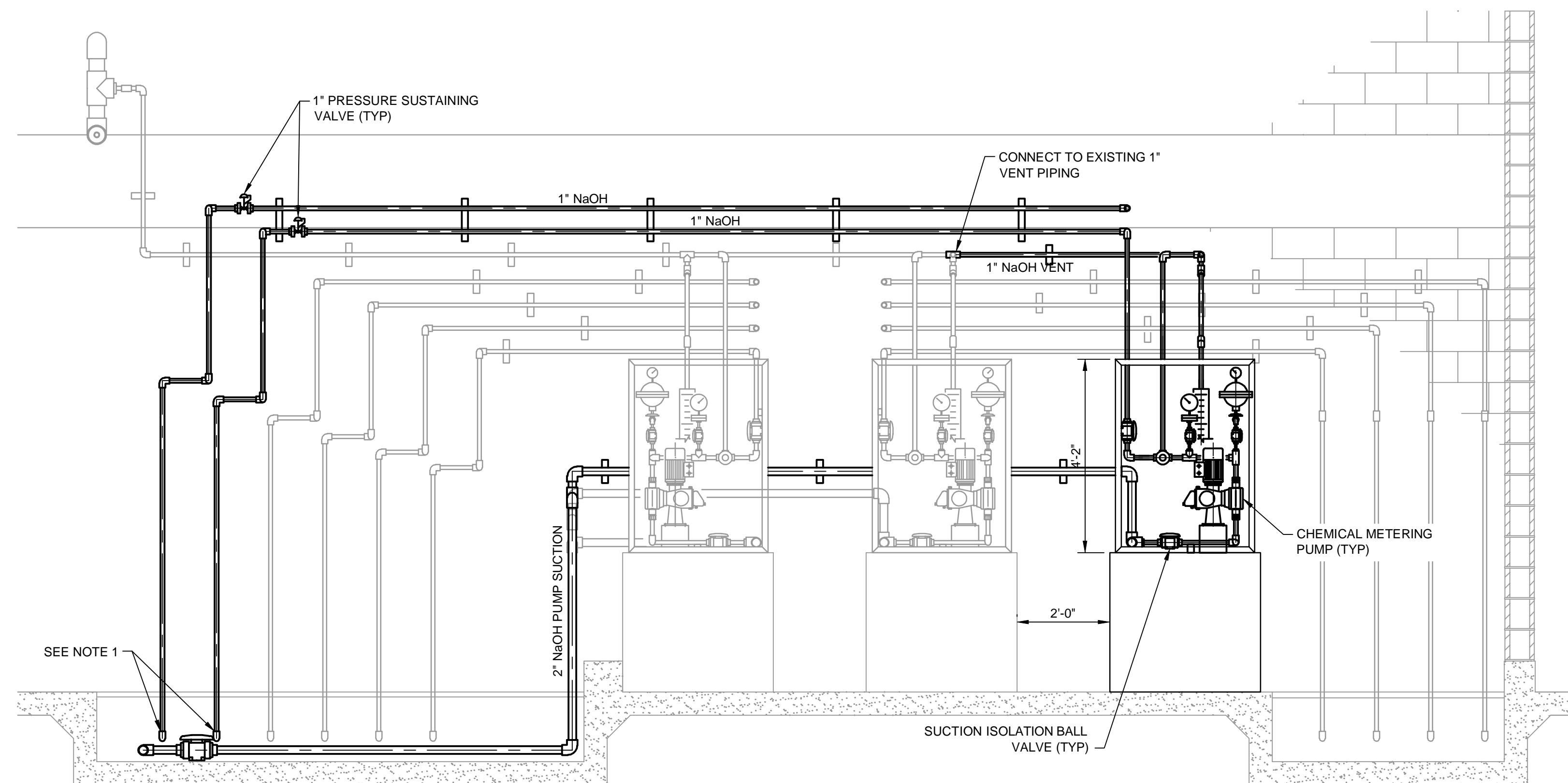
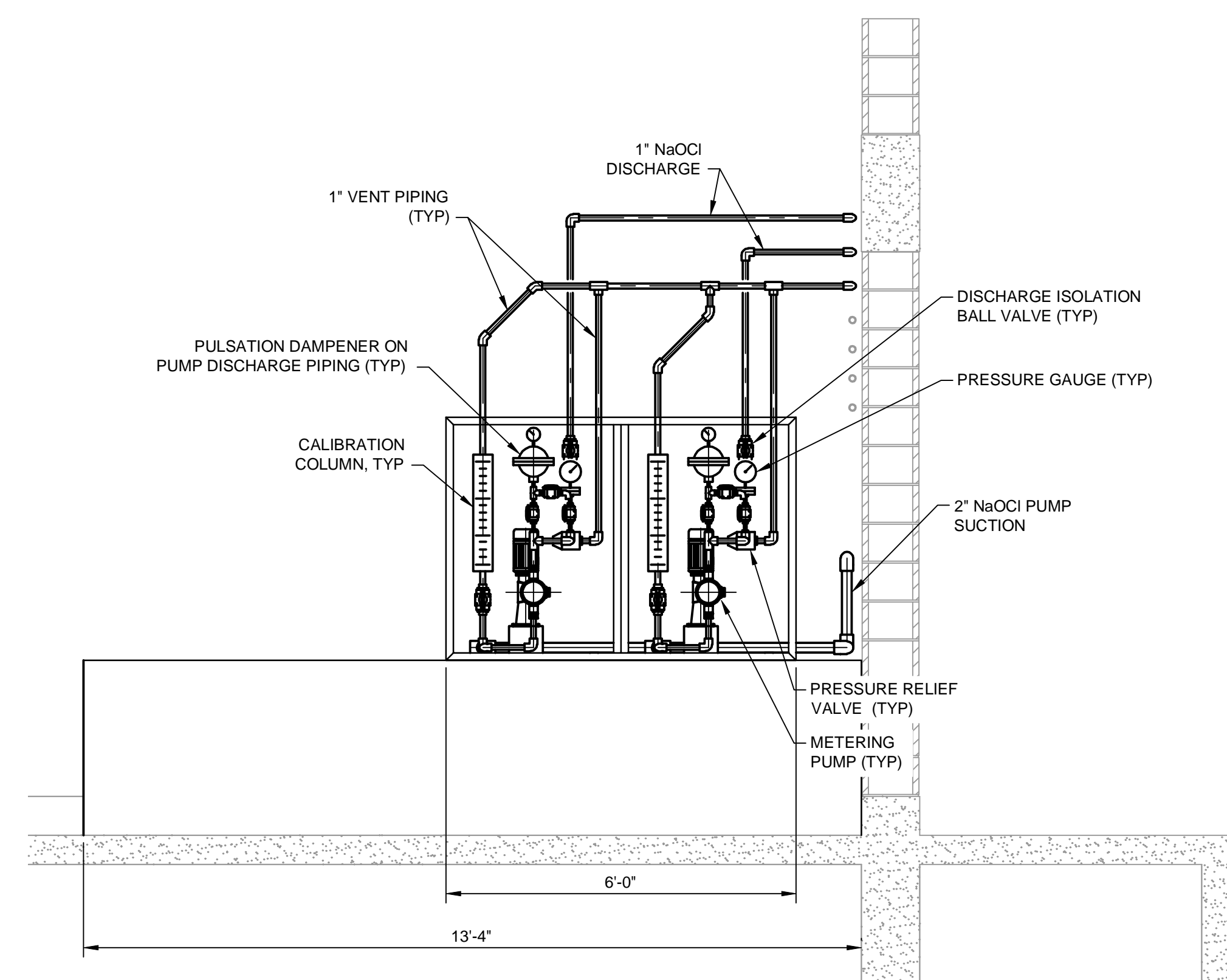


SODIUM HYDROXIDE MODIFICATIONS PLAN
SCALE: 3/8" = 1'-0"



A SECTION
D118 SCALE: 1/2" = 1'-0"



B SECTION
D118 SCALE: 1/2" = 1'-0"

NOTE:
1. ROUTE DISCHARGE PIPING THROUGH CHEMICAL TRENCH TO PROPOSED AQC SCRUBBER 2 STAGE A (62-MP-9) AND STAGE B (62-MP-10).

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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 60
SODIUM HYDROXIDE FEED
SYSTEM MODIFICATIONS

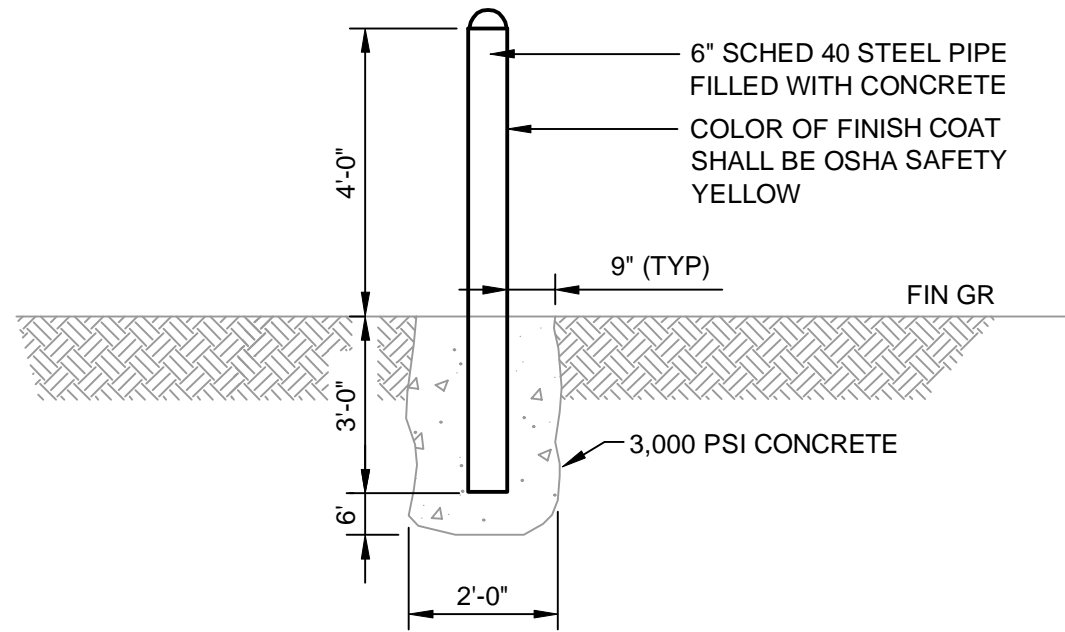
Project No.: 200-10034-11005
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D118

11/14/2017 7:45:10 AM - P:\IER\10034\200-10034-11005\CAD\SHEETFILES\D118 PROCESS 60 MODS.DWG - EVANS, JON

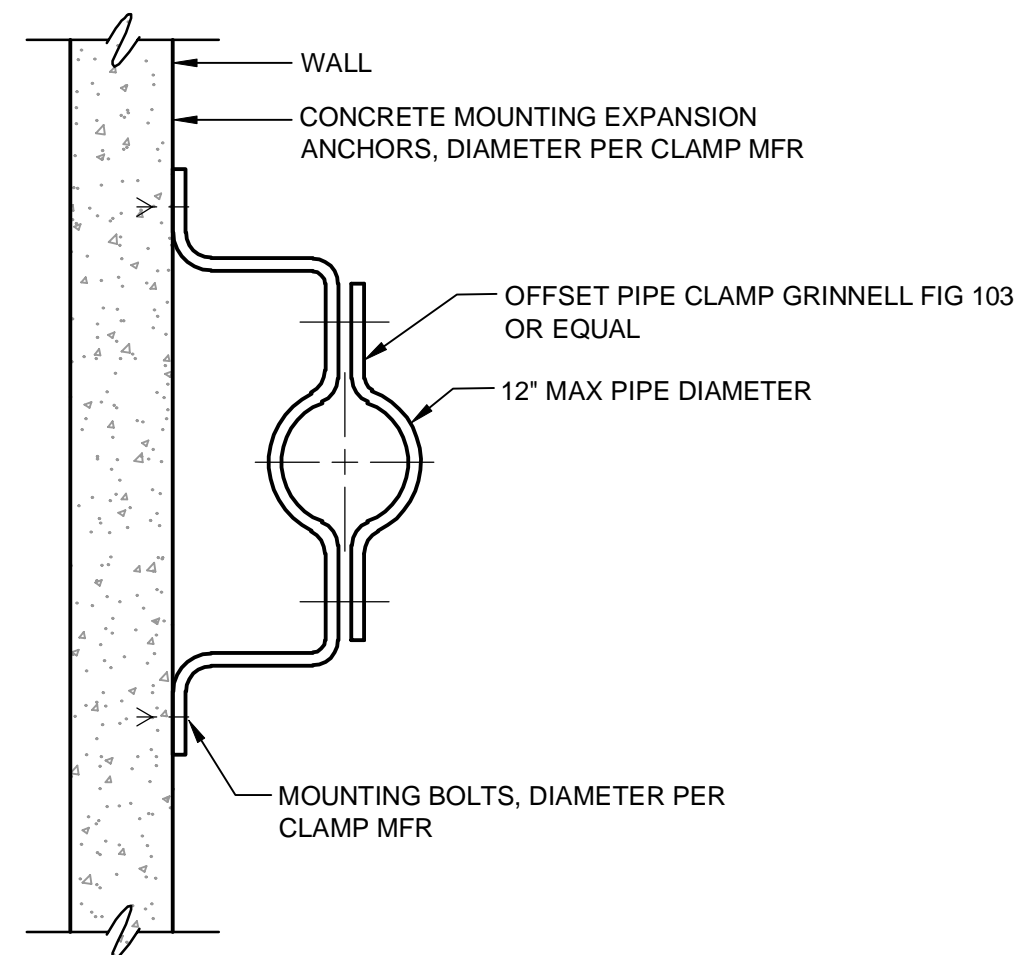
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Bar Measures 1 inch



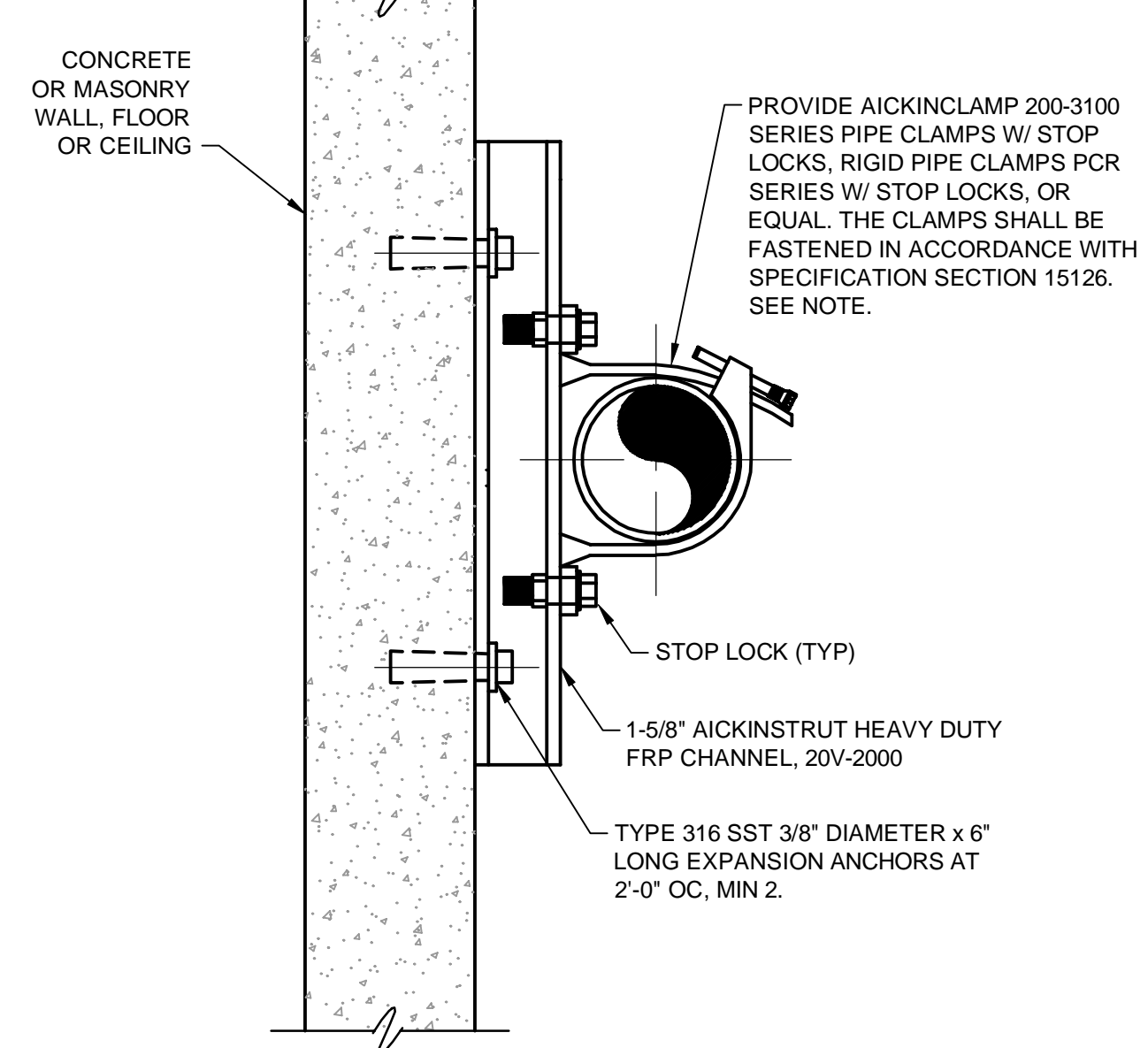
BOLLARD

1 DETAIL
SCALE: NTS



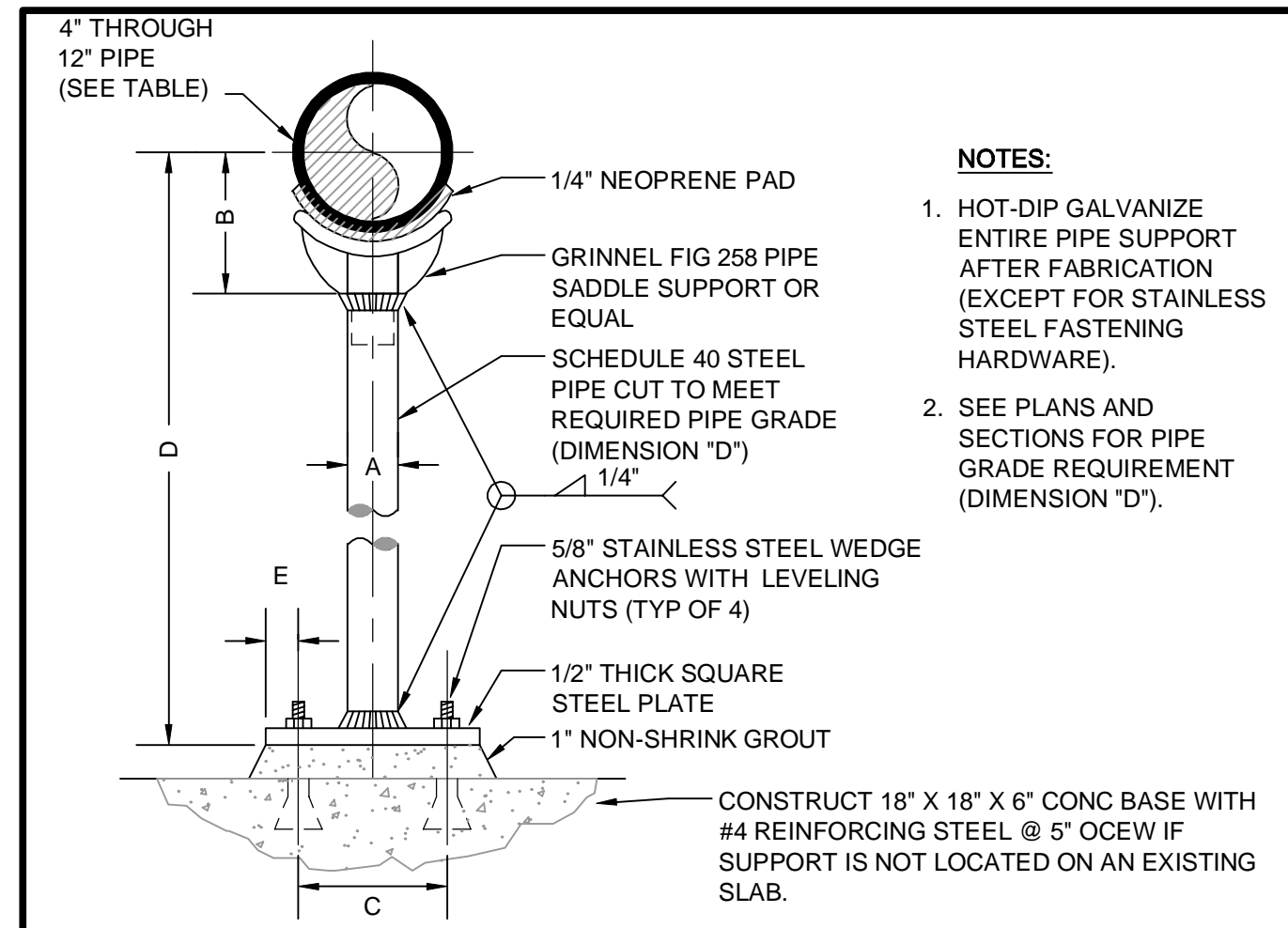
PIPE SUPPORT - OFFSET

2 DETAIL
SCALE: NTS



NON-METALLIC PIPE SUPPORT

3 DETAIL
SCALE: NTS

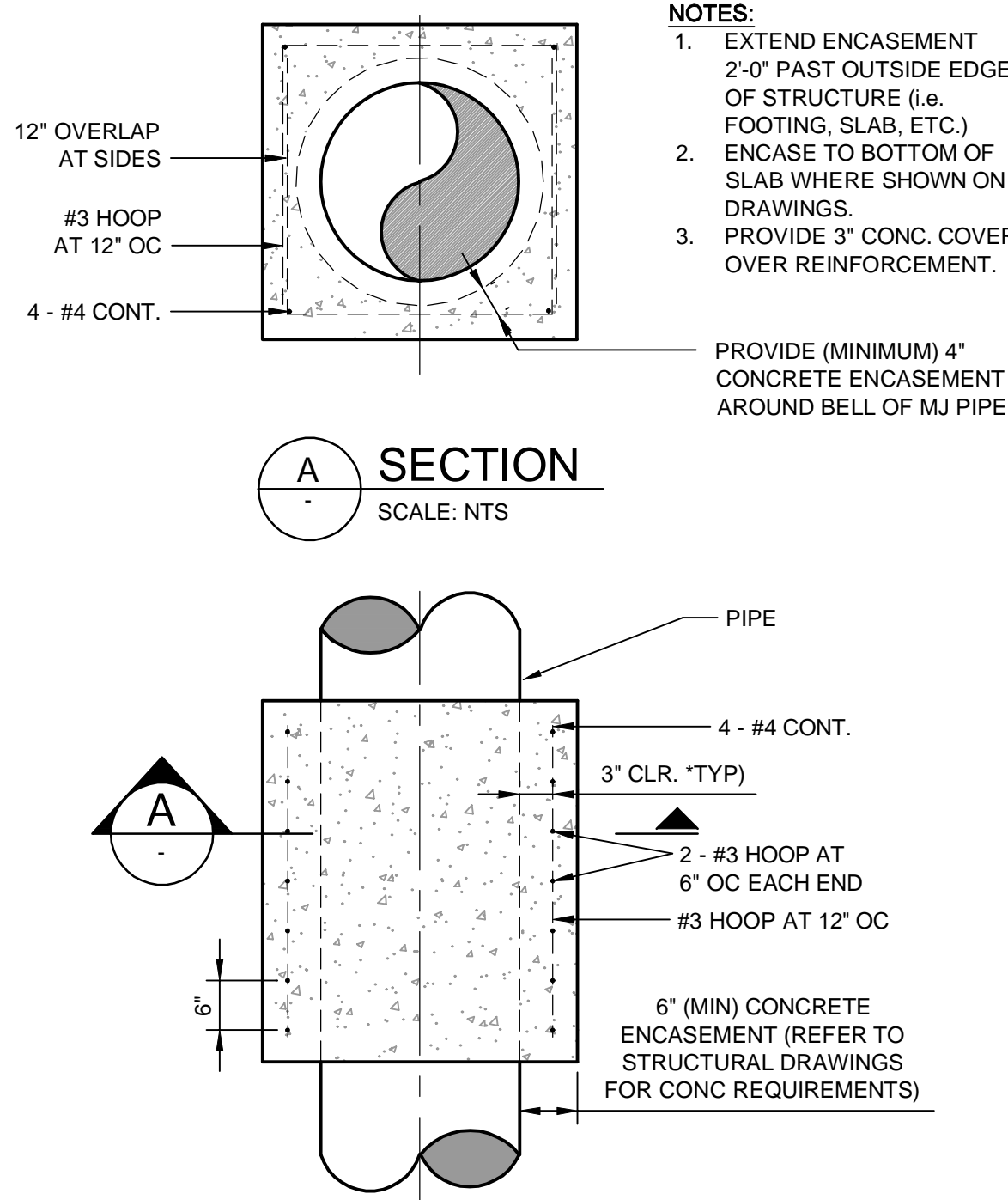


PIPE SUPPORT - SADDLE

4 DETAIL
SCALE: NTS

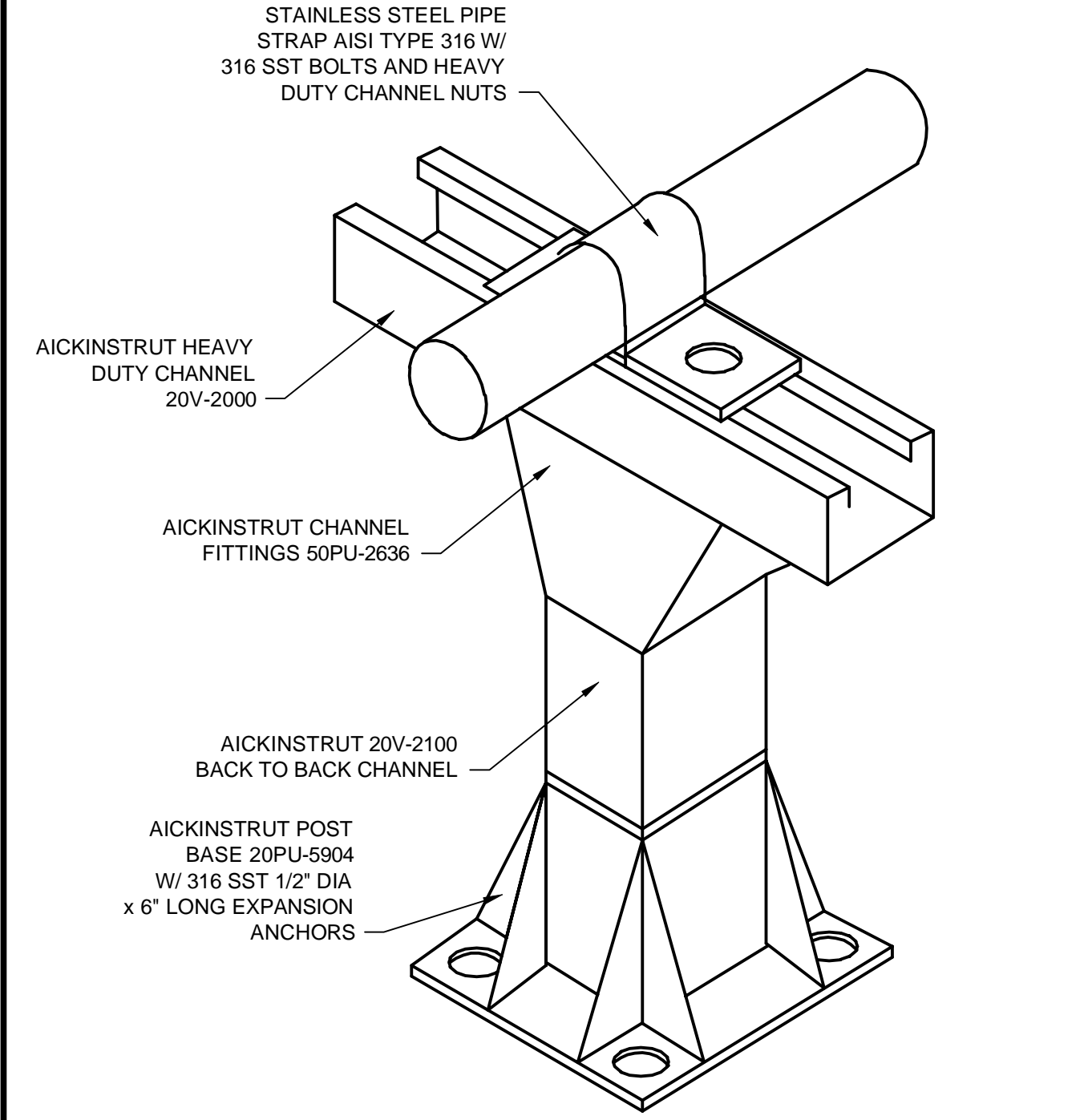
PIPE SIZE	A	B	C	D		E
				MIN	MAX	
4	3	4-3/16	7	6	48	1
5	3	4-13/16	7	6	48	1
6	3	5-7/16	7	8	48	1
8	3	6-15/16	7	8	48	1
10	3	8-7/16	7	10	48	1
12	3	9-15/16	7	12	48	1

* ALL DIMENSIONS IN INCHES.



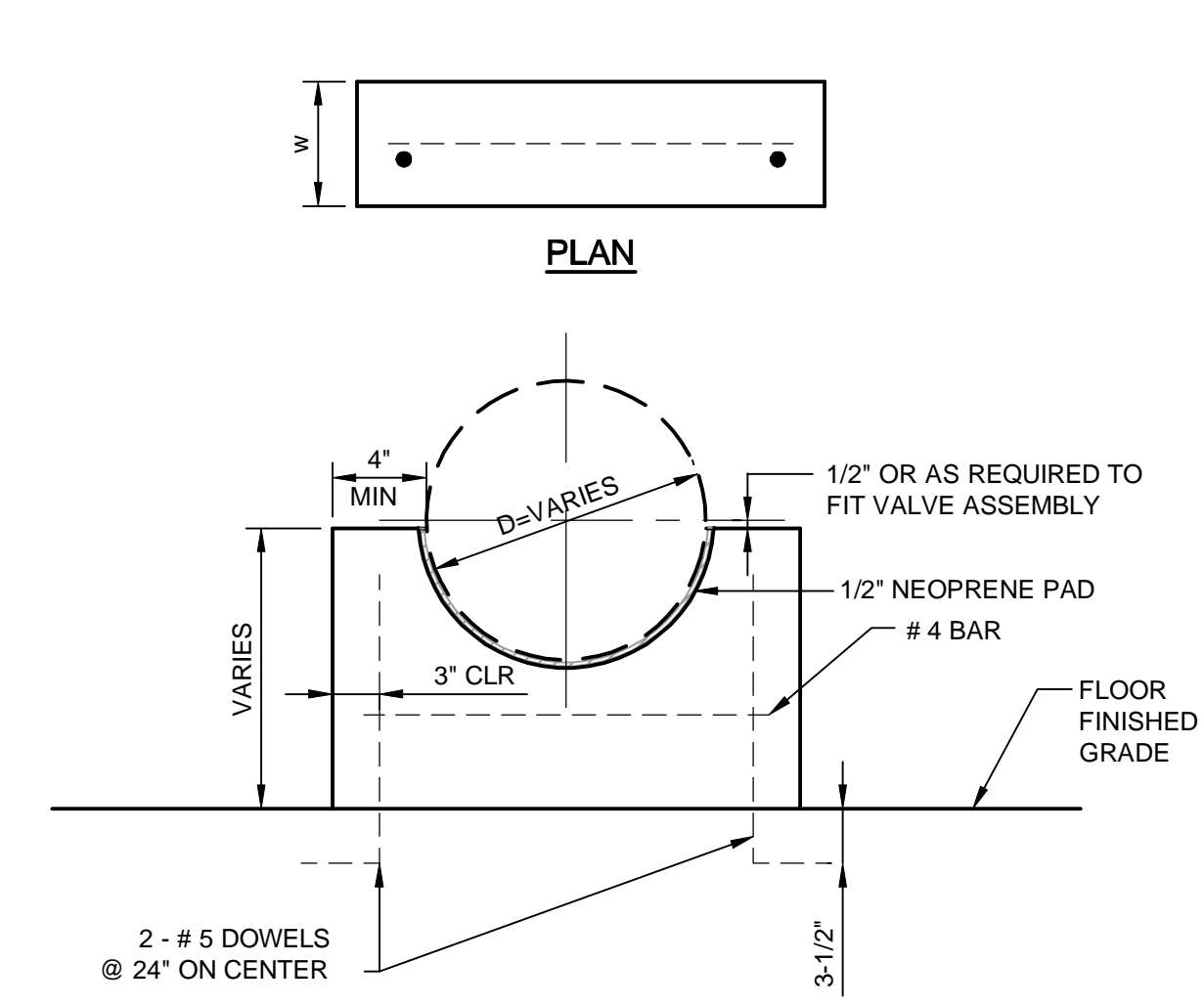
CONCRETE ENCASUREMENT

5 DETAIL
SCALE: NTS



NON-METALLIC PIPE SUPPORT

6 DETAIL
SCALE: NTS

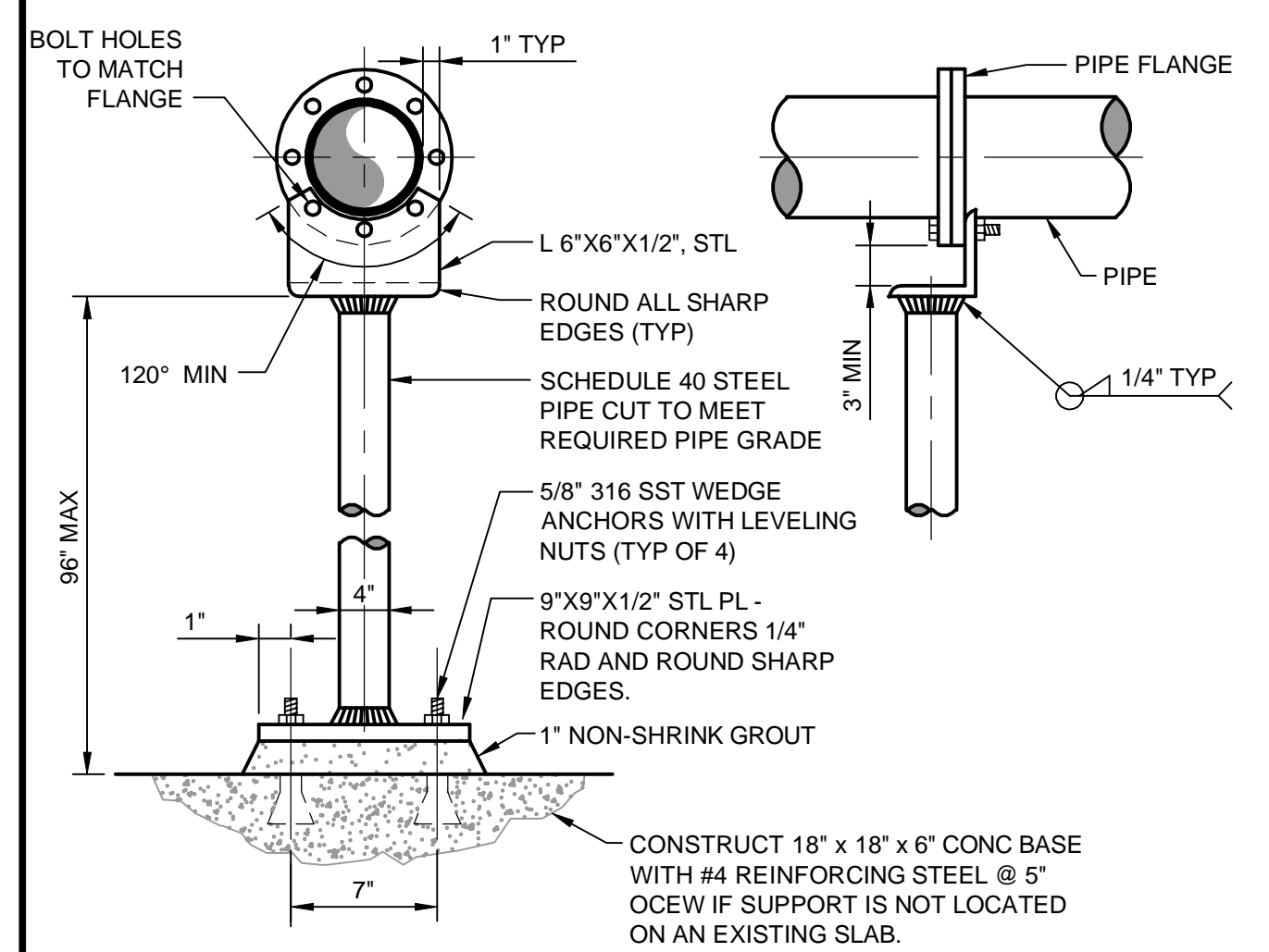


NOTE: PROVIDE CONCRETE FOOTING BELOW GRADE FOR ALL FINISHED GRADE APPLICATIONS.

PIPE DIAMETER "D" INCHES	MINIMUM SUPPORT WIDTH "W" INCHES
12 ≤	6
16 ≤	8
24 ≤	12
54 ≤	18

CONCRETE PIPE SUPPORT

7 DETAIL
SCALE: NTS



NOTES:
1. HOT-DIP GALVANIZE ENTIRE PIPE SUPPORT AFTER FABRICATION (EXCEPT FOR STAINLESS STEEL FASTENING HARDWARE).
2. SEE PLANS AND SECTIONS FOR PIPE GRADE REQUIREMENT.
3. PIPE SUPPORT SUITABLE FOR PIPE SIZES 3" THROUGH 24" DIA.

PIPE SUPPORT - FLANGE

8 DETAIL
SCALE: NTS

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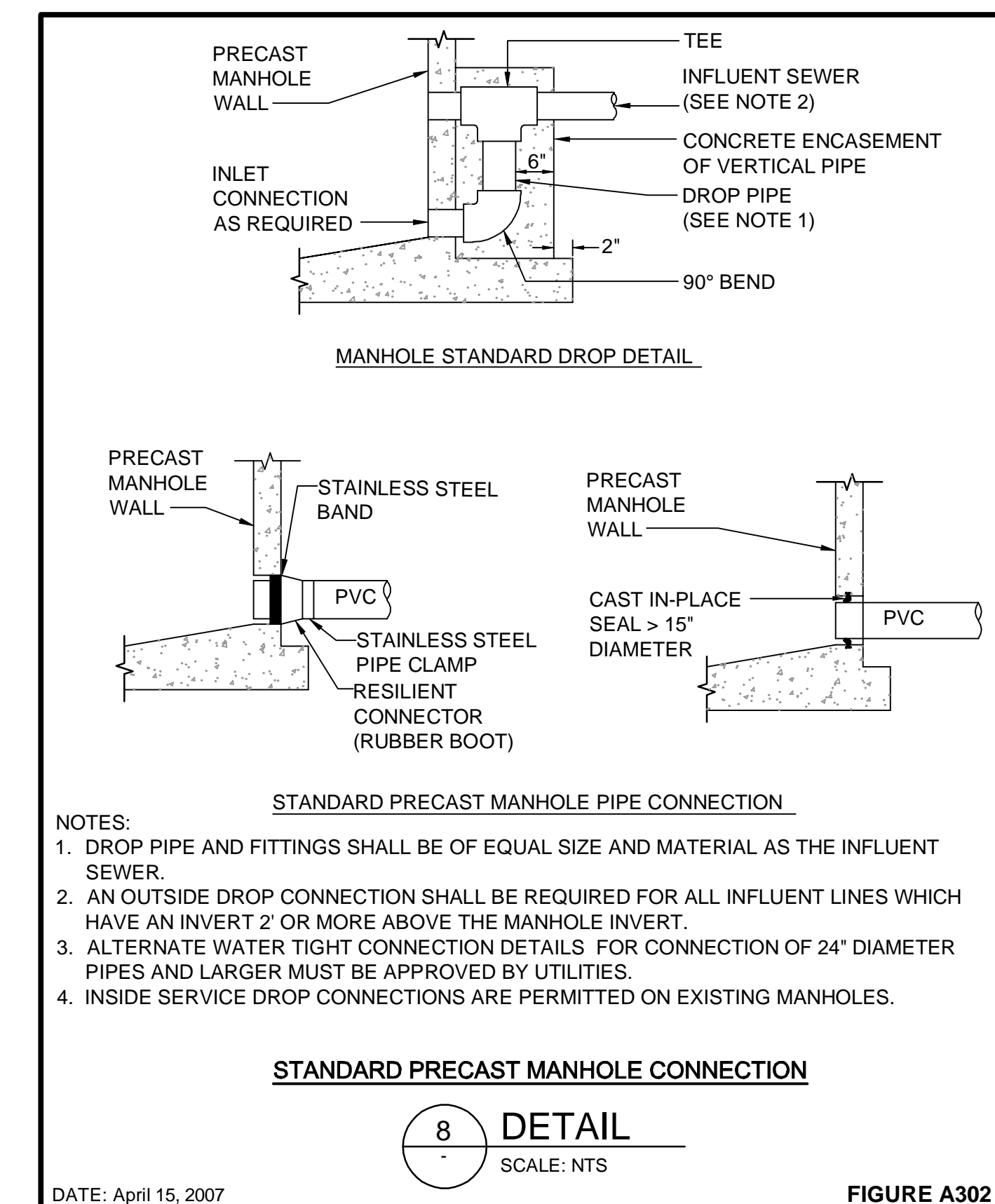
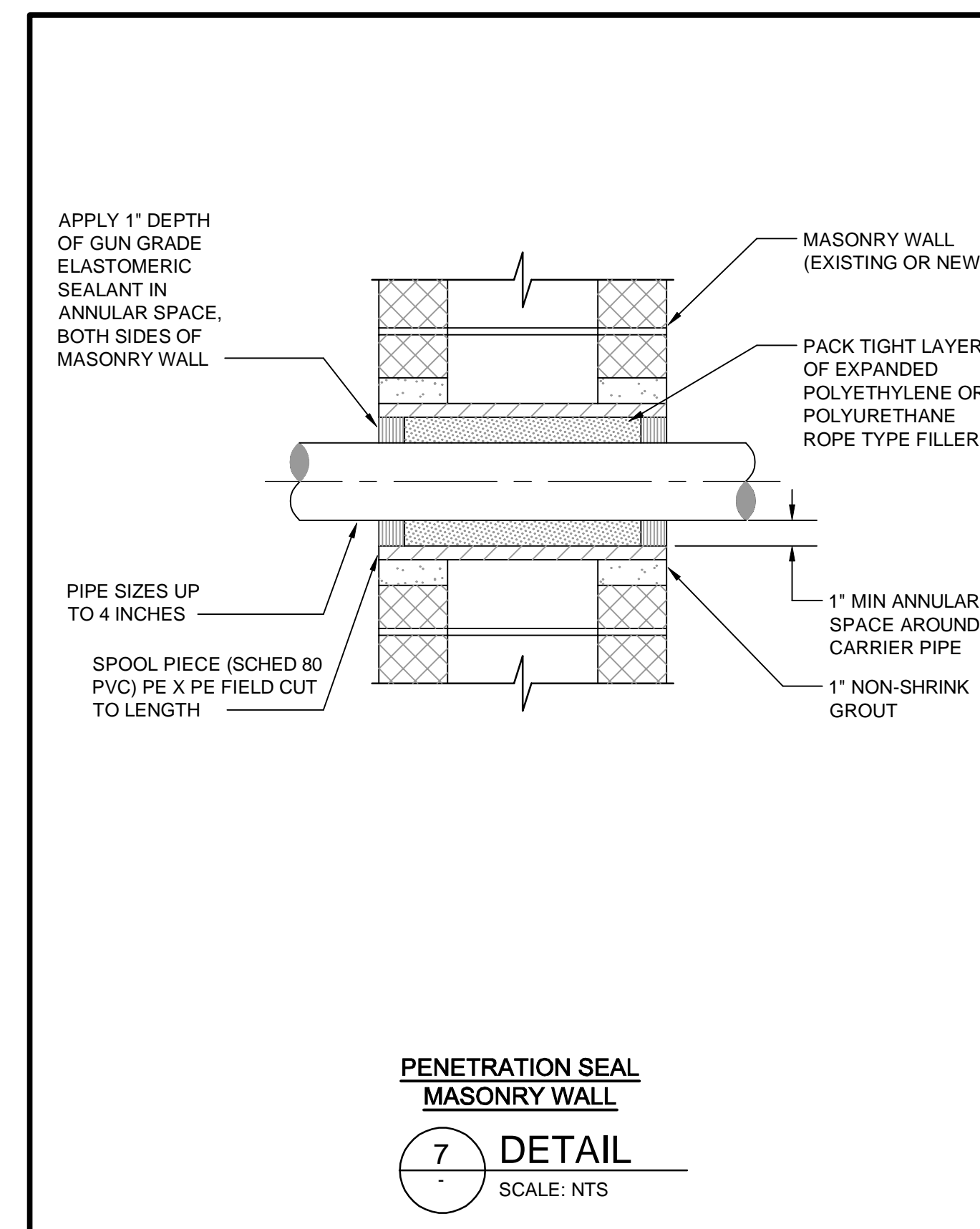
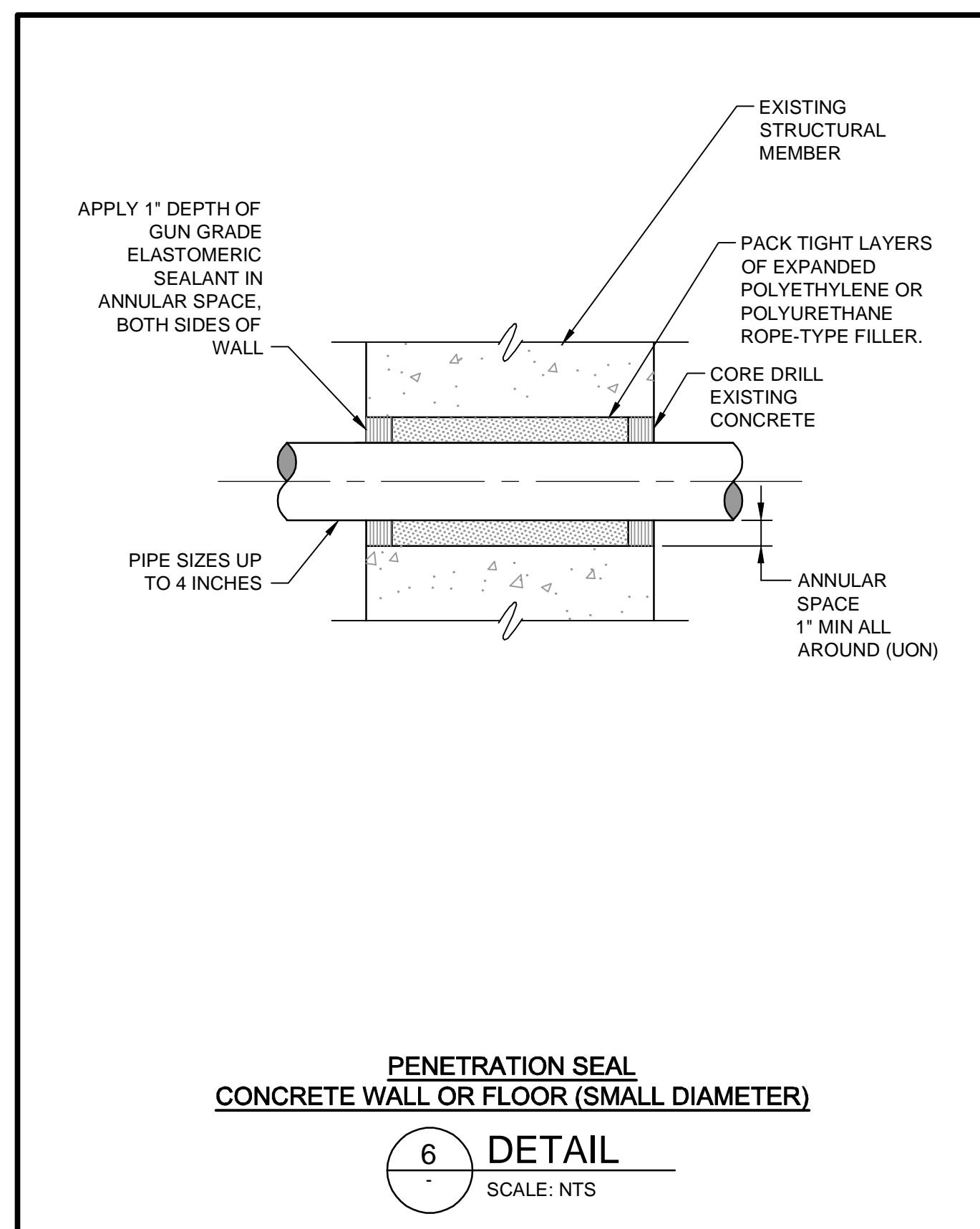
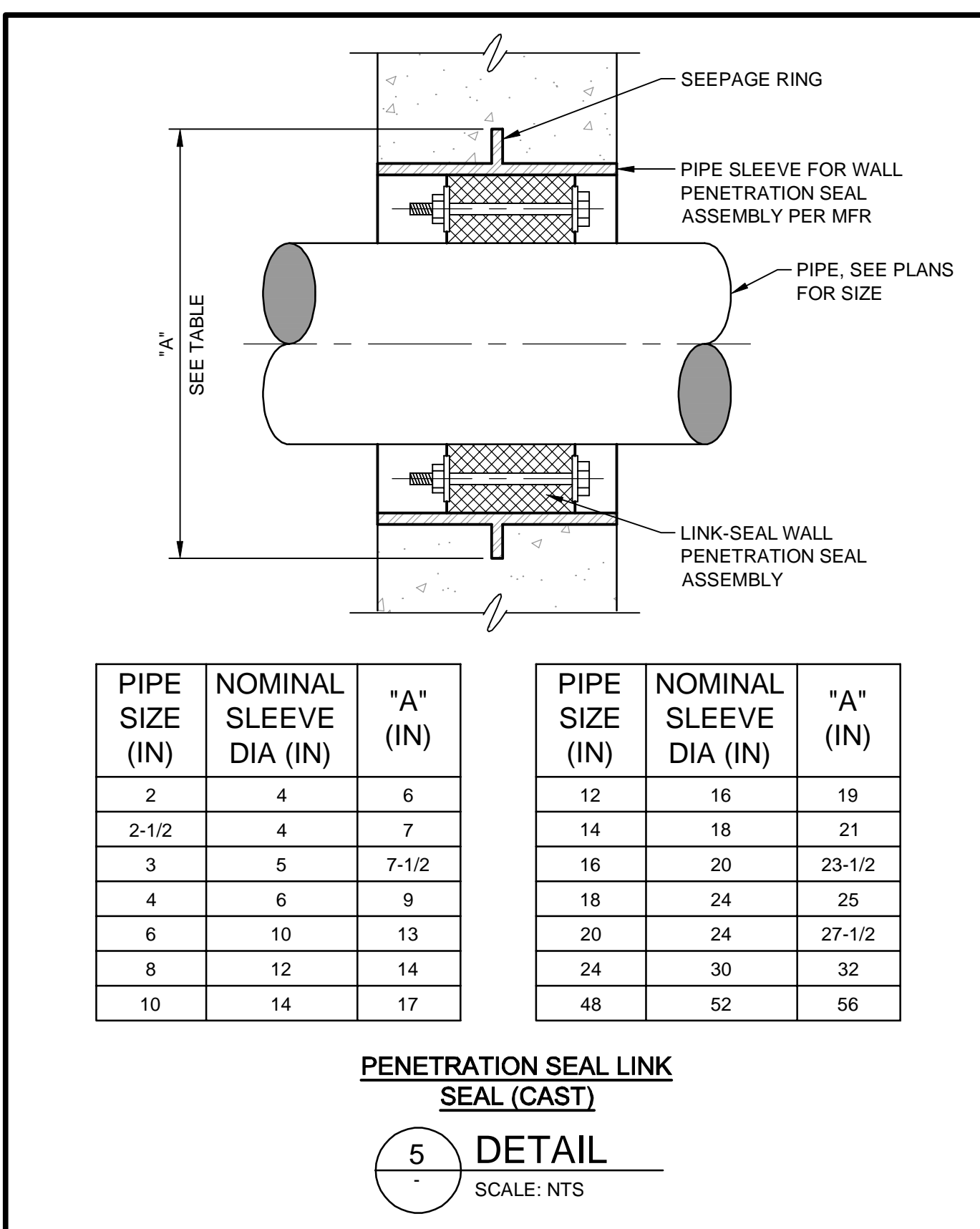
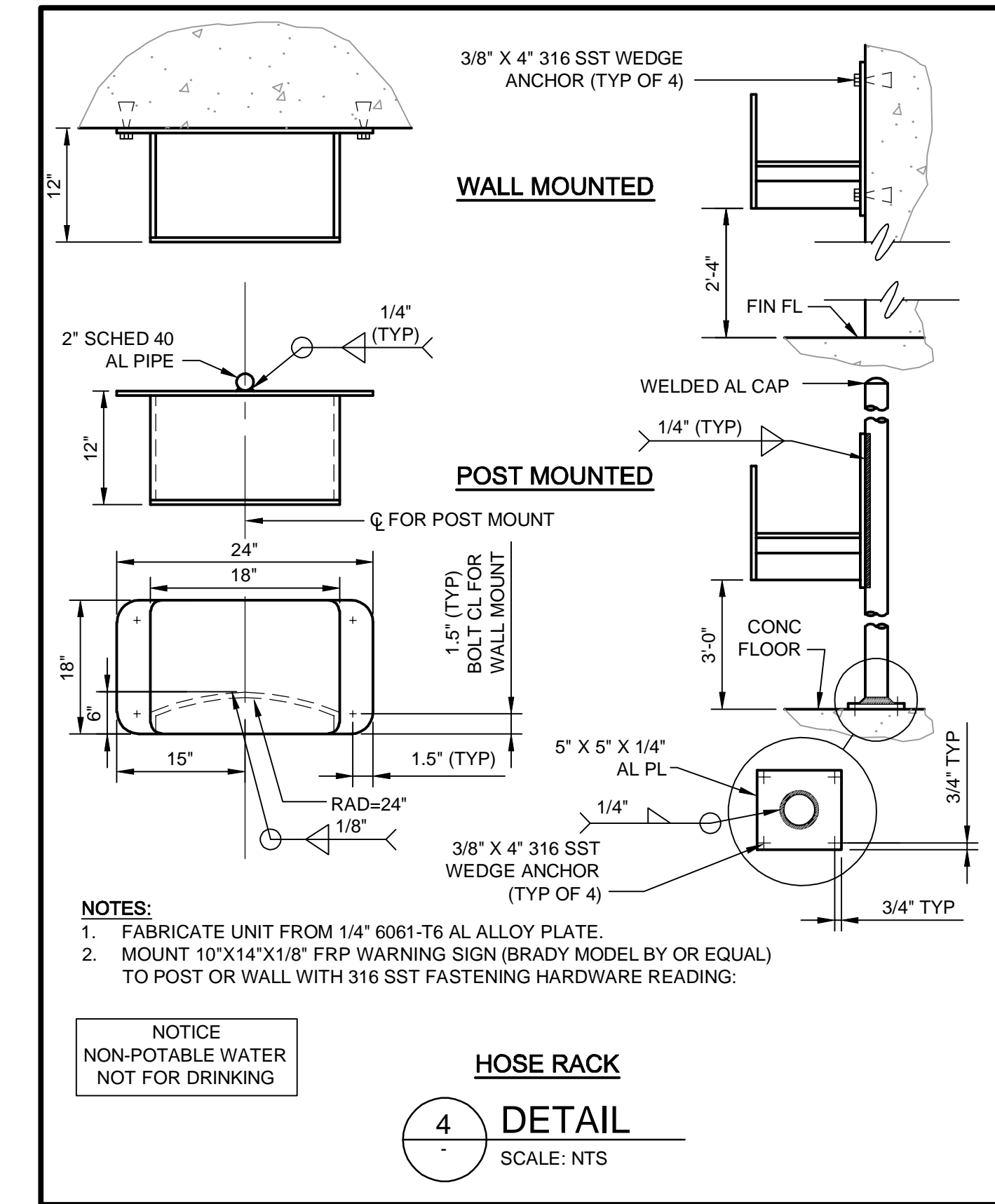
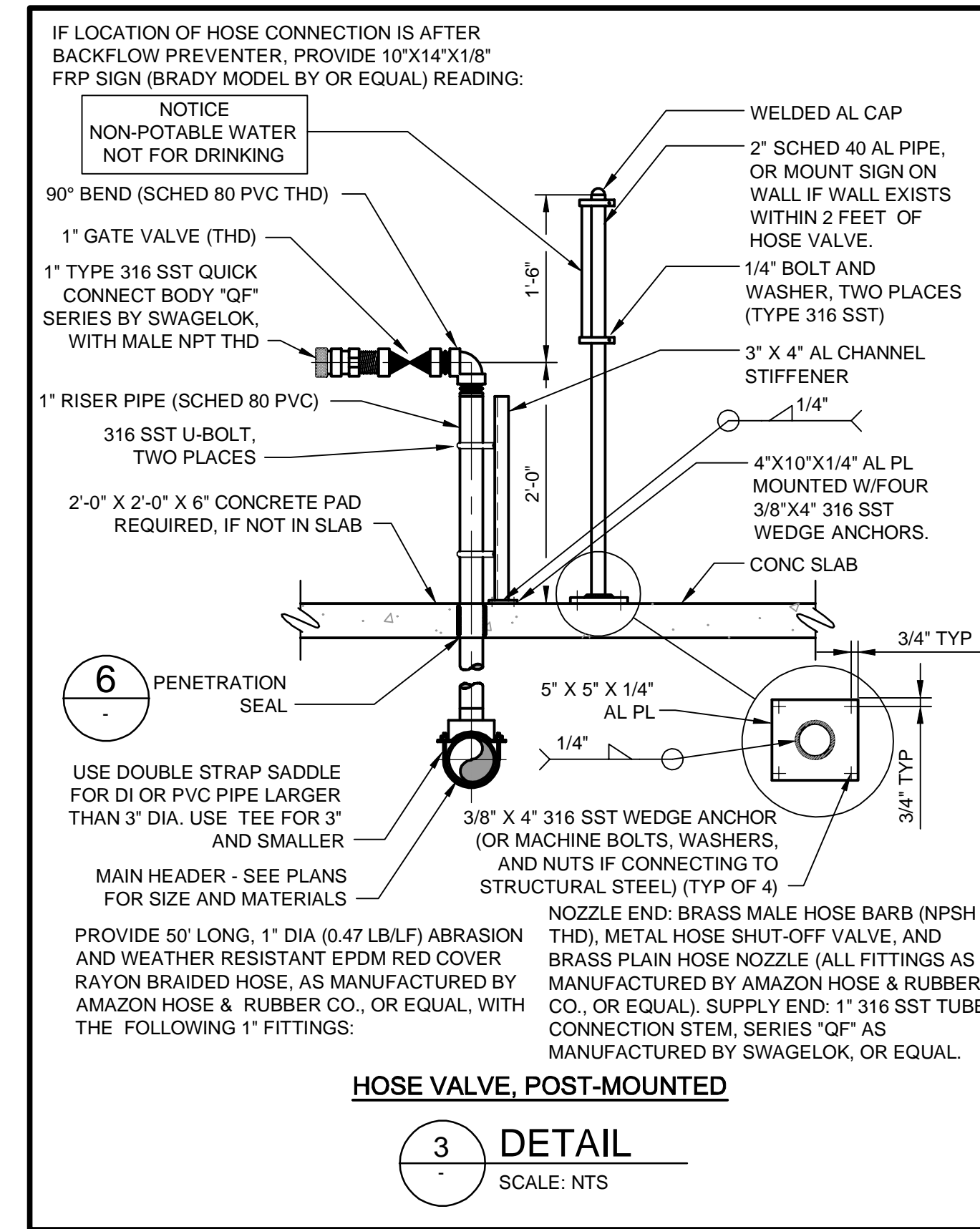
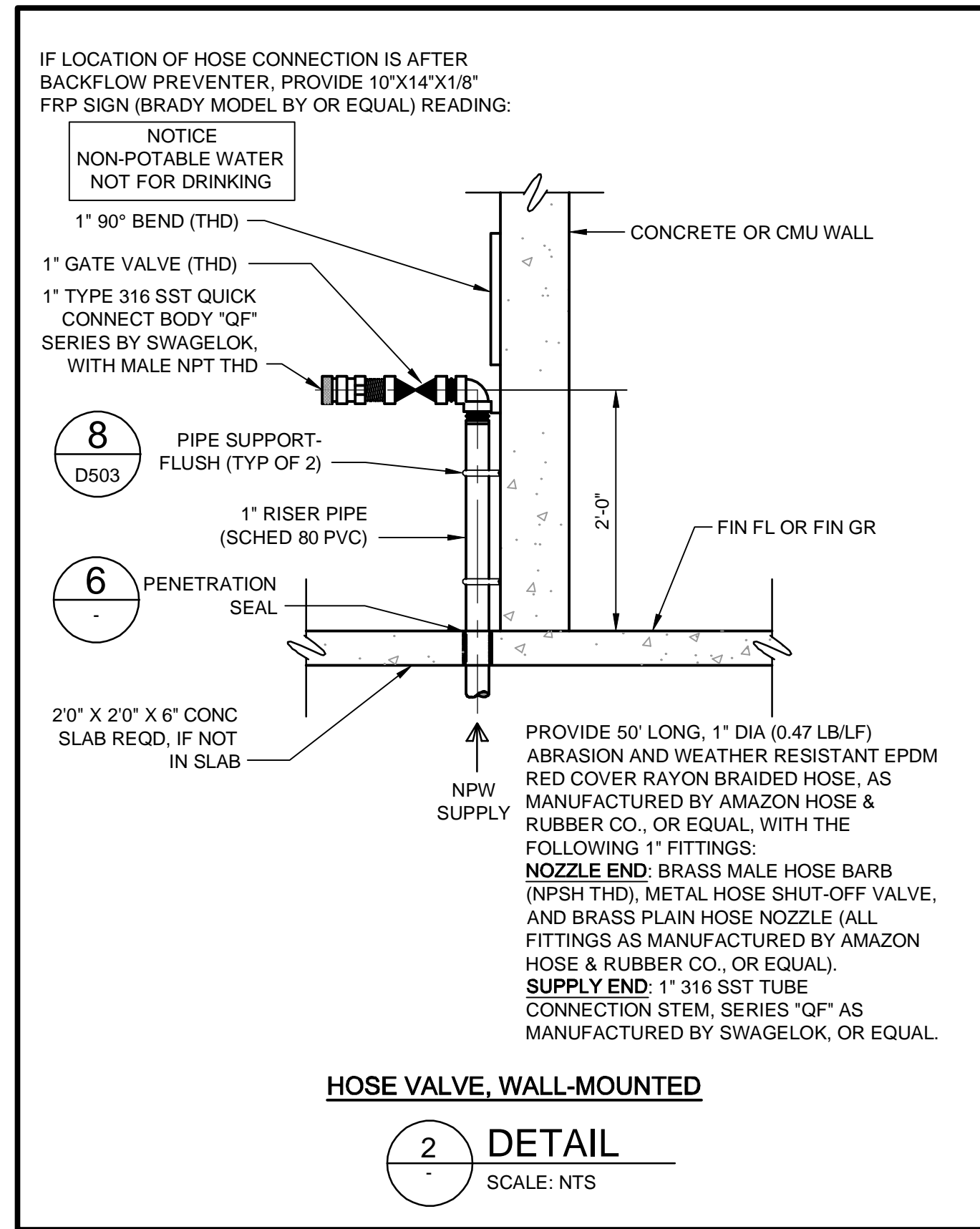
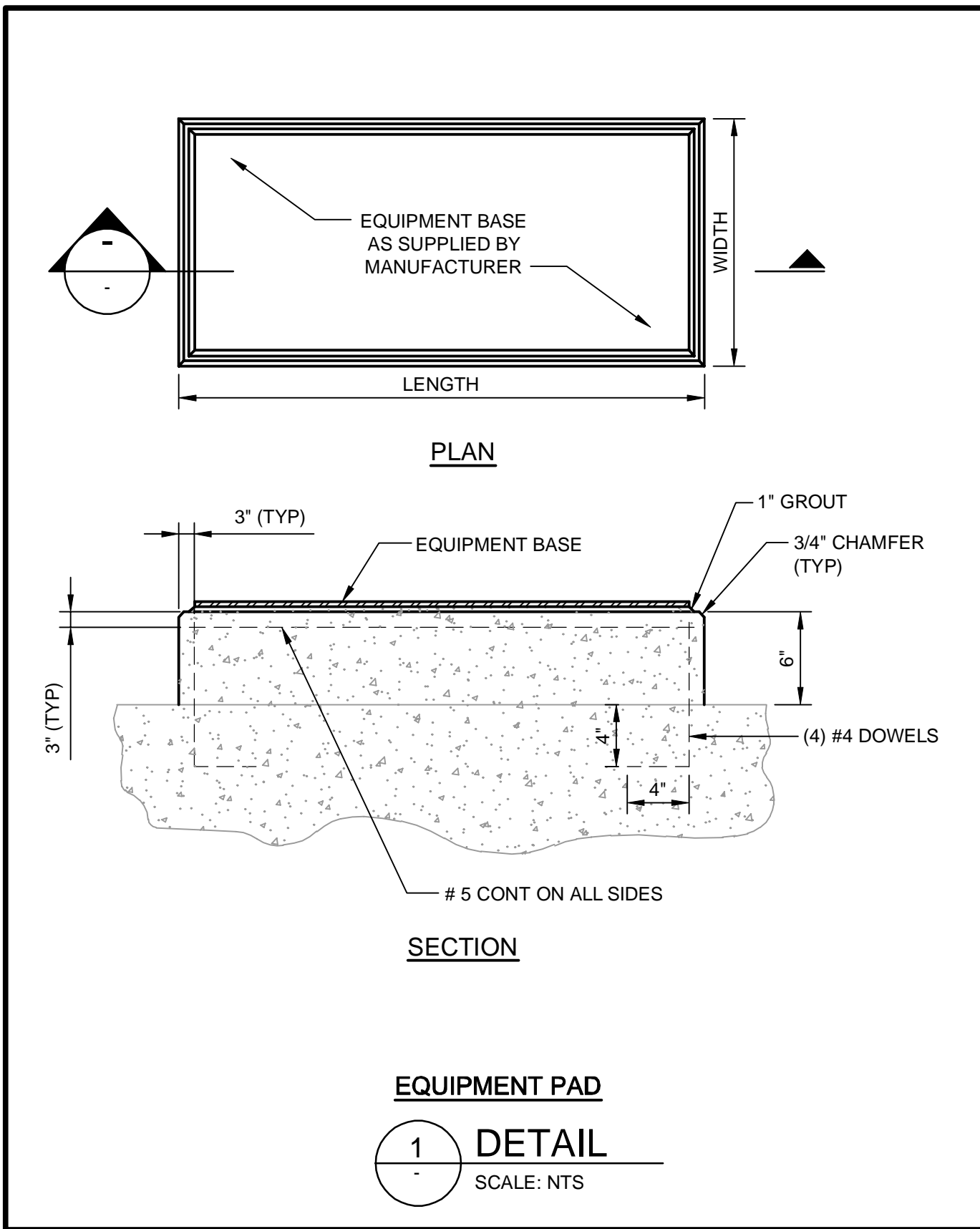
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS DETAILS

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D501

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Bar Measures 1 inch



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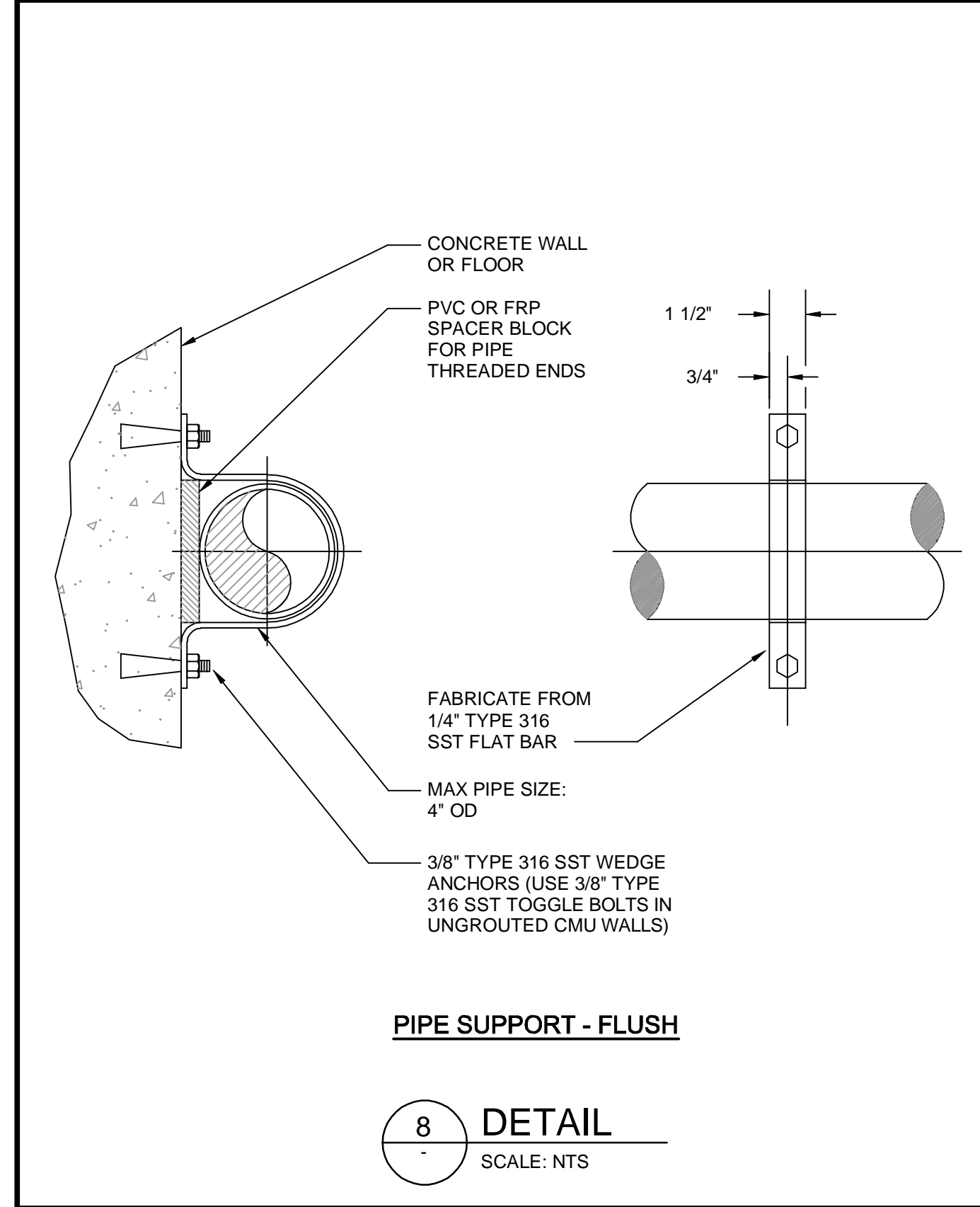
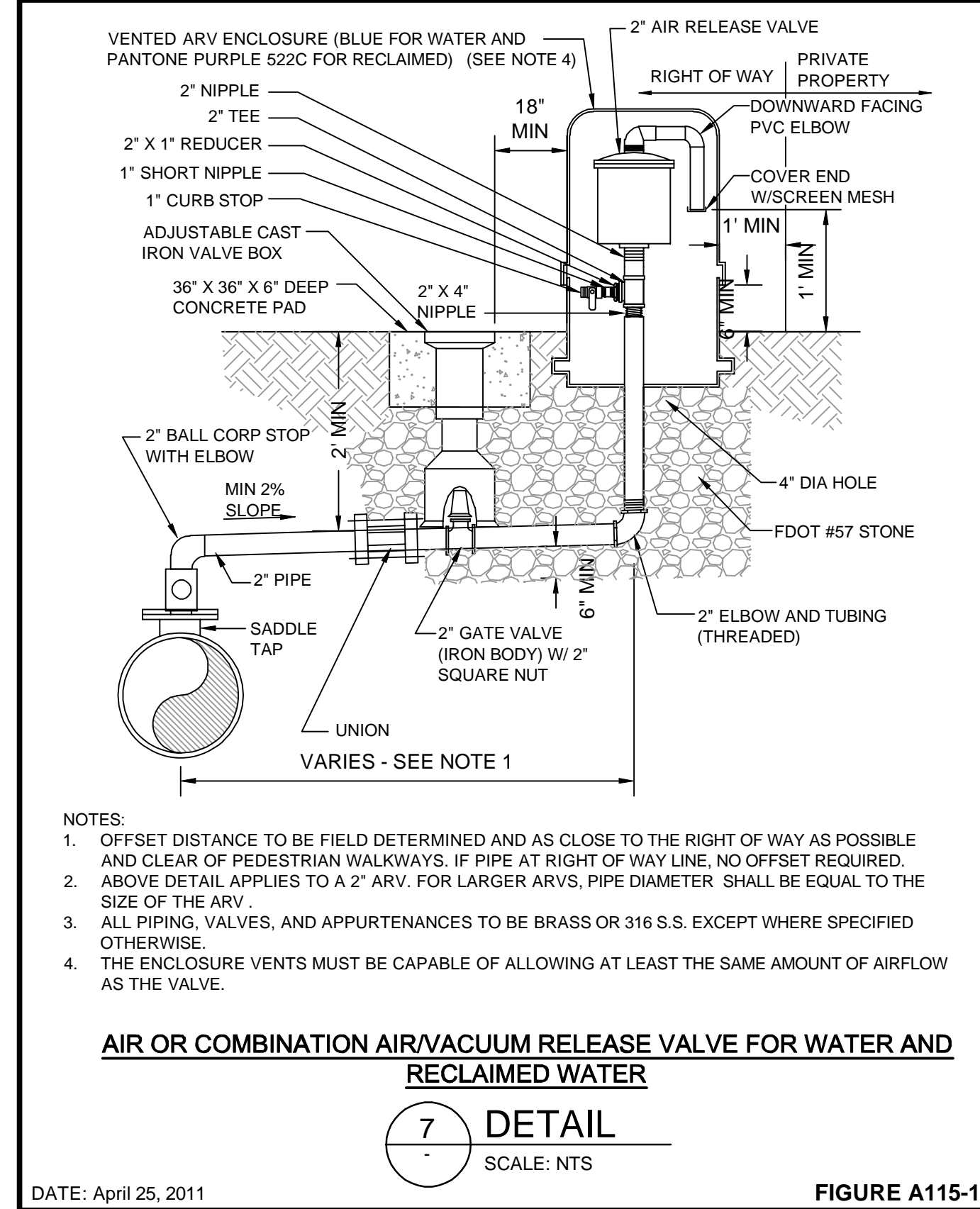
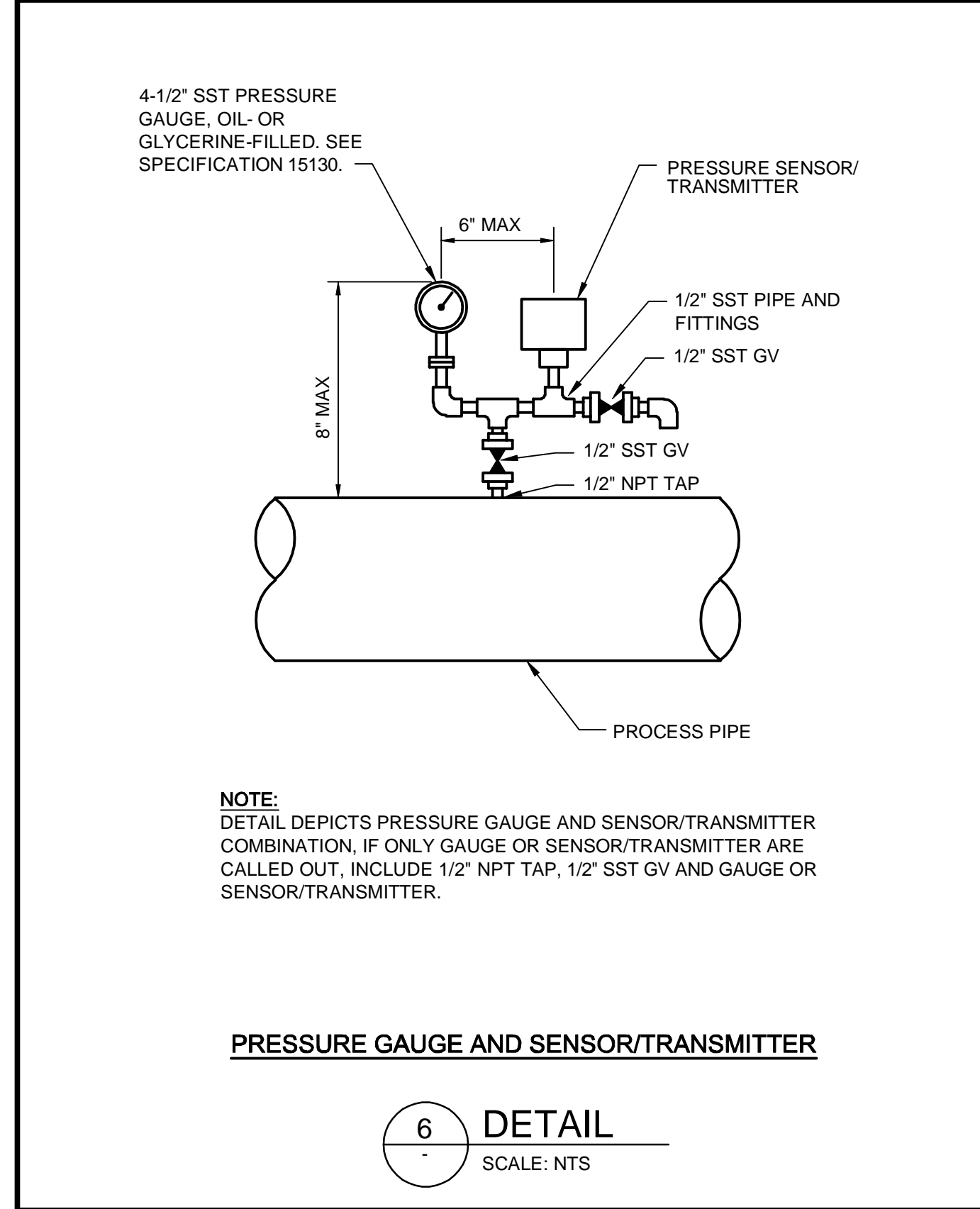
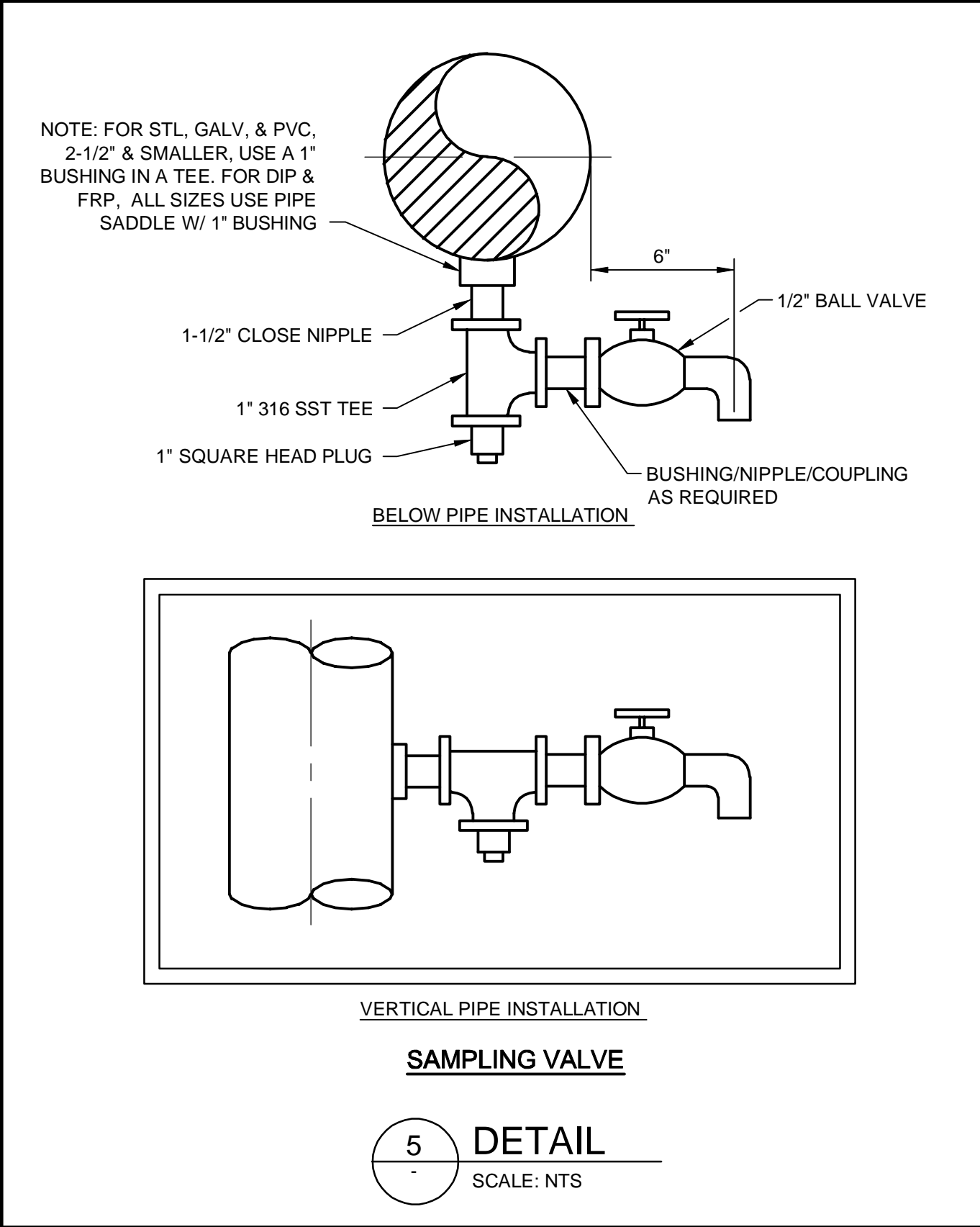
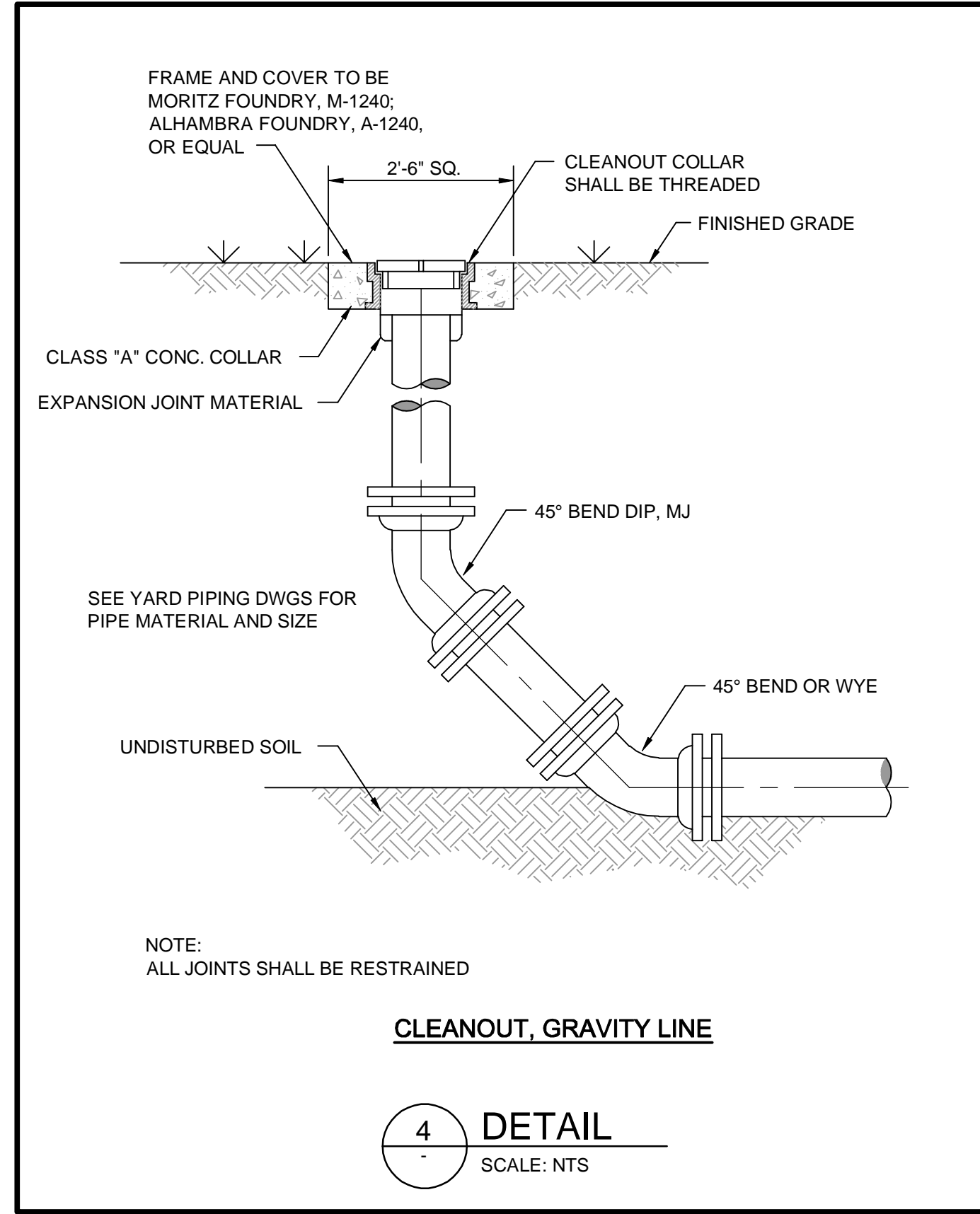
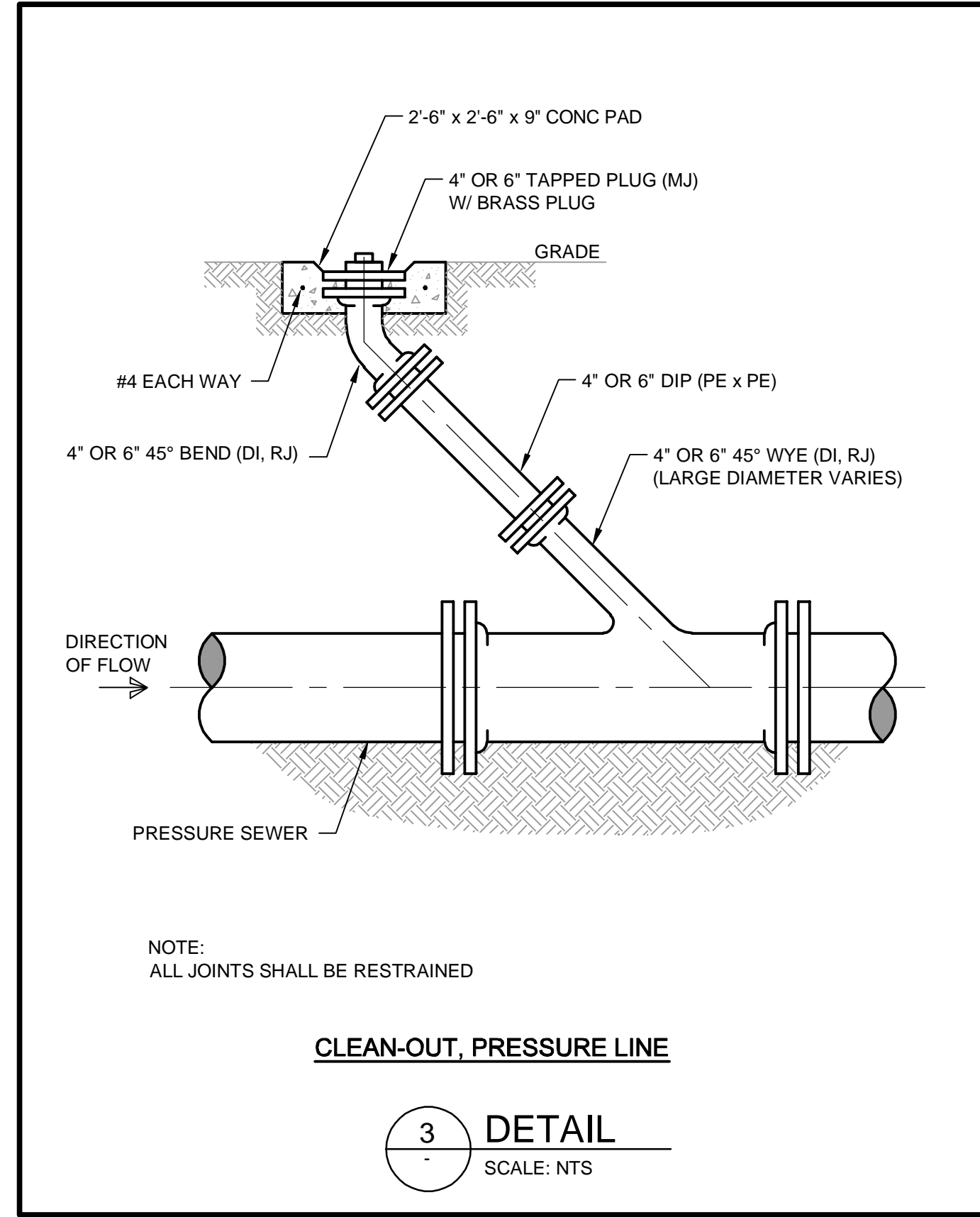
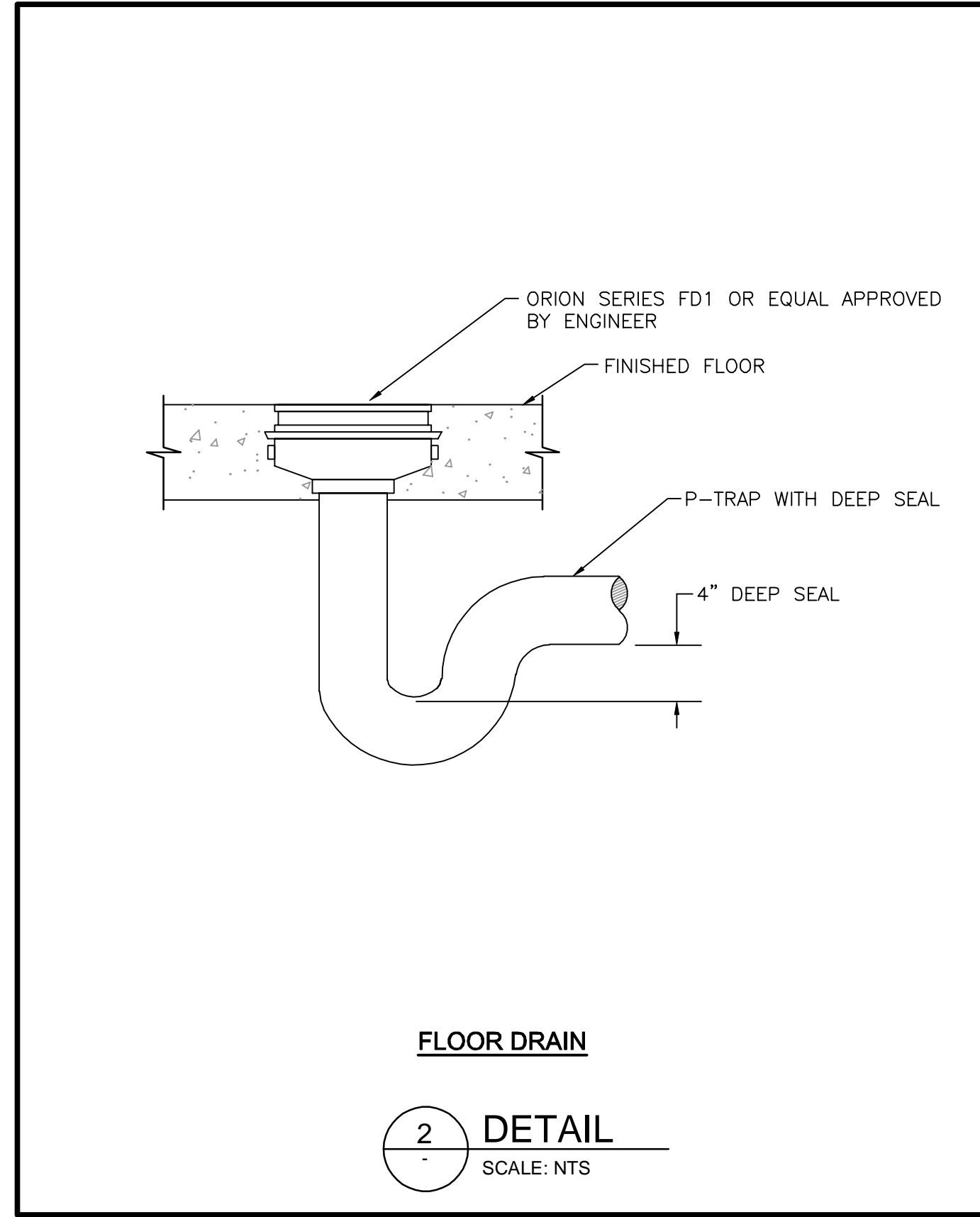
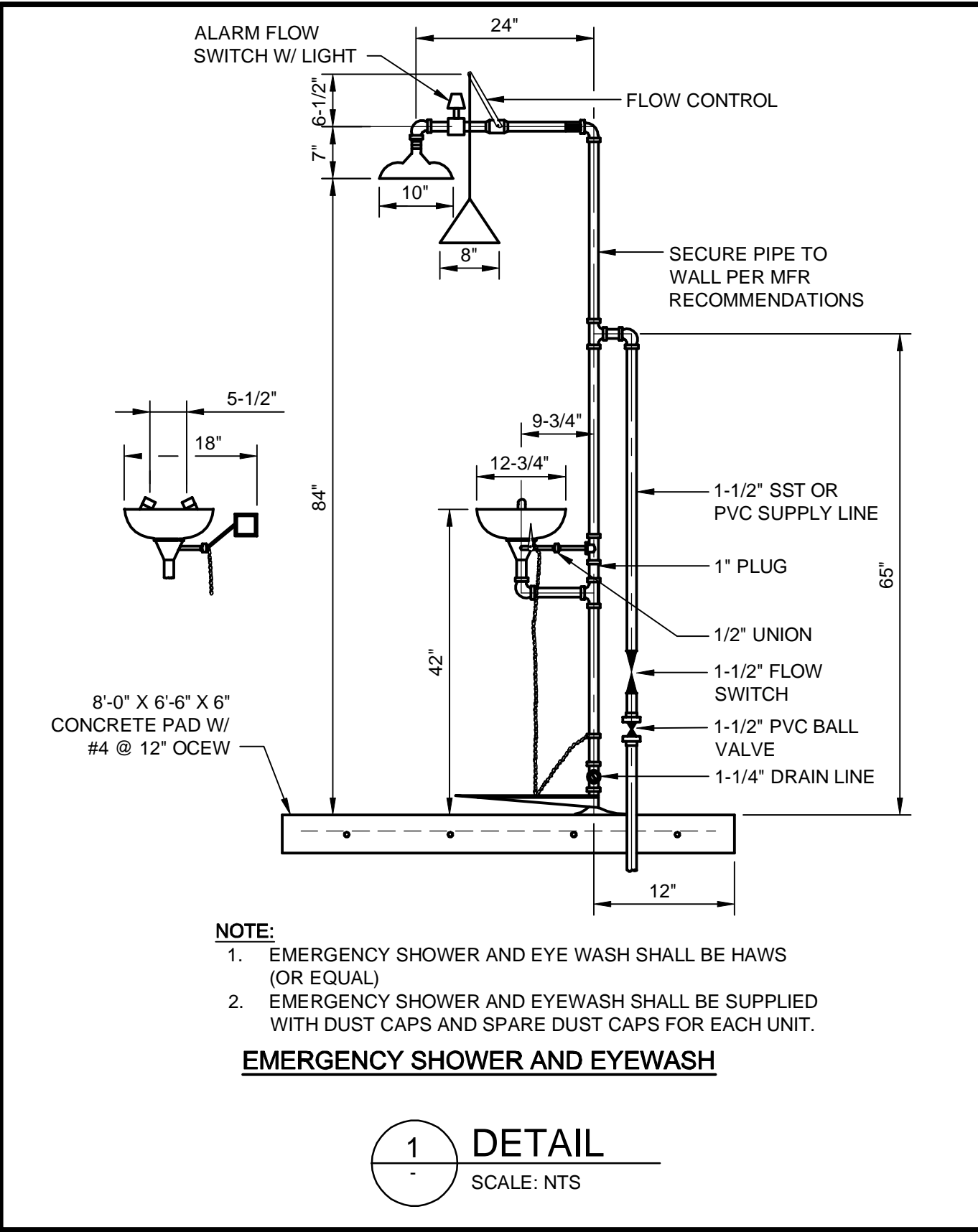
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BY	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS DETAILS

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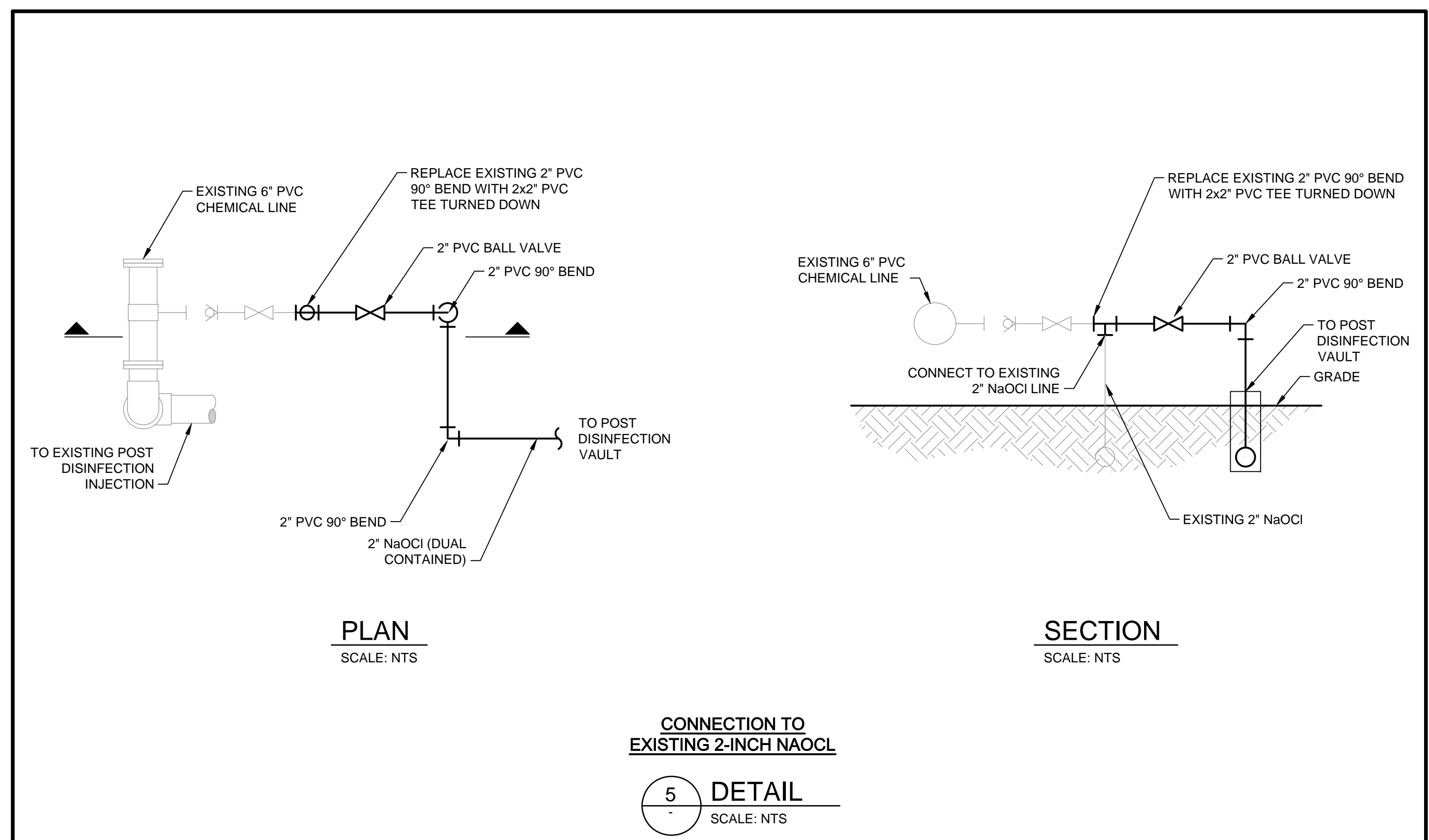
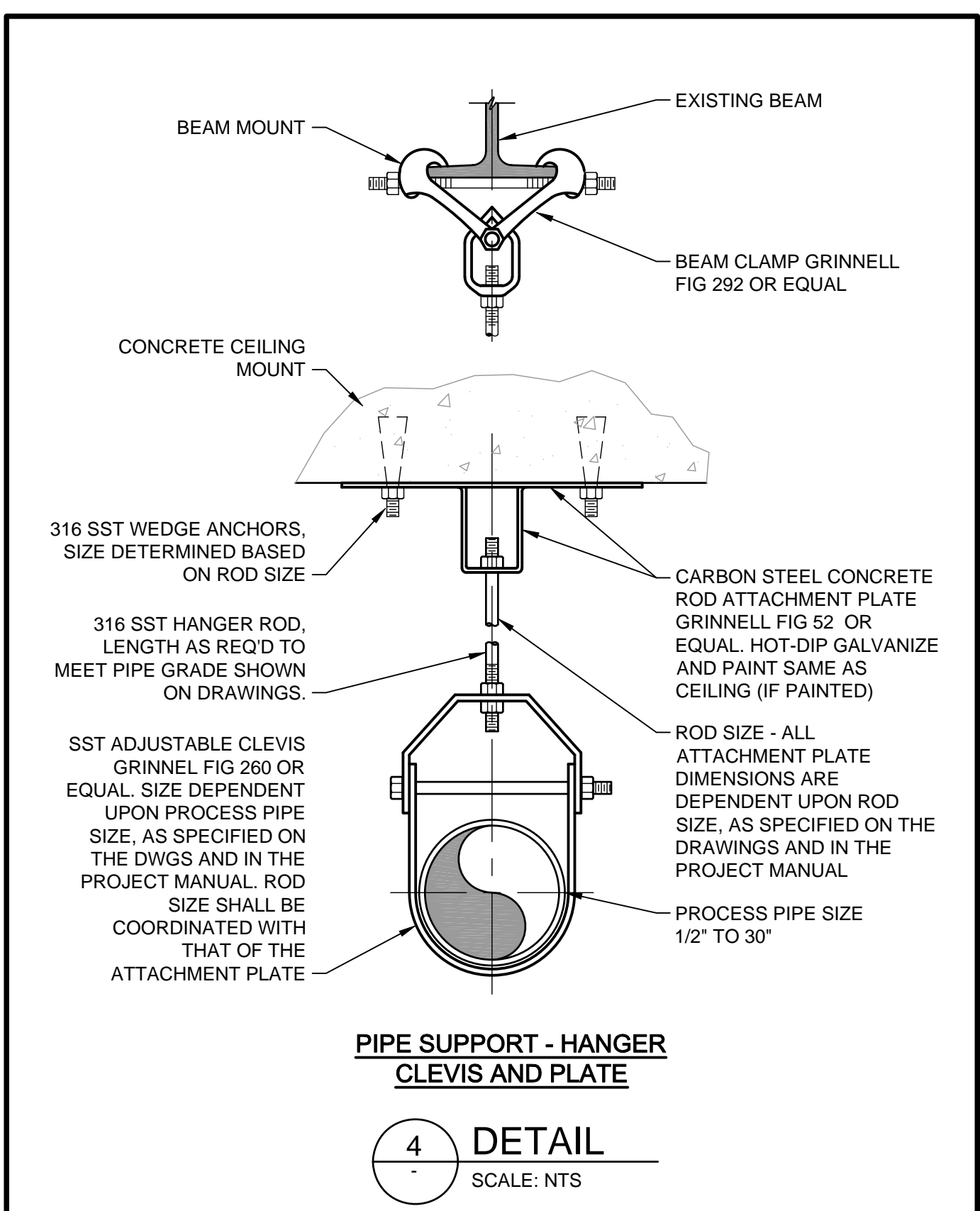
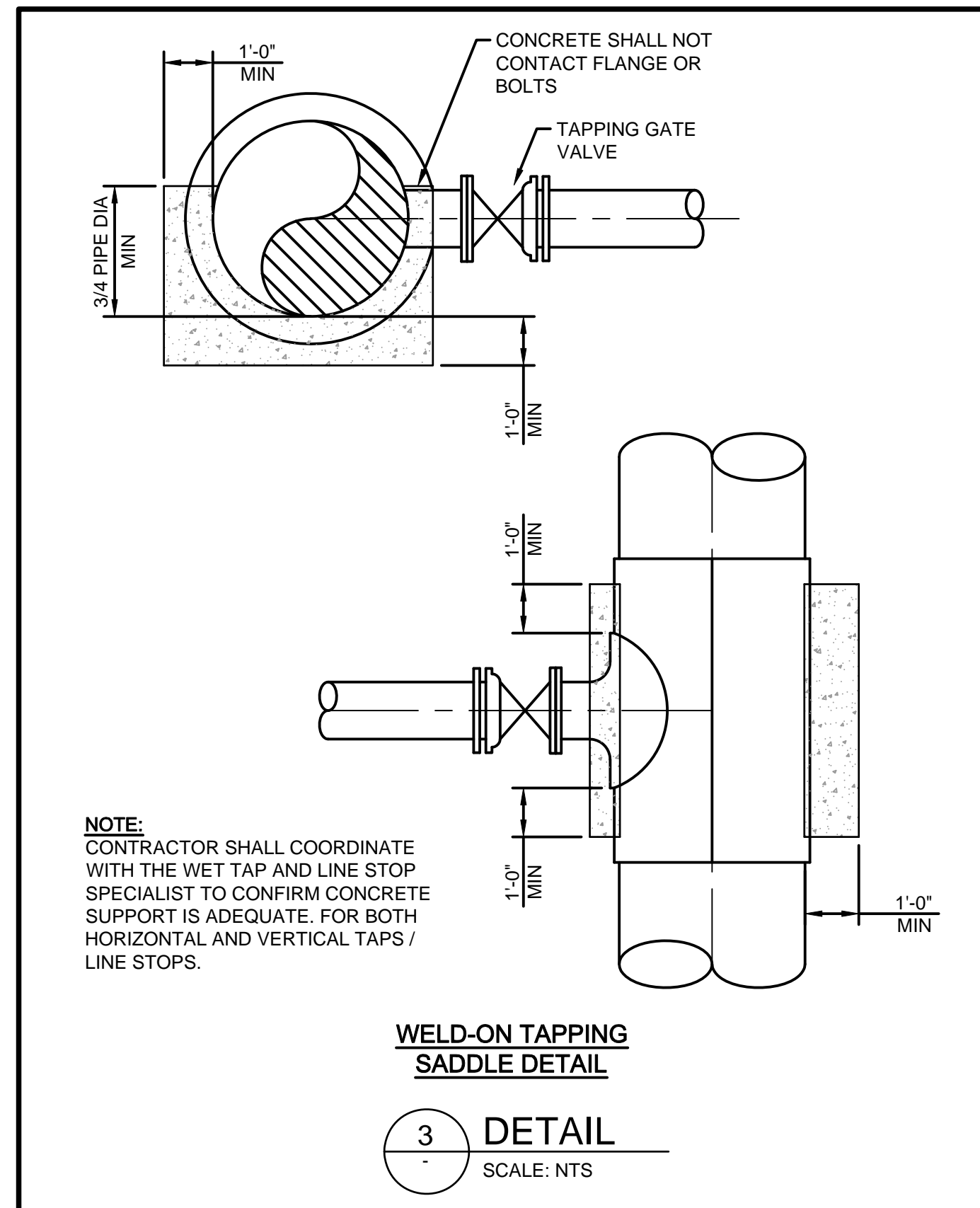
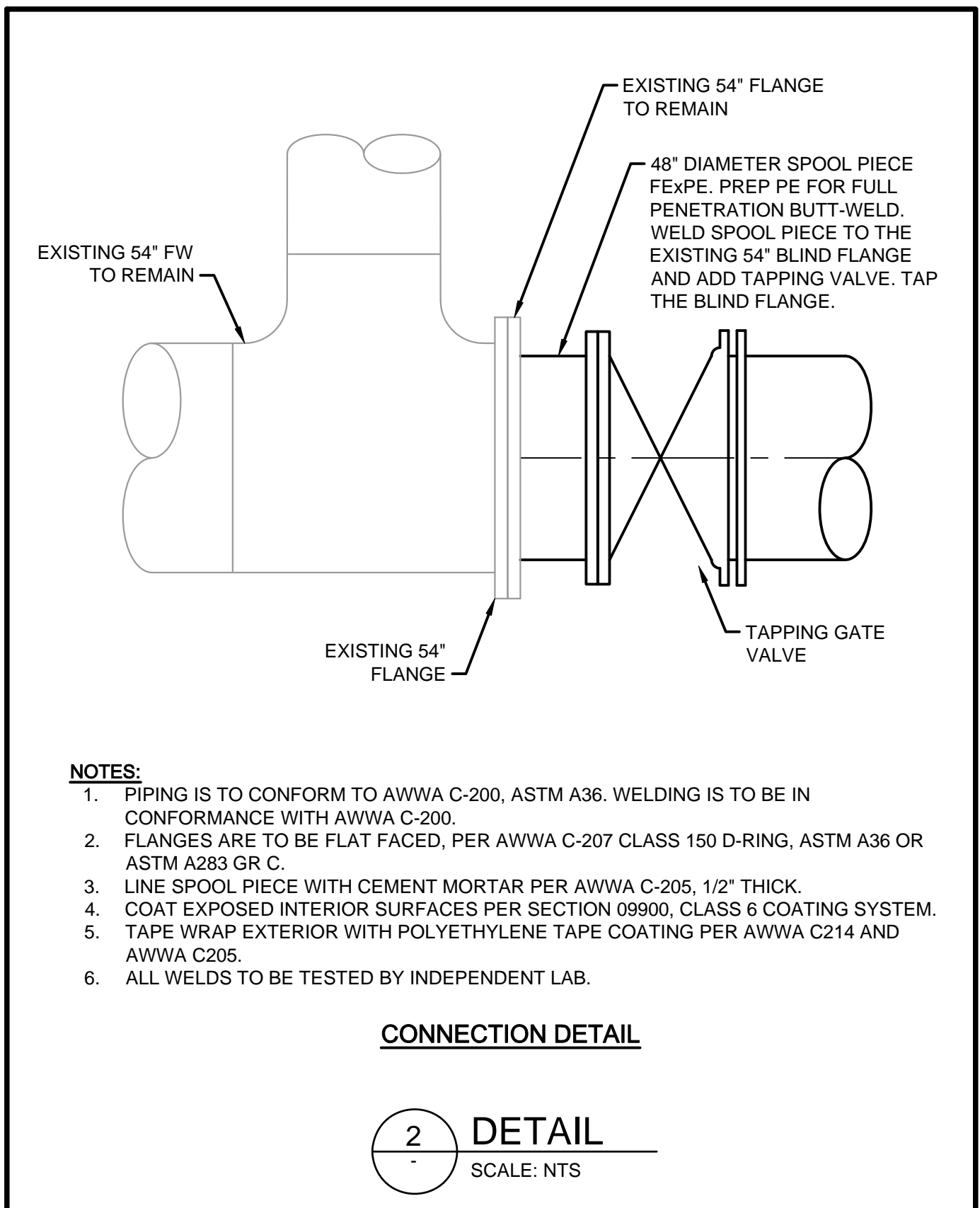
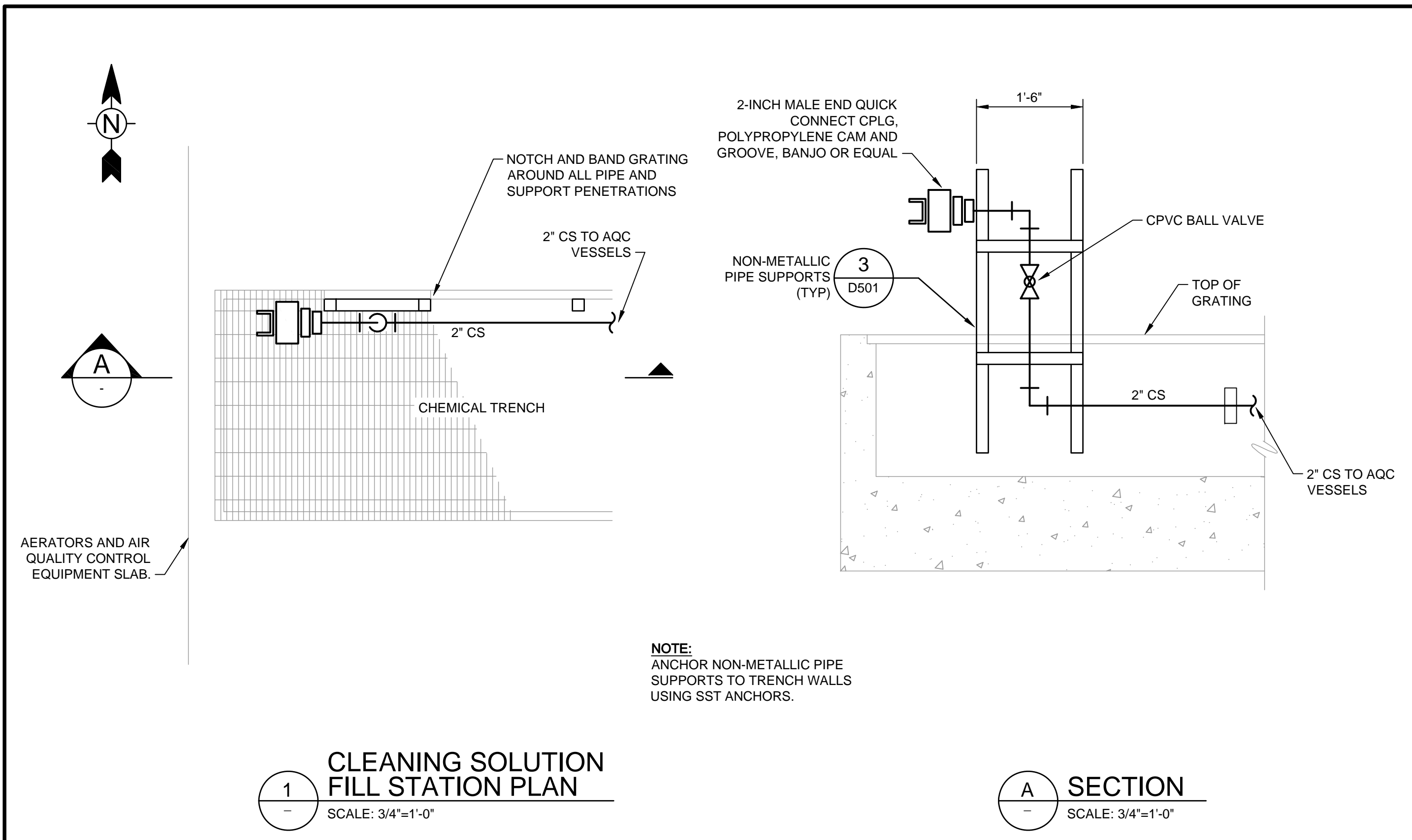
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS - PHASE 3B
PROCESS DETAILS

Project No.: 200-10034-11005
Designed By: JCB
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D503

Bar Measures 1 inch

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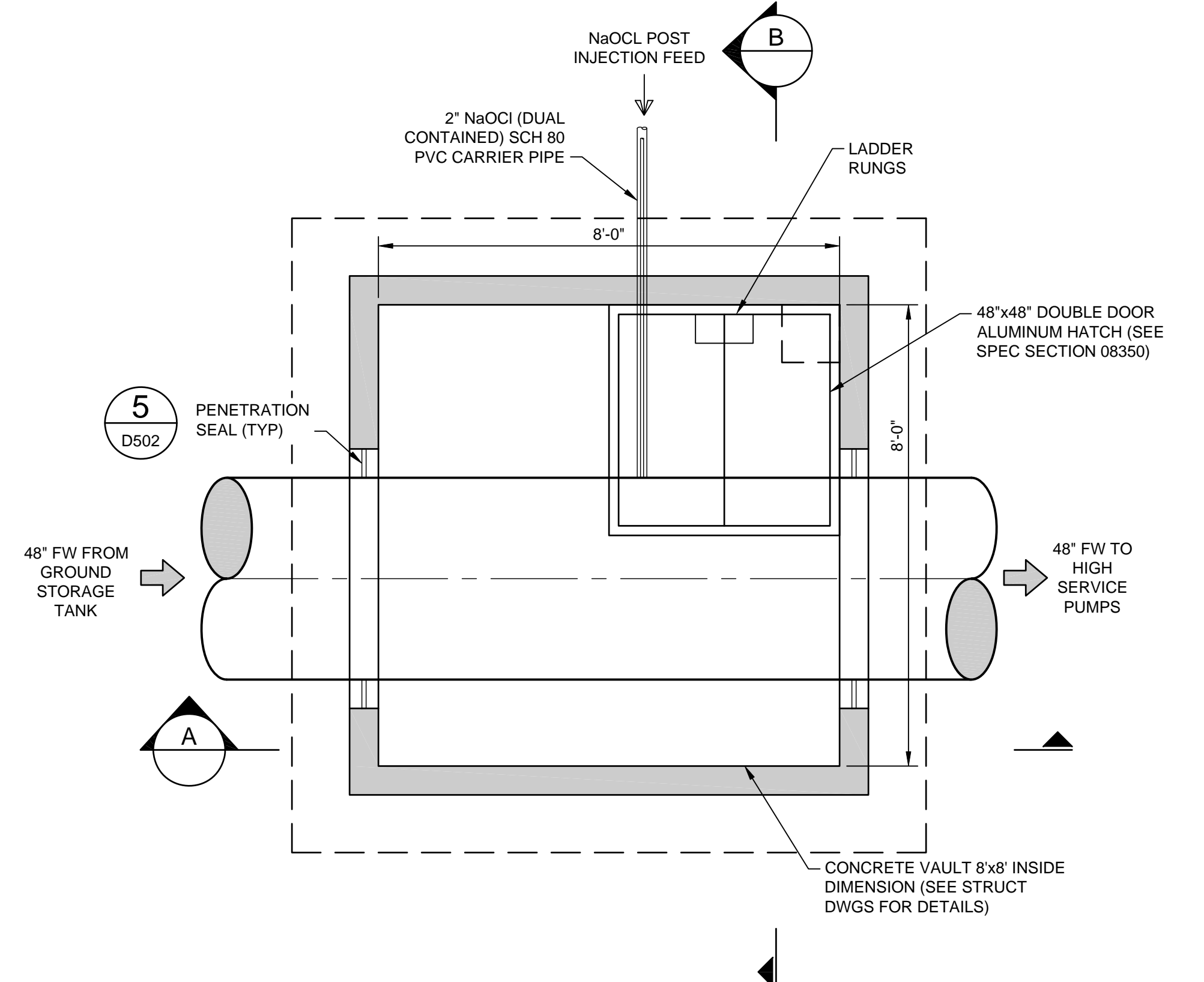
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ORANGE COUNTY UTILITIES
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IMPROVEMENTS - PHASE 3B
PROCESS DETAILS

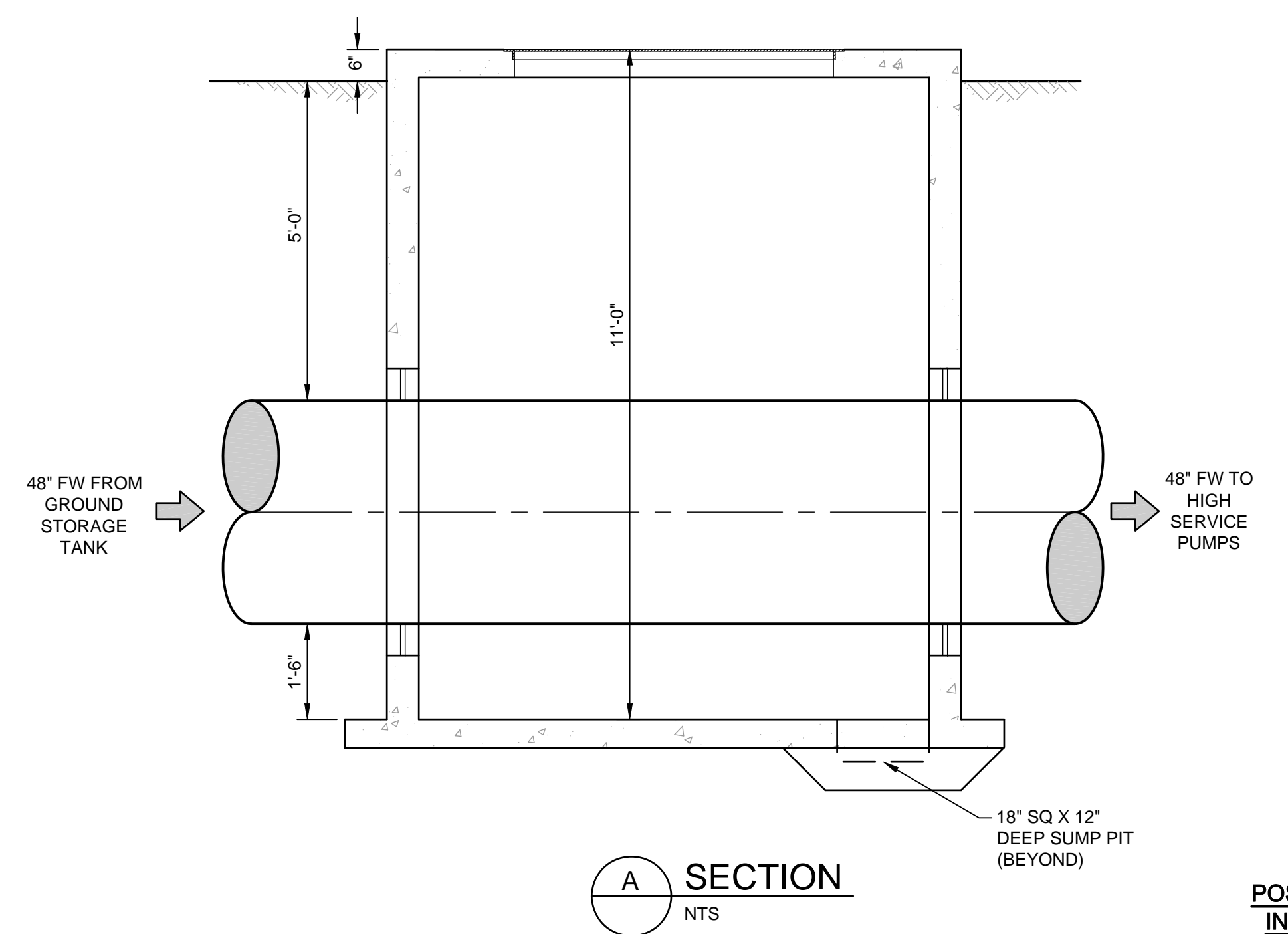
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Designed By: JCB
Drawn By: JTE
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D504

Bar Measures 1 inch

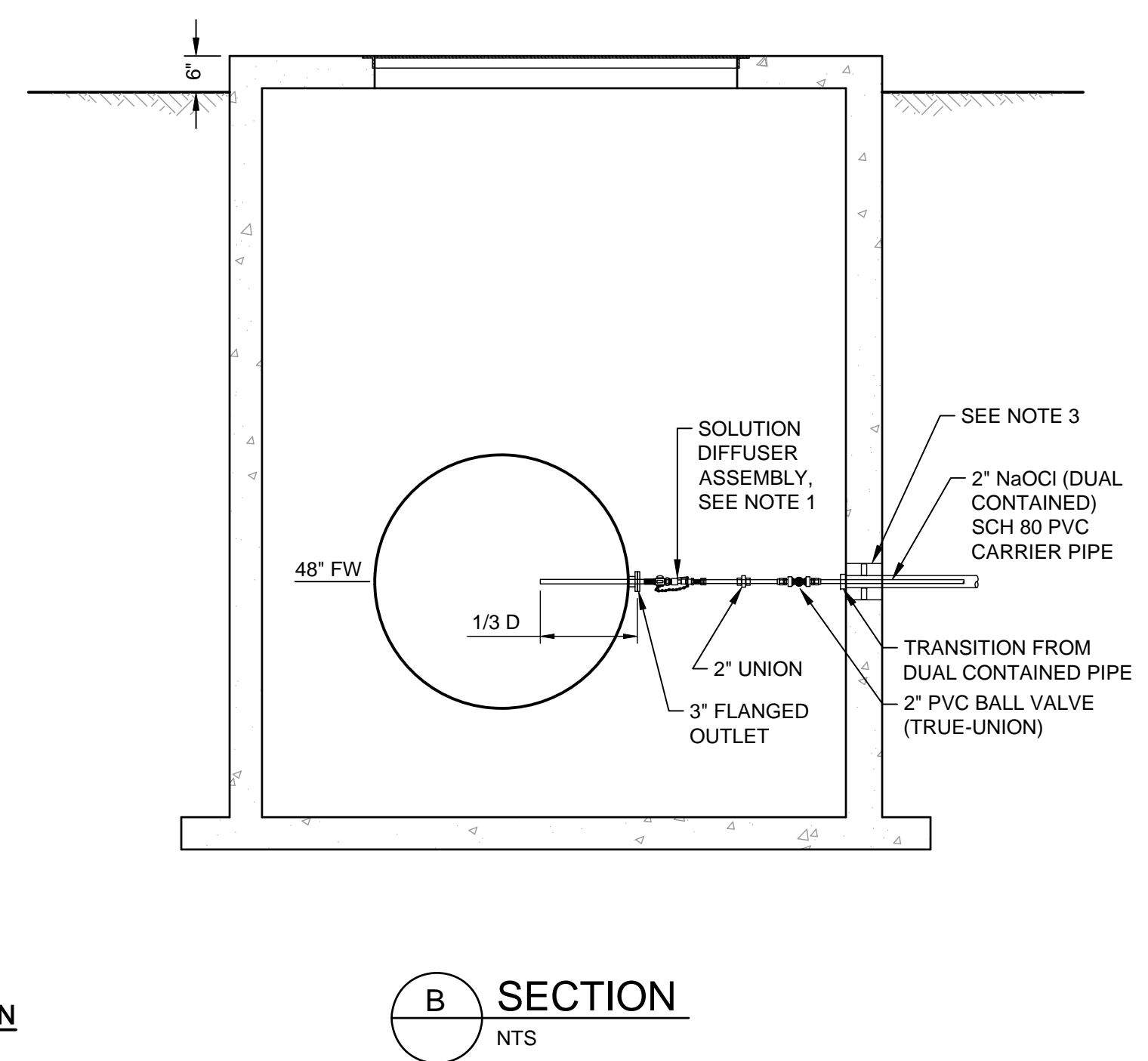


- NOTES:**
1. SOLUTION DIFFUSER ASSEMBLY SHALL INCLUDE THE SOLUTION TUBE, NPT BRASS CORP STOP SIZED FOR PASSAGE OF THE SOLUTION TUBE SHOWN, SOLUTION TUBE ADAPTER, PACKING NUT, SST SAFETY CHAIN AND RESTRAIN HOOK, AND BALL CHECK VALVE. SOLUTION DIFFUSER ASSEMBLY SHALL BE RATED FOR 150 PSI AND MANUFACTURED BY SAF-T-FLO, OR ENGINEER APPROVED EQUAL. ALL COMPONENTS IN CONTACT WITH CHEMICAL SHALL BE PVC.
 2. COAT INTERIOR SURFACES OF INJECTION VAULT WITH CHEMICAL RESISTANT COATING PER SECTION 09900.
 3. 6" DIAMETER OPENING IN CONCRETE WALL TO ACCOMMODATE 4" DIAMETER PVC CARRIER PIPE. FILL VOID USING NON-SHRINK GROUT.



POST DISINFECTION INJECTION VAULT

1 DETAIL
SCALE: NTS



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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS DETAILS

Project No.: 200-10034-11005
Designed By: JCB
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D505

PLUMBING EQUIPMENT SCHEDULE

- FD-1 FLOOR DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND "TYPE B" POLISHED NICKEL BRONZE STRAINER, 1/2" TRAP PRIMER CONNECTION. EQUAL TO ZURN ZN-415-P.
FD-2 4" HEAVY DUTY RECTANGULAR FLOOR DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, SEEPAGE PAN, COMBINATION MEMBRANE FLASHING CLAMP AND FRAME FOR HEAVY DUTY CAST IRON SLOTTED GRATE.
WHA WATER HAMMER ARRESTORS SHALL BE PDI WH-201, ANSI A112.26.1M AND ASSE 1010 CERTIFIED. ZURN MODEL 1700 SHOCKTROL, OR APPROVED EQUAL.
WCO WALL CLEANOUT, ROUND CLEANOUT ACCESS COVER, STAINLESS STEEL. ZURN MODEL Z-1446, OR APPROVED EQUAL.
ECO FLOOR CLEANOUT, ADJUSTABLE, POLISHED NICKEL-BRONZE ROUND TOP, DURA-COATED CAST IRON BODY, GAS AND WATER TIGHT ABS TAPERED THREAD PLUG, PROVIDE CARPET MARKER AS REQUIRED, ZURN MODEL ZN-1400, OR APPROVED EQUAL.
TP TRAP PRIMER, CHROME PLATED CAST BRASS BODY P-TRAP WITH CLEANOUT, 1-1/2" OUTLET WITH REDUCING WASHER FOR 1-1/4" SINK TAIL PIECE, STAINLESS STEEL BRAIDED PRIMER HOSE WITH 1/2" COMPRESSION FITTINGS. ZURN MODEL Z-1021 WATER SAVER TRAP PRIMER, OR APPROVED EQUAL.

PLUMBING FIXTURE SCHEDULE

- HB-1 HOSE BIBB WALL MOUNTED, ANTI-SIPHON, ALL BRONZE INTERIOR, VANDAL RESISTANT OPERATING STEM, ROUGH BRONZE FINISH, VACUUM BREAKER, 1" MALE HOSE CONNECTION

- NOTES:
1. ALL FIXTURE STOPS SHALL BE 1/4 TURN STOP TO OPEN.
2. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL HAVE EQUAL FIXTURES APPROVED BY ARCHITECT AND ENGINEER.

PLUMBING GENERAL NOTES

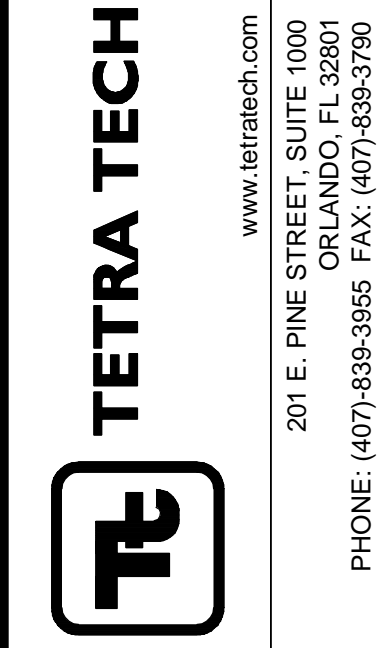
- 1. ALL PLUMBING WORK SHALL BE GOVERNED AND INSTALLED IN COMPLIANCE WITH THE LATEST EDITION AND APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:
A. FLORIDA BUILDING CODE - 2007 WITH THE 2009 SUPPLEMENTS
B. FLORIDA EXISTING BUILDING CODE - 2007 WITH THE 2009 SUPPLEMENTS
C. FLORIDA MECHANICAL CODE - 2007 WITH THE 2009 SUPPLEMENTS
D. FLORIDA PLUMBING CODE - 2007 WITH THE 2009 SUPPLEMENTS
E. FLORIDA FUEL GAS CODE - 2007 WITH THE 2009 SUPPLEMENTS
F. FLORIDA ENERGY EFFICIENCY CODE - 2007 WITH THE 2009 SUPPLEMENTS
G. FLORIDA FIRE PREVENTION CODE - 2007 WITH THE 2009 SUPPLEMENTS
H. NATIONAL ELECTRICAL CODE (NEC) - 2008
I. NFPA - LATEST EDITION
J. ASPE STANDARDS
K. ANSI
L. AMERICANS WITH DISABILITIES ACT (ADA)
M. ALL OTHER APPLICABLE FEDERAL, COUNTY AND CITY CODES REQUIRED BY LOCAL JURISDICTIONS
2. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF UTILITIES IN FIELD AND ALL EXISTING BUILDING CONDITIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FITTINGS AS REQUIRED BY ALL APPLICABLE CODES AND GOVERNING AUTHORITIES.
4. CONTRACTOR SHALL PROVIDE ALL WORK CUSTOMARILY INCLUDED IF NOT SPECIFICALLY CALLED FOR ON THE PLANS. ALL WORK SHALL BE IN ACCORDANCE WITH BUILDING PLANS AND SPECIFICATIONS.
5. PIPE ROUTING IS SCHEMATIC AND IS NOT INTENDED TO INDICATE EXACT ROUTING. THE PIPING SHALL BE INSTALLED WITH NO CHANGES IN PIPE SIZE. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION AND CLEARANCES.
6. CONTRACTOR SHALL VERIFY AND CORRECT AS REQUIRED TO MEET ALL CODES AND REGULATIONS ANY POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTION SPECIFIED IN PLUMBING FIXTURE SCHEDULE AND FIXTURES ACTUALLY INSTALLED ON THE SITE.
7. CONTRACTOR SHALL VERIFY INSTALLATIONS AND OBSTRUCTIONS OF ALL TRADES AND SHALL COORDINATE ALL PLUMBING WORK WITH OTHER TRADES AND ROUTE PIPING TO AVOID INTERFERENCES.
8. PROVIDE ACCESS PANELS TO ALL VALVES WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURE EXACT LOCATIONS, MOUNTING HEIGHTS AND DIMENSIONS.
10. ALL EQUIPMENT THAT IS SHOWN TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT AN AREA DESIGNATED BY THE OWNER. ALL EQUIPMENT NOT WANTED BY THE OWNER SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
11. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING SANITARY PIPING TO WHICH NEW SEWER DRAINS ARE TO BE CONNECTED BEFORE INSTALLATION OF NEW SEWER LINE.
12. ALL ADA COMPLIANT (HANDICAP) FIXTURES SHALL BE MOUNTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).
13. CONTRACTOR SHALL FURNISH AND INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
14. PIPING SHALL NOT BE ROUTED THROUGH OR ABOVE ELECTRICAL ROOMS.
15. ALL STORM AND SANITARY PIPING 2 1/2" OR LESS SHALL SLOPE 1/4" PER FOOT. 3" PIPING AND LARGER SHALL SLOPE 1/8" PER FOOT. VENT PIPING SHALL SLOPE BACK TO THE DRAINAGE PIPE.
16. ALL PIPING SHALL BE FIRMLY ANCHORED AND SUPPORTED TO PREVENT SWAY AND VIBRATION THE ENTIRE LENGTH.
17. ALL EXPOSED PIPING AT PLUMBING FIXTURES SHALL BE CHROME PLATED BRASS WITH ESCUTCHEON PLATES AT THE WALL, FLOOR OR CEILING PENETRATIONS.
18. DRAIN, WASTE, AND VENT PIPING SHALL BE SCHEDULE 40 CAST IRON, NO HUB, DWV PIPING AND FITTINGS. SCHEDULE 40 PVC MAY BE USED WHERE PERMITTED BY CODE AND BUILDING OWNER.
19. INSTALL WATER HAMMER SHOCK ARRESTORS AT EACH BATTERY OF FIXTURES AND AS INDICATED ON RISER DIAGRAMS/ISOMETRICS. ARRESTORS SHALL BE FACTORY-FABRICATED. INSTALL ARRESTORS AND SIZE PER PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I. WH-201.
20. INSULATE ALL DOMESTIC HOT WATER AND HOT WATER RETURN PIPING WITH 1" FIBERGLASS WITH FOIL JACKETING.
21. INSULATE UNDERBODIES OF ROOF DRAINS AND ALL HORIZONTAL STORM DRAINS WITH 1/2" FIBERGLASS WITH FOIL JACKETING.
22. INSULATION SHALL COMPLY WITH ASTM E 84 WITH A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS. INSULATION SHALL BE PROTECTED FROM DAMAGE BY HANGERS WITH PIPE SADDLES.
23. ROUTE ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS, IN MECHANICAL ROOMS, OR IN CHASES EXCEPT AS SPECIFICALLY NOTED.
24. DOMESTIC WATER DISTRIBUTION PIPING BELOW GRADE SHALL BE COPPER TUBE, TYPE K, ANNEALED TEMPER, ASTM B 88 WITH WROUGHT COPPER SOLDER JOINT PRESSURE FITTINGS, ASME B16.22. ABOVE GRADE PIPING SHALL BE COPPER TUBE, TYPE L, ANNEALED TEMPER, ASTM B 88 WITH CAST OR WROUGHT COPPER SOLDER JOINT PRESSURE FITTINGS, ASME B16.18/22. SOLDER SHALL BE ASTM B 32, LEAD-FREE ALLOYS. PROVIDE A WATER-FLUSHABLE FLUX ACCORDING TO ASTM B 813.
25. ALL NON-INSULATED COPPER TUBING AND FITTINGS BELOW GRADE, INCLUDING WHEN RUN WITHIN CONCRETE SLABS AND CONCRETE FILLED MASONRY CONSTRUCTION, SHALL BE WRAPPED WITH 10 MIL. PVC PRESSURE SENSITIVE TAPE WITH 50% OVERLAP (20 MIL. TOTAL THICKNESS). PIPING SHALL BE CLEANED PRIOR TO TAPE APPLICATION.
26. ALL FLOOR DRAINS AND FLOOR SINKS SHALL HAVE TRAP PRIMER CONNECTIONS AND SHALL BE SUPPLIED FROM AUTOMATIC TRAP PRIMERS CONNECTED TO THE WATER SUPPLY OR THE NEAREST SINK. RUN 1/2" TYPE "K" SOFT COPPER TUBING FROM TRAP PRIMERS TO FLOOR DRAIN/SINK TRAP PRIMER CONNECTION. SEE DETAIL.
27. DRAIN, WASTE, AND VENT PIPING LOCATED IN FIRE RATED WALL ASSEMBLIES AND RETURN AIR PLENUMS SHALL BE SERVICE WEIGHT CAST IRON WITH NO HUB FITTINGS.
28. PROVIDE CLEANOUTS IN ACCORDANCE WITH APPLICABLE BUILDING CODES, NO MORE THAN 100 FT. APART, AT CHANGES IN DIRECTION GREATER THAN 45 DEGREES, AT BASE OF DOWNSPOUTS AND AT BASE OF SOIL AND WASTE STACKS.
29. ALL VENTS THROUGH ROOF SHALL BE A MIN. OF 10'-0" FROM ANY MECHANICAL EQUIPMENT OUTSIDE AIR INTAKES. OFFSET VENT STACKS AS NECESSARY TO ACCOMMODATE THIS REQUIREMENT.

PLUMBING SYMBOL LEGEND

Table with columns: SYMBOL, DESCRIPTION, ABBREVIATION. Includes symbols for SAN, ST, GW, V, CW, HW, HWR, CD, G, GV, GLV, BV, BFV, CV, SHUT-OFF VALVE IN VALVE BOX, HB, UNION, STRAINER, PIPE ANCHOR, PA, CONCENTRIC REDUCER, ECCENTRIC REDUCER, WATER HAMMER ARRESTOR, WHA, TP, TEE, ELL, RISER DOWN, RISER UP, P-TRAP, CAP ON END OF PIPE, PIPE CONTINUATION, PIPE FLOW - IN DIRECTION OF ARROW, FLOOR CLEANOUT, FCO, WALL CLEANOUT or CLEANOUT PLUG, WCO or CO, CLEANOUT TO GRADE or EXTERIOR CLEANOUT, COTG or ECO, FLOOR DRAIN, FD, FLOOR SINK, FS, PLUMBING HEX NOTE, POINT OF CONNECTION BETWEEN NEW AND EXISTING, POC, POINT OF REMOVAL, POR.

PLUMBING ABBREVIATIONS

Table with columns: DESCRIPTION, ABBREVIATION. Includes ABOVE FINISHED FLOOR, AFF; AMERICAN DISABILITIES ACT, ADA; ACCESS PANEL, AP; BARRIER FREE, BF; BELOW FLOOR, B/F; BELOW SLAB, B/S; PRIMARY RAINWATER LEADER, RWL; SECONDARY RAINWATER LEADER, SRWL; UNDERGROUND, U/G; VACUUM BREAKER, VB; VENT THROUGH ROOF, VTR.



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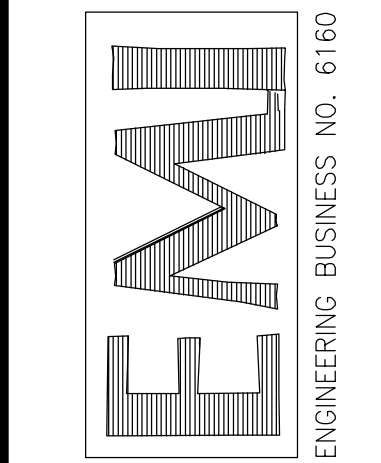


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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PLUMBING LEGEND
AND ABBREVIATIONS

Project No.: 200-10034-11005
Designed By: WCH
Drawn By: DJK
Checked By: WCH

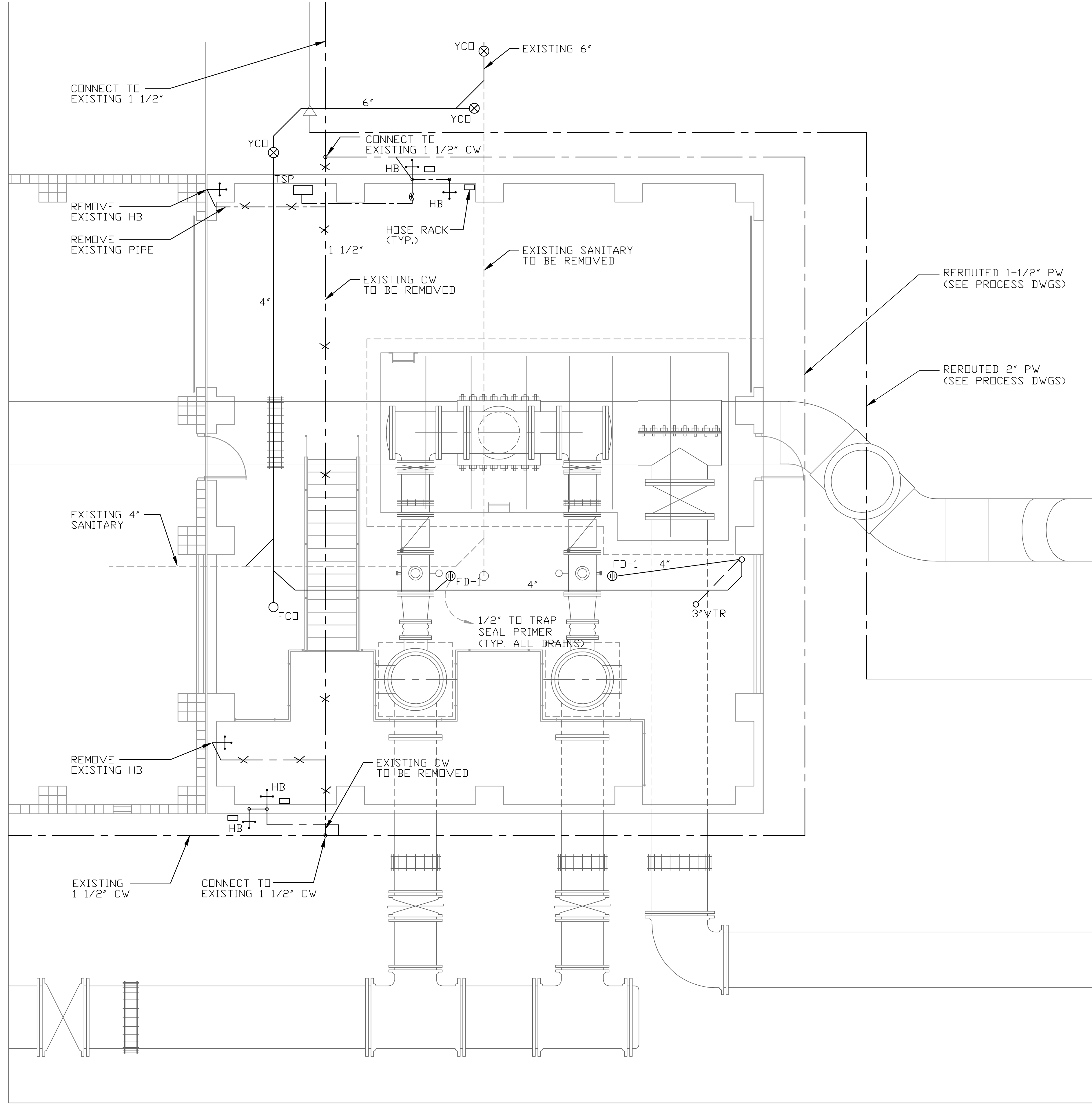
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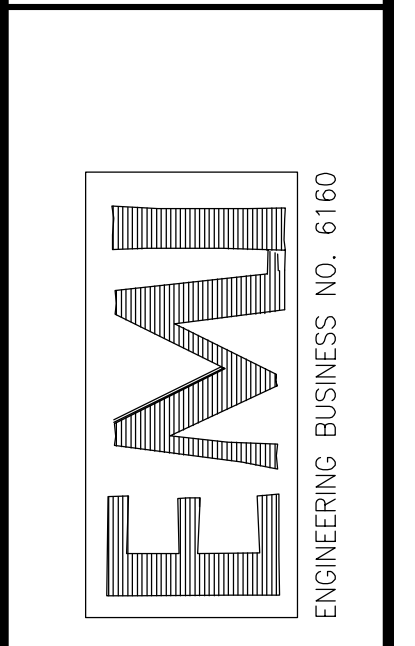
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Bar Measures 1 inch

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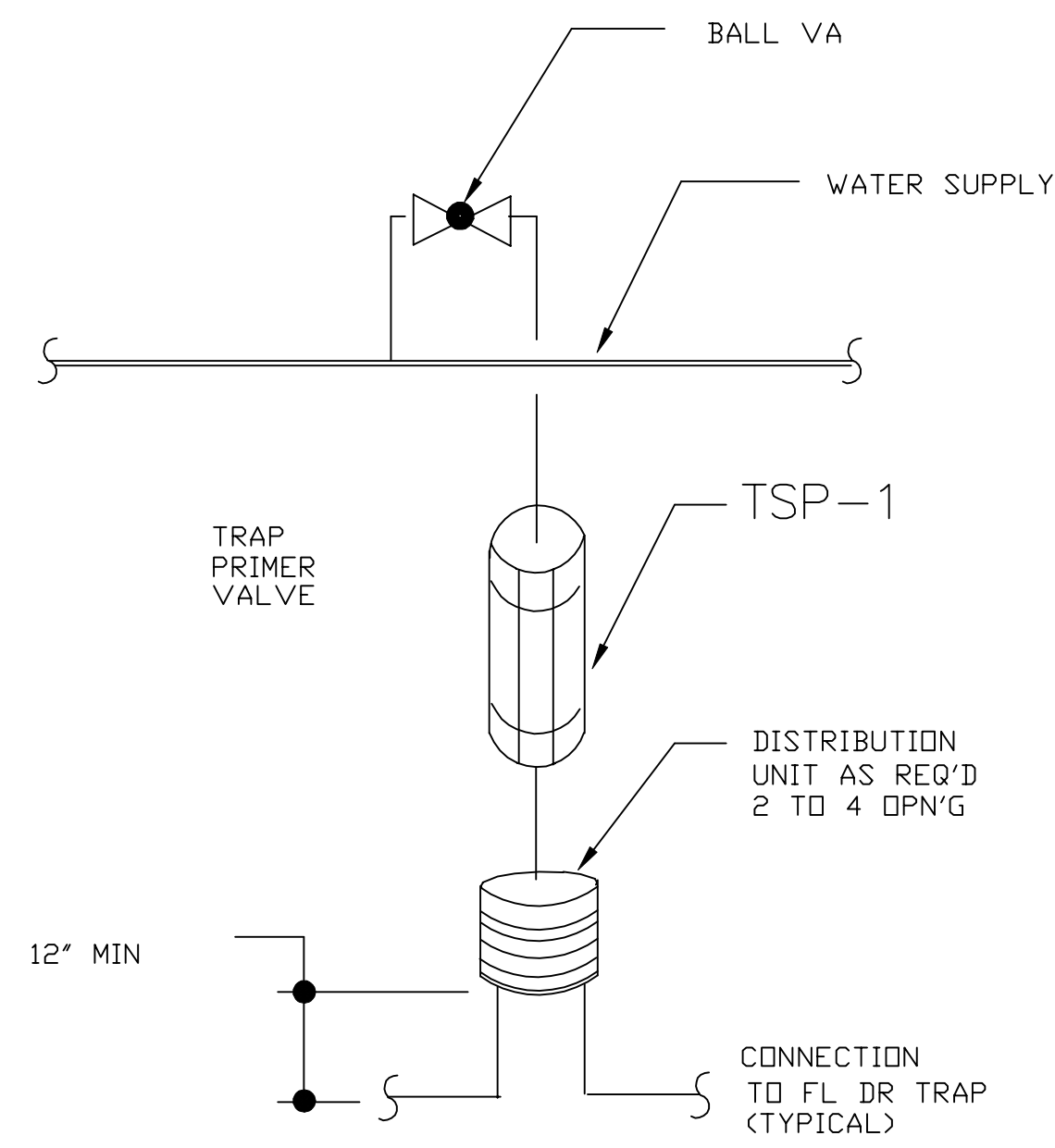


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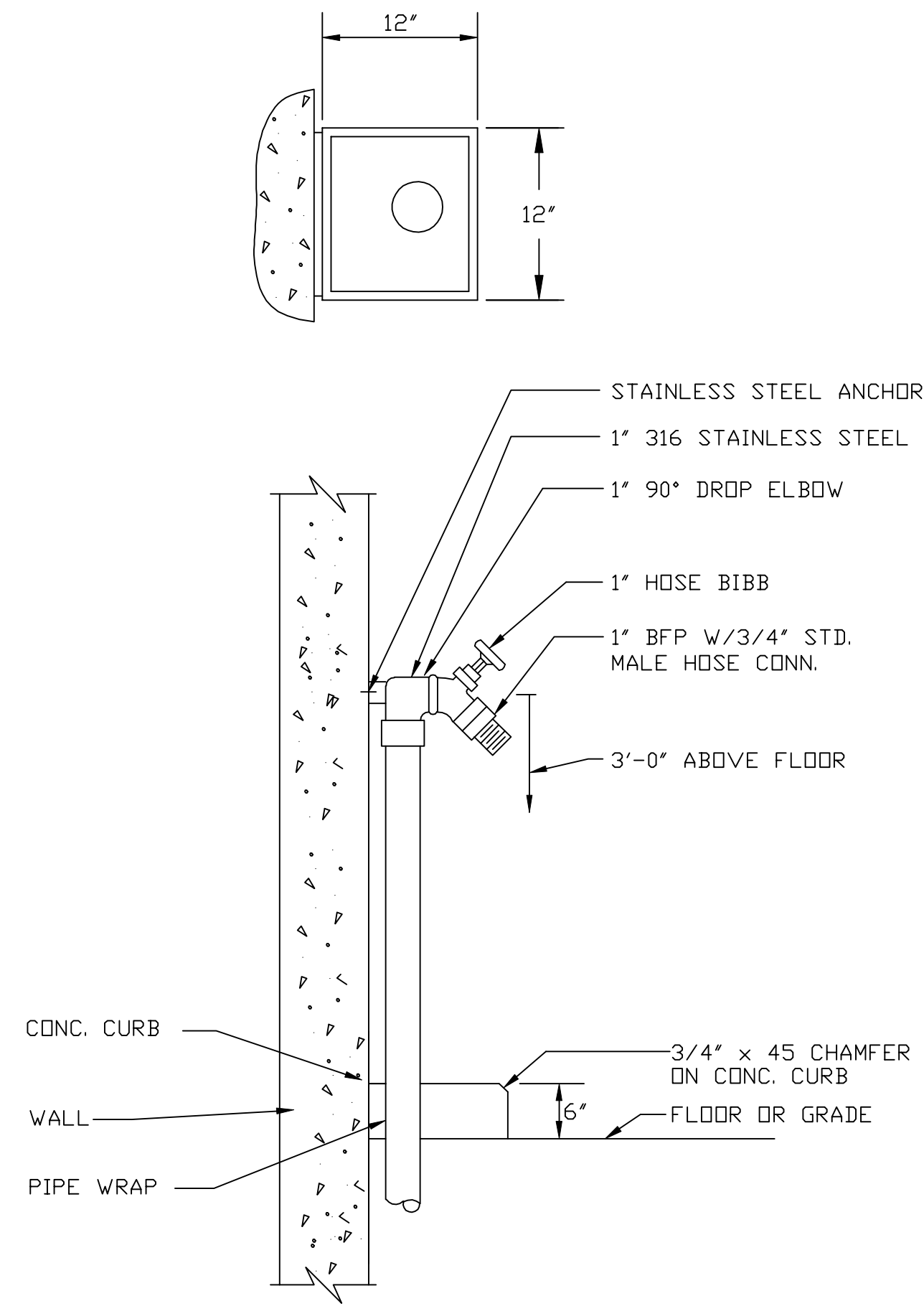
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 50
HIGH SERVICE PUMP BUILDING
PLUMBING PLAN

Project No.:	200-10034-11005
Designed By:	WCH
Drawn By:	DJK
Checked By:	WCH

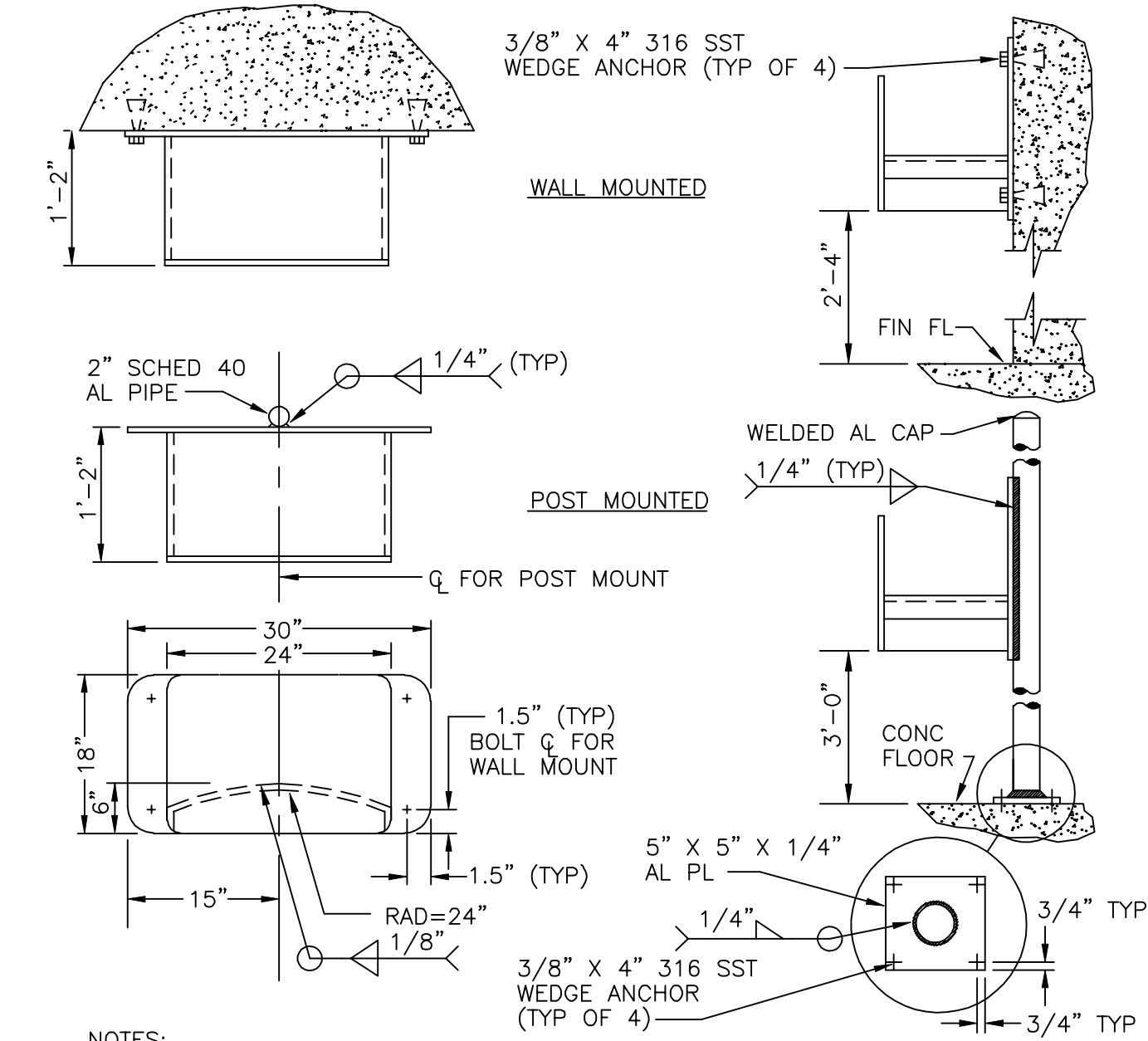
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TRAP PRIMER (TSP)
NONE



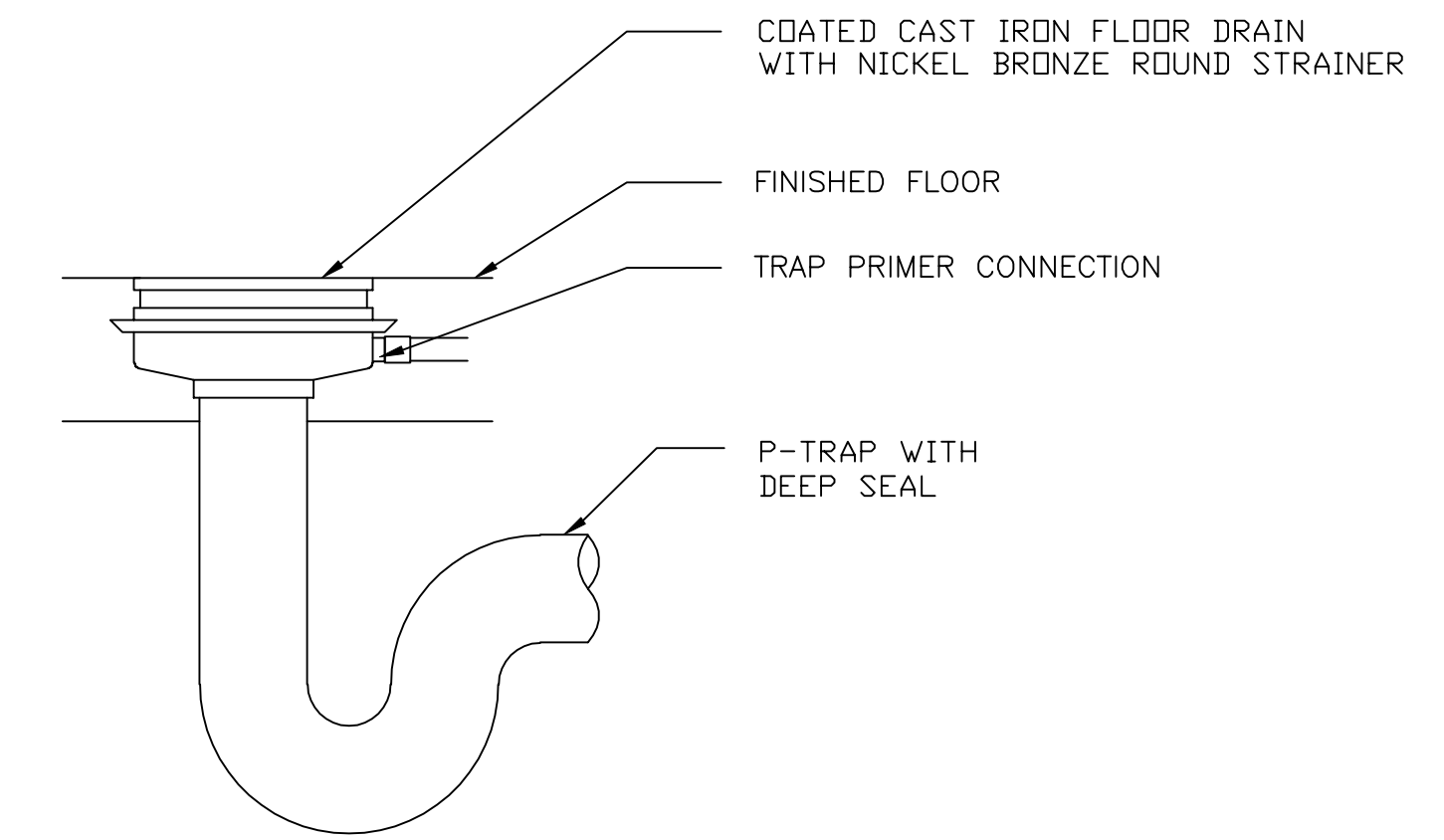
HOSE BIBB DETAIL (HB)



NOTES:
 1. FABRICATE UNIT FROM 1/4" 6061-T6 AL ALLOY PLATE.
 2. MOUNT 10"x14"x1/8" FRP WARNING SIGN (BRADY MODEL BY OR EQUAL) TO POST OR WALL WITH 316 SST FASTENING HARDWARE READING:
 NOTICE
 NON-POTABLE WATER
 NOT FOR DRINKING
 2. PROVIDE FOR EACH RACK A 1" 50 FT INDUSTRIAL HOSE

HOSE RACK

DETAIL 1
SCALE: NTS



TYPICAL FLOOR DRAIN
N.T.S.

BY	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B

PLUMBING DETAILS

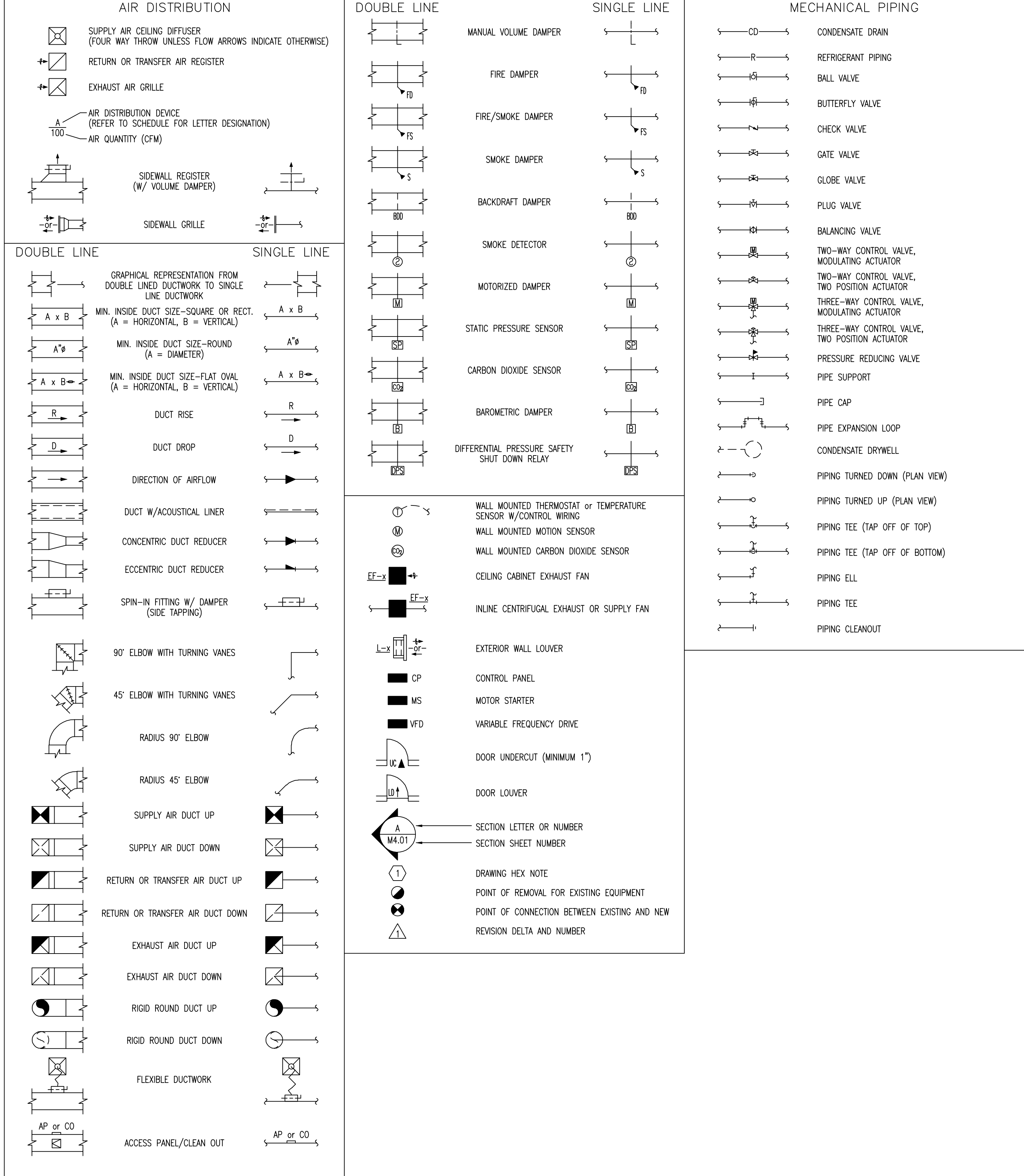
Project No.:	200-10034-11005
Designed By:	WCH
Drawn By:	DJK
Checked By:	WCH

MECHANICAL GENERAL NOTES

1. ALL MECHANICAL WORK SHALL BE GOVERNED AND INSTALLED IN COMPLIANCE WITH THE LATEST EDITION AND APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:
 A. FLORIDA BUILDING CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 B. FLORIDA MECHANICAL CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 C. FLORIDA PLUMBING CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 D. FLORIDA ENERGY EFFICIENCY CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 E. FLORIDA FIRE PREVENTION CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 F. FLORIDA FUEL GAS CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 G. FLORIDA EXISTING BUILDING CODE – 2007 WITH THE 2009 SUPPLEMENTS.
 H. NATIONAL ELECTRICAL CODE (NEC) – 2008
 I. NFPA 90A – INSTALLATION OF AIR CONDITIONING & VENTILATING SYSTEMS
 J. NFPA 101 – LIFE SAFETY CODE
 K. ASHRAE STANDARDS (INCLUDING 15, 55, 62.1, 90.1 & 129)
 L. ANSI
 M. SMACNA DUCTWORK STANDARDS
 N. AMERICANS WITH DISABILITIES ACT (ADA)
 O. ALL OTHER APPLICABLE FEDERAL, COUNTY AND CITY CODES REQUIRED BY LOCAL JURISDICTIONS
2. SUPPLY AND RETURN AIR DUCTWORK:
 A. ALL RECTANGULAR SUPPLY AND RETURN AIR METAL DUCTWORK SHALL BE GALVANIZED SHEET METAL, EXTERNALLY INSULATED WITH 2" THICK, 0.75 LB. DENSITY DUCT WRAP WITH A MINIMUM R-VALUE OF R-6.0. SEAL ALL DUCTWORK JOINTS AND SEAMS WITH MEDIUM VELOCITY DUCT SEALANT AND SEAL ALL INSULATION JOINTS AND SEAMS WITH FAB AND MASTIC, FOIL TAPE IS NOT ACCEPTABLE.
 B. ALL ROUND NONEXPOSED SUPPLY AIR DUCTWORK SHALL BE GALVANIZED SPIRAL SHEET METAL, EXTERNALLY INSULATED WITH 2" THICK, 0.75 LB. DENSITY DUCT WRAP WITH A MINIMUM R-VALUE OF R-6.0. SEAL ALL DUCTWORK JOINTS AND SEAMS WITH MEDIUM VELOCITY DUCT SEALANT AND SEAL ALL INSULATION JOINTS AND SEAMS WITH FAB AND MASTIC, FOIL TAPE IS NOT ACCEPTABLE.
 C. ALL ROUND EXPOSED SUPPLY AIR DUCTWORK SHALL BE DOUBLE WALL, GALVANIZED STEEL, INSULATED "ACOUSTI-K27" DUCT AS MANUFACTURED BY UNITED MCGILL. INNER METAL LINER SHALL BE PERFORATED. INSULATION THICKNESS SHALL BE 2" WITH A MINIMUM R-VALUE OF R-6.0 AND AN ANTIMICROBIAL "EPA" APPROVED COATING MEETING UL 181 WITH PAINT GRIP FINISH. ALL JOINTS AND SEAMS SHALL BE SEALED WITH MEDIUM VELOCITY DUCT SEALANT.
 D. ALL SUPPLY AIR INTERNALLY LINED DUCTWORK SHALL BE GALVANIZED METAL DUCT WITH A 2" THICK, MINIMUM R-VALUE OF R-4.2, FIBERGLASS DUCT LINER MEETING UL 181 W/ AN ANTIMICROBIAL "EPA" APPROVED COATING IN ACCORDANCE WITH SMACNA STANDARDS. ALL JOINTS AND SEAMS SHALL BE SEALED WITH MEDIUM VELOCITY DUCT SEALANT.
 E. ALL RETURN AIR INTERNALLY LINED DUCTWORK SHALL BE GALVANIZED METAL DUCT WITH A 1" THICK, MINIMUM R-VALUE OF R-4.2, FIBERGLASS DUCT LINER MEETING UL 181 W/ AN ANTIMICROBIAL "EPA" APPROVED COATING IN ACCORDANCE WITH SMACNA STANDARDS. ALL JOINTS AND SEAMS SHALL BE SEALED WITH MEDIUM VELOCITY DUCT SEALANT.
 F. RETURN AIR PLENUMS AND ALL TRANSFER AIR DUCTWORK SHALL BE INTERNALLY LINED WITH A 1" THICK, MINIMUM R-VALUE OF R-4.2, INSULATION MEETING UL 181 W/ ANTIMICROBIAL "EPA" APPROVED COATING IN ACCORDANCE WITH SMACNA STANDARDS. ALL JOINTS AND SEAMS SHALL BE SEALED WITH MEDIUM VELOCITY DUCT SEALANT.
3. EXHAUST DUCTWORK SHALL BE UNINSULATED RIGID GALVANIZED SHEETMETAL DUCT. SEAL ALL JOINTS AND SEAMS WITH MEDIUM PRESSURE DUCT SEALANT.
4. OUTSIDE AIR DUCTWORK SHALL BE GALVANIZED SHEET METAL, EXTERNALLY INSULATED WITH 2" THICK, 0.75 LB. DENSITY DUCT WRAP WITH A MINIMUM R-VALUE OF R-6.0. SEAL ALL DUCTWORK JOINTS AND SEAMS WITH MEDIUM VELOCITY DUCT SEALANT AND SEAL ALL INSULATION JOINTS AND SEAMS WITH FAB AND MASTIC, FOIL TAPE IS NOT ACCEPTABLE.
5. ALL DUCTWORK SHALL BE FABRICATED, CONSTRUCTED, SUPPORTED AND INSULATED IN STRICT COMPLIANCE WITH SMACNA STANDARDS AND THE FLORIDA ENERGY EFFICIENCY CODE.
6. PROVIDE A "N.E.B.B." OR "A.A.B.C." CERTIFIED TEST AND BALANCE CONTRACTOR TO PROVIDE A COMPLETE T&B REPORT FOR ALL NEW AND EXISTING HVAC AIR DISTRIBUTION SYSTEMS, EQUIPMENT AND KITCHEN HOODS AS INDICATED ON PLANS. THE T&B CONTRACTOR SHALL CONFIRM PROPER OPERATION OF ALL NEW AND EXISTING UNITS AND ASSOCIATED CONTROL SYSTEM.
7. CHECK/VERIFY CLEARANCES BEFORE ORDERING MATERIALS DUE TO LIMITED SPACE AVAILABILITY. IF THE INDICATED DUCTWORK SIZES ARE UNABLE TO FIT IN THE SPACE, PROVIDE EQUIVALENT DUCT SIZES WITH ALL REQUIRED OFFSETS, TRANSITIONS, ETC., AT NO ADDITIONAL COST TO OWNER.
8. CONTRACTOR SHALL FULLY COORDINATE LOCATION OF CEILING ACCESS PANELS AND LOCATIONS FOR ALL MECHANICAL EQUIPMENT, FIRE DAMPERS, SMOKE DAMPERS, DUCT MOUNTED SMOKE DETECTORS, DUCT ACCESS DOORS, GREASE DUCT CLEANOUTS, ETC., REQUIRING SERVICE ACCESS AND/OR INSPECTION ABOVE ALL CEILINGS AND IN ALL CHASSES OR PARTITIONS WITH THE GENERAL CONTRACTOR.
9. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO INSTALLATION OF THE WORK.
10. ALL WORK SHALL BE LOCATED TO AVOID CONFLICTS WITH OTHER TRADES. PROVIDE ADEQUATE CLEARANCE FOR ARCHITECTURAL DESIGN, PROPER OPERATION AND SERVICE OF ALL MECHANICAL EQUIPMENT.
11. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. INSTALL DUCTWORK, EQUIPMENT AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICTS WITH OTHER TRADES' WORK. MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION.
12. MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR. PROVIDE A FIVE YEAR WARRANTY ON ALL COMPRESSORS.
13. COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING.
14. CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS CLEARLY INDICATING LOCATION OF DUCTWORK AND EQUIPMENT, INCLUDING DIMENSIONS, ARRANGEMENT, RATING AND CAPACITIES OF ALL NEW AND EXISTING SYSTEMS.
15. ALL DUCT BENDS FROM THE VERTICAL TO THE HORIZONTAL AND ANGLED TURNS OF DUCTWORK SHALL HAVE TURNING VANES INSTALLED.
16. EXTRACTORS OR SPIN-IN FITTINGS WITH VOLUME DAMPERS SHALL BE INSTALLED IN ALL BRANCH DUCTWORK LEADING FROM MAIN TRUNK LINES. PROVIDE DAMPER ACTUATORS OR ACCESS PANELS FOR VOLUME DAMPERS ABOVE CONCEALED CEILINGS.
17. DUCT SIZES SHOWN ARE MINIMUM INSIDE DIMENSIONS.
18. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS, AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
19. CONTRACTOR SHALL INCLUDE IN THE BID THE NECESSARY PROGRAMMING, WIRING AND PROCEDURES FOR THE GRAPHICS AND COMMUNICATIONS AND ALL WORK AND MATERIALS REQUIRED TO INTERFACE ALL MECHANICAL EQUIPMENT FOR A COMPLETE AND FULLY OPERATIONAL TEMPERATURE AND BUILDING AUTOMATED CONTROL SYSTEM WHICH SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 15 – MECHANICAL OF THESE CONTRACT DOCUMENTS. PROVIDE A COMPLETE CONTROL SYSTEM WIRING SCHEMATIC, POINT TO POINT DIAGRAM AND SEQUENCE OF OPERATIONS. ALL WIRING SHALL BE PLENUM RATED. ALL CONTROL VOLTAGE WIRING IN EXPOSED AREAS SHALL BE IN CONDUIT.
20. INSTALL ALL THERMOSTATS, HUMIDISTATS AND TEMPERATURE SENSORS AT 48" A.F.F.
21. COORDINATE DIFFUSER AND REGISTER LOCATIONS WITH SPRINKLER HEAD AND LIGHTING LAYOUT AND LOCATE PER ARCHITECTURAL REFLECTED CEILING PLANS.

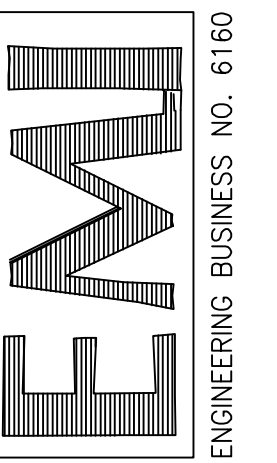
22. REVIEW DRAWINGS AND PROVIDE ALL WORK FOR A COMPLETE AND OPERABLE SYSTEM, INCLUDING ALL INCIDENTALS REQUIRED BY CODE AGENCIES AND LOCAL GOVERNING BODIES. ANY DISCREPANCY NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING PRIOR TO THE BID SHALL BE CONSIDERED CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT AND AS THE ARCHITECT DIRECTS.
23. LOCATE AND ARRANGE EQUIPMENT INTO THE AVAILABLE SPACE IN A MANNER TO ALLOW FOR ALL WORKING PARTS TO BE ACCESSIBLE FOR MAINTENANCE AND SERVICE.
24. PRIOR TO SUBMITTING A PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT ALL EXISTING CONDITIONS TO INSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED.
25. FURNISH TO THE OWNER, TWO COPIES OF OPERATING INSTRUCTIONS, MANUFACTURER'S PARTS DATA AND SERVICE INSTRUCTIONS.
26. ALL DUCTWORK, PIPING AND MECHANICAL EQUIPMENT ABOVE CEILING SHALL BE INSTALLED AS HIGH AS POSSIBLE.
27. PROVIDE THE NECESSARY REQUIRED NUMBER OF SUBMITTALS FOR ALL MECHANICAL EQUIPMENT, DUCTWORK, AIR DISTRIBUTION AND MATERIALS REQUIRED PER THESE PLANS AND SPECIFICATIONS.
28. PROVIDE AND INSTALL INSULATED HINGED ACCESS PANELS FOR ALL FIRE DAMPERS.
29. PROVIDE U.L. LISTED FIRE DAMPERS IN ALL PENETRATIONS OF FIRE RATED ASSEMBLIES. INSTALL ALL FIRE DAMPERS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE U.L. LISTING REQUIREMENTS.
30. FIRE DAMPERS – 1-1/2 HOUR RATED:
 A. U.L. LABELED FIRE DAMPERS SHALL BE CLASSIFIED "FOR USE IN DYNAMIC SYSTEMS".
 B. FURNISH AND INSTALL, AT LOCATIONS SHOWN ON PLANS (SEE ARCHITECTURAL PLANS FOR LOCATION OF FIRE RATED PARTITIONS) OR AS REQUIRED BY GOV. CODES, FIRE DAMPERS CONSTRUCTED AND TESTED IN ACCORDANCE WITH U.L. SAFETY STANDARD 555.
 C. EACH FIRE DAMPER SHALL HAVE A 1-1/2 HOUR FIRE PROTECTION RATING (SUITABLE FOR INSTALLATION IN 3 HOUR RATED ASSEMBLIES AND LESS), 165' MIN. FUSIBLE LINK AND SHALL INCLUDE THE U.L. LABEL.
 D. FIRE DAMPERS SHALL BE EQUIPPED FOR VERTICAL OR HORIZONTAL INSTALLATION AS REQUIRED BY THE LOCATION INDICATED. DAMPERS SHALL BE GRAVITY OPERATED FOR VERTICAL INSTALLATIONS, BY CLOSURE SPRINGS AND LATCHES FOR HORIZONTAL INSTALLATIONS.
 E. DAMPERS IN RETURN AIR OPENINGS OR BEHIND GRILLES OR REGISTERS SHALL BE "TYPE A". DAMPERS IN LOW AND MEDIUM PRESSURE DUCTWORK SHALL BE "TYPE B". DAMPERS IN HIGH PRESSURE DUCTWORK SHALL BE "TYPE C".
 F. ACCEPTABLE MANUFACTURERS ARE:
 • GREENHECK
 • RUSKIN
 • AIR BALANCE
 • LLOYD INDUSTRIES
 G. FIRE DAMPERS SHALL BE INSTALLED UTILIZING STEEL SLEEVES, ANGLES, OTHER MATERIALS, AND PRACTICES REQUIRED TO PROVIDE AN INSTALLATION EQUIVALENT TO THAT UTILIZED BY THE MANUFACTURER WHEN DAMPERS WERE TESTED AT U.L. INSTALLATION SHALL BE IN ACCORDANCE WITH THE DAMPER MANUFACTURER'S INSTRUCTIONS.
 H. ADEQUATELY PROVIDE DAMPER LOCATION ACCESS AFTER DAMPER INSTALLATION.
 I. PROVIDE A DUCT ACCESS DOOR THAT WILL ALLOW RESETTING OF DAMPER AND REPLACEMENT OF THE LINK. ACCESS SHALL BE 12"x12" MINIMUM, EXCEPT FOR SMALLER DUCTS, WHERE ACCESS SHALL AS LARGE AS PRACTICAL.
31. ALL PIPING AND DUCTWORK SHALL BE NONCOMBUSTIBLE MATERIAL.
32. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. MANUFACTURER'S SERVICE CLEARANCE FOR ALL EQUIPMENT SHALL BE MAINTAINED.
33. CONTRACTOR SHALL PATCH ALL HOLES IN DUCTWORK THAT ARISE FROM RELOCATION/REMOVAL OF EXISTING BRANCH CONNECTIONS, TAPS OR FITTINGS. SEAL DUCT AIRTIGHT WITH FAB AND MASTIC PER SMACNA STANDARDS.
34. EXHAUST FAN OUTLETS AND PLUMBING VENTS SHALL BE INSTALLED A MINIMUM OF 10"-0" FROM FRESH AIR INTAKES OF THE MECHANICAL EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE PLUMBING CONTRACTOR. PROVIDE ANY VENT OR DUCT OFFSETS AT NO ADDITIONAL COSTS TO THE OWNER.
35. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS AS REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.
36. COORDINATE ALL WALL, ROOF AND SLAB PENETRATIONS WITH GENERAL CONTRACTOR AND AS REQUIRED PER STRUCTURAL AND ARCHITECTURAL PLANS AND SPECIFICATIONS.
37. PROVIDE A DEEP SEAL TRAP AT CONDENSATE DRAIN TO AIR CONDITIONING UNITS. RUN CONDENSATE DRAIN FROM DRAIN PAN CONNECTION TO NEAREST FLOOR DRAIN, ROOF DRAIN, CONDENSATE RISER OR DRYWELL. CONDENSATE DRAIN PIPING SHALL BE FULL SIZE OF UNIT CONNECTION. CONDENSATE PIPING ON ROOF SHALL BE NON-INSULATED PAC SCHEDULE 40. CONDENSATE PIPING INSTALLED INSIDE OF BUILDING SHALL BE TYPE "L" COPPER AND INSULATED PER SPECIFICATIONS.
38. ALL UNDERCUT DOORS SHOWN ON THE MECHANICAL DRAWINGS, SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. THE UNDERCUT DEPTH SHALL BE A MINIMUM OF 1".
39. STARTERS REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE FURNISHED BY DIVISION 15 – MECHANICAL AND INSTALLED BY DIVISION 16 – ELECTRICAL. STARTERS SHALL BE COMBINATION DISCONNECT HAND-OFF AUTO TYPE WITH CONTROL TRANSFORMER AND AUXILIARY CONTACTS.
40. DISCONNECT SWITCHES REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE PROVIDED BY DIVISION 16 – ELECTRICAL UNLESS NOTED OTHERWISE.
41. CONTRACTOR SHALL INCLUDE IN THE BID THE TRANSPORT AND DISPOSAL OR RECYCLING OF ALL WASTE MATERIALS GENERATED BY THIS PROJECT IN ACCORDANCE WITH ALL RULES, REGULATIONS AND GUIDELINES APPLICABLE.
42. ALL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE PROPERLY PROTECTED WITH A U.L. RATED FIRESTOPPING SYSTEM.
43. COORDINATE ALL DUCT MOUNTED SMOKE DETECTORS AND FIRE SMOKE DAMPERS WITH DIVISION-16 FIRE ALARM AND ELECTRICAL CONTRACTORS.
44. PROVIDE AUXILIARY DRAIN PANS WITH A FLOAT SWITCH, THAT WILL DE-ENERGIZE THE AHU, FOR ALL SUSPENDED AHU'S ABOVE CEILINGS OR AS REQUIRED BY CODE.
45. ALL LOUVERS SHOWN ON THE MECHANICAL PLANS SHALL BE FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. COORDINATE MINIMUM FREE AREA REQUIREMENTS SHOWN. PROVIDE A MINIMUM 24" DEEP PLENUM FOR DUCTWORK CONNECTION.
46. THE MECHANICAL CONTRACTOR SHALL REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR DETAILS AND LOCATION OF ALL ROOF MOUNTED MECHANICAL EQUIPMENT AND SHALL COMPLY WITH FLORIDA BUILDING CODE SECTION 1509.7 "MECHANICAL UNITS".
47. CONTRACTOR SHALL PROVIDE A MINIMUM OF 7'-0" CLEARANCE FROM BOTTOM OF MECHANICAL EQUIPMENT/DUCTWORK TO FINISHED FLOOR.

MECHANICAL SYMBOL LEGEND



www.tetra.tech
201 E. PINE STREET, SUITE 1000
ORLANDO, FL 32801
PHONE: (407) 839-3955 FAX: (407) 839-3790

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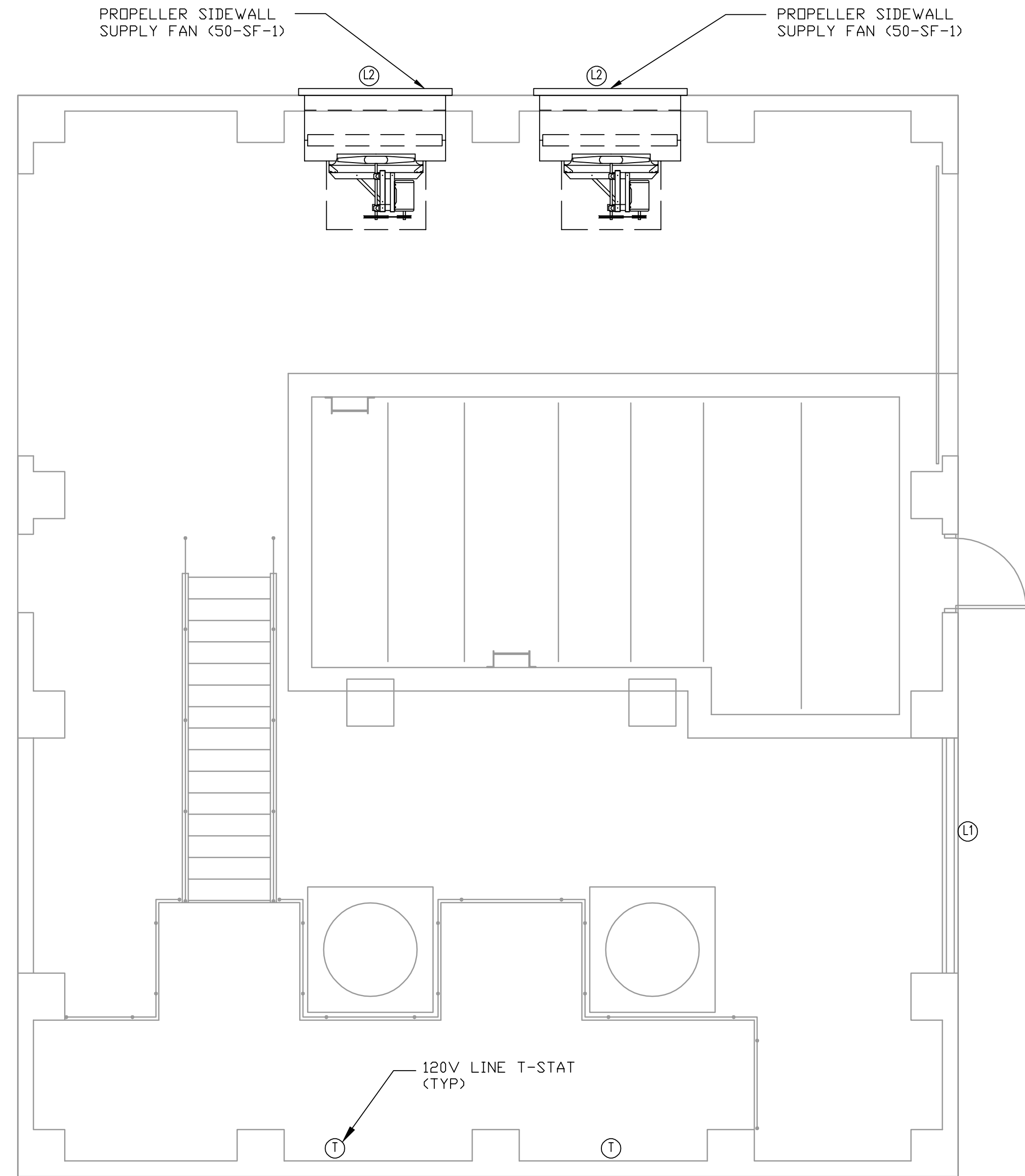
ENGINEERING BUSINESS NO. 6160

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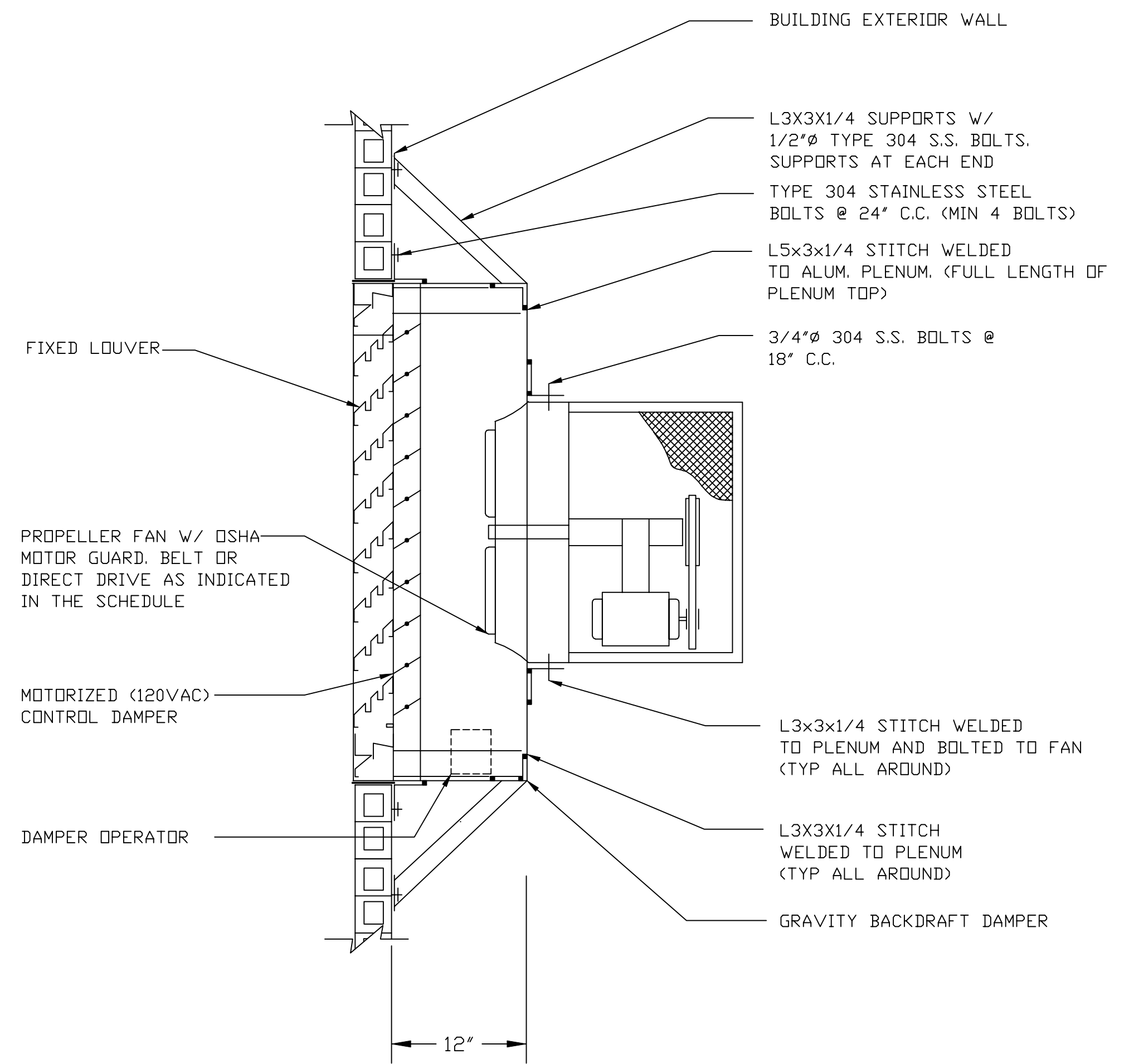
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
SYMBOLS

Project No.:	200-10034-11005
Designed By:	WCH
Drawn By:	DJK
Checked By:	WCH

M001



HSP ROOM



TYPICAL WALL MOUNTED FAN

WALL MOUNTED LOUVER SCHEDULE

SYMBOL	QUANTITY	SIZE	CFM	MAX. VELOCITY (FPM)	MAX. P.D. (IN. W.G.)	MATERIAL	FREE AREA (SQFT.)	BLADE ANGLE (DEG.)	BLADE SPACING	FRAME DEPTH	MANUFACTURER	MODEL NUMBER	REMARKS
L1	1	10'x16'-8"	66,000	200	0.05	EXTRUDED ALUM.	400	37	4	6	GREENHECK	ESD-635D	ALL
L2	2	6'x6'	13,000	200	0.05	EXTRUDED ALUM.	15	37	4	6	GREENHECK	ESD-635D	ALL

REMARKS:

1. FINISH SHALL BE "KYNAR 500" FLUOROPOLYMER COATING. COLOR SELECTED BY OWNER.
2. PROVIDE SILL EXTENSION.
3. PROVIDE BIRD SCREEN.
4. LOUVERS SHALL COMPLY WITH MINIMUM 130 MPH LOCAL CODE REQUIREMENTS.

SUPPLY AIR FAN SCHEDULE

SYMBOL	LOCATION	SERVICE	TYPE	FAN DATA				MOTOR DATA					
				CFM	ESP (IN. W.G.)	FAN RPM	MAX. SONES	DRIVE	HP (WATTS)	RPM (HIGH/LOW)	VOLT	PH	HZ.
50-SF-1	PUMP ROOM	SUPPLY	WALL	13000	0.5	640	24	BELT	3/4	1800	460	3	60
50-SF-2	PUMP ROOM	SUPPLY	WALL	13000	0.5	640	24	BELT	3/4	1800	460	3	60

SYMBOL	PHYSICAL CHARACTERISTICS			CONTROLLED BY	MANUFACTURER	MODEL NUMBER	REMARKS
	DIMENSIONS LxWxH (in.)	WEIGHT (LBS.)	WALL OPENING LxW (in.)				
50-SF-1	50"x50"x30"	175	60"x60"	T-STAT	GREENHECK	SBCS-3H42-7	1-8
50-SF-2	50"x50"x30"	175	60"x60"	T-STAT	GREENHECK	SBCS-3H42-7	1-8

REMARKS:

1. PROVIDE INTEGRAL DISCONNECT SWITCH (NEMA 4X)
2. PROVIDE BACK-DRAFT DAMPER. (COATED) (120V OPERATOR W/ END SWITCH)
3. PROVIDE SPARE BELTS
4. PROVIDE PREMIUM MOTOR
5. PROVIDE EPOXY COATING
6. PROVIDE OSHA MOTOR GUARD
7. PROVIDE BEARING W/ GREASE FITTINGS
8. PROVIDE PIGTAIL NON-METALLIC
9. PROVIDE FLANGED INLET AND OUTLET DUCT TURN CONDITIONS.
10. PROVIDE THRUST RESTRAINTS.
11. PROVIDE WITH HI-PRO ZINC COATING AGAINST CHEMICALS AND UV.
12. PROVIDE SPRING TYPE VIBRATION ISOLATION HANGERS WITH 1" DEFLECTION.
13. PROVIDE BELT GUARD TOTAL ENCLOSURE.
14. PROVIDE COPPER EXTENDED LUBE LINE.
15. PROVIDE BEARING EXTEND LIFE OF 200K HRS.
16. PROVIDE INLET GUARD.

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MARK	DATE	DESCRIPTION

BACKGROUND PLAN AND ONE LINE SYMBOLS

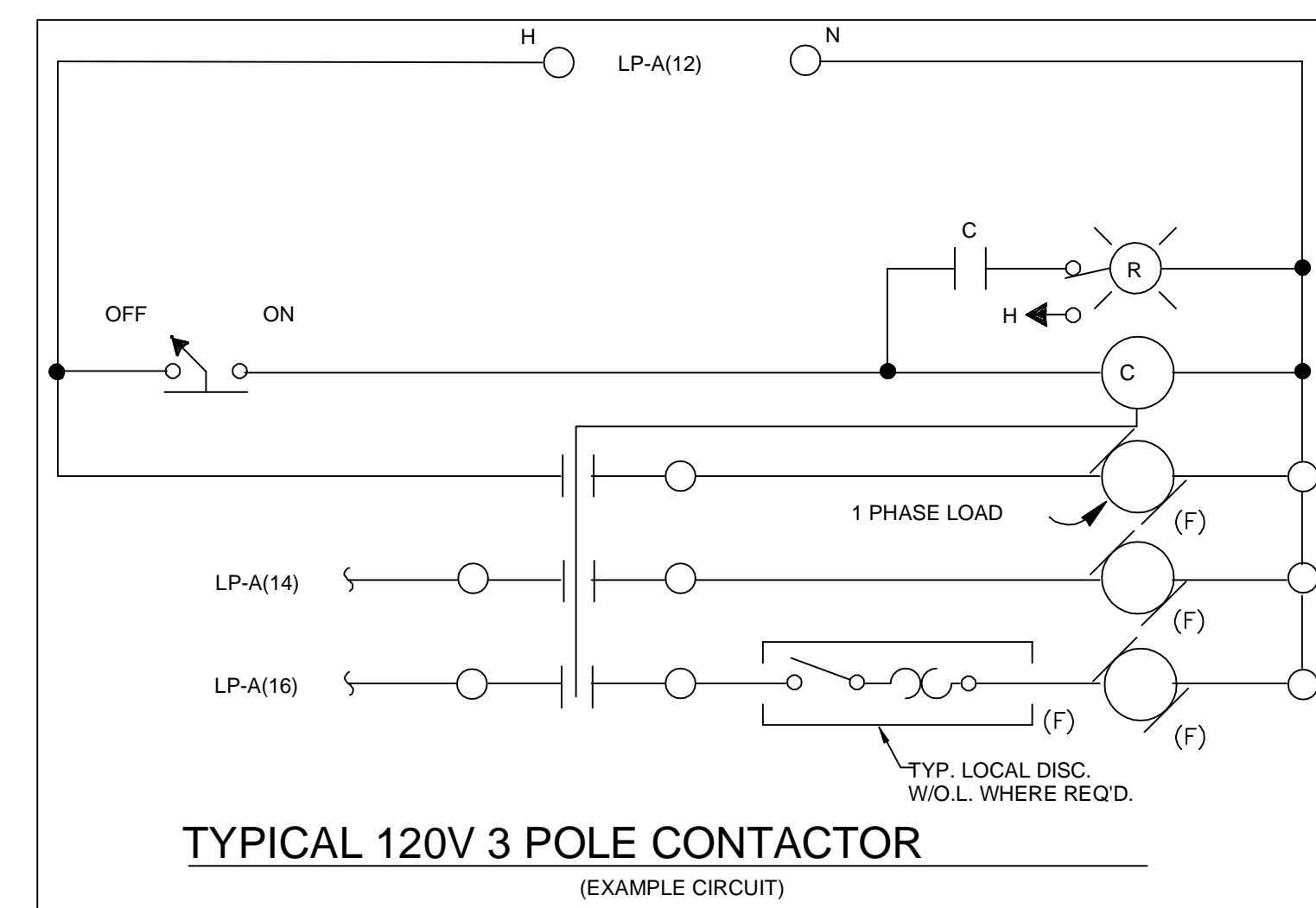
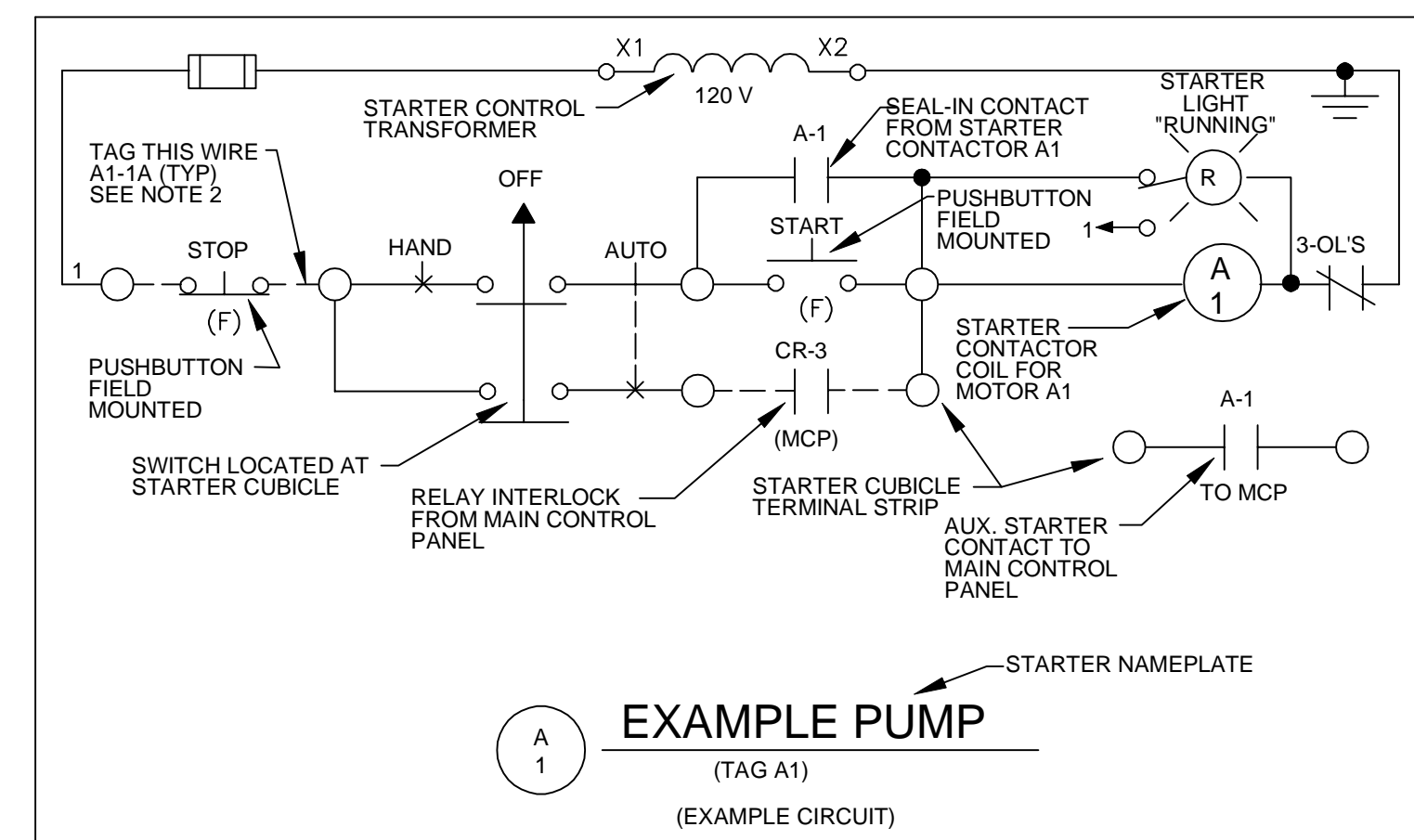
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONTROL SWITCH (SEL. OR P.B.) SEE CIRCUITS FOR SPECIFIC TYPE		LOW VOLTAGE DISCONNECT SWITCH
	SEE CIRCUITS FOR SPECIFIC TYPE FLOAT SWITCH - FLOW SWITCH		LOW VOLTAGE FUSE (BELOW 600V)
	TEMPERATURE - HUMIDISTAT SWITCH (SUBSCRIPT = NO. OF STAGES)		ALL STARTERS SHALL BE FULL VOLTAGE NON-REVERSING UNLESS OTHERWISE INDICATED
	LIMIT - PRESSURE - VACUUM SWITCH		(FVR) FULL VOLTAGE REVERSING (RV) REDUCED VOLTAGE (2S,2W) TWO SPEED, TWO WINDING
	ELECTRICAL OR MECHANICAL ALTERNATOR (SEE WIRING)		600V, 3 POLE MOLDED CASE CIRCUIT BREAKER, FRAME & RATING AS SHOWN
	OVERLOAD SWITCH OR DEVICE		SINGLE PHASE, FRACTIONAL HP MOTOR TO LOCATION INDICATED (SEE GEN. NOTE 4)
	TERMINAL BOX		THREE PHASE LOAD WITH IDENTIFICATION
	SOLENOID VALVE		HIGH VOLTAGE FUSE (ABOVE 600 V)
	PHOTOCELL LINE VOLTAGE		TAG NO. (BALLOON) FOR DEVICE INDICATED
	ITEM NO. INTERCOM EQUIPMENT		FOR POWER (SEE GEN. NOTE 4) 3/4" CU/C#18 SHLD. CONDUIT AND WIRE RUN FROM DEVICE INDICATED TO LOCATION INDICATED
	INTERCOMMUNICATION SYSTEM AMPLIFIER - WALL STATION - LINE BALANCE		CAPACITOR, 3 PHASE, SIZE AS INDICATED
	INTERCOMMUNICATION DESK SET		DISCONNECT SWITCH (F) = FUSED (C) = CIRCUIT BREAKER
	INTERCOM. SPEAKER (SURFACE MTD.)		MAGNETIC STARTER (BACKGROUND DRAWINGS ONLY)
	INTERCOM. SPEAKER (CEILING LAY-IN)		COMBINATION MAGNETIC STARTER FUSED UNLESS NOTED (CIRCUIT BREAKER) SS = STAINLESS STEEL
	TELEPHONE OUTLET OR JUNCTION BOX		COMBINATION LIGHTING CONTACTOR WITH HAND-OFF-AUTO SWITCH
	WELDING RECEPTACLE - NEMA L9-50R 600V, 2P, 3W, SIMPLEX		MANUAL STARTER (R) = REVERSING
	INTERCOM HANDSET - SURFACE MOUNTED WITH REMOTE SPEAKER AMPLIFIER		CONTROL PANEL
	INTERCOM VOLUME CONTROL		TEMPERATURE CONTROL PANEL
	INTERCOM SPEAKER - SURFACE MOUNTED		UNIT HEATER, 1/8 HORSEPOWER
	INTERCOM HANDSET - FLUSH MOUNTED WITH REMOTE SPEAKER AMPLIFIER		600 VOLT FEEDER BUS DUCT (AMPERAGE AS INDICATED)
	DOOR CONTACT		LIGHTNING ARRESTOR
	AS NOTED (LIGHTING PANEL, CONTROL PANEL, DISTRIBUTION PANEL ETC.) WALL MOUNTED		LOW VOLTAGE HOME RUNS 120/208 V 120/240 V (SEE GEN. NOTE 4)
	JUNCTION BOX		NEMA 4 WATERTIGHT
	HEATER		NEMA 4X WATERTIGHT AND CORROSION PROOF
	TRANSFORMER		NEMA 7 EXPLOSION PROOF - CLASS I, DIVISION I, GROUP D
	CONDUIT WITH CONDUIT SEAL FITTING		NEMA 9 EXPLOSION PROOF - CLASS II, DIVISION 1
	CONDUIT EXPOSED		KEYLOCK
	CONDUIT CONCEALED		SMOKE DETECTOR
	DIRECT BURIED CONDUIT		EXIT LIGHT
	OVERHEAD LINE		FLUORESCENT LUMINAIRE
	UNDERGROUND DUCT BANK		INCANDESCENT LUMINAIRE
	COPPER-CLAD GROUND ROD		HIGH INTENSITY DISCHARGE LIGHT
	CONCRETE ENCASED DUCT BANK, WITH CABLE LOCATIONS AND SPARE DUCTS AS INDICATED ON DRAWINGS		EMERGENCY BATTERY PACK
	CABLE REEL		
	HORN/SSTROBE (110CD)		
	FLOW SWITCH & TAMPER SWITCH		
	MOTOR		

CONTROL CIRCUIT & PILOT DEVICE LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PRESS. ACTUATED SWITCH		SELECTOR SWITCH OPERATOR WITH FUNCTION SHOWN
	FLOAT ACTUATED SWITCH		MOMENTARY PUSHBUTTON OPERATOR-NORMALLY OPEN
	FLOW ACTUATED SWITCH		MOMENTARY PUSHBUTTON OPERATOR-NORMALLY CLOSED
	TEMP. ACTUATED SWITCH		PUSHBUTTON OPERATOR WITH MUSHROOM HEAD
	LIMIT SWITCH - NORMALLY OPEN		FIELD LOCATED STOP BUTTON
	LIMIT SWITCH - NORMALLY CLOSED		MAINTAINED PUSH-PULL OPERATOR
	LIMIT SWITCH-NORMALLY CLOSED-HELD OPEN		MAINTAINED STOP-START PUSHBUTTON OPERATOR
	LIMIT SWITCH-NORMALLY OPEN-HELD CLOSED		SOLENOID OR CLUTCH
	LATCHING CABLE SWITCH		PUSH-TO-TEST INDICATING LIGHT
	TIME-DELAY FUSE		MAINTAINED STOP- MOMENTARY START PUSHBUTTON (JOG)
	CONTROL RELAY COIL		ZERO SPEED OR ANTI- PLUGGING SWITCH
	CONTROL RELAY CONTACT-NORMALLY OPEN		LOCAL TERMINALS WITH EXTERNAL WIRING
	CONTROL RELAY CONTACT-NORMALLY CLOSED		ELAPSED TIME INDICATOR
	TWO COIL LATCHING RELAY		TIMING RELAY INSTANTANEOUS CONTACTS
	TIMING RELAY COIL		
	TIMED CLOSED CONTACT ON ENERGIZATION		
	TIMED OPEN CONTACT ON ENERGIZATION		
	TIMED CLOSED CONTACT ON DE-ENERGIZATION		
	120 VAC TRANSFORMER		

WIRING DEVICE SCHEDULE

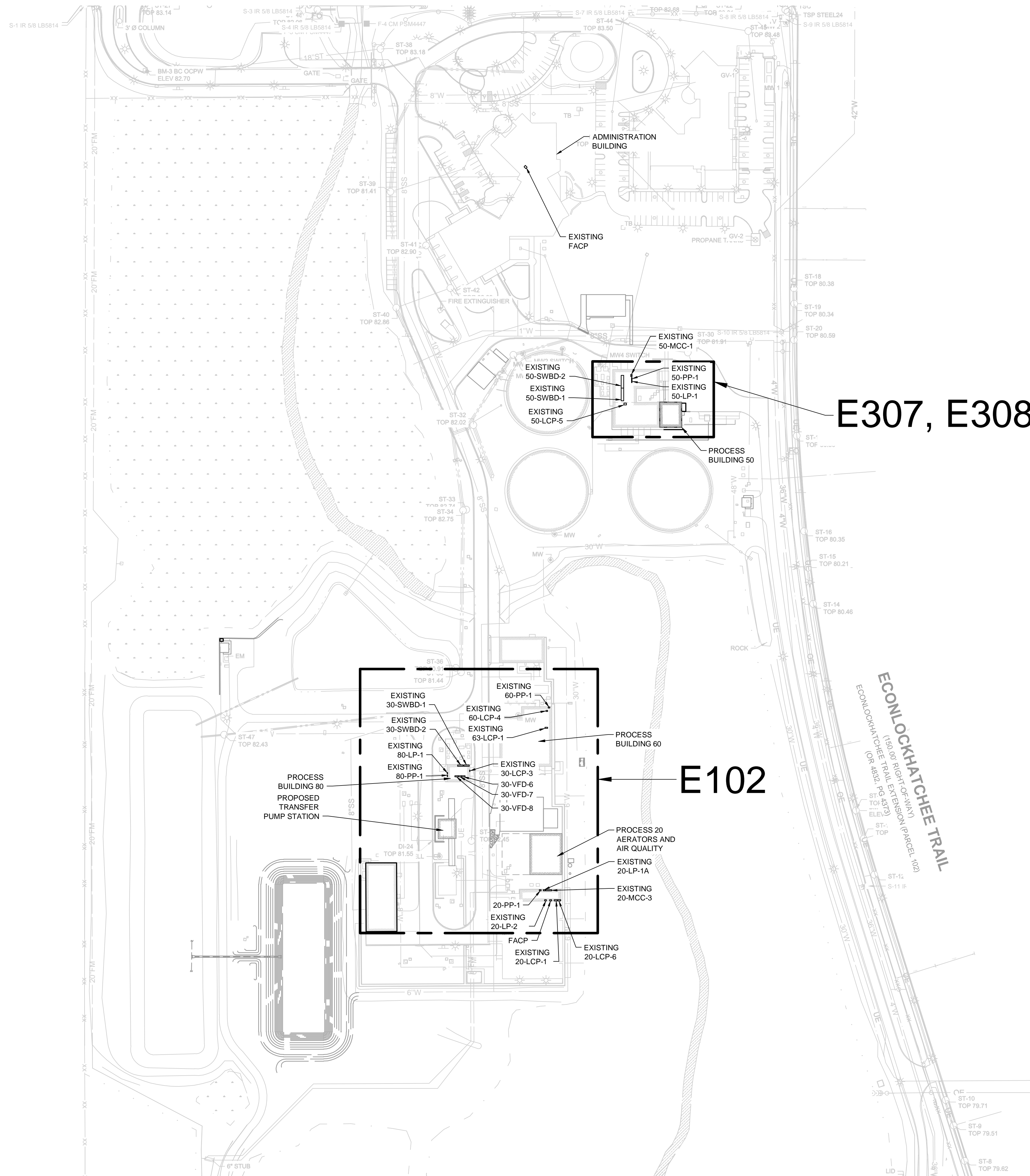
SYMBOL	DESCRIPTION	NEMA TYPE
	125V, 2P, SIMPLEX, CLOCK HANGER	1-15 R
	125V, 2P, SIMPLEX, 3W	5-20 R
	125V, 2P, DUPLEX, 3W	5-20 R
	125/250V, 3P, SIMPLEX, 3W, RANGE TYPE	10-50 R
	20A, 120/277 V SWITCH	SPST
	20A, 120/277 V SWITCH	2PDT
	20A, 120/277 V SWITCH 3-DESIGNATES 3-WAY SWITCHING, a-DESIGNATES CONTROLLING 'a' FIXTURES ONLY	3 WAY
	20A, 120/277 V SWITCH	4 WAY
	20A, 120/277 V DIMMER SWITCH	
	250V, 2P, SIMPLEX, 3W, 50A	6-50R
	125V, 2P, MULTI-RECEPTACLE	5-15R
	250V, 2P, SIMPLEX, 3W, 20A	6-20R
	600V, 2P, 3W, SIMPLEX WELDING	L9-50R
	208V, 3P, SIMPLEX, 4W, LOCKING	L14-20R
	277V, 2P, DUPLEX, 3W	7-15R



GENERAL NOTES:

- ELECTRICAL MATERIALS AND EQUIPMENT ITEMS SHOWN IN LIGHT LINE WEIGHTS ON THE DRAWINGS ARE EXISTING ITEMS TO REMAIN. ELECTRICAL MATERIALS AND EQUIPMENT ITEMS SHOWN IN DARK LINE WEIGHTS ARE NEW UNDER THIS CONTRACT.
- ITEMS SHOWN CROSSHATCHED ON THE DRAWINGS ARE EXISTING ITEMS TO BE REMOVED.
- FOR ITEMS INDICATED AS "FIELD LOCATE" CHECK DRAWINGS OF OTHER TRADES (IN PARTICULAR PIPING AND STRUCTURAL) FOR INTERFERENCE AND FOR LOCATIONS OF MOUNTING FLANGES, CONNECTION POINTS, ETC.
- INSTALL A SINGLE CONDUCTOR INSULATED (RHH, THHN, OR XHHW) COPPER GROUND WIRE IN EACH CONDUIT, SIZE AS SHOWN ON DRAWINGS OR AS A MINIMUM PER THE NATIONAL ELECTRICAL CODE. THIS GROUND WIRE SHALL BE CONNECTED AT EACH END TO THE EQUIPMENT GROUND.
- THE FOLLOWING COMPONENT IDENTIFICATION SHALL BE USED AS APPROPRIATE:
(F) FIELD MOUNTED, NOT AT STARTER OR OTHER CONTROL PANELS.
(S) STARTER PANEL MOUNTED.
(MCP) AT MAIN CONTROL PANEL.
(1) AT CONTROL PANEL NO. 1
(2) AT CONTROL PANEL NO. 2
(TCP) AT TEMPERATURE CONTROL PANEL.
- EQUIPMENT SHOWN WITHIN NEMA 4X AREAS SHALL BE RATED NEMA 12 AND EQUIPMENT SHOWN OUTSIDE SHALL BE RATED NEMA 4X, UNLESS OTHERWISE INDICATED.
- MINIMUM CONTROL WIRE SIZE SHALL BE EITHER #14 AWG OR 2/C#16SH AND MINIMUM POWER WIRE SIZE SHALL BE #12 AWG, UNLESS OTHERWISE INDICATED.
- MINIMUM CONDUIT SIZE SHALL BE 3/4", UNLESS OTHERWISE INDICATED.
- PROVIDE INSULATED CONDUCTOR (THHN/THWN) FOR EXTERIOR WORK AND FOR INTERIOR WORK.
- PROVIDE 20% SPARE I/O MINIMUM FOR EACH DISCRETE AND ANALOG TYPE PER CARD AND CONTROL PANEL, UNLESS OTHERWISE INDICATED.
- WIRE NUMBERS (1, 3 & 5) ETC. SHALL BE PREFIXED WITH STARTER TAG NUMBERS. THE WIRE NUMBER AFTER THE PREFIX, MAY BE THE MANUFACTURERS WIRE NUMBERING SYSTEM. WIRE MARKERS MAY BE USED AT EACH WIRE TERMINATION POINT.
- EQUIPMENT SHOWN WITHIN NEMA 4X AREAS SHALL BE CONSTRUCTED OF 316-STAINLESS STEEL & PAINTED WHITE, UNLESS NOTED OTHERWISE.
- HOMERUNS SHALL BE 3/4" C12#12, 1#12 UNLESS NOTED OTHERWISE.
- EXISTING LIGHT FIXTURES SHALL BE LOWERED & CONDUIT & WIRE EXTENDED AS NECESSARY TO AVOID NEW CONSTRUCTION CASTING A SHADOW BECAUSE NEW CONSTRUCTION IS MOUNTED LOWER THAN EXISTING LIGHT FIXTURES.
- LIGHTING CONTROLS FOR NEW & EXISTING LIGHTING MODIFIED SHALL BE PROVIDED VIA EXISTING IFIX GRAPHIC & CONTROL SYSTEM. PROVIDE PROGRAMMING UPDATES AS REQUIRED TO CONTROL THE NEW & EXISTING LIGHTING.
- ALL BURIED CONDUIT SHALL BE CONCRETE ENCASED WITH RED PIGMENTED DYE.
- MANHOLES SHALL BE INSTALLED CORNER TO CORNER AND SHALL HAVE A MINIMUM OF 6" BETWEEN THEM. MANHOLES SHALL NOT BE INSTALLED FACE TO FACE.
- ALL DUCTBANKS TO BE CONCRETE ENCASED, RED DYE MIX NOT SPREAD ON TOP. REINFORCE WITH CONTINUOUS #4 REBAR 24" O.C. SEE SHEET E-602.

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E307, E308, & E309

E102

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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
OVERALL ELECTRICAL KEY PLAN

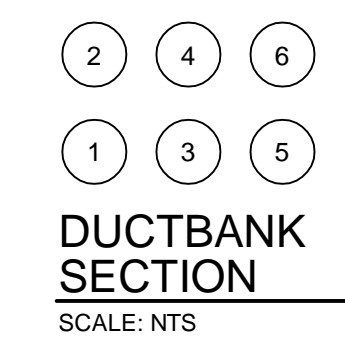
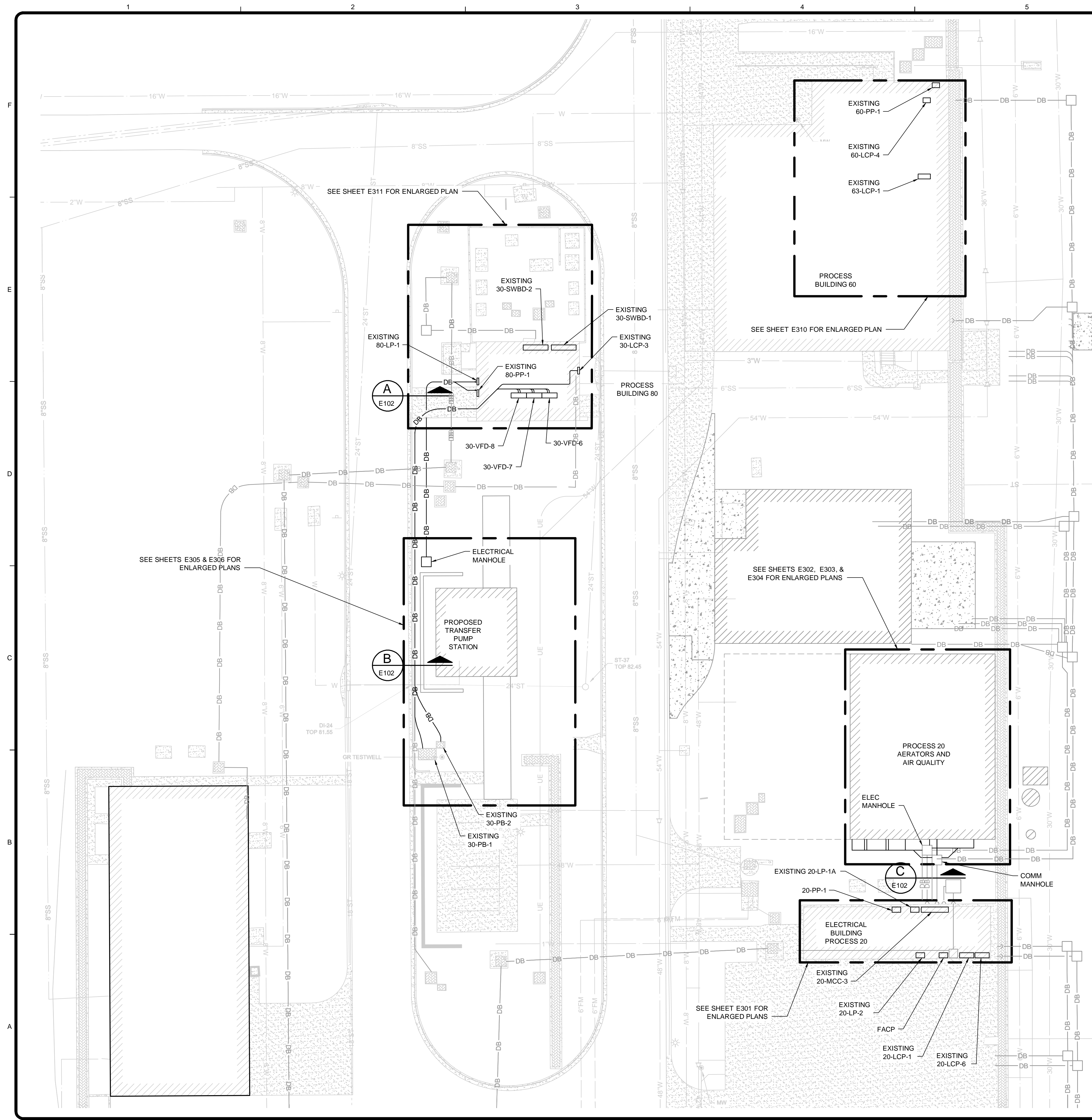
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E101

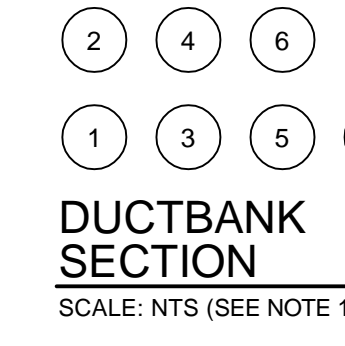
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Bar Measures 1 inch

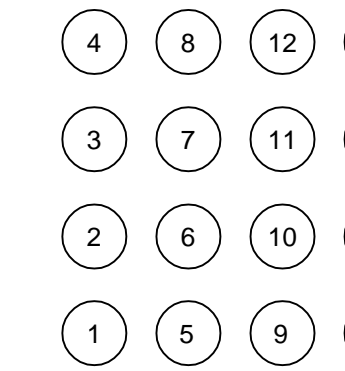
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- 1. 1 1/4\"/>



- 1. 4\"/>



- 1. 2\"/>

- 23. 1\"/>

- 29. 1\"/>

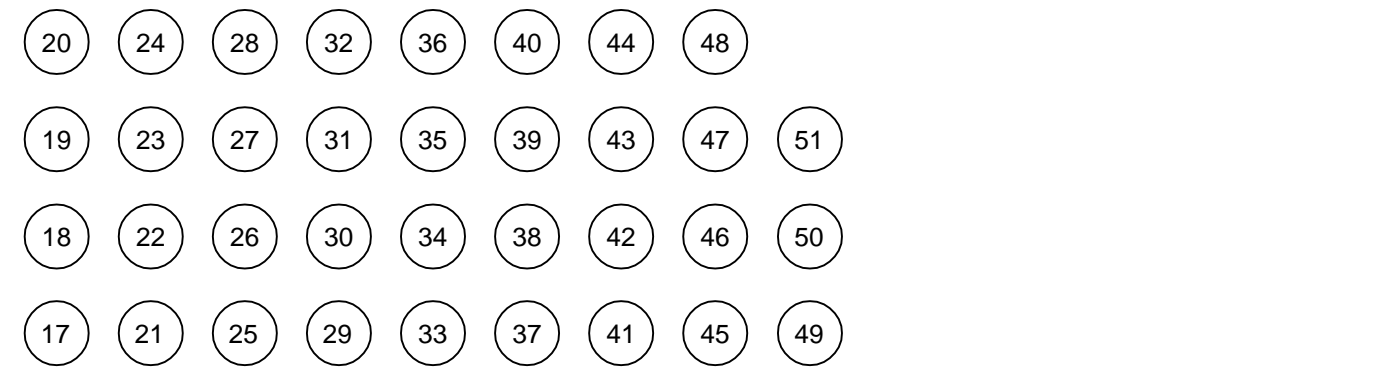
- 32. 1\"/>



- 1. (80-LP-1 TO RECEPTACLES VIA ELEC MANHOLE)



- 1. (30-VFD-6 TO 30-P-6 VIA 30-PB-1)



- 1. (20-B-3 TO 20-MCC-3 VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)

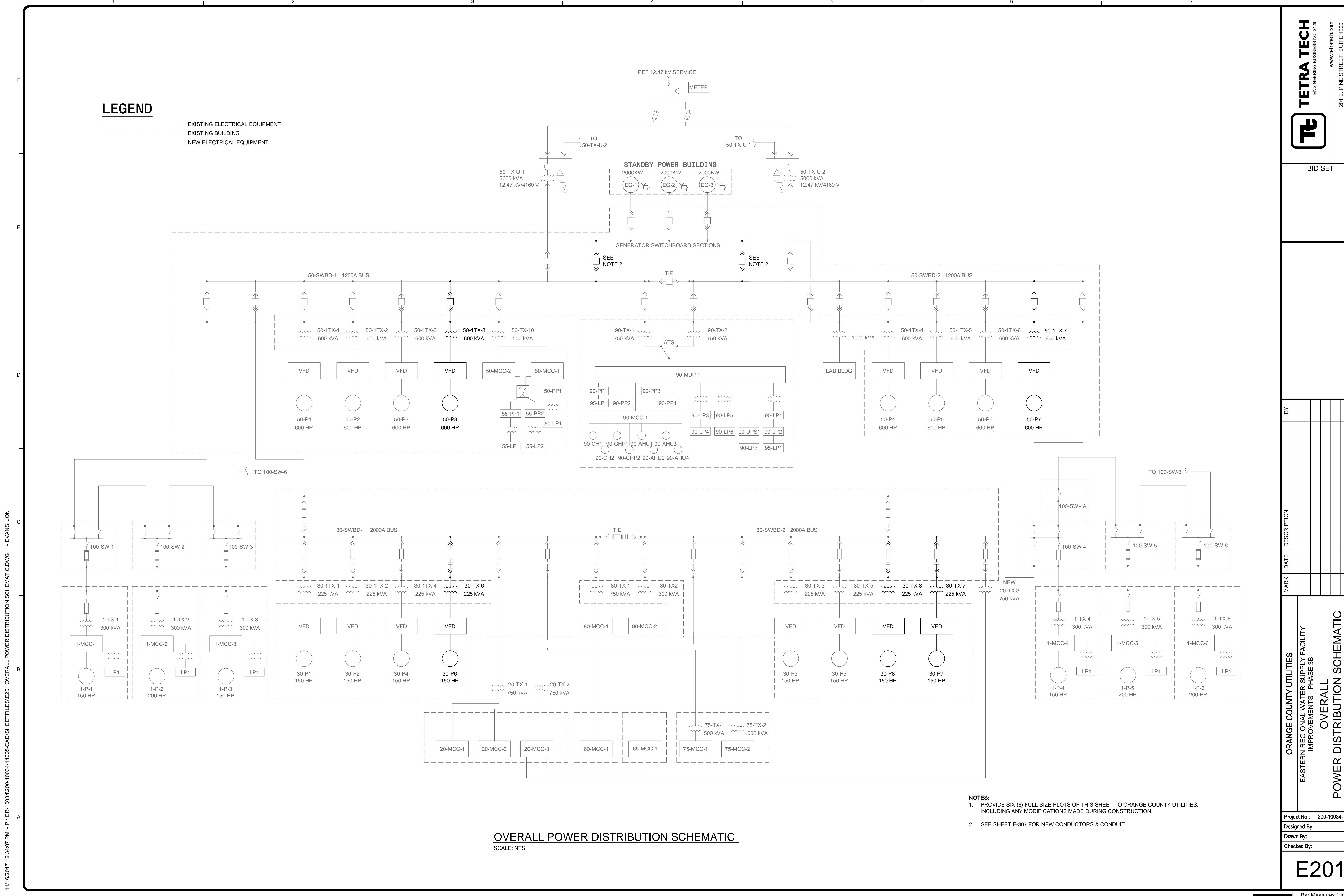
- 23. (HEAT TRACE TO 20-LP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)

- 29. (EYEWASH-7, EYEWASH-8 TO FACP VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)

- 32. (20-AE/AIT-2B-3 TO 20-LP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)

NOTES:
1. CONDUITS & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTIONS OF CONDUITS FROM VFDS & 30-LCP-3 TO 30-PB-1 & 30-PB-2, WHICH ARE EXISTING. UTILIZE THIS EXISTING CONDUIT TO ROUTE NEW WIRES AS SHOWN.
2. CONDUIT FROM ELEC & COMM MANHOLES TO PULLBOX ABOVE 20-MCC-3 ARE EXISTING. SEE SHEET E302 FOR BEGINNING AND END OF CONDUIT & WIRE SHOWN.
3. ALL DUCTBANKS TO BE CONCRETE ENCASED, RED DYE MIX NOT SPREAD ON TOP. REINFORCE WITH CONTINUOUS #4 REBAR 24\"/>

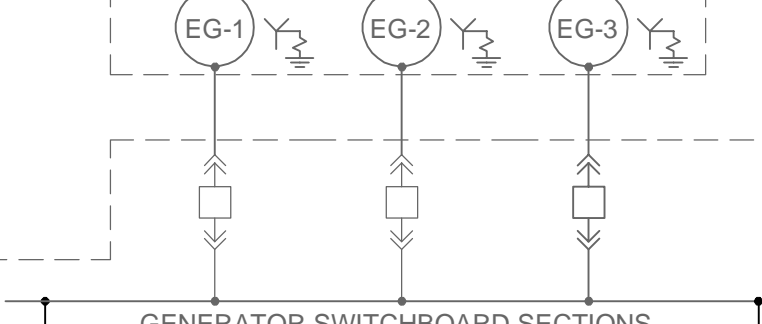
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Designed By: FWY
Drawn By: TAC
Checked By: WAP
E102
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS - PHASE 3B
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LEGEND

- EXISTING ELECTRICAL EQUIPMENT
- EXISTING BUILDING
- NEW ELECTRICAL EQUIPMENT

STANDBY POWER BUILDING



GENERATOR SWITCHBOARD SECTIONS



- NOTES:**
1. PROVIDE SIX (6) FULL-SIZE PLOTS OF THIS SHEET TO ORANGE COUNTY UTILITIES, INCLUDING ANY MODIFICATIONS MADE DURING CONSTRUCTION.
 2. SEE SHEET E-307 FOR NEW CONDUCTORS & CONDUIT.

OVERALL POWER DISTRIBUTION SCHEMATIC

SCALE: NTS

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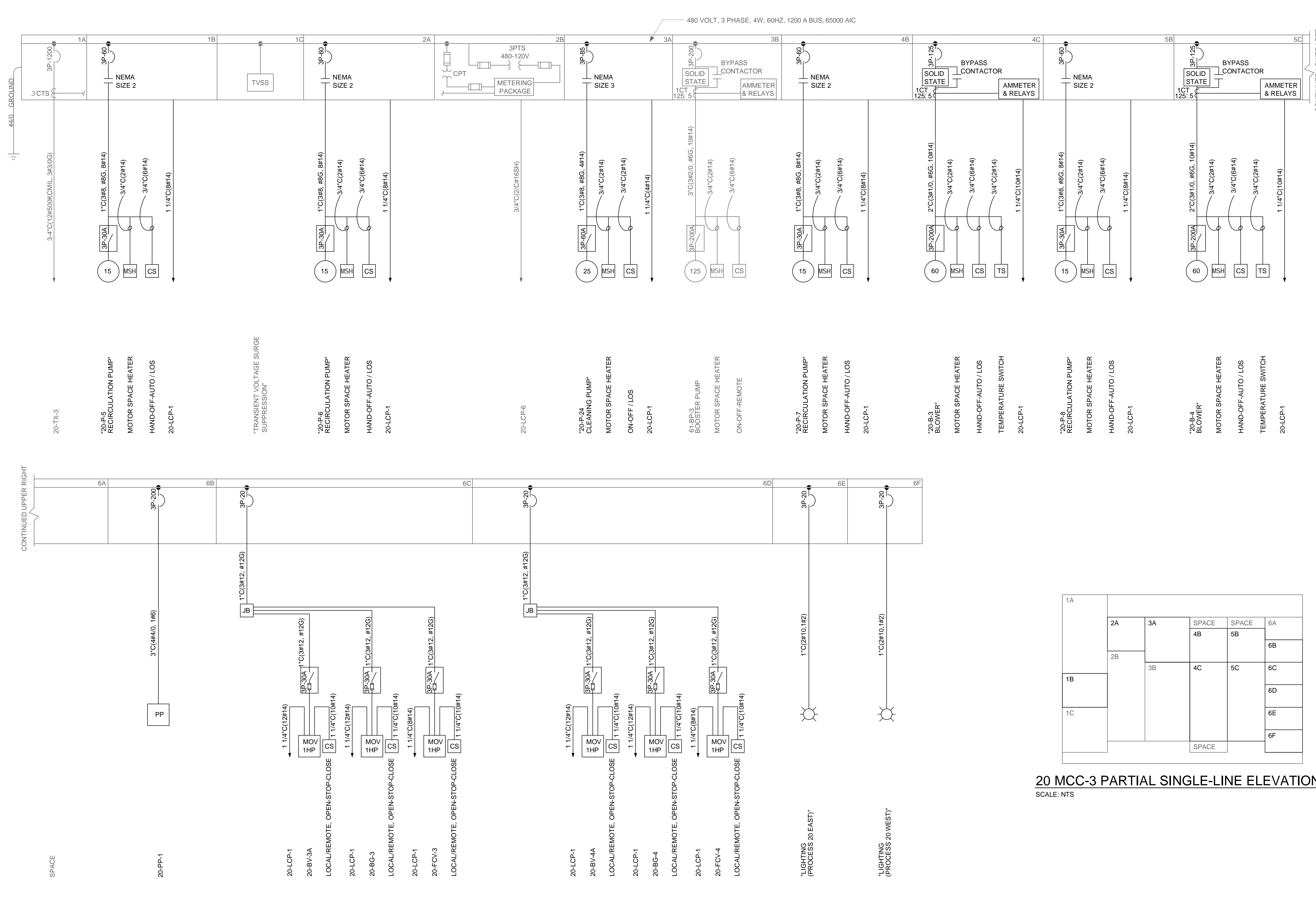
**OVERALL
POWER DISTRIBUTION SCHEMATIC**

Project No.: 200-10034-11005
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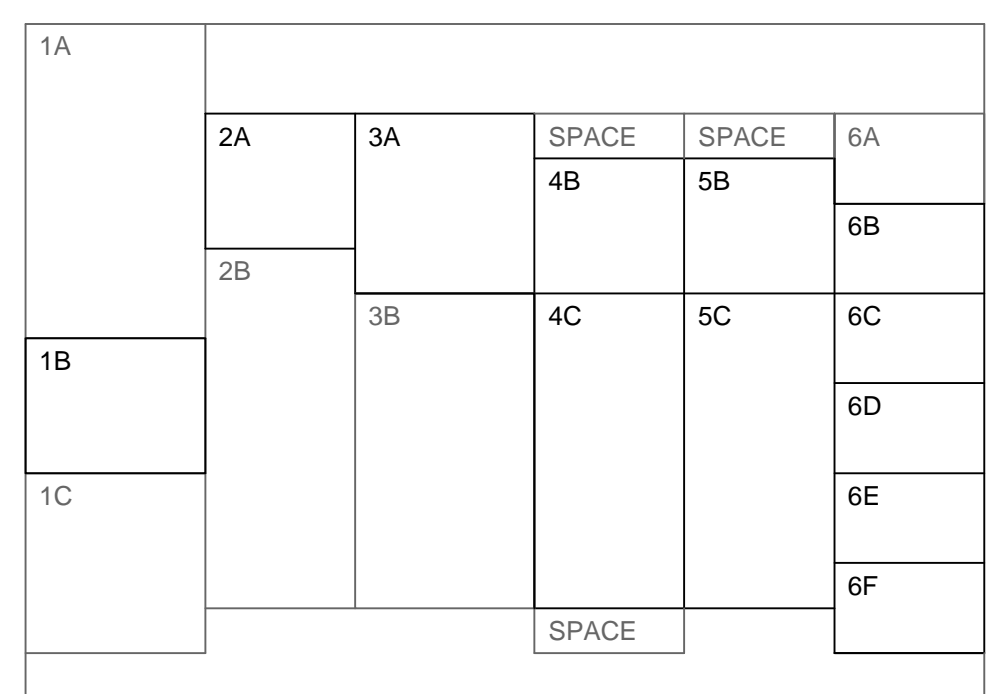
E201

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Bar Measures 1 inch

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20 MCC-3 PARTIAL SINGLE-LINE DIAGRAM
(PROCESS 20 ELECTRICAL BUILDING)



20 MCC-3 PARTIAL SINGLE-LINE ELEVATION
SCALE: NTS

- NOTES:**
- WORK SHOWN ON EXISTING GENERAL ELECTRIC SWITCHGEAR AND MCC'S SHALL BE PROVIDED BY GENERAL ELECTRIC REPRESENTATIVE ONLY INCLUDING, BUT NOT LIMITED TO, NEW MCC DOORS. MODIFICATION OF EXISTING MCC DOORS SHALL BE STRICTLY PROHIBITED. CONTRACTOR'S BID SHALL INCLUDE WORK TO BE PERFORMED BY GENERAL ELECTRIC. CONTRACTOR TO PROVIDE CONDUIT AND WIRE AND MAKE TERMINATIONS TO NEW BUCKETS.

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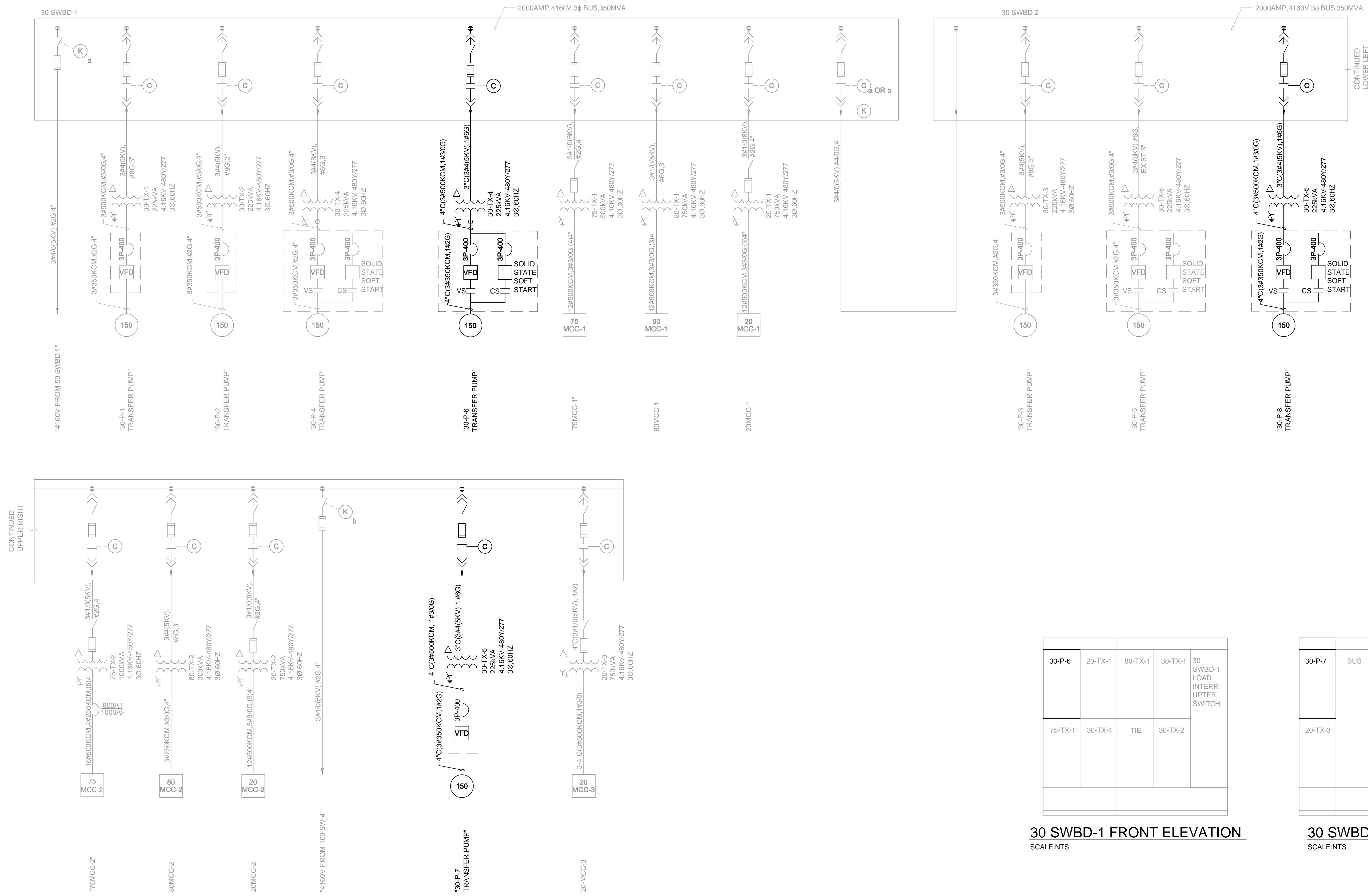
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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
20 MCC-3
PARTIAL SINGLE-LINE DIAGRAM

Project No.:	200-10034-11005
Designed By:	FWY
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Checked By:	WAP

E202



30 SWBD-1 FRONT ELEVATION
SCALE:N/T

30-P-6	20-TX-1	80-TX-1	30-TX-1	30-SWBD-1 LOAD INTERRUPTER SWITCH
75-TX-1	30-TX-4	TIE	30-TX-2	

30 SWBD-2 FRONT ELEVATION
SCALE:N/T

30-P-7	BUS	30-TX-3	30-SWBD-2 LOAD INTERRUPTER SWITCH	30-TX-5	75-TX-2
20-TX-3		80-TX-2		30-P-8	20-TX-2

MEDIUM VOLTAGE 30 SWBD-1 AND 30 SWBD-2 SINGLE-LINE DIAGRAM
(PROCESS 30 MCC BUILDING)

- NOTES:**
1. WORK SHOWN ON EXISTING GENERAL ELECTRIC SWITCHGEAR AND MCC'S SHALL BE PROVIDED BY GENERAL ELECTRIC REPRESENTATIVE ONLY INCLUDING, BUT NOT LIMITED TO, NEW MCC DOORS. MODIFICATION OF EXISTING MCC DOORS SHALL BE STRICTLY PROHIBITED. CONTRACTOR'S BID SHALL INCLUDE WORK TO BE PERFORMED BY GENERAL ELECTRIC. CONTRACTOR TO PROVIDE CONDUIT AND WIRE AND MAKE TERMINATIONS TO NEW BUCKETS.

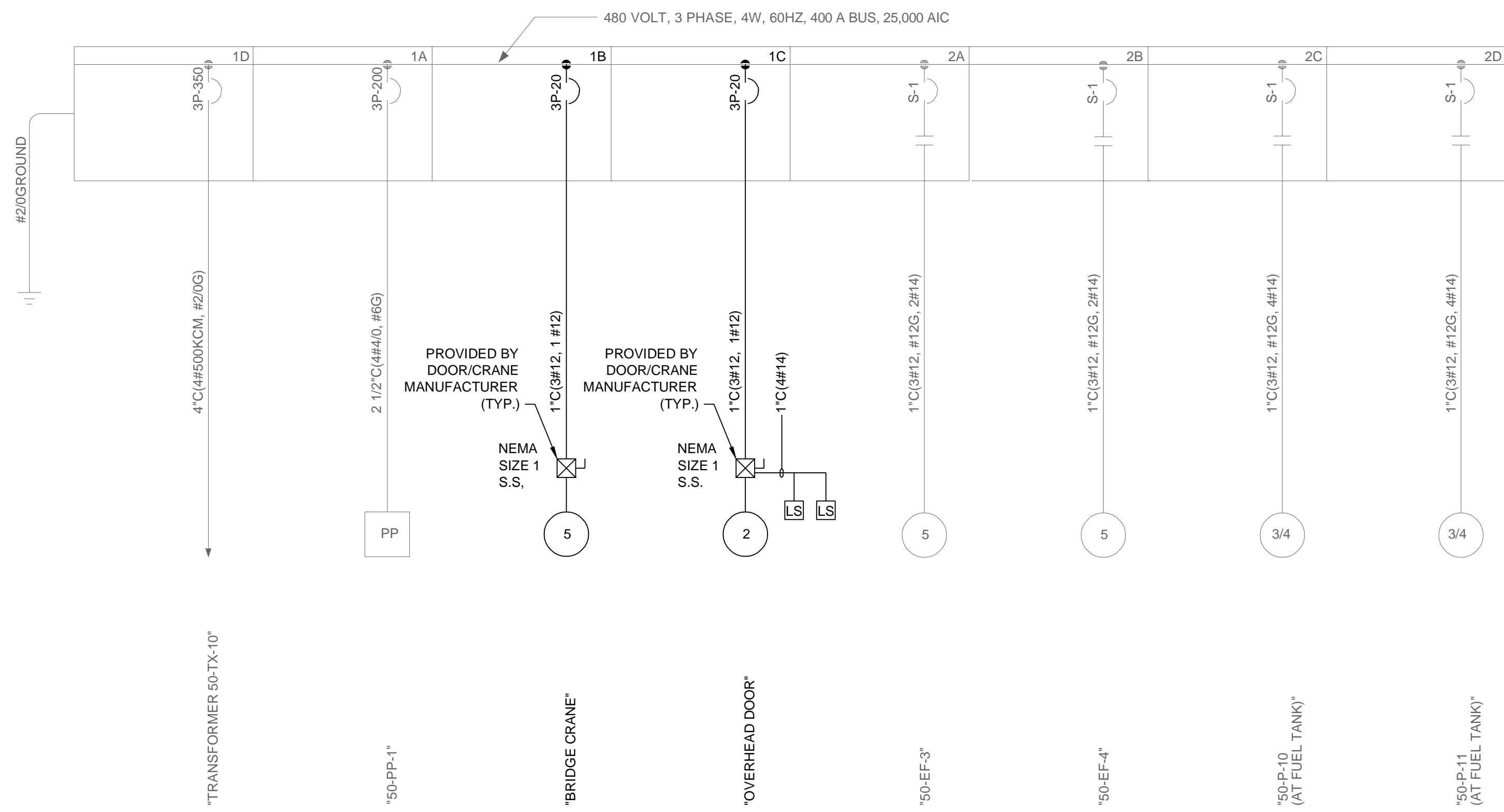
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IMPROVEMENTS - PHASE 3B
SINGLE-LINE DIAGRAM
Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

E203



50 MCC-1 SINGLE-LINE DIAGRAM
(HSP BUILDING)

1A	2A
1B	2B
1C	SPACE
1D	
LUGS	2C
	2D

50 MCC-1 FRONT ELEVATION
SCALE: NTS

- NOTES:**
- WORK SHOWN ON EXISTING GENERAL ELECTRIC SWITCHGEAR AND MCC'S SHALL BE PROVIDED BY GENERAL ELECTRIC REPRESENTATIVE ONLY INCLUDING, BUT NOT LIMITED TO, NEW MCC DOORS. MODIFICATION OF EXISTING MCC DOORS SHALL BE STRICTLY PROHIBITED. CONTRACTOR'S BID SHALL INCLUDE WORK TO BE PERFORMED BY GENERAL ELECTRIC. CONTRACTOR TO PROVIDE CONDUIT AND WIRE AND MAKE TERMINATIONS TO NEW BUCKETS.

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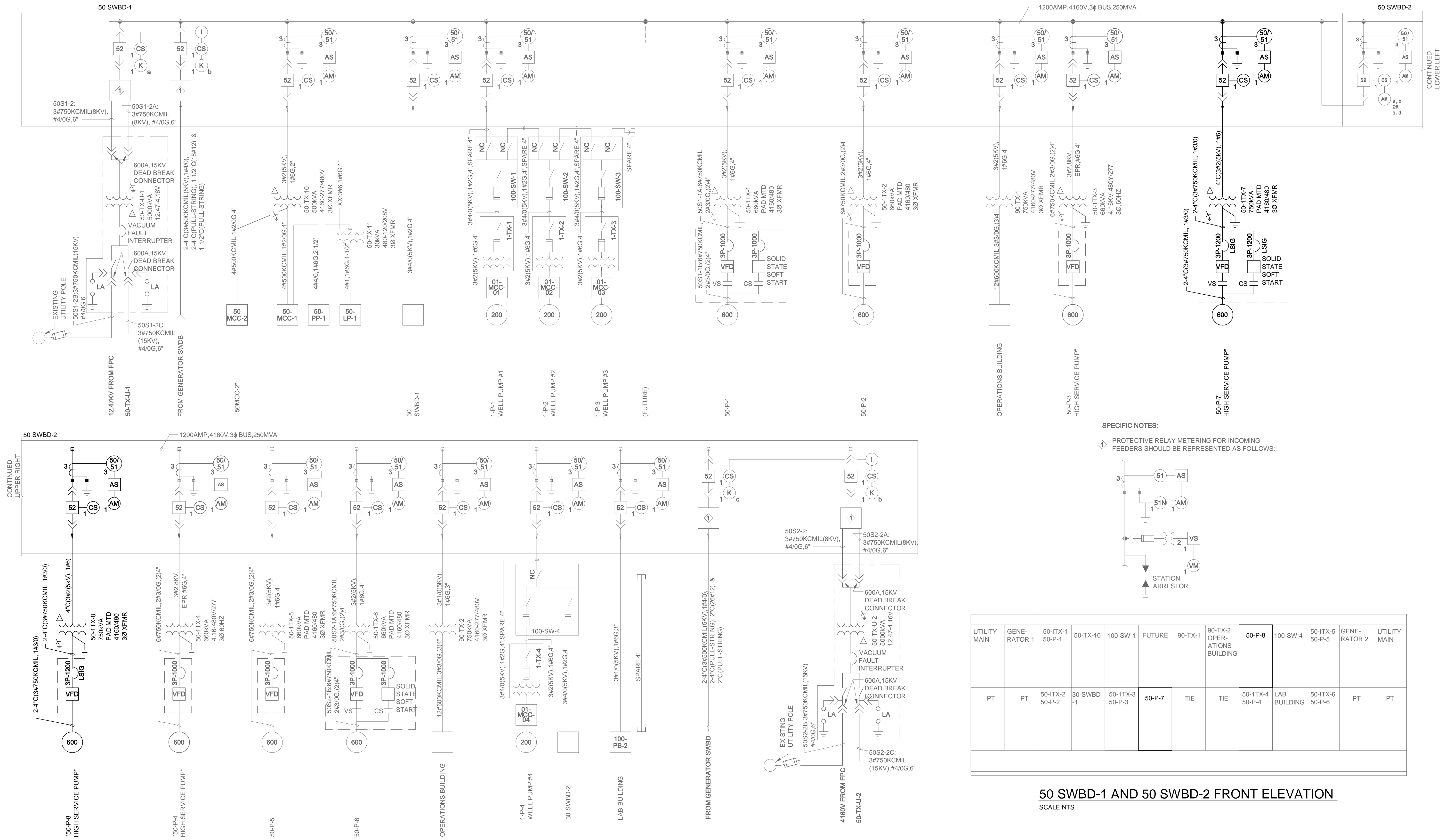
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IMPROVEMENTS - PHASE 3B

50 MCC-1
SINGLE LINE DIAGRAM

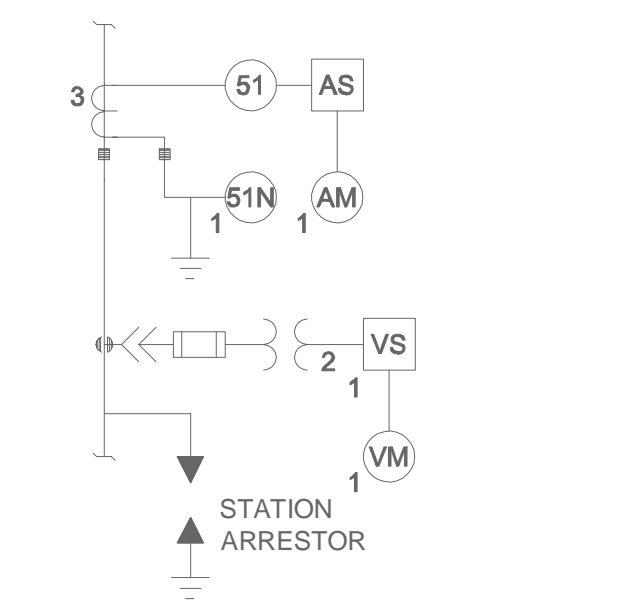
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E204

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SPECIFIC NOTES:
 ⚠ PROTECTIVE RELAY METERING FOR INCOMING FEEDERS SHOULD BE REPRESENTED AS FOLLOWS:



MARK	DATE	DESCRIPTION	BY

50 SWBD-1 AND 50 SWBD-2 FRONT ELEVATION
SCALE: NTS

NOTES:
 1. WORK SHOWN ON EXISTING GENERAL ELECTRIC SWITCHGEAR AND MCC'S SHALL BE PROVIDED BY GENERAL ELECTRIC REPRESENTATIVE ONLY INCLUDING, BUT NOT LIMITED TO, NEW MCC DOORS. MODIFICATION OF EXISTING MCC DOORS SHALL BE STRICTLY PROHIBITED. CONTRACTOR'S BID SHALL INCLUDE WORK TO BE PERFORMED BY GENERAL ELECTRIC, CONTRACTOR TO PROVIDE CONDUIT AND WIRE AND MAKE TERMINATIONS TO NEW BUCKETS.

50 SWBD-1 AND 50 SWBD-2 SINGLE-LINE DIAGRAM
(HSP BUILDING)

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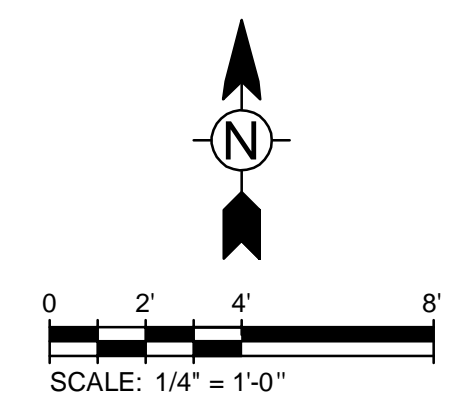
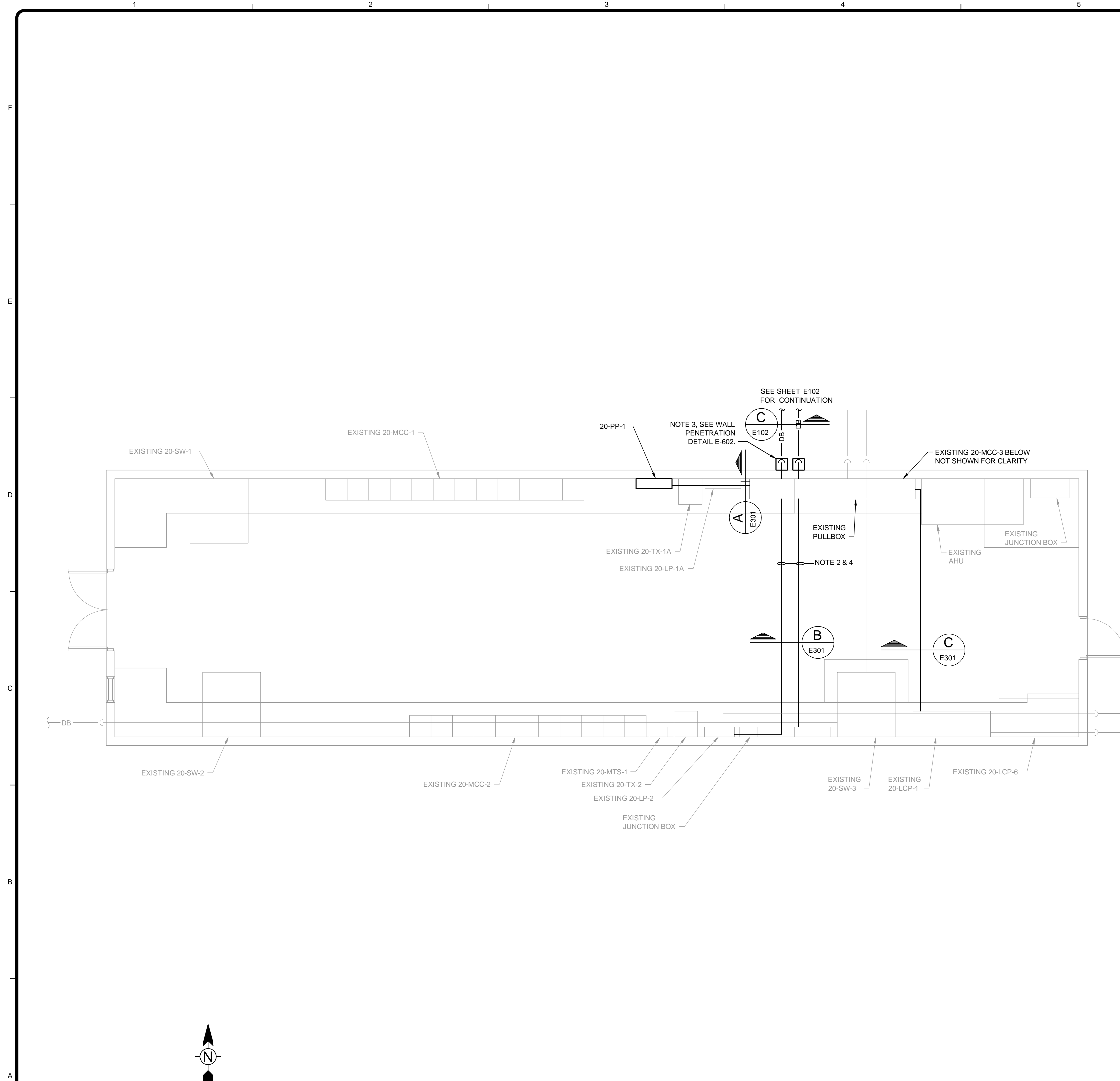
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ORANGE COUNTY UTILITIES
 EASTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS - PHASE 3B
 PROCESS 50 SWBD-1 AND 50 SWBD-2
 SINGLE-LINE DIAGRAM

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

E205

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Bar Measures 1 inch



POWER PLAN
SCALE: 1/4"=1'-0"

- 2
- 4
- 1
- 3
- 5

SECTION A
E301
SCALE: NTS

- 1. 1"C(2#6, 1#8)
- 2. 1"C(2#10, 1#10)
- 3. 1"C(2#10, 1#10)
- 4. 1"C(2#10, 1#10)
- 5. 1"C(2#6, 1#8)
- 6. (HEAT TRACE CONTROLLER TO 20-PP-1 VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 7. (20-AE/AIT-2A-1, 20-AE/AIT-2B-3 TO 20-LP-1A VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 8. (20-FE/FIT-3, 20-FE/FIT-4 TO 20-LP-1A VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 9. (VAPEX TO 20-LP-1A VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 10. (HEAT TRACE CONTROLLER TO 20-PP-1 VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)

- 2
- 4
- 6
- 8
- 10
- 12
- 14
- 16
- 18
- 20
- 22
- 24
- 26
- 28
- 30
- 1
- 3
- 5
- 7
- 9
- 11
- 13
- 15
- 17
- 19
- 21
- 23
- 25
- 27
- 29

SECTION B
E301
SCALE: NTS (SEE NOTE 1)

- 1. 1"C(2#8, 1#8)
- 2. 1"C(2#8, 1#8)
- 3. 1 1/4"C(12#14)
- 4. 1 1/4"C(10#14)
- 5. 1 1/4"C(10#14)
- 6. 1 1/4"C(10#14)
- 7. 1 1/4"C(8#14)
- 8. 1 1/4"C(12#14)
- 9. 1"C(3#14)
- 10. 1"C(4#14)
- 11. 1"C(2/C#16SH)
- 12. 1"C(2#14)
- 13. 1"C(2#14)
- 14. 1"C(3-2/C#16SH)
- 15. 1"C(2-2/C#16SH)
- 16. 1"C(2-2/C#16SH)
- 17. 1"C(2/C#16SH)
- 18. 1"C(2/C#16SH)
- 19. 1"C(2/C#16SH)
- 20. 1"C(2/C#16SH)
- 21. 1"C(4#14)
- 22. 1 1/4"C(10#14)
- 23. 1 1/4"C(10#14)
- 24. 1 1/4"C(10#14)
- 25. 1 1/4"C(8#14)
- 26. 1 1/4"C(12#14)
- 27. 1 1/4"C(12#14)
- 28. 1"C(2/C#16SH)
- 29. 1"C(4#14)
- 30. 1"C(3#14)
- 1. (20-FCV-2A-2, 20-FCV-2A-1, 20-DV-3-1 TO 20-LP-2 VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 2. (20-FCV-2B-2, 20-FCV-2B-1, 20-DV-4-1 TO 20-LP-2 VIA ELEC MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 3. (20-BV-3A TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 4. (20-FCV-2A-1 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 5. (20-FCV-2A-2 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 6. (20-DV-3-1 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 7. (20-FCV-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 8. (20-BG-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 9. (HEAT TRACE TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 10. (20-LSH-2A, 20-LSL-2A TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 11. (20-AE/AIT-2A-1 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 12. (20-LSH-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 13. (20-LSH-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 14. (VAPEX TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 15. (20-FCV-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 16. (20-FCV-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 17. (20-FE/FIT-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 18. (20-DPT-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 19. (20-FE/FIT-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 20. (20-DPT-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 21. (EYEWASH-7, EYEWASH-8 TO FACP VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 22. (20-FCV-2B-1 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 23. (20-FCV-2B-2 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 24. (20-DV-4-1 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 25. (20-FCV-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 26. (20-BV-4A TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 27. (20-BG-4 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 28. (20-AE/AIT-2B-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 29. (20-LSH-2B, 20-LSL-2B TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)
- 30. (HEAT TRACE TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)

1

SECTION C
E301
SCALE: NTS (SEE NOTE 1)

- 1. 4"C(150#14)
- 1. (20-MCC-3 TO 20-LCP-1 VIA COMM MANHOLE & PULLBOX ABOVE 20-MCC-3)

NOTES:
1. REFER TO E001 GENERAL NOTE 18 AND DETAIL SHEET E-602, ALL DUCTBANKS.
2. TRAPEZE MOUNT, REFER TO SHEET E-602.
3. PROVIDE HINGED COVER STAINLESS STEEL PULL BOXES. PROVIDE ENGRAVED TAGS INDICATING USE.
4. LOWER EXISTING LIGHT FIXTURES & ROUTE NEW CONDUITS BETWEEN LIGHTS & CEILING.

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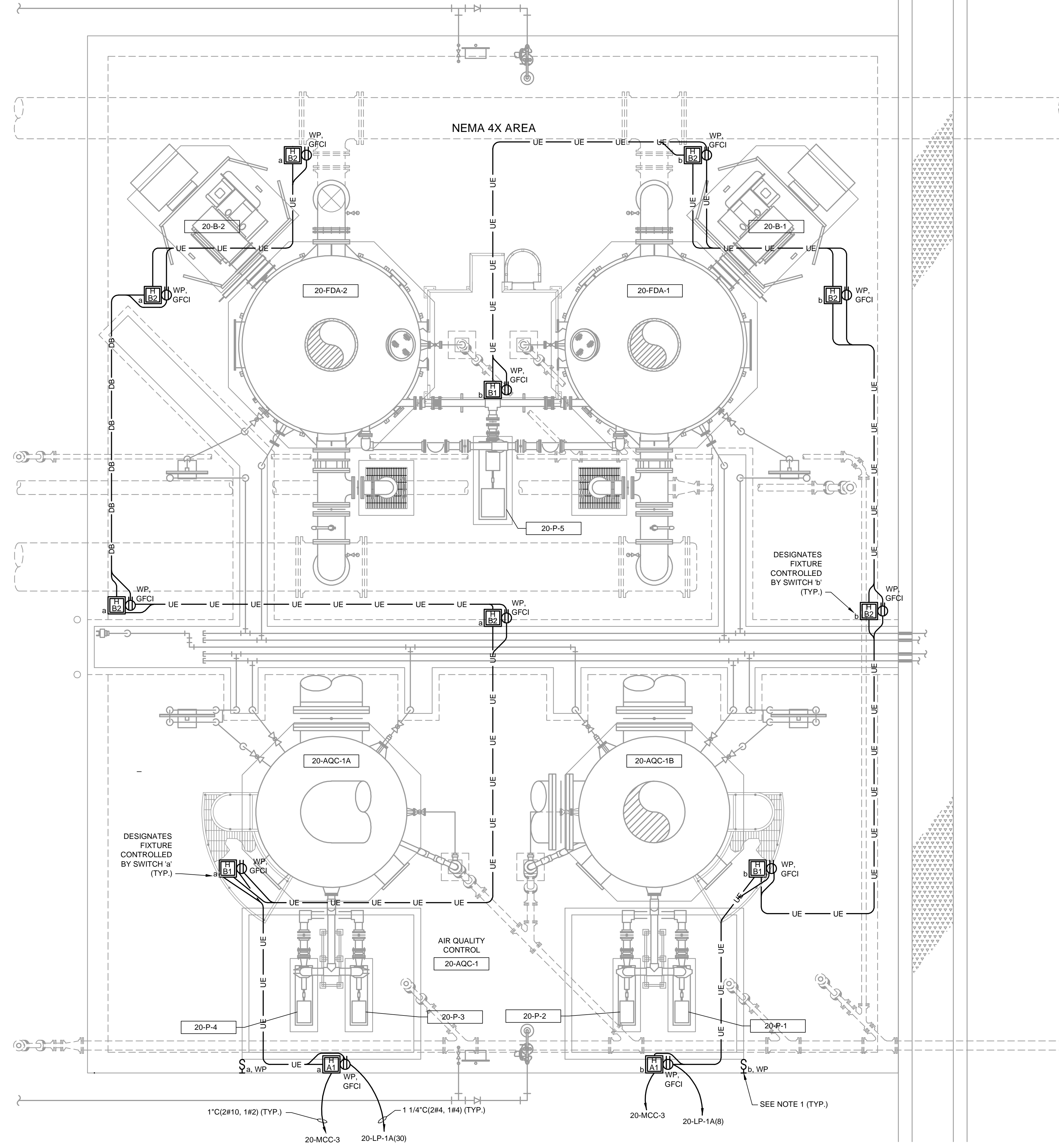
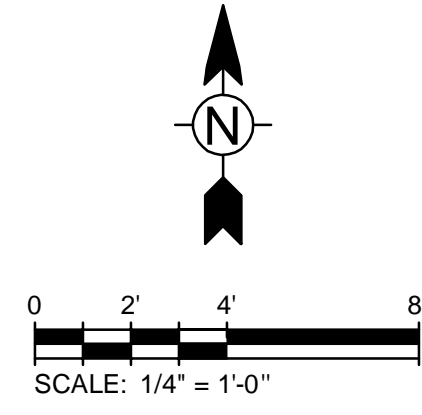
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BY									

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EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 20 BUILDING
EXISTING MCC POWER PLAN

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

E301



LIGHTING PLAN
SCALE: 1/4" = 1'-0"

- NOTES:**
1. MOUNT 277V SWITCH TO UNISTRUT @ 48" AFF.

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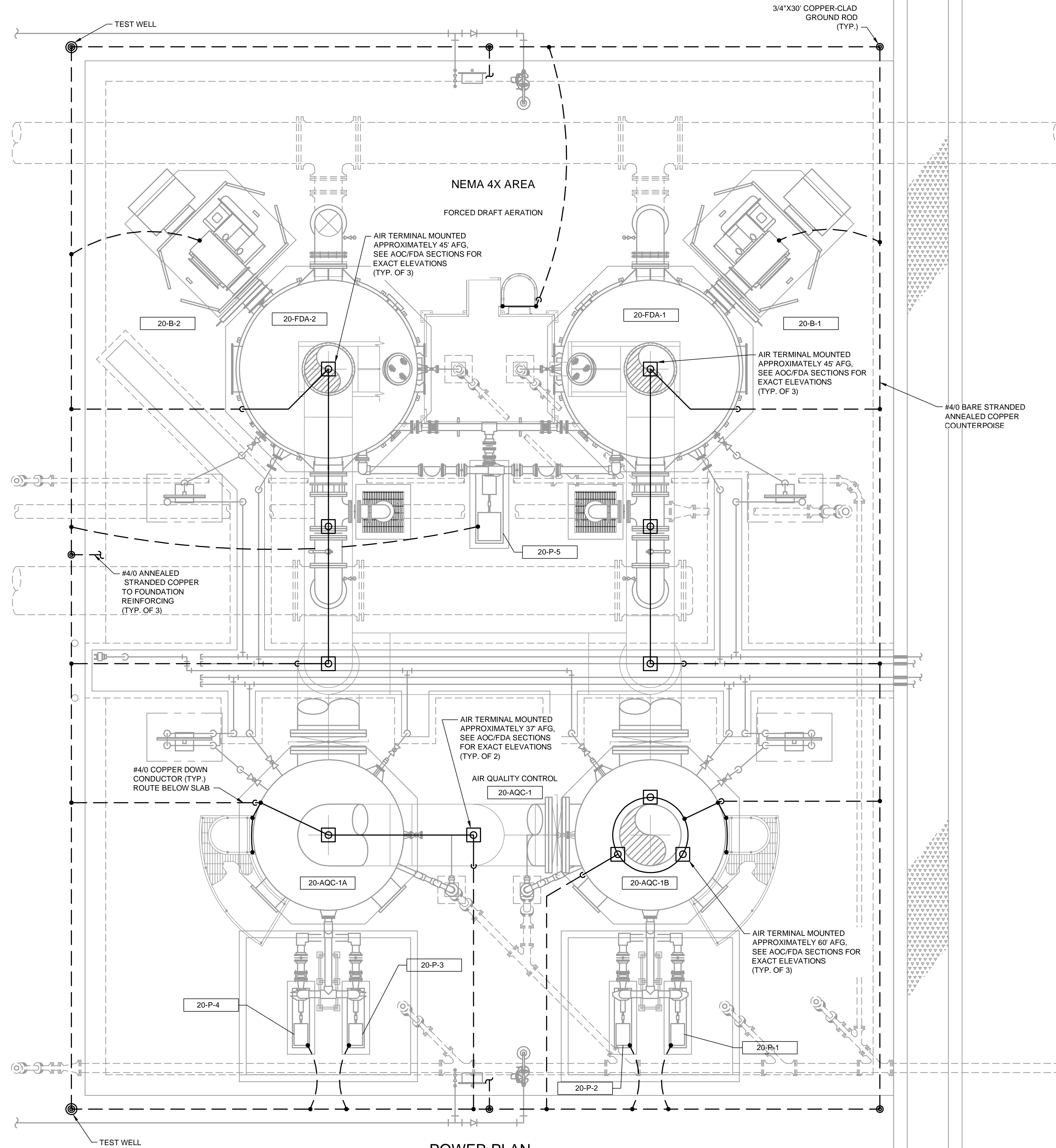
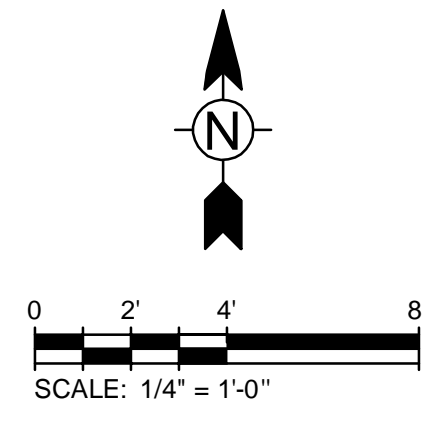
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IMPROVEMENTS - PHASE 3B
PROCESS 20
LIGHTING PLAN

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

E303



POWER PLAN

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

NOTES:

1. UNIONS BELOW GRADE SHALL BE EXOTHERMICALLY CONNECTED, UNIONS ABOVE GRADE SHALL BE MECHANICALLY CONNECTED. APPLY SILICON SPRAY TO PROTECT MECHANICAL CONNECTIONS.
2. CONDUCTORS SHALL BE ROUTED AS INCONSPICUOUSLY AS POSSIBLE. LIGHTNING PROTECTION SYSTEM TO BE INSTALLED AS CLASS 1 SYSTEM AS PER NFPA 780 UNLESS OTHERWISE INDICATED. UL MASTER LABEL IS REQUIRED UPON COMPLETION OF INSPECTION.
3. BOND ELECTRICAL EQUIPMENT TO NEAREST COUNTERPOISE VIA #4/0 WIRE.
4. ROUTE DOWN CONDUCTORS WITHIN 1'C.

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PROCESS 20
LIGHTNING PROTECTION PLAN

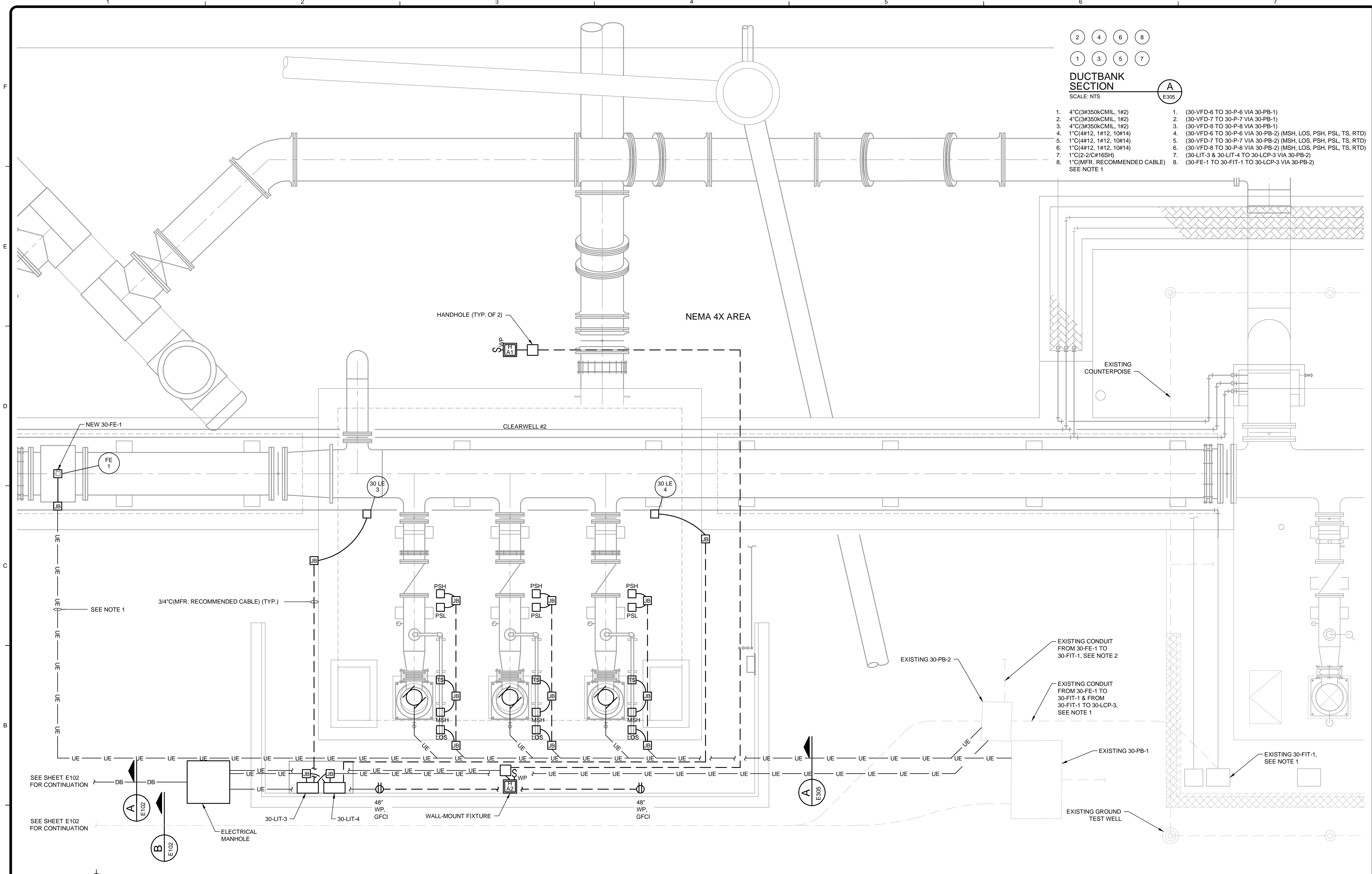
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Designed By: FWY
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E304

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Bar Measures 1 inch

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- 2
- 4
- 6
- 8
- 1
- 3
- 5
- 7

DUCTBANK SECTION
SCALE: NTS

A
E305

- | | |
|--------------------------------|-------------------------------------------------------------------|
| 1. 4"C(3#350KCMIL, 1#2) | 1. (30-VFD-6 TO 30-P-6 VIA 30-PB-1) |
| 2. 4"C(3#350KCMIL, 1#2) | 2. (30-VFD-7 TO 30-P-7 VIA 30-PB-1) |
| 3. 4"C(3#350KCMIL, 1#2) | 3. (30-VFD-8 TO 30-P-8 VIA 30-PB-1) |
| 4. 1"C(4#12, 1#12, 10#14) | 4. (30-VFD-6 TO 30-P-6 VIA 30-PB-2) (MSH, LOS, PSH, PSL, TS, RTD) |
| 5. 1"C(4#12, 1#12, 10#14) | 5. (30-VFD-7 TO 30-P-7 VIA 30-PB-2) (MSH, LOS, PSH, PSL, TS, RTD) |
| 6. 1"C(4#12, 1#12, 10#14) | 6. (30-VFD-8 TO 30-P-8 VIA 30-PB-2) (MSH, LOS, PSH, PSL, TS, RTD) |
| 7. 1"C(2-2/C#16SH) | 7. (30-LIT-3 & 30-LIT-4 TO 30-LCP-3 VIA 30-PB-2) |
| 8. 1"C(MFR. RECOMMENDED CABLE) | 8. (30-FE-1 TO 30-FIT-1 TO 30-LCP-3 VIA 30-PB-2) |
- SEE NOTE 1

POWER AND LIGHTING PLANS
SCALE: 1/4" = 1'-0"

- NOTES:**
- REMOVE AND REPLACE EXISTING 30-FE-1 (NOT SHOWN FOR CLARITY) AND 30-FIT-1 WITH NEW. REMOVE EXISTING 2/C#18SH FROM 30-FE-1 TO 30-LCP-3 VIA 30-FIT-1. ROUTE NEW 1" CONDUIT FROM 30-PB-2 TO NEW 30-FE-1. ROUTE NEW 2/C#16SH FROM NEW 30-FE-1 TO 30-LCP-3 VIA NEW 30-FIT-1. UTILIZE EXISTING 1" SPARE CONDUIT FROM 30-LCP-3 TO 30-PB-2. MOUNT NEW 30-FIT-1 IN SAME LOCATION AS EXISTING 30-FIT-1. UTILIZE EXISTING POWER FOR EXISTING 30-FIT-1 TO REFEED NEW 30-FIT-1.
 - EXISTING CONDUIT FROM 30-PB-2 TO 30-FE-1 SHALL BE CUT, CAPPED, AND ABANDONED 6" BELOW FINISHED GRADE. UTILIZE EXISTING CONDUIT FROM 30-PB-2 TO 30-FIT-1 FOR NEW WIRES FROM NEW 30-FE-1 TO NEW 30-FIT-1.

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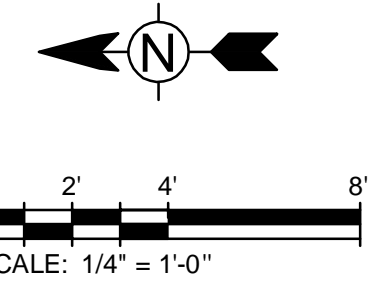
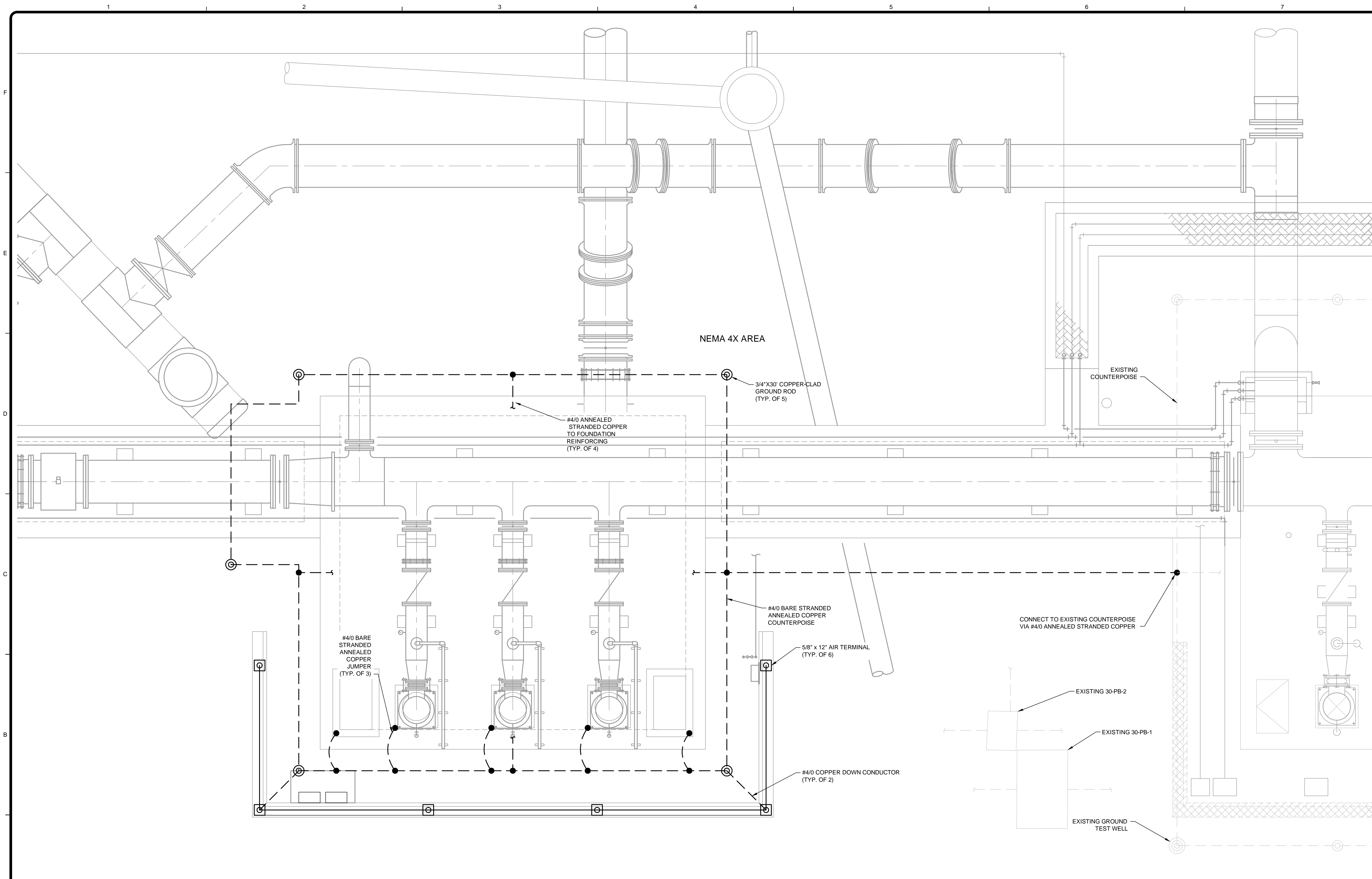
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PROCESS 30
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E305

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Bar Measures 1 inch

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LIGHTNING PROTECTION PLAN
SCALE: 1/4" = 1'-0"

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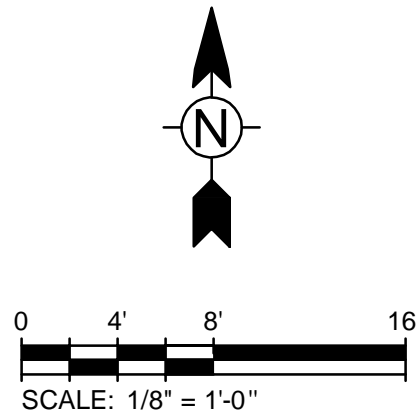
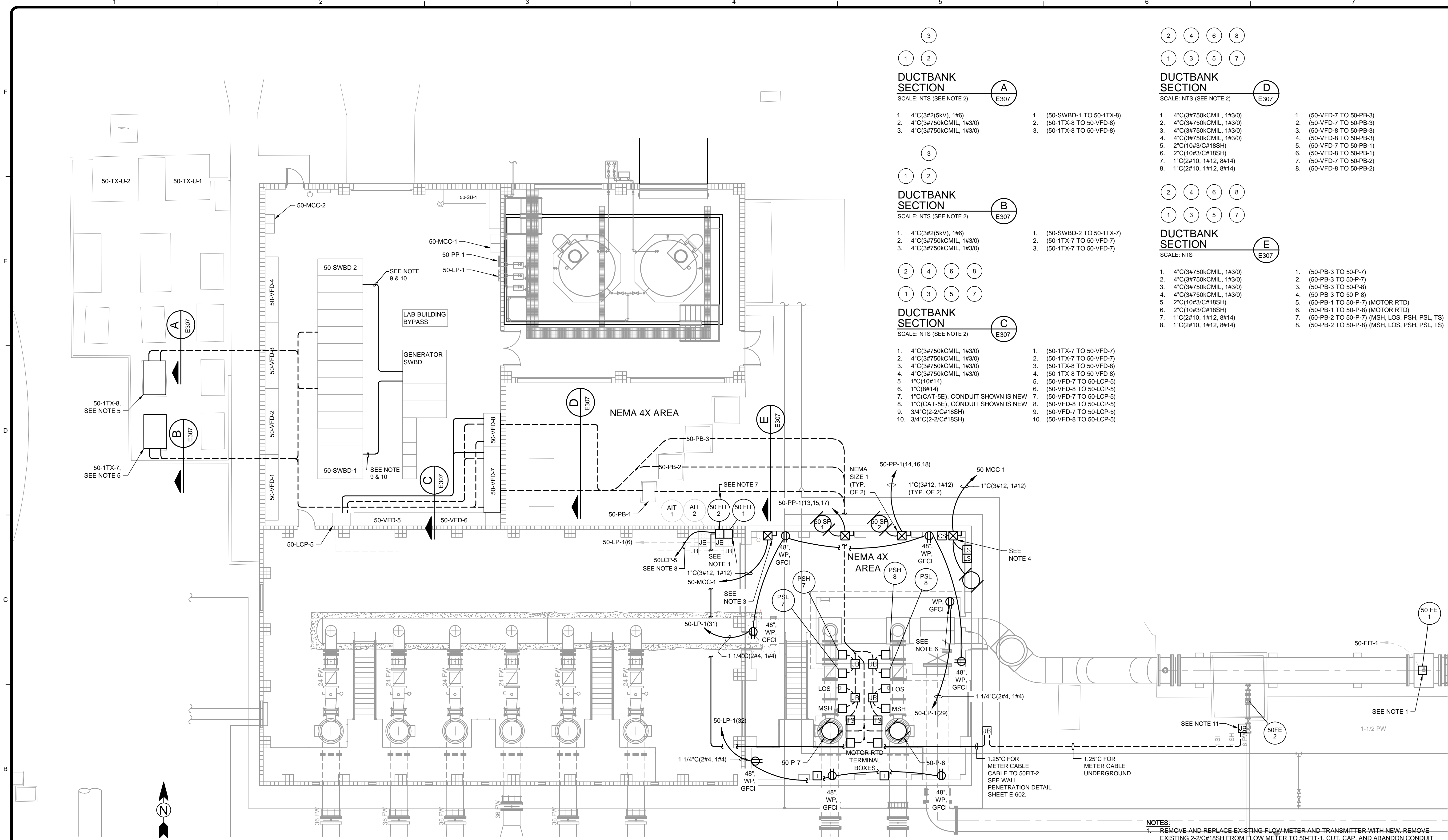
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PROCESS 30
LIGHTNING PROTECTION PLAN

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E306

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POWER PLAN
SCALE: 1/8" = 1'-0"

- DUCTBANK SECTION A**
SCALE: NTS (SEE NOTE 2)
E307
- 4"C(3#2(5kV), 1#6)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)

- DUCTBANK SECTION B**
SCALE: NTS (SEE NOTE 2)
E307
- 4"C(3#2(5kV), 1#6)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)

- DUCTBANK SECTION C**
SCALE: NTS (SEE NOTE 2)
E307
- 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 1"C(10#14)
 - 1"C(8#14)
 - 1"C(CAT-5E), CONDUIT SHOWN IS NEW
 - 1"C(CAT-5E), CONDUIT SHOWN IS NEW
 - 3/4"C(2-2/C#18SH)
 - 3/4"C(2-2/C#18SH)

- DUCTBANK SECTION D**
SCALE: NTS (SEE NOTE 2)
E307
- 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 2"C(10#3/C#18SH)
 - 2"C(10#3/C#18SH)
 - 1"C(2#10, 1#12, 8#14)
 - 1"C(2#10, 1#12, 8#14)

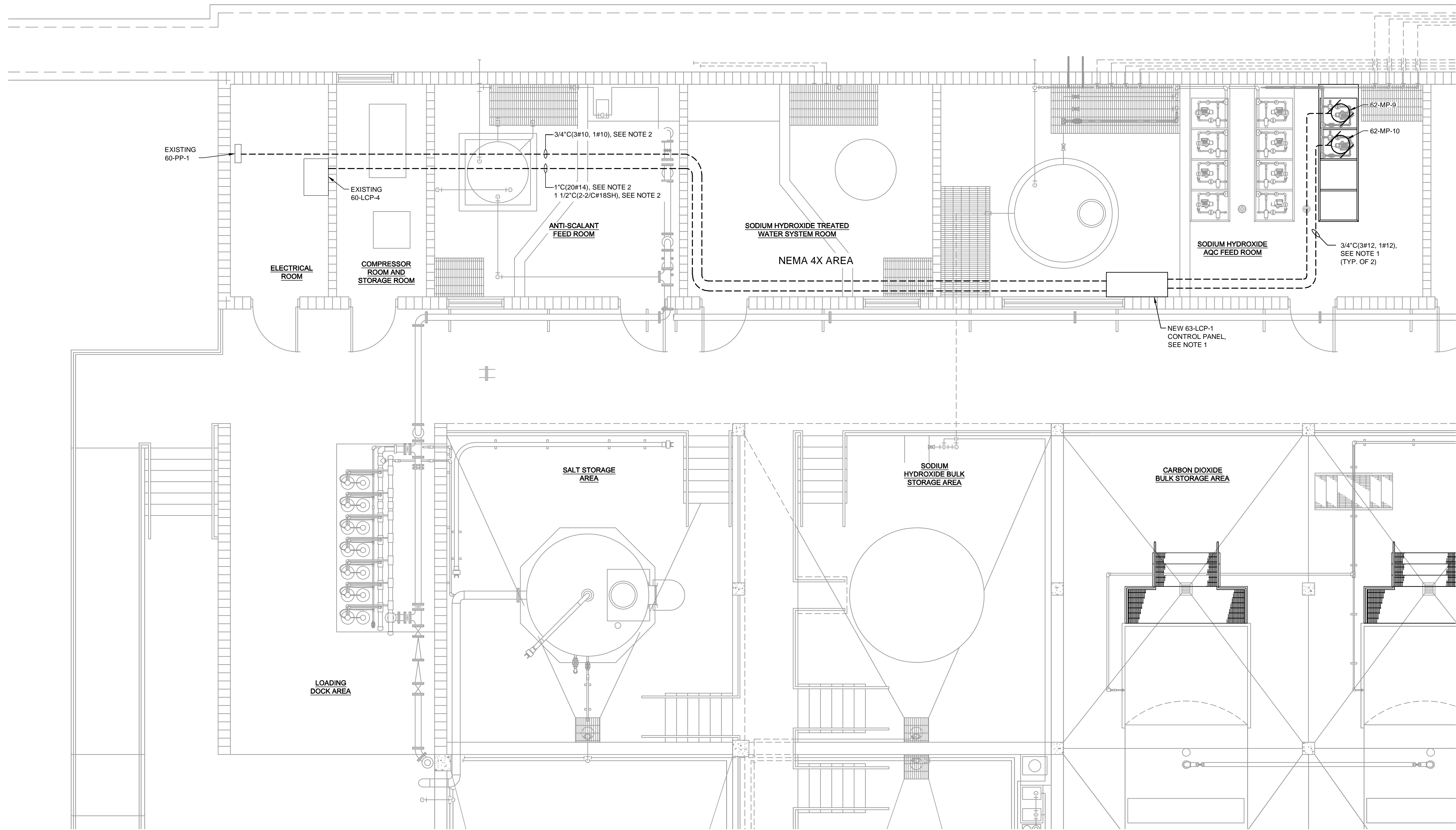
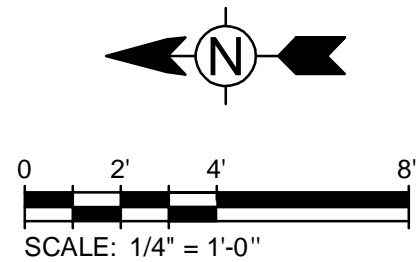
- DUCTBANK SECTION E**
SCALE: NTS
E307
- 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 4"C(3#750kCMIL, 1#3/0)
 - 2"C(10#3/C#18SH)
 - 2"C(10#3/C#18SH)
 - 1"C(2#10, 1#12, 8#14)
 - 1"C(2#10, 1#12, 8#14)

- NOTES:**
- REMOVE AND REPLACE EXISTING FLOW METER AND TRANSMITTER WITH NEW. REMOVE EXISTING 2-2/C#18SH FROM FLOW METER TO 50-FIT-1. CUT, CAP, AND ABANDON CONDUIT AT FINISHED FLOOR OR 6" BELOW FINISHED GRADE. COIL AND PROTECT EXISTING POWER AND COMMUNICATION WIRES FEEDING 50-FIT-1 TO BE RECONNECTED TO NEW TRANSMITTER. ROUTE NEW 1"C(2-2/C#16SH) FROM NEW FLOW METER TO NEW 50-FIT-1. MOUNT THE NEW FLOW METER'S TRANSMITTER IN THE SAME LOCATION AND UTILIZE COILED EXISTING POWER AND COMMUNICATION WIRES TO REFEED. PROVIDE GROUND ROD AND GROUNDING PER VENDOR REQUIREMENTS.
 - CONDUITS SHOWN WITHIN THIS SECTION ARE EXISTING, UNLESS NOTED OTHERWISE. ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN.
 - MOUNT HOIST'S COMBINATION STARTER TO WALL, FIELD VERIFY EXACT LOCATION WITH OCU AND MANUFACTURER.
 - MOUNT OVERHEAD DOOR'S COMBINATION STARTER TO WALL, FIELD VERIFY EXACT LOCATION WITH OCU AND MANUFACTURER.
 - SEE GROUND MAT DETAIL ON SHEET E601 FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE DEDICATED SUMP PUMP RECEPTACLE WITHIN TRENCH AT 48" AFF.
 - INSTALL 50FIT-2 ABOVE 50FIT-1, INTERCEPT POWER IN NEAREST J-BOX AND USE FOR BOTH FLOW METERS.
 - 3/4"C(2/C#18SH)
 - 3-4"C(3#500kCMIL, 15kV 1#4/0G) OVERHEAD
 - REMOVE EXISTING BELOW GRADE CONDUCTORS, ABANDON CONDUIT.
 - GROUND METER PER VENDOR MANUAL.
 - PROVIDE FOR SHEETING TO PROTECT EXISTING EQUIPMENT OPERATIONS.
 - REFER TO E-001 GENERAL NOTE 18 AND DETAIL SHEET E-602, ALL DUCTBANKS.

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PROCESS 50 BUILDING			
POWER PLAN			
Project No.:	200-10034-11005	Designed By:	FWY
Drawn By:	TAC	Checked By:	WAP
E307			

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OVERALL MODIFICATIONS PLAN

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

- NOTES:**
- LOCATE NEW BACKPLANE WITHIN EXISTING ENCLOSURE, SEE SHEETS I309 & I310 FOR ADDITIONAL REQUIREMENTS. REMOVE WIRES TO/FROM 63-LCP-1 WITHIN EXISTING CONDUITS, PULL IN PULL-STRINGS IN EACH EXISTING CONDUIT. UTILIZE EXISTING CONDUITS FOR NEW WIRES AS SHOWN. MOUNT 18" ABOVE FINISHED FLOOR.
 - ROUTE NEW WIRES THROUGH EXISTING CONDUITS. CONNECT NEW WIRES TO EXISTING CIRCUIT BREAKERS & I/O CARDS AS SHOWN ON SHEETS E501 & I308, RESPECTIVELY.



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PROCESS 60 BUILDING
POWER PLAN

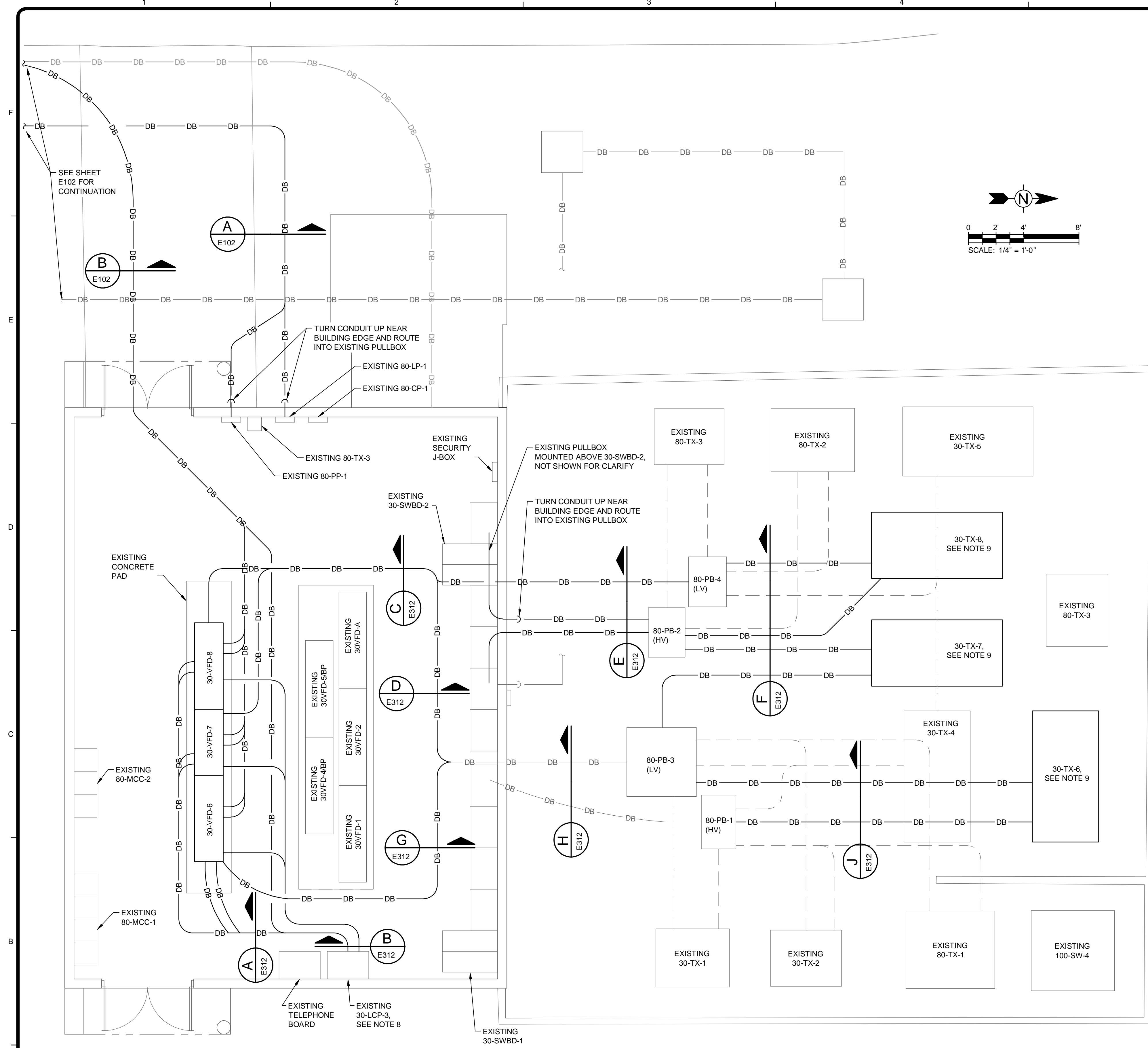
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E310

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80 MCC BLDG POWER PLAN
SCALE: 1/4"=1'-0"

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-

DUCTBANK SECTION A
SCALE: NTS (SEE NOTE 1)

- | | |
|----------------------|---------------------------|
| 1. 1"C(12#14) | 1. (30-LCP-3 TO 30-VFD-6) |
| 2. 1"C(12#14) | 2. (30-LCP-3 TO 30-VFD-7) |
| 3. 1"C(12#14) | 3. (30-LCP-3 TO 30-VFD-8) |
| 4. 1"C(2-2/C#18SH) | 4. (30-LCP-3 TO 30-VFD-6) |
| 5. 1"C(2-2/C#18SH) | 5. (30-LCP-3 TO 30-VFD-7) |
| 6. 1"C(2-2/C#18SH) | 6. (30-LCP-3 TO 30-VFD-8) |
| 7. 1"C(CAT-5E) | 7. (30-VFD-6 TO 30-LCP-3) |
| 8. 1"C(CAT-5E) | 8. (30-VFD-7 TO 30-LCP-3) |
| 9. 1"C(CAT-5E) | 9. (30-VFD-8 TO 30-LCP-3) |
| CONDUIT SHOWN IS NEW | |
| CONDUIT SHOWN IS NEW | |
| CONDUIT SHOWN IS NEW | |

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DUCTBANK SECTION B
SCALE: NTS (SEE NOTE 2)

- | | |
|----------------------|----------------------------------------------------------|
| 1. 1"C(12#14) | 1. (30-LCP-3 TO 30-VFD-6) |
| 2. 1"C(12#14) | 2. (30-LCP-3 TO 30-VFD-7) |
| 3. 1"C(12#14) | 3. (30-LCP-3 TO 30-VFD-8) |
| 4. 1"C(2-2/C#18SH) | 4. (30-LCP-3 TO 30-VFD-6) |
| 5. 1"C(2-2/C#18SH) | 5. (30-LCP-3 TO 30-VFD-7) |
| 6. 1"C(2-2/C#18SH) | 6. (30-LCP-3 TO 30-VFD-8) |
| 7. 1"C(3-2/C#16SH) | 7. (30-FE/FIT-1, 30-LE/LIT-3, & 30-LE/LIT-4 TO 30-LCP-3) |
| 8. 1"C(CAT-5E) | 8. (30-VFD-6 TO 30-LCP-3) |
| 9. 1"C(CAT-5E) | 9. (30-VFD-7 TO 30-LCP-3) |
| 10. 1"C(CAT-5E) | 10. (20-VFD-8 TO 30-LCP-3) |
| CONDUIT SHOWN IS NEW | |
| CONDUIT SHOWN IS NEW | |
| CONDUIT SHOWN IS NEW | |

DUCTBANK SECTION C
SCALE: NTS (SEE NOTE 3)

- | | |
|---------------------------|--------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-7 TO 30-VFD-7 VIA 80-PB-3) |
| 2. 4"C(3#500kCMIL, 1#3/0) | 2. (30-TX-8 TO 30-VFD-8 VIA 80-PB-3) |

DUCTBANK SECTION D
SCALE: NTS (SEE NOTE 3)

- | | |
|---------------------------|--------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-7 TO 30-VFD-7 VIA 80-PB-3) |
|---------------------------|--------------------------------------|

DUCTBANK SECTION E
SCALE: NTS (SEE NOTES 3 & 4)

- | | |
|---------------------------|---------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-8 TO 30-VFD-8 VIA 80-PB-4) |
| 2. 3"C(3#4(8KV), 1#6) | 2. (30-SWBD-2 TO 30-TX-7 VIA 80-PB-2) |
| 3. 3"C(3#4(8KV), 1#6) | 3. (30-SWBD-2 TO 30-TX-8 VIA 80-PB-2) |

DUCTBANK SECTION F
SCALE: NTS (SEE NOTE 5)

- | | |
|---------------------------|---------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-7 TO 30-VFD-7 VIA 80-PB-3) |
| 2. 4"C(3#500kCMIL, 1#3/0) | 2. (30-TX-8 TO 30-VFD-8 VIA 80-PB-4) |
| 3. 3"C(3#4(8KV), 1#6) | 3. (30-SWBD-2 TO 30-TX-7 VIA 80-PB-2) |
| 4. 3"C(3#4(8KV), 1#6) | 4. (30-SWBD-2 TO 30-TX-8 VIA 80-PB-2) |

DUCTBANK SECTION G
SCALE: NTS (SEE NOTE 6)

- | | |
|---------------------------|--------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-6 TO 30-VFD-6 VIA 80-PB-3) |
|---------------------------|--------------------------------------|

DUCTBANK SECTION H
SCALE: NTS (SEE NOTES 3, 6, 7)

- | | |
|---------------------------|---------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-6 TO 30-VFD-6 VIA 80-PB-3) |
| 2. 4"C(3#500kCMIL, 1#3/0) | 2. (30-TX-7 TO 30-VFD-7 VIA 80-PB-3) |
| 3. 3"C(3#4(8KV), 1#6) | 3. (30-SWBD-1 TO 30-TX-6 VIA 80-PB-1) |

DUCTBANK SECTION J
SCALE: NTS (SEE NOTE 5)

- | | |
|---------------------------|---------------------------------------|
| 1. 4"C(3#500kCMIL, 1#3/0) | 1. (30-TX-6 TO 30-VFD-6 VIA 80-PB-3) |
| 2. 3"C(3#4(8KV), 1#6) | 2. (30-SWBD-1 TO 30-TX-6 VIA 80-PB-1) |

- NOTES:**
- CONDUITS SHOWN WITHIN THIS SECTION ARE EXISTING, UNLESS NOTED OTHERWISE. ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN.
 - CONDUITS & WIRES SHOWN SHALL BE NEW, ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTIONS OF CONDUITS FROM VFDs & 30-LCP-3 TO 30-PB-1 & 30-PB-2, WHICH ARE EXISTING. ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN.
 - CONDUIT(S) & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTIONS OF CONDUITS FROM 80-PB-3 TO 30-VFD-7 & 80-PB-4 TO 30-VFD-8 WHICH ARE EXISTING. ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN.
 - CONDUIT(S) & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTION OF CONDUIT FROM 30-SWBD-2 TO 30-PB-2 WHICH IS EXISTING. ROUTE NEW WIRES WITHIN EXISTING CONDUITS AS SHOWN.
 - DUCTBANK ONLY SHOWS NEW CONDUIT AND WIRE, EXISTING CONDUIT AND WIRE ARE NOT INCLUDED IN THIS SECTION.
 - CONDUIT(S) & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTION OF CONDUIT FROM 80-PB-3 TO 30-VFD-6 WHICH IS EXISTING. ROUTE NEW WIRES WITHIN EXISTING CONDUIT AS SHOWN.
 - CONDUITS & WIRES SHOWN SHALL BE NEW, EXCEPT THE SECTION OF CONDUIT FROM 30-SWBD-1 TO 80-PB-1 WHICH IS EXISTING. ROUTE NEW WIRES WITHIN EXISTING CONDUIT AS SHOWN.
 - BUILD AND INSTALL NEW PLC CONTROL PANEL. SCHEDULE CROSSOVERS FOR LESS THAN 4 HOURS AT A TIME. REMOVE AND REPLACE 10-SLOT RACK WITH 16-SLOT RACK. PROVIDE EMPTY MODULES IN SLOTS 12 THROUGH 16; SEE SHEET 1308 FOR ADDITIONAL REQUIREMENTS. PROVIDE TWO GARRETTCOM SWITCH WITHIN 30-LCP-3.
 - SEE GROUND MAT DETAIL ON SHEET E601 FOR ADDITIONAL REQUIREMENTS.
 - REFER TO E001 GENERAL NOTE 18 AND DETAIL SHEET E-602, ALL DUCTBANKS.
 - CONTRACTOR SHALL CONFIRM ALL SPACE REQUIREMENTS FOR TRANSFORMERS AND VFD'S PRIOR TO SELECTING FINAL EQUIPMENT. VENDOR TO INSURE CODE COMPLIANT SPACE IS AVAILABLE FOR THE SELECTED EQUIPMENT.

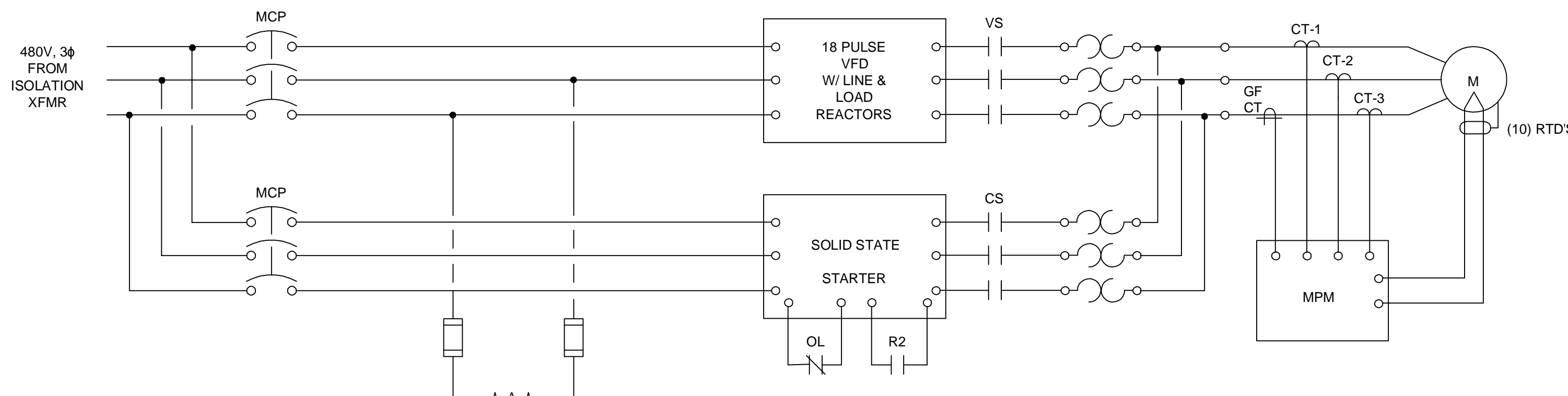
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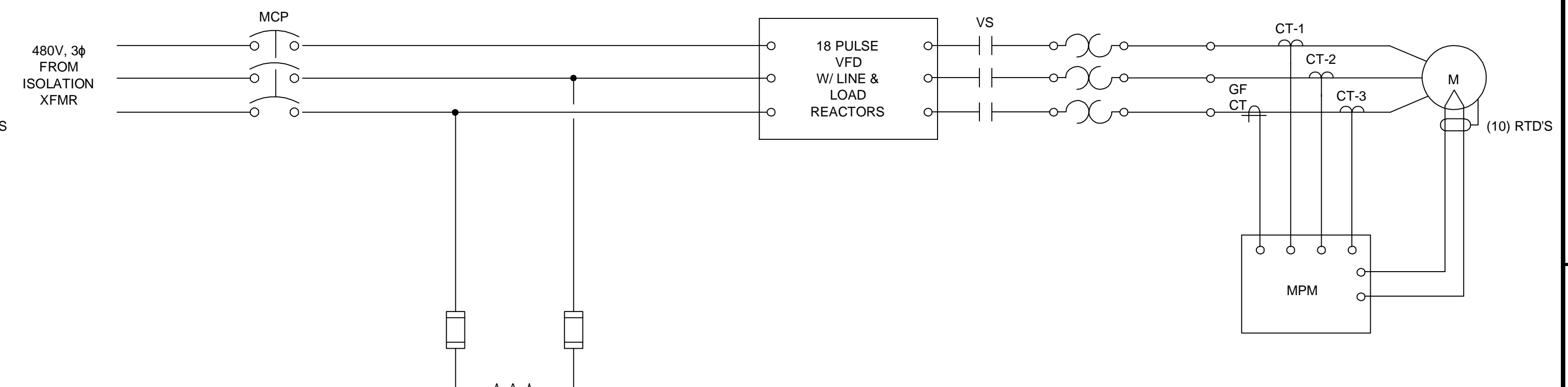
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 80 BUILDING
POWER PLAN

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

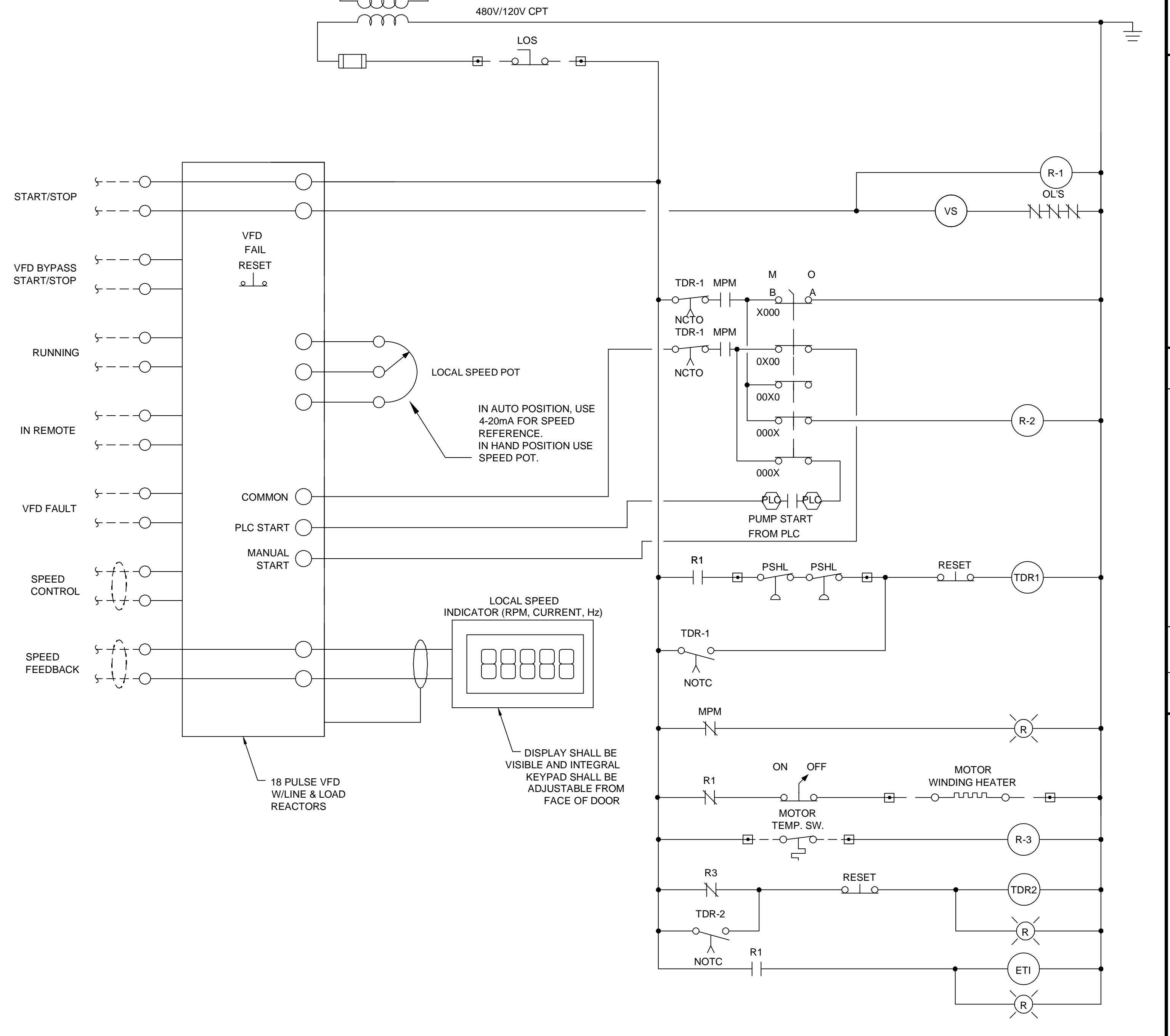
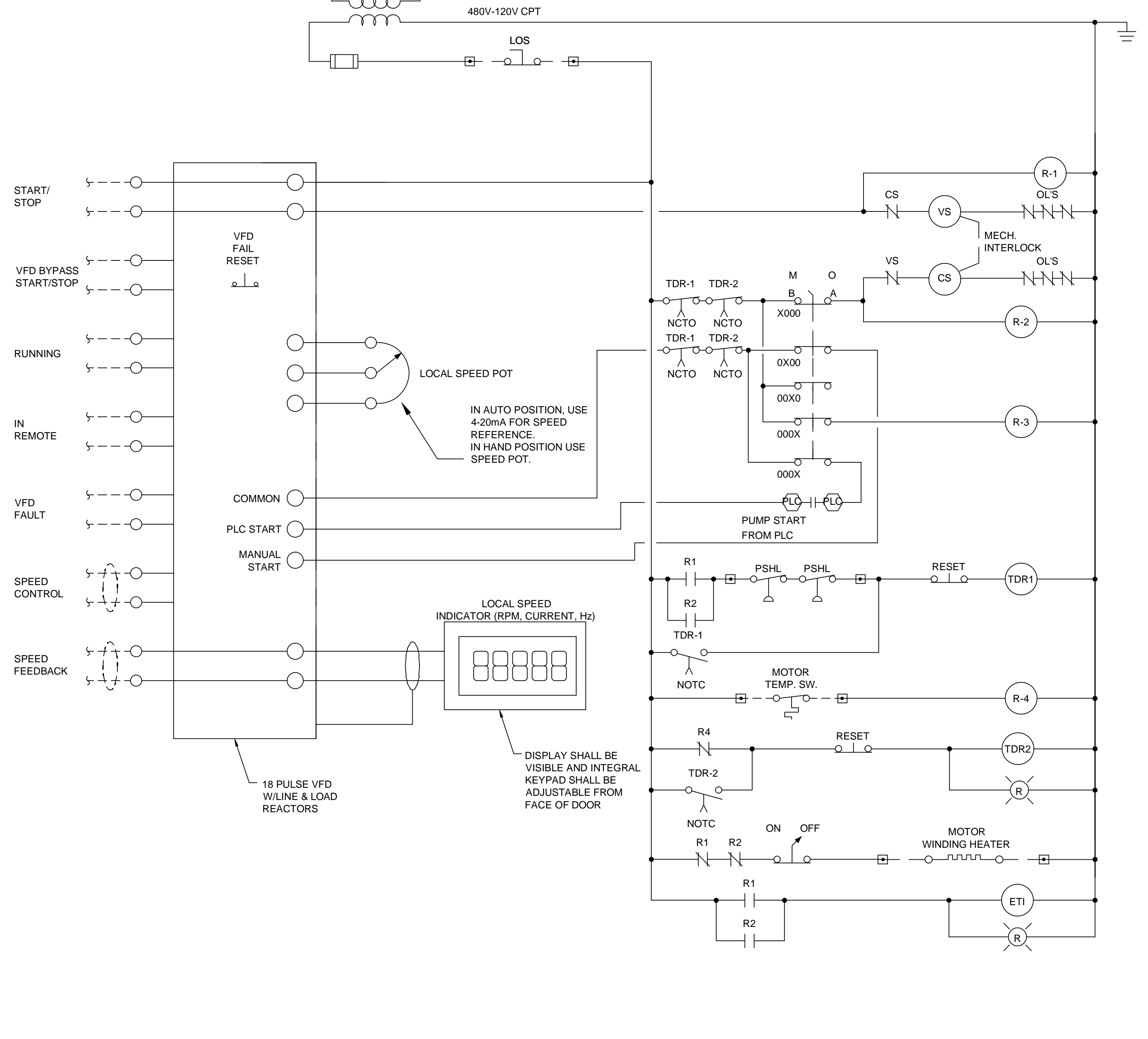
E311



HIGH SERVICE PUMP CONTROL SCHEMATIC DIAGRAM
NO SCALE (TYP. FOR 50-P-7)



HIGH SERVICE PUMP CONTROL SCHEMATIC DIAGRAM
NO SCALE (TYP. FOR 50-P-8)



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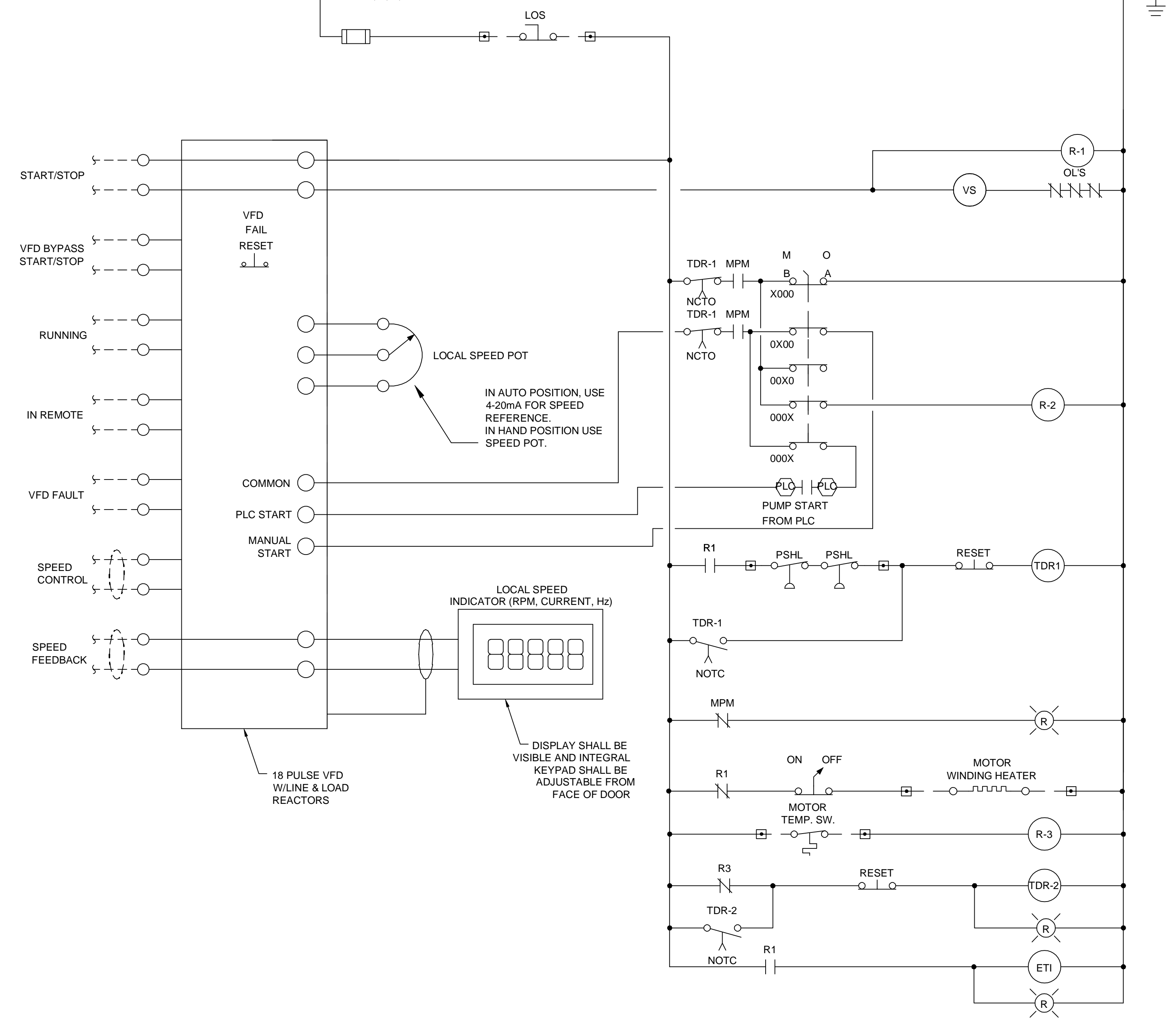
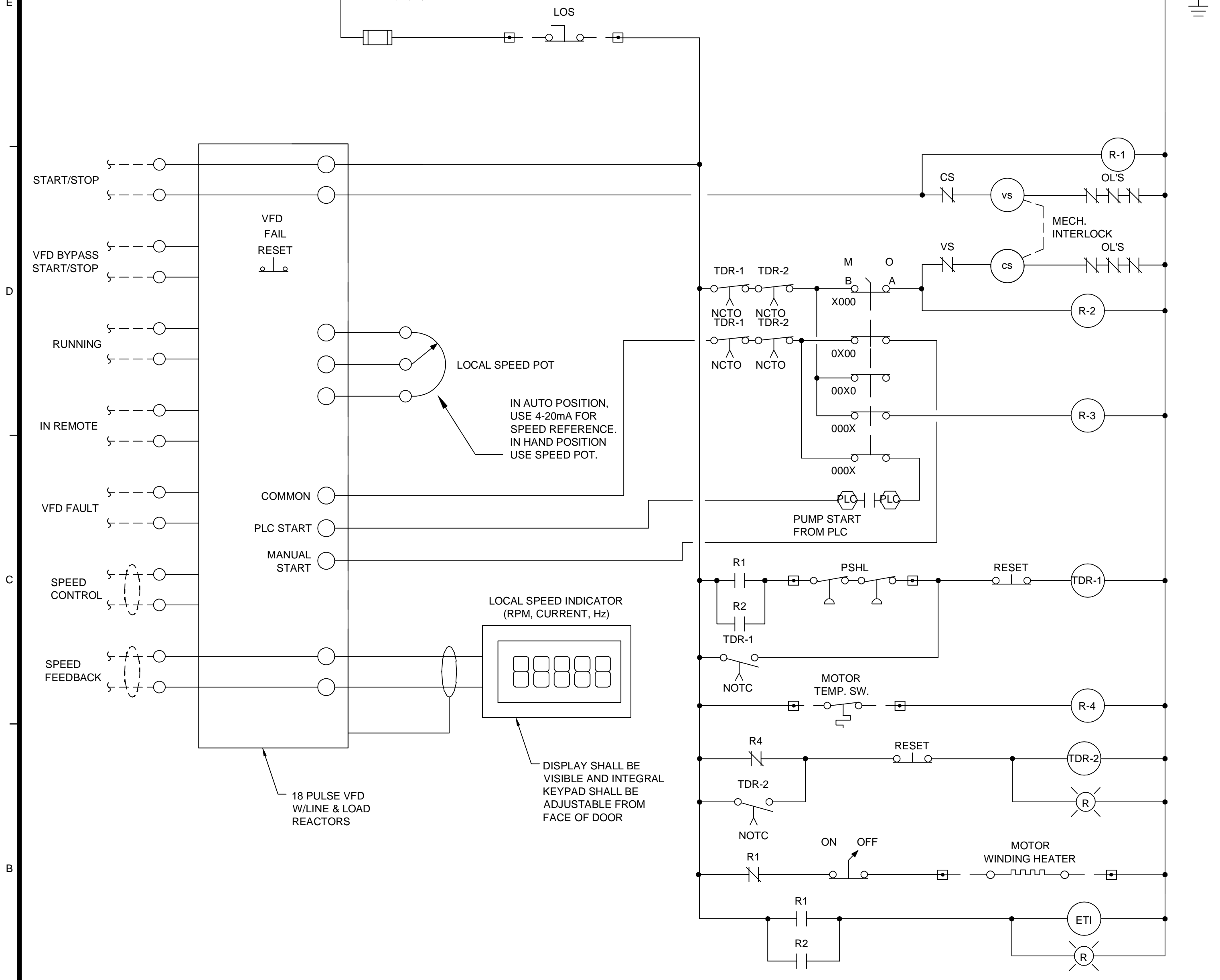
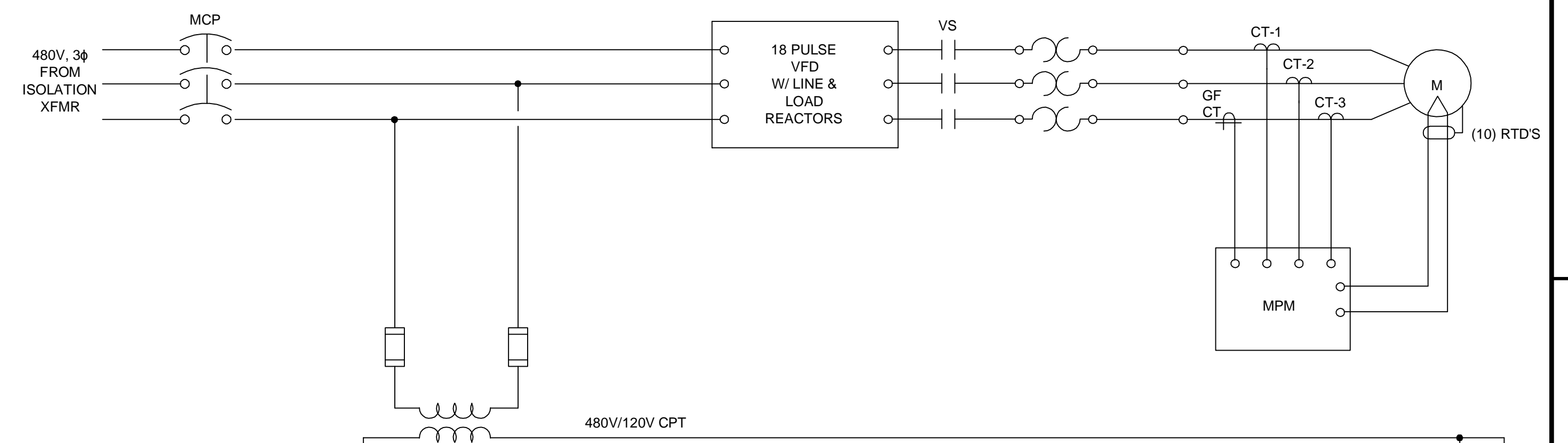
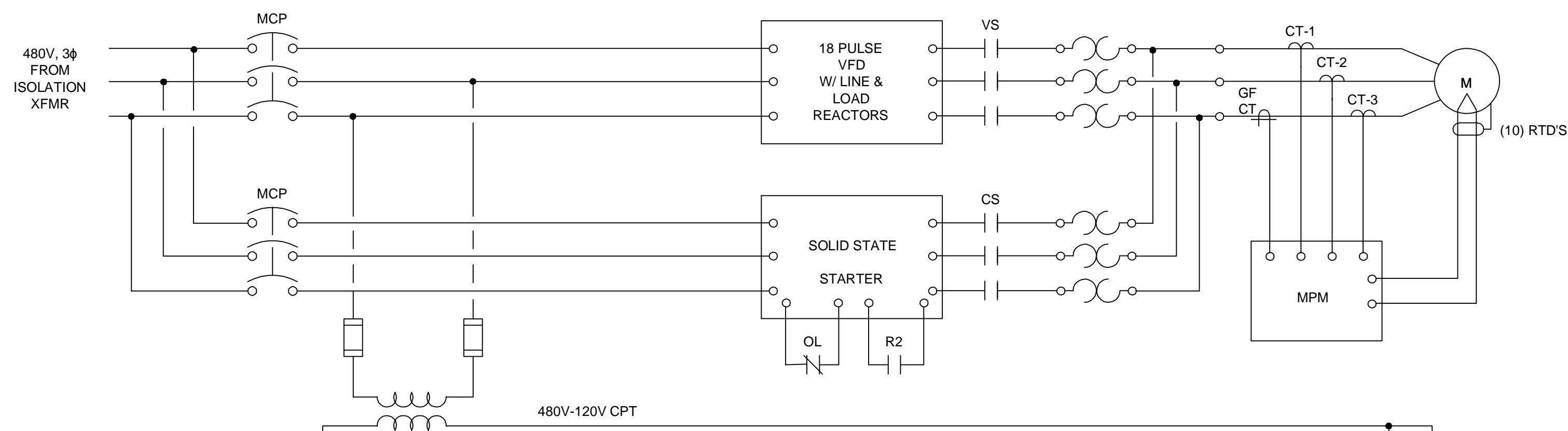
MARK	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
WIRING DIAGRAMS

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

E402

Copyright: Tetra Tech
Bar Measures 1 inch



TRANSFER PUMP CONTROL SCHEMATIC DIAGRAM
NO SCALE (TYP. FOR : 30-P-6 AND 30-P-8)

TRANSFER PUMP CONTROL SCHEMATIC DIAGRAM
NO SCALE (TYP. FOR : 30-P-7)

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BY	DATE	DESCRIPTION

PANELBOARD: NEW 20-PP-1

SERVICE: 480/277V, 3 PH, 4 W + GND

BUS SIZE: 200A LOAD: 16.6 kVA
 MAIN DEVICE: 200A CONN. 16.6 kVA
 SFC RATING: 42kAIC DEM. 16.6 kVA
 MOUNTING: SURFACE DEM. 20.0 Amps

NOTES:
 1. SPD SHALL BE RATED 40KA MIN.
 LOCATION: PROCESS BUILDING 20

CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	30/1		HEAT TRACE CONTROLLER	8,310	8,310		HEAT TRACE CONTROLLER		30/1	2
3	20/1		SPARE				SPARE		20/1	4
5	20/1		SPARE				SPARE		20/1	6
7	30/3		SURGE PROTECTION DEVICE (SPD)				SPACE		30/3	8
11							SPACE			10
13							SPACE			12
15							SPACE			14
17							SPACE			16
19							SPACE			18
21							SPACE			20
23							SPACE			22
25							SPACE			24
27							SPACE			26
29							SPACE			28
31							SPACE			30
33							SPACE			32
35							SPACE			34
37							SPACE			36
39							SPACE			38
41							SPACE			40
42							SPACE			42
TOTAL CONNECTED LOADS:				8,310	8,310	0	0	0		

PANELBOARD: EXISTING 50-PP-1

SERVICE: 480/277V, 3 PH, 4 W

BUS SIZE: 225A LOAD: 14.9 kVA
 MAIN DEVICE: 225A CONN. 14.9 kVA
 SFC RATING: 42kAIC DEM. 13.6 kVA
 MOUNTING: RECESSED DEM. 16.3 Amps

NOTES:
 1. PROVIDE NEW BREAKERS AS SHOWN
 LOCATION: PROCESS BUILDING 50

CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	20/1		HSP ROOM LIGHTING	-	-		MCC ROOM LIGHTING		20/1	2
3	20/1	1	LIGHTS-HSP 7, 8 AREA	2,250			SPARE		20/1	4
5	20/1		SPARE				SPARE		20/1	6
7	50/3		TRANSFORMER 50-TX-1	-	-		GEN. ROOM EXTERIOR LIGHTING		50/3	8
9							SPARE		20/1	10
11							SPARE		20/1	12
13	30/3	1	50-SF-1 (3/4HP)	2,104	2,104		50-SF-2 (3/4HP)	1	30/3	14
15				2,104	2,104		HEAT PUMP 50-HP-1		20/2	16
17						2,104	HEAT PUMP 50-HP-2		20/2	18
19	30/3		CONDENSOR 50-CU-1	-	-		HEAT PUMP 50-HP-1		20/2	20
21							HEAT PUMP 50-HP-2		20/2	22
23	30/1		AIR HANDLER 50-SU-1				GEN HTR -1		20/2	24
25							HEAT PUMP 50-HP-1		20/2	26
27	30/1		HEATER (50-SU-1)				HOIST		30/3	28
29							HEAT PUMP 50-HP-2		20/2	30
31							HEAT PUMP 50-HP-1		20/2	32
33	20/1		SITE LTG-ZONE G				SITE LTG-ZONE J		20/1	34
35	20/1		SITE LTG-ZONE H				GEN HTR DISC A #2		20/1	36
37	20/1		SITE LTG-ZONE I				HEAT PUMP 50-HP-1		20/2	38
39							HEAT PUMP 50-HP-2		20/2	40
41							HEAT PUMP 50-HP-1		20/2	42
TOTAL CONNECTED LOADS:				2,104	2,104	4,354	2,104	2,104		

PANELBOARD: EXISTING 80-PP-1

SERVICE: 480/277V, 3 PH, 4 W

BUS SIZE: 100A LOAD: 0.5 kVA
 MAIN DEVICE: 100A CONN. 0.5 kVA
 SFC RATING: 42kAIC DEM. 0.5 kVA
 MOUNTING: RECESSED DEM. 0.6 Amps

NOTES:
 1. PROVIDE NEW BREAKERS AS SHOWN
 LOCATION: PROCESS BUILDING 80

CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	20/1		MCC ROOM LTG				MCC ROOM LTG		20/1	2
3	20/1		EXTERIOR LIGHTING				80-SU-1 (AHU)		30/3	4
5	20/1		SPARE				80-SU-1 (COMP.)		30/3	6
7	20/1		TRANSFER P.S. LTG.				80-TX-5		30/3	8
9	20/1		ROADWAY LTG.				SPACE			10
11	20/1		SPARE				SPACE			12
13	20/1		SPARE				SPACE			14
15	20/1		SPARE				SPACE			16
17	20/1		SPARE				SPACE			18
19	20/1	1	LIGHTS-XFR PMPS 6,7,8	500			SPACE			20
21			SPACE				SPACE			22
23			SPACE				SPACE			24
25			SPACE				SPACE			26
27							SPACE			28
29							SPACE			30
31							SPACE			32
33							SPACE			34
35							SPACE			36
37							SPACE			38
39							SPACE			40
41							SPACE			42
TOTAL CONNECTED LOADS:				500	0	0	0	0		

PANELBOARD: EXISTING 20-LP-1A

SERVICE: 208/120V, 3 PH, 4 W

BUS SIZE: 225A LOAD: 17.3 kVA
 MAIN DEVICE: 150A CONN. 17.3 kVA
 SFC RATING: 10,000A DEM. 17.3 kVA
 MOUNTING: SURFACE DEM. 48.0 Amps

NOTES:
 1. PROVIDE NEW BREAKERS AS SHOWN
 LOCATION: PROCESS BUILDING 20

CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	20/1		20-LCP-6	1,000	540		ELECTRICAL BLDG(N)		20/1	2
3	20/1		20-AIT-3A1, 3A2		200	360	RECEP-TS-AIR & AQC (N1)		20/1	4
5	20/1		20-AIT-3B1, 3B2, 3B4, 3B4				RECEP-TS-AIR & AQC (N2)		20/1	6
7	20/1		20-AIT-4A1, 4A2	200	1,080		RECEP-TS-FDA & AQC AREA	1	20/1	8
9	20/1		20-AIT-4B1, 4B2, 4B4, 4B4		400	160	LIGHTS AT TEMP HYPO		20/1	10
11	20/1		20-FCV-5A1, 3A2, 3B1, 3B2				20-SMD-01		20/1	12
13	20/1		20-DV-5-1, 6-1, 7-1, 8-1	1,000	50		20-ES/EW-1		20/1	14
15	20/1		20-FIT-5, 6, 7, 8		800	50	20-ES/EW-2		20/1	16
17	20/1		20-FCV-4A1, 4A2, 4B1, 4B2				LIT-501, TRUCK UNLOAD		20/1	18
19	20/1		FDA/AQC VALVE	528	528		FDA/AQC VALVE		20/1	20
21	20/1		FDA/AQC VALVE	528	528		FDA/AQC VALVE		20/1	22
23	20/1		FDA/AQC VALVE	528	528		FDA/AQC VALVE		20/1	24
25	20/1		FDA/AQC VALVE	528	528		FDA/AQC VALVE		20/1	26
27	20/1		FDA/AQC VALVE	528	528		FDA/AQC VALVE		20/1	28
29	20/1		20-LCP-1				RECEP-TS-FDA & AQC AREA	1	20/1	30
31	20/1	1	20-FIT-3, 4	200	-		SPACE		20/1	32
33	20/1	1	VAPEX		600	-	SPACE		20/1	34
35	20/1	1	20-AIT-2A1, 2B3				SPACE	1	20/1	36
37	20/1		SPARE				SPACE			38
39	20/1		SPARE				SPACE			40
41	20/1	1	SPARE				SPACE			42
TOTAL CONNECTED LOADS:				3,456	2,726	3,056	1,626	4,128	2,298	

PANELBOARD: EXISTING 50-LP-1

SERVICE: 208/120V, 3 PH, 4 W

BUS SIZE: 100A LOAD: 1.6 kVA
 MAIN DEVICE: 100A CONN. 1.6 kVA
 SFC RATING: 10,000A DEM. 1.6 kVA
 MOUNTING: SURFACE DEM. 4.5 Amps

NOTES:
 1. PROVIDE NEW BREAKERS AS SHOWN
 LOCATION: PROCESS BUILDING 50

CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	20/1		WATER COOLER	-	-		LCP-5		20/1	2
3	20/1		H.S.P. ROOM RECEP-T.	-	-		LCP-5		20/1	4
5	20/1		H.S.P. ROOM RECEP-T.				50-AIT-1, 2 & 3		20/1	6
7	20/1		GEN. ROOM RECEP-T.	-	-		50-LIT-1 & 2		15/1	8
9	20/1		MCC ROOM RECEP-T.	-	-		FUEL LEAK PANEL		15/1	10
11	20/1		EMERGENCY LIGHTS	-	-		EXH. LGT CONTROL PANEL		15/1	12
13	20/1		50-BC-1 (BATT. CHGR)	-	-		EXHAUST FAN 50-EF-1		15/1	14
15	20/1		50-BC-2 (BATT. CHGR)	-	-		EXHAUST FAN 50-EF-2		15/1	16
17	20/1		GEN #2 HEATER	-	-		RECTIFIER #2		20/1	18
19	20/1		DAY-TANK-2	-	-		DAY-TANK-1		20/1	20
21	20/1		IRRRIGATION PANEL	-	-		TELEPHONE BOARD		20/1	22
23	20/1		GEN. #1 HEATER	-	-		HEAT TRACE		20/1	24
25	20/1		130V BATTERY CHARGER				40-LIT 1-2-3		20/1	26
27	20/1		FUEL TANKS SUMP RECEP-T.				RECEP-T. KRAUM TANK		20/1	28
29	20/1	1	RECEP-T-SUMP PUMP				SMD (DUCT DETECTION)		20/1	30
31	20/1	1	RECEP-TS-HSP 7, 8 ROOM	720	540		RECEP-TS-HSP 7, 8 ROOM	1	20/1	32
33			SPACE				SPACE			34
35			SPACE				SPACE			36
37			SPACE				SPACE			38
39			SPACE				SPACE			40
41			SPACE				SPACE			42
TOTAL CONNECTED LOADS:				720	540	0	0	360	0	

PANELBOARD: EXISTING 80-LP-1

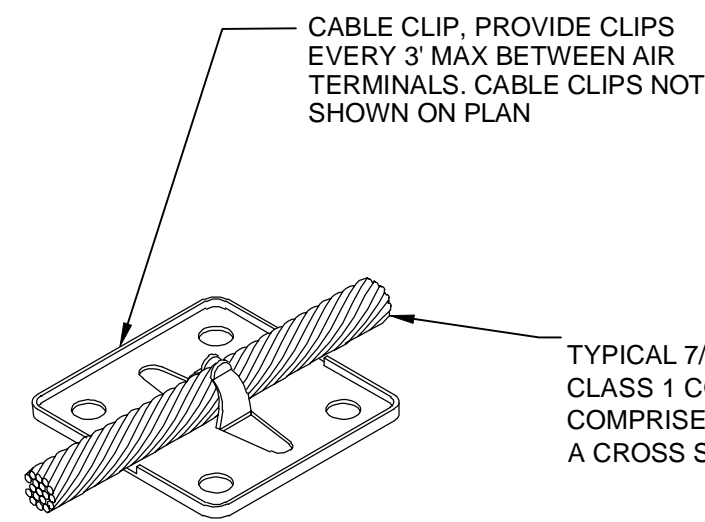
SERVICE: 208/120V, 3 PH, 4 W

BUS SIZE: 100A LOAD: 0.8 kVA
 MAIN DEVICE: 60A CONN. 0.8 kVA
 SFC RATING: 10,000AIC DEM. 0.8 kVA
 MOUNTING: SURFACE DEM. 2.1 Amps

NOTES:
 1. PROVIDE NEW BREAKERS AS SHOWN
 LOCATION: PROCESS BUILDING 80

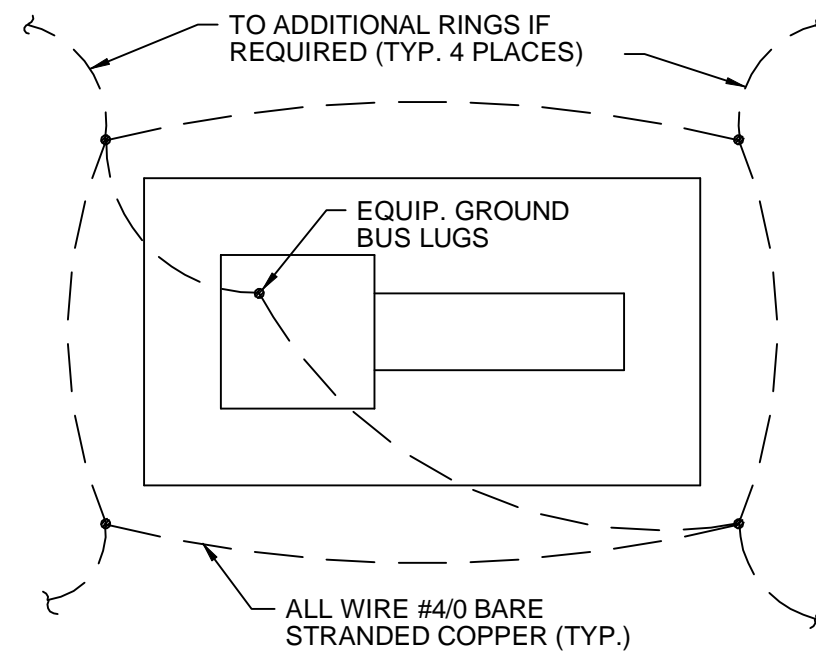
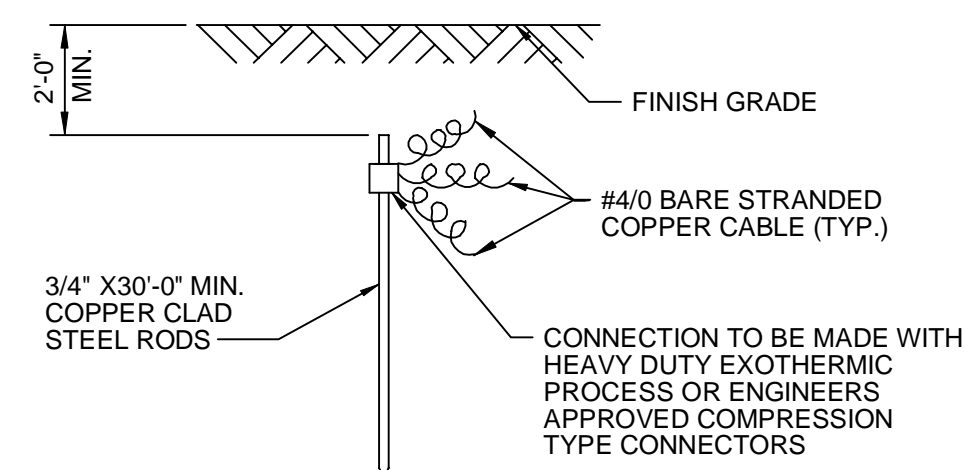
CKT #	TRIP/ POLE #	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)			CIRCUIT DESCRIPTION	NOTES	TRIP/ POLE #	CKT #
				PHASE A	PHASE B	PHASE C				
1	20/1		RECEPTACLES	-	-		LCP-3		20/1	2
3	20/1		RECEPTACLES	-	-		LCP-3		20/1	4
5	20/1		EMERGENCY LIGHTING				30-LIT-1 & 30-AIT-1		20/1	6
7	20/1		80-CP-1	-	-		30-R RECEPTACLE		20/1	8
9	20/1		SPARE	-	-		LIGHT AT XFER PUMP SP		20/1	10
11	20/1		RECTIFIER #3	-	-		GEN. #3 DAYTANK		20/1	12

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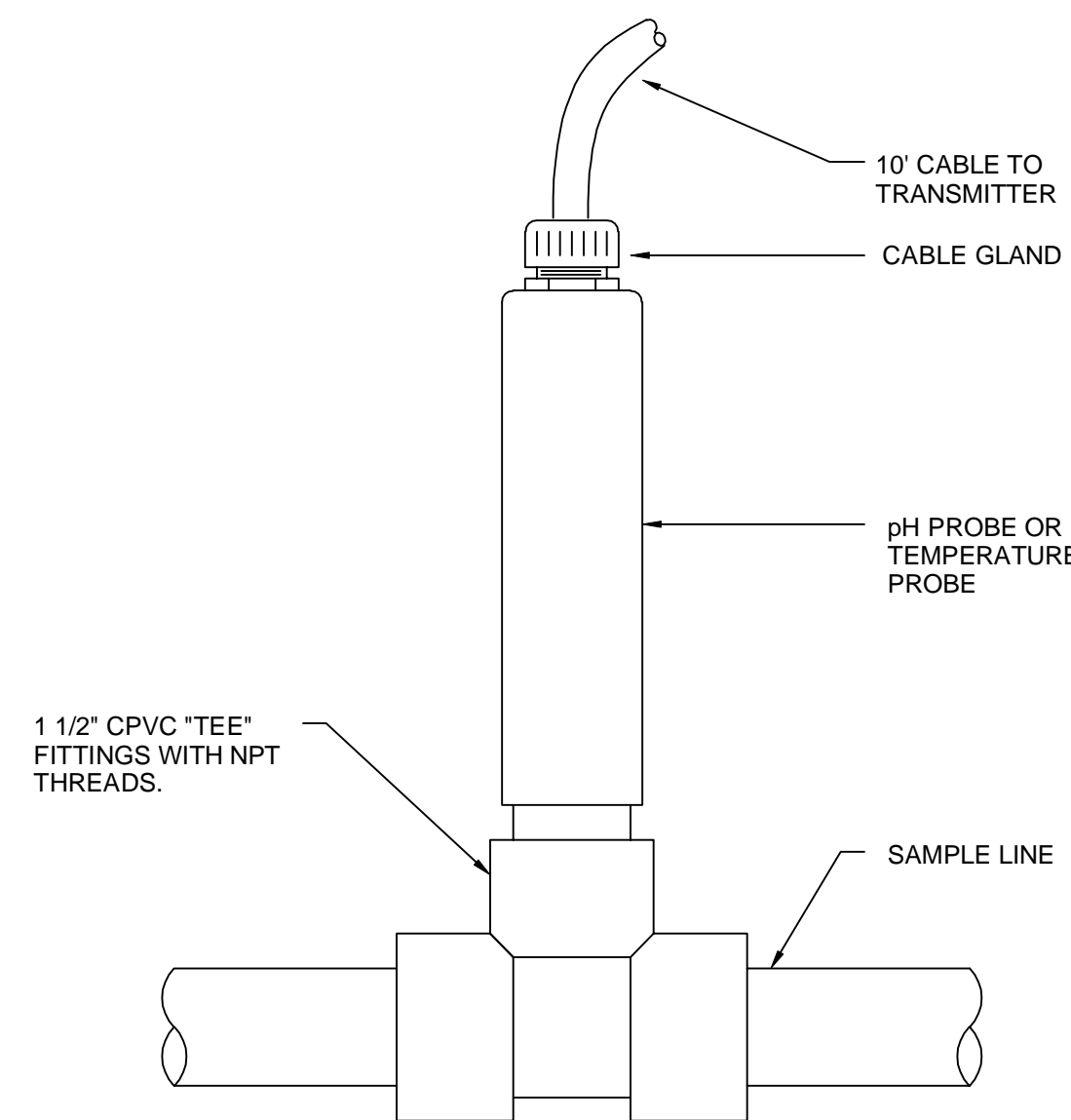
TYPICAL 7/8" DIAMETER CLASS 1 COPPER CONDUCTOR, COMPRISED OF 24 BRAIDED 14 AWG STRANDS AND A CROSS SECTIONAL AREA OF 98,600 CM (TYP.)

ADHESIVE CABLE HOLDER DETAIL
NO SCALE

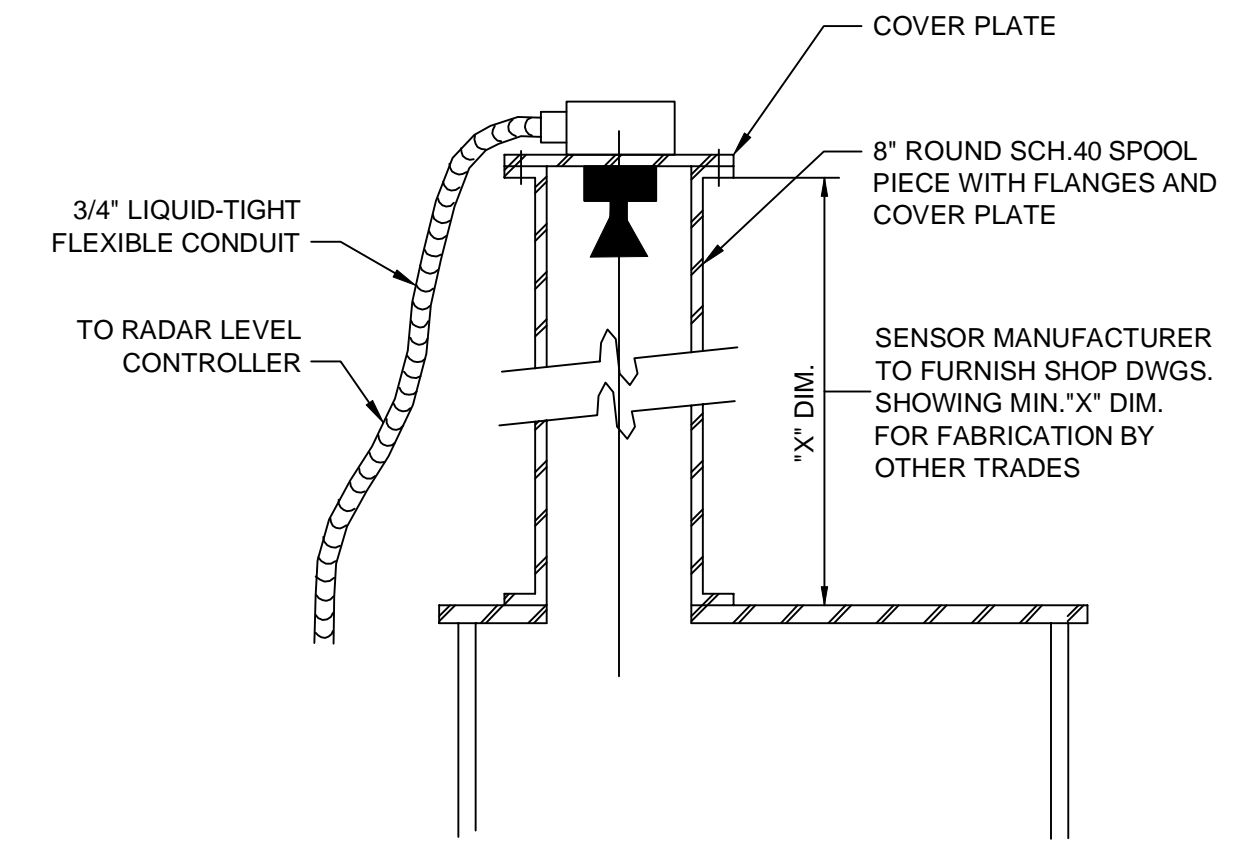


NOTE:
ADDITIONAL CONCENTRIC RINGS SHALL BE ADDED AS REQUIRED TO MEET THE (5) OHM SPECIFIED RESISTANCE. EACH RING TO HAVE 4 GROUND RODS AND SPACED 10 FEET FROM THE INNER RING.

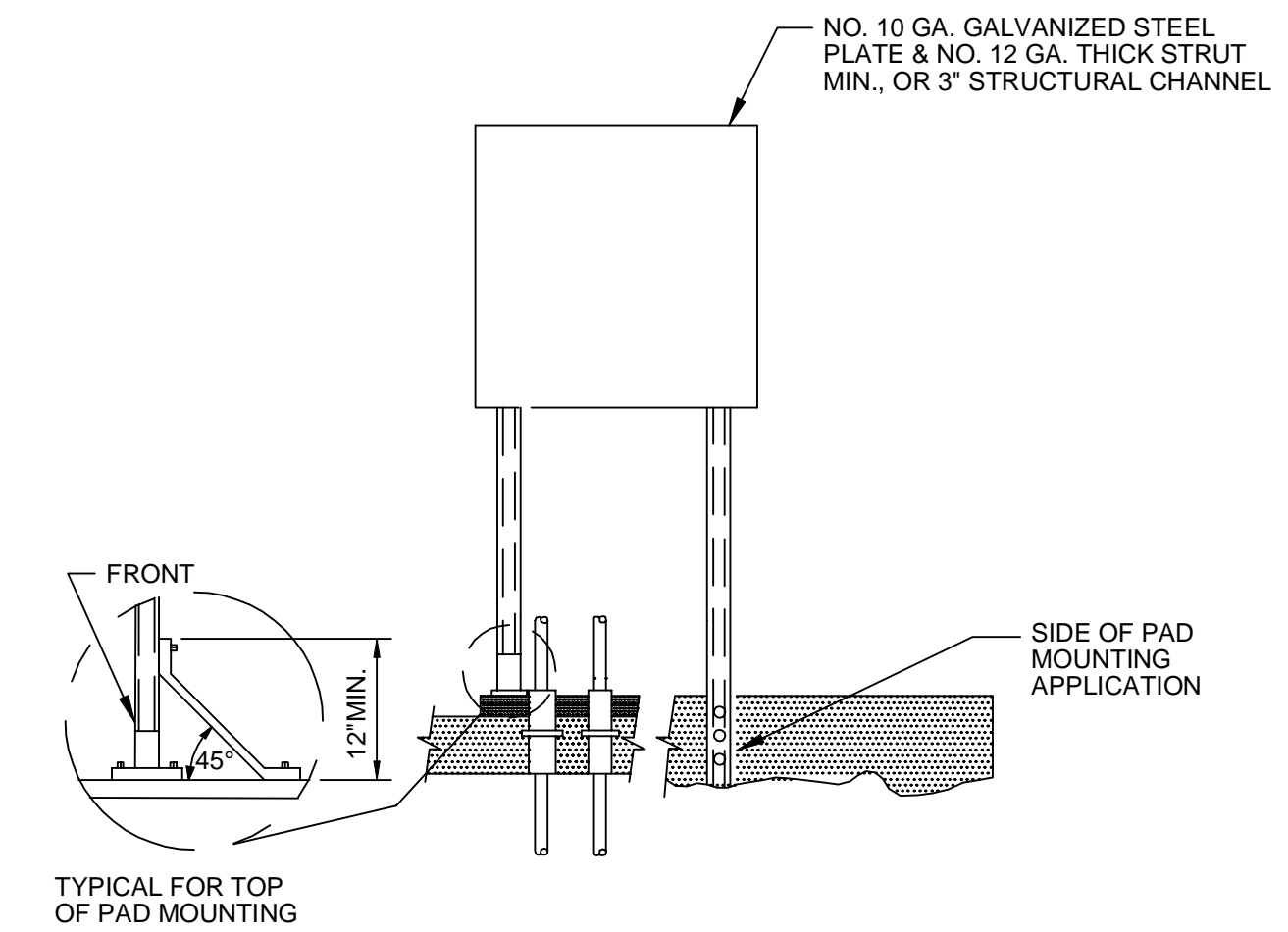
GROUND MAT DETAIL
NO SCALE



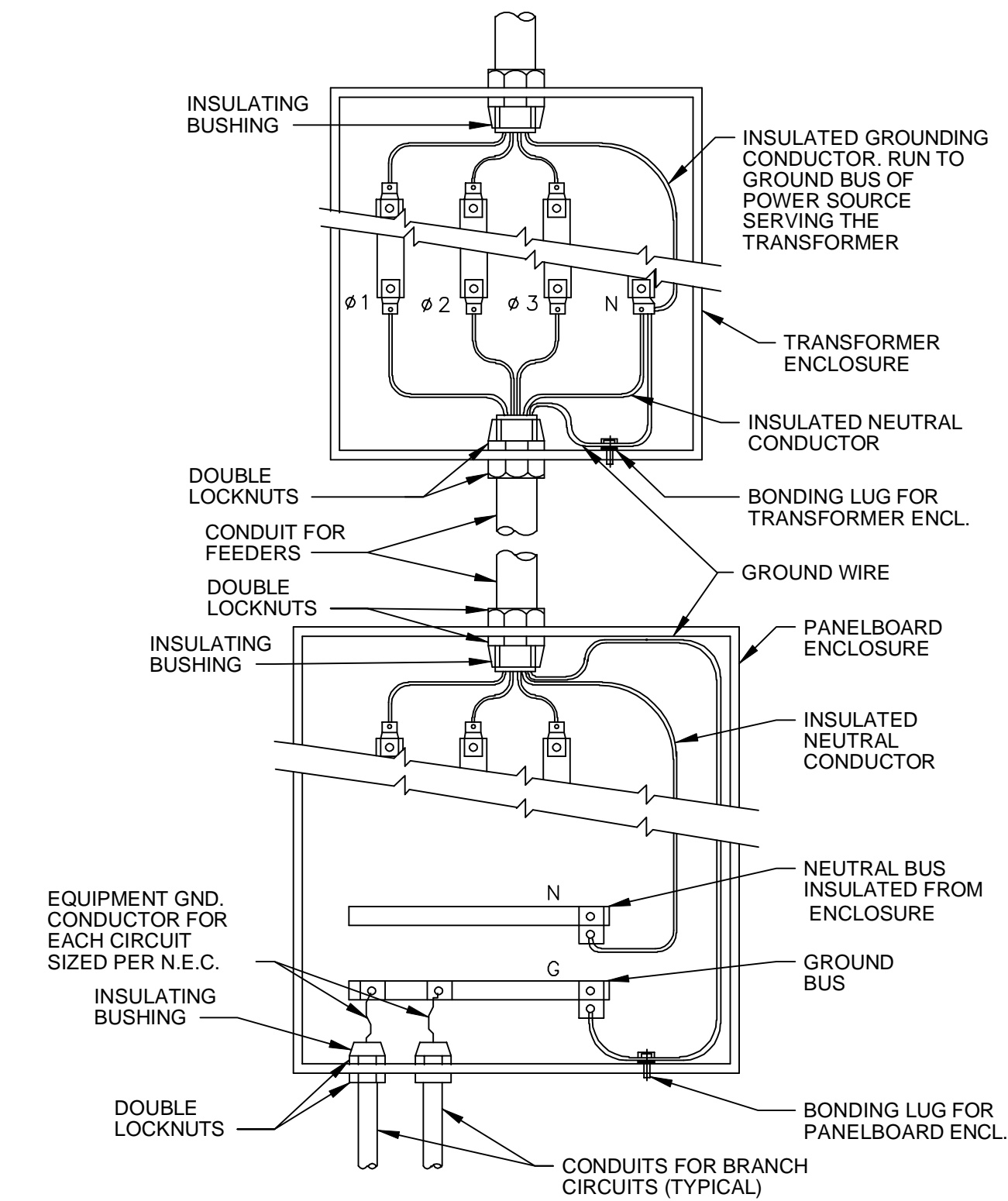
pH PROBE & TEMPERATURE PROBE MOUNTING DETAIL (IN-LINE TYPE)
NO SCALE



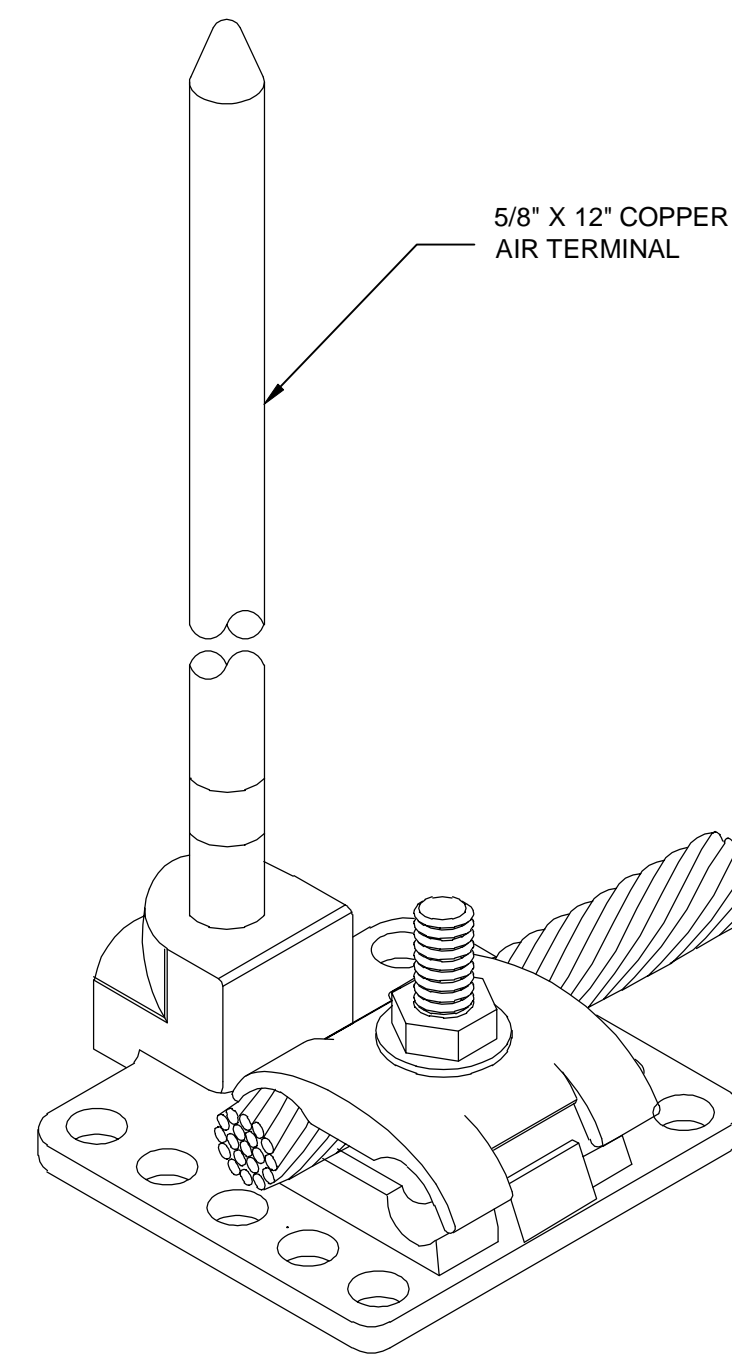
LE/LIT 3 LE/LIT 4
RADAR LEVEL SENSOR DETAIL
NO SCALE



RACK MOUNTED EQUIPMENT DETAIL
NO SCALE

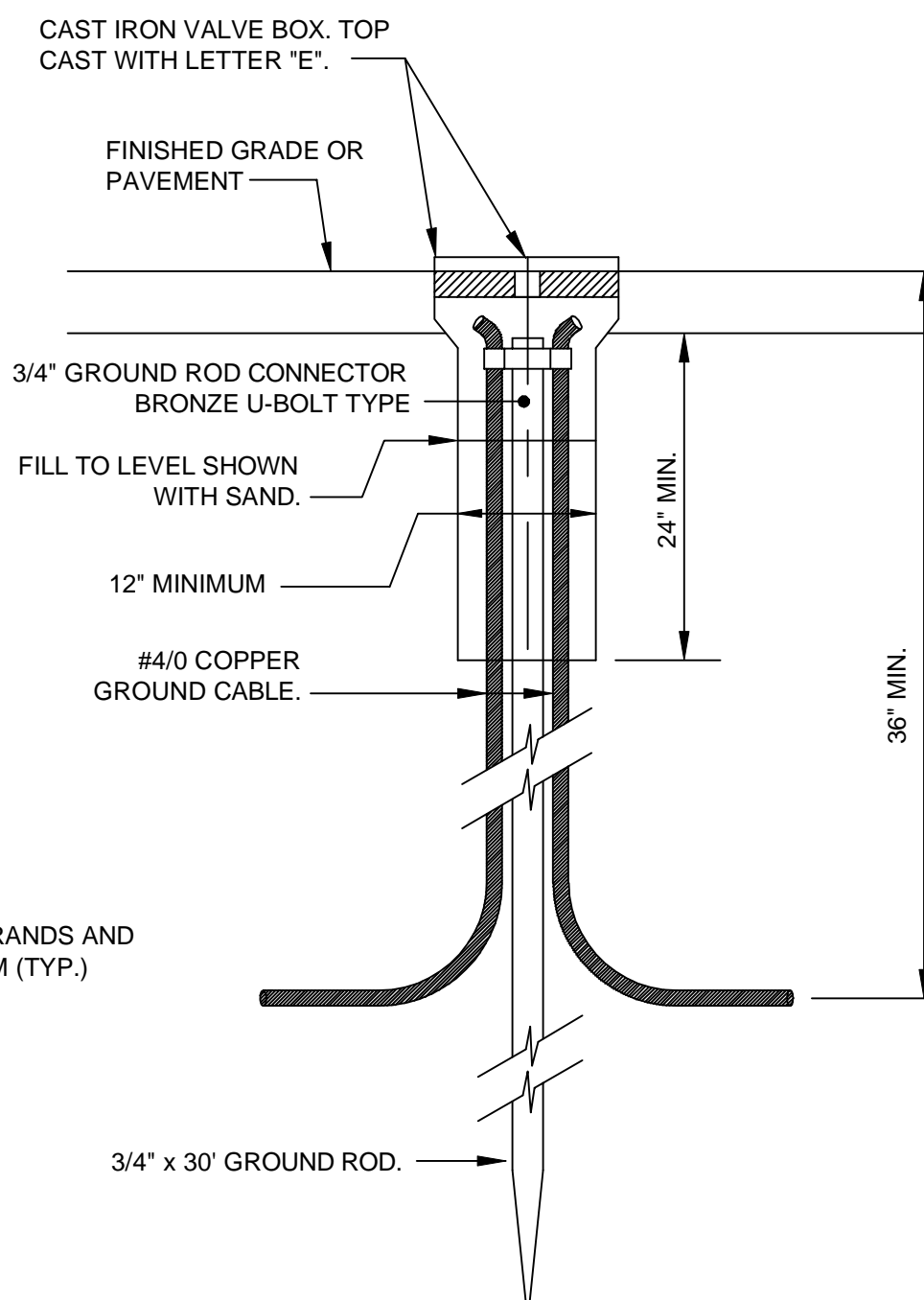


CONDUIT GROUNDING DETAILS FOR TRANSFORMERS, DISTRIBUTION PANELS, AND WALL MOUNTED ENCLOSURES
NO SCALE

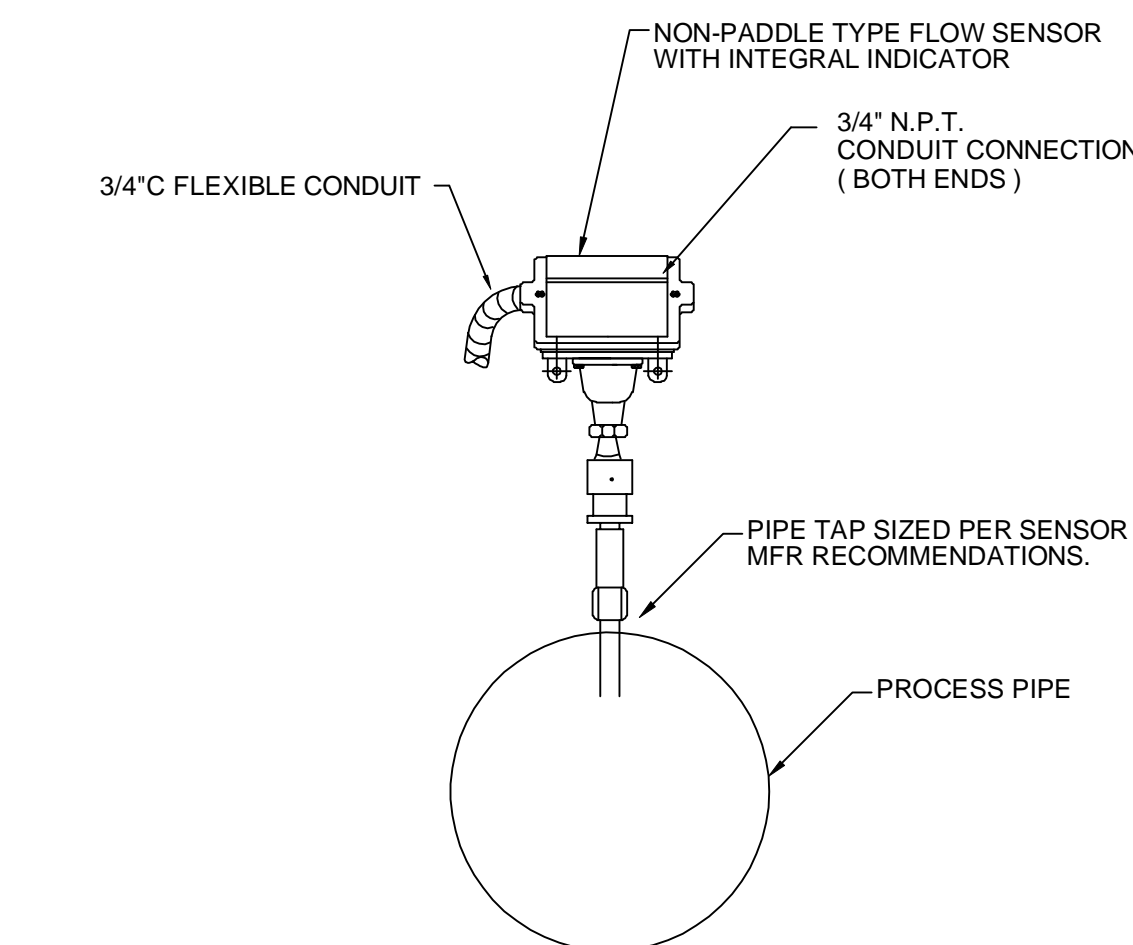


TYPICAL 7/8" DIAMETER CLASS 1 COPPER CONDUCTOR, COMPRISED OF 24 BRAIDED 14 AWG STRANDS AND A CROSS SECTIONAL AREA OF 98,600 CM (TYP.)

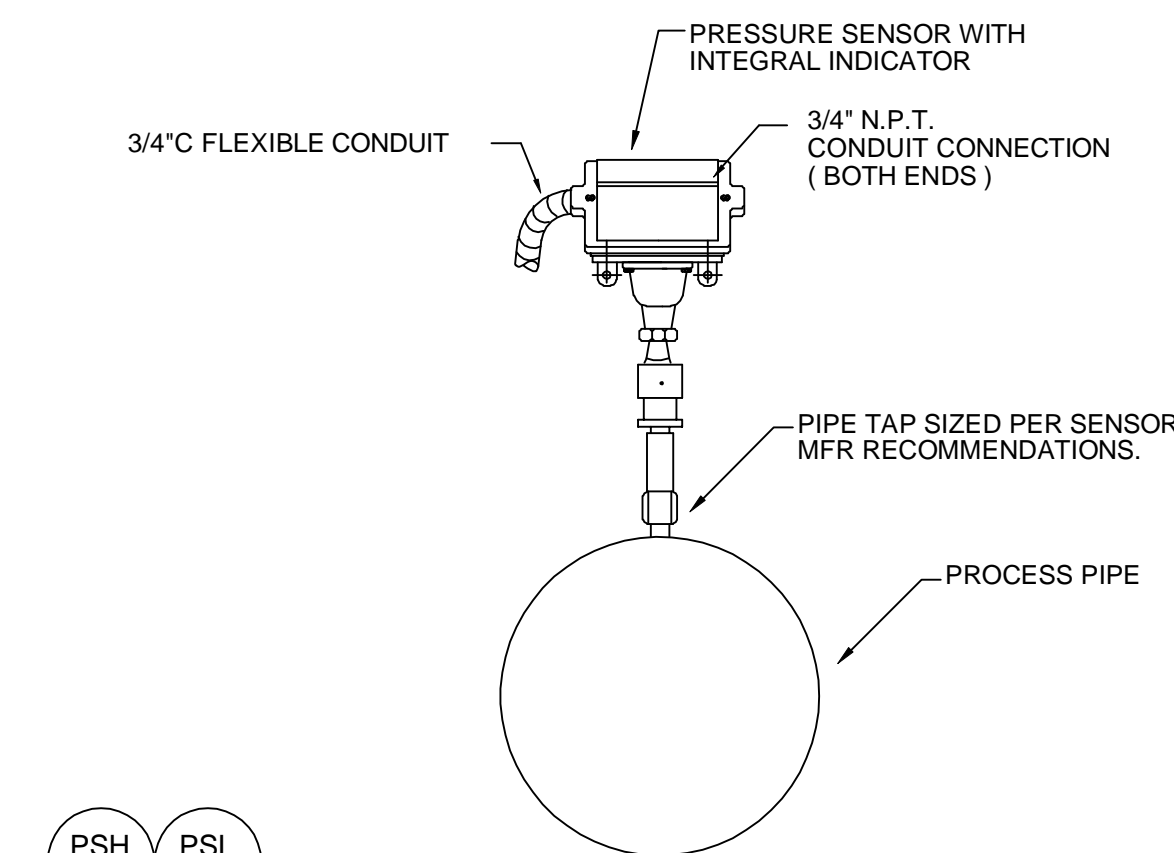
AIR TERMINAL AND BASE DETAIL
NO SCALE



GROUND ROD INSPECTION AND TEST WELL INSTALLATION DETAIL
NO SCALE



FSL 9 FSL 10
MASS FLOW SENSOR DETAIL
NO SCALE



PSH 7 PSL 7 PSH 8 PSL 8
PRESSURE SENSOR DETAIL
NO SCALE

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PHONE: (407) 839-3955 FAX: (407) 839-3790

BID SET

BY	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B

ELECTRICAL DETAILS

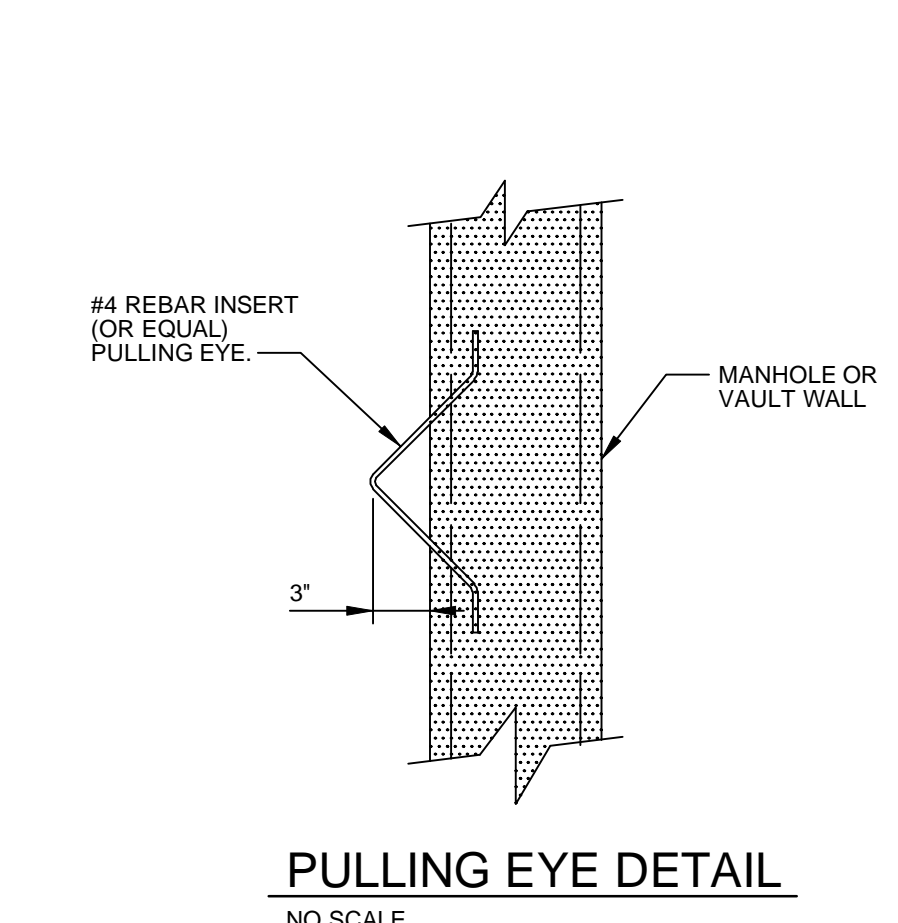
Project No.: 200-10034-11005

Designed By: FWY

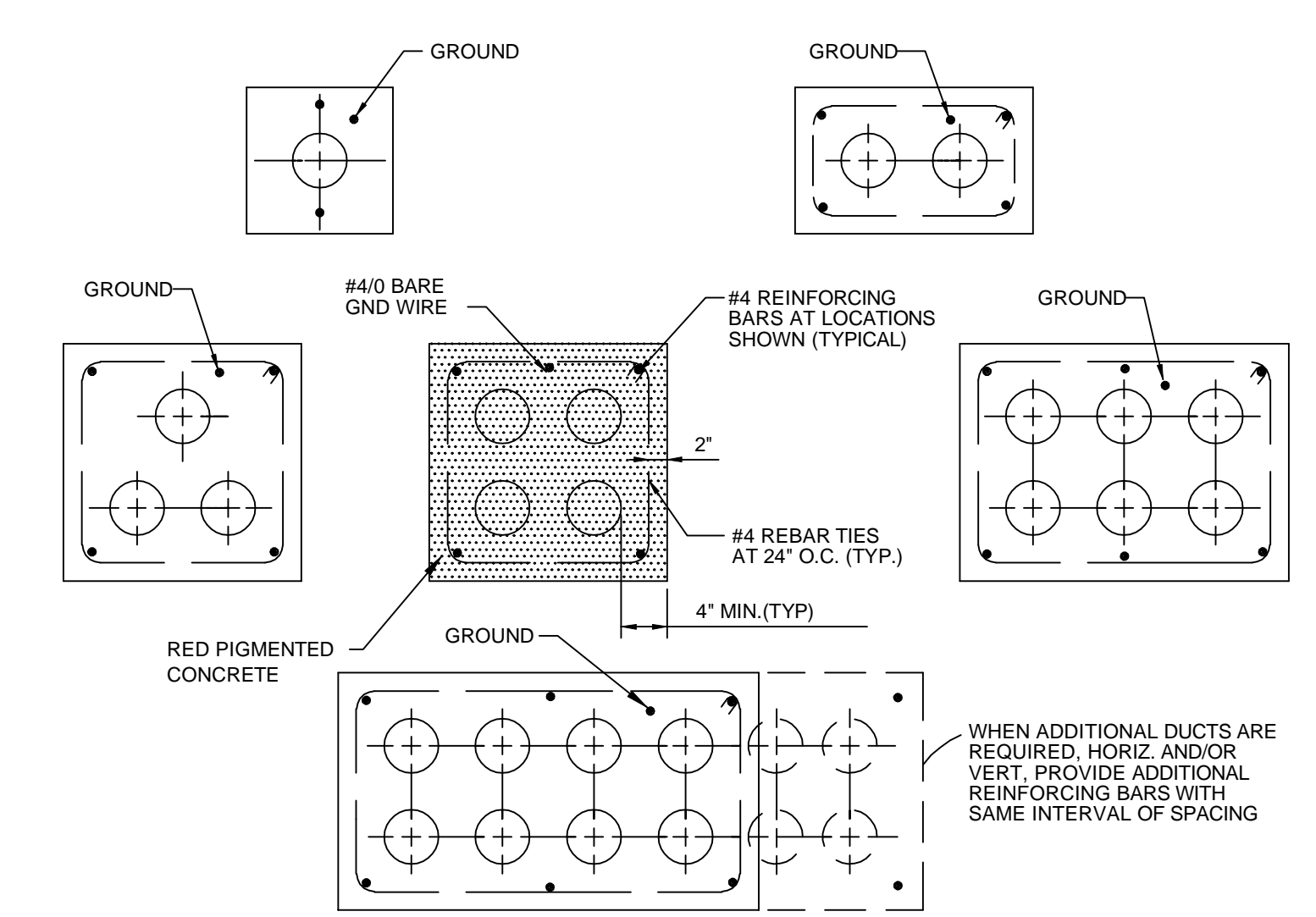
Drawn By: TAC

Checked By: WAP

E601

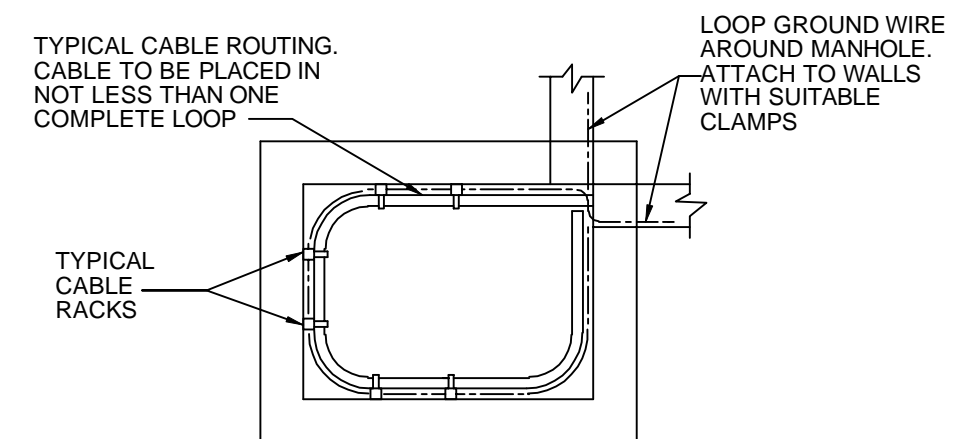


PULLING EYE DETAIL
NO SCALE

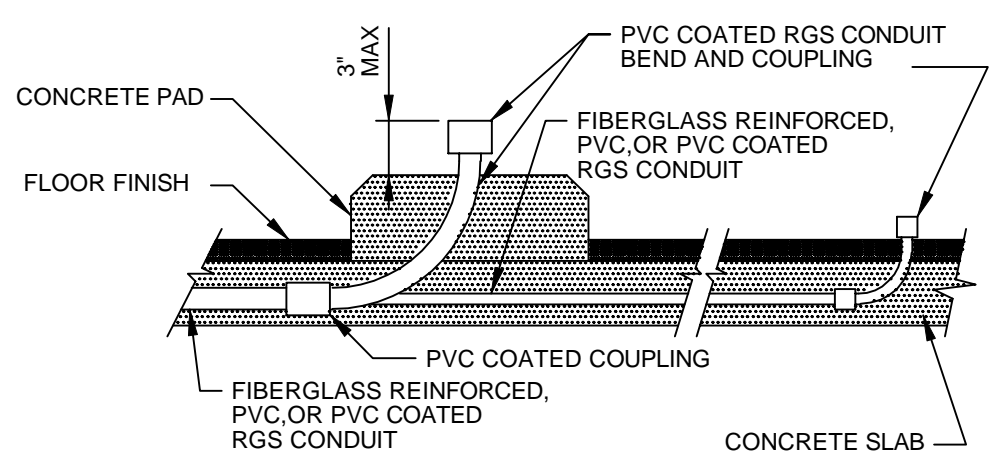


UNDERGROUND DUCT AND ALL BURIED CONDUIT SECTIONS
NO SCALE

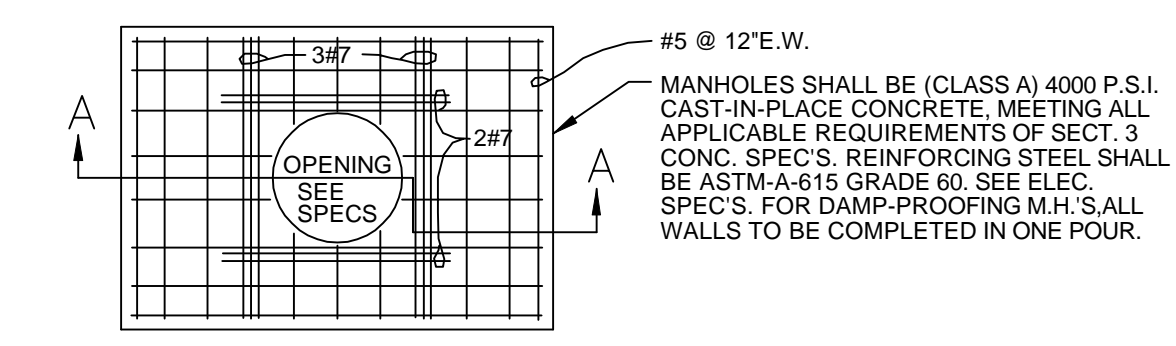
WHEN ADDITIONAL DUCTS ARE REQUIRED, HORIZ. AND/OR VERT. PROVIDE ADDITIONAL REINFORCING BARS WITH SAME INTERVAL OF SPACING



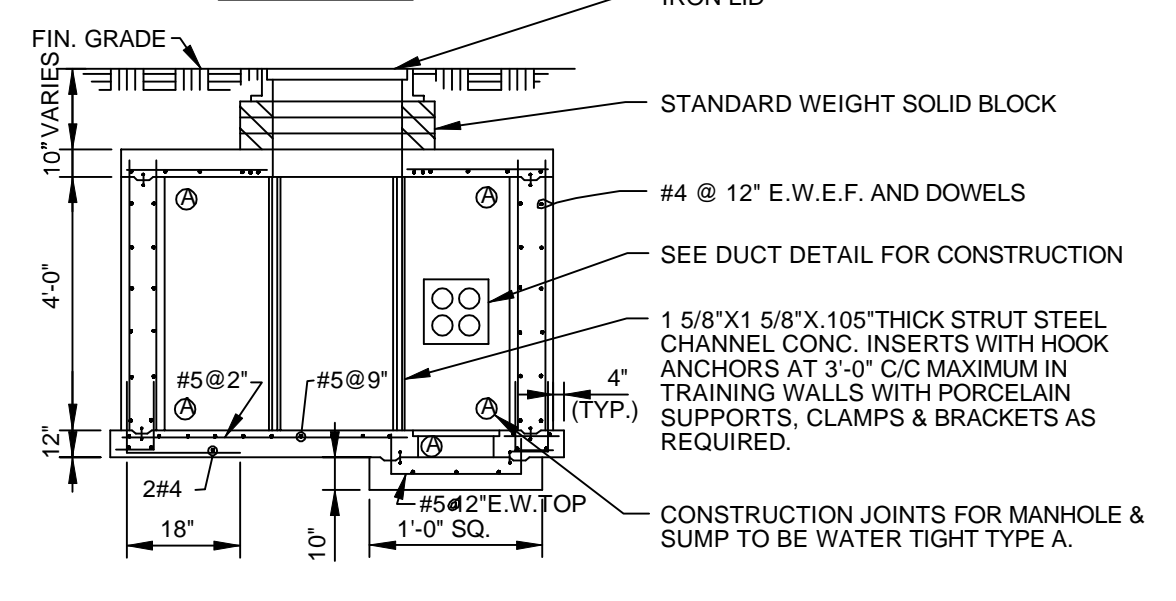
CABLE ROUTING DETAIL
NO SCALE



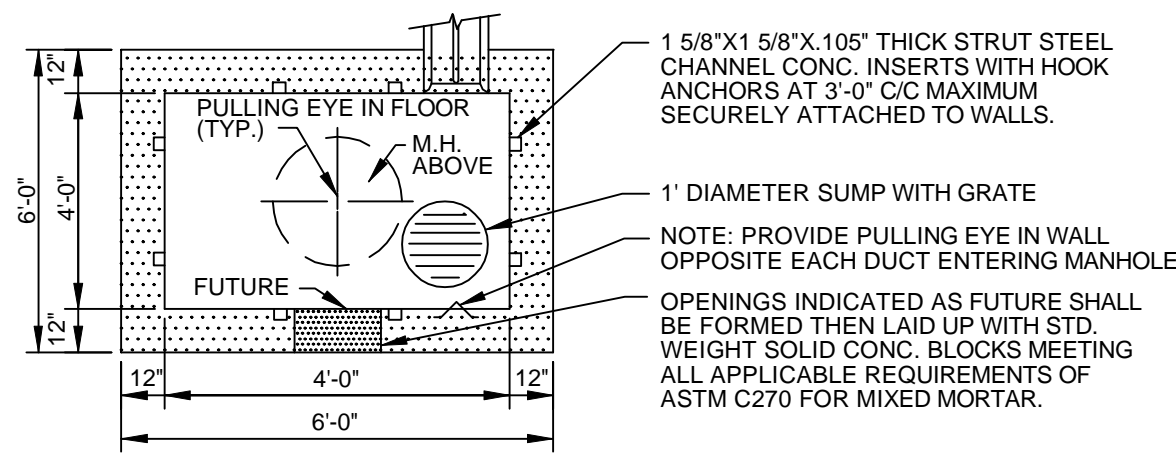
CONDUIT STUB-UP DETAIL
NO SCALE



TOP PLAN

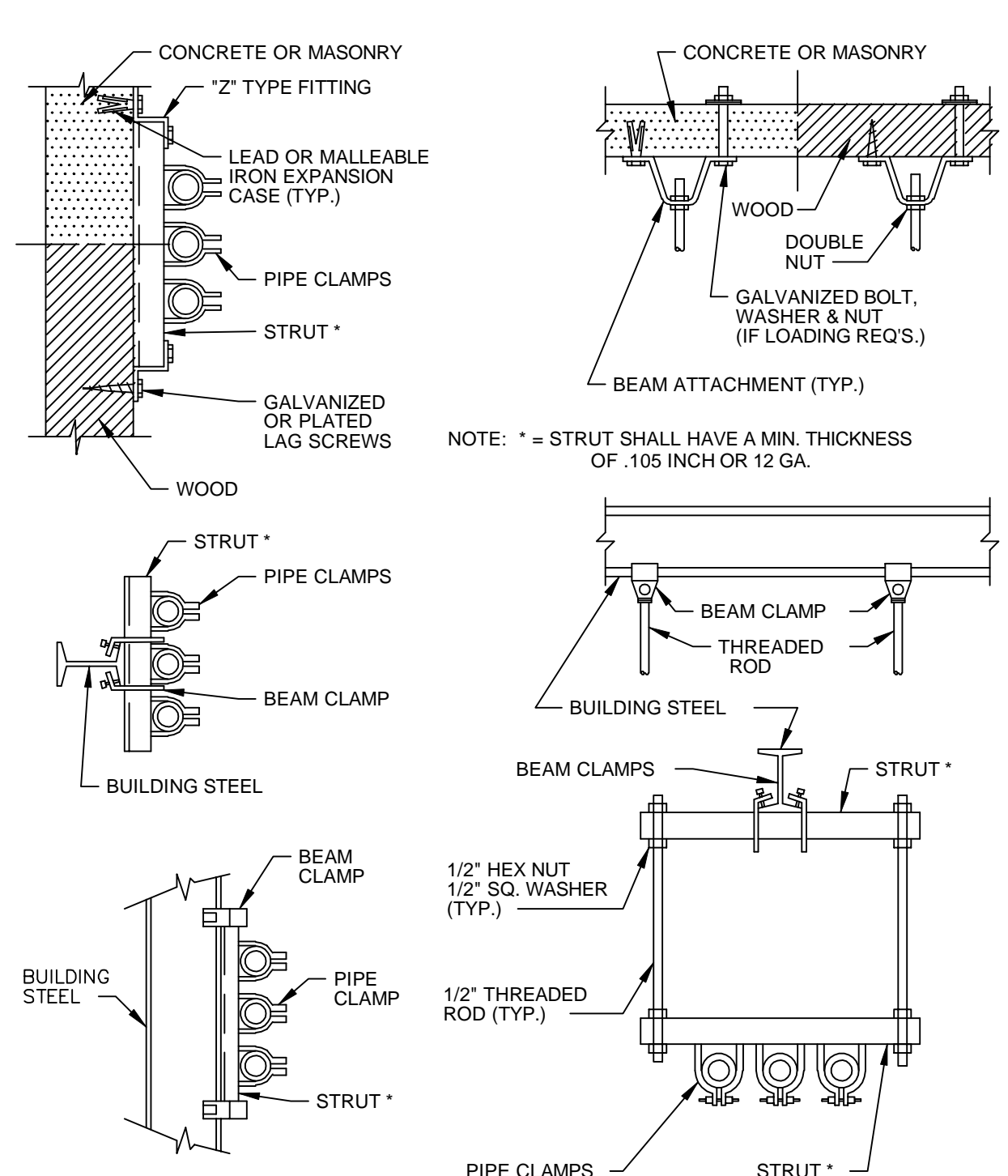


SECTION A-A



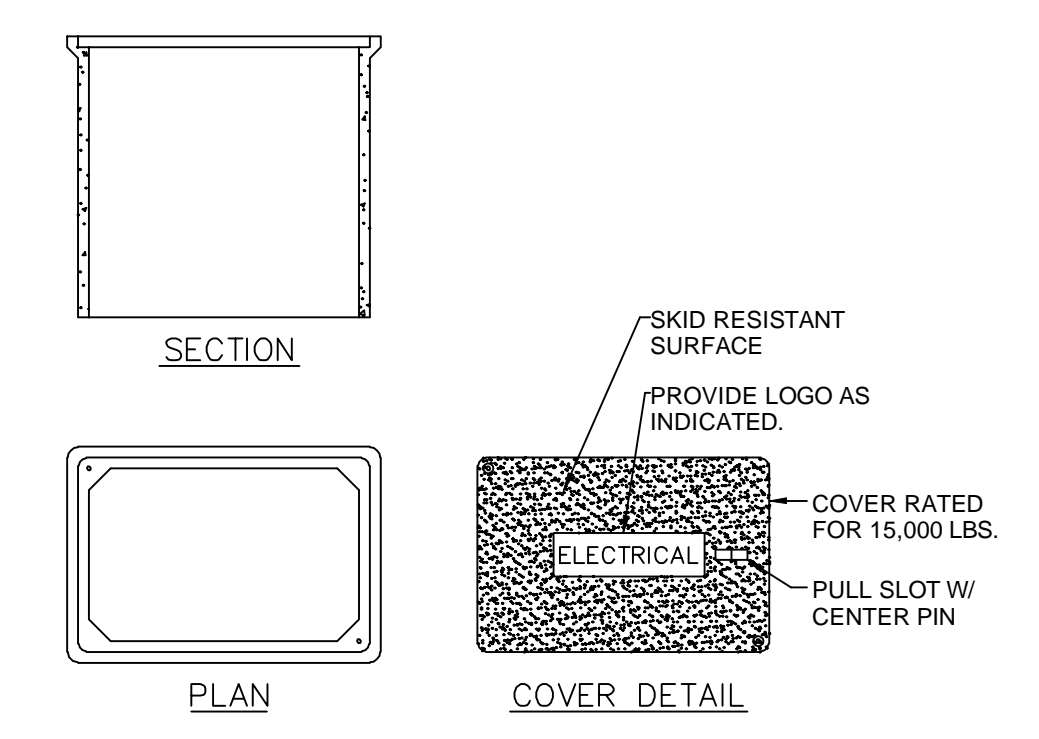
SECTIONAL PLAN

TYPICAL SINGLE MANHOLE DETAILS
NO SCALE HIGH WATER TABLE APPLICATION



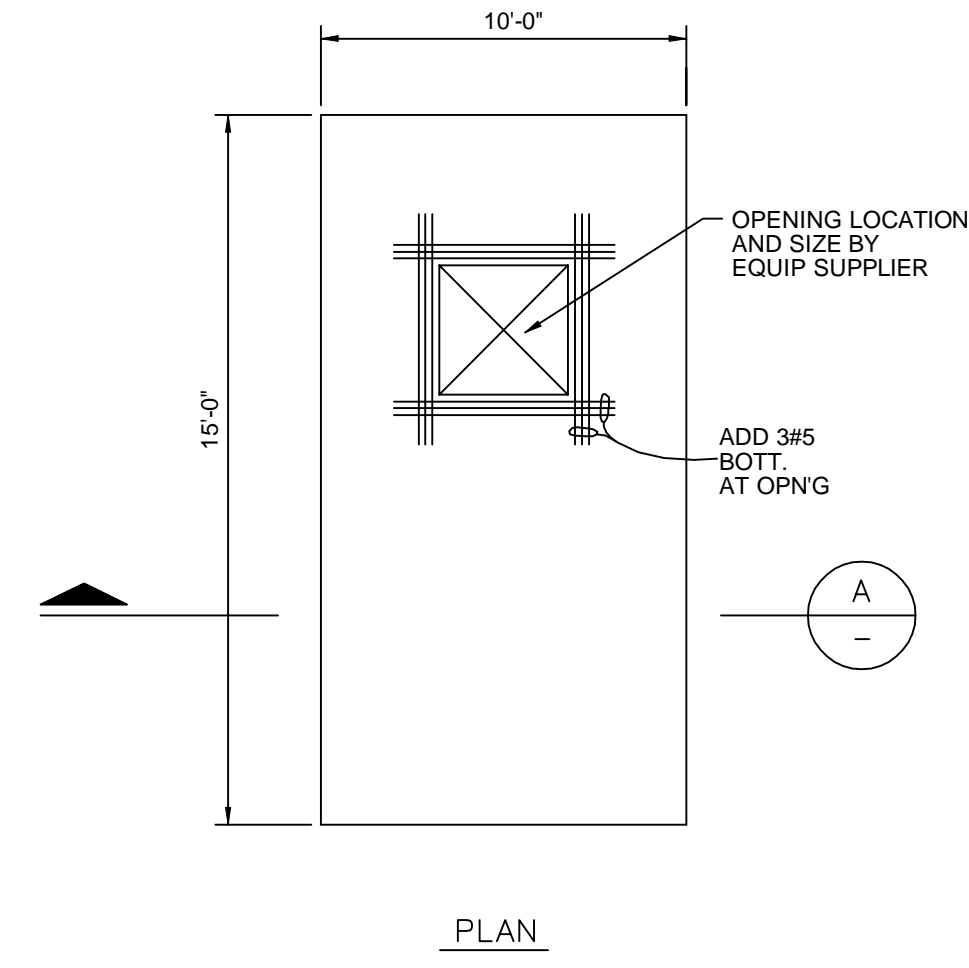
VERTICALLY RACKED AND VERTICAL RUNS
NO SCALE

HORIZ. RACKED SUSPENDED RUN
NO SCALE

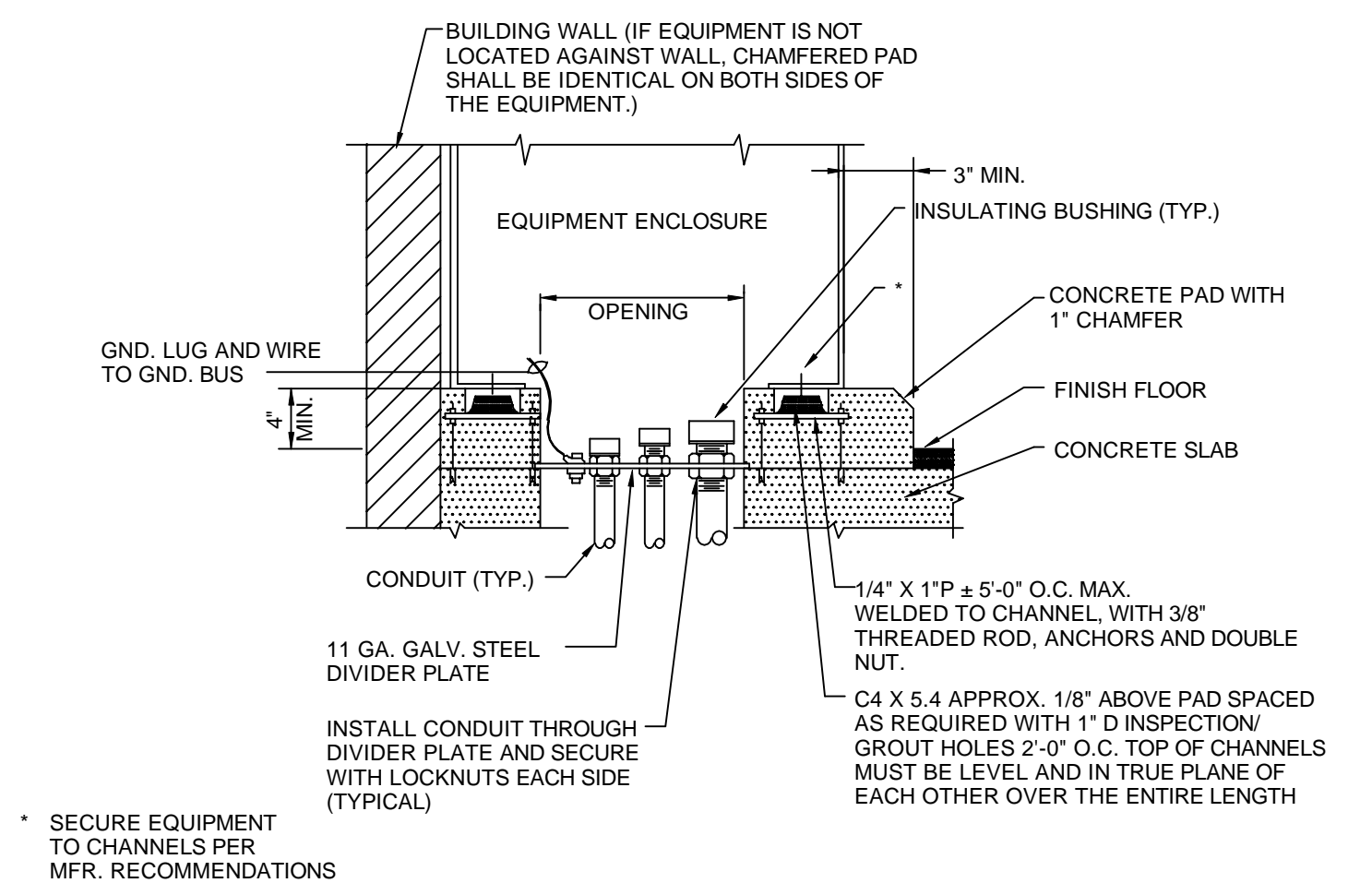


HANDHOLE DETAIL
NO SCALE QUAZITE COMPOSOLITE OR EQUAL

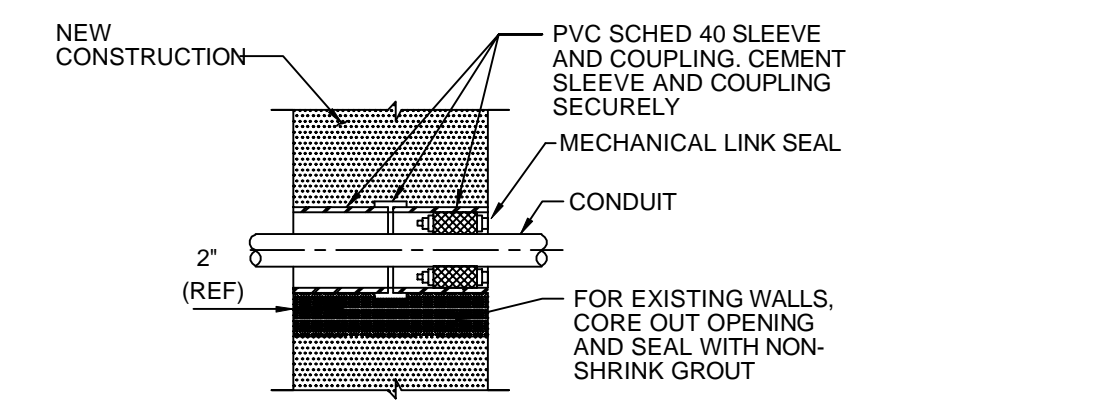
- NOTES:**
- HANDHOLES FOR LOW VOLTAGE CABLES INSTALLED IN PARKING LOTS, SIDEWALKS, AND TURFED AREAS SHALL BE FABRICATED FROM AN AGGREGATE CONSISTING OF SAND AND WITH CONTINUOUS WOVEN GLASS STRANDS HAVING AN OVERALL COMPRESSIVE STRENGTH OF AT LEAST 10,000 PSI AND A FLEXURAL STRENGTH OF AT LEAST 5,000 PSI. PULLBOX AND HANDHOLE COVERS IN SIDEWALKS, AND TURFED AREAS SHALL BE OF THE SAME MATERIAL AS THE BOX. CONCRETE PULLBOXES SHALL CONSIST OF PRECAST REINFORCED CONCRETE BOXES, EXTENSIONS, BASES, AND COVERS.
 - IN PAVED AREAS, FRAMES AND COVERS FOR HANDHOLE ENTRANCES IN VEHICULAR TRAFFIC AREAS SHALL BE FLUSH WITH THE FINISHED SURFACE OF THE PAVING. IN UNPAVED AREAS, THE TOP OF MANHOLE COVERS SHALL BE APPROXIMATELY 1/2" ABOVE THE FINISHED GRADE.



TRANSFORMER PAD
NO SCALE



INTERIOR PAD MOUNTED EQUIPMENT DETAIL
NO SCALE



EXTERIOR WALL CONDUIT SLEEVE DETAIL
NO SCALE DO NOT USE BELOW GRADE

BID SET

MARK	DATE	DESCRIPTION	BY

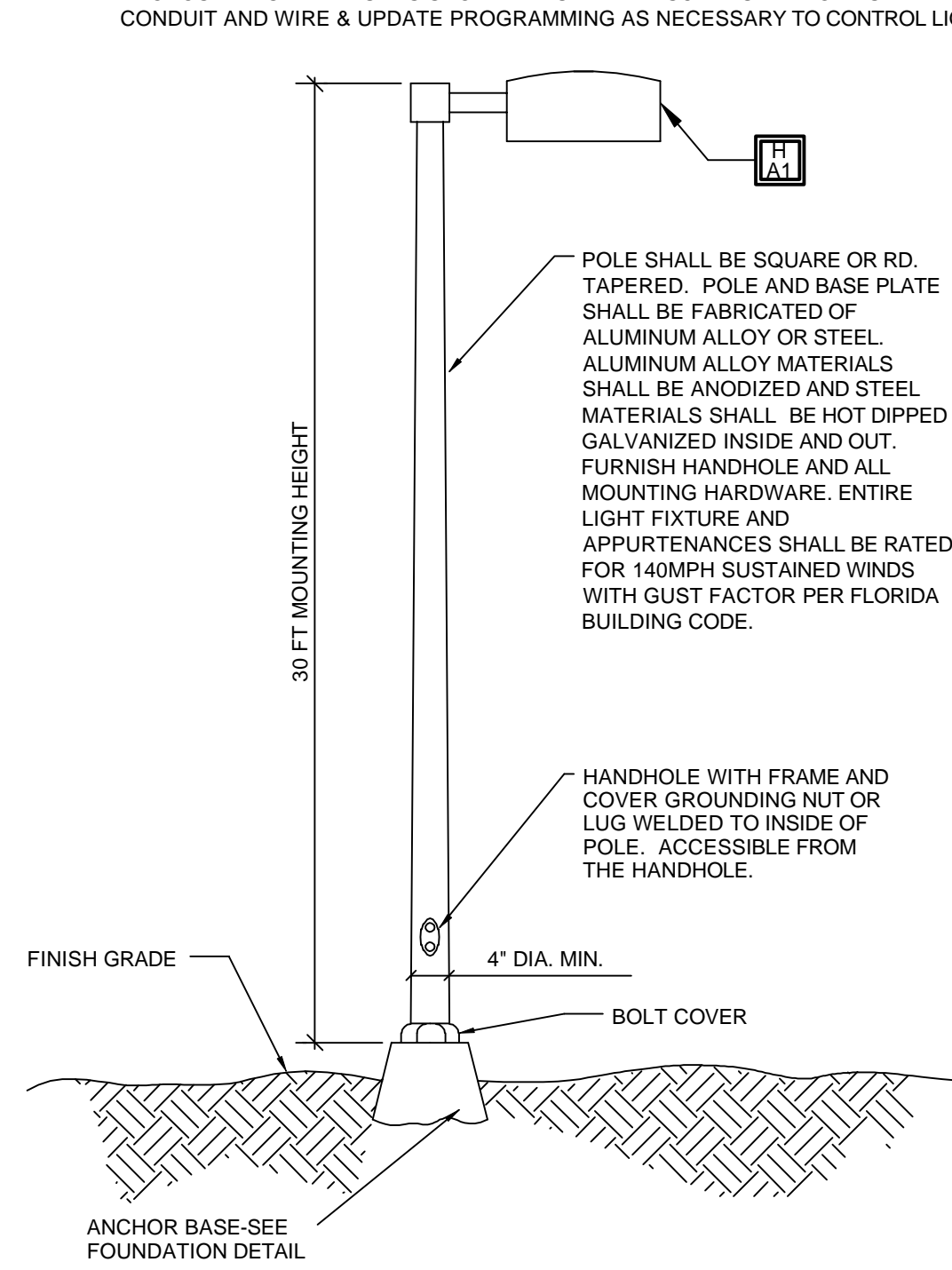
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
ELECTRICAL DETAILS

Project No.: 200-10034-11005
Designed By: FWY
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Checked By: WAP

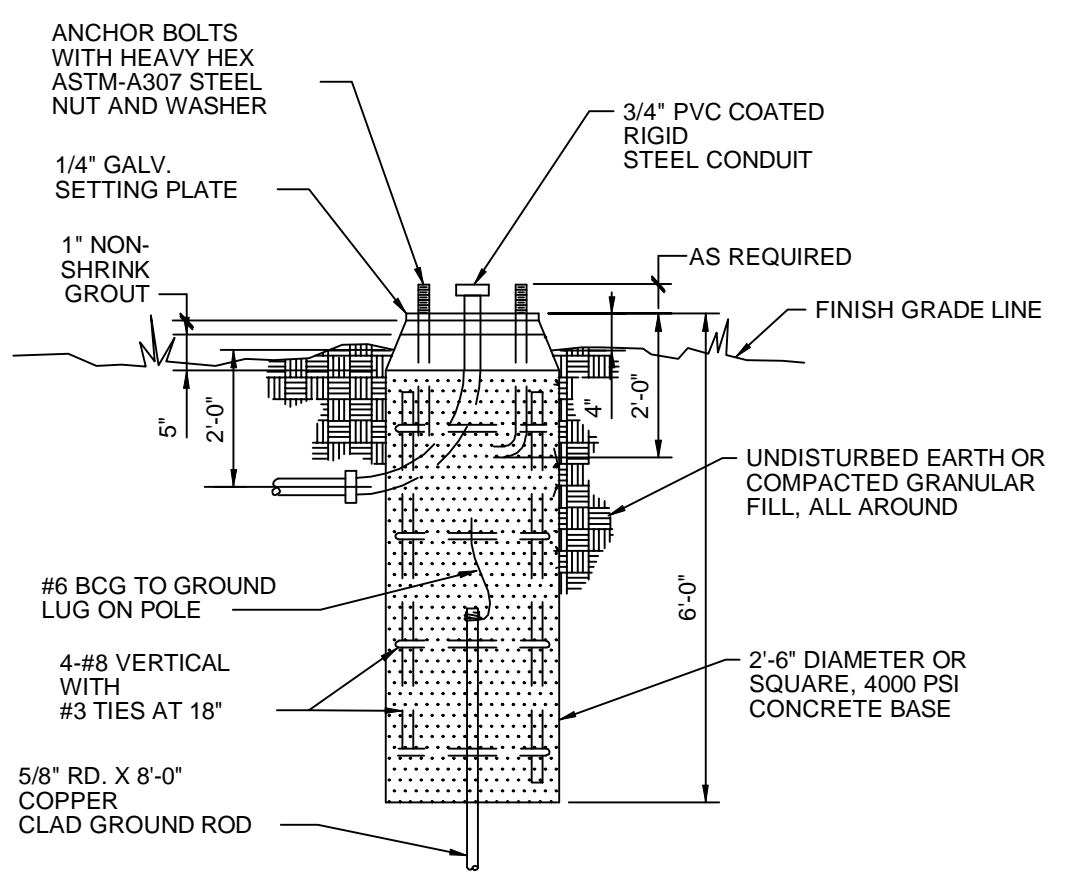
E602

LUMINAIRE SCHEDULE							
SYMBOL	DESCRIPTION	MOUNTING	LAMPS			MANUFACTURERS (OR EQUAL)	
			NO.	WATTAGE	TYPE	NAME	MODEL OR SERIES
	60 HIGH BRIGHTNESS LED'S 30' POLE-MOUNTED SHOEBOX FLOODLIGHT SITE LIGHT	POLE	60	140W	LED	SPAULDING	CL1-A-60L-U-5K-4-DB AND SSS-30-60-A2-DB
	60 HIGH BRIGHTNESS LED'S WALL-MOUNTED SHOEBOX FLOODLIGHT SITE LIGHT	SURFACE	60	140W	LED	SPAULDING	CL1-A-60L-U-5K-4-DB
	25-DEGREE STANCHION MOUNT WITH GLOBE & GUARD, HAZARDOUS LOCATION	STANCHION CATWALK	-	18.7W	LED	HUBBELL	VP2-V8LU15-VL15G
	25-DEGREE STANCHION MOUNT WITH GLOBE & GUARD, HAZARDOUS LOCATION	STANCHION FLOOR	-	18.7W	LED	HUBBELL	VP2-V8LU15-VL15G
	EXTERIOR CAST ALUMINUM WALL PACK, WITH GLASS REFRACTOR, BRONZE FINISH WITH PHOTOCCELL	SURFACE	9	21W	LED	HUBBELL	LNC-9LU-5K-4-1
	HIGH BAY FIXTURE WITH POWER HOOK ASSEMBLY	PENDANT	-	90W	LED	LEDALUX	PGLED-90-60-T5-120/277-BZ
	WET LOCATION, NEMA 4X ENCLOSURE, DIE-CAST ALUMINUM HOUSING, WHITE, NI-CAD BATTERY	SURFACE	-	3.2W	LED	DUAL LITE	SEWLDWRWE-4X
	EMERGENCY LIGHT UNIT, WALL MOUNTED, SEALED & GASKETED, NEMA 4X ENCLOSURE, TIME DELAY	SURFACE	4	30W	LED	DUAL LITE	PG-W

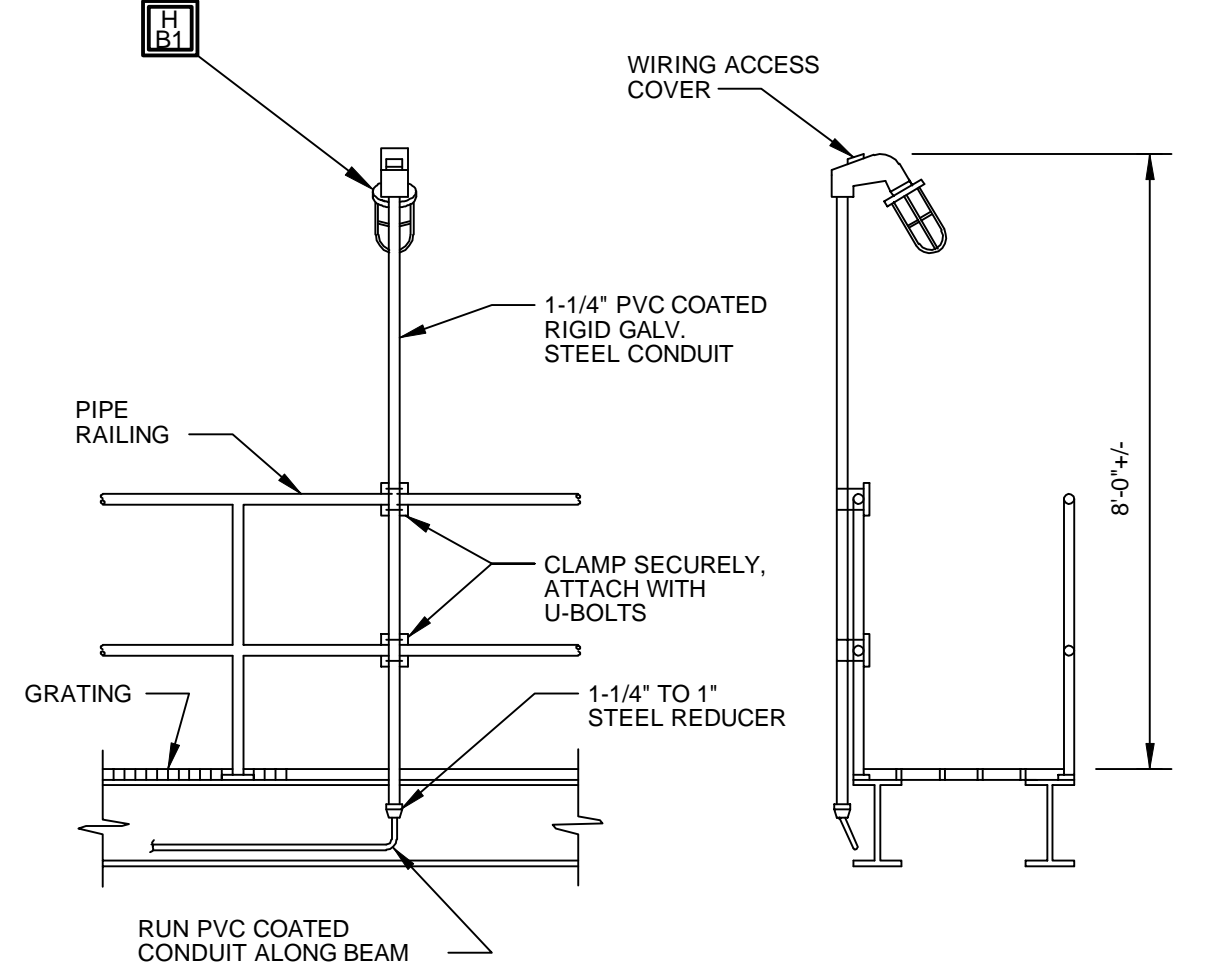
NOTE:
PROPOSED LIGHT FIXTURES SHOWN IN LUMINAIRE SCHEDULE ABOVE SHALL BE CONTROLLED VIA THE PLC. PROVIDE
CONDUIT AND WIRE & UPDATE PROGRAMMING AS NECESSARY TO CONTROL LIGHTS VIA THE PLC.



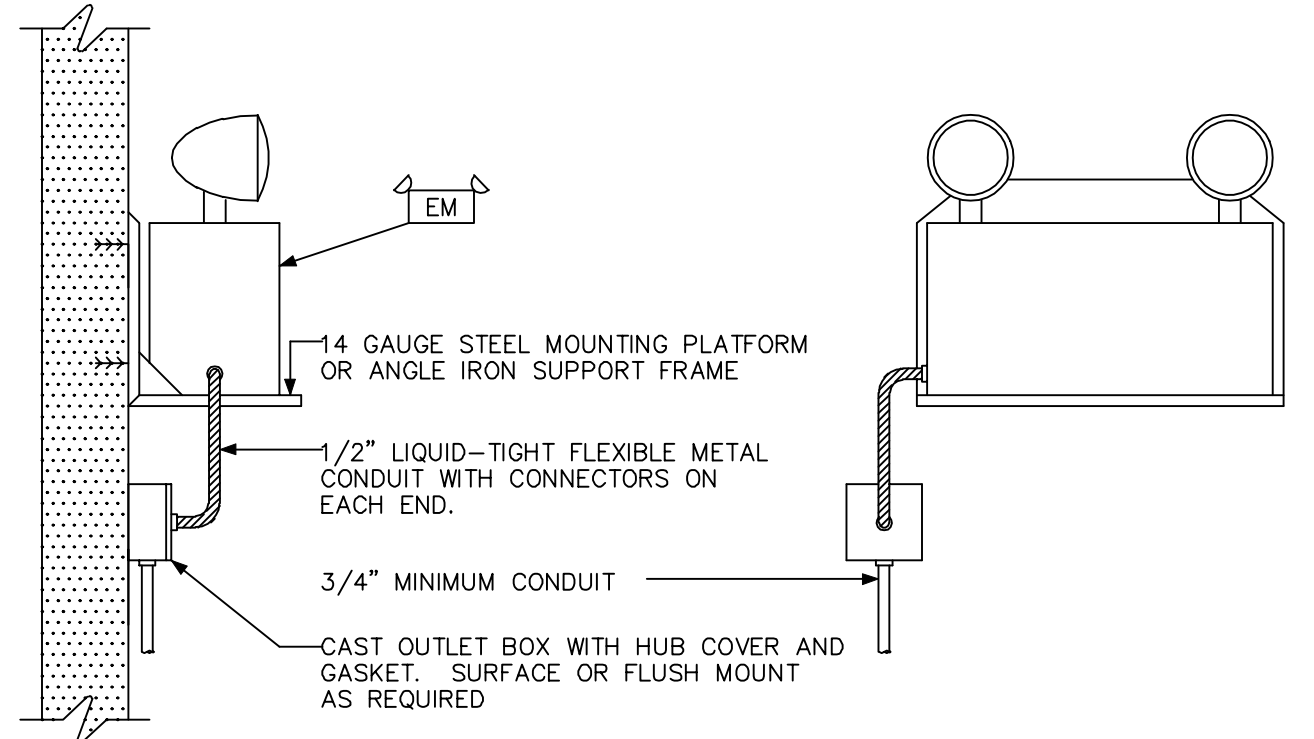
TYPICAL YARD LIGHTING DETAIL
NO SCALE



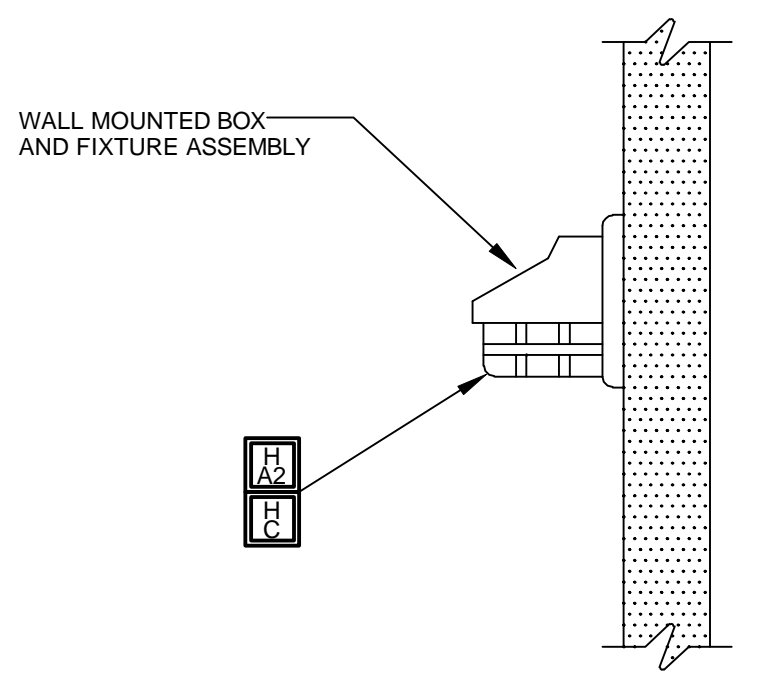
TYPICAL LIGHT STANDARD FOUNDATION DETAIL
NO SCALE FOR 30' NOMINAL HEIGHT LUMINAIRE



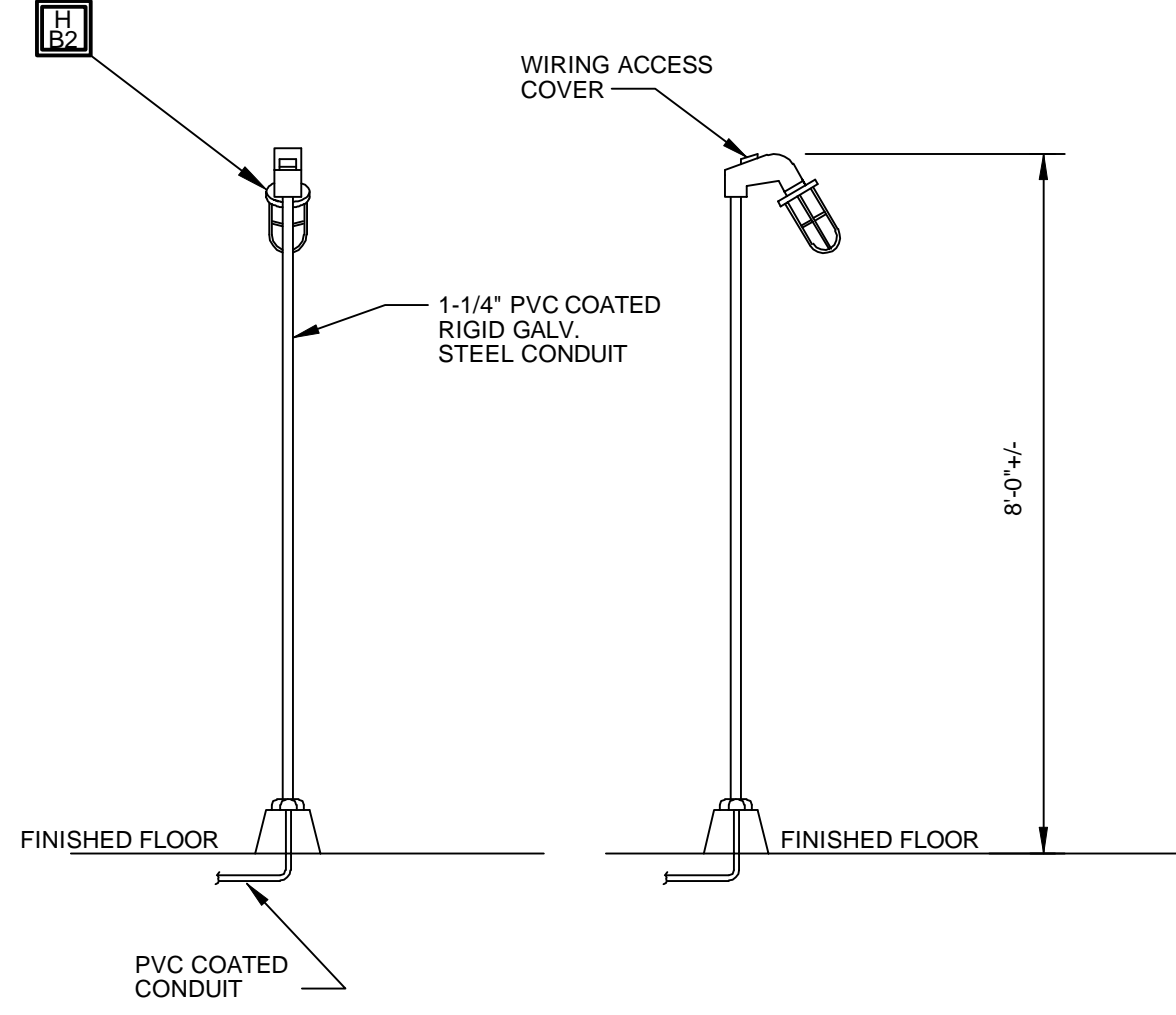
**STANCHION MOUNTED LIGHTING DETAIL
FOR TANK BRIDGES & CATWALK**
NO SCALE



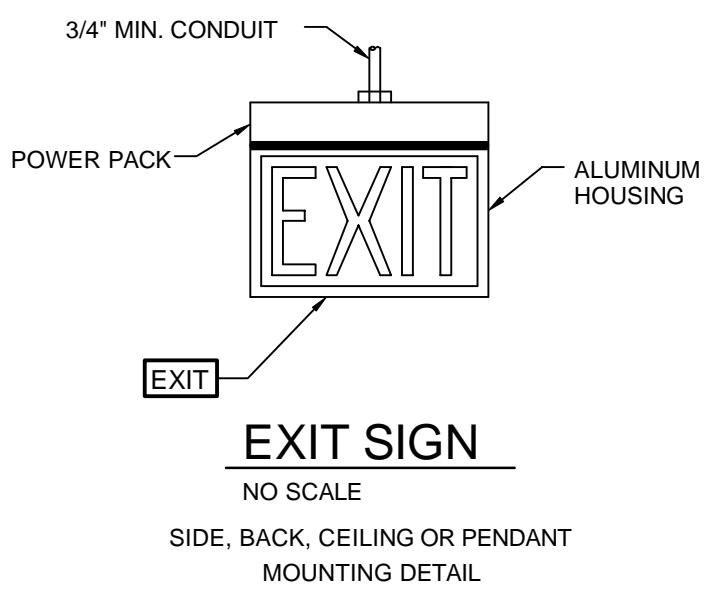
EMERGENCY LIGHT MOUNTING DETAIL
NO SCALE



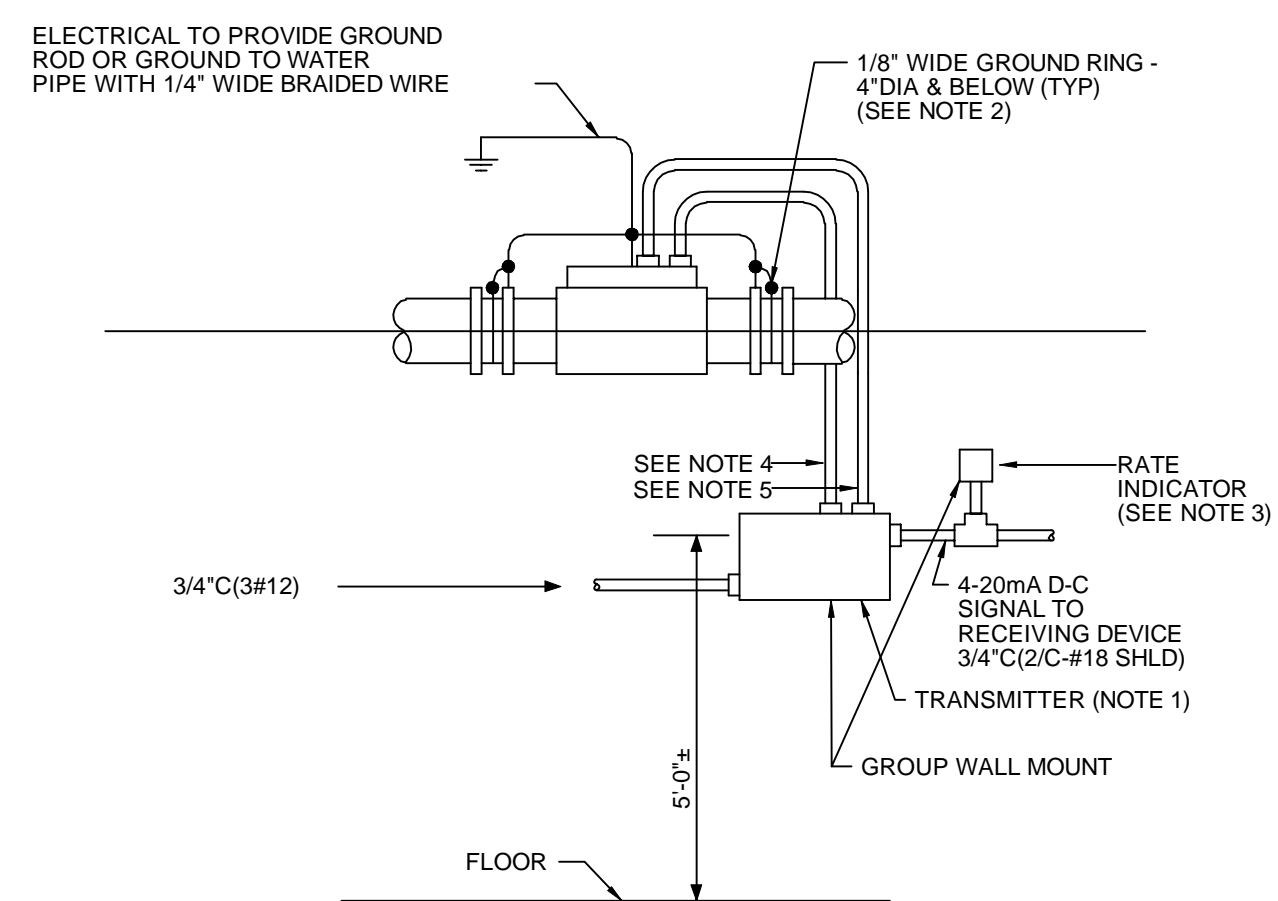
**VAPORTIGHT OR WEATHERPROOF
WALL MOUNTING FIXTURE**
NO SCALE



FLOOR MOUNTED LIGHTING DETAIL
NO SCALE

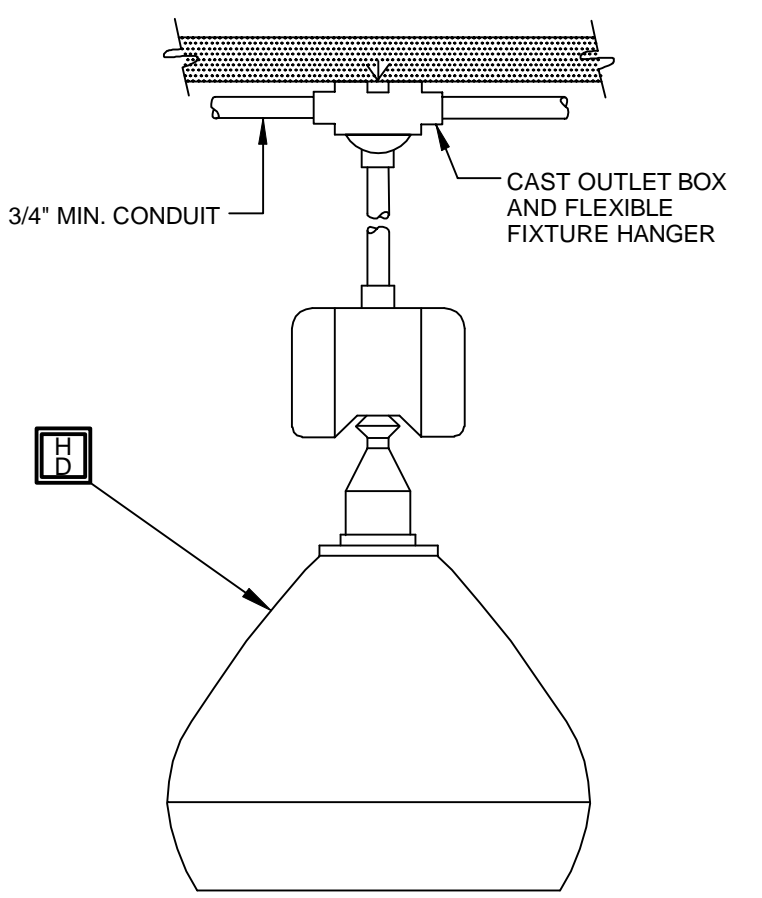


EXIT SIGN
NO SCALE
SIDE, BACK, CEILING OR PENDANT
MOUNTING DETAIL



- NOTES:
1. LOCATION FOR TRANSMITTERS NOT INTEGRALLY MOUNTED ON THE FLOW METER.
 2. GROUND MAGMETER AS INSTRUCTED BY THE VENDOR.
 3. INSTALL SEPARATELY MOUNTED INDICATOR, NOT REQUIRED ON INDICATING WALL MOUNTED TRANSMITTERS.
 4. POWER WIRING, 3/4"C(4#12) OR AS SUPPLIED BY MANUFACTURER.
 5. SIGNAL WIRING, 3/4"C(6/C-#18SHLD.) OR AS SUPPLIED BY MANUFACTURER.

MAGNETIC FLOW METER INSTALLATION
NO SCALE SEE "DEVICE BOX CONDUIT DETAIL" FOR INSTALLATION



HIGH BAY MOUNTING DETAIL
NO SCALE

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MARK	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
ELECTRICAL DETAILS

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

E603

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Bar Measures 1 inch

GRAPHIC SYMBOL FOR INSTRUMENTATION ITEMS

	DEVICE MOUNTED ON PANEL		CONTROL RELAY CONTACT-NORMALLY OPEN
	BOARD OR PANEL MOUNTED DEVICE- DEVICE MOUNTED INSIDE PANEL		CONTROL RELAY CONTACT-NORMALLY CLOSED
	FIELD OR LOCALLY MOUNTED DEVICE		LIGHTNING ARRESTOR
	PROGRAMMED FUNCTION NOT NORMALLY ACCESSIBLE TO OPERATOR		ELAPSED TIME INDICATOR
	PROGRAMMED FUNCTION ACCESSIBLE THROUGH OPERATOR'S INTERFACE DEVICE		TIMING RELAY COIL
	COMPUTER SYSTEM INPUT OR OUTPUT POINT		TIMED RELAY COIL (OFF-DELAY)
	INTERLOCKING		INDICATING LIGHT
	EXCLUSIVE OR		PUSH-TO-TEST INDICATING LIGHT
	ALTERNATOR		BATTERY
	OR		SECONDARY TRANSFORMER
	AND		VARIABLE RESISTOR
	MOTOR STARTER		RESISTOR
	PURGE		MOLDED CASE CIRCUIT BREAKER
	COMPLEX LOGIC		SPEED SWITCH
	COMPUTER LOGIC SYSTEM		MOMENTARY PUSHBUTTON OPERATOR- NORMALLY CLOSED
	TERMINAL OR TRANSITION POINT		MOMENTARY PUSHBUTTON OPERATOR- NORMALLY OPEN
	FLOAT SWITCH		SELECTOR SWITCH-NORMALLY OPEN
	PARSHALL FLUME		PUSHBUTTON OPERATOR WITH MUSHROOM HEAD
	MIXER		SOLENOID OR CLUTCH
	SEAL		THERMAL OVERLOAD
	OFF PAGE CONNECTOR		A-C SURGE PROTECTOR
	PROCESS MACHINERY MOTOR		HORN
	VENTURI OR INSERT FLOW TUBE		FIELD LOCATED
	IN-LINE FLOW ELEMENT (PROPELLER TYPE)		TERMINAL POINT
	IN-LINE FLOW ELEMENT (MAGNETIC TYPE)		TERMINAL POINT ARROW
	IN-LINE FLOW ELEMENT (ULTRA SONIC)		LOW VOLTAGE FUSE
	FLOW ORIFICE		CIRCUIT BREAKER WITH STAB CONNECTION
	TURBIDIMETER		CONTROL POWER TRANSFORMER
	ROTAMETER		TWO COIL LATCHING RELAY
	PUMP		RECEPTACLE
	BLOWER		
	GENERAL USE DISCONNECTING SWITCH		SELECTOR SWITCH OPERATOR WITH FUNCTION SHOWN
	TIMED CLOSED CONTACT ON ENERGIZATION		
	TIMED OPEN CONTACT ON ENERGIZATION		MAINTAINED PUSH-PULL OPERATOR
	TIMED OPEN CONTACT ON DE-ENERGIZATION		
	TIMED CLOSED CONTACT ON DE-ENERGIZATION		MAINTAINED STOP-START PUSHBUTTON OPERATOR
	FLOAT ACTUATED SWITCH-NO		
	FLOAT ACTUATED SWITCH-NC		DIODE RECTIFIER OR D-C SURGE PROTECTOR
	PRESSURE ACTUATED SWITCH-NC		DIGITAL INPUT
	PRESSURE ACTUATED SWITCH-NO		DIGITAL OUTPUT
	FLOW ACTUATED SWITCH-NO		ANALOG OUTPUT
	FLOW ACTUATED SWITCH-NC		ANALOG OUTPUT
	TEMPERATURE SWITCH-NO		
	TEMPERATURE SWITCH-NC		
	LIMIT SWITCH - NORMALLY OPEN		
	LIMIT SWITCH - NORMALLY OPEN - HELD CLOSED		
	LIMIT SWITCH - NORMALLY CLOSED - HELD OPEN		
	LIMIT SWITCH - NORMALLY CLOSED		

GRAPHIC SYMBOLS FOR VALVES

SYMBOL	DESCRIPTION
	STROKE OR POSITION ACTUATOR CYLINDER (OPEN-SHUT)
	STROKE OR POSITION ACTUATOR CYLINDER (THROTTLING)
	PNEUMATIC DIAPHRAGM OR POSITIONER (OPEN-SHUT)
	PNEUMATIC DIAPHRAGM OR POSITIONER (THROTTLING)
	MOTOR OPERATED (THROTTLING)
	MOTOR OPERATED (OPEN-SHUT)
	SLIDE-STOP GATE
	SLUICE GATE
	AIR SET ASSEMBLY
	BALL VALVE
	GLOBE VALVE
	GATE VALVE OR KNIFE GATE
	CHECK VALVE
	PLUG VALVE
	BUTTERFLY VALVE, DAMPER OR LOUVER
	TWO-WAY SOLENOID VALVE OPERATOR
	ELECTRONICALLY CONTROLLED CHECK VALVE
	TWO-WAY SOLENOID VALVE OPERATOR-DETENTED
	THREE-WAY SOLENOID VALVE OPERATOR
	FOUR-WAY SOLENOID VALVE OPERATOR

ABBREVIATIONS

SYMBOL	DESCRIPTION
R	RESET
T	TRIP
AS	AIR SUPPLY
DO	DISSOLVED OXYGEN
GS	GAS SUPPLY
HS	HYDRAULIC SUPPLY
NS	NITROGEN SUPPLY
ORP	OXYGEN REDUCTION POTENTIAL
SS	STEAM SUPPLY
SP	SET POINT
WS	WATER SUPPLY
PV	PROCESS VARIABLE
F.O.	FAIL OPEN
F.C.	FAIL CLOSE
%	GAIN OR PROPORTIONAL CONTROL
/	INTEGRAL OR RESET CONTROL
d	DERIVATIVE OR RATE CONTROL
v	VELOCITY ALGORITHM
1-0	ON-OFF CONTROL
√	SQUARE ROOT EXTRACTOR
ε	ADD OR TOTALIZE
Δ	SUBTRACT OR DIFFERENCE
>	HIGHEST MEASURED VARIABLE
<	LOWEST MEASURED VARIABLE
E/I, I/P	CONVERT ONE TO ANOTHER
X, ÷	MULTIPLY, DIVIDE
BIAS	BIAS OR REVERSING
f(x)	CHARACTERIZE - (EQUATION / D/%/ETC.)

INSTRUMENTATION LINE SYMBOLS

SYMBOL	DESCRIPTION
	ELECTRICAL SIGNAL
	AIR LINE
	HYDRAULIC SIGNAL
	ELECTROMAGNETIC OR SONIC SIGNAL
	SOFTWARE SIGNAL
	CONNECTION TO PROCESS, OR MECHANICAL LINK

I.S.A. STANDARD LETTER FUNCTIONS

SYMBOL	FIRST LETTER	SUCCEEDING LETTERS
A	ANALYSIS, ANALOG	ALARM
B	BURNER, FLAME	BATCH
C	CONDUCTIVITY, COMMAND	CONTROL (FEEDBACK TYPE)
D	DENSITY, SPECIFIC GRAVITY	
E	VOLTAGE	PRIMARY ELEMENT
F	FLOW RATE	RATIO
G	GAGING	GLASS
H	HAND, MANUAL	HIGH
I	CURRENT	INDICATE
J	POWER	SCAN
K	TIME, TIME SCHEDULE	CONTROL (NO FEEDBACK)
L	LEVEL, LIGHT	LOW
M	MOISTURE, HUMIDITY	MIDDLE, MODULATE
N		
O	OVERLOAD	ORIFICE
P	PRESSURE, VACUUM	POINT
Q	QUANTITY	TOTALIZE, INTEGRATE
R	RADIOACTIVITY	RECORD, PRINT, RECEIVE
S	SPEED, FREQUENCY, SOLENOID	SWITCH
T	TEMPERATURE, TURBIDITY	TRANSMIT, TRANSFORM
U	MULTIVARIABLE	MULTIFUNCTION
V	VIBRATION, VISCOSITY	VALVE, DAMPER, LOUVER
W	WEIGHT, FORCE	
X		
Y		RELAY, COMPUTE
Z	POSITION	DRIVE, ACTUATE

GENERAL NOTES:

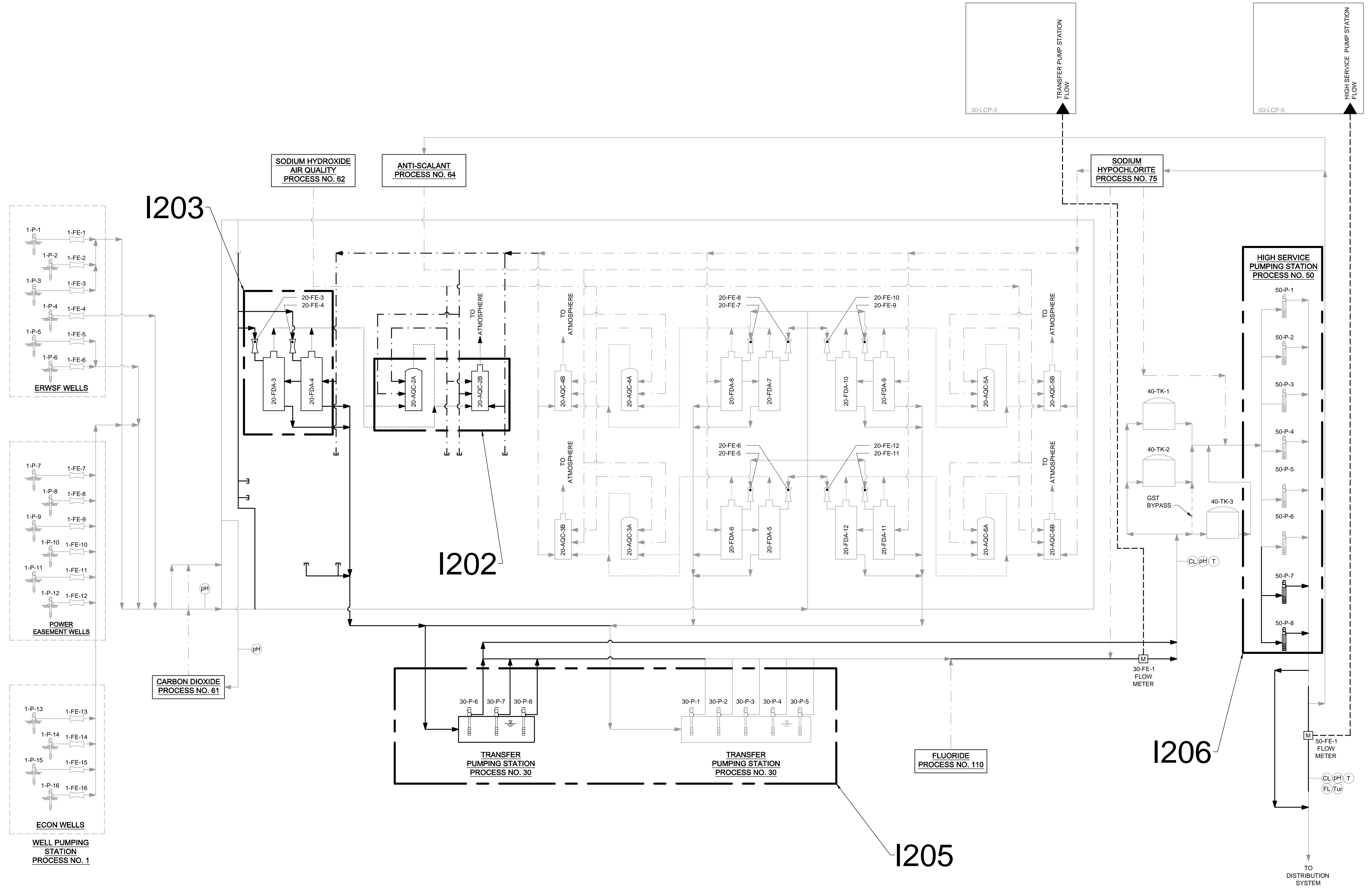
- ONE (1) SYSTEM INTEGRATOR SHALL BARE THE FULL RESPONSIBILITY FOR INTEGRATING ALL NEW CONTROLS INTO EXISTING SCADA NETWORK. MULTIPLE SYSTEM INTEGRATORS RESPONSIBLE FOR INDIVIDUAL PORTIONS SHALL BE PROHIBITED. SYSTEM INTEGRATOR & ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS, INCLUDING BUT NOT LIMITED TO, CONTROL PANELS, CONDUIT & WIRE FOR A FULLY FUNCTIONAL SYSTEM. SYSTEM INTEGRATOR SHALL BE RESPONSIBLE FOR INTEGRATING INDIVIDUAL CONTROL PANELS FROM EQUIPMENT PROVIDERS.
- ALL EXTERIOR PANELS SHALL HAVE SUN SHADES.
- PROVIDE AS-BUILTS OF ALL I/O LAYOUTS AFTER ADDED WIRES COMPLETED IN FIELD.

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Project No.:	200-10034-11005
Designed By:	BRW
Drawn By:	BRW
Checked By:	BRW

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OVERALL PROCESS AND INSTRUMENTATION DIAGRAM

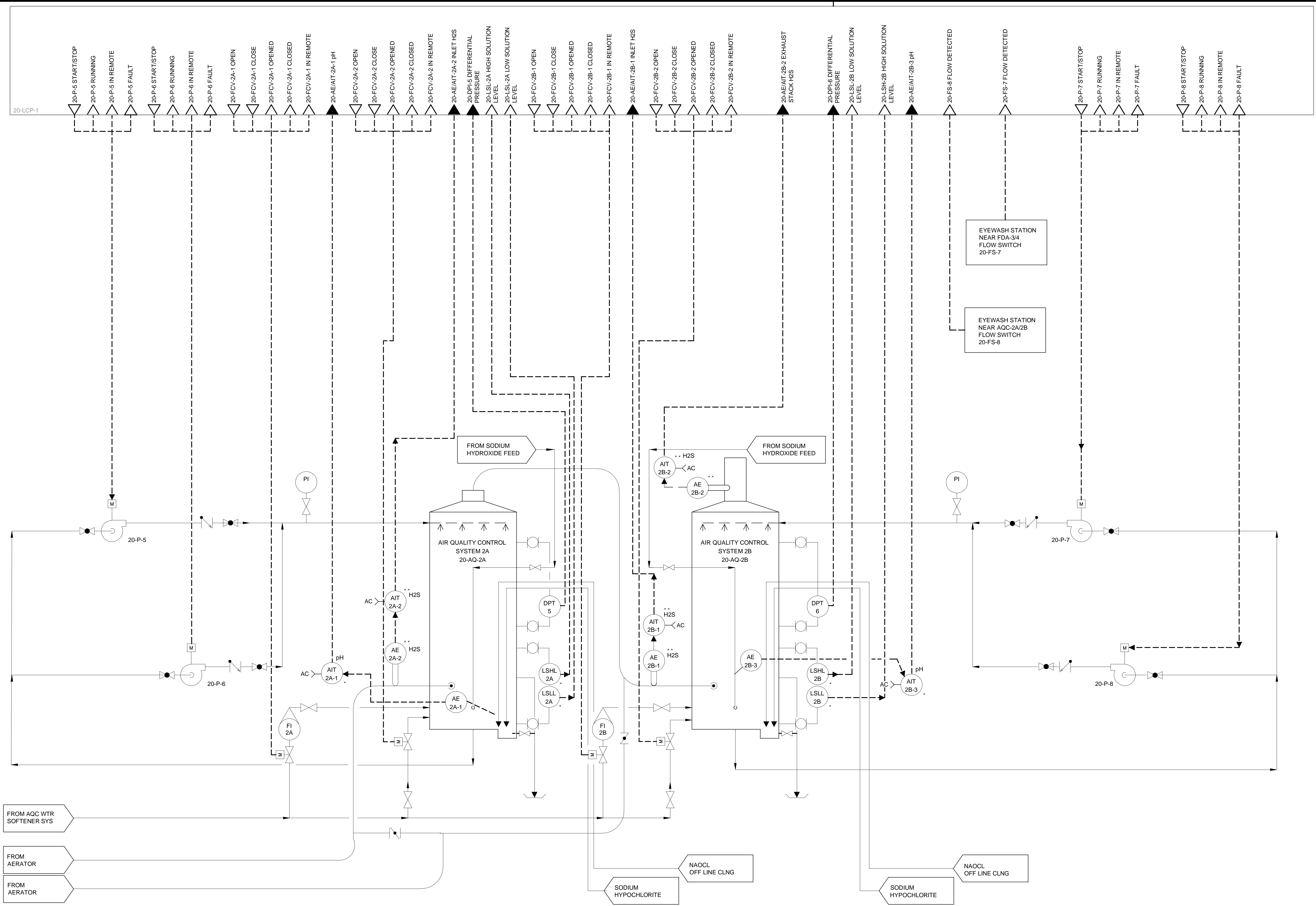
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I201

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Bar Measures 1 inch

OVERALL PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS

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PROCESS 20 AQC PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS

* DENOTES EQUIPMENT FURNISHED WITH THE AQC'S.
** DENOTES FIELD DEVICE IS WITH IN VAPEX UNIT.

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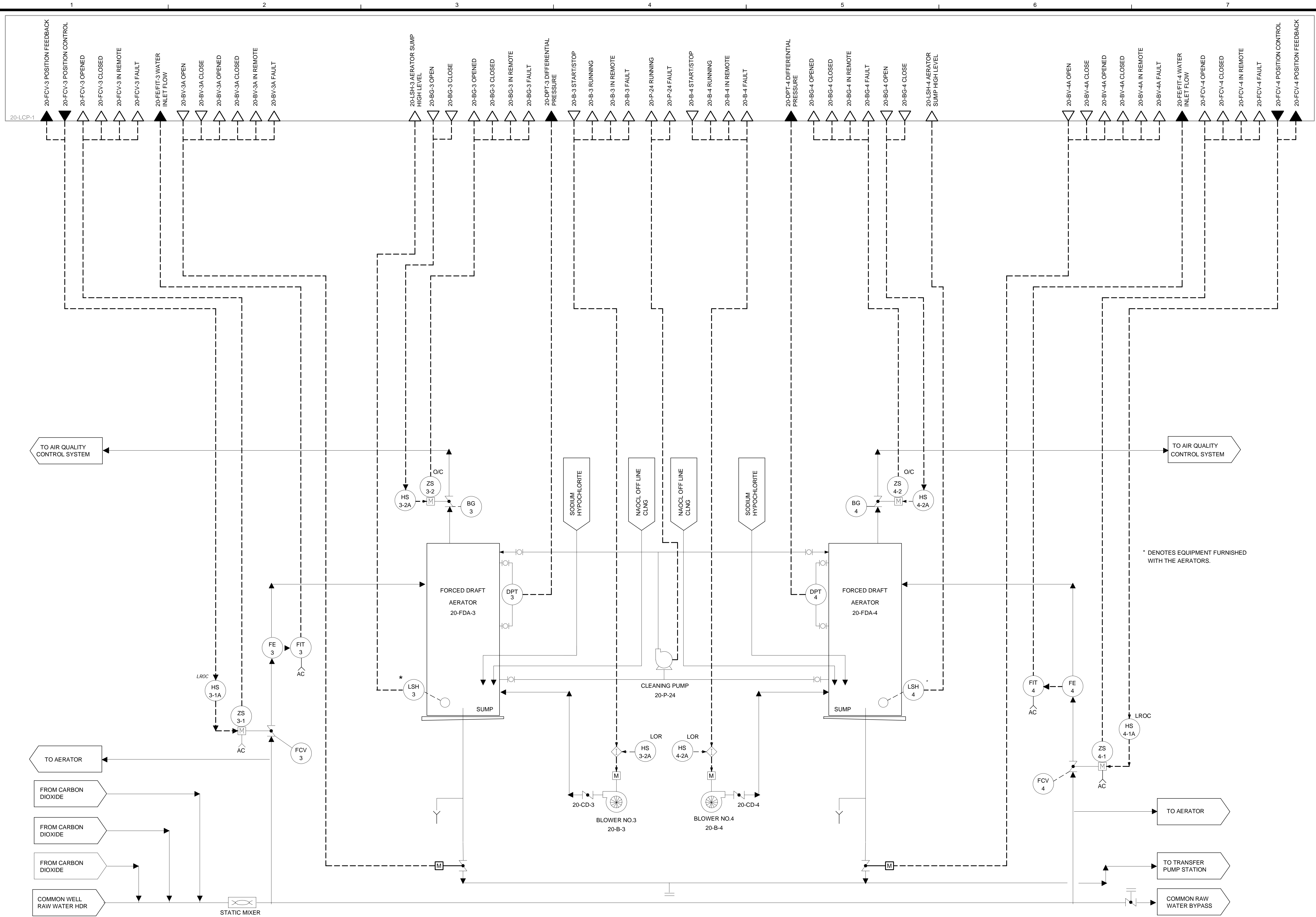
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IMPROVEMENTS - PHASE 3B
**PROCESS 20 AQC
PROCESS AND INSTRUMENTATION
DIAGRAM**

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

1202

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PROCESS 20 FDA PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS



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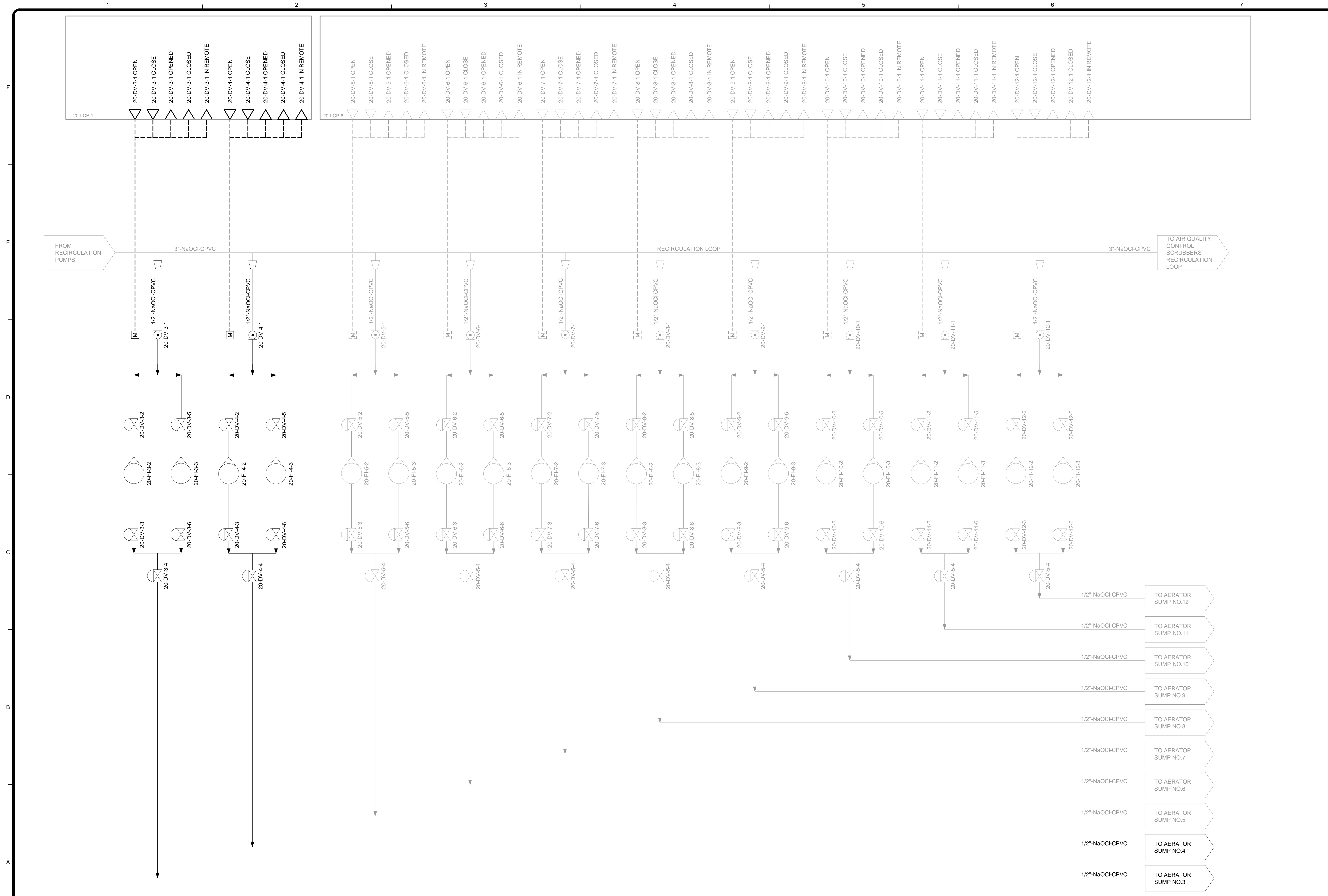
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PROCESS 20 FDA
PROCESS AND INSTRUMENTATION
DIAGRAM

Project No.: 200-10034-11005
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1203

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PROCESS 20 PROCESS AND INSTRUMENTATION DIAGRAM
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IMPROVEMENTS - PHASE 3B
PROCESS 20
PROCESS AND INSTRUMENTATION
DIAGRAM

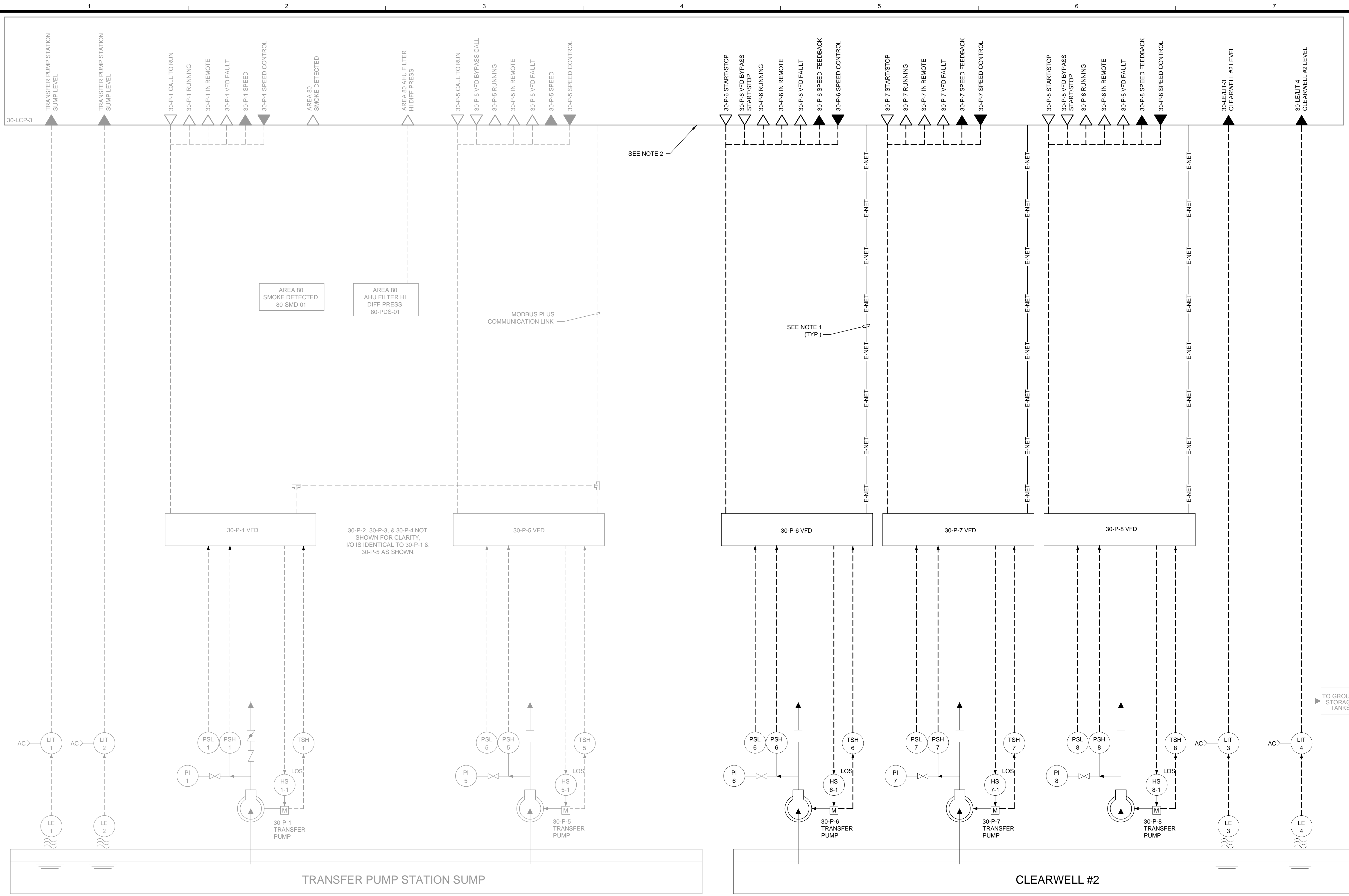
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1204

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Bar Measures 1 inch

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PROCESS 30 PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS

- NOTES:**
1. PROVIDE 1" (CAT-5E) FROM VFD TO NEW GARRETTCOM SWITCH. COORDINATE EXACT LOCATION OF GARRETTCOM SWITCH ENCLOSURE WITH OCU. PROVIDE A FULLY FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO, HARDWARE, SOFTWARE, CONDUIT, WIRE, CABLES, & PROGRAMMING. DIAGNOSTIC DATA INCLUDING PUMP KW SHALL BE COMMUNICATED OVER ETHERNET PROTOCOL & MUST BE COMPATIBLE WITH A QUANTUM PLC.
 2. PROVIDE NEW GARRETTCOM SWITCH AS NECESSARY FOR ADDITIONAL VFD AND POWER MONITOR EQUIPMENT. PROVIDE AIR GAP BETWEEN THE EXISTING AND NEW SWITCH IN THE RACK. ADD A CAT-5E JUMPER BETWEEN OLD AND NEW SWITCH.

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IMPROVEMENTS - PHASE 3B

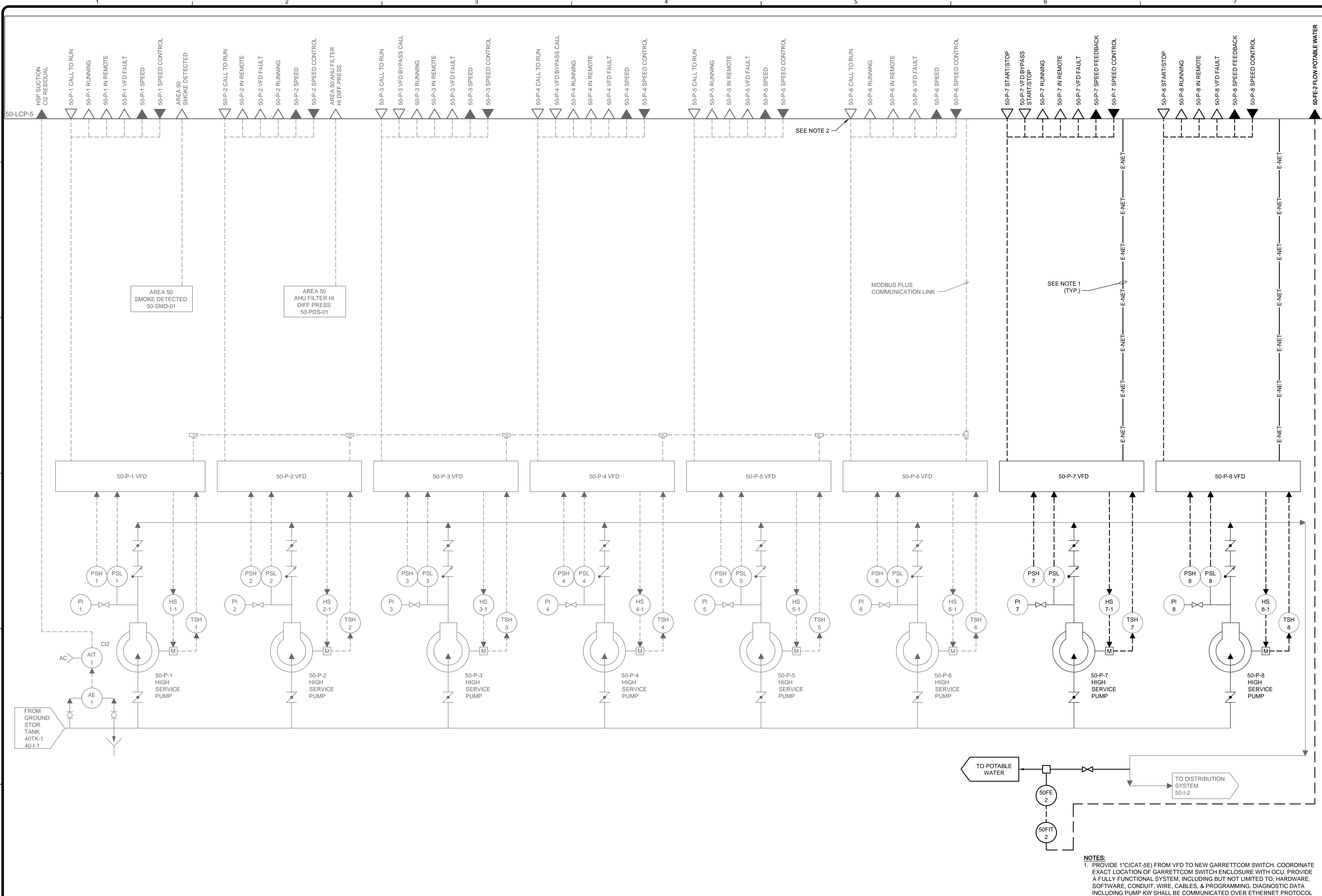
**PROCESS 30
PROCESS AND INSTRUMENTATION
DIAGRAM**

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

1205

Copyright: Tetra Tech
Bar Measures 1 inch

11/16/2017 12:46:09 PM - P:\JER10034\200-10034-11005\CAD\SHEETFILES\206 PROCESS 50 PROCESS AND INSTRUMENTATION DIAGRAM.DWG - EVANS_JON



PROCESS 50 PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS

- NOTES:**
- PROVIDE 1"(CAT-5E) FROM VFD TO NEW GARRETTCOM SWITCH. COORDINATE EXACT LOCATION OF GARRETTCOM SWITCH ENCLOSURE WITH OCU. PROVIDE A FULLY FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO, HARDWARE, SOFTWARE, CONDUIT, WIRE, CABLES, & PROGRAMMING. DIAGNOSTIC DATA INCLUDING PUMP KW SHALL BE COMMUNICATED OVER ETHERNET PROTOCOL & MUST BE COMPATIBLE WITH A QUANTUM PLC.
 - PROVIDE NEW GARRETTCOM SWITCH AS NECESSARY FOR ADDITIONAL VFD AND POWER MONITOR EQUIPMENT. PROVIDE AIR GAP BETWEEN THE EXISTING AND NEW SWITCH IN THE RACK. ADD A CAT-5E JUMPER BETWEEN OLD AND NEW SWITCH.

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BID SET

BY	DATE	DESCRIPTION

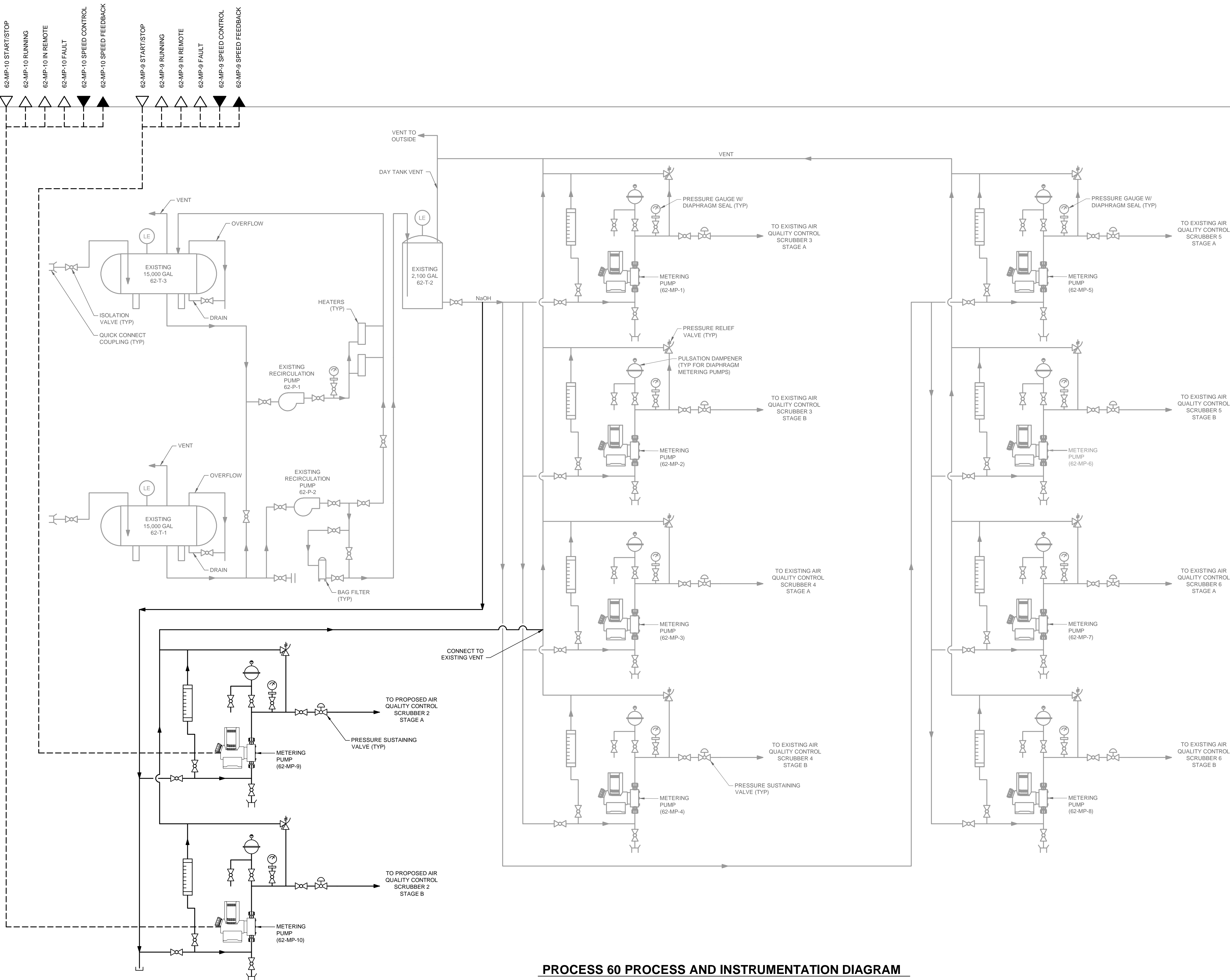
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 50
PROCESS AND INSTRUMENTATION
DIAGRAM

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

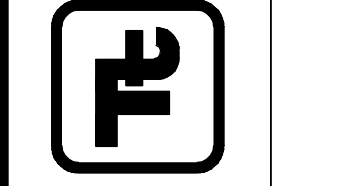
1206

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Bar Measures 1 inch

11/16/2017 12:46:32 PM - P:\I\ER10034\200-10034-1\1005\CAD\SHETS\1207 PROCESS 60 PROCESS AND INSTRUMENTATION DIAGRAM.DWG - EVANS_JON



PROCESS 60 PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS



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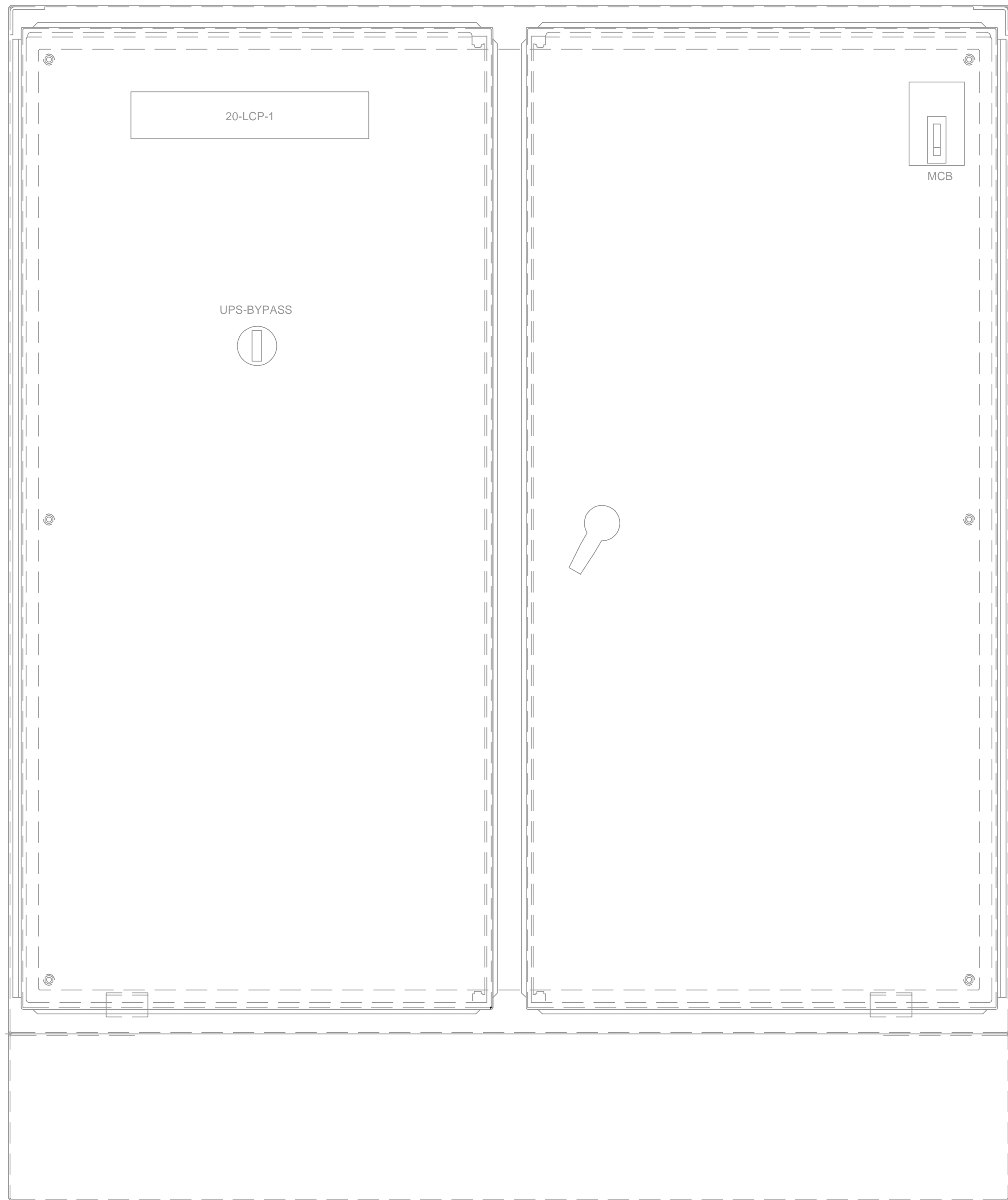
BY	DESCRIPTION	MARK	DATE

BY	DESCRIPTION	MARK	DATE

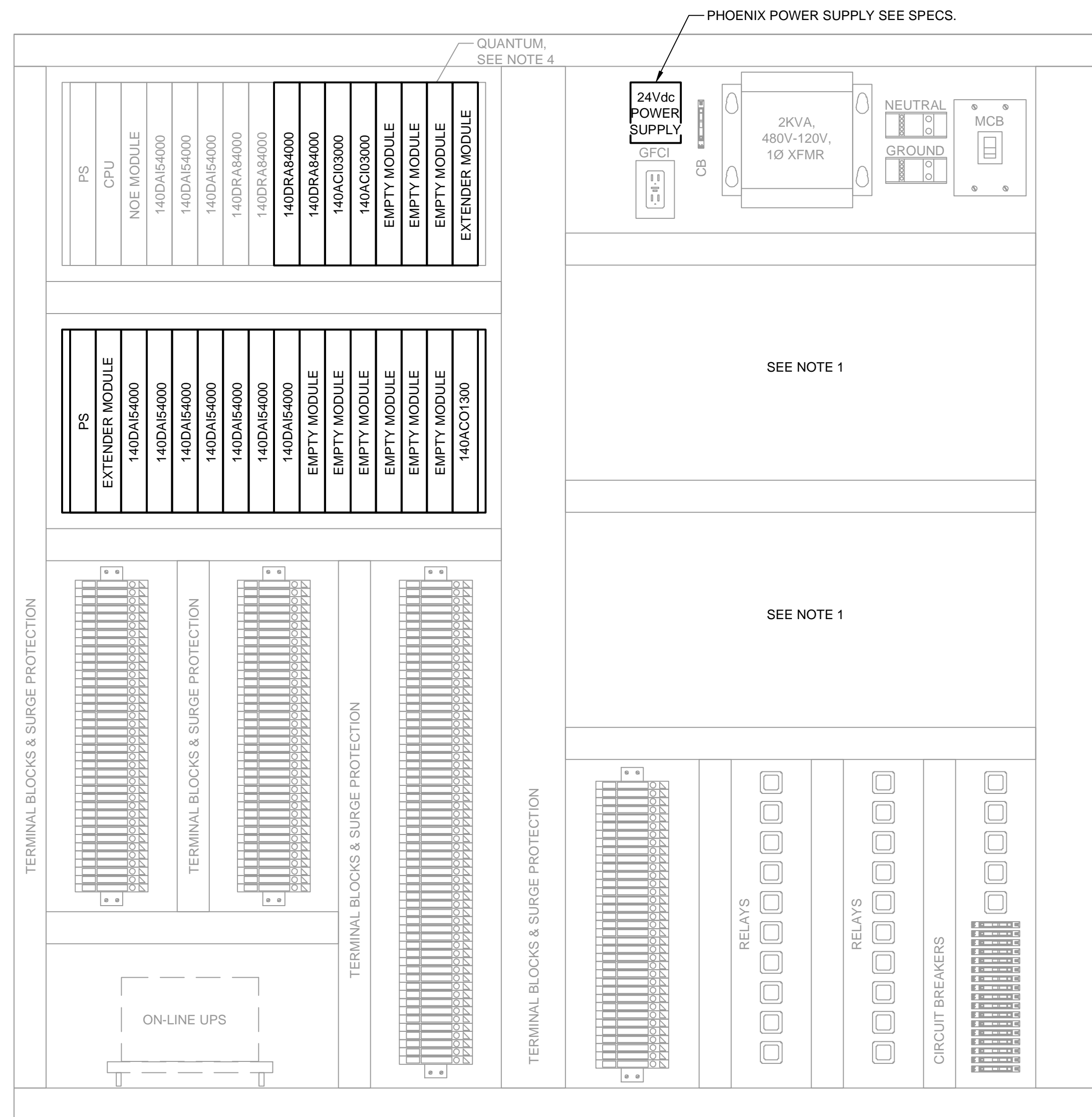
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
**PROCESS 60
PROCESS AND INSTRUMENTATION
DIAGRAM**

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

1207



20-LCP-1 CONTROL PANEL
NO SCALE



PROPOSED SUBPLATE LAYOUT
NO SCALE

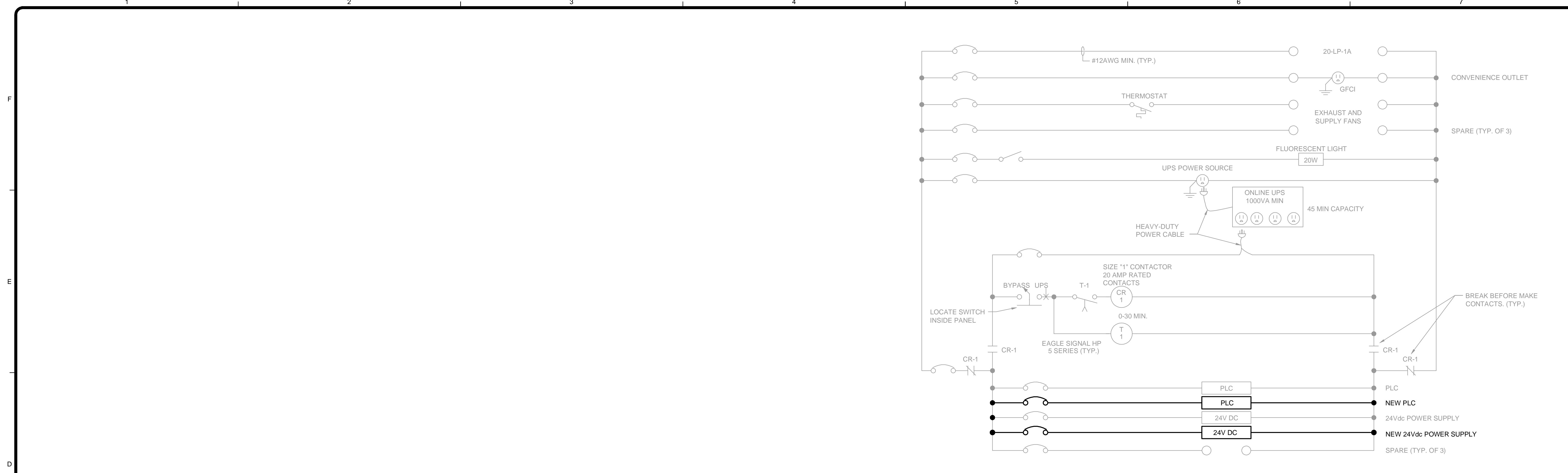
NOTES:
1. SPACE RESERVED FOR FUTURE 16 SLOT RACK.

BID SET

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
20-LCP-1
PROPOSED LAYOUT

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

1301



20-LCP-1 WIRING DIAGRAM
NO SCALE

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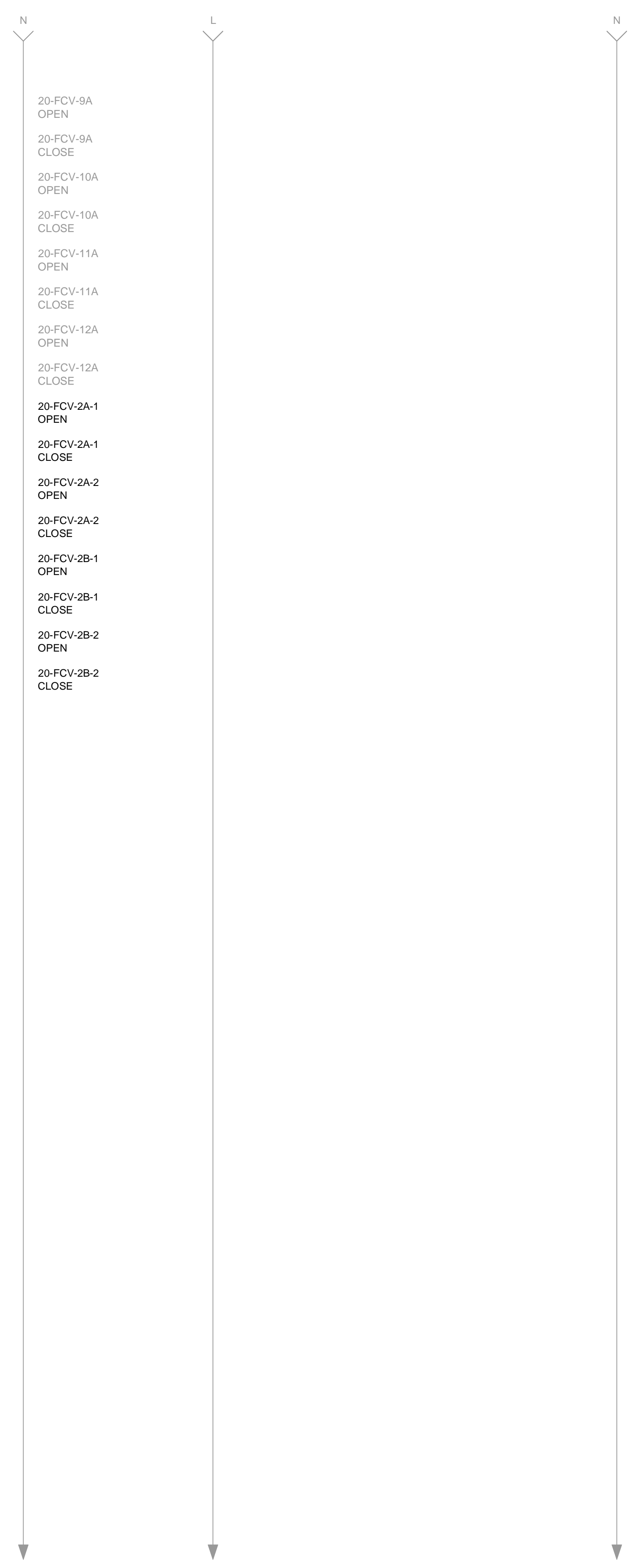
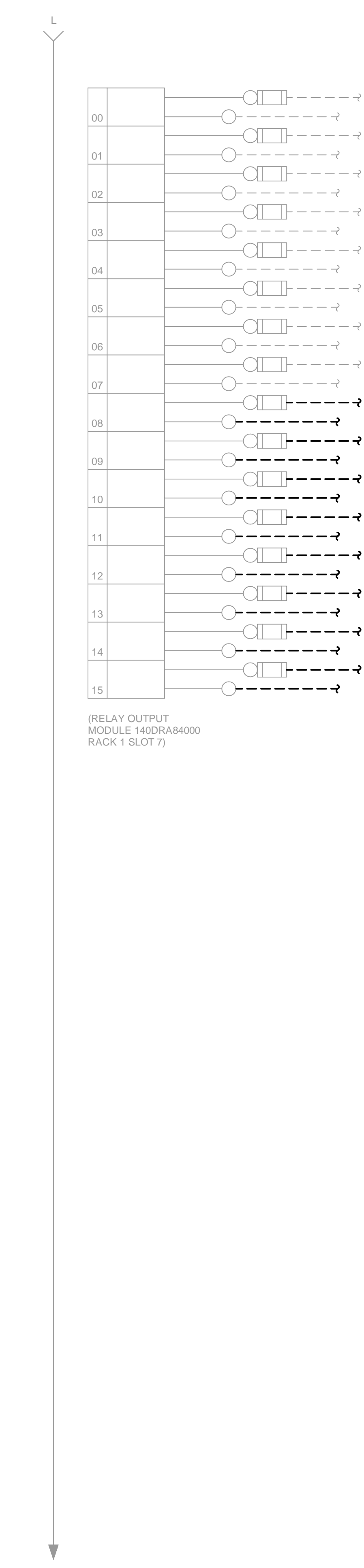
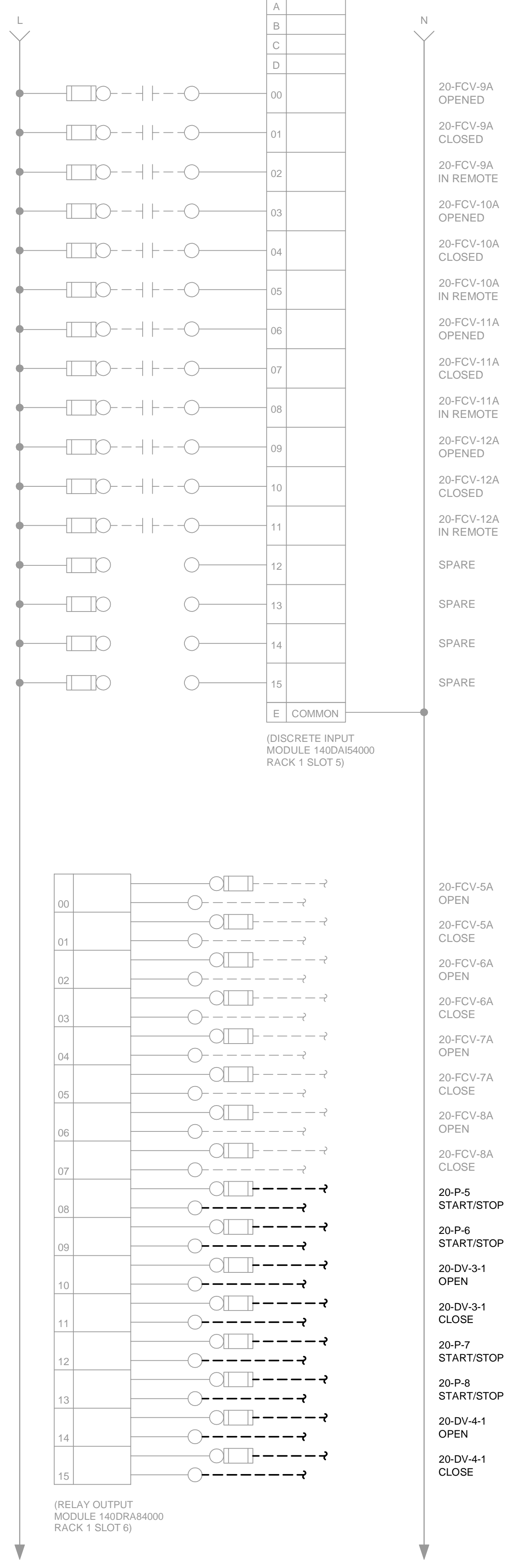
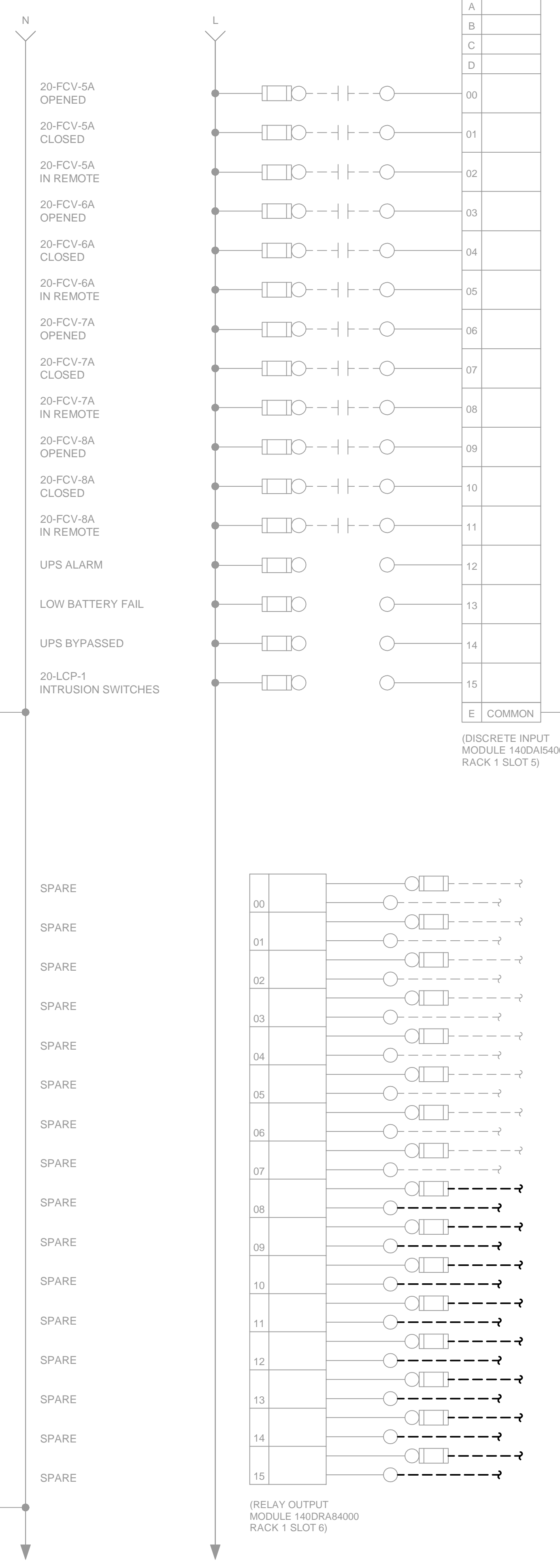
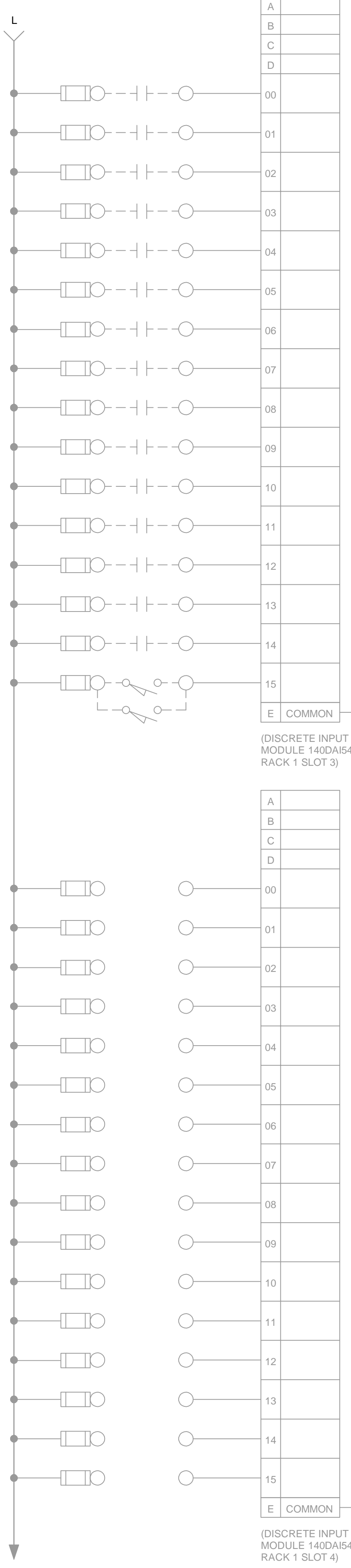
MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
20-LCP-1
WIRING DIAGRAM

Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

1302

11/16/2017 12:47:13 PM - P:\JER10034\200-10034-11005\CAD\DWG\FILES\I303 20-LCP-1 I/O LAYOUT.DWG - EVANS, JON



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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
20-LCP-1
I/O LAYOUT

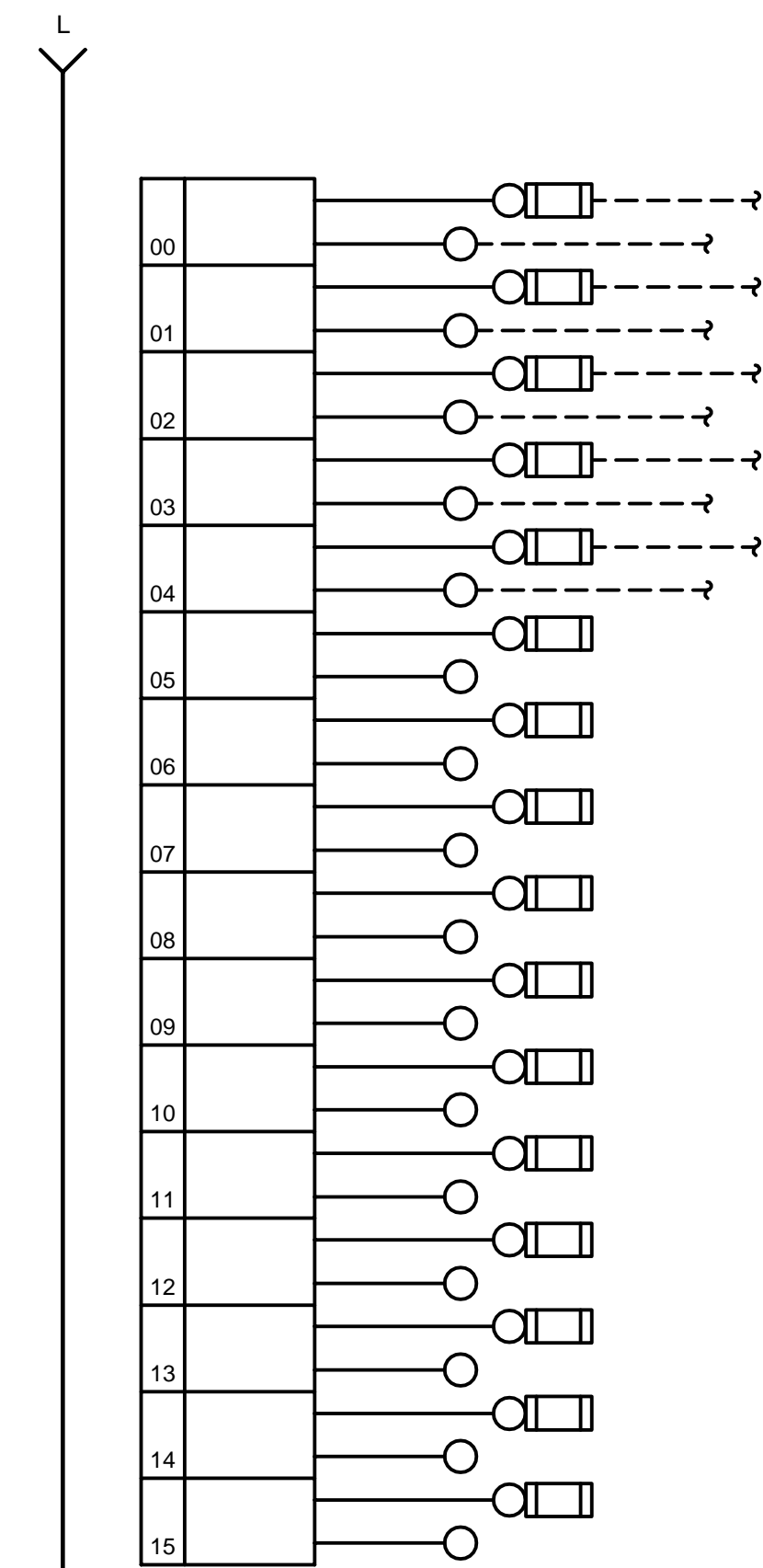
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Designed By: FWY
Drawn By: TAC
Checked By: WAP

20-LCP-1 I/O LAYOUT
SCALE: NTS

1303

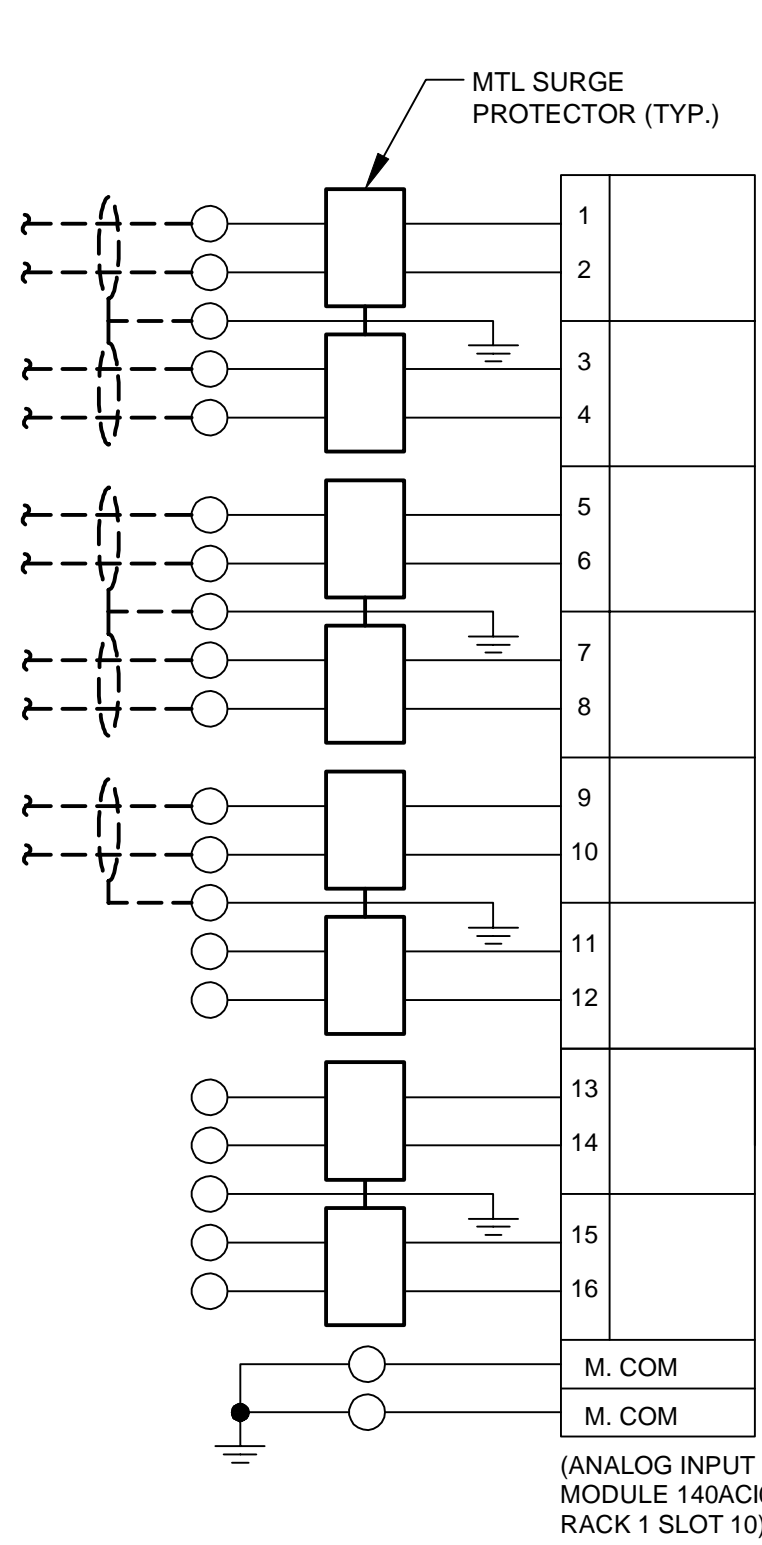
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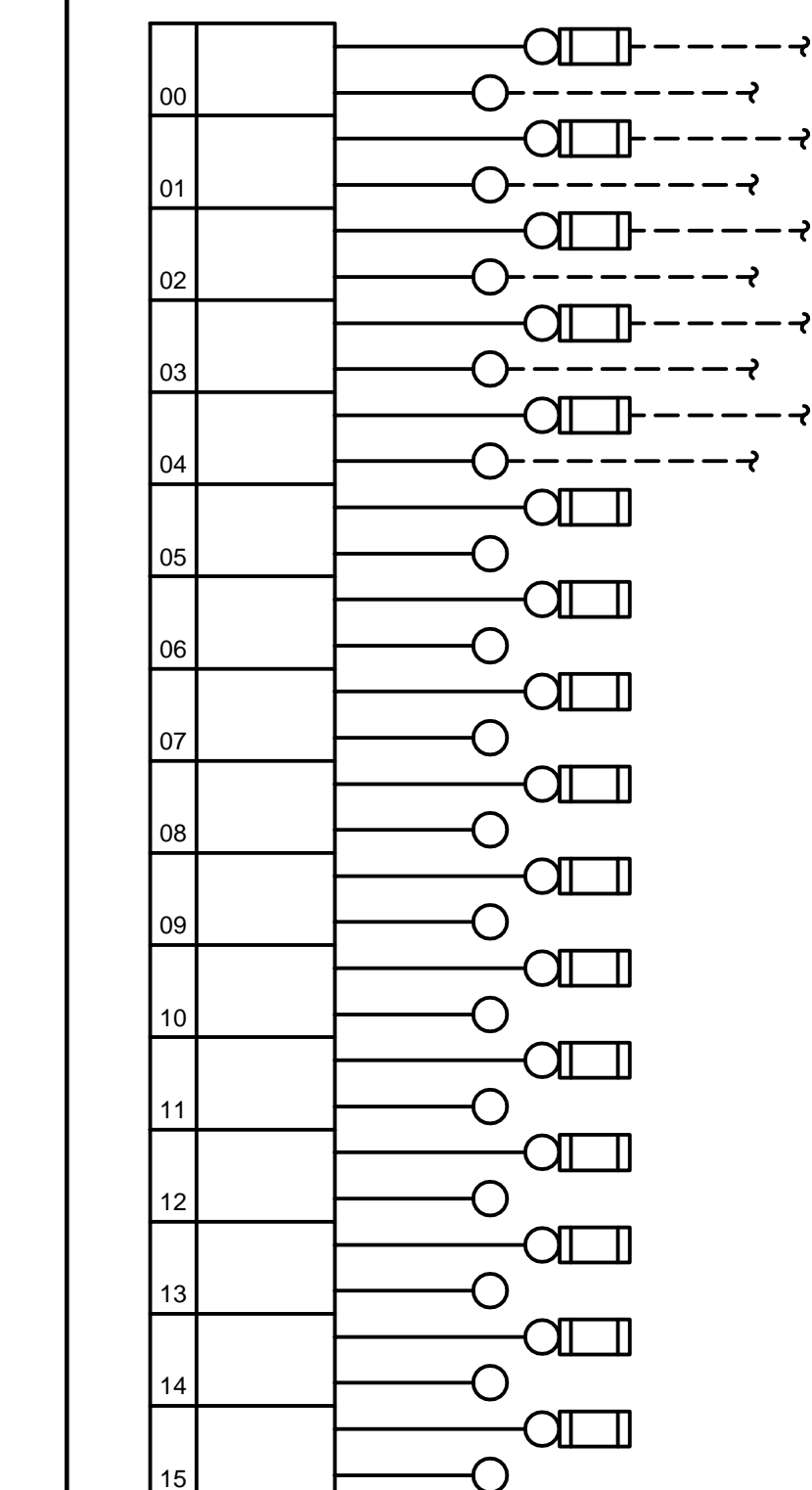
(RELAY OUTPUT
MODULE 140DRA84000
RACK 1 SLOT 8)

00 20-B-3
START/STOP
01 20-BG-3
OPEN
02 20-BG-3
CLOSE
03 20-BV-3A
OPEN
04 20-BV-3A
CLOSE
05 SPARE
06 SPARE
07 SPARE
08 SPARE
09 SPARE
10 SPARE
11 SPARE
12 SPARE
13 SPARE
14 SPARE
15 SPARE



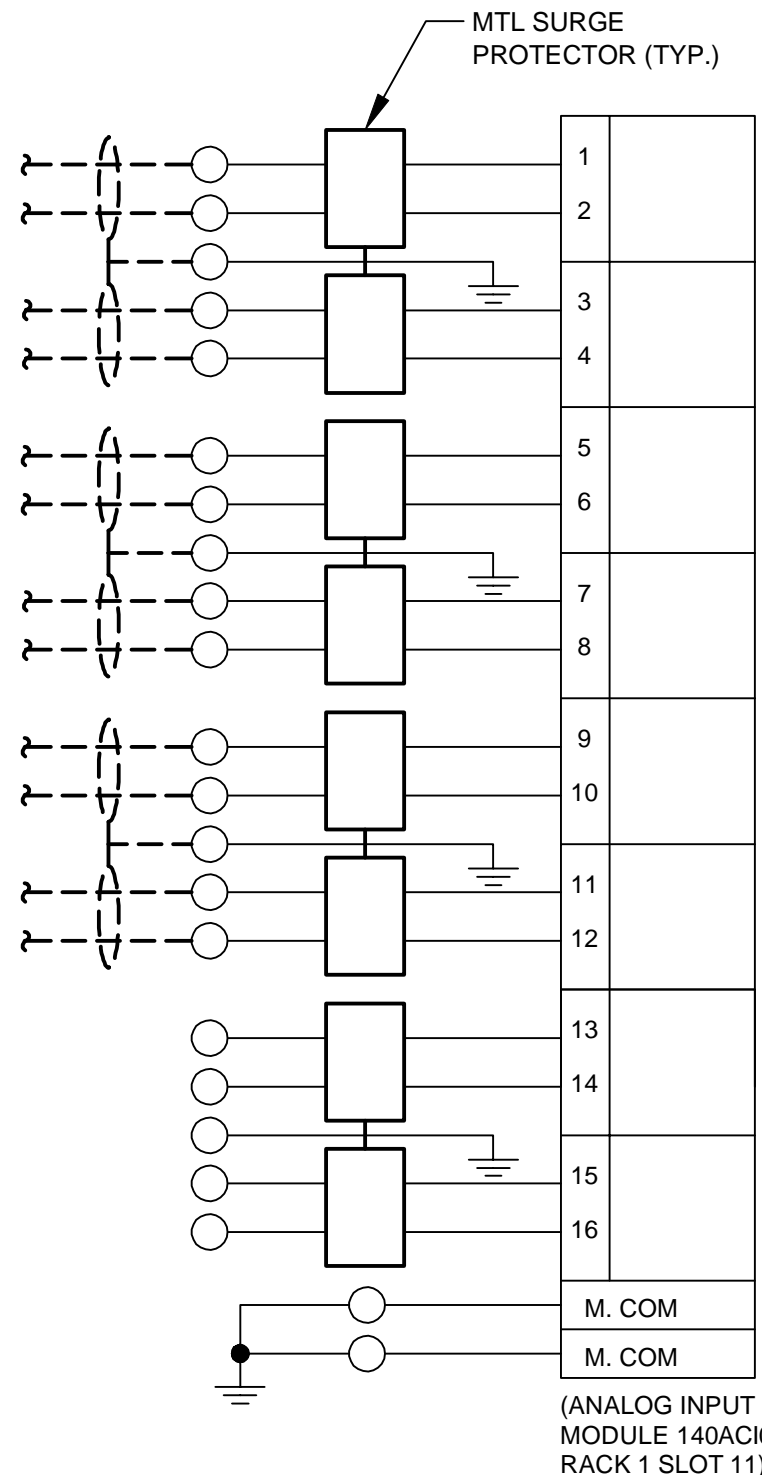
(ANALOG INPUT
MODULE 140ACI03000
RACK 1 SLOT 10)

1 20-FE/FIT-3
WATER INLET FLOW
2
3 20-DPT-3
DIFFERENTIAL PRESSURE
4
5 20-AE/AIT-2A-2, VIA VAPEX
INLET H2S
6
7 20-AE/AIT-2A-1
pH
8
9 20-FCV-3
POSITION FEEDBACK
10
11 SPARE
12
13 SPARE
14
15 SPARE
16
M.COM
M.COM



(RELAY OUTPUT
MODULE 140DRA84000
RACK 1 SLOT 9)

00 20-B-4
START/STOP
01 20-BG-4
OPEN
02 20-BG-4
CLOSE
03 20-BV-4A
OPEN
04 20-BV-4A
CLOSE
05 SPARE
06 SPARE
07 SPARE
08 SPARE
09 SPARE
10 SPARE
11 SPARE
12 SPARE
13 SPARE
14 SPARE
15 SPARE



(ANALOG INPUT
MODULE 140ACI03000
RACK 1 SLOT 11)

1 20-FE/FIT-4
WATER INLET FLOW
2
3 20-DPT-4
DIFFERENTIAL PRESSURE
4
5 20-AE/AIT-2B-1, VIA VAPEX
INLET H2S
6
7 20-AE/AIT-2B-2, VIA VAPEX
EXHAUST STACK H2S
8
9 20-AE/AIT-2B-3
pH
10
11 20-FCV-4
POSITION FEEDBACK
12
13 SPARE
14
15 SPARE
16
M.COM
M.COM

20-LCP-1 I/O LAYOUT
SCALE: NTS

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EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
20-LCP-1
I/O LAYOUT

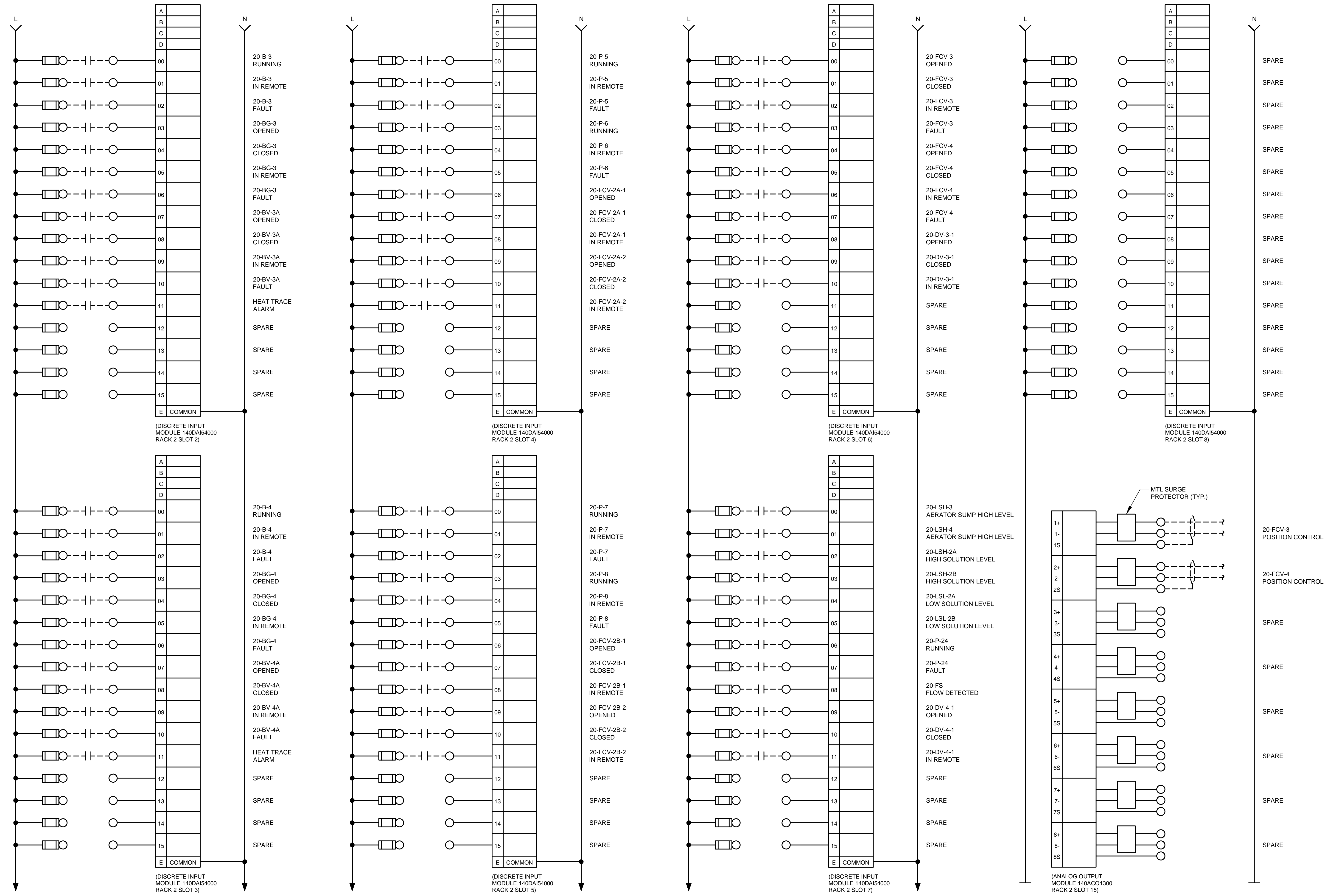
Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP

1304

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Bar Measures 1 inch

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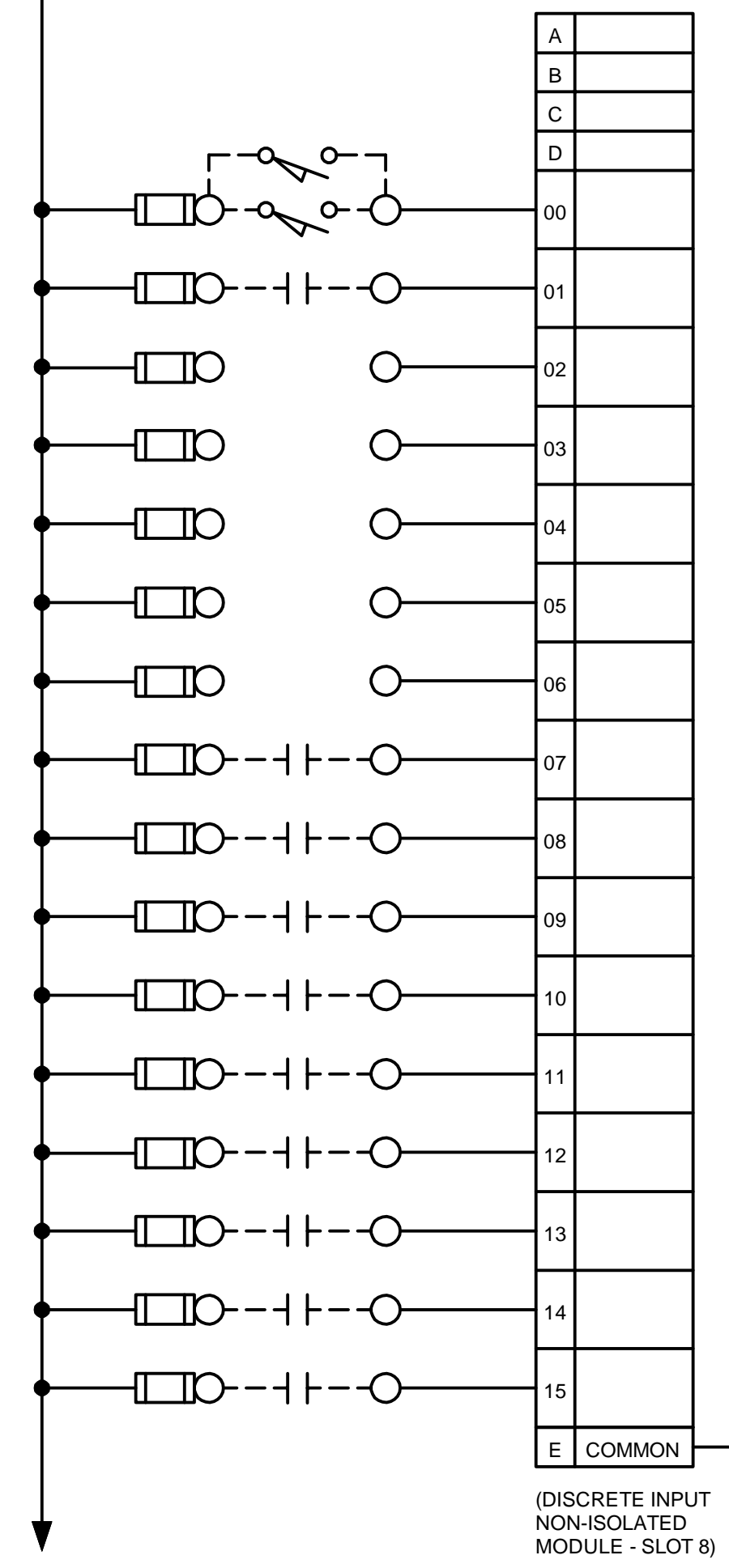
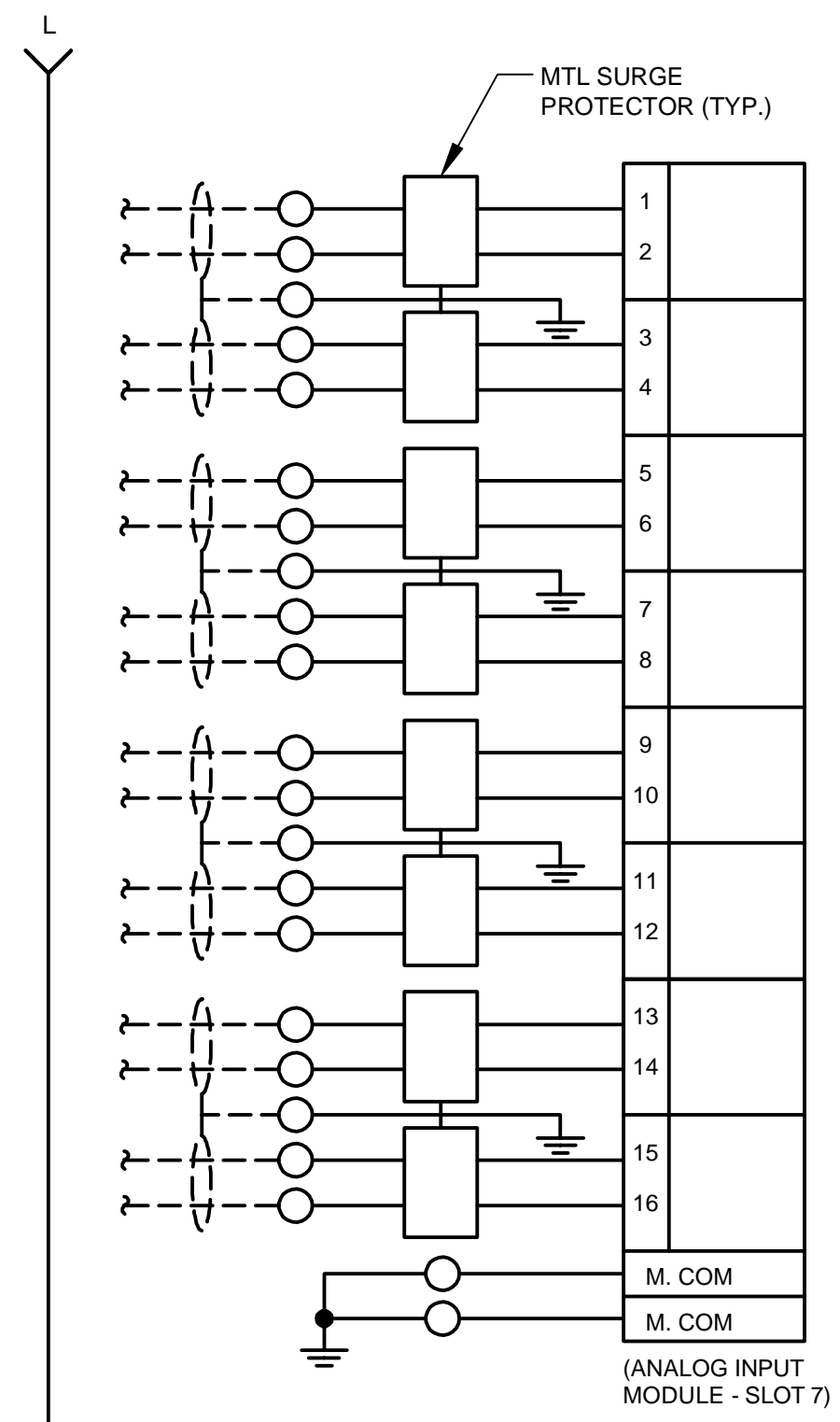


20-LCP-1 I/O LAYOUT
SCALE: NTS

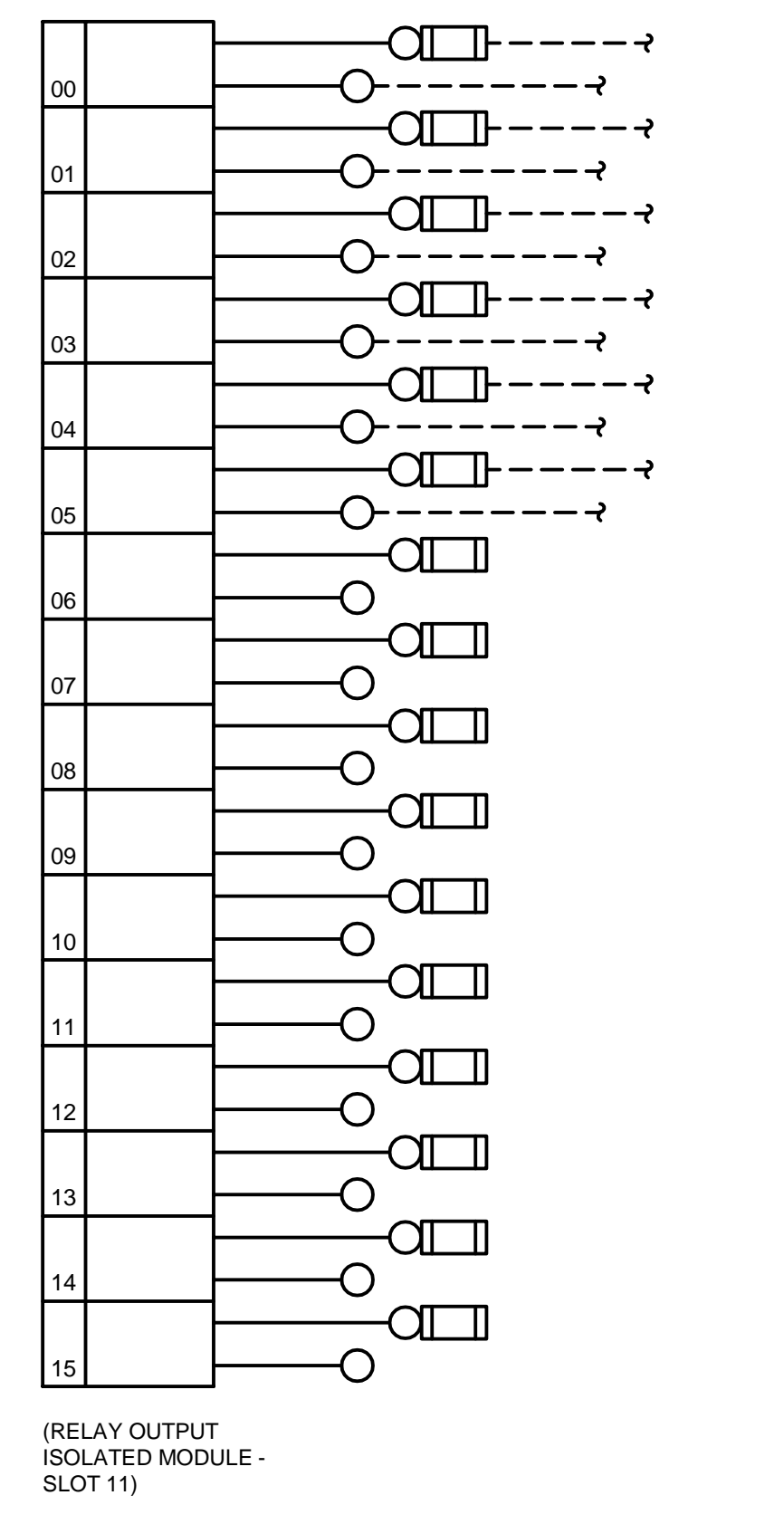
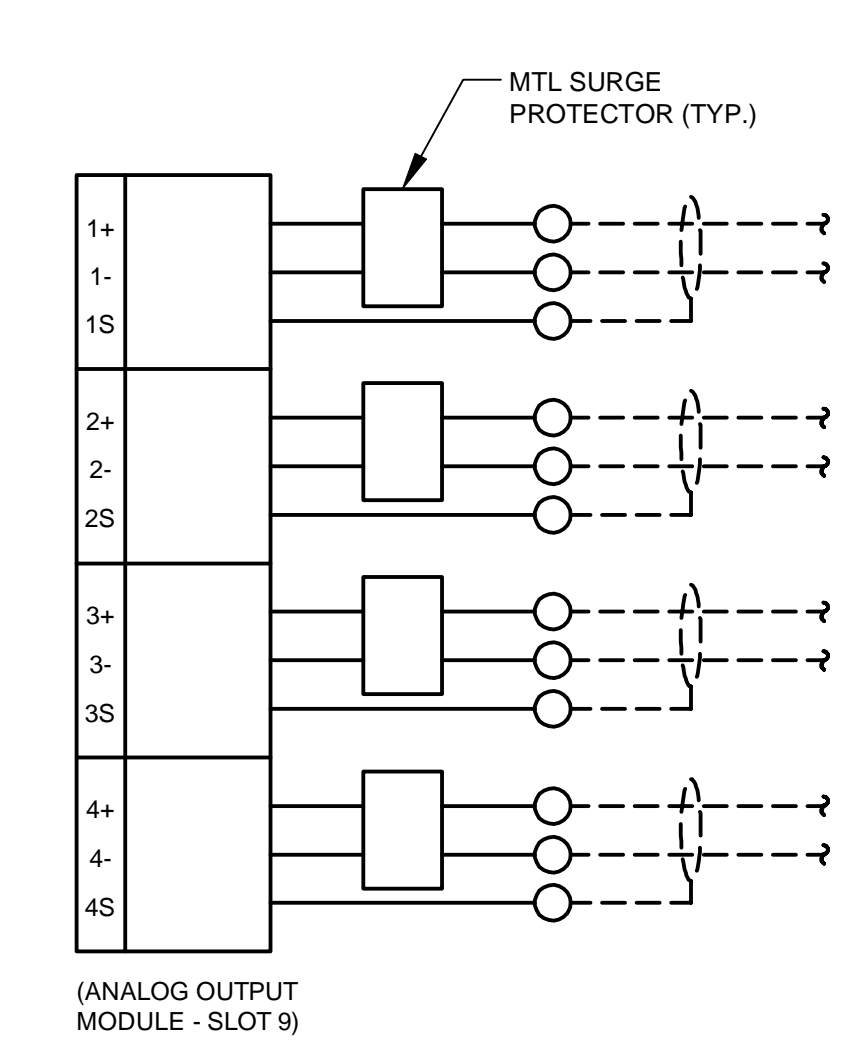
TETRA TECH <small>ENGINEERING BUSINESS NO. 2429</small>
<small>www.tetratex.com 201 E. PINE STREET, SUITE 1000 ORLANDO, FL 32801 PHONE: (407)-839-5955 FAX: (407)-839-3790</small>
BID SET
ORANGE COUNTY UTILITIES EASTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS - PHASE 3B 20-LCP-1 I-O LAYOUT
Project No.: 200-10034-11005
Designed By: FWY
Drawn By: TAC
Checked By: WAP
1305

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Bar Measures 1 inch



- CLEARWELL #2 LEVEL
- 30-FIT-1
- 30-SC-3
- 30-LI-2
- CLEARWELL #2 LEVEL
- 30-P-6 SPEED FEEDBACK
- 30-P-7 SPEED FEEDBACK
- 30-P-8 SPEED FEEDBACK



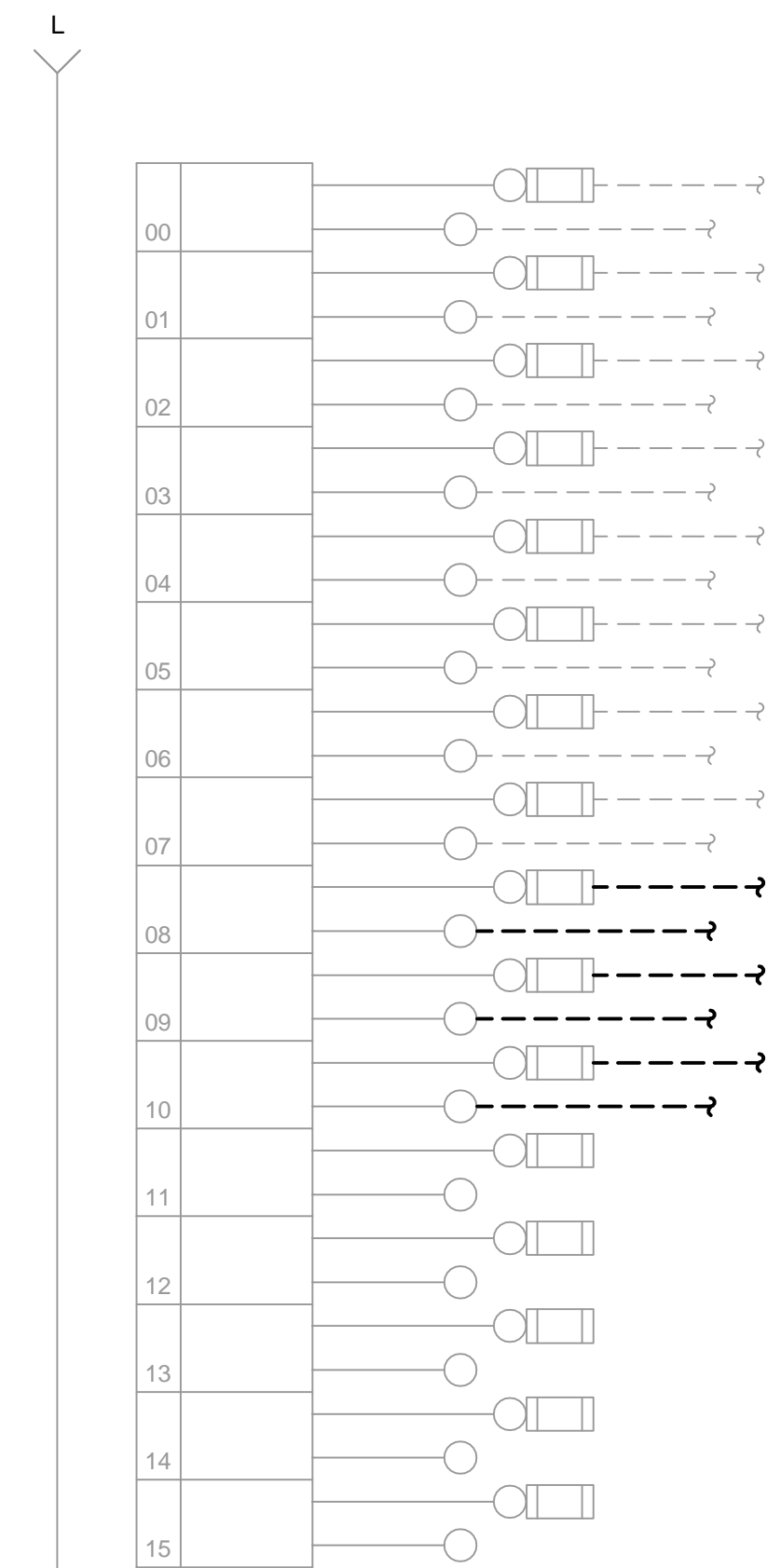
30-LCP-3 I/O LAYOUT
SCALE: NTS

- 30-P-6 SPEED CONTROL
- CL2 MODULATING VALVE OUTPUT
- 30-P-7 SPEED CONTROL
- 30-P-8 SPEED CONTROL
- 30-P-6 START/STOP
- 30-P-6 VFD BYPASS START/STOP
- 30-P-7 START/STOP
- SPARE
- 30-P-8 START/STOP
- 30-P-8 VFD BYPASS START/STOP
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE

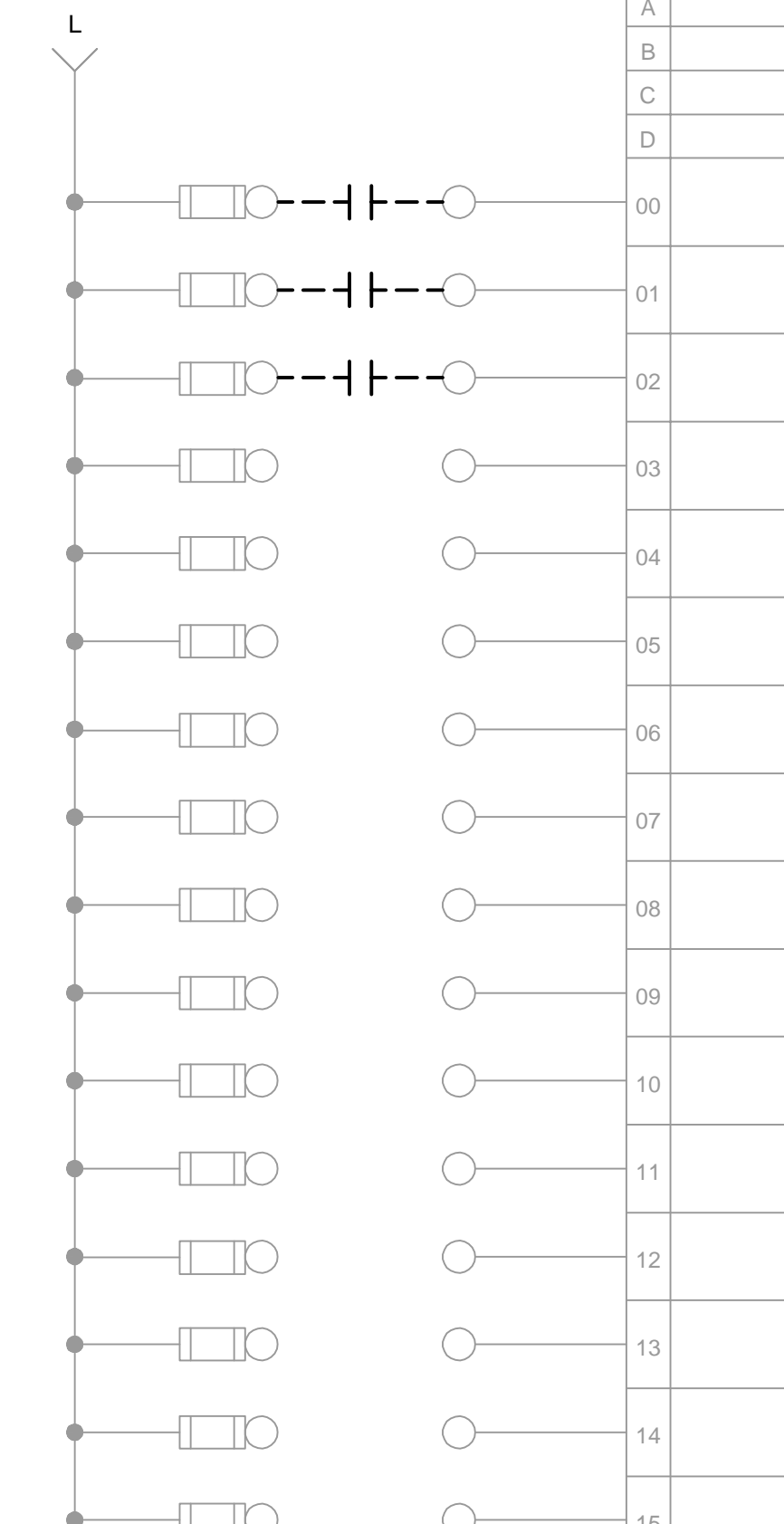
NOTES:
1. PROVIDE AN INTRUSION SWITCH ON EACH CONTROL PANEL DOOR.
2. PROVIDE COMPLETE NEW PLC PANEL, UPS, POWER SUPPLIES ETC. TO REPLACE EXISTING. FIELD VERIFY THE REQUIREMENTS PRIOR TO SUBMITTING BID.

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BID SET	
ORANGE COUNTY UTILITIES	Project No.: 200-10034-11005
EASTERN REGIONAL WATER SUPPLY FACILITY IMPROVEMENTS - PHASE 3B	Designed By: FWY
30-LCP-3 I/O LAYOUT	Drawn By: TAC
	Checked By: WAP
1306	

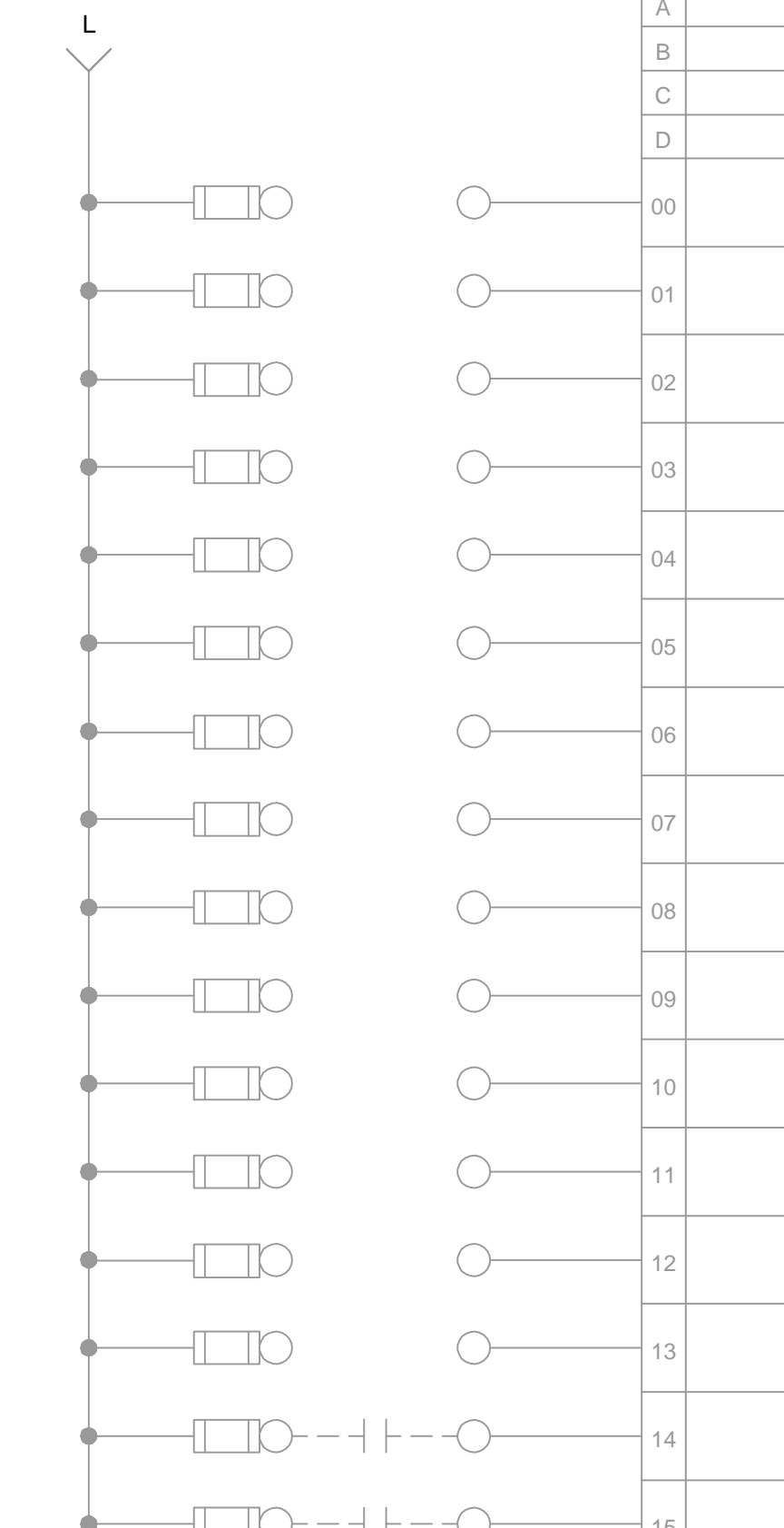
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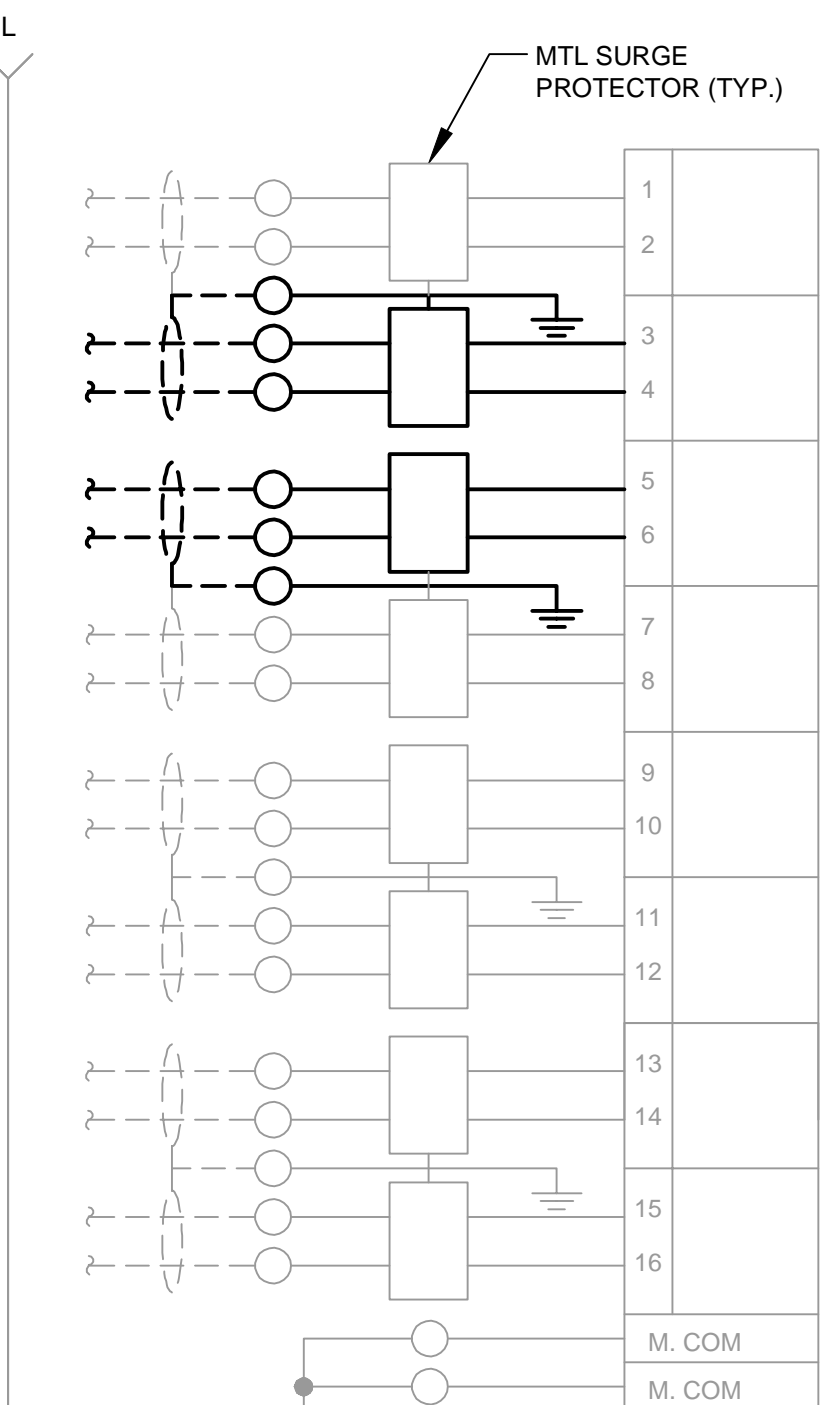
- 50-YC-1A MOMENTARY ON
- 50-YC-1B MOMENTARY OFF
- 50-YC-1C MOMENTARY ON
- 50-YC-1D MOMENTARY OFF
- 50-YC-1E MOMENTARY ON
- 50-YC-1F MOMENTARY OFF
- 50-YC-1G MOMENTARY ON
- 50-YC-1H MOMENTARY OFF
- 50-P-7 START/STOP
- 50-P-7 VFD BYPASS START/STOP
- 50-P-8 START/STOP
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE



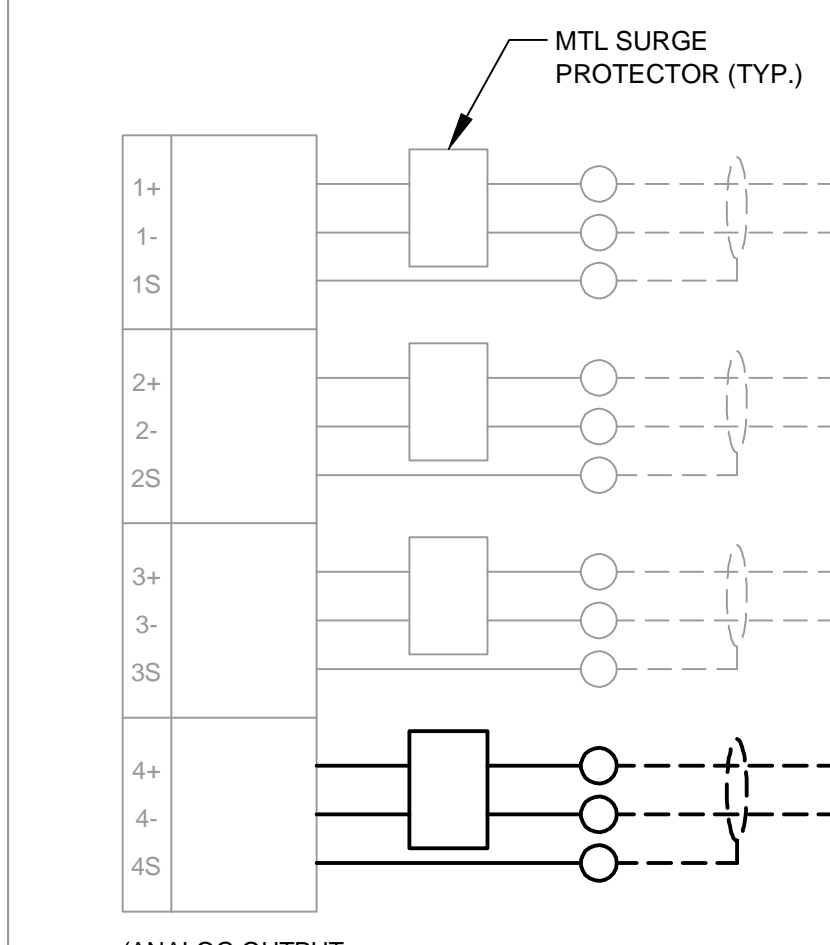
- 50-P-8 RUNNING
- 50-P-8 IN REMOTE
- 50-P-8 VFD FAULT
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE



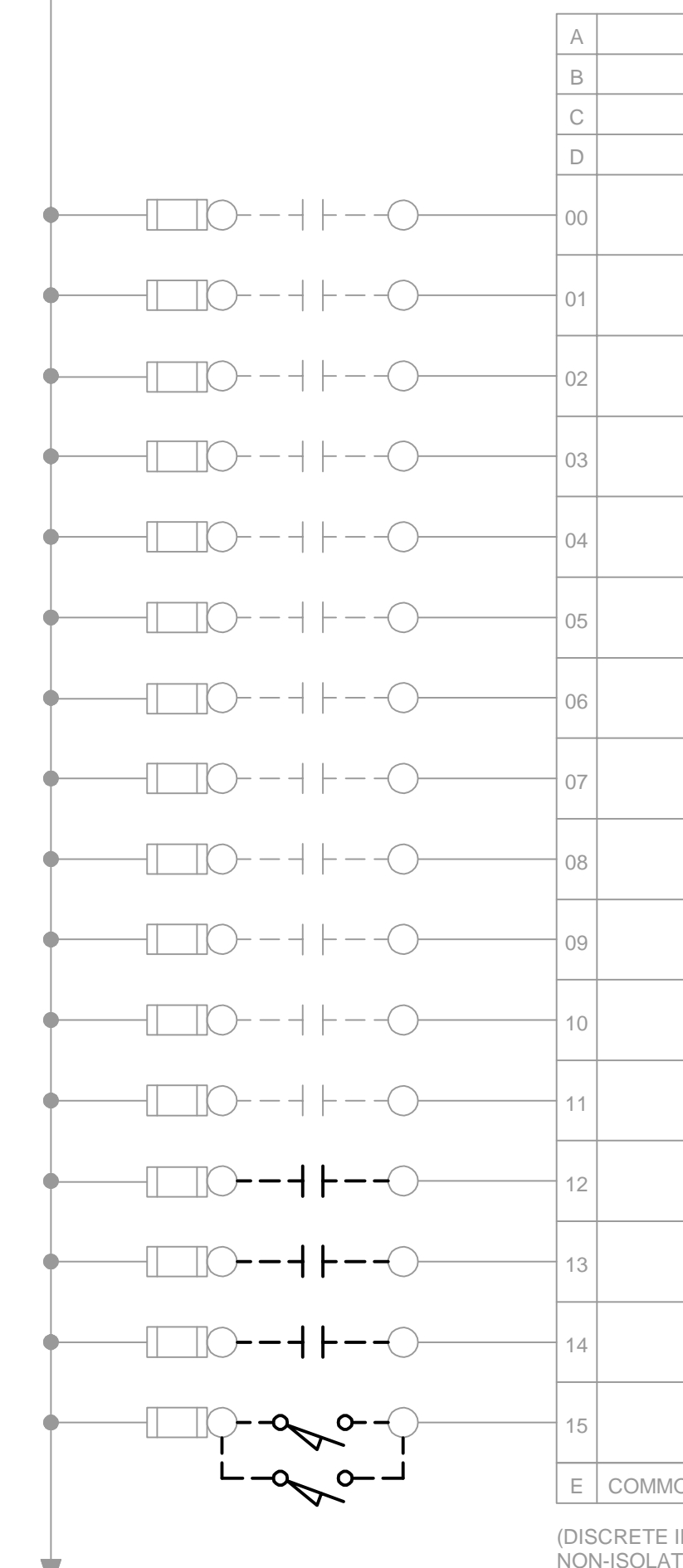
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- NEW SPARE
- SPARE
- SPARE
- SPARE
- HSP BLDG BACKUP SMOKE DETECTOR
- HSP BLDG SMOKE DETECTOR



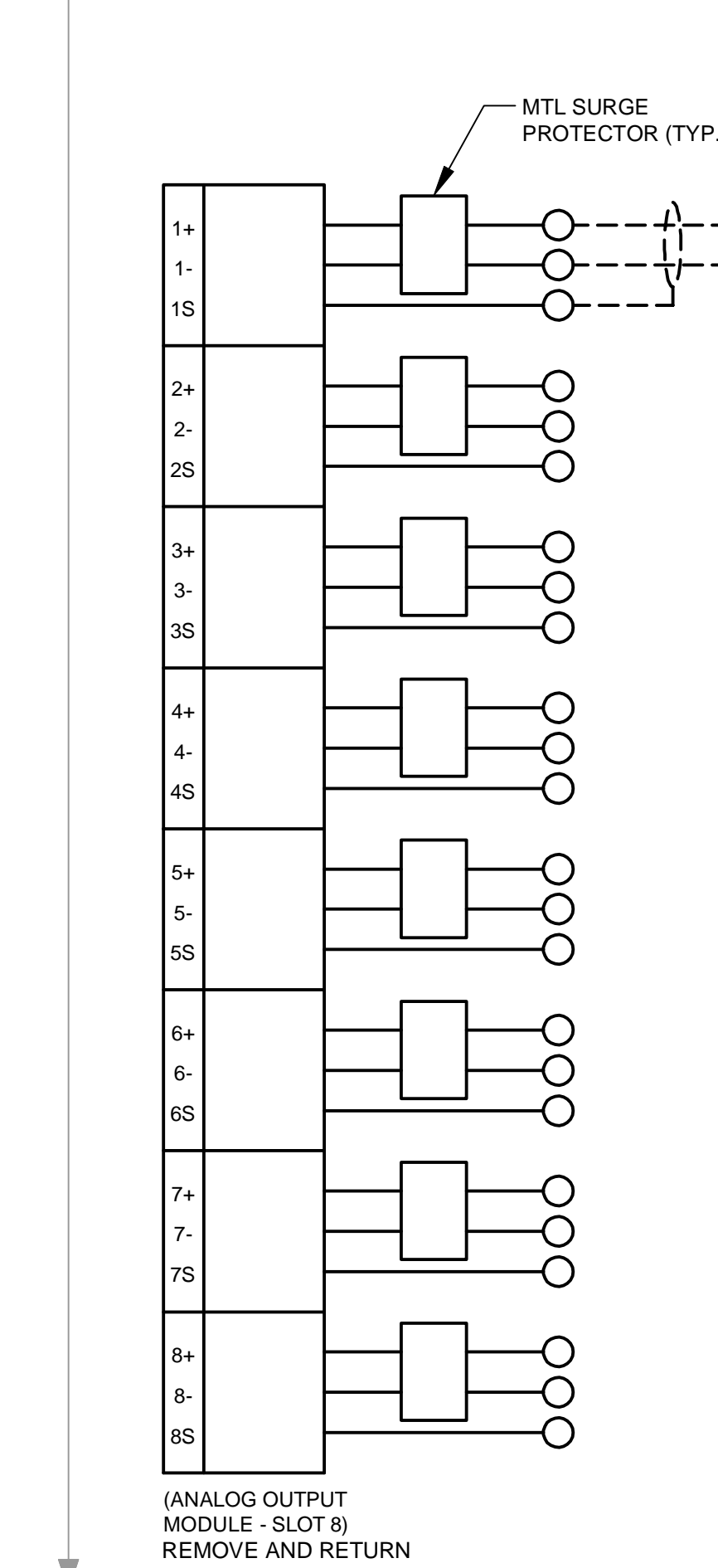
- 50G-WN-1 GENERATOR BUS WATT TRANSDUCER
- 50-P-8 SPEED FEEDBACK
- 50-FIT-2 POTABLE WATER
- FLUORIDE EFF
- TEMP
- CL2 ANALYZER
- pH ANALYZER
- TEMP 4 LOG VIRUS ANALYZER



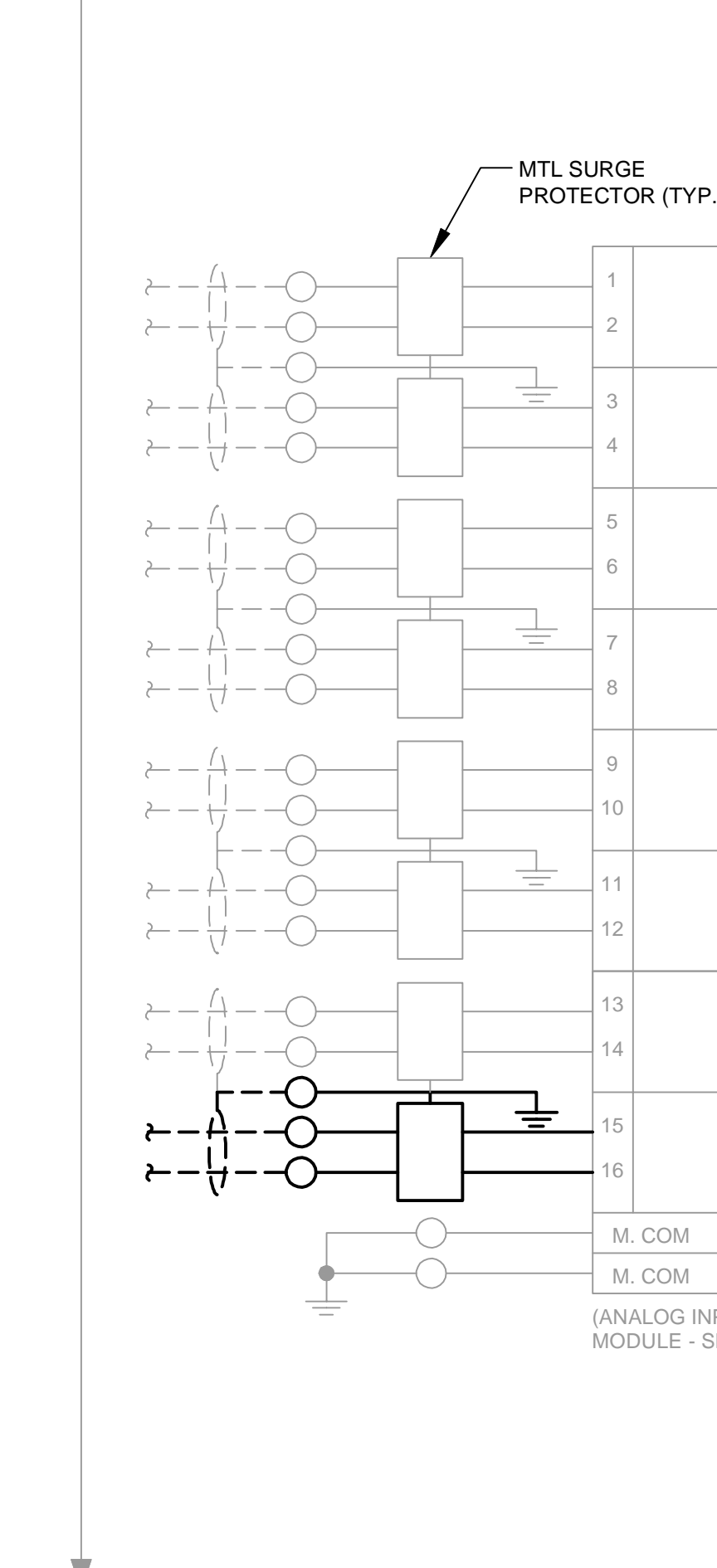
- 50-P-6 SPEED CONTROL
- 50-P-3 SPEED CONTROL
- 50-P-4 SPEED CONTROL
- 50-P-7 SPEED CONTROL



- 50-P-4 VFD FAULT
- 50-P-4 RUNNING
- 50-P-4 IN REMOTE
- SPARE
- 50-P-5 VFD FAULT
- 50-P-5 RUNNING
- 50-P-5 IN REMOTE
- SPARE
- 50-P-6 VFD FAULT
- 50-P-6 RUNNING
- 50-P-6 IN REMOTE
- SPARE
- 50-P-7 RUNNING
- 50-P-7 IN REMOTE
- 50-P-7 VFD FAULT
- 50-LCP-5 INTRUSION SWITCHES



- 50-P-8 SPEED CONTROL
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE
- SPARE



- 50-AN-1 CL2 RESIDUAL
- 50-AN-1 pH
- 50-AN-1 TURBIDITY
- 50-FI-1 FLOW
- 50-PI-1 PRESSURE
- 50-P-2 SPEED FEEDBACK
- 50-FIT-1 FLOW
- 50-P-7 SPEED FEEDBACK

50-LCP-5 I/O LAYOUT
SCALE: NTS

- NOTES:
- PROVIDE AN INTRUSION SWITCH ON EACH CONTROL PANEL DOOR.

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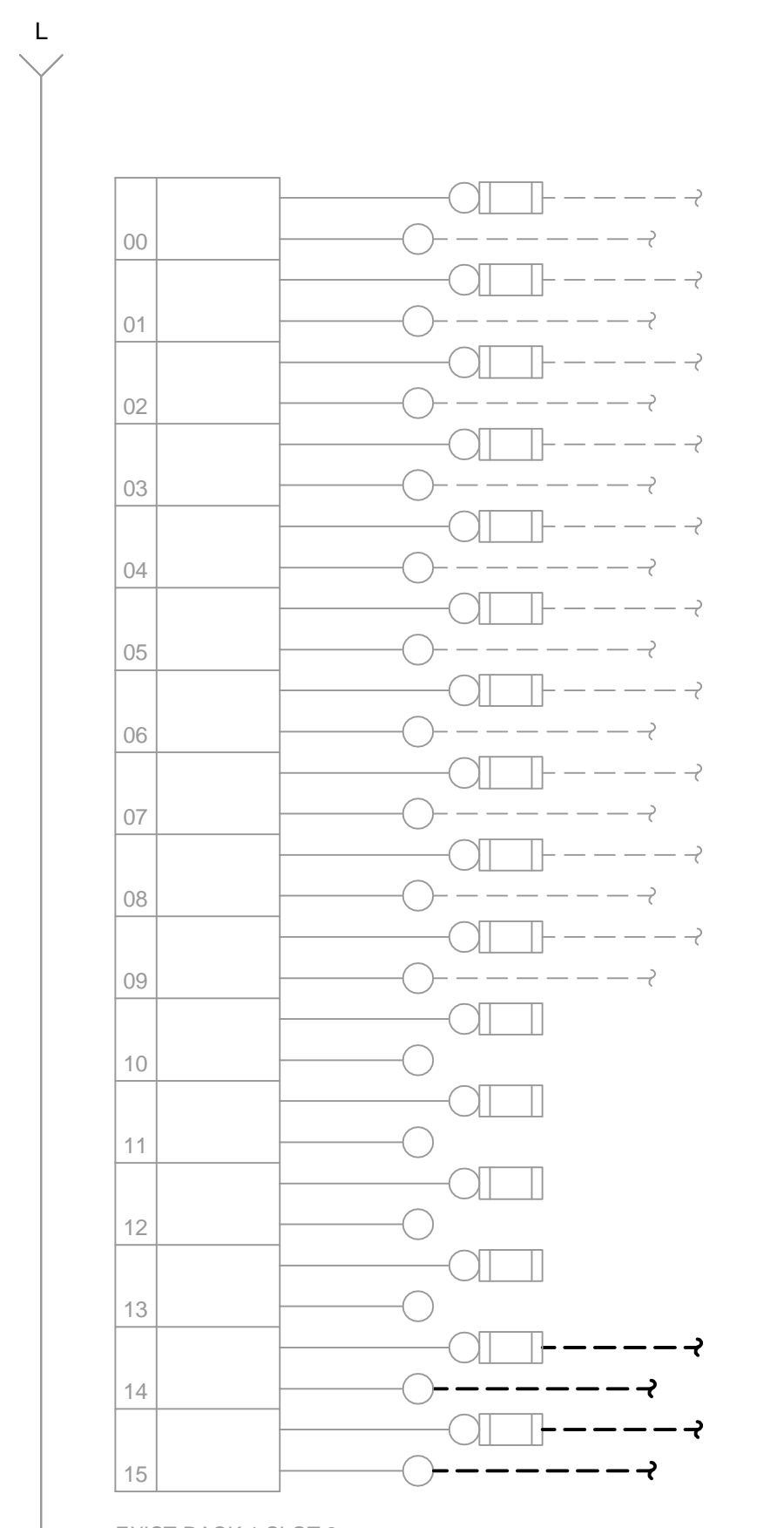
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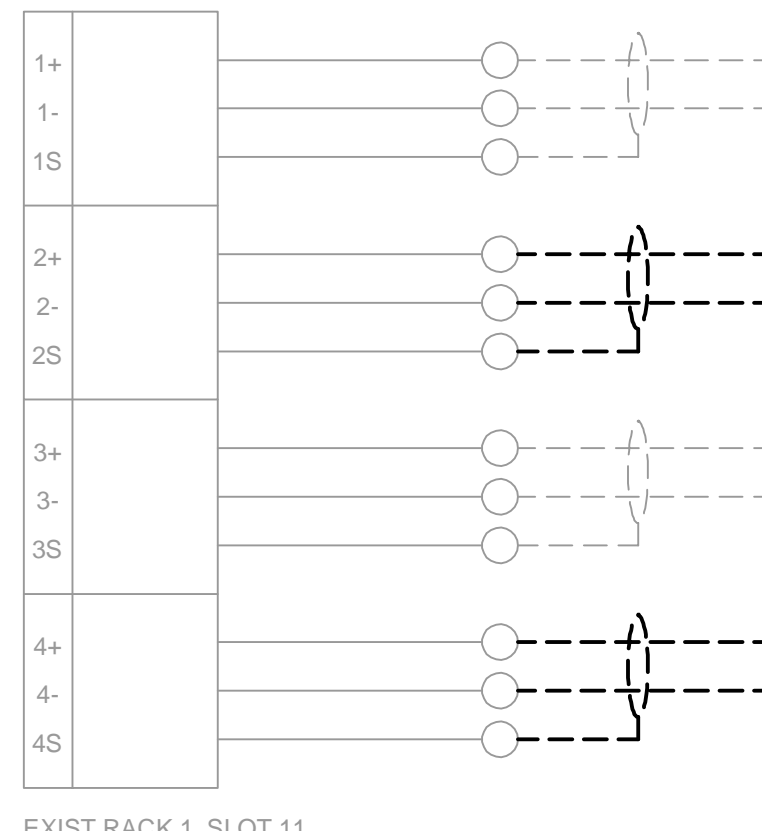
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
**50-LCP-5
I/O LAYOUT**

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

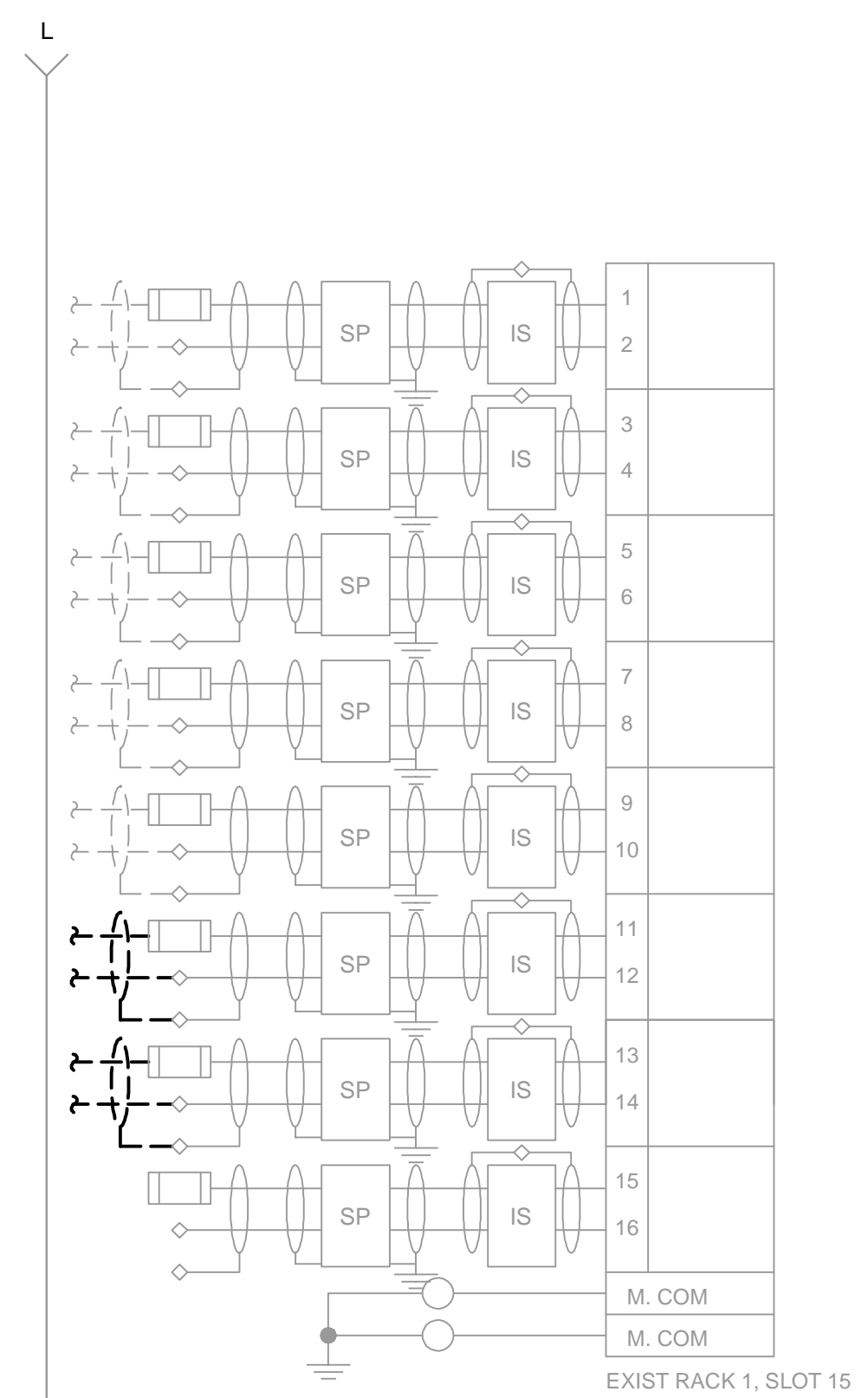
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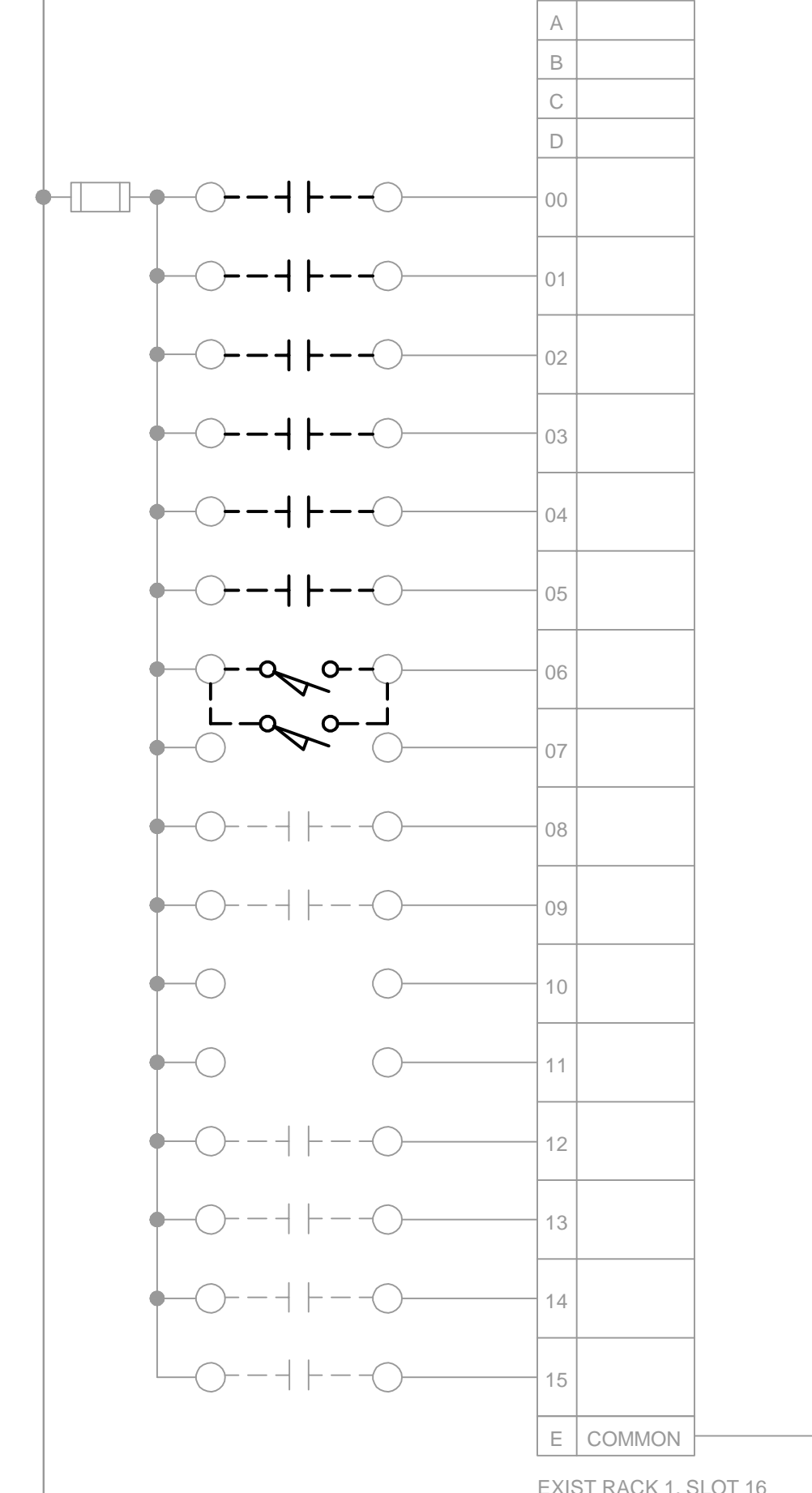
EXIST SOLENOID OPEN
 EXIST SOLENOID CLOSE
 EXIST 61-QA-1-2 OPEN
 EXIST 61-QA-2-2 OPEN
 EXIST ANTI-SCA
 EXIST 61-QC-3-2 OPEN
 EXIST 62-YC-3 CALL
 EXIST 62-YC-4 CALL
 EXIST 63-P-3 CALL
 EXIST 63-P-1 CALL
 EXIST SPARE
 EXIST SPARE
 EXIST SPARE
 EXIST SPARE
 62-MP-9 START/STOP
 62-MP-10 START/STOP



EXIST 61-FN-1 FLOW CONTROL VALVE
 62-MP-9 SPEED CONTROL
 EXIST 61-FN-2 FLOW CONTROL VALVE
 62-MP-10 SPEED CONTROL



EXIST PRECHLORINE
 EXIST PRE-pH
 EXIST PRE-FLUORIDE
 EXIST DAYTANK LEVEL
 EXIST DAYTANK PRESSURE
 62-MP-9 SPEED FEEDBACK
 62-MP-10 SPEED FEEDBACK
 EXIST SPARE



62-MP-9 RUNNING
 62-MP-9 IN REMOTE
 62-MP-9 FAULT
 62-MP-10 RUNNING
 62-MP-10 IN REMOTE
 62-MP-10 FAULT
 63-LCP-1 INTRUSION SWITCHES
 EXIST SPARE
 EXIST EYEWASH
 EXIST EYEWASH
 EXIST SPARE
 EXIST SPARE
 EXIST EYEWASH
 EXIST EYEWASH
 EXIST SOLENOID OPENED
 EXIST SOLENOID CLOSED

60-LCP-4 I/O LAYOUT
 SCALE: NTS

NOTES:
 1. PROVIDE AN INTRUSION SWITCH ON EACH CONTROL PANEL DOOR.

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MARK	DATE	DESCRIPTION

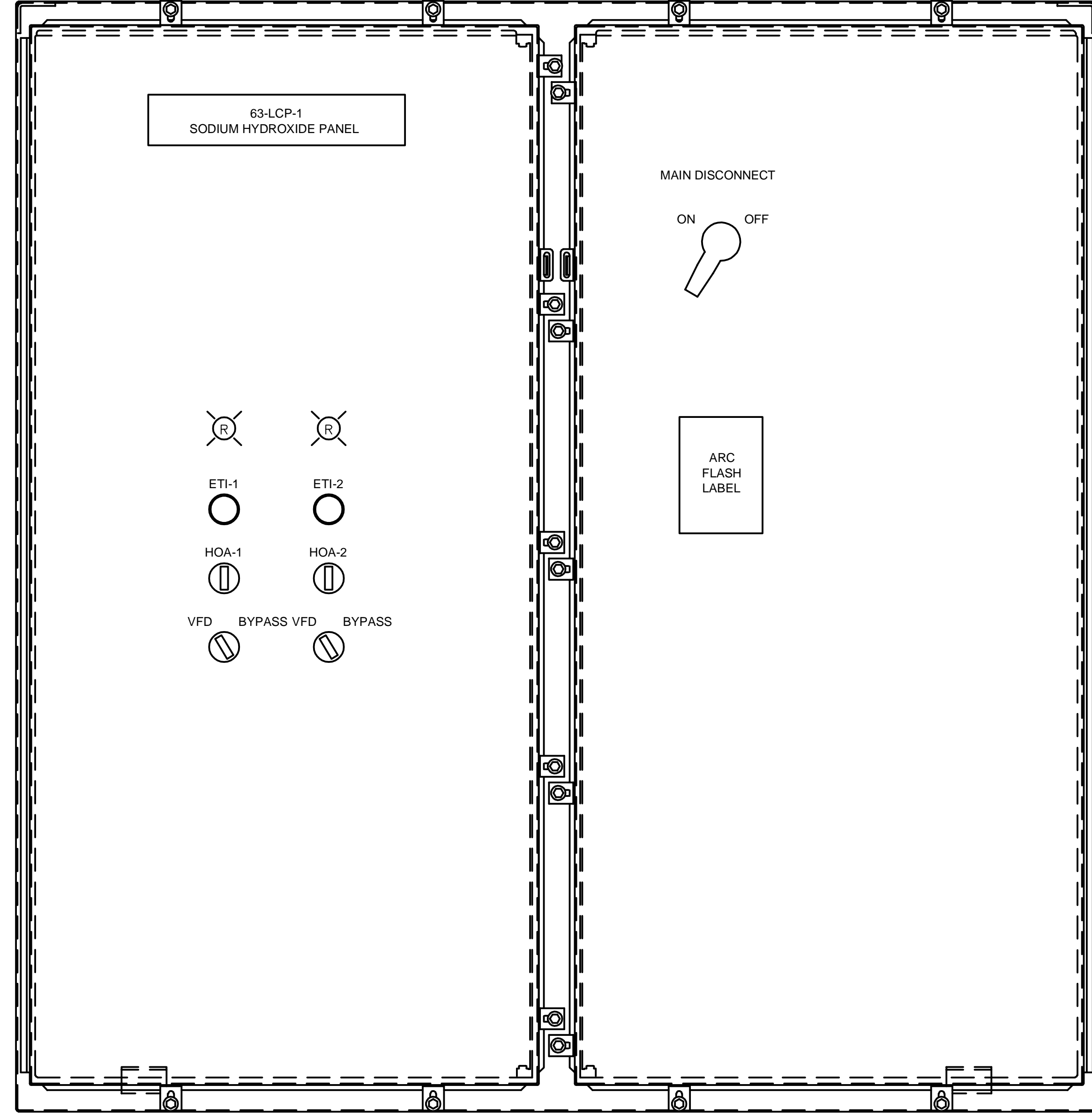
BY				

ORANGE COUNTY UTILITIES
 EASTERN REGIONAL WATER SUPPLY FACILITY
 IMPROVEMENTS - PHASE 3B
60-LCP-4
I/O LAYOUT

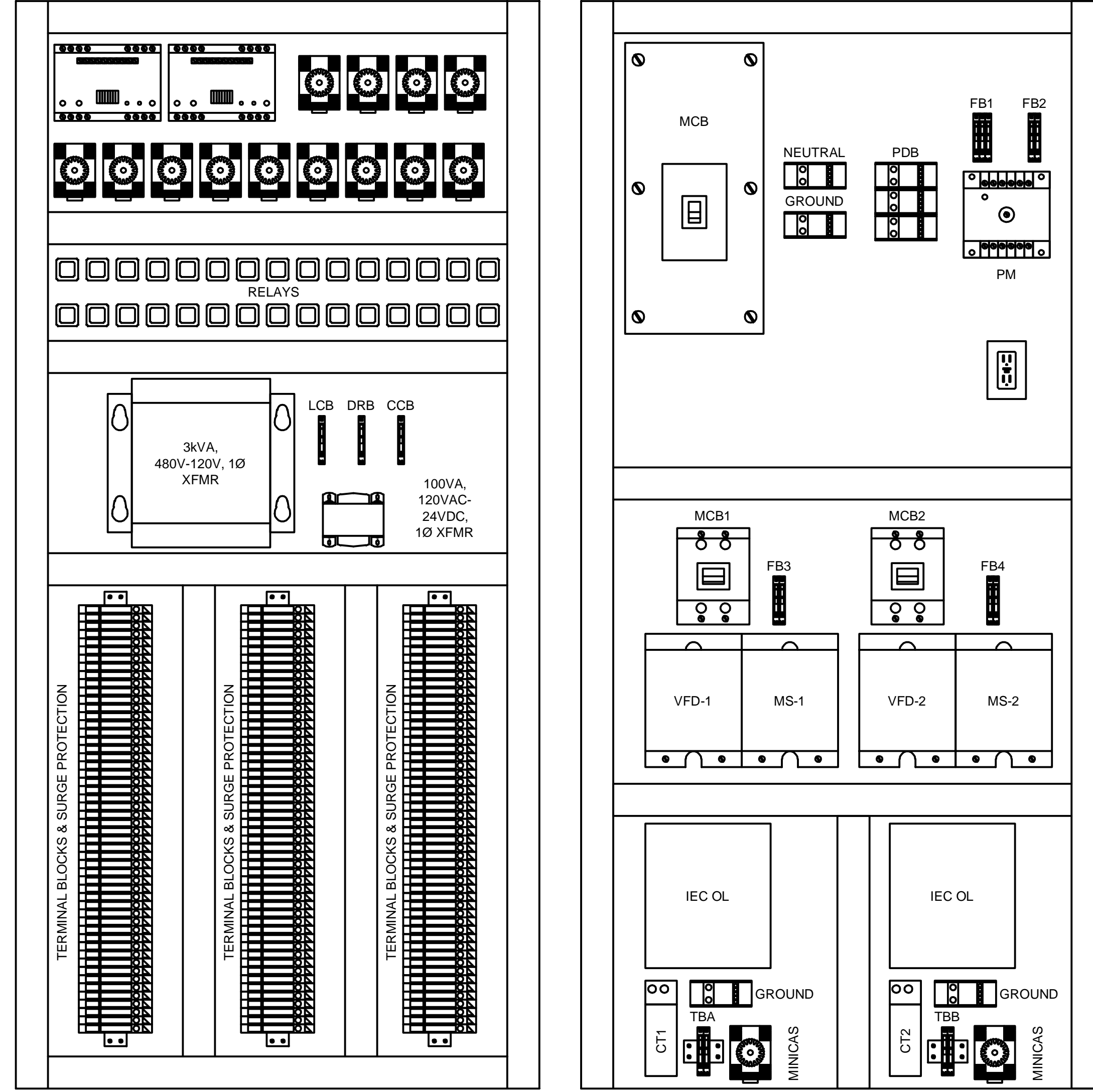
Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

1308

11/16/2017 12:48:38 PM - P:\JER10034\200-10034-11005\CAD\SHEETFILES\1009 PROCESS 62 63-LCP-1 SODIUM HYDROXIDE CONTROL PANEL LAYOUT.DWG - EVANS, JON



63-LCP-1 CONTROL PANEL
NTS



PROPOSED SUBPLATE LAYOUT
NTS

NOTES:
1. REMOVE AND REPLACE EXISTING BACKPLANES WITH NEW. DRILL HOLES IN LEFT FRONT DOOR AND MOUNT DEVICES AS SHOWN. IF DOOR CANNOT BE MODIFIED AS SHOWN, THEN PROVIDE NEW DOOR, MATCH EXISTING. ENCLOSURE RATING SHALL REMAIN.

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IMPROVEMENTS - PHASE 3B
PROCESS 62
63-LCP-1 SODIUM HYDROXIDE CONTROL PANEL LAYOUT

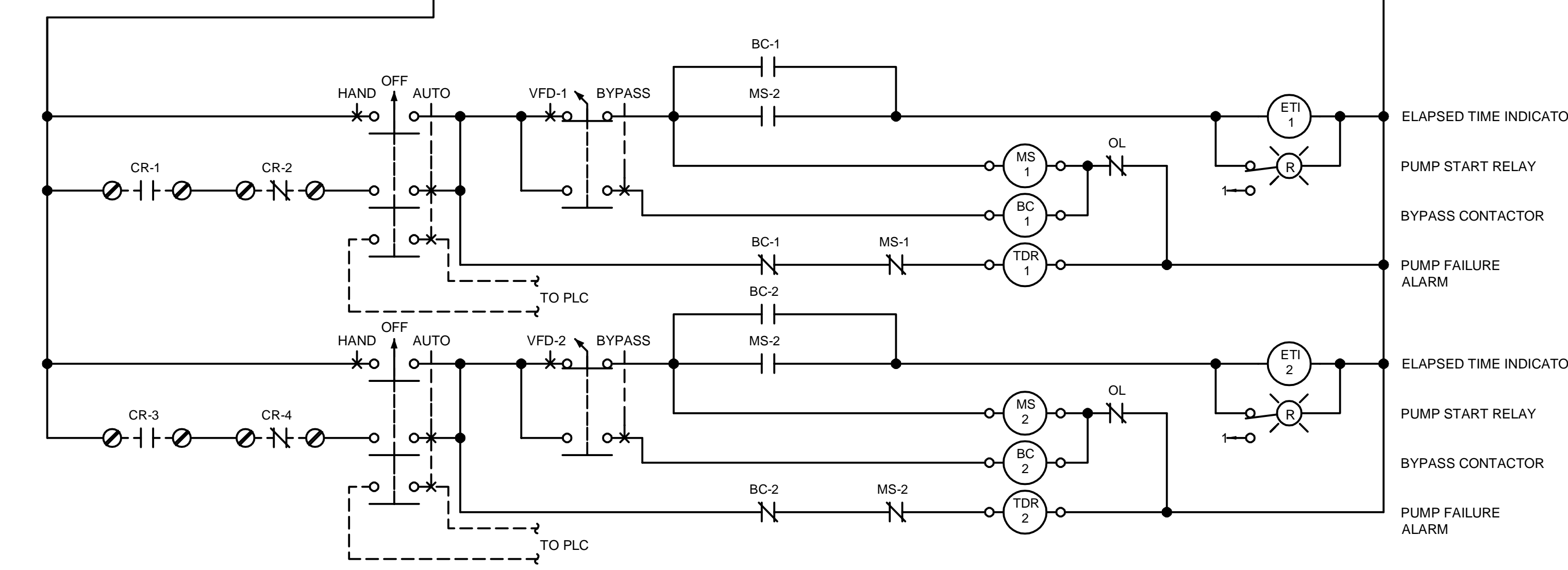
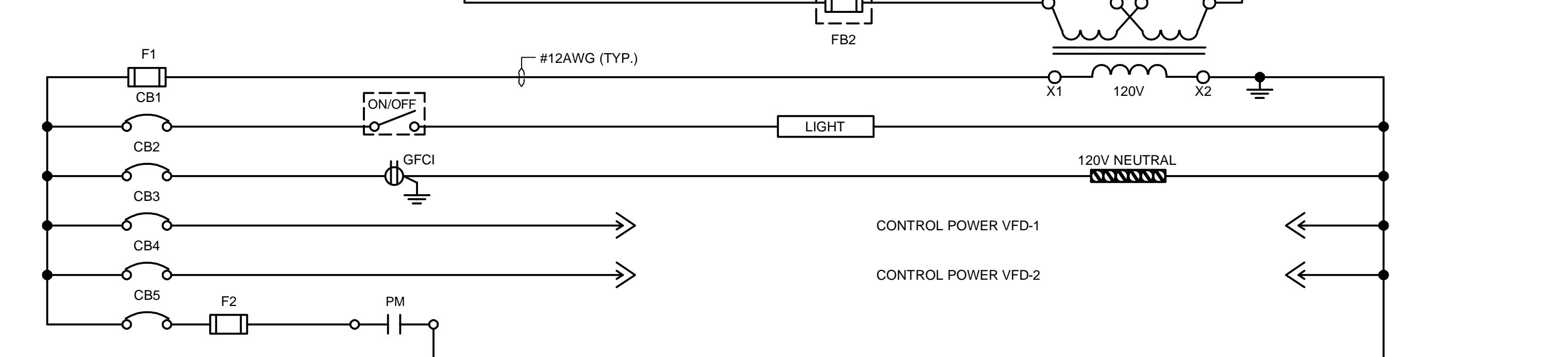
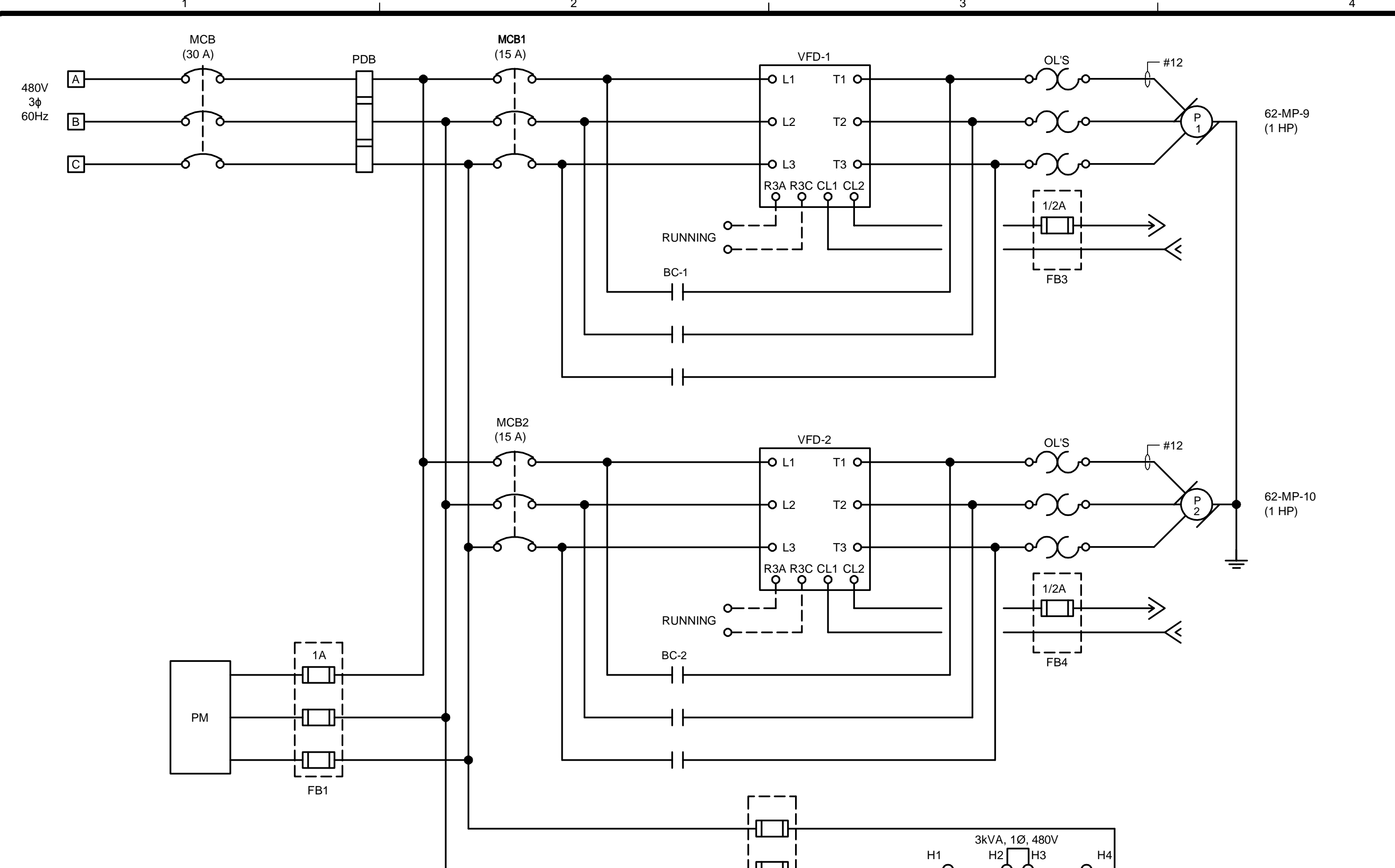
Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

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Bar Measures 1 inch

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62-LCP-1 WIRING DIAGRAM
SCALE: NTS



BID SET

MARK	DATE	DESCRIPTION

BY

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
IMPROVEMENTS - PHASE 3B
PROCESS 62
62-LCP-1 SODIUM HYDROXIDE
WIRING DIAGRAM

Project No.:	200-10034-11005
Designed By:	FWY
Drawn By:	TAC
Checked By:	WAP

I310

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Bar Measures 1 inch