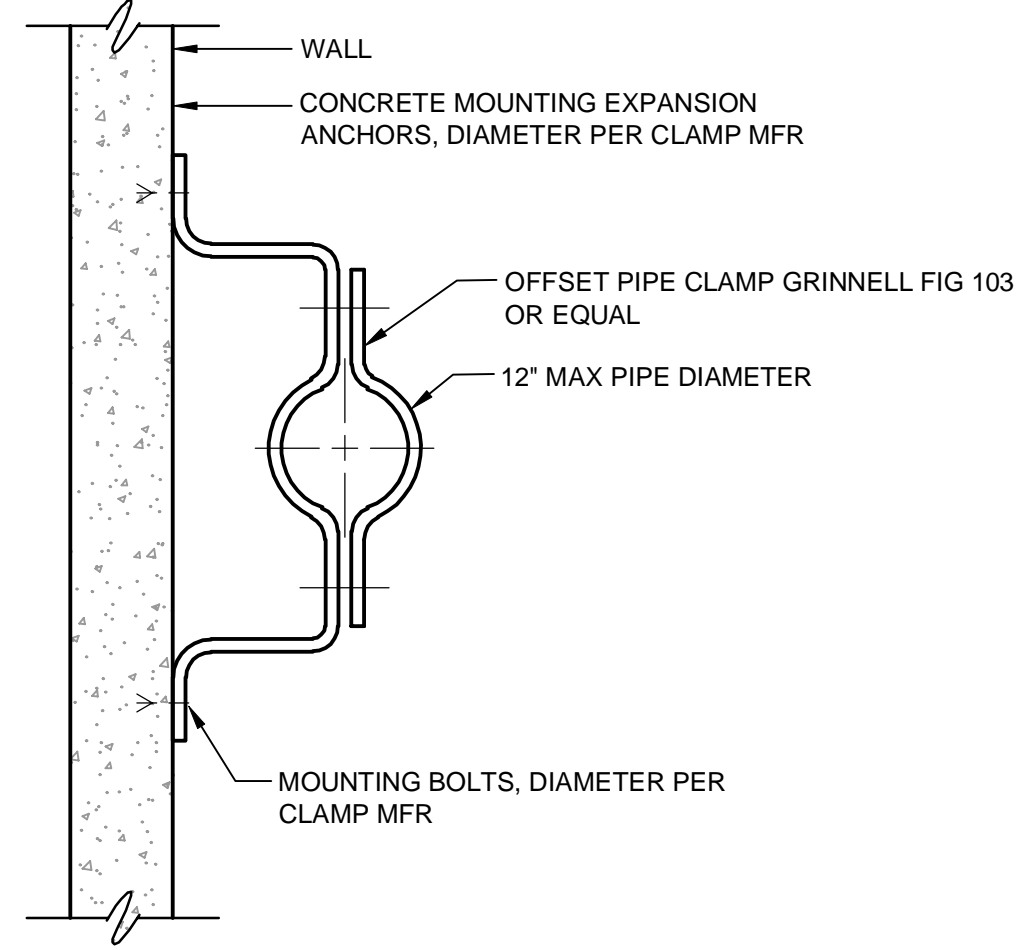


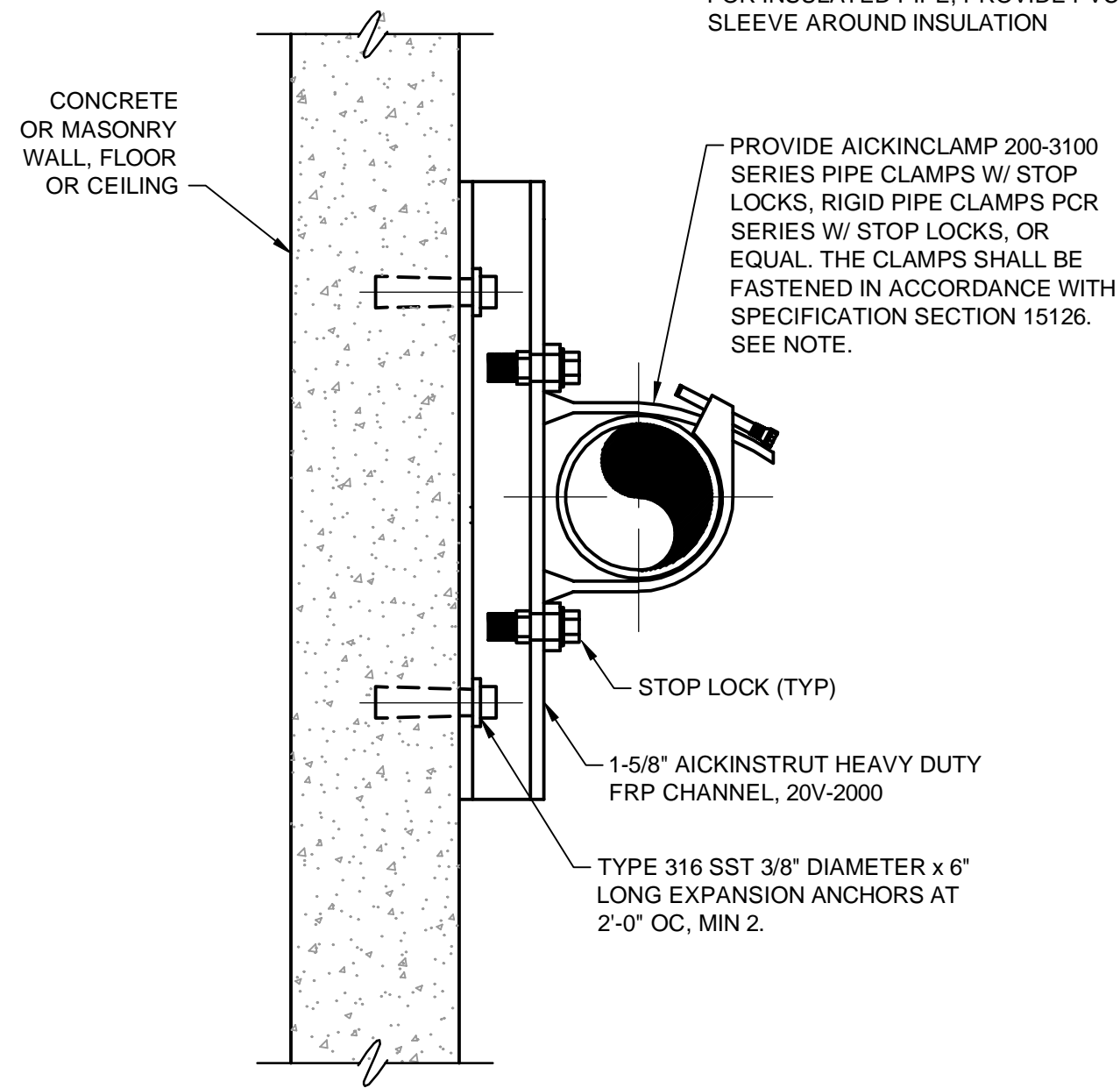
BOLLARD

1 DETAIL
SCALE: NTS



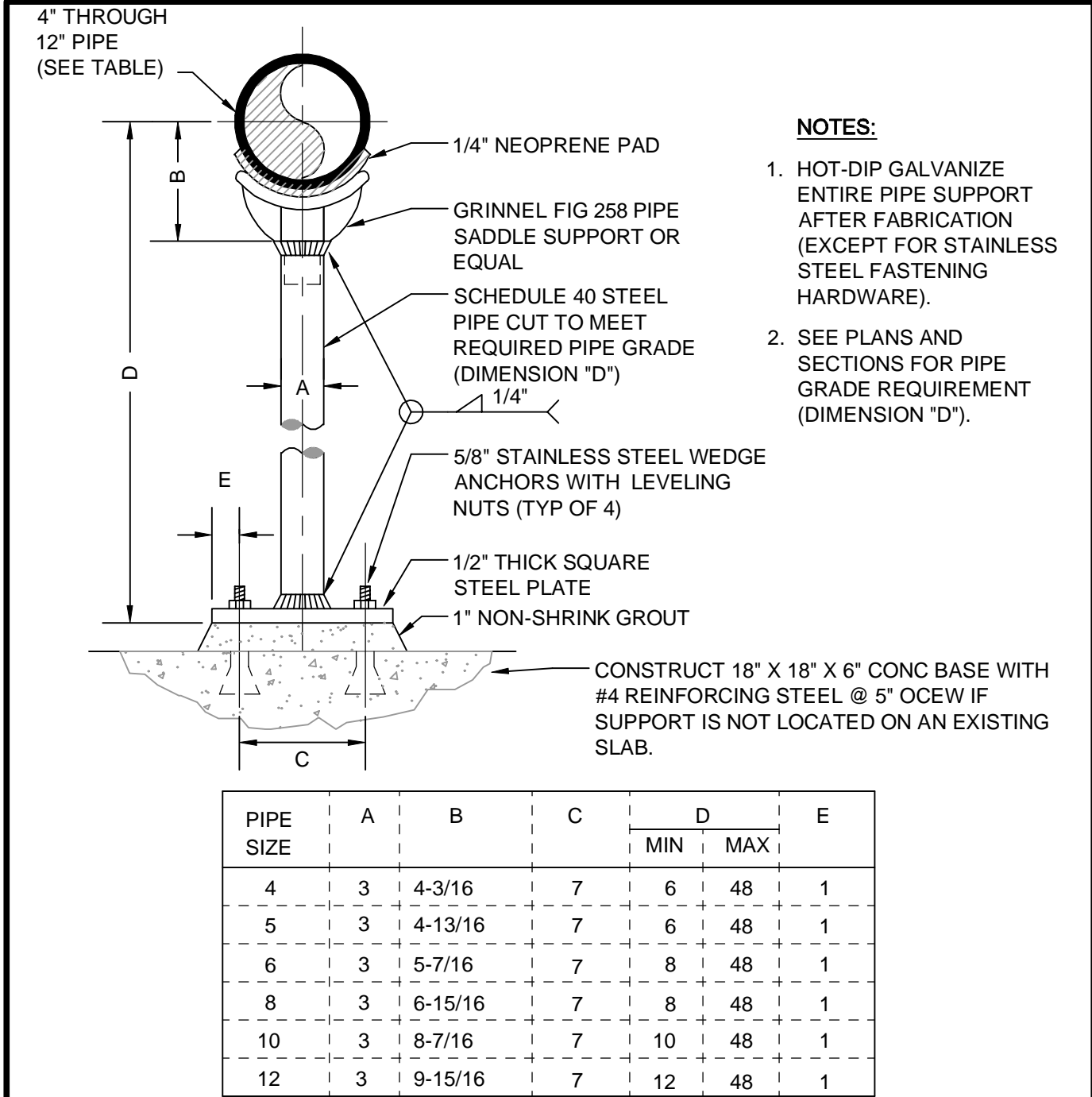
PIPE SUPPORT - OFFSET

2 DETAIL
SCALE: NTS



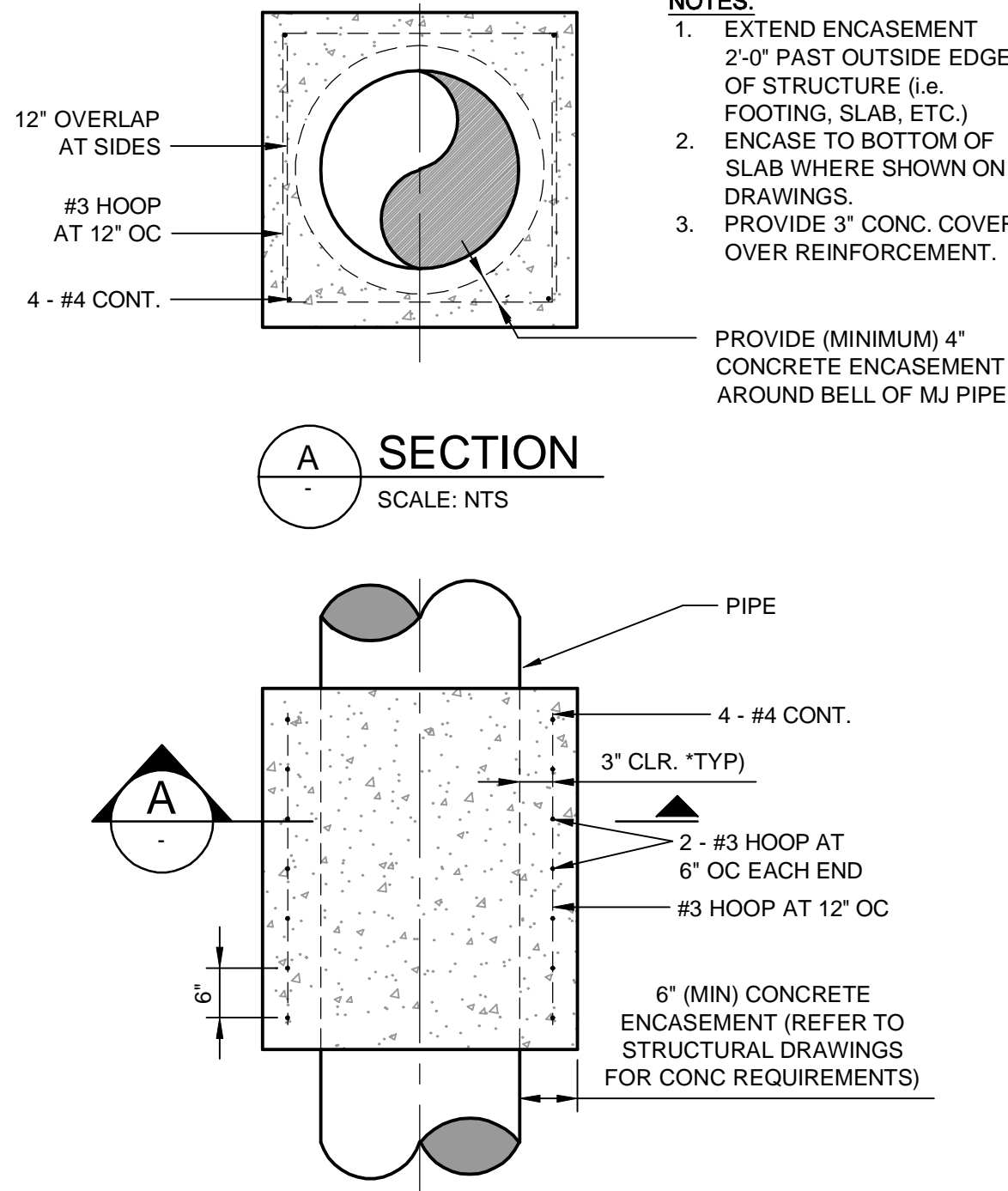
NON-METALLIC PIPE SUPPORT

3 DETAIL
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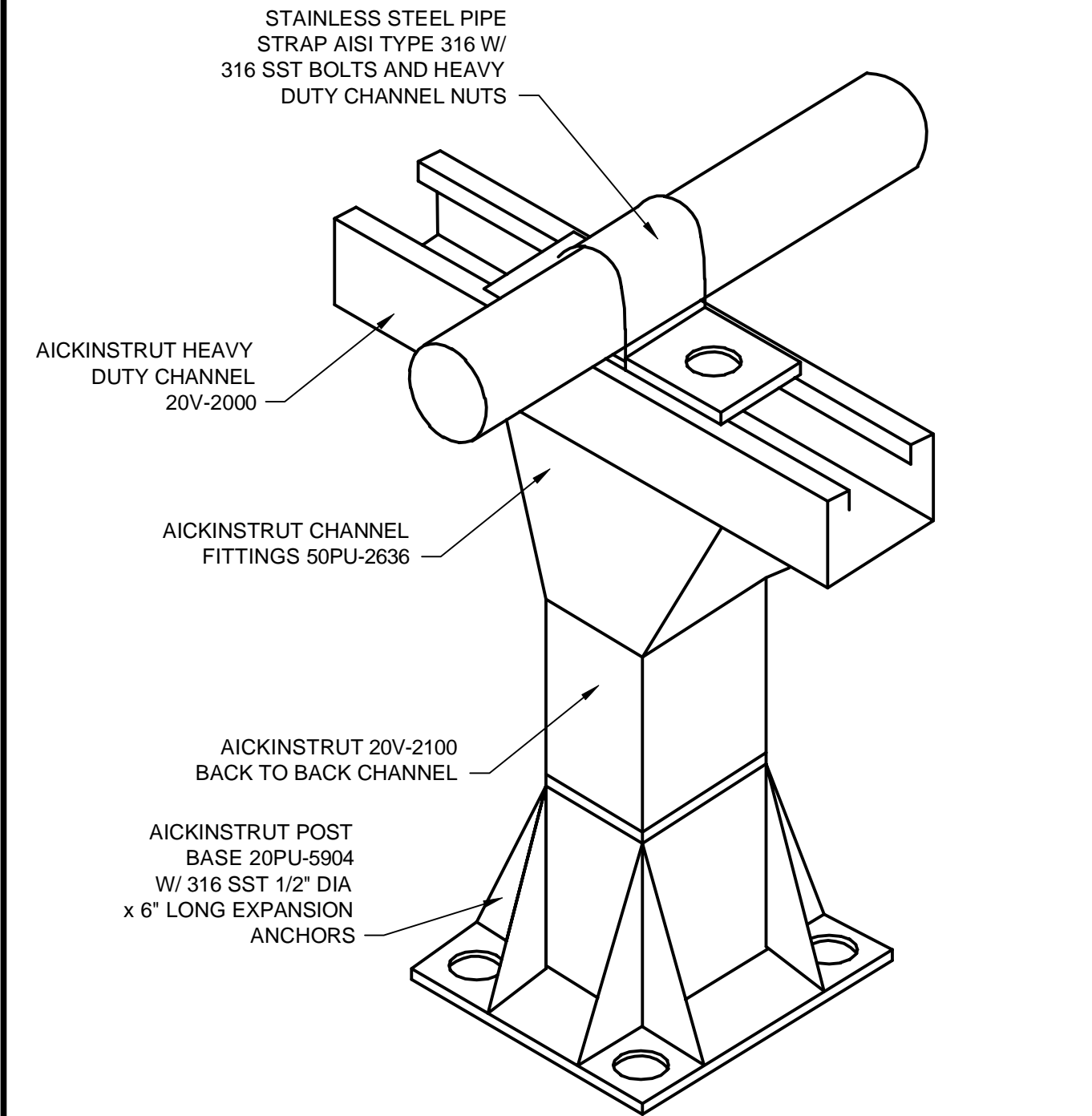
PIPE SUPPORT - SADDLE

4 DETAIL
SCALE: NTS



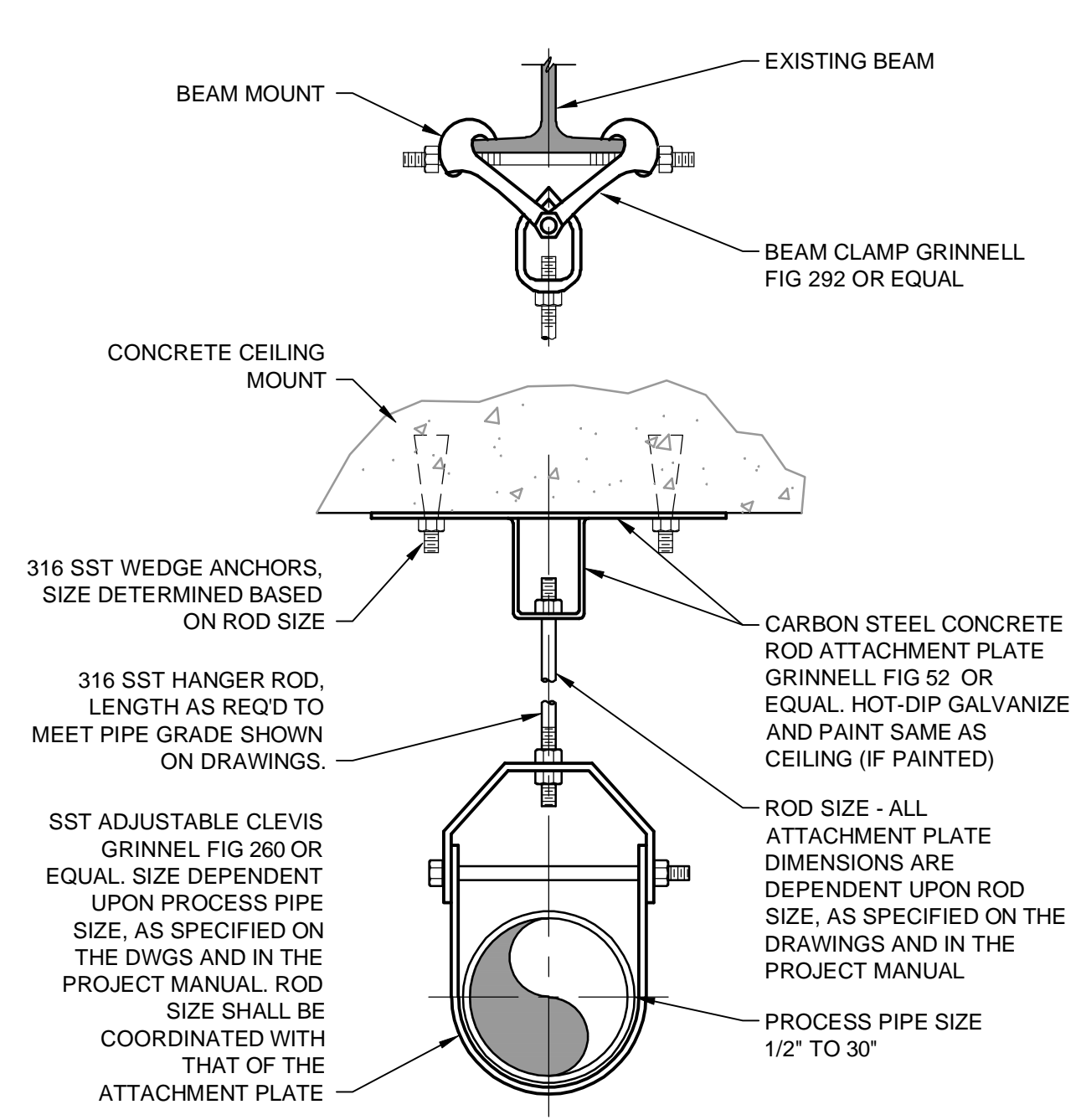
CONCRETE ENCASEMENT

5 DETAIL
SCALE: NTS



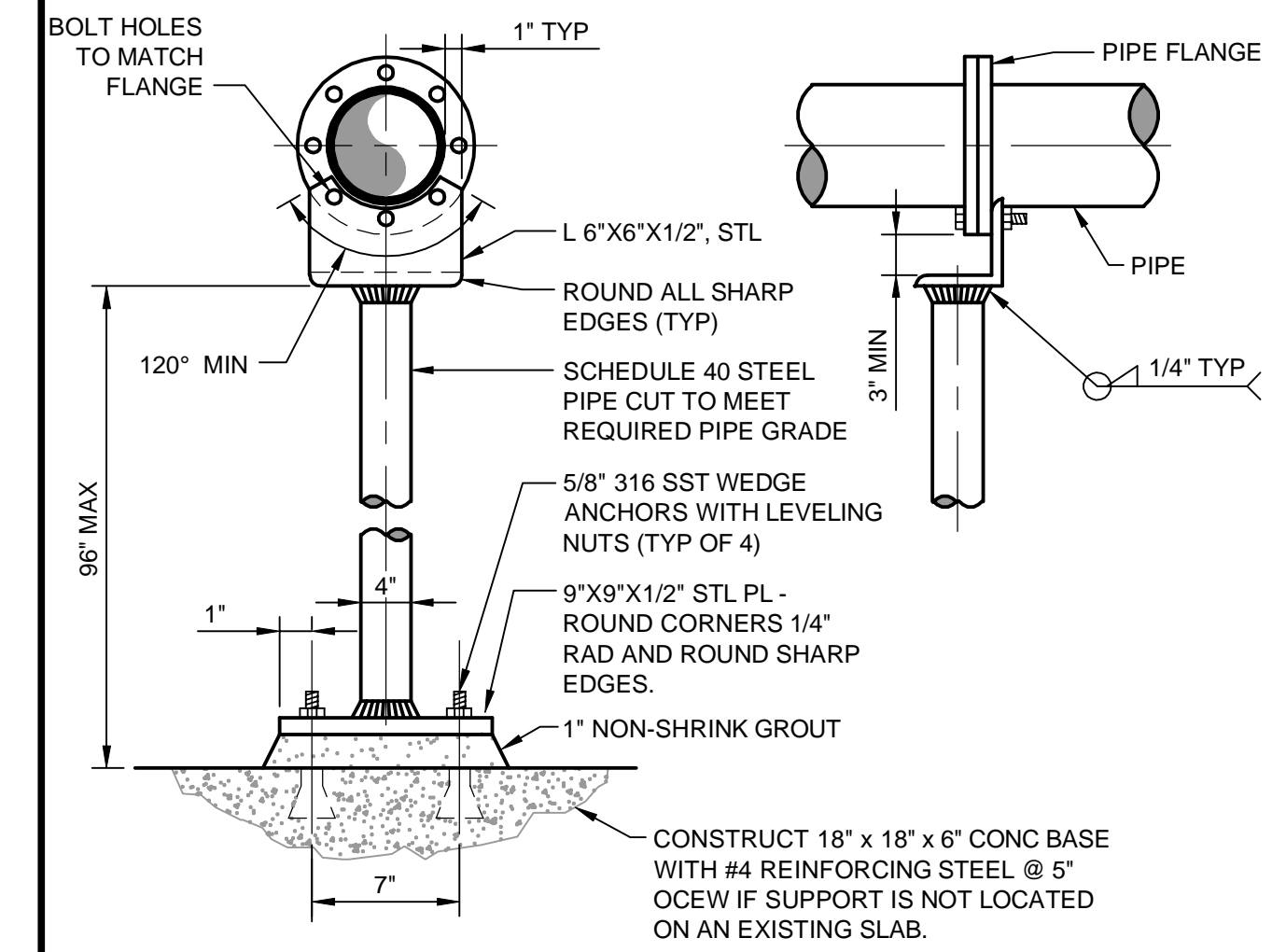
NON-METALLIC PIPE SUPPORT

6 DETAIL
SCALE: NTS



PIPE SUPPORT - HANGER CLEVIS AND PLATE

7 DETAIL
SCALE: NTS

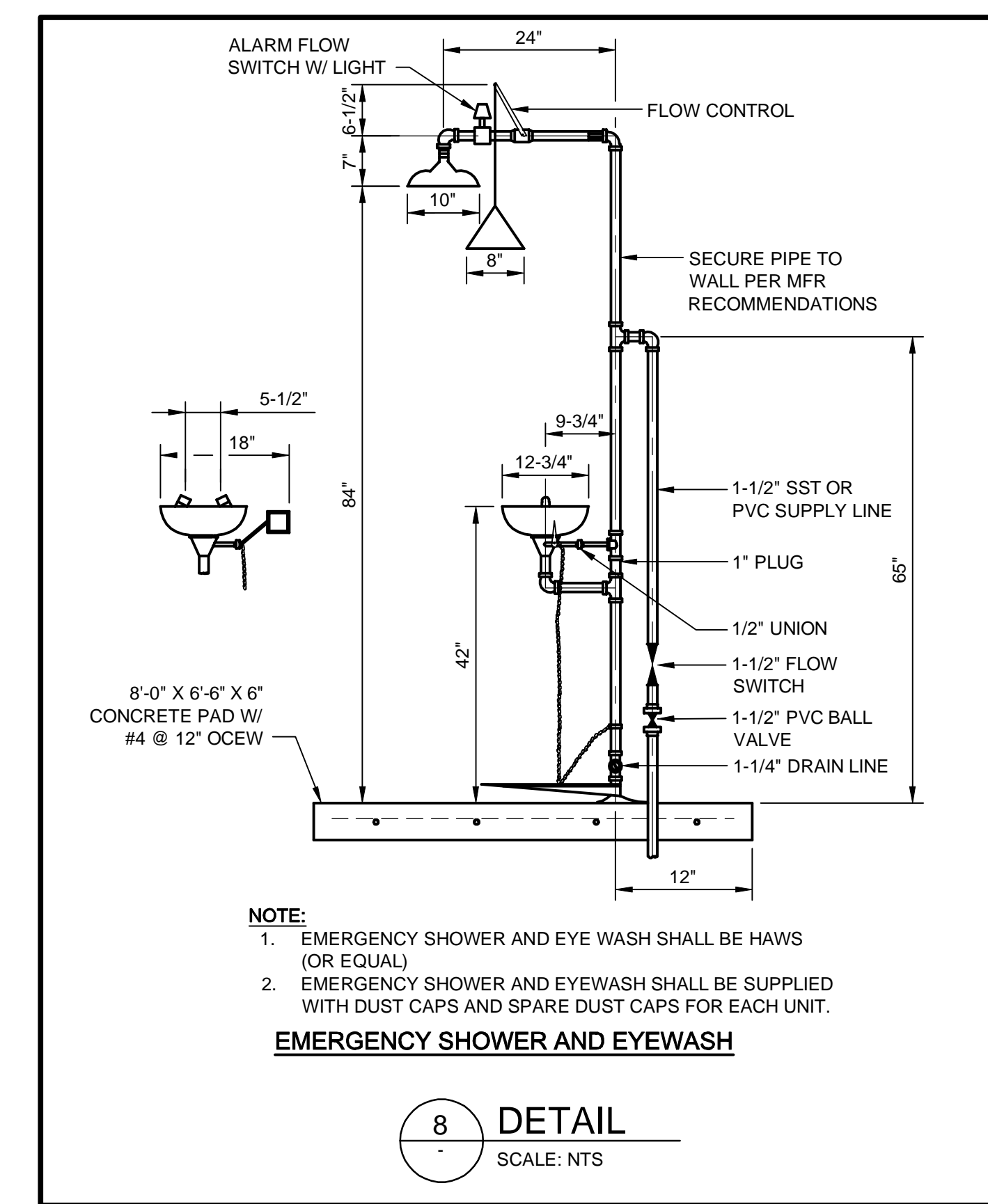
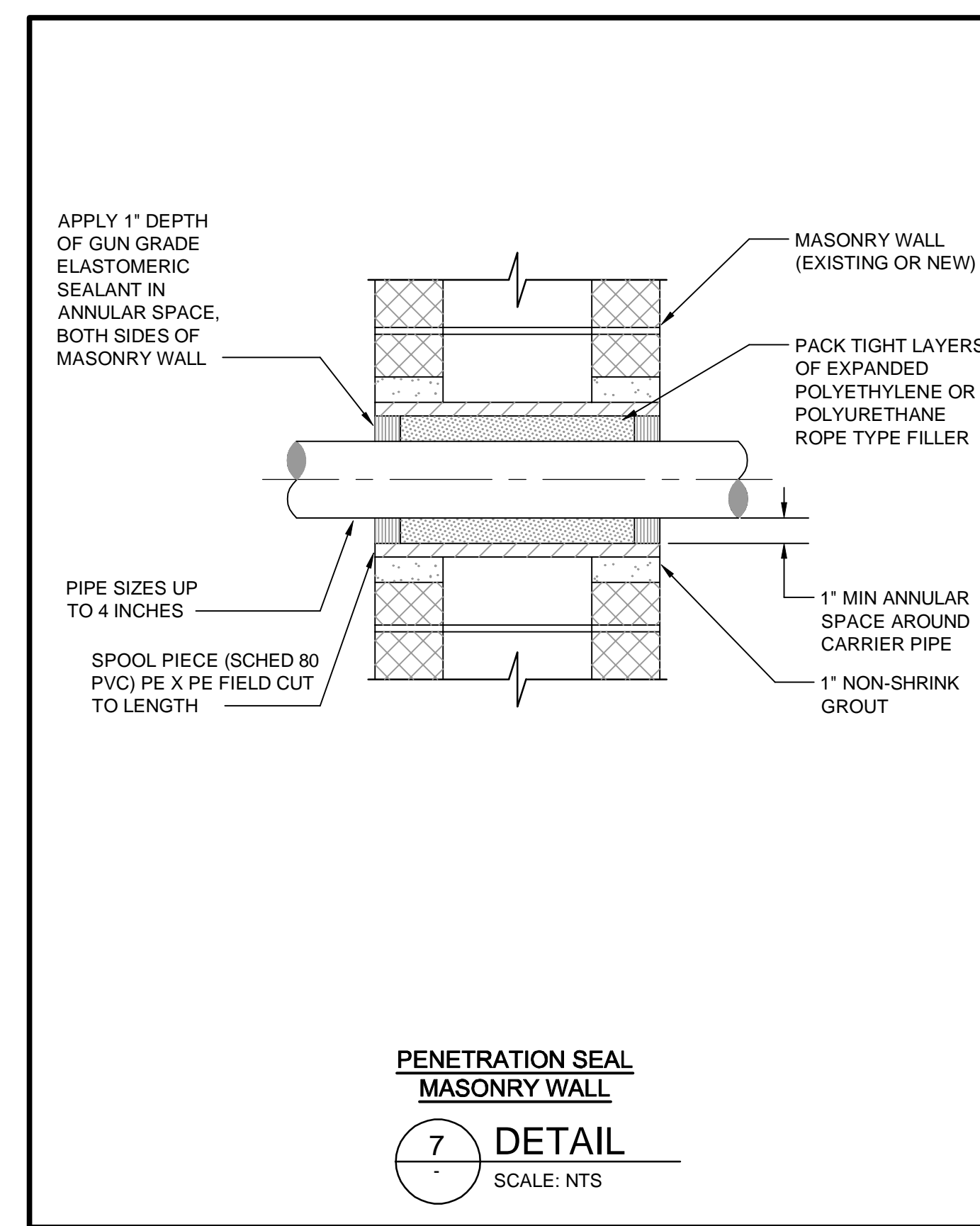
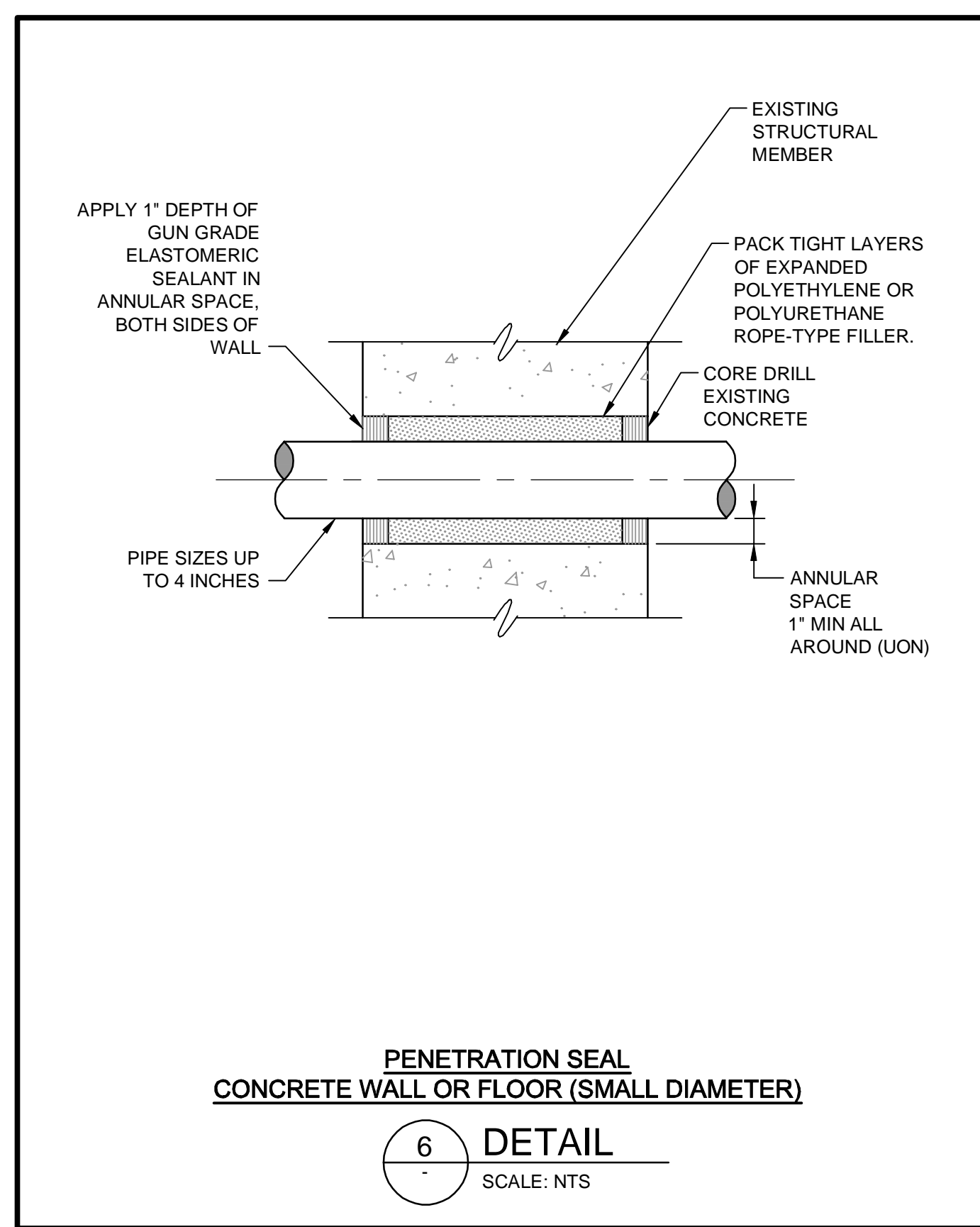
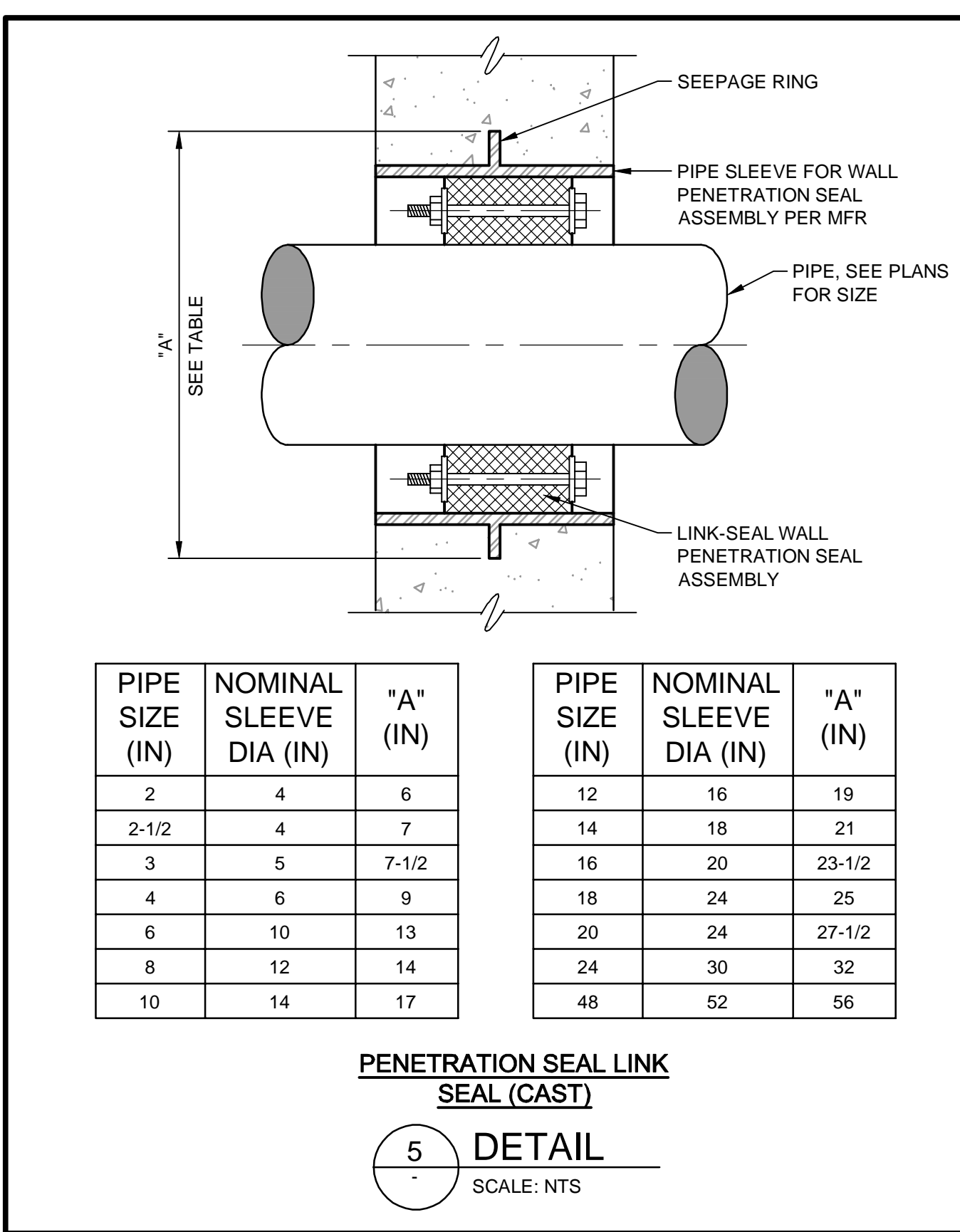
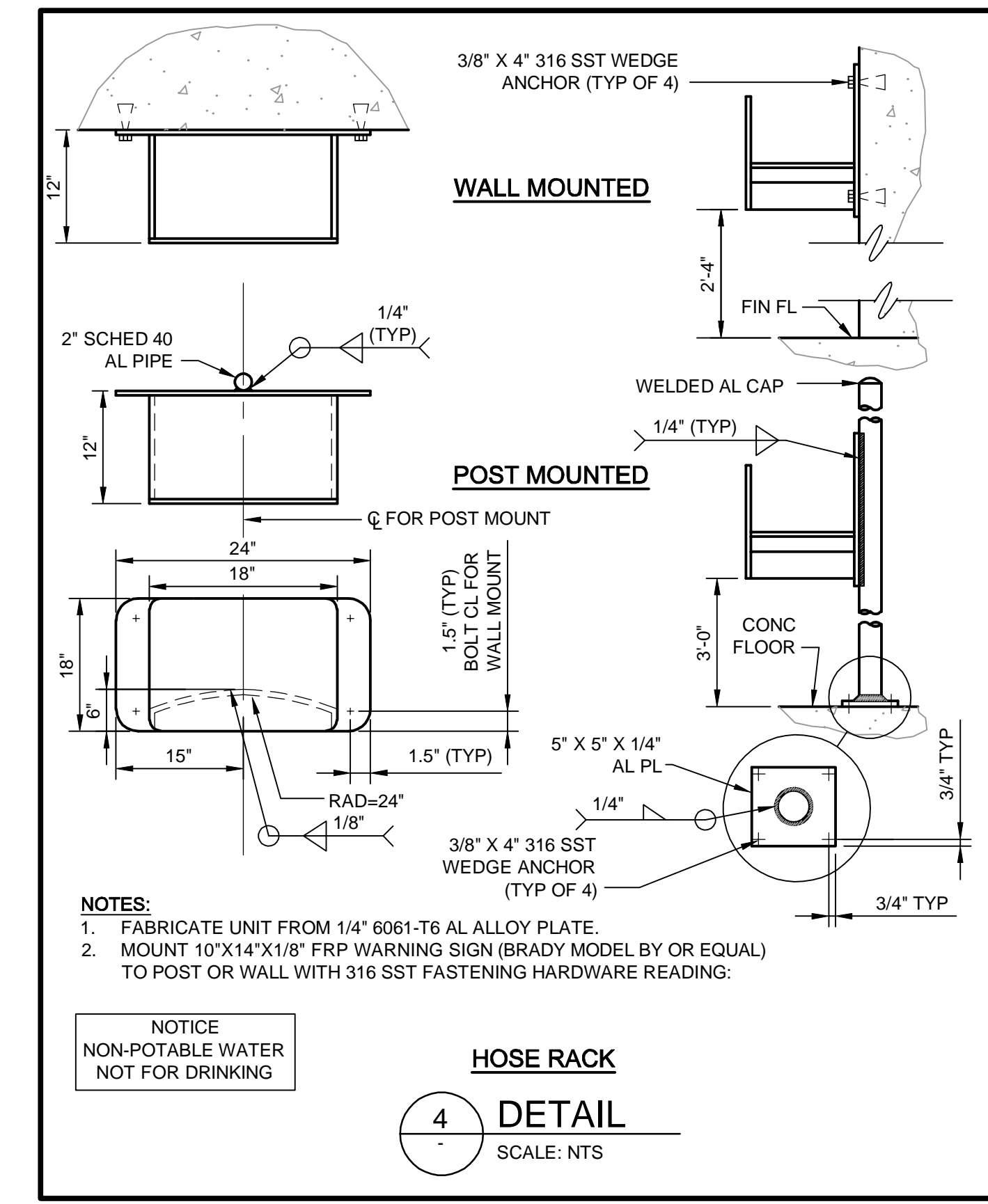
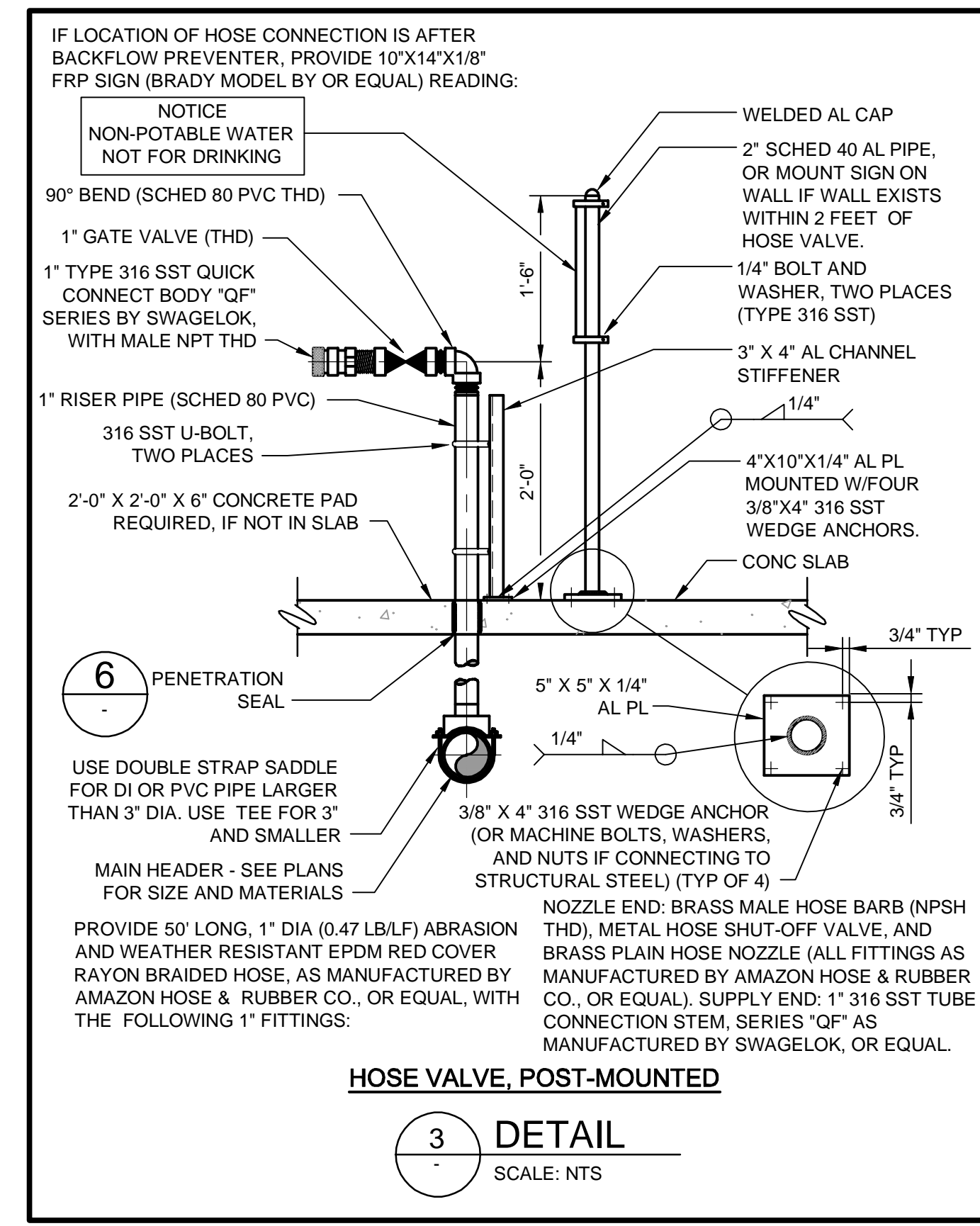
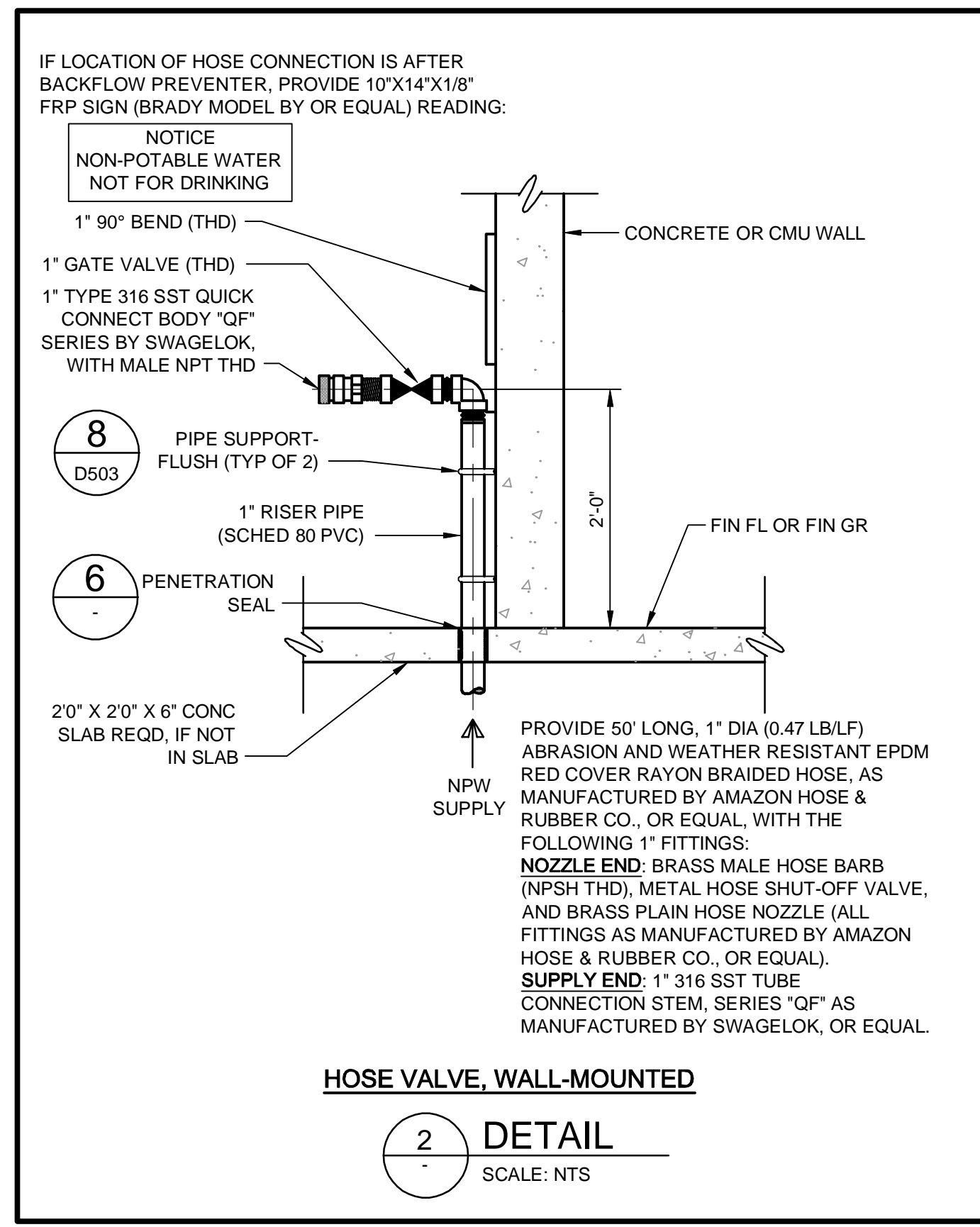
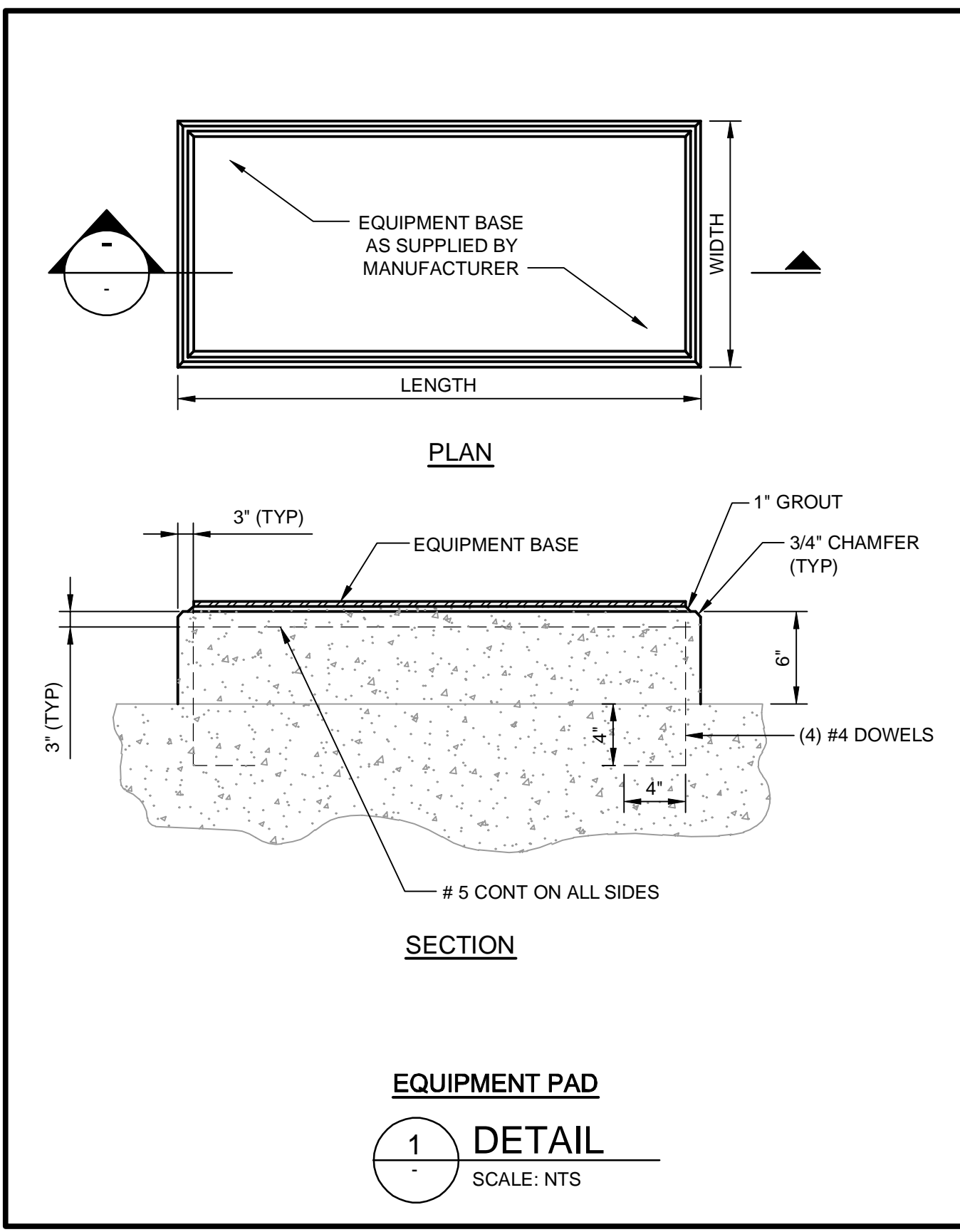


PIPE SUPPORT - FLANGE

8 DETAIL
SCALE: NTS

NOTES:

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



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BY	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

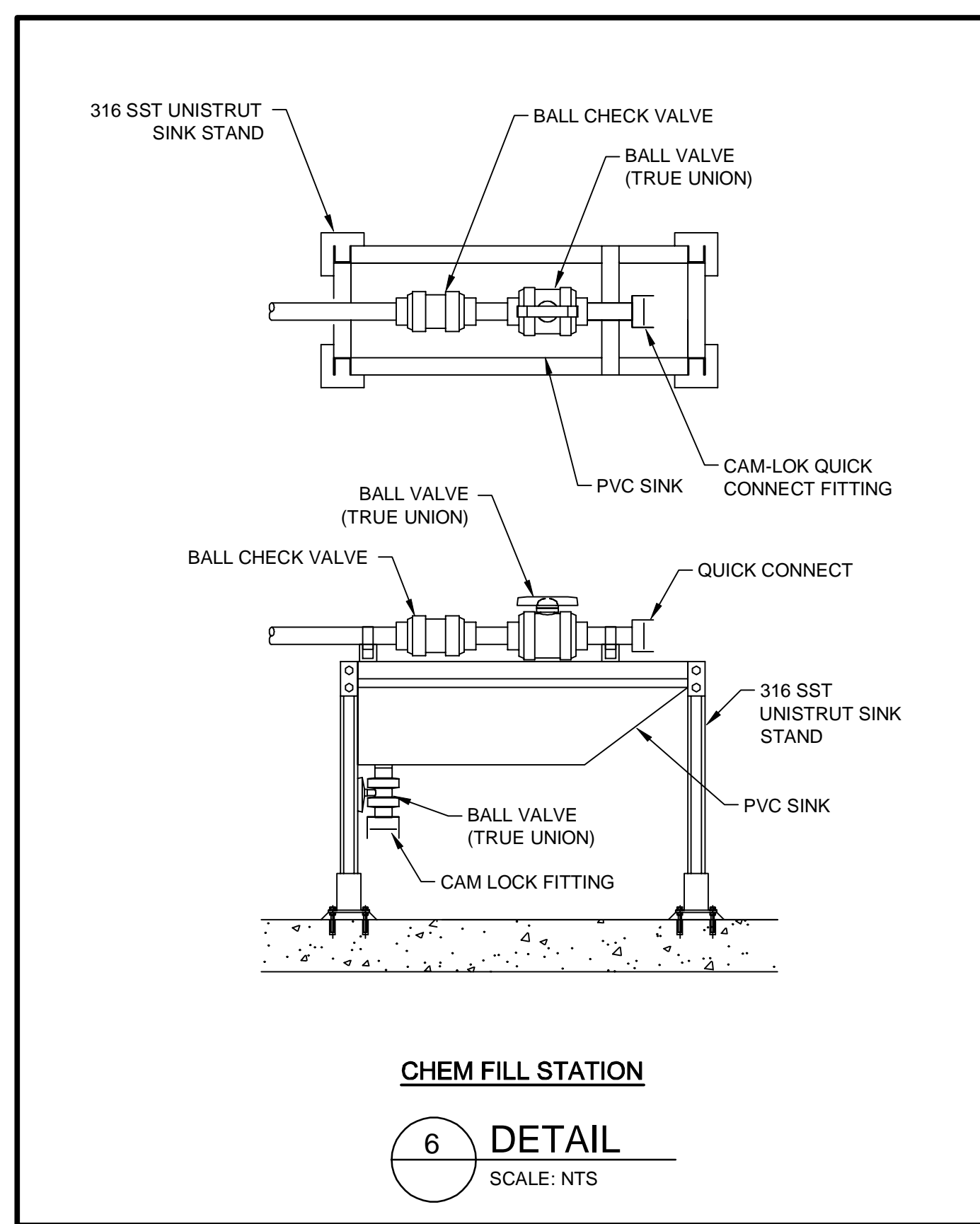
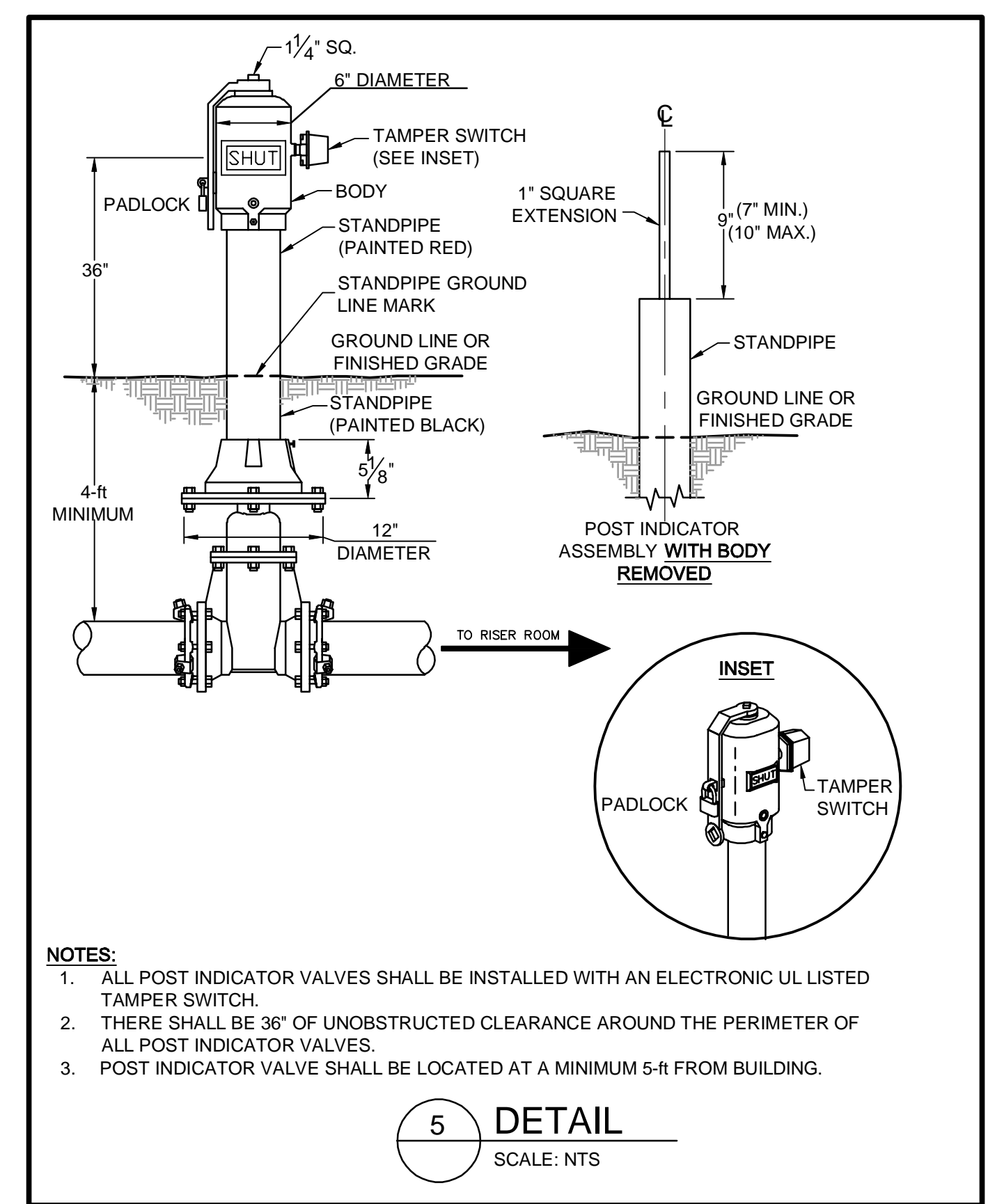
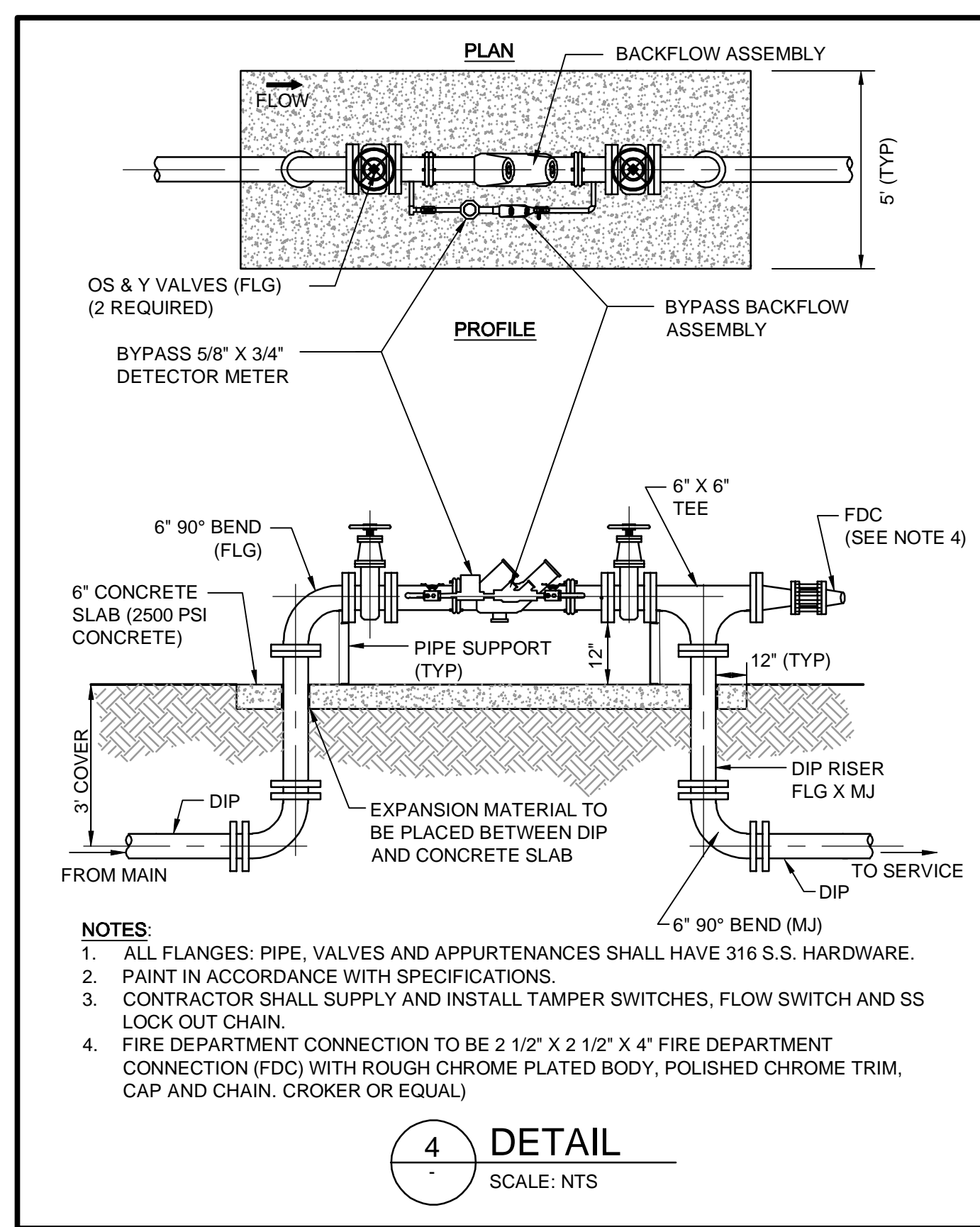
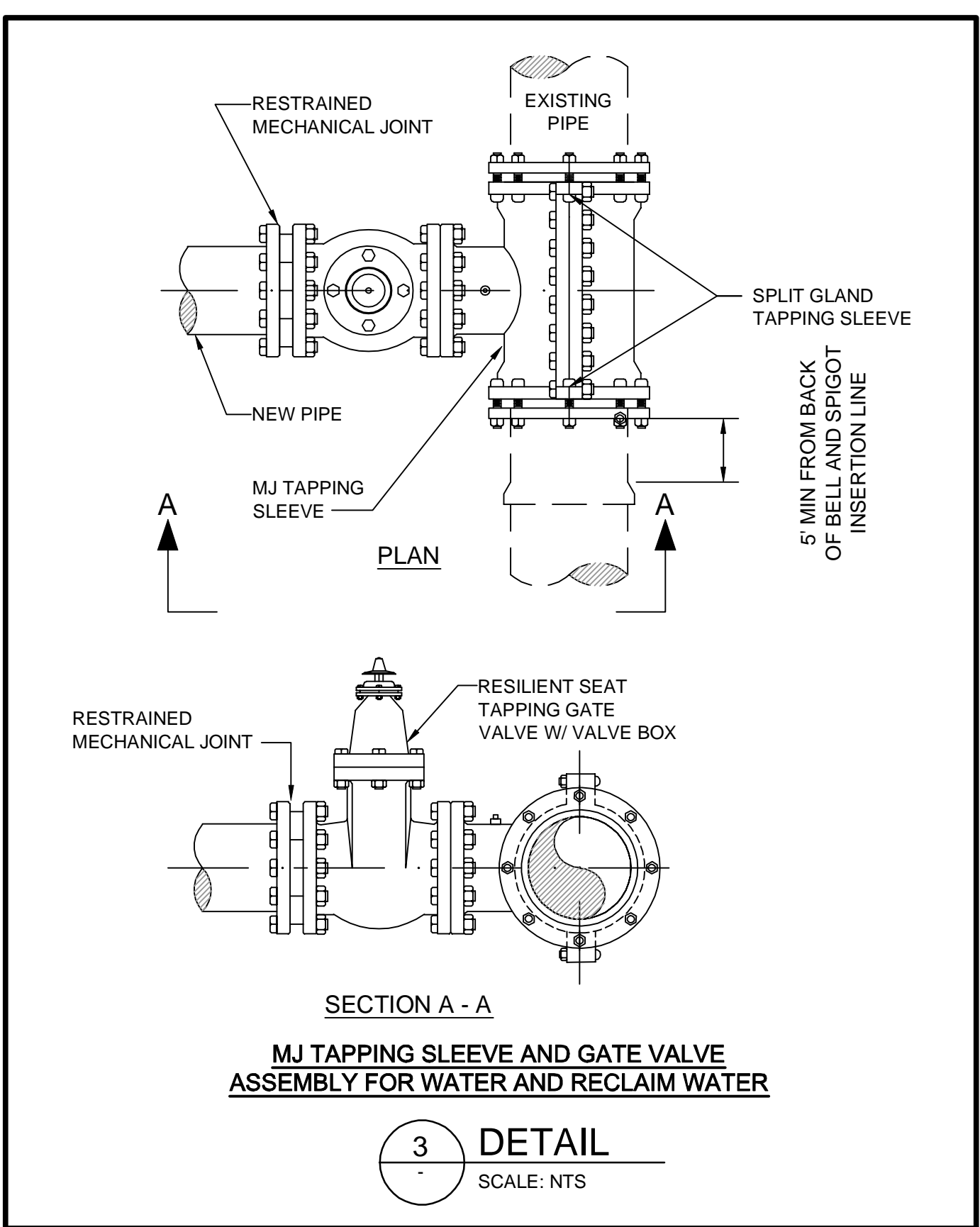
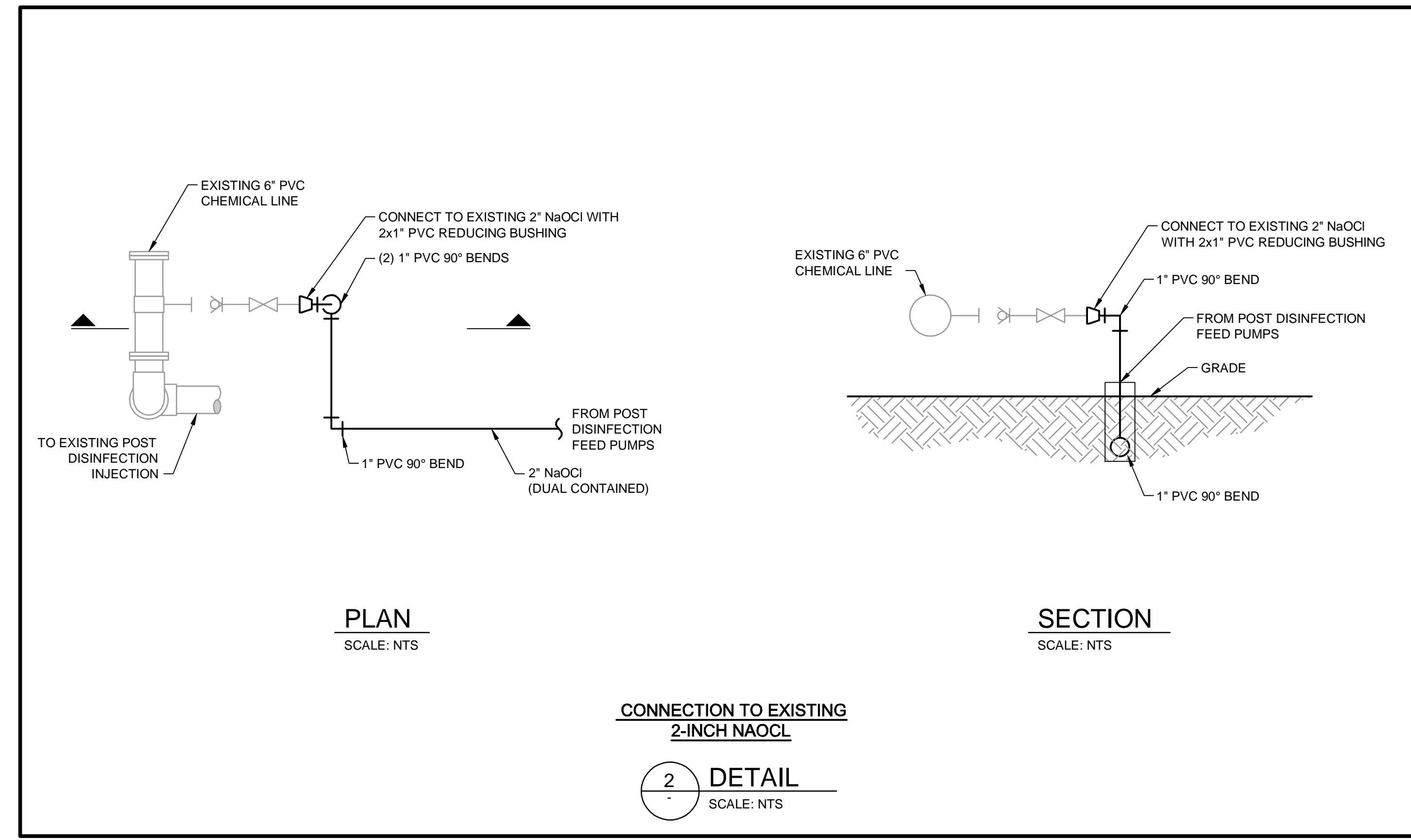
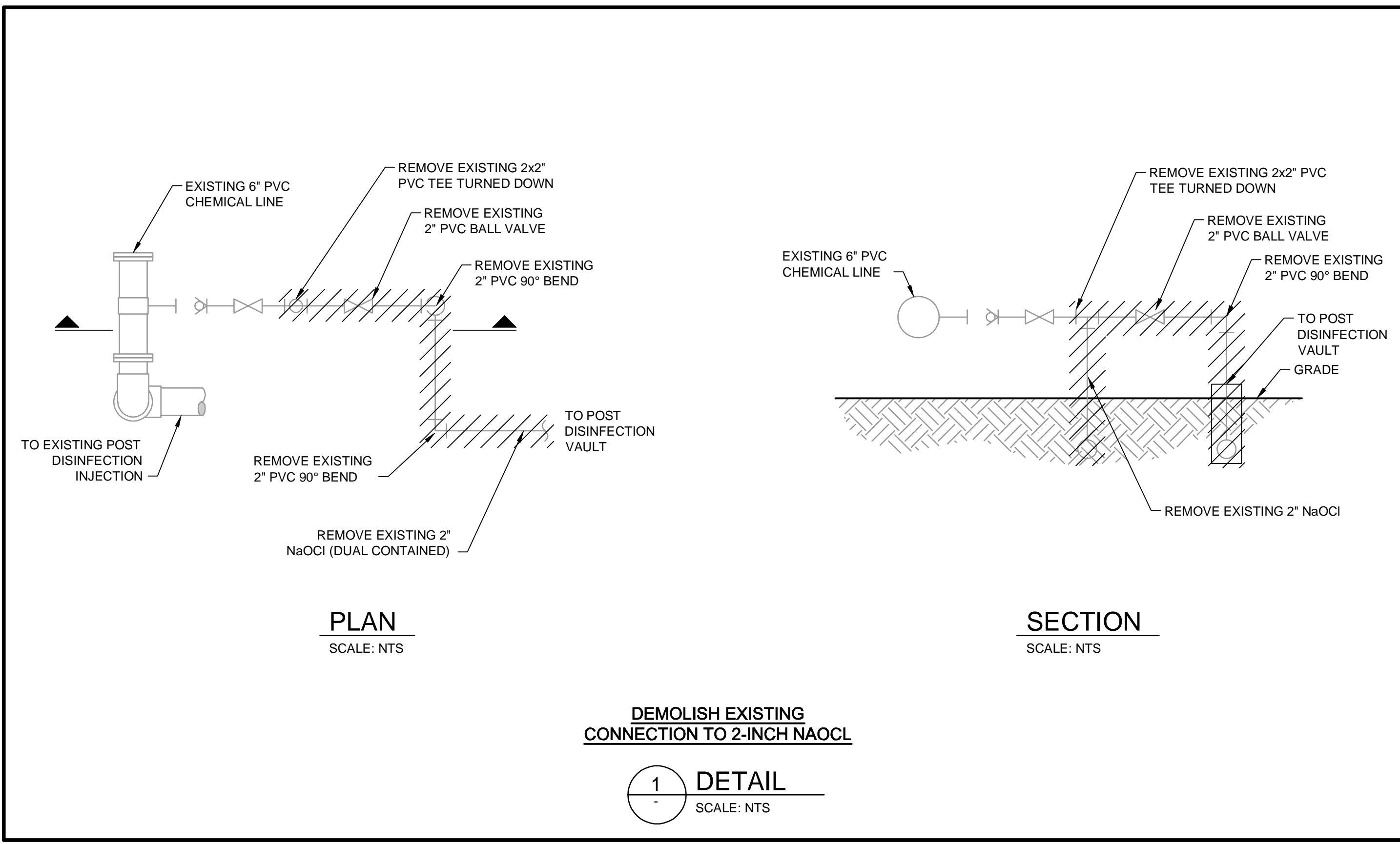
PROCESS DETAILS

Project No.: 200-10034-18003
 Designed By:
 Drawn By:
 Checked By:

D502

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Bar Measures 1 inch

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BY	
DATE	
DESCRIPTION	
MARK	

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS DETAILS

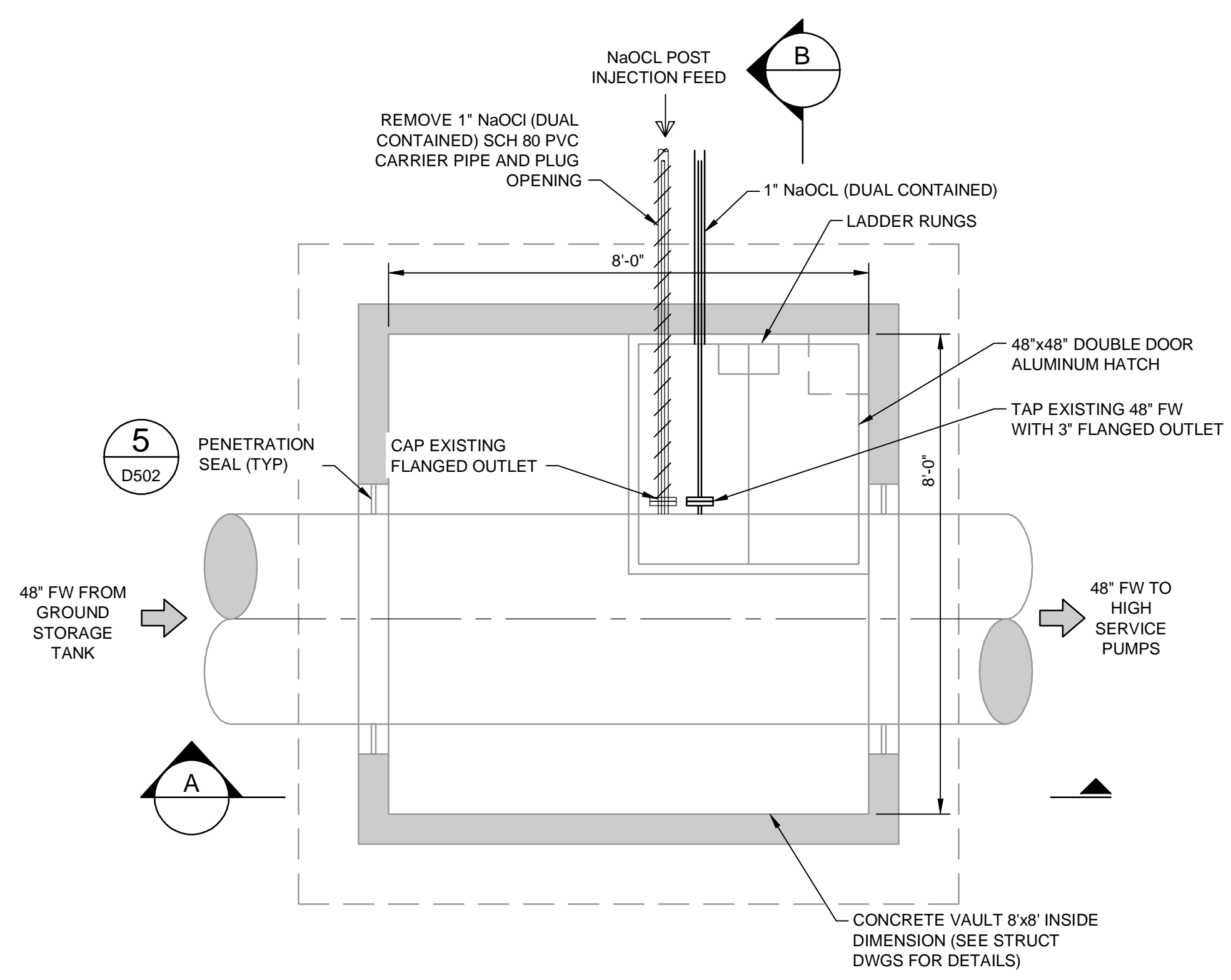
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Designed By:
Drawn By:
Checked By:

D503

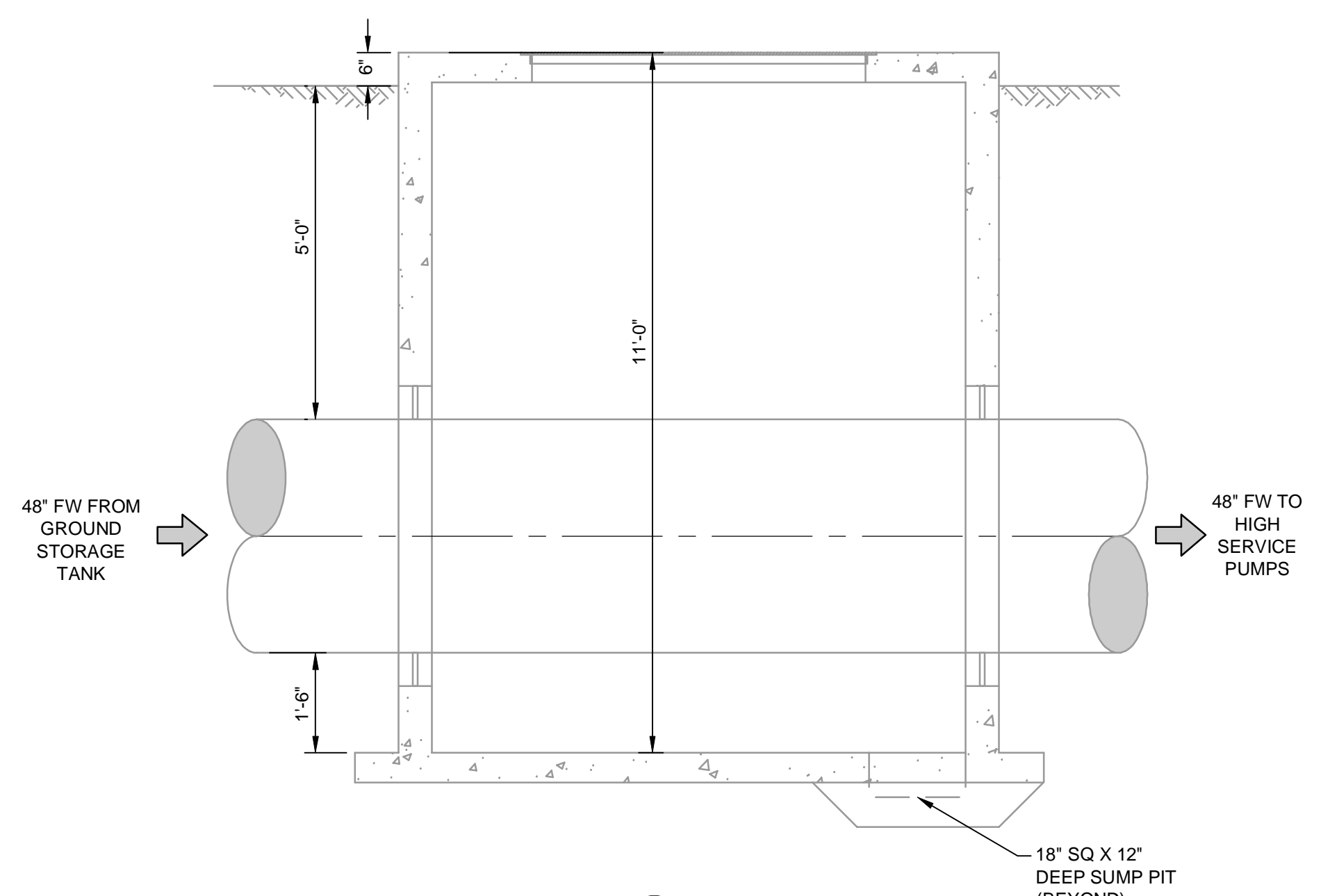
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Bar Measures 1 inch

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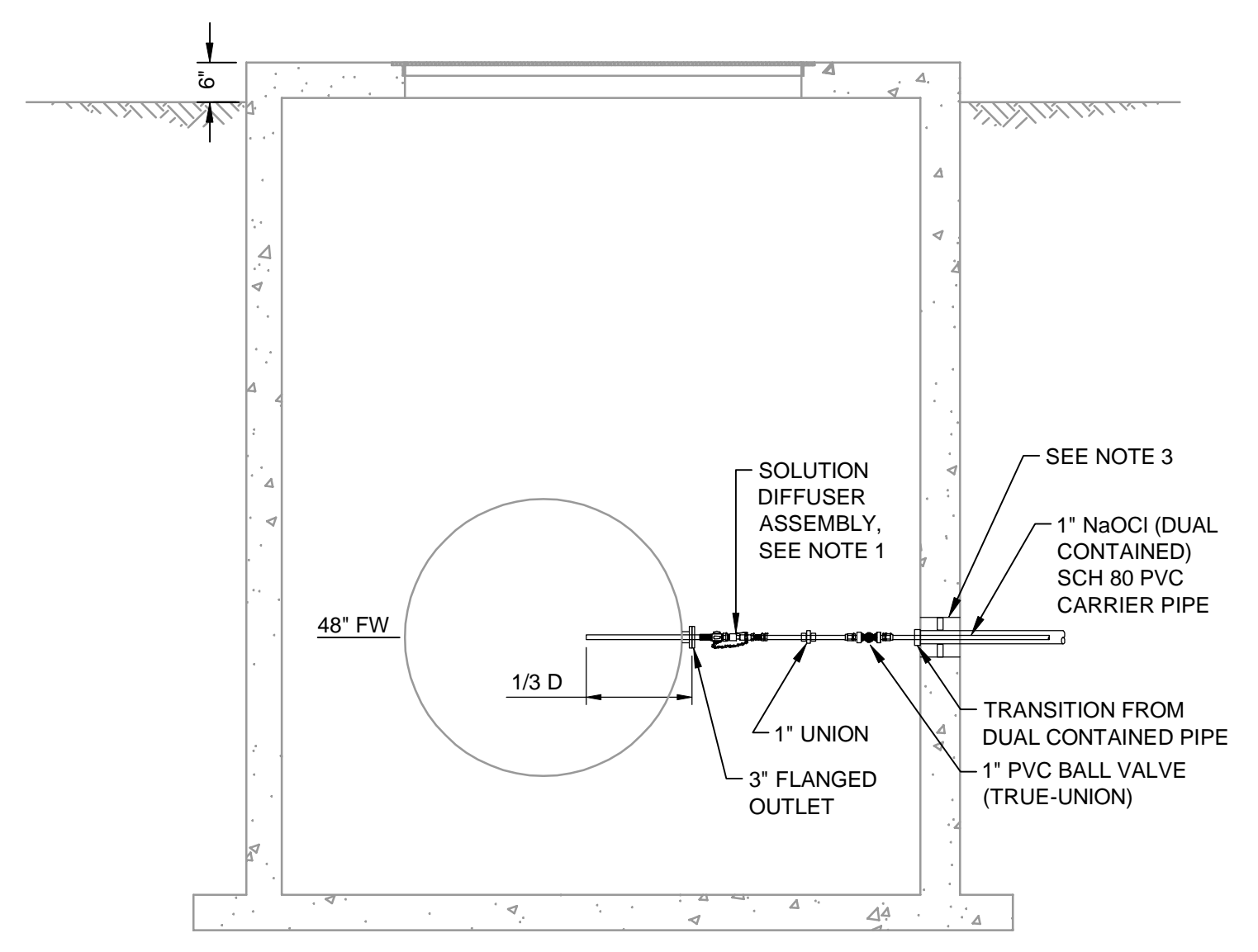


- NOTES:**
- SOLUTION DIFFUSER ASSEMBLY SHALL INCLUDE THE SOLUTION TUBE, NPT BRASS CORP STOP SIZED FOR PASSAGE OF THE SOLUTION TUBE SHOWN, SOLUTION TUBE ADAPTER, PACKING NUT, SST SAFETY CHAIN AND RESTRAIN HOOK, AND BALL CHECK VALVE. SOLUTION DIFFUSER ASSEMBLY SHALL BE RATED FOR 150 PSI AND MANUFACTURED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

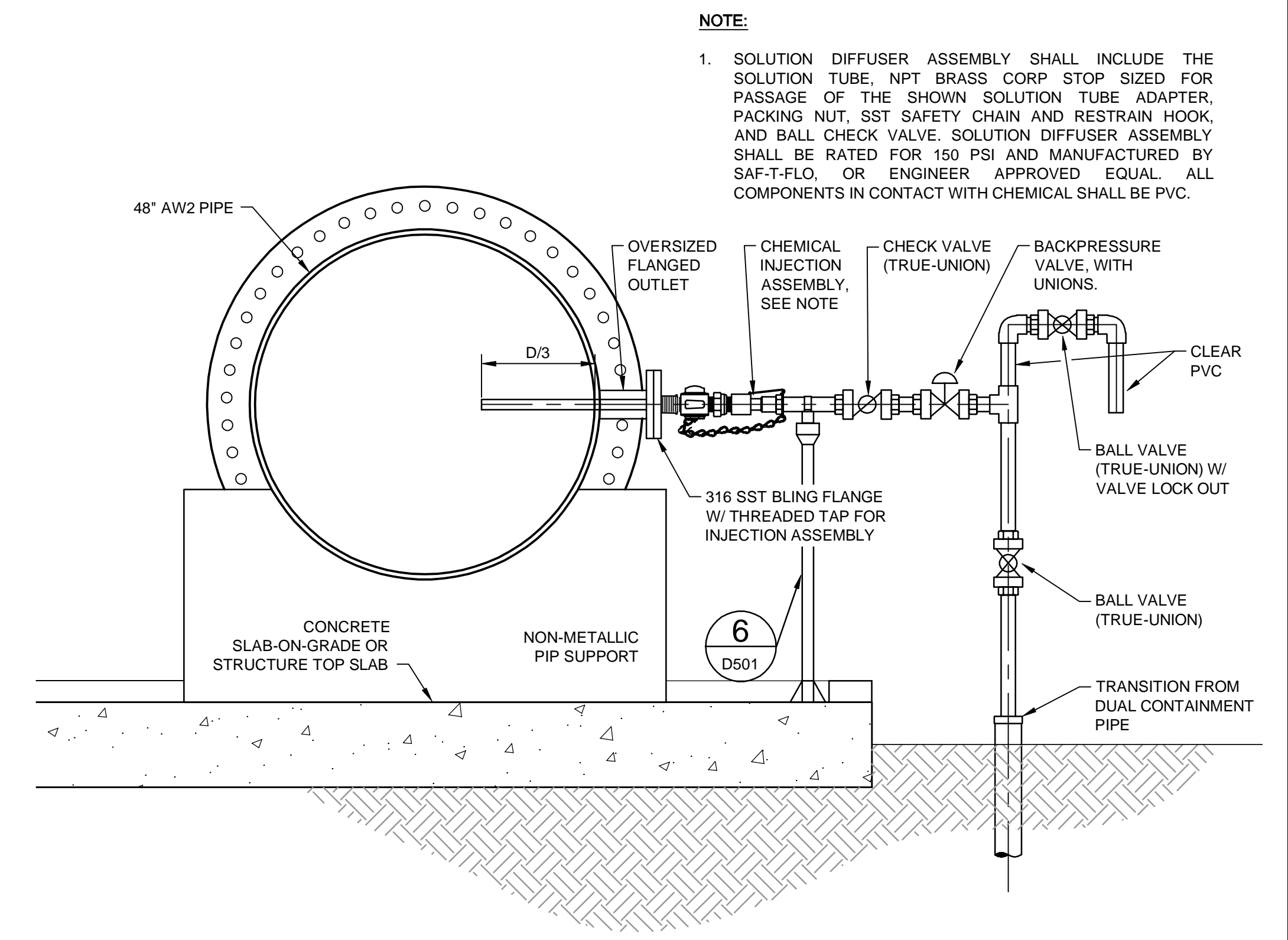


POST DISINFECTION INJECTION VAULT

1 DETAIL
SCALE: NTS

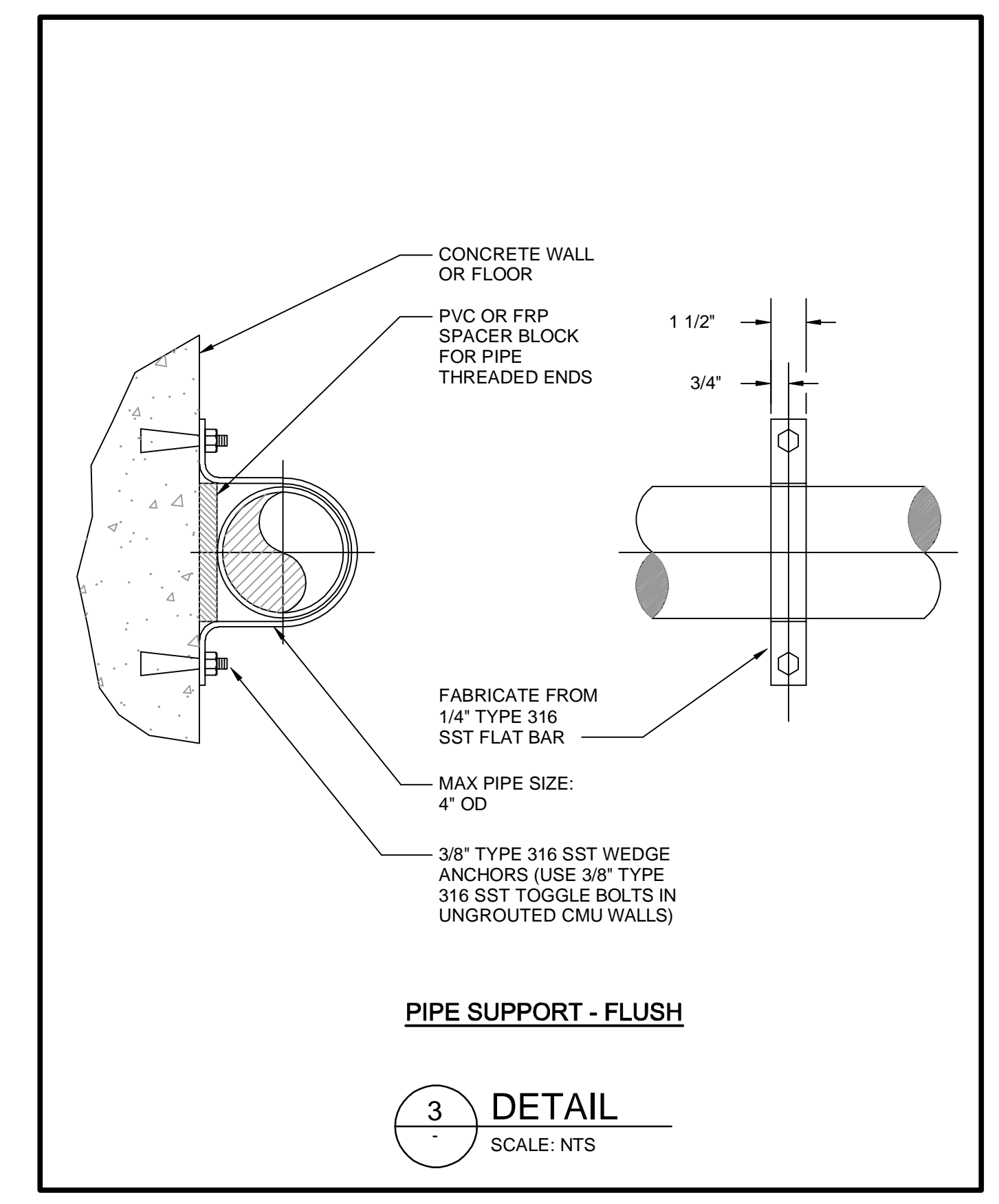


2 DETAIL
SCALE: 3/4" = 1'-0"



- NOTE:**
- SOLUTION DIFFUSER ASSEMBLY SHALL INCLUDE THE SOLUTION TUBE, NPT BRASS CORP STOP SIZED FOR PASSAGE OF THE 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.

CHEMICAL INJECTION DETAIL - HFSA AND NaOCl
SCALE: 3/4" = 1'-0"



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ORANGE COUNTY UTILITIES

EASTERN REGIONAL WATER SUPPLY FACILITY

SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

Project No.: 200-10034-18003

Designed By:

Drawn By:

Checked By:

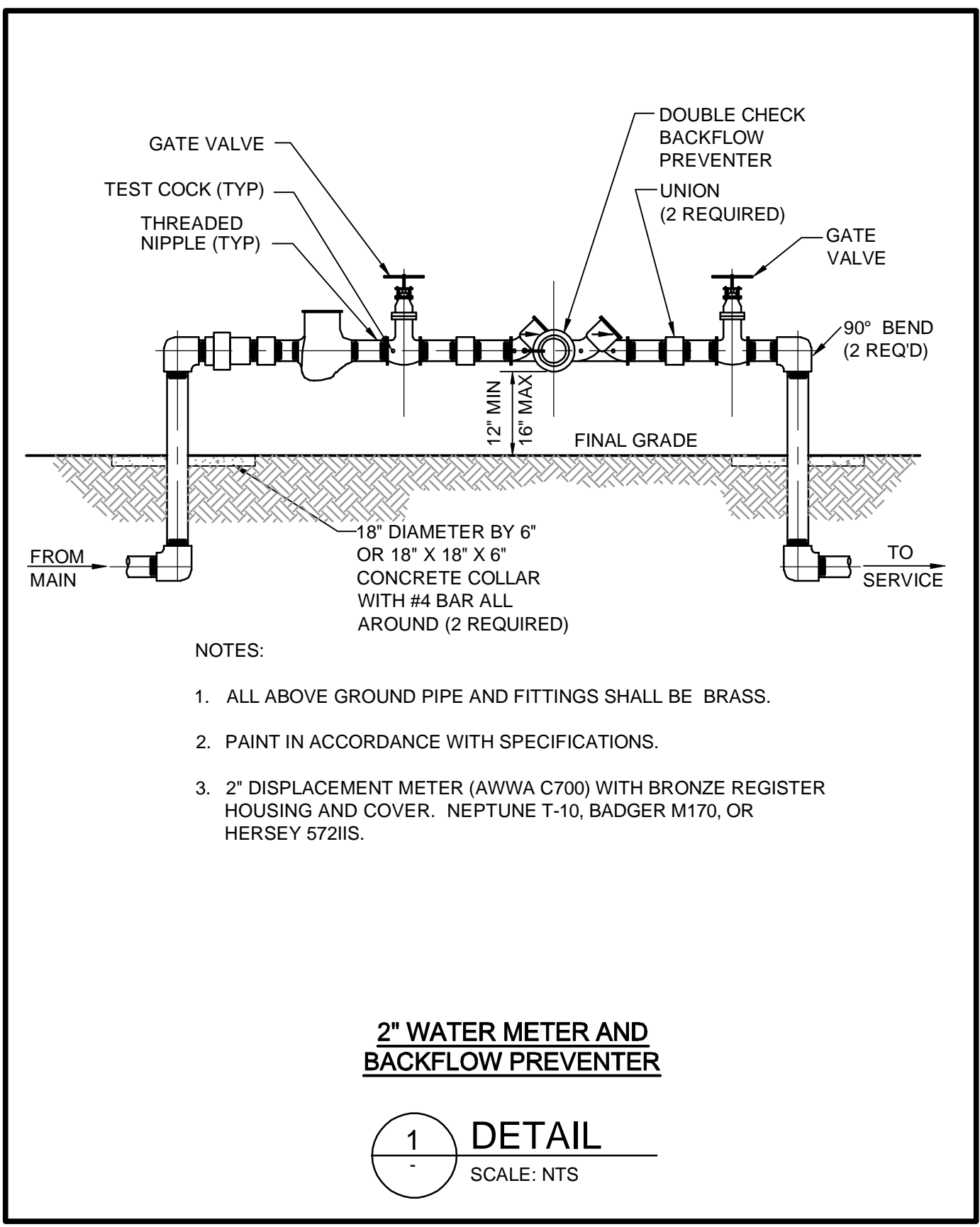
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PROCESS DETAILS

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- NOTES:
1. ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE BRASS.
 2. PAINT IN ACCORDANCE WITH SPECIFICATIONS.
 3. 2" DISPLACEMENT METER (AWWA C700) WITH BRONZE REGISTER HOUSING AND COVER. NEPTUNE T-10, BADGER M170, OR HERSEY 572IIS.

2" WATER METER AND BACKFLOW PREVENTER

1 DETAIL
SCALE: NTS

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SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

PROCESS DETAILS

Project No.: 200-10034-18003
Designed By:
Drawn By:
Checked By:

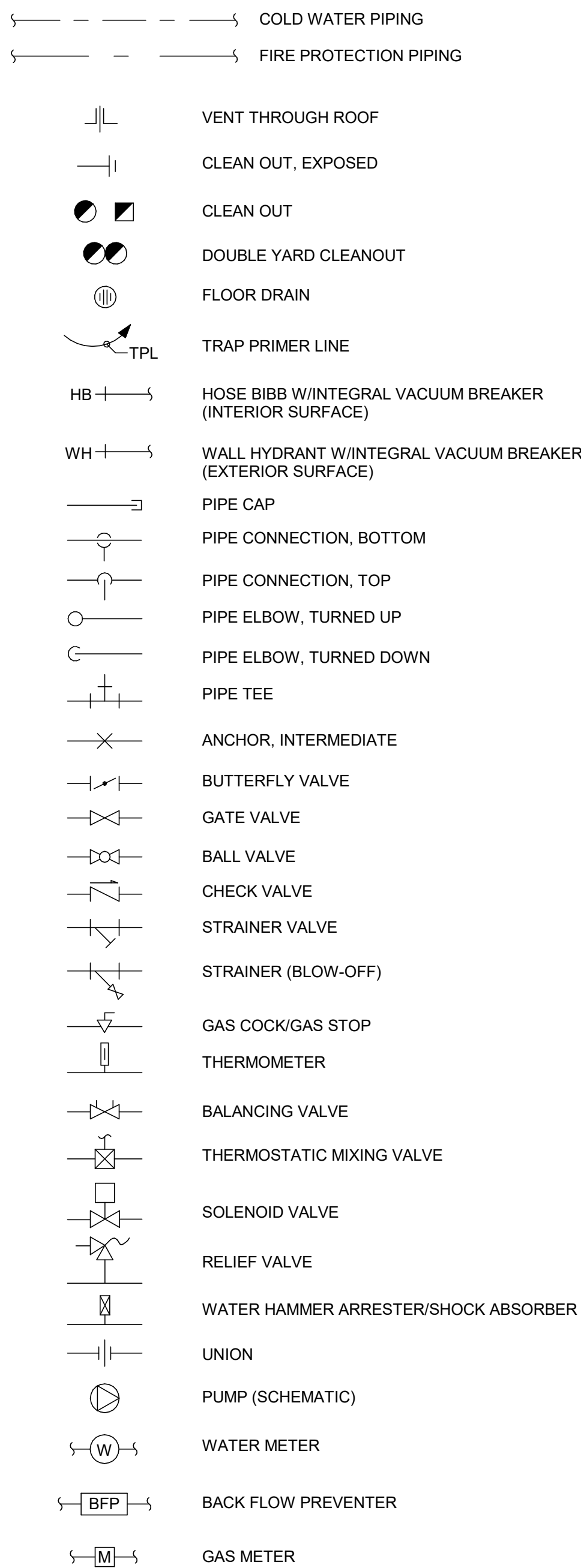
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Bar Measures 1 inch

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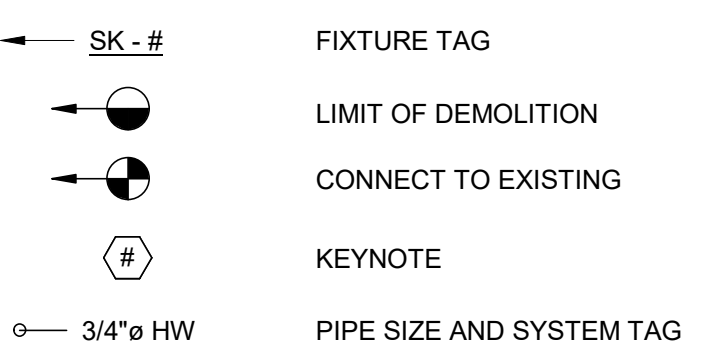
PLUMBING LEGEND



PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	R	RADIUS
AFG	ABOVE FINISHED GRADE	RD	ROOF DRAIN
APPROX	APPROXIMATE	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
BFF	BELOW FINISHED FLOOR	RPM	REVOLUTIONS PER MINUTE
BFP	BACKFLOW PREVENTER	SAN	SANITARY SEWER PIPING
CA	COMPRESSED AIR	SK	SINK
CAP	CAPACITY	SP	SUMP PUMP
CO	CLEAN OUT	SPEC	SPECIFICATION
COND	CONDENSATE	STD	STANDARD
CONN	CONNECTION	STO	STORM
CONT	CONTINUATION	SW	SERVICE WATER
D	DRAIN	TBD	TO BE DETERMINED
DCW	DOMESTIC COLD WATER	TCV	TEMPERING VALVE
DEG	DEGREES	TD	TRENCH DRAIN
DEMO	DEMOLITION	TEMP	TEMPERATURE
DIA	DIAMETER	TMV	THERMOSTATIC MIXING VALVE
DN	DOWN	TP	TRAP PRIMER
DS	DOWNSPOUT	TW	TEPID WATER
DWG	DRAWING	TYP	TYPICAL
EA	EACH	UR	URINAL
EEW	EMERGENCY EYE/FACE WASH	V	VENT
ENT	ENTERING	VIF	VERIFY IN FIELD
ESS	EMERGENCY SAFETY SHOWER	VS	VENT STACK
ET	EXPANSION TANK	VTR	VENT THRU ROOF
F	FAHRENHEIT	WB	WASHER BOX
FCO	FLOOR CLEAN OUT	WC	WATER CLOSET
FD	FLOOR DRAIN	WCO	WALL CLEAN OUT
FH	FIRE HYDRANT	WG	WATER GAUGE
FM	FLOW METER	WPD	WATER PRESSURE DROP
FPH	FREEZE PROOF HYDRANT	Ø	DIAMETER
FPM	FEET PER MINUTE		
GAL	GALLONS		
GD	GARBAGE DISPOSAL		
GM	GAS METER		
GPM	GALLONS PER MINUTE		
GWH	GAS WATER HEATER		
HB	HOSE BIBB		
HD	HEAD		
HO	HUB OUTLET		
HP	HORSEPOWER		
HW	HOT WATER		
HWR	HOT WATER RETURN		
ID	INSIDE DIAMETER/DIMENSION		
IE	INVERT ELEVATION		
IMVB	ICE MAKER VALVE BOX		
IN	INCH		
IW	INDUSTRIAL WASTE		
IWH	INSTANTANEOUS WATER HEATER		
LAV	LAVATORY		
M	METER		
MAX	MAXIMUM		
MEZZ	MEZZANINE		
MFR	MANUFACTURER		
MIN	MINIMUM		
N/A	NOT APPLICABLE		
NG	NATURAL GAS		
NPW	NON-POTABLE WATER		
NTS	NOT TO SCALE		
OD	OUTSIDE DIAMETER		
PCV	PRESSURE CONTROL VALVE		
PD	PRESSURE DROP		
PG	PRESSURE GAUGE		
PRV	PRESSURE REDUCING VALVE		
PSI	POUNDS PER SQUARE INCH		
PVC	POLYVINYL CHLORIDE		
PW	POTABLE WATER		

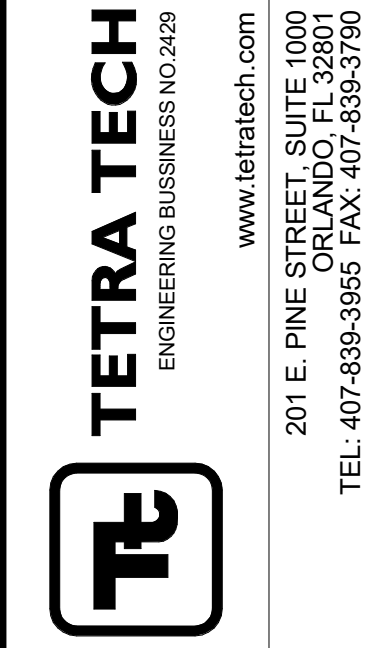
SYMBOLS AND TAGS



- NOTES:**
1. THIS LEGEND IS FOR REFERENCE ONLY.
 2. ALL SYMBOLS WHICH APPEAR WITHIN THE LEGEND MAY NOT APPLY TO THIS PROJECT.

GENERAL PLUMBING NOTES

1. ALL EQUIPMENT AND PIPING SHALL BE INSTALLED IN COMPLIANCE WITH THE LATEST APPLICABLE EDITION OF THE FLORIDA PLUMBING CODE AND LOCAL UTILITIES.
2. ALL INTERIOR FLOOR DRAINS AND OPEN RECEPTACLES WITH TRAPS SHALL BE PROTECTED BY A TRAP PRIMER (SEE SPECIFICATIONS AND PLANS FOR LOCATION AND TYPE.) PROVIDE 1/2" SLOPED LINE TO FLOOR DRAIN. SEE DETAILS SHEET.
3. WATER LINES SHALL NOT BE ROUTED ABOVE ANY ELECTRICAL ROOM OR ELECTRICAL PANELS OR TELEPHONE ROOMS.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH OTHER TRADES TO MINIMIZE SPATIAL CONFLICTS.
5. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS BEFORE CONSTRUCTION BEGINS, INCLUDING SEWER, DRAIN, AND CONDUIT INV. ELEV. CONTACT CONTRACTING OFFICER SHOULD DISCREPANCIES OCCUR.



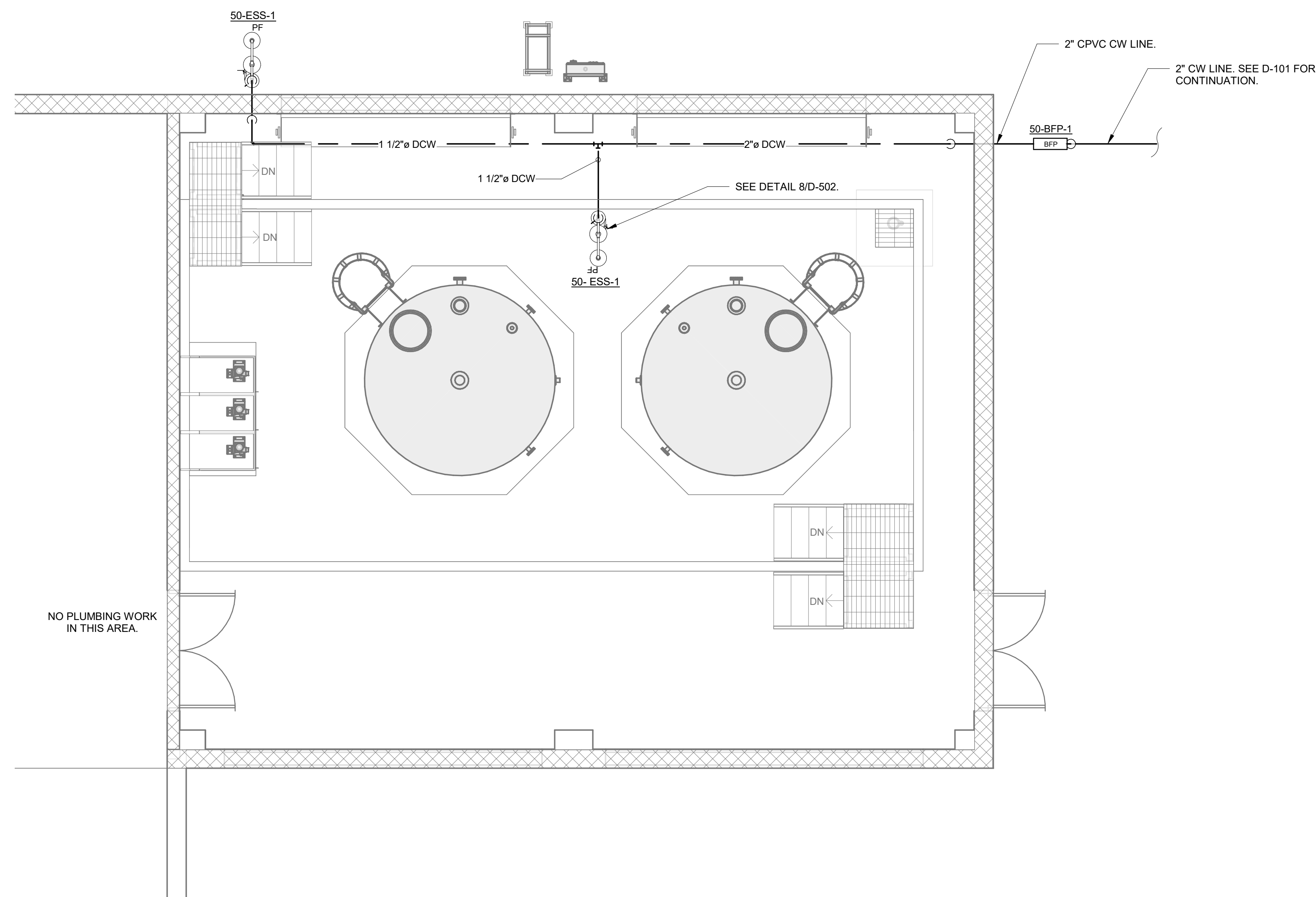
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ORANGE COUNTY UTILITIES
 EASTERN REGIONAL WATER SUPPLY FACILITY
 SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PLUMBING SYMBOLS AND ABBREVIATIONS

PROJ:	200-10034-18003
DESN:	MGS
DRWN:	VBD
CHKD:	LER

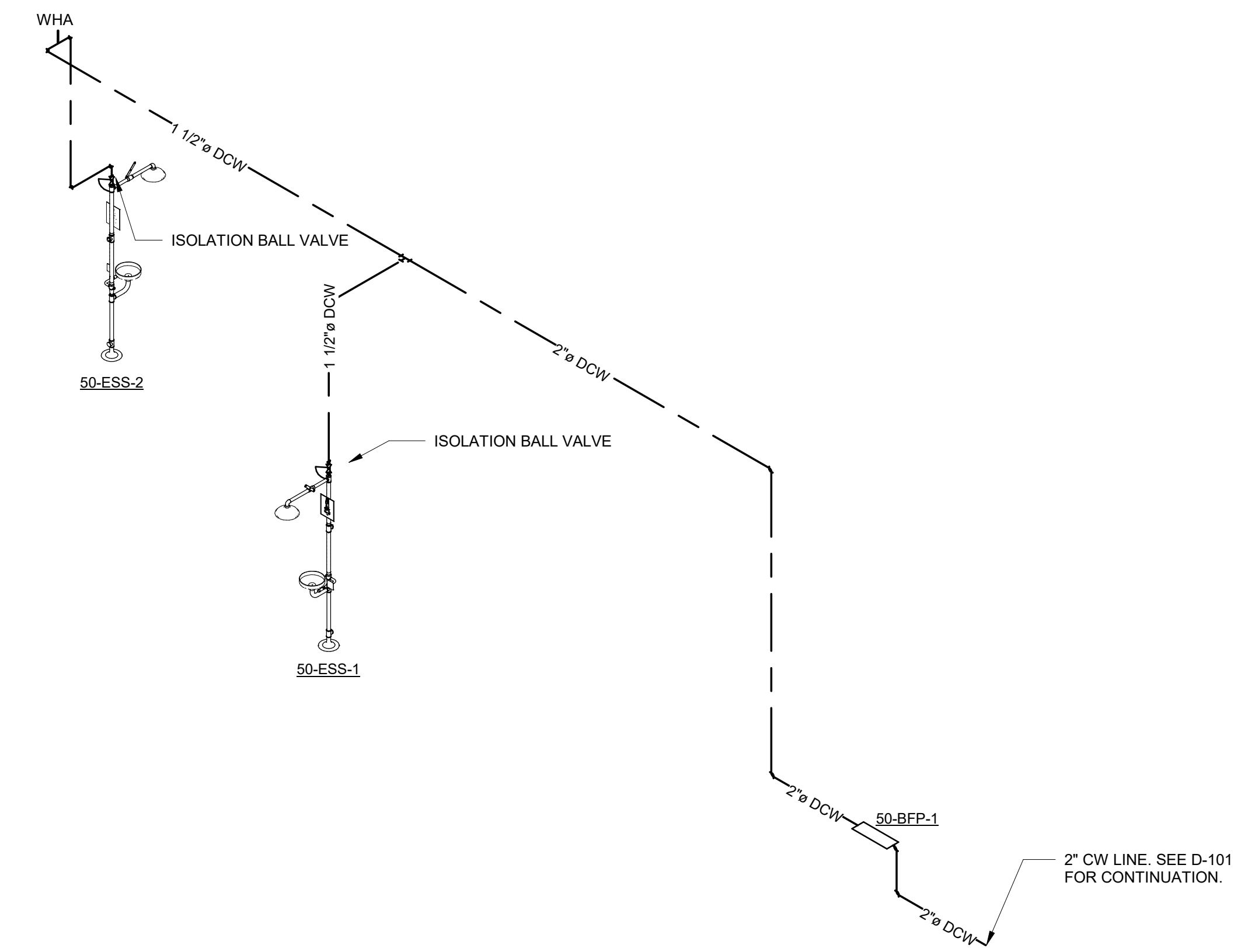
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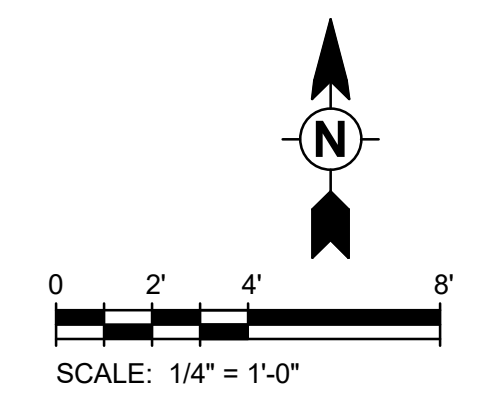
1 PROCESS 50 PLUMBING PLAN
P101 SCALE: 1/4" = 1'-0"

MODIFICATION GENERAL NOTES:

- 1. COORDINATE NEW PIPING, AND ASSOCIATED FIXTURES WITH EXISTING PIPES, EQUIPMENT, CONDUIT WIRING, LIGHTING STRUCTURE, ETC.
- 2. DOMESTIC WATER LINE SHALL TRANSITION TO CPVC PRIOR TO ENTERING WALL TO SODIUM HYPOCHLORITE ROOM.
- 3. INSULATE EXPOSED EXTERIOR WATER PIPING.



2 DOMESTIC WATER RISER DIAGRAM
P101 NTS



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ORANGE COUNTY UTILITIES
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SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
PLUMBING PLAN AND
RISER DIAGRAM

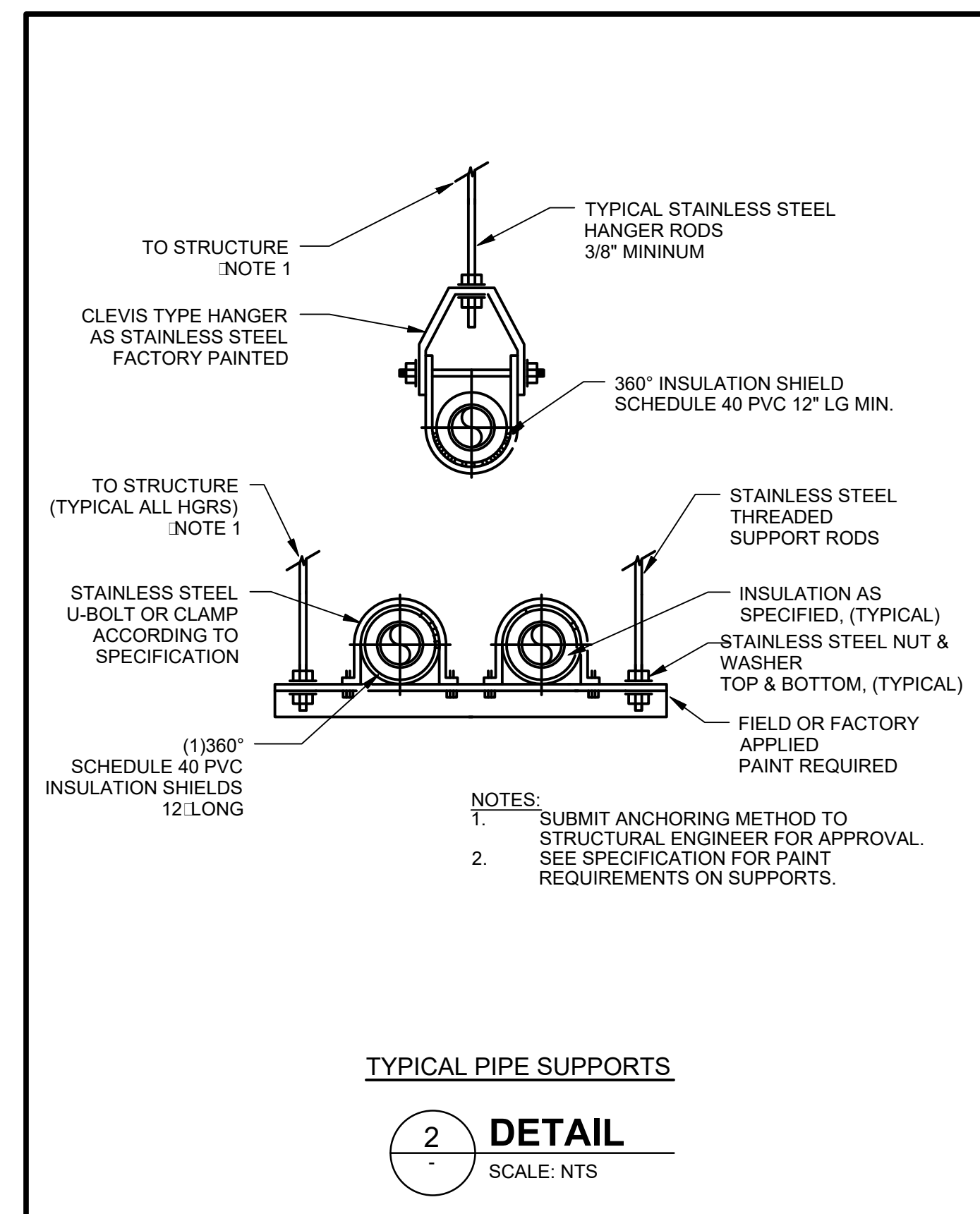
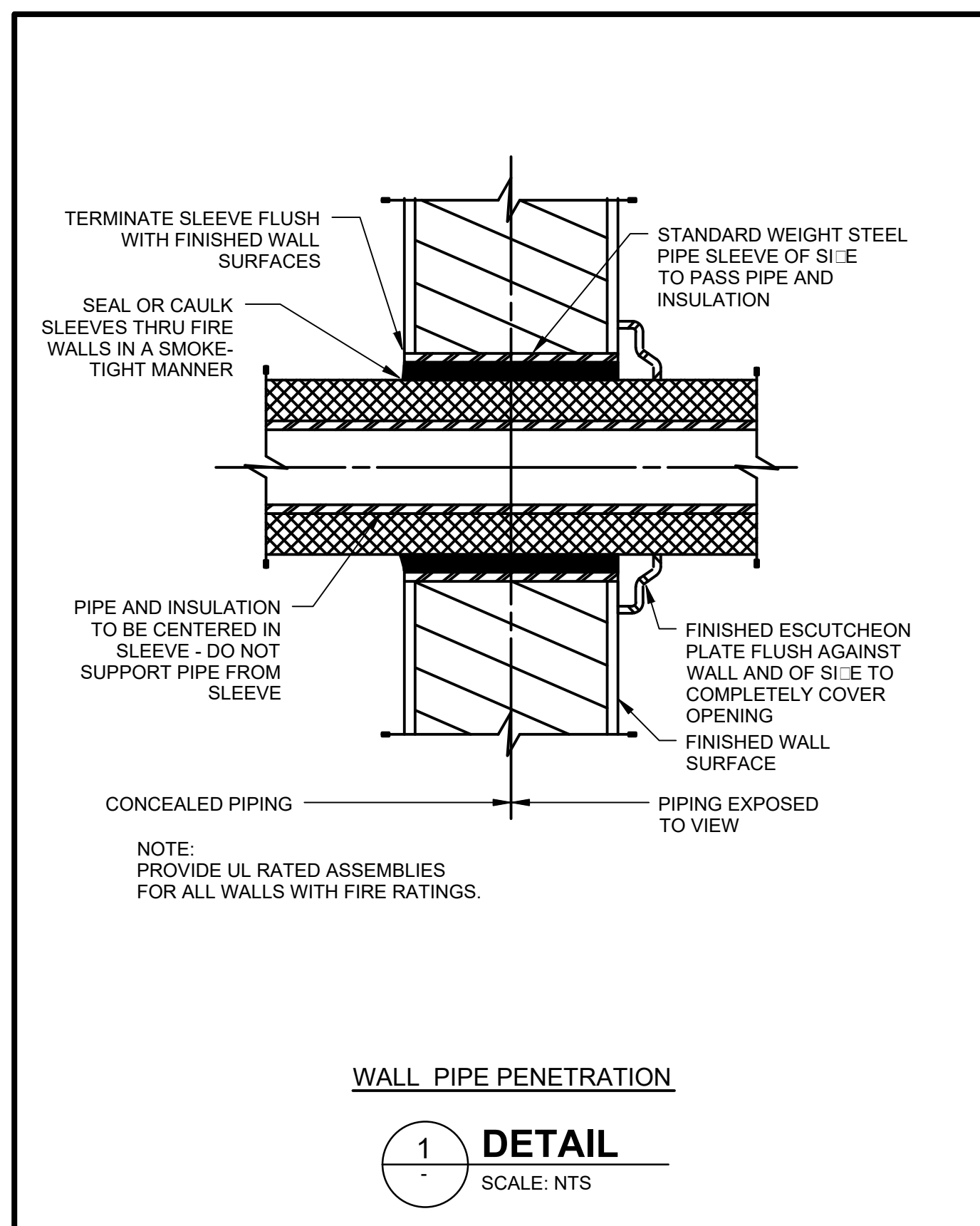
PROJ:	200-10034-18003
DESN:	MGS
DRWN:	VBD
CHKD:	LER

P101

PLUMBING FIXTURE SCHEDULE					
MARK	DESCRIPTION	MANUFACTURER OR APPROVED EQUAL	MODEL	CONNECTIONS	COMMENTS
				CW	
50-ESS-1	EMERGENCY SHOWER COMBINATION EYE/FACE WASH	HAWS	8330	1-1/4"	PROVIDE HAWS 9001 ALARM SYSTEM AND CONNECT TO PLANT SCADA SYSTEM PROVIDE HAWS 9102 DUST COVER. PROVIDE UNIT WITH FREE-FLOW AND SCALD PROTECTION BLEED VALVES.
50-ESS-2	EMERGENCY SHOWER COMBINATION EYE/FACE WASH	HAWS	8330	1-1/4"	PROVIDE HAWS 9001 ALARM SYSTEM AND CONNECT TO PLANT SCADA SYSTEM PROVIDE HAWS 9102 DUST COVER. PROVIDE UNIT WITH FREE-FLOW AND SCALD PROTECTION BLEED VALVES.
50-BFP-1	REDUCED PRESSURE ONE BACKFLOW PREVENTER	WATTS	LF909	2"	
50-WHA-1	WATER HAMMER ARRESTOR	WATTS	LF150A	1 1/2"	

NOTES:

1. PRODUCT BRANDS SHOWN ON DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND SHALL NOT BE CONSTRUCTED AS THE ONLY PRODUCT AVAILABLE. OTHER BRAND SELECTED SHALL MEET THE PERFORMANCE AND MATERIAL SPECIFICATIONS OF PRODUCTS LISTED.



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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PLUMBING
SCHEDULES AND DETAILS

Project No.: 200-10034-18003
Designed By: MGS
Drawn By: VBD
Checked By: LER

P501

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Bar Measures 1 inch

FIRE PROTECTION NOTES

- A. INSTALL SYSTEM IN ACCORDANCE WITH NFPA 13 & 24, FLORIDA FIRE PREVENTION CODE SIXTH EDITION AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ALL MATERIALS SHALL BE FM/UL LISTED FOR USE IN FIRE PROTECTION SYSTEMS.
- B. ABOVE GROUND PIPING SHALL BE SCHEDULE 40 BLACK STEEL. UNDERGROUND PIPING SHALL BE AS SHOWN ON THE YARD PIPING DRAWINGS.
- C. HANGER LOCATIONS SHALL BE COORDINATED WITH THE BUILDING STRUCTURAL STEEL. SUPPORT PIPING IN ACCORDANCE WITH NFPA-13. PROVIDE ALL MISCELLANEOUS STEEL FRAMING AS REQUIRED TO SUPPORT PIPING FROM STRUCTURE. HANG ALL PIPING TIGHT TO STRUCTURE FOR MAXIMUM WORKING CLEARANCE IN SPACE.
- D. PROVIDE CHROME ESCUTCHEONS WHERE PIPING PENETRATES WALLS IN EXPOSED AREAS.
- E. SPRINKLERS SHALL BE FROM A SINGLE MANUFACTURER.
- F. ALL MEASUREMENTS AND ELEVATIONS SHALL BE ESTABLISHED BY THE CONTRACTOR PRIOR TO FABRICATION OF PIPE AND COORDINATED WITH THE BUILDING STRUCTURE, DUCTWORK SHOP DRAWINGS AND THE WORK OF OTHER TRADES. PROVIDE OFFSETS WHERE REQUIRED DUE TO OBSTRUCTIONS OR INTERFERENCE AT NO ADDITIONAL COST TO THE OWNER.
- G. THE CONTRACTOR SHALL PREPARE FABRICATION / WORKING PLANS AS DEFINED BY NFPA-13 WHICH CLEARLY INDICATE ALL CUT PIPE DIMENSIONS, HANGER TYPES AND LOCATIONS, ANY TRAPPED SECTIONS OF PIPING, AND DEVIATIONS FROM THIS LAYOUT REQUIRED FOR COORDINATION. PROVIDE AUXILIARY DRAINS FOR ANY TRAPPED PIPING.
- H. TIE-IN OF FLOW SWITCH AND TAMPER SWITCHES TO FIRE ALARM SYSTEM SHALL BE PERFORMED UNDER DIVISION 16
- I. SYSTEMS SHALL BE HYDRAULICALLY DESIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF FLORIDA. REFER TO THE NOTES ON THE DRAWINGS FOR DENSITIES AND AREA OF APPLICATION.
- J. ALL SPRINKLER PIPING SHALL BE PAINTED RED, WITH ON PRIMER COAT AND TWO ADDITIONAL COATS OF PAINT. REFER TO DIVISION 9.
- K. SEE YARD PIPING DRAWINGS AND F001 FOR SITE PIPING.
- L. TEST SYSTEMS IN ACCORDANCE WITH NFPA-13 AND 24 AND REQUIREMENTS OF AUTHORITY HAVING JURISDICTION (AHJ) AND PREPARE "CONTRACTORS MATERIAL AND TEST CERTIFICATE" AS PRESCRIBED BY NFPA-13 AND NFPA-24.
- M. PROVIDE SPRINKLER HEAD CABINET WITH EACH TYPE AND TEMPERATURE RATING USED ON THE PROJECT, MINIMUM QUANTITY AS PER NFPA-13
- N. LABEL DRAIN PIPING, INSPECTOR'S TEST, MAIN DRAIN, FIRE DEPARTMENT CONNECTION, RISER SHUT-OFF VALVE AND SIMILAR COMPONENTS.
- O. ALL PIPE SIZES ARE INDUSTRY STANDARD ASTM A53 PIPE DESIGNATED BY THEIR NOMINAL DIAMETER.
- P. PIPE SIZES INDICATED ARE THE MINIMUM ALLOWABLE ACTUAL SIZES TO BE BASED UPON HYDRAULIC CALCULATIONS.
- Q. FLOW TEST DATA: 64 PSI STATIC PRESSURE, 60 PSI RESIDUAL PRESSURE AT AT 691 GPM FLOW AT TEST. TEST DATE: 05-22-2018. AVAILABLE FIRE FLOW AT 20 PSI IS 2085 GPM. FLOW TEST PERFORMED AT 9100 CURRY FORD ROAD. HYDRANT LOCATIONS AS SHOWN ON THE DRAWINGS BELOW. FLOW TEST DATA IS PROVIDED FOR INFORMATION ONLY. CONTRACTOR SHALL PERFORM A NEW FLOW TEST AS PART OF THIS SCOPE OF WORK. REFER TO THE SPECIFICATIONS.

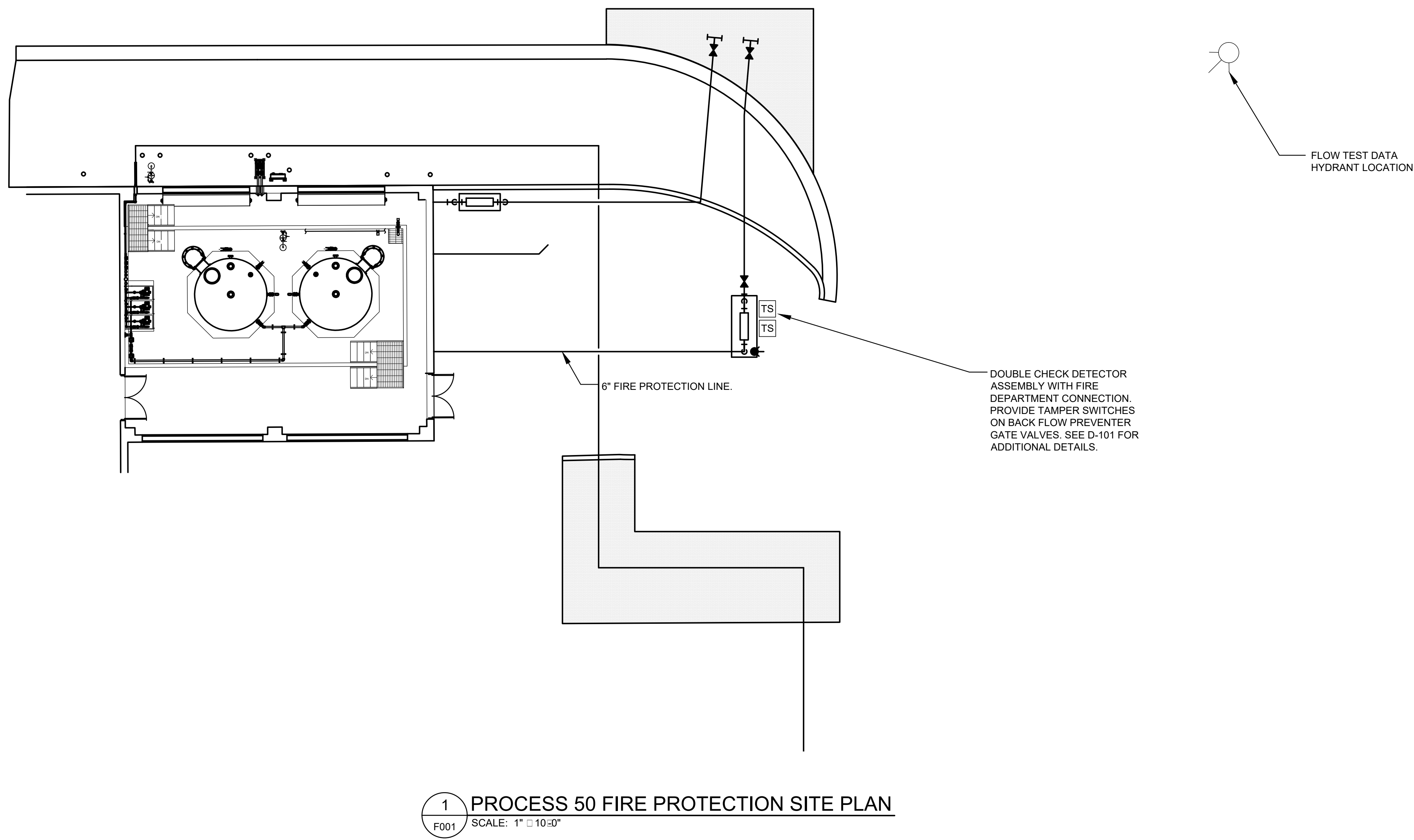
FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION
—	PIPING
⊘	CHECK VALVE
(FS)	FLOW SWITCH WITH ADJUSTABLE RETARD
⊕	PRESSURE GAUGE WITH COCK
⊙	FIRE HYDRANT
AHJ	AUTHORITY HAVING JURISDICTION
SPDT	SINGLE POLE DOUBLE THROW
FM	FACTORY MUTUAL
UL	UNDERWRITERS LABORATORY
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
IN	INCHES
MM or mm	MILLIMETERS
k	KILO
PSI	POUNDS PER SQUARE INCH
GPM	GALLONS PER MINUTE
TS	TAMPER SWITCH

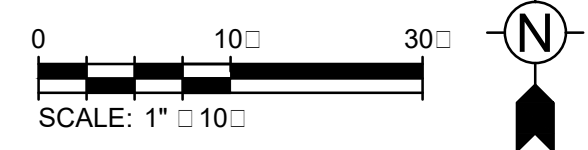
FIRE SUPPRESSION SYSTEM SCHEDULE

SUPPRESSION SYSTEM CODE NO.	BUILDING DESCRIPTION	SYSTEM TYPE	OCCUPANCY HAZARD CLASSIFICATION	WATER APPLICATION DENSITY	MINIMUM CALCULATED AREA	COMBINED HOSE STREAM	MAXIMUM HEAD SPACING	MAXIMUM HEAD PROTECTION AREA
1	PROCESS BUILDING 50	WET SPRINKLER	ORDINARY GROUP 2 HAZARD	0.2 GPM/SQ FT	1500 SQ FT	250 GPM	15 FT	130 SQ FT

- NOTES:
- LOCATE FIRE DEPARTMENT CONNECTIONS PER THE REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT. PROPOSED LOCATION IS SHOWN ON THE FIRE PROTECTION AND PROCESS DRAWINGS. VERIFY SIZE AND THREADS OF THE FDC REQUIRED BY THE AHJ.
 - CONTRACTOR SHALL VERIFY WITH THE AUTHORITY HAVING JURISDICTION AND THE OWNER'S INSURANCE CARRIER (IF APPLICABLE) THE DENSITIES AND OCCUPANCY CLASSIFICATIONS FOR THIS BUILDING.
 - HOSE STREAM ALLOWANCE SHALL BE APPLIED AT EACH RISER. TOTALS ARE NOT CUMULATIVE.
 - ALL PIPING PENETRATIONS OF RATED WALLS SHALL BE SEALED PER DETAILS OR OTHER UL LISTED ASSEMBLY. REFER TO DRAWING FOR COORDINATION
 - COORDINATE LOCATIONS OF ALL FIRE PROTECTION PIPING AND EQUIPMENT WITH ALL OTHER UTILITIES, PIPING, DUCTWORK, ELECTRICAL DUCT BANKS, CONDUIT, WIRING, LIGHTING, BUILDING STRUCTURES, ETC.
 - ALL UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE INSTALLED IN ACCORDANCE WITH NFPA-241. ALL UNDERGROUND FIRE LINES MUST BE INSTALLED BY A CONTRACTOR WITH A CLASS I, II, OR V LICENSE.

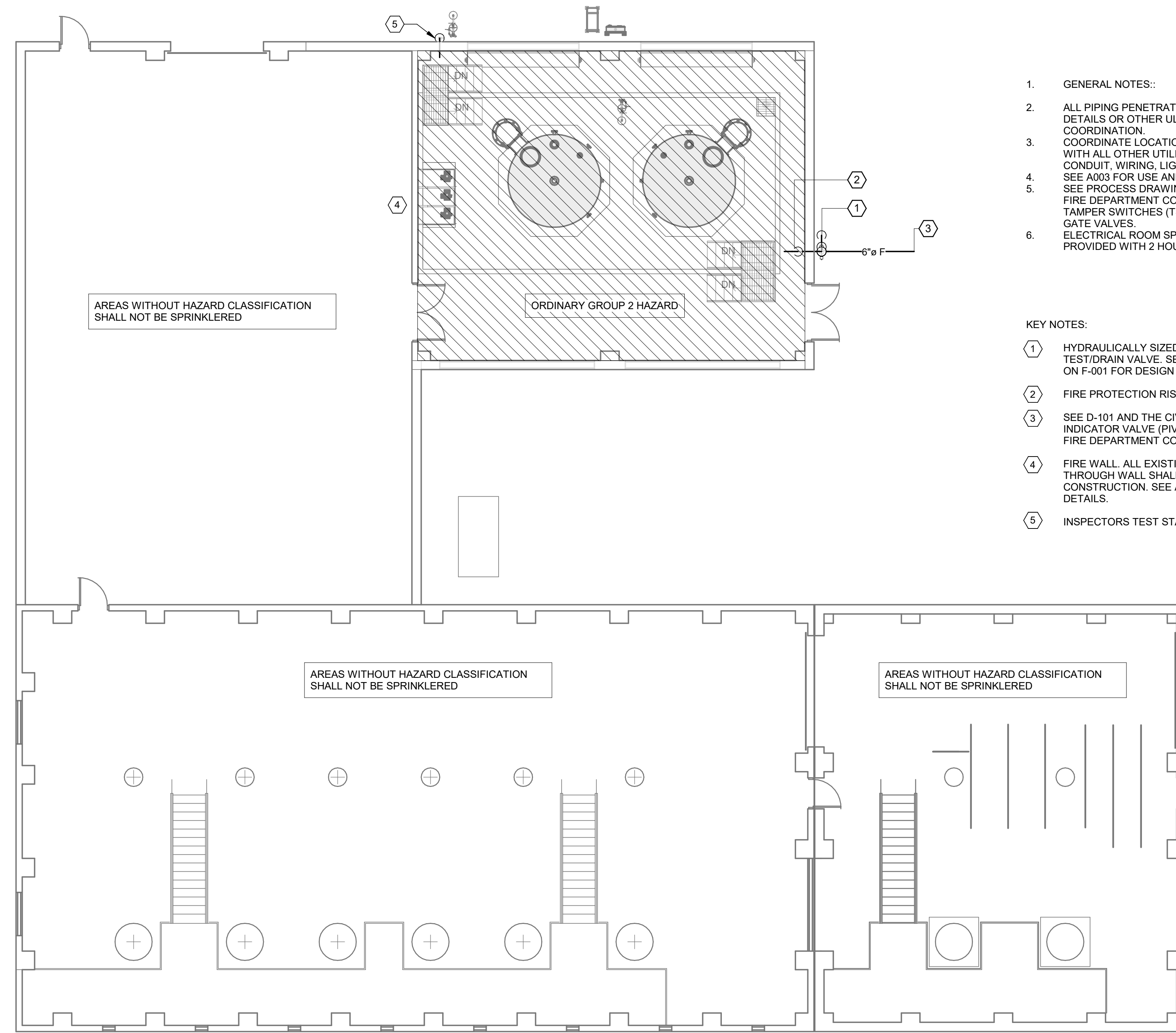


1 PROCESS 50 FIRE PROTECTION SITE PLAN
F001 SCALE: 1" = 10'-0"



MARK	DATE	DESCRIPTION

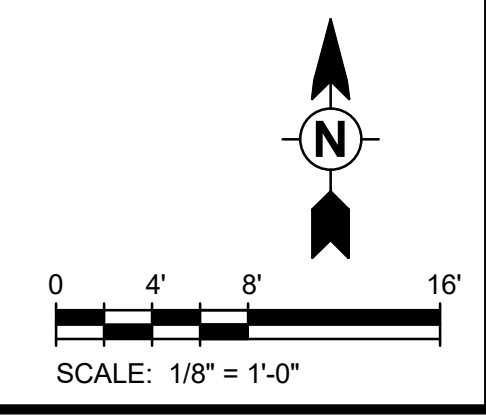
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1. GENERAL NOTES:
2. ALL PIPING PENETRATIONS OF RATED WALLS SHALL BE SEALED PER DETAILS OR OTHER UL LISTED ASSEMBLY. REFER TO DRAWING FOR COORDINATION.
 3. COORDINATE LOCATIONS OF ALL FIRE PROTECTION PIPING AND EQUIPMENT WITH ALL OTHER UTILITIES, PIPING, DUCTWORK, ELECTRICAL DUCT BANKS, CONDUIT, WIRING, LIGHTING, BUILDING STRUCTURES, ETC.
 4. SEE A003 FOR USE AND OCCUPANCY CLASSIFICATION.
 5. SEE PROCESS DRAWING D101 FOR LOCATION OF BACK FLOW PREVENTER, FIRE DEPARTMENT CONNECTION AND POST INDICATOR VALVE. PROVIDE TAMPER SWITCHES (TS) AT BACK FLOW PREVENTER AND POST INDICATOR GATE VALVES.
 6. ELECTRICAL ROOM SPRINKLERS MAY BE OMITTED FROM SYSTEM IF PROVIDED WITH 2 HOUR FIRE WALL SEPERATION PER NFPA 13-2013.

- KEY NOTES:
- ① HYDRAULICALLY SIZED FIRE PROTECTION MAIN WITH TEST/DRAIN VALVE. SEE THE FIRE SUPPRESSION SCHEDULE ON F-001 FOR DESIGN CRITERIA AND DETAIL 1/F501.
 - ② FIRE PROTECTION RISER.
 - ③ SEE D-101 AND THE CIVIL DRAWINGS FOR LOCATION OF POST INDICATOR VALVE (PIV), BACKFLOW PREVENTER (BFP) AND FIRE DEPARTMENT CONNECTION (FDC).
 - ④ FIRE WALL. ALL EXISTING AND NEW PENETRATIONS/OPENINGS THROUGH WALL SHALL BE PROVIDED WITH RATED CONSTRUCTION. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
 - ⑤ INSPECTORS TEST STATION. SEE 2/F501.

1 PROCESS 50 FIRE PROTECTION PLAN
F101 SCALE: 1/8" = 1'-0"

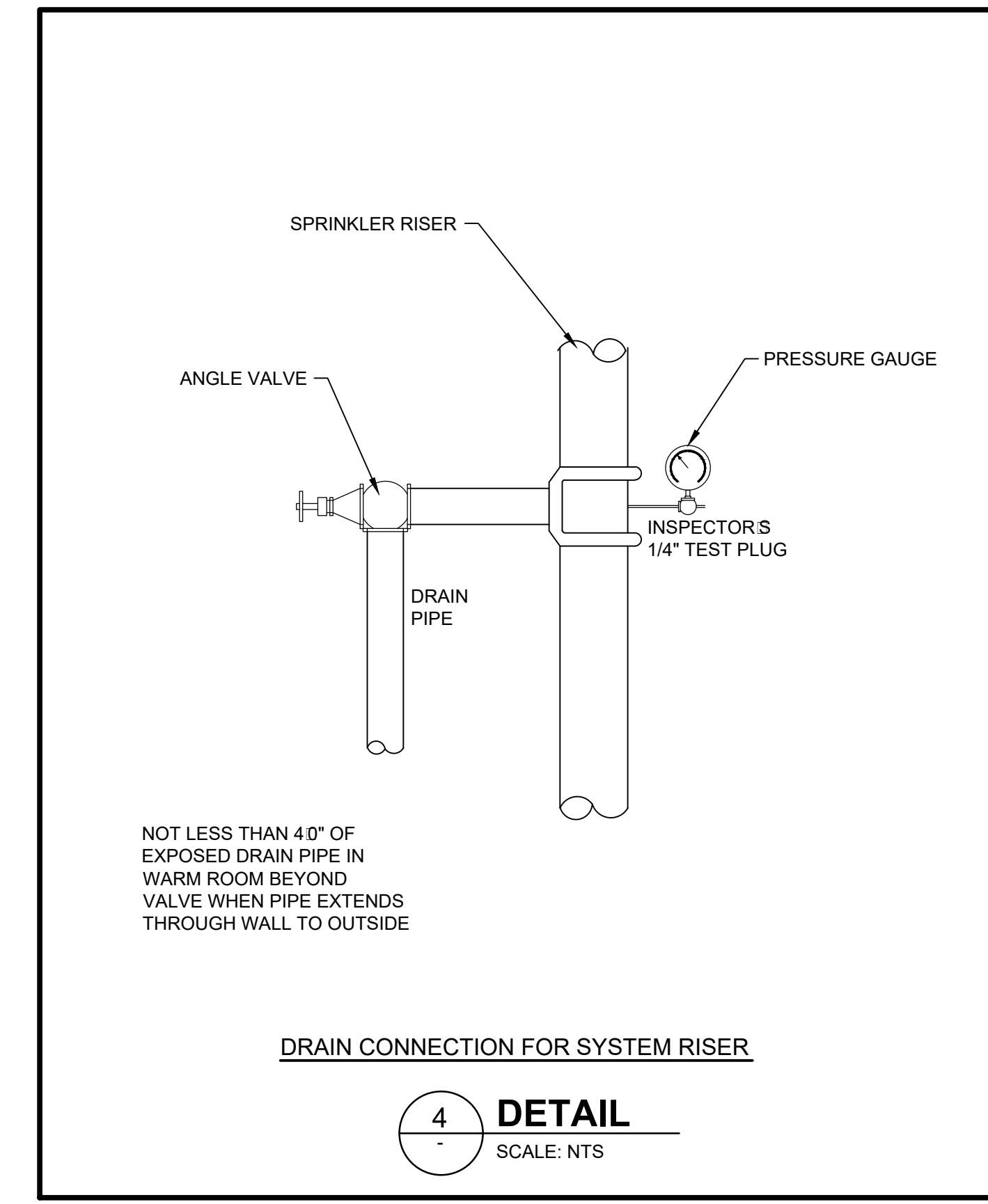
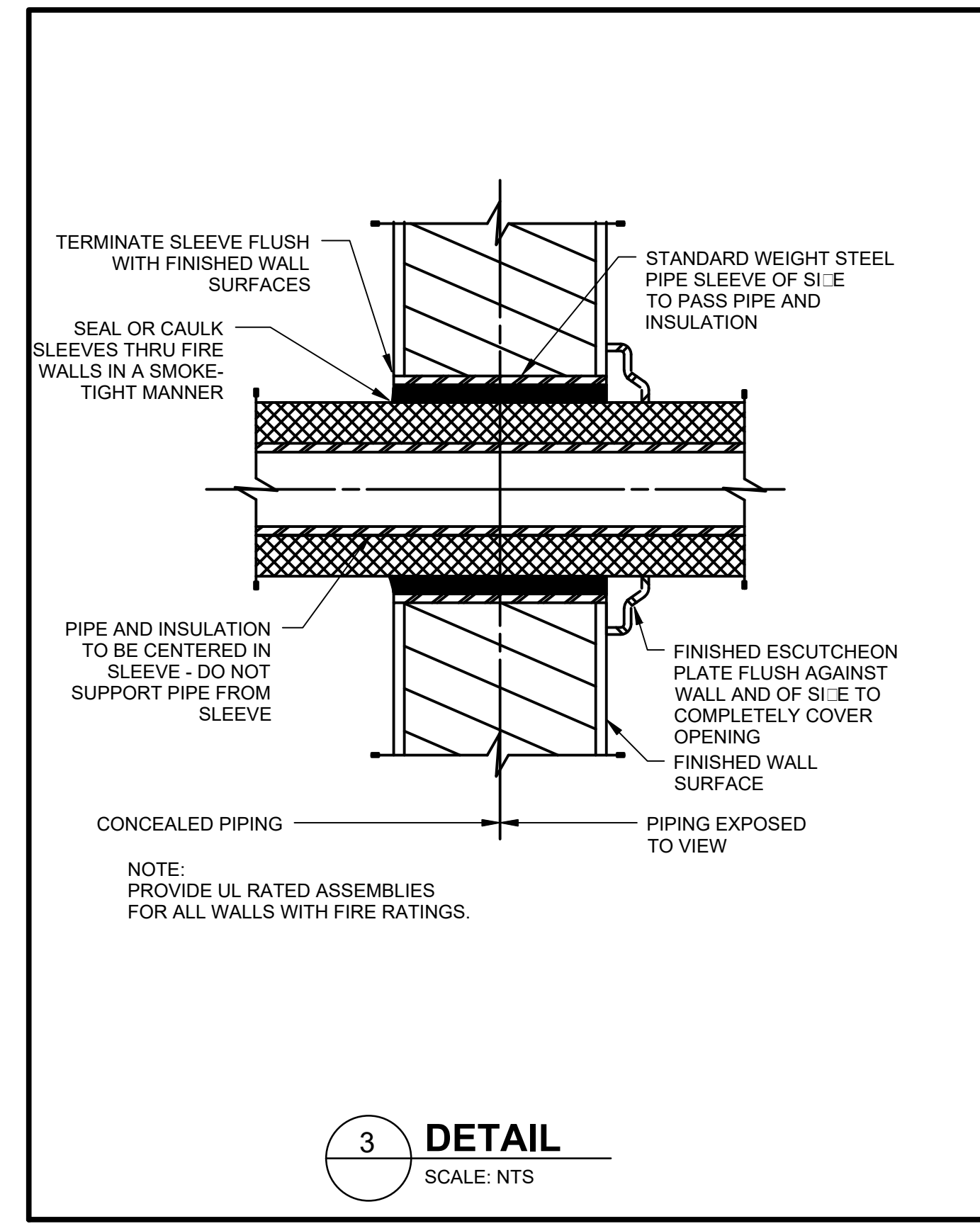
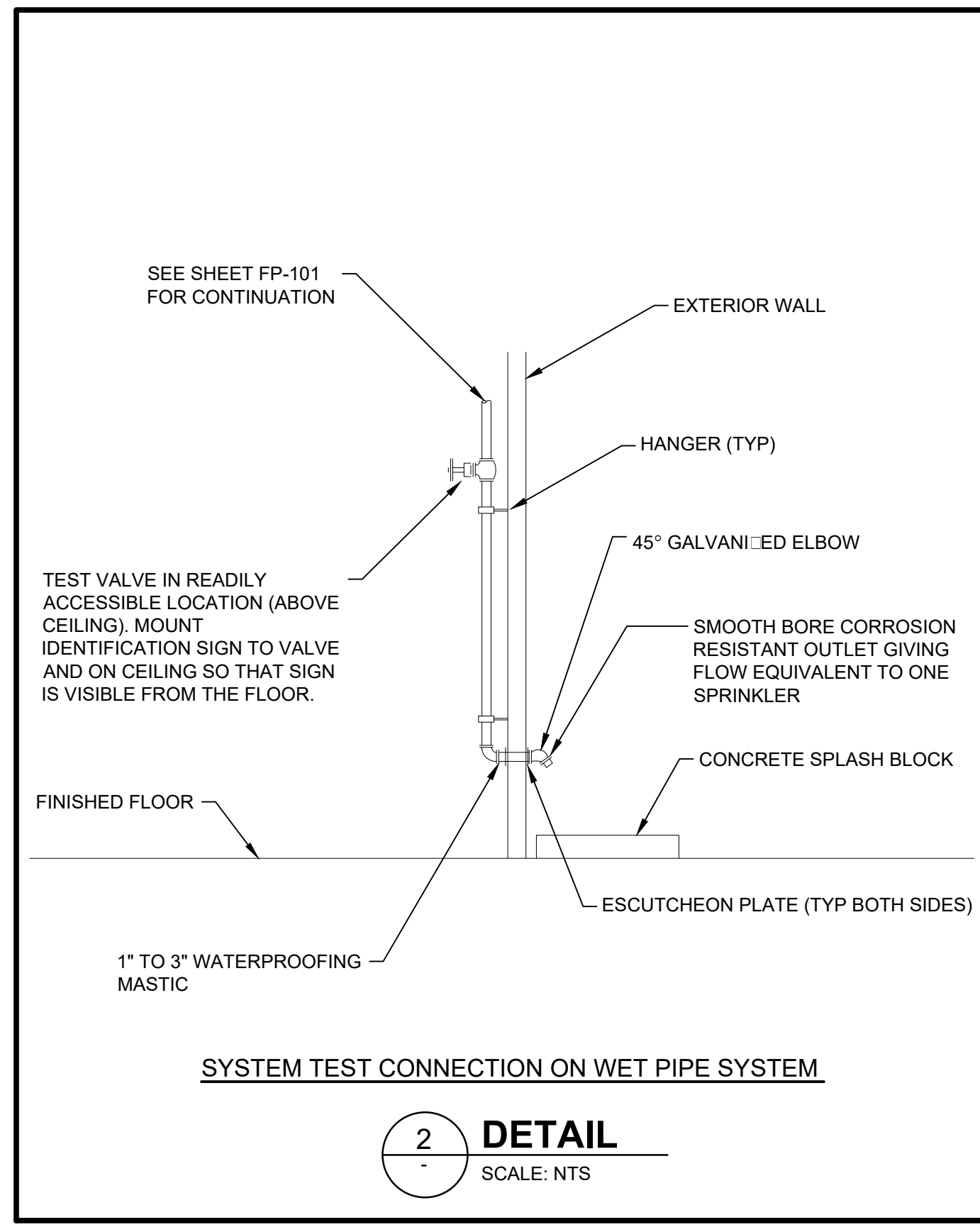
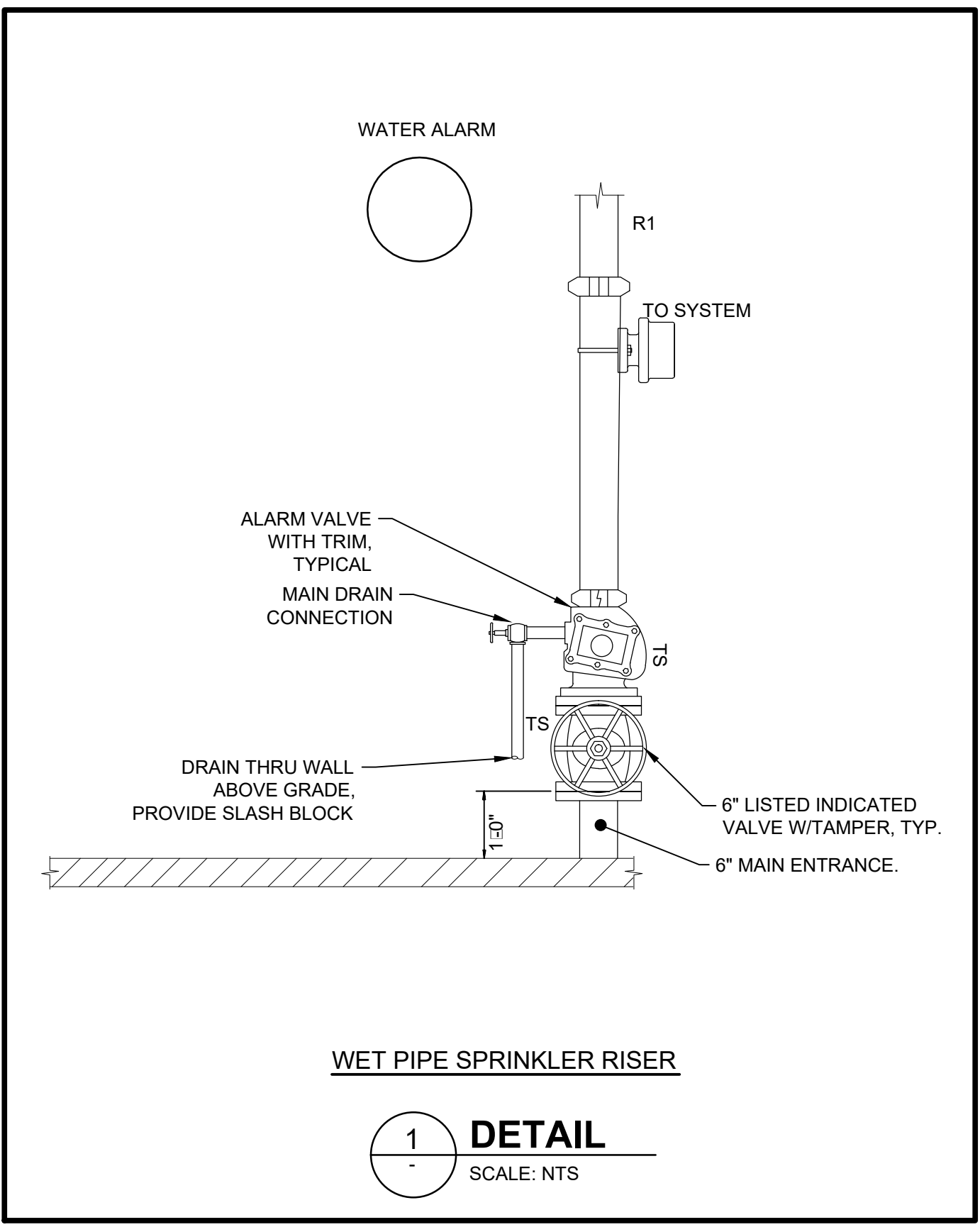


BY	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
FIRE PROTECTION PLAN

PROJ: 200-10034-18003
DESN: MGS
DRWN: VBD
CHKD: LER

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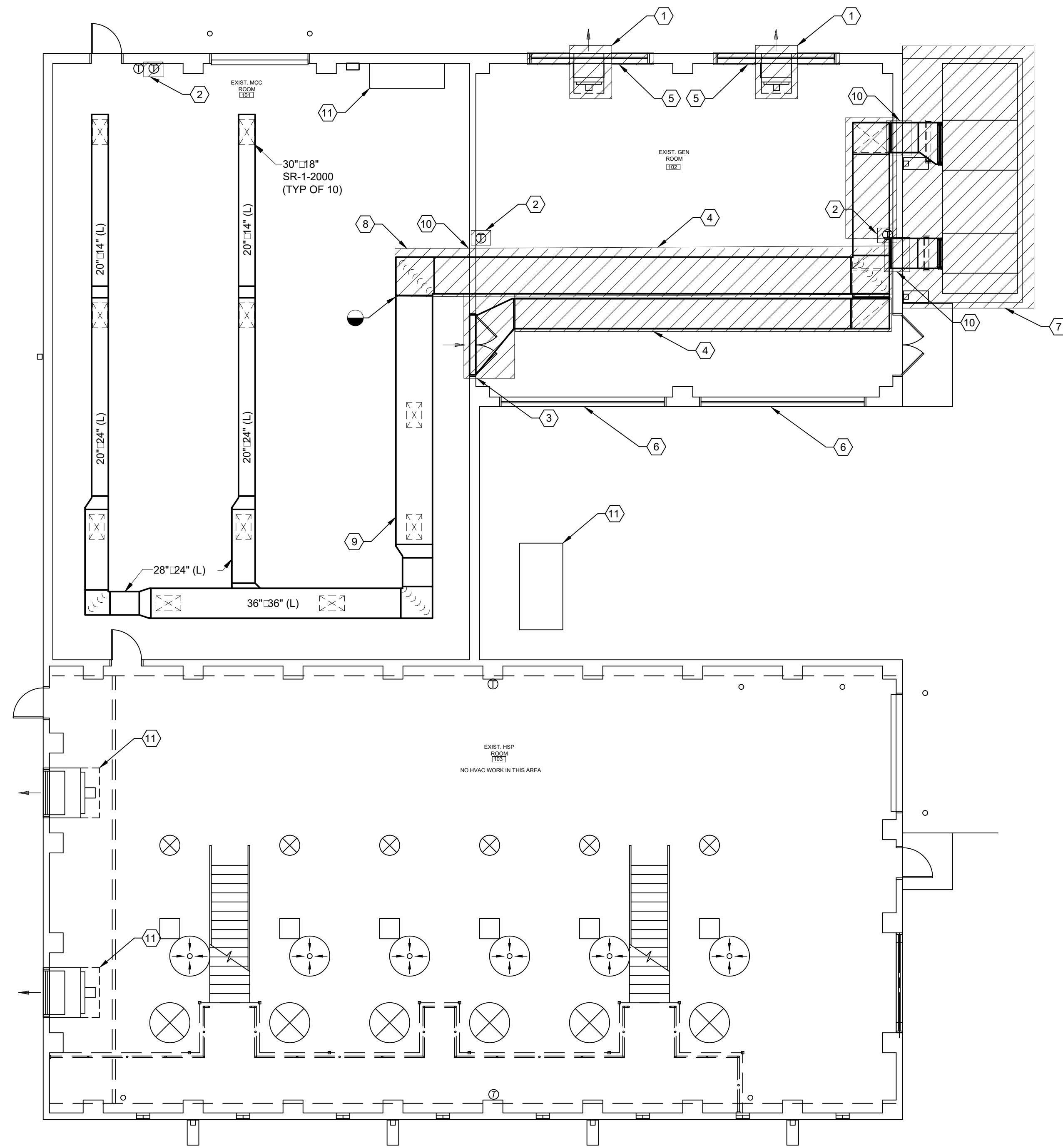
MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
FIRE PROTECTION DETAILS

Project No.: 200-10034-18003
Designed By: MGS
Drawn By: VBD
Checked By: LER

F501

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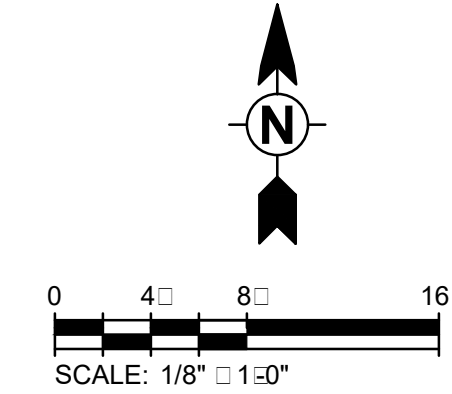
1 PROCESS 50 HVAC DEMOLITION PLAN
M101 SCALE: 1/8" = 1'-0"

DEMOLITION GENERAL NOTES:

- COORDINATE DEMOLITION AND DISPOSAL WITH THE REQUIREMENTS OF SECTION 02050 AND THE OWNER.
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS, DIMENSIONS, AND CONFIGURATION OF ALL EXISTING EQUIPMENT, DUCTWORK, HANGERS, SUPPORTS, ANCHORS, CONTROLS, ETC.

DEMOLITION KEY NOTES:

- REMOVE EXISTING EXHAUST FAN INCLUDING ALL ASSOCIATED DUCTWORK, SUPPORTS, CONTROLS, WIRING, CONDUIT, ETC.
- REMOVE EXISTING THERMOSTATS INCLUDING ALL ASSOCIATED CONTROLS, WIRING, CONDUIT, ETC.
- REMOVE EXISTING DUCTWORK AND RETURN GRILLE THROUGH WALL. INFILL AND PATCH TO MATCH EXISTING. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE EXISTING DUCTWORK INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, ETC.
- EXISTING LOUVER SHALL BE REMOVED AND REPLACED WITH ROLL UP DOOR. SEE ARCHITECTURAL/STRUCTURAL DRAWINGS FOR DETAILS.
- EXISTING LOUVER TO REMAIN.
- REMOVE EXISTING GRADE MOUNTED ROOFTOP UNIT INCLUDING ALL ASSOCIATED DUCTWORK, SUPPORTS, PIPING, CONTROLS, WIRING, ETC. REMOVE EXISTING CONCRETE PAD.
- REMOVE EXISTING DUCTWORK AS REQUIRED TO ALLOW FOR NEW DUCTWORK CONNECTION. SEE M-102 FOR EXTENT OF DEMOLITION.
- EXISTING DUCTWORK IN ELECTRICAL ROOM INCLUDING EXISTING HANGERS, SUPPORTS, SUPPLY REGISTERS, ETC. TO REMAIN.
- REMOVE EXISTING DUCTWORK THROUGH WALL. INFILL AND PATCH TO MATCH EXISTING. SEE STRUCTURAL DRAWINGS FOR DETAILS.
- EXISTING EQUIPMENT TO REMAIN.
- EXISTING T-STAT TO REMAIN.



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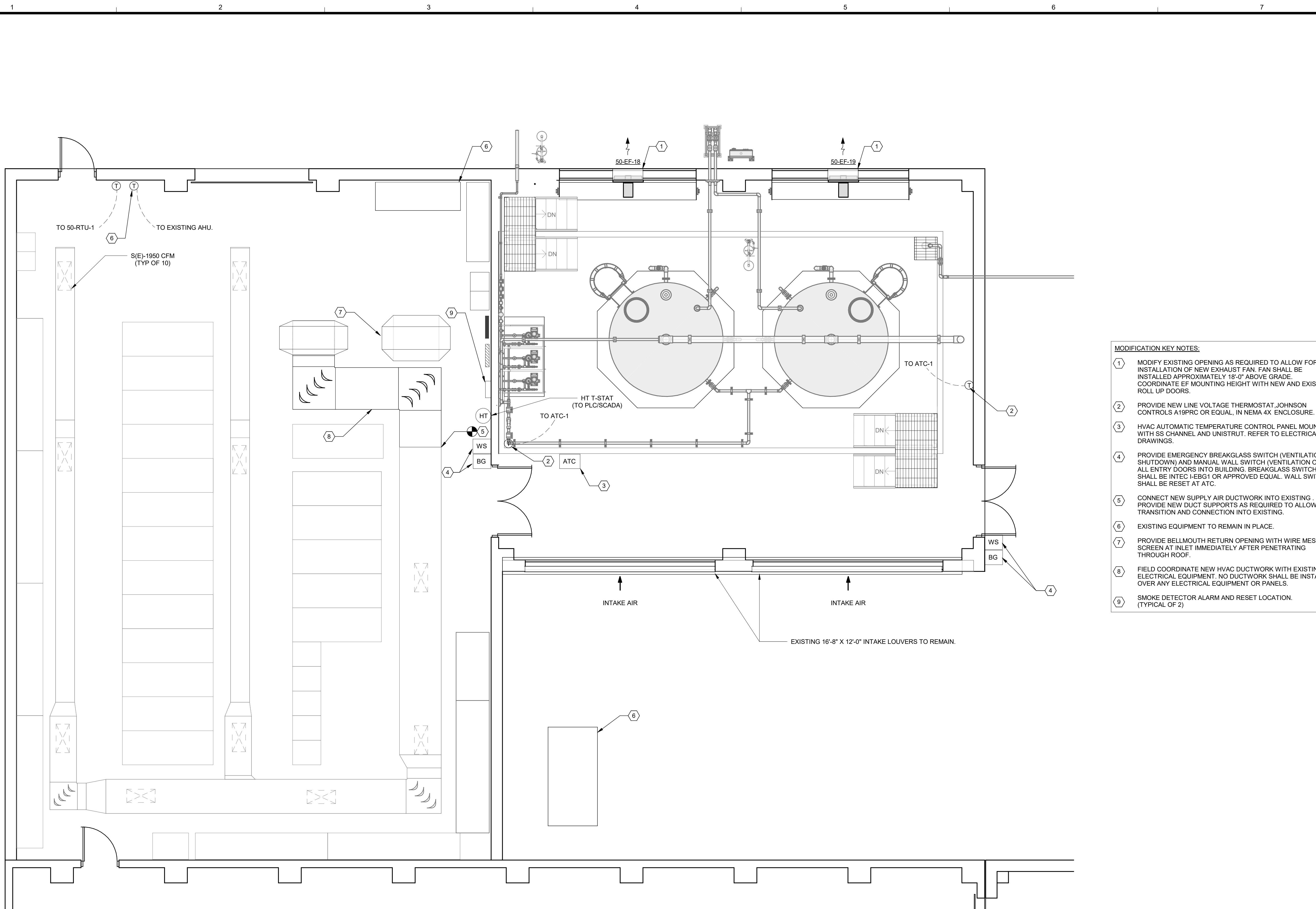
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
HVAC DEMOLITION PLAN

Project No.:	200-10034-18003
Designed By:	MGS
Drawn By:	VBD
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M101

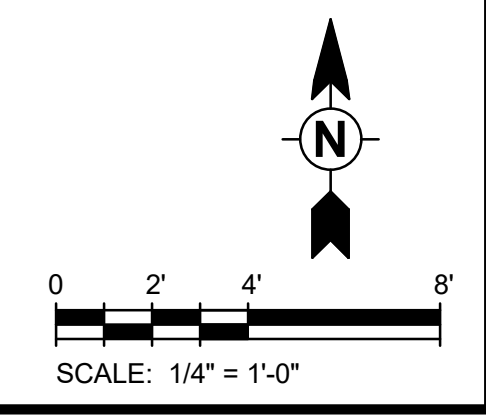
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- MODIFICATION KEY NOTES:**
- ① MODIFY EXISTING OPENING AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW EXHAUST FAN. FAN SHALL BE INSTALLED APPROXIMATELY 18'-0" ABOVE GRADE. COORDINATE EF MOUNTING HEIGHT WITH NEW AND EXISTING ROLL UP DOORS.
 - ② PROVIDE NEW LINE VOLTAGE THERMOSTAT, JOHNSON CONTROLS A19PRC OR EQUAL, IN NEMA 4X ENCLOSURE.
 - ③ HVAC AUTOMATIC TEMPERATURE CONTROL PANEL MOUNTED WITH SS CHANNEL AND UNISTRUT. REFER TO ELECTRICAL DRAWINGS.
 - ④ PROVIDE EMERGENCY BREAKGLASS SWITCH (VENTILATION SHUTDOWN) AND MANUAL WALL SWITCH (VENTILATION ON) AT ALL ENTRY DOORS INTO BUILDING. BREAKGLASS SWITCH SHALL BE INTEC I-EBG1 OR APPROVED EQUAL. WALL SWITCH SHALL BE RESET AT ATC.
 - ⑤ CONNECT NEW SUPPLY AIR DUCTWORK INTO EXISTING. PROVIDE NEW DUCT SUPPORTS AS REQUIRED TO ALLOW FOR TRANSITION AND CONNECTION INTO EXISTING.
 - ⑥ EXISTING EQUIPMENT TO REMAIN IN PLACE.
 - ⑦ PROVIDE BELLMOUTH RETURN OPENING WITH WIRE MESH SCREEN AT INLET IMMEDIATELY AFTER PENETRATING THROUGH ROOF.
 - ⑧ FIELD COORDINATE NEW HVAC DUCTWORK WITH EXISTING ELECTRICAL EQUIPMENT. NO DUCTWORK SHALL BE INSTALLED OVER ANY ELECTRICAL EQUIPMENT OR PANELS.
 - ⑨ SMOKE DETECTOR ALARM AND RESET LOCATION. (TYPICAL OF 2)

1 PROCESS 50 HVAC MODIFICATION PLAN
M102 SCALE: 1/4" = 1'-0"



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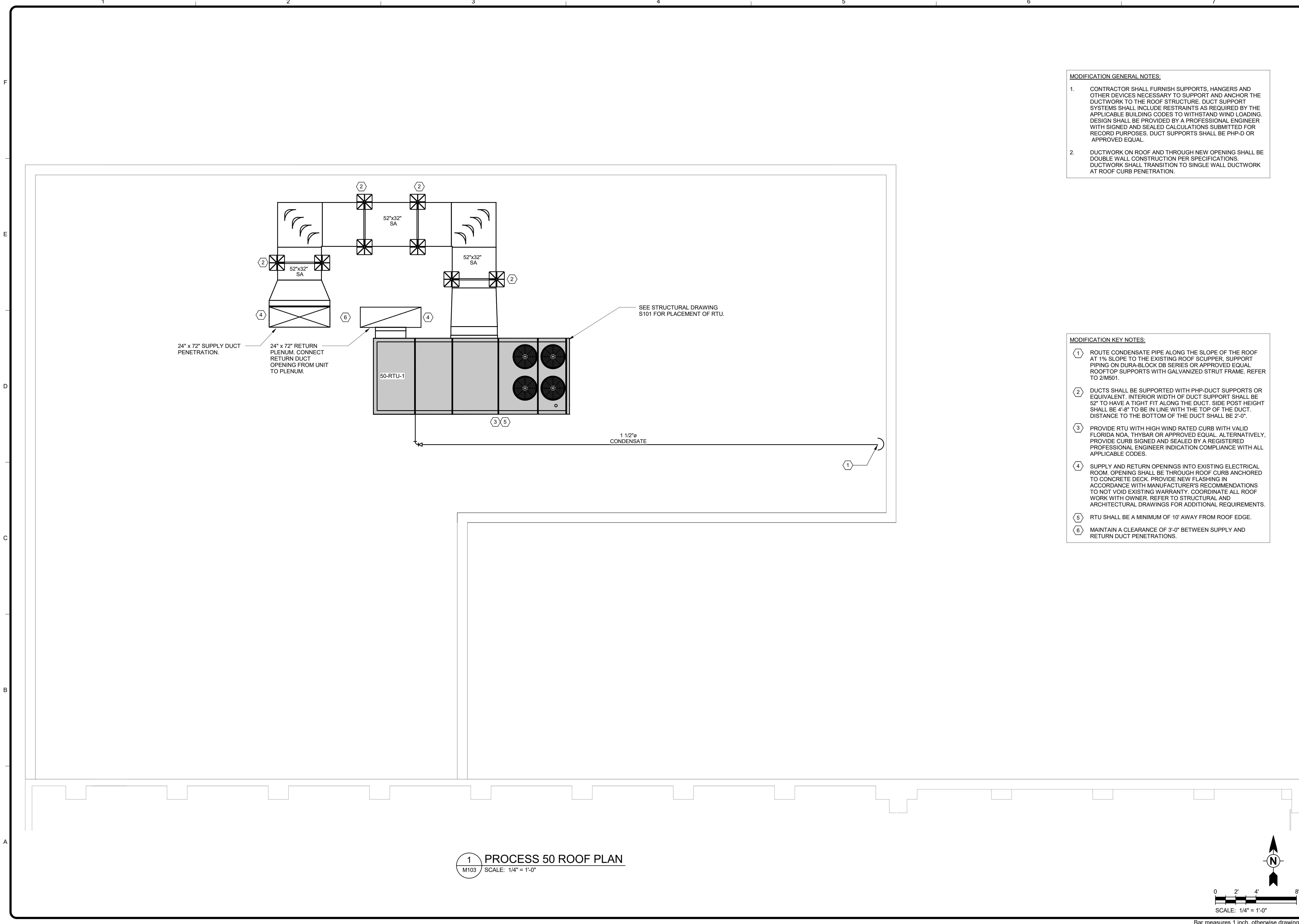
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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
HVAC FLOOR PLAN

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DESN:	MGS
DRWN:	VBD
CHKD:	LER

M102

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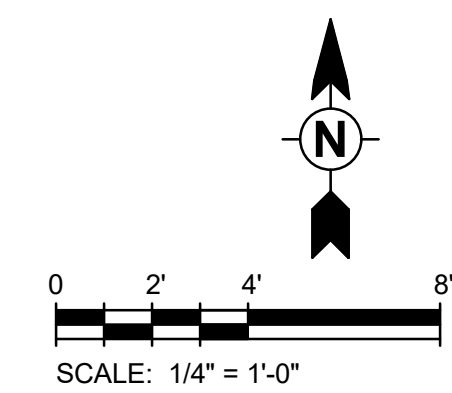
MODIFICATION GENERAL NOTES:

- CONTRACTOR SHALL FURNISH SUPPORTS, HANGERS AND OTHER DEVICES NECESSARY TO SUPPORT AND ANCHOR THE DUCTWORK TO THE ROOF STRUCTURE. DUCT SUPPORT SYSTEMS SHALL INCLUDE RESTRAINTS AS REQUIRED BY THE APPLICABLE BUILDING CODES TO WITHSTAND WIND LOADING. DESIGN SHALL BE PROVIDED BY A PROFESSIONAL ENGINEER WITH SIGNED AND SEALED CALCULATIONS SUBMITTED FOR RECORD PURPOSES. DUCT SUPPORTS SHALL BE PHP-D OR APPROVED EQUAL.
- DUCTWORK ON ROOF AND THROUGH NEW OPENING SHALL BE DOUBLE WALL CONSTRUCTION PER SPECIFICATIONS. DUCTWORK SHALL TRANSITION TO SINGLE WALL DUCTWORK AT ROOF CURB PENETRATION.

MODIFICATION KEY NOTES:

- ROUTE CONDENSATE PIPE ALONG THE SLOPE OF THE ROOF AT 1% SLOPE TO THE EXISTING ROOF SCUPPER. SUPPORT PIPING ON DURA-BLOCK DB SERIES OR APPROVED EQUAL ROOFTOP SUPPORTS WITH GALVANIZED STRUT FRAME. REFER TO 2/MS01.
- DUCTS SHALL BE SUPPORTED WITH PHP-DUCT SUPPORTS OR EQUIVALENT. INTERIOR WIDTH OF DUCT SUPPORT SHALL BE 52" TO HAVE A TIGHT FIT ALONG THE DUCT. SIDE POST HEIGHT SHALL BE 4'-8" TO BE IN LINE WITH THE TOP OF THE DUCT. DISTANCE TO THE BOTTOM OF THE DUCT SHALL BE 2'-0".
- PROVIDE RTU WITH HIGH WIND RATED CURB WITH VALID FLORIDA NOA, THYBAR OR APPROVED EQUAL. ALTERNATIVELY, PROVIDE CURB SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER INDICATING COMPLIANCE WITH ALL APPLICABLE CODES.
- SUPPLY AND RETURN OPENINGS INTO EXISTING ELECTRICAL ROOM. OPENING SHALL BE THROUGH ROOF CURB ANCHORED TO CONCRETE DECK. PROVIDE NEW FLASHING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO NOT VOID EXISTING WARRANTY. COORDINATE ALL ROOF WORK WITH OWNER. REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- RTU SHALL BE A MINIMUM OF 10' AWAY FROM ROOF EDGE.
- MAINTAIN A CLEARANCE OF 3'-0" BETWEEN SUPPLY AND RETURN DUCT PENETRATIONS.

1 PROCESS 50 ROOF PLAN
M103 SCALE: 1/4" = 1'-0"



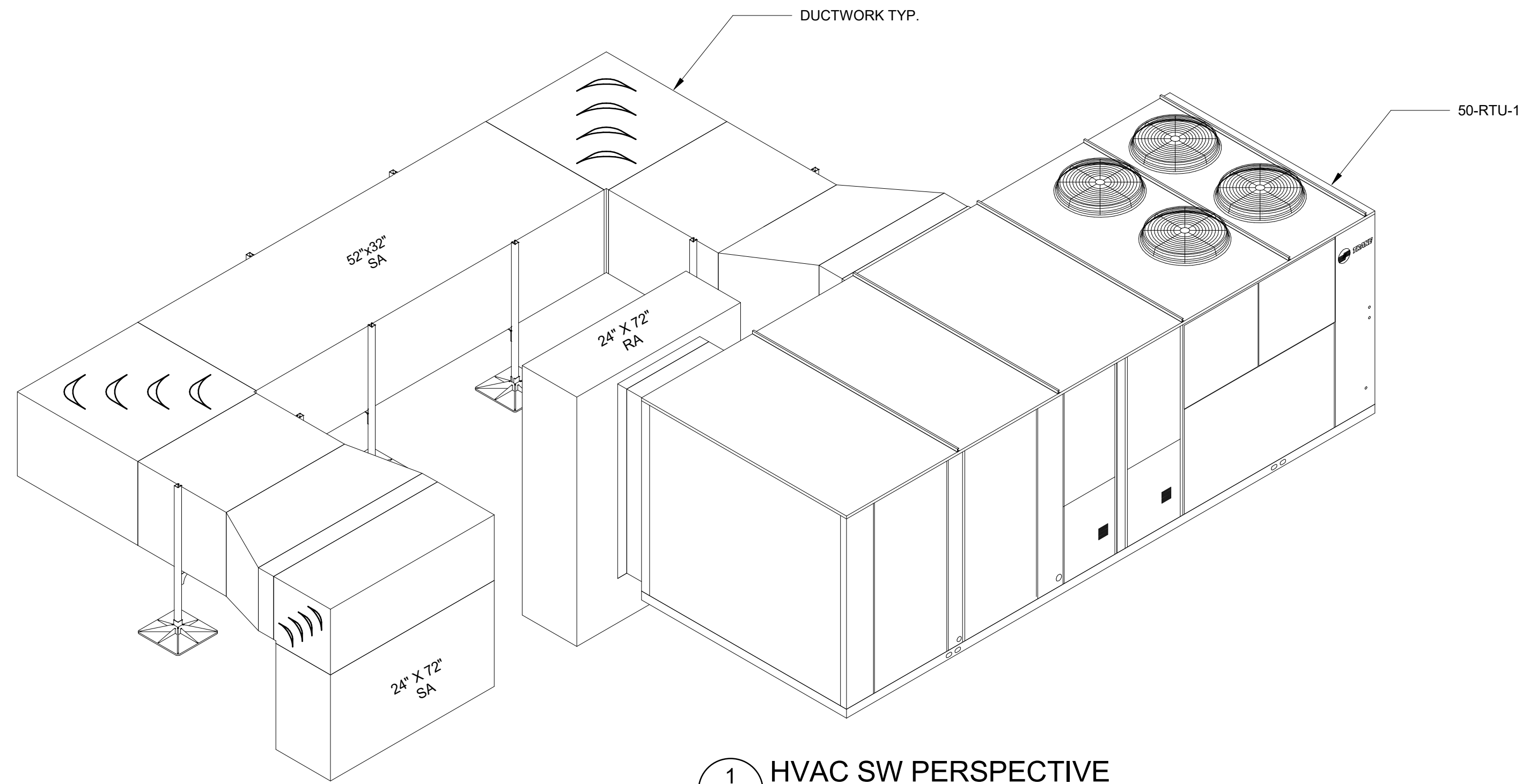
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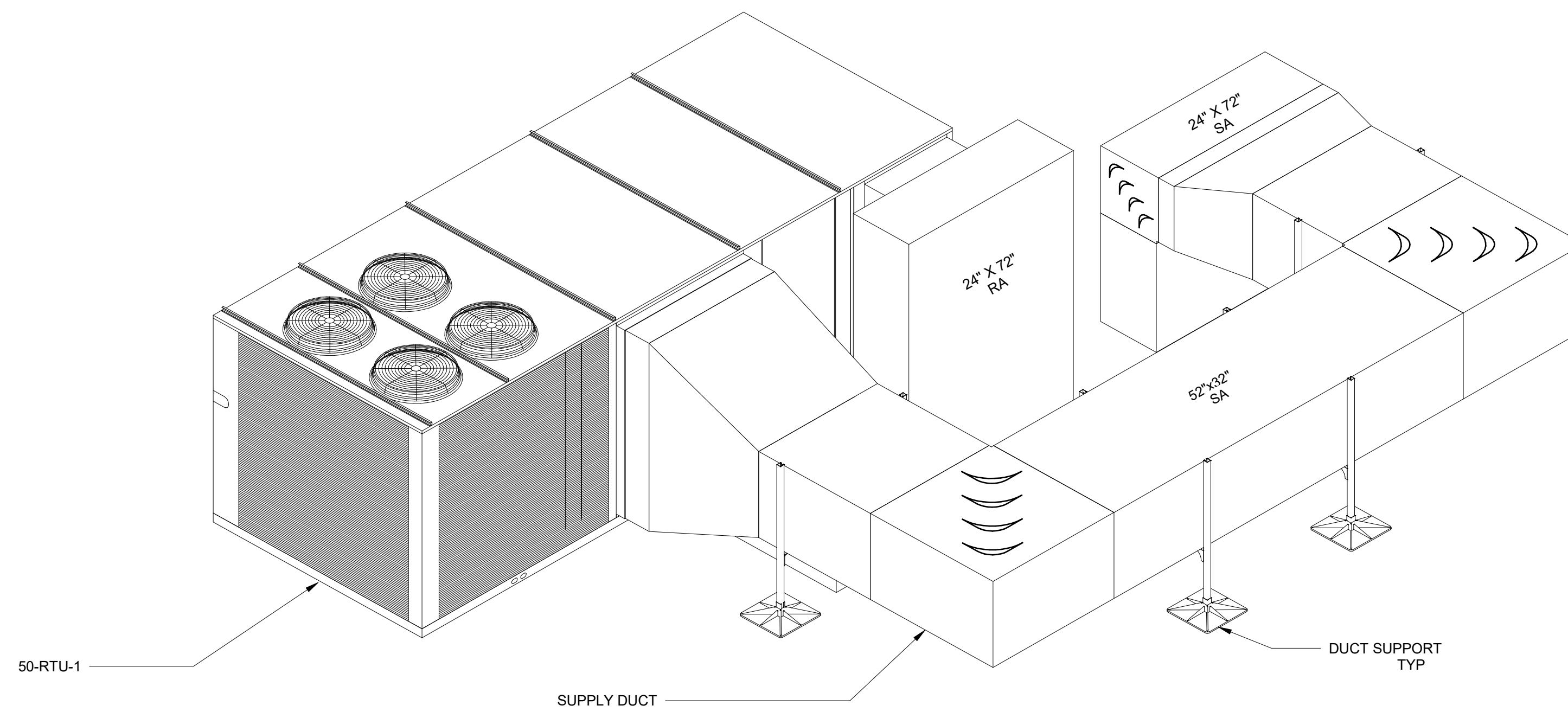
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
HVAC ROOF PLAN

PROJ: 200-10034-18003
DESN: MGS
DRWN: VBD
CHKD: LER

M103



1 HVAC SW PERSPECTIVE
M104 NTS



2 HVAC NE PERSPECTIVE
M104 NTS

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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50
HVAC PERSPECTIVES

PROJ:	200-10034-18003
DESN:	MGS
DRWN:	VBD
CHKD:	LER

M104

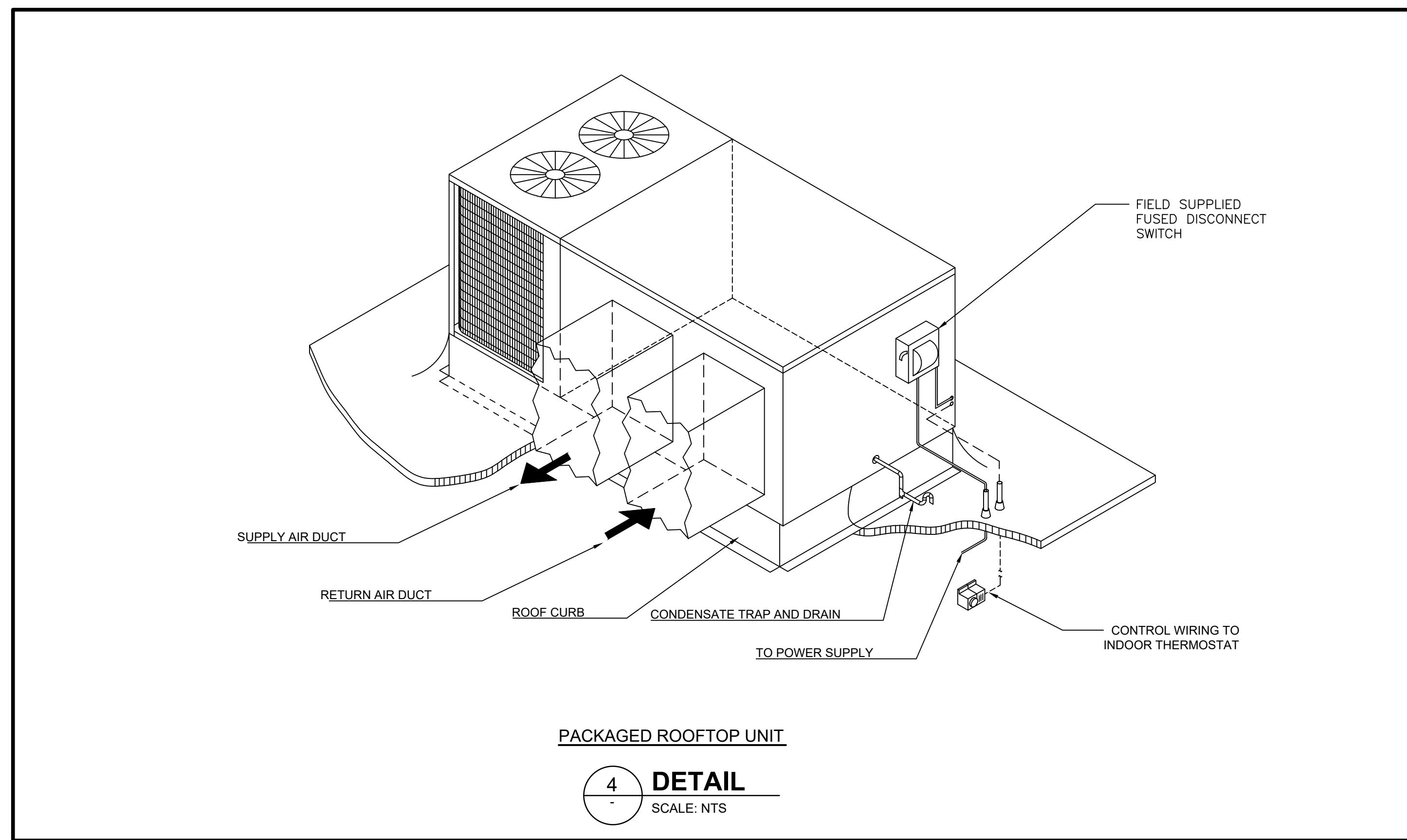
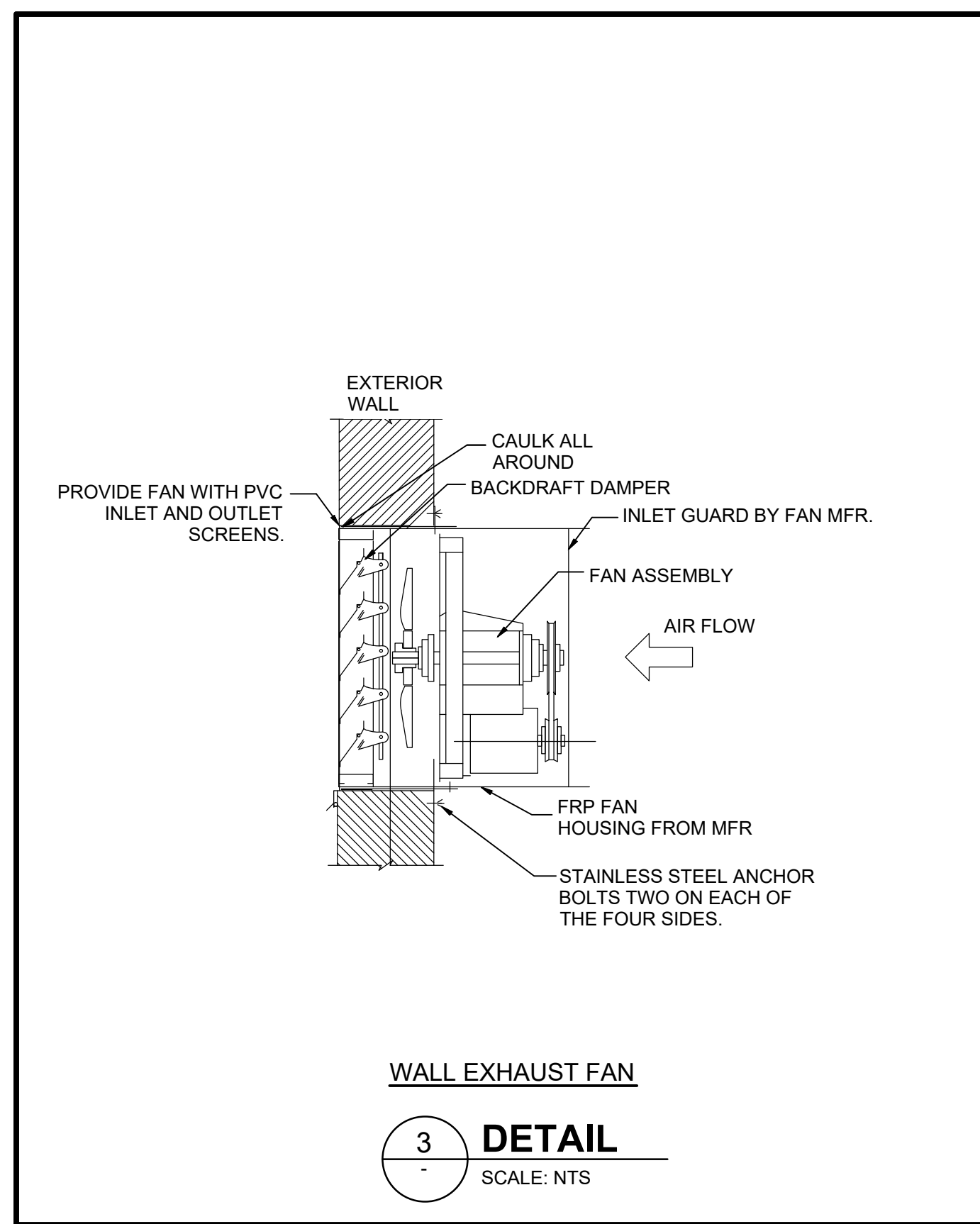
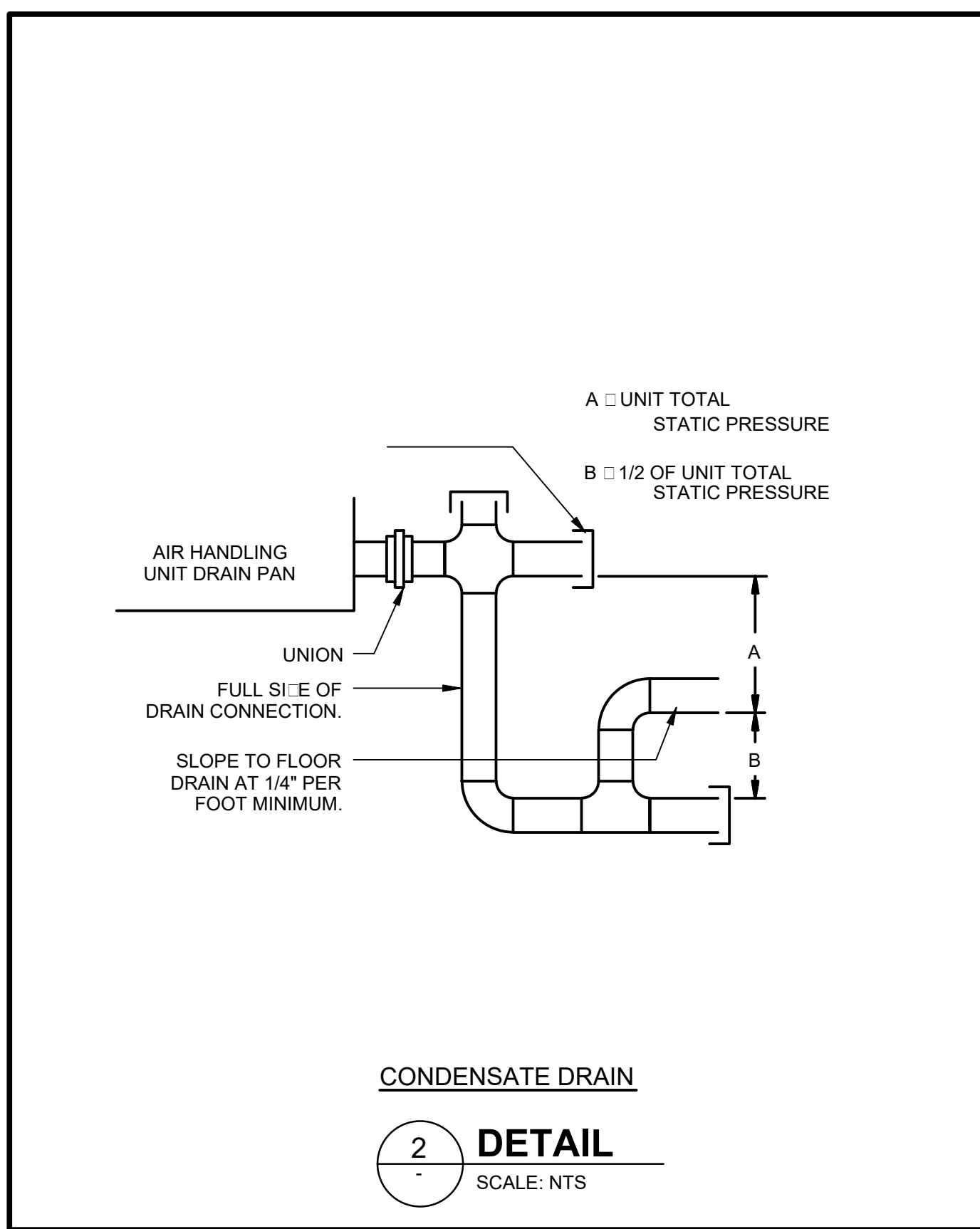
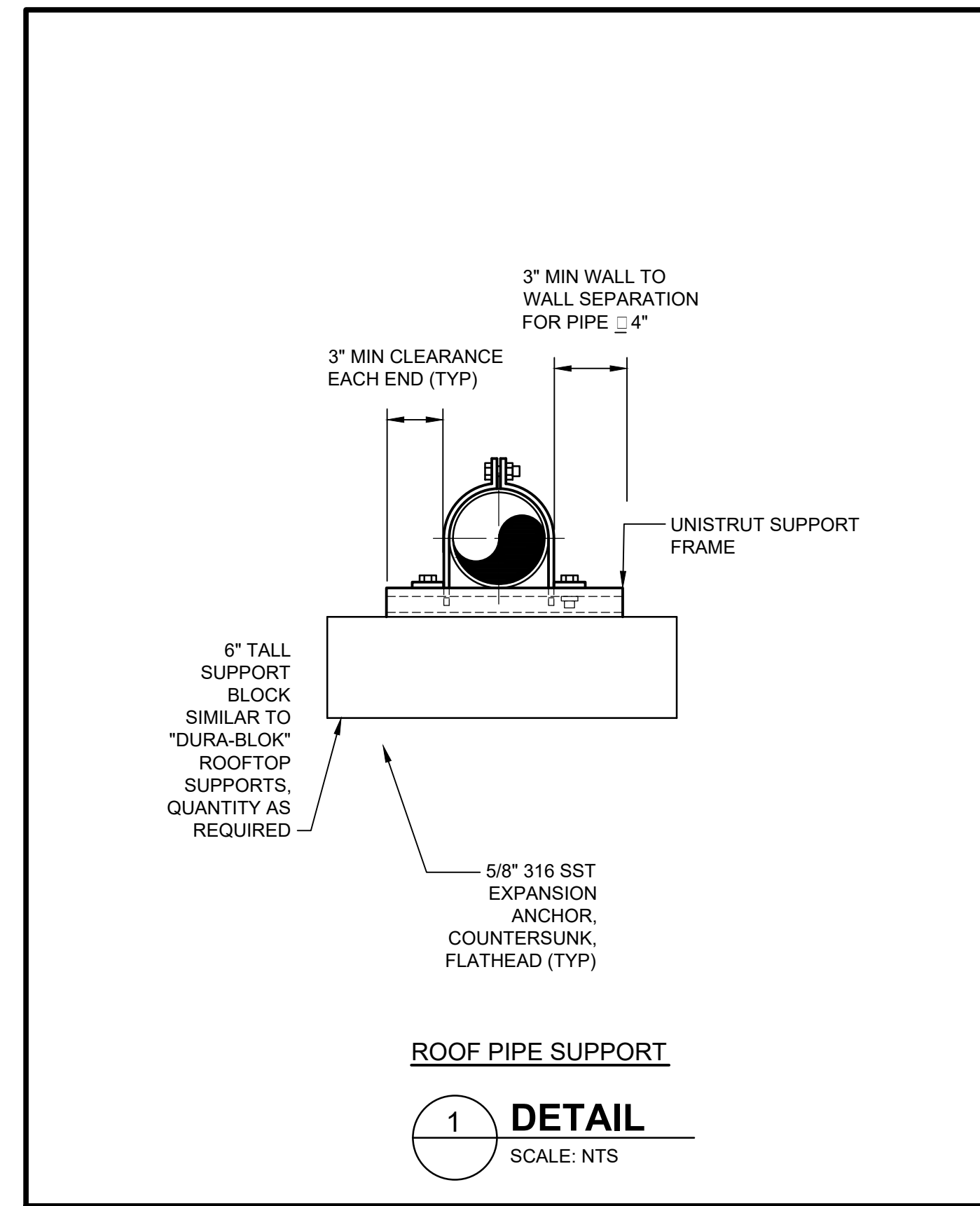
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FAN SCHEDULE											
MARK	AREA SERVED	CFM	E.S.P. (IN. WG)	FAN RPM	ELECTRICAL		TYPE	DRIVE	MANUFACTURER	MODEL	REMARKS
					HP	VOLTS/PH/H \square					
50-EF-1	PROCESS 50 BUILDING	3,675	0.25"	1,760	0.5	460/3/60	EXHAUST	DIRECT	MK PLASTICS	AXPR 16	1,2,3
50-EF-2	PROCESS 50 BUILDING	3,675	0.25"	1,760	0.5	460/3/60	EXHAUST	DIRECT	MK PLASTICS	AXPR 16	1,2,3

- NOTES:**
- PROVIDE UNIT WITH FRP CONSTRUCTION, HI-PRO POLYESTER COATING ON FAN AND ALL ACCESSORIES, FRP SHUTTER, FRP WALL BOX, UNWIRED DISCONNECT SWITCH, PVC SCREEN (INLET AND OUTLET), AND PROPELLER GUARD, STAINLESS STEEL HARDWARE.
 - MOTOR STARTER BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
 - BASIS OF DESIGN IS MK PLASTICS OR EQUAL.

PACKAGED ROOFTOP UNIT SCHEDULE																				
MARK	AREA SERVED	COIL DATA							FAN DATA			ELECTRICAL DATA		FILTERS	MANUFACTURER	MODEL	EER / IEER	WEIGHT	REMARKS	
		E.A.T		L.A.T		TOTAL	SENSIBLE	HEATING	CFM	HP	ESP	VOLTS/PH/H \square	MCA							MOCP
		DB	WB	DB	WB	MBH	MBH	TYPE												
50-RTU-1	ELECTRICAL ROOM	80	63	56.7	54.2	566	510	NONE	19,500	20	1.5"	460/3/60	135	150	2" MERV 8 THROWAWAY	TRANE	TCH600B4	10.4 / 11.7	5,500 LBS	1, 2, 3

- NOTES:**
- PROVIDE UNIT WITH, LOW LEAK 0-100 \square ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL, 100 \square POWER EXHAUST WITH FRESH AIR TRACKING, REMOVAL TOOL FOR FILTERS, BLACK EPOXY COATED COILS, CONDENSATE DRAIN PAN WITH OVERFLOW SWITCH, THROUGH-THE-BASE ELECTRICAL DRAIN CONNECTION, HINGED ACCESS DOOR, LOW AMBIENT COOLING, STAINLESS STEEL DRAIN PAN, HUMAN INTERFACE TOUCH SCREEN AND PROGRAMMABLE 24 HOUR 7 DAY TOUCH SCREEN THERMOSTAT.
 - COIL FACE VELOCITY SHALL NOT EXCEED 550 FPM. SIZE FANS FOR DIRTY FILTER CONDITION.
 - BASIS OF DESIGN IS TRANE OR EQUAL.
 - SELECT UNIT AT 95 DEG F AMBIENT



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BY	DATE	DESCRIPTION

MARK	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
HVAC SCHEDULES AND DETAILS

Project No.: 200-10034-18003
Designed By: MGS
Drawn By: VBD
Checked By: LER

M501

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Bar Measures 1 inch

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 (FVR) FULL VOLTAGE REVERSING (RV) REDUCED VOLTAGE (2S, 2W) TWO SPEED, TWO WINDING
	LIMIT - PRESSURE - VACUUM SWITCH		600V, 3 POLE MOLDED CASE CIRCUIT BREAKER, FRAME & RATING AS SHOWN
	ELECTRICAL OR MECHANICAL ALTERNATOR (SEE WIRING)		SINGLE PHASE, FRACTIONAL HP MOTOR TO LOCATION INDICATED (SEE GEN. NOTE 4)
	OVERLOAD SWITCH OR DEVICE		THREE PHASE LOAD WITH IDENTIFICATION
	TERMINAL BOX		HIGH VOLTAGE FUSE (ABOVE 600 V)
	SOLENOID VALVE		TAG NO. (BALLOON) FOR DEVICE INDICATED
	PHOTOCELL LINE VOLTAGE		FOR POWER (SEE GEN. NOTE 4) 3/4" C/2" C - 18 SHLD. CONDUIT AND WIRE RUN FROM DEVICE INDICATED TO LOCATION INDICATED
	ITEM NO. INTERCOM EQUIPMENT		CAPACITOR, 3 PHASE, S.I.E. AS INDICATED
	INTERCOMMUNICATION SYSTEM AMPLIFIER - WALL STATION - LINE BALANCE		DISCONNECT SWITCH (F) - FUSED (C) - CIRCUIT BREAKER
	INTERCOMMUNICATION DESK SET		MAGNETIC STARTER (BACKGROUND DRAWINGS ONLY)
	INTERCOM. SPEAKER (SURFACE MTD.)		COMBINATION MAGNETIC STARTER FUSED UNLESS NOTED (CIRCUIT BREAKER) SS - STAINLESS STEEL
	INTERCOM. SPEAKER (CEILING LAY-IN)		COMBINATION LIGHTING CONTACTOR WITH HAND-OFF-AUTO SWITCH
	TELEPHONE OUTLET OR JUNCTION BOX		MANUAL STARTER (R) - REVERSING
	WELDING RECEPTACLE - NEMA L9-50R 600V, 2P, 3W, SIMPLEX		CONTROL PANEL
	INTERCOM HANDSET - SURFACE MOUNTED WITH REMOTE SPEAKER AMPLIFIER		TEMPERATURE CONTROL PANEL
	INTERCOM VOLUME CONTROL		UNIT HEATER, 1/8 HORSEPOWER
	INTERCOM SPEAKER - SURFACE MOUNTED		600 VOLT FEEDER BUS DUCT (AMPERAGE AS INDICATED)
	INTERCOM HANDSET - FLUSH MOUNTED WITH REMOTE SPEAKER AMPLIFIER		LIGHTNING ARRESTOR
	DOOR CONTACT		LOW VOLTAGE HOME RUNS 120/208 V 120/240 V (SEE GEN. NOTE 4)
	AS NOTED (LIGHTING PANEL, CONTROL PANEL, DISTRIBUTION PANEL ETC.) WALL MOUNTED	NEMA 4	WATERTIGHT
	JUNCTION BOX	NEMA 4X	WATERTIGHT AND CORROSION PROOF
	HEATER	NEMA 7	EXPLOSION PROOF - CLASS I, DIVISION I, GROUP D
	TRANSFORMER	NEMA 9	EXPLOSION PROOF - CLASS II, DIVISION 1
	CONDUIT WITH CONDUIT SEAL FITTING		KEYLOCK
	CONDUIT EXPOSED		SMOKE DETECTOR
	CONDUIT CONCEALED		EXIT LIGHT
	DIRECT BURIED CONDUIT		FLUORESCENT LUMINAIRE
	OVERHEAD LINE		INCANDESCENT LUMINAIRE
	UNDERGROUND DUCT BANK - ALL CONDUITS SHALL BE CONCRETE ENCASED WITH RED DYE		HIGH INTENSITY DISCHARGE LIGHT
	COPPER-CLAD GROUND ROD		EMERGENCY BATTERY PACK
	CONCRETE ENCASED DUCT BANK, WITH CABLE LOCATIONS AND SPARE DUCTS AS INDICATED ON DRAWINGS		
	CABLE REEL		
	HORN/STROBE (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 OPEN CONTACT ON DE-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 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 (RHW, THHN, OR XHHW) COPPER GROUND WIRE IN EACH CONDUIT, S.I.E. 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 INSIDE SHALL BE RATED NEMA 12 AND EQUIPMENT SHOWN OUTSIDE SHALL BE RATED NEMA 4X, UNLESS OTHERWISE INDICATED.
- MINIMUM CONTROL WIRE S.I.E. SHALL BE EITHER #14 AWG OR 2/C #16SH AND MINIMUM POWER WIRE S.I.E. SHALL BE #12 AWG, UNLESS OTHERWISE INDICATED.
- MINIMUM CONDUIT S.I.E. SHALL BE 3/4", UNLESS OTHERWISE INDICATED.
- PROVIDE INSULATED CONDUCTOR (THHN/THWN) FOR EXTERIOR WORK AND FOR INTERIOR WORK.
- 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" C/2" I.D. UNLESS NOTED OTHERWISE.
- ALL BURIED CONDUIT SHALL BE ENCASED IN CONCRETE, RED DYE MIX NOT SPREAD ON TOP, WITH A MINIMUM OF 2" COVER ON ALL SIDES.

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MARK	DATE	DESCRIPTION

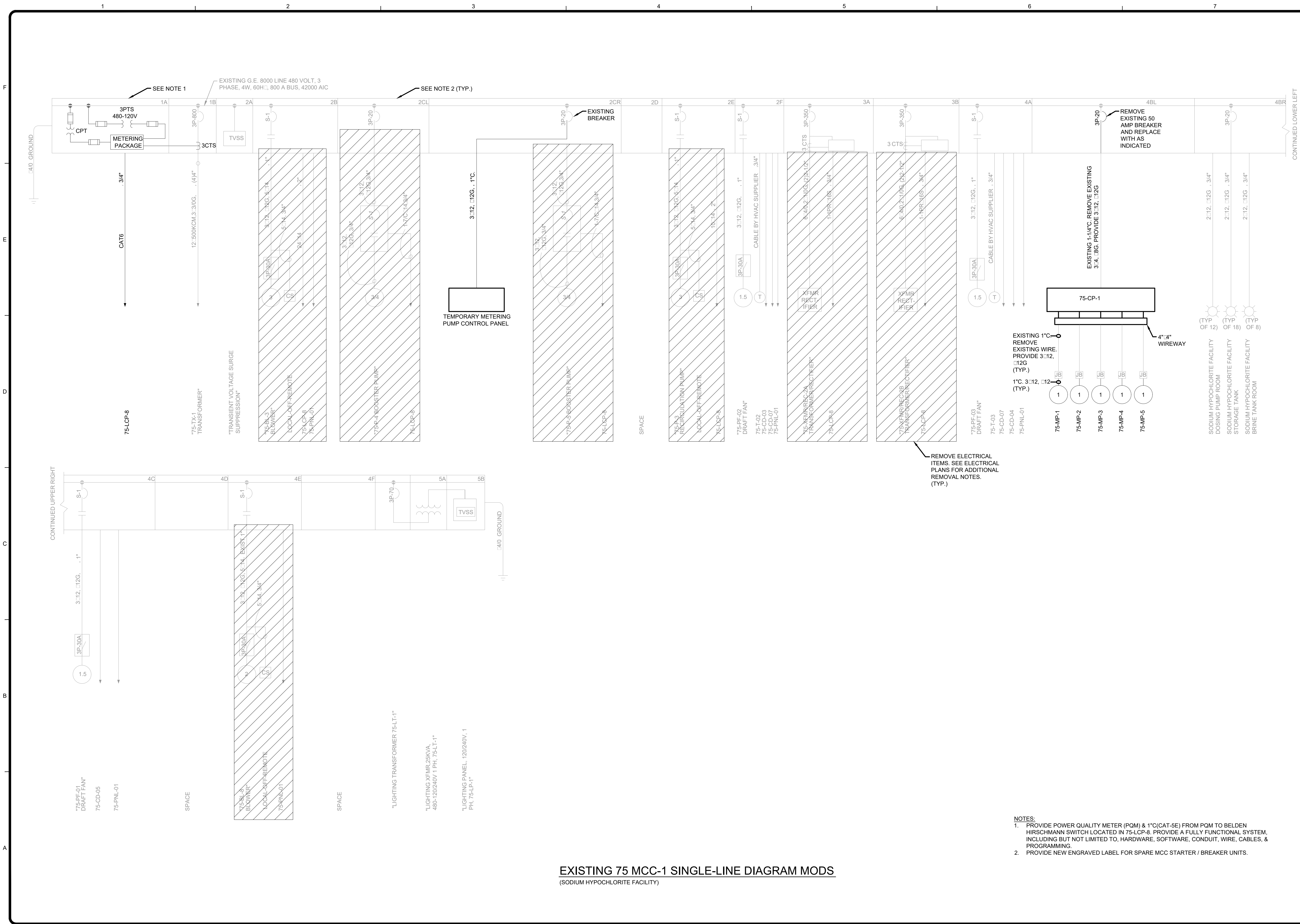
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
ELECTRICAL LEGEND

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

E001

9/18/2019 12:37:44 PM - V:\TSS\181F52\PROJECTS\10034\200-10034-18003\CAD\SHEETFILES\E001 ELECTRICAL LEGEND.DWG - JOHNSON, CALEY

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EXISTING 75 MCC-1 SINGLE-LINE DIAGRAM MODS
(SODIUM HYPOCHLORITE FACILITY)

- NOTES:**
1. PROVIDE POWER QUALITY METER (PQM) & 1" (CAT-5E) FROM PQM TO BELDEN HIRSCHMANN SWITCH LOCATED IN 75-LCP-8. PROVIDE A FULLY FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO, HARDWARE, SOFTWARE, CONDUIT, WIRE, CABLES, & PROGRAMMING.
 2. PROVIDE NEW ENGRAVED LABEL FOR SPARE MCC STARTER / BREAKER UNITS.

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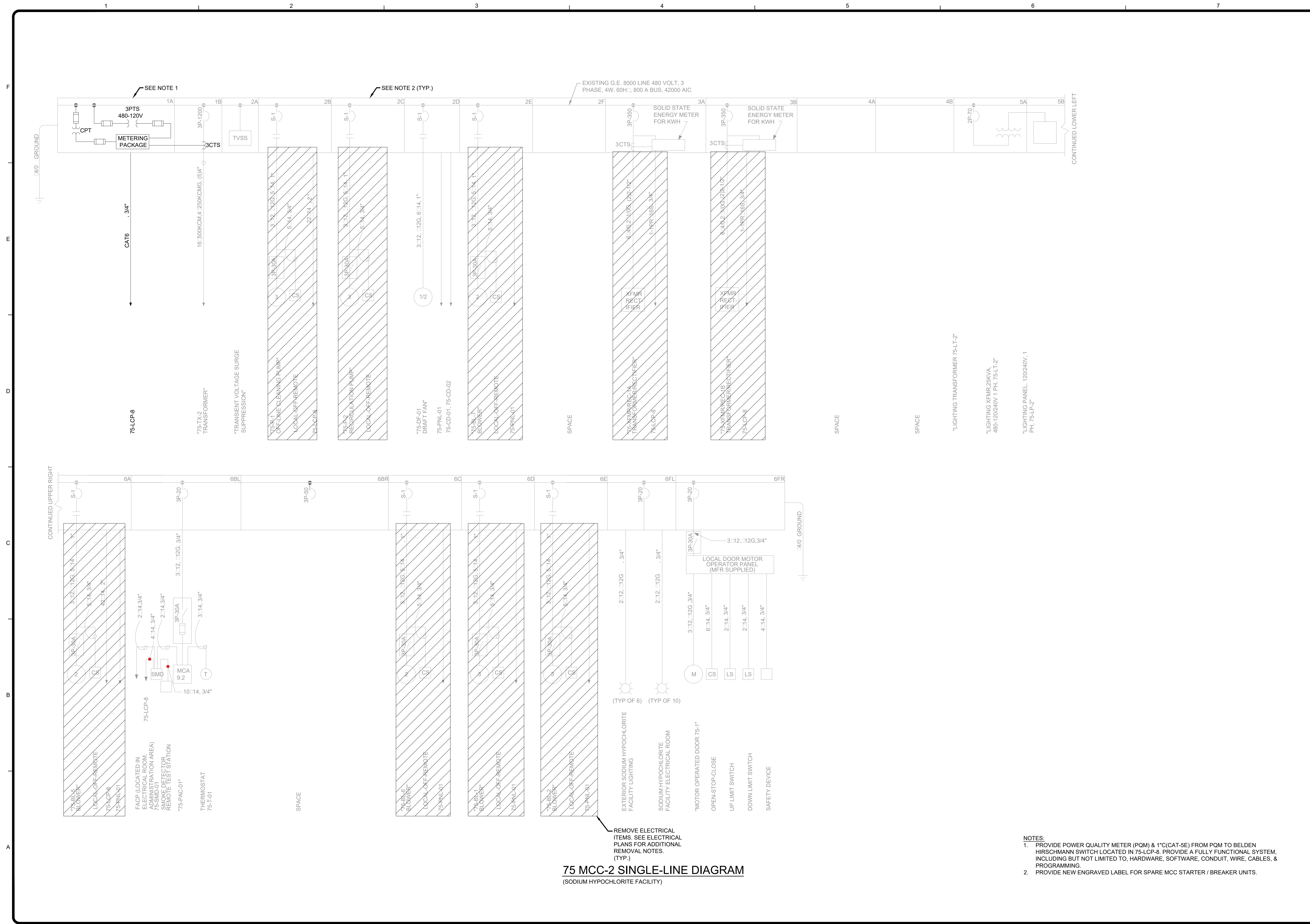
MARK	DATE	DESCRIPTION

BY	DESCRIPTION

ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 75
EXISTING 75 MCC-1
SINGLE-LINE DIAGRAM MODS

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

E101

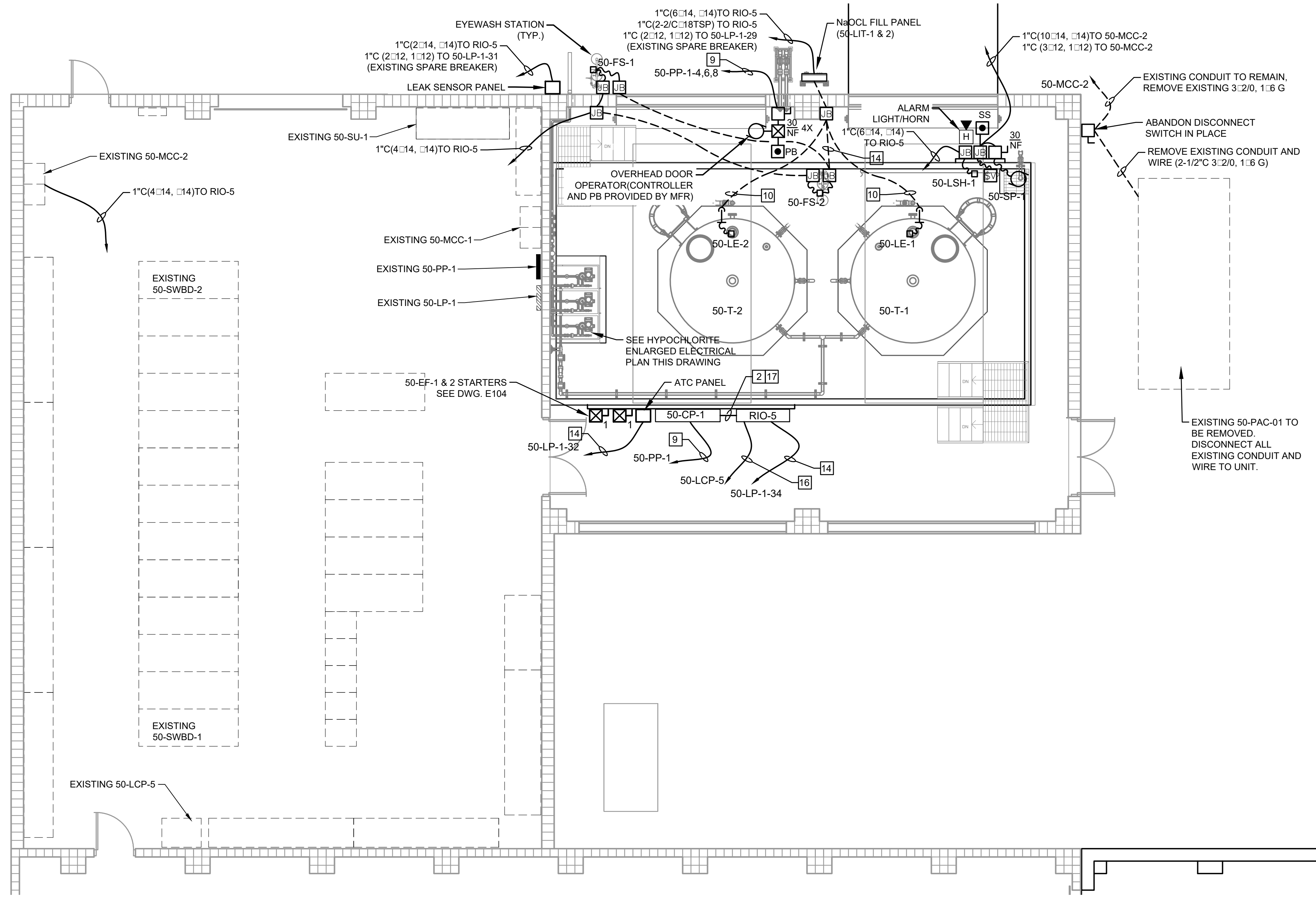


75 MCC-2 SINGLE-LINE DIAGRAM
(SODIUM HYPOCHLORITE FACILITY)

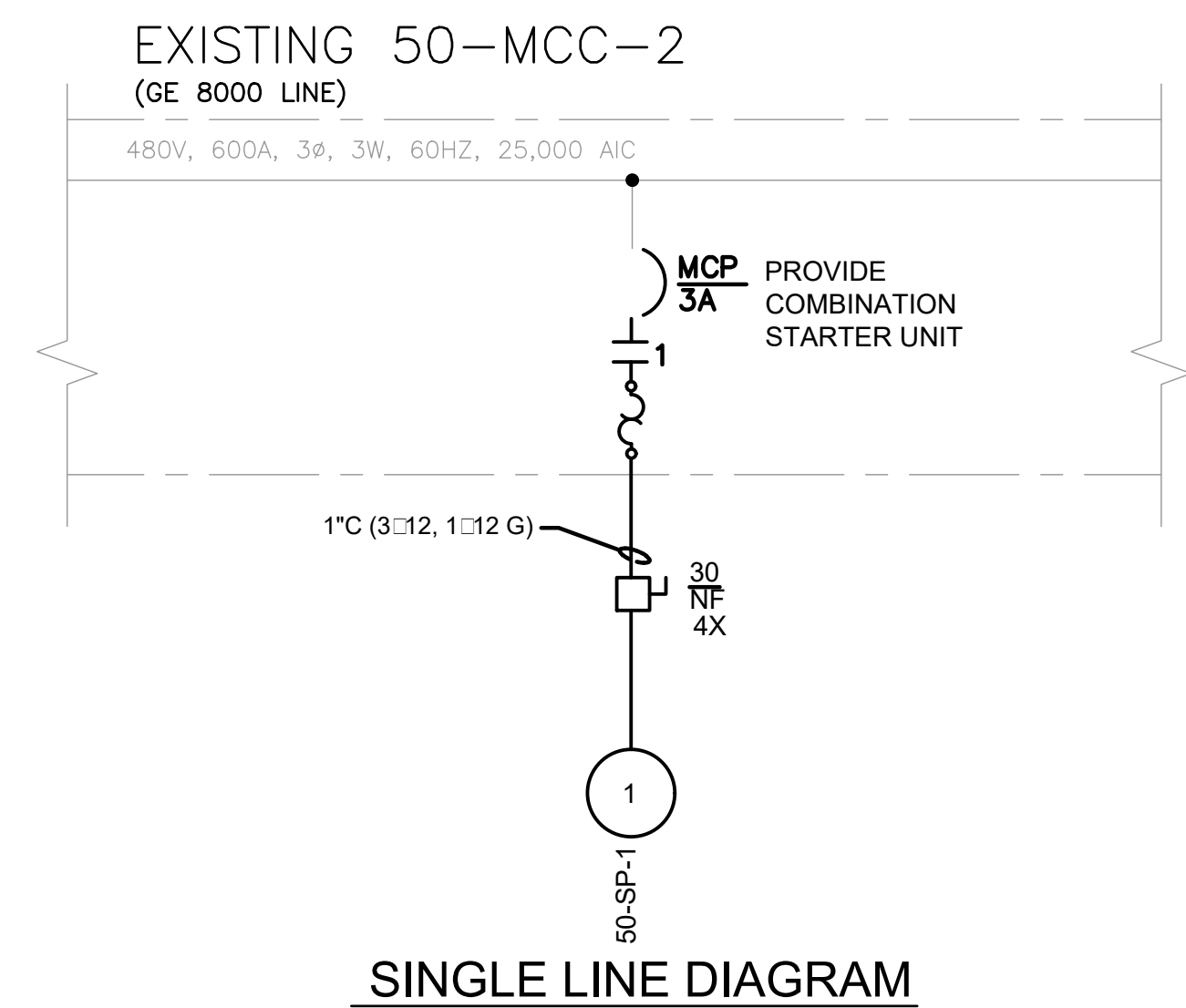
- NOTES:
1. PROVIDE POWER QUALITY METER (PQM) & 1°C(CAT-5E) FROM PQM TO BELDEN HIRSCHMANN SWITCH LOCATED IN 75-LCP-8. PROVIDE A FULLY FUNCTIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO, HARDWARE, SOFTWARE, CONDUIT, WIRE, CABLES, & PROGRAMMING.
 2. PROVIDE NEW ENGRAVED LABEL FOR SPARE MCC STARTER / BREAKER UNITS.

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		BY	
ORANGE COUNTY UTILITIES		MARK	DESCRIPTION
EASTERN REGIONAL WATER SUPPLY FACILITY		DATE	
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK			
PROCESS 75			
EXISTING 75-MCC-2			
SINGLE-LINE DIAGRAM MODS			
Project No.:	200-10034-18003	Designed By:	DK
Drawn By:	DK	Checked By:	BRW
E102			

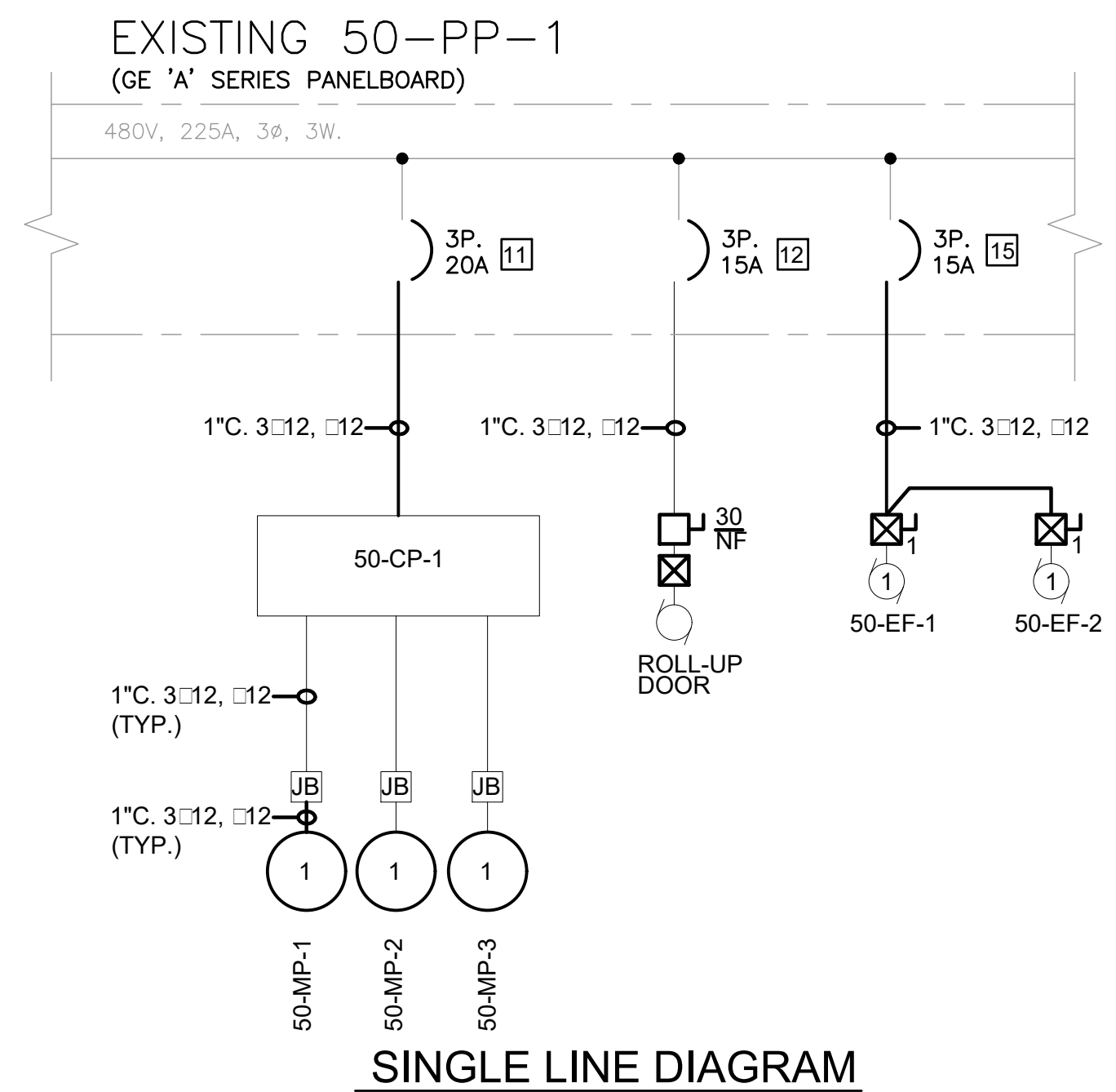
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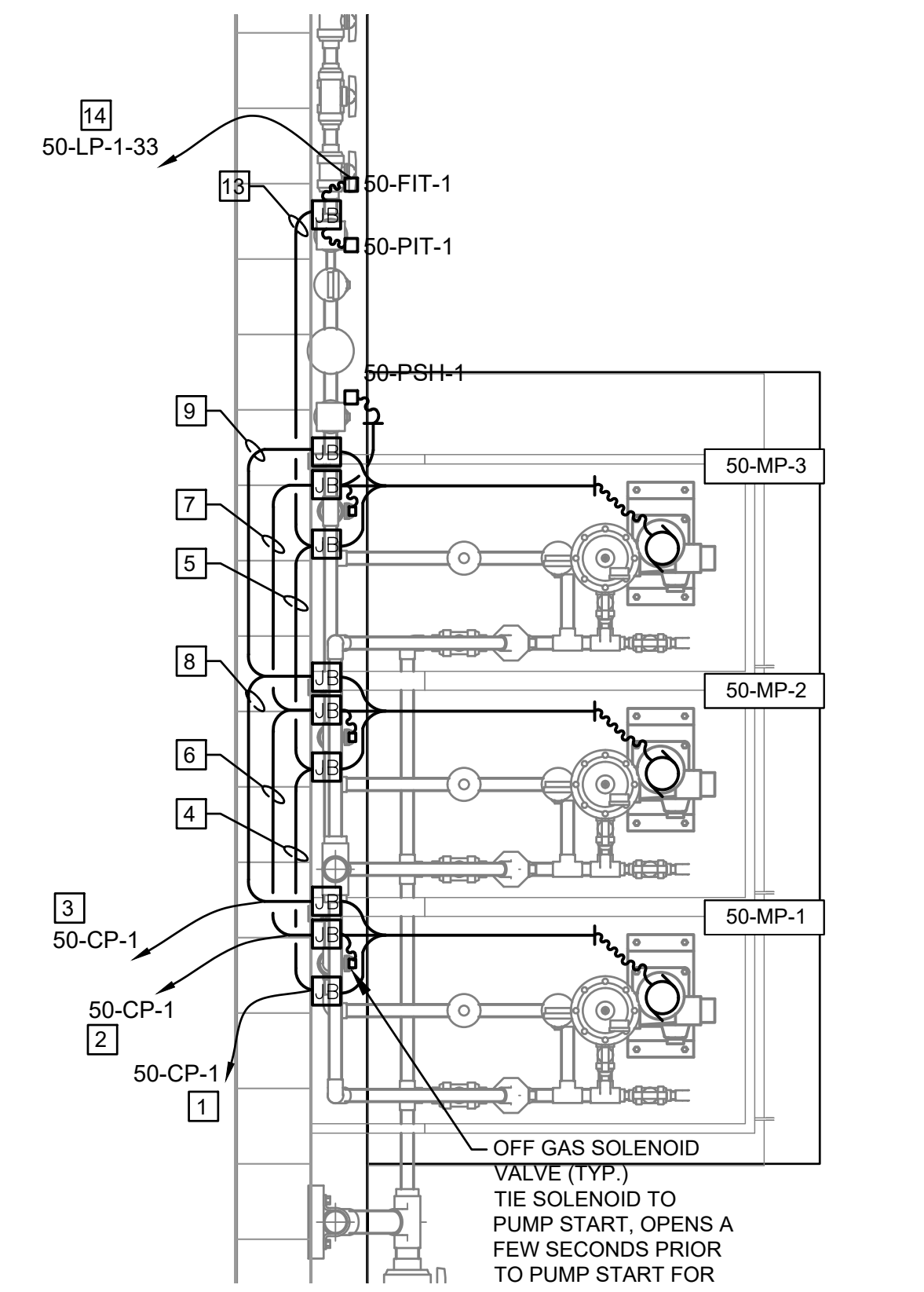
HYPOCHLORITE ELECTRICAL PLAN
SCALE: 3/16" = 1'-0"



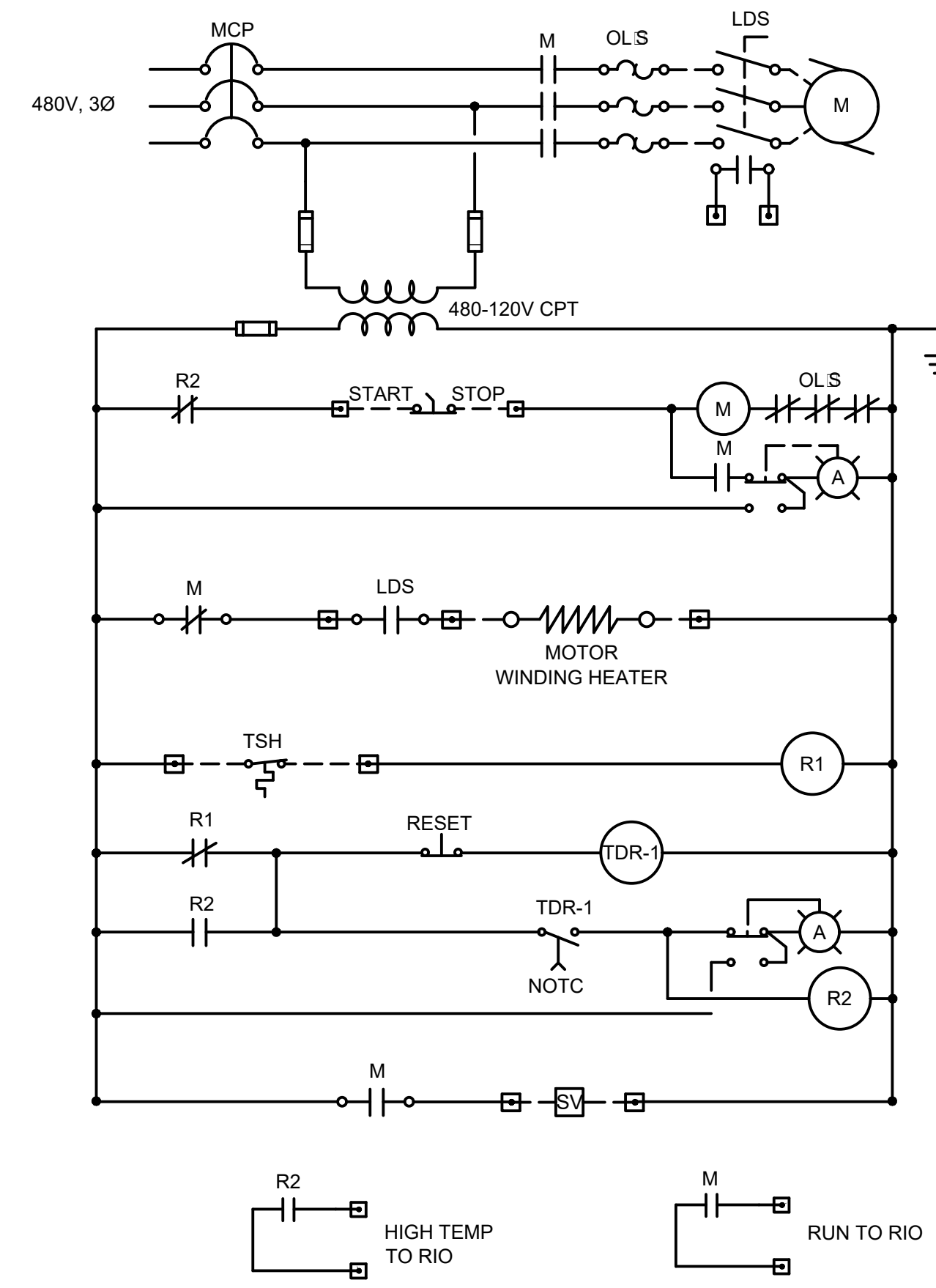
SINGLE LINE DIAGRAM



SINGLE LINE DIAGRAM

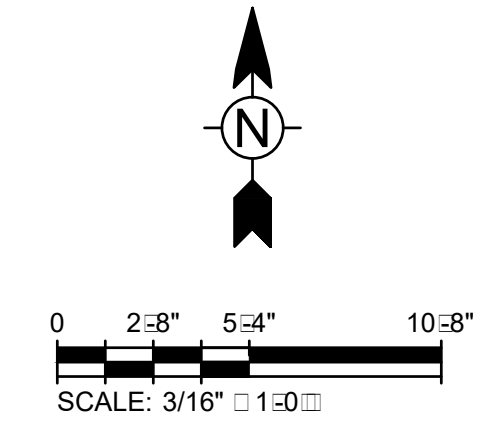


HYPOCHLORITE ENLARGED ELECTRICAL PLAN
SCALE: 3/4" = 1'-0"



50-SP-1 WIRING DIAGRAM

- SPECIFIC NOTES:**
- 1 2\"/>
 - 2 2\"/>
 - 3 1\"/>
 - 4 2\"/>
 - 5 1\"/>
 - 6 1\"/>
 - 7 1\"/>
 - 8 1\"/>
 - 9 1\"/>
 - 10 1\"/>
 - 11 UTIL: E EXISTING SPARE 3P-20A BREAKER (14,16,18) FOR 50-CP-1.
 - 12 REMOVE (3) EXISTING 1P-20A BREAKERS (SPARE). REARRANGE EXISTING BREAKERS IN PANEL TO EXCEPT NEW 3P-20A BREAKER (4,6,8) FOR ROLL-UP DOOR.
 - 13 1\"/>
 - 14 1\"/>
 - 15 REMOVE EXISTING 3P-50A BREAKERS (13,15,17) AND PROVIDE NEW 3P-15A BREAKER FOR 50-EF-1 AND 50-EF-2.
 - 16 1\"/>
 - 17 2\"/>



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ORANGE COUNTY UTILITIES

EASTERN REGIONAL WATER SUPPLY FACILITY

SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

PROCESS 50 SODIUM

HYPOCHLORITE

ELECTRICAL PLAN

Project No.: 200-10034-18003

Designed By: DK

Drawn By: DK

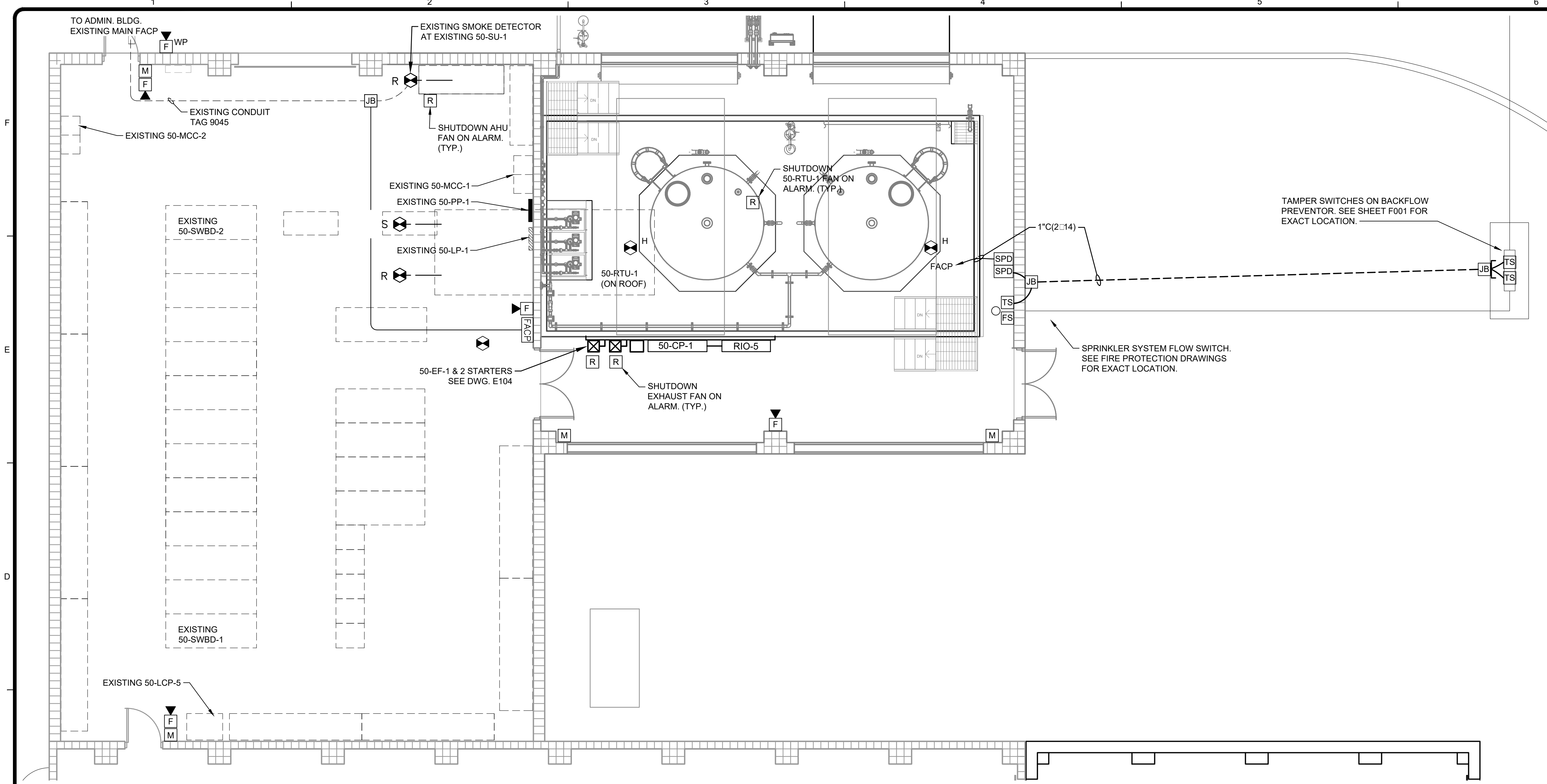
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E103

Bar Measures 1 inch

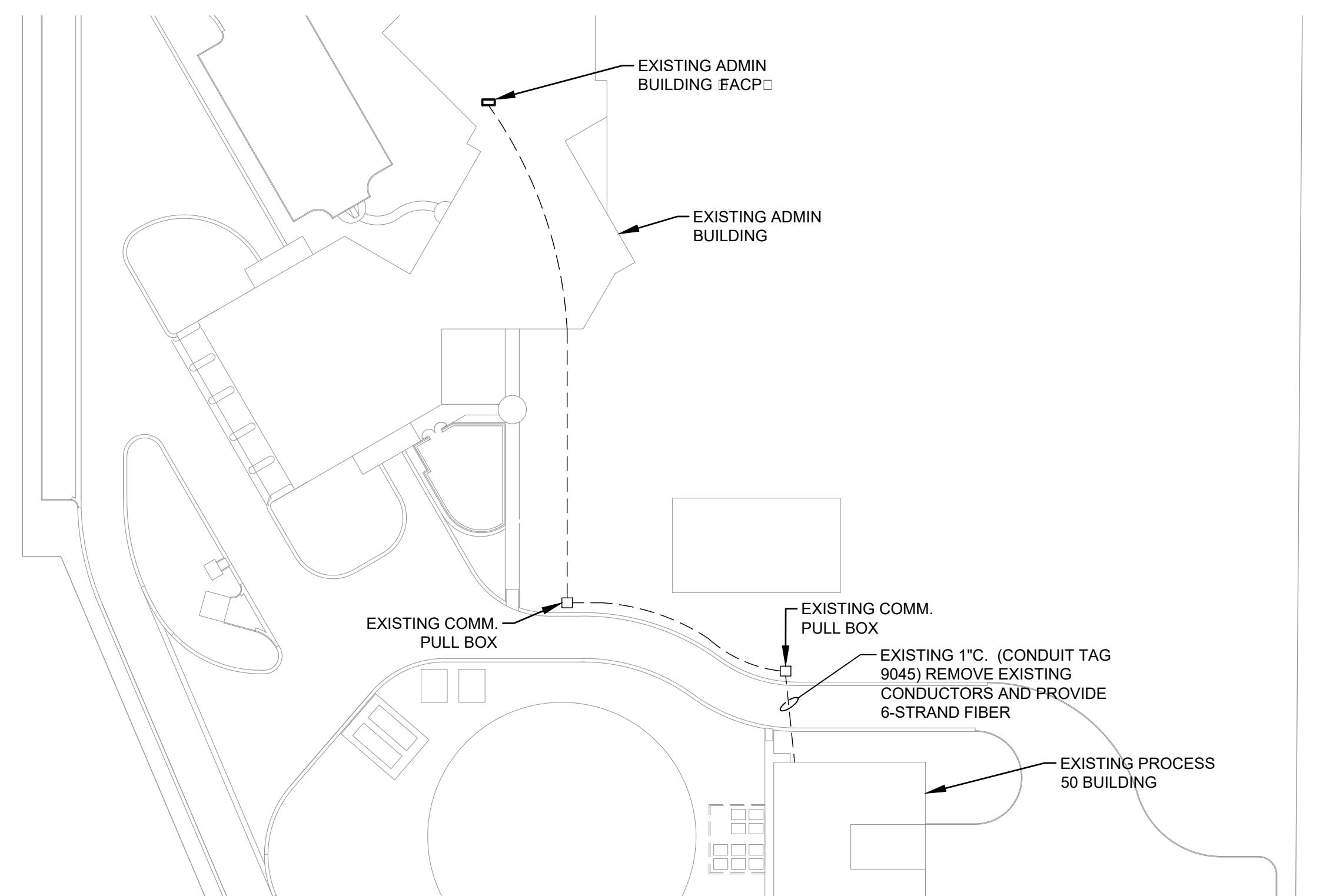
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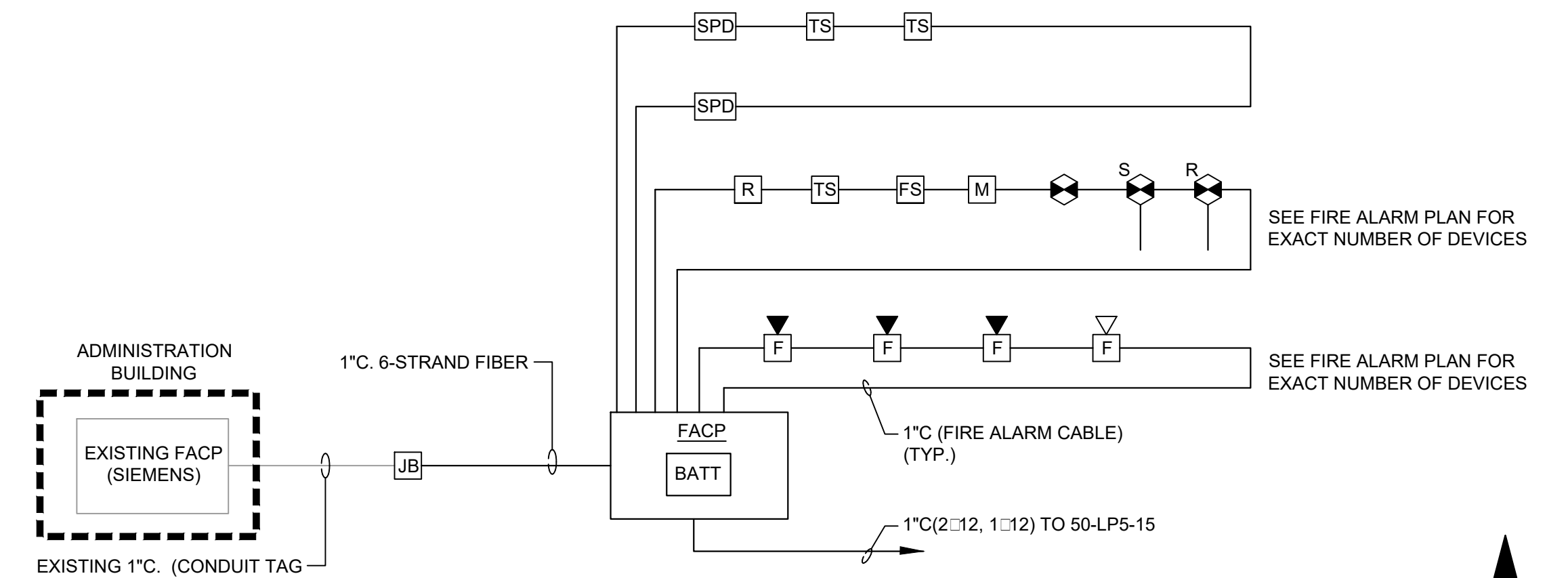


- ### FIRE ALARM SYMBOLS
- FIRE ALARM CONTROL PANEL
 - FIRE ALARM COMBINATION HORN STROBE. 30\"/>

HYPOCHLORITE FIRE ALARM PLAN
SCALE: 3/16" = 1'-0"

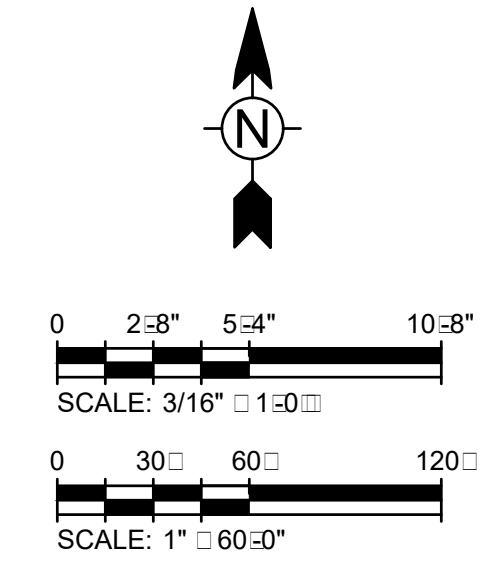


FIRE ALARM SITE PLAN
SCALE: 1" = 60'-0"



- NOTES:**
- FACP SHALL BE COMPATIBLE WITH EXISTING FACP AND BE CAPABLE OF TRANSMITTING EMERGENCY SIGNALS BEING CONTROLLED AND/OR INITIATED.
 - FACP SHALL BE WIRED AS A CLASS B FIRE ALARM SYSTEM.

FIRE ALARM RISER
SCALE: NO SCALE



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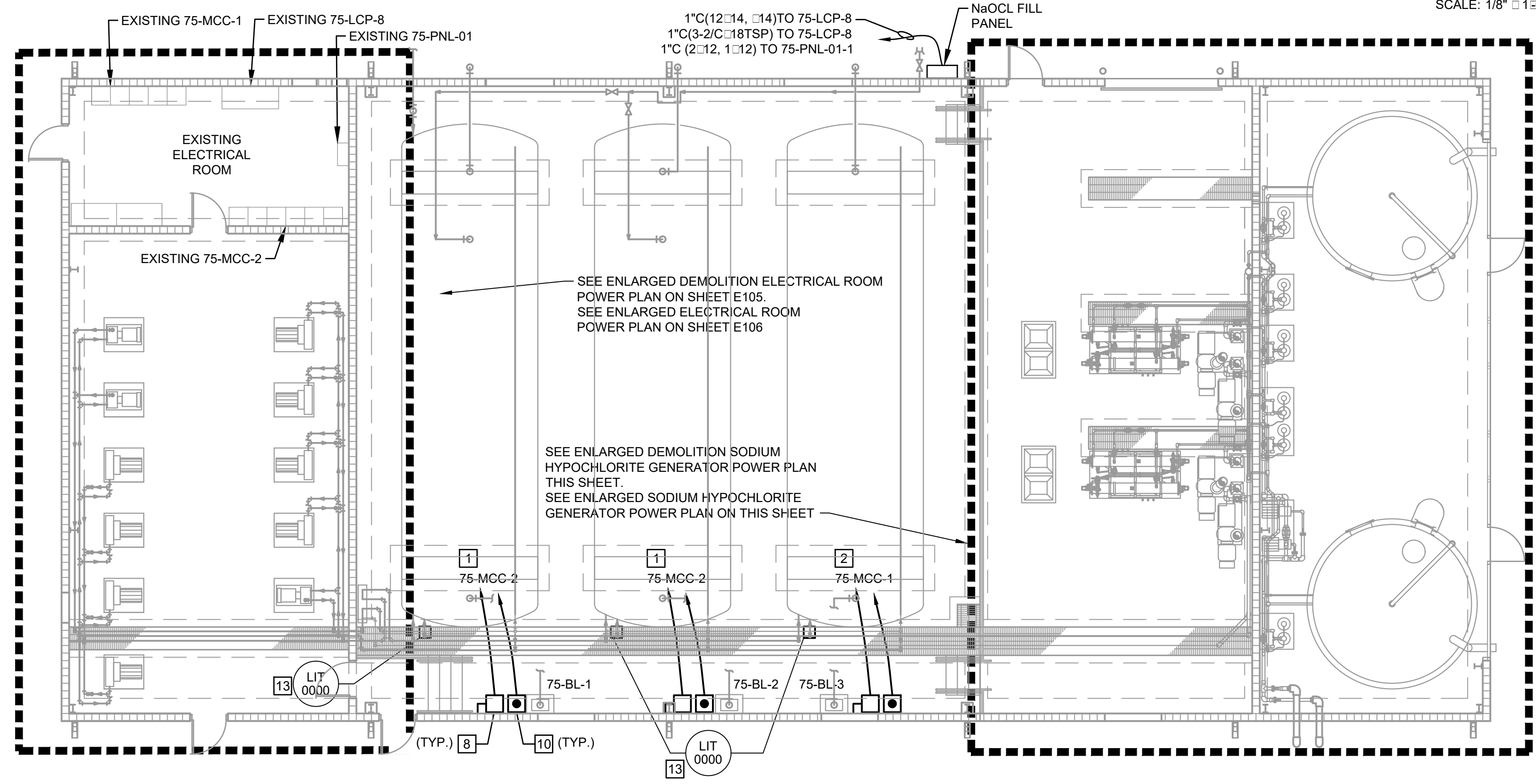
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 50 SODIUM
HYPOCHLORITE FIRE
ALARM PLAN

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

E105

Bar Measures 1 inch

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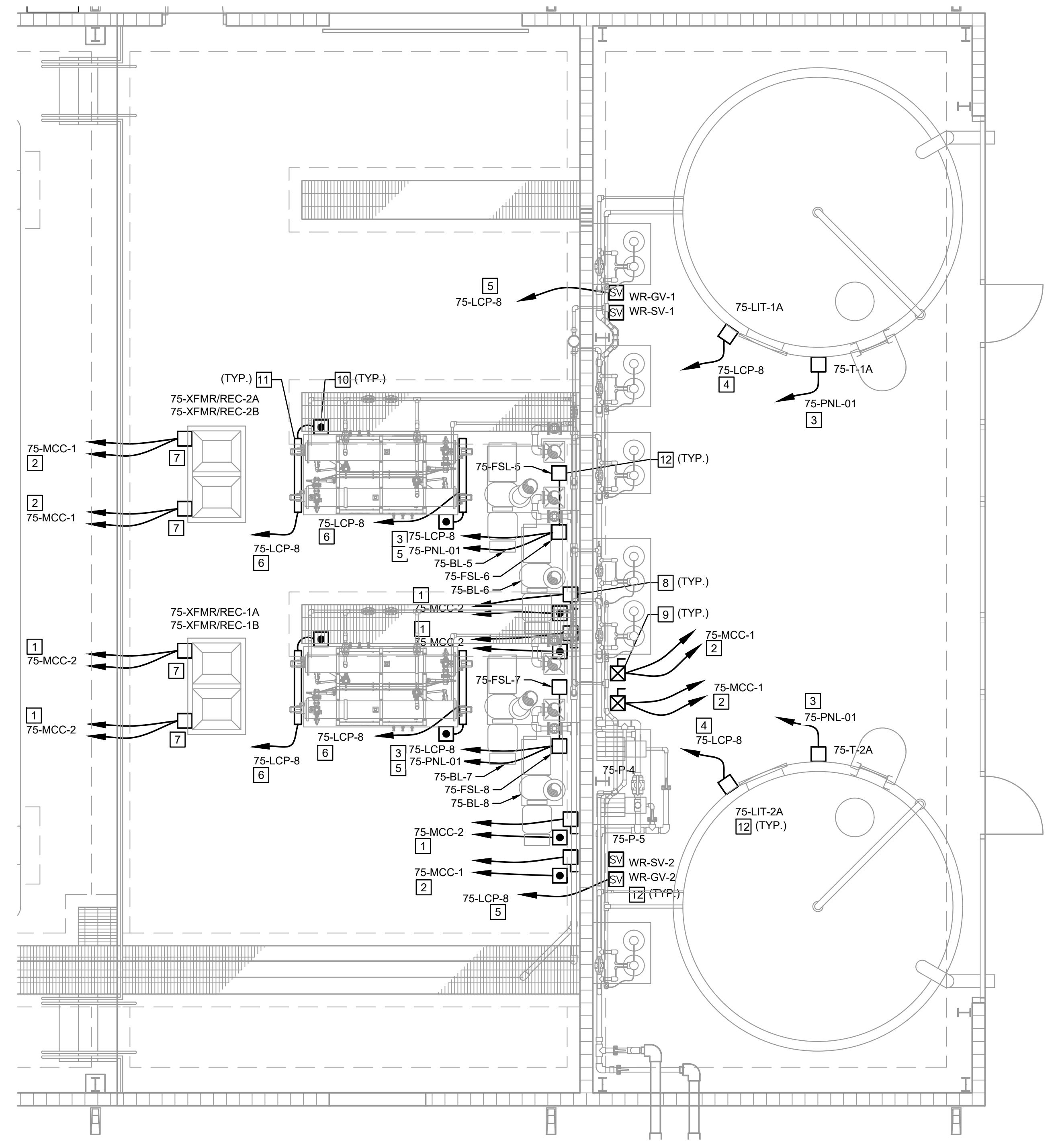
DEMOLITION SODIUM HYPOCHLORITE BUILDING PLAN
SCALE: 1/8"=1'-0"

NOTES:

1. ALL EQUIPMENT RELATED TO THE SODIUM HYPOCHLORITE GENERATION SYSTEM, INCLUDING BRINE STORAGE TANKS, SOFTENING SYSTEM, HYPOCHLORITE GENERATORS, BLOWERS, INTERCONNECTING PIPING AND VALVES, ELECTRICAL AND CONTROLS SHALL REMAIN IN SERVICE UNTIL THE STORAGE TANK AND METERING PUMP REPLACEMENT FOR BULK SODIUM HYPOCHLORITE DELIVERY, STORAGE AND FEED IS ACCEPTED FOR FULL-TIME OPERATION BY THE OWNER AND IS FULLY OPERATIONAL AND CLEARED FOR SERVICE BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. IT IS INTENDED THAT EVERYTHING ASSOCIATED WITH THE SODIUM HYPOCHLORITE GENERATION SYSTEM BE DEMOLISHED, REMOVED AND PROPERLY DISPOSED OF SUCH THAT THIS AREA CAN BE USED FOR FUTURE FACILITIES. DISASSEMBLE, REMOVE AND PROPERLY DISPOSE OF ALL EQUIPMENT, STORAGE TANKS, PIPING, VENT LINES, PUMPS, VALVE, ELECTRICAL PANELS, CONTROL PANELS, DEVICES, CONDUIT, WIRING AND ALL OTHER EQUIPMENT RELATED TO THIS SYSTEM. DO NOT DISTURB FACILITIES NOT DESIGNATED FOR DEMOLITION.
2. CONTRACTOR SHALL SUBMIT A DETAILED DEMOLITION PLAN PROVIDING THE SEQUENCE FOR DEMOLITION, CONSTRUCTION AND TEMPORARY STORAGE AND FEED SYSTEM FOR THE SODIUM HYPOCHLORITE STORAGE AND FEED PUMP MODIFICATIONS OUTLINING STEP BY STEP SEQUENCE AND DURATION OF TANK REMOVALS, METERING PUMP REPLACEMENT, SUCTION AND FEED PIPING REMOVAL AND INSTALLATION OF NEW SUCTION AND FEED PIPING, ELECTRICAL AND CONTROL MODIFICATIONS, TEMPORARY STORAGE AND FEED SYSTEM INSTALLATION AND OPERATIONS AND ALL OTHER SEQUENCING EVENTS TO DEMONSTRATE THE CAPABILITY OF MAINTAINING PRE AND POST DISINFECTION OPERATION WITHOUT DISRUPTION IN SERVICE. SEE SPECIFICATION SECTION 01010 FOR ADDITIONAL SEQUENCING REQUIREMENTS AND SECTION 11400 FOR REQUIREMENTS OF THE TEMPORARY STORAGE AND FEED SYSTEM.
3. ALL WALL, CEILING AND SLAB PENETRATIONS SHALL BE PATCHED AND SEALED. REMOVE EXISTING EQUIPMENT PADS FOLLOWING DEMOLITION OF ASSOCIATED EQUIPMENT AND PATCH FLOOR TO MATCH EXISTING.
4. ALL DISTURBED SURFACES SHALL BE PATCHED AND COATED IN ACCORDANCE WITH SPECIFICATION SECTION 09900.
5. SEE SPECIFICATION SECTION 02050 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
6. ALL ELECTRICAL EQUIPMENT AND DEVICES TO BE TURNED OVER TO OWNER.

SPECIFIC NOTES:

- 1 REMOVE EXISTING CONDUCTORS. SEE DWG. E-102 FOR CONDUCTOR SIZE AND QUANTITY. CAP AND ABANDON CONDUIT.
- 2 REMOVE EXISTING CONDUCTORS. SEE DWG. E-101 FOR CONDUCTOR SIZE AND QUANTITY. CAP AND ABANDON CONDUIT.
- 3 REMOVE 2"Ø, 1"Ø, CAP AND ABANDON CONDUIT.
- 4 REMOVE 2"Ø 16TSP, CAP AND ABANDON CONDUIT.
- 5 REMOVE 4"Ø, 1"Ø, CAP AND ABANDON CONDUIT.
- 6 REMOVE ALL CONDUCTORS.
- 7 REMOVE JUNCTION BOX.
- 8 REMOVE DISCONNECT SWITCH.
- 9 REMOVE STARTER/DISCONNECT SWITCH.
- 10 REMOVE CONTROL STATION.
- 11 ABANDON WIREWAY.
- 12 REMOVE DEVICES.
- 13 REMOVE EXISTING LEVEL TRANSMITTER AND PROVIDE NEW. RECONNECT TO EXISTING POWER AND CONTROL CONDUIT AND WIRE.



ENLARGED DEMOLITION SODIUM HYPOCHLORITE GENERATOR POWER PLAN
SCALE: 1/4"=1'-0"

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ORANGE COUNTY UTILITIES

EASTERN REGIONAL WATER SUPPLY FACILITY

SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

PROCESS 75

SODIUM HYPOCHLORITE

ELECTRICAL PLANS

Project No.: 200-10034-18003

Designed By: DK

Drawn By: DK

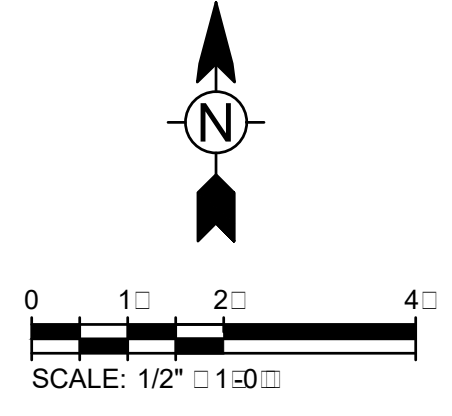
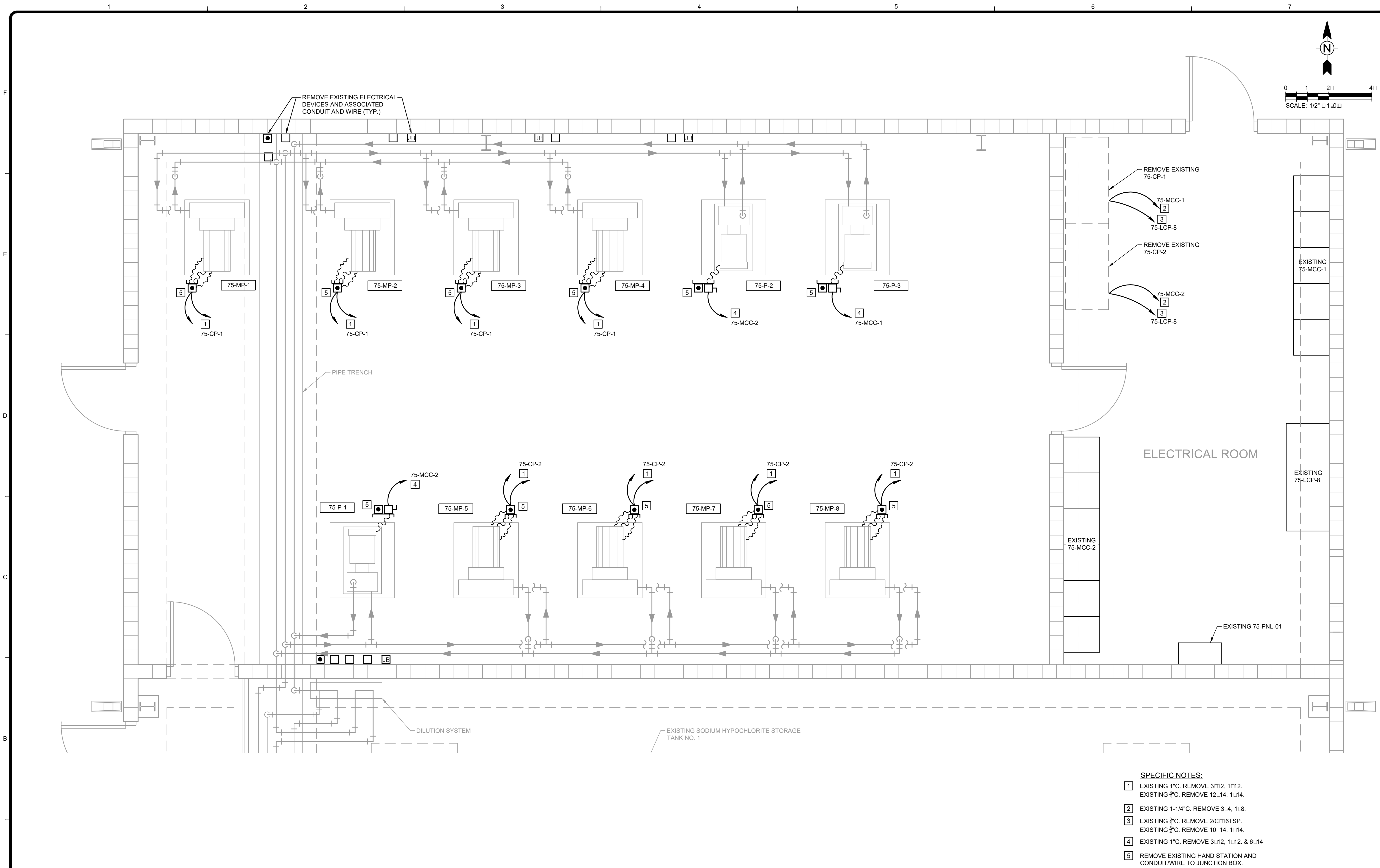
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E106

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- SPECIFIC NOTES:**
- 1 EXISTING 1" C. REMOVE 3-12, 1-12, 1-14.
EXISTING 3/4" C. REMOVE 12-14, 1-14.
 - 2 EXISTING 1-1/4" C. REMOVE 3-4, 1-8.
 - 3 EXISTING 3/8" C. REMOVE 2/C-16TSP.
EXISTING 3/8" C. REMOVE 10-14, 1-14.
 - 4 EXISTING 1" C. REMOVE 3-12, 1-12, & 6-14.
 - 5 REMOVE EXISTING HAND STATION AND CONDUIT/WIRE TO JUNCTION BOX. STANCHION TO REMAIN. REMOVE WIRE BACK TO CONTROL PANELS 75-CP-1 OR 75-CP-2.

PROCESS 75 BUILDING DEMOLITION POWER PLAN

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

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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 75 SODIUM
HYPO PUMP ROOM
DEMOLITION POWER PLAN

Project No.:	200-10034-18003
Designed By:	DK
Drawn By:	DK
Checked By:	BRW

E107

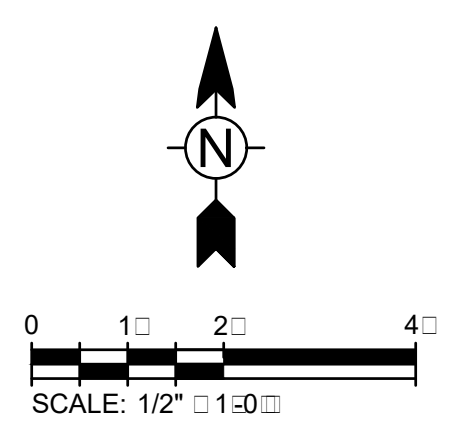
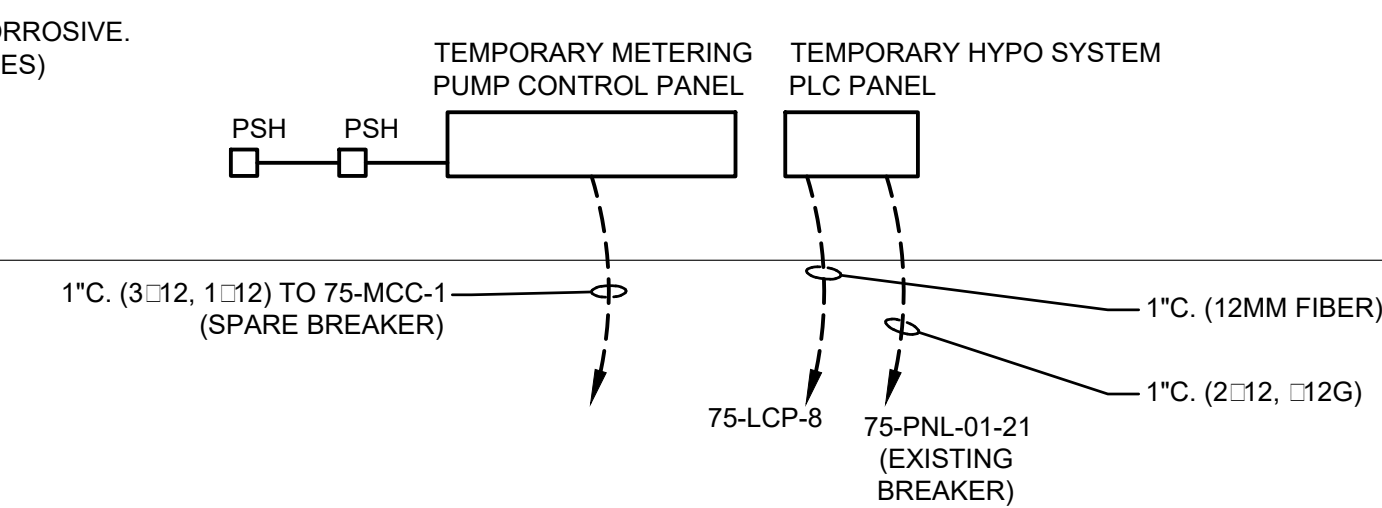
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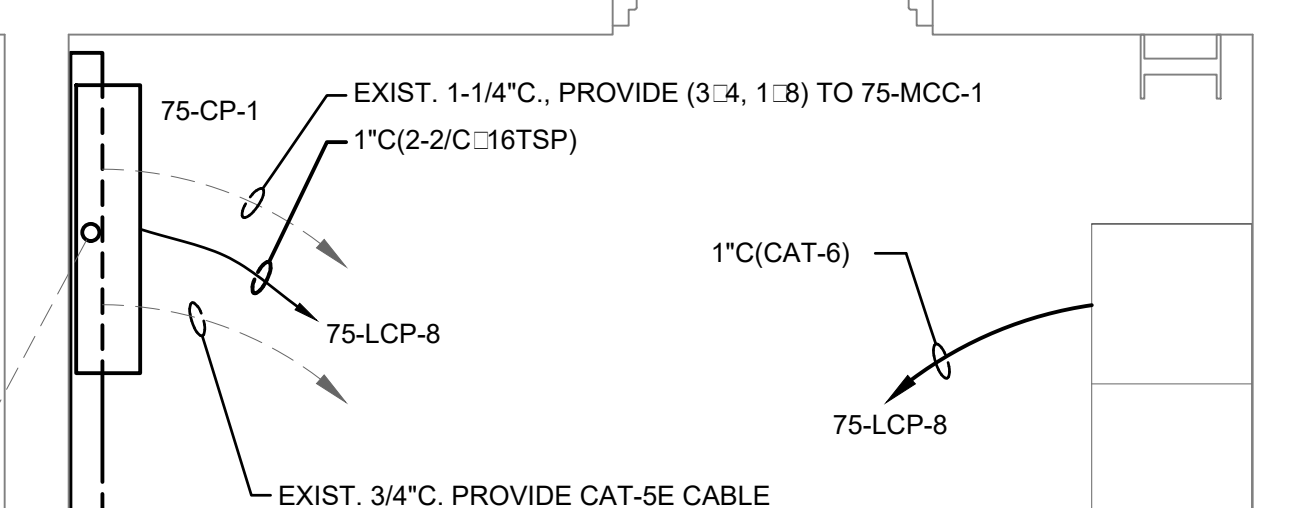
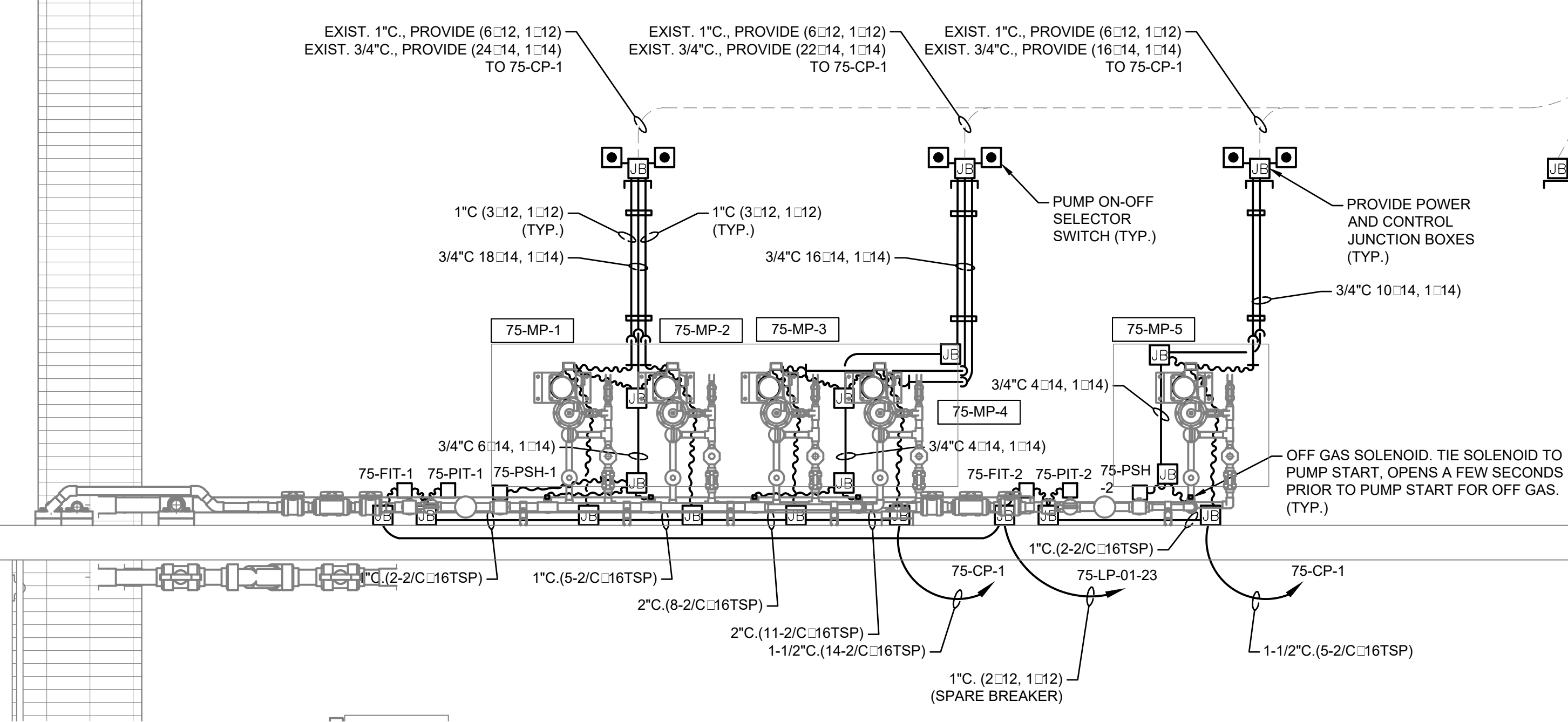
- NOTES:**
1. PROVIDE BELDEN HIRSCHMANN SWITCH WITHIN 75-LCP-8 ADJACENT TO EXISTING BELDEN HIRSCHMANN SWITCH. CONNECT TWO SWITCHES TOGETHER VIA NEW JUMPER. NEW SWITCH SHALL MATCH EXISTING.
 2. FOR TEMPORARY CHEMICAL STORAGE AND FEED SYSTEM, MANUFACTURER SHALL INCLUDE ALL CONDUIT AND WIRE THAT IS NOT INDICATED ON THIS PLAN BUT IS REQUIRED TO MAKE A COMPLETE AND FUNCTIONING SYSTEM WITHIN THIS BID.

TEMPORARY CHEMICAL STORAGE AND FEED SYSTEM (AREA CLASSIFIED AS CORROSIVE. PROVIDE NEMA 4X DEVICES)



AREA CLASSIFIED AS CORROSIVE. PROVIDE NEMA 4X DEVICES.

ELECTRICAL ROOM



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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
**PROCESS 75 SODIUM
HYPOCHLORITE PUMP
ROOM POWER PLAN**

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

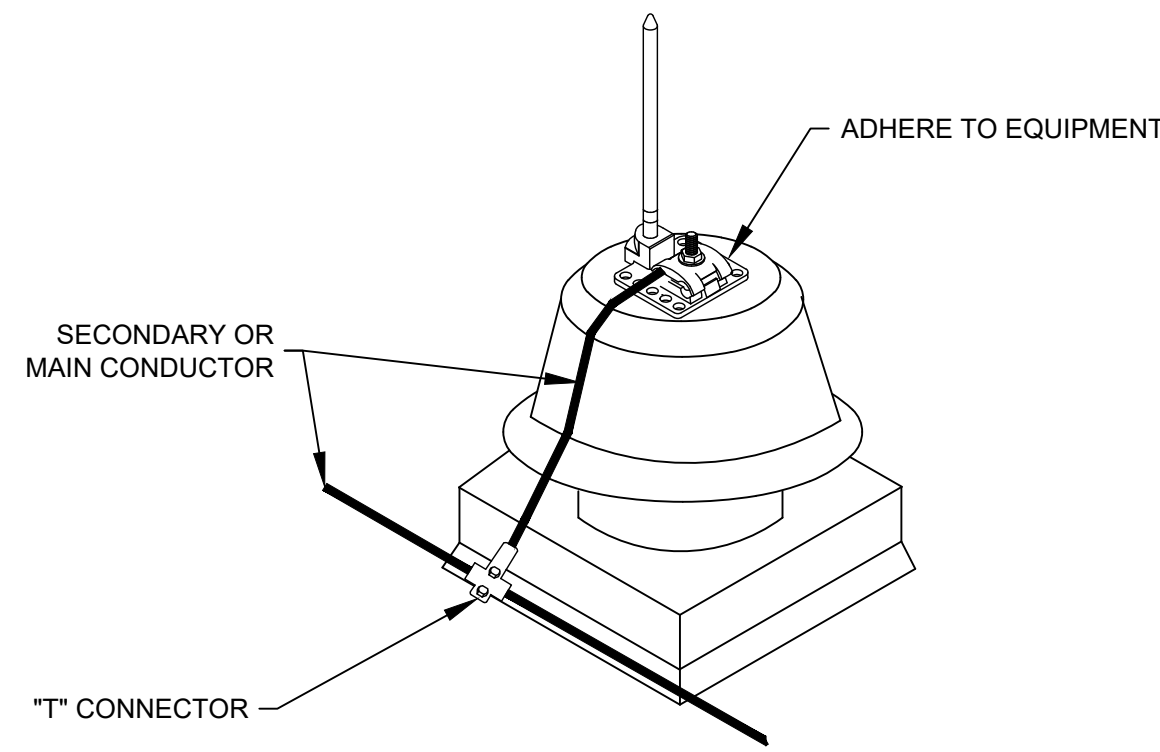
E108

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PROCESS 75 BUILDING POWER PLAN
SCALE: 1/2" = 1'-0"

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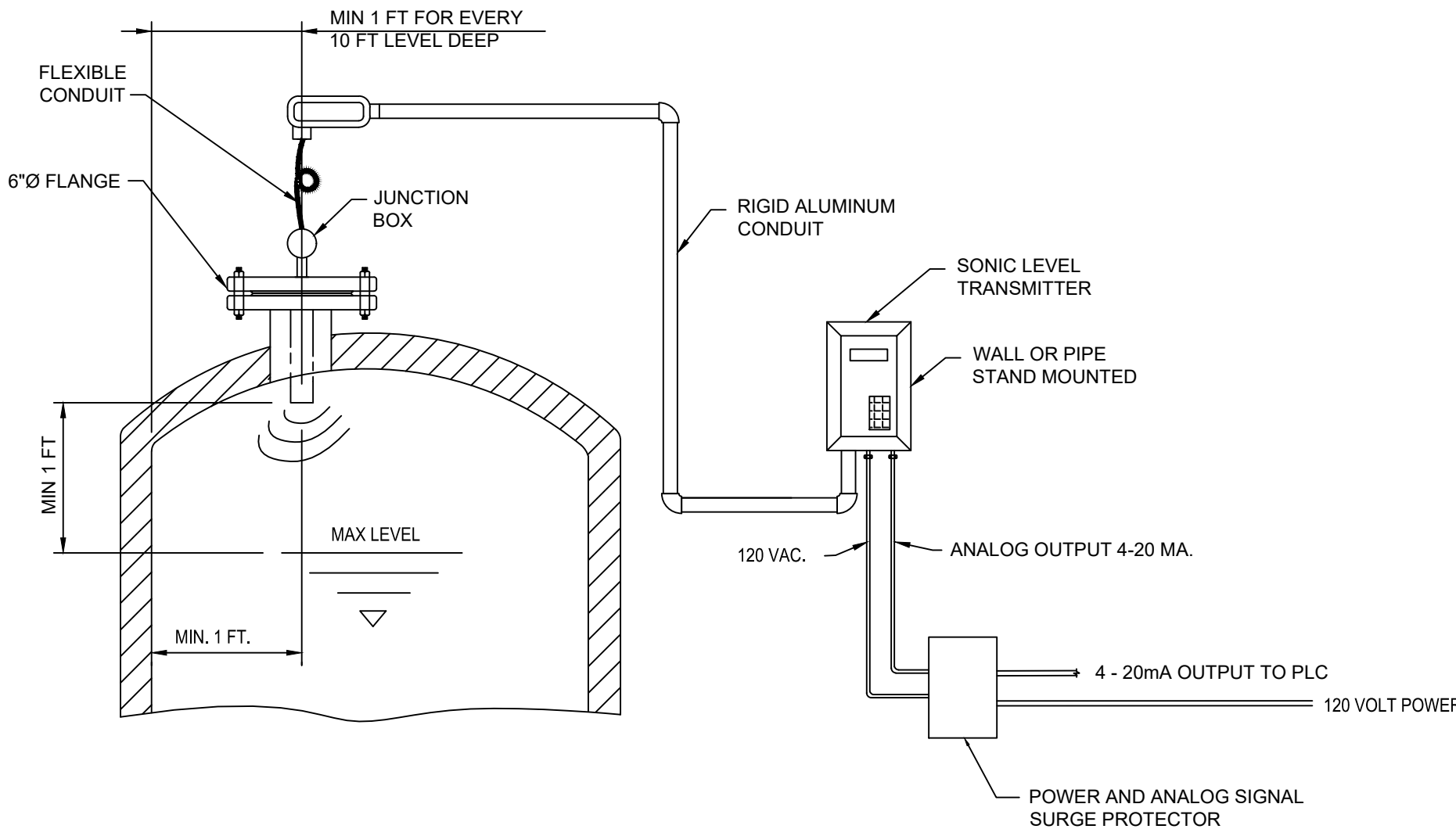
MECHANICAL EQUIPMENT GROUNDING DETAIL



- NOTES:**
- ANY MATERIAL THAT COMES IN CONTACT WITH THE ROOF (DEVICES, ADHESIVES, ETC.) SHALL BE APPROVED BY THE ROOFING SUBCONTRACTOR TO MAINTAIN ROOFING INTEGRITY AND WARRANTY. LIGHTNING PROTECTION SUBCONTRACTOR TO PROVIDE DOCUMENTATION OF ROOFING SUBCONTRACTOR'S ACCEPTANCE OF REQUIRED DEVICES.
 - IF METAL IS LESS THAN 3/16" THICK FULL PROTECTION IS REQUIRED.

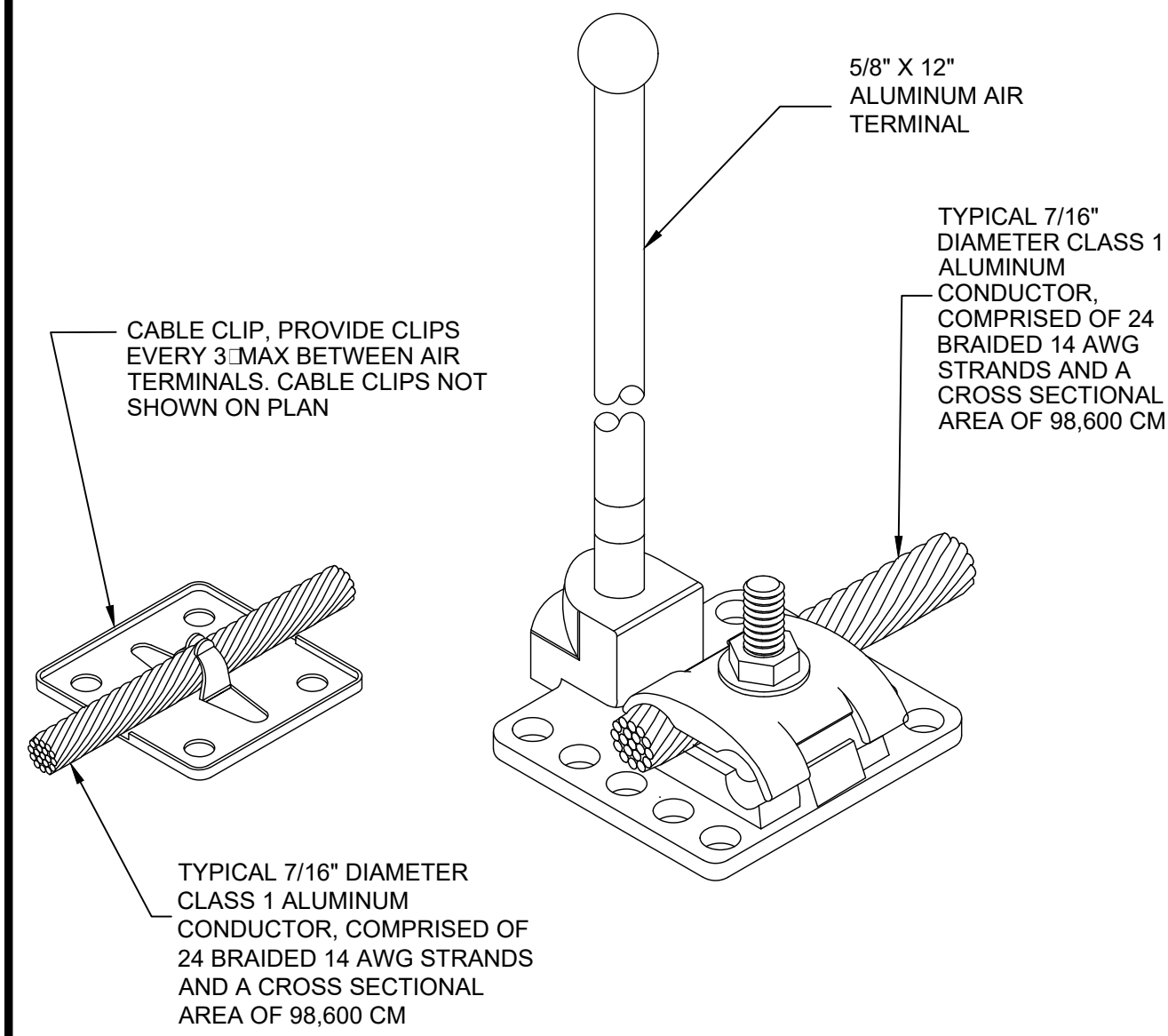
1 DETAIL
SCALE: NTS

TANK SONIC LEVEL TRANSMITTER



2 DETAIL
SCALE: NTS

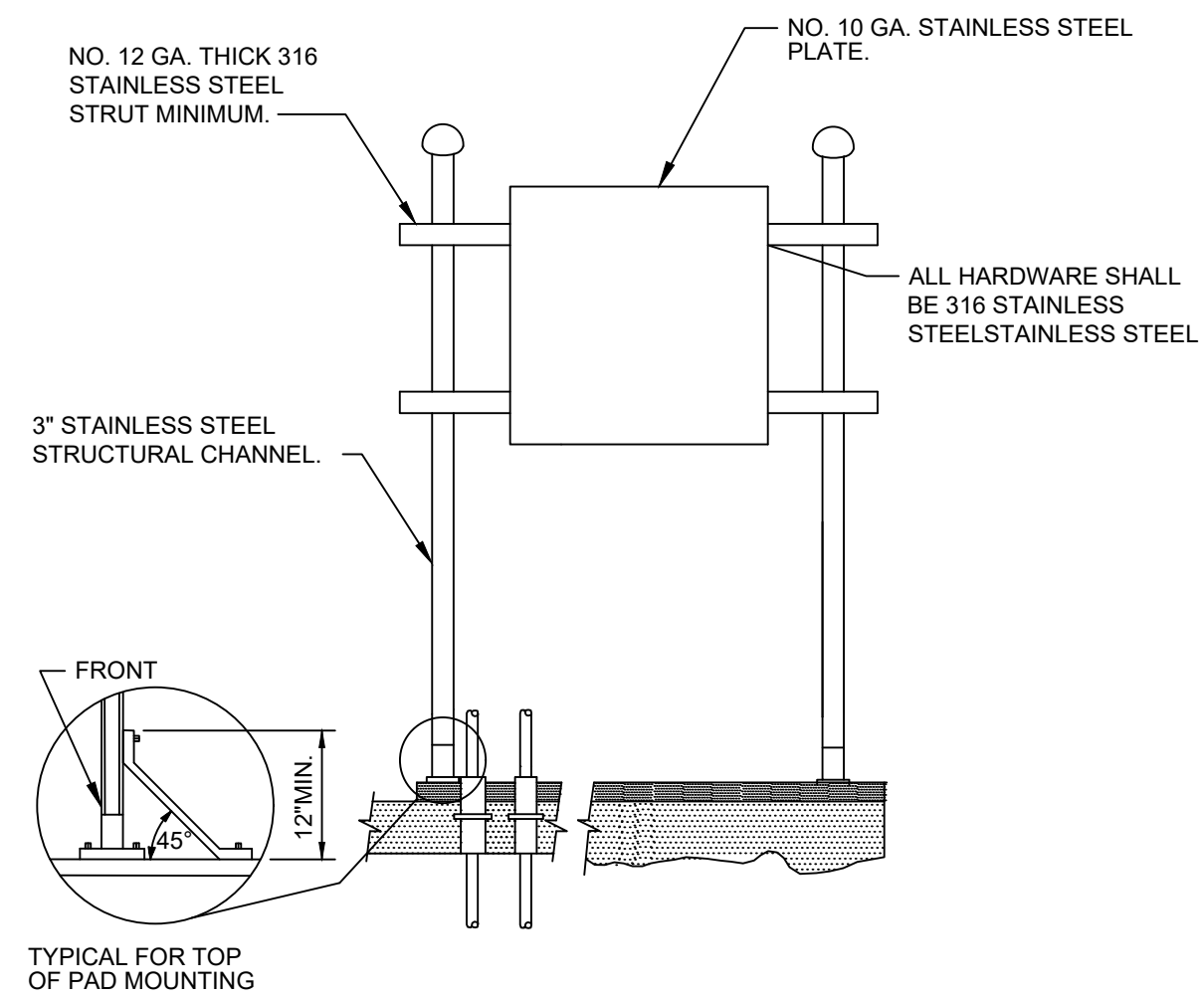
AIR TERMINAL AND BASE DETAIL



- NOTES:**
- ANY MATERIAL THAT COMES IN CONTACT WITH THE ROOF (DEVICES, ADHESIVES, ETC.) SHALL BE APPROVED BY THE ROOFING SUBCONTRACTOR TO MAINTAIN ROOFING INTEGRITY AND WARRANTY. LIGHTNING PROTECTION SUBCONTRACTOR TO PROVIDE DOCUMENTATION OF ROOFING SUBCONTRACTOR'S ACCEPTANCE OF REQUIRED DEVICES.

3 DETAIL
SCALE: NTS

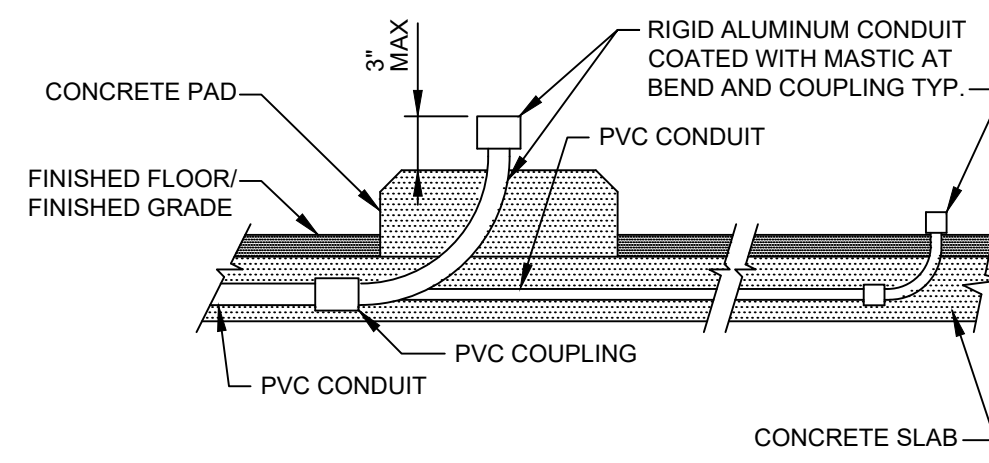
RACK MOUNTED EQUIPMENT DETAIL



- NOTES:**
- PROVIDE CONCRETE EQUIPMENT PAD AT EACH LOCATION.

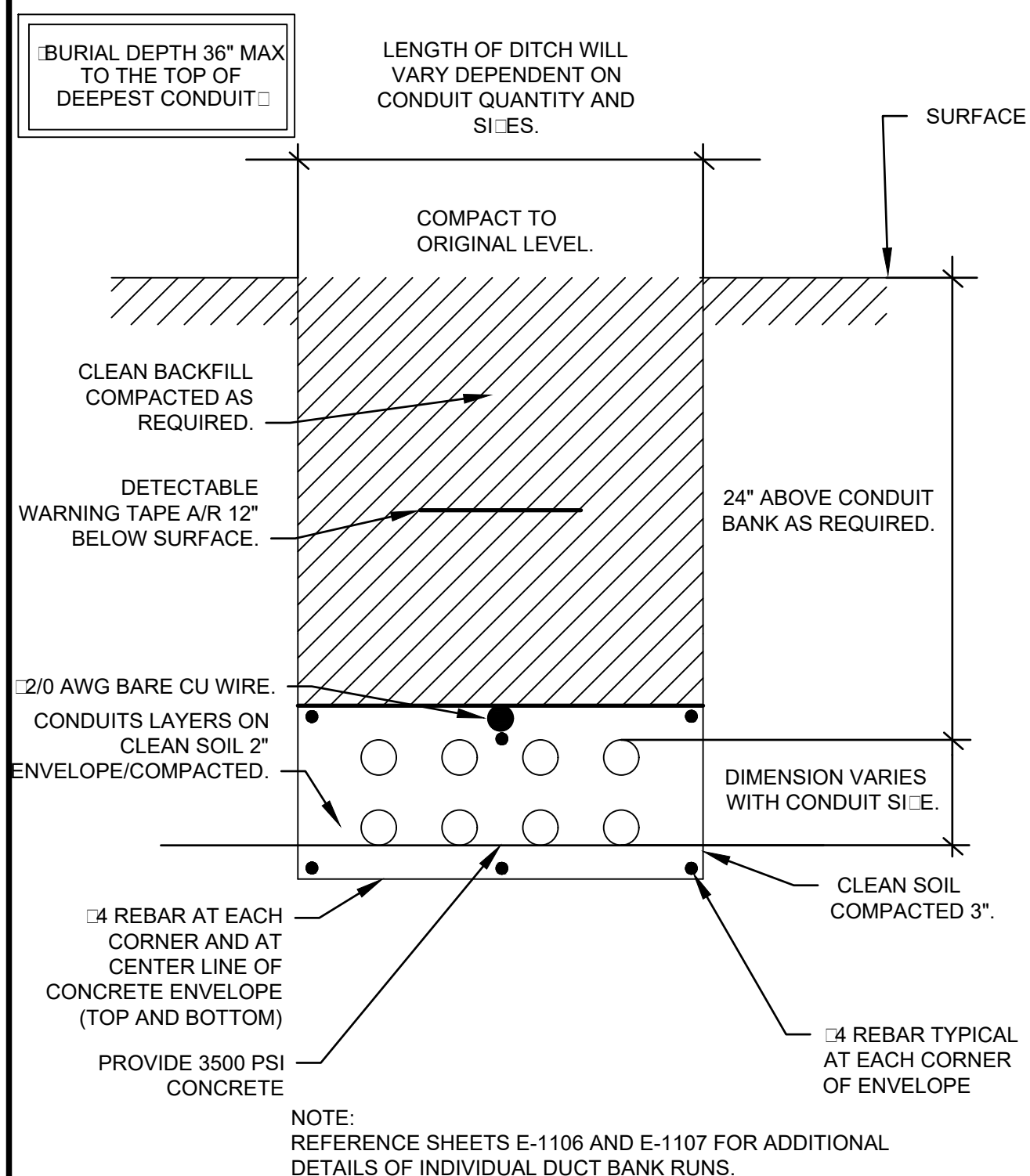
4 DETAIL
SCALE: NTS

CONDUIT STUB-UP DETAIL



5 DETAIL
SCALE: NTS

CONCRETE REINFORCED DUCT BANK SECTION



6 DETAIL
SCALE: NTS

BID SET

BY	DATE	DESCRIPTION

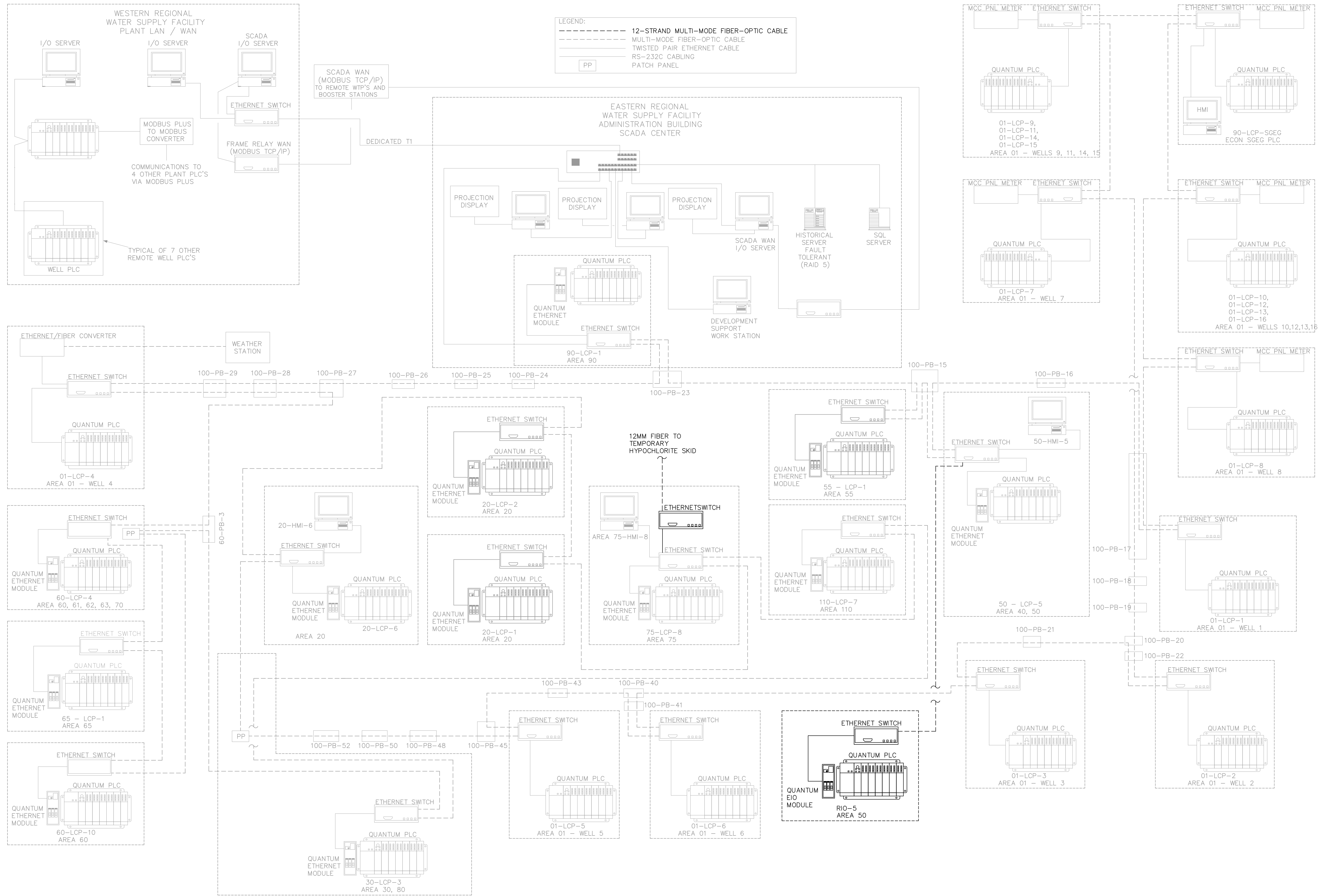
ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK

ELECTRICAL DETAILS

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

E501

9/18/2019 12:23:34 PM - \\TTS181FSZ\PROJECTS\IER\10034\200-10034-18003\CAD\SHEETFILES\002 NETWORK ARCHITECTURE.DWG - JOHNSON, CALEY



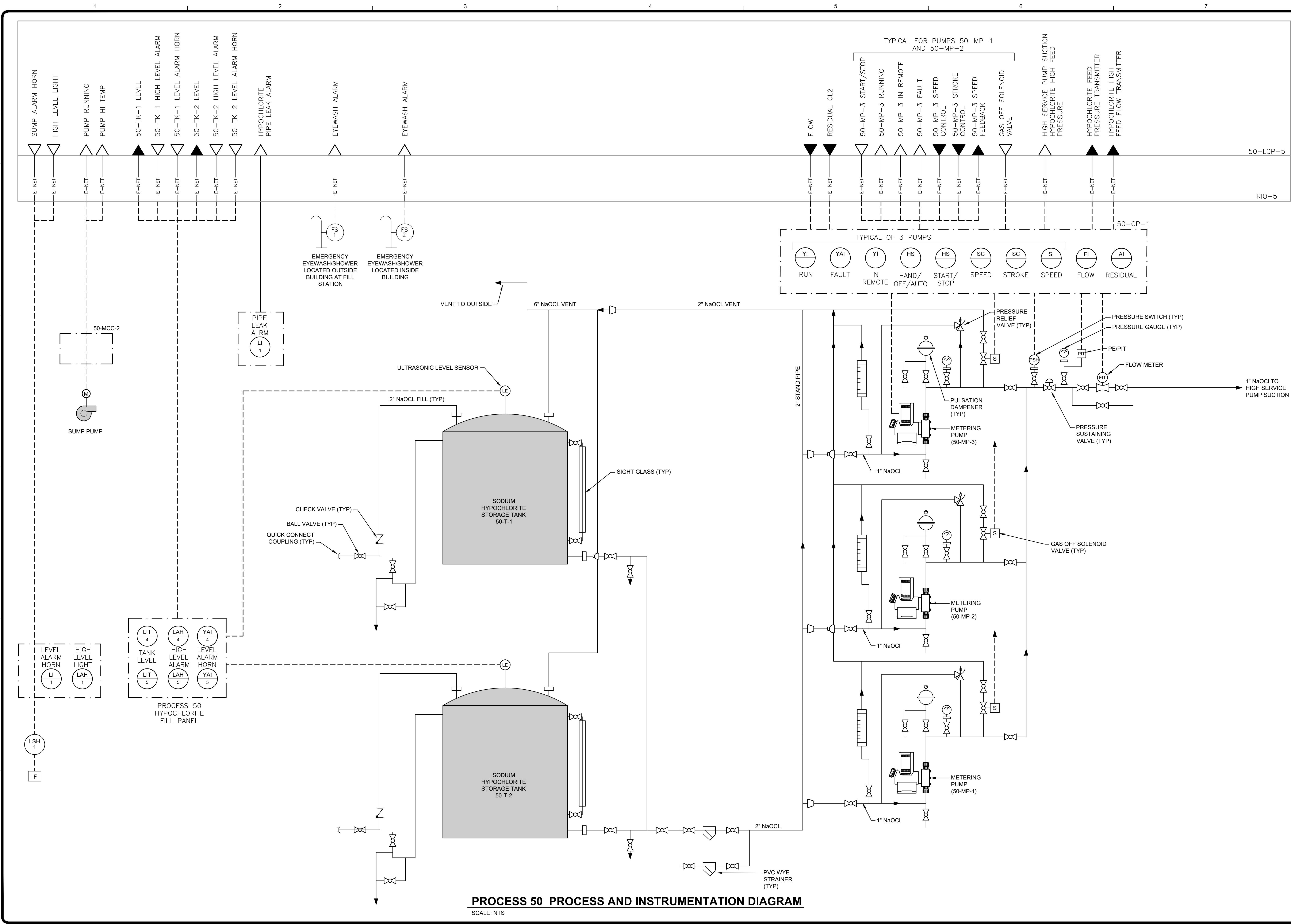
BID SET

MARK	DATE	DESCRIPTION

ORANGE COUNTY UTILITIES
 EASTERN REGIONAL WATER SUPPLY FACILITY
 SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
NETWORK ARCHITECTURE

Project No.: 200-10034-18003
 Designed By: AMR
 Drawn By: AMR
 Checked By: BRW

9/18/2019 12:27:16 PM - \\TTS181FSZ\PROJECTS\IER\10034\200-10034-18003\CAD\SHEETFILES\101 PROCESS 50 P&ID.DWG - JOHNSON, CALEY



TETRA TECH
ENGINEERING BUSINESS NO. 2429

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

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DATE	
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DESCRIPTION	

ORANGE COUNTY UTILITIES	
EASTERN REGIONAL WATER SUPPLY FACILITY	
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK	
PROCESS 50 POST DISINFECTION	
PROCESS AND INSTRUMENTATION	
DIAGRAM	

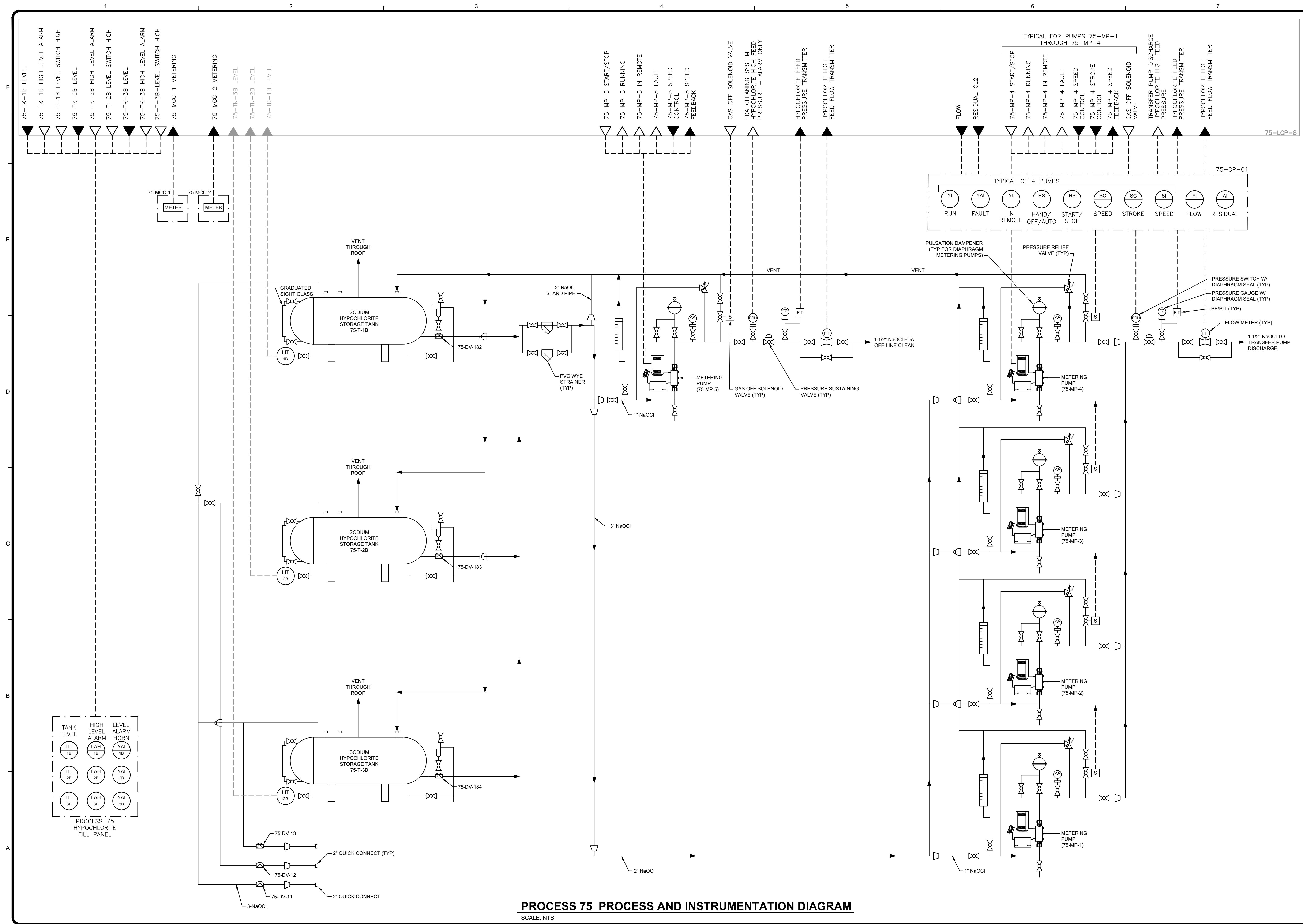
Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

1101

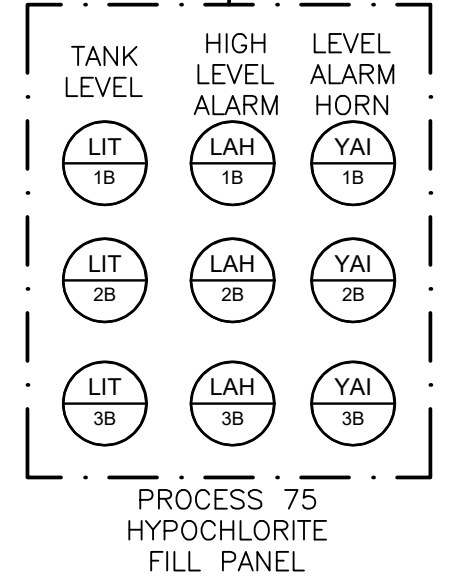
Bar Measures 1 inch

Copyright: Tetra Tech

9/18/2019 12:27:41 PM - \\TTS181FS\PROJECTS\IER\10034-18003\CAD\SHHEETS\1102 PROCESS 75 P&ID.DWG - JOHNSON, CALEY



PROCESS 75 PROCESS AND INSTRUMENTATION DIAGRAM
SCALE: NTS



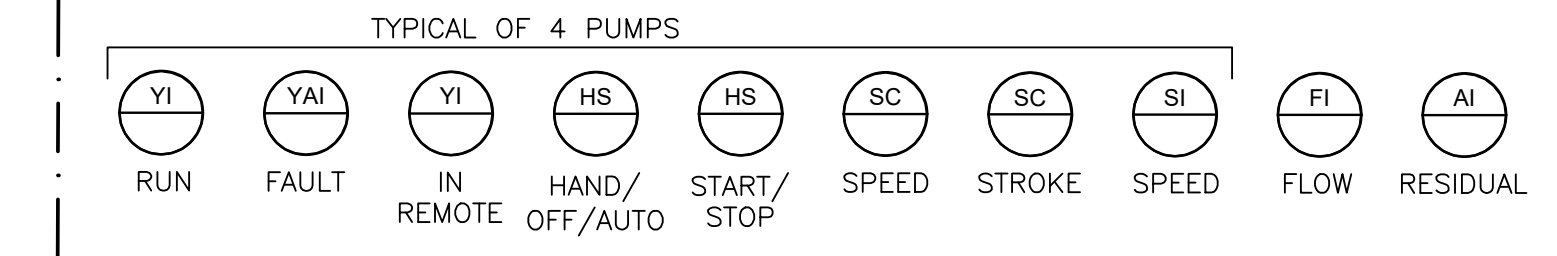
- 75-TK-1B LEVEL
- 75-TK-1B HIGH LEVEL ALARM
- 75-T-1B LEVEL SWITCH HIGH
- 75-TK-2B LEVEL
- 75-TK-2B HIGH LEVEL ALARM
- 75-T-2B LEVEL SWITCH HIGH
- 75-TK-3B LEVEL
- 75-TK-3B HIGH LEVEL ALARM
- 75-T-3B LEVEL SWITCH HIGH
- 75-MCC-1 METERING

- 75-MCC-2 METERING
- 75-TK-3B LEVEL
- 75-TK-2B LEVEL
- 75-TK-1B LEVEL

- 75-MP-5 START/STOP
- 75-MP-5 RUNNING
- 75-MP-5 IN REMOTE
- 75-MP-5 FAULT
- 75-MP-5 SPEED CONTROL
- 75-MP-5 SPEED FEEDBACK

- GAS OFF SOLENOID VALVE
- FDA CLEANING SYSTEM HYPOCHLORITE HIGH FEED PRESSURE - ALARM ONLY
- HYPOCHLORITE FEED PRESSURE TRANSMITTER
- HYPOCHLORITE HIGH FEED FLOW TRANSMITTER

- 75-MP-4 START/STOP
- 75-MP-4 RUNNING
- 75-MP-4 IN REMOTE
- 75-MP-4 FAULT
- 75-MP-4 SPEED CONTROL
- 75-MP-4 STROKE CONTROL
- 75-MP-4 SPEED FEEDBACK
- GAS OFF SOLENOID VALVE
- TRANSFER PUMP DISCHARGE HYPOCHLORITE HIGH FEED PRESSURE
- HYPOCHLORITE FEED PRESSURE TRANSMITTER
- HYPOCHLORITE HIGH FEED FLOW TRANSMITTER



- PULSATION DAMPENER (TYP FOR DIAPHRAGM METERING PUMPS)
- PRESSURE RELIEF VALVE (TYP)

- PRESSURE SWITCH W/ DIAPHRAGM SEAL (TYP)
- PRESSURE GAUGE W/ DIAPHRAGM SEAL (TYP)
- PE/PIT (TYP)
- FLOW METER (TYP)

- 1 1/2" NaOCl TO TRANSFER PUMP DISCHARGE

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ORANGE COUNTY UTILITIES
EASTERN REGIONAL WATER SUPPLY FACILITY
SODIUM HYPOCHLORITE SYSTEM CONVERSION TO BULK
PROCESS 75
PROCESS AND INSTRUMENTATION
DIAGRAM

Project No.: 200-10034-18003
Designed By: DK
Drawn By: DK
Checked By: BRW

1102

Bar Measures 1 inch