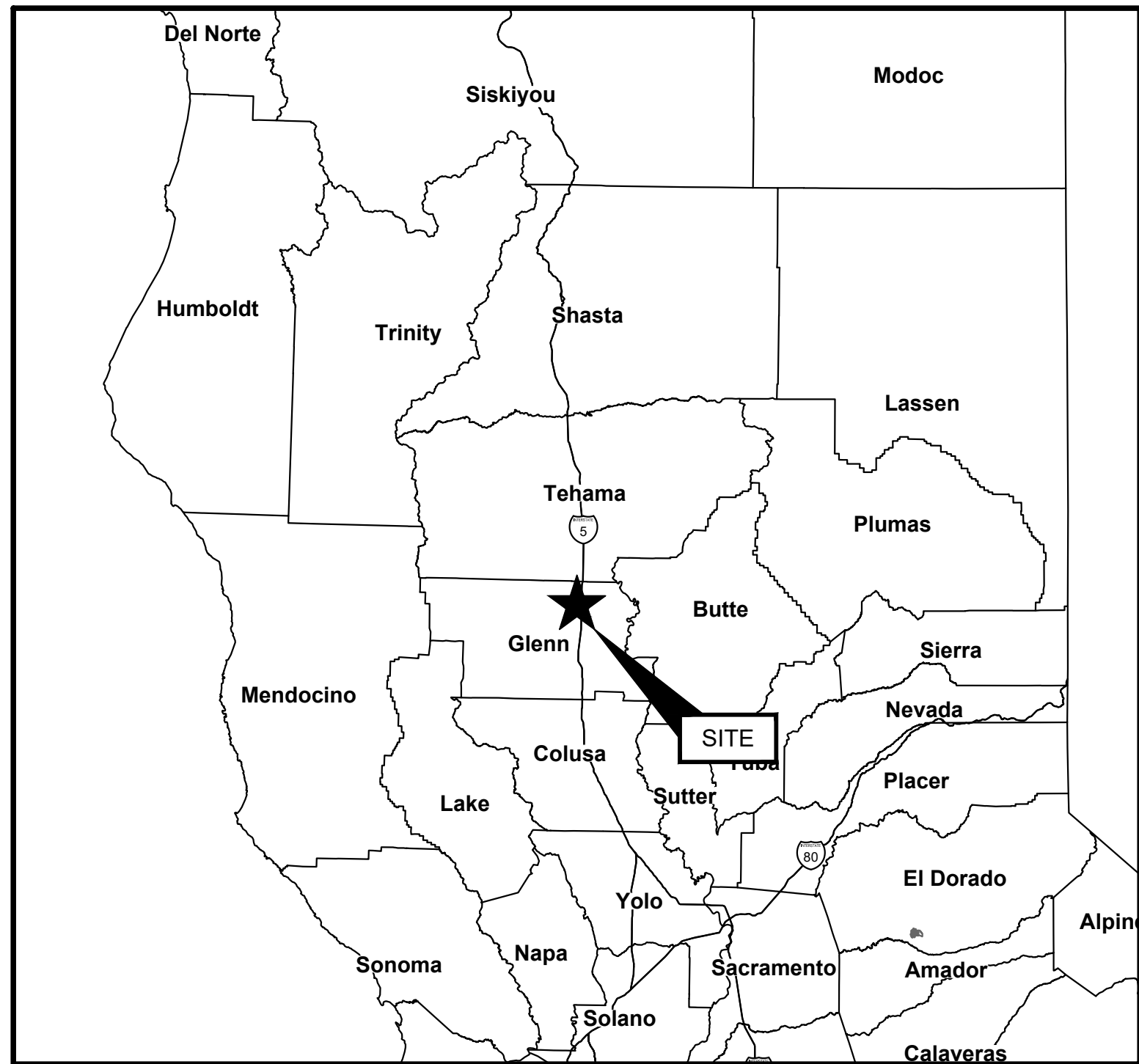
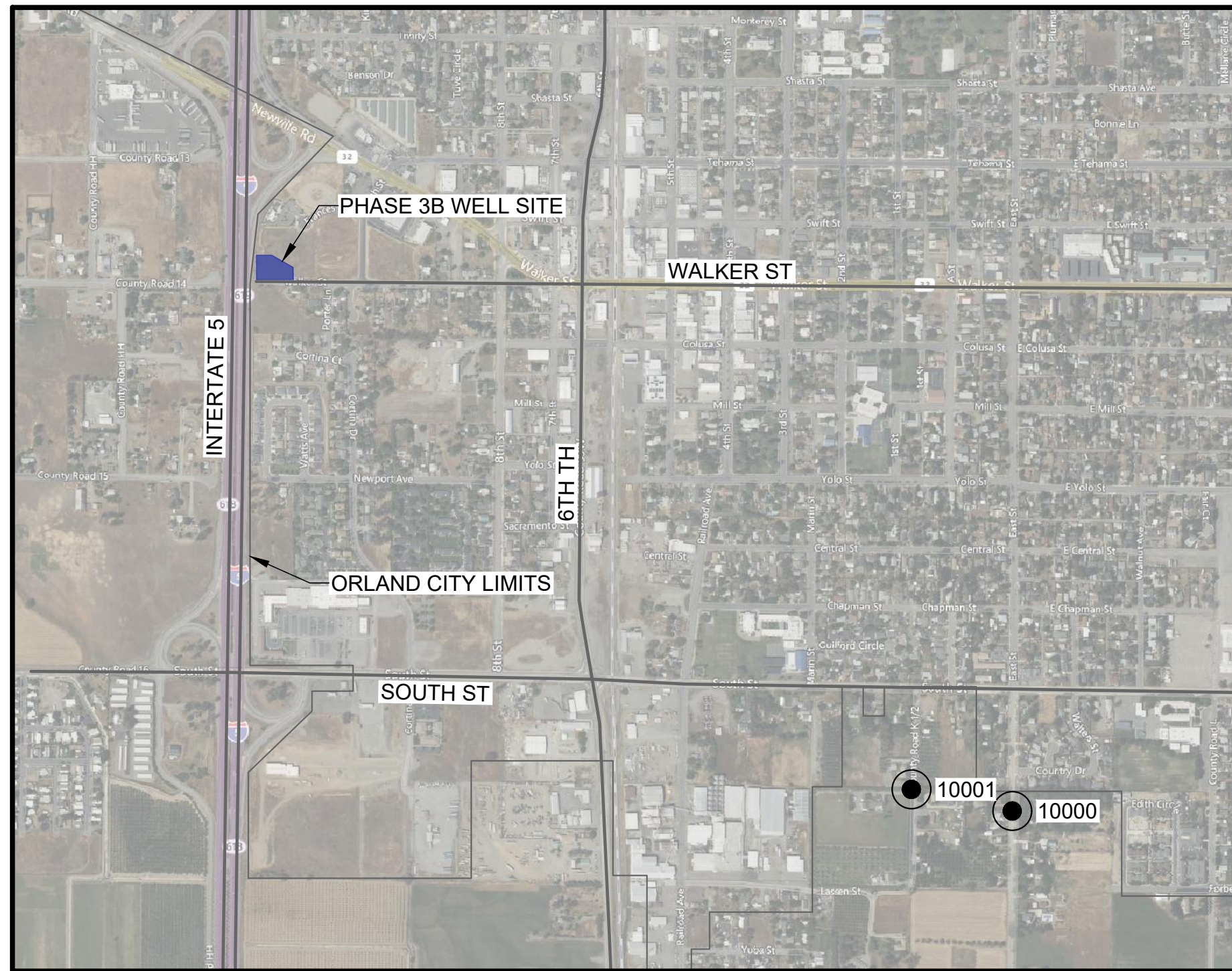




STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
DIVISION OF INTEGRATED REGIONAL WATER MANAGEMENT
SMALL COMMUNITY DROUGHT RELIEF PROGRAM
CITY OF ORLAND
ORLAND EMERGENCY GROUNDWATER RESOURCE PROJECT
PHASE 3B



STATE MAP
(NOT TO SCALE)



SITE LOCATION MAP
(NOT TO SCALE)

SHEET LIST		
SHEET NO.	DWG NO.	SHEET NAME
1	G-01	COVER SHEET
2	G-02	GENERAL NOTES
3	G-03	CIVIL AND GENERAL LEGEND
4	CG-01	PIPING STANDARD DETAILS 1 OF 2
5	CG-02	PIPING STANDARD DETAILS 2 OF 2
6	CG-03	FENCING DETAILS
7	C-01	EXISTING SITE PLAN
8	C-02	PROPOSED SITE PLAN
9	C-03	PLAN VIEW - WELL HOUSE
10	C-04	ELEVATION VIEW - WELL HOUSE
11	C-05	CIVIL DETAILS
12	M-01	MECHANICAL DETAILS
13	S-01	STRUCTURAL DETAILS
14	S-02	GENERATOR PAD AND PUMP BUILDING DETAILS
15	E-01	SYMBOLS AND ABBREVIATIONS
16	E-02	METER/MAIN ONE LINE ELEVATION, LOAD, & LIGHTING SCHEDULE
17	E-03	VFD ELEMENTARY DIAGRAM
18	E-04	PLC CONTROL PANEL ELEVATION & BACKPAN LAYOUT
19	E-05	PLC CONTROL PANEL POWER DISTRIBUTION
20	E-06	EXAMPLE PLC I/O WIRING DIAGRAM
21	E-07	PUMP BUILDING POWER PLAN OVERALL ELECTRICAL SITE PLAN
22	E-08	PUMP BUILDING POWER AND CONTROL ELECTRICAL SITE PLAN
23	E-09	PUMP BUILDING LIGHTING AND RECEPTACLE ELECTRICAL SITE PLAN
24	E-10	CONDUIT AND WIRE ROUTING SCHEDULE
25	E-11	ELECTRICAL DETAILS SHEET 1
26	E-12	ELECTRICAL DETAILS SHEET 2
27	I-01	SYMBOLS AND ABBREVIATIONS
28	I-02	WELL PUMP SYSTEMS P&ID

POINT LOCATION DATA				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
10000	2394827.17	6508945.10	246.48	MON-PC+
10001	2394969.03	6508283.53	248.50	MON-PC+

BASIS OF SURVEY:
HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
CALIFORNIA STATE PLANES, ZONE II US FOOT.
VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
CITY OF ORLAND REPRESENTATIVE IS RESPONSIBLE FOR THE
SURVEYING AND STAKING NECESSARY FOR LAYOUT AND
CONSTRUCTION OF THE PROJECT.

PREPARED FOR:

CITY OF ORLAND
815 FOURTH STREET
ORLAND, CA 95963
(530)865-1610




PREPARED BY:

GEI CONSULTANTS, INC.
11010 WHITE ROCK ROAD
SUITE 200
RANCHO CORDOVA, CA 95670
(916)631-4500



GEI PROJECT NO. 2204930
MARCH, 2025

ISSUED FOR BID

	DWG. NO. G-01
	SHEET NO. 1 OF 28
	REV NO. -

1. PERFORM ALL CONSTRUCTION IN ACCORDANCE WITH THESE PLANS AND THE CITY OF ORLAND STANDARD PLANS AND SPECIFICATIONS. CITY OF ORLAND'S STANDARD PLANS AND SPECIFICATIONS NOT INCLUDED IN THIS SET OF PLANS ARE LOCATED ON THEIR WEB SITE AT
[HTTP://WWW.CI.ORLAND.CA.US/DEPTS/PUBLICWORKS/STANDARDPLANSANDSPEC.SCFM](http://www.ci.orland.ca.us/depts/publicworks/standardplansandspecs.cfm)
2. PERFORM CONSTRUCTION WORK IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, WHERE NOT IN CONFLICT WITH THESE PLANS AND SPECIFICATIONS.
3. THE CONTRACTOR SHALL ALSO NOTIFY THE CITY OF ORLAND PUBLIC WORKS DEPARTMENT AT (530) 865-1610 PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES WITHIN THE CITY OF ORLAND RIGHT-OF-WAY.
4. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT AND ALL OTHER PERMITS REQUIRED BY THE CITY OF ORLAND FOR WORK WITHIN THEIR RIGHT-OF-WAY. THE CONTRACTOR SHALL OBTAIN ALL OTHER PERMITS REQUIRED TO PERFORM THE WORK AND SHALL ABIDE BY THE CONDITIONS OF THE PERMITS AND SHALL PERFORM ALL WORK ORDERED BY SAID PERMITS IN CONFORMANCE THEREWITH AND AS DIRECTED BY THE CITY OF ORLAND'S CONSTRUCTION MANAGER REPRESENTATIVE.
5. PERFORM ALL CONSTRUCTION IN COMPLIANCE WITH STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY REGULATIONS AND THE APPLICABLE REQUIREMENTS OF OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION AND THE MANUAL OF TRAFFIC CONTROL HANDBOOK.
6. AN OSHA PERMIT IS REQUIRED WHEN WORKERS ENTER TRENCHES OR EXCAVATIONS FIVE (5) FEET IN DEPTH OR DEEPER. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND CONFORM TO REQUIREMENTS OF OSHA.
7. THE LOCATION, PIPE DIAMETER AND ELEVATIONS OF UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND BASED ON LIMITED AVAILABLE AS-BUILTS ONLY. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES SO THAT THOSE COMPANIES MAY MARK THE LOCATIONS OF THEIR LINES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UNDERGROUND UTILITIES SERVICE ALERT (USA) AT 811 PRIOR TO EXCAVATION (48 HOURS MINIMUM). PROTECT THE EXISTING UTILITIES AND FIELD VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. SUBMIT THE LOCATION, DIRECTION, AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE WORK AREA TO THE ENGINEER A MINIMUM OF 7 DAYS PRIOR TO CONSTRUCTION. THE FOLLOWING AGENCIES ARE KNOWN TO HAVE FACILITIES WITHIN THE CONSTRUCTION AREA:
PG&E
COMCAST
ATT TELEPHONE CO.
CITY OF ORLAND
8. ALL UNDERGROUND UTILITIES AND ABOVE GROUND UTILITIES SHALL BE PROTECTED IN PLACE. IF THE CONTRACTOR FINDS CONFLICT BETWEEN CONTRACT FACILITIES AND EXISTING FACILITIES, HE SHALL NOTIFY CITY OF ORLAND IMMEDIATELY AND FOLLOW NOTIFICATION UP IN WRITING WITHIN 24 HOURS.
9. SAW CUT ALL PAVED AREAS TO BE REMOVED ON A NEAT, STRAIGHT LINE, PARALLEL TO THE PIPELINE. PROTECT THE CUT EDGE FROM CRUSHING AND RE-CUT ALL BROKEN EDGES PRIOR TO PAVING OPERATIONS.
10. PROTECT FROM INJURY OR DAMAGE ALL TREES AND SHRUBBERY THAT ARE NOT TO BE REMOVED AND POLE LINES, FENCES, SIGNS, SURVEY MARKERS AND MONUMENTS, BUILDINGS AND STRUCTURES, CONDUITS, PIPELINES UNDER OR ABOVE GROUND, SEWER AND WATERLINES, ALL HIGHWAY OR STREET FACILITIES, AND ANY OTHER IMPROVEMENTS OF FACILITIES WITHIN OR ADJACENT TO THE WORK. PROVIDE AND INSTALL SUITABLE SAFEGUARDS TO PROTECT SUCH OBJECTS FROM INJURY OR DAMAGE. REPLACE OR RESTORE ALL OBJECTS, INJURED OR DAMAGED DURING THE PROSECUTION OF THE WORK, TO A CONDITION AS GOOD AS WHEN THE CONTRACTOR ENTERED UPON THE WORK, OR AS GOOD AS REQUIRED BY THE PLANS AND SPECIFICATIONS IF ANY SUCH OBJECTS ARE A PART OF THE WORK BEING PERFORMED.
11. NOTIFY THE CITY WATER DEPARTMENT TWENTY-FOUR (24) HOURS BEFORE WATER VALVE OPERATIONS ARE PERFORMED. ALL WATER SYSTEM VALVES SHALL BE OPERATED BY THE CITY STAFF ONLY.

1. ALL JOINTS SHALL BE RESTRAINED UNLESS OTHERWISE NOTED. THRUST BLOCKS SHALL BE CONSTRUCTED AT PIPE TEES, BENDS, CROSSES, AND VALVES PER CITY OF ORLAND STANDARDS 303.
2. DEVIATION FROM THESE PLANS SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM (1) DESIGN ENGINEER, (2) CITY OF ORLAND.
3. FUGITIVE DUST CONTROL MEASURES SHALL BE TAKEN IN ACCORDANCE WITH REQUIREMENTS OF THE GLENN COUNTY AIR POLLUTION CONTROL DISTRICT.
4. ANY UTILITIES CONFLICTING WITH THE IMPROVEMENTS SHALL BE RELOCATED DURING CONSTRUCTION AND INSPECTION OF THE IMPROVEMENTS SHALL BE ARRANGED BY THE CONTRACTOR.
5. FINAL INSPECTION AND ACCEPTANCE OF ALL WORK AS IT PERTAINS TO THE ROADWAY WILL BE BY THE CITY OF ORLAND.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THEIR OWN STAGING AND STORAGE. THE CITY OF ORLAND WILL NOT BE PROVIDING FACILITIES OR SERVICES FOR THE CONTRACTOR'S USE UNDER THIS CONTRACT.
7. TRENCHES SHALL CONFORM TO CITY OF ORLAND LAND DIVISION STANDARDS AND IMPROVEMENT STANDARD DETAIL 106.

1. ANY METHODS, STREET MARKINGS AND SIGNAGE NECESSARY FOR WARNING MOTORISTS, WARNING PEDESTRIANS OR DIVERTING TRAFFIC DURING CONSTRUCTION SHALL CONFORM TO THE CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITION.
2. ALL PAVEMENT MARKINGS, MARKERS, PAINT, TRAFFIC BUTTONS, TRAFFIC CONTROLS AND SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES AND THE CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, LATEST EDITIONS.
3. THE HOURS OF CONSTRUCTION OPERATIONS WILL FOLLOW THE NOISE RESTRICTIONS AS PER THE CITY OF ORLAND NUISANCE ORDINANCE AND AS SPECIFIED IN THE CITY OF ORLAND STANDARD CONSTRUCTION SPECIFICATIONS.

1. PROJECT SAFETY SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA AND THE CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH CURRENT REGULATIONS.

1. EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CALIFORNIA DEPARTMENT OF ENVIRONMENTAL QUALITY GUIDEBOOK OF BEST MANAGEMENT PRACTICES FOR CALIFORNIA WATERSHEDS.
2. ALL SLOPES SHALL BE SODDED OR SEEDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER SUITABLE TO THE AREA AND SEASON IN WHICH THEY ARE APPLIED.
3. SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY BEST MANAGEMENT PRACTICES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CONTRACTORS CERTIFIED STORM WATER OPERATOR FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY OF ORLAND'S HYDROLOGY ENGINEER OR FIELD REPRESENTATIVE, THEY ARE WARRANTED.
4. ALL MUD, DIRT, ROCKS, DEBRIS, ETC., SPILLED, TRACKED OR OTHERWISE DEPOSITED ON EXISTING PAVED STREETS, DRIVES AND AREAS USED BY THE PUBLIC SHALL BE CLEANED UP IMMEDIATELY.

1. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. A CITY INSPECTOR SHALL BE PRESENT DURING ALL TESTS. TESTING SHALL BE COORDINATED WITH THE CITY'S INSPECTOR AND HE/SHE SHALL BE GIVEN A MINIMUM OF 2 BUSINESS DAYS NOTICE PRIOR TO ANY TESTING.
2. STREET RIGHTS-OF-WAY SHALL BE GRADED AT A SLOPE TO PROVIDE POSITIVE DRAINAGE TOWARD THE CURB UNLESS OTHERWISE INDICATED DUE TO SPECIAL CIRCUMSTANCES.
3. CONTRACTOR TO OBTAIN PERMIT FROM THE CITY OF ORLAND FOR ALL WORK WITHIN THE RIGHT-OF-WAY. THERE IS NOT A FEE TO OBTAIN PERMIT FROM THE CITY.

1. THE CONTRACTOR SHALL CONTACT THE CITY ENGINEER TO COORDINATE UTILITY MAIN, STRUCTURE, AND UTILITY TIE-INS AND NOTIFY HIM/HER AT LEAST 3 BUSINESS DAYS PRIOR FOR INSPECTION SERVICES.
2. THE CONTRACTOR MUST OBTAIN A WATER METER FROM THE CITY OF ORLAND PUBLIC WORKS DEPARTMENT FOR ALL PUBLIC WATER USED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE.
3. THE CONTRACTOR, AT THEIR EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS PER CITY OF ORLAND SPECIFICATION REQUIREMENTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY THE INSPECTOR FROM THE CITY OF ORLAND.
4. THE CONTRACTOR SHALL COORDINATE TESTING WITH THE CITY INSPECTOR AND PROVIDE NO LESS THAN 2 BUSINESS DAYS NOTICE PRIOR TO PERFORMING DISINFECTION, QUALITY TESTING OR PRESSURE TESTING.
5. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES ON THE PUBLIC SYSTEM. VALVE OPERATION MUST BE COORDINATED WITH THE CITY OF ORLAND PUBLIC WORKS DEPARTMENT.
6. FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, THE CONTRACTOR SHALL NOTIFY THE CITY OF ORLAND REPRESENTATIVE AND CITY OF ORLAND PUBLIC WORKS DEPARTMENT A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ADJOINING PROPERTY OWNER TO LOCATE PRIVATE UTILITIES THAT MAY BE PLACED ON PRIVATE OR PUBLIC PROPERTY.

AGENCY	CONTACT NAME	TELEPHONE NO.
CITY OF ORLAND REPRESENTATIVE	PAUL W. RABO	(530) 895-1422
CITY OF ORLAND PUBLIC WORKS DEPARTMENT	ED VONASEK	(530) 865-1600
CITY OF ORLAND - WASTE MANAGEMENT	N/A	(530) 865-4712
USA NORTH	N/A	811 OR (800) 642-2444
AT&T	N/A	(877) 563-3528
COMCAST	N/A	(888) 824-8219
ORLAND UNIT WATER USERS ASSOCIATION	RIK MASSA	(530) 865-4126
PG&E	TANNER PASCHKE	(530) 228-7222

USA NORTH 811
Call 811 Before You Dig



GEI Consultants
GEI CONSULTANTS, INC.
11010 WHITE ROCK ROAD
SUITE 200
RANCHO CORDOVA, CA 95670
(916) 631-4500



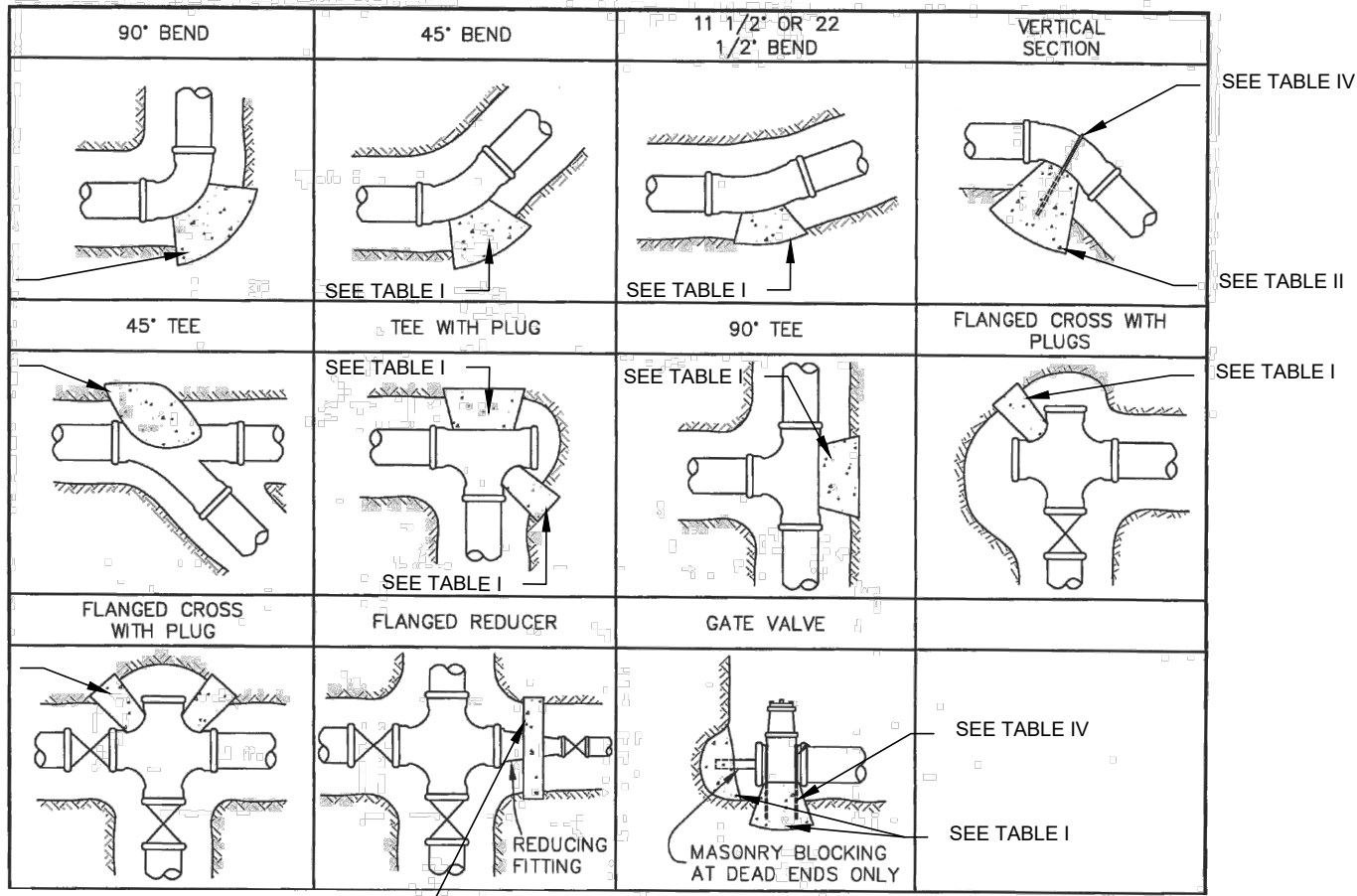
**ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3B**

				SHEET NAME	SHEET. NO. 2 OF 28
0	3/25/2025	ISSUED FOR BID	MM	GENERAL NOTES	G-02
NO	DATE	ISSUE/REVISION	APP		

AVILA, JULIAN B:\Working\DWG\2204930 Drought Support\05_Civil and General Legend.dwg - 3/21/2025

SYMBOLS					LINE TYPES			ABBREVIATIONS			
WATER SUPPLY SYSTEM					WATER SUPPLY SYSTEM						
EXISTING	PROPOSED	DESCRIPTION	MATERIAL DESCRIPTION	HATCH LEGEND	EXISTING	PROPOSED	DESCRIPTION				
		FIRE HYDRANT					UG WATER SERVICE				
		MANHOLE WATER					UG WATERMAIN				
		U.G. WATER VALVE	HMA, DEMO								
01-01	01-01	CURB STOP & BOX	HMA, STANDARD								
		BLOW OFF VALVE	CONCRETE								
		MONITORING WELL	CRUSHED ROCK BASE OR CLASS 2 AB								
		WELL									
		METER PIT	BUILDING INSULATION								
		WATER PLUG	ENGINEERED FILL								
		POST INDICATOR VALVE	EARTH								
SANITARY SEWER SYSTEM					SANITARY SEWER SYSTEM						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		MANHOLE SANITARY						UG SANITARY SEWER MAIN			
								UG SANITARY SEWER FORCE MAIN			
DRAINAGE UTILITIES					DRAINAGE UTILITIES						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		STORM DRAIN						STORM DRAIN			
								DRAIN			
								PUMP TO WASTE			
ELECTRICAL POWER					ELECTRICAL POWER						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		OVERHEAD ELECTRICAL						OVERHEAD ELECTRICAL			
								UNDERGROUND ELECTRICAL			
NATURAL GAS					NATURAL GAS						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		UG NATURAL GAS						UG NATURAL GAS			
COMMUNICATION					COMMUNICATION						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		UNDERGROUND COMMUNICATIONS						UNDERGROUND COMMUNICATIONS			
MISCELLANEOUS					MISCELLANEOUS						
EXISTING	PROPOSED	DESCRIPTION				EXISTING	PROPOSED	DESCRIPTION			
		BRICK BARRIER						BRICK BARRIER			
		IRON FENCE						IRON FENCE			
		WOOD/VINYL FENCE						WOOD/VINYL FENCE			
		CHAIN LINK FENCE						CHAIN LINK FENCE			
		ROAD CENTERLINE						ROAD CENTERLINE			
		TREE LINE						TREE LINE			
		CURB						CURB			
		PROPERTY LINE						PROPERTY LINE			
		RIGHT-OF-WAY						RIGHT-OF-WAY			
		CONTOUR LINE						CONTOUR LINE			
		DRAINAGE DITCH CENTERLINE						DRAINAGE DITCH CENTERLINE			
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01-01	01-01	CURB STOP & BOX	HMA, STANDARD								
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01-01	01-01	CURB STOP & BOX	HMA, STANDARD								

AVILA, JULIAN - B:\Working\DWG\224930 Drought Support\05_Town\25-03 Orland\03_CADD\Design\Sheetal - PHASE 3B\CG-01_PIPING STANDARD DETAILS 1.dwg - 3/25/2025



- NOTES
- THRUST BLOCKS SHALL BE CONSTRUCTED SO THAT THE BEARING SURFACE IS IN DIRECT LINE WITH THE MAJOR FORCE CREATED BY THE PIPE OR FITTING.
 - ALL CONCRETE SHALL BE CLASS C P.C.C.
 - CONCRETE SHALL BE FLUID ENOUGH SO THAT IT MAY BE WORKED AROUND THE FITTING.
 - CONCRETE SHALL BE KEPT BEHIND THE BELL OF THE FITTING AND AWAY FROM BOLTS AND FITTINGS.
 - THRUST BLOCK BEARING SURFACE SHALL BE PLACED AGAINST UNDISTURBED EARTH AND SHALL HAVE A MINIMUM VOLUME OF 6 CU. FT. AND A MINIMUM BEARING AREA OF 1 SF PER INCH OF DIAMETER. PIPES LARGER THAN 10" REQUIRE SPECIAL DESIGN.
 - A CONCRETE PAD SHALL BE POURED UNDER ALL VALVES 12" OR LARGER, OR AS DIRECTED BY THE ENGINEER.
 - ALL ANCHOR BLOCKS SHALL BE CONSTRUCTED AS SPECIFIED. SIZE OF BLOCK AND NUMBER OF STRAPS TO BE DESIGNED IN EACH SITUATION.

TABLE I CONCRETE THRUST BLOCKING (HORIZONTAL) MIN BEARING AREA (SF)					
DIA.	Δ = 90°	Δ = 45°	Δ = 22.5°	Δ = 11.25°	TEE, DEAD END, VALVE ANCHOR
10 in.	20.6	11.2	10.0	10.0	11.3
8 in.	13.7	8.0	8.0	8.0	8.0
6 in.	8.0	6.0	6.0	6.0	6.0
4 in.	4.0	4.0	4.0	4.0	4.0

TABLE II
CONCRETE BLOCKING (VERTICAL)
MIN CONCRETE VOLUME (CY)

DIA.	Δ = 90°	Δ = 45°	Δ = 22.5°	Δ = 11.25°
10 in.	3.6	2.5	1.4	0.7
8 in.	2.4	1.7	0.9	0.5
6 in.	1.4	1.0	0.5	0.3
4 in.	0.7	0.5	0.3	0.3

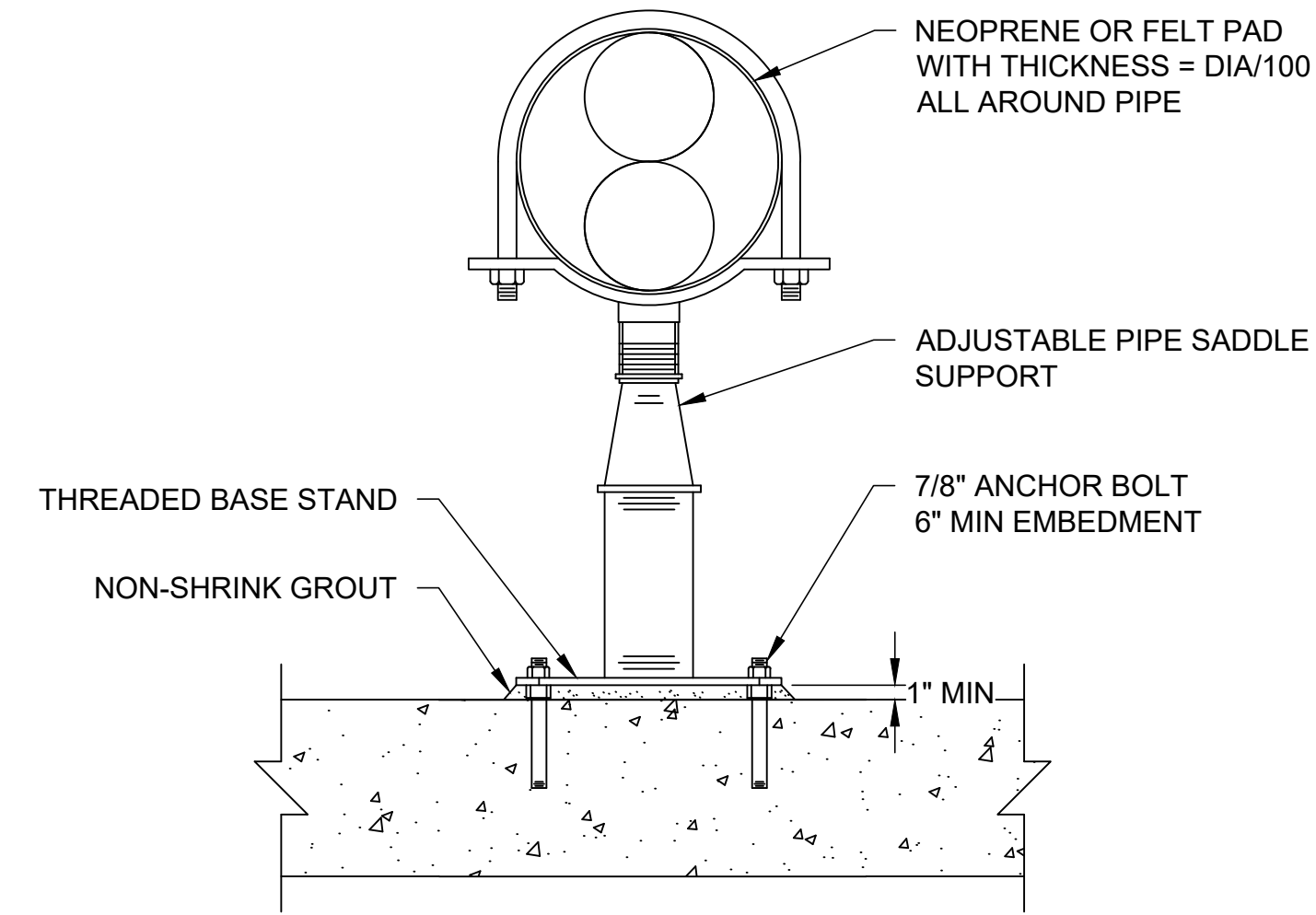
TABLE III
CONCRETE THRUST BLOCKING (REDUCER)
MIN BEARING AREA (SF)

LARGE DIA.	SMALL DIA.		
	8 in.	6 in.	4 in.
10 in.	4.9	9.0	11.9
8 in.	N/A	4.1	7.0
6 in.	N/A	N/A	2.9

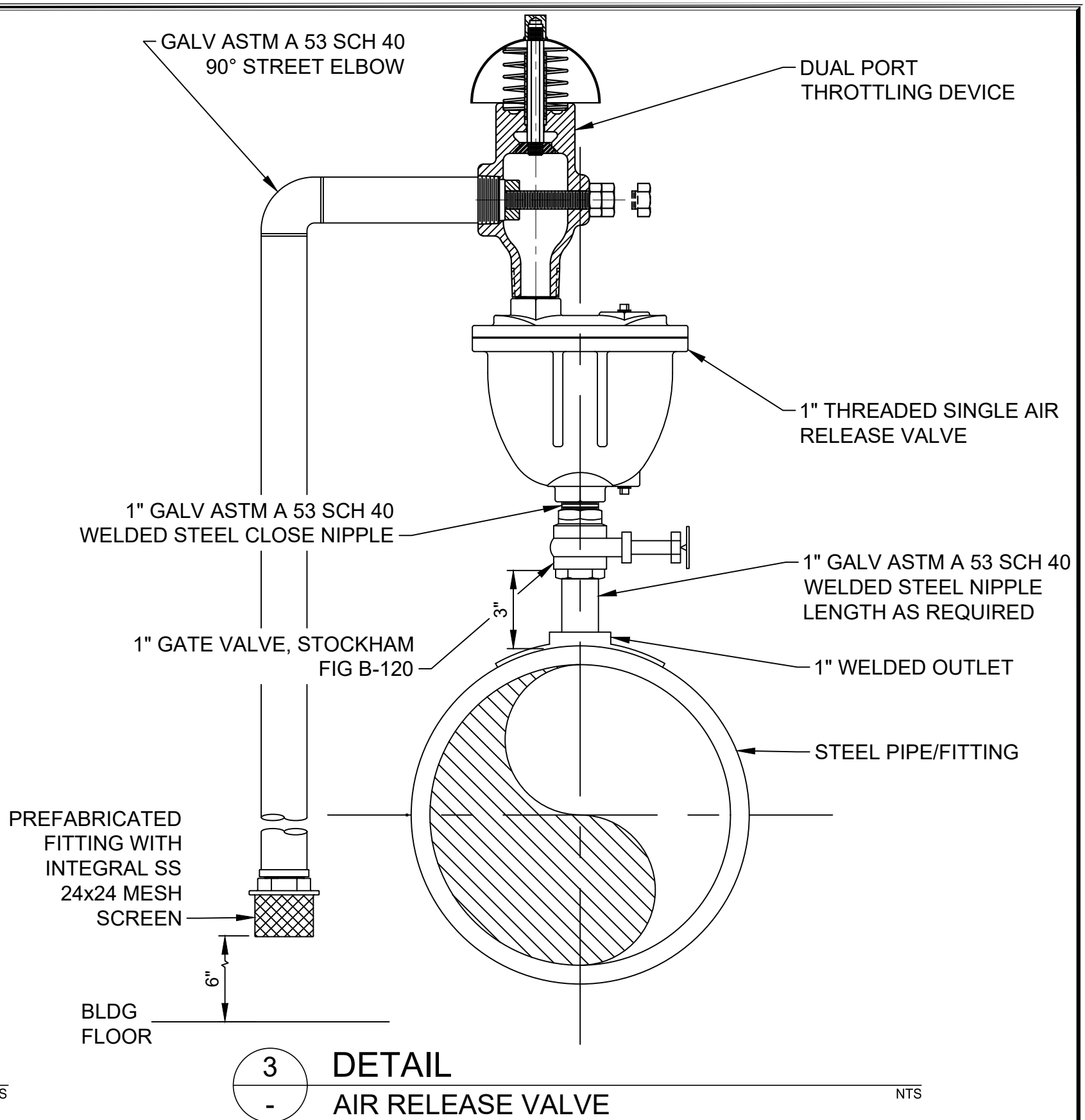
TABLE IV
MIN REBAR SIZE
(VERTICAL & ANCHOR)

DIA.	Δ = 90°	Δ = 45°	Δ = 22.5°	Δ = 11.25°	VALVE ANCHOR
10 in.	2 - #5	2 - #4	2 - #4	2 - #4	2 - #4
8 in.	2 - #4	2 - #4	2 - #4	2 - #4	2 - #4
6 in.	2 - #4	2 - #4	2 - #4	2 - #4	2 - #4
4 in.	2 - #4	2 - #4	2 - #4	2 - #4	2 - #4

2 - DETAIL
- VALVE COVER INSTALLATION - CITY STD DETAIL 305 NTS



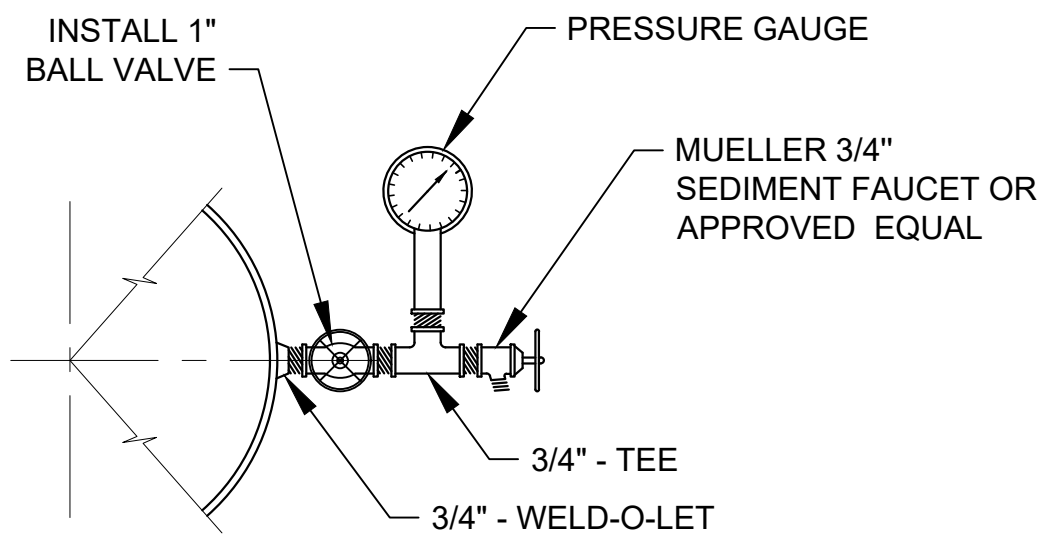
- NOTES:
- ALL ADJUSTABLE PIPE SUPPORT COMPONENTS SHALL BE HOT DIP GALVANIZED STEEL.
 - ADJUSTABLE PIPE SUPPORT AND THREADED BASE STAND SHALL BE EATON B-LINE SERIES OR APPROVED EQUAL.
 - ANCHORS SHALL BE HOT DIP GALVANIZED ALL THREAD (ASTM F1554 GR. 36), HILTI HAS-V-36. EPOXY SHALL BE HILTI HIT-RE 500 OR APPROVED EQUAL.



3 - DETAIL
- AIR RELEASE VALVE NTS

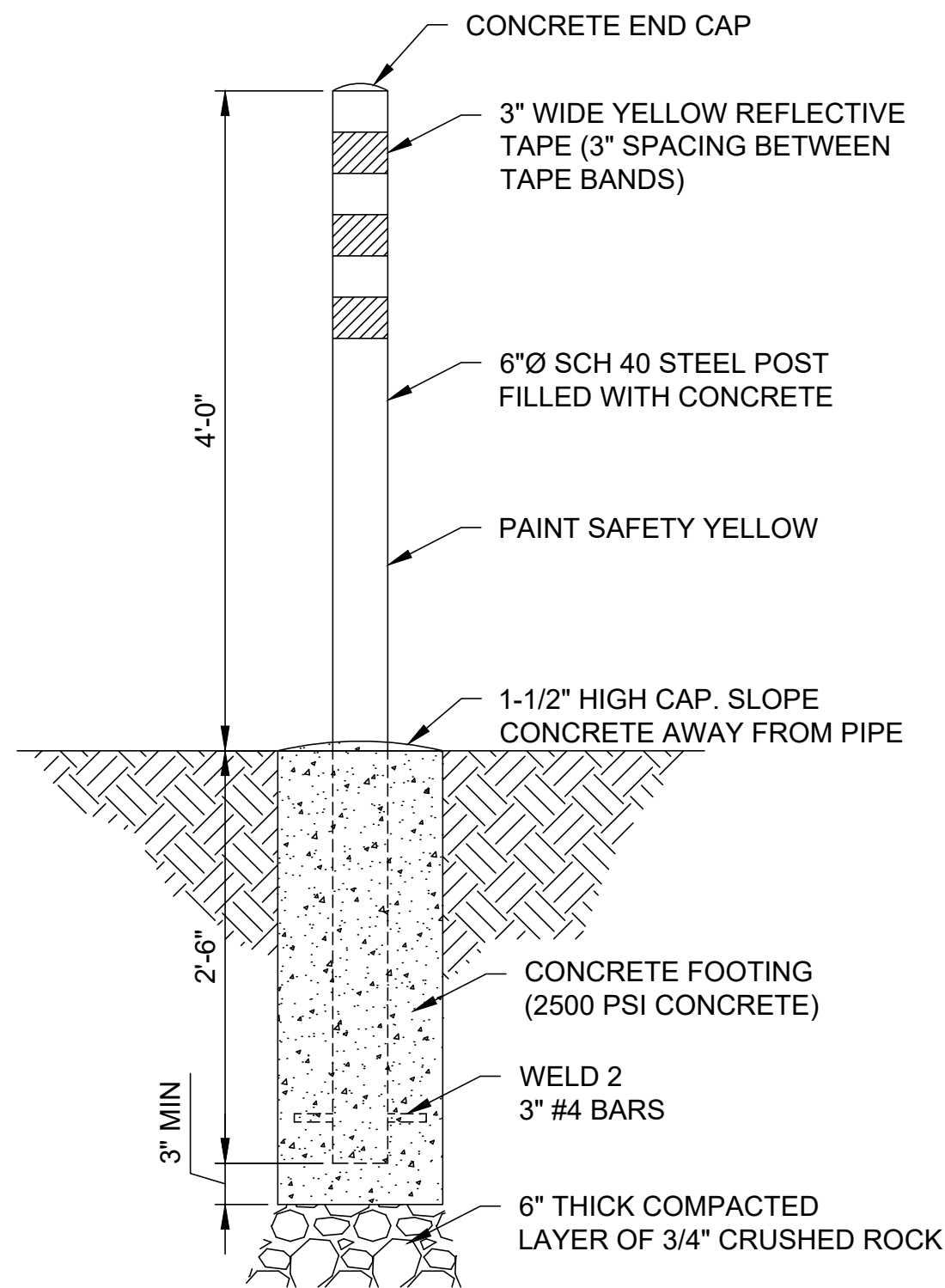
THRUST BLOCK NOTES:

- THRUST BLOCK BEARING AREAS AND VOLUME ARE BASED ON A TEST PRESSURE OF 100 PSI AND SOIL BEARING CAPACITY OF 1000 PSF.
- WHERE THRUST BLOCKS OVERLAP, CONTRACTOR SHALL SUBMIT A DETAIL PRIOR TO CONSTRUCTION FOR ENGINEER REVIEW AND APPROVAL.
- THRUST BLOCKS SHALL BE KEYED INTO THE TRENCH WALLS AND BASE.
- THRUST BLOCKS SHALL BE CONSTRUCTED USING FORMS.
- DISTANCE BETWEEN THRUST BLOCK BEARING FACE AND AN EXISTING FACILITY SHALL BE MINIMUM OF 10 FEET.
- ALL BURIED FITTINGS SHALL BE RESTRAINED WITH MEGALUG JOINT RESTRAINT OR THRUST BLOCKS INSTALLED PER ORLAND STANDARD DETAIL 303.



- NOTE:
- INSTALL SAMPLER ON THE SIDE OF PIPE CENTERLINE.

4 - DETAIL
- WATER SAMPLER NTS



5 - DETAIL
- BOLLARD/GUARD POST NTS

6 - DETAIL
- ADJUSTABLE PIPE SUPPORT NTS

ISSUED FOR BID



Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.



Designed: M. MARTIN
Drawn: F. OLSON
Checked: C. TRUEBLOOD
Approved: M. MARTIN
P.E. No: C35079
GEI Project 2204930



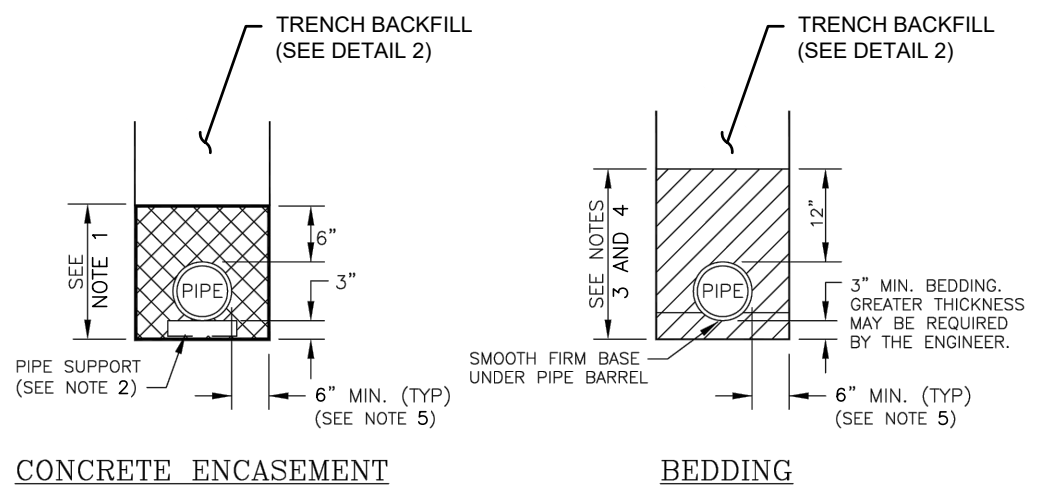
ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3B

NO	DATE	ISSUE/REVISION	APP
0	3/25/2025	ISSUED FOR BID	MM

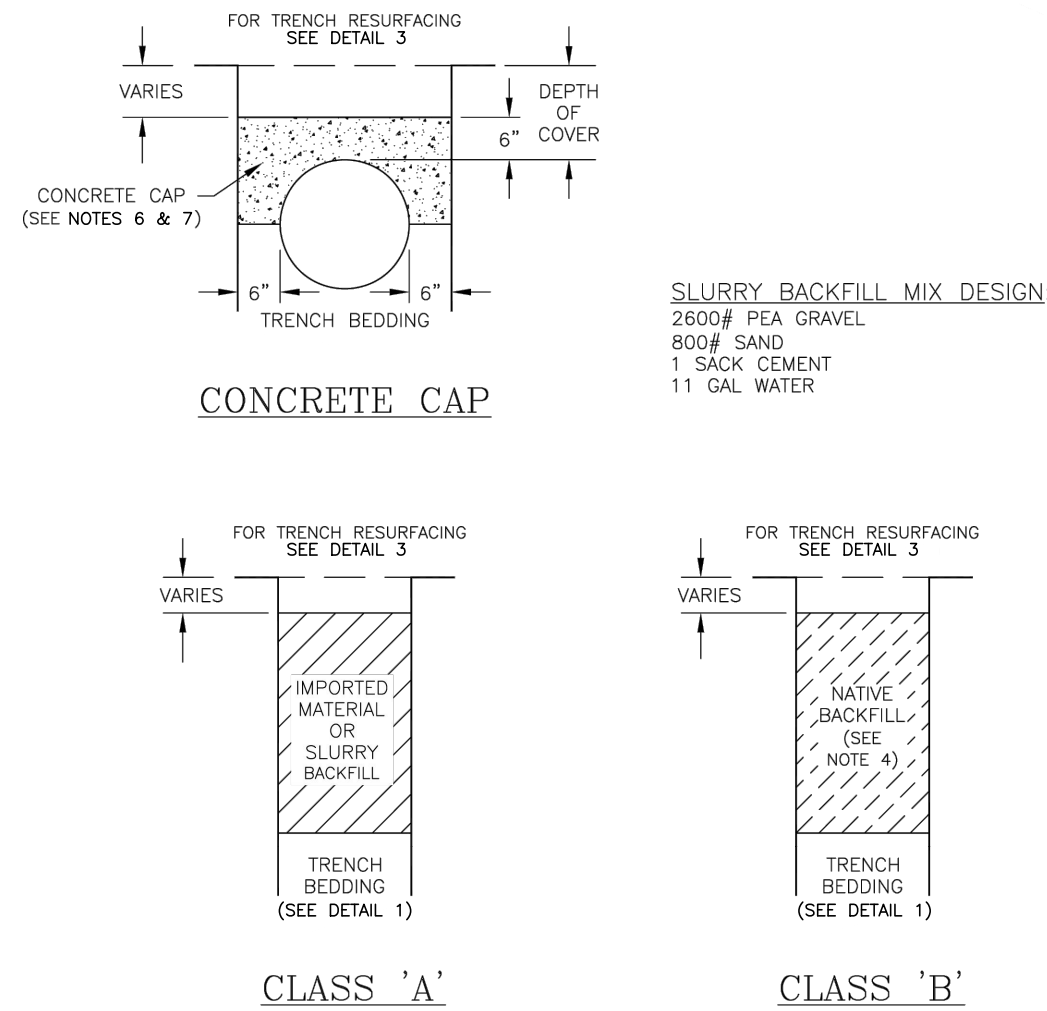
SHEET NAME
PIPING STANDARD
DETAILS 1 OF 2

SHEET. NO.
4 OF 28
CG-01

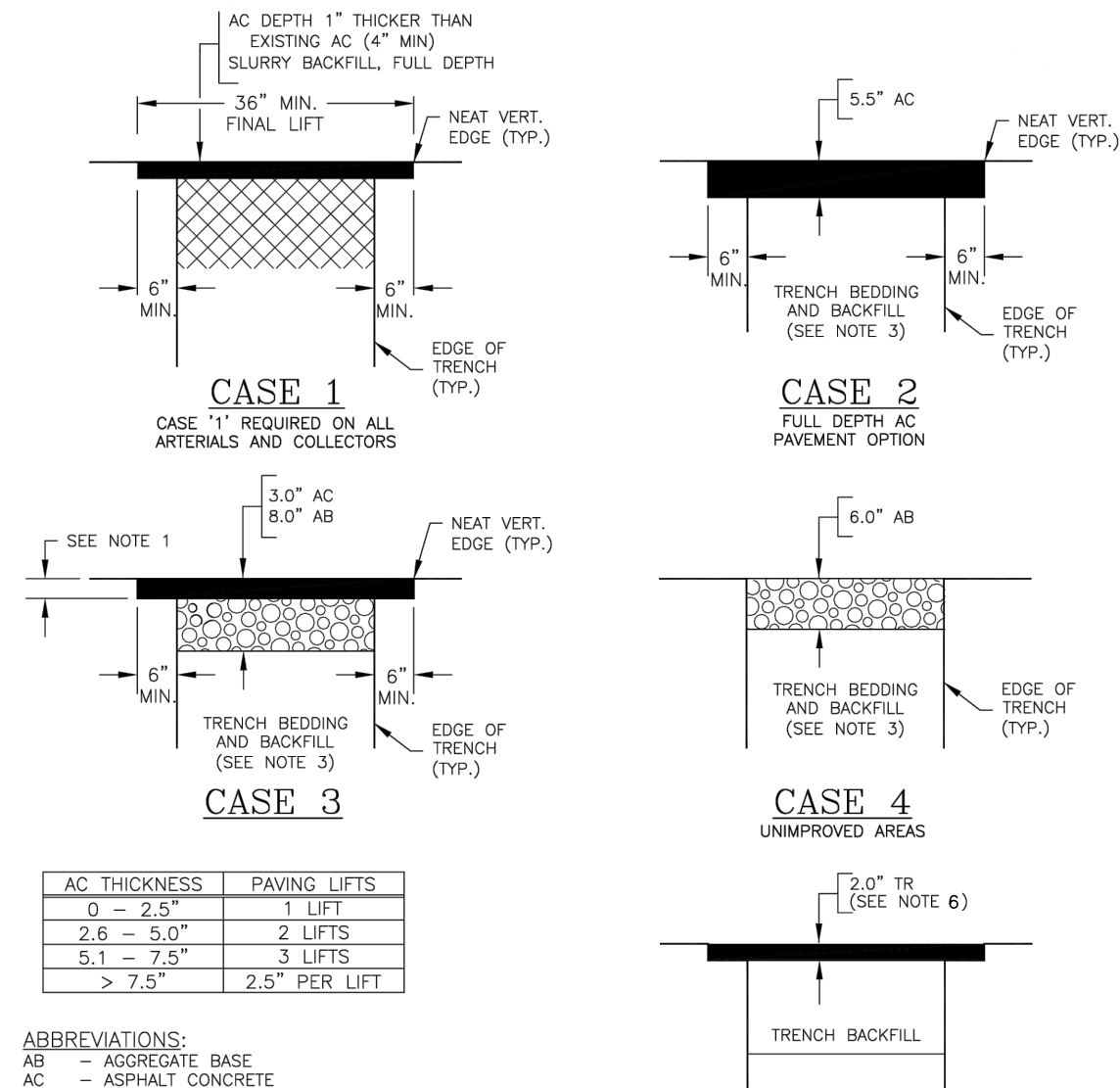
AVILA, JULIAN - B:\Working\DWG\224930 Drought Support\05 - Trench\25-03 Orland\09_CADD\Design\Sheet - PIPING STANDARD DETAILS 2.dwg - 3/21/2025



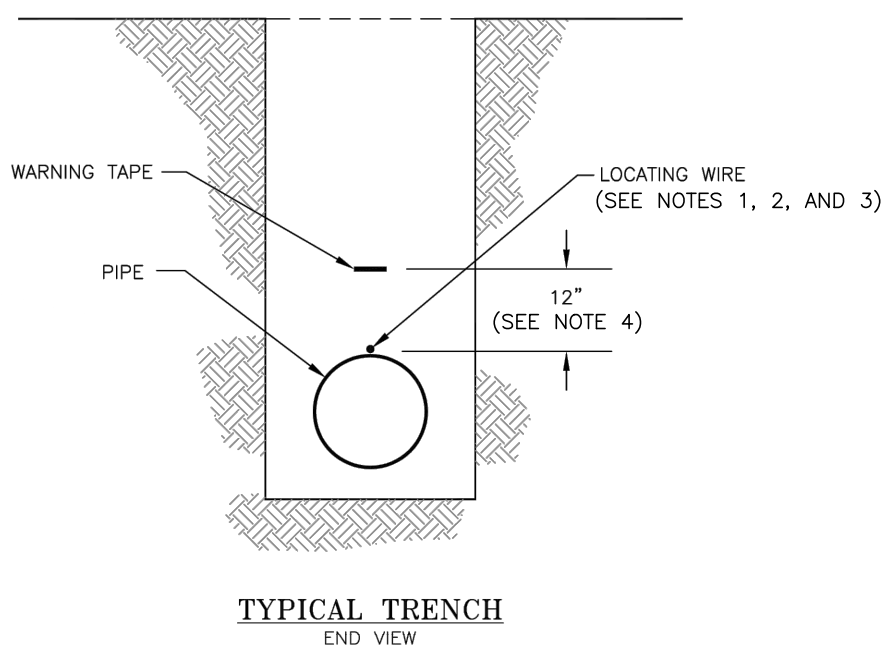
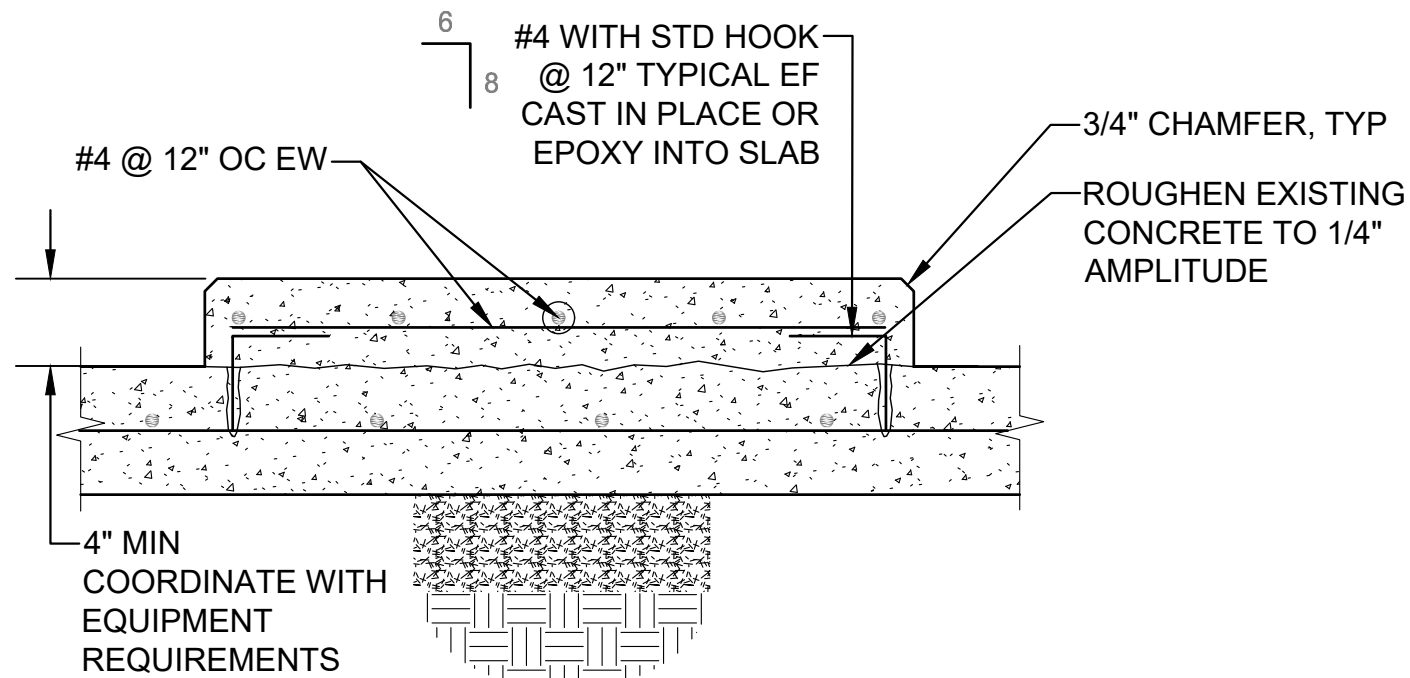
- NOTES:
- CONCRETE FOR ENCASING PIPE SHALL BE CLASS 450-C-2000 PER THE SPECIFICATIONS.
 - ON ALL CONCRETE ENCASED PIPES, PIPE SHALL BE SUPPORTED ON CONCRETE BLOCKS, GROUT PADS, OR BY OTHER APPROVED METHOD. TWO SUPPORTS SHALL BE REQUIRED PER JOINT OF PIPE. CARE SHALL BE TAKEN NOT TO FLOAT PIPE WHILE PLACING CONCRETE.
 - BACKFILL BY HAND, COMPACT OR CONSOLIDATE TO PROVIDE SOLID BEDDING UNDER AND AROUND PIPE.
 - BEDDING MATERIAL:
 - WATER MAINS SHALL BE PER THE SPECIFICATIONS.
 - TRENCH WIDTH ON EACH SIDE OF THE PIPE SHALL BE A MINIMUM OF EITHER SIX (6) INCHES OR THE PIPE MANUFACTURER'S RECOMMENDED MINIMUM, WHICHEVER IS GREATER.



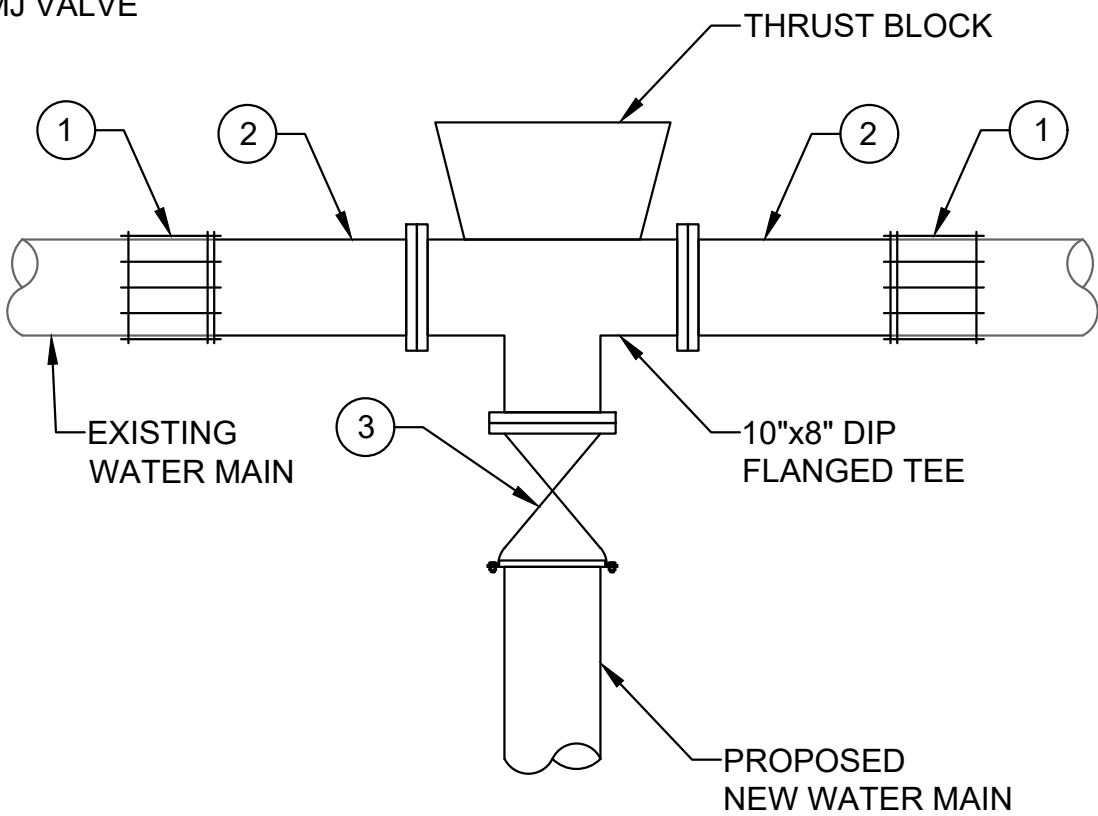
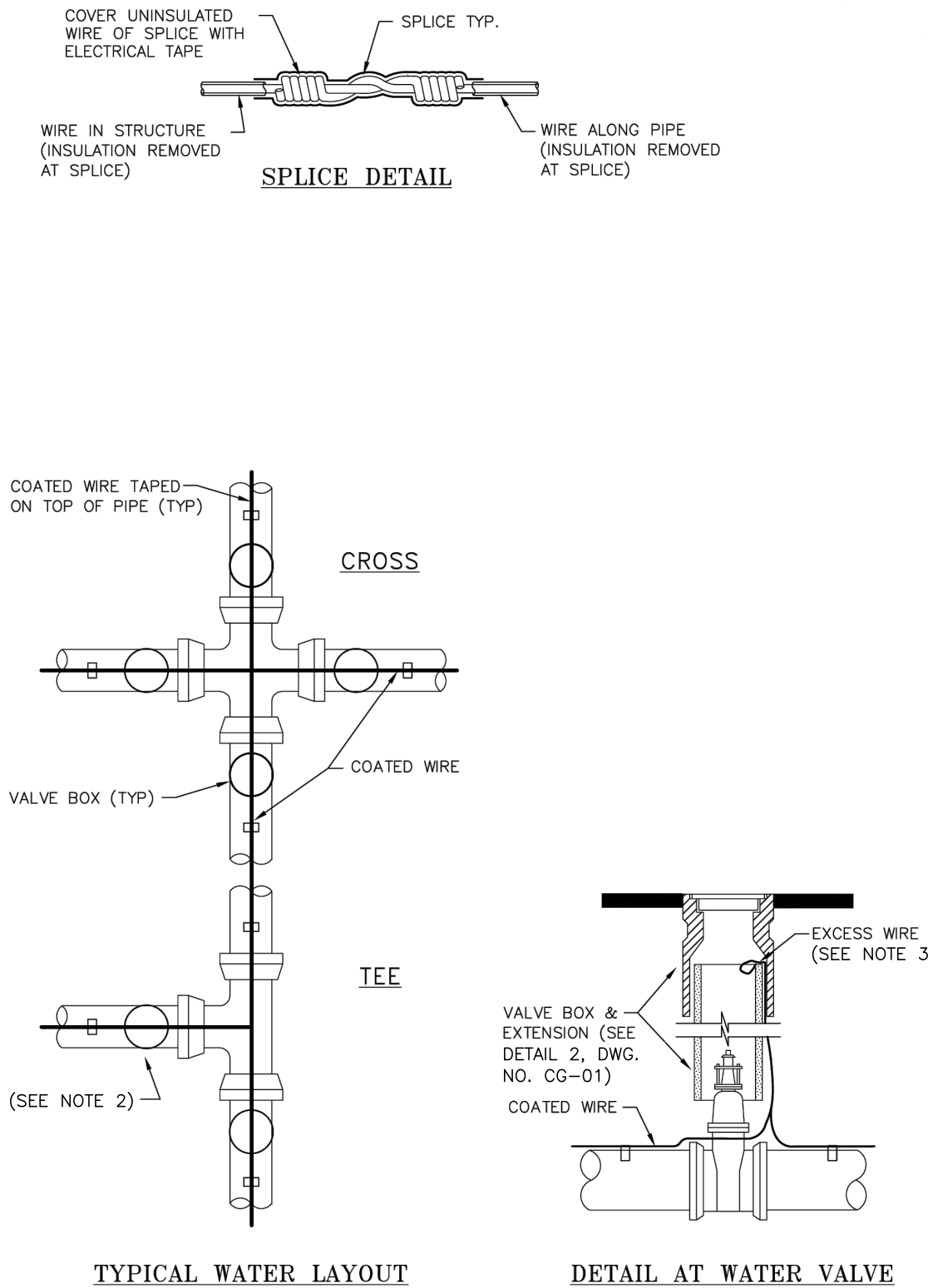
- NOTES:
- IMPORT BACKFILL MATERIAL PER THE SPECIFICATIONS.
 - SLURRY BACKFILL SHALL BE PER MIX DESIGN ABOVE, AND SHALL BE PLACED AND COMPACTED IN LIFTS NOT EXCEEDING THREE (3) FEET.
 - NATIVE BACKFILL MAY BE USED IN-LIEU OF IMPORT BACKFILL ONLY IF AN INDEPENDENT GEOTECHNICAL ENGINEERING COMPANY MONITORS AND TESTS THE BACKFILL DURING THE ENTIRE BACKFILLING OPERATION.
 - FOR REQUIRED COMPACTION DENSITY AND TESTING FREQUENCY, SEE CONTRACT SPECIFICATIONS.
 - COMPACTION BY LETTING IS NOT PERMITTED.
 - CONCRETE CAP SHALL BE PLACED OVER PIPE WHEN THE DEPTH OF COVER IS LESS THAN THE MINIMUM FOR THE SPECIFIC TYPE OF PIPE PER THESE STANDARDS.
 - CONCRETE CAP SHALL BE CLASS 450-C-2000 PER THE CONTRACT SPECIFICATIONS.



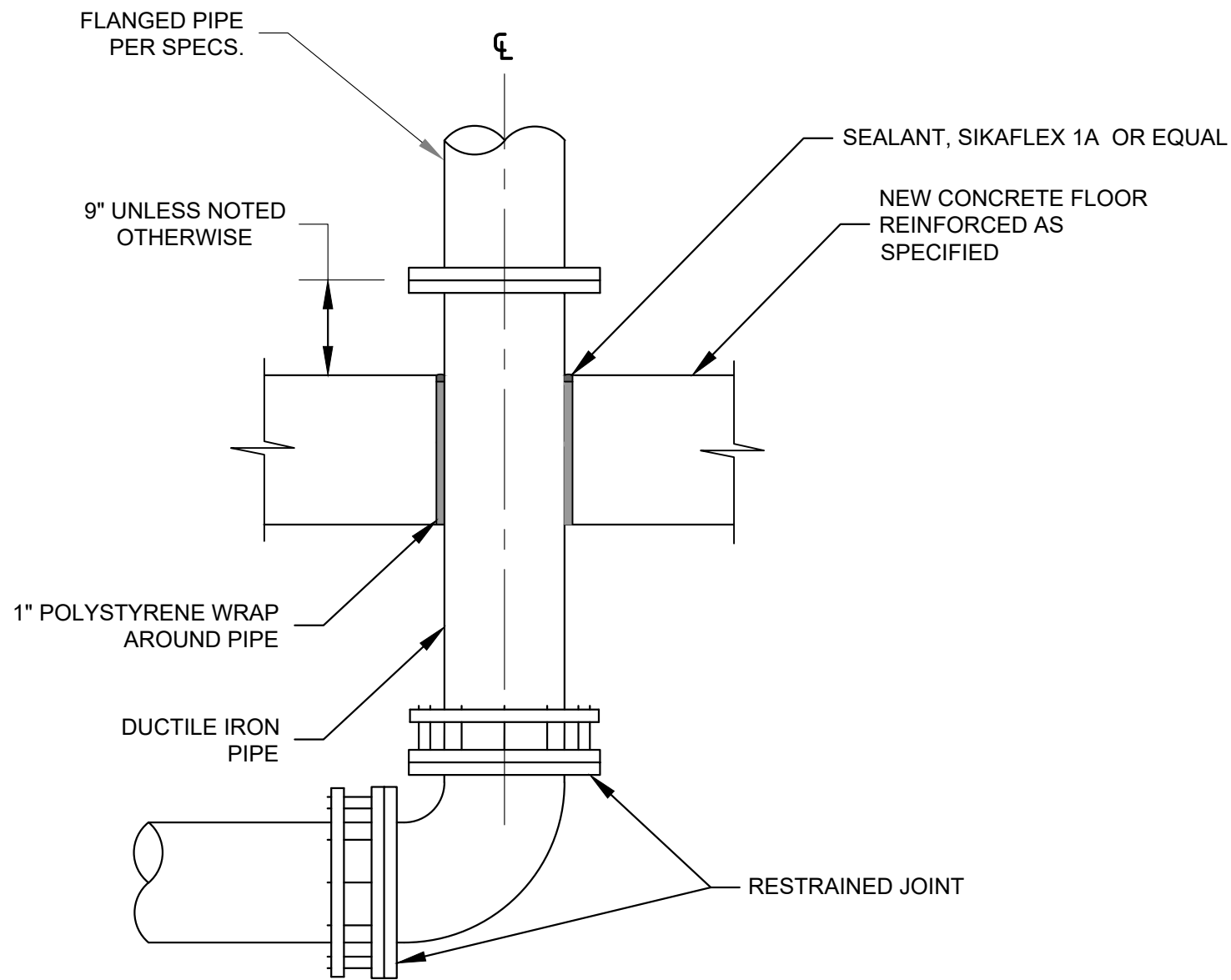
- NOTES:
- EXCEPT AS NOTED IN CASE 1, MINIMUM THICKNESS OF AC RESURFACING IS THREE (3) INCHES OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
 - FOR TRENCH BEDDING SEE DETAIL 1 AND FOR TRENCH BACKFILL SEE DETAIL 2.
 - FOR REQUIRED COMPACTION DENSITY AND TESTING FREQUENCY, SEE THE CONTRACT SPECIFICATIONS.
 - FOR ANY TRENCH CUT WITHIN TWO (2) FEET OF THE EDGE OF PAVEMENT AND/OR AN EXISTING PAVEMENT REPAIR, THE EXISTING AC SHALL BE REMOVED AND RESURFACED TO THE EDGE OF THE ADJACENT FEATURE.
 - ANY PAVEMENT DELINEATION AND/OR MARKINGS REMOVED DURING TRENCHING OPERATIONS SHALL BE REPLACED IN KIND AS THERMOPLASTIC STRIPING AT 90 MIL (MIN) AND MARKINGS AT 120 MIL (MIN) THICK.
 - TEMPORARY PAVEMENT RESURFACING SHALL CONFORM TO REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, (GREENBOOK) FOR TEMPORARY RESURFACING. THE TEMPORARY RESURFACING SHALL BE PLACED, ROLLED, MAINTAINED TO A SMOOTH FINISH, REMOVED AND DISPOSED OF BY THE CONTRACTOR.



- NOTES:
- LOCATING WIRE SHALL BE INSTALLED IN CONJUNCTION WITH WARNING TAPE ON ALL PIPELINES (INCLUDING LINES TO FIRE HYDRANTS, BLOWOFFS, WATER SERVICES, GATE VALVES, AND AIR VALVES).
 - WIRE SHALL NOT TOUCH METALLIC STRUCTURES, VALVES, OR FITTINGS (MAINTAIN 3 INCHES CLEAR DISTANCE).
 - WIRE SHALL BE PLACED WITHIN 6"-12" OF TOP OF STRUCTURES AND WITH SUFFICIENT EXCESS TO ALLOW FOR ABOVE GROUND CONNECTION TO LOCATING EQUIPMENT (2 FOOT MIN).
 - LOCATING WARNING TAPE SHALL BE INSTALLED 12 INCHES ABOVE PIPELINE (INCLUDING LINES TO FIRE HYDRANTS, BLOWOFFS, WATER SERVICES, GATE VALVES, AND AIR VALVES) AND SHALL BE UNBROKEN FOR THE ENTIRE RUN OF THE PIPE.



- NOTES:
- TEE, COUPLINGS GATE VALVES, AND ALL NEW OR EXPOSED PIPING SHALL BE WRAPPED WITH 10 MIL MIN. POLYETHYLENE ENCASEMENT.
 - DO NOT ALLOW ANY WATER TO ENTER THE EXISTING PIPE. ADHERE CHLORINE TABLETS TO TEE, THE NUMBER OF TABLETS SHALL BE AS DIRECTED BY THE DISTRICT. SPRAY EXISTING PIPE, ALL FITTINGS AND VALVES WITH A SOLUTION OF SUPER CHLORINATED WATER JUST PRIOR TO INSTALLATION.
 - PROVIDE THRUST BLOCKS OR RESTRAINED PIPE JOINTS AS REQUIRED TO PREVENT MOVEMENT.
 - COORDINATE WATERLINE OUTAGE WITH CITY OF ORLAND.



Designed: M. MARTIN
Drawn: F. OLSON
Checked: C. TRUEBLOOD
Approved: M. MARTIN
P.E. No: C35079
GEI Project 2204930



ORLAND EMERGENCY GROUNDWATER RESOURCE PROJECT PHASE 3B

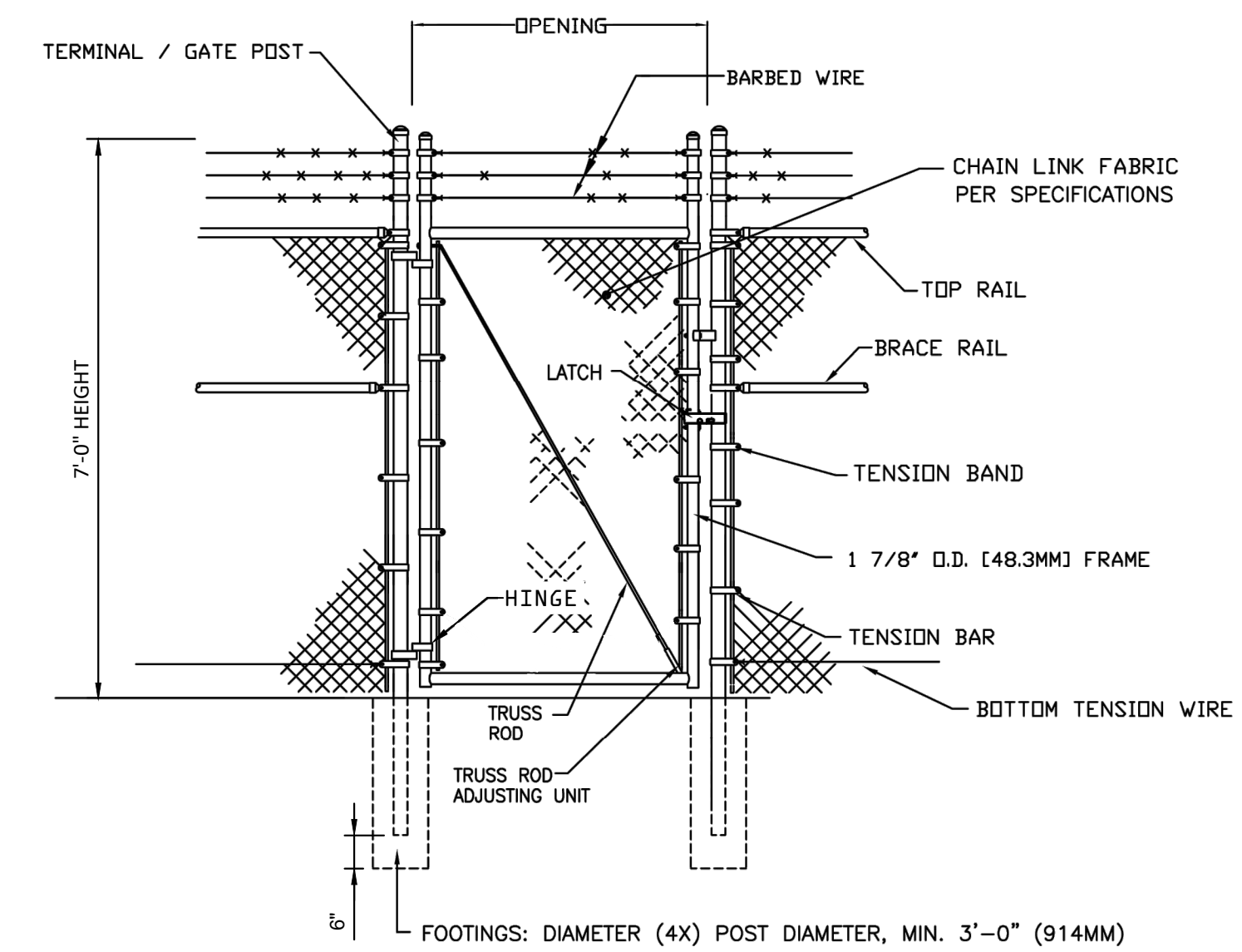
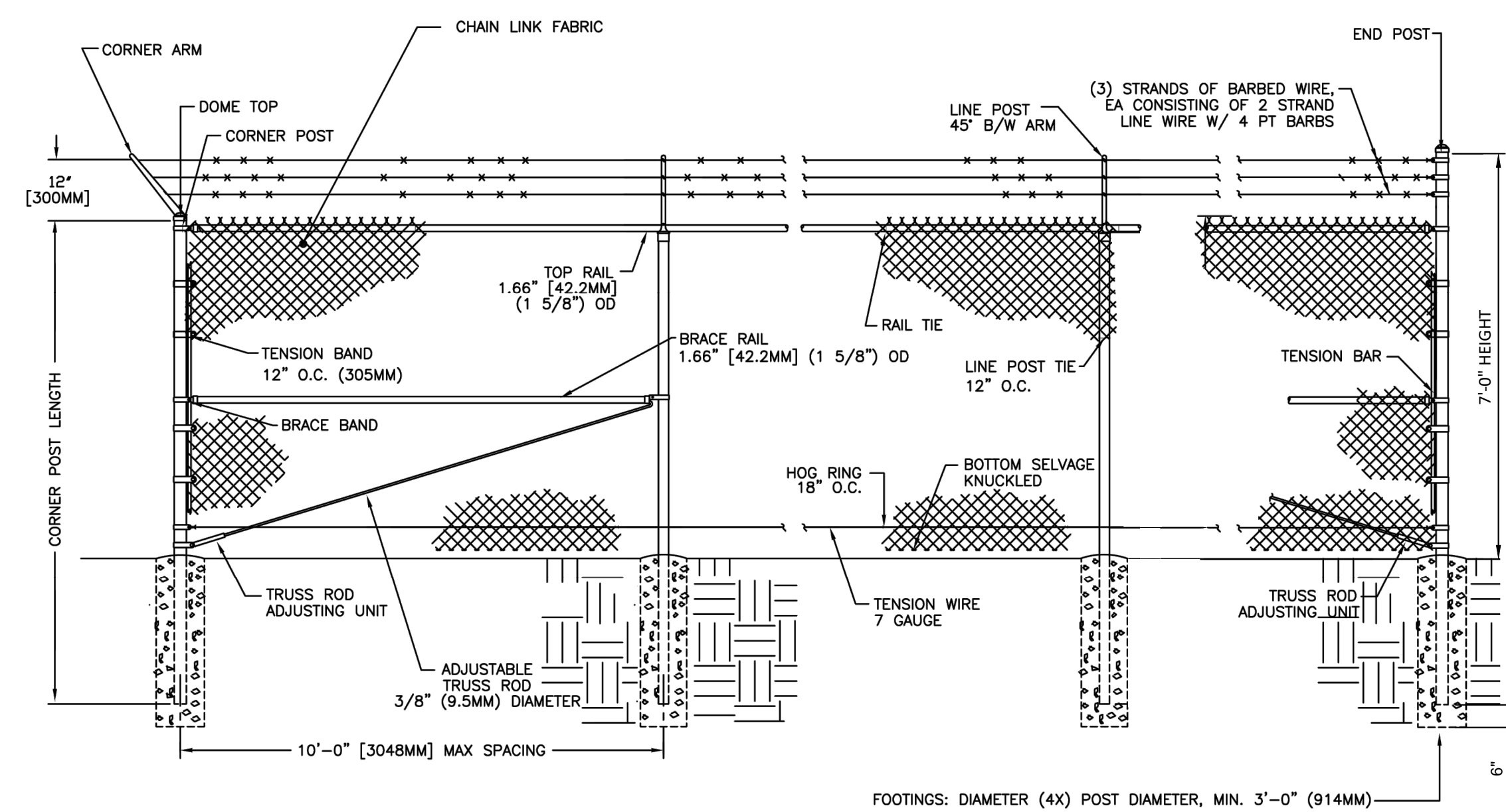
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NO	DATE	ISSUE/REVISION	APP

SHEET NAME
**PIPING STANDARD
DETAILS 2 OF 2**

SHEET NO.
5 OF 28

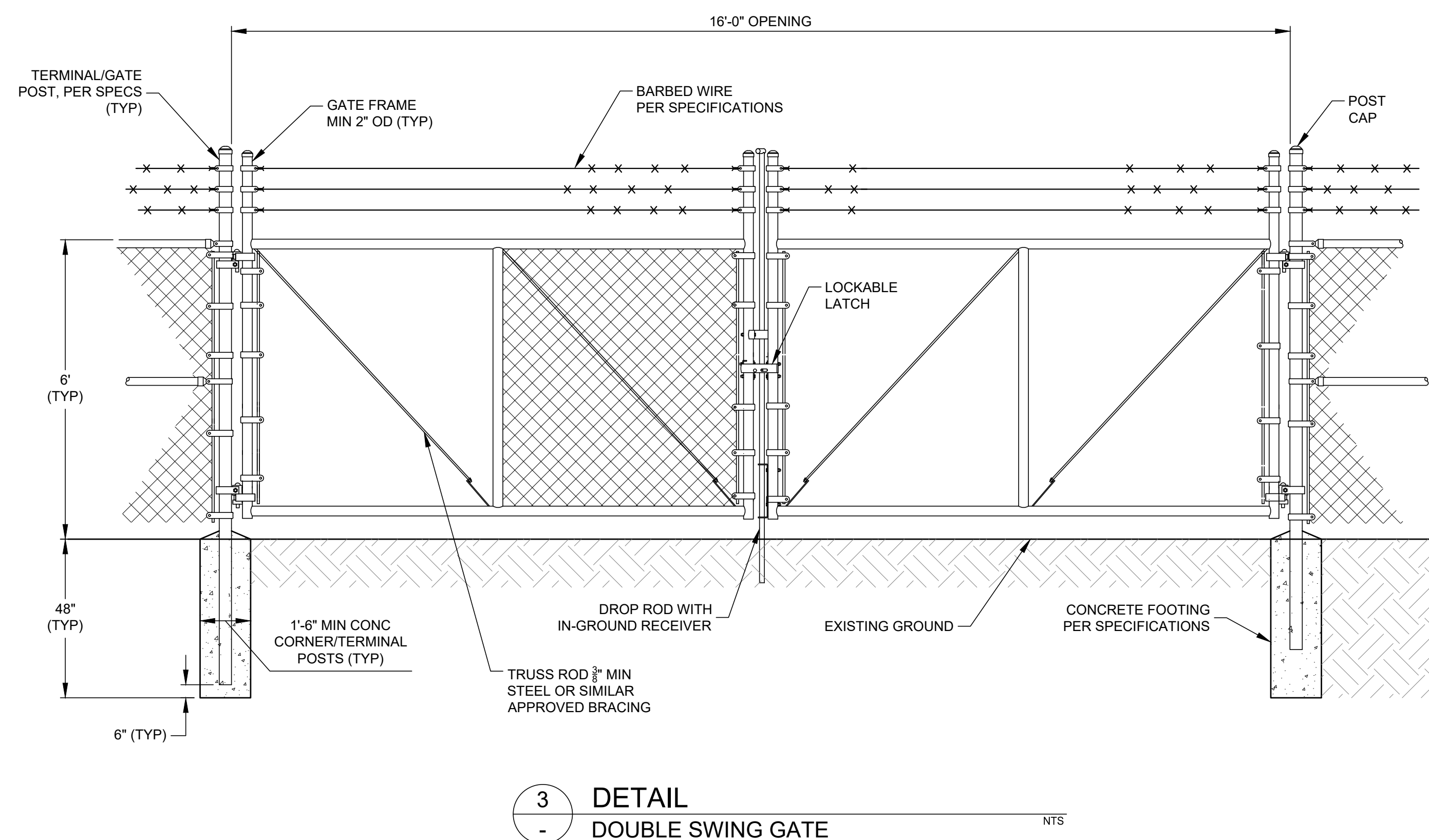
CG-02

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NOTE:
1. VERTICAL AND HORIZONTAL MEMBERS MAXIMUM 10' O.C.

NOM HEIGHT (H)
6'-0" OR 6+1=7'



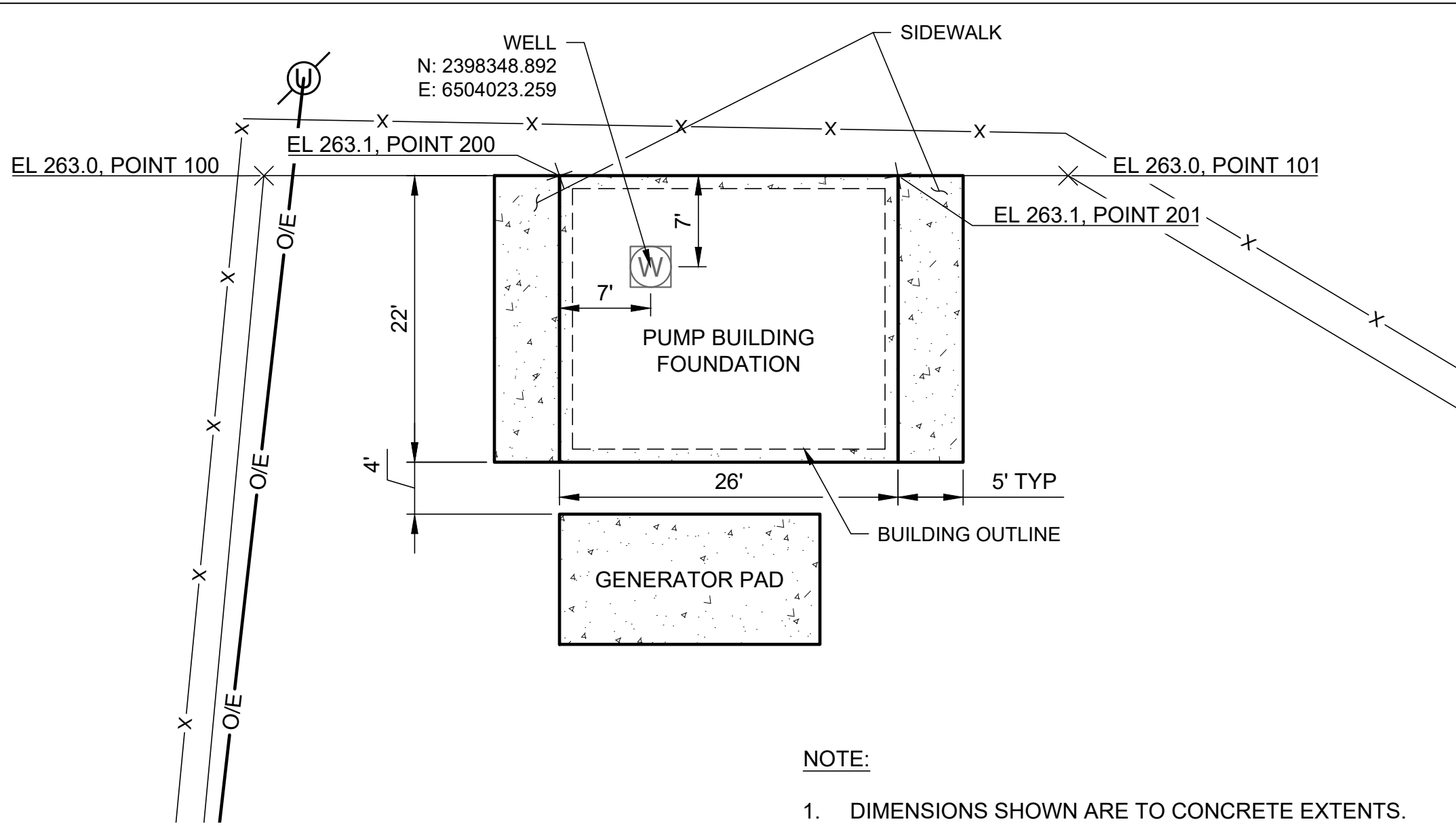
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				<div><div>SHEET NAME</div><div>6 OF 28</div><div>FENCING DETAILS</div><div>CG-03</div></div>	
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NO	DATE	ISSUE/REVISION	APP		

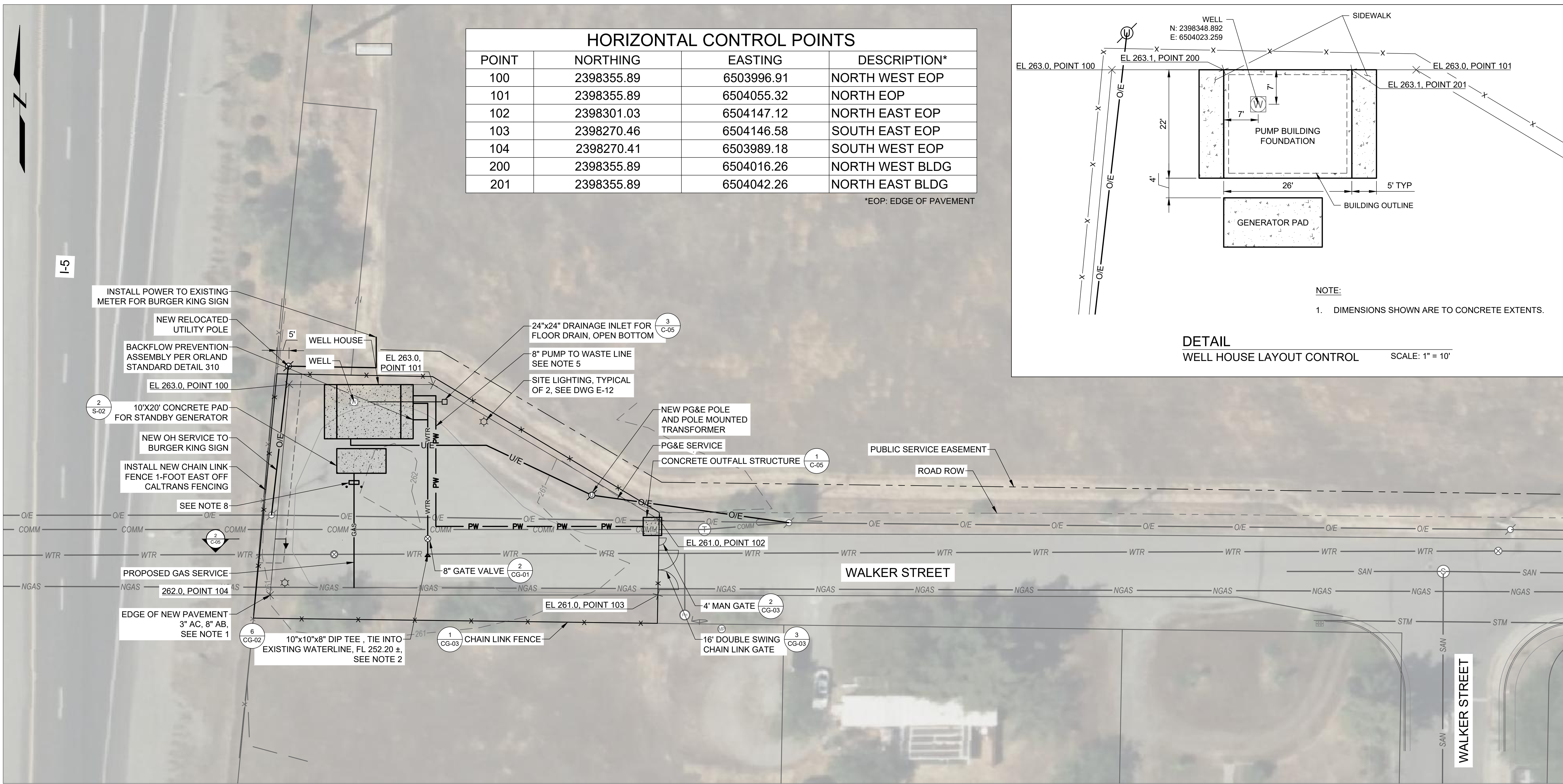
AVILA, JULIAN_B WorkingDWG2204930 Drough Support105, T0425-03 Orland010, CADDesign\Sheetal, PHASE 3B-C-02, PROPOSED SITE PLAN.dwg - 3/21/2025

HORIZONTAL CONTROL POINTS			
POINT	NORTHING	EASTING	DESCRIPTION*
100	2398355.89	6503996.91	NORTH WEST EOP
101	2398355.89	6504055.32	NORTH EOP
102	2398301.03	6504147.12	NORTH EAST EOP
103	2398270.46	6504146.58	SOUTH EAST EOP
104	2398270.41	6503989.18	SOUTH WEST EOP
200	2398355.89	6504016.26	NORTH WEST BLDG
201	2398355.89	6504042.26	NORTH EAST BLDG

*EOP: EDGE OF PAVEMENT



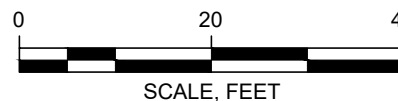
DETAIL
WELL HOUSE LAYOUT CONTROL
SCALE: 1" = 10'



NOTES:

1. GRADE NEW ASPHALT PAVEMENT TO DRAIN TOWARDS INLET.
2. POT HOLE TO LOCATE EXISTING 10" WATER LINE.
3. ALL BURIED FITTINGS SHALL BE RESTRAINED WITH MEGALUG JOINT RESTRAINT OR THRUST BLOCKS INSTALLED PER ORLAND STANDARD DETAIL 303.
4. ALL BURIED PIPE SHALL BE DUCTILE IRON PIPE, UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR MAY MODIFY THE ALIGNMENT OF THE PUMP TO WASTE LINE FROM THE WELL BUILDING TO THE CONCRETE OUTFALL STRUCTURE AND MAINTAIN AT LEAST A 10 FOOT CLEARANCE FROM THE POWER POLE AND 3 FOOT CLEARANCE FROM BURIED UTILITIES. THE PIPE ALIGNMENT SHALL BE APPROVED BY THE ENGINEER.
6. THE UNDERGROUND ELECTRICAL INCLUDES THE MULTIPLE CONDUITS FOR PG&E ELECTRICAL SERVICE FOR AT&T COMMUNICATIONS. SEE THE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. INSTALL CHAIN LINK FENCE ON PROPERTY LINE UNLESS OTHERWISE NOTED.
8. INSTALL NEW PG&E GAS SERVICE. INSTALL THE PG&E GAS METER 3 FEET SOUTH OF THE GENERATOR. INSTALL 24"-36" POSTS PER PG&E GREENBOOK STANDARD J-95 FOR THE METER GUARD INSTALLATION. COORDINATE LOCATION OF GAS SERVICE WITH PG&E.

PROPOSED SITE PLAN
SCALE: 1" = 20'



ISSUED FOR BID



Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.



Designed: M. MARTIN
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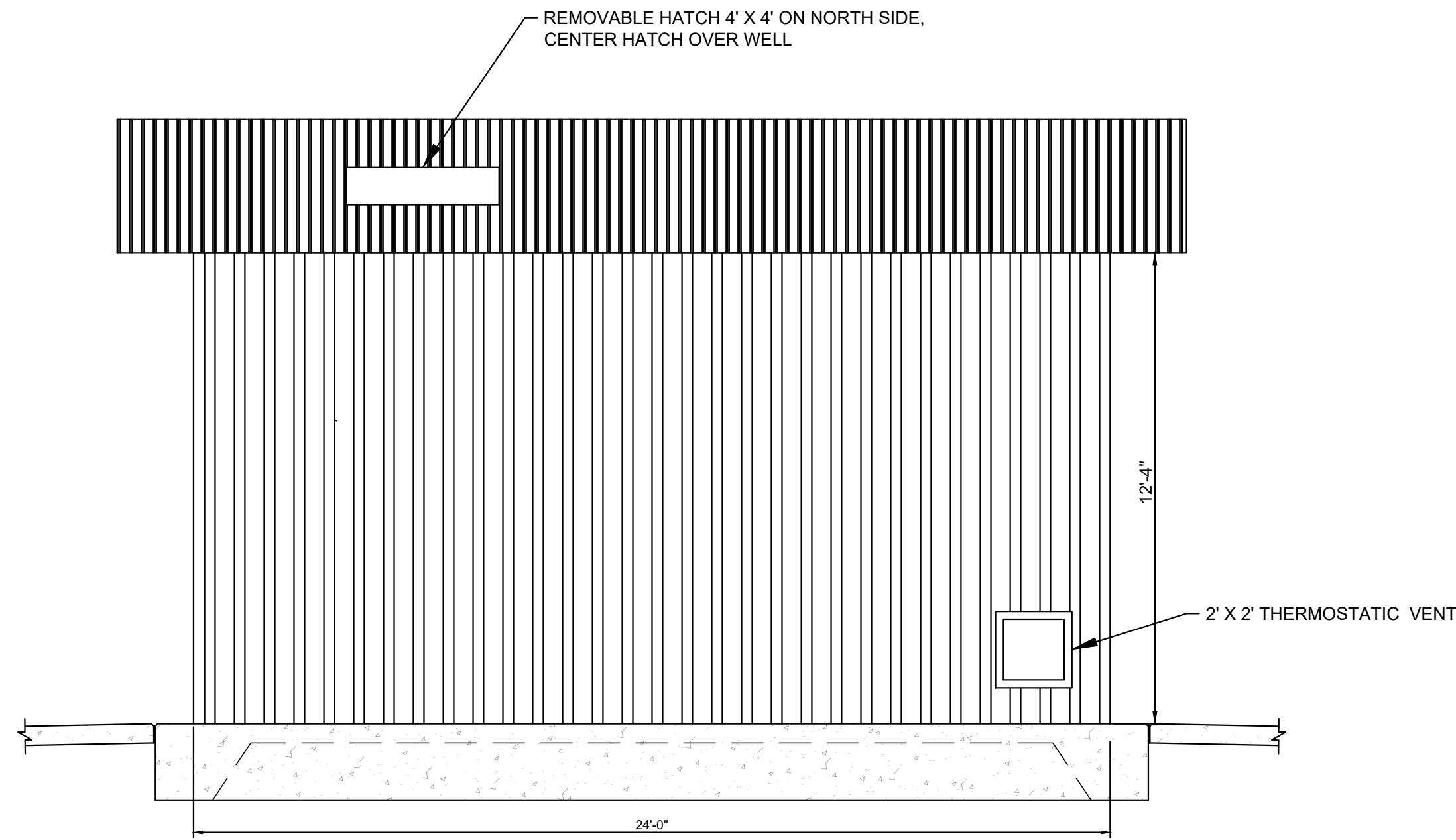


ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3B

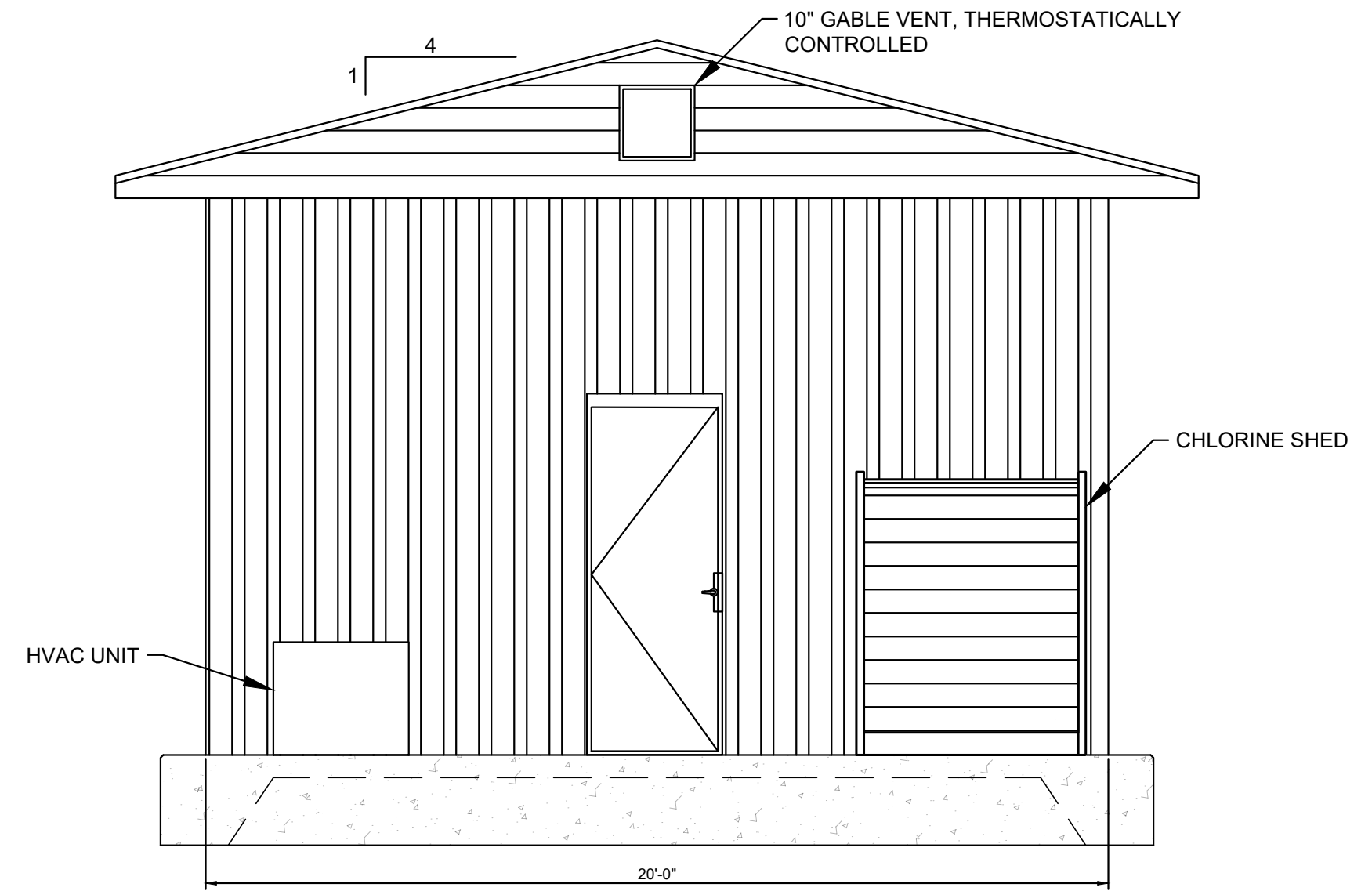
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SHEET NAME
PROPOSED SITE PLAN

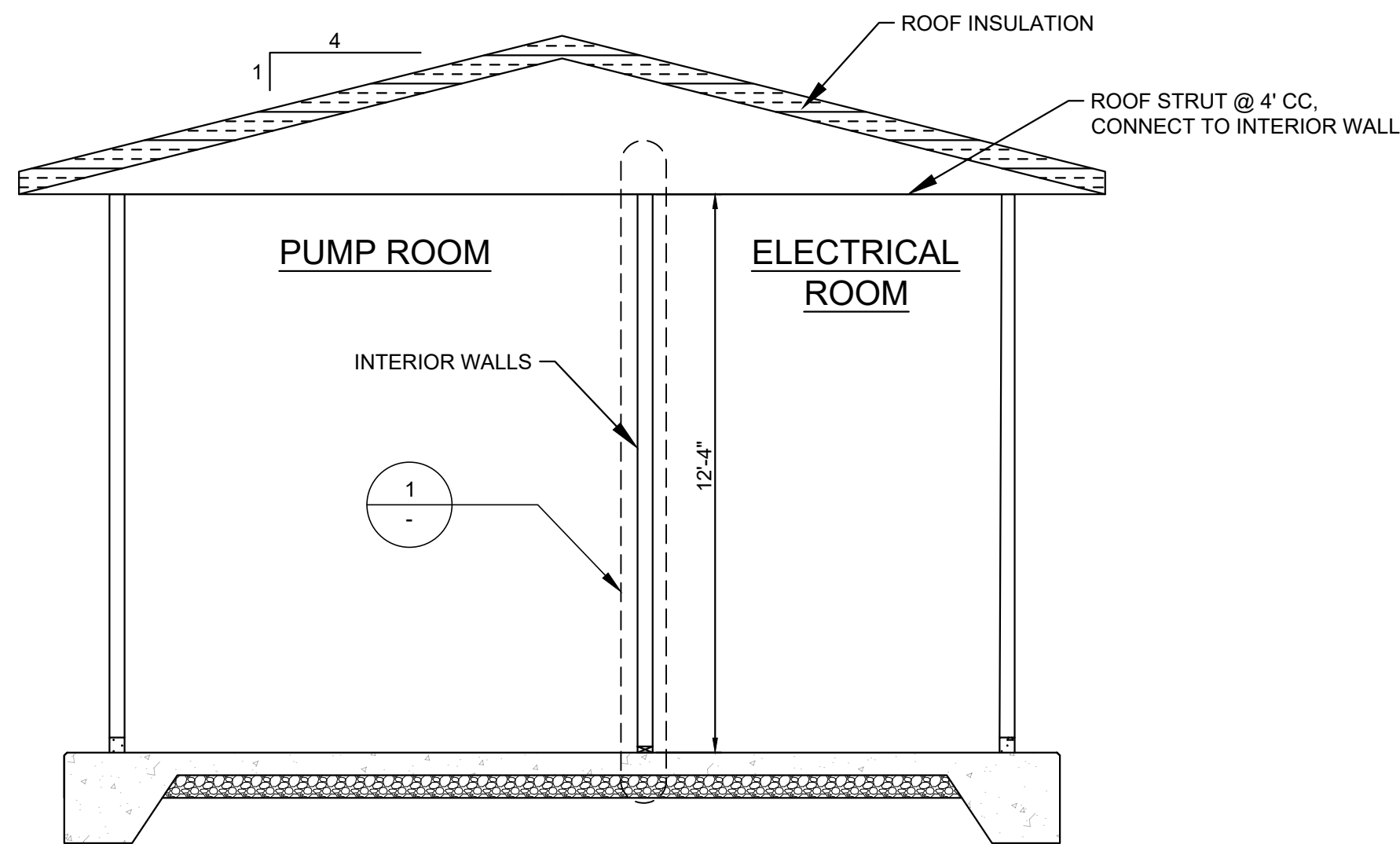
SHEET. NO.
8 OF 28
C-02



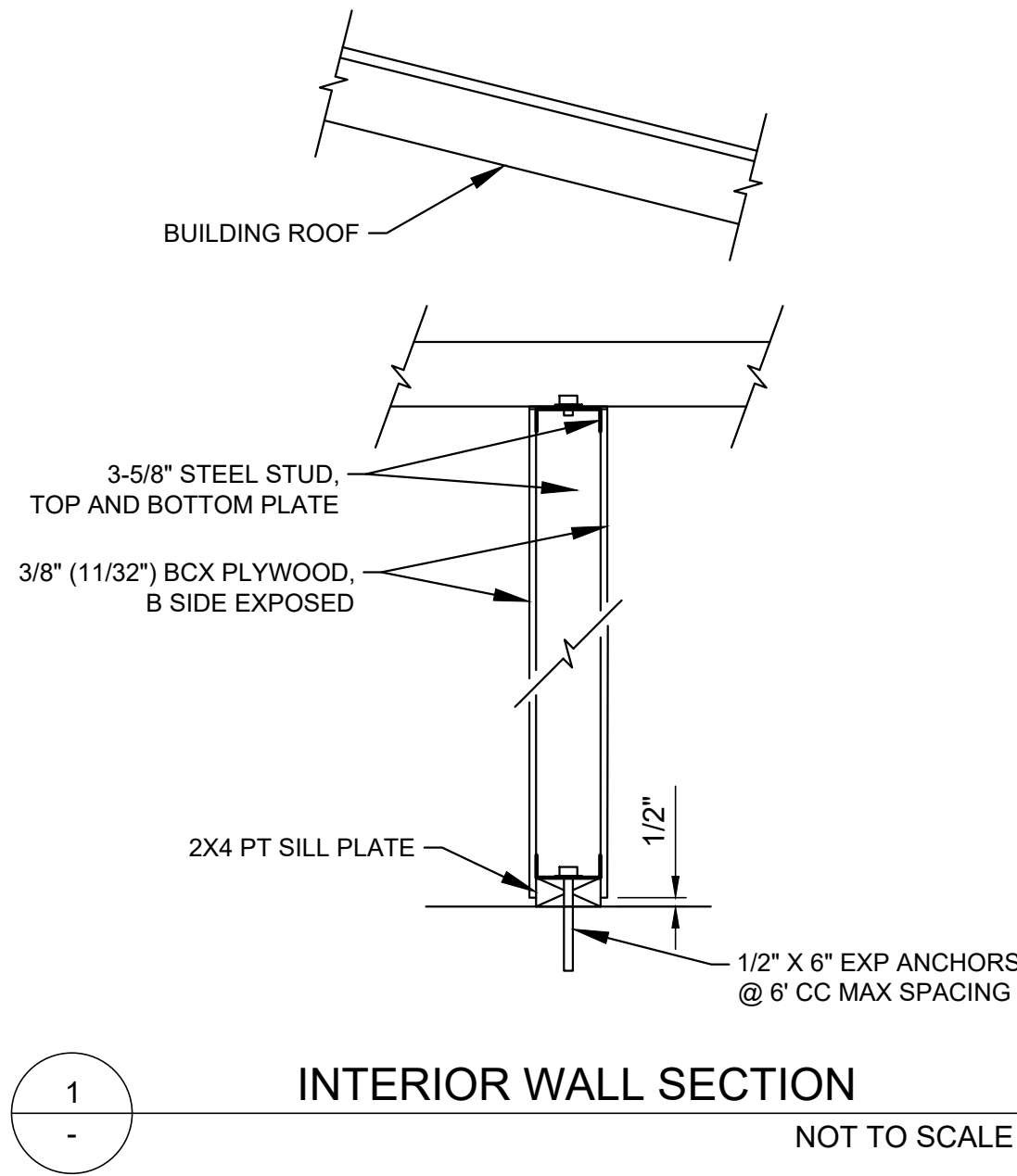
SOUTH ELEVATION (NORTH ELEVATION SIMILAR)
NOT TO SCALE



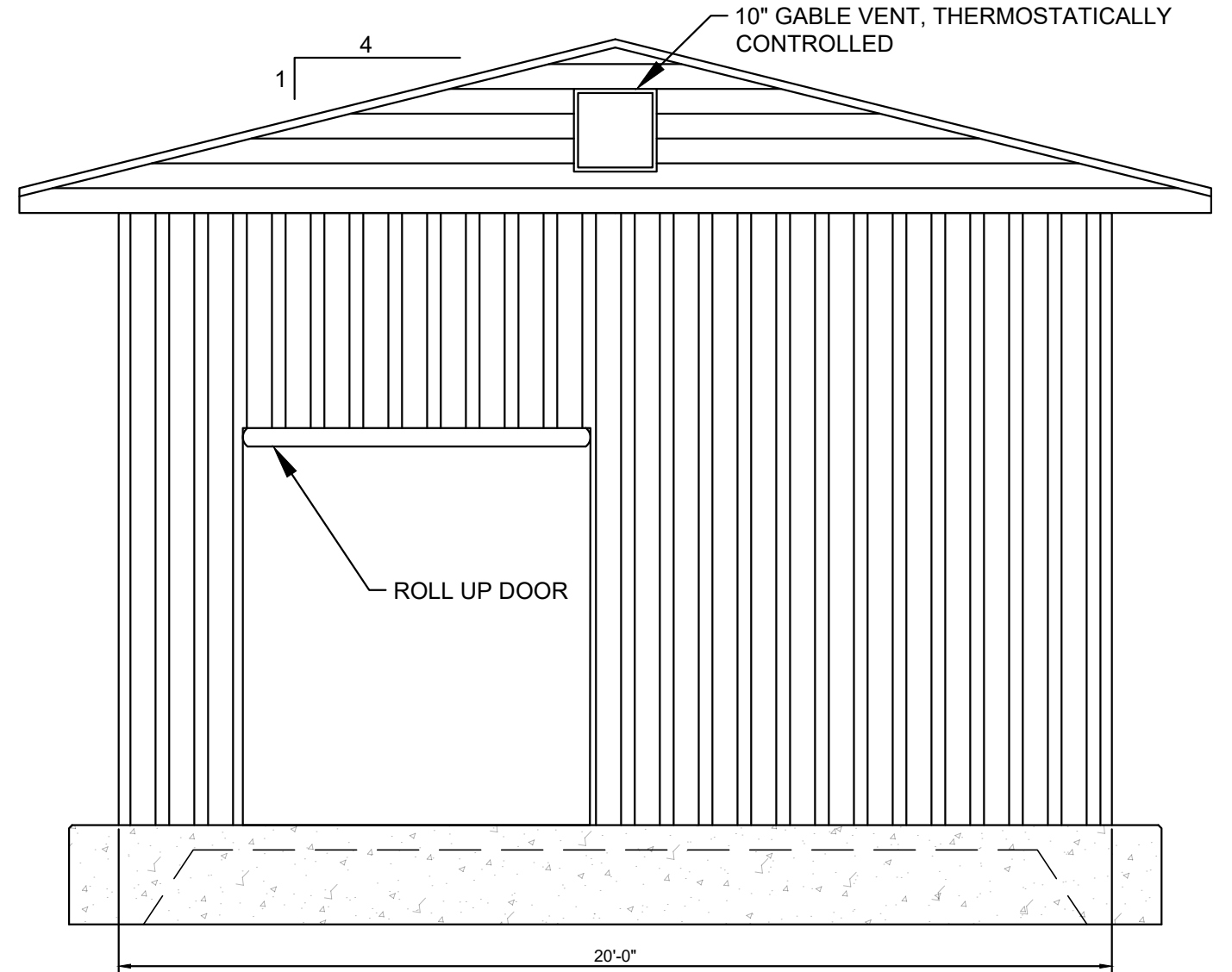
EAST ELEVATION
NOT TO SCALE



INTERIOR ELEVATION
NOT TO SCALE



INTERIOR WALL SECTION
NOT TO SCALE



WEST ELEVATION
NOT TO SCALE

NOTES:

- 1 PRE-ENGINEERED METAL BUILDING. CONTRACTOR TO PROVIDE BUILDING SHOP DRAWINGS SIGNED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE STATE OF CALIFORNIA PER SPECIFICATIONS.



Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.



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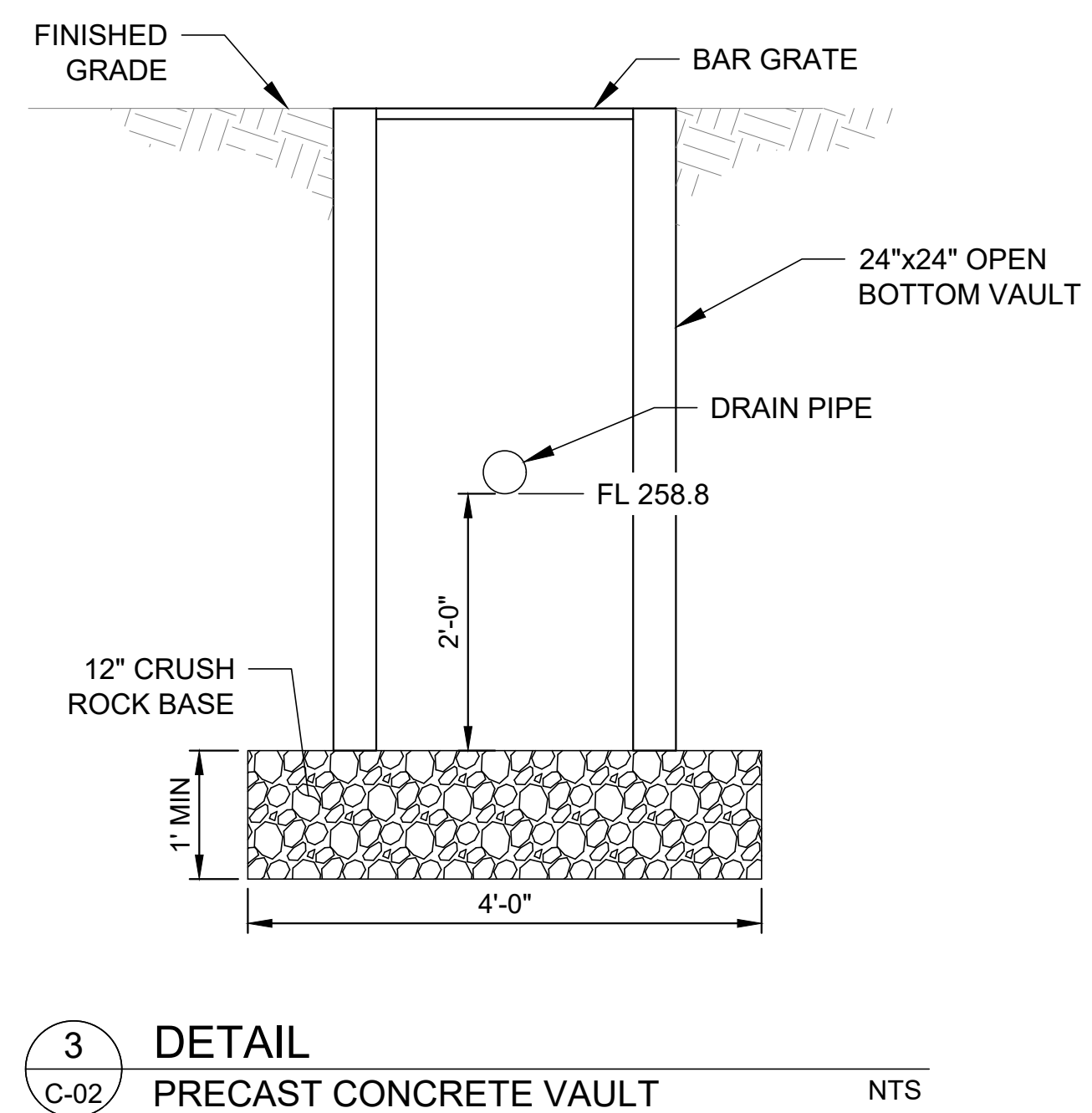
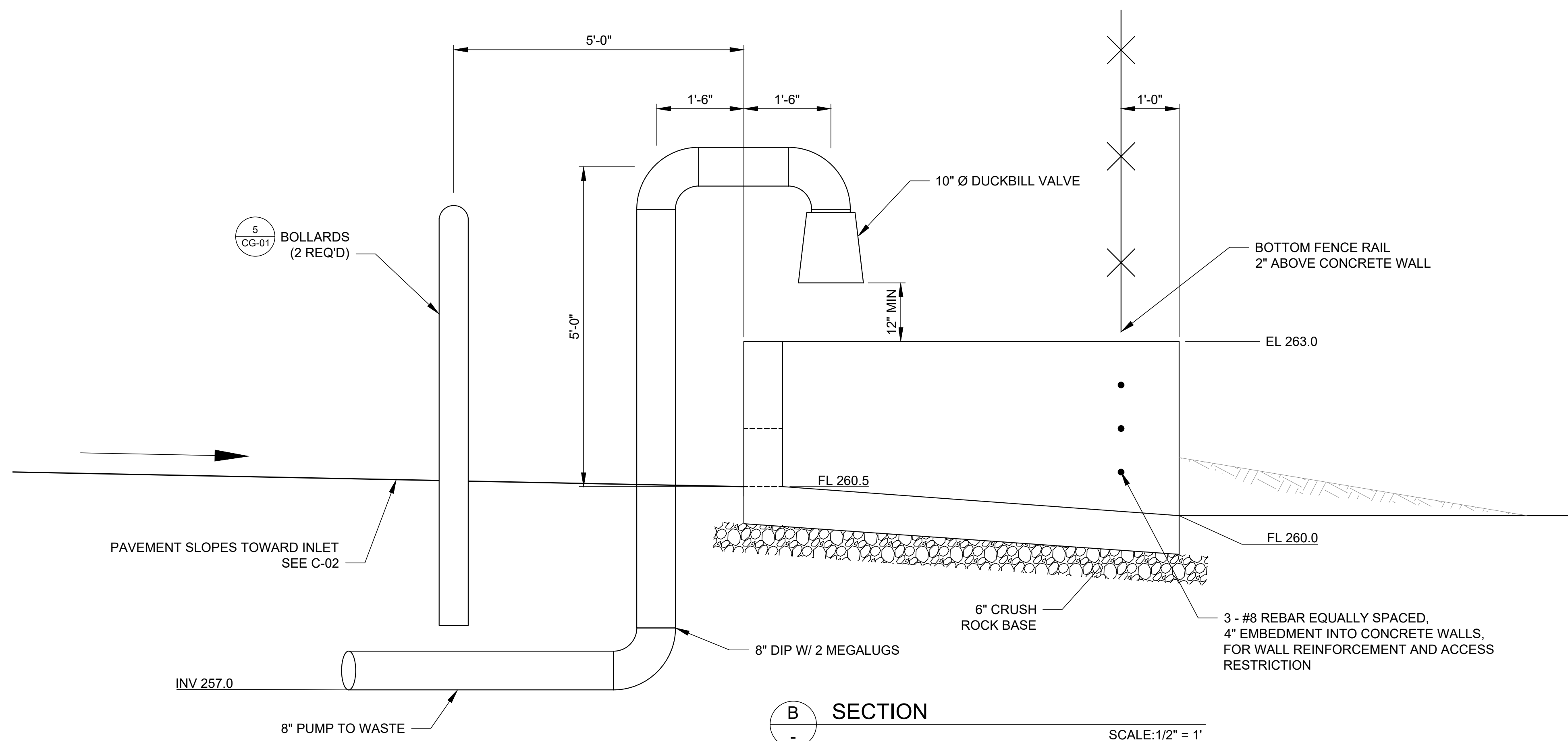
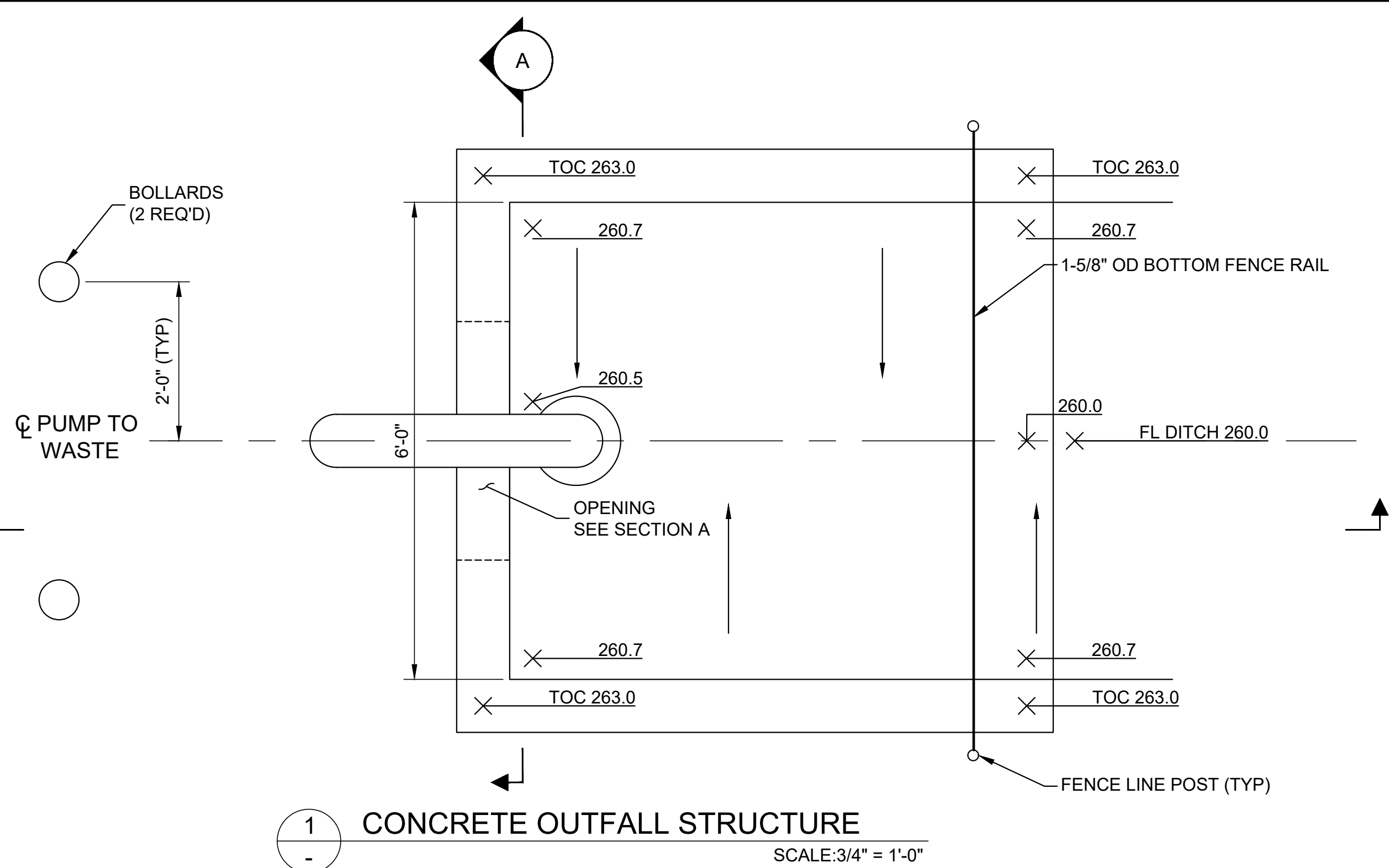
ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3B

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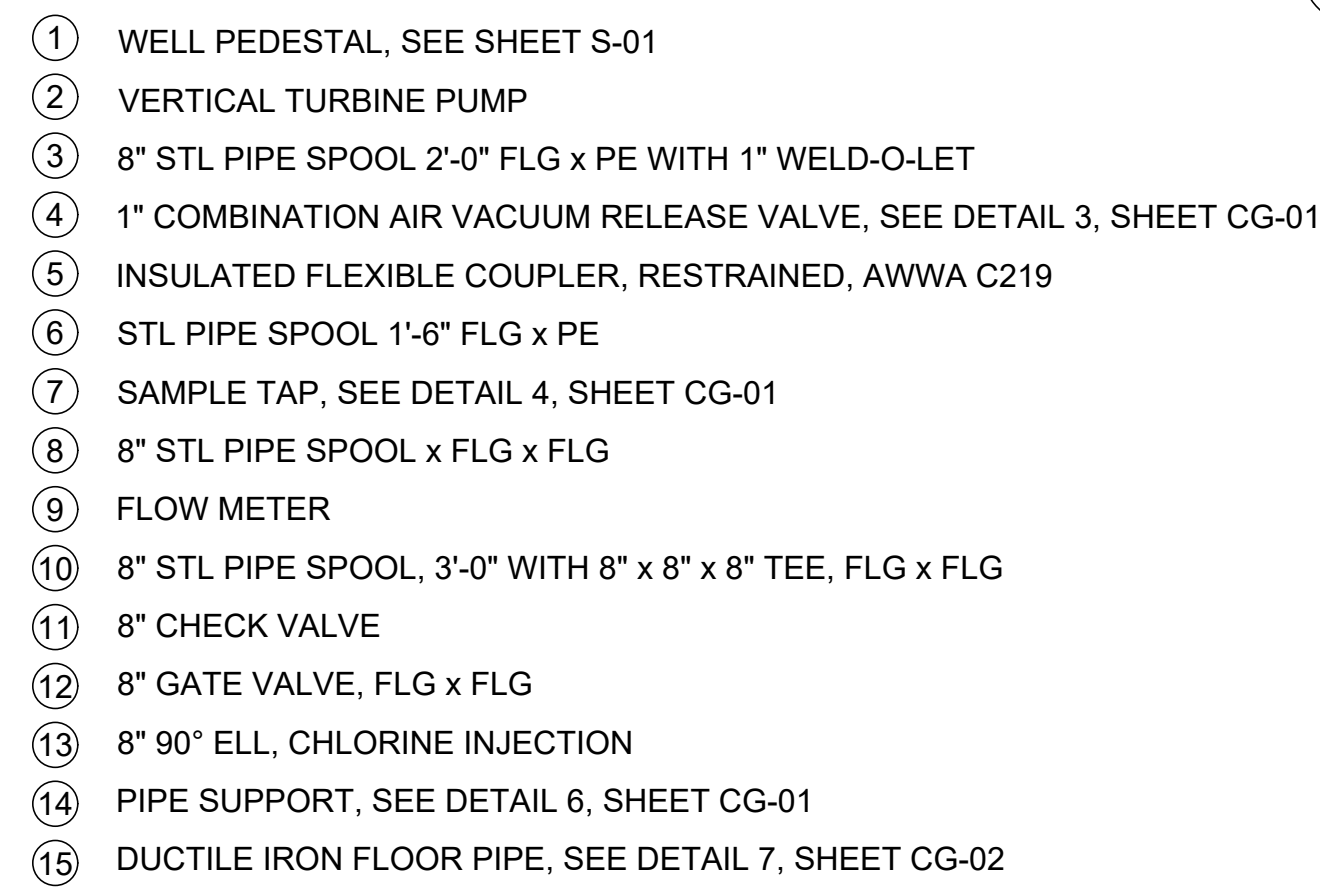
SHEET NAME
ELEVATION VIEW - WELL
HOUSE

SHEET. NO.
10 OF 28
C-04

ISSUED FOR BID



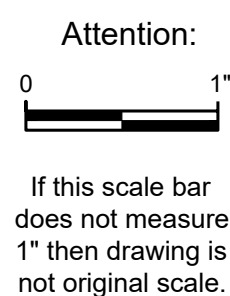
C-05



SCALE: 1" = 1'-6"

A
C-03

1. UNDERGROUND PIPING, CONTRACTOR MAY INSTALL MJ FITTINGS WITH MEGALUG RESTRAINTS. ALL DIP AND STEEL PIPE JOINTS ARE RESTRAINED UNLESS OTHERWISE NOTED.
2. PROVIDE AN INSULATION FLANGE AT STEEL TO DUCTILE IRON PIPE TRANSITIONS.



GEI Consultants
GEI CONSULTANTS, INC.
11010 WHITE ROCK ROAD
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RANCHO CORDOVA, CA 95670
(916)631-4500



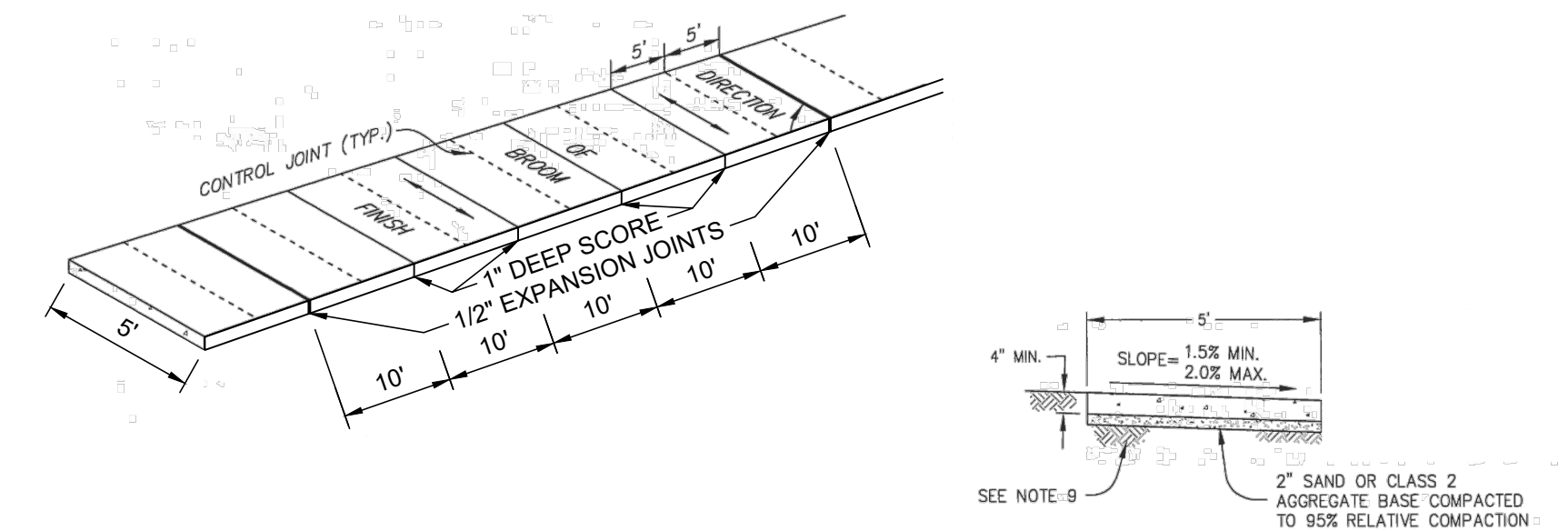
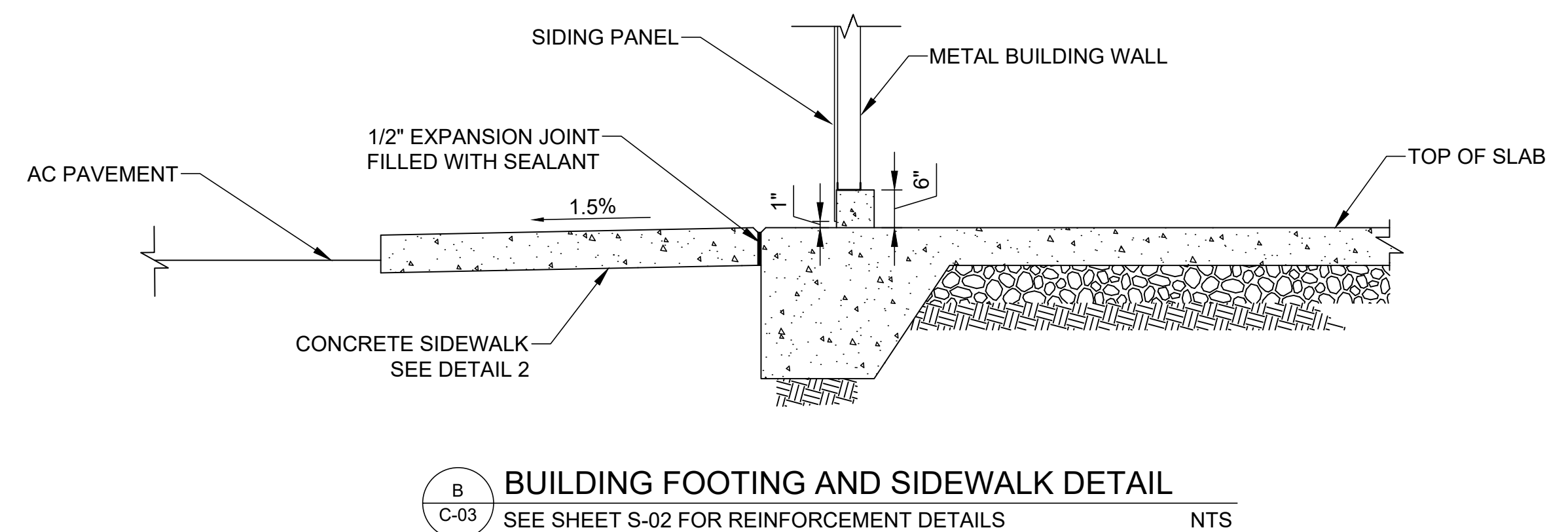
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GROUNDWATER
RESOURCE PROJECT
PHASE 3B**

SHEET NAME

MECHANICAL DETAILS

M-01

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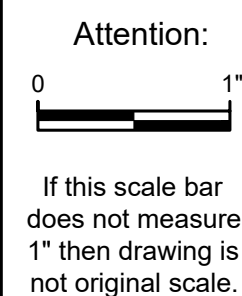


- ## NOTES
1. ALL CONCRETE SHALL BE CLASS B P.C.C.
 2. 1/2 INCH, PRE-MOLDED JOINT FILLER SHALL BE INSTALLED IN EXPANSION JOINTS AT REGULAR INTERVALS NOT EXCEEDING 10 FEET. AT THE E.C. AND E.O. OF ALL CURB RETURNING AND AT THE END OF ALL DRIVEWAYS, AND SHALL BE FULL-DEPTH AND COMPLETELY FILL THE JOINT.
 3. A MINIMUM OF 2 INCHES OF SAND, OR CLASS 2 AGGREGATE BASE, TO BE PLACED UNDER THE SIDEWALK. (SEE NOTE 6 BELOW)
 4. ALL WORK DONE AND ALL MATERIALS SUPPLIED SHALL CONFORM TO THE ORLAND IMPROVEMENT STANDARDS.
 5. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER FOR INSPECTION AT LEAST 24 HOURS PRIOR TO PLACING CONCRETE.
 6. FOR SIDEWALK ABUTTING ROLLED CURB AND GUTTER, THE THICKNESS OF AGGREGATE BASE UNDER THE SIDEWALK SHALL BE THE SAME AS THE THICKNESS PLACED UNDER THE STREET PAVEMENT.
 7. EXPANSION JOINTS IN SIDEWALK SHALL BE ADJACENT TO EXPANSION JOINT IN CURB AND GUTTER.
 8. PROVIDE COLD JOINT AT BACK OF CURB. IF CURB, GUTTER, AND SIDEWALK ARE POURED MONOLITHICALLY, PROVIDE 1" DEEP SCORE AT BACK OF CURB.
 9. SUBGRADE UNDER SIDEWALK COMPACTED TO 92% RELATIVE COMPACTION.

2 SIDEWALK - CITY STD DETAIL 204
- NTS

NOTES:

1. WELL PEDESTAL SHALL EXTEND A MINIMUM OF 18 INCHES BELOW GROUND SURFACE OR A MINIMUM OF 6 INCHES BELOW TOP OF CONDUCTOR CASING, WHICHEVER IS GREATER.
2. THE PUMP PEDESTAL SHALL BE FREE OF CRACKS, VOIDS, OR OTHER SIGNIFICANT DEFECTS LIKELY TO PREVENT WATER TIGHTNESS.
3. WORK TO BE PERFORMED WILL COMPLETE REPLACEMENT OF EXISTING PEDESTAL, PAD, AND ASSOCIATED PIPING TO MEET CURRENT CALIFORNIA DEPARTMENT OF PUBLIC HEALTH STANDARDS.
4. EXPOSE EXISTING WELL CASING.
5. ALL REINFORCING SHALL BE #5 @ 12" UNLESS OTHERWISE NOTED.



<i>Designed:</i>	M. MARTIN
<i>Drawn:</i>	F. OLSON
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<i>Approved:</i>	M. MARTIN
<i>P.E. No:</i>	C35079
<i>GEI Project</i>	2204930



CITY OF ORLAND
815 FOURTH ST.
ORLAND, CA 95963

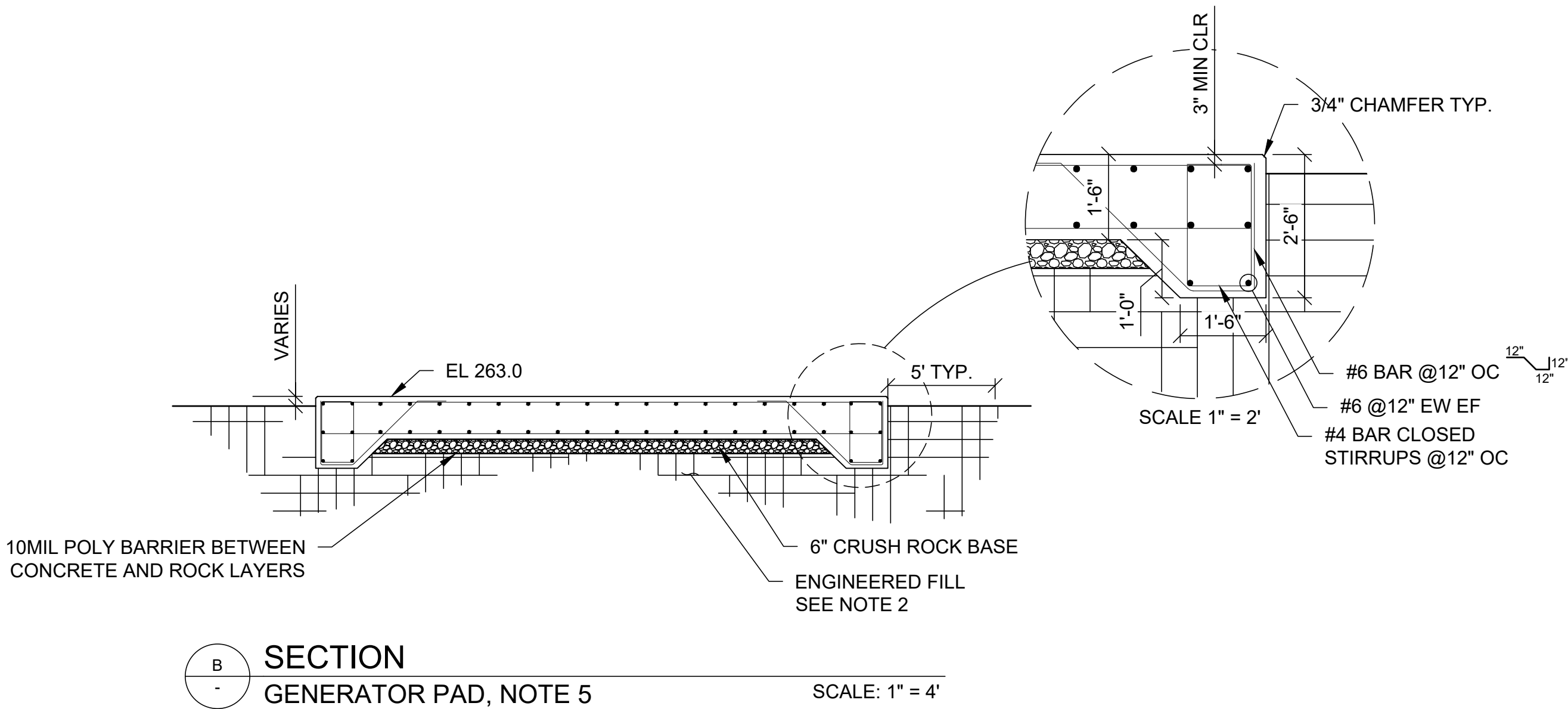
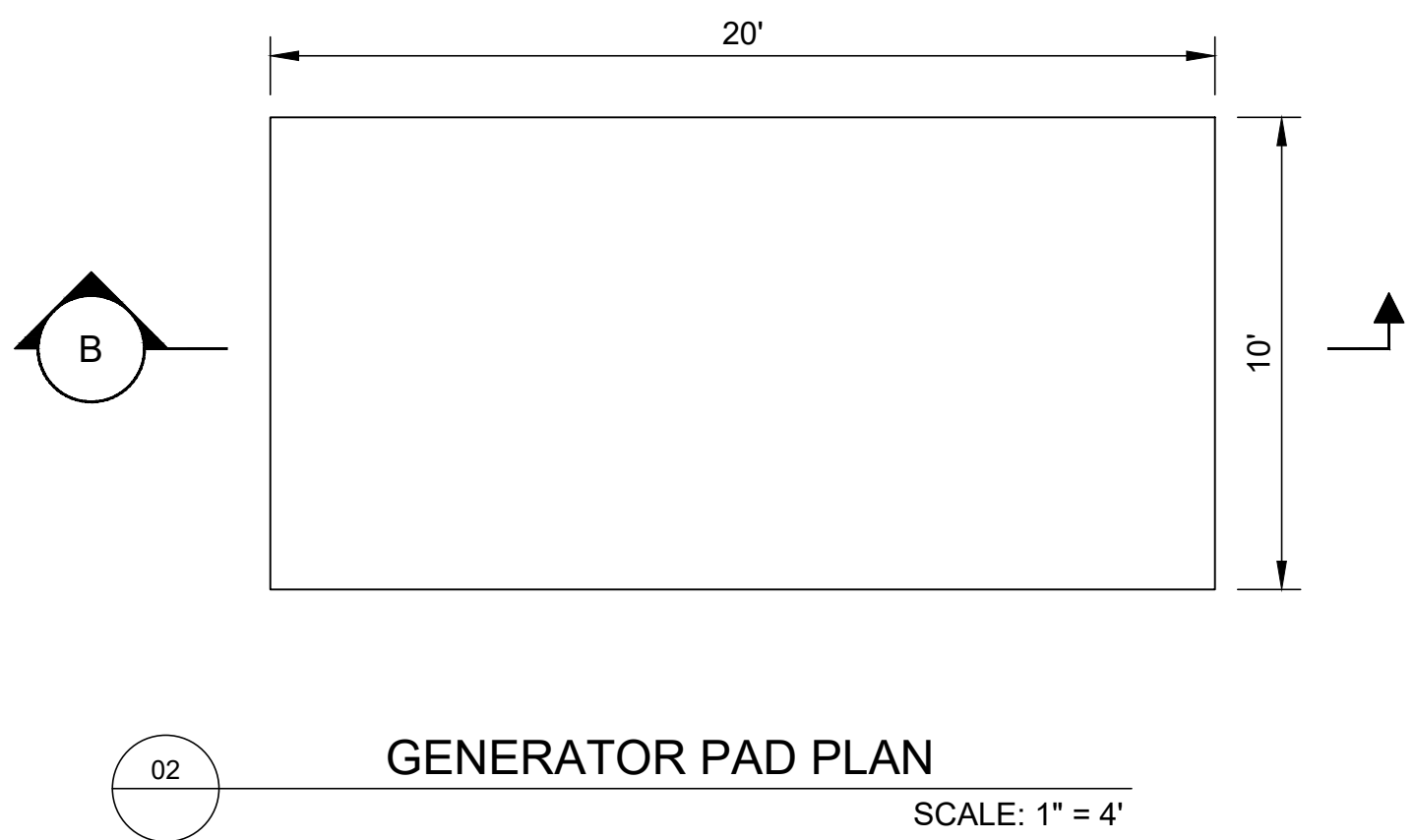
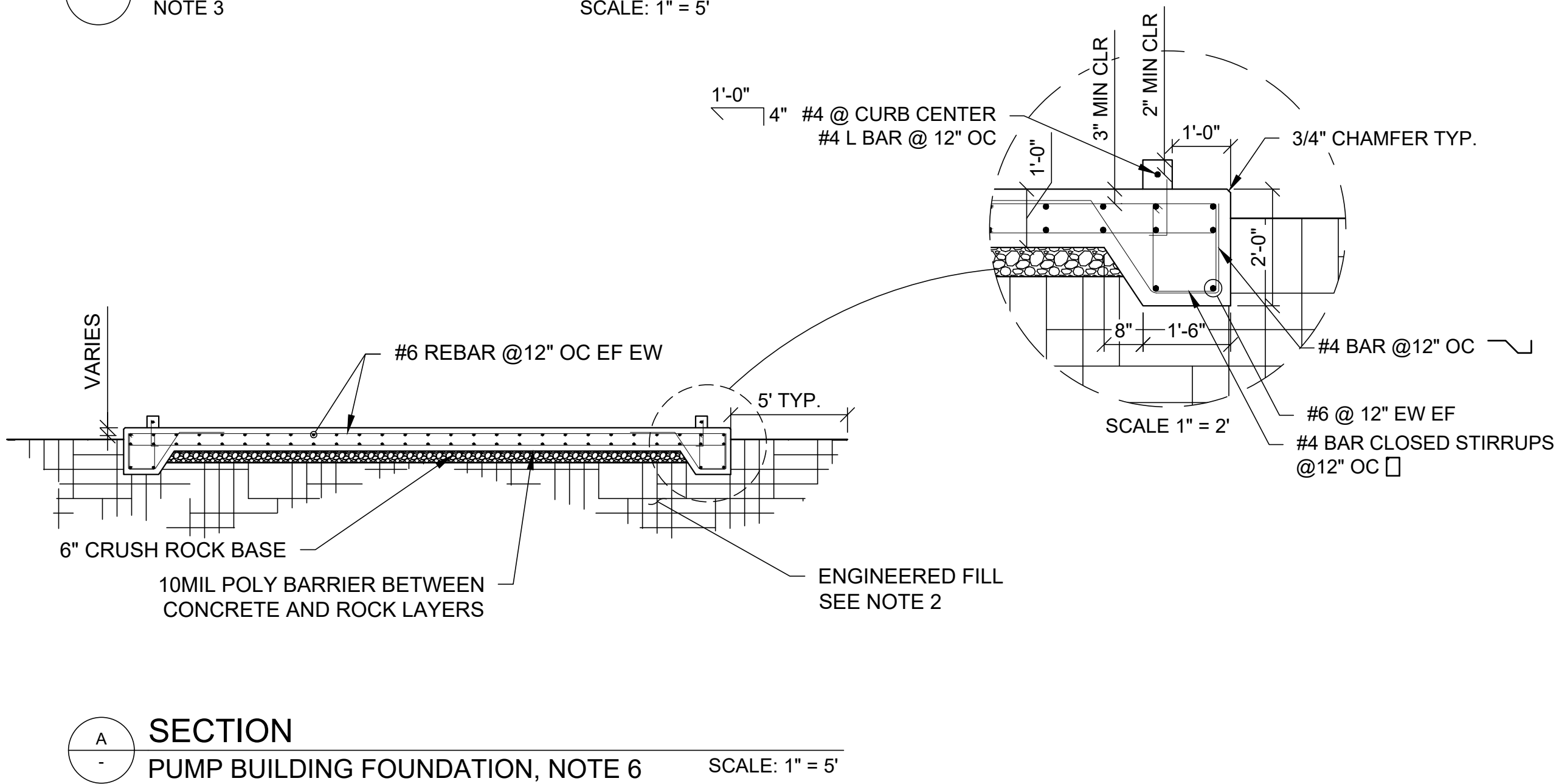
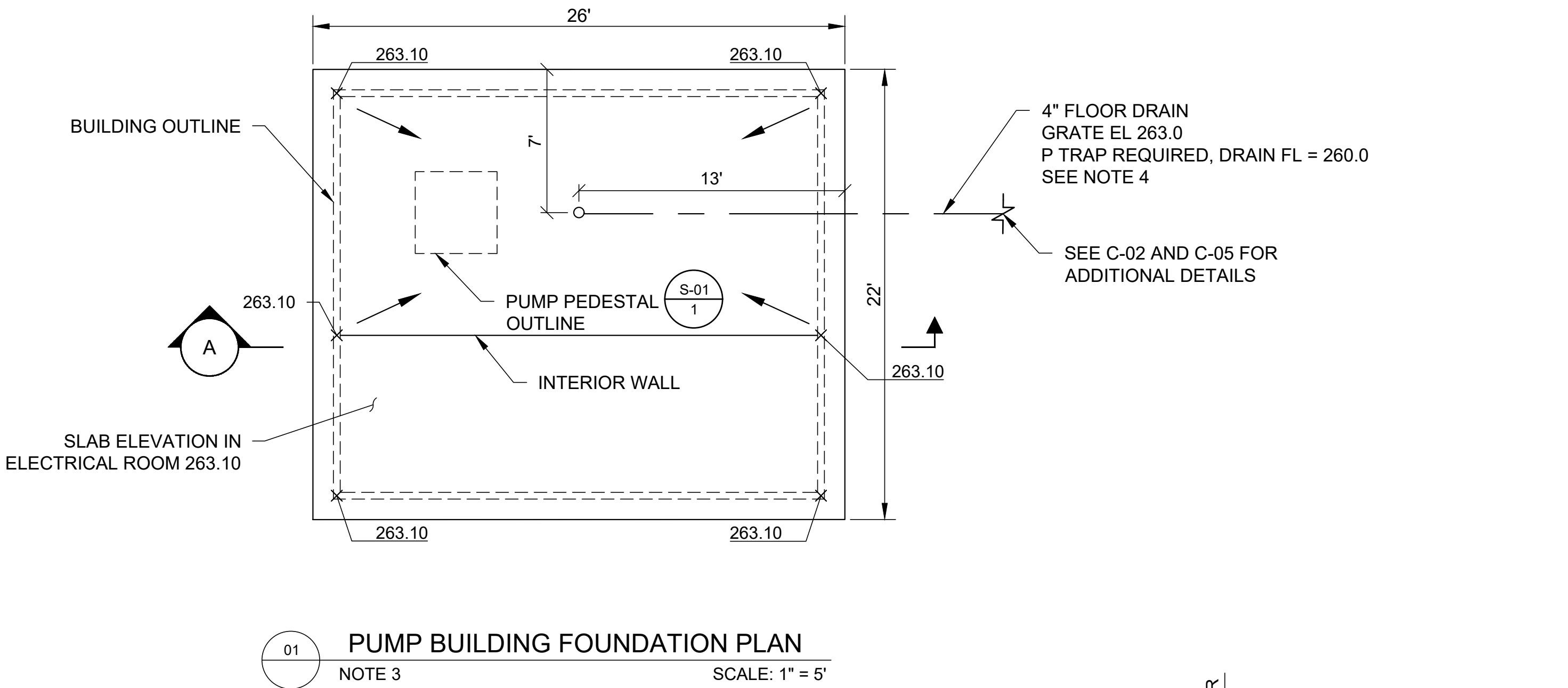
**ORLAND EMERGENCY
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RESOURCE PROJECT
PHASE 3B**

				SHEET NAME	SHEET. NO. 13 OF 28
0	3/25/2025	ISSUED FOR BID	MM	STRUCTURAL DETAILS	S-01
NO	DATE	ISSUE/REVISION	APP		

ISSUED FOR BID

SHEET. NO.
3 OF 28

S-01



NOTES:

- SEE SPECIFICATIONS FOR EARTHWORK AND BACKFILL.
- EXCAVATE FOUNDATION SOIL A MIN OF 2-FEET BELOW BOTTOM OF CONCRETE FOOTING AND 5-FEET BEYOND THE STRUCTURE. SCARIFY THE SUBGRADE 8" AND COMPACT TO 95% RELATIVE COMPACTION. BACKFILL WITH ENGINEERED FILL COMPACTED TO 95% RELATIVE COMPACTION.
- CONCRETE HOUSE KEEPING PAD FOR PLC NOT SHOWN ON DETAIL, SEE ELECTRICAL DRAWINGS.
- PROVIDE 1" POLYSTYRENE FOAM AROUND FLOOR DRAIN WHERE IT CROSSES THE CONCRETE FOOTING.
- CONCRETE ANCHORS FOR GENERATOR NOT SHOWN.
- CONCRETE SIDEWALK NOT SHOWN.

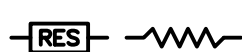
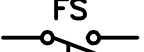

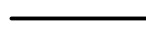



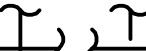
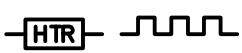











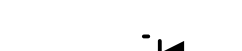


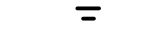


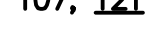
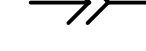



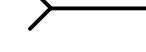
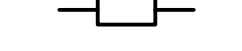

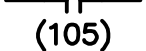







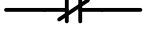













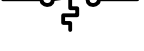

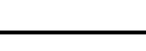
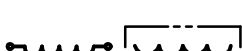

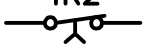
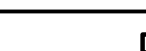
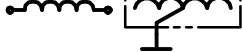
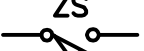








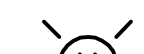
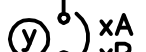


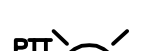
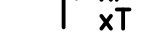

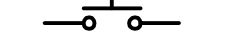





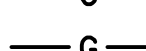
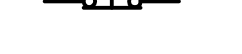


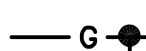




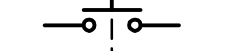



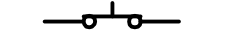













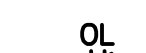



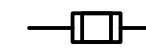

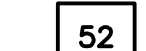














<p>Attention:</p> <p>0 1"</p> <p>If this scale bar does not measure 1" then drawing is not original scale.</p>		Designed: M. MARTIN
		Drawn: F. OLSON
		Checked: C. TRUEBLOOD
		Approved: M. MARTIN
		P.E. No: C35079
		GEI Project 2204930



ORLAND EMERGENCY GROUNDWATER RESOURCE PROJECT PHASE 3B					SHEET NAME GENERATOR PAD AND PUMP BUILDING DETAILS	SHEET. NO. 14 OF 28 S-02
	0	3/25/2025	ISSUED FOR BID	MM		
	NO	DATE	ISSUE/REVISION	APP		

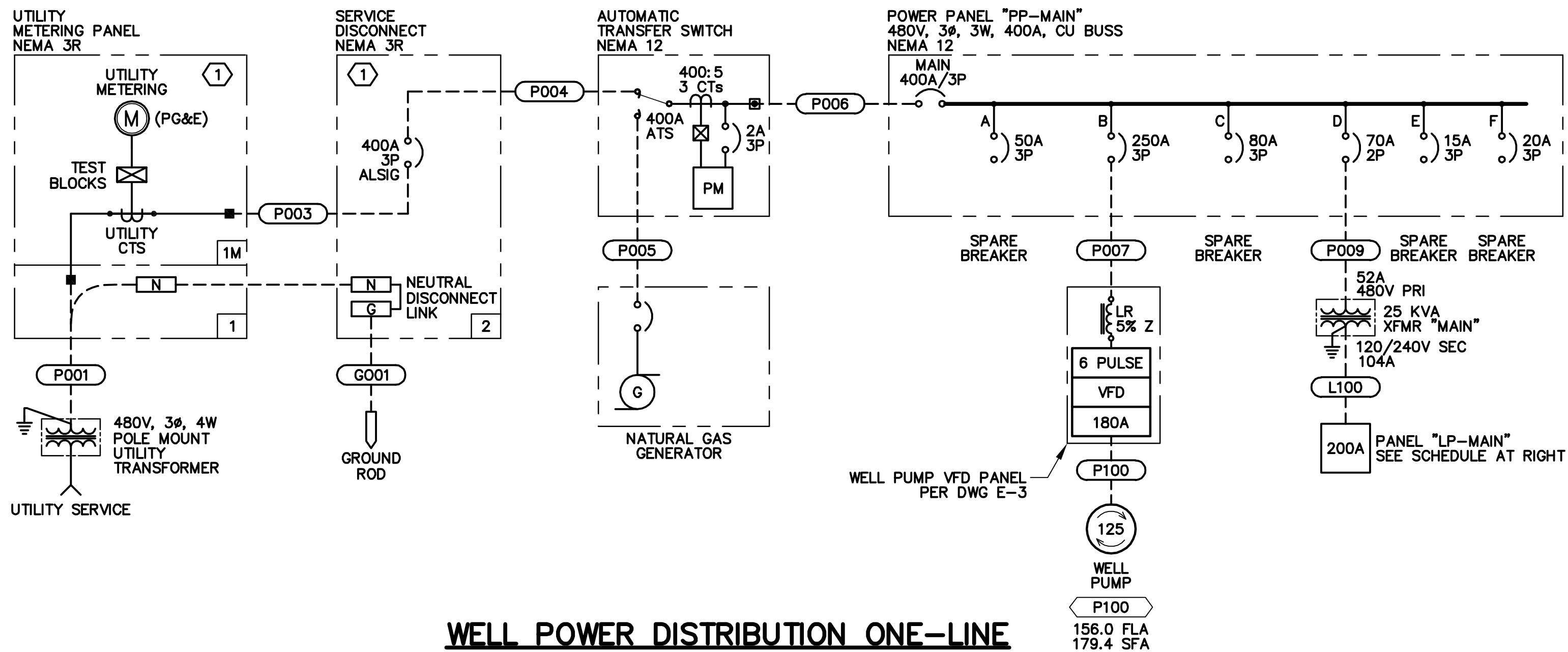
DAVID C. GEI\1901051_Orange Vale Water Co. Well No. 3, I-CAD\GEI-Orange Vale Water Co. Well No. 3.dwg - 7/26/2022

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
COMPONENTS		SWITCHES – PROCESS		DEVICES – RELAY		WIRING – CONNECTIONS	
	RESISTOR		FLOW SWITCH – CLOSSES UPON INCREASING FLOW		CONTACTOR OR STARTER M1		PANEL OR EQUIPMENT WIRING
	SOLENOID COIL		FLOW SWITCH – OPENS UPON INCREASING FLOW		CONTROL RELAY CR1		FIELD WIRING
	HEATER		LEVEL SWITCH – CLOSSES UPON INCREASING LEVEL		TIME DELAY RELAY TR2 – ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN		CONDUCTORS – NOT CONNECTED
	CAPACITOR		LEVEL SWITCH – OPENS UPON INCREASING LEVEL		TIME DELAY ON ENERGIZATION TIME DELAY ON DE-ENERGIZATION		CONDUCTORS – CONNECTED
	DIODE		PRESSURE SWITCH – CLOSSES UPON INCREASING PRESSURE (DECREASING VACUUM)		NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105		GROUND CONNECTION
	DIODE, ZENER		TEMPERATURE SWITCH – CLOSSES UPON INCREASING TEMPERATURE		NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1		PLUG AND RECEPTACLE
	METAL OXIDE VARISTOR		TORQUE SWITCH – CLOSSES UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED		INCOMING LINE
	AUDIBLE ALARM		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED		TERMINAL BLOCKS WITH TERMINAL NUMBER AS SHOWN OR AS DETERMINED BY SUBMITTAL
	3 PHASE MOTOR ? = MOTOR HP		LIMIT SWITCH – CLOSSES AT SET LIMIT		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED		DISCONNECTING TERMINAL BLOCK
	3 PHASE MOTOR		LIMIT SWITCH – OPENS AT SET LIMIT		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		FUSE
	SINGLE PHASE MOTOR		TORQUE SWITCH – CLOSSES UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		SHIELDED CABLE
	TRANSFORMER SIZE AND VOLTAGE AS SHOWN		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		CONTACT OPENS AND CLOSSES IN A TIMED REPEAT CYCLE	PLAN – SYMBOLS	
	UTILITY POWER METER		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT, EXPOSED
	UFER GROUND		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT, IN SLAB OR BELOW GRADE
	GROUND ROD		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT, CONCEALED IN WALL OR CEILING
	CURRENT TRANSFORMER RATIO AS NOTED		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT STUBBED OUT & CAPPED
	DISCONNECT SWITCH SIZED PER FEEDER		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT BENDS TOWARD OBSERVER
	POWER DISTRIBUTION BLOCK		TORQUE SWITCH – OPENS UPON INCREASING TORQUE				CONDUIT BENDS AWAY FROM OBSERVER
SWITCHES – OPERATOR		DEVICES – FRONT PANEL		DEVICES – PROTECTIVE			CONDUIT ENDS
	TOGGLE OR DISCONNECT SWITCH		INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE		LOW VOLTAGE MOLDED CASE, INSULATED CASE OR POWER CIRCUIT BREAKER. RATINGS AS SHOWN IN DRAWINGS AND AS DEFINED BELOW: xA: CIRCUIT BREAKER AMERAGE xA: AMPERAGE TRIP xA: AMPERAGE FRAME xP: NUMBER OF POLES xT: TRIP PROTECTION MCP: MOTOR CIRCUIT PROTECTION TM: THERMAL MAGNETIC L: LONG TIME DELAY S: SHORT TIME DELAY I: INSTANTANEOUS TRIP G: GROUND FAULT A: ARC FLASH PROTECTION 100% DUTY RATED		FLEXIBLE CONDUIT CONNECTION FROM J-BOX TO EQUIPMENT
	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION		INDICATING LIGHT, PUSH TO TEST		y: BREAKER FEATURES / OPTIONS – SHUNT TRIP – KIRK–KEY INTERLOCK – MANUALLY CHARGED PUSHBUTTON OPERATION – ELECTRICALLY CHARGED PUSHBUTTON OPERATION		CONDUIT CHANGE IN ELEVATION
	PUSHBUTTON – NORMALLY CLOSED, MOMENTARY UNLESS LOS (LOCK OUT STOP) WHERE MECHANICALLY HELD		ELAPSED TIME METER		THERMAL OVERLOAD CONTACT		BARE COPPER GROUND WIRE
	PUSHBUTTON, MECHANICALLY CONNECTED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN	DEVICES – PROTECTIVE			THERMAL OVERLOAD ELEMENT		GROUND CONNECTION BOLTED TYPE
	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS I.E. AT POSITION OF HAND, OFF, OR AUTO		FUSED POTENTIAL TRANSFORMER, 208 / 120 V SECONDARY OR AS SHOWN		FUSE		GROUND CONNECTION EXOTHERMIC WELD TYPE
	SELECTOR SWITCH, 2 POSITION – MIDDLE POSITION IS DELETED		POWER MONITOR		MEDIUM VOLTAGE CIRCUIT BREAKER		DISCONNECT SWITCH
	ALTERNATE METHOD: X00 = HAND 00X = AUTO, 0X0 = OFF		SURGE PROTECTION DEVICE		TRIP FUNCTIONS PER DRAWINGS AND SPECIFICATIONS		FIELD MOUNTED DEVICE
	POTENTIOMETER		POWER FAIL REPLAY		MULTIFUNCTION RELAY PER SPECIFICATIONS		TELEPHONE/DATA RECEPTACLE
					100%		2 PORT TA568A, 2 CAT 6 CABLES
					– SHUNT TRIP		CONDUIT REFERENCE TO SCHEDULE
					– KIRK–KEY INTERLOCK		THERMOSTAT
					– MANUALLY CHARGED PUSHBUTTON OPERATION		EYS SEAL
					– ELECTRICALLY CHARGED PUSHBUTTON OPERATION		JUNCTION BOX
					THERMAL OVERLOAD CONTACT		PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)
					THERMAL OVERLOAD ELEMENT		LIGHTING FIXTURE
					MEDIUM VOLTAGE CIRCUIT BREAKER		# – CIRCUIT BREAKER NUMBER
					TRIP FUNCTIONS PER DRAWINGS AND SPECIFICATIONS		A – FIXTURE SCHEDULE REF.
					MULTIFUNCTION RELAY PER SPECIFICATIONS		α – CONTROL SWITCH REFERENCE
					TOGGLE SWITCH		DUPLEX RECEPTACLE
					3 – 3 WAY		# – CIRCUIT BREAKER NUMBER
					MOTION DETECTOR		WP – WEATHERPROOF (IF SHOWN)
					TIMER SWITCH		GFI – GROUND FAULT TYPE
					SPECIAL RECEPTACLE AS REQUIRED FOR EQUIPMENT TO BE CONNECTED		

MISCELLANEOUS ABBREVIATIONS			
&	AND	N	NEUTRAL
AT	AT	NC	NORMALLY CLOSED
AMBER, AMPERES	AMBER, AMPERES	NHC	NORMALLY HELD CLOSED
ALTERNATING CURRENT	ALTERNATING CURRENT	NHO	NORMALLY HELD OPEN
ACKNOWLEDGE	ACKNOWLEDGE	NIC	NOT IN CONTRACT
ABOVE FINISHED FLOOR	ABOVE FINISHED FLOOR	NL	NIGHT LIGHT
AMP HOUR	AMP HOUR	NO	NORMALLY OPEN
ANALOG INPUT	ANALOG INPUT	NTS	NOT TO SCALE
AMP INTERRUPTING CAPACITY SYMMETRICAL	AMP INTERRUPTING CAPACITY SYMMETRICAL	(N)	NEW
AMP METER	AMP METER	OC	ON CENTER
ANALOG OUTPUT	ANALOG OUTPUT	OI, OIT	OPERATOR INTERFACE
AMERICAN WIRE GUAGE	AMERICAN WIRE GUAGE	OL	OVERLOAD
AUTOMATIC TRANSFER SWITCH	AUTOMATIC TRANSFER SWITCH	ORP	OXIDATION REDUCTION POTENTIAL
BATTERY	BATTERY	P	POLE
BELOW FINISHED CEILING	BELOW FINISHED CEILING	PB	PUSHBUTTON
BIOCHEMICAL OXYGEN DEMAND	BIOCHEMICAL OXYGEN DEMAND	PBX	PULL BOX
BAND PASS FILTER	BAND PASS FILTER	PDB	POWER DISTRIBUTION BLOCK
BYPASS	BYPASS	PF	POWER FACTOR
CONDUIT	CONDUIT	PFR	POWER FAIL RELAY
CAPACITOR	CAPACITOR	PH	HYDROGEN ION CONCENTRATION
CIRCUIT BREAKER	CIRCUIT BREAKER	PLC	PROGRAMMABLE LOGIC CONTROLLER
CIRCUIT	CIRCUIT	PM	POWER MONITOR
COAXIAL CABLE	COAXIAL CABLE	PNL	PANEL
COMMUNICATION	COMMUNICATION	POT	POTENTIOMETER
CONTROL RELAY	CONTROL RELAY	PR	PAIR, TWISTED AND SHIELDED
CURRENT TRANSFORMER	CURRENT TRANSFORMER	PRI	PRIMARY
CONSTANT SPEED	CONSTANT SPEED	PROVIDE	FURNISH, INSTALL, AND CONNECT
COPPER	COPPER	PS	PRESSURE SWITCH
DIRECT CURRENT	DIRECT CURRENT	PT	POTENTIAL TRANSFORMER
DETAIL	DETAIL	PTT	PUSH TO TEST
DIGITAL INPUT	DIGITAL INPUT	PVC	POLYVINYLCHLORIDE
DISCONNECT	DISCONNECT	PWR	POWER
DIGITAL OUTPUT	DIGITAL OUTPUT	REF	REFERENCE
DOUBLE POLE DOUBLE THROW	DOUBLE POLE DOUBLE THROW	RFI	RADIO FREQUENCY INTERFERENCE
DRAWING	DRAWING	RMS	ROOT MEAN SQUARE
ELECTRICAL DRAWING DETAIL	ELECTRICAL DRAWING DETAIL	RTD	RESISTANCE TEMPERATURE DETECTOR
ELEVATION	ELEVATION	RST	RESET
ETHERNET	ETHERNET	RVAT	REDUCE VOLTAGE AUTO TRANSFORMER
ELAPSED TIME METER	ELAPSED TIME METER	RTU	REMOTE TERMINAL UNIT
ETHERNET SWITCH	ETHERNET SWITCH	(R)	REWIRE, RELOCATE, REVISE, REUSE
EXISTING	EXISTING	SCH	SCHEDULE
FIELD CONTROL STATION	FIELD CONTROL STATION	SEC	SECONDARY, SECOND
FULL LOAD AMPS	FULL LOAD AMPS	SECS	SECONDS
FLEXIBLE LIQUID TIGHT CONDUIT	FLEXIBLE LIQUID TIGHT CONDUIT	SEL	SELECTOR
FULL SPEED	FULL SPEED	SFA	SERVICE FACTOR AMPS
FULL VOLTAGE NON-REVERSING	FULL VOLTAGE NON-REVERSING	SPEC	SPECIFICATION
FULL VOLTAGE REVERSING	FULL VOLTAGE REVERSING	SPD	SURGE PROTECTIVE DEVICE
FORWARD	FORWARD	SS	STAINLESS STEEL
FUTURE	FUTURE	SSRC	STAINLESS STEEL RIGID CONDUIT
GALVANIZED	GALVANIZED	SSS	SOLID STATE STARTER
GROUND FAULT INTERRUPTER	GROUND FAULT INTERRUPTER	STT	START
GROUND	GROUND	STP	STOP
GALVANIZED RIGID STEEL CONDUIT	GALVANIZED RIGID STEEL CONDUIT	SV	SOLENOID VALVE
PVC COATED GRS CONDUIT	PVC COATED GRS CONDUIT	SW	SWITCH
HIGH	HIGH	SWBD	SWITCHBOARD
HUMAN INTERFACE MODULE	HUMAN INTERFACE MODULE	SYM	SYMMETRICAL
HAND OFF AUTO	HAND OFF AUTO	TB	TERMINAL BLOCK
HORSE POWER	HORSE POWER	TC	TIME CLOCK
HIGH PRESSURE SODIUM	HIGH PRESSURE SODIUM	TDOD	TIME DELAY ON DE-ENERGIZATION
HAND SWITCH	HAND SWITCH	TDOE	TIME DELAY ON ENERGIZATION
HEATER	HEATER	TELCO	TELEPHONE COMPANY
HERTZ	HERTZ	TM	THERMAL MAGNETIC
HAZARD	HAZARD	TEMP	TEMPERATURE
INTERLOCK	INTERLOCK	TR	TIME DELAY RELAY
INPUT/OUTPUT	INPUT/OUTPUT	TRIAD	TWISTED AND SHIELDED 3 CONDUCTOR
INSTANTANEOUS	INSTANTANEOUS	TS	TEMPERATURE SWITCH
INTRINSICALLY SAFE RELAY	INTRINSICALLY SAFE RELAY	TSPR	TWISTED AND SHIELDED PAIR
INTRINSICALLY SAFE	INTRINSICALLY SAFE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
JUNCTION BOX	JUNCTION BOX	TYP	TYPICAL
KILO, PREFIX	KILO, PREFIX	UG	UNDERGROUND
LIGHTNING ARRESTOR	LIGHTNING ARRESTOR	ULH	ULTRA LOW HARMONIC
LIGHTING CONTACTOR	LIGHTING CONTACTOR	UON	UNLESS OTHERWISE NOTED
LOWER EXPLOSION LIMIT	LOWER EXPLOSION LIMIT	UPS	UNINTERRUPTIBLE POWER SUPPLY
LOCK OUT STOP	LOCK OUT STOP	V	VOLTAGE
LIMIT SWITCH	LIMIT SWITCH	VA	VOLT AMPS
MOTOR CONTACTOR	MOTOR CONTACTOR	VAR	VOLT AMPS REACTIVE
MAGNETIC FLOWMETER	MAGNETIC FLOWMETER	VFD	VARIABLE FREQUENCY DRIVE
MAXIMUM	MAXIMUM	VLV	VALVE
MOTOR CONTROL CENTER	MOTOR CONTROL CENTER	VM	VOLTMETER
THOUSAND CIRCULAR MILS	THOUSAND CIRCULAR MILS	VMR	VOLTAGE MONITOR RELAY
MOTOR CIRCUIT PROTECTOR	MOTOR CIRCUIT PROTECTOR	VR	VOLTAGE RELAY
MOLDED CASE SWITCH	MOLDED CASE SWITCH	W	WATTS
MANHOLE	MANHOLE	WP	WEATHER PROOF, NEMA 3R
MINIMUM, MINUTE	MINIMUM, MINUTE	WTP	WATER TREATMENT PLANT
MODEM	MODEM	WWTP	WASTE WATER TREATMENT PLANT
MOTOR OPERATED VALVE	MOTOR OPERATED VALVE	XFMR	TRANSFORMER
MOTOR	MOTOR	Z	IMPEDANCE
MULTIPLEXER	MULTIPLEXER	ZS	LIMIT SWITCH
MERCURY VAPOR, MEDIUM VOLTAGE	MERCURY VAPOR, MEDIUM VOLTAGE		

ISSUED FOR BID

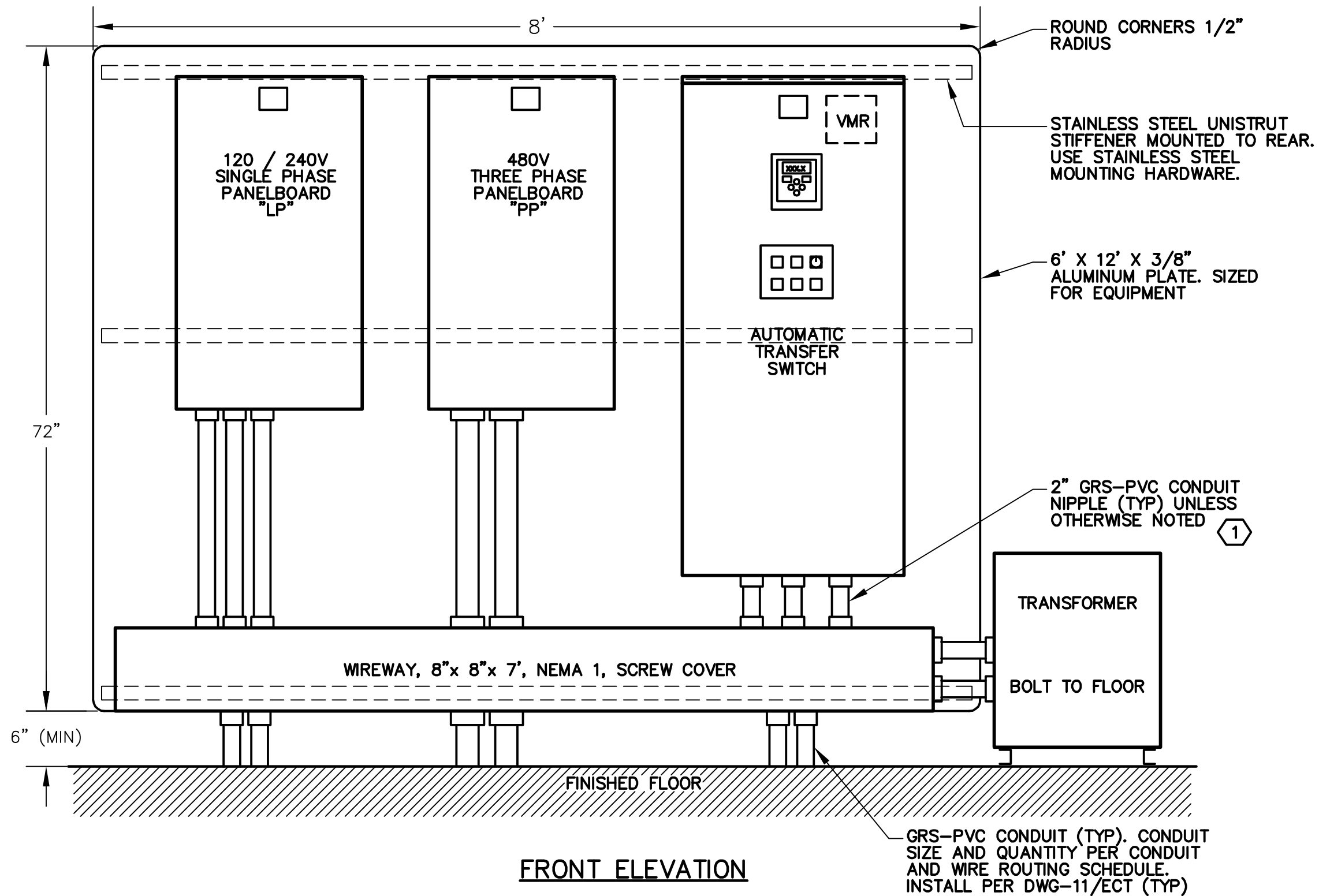
DAVID C:\GEI\1901051_Orange Vale Water Co - Well No. 3\CAD\GEI-Orange Vale Water Co Well No. 3.dwg - 7/26/2022



WELL POWER DISTRIBUTION ONE-LINE

DRAWING REFERENCED NOTES:

- ① SEE PANEL ELEVATION AND INSTALLATION DETAILS ON DRAWING E-12.



WELL CONTROL BUILDING ELECTRICAL WALL LAYOUT ②③

NEMA 1 INDOOR

DRAWING REFERENCED NOTES:

- ① CONDUITS ABOVE WIREWAY ARE NOT NUMBERED AND ARE COLLECTORS FOR UNDERGROUND CONDUITS AND WIREWAY.
② DIMENSIONS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL LAYOUT PURPOSES ONLY.
③ SELECT CONDUITS SHOWN, SEE SITE PLANS FOR ALL CONDUITS.

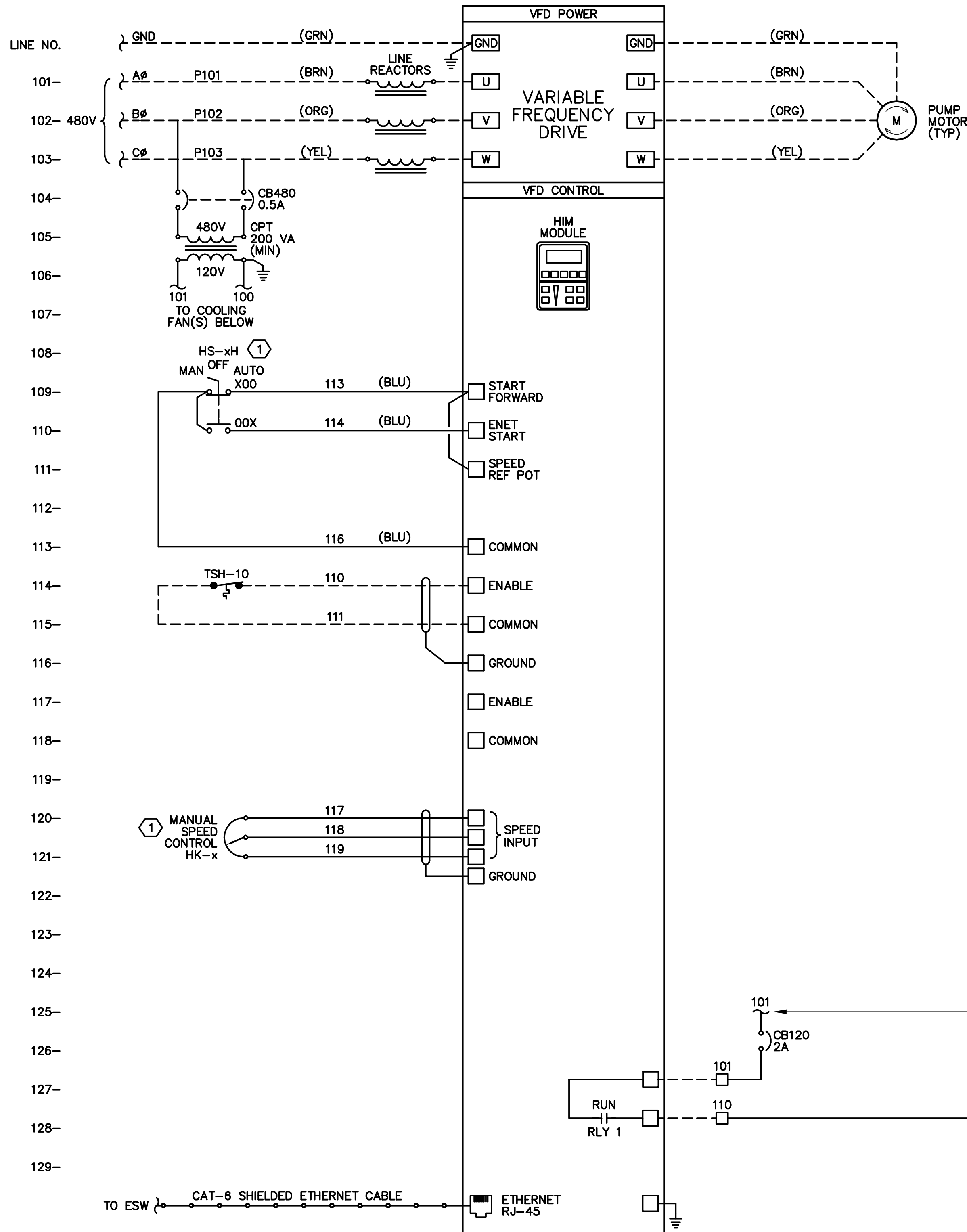
LOAD CALCULATIONS											
CONNECTED LOAD				DEMAND LOAD				GENERATOR LOAD			
LOAD DESCRIPTION		LOAD	QTY	TOTAL	LOAD	QTY	TOTAL	LOAD	QTY	TOTAL	
125HP WELL PUMP		156.00	A 1	129696.0 VA	156.00	A 1	129696.0 VA	156.00	A 1	129696.0 VA	
PANELBOARD LP	120/240	13.14	A 1	10925.0 VA	10.51	A 1	8740.0 VA	10.51	A 1	8740.0 VA	
TOTAL LOAD =		169.14	A <	140621.0 VA	166.51	A <	138436.0 VA	166.51	A <	138436.0 VA	
LOAD CORRECTION FACTORS								GENERATOR SIZE			
LARGEST MOTOR LOAD		x 25%						NAMEPLATE = 180 KW 225 KVA			
125HP HP =>	0.25 x	129696.0 VA	=	39.00 A	32424.0 VA	39.00 A	32424.0 VA	⊙ TEMP OF 100 deg F			
80% BREAKER DERATING =	TOTAL x 0.25 =	52.04 A	43261.2 VA	51.38 A	42715.0 VA	ELEVATION OF 200 FT ASL					
FOR CONTINUOUS LOADS NEC 210—20								DERATED SIZE = 175.9 KW 219.8 KVA			
SERVICE SIZE (MIN)		=	260.18 AMP	216306.2VA	256.89 A	213574.9VA	AMPERAGE = 264 A ⊙ 0.8 PF				
UTILITY SERVICE =		400 AMP	UTILIZATION % = 71 % ⊙ 0.90 PF								
480V, 3 PHASE, 4 WIRE		VOLT DIP % = 15% MAXIMUM									

PANEL "LP"												
LOCATION:MCC SECTION ENCLOSURE:NEMA 1A AIC RATING:10 KAIC						120/ 240 VOLTS, 1 PHASE, 3 WIRE 200 AMP BUS 150 AMP MAIN BREAKER						
BKR NO.	DESCRIPTION	LOAD VA	LINE AMPS	AMPS/ POLE	BKR NO.	BKR NO.	AMPS/ POLE	LINE AMPS	LOAD VA	DESCRIPTION	BKR NO.	
1	LIGHTING INDOORS	336	2.8	20/1	1	2	20/1	4.6	550	CONTROL PANEL	2	
3	LIGHTING OUTDOORS	304		2.5	20/1	4	20/1	3.3	400	CONTROL PANEL AUXILLIARY	4	
5	RECEPTACLE INDOORS—ELECTRICAL ROOM	660	5.5	20/1	5	6	15/1	0.0	0	SPARE	6	
7	RECEPTACLE INDOORS—PUMP ROOM	1800		15.0	20/1*	7	8	10/1	0.0	0	SPARE	8
9	RECEPTACLE OUTDOORS	660	5.5	20/1*	9	10	15/1	12.5	1500	HVAC	10	
11	CHEMICAL BUILDING LIGHTING	150		1.3	20/1	11	12	20/1*	6.3	750	GENERATOR RECEPTACLE	12
13	SITE LIGHTING	350	2.9	20/1	13	14	30/2	12.7	1520	GENERATOR BLOCK HEATER	14	
15	EXHAUST FAN	175		1.5	20/1	15	16		12.7	1520		16
17	RECEPTACLE—ATT BACKBOARD	660	5.5	20/1	17	18	20/1	0.0	0	SPARE	18	
19	SPARE	0		0.0	20/1	19	20	20/1	0.0	0	SPARE	20
21	RECEPTACLE—CHEMICAL PUMP	250	2.1	20/1	21	22	20/1	0.0	0	SPARE	22	
23	SPARE	0		0.0	20/1	23	24	20/1	0.0	0	SPARE	24
25	HVAC	1250	10.4	20/2	25	26	20/1	0.0	0	SPARE	26	
27		1250	10.4		27	28		0.0	0	SPACE	28	
29	SPARE	0	0.0	20/1	29	30		0.0	0	SPACE	30	
31	SPARE	0		0.0	20/1	31	32		0.0	0	SPACE	32
33	SPARE	0	0.0	20/1	33	34		0.0	0	SPACE	34	
35	SPACE	0		0.0	35	36		0.0	0	SPACE	36	
37	SPACE	0	0.0		37	38		0.0	0	SPACE	38	
39	SPACE	0		0.0	39	40		0.0	0	SPACE	40	
41	SPACE	0	0.0		41	42		0.0	0	SPACE	42	
<div>PHASE A B LEFT SIDE AMPS 34.72 30.66 LEFT SIDE KVA 4.17 3.68 TOTAL PHASE KVA 7.74 6.35 TOTAL PHASE AMPS 64 53 % OF AVERAGE 110 90</div>						<div>NEUTRAL GROUND PHASE A B RIGHT SIDE AMPS 29.75 22.25 RIGHT SIDE KVA 3.57 2.67 TOTAL KVA 14.09 TOTAL AMPS @ 240V, 1P 58.69 DIVERSITY FACTOR 0.80 LOAD KVA 11.27</div>						

- NOTES: 1 MEANS OF WIRE COLOR CODING SHALL BE POSTED ON PANELBOARD PER NEC 210 (4)
2 ASTERISK (*) DENOTES GFI BREAKER REQUIRED WITH 5 MA SENSITIVITY
3 TILDA (~) DENOTES GFI BREAKER REQUIRED WITH 30 MA SENSITIVITY

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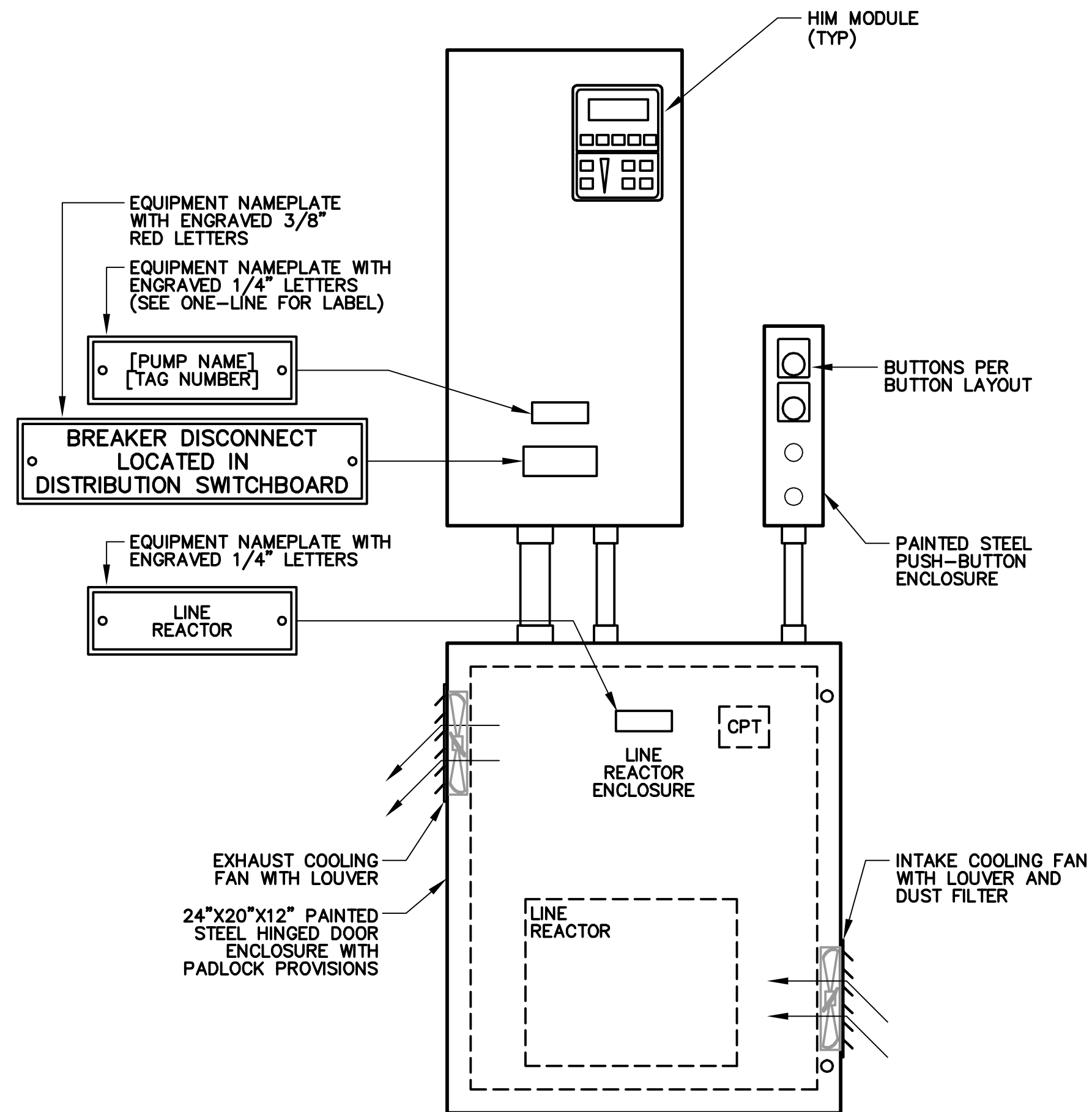
DAVID C. GEI\1901051_Orange Vale Water Co - Well No. 3, CAD\GEI-Orange Vale Water Co Well No. 3.dwg - 7/26/2022



VFD MOTOR ELEMENTARY DIAGRAM

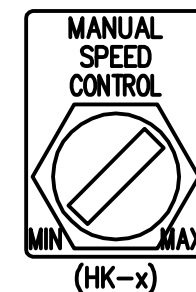
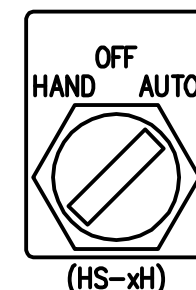
NOTES REFERENCED IN DRAWING:

1 LOCATED IN PUSHBUTTON ENCLOSURE.



VFD PANEL ELEVATION

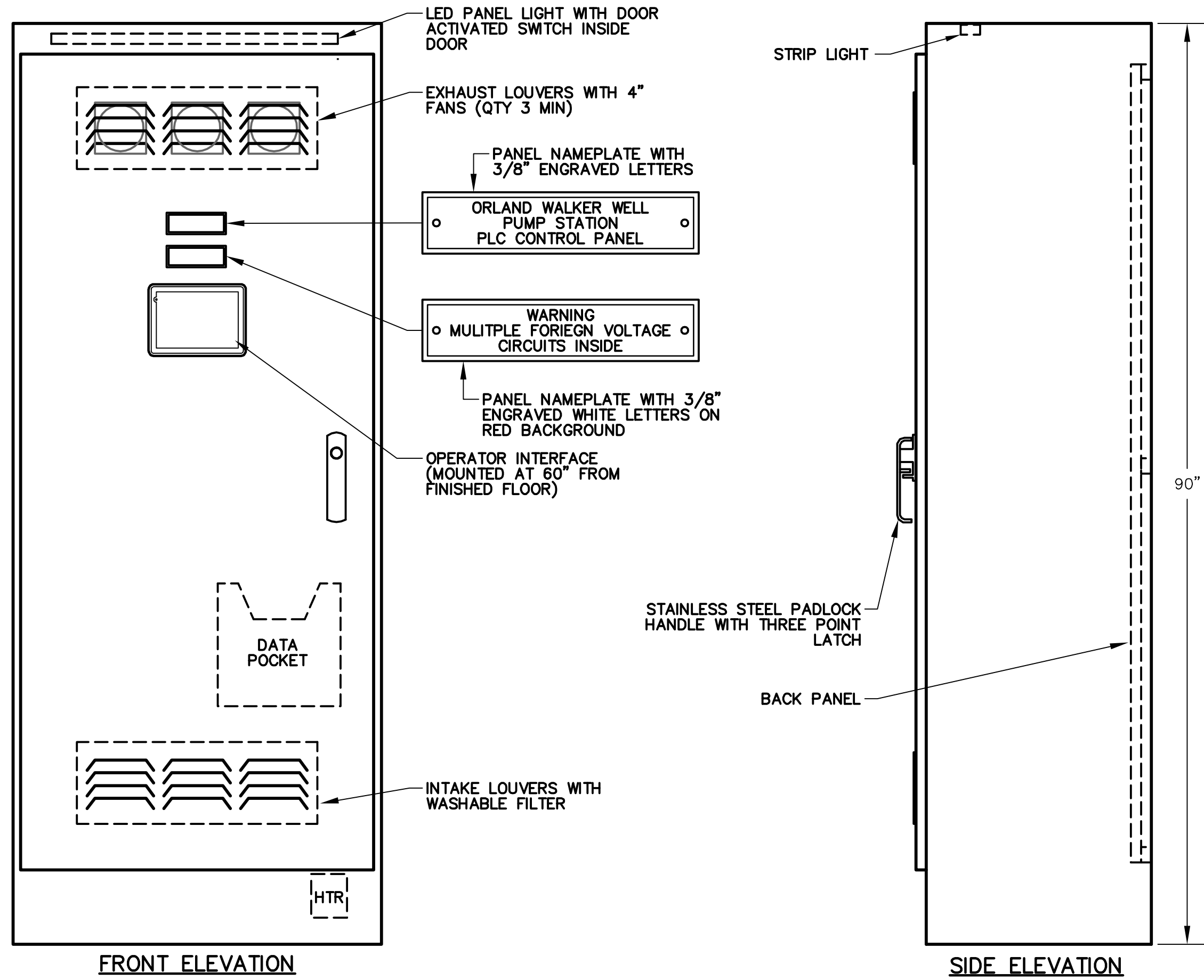
NEMA 1, NOT TO SCALE



BUTTON LAYOUT

NOT TO SCALE

ISSUED FOR BID

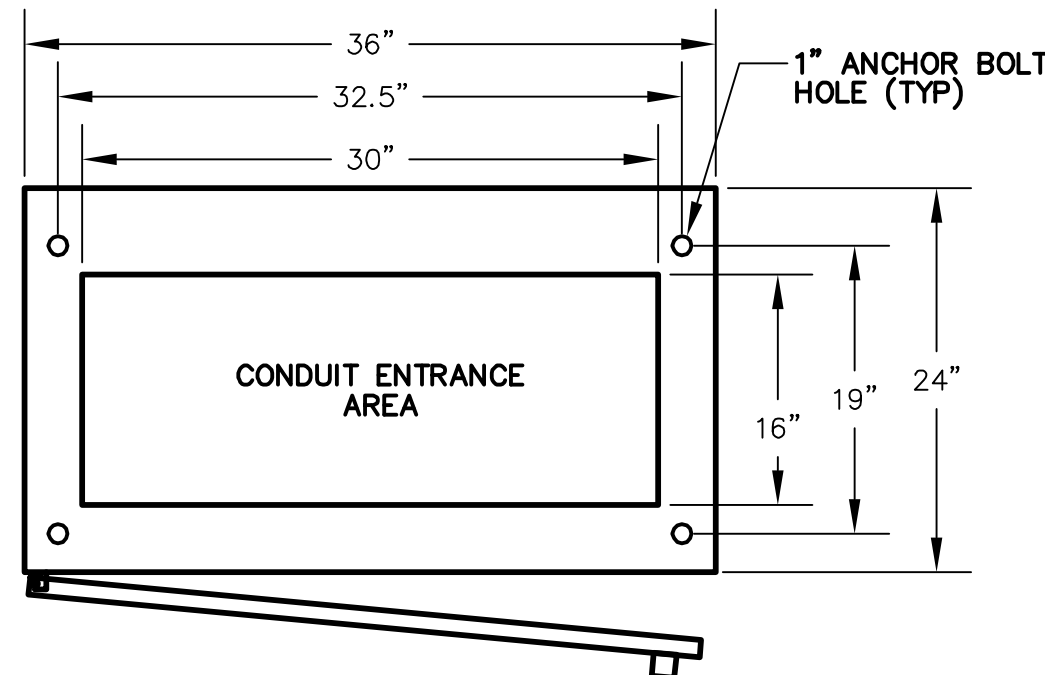


FRONT ELEVATION

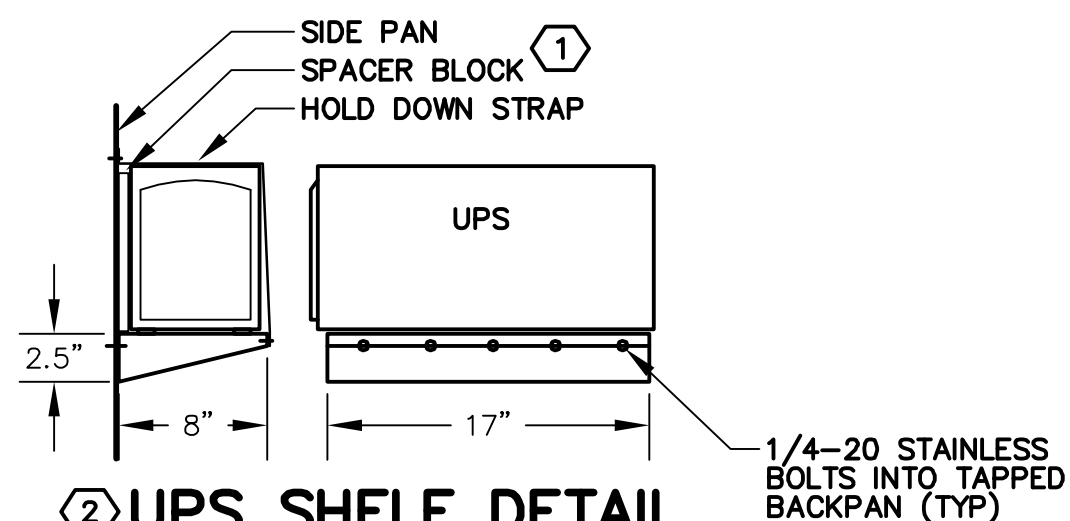
SIDE ELEVATION

ELEVATION ②

SCALE: 1" = 10"



BASE PLAN



UPS SHELF DETAIL ②

SCALE: 1" = 10"

PANEL FABRICATION METHODS

1. NEMA 4X, STAINLESS STEEL.
2. OUTER DOOR SEALED WITH RUBBERIZED FOAM GASKET.
3. PANEL SHALL BE FABRICATED FROM BRUSHED STAINLESS STEEL.
4. 12 GAUGE EXTERIOR AND 14 GAUGE INTERIOR.
5. ALL SEAMS SHALL HAVE CONTINUOUS WELD GROUND SMOOTH.
6. DOOR TO BE PADLOCKABLE WITH HEAVY DUTY 3 POINT LATCH.
7. DOOR HINGES AND PINS SHALL BE CONTINUOUS, HEAVY DUTY.
8. NO SCREWS, RIVETS, OR BOLTS SHALL PROTRUDE EXTERNALLY.
9. INTERNAL SCREWS, RIVETS, BOLTS, AND NUTS SHALL BE MACHINE THREAD INTO TAPPED BACKPAN.
10. EXTERIOR PANEL COLOR: NA.
11. MOUNTING PAN AND INTERIOR DOOR COLOR: WHITE.
12. FABRICATION AND WRING SHALL CONFORM TO U.L. AND NEMA STANDARDS.
13. ALL WRING SHALL BE PERMANENTLY LABELED WITH WIRE MARKERS ON BOTH ENDS.
14. WRING DIAGRAMS SHALL BE PLACED IN A PLASTIC DRAWING HOLDER PERMANENTLY ATTACHED TO THE INSIDE OF THE FRONT DOOR.
15. AS - BUILT WRING DIAGRAMS SHALL BE SHIPPED WITH EQUIPMENT.

GENERAL NOTES:

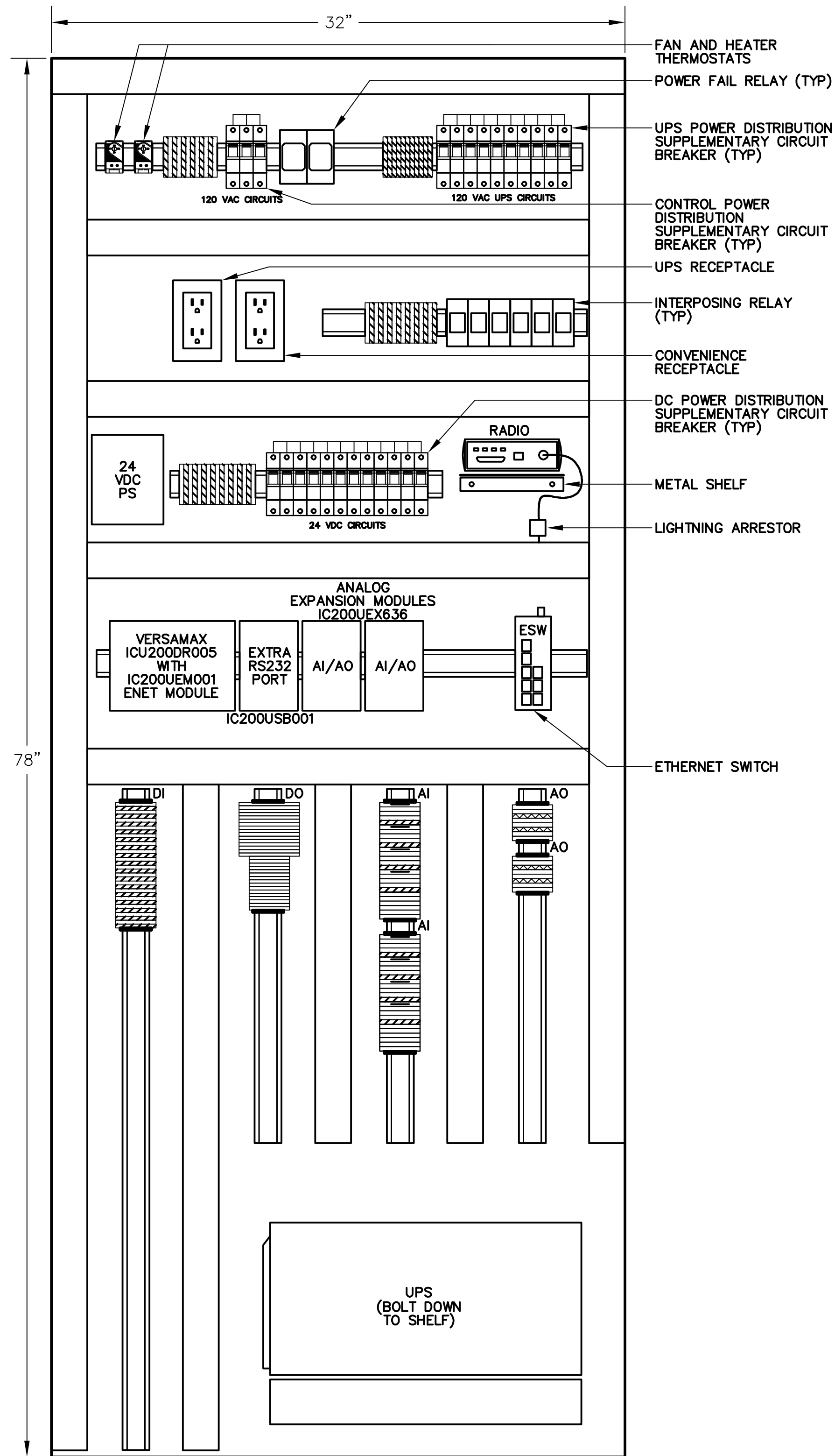
1. REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ACTUAL BACKPAN LAYOUT SHALL BE SIMILAR TO LAYOUT SHOWN. SUBMIT SCALED BACKPAN LAYOUT FOR REVIEW BY ENGINEER.
2. QUANTITY OF TERMINAL BLOCKS AND RELAYS SHALL BE AS DETERMINED BY P&IDS AND EXAMPLE I/O WRING DIAGRAM.

LAYOUT REFERENCED NOTES:

- ① WIRE I/O TO TERMINAL BLOCK PER EXAMPLE I/O WRING DIAGRAMS.
- ② CONTROL ENCLOSURE SHALL BE FREESTANDING PAINTED STEEL. PROVIDE SAGINAW MODEL NUMBER SCE 903624FS OR EQUAL. PROVIDE PADLOCKABLE 3-POINT DOOR LATCH, SWINGOUT PANEL, BACKPAN AND ANY OTHER PARTS TO COMPLETE PANEL.

UPS DETAIL NOTES:

- ① DO NOT BLOCK VENTS WITH SPACER BLOCK. USE TWO.
- ② FABRICATED FROM 14 GA (MIN) PAINTED GALVANEAL OR STAINLESS STEEL SOLID SIDES, TOP, BACK AND FRONT WITH CONTINUOUS WELDED SEAMS.

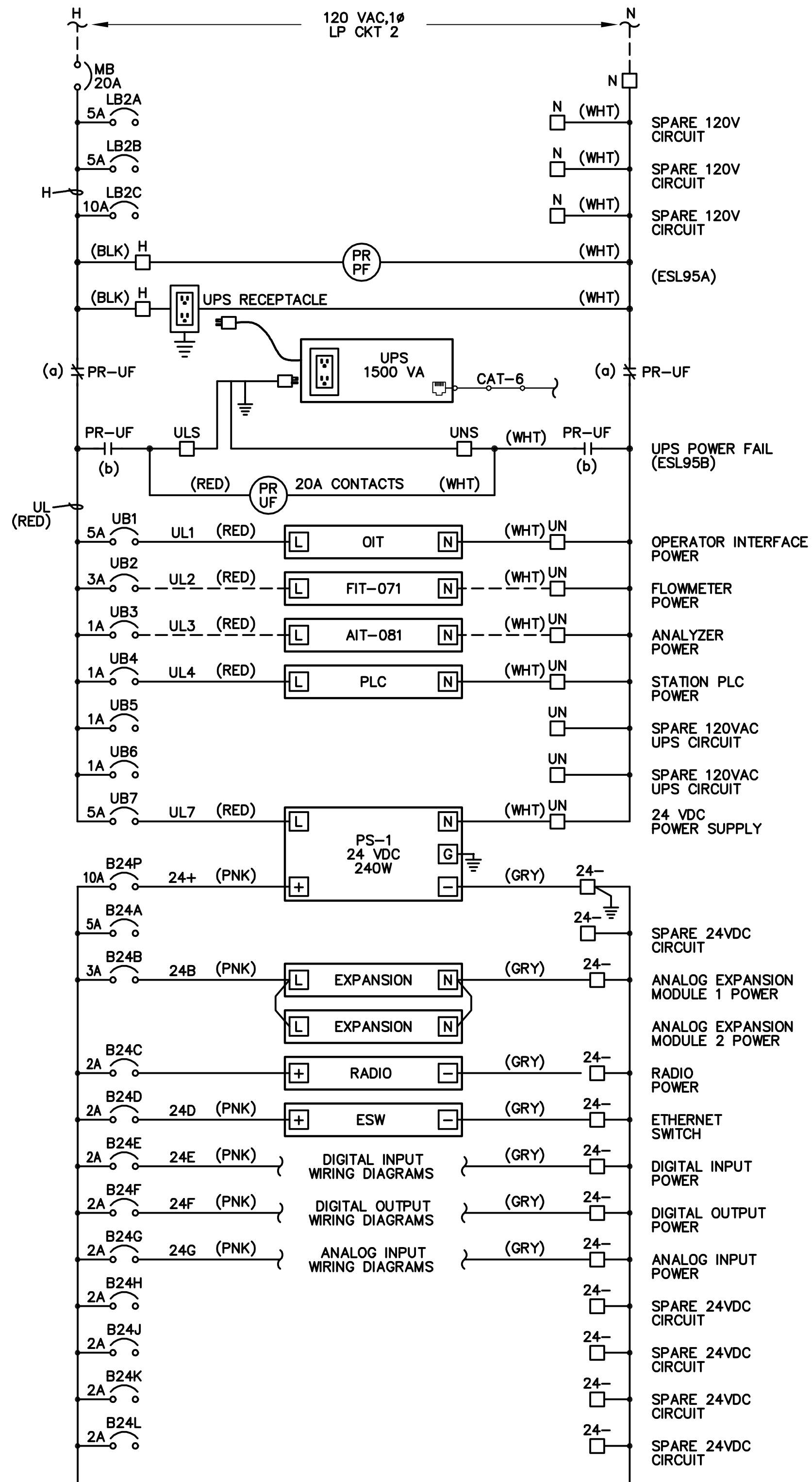


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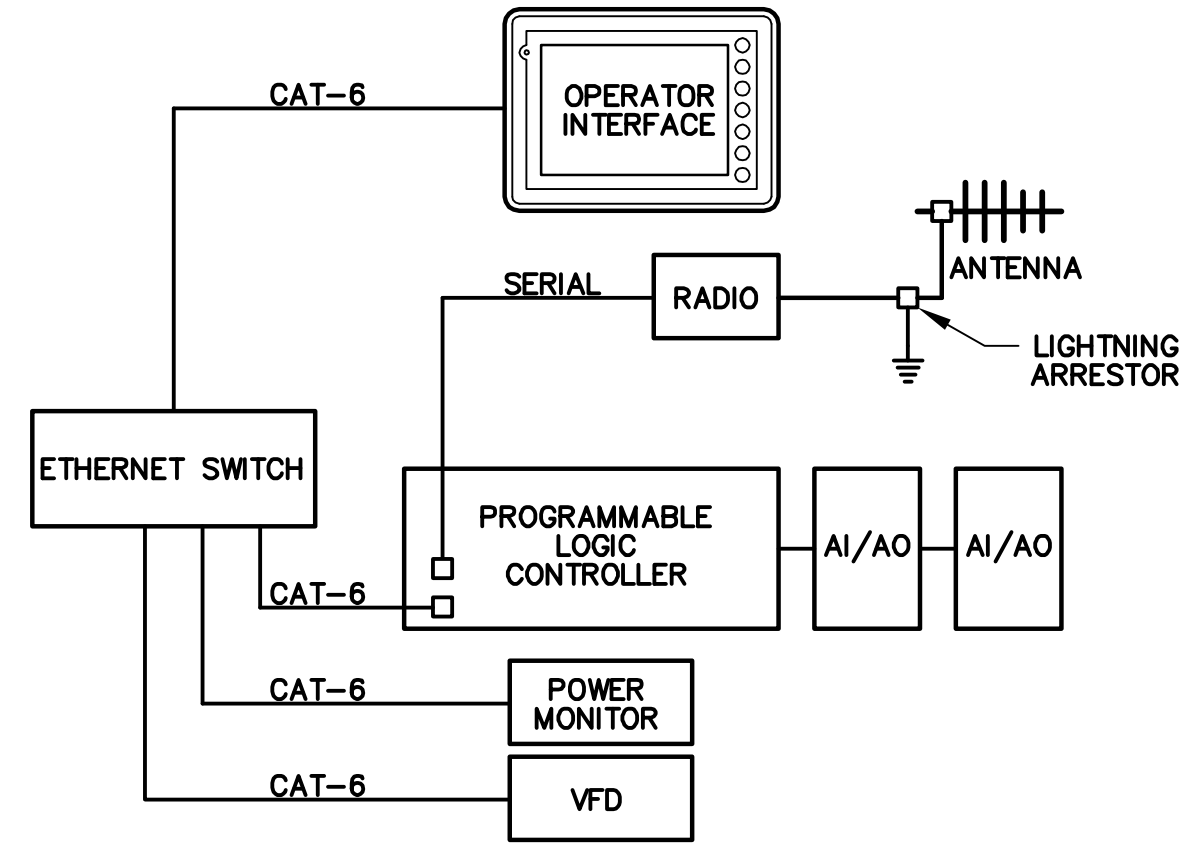
BACKPAN LAYOUT ①

SCALE: 1" = 10"

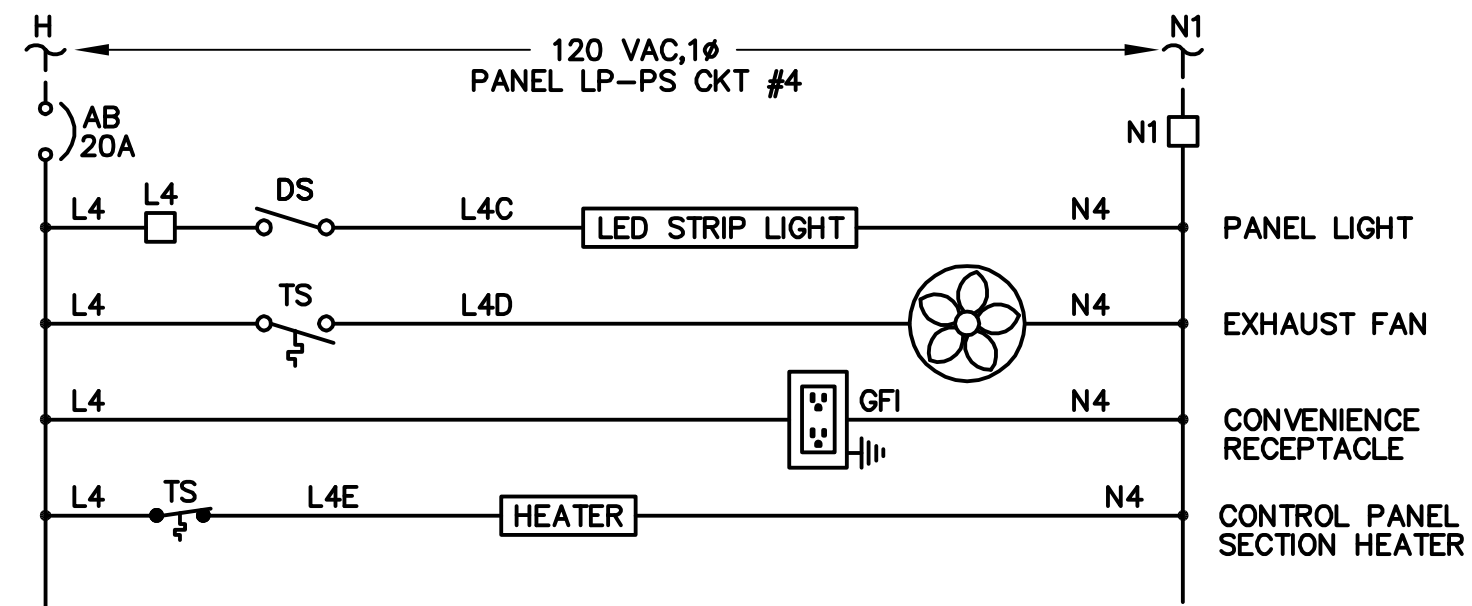
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POWER DISTRIBUTION DIAGRAM



COMMUNICATION BLOCK DIAGRAM



AUXILLIARY POWER DIAGRAM

ISSUED FOR BID

Attention:

If this scale bar does not measure 1" then drawing is not original scale.

Designed: M.YARBROUGH

Drawn: M.YARBROUGH

Checked: M.FRISCH

Approved By: T.FRISCH

P.E. No: E15761

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ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3

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ELECTRICAL

PLC CONTROL
PANEL POWER
DISTRIBUTION

SHEET NO.
19 OF 28

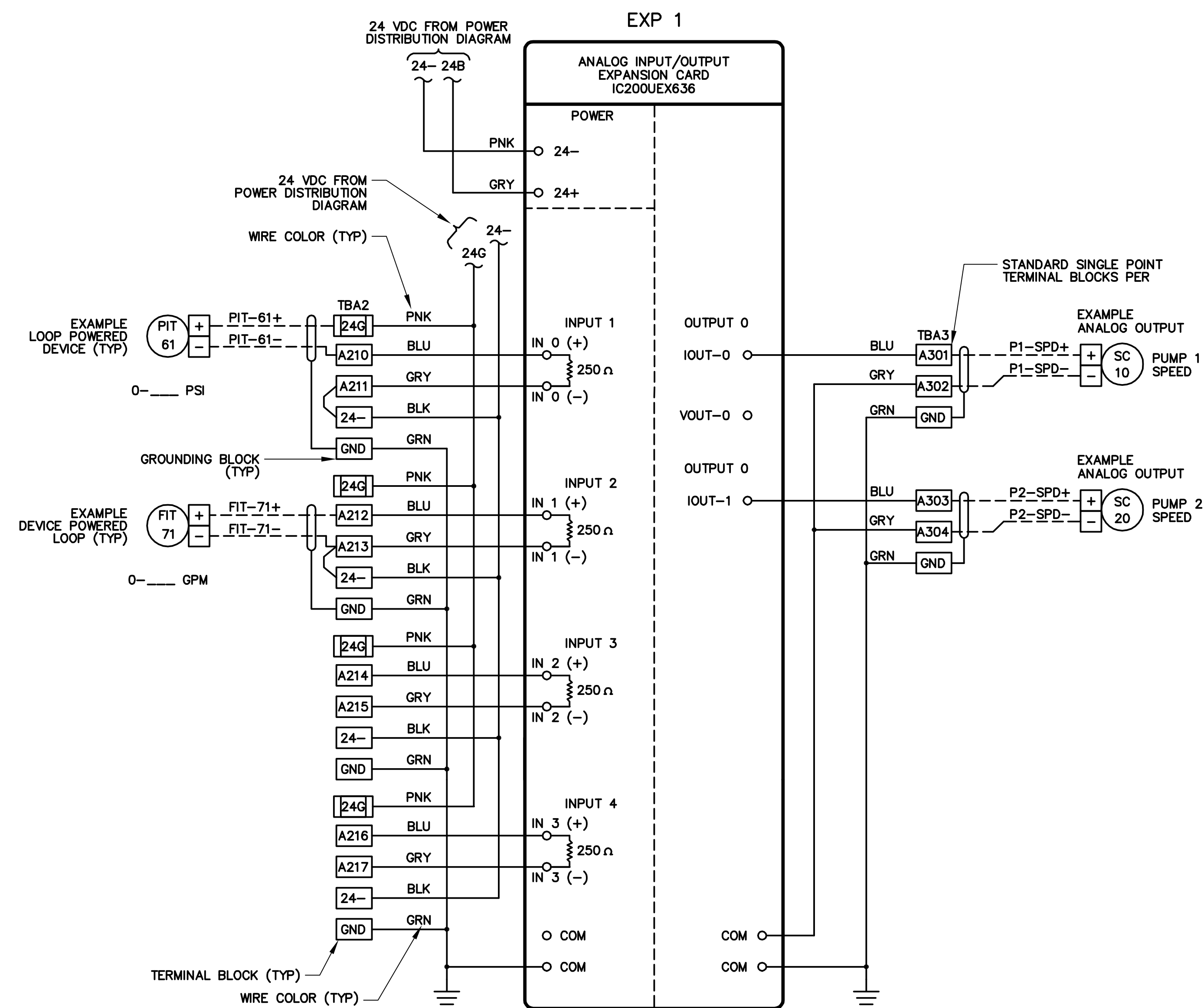
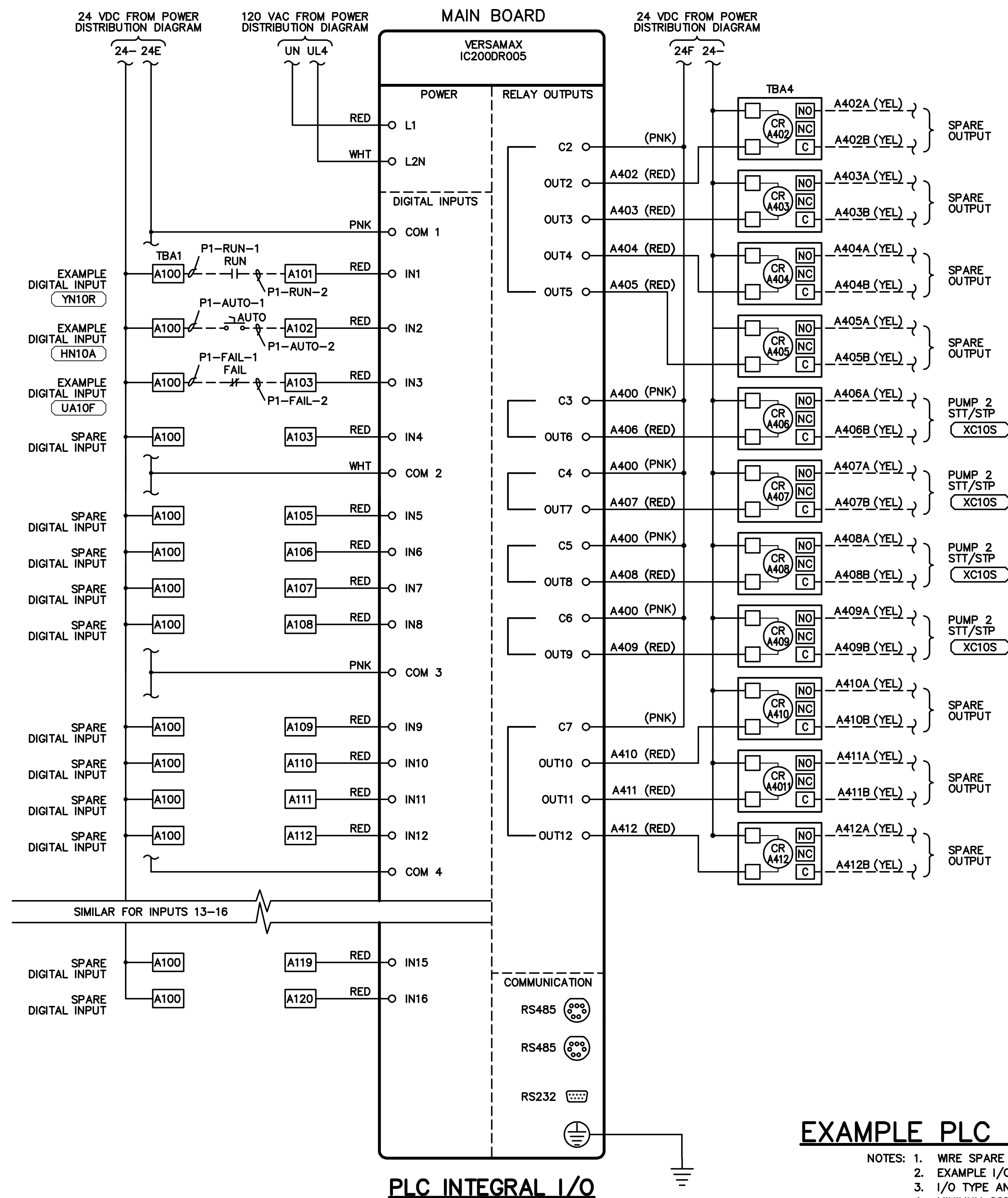
E-5

DAVID C. GEI\1901051_Orland Vale Water Co - Well No. 3, CAD\GEI-Orland Vale Water Co Well No. 3.dwg - 7/26/2022

FRISCH
ENGINEERING, INC.

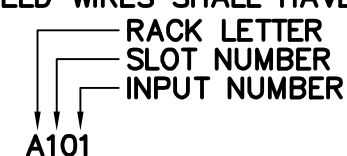
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD, UNIT 600
FOLSOM, CA 95630
PH 916.353.1025
WWW.FRISCHENGINEERING.COM

FILE: 2207K-WELL-ED5.DWG
DATE: MAR 21, 2025 TIME: 1:18:20PM

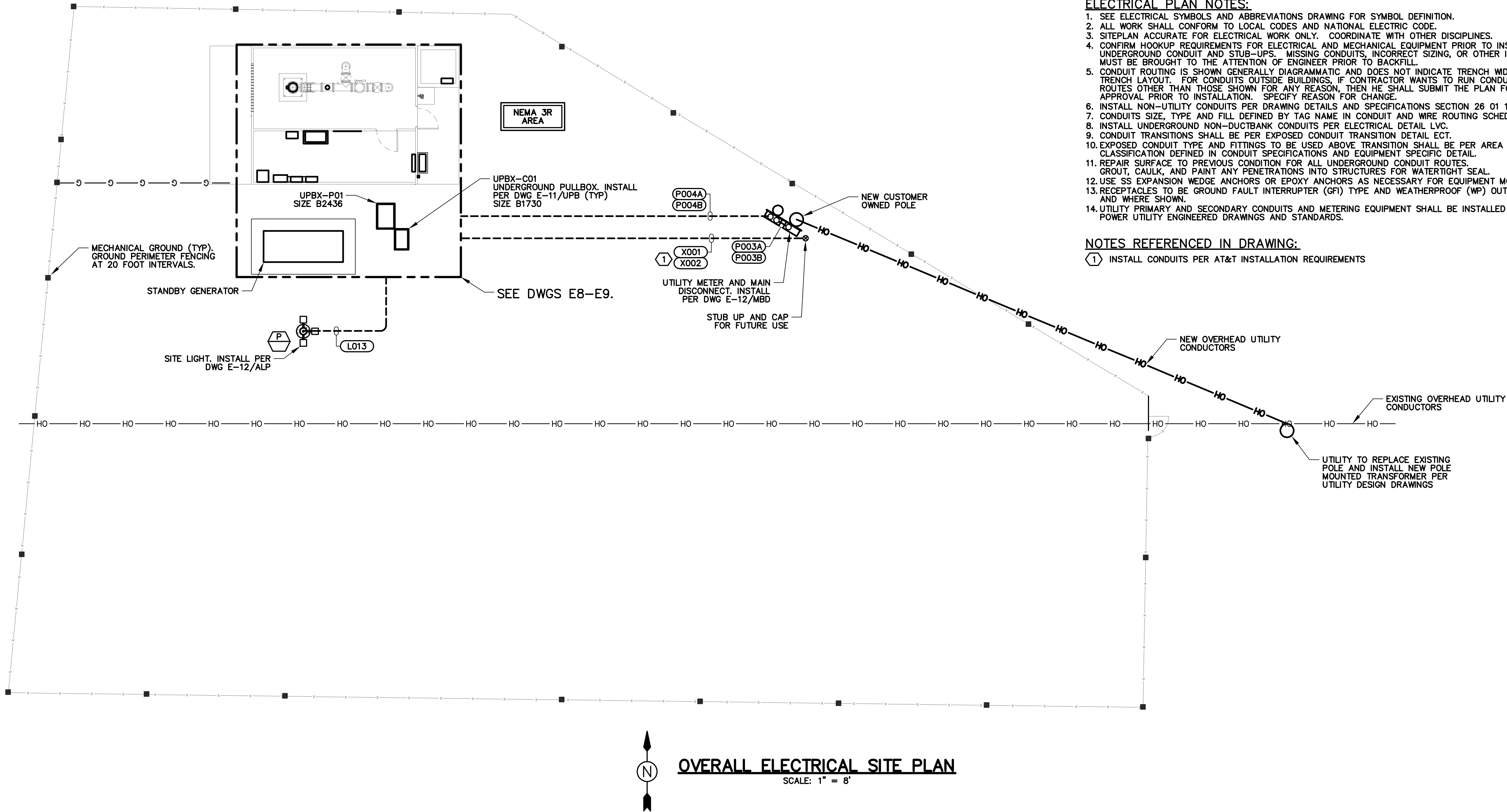


EXAMPLE PLC I/O WIRING DIAGRAMS

- NOTES: 1. WIRE SPARE I/O POINTS TO TERMINAL BLOCKS.
2. EXAMPLE I/O POINTS SHOWN. THIS DRAWING INTENDED TO SHOW I/O WIRING ONLY.
3. I/O TYPE AND NUMBER OF POINTS AND CARDS REQUIRED IS DETERMINED BY P&ID DRAWINGS.
4. MINIMUM 20% SPARE I/O POINTS PER I/O TYPE.
5. PLC I/O CARD WIRE NUMBERS SHALL BE BUILT AS SHOWN IN EXAMPLE BELOW.
FIELD WIRES SHALL HAVE SAME NUMBER AS TERMINAL NUMBER.



DAVID C. GEI\1901051_Orange Vale Water Co. Well No. 3, CAD\GEI-Orange Vale Water Co. Well No. 3.dwg - 7/26/2022



- ELECTRICAL PLAN NOTES:**
1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
 2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
 3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
 4. CONFIRM HOOKUP REQUIREMENTS FOR ELECTRICAL AND MECHANICAL EQUIPMENT PRIOR TO INSTALLING UNDERGROUND CONDUIT AND STUB-UPS. MISSING CONDUITS, INCORRECT SIZING, OR OTHER ISSUES MUST BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO BACKFILL.
 5. CONDUIT ROUTING IS SHOWN GENERALLY DIAGRAMMATIC AND DOES NOT INDICATE TRENCH WIDTH OR TRENCH LAYOUT. FOR CONDUITS OUTSIDE BUILDINGS, IF CONTRACTOR WANTS TO RUN CONDUITS IN ROUTES OTHER THAN THOSE SHOWN FOR ANY REASON, THEN HE SHALL SUBMIT THE PLAN FOR APPROVAL PRIOR TO INSTALLATION. SPECIFY REASON FOR CHANGE.
 6. INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 26 01 10.
 7. CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT AND WIRE ROUTING SCHEDULE.
 8. INSTALL UNDERGROUND NON-DUCTBANK CONDUITS PER ELECTRICAL DETAIL LVC.
 9. CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL ECT.
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 11. REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
 12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
 13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.
 14. UTILITY PRIMARY AND SECONDARY CONDUITS AND METERING EQUIPMENT SHALL BE INSTALLED PER POWER UTILITY ENGINEERED DRAWINGS AND STANDARDS.

NOTES REFERENCED IN DRAWING:

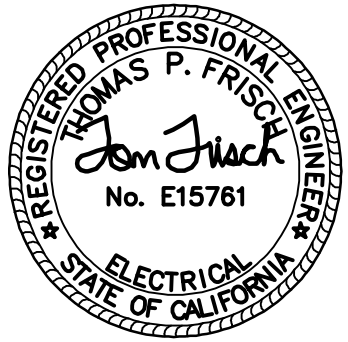
① INSTALL CONDUITS PER AT&T INSTALLATION REQUIREMENTS

OVERALL ELECTRICAL SITE PLAN
SCALE: 1" = 8'

0 8 16
(Approximate Scale in Feet)

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD. UNIT 600
FOLSOM, CA 95630
PH 916.353.1025
WWW.FRISCHENGINEERING.COM
FILE: 2207K-WELL-ED7.DWG
DATE: MAR 21, 2025 TIME: 1:18:40PM

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.



Designed: M.YARBROUGH
Drawn: M.YARBROUGH
Checked: M.FRISCH
Approved By: T.FRISCH
P.E. No: E15761
GEI Project 2204930

GEI Consultants
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CITY OF ORLAND
815 FOURTH ST.
ORLAND, CA 95963

**ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3**

0	3-25-25	ISSUED FOR BID	MBY
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ELECTRICAL

PUMP BUILDING
POWER PLAN OVERALL
ELECTRICAL SITE
PLAN

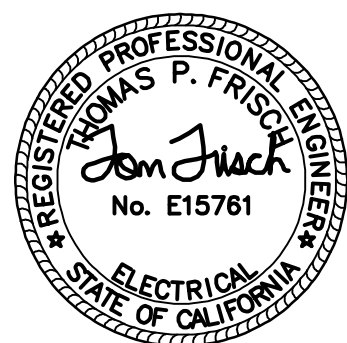
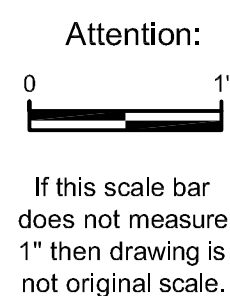
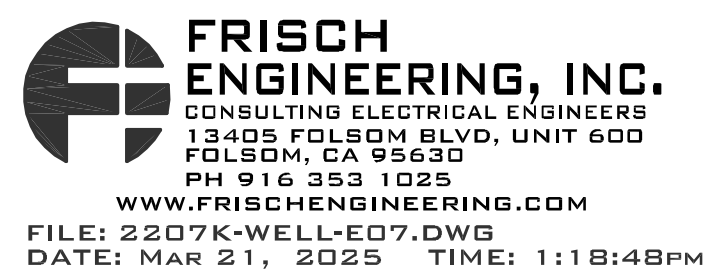
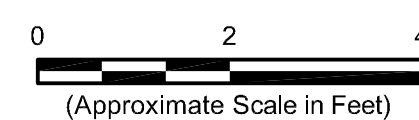
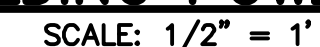
SHEET NO.
21 OF 28

E-7

ISSUED FOR BID

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
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13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AFTER INSTALLATION.
14. STUB UP CONDUITS BENEATH GENERATOR FRAME PER MANUFACTURER RECOMMENDATIONS. USE FLEXIBLE CONDUIT FOR TRANSITION BETWEEN EXPOSED CONDUIT TRANSITION AND ELECTRICAL CONNECTION BOX AND GENERATOR CONTROL PANEL.

① AT&T CONDUITS SHALL BE STUBBED 2" ABOVE FINISHED FLOOR



Designed:	M.YARBROUGH
Drawn:	M.YARBROUGH
Checked:	M.FRISCH
Approved By:	T.FRISCH
P.E. No:	E15761
GEI Project	2204930



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815 FOURTH ST.
ORLAND, CA 95963

**ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3**

0	3-25-25	ISSUED FOR BID	MB
NO	DATE	ISSUE/REVISION	APR

ELECTRICAL

PUMP BUILDING
POWER & CONTROL
ELECTRICAL SITE
PLAN

SHEET NO.
22 OF 28

E-8

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ELECTRICAL PLAN NOTES:

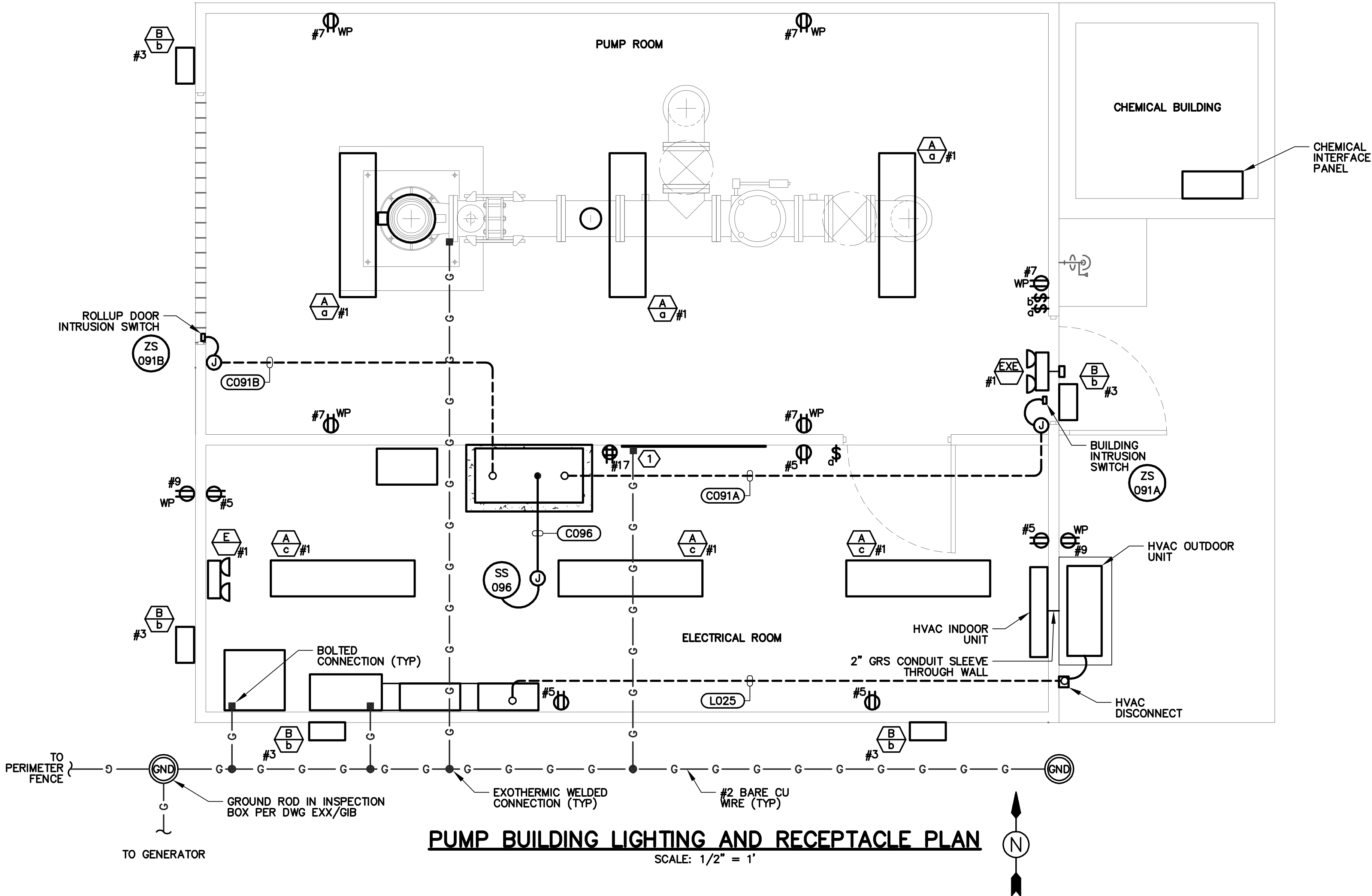
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12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.

GENERAL NOTES THAT APPLY TO LIGHTING AND RECEPTACLE PLAN.

1. THESE NOTES SHALL APPLY TO ALL EQUIPMENT OR FIXTURES WITH ELECTRICAL CONNECTIONS BUT WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.
2. PROVIDE AND INSTALL NECESSARY WIRES IN SURFACE MOUNT 3/4" (MINIMUM) CONDUIT FOR FOR ELECTRICAL FIXTURE ARRANGEMENT AS SHOWN. MAXIMUM 3 CIRCUITS PER CONDUIT SECTION OVER 24" IN LENGTH. CONDUITS SHALL NOT EXCEED 40% FILL.
3. CONDUITS UNDER SLAB SHALL BE PVC-40 WITH STUB-OUTS PER EXPOSED CONDUIT TRANSITION DETAIL.
4. CONDUITS ABOVE CEILING SHALL BE EMT WITH COMPRESSION STYLE FITTINGS. CONDUITS BELOW CEILING SHALL BE GRS. ACCESS TO ATTIC AREA SHALL NOT BE REQUIRED TO INSTALL CONDUCTORS.
5. DEVICE BOXES AND CONDUIT BODIES SHALL BE CAST IRON OR ALUMINUM WITH THREADED HUB.
6. CONDUCTORS SHALL BE COPPER TYPE THHN, CLASS C STRANDING, #12 AWG (MINIMUM).
7. MOUNT CONDUITS USING SINGLE BOLT GALVANIZED PIPE STRAPS AND CLAMP BACK SPACERS.
8. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
9. EXPOSED CONDUIT SHALL BE PAINTED WITH WALL AND/OR CEILING AS SPECIFIED.
10. PROVIDE AND INSTALL FIXTURES PER SCHEDULE THIS PAGE, QUANTITY AS SHOWN IN DRAWINGS.
11. PROVIDE AND INSTALL ALL DEVICE BOXES, JUNCTION BOXES, RECEPTACLES, SWITCHES, AND COVERS MOUNT ALL RECEPTACLES AT 48" AFF UNLESS OTHERWISE NOTED.
12. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) WHERE SHOWN.
13. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
14. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
15. SWITCH TYPE: T= TIME SWITCH, M= MOTION DETECTOR, 3= 3-WAY.

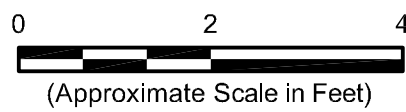
NOTES REFERENCED IN DRAWING:

- ① STUB UP #6 AWG GROUND CONDUCTOR FOR AT&T.



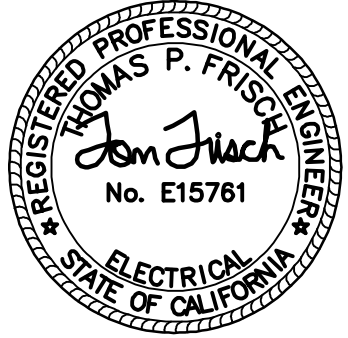
FIXTURE SCHEDULE						
CODE LETTER	FIXTURE TYPE	FIXTURE LAMPS	WATTS/ FIXTURE	MANUFACTURER OR APPROVED EQUAL	MOUNTING ARRANGEMENT	NOTES
A	STRIP LUMINAIRE, 4 FT, VAPORTIGHT MOLDED POLYCARBONATE HOUSING FROSTED LENS, MEDIUM DISTRIBUTION	6000 LUMEN 4000K	120V 50W	ATLAS ILW48LED4D RAB SEAL4-50/D10 METALUX 4VT2	CEILING MOUNT	U.L. LISTED FOR WET LOCATIONS -20F TO 140F
B	WALL PACK LIGHT - MEDIUM DARK BRONZE COLOR ALUMINUM CASE	5025 LUMEN 4000K	120V 43W	ATLAS WPM64LED RAB WPLEDFC52N/PCS LUMARK AXCS4A	WALL MOUNT 12 FT AFF	U.L. LISTED FOR WET LOCATIONS PHOTOCELL CONTROL FULL CUTOFF
EXE	EXIT LIGHT PACK WITH EGRESS LAMPS AND REMOTE OUTDOOR EGRESS FIXTURE LED LAMPS WITH RED LED SIGN INTEGRAL BATTERY AND CHARGER	2 LED 3W	120V 5W	DUAL-LITE HCX-U-R-W-03L-RC12 CPRSB0603L	WALL MOUNT 9 FT AFF	WHITE INTERIOR, BROWN EXTERIOR DUAL LED LAMPS INDOORS AND OUT 12W REMOTE LIGHT CAPACITY
E	EMERGENCY LIGHT PACK WITH INTEGRAL BATTERY CHARGER THERMOPLASTIC ENCLOSURE	2 LED 3W 3.6 VOLT	120V 6W	LITHONIA ELM2 LED HO	WALL MOUNT 7.5 FT AFF	NICAD BATTERIES
P	POLE MOUNTED CUTOFF LUMINAIRE BRONZE POLE AND LAMP TYPE IV DISTRIBUTION	LED, 4000K > 14000 LM	MVOLT ~130W	LITHONIA LUMARK	POLE MOUNT POLE BASE PER DETAILS	LAMP HEIGHT 20 FT OR AS SHOWN ON PLANS

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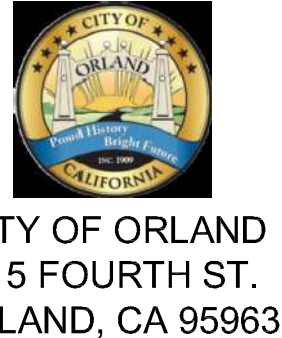


FRISCH ENGINEERING, INC.
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13405 FOLSOM BLVD, UNIT 600
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FILE: 2207K-WELL-ED7.DWG
DATE: MAR 21, 2025 TIME: 1:18:56PM

Attention:
0 1"
If this scale bar does not measure 1" then drawing is not original scale.



Designed: M.YARBROUGH
Drawn: M.YARBROUGH
Checked: M.FRISCH
Approved By: T.FRISCH
P.E. No: E15761
GEI Project 2204930



**ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3**

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ELECTRICAL
PUMP BUILDING
LIGHTING &
RECEPTACLE
ELECTRICAL SITE
PLAN

SHEET NO.
23 OF 28

E-9

DAVID C:\GEI\1901051_Orange Vale Water Co - Well No. 3\CAD\GEI-Orange Vale Water Co Well No. 3.dwg - 7/26/2022

CONDUIT & WIRE ROUTING SCHEDULE												
REV	CONDUIT DETAILS						POWER WIRE		CONTROL WIRE		GROUND	NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE	QTY	SIZE		
	A001	PLC CONTROL PANEL	VFD CONTROL PANEL	1	3/4"	SPEC	-	-	-	-	-	
	A041	PLC CONTROL PANEL	CHEMICAL INTERFACE PANEL	1	3/4"	SPEC	-	-	2	#18 TSPR	#14	
	A151	PLC CONTROL PANEL	LT-151	1	3/4"	SPEC	-	-	1	#18 TSPR	#14	
	A162	PLC CONTROL PANEL	PIT-162	1	3/4"	SPEC	-	-	1	#18 TSPR	#14	
	A171	PLC CONTROL PANEL	FIT-171	1	3/4"	SPEC	-	-	1	#18 TSPR	#14	
	C001	VFD CONTROL PANEL	PLC CONTROL PANEL	1	3/4"	SPEC	-	-	-	-	-	
	C003 A	PLC CONTROL PANEL	GENERATOR	1	3/4"	SPEC	-	-	8	#14	#14	GROUND SPARES
	C003 B	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	-	-	8	#14	#14	
	C003 C	GENERATOR	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	-	-	2	#14	#14	
	C004	PLC CONTROL PANEL	PANEL LP	1	3/4"	SPEC	-	-	8	#14	#14	
	C041	PLC CONTROL PANEL	CHEMICAL INTERFACE PANEL	1	3/4"	SPEC	-	-	6	#14	#14	
	C091 A	PLC CONTROL PANEL	BUILDING DOOR INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	#14	ZS-091A
	C091 B	PLC CONTROL PANEL	ROLLUP DOOR INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	#14	ZS-091B
	C096	PLC CONTROL PANEL	SS-096	1	3/4"	SPEC	-	-	2	#14	#14	
	C100	VFD CONTROL PANEL	WELL PUMP	1	3/4"	SPEC	-	-	2	#14	#14	
	C171	PLC CONTROL PANEL	FIT-171, PSH-161	1	3/4"	SPEC	-	-	4	#14	#14	
	C172	PLC CONTROL PANEL	FSH-172	1	3/4"	SPEC	-	-	2	#14	#14	
	D001	VFD CONTROL PANEL	PLC CONTROL PANEL	1	3/4"	SPEC	-	-	1	CAT 6	-	
	G001	SERVICE DISCONNECT	GROUND ROD	1	1"	SPEC	-	-	-	-	#2	
	L002	PLC CONTROL PANEL	PANEL LP	1	3/4"	SPEC	4	#12	-	-	#12	CKT 2, 4
	L011	PANEL LP	CHEMICAL BUILDING LIGHTS	1	3/4"	SPEC	2	#12	-	-	#12	CKT 11
	L012	PANEL LP	GENERATOR	1	3/4"	SPEC	2	#12	-	-	#12	CKT 12
	L013	PANEL LP	SITE LIGHT	1	3/4"	SPEC	2	#12	-	-	#12	CKT 13
	L014	PANEL LP	GENERATOR	1	3/4"	SPEC	2	#10	-	-	#10	CKT 14, 16
	L021	PANEL LP	CHEMICAL INTERFACE PANEL	1	3/4"	SPEC	2	#12	-	-	#12	
	L025	PANEL LP	HVAC DISCONNECT	1	3/4"	SPEC	3	#12	-	-	#12	CKT 25, 27
	L100	25KVA XFMR MAIN	PANEL LP	1	1-1/2"	SPEC	3	#1/0	-	-	#6	
	P002	UTILITY TRANSFORMER	UTILITY METERING PANEL	1	5"	SPEC	-	-	-	-	-	PER UTILITY REQUIREMENTS
	P003 A,B	UTILITY METERING PANEL	SERVICE DISCONNECT	2	3"	SPEC	4	#4/0	-	-	#2	
	P004 A,B	SERVICE DISCONNECT	AUTOMATIC TRANSFER SWITCH	2	3"	SPEC	3	#4/0	-	-	#4	
	P005 A,B	GENERATOR	AUTOMATIC TRANSFER SWITCH	2	3"	SPEC	3	#4/0	-	-	#4	
	P006 A,B	AUTOMATIC TRANSFER SWITCH	PP-MAIN	2	3"	SPEC	3	#4/0	-	-	#4	
	P007	PP-MAIN	VFD CONTROL PANEL	1	3"	SPEC	3	#250	-	-	#1	
	P009	PP-MAIN	XFMR LP	1	1-1/2"	SPEC	2	#4	-	-	#8	
	P100	WELL PUMP VFD	WELL PUMP	1	3"	SPEC	3	#4/0	-	-	#1	
	X001	ATT PLYWOOD BACKBOARD	UTILITY POLE	1	2"	SPEC	-	-	-	-	-	
	X002	ATT PLYWOOD BACKBOARD	UTILITY POLE	1	2"	SPEC	-	-	-	-	-	
	X003	PANEL LP	UPBX-P01	1	3/4"	SPEC	-	-	-	-	-	
	X004	PANEL LP	UPBX-P01	1	3/4"	SPEC	-	-	-	-	-	
	X005	PANEL LP	UPBX-P01	1	3/4"	SPEC	-	-	-	-	-	
	X006	PLC CONTROL PANEL	UPBX-C01	1	3/4"	SPEC	-	-	-	-	-	
	X007	PLC CONTROL PANEL	UPBX-C01	1	3/4"	SPEC	-	-	-	-	-	
	X008	PLC CONTROL PANEL	PANEL LP	1	3/4"	SPEC	-	-	-	-	-	

NOTES PERTAINING TO CONDUIT SCHEDULE:

1. CONDUIT TYPE "SPEC" IS AS DEFINED IN SPECIFICATIONS SECTION [CONDUIT AND BOXES] FOR NON-EXPOSED AND EXPOSED PORTIONS OF CONDUIT RUN.

2. SEE SPECIFICATIONS AND EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR CONDUIT TRANSITION MATERIALS AND METHODS FROM BELOW GROUND TO EXPOSED PORTIONS OF RUN.

3. CONDUITS OVER 15 FT LENGTH (EITHER EMPTY OR WITH CONDUCTORS SIZED LESS THAN #8 AWG), SHALL INCLUDE A POLY PULL STRING. STRING SHALL BE TIED OFF AT EACH END.


4. FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS [CONDUIT AND BOXES.]
5. WIRE SIZING IN TABLE IS BASED ON COPPER CONDUCTORS, THHN INSULATION, WITH TYPE C STRANDING. OTHER CONDUCTOR TYPES, IF ALLOWED OR REQUIRED PER SPECIFICATION, MAY REQUIRE CONDUITS TO BE UPSIZED BY CONTRACTOR AND SUBMITTED FOR APPROVAL.

6. SEE GENERAL NOTES ON LIGHTING AND RECEPTACLE PLAN FOR CONDUIT REQUIREMENTS FOR ELECTRICAL DEVICES WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.


7. CONDUIT LABELING CONVENTION IS AS FOLLOWS: A- ANALOG, C- CONTROL, D- COMM, L- PANELBOARD, P- POWER, S- SECURITY, T- MEDIUM VOLTAGE, V- VIDEO, X- SPARE.

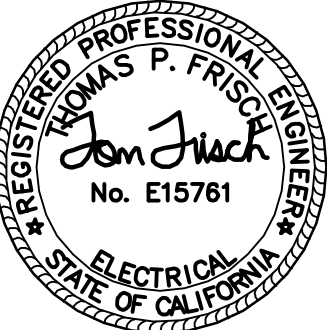
WELL PUMP P&ID

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FILE: 2207K-WELL-E10.DWG
DATE: MAR 21, 2025 TIME: 1:19:04PM

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1" then drawing is
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Designed: M.YARBROUGH

Drawn: M.YARBROUGH

Checked: M.FRISCH

Approved By: T.FRISCH

P.E. No: E15761

GEI Project 2204930



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CITY OF ORLAND
815 FOURTH ST.
ORLAND, CA 95963

**ORLAND EMERGENCY
GROUNDWATER
RESOURCE PROJECT
PHASE 3**

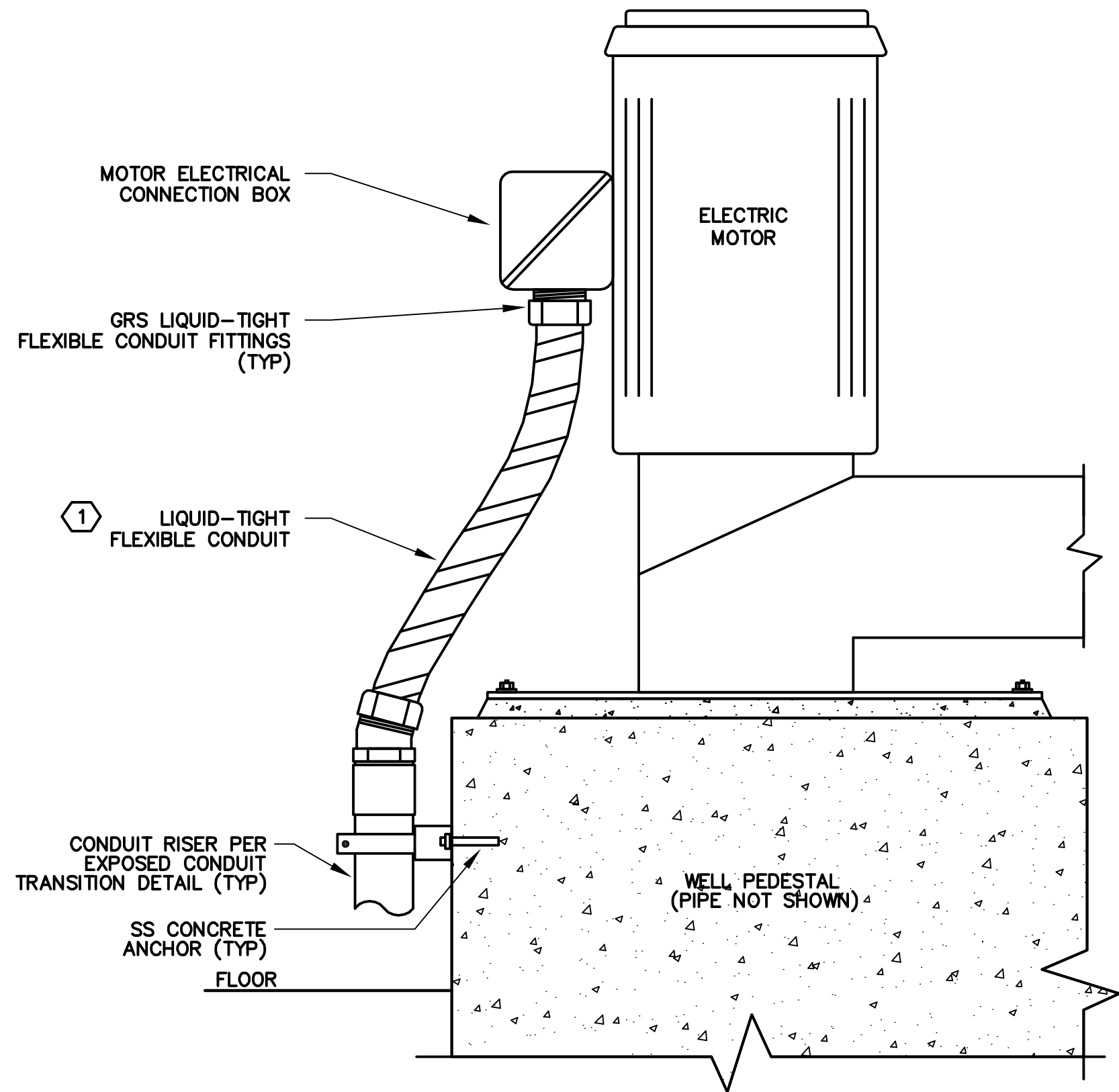
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INSTRUMENTATION

CONDUIT AND WIRE
ROUTING SCHEDULE

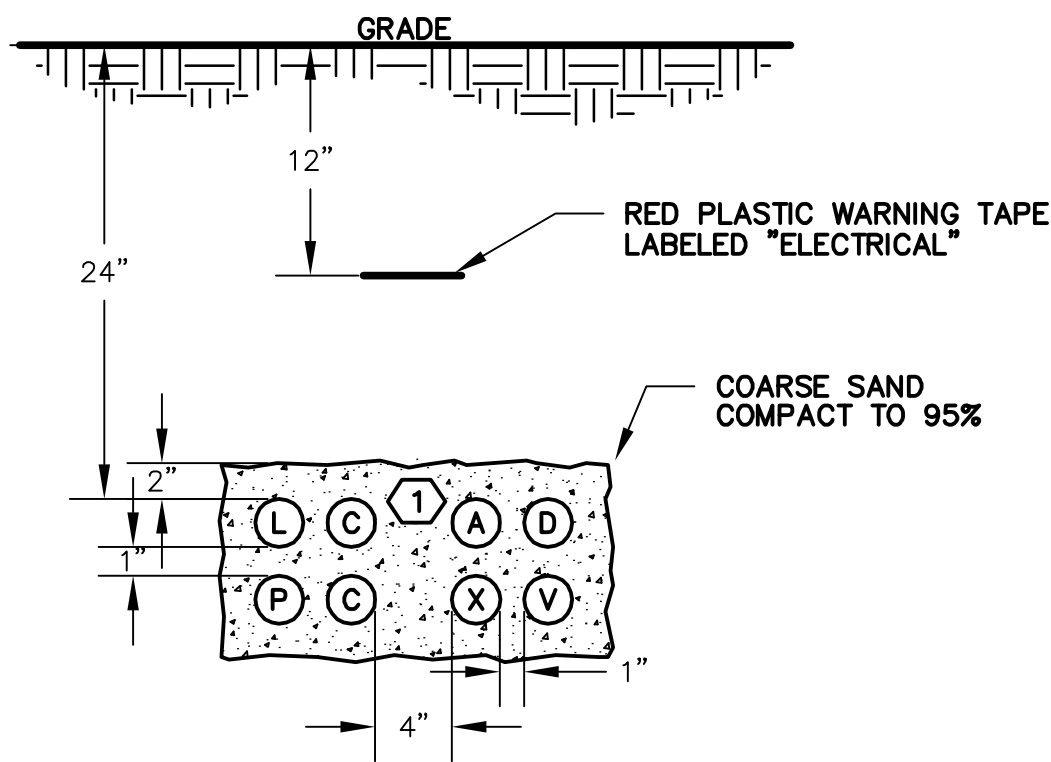
SHEET NO.
24 OF 28

E-10



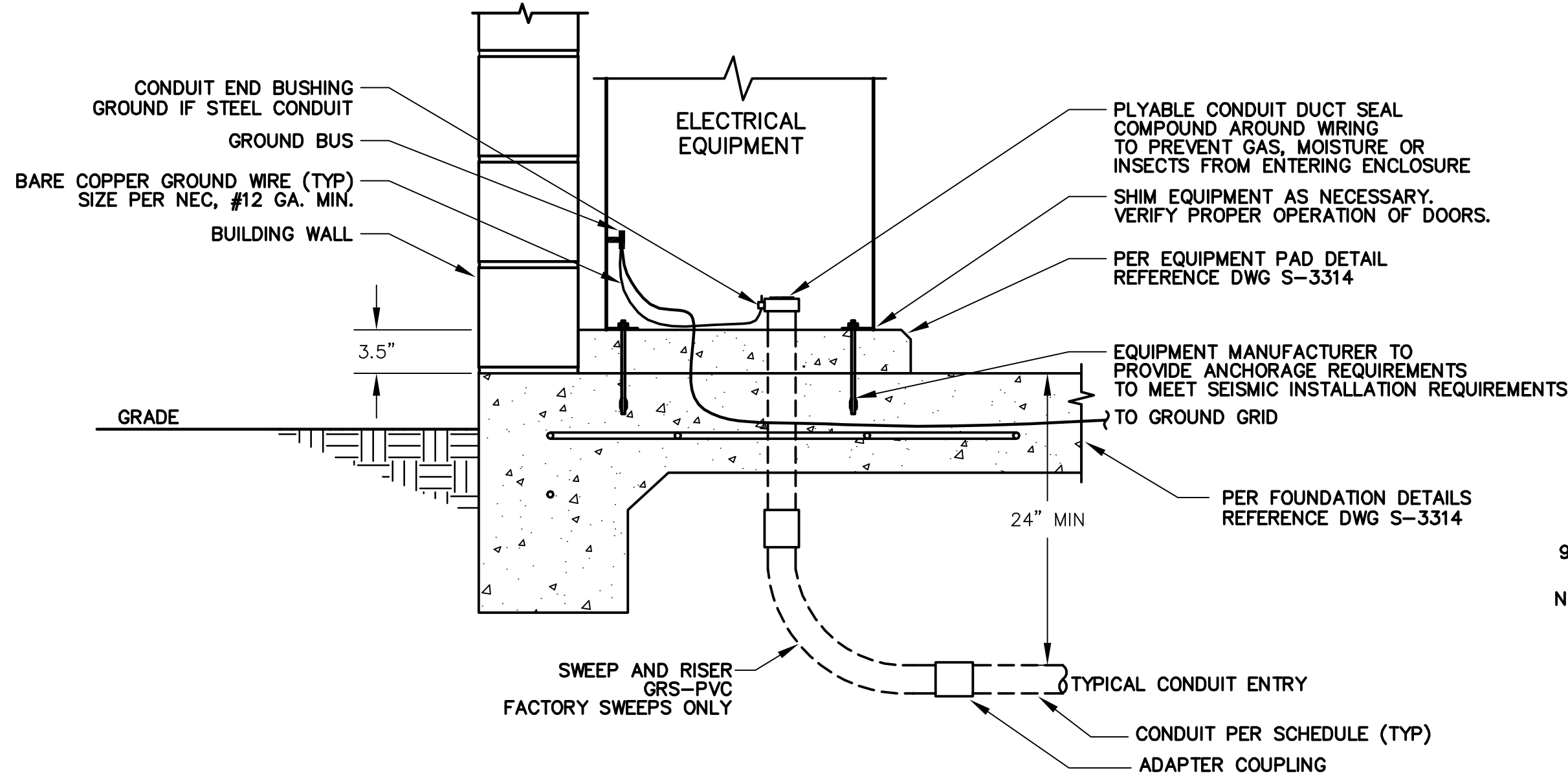
PMC PUMP MOTOR CONNECTION DETAIL
NOT TO SCALE

NOTES: 1 48" MAXIMUM LENGTH. DIAMETER MAY BE REDUCED IF MOTOR CONNECTION BOX WILL NOT ACCEPT SIZE PER CONDUIT SCHEDULE. DO NOT EXCEED MINIMUM DIAMETER PER NEC.

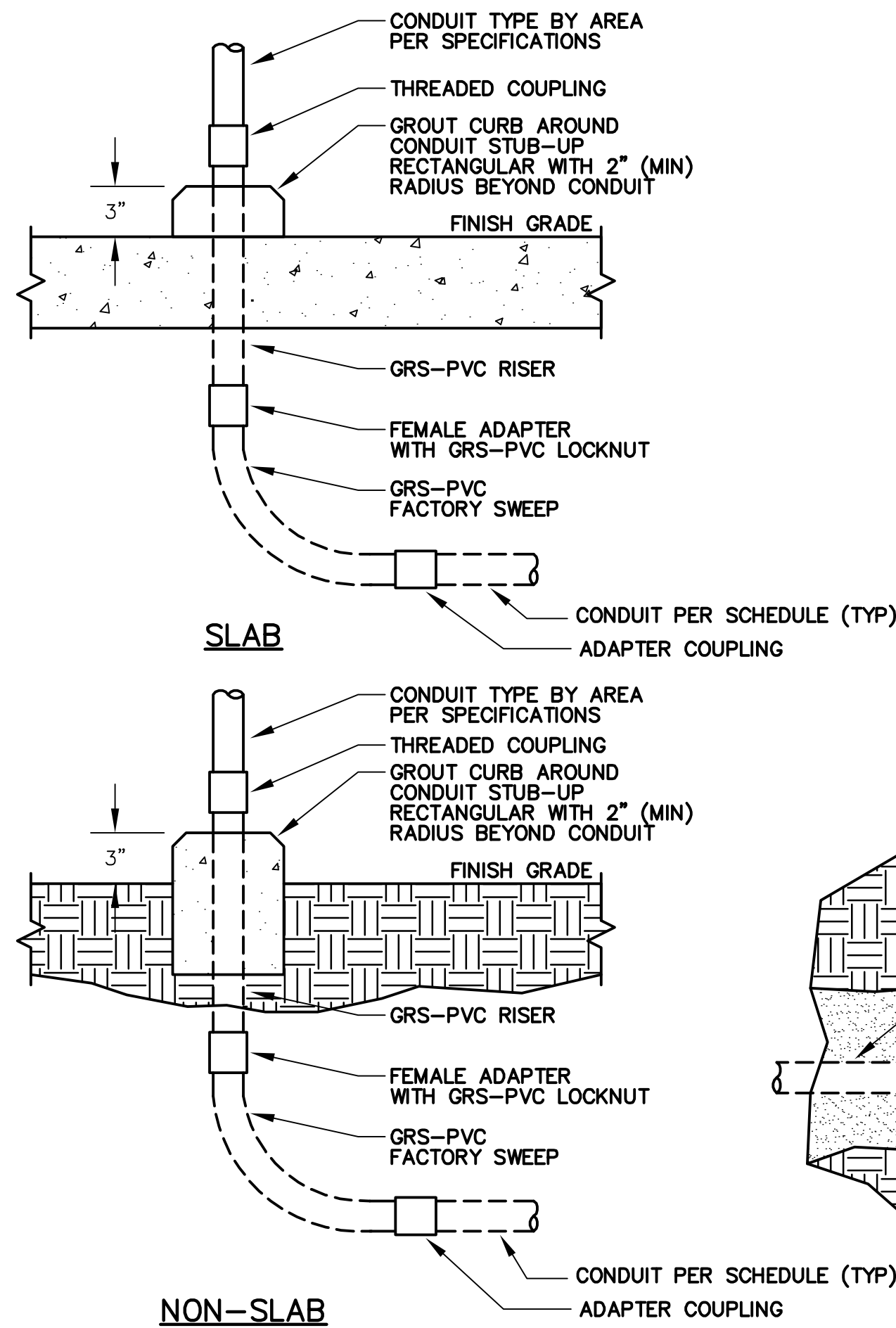


LVC LOW VOLTAGE NON-DUCT BANK SECTION
NOT TO SCALE

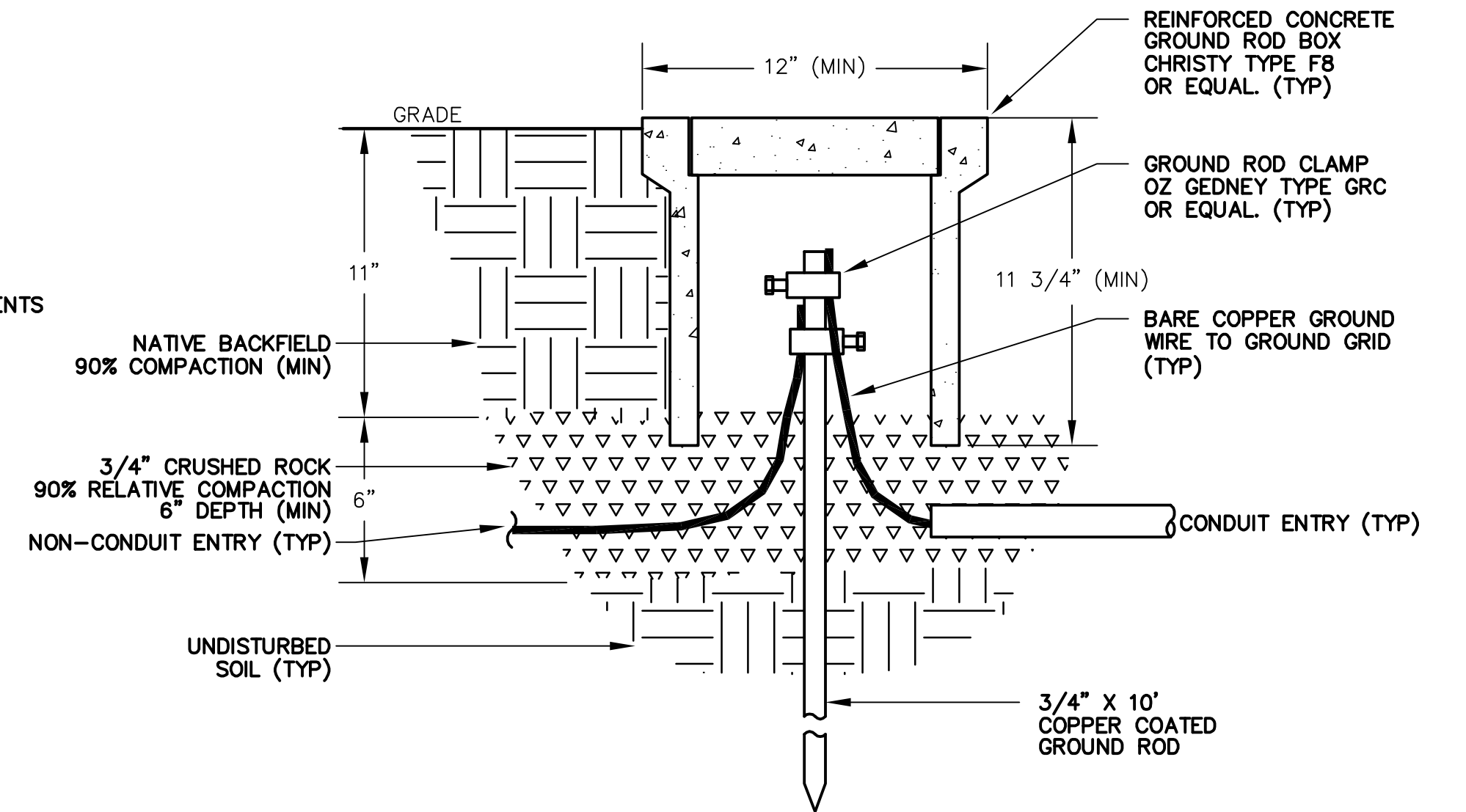
NOTES: 1 NUMBER OF CONDUITS PER PLANS AND SCHEDULE. MAXIMUM DEPTH OF TRENCH SHALL BE 42". DESIGN TRENCH DESIGN AND INSTALL TRENCH TO MAINTAIN 6" VERTICAL CLEARANCE AND 12" HORIZONTAL CLEARANCE FROM PIPES.
2 P, L, OR C DESIGNATION FOR POWER OR CONTROL CONDUITS.
3 A, D, V, OR X DESIGNATION FOR COMMUNICATION (TELEPHONE, DATA, VIDEO, OR INSTRUMENTATION) CONDUITS.
4 USE CONDUIT SPACERS TO SUPPORT CONDUITS AND MAINTAIN SPACING (3" INTERVALS)



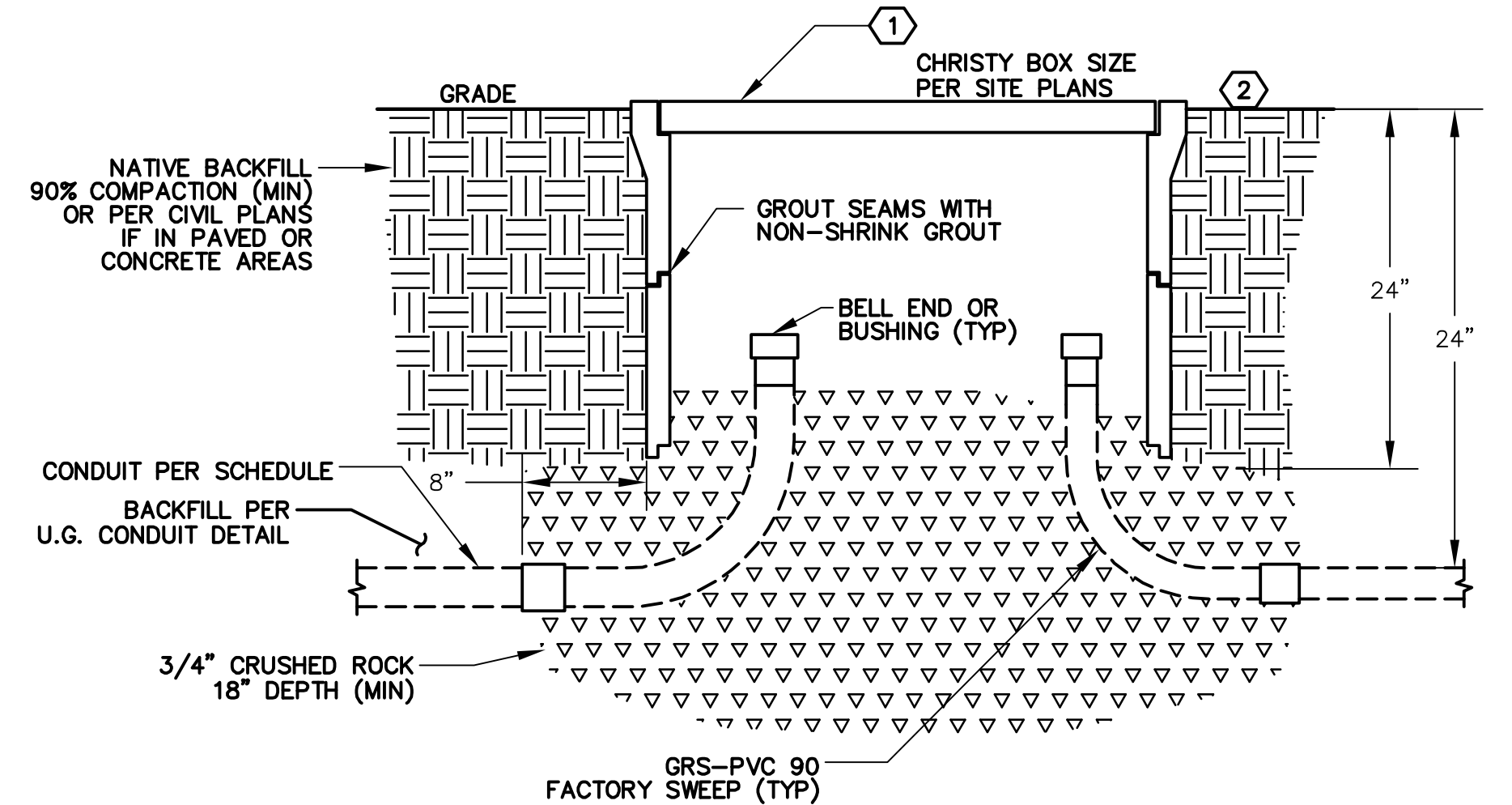
ECP EQUIPMENT CONCRETE PAD DETAIL
NOT TO SCALE



ECT EXPOSED CONDUIT TRANSITION DETAIL
NOT TO SCALE



GIB GROUND INSPECTION BOX DETAIL
NOT TO SCALE



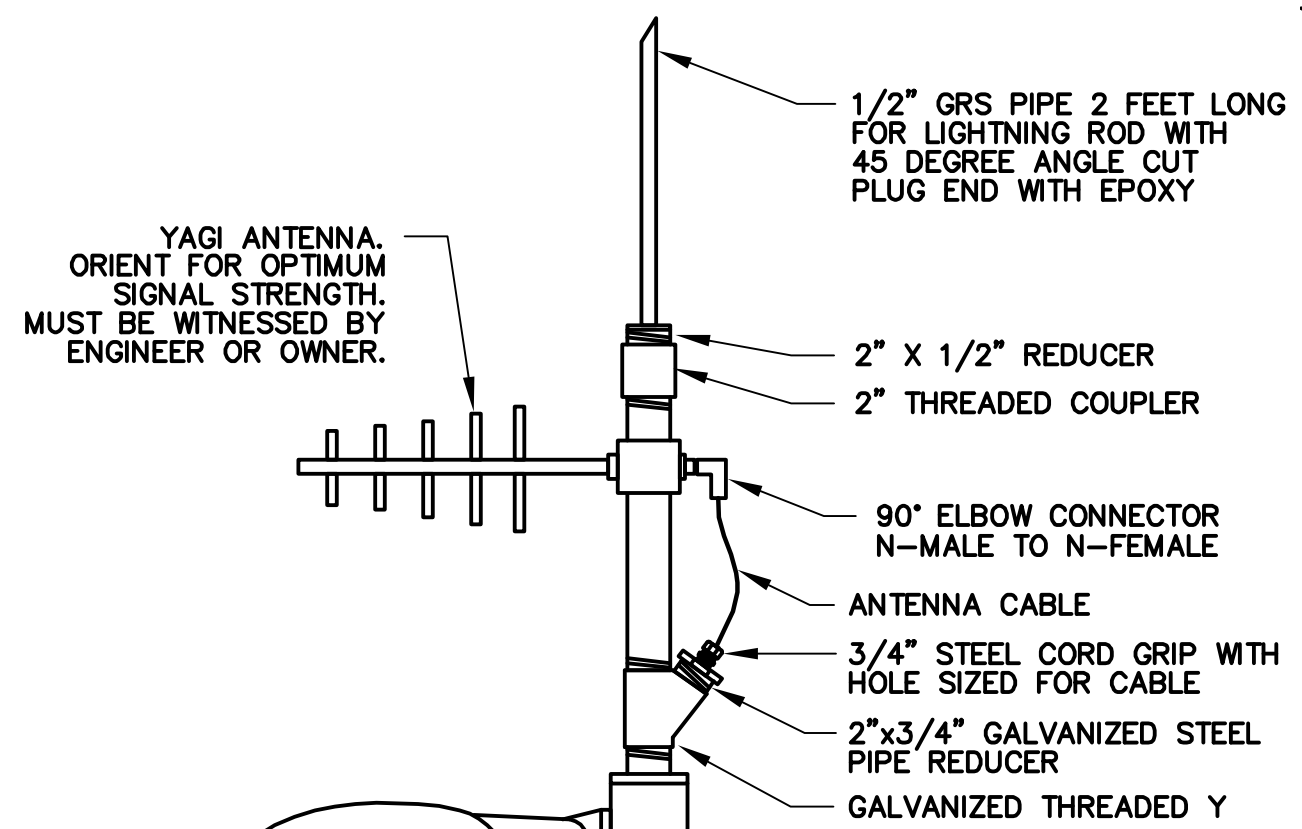
UPB UNDERGROUND PULL BOX DETAIL
NOT TO SCALE

NOTES: 1 PROVIDE CONCRETE LID IN NON-TRAFFIC AREAS. PROVIDE TRAFFIC RATED STEEL LID IN TRAFFIC AREAS. LABEL COVER PLATE "ELECTRICAL"
2 COLLAR TO BE 1/4" ABOVE SURROUNDING GRADE AND TOP OF PULL BOX

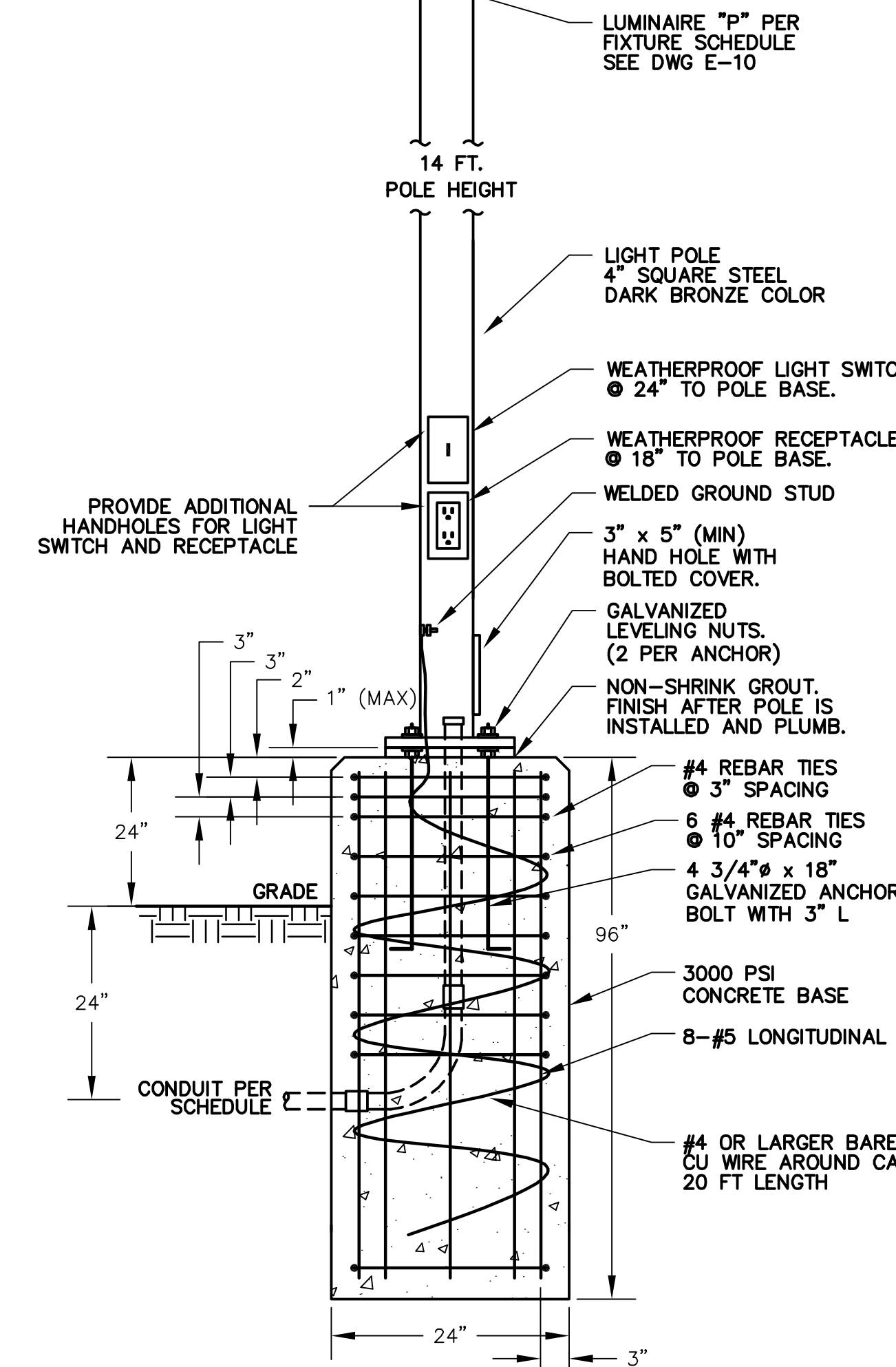
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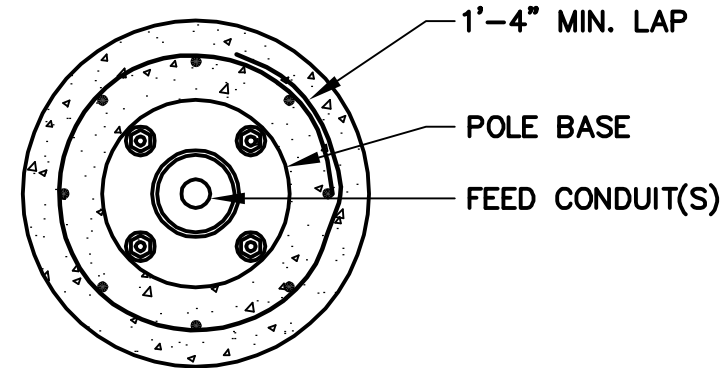
ELECTRICAL
ELECTRICAL DETAILS SHEET 1



ANTENNA MOUNT ONLY ON POLE AS INDICATED ON SITE PLAN.

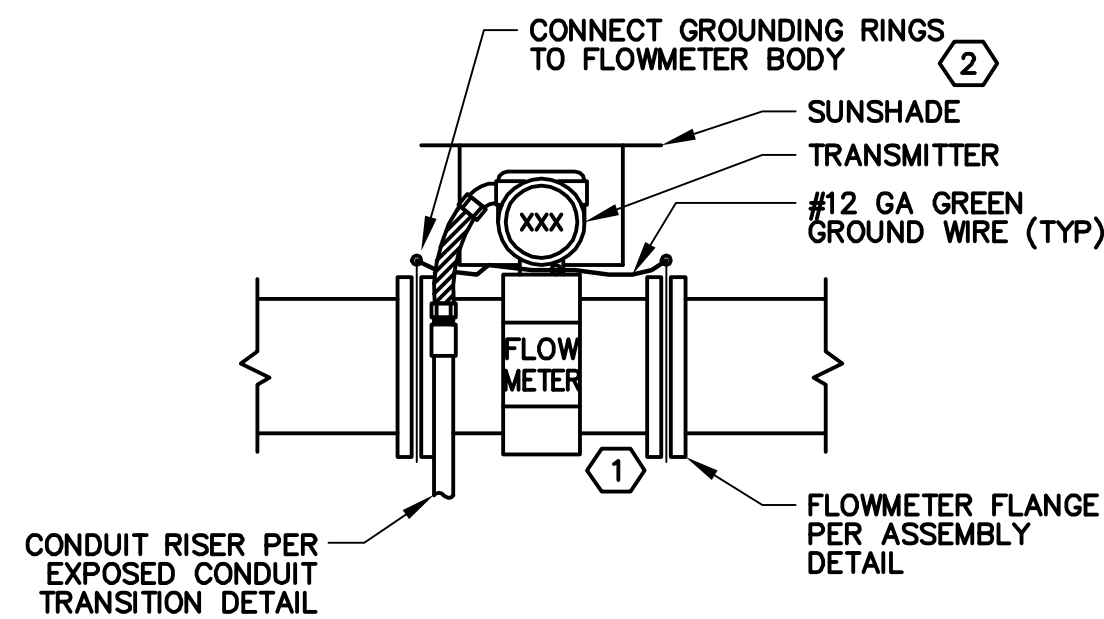


ELEVATION



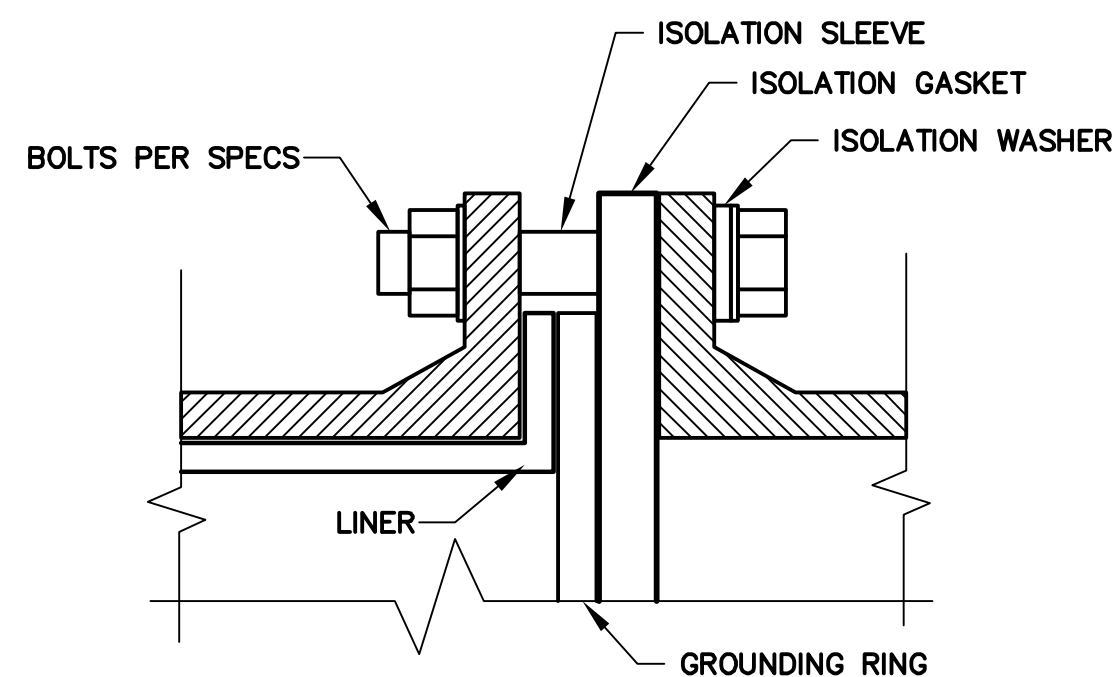
TOP VIEW

ALP AREA LIGHT POLE NOT TO SCALE

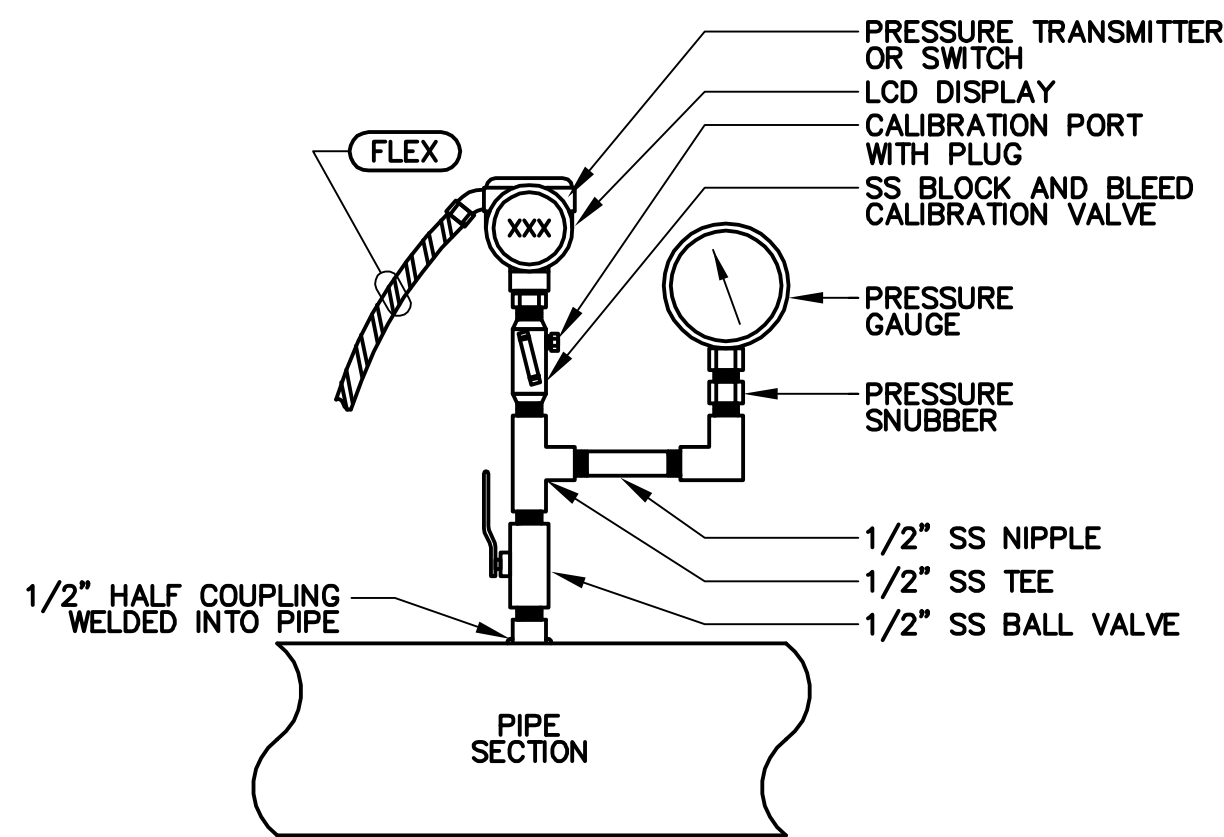


FMD FLOWMETER DETAIL NOT TO SCALE

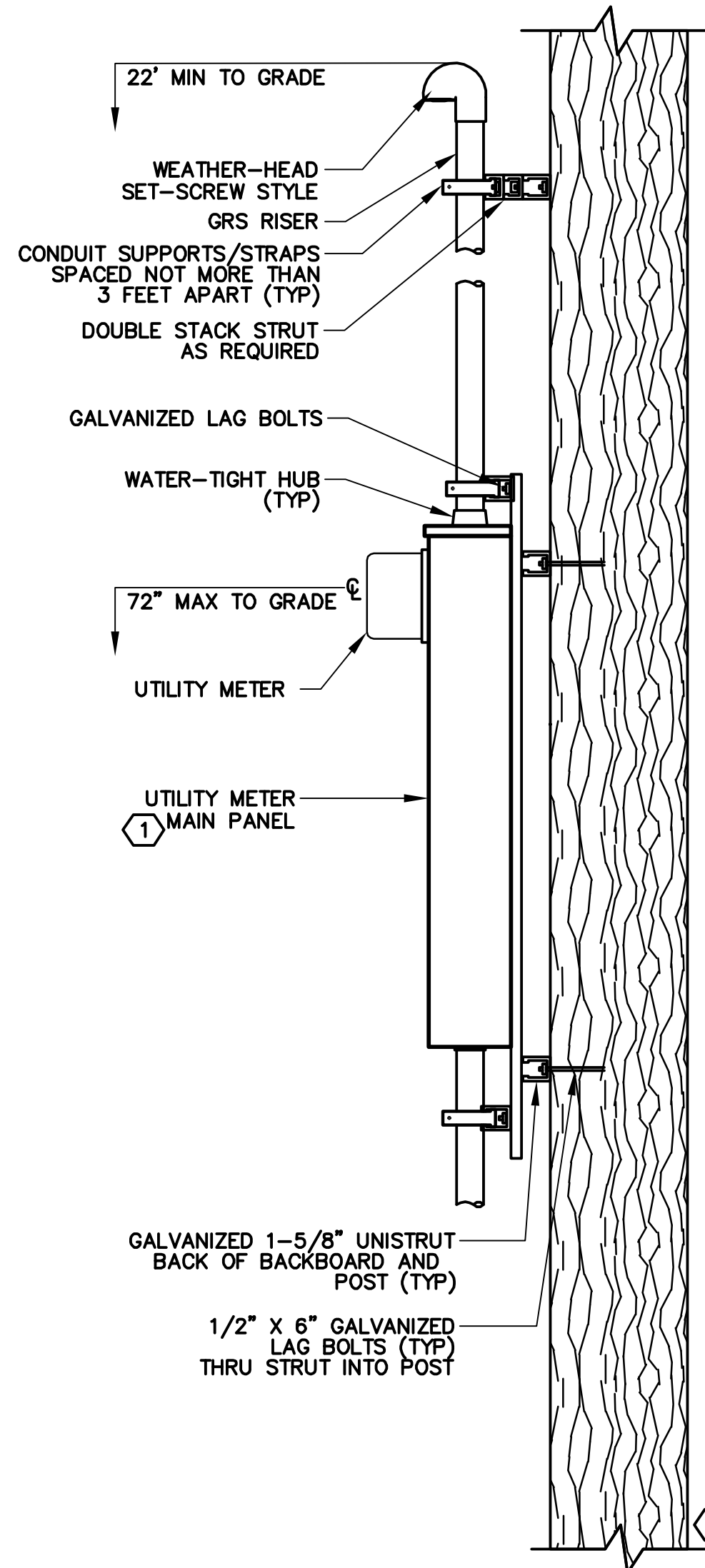
- NOTES:
- REFER TO MANUFACTURERS INSTRUCTIONS REGARDING THE ALLOWED MINIMUM NUMBER PIPE DIAMETERS UPSTREAM AND DOWN STREAM OF FLOW METER FROM VALVES, TEES, ELBOWS, OR OTHER PIPE CONNECTIONS.
 - FURNISH AND INSTALL GROUND RINGS AS SPECIFIED FROM FLOW METER MANUFACTURER. FURNISH AND INSTALL A #10 AWG GROUND WIRE FROM GROUND RINGS, TO FLOW METER, AND TO GROUND ROD.



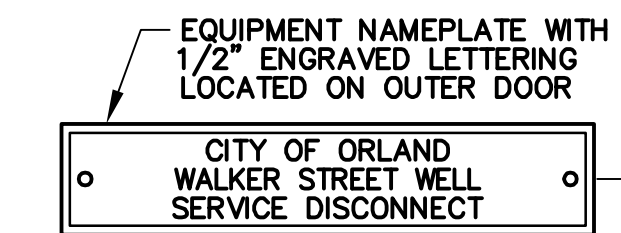
FLG FLOWMETER FLANGE ASSEMBLY NOT TO SCALE



PTA PRESSURE DEVICE ASSEMBLY DETAIL NOT TO SCALE



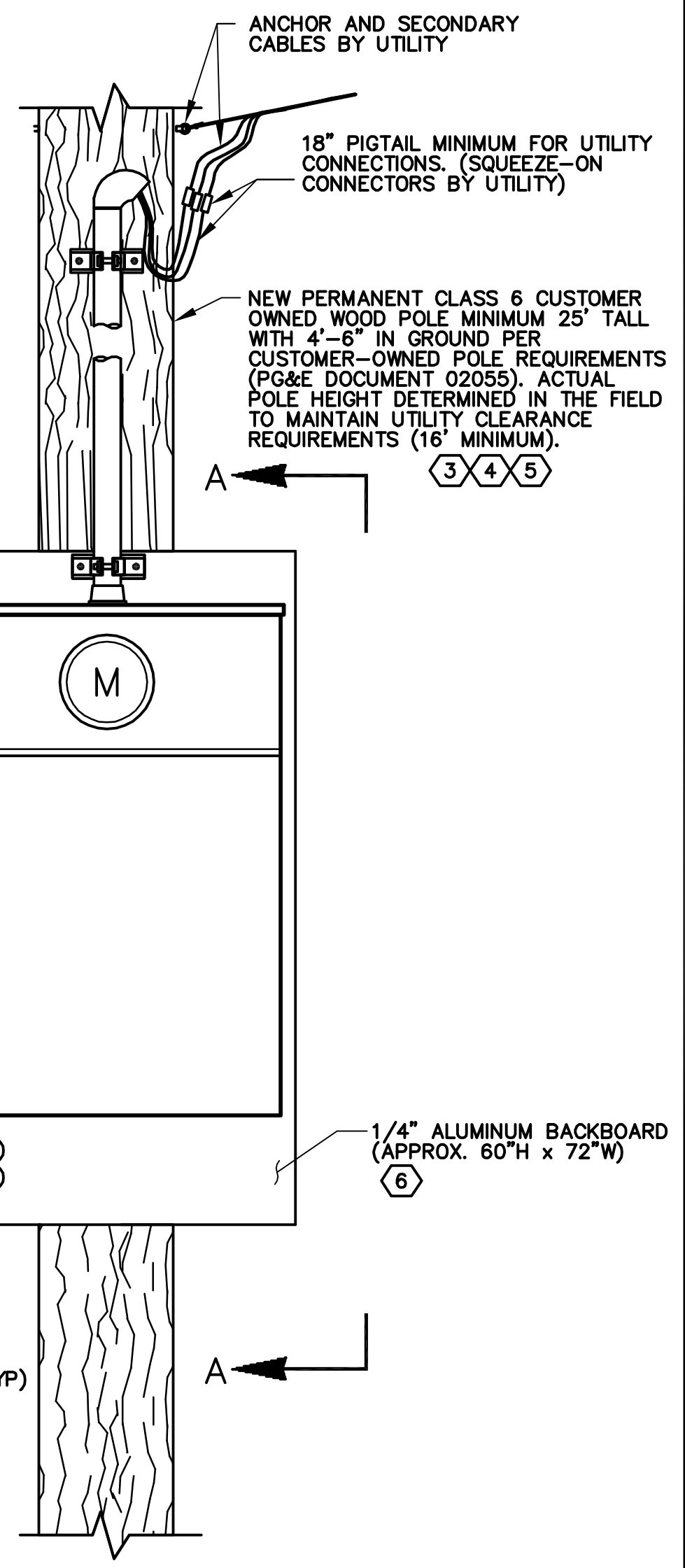
SECTION A-A



MBD METER/MAIN BACKBOARD DETAIL NEMA 3R, OUTDOOR NOT TO SCALE

DRAWING REFERENCED NOTES:

- SINGLE METER POSITION, NEMA TYPE 3R RATED, ANSI 61 GRAY ELECTROCOAT FINISH, 600 VAC RATED TEST BLOCK BYPASS UTILITY METERING ENCLOSURE WITH MAIN DISCONNECT. PANEL SHALL BE USER CERTIFIED AND MEET PG&E GREENBOOK REQUIREMENTS.
- NEMA 3R ENCLOSED CIRCUIT BREAKER, 3-POLE, 480V, 400 AMP WITH ARC FLASH REDUCTION SYSTEM. PROVIDE EATON AR3HB1DL2R OR APPROVED EQUAL.
- NOTIFY UTILITY AND SCHEDULE INSPECTION PRIOR TO SETTING CUSTOMER-OWNED POLE
- PROVIDE COPY OF THE "CERTIFICATE OF TREATMENT" TO UTILITY.
- GROUNDING WIRE SHALL BE PROTECTED AGAINST MECHANICAL DAMAGE BY RIGID STEEL CONDUIT. THE GROUND ROD SHALL BE LOCATED NO LESS THAN 12 INCHES FROM THE POLE SURFACE.
- CUSTOMER'S EQUIPMENT SHALL NOT BE INSTALLED IN THE CLIMBING SPACE OR OVER THE POLE BRAND.
- ALL POLES TO BE SET BY CONTRACTOR.



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ELECTRICAL	SHEET NO. 26 OF 28
ELECTRICAL DETAILS SHEET 2	E-12

DAVID C:\GEI\1901051_Orange Vale Water Co - Well No. 3.ICAD\GEI-Orange Vale Water Co Well No. 3.dwg - 7/26/2022

P&ID ABBREVIATIONS					
INSTRUMENTATION SYMBOLS					
FIRST LETTER		SUCCEEDING LETTERS			
	MEASURED OR 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	RATIO			
G	GENERAL		GLASS VIEWING DEVICE		
H	HAND				HIGH, OPENED
I	CURRENT		INDICATING, INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULED	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	OPERTOR		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			VAVE, DAMPER, LOUVER	
W	WEIGHT		WELL		
X	SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OF PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTER	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

P&ID ABBREVIATIONS			
SWITCH IDENTIFIER			
F/R	FORWARD/REVERSE	OPN	OPEN
HOA	HAND-OFF-AUTO	CLS	CLOSE
HOR	HAND-OFF-REMOTE	SEL	SELECTOR
LOS	LOCK OUT STOP	S/S	START / STOP
L/R	LOCAL / REMOTE	%	PERCENT ADJUSTMENT
MOA	MANUAL-OFF-AUTO		
OCA	OPEN-CLOSE-AUTO		
O/C	OPEN / CLOSE		
O/O	ON / OFF		

P&ID SYMBOLS							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ISA SYMBOLS		VALVES		PUMPS		SENSORS	
	FIELD MOUNTED INSTRUMENT		GATE VALVE		CENTRIFUGAL PUMP OR BLOWER		MAGNETIC FLOWMETER
	INSTRUMENT MOUNTED ON DOOR OF LOCAL PANEL, OPERATOR ACCESSIBLE		CHECK VALVE		SUBMERSIBLE SEWAGE PUMP		DENSITY METER
	INSTRUMENT MOUNTED ON DOOR OF FIELD PANEL, OPERATOR ACCESSIBLE		PLUG VALVE		VERTICAL TURBINE PUMP OR WELL PUMP		ULTRASONIC FLOWMETER
	INSTRUMENT MOUNTED WITHIN PANEL, OPERATOR INACCESSIBLE		BALL VALVE		SUBMERSIBLE WELL PUMP		TURBINE OR PROPELLER METER
	INSTRUMENT MOUNTED WITHIN FIELD PANEL, OPERATOR INACCESSIBLE		BALL CHECK VALVE		GEAR PUMP		VENTURI TUBE
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES		BUTTERFLY VALVE		POSITIVE DISPLACEMENT PUMP OR BLOWER		THERMAL DISPERSION FLOWMETER OR SWITCH
	ASSOCIATED MOTOR CONTROL ELEMENTARY IF APPLICABLE		ANGLE VALVE		DIAPHRAGM PUMP		PADDLE WHEEL FLOWMETER
	VISUAL DISPLAY OF PLC ANALOG REGISTER SCALE TO UNITS AS SHOWN		NEEDLE VALVE		PERISTALTIC PUMP		CORIOLIS FLOWMETER
	VISUAL DISPLAY OF PLC ANALOG ALARM REGISTER		RELIEF VALVE	SENSORS			
	VISUAL DISPLAY OF PLC DIGITAL REGISTER		DIAPHRAGM VALVE		ORIFICE PLATE	MISCELLANEOUS MECHANICAL ITEMS	
	VISUAL DISPLAY OF PLC DIGITAL ALARM REGISTER		3-WAY VALVE		ULTRASONIC LEVEL TRANSMITTER (FLOW IF OVER FLUME OR WEIR)		PIPE REDUCER
	TAG DESCRIPTION		FLOW CONTROL VALVE		CONDUCTANCE TYPE LEVEL ELEMENTS		RUPTURE DISC
	PLC I/O TAG		PINCH VALVE		RADAR TYPE LEVEL TRANSMITTER		PRESSURE OR VACUUM RELIEF VALVE
	PLC DIGITAL INPUT		CONE VALVE		GUIDED OPTION		DIAPHRAGM SEAL
	PLC DIGITAL OUTPUT		ANTISIPHON/BACKPRESSURE VALVE		CAPACITANCE TYPE LEVEL TRANSMITTER		ANNULAR SEAL
	ANALOG INPUT		SOLENOID VALVE (2-WAY) (S-M FOR MOTORIZED VALVE)				DRAIN TO WASTE
	ANALOG OUTPUT		SOLENOID VALVE (3-WAY) (S-M FOR MOTORIZED VALVE)				MIXER
	AUDIBLE ALARM (BUZZER OR HORN)		SOLENOID VALVE (4-WAY) (S-M FOR MOTORIZED VALVE)				FILTER
	LAMP INDICATION COLOR DENOTED BY "X" RED, BLU, GRN, WHT, AMBER		PNEUMATIC DIAPHRAGM CONTROL VALVE				VENT W/CAP OR SCREEN
	CONTINUATION TAG FROM ONE AREA TO ANOTHER AREA OF DIFFERENT DRAWINGS "a" TAG IDENTIFIER TO POINT ON DRAWING NUMBER XXXX.		PRESSURE SUSTAINING VALVE				FLEXIBLE HOSE OR TUBING
	CONTINUED ON DWG I-X		PRESSURE REGULATING VALVE				SPRAY NOZZLE SYSTEM
LINE TYPES			MULTIFUNCTION VALVE				EXPANSION JOINT
	PRIMARY PROCESS LINE		SLUICE GATE (SG) OR SLIDE GATE (SLG)				STATIC MIXER
	SECONDARY PROCESS LINE		AIR RELIEF VALVE (ARV)				INJECTION POINT
	ELECTRICAL SIGNAL LINE (DIGITAL OR ANALOG)		FLOAT VALVE				EJECTOR / EDUCTOR
	SOFTWARE OR DATA LINK		STRAINER				HOSE COUPLING
	BOUNDARY OF EQUIPMENT PACKAGE SYSTEM		BACKFLOW PREVENTER				PULSATION DAMPENER
	COMMUNICATION CONNECTION		CALIBRATION VALVE				OMNI ANTENNA NON-DIRECTIONAL
			CALIBRATION COLUMN				YAGI ANTENNA DIRECTIONAL
			ROTAMETER				
			UNION				
		ACTUATORS					
			MOTORIZED SOLENOID				
			PNEUMATIC OPERATOR S- SOLENOID - OPEN/CLOSE A- POSITIONER - MODULATING				

0	3-25-25	ISSUED FOR BID	MBY
NO	DATE	ISSUE/REVISION	APP

