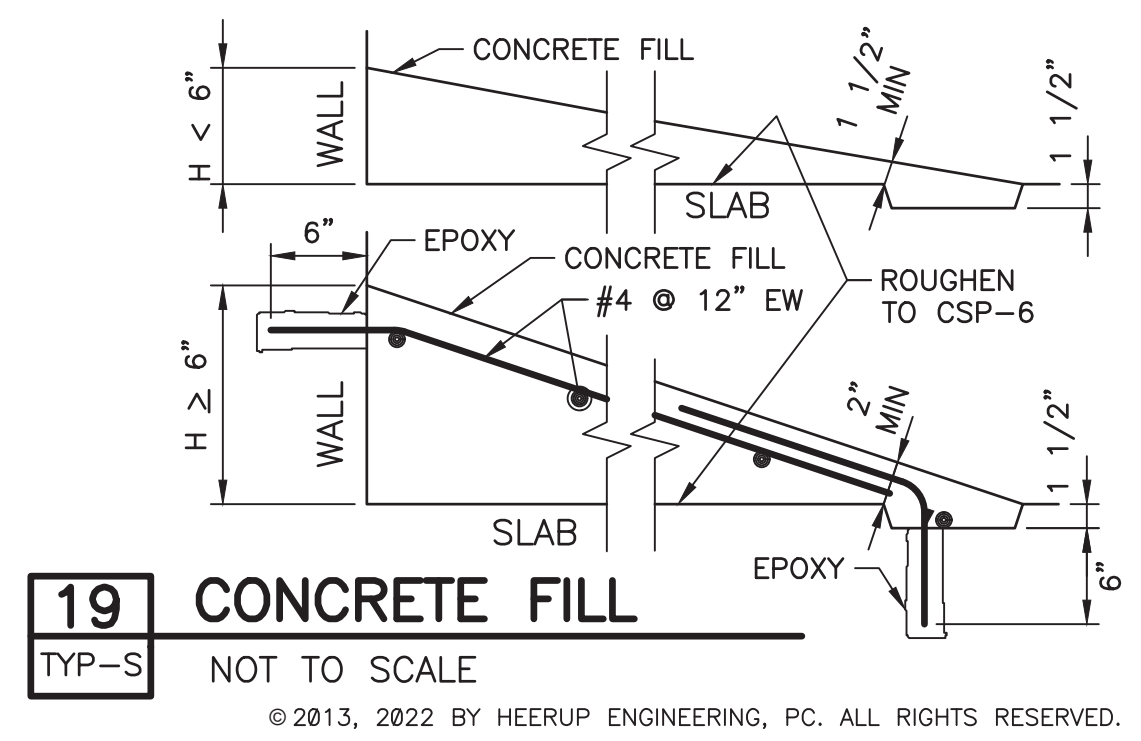
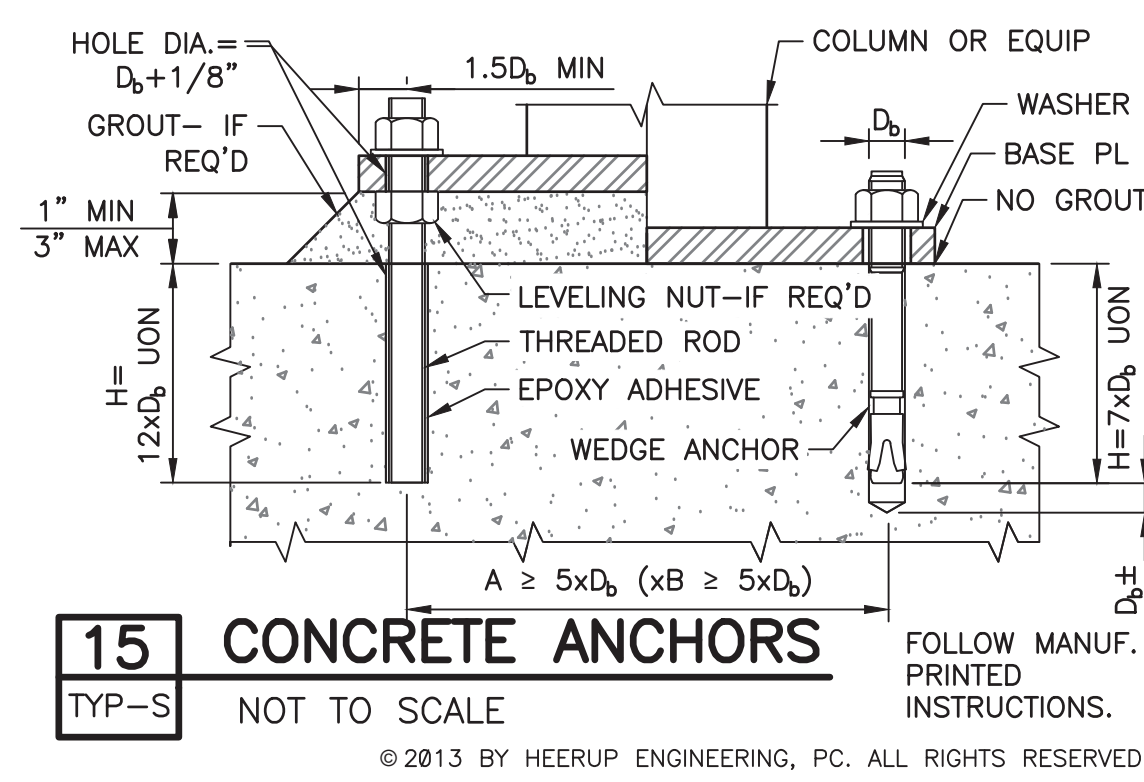
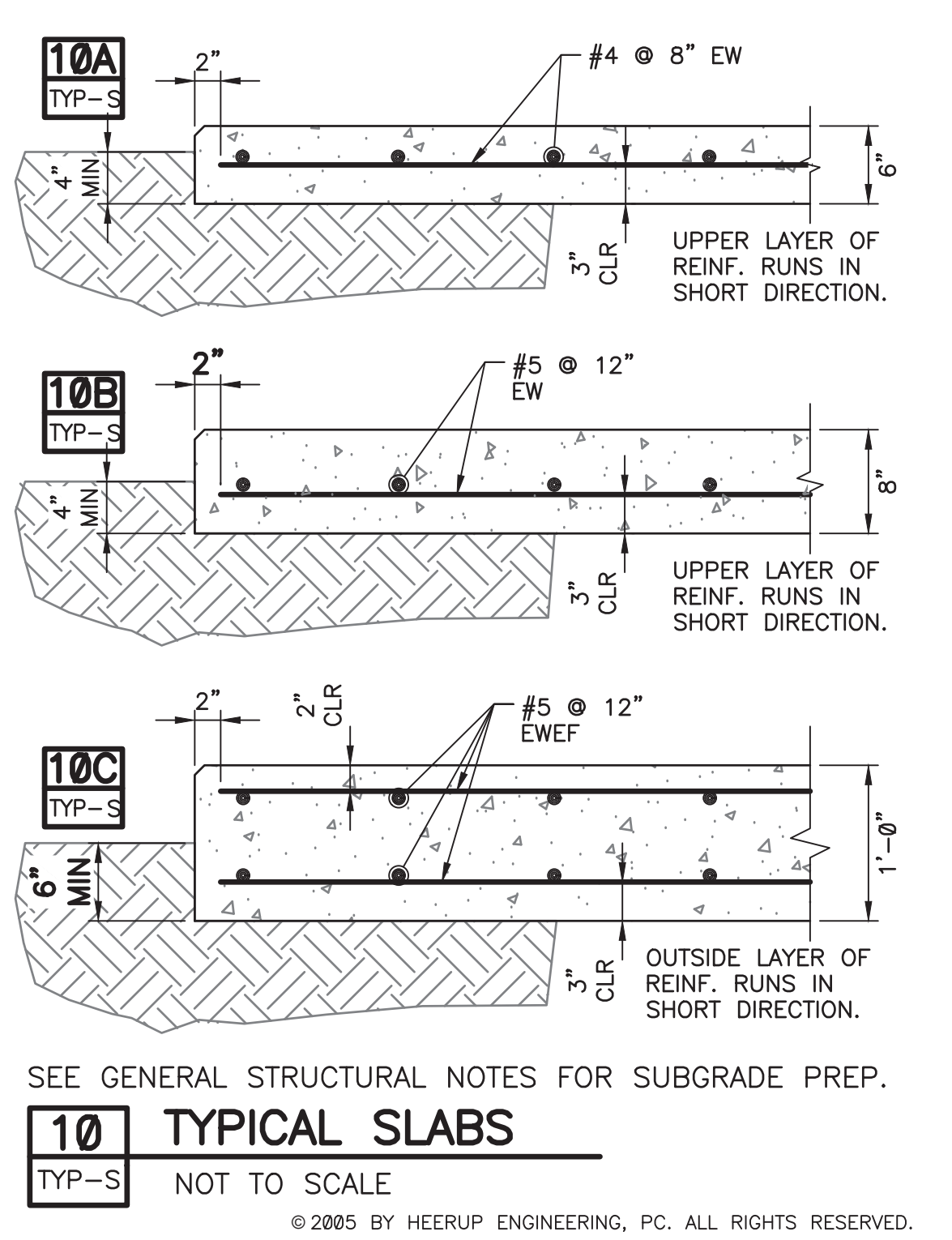
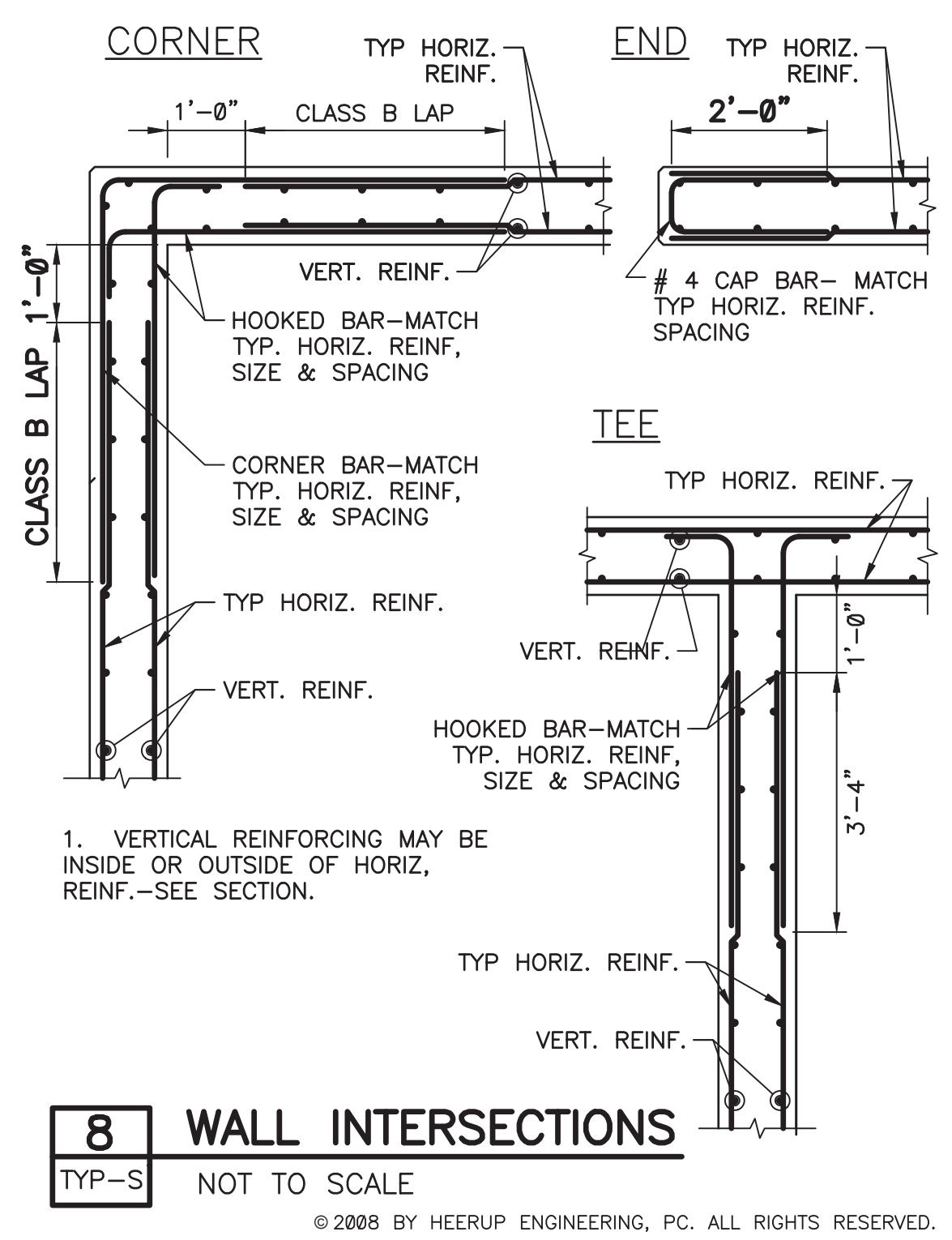
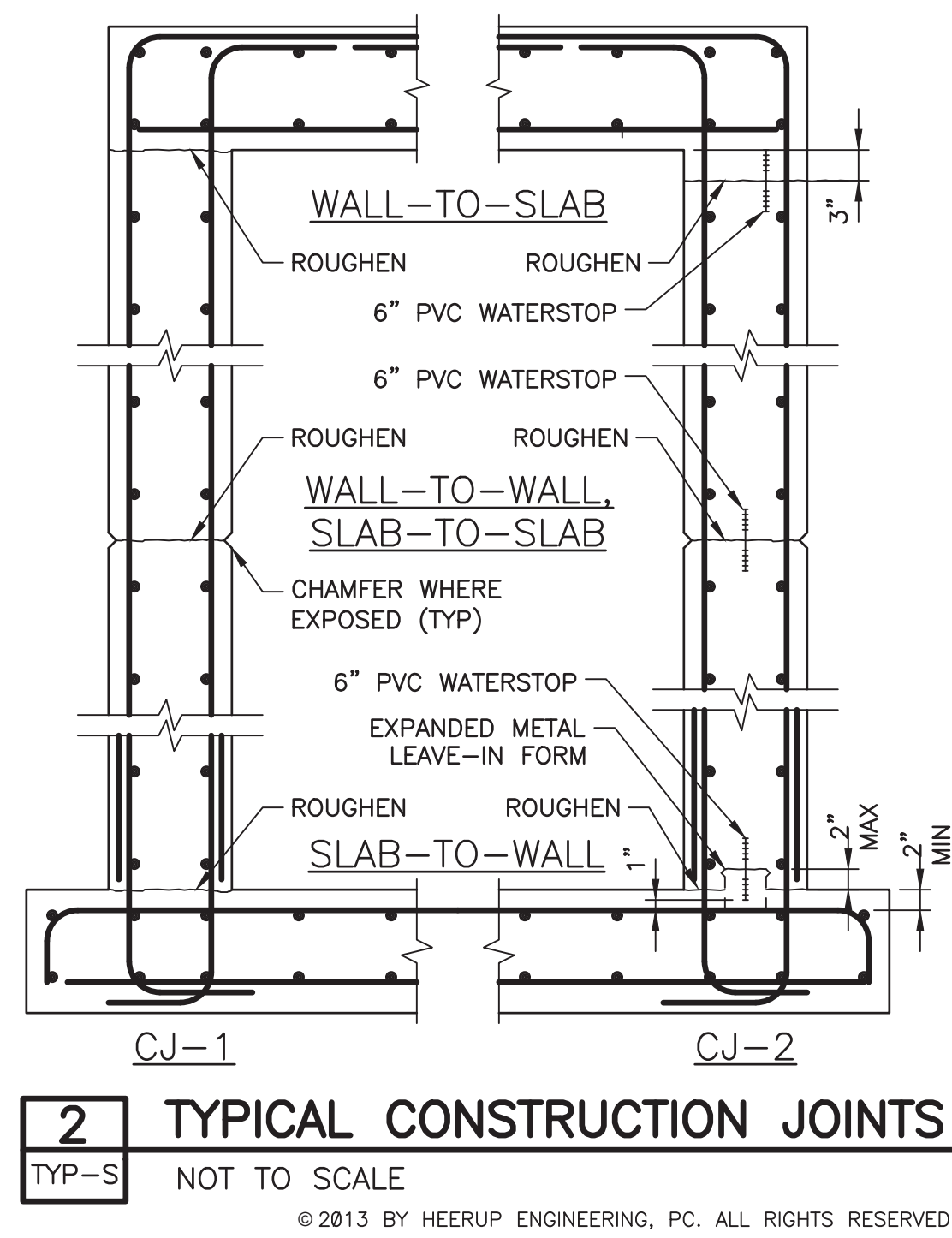
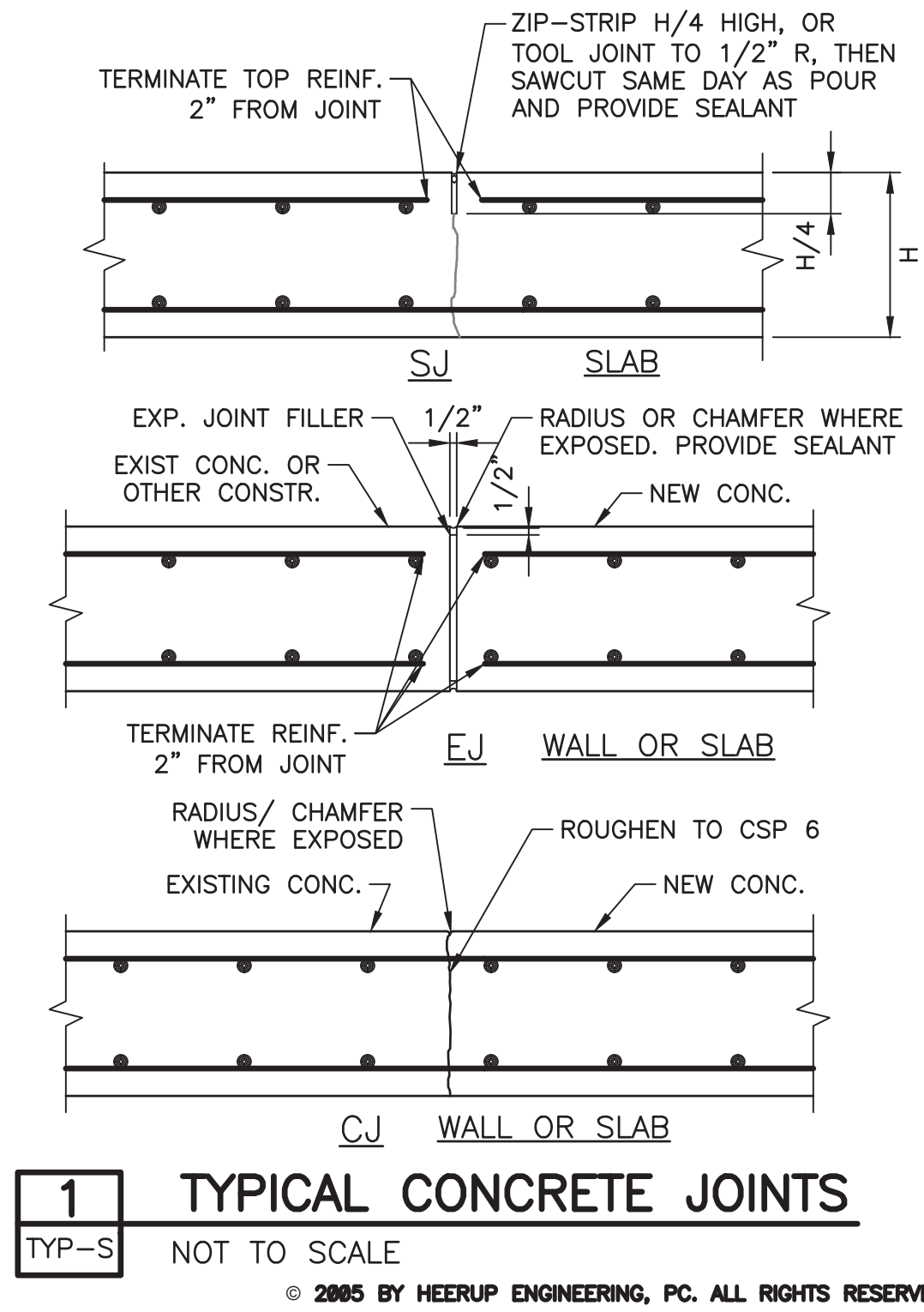
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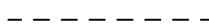
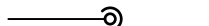
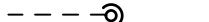






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CONDUIT	
	EXPOSED CONDUIT
	UNDERGROUND DUCT BANK OR CONCEALED CONDUIT IN CONCRETE FLOOR, CEILING OR WALL UNLESS OTHERWISE INDICATED OR NOTED.
	INDICATES CONDUIT TURNING UP OR TOWARD THE VIEWER.
	INDICATES CONDUIT TURNING DOWN OR AWAY FROM THE VIEWER.
	CONDUITS IDENTIFIED BY A NUMBER SHALL BE LISTED IN THE CONDUIT SCHEDULES
	CONDUITS IDENTIFIED BY LETTERS SHALL CONFORM TO THE TABLES IN THE LEGEND
	CONDUIT STUBBED OUT AND CAPPED
	FLEXIBLE CONDUIT OR MANUFACTURER'S CABLE(S)
	TEE FITTING IN CONDUIT


#

ELEMENTS

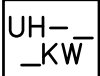

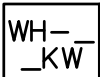


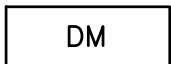
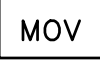







 RESISTOR OR RESISTIVE ELEMENT

 OVERLOAD RELAY THERMAL ELEMENT (HEATER)

 STRIP HEATER OR HEATING ELEMENT

 HIGH VOLTAGE, GROUP OPERATED, AIR-BREAK SWITCH * CONTINUOUS AMPERE RATING

EQUIPMENT

SINGLE LINE	PLAN	
		UNIT HEATER NO. 1
		WATER HEATER NO. 1
		DAMPER MOTOR
DAMPER		
		MOTOR OPERATED VALVE "XXXX" DENOTES LOOP NUMBER TO BE OBTAINED FROM INSTRUMENTATION DRAWINGS
		HAND HOLE
		REMOTE CONTROL STATION
		INTERMEDIATE TERMINAL PANEL

LIGHTING

<p>\$_a</p> <p>\$_b²</p> <p>\$_c³</p> <p>\$_d⁴</p> <p>\$_M</p> <p>\$^P</p> <p>PB</p> <p>PB</p> <p>Ca</p>	<p>SINGLE POLE SWITCH "a" INDICATES SWITCHLEG SHALL CONTROL LUMAIRES WITH "a" DESIGNATION</p> <p>DOUBLE POLE SWITCH "b" INDICATES SWITCHLEG SHALL CONTROL LUMAIRES WITH "b" DESIGNATION</p> <p>THREE WAY SWITCH "c" INDICATES SWITCHLEG SHALL CONTROL LUMAIRES WITH "c" DESIGNATION</p> <p>FOUR WAY SWITCH "d" INDICATES SWITCHLEG SHALL CONTROL LUMAIRES "d" DESIGNATION</p> <p>SINGLE POLE, DOUBLE THROW MOMENTARY CONTACT SWITCH, CENTER OFF</p> <p>SINGLE POLE SWITCH AND PILOT LIGHT</p> <p> </p> <p>PULL BOX</p> <p> </p> <p>LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED a-CONTACTOR NUMBER (C1, C2, ETC.)</p>
---	---

<p>CP-X OR ↙ ALP-X</p> <p>TM TIME SWITCH</p> <p>P-X OR ↙ LP-X</p> <p>PP-X OR ↙ PP-X</p>	<p>AREA LIGHTING CONTACTOR PANEL X= PANEL NAME</p> <p> </p> <p>LIGHTING PANELBOARD NO. X (240/120V OR 208/120V) X= PANELBOARD NAME</p> <p> </p> <p>POWER DISTRIBUTION PANELBOARD NO. X (480V OR 480/277V) X= PANELBOARD NAME</p>
---	--

<p>XX X Y NL b</p> <p>XX NL X b</p>	<p>TYPICAL LUMAIRES SEE SCHEDULE FOR SPECIFICS</p> <p>"XX"-FIXTURE TYPE X= PANELBOARD NAME Y= CIRCUIT NUMBER SWITCH "b" NL= NIGHT LIGHT (UNSWITCHED)</p> <p> </p> <p>FLUORESCENT TYPE LUMAIRES. SEE SCHEDULE FOR SPECIFICS. NOTATIONS SAME AS ABOVE.</p>
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CITY PROJECT NO. WS90400067—4

DATE: JANUARY 2023

E01 SHEET 24 OF 41

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POWER SWITCHES

SINGLE LINE

PLAN

DESCRIPTION

NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, * AMPERE RATING

FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, AMPERE RATING AND FUSE SIZE AS NOTED *AMPERE RATING *FUSE RATING

MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION "P" INDICATES WITH PILOT LIGHT "2" INDICATES NUMBER OF POLES

DRAWOUT TYPE EQUIPMENT OR DEVICE

MEDIUM VOLTAGE CABLE TERMINATION

MEDIUM VOLTAGE AIR INTERRUPTER SWITCH

MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH

MEDIUM VOLTAGE FUSED MOTOR CONTROLLER *AT=AUTOTRANSFORMER TYPE

TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE ONE LINE DIAGRAMS ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 13. ALL OTHER DRY TYPE TRANSFORMERS SHALL HAVE A K-4 RATING. ISOLATION TRANSFORMERS SHALL HAVE A K-20 RATING METER * WM-WATTMETER WHM-WATTHOUR METER WHDM-WATTHOUR DEMAND METER WHDR-WATTHOUR DEMAND RECORDER PF-POWER FACTOR METER TRANSDUCER * AX-CURRENT TRANSDUCER WX-WATT TRANSDUCER

CURRENT TRANSFORMER *QUANTITY XXXX = PRIMARY AMPERE RATING

POTENTIAL TRANSFORMER (PT) OR CONTROL POWER TRANSFORMER (CPT) *QUANTITY XXXX = PRIMARY VOLTAGE RATING

GENERATOR WITH GENERATION NUMBER, RATINGS AND CONNECTIONS AS NOTED IN CALL-OUT ON DRAWING

AUTOMATIC TRANSFER SWITCH (ATS) "N" INDICATES NORMAL SOURCE "S" INDICATES STANDBY SOURCE "RATE" INDICATES CONTINUOUS CURRENT RATING "#" INDICATES ATS NAME

AC MOTOR SPEED CONTROLLER (VARIABLE FREQUENCY DRIVE)

DC MOTOR SPEED CONTROLLER (SILICON CONTROLLED RECTIFIER)

MOTOR, NUMERAL INDICATES HORSEPOWER

VOLTMETER WITH SWITCH, 3 PHASE * = SCALE

AMMETER WITH SWITCH, 3 PHASE * = SCALE

LIGHTNING ARRESTOR

SURGE SUPPRESSER

TRANSIENT VOLTAGE SURGE SUPPRESSOR (POWER DISTRIBUTION TYPE) PILOT LIGHT, COLOR AS NOTED A-AMBER, B-BLUE, C-CLEAR G-GREEN, R-RED, W-WHITE

SPECIAL CAPACITOR *SC-SURGE CAPACITOR PR-POWER FACTOR CORRECTION CAPACITOR

CONTROL STATION (STANDMOUNT OR WALLMOUNT) SEE SCHEMATIC DIAGRAMS AND/OR INSTRUMENTATION DIAGRAMS FOR TYPE AND QUANTITY OF OPERATORS.

SOLENOID OPERATED VALVE

ELAPSED TIME METER

PUSH BUTTONS

SINGLE LINE

DESCRIPTION

EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)

PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED

PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN

START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP

2 POSITION SELECTOR SWITCH, NORMALLY CLOSED

2 POSITION SELECTOR SWITCH, NORMALLY OPEN

2 POSITION 2 POLE SELECTOR SWITCH

2 POSITION 3 POLE SELECTOR SWITCH

3 POSITION SELECTOR SWITCH, NORMALLY CLOSED

3 POSITION SELECTOR SWITCH, NORMALLY OPEN

3 POSITION 3 POLE SELECTOR SWITCH

4 POSITION SELECTOR SWITCH, NORMALLY OPEN

PUSH BUTTONS CONT.

SINGLE LINE

DESCRIPTION

4 POSITION SELECTOR SWITCH, NORMALLY CLOSED

4 POSITION 4 POLE SELECTOR SWITCH

RELAY CONTACTS

NORMALLY OPEN RELAY CONTACT

NORMALLY CLOSED RELAY CONTACT

NOTC-NORMALLY OPEN TIMED CLOSING, WHEN ENERGIZED

NCTO-NORMALLY CLOSED TIMED OPENING, WHEN ENERGIZED

NOTO-NORMALLY OPEN, TIMED OPENING WHEN DE-ENERGIZED

NCTC-NORMALLY CLOSED, TIMED CLOSING WHEN DE-ENERGIZED

SWITCH CONTACTS

FIELD MOUNTED INSTRUMENT X= DESIGNATION TO BE OBTAINED FROM INSTRUMENTATION DRAWINGS 0000= LOOP NUMBER TO BE OBTAINED FROM INSTRUMENTATION DRAWINGS

AUXILLARY SWITCH CONTACT NORMALLY CLOSED

AUXILLARY SWITCH CONTACT NORMALLY OPEN

SWITCH CONTACTS CONT.

SINGLE LINE

DESCRIPTION

NORMALLY OPEN SWITCH

NORMALLY CLOSED SWITCH

LIQUID LEVEL (FLOAT) NORMALLY CLOSED, OPENS ON RISING LEVEL

LIQUID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSSES ON RISING LEVEL

PRESSURE SWITCH NORMALLY OPEN, CLOSSES ON RISING PRESSURE

PRESSURE SWITCH NORMALLY CLOSED, OPENS ON DROPPING PRESSURE

VACUUM SWITCH NORMALLY OPEN, CLOSSES ON RISING PRESSURE

VACUUM SWITCH NORMALLY CLOSED, OPENS ON DROPPING PRESSURE

DIFFERENTIAL PRESSURE SWITCH NORMALLY OPEN, CLOSSES ON RISING DIFFERENTIAL PRESSURE

DIFFERENTIAL PRESSURE SWITCH NORMALLY CLOSED, OPENS ON RISING DIFFERENTIAL PRESSURE

TEMPERATURE SWITCH NORMALLY OPEN, CLOSSES ON RISING TEMPERATURE

TEMPERATURE SWITCH NORMALLY CLOSED, OPENS ON RISING TEMPERATURE

FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSSES ON INCREASED FLOW

FLOW SWITCH (AIR, WATER, ETC.) NORMALLY CLOSED, OPENS ON INCREASED FLOW

POSITION (LIMIT) SWITCH NORMALLY OPEN

POSITION (LIMIT) SWITCH NORMALLY CLOSED

SWITCH CONTACTS CONT.

SINGLE LINE

DESCRIPTION

POSITION (LIMIT) SWITCH NORMALLY OPEN-HELD CLOSED

POSITION (LIMIT) SWITCH NORMALLY CLOSED-HELD OPEN

TORQUE SWITCH NORMALLY OPEN, CLOSSES ON HIGH TORQUE

TORQUE SWITCH NORMALLY CLOSED, OPENS ON HIGH TORQUE

PUSH-TEST, 110V S6 LAMP UNLESS NOTED, LETTER IS LENS COLOR * R-RED G-GREEN B-BLUE

RECEPTABLES

208V, 3P, 4W, RECEPTACLE *AMPERE RATING AS NOTED X= PANELBOARD NUMBER Y= CIRCUIT NUMBER

480V, 3P, 4W RECEPTACLE AND DISCONNECT SWITCH *AMPERE RATING AS NOTED X= PANELBOARD NUMBER Y= CIRCUIT NUMBER

DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W UNLESS OTHERWISE NOTED * C-MOUNTED ABOVE COUNTER-TOP GF- GROUND FAULT INTERRUPTER TYPE WP-WEATHERPROOF T-TRANSIENT VOLTAGE SURGE SUPPRESSER X= PANELBOARD NUMBER Y= CIRCUIT NUMBER

240V, 20, 3W, RECEPTACLE *AMPERE RATING AS NOTED MULTI-OUTLET ASSEMBLY

FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED

SECURITY SYSTEM DOOR OR SWITCH

SECURITY SYSTEM WINDOW SWITCH

SECURITY SYSTEM KEY PAD

SECURITY SYSTEM CARD ACCESS READER

GLASS BREAK DETECTOR

SECURITY ALARM MOTION DETECTOR

CLOSED CIRCUIT TV CAMERA

PAN, TILT, ZOOM CAMERA LENS CONTROLS

REVISIONS

NO.	BY	DATE	CKD	REMARKS

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CKD DA

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

ELECTRICAL

LIFT STATION 76 PHASE II EXPANSION
LEGEND 2

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CITY PROJECT NO. WS90400067-4

DATE: JANUARY 2023

E02 SHEET 25 OF 41

CAD FILE: 04276.05_E02

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REVISIONS

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PROJECT NO.

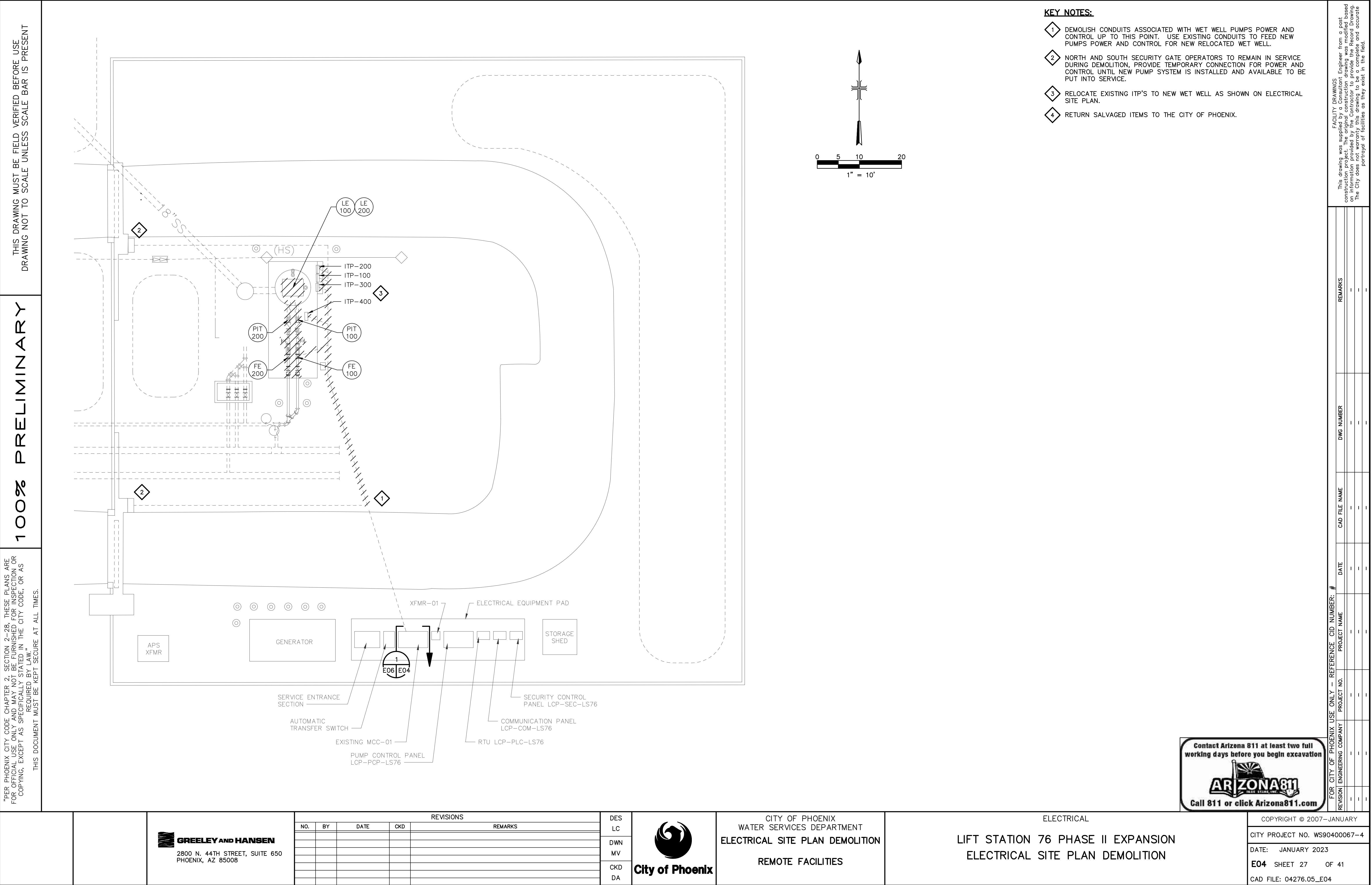
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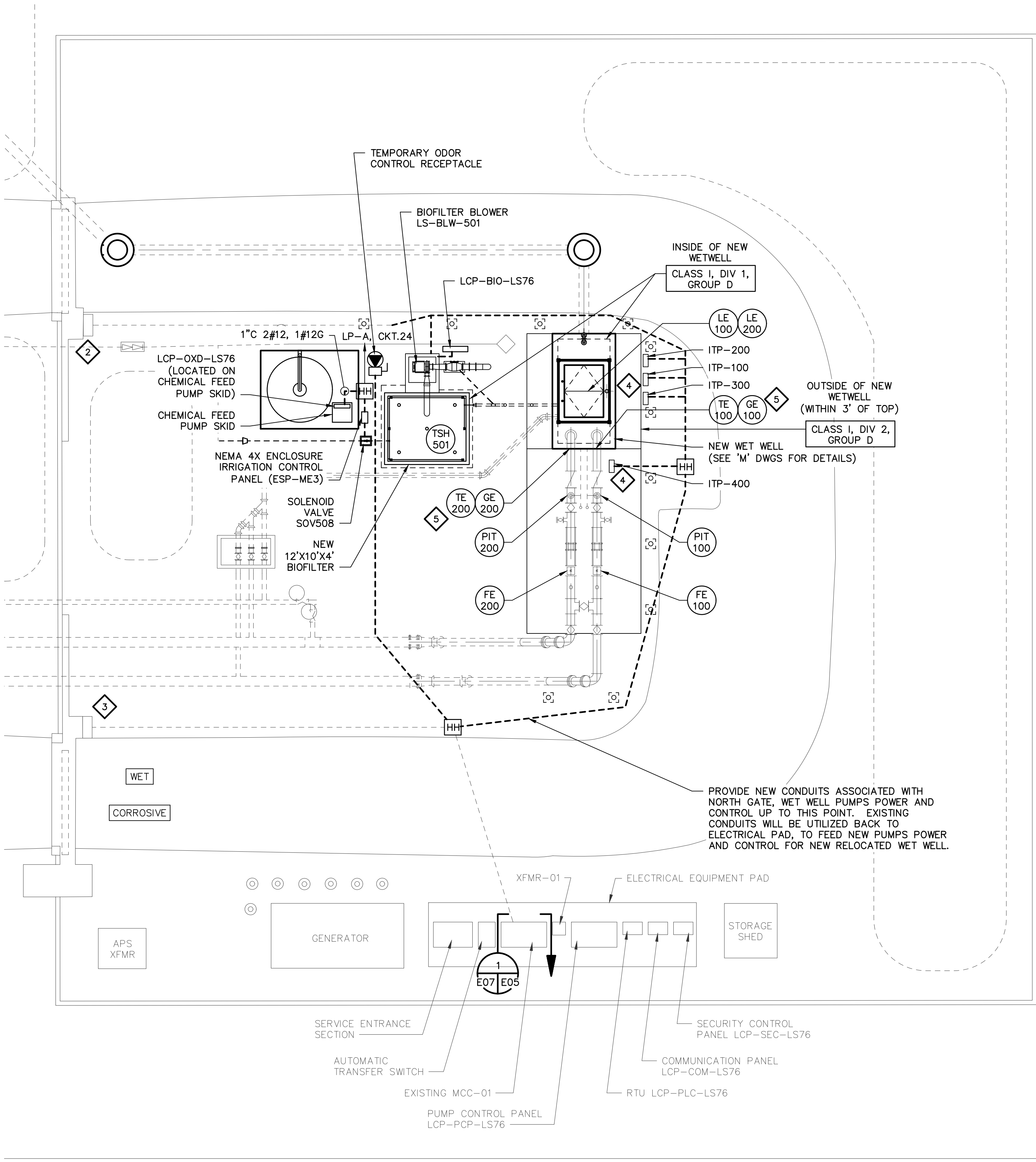
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REMARKS

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Call 811 or click Arizona811.com





- KEY NOTES:**
- 1 PROVIDE NEW CONDUIT TO EXISTING NORTH GATE FROM EXISTING SECURITY CONTROL PANEL.
 - 2 RECONNECT NORTH GATE CONTROL ONCE PUMP SYSTEM HAS BEEN INSTALLED AND PUT BACK INTO SERVICE. UTILIZE EXISTING CONDUITS AS NEEDED.
 - 3 RECONNECT SOUTH GATE CONTROL ONCE PUMP SYSTEM HAS BEEN INSTALLED AND PUT BACK INTO SERVICE. UTILIZE EXISTING CONDUITS AS NEEDED.
 - 4 DISCONNECT AND RELOCATE EXISTING ITP'S AS SHOWN AT NEW WET WELL. PROVIDE NEW CONDUIT AND WIRE AS DETAILED ON CONDUIT BLOCK DIAGRAMS FOR ALL POWER AND CONTROL FOR PUMPS #1 AND #2.
 - 5 TE'S AND GE'S ARE INTERNAL TO SUBMERSIBLE PUMPS WITHIN WET WELL.
 - 6 LE'S ARE INTERNAL TO THE WET WELL.

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working days before you begin excavation



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City of Phoenix

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

ELECTRICAL
LIFT STATION 76 PHASE II EXPANSION
ELECTRICAL SITE PLAN

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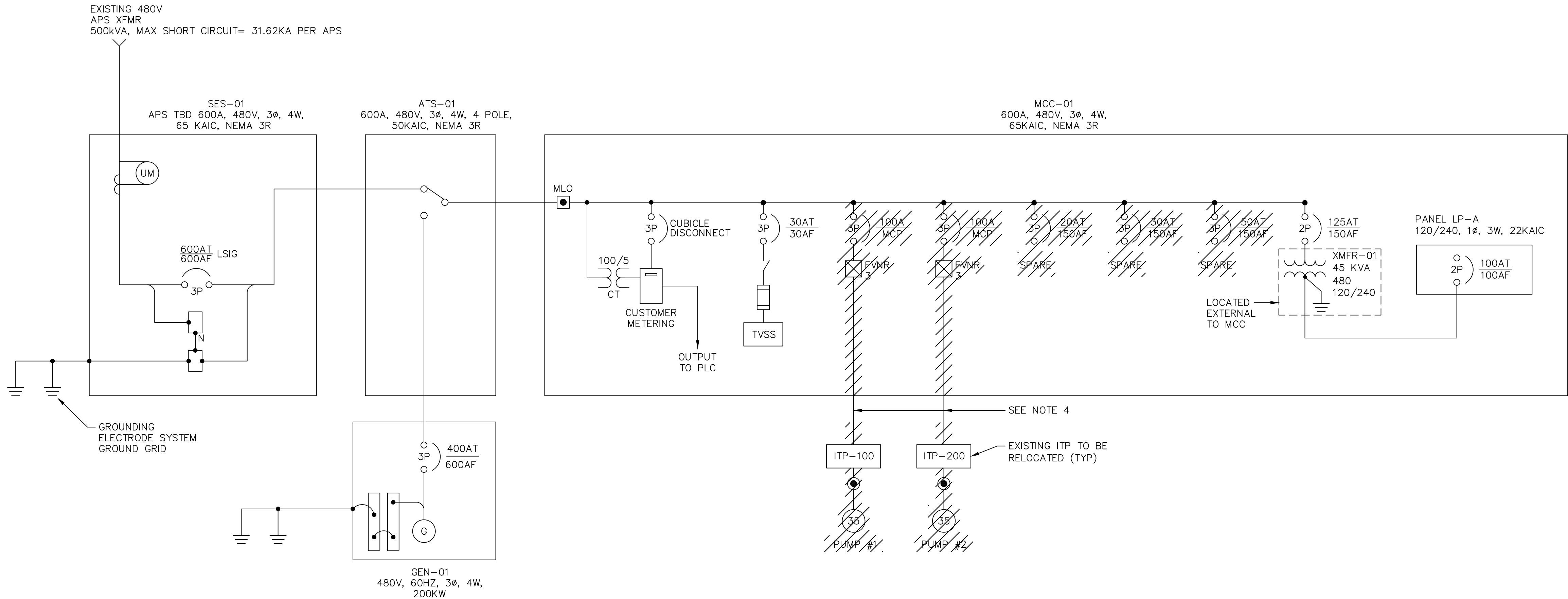
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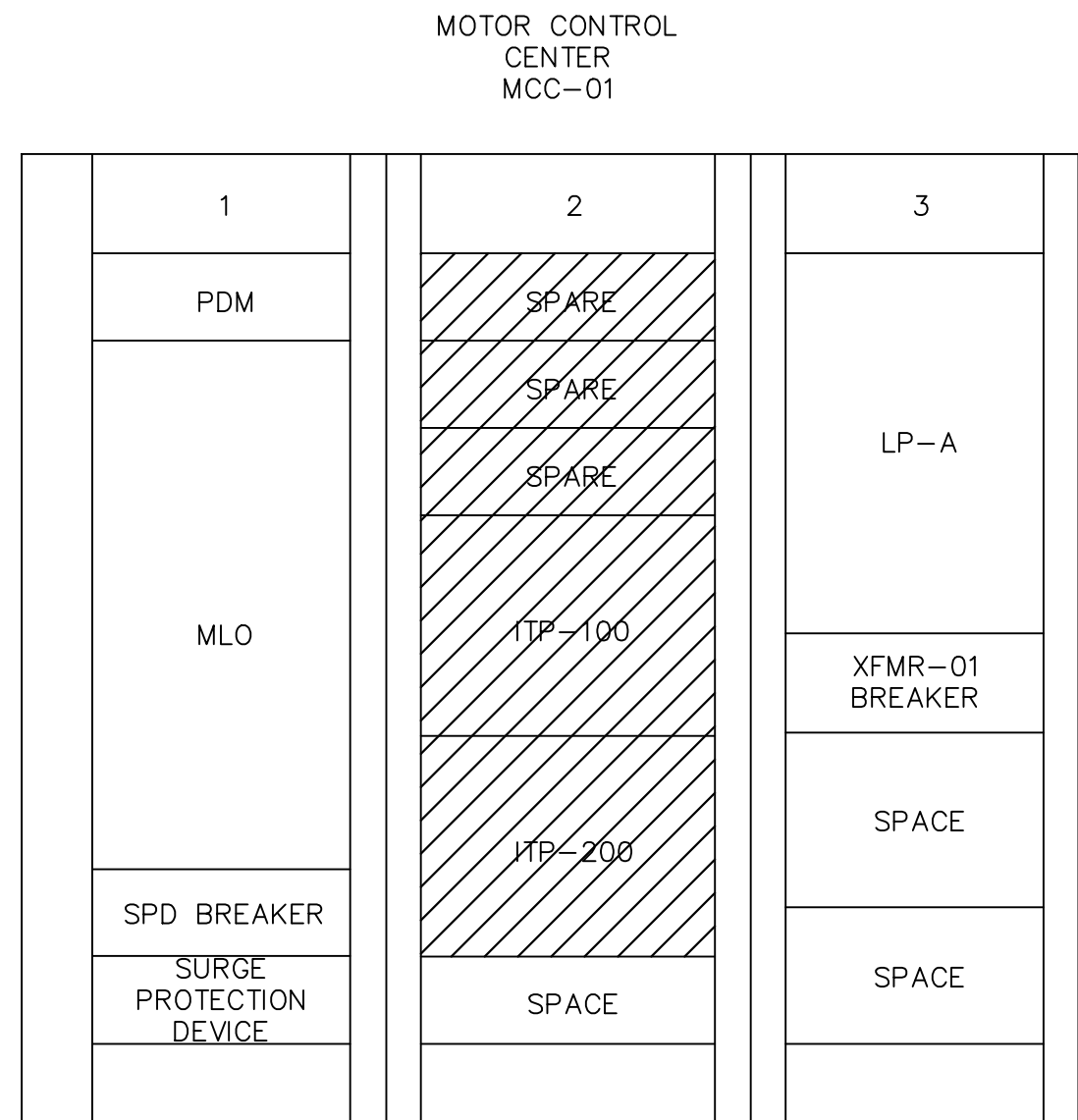
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- NOTES**
1. REMOVE EXISTING STARTERS AND BREAKERS, AND TURN OVER TO OWNER.
 2. REMOVE ALL ASSOCIATED WIRE FOR POWER AND CONTROLS FOR PUMPS #1 AND #2. REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING FROM EXISTING CONDUITS FROM WET WELL BACK TO MCC-01, AND LCP-PCP-LS76.
 3. RETURN SALVAGED ITEMS TO THE CITY OF PHOENIX.
 4. EXISTING CONDUITS FOR NEW PUMPS 1 & 2 TO BE UTILIZED FROM MCC TO NEW INTERCEPT POINT FOR FUTURE FEEDS AS SHOWN ON E-05. BEYOND INTERCEPT, DEMOLISH EXISTING PUMP FEEDS.

MCC-01 SINGLE LINE DIAGRAM – DEMOLITION

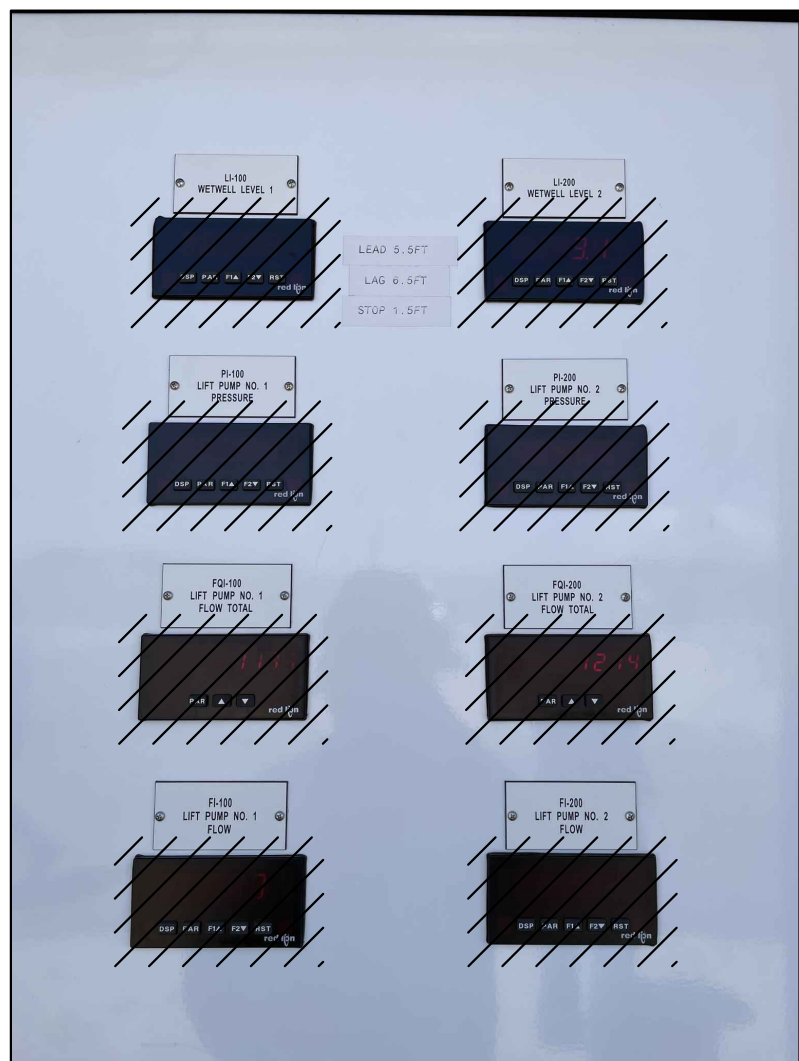


MCC-01 ELEVATION

1
E06 E04
SCALE = NOT TO SCALE



EXISTING LCP-PCP-LS76 LIFT STATION NO.76 PUMP CONTROL



2
E06 E06
SCALE = NOT TO SCALE



PUMP CONTROL NOTES

1. REUSE EXISTING MINI CAS II MOTOR PROTECTION RELAYS FOR NEW PUMPS #1 AND #2.
2. RESET LIFT PUMP RUN TIME (HOURS), REMOVE AND TURN OVER TO OWNER IF RESET IS NOT POSSIBLE. REPLACE WITH NEW LIFT PUMP RUN TIME (HOURS) FOR PUMPS #1 AND #2 IF RESET IS NOT POSSIBLE.
3. REMOVE AND TURN OVER TO OWNER EXISTING DIGITAL DISPLAYS. REPLACE WITH NEW DIGITAL DISPLAYS FOR REQUIRED DISPLAYS.



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PHOENIX, AZ 85008

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ELECTRICAL
LIFT STATION 76 PHASE II EXPANSION
ELECTRICAL SINGLE LINE DEMOLITION

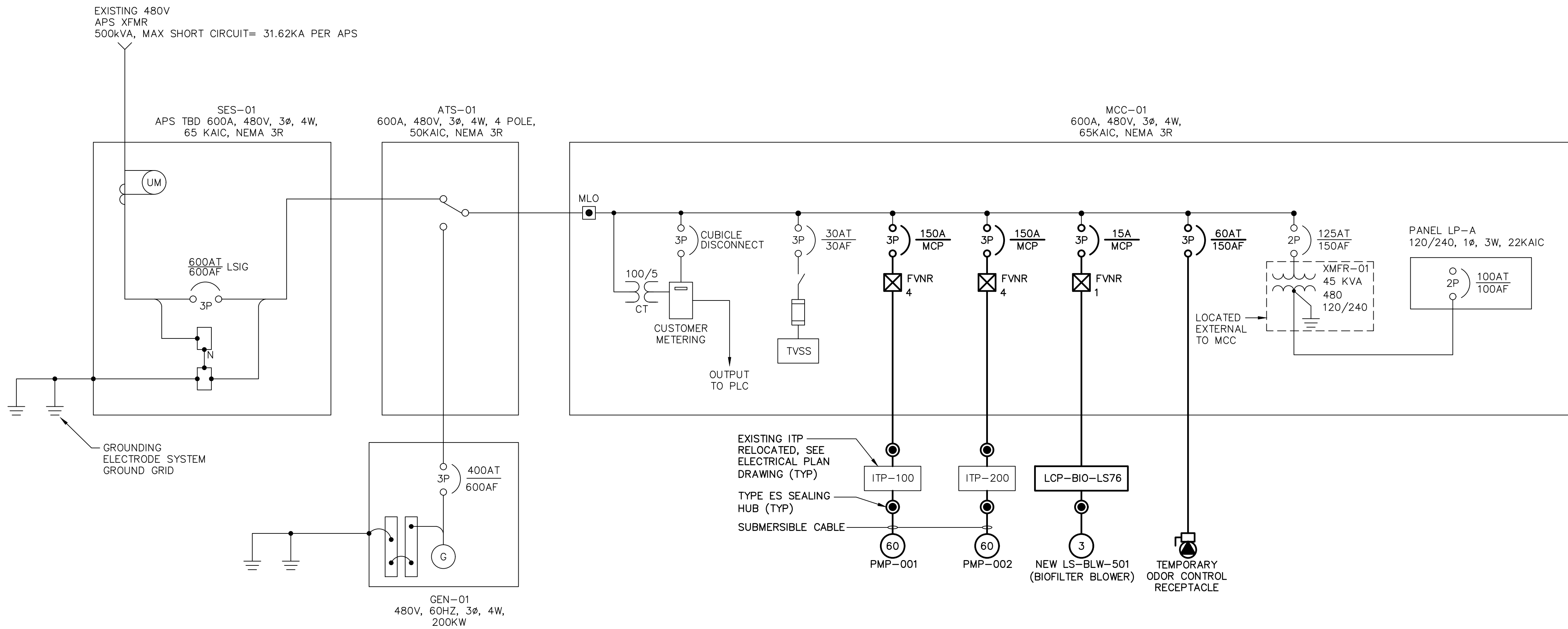
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DATE: JANUARY 2023
E06 SHEET 29 OF 41
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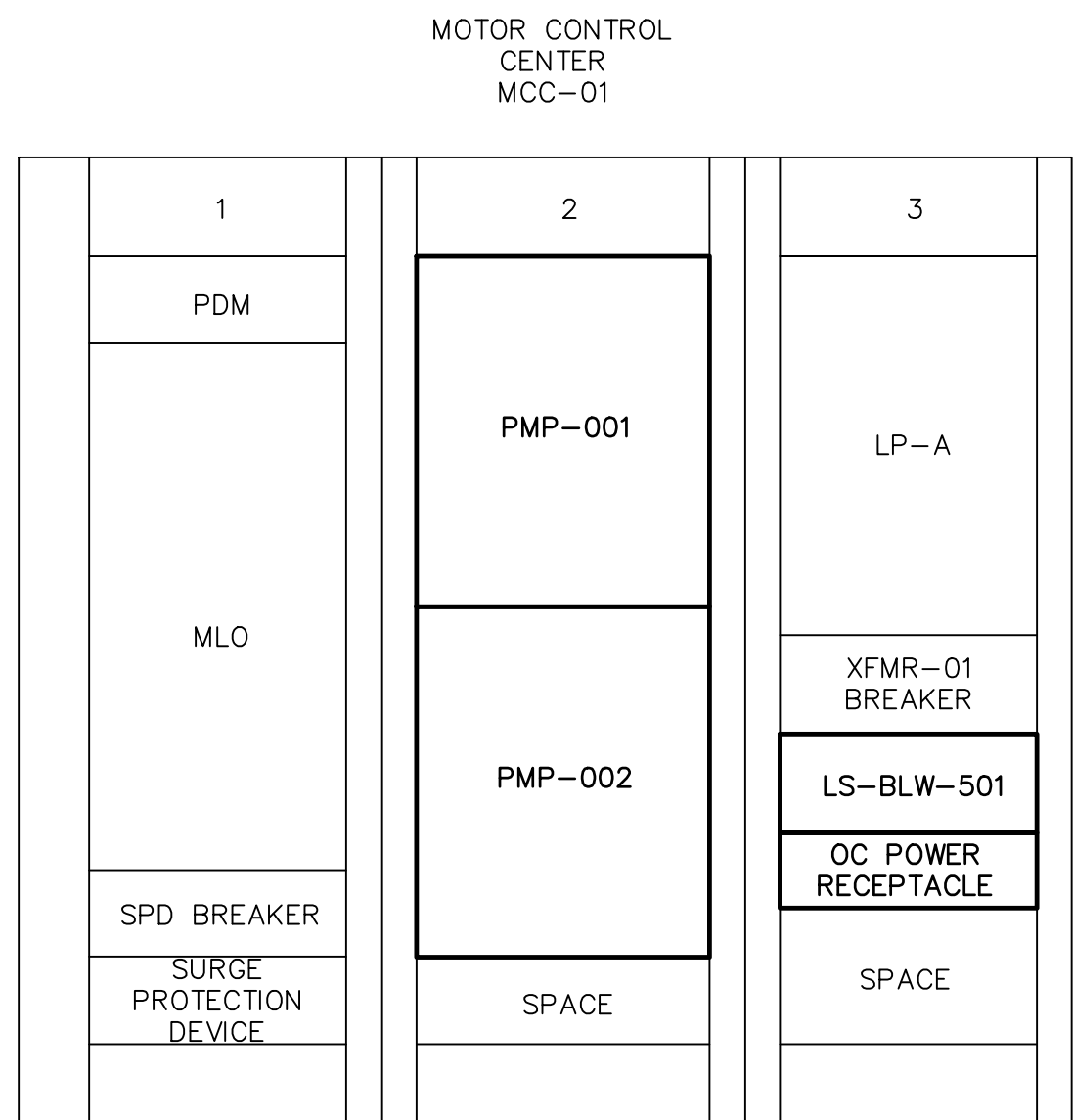
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MCC-01 SINGLE LINE DIAGRAM



MCC-01 ELEVATION

A diagram of a 2-to-1 multiplexer. It has two input lines at the bottom labeled 'E07' and 'E05'. These lines converge into a single output line at the top labeled '1'.

SCALE = NOT TO SCALE

[illegible]

LC
DWN
MV
CKD
DA

**City of Phoenix**

CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

ELECTRICAL

LIFT STATION 76 PHASE II EXPANSION

ELECTRICAL SINGLE LINE AND EQUIPMENT ELEVATION

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E07 SHEET 30 OF 41

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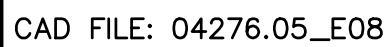


BLOWER LOCAL CONTROL PANEL
LCP-BIO-LS76 BLOCK WIRING DIAGRAM
NOT TO SCALE

1. PENDING VERIFICATION FROM I&C.

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REVISION

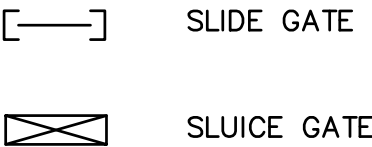
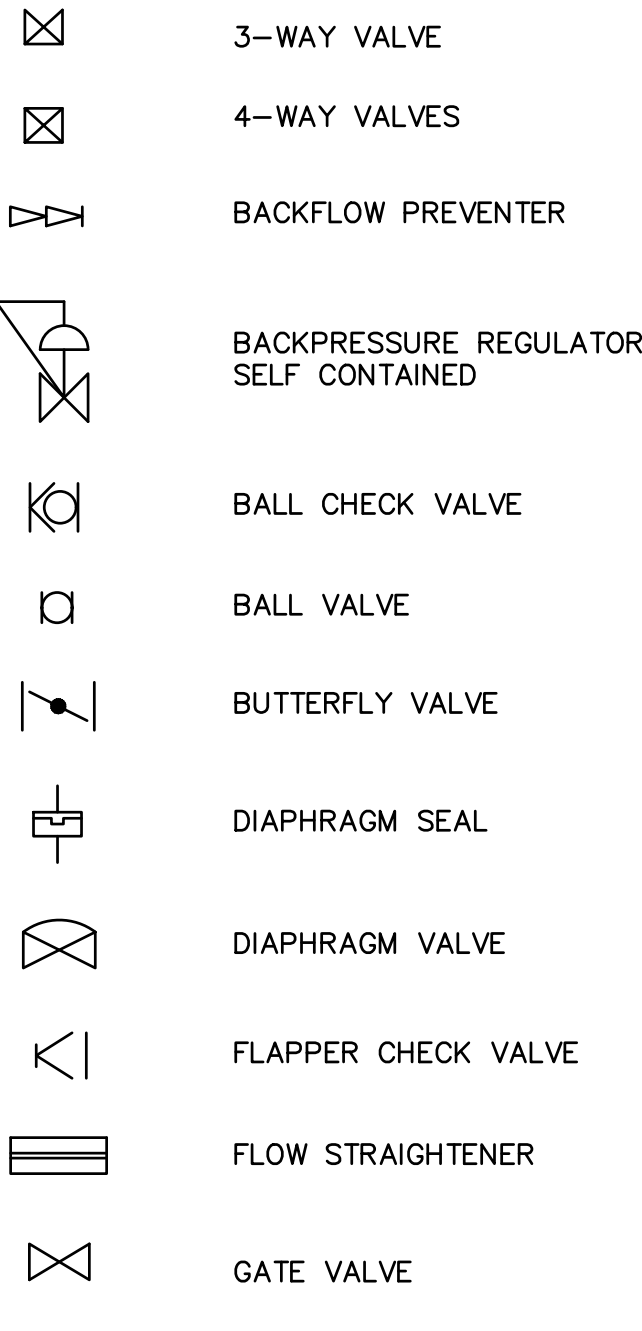


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INDICATES SPEED
CS = COSTANT SPEED
2S = TWO SPEED
VS = VARIABLE SPEED
VT = VARIABLE STROKE
(PER METERING PUMPS ONLY)
BLANK = UNKNOWN



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CSI COMPUTER CONTROL SYSTEM TAG EXTENSIONS


DIGITAL INPUT (STATUS)	DESCRIPTION	DIGITAL INPUT (ALARM)	DESCRIPTION	DIGITAL INPUT (ALARM) (CONTINUED)	DESCRIPTION	ANALOG INPUT	DESCRIPTION	ANALOG OUTPUT	DESCRIPTION
ATS Switch Activated	ATSActive	ATS Low Voltage (Voltage Loss)	ATSLoVolt	Process Gas Concentration High High Level	HIHiGasConc	Counter in Time	Time	Equipment Position Control	EquipPosCtrl
ATS Switch Disabled	ATSDisabled	Blower in Surge Condition	BlwrSurge	Process Gas Concentration High Level	HiGasConc	Engine RPM	RPM	Flow Pacing Control	FlowPaceCtrl
ATS Switch in Normal Status	ATSNormal	Blower Shutdown due to Surge Condition	BlwrHiSurge	Process Low Low Level	LoLoLevel	Equipment Position (Generic)	EquipPos	Generic Process Setpoint Control	SetpCtrl
Breaker Closed Status	BrkrClsd	Building Smoke Detector Alarm	SmokeDet	Process Low Low Press	LoLoPress	Gate Position (0–100%)	GatePos	Peristaltic Pump Speed Control	PmpSpdCtrl
Breaker Open Status	BrkrOpned	Chemical Eyewash Activated	EyewashAct	Process Low Low Temp	LoLoTemp	Generator Coolant Temperature	GenCoolTemp	SCR Drive Speed Control	SCRDSpeedCtrl
Disconnect Closed	DiscClsd	Door Intrusion Switch Alarm	Intrusion	Process Low Flow	LoFlow	Generator Oil Pressure	GenOilPress	SCR Drive Stroke Control	SCRDStrokeCtrl
Emergency Lockout Stop Switch Status	ELOS	Electrical Breaker Tripped	BrkrTrip	Process Low Level	LoLevel	Generator Speed	GenSpeed	Valve Positioning Control	VivPosCtrl
Emergency Mushroom Switch	EmergStop	Equipment Alarm (Common or Generic)	EquipAlm	Process Low Press	LoPress	Lamp Intensity	Intensity	Variable Frequency Drive Control	VFDSpeedCtrl
Equipment Closed (Generic)	EquipClsd	Equipment Low Battery	LoBatt	Process Low Temp	LoTemp	Lamp Transmittance	Transmittance		
Equipment Hand–Off–Auto Switch Status	EquipInAuto	Feed Pump Diaphragm Leak	DiaphLeak	Process High High DPress	HIHiDPress	MCC or Switchgear AMPS AC	Amps		
Equipment at Maximum Capacity	MaxCap	Generator Battery Low Voltage	GenLoVolt	Process High High Level	HIHiLevel	MCC or Switchgear KW hours	KWH		
Equipment at Minimum Capacity	MinCap	Generator Battery High Voltage	GenHiVolt	Process High High Press	HIHiPress	MCC or Switchgear Power Factor	PwrFactor		
Equipment Opened (Generic)	EquipOpned	Generator Overcrank Detected	GenOvcrank	Process High High Temp	HIHiTemp	MCC or Switchgear VAR–hours	VARH		
Equipment Ready	EquipReady	Generator Overspeed Detected	GenOvrspeed	Process High DPress	HiDPress	MCC or Switchgear Volts AC	Volts		
Equipment Running Status (Generic)	EquipRunStat	Generic System Fail	SysFail	Process High Flow	HiFlow	MCC or Switchgear Volt–Amps	Volt–Amps		
Equipment 1/2 Select Switch Status	SelectEquipOne	High High Density	HIHiDensity	Process High Level	HiLevel	MCC or Switchgear Volt–Amps Reactive	KVARs		
Equipment Start Active	EquipStart	High High Torque Alarm	HIHiTorq	Process High Press	HiPress	MCC or Switchgear Watts	KW		
Equipment Stop Active	EquipStop	High High Vibration	HIHiVib	Process High Temp	HiTemp	Motor Bearing Temperature	MtrBearTemp		
Equipment in Test Mode	EquipTestMd	High High Vibration in X Direction	HIHiXVib	SCR Drive Fail	SCRDFail	Motor AC Amperage	MtrAmps		
Flow Switch Status	FlowPresent	High High Vibration in Y Direction	HIHiYVib	Tank Leak Detect	TankLeak	Peristaltic Pump Speed	PmpSpeed		
Forward Motion Status	FwdMotion	High High Vibration in Z Direction	HIHiZVib	Ultrasonic Meter Loss of Echo	EchoLoss	Process Chemical Concentration Measurement	ChemConc		
Gate Open Status	GateOpned	High Density	HiDensity	Valve Failed Open	OpenFail	Process Density or TSS Measurement	Density		
Gate Close Status	GateClsd	High Speed	HiSpd	Valve Failed Close	CloseFail	Process Differential Pressure	DPress		
Local/Computer Switch Status	CompMode	High Torque Alarm	HiTorq	Variable Frequency Drive Fail	VFDFail	Process Dissolved Oxygen Measurement	DissOxy		
Local/Remote Switch Status	RemMode	High Vibration	HiVib	Sprinkler Water Flow	Sprklrflow	Process Flow Rate	Flow		
Panel Ready (circuit breaker common signal)	PwrFail	High Vibration in X Direction	HiXVib			Process Gas Concentration Measurement	GasConc		
Pump Lead/Lag Switch Status	PumpLnLead	High Vibration in Y Direction	HiYVib	DIGITAL OUTPUT	DESCRIPTION	Process Level Measurement	Level		
Pump Running Status	PumpRunStat	High Vibration in Z Direction	HiZVib	Gate Close Command	GateCls	Process Oxidation Reduction Potential	ORP		
Reverse Motion Status	RevMotion	Low Speed Switch Activated	LowSpd	Gate Open Command	GateOpn	Process pH	PH		
Valve Open Status	VivOpned	Main Power Failure	PwrFail	Motor Forward Command	MtrFwd	Process Pressure Measurement	Press		
Valve Close Status	VivClsd	Maintenance Mode	MaintMde	Motor Reverse Command	MtrRev	Process Temperature Measurement	Temp		
VFD Bypass Mode Selected	VFDBypass	Motor Amperage Low	LoMtrAmps	Motor Start Command	MtrStart	Process Turbidity Measurement	Turbidity		
VFD Running Status	VFDRunStat	Motor Amperage High	HiMtrAmps	Motor Start/Stop Command	MtrStart	SCR Drive Speed Feedback	SCRDSpeed		
		Motor Bearing High Temperature	MtrBearHiTemp	Motor Stop Command	MtrSS	Valve Position (0–100%)	VivPos		
		Motor Failure	MtrFail	PLC/Serial Watchdog Bit Active	MtrStop	Variable Frequency Drive AMPS	VFDAmps		
		Motor Overload Alarm	MtrOL		WtchDogbit	Variable Frequency Drive Frequency	VFDFreq		
		Motor Stator Moisture Detect	MtrLeak		ProcNorm	Variable Frequency Drive Speed Feedback	VFDSpeed		
		Motor Winding High Temperature	MtrWindHiTemp		RemAlmAck	Variable Frequency Drive Volts	VFDVolts		
		No Seal Water Present	NoSealWtr		RemClAlm	Vibration (Generic)	Vib		
		Pipe Leak Detect	PipeLeak		RemCmnAlm	Vibration in X Direction	XVib		
		Process Chem Concentration Low Low Level	LoLoChemConc		RemOvrde	Vibration in Y Direction	YVib		
		Process Chem Concentration Low Level	LoChemConc		RemReset	Vibration in Z Direction	ZVib		
		Process Chem Concentration High High Level	HIHiChemConc		TimerStart	Water Hardness Measurement	Hardness		
		Process Chem Concentration High Level	HiChemConc		Remote Timer Stop				
		Process Gas Concentration Low Level	LoGasConc		VivCls				
		Process Gas Concentration Low Low Level	LoLoGasConc		VivOpn				
		Generator Low Oil Pressure	GenLoOilPress						
		Generator Low Low Oil Pressure	GenLoLoOilPress						
		Generator High High Coolant Temperature	GenHiHiCoolTemp						
		Generator High Coolant Temperature	GenHiCoolTemp						
		Generator Low Coolant Temperature	GenLoCoolTemp						
		Generator Low Fuel Pressure	GenLoFuelPress						
		Generator Battery Charger Fault	GenBattChargFault						
		Generator Emergency Stop	GenEmergStop						
		Generator High Temperature	GenHiTemp						
		Generator Ready	GenReady						
NOTE: THESE TAG EXTENSIONS ARE THE CURRENT STANDARD. THEY ARE IN USE AT THE CAVE CREEK, UNION HILLS, AND NORTH GATEWAY FACILITIES.									

FACILITY DRAWINGS

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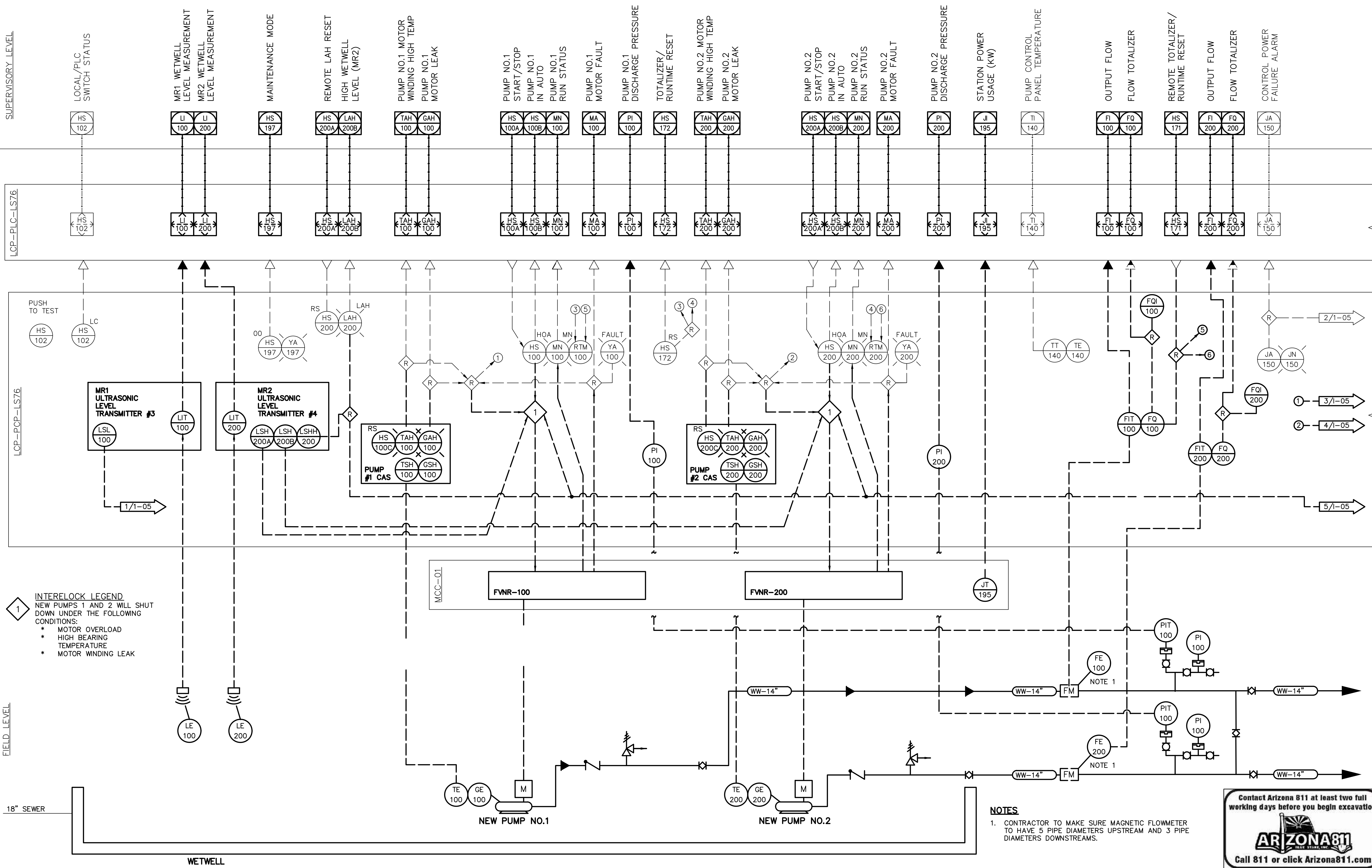
PARSON'S COMPUTER CONTROL SYSTEM TAG EXTENSIONS

[illegible][illegible]

REVISIONS					DES AG	 City of Phoenix	CITY OF PHOENIX WATER SERVICES DEPARTMENT COLLECTION SYSTEMS REMOTE FACILITIES	INSTRUMENTATION AND CONTROL LIFT STATION 76 PHASE II EXPANSION ABBREVIATIONS	COPYRIGHT © 2007—JANUARY
NO.	BY	DATE	CKD	REMARKS	DWN MV				CITY PROJECT NO. WS90400067—4
									DATE: JANUARY 2023
									103 SHEET 36 OF 41
									CAD FILE: 04276.05_I03

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SLIPPERVISORY | LEVEL



1. CONTRACTOR TO MAKE SURE MAGNETIC FLOWMETER TO HAVE 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETERS DOWNSTREAMS.



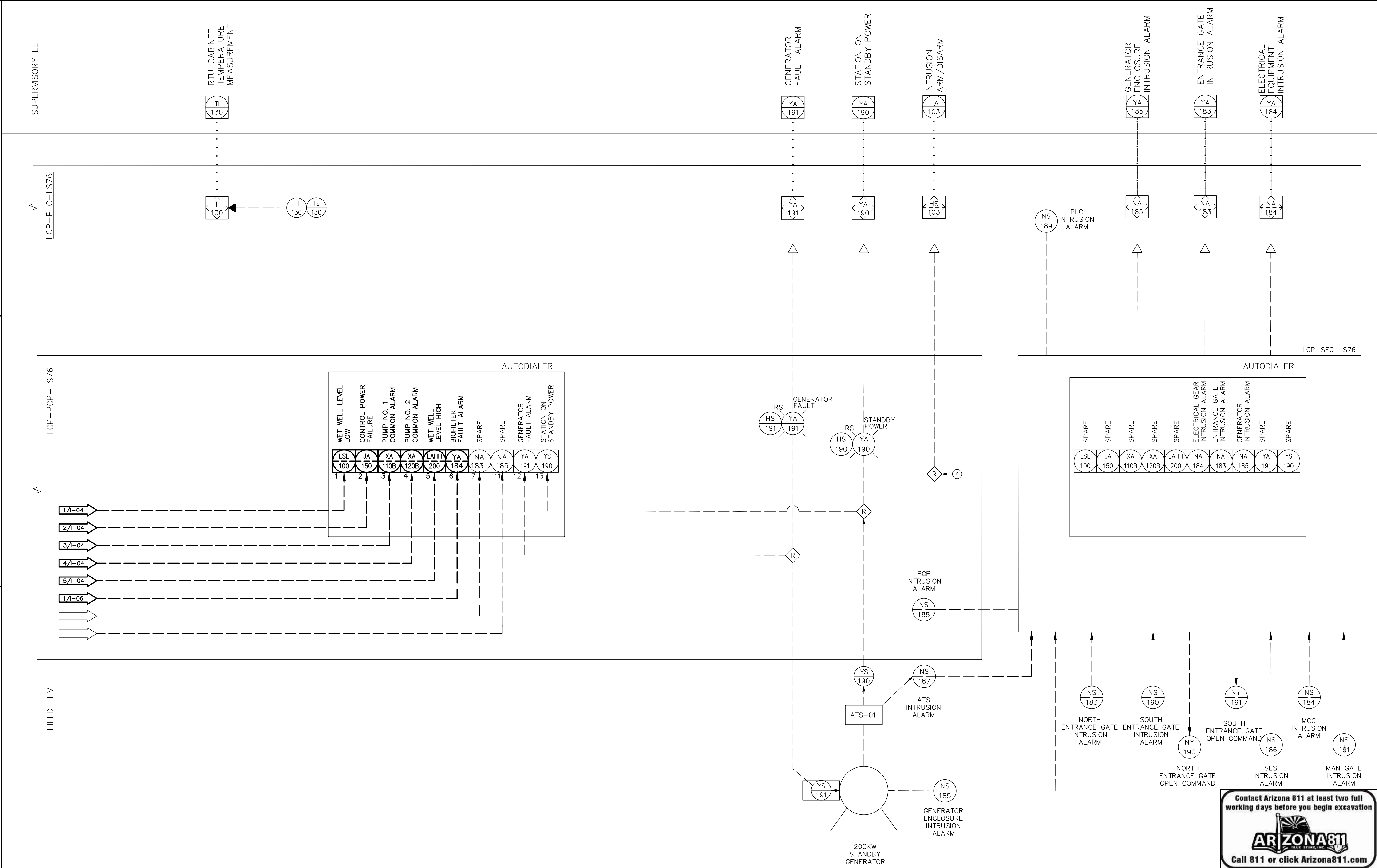
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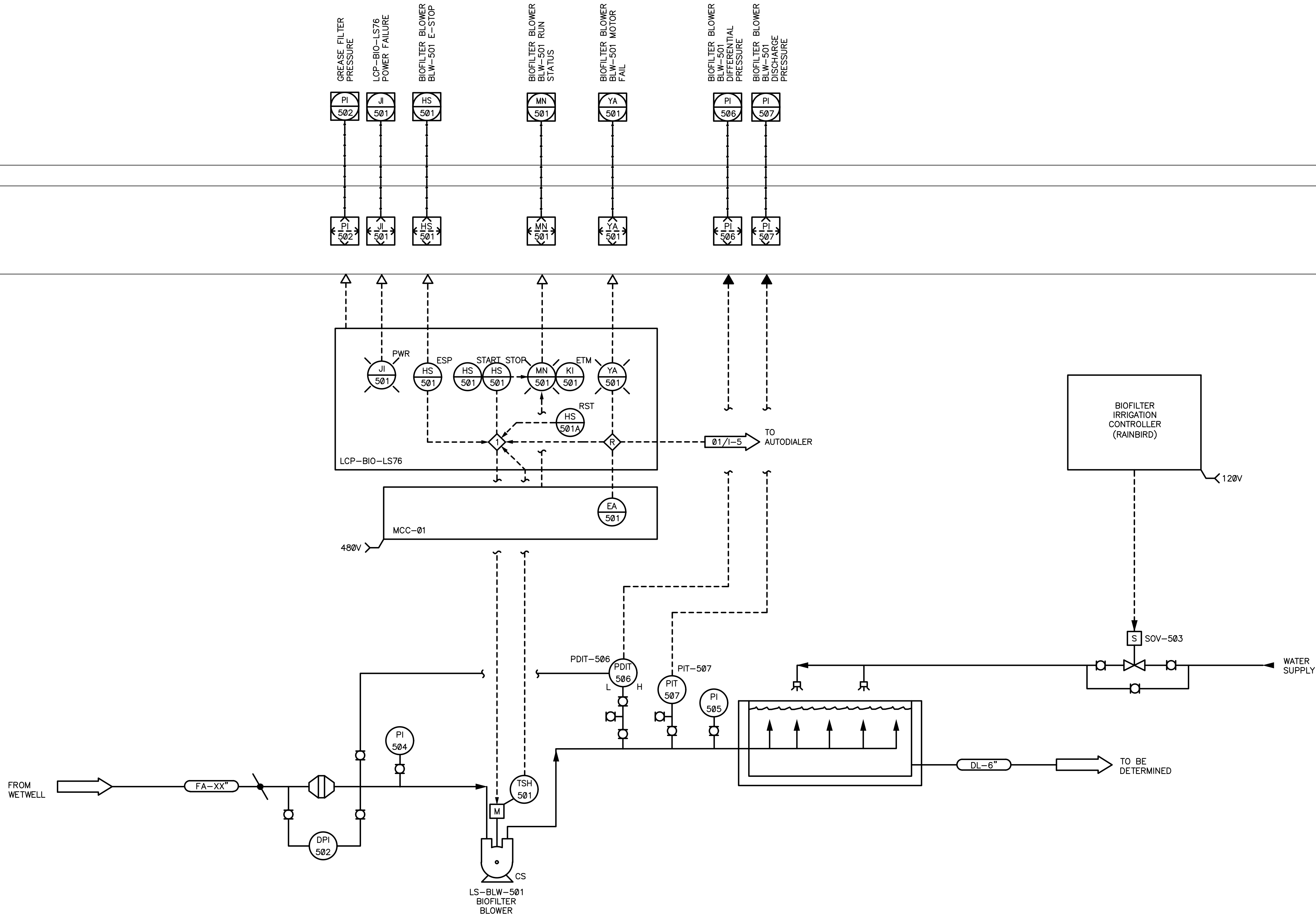
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SUPERVISORY LEVEL

1 ELECTRICAL INTERLOCK LEGEND
 THE PUMP WILL STOP IF THE
 FOLLOWING CONDITION EXISTS:
 * MOTOR OVERLOAD
 * HIGH TEMPERATURE
 * EMERGENCY STOP WILL INHIBIT
 PUMP OPERATION

[illegible]

DES
AG
DWN
MV
CKD
DR



CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

INSTRUMENTATION AND CONTROL

LIFT STATION 76 PHASE II EXPANSION

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DATE: JANUARY 2023
SHEET 39 OF 41
AD FILE: 04276.05_I06

FACILITY DRAWINGS

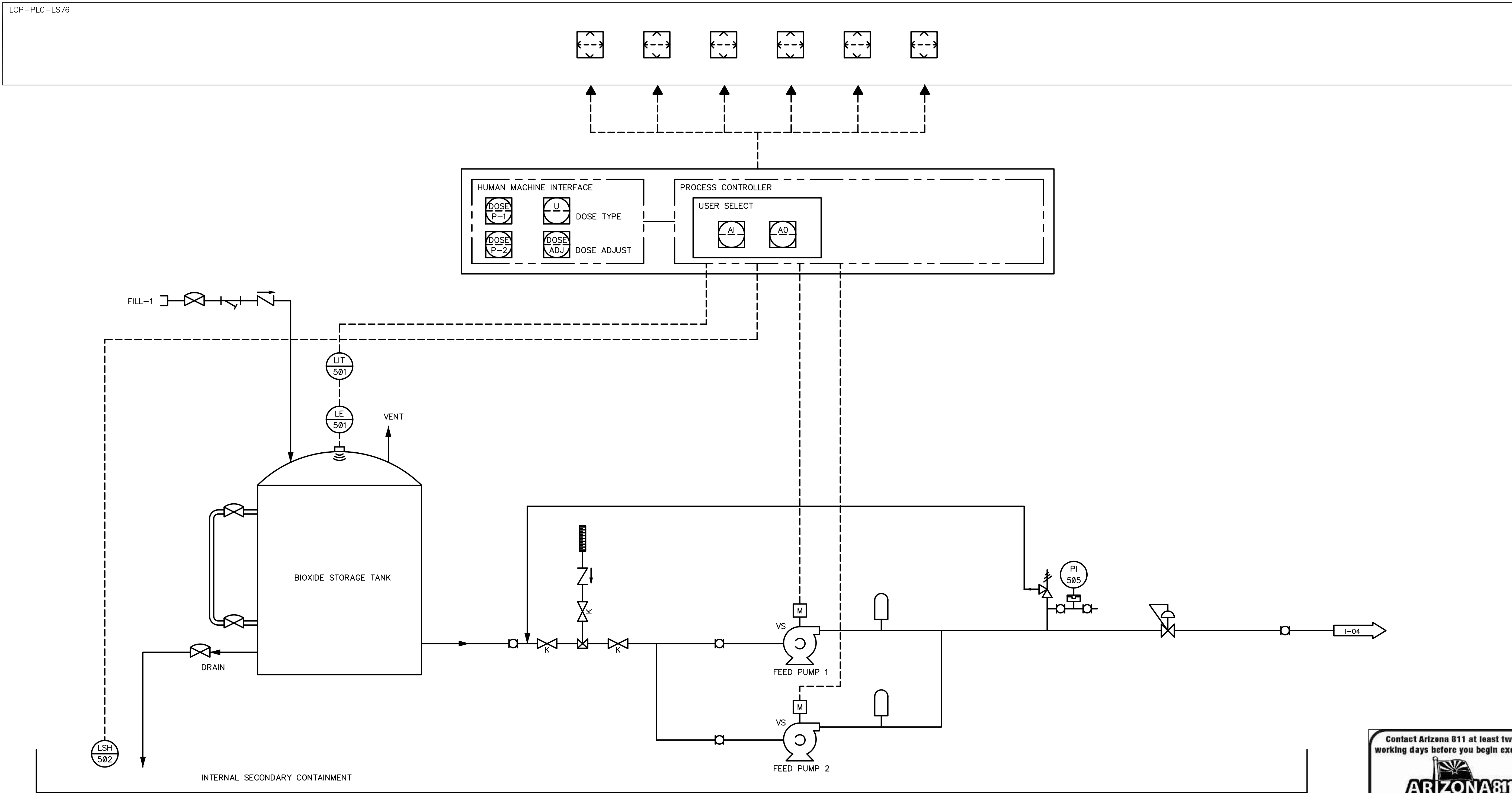
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SUPERVISORY LEVEL

Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811
ILLUM STAKE, INC.

Call 811 or click Arizona811.com

[illegible]

DES	AG
DWN	MV
CKD	DR



CITY OF PHOENIX
WATER SERVICES DEPARTMENT
COLLECTION SYSTEMS
REMOTE FACILITIES

INSTRUMENTATION AND CONTROL

LIFT STATION 76 PHASE II EXPANSION

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FACILITY DRAWINGS

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