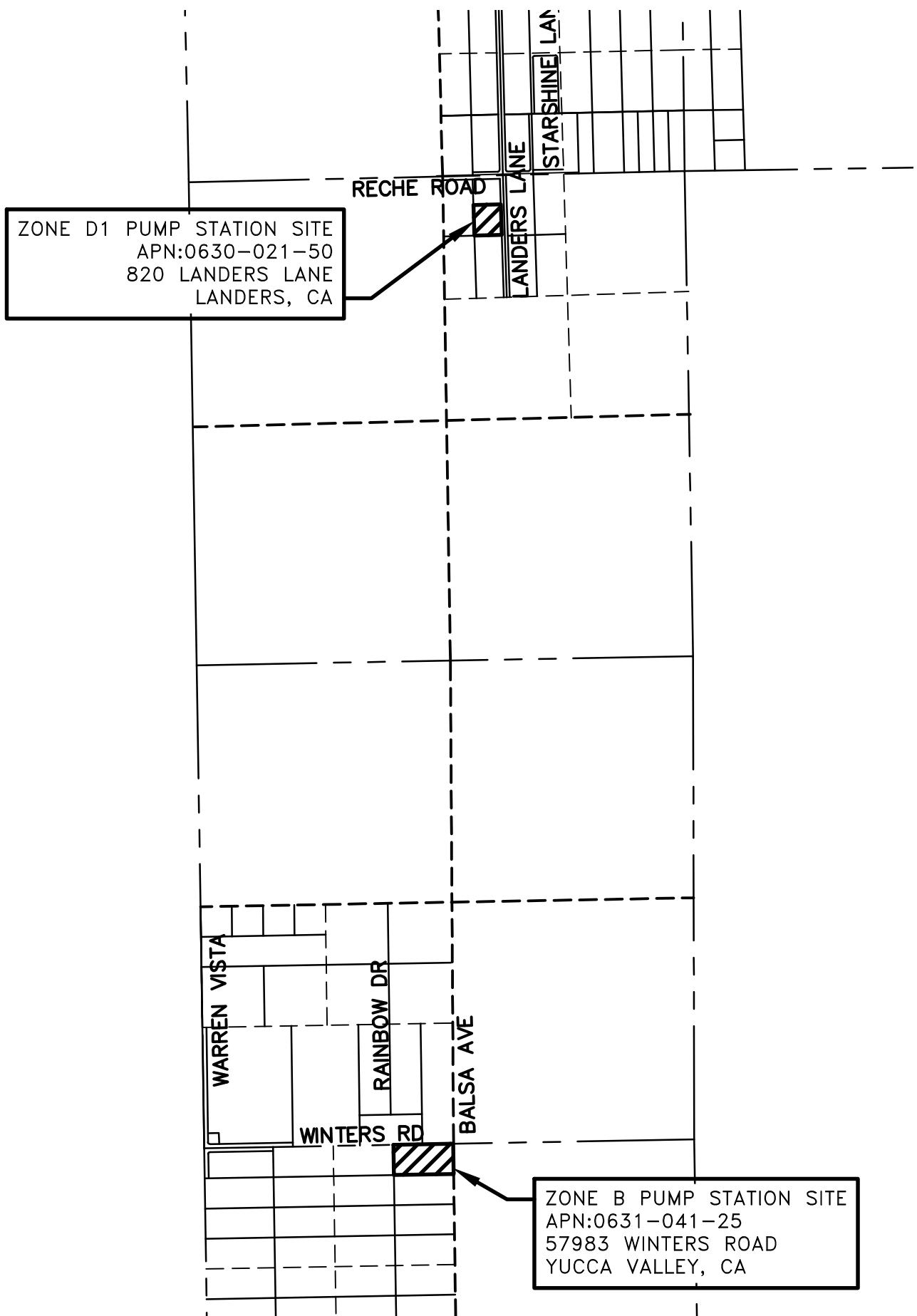


BDVWA WATER SYSTEM IMPROVEMENTS AND CONSOLIDATION PROJECTS

VOLUME 3 OF 3

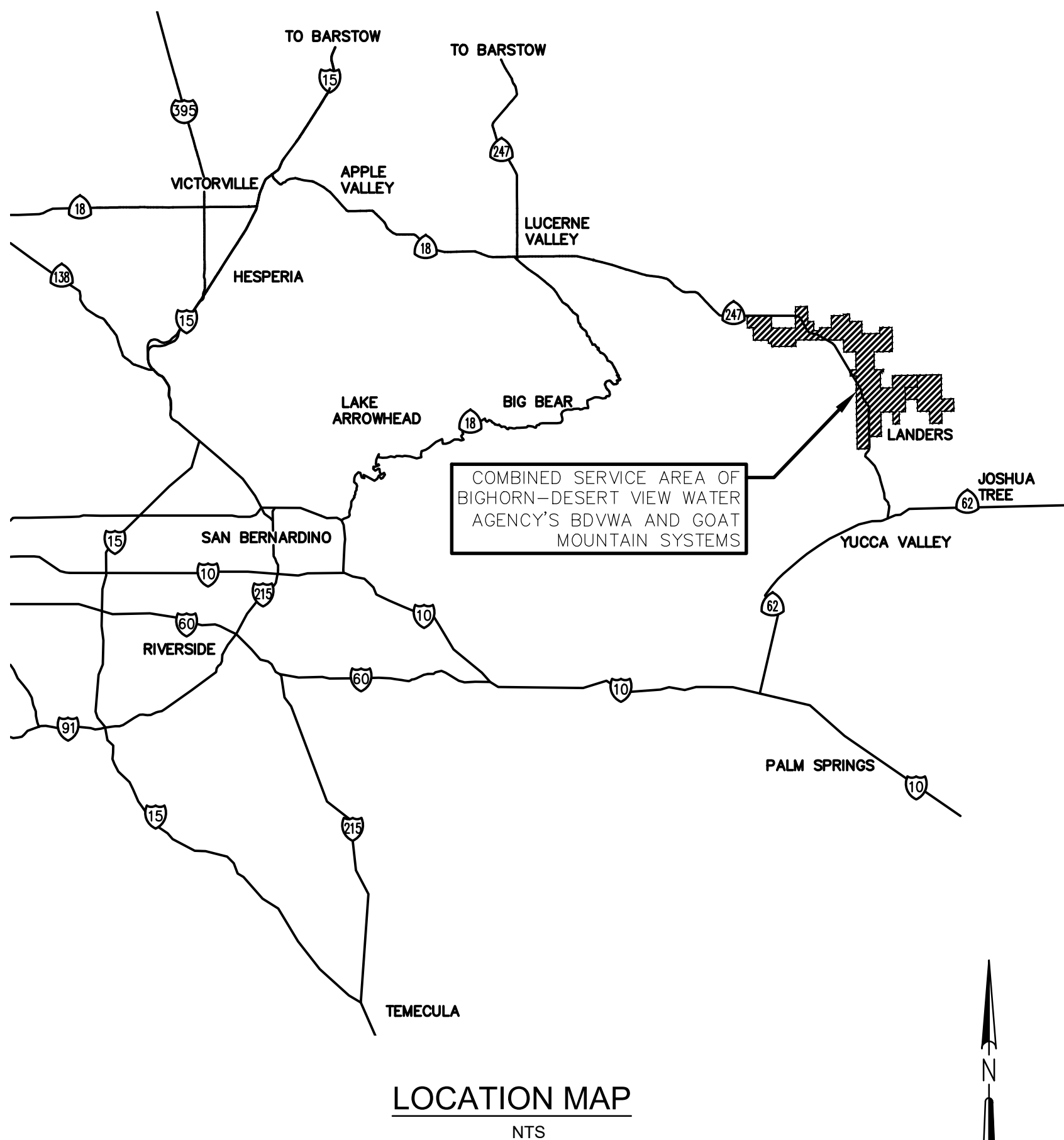
ZONES B AND D1 PUMP STATIONS IMPROVEMENTS 100% DESIGN SUBMITTAL

SHEET INDEX



VICINITY MAP
NTS

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LOCATION MAP
NTS

DIGALERT
CALL AT LEAST SEVEN WORKING DAYS PRIOR TO EXCAVATING
1-800-227-2600
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

THE CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES BY CONTACTING UTILITY UNDERGROUND SERVICE ALERT PRIOR TO ANY EXCAVATING AT 1-800-227-2600

CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF SECTION 310523 FOR ALL POTHOLING.

REVISION
BID SET
DESIGN
J. NELSON
DRAWING
J. NELSON
CHECK
M. CAREY
APPROVED
9/4/2026

REGISTERED PROFESSIONAL ENGINEER
JARED P. NELSON
No. C89673
Exp. 3/31/27
STATE OF CALIFORNIA

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
TITLE SHEET



BIGHORN
Desert View
WATER AGENCY

PROJECT: 072-01C
DATE: SEPTEMBER
DRAWING NUMBER
G-01
1 / 38



**State Water
Resources
Control Board**

GENERAL NOTES

1.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO ORDERING OR FABRICATING ANY MATERIALS AND SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2.

UNLESS OTHERWISE DETAILED, SPECIFIED, OR INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL CONFORM TO THE APPLICABLE TYPICAL DETAILS, GENERAL NOTES AND CURRENT STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA). TYPICAL DETAILS SHALL APPLY EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS
3.

WHERE NO SPECIFIC CONSTRUCTION DETAILS ARE SHOWN OR NOTED, WORK SHALL BE CONSISTENT WITH SIMILAR WORK ELSEWHERE IN THE PROJECT.
4.

THE CONTRACTOR SHALL COORDINATE WITH AGENCY STAFF TO LOCATE ALL EXISTING UNDERGROUND UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION ACTIVITIES TO AVOID IMPACTS TO THE CONSTRUCTION SCHEDULE, SHOULD RELOCATION OR ADJUSTMENT OF UTILITIES BE REQUIRED.
5.

LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION; NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, NOR THAT ALL UTILITIES ARE SHOWN.
6.

PRIOR TO ANY TRENCHING OR CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, EXPOSING, PROTECTING, MAINTAINING, AND COORDINATING AROUND ALL EXISTING UTILITIES, INCLUDING SEWER, STORM DRAIN, WATER, ELECTRIC, COMMUNICATIONS, AND GAS. UTILITIES AND FACILITIES THAT MAY AFFECT CONSTRUCTION---SUCH AS LINE CROSSINGS, PARALLEL UTILITIES, AND PROPOSED CONNECTIONS---SHALL BE FIELD VERIFIED TO ALLOW THE ENGINEER TO CONFIRM UTILITY LOCATION, GRADE, ALIGNMENT, AND APPLICABLE DESIGN ASSUMPTIONS. FIELD CONDITIONS MAY REQUIRE RELOCATION OF EXISTING UTILITIES OR REVISIONS TO THE ALIGNMENT OF PROPOSED IMPROVEMENTS.
7.

ALL DESIGN CHANGES TO THE WATER SYSTEM SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE CHANGE.
8.

THE CONTRACTOR SHALL NOTIFY DIGALERT OF SOUTHERN CALIFORNIA BY CALLING 8_1_1 AT LEAST 48 HOURS PRIOR TO PERFORMING ANY WORK IN THE PUBLIC RIGHT-OF-WAY TO HAVE UNDERGROUND UTILITIES LOCATED.
9.

CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING MONUMENTS AND ANY OTHER SURVEY MARKERS DURING CONSTRUCTION, INCLUDING STAKING BY THE AGENCY'S SURVEYOR. ANY SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10.

ALL EXCESS MATERIAL FROM THE PROJECT IS TO BE REMOVED FROM THE SITE AND DISPOSED UNDER THE AGENCY'S APPROVAL. COST FOR THE REMOVAL AND DISPOSAL OF EXCESS MATERIAL SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
11.

THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT INTERFERE WITH REQUIRED AGENCY OPERATIONS OR EMERGENCY ACCESS. CONTINUOUS ACCESS FOR AGENCY PERSONNEL AND EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL ALSO MAINTAIN UNINTERRUPTED ACCESS TO DRIVEWAYS AND PRIVATE ROADS THROUGHOUT CONSTRUCTION AND SHALL KEEP NON-SKID STEEL PLATES ON SITE TO SAFELY COVER EXPOSED TRENCHES AS NECESSARY TO PROVIDE IMMEDIATE VEHICULAR AND PEDESTRIAN ACCESS.
12.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING EACH PERMIT_ISSUING AGENCY WITHIN THE TIME PERIOD SPECIFIED BY THAT AGENCY PRIOR TO BEGINNING CONSTRUCTION AND SHALL COMPLY WITH ALL APPLICABLE PERMITTING REQUIREMENTS AS SPECIFIED IN THE PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR NOISE, EROSION, AND DUST CONTROL REQUIREMENTS DURING CONSTRUCTION AND SHALL PERFORM ALL CONSTRUCTION ACTIVITIES IN COMPLIANCE WITH STANDARDS ESTABLISHED BY THE LOCAL AIR QUALITY MANAGEMENT DISTRICT FOR AIRBORNE PARTICULATE MATTER. A TRENCH SAFETY PERMIT SHALL BE OBTAINED FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO EXCAVATION OF ANY TRENCH OR CUT WITH VERTICAL OR NEAR-VERTICAL WALLS GREATER THAN FIVE (5) FEET DEEP.
13.

IN THE EVENT THAT ANY REMAINS OF PREHISTORIC OR HISTORIC HUMAN ACTIVITIES ARE ENCOUNTERED DURING PROJECT-RELATED ACTIVITIES, WORK IN THE IMMEDIATE VICINITY OF THE FINDS SHALL HALT AND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT SUPERINTENDENT AND THE AGENCY. WORK SHALL NOT RESUME UNTIL A QUALIFIED ARCHAEOLOGIST OR HISTORIC ARCHAEOLOGIST, AS APPROPRIATE, HAS EVALUATED THE FINDINGS AND MADE RECOMMENDATIONS FOR TREATMENT OF THE RESOURCE, AND SUCH RECOMMENDATIONS ARE CARRIED OUT. IF HUMAN BURIAL REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL ALSO CONTACT THE COUNTY CORONER.
14.

UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING PIPELINES SHALL BE MADE DRY. THE TIME AND DURATION OF ANY SHUTDOWNS OF EXISTING MAINS SHALL BE SUBJECT TO OWNER APPROVAL. THE OWNER SHALL BE NOTIFIED A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE OF ANY SHUTDOWN. SYSTEM VALVES SHALL BE OPERATED BY OWNER'S FORCES ONLY. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ALL ARRANGEMENTS FOR HIGH LINING AND TEMPORARY SERVICES PRIOR TO SHUTDOWNS. NO SHUTDOWNS SHALL BE SCHEDULED ON MONDAYS, FRIDAYS, WEEKENDS, OR HOLIDAYS.
15.

NO WORK SHALL BEGIN OR PROCEED WITHOUT THE DIRECTION OF THE OWNER'S INSPECTOR. THE CONTRACTOR SHALL NOTIFY THE OWNER'S INSPECTOR A MINIMUM OF FORTY- EIGHT (48) HOURS PRIOR TO THE START OF WORK TO ARRANGE FOR INSPECTION.
16.

CONTRACTOR SHALL TIE OFF ALL VALVE LOCATIONS AND PROVIDE WRITTEN DIMENSIONS TO INSPECTOR IMMEDIATELY UPON INSTALLATION OF VALVES.
17.

THE WATER SYSTEM, INCLUDING PIPELINES AND APPURTENANCES, SHALL BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OF THE PROJECT SPECIFICATIONS PRIOR TO TIE-IN OR CONNECTION TO EXISTING SYSTEM FACILITIES. BACTERIOLOGIC QUALITY TEST RESULTS SHALL CONFORM TO THE CRITERIA SPECIFIED IN THE PROJECT SPECIFICATIONS.
18.

CONNECTIONS TO EXISTING ASBESTOS CEMENT PIPE SHALL BE MADE AS SPECIFIED IN THE SPECIFICATION.
19.

CONSTRUCTION SEQUENCING AND FACILITY SHUTDOWN LIMITATIONS ARE ESSENTIAL TO THE EXECUTION OF THE WORK. SEE PROJECT SPECIFICATIONS.
20.

THE CONTRACTOR SHALL REFER TO PREVIOUS RECORD DRAWINGS FOR ADDITIONAL INFORMATION RELEVANT TO EXISTING UTILITIES.
21.

THE CONTRACTOR SHALL REFER TO PREVIOUS RECORD DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO EXISTING UTILITIES. CONTRACT RECORD DRAWINGS SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF THE WORK AND SHALL PROVIDE POST-CONSTRUCTION VERIFICATION OF THE LOCATION AND ELEVATION OF PIPES AND APPURTENANCES. THE CONTRACTOR SHALL ABIDE BY ALL GUARANTEES AND WARRANTIES PROVIDED IN THE PROJECT SPECIFICATIONS.
22.

THE CONTRACTOR SHALL INSPECT THE SITE PRIOR TO BIDDING TO DETERMINE THE EXTENT OF DEMOLITION WORK AND SITE CONDITIONS AND SHALL INCLUDE ALL NECESSARY WORK IN THE BID. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, RESTORING, OR REPLACING ANY PAVEMENT AND GRAVEL ACCESS ROUTES DAMAGED BY CONSTRUCTION ACTIVITIES OR TRAFFIC, AND THE BID SHALL INCLUDE ALL SUCH COSTS. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCTION, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY.

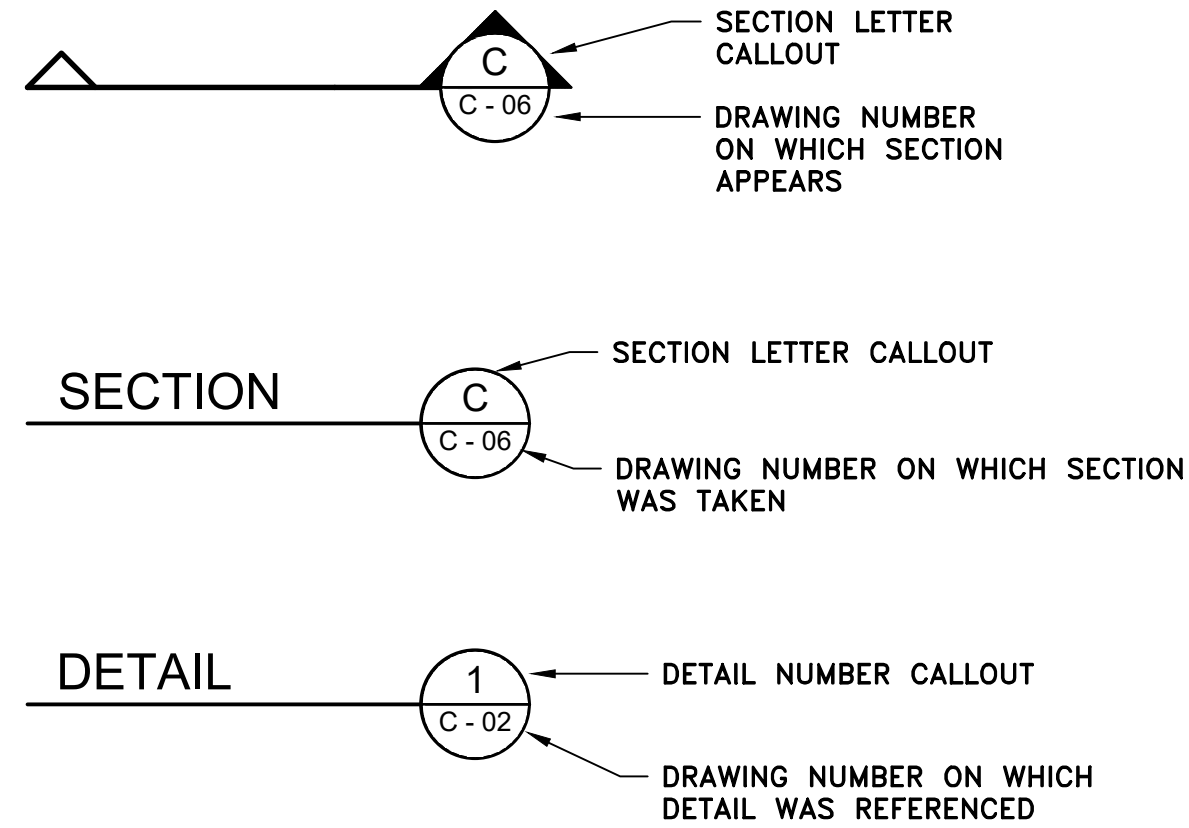
ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASBESTOS CEMENT
ALT	ALTERNATE
ANG	ANGLE
APPROX	APPROXIMATE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BDVWA	BIGHORN-DESERT VIEW WATER AGENCY
BF	BLIND FLANGE
CA	CALIFORNIA
CAV	COMBINATION AIR AND VACUUM VALVE
CL	CENTERLINE
CONC	CONCRETE
CONN	CONNECT/CONNECTION
CMP	CORRUGATED METAL PIPE
CY	CUBIC YARDS
CMRS	COUNTY MAINTENANCE ROAD SYSTEM
CP	CONTROL POINT
CS	CONTRACT SPECIFICATIONS
CTF	CUT TO FIT
DEFL	DEFLECTION
DEG	DEGREE
DEMO	DEMOLISH/DEMOLITION
DET	DETAIL
DI, DIP	DUCTILE IRON, DUCTILE IRON PIPE
DIPS	DUCTILE IRON PIPE SIZE
DIA	DIAMETER
DWG(S)	DRAWING(S)
DWY	DRIVEWAY
E	EAST
EA	EACH
EG	EXISTING GRADE
ELEC	ELECTRIC
EOP	EDGE OF PAVEMENT
ETW	EDGE OF TRAVEL WAY
EX	EXISTING
FCA	FLANGED COUPLING ADAPTER
FG	FINISHED GRADE
FLG	FLANGE
FO	FIBER OPTIC
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FT (OR ')	FEET
F&I	FURNISH AND INSTALL
G	GAS
GMS	GOAT MOUNTAIN SYSTEM
GV	GATE VALVE
H, HORIZ	HORIZONTAL
HDG	HOT DIP GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN (OR ")	INCHES
LF	LINEAR FEET
MAX	MAXIMUM
MFG	MANUFACTURER
MIN	MINIMUM
MIP	MALLEABLE IRON PIPE
MJ	MECHANICAL JOINT
N	NORTH
No./#	NUMBER
NTS	NOT TO SCALE
O.D.	OUTSIDE DIAMETER
OH	OVERHEAD
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PE	PLAIN END
PH	POT HOLE
PI	POINT OF INTERSECTION
PIP	PROTECT IN PLACE
PL	PROPERTY LINE
PO	PUSH ON
PP	POWER POLE
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PWR	POWER
RAD	RADIUS
ROW	RIGHT OF WAY
S	SLOPE, SOUTH
S.B.CO.	SAN BERNARDINO COUNTY
SBCFCD	S.B.CO. FLOOD CONTROL DISTRICT
SBCSD	SAN BERNARDINO COUNTY SPECIAL DISTRICTS
SCE	SOUTHERN CALIFORNIA EDISON
SF	SQUARE FEET
SFT	SURVEY FEET
SHT	SHEET
SPEC(S)	SPECIFICATION(S)
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
SWG	SOUTHWEST GAS
SV	SPOT ELEVATION
TB	THRUST BLOCK
TEL/TELCO	TELEPHONE/TELECOMMUNICATION
TOC	TOP OF CURB
TOP	TOP OF PIPE, TOP OF SLOPE
TYP	TYPICAL
U.S.A.	UNITED STATES OF AMERICA
W	WEST, WATER

LEGEND

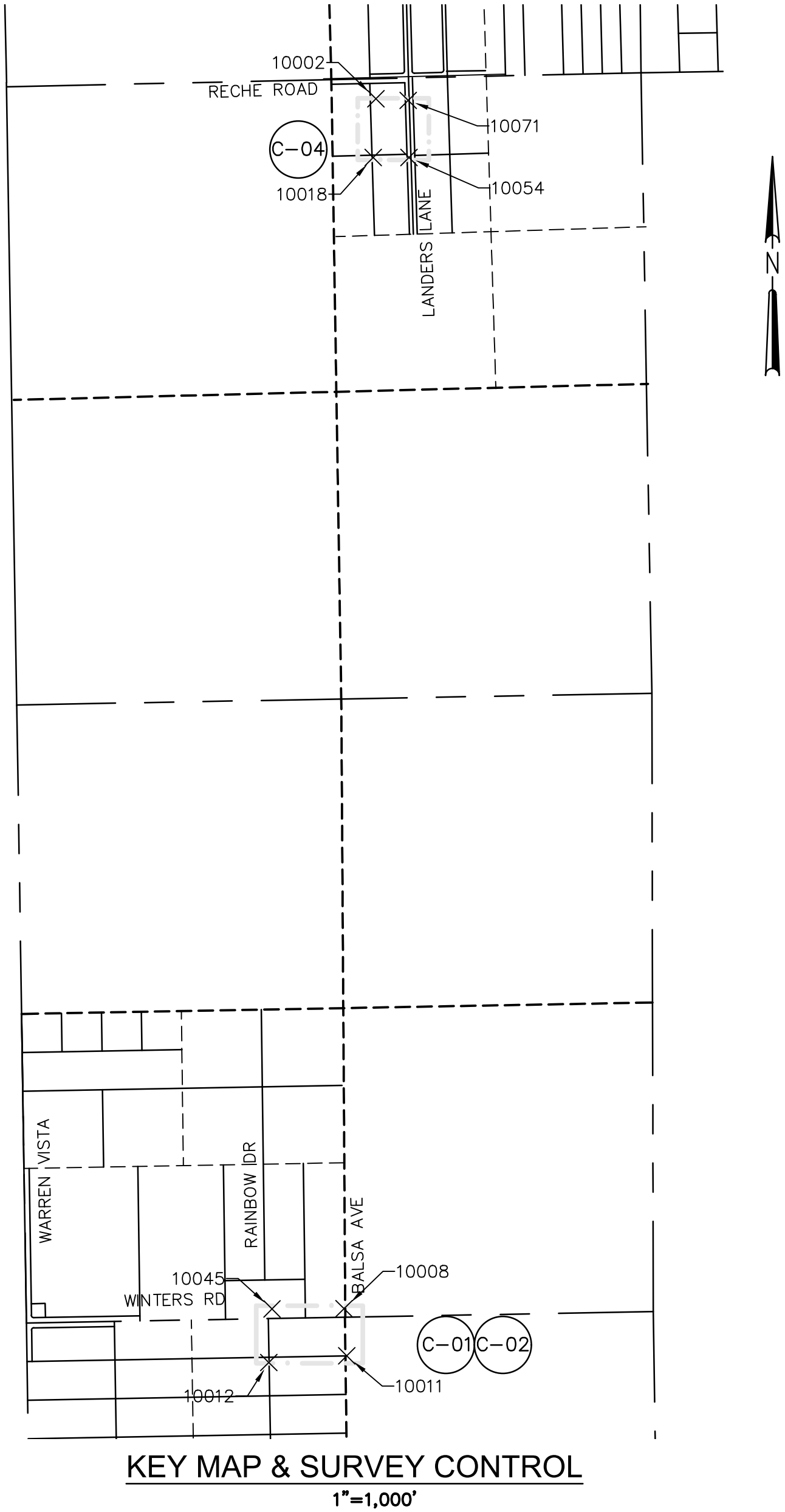
EX. MONUMENT	
EX. WATER VALVE	
EX. WATER METER	
EX. FIRE HYDRANT	
EX. POWER POLE	
EX. WIRE FENCE	
EX CENTERLINE	
EX. RIGHT OF WAY	
EX. EASEMENT	
EX. WATER LINE	
EX. ELECTRICAL CONDUIT	
EX SECTION LINE	
EX. 1/4 SECTION LINE	
EX. LOT LINE	
EX. TELECOMMUNICATIONS LINE	
EX. OVERHEAD ELECTRIC LINE	
PROPOSED EASEMENT	
PROPOSED PIPELINE	
PROPOSED TELCO CONDUIT	
PROPOSED WATER VALVE	
PROPOSED BLOW-OFF ASSEMBLY	
PROPOSED COMBINATION AIR AND VACUUM VALVE	
PROPOSED DRY BARREL FIRE HYDRANT	
BIGHORN-DESERT VIEW WATER AGENCY SERVICE AREA	
JOSHUA TREE	

SECTION AND DETAIL DESIGNATION



CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
10002	1922881.854	7046862.007	3089.846	CP 2X2IN HUB & TACK
10008	1912514.21	7046589.539	3264.559	CP HUB TACK FX-1
10011	1912109.672	7046612.747	3270.679	CP HUB TACK FX-3
10012	1912052.602	7045943.89	3288.389	CP HUB TACK FX-4
10018	1922379.185	7046839.342	3100.341	CP HUB TACK FX-9 NOR COR
10045	1912511.162	7045971.834	3287.556	SV
10054	1922378.919	7047145.659	3099.886	AC
10071	1922867.722	7047138.696	3091.501	AC



BASIS OF COORDINATES

THE COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 AND ARE EXPRESSED IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE V, AT EPOCH 2010 AND ARE BASED ON NGS OPUS SOLUTION AT CONTROL POINT #10000, ESTABLISHED FROM CALIFORNIA CORs STATIONS "P600" (DN7434), "BMHL" (DK6384), AND "P603" (DM7569).

POINT #10000 VALUE = N-1922846.36SFT, E-7046901.24SFT.

BASIS OF BEARINGS

BEARINGS ARE REFERENCED TO GRID NORTH AS DEFINED BY THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE V.

BASIS OF ELEVATION

ELEVATION ARE REFERENCED TO NAVD88 AS DETERMINED BY THE ABOVE-DESCRIBED OPUS SOLUTION AT CONTROL POINT #10000, WITH THE PUBLISHED ELEVATION OF 3090.143SFT (NAVD88 DATUM).

DATE OF INITIAL SURVEY

APRIL 2019 BY NV5

GEOTECHNICAL INVESTIGATION REPORT

GEOTECHNICAL INVESTIGATION REPORT NV5 WEST (NV5)
BIGHORN-DESERT VIEW WATER AGENCY
WATER SYSTEM IMPROVEMENTS
LANDERS, CALIFORNIA
PROJECT NO. 226815-0000025.07
DATED: NOVEMBER 14, 2019

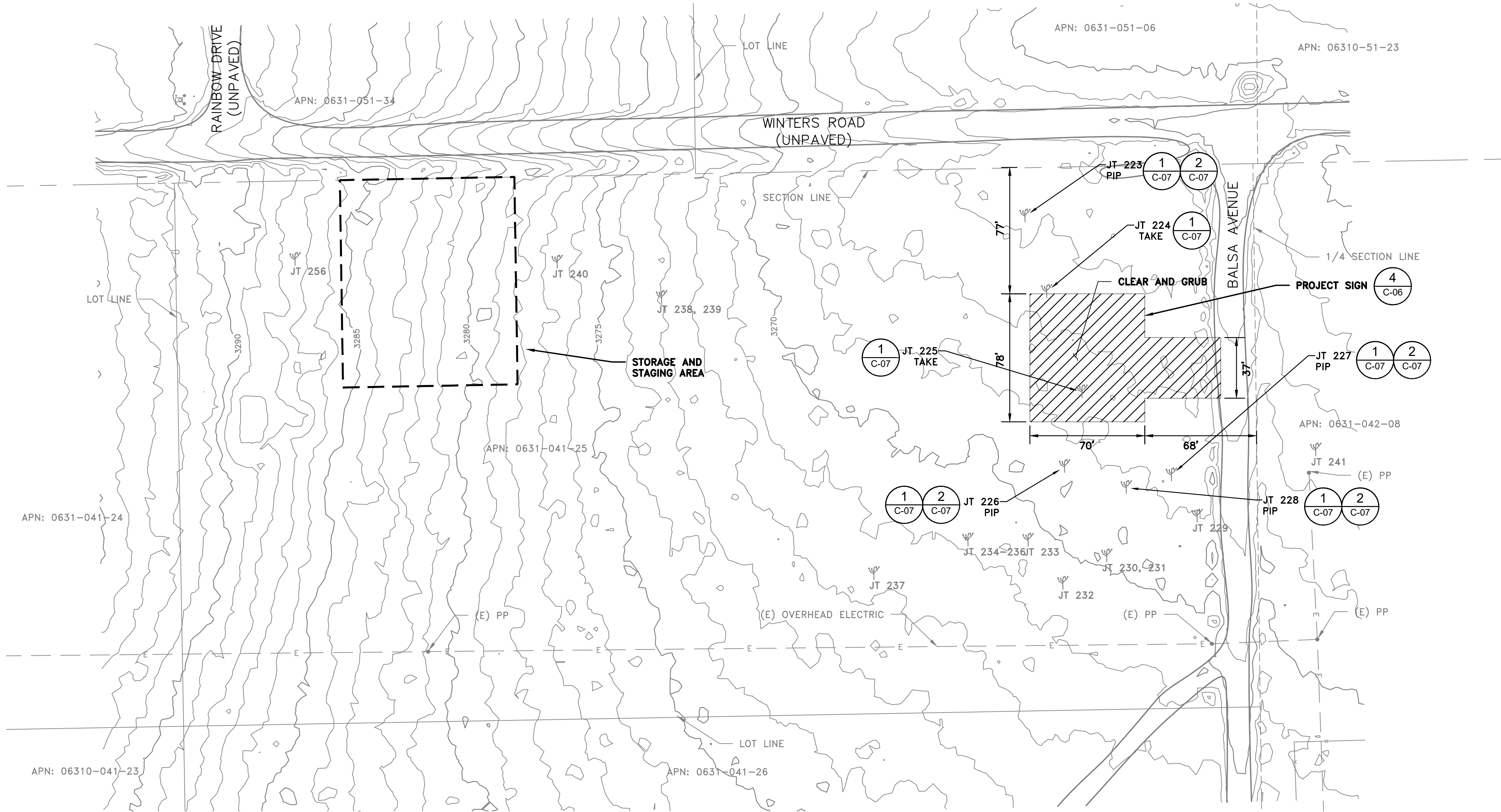
REVISION
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CHECK
M. CAREY
APV
9/4/2026

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS IMPROVEMENTS

NOTES, ABBREVIATIONS, BASIS OF BEARINGS



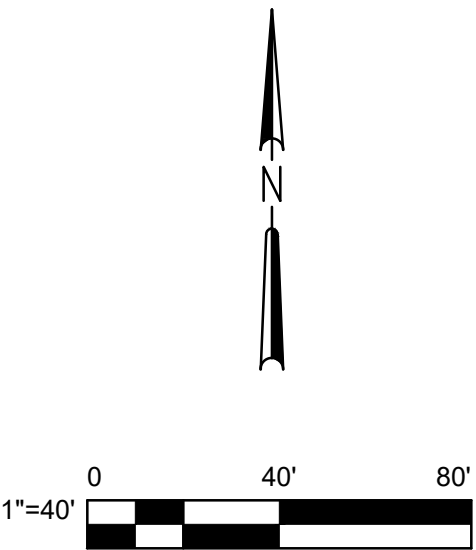
PROJECT:	072-01C
DATE:	SEPTEMBER
DRAWING NUMBER	
G-02	
2 / 38	



EXISTING SITE PLAN
SCALE 1"=40'

GENERAL SHEET NOTES

1. THE CONTRACTOR SHALL LIMIT ALL WORK, DISTURBANCE, STAGING, AND SPOILS STOCKPILING TO THE PUBLIC R/W AND RECORDED EASEMENT LIMITS SHOWN. NO OFF-EASEMENT ACCESS OR DISTURBANCE ON PRIVATE PROPERTY IS PERMITTED WITHOUT WRITTEN AUTHORIZATION AND/OR OBTAINING SEPARATE TEMPORARY RIGHTS.
2. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE WESTERN JOSHUA TREE CONSERVATION ACT INCIDENTAL TAKE PERMIT NO. 1927-ITP-2026-009-06:
 - A. THE CONTRACTOR SHALL NOT DISTURB, TRIM, RELOCATE, OR ENCROACH INTO THE APPROVED NO-DISTURBANCE BUFFER AROUND ANY WESTERN JOSHUA TREE OR PROTECTED JOSUA TREE, EXCEPT WHERE SPECIFICALLY AUTHORIZED ON THE PLANS OR IN WRITING BY THE ENGINEER AND PROJECT BIOLOGIST.
 - B. NO GRADING, EXCAVATION, SPOILS, EQUIPMENT PARKING, REFUELING, OR MATERIAL STORAGE WITHIN FENCED TREE PROTECTION ZONES.
 - C. REMOVAL OF ANY WESTERN JOSHUA TREE AUTHORIZED FOR TAKE SHALL BE PERFORMED OR DIRECTLY SUPERVISED BY A DESERT NATIVE PLANT SPECIALIST IN ACCORDANCE WITH THE PROJECTS WJCA ITP. DISPOSAL OR RETENTION OF TREE MATERIAL SHALL CONFORM TO PERMIT CONDITIONS; NO POSSESSION OR USE OF TREE MATERIAL BY CONTRACTOR OR ITS EMPLOYEES IS ALLOWED EXCEPT AS EXPRESSLY AUTHORIZED.



REVISION
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DESN
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CHECK
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9/4/2026
REGISTERED PROFESSIONAL ENGINEER JARED P. NELSON No. C89673 Exp. 3/31/27 STATE OF CALIFORNIA

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS EXISTING SITE PLAN



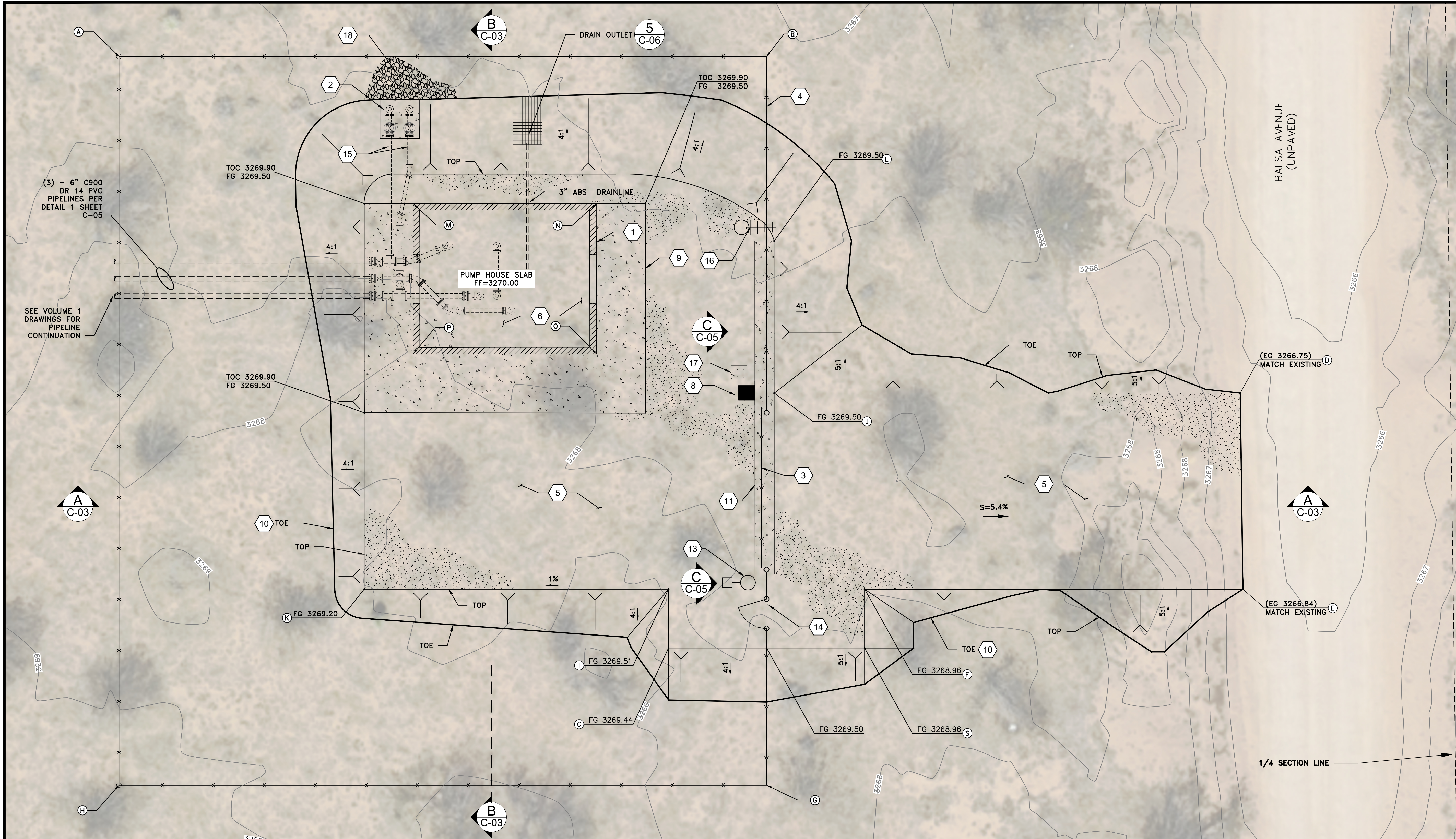
PROJECT: 072-01C

DATE:

SEPTEMBER

DRAWING NUMBER

C-01
3 / 38



COORDINATE TABLE					
NO	NORTHING	EASTING	NO	NORTHING	EASTING
(A)	1912360.145	7046462.936	(J)	1912325.828	7046529.755
(B)	1912360.161	7046528.972	(K)	1912305.828	7046487.944
(C)	1912299.824	7046518.972	(L)	1912341.352	7046529.755
(D)	1912325.828	7046577.274	(M)	1912345.161	7046492.944
(E)	1912305.828	7046577.542	(N)	1912345.161	7046511.611
(F)	1912305.823	7046538.972	(O)	1912329.828	7046511.611
(G)	1912285.828	7046528.972	(P)	1912329.828	7046492.944
(H)	1912285.828	7046462.944	(S)	1912299.825	7046538.972
(I)	1912305.823	7046518.973			

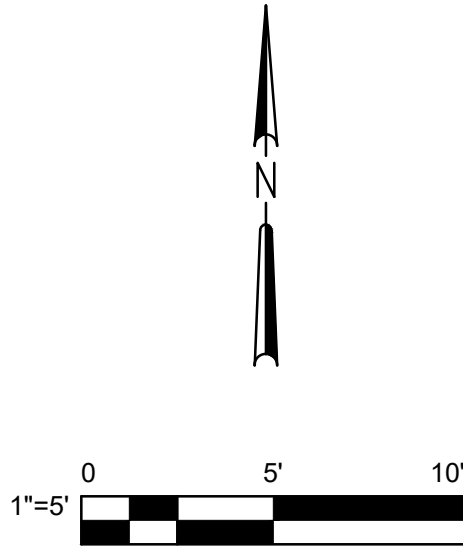
SHEET KEYNOTES

- CMU PUMP HOUSE BUILDING SEE STRUCTURAL SHEETS.
- FLUSHOUT ASSEMBLY PER DETAIL 2 SHEET C-06.
- SOLAR POWERED INDUSTRIAL CHAIN LINK SLIDING GATE PER SHEET C-05 DETAIL 3.
- SITE FENCING PER SHEET C-05 DETAIL 3.
- 6-IN THICK DECOMPOSED GRANITE DRIVEWAY 90% RC.
- BUILDING FOUNDATION SEE STRUCTURAL DRAWINGS.
- LIGHT POLE, SEE ELECTRICAL DRAWINGS
- CONCRETE PAD FOR SLIDE GATE OPERATOR, SHEET C-05 DETAIL 3.
- SIDEWALK AND LANDINGS SEE SHEET S-01.
- LIMIT OF GRADING
- REINFORCED CONCRETE STRIP UNDER GATE PATH, SEE SHEET C-05 DETAIL 3.

- DRAIN PIPE OUTLET, SEE DETAIL 5 SHEET C-07
- AREA LIGHT, W/ SWITCH, SEE ELECTRICAL SHEETS
- 3 FOOT WIDE MAN GATE W/ LOCKABLE HATCH
- 4" DR 14 C900 PVC PIPE, RESTRAIN ALL JOINTS
- ANTENNA MAST, SEE ELECTRICAL SHEETS
- GATE SOLAR PANEL THIS LOCATION
- CLASS 2 ROCK SLOPE PROTECTION (RSP) PER CALTRANS STANDARD SPECIFICATION SECTION 72-2, INCLUDING FILTER FABRIC AND MINIMUM 6-INCH BEDDING LAYER

GENERAL SHEET NOTES

- COORDINATE ALL UTILITIES WITH ELECTRICAL SHEETS.
- DISINFECT ALL POTABLE WATER PIPING PER CS 15140
- PRESSURE TEST ALL POTABLE WATER PIPING PER CS 15042
- COORDINATE SITE PIPING WITH MECHANICAL SHEETS
- SEE STRUCTURAL SHEETS FOR SLAB AND BUILDING DIMENSIONS



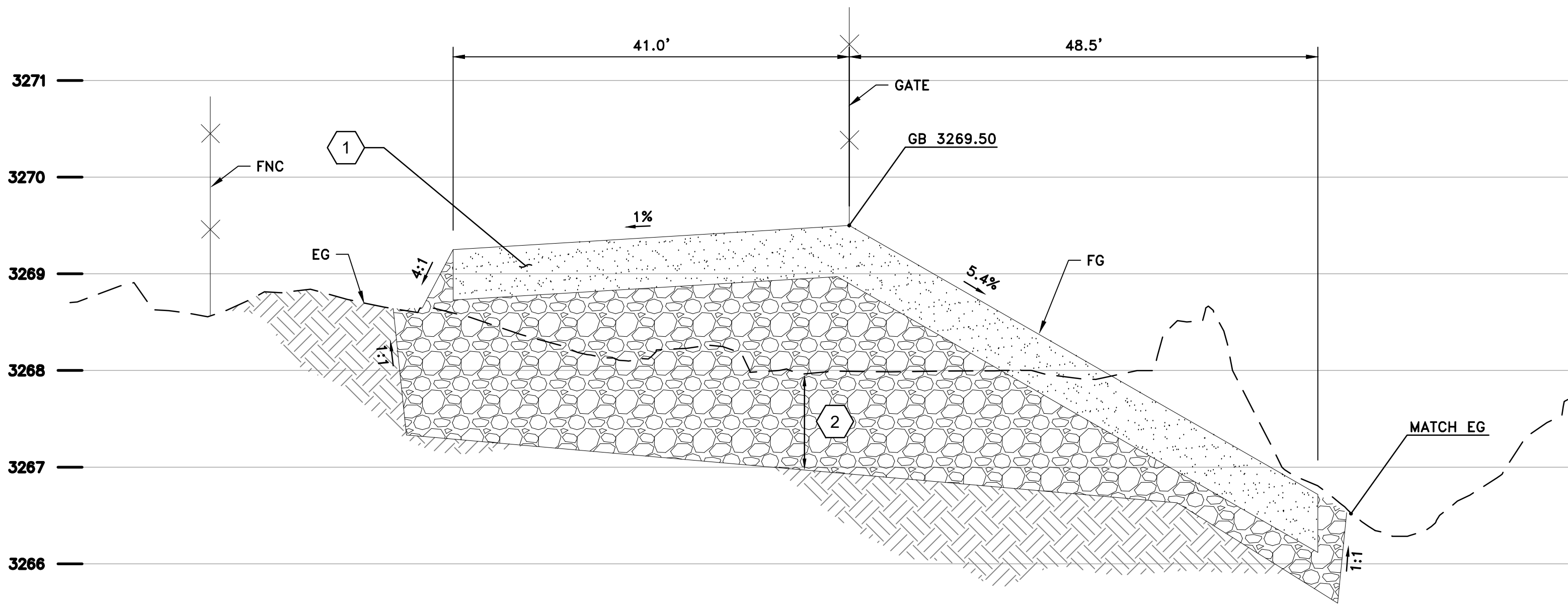
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APPROVED
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VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
ZONE B PS SITE PLAN

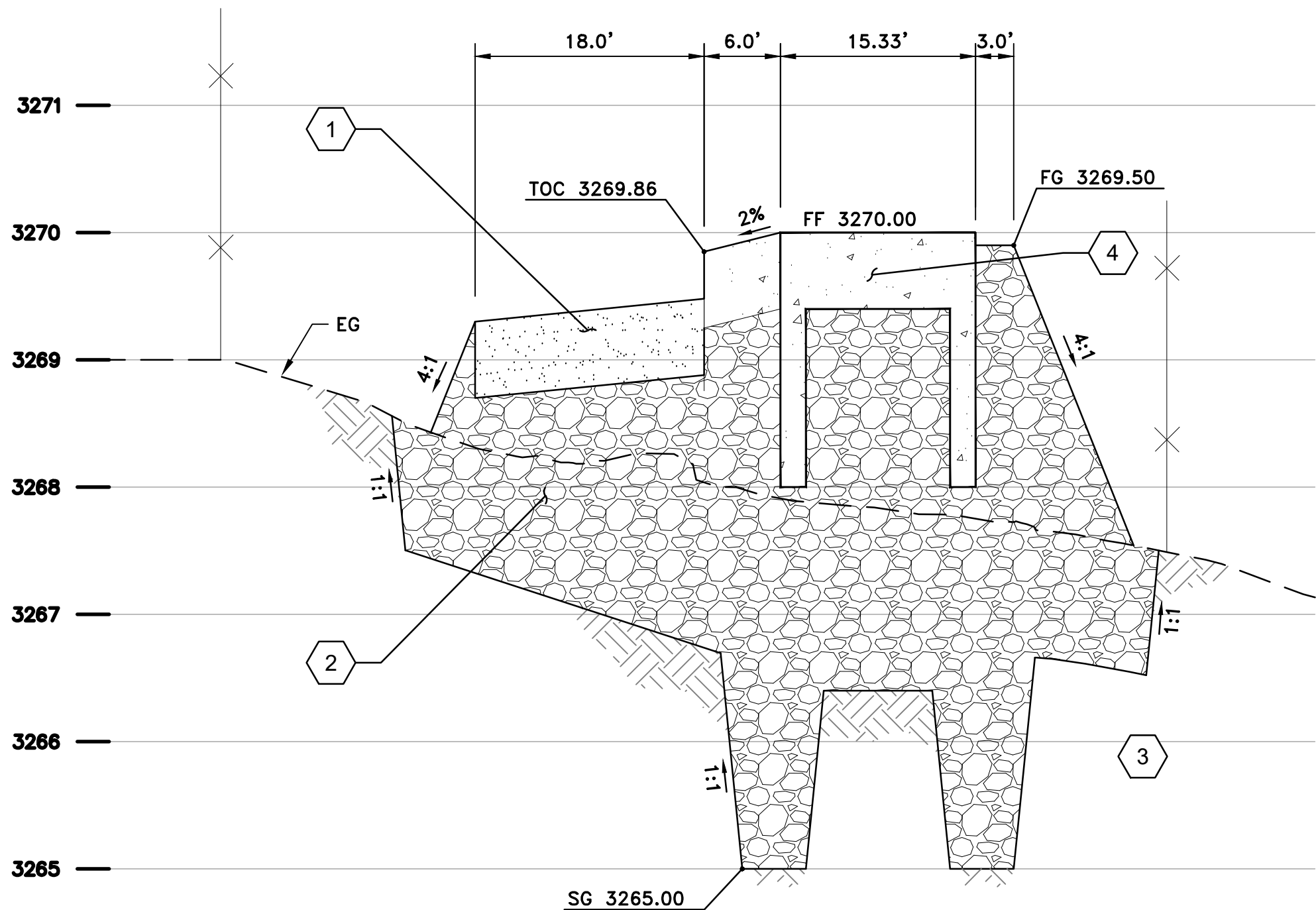


BIGHORN
Desert View
WATER AGENCY

PROJECT: 072-01C
DATE: SEPTEMBER
DRAWING NUMBER
C-02
4 / 38



A SECTION
C-02
HORZ SCALE: 1"=10'
VERT SCALE: 1"=1'



B SECTION
C-02
HORZ SCALE: 1"=10'
VERT SCALE: 1"=1'

GENERAL SHEET NOTES

1. ALL GRADING SHALL CONFORM TO THE LATEST CALIFORNIA BUILDING CODE (CBC) CHAPTERS 17, 18, APPENDIX-J AND ALL APPLICABLE SECTIONS.
2. CONTRACTOR SHALL REFER AND ADHERE TO THE RECOMMENDATIONS AND REQUIREMENTS OF THE GEOTECHNICAL REPORT 'GEOTECHNICAL INVESTIGATION REPORT, BIGHORN-DESERT VIEW WATER AGENCY, WATER SYSTEM IMPROVEMENTS, LANDERS, CALIFORNIA', DATED NOVEMBER 14, 2019, PREPARED BY NV5.
3. AREAS TO RECEIVE FILL AND/OR SURFACE IMPROVEMENTS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES, BROUGHT TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AND COMPACTED TO AT LEAST 90% RELATIVE COMPACTION.
4. GRADED SLOPES SHALL BE CONSTRUCTED AT A GRADIENT OF 2:1 (HORIZONTAL:VERTICAL) OR FLATTER.

KEYNOTES

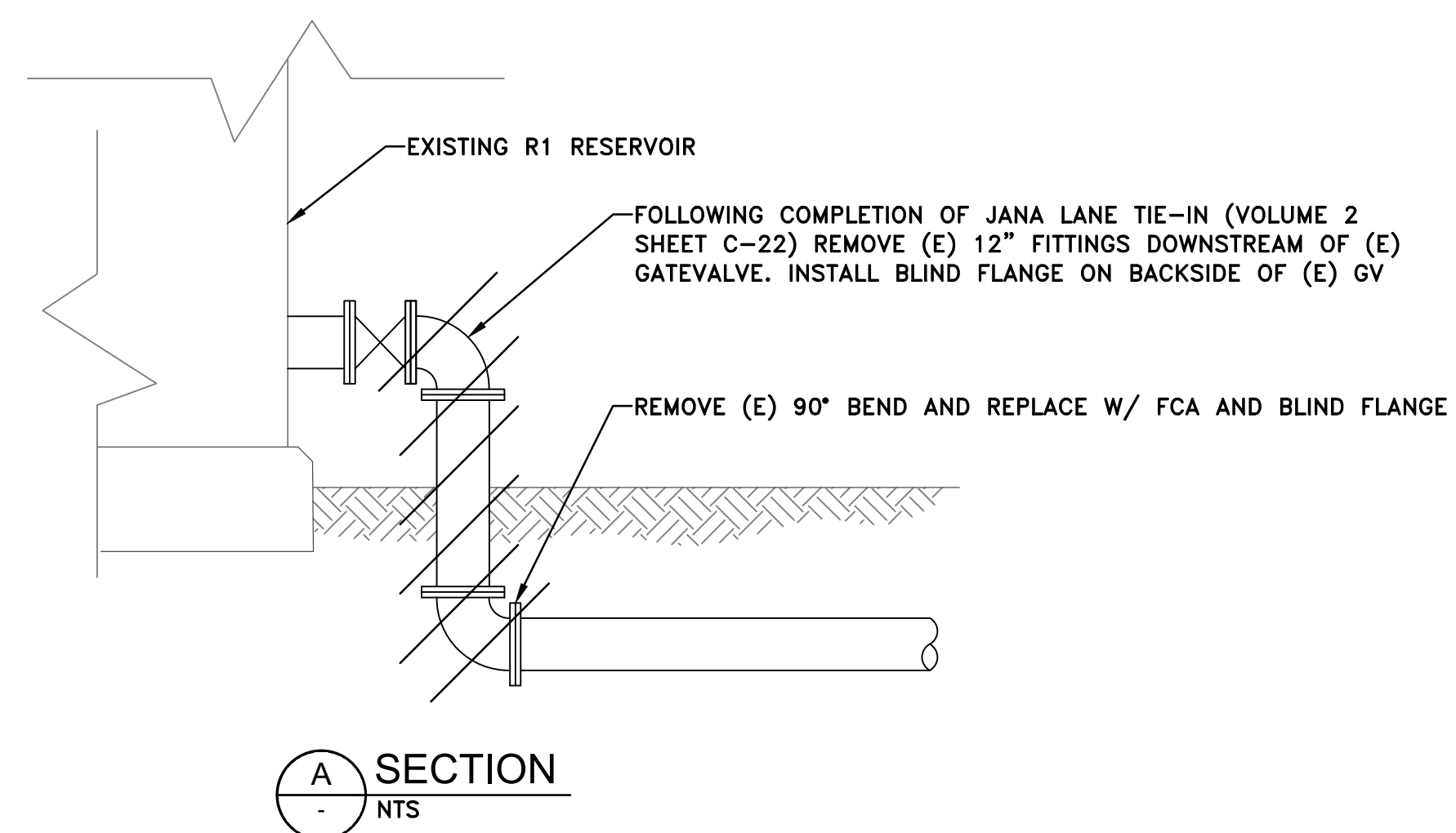
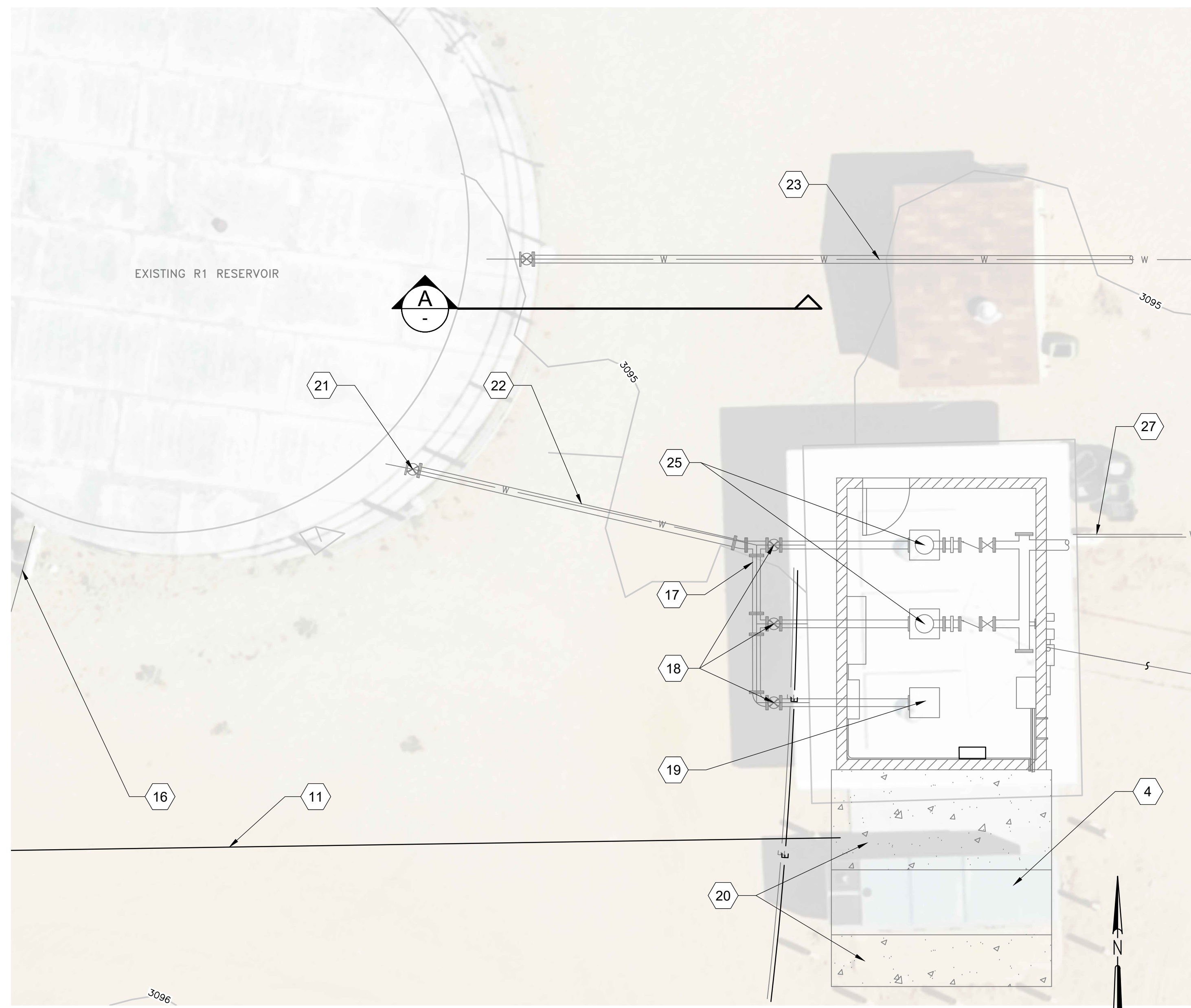
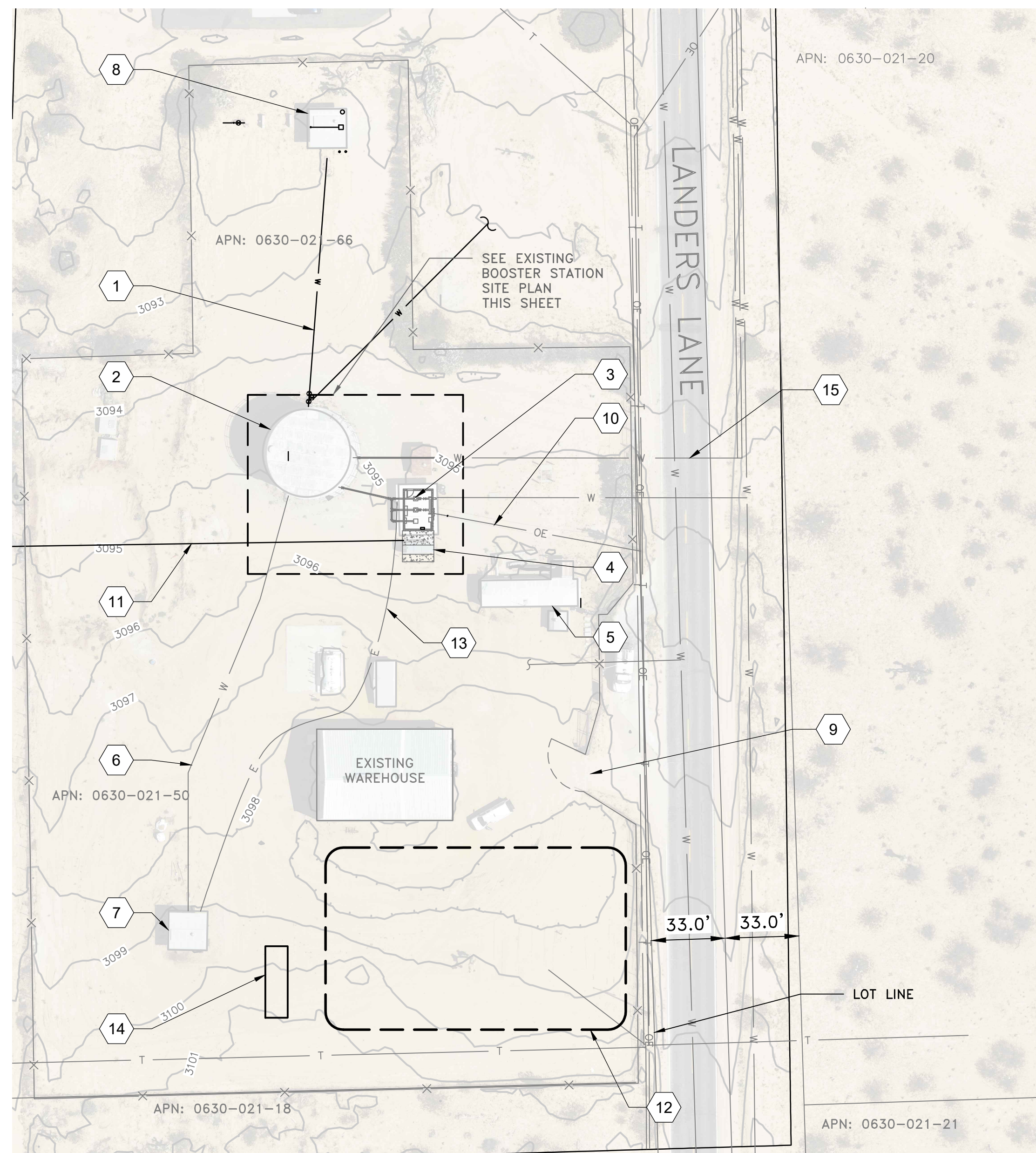
1. 6" THICK DECOMPOSED GRANITE DRIVEWAY 90 RC
2. FOR PAVED AREAS AND FLATWORK, EXCAVATE TO A DEPTH OF AT LEAST 12 INCHES BELOW THE PROPOSED OR EXISTING SUBGRADE ELEVATION, WHICHEVER IS GREATER, AND REPLACE WITH NON-EXPANSIVE COMPACTED FILL (EXPANSION INDEX NOT EXCEEDING 20). THE EXCAVATIONS SHALL EXTEND A HORIZONTAL DISTANCE OF AT LEAST 2 FEET BEYOND THE OUTSIDE PERIMETER
3. FOR THE BUILDING FOUNDATION, SOILS SHALL BE REMOVED AND RECOMPACTED TO A DEPTH OF AT LEAST 3 FEET BELOW THE BOTTOM OF THE FOUNDATION. EXCAVATION SHALL EXTEND LATERALLY A DISTANCE OF AT LEAST 3 FEET OUTSIDE THE FOUNDATION. RECOMPACTION SHALL BE TO 90% RELATIVE COMPACTION. SEE NOTES 1 THROUGH 4 ON SECTION B SHEET S-02.
4. BUILDING FOUNDATION, SEE STRUCTURAL DRAWINGS.

REVISION
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DESN
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DRW
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CHECK
M. CAREY
APV
9/4/2026

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS SITE SECTIONS



PROJECT:
072-01C
DATE:
SEPTEMBER
DRAWING NUMBER
C-03
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- ## SHEET KEYNOTES

- | | | | |
|-----|--|-----|---|
| 1. | EXISTING WELL NO. GM-3 LINE | 16. | EXISTING PIPE FROM GM-1 |
| 2. | EXISTING R1 RESERVOIR | 17. | EXISTING PUMP SUCTION HEADER |
| 3. | EXISTING R1 BOOSTER PUMP STATION SEE SHEET M-04 | 18. | EXISTING VALVES |
| 4. | EXISTING GENERATOR ABOVE CONCRETE SLAB | 19. | SPARE CAN, SEE SHEET M-05 FOR INSTALLATION OF D1 |
| 5. | EXISTING OFFICE TRAILER | | VERTICAL TURBINE BOOSTER PUMP |
| 6. | EXISTING WELL NO. GM-1 LINE | 20. | EXISTING CONCRETE PAD |
| 7. | EXISTING WELL NO. GM-1 | 21. | EXISTING VALVE |
| 8. | EXISTING WELL NO. GM-3 | 22. | EXISTING PIPE FROM RESERVOIR TO R1 BOOSTER PUMP STATION |
| 9. | ENTRANCE GATE | 23. | EXISTING 12" PIPE TO EXISTING BDVWA ZONE B |
| 10. | EXISTING OVERHEAD ELECTRIC | 24. | EXISTING 8" OUTLET PIPE TO EXISTING BDVWA ZONE A |
| 11. | (N) 8" PVC C900 TO RECHE ROAD FROM DISCHARGE, SEE VOLUME 2 | 25. | EXISTING R1 VERTICAL TURBINE PUMPS |
| 12. | STAGING AREA PER CS 01600 | 27. | EXISTING 12" PIPE TO R1 TANKS |
| 13. | EXISTING POWER CONDUIT | | |
| 14. | CONSTRUCTION TRAILER PER CS 01500 | | |
| 15. | EXISTING BDVWA 12" WATER | | |



VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
EXISTING R1 PUMP STATION SITE PLAN

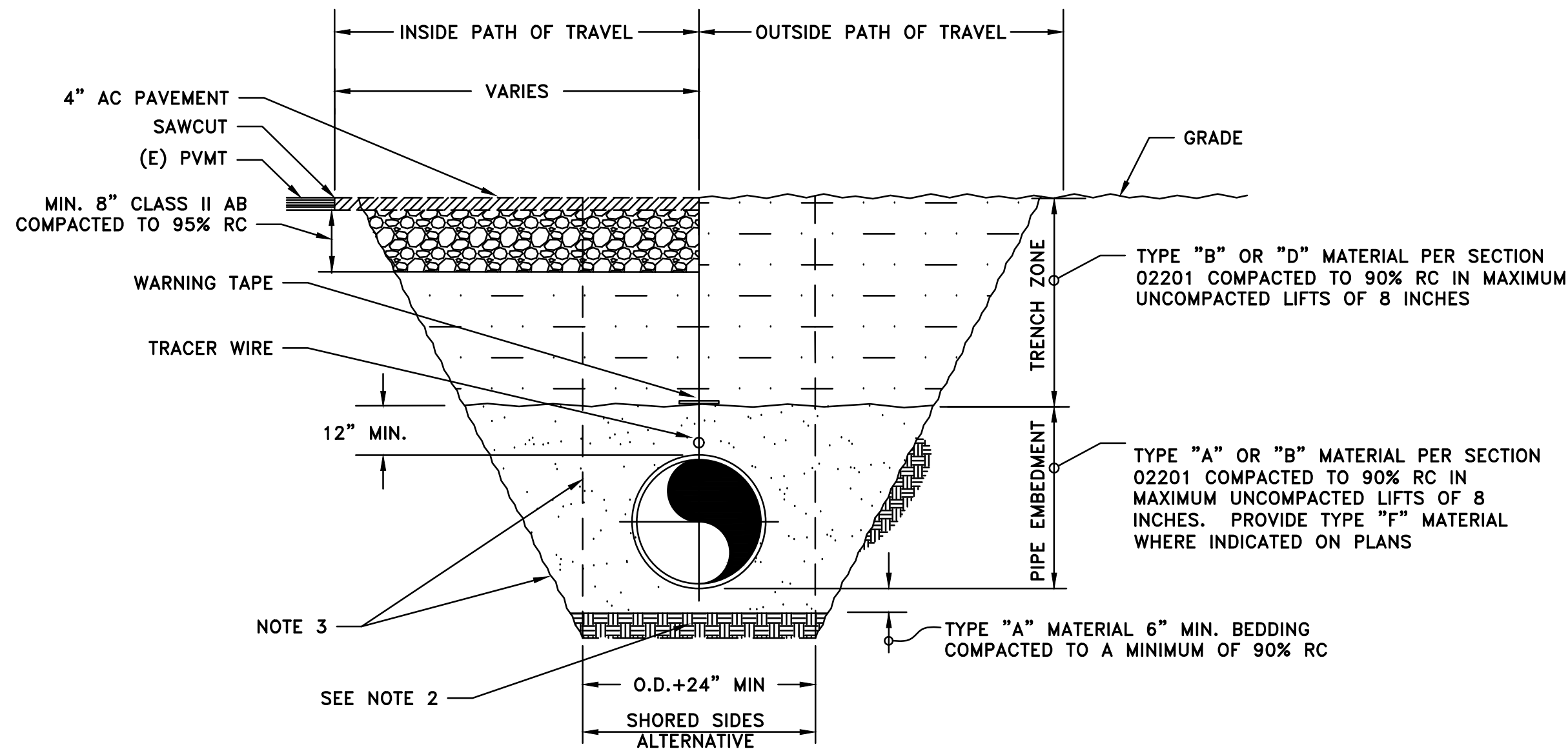


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Desert View
WATER AGENCY

PROJECT:
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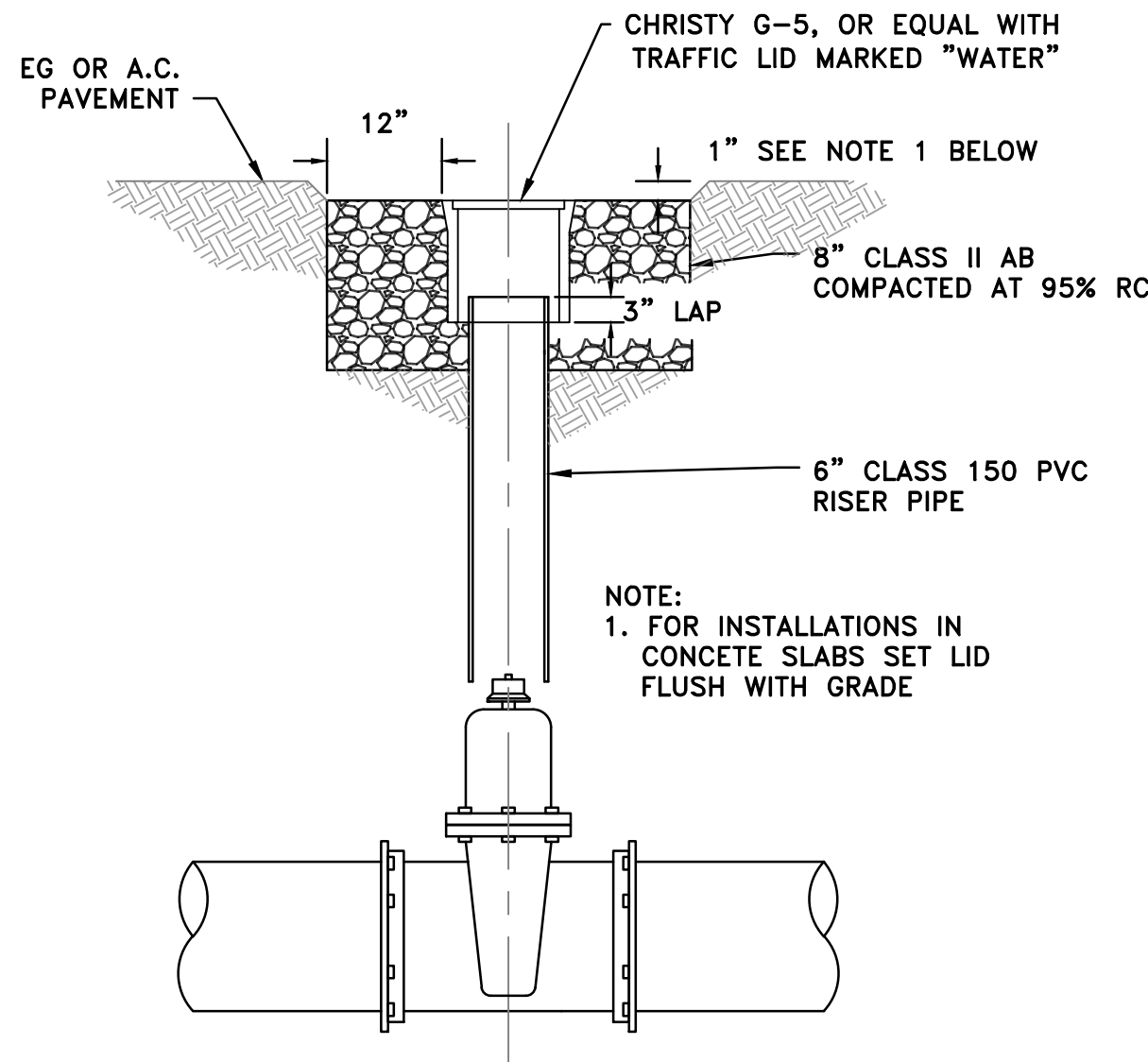
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C-04
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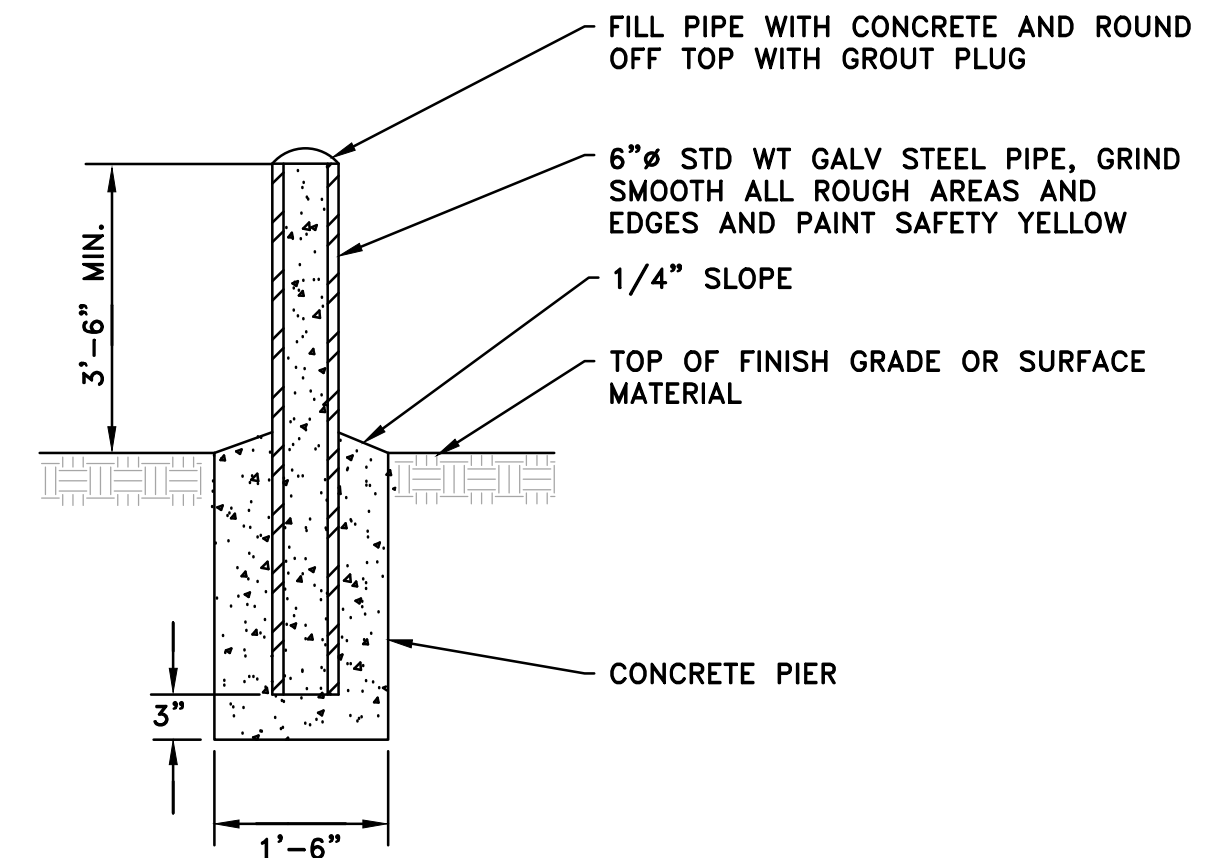


- NOTES:**
1. MINIMUM COVER FROM TOP OF PIPE TO FINISHED GRADE NO LESS THAN 48".
 2. OVER EXCAVATE BY A MIN. OF 6" AND REPLACE W/ IMPORTED FILL IN AREAS WHERE INADEQUATE MATERIALS ARE FOUND AS DETERMINED BY THE ENGINEER OR GEOTECHNICAL REPRESENTATIVE. IF REQUIRED PER ENGINEER OR THE GEOTECH'S DIRECTION USE 3/4" CRUSHED ROCK WRAPPED IN APPROVED GEO FABRIC.
 3. OPEN-TRENCH STABILITY SHALL CONFORM TO THE OSHA REQUIREMENTS OUTLINED IN PART 8.4 OF GEOTECHNICAL REPORT.
 4. (E) AGGREGATE BASE IN UNPAVED AREAS SHALL BE REPLACED IN KIND.
 5. MOISTURE CONTENT SHALL BE MAINTAINED WITHIN 2% OF OPTIMUM.

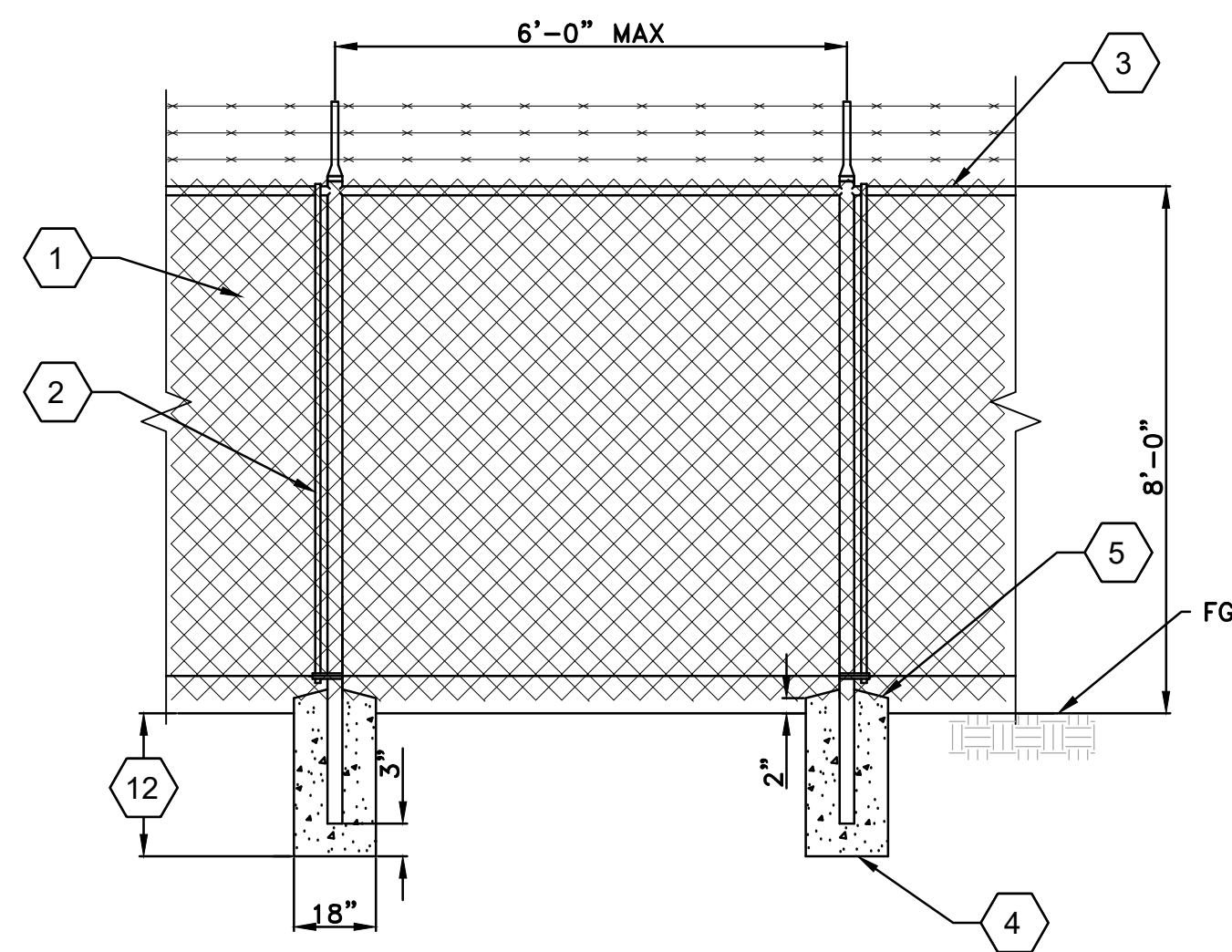
1 PIPE TRENCH
VAR NTS



4 VALVE BOX
VAR NTS

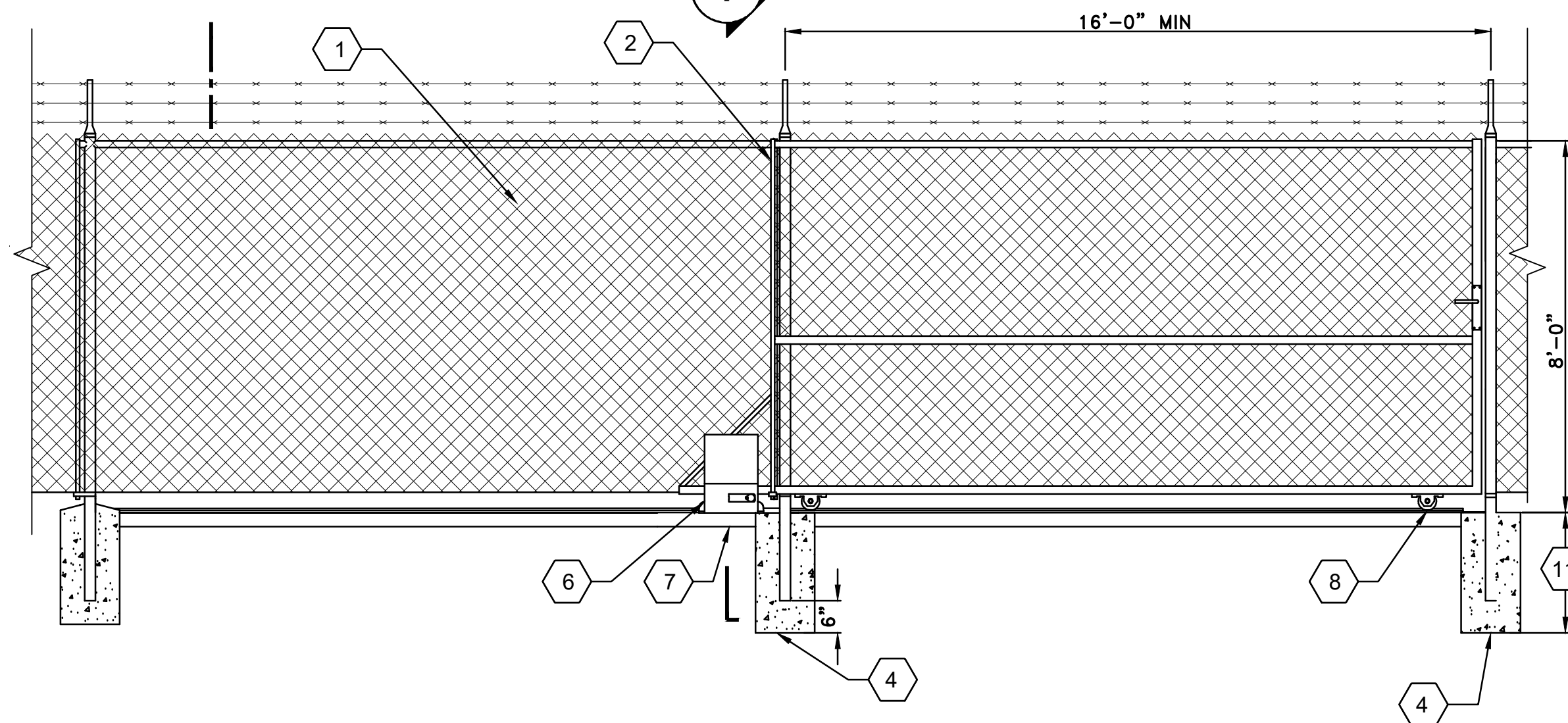


5 TRAFFIC BOLLARD
VAR NTS



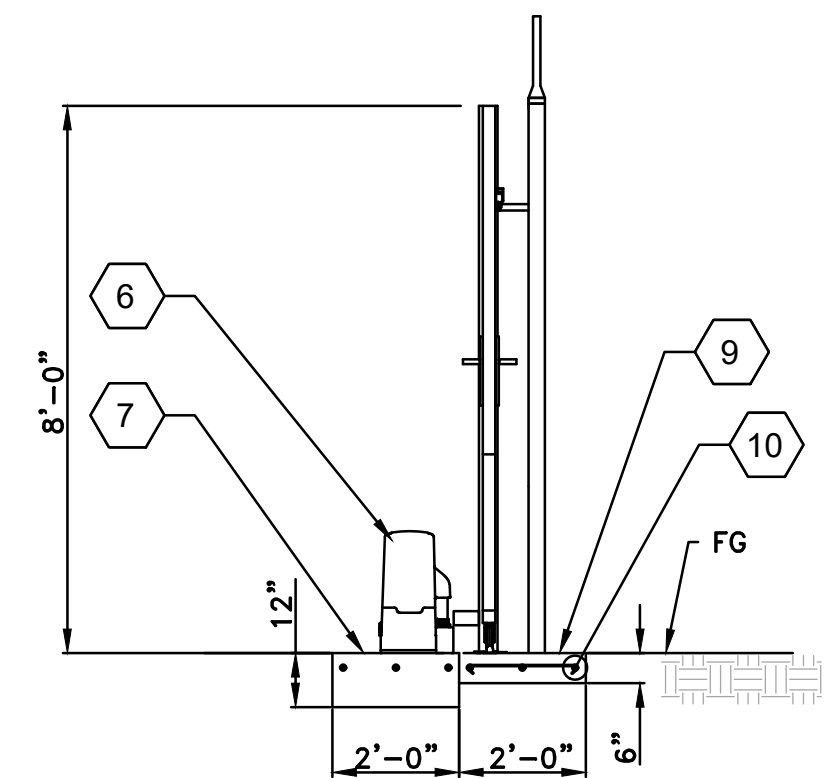
DETAIL KEYNOTES:

1. FENCE MATERIAL AND INSTALLATION SHALL CONFORM TO SECTION 02821 OF THE CONTRACT SPECIFICATIONS.
2. FENCE AND GATE SHALL INCLUDE PRIVACY SLATS PER SPECIFICATIONS.
3. CONTINUOUS TOP RAIL
4. PROVIDE 24" DIA. X 48" DEEP PIERS AT CORNER, TERMINAL, AND PULL POSTS.
5. CONCRETE SHALL BE CROWNED AT TOP AND SLOPED TO DRAIN.
6. SOLAR-POWERED SLIDE GATE OPERATOR, SEE SECTION 02821, 2.6.A
7. 24" X 30" X 12" CONCRETE PAD REINFORCED W/ #4 BARS. MOUNT GATE ACTUATOR W/ 1/2" ANCHOR BOLTS SEE SECTION 02821, 3.4.



8. CANTILEVER ROLLER ASSEMBLY SEE SECTION 02821, 2.5.D.1
9. 36' LONG CONCRETE STRIP, 24" WIDE X 6" THICK LOCATED UNDER GATE PATH, CONFIRM SLIDE GATE TRACK AND CANTILEVER ROLLER ALIGNMENT WITH GATE INSTALLER PRIOR TO POURING CONCRETE STRIP. SEE C-02 FOR STRIP LOCATION.
10. (3) EQUALLY SPACED #5 LONGITUDINAL BARS AND #4 TRANSVERSE BARS AT 12" O.C.
11. 48" FOR TERMINAL OR CORNER POSTS
12. 42" FOR TYPICAL POSTS

C CHAINLINK GATE AND FENCING
C-02 NTS



A SECTION
NTS

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
CIVIL DETAILS - 1



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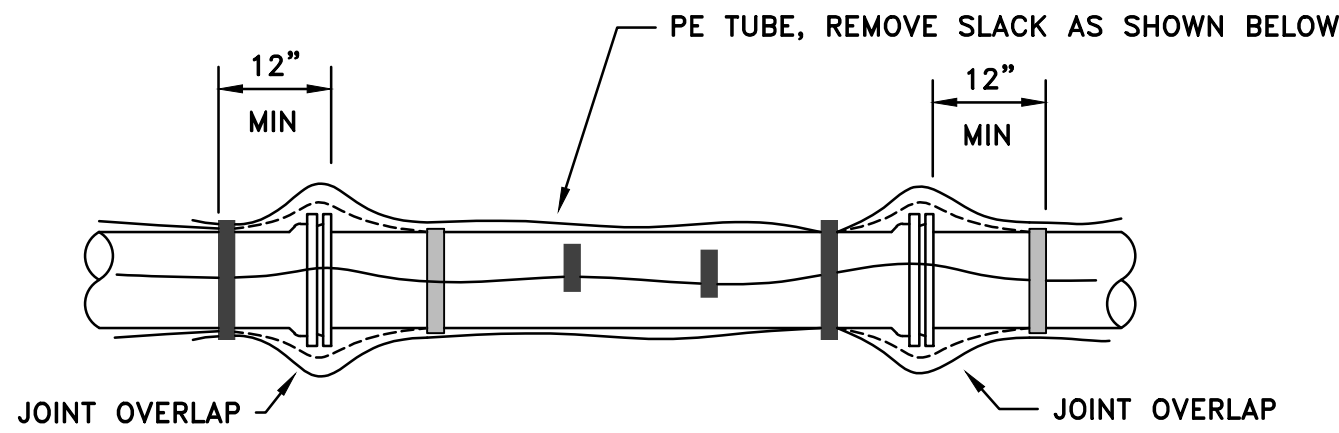
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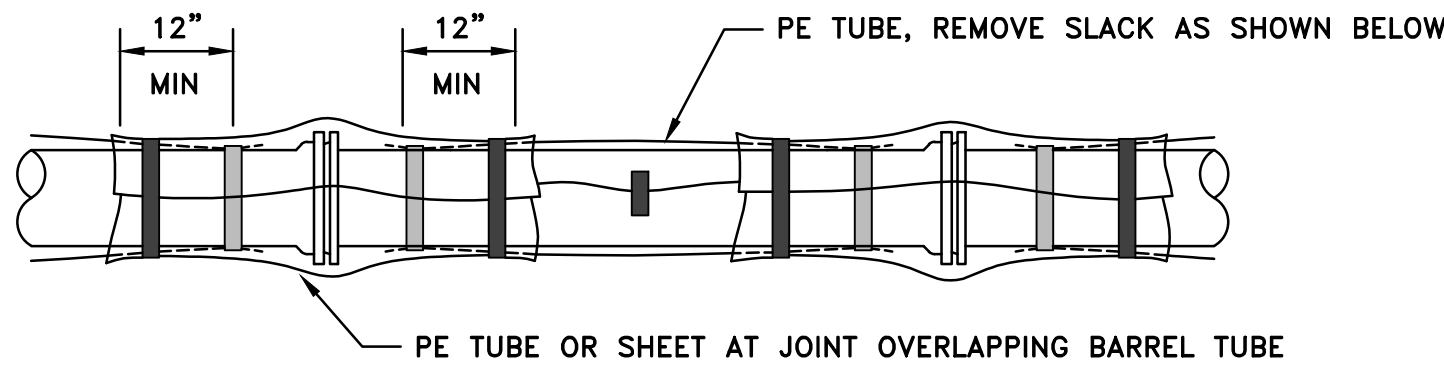
C-05
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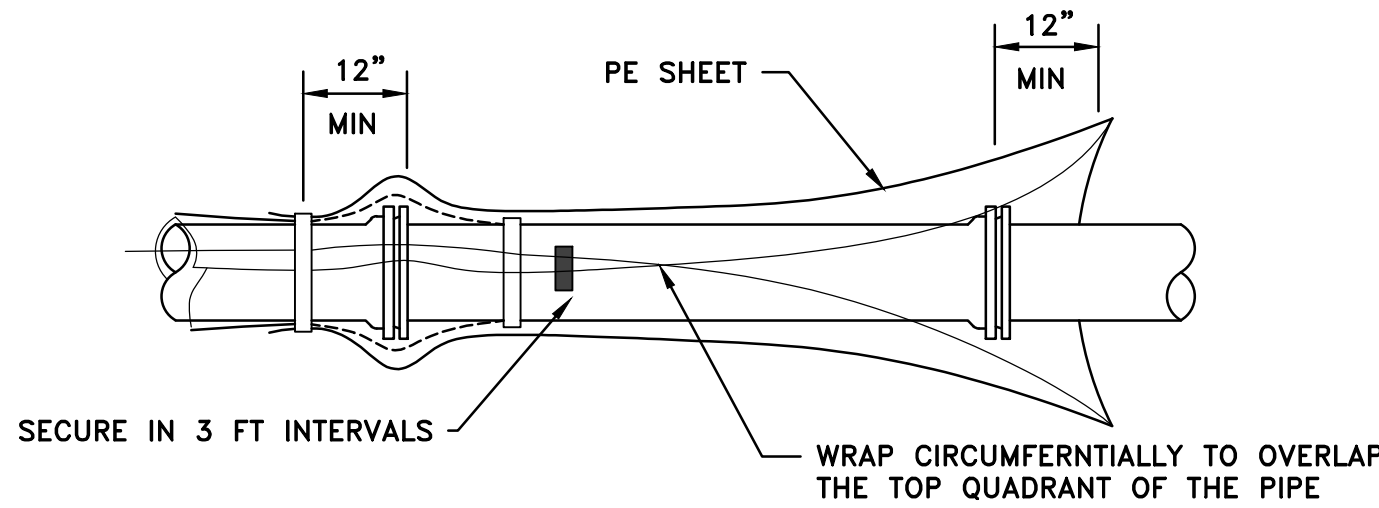




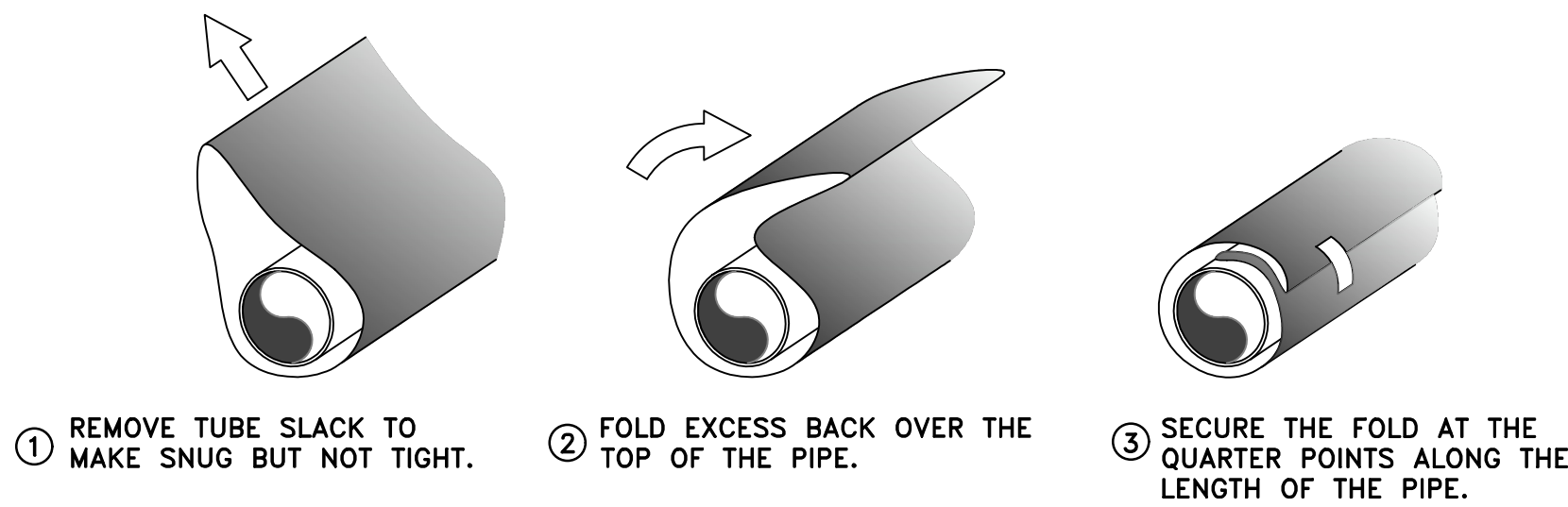
AWWA C105 - INSTALLATION METHOD "A"



AWWA C105 - INSTALLATION METHOD "B"



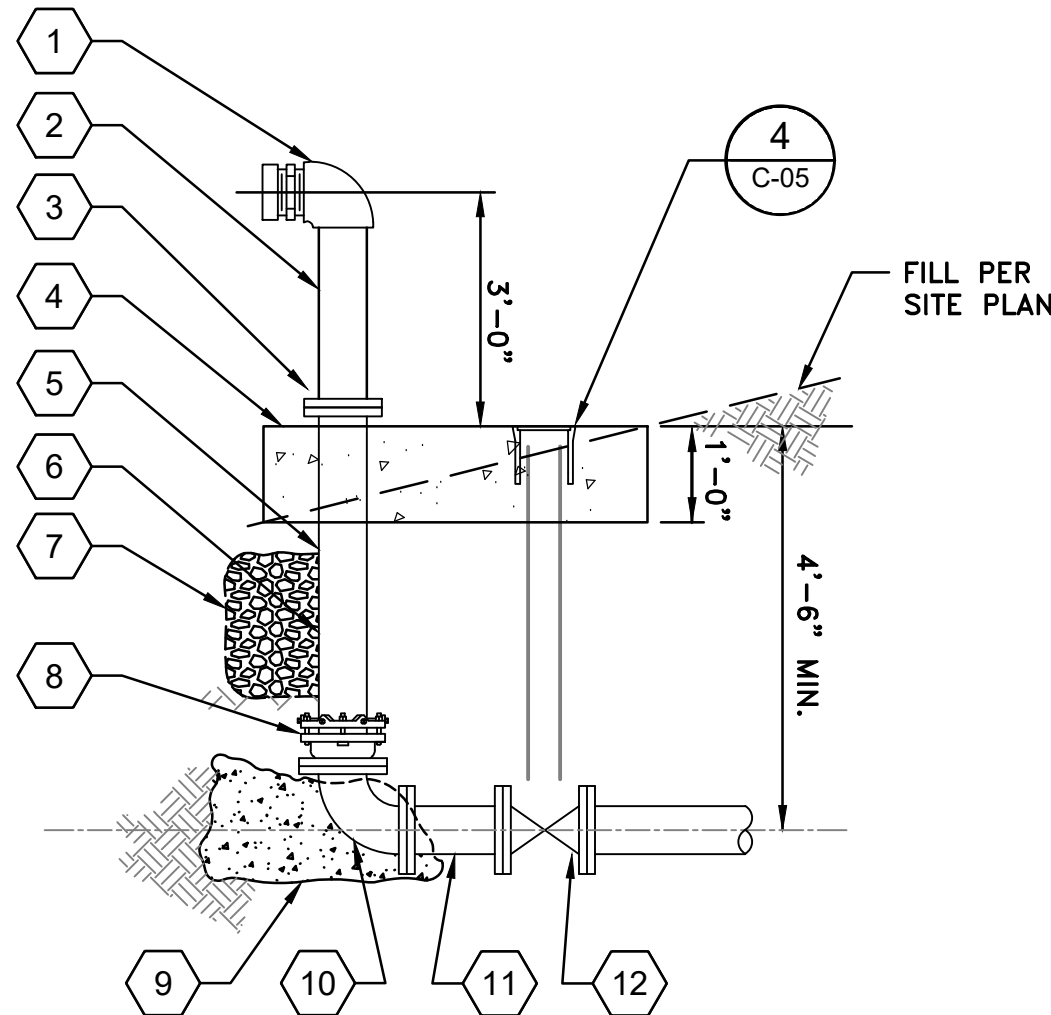
AWWA C105 - INSTALLATION METHOD "C"



AWWA C105 - SLACK REDUCTION

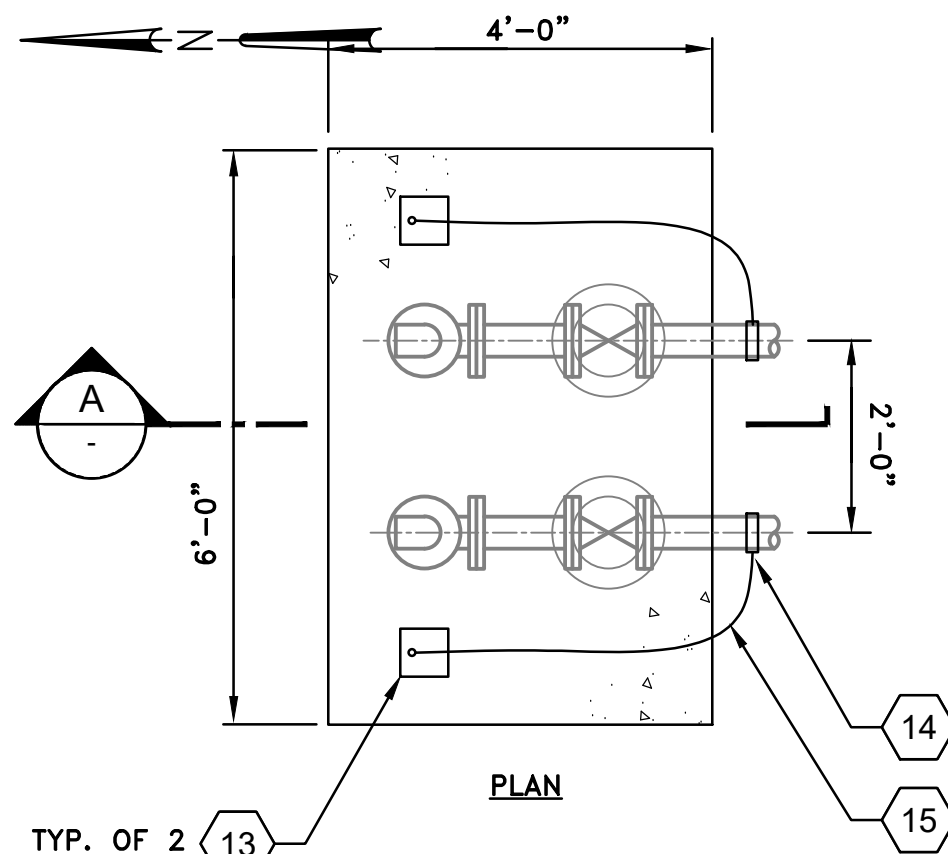
- NOTES:
- CONTRACTOR SHALL FOLLOW ONE OF THE THREE PE ENCASEMENT INSTALLATION METHODS SHOWN ABOVE FOR ALL SUBGRADE DI PIPE AND FITTINGS. PE PRODUCT SHALL CONSIST OF EITHER 4 MIL HDPE OR 8 MIL LDPE FEATURING "ANSI/AWWA C105/A21.5" MARKINGS.
 - BEND, REDUCERS, OFFSETS, AND OTHER APPURTENANCES SHALL BE ENCASED IN PE IN THE SAME MANNER AS ADJACENT PIPE.
 - INSTALLATION REQUIREMENTS ARE NOT LIMITED TO THIS DETAIL, THE CONTRACTOR SHALL INSTALL ALL PE ENCASEMENT AS RECOMMENDED BY AWWA C105 UNO.
 - REMOVAL OF INSTALLED PIPE DUE TO REPAIR OR REMEDY IMPROPER INSTALLATION OF PE ENCASEMENT, OR LACK THEREOF, SHALL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL CONTRACT COST OR TIMES.

1 POLYETHYLENE ENCASEMENT OF DI PIPE AND FITTINGS
VAR. NTS



- SECTION NOTES:
- SEE DETAIL KEYNOTES, DETAIL 2, THIS SHEET

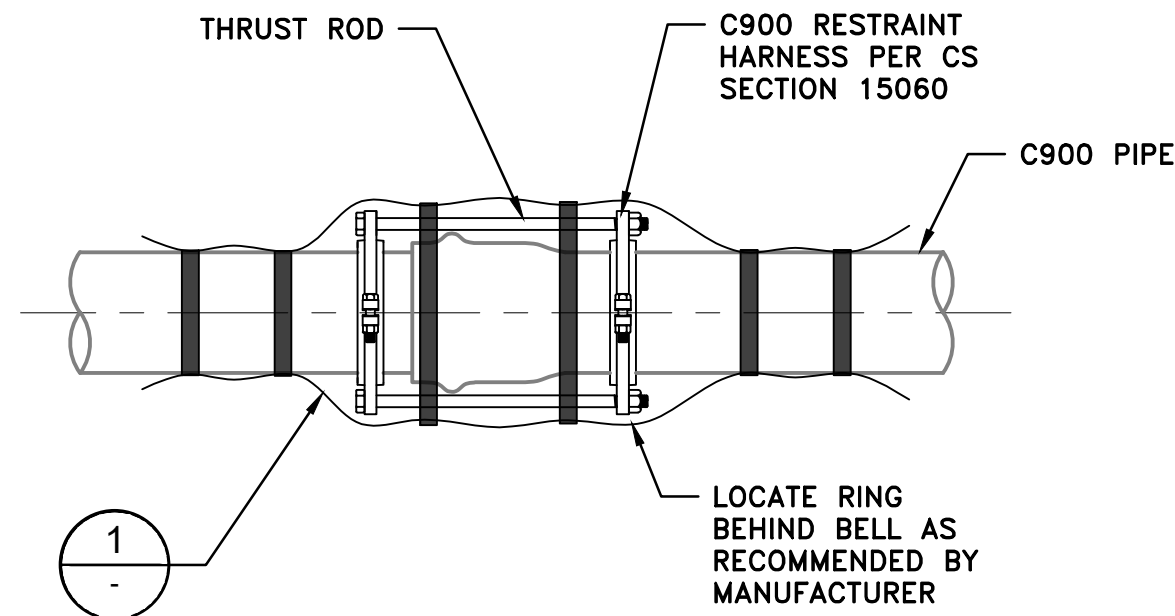
A SECTION
NTS



DETAIL KEYNOTES:

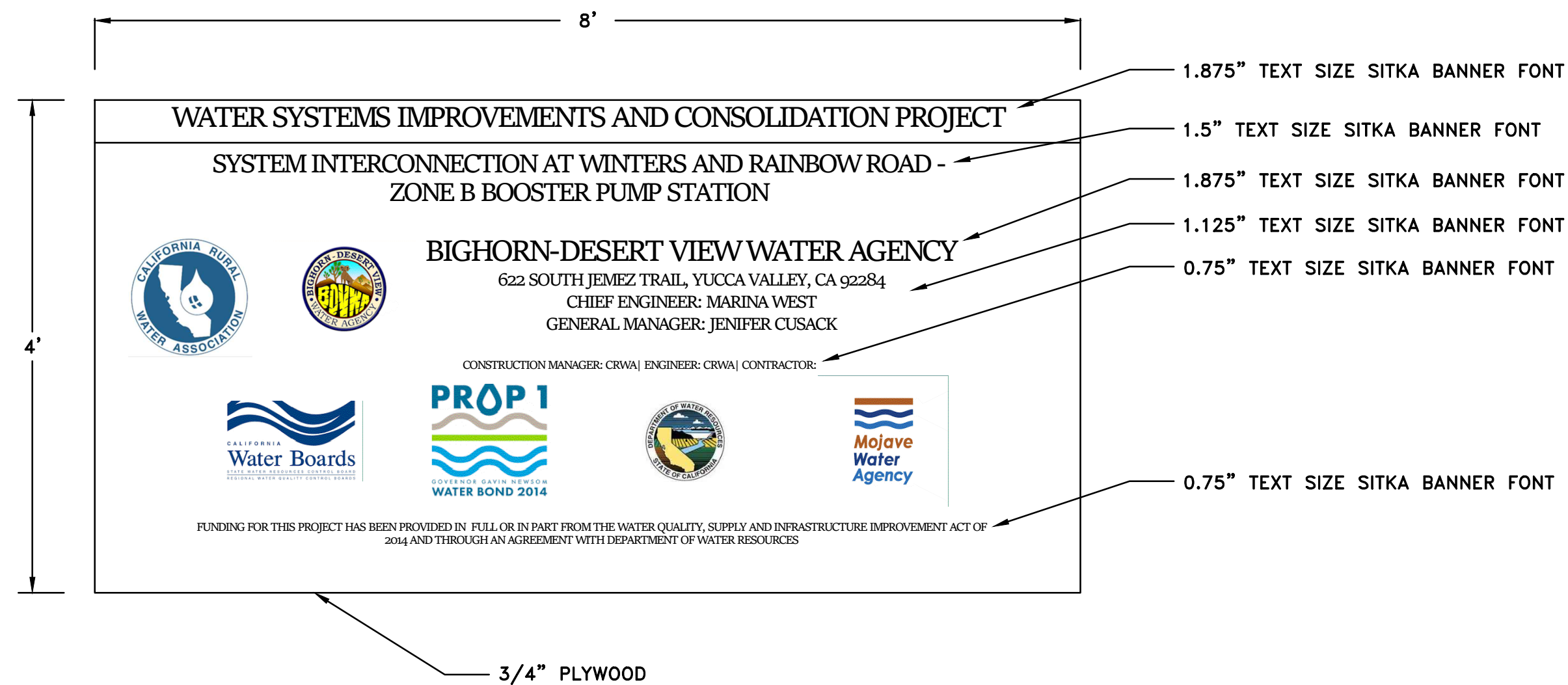
- 90° ELB. AND MALE 2 1/2" NH THREADED OUTLET W/ CAP
- 4" SCH 40 GALVANIZED STEEL RISER
- 4" COMPANION FLANGE
- CONCRETE SLAB
- 4" FL X PE DI PIPE
- DRILL 1/4" HOLE
- DRAIN ROCK
- 4" FL X MJ ADAPTER RESTRAINED W/ MEGA LUG
- THRUST BLOCK
- 4" DI FLANGED 90°
- 4" X 12" DI FLANGED PIPE
- 4" FLANGED GV, TYP. OF 2
- KUPFERLE MODEL 66 SAMPLING STATION
- DOUBLE STRAP SERVICE SADDLE MINIMUM WORKING PRESSURE 250 PSI, ROMAC 202NS OR EQUAL APPROVED
- TYPE "K" SEAMLESS COPPER TUBE

2 FLUSHOUT ASSEMBLY
VAR. NTS

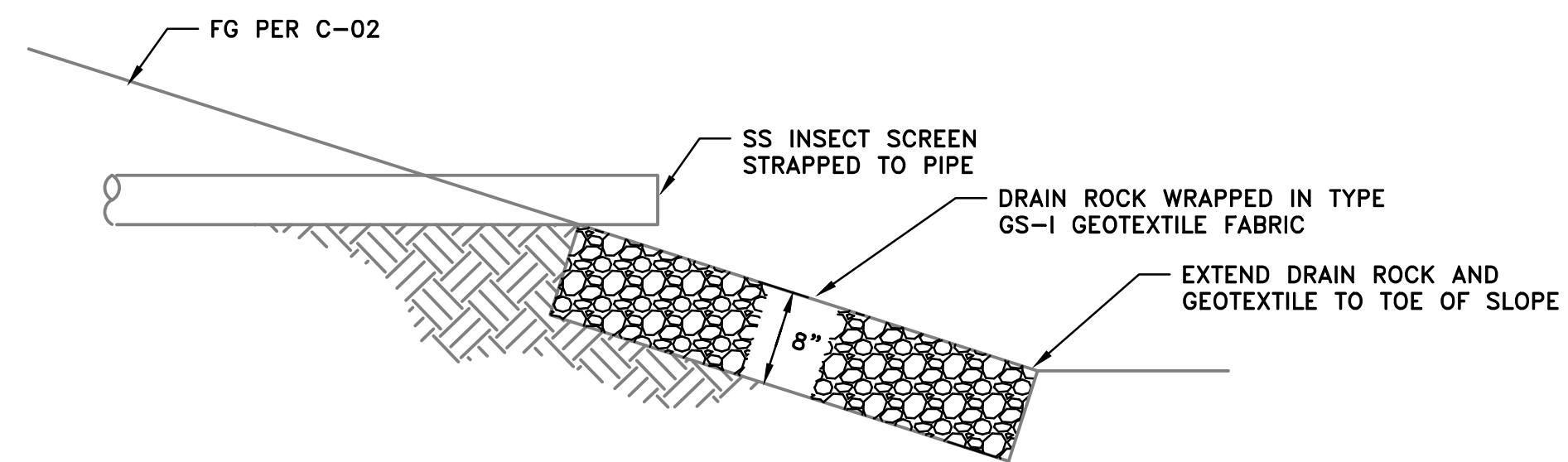


- NOTES
- PRESSURE RATING SHALL BE EQUAL TO OR EXCEED THE RATING OF THE PIPE BEING RESTRAINED.

3 PVC PIPE RESTRAINT
VAR. NTS



4 SIGNAGE
C-01 NTS



5 DRAIN OUTLET PROTECTION
VAR. NTS

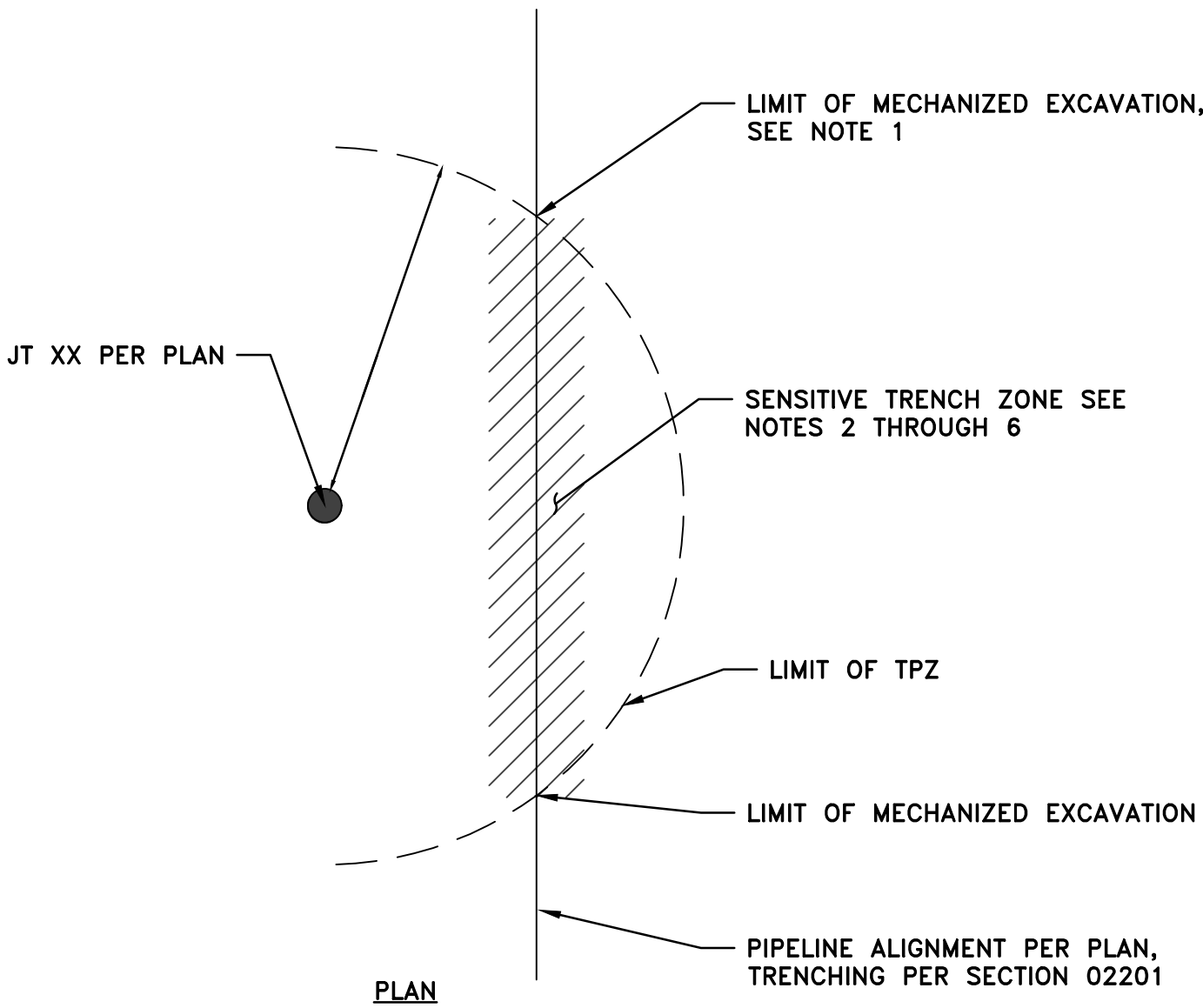
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APV
9/4/2026

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
CIVIL DETAILS - 2



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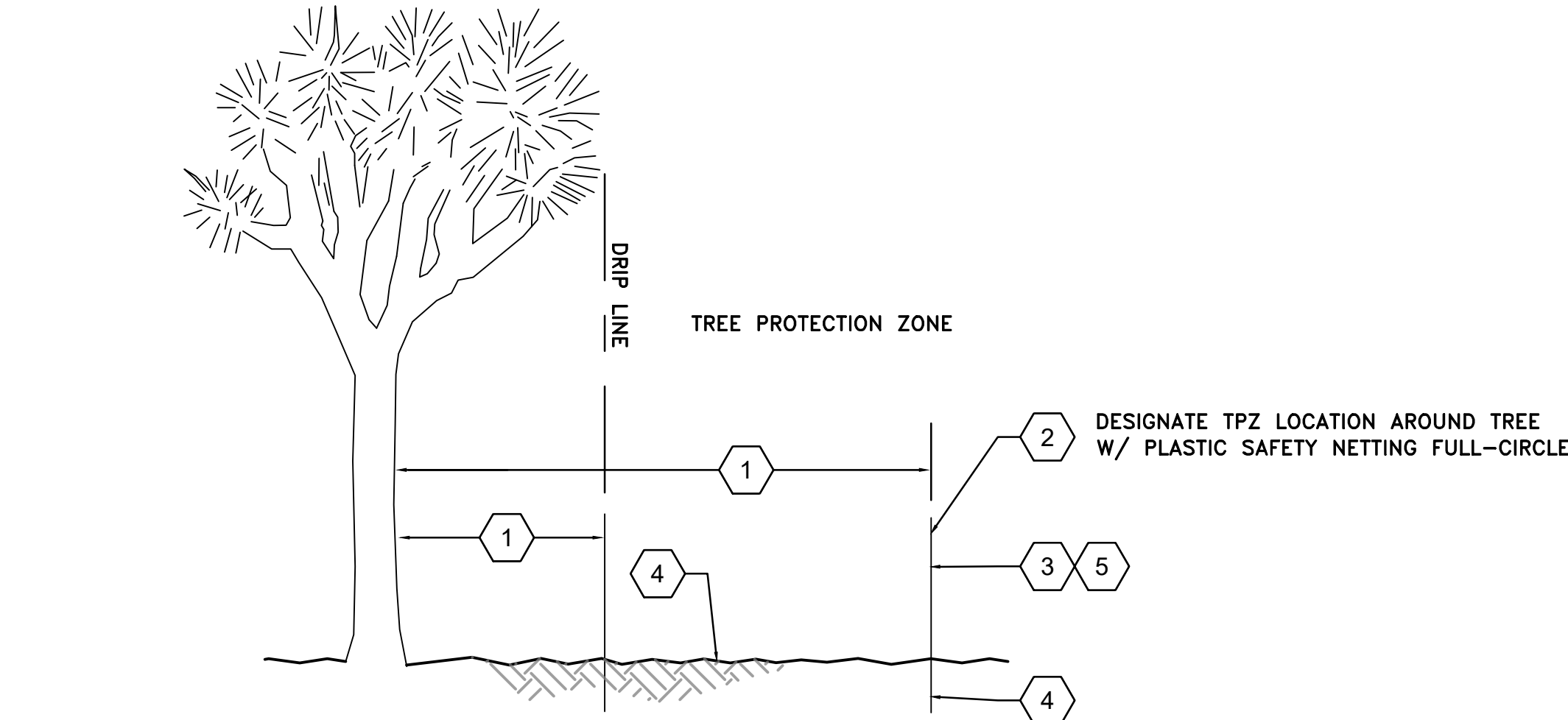
PROJECT:
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1
VAR. NTS

TRENCHING WITHIN TPZ

1. LIMITS OF MECHANIZED EXCAVATION SHALL BE LOCATED 10 RADIAL FEET FROM JOSHUA TREE TRUNK OR AS DIRECTED BY PROJECT BIOLOGIST. USE OF EXCAVATOR BUCKET, RIPPING, TRENCHER SHALL NOT BE USED BEYOND THIS POINT.
2. EXCAVATION WITHIN SENSITIVE ZONE: USE HAND TOOLS OR VACUUM EXCAVATION ONLY. NO RIPPING OR ROCKWHEEL USE IN THIS ZONE. EXCAVATION SHALL BE PERFORMED UNDER DIRECTION OF PROJECT BIOLOGIST OR DESERT NATIVE PLANT SPECIALIST.
3. ROOT HANDLING: EXPOSE ROOTS CAREFULLY; DO NOT TEAR ROOTS WITH MACHINERY. ROOTS 2 INCHES DIAMETER AND SMALLER MAY BE CLEANLY CUT WITH SHARP HAND TOOLS ONLY WHEN UNAVOIDABLE; CUT SURFACES SHALL BE CLEAN AND SMOOTH. ROOTS LARGER THAN 2 INCHES DIAMETER SHALL NOT BE CUT WITHOUT PRIOR WRITTEN APPROVAL FROM PROJECT BIOLOGIST OR DESERT NATIVE PLANT SPECIALIST. PROTECT EXPOSED ROOTS FROM DRYING (E.G., DAMP BURLAP) AND BACKFILL SAME DAY WHERE FEASIBLE.
4. PIPE / ROOT CLEARANCE: WHEN SIGNIFICANT ROOTS ARE ENCOUNTERED AT OR BELOW PIPE INVERT, CONTRACTOR SHALL NOTIFY ENGINEER AND PROJECT BIOLOGIST IMMEDIATELY. ENGINEER AND BIOLOGIST MAY DIRECT MINOR PIPE GRADE ADJUSTMENTS OR LOCALIZED ALIGNMENT SHIFTS WHERE FEASIBLE TO AVOID CUTTING MAJOR ROOTS.
5. BACKFILL WITHIN SENSITIVE TRENCH ZONE: BACKFILL AROUND EXPOSED ROOTS WITH NATIVE SOIL OR APPROVED FINE-GRAINED MATERIAL FREE OF DEBRIS AND LARGE ROCK. PLACE BACKFILL IN THIN LIFTS AND COMPACT WITH HAND TAMPERS ONLY WITHIN SENSITIVE ZONE. NO PLATE COMPACTORS OR ROLLERS WITHIN TPZ UNLESS APPROVED BY ENGINEER.
6. SURFACE RESTORATION AND WATERING: RESTORE FINISHED GRADE TO APPROXIMATE PRE-CONSTRUCTION CONDITION AND MAINTAIN EXISTING DRAINAGE PATTERNS AWAY FROM TREE TRUNK. LIGHTLY WATER SOIL IN SENSITIVE ZONE AFTER BACKFILL AS NEEDED TO REDUCE SETTLEMENT AND DUST, AVOIDING PONDED WATER AT TRUNK.
7. CONSTRUCTION LOADS: NO CRANES, TRUCKS, OR TRACKED EQUIPMENT SHALL OPERATE WITHIN TPZ OR CLOSER TO TREE TRUNK THAN THE MINIMUM CLEARANCE DISTANCE SHOWN ON PLANS. ANY TEMPORARY BRIDGING REQUIRED FOR ACCESS OVER ROOT ZONE SHALL BE DESIGNED AND LOCATED TO AVOID DIRECT LOADING ON ROOT-BEARING SOILS AND SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.
8. MONITORING AND STOP-WORK AUTHORITY: ALL WORK WITHIN 10 FEET OF A PROTECTED WESTERN JOSHUA TREE (DISTANCE PER PLANS) SHALL BE SUBJECT TO BIOLOGICAL MONITORING. PROJECT BIOLOGIST SHALL HAVE AUTHORITY TO HALT WORK IMMEDIATELY IF EXCAVATION, BACKFILL, OR COMPACTION PRACTICES RISK NON-COMPLIANCE WITH WESTERN JOSHUA TREE PERMIT OR PROJECT MITIGATION MEASURES.



DETAIL KEYNOTES

1. THE TREE PROTECTION ZONE SHALL BE DEFINED AS NO LESS THAN THE DRIPLINE RADIUS OF THE TREE OR A MINIMUM OF 10 FEET FROM THE TRUNK, WHICHEVER IS GREATER. WITHIN THE FOLLOWING SHALL BE PROHIBITED: VEHICLE OR EQUIPMENT ACCESS; STOCKPILING OF SOIL, AGGREGATE, OR MATERIALS; OR FUELING, EQUIPMENT MAINTENANCE.
2. ORANGE PLASTIC SAFETY NETTING SHALL BE HIGH-VISIBILITY, UV-STABILIZED POLYETHYLENE OR POLYPROPYLENE CONSTRUCTION SAFETY FENCE, MINIMUM 4 FT HEIGHT, FLUORESCENT ORANGE COLOR, WITH MESH OPENINGS APPROXIMATELY 1-1/2 IN BY 4 IN. SUPPORT FENCE ON 1.33 LB/FT STEEL T-POSTS (OR APPROVED EQUAL) SPACED 8 FT MAXIMUM. DRIVE POSTS A MINIMUM OF 18 IN INTO UNDISTURBED SOIL.
3. ATTACH FENCE TO POSTS WITH UV-STABLE PLASTIC CABLE TIES OR 14 GA GALVANIZED WIRE AT 12 IN VERTICAL SPACING (TOP, MID-HEIGHT, AND BOTTOM OF FENCE). PROVIDE MINIMUM 6" CLEARANCE BETWEEN EXISTING GRADE AND BOTTOM OF SAFETY NETTING.
4. EXISTING GROUND SURFACE WITHIN THE TPZ SHALL BE PROTECTED AND LEFT UNDISTURBED. NO CUT OR FILL GREATER THAN 2 INCHES SHALL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE PROJECT BIOLOGIST.
5. ATTACH MINIMUM OF ONE 12" X 18" SIGN TO TPZ FENCING. SIGNS SHALL CONSIST OF RIGID PANELS FABRICATED FROM 4 MM CORRUGATED PLASTIC (COROPLAST) OR 0.040 IN THICK ALUMINUM, UV-STABILIZED INK OR VINYL GRAPHICS. BACKGROUND FLUORESCENT ORANGE OR YELLOW WITH MINIMUM 1-1/2 IN HIGH BLACK LETTERING STATING:

"TREE PROTECTION AREA -DO NOT ENTER. NO GRADING, TRENCHING, STOCKPILING, OR PARKING."

ATTACH SIGNS TO TREE PROTECTION FENCING WITH UV-STABLE PLASTIC CABLE TIES AT TOP AND SIDES.

2
VAR. NTS

TREE PROTECTION ZONE (TPZ)

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VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
CIVIL DETAILS - 3



BIGHORN
Desert View
WATER AGENCY

PROJECT: 072-01C

DATE:

SEPTEMBER

DRAWING NUMBER

C-07
9 / 38

ABBREVIATIONS				LEGEND				REVISION BID SET	
								DESIGN	J. NELSON
								DRAWN	J. NELSON
								CHECKED	M. CAREY
								APPROVED	9/4/2026
								REGISTERED PROFESSIONAL ENGINEER Jared P. Nelson No. C89673 Exp. 3/31/27 STATE OF CALIFORNIA	
								VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS IMPROVEMENTS MECHANICAL LEGEND AND ABBREVIATIONS	
								CALIFORNIA RURAL WATER ASSOCIATION BIGHORN Desert View WATER AGENCY	
								PROJECT:	072-01C
								DATE:	SEPTEMBER
								DRAWING NUMBER	M-01
									10 / 38
								VERIFY SCALE! 01"	

ABBREVIATIONS

1W	1 WATER	(N)	NEW
3W	3 WATER	N/A	NOT APPLICABLE
AD	AREA DRAIN	NC	NORMALLY CLOSED, NOISE CRITERIA
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AG	ABOVE GRADE	NO	NORMALLY OPEN, NUMBER
APPROX	APPROXIMATE(LY)	NTS	NOT TO SCALE
ARV	AIR RELEASE VALVE	OC	ON CENTER
AVG	AVERAGE	OD	OUTSIDE DIAMETER
BFP	BACK FLOW PREVENTER	OFD	OVERFLOW DRAIN
BG	BELOW GRADE	ORD	OVERFLOW ROOF DRAIN
BO	BLOW OFF	PE	PLAIN END
CI	CAST IRON	PMP	PUMP
CD	CONDENSATE DRAIN	POC	POINT OF CONNECTION
CU FT	CUBIC FEET	PSF	POUNDS PER SQUARE FOOT
CFM	CUBIC FEET PER MINUTE	PSI	POUNDS PER SQUARE INCH
CU IN	CUBIC INCHES	PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
CMPR	COMPRESSOR	PSIG	POUNDS PER SQUARE INCH, GAGE
CONC	CONCENTRIC	PV	PLUG VALVE
CONT	CONTINUED	PVC	POLYVINYL CHLORIDE
CS	CONTRACT SPECIFICATIONS	RD	ROOF DRAIN
CTF	CUT TO FIT	REQ	REQUIRED
CU	COPPER	SFE	SAMPLE FINAL EFFLUENT
CV	CHECK VALVE	SH	SODIUM HYPOCHLORITE
CW	COLD WATER, CLOCKWISE	SLC	SLUICE
D	DEPTH	SLD	SLIDE
DI	DUCTILE IRON	STD	STANDARD
DIA	DIAMETER	SD	STORM DRAIN
DN	DOWN	SS	STAINLESS STEEL
DR	DRAIN	SSE	SAMPLE SECONDARY EFFLUENT
EBAA	EBAA IRON, INC.	STL	STEEL
ECC	ECCENTRIC	TEMP	TEMPERATURE
ELEV	ELEVATION	TYP	TYPICAL
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	TW	TEMPERED WATER
FCA	FLANGED COUPLER ADAPTER	UON	UNLESS OTHERWISE NOTED
FCO	FLOOR CLEANOUT	V	VENT, VOLT
FD	FLOOR DRAIN, FIRE DAMPER	VFD	VARIABLE FREQUENCY DRIVE
FE	FINAL EFFLUENT	VOL	VOLUME
FL	FLANGE	VTR	VENT TO ROOF
FLTE	FILTER EFFLUENT	W	WIDTH
FLTI	FILTER INFLUENT	W/	WITH
FPM	FEET PER MINUTE	WG	WATER GAGE
FPS	FEET PER SECOND	W/O	WITHOUT
FT	FOOT, FEET	WH	WATER HEATER
G	GAS, GRINDER	XMTR	TRANSMITTER
GA	GAUGE	YR	YEAR
GALV	GALVANIZED	Z	ZONE
GV	GATE VALVE		
HD	HEAD		
HF	HYDRAULIC FLUID		
HT	HEIGHT		
HVAC	HEATING, VENTILATION & CONDITIONING		
HW	HOT WATER		
HWR	HOT WATER RETURN		
ID	INSIDE DIAMETER		
IE	INVERT ELEVATION		
INV	INVERT		
L	LENGTH		
LBS	POUNDS		
LF	LINEAR FEET		
MAX	MAXIMUM		
MFR	MANUFACTURER		
MJ	MECHANICAL JOINT		
MIN	MINIMUM, MINUTE		

GENERAL NOTES

1. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED.
2. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
3. SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.

LEGEND

PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		NEW PIPE (ABOVE GRADE)
		NEW PIPE (BELOW GRADE)
		EXISTING PIPE
		EXISTING PIPE TO BE REMOVED
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		FLANGED COUPLING ADAPTER W/ JOINT RESTRAINT
		FLEXIBLE COUPLING W/ JOINT RESTRAINT
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		TEE
		CONCENTRIC REDUCER
		UNION
		CAP
		PIPE SUPPORT
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		LATERAL

VALVE SYMBOLS

DOUBLE LINE	
	BUTTERFLY (BFV)
	SILENT CHECK
	CHECK VALVE
	GATE VALVE
	PLUG VALVE
	BALL VALVE
SINGLE LINE	
	GATE
	BUTTERFLY
	BALL
	BALANCING VALVE
	CHECK VALVE - SLANTED DISC
	SILENT CHECK
	PLUG VALVE
	HOSE VALVE
	AIR AND/OR VACUUM RELEASE

ACTUATOR SYMOBLS

	ELECTRIC W/ POSITIONER
	HYDRAULIC
	SOLENOID
	MOTOR
	PNEUMATIC W/ SOLENOID

NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC, ELECTRICAL OR HYDRAULIC)

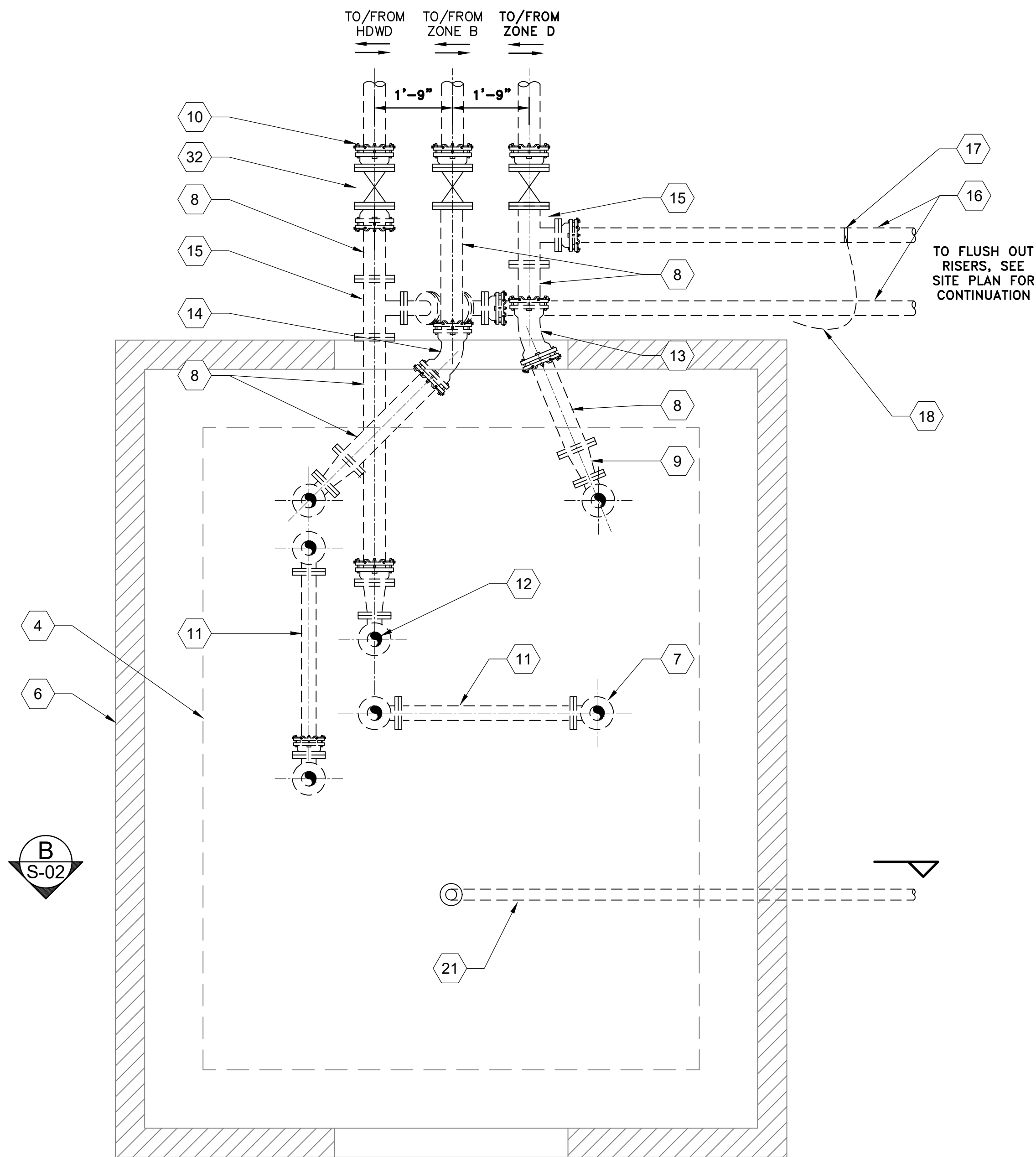
XX: FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

MISCELLANEOUS PIPING SYMBOLS

	STRAINER
	GAUGE WITH COCK
	THERMOMETER
	TEMPERATURE SWITCH
	AIR GAP
	COMPRESSED AIR CONNECTION
	METERING PUMP

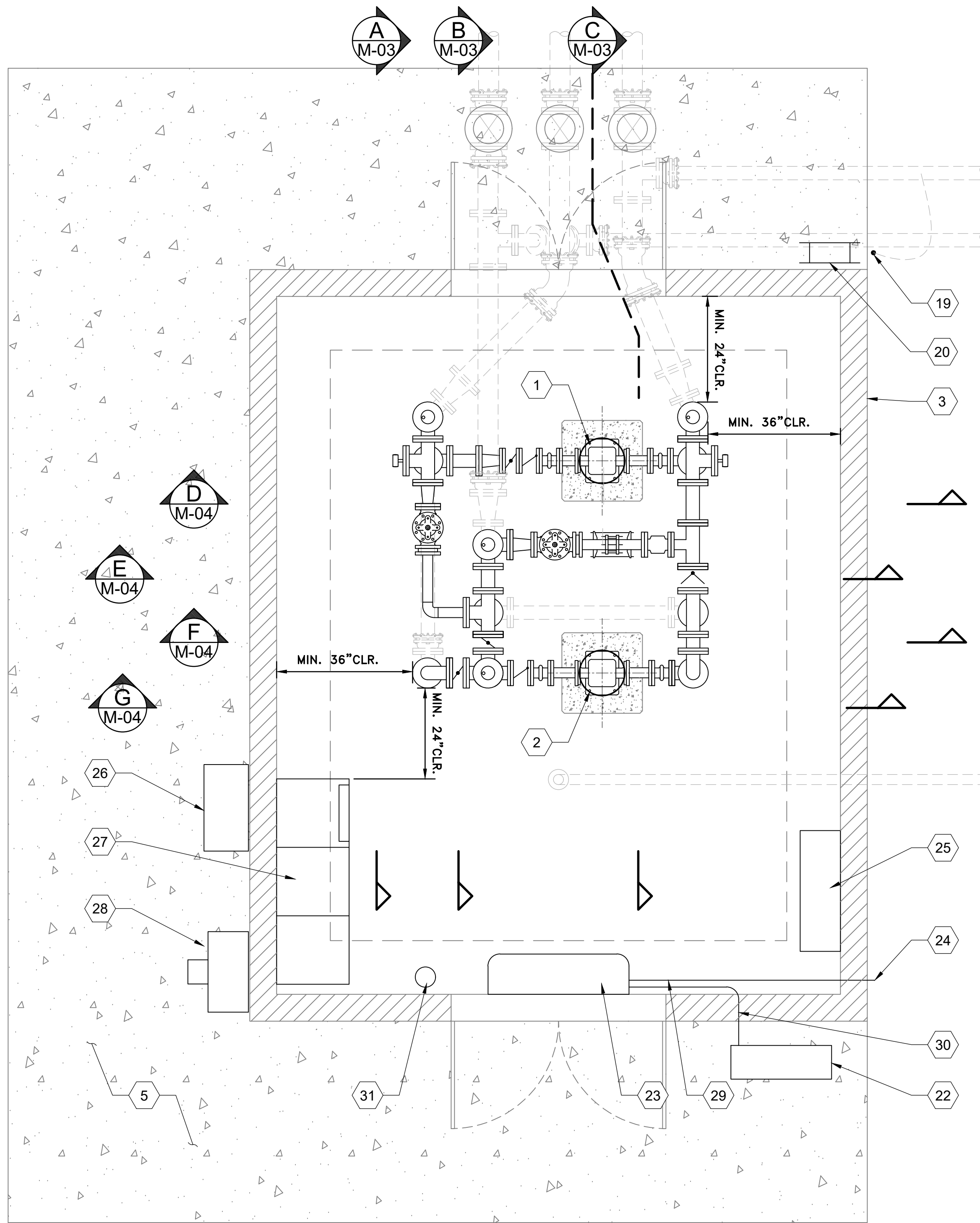
EQUIPMENT SYMBOLS

NOTE:	
XX: AS	= ADJUSTABLE SPEED
CS-1	= CONSTANT SPEED (SINGLE SPEED)
CS-2	= CONSTANT SPEED (TWO SPEED)
	CENTRIFUGAL PUMP (DRY PIT)
	CENTRIFUGAL WET PIT PUMP OR TURBINE PUMP



SUBSLAB PIPING LAYOUT
1/2" = 1'-0"

1
—



PLAN
1/2" = 1'-0"

2
—



GENERAL SHEET NOTES

- THE DIMENSIONS SHOWN HEREIN WILL VARY DEPENDING ON THE SPECIFIC INSTRUMENTS, FITTINGS, AND OTHER APPURTENANCES SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND VERIFY ALL DIMENSIONS PRIOR TO PIPING LAYOUT.
- UNO ALL DUCTILE IRON FITTINGS SHALL CONFROM TO CS SECTION 15060.
- COAT ALL ABOVE GRADE FITTINGS AND PIPING PER CS SECTION 09900.
- INSTALL ALL BURIED DUCTILE IRON PIPE AND FITTINGS PER CS SECTION 02201 AND WRAP IN POLYETHYLENE PER DETAIL 1 SHEET C-06.

SHEET KEYNOTES

- PUMP NO. 1 PER CS SECTION 11800 PART 2.02, B.
- PUMP NO. 2 PER CS SECTION 11800 PART 2.02, C.
- EXTERIOR CMU WALL SEE STRUCTURAL SHEETS
- BUILDING FOUNDATION, INSIDE FACE OF THICKENED EDGE. SEE STRUCTURAL SHEETS
- CONCRETE SIDEWALK, SEE STRUCTURAL SHEETS
- BUILDING FOUNDATION OUTSIDE FACE, SEE STRUCTURAL SHEETS
- 4" FL X FL DI 90° BEND, TYP. OF 7
- 6" FL X PE DI PIPE CTF
- 4" X 6" DI FLANGED REDUCER, TYP. OF 3.
- 6" FL X MJ ADAPTER RESTRAINED W/ EBAA MEGALUG, TYP. OF 4
- 4" FL X PE DI PIPE
- WRAP PIPE W/ COMPRESSIBLE FIBER EXPANSION JOINT AT PENETRATION, TYP. OF 7
- 6" MJ X MJ DI 22.5° BEND RESTRAINED W/ EBAA MEGALUGS
- 6" MJ X MJ DI 45° BEND RESTRAINED W/ EBAA MEDALUGS
- 6" FLANGED DI TEE W/ 4" BRANCH
- C900 DR 14 PIPE
- DOUBLE STRAP BRASS SERVICE SADDLE W/ 1" TAP ROMAC 202NS OR EQ
- 1" TYPE "K" SEAMLESS COPPER TUBE
- 3/4" GALVANIZED STEEL RISER MOUNTED TO WALL W/ SPIGOT
- CAST ALUMINUM HOSE RACK
- 3" ABS DRAINLINE, SEE SITE PLAN FOR CONTINUATION
- CONDENSER PER CS 15800
- MINI SPLIT HVAC UNIT PER CS 15800, INSTALL ABOVE DOORWAY
- CONDENSATION DRAIN, PENETRATE WALL MIN. 6" ABOVE GRADE, CAP END SS INSECT SCREEN
- RTU PANEL, SEE ELECTRICAL SHEETS
- MANUAL TRANSFER SWITCH, SEE ELECTRICAL SHEETS
- MOTOR CONTROL CENTER, LIGHTING PANELBOARD, SEE ELECTRICAL SHEETS
- METER/MAIN PANEL, SEE ELECTRICAL SHEETS
- COPPER DRAINLINE, SLOPE TO DRAIN
- INSTALL 2" PVC SLEEVE FOR LINESET, SEAL W/ CLOSED-CELL FOAM
- 5 LB ABC FIRE EXTINGUISHER WALL MOUNTED 42" ABOVE FLOOR IN ACCORDANCE WITH NFPA 10
- 6" FLANGED GATE VALVE W/ CAN PER DETAIL 4 SHEET C-05

REVISION	BID SET
DESIGN	J. NELSON
DRAWING	J. NELSON
CHECK	M. CAREY
APPROVED	
DATE	9/4/2026

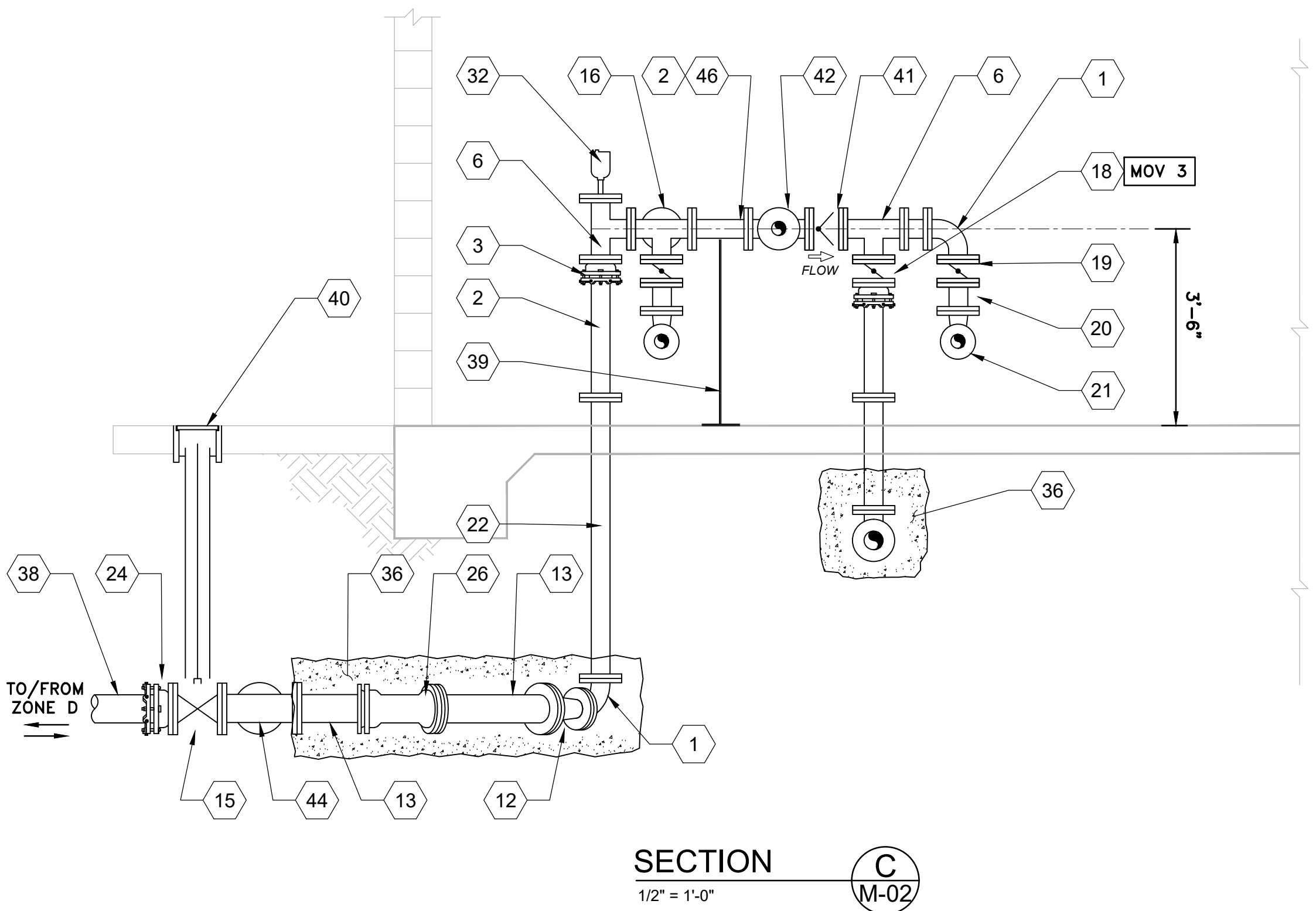
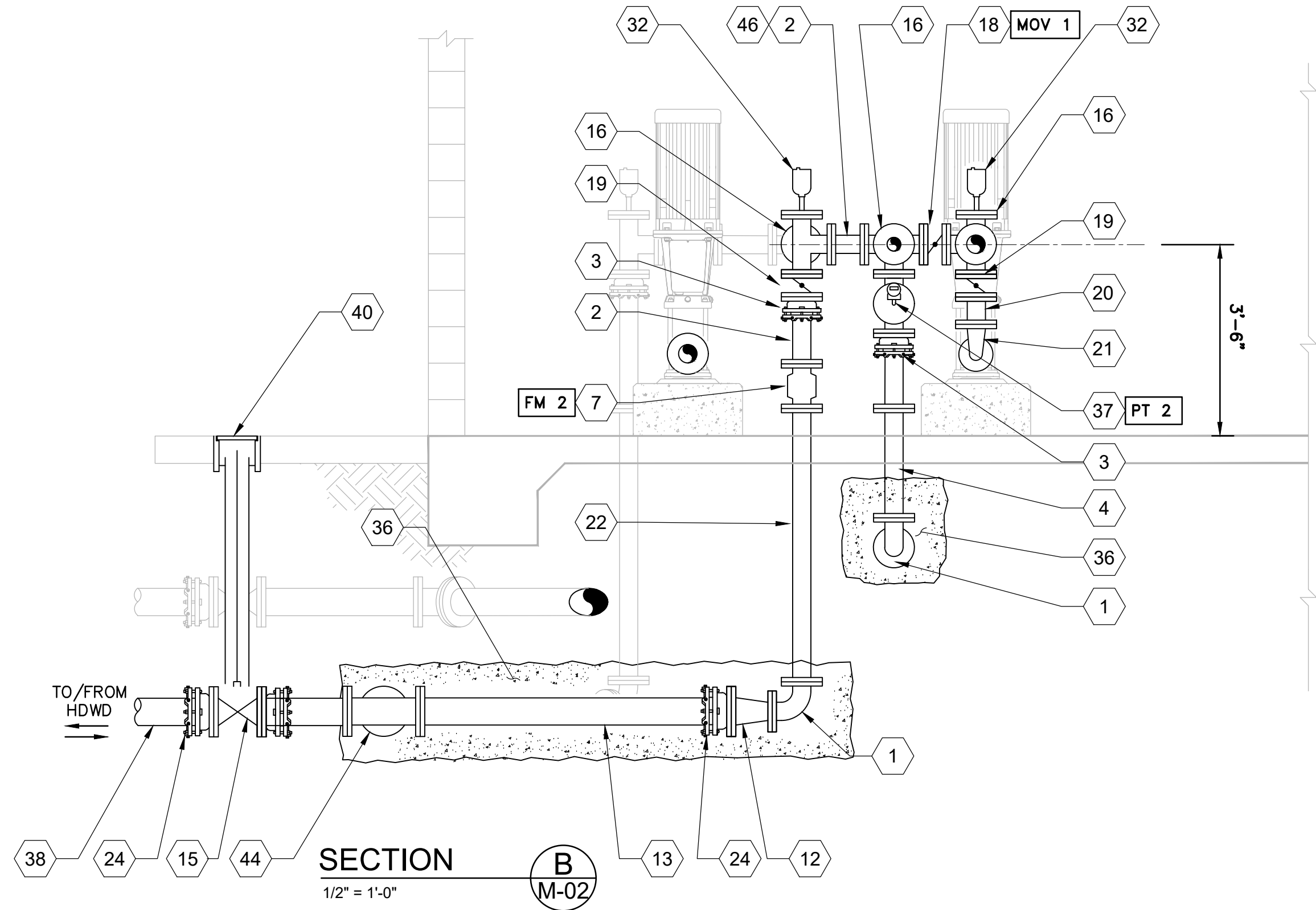
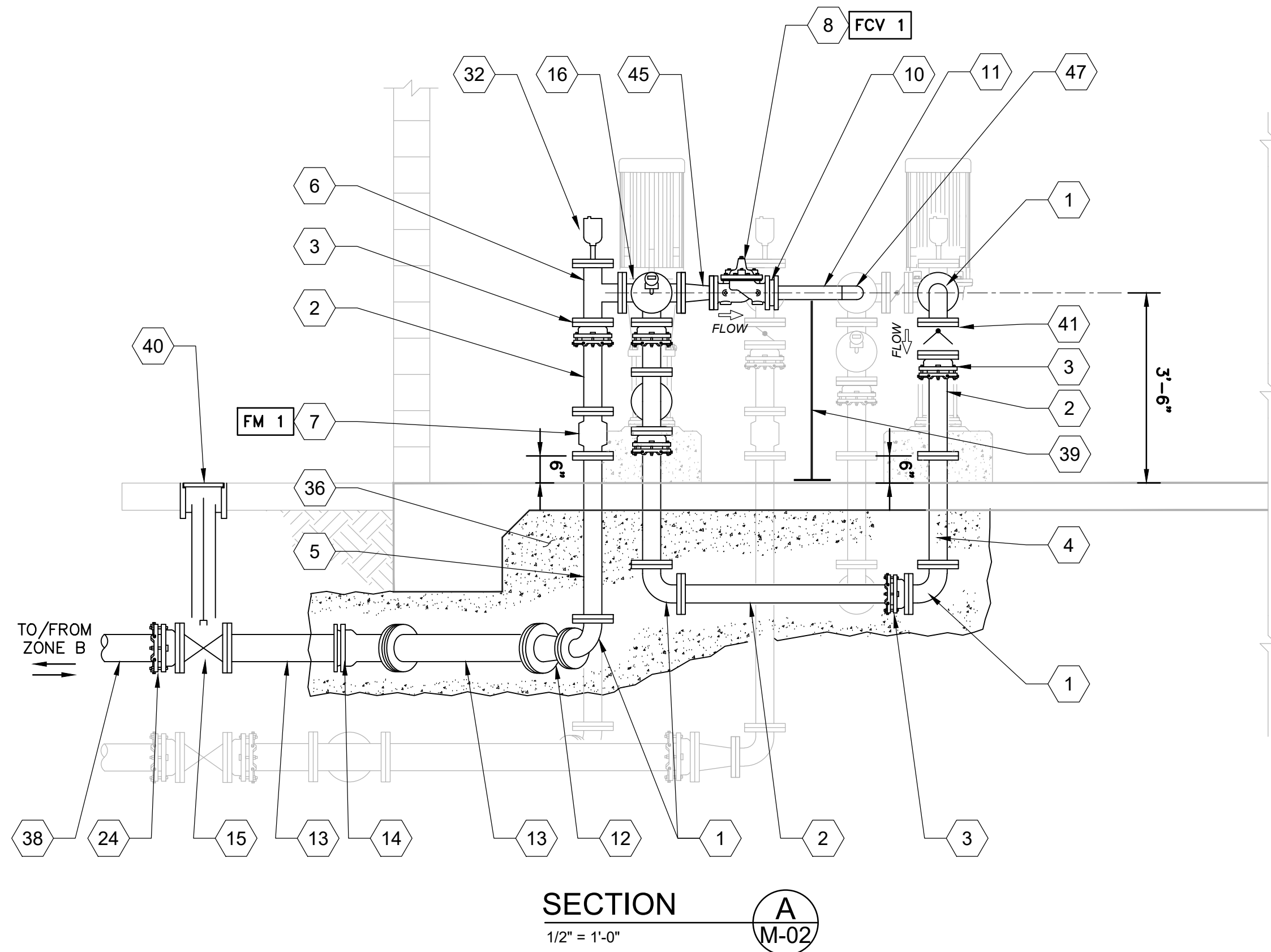


VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS MECHANICAL PLAN



BIGHORN
Desert View
WATER AGENCY

PROJECT:	072-01C
DATE:	SEPTEMBER
DRAWING NUMBER	M-02
	11 / 38



SHEET KEYNOTES

- 4" FL X FL DI 90° BEND
- 4" FL X PE DI PIPE CTF
- 4" FL X MJ ADAPTER RESTRAINED W/ EBAA MEGALUG. CONTRACTOR MAY ELECT TO USE RESTRAINED FLANGE ADAPTERS WHERE APPROVED BY ENGINEER
- 4" X 2'-0" FL X FL DI PIPE
- 4" X 3'-0" FL X FL DI PIPE
- 4" FLANGED DI TEE
- 4" FLANGED MAGNETIC FLOW METER PER CS 16010, SEE ELECTRICAL SHEETS
- 3" FCV PER CS 15100, 2.6.
- 4" X 3" COMPANION FLANGE
- ORIFICE PLATE PER FCV SPECIFICATIONS, SECURE COMPANION FLANGE
- 3" THREADED BRASS PIPE CTF PER CS SECTION 15061
- 4" X 6" FLANGED DI REDUCER
- 6" FL X PE DI PIPE CTF
- 6" MJ X MJ DI 45° BEND RESTRAINED W/ EBAA MEGALUG
- 6" FLANGED GV
- 4" FLANGED DI TEE W/ SIDE OUTLET
- 4" FLANGED DI 90° BEND W/ SIDE OUTLET
- 4" FLANGED MOTOR ACTUATED BUTTERFLY VALVE PER CS 15100 PART 2.5.D.3
- 4" FLANGED MANUALLY ACTUATED BUTTERFLY VALVE PER CS 15100 PART 2.5.D.2
- 4" X 0'-6" FL X FL DI PIPE
- 4" X 3" DI REDUCING 90° BEND
- 4" X 5'-0" FL X FL DI PIPE
- PROVIDE 1/4 TURN LEVER OPERATOR W/ LOCKOUT DEVICE
- 6" FL X MJ ADAPTER RESTRAINED W/ EBAA MEGALUG
- 4" X 1'-0" FL X FL DI PIPE
- 6" MJ X MJ DI 22.5° BEND RESTRAINED W/ EBAA MEGALUG
- 3" EPDM LINED EXPANSION JOINT W/LIMIT ROD
- 3" COUPLER
- 3" FLANGED SILENT CHECK VALVE
- 3" FLANGED BUTTERFLY VALVE W/ 1/4 TURN MANUAL OPERATOR LEVER
- 3" X 4" FLANGED REDUCER
- CAV ASSEMBLY PER DETAIL 4 SHEET M-06
- PUMP PEDESTAL PER DETAIL 2 SHEET M-06
- PUMP NO. 1, SEE CS SECTION 11800
- PUMP NO. 2, SEE CS SECTION 11800
- CONCRETE ENCASMENT PIPE ENVELOPE CS SECTION 02201
- PRESSURE TRANSDUCER PER CS 16010 MOUNTED TO COMPANION
- 6" C900 PVC PIPING, SEE SITE PLAN
- FLANGE OR SADDLE MOUNTED, PIPE SUPPORT PER DETAIL 1, SHEET M-06
- VALVE CAN INSTALLATION PER DETAIL 2 SHEET C-05
- 4" FLANGED SILENT CHECK VALVE W/ 7 1/4" LAY LENGTH PER CS SECTION 15100 PART 2.8
- 4" FLANGED DI TEE W/ 3" BRANCH
- 3" FLANGED MAGNETIC FLOW METER PER CS, SEE ELECTRICAL SHEETS
- 6" FLANGED DI TEE W/ 4" BRANCH
- 4" X 3" FLANGED DI REDUCER
- 4" RESTRAINED FLANGE ADAPTER
- 3" THREADED BRASS 90° BEND
- 3" RESTRAINED DRESSER COUPLER
- CONTRACTOR SHALL PROVIDE ANCHORAGE DESIGN AND CALCULATIONS PER CS SECTION 01611 AND 05501
- 3" FL X PE DI PIPE, CTF

GENERAL SHEET NOTES

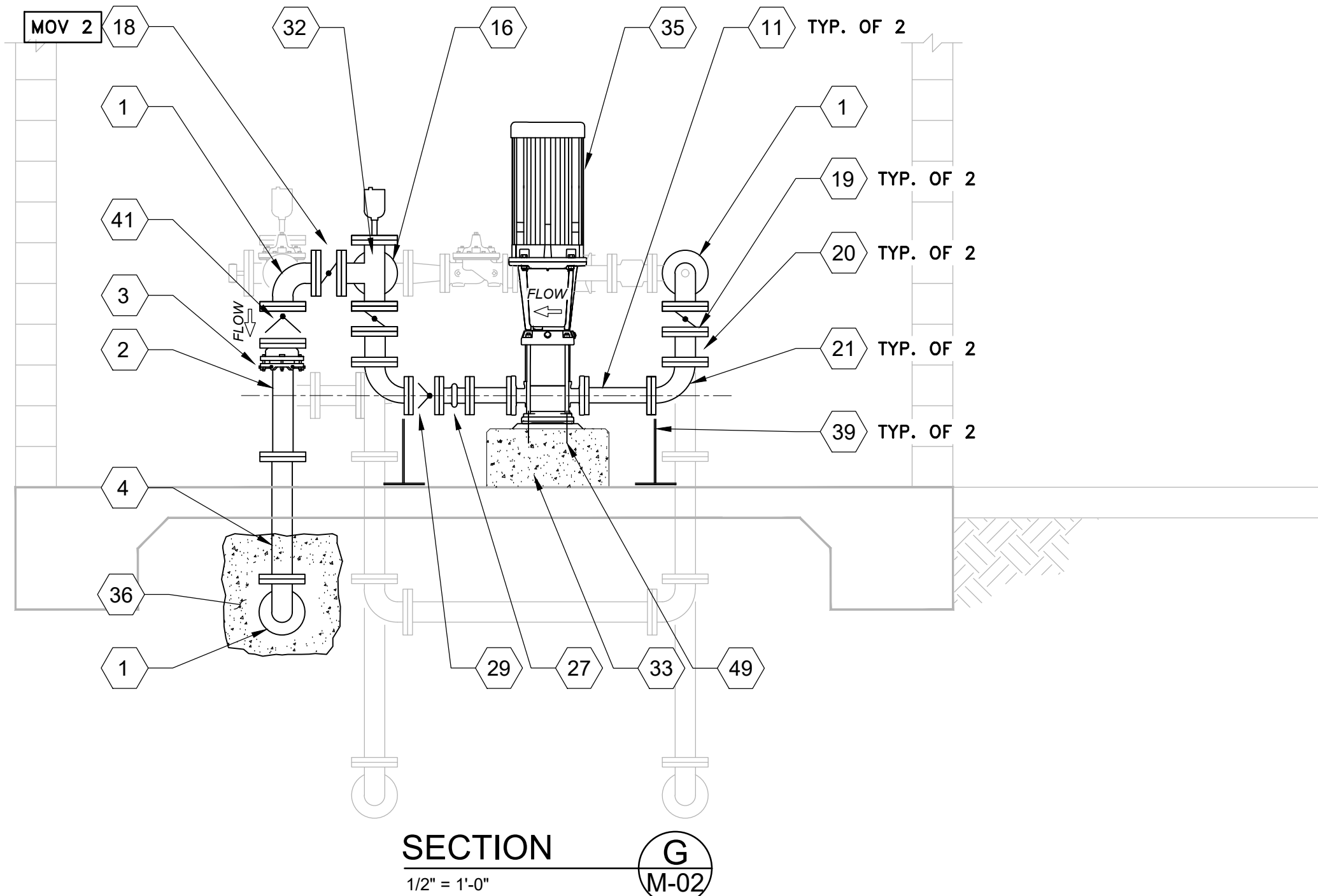
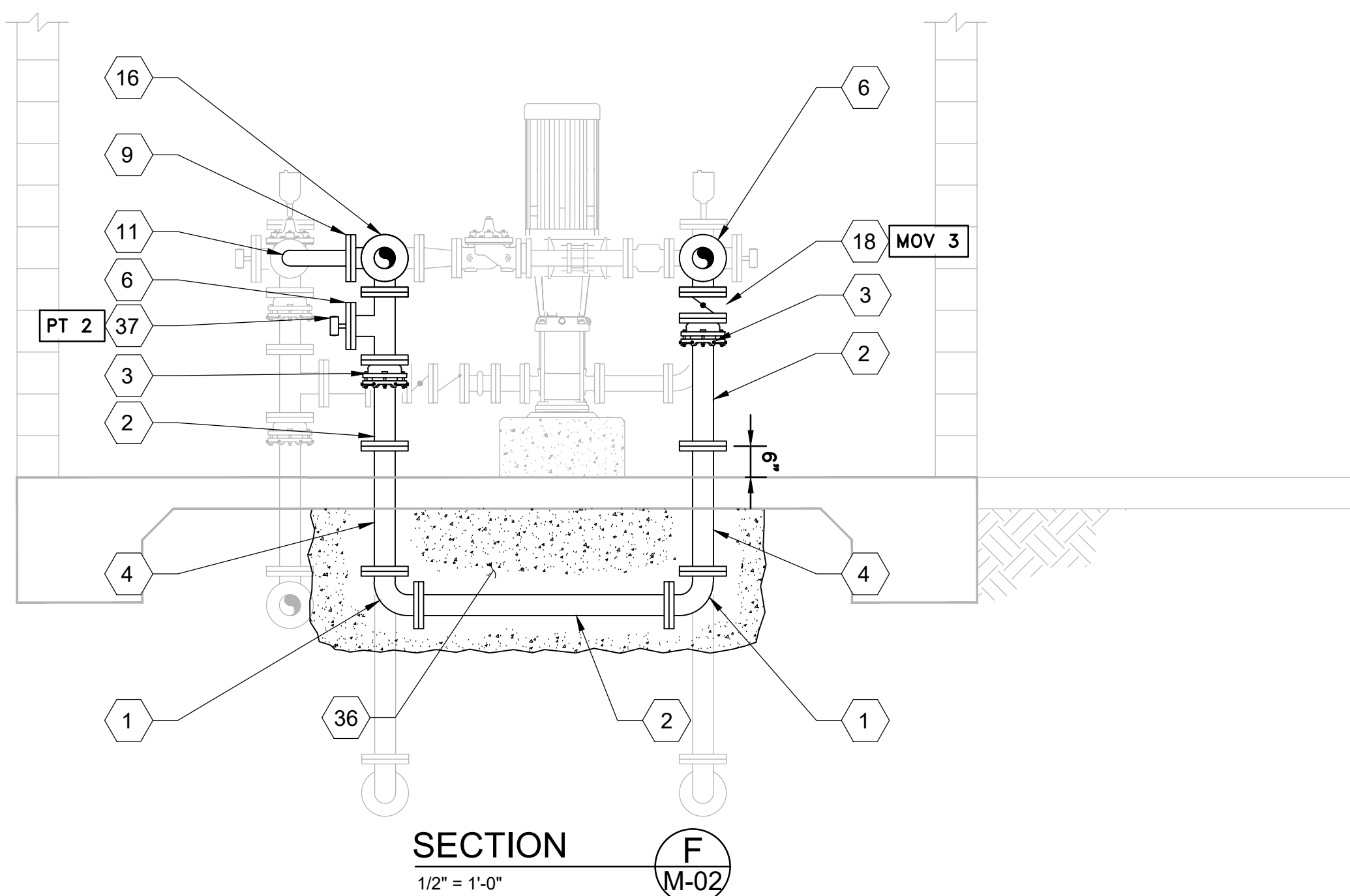
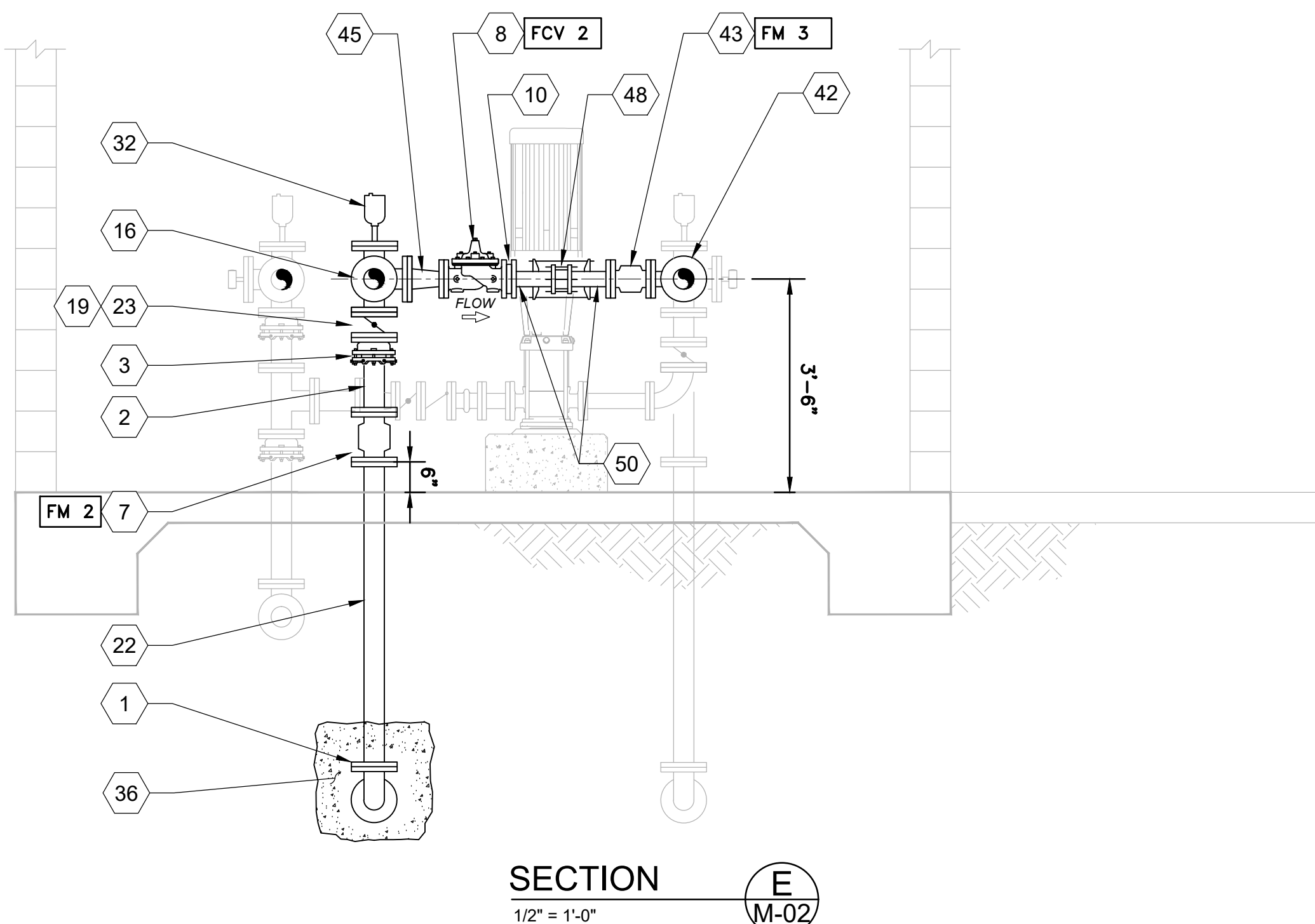
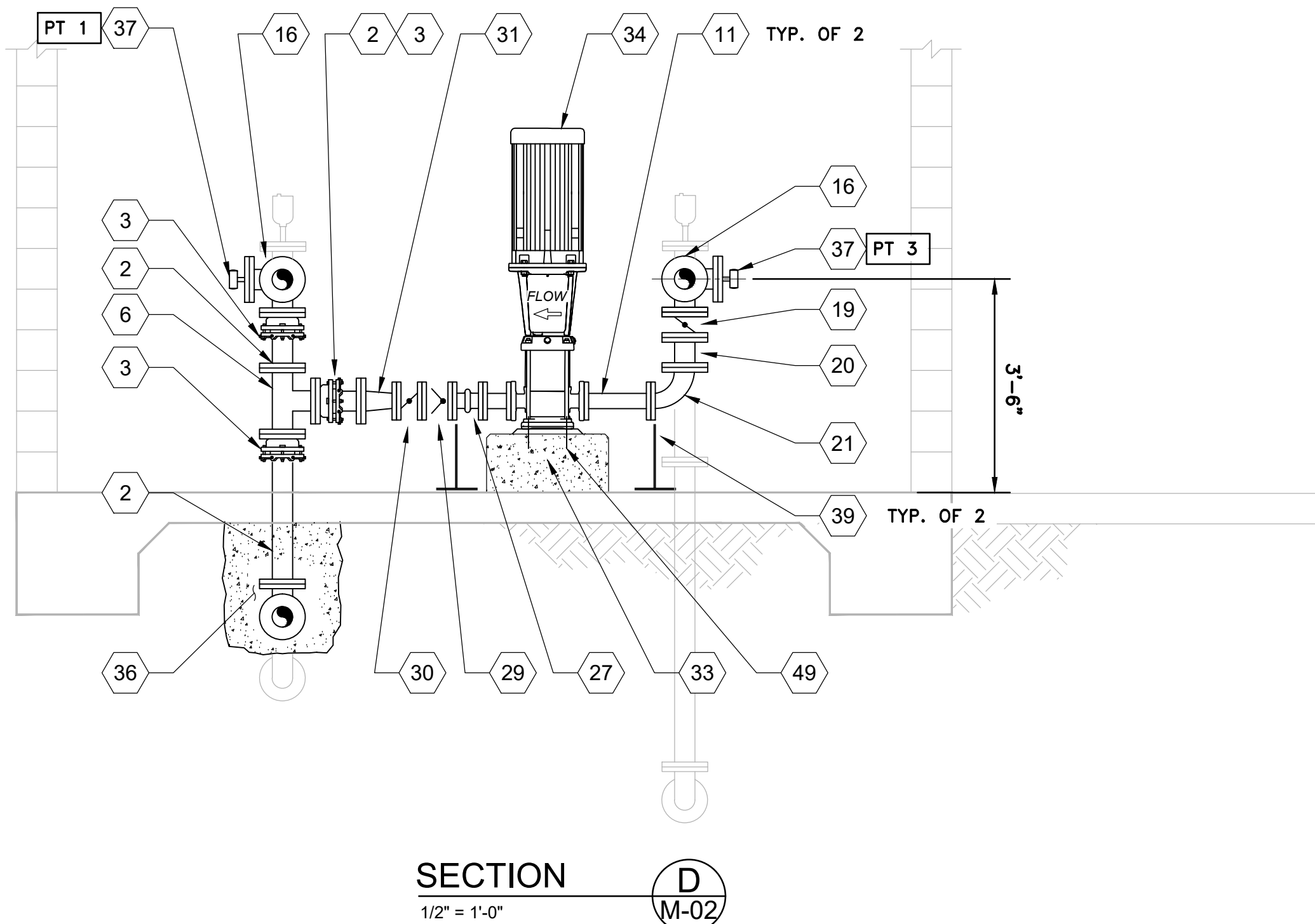
- THE DIMENSIONS SHOWN HEREIN WILL VARY DEPENDING ON THE SPECIFIC INSTRUMENTS, FITTINGS, AND OTHER APPURTENANCES SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND VERIFY ALL DIMENSIONS PRIOR TO PIPING LAYOUT.
- UNO ALL DUCTILE IRON PIPING, FITTINGS, ADAPTERS AND RESTRAINTS SHALL CONFROM TO CS SECTION 15060.
- COAT ALL ABOVE GRADE FITTINGS PER CS SECTION 09900.
- MANUAL AND MOTORIZED VALVE ACTUATORS ARE NOT SHOWN FOR CLARITY, CONTRACTOR SHALL CONFIRM THE POSITIONING AND ORIENTATION OF ALL HAND WHEEL AND MOTORIZED ACTUATORS W/ ENGINEER PRIOR TO INSTALLATION.
- INSTALL LIQUID FILLED PRESSURE GAUGES ON SUCTION AND DISCHARGE SIDE OF EACH PUMP PER DETAIL 5 SHEET M-06.

REVISION
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DESN
J. NELSON
DRW
J. NELSON
CHECK
M. CAREY
APV
9/4/2026

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS IMPROVEMENTS ZONE B PS MECHANICAL SECTION - 1



PROJECT:
072-01C
DATE:
SEPTEMBER
DRAWING NUMBER
M-03
12 / 38



 SHEET KEYNOTES

1. 4" FL X FL DI 90° BEND
2. 4" FL X PE DI PIPE CTF
3. 4" FL X MJ ADAPTER RESTRAINED W/ EBAA MEGALUG. CONTRACTOR MAY ELECT TO USE RESTRAINED FLANGE ADAPTERS WHERE APPROVED BY ENGINEER
4. 4" X 2'-0" FL X FL DI PIPE
5. 4" X 3'-0" FL X FL DI PIPE
6. 4" FLANGED DI TEE
7. 4" FLANGED MAGNETIC FLOW METER PER CS 16010, SEE ELECTRICAL SHEETS
8. 3" FCV PER CS 15100, 2.6.
9. 4" X 3" COMPANION FLANGE
10. ORIFICE PLATE PER FCV SPECIFICATIONS, SECURE COMPANION FLANGE
11. 3" THREADED BRASS PIPE CTF PER CS SECTION 15061
12. 4" X 6" FLANGED DI REDUCER

13. 6" FL X PE DI PIPE CTF
14. 6" MJ X MJ DI 45° BEND RESTRAINED W/ EBAA MEGALUG
15. 6" FLANGED GV
16. 4" FLANGED DI TEE W/ SIDE OUTLET
17. 4" FLANGED DI 90° BEND W/ SIDE OUTLET
18. 4" FLANGED MOTOR ACTUATED BUTTERFLY VALVE PER CS 15100 PART 2.5.D.3
19. 4" FLANGED MANUALLY ACTUATED BUTTERFLY VALVE PER CS 15100 PART 2.5.D.2
20. 4" X 0'-6" FL X FL DI PIPE
21. 4" X 3" DI REDUCING 90° BEND
22. 4" X 5'-0" FL X FL DI PIPE
23. PROVIDE 1/4 TURN LEVER OPERATOR W/ LOCKOUT DEVICE
24. 6" FL X MJ ADAPTER RESTRAINED W/ EBAA MEGALUG

25. 4" X 1'-0" FL X FL DI PIPE
26. 6" MJ X MJ DI 22.5° BEND RESTRAINED W/ EBAA MEGALUG
27. 3" EPDM LINED EXPANSION JOINT W/LIMIT ROD
28. 3" COUPLER
29. 3" FLANGED SILENT CHECK VALVE
30. 3" FLANGED BUTTERFLY VALVE W/ 1/4 TURN MANUAL OPERATOR LEVER
31. 3" X 4" FLANGED REDUCER
32. CAV ASSEMBLY PER DETAIL 4 SHEET M-06
33. PUMP PEDESTAL PER DETAIL 2 SHEET M-06
34. PUMP NO. 1, SEE CS SECTION 11800
35. PUMP NO. 2, SEE CS SECTION 11800
36. CONCRETE ENCASUREMENT PIPE ENVELOPE CS SECTION 02201
37. PRESSURE TRANSDUCER PER CS 16010 MOUNTED TO COMPANION FLANGE, SEE ELECTRICAL SHEETS

38. 6" C900 PVC PIPING, SEE SITE PLAN
39. FLANGE OR SADDLE MOUNTED, PIPE SUPPORT PER DETAIL 1, SHEET M-06
40. VALVE CAN INSTALLATION PER DETAIL 2 SHEET C-05
41. 4" FLANGED SILENT CHECK VALVE W/ 7 1/4" LAY LENGTH PER CS SECTION 15100 PART 2.8
42. 4" FLANGED DI TEE W/ 3" BRANCH
43. 3" FLANGED MAGNETIC FLOW METER PER CS, SEE ELECTRICAL SHEETS
44. 6" FLANGED DI TEE W/ 4" BRANCH
45. 4" X 3" FLANGED DI REDUCER
46. 4" RESTRAINED FLANGE ADAPTER
47. 3" THREADED BRASS 90° BEND
48. 3" RESTRAINED DRESSER COUPLER
49. CONTRACTOR SHALL PROVIDE ANCHORAGE DESIGN AND CALCULATIONS PER CS SECTION 01611 AND 05501
50. 3" FL X PE DI PIPE, CTF

GENERAL SHEET NOTES

1. THE DIMENSIONS SHOWN HEREIN WILL VARY DEPENDING ON THE SPECIFIC INSTRUMENTS, FITTINGS, AND OTHER APPURTENANCES SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND VERIFY ALL DIMENSIONS PRIOR TO PIPING LAYOUT.
2. UNO ALL DUCTILE IRON PIPING, FITTINGS, ADAPTERS AND RESTRAINTS SHALL CONFROM TO CS SECTION 15060.
3. COAT ALL ABOVE GRADE FITTINGS PER CS SECTION 09900.
4. MANUAL AND MOTORIZED VALVE ACTUATORS ARE NOT SHOWN FOR CLARITY, CONTRACTOR SHALL CONFIRM THE POSITIONING AND ORIENTATION OF ALL HAND WHEEL AND MOTORIZED ACTUATORS W/ ENGINEER PRIOR TO INSTALLATION.
5. INSTALL LIQUID FILLED PRESSURE GAUGES ON SUCTION AND DISCHARGE SIDE OF EACH PUMP PER DETAIL 5 SHEET M-06.

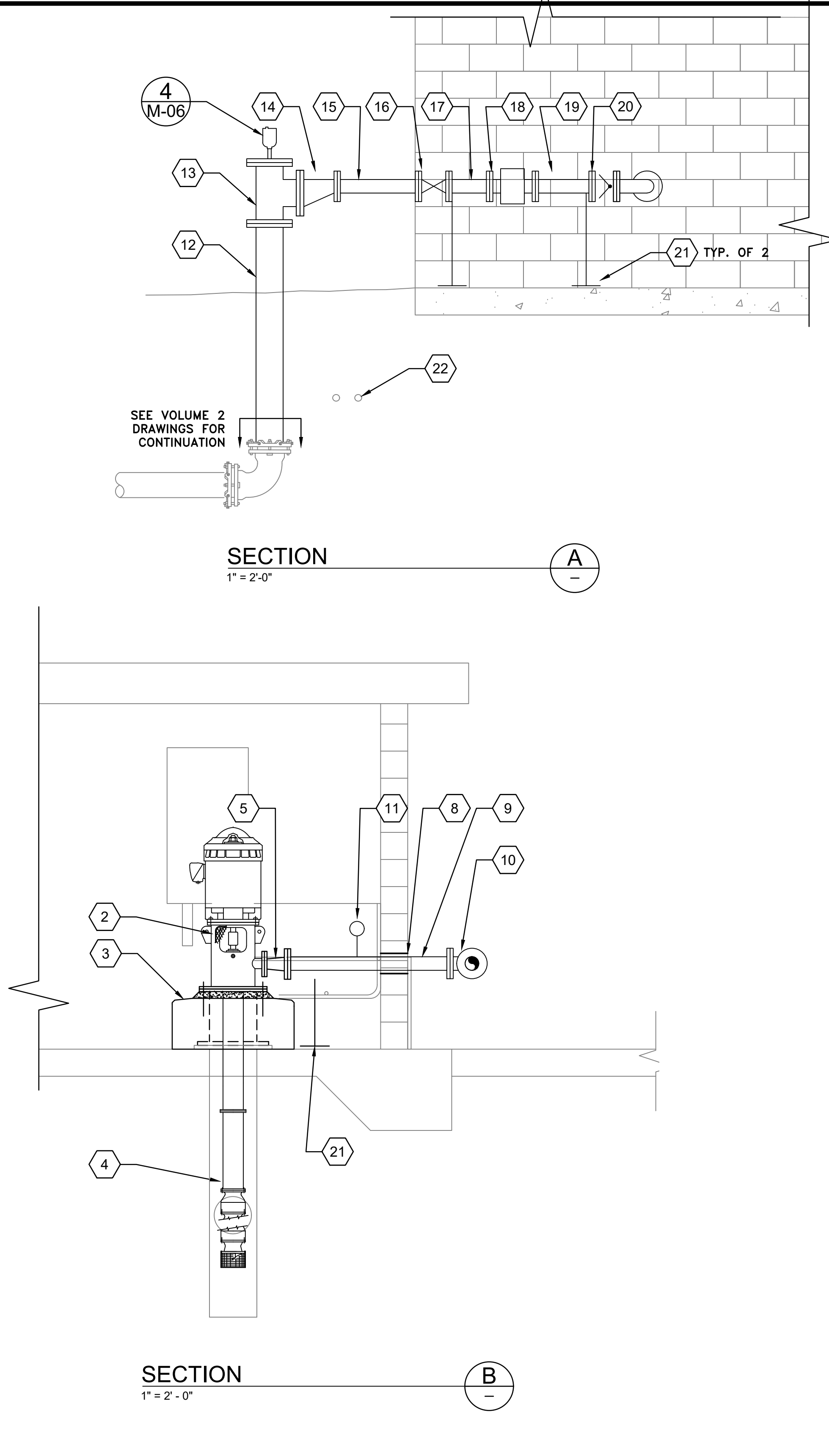
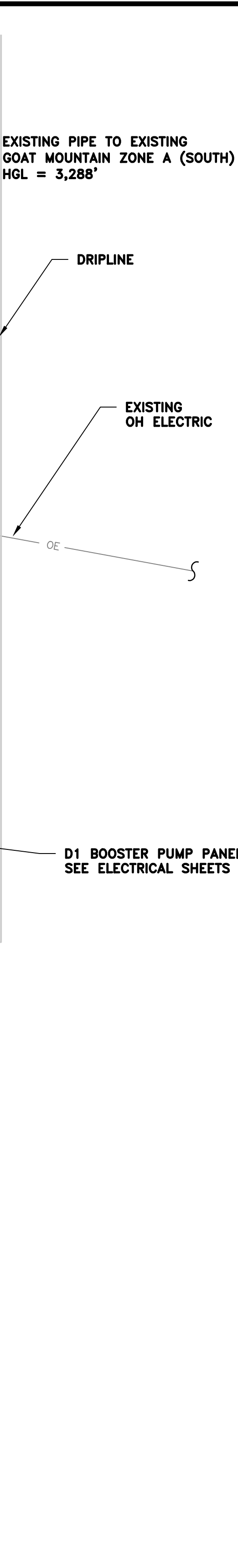
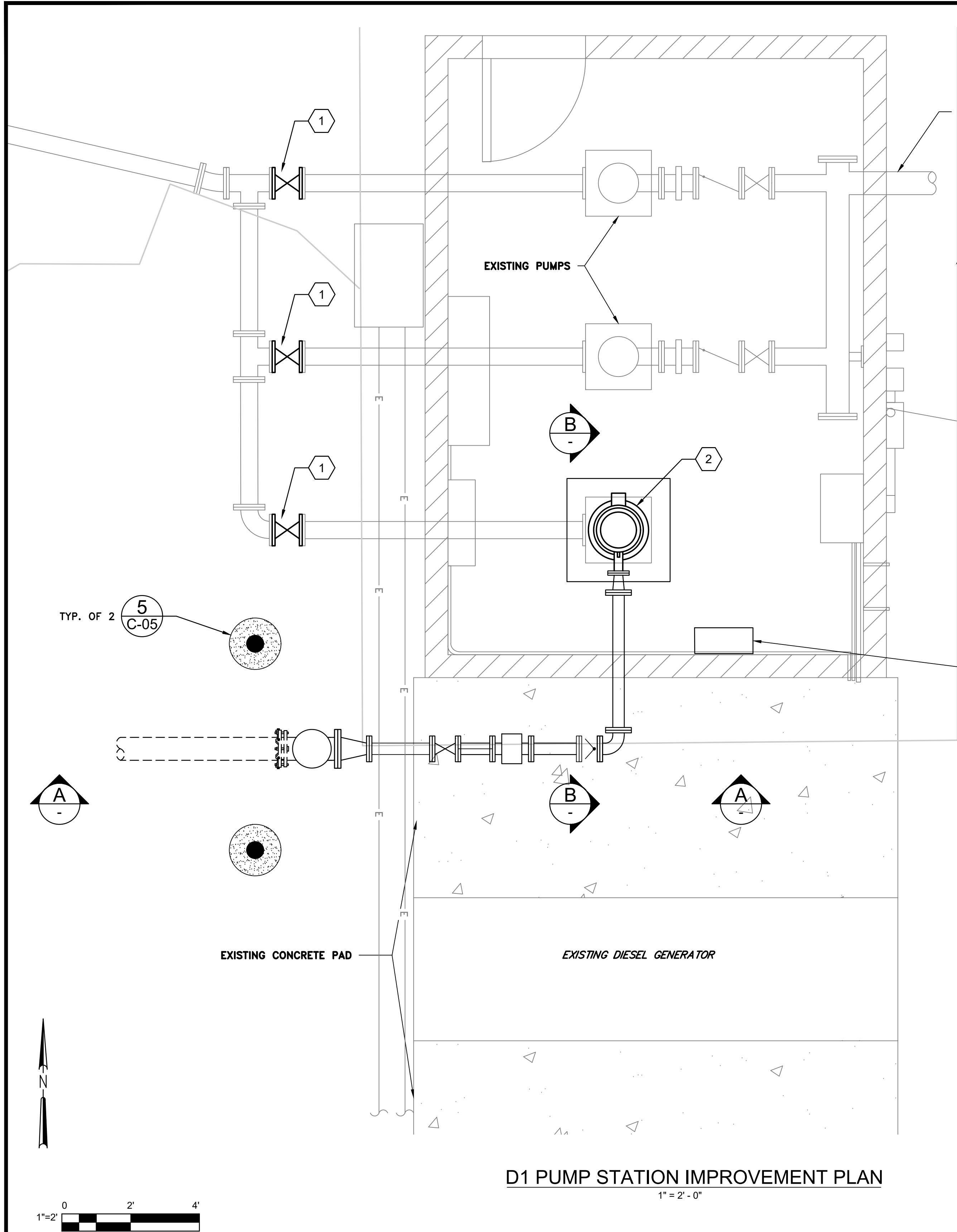
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APV
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VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS MECHANICAL SECTION - 2



PROJECT:
072-01C
DATE:
SEPTEMBER
DRAWING NUMBER
M-04
13 / 38



REVISION	BID SET
DESIGN	J. NELSON
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REGISTERED PROFESSIONAL ENGINEER
Jared P. Nelson
No. C89673
Exp. 3/31/27
STATE OF CALIFORNIA

VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
D1 PS MECHANICAL PLAN AND SECTIONS



PROJECT:	072-01C
DATE:	SEPTEMBER
DRAWING NUMBER	M-05
	14 / 38

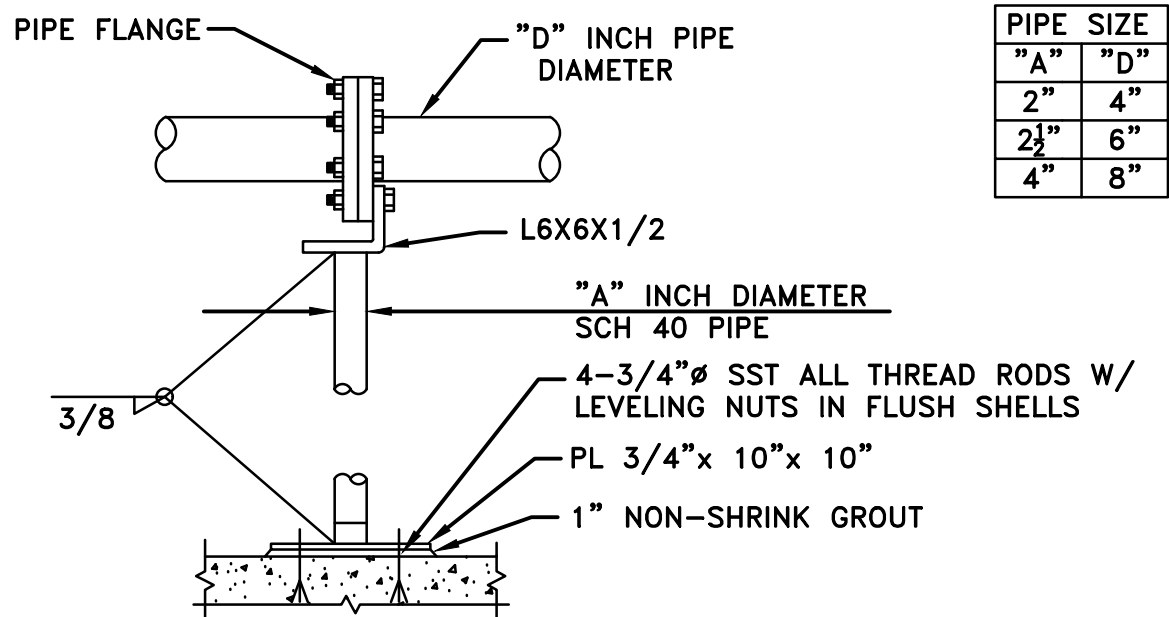
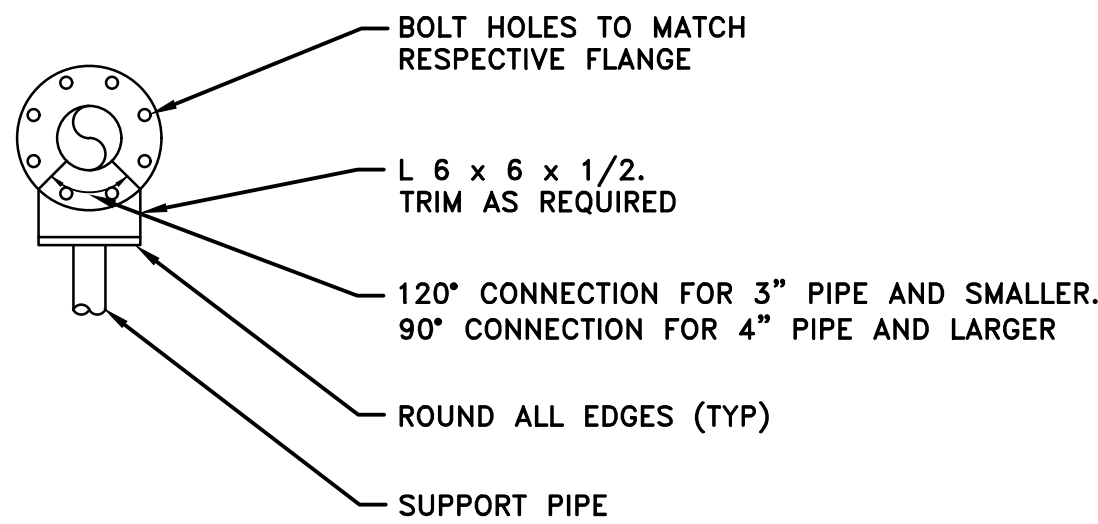
SHEET KEYNOTES

- REMOVE (E) GATE VALVE AND INSTALL 6" GATE VALVE, USE RESTRAINED FLANGE ADAPTERS WHERE REQUIRED
- INSTALL ZONE D1 BOOSTER PUMP PER CS 11900.
- INSTALL PUMP PEDESTAL PER DETAIL 3 SHEET M-06.
- INSTALL D1 BOOSTER PUMP IN EXISTING PUMP CAN, CONTRACTOR SHALL VERIFY CAN DEPTH, DIAMETER AND OTHER DIMENSIONS PRIOR TO PUMP SUBMITTAL
- FLANGED DI REDUCER
- NOT USED
- NOT USED
- CORE (E) CMU WALL FOR PIPE PENETRATION, NON-SHRINK GROUT ANNULAR SPACE
- 4" X 4'-0" FL X FL DI PIPE
- 4" FLANGED DI 90°
- SADDLE MOUNTED PRESSURE SWITCH, SEE ELECTRICAL SHEETS

- 8" FL X PE DI PIPE, CTF
- 8" FLANGED DI TEE
- 4" X 8" FLANGED ECCENTRIC DI REDUCER
- 4" X 2'-0" FLANGED DI PIPE
- 4" FLANGED GV
- 4" X 1'-0" FLANGED DI PIPE
- 4" MAGNETIC FLOW METER PER CS 16010, SEE ELECTRICAL SHEETS
- 4" X 1'-6" FLANGED DI PIPE
- 4" SILENT CHECK VALVE
- FLANGED MOUNTED PIPE SUPPORT PER DETAIL 1 SHEET M-06
- (2) 2" EXISTING ELECTRICAL CONDUIT, CONTRACTOR TO POTHOLE AND VERIFY PER CS 310523

GENERAL SHEET NOTES

- AT THE ONSET OF CONSTRUCTION, THE CONTRACTOR SHALL REPLACE EXISTING GATE VALVES (3) IN KIND. THE CONTRACTOR SHALL FIELD VERIFY VALVE TYPE, SIZE AND END CONNECTIONS. CONTRACTOR SHALL OBTAIN APPROVAL FROM CONSTRUCTION MANAGER BEFORE PURCHASING IN KIND REPLACEMENT VALVES.
- THE DIMENSIONS SHOWN HEREIN WILL VARY DEPENDING ON THE SPECIFIC INSTRUMENTS, FITTINGS, AND OTHER APPURTENANCES SUBMITTED BY THE SONTRACTOR AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND VERIFY ALL DIMENSIONS PRIOR TO PIPING LAYOUT.
- UNO ALL DUCTILE IRON PIPING FITTINGS, ADAPTERS AND RESTAINTS SHALL CONFORM TO CS SECTION 15060.
- COAT ALL ABOVE GRADE FITTINGS PER CS SECTION 09900.

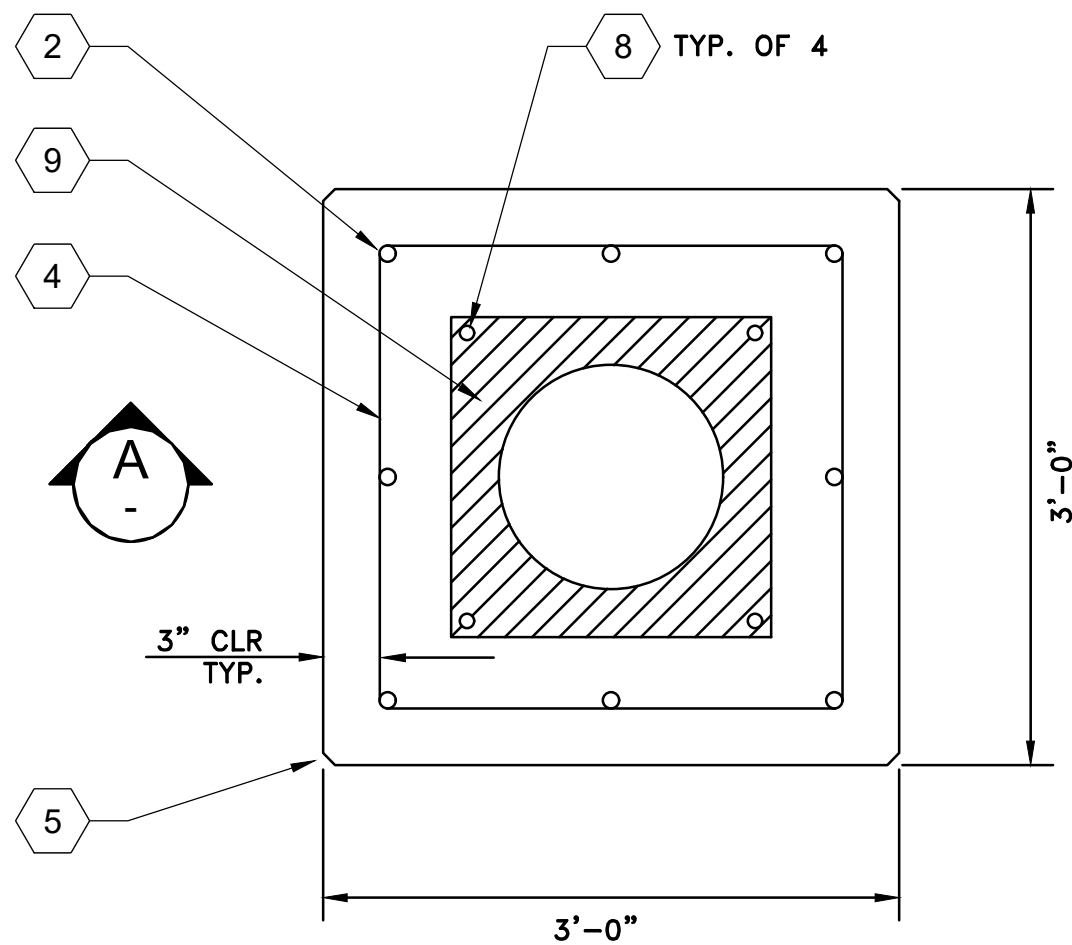


PIPE SIZE	
"A"	"D"
2"	4"
2 1/2"	6"
4"	8"

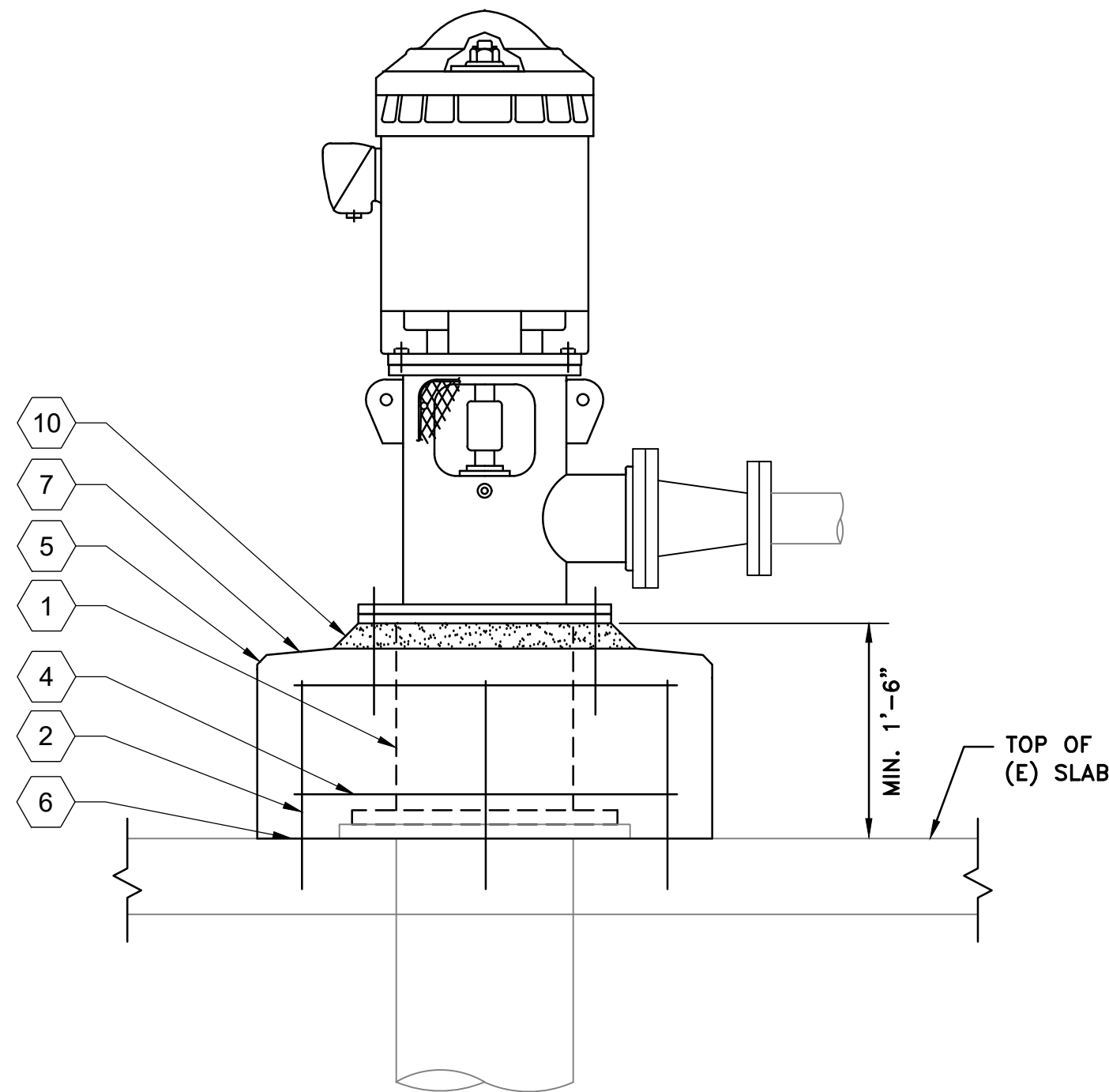
- NOTES:
1. MAXIMUM VERTICAL LOAD = 1000 LBS.
 2. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE. MATERIAL FOR ANCHOR BOLTS, PIPE, AND L 6" X 6" X 1/2" SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, MATERIAL FOR ANCHOR BOLTS, PIPE, AND L 6" X 6" X 1/2" SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 3. FIELD PAINT PER CS.
 4. CONTRACTOR MAY SUBMIT ALTERNATIVE DESIGNS FOR REVIEW BY ENGINEER.

1 PIPE SUPPORT

VAR. NTS



PLAN

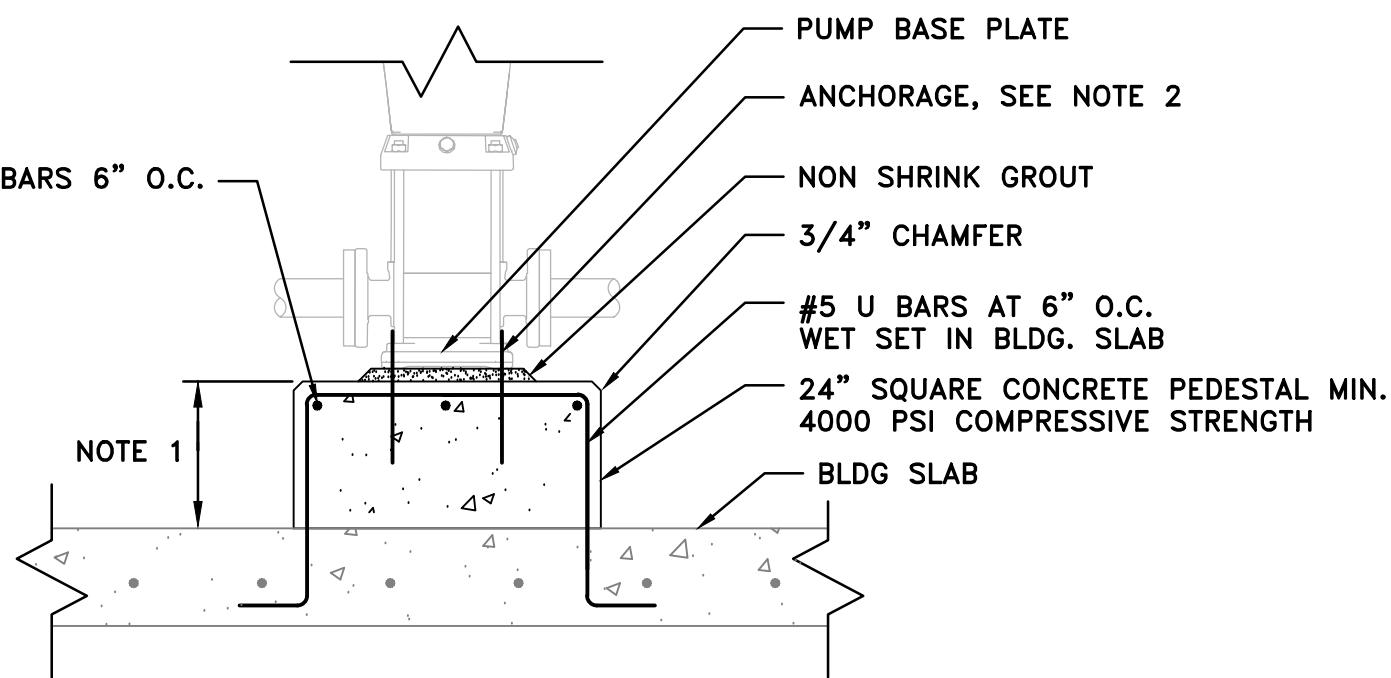


SECTION - A

1. EPOXY LINED AND COATED 14" FLANGED STL RISER FABRICATE. CONTRACTOR SHALL CONFIRM HEIGHT, FLANGE TYPE, AND DIAMETER PRIOR TO FABRICATION. EXTERIOR COAT PER SECTION CS 09900
2. EPOXY ANCHORED #4 BAR, TYP OF 8. EQ SPACED EMBED MIN. 5" IN EXISTING SLAB WITH ICC-ES LISTED, CRACKED CONCRETE, SEISMIC C2 SIMPSON SET-XP OR EQUAL.
3. CONCRETE PUMP PEDESTAL, STRUCTURAL MIX PER SECTION CS 03002
4. #4 AT 6" EW TOP & BOTTOM MATS, MIN COVER 2" SIDES/BOTTOM, 3" TOP.
5. 3/4" CHAMFER, TYP. OF 4
6. SHOT-BLAST / SCARIFY SLAB SURFACE TO TO ±1/4" AMPLITUDE AND APPLY EPOXY BONDING AGENT ASTM C881 TYPE II OR V IMMEDIATELY BEFORE POUR
7. SLOPE TOP OF PEDESTAL 1/8"/FT AWAY FROM RISER.
8. ANCHOR SOLE PLATE TO PEDESTAL W/ ASTM A193 B8M CLASS 2 ALL THREAD ANCHORS W/ ASTM A194 GRADE 8M NUTS AND 316 SS FLAT WASHERS. CONTRACTOR TO DETERMINE ALL THREAD DIAMETER AND EMBEDMENT DEPTH AND PROVIDE CALCULATIONS SUBMITTAL
9. SOLE PLATE, SIZING PER MANUFACTURER
10. NON-SHRINK PRECISION GROUT, CEMENT-BASED, ASTM C1107, NON-METALLIC, HIGH-FLOW, 28-DAY COMPRESSIVE STRENGTH 8,000 PSI

3 VERTICAL TURBINE PUMP PEDESTAL

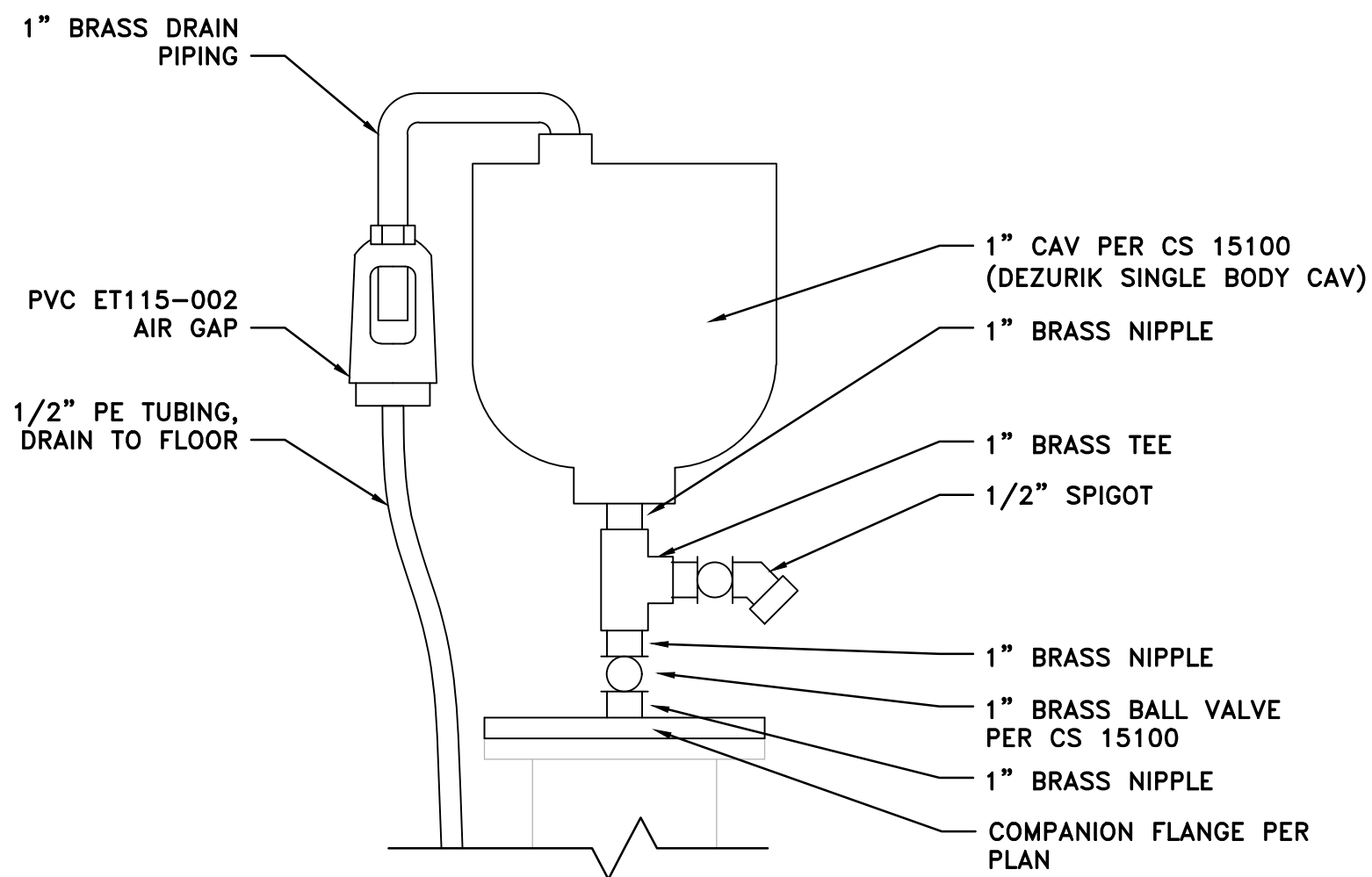
VAR. NTS



- DETAIL NOTES:
1. COORDINATE PUMP PEDESTAL HEIGHT W/ PUMP PIPING ELEVATIONS, SEE MECHANICAL SHEETS.
 2. CONTRACTOR SHALL PROVIDE ANCHORAGE DESIGN AND CALCULATIONS PER CS SECTIONS 01611 AND 05501.

2 EQUIPMENT PEDESTAL

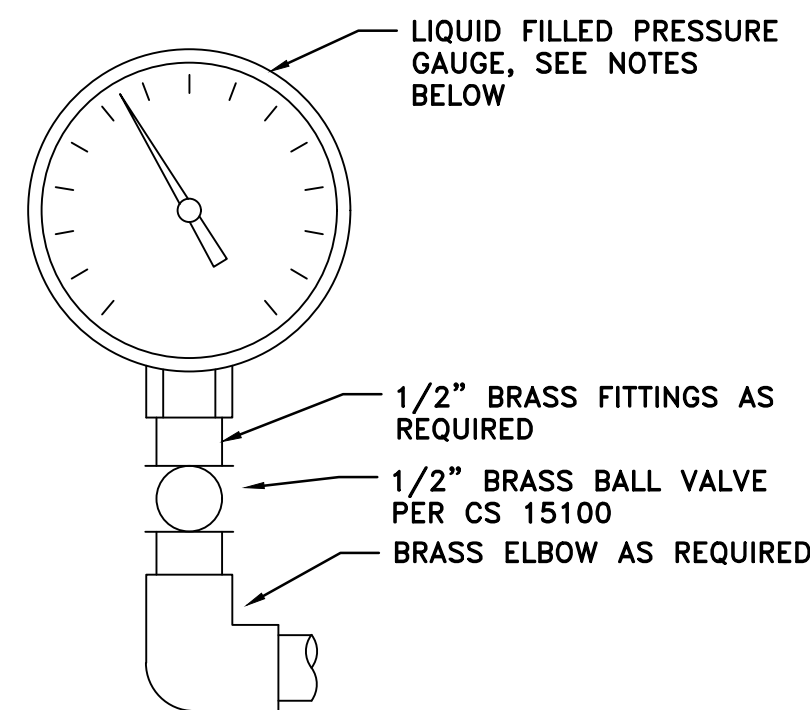
VAR. NTS



- DETAIL NOTES:
1. FOR OUTSIDE LOCATIONS:
 - A. PROVIDE SS INSECT SCREEN AT END OF BRASS DRAIN PIPING.
 - B. OMIT PVC AIR GAP, PE DRAIN TUBING, 1" TEE, AND SAMPLE PORT.

4 1" ABOVE GRADE CAV

VAR. NTS



- DETAIL NOTES:
1. GAUGE SHALL BE LIQUID-FILLED, MINIMUM 4-1/2-INCH DIAMETER DIAL.
 2. GAUGE CASE SHALL BE STAINLESS STEEL WITH BLOW-OUT BACK FOR SAFETY.
 3. GAUGE ACCURACY SHALL BE ±1% OF FULL SCALE.
 4. SELECT GAUGE RANGE SUCH THAT NORMAL OPERATING PRESSURE IS BETWEEN 30% AND 70% OF FULL SCALE.
 5. PROVIDE PRESSURE SNUBBER OR PULSATION DAMPENER UPSTREAM OF GAUGE WHERE INSTALLED ON PUMP DISCHARGE OR OTHER PULSATING SERVICE.
 6. INSTALL GAUGE IN VERTICAL UPRIGHT POSITION AND ORIENT FOR EASY READING FROM OPERATING FLOOR.
 7. COORDINATE EXACT LOCATION WITH PRESSURE TRANSMITTER (PT) WHERE BOTH ARE INSTALLED AT SAME POINT.

5 PRESSURE GAUGE

VAR. NTS

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9/4/2026



VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS IMPROVEMENTS MECHANICAL DETAILS



BIGHORN
Desert View
WATER AGENCY

PROJECT: 072-01C

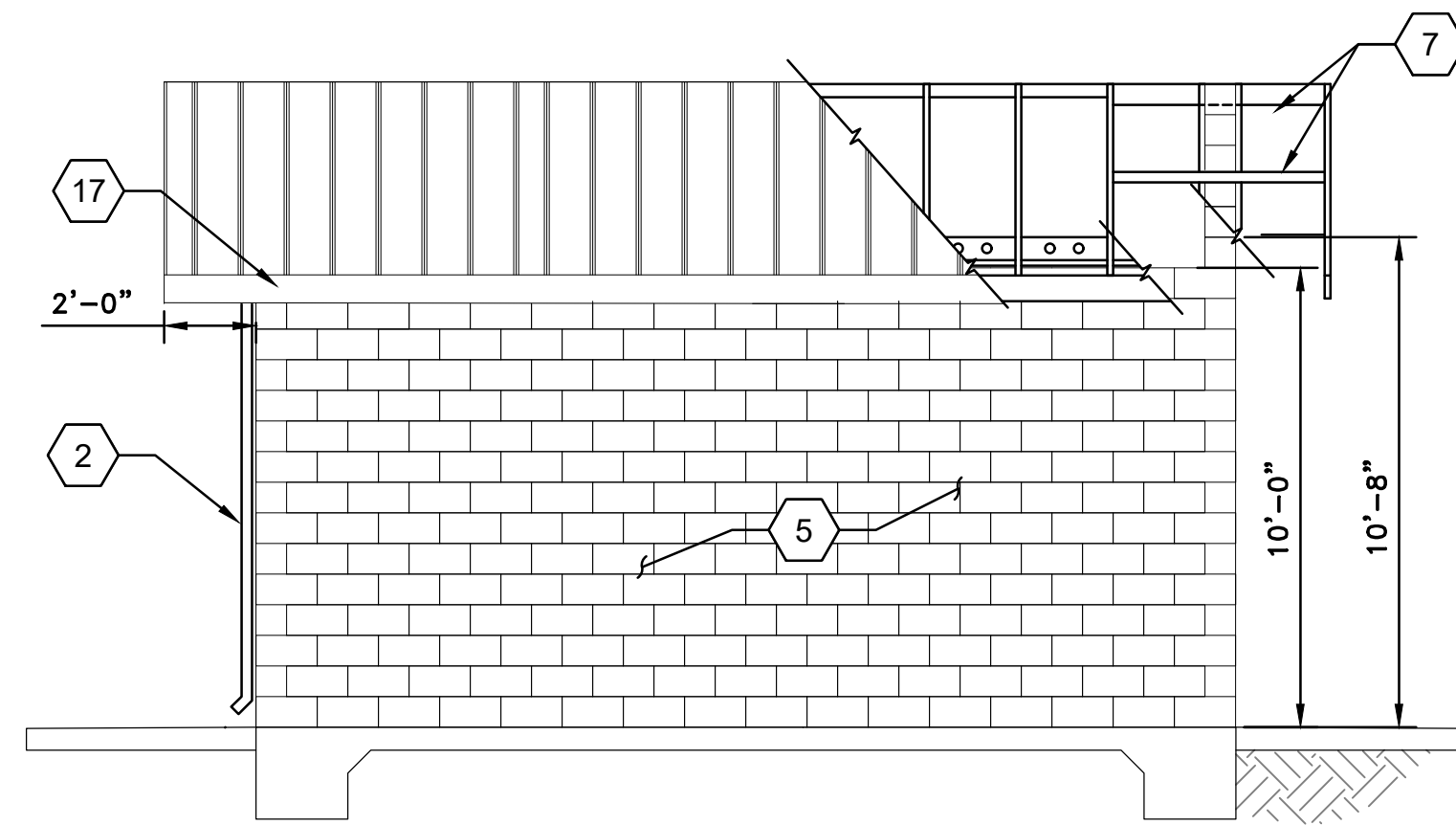
DATE:

SEPTEMBER

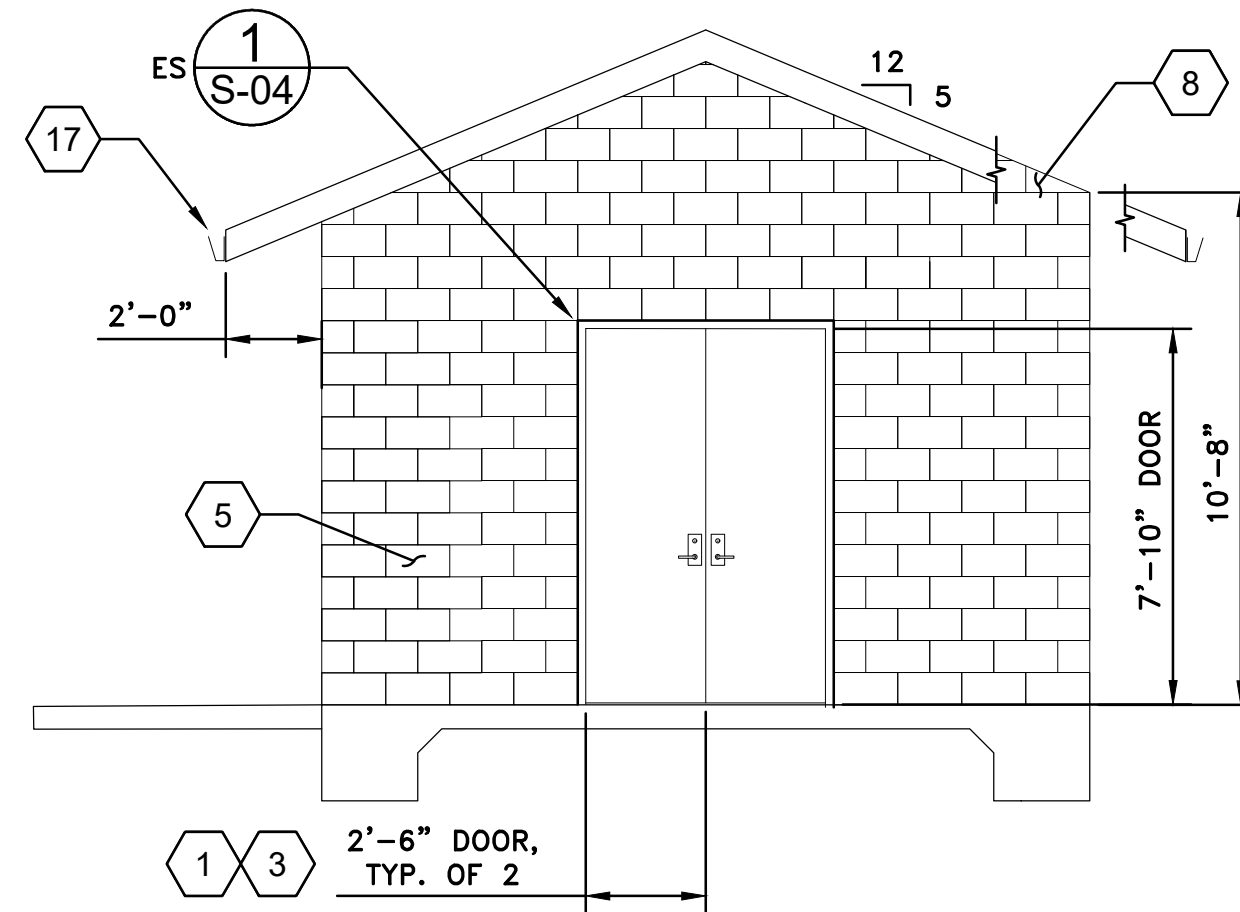
DRAWING NUMBER

M-06

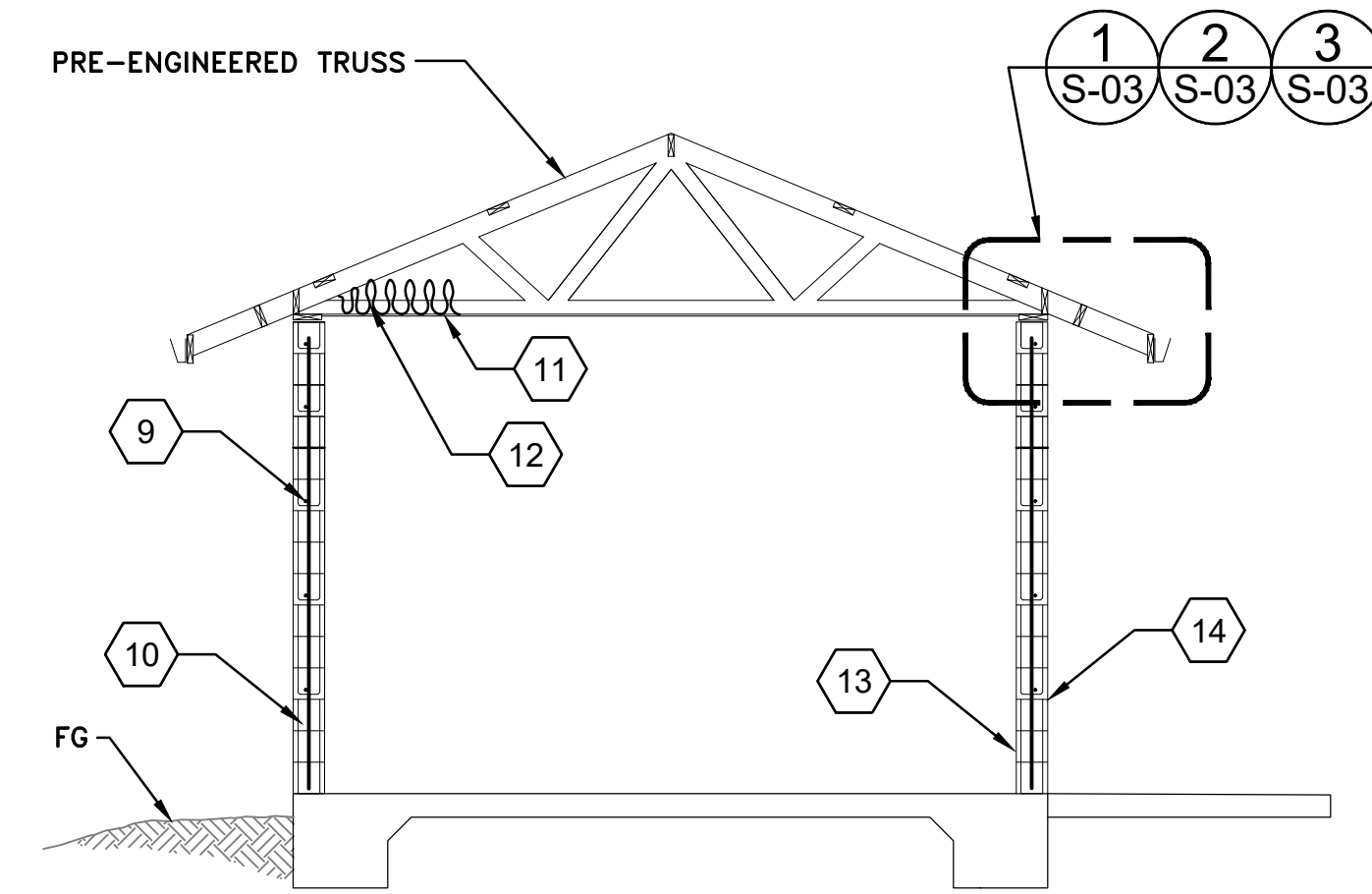
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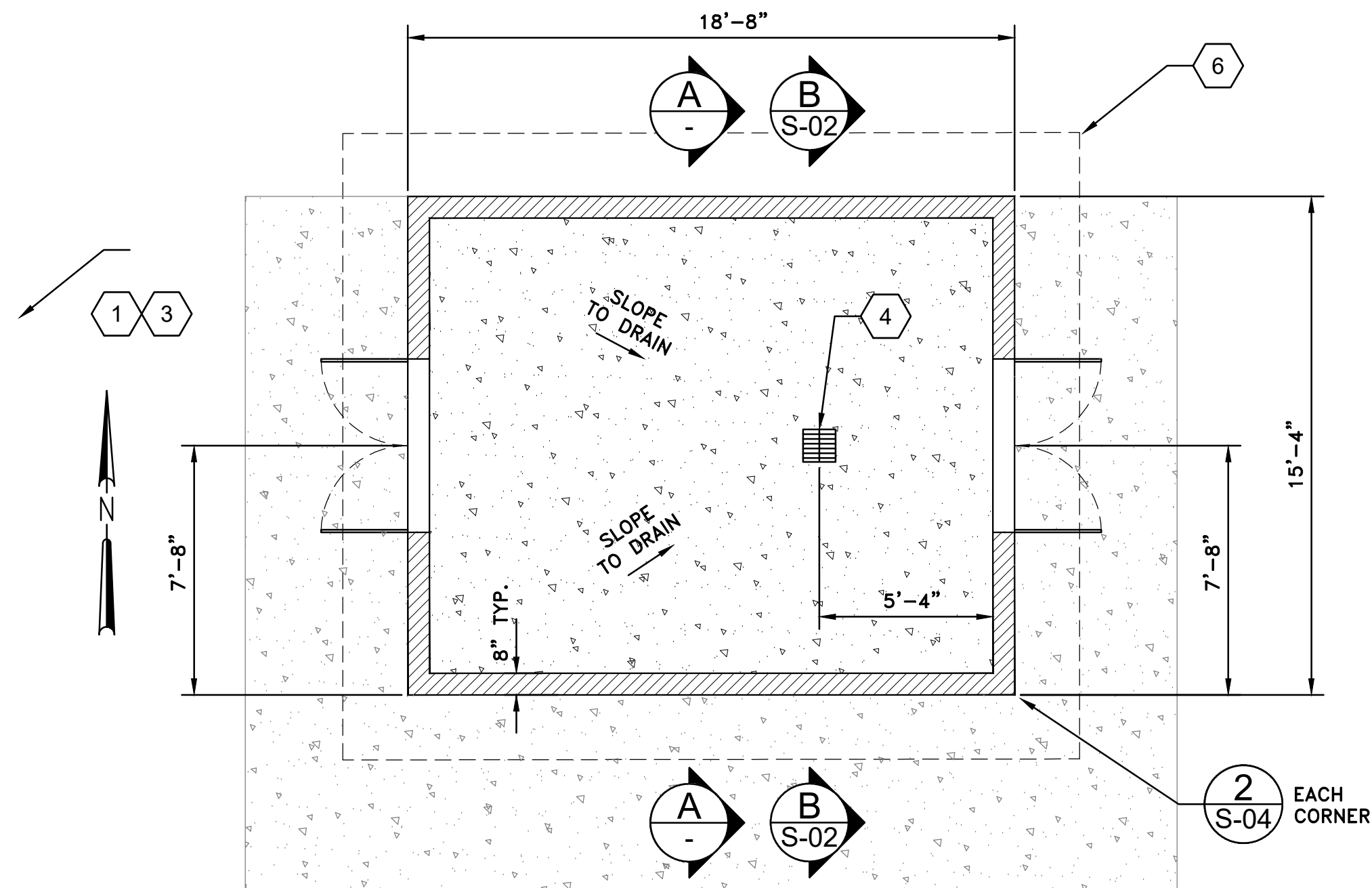
SOUTH / NORTH ELEVATION
1/4" = 1'-0"



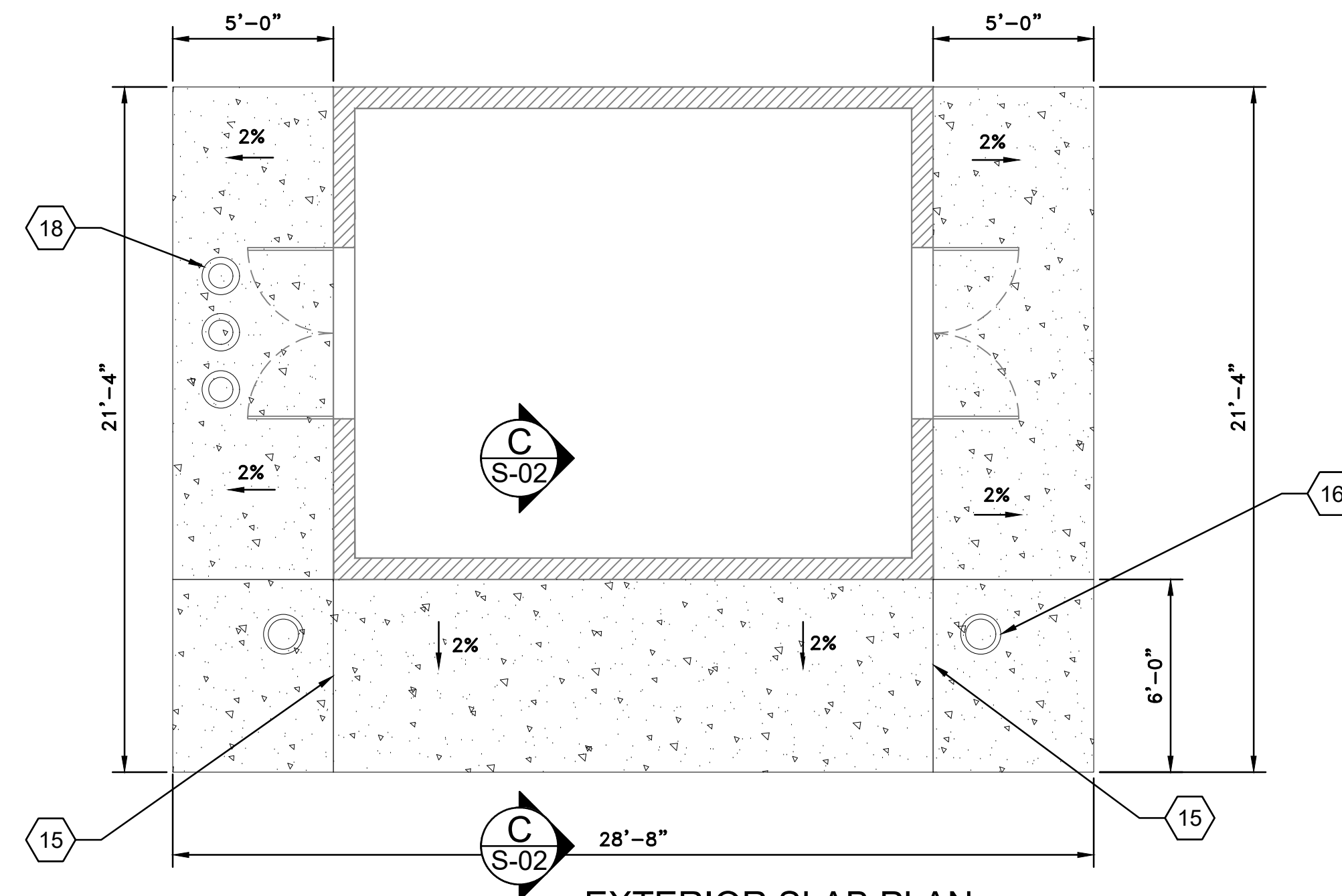
EAST ELEVATION
1/4" = 1'-0"



A SECTION
1/4" = 1'-0"



PLAN
1/4" = 1'-0"



EXTERIOR SLAB PLAN
1/4" = 1'-0"

SHEET KEYNOTES

- 2'-6" X 7'-10" HOLLOW METAL DOOR W/ FIBROUS HONEYCOMB CORE W/ LOUVER
- DOWN SPOUT LOCATED ON WEST FACE OF BLDG, TYP. OF 2
- RIGHT DOOR FIXED
- FLOOR DRAIN INLET
- SPLIT FACE CMU PER CS 04200.
- DRIPLINE
- OUTRIGGER
- PROVIDE SMOOTH FACE CMU WHERE IN CONTACT W/ GABLE LEDGER, ALL OTHER EXTERIOR FACES SPLIT FACE

- HORIZONTAL REINFORCEMENT #5 AT 16" O.C.
- VERTICAL REINFORCEMENT #5 AT 24" O.C. 12" MAX FROM ENDS
- 5/8" GYPSUM BOARD TYPE X
- R38 BATT INSULATION
- COAT INTERIOR SURFACE PER SECTION 09900, ALL INTERIOR CMU FACE
- COAT EXTERIOR CMU SURFACES PER SECTION 09900, ALL EXTERIOR FACES
- CONSTRUCTION JOINT
- GROUND ROD HAND HOLE, SEE ELECTRICAL SHEETS
- SEAMLESS GUTTER PER CS 07620
- VALVE CANS FLUSH W/ SLAB, SEE DETAIL 4 ON SHEET C-05

GENERAL SHEET NOTES

- SEALANTS (MINIMUM): AT A MINIMUM, PROVIDE SEALANT PER CS 07900 AT: (1) EXTERIOR WALL PENETRATIONS, (2) PERIMETER OF DOORS/FRAMES/LOUVERS, (3) DISSIMILAR MATERIAL TRANSITIONS EXPOSED TO WEATHER, (4) INTERIOR WET AREAS AT FIXTURES/EQUIPMENT PADS, AND (5) FLOOR/CONTROL JOINTS WHERE INDICATED BY 07900.
- EXTERIOR BUILDING LIGHTS, MANUAL TRANSFER SWITCH, AND METER/MAIN PANEL NOT SHOWN FOR CLARITY, SEE ELECTRICAL SHEETS.

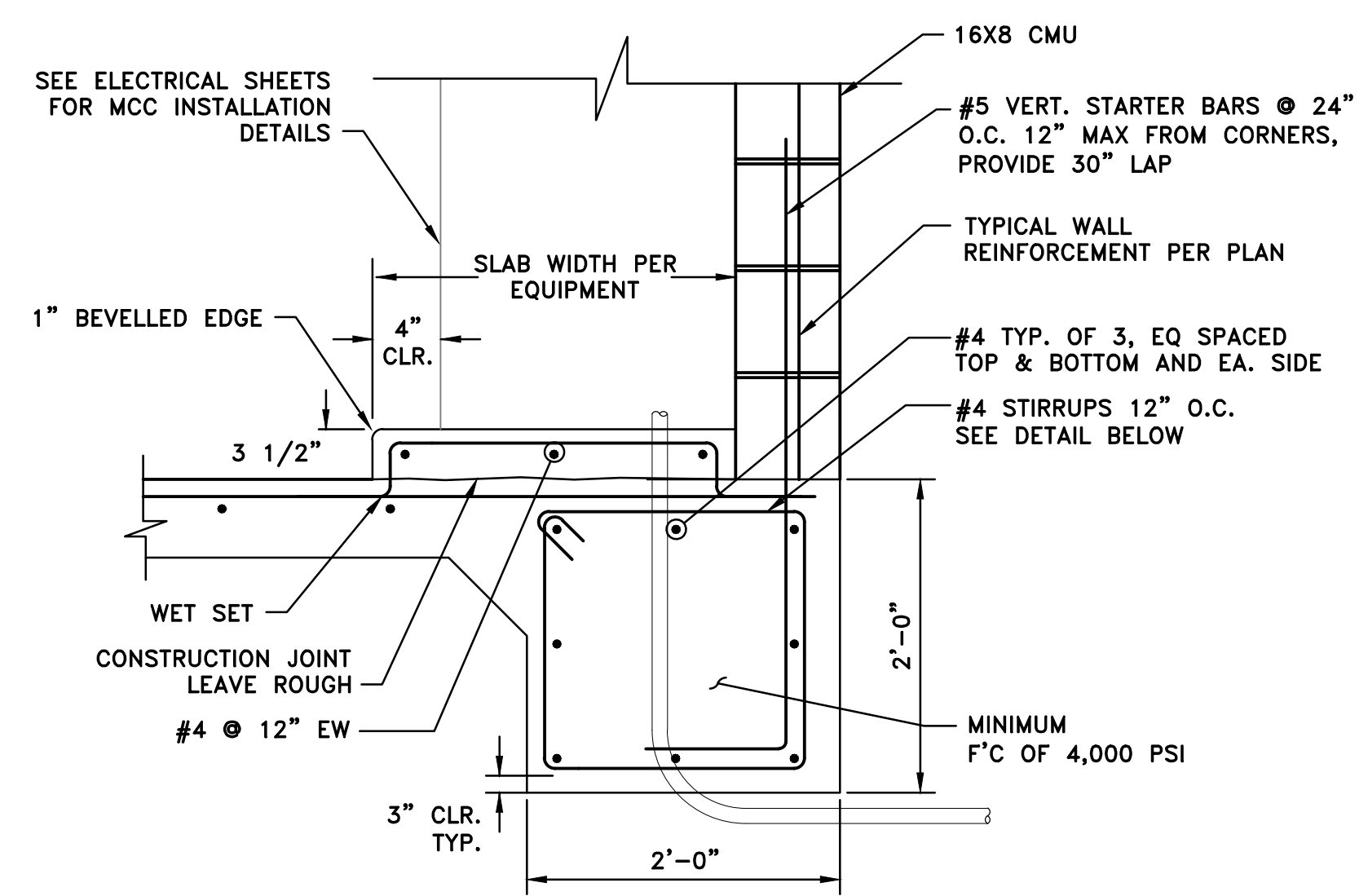
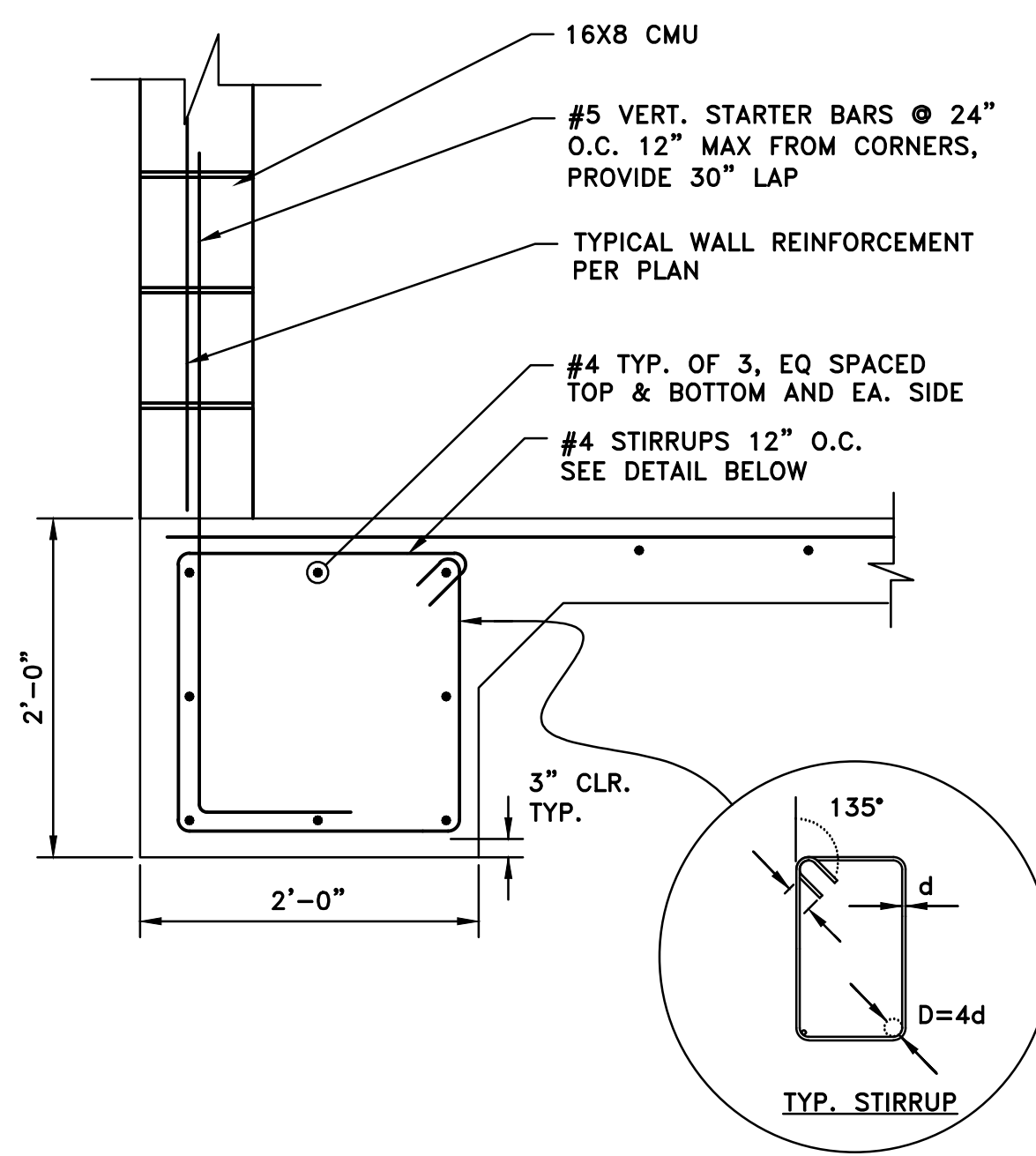
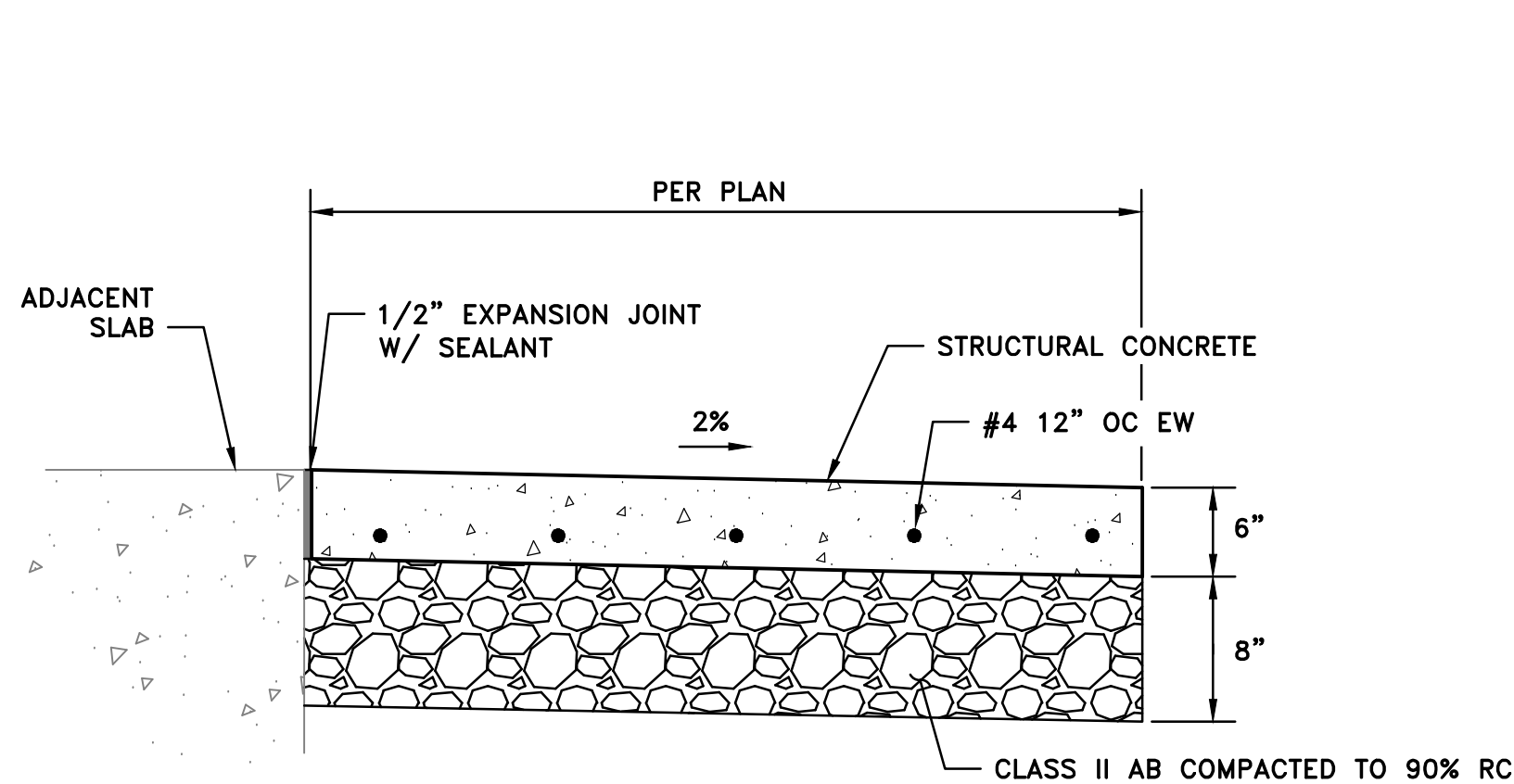
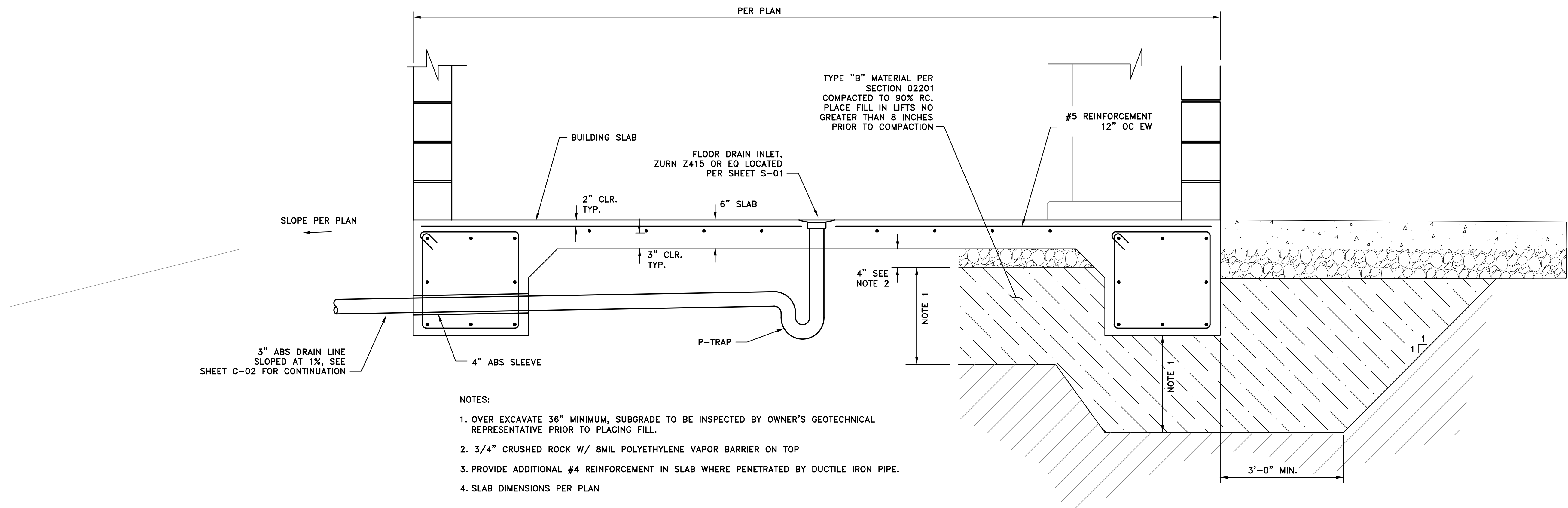
REVISION
BID SET
DESIGN
J. NELSON
DRW
J. NELSON
CHECK
M. CAREY
APV
9/4/2026



**VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS BUILDING PLAN & ELEVATIONS**



PROJECT:
072-01C
DATE:
SEPTEMBER
DRAWING NUMBER
S-01
16 / 38



REVISION
BID SET
DESIGN
J. NELSON
DRAW
J. NELSON
CHECK
M. CAREY
APV
9/4/2026



VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS BUILDING FOUNDATION



BIGHORN
Desert View
WATER AGENCY

PROJECT: 072-01C

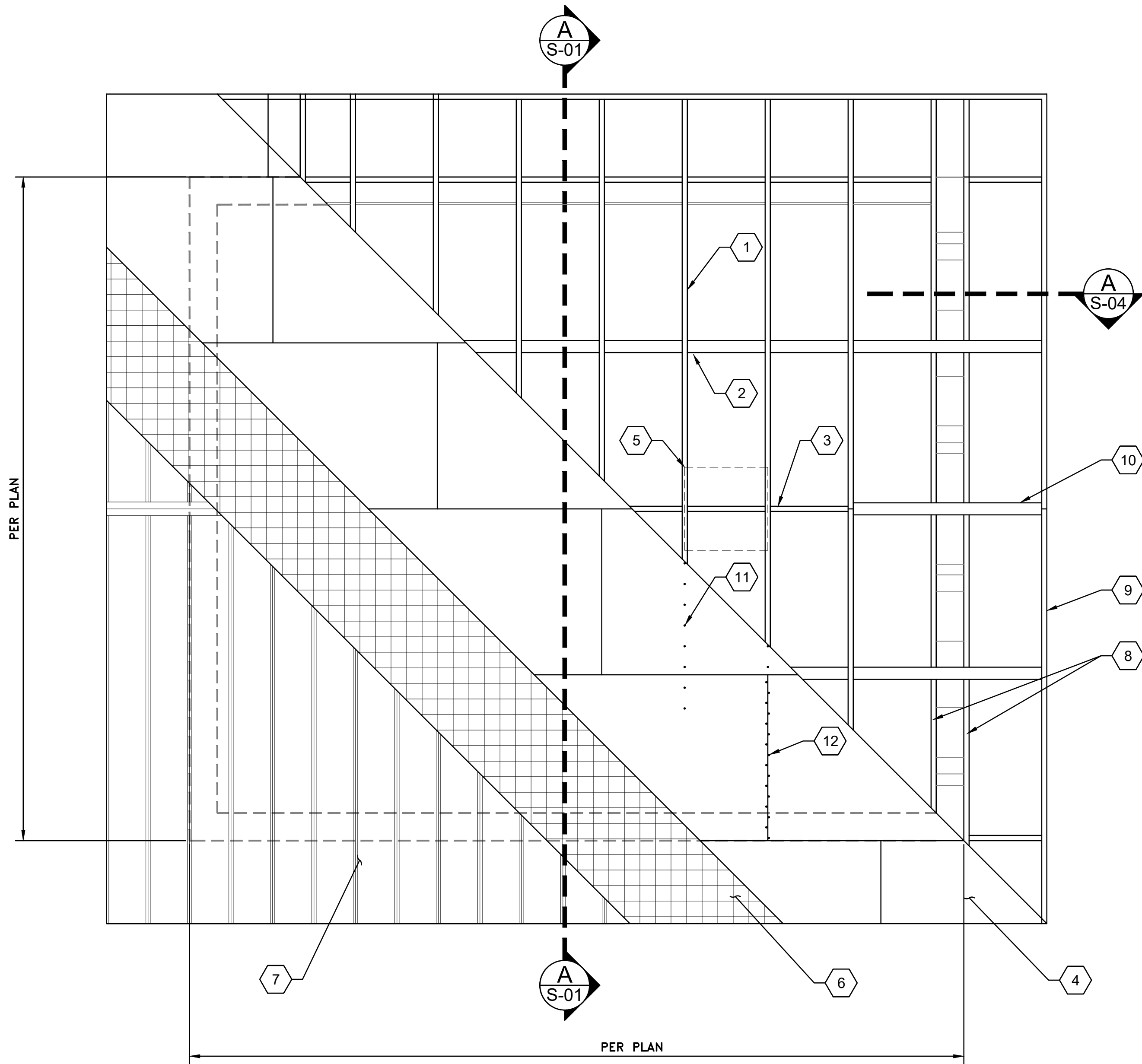
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DRAWING NUMBER

S-02

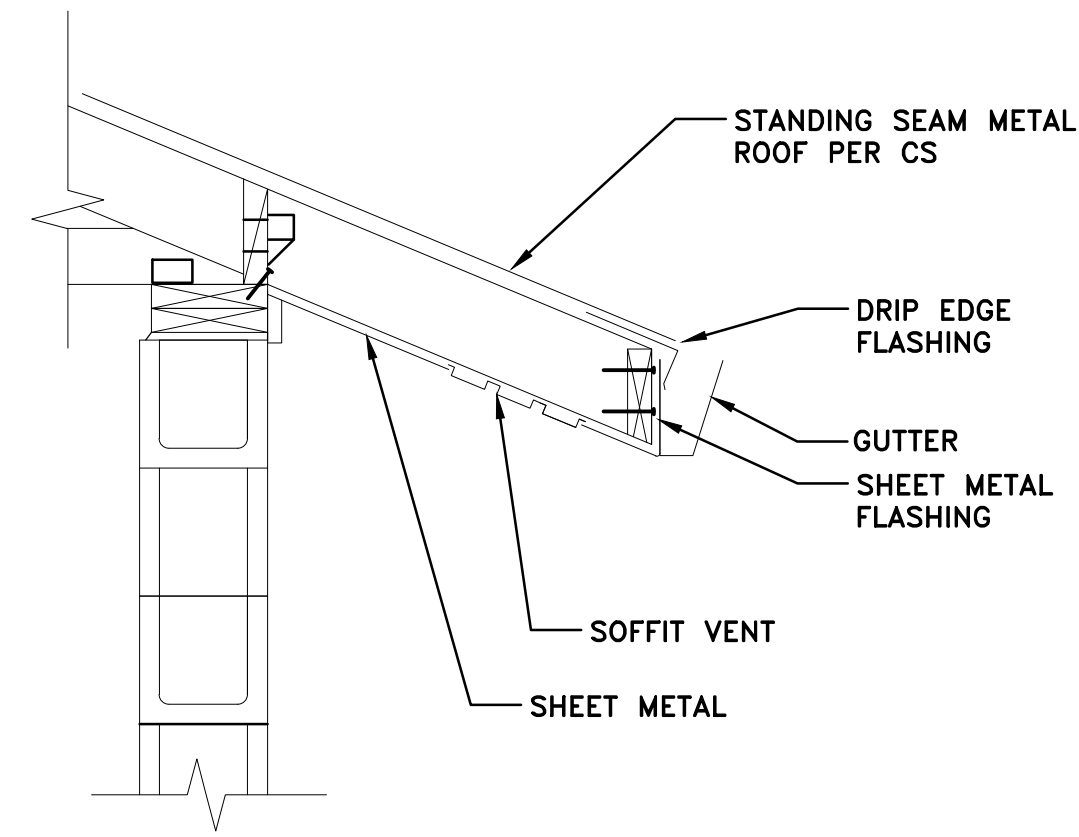
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BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ADJUST SCALE ACCORDINGLY. THESE DRAWING WERE PREPARED FOR ANSI D PAPER SIZE AND ARE NOT SUITABLE FOR CONSTRUCTION IF SCALED TO ANY OTHER SIZE. THESE CONTRACT DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ARE NOT TO BE USED AS A STAND ALONE DOCUMENT FOR CONSTRUCTION.

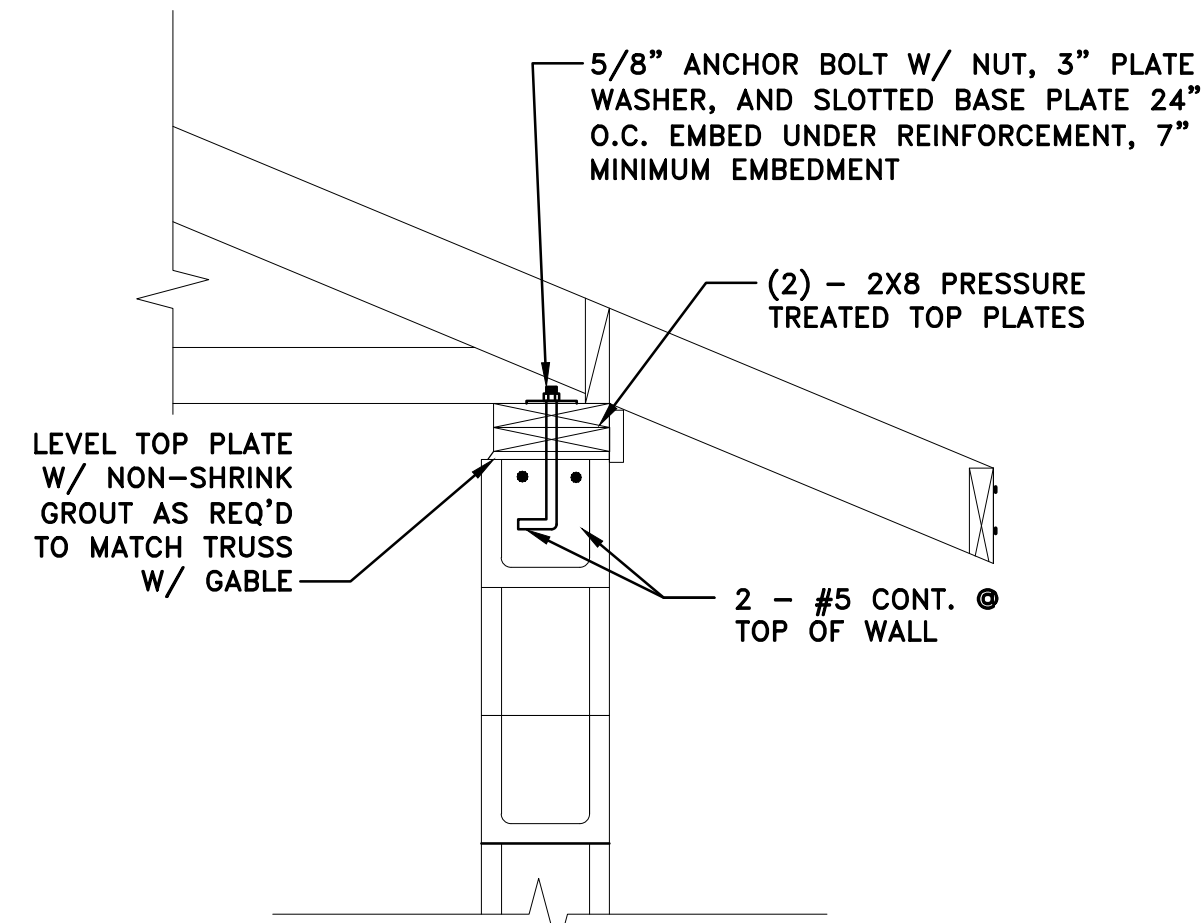


- ENGINEERED ROOF TRUSSES AT 2'-0" O.C. PER CS SECTION 06176
DESIGN LOADINGS:
DEAD LOAD: 20 PSF
LIVE LOAD: 80 PSF
- 2X4 BLOCKING ALL PANEL EDGES
- 2X RIDGE BLOCKING
- 4X8 STAGGERED 3/4" CDX ROOF SHEATHING UNO NAILED WITH 8d AT 6" OC IN FIELD. IN LOCATIONS WHERE PANELS SMALLER THAN 4X8 ARE REQUIRED PROVIDE BLOCKING AS NECESSARY TO FASTEN ALL EDGES.
- 24"x24" ATTIC ACCESS
- ROOF UNDERLAYMENT PER CS SECTION 07411
- STANDING SEAM METAL ROOF PER CS SECTION 07411
- 2X8 GABLE LEDGER SEE SECTION A ON SHEET S-04.
- 2X8 FASCIA
- 4X6 RIDGE OUTRIGGER, NOTCH CMU AS REQD.
- FIELD NAILING 6" O.C.
- 8d EDGE NAILING 6" O.C.
- 2X4 OUTRIGGER AT 30" O.C.

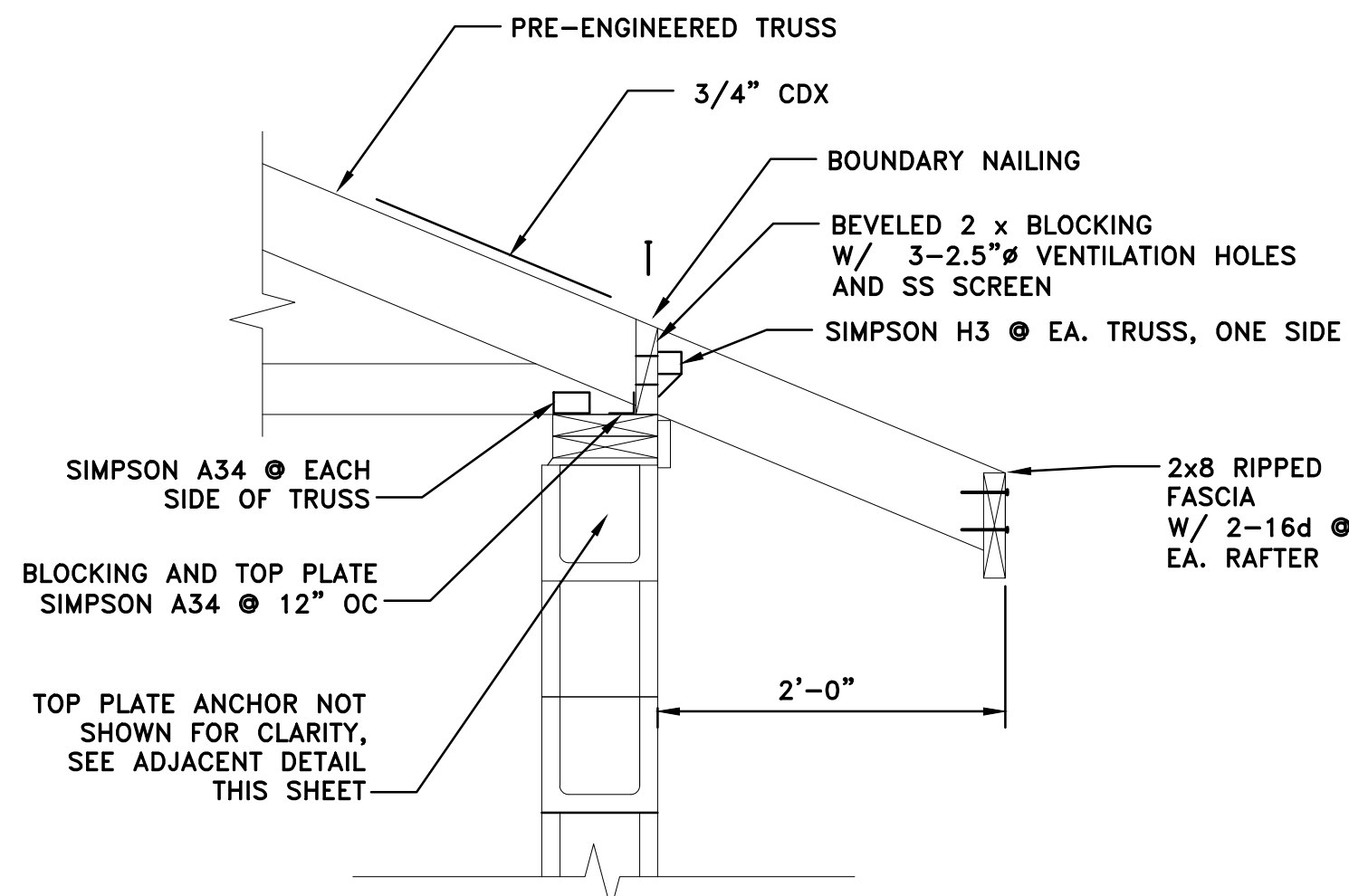
ROOF PLAN
SCALE: NONE



EAVE DETAIL
SCALE: NONE



WALL TO TOP PLATE
CONNECTION
SCALE: NONE



TRUSS TO TOP PLATE
CONNECTION
SCALE: NONE

REVISION
BID SET
DESN
J. NELSON
DRW
J. NELSON
CHECK
M. CAREY
APV
9/4/2026

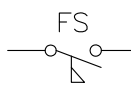
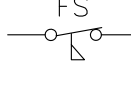
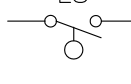
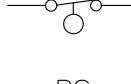
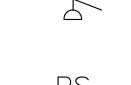
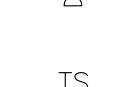
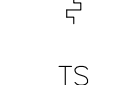
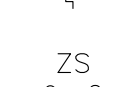
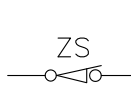
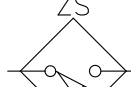
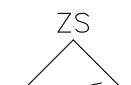
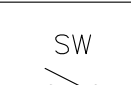
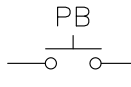
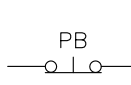
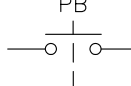
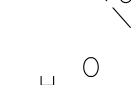


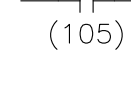
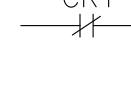
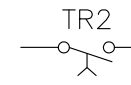
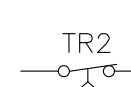
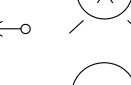
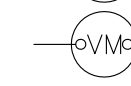
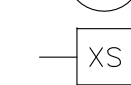
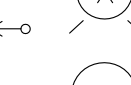
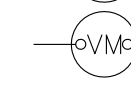
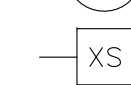
VOL. 3 OF 3 - ZONES B AND D1 PUMP STATIONS
IMPROVEMENTS
ZONE B PS ROOF DETAILS

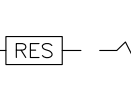
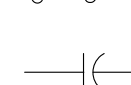
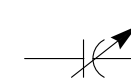
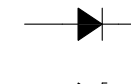
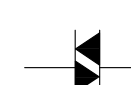
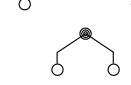
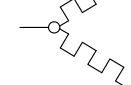
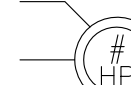
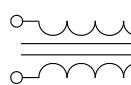
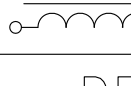
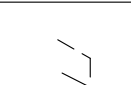
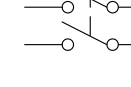
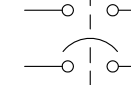
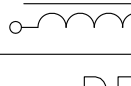
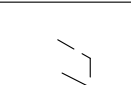
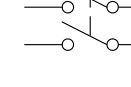
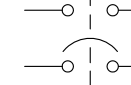
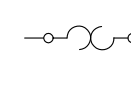
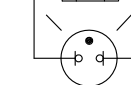
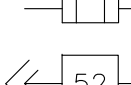


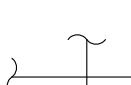
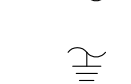
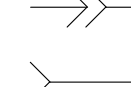
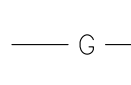
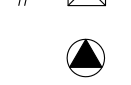
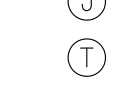
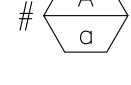
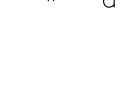
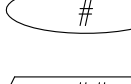
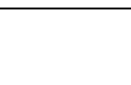
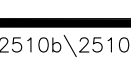
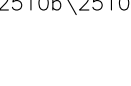
PROJECT:
072-01C
DATE:
SEPTEMBER
DRAWING NUMBER
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MISCELLANEOUS ELECTRICAL & INSTRUMENTATION ABBREVIATIONS			
&	AND	HOA	HAND-OFF-AUTO
@	AT	HOR	HAND-OFF-REMOTE
A	AMBER, AMPERES	HP	HORSEPOWER
AC	ALTERNATING CURRENT	HPS	HIGH PRESSURE SODIUM
AF	AMP FRAME	HS	HAND SWITCH
AFF	ABOVE FINISHED FLOOR	HTR	HEATER
AI	ANALOG INPUT	HZ	HERTZ (CYCLES PER SECOND)
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	HZD	HAZARDOUS AREA, EXPLOSION PROOF
AL	RIGID ALUMINUM CONDUIT	I	INTERLOCK
ALT	ALTERNATOR	I/O	INPUT/OUTPUT
AM	AMMETER	ICR	INSTRUMENTATION CONTROL RELAY
ARMS	ARC FLASH REDUCTION MAINTENANCE SYS	INST	INSTANTANEOUS
ARV	AIR RELEASE VALVE	ISC	SHORT CKT INTERRUPTING CURRENT (SYMM)
AO	ANALOG OUTPUT	ISR	INTRINSICALLY SAFE RELAY
AT	AMP TRIP	J	JUNCTION BOX
ATS	AUTOMATIC TRANSFER SWITCH	K	KILO, PREFIX
AWG	AMERICAN WIRE GUAGE	KAIC	KILO-AMPERE INTERRUPTING CAPACITY
B	BLUE	L	LINE
BC	BARE COPPER	LA	LIGHTNING ARRESTOR
BFC	BELOW FINISHED CEILING	LC	LIGHTING CONTACTOR
BOD	BIOCHEMICAL OXYGEN DEMAND	LCD	LIQUID CRYSTAL DISPLAY
BLK	BLANK	LED	LIGHT EMITTING DIODE
BKR	BREAKER	LEL	LOWER EXPLOSIVE LIMIT
C	CONDUIT	LGT	LIGHT
CAP	CAPACITOR	LO	LOW
CB	CIRCUIT BREAKER	LOR	LOCAL-OFF-REMOTE
CBL	CABLE	LOS	LOCK-OUT STOP SWITCH
CH	CHANNEL	LP	LIGHTING PANELBOARD
CKT	CIRCUIT	LPU	LINE PROTECTION UNIT
COAX	COAXIAL CABLE	LS	LEVEL SWITCH
COMM	COMMUNICATION PORT	LSI	LONG, SHORT, INSTANTANOUS
CP	CONTROL PANEL	M	MOTOR CONTRACTOR
CPT	CONTROL POWER TRANSFORMER	MAX	MAXIMUM
CR	CONTROL RELAY	MCC	MOTOR CONTROL CENTER
CT	CURRENT TRANSFORMER	MCM	THOUSAND CIRCULAR MILS
CTQ	CONSTANT TORQUE	MCP	MOTOR CIRCUIT PROTECTOR
CU	COPPER, CONDENSING UNIT	MH	MANHOLE
DC	DIRECT CURRENT	MHD	METAL HALIDE
DET	DETAIL	MIN	MINIMUM
DI	DIGITAL INPUT	MIN5	MINUTES
DIA	DIAGRAM	MISC	MISCELLANEOUS
DISC	DISCONNECT	MMR	MOTOR MANAGEMENT RELAY
DIV	DIVISION	MMS	METER/MAIN SWITCHBOARD
DO	DIGITAL OUTPUT	MNFR	MANUFACTURER
DPDT	DOUBLE POLE DOUBLE THROW	MOV	MOTOR OPERATED VALVE
DWG	DRAWING	MPS	MOTOR PROTECTION SYSTEM
EF	EXHAUST FAN	MS	MOISTURE SENSOR/SWITCH
ELEV	ELEVATION	MTR	MOTOR
EMT	ELECTRICAL METALLIC TUBING	MTS	MANUAL TRANSFER SWITCH
ETM	ELAPSED TIME METER	MV	MEDIUM VOLTAGE
(E)	EXISTING	N	NEUTRAL
F	FRAME	NC	NORMALLY CLOSED
FC	FAIL CLOSED, FAN COIL	NEC	NATIONAL ELECTRICAL CODE
FCS	FIELD CONTROL STATION	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
FCU	FAN CONTROL UNIT	NIC	NOT IN CONTRACT
FLA	FULL LOAD AMPS	NO	NORMALLY OPEN
FO	FAIL OPEN	NP	NAMEPLATE
FLEX	FLEXIBLE, METAL LIQUID TIGHT CONDUIT	NTS	NOT TO SCALE
FROA	FORWARD-REVERSE-OFF-AUTO	(N)	NEW
FS	FLOW SWITCH OR FULL SPEED	OC	ON CENTER
FV, FVNR	FULL VOLTAGE NON-REVERSING	OI	OPERATOR INTERFACE
FWD	FORWARD	OL	OVERLOAD
(F)	FUTURE	ORP	OXIDATION REDUCTION POTENTIAL
G	GREEN	P	PHASE, POLE
GALV	GALVANIZED	PB	PULL BOX
GEN	GENERATOR	PBI	PULL BOX INSTRUMENT
GFI	GROUND FAULT CIRCUIT INTERRUPTER	PBP	PULL BOX POWER
GND	GROUND	PE	PHOTOCELL
GRS	GALVANIZED RIGID STEEL CONDUIT	PF	POWER FAIL
GRS-PVC	PVC COATED GRS CONDUIT	PFR	POWER (PHASE) FAIL RELAY
HACR	HEATING AIR CONDITIONING AND REFRIGERATION	PH	HYDROGEN ION CONCENTRATION
HC	PUSHBUTTON	PLC	PROGRAMMABLE LOGIC CONTROLLER
HI	HIGH	PM	POWER MONITOR
HID	HIGH INTENSITY DISCHARGE	PMP	PUMP
HMI	HUMAN MACHINE INTERFACE	PNL	PANEL
PR	PAIR, TWISTED & SHIELDED CABLE		
PRESS	PRESSURE		
PRI	PRIMARY		
PROVIDE	FURNISH, INSTALL & CONNECT		
PRR	POWER RELAY		
PS	PRESSURE SWITCH, POWER SUPPLY		
PT	POTENTIAL TRANSFORMER		
PTT	PUSH TO TEST		
PV	PROCESS VARIABLE		
PVC	POLY VINYL CHLORIDE		
PWR	POWER		
R	RED		
RCT	REPEAT CYCLE TIMER		
REF	REFERENCE		
RIO	REMOTE I/O		
RTD	RESISTANCE TEMPERATURE DETECTOR		
RTM	RUN TIME METER		
RTU	REMOTE TELEMETRY UNIT		
RVNR	REDUCED VOLTAGE NON-REVERSING		
(R)	REWIRE, RELOCATE, REVISE, REUSE, REPLACE		
SC	SHORTING CONTACTOR		
SCH	SCHEDULE		
SEC	SECONDARY		
SECS	SECONDS		
SEL	SELECTOR		
SFA	SERVICE FACTOR AMPS		
SP	SETPOINT		
SPD	SURGE PROTECTIVE DEVICE		
SPEC	SPECIFICATION		
SS	STAINLESS STEEL		
SSS	SOLID STATE SOFT STARTER		
STT	START		
STP	STOP		
SV	SOLENOID VALVE		
SW	SWITCH		
SWBD	SWITCHBOARD		
SWGR	SWITCHGEAR		
SYMM	SYMMETRICAL		
T	TRIP		
TB	TERMINAL BLOCK		
TC	TIME CLOCK		
TDOD	TIME DELAY ON DE-ENERGIZATION		
TDOE	TIME DELAY ON ENERGIZATION		
TEL	TELEMETRY		
TELCO	TELEPHONE COMPANY		
TEMP	TEMPERATURE		
TM	THERMAL MAGNETIC		
TOC	TOTAL ORGANIC CARBON		
TR	TIME DELAY RELAY		
TRIAD	TWISTED & SHIELDED 3 CONDUCTOR		
TS	TEMPERATURE SWITCH		
TSPR	TWISTED & SHIELDED PAIR		
UG	UNDERGROUND		
UL	UNDERWRITERS LABORATORIES		
UON	UNLESS OTHERWISE NOTED		
UPS	UNINTERRUPTIBLE POWER SUPPLIES		
V	VOLTAGE		
VA	VOLT AMPS		
VAR	VOLT AMP REACTIVE		
VFD	VARIABLE FREQUENCY DRIVE		
VLV	VALVE		
VM	VOLTMETER		
VTQ	VARIABLE TORQUE		
W	WHITE, WATTS		
WHM	WATT-HOUR METER		
WM	WATTMETER		
WP	WATERPROOF, WEATHER PROOF		
WS	TORQUE SWITCH, WATER SURFACE		
XFMR	TRANSFORMER		
XS	MISCELLANEOUS SWITCH		
Y	YELLOW		
Z	IMPEDANCE		
ZS	LIMIT SWITCH		

SYMBOL	DESCRIPTION
SWITCHES – PROCESS	
	FLOW SWITCH – CLOSSES UPON INCREASING FLOW
	FLOW SWITCH – OPENS UPON INCREASING FLOW
	LEVEL SWITCH – CLOSSES UPON INCREASING LEVEL
	LEVEL SWITCH – OPENS UPON INCREASING LEVEL
	PRESSURE SWITCH – CLOSSES UPON INCREASING PRESSURE (INCREASING VACUUM)
	PRESSURE SWITCH – OPENS UPON INCREASING PRESSURE (INCREASING VACUUM)
	TEMPERATURE SWITCH – CLOSSES UPON INCREASING TEMPERATURE
	TEMPERATURE SWITCH – OPENS UPON INCREASING TEMPERATURE
	LIMIT SWITCH – CLOSSES AT SET LIMIT
	LIMIT SWITCH – OPENS AT SET LIMIT
	PROXIMITY SWITCH – CLOSSES UPON DECREASING DISTANCE
	PROXIMITY SWITCH – OPENS UPON DECREASING DISTANCE
	TORQUE SWITCH – CLOSSES UPON INCREASING TORQUE
	TORQUE SWITCH – OPENS UPON INCREASING TORQUE
SWITCHES – OPERATOR	
	TOGGLE OR DISCONNECT SWITCH
	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION
	PUSHBUTTON – NORMALLY CLOSED, MOMENTARY ACTION
	PUSHBUTTON, MECHANICALLY INTERLOCKED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN, MAINTAINED ACTION
	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION OF H-HAND, O-OFF, OR A-AUTO
	SELECTOR SWITCH, 2 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION AS SHOWN

SYMBOL	DESCRIPTION
DEVICES – RELAY	
	CONTROL RELAY CR1 WITH NORMALLY OPEN CONTACT ON LINE 28 & NORMALLY CLOSED CONTACT ON LINE 111
	TIME DELAY RELAY TR2 – ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN
	TIME DELAY ON ENERGIZATION TIME DELAY ON DE-ENERGIZATION
	CONTACTOR OR STARTER M1
	SOLENOID
	NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105
	NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1
	NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED
	NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED
	NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED
	NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED
	CONTACT OPENS AND CLOSSES IN A TIMED REPEAT CYCLE
DEVICES – FRONT PANEL	
	INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE
	INDICATING LIGHT, PUSH TO TEST
	AMP METER
	VOLT METER
	ELAPSED TIME METER
	RUN TIME METER
	MULTI-POSITION SWITCH WHERE LETTER "X" IS FUNCTION: A=AMP, V=VOLT
DEVICES – PROTECTIVE	
	DISCONNECT, 3 POLE
	CIRCUIT BREAKER, 3 POLE THERMAL MAGNETIC (TM) OR MOTOR CIRCUIT PROTECT (MCP)
	THERMAL OVERLOAD CONTACT
	THERMAL OVERLOAD ELEMENT
	FUSE WITH BLOWN FUSE INDICATING LIGHT
	FUSE
	MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
	LOW VOLTAGE DRAWOUT CIRCUIT BREAKER

SYMBOL	DESCRIPTION
COMPONENTS	
	RESISTOR
	POTENTIOMETER
	CAPACITOR, FIXED
	CAPACITOR, ADJUSTABLE
	DIODE
	DIODE, ZENER
	VARIATOR TRANSIENT VOLTAGE SUPPRESSOR
	VOLTAGE SURGE SUPPRESSOR, AC
	RESISTANCE TEMPERATURE DETECTOR (RTD)
	THERMOCOUPLE (T/C)
DEVICES – MISCELLANEOUS	
	AUDIBLE ALARM
	BATTERY
	HEATER
	3 PHASE HEATER
	GENERATOR
	3 PHASE MOTOR # = MOTOR HP
	SINGLE PHASE MOTOR
	TRANSFORMER
	LINE REACTOR
DEVICES – PROTECTIVE	
	DISCONNECT, 3 POLE
	CIRCUIT BREAKER, 3 POLE THERMAL MAGNETIC (TM) OR MOTOR CIRCUIT PROTECT (MCP)
	THERMAL OVERLOAD CONTACT
	THERMAL OVERLOAD ELEMENT
	FUSE WITH BLOWN FUSE INDICATING LIGHT
	FUSE
	MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
	LOW VOLTAGE DRAWOUT CIRCUIT BREAKER

SYMBOL	DESCRIPTION
WIRING – CONNECTIONS	
	PANEL OR EQUIPMENT WIRING
	FIELD WIRING
	CONDUCTORS – NOT CONNECTED
	CONDUCTORS – CONNECTED
	GROUND
	CHASSIS OR FRAME GROUND
	PLUG AND RECEPTACLE
	INCOMING LINE
	TERMINAL BLOCKS
	TERMINALS
	SHIELDED CABLE
PLAN – SYMBOLS	
	CONDUIT, EXPOSED
	CONDUIT, IN SLAB OR BELOW GRADE
	CONDUIT STUBBED OUT & CAPPED
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT ENDS
	CONDUIT CHANGE IN ELEVATION
	BARE COPPER GROUND WIRE
	GROUND CONNECTION BOLTED TYPE
	GROUND CONNECTION EXOTHERMIC WELD TYPE
	PULL BOX
	DISCONNECT SWITCH
	FIELD CONTROL STATION WITH JUNCTION BOX
	FIELD CONTROL STATION WITH #AMP DISCONNECT SWITCH
	SPECIAL RECEPTACLE
	JUNCTION BOX
	THERMOSTAT
	LIGHTING, FANS, HEATERS # – CIRCUIT BREAKER NUMBER A – FIXTURE SCHEDULE REF. o – CONTROL SWITCH REFERENCE
	DUPLEX RECEPTACLE # – CIRCUIT BREAKER NUMBER
	TOGGLE SWITCH # – CIRCUIT BREAKER NUMBER SUBSCRIPT – CIRCUIT CONTROLLED SUPERSCRIPT – BLANK = 1 WAY 2 = 2 WAY 3 = 3 WAY
	CONDUIT #
	EQUIPMENT NUMBER

REVISION
BID SET

DESIGN
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DRAWING
Z. VOGLER

CHECK
X. LI

APPROVED
APV


9/3/2026

ZONES B AND D1 PUMP STATIONS IMPROVEMENTS

ELECTRICAL SYMBOLS & ABBREVIATIONS





PROJECT: 072-01C

DATE: SEPTEMBER 2026

DRAWING NUMBER

E-1

20 / 38

LIGHTING AND FIXTURE SCHEDULE							
CODE LETTER	FIXTURE TYPE	FINISH	FIXTURE LAMPS	WATTS/ FIXTURE	MANUFACTURER OR APPROVED EQUAL	MOUNTING ARRANGEMENT	NOTES
A	LED LUMINAIRE, 4 FT LED STRIPLIGHT; 5000 LUMENS SNAP ON DIFFUSER WIRE GUARD PROTECTORS 4000K TEMP	WHITE	LED 4000 K 120 VAC 80 CRI	38	LITHONIA ZL1N - MULI VOLT	CEILING MOUNT	UL LISTED FOR DAMP LOCATIONS PROVIDE BATTERY BACK-UP NIGHT LIGHT WHERE SHOWN PLUG IN WIRING
B	SECURITY LIGHT, HEAVY DUTY WEATHERPROOF POWDER COAT FINISH FULL CUTOFF; ONE ENGINE; TYPE II DIST	DARK BRONZE	LED 3000 K MULTI-VOLT	65	LITHONIA WALL LIGHT WSQ	WALL MOUNT ON BUILDING AT 11 FT	WITH PHOTOCELL CONTROL PE (WHERE SHOWN) U.L. LISTED FOR WET LOCATIONS LIGHT SWITCH ON / ENABLE
E	EMERGENCY LIGHTING IMPACT RESISTANT CONTEMPORARY HOUSING REGULATED CHARGER	WHITE	3W LED 2 EACH 120 VAC	3	LITHONIA QUANTUM LED SERIES ELM2	WALL MOUNTED AT 9'	SEALED NICKEL CALCIUM BATTERY TEST SWITCH UL LISTED FOR DAMP ENVIRONMENT
T	AREA LIGHT ONE PIECE, DIE CAST; TYPE 5 WIDE ALUMINUM HOUSING WITH HIGH TRANSMISSION GLASS LENS, FUSED	BRONZE	LED 2 EACH UNIVERSAL SINGLE	182	PHILIPS GARDCO OPTIFORM - SMALL OPF-S - A07-840	MOUNT ON POLE PER DWG E-13 DET B	U.L. LISTED FOR WET LOCATIONS FUSE IN HAND HOLE LOCAL SWITCH; WITH FOURPLEX RECEPT WITH ARM MOUNT
X	EXIT LIGHTING WITH NICAD BATTERY STEEL HOUSING, DIRECTION KNOCKOUTS SELF POWERED	WHITE	GREEN LED TYPE 120 VAC	3.8	EMERGILITE LW-SNX-14-G	UNIVERSAL	UL LISTED TEST SWITCH

GENERAL NOTES THAT APPLY TO LIGHTING AND RECEPTACLE PLAN

- PROVIDE AND INSTALL NECESSARY WIRES IN CONCEALED 3/4" (MIN) GRS CONDUIT FOR LIGHTING AND RECEPTACLE ARRANGEMENT AS SHOWN. IF CONDUITS ARE ROUTED UNDERGROUND, THE UNDERGROUND SECTION AND CONCEALED RISER TO FIRST DEVICE BOX BY BE PVC-80.
- DEVICE BOXES AND CONDUIT BODIES SHALL BE METALLIC. IN NEMA 4X AREAS, USE MALLEABLE METALLIC BOXES.
- CONDUCTORS SHALL BE COPPER TYPE THHN, #12 AWG (MINIMUM).
- MOUNT CONDUITS USING SINGLE BOLT GALVANIZED PIPE STRAPS AND CLAMP BACK SPACERS.
- USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
- PROVIDE AND INSTALL FIXTURES PER SCHEDULE THIS PAGE, QUANTITY AS SHOWN IN DRAWING.
- PROVIDE AND INSTALL ALL DEVICE BOXES, JUNCTION BOXES, RECEPTACLES, SWITCHES, AND COVERS.
- RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) WHERE SHOWN.
- SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
- ALL WORK SHALL CONFORM TO LOCAL CODES, LATEST CBC AND 2023 NATIONAL ELECTRICAL CODE.

ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
LIGHTING FIXTURE SCHEDULE
& GENERAL NOTES



PROJECT: 072-01C

DATE: SEPTEMBER 2026

DRAWING NUMBER

E-9

21 / 38

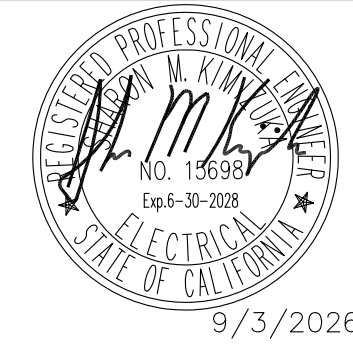
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9/3/2026

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APPROVED

9/3/2026

REGISTERED PROFESSIONAL ELECTRICAL ENGINEER

S. KIMIZUKA

NO. 15698

Exp. 8-30-2028

ELECTRICAL

STATE OF CALIFORNIA

ZONES B AND D1 PUMP STATIONS IMPROVEMENTS

EXAMPLE INTERCONNECT DIAGRAM

CALIFORNIA RURAL WATER ASSOCIATION

BIGHORN

Desert View

WATER AGENCY

PROJECT: 072-01C

DATE: SEPTEMBER 2026

DRAWING NUMBER

E-10

22 / 38

VERIFY SCALE!

1"

0

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY. THESE DRAWINGS WERE PREPARED FOR CONSTRUCTION IF SCALED TO ANY OTHER SIZE. THESE CONTRACT DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ARE NOT TO BE USED AS A STAND ALONE DOCUMENT FOR CONSTRUCTION.

NOTES:

REFERENCE DOCUMENTS

TYPICAL CONDUIT MARKING SYSTEM

TYPICAL WIRE LABEL

1

CONDUIT SIZE & TYPE; WIRE FILL FOR CONDUITS TO BE DESIGNATED NEXT TO CONDUIT NUMBER ELLIPSE.

2

THESE ARE THE CONTRACTOR DESIGNATED DRAWING NUMBERS.

3

NOT MORE THAN TWO WIRES PER TERMINAL BLOCK.

4

ALL TERMINAL BLOCKS TO BE PLACED IN NUMERICAL ORDER.

5

ALL NEUTRALS SHALL BE WHITE WIRE COLOR.

6

#12 GND TO DEVICES SHALL BE BONDED TO #8 GND LUG.

DRAWING #	DESCRIPTION	MANUFACTURER
P712	P&ID DIAGRAM	DESIGN
E717	ELECTRICAL SITE PLAN	DESIGN
PAGE 32, 36	CONDUIT AND CABLE SCHEDULE	DESIGN
2 1354-11	LOOP DIAGRAM	CONTRACTOR
2 1354-68	ELEMENTARY DIAGRAM	CONTRACTOR

SECURE TAGS TO CONDUIT WITH STAINLESS STEEL CABLE TIES

CONDUIT

C 7117

BRASS OR STAINLESS STEEL WITH STAMPED/ENGRAVED LETTERS

BLACK LETTERS MACHINE TYPED ON WHITE SLEEVE WIRE IDENTIFICATION LABEL SIZED TO FIT WIRE

406-HC7117

WIRE

EQUIPMENT

FIELD

MCC-4 SECTION 1 CUBICLE A~E

CONTROL PANEL NO.2

PUMP 7

PMP7117

MOTOR

3#4 & #8 GND

1 1/2" FLEX

415-SV7117 (VLT)

416-SV7117 (WHT)

5

3/4" FLEX

2#12 & #12 GND

DISCONNECT

P7117-T1 (BRN)

P7117-T2 (ORG)

P7117-T3 (YEL)

(GRN)

3#4 & #8 GND

6

P7117-X1~X3

JB

3#12 SPARE

3/4" FLEX

2#12 & #12 GND

PSH7161-B702 (VLT)

PSH7161-B703 (VLT)

TS

HEAT TAPE

LP200A-3L (RED)

LP200A-3N (WHT)

(GRN)

406-HC7117 (VLT)

407-HC7117 (VLT)

LOS

HC7117

GRS-PVC

3/4" 2#12 & #12 GND

FCS7117

406-HC7117 (VLT)

407-HC7117 (VLT)

413-A1301 (VLT)

414-A1302 (WHT)

418-A1303 (VLT)

424-A1304 (VLT)

415-SV7117 (VLT)

416-SV7117 (WHT)

5

ADD JUMPERS

P7117-T1 (BRN)

P7117-T2 (ORG)

P7117-T3 (YEL)

P7117-X1~X3

(GRN)

GROUND BUS

(GRN)

1

P7117

2" PVC/GRS-PVC

3#4 & #8 GND

9#12

1

C7117

3" GRS

4#12 & #12 GND

4#14

2#14

4#12

2#14

1

L2003

1" PVC/GRS-PVC

2#12 & #12 GND

413-A1301 (VLT)

414-A1302 (WHT)

418-A1303 (VLT)

424-A1304 (VLT)

402-B700 (VLT)

403-B701 (VLT)

PSH7161-B702 (VLT)

PSH7161-B703 (VLT)

WIRE LABEL (TYP)

WIRE COLOR (TYP)

(GRN)

GND

4

TB A

1301

1302

1303

1304

TB B

700

701

702

703

PANELBOARD LP200A

LP200A-3L (RED)

LP200A-3N (WHT)

(GRN)

CKT #3

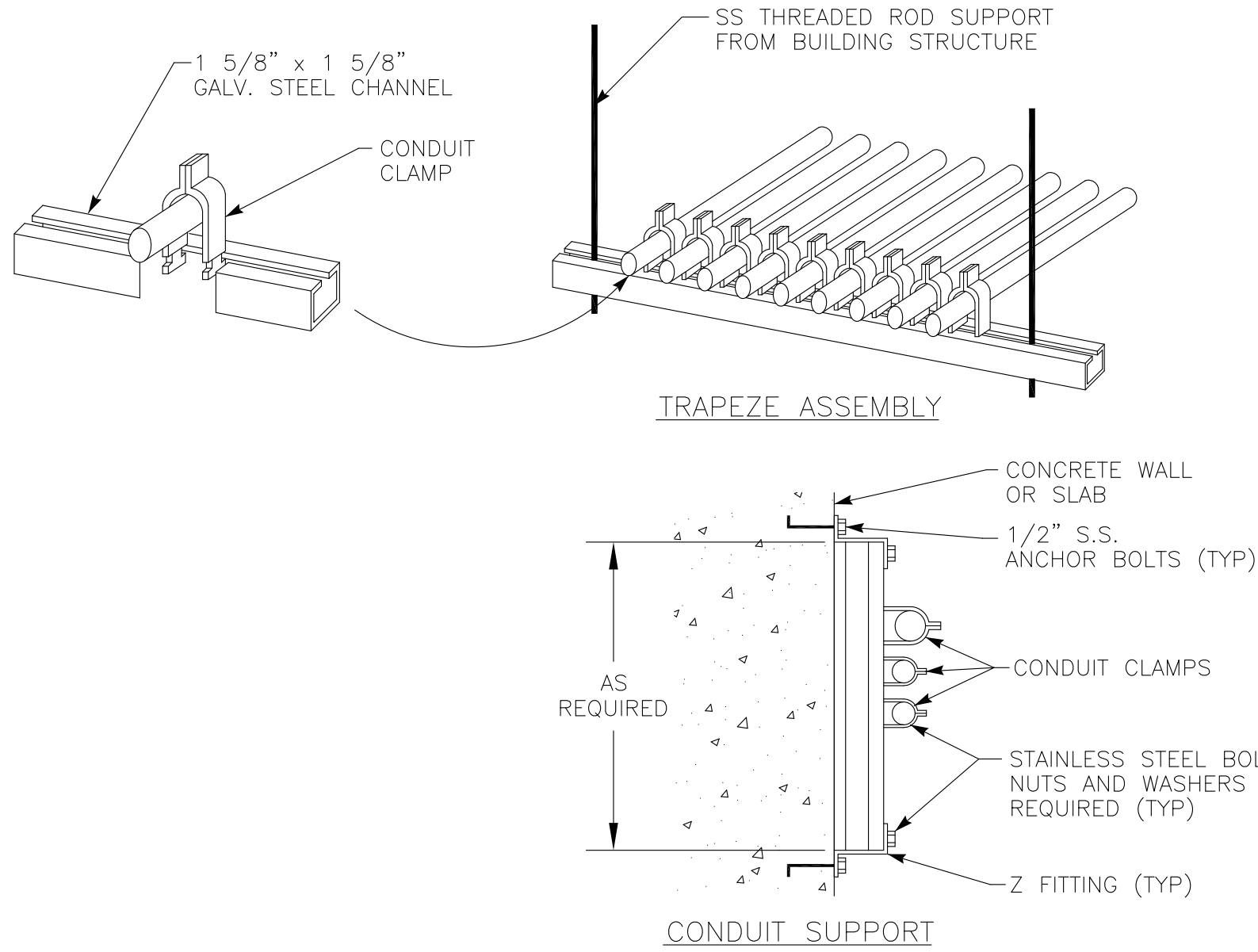
PHASE B

N

G

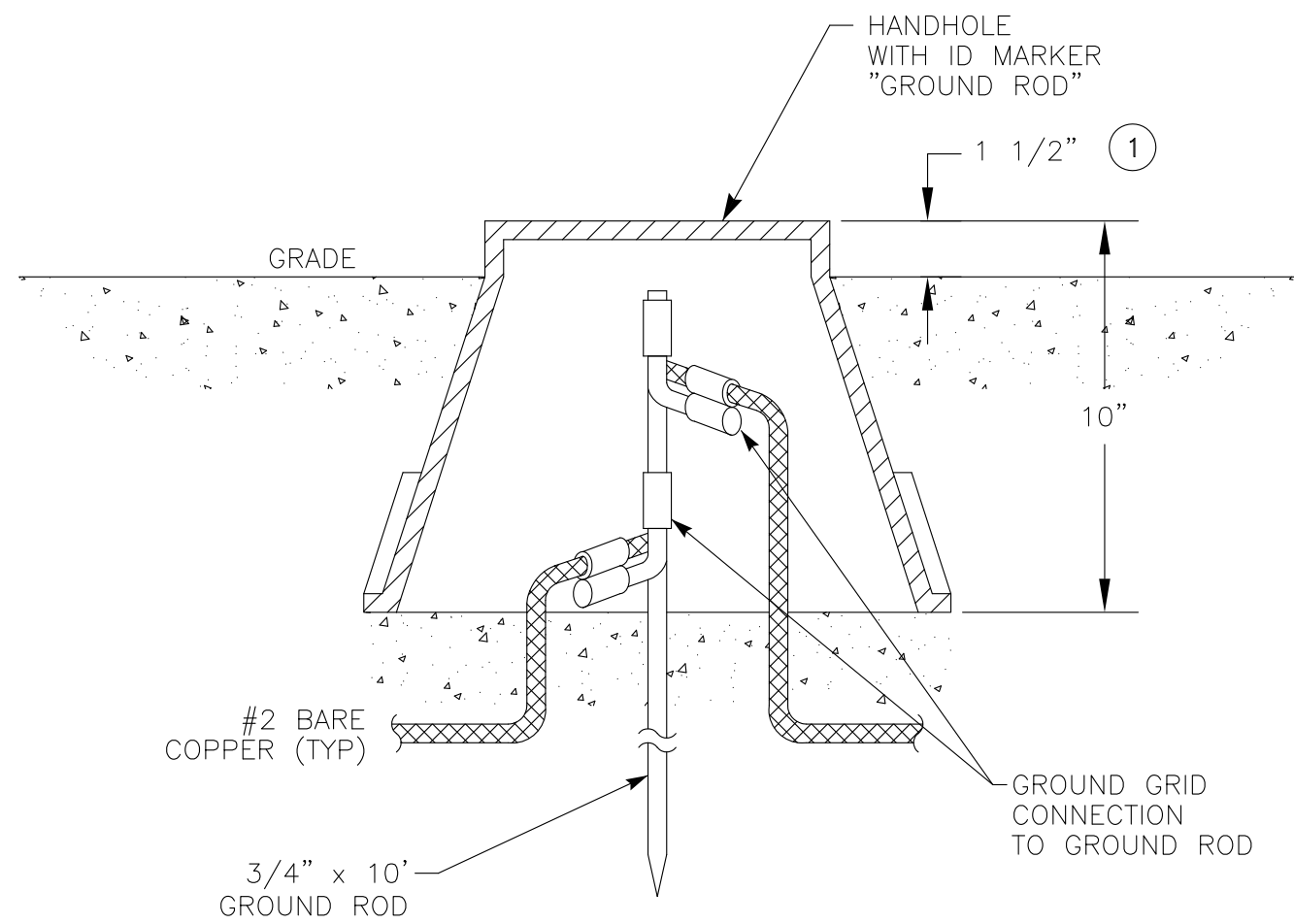
EXAMPLE INTERCONNECTION DIAGRAM

(THIS DRAWING ILLUSTRATES THE FORMAT THAT SHALL BE FOLLOWED IN PREPARATION OF ALL INTERCONNECT DWGS)



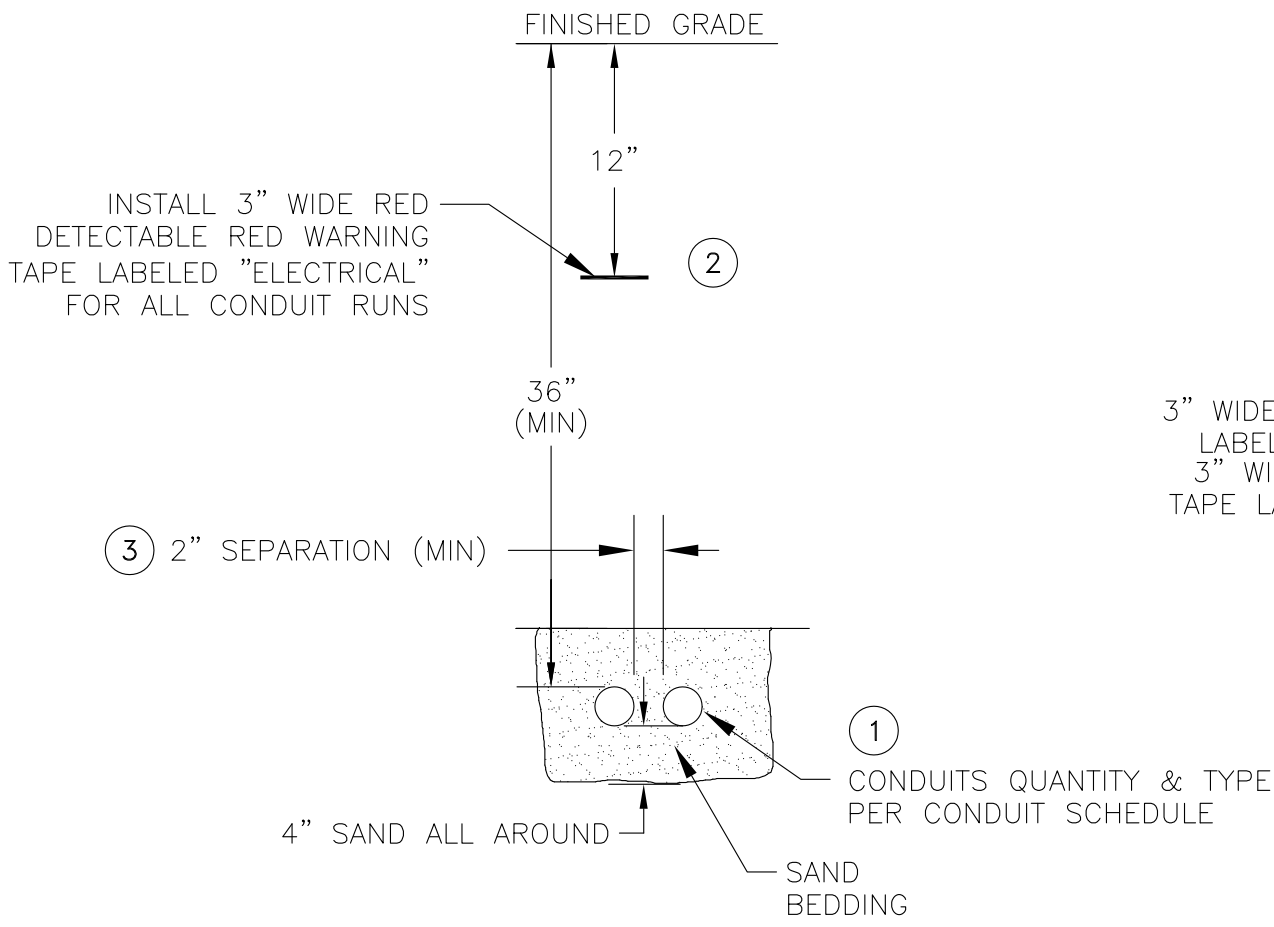
CONDUIT PIPE STRAP MOUNTING
NOT TO SCALE
DETAIL
A
E-11

- NOTES: ① THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
- ② CHANNEL AND ALL SUPPORT DEVICES TO BE NEMA RATED PER AREA CLASSIFICATION. FIELD COAT ALL CUTS, ETC. TO MATCH.
- ③ CHANNELS TO BE SPACED 5' MAXIMUM.



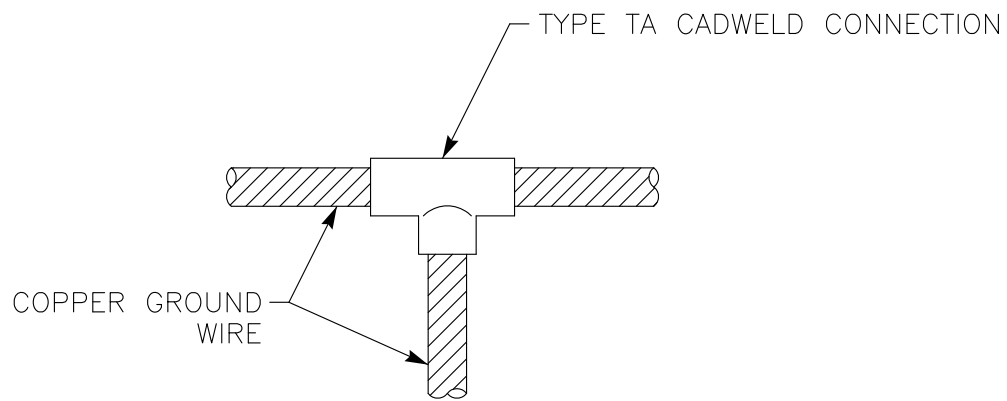
HANDHOLE GROUNDING
NOT TO SCALE
DETAIL
E
E-11

- NOTES: ① FLUSH IN PAVED AREAS.

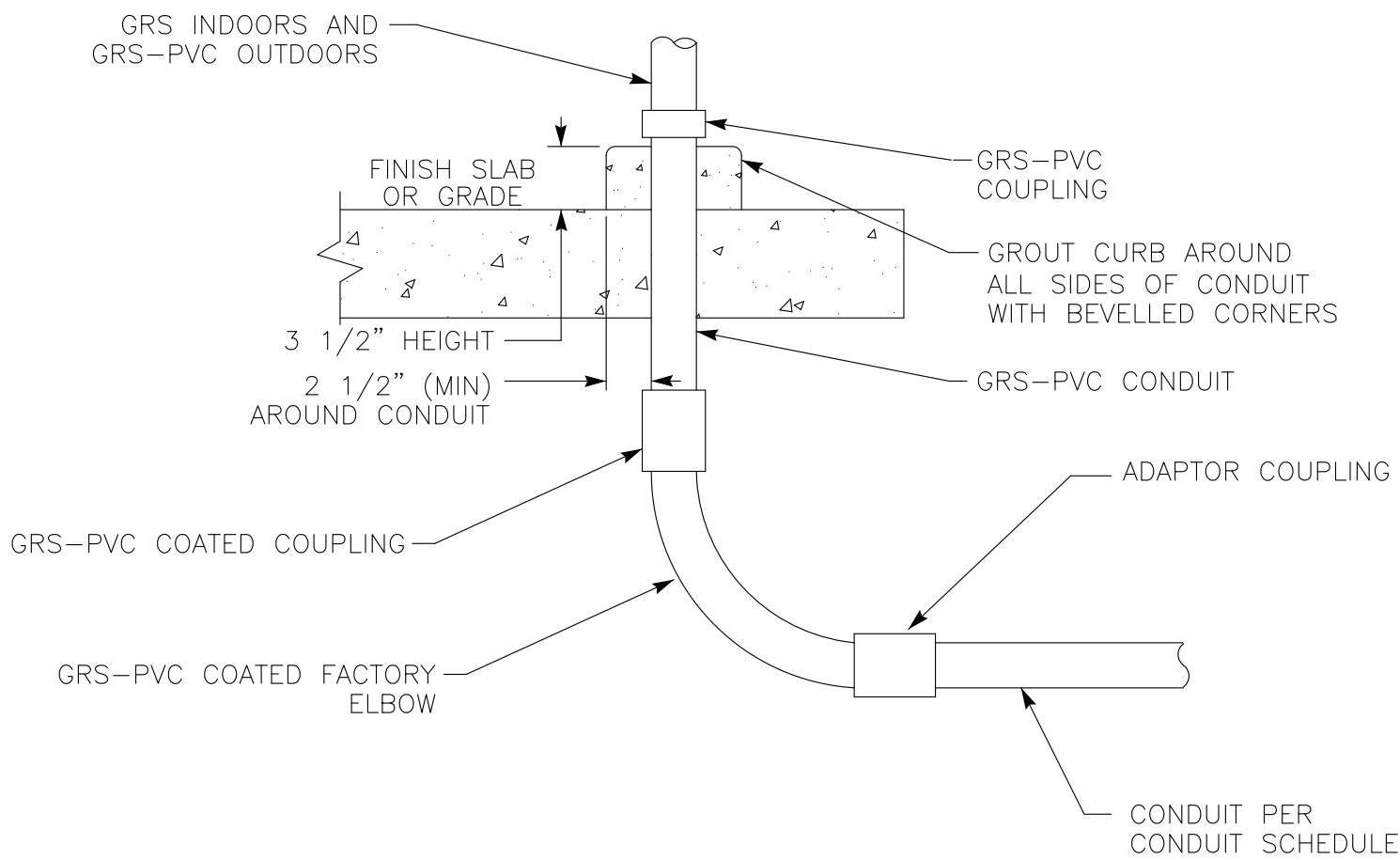


UNDERGROUND CONDUITS
NOT TO SCALE
DETAIL
B
E-11

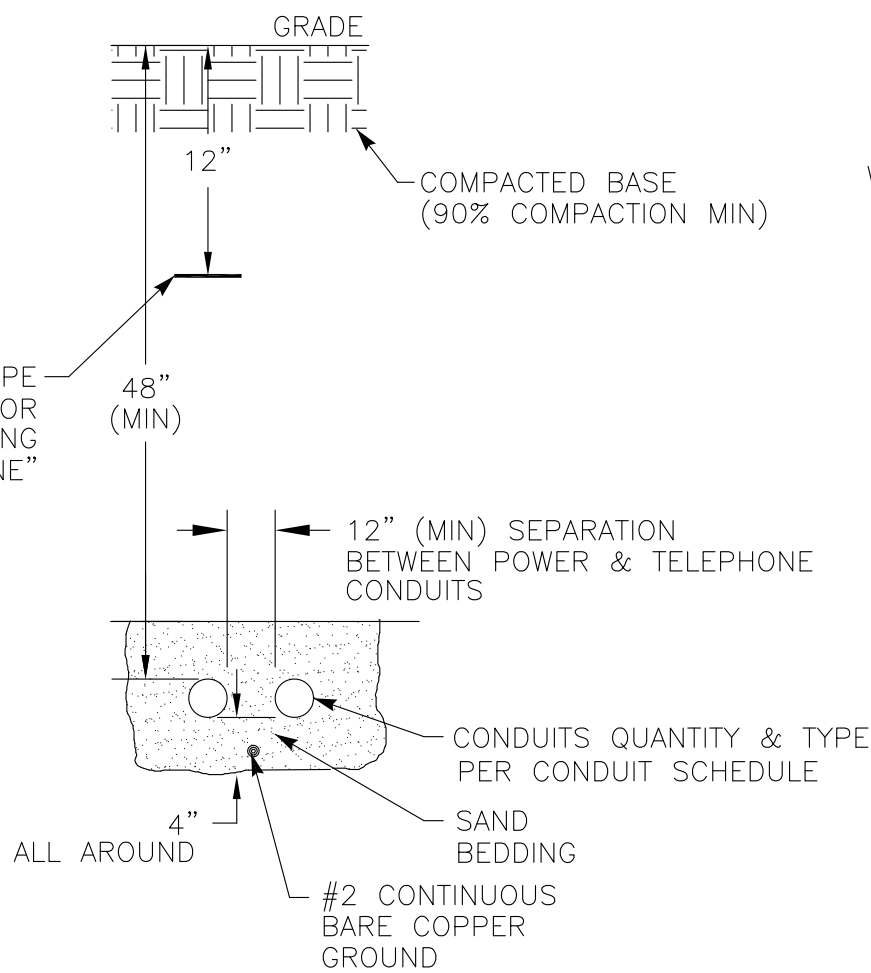
- NOTES: ① PLACE CONDUIT RUNS OF 4 CONDUITS OR GREATER IN PLASTIC SPACERS (RATED FOR DIRECT BURIAL) EVERY 8' ALONG LENGTH OF RUN.
- ② TRENCHING & COMPACTED BACKFILL PER COUNTY STANDARDS.
- ③ PROVIDE 12" (MIN) SEPARATION BETWEEN "A & C" TYPE GROUP AND "P" TYPE GROUP CONDUITS.



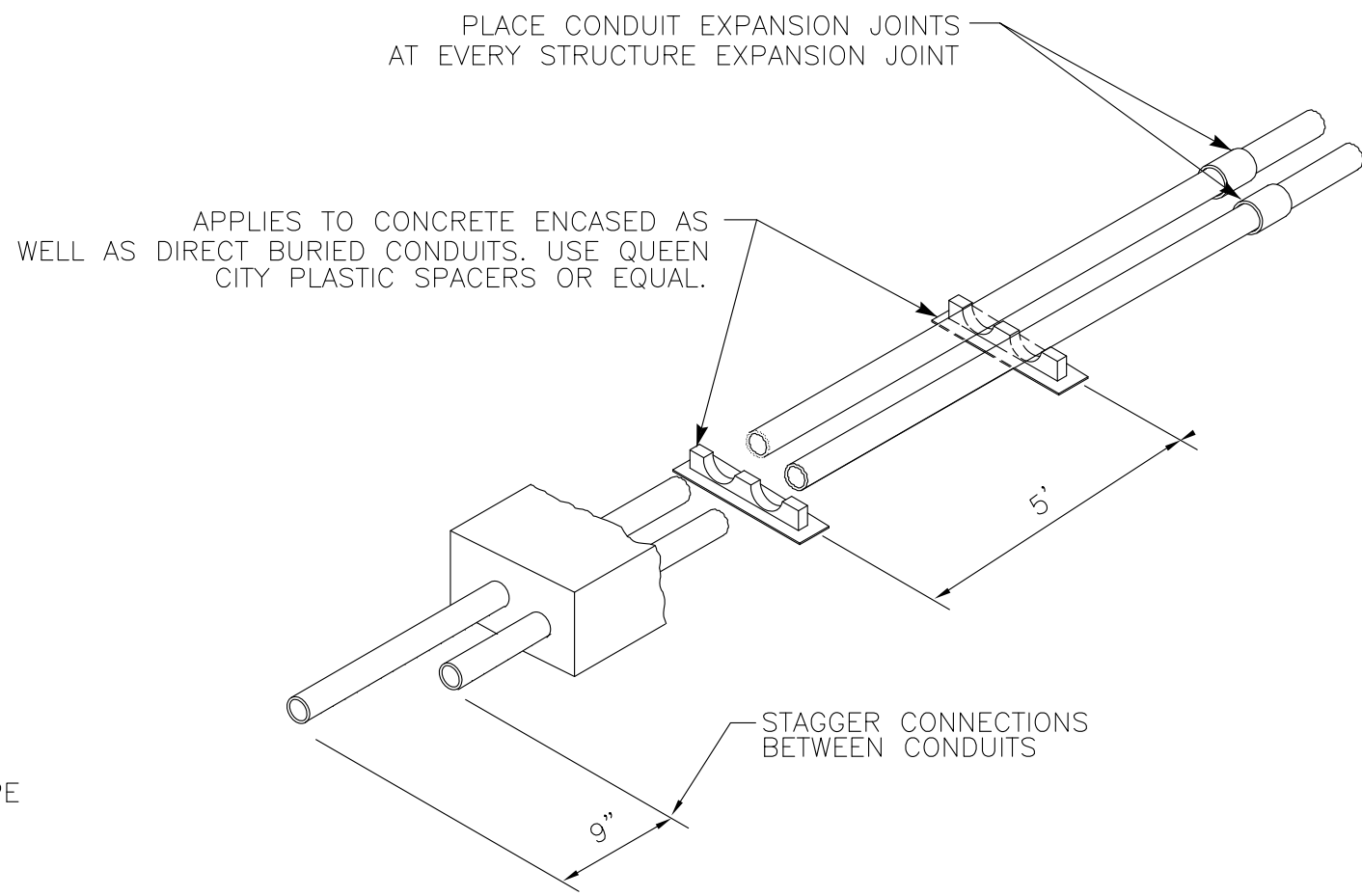
GROUND CABLE CONNECTION
NOT TO SCALE
DETAIL
F
E-11



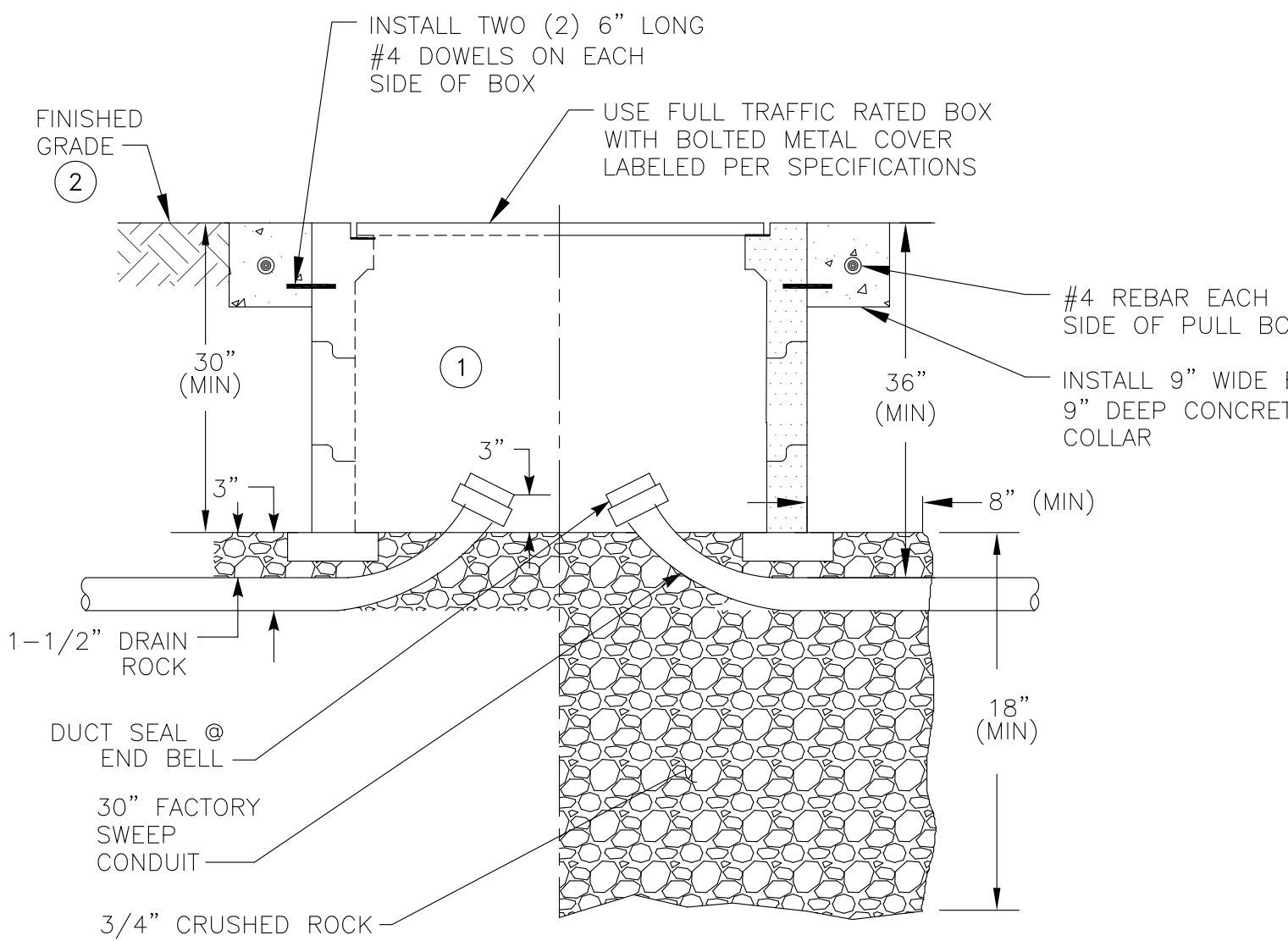
EXPOSED CONDUIT TRANSITION
NOT TO SCALE
DETAIL
G
E-11



UTILITY CONDUITS
NOT TO SCALE
DETAIL
C
E-11

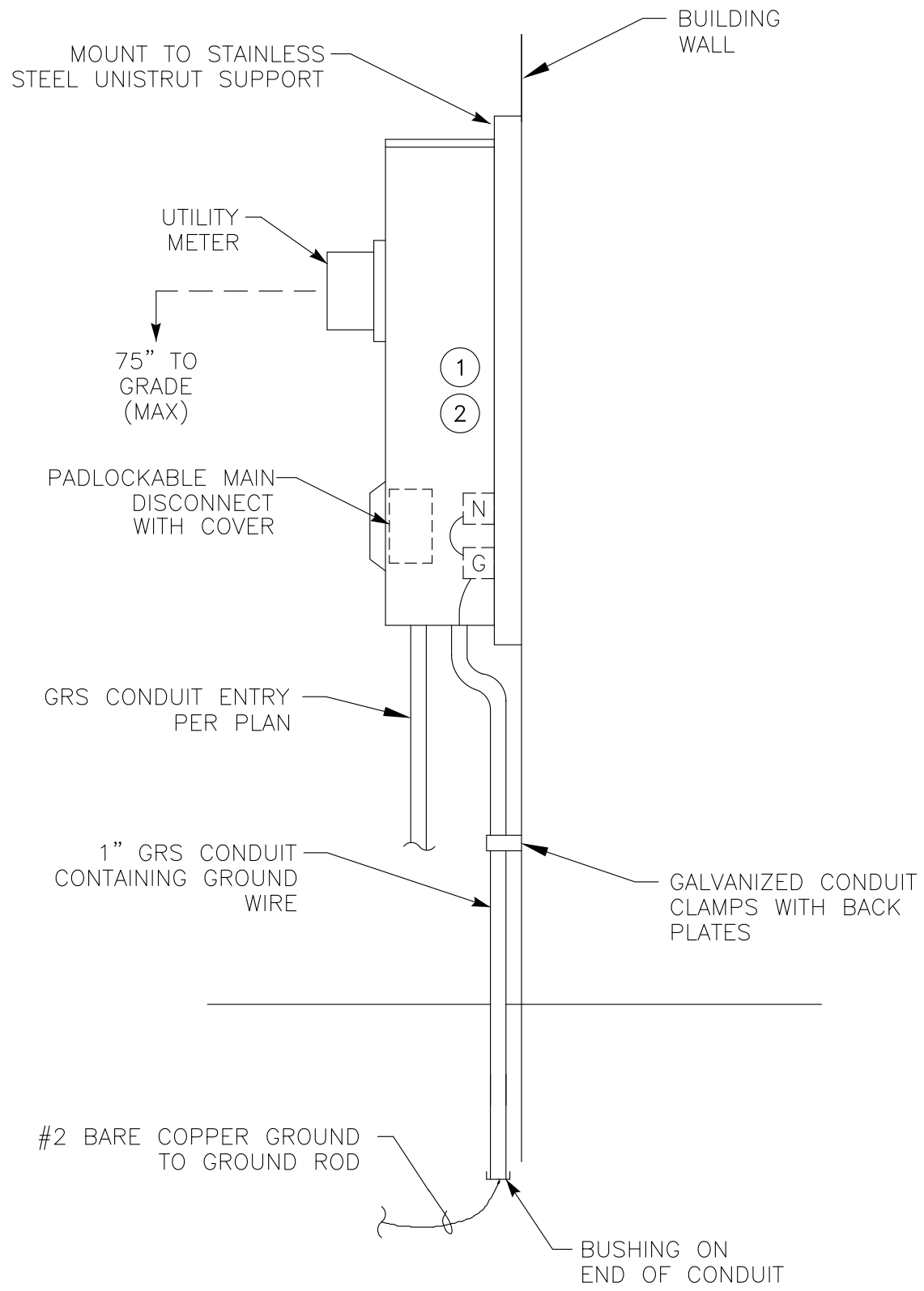


SPACERS AND JOINTS INSTALLATION
NOT TO SCALE
DETAIL
D
E-11



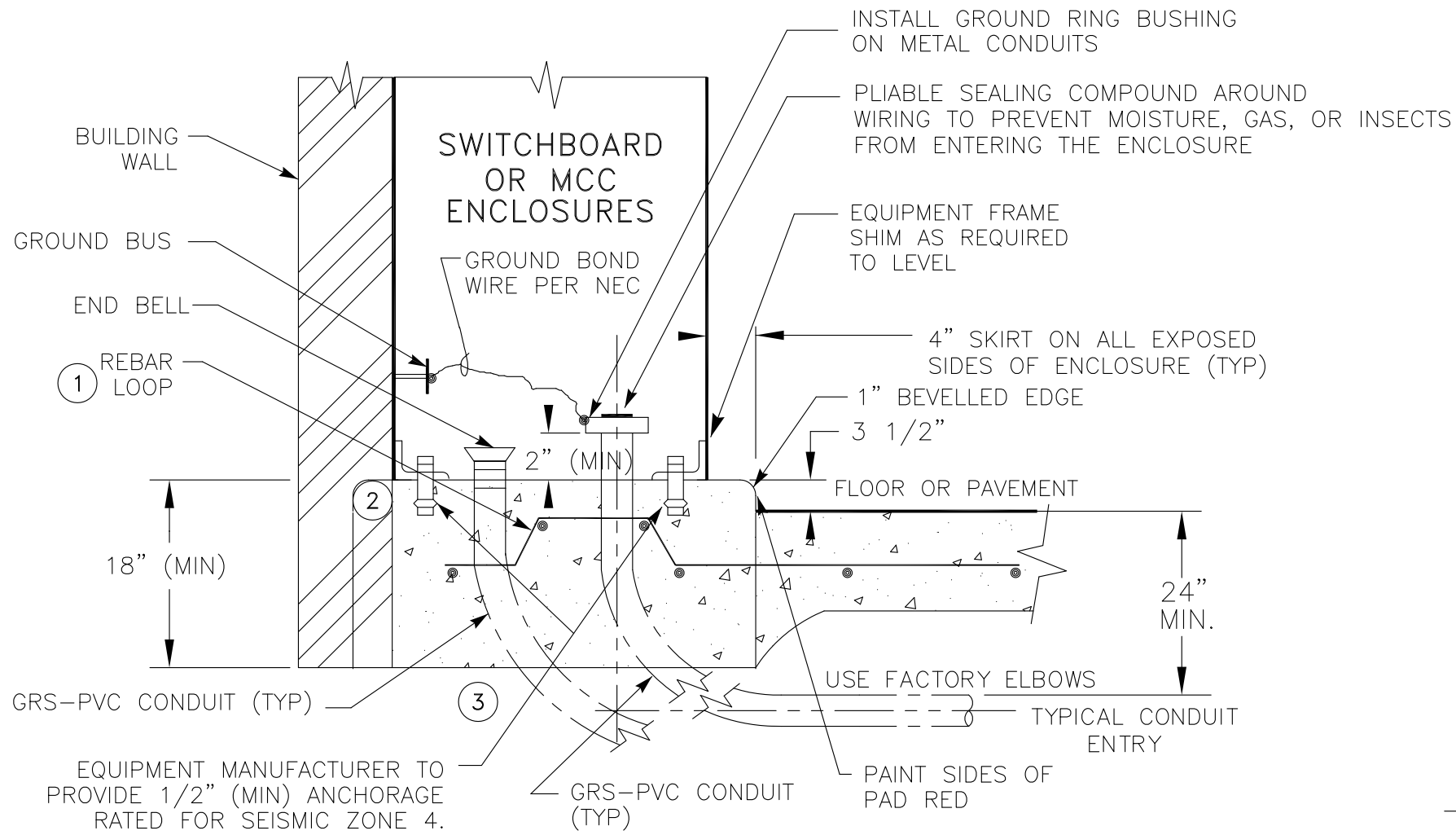
PULL BOX
NOT TO SCALE
DETAIL
H
E-11

- NOTES: ① TRAFFIC RATED CHRISTY B2436 OR EQUAL, MINIMUM BOX SIZE. PROVIDE LARGER AT NO ADDITIONAL COST TO OWNER.
- ② ADD EXTENSIONS WHERE NECESSARY TO RAISE COVER TO FINISHED GRADE.



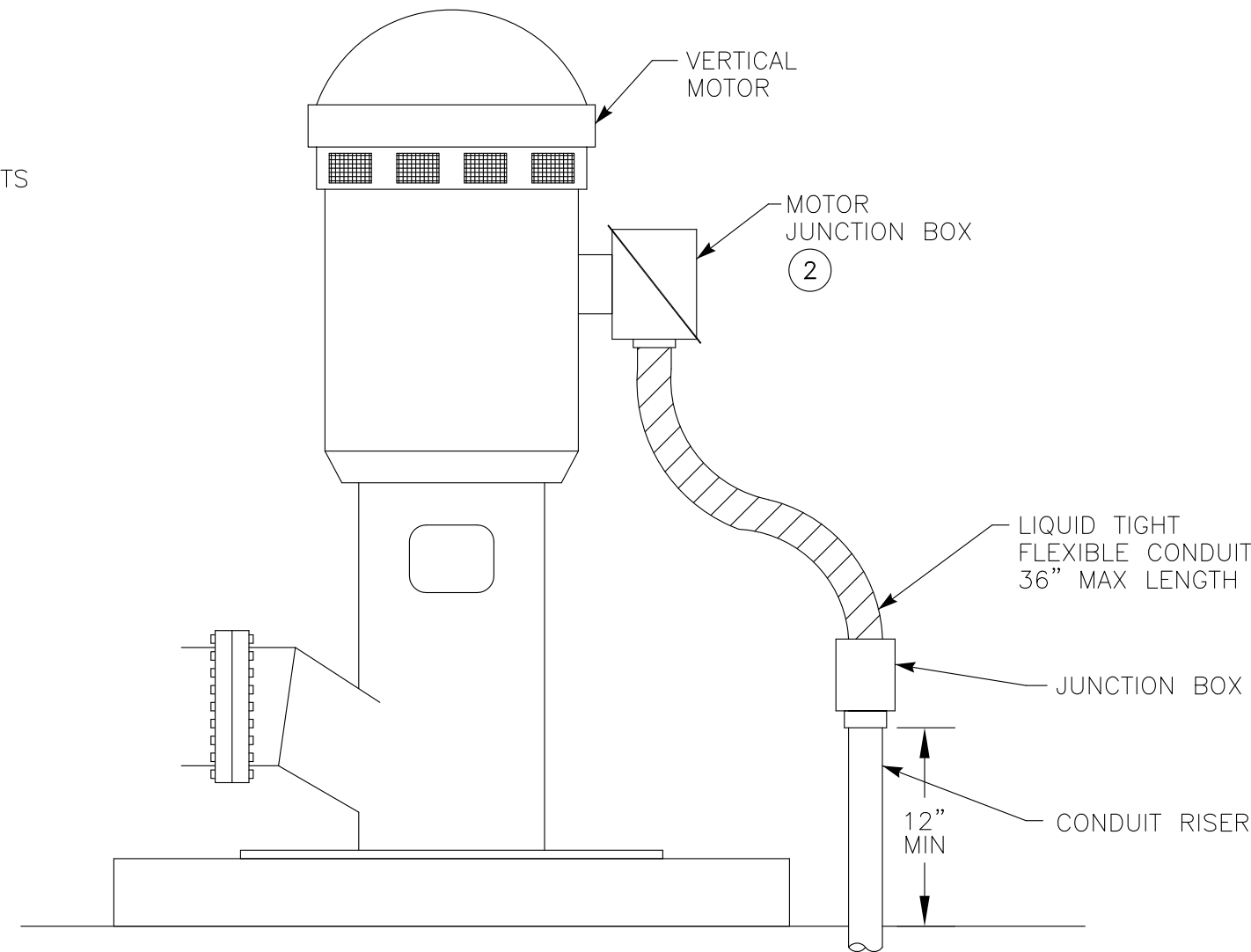
METER/MAIN PANEL
NOT TO SCALE
DETAIL

- NOTES: ① PAINT ENCLOSURE, SUPPORT & ALL CONDUITS TO MATCH COLOR OF PANEL.
- ② PROVIDE ENGRAVED RED NAMEPLATE WITH 1" WHITE LETTERS TO MEET NEC 702.7 (A).



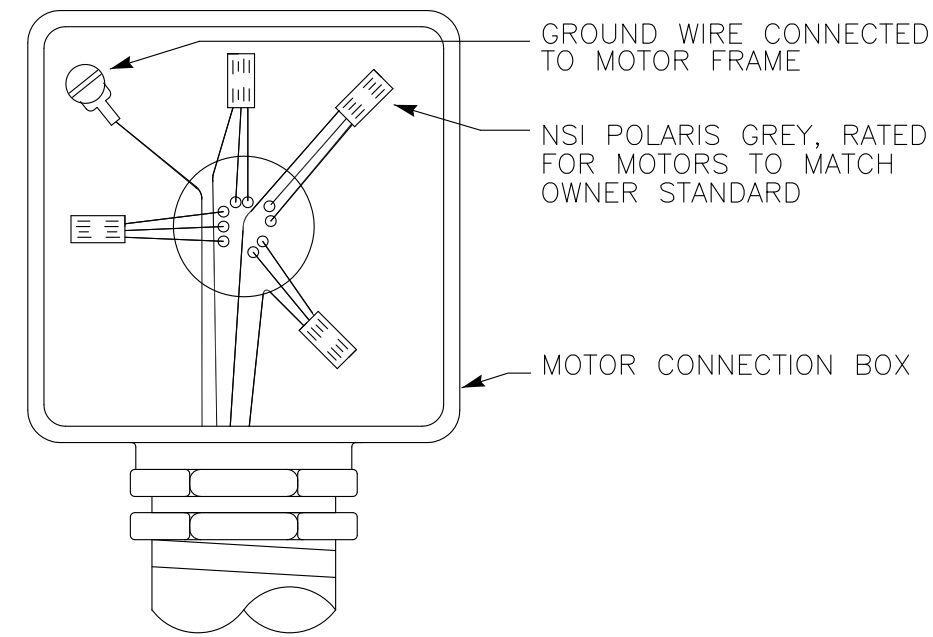
EQUIPMENT CONCRETE PAD
NOT TO SCALE
DETAIL

- NOTES: ① CONCRETE PAD ABOVE FLOOR TO BE POURED AFTER MAIN PAD HAD BEEN POURED. PAD ABOVE FLOOR TO BE CLASS "A" CONCRETE COMPOSITION ACCURATELY LEVELED WITHIN 1/16 INCH. REBAR TO BE #4 @ 12" CROSSWAYS & VERTICAL EVERY 6" (MINIMUM) OR AS CALLED OUT IN STRUCTURAL DRAWINGS.
- ② IF NO BUILDING WALL EXTEND PAD 4" BEYOND ENCLOSURE ON BACK & SIDES.
- ③ CONCRETE DUCT BANKS SHALL EXTEND & CONNECT INTO EQUIPMENT CONCRETE PAD.

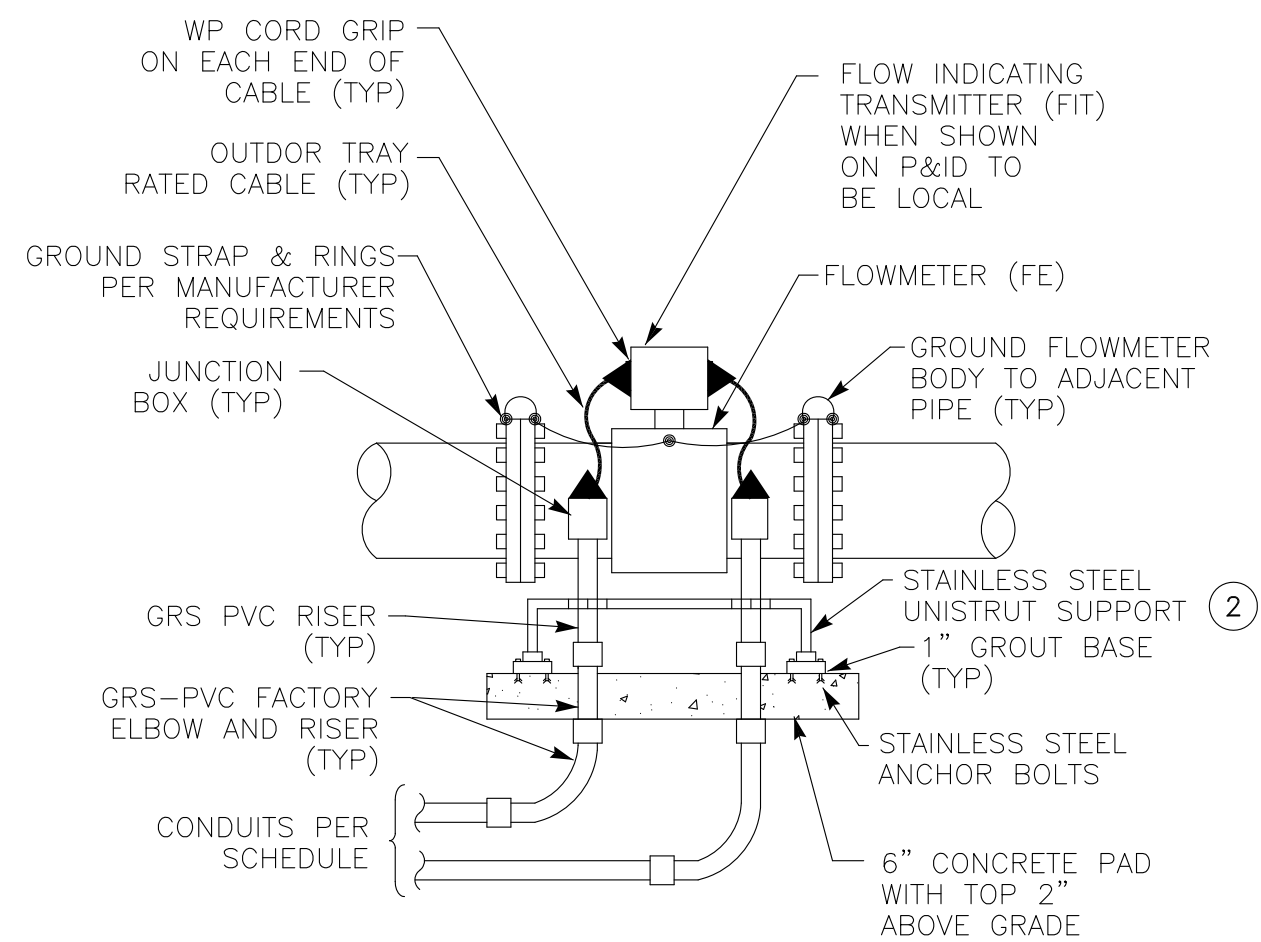


VERTICAL MOTOR CONNECTION
NOT TO SCALE
DETAIL

- NOTES: ① MOTOR MAKEUP PER DWG E12, DET "D".
- ② PROVIDE LARGER MOTOR JUNCTION BOX TO ACCOMMODATE WIRES & CONDUIT IN CONDUIT & WIRE ROUTING SCHEDULE.

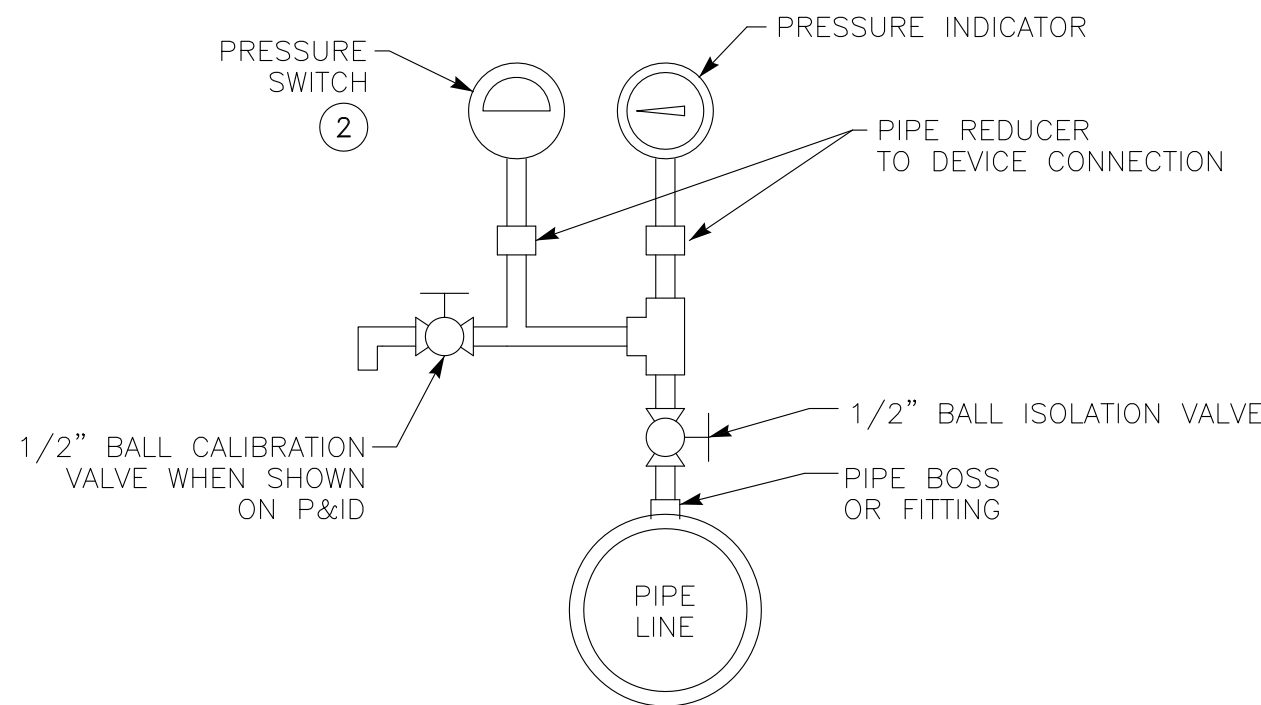


MOTOR MAKEUP
NOT TO SCALE
DETAIL



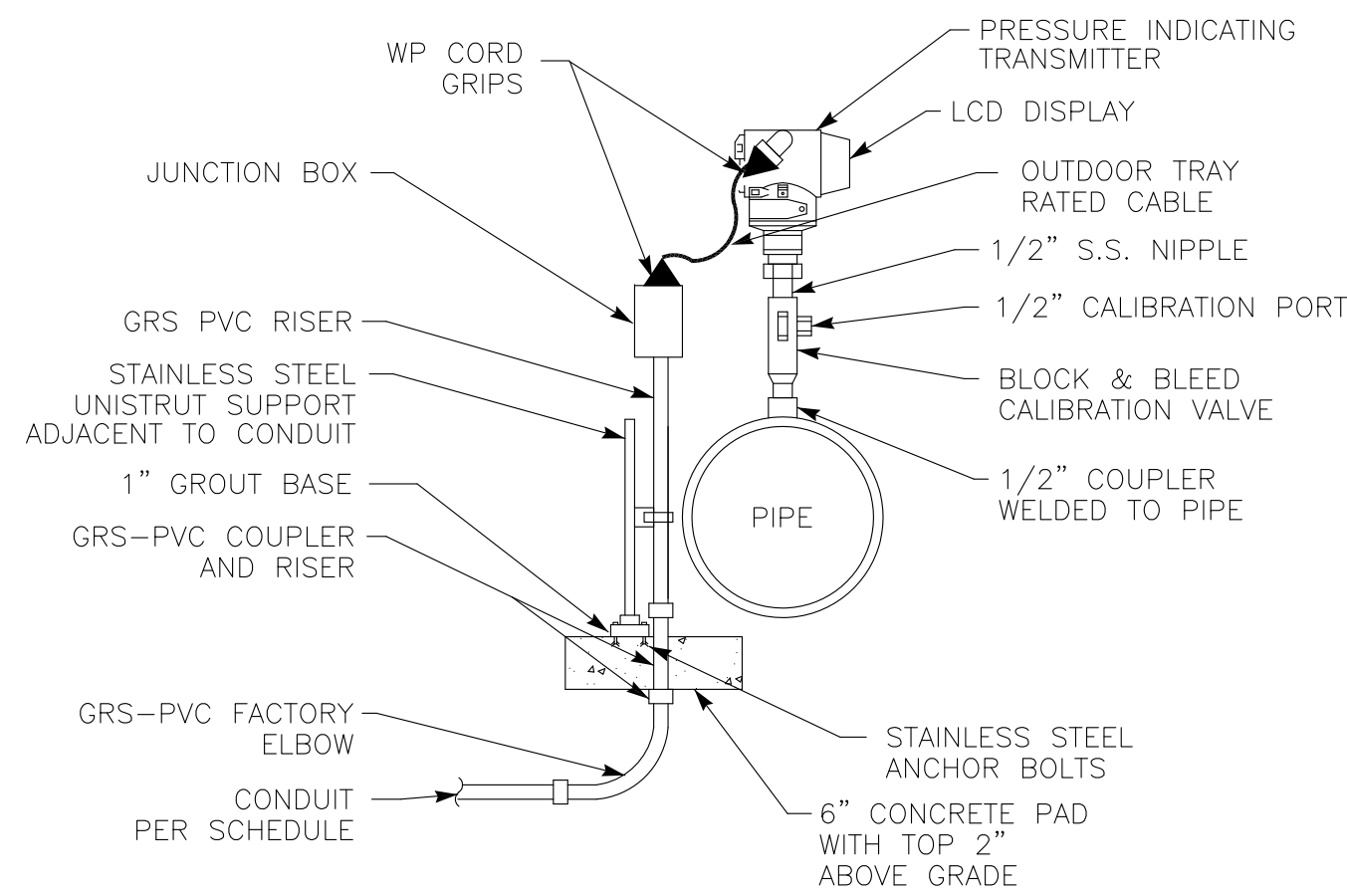
ABOVE GRADE FLOWMETER
NOT TO SCALE
DETAIL

- NOTES: ① SIMILAR INSTALLATION SHALL BE USED FOR VERTICAL PIPES.
- ② SUPPORT WITH TWO HOLE BASE ON EACH SIDE AND HEIGHT OF HORIZONTAL UNISTRUT SUPPORT TO BE 12" MINIMUM.

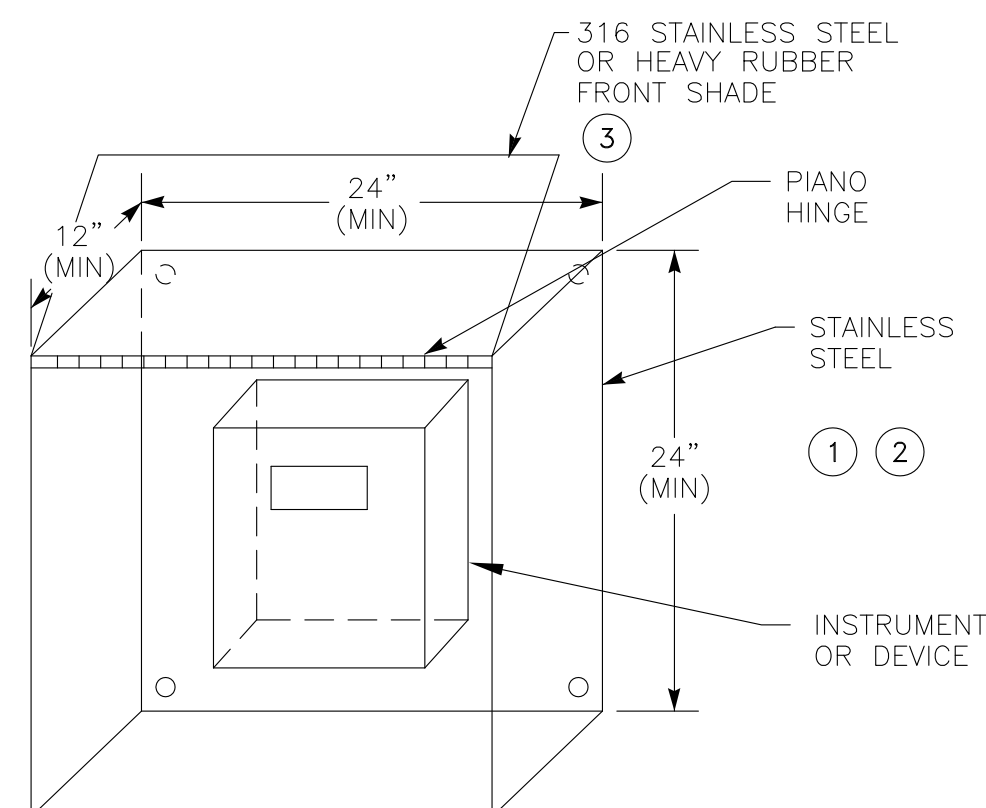


PRESSURE SWITCH/INDICATOR
NOT TO SCALE
DETAIL

- NOTES: ① 1/2" GALVANIZED PIPING & VALVES.
- ② PROVIDE CONDUIT SUPPORT PER DWG E-12, DETAIL "F".

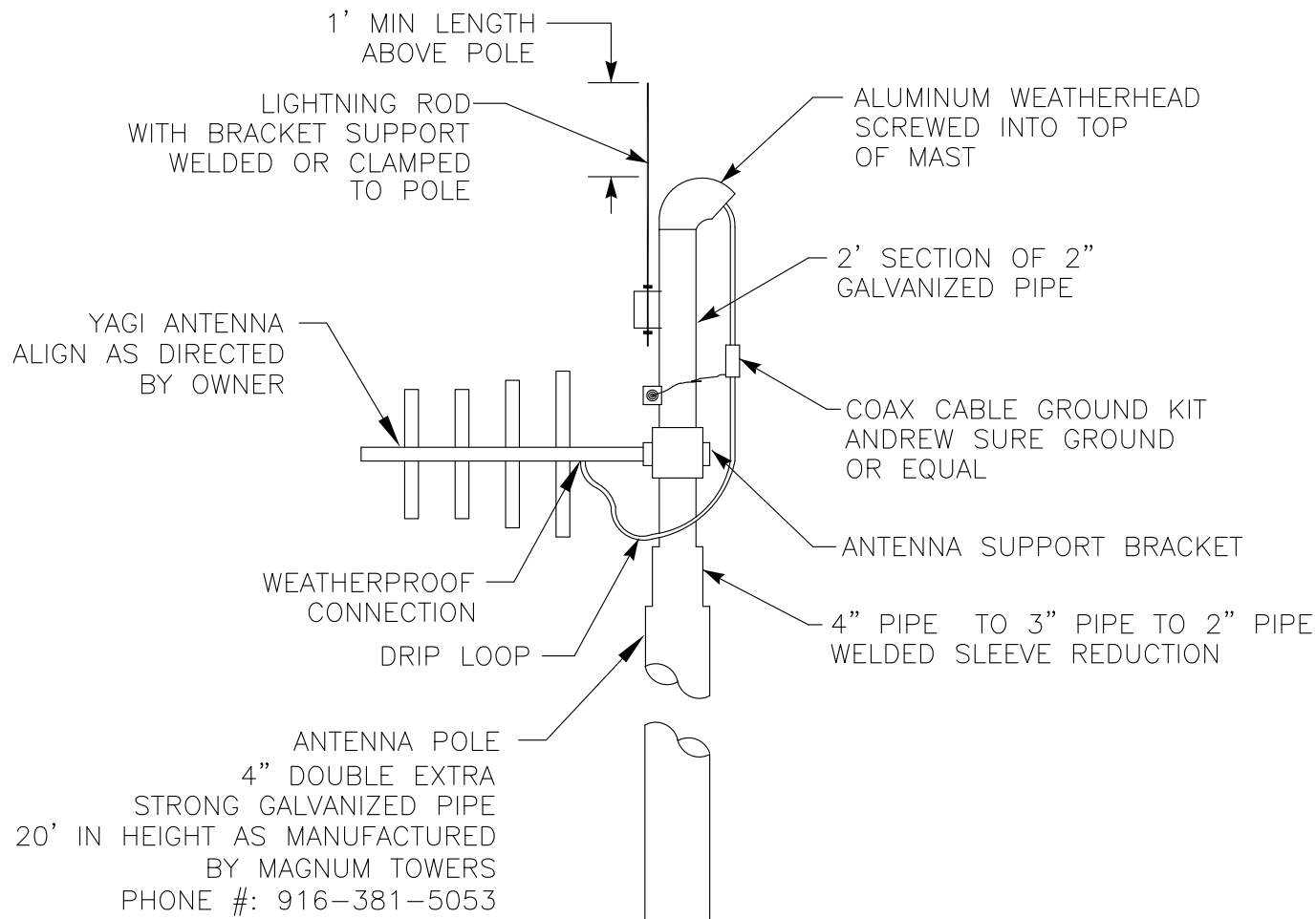


PRESSURE TRANSMITTER
NOT TO SCALE
DETAIL



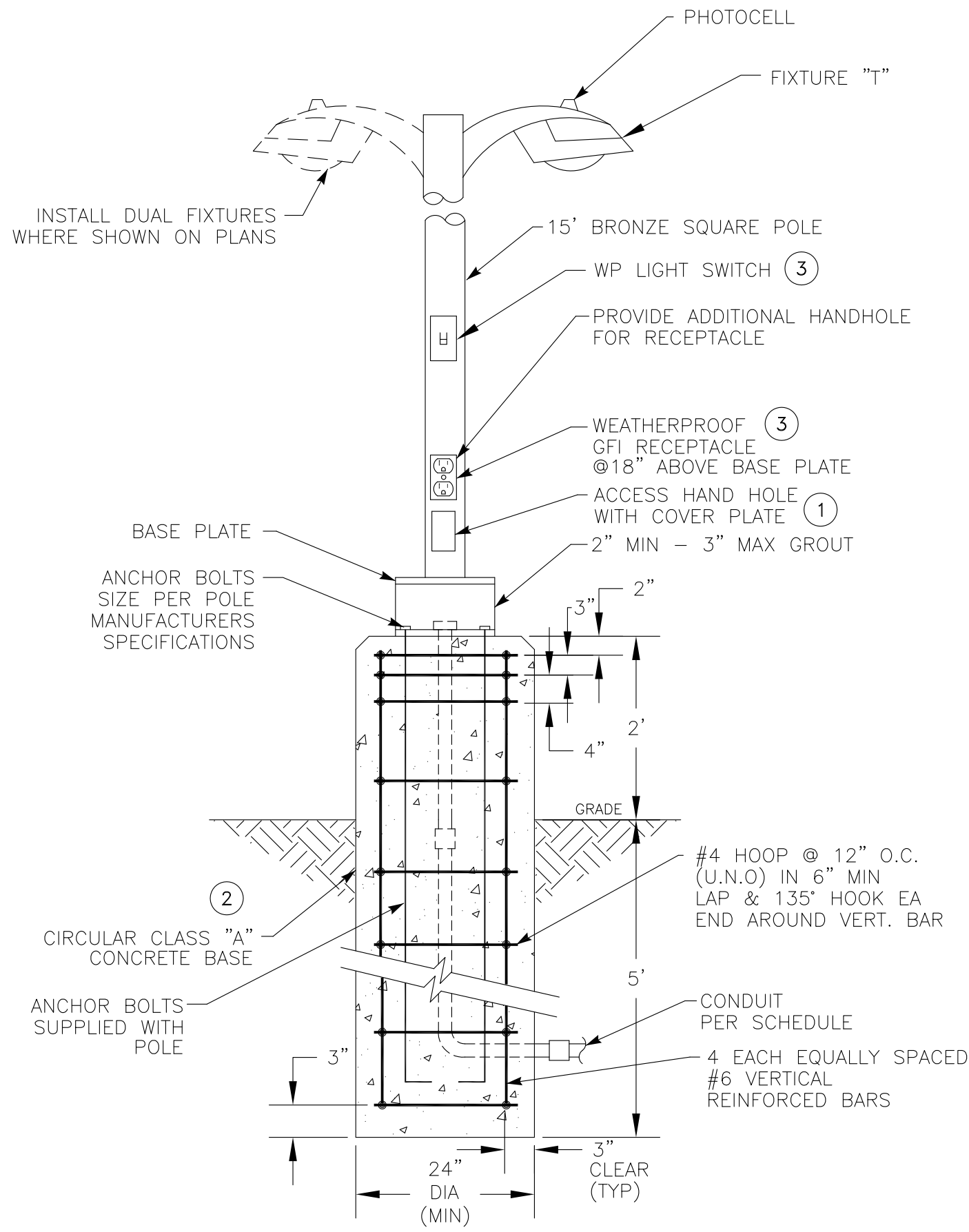
SUNSHIELD
NOT TO SCALE
DETAIL

- NOTES: ① USA BLUEBOOK SUNSHIELD OR EQUAL.
- ② SUPPORT WITH STAINLESS STEEL UNISTRUT.
- ③ FRONT SHADE SHALL FOLD DOWN IN FRONT OF INSTRUMENT/DEVICE TO PROTECT FROM SUN EXPOSURE & OPEN 270° TO LAY FLAT ON TOP OF SUNSHIELD.



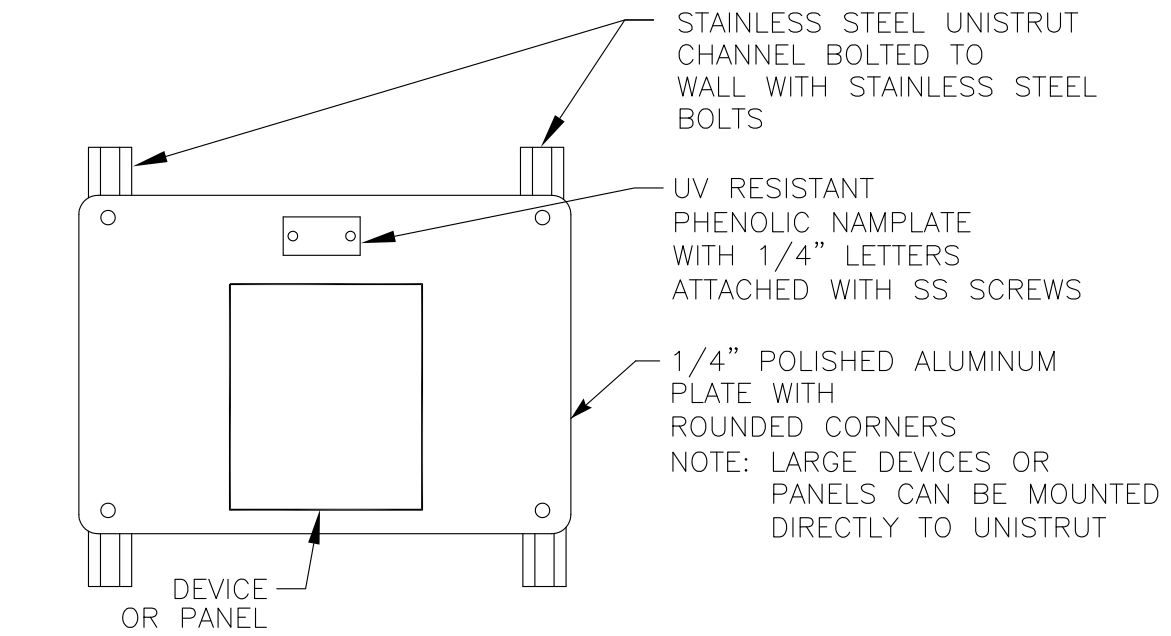
ANTENNA MAST INSTALLATION
NOT TO SCALE
DETAIL

NOTES: 1 ANTENNA MAST AND POLE SHALL BE POWDER COATED BLACK.

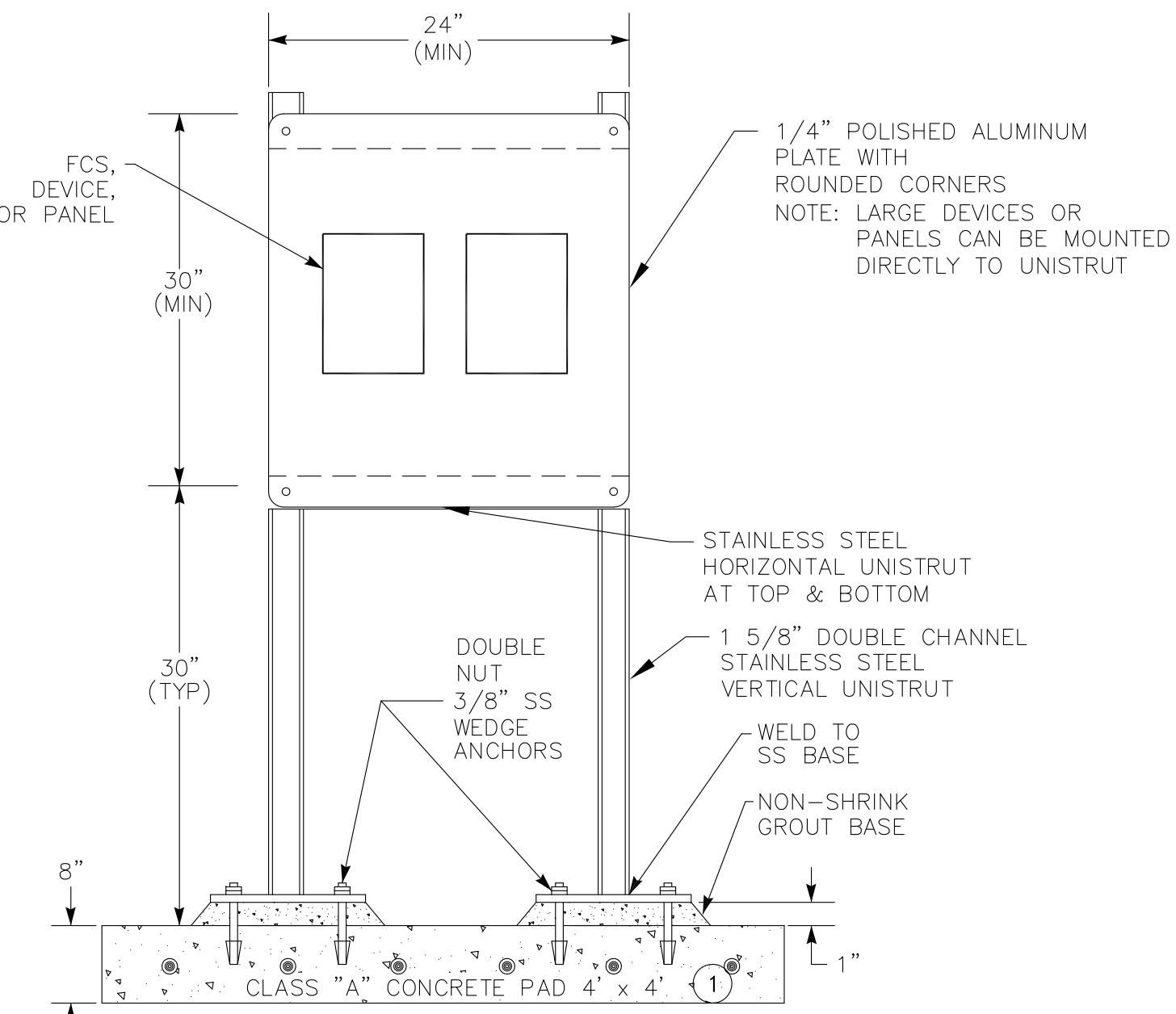


AREA LIGHT
NOT TO SCALE
DETAIL

NOTES: 1 PROVIDE 2 POLE FUSE HOLDER WITH FUSES & RUBBER BOOTS ON LIGHT WIRING FEED INSIDE HANDHOLE.
2 PLACE FINISH CONCRETE ON EXPOSED SURFACE AFTER FORMING TUBE IS REMOVED.
3 WHERE SHOWN ON SITE PLAN.

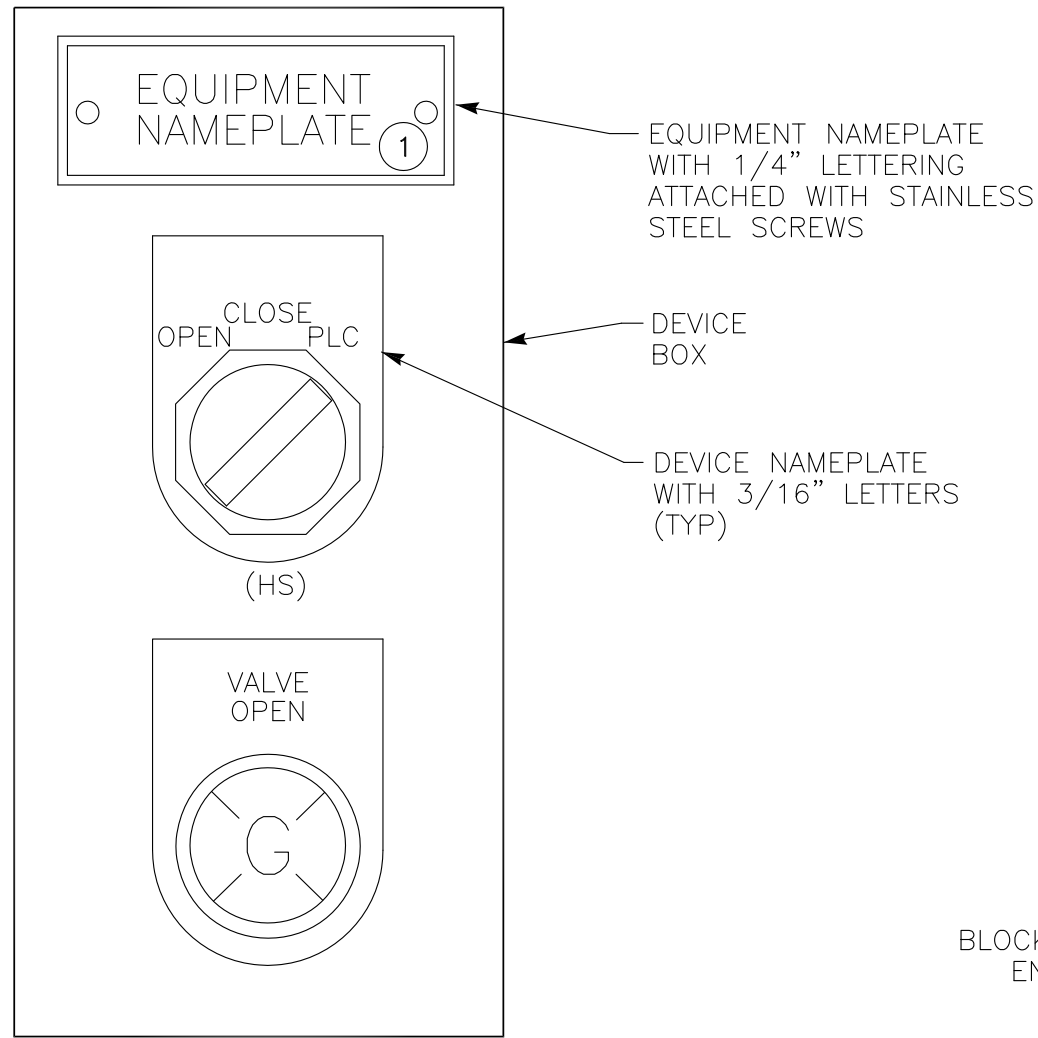


WALL PLATE SUPPORT
NOT TO SCALE
DETAIL



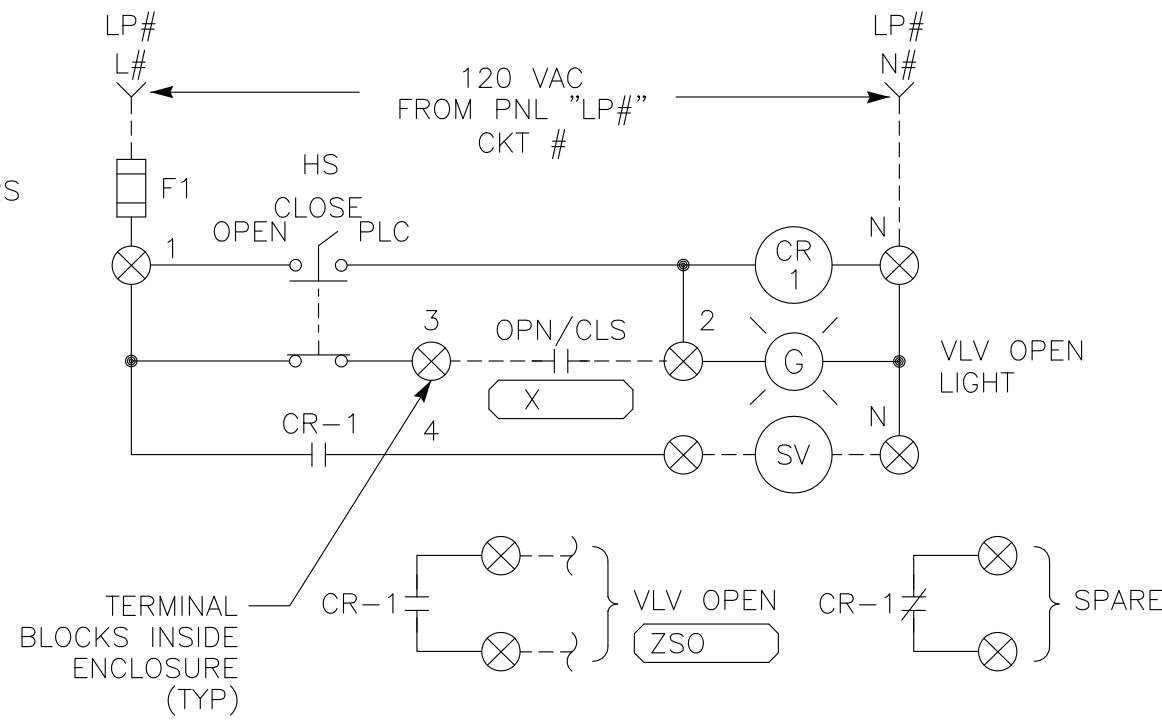
PANEL SUPPORT
NOT TO SCALE
DETAIL

NOTES: 1 #3 REBAR CROSSWAYS AT 12" INTERVALS INSIDE PAD.



OPEN/CLOSE/PLC FCS ELEM & ELEV
NOT TO SCALE
DETAIL

NOTES: 1 EQUIPMENT NAMEPLATE TO CONTAIN EQUIPMENT DESCRIPTION & EQUIPMENT NUMBER PER P&ID DIAGRAM. MOUNT ON OR ABOVE DEVICE BOX ON FCS.



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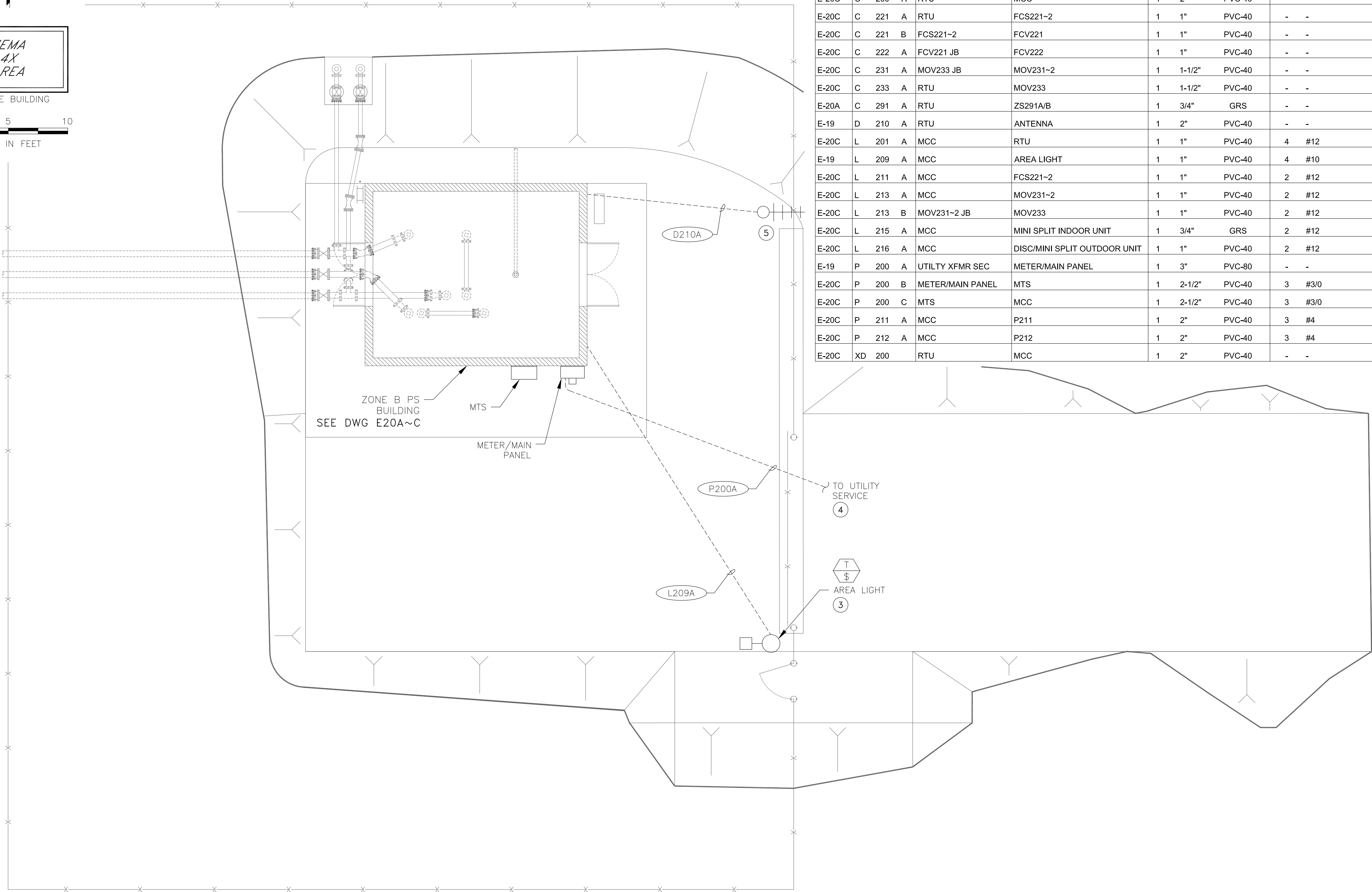
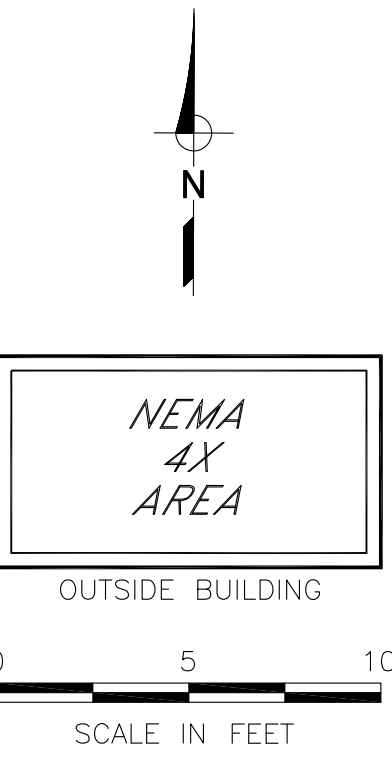


ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
TYPICAL ELECTRICAL
DETAILS NO.3



PROJECT:
072-01C
DATE:
SEPTEMBER 2026
DRAWING NUMBER
E-13
25 / 38





ZONE B PS ELECTRICAL OVERALL SITE PLAN ①②

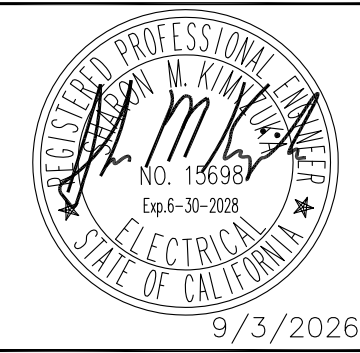
- NOTES: ① UG CONDUITS PER DWG E-11, DETAIL "B".
- ② EXPOSED CONDUITS TRANSITIONS PER DWG E-11, DETAIL "G".
- ③ AREA LIGHT PER DWG E-13, DETAIL "B".
- ④ UTILITY CONDUITS, POLE RISER, PULL BOX AND GROUNDING SYSTEM TO BE PROVIDED AND INSTALLED BY CONTRACTOR PER UTILITY ENGINEERED DRAWINGS.
- ⑤ ANTENNA PER DWG E-13, DETAIL "A".

CONDUIT & WIRE ROUTING SCHEDULE

REF	DWG	CONDUIT		FROM	TO	QTY	SIZE	TYPE	PWR	SIZE	GND	CONTROL	SIZE	SIGNAL	SIZE	NOTES
		NO.							QTY		SIZE	QTY		QTY		
E-20C	A	061	A	RTU	PIT061/FIT071	1	1-1/2"	GRS-PVC	Z2	#14		-	-	3	#16 TSPR	
E-20C	A	200	A	RTU	MCC	1	2"	GRS-PVC	-	-	#12	-	-	6	#16 TSPR	
E-20C	A	261	A	PIT461/FIT472 JB	PIT261/FIT271	1	1"	GRS-PVC	2	#14	#12	-	-	3	#16 TSPR	
E-20C	A	461	A	RTU	PIT461/FIT472	1	1-1/2"	GRS-PVC	4	#14	#12	-	-	6	#16 TSPR	
E-20C	C	200	A	RTU	MCC	1	2"	PVC-40	-	-	#12	24	#14	-	-	
E-20C	C	221	A	RTU	FCS221~2	1	1"	PVC-40	-	-	#12	16	#14	-	-	
E-20C	C	221	B	FCS221~2	FCV221	1	1"	PVC-40	-	-	#12	16	#14	-	-	
E-20C	C	222	A	FCV221 JB	FCV222	1	1"	PVC-40	-	-	#12	8	#14	-	-	
E-20C	C	231	A	MOV233 JB	MOV231~2	1	1-1/2"	PVC-40	-	-	#12	20	#14	-	-	
E-20C	C	233	A	RTU	MOV233	1	1-1/2"	PVC-40	-	-	#12	30	#14	-	-	
E-20A	C	291	A	RTU	ZS291A/B	1	3/4"	GRS	-	-	#12	4	#14	-	-	
E-19	D	210	A	RTU	ANTENNA	1	2"	PVC-40	-	-	#8	-	-	1	1/2" COAX	
E-20C	L	201	A	MCC	RTU	1	1"	PVC-40	4	#12	#12	-	-	-	-	
E-19	L	209	A	MCC	AREA LIGHT	1	1"	PVC-40	4	#10	#10	-	-	-	-	
E-20C	L	211	A	MCC	FCS221~2	1	1"	PVC-40	2	#12	#12	-	-	-	-	
E-20C	L	213	A	MCC	MOV231~2	1	1"	PVC-40	2	#12	#12	-	-	-	-	
E-20C	L	213	B	MOV231~2 JB	MOV233	1	1"	PVC-40	2	#12	#12	-	-	-	-	
E-20C	L	215	A	MCC	MINI SPLIT INDOOR UNIT	1	3/4"	GRS	2	#12	#12	-	-	-	-	
E-20C	L	216	A	MCC	DISC/MINI SPLIT OUTDOOR UNIT	1	1"	PVC-40	2	#12	#12	-	-	-	-	
E-19	P	200	A	UTILITY XFMR SEC	METER/MAIN PANEL	1	3"	PVC-80	-	-	-	-	-	-	-	PULL TAPE
E-20C	P	200	B	METER/MAIN PANEL	MTS	1	2-1/2"	PVC-40	3	#3/0	#3	-	-	-	-	
E-20C	P	200	C	MTS	MCC	1	2-1/2"	PVC-40	3	#3/0	#3	-	-	-	-	
E-20C	P	211	A	MCC	P211	1	2"	PVC-40	3	#4	#8	4	#14	-	-	VFD RATED CABLE
E-20C	P	212	A	MCC	P212	1	2"	PVC-40	3	#4	#8	4	#14	-	-	VFD RATED CABLE
E-20C	XD	200		RTU	MCC	1	2"	PVC-40	-	-	-	-	-	-	-	PULL ROPE



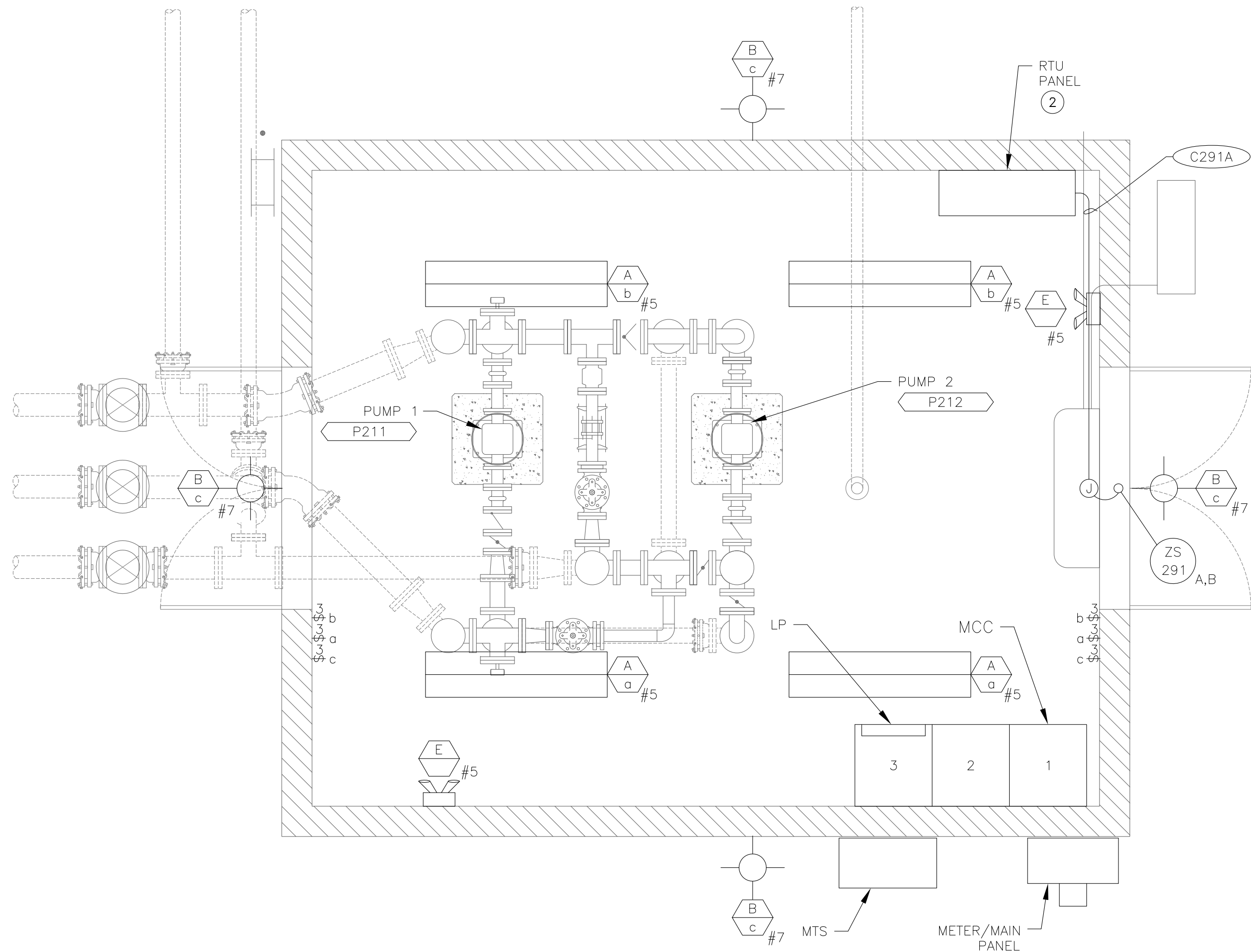
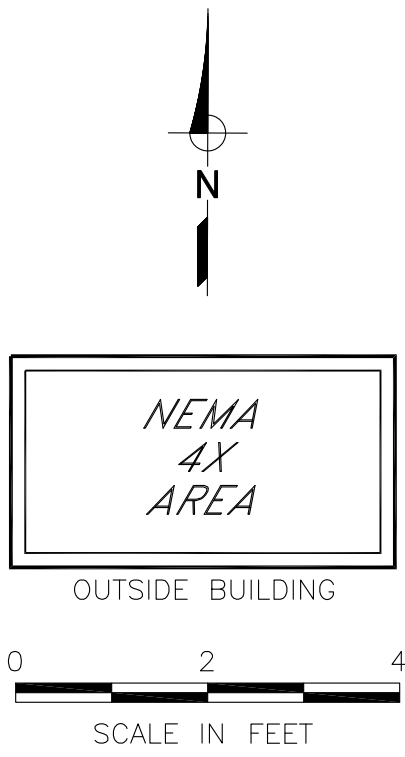
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DESN S. KIMIZUKA
DRW Z. VOGLER
CHECK X. LI
APV



ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
ZONE B PS
OVERALL SITE PLAN



PROJECT: 072-01C
DATE: SEPTEMBER 2026
DRAWING NUMBER E-19
26 / 38



ZONE B PS BUILDING ELECTRICAL REFLECTIVE PLAN ①

- NOTES: ① SEE DWG E-9 FOR CONDUIT & WIRE INSTALLATION REQUIREMENTS AND LIGHTING FIXTURES SCHEDULE. CIRCUITS SHOWN ARE FED FROM PANEL LP.
- ② PROVIDED BY OWNER, INSTALLED BY CONTRACTOR.

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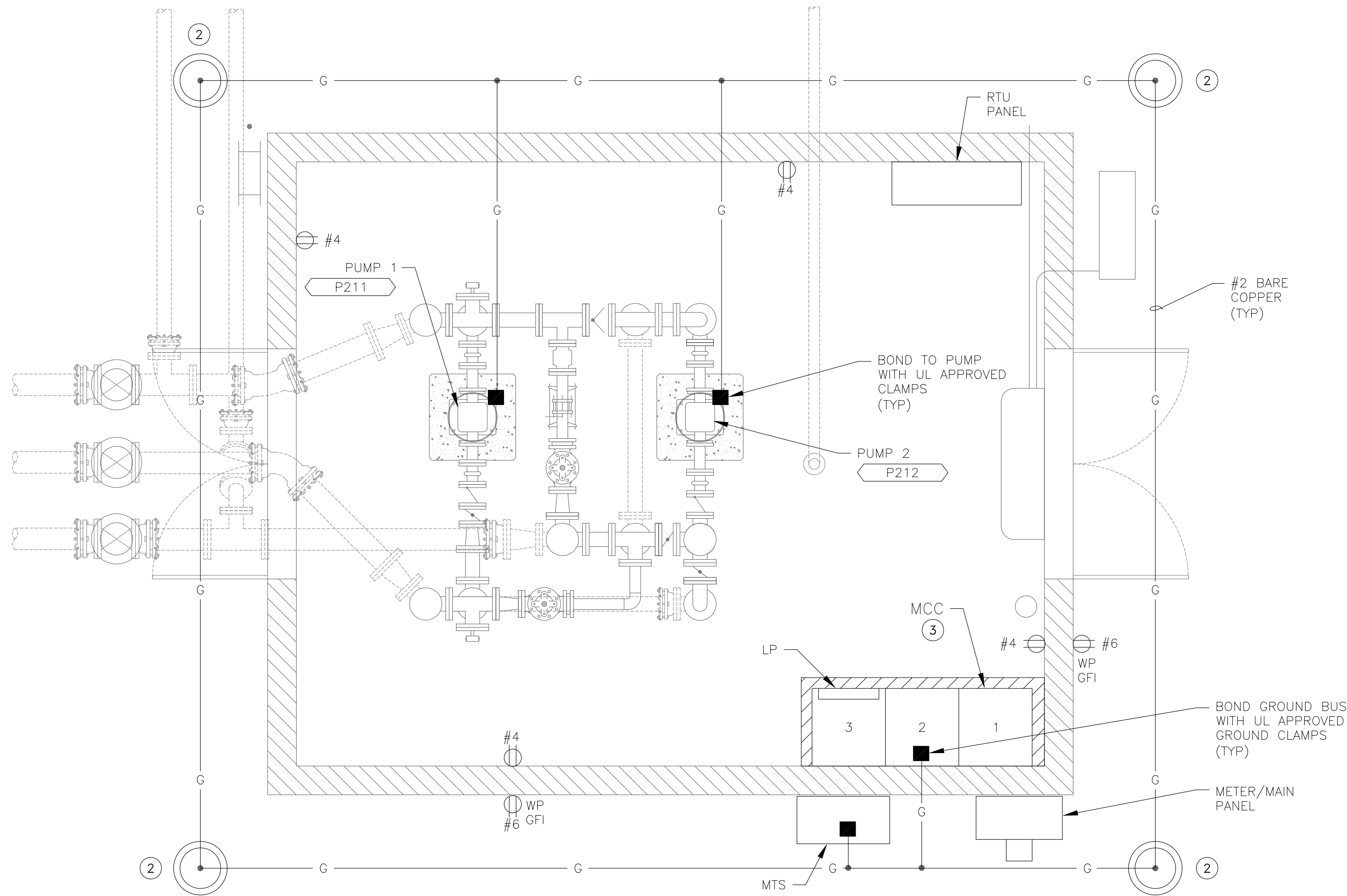
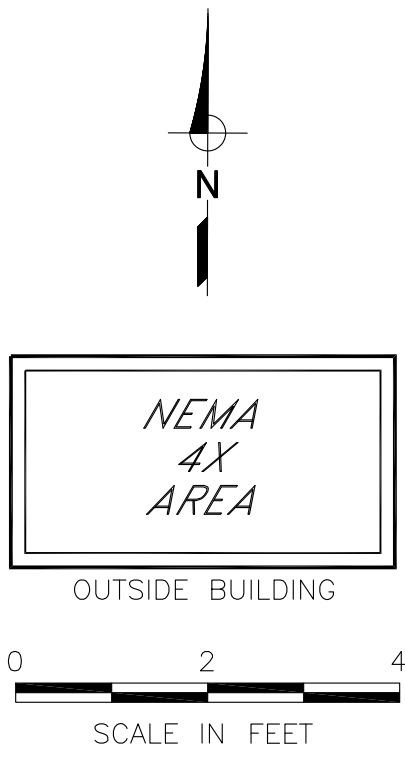
Professional Engineer
No. 15698
Exp. 8-30-2028
Electrical
State of California

9/3/2026

ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
ZONE B PS BUILDING
ELECTRICAL REFLECTIVE PLAN



PROJECT:
072-01C
DATE:
SEPTEMBER 2026
DRAWING NUMBER
E-20A
27 / 38



ZONE B PS BUILDING ELECTRICAL BASE PLAN ①

- NOTES: ① SEE DWG E-9 FOR CONDUIT & WIRE INSTALLATION REQUIREMENTS. CIRCUITS SHOWN ARE FED FROM PANEL LP.
- ② GROUND RING TO CONSIST OF #2 BARE COPPER WITH MINIMUM 30" COVER. INSTALL GROUND ROD HANDHOLE PER DWG E-11, DETAIL "E".
- ③ HOUSEKEEPING CONCRETE PAD PER DWG E-12, DETAIL "B".

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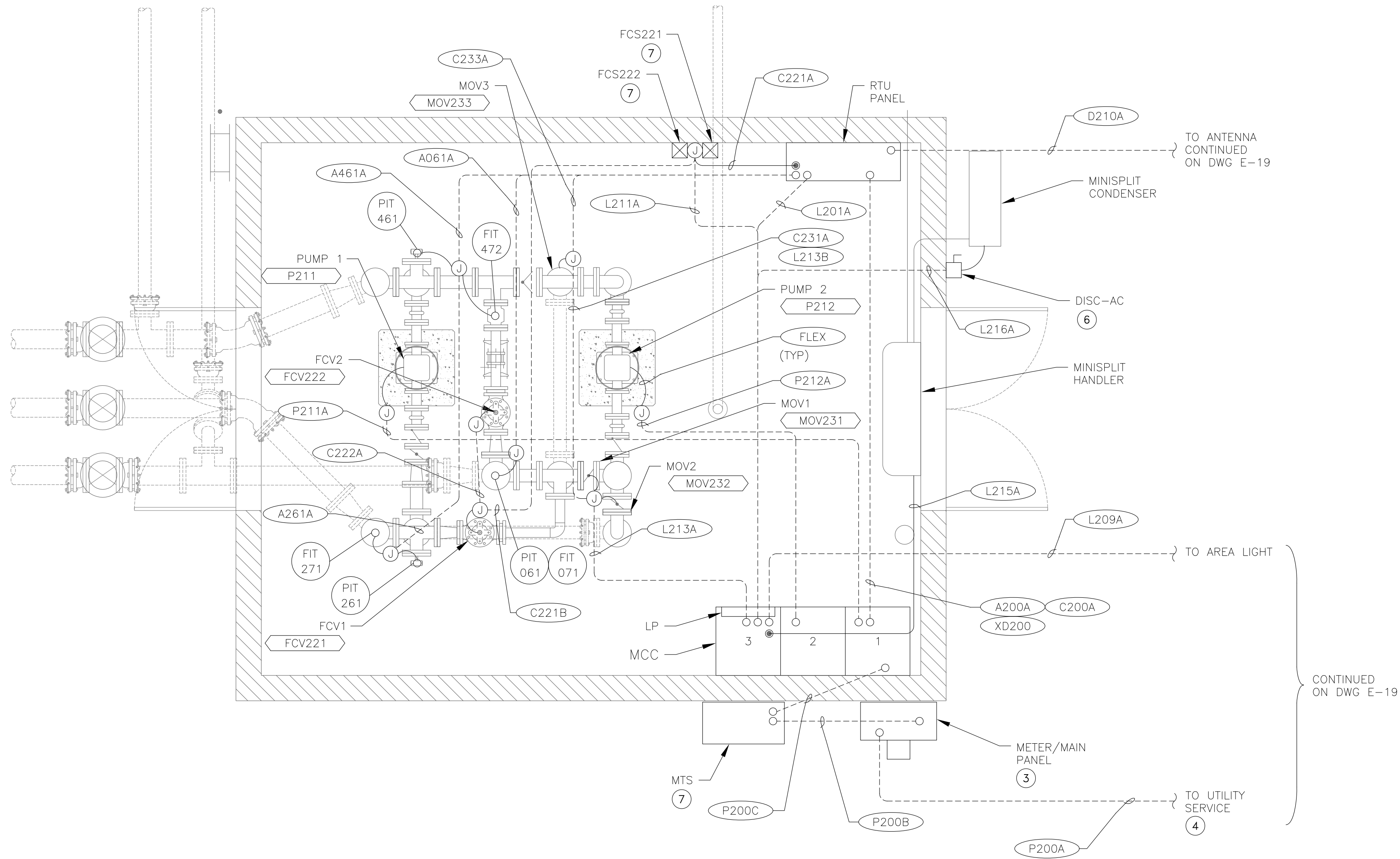
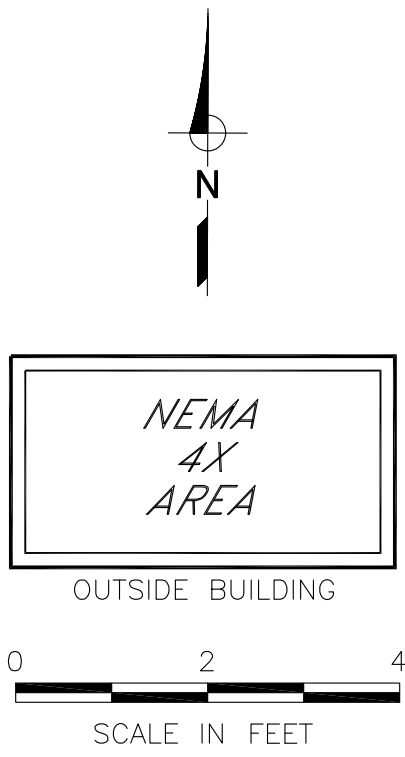


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ZONES B AND D1 PUMP STATIONS IMPROVEMENTS ZONE B PS BUILDING ELECTRICAL BASE PLAN



PROJECT:
072-01C
DATE:
SEPTEMBER 2026
DRAWING NUMBER
E-20B
28 / 38



ZONE B PS BUILDING ELECTRICAL POWER PLAN①②⑤

NOTES: ① UG CONDUITS PER DWG E-11, DETAIL "B".

② EXPOSED CONDUITS TRANSITIONS PER DWG E-11, DETAIL "C".

③ METER/MAIN PANEL PER DWG E-12, DETAIL "A".

④ UTILITY CONDUITS, POLE RISER, PULL BOX AND GROUNDING SYSTEM TO BE PROVIDED AND INSTALLED BY CONTRACTOR PER UTILITY ENGINEERED DRAWINGS.

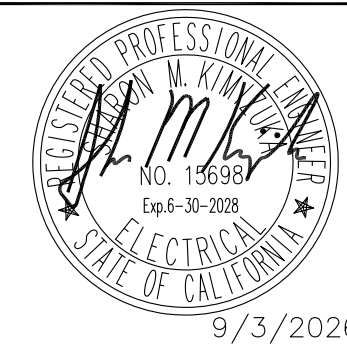
⑤ CONDUITS UNDER BUILDING MAY BE PLACED IN CONCRETE SLURRY.

⑥ WALL MOUNT 30A/2P/240V NEMA 3R DISCONNECT NEXT TO CONDENSER UNIT.

⑦ INSTALLATION PER DWG E-13, DETAIL "C".



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ZONES B AND D1 PUMP STATIONS IMPROVEMENTS ZONE B PS BUILDING ELECTRICAL POWER PLAN



PROJECT: 072-01C

DATE: SEPTEMBER 2026

DRAWING NUMBER

E-20C

29 / 38

POWER UTILITY SERVICE DIVISION OF WORK		Electrical Contractor	Utility Company
Primary Conduits		N/A	
Primary Conductors			N/A
Transformer Pad		N/A	
Transformer			X
Transformer Connections			X
Transformer Ground Rod		N/A	
Secondary Conduits		X	
Secondary Conductors		X	
Bollards		X	
Meter Enclosure/Base		X	
Utility Meter			X
C/T Enclosure		N/A	
Current Transformers C/T			N/A
Meter Room Lock Box		N/A	
Power Company Information:			
Contact Name:			
Power Utility:	SCE		
Address:			
City/State/Zip:			
Phone:			
E-mail:			
Notes:			
1. All Utility Service installation work shall be done by Contractor per Power Utility Engineered drawings (which supersedes what is shown on Contract Drawings).			
2. Contractor shall coordinate and schedule all Power Utility inspections and tests in strict compliance with Power Utility requirements.			

ZONE B BOOSTER PS LOAD CALCULATIONS		UTILITY SERVICE					
HP DESCRIPTION	LOAD AMPS	QTY LOAD	LOAD VA	RUN AMPS	QTY RUN	RUN VA	
30 PUMP	40.0	1	33,255	40.0	1	33,255	
20 PUMP	27.0	1	22,447	27.0	1	22,447	
PANEL LP	9.2		7,614	9.2		7,614	
SUBTOTAL	76.2		30,061	76.2		63,317	
DIVERSITY FACTOR			211 %				
30 HP Largest motor @ 25% additional				40.0	0.25	8,314	
TOTAL						71,631	
/ 480 V, 3 Phase, 4 Wire, Service Amps =		86.2 Amps 1.25 Multiplier Service Size = 107.7 Amps Main Breaker Size = 200.0 Amps % Main Breaker Load = 53.8%					

DWG REF: E-21 NAMEPLATE: LP LOCATION: MCC		MOUNTING: FLUSH		VOLTS: 120 / 240 PHASE: 1 WIRE: 3		BUS AMPS: 100A MAIN BKR: 60A KAIC RATING: 10		ENTRY: BOTTOM NEMA: 1 SPD: YES				
BKR NO.	LOAD DESCRIPTION	LOAD VA	LINE AMPS	BKR AMP/ POLE	BKR NO.	PHASE	BKR NO.	AMP/ POLE	LINE AMPS	LOAD VA	DESCRIPTION	BKR NO.
1	RTU PANEL	800	7	20/1	1	A	2	20/1	2	200	RTU LGT/HTR	2
3	SPARE	0	0	20/1	3	B	4	20/1	6	720	RECEPT-INSIDE BUILDING	4
5	LIGHTS-INSIDE BUILDING	200	2	20/1	5	A	6	20/1	6	720	RECEPT-EXTERIOR BUILDING	6
7	LIGHTS-EXTERIOR BUILDING	300	3	20/1	7	B	8	20/1	0	0	SPARE	8
9	LIGHTS-AREA	200	2	20/1	9	A	10	20/1	2	180	RECEPT-MCC	10
11	FCV221~2	300	3	20/1	11	B	12	20/1	0	0	SPARE	12
13	MOV231~3	1,000	8	20/1	13	A	14	20/1	0	0	SPARE	14
15	MINI SPLIT INDOOR UNIT	120	1	15/2	15	B	16	20/2	15	1,800	MINI SPLIT OUTDOOR UNIT	16
17		120	1		17	A	18		15	1,800		18

PHASE

A

B

LEFT SIDE AMPS

19

6

LEFT SIDE KVA

2.32

0.72

TOTAL KVA

8.46

TOTAL AMPS @ 240V, 1P

35.3

DIVERSITY FACTOR

0.90

LOAD KVA

7.61

NEUTRAL

GROUND

A

B

PHASE

24

21

RIGHT SIDE AMPS

2.90

2.52

RIGHT SIDE KVA

2.32

0.72

LEFT SIDE KVA

5.22

3.24

TOTAL PHASE KVA

44

27

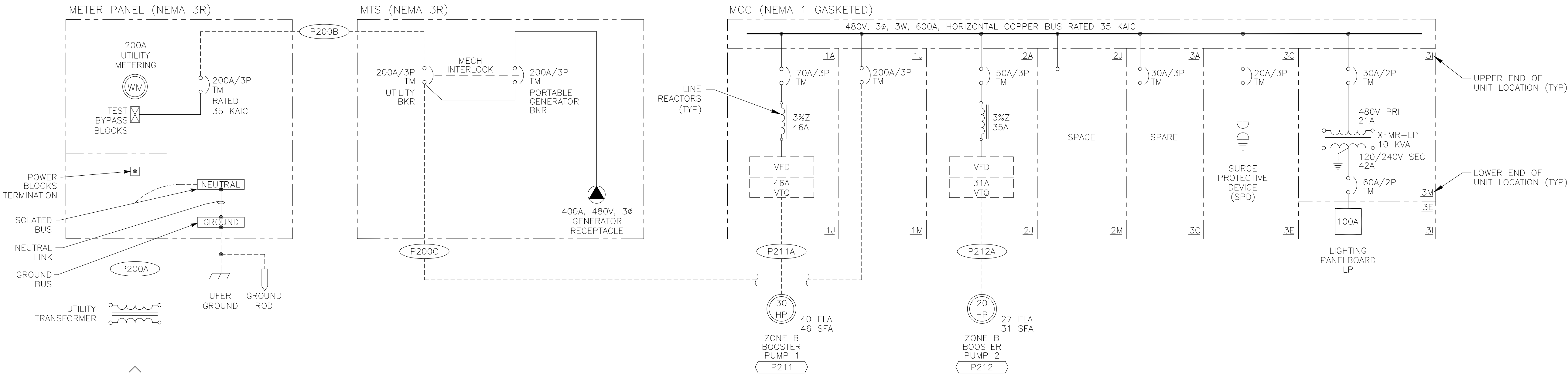
TOTAL PHASE AMPS

123

77

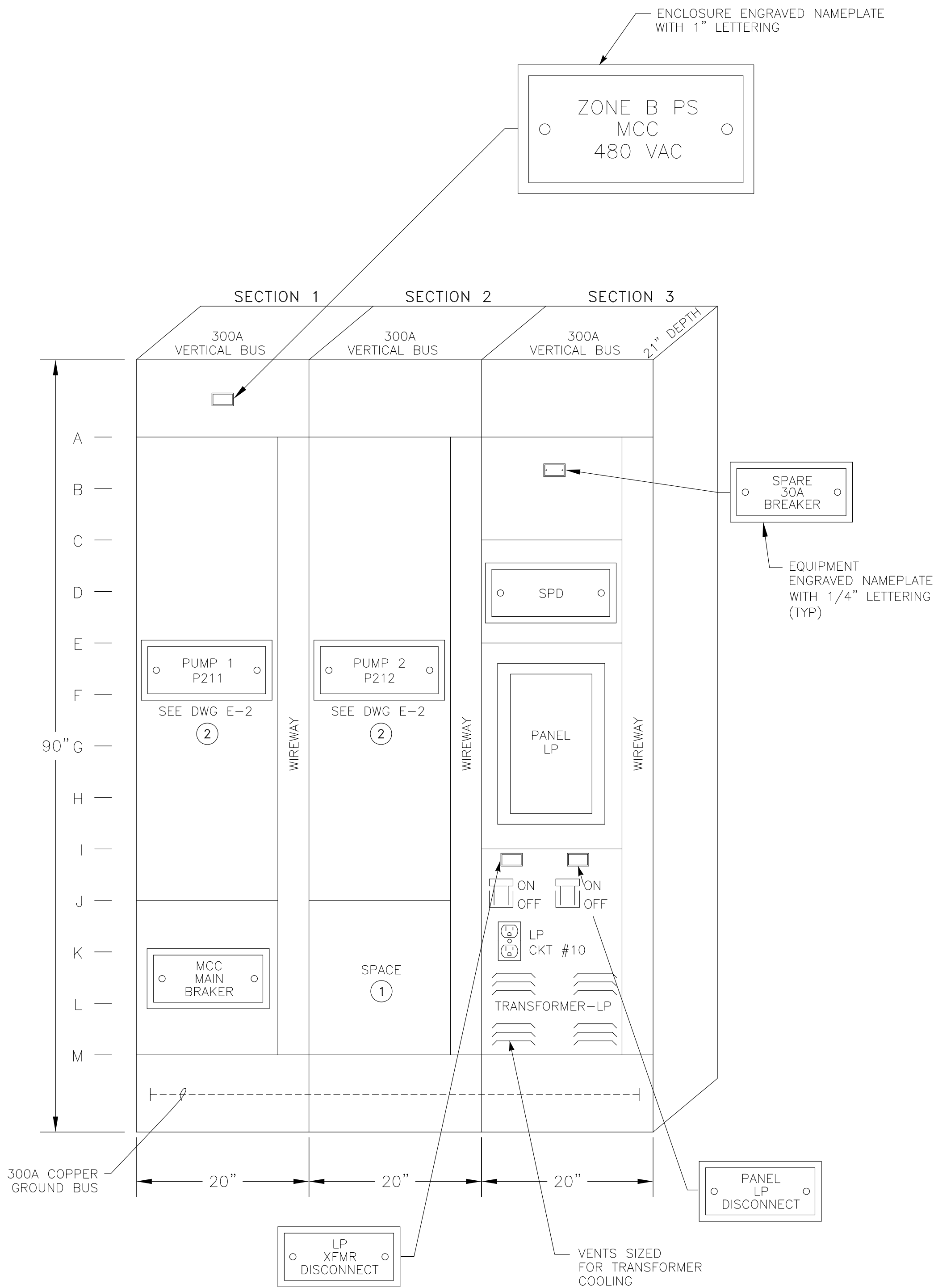
% OF AVERAGE

- NOTES: 1. MEANS OF WIRE COLOR CODING SHALL BE POSTED ON PANELBOARD PER NEC 210.5
2. (G) INDICATES GFI BREAKER REQUIRED WITH 30 MA SENSITIVITY
3. (H) INDICATES HACR RATED BREAKER.
4. (L) PROVIDE PADLOCKING PROVISION IN ORDER TO LOCK BREAKER IN THE OFF POSITION.



ZONE B BOOSTER PS ONE LINE DIAGRAM ①

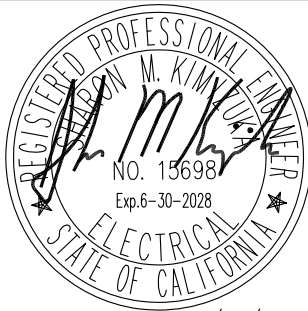
NOTE: ① ALL LUGS SHALL BE COPPER. SIZE FOR WIRES LISTED IN "CONDUIT & WIRE SCHEDULE".



MCC ELEVATION
NOT TO SCALE

- NOTES: ① EACH SPACE LOCATION TO HAVE DRAW OUT BUCKET WITH BLANK DOOR.
- ② TOP OF DEVICES TO BE MAXIMUM 66" ABOVE FINISHED FLOOR.

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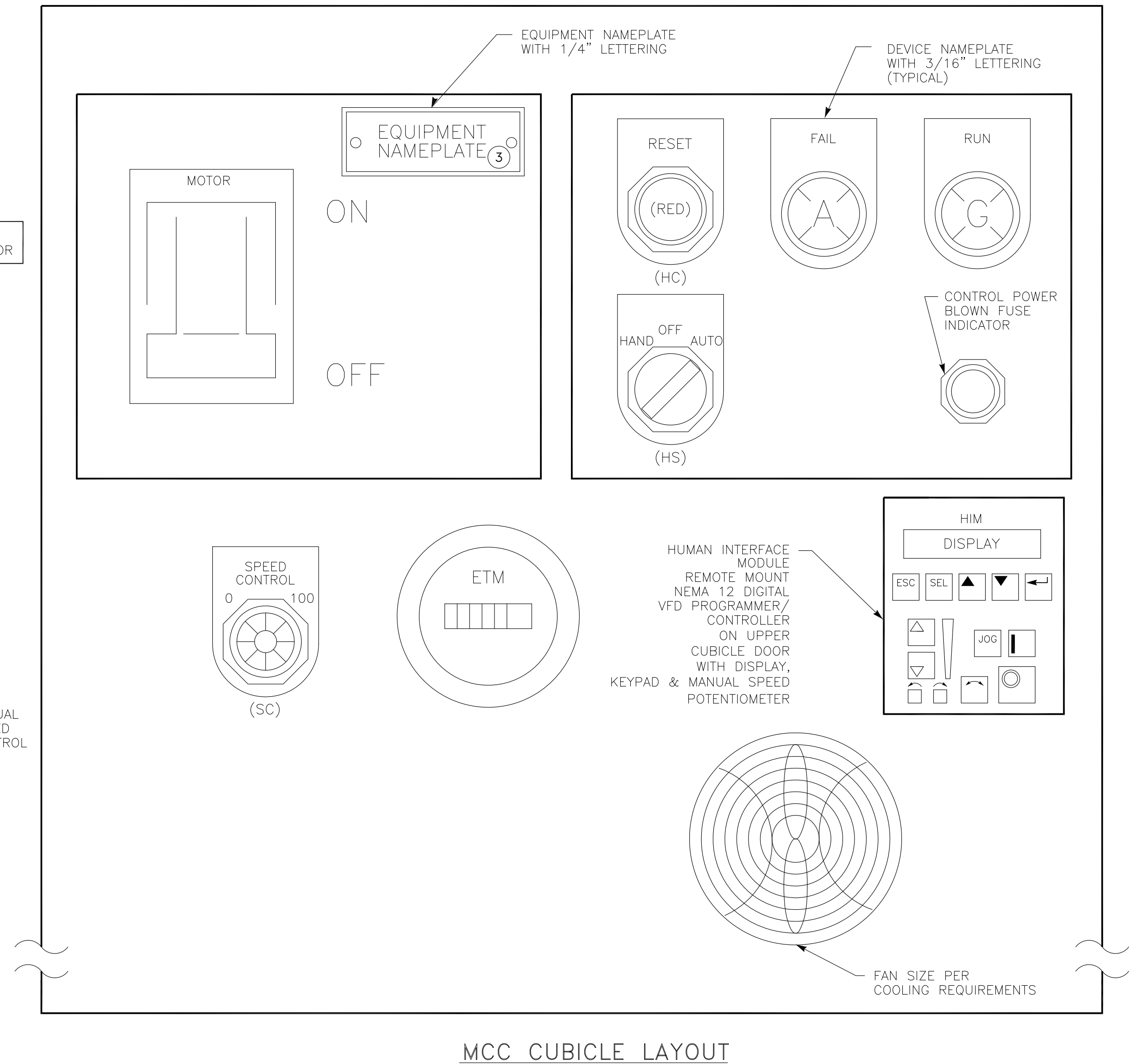
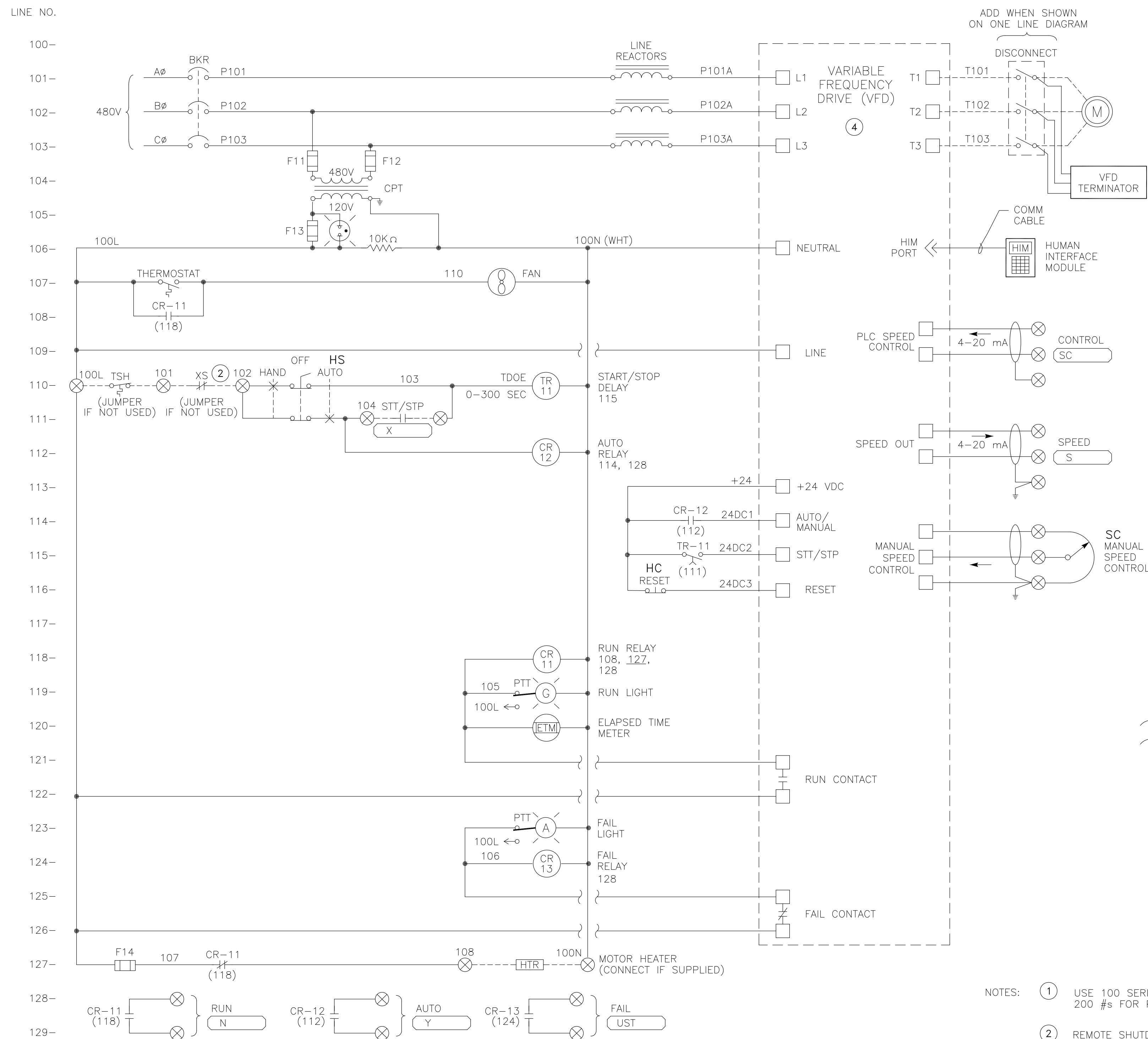


9/3/2026

ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
ZONE B BOOSTER PUMP STATION
MCC ELEVATION



PROJECT:
072-01C
DATE:
SEPTEMBER 2026
DRAWING NUMBER
E-22
31 / 38



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APPROVED



VFD ELEMENTARY DIAGRAM

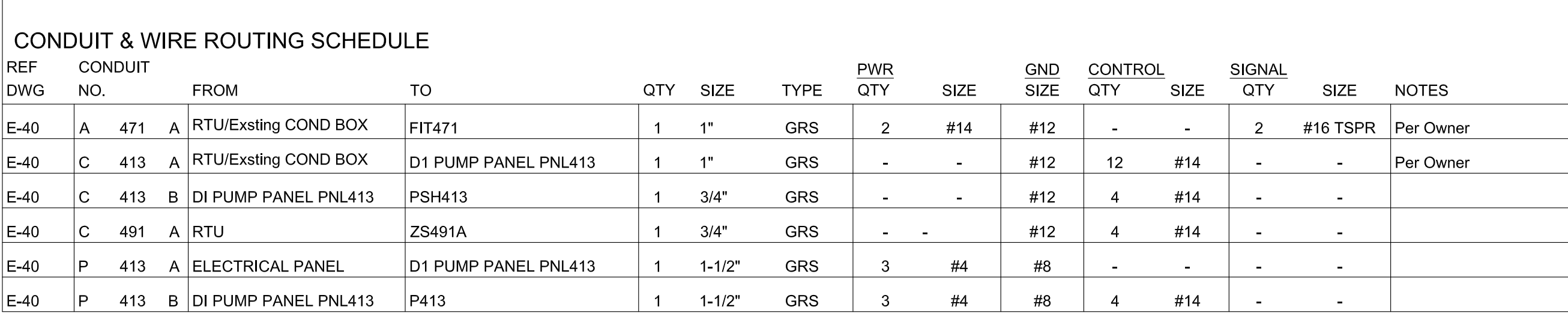


PROJECT:
072-01C

DATE:
SEPTEMBER 2026

DRAWING NUMBER
E-23
32 / 38



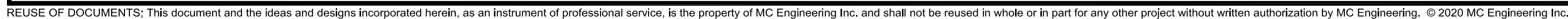


NOTES: (1) HAND DIG TRENCH FOR UG CONDUITS IN EXISTING AREA, EXISTING UG SERVICES ARE NOT SHOWN & SHALL BE PROTECTED FROM DAMAGE. UG CONDUITS PER DWG E-11, DETAIL "B".

(2) EXPOSED CONDUITS TRANSITIONS PER DWG E-11, DETAIL "G".

(3) EXPOSED CONDUITS PER DWG E-11, DETAIL "A".

(4) ROUTE NEW CONDUITS TO (E) CONDUIT BOX PER OWNER'S INSTRUCTIONS TO CONNECT RTU LOCATED AT WAREHOUSE.



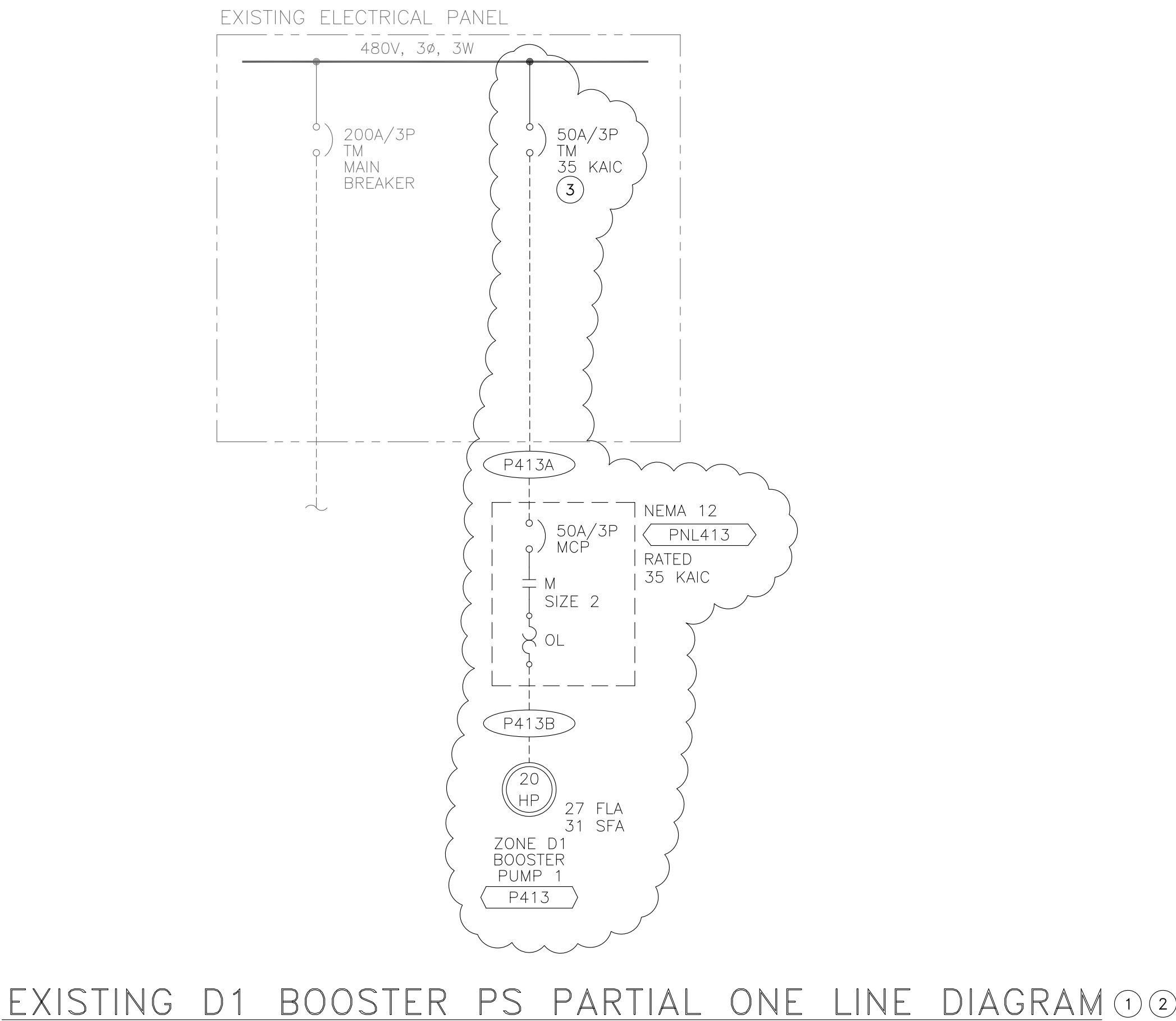
PROJECT: 072-01C

DATE: _____

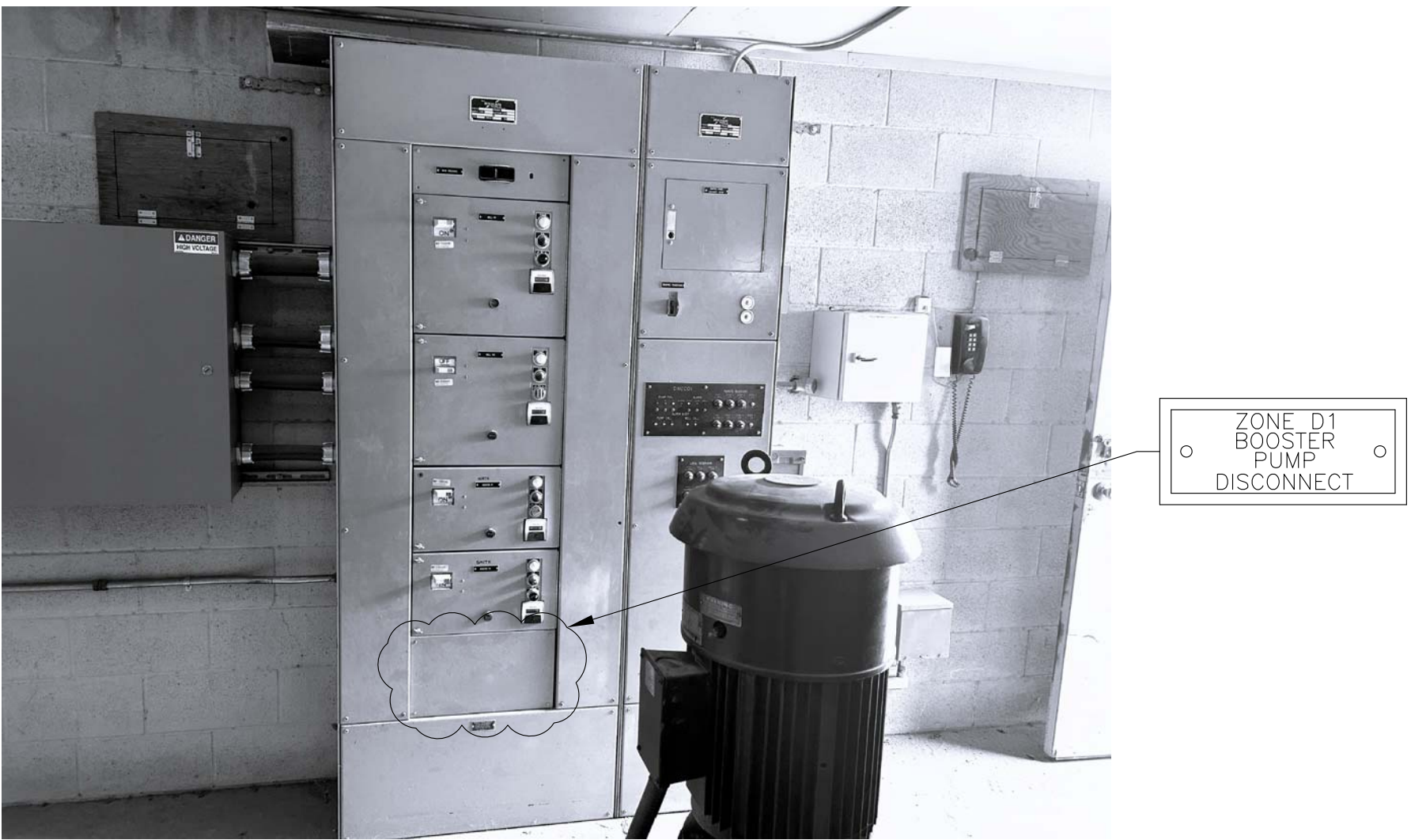
E-40

33 / 38

VERIFY SCALE!
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ADJUST SCALE ACCORDINGLY. THESE DRAWINGS WERE PREPARED FOR ANSI D PAPER SIZE AND ARE NOT SUITABLE FOR CONSTRUCTION IF SCALED TO ANY OTHER SIZE. THESE CONTRACT DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ARE NOT TO BE USED AS A STAND ALONE DOCUMENT FOR CONSTRUCTION.



- NOTE:
- ① NEW WORK SHOWN IN BUBBLES.
- ② ALL LUGS SHALL BE COPPER. SIZE FOR WIRES LISTED IN "CONDUIT & WIRE SCHEDULE".
- ③ CONTRACTOR SHALL FIELD VERIFY TO ADD NEW CIRCUIT BREAKER AND PROVIDE NEW NAMEPLATE WITH 1/4" LETTERS AS SHOWN, SEE PHOTO-A.



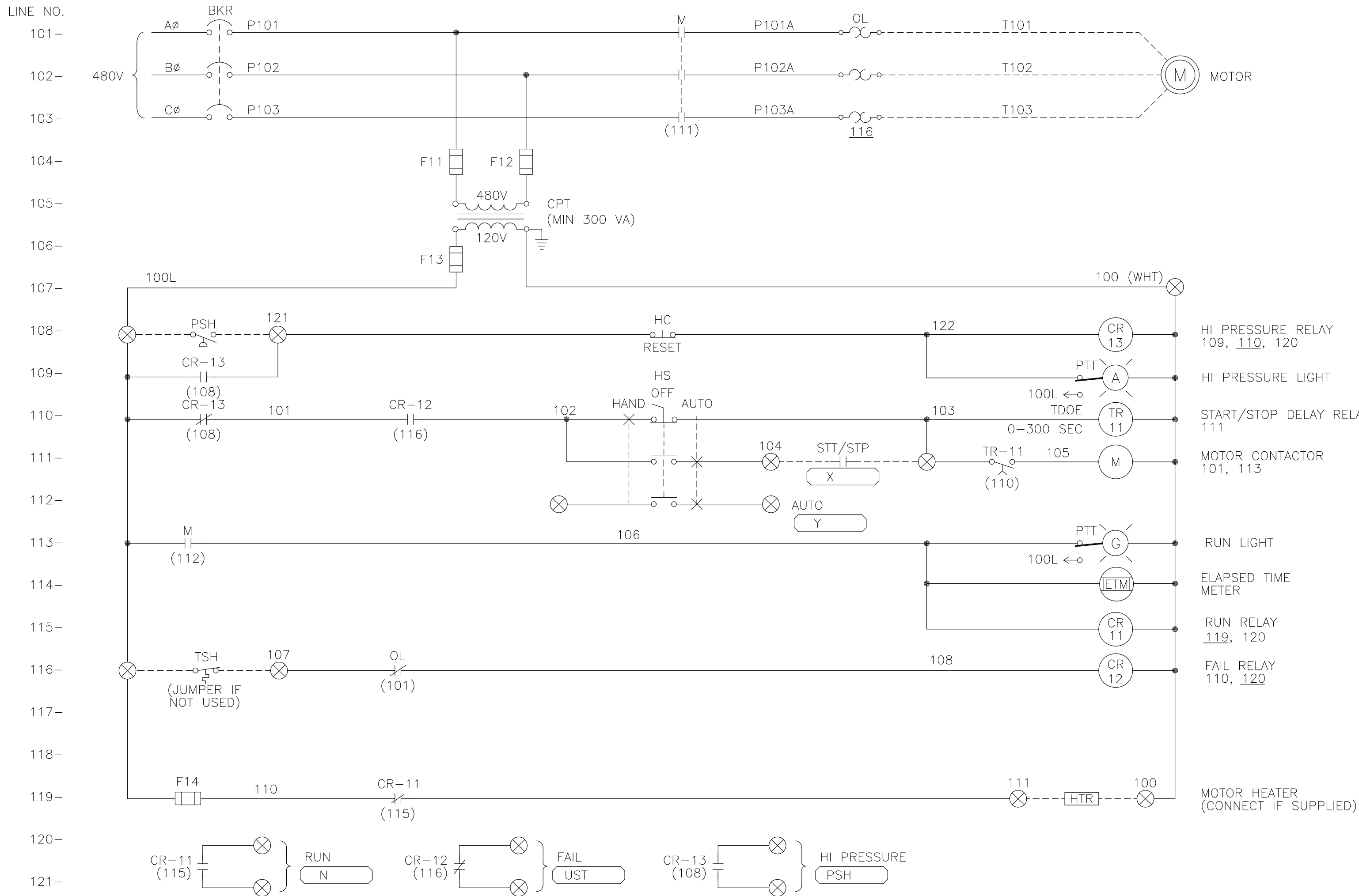
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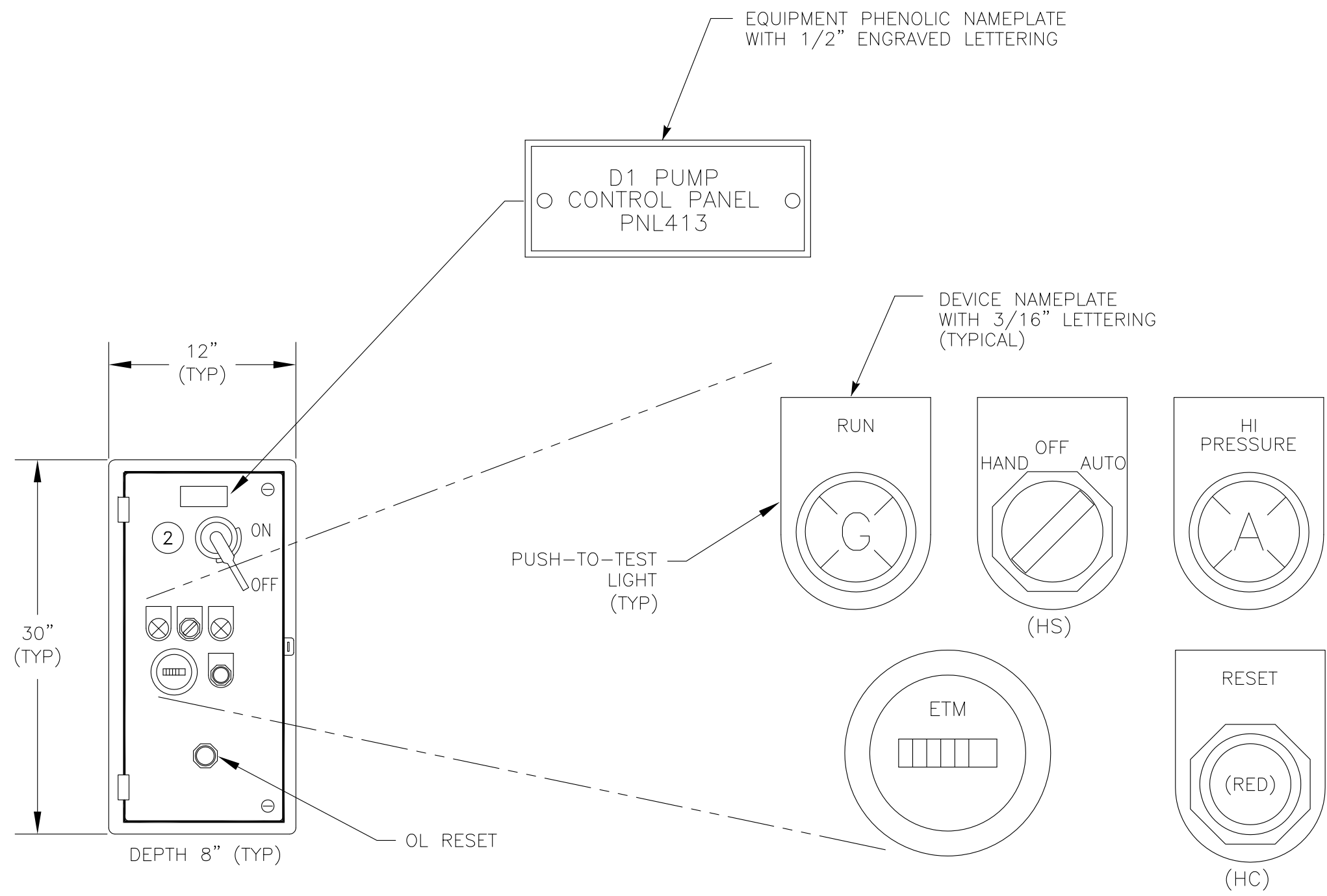
ZONES B AND D1 PUMP STATIONS IMPROVEMENTS
EXISTING D1 BOOSTER PUMP STATION
PARTIAL ONE LINE DIAGRAM



PROJECT:
072-01C
DATE:
SEPTEMBER 2026
DRAWING NUMBER
E-41
34 / 38



FULL SPEED ELEMENTARY DIAGRAM

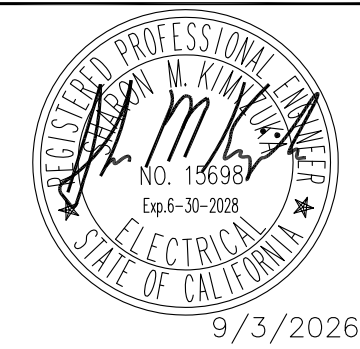


PUMP CONTROL PANEL ELEVATION ①

NOT TO SCALE

- NOTES: ① NEMA 12 ENCLOSURE WITH TYPICAL DIMENSIONS AS SHOWN.
- ② PROVIDE PADLOCKABLE HASP TO LOCK BREAKER IN OFF POSITION.

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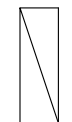
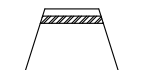
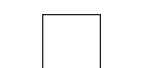
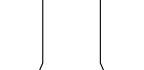
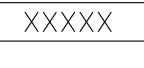
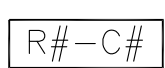
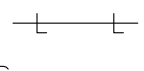
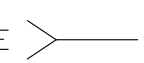
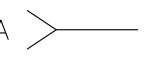
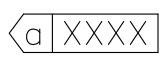
ZONES B AND D1 PUMP STATIONS IMPROVEMENTS

FULL SPEED

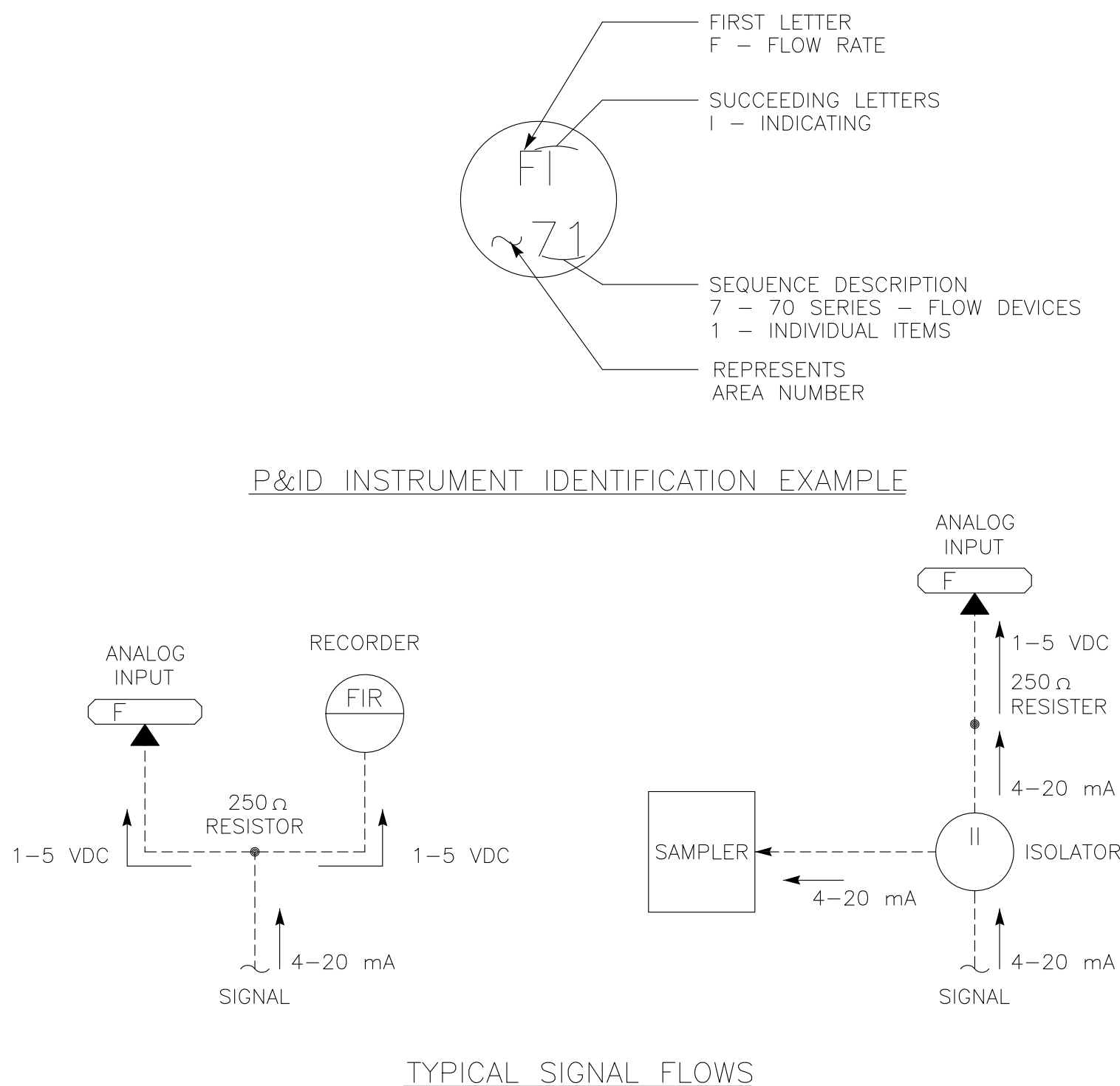
ELEMENTARY DIAGRAM



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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
P & I DIAGRAM SYMBOLS		P & I DIAGRAM SYMBOLS	
	FIELD MOUNTED INSTRUMENT		VALVE (GENERAL)
	FACE MOUNTED INSTRUMENT ON LOCAL PANEL, OPERATOR ACCESSIBLE		
	FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE		GATE (GENERAL)
	INSTRUMENT MOUNTED IN LOCAL PANEL, OPERATOR INACCESSIBLE		
	INSTRUMENT MOUNTED IN FIELD PANEL, OPERATOR INACCESSIBLE		CHECK VALVE (GENERAL)
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES		
DWG #	— REFERENCE ELEMENTARY DWG. #		PUMP (GENERAL)
	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL INDICATION		
	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL ALARM INDICATION		BLOWER (GENERAL)
	PLC OR COMPUTER PERFORMING INTERNAL OPERATION		
	PLC OR COMPUTER PERFORMING INTERNAL ALARM OPERATION		
$\propto \int \partial_t$	PROPORTIONAL, INTEGRAL, AND DIFFERENTIAL PARAMETERS		
% +/-	RATIO AND BIAS PARAMETERS		
	AUDIBLE ALARM (BUZZER OR HORN)		
	ANNUNCIATOR WINDOW R — ROW # C — COLUMN #		
	LAMP INDICATION (STATUS OR ALARM)		
	DISCRETE INPUT		
	DISCRETE OUTPUT		
	ANALOG INPUT		
	ANALOG OUTPUT		
	JUMP TAG FROM ONE AREA TO ANOTHER AREA OF DRAWING		
	"a" TAG CONNECT POINT ON EACH DRAWING		
	CONTINUED		
	ON DWG P-X		
	AUTODIALER PRIORITY # PC BASED SOFTWARE		

INSTRUMENT IDENTIFICATION LETTERS					
FIRST — LETTER		SUCCEEDING — LETTER			
	MEASURED OF INITIATING VARIABLE	MODIFIER	READOUT PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROLLER	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GENERAL		GLASS VIEWING DEVICE		
H	HAND				HIGH, OPENED
I	CURRENT (ELEC.)		INDICATING, INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW, CLOSED
M	MOISTURE	MOMENTARY			MIDDLE
N	STATUS		STATUS	USER'S CHOICE	USER'S CHOICE
O	OPERATOR		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RESET		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	TEST
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTOR	
Z	POSITION DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	



NUMBERING SEQUENCE	
SEQUENCE NUMBER	DESCRIPTION
00	COMMON ALARM
01-09	INDIVIDUAL ITEMS
10	MECHANICAL
20	MECHANICAL
30	MECHANICAL
40	MECHANICAL
50	LEVEL DEVICES
60	PRESSURE DEVICES
70	FLOW DEVICES
80	ANALYTICAL DEVICES
90	SAFETY & SECURITY DEVICES

REVISION	
BID SET	
DESN	S. KIMIZUKA
DRW	Z. VOGLER
CHECK	X. LI
APV	



ZONES B AND D1 PUMP STATIONS IMPROVEMENTS INSTRUMENTATION SYMBOLS & ABBREVIATIONS



PROJECT:	072-01C
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DATE:

DRAWING NUMBER

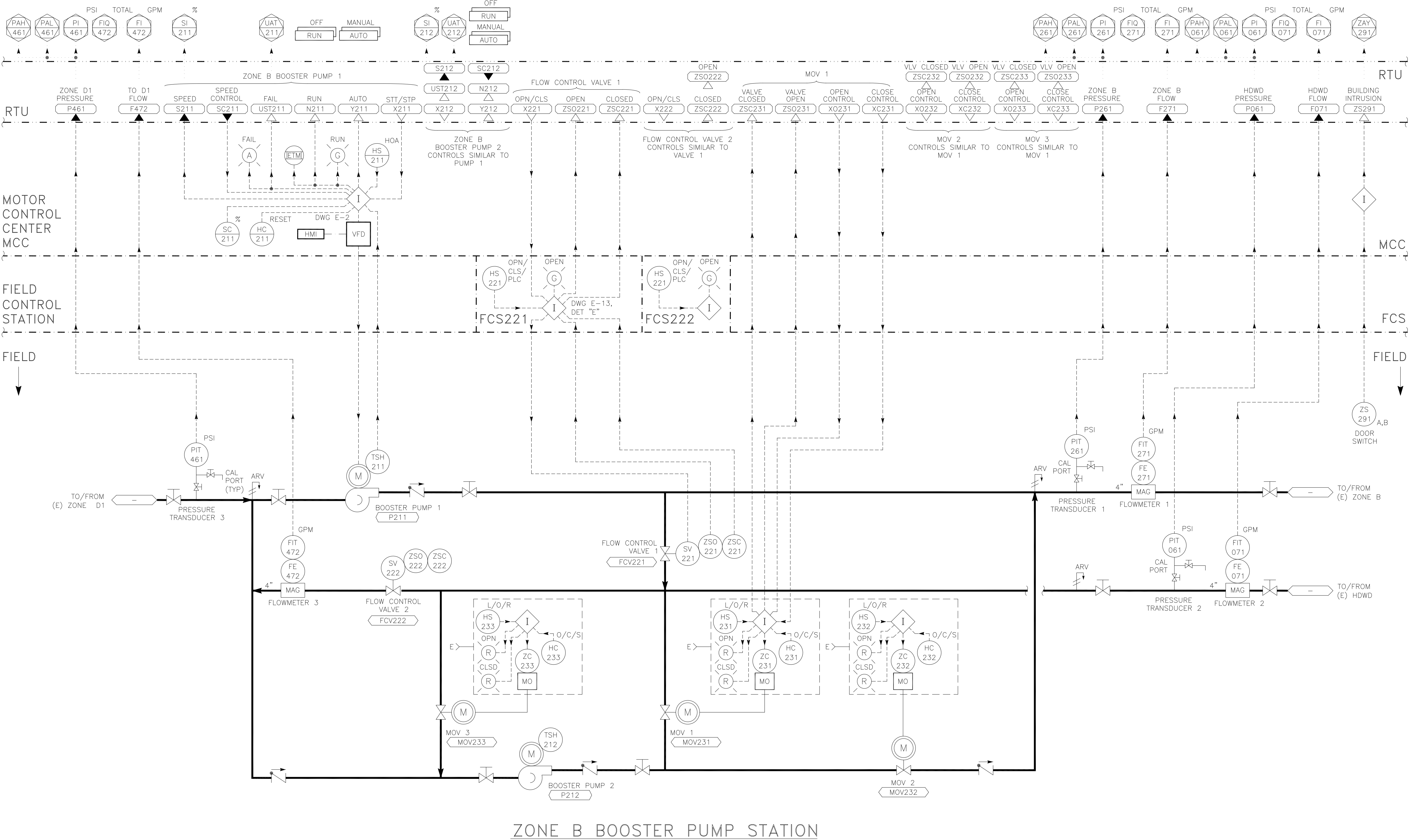
I-1

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SCADA

SCADA



ZONE B BOOSTER PUMP STATION

NOTES: ① WIRE SWITCHES IN SERIES.



ZONES B AND D1 PUMP STATIONS IMPROVEMENTS

ZONE B BOOSTER PUMP STATION P&ID



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REVISION	BID SET
DESIGN	S. KIMIZUKA
DRAWN	Z. VOGLER
CHECKED	X. LI
APPROVED	

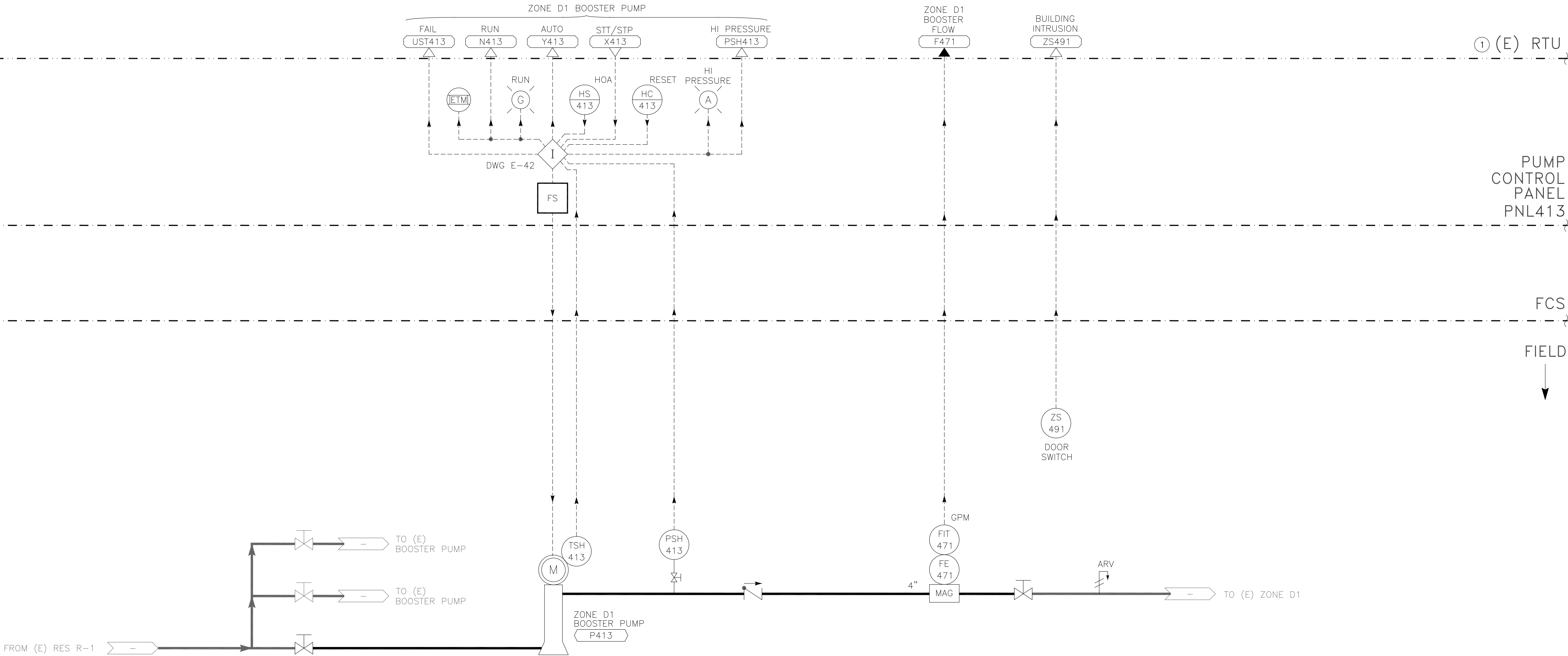
VERIFY SCALE! 1" = 0'

REMOTE
TELEMETRY
UNIT
(E) RTU ①

PUMP
CONTROL PANEL
PNL413

FIELD
CONTROL
STATION

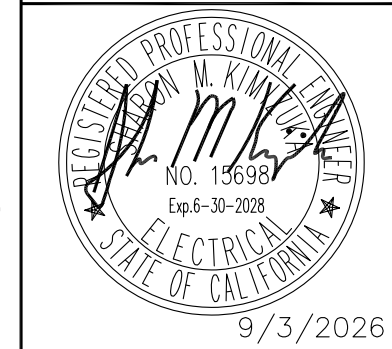
FIELD
↓



ZONE D1 BOOSTER PUMP STATION

NOTES: ① MODIFY (E) RTU PER OWNER'S INSTRUCTIONS.

REVISION
BID SET
DESN
S. KIMIZUKA
DRW
Z. VOGLER
CHECK
X. LI
APV



ZONES B AND D1 PUMP STATIONS IMPROVEMENTS ZONE D1 BOOSTER PUMP STATION P&ID



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