

PROJECT NARRATIVE

BACKGROUNDS

The City of Phoenix and EPCOR entered into an IGA (Inter-government Agreement) to supply water from the City of Phoenix water distribution system to the Town of Paradise Valley, to which EPCOR provide water services. Phase 1 of the Paradise Valley Phoenix Interconnect project, 24-inch diameter water transmission main, has been constructed in Lincoln Drive between 36th Street and 52nd Place. Phase 2 of the Interconnect project will build a new pump station, called Interconnect Booster Pump Station (IBPS), connecting the new 24-inch water transmission to the existing Country Club Booster Pump Station (BPS).

PROJECT SUMMARY

The existing Country Club BPS, operated by EPCOR, is currently equipped with four pumps supplying water from Paradise Valley Main Zone to Country Club Zone. The new IBPS will be equipped with a single pump and electrical equipment. The IBPS will be constructed within the existing Country Club BPS site. The primary purpose of the new pump is to raise the pressure of the Phoenix water matching the Paradise Valley Main Zone pressure so the existing Country Club BPS will be able to supply Phoenix water into the existing Country Club Zone.

Once constructed, the new IBPS, along with the new 24-inch diameter water transmission main, will deliver an average flow of 2.8 MGD (1,944 gpm) from the City of Phoenix water distribution system at 36th Street and Lincoln Drive to the Paradise Valley water system at the Country Club BPS. The new pump station will provide additional water supply to the existing Country Club BPS, servicing the area north of Lincoln Drive between 40th Street and 56th Street. The Country Club Zone also supplies water to the subsequent water pressure zones, including Clearwater Hills, Clearwater Hills 3, Las Brisa, and High Cliff, through a booster pump station for each subsequent zone. As part of this project, a new chemical metering system will also be installed in order to maintain the water quality within the Paradise Valley water system.

PARCEL INFORMATION

The existing Country Club BPS is located on the east part of the Marriott Condominium – Camelback Inn. Marriott Condominium Development Corporation owns the land and allowed

EPCOR to use the site for the booster pump facility. The Letter of Authorization from Marriott is enclosed.

NOISE IMPACT

In regards to the potential audible and/or visual disturbance to the neighboring community, this project will have little impact as the new pump will be installed in an acoustic enclosure and all new equipment will be installed behind the existing Country Club BPS building. The noise level from the new pump will be approximately 64-db at 6-ft from the pump, 46-db at 50-ft (that is from the nearest street, Desert Fairways Drive), and 37-db at 150-ft (that is from the nearest house). The acoustic enclosure will be composed of 4-inch thick insulation panels supported by steel frames and anchored into the concrete pad and will reduce the noise of the pump by 17-dB. Therefore, the pump sound levels with the enclosure will be 47-db at a 6-ft distance, 29-db at 50-ft, and 20-db at 150-ft. For references, the average noise level from an outdoor air conditioner unit (condenser with fan) is 60-db to 70-db at 6-ft distance and the noise from a very quiet dishwasher is around 40-db.

In order to minimize the noise impact on the surrounding neighbors during construction, the contractor will not perform any construction activities except between the hours of 7 AM to 5 PM Monday through Saturday.

TRAFFIC IMPACT

The project will install a new 16-inch waterline in Desert Fairways Drive and make a connection to 8-inch sewer main. The construction will allow local traffic at all times. As part of the Right-of-Way permit application, a traffic control plan will be submitted for approval. There will be no traffic impact once the construction is complete.

LIGHTING ISSUE

There will not be any lighting issues during construction as the construction will take place during the daylight hours. There will not be any lighting issues after the project is complete as the only newly installed lights will be inside of the acoustic enclosure and not visible from outside.

SITE SCREENING

Based on the Town's Planning Commission Work Study Session held on February 18, 2020, a rusted metal fence, in lieu of a wrought iron fence with redwood slats, will be used for the required site screening at the existing Country Club BPS. The proposed fence will be installed behind the existing landscaping trees and the existing APS equipment (switch cabinets, capacity cabinet, and transformer) (see the attached graphic renderings). The proposed fence alignment complies with APS clearance requirements for various types of equipment. A 12-ft wide swing gate will be installed on the northwest side of the BPS site. As discussed, the proposed fence will tie to the existing chain-link fence on the southeast corner and to the existing shrub on the northwest corner.

Wilson Engineers has been closely coordinating with the Town's Engineering Department for all required permits and is submitting this application on behalf of EPCOR to comply with the Town's ordinance. The existing pump station is the essential public facility for the neighboring community and has been continuously operated since it was built. Therefore, the citizens in the area will understand and accept the importance of this project. It is certain that this project will benefit the residents of Paradise Valley for many years to come by providing a stable potable water system.

Graphic Renderings of the Proposed Fence and Gate

Rusted Metal Fence/Gate



8'-0" Tall Entrance Gate (Facing East from Desert Fairways Drive)

Rusted Metal Fence/Gate



8'-0" Tall Fence (Facing East from Desert Fairways Drive)

Rusted Metal Fence/Gate



South of BPS (Facing North from Desert Fairways Drive)

February 24, 2020

George Burton
Senior Planner
Town of Paradise Valley
6401 E Lincoln Drive
Paradise Valley, AZ 85253

Re: Conditional Use Permit (CUP) for EPCOR Pump Station. Parcel 169-28-001G

Dear Mr. Burton:

Please find below our responses to your comments received after the Work Study Session held on February 18, 2020 for the EPCOR Paradise Valley Phoenix Interconnect Booster Pump Station project:

1. Identify the decibel level/noise generated by the new pump itself and the decibel level/noise level that will be generated by the pump after the acoustical screen is placed around it. Also, please identify where that noise level is taken from (e.g. next to the pump or enclosure/ 10' away from the pump or enclosure, etc.). Please update the plans and documents accordingly.
Response: *The requested information has been added to the Project Narrative.*
2. Please provide locations of other pumps that have the acoustical enclosure for the Planning Commission to visit and evaluate the noise attenuation provided by the proposed acoustical screen. If applicable, please provide the contact name and phone number of any staff member that the Commissioners should contact in order to visit the site.
Response: *This will be coordinated and provided by EPCOR.*
3. The Commission prefers a block wall with stucco and paint finish. However, a rusted metal panel and post fence may be a feasible alternative. Please update the plans and documents accordingly.
Response: *As discussed, the use of a masonry block wall would be challenging due to the existing utilities in and around the existing BPS. The rusted metal fence and gates will be used in lieu of the wrought iron fence with redwood slats. Please see the updated renderings in the Project Narrative.*
4. The new fence wall may dead end to the north at the existing vegetation. However, a stipulation will be added that if the vegetation dies or is removed, the fence will have to be extended along that north part of the pump station and tie into the existing Camelback Inn maintenance yard fence.
Response: *Acknowledged.*

If you have any questions or need anything else, please contact me at (480) 893-8860 or via email at woosuk.cha@wilson-engineers.com.

Thank you,



Woosuk Cha

WILSON ENGINEERS

EPCOR Pump Station

Air Release Valve Enclosure

PIPELINE PRODUCTS

Waterworks Tools for the Professional



MADE IN THE U.S.A.
BUILT TO LAST

Available Colors:

Blue, Green, Yellow, Purple, Tan, Sandstone Mix & Granite Mix

Tan will be used.

PRODUCT FEATURES:

14" x 24" will be used.

Available in 3 Sizes: 14" x 24", 18" x 30", 24" x 36"

7 aesthetically pleasing colors for commercial or residential settings

Engineered for low-maintenance & graffiti resistant performance

Manufactured from low density polyethylene with U.V. inhibitors for maximum life

Lightweight two-piece (Base & Cover) design allows easy, 360° access to the valve

Top cover locks to the base with an automatic internal latch

An integrated padlock tab can be used for added security



Toll Free: 800.998.1079 | Phone: 760.744.8907 | Fax: 760.744.8949
www.pipelineproducts.com | sales@pipelineproducts.com

EPCOR Pump Station

Acoustic Enclosure for Pump

Standard Color

Surrey Beige will be used.

valspar
if it matters, we're on it.®

Weather XL – Siliconized Modified Polyester

WEATHER XL coating systems utilize only ceramic and inorganic pigments offering superior color stability, chalk and fade resistance as well as gloss retention.

SMP



Driftwood
SR:0.55 E:0.86 SRI:64

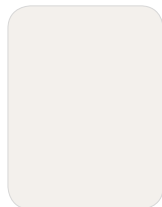


Sandstone
SR:0.49 E:0.86 SRI:56

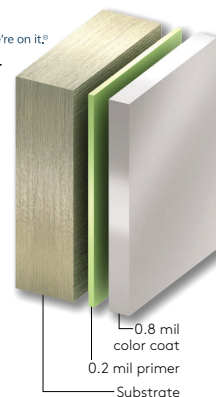


Surrey Beige
SR:0.41 E:0.86 SRI:45

MP (Modified Polyester)



Imperial White
SR:0.62 E:0.86 SRI:74



Solid Fluropon® PVDF Colors – Kynar 500® / Hylar 5000

Fluropon coatings are durable polyvinylidene coating system containing 70% Kynar or Hylar resins, ceramic and other inorganic pigments. This system provides a powerful chemical bond, superior resistance to ultraviolet radiation resulting in exceptional color retention, resistance to chalking and chemical degradation.

Category 1



Regal White
SR:0.70 E:0.86 SRI:85



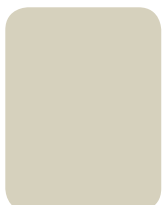
Ascot White
SR:0.69 E:0.85 SRI:83



Bone White
SR:0.69 E:0.84 SRI:83



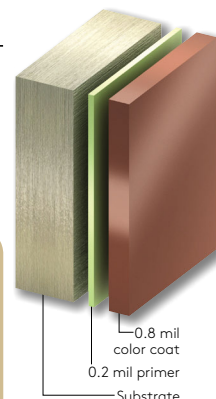
Driftwood
SR:0.45 E:0.86 SRI:50



Sandstone
SR:0.61 E:0.85 SRI:72



Surrey Beige
SR:0.48 E:0.86 SRI:54



Category 2



Dove Gray
SR:0.47 E:0.86 SRI:53



Zinc Gray
SR:0.35 E:0.86 SRI:37



Rawhide
SR:0.55 E:0.85 SRI:64



Parchment
SR:0.53 E:0.85 SRI:61



Rock Tan
SR:0.62 E:0.86 SRI:74



Taupestone
SR:0.27 E:0.86 SRI:26



Spartan Bronze
SR:0.31 E:0.85 SRI:31



Redwood
SR:0.38 E:0.86 SRI:41



Slate Blue
SR:0.28 E:0.85 SRI:27

Category 3



Colonial Red
SR:0.32 E:0.86 SRI:33



Evergreen
SR:0.26 E:0.85 SRI:24



Regal Blue
SR:0.26 E:0.85 SRI:24



Tahoe Blue
SR:0.26 E:0.85 SRI:24

SR (Solar Reflectivity)

This is the ability of a material to reflect solar energy back into the atmosphere. Rated on a scale from 0 to 1, where 1 is the most reflective.

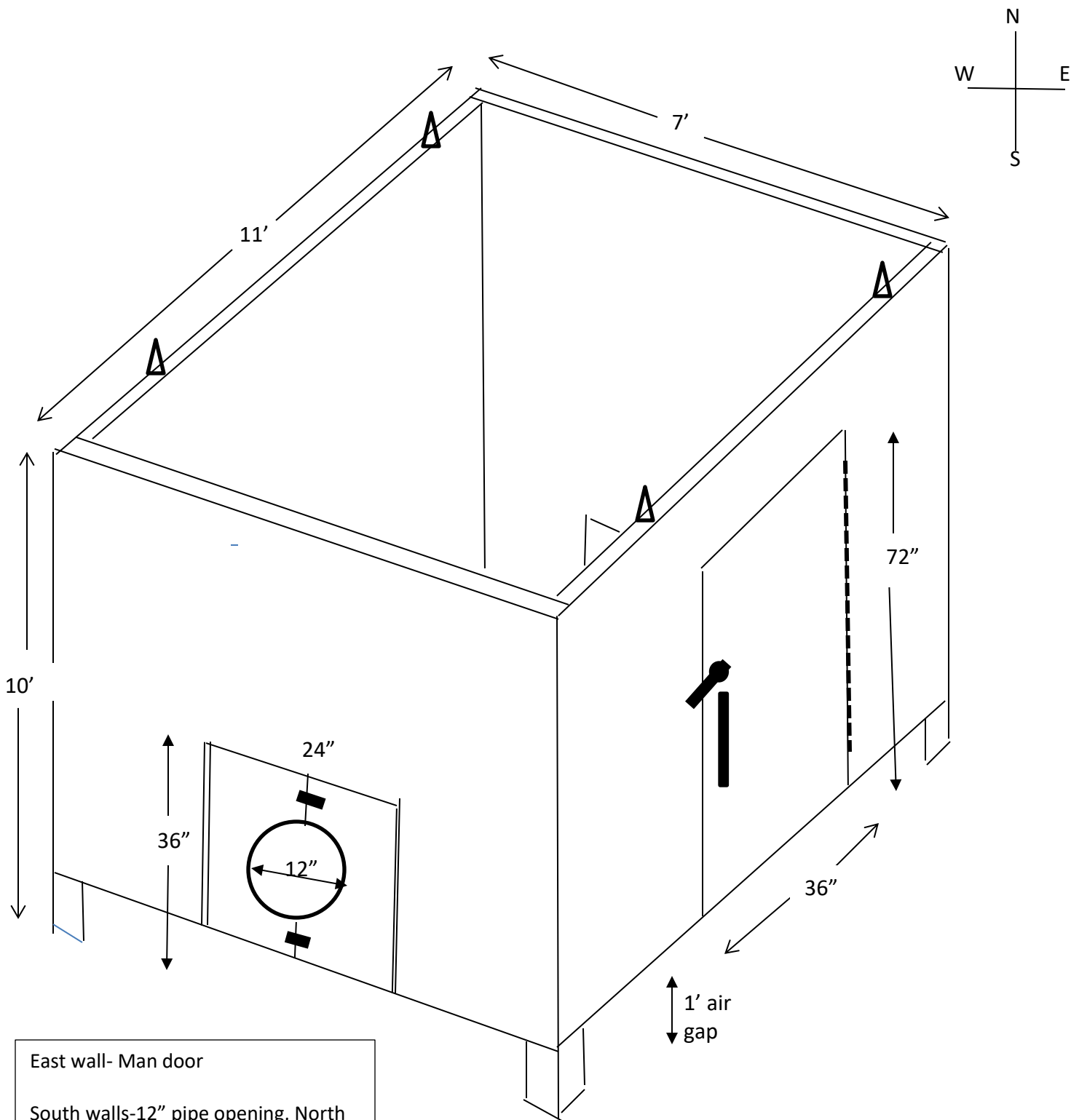
E (Emissivity)

Emissivity is the ability of the material to release absorbed energy back into the atmosphere. Rated on a scale from 0 to 1, where 1 is the most emissive.

SRI (Solar Reflective Index)

This is used to determine compliance with LEED® requirements and is calculated according to ASTM E 1980 using values for reflectance and the materials ability to release absorbed energy (emissivity) in medium wind speed conditions. Rated on a scale from 0 to 1, where 1 is the most reflective.

SoundGuard Sound Enclosure



East wall- Man door

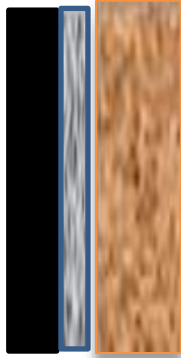
South walls-12" pipe opening, North wall 14" pipe opening, both with framed opening, hinged doors, and double latches

3 walls have a 12" airgap; 1 wall solid to ground (TBD)

**COPPER COUNTRY
ASSOCIATES**

480-272-2500 Herman Phillips

PANEL CONSTRUCTION CROSS-SECTION FOR WALLS, DOOR



2 1/2" X 1/8" STEEL SQUARE TUBING



1" THICK SOUND GUARD CRUMB RUBBER



4" THICK - 26 GAUGE TAN GALVALUME STYROFOAM ACOUSTICAL INSULATED PANEL (COLOR PAINTED AS SPECIFIED)



James A. Lane, PE
jameslane1@cox.net
Phone: (602) 321-1945
www.jameslanepe.com

Job Name Sound Wall

Job # 19047

By Lane

Sheet #

1

Date 5/28/2019

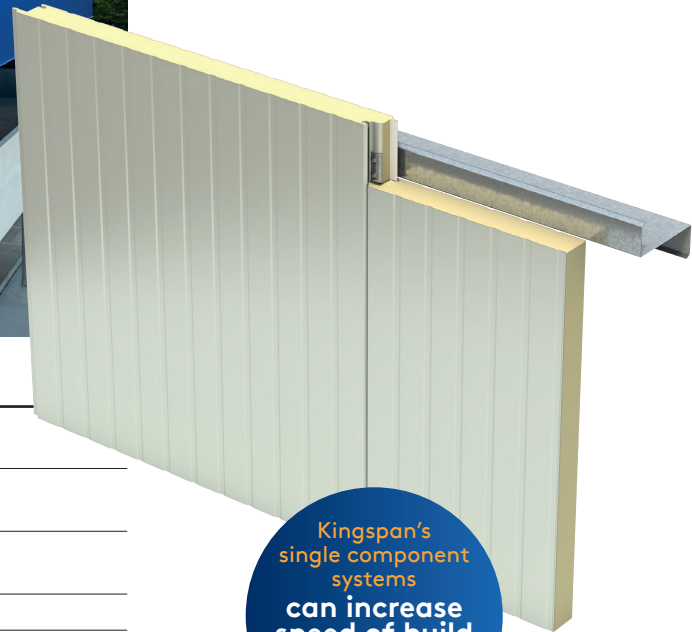


Structural Analysis Sound Wall Steel Frame



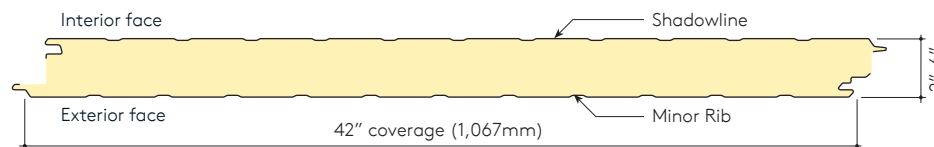
300 Series Minor Rib Data Sheet

Insulated Wall Panel System



Product Specification

Profile:	Exterior: Minor Rib Interior: Minor Rib, Shadowline or V-groove
Embossing:	Exterior: Stucco or non-embossed Interior: Stucco or non-embossed
Gauge:	Exterior: 26, 24, 22 ga Interior: 26, 24, 22 ga
Width:	42"
Thickness:	2", 2.5", 3", 4", 5", 6"
Length:	8' - 53'
Reveal option:	N/A
Orientation:	Vertical
Post fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75°F ≈ 8.25 per inch per ASTM C518 @ 35°F



Kingspan's
single component
systems
can increase
speed of build
by up to
50%

Applications

300 Series panels are used for exterior walls. Both interior and exterior facings feature the same minor rib profile that provides a clean flat appearance and is easily washable.

300 Series panels are suitable for new and retrofit applications across the cold storage, commercial and industrial market sectors.

Design Features

High thermal efficiency combined with low installed cost makes the 300 Series the preferred choice for interior cold storage applications. Concealed fasteners provide a continuous look and clean design.

The foamed-in-place manufacturing process produces superior panels of consistent high quality that arrive to site ready for quick and easy installation, saving up to 50% in on-site construction time.

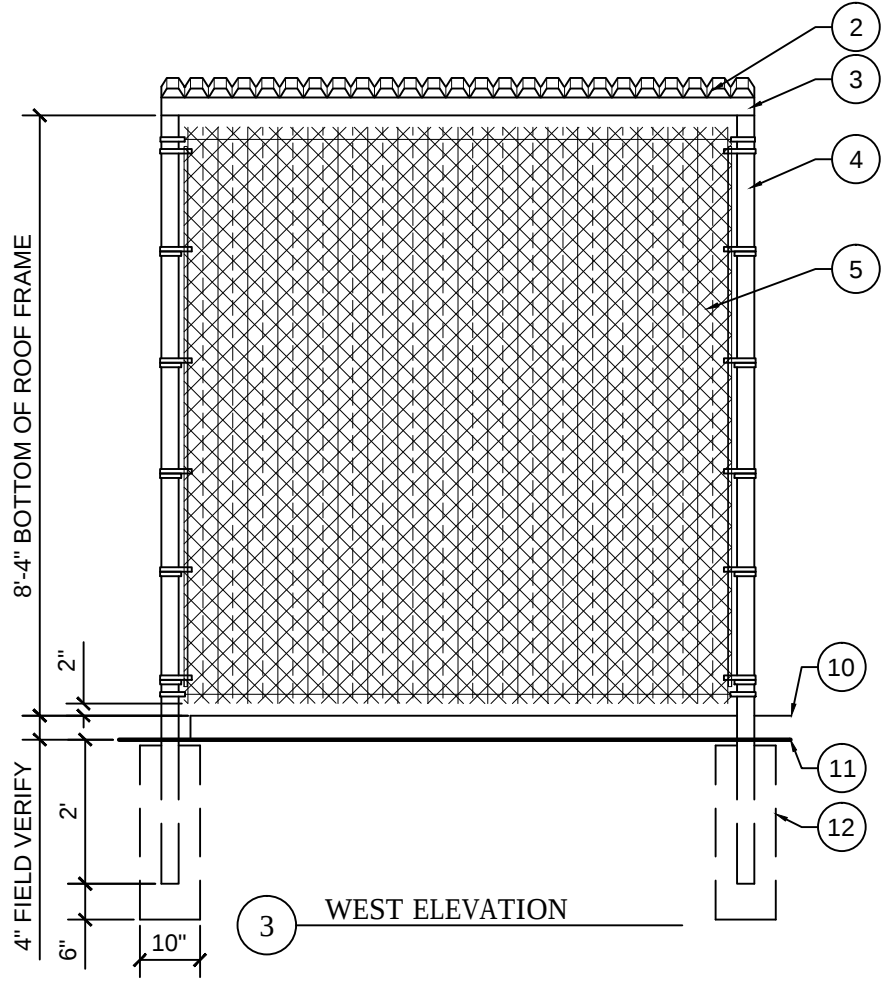
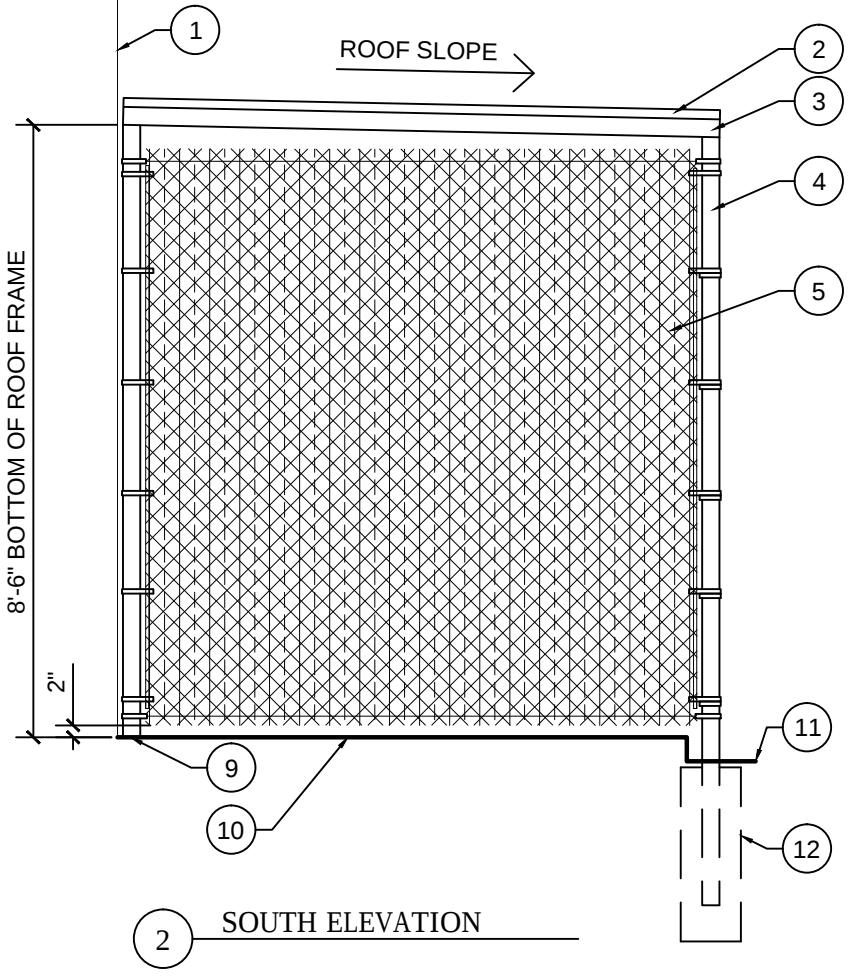
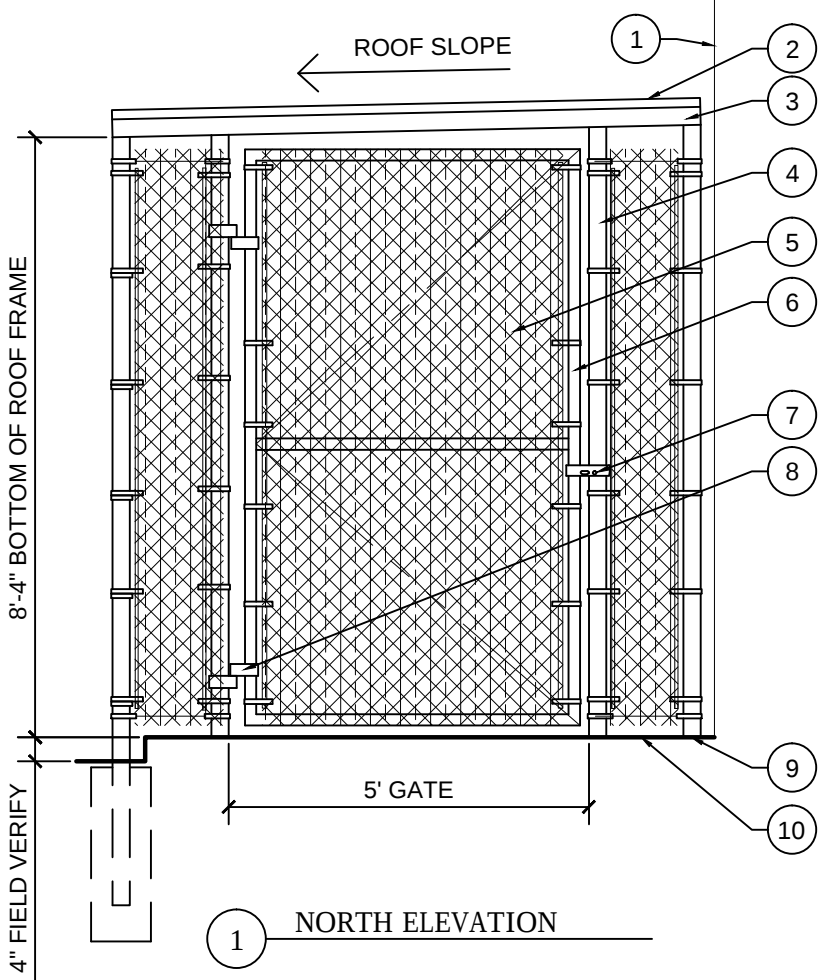
Customer Options

Choose from our in-stock Fluoropolymers or select a custom color to match your needs. For interior heavy wash down environments, plastisol (PVC) coatings as well as stainless steel facings are available.



EPCOR Pump Station

Chemical Metering Pump Enclosure



GENERAL NOTES

1. ALL DIMENSIONS & LOCATIONS TO BE FIELD VERIFIED (F.V.)

KEY NOTES

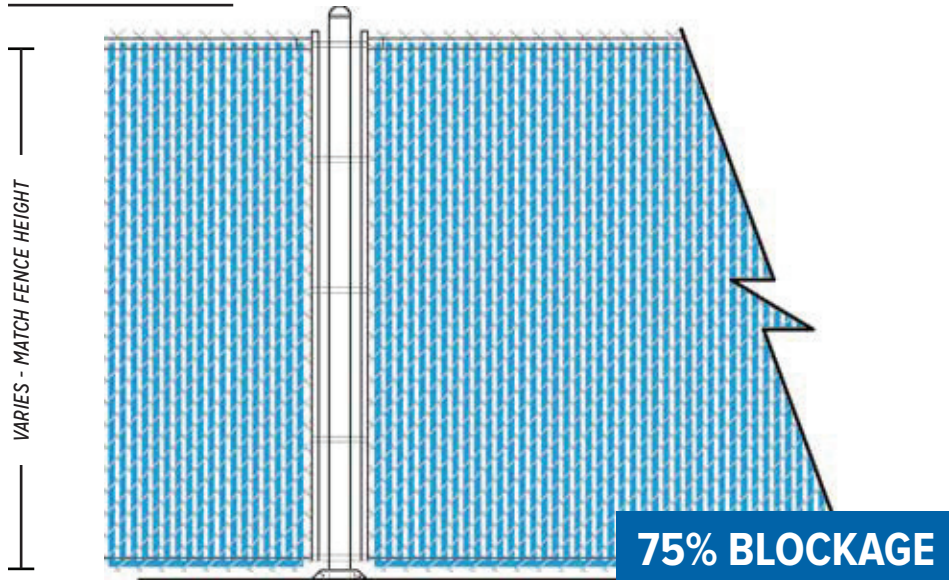
1. BUILDING WALL
2. B-DECK (RB PATTERN) TAN / WHITE COLOR
3. 3" SQ 11 GA. GALV ROOF FRAME TYP WELDED TO TOP OF POSTS
4. 2 7/8" 40 WT GALV POST TYP
5. 2" 9 GA GALV CHAIN LINK FABRIC W/ PRIVACY SLATS TAN
6. 1 7/8" 40 WT GALV GATE FRAME
7. FORK LATCH W/ PADLOCK TAB. PADLOCK BY OTHERS
8. PAIR OF HINGES
9. 6" X 6" X 1/4" PLATE WELDED TO BOTTOM OF POST & ANCHOR BOLTED TO CONCRETE W/ (4) ANCHOR BOLTS AS REQ'D
10. CONCRETE SLAB BY OTHERS
11. FINISHED GRADE
12. CONCRETE POST FOOTING @ GRADE

BBF BIDDLE & BROWN FENCE COMPANY 895 W. ELWOOD ST. PHOENIX, AZ 85041 PHONE: 602.456.8999 FAX: 602.396.1077		
PROJECT:	EPCOR - PARADISE VALLEY PHOENIX INTERCONNECT BOOSTER PUMP STATION	
TITLE	FENCE & GATE ELEVATIONS	
DATE	10/22/19	DWG# 02
DRAWN BY	JK	
SCALE	NTS	

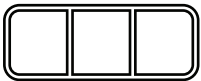
4000 SERIES

TUBE SLATS WITH BOTTOM LOCK

Elevation View



SLAT PROFILE



Available Colors

Black, Green, Tan, White, Red, Brown

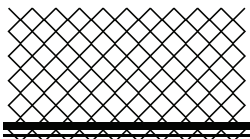


Tan will be used

Attachment Enlargement

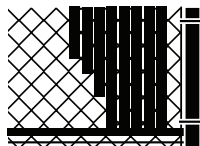
STEP 1

Insert rail horizontally in first full diamond at bottom of fence with open side facing up.



STEP 2

Insert vertical slats with interlocking tab downward. Slat engages and interlocks with bottom rail.



STEP 3

Push the vertical slat into the horizontal channel to lock-in place.



FENCESCREEN SPECIFICATIONS

PROPERTIES	RESULTS
Melt Index	0.6
Density	0.957
Minimum Temp.	-76° F
Maximum Temp.	250° F
Tensile Strength	3,700 psi
Slat Width	1 ^{3/32} "
Mesh Size	2"
Standard Heights	4, 5, 6, 7, 8, 10, and 12 feet
Wire Gauge	8, 9, or 11
Slats Per Box	82
Average Coverage Per Box	10 linear feet

MATERIAL CONSTRUCTION

Fence Tube Slats w/ Bottom Lock are made from extruded High Density Polyethylene (HDPE), color pigments, and UV inhibitors.

DURABILITY

HDPE fence products are resistant to: severe weather conditions, salt water, sand, road dirt, most acids, alcohol, alkaline, ammonia, petroleum distillates, and common environmental pollutants.

MAINTENANCE

Pressure cleaning of surface contaminants is quickly accomplished with plain water.

WIND LOAD DISCLAIMER

Fencescreen will not be responsible for fence damage resulting from wind load conditions due to insufficient structural support.

FEATURES

- UV stabilized to protect against the harmful rays of the sun.

Drawings not to scale.

Detail Name:

4000 Series Tube Slats with
Bottom Lock

Drawing Number:

4000 - TUBE SLAT BOTTOM LOCK



PHONE: 1.888.313.6313

| www.FenceScreen.com



EPCOR

PARADISE VALLEY PHOENIX INTERCONNECT

INTERCONNECT BOOSTER PUMP STATION (PHASE 2)

OCTOBER 2019

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E-4.0

E-4.1

E-5.0

E-6.0

E-6.1

I-1.0

I-2.0
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BOOSTER PUMP STATION – CONDUIT BLOCK DIAGRAM

BOOSTER PUMP STATION – TYPICAL DETAILS – 1

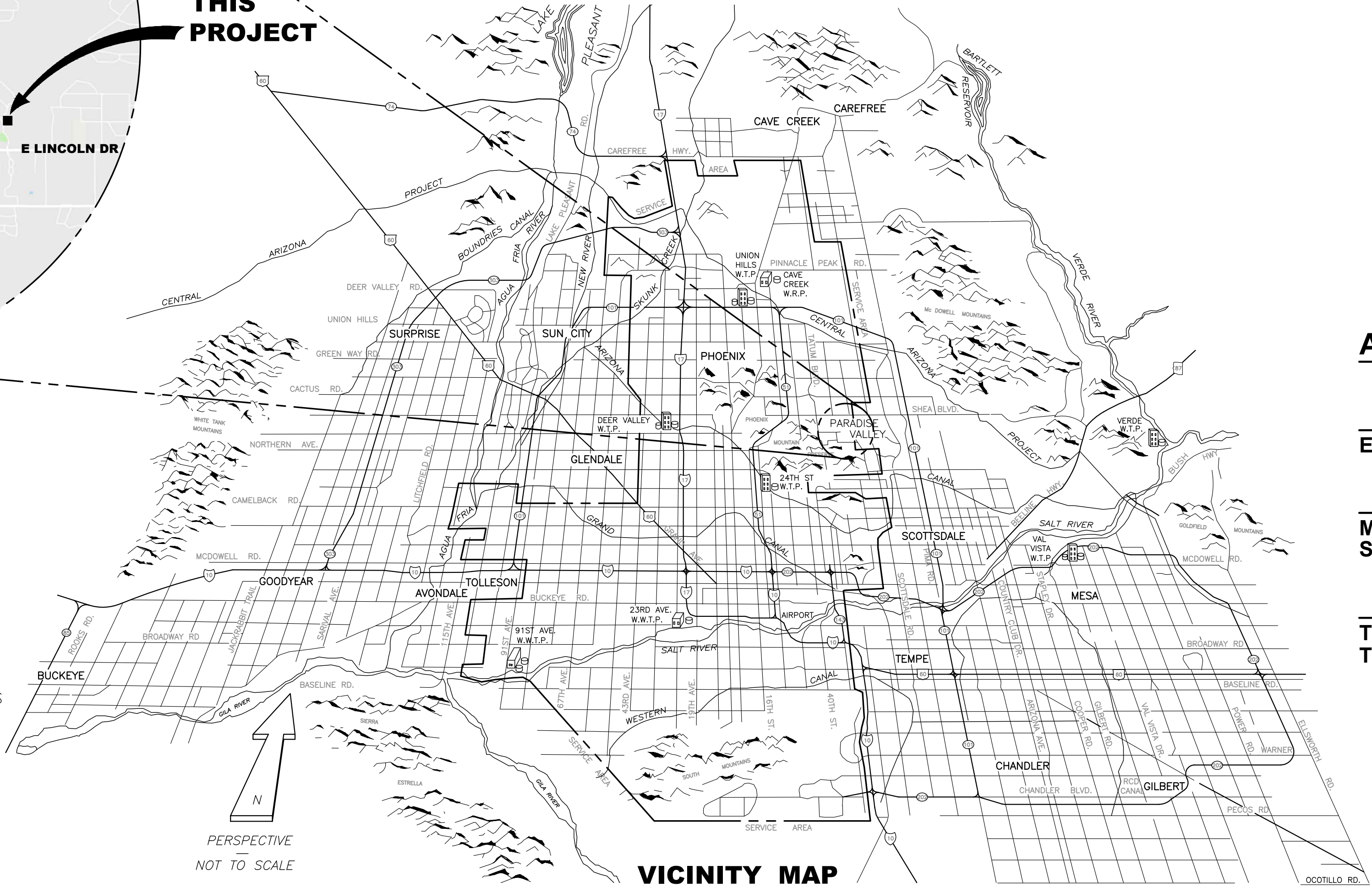
BOOSTER PUMP STATION – TYPICAL DETAILS – 2

BOOSTER PUMP STATION – INSTRUMENTATION SYMBOLS AND LEGEND

BOOSTER PUMP STATION – P&ID



THIS PROJECT



OWNER:

EPCOR
2355 WEST PINNACLE PEAK ROAD, SUITE 300
PHOENIX, AZ. 85027
PH: (623) 445-2455

ENGINEER:

WILSON ENGINEERS
1620 W FOUNTAINHEAD PKWY, SUITE 501
TEMPE, AZ. 85282
PH: (480) 893-8860

APPROVALS:

EPCOR	DATE
MARICOPA COUNTY ENVIRONMENTAL SERVICE DEPARTMENT	DATE
TOWN OF PARADISE VALLEY TOWN ENGINEER	DATE

REVISIONS					REMARKS
NO.	BY	CHKD	DATE		

UTILITY COORDINATION

ALL MATERIALS COMING INTO CONTACT WITH POTABLE WATER MUST MEET NSF STANDARD 60 AND 61 IN ACCORDANCE WITH AAC 18-4-213

STATUS:

AGENCY REVIEW

CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU BEGIN EXCAVATION.

ARIZONA811

Arizona Blue Stake, Inc.

DIAL 811 OR 1-800-STAKE-IT (782-5348) IN MARICOPA COUNTY:(602)263-1100

WILSON ENGINEERS

1620 W Fountainhead Pkwy Suite 501 Tempe, AZ 85282 Phone: (480) 893-8860

IMPROVING ARIZONA'S INFRASTRUCTURE SINCE 1942

XREFS: TB-WE-D, SEAL-WC

GENERAL NOTES:

1. ANY CHANGES FROM APPROVED PLANS MUST BE SUBMITTED TO EPCOR WATER FOR WRITTEN APPROVAL PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL NOTIFY EPCOR WATER CONSTRUCTION INSPECTIONS DEPARTMENT 48 HOURS IN ADVANCE OF ANY CONSTRUCTION. USE THE CONTACT LIST IN EPCOR WATER'S DEVELOPER GUIDE TO SCHEDULE INSPECTION (EPCOR WATER GENERAL PHONE NUMBER IS 623-445-2400). WHEN APPOINTMENTS FOR INSPECTION ARE ARRANGED AT LEAST 48 HOURS IN ADVANCE, THE INSPECTION/TEST WILL BE CONDUCTED AS SCHEDULED, OTHERWISE THE REQUEST WILL BE SCHEDULED BASED ON AVAILABILITY.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED PERMITS AND INSPECTIONS FROM APPROPRIATE GOVERNMENTAL AGENCIES FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY (MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION, CITY ENGINEERING DEPARTMENT, ETC.). INSPECTIONS BY EPCOR WATER DO NOT RELIEVE CONTRACTOR OF RESPONSIBILITY TO OBTAIN REQUIRED INSPECTIONS FROM OTHER INTERESTED GOVERNMENTAL AGENCIES (BUILDING SAFETY, FIRE DISTRICT, ETC.).
4. ALL WORK AND TESTING SHALL BE IN ACCORDANCE WITH MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) STANDARD SPECIFICATIONS AND DETAILS UNLESS OTHERWISE STATED ON PLANS.
5. ALL POTABLE WATERLINES AND FITTINGS SHALL HAVE NSF-PW SEAL. ALL MATERIALS AND PRODUCTS USED IN THE POTABLE WATER SYSTEM SHALL CONFORM TO NSF STANDARDS 60 AND 61 IN ACCORDANCE WITH AAC R18-4-213. ALL MATERIALS SHALL BE LEAD-FREE AS DEFINED IN AAC R18-4-101 AND R18-4-107.
6. PIPE SEPARATION: SEPARATION BETWEEN WATER AND SEWER LINES WILL BE A MINIMUM OF 6 FEET FROM OUTSIDE EDGE TO OUTSIDE EDGE OF PIPE. TWO FEET SEPARATION IS REQUIRED BETWEEN WATER LINES, STORM DRAINS, AND DRY UTILITIES.
7. DIP SECTION: ALL DIP SECTIONS SHALL BE CONSTRUCTED OF RESTRAINED DUCTILE IRON PIPE (DIP) PER EPCOR WATER'S STD. DET. 370-1. ALL DIP SECTIONS SHALL BE JOINT RESTRAINED DIP WITH POLYETHYLENE WRAP FOR THE ENTIRE LENGTH PER MAG SECTION 610.6. JOINT RESTRAINED LENGTHS WILL FOLLOW MAG STD. DET. 303-1 AND 303-2. ANCHOR BLOCKS/THRUST BLOCKS MUST BE INSTALLED FOR VERTICAL BENDS PER MAG STD. DET. 381.
8. CONCRETE ENCASEMENT: ALL WATER AND SEWER ENCASEMENTS SHALL FOLLOW MAG STD. DET. 404-1. WHEN A WATER LINE MUST BE CONSTRUCTED UNDER A SEWER OR RECLAIMED WATER LINE, THE WATER LINE MUST BE A MINIMUM OF 2' BELOW THE SEWER OR RECLAIMED WATER LINE AND EXTRA PROTECTION IS REQUIRED. PROTECTION FOR THE SEWER MAIN SHOULD BE CONSTRUCTED WITH MECHANICAL JOINT OR RESTRAINED JOINT DUCTILE IRON PIPE FOR A DISTANCE OF TEN FEET ON BOTH SIDES OF THE WATER MAIN. A FULL LENGTH OF DIP WILL BE CENTERED OVER/UNDER THE WATER MAIN. WHEN DIP IS NOT USED FOR THE SEWER MAIN, BOTH THE WATER AND SEWER LINES WILL BE ENCASED IN CONCRETE FOR A LENGTH OF 10' ON BOTH SIDES OF THE CROSSING, PER MAG STD. DET. 404-2. REFER TO MAG STD. DET. 404-1 REGARDING FORCE MAINS. ALL ENCASEMENTS REQUIRE REBAR AND CLASS "C" CONCRETE.
9. GATE VALVES SHALL BE RESILIENT SEATED IN ACCORDANCE WITH EPCOR WATER'S WATER MATERIAL SPECS AND MAG SECT. 630.3.
10. VALVE SUPPORTS SHALL BE IN ACCORDANCE WITH MAG STD. DET. 301.
11. VALVE BOXES SHALL BE IN ACCORDANCE WITH MAG STD. DET. 391-1, TYPE C.
12. WATER VALVE DEBRIS CAPS: DEBRIS CAPS ARE REQUIRED WHEN WATER VALVES ARE CONSTRUCTED WITHIN 2 FEET OF THE EDGE OF GUTTER, IN AREAS THAT ARE UNPAVED, AND AREAS PRONE TO FLOODING. VALVES SHOULD BE SET 2-TENTHS ABOVE FINISH GRADE IN ALL UNPAVED AREAS. CONCRETE COLLAR WITH CARSONITE MARKER IS REQUIRED ON ALL VALVE LOCATIONS OUTSIDE OF RIGHT-OF-WAY.
13. CONCRETE THRUST BLOCKS SHALL BE IN ACCORDANCE WITH MAG STD. DET. 380. THRUST BLOCKS ARE NOT ALLOWED IN ROWS IN PLACE OF CONCRETE THRUST BLOCKS. 90-DEGREE FITTINGS ARE NOT ALLOWED IN ROW'S, BUT MAY BE USED IN OTHER AREAS AS APPROVED BY EPCOR.
14. FIELD LOCK GASKETS ARE NOT ALLOWED.
15. WATER SERVICES 2 INCHES AND SMALLER SHALL BE IN ACCORDANCE WITH EPCOR WATER STD. DET. 342-2.
16. FIRE HYDRANTS LOCATED ON "DEAD END" WATER MAINS SHALL HAVE A BLOW-OFF, IN ACCORDANCE WITH EPCOR WATER STD. DET. 390-1, INSTALLED AT THE END OF THE WATER MAIN.
17. HYDRANT COATING: FRAZEE ARO PLATE II 6480462 "BRIGHT YELLOW" OR SHERWIN WILLIAMS B547Z0104 "SAFETY YELLOW". COMPLETE HYDRANT PREPARATION PRIOR TO INSPECTION FOR PAINTING. INSPECTION IS ALSO REQUIRED AFTER PAINTING FOR CONTRACTOR TO RECEIVE FINAL ACCEPTANCE. DOES NOT APPLY TO PROJECTS IN MOHAVE COUNTY.
18. PUMPER NOZZLE TO BE ORIENTED TO PROVIDE BEST ACCESSIBILITY FOR FIRE TRUCK. ALL HYDRANT PORTS MUST BE LUBRICATED WITH A FOOD-GRADE LUBRICANT.
19. EXCEPT IN MOHAVE COUNTY, FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH EPCOR WATER STD. DET. 360-1 OR 360-2 AS INDICATED ON THE PLAN. IN MOHAVE COUNTY, FIRE HYDRANTS SHALL COMPLY WITH LOCAL FIRE MARSHAL REQUIREMENTS.
20. RECLAIMED WATERLINES SHALL BE INSTALLED IN ACCORDANCE WITH MAG SECTIONS 601, 610 AND 616. TESTING SHALL BE IN ACCORDANCE WITH MAG SECTIONS 610 AND 611 INCLUDING DISINFECTION/CHLORINATION. FINAL FLUSHING AND BACTERIOLOGICAL TESTING AS SPECIFIED IN MAG SECTION 611.15 SHALL NOT BE REQUIRED.
21. WATER TIGHT MANHOLE COVERS: WATER TIGHT MANHOLE COVERS ARE REQUIRED WHEN THE EDGE OF THE MANHOLE COVERS ARE CONSTRUCTED WITHIN 2 FEET OF THE EDGE OF GUTTER, IN AREAS THAT ARE UNPAVED, AND AREAS PRONE TO FLOODING. MANHOLES SHOULD BE SET 2-TENTHS ABOVE FINISH GRADE IN ALL UNPAVED AREAS. CONCRETE COLLAR WITH CARSONITE MARKER IS REQUIRED ON ALL VALVE LOCATIONS OUTSIDE OF RIGHT-OF-WAY. WATER TIGHT MANHOLE COVERS ARE REQUIRED FOR ALL MANHOLES IN MOHAVE COUNTY.
22. WATER PRESSURE TESTING: ALL WATER LINES WILL BE TESTED PER MAG SECTION 610.15. MODIFICATIONS TO THESE SPECIFICATIONS INCLUDE: THE TESTING TO BE AT A MINIMUM OF 200 PSI. HIGHER TEST PRESSURES MAY BE REQUIRED IN CERTAIN CIRCUMSTANCES. AND LOSS/LEAKAGE CALCULATIONS WILL BE BASED UPON A MAXIMUM OF 1500-FEET, STARTING WITH THE SMALLEST DIAMETER PIPE.
23. THE CONTRACTOR IS REQUIRED TO UNIFORM SLOPE TEST ALL SEWER LINES BY VIDEO AND VACUUM TEST ALL MANHOLES IN ACCORDANCE WITH A.A.C. R18-9-E301. DEFLECTION TESTING SHALL BE PERFORMED PER MAG SECTION 615.11. TESTING DOCUMENTATION AND DVDS SHALL BE SUBMITTED TO EPCOR WATER DEVELOPMENT SERVICES PROJECT MANAGER FOR APPROVAL PRIOR TO ACCEPTANCE. ALL REQUIRED REPAIRS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE COORDINATED WITH EPCOR WATER INSPECTORS
24. SEWER TESTING: ALL SEWER MAINS AND LATERALS SHALL BE PRESSURE TESTED AND VIDEO TESTED. ALL SEWER MAINS SHALL ALSO BE MANDRILL TESTED. THE MAXIMUM ALLOWABLE SAG IS 0.5 INCHES.
25. IN MOHAVE COUNTY, SOLID SLEEVES ARE NOT ALLOWED AS A REMEDY TO A FAILED PRESSURE TEST ON A NEW LINE.

BACKFLOW PREVENTION GENERAL NOTES:

1. BACKFLOW PREVENTION DEVICES: ALL LANDSCAPE AND COMMERCIAL WATER SERVICES REQUIRE BACKFLOW PREVENTION DEVICES. MEETING THE REQUIREMENTS OF EPCOR WATER. BACKFLOW DEVICES SHALL BE IN PLACE PRIOR TO METERS BEING SET. TESTING OF THE BACKFLOW DEVICES MAY BE COMPLETED AFTER THE INSTALLATION OF THE METER.

2. CONTACT UTILITY CROSS-CONNECTION SPECIALIST (BACKFLOW PREVENTION) AT (623) 445-2411 FOR APPROVED ASSEMBLY LIST, INSPECTIONS AND TESTING.
3. USE ONLY A UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (USC) APPROVED ASSEMBLY.
4. BACKFLOW PREVENTION ASSEMBLIES SHALL HAVE A CERTIFICATE OF APPROVAL ISSUED BY USC-FFCCHR, OR OTHER APPROVED THIRD-PARTY CERTIFYING ENTITY UNRELATED TO THE PRODUCT MANUFACTURER OR VENDOR, IN ACCORDANCE WITH AAC R18-4-215. ALL ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH EPCOR WATER STANDARD DETAILS. NO ASSEMBLY SHALL BE PLACED IN SERVICE UNLESS IT HAS BEEN TESTED AND IS FUNCTIONING AS DESIGNED. A CERTIFIED TEST MUST BE SUBMITTED TO EPCOR WATER CROSS CONNECTION SPECIALIST (BACKFLOW PREVENTION) FOR APPROVAL. APPROVAL OF WATER FACILITIES WILL NOT BE GRANTED PRIOR TO BACKFLOW PREVENTION APPROVAL.
5. LOCATE ASSEMBLY WITHIN 36 INCHES OF WATER METER UNLESS OTHERWISE DIRECTED BY UTILITY'S CROSS-CONNECTION SPECIALIST.
6. ALL PRESSURE VACUUM BREAKER ASSEMBLIES SHALL BE INSTALLED A MINIMUM OF 12 INCHES ABOVE ALL DOWNSTREAM PIPING AND OUTLETS.
7. USE LEAD FREE SOLDER ONLY.
8. OPTIONAL (WITH PRIOR APPROVAL FROM EPCOR WATER) PLANT SCREENING POSTS AND/OR PROTECTIVE ENCLOSURES: FOR VANDALISM AND/OR FREEZE PROTECTION.
9. CLEARANCES:
10. FIRE LINES: PROVIDE USAGE-TAMPER SWITCHES & WIRING TO ALARM SYSTEM WHERE REQUIRED BY FIRE DEPARTMENT. NOTE: FIRE LINES LONGER THAN 75' REQUIRE BACKFLOW ASSEMBLY AT PROPERTY LINE OR EPCOR APPROVED LOCATION. SUCH FIRE LINES MUST HAVE BACKFLOW PREVENTION ASSEMBLIES WITH A METERED BYPASS.

APPROVAL PROCESS FOR BACKFLOW PREVENTION ASSEMBLIES:

1. ALL NEW BACKFLOW PREVENTION ASSEMBLIES (BPAS) SHALL BE TESTED AND FUNCTIONING AS DESIGNED PRIOR TO APPROVAL IN ACCORDANCE WITH AAC R18-4-215.
2. DEVELOPER/CONTRACTOR/CUSTOMER SHALL FORWARD PASSING TEST REPORT WITH REQUIRED BPA INFORMATION TO EPCOR WATER CROSS CONNECTION SPECIALIST, MARKED PENDING APPROVAL.
3. EPCOR WATER CROSS CONNECTION SPECIALIST (BACKFLOW PREVENTION) WILL NOTIFY DEVELOPER SERVICES THAT AN APPROVED BACKFLOW PREVENTION ASSEMBLY TEST HAS BEEN RECEIVED, AND THIS PROJECT IS READY FOR AN APPROVAL INSPECTION.
4. A CONSTRUCTION INSPECTOR THEN SCHEDULES AN APPROVAL INSPECTION WITH THE DEVELOPER/CONTRACTOR/CUSTOMER.
5. EPCOR WATER CONSTRUCTION INSPECTOR CONFIRMS PRESENCE OF BPA, AND CONFIRMS PROPER INSTALLATION GUIDELINES HAVE BEEN FOLLOWED.
6. BACKFLOW PREVENTION APPROVAL PROCESS COMPLETE.
7. APPROVAL MAY BE GRANTED PROVIDED ALL OTHER REQUIRED OPERATION INSPECTION ITEMS HAVE NO DEFICIENCIES.

WATER SYSTEM MATERIAL SPECIFICATION

DISTRIBUTION PIPING

C900 POLYVINYL CHLORIDE (PVC): IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD C900 FOR PIPE DIAMETERS THRU DR=18, ELASTOMERIC-GASKET BELL-END. AREAS SUBJECTED TO PRESSURES GREATER THAN 100 PSI SHALL BE DR=14.

C905 POLYVINYL CHLORIDE (PVC): IN ACCORDANCE AWWA STANDARD C905 FOR PIPE

DUCTILE IRON PIPE, MORTAR-LINED (D.I.P.): IN ACCORDANCE AWWA STANDARDS C150 & C151 MORTAR LINING SHALL BE IN ACCORDANCE WITH AWWA C104. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6. 6" THROUGH 14" DIAMETER MUST BE PRESSURE CLASS 350 MINIMUM. 16" THROUGH 24" MUST BE VPRESSURE CLASS 250 MINIMUM, 30" AND LARGER MUST BE PRESSURE CLASS 150 MINIMUM.

IN PARADISE VALLEY DISTRICT, DUCTILE IRON PIPE ONLY. PVC IS NOT PERMITTED.

IN MOHAVE COUNTY, ALL PVC MUST BE DR14 ONLY. DR18 IS NOT PERMITTED.

CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE: IN ACCORDANCE WITH AWWA STANDARD C303 AND M.A.G. SECTION 758 FOR PIPE DIAMETERS GREATER THAN MANUFACTURER'S TECHNICAL DATA SHEETS SHALL BE SUBMITTED TO EPCOR WATER FOR REVIEW AND APPROVAL. SERVICE TAPS ARE NOT PERMITTED ON CONCRETE PRESSURE PIPE.

DISTRIBUTION FITTING

PUSH-ON OR MECHANICAL JOINT IN ACCORDANCE WITH AWWA C111 AND M.A.G. SECTION 750.4. JOINT RESTRAINTS, WHERE REQUIRED, SHALL BE MECHANICAL RESTRAINED JOINT WITH PRODUCT APPROVED BY EPCOR WATER OR FLANGED JOINT FOR LENGTHS IN ACCORDANCE WITH M.A.G. DETAIL 303-2. FIELD LOCK GASKETS ARE NOT ALLOWED.

WATER LINE VALVE

MUELLER, CLOW, KENNEDY, OR M&H RESILIENT WEDGE SEATED GATE VALVE IN ACCORDANCE WITH M.A.G. SECTION 630.3 WITH VALVE BOX AND COVER IN ACCORDANCE WITH M.A.G. DETAIL 391-1 TYPE "C" MINIMUM LID WEIGHT OF 16LBS. VALVES INSTALLED OUTSIDE THE PAVEMENT OR IN THE FLOW LINE OF A ROADWAY SHALL HAVE A DEBRIS CAP INSTALLED PER M.A.G. STD. DET. 392. BUTTERFLY VALVES ARE PERMITTED ABOVE-GROUND ONLY.

BUTTERFLY VALVES IN ACCORDANCE WITH AWWA STANDARD C504 FOR VALVE SIZES GREATER THAN ALL BUTTERFLY VALVES SHALL BE ABOVE-GROUND ONLY.

CONTROL VALVES (MOHAVE COUNTY ONLY)

THE EXTERNAL TUBING NEEDS TO BE STAINLESS STEEL, NOT COPPER. CLA-VAL IS THE ONLY ACCEPTABLE MANUFACTURER.

TAPPING SLEEVE & VALVE

STAINLESS STEEL CASCADE JCM PARADISE VALLEY DISTRICT MAY REQUIRE A BYPASS ON VALVES ON OR LARGER PIPE. CONTACT EPCOR WATER FOR APPROVAL ON A CASE-BY-CASE BASIS.

WATER SERVICE

FOR TAPS, PIPE AND FITTINGS FOR WATER SERVICES THROUGH 2 INCHES, THE SIZE SHALL BE IN ACCORDANCE WITH EPCOR WATER'S STD. DET. 342-2. REQUESTS FOR LARGER SIZES MUST BE SUBMITTED FOR REVIEW AND APPROVAL. MINIMUM WATER SERVICE LINE SIZE DIAMETER SHALL BE 1"

TUBAC DISTRICT REQUIRES METER SETTERS ON ALL PROJECTS.

2"VALLEY SETTERS ARE REQUIRED FOR CRITICAL SERVICE DEVELOPMENTS IN PARADISE VALLEY AND ANTHEM DISTRICTS.

APPROVED SADDLES, ALL IRON PIPE THREAD TAP AND BRONZE STRAP: FOR PVC, JONES J-995, JONES J-996, MUELLER H-13000 SERIES; FOR DUCTILE IRON PIPE, FORD 202B, JONES J-979, MUELLER BR2B SERIES, MUELLER BR2S SERIES.

ALL BRASS FITTINGS MUST BE MANUFACTURED BY FORD, MUELLER, OR JAMES JONES. ALL ANGLE METER STOPS MUST INCLUDE LOCKING WINGS.

ALL CORP STOPS AND ANGLE VALVES MUST BE BALL STYLE. ALL FITTINGS MUST BE "PAC-JOINT" TYPE.

ALL BRASS MUST BE LEAD FREE.

FIRE HYDRANTS

DRY BARREL FIRE HYDRANTS SHALL BE MUELLER CENTURION, CLOW MEDALLION OR KENNEDY K81D. WET BARREL HYDRANTS SHALL BE JONES, OR CLOW.

ALL HYDRANTS SHALL BE EQUIPPED WITH NATIONAL STANDARD HOSE THREADS.

TRACER WIRE

SEE EPCOR WATER'S STD. DET. 350-1. TRACER WIRE MUST BE USED FOR ALL WATER LINES.

DIP SECTIONS

ALL DIP SECTIONS SHALL BE CONSTRUCTED OF RESTRAINED DUCTILE IRON PIPE (DIP) PER EPCOR WATER'S STD. DET. 370-1. ALL DIP SECTIONS SHALL BE JOINT RESTRAINED DIP WITH POLYETHYLENE WRAP FOR THE ENTIRE LENGTH PER MAG SECTION 610.6. JOINT RESTRAINED LENGTHS WILL FOLLOW MAG STD. DET. 303-1 AND 303-2. ANCHOR BLOCKS/THRUST BLOCKS MUST BE INSTALLED FOR VERTICAL BENDS PER MAG STD. DET. 381.

MARKING TAPE

SEE EPCOR WATER'S STD. DET. 350-1. MARKING TAPE MUST BE USED FOR ALL WATER LINES AND SERVICES.

MARKING POSTS

CARSONITE MARKING POSTS ARE REQUIRED FOR ALL WATER VALVES LOCATED OUTSIDE OF ROW AND OUTSIDE OF PAVED AREAS, INSTALLED WITH CONCRETE COLLAR.

ALL OTHER ITEMS

IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. WHERE M.A.G. STANDARDS ARE SPECIFIED, THOSE STANDARDS ARE APPLICABLE.

SEWER SYSTEM MATERIAL SPECIFICATION

COLLECTION MAINS

SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS, ASTM D-3034, AND ASTM F-678 OR US PIPE PROTECTO 401 CERAMIC EPOXY DUCTILE IRON PIPE. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6

SEWER SERVICE

SDR35 PVC SEWER PIPE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS, INCLUDING MARKER BALL AND ASTM D-3034.

MANHOLES

PRECAST CONCRETE IN ACCORDANCE WITH M.A.G. SPECIFICATIONS, EXCEPT THAT NO STEPS SHALL BE INSTALLED IN ANY MANHOLES. EACH MANHOLE SHALL BE TREATED WITH INSECT TREATMENT AS SOON AS THAT MANHOLE IS RAISED TO GRADE, AFTER LINING IS COMPLETE AND PRIOR TO FINAL ACCEPTANCE. CERTAIN SEWER MANHOLES SHALL BE LINED, INCLUDING THE BASE, WITH ONE OF THE FOLLOWING PRODUCTS, AS APPLIED BY A CERTIFIED APPLICATOR:

NEOPOXY NPR-5300 SERIES EPOXY
RAVEN 405/A10
SAUERISEN 210
SEWER SHIELD 100

AS A MINIMUM, LINING IS REQUIRED UNDER THE FOLLOWING CONDITIONS:

- MANHOLES FOR SEWERS THAT ARE 15 INCHES IN DIAMETER OR LARGER
- MANHOLES FOR SEWERS THAT ARE 12 FEET IN DEPTH OR GREATER
- MANHOLES THAT RECEIVE WASTEWATER FROM FORCE MAINS

MANHOLE COVER

CAST IRON IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. ALL MANHOLES SHALL HAVE A FRAME AND COVER, NEENAH R-1743. LID TO BE STAMPED "SANITARY SEWER" IN ACCORDANCE WITH M.A.G. DETAIL 424. SEE EPCOR WATER'S STD. DET. 100-2 FOR INFORMATION ON WATER TIGHT MANHOLE COVERS.

ALL OTHER ITEMS

IN ACCORDANCE WITH M.A.G. SPECIFICATIONS.

FORCE MAINS

PVC PRESSURE PIPE IN ACCORDANCE WITH AWWA C900 OR C905, GRIFFIN H2SEWER SAFE OR US PIPE PROTECTO 401 DUCTILE IRON PIPE, MIN. PRESSURE CLASS 150. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6.

MARKING POSTS

CARSONITE MARKING POSTS ARE REQUIRED FOR ALL SEWER MAINS OUTSIDE OF ROW AND OUTSIDE OF PAVED AREAS, AND ARE REQUIRED FOR FORCE MAINS GREATER THAN 16 INCHES IN DIAMETER.

TRACER WIRE

SEE EPCOR WATER'S STD. DET. 350-1. TRACER WIRE MUST BE USED FOR ALL SEWER FORCE MAINS.

MARKING TAPE

SEE EPCOR WATER'S STD. DET. 350-1. MARKING TAPE MUST BE USED FOR ALL SEWER LINES AND SERVICES.

ALL OTHER ITEMS

IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. WHERE M.A.G. STANDARDS ARE SPECIFIED, THOSE STANDARDS ARE APPLICABLE REGARDLESS OF PROJECT LOCATION

RECLAIMED WATER SYSTEM MATERIAL SPECIFICATION

DISTRIBUTION PIPING

C900 POLYVINYL CHLORIDE (PVC): IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD C900 FOR PIPE DIAMETERS UP TO DR=18, ELASTOMERIC-GASKET BELL-END.

IN MOHAVE COUNTY, ALL PVC MUST BE DR14 ONLY. DR18 IS NOT PERMITTED.

C905 POLYVINYL CHLORIDE (PVC): IN ACCORDANCE AWWA STANDARD C905 FOR PIPE

DUCTILE IRON PIPE (D.I.P.): IN ACCORDANCE WITH AWWA STANDARDS C150 & C151. MOTAR LINING SHALL BE IN ACCORDANCE WITH AWWA C104. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH IN ACCORDANCE WITH M.A.G. SECTION 610.6. 6" THROUGH 14" DIAMETER MUST BE PRESSURE CLASS 350 MINIMUM. 16" THROUGH 24" MUST BE PRESSURE CLASS 250 MINIMUM, 30" AND LARGER MUST BE PRESSURE CLASS 150 MINIMUM.

ALL PIPE SHALL BE APPROPRIATELY IDENTIFIED THROUGH INTEGRAL COLORING AND WORDING OF THE PIPE, STENCILING OF THE PIPE, OR PIPE SLEEVING (PIPE SOCKS) IN ACCORDANCE WITH M.A.G. SECTION 616. MARKING TAPE SHALL BE INSTALLED IN ACCORDANCE WITH EPCOR WATER'S STD. DET. 350-1.

FITTINGS

PUSH-ON OR MECHANICAL JOINT IN ACCORDANCE WITH M.A.G. SECTION 750. JOINT RESTRAINTS, WHERE REQUIRED, SHALL BE MECHANICAL RESTRAINT JOINT WITH PRODUCT APPROVED BY THE UTILITY FOR LENGTHS IN ACCORDANCE WITH M.A.G. STD. DET. 303-2.

VALVES

MUELLER, CLOW, KENNEDY, OR M&H RESILIENT WEDGE SEATED GATE VALVE IN ACCORDANCE WITH M.A.G. SECTION 630.3 WITH VALVE BOX AND COVER IN ACCORDANCE WITH M.A.G. DETAIL 391-1 TYPE "C" MINIMUM LID WEIGHT OF 16LBS.

VALVE RISER PIPES SHALL BE PAINTED PURPLE (SEYMOUR SAFETY PURPLE) INSIDE AND OUT. DEBRIS CAPS WITH IDENTIFICATION TAG SHALL BE INSTALLED IN ACCORDANCE WITH M.A.G. STD. DET. 392, M.A.G. SECTION 616, AND EPCOR WATER'S STD. DET. 600-1.

SERVICES

TAPS, PIPE AND FITTINGS FOR WATER SERVICES AND 2" SIZE SHALL BE IN ACCORDANCE WITH EPCOR WATER'S STD. DET. 610-1. LARGER SIZES TO BE SUBMITTED FOR APPROVAL.

DIP SECTIONS

ALL DIP SECTIONS SHALL BE CONSTRUCTED OF RESTRAINED DUCTILE IRON PIPE (DIP) PER EPCOR WATER'S STD. DET. 370-1. ALL DIP SECTIONS SHALL BE JOINT RESTRAINED DIP WITH POLYETHYLENE WRAP FOR THE ENTIRE LENGTH PER MAG SECTION 610.6. JOINT RESTRAINED LENGTHS WILL FOLLOW MAD STD. DET. 303-1 AND 303-2 AND APPROPRIATELY IDENTIFIED IN ACCORDANCE WITH MAG SECTION 616. ANCHOR BLOCKS/THRUST BLOCKS MUST BE INSTALLED FOR VERTICAL BENDS PER MAG STD. DET. 381.

MARKING TAPE

WORDING PER M.A.G. SECTION 616 TO BE USED ON ALL RECLAIMED WATER MAINS. THE MARKING TAPE SHALL BE PRINTED RECLAIMED WATER ON PURPLE TAPE FOR RECLAIMED WATER LINES.

ALL OTHER ITEMS

IN ACCORDANCE WITH M.A.G. SPECIFICATIONS. WHERE M.A.G. STANDARDS ARE SPECIFIED, THOSE STANDARDS ARE APPLICABLE REGARDLESS OF PROJECT LOCATION.

UTILITIES LOCATION

UTILITIES LOCATION: THE CONTRACTOR SHALL UNCOVER AHEAD OF CONSTRUCTION ALL LINES BEING TIED INTO AND ALL INTERSECTING UTILITIES SHOWN ON THE PLANS OR MARKED BY BLUE STAKE TO VERIFY THEIR LOCATION AND DEPTH. UTILITY SERVICES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. ALL PRECAUTIONS SHALL BE USED WHILE WORKING NEAR ABOVE AND BELOW GROUND UTILITIES TO AVOID INJURY OR DEATH TO PERSONNEL, PROPERTY DAMAGE AND/OR INTERRUPTION OF SERVICE. (SEE OSHA STD. 1926.651 (b)). INDICATED UTILITY LOCATIONS WERE OBTAINED FROM BLUE STAKE FIELD LOCATIONS AND RECORD DRAWINGS.

CONTRACTORS NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING THE RELOCATION AND ASSOCIATED COSTS OF ALL UTILITIES. A UTILITY RELOCATION SCHEDULE SHALL BE SUBMITTED PRIOR TO THE ISSUANCE OF PERMITS.
2. THE CONTRACTOR SHALL PROVIDE A TEMPORARY THRUST RESTRAINT SYSTEM FOR EXISTING PIPES WHEREVER THE INSTALLATION OF NEW PIPES DISTURBS THE EXISTING PIPES THRUST RESTRAINT. UPON COMPLETION OF THE NEW PIPE INSTALLATION, THE CONTRACTOR SHALL RESTORE THE EXISTING PIPE THRUST RESTRAINT SYSTEM TO LIKE NEW CONDITION.
3. CONTRACTOR SHALL PROTECT EXISTING PLANT MATERIAL, ESPECIALLY THE PALM AND EXISTING LIGHTS DURING CONSTRUCTION.
4. CONTRACTOR TO ENSURE THAT IRRIGATION GETS UNINTERRUPTED SERVICE INCLUDING A WATER TRUCK IF NECESSARY. AT NO ADDITIONAL COST TO OWNER

ENGINEERS NOTES

1. CONTACT BLUE STAKE ALL AREAS PRIOR TO CONSTRUCTION
2. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THE DESIGN DOCUMENTS.
3. FIELD VERIFY LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THE WORK AND AVOID DAMAGE TO THE SAME.
4. SUBMIT UTILITY VERIFICATION REPORT TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION FOR CROSSING UTILITIES FIELD VERIFICATION SHALL ALSO BE PROVIDED FOR PARALLEL UTILITIES ON 200-FOOT INTERVALS OR A MINIMUM OF 1 LOCAION FOR UTILITIES THAN PARALLEL FOR LESS THAN 200 LF
5. ACTUAL NEW PIPE ALIGNMENTS AND DEPTH SHALL BE ADJUSTED IN THE FIELD TO AVOID CONFLICT WITH OTHER UTILITIES. ALL LOCATION ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER.
6. UTILITIES DESIGNATED AS ABANDONED SHALL BE TREATED AS LIVE UTILITIES EXPOSE UTILITIES AND OBTAIN APPROVAL FROM OWNER OF ABANDONED UTILITY PRIOR TO REMOVAL
7. CONTRACTOR SHALL PROVIDE A DETAILED TRAFFIC SEQUENCES PLAN FOR APPROVAL BY THE ENGINEER/OWNER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.
8. CONTRACTOR SHALL REPAIR ANY DAMAGE TO STRIPING AND TRAFFIC LOOP DETECTORS AT STREET INTERSECTIONS.
9. CONTRACTOR SHALL PROTECT CURBS, GUTTERS, SIDEWALKS, LANDSCAPING, SIGNS AND ALL OTHER ABOVE GROUND IMPROVEMENTS DURING CONSTRUCTION OR REPLACE IN-KIND.
10. ANY VALVE/MANHOLE ADJUSTMENTS IN PAVEMENT TO BE DONE IN BLACK CONCRETE.
11. ALL ABOVE GROUND PIPES AND FITTINGS SHALL BE PAINTED SAN DIEGO BUFF.
12. CONTRACTOR SHALL NOT HAVE ANY CONSTRUCTION EQUIPMENT OR MATERIALS DELIVERED TO THE JOB SITE EXCEPT BETWEEN THE HOURS OF 7AM AND 5PM MONDAY THROUGH SATURDAY. CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITIES ON SUNDAYS OR LEGAL HOLIDAYS. ALL CONSTRUCTION EQUIPMENT SHALL BE DELIVERED WITHIN CONFORMANCE OF PARADISE VALLEY TOWN CODE SECTION 8-10-2.
13. CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITIES AT THE JOB SITE OUTSIDE THE HOURS OF 7AM AND 5PM MONDAY THROUGH SATURDAY. CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITIES ON SUNDAYS OR LEGAL HOLIDAYS. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN CONFORMANCE WITH PARADISE VALLEY TOWN CODE SECTION 8-10-2.

UTILITY COORDINATION

ALL MATERIALS COMING INTO CONTACT WITH POTABLE WATER MUST MEET NSF STANDARD 60 AND 61 IN ACCORDANCE WITH AAC 18-4-213



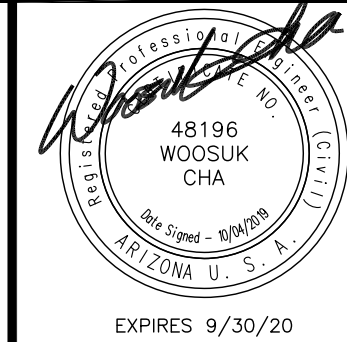
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Improving Arizona's
Infrastructure Since 1942

WILSON
ENGINEERS

EPCOR
PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
GENERAL NOTES
OWNERS PROJECT No. 1005775
WILSON PROJECT NO. 18015

Design: WJC	Drawn: KLC	Checked: WC	Wilson Project No.: 18015	By	Date	Revision	Description

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY



Sheet No. G-2

THE HORIZONTAL DATUM FOR THIS SURVEY IS BASED ON THE MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION (MCDOT) GEODETIC DENSIFICATION AND CADASTRAL SURVEY (GDACS) WEBSITE WWW.MCDOT.MARICOPA.GOV, UNDER THE SURVEY INFORMATION LINK ON NOVEMBER 21, 2017.

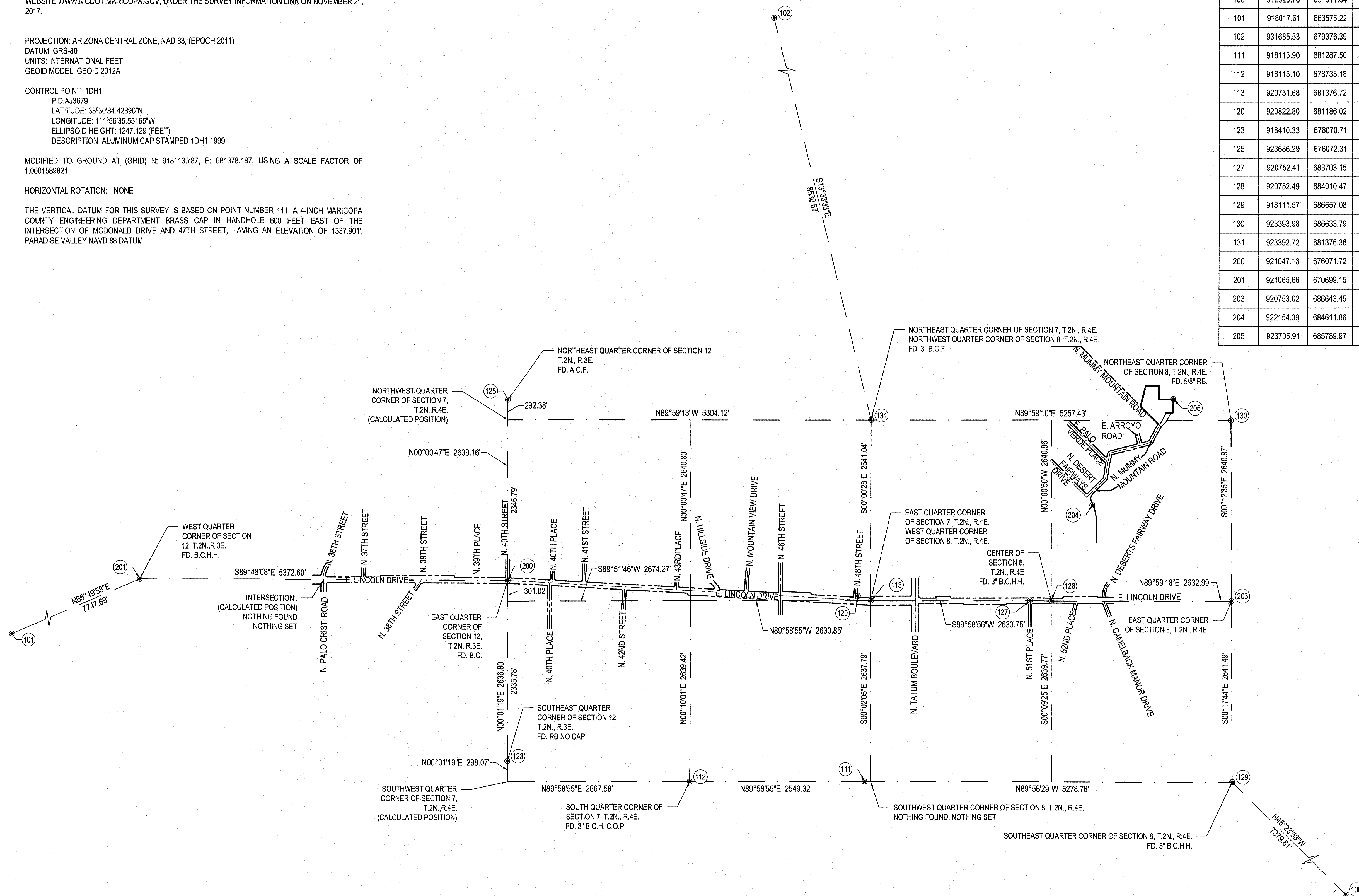
CONTROL POINT: 1DH1
PID:AJ3679
LATITUDE: 33°30'34.42390"N
LONGITUDE: 111°56'35.55165"W
ELLIPSOID HEIGHT: 1247.129 (FEET)
DESCRIPTION: ALUMINUM CAP STAMPED 1DH1 1999

MODIFIED TO GROUND AT (GRID) N: 918113.787, E: 681378.187, USING A SCALE FACTOR OF 1.0001589821.

HORIZONTAL ROTATION: NONE

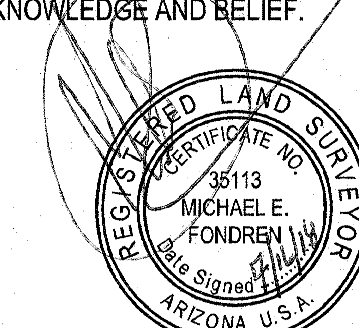
THE VERTICAL DATUM FOR THIS SURVEY IS BASED ON POINT NUMBER 111, A 4-INCH MARICOPA COUNTY ENGINEERING DEPARTMENT BRASS CAP IN HANDHOLE 600 FEET EAST OF THE INTERSECTION OF MCDONALD DRIVE AND 47TH STREET, HAVING AN ELEVATION OF 1337.901', PARADISE VALLEY NAVD 88 DATUM.

POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	912929.76	691911.64	1344.56	AJ3679
101	918017.61	663576.22	1218.23	DV1248
102	931685.53	679376.39	1615.25	AJ3718
111	918113.90	681287.50	1337.90	BM- FD 4IN BCH MCED
112	918113.10	678738.18	1312.26	FD 3IN BCH COPX .3DN
113	920751.68	681376.72	1351.70	FD 2IN ACF MC TOWNSHIP 2N R43 S7/8 2004 RLS21782
120	920822.90	681186.02	1356.04	ST 1/2IN RB W/CAP
123	918410.33	676070.71	1306.44	FD 5/8IN REBAR NO CAP
125	923686.29	676072.31	1585.89	2IN AC FLUSH W/PNCH
127	920752.41	683703.15	1342.72	FD 3IN BC IN HH W/PNCH ILLEGIBLE
128	920752.49	684010.47	1343.82	FD 3IN BC IN HH W/PNCH
129	918111.57	686657.08	1417.59	FD 3IN BC IN HH W/PNCH
130	923393.98	686633.79	1458.29	FD 5/8IN REB W/CAP LS32237
131	923392.72	681376.36	1420.02	FD 3IN BC FLUSH W/PNCH
200	921047.13	676071.72	1403.30	FD BC PH M CNTY
201	921065.66	670699.15	1387.21	FD BC H M CNTY
203	920753.02	686643.45	1363.52	FD BC H M CNTY
204	922154.39	684611.86	1381.00	TEMPORARY BM- FD WELL HEAD
205	923705.91	685789.97	1537.47	TEMPORARY BM- SET 60D NAIL

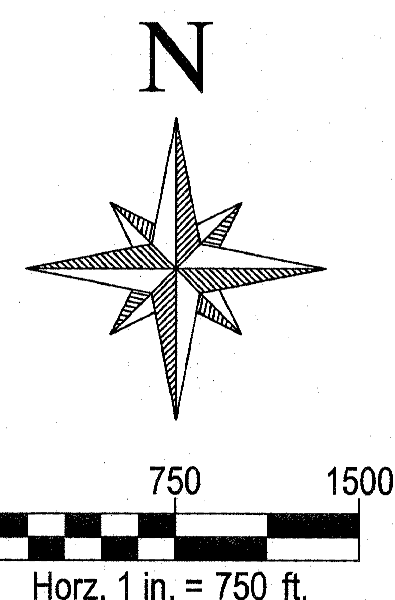


THIS TOPOGRAPHIC SURVEY WAS PERFORMED UNDER MY DIRECTION DURING THE MONTH OF MAY 2018, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

MICHAEL E. FONDREN RLS 35113
WOOD, PATEL & ASSOCIATES, INC.
2051 WEST NORTHERN AVENUE - SUITE 100
PHOENIX, ARIZONA 85021
(602) 335-8500
SURVEYOR@WOODPATEL.COM



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EPCOR
PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
SURVEY CONTROL

OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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Sheet No. G-3

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ABC	AGGREGATE BASE COURSE
AC	AGGREGATE COURSE
BPS	BOOSTER PUMP STATION
CLS	CHLORINE SOLUTION
CMU	CONCRETE MASONARY UNIT
COC	SEWAGE CLEAN OUT
COC	CITY OF CHANDLER
COP	COPPER PIPE
CPVC	CHLORINATED POLYVINYL CHLORIDE
D	DRAIN
DIP	DUCTILE IRON PIPE
E	ELECTRICAL
EL	ELEVATION
FF	EDGE OF PAVEMENT
FF	FINISH FLOOR
FG	FINISHED GRADE
FO	FIBER OPTIC
G	GROUND ELEVATION
GB	GRADE BREAK
HWE	HIGH WATER ELEVATION
IRR	IRRIGATION
LCS	LOW CARBON STEEL
LF	LINEAL FOOT
MMH	MARICOPA COUNTY ASSOCIATION OF GOVERNMENTS
AMH	MANHOLE
OP	ORTHOPHOSPHATE
PAD	PAD ELEVATIONS
R	RADIUS
ROW	RIGHT OF WAY
S	SEWER
SD	STORM DRAIN
SS	STAINLESS STEEL
T	TELEPHONE
TC	TOP OF CURB
TYP	TYPICAL
W	POTABLE WATER

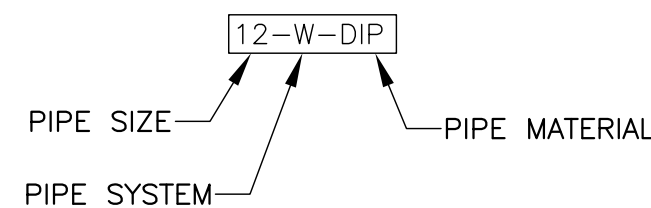
	NEW CONSTRUCTION (SOLID)
	EXISTING CONSTRUCTION (SCREENED BACK)
	RIGHT-OF-WAY LINE
	EASEMENT LINE
	PROPERTY LINE, PARCEL, LOT LINE
	BOUNDARY LINE, LIMITS
	MONUMENT LINE
	SECTION LINE
	ODOR SETBACK LINE
	NEW UTILITY
	EXISTING UTILITY
	FUTURE FACILITY
	NEW CONTOUR (INDEX)
	NEW CONTOUR (INTERMEDIATE)
	EXISTING CONTOUR (INDEX)
	EXISTING CONTOUR (INTERMEDIATE)
	DRAINAGE FLOW/SWALE LINE
	MATCH LINE
	BREAK LINE
	NEW CHAINLINK FENCE
	EXISTING CHAINLINK FENCE
	NEW WALL
	EXISTING WALL
	LANE STRIPING
	SLOPE DIRECTION AND GRADE

GATE VALVE (GENERIC)		
BALL VALVE		
PLUG VALVE		
BUTTERFLY VALVE (FLANGED)		
BUTTERFLY VALVE (WAFFER)		
CHECK VALVE		
HOSE BIBB		

	PIPE IN SECTION
	PIPE CONTINUATION
	FLANGED (FLG)
	MECHANICAL JOINT (MJ) OR FASTITE (FST)
	WELDED OR SOCKET
	GROOVE TYPE COUPLING
	FLEXIBLE COUPLING
	FLANGE FLEXIBLE COUPLING
	PUSH ON (PO) OR BELL AND SPIGOT (DIP)
	PUSH ON OR BELL AND SPIGOT (PVC /COPPER)

	ACCESS HATCH
	ASPHALT - SECTION
	CMU BLOCK
	CONCRETE
	EARTH
	GRATE - PLAN
	GRATE - SECTION
	RIPRAP - PLAN
	GROUT
	STABILIZED DECOMPOSED GRANITE
	REMOVAL/DEMOLITION
	NEW MAINTENANCE ROAD - PLAN

PIPING IS CALLED OUT BY SIZE FOLLOWED BY PIPING SYSTEM
FOLLOWED BY PIPE MATERIAL. ENCLOSED AS SHOWN:



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

(X) CONSTRUCTION NOTE

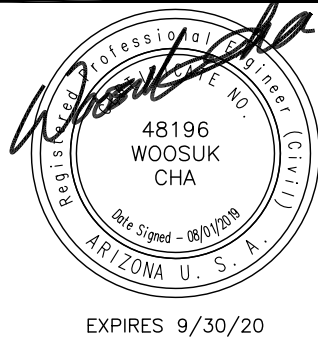
(X) ELEVATION

(X) ROADWAY DIMENSIONS

<u>CODE</u>	<u>DESCRIPTION</u>
☒ G	FINISH GRADE
☒ P	POINT OF TANGENT/PIPE/OTHERS
☒ S	SITE

	11.25° ELBOW
	11.25° ELBOW DOWN
	11.25° ELBOW UP
	22.5° ELBOW
	22.5° ELBOW DOWN
	22.5° ELBOW UP
	45° ELBOW
	45° ELBOW DOWN
	45° ELBOW UP
	90° ELBOW
	90° ELBOW DOWN
	90° ELBOW UP
	CROSS
	TEE
	TEE DOWN
	TEE UP
	WYE
	REDUCER
	ECCENTRIC REDUCER
	CAP PLUG
	LARGE ARROW
	MEDIUM ARROW
	SMALL ARROW
	BREAK
	LOOP

	3-WAY VALVE
	4-WAY VALVE
	BACKPRESSURE REGULATOR SELF CONTAINED
	PRESSURE REGULATING VALVE SELF CONTAINED
	BUTTERFLY VALVE
	CHECK VALVE
	DAMPER
	DIAPHRAGM
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	CHECK BALL VALVE
	PLUG VALVE
	NEEDLE VALVE
	HOSE BIBB
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	VACUUM RELEASE VALVE
	YARD HYDRANT
	VENTURI TYPE FLOW ELEMENT
	DIFFUSER
	CALIBRATION COLUMN
	PRESSURE GAUGE
	FLEXIBLE COUPLING
	MOTOR OPERATOR
	INSERTION TYPE MAGNETIC FLOW ELEMENT
	FULL BODY MAGNETIC FLOWMETER
	SOLENOID OPERATOR
	ROTAMETER
	BACKFLOW PREVENTOR WITH ISOLATION VALVES
	PRESSURE GAUGE W/SHUT OFF COCK
	PRESSURE SWITCH
	STRAINER
	UNION
	EXPANSION JOINT
	DRAIN

Sheet No. **G-4**

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EPCOR
PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)

LEGEND, SYMBOL AND ABBREVIATION

OWNERS PROJECT No. 1005775
WILSON PROJECT NO. 18015

Design: VKG	Drawn: KLC	Checked: WC
Date: 8/19	Wilson Project No.: 18015	

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Sheet No. **G-4**

XREFS: TB-W-E-D; C-SITE; XC-SITE-EASEMENT; SEAL-WC; FENCE LAYOUT; C-SITE-YARD PIPING



KEYED NOTES

- 1 EXISTING COUNTRY CLUB BOOSTER PUMP STATION
- 2 PROPOSED LOCATION OF INTERCONNECT BOOSTER PUMP STATION
- 3 PROPOSED LOCATION OF CHEMICAL FEED
- 4 PROPOSED LOCATION OF RUSTED METAL SWING GATE
- 5 PROPOSED LOCATION OF RUSTED METAL PANEL AND POST FENCE
- 6 AIR RELEASE VALVE WITH TAN CYLINDRICAL POLYETHYLENE ENCLOSURE, 14" DIA BY 24" TALL



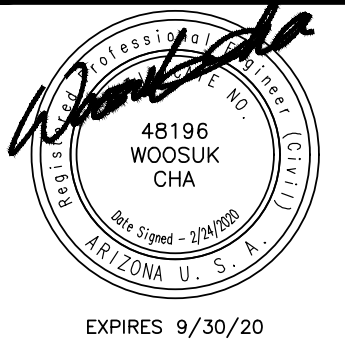
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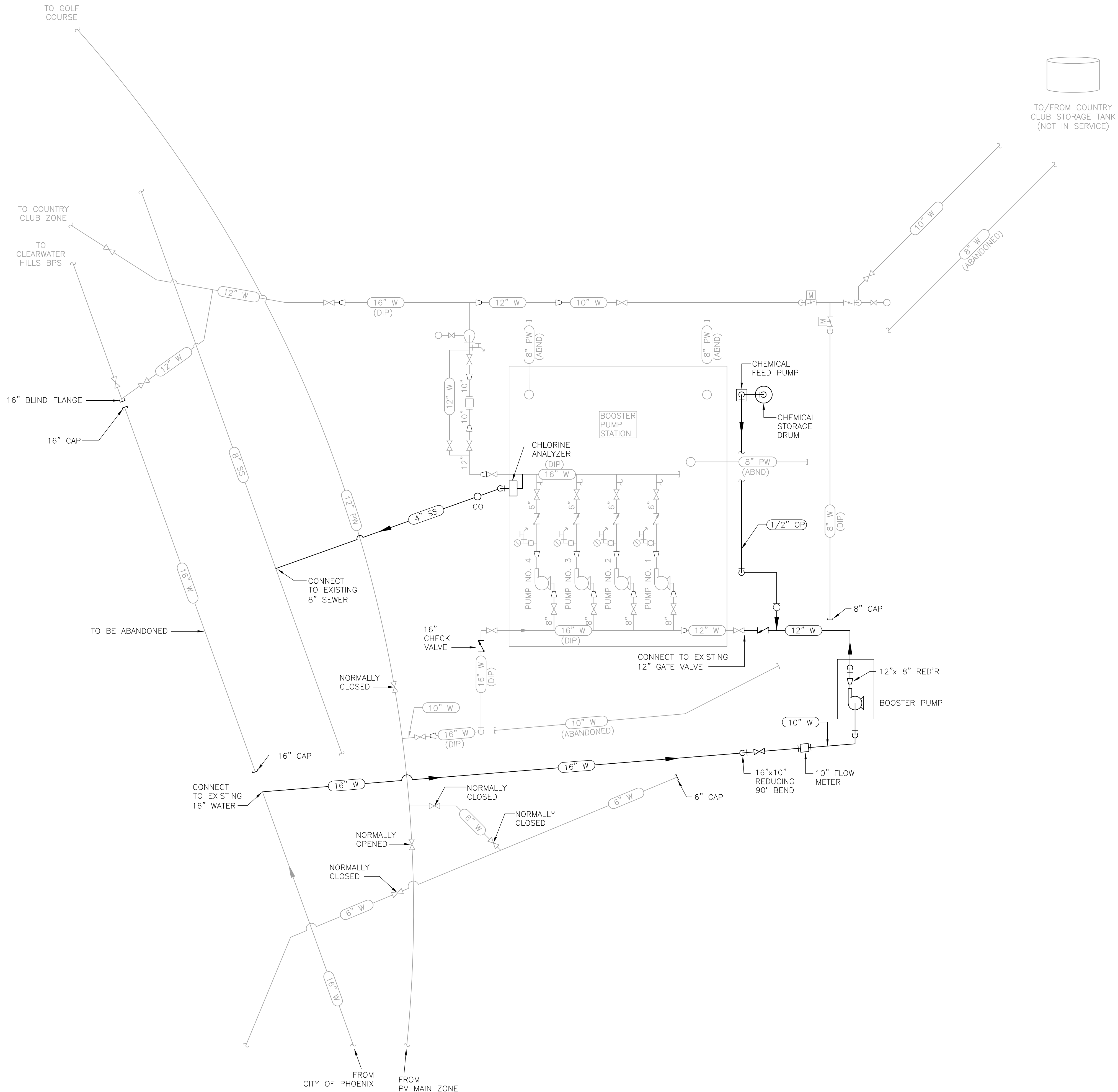
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PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
OVERALL COUNTRY CLUB BPS
AERIAL SITE PLAN
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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		By

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XREFS: TB-WE-D; SEAL-WC



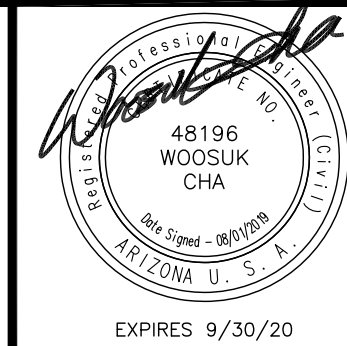
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
PROCESS FLOW DIAGRAM
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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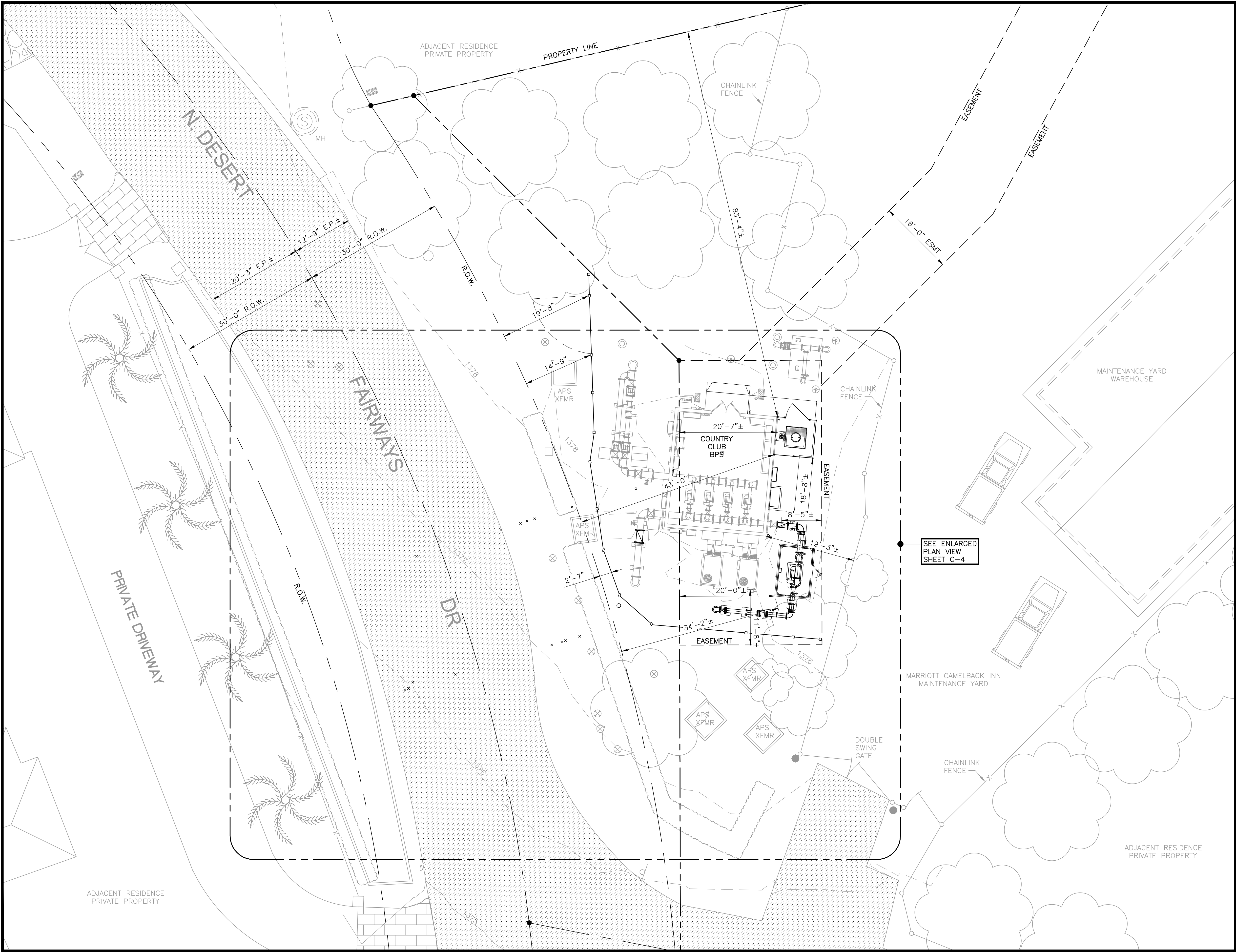
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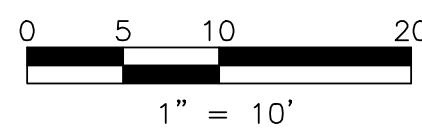
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XREFS: TB-WE-D, C-SITE, XC-SITE-SURVEY, SEAL-WG, FENCE, LAYOUT, C-SITE-YARD, PIPING

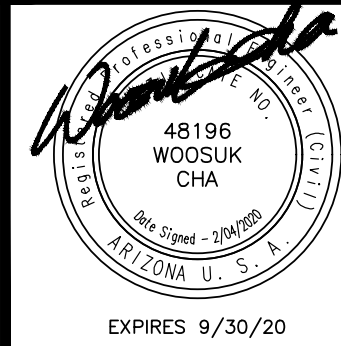
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PLAN



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Sheet No. C-2

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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
OVERALL EXISTING SITE PLAN
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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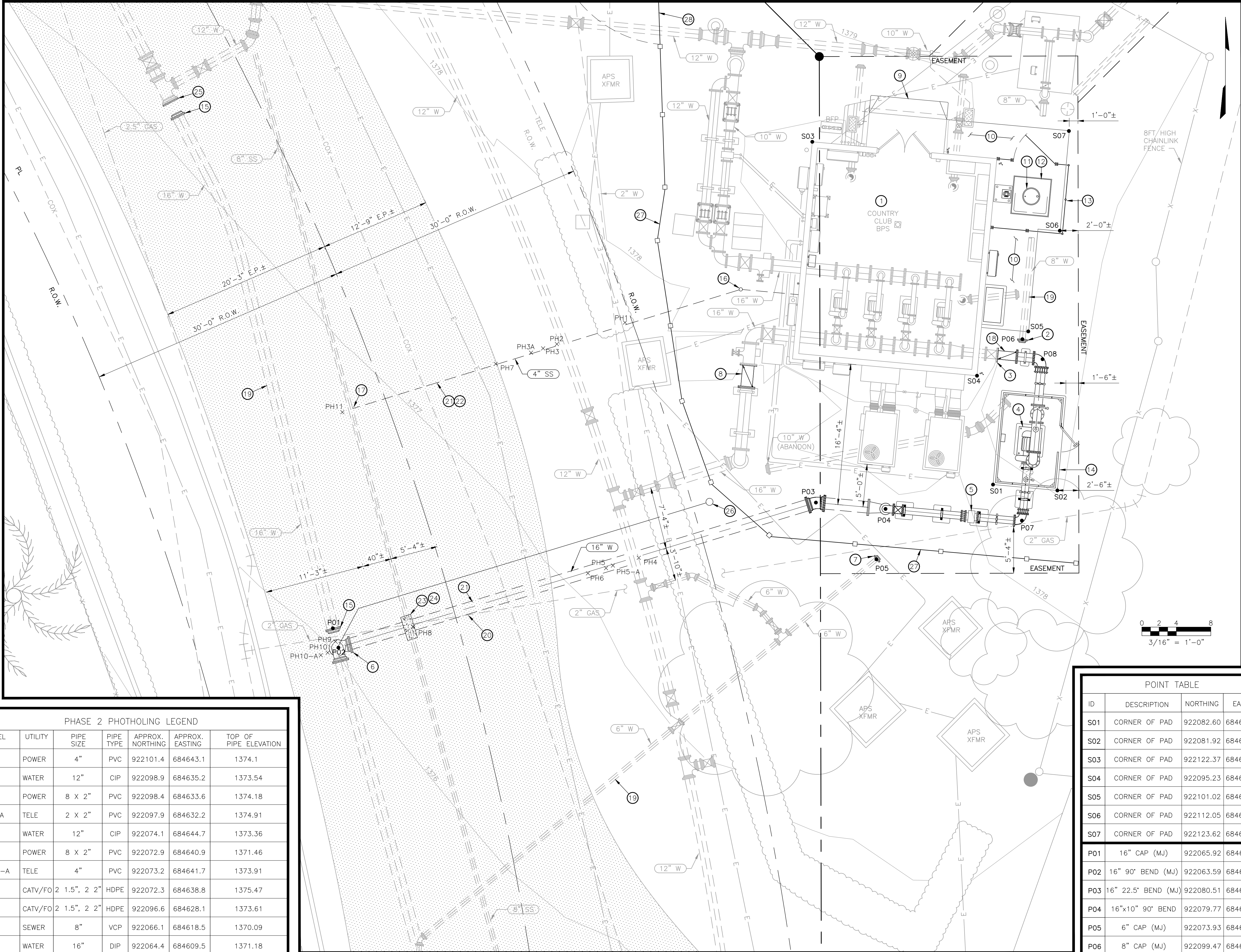
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AGENCY REVIEW

XREFS: TB-W-E-D, C-SITE, XC-SITE-SURVEY, C-SITE-YARD PIPING, XC-SITE-YARD PIPING, SEAL-WC, FENCE LAYOUT

PHASE 2 POTHOLING LEGEND						
LABEL	UTILITY	PIPE SIZE	PIPE TYPE	APPROX. NORTHING	APPROX. EASTING	TOP OF PIPE ELEVATION
PH1	POWER	4"	PVC	922101.4	684643.1	1374.1
PH2	WATER	12"	CIP	922098.9	684635.2	1373.54
PH3	POWER	8 X 2"	PVC	922098.4	684633.6	1374.18
PH3A	TELE	2 X 2"	PVC	922097.9	684632.2	1374.91
PH4	WATER	12"	CIP	922074.1	684644.7	1373.36
PH5	POWER	8 X 2"	PVC	922072.9	684640.9	1371.46
PH5-A	TELE	4"	PVC	922073.2	684641.7	1373.91
PH6	CATV/FO	2 1.5", 2 2"	HDPE	922072.3	684638.8	1375.47
PH7	CATV/FO	2 1.5", 2 2"	HDPE	922096.6	684628.1	1373.61
PH8	SEWER	8"	VCP	922066.1	684618.5	1370.09
PH9	WATER	16"	DIP	922064.4	684609.5	1371.18
PH10	COMM	4"	PVC	922063.1	684608.6	1373.96
PH10-A	GAS	2.5"	STEEL	922062.8	684607.8	1373.81



PLAN

KEYED NOTES

- EXISTING COUNTRY CLUB BPS, SEE MECHANICAL AND ELECTRICAL SHEETS FOR ENLARGED PLANS
- 8" DIA MJ CAP
- CONNECT TO EXISTING ABOVE GRADE 12" DIA DIP GATE VALVE
- BOOSTER PUMP ON PAD (1,944-GPM)
- 10" DIA FLOW METER
- CONNECT TO EXISTING 16" DIA PIPING
- 6" DIA MJ CAP
- 16" DIA CHECK VALVE (FLG)
- CONCRETE RAMP
- CONCRETE WALKWAY
- 55-GAL CHEMICAL STORAGE DRUM
- CHEMICAL CONTAINMENT PALLET (60-GAL)
- 8'-6" HIGH CHAINLINK FENCE WITH 5-FT WIDE SWING ENTRY GATE
- PUMP ACOUSTIC ENCLOSURE ON PAD
- 16" DIA MJ CAP
- SEWER CLEANOUT PER MAG STANDARD 441. PROVIDE THREADED CAP
- CONNECT TO EXISTING SEWER LINE PER CITY OF PHOENIX STANDARD DETAIL P-1431
- 12" DIA CHECK VALVE (FLG), VAL-MATIC 7200 SURGE BUSTER
- ABANDON-IN-PLACE EXISTING WATERLINE
- 16" DIA DIP, POLY WRAPPED, RESTRAINED. PIPE TRENCH PER EPCOR STANDARD DETAIL 350-1
- REMOVE AND REPLACE PAVEMENT PER PARADISE VALLEY STANDARD DETAIL 200, T-TOP
- 4" DIA SEWER SERVICE
- CONCRETE ENCASEMENT PER MAG STANDARD DETAIL-404
- MAINTAIN MINIMUM OF 2' VERTICAL CLEARANCE BETWEEN WATERLINE AND SEWERLINE, SEE SHEET C-5
- 16" DIA BLIND FLANGE
- AIR RELEASE VALVE WITH TAN CYLINDRICAL POLYETHYLENE ENCLOSURE, 14" DIA BY 24" TALL
- 8'-0" RUSTED METAL PANEL AND POST FENCE (114 LF)
- 8'-0" HIGH RUSTED METAL PANEL SWING GATE (12'-0" OPENING)

CONSTRUCTION NOTES

- CONTRACTOR SHALL VERIFY VALVE BOX LOCATIONS PRIOR TO CONSTRUCTION AND THEN RE-OPENED AFTER APPROVAL OF CONSTRUCTION.
 - CONTRACTOR TO COORDINATE WITH OWNER FOR ANY SHUT DOWN OR DISCONNECT OF EXISTING PROCESS PIPING, ELECTRICAL CONDUCTORS AND INSTRUMENTATION CONDUITS WORK SCOPE AREA.
 - SHUT DOWN OF ANY PROCESS PIPING THAT INTERFERES WITH THE WATER DISTRIBUTION, A MOPO WILL BE REQUIRED, APPROVED BY OWNER AND BY THE ENGINEER PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES, BY POTHOLING, WHICH MAY AFFECT THE CONSTRUCTION OF THIS PROJECT. PRIOR TO CONSTRUCTION, COORDINATE WITH ENGINEER IF MODIFICATIONS ARE REQUIRED.
 - CONTRACTOR SHALL REPLACE ALL IRRIGATION LINES REMOVED DURING CONSTRUCTION PER SPECIFICATIONS.
 - CONTRACTOR SHALL REPLACE ALL DG LANDSCAPE AND PAVEMENT REMOVED DURING CONSTRUCTION AND REPLACE IN-KIND.
- (SEE SHEET C-3 FOR ADDITIONAL NOTES)



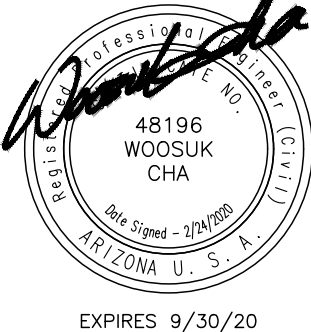
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
ENLARGED YARD PIPING PLAN
OWNERS PROJECT No. 1005775
WILSON PROJECT NO. 18015

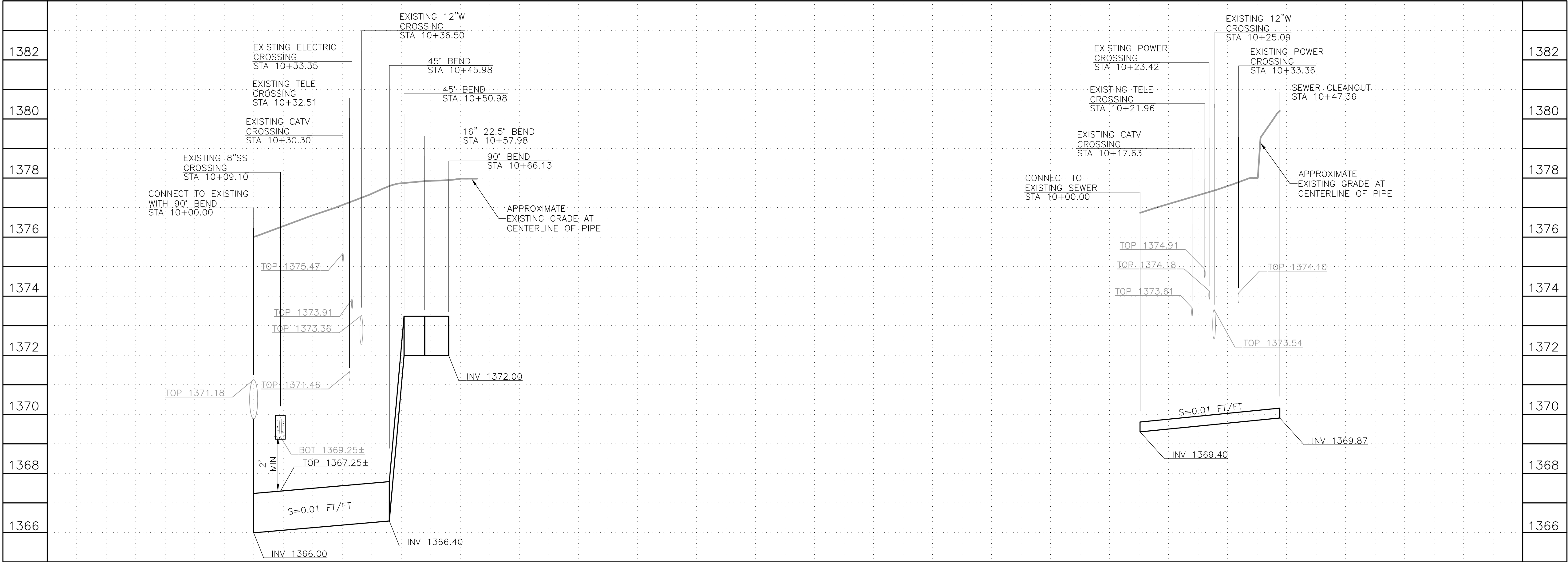
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Sheet No. C-4

XREFS: TB-WF-D; C-SITE; XC-SITE-SURVEY; C-SITE-YARD PIPING; XC-SITE-YARD PIPING; SEAL-WC; Base 1.0; Survey -- Wood Patel PH2; 4804-P01-EMAIL-MUMMTRGAD-ROW; Yard Piping



16" W PROFILE
HORT SCALE: 1"=20'
VERT SCALE: 1"=2'

4" SS (SERVICE) PROFILE
HORT SCALE: 1"=20'
VERT SCALE: 1"=2'



Sheet No. C-5

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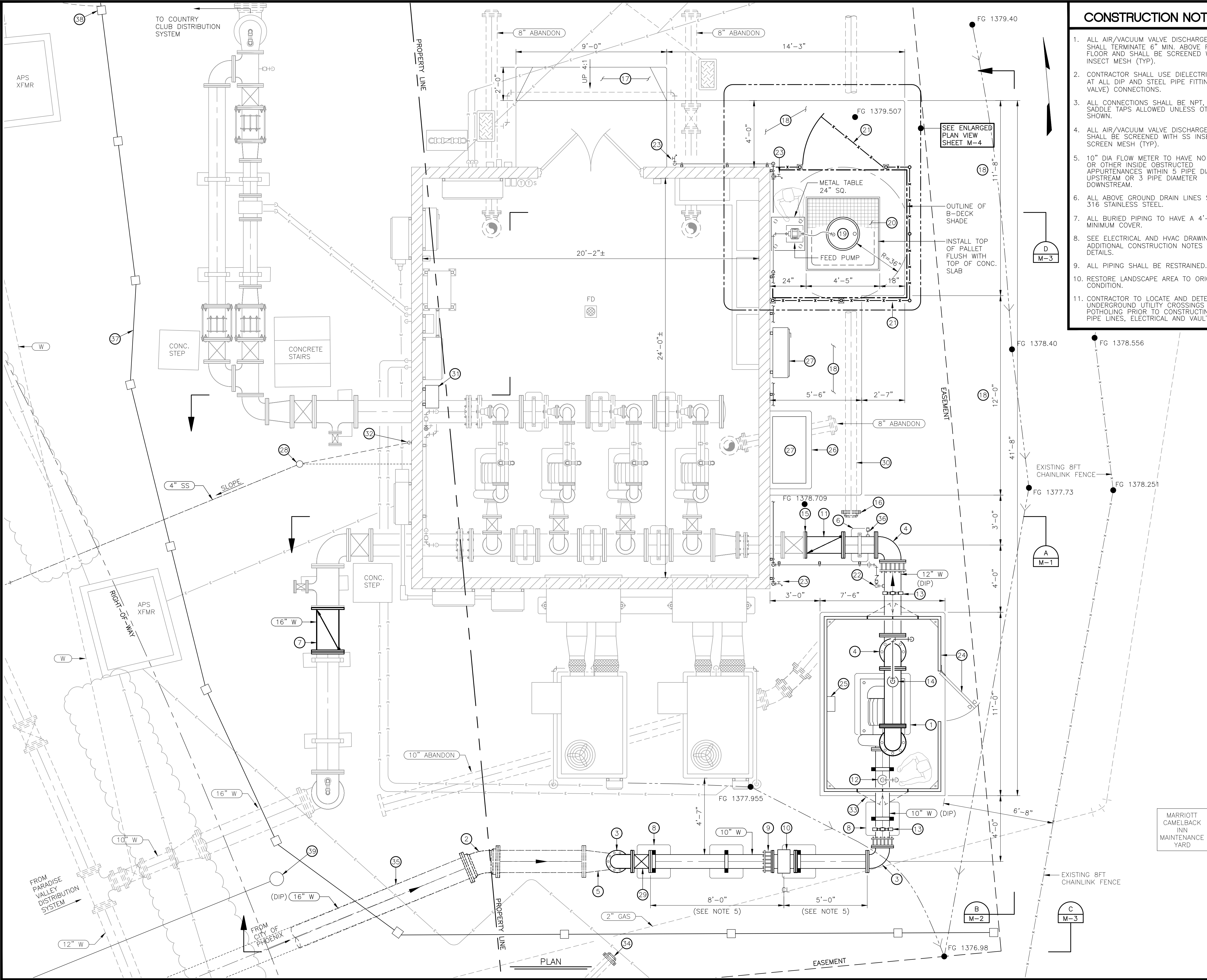
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PIPE PROFILES

OWNERS PROJECT NO. 1005775
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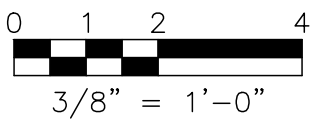


CONSTRUCTION NOTES

1. ALL AIR/VACUUM VALVE DISCHARGE PIPE SHALL TERMINATE 6" MIN. ABOVE FINISHED FLOOR AND SHALL BE SCREENED WITH SS INSECT MESH (TYP).
2. CONTRACTOR SHALL USE DIELECTRIC FLG KIT AT ALL DIP AND STEEL PIPE FITTINGS (AND VALVE) CONNECTIONS.
3. ALL CONNECTIONS SHALL BE NPT, NO SADDLE TAPS ALLOWED UNLESS OTHERWISE SHOWN.
4. ALL AIR/VACUUM VALVE DISCHARGE LINES SHALL BE SCREENED WITH SS INSECT SCREEN MESH (TYP).
5. 10" DIA FLOW METER TO HAVE NO FITTINGS OR OTHER INSIDE OBSTRUCTED APPURTENANCES WITHIN 5 PIPE DIAMETER UPSTREAM OR 3 PIPE DIAMETER DOWNSTREAM.
6. ALL ABOVE GROUND DRAIN LINES SHALL BE 316 STAINLESS STEEL.
7. ALL BURIED PIPING TO HAVE A 4'-0" MINIMUM COVER.
8. SEE ELECTRICAL AND HVAC DRAWINGS FOR ADDITIONAL CONSTRUCTION NOTES AND/OR DETAILS.
9. ALL PIPING SHALL BE RESTRAINED.
10. RESTORE LANDSCAPE AREA TO ORIGINAL CONDITION.
11. CONTRACTOR TO LOCATE AND DETERMINE ALL UNDERGROUND UTILITY CROSSINGS BY POTHOLING PRIOR TO CONSTRUCTING NEW PIPE LINES, ELECTRICAL AND VAULTS.

KEYED NOTES

- 1 PUMP WITH EQUIPMENT PAD (1,944-GPM)
- 2 16" DIA 22.5' BEND (MJ)
- 3 10" DIA 90° BEND (TYP)
- 4 12" DIA 90° BEND (TYP)
- 5 16"x 10" 90° REDUCING BEND FLG (UP)
- 6 CONCRETE PIPE SUPPORT, SEE DETAIL 404 SHEET M-8
- 7 16" DIA CHECK VALVE, VAL-MATIC 7,200 SURGE BUSTER
- 8 ADJUSTABLE PIPE SUPPORT WITH CONCRETE BASE (TYP), SEE DETAIL 401 SHEET M-8
- 9 10" DIA FLANGED COUPLING ADAPTER (TYP)
- 10 10" DIA FLOW METER
- 11 12" DIA CHECK VALVE, VAL-MATIC 7200 SURGE BUSTER
- 12 2" AIR/VAC RELEASE VALVE ASSEMBLY, SEE DETAIL 200 SHEET M-6
- 13 PRESSURE GAUGE AND TRANSMITTER ASSEMBLY, SEE DETAIL 201 SHEET M-6 (TYP)
- 14 1" COMBINATION AIR RELEASE/VACUUM RELIEF VALVE, SEE DETAIL 200 SHEET M-6
- 15 CONNECT TO EXISTING 12" GATE VALE
- 16 8" DIA PLUG (MJ)
- 17 NEW CONCRETE RAMP
- 18 NEW CONCRETE WALKWAY, SEE DETAIL 302 SHEET M-7
- 19 55-GAL CHEMICAL STORAGE DRUM
- 20 CHEMICAL CONTAINMENT PALLET (60-GAL)
- 21 8'-6" HIGH CHAINLINK FENCE WITH 5-FT WIDE SWING ENTRY GATE (WITH PRIVACY SLATS)
- 22 TAP INTO 12" DIA SPOOL PIECE PIPING, SEE DETAIL 204 SHEET M-6
- 23 HOSE BIBB (TYP)
- 24 ACOUSTIC ENCLOSURE WITH 36" WIDE ACCESS DOOR WAY, SEE DETAIL 100 SHEET M-5
- 25 ACOUSTIC ENCLOSURE LIGHTING
- 26 ELECTRICAL EQUIPMENT HOUSE KEEPING CONCRETE PAD, SEE DETAIL 302 SHEET M-7
- 27 ELECTRICAL EQUIPMENT, SEE ELECTRICAL SHEETS
- 28 SEWER CLEANOUT PER MAG STANDARD DETAIL 441. SEE DETAIL 103 SHEET M-5
- 29 10" DIA GATE VALVE
- 30 ABANDON-IN-PLACE EXISTING WATERLINE
- 31 CHLORINE ANALYZER
- 32 CHLORINE ANALYZER DRAIN, SEE DETAIL 103 SHEET M-5
- 33 ACOUSTICAL ENCLOSURE FRAMED OPENING DETAIL FOR PIPE (TYP), SEE DETAIL 100 SHEET M-5
- 34 6" DIA PLUG (MJ)
- 35 16" DIA DIP, POLYWRAPPED RESTRAINED. PIPE TRENCH PER EPCOR STANDARD DETAIL 350-1
- 36 1" DIA SAMPLE TAP WITH BALL VALVE PER DETAIL 205 SHEET M-6
- 37 8'-0" RUSTED METAL PANEL AND POST FENCE (114 LF)
- 38 8'-0" HIGH RUSTED METAL PANEL SWING GATE (12'-0" OPENING)
- 39 AIR RELEASE VALVE WITH TAN CYLINDRICAL POLYETHYLENE ENCLOSURE, 14" DIA BY 24" TALL



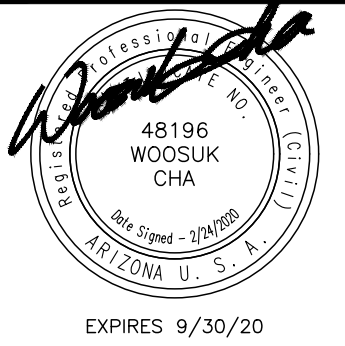
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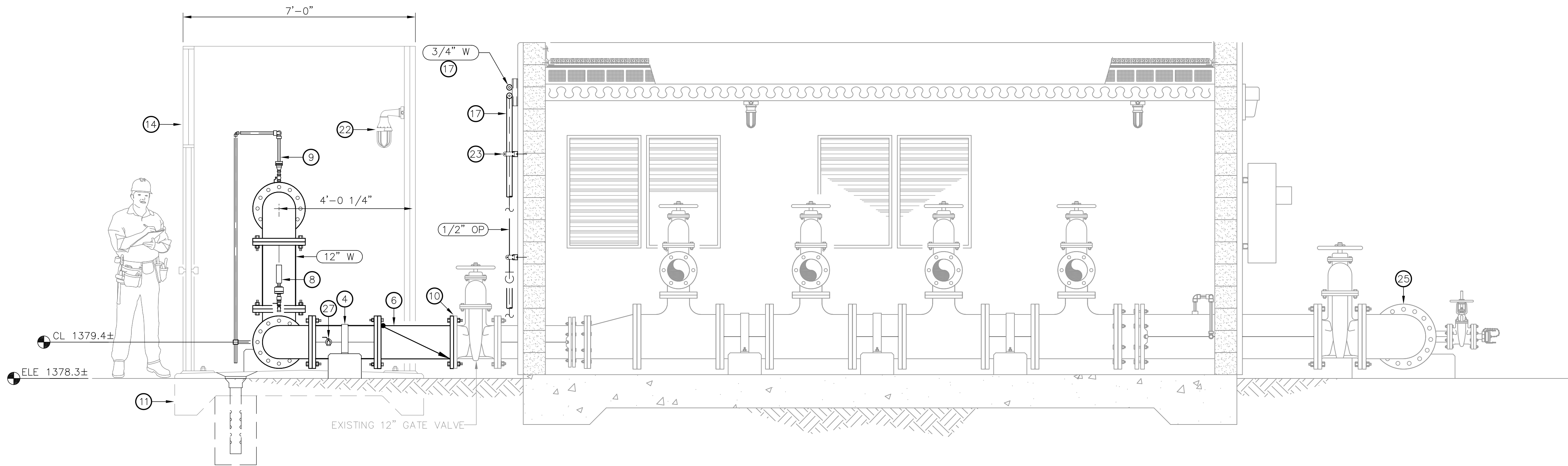
EPOR
PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
BOOSTER PUMP STATION PLAN
OWNERS PROJECT No. 1005775
WILSON PROJECT No. 18015

Design: VKG	Drawn: RFV	Checked: WC
Date: 8/19	Wilson	Project No.: 18015
Revision	Date	Description
	10/19	MCSO REVIEW COMMENTS
		VKG

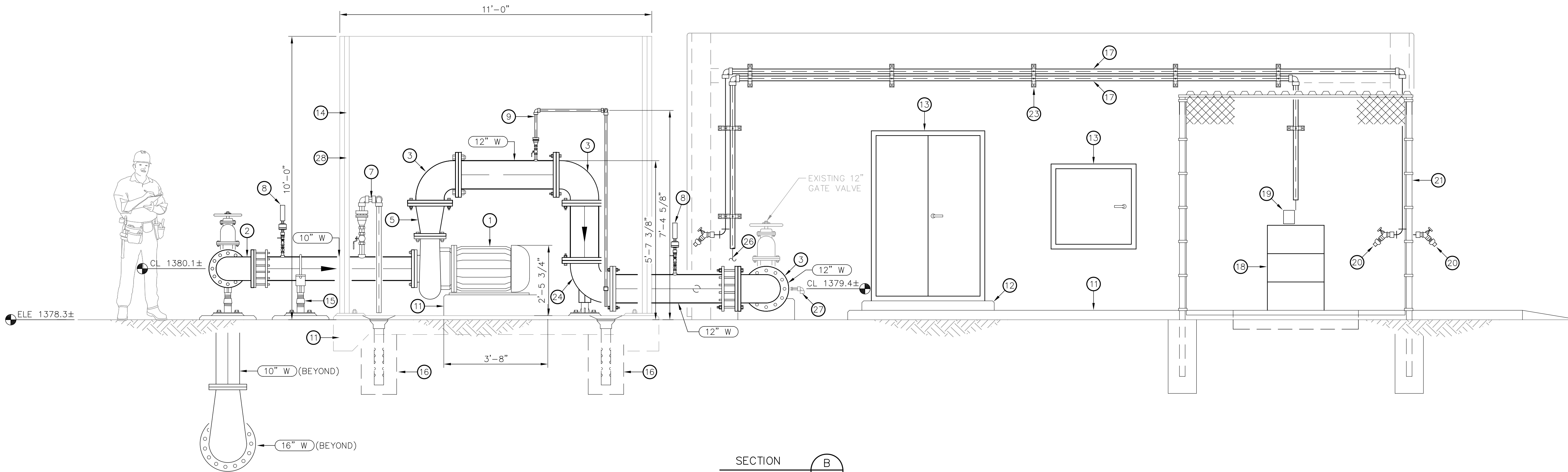
VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1 2 4
3/8" = 1'-0"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY



Sheet No. M-1



SECTION A
NOT TO SCALE
1/2" = 1'-0"



SECTION B
NOT TO SCALE
1/2" = 1'-0"

KEYED NOTES

- 1 PUMP WITH EQUIPMENT PAD (1,944-GPM)
- 2 10" DIA 90° BEND
- 3 12" DIA 90° BEND (TYP)
- 4 CONCRETE PIPE SUPPORT, SEE DETAIL 404 SHEET M-8
- 5 12" X 8" DIA REDUCER
- 6 12" DIA CHECK VALVE, VAL-MATIC 7200 SURGE BUSTER
- 7 2" AIR/VAC RELEASE VALVE ASSEMBLY, SEE DETAIL 200 SHEET M-6
- 8 PRESSURE GAUGE TRANSMITTER ASSEMBLY, SEE DETAIL 201 SHEET M-6
- 9 1" COMBINATION AIR RELEASE/VACUUM RELIEF VALVE, SEE DETAIL 200 SHEET M-6
- 10 CONNECT TO EXISTING 12" GATE VALE
- 11 CONCRETE PAD, SEE DETAIL 302 SHEET M-7
- 12 ELECTRICAL EQUIPMENT HOUSE KEEPING CONCRETE PAD, SEE DETAIL 302 SHEET M-7
- 13 ELECTRICAL EQUIPMENT, SEE ELECTRICAL SHEETS
- 14 ACOUSTIC ENCLOSURE
- 15 ADJUSTABLE PIPE SUPPORT, SEE DETAIL 401 SHEET M-8
- 16 FRENCH DRAIN, SEE DETAIL 105 SHEET M-5 (TYP)
- 17 DOUBLE CONTAINMENT PIPING SYSTEM (TYP)
- 18 55-GAL CHEMICAL STORAGE DRUM
- 19 CHEMICAL FEED PUMP, SEE SHEET M-4
- 20 HOSE BIBB (TYP). SEE DETAIL 104 SHEET M-5
- 21 CHAINLINK FENCE WITH PRIVACY SLAT, SEE SHEET M-4 FOR DETAILS
- 22 ACOUSTIC ENCLOSURE LIGHTING
- 23 UNISTRUT PIPE SUPPORT, SEE DETAIL 300 SHEET M-7
- 24 12" DIA 90° BEND WITH BASE SUPPORT, SEE DETAIL 203 SHEET M-6
- 25 16" DIA CHECK VALVE, VAL-MATIC 7200 SURGE BUSTER
- 26 CHEMICAL LINE FEED CONNECTION TO PIPE PER DETAIL 204 SHEET M-6
- 27 1" DIA SAMPLE TAP WITH BALL VALVE PER DETAIL 205 SHEET M-6
- 28 4" THICK INSULATED METAL WALL PANELS SUPPORTED BY STEEL FRAME

CONSTRUCTION NOTES

1. ALL AIR/VACUUM VALVE DISCHARGE PIPE SHALL TERMINATE 6" MIN. ABOVE FINISHED FLOOR AND SHALL BE SCREENED WITH SS INSECT MESH (TYP).
2. CONTRACTOR SHALL USE DIELECTRIC FLG KIT AT ALL DIP AND STEEL PIPE FITTINGS (AND VALVE) CONNECTIONS.
3. ALL CONNECTIONS SHALL BE NPT, NO SADDLE TAPS ALLOWED UNLESS OTHERWISE SHOWN.
4. ALL AIR/VACUUM VALVE DISCHARGE LINES SHALL BE SCREENED WITH SS INSECT SCREEN MESH (TYP).
5. 10" DIA FLOW METER TO HAVE NO FITTINGS OR OTHER INSIDE OBSTRUCTED APPURTENANCES WITHIN 5 PIPE DIAMETER UPSTREAM OR 3 PIPE DIAMETER DOWNSTREAM.
6. ALL ABOVE GROUND DRAIN LINES SHALL BE 316 STAINLESS STEEL.
7. ALL BURIED PIPING TO HAVE A 4'-0" MINIMUM COVER.
8. SEE ELECTRICAL AND HVAC DRAWINGS FOR ADDITIONAL CONSTRUCTION NOTES AND/OR DETAILS.
9. ALL PIPING SHALL BE RESTRAINED.
10. RESTORE LANDSCAPE AREA TO ORIGINAL CONDITION.
11. CONTRACTOR TO LOCATE AND DETERMINE ALL UNDERGROUND UTILITY CROSSINGS BY POT-HOLING PRIOR TO CONSTRUCTING NEW PIPE LINES, ELECTRICAL AND VAULTS.



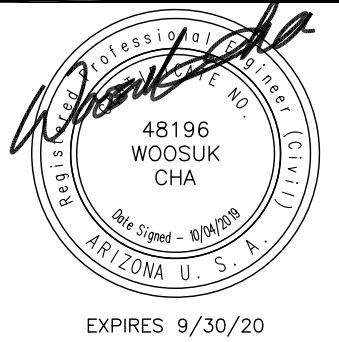
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
BOOSTER PUMP STATION SECTIONS 1
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

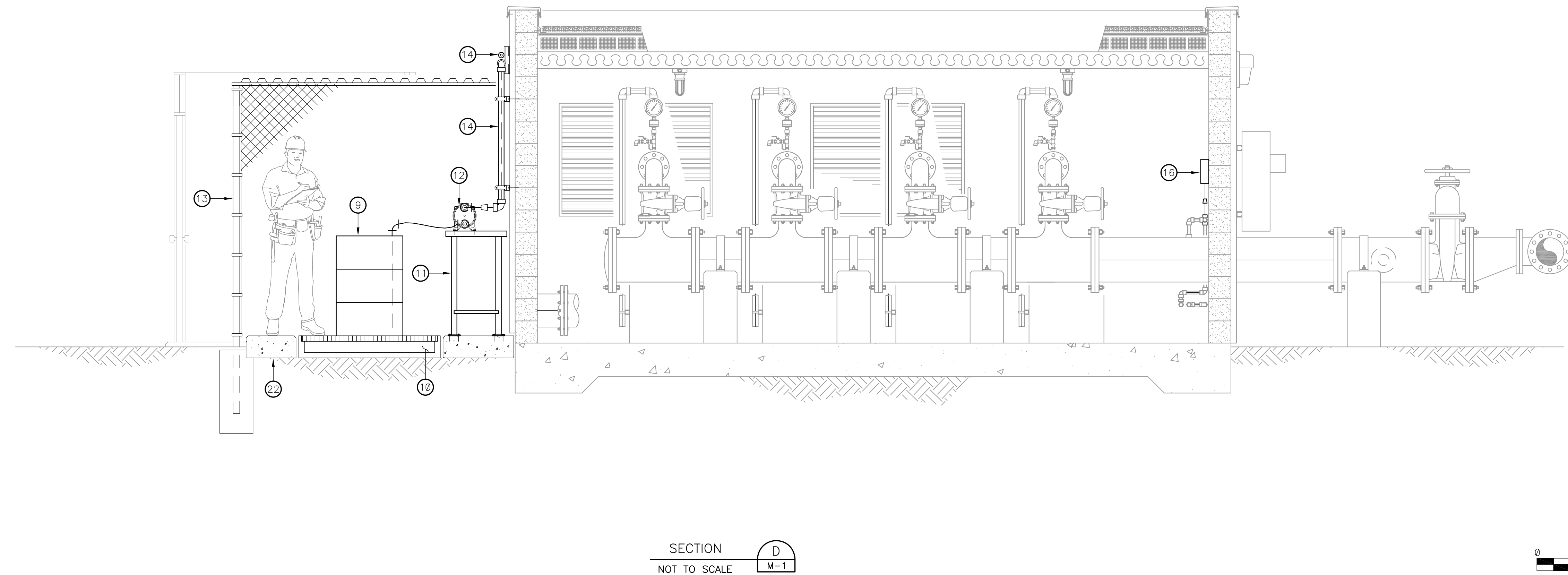
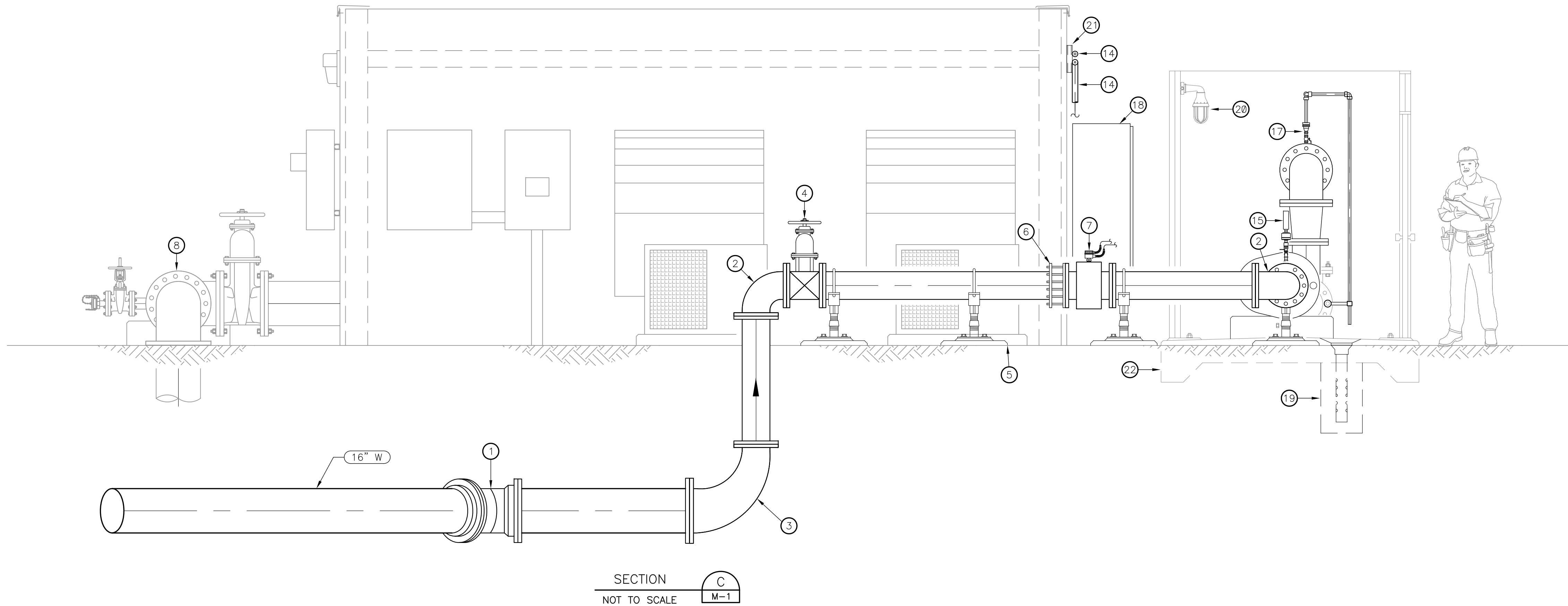
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Revision	Date	Description
		By VKG

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Sheet No. M-2

AGENCY REVIEW



KEYED NOTES

- 1 16" DIA 22.5' BEND (MJ)
- 2 10" DIA 90° BEND (TYP)
- 3 16"x10" REDUCING 90° BEND (FL)
- 4 10" DIA GATE VALVE
- 5 ADJUSTABLE PIPE SUPPORT (TYP), SEE DETAIL 401 SHEET M-8
- 6 10" DIA FLANGED COUPLING ADAPTER
- 7 10" DIA FLOW METER
- 8 16" CHECK VALVE, SEE SHEET M-1 FOR LOCATION
- 9 55-GALLON CHEMICAL STORAGE DRUM
- 10 CHEMICAL CONTAINMENT PALLET (60-GALLON), SEE DETAIL 101 SHEET M-5
- 11 METAL TABLE (24" SQ), SEE DETAIL A SHEET M-4
- 12 CHEMICAL FEED PUMP, SEE SHEET M-4
- 13 CHAINLINK FENCE WITH 5-FT WIDE SWING ENTRY GATE (WITH PRIVACY SLATS), SEE SHEET M-4 FOR DETAILS
- 14 DOUBLE CONTAINMENT PIPING SYSTEM
- 15 PRESSURE GAUGE TRANSMITTER ASSEMBLY, SEE DETAIL 201 SHEET M-6
- 16 CHLORINE ANALYZER, SEE DETAIL 102 SHEET M-5
- 17 1" COMBINATION AIR RELEASE/VACUUM RELIEF VALVE, SEE DETAIL 200 SHEET M-6
- 18 ELECTRICAL EQUIPMENT, SEE ELECTRICAL SHEETS
- 19 FRENCH DRAIN, SEE DETAIL 105 SHEET M-5
- 20 ACOUSTIC ENCLOSURE LIGHTING
- 21 UNISTRUT PIPE SUPPORT, SEE DETAIL 300 SHEET M-7
- 22 CONCRETE PAD, SEE DETAIL 302 SHEET M-7

CONSTRUCTION NOTES

- 1. ALL AIR/VACUUM VALVE DISCHARGE PIPE SHALL TERMINATE 6" MIN. ABOVE FINISHED FLOOR AND SHALL BE SCREENED WITH SS INSECT MESH (TYP).
- 2. CONTRACTOR SHALL USE DIELECTRIC FLG KIT AT ALL DIP AND STEEL PIPE FITTINGS (AND VALVE) CONNECTIONS.
- 3. ALL CONNECTIONS SHALL BE NPT, NO SADDLE TAPS ALLOWED UNLESS OTHERWISE SHOWN.
- 4. ALL AIR/VACUUM VALVE DISCHARGE LINES SHALL BE SCREENED WITH SS INSECT SCREEN MESH (TYP).
- 5. 10" DIA FLOW METER TO HAVE NO FITTINGS OR OTHER INSIDE OBSTRUCTED APPURTENANCES WITHIN 5 PIPE DIAMETER UPSTREAM OR 3 PIPE DIAMETER DOWNSTREAM.
- 6. ALL ABOVE GROUND DRAIN LINES SHALL BE 316 STAINLESS STEEL.
- 7. ALL BURIED PIPING TO HAVE A 4'-0" MINIMUM COVER.
- 8. SEE ELECTRICAL AND HVAC DRAWINGS FOR ADDITIONAL CONSTRUCTION NOTES AND/OR DETAILS.
- 9. ALL PIPING SHALL BE RESTRAINED.
- 10. RESTORE LANDSCAPE AREA TO ORIGINAL CONDITION.
- 11. CONTRACTOR TO LOCATE AND DETERMINE ALL UNDERGROUND UTILITY CROSSINGS BY POTHOLING PRIOR TO CONSTRUCTING NEW PIPE LINES, ELECTRICAL AND VAULTS.



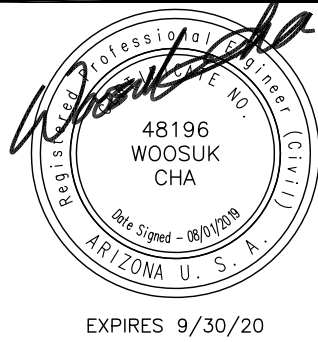
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
BOOSTER PUMP STATION SECTIONS 2
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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Revision	Date	By
		Description

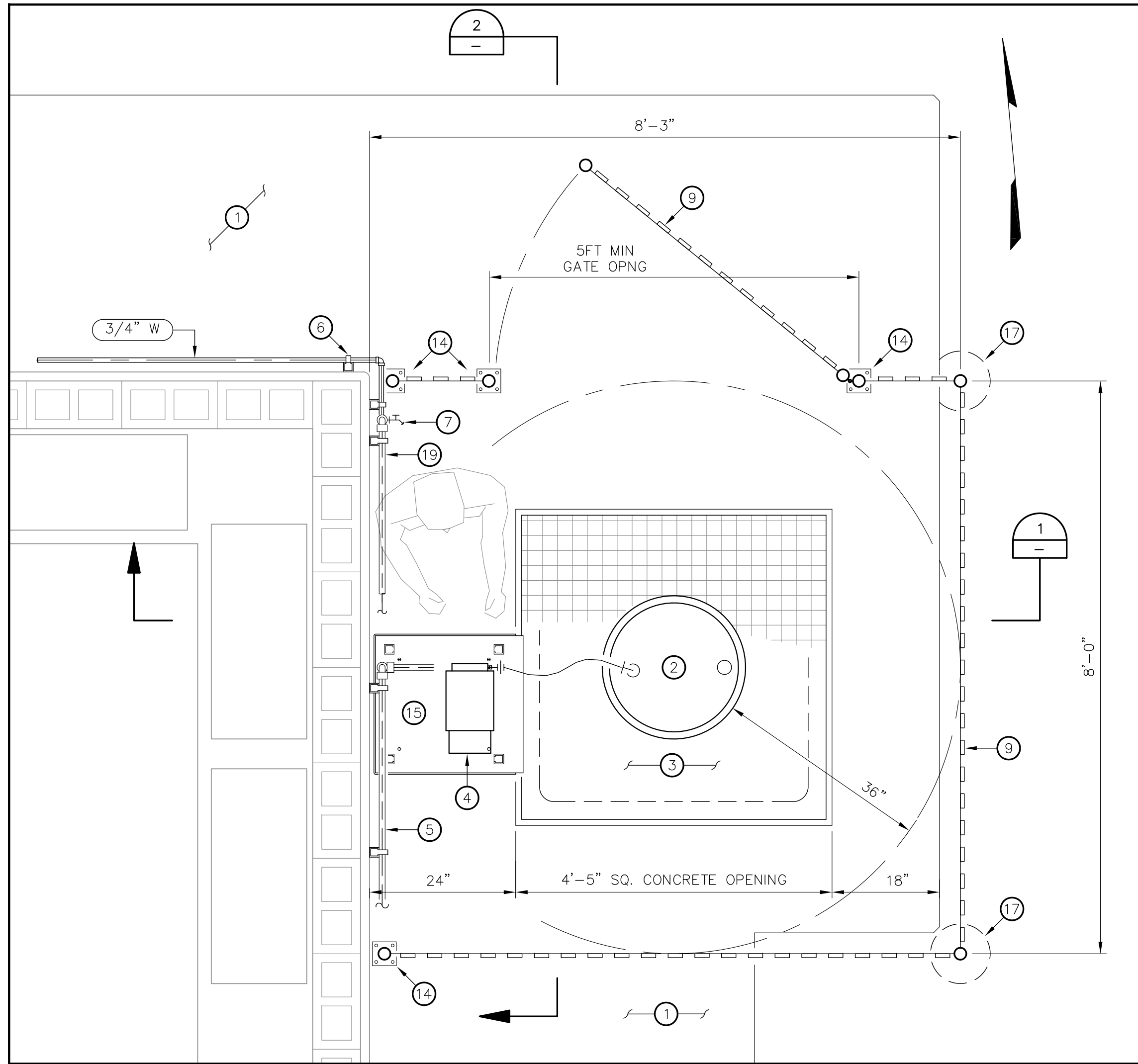
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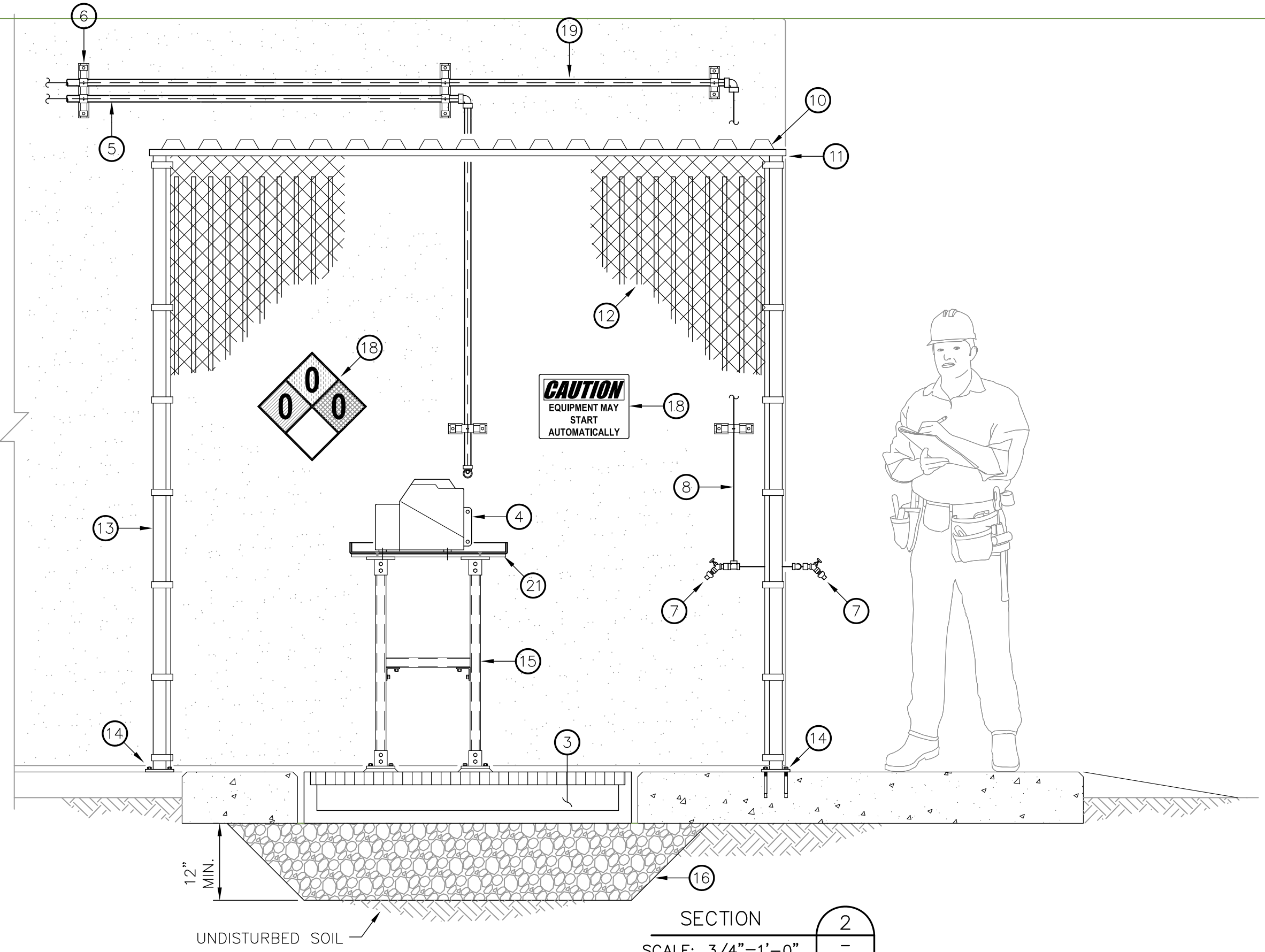
Sheet No. M-3

AGENCY REVIEW

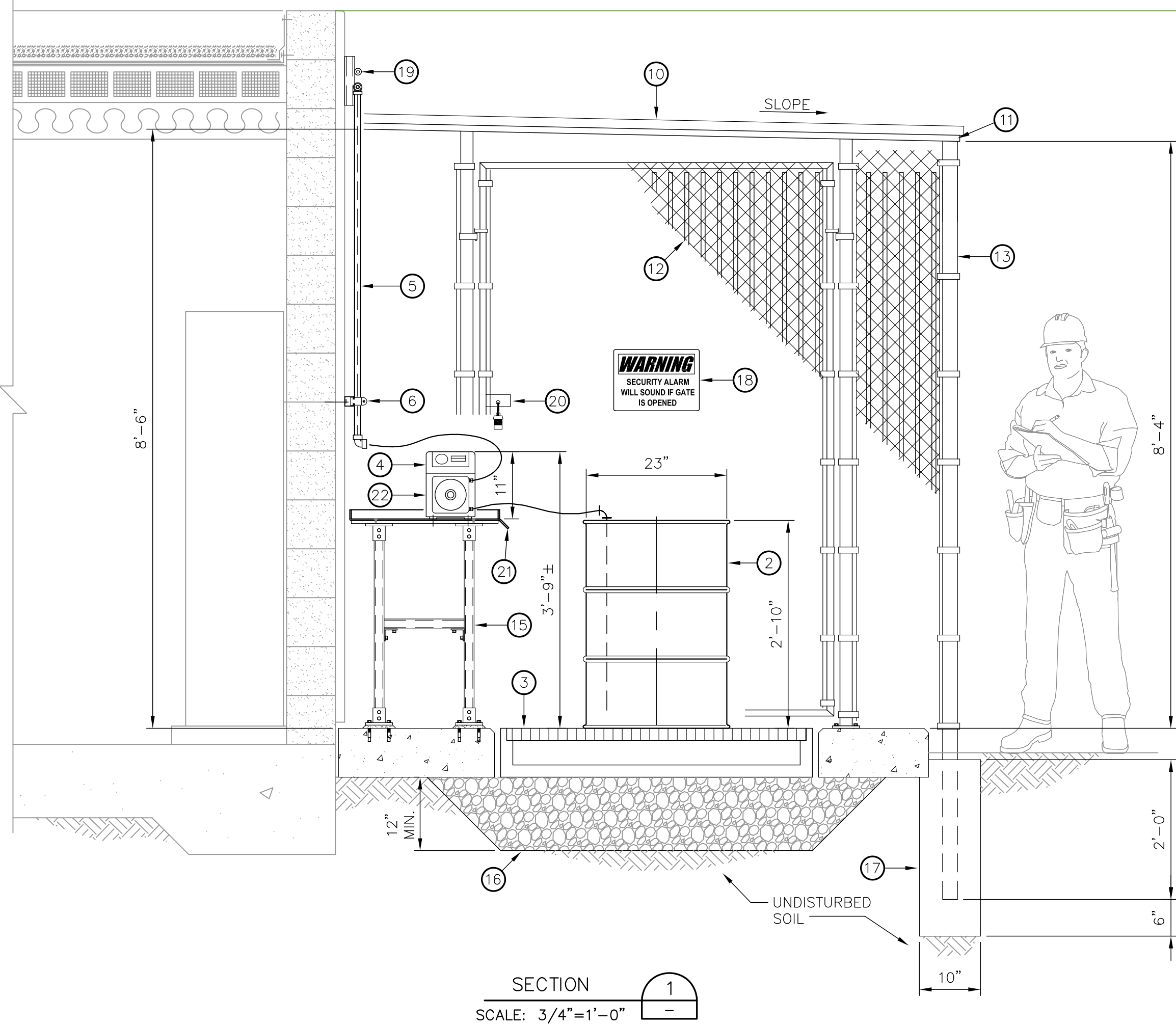
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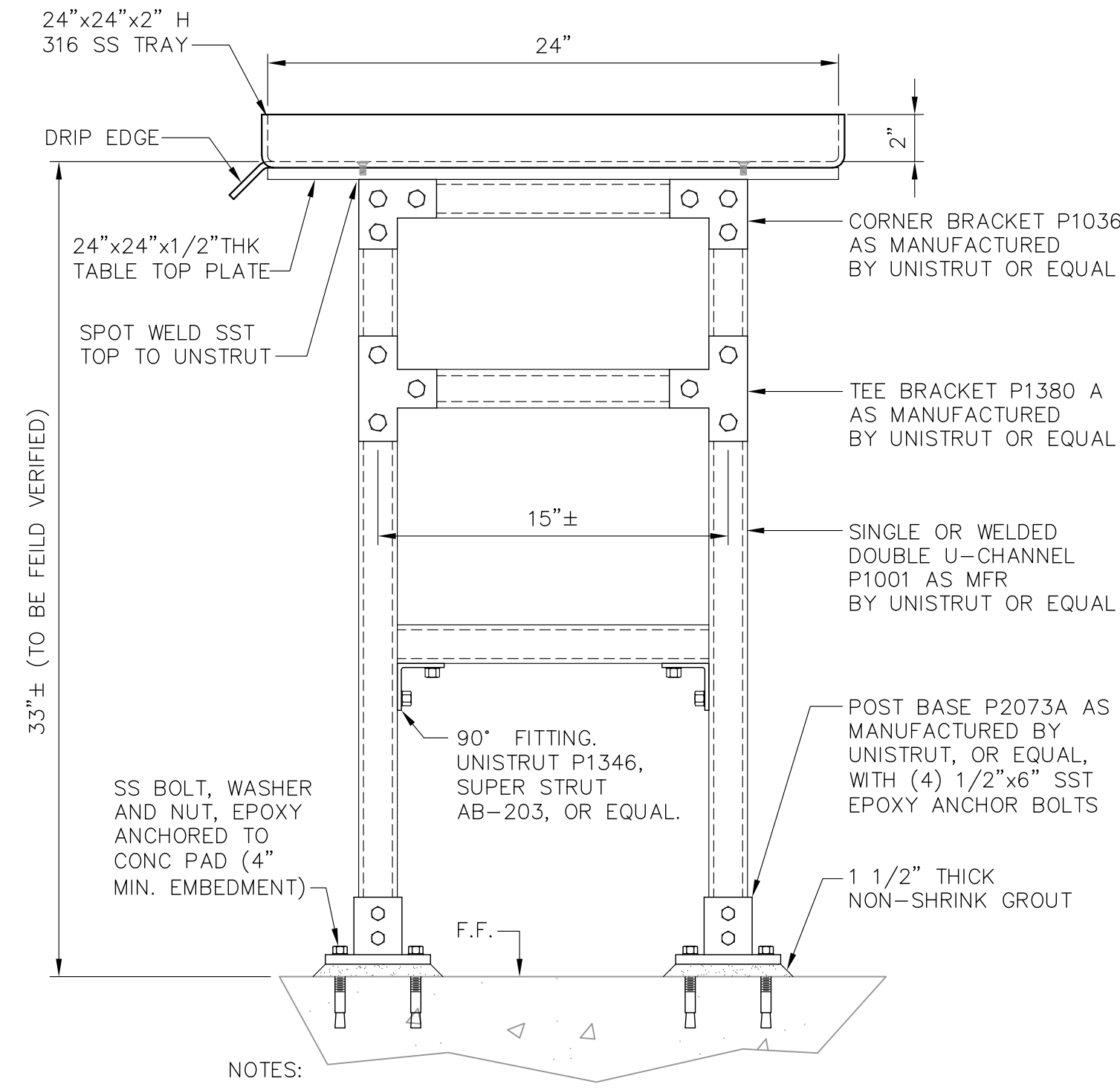
CHEMICAL FEED SYSTEM PLAN
SCALE: 3/4" = 1'-0"



SECTION 2
SCALE: 3/4" = 1'-0"



SECTION 1
SCALE: 3/4" = 1'-0"



NOTES:
1. DO NOT ATTACH TO BUILDING.
2. IN CORROSIVE AREAS USE STAINLESS STEEL STRUT OR FRP.

EQUIPMENT UNISTRUT SUPPORT TABLE

DETAIL	A
NOT TO SCALE	-

KEYED NOTES

- NEW CONCRETE WALKWAY
- 55 GAL CHEMICAL STORAGE DRUM
- CHEMICAL CONTAINMENT PALLET (60 GAL)
CHEMICAL FEED PUMP MOUNTED TO EQUIPMENT TABLE, BLUE-WHITE MODEL M-324-QNEE WITH QUICK DISCONNECT KIT, CALIBRATION COLUMN, AND PRESSURE GAUGE
- CHEMICAL FEED PUMP IN DOUBLE CONTAINMENT PIPING
- PIPE SUPPORT (TYP), SEE DETAIL 300 SHEET M-7
- HOSE BIBB (TYP)
- 3/4" DIA COPPER PIPE
- 8'-6" HIGH CHAINLINK FENCE WITH 5 FT WIDE SWING ENTRY GATE
- TAN/WHITE B-DECK SHEETS (RB PATTERN)
- GALVANIZED TRUSS WELDED TO TOP OF FENCE POSTS
- CHAINLINK FENCE WITH TAN PRIVACY SLATS ALL SIDES (TYP)
- 2" DIA x 11 GA GALVANIZED FENCE POST
- 2" DIA x 11 GA GALVANIZED FENCE POST WITH BASE PLATE, ANCHOR TO CONCRETE SLAB
- EQUIPMENT UNISTRUT SUPPORT TABLE, SEE DETAIL A THIS SHEET
- 3/4" CRUSHED ROCK
- 10" DIA CONCRETE POST FOOTING (TYP)
- SIGNAGE (TYP), SEE DETAIL 301 SHEET M-7
- DOUBLE CONTAINMENT PIPING SYSTEM (TYP)
- SWING GATE WITH PAD LOCK LATCH (LOCK SUPPLIED BY OWNER)
- 24"x24"x2" 316SS SPILL CONTAINMENT TRAY
- CHEMICAL METERING PUMP 10 3/4" X 8 1/8" X 15 1/4"

CONSTRUCTION NOTES

- ALL AIR/VACUUM VALVE DISCHARGE PIPE SHALL TERMINATE 6" MIN. ABOVE FINISHED FLOOR AND SHALL BE SCREENED WITH SS INSECT MESH (TYP).
- CONTRACTOR SHALL USE DIELECTRIC FLG KIT AT ALL DIP AND STEEL PIPE FITTINGS (AND VALVE) CONNECTIONS.
- ALL CONNECTIONS SHALL BE NPT, NO SADDLE TAPS ALLOWED UNLESS OTHERWISE SHOWN.
- ALL AIR/VACUUM VALVE DISCHARGE LINES SHALL BE SCREENED WITH SS INSECT SCREEN MESH (TYP).
- 10" DIA FLOW METER TO HAVE NO FITTINGS OR OTHER INSIDE OBSTRUCTED APPURTENANCES WITHIN 5 PIPE DIAMETER UPSTREAM OR 3 PIPE DIAMETER DOWNSTREAM.
- ALL ABOVE GROUND DRAIN LINES SHALL BE 316 STAINLESS STEEL.
- ALL BURIED PIPING TO HAVE A 4'-0" MINIMUM COVER.
- SEE ELECTRICAL AND HVAC DRAWINGS FOR ADDITIONAL CONSTRUCTION NOTES AND/OR DETAILS.
- ALL PIPING SHALL BE RESTRAINED.
- RESTORE LANDSCAPE AREA TO ORIGINAL CONDITION.
- CONTRACTOR TO LOCATE AND DETERMINE ALL UNDERGROUND UTILITY CROSSINGS BY POT-HOLING PRIOR TO CONSTRUCTING NEW PIPE LINES, ELECTRICAL AND VAULTS.



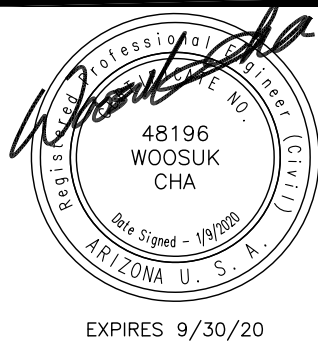
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
CHEMICAL FEED AREA
PLAN, SECTIONS AND DETAIL
OWNERS PROJECT No. 1005775
WILSON PROJECT NO. 18015

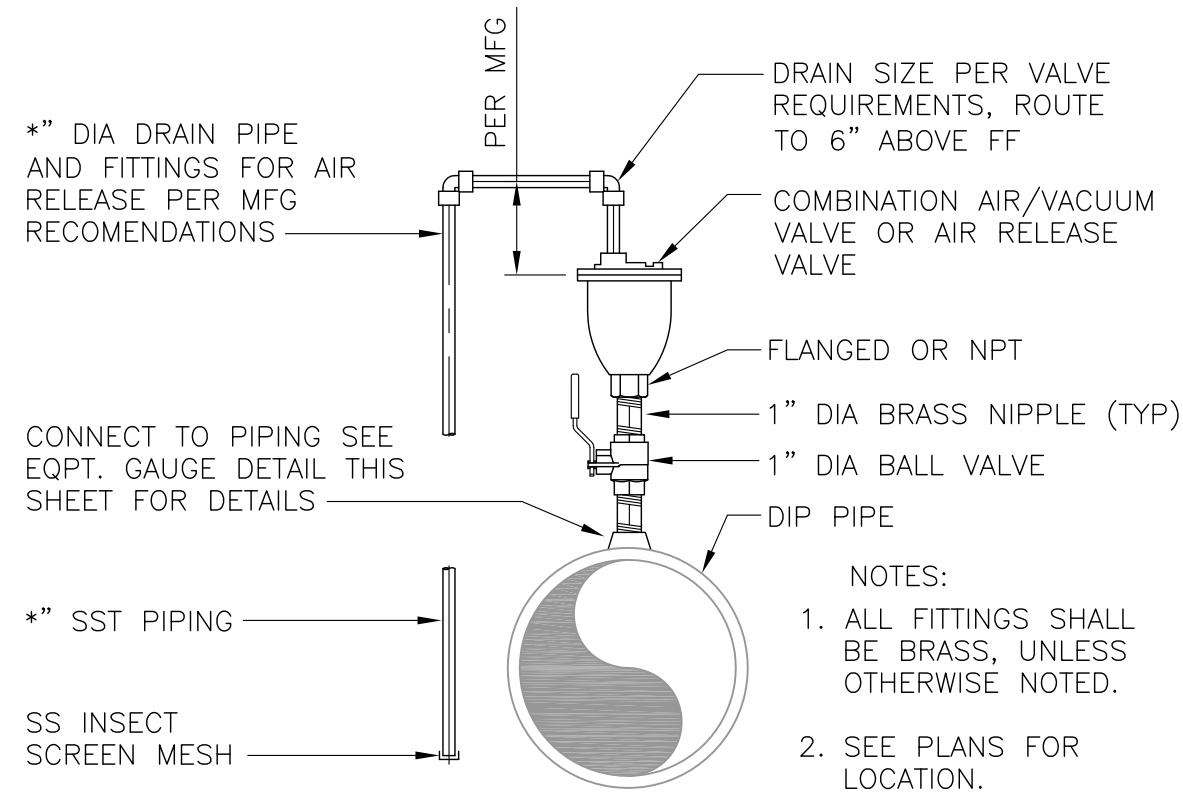
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Revision	Date	Description

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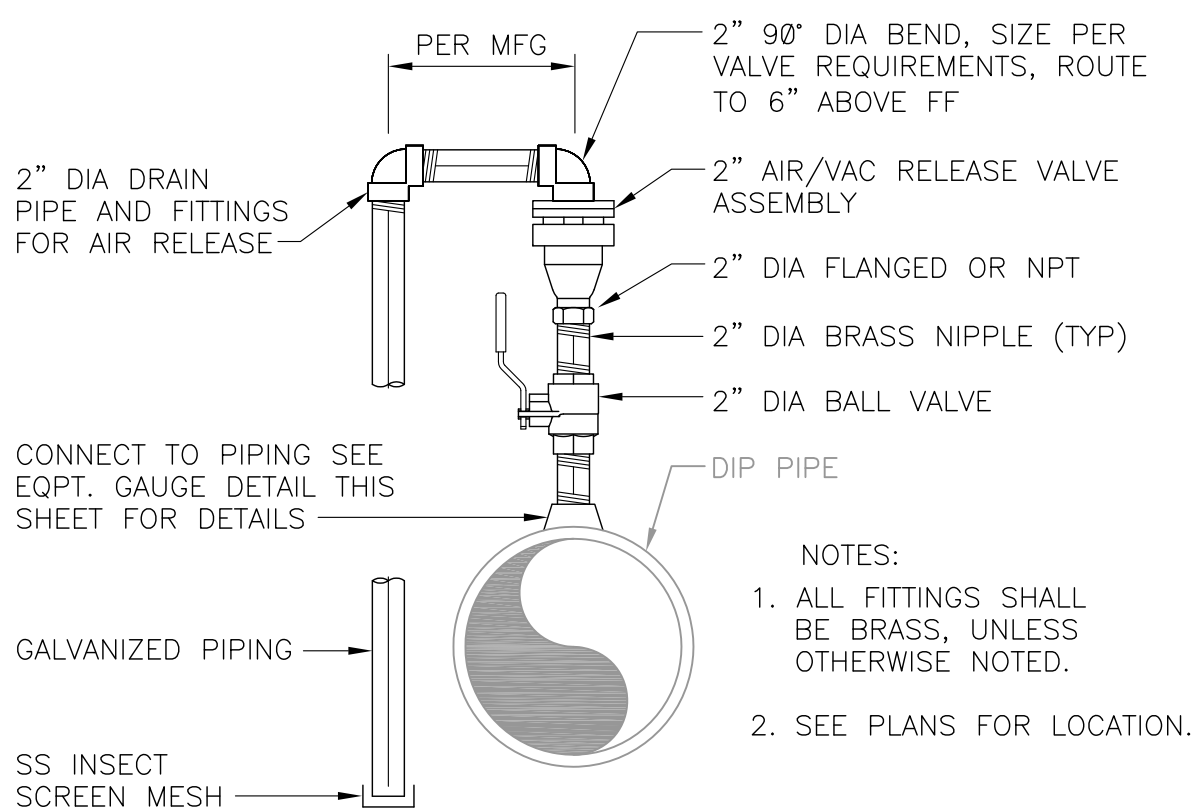


Sheet No. M-4

AGENCY REVIEW

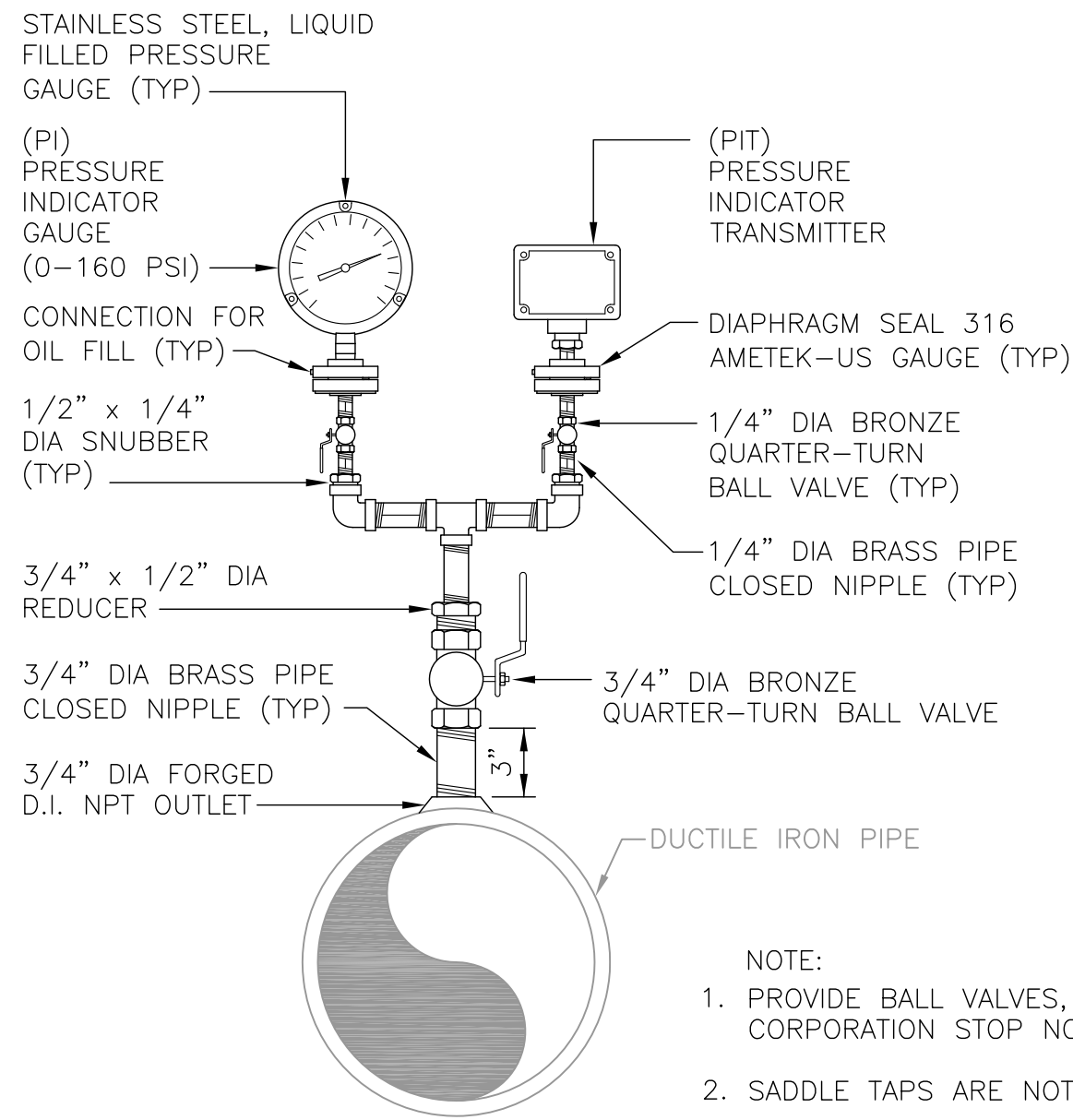


1" COMBINATION AIR RELEASE/VACUUM RELIEF VALVE

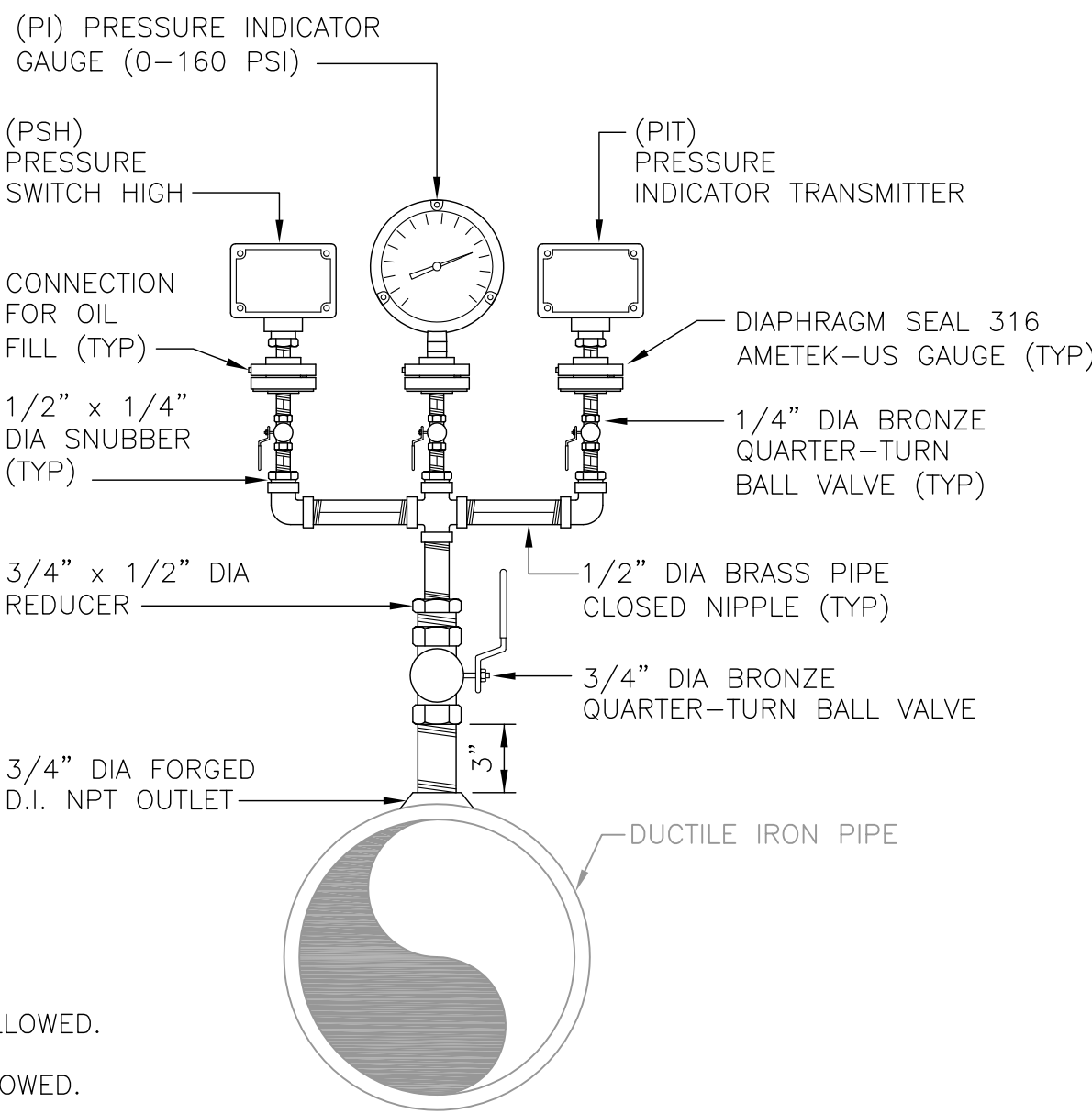


2" AIR/VAC RELEASE VALVE ASSEMBLY

DETAIL 200
NOT TO SCALE -

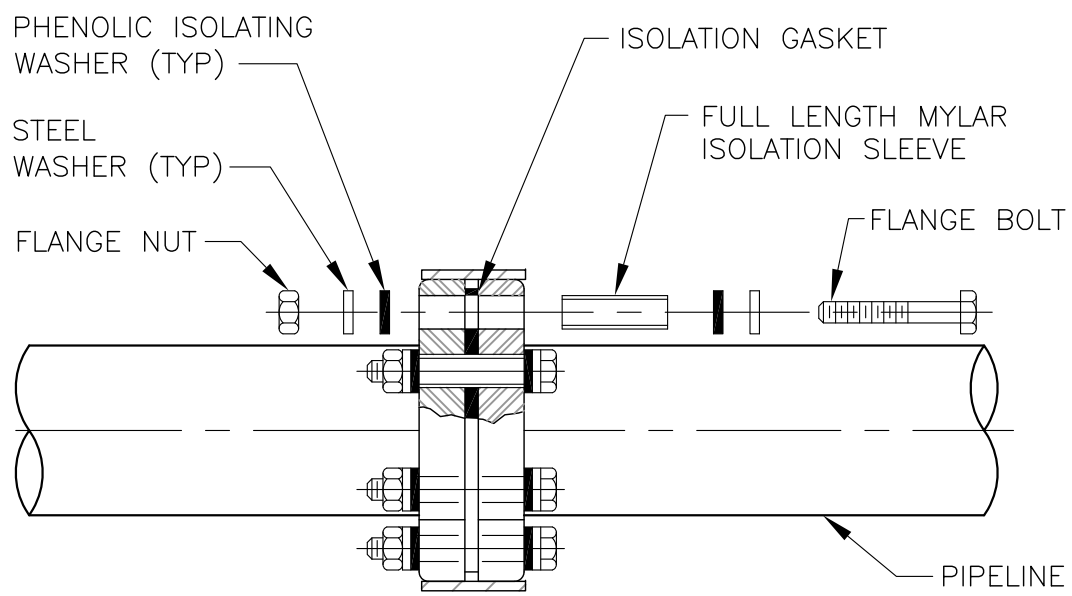


PI GAUGE AND PIT SWITCH ASSEMBLY



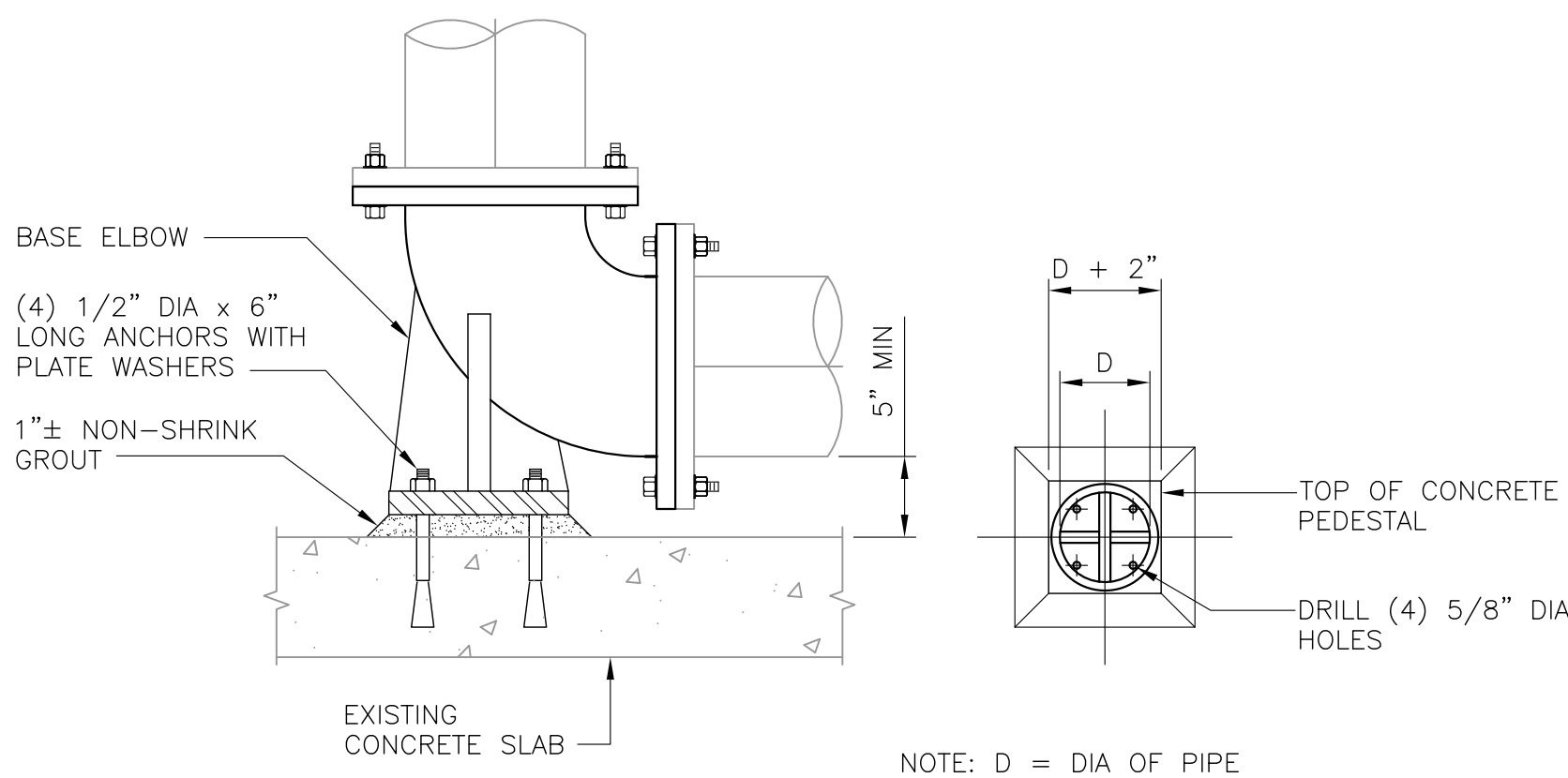
PSH, PI GAUGE AND PIT SWITCH ASSEMBLY

DETAIL 201
NOT TO SCALE -



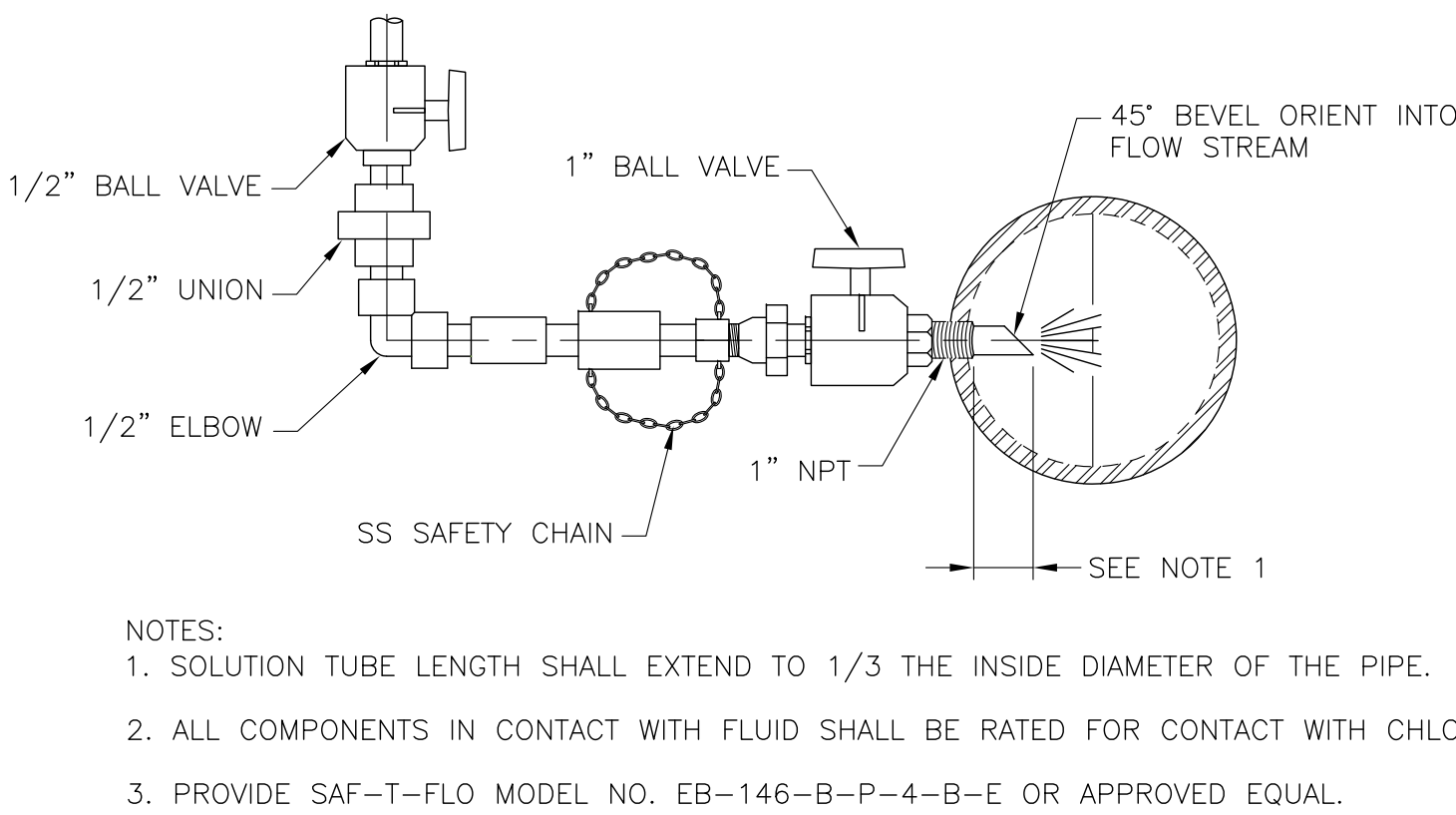
ISOLATING JOINT FLANGE KIT

DETAIL 202
NOT TO SCALE -



ELBOW WITH BASE

DETAIL 203
NOT TO SCALE -



CHEMICAL INJECTION QUILL CONNECTION

DETAIL 204
NOT TO SCALE -

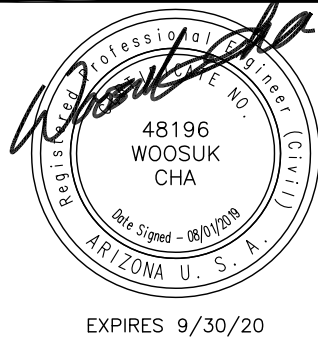
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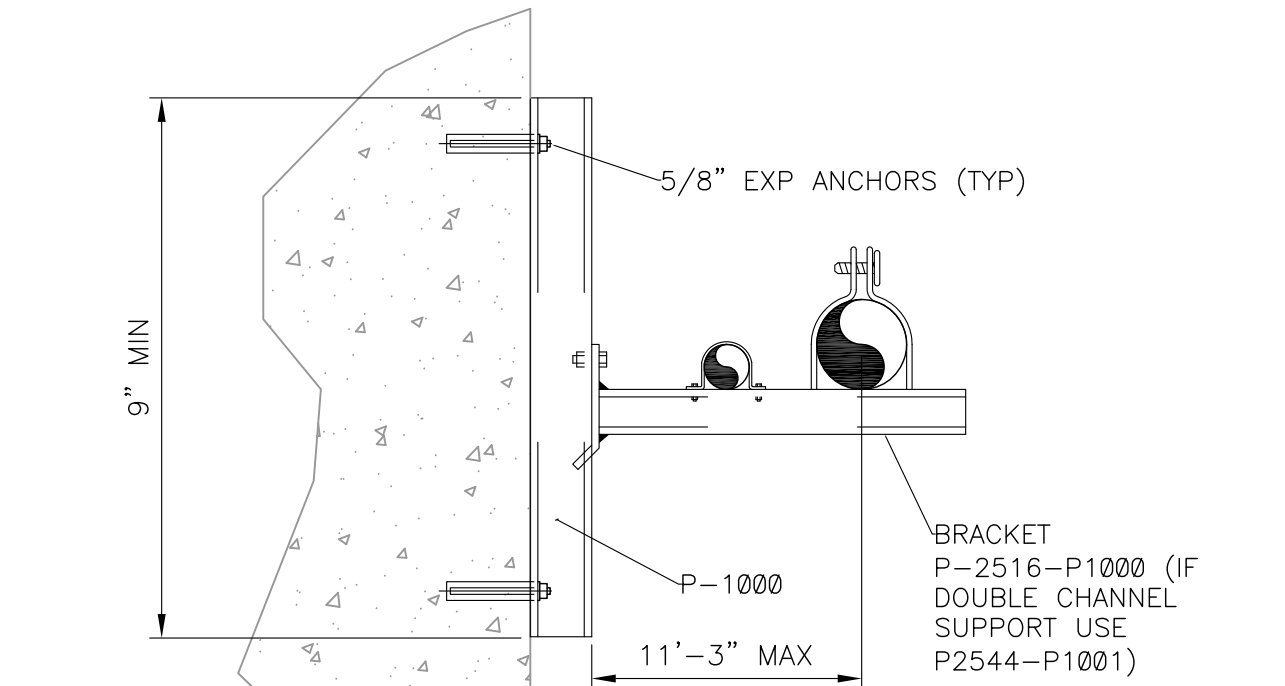
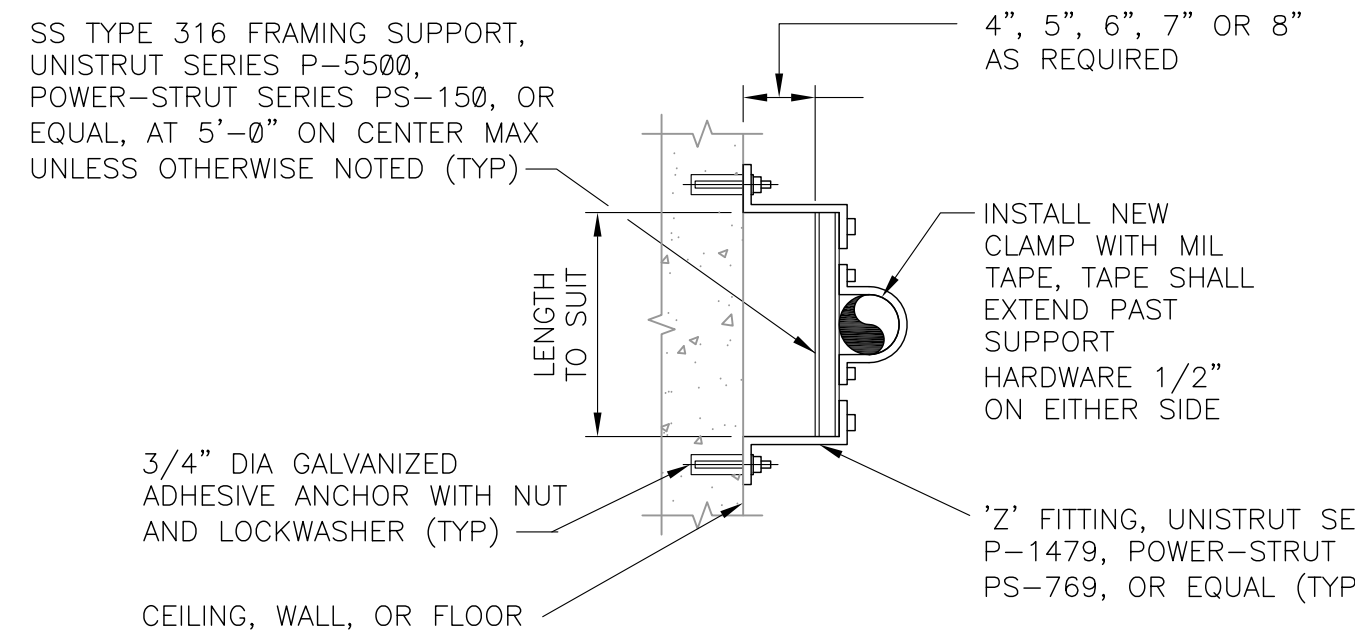
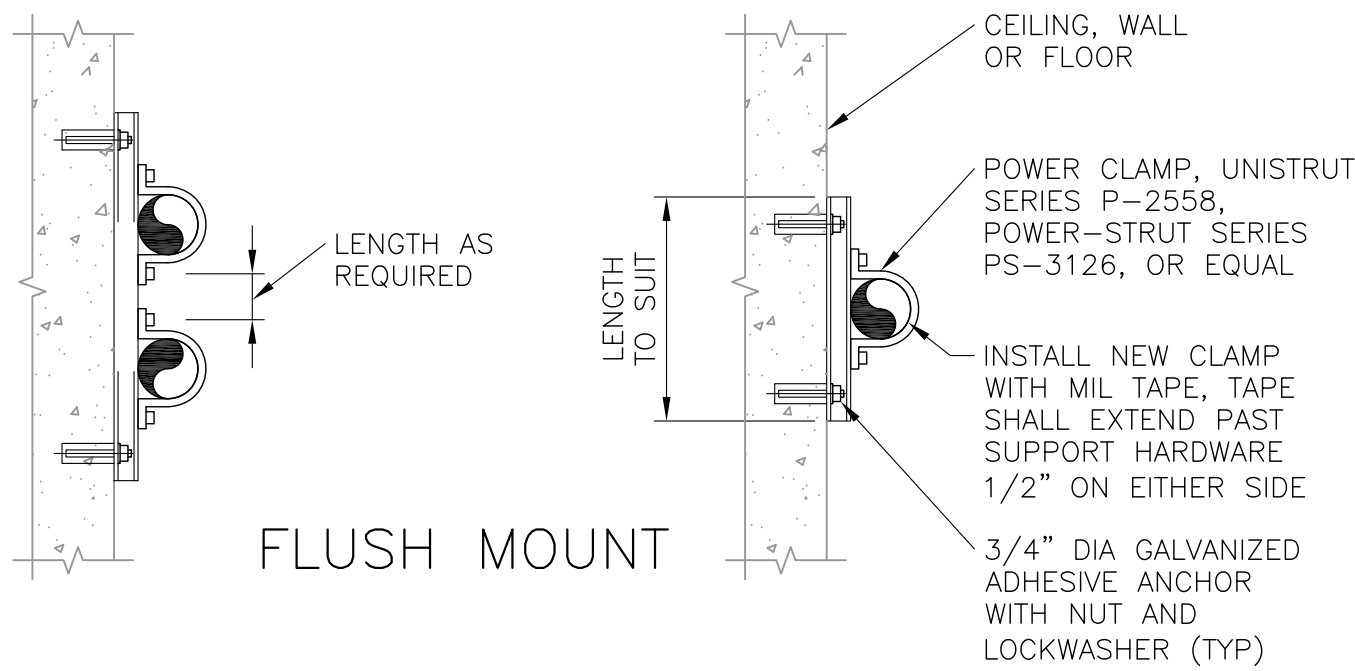
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INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
TYPICAL DETAILS 2
OWNERS PROJECT NO. 1005775
WILSON PROJECT NO. 18015

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Sheet No. M-6



- NOTES:
- MODEL NUMBERS ARE BASED ON UNISTRUT OR EQUAL.
 - IF SUPPORT IS SUBMERGED, IN A TRENCH OR BELOW TOP OF WALL OF HYDRAULIC STRUCTURE, ALL MATERIAL SHALL BE 316 STAINLESS STEEL.
 - FOR COPPER PIPE, WRAP PIPE UNDER "U" CLIP WITH POLYETHYLENE TAPE.
 - CONCRETE ANCHORS CAN BE USED IN LIEU OF A "Z" FITTING AND EXP ANCHORS.
 - MAX PIPE SIZES 6 DIA, PIPE CLAMP SIZES AS REQUIRED.

PIPE SIZES	MAX BRACKET SPACING		
	STEEL	CPVC	PVC
2 - 6" DIA	5'-0" OC	5'-0" OC	5'-0" OC
2 - 4" DIA	8'-0" OC	5'-0" OC	5'-0" OC
2 - 3" DIA	10'-0" OC	5'-0" OC	5'-0" OC
2 - 2" DIA		4'-0" OC	4'-0" OC

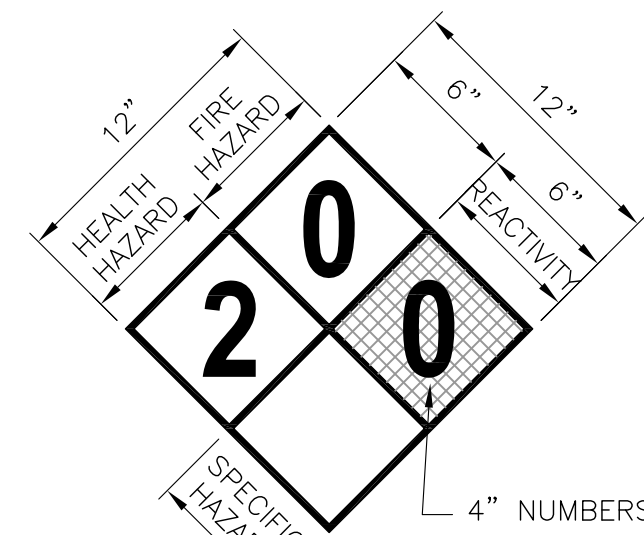
DETAIL	300
NOT TO SCALE	-

SIGNAGE SCHEDULE

QUAN.	SIGN TYPE	MESSAGE	FORMS OF MESSAGE/ SYMBOL TYPE (AS REQUIRED)	MATERIAL/ SPECIAL INSTRUCTIONS	LOCATION	OPTIONS/REMARKS
1	A	WARNING: SECURITY ALARM WILL SOUND IF GATE IS OPENED	TEXT	FIBERGLASS	CHAINLINK FENCE SWING GATE	
1	B	PROVIDE HAZARD NUMBERS PER MSDS	TEXT	FIBERGLASS	CHAINLINK FENCE SWING GATE	PROVIDE HAZARD NUMBERS PER MSDS
1	C	CAUTION: EQUIPMENT MAY START AUTOMATICALLY	TEXT	FIBERGLASS	ON BUILDING WALL NEXT TO CHEMICAL FEED PUMP	



TYPE A:
CAUTION
SCALE: 1 1/2" = 1'-0"



TYPE B:
NFPA 704 HAZ.
RATING SIGN

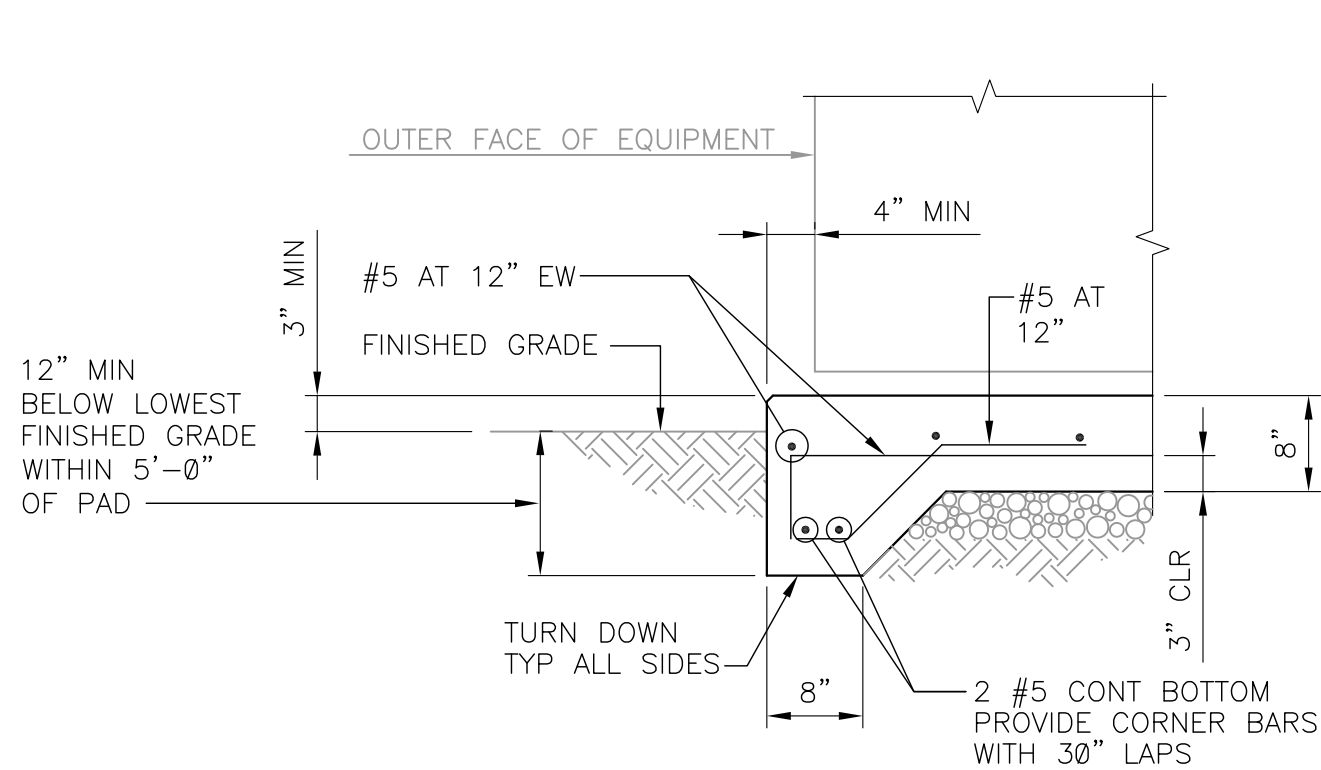


TYPE C:
CAUTION
SCALE: 1 1/2" = 1'-0"

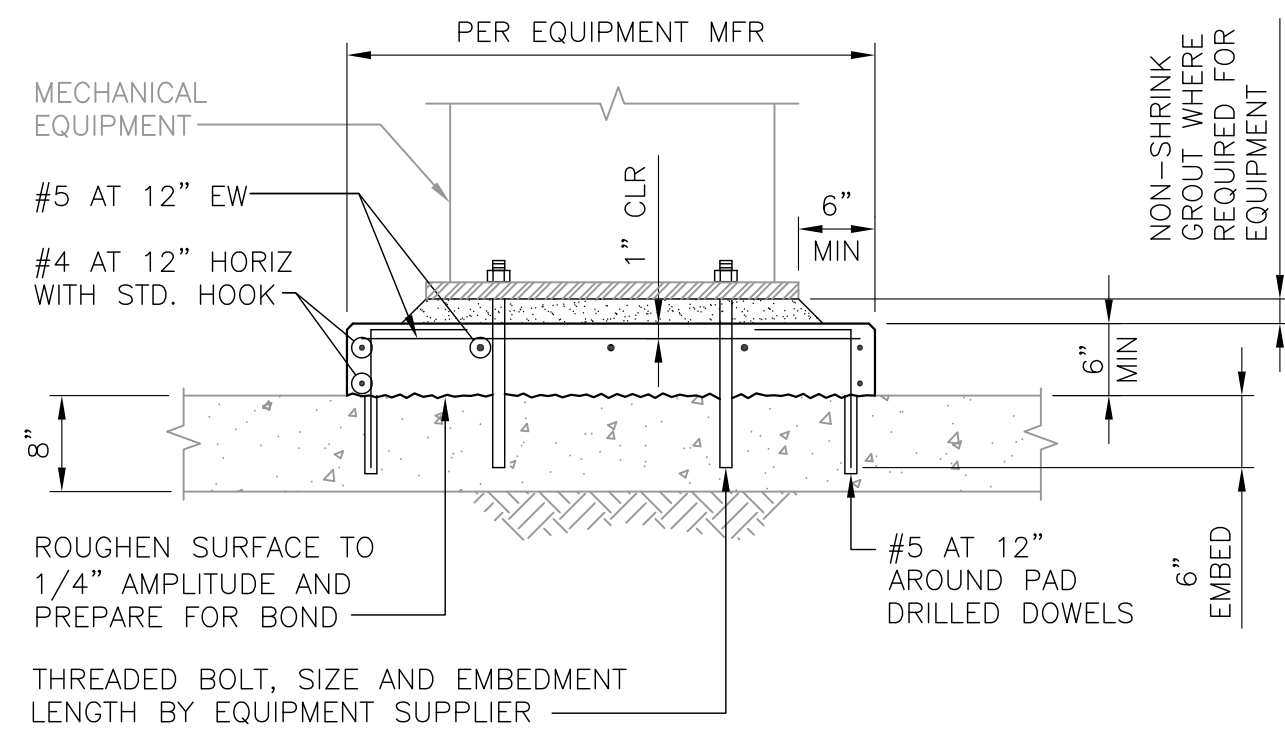
- SIGNAGE NOTES:
- PROVIDE HAZARD RATING SIGNS / RIGHT-TO-KNOW SIGNS, LABELS AND TAGS TO COMPLY WITH NFPA 704, OSHA 1910.1200, AND OSHA SUBPART Z, FOR PROPER IDENTIFICATION OF ALL THE CHEMICALS AND MATERIALS PRESENT. THE HAZARDS ASSOCIATED WITH THESE CHEMICALS AND MATERIALS, AND WHERE THEY ARE LOCATED. VERIFY EXACT INFORMATION FOR SIGNS AND LOCATION OF SIGNS IN THE FIELD WITH OWNER AND ENGINEER.
 - PROVIDE ALL ACCIDENT PREVENTION, HEALTH, SAFETY AND WARNING SIGNS IN COMPLIANCE WITH ANSI Z525.1, ANSI Z636.2, ANSI Z535.3 AND OSHA 1910.44 AND 1910.145. FIELD VERIFY EXACT LOCATION OF SIGNS WITH OWNER AND ENGINEER.
 - SEE SPECIFICATION 10400 FOR ADDITIONAL QUANTITY TO BE USED AS DESIGNATED BY ENGINEER.

NFPA SIGNAGE

DETAIL	301
NOT TO SCALE	-



LIGHT DUTY EQUIPMENT PAD ON GRADE

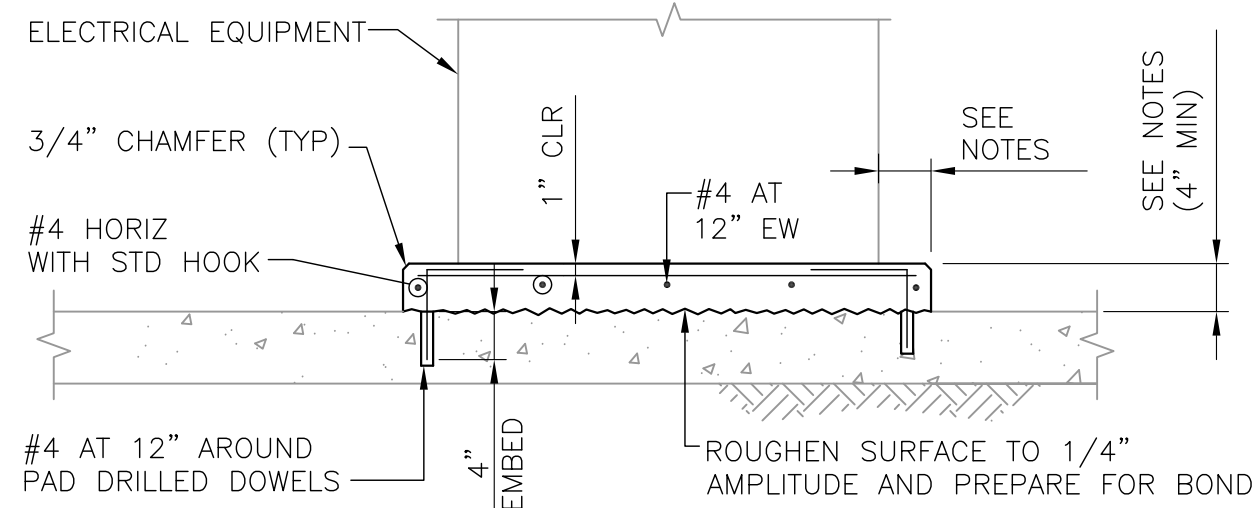


MECHANICAL EQUIPMENT SUPPORT PAD
WITH DRILLED IN ANCHORS

DETAIL	302
NOT TO SCALE	-

- NOTES:
- PROVIDE 1 1/2" MIN NON-SHRINK, UNLESS NOTED OTHERWISE BY THE EQUIPMENT MFR.
 - SEE ELECTRICAL SHEETS FOR EQUIPMENT SIZE REQUIREMENTS.
 - SEE MECH SHEETS FOR SIZE OF EQUIPMENT PAD AND EQUIPMENT.
 - FINISHED CONCRETE SIDEWALK PER MAG STD. DETAILS.
 - FINISHED EQUIPMENT PAD TO SLOPE AWAY FROM BUILDING TO GRADE, MIN. 1/4" PER L.F..

GENERAL NOTES



ELECTRICAL EQUIPMENT SUPPORT
PAD WITH DRILLED IN DOWELS



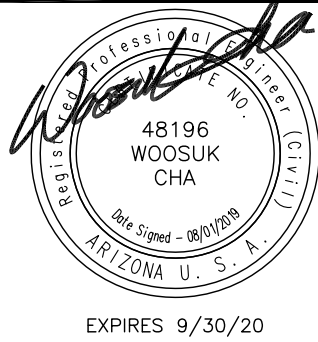
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TYPICAL DETAILS 3
OWNERS PROJECT NO. 1005775
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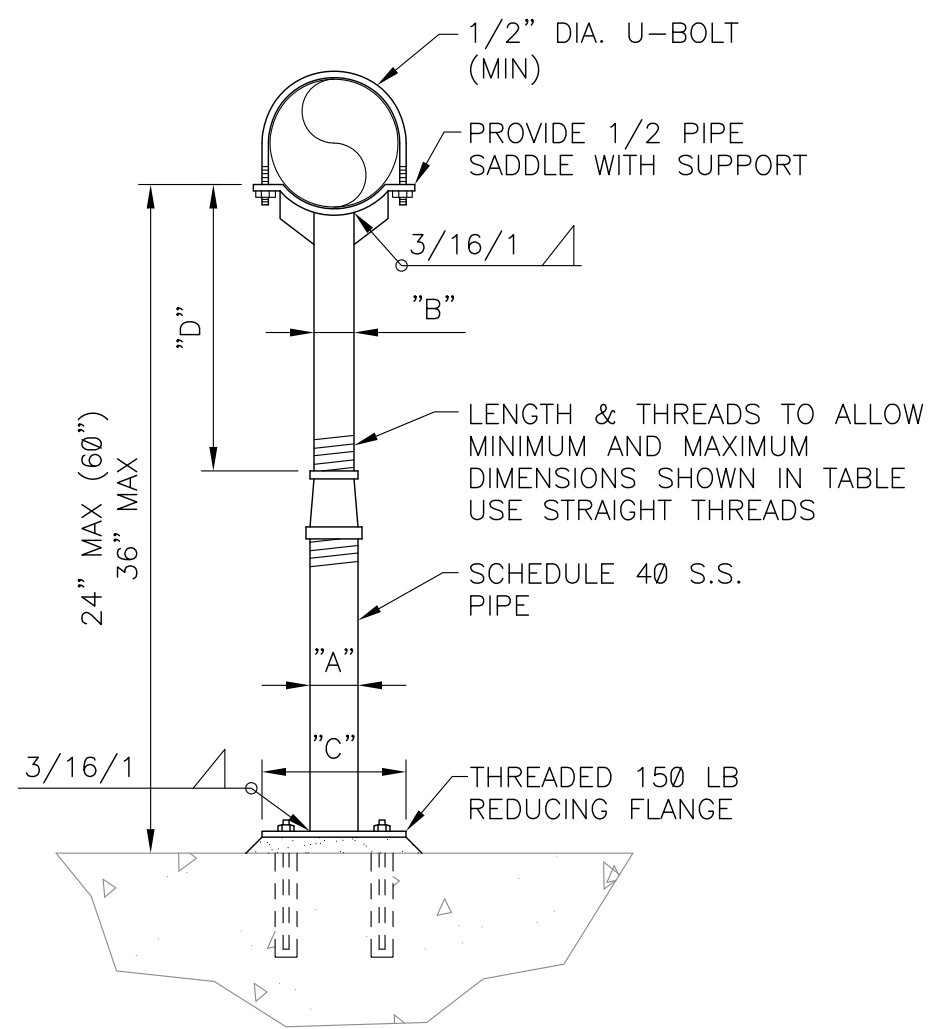
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Revision	Date	Description

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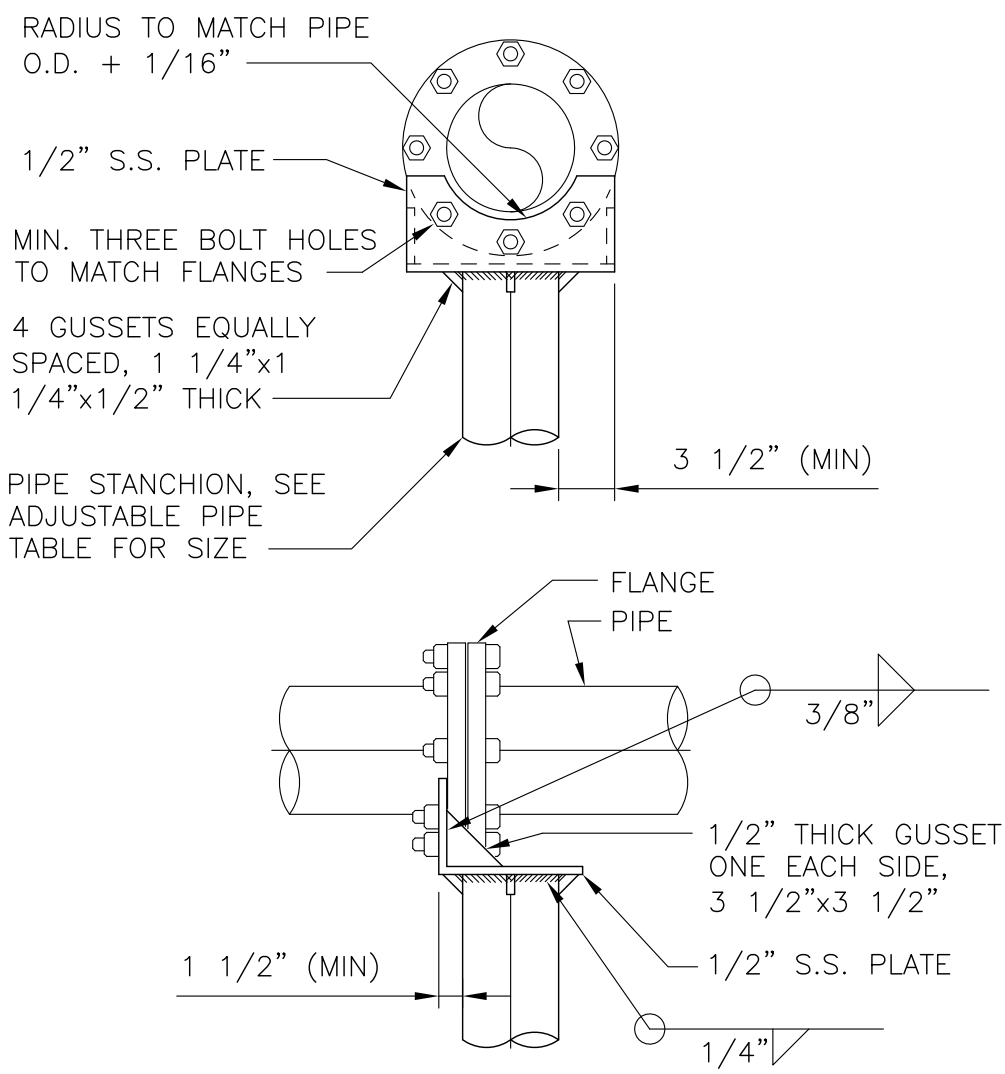
AGENCY REVIEW



ADJUSTABLE PIPE SUPPORT
WITH "U" BOLT

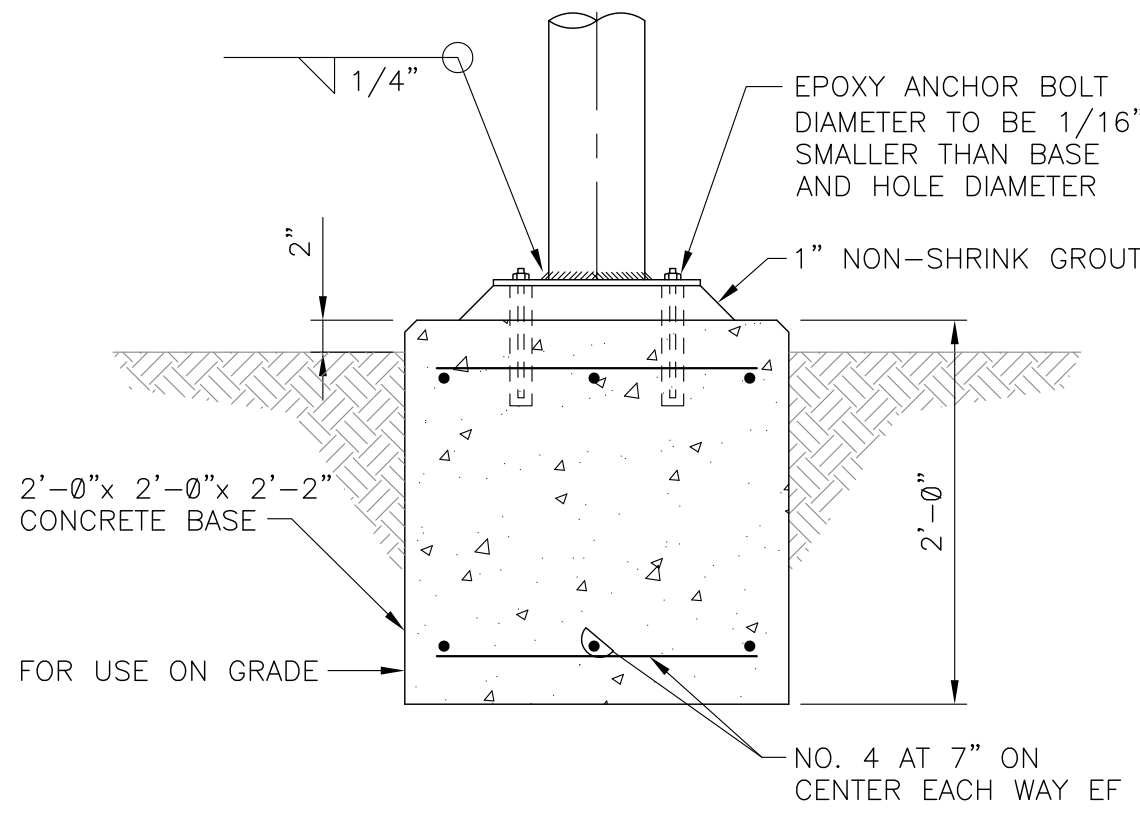
ADJUSTABLE PIPE SUPPORT TABLE DIMENSIONS IN INCHES							
PIPE SIZE	"A"	"B"	"C"	"D"		ANCHORS	
				MINIMUM	MAXIMUM	DIA	EMBED
≤ 2 1/2	2 1/2	1 1/2	9	8	13	5/8	5
3	2 1/2	1 1/2	9	8 1/2	13 1/2	5/8	5
3 1/2	2 1/2	1 1/2	9	8 1/2	13 1/2	5/8	5
4	3	2 1/2	9	9 1/2	14	5/8	5
6	3	2 1/2	9	10 1/2	15 1/2	5/8	5
8	3	2 1/2	9	11 1/2	16 1/2	5/8	5
10	3	2 1/2	9	13 1/2	18 1/2	5/8	5
12	3	2 1/2	9	15	19 1/2	5/8	5
14	4	3	11	16 1/2	20 1/2	3/4	6 5/8
16	4	3	11	17 1/2	22 1/2	3/4	6 5/8
18	6	3 1/2	13 1/2	19 1/2	24	3/4	6 5/8
20	6	3 1/2	13 1/2	21	25 1/2	3/4	6 5/8
24	6	4	13 1/2	23 1/2	28 1/2	3/4	6 5/8
30	6	4	13 1/2	27	31 1/2	3/4	6 5/8

* CONTRACTOR SHALL PROVIDE A 3/16" THICK HARD RUBBER PAD ON HALF PIPE SADDLE.



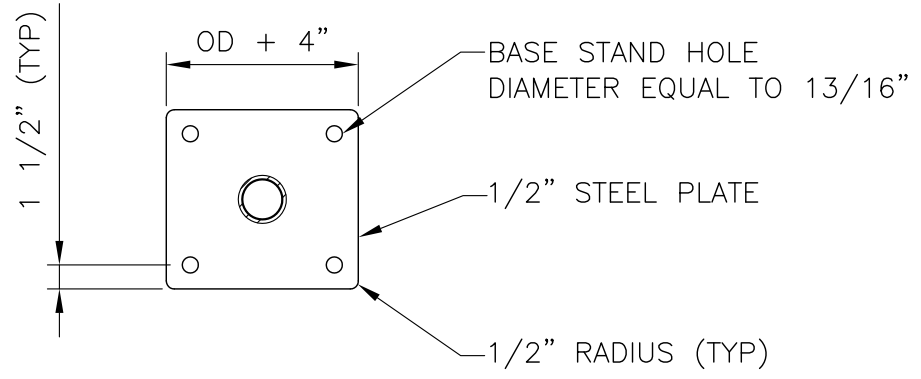
FIXED PIPE SUPPORT
WITH FLANGED SADDLE

DETAIL	401
NOT TO SCALE	-



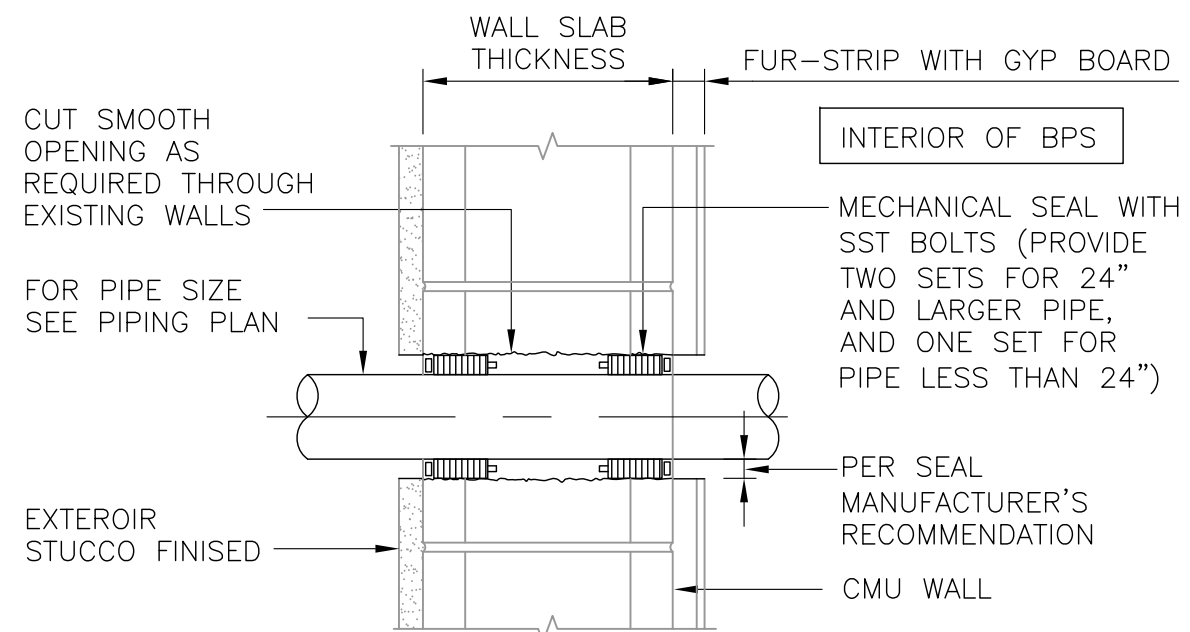
CONCRETE
BASE SUPPORT

PIPE SIZE		MAX LOAD (LBS)
"D"	"A"	
4	2	3000
6	2 1/2	3000
8, 10	4	3700
12, 14, 16	6	4500
18, 20, 24	8	5000



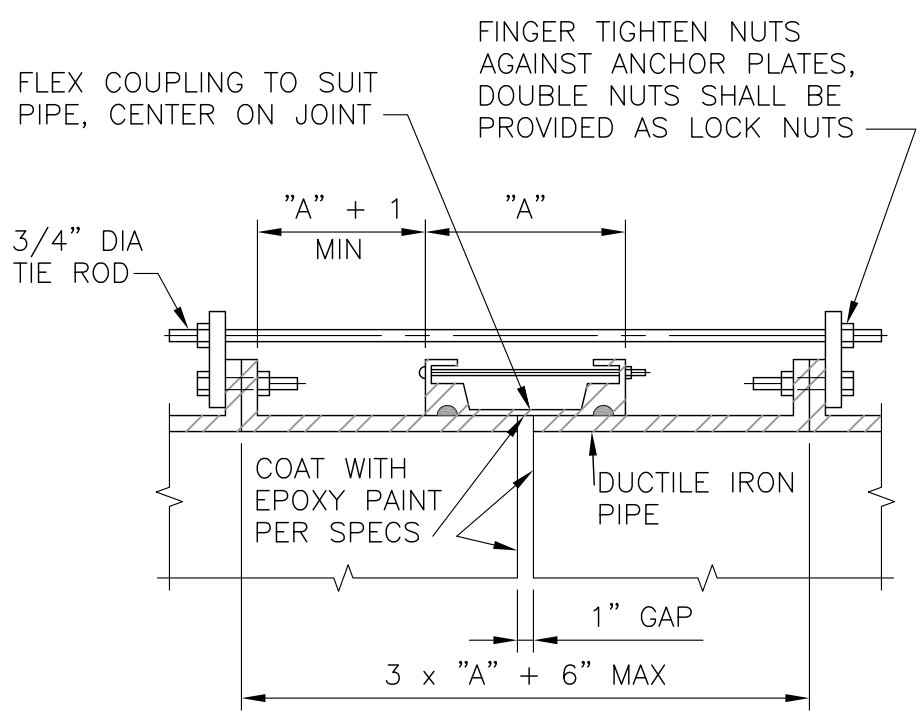
- NOTES:
- HOT-DIP GALVANIZE AFTER FABRICATION.
 - MAXIMUM VERTICAL LOAD-SEE TABLE.

PIPE SUPPORT
FLOOR PLATE



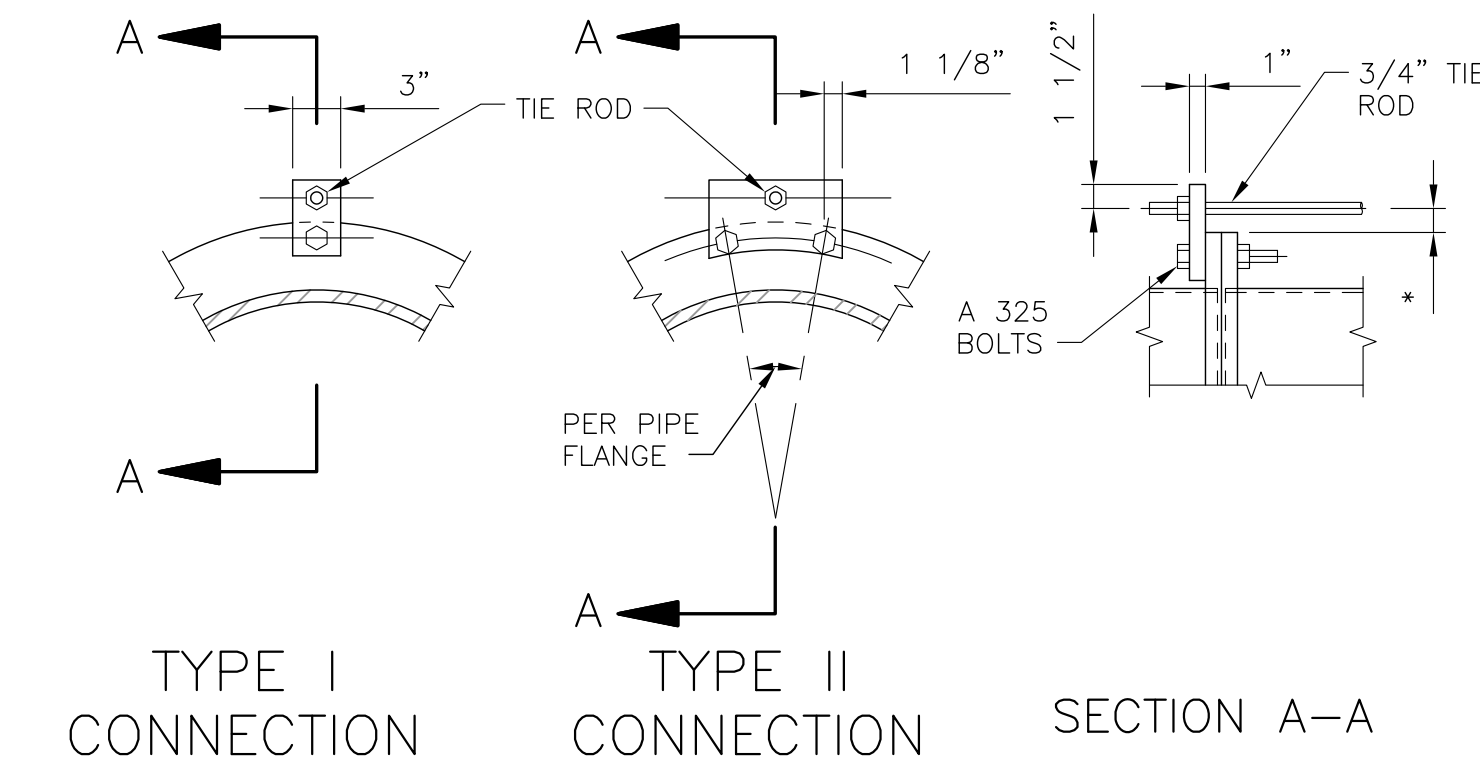
INSTALLATION THROUGH EXISTING WALL
DRY CONDITIONS
FOR PIPES SMALLER THAN 6"

DETAIL	402
NOT TO SCALE	-



ROD SCHEDULE FOR DIP		
PIPE THRUST SEE NOTE 2	TYPE OF CONNECTION	NO RODS
0-6,000#	I	2
6,001-12,000#	II	2
12,001-18,000#	II	3
18,001-24,000#	II	4
24,001-30,000#	II	5

DUCTILE IRON PIPE FLEXIBLE
COUPLING TIE DOWN



TYPE I
CONNECTION

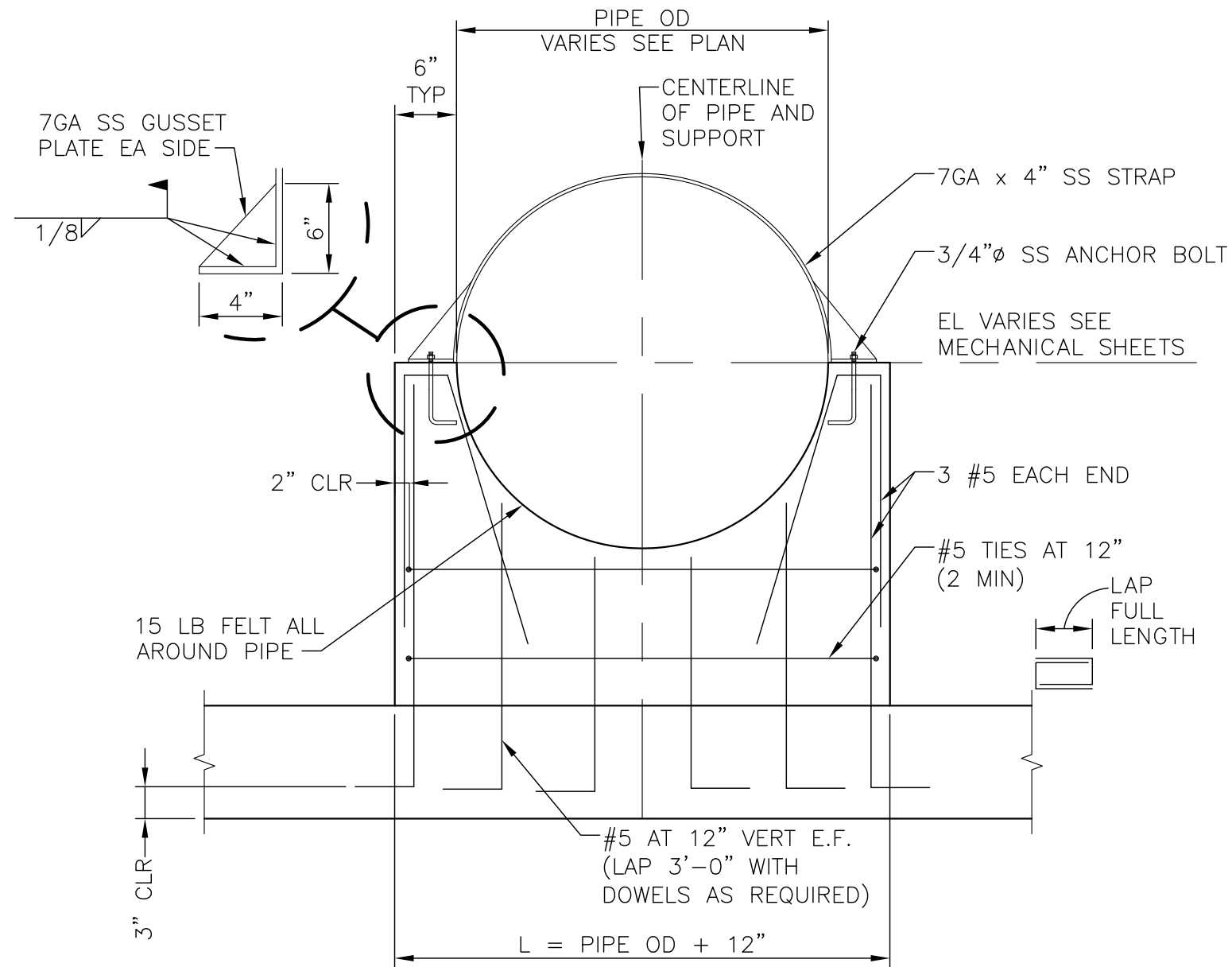
TYPE II
CONNECTION

SECTION A-A

- NOTES:
- ALL EXPOSED FLEXIBLE COUPLINGS SHALL HAVE TIE RODS UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
 - PIPE THRUST SHALL BE BASED ON TEST PRESSURE.
 - PIPE THRUST = $0.7854 \times D^2 \times \text{TEST PRESSURE}$, WHERE D IS PIPE OD.
 - MIN TIE ROD YIELD 48,000 PSI.
 - FOR THRUSTS GREATER THAN 30,000 POUNDS, ADD ONE 3/4 INCH DIAMETER ROD FOR EVERY 6,000 POUNDS INCREASE IN THRUST.
 - CONTRACTOR MAY USE ONE INCH DIA ROD FOR THRUSTS GREATER THAN 30,000 POUNDS. NUMBER OF ONE INCH RODS = NUMBER OF 3/4 INCH RODS $\times 0.5625$. ROUND OFF TO THE NEXT LARGER NUMBER.
 - ALL ROD CONNECTIONS SHALL BE TYPE II FOR THRUSTS GREATER THAN 30,000 POUNDS.
 - GRIND ALL CORNERS SMOOTH.
 - * AS REQUIRED TO CLEAR FLEXIBLE COUPLING (1 1/2" MAX).

DUCTILE IRON PIPE FLEXIBLE
COUPLING TIE DOWN

DETAIL	403
NOT TO SCALE	-



CONCRETE PIPE SUPPORT

DETAIL	404
NOT TO SCALE	-



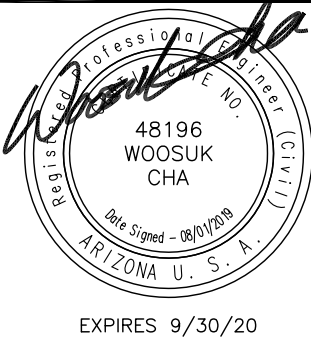
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WILSON
ENGINEERS

EPOR
PARADISE VALLEY PHOENIX INTERCONNECT
INTERCONNECT BOOSTER PUMP STATION (PHASE 2)
TYPICAL DETAILS 4
OWNERS PROJECT No. 1005775
WILSON PROJECT NO. 18015

Design: VKG	Drawn: RFV	Checked: WC
Date: 8/19	Wilson	Project No.: 18015
Revision	Date	Description
		By

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY



Sheet No. M-8

AGENCY REVIEW

XREFS: TB-WE-D; DETAIL-06; DETAIL-08; DETAIL-12; DETAIL-14; DETAIL-21; SEAL-WC