

**CONSTRUCTION DRAWINGS
FOR THE**

**SOUTH WATER RECLAMATION FACILITY
FOG & SEPTAGE RECEIVING STATIONS**

**PREPARED FOR:
ORANGE COUNTY UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA**

**ORANGE COUNTY UTILITIES
ENGINEERING DIVISION
9150 CURRY FORD ROAD, 2ND FLOOR
ORLANDO, FL 32825
PHONE: 407-254-9900**



BOARD OF COUNTY COMMISSIONERS

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COUNTY MAYOR**

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County Administrator**

**RAYMOND E. HANSON, PE
Director Orange County Utilities Department**

ISSUED FOR BID

ORANGE COUNTY IFB NO. _____

SEQUENCE NO. 80047

CAP NO. 1555-17

REI Project No. 110025

PROJECT TEAM



REISS ENGINEERING, INC.
CONSULTING ENGINEERS

**1016 SPRING VILLAS PT.
WINTER SPRINGS, FLORIDA 32708
TEL: (407) 679-5358
FAX: (407) 679-5003**

GENERAL, CIVIL, MECHANICAL

Curtis I. Kunihiro, P.E.
Florida P.E. No. 33688
Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

STRUCTURAL

e/T ENGINEERING TECHNOLOGIES, INC.
John Sobczak, P.E.
Florida P.E. No. 71407
Certificate of Authorization No. 8414
3551 W. Lake Mary Blvd., Suite 210
Lake Mary, FL 32746

ELECTRICAL AND INSTRUMENTATION

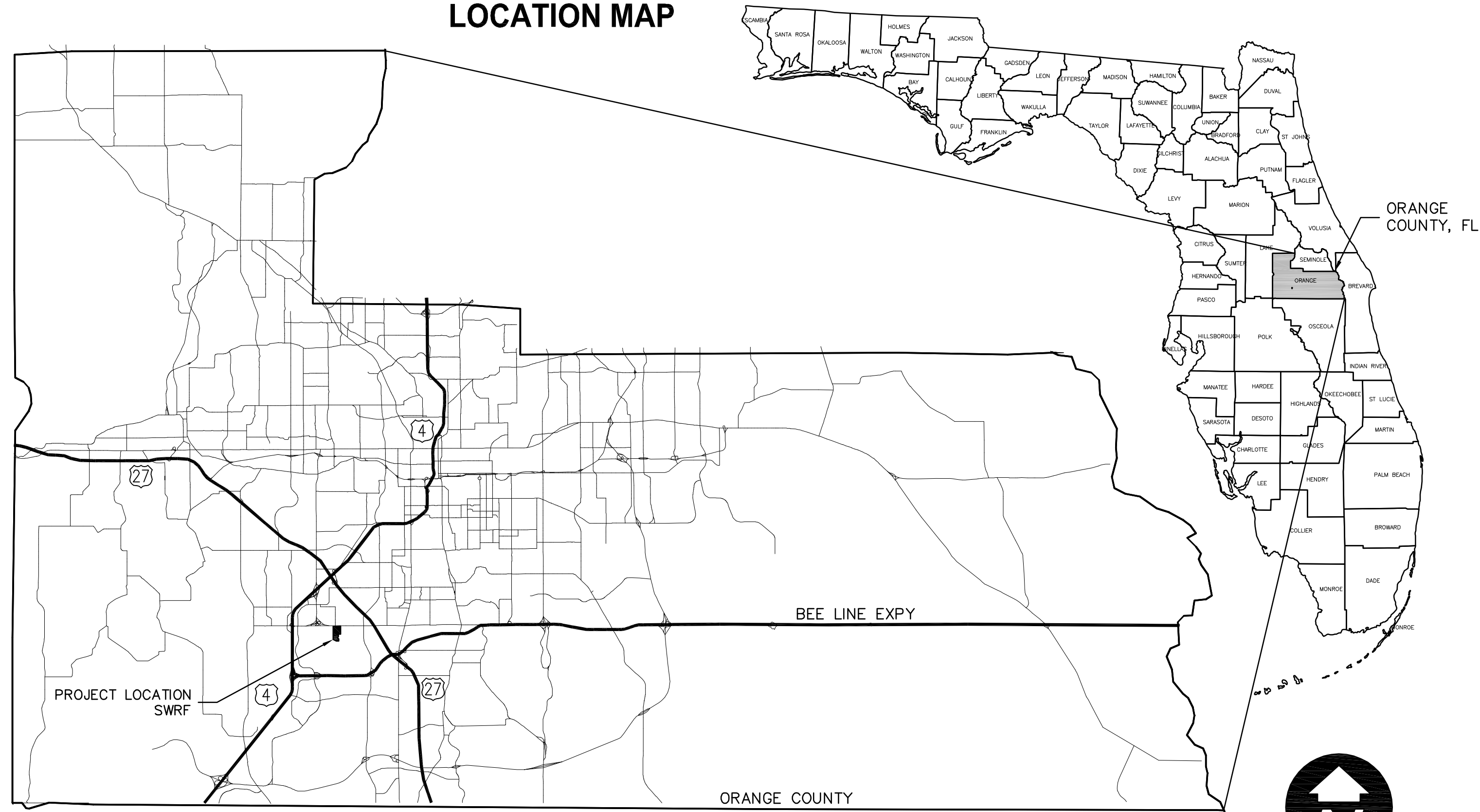
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REV	DATE	DESCRIPTION	BY
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LOCATION MAP

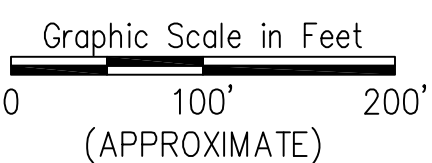
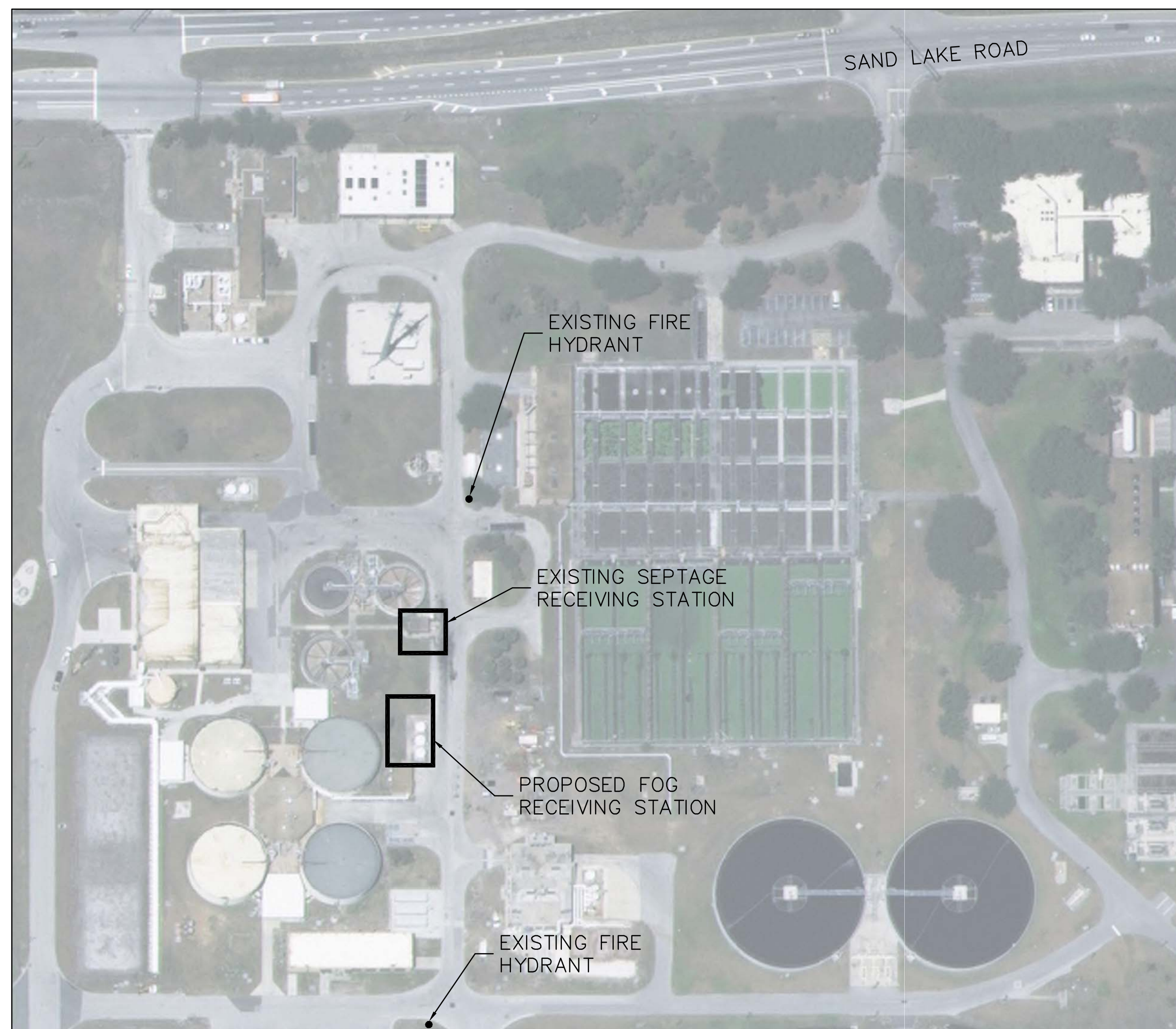


OCU GENERAL NOTES:

1. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS, RECLAIMED WATER MAINS, ELECTRICAL DUCTBANKS, CONTROL AND COMMUNICATION CONDUITS, AND OTHER BURIED UTILITIES. MAIN LOCATIONS SHOWN ON PLANS MAY NOT BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS. HAND DIGGING IS REQUIRED FOR INSTALLATION OF ALL UTILITIES.
2. SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR, AND THE SWRF SCADA (407-254-7732).
3. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION RPR AT LEAST SEVEN DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION PROJECT BY CALLING RPR CELL PHONE NUMBER.
4. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION RPR AT LEAST 48 HOURS PRIOR TO ANY UTILITIES CONSTRUCTION BY CALLING RPR CELL PHONE NUMBER.
5. THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU SYSTEM SHALL BE IN CONFORMANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL.
6. ALL OCU MAINS AND FACILITIES WITHIN THE LIMITS OF THE PROJECT SHALL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
7. THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL IMMEDIATELY REPAIR ALL DAMAGES TO OCU MAINS AND FACILITIES. IF THE REPAIR IS NOT MADE IN A TIMELY MANNER, AS DETERMINED BY OCU, OCU MAY PERFORM REQUIRED REPAIRS AND CLEANUP. THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.
8. ONLY OCU SHALL OPERATE OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR SHALL COORDINATE VALVE OPERATION WITH THE OCU INSPECTOR. FOR OPERATION OF MAINS NOT OWNED BY OCU, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE APPROPRIATE UTILITY REPRESENTATIVE. CONTRACTOR SHALL PROVIDE A CONSTRUCTION ASSISTANCE REQUEST (C.A.R.) WITH SEVEN (7) DAYS NOTICE.
9. CONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR RECLAIMED WATER SERVICE WITHOUT PRIOR APPROVAL FROM OCU. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR CONTRACTOR SHALL PROVIDE A C.A.R. WITH SEVEN (7) DAYS NOTICE.
10. ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED DURING CONSTRUCTION UNLESS APPROVED BY OCU.
11. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH A BACKFLOW PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN ORDER TO CHLORINATE AND FLUSH NEW PIPELINES WITH POTABLE WATER, IF APPLICABLE.
12. FOR PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, NO PIPE BENDING IS ALLOWED. FOR PVC PIPE JOINTS, NO DEFLECTION IS ALLOWED. ALIGNMENT CHANGE SHALL BE MADE ONLY WITH SLEEVES AND FITTINGS.
13. FOR NON-PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, MAXIMUM DEFLECTIONS AT PIPE JOINTS, FITTINGS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL NOT EXCEED 75 PERCENT OF THE PIPE MANUFACTURER'S RECOMMENDATION.
14. ALL COMMUNICATIONS BY CONTRACTOR SHALL BE DIRECTED TO ORANGE COUNTY RPR.
15. SOD ALL AREAS DISTURBED.

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PROJECT LOCATION MAP
4760 W. SAND LAKE ROAD
ORLANDO, FL 32819

Parent Sheet: Set:110025_SWRF_FOG_Rev/Plot by:ROBERT L. LUPU Rev on:8/22/2016 3:56 PM Individual File Path: R:\PROJECTS\110025 - ORANGE COUNTY SWRF_FOG_RECEIVING STATION DESIGN DRAWINGS\FINALDESIGN_G02.DWG



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Issue Certification
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 Winter Springs, FL 32708

Designed_CIK
 Drawn_RLL
 Checked_DNN
 Reviewed_MKW
 Approved_CIK

LINE IS 3/4" AT FULL SIZE
 LINE IS 1/8" AT HALF SIZE

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

GENERAL

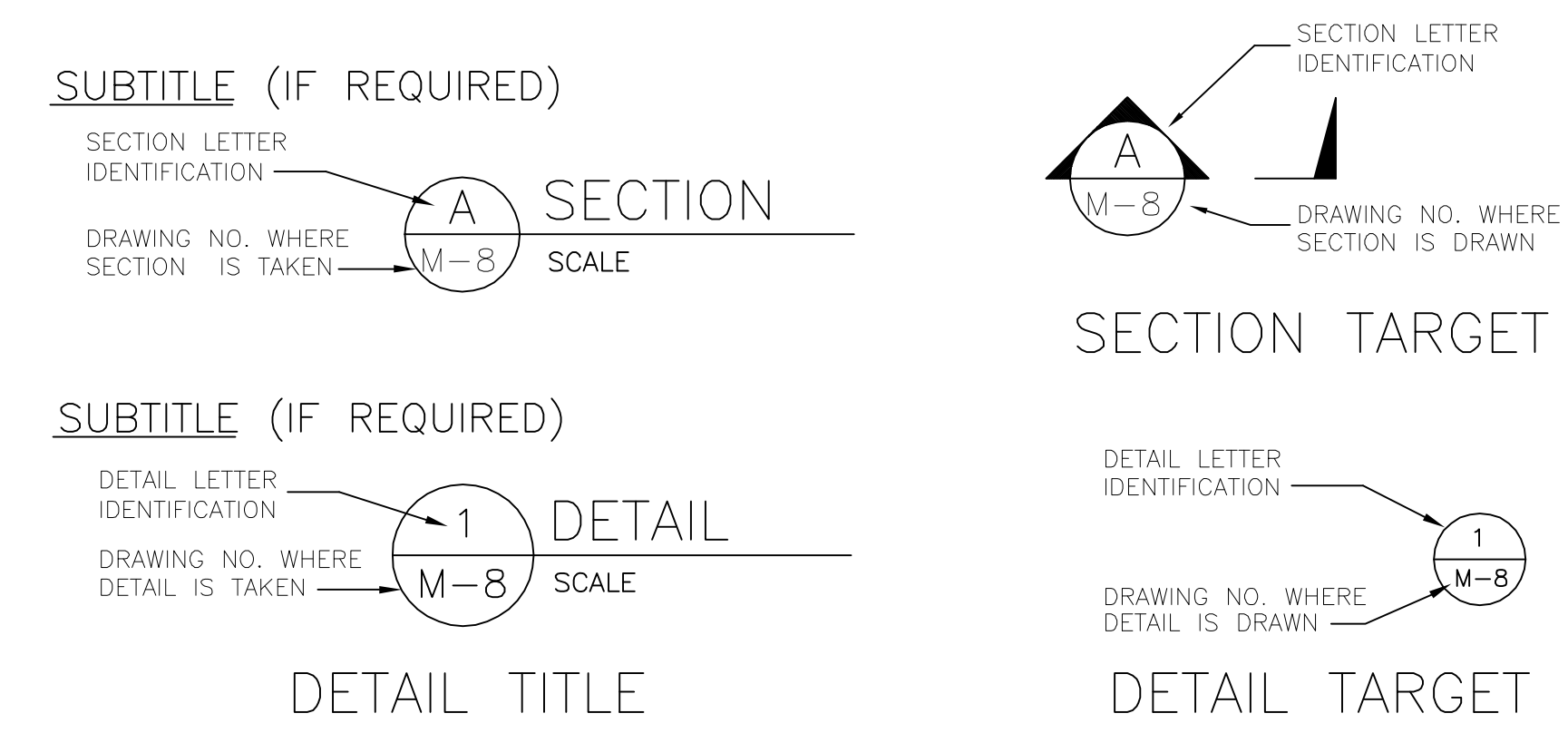
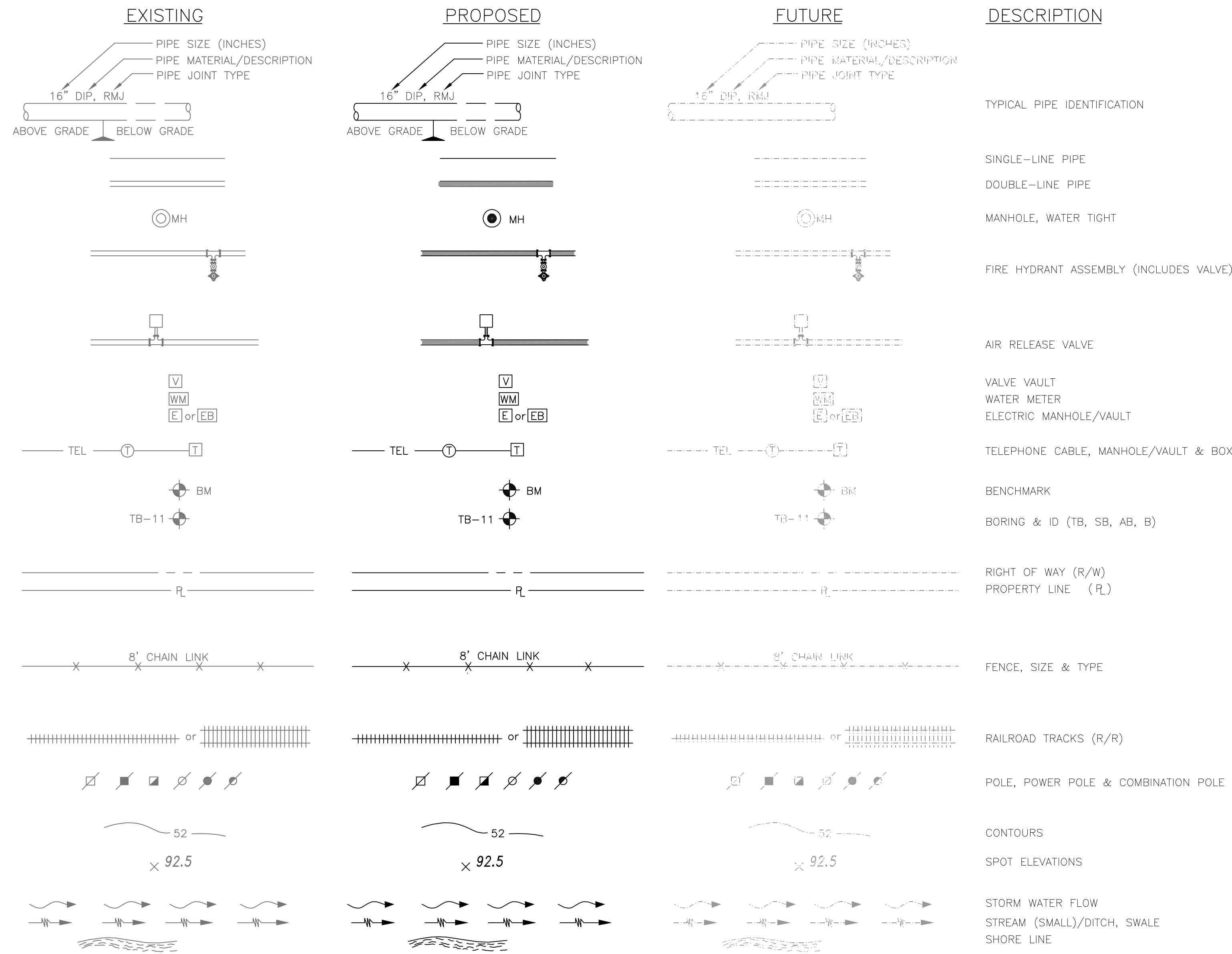
LOCATION MAP, GENERAL NOTES, AND INDEX

PROJECT NO.: 110025	
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DRAWING NO. G02	SHEET NO.: 02 OF 48



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
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SYMBOLS, STRUCTURES & FEATURES



STANDARD LINETYPES

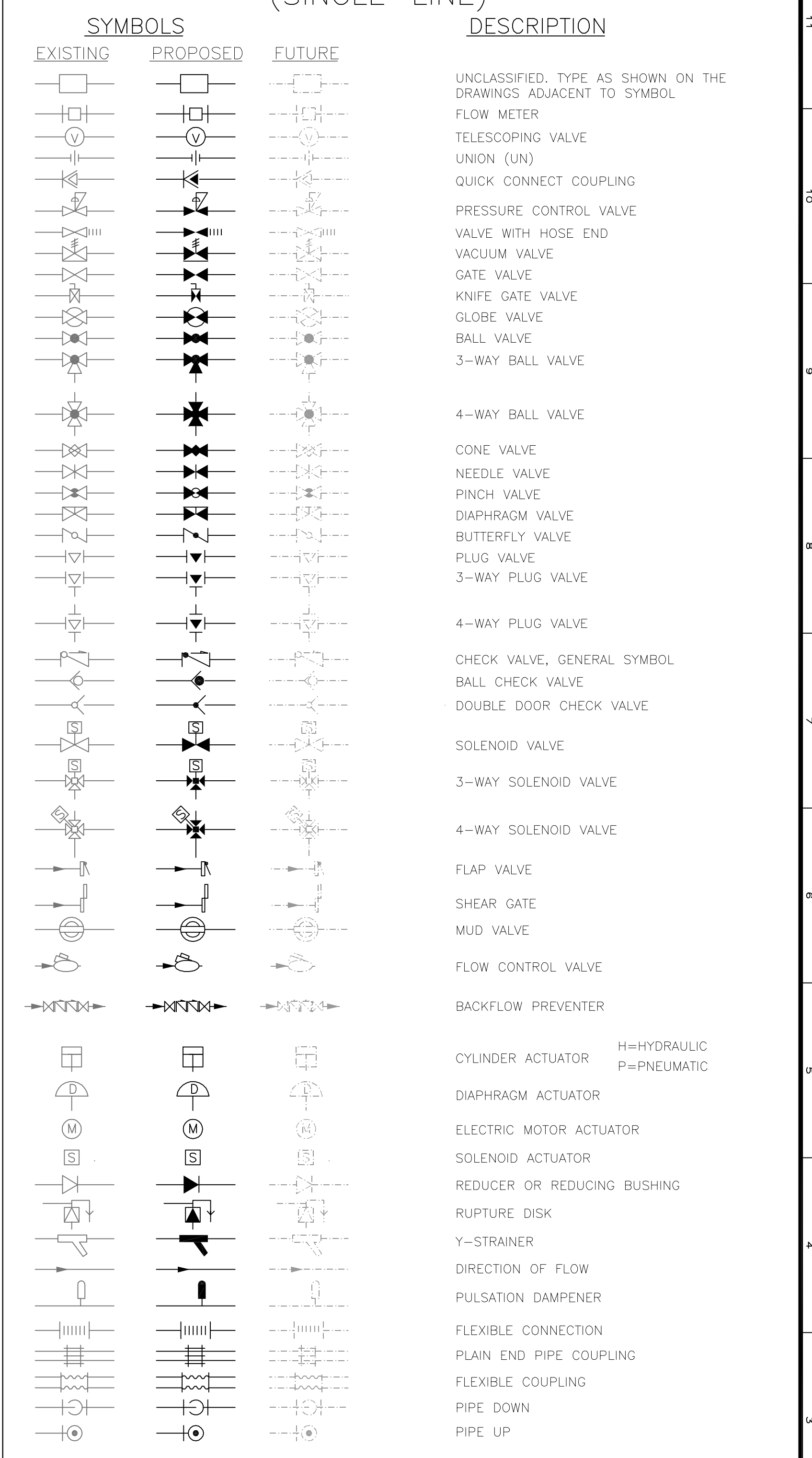
SOLID, BLACK	PROPOSED FEATURES (ABOVE GROUND)
HIDDEN, BLACK	PROPOSED FEATURES (BELOW GROUND)
SOLID, GRAY	EXISTING FEATURES (ABOVE GROUND)
HIDDEN, GRAY	EXISTING FEATURES (BELOW GROUND)
DASHDOT2, GRAY	FUTURE FEATURES

NOTE:
THIS GENERAL LEGEND IS FOR GENERAL REFERENCE. NOT ALL ABBREVIATIONS, SYMBOLS, PROCESSES, MATERIALS, OR FITTINGS ARE NECESSARILY USED IN THIS DESIGN.
INDIVIDUAL DISCIPLINE STANDARD LEGENDS MAY SUPERCEDE THIS GENERAL LEGEND.

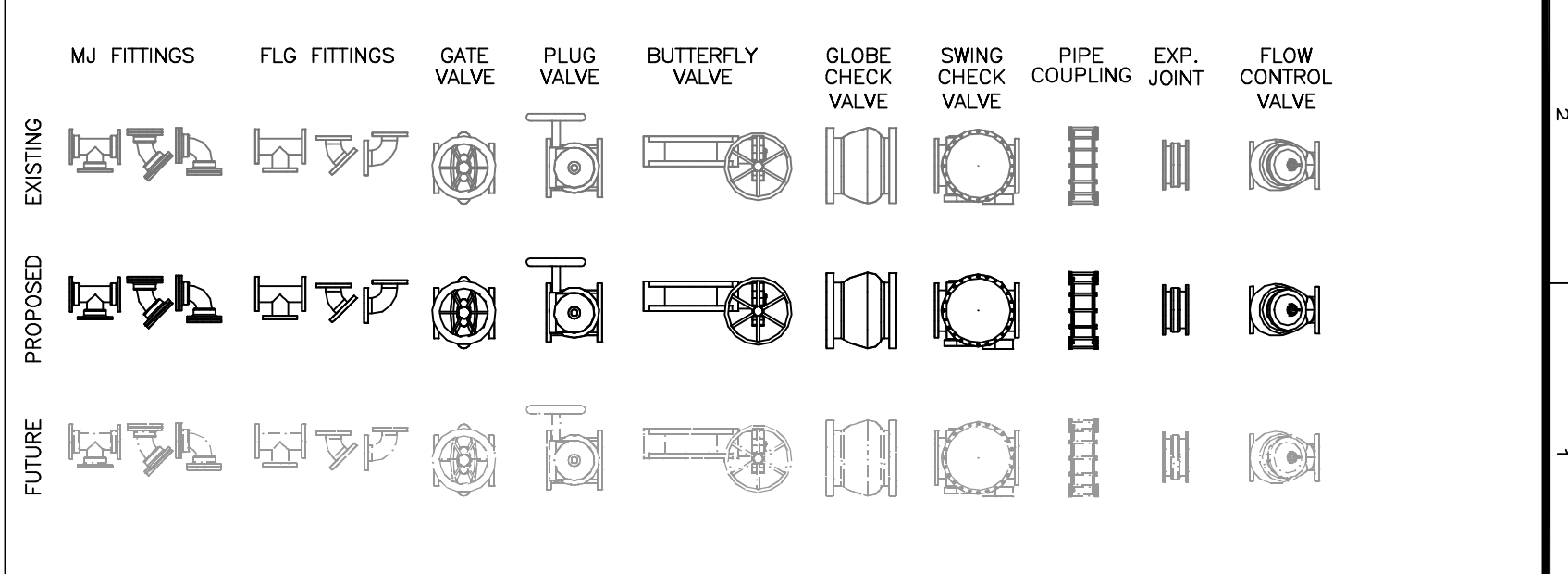
ABBREVIATIONS

GENERAL SYMBOLS	PIPE / JOINTS	SYMBOLS
ADJ. ADJ.	BLACK IRON PIPE	BIP
ANGLE ANGLE OF DEFLECTION	BLACK STEEL PIPE	BSP
APPROXIMATE APPROX.	BUTT WELD	BW
BACKFLOW PREVENTER BFP	CAST IRON	CI
BENCH MARK BM	CAST IRON PIPE	CIP
BTWN. BTWN.	CAST IRON SOIL PIPE	CISP
B.O.S. B.O.S.	CONCRETE PRESSURE PIPE	CPP
BUILDING BLDG.	COPPER PIPE	COP
CAPACITY CAP.	CORRUGATED METAL PIPE	CMPP
CENTER LINE C.C.	CHLORINATED POLYVINYL CHLORIDE	CPVC
CENTER TO CENTER C.O.	POLYETHYLENE	XLHDPE
CLEANOUT CONC.	DUCTILE IRON PIPE	DIP
CONCRETE COND.	DUCTILE IRON	DI
CONTINUATION CONN.	EXPANSION	EXP
CONSTRUCT CONST.	FLANGE	FLG
CONTRACTOR CONTR.	GALVANIZED STEEL PIPE	GS
CUBIC FOOT CU. FT.	HIGH-DENSITY POLYETHYLENE	HDPE
CUBIC INCH CU. IN.	JOINT	JT
CUBIC YARD CU. YD.	LINEAR HIGH-DENSITY POLYETHYLENE	LHDPE
DEGREE DEG.	MECHANICAL JOINT	MJ
DIAMETER DIA.	METAL REINFORCED PLASTIC PIPE	MRPP
DIAGONAL DIAG.	POLYETHYLENE PIPE	PE
DIMENSION DIM.	POLYVINYLCHLORIDE	PVC
DISCHARGE DISC.	POLYVINYLCHLORIDE (DOUBLE CONTAINED)	PVC-D
DRAWING DWG.	POLYVINYLIDENE FLUORIDE (KYNAR)	PVDF
EACH EA.	PUSH-ON JOINT	PJ
EACH WAY E.W.	REINFORCED CONCRETE PIPE	RCP
EACH FACE E.F.	RESTRAINED JOINT (BELL)	RJ
ELEVATION ELEV.	RESTRAINED MECHANICAL JOINT	RMJ
EQUIPMENT EQUIP.	SCHEDULE	SCH
EXISTING EXIST.	STAINLESS STEEL	S.STL. SS
FINISH FIN.	STEEL PIPE	STL
FINISH FLOOR F.F.	TIED JOINT	TJ
FIRE PROTECTION FP	VITRIFIED CLAY PIPE	VCP
FLEXIBLE FLEX.	WALL SLEEVE	WS
FLOOR DRAIN F.D.	WALL PIPE (WITH WATER STOP)	WP
GAUGE GA.		
GRADE GR.		
HIGH HI.		
HIGH POINT H.P.		
HIGH WATER LEVEL H.W.L.		
HORIZONTAL HORIZ.		
HORIZ. DIRECTIONAL DRILL HDD		
HORSEPOWER H.P.		
INSIDE DIAMETER I.D.		
INTERMEDIATE INT.		
LINEAR FOOT L.F.		
LONG LG., L.		
LOW WATER LEVEL L.W.L.		
LOW POINT L.P.T.		
MANHOLE MH		
MANUFACTURER MFR.		
MATERIAL MTL.		
MAXIMUM MAX.		
MECHANICAL MECH.		
MINIMUM MIN.		
MOUNTED MTD.		
NOMINAL NOM.		
NORMALLY OPEN/CLOSED N.O./N.C.		
NOT IN CONTRACT N.I.C.		
NOT TO SCALE N.T.S.		
NUMBER NO., #		
ON CENTERS O.C.		
OPERATOR OPER.		
OPTION OPT.		
OPPOSITE OPPOS.		
OPENING OPNG.		
OR EQUAL O/E		
OUTSIDE DIAMETER O.D.		
PROPOSED GRADE LINE PGL		
PLATE PL		
POINT PT.		
POUND LB.		
PRESSURE PRES.		
PROPOSED PROP.		
RADIUS RAD., R.		
RADIUS OF CURVATURE ROC		
REQUIRED REQ'D.		
RIGHT OF WAY R/W, R.O.W.		
ROOM RM.		
REVOLUTIONS PER MINUTE R.P.M.		
SECTION SEC.		
SHEET SH., SHT.		
SIDEWALK SDWK.		
SIMILAR SIM.		
SOIL BORING SB, B, AB		
SPECIFICATIONS SPECS.		
SQUARE SQ.		
SQUARE FOOT SQ. FT.		
SQUARE INCH SQ. IN.		
SQUARE YARD SQ. YD.		
STANDARD STD.		
STD. DIMENSION RATIO S.D.R., SDR		
STATION STA.		
SYMMETRICAL SYMM.		
TAPPING SLEEVE TS		
TAPPING VALVE TV		
TEMPORARY TEMP.		
TEST BORING TB		
TEST HOLE TH		
THICK THK.		
THREADED THD.		
TOP OF CONCRETE T.O.C.		
TOP OF SLAB T.O.S.		
TYPICAL TYP.		
UNLESS NOTED OTHERWISE UN.N.O.		
ULTRAVIOLET UV		
VERTICAL VERT.		
VENT VT.		
VENT THROUGH ROOF V.T.R.		
WATER LEVEL W.L.		
WEATHERPROOF W.P.F.		
WIDE W.		
WITH W/		
EQUIPMENT		
HIGH SERVICE PUMP HSP		
CHLORINATOR CHL		
AMMONIATOR AMM		
FLUORINATOR FL		
CHLORINE BOOSTER PUMP CBP		
BLACK IRON PIPE		
BLACK STEEL PIPE		
BUTT WELD		
CAST IRON		
CAST IRON PIPE		
CAST IRON SOIL PIPE		
CONCRETE PRESSURE PIPE		
COPPER PIPE		
CORRUGATED METAL PIPE		
CHLORINATED POLYVINYL CHLORIDE		
POLYETHYLENE		
DUCTILE IRON PIPE		
DUCTILE IRON		
EXPANSION		
FLANGE		
GALVANIZED STEEL PIPE		
HIGH-DENSITY POLYETHYLENE		
JOINT		
LINEAR HIGH-DENSITY POLYETHYLENE		
MECHANICAL JOINT		
METAL REINFORCED PLASTIC PIPE		
POLYETHYLENE PIPE		
POLYVINYLCHLORIDE		
POLYVINYLCHLORIDE (DOUBLE CONTAINED)		
POLYVINYLIDENE FLUORIDE (KYNAR)		
PUSH-ON JOINT		
REINFORCED CONCRETE PIPE		
RESTRAINED JOINT (BELL)		
RESTRAINED MECHANICAL JOINT		
SCHEDULE		
STAINLESS STEEL		
STEEL PIPE		
TIED JOINT		
VITRIFIED CLAY PIPE		
WALL SLEEVE		
WALL PIPE (WITH WATER STOP)		
VALVES, FITTINGS, ETC.		
ACTUATED BUTTERFLY VALVE ABFV		
AIR CUSHION CHECK VALVE ACCV		
AIR RELEASE VALVE ARV		
BALL CHECK VALVE BACV		
BALL VALVE BV		
BLIND FLANGE BF		
BUTTERFLY VALVE BFV		
BURIED GEAR OPERATOR BGO		
CHECK VALVE, SWING/GLOBE CV		
ELBOW ELL		
ELECTRIC VALVE ACTUATOR EVA		
ELEVATED GEAR OPERATOR EGO		
EXPANSION JOINT EJ		
FIRE HYDRANT FH		
FITTING FTG		
FLANGE FLG		
FLANGED ADAPTOR FA		
FLEXIBLE COUPLING FC		
GATE VALVE GV		
HARNESSED FLANGED COUPLING ADAPTER HFCA		
HYDRAULIC VALVE ACTUATOR HVA		
KNIFE GATE VALVE KGV		
ORIFICE PLATE O.P.		
PLASTIC BALL VALVE PBV		
PLUG VALVE PV		
REDUCER RED		
SILENT CHECK VALVE SCV		
SOLENOID VALVE SV		
VALVE BOX VB		
LIQUID & GAS PROCESS		
AIR PIPE AIR		
AMMONIA GAS AS		
AMMONIA SOLUTION AG		
CHLORINE GAS CG		
CHLORINE SOLUTION CS		
CONCENTRATE WATER CONC		
DISINFECTED WATER DW		
EFFLUENT EFF		
FILTER EFFLUENT FE		
FINISHED WATER FW		
FORCE MAIN FM		
HOT WATER HW		
INFILTRANT INF		
INFLUENT INFL		
INFLUENT RECYCLE IR		
MICROFILTRATION MF		
MIXED LIQUOR ML		
NON-POTABLE WATER NPW, NW		
PERMEATE PERM		
POLYMER PO		
POTABLE WATER PW		
RAW SEWAGE RS		
RAW WATER RAW		
RECIRCULATION PUMP RP		
RECLAIMED WATER/RECLAIMED WATER MAIN RW/RWM/RCW/WRU		
RETURN ACTIVATED SLUDGE RAS		
RETURN EFFLUENT WATER REW		
REUSE EFFLUENT WATER REU		
RO REJECT RO		
SECONDARY EFFLUENT SE		
WASTE ACTIVATED SLUDGE WAS		
WATER MAIN WM		
STORMWATER		
DRAIN/SANITARY SEWER D		
STORM DRAIN SD		
STORMWATER/STORMWATER FORCEMAIN SW/SWFM		
POWER & FUEL		
ELECTRIC CABLE/DUCT BANK E		
FUEL LINE FL		
NATURAL GAS or DIGESTER GAS GAS		
COMMUNICATION		
FIBER OPTIC FO, FOC		
TELEVISION CABLE TV		

VALVES, PIPES & FITTINGS (SINGLE-LINE)



VALVES, PIPES & FITTINGS (DOUBLE-LINE/3D)



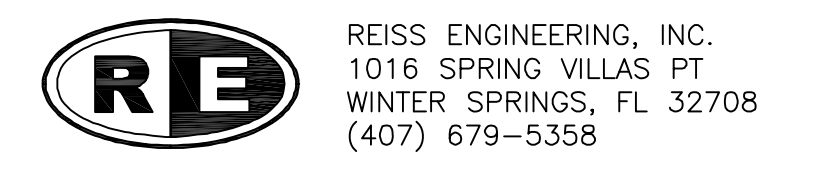
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Designed CIK
Drawn RLL
Checked DNN
Reviewed MKW
Approved CIK

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
GENERAL
STANDARD LEGEND AND ABBREVIATIONS

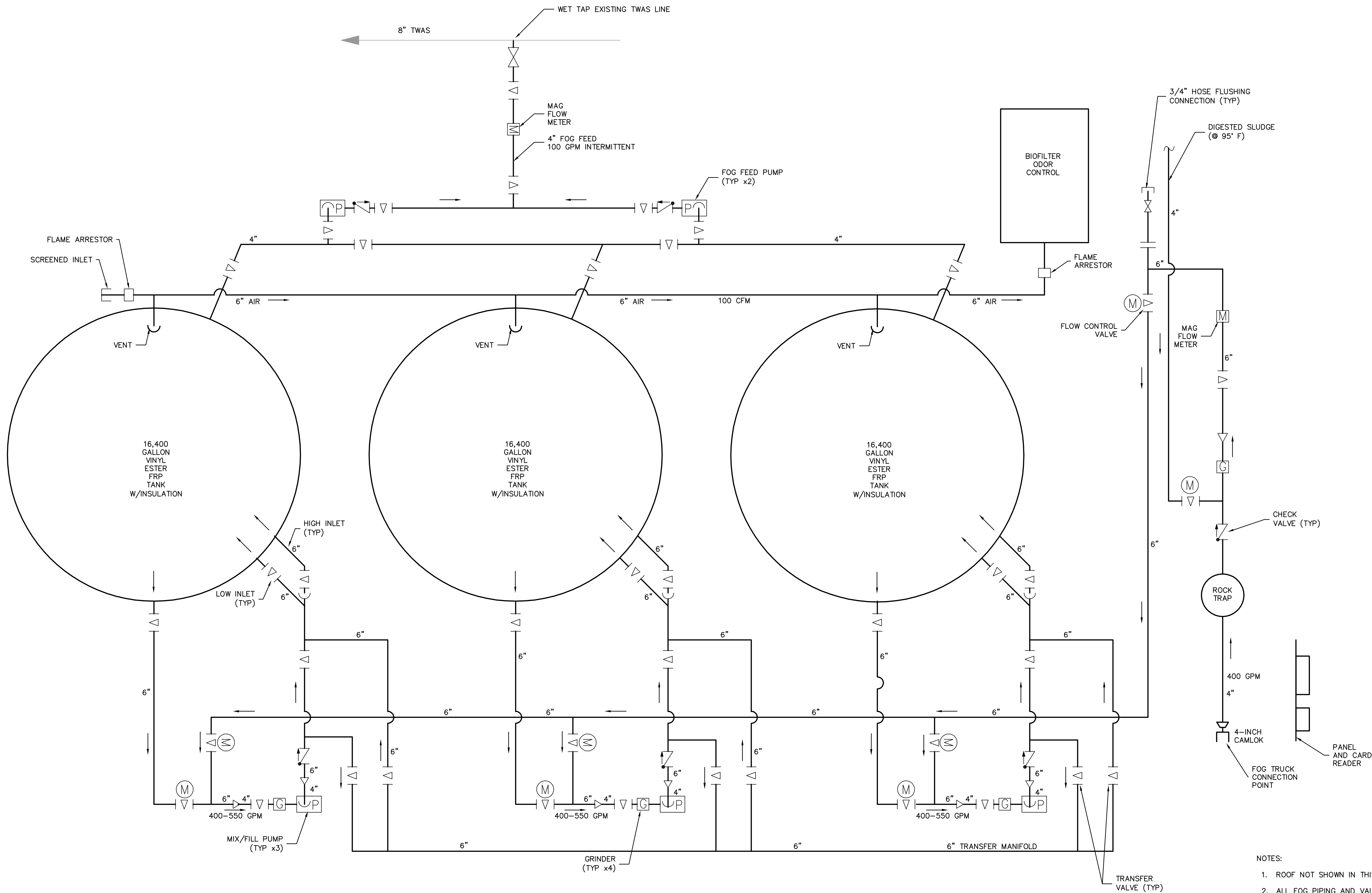
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DRAWING NO.:	G03
SHEET NO.:	03 OF 48



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- NOTES:
1. ROOF NOT SHOWN IN THIS DIAGRAM
 2. ALL FOG PIPING AND VALVES SHALL BE GLASS-LINED DI WITH HEAT TRACING, INSULATION, AND JACKETING. SEE SPECIFICATIONS.



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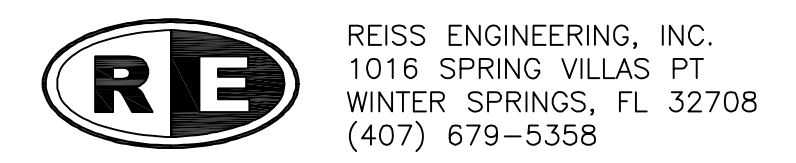
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 Reviewed_MKW
 Approved_CIK

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

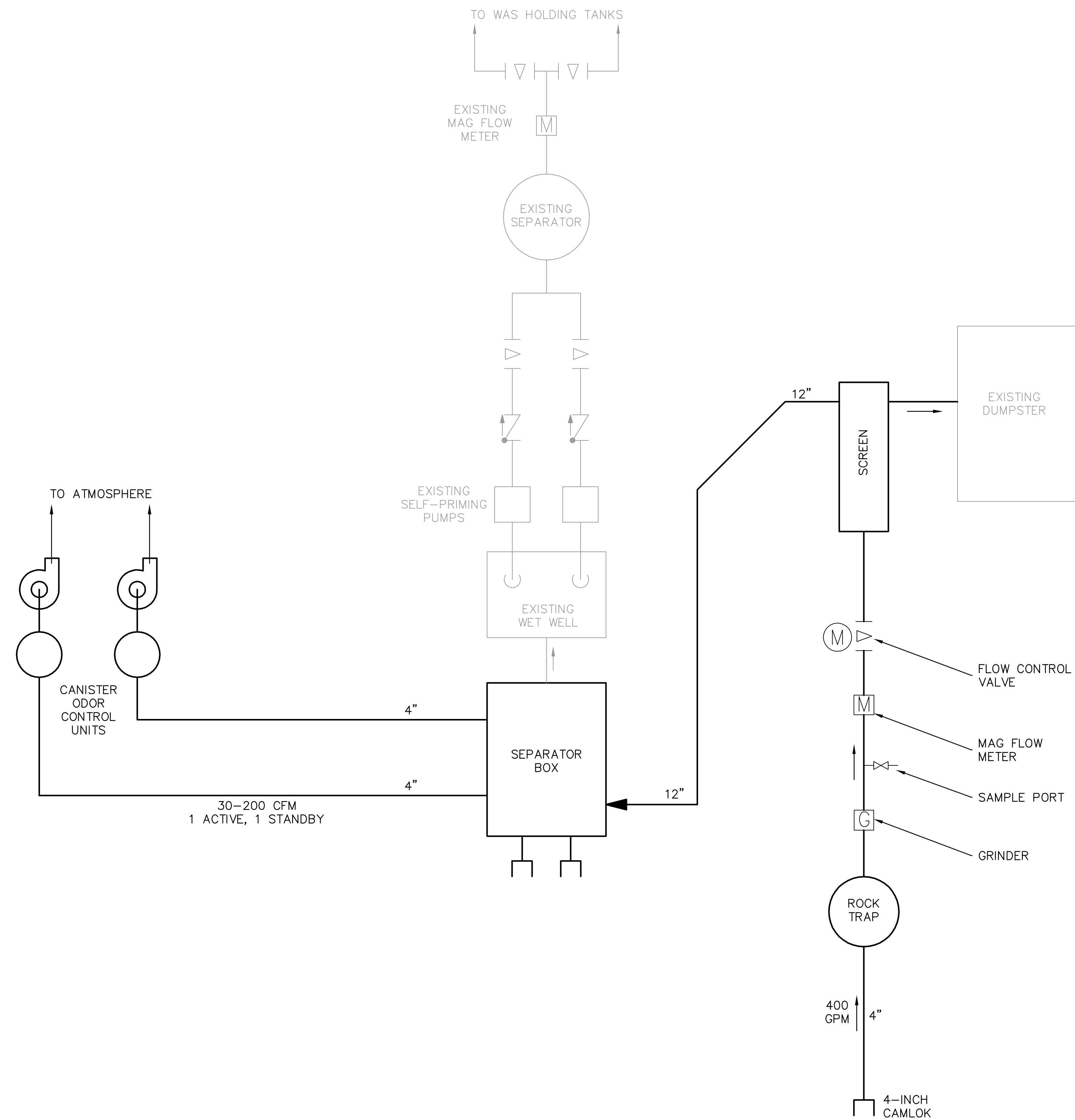
GENERAL

PROCESS FLOW DIAGRAM – FOG RECEIVING

PROJECT NO.: 110025	
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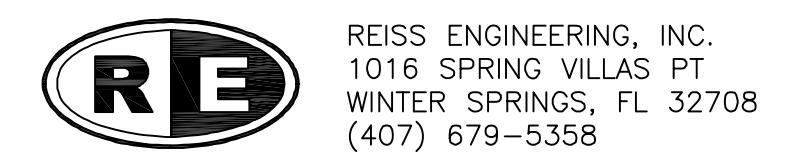
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 Reviewed_MKW
 Approved_CIK

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

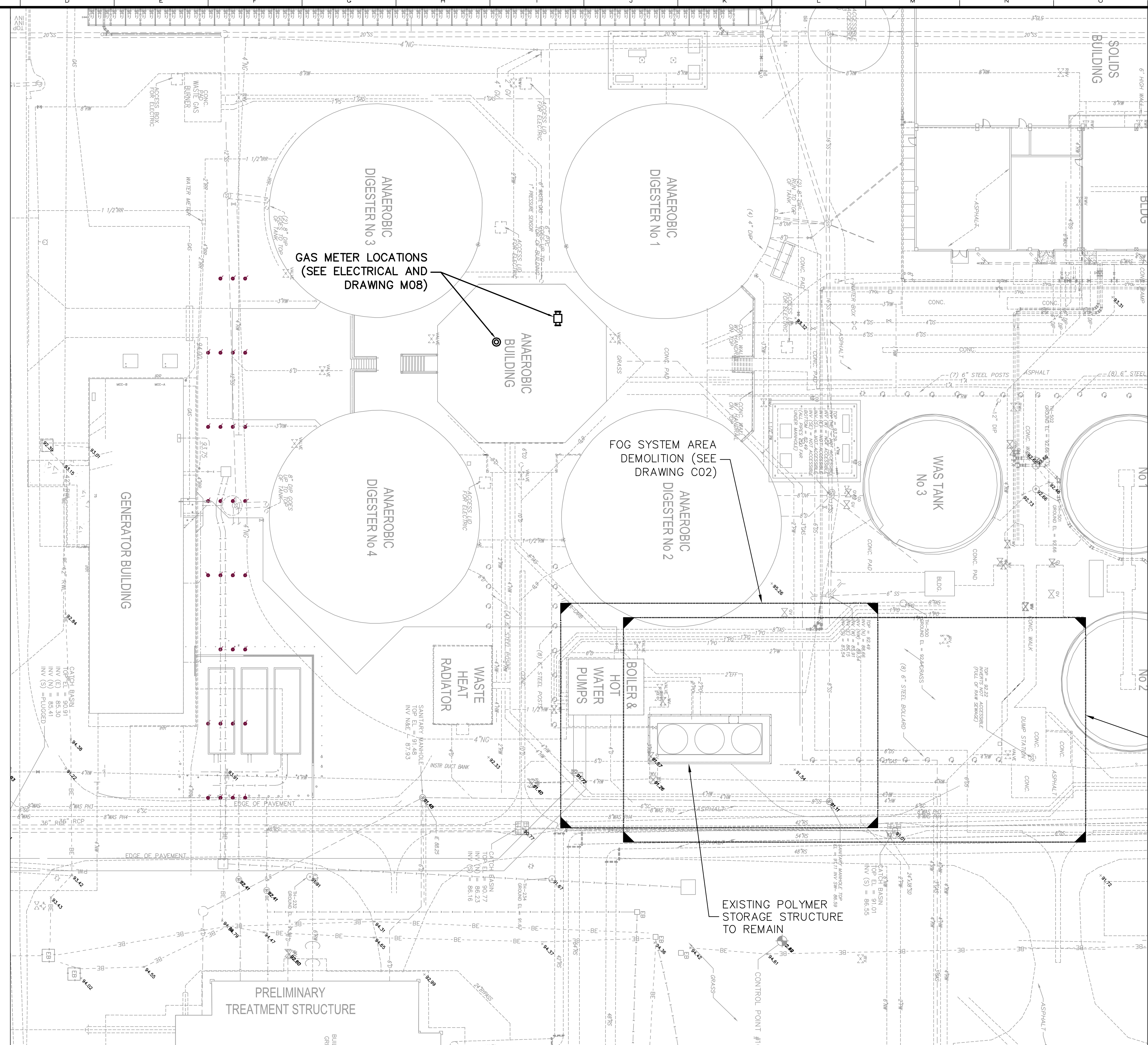
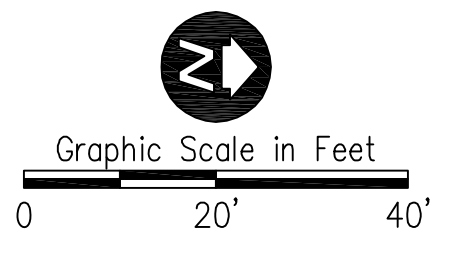
GENERAL

PROCESS FLOW DIAGRAM – SEPTAGE RECEIVING

PROJECT NO.: 110025	
SCALE: N.T.S.	REVISION: 0
DRAWING NO. G05	SHEET NO.: 05 OF 48



Parent Sheet: Set: 110025_SWRF_FOG_Rev/Plot by: ROBERT L. LUPO Rev on: 1/26/2016 9:56 AM Individual File Path: \\PROJECTS\110025 - ORANGE COUNTY SWRF_FOG_RECEIVING_STATION_DESIGN\DRAWINGS\FINAL\DESIGN\C01.DWG



GAS METER LOCATIONS
(SEE ELECTRICAL AND
DRAWING M08)

FOG SYSTEM AREA
DEMOLITION (SEE
DRAWING C02)

FOG AND SEPTAGE SYSTEMS AREA
MODIFICATIONS (SEE DRAWING C03)

EXISTING POLYMER
STORAGE STRUCTURE
TO REMAIN



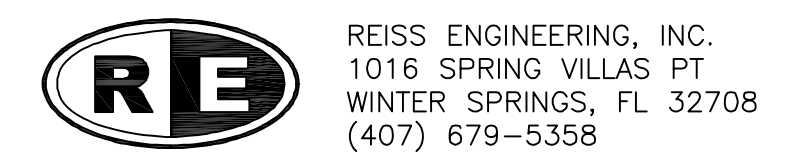
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Florida P.E. No. 33688
Reiss Engineering, Inc.
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1016 Spring Villas Pt.
Winter Springs, FL 32708

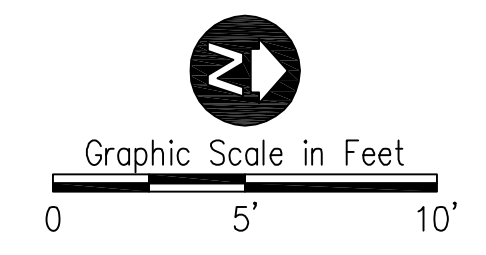
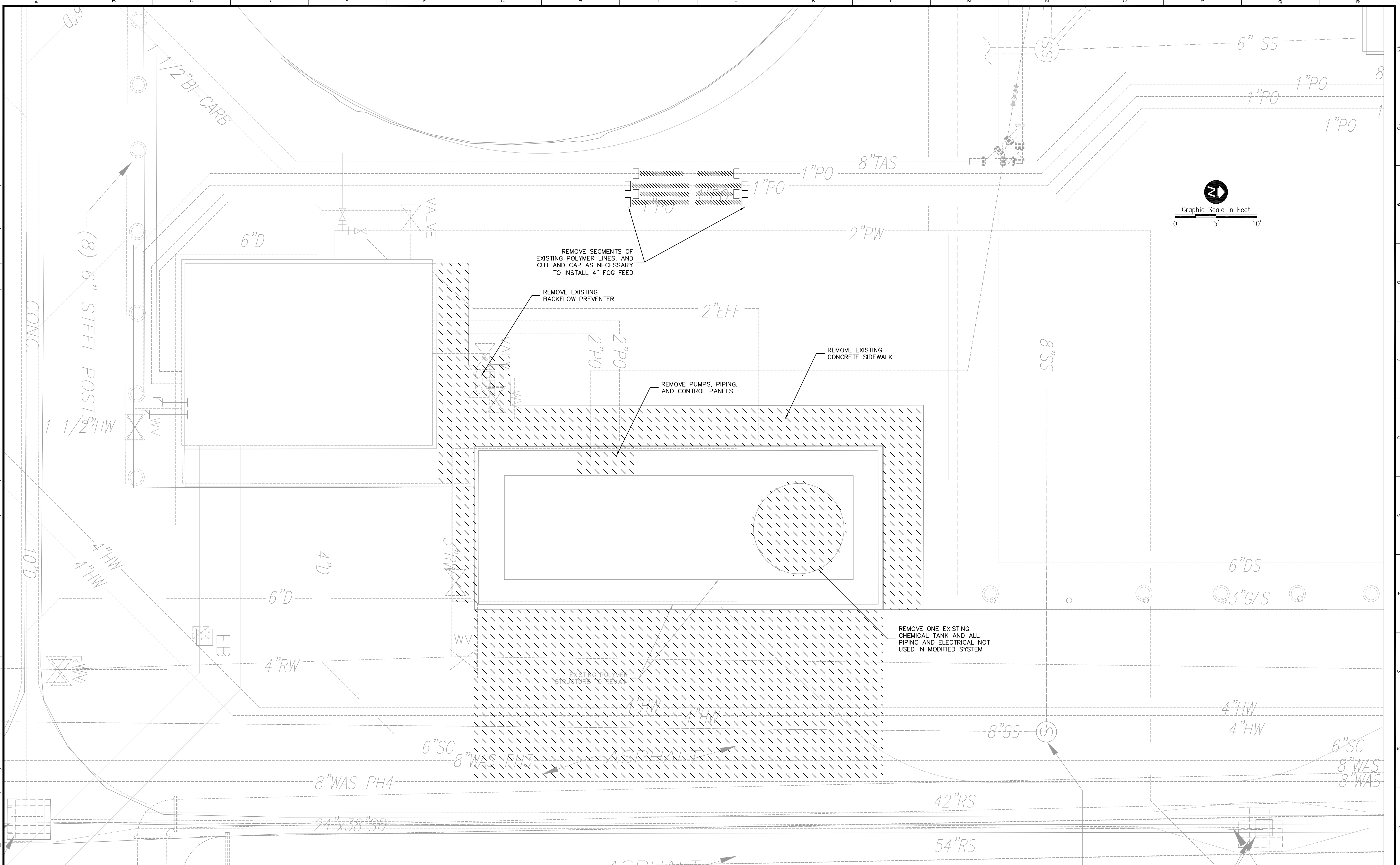
Designed CIK
Drawn RLL
Checked DNN
Reviewed MKW
Approved CIK

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
CIVIL
EXISTING SITE PLAN

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	C01
SHEET NO.:	06 OF 48



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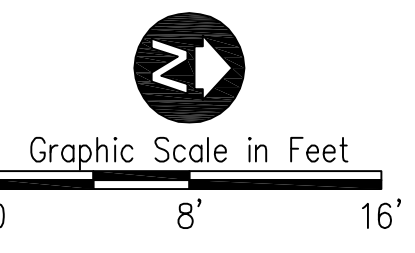
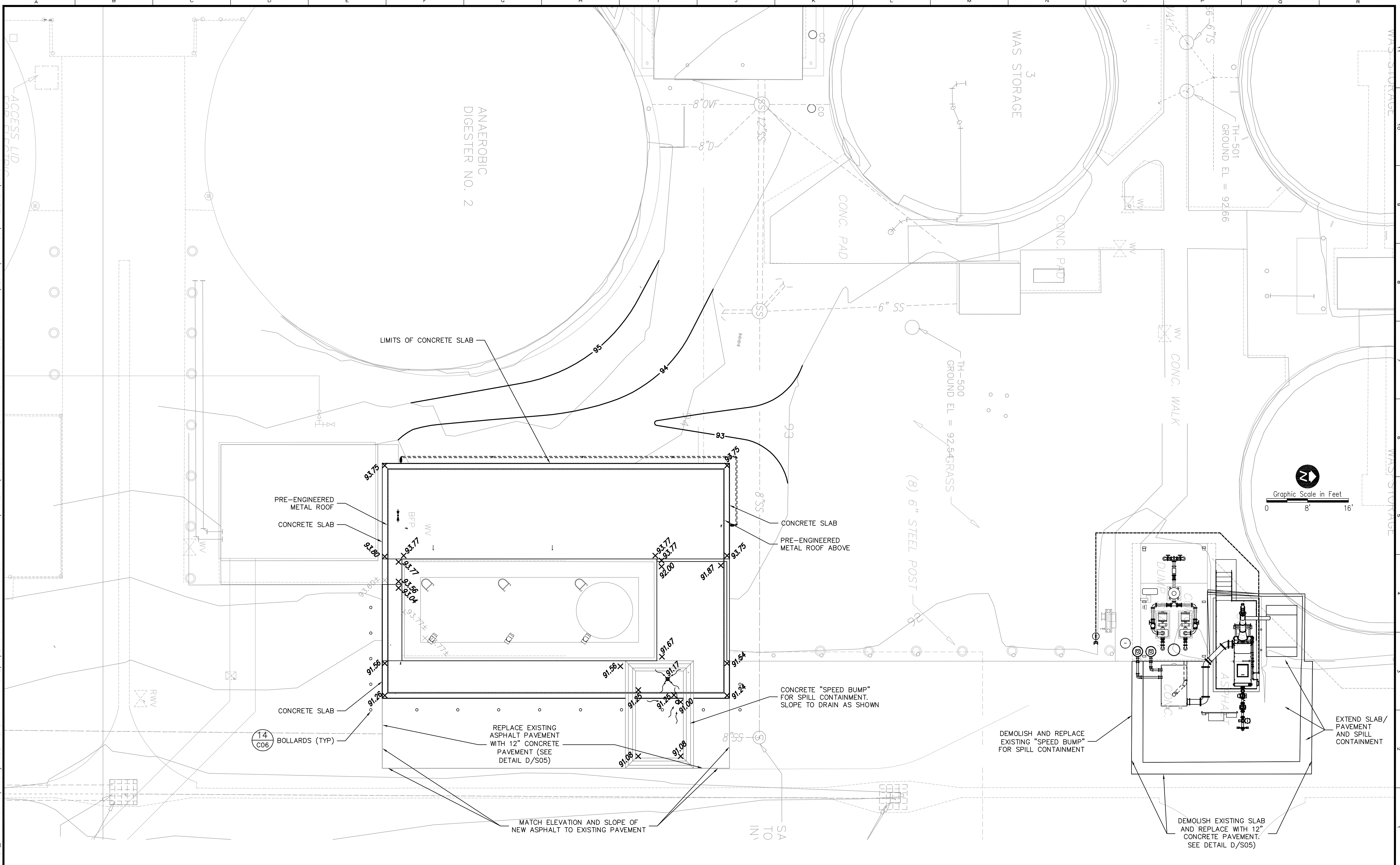
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 CIVIL
 FOG AREA DEMOLITION PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO.: C02	SHEET NO.: 07 OF 48

RE REISS ENGINEERING, INC.
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 WINTER SPRINGS, FL 32708
 (407) 679-5358

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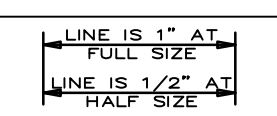
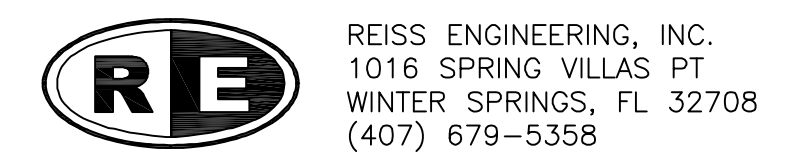
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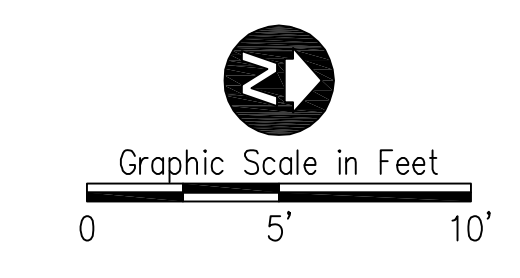
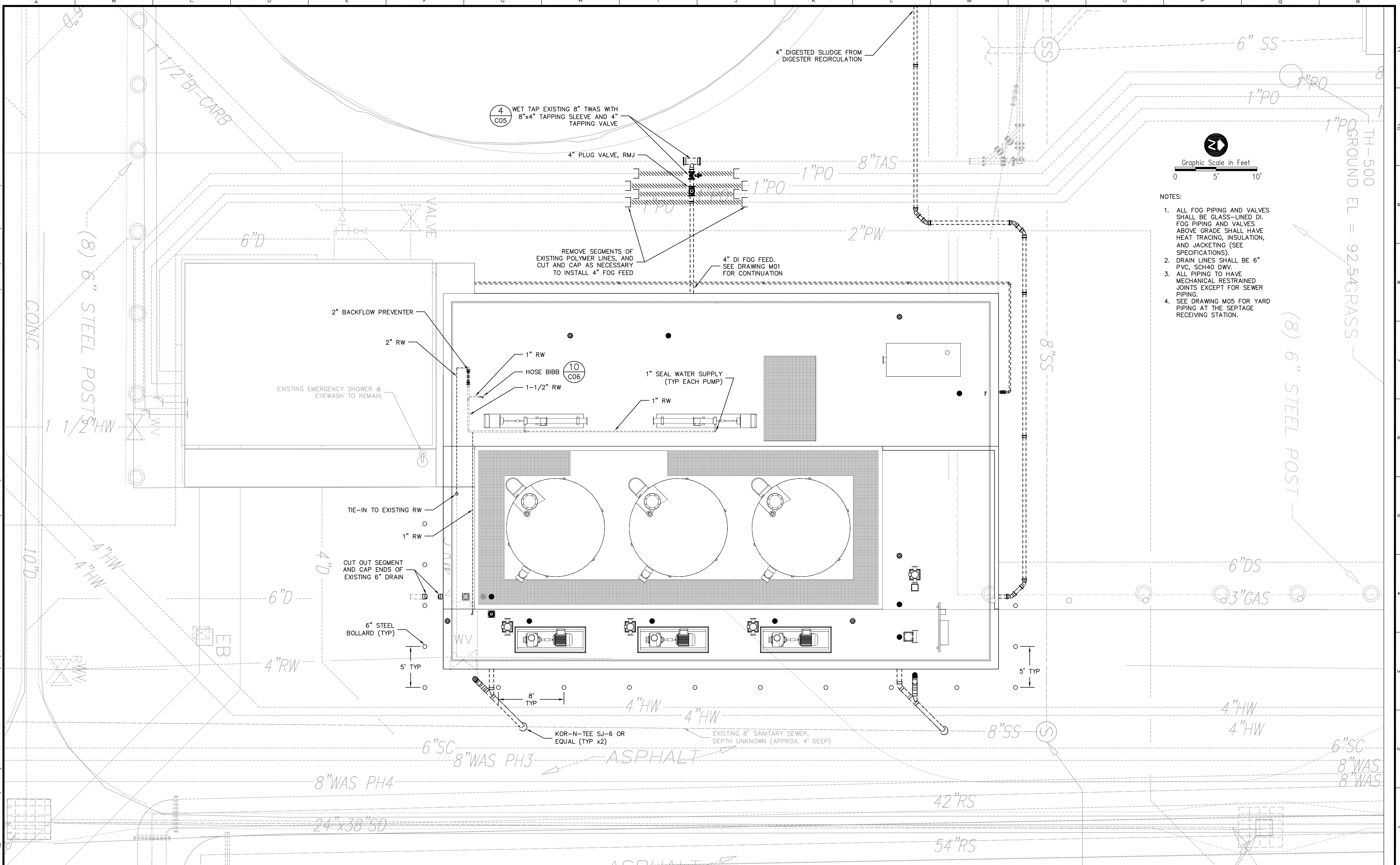
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 CIVIL
 SITE PLAN AND PAVING & GRADING

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. C03	SHEET NO.: 08 OF 48



Parent Sheet: Set: 110025_SWRF_FOG_Rev/Plot by: ROBERT L. LUPO Rev on: 1/26/2016 9:57 AM Individual File Path: R:\PROJECTS\110025 - ORANGE COUNTY SWRF_FOG_RECEIVING_STATION\DESIGN\DRAWINGS\FINAL\DESIGN_C04.DWG



- NOTES:
1. ALL FOG PIPING AND VALVES SHALL BE GLASS-LINED DI. FOG PIPING AND VALVES ABOVE GRADE SHALL HAVE HEAT TRACING, INSULATION, AND JACKETING (SEE SPECIFICATIONS).
 2. DRAIN LINES SHALL BE 6" PVC, SCH40 DWV.
 3. ALL PIPING TO HAVE MECHANICAL RESTRAINED JOINTS EXCEPT FOR SEWER PIPING.
 4. SEE DRAWING M05 FOR YARD PIPING AT THE SEPTAGE RECEIVING STATION.



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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 CIVIL
 YARD PIPING

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. C04	SHEET NO.: 09 OF 48

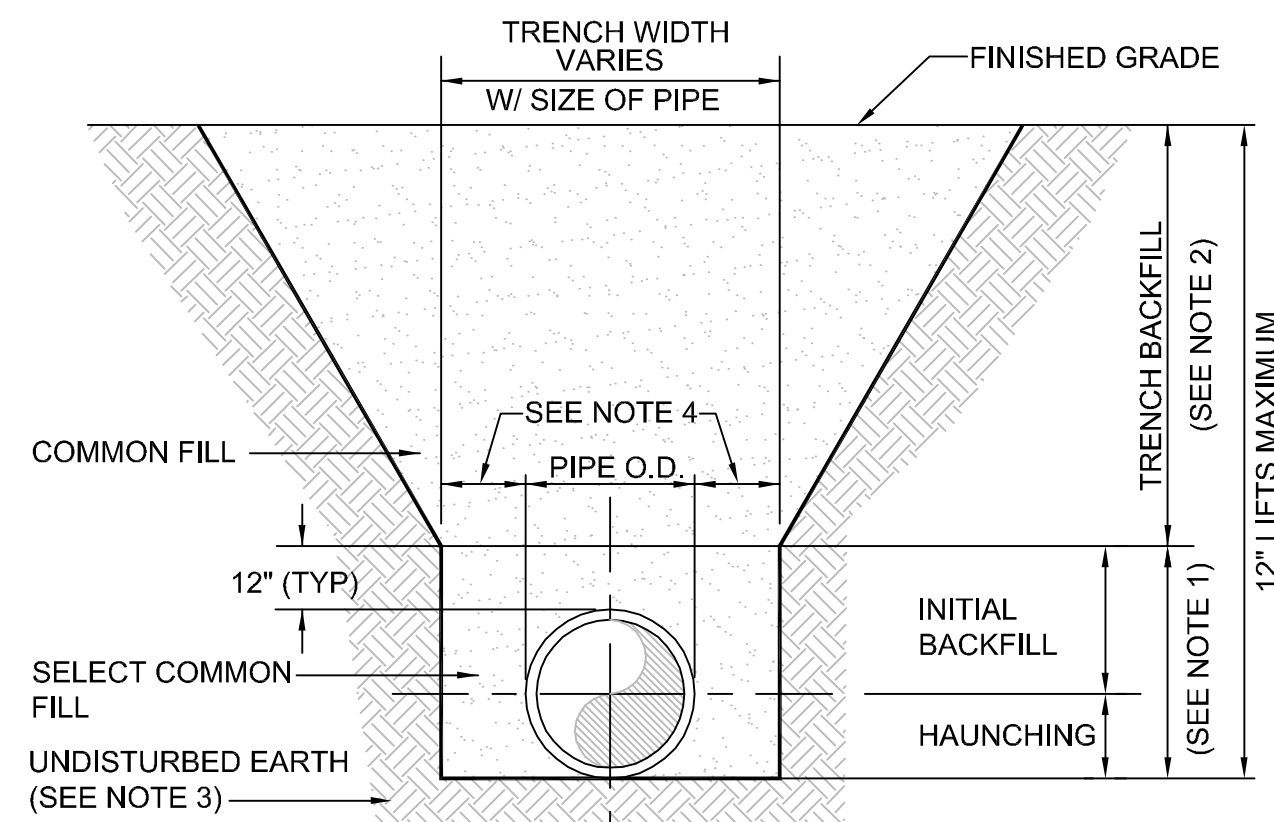
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PROPOSED UTILITY	HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS							
	POTABLE WATER		RECLAIMED WATER		WASTEWATER (GRAVITY & FM)		STORM SEWER	
	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT
POTABLE WATER	3' NOTE 1	12"	3' NOTE 1 & 3	12" NOTE 3	6' NOTE 3	12" NOTE 3	3' NOTE 1 & 3	12"/18" NOTE 2 & 3
RECLAIMED WATER	3' NOTE 1 & 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
WASTEWATER (GRAVITY AND FM)	6' NOTE 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
RIGHT OF WAY	3' NOTE 1	N/A	3' NOTE 1	N/A	3' NOTE 1	N/A	N/A	N/A

NOTES:

- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTHS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
- THE 18-INCH SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE CROSSES ABOVE THE OCU MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24 INCHES. OTHERWISE, THE REQUIRED SEPARATION IS 12 INCHES.
- THIS SEPARATION REQUIREMENT COMPLIES WITH MINIMUM FDEP SEPARATION REQUIREMENTS OUTLINED IN 62-555.314, FAC. VARIANCES FROM THE FDEP REQUIREMENTS MUST COMPLY WITH 62-555.314(5), FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND OCU.
- DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.

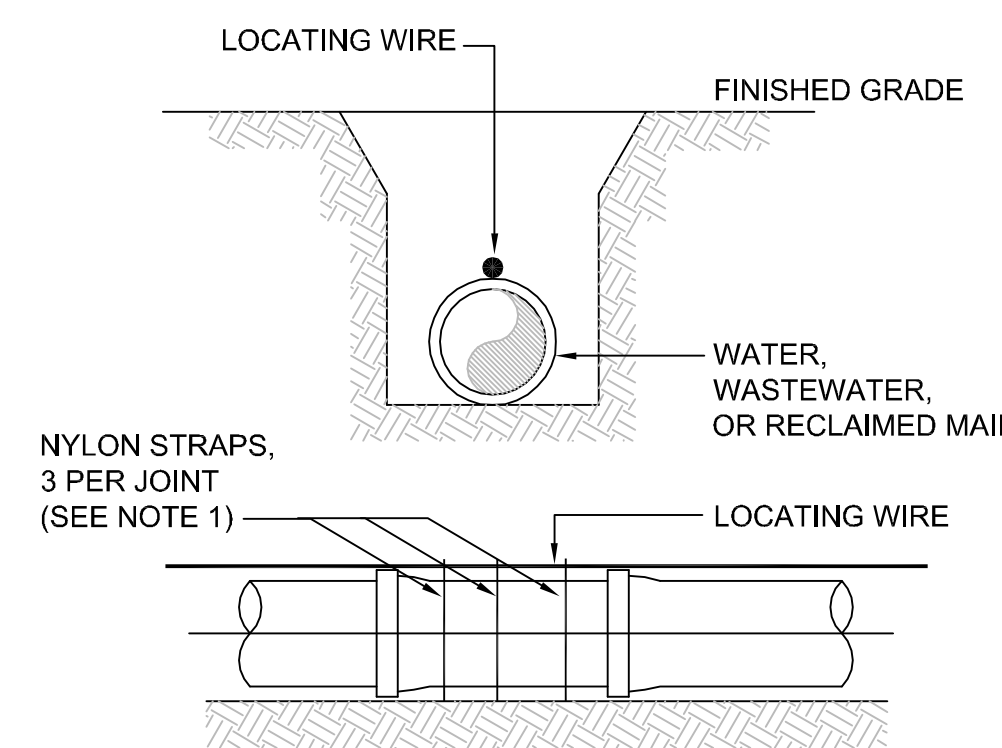
1 SEPARATION REQUIREMENTS FOR WATER WASTEWATER AND RECLAIMED WATER MAINS
SCALE: N.T.S.



NOTES:

- INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
- 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
- WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
- ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
- FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

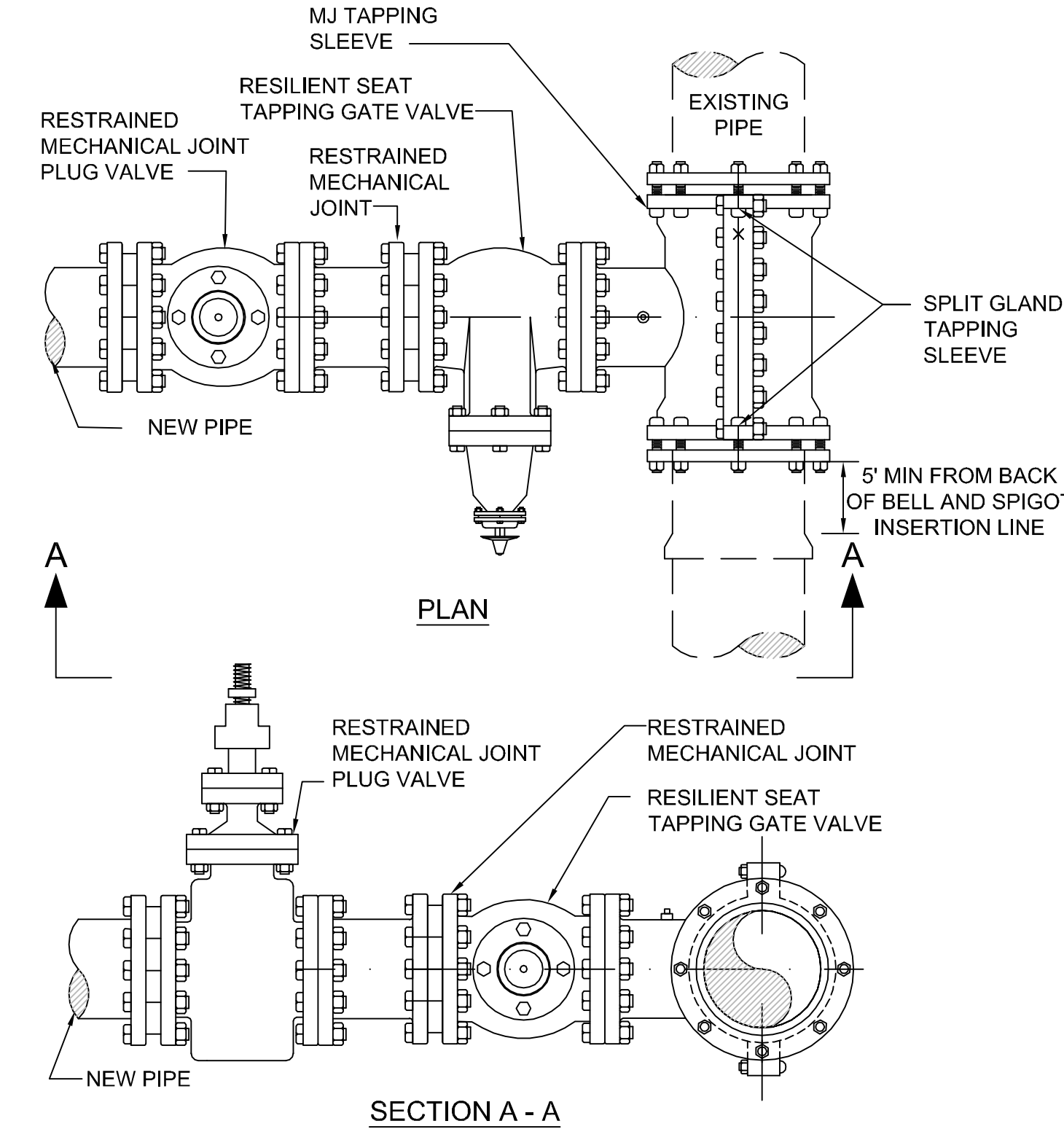
2 BEDDING AND TRENCHING - TYPE B
SCALE: N.T.S.



NOTES:

- ALL PIPE SHALL REQUIRE INSULATED LOCATING WIRE (10 GAUGE SOLID COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE WRAPPED WITH NYLON STRAPS TO TOP CENTERLINE OF THE PIPE.
- LOCATING WIRE SHALL BE CONTINUOUS INSIDE VALVE BOXES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR.
- WIRE INSULATION SHALL BE COLOR CODED FOR THE TYPE OF PIPE BEING INSTALLED.

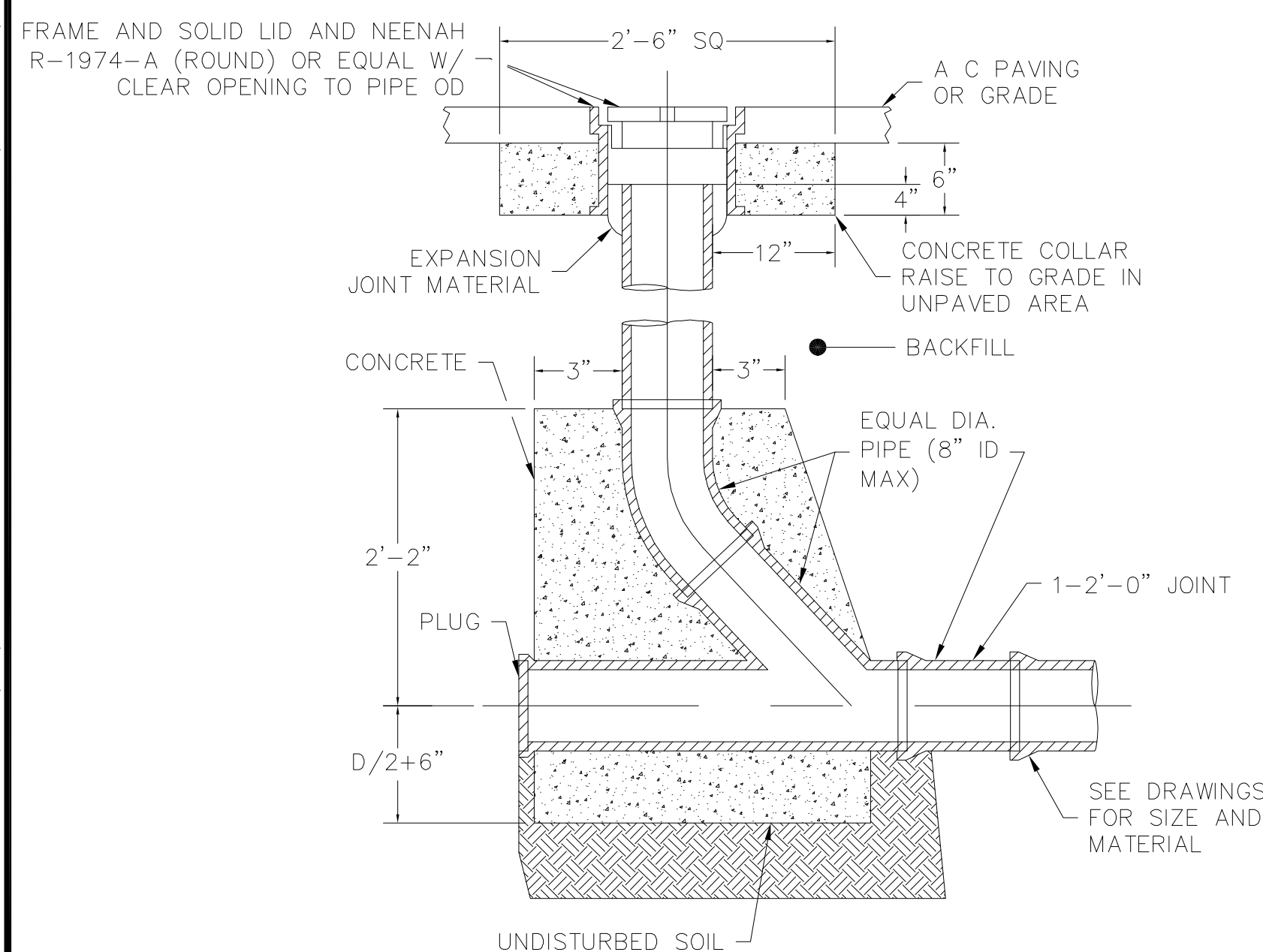
3 PIPE LOCATING WIRE
SCALE: N.T.S.



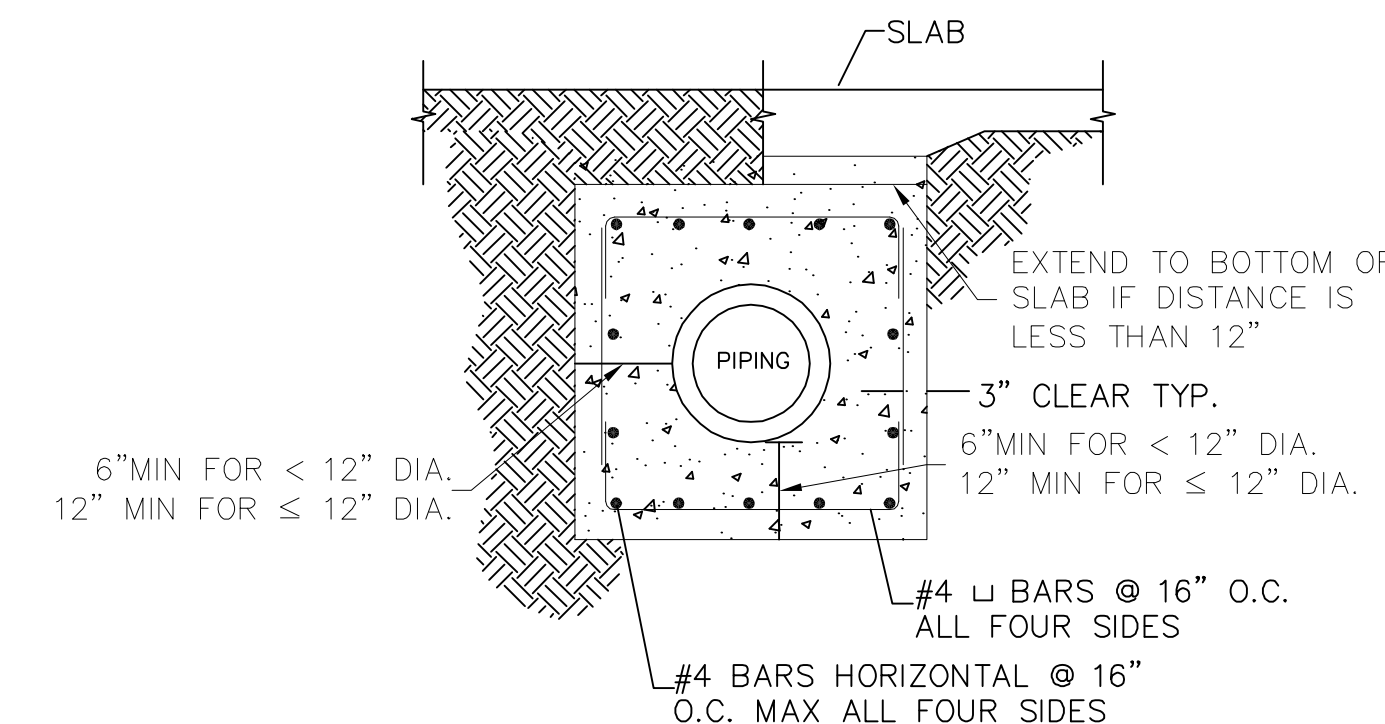
NOTES:

- PLUG VALVES GREATER THAN 4" SHALL BE GEAR ACTUATED.
- PLUG VALVE TO BE INSTALLED VERTICALLY, AND TAPPING GATE VALVE TO BE INSTALLED HORIZONTALLY AND ABANDONED IN THE OPEN POSITION.

4 MJ TAPPING SLEEVE AND GATE VALVE WITH PLUG VALVE FOR WASTEWATER
SCALE: N.T.S.

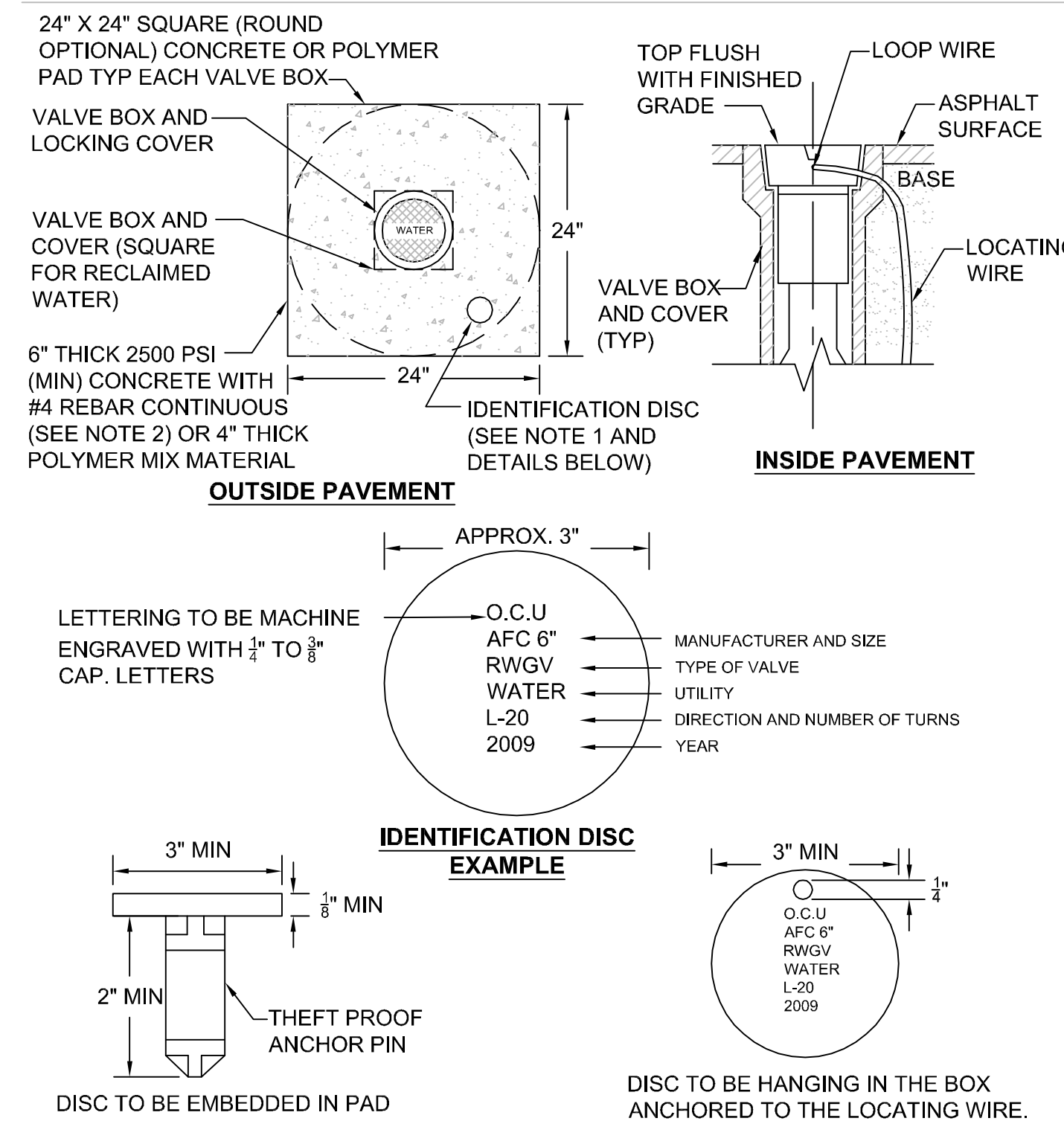


5 CLEANOUT DETAIL
SCALE: N.T.S.



NOTE
REINFORCING NOT NEEDED FOR ENCASEMENT OF DIP, UNLESS UNDER PAVEMENT.

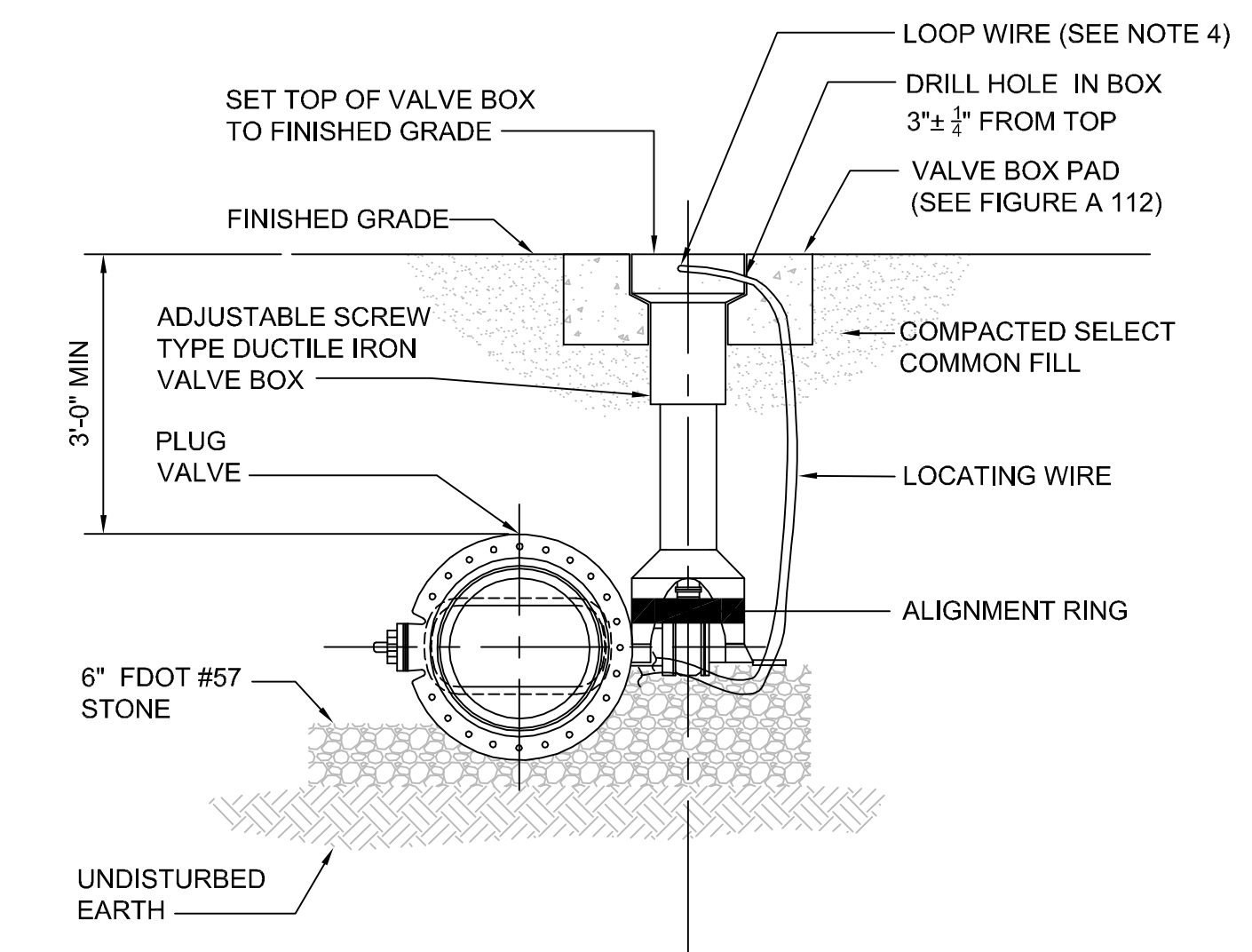
6 CONCRETE ENCASEMENT DETAIL
SCALE: N.T.S.



NOTES:

- BRONZE (OR STAINLESS STEEL) IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES, EXCEPT HYDRANT VALVES.
- IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD WITH TWO #4 REBAR AROUND PERIMETER MAY BE USED.

7 VALVE BOX PAD
SCALE: N.T.S.



NOTES:

- PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
- THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 3' OF FINISHED GRADE.
- PROVIDE A PLASTIC DEBRIS SHIELD / ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
- LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED.
- FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
- REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.

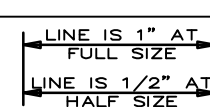
8 PLUG VALVE DETAIL
SCALE: N.T.S.



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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

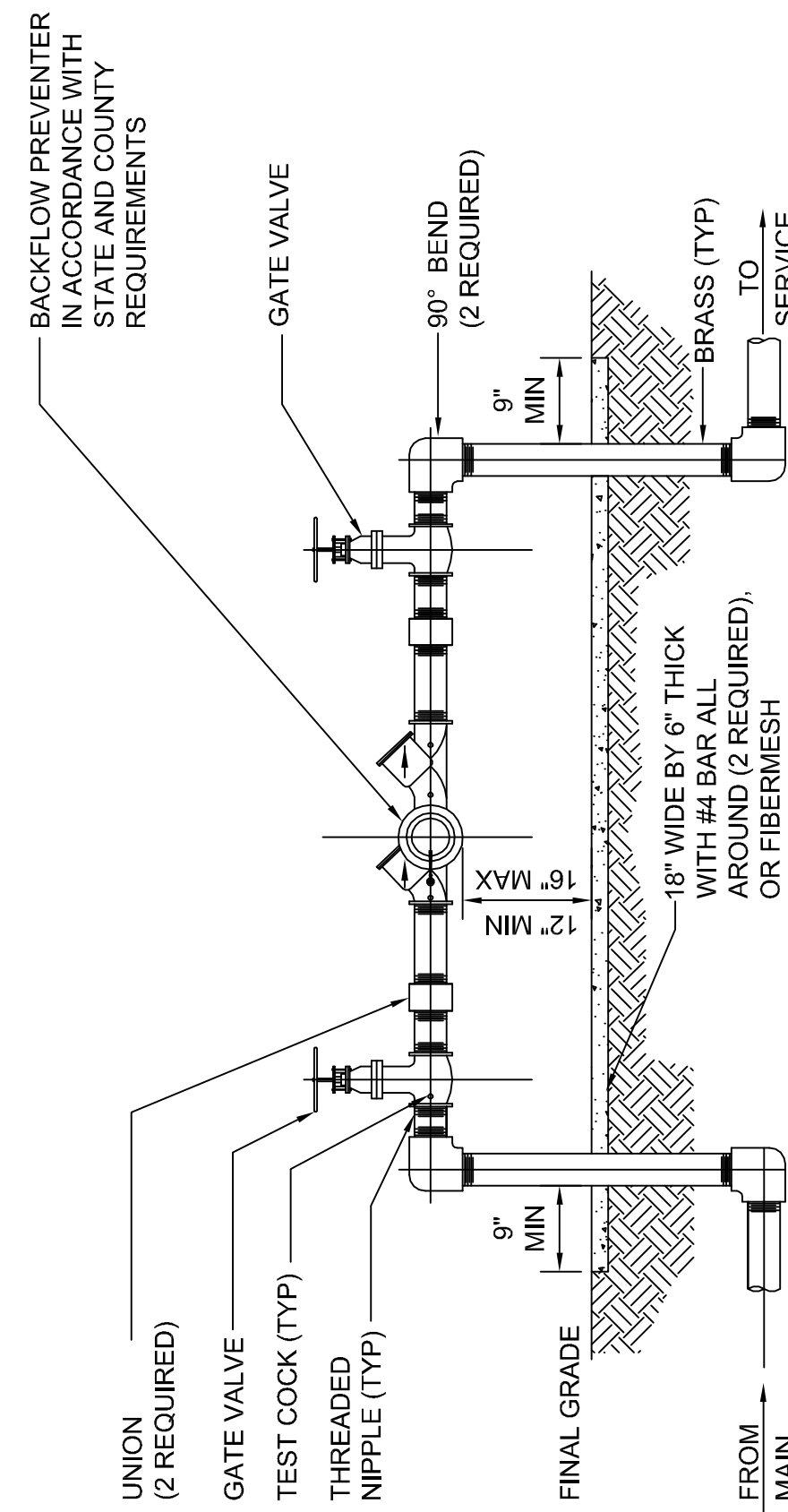
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CIVIL DETAILS

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SCALE:	NOTED
REVISION:	0
DRAWING NO.:	C05
SHEET NO.:	10 OF 48

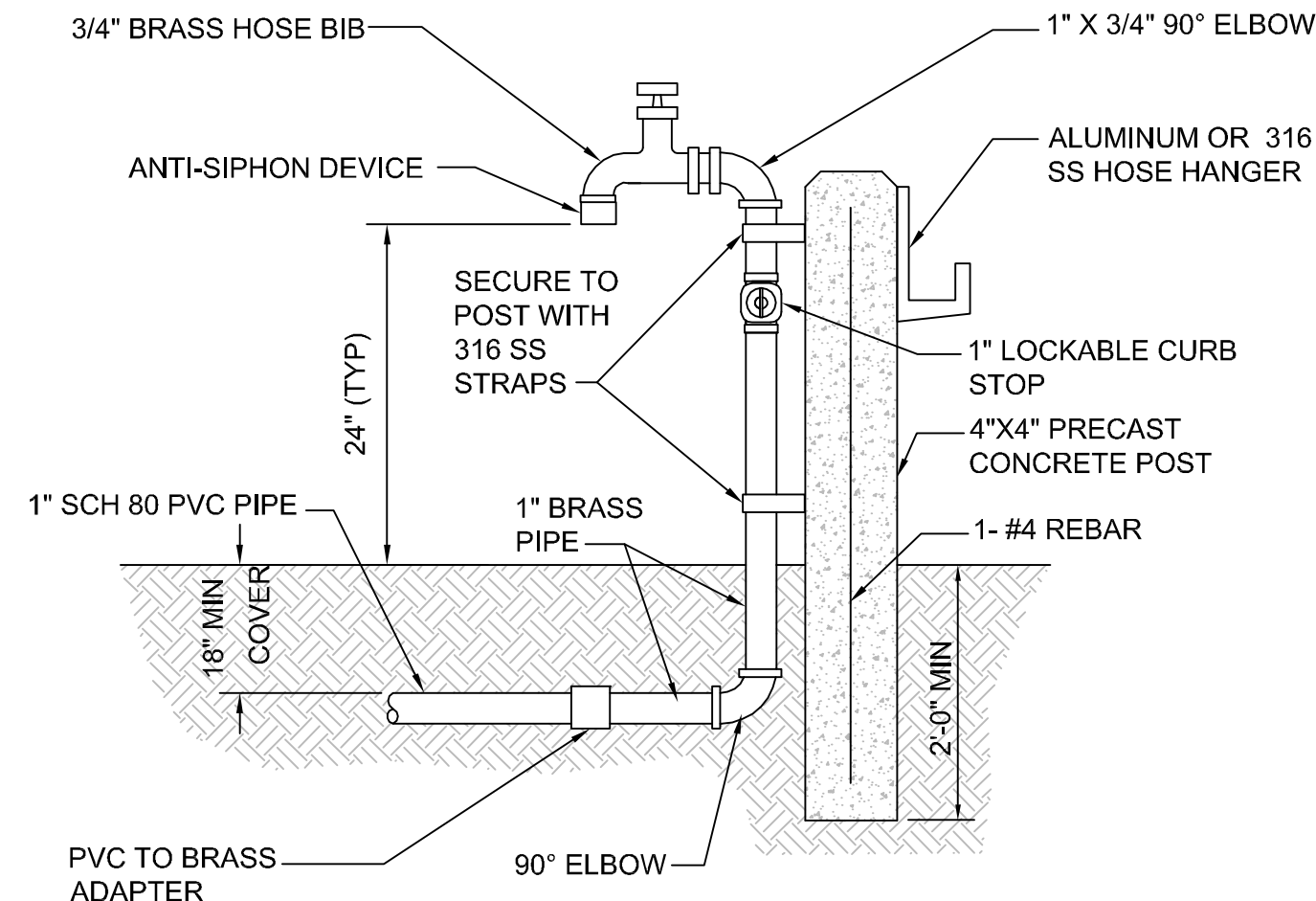


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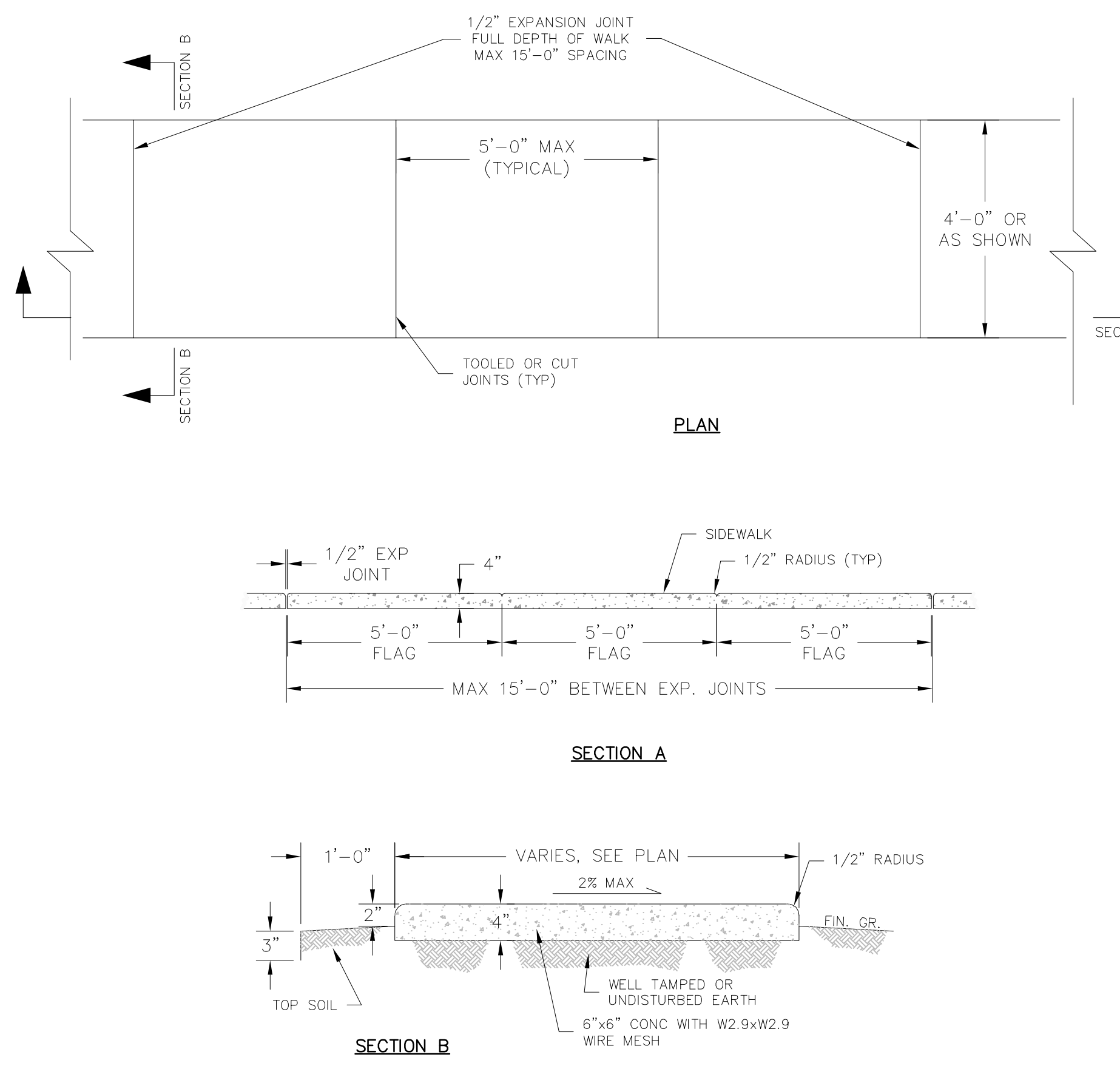
NOTES:
1. ALL PIPE AND PIPE FITTINGS SHALL BE BRASS.
2. PAINTING IN ACCORDANCE WITH THIS MANUAL.

9 REDUCED PRESSURE BACKFLOW PREVENTER
SCALE: N.T.S.

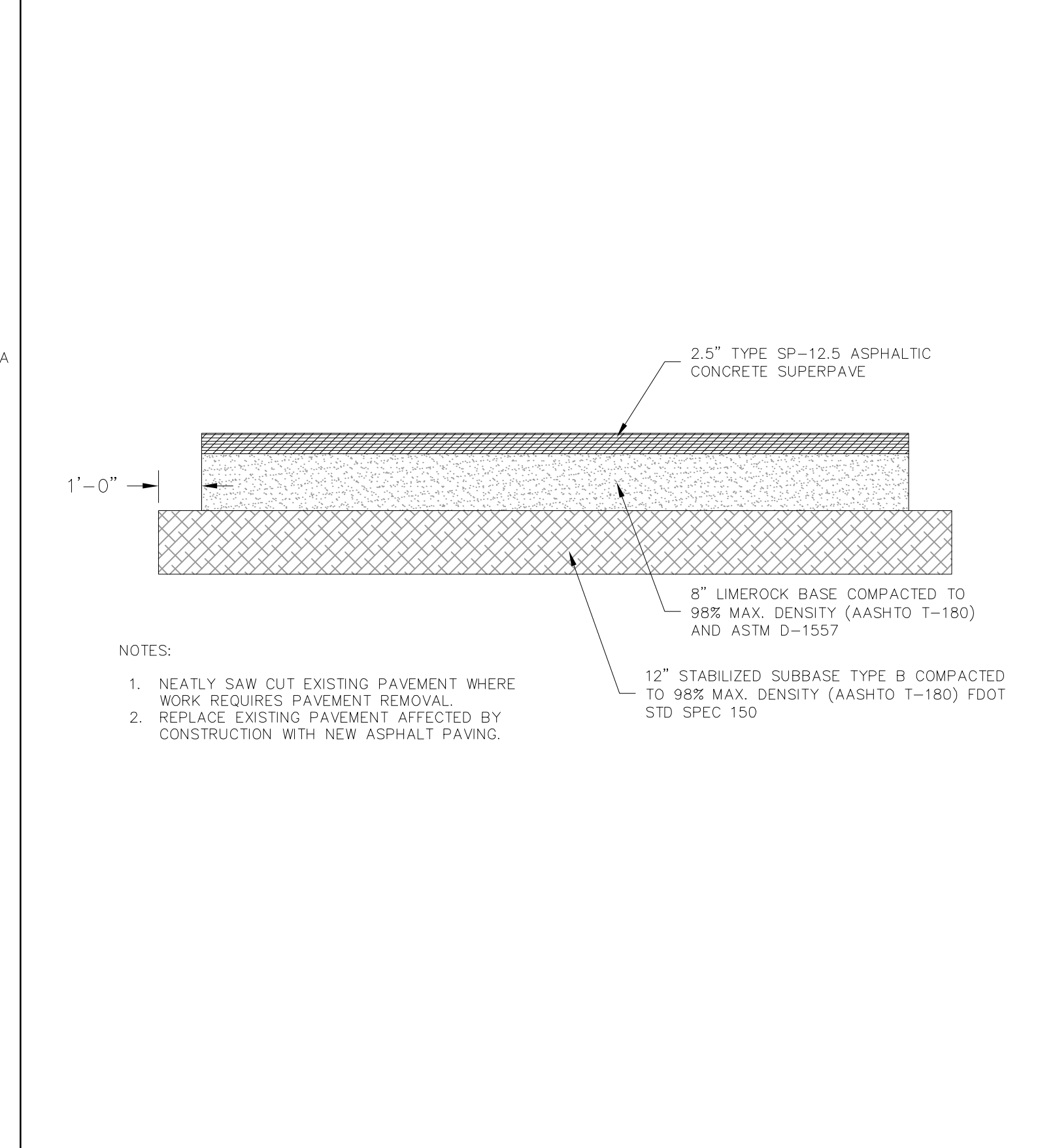


NOTE:
PROVIDE 50 FEET OF 3/4" INDUSTRIAL HOSE.

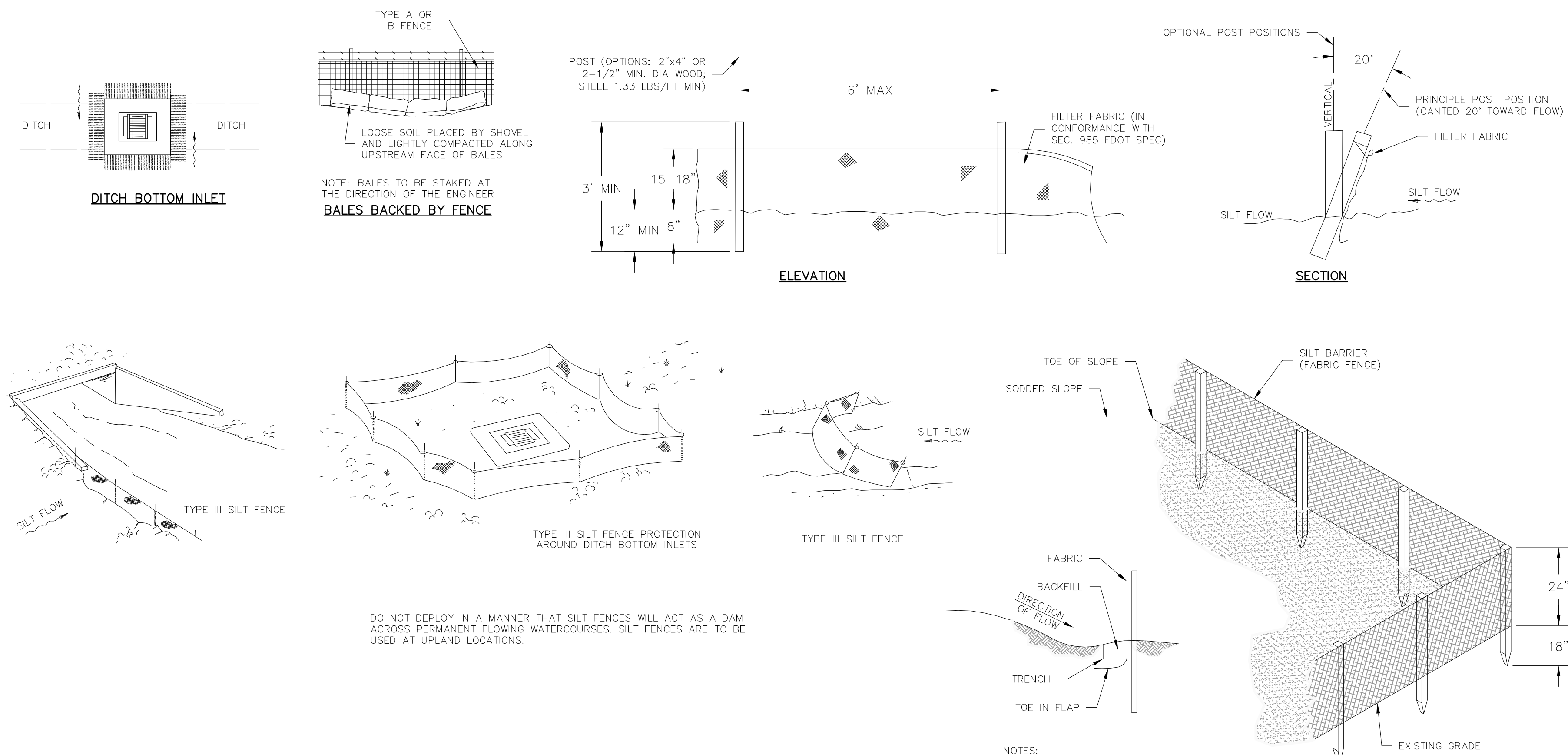
10 HOSE BIBB
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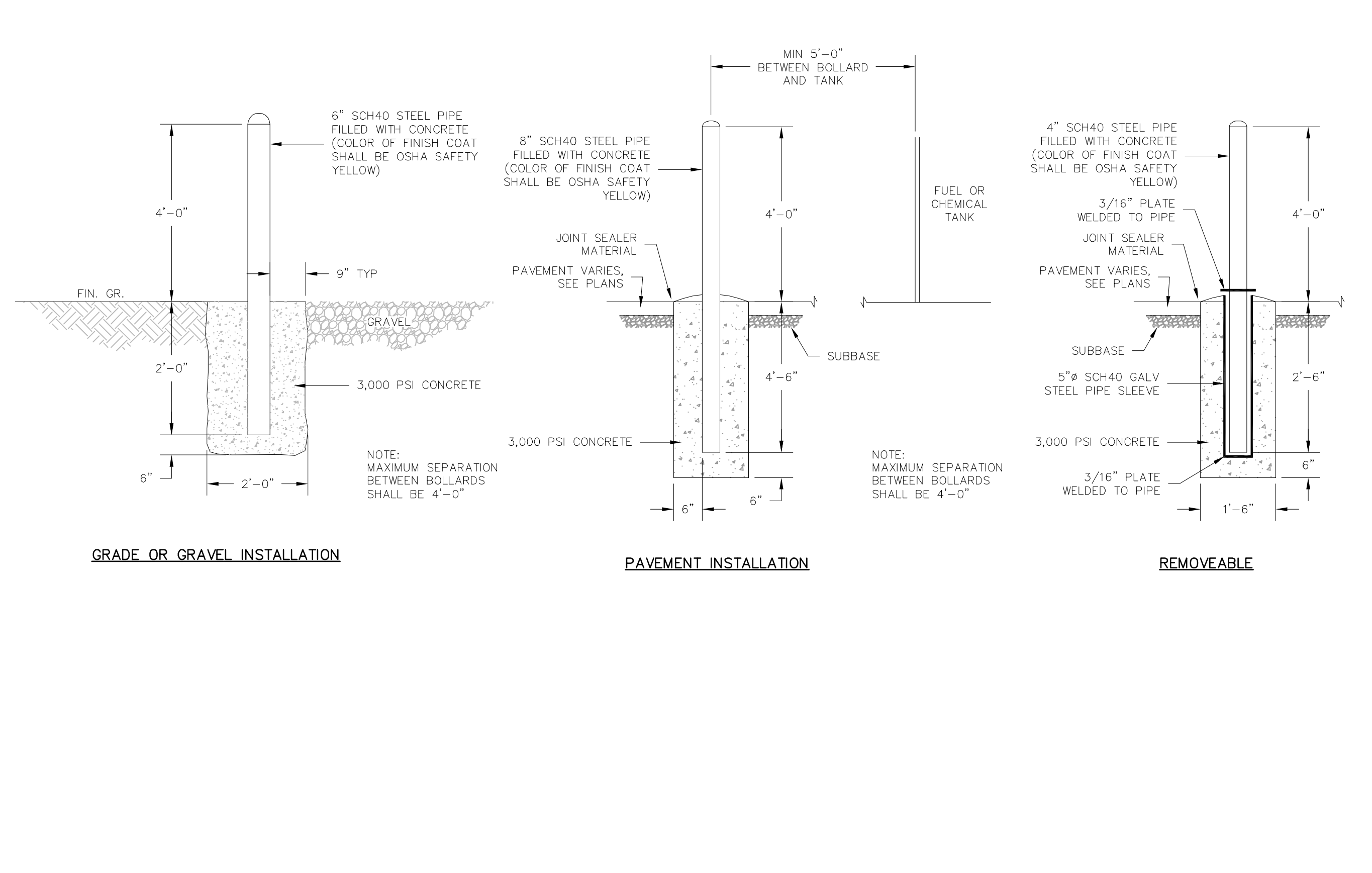
11 CONCRETE SIDEWALK
SCALE: N.T.S.



12 PAVEMENT RESTORATION DETAIL
SCALE: N.T.S.



13 EROSION CONTROL DETAILS
SCALE: N.T.S.



14 BOLLARD DETAILS
SCALE: N.T.S.



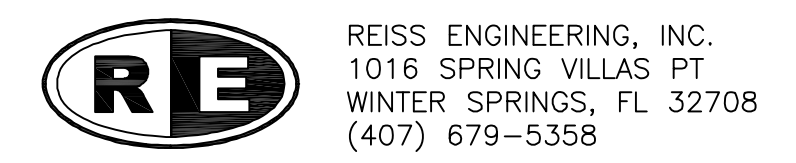
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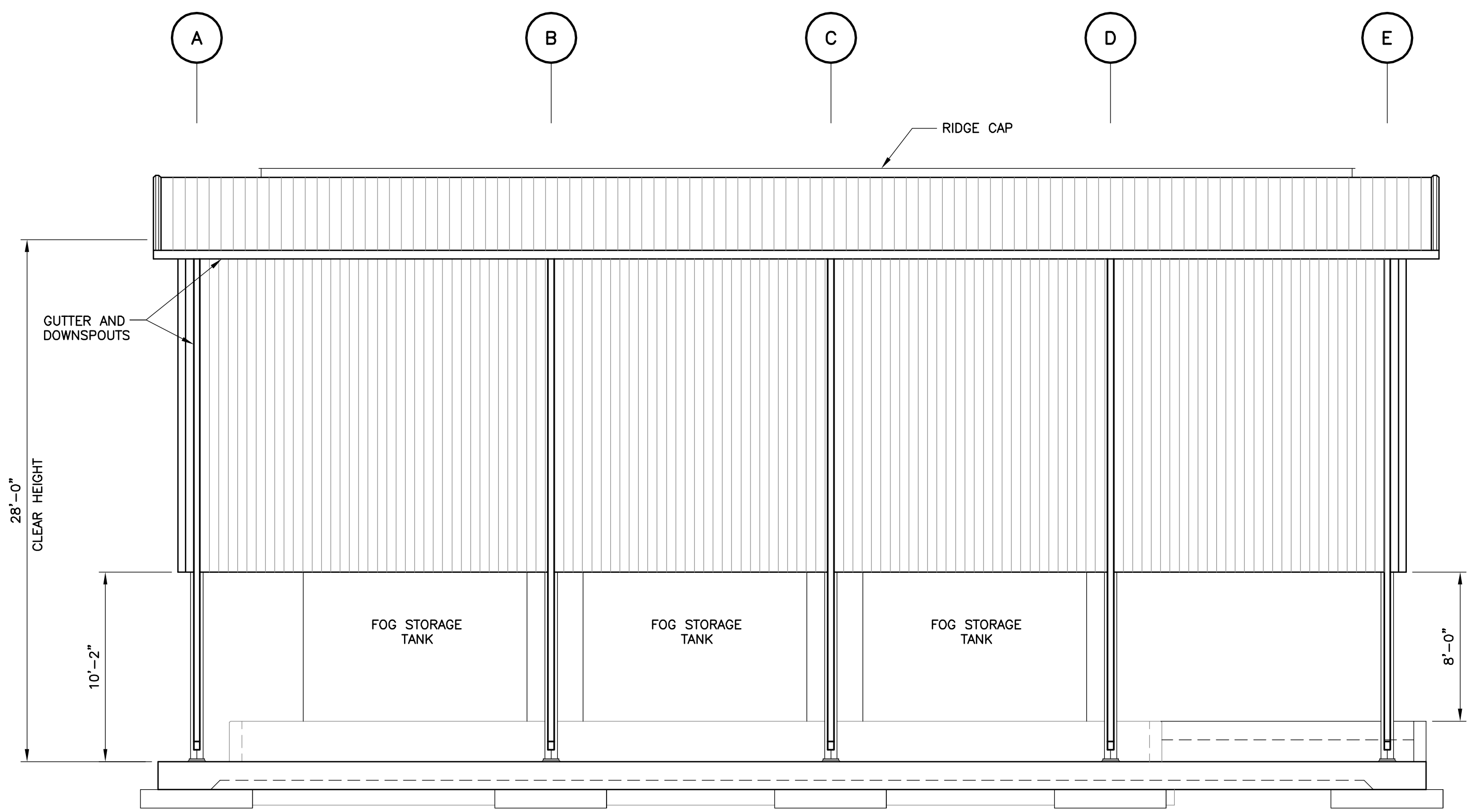
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SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
CIVIL
CIVIL DETAILS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. C06	SHEET NO.: 11 OF 48

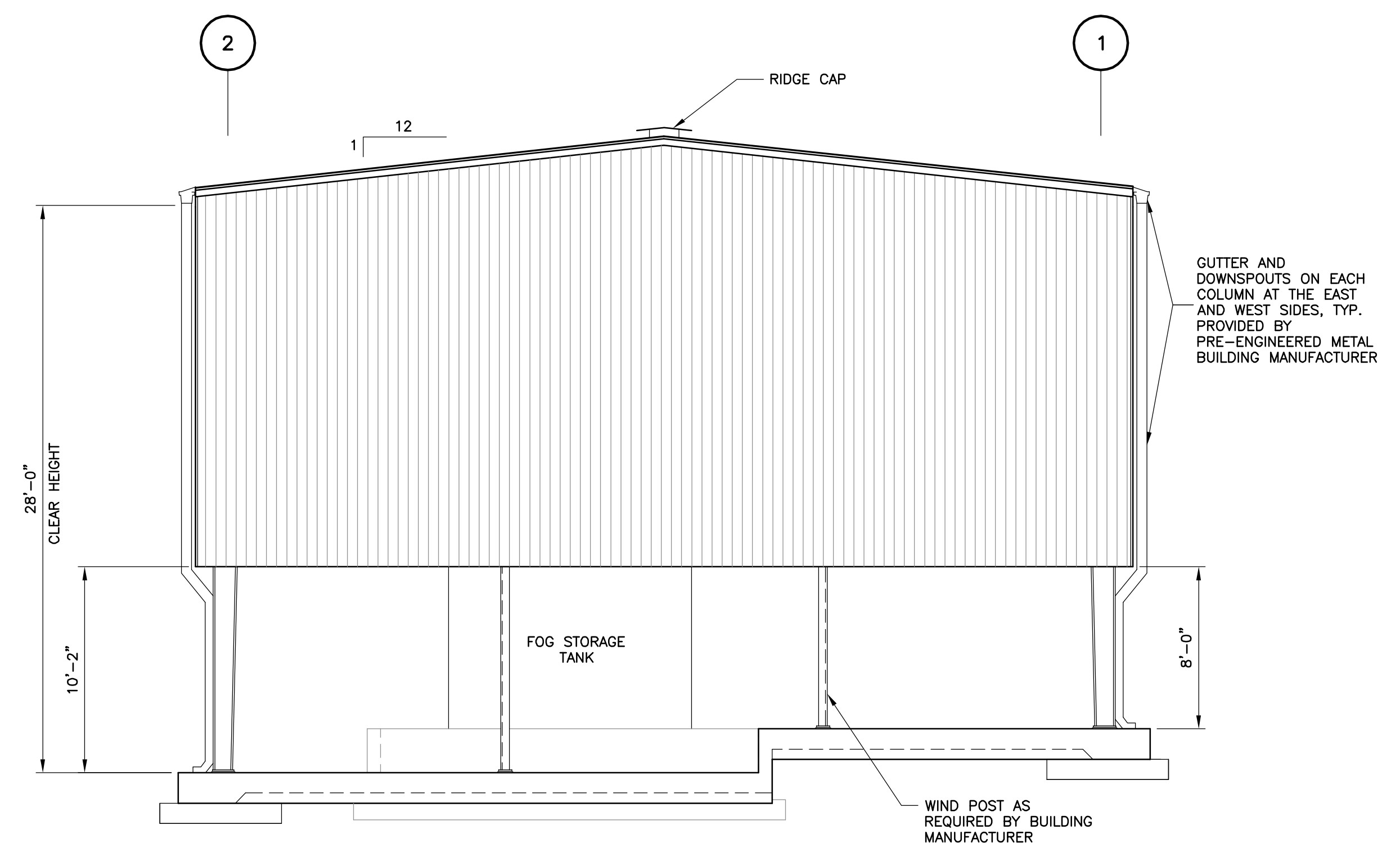


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EAST ELEVATION
3/16"=1'-0" * WEST ELEVATION SIMILAR



NORTH ELEVATION
3/16"=1'-0" * SOUTH ELEVATION SIMILAR

GENERAL STRUCTURAL NOTES

DESIGN CRITERIA

CODES:
2014 FLORIDA BUILDING CODE

REINFORCED CONCRETE:
WATER RETAINING STRUCTURES: ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"
ALL OTHER STRUCTURES: ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"

BUILDING CODE REQUIREMENTS

CLASSIFICATION OF OCCUPANCY:	LOW HAZARD STORAGE, S-2
MINIMUM TYPE OF CONSTRUCTION:	TYPE III-B
MAXIMUM AREA PER FLOOR:	26,000 SQ. FT. PER STORY
ACTUAL AREA:	3,264 SQ. FT.
MAXIMUM HEIGHT:	3 STORIES
ACTUAL HEIGHT:	1 STORY - 28 FT.

REQUIRED FIRE RESISTANCE OF VARIOUS MEMBERS

STRUCTURAL FRAME	0 HOURS
EXTERIOR BEARING WALLS	N/A
INTERIOR BEARING WALLS	N/A
EXTERIOR NON-BEARING WALLS	N/A
INTERIOR NON-BEARING WALLS	N/A
FLOORS	0 HOURS
ROOF	0 HOURS

OCCUPANCY SEPARATION: NOT REQUIRED (ALL ONE OCCUPANCY)
OCCUPANT LOAD: 33 = 100 SQ. FT. PER PERSON ("INDUSTRIAL AREA" PER TABLE 1004.1.1)

NOTE: THE STRUCTURE IS OPEN ON ALL SIDES AND EGRESS REQUIREMENTS ARE NOT APPLICABLE.

DESIGN LIVE LOADS:

STAIRWAYS AND LANDINGS	100 PSF
SLABS ON GRADE	300 PSF

CONCRETE

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS (LATEST EDITION)

ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

REINFORCING STEEL

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC, ASTM A185. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

- CONCRETE CAST AGAINST EARTH 3"
- ALL FORMED SURFACES 2"

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

PRE-ENGINEERED METAL BUILDING

FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO DESIGN, FABRICATE, DELIVER TO JOB SITE AND ERECT THE PRE-ENGINEERED METAL BUILDING AS SHOWN ON THE DRAWINGS.

PRE-ENGINEERED METAL BUILDING MANUFACTURER TO PROVIDE WALL PANELS AND WALL GIRTS TO BE REMOVABLE, WITHOUT AFFECTING THE REMAINING STRUCTURE, ON THE EAST SIDE BETWEEN COLUMN LINES A-B, B-C AND C-D FOR THE PURPOSE OF REMOVAL OF THE TANKS FOR FUTURE REPAIR OR REPLACEMENT. PROVIDE WATERTIGHT SIDELAPS/EDGES AT EACH REMOVABLE SECTION. PRIMARY AND SECONDARY FRAMING SHOWN ON THE DRAWINGS TO BE MODIFIED AS REQUIRED.

SUBMIT TO THE ENGINEER COMPLETE PLANS SHOWING SUPERSTRUCTURE COLUMN LINES SET TO COORDINATE WITH CONCRETE DIMENSIONS SHOWN. INDICATE ANCHOR BOLT SIZE AND LOCATIONS AND FOUNDATION REACTIONS IN KIPS AT ALL COLUMNS.

SUBMIT LETTER AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA CERTIFYING THAT THE STRUCTURAL FRAMING AND COVERING PANELS PROPOSED MEET THE DESIGN CRITERIA.

PRIOR TO FOUNDATION CONSTRUCTION, PRE-ENGINEERED METAL BUILDING SUBMITTAL MUST BE APPROVED. CONSTRUCTION DETAILS MAY BE VARIED TO SUIT MANUFACTURER'S STANDARD DESIGN.

DESIGN CRITERIA:

ROOF DEAD LOAD:	SELF WEIGHT
SUPERIMPOSED DEAD LOAD:	8 PSF
ROOF LIVE LOAD:	20 PSF

WIND LOADS:

- ULTIMATE DESIGN WIND SPEED, V_{ult} (3-SECOND GUST) 150 MPH
- NOMINAL DESIGN WIND SPEED, V₅₀ 117 MPH
- RISK CATEGORY III
- EXPOSURE CATEGORY B
- DESIGN PRESSURES: PER ASCE 7-10
- ENCLOSURE CLASSIFICATION PARTIALLY ENCLOSED
- INTERNAL PRESSURE COEFFICIENT, C_{gp} ±0.55

ALL BUILDING COLUMNS SHALL BE DESIGNED AS "PIN" CONNECTED. COLUMN ENDS SHALL NOT TRANSFER MOMENTS TO FOUNDATION.

COLUMN AND BASE PLATE SIZE SHALL ALLOW FOR A MINIMUM ANCHOR BOLT DISTANCE OF 8" TO ANY VERTICAL EDGE OF CONCRETE UNLESS SPECIFICALLY APPROVED BY ENGINEER. THE MINIMUM ANCHOR ROD EMBEDMENT DEPTH IS 1'-2".

MANUFACTURERS:
BUTLER MANUFACTURING COMPANY, KANSAS CITY, MISSOURI; VARCO PRUDEN BUILDINGS, MEMPHIS, TENNESSEE; OR EQUAL.

MATERIALS:

FRAMING - PRIMARY AND SECONDARY FRAMING SHALL CONSIST OF SHOP FABRICATED WELDED UP PLATE SECTION COLUMNS AND ROOF BEAMS COMPLETE WITH NECESSARY SPLICE, BASE, CAP, COMPRESSION, AND STIFFENER PLATES WITH BOLT CONNECTION HOLES FOR FIELD ASSEMBLY. PURLINS AND GIRTS SHALL BE 8-IN MIN. DEEP "Z" SECTIONS. EAVE STRUTS SHALL BE 8-IN MIN. DEEP "C" SECTIONS. LATERAL BRACING SHALL BE DESIGNED BY THE BUILDING MANUFACTURER. ALL BOLTS FOR STRUCTURAL FRAMING CONNECTIONS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325.

WALL SYSTEM - EXTERIOR WALL PANELS SHALL BE BUTLERBIB PANELS AS FURNISHED BY BUTLER MANUFACTURING COMPANY OR EQUAL. PANEL MATERIAL SHALL BE ASTM A446, GRADE C, 26 GAUGE GALVANIZED STEEL G90 COATING CONFORMING TO ASTM A525. FURNISH EXTERIOR AND INTERIOR TRIM AS REQUIRED FOR ALL DOORS, FLASHINGS, CLOSURES.

ROOF SYSTEM - THE BUILDING ROOF PANELS SHALL BE PRECISION ROLL FORMED MR-20 PANELS AS FURNISHED BY BUTLER MANUFACTURING COMPANY OR EQUAL. PANEL MATERIAL AS SPECIFIED SHALL BE 20 GAUGE GALVANIZED STEEL (80,000 PSI YIELD) G90 COATING CONFORMING TO ASTM A525. GUTTERS, DOWNSPOUTS AND TRIM PIECES ARE TO BE STANDARD PRODUCTS INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.

FASTENERS - FASTENERS FOR WALL AND ROOF SYSTEM SHALL BE HOT DIPPED GALVANIZED AND FURNISHED WITH AN INTEGRAL GALVANIZED STEEL-BACKED NEOPRENE WASHER. ALL EXPOSED FASTENERS SHALL BE PREPAINTED TO MATCH WALL COLOR.

ANCHOR BOLTS - ANCHOR BOLTS SHALL BE F1554 GRADE 36 HOT DIPPED GALV. HEAVY HEX HEADED. ANCHOR BOLTS SHALL BE DESIGNED BY THE BUILDING MANUFACTURER AND FURNISHED BY THE CONTRACTOR.

PAINTING:

ALL STRUCTURAL STEEL SHALL BE SHOP PREPARED AND FIELD PAINTED PRIOR TO ERECTION. PRIOR TO PAINTING, ALL STEEL SHALL BE CLEANED OF LOOSE RUST, LOOSE MILL SCALE, DIRT AND OTHER FOREIGN MATERIAL. SEE SPECIFICATION.

PAINT COLOR TO BE APPROVED BY THE OWNER.



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Florida P.E. No. 71407
e/T Engineering Technologies, Inc.
Certificate of Authorization No. 8414
3551 W. Lake Mary Blvd, Suite 210
Lake Mary, FL 32746

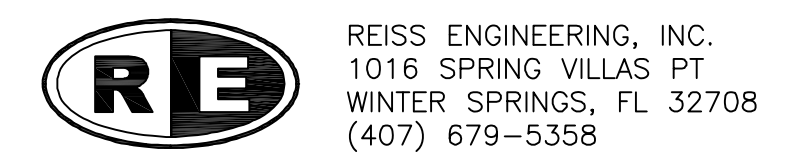
Designed JS
Drawn DM
Checked BE
Reviewed JS
Approved JS

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

STRUCTURAL

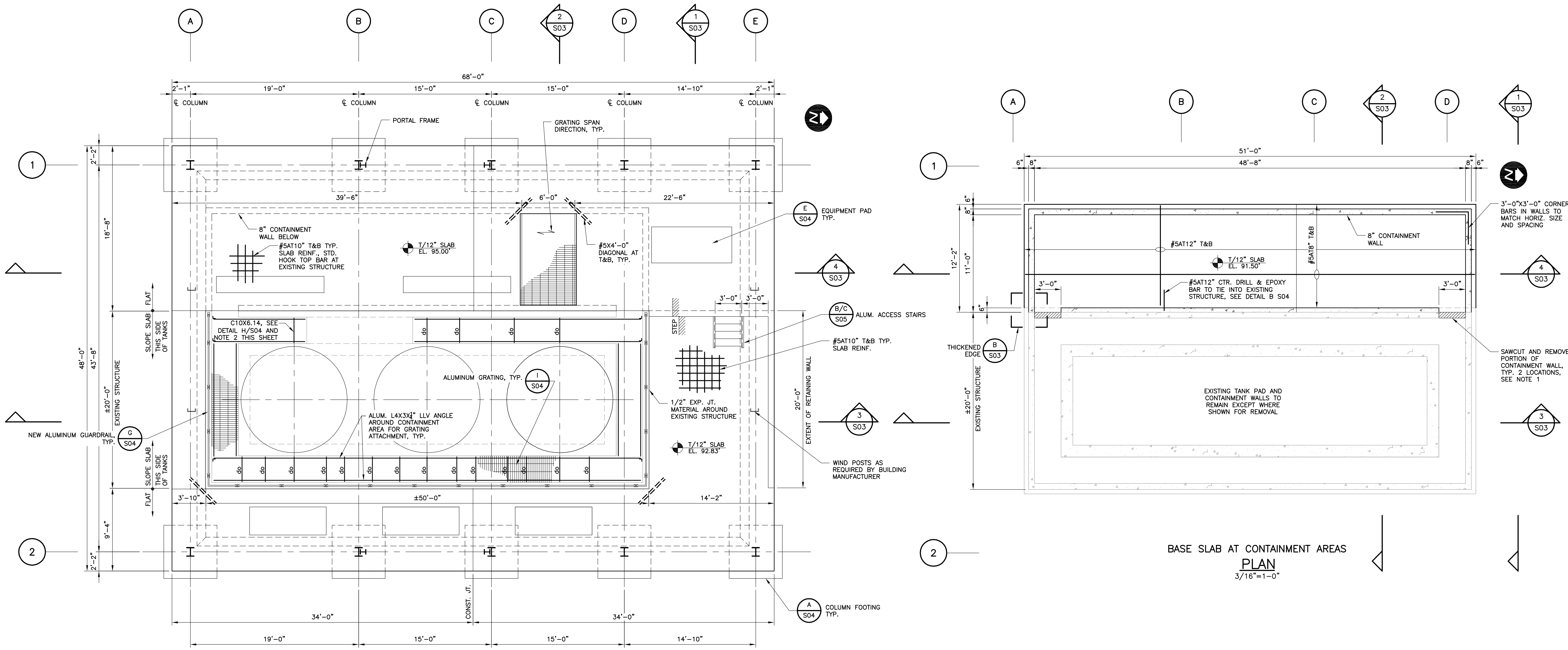
STRUCTURAL GENERAL NOTES AND CANOPY ELEVATIONS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. S01	SHEET NO.: 12 OF 48



REISS ENGINEERING, INC.
1016 SPRING VILLAS PT
WINTER SPRINGS, FL 32708
(407) 679-5358

Parent Sheet: Set: 110025_SWRF_FOG_Rev/Plot by: ROBERT L. LUPU Rev on: 9/29/2016 4:50 PM Individual File Path: R:\PROJECTS\110025 - ORANGE COUNTY SWRF FOG RECEIVING STATION\DRAWINGS\FINAL\DESIGN\10_S02.DWG



BASE SLAB AT CONTAINMENT AREAS
PLAN
 3/16"=1'-0"

- NOTES:
- GRIND BACK ALL EXPOSED REINFORCEMENT 1" AND PATCH W/ Sikotop 123 Plus, TYPICAL.
 - COORDINATE FINAL LOCATIONS AND QUANTITY OF PIPE STANCHION SUPPORTS W/ "M" DRAWINGS AND EQUIPMENT TO BE SUPPORTED



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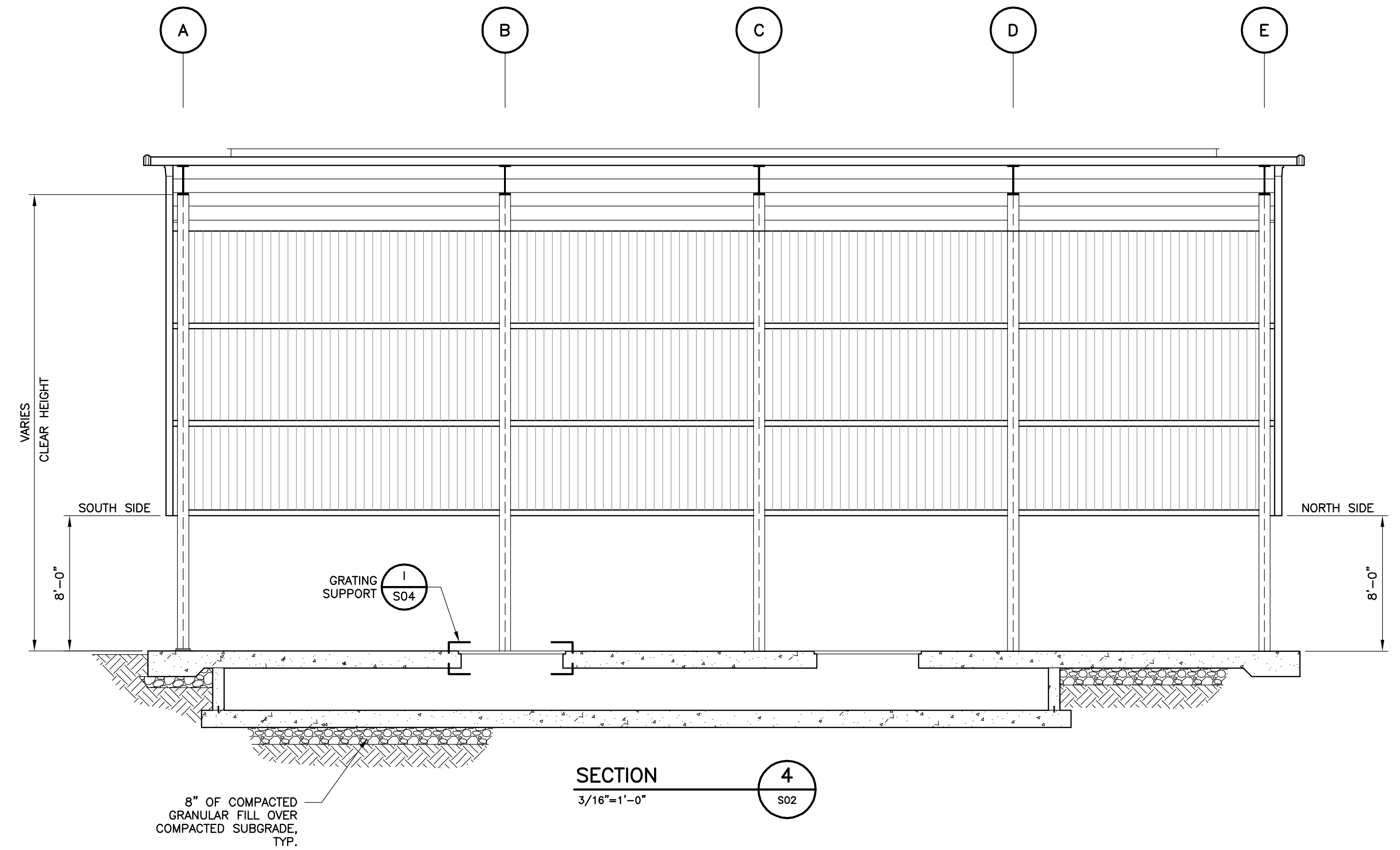
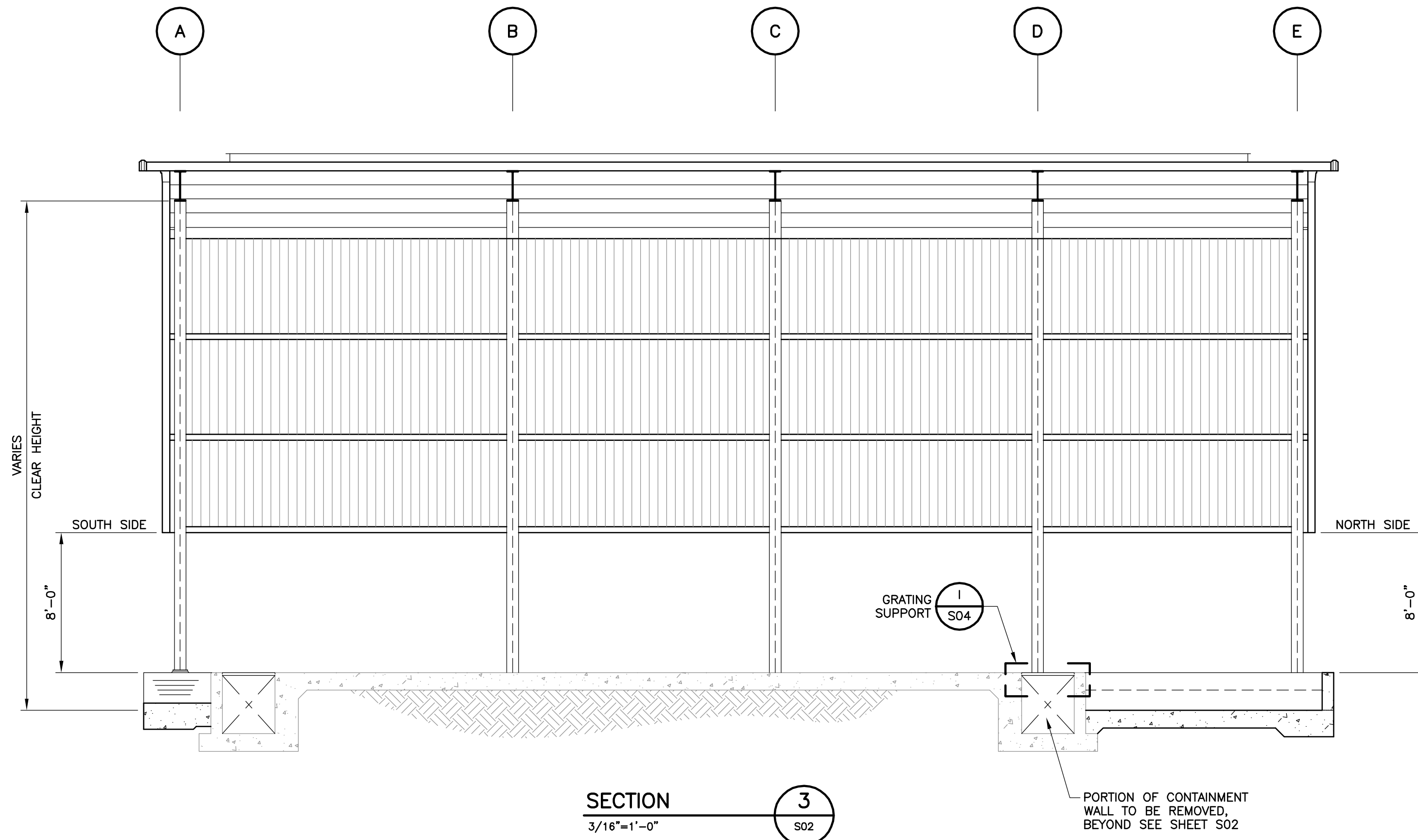
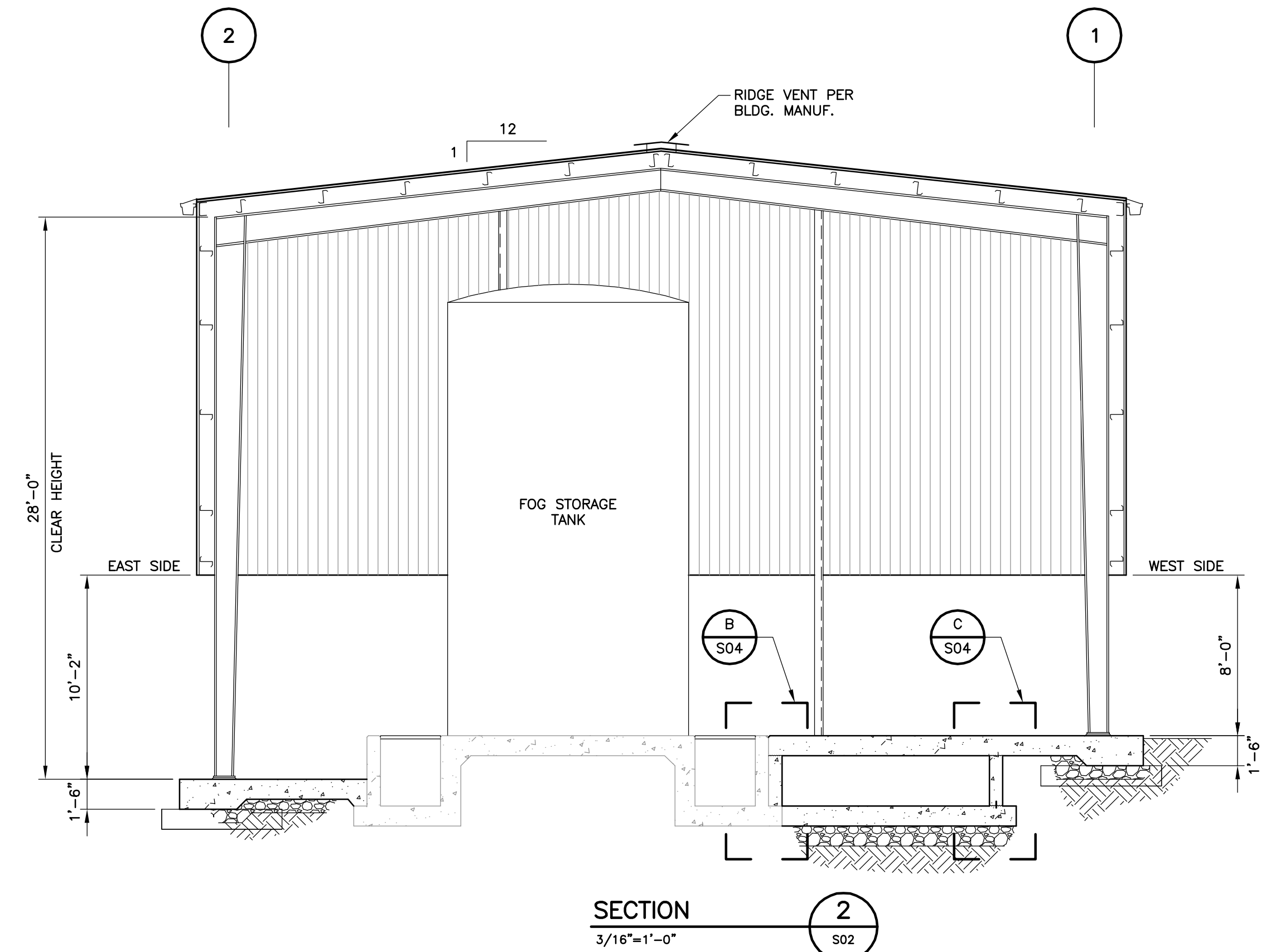
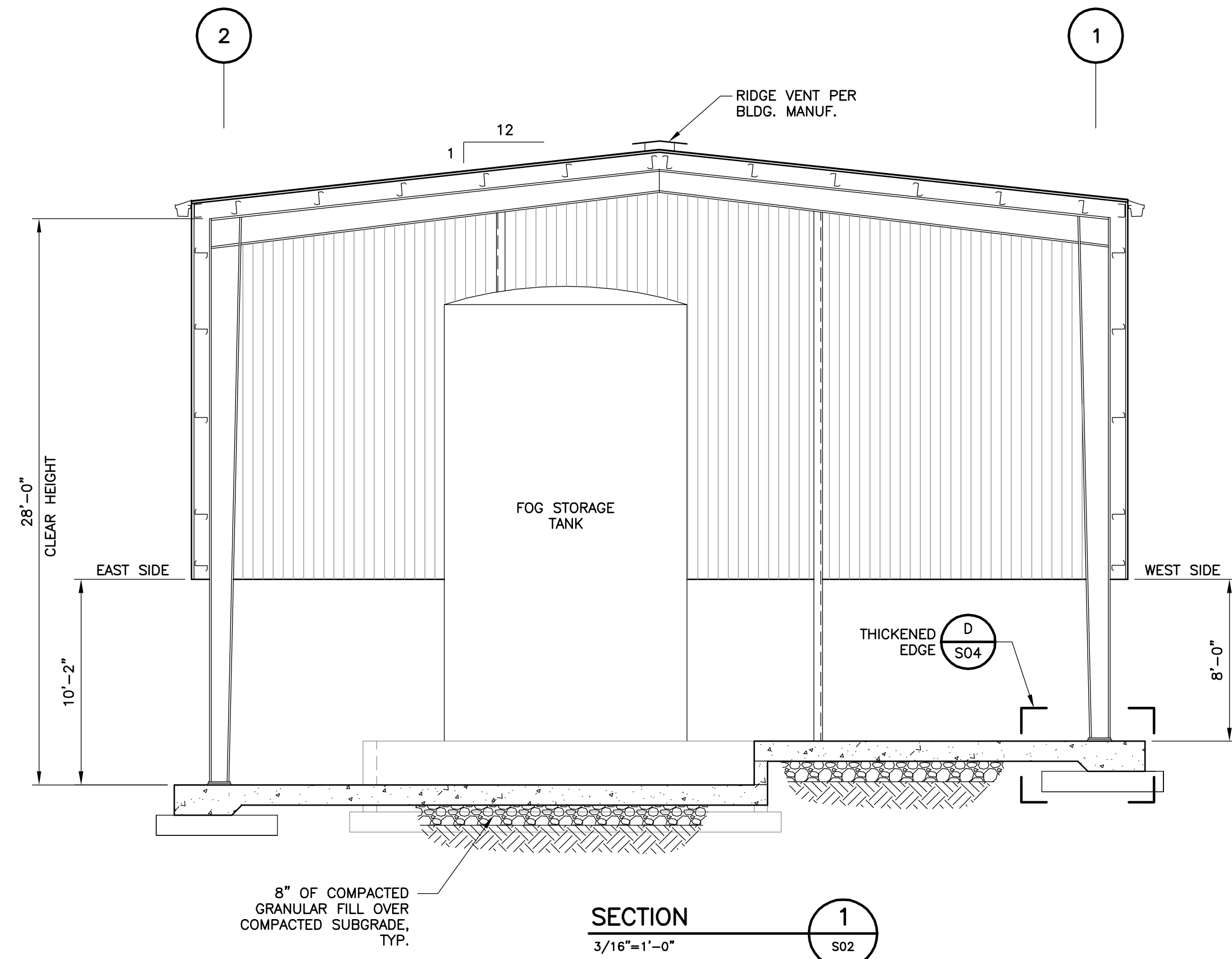
LINE IS 3/4" AT
 POLE SIZE
 LINE IS 1/2" AT
 HALF SIZE

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 STRUCTURAL
 CANOPY PLAN AND SECTIONS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. S02	SHEET NO.: 13 OF 48

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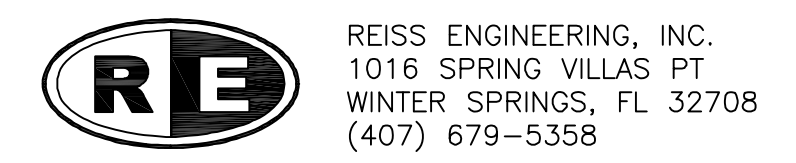
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LINE IS 3/4" AT
POLE SIZE
HALF SIZE

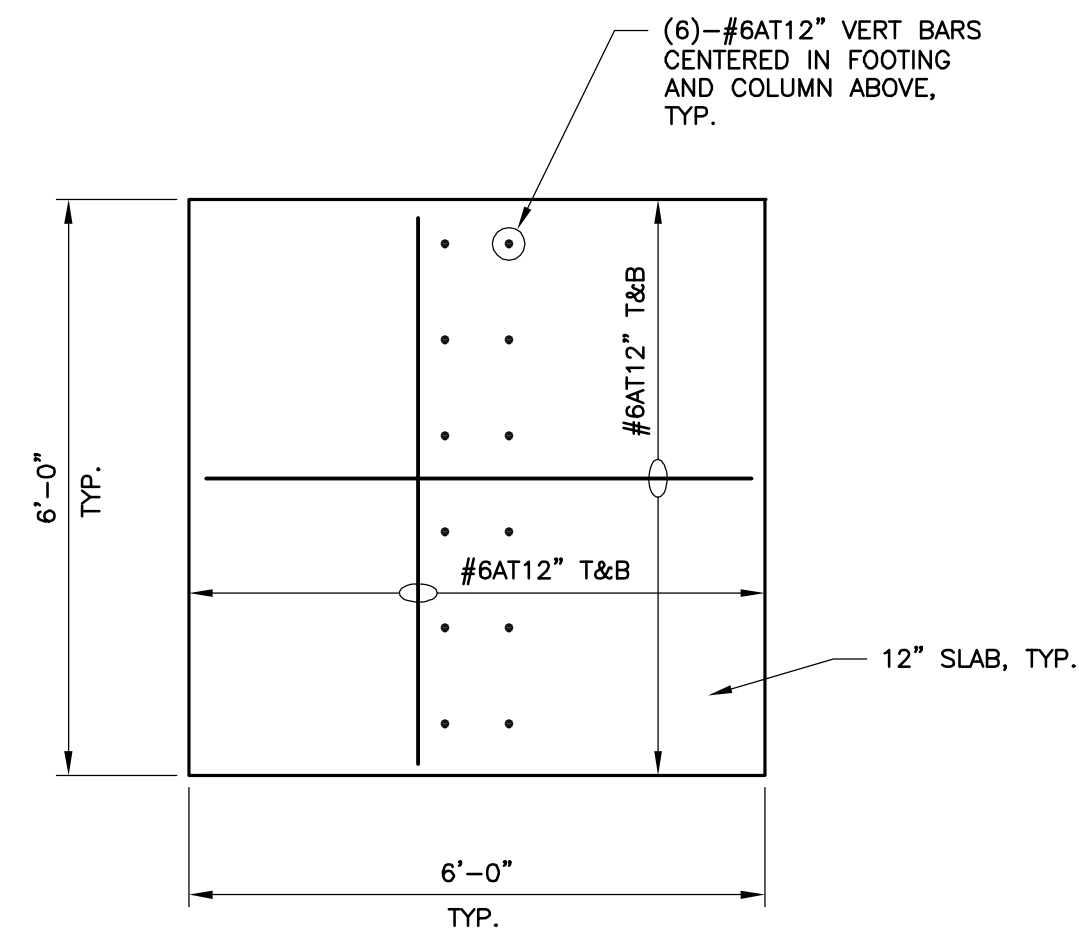
ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
STRUCTURAL
FOG STATION PLAN AND FOUNDATION PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. S03	SHEET NO.: 14 OF 48

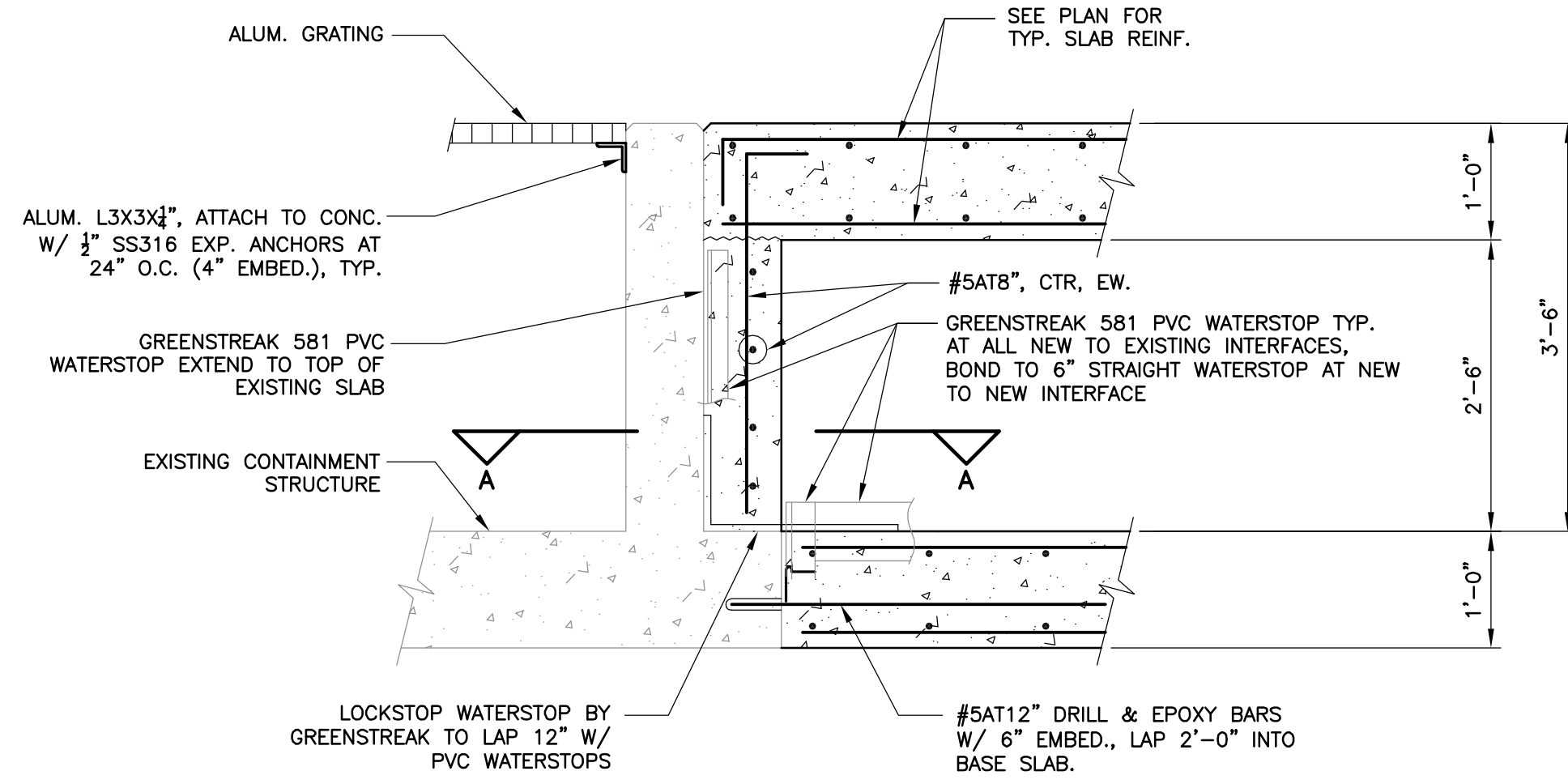


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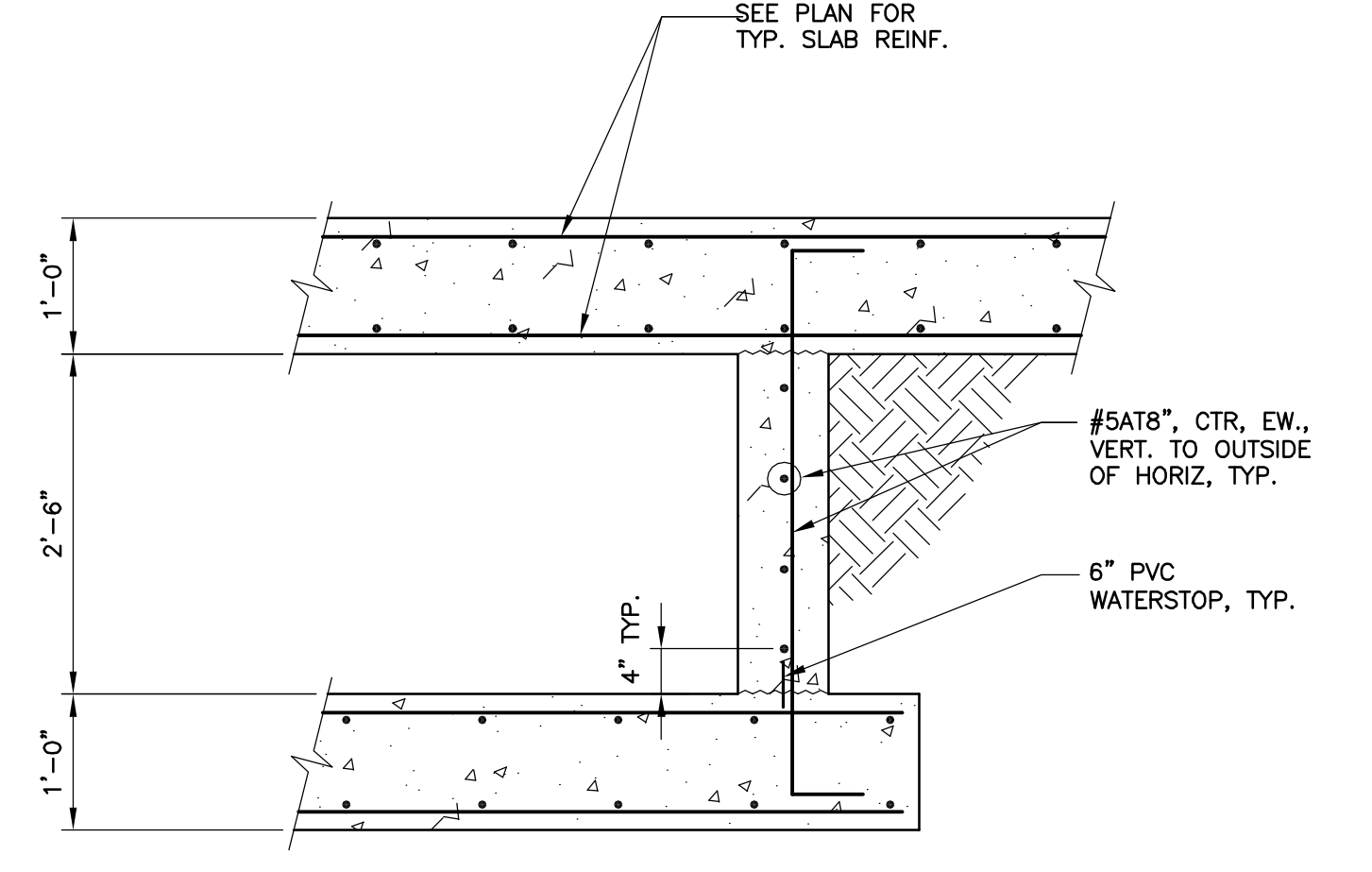
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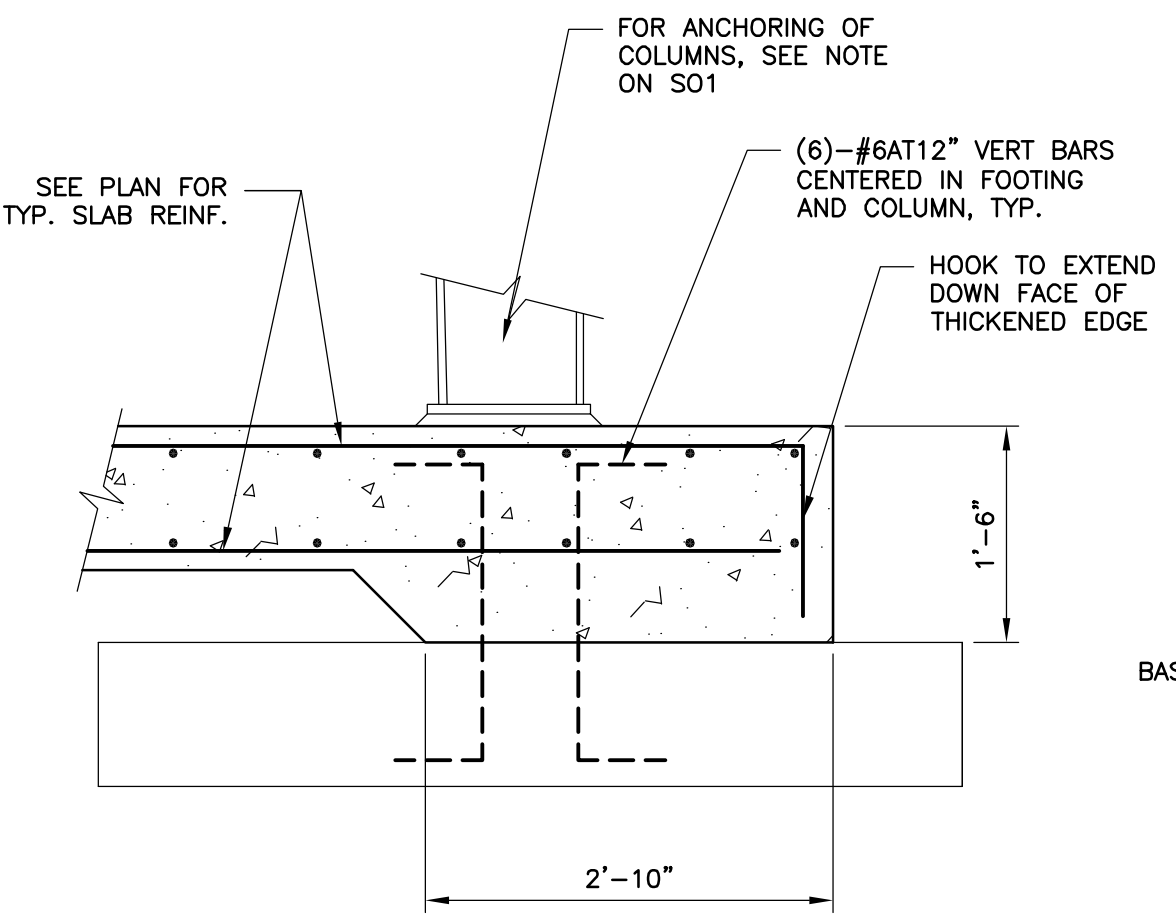
TYPICAL COLUMN FOOTING
DETAIL A
 3/4"=1'-0"
 S02



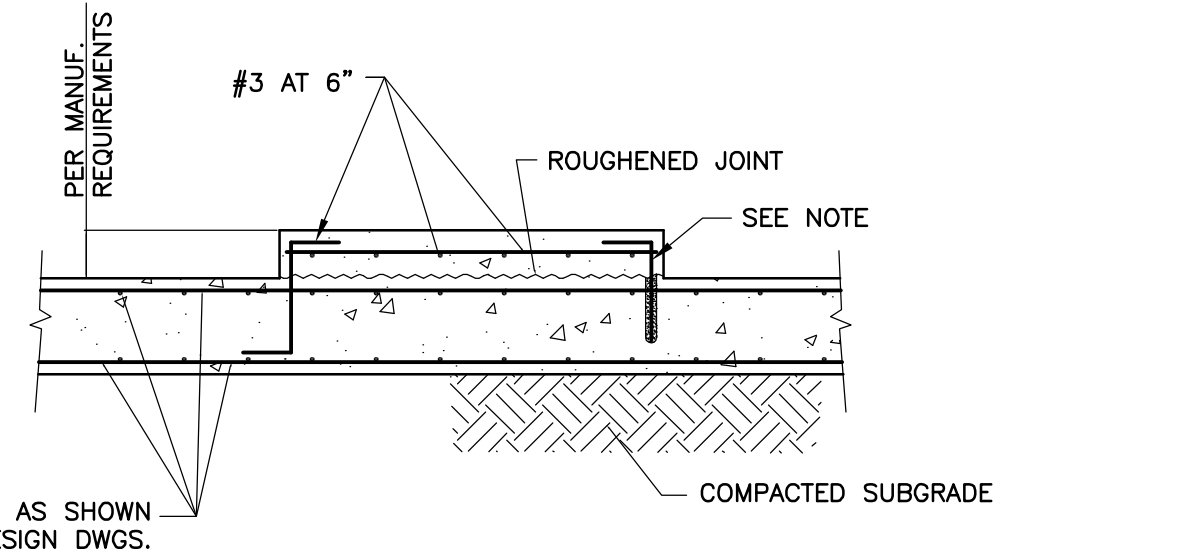
DETAIL B
 1/2"=1'-0"
 S02



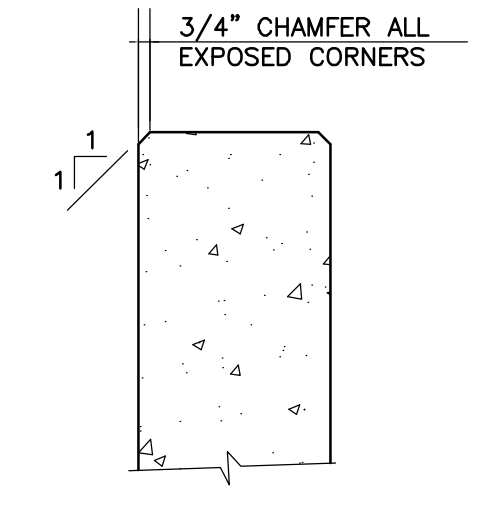
DETAIL C
 1/2"=1'-0"
 S02



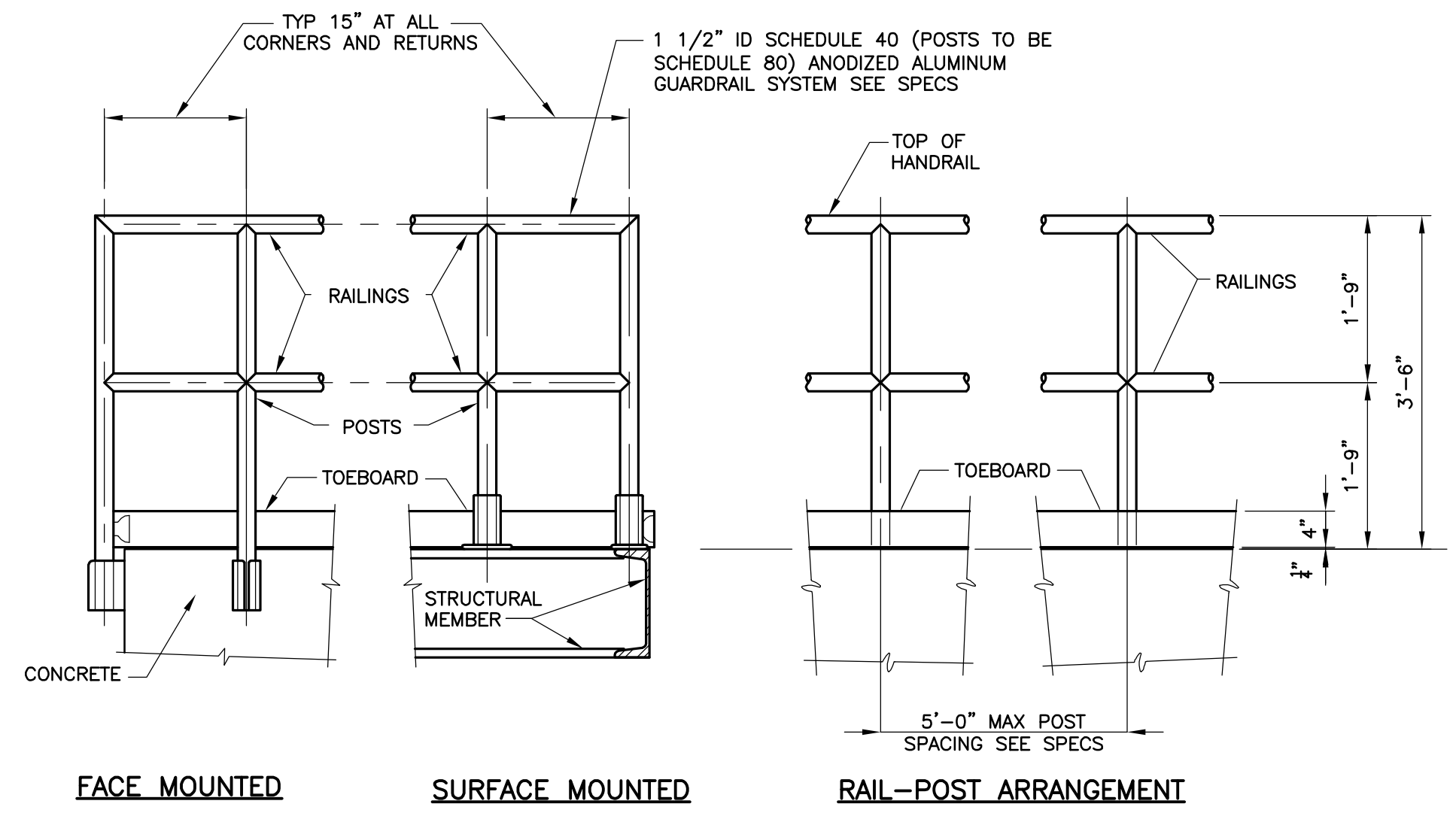
DETAIL D
 1/2"=1'-0"
 S02



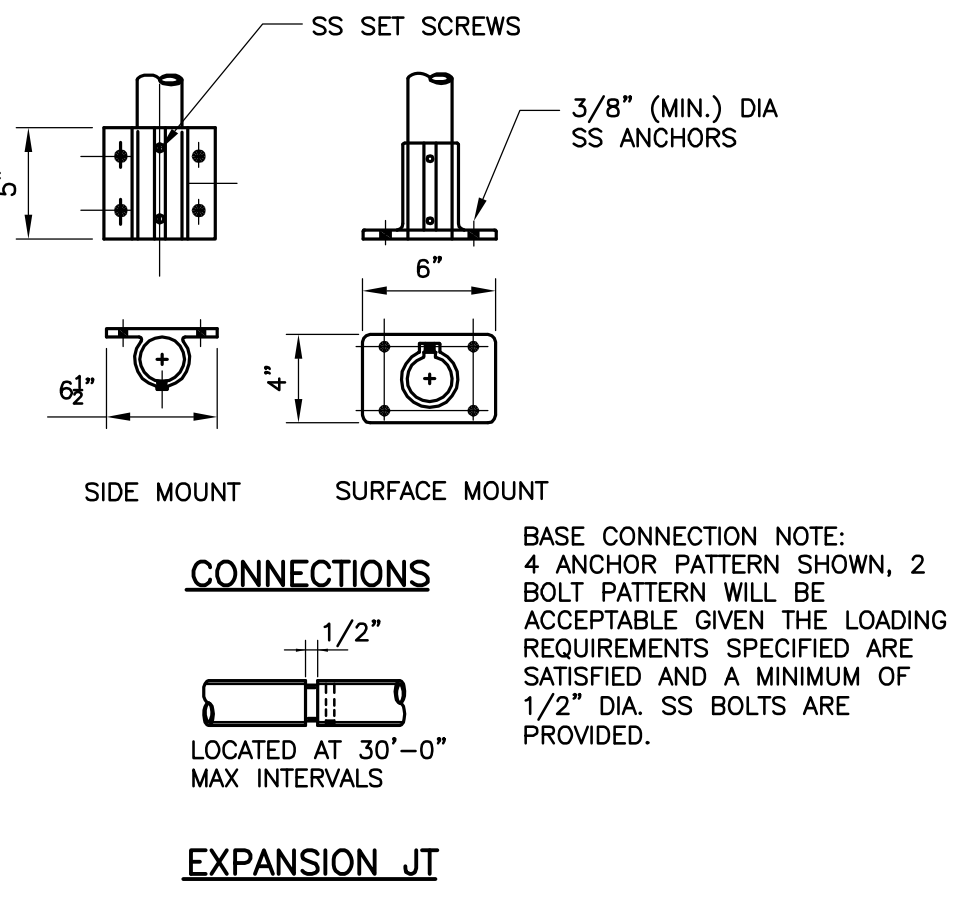
EQUIPMENT PAD
DETAIL E
 NTS



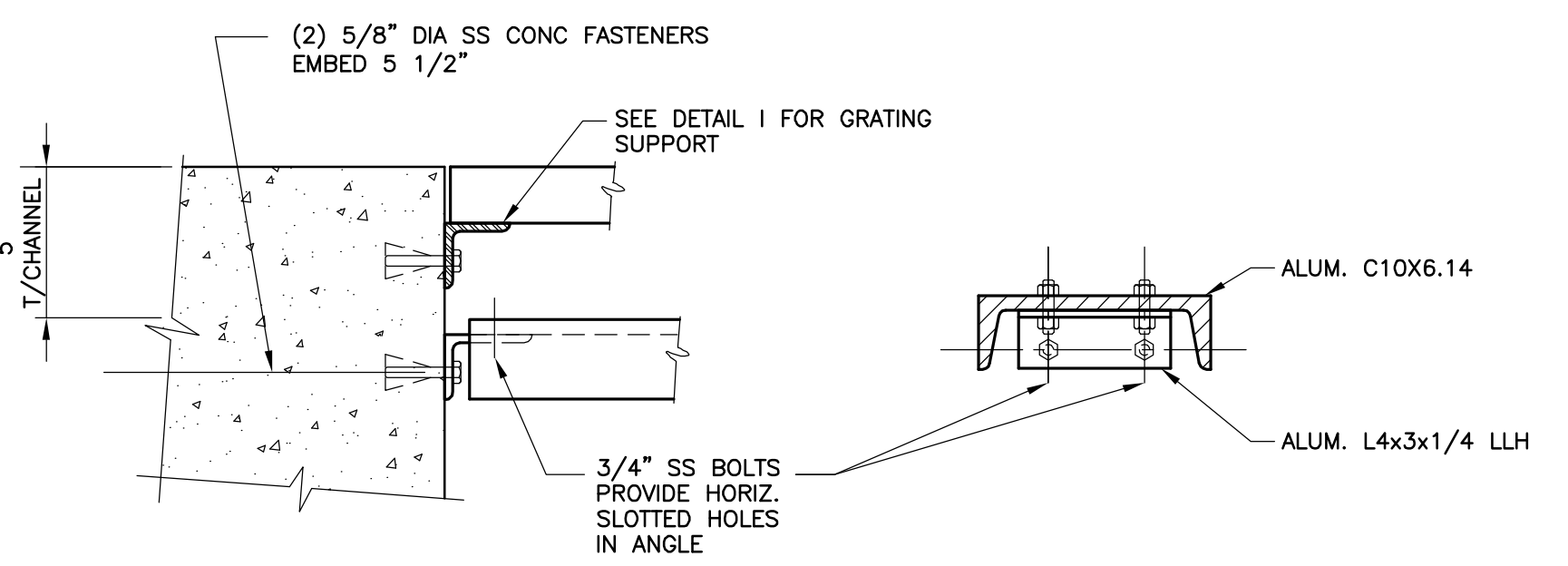
CHAMFER
DETAIL F
 NTS



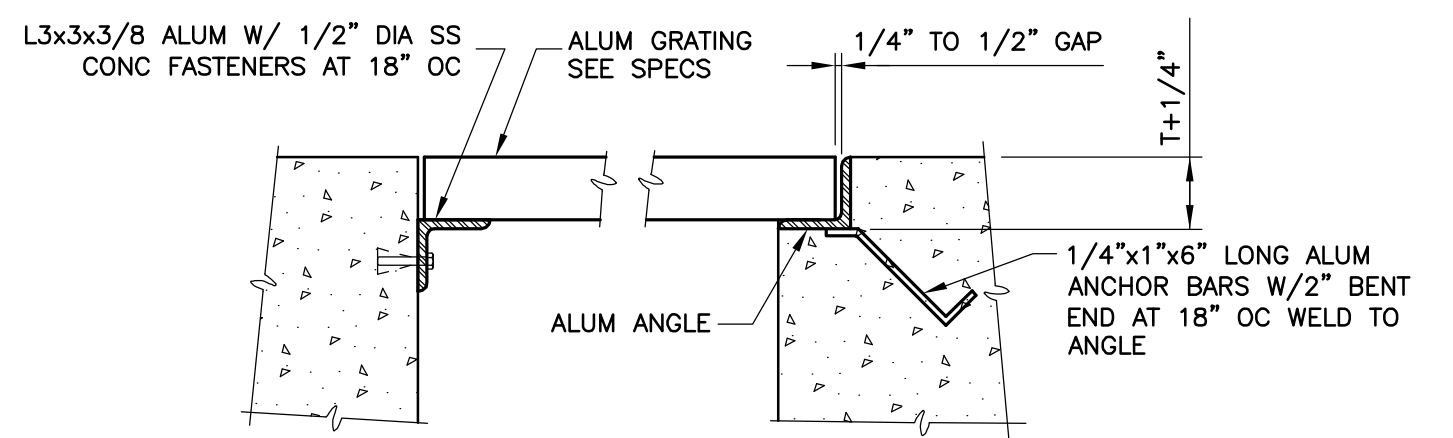
GUARD RAILS
DETAIL G
 NTS



BASE CONNECTION NOTE:
 4 ANCHOR PATTERN SHOWN, 2 BOLT PATTERN WILL BE ACCEPTABLE GIVEN THE LOADING REQUIREMENTS SPECIFIED ARE SATISFIED AND A MINIMUM OF 1/2" DIA. SS BOLTS ARE PROVIDED.

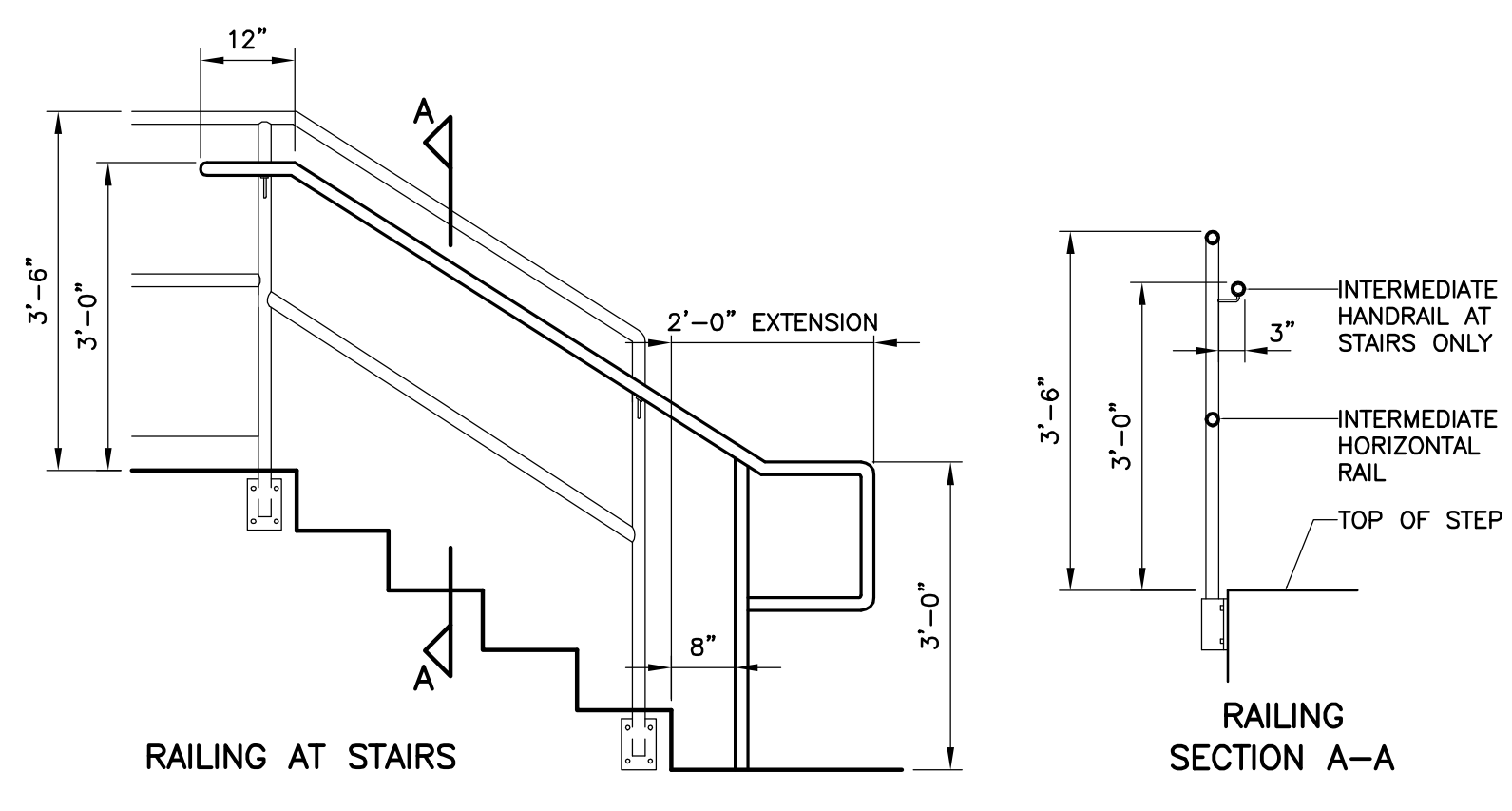


STANCHION PIPE SUPPORT CHANNEL TO CONCRETE
DETAIL H
 NTS
 S02



GRATING AND GRATING SUPPORT
DETAIL I
 NTS

MAXIMUM SPAN	DEPTH	BEARING BAR	
		THICKNESS	SPACING
3'-0"	1 1/4"	3/16"	1 3/16"
4'-0"	1 1/2"	3/16"	1 3/16"
5'-0"	2"	3/16"	1 3/16"
6'-0"	2 1/4"	3/16"	1 3/16"



HANDRAIL ATTACHED TO GUARDRAIL SYSTEM
DETAIL J
 NTS

- NOTES:**
- ALUMINUM EMBEDDED IN CONCRETE MUST BE PAINTED WITH ONE SHOP COAT OF HEAVY BITUMASTIC.
 - ALUMINUM SHAPES IN CONTACT WITH CONCRETE MUST BE SEPARATED BY 1/8" NEOPRENE GASKET OR ANY CASE WHERE TWO DIFFERENT METALS ARE TO BE IN CONTACT. A NEOPRENE GASKET MUST BE PROVIDED.
 - HANDRAILS, GUARDRAILS, POST, BRACKETS AND MOUNTINGS SHALL MEET THE FLORIDA BUILDING CODE (FBC) AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS (OSHA) LOADING REQUIREMENTS.
 - TOP OF ALL GUARDRAILS SHOULD BE 42" HIGH ABOVE THE FINISH FLOOR OR WALKWAY, THE INTERMEDIATE RAILS SHALL BE EQUALLY SPACED BETWEEN THE TOP RAIL AND THE TOEBOARD.



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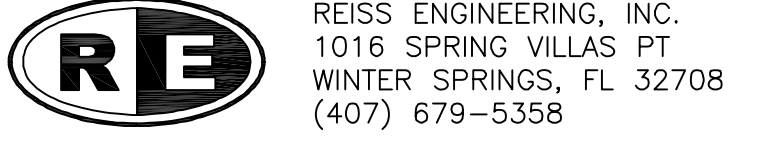
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

STRUCTURAL

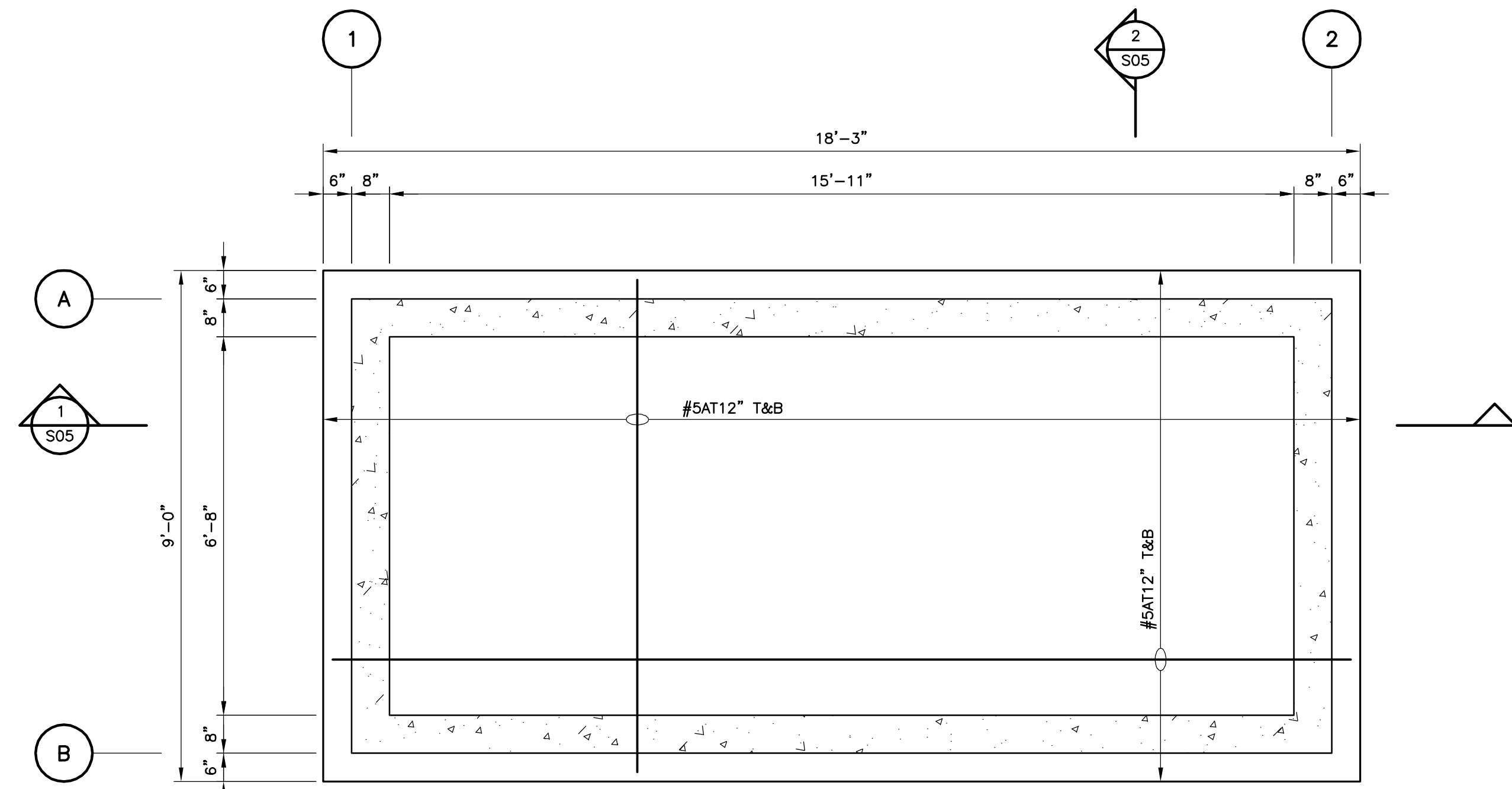
SEPTAGE RECEIVING STATION REHABILITATION

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO.: S04	SHEET NO.: 15 OF 48



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 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
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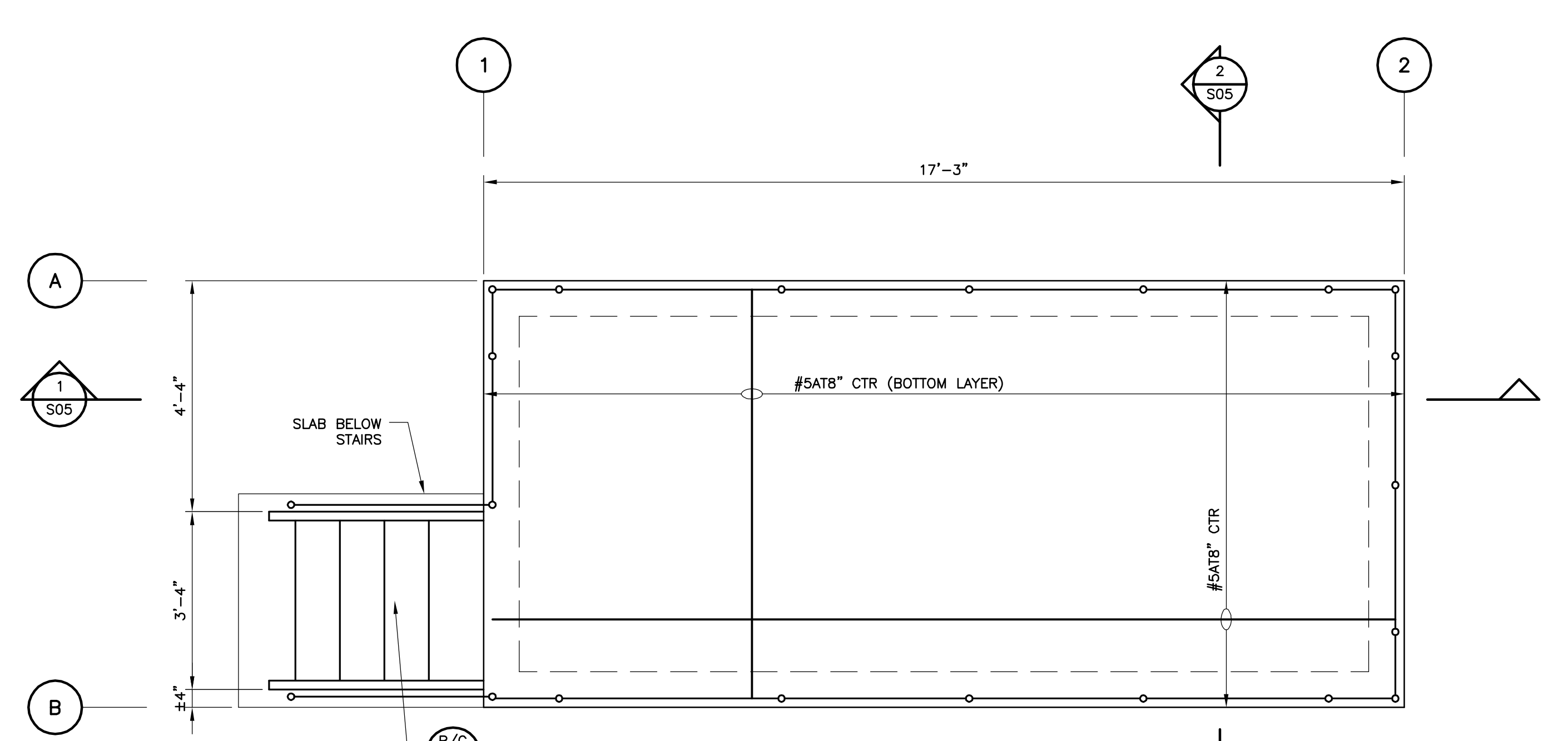
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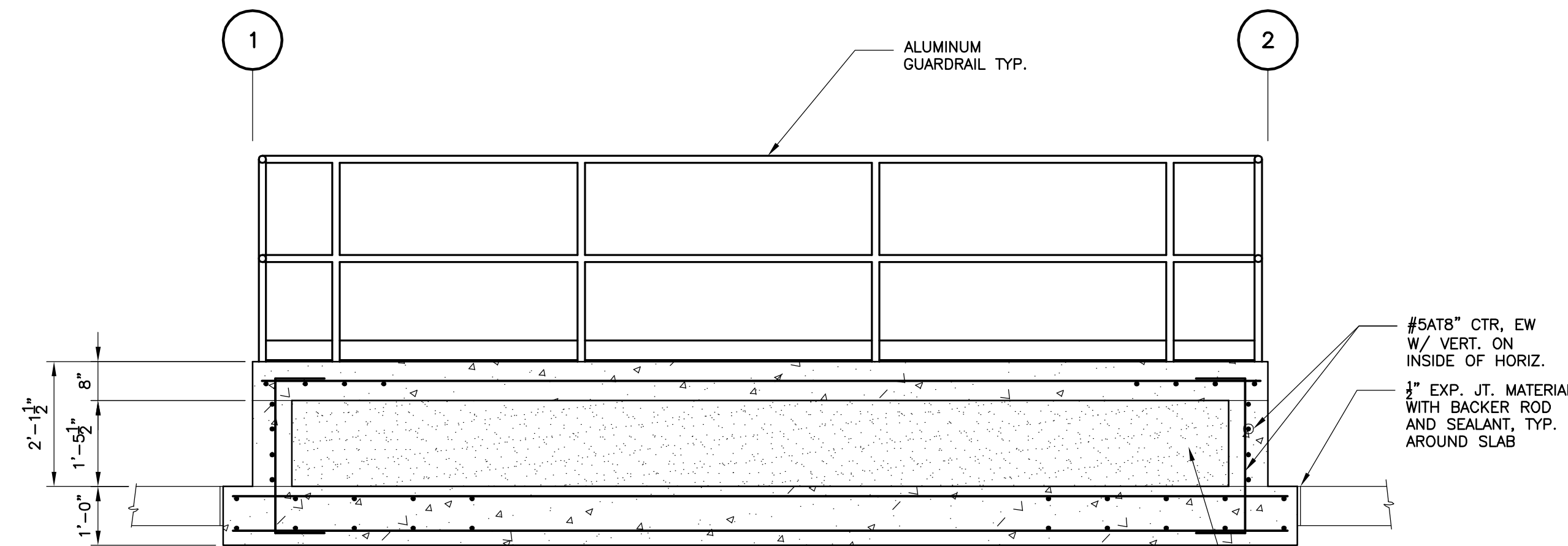
**BASE SLAB
PLAN**
1/2"=1'-0"

NOTES:

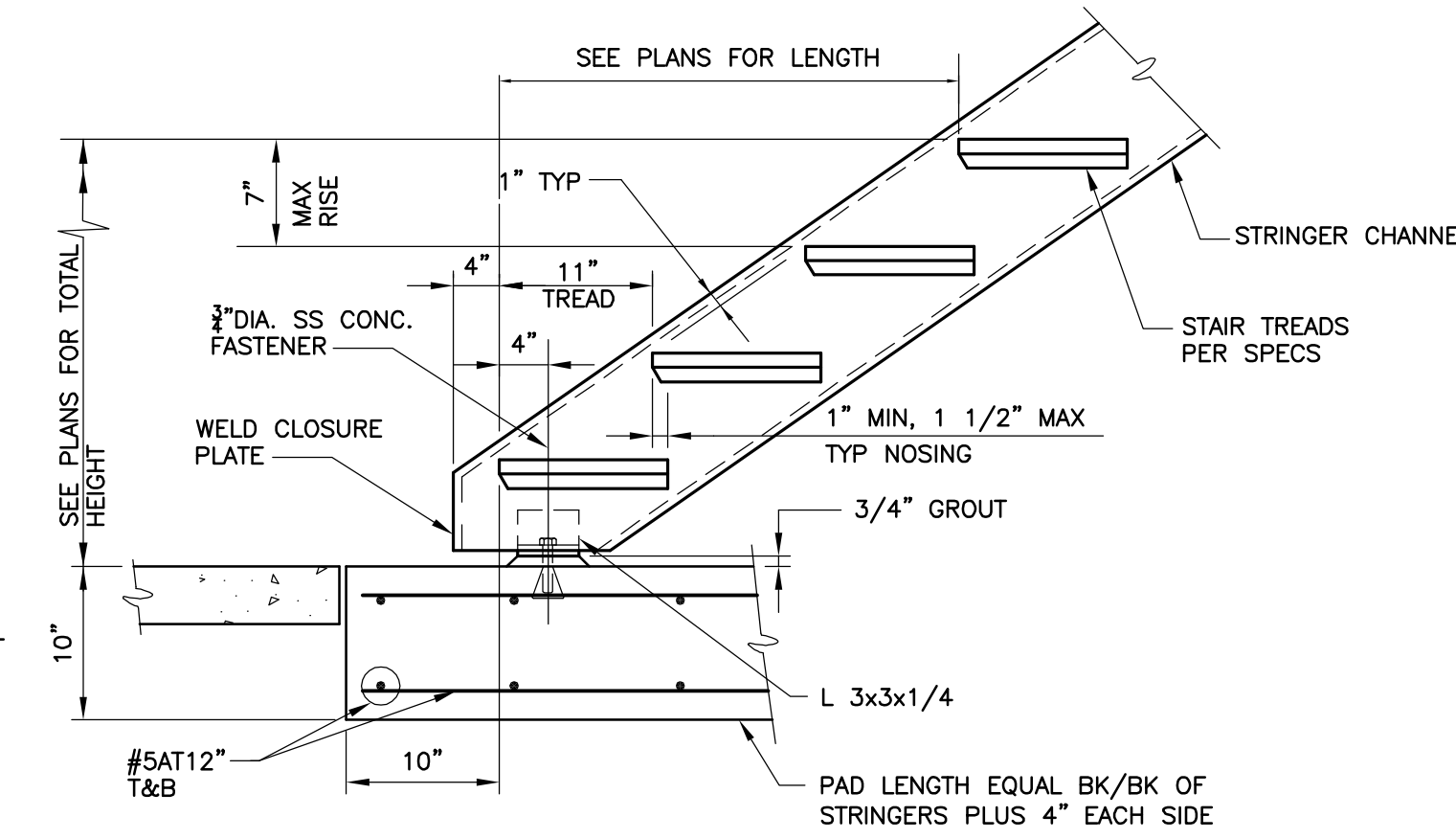
- IT IS CONTRACTOR'S OPTION TO PROVIDE GRANULAR SAND FILL WHERE SHOWN OR FORM EXTERIOR OF ELEVATED PAD AND CAST ENTIRE AREA WITH CONCRETE.



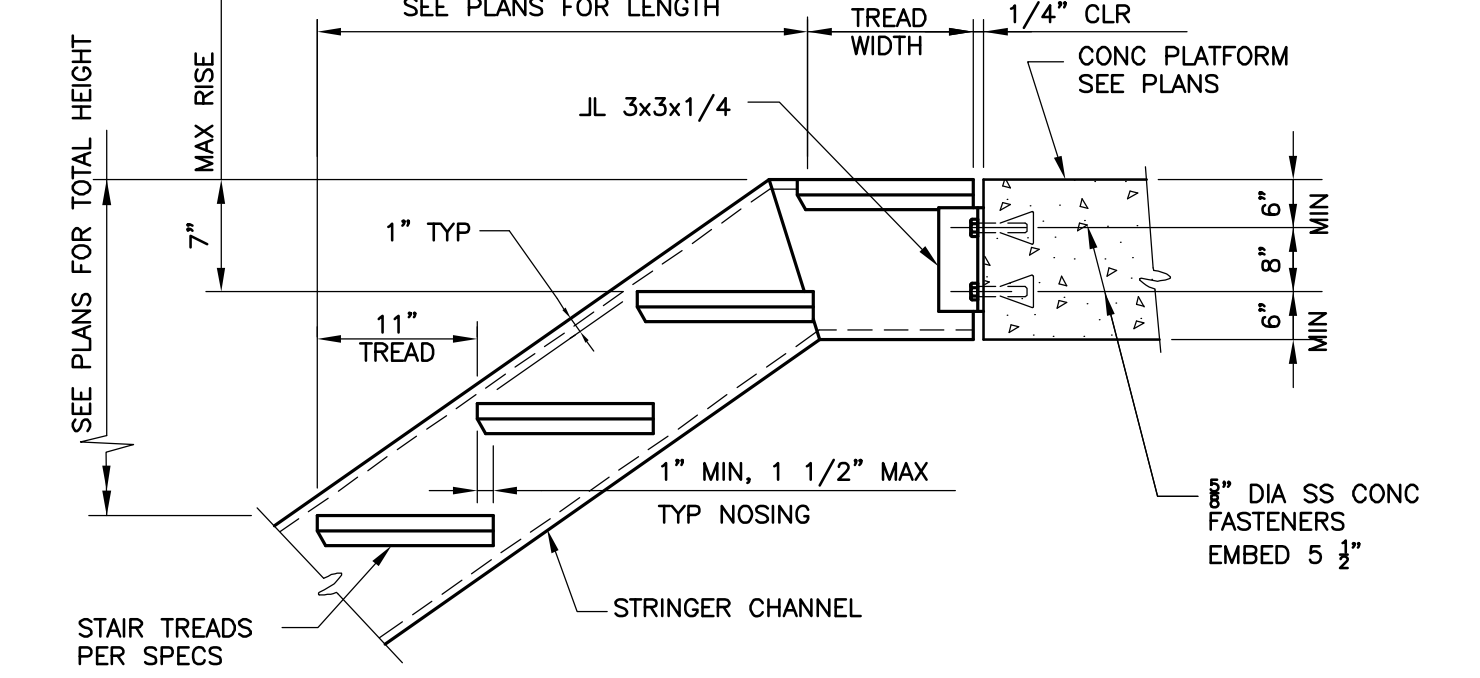
**TOP SLAB
PLAN**
1/2"=1'-0"



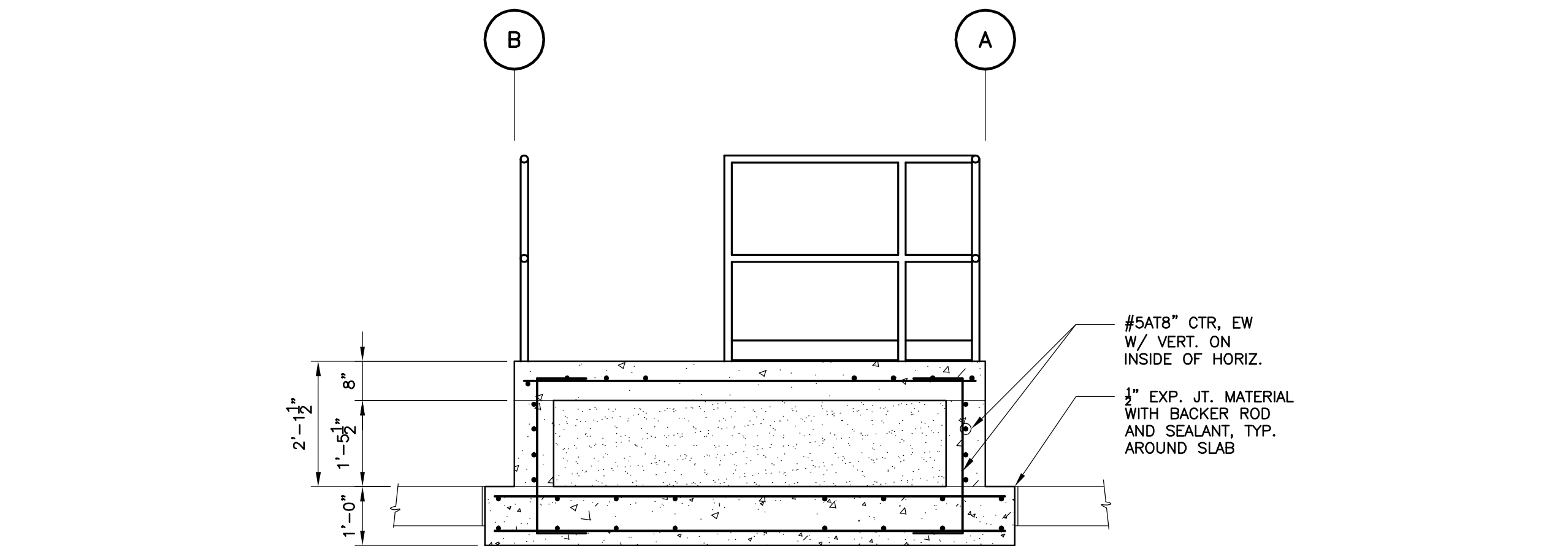
SECTION 1
1/2"=1'-0"



**ALUM STAIR STRINGER TO CONCRETE
DETAIL B**
1/2"=1'-0"

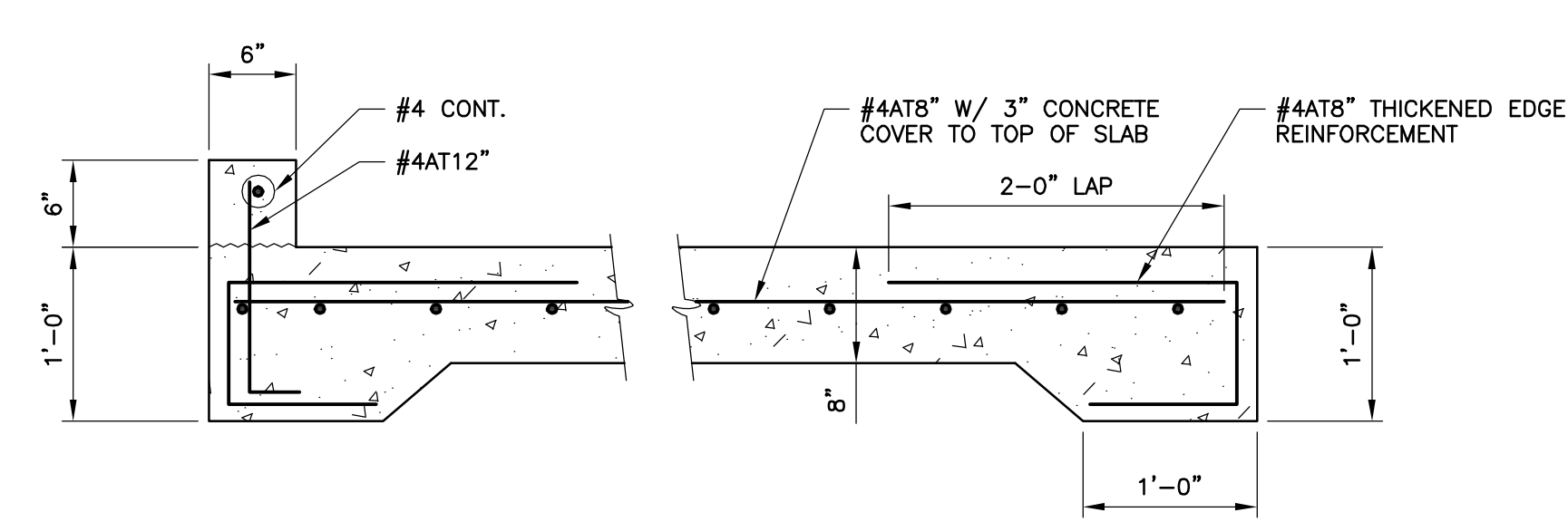


**ALUM STAIR STRINGER TO CONCRETE PLATFORM TOP
DETAIL C**
1/2"=1'-0"



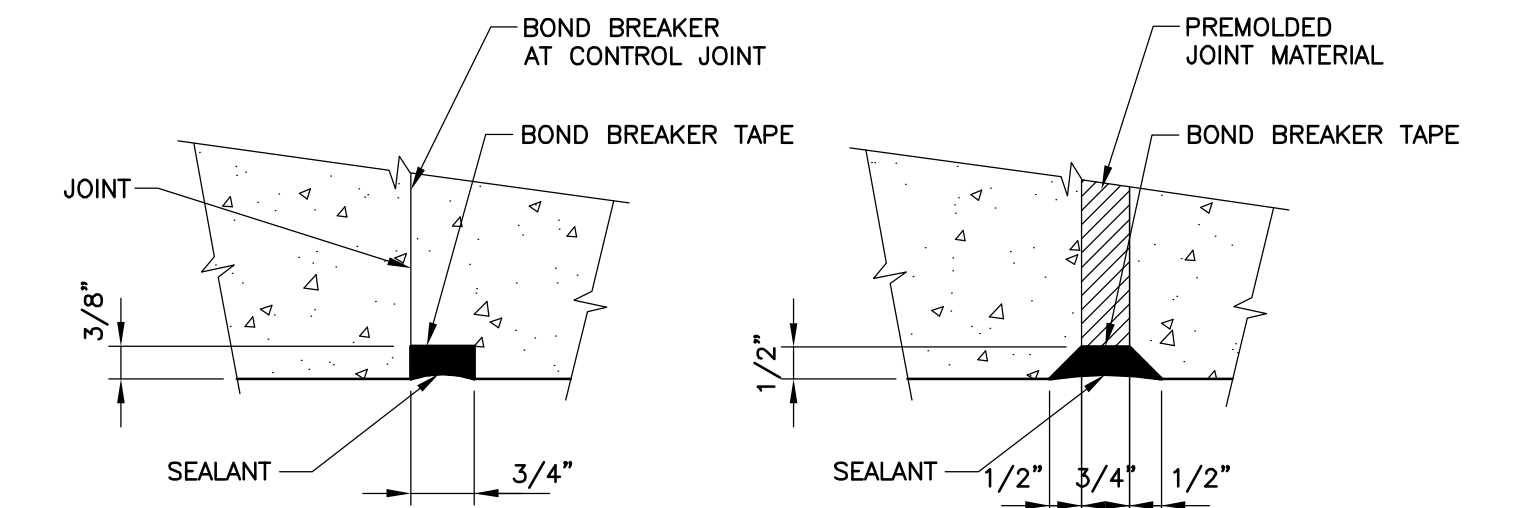
SECTION 2
1/2"=1'-0"

NOTE:
1. GUARDRAIL NOT SHOWN ON STAIRS, PROVIDE AS SHOWN ON DETAIL J/S04.



**CONCRETE SLAB-ON-GRADE
DETAIL D**
1/2"=1'-0"

NOTE:
1. PROVIDE 2" DEEP SAWCUT JOINTS AT 12'-0" O.C. MAXIMUM.



**JOINT SEALANTS
DETAIL E**
NTS



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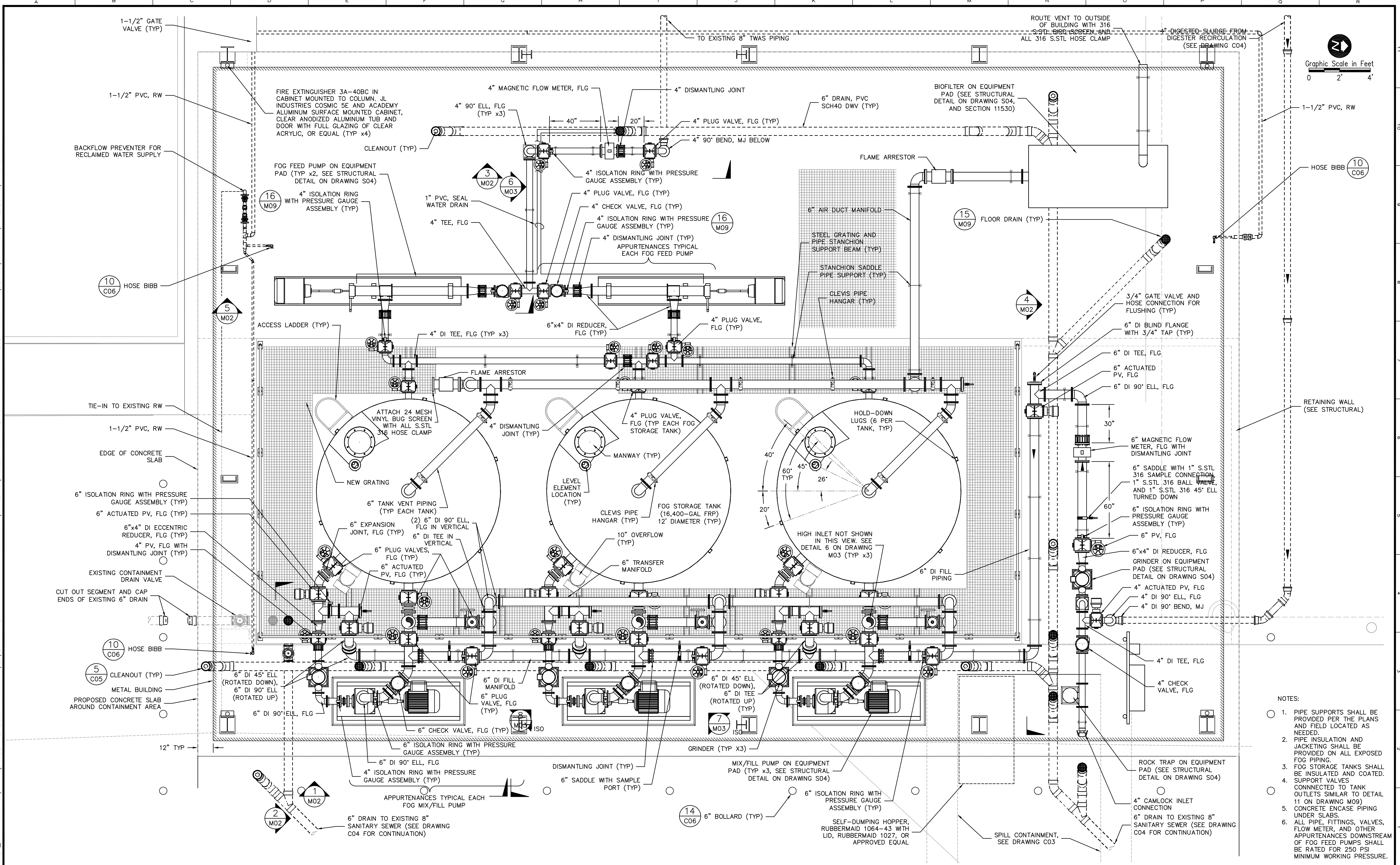
LINE IS 3/4" AT
POLE SIZE
HALF SIZE

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
STRUCTURAL
SEPTAGE RECEIVING STATION ELEVATED PAD PLANS AND SECTIONS

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	S05
SHEET NO.:	16 OF 48

RE REISS ENGINEERING, INC.
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WINTER SPRINGS, FL 32708
(407) 679-5358

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- NOTES:
- PIPE SUPPORTS SHALL BE PROVIDED PER THE PLANS AND FIELD LOCATED AS NEEDED.
 - PIPE INSULATION AND JACKETING SHALL BE PROVIDED ON ALL EXPOSED FOG PIPING.
 - FOG STORAGE TANKS SHALL BE INSULATED AND COATED. SUPPORT VALVES CONNECTED TO TANK OUTLETS SIMILAR TO DETAIL 11 ON DRAWING M09.
 - CONCRETE ENCASE PIPING UNDER SLABS.
 - ALL PIPE, FITTINGS, VALVES, FLOW METER, AND OTHER APPURTENANCES DOWNSTREAM OF FOG FEED PUMPS SHALL BE RATED FOR 250 PSI MINIMUM WORKING PRESSURE.



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 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

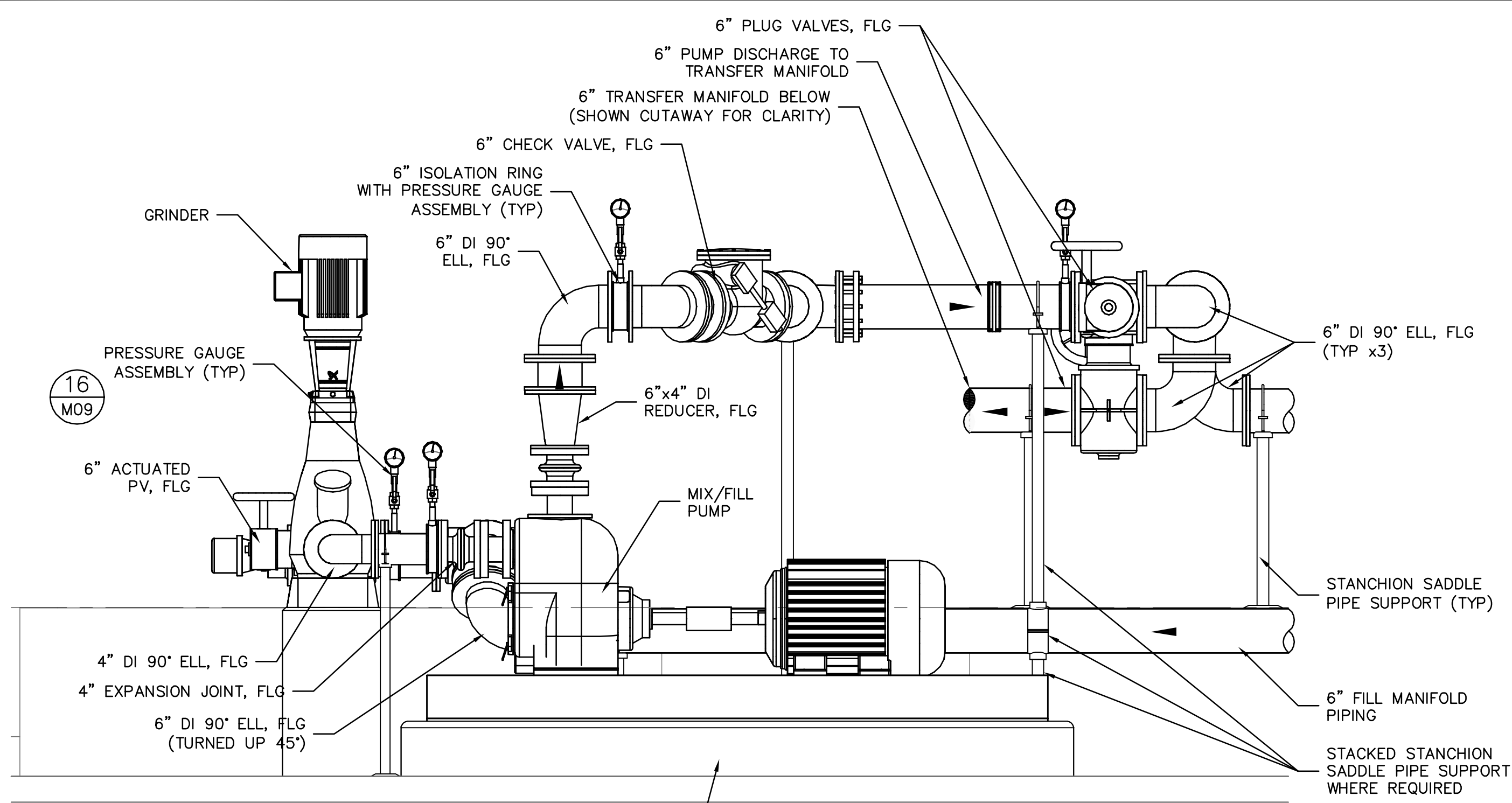
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 Drawn: RLL
 Checked: DNN
 Reviewed: MKW
 Approved: CLK

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 MECHANICAL
 FOG RECEIVING STATION PLAN

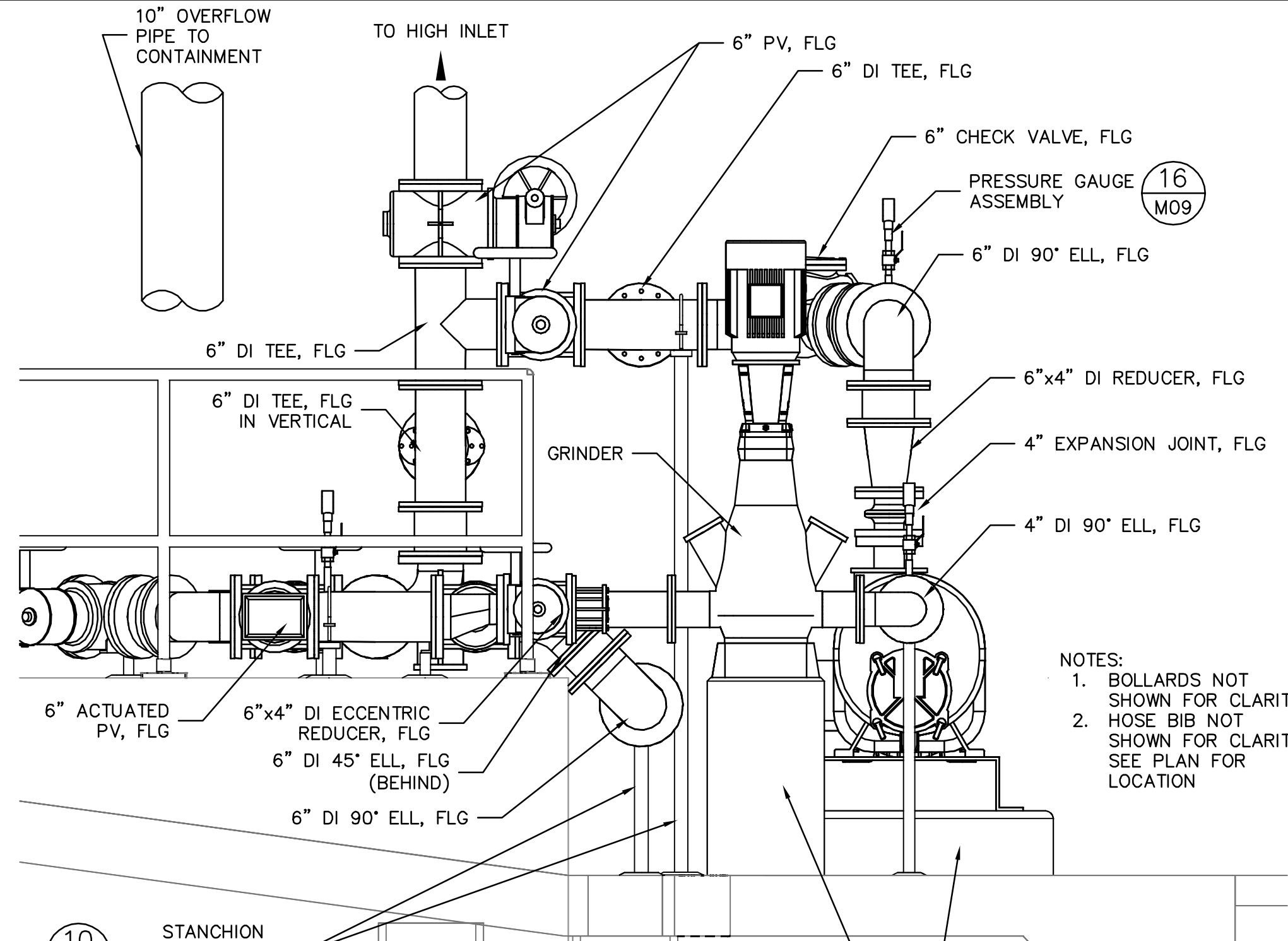
PROJECT NO.:	110025
SCALE:	3/8" = 1'-0"
DRAWING NO.:	M01
REVISION:	0
SHEET NO.:	17 OF 48

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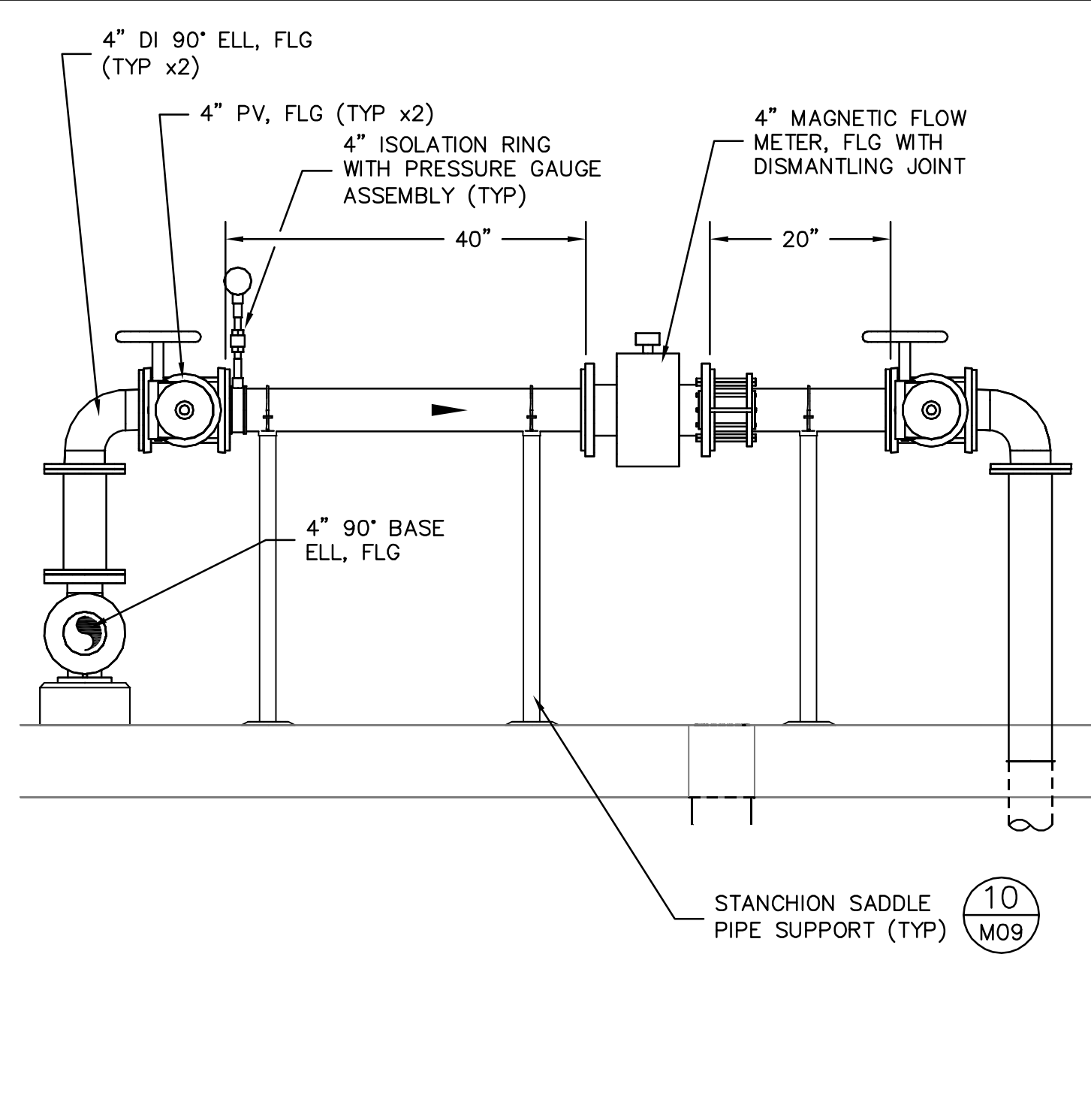
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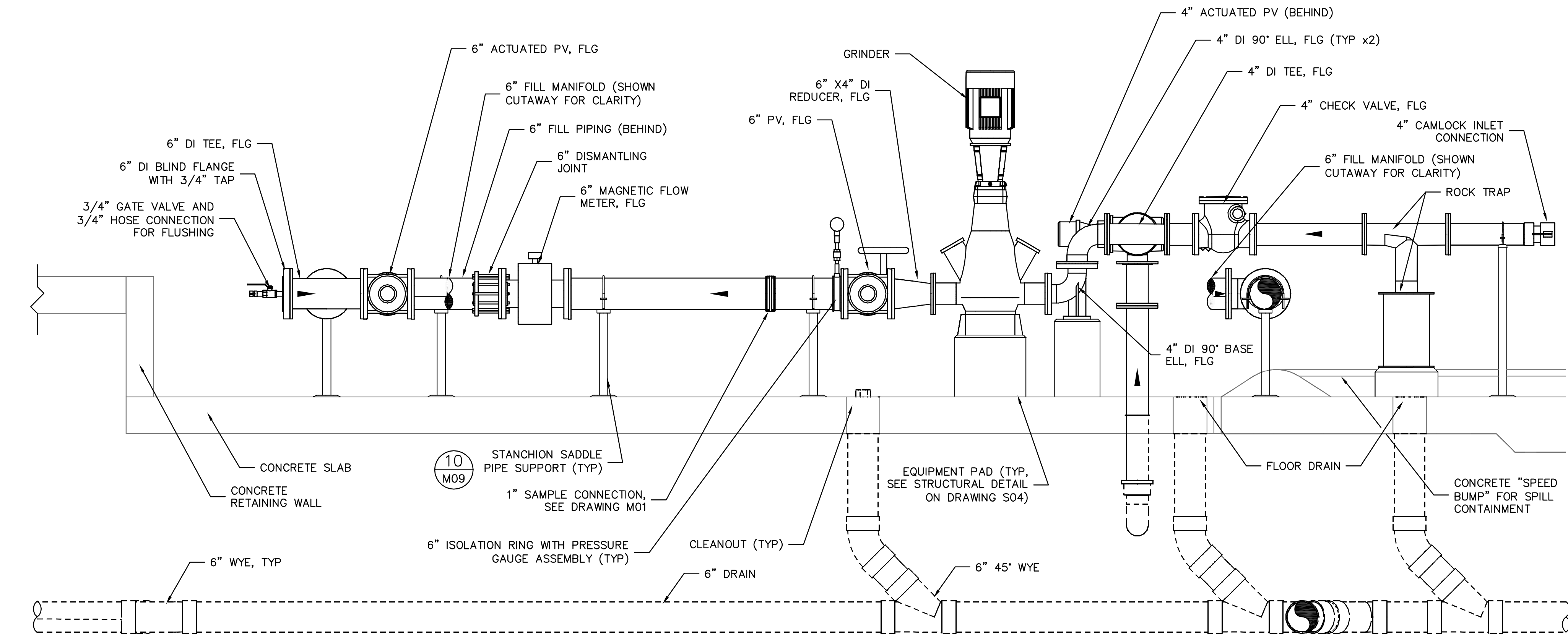
1 M01 MIX-FILL PUMP DETAIL - EAST ELEVATION
SCALE: 3/4" = 1'-0"



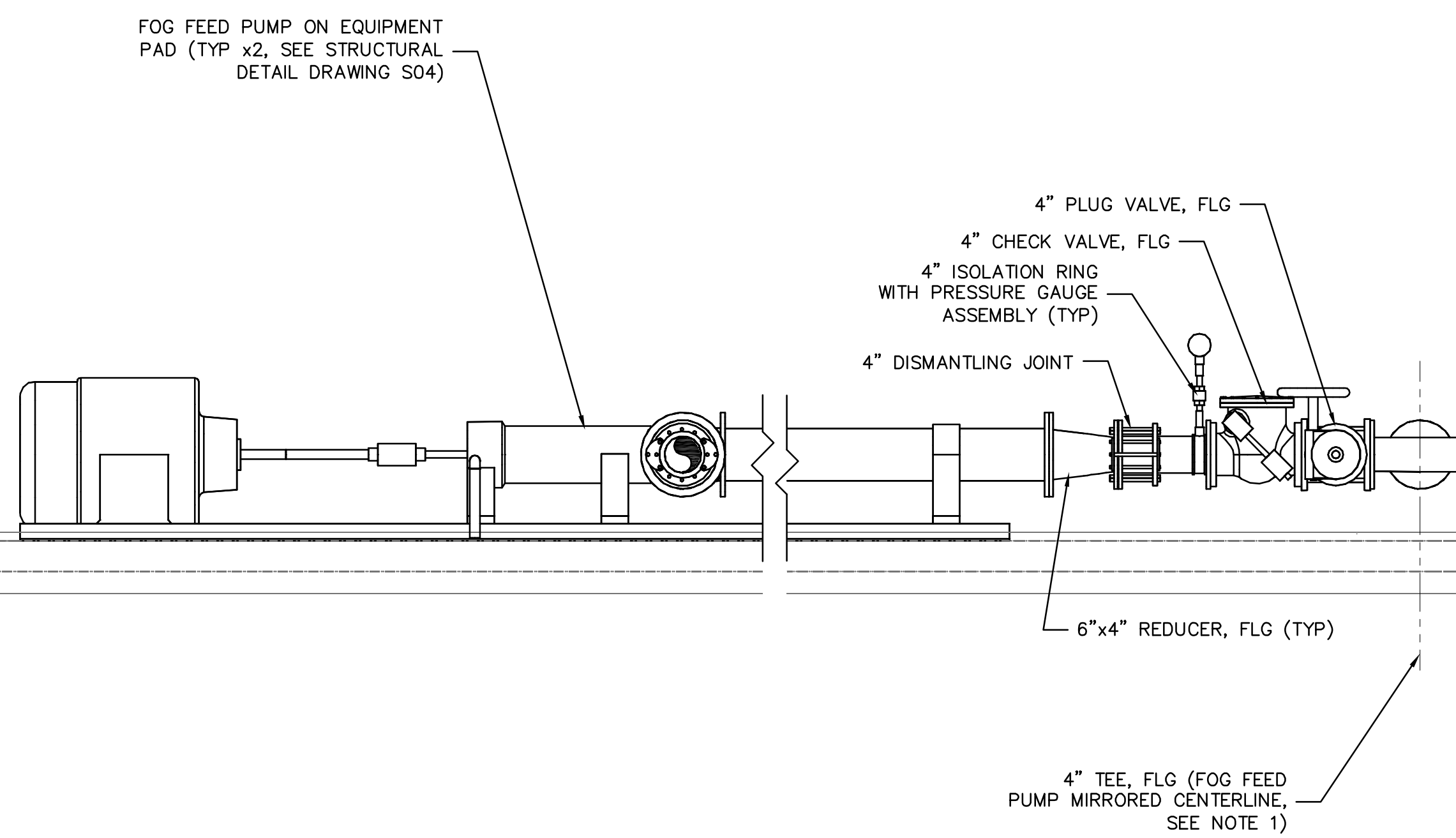
2 M01 MIX-FILL PUMP DETAIL - SOUTH ELEVATION
SCALE: 3/4" = 1'-0"



3 M01 FOG FEED PUMP DISCHARGE FLOW METER ASSEMBLY
SCALE: 3/4" = 1'-0"



4 M01 FILL HEADER METER ASSEMBLY
SCALE: 3/4" = 1'-0"



NOTE:
1. SOUTHERN FOG FEED PUMP SHOWN IN DETAIL. NORTHERN FOG FEED PUMP PIPING AND APPURTENANCES ARE MIRRORED ABOUT THE 4\"/>

5 FOG PUMP PIPING DETAIL
SCALE: 3/4" = 1'-0"



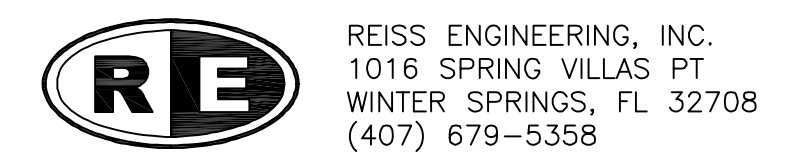
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1016 Spring Villas Pt.
Winter Springs, FL 32708

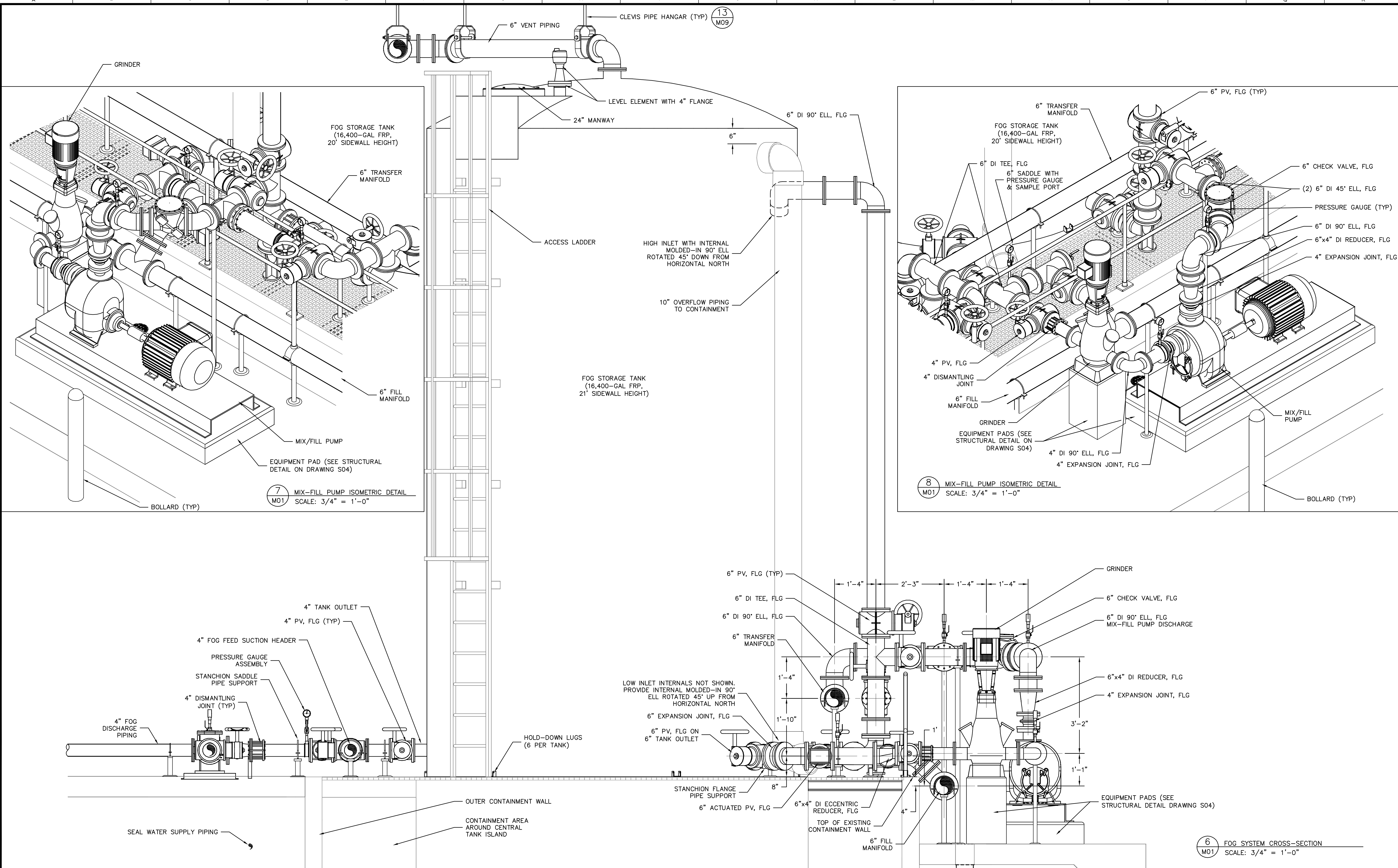
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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
MECHANICAL
FOG RECEIVING STATION DETAILS

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	M02
SHEET NO.:	18 OF 48



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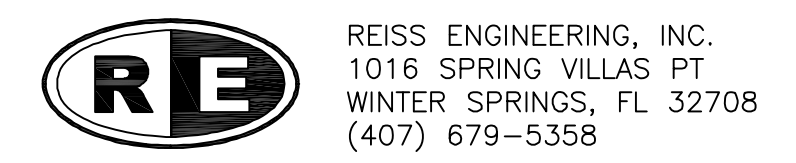
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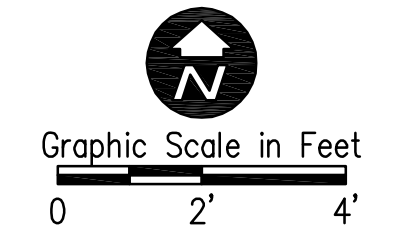
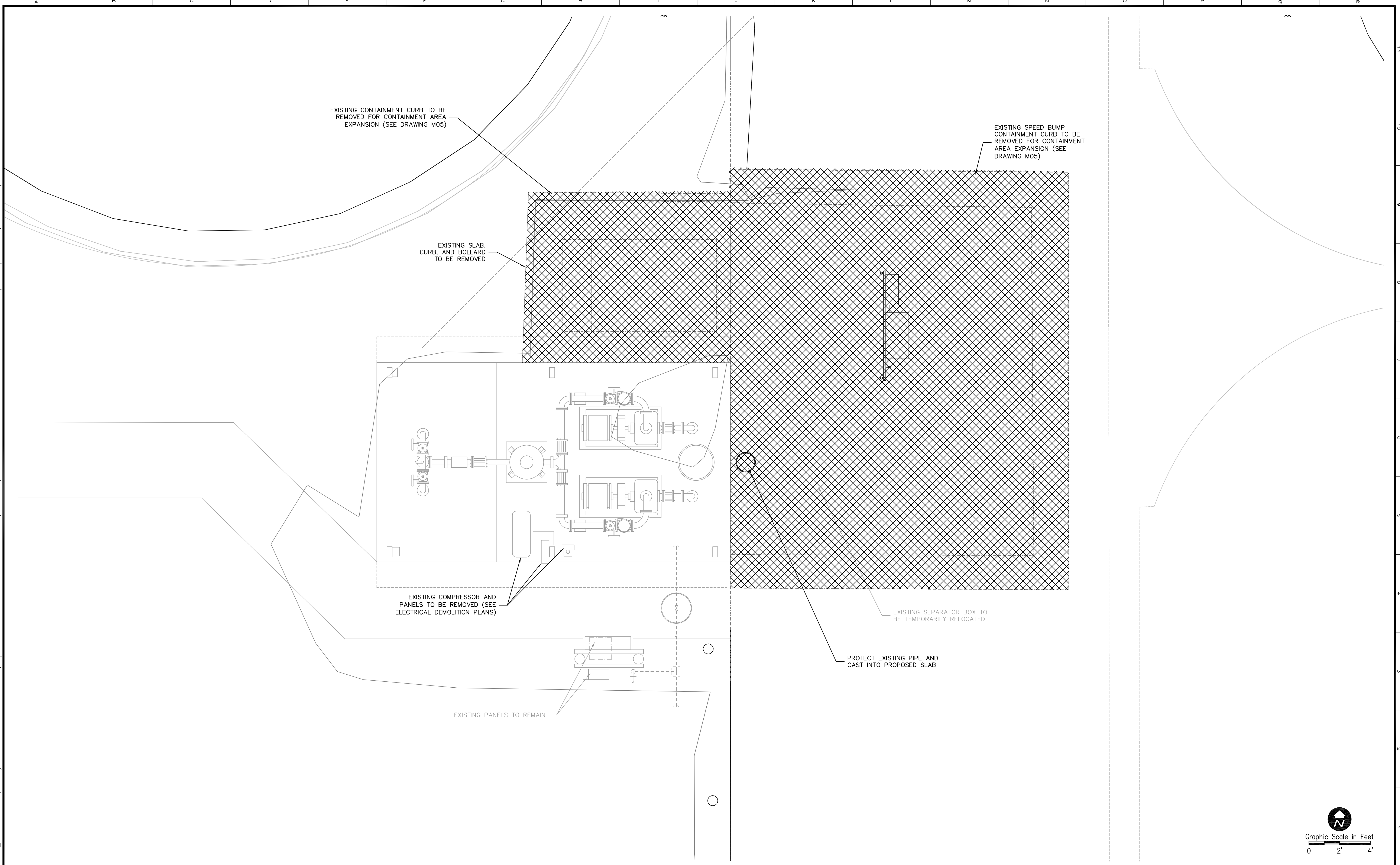
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 MECHANICAL
 FOG RECEIVING STATION DETAILS

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	M03
SHEET NO.:	19 OF 48



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

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Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

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Drawn_RLL
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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

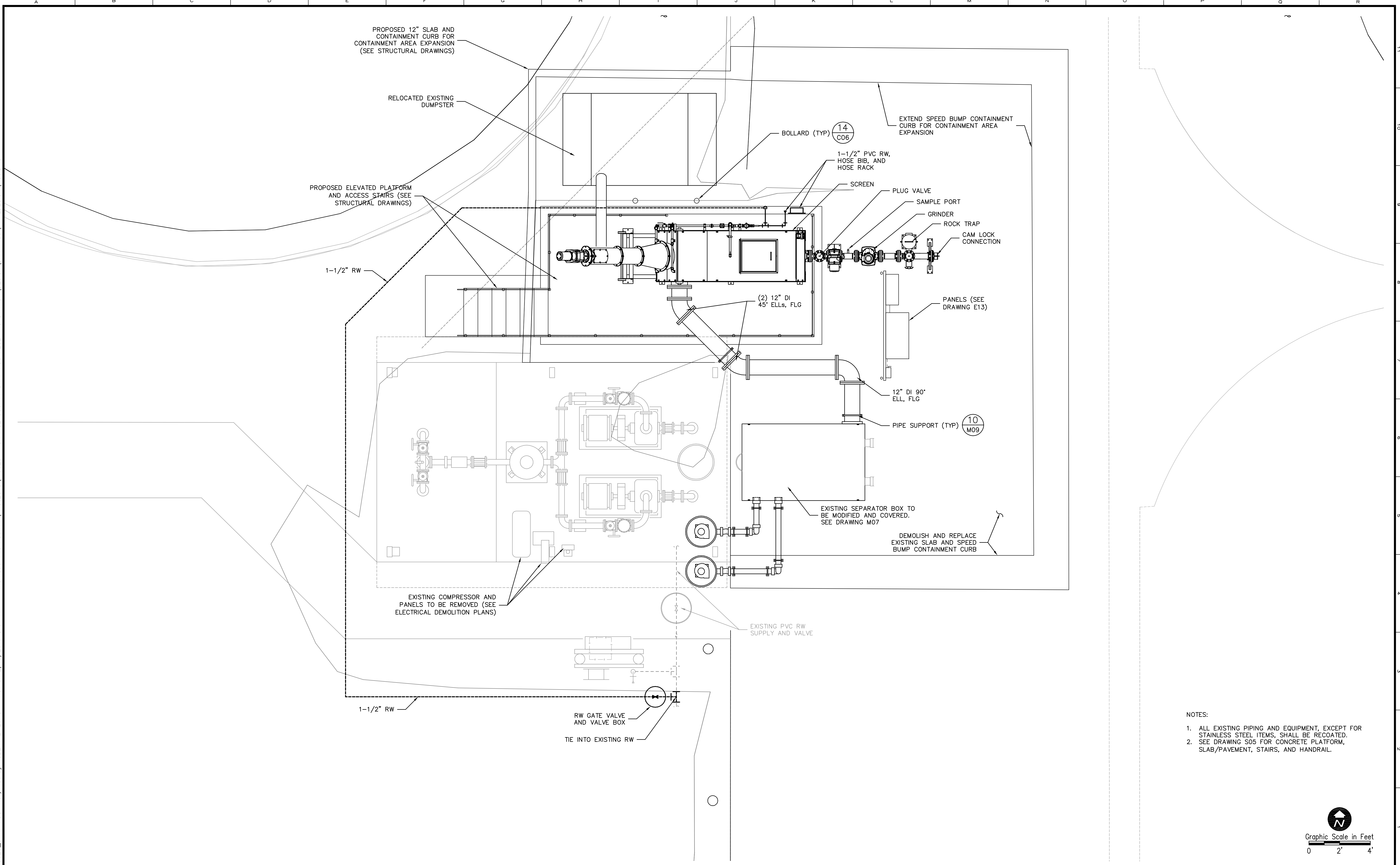
MECHANICAL

EXISTING SEPTAGE RECEIVING STATION AND DEMOLITION

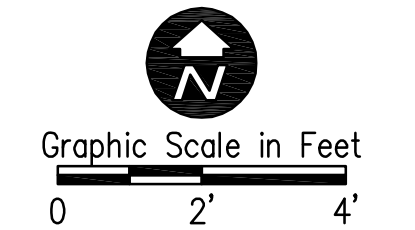
PROJECT NO.:	110025
SCALE:	3/8"=1'-0"
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DRAWING NO.:	M04
SHEET NO.:	20 OF 48

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- NOTES:
1. ALL EXISTING PIPING AND EQUIPMENT, EXCEPT FOR STAINLESS STEEL ITEMS, SHALL BE RECOATED.
 2. SEE DRAWING S05 FOR CONCRETE PLATFORM, SLAB/PAVEMENT, STAIRS, AND HANDRAIL.



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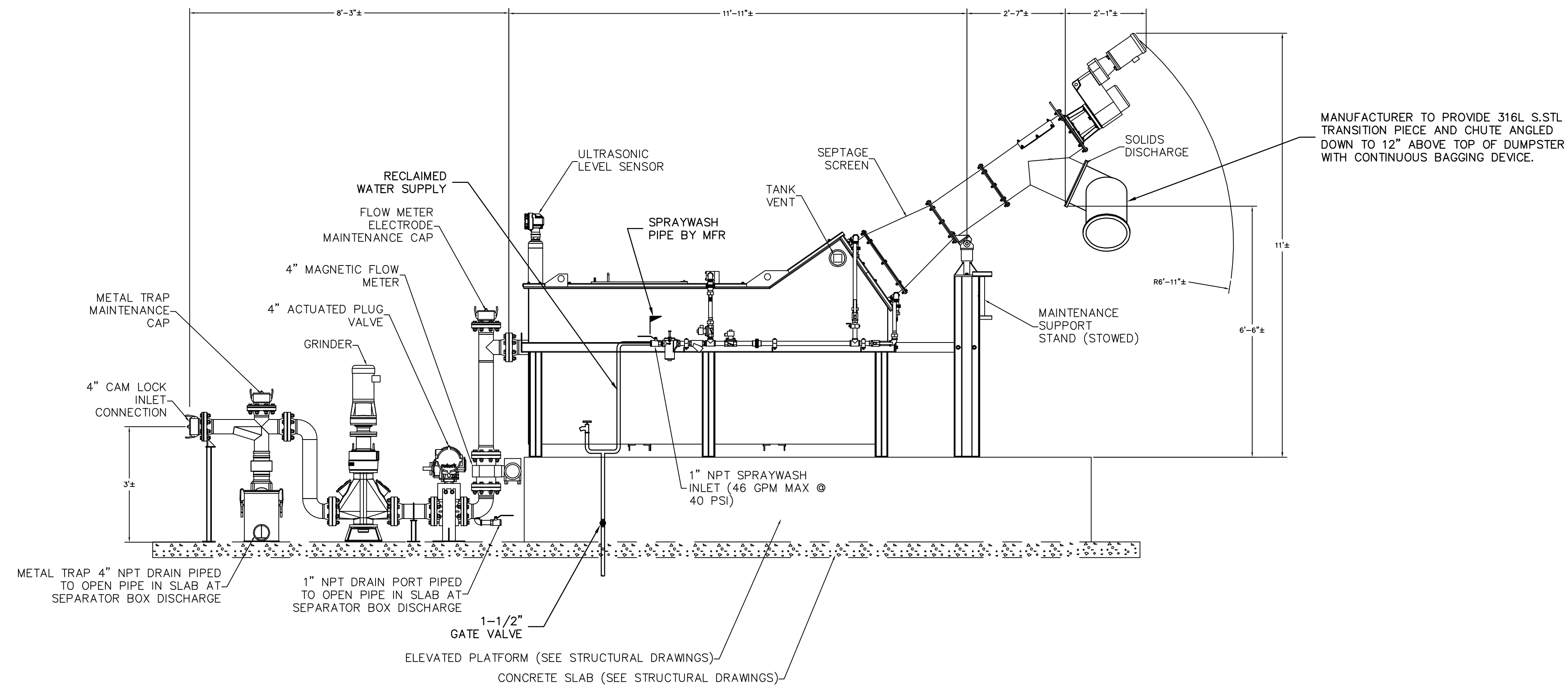
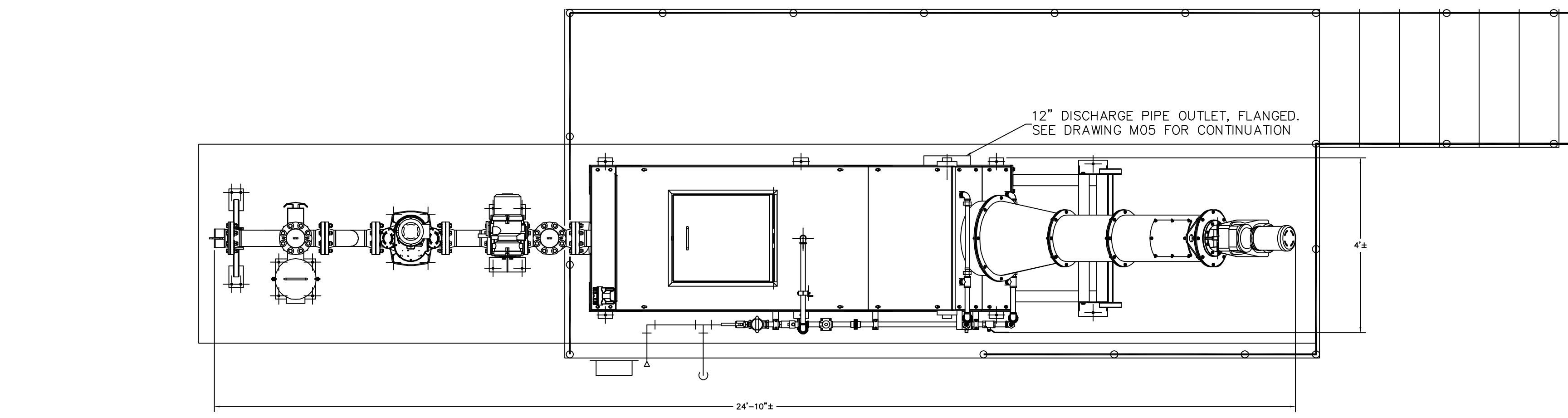
Designed CLK
 Drawn RLL
 Checked DNN
 Reviewed MKW
 Approved CLK

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 MECHANICAL
 SEPTAGE RECEIVING STATION PLAN

PROJECT NO.: 110025	
SCALE: 3/8"=1'-0"	REVISION: 0
DRAWING NO. M05	SHEET NO.: 21 OF 48

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- NOTES:
1. SEE DRAWING S05 FOR CONCRETE PLATFORM AND SLAB/PAVEMENT.
 2. SEE SECTION 11332 FOR SEPTAGE RECEIVING EQUIPMENT.
 3. HANDRAIL NOT SHOWN IN THIS VIEW. SECURE RW HOSE BIBB AND HOSE RACK TO HANDRAIL.
 4. ABOVE GRADE RW PIPE SHALL BE 1-1/2" AND 1" NPT BRASS W/THREADED JOINTS. STRAP PIPE TO CONCRETE PLATFORM USING OFFSET PIPE SUPPORTS.



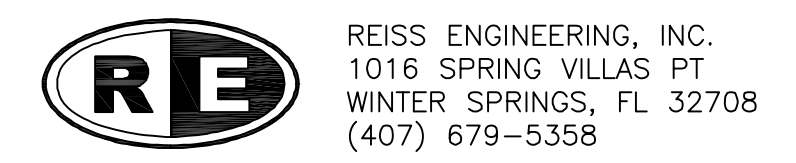
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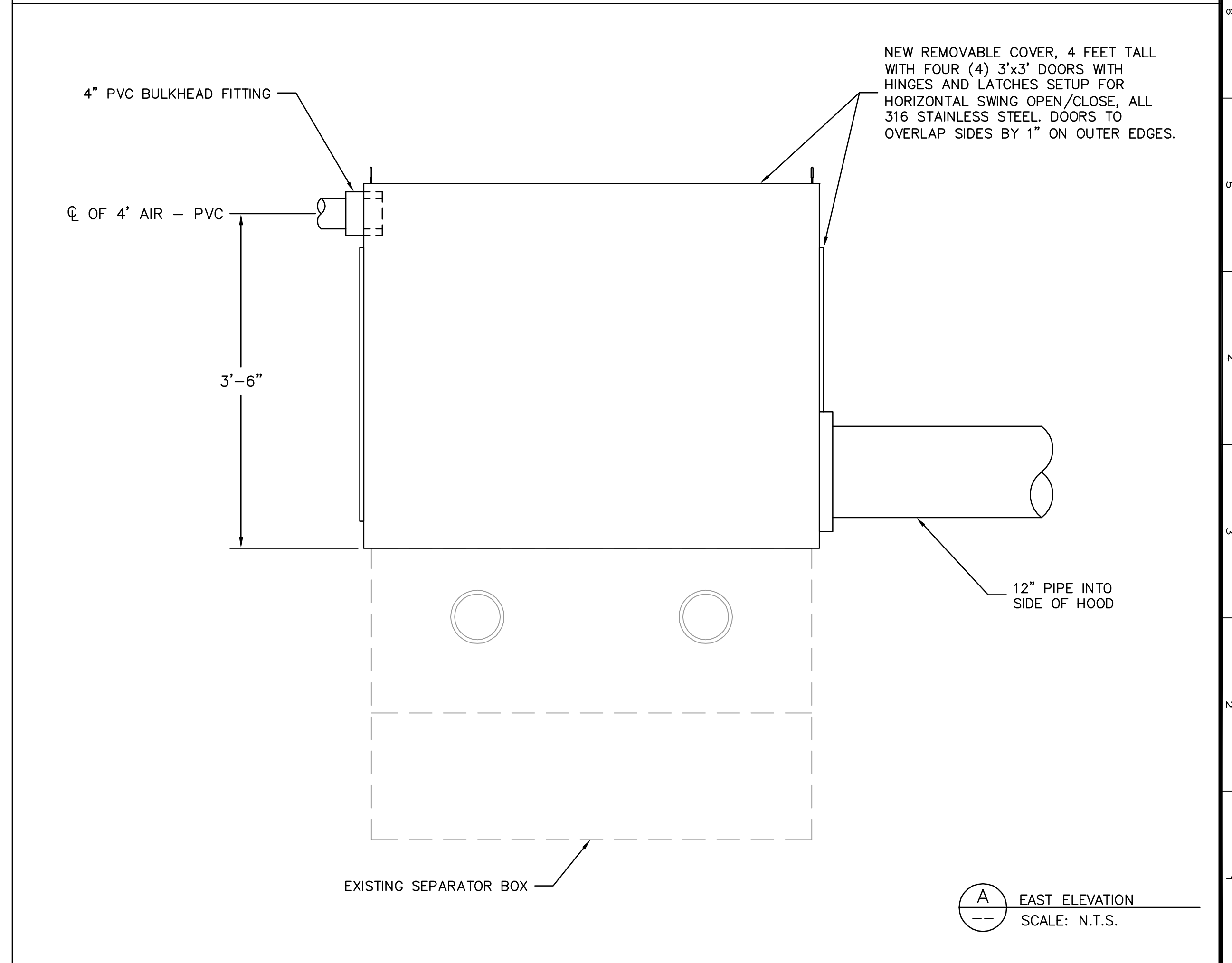
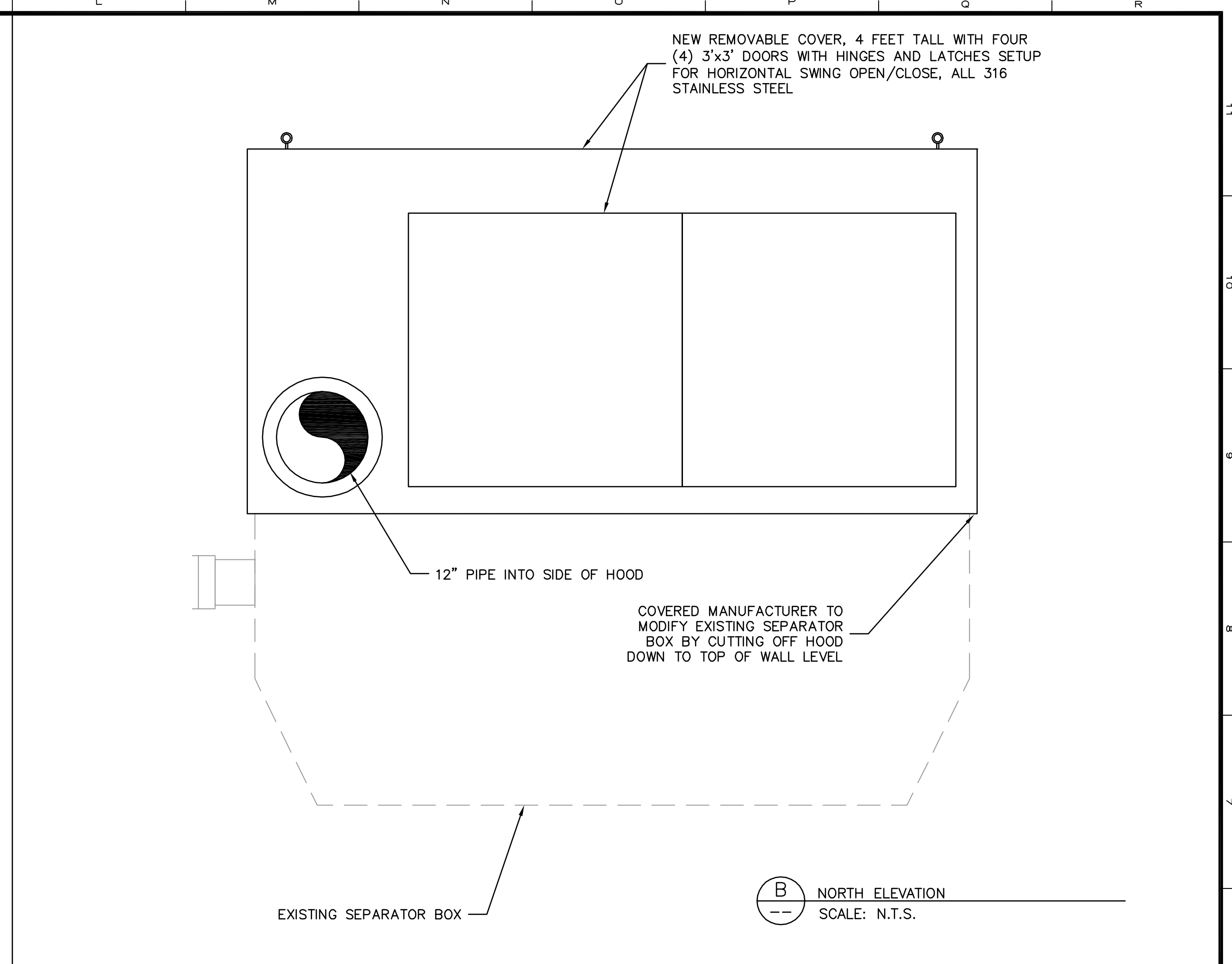
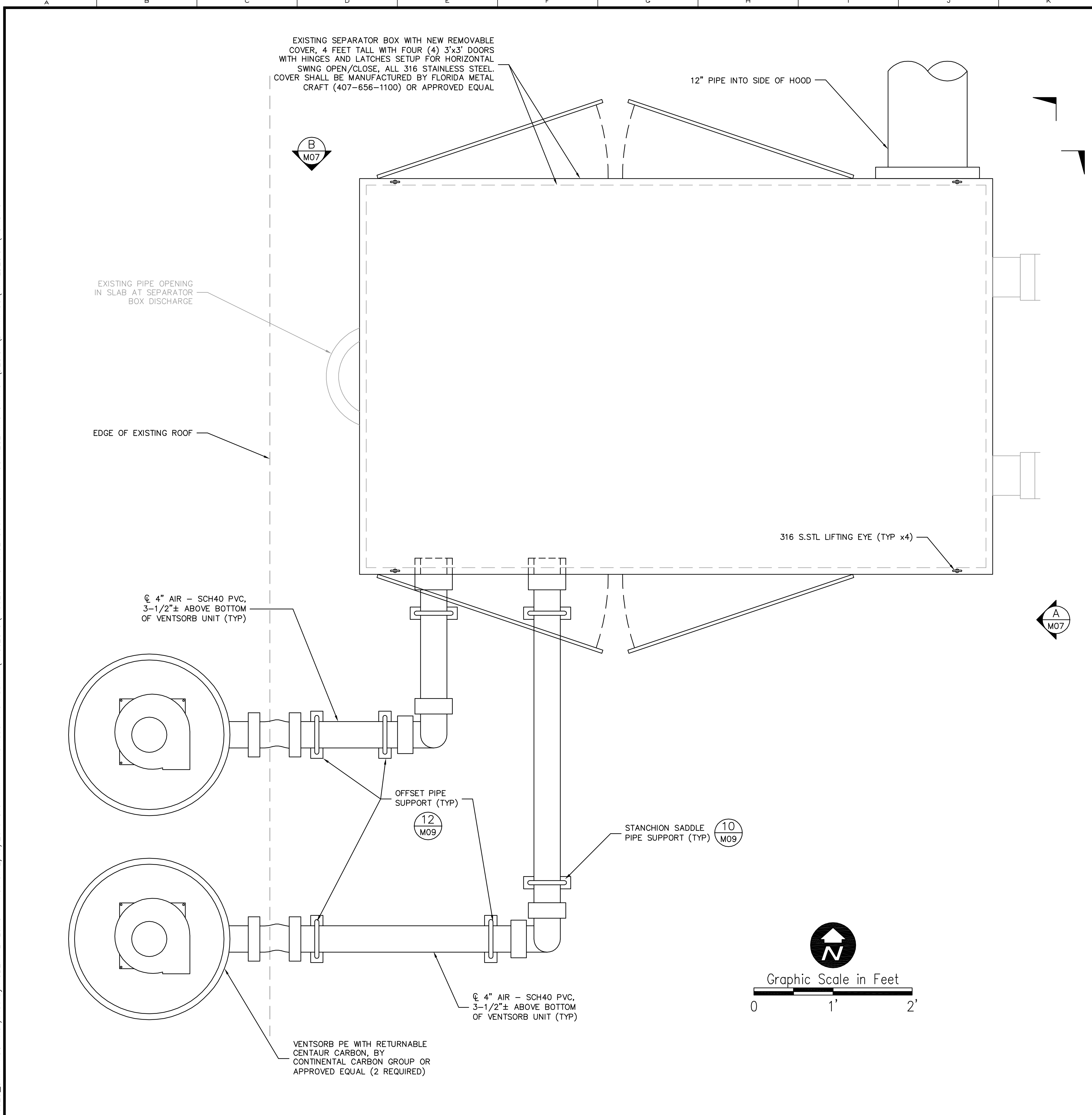
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 Checked DNN
 Reviewed MKW
 Approved CLK

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 MECHANICAL
 SEPTAGE RECEIVING STATION SECTIONS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. M06	SHEET NO.: 22 OF 48



Parent Sheet: Set: 110025_SWRF_FOG_Rev/Plot by: ROBERT L. LUPU Rev on: 2/15/2016 8:07 AM Individual File Path: R:\PROJECTS\110025 - ORANGE COUNTY SWRF FOG RECEIVING STATION\DRAWINGS\FINAL\DESIGN\M07.DWG



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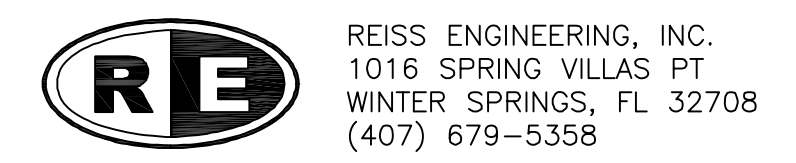
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Reviewed_MKW
Approved_CIK

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

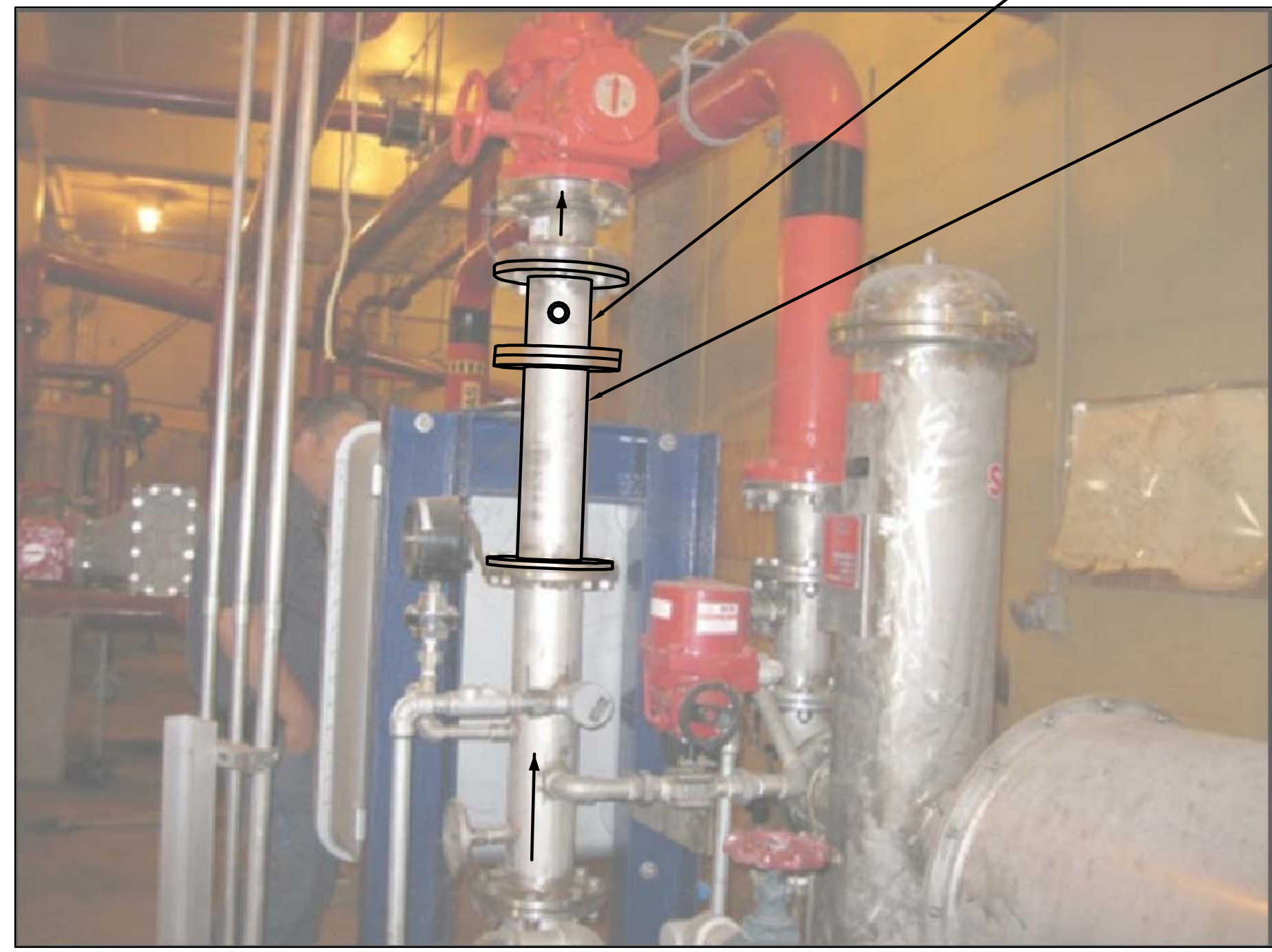
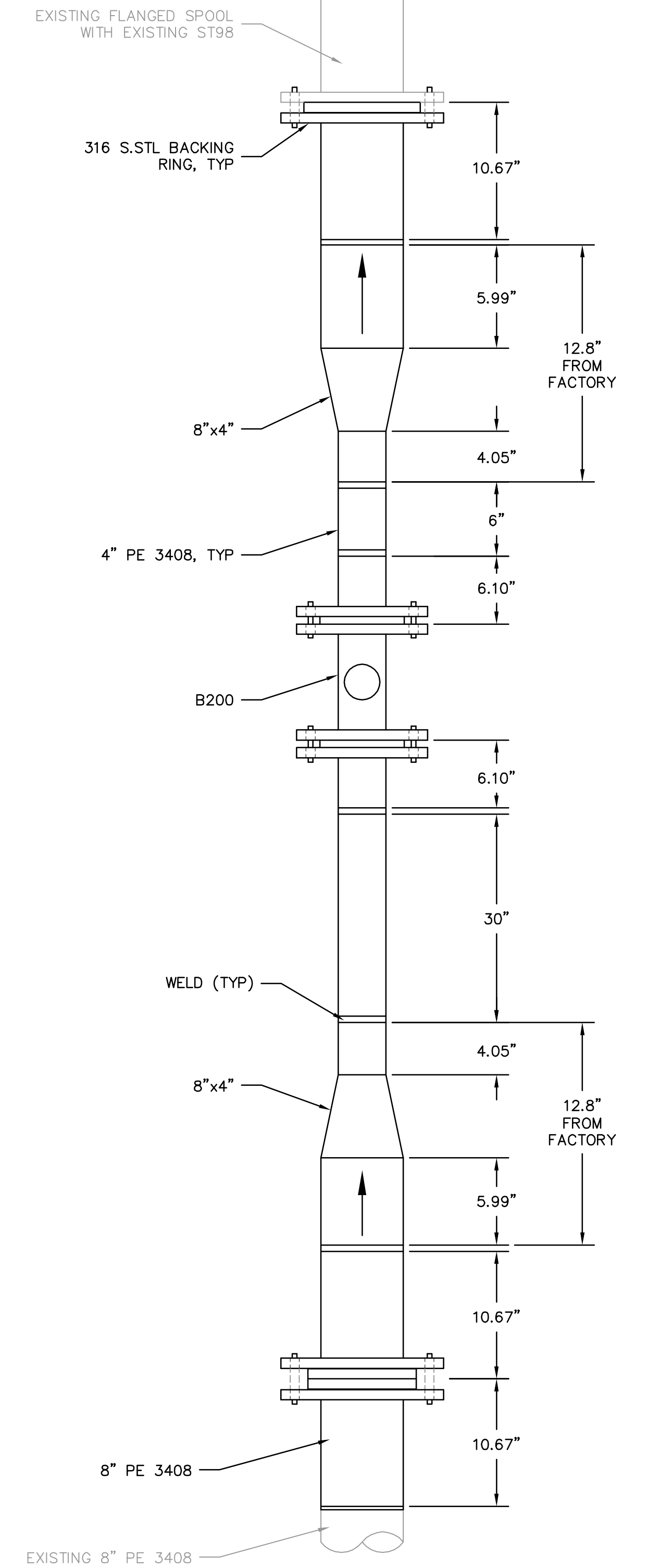
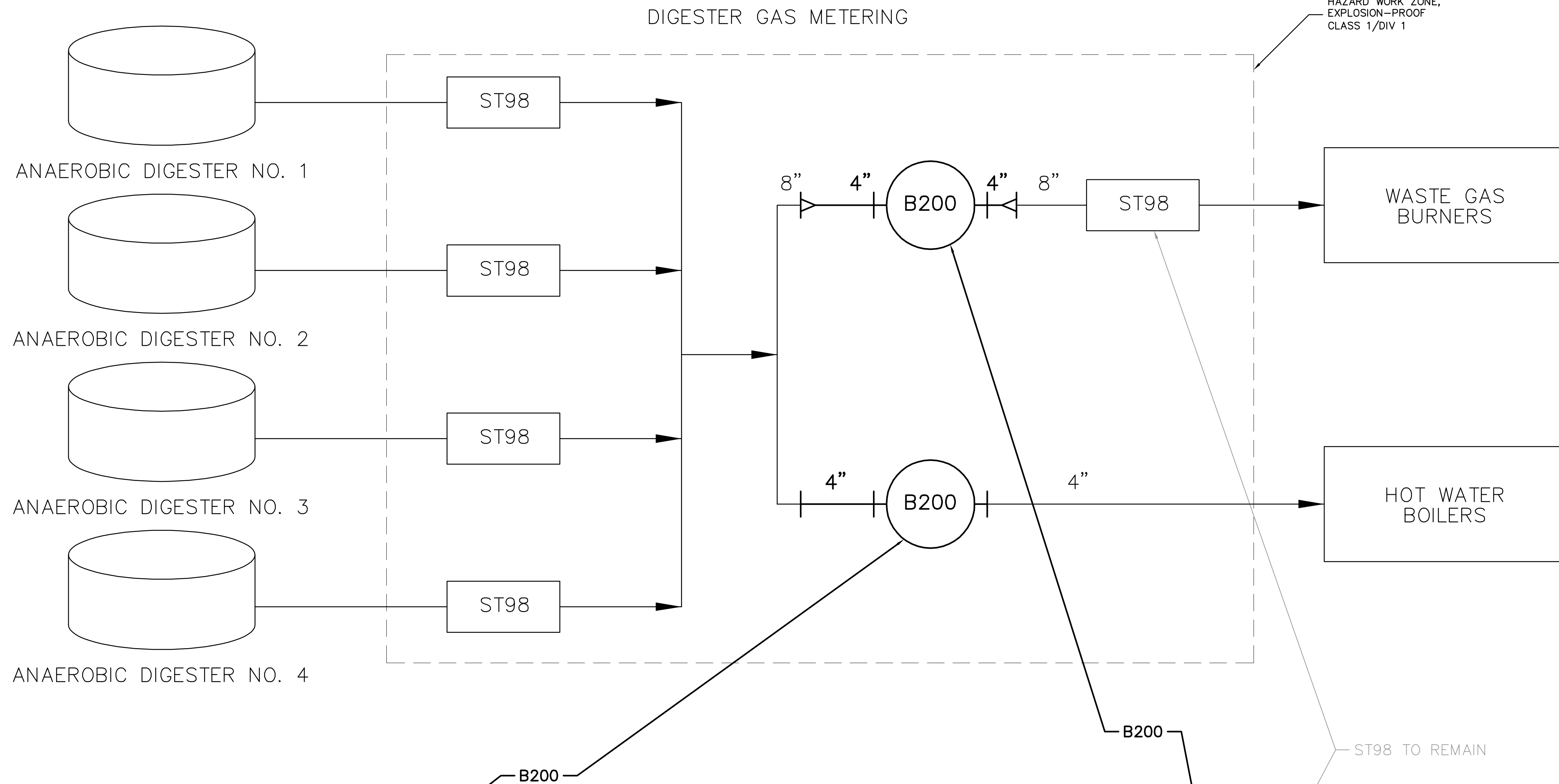
MECHANICAL

SEPTAGE RECEIVING STATION SEPARATOR SCREEN
MODIFICATIONS & ODOR CONTROL

PROJECT NO.:	110025
SCALE:	N.T.S.
REVISION:	0
DRAWING NO.:	M07
SHEET NO.:	23 OF 48



Parent Sheet: Set: 110025_SWRFFOG Rev/Plot by: ROBERT L. LUPU Rev on: 1/26/2016 10:21 AM Individual File Path: R:\PROJECTS\110025 - ORANGE COUNTY SWRF FOG RECEIVING STATION DESIGN\DRAWINGS\FINAL\DESIGN\M08.DWG



GAS GOING TO HOT WATER BOILERS

REMOVE AND REPLACE EXISTING 4" SPOOL WITH B200 AND 316 S.STL FLANGED SPOOL PIECE, AND TEST (PRESSURE, NO LEAKAGE) PRIOR TO PLACING LINE BACK IN SERVICE



GAS GOING TO WASTE GAS BURNERS

INSTALLATION DIAGRAM
NOT TO SCALE

CUT EXISTING PIPE OUT, INSTALL PIPING AND B200, AND TEST (PRESSURE, NO LEAKAGE) PRIOR TO PLACING LINE BACK IN SERVICE (SEE INSTALLATION DIAGRAM FOR DETAIL ON THIS DRAWING)

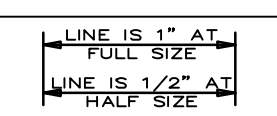
- NOTES:
1. ALL WORK, INCLUDING TOOLS, LABOR, MATERIALS, AND SAFETY EQUIPMENT, IN THIS AREA SHALL COMPLY WITH THE REQUIREMENTS FOR CLASS I, DIV 1 HAZARDOUS LOCATIONS.
 2. CONTRACTOR TO COORDINATE WITH OCU FOR PLANNED SHUTDOWN AND ISOLATION OF GAS PIPE. GAS PIPE MUST BE PURGED OF ALL GAS BEFORE WORK CAN COMMENCE ON PIPE.
 3. INSTALLED PE3408, DR11 PIPE AND FLANGES SHALL BE SUITABLE FOR GAS-TIGHT, EXPLOSION-PROOF SERVICE.
 4. FOLLOWER FLANGES AND ALL FASTENERS, BOLTS, AND OTHER HARDWARE SHALL BE 316 S.STL.
 5. PROVIDE SADDLE TYPE HANGERS ON BOTH SIDES OF B200, ALL 316 S.STL.



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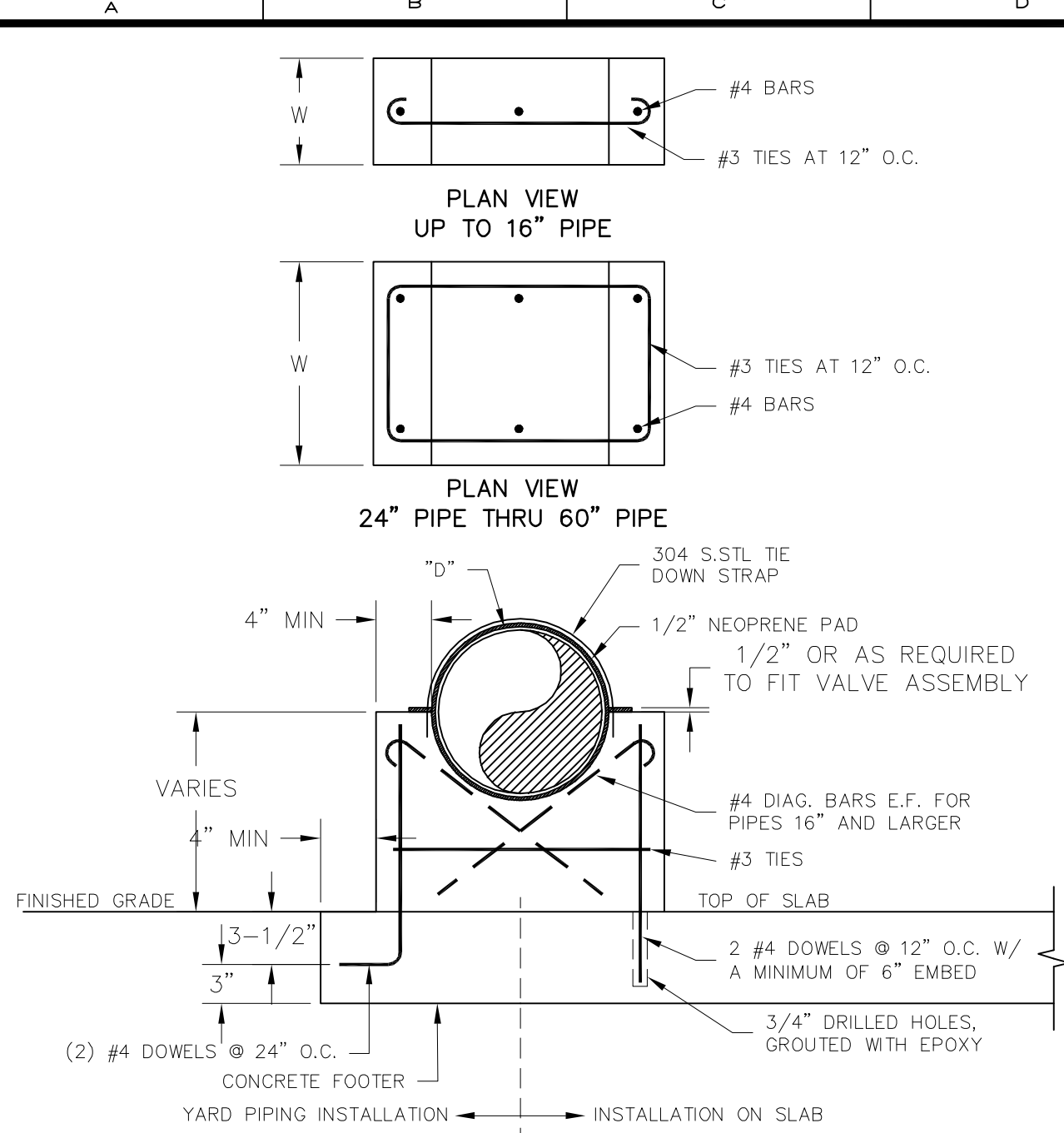


ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
MECHANICAL
GAS METERS/ANALYZERS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. M08	SHEET NO.: 24 OF 48

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WINTER SPRINGS, FL 32708
(407) 679-5358

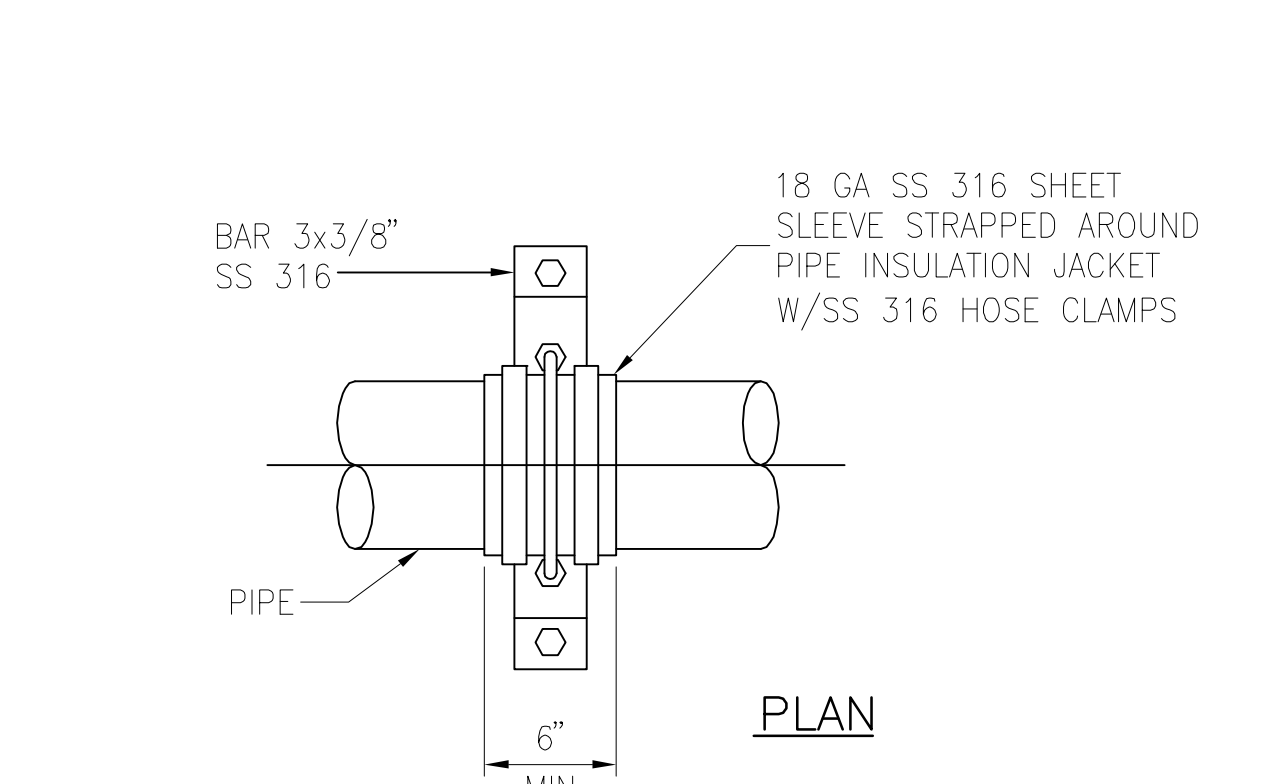
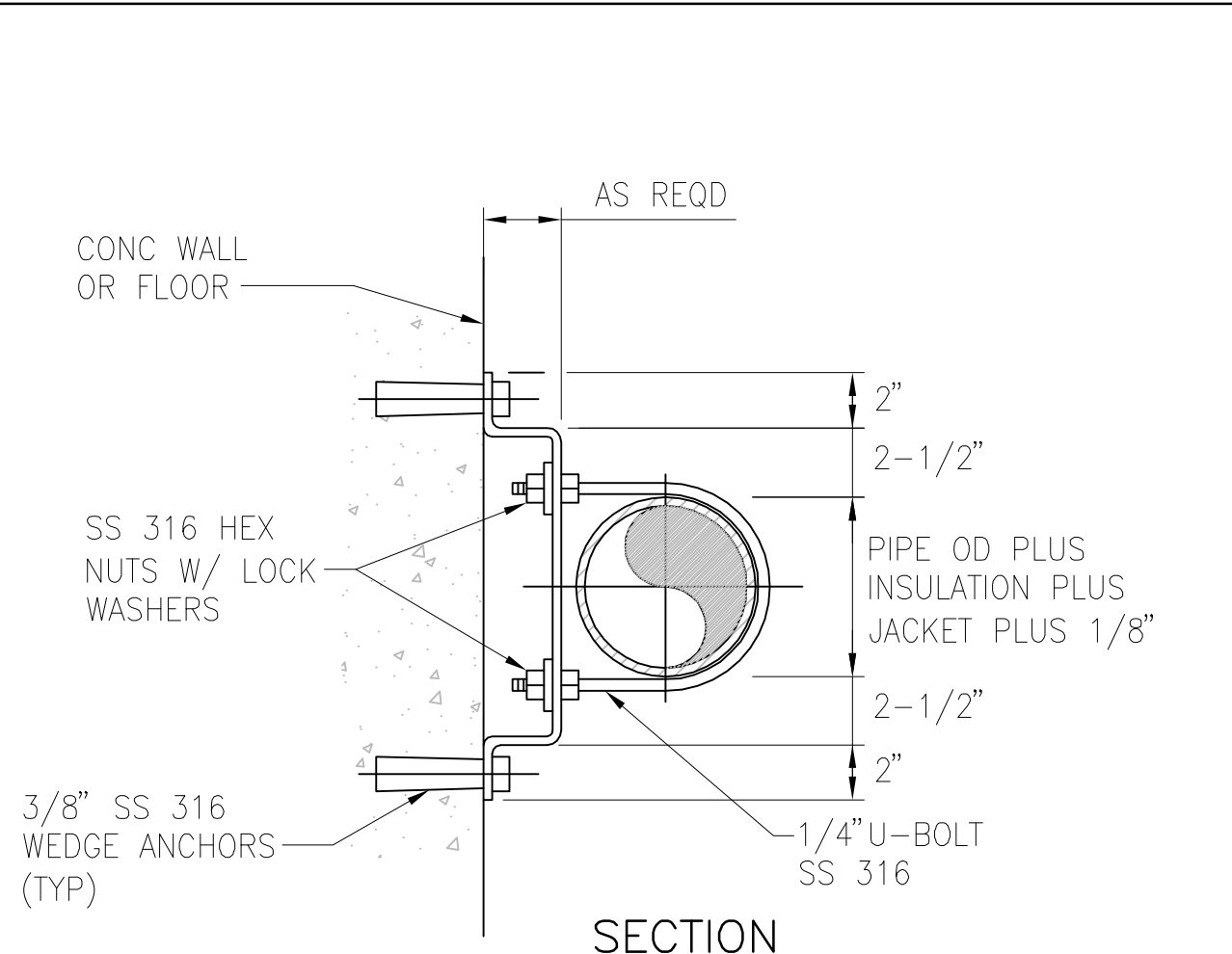
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PIPE INSULATION JACKET DIAMETER "D" (INCHES)	MINIMUM SUPPORT WIDTH "W" (INCHES)
≤ 12	6
≤ 16	8
≤ 24	12
30, 36, & 42	16
48	20
54 & 60	24

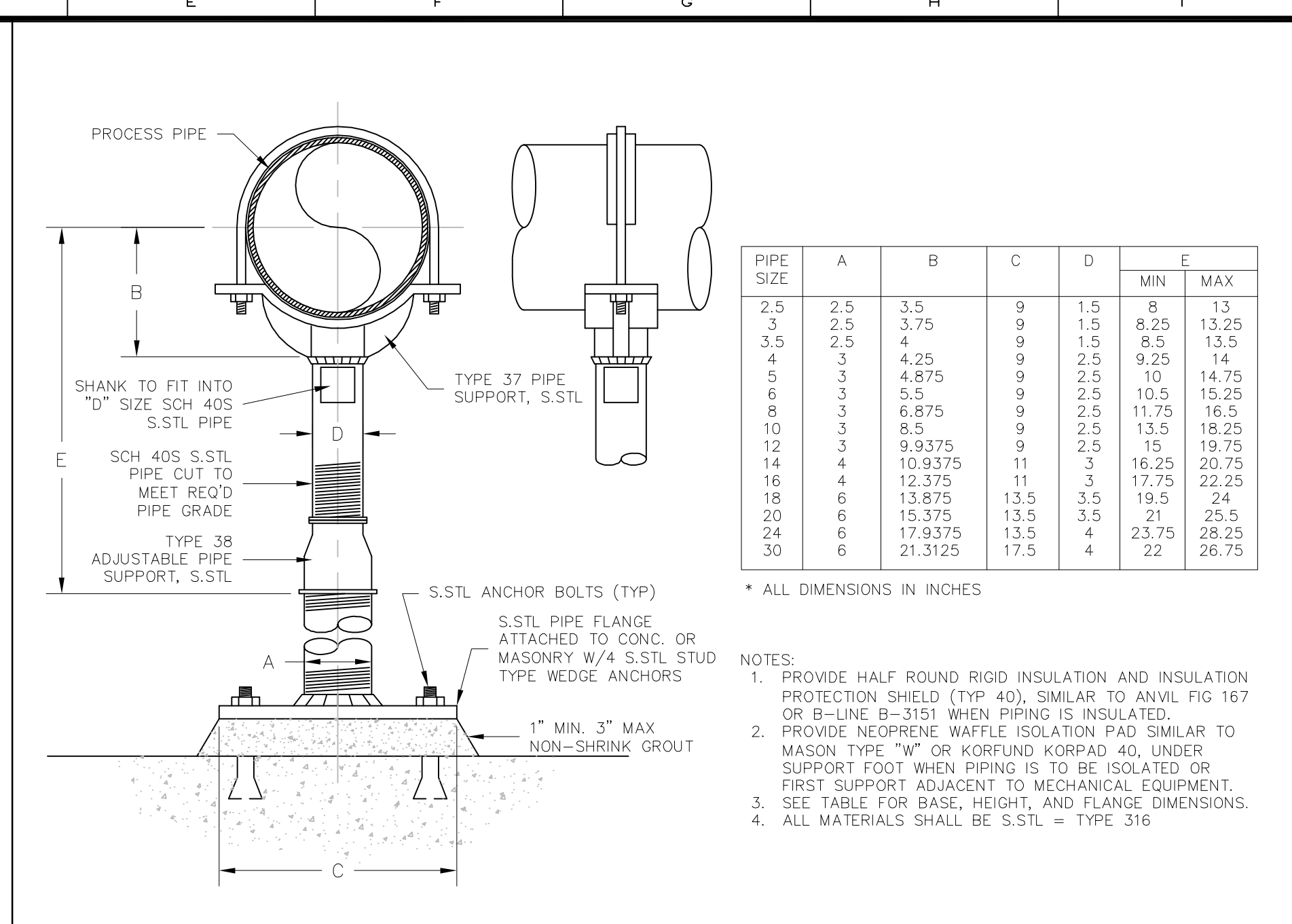
NOTES:
 1. PROVIDE CONCRETE FOOTING BELOW GRADE FOR ALL FINISHED GRADE APPLICATIONS.
 2. THE DRAWINGS INDICATE SUPPORTS FOR DEPICTION ONLY. ALL SUPPORT SPACING AND TYPE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. SUPPORT SPACING SHOWN ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF SUPPLYING AND INSTALLING ADEQUATE SUPPORTS PER THE SPECIFICATIONS.

9 CONCRETE PIPE SUPPORT DETAIL
SCALE: N.T.S.



12 OFFSET PIPE SUPPORT DETAIL
SCALE: N.T.S.

15 FLOOR DRAIN
SCALE: N.T.S.

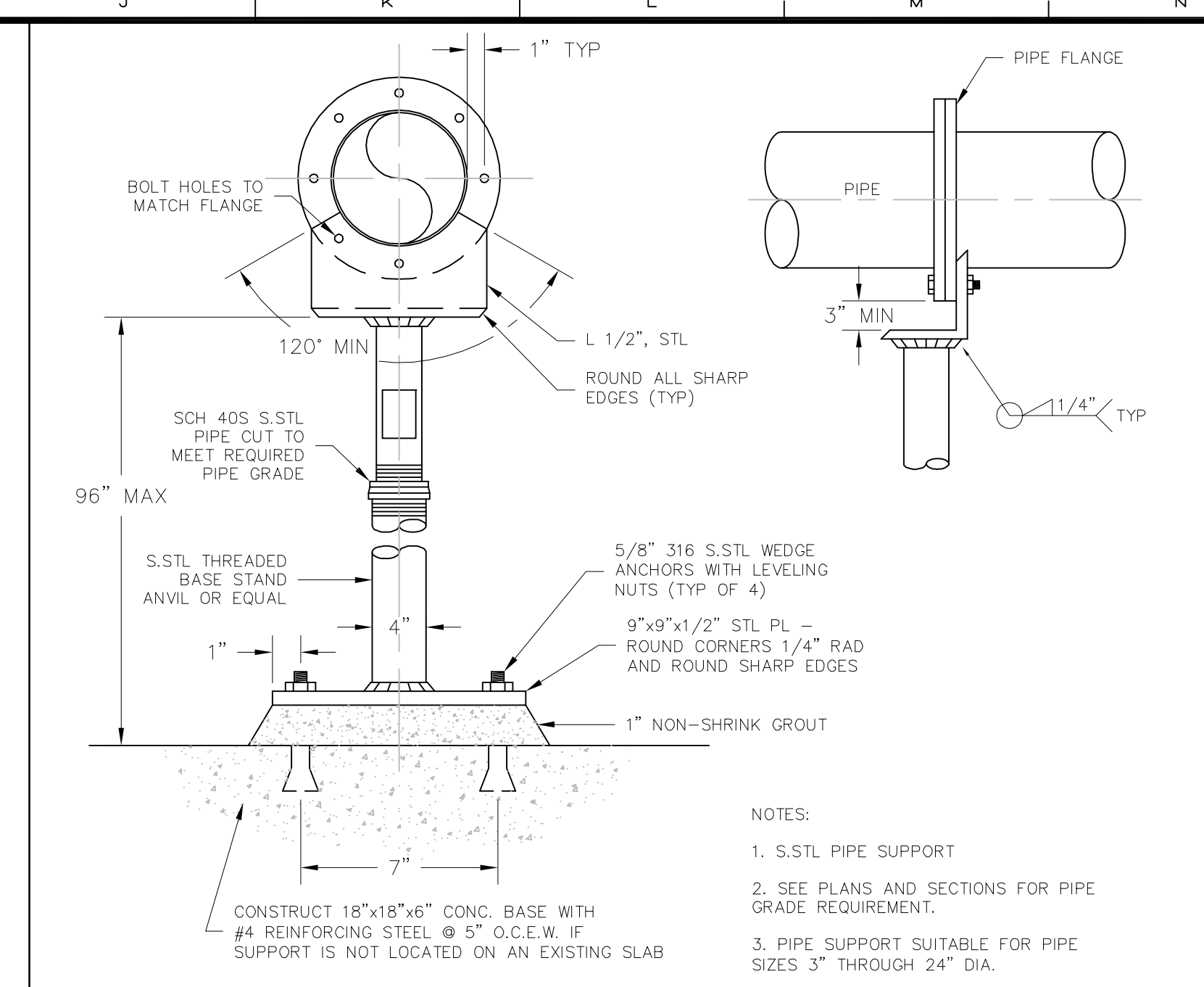


PIPE SIZE	A	B	C	D	MIN	MAX
2.5	2.5	3.75	9	1.5	8	13
3	2.5	3.75	9	1.5	8.25	13.25
3.5	2.5	4	9	1.5	8.5	13.5
4	3	4.25	9	2.5	9.25	14
5	3	4.875	9	2.5	10	14.75
6	3	5.5	9	2.5	10.5	15.25
8	3	6.875	9	2.5	11.75	16.5
10	3	8.5	9	2.5	13.5	18.25
12	3	9.9375	9	2.5	15	19.75
14	4	10.9375	11	3	16.25	20.75
16	4	12.375	11	3	17.75	22.25
18	6	13.875	13.5	3.5	19.5	24
20	6	15.375	13.5	3.5	21	25.5
24	6	17.9375	13.5	4	23.75	28.25
30	6	21.3125	17.5	4	22	26.75

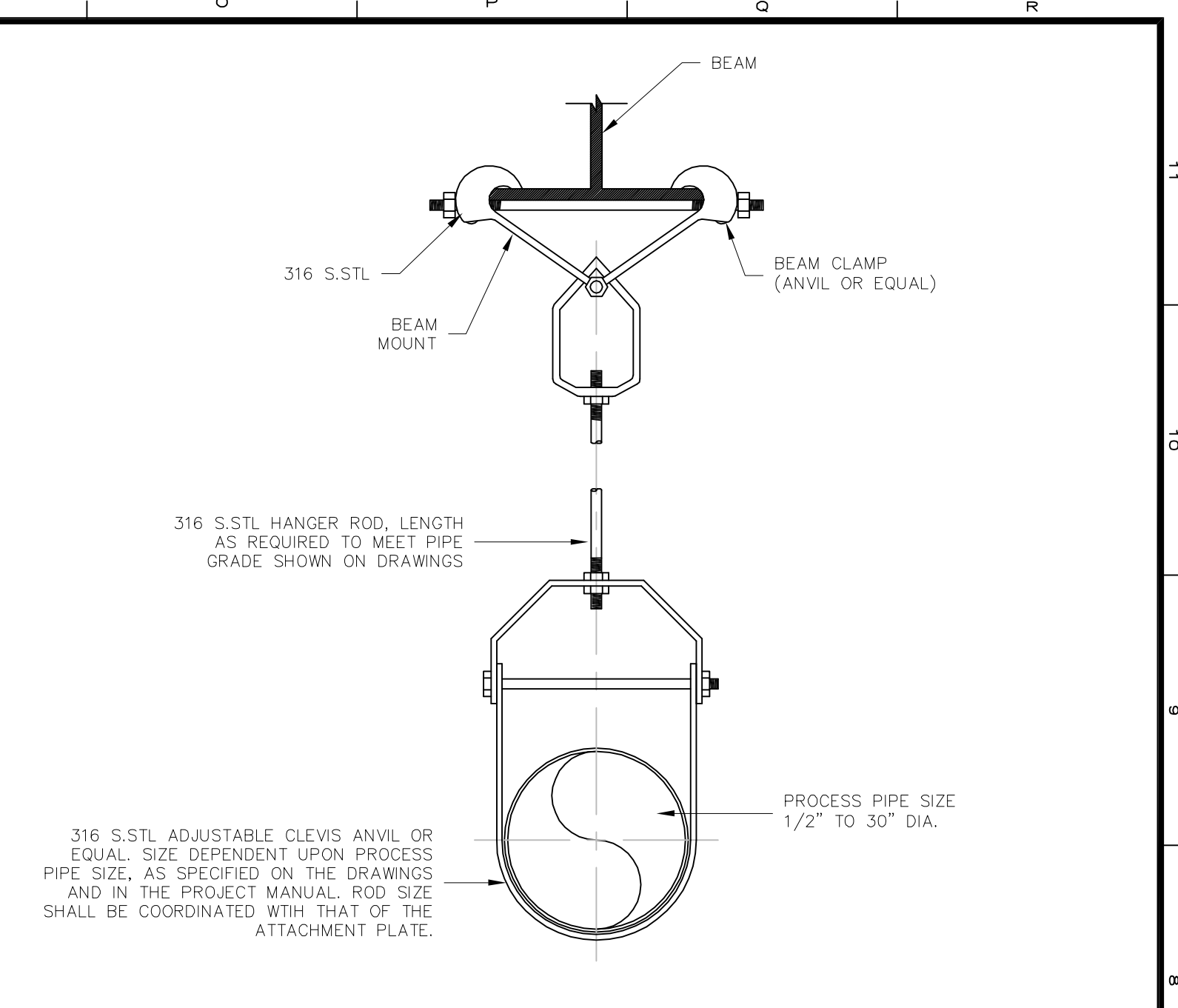
* ALL DIMENSIONS IN INCHES

NOTES:
 1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD (TYP 40), SIMILAR TO ANVIL FIG 167 OR B-LINE B-3151 WHEN PIPING IS INSULATED.
 2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD SIMILAR TO MASON TYPE "W" OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS TO BE ISOLATED OR FIRST SUPPORT ADJACENT TO MECHANICAL EQUIPMENT.
 3. SEE TABLE FOR BASE, HEIGHT, AND FLANGE DIMENSIONS.
 4. ALL MATERIALS SHALL BE S.S.TL = TYPE 316

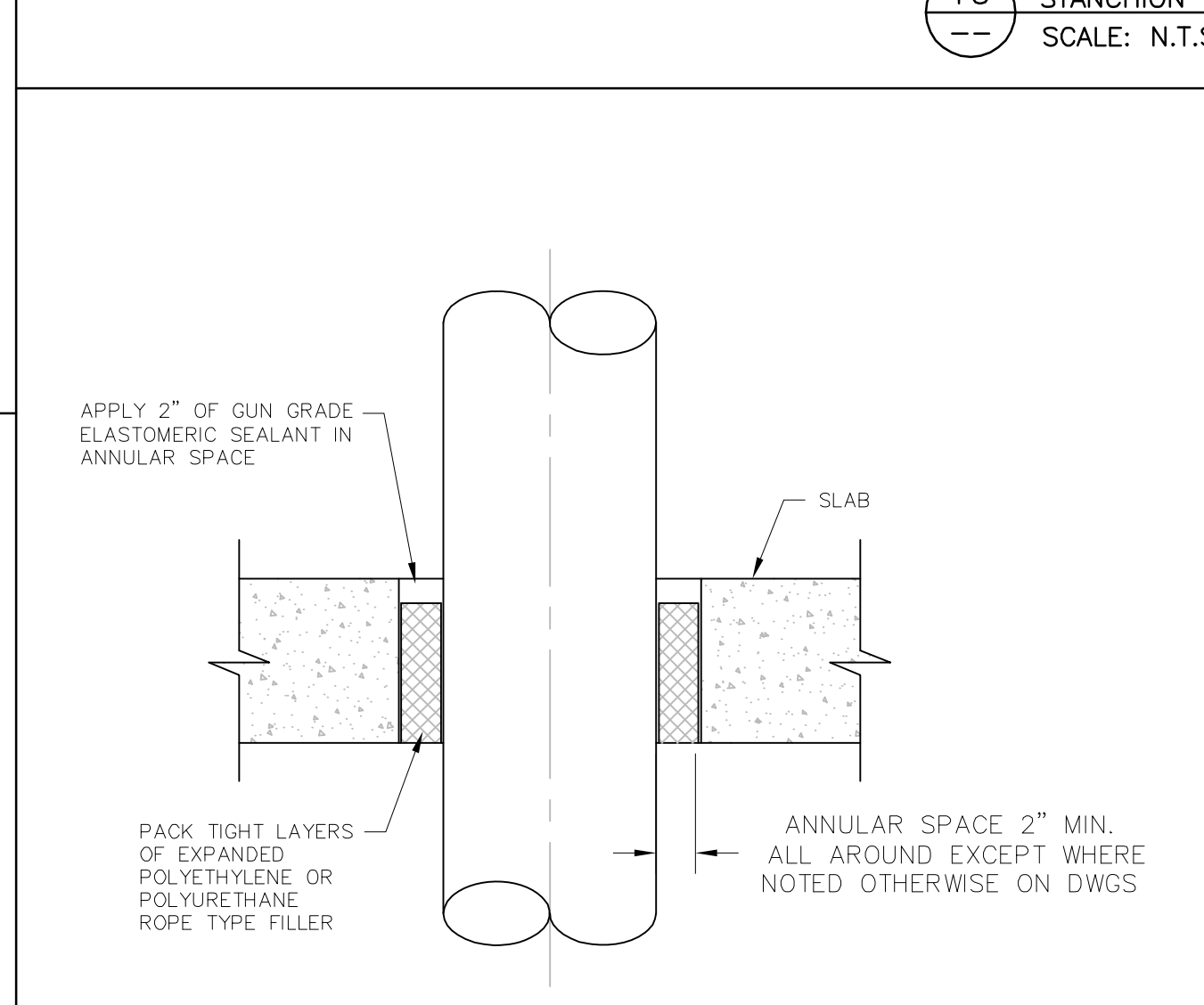
10 STANCHION SADDLE PIPE SUPPORT
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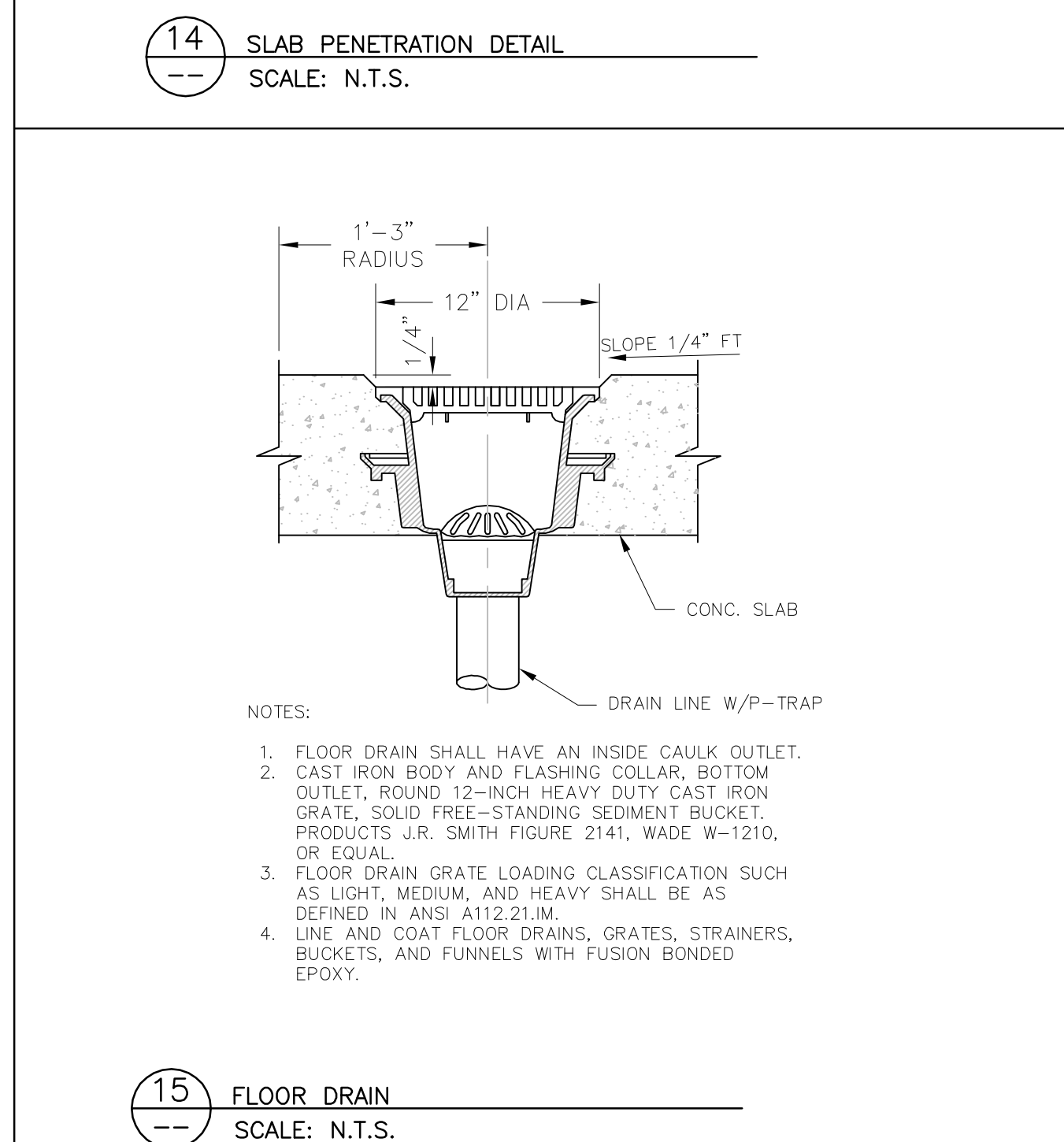
11 STANCHION FLANGE PIPE SUPPORT
SCALE: N.T.S.



13 PIPE SUPPORT - CLEVIS PIPE HANGER
SCALE: N.T.S.



14 SLAB PENETRATION DETAIL
SCALE: N.T.S.



NOTES:
 ALL MATERIALS SHALL BE 316 S.S.TL

16 PRESSURE GAUGE
SCALE: N.T.S.



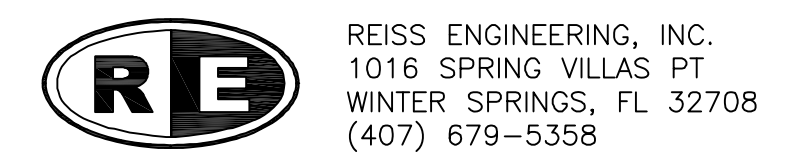
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 1016 Spring Villas Pt.
 Winter Springs, FL 32708

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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 MECHANICAL
 MECHANICAL DETAILS

PROJECT NO.: 110025	REVISION: 0
SCALE: NOTED	SHEET NO.: 25 OF 48
DRAWING NO. M09	



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 WINTER SPRINGS, FL 32708
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Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 8/2/2016 2:15 PM I:\Projects\110025-SWRF FOG & Septage Receiving Stations\BID SUBMITTAL\DWGS

PLAN SYMBOLS		SINGLE LINE DIAGRAM SYMBOLS		CONTROL DIAGRAM SYMBOLS		ABBREVIATIONS		NOTES	
	HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS. HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2#12 CONDUCTORS & 1#12 GND IN 3/4" CONDUIT.		COMBINATION MOTOR STARTER		DUPLEX RECEPTACLE	A	AMPERES	1.	ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING		VOLTMETER		NORMALLY OPEN CONTACT	ACCU	AIR COOLED CONDENSING UNIT ABOVE FINISHED FLOOR	2.	ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC... THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.		AMMETER		NORMALLY CLOSED CONTACT	AHU	AIR HANDLING UNIT	3.	ALL WORK SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, ORANGE COUNTY STANDARDS, THE FLORIDA BUILDING CODE AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.		THREE PHASE VOLT SWITCH		LIMIT SWITCH, NORMALLY OPEN	ATS	AMPS INTERRUPTING CURRENT	4.	MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING, UNLESS OTHERWISE NOTED. ALL CONDUCTORS SHALL BE COPPER.
	FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.		THREE PHASE AMP SWITCH		LIMIT SWITCH, NORMALLY CLOSED	BCP	AUTOMATIC TRANSFER SWITCH	5.	IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
	CONCRETE ENCASED DUCTBANK.		GROUND FAULT INTERRUPTER		PRESSURE SWITCH, NORMALLY OPEN	BK	BIOFILTER CONTROL PANEL	6.	ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. OR LOCAL CODES. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250 OF THE NATIONAL ELECTRICAL CODE.
	WALL MOUNTED LIGHTING FIXTURE.		WATT HOUR METER		PRESSURE SWITCH, NORMALLY CLOSED	BK	BREAKER	7.	ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
	LED LIGHTING FIXTURE, CEILING MOUNTED.		FUSE		FLOAT SWITCH, NORMALLY OPEN	BLDG	BUILDING	8.	ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.
	EXTERIOR LUMINAIRE AND MOUNTING STANDARD.		CAPACITOR		FLOAT SWITCH, NORMALLY CLOSED	CT	CIRCUIT	9.	CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM DATE OF ACCEPTANCE.
	EXISTING EXTERIOR LIGHTING.		DRAW-OUT CIRCUIT BREAKER		FLOW SWITCH, NORMALLY OPEN	CT	CONTROL MANHOLE	10.	CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
	EMERGENCY BATTERY PACK LIGHTING FIXTURE.		MOLDED CASE CIRCUIT BREAKER		FLOW SWITCH, NORMALLY CLOSED	CT	CONTROL POWER TRANSFORMER	11.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.
	JUNCTION BOX N.E.C. SURFACE MOUNTED UNLESS INDICATED OTHERWISE.		TYPICAL SELECTOR SWITCH AND CONTROL. SEE ELEMENTARY DIAGRAMS FOR EXACT TYPE.		TEMPERATURE SWITCH, NORMALLY OPEN	CT	CURRENT TRANSFORMER	12.	ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/ TYPE WRITTEN DIRECTORIES (NEW & EXISTING).
	NEMA 4X STAINLESS STEEL JUNCTION BOX PER N.E.C., FLUSH MOUNTED UNLESS INDICATED OTHERWISE.		ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.		TEMPERATURE SWITCH, NORMALLY CLOSED	CT	CURRENT TRANSFORMER	13.	ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
	FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.		SERVICE OR EQUIPMENT GROUND.		NORMALLY OPEN, TIMED TO CLOSE CONTACT	CT	CURRENT TRANSFORMER	14.	REFER TO THE MECHANICAL DRAWINGS AND THE APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.
	FLUSH OR SURFACE MOUNTED POWER PANELBOARD.		NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.		NORMALLY CLOSED, TIMED TO OPEN CONTACT	CT	CURRENT TRANSFORMER	15.	SHADED/SLANTED TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES. NON-SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES AND WORK. SLANTED TEXT (NOT SHADED) DENOTES FUTURE EQUIPMENT, STRUCTURES AND WORK.
	DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.		NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.		NORMALLY CLOSED, TIMED TO CLOSE CONTACT	CT	CURRENT TRANSFORMER	16.	ALL BURIED CONDUITS TO BE CONCRETE ENCASED.
	LIQUID FILLED TRANSFORMER, KVA RATING AS SHOWN		CROUSE HINDS EYS FITTING FILLED w/ CHICO 'A' SEALING COMPOUND & CHICO 'X' FIBER		NORMALLY OPEN, TIMED TO OPEN CONTACT	CT	CURRENT TRANSFORMER	17.	THE ANAEROBIC DIGESTER PUMP ROOM IS CLASSIFIED AS CLASS I, DIVISION 1, GROUP D HAZARDOUS AREA PER NFPA-820-2012 EDITION. ALL WIRING METHODS IN THE CLASSIFIED AREA ARE TO BE PER THE REQUIREMENTS OF THE N.E.C. ARTICLE 500.
	SINGLE RECEPTACLE, RATING AS SHOWN		NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.		ALARM RELAY	CT	CURRENT TRANSFORMER		
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.		NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.		ALARM TIMER	CT	CURRENT TRANSFORMER		
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 6" ABOVE FINISHED COUNTER AS REQUIRED (AFC)		CURRENT TRANSFORMERS		CONTROL RELAY	CT	CURRENT TRANSFORMER		
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH, FLOOR MOUNTED OUTLET BOX.		POTENTIAL TRANSFORMERS.		MOTOR STARTER	CT	CURRENT TRANSFORMER		
	20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED.		LIQUID LEVEL SWITCH		TIMING RELAY	CT	CURRENT TRANSFORMER		
	SURFACE MOUNTED GROUND FAULT DUPLEX WEATHERPROOF RECEPTACLE 20A, 125V, 3W - MOUNTED 24" ABOVE FINISHED GRADE, UNLESS OTHERWISE NOTED.		OFF REMOTE		TORQUE SWITCH	CT	CURRENT TRANSFORMER		
	20A, 125, 3W DOUBLE DUPLEX RECEPTACLE IN FLUSH OUTLET BOX.		LIMIT SWITCH		ALARM INDICATING LIGHT	CT	CURRENT TRANSFORMER		
	FLUSH MOUNTED GROUND FAULT DUPLEX RECEPTACLE 20A, 125V, 3W -MOUNTED 24" ABOVE FINISHED FLOOR.		LEVEL INDICATING TRANSMITTER		RUN INDICATING LIGHT	CT	CURRENT TRANSFORMER		
	DISCONNECT RACK MOUNTED.		MOTORIZED VALVE		MOMENTARY CONTACT PUSHBUTTON	CT	CURRENT TRANSFORMER		
	HANDS/OFF/AUTOMATIC & DISCONNECT RACK MOUNTED WITH JUNCTION BOX MOUNTED BELOW OFF REMOTE		PHOTOCELL		MOMENTARY BREAK PUSHBUTTON OR RESET	CT	CURRENT TRANSFORMER		
	SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).		PRESSURE SWITCH		EMERGENCY LOCKOUT SWITCH. LOCKABLE IN THE OFF POSITION	CT	CURRENT TRANSFORMER		
	SINGLE POLE SWITCH, SURFACE MOUNTED.		FLOW INDICATING TRANSMITTER		KEYED SWITCH	CT	CURRENT TRANSFORMER		
	THREE-WAY SWITCH IN FLUSH OUTLET BOX.		FLOW ELEMENT		MAINTAINED CONTACT ON-OFF SWITCH	CT	CURRENT TRANSFORMER		
	FOUR-WAY SWITCH IN FLUSH OUTLET BOX.		LEVEL ELEMENT		START/STOP(S/S) CONTROL SWITCH MAINTAINED CONTACT	CT	CURRENT TRANSFORMER		
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.		HEAT TRACE		THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH	CT	CURRENT TRANSFORMER		
	NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.		THERMOSTAT		FUSE	CT	CURRENT TRANSFORMER		
	ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.		SOLENOID VALVE		MOLDED CASE CIRCUIT BREAKER	CT	CURRENT TRANSFORMER		
	FUSED DISCONNECT SWITCH(30/20: 30=SWITCH RATING, 20=FUSE RATING) 3 POLE-UNLESS NOTED OTHERWISE.		TIME CLOCK		CONTROL POWER TRANSFORMER	CT	CURRENT TRANSFORMER		
	COMBINATION MOTOR STARTER, DISCONNECT SWITCH		PHOTOCELL		REMOTE TERMINAL BLOCK POINT	CT	CURRENT TRANSFORMER		
	VARIABLE FREQUENCY DRIVE		TEMPERATURE SWITCH			CT	CURRENT TRANSFORMER		
	CONTROL MANHOLE, SEE 'PULLBOX DETAIL'		SPACE HEATER			CT	CURRENT TRANSFORMER		
	POWER MANHOLE, SEE 'PULLBOX DETAIL'		ANALYSIS INDICATING TRANSMITTER			CT	CURRENT TRANSFORMER		
	MOTORIZED VALVE		ANALYTICAL ELEMENT			CT	CURRENT TRANSFORMER		
			TEMPERATURE INDICATING TRANSMITTER			CT	CURRENT TRANSFORMER		
			TEMPERATURE ELEMENT			CT	CURRENT TRANSFORMER		



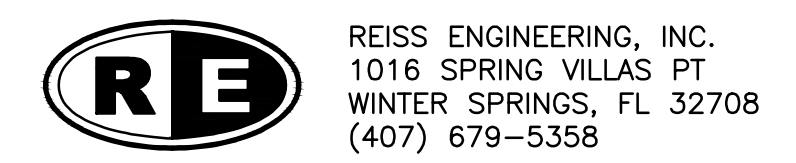
REV	DATE	DESCRIPTION	BY
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 ELECTRICAL SYMBOLS, NOTES, AND ABBREVIATIONS

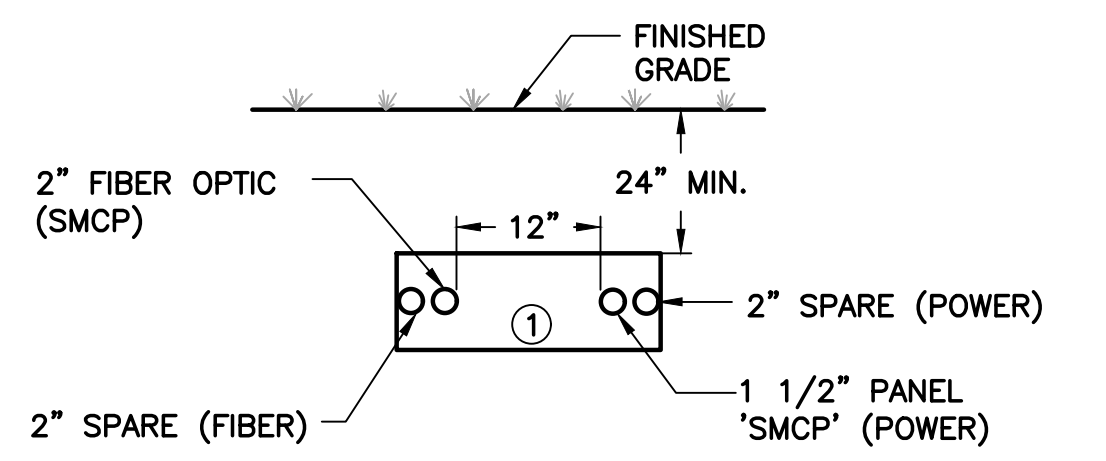
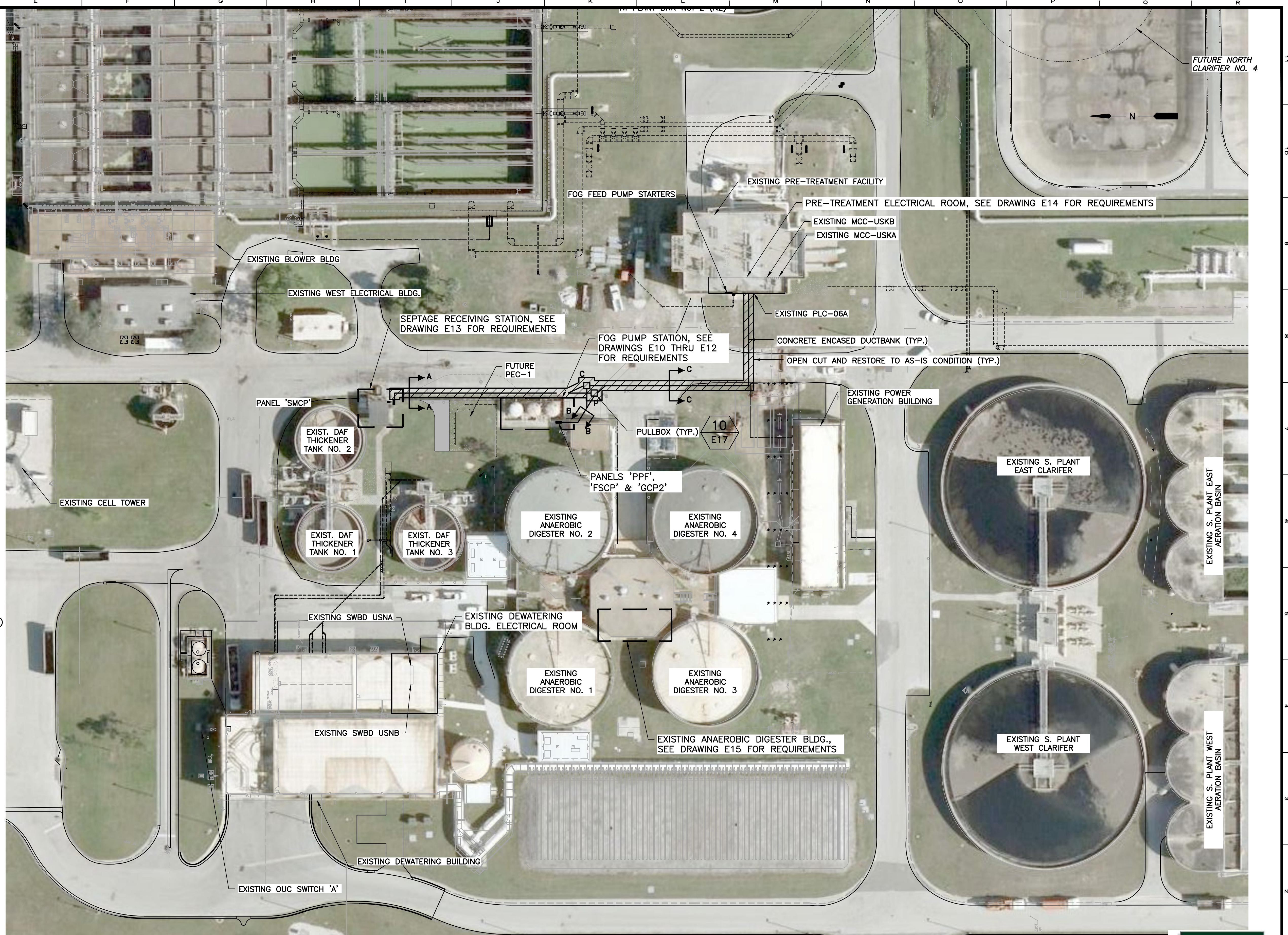
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SCALE:	NOTED
REVISION:	0
DRAWING NO.:	E01
SHEET NO.:	26 OF 48



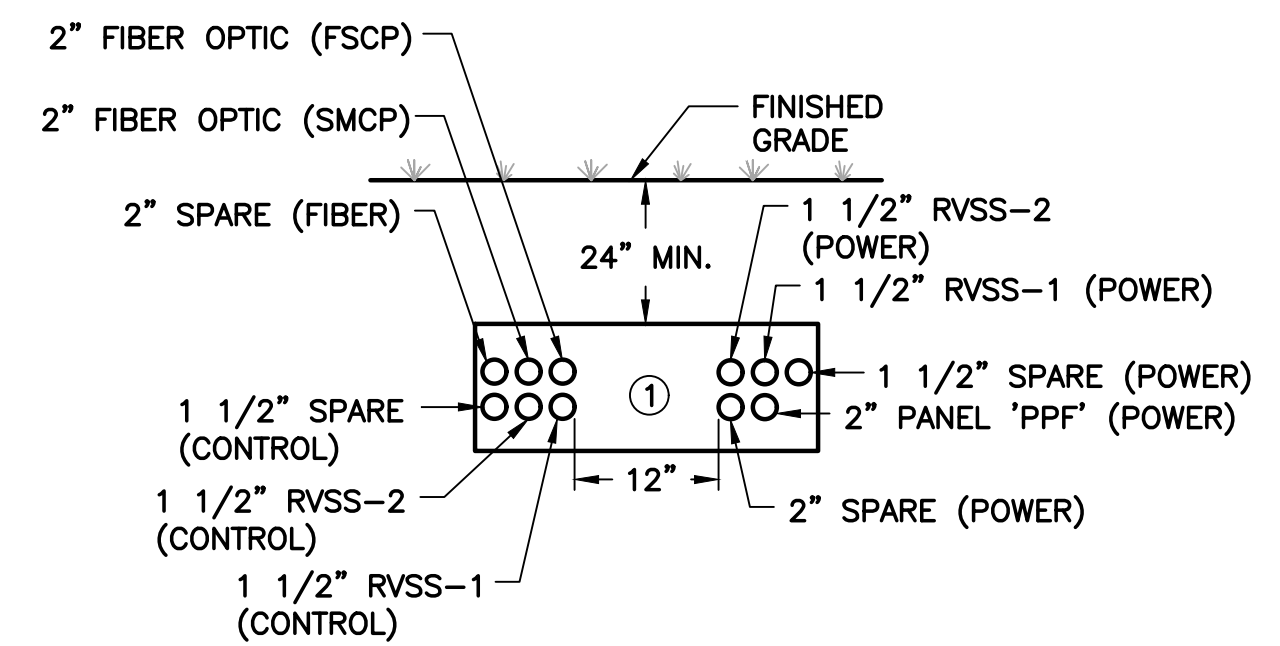
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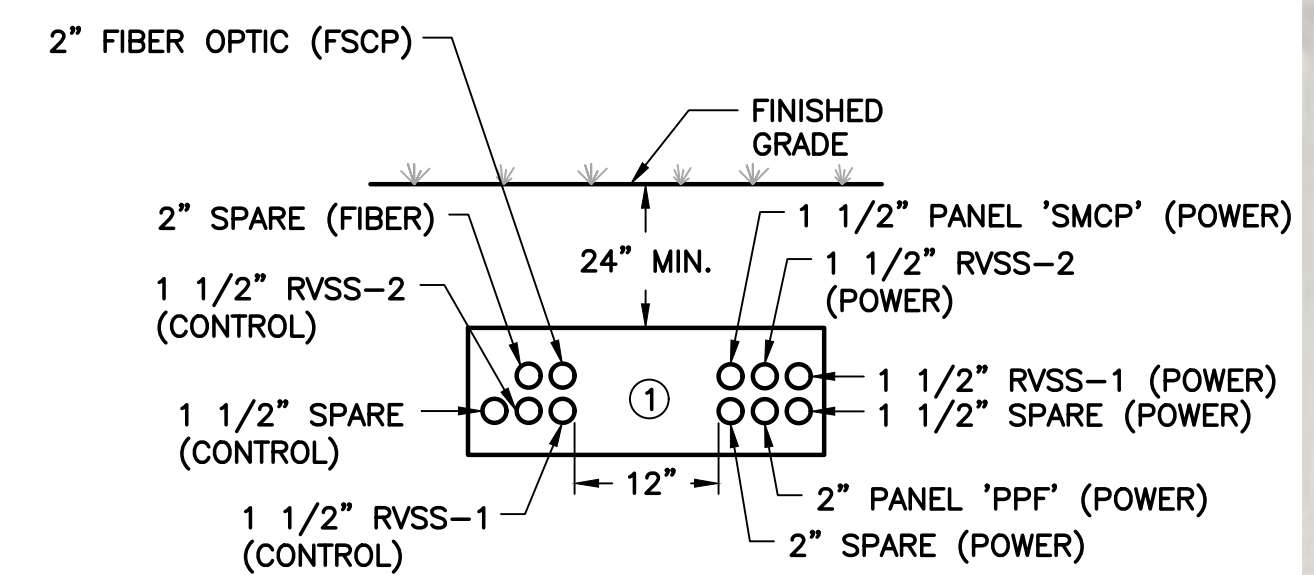
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SECTION 'A-A'
SCALE: N.T.S.



SECTION 'B-B'
SCALE: N.T.S.

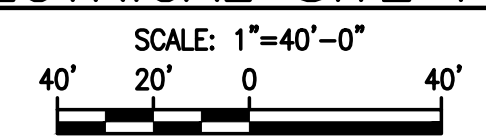


SECTION 'C-C'
SCALE: N.T.S.

NOTES:

- ① ALL UNDERGROUND CONDUITS SHALL BE CONCRETE ENCASED, INCLUDING INDIVIDUAL CONDUITS. ALL DUCTBANKS SHALL BE DYED RED.
- ② ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULLSTRINGS.

ELECTRICAL SITE PLAN



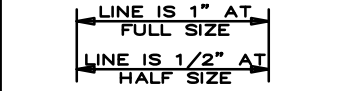
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0	9/2016	ISSUED FOR BID	LMR

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Checked LMR
Reviewed DD
Approved LMR

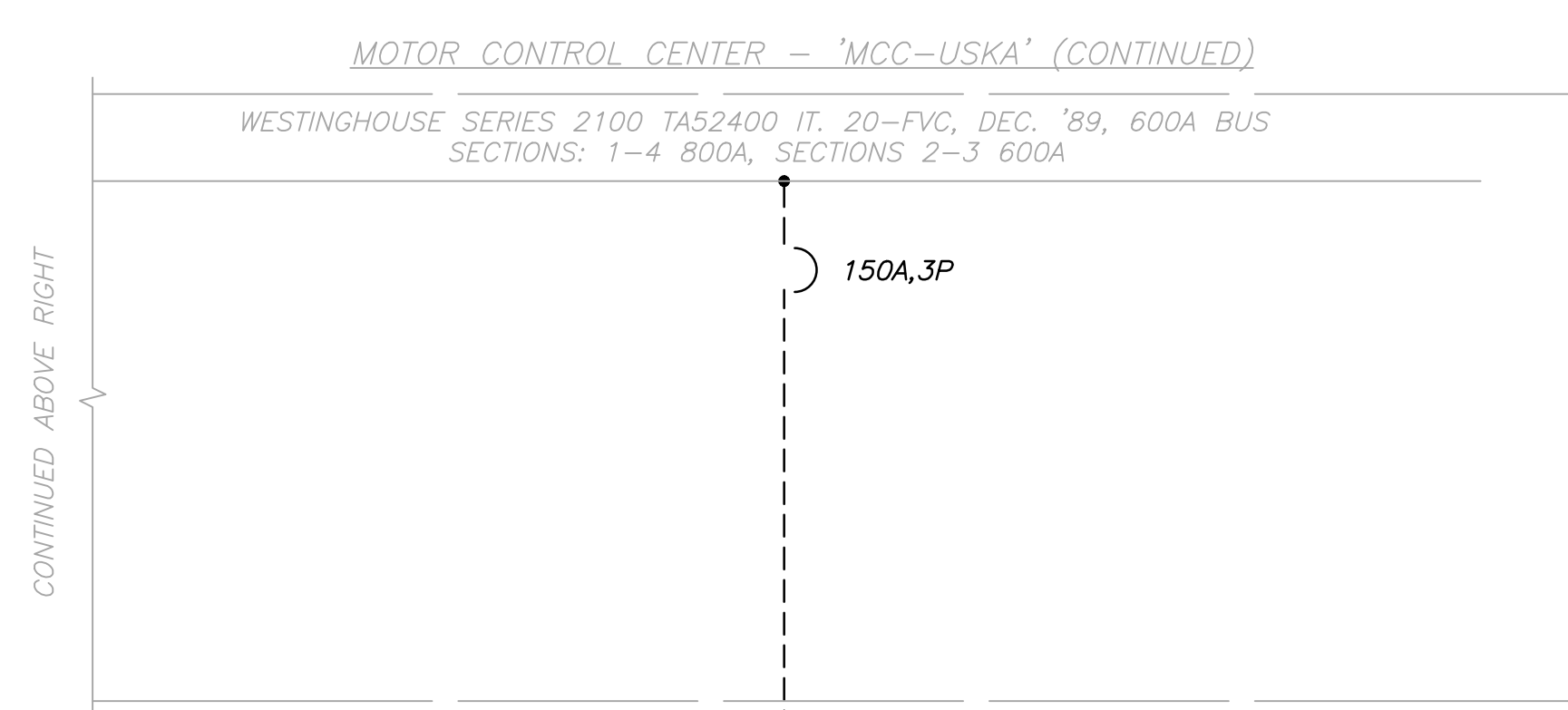
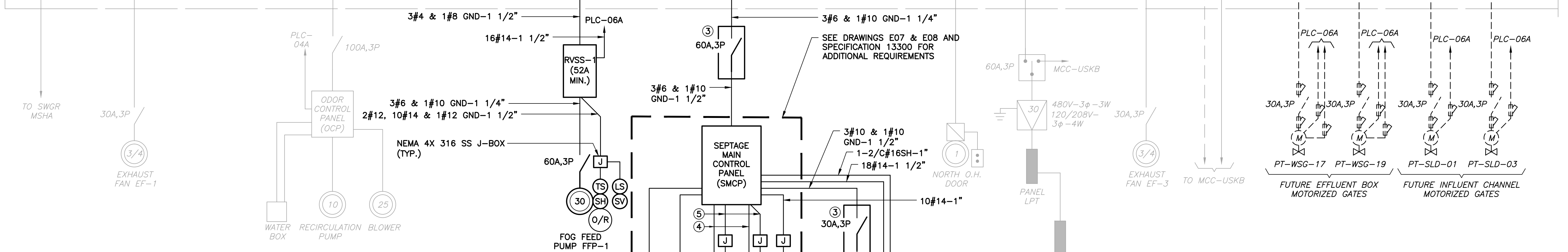
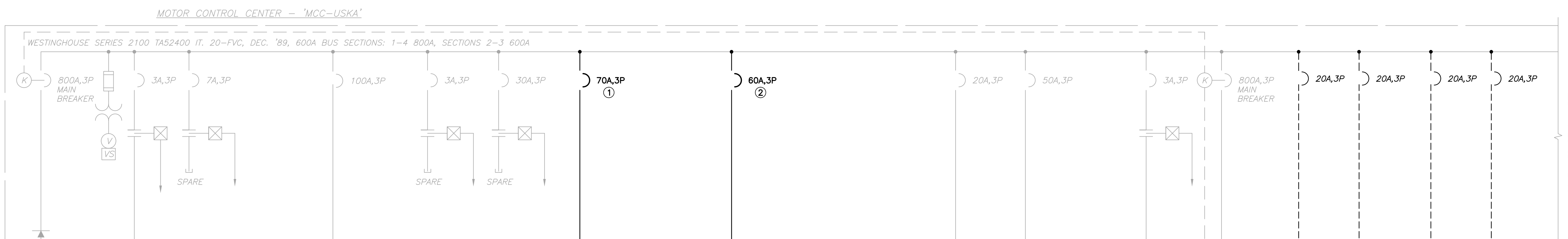


ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
ELECTRICAL
ELECTRICAL SITE PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E02	SHEET NO.: 27 OF 48

RE REISS ENGINEERING, INC.
1016 SPRING VILLAS PT
WINTER SPRINGS, FL 32708
(407) 679-5358

Parent Sheet Set: 110025-SWRF FOG & Septage Receiving Stations, REISS ENGINEERING\ORANGE COUNTY Y11-902-PH-SWRF FOG & SEPTAGE RECEIVING STATIONS\B_ID SUBMITTAL.DWG



'MCC-USKA' LOAD TABULATION

480V-3Φ-3W

DESCRIPTION	LOAD	AMPACITY
① EXHAUST FAN	2 @ 0.75 HP	= 2.20 AMPS
① ODOUR CONTROL	1 @ 50.0 HP	= 65.00 AMPS
① OVERHEAD DOOR	1 @ 1.0 HP	= 1.10 AMPS
① PANEL LPT VIA XFMR	-	= 36.08 AMPS
① FUTURE INFL MOT. VALVE	2 @ 1.0 HP	= 4.20 AMPS
① FUTURE EFF MOT. VALVE	2 @ 1.0 HP	= 4.20 AMPS
① FUTURE GRIT DEWTR SCREW	2 @ 3.0 HP	= 9.60 AMPS
① FUTURE GRIT COLLECTOR	2 @ 2.0 HP	= 6.80 AMPS
① FUTURE GRIT PUMP	2 @ 25.0 HP	= 68.00 AMPS
① FOG FEED PUMP	1 @ 30.0 HP	= 40.00 AMPS
① SEPTAGE PUMP	2 @ 5.0 HP	= 15.20 AMPS
① SEPTAGE GRINDER	1 @ 5.0 HP	= 7.60 AMPS
① SEPTAGE AUGER	1 @ 2.0 HP	= 3.40 AMPS
① SEPTAGE BLOWER	2 @ 5.0 HP	= 15.20 AMPS
CONNECTED LOAD		= 278.58 AMPS
② SERVICE ENTRANCE = 278.58 AMPS + (0.25)(65.00)		= 294.83 AMPS

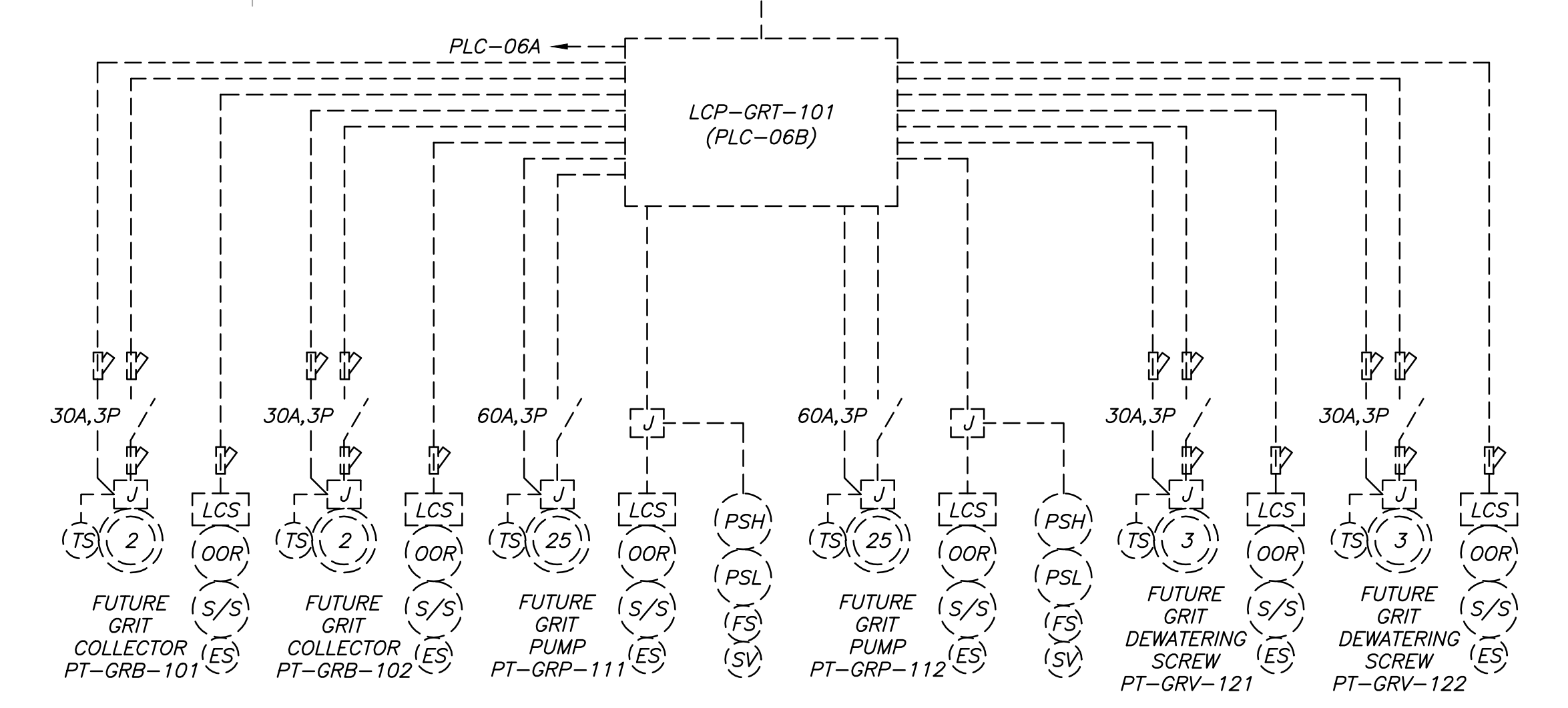
NOTES:

① AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

- NOTES:**
- CONTRACTOR TO REPLACE EXISTING 30A,3P CIRCUIT BREAKER WITH NEW 70A,3P CIRCUIT BREAKER.
 - CONTRACTOR TO REPLACE EXISTING 20A,3P CIRCUIT BREAKER WITH NEW 60A,3P CIRCUIT BREAKER.
 - 480V NEMA 4X STAINLESS STEEL, HEAVY-DUTY NON-FUSED DISCONNECT SWITCH, 42,000 AIC.
 - 3#12, 2#14 & 1#12 GND-1".
 - 4#14-1".

'MCC-USKA' SINGLE LINE DIAGRAM (EXISTING PRE-TREATMENT FACILITY)



REV	DATE	DESCRIPTION	BY
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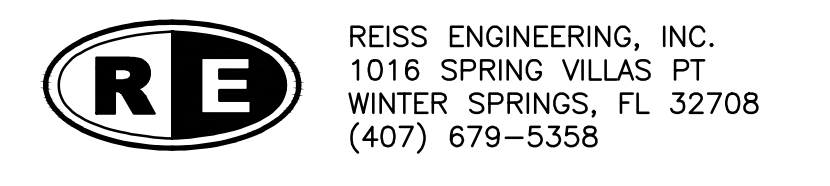
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

ELECTRICAL

MCC-USKA SINGLE LINE DIAGRAM

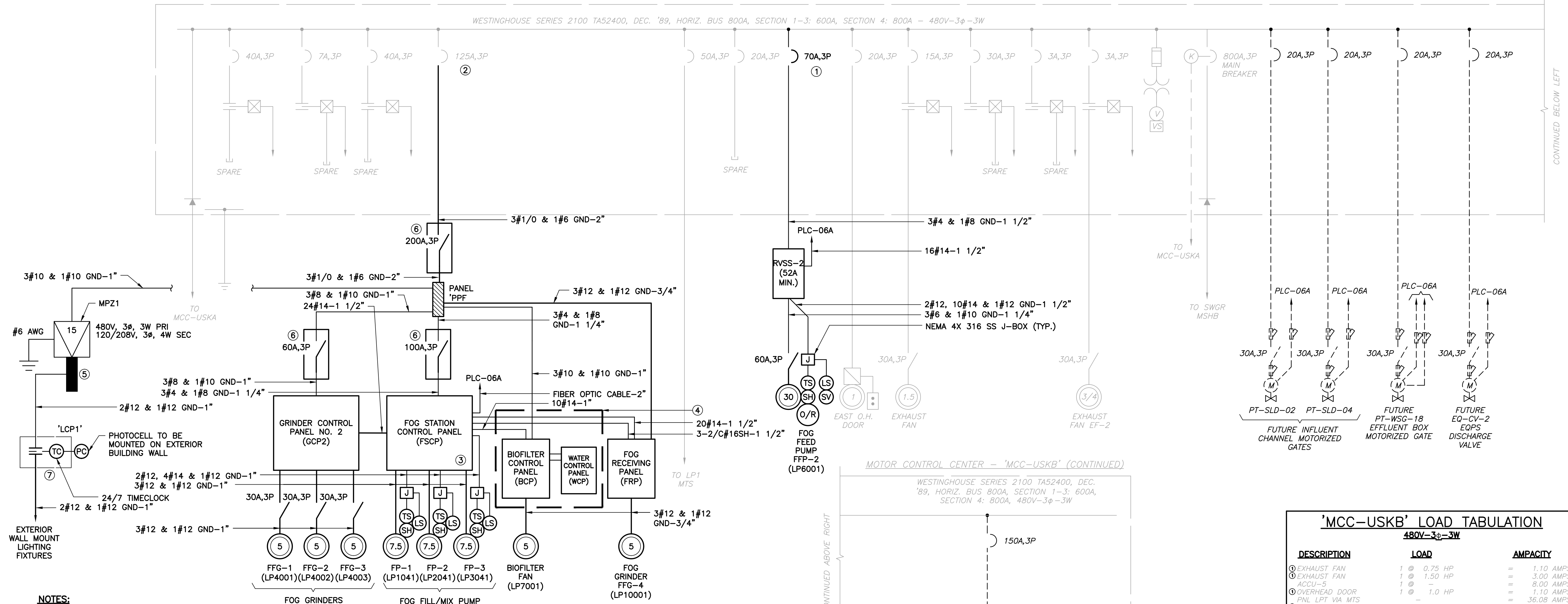
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SCALE: NOTED	REVISION: 0
DRAWING NO. E03	SHEET NO.: 28 OF 48



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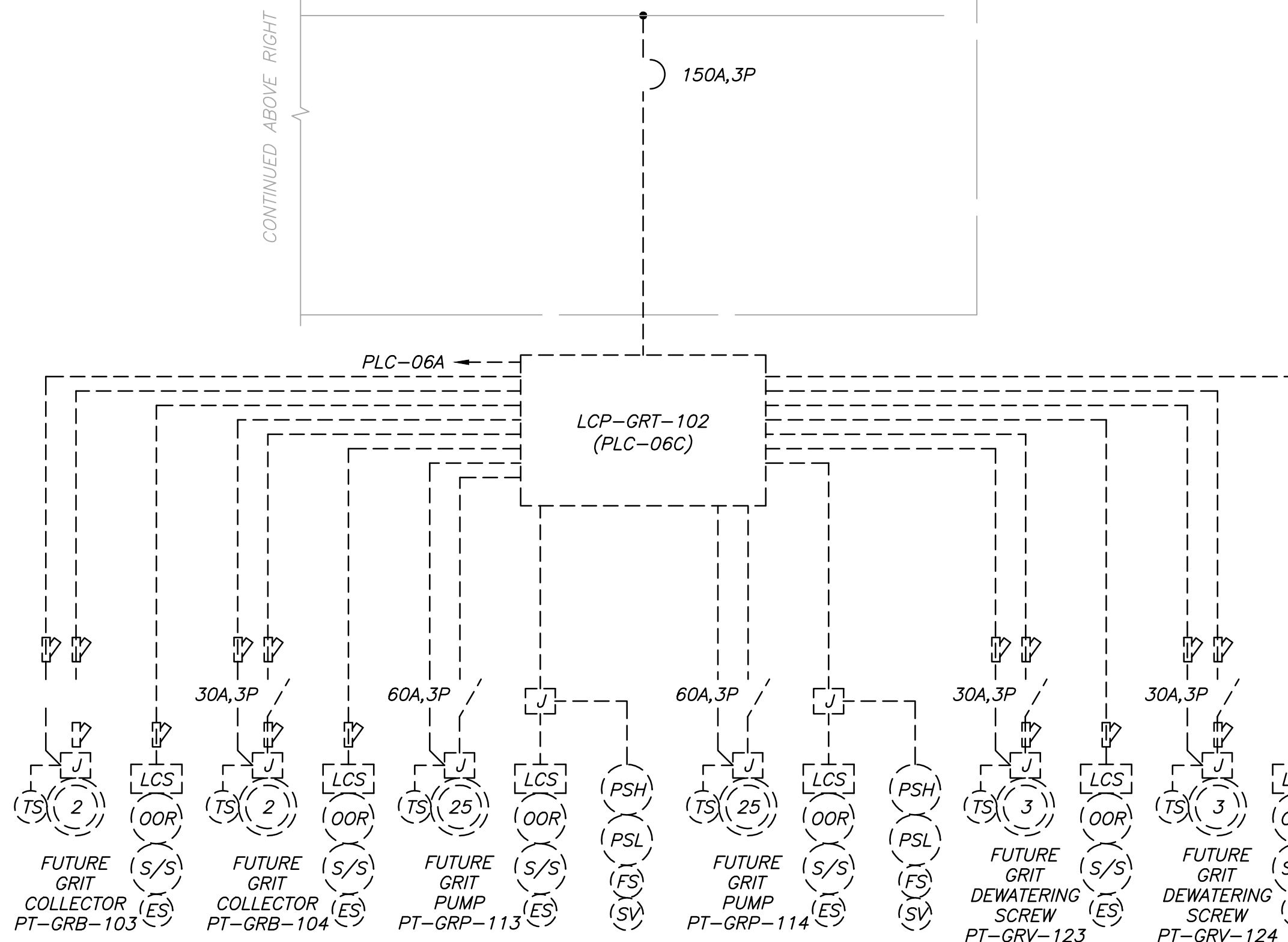
MOTOR CONTROL CENTER - 'MCC-USKB'

WESTINGHOUSE SERIES 2100 TA52400, DEC. '89, HORIZ. BUS 800A, SECTION 1-3: 600A, SECTION 4: 800A - 480V-3φ-3W



MOTOR CONTROL CENTER - 'MCC-USKB' (CONTINUED)

WESTINGHOUSE SERIES 2100 TA52400, DEC. '89, HORIZ. BUS 800A, SECTION 1-3: 600A, SECTION 4: 800A, 480V-3φ-3W



'MCC-USKB' SINGLE LINE DIAGRAM (EXISTING PRE-TREATMENT FACILITY)

'MCC-USKB' LOAD TABULATION		
480V-3φ-3W		
DESCRIPTION	LOAD	AMPACITY
① EXHAUST FAN	1 @ 0.75 HP	= 1.10 AMPS
② EXHAUST FAN	1 @ 1.50 HP	= 3.00 AMPS
ACCU-5	1 @ -	= 8.00 AMPS
③ OVERHEAD DOOR	1 @ 1.0 HP	= 1.10 AMPS
FUTURE PT VIA WFS		
④ FUTURE INFL. MOT. VALVE	2 @ 1.0 HP	= 4.20 AMPS
⑤ FUTURE EFF. MOT. VALVE	1 @ 1.0 HP	= 2.10 AMPS
⑥ FUTURE EOPS DISCH VALVE	1 @ 1.0 HP	= 2.10 AMPS
⑦ FUTURE GRIT DWTR SCREW	2 @ 3.0 HP	= 9.60 AMPS
⑧ FUTURE GRIT COLLECTOR	2 @ 2.0 HP	= 6.80 AMPS
⑨ FUTURE GRIT PUMP	2 @ 25.0 HP	= 68.00 AMPS
⑩ FOG FEED PUMP	1 @ 30.0 HP	= 40.00 AMPS
⑪ GRINDER	4 @ 5.0 HP	= 30.40 AMPS
⑫ FOG MIX/FILL PUMP	3 @ 7.5 HP	= 33.00 AMPS
⑬ ODOR CNTRL BLWR	1 @ 5.0 HP	= 7.60 AMPS
CONNECTED LOAD		= 253.08 AMPS
⑭ SERVICE ENTRANCE = 253.08 AMPS + (0.25)(40.00) = 263.08 AMPS		

NOTES:

- AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.
- SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

- NOTES:**
- CONTRACTOR TO REPLACE EXISTING 30A,3P CIRCUIT BREAKER WITH NEW 70A,3P CIRCUIT BREAKER.
 - TIE INTO EXISTING LOAD SIDE OF EXISTING CIRCUIT BREAKER.
 - SEE DRAWINGS E07, E08 AND SPECIFICATION SECTION 13300 FOR ADDITIONAL REQUIREMENTS.
 - PRE-WIRED ELECTRICAL COMPONENTS FURNISHED BY BIOFILTER CONTROL SYSTEM SUPPLIER AND INSTALLED BY THIS CONTRACTOR. SEE DIVISION 11 FOR ADDITIONAL REQUIREMENTS.
 - CONTRACTOR TO FURNISH AND INSTALL 15KVA MINI POWER-ZONE (MPZ1), NEMA 3R STAINLESS STEEL ENCLOSURE AS MANUFACTURED BY SQUARE D OR APPROVED EQUAL.
 - 480V NEMA 4X STAINLESS STEEL, HEAVY-DUTY NON-FUSED DISCONNECT SWITCH, 42,000 AIC.
 - 30A,2P ELECTRICALLY HELD LIGHTING CONTACTOR WITH 120V COIL IN A NEMA 4X 316 SS ENCLOSURE. PROVIDE RELAYS AND HOA AS SHOWN IN THE CONTACTOR ELEMENTARY DIAGRAM ON DRAWING E09.

Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:50 PM I:\Projects\110025-SWRF FOG & Septage Receiving Stations\BID SUBMITTAL\DWGS



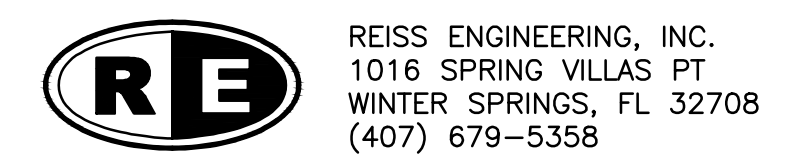
REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

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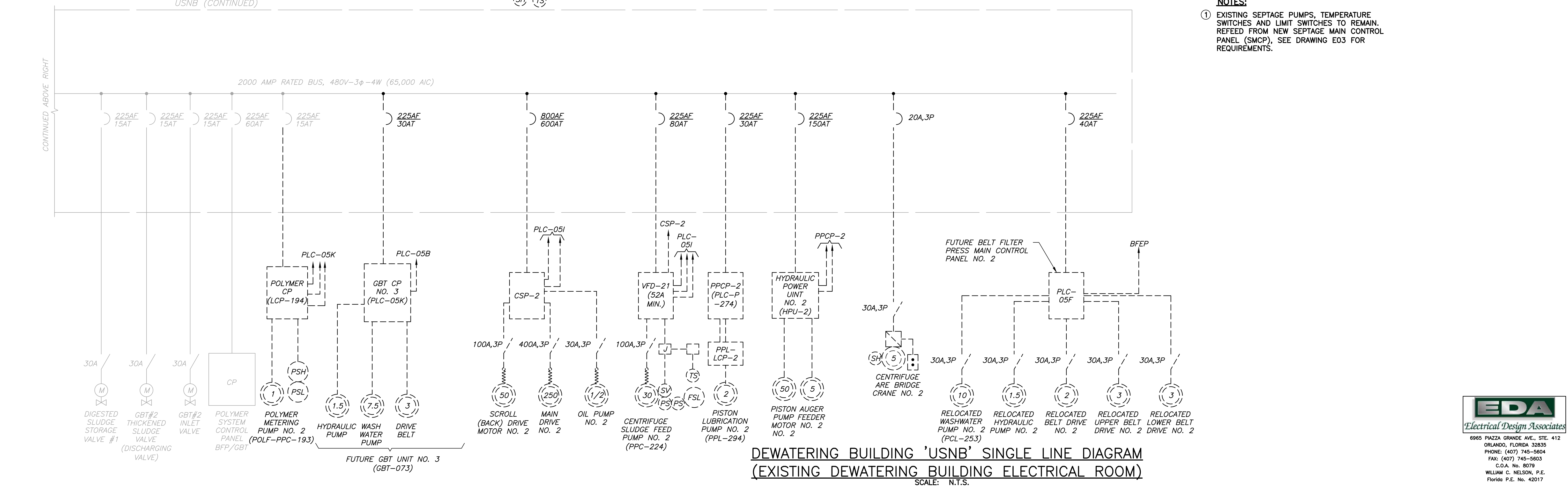
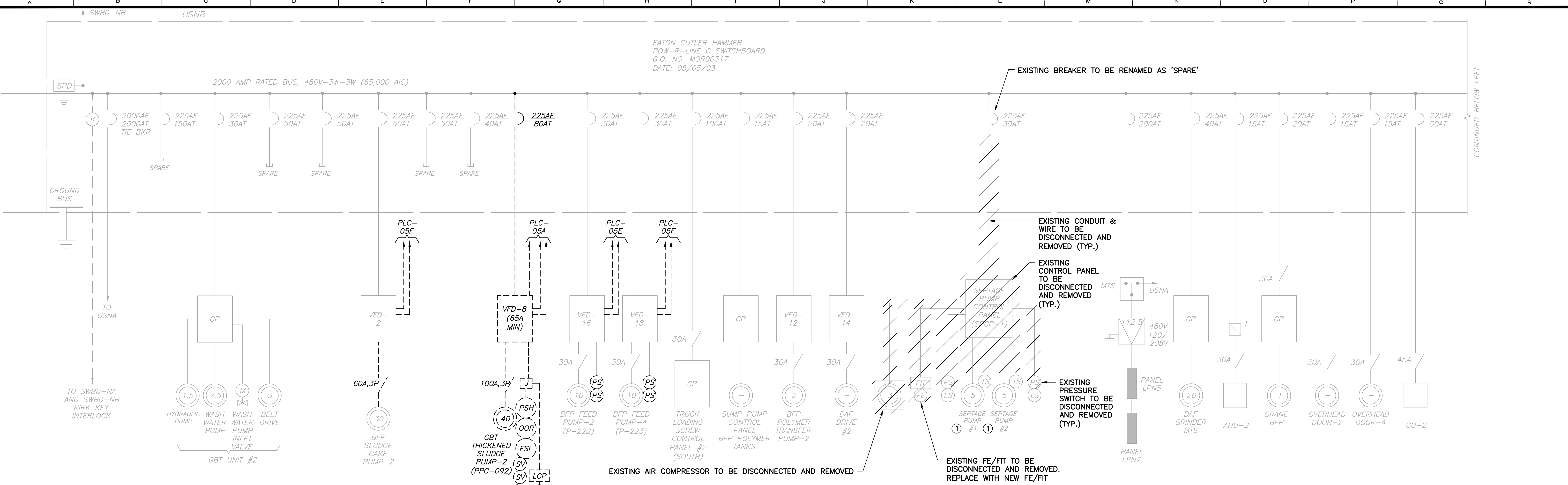
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 MCC-USKB SINGLE LINE DIAGRAM

PROJECT NO.:	110025
SCALE:	NOTED
DRAWING NO.:	E04
REVISION:	0
SHEET NO.:	29 OF 48



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NOTES:
 ① EXISTING SEPTAGE PUMPS, TEMPERATURE SWITCHES AND LIMIT SWITCHES TO REMAIN. REFEED FROM NEW SEPTAGE MAIN CONTROL PANEL (SMCP). SEE DRAWING E03 FOR REQUIREMENTS.

**DEWATERING BUILDING 'USNB' SINGLE LINE DIAGRAM
 (EXISTING DEWATERING BUILDING ELECTRICAL ROOM)**
 SCALE: N.T.S.



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 Reviewed DD
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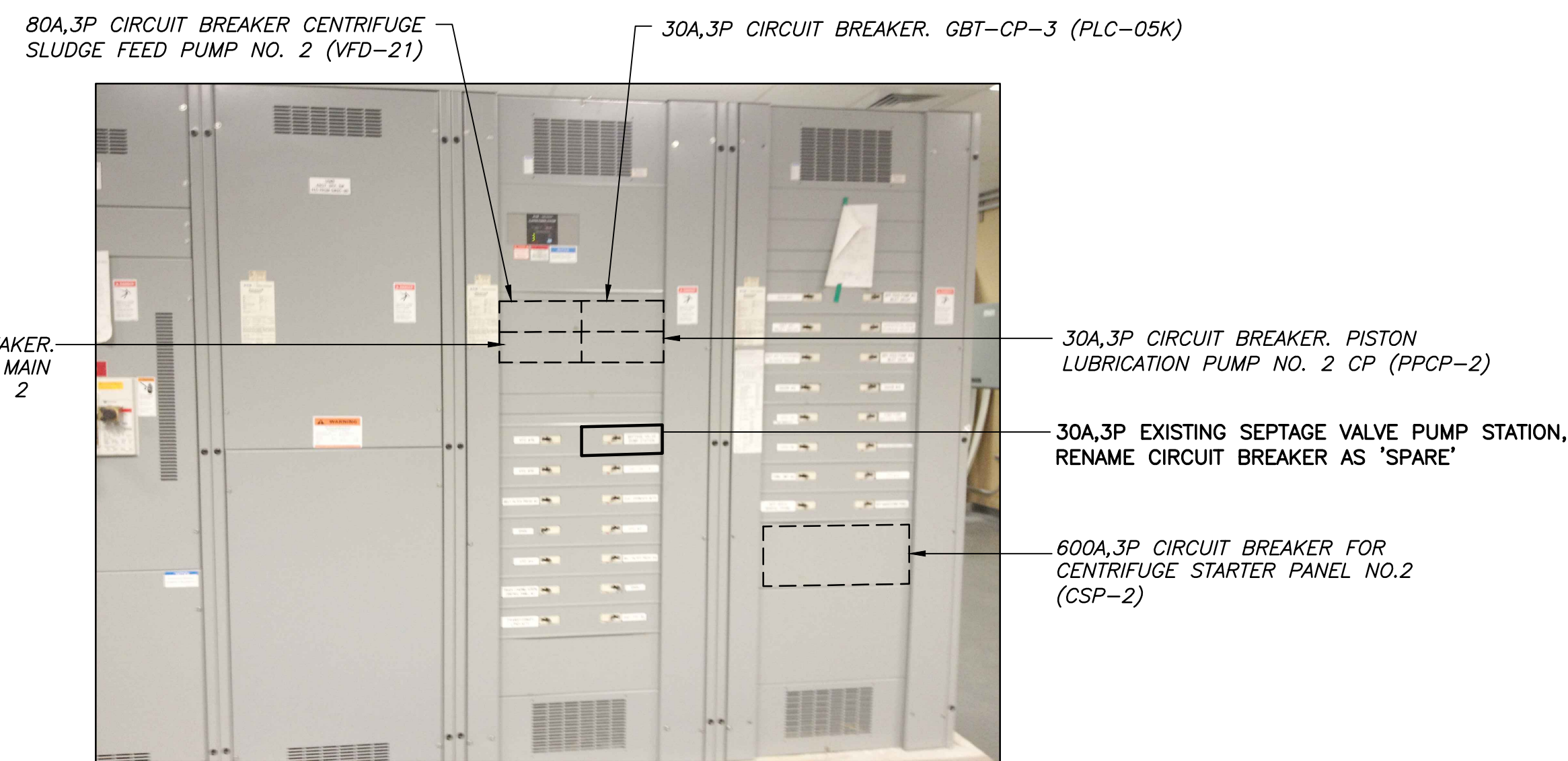
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 USNB SINGLE LINE DIAGRAM

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E05	SHEET NO.: 30 OF 48

Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:51 PM F:\Active Projects\Reiss Engineering\Orange County\11-902-PH-SWRF FOG & SEPTAGE RECEIVING STATIONS\BID SUBMITTAL\DWGS

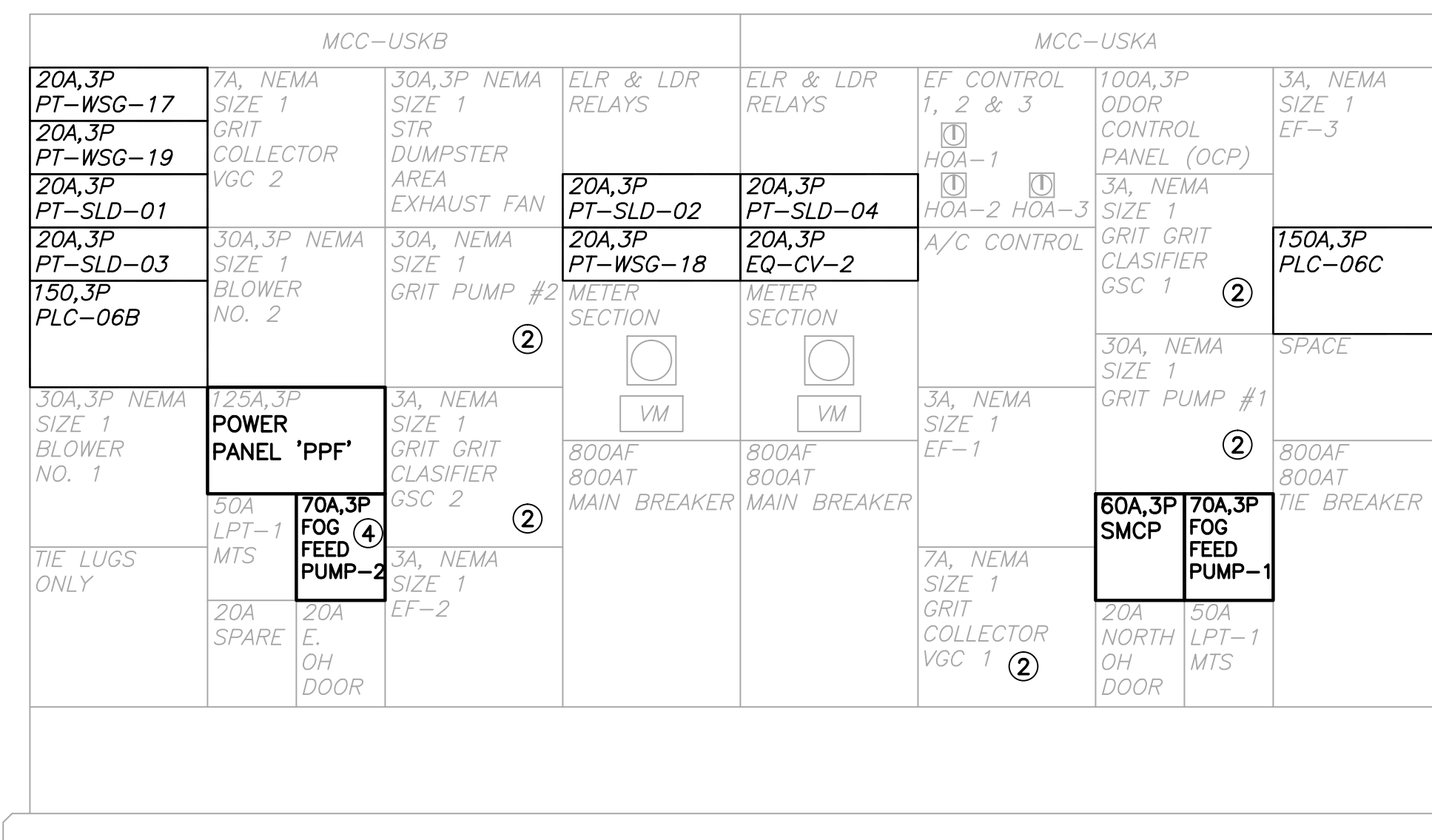


EXISTING SWBD 'USNA' & 'USNB' OVERALL EQUIPMENT FRONT VIEW
(DEWATERING BUILDING ELECTRICAL ROOM)
N.T.S.

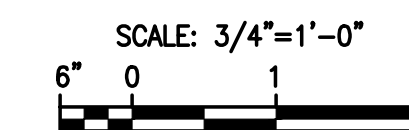


NOTES:
① MODIFY SWBD AS SHOWN ON SINGLE LINE DIAGRAM. PROVIDE UPDATED NAME PLATES.

EXISTING SWBD 'USNB' FRONT VIEW
(DEWATERING BUILDING ELECTRICAL ROOM)
N.T.S.



① MCC-USKA & MCC-USKB MODIFIED FRONT VIEW
(PRE-TREATMENT FACILITY)



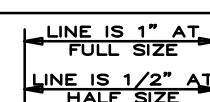
NOTES:
① MODIFY MCC AS SHOWN ON SINGLE LINE DIAGRAM. PROVIDE UPDATED NAMEPLATES.
② RENAME AS 'SPARE'.
③ MCC SHALL REMAIN IN OPERATION AT ALL TIMES DURING CONSTRUCTION.
④ EXISTING 30A,3P SPARE CIRCUIT BREAKER TO BE DISCONNECTED, REMOVED AND REPLACED WITH NEW 70A,3P CIRCUIT BREAKER.



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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

ELECTRICAL
EQUIPMENT FRONT VIEWS

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E06	SHEET NO.: 31 OF 48

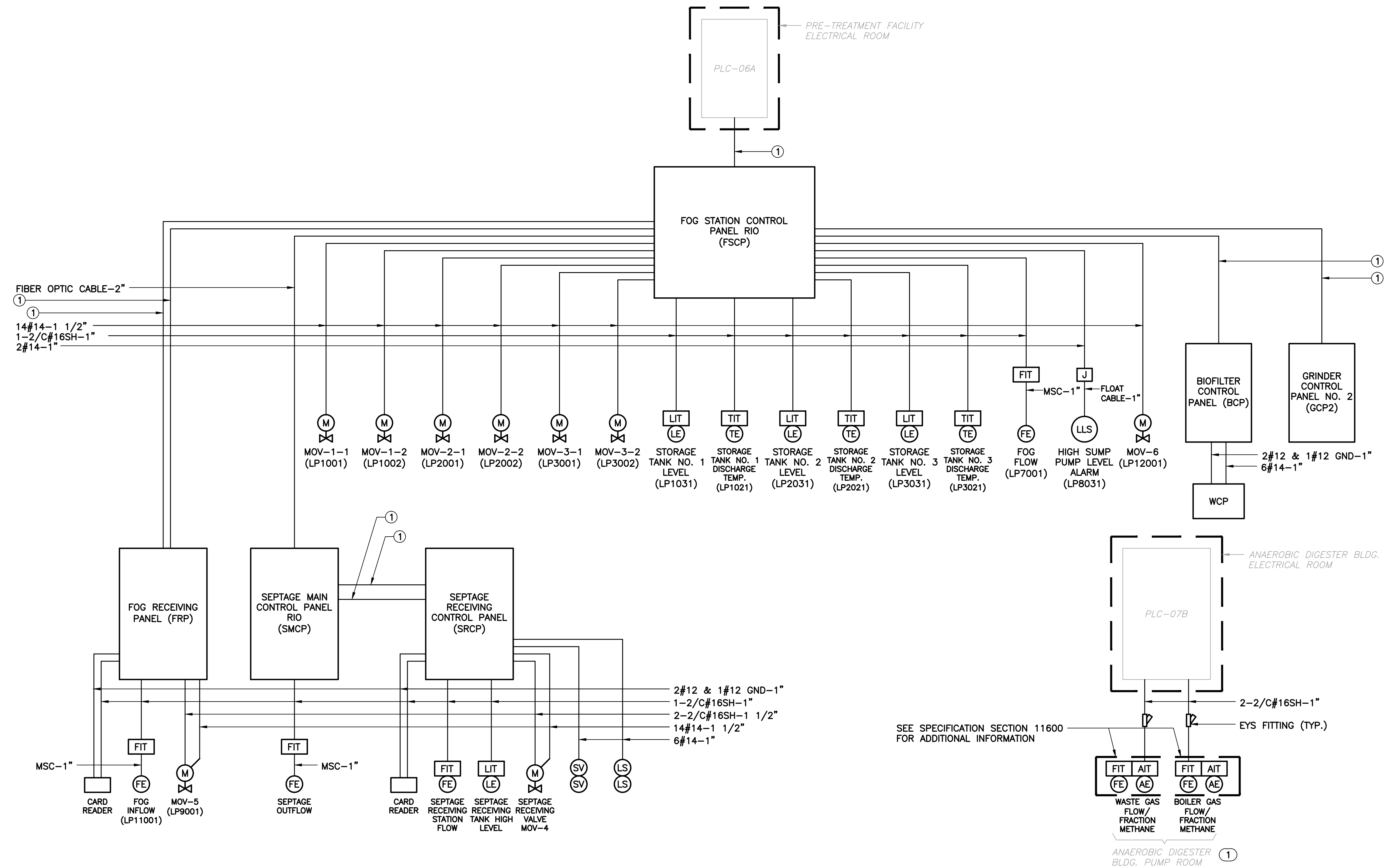


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Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:51 PM Infiniti\AC\Projects\REISS\ENGINEERING\ORANGE COUNTY\Y11-902-PH-SWRF FOG & SEPTAGE RECEIVING STATIONS\BID SUBMITTAL\DWGS



NOTES:
 ① REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.

SEE SPECIFICATION SECTION 11600 FOR ADDITIONAL INFORMATION

NOTES:
 ① THE ANAEROBIC DIGESTER PUMP ROOM IS CLASSIFIED AS CLASS I, DIVISION 1, GROUP D HAZARDOUS AREA PER NFPA-820-2012 EDITION. ALL WIRING METHODS IN THE CLASSIFIED AREA ARE TO BE PER THE REQUIREMENTS OF THE N.E.C. ARTICLE 500.

CONTROL INTERFACE WIRING DIAGRAM



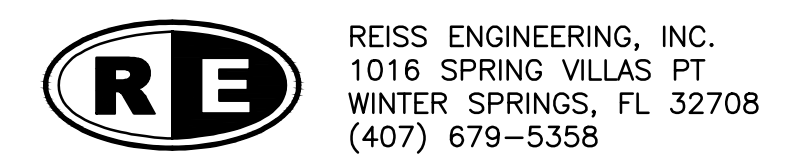
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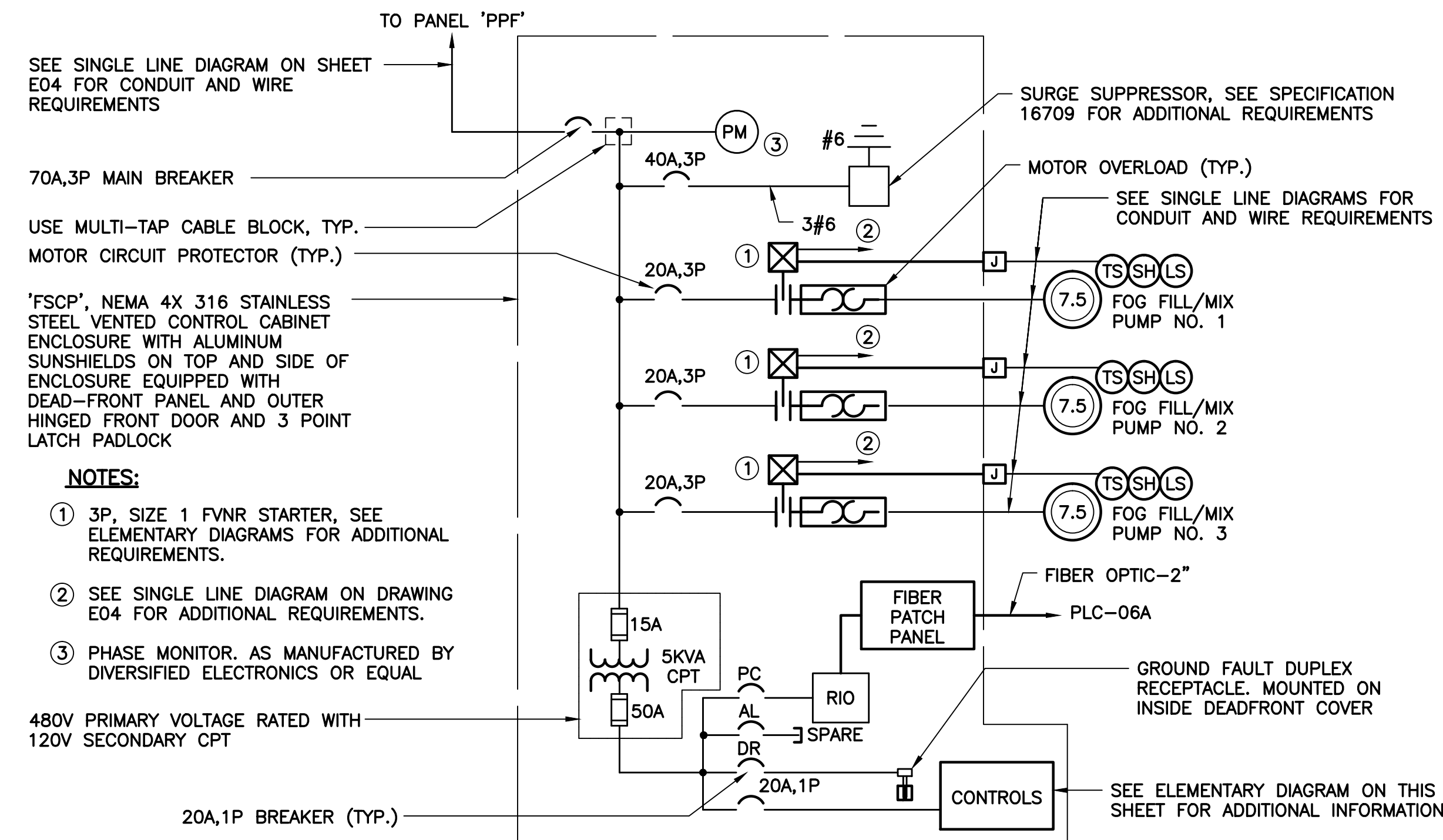
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
CONTROL INTERFACE WIRING DIAGRAM

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E07	SHEET NO.: 32 OF 48

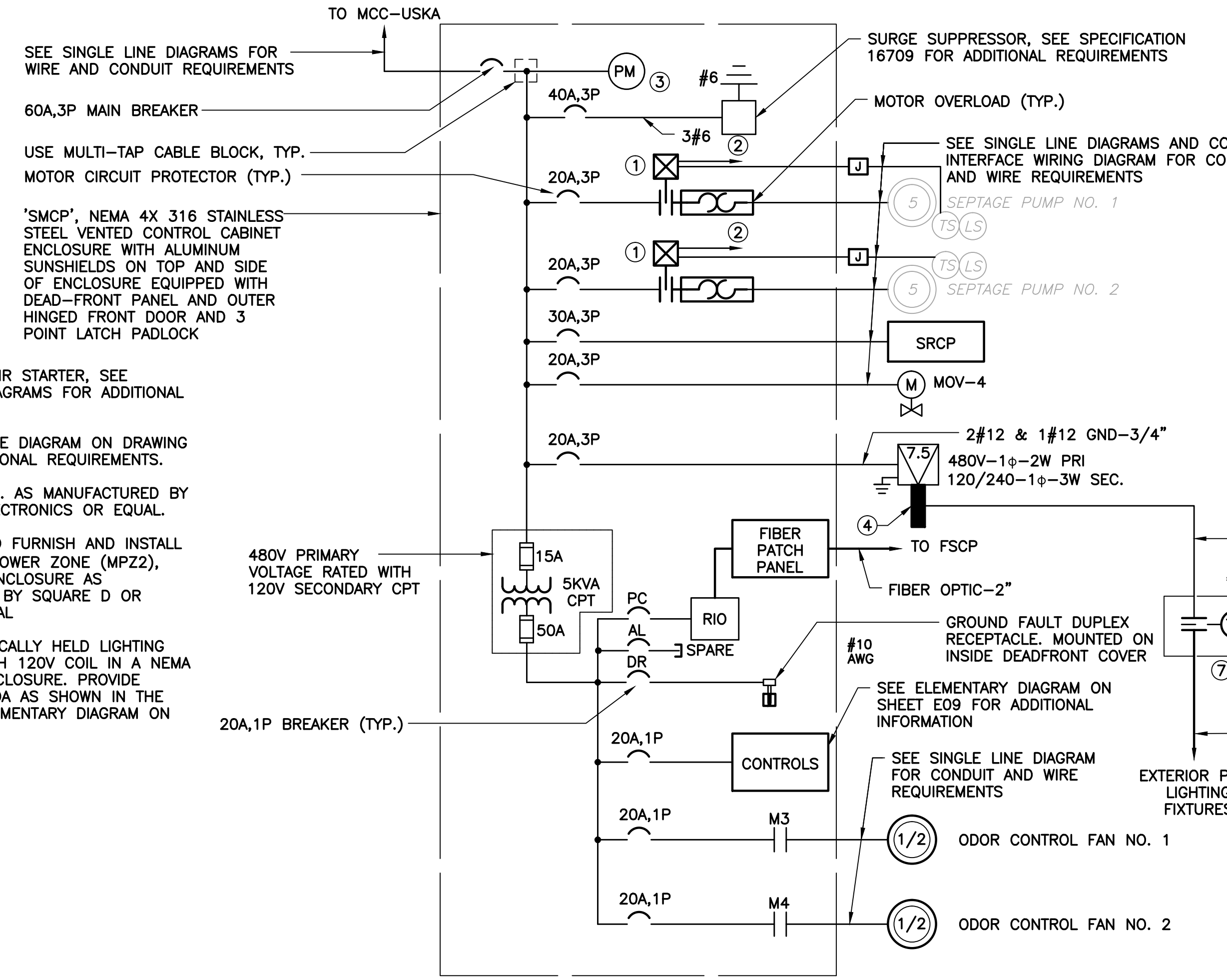


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 Florida P.E. No. 42017

Parent Sheet: Set: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS_BID SUBMITTAL.DWG



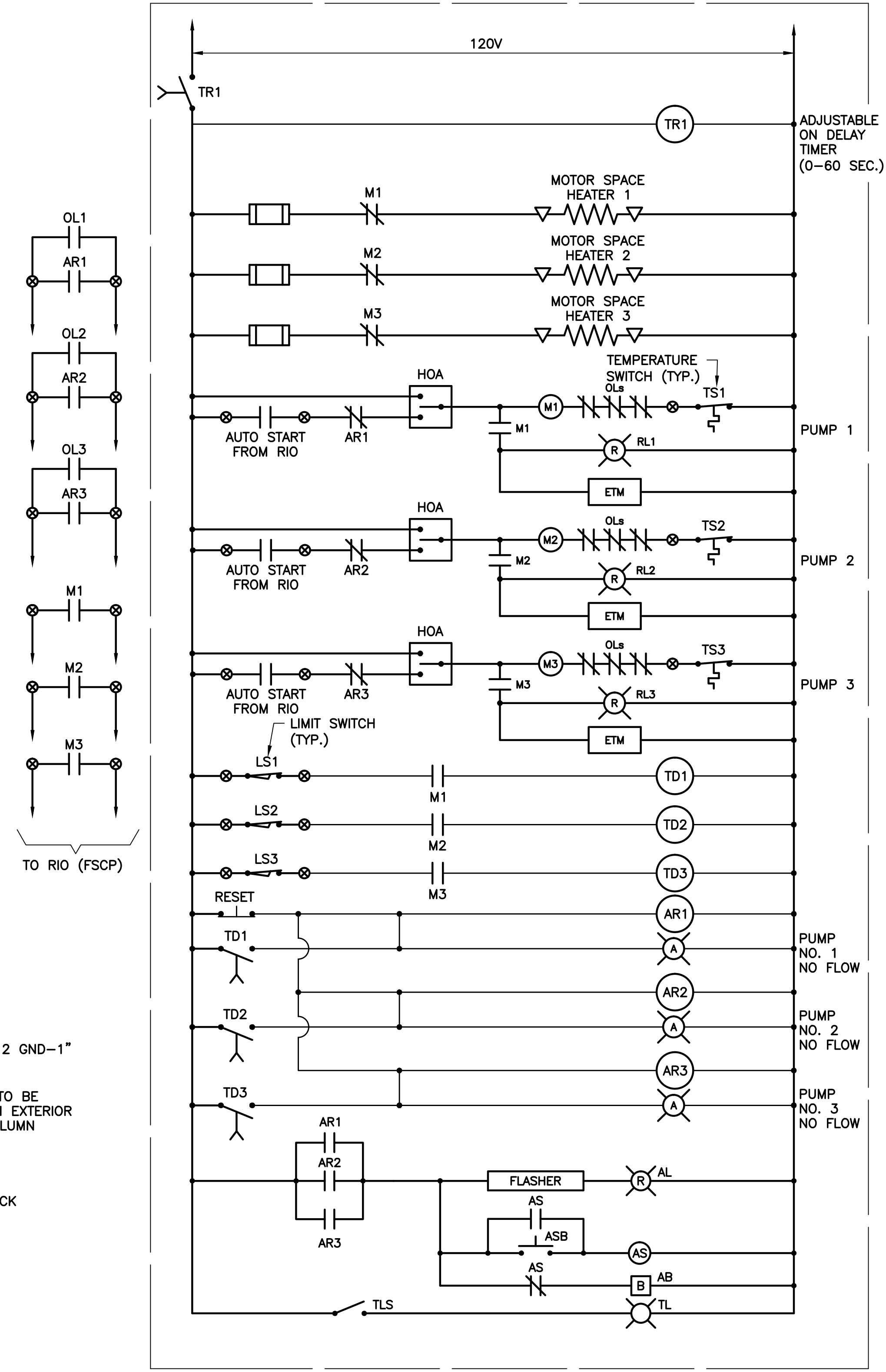
FOG STATION CONTROL PANEL (FSCP) SINGLE LINE DIAGRAM



SEPTAGE MAIN CONTROL PANEL (SMCP) SINGLE LINE DIAGRAM

- NOTES:**
- 3P, SIZE 1 FVNR STARTER, SEE ELEMENTARY DIAGRAMS FOR ADDITIONAL REQUIREMENTS.
 - SEE SINGLE LINE DIAGRAM ON DRAWING E04 FOR ADDITIONAL REQUIREMENTS.
 - PHASE MONITOR, AS MANUFACTURED BY DIVERSIFIED ELECTRONICS OR EQUAL
- 480V PRIMARY VOLTAGE RATED WITH 120V SECONDARY CPT

- NOTES:**
- 3P, SIZE 1 FVNR STARTER, SEE ELEMENTARY DIAGRAMS FOR ADDITIONAL REQUIREMENTS.
 - SEE SINGLE LINE DIAGRAM ON DRAWING E03 FOR ADDITIONAL REQUIREMENTS.
 - PHASE MONITOR, AS MANUFACTURED BY DIVERSIFIED ELECTRONICS OR EQUAL.
 - CONTRACTOR TO FURNISH AND INSTALL 7.5 KVA MINI POWER ZONE (MPZ2), NEMA 3R SS ENCLOSURE AS MANUFACTURED BY SQUARE D OR APPROVED EQUAL
 - 30A, 2P ELECTRICALLY HELD LIGHTING CONTACTOR WITH 120V COIL IN A NEMA 4X 316 SS ENCLOSURE. PROVIDE RELAYS AND HOA AS SHOWN IN THE CONTACTOR ELEMENTARY DIAGRAM ON DRAWING E09.



FOG STATION ELEMENTARY DIAGRAM



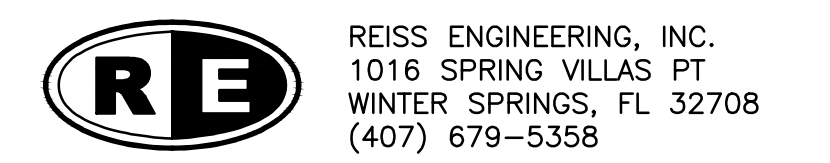
REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

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 Reviewed_DD
 Approved_LMR

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 ELEMENTARY DIAGRAMS - 1

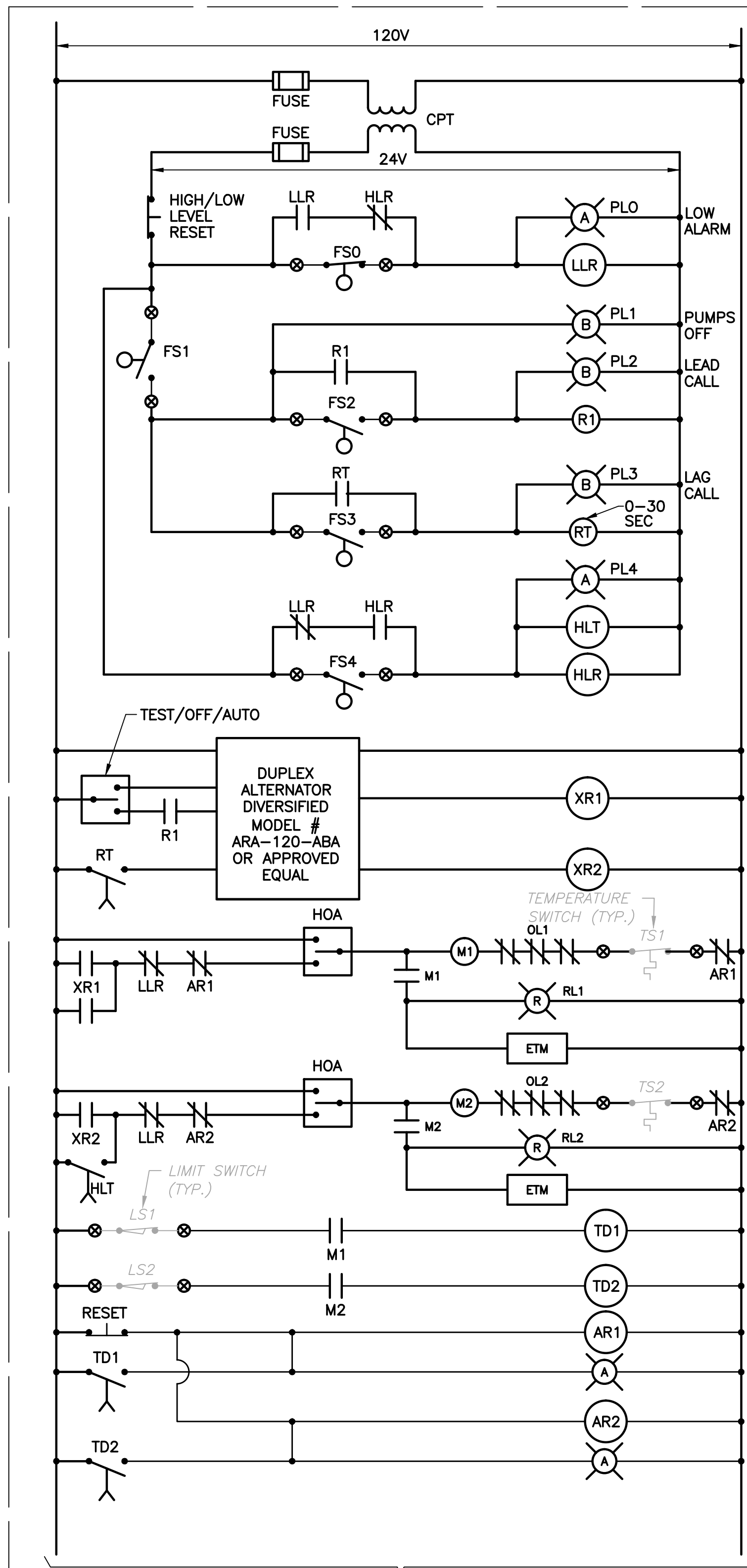
PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	E08
SHEET NO.:	33 OF 48



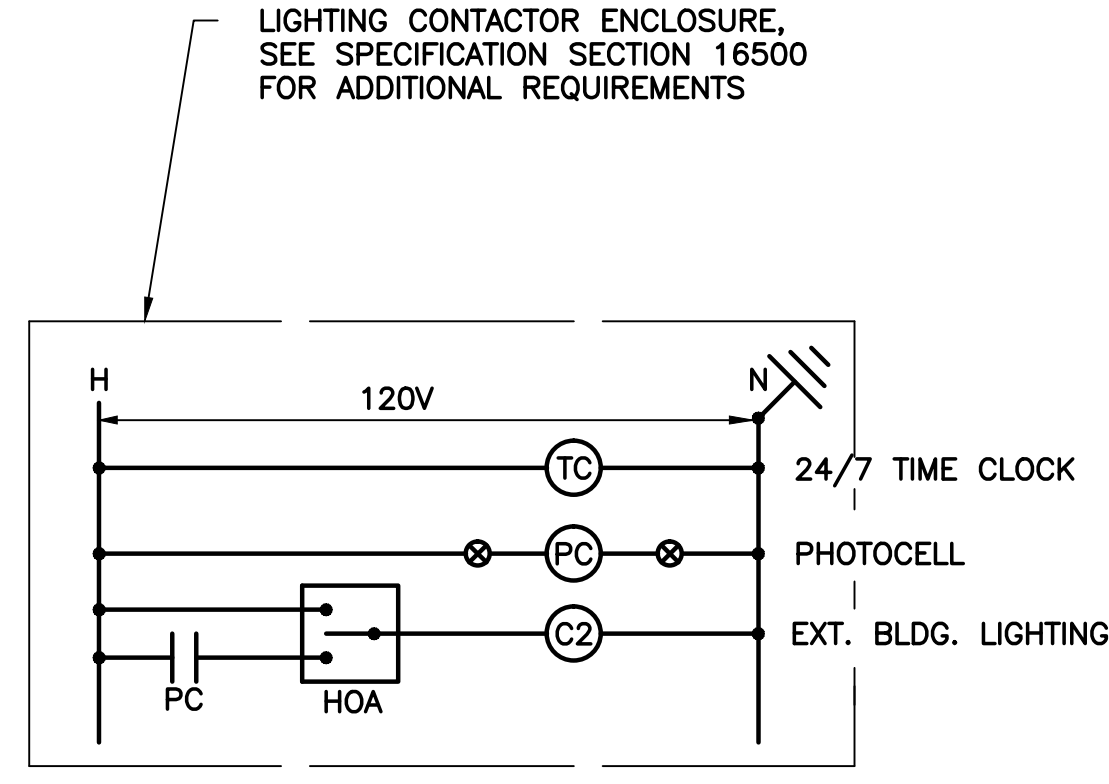
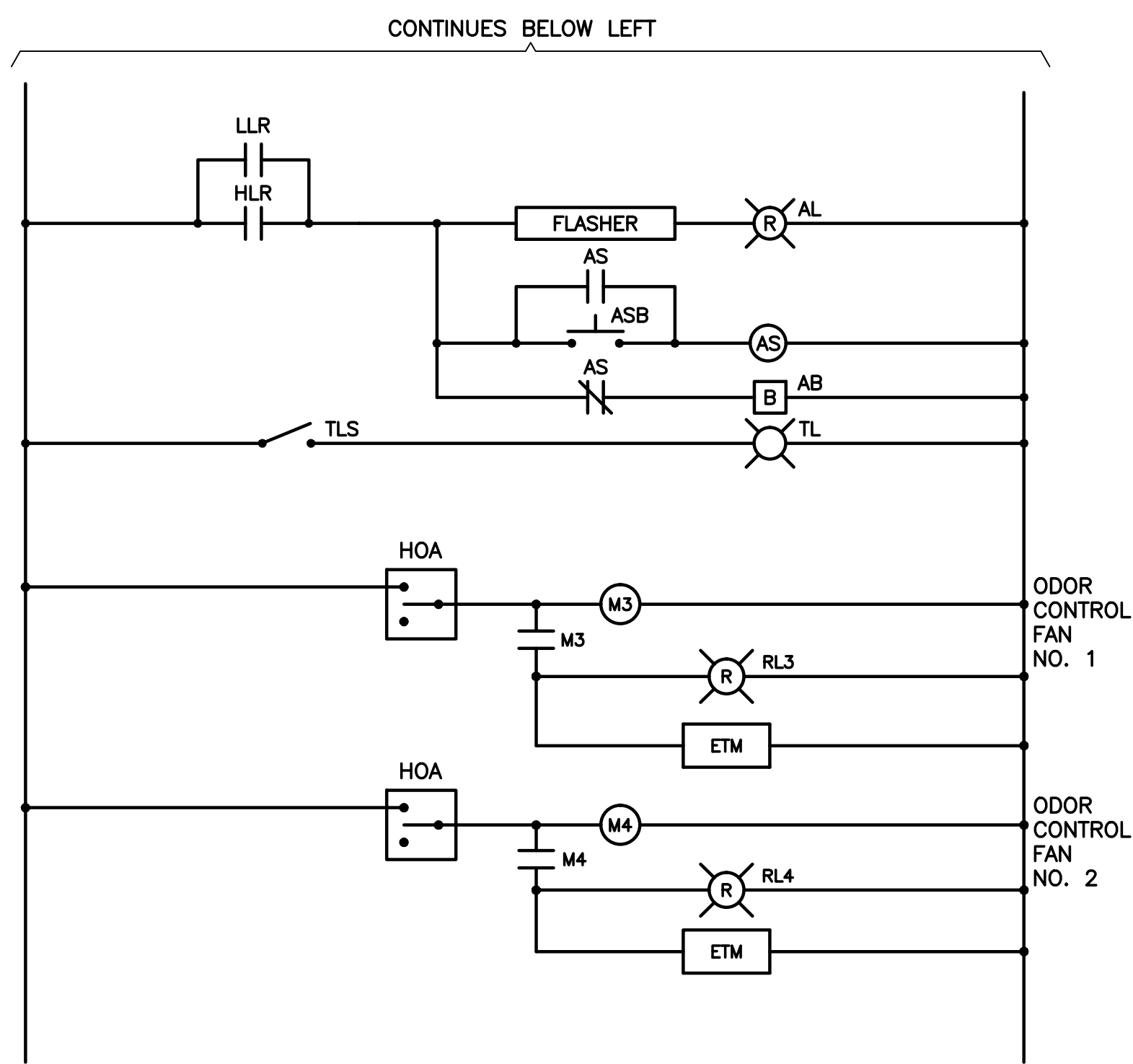
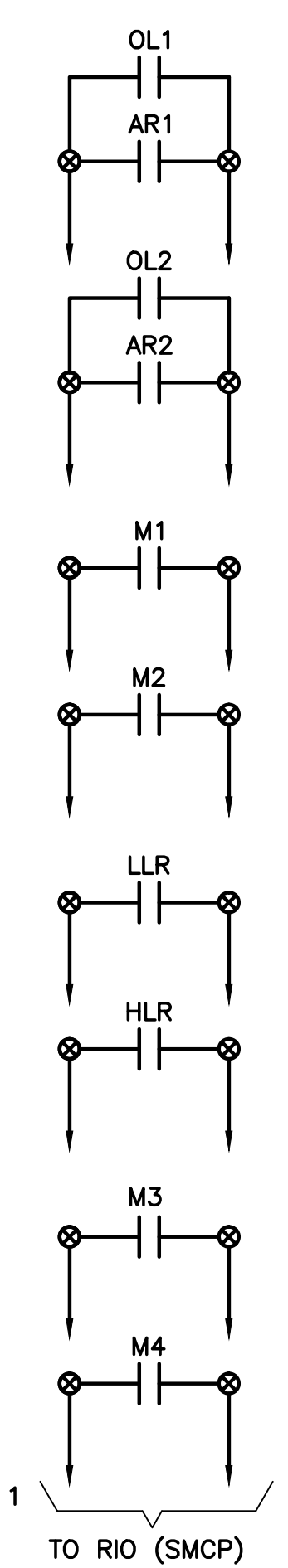
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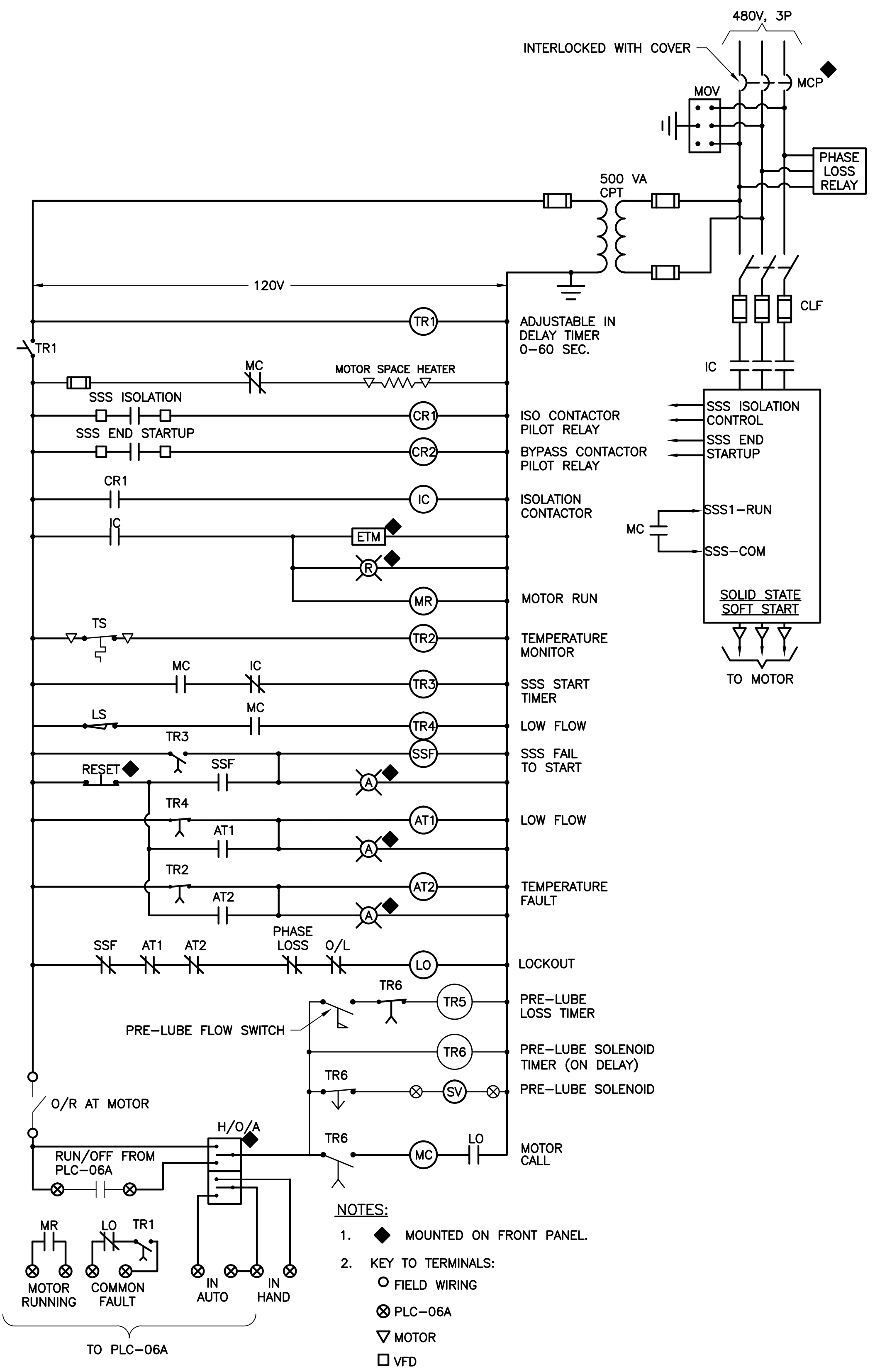
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SEPTAGE PUMP/SEPERATOR BLOWER ELEMENTARY DIAGRAM



CONTACTOR ELEMENTARY DIAGRAM (TYP. LCP1 & LCP2) N.T.S.



FOG FEED PUMP REDUCED VOLTAGE SOFT STARTER ELEMENTARY DIAGRAM (TYP. 2)

- NOTES:
- ◆ MOUNTED ON FRONT PANEL.
 - KEY TO TERMINALS:
 ○ FIELD WIRING
 ⊗ PLC-06A
 ▽ MOTOR
 □ VFD



REV	DATE	DESCRIPTION	BY
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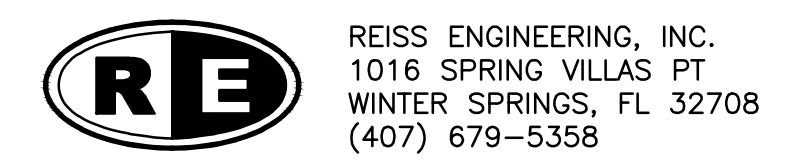
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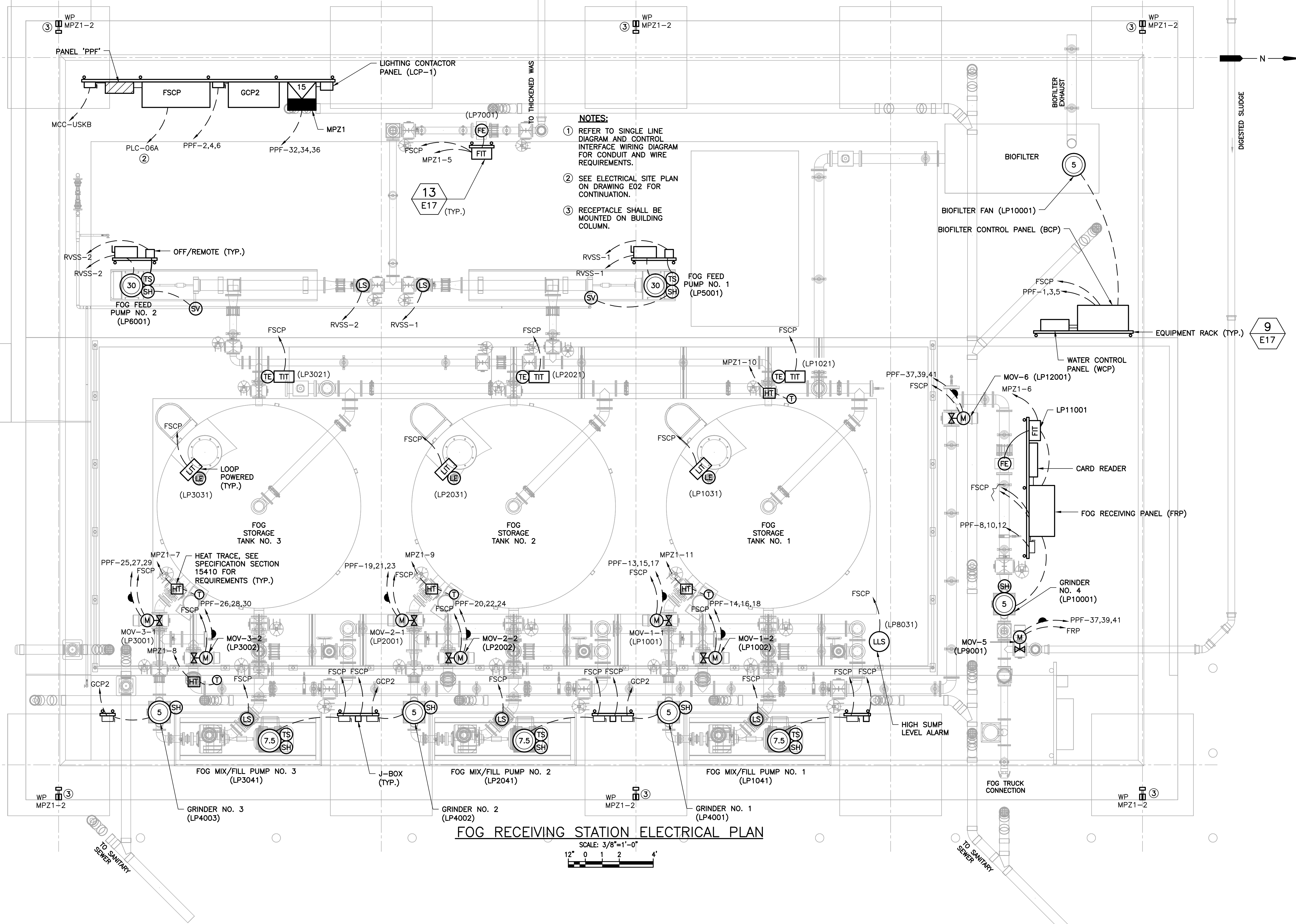
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

ELECTRICAL
 ELEMENTARY DIAGRAMS - 2

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E09	SHEET NO.: 34 OF 48

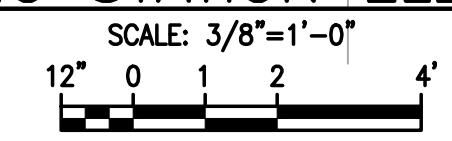


Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:51 PM I:\Projects\110025-SWRF FOG & Septage Receiving Stations\BID SUBMITTAL.DWG



- NOTES:**
- ① REFER TO SINGLE LINE DIAGRAM AND CONTROL INTERFACE WIRING DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
 - ② SEE ELECTRICAL SITE PLAN ON DRAWING E02 FOR CONTINUATION.
 - ③ RECEPTACLE SHALL BE MOUNTED ON BUILDING COLUMN.

FOG RECEIVING STATION ELECTRICAL PLAN



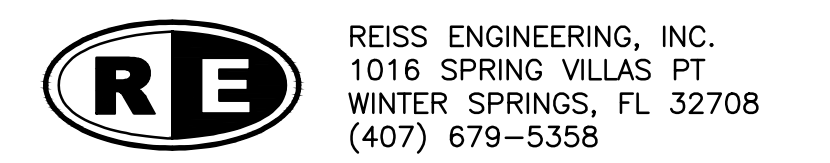
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0	9/2016	ISSUED FOR BID	LMR

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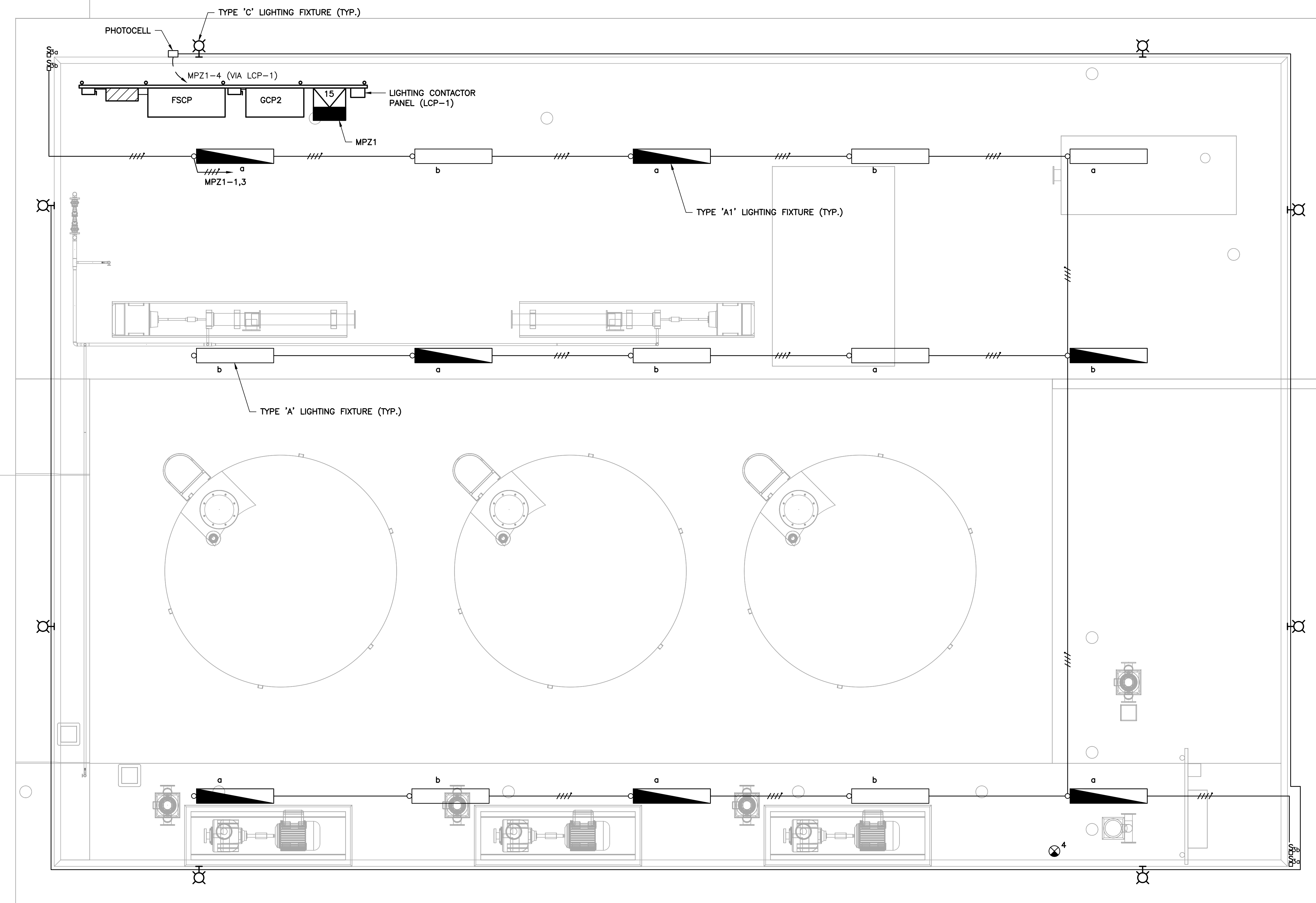
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 FOG RECEIVING STATION ELECTRICAL PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E10	SHEET NO.: 35 OF 48



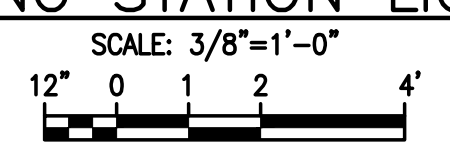
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- NOTES:**
- ① ALL TYPES 'A' AND 'A1' LIGHTING FIXTURES SHALL BE MOUNTED 19'-0" ABOVE FINISHED FLOOR.
 - ② ALL TYPE 'C' LIGHT FIXTURES SHALL BE MOUNTED 12'-0" ABOVE FINISHED FLOOR.

FOG RECEIVING STATION LIGHTING PLAN



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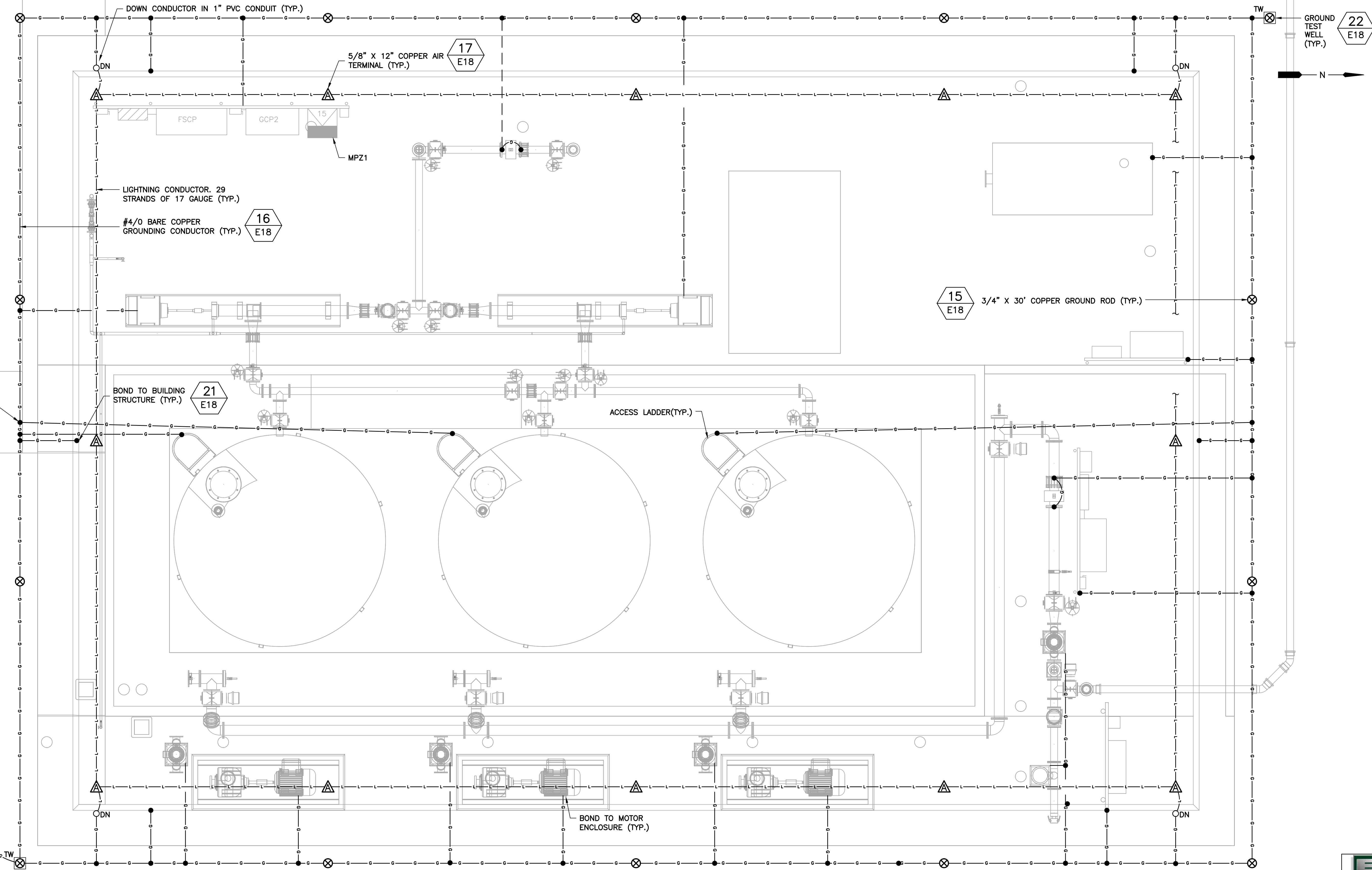
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
FOG RECEIVING STATION LIGHTING PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E11	SHEET NO.: 36 OF 48

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FOG RECEIVING STATION LIGHTNING PROTECTION/GROUNDING PLAN

SCALE: 3/8" = 1'-0"
 12" 0 1 2 4'



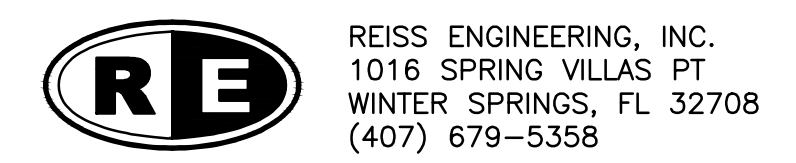
REV	DATE	DESCRIPTION	BY
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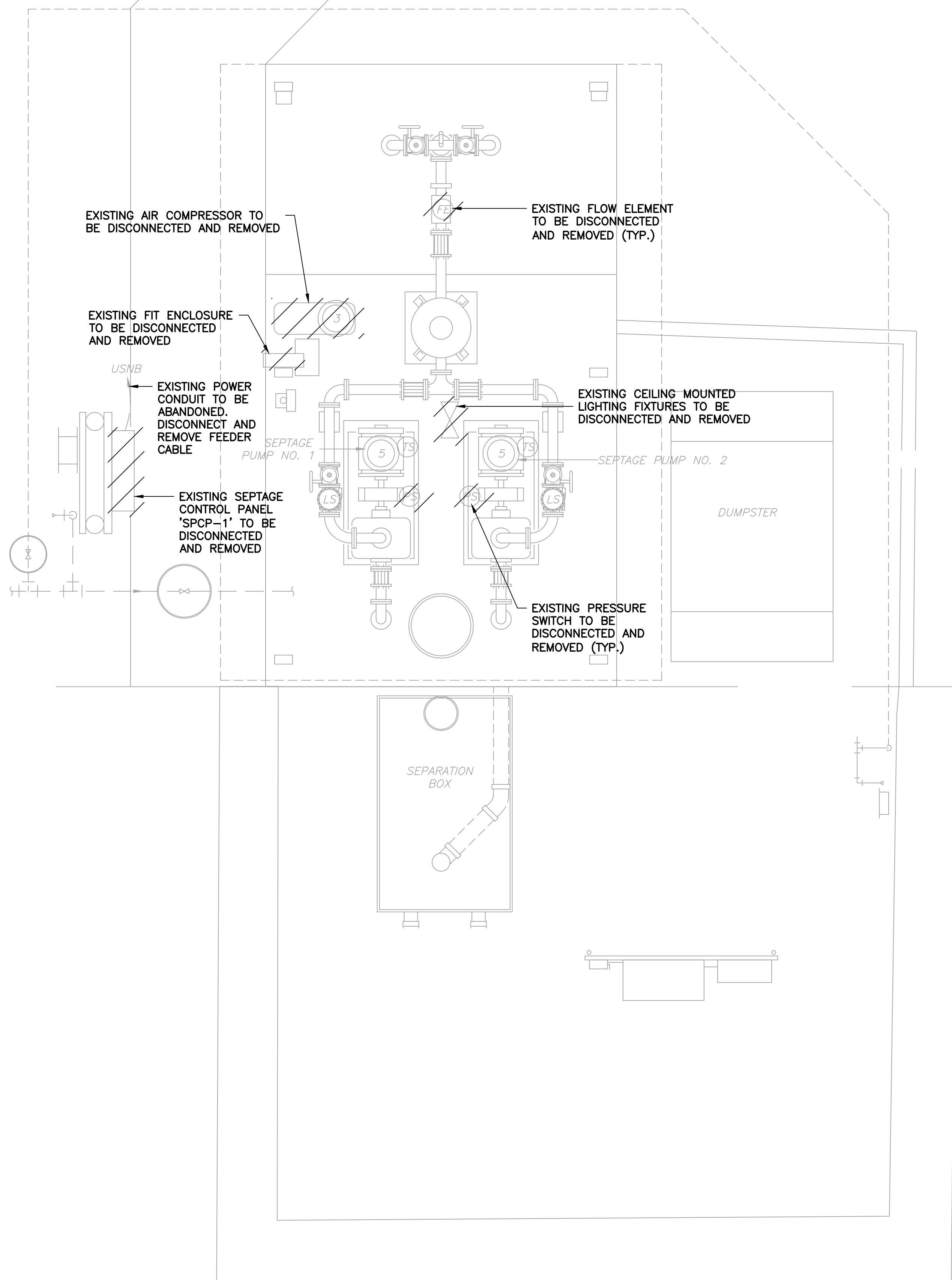
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 FOG RECEIVING STATION LIGHTNING
 PROTECTION/GROUNDING PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E12	SHEET NO.: 37 OF 48

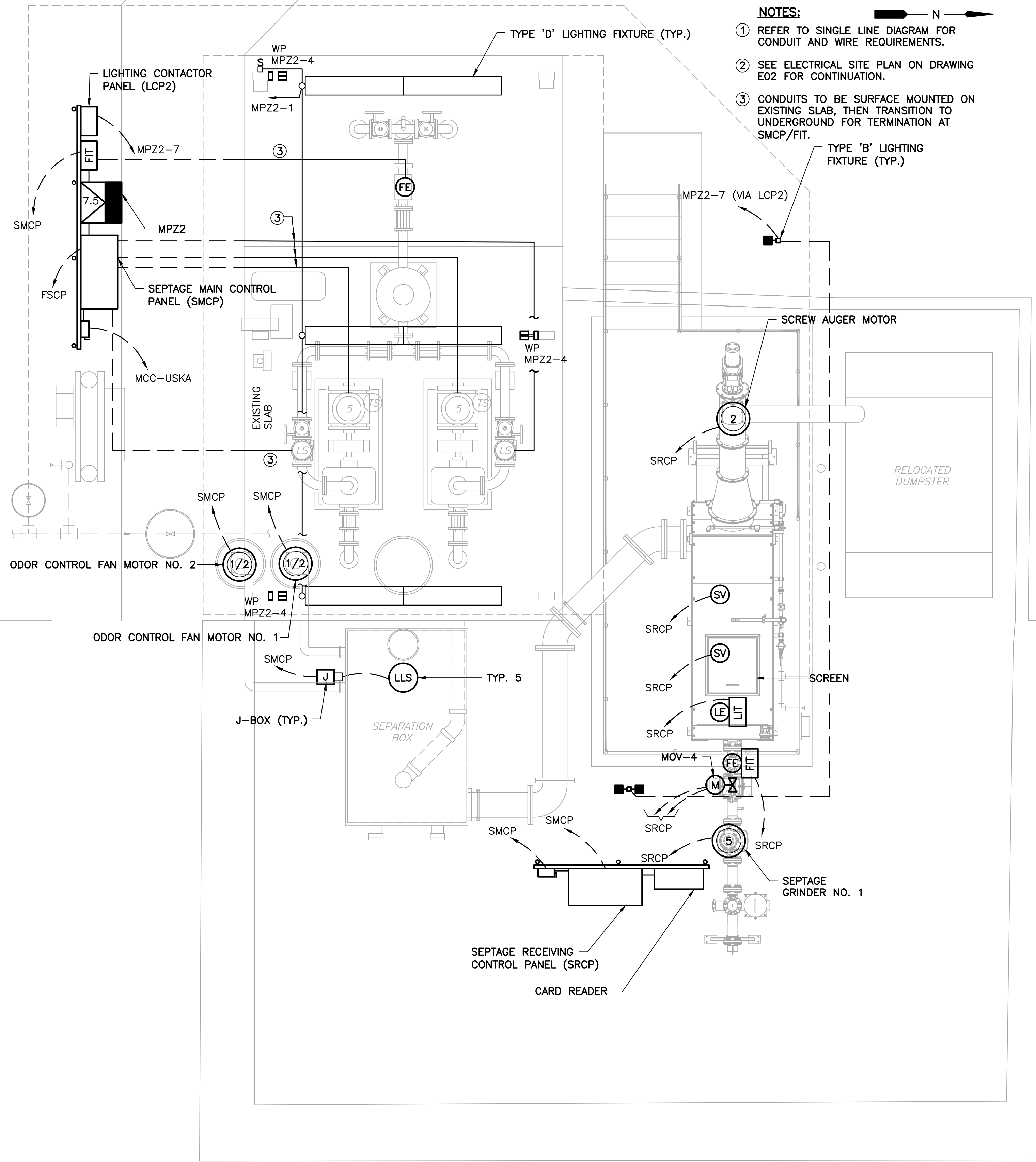
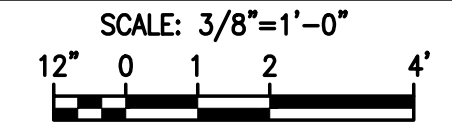


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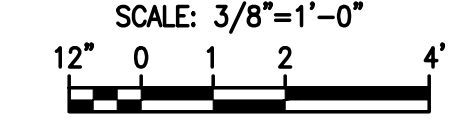
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EXISTING SEPTAGE RECEIVING STATION ELECTRICAL DEMOLITION PLAN



PROPOSED SEPTAGE RECEIVING STATION ELECTRICAL PLAN



- NOTES:**
- ① REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.
 - ② SEE ELECTRICAL SITE PLAN ON DRAWING E02 FOR CONTINUATION.
 - ③ CONDUITS TO BE SURFACE MOUNTED ON EXISTING SLAB, THEN TRANSITION TO UNDERGROUND FOR TERMINATION AT SMCP/FIT.



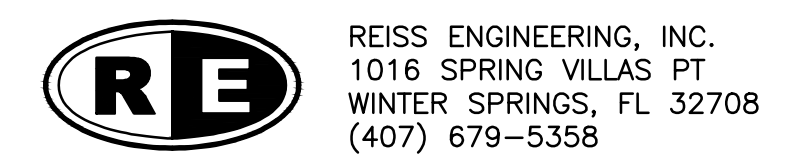
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0	9/2016	ISSUED FOR BID	LMR

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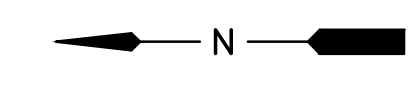
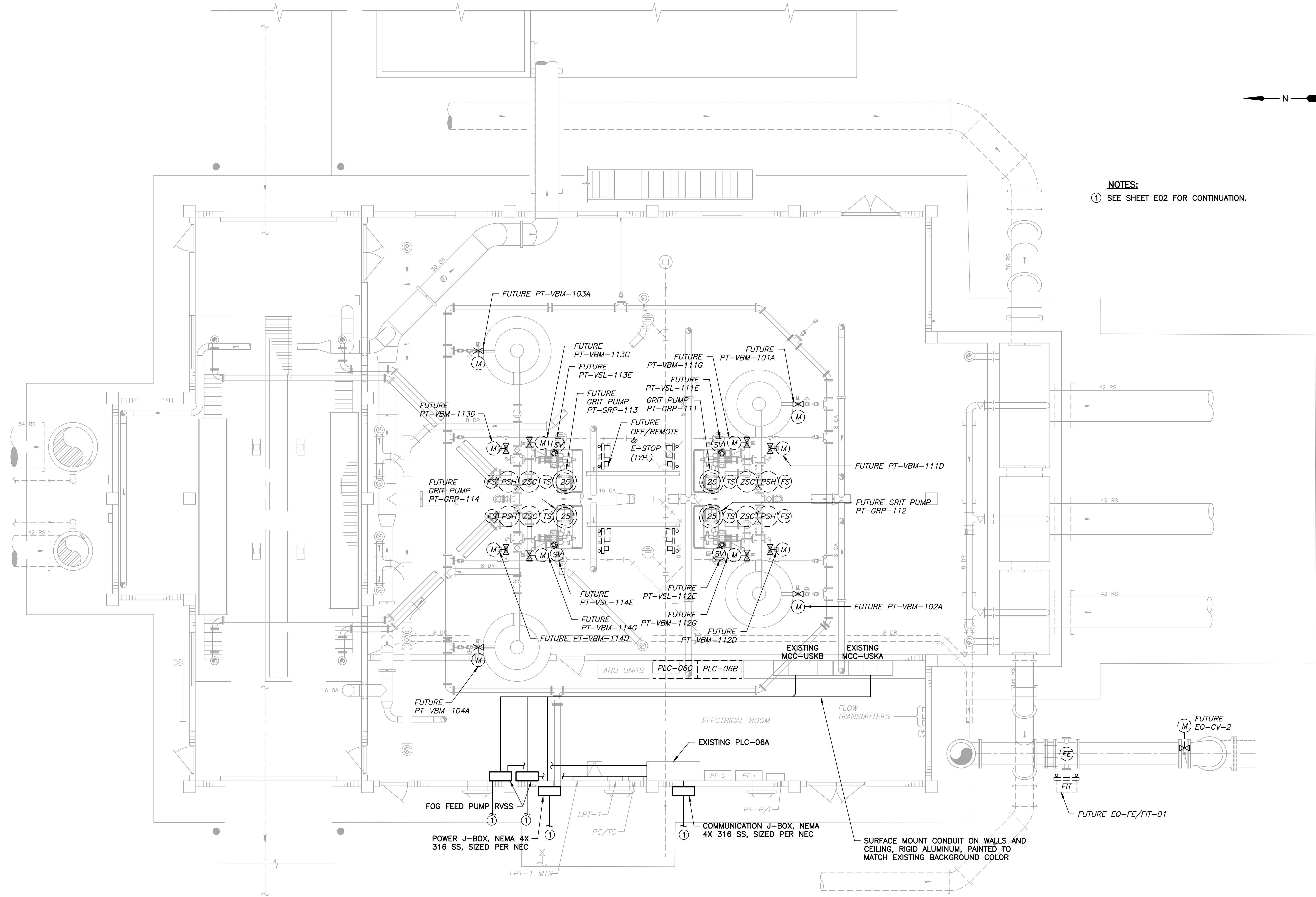
ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 SEPTAGE RECEIVING STATION ELECTRICAL PLANS

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	E13
SHEET NO.:	38 OF 48



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NOTES:
 ① SEE SHEET E02 FOR CONTINUATION.

PRE-TREATMENT FACILITY LOWER LEVEL ELECTRICAL PLAN

SCALE: 3/16" = 1'-0"
 6 4 2 0 5'

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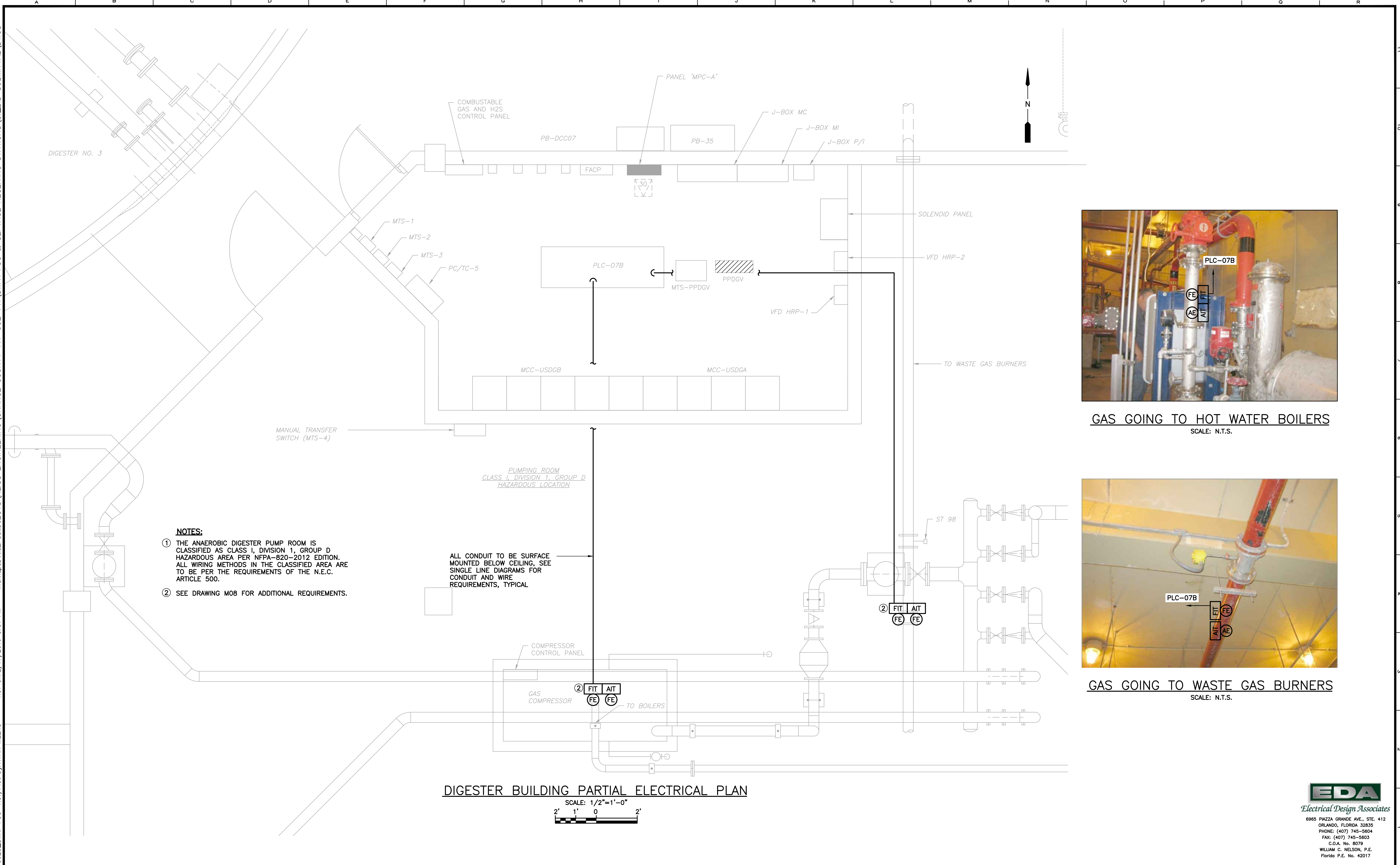
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 Checked_LMR
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 PRE-TREATMENT FACILITY LOWER LEVEL ELECTRICAL PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E14	SHEET NO.: 39 OF 48

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Parent Sheet Set: 110025-SWRF FOG & Septage Receiving Stations, Orange County, Y11-902-PH-SWRF FOG & Septage Receiving Stations, B_ID SUBMITTAL DWGS



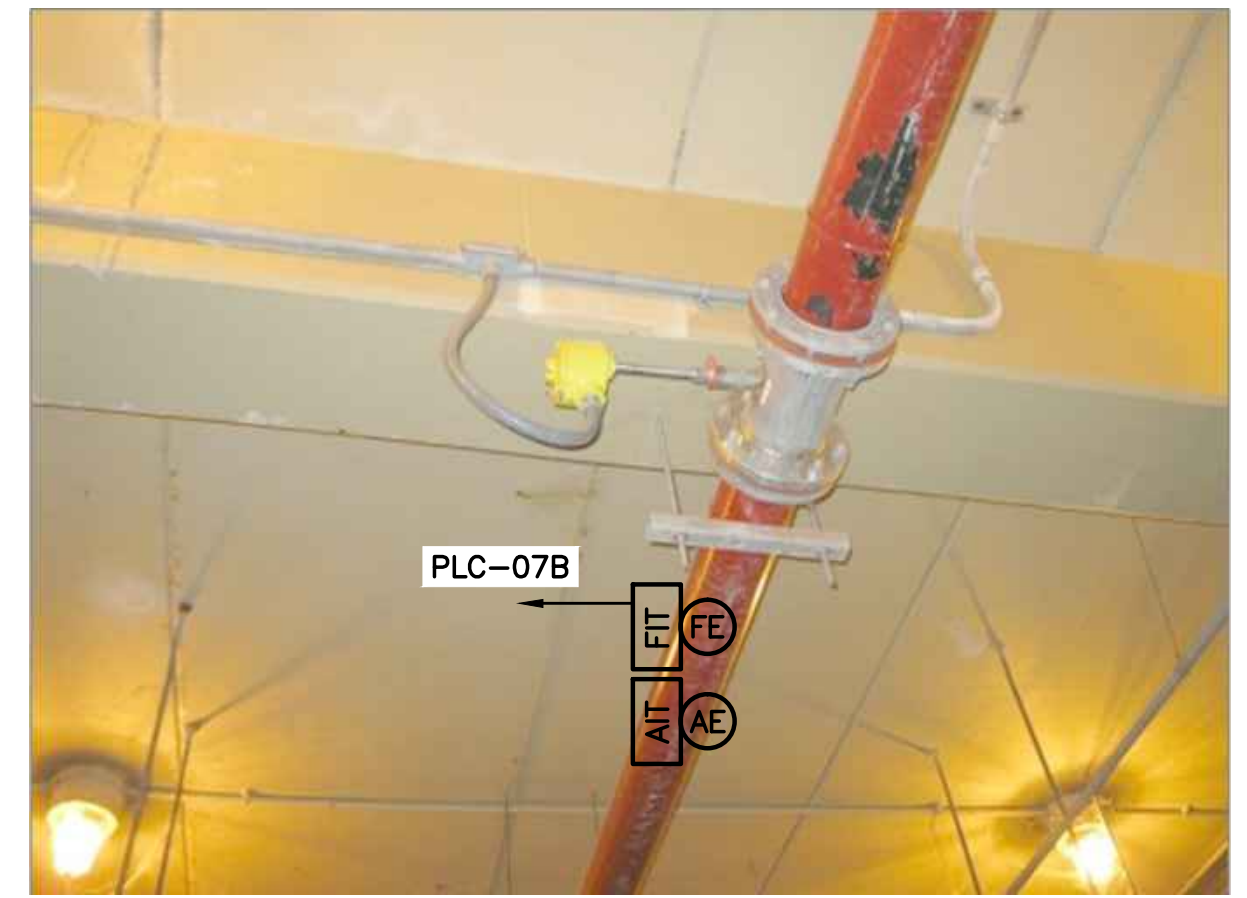
- NOTES:**
- THE ANAEROBIC DIGESTER PUMP ROOM IS CLASSIFIED AS CLASS I, DIVISION 1, GROUP D HAZARDOUS AREA PER NFPA-820-2012 EDITION. ALL WIRING METHODS IN THE CLASSIFIED AREA ARE TO BE PER THE REQUIREMENTS OF THE N.E.C. ARTICLE 500.
 - SEE DRAWING M08 FOR ADDITIONAL REQUIREMENTS.

ALL CONDUIT TO BE SURFACE MOUNTED BELOW CEILING, SEE SINGLE LINE DIAGRAMS FOR CONDUIT AND WIRE REQUIREMENTS, TYPICAL

DIGESTER BUILDING PARTIAL ELECTRICAL PLAN
 SCALE: 1/2"=1'-0"
 2' 1' 0' 2'



GAS GOING TO HOT WATER BOILERS
 SCALE: N.T.S.



GAS GOING TO WASTE GAS BURNERS
 SCALE: N.T.S.



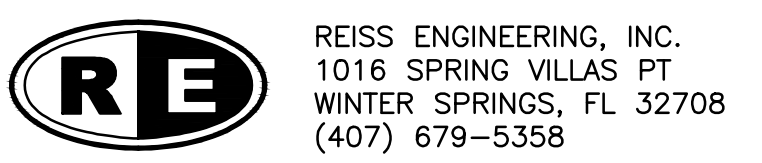
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ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
DIGESTER BUILDING PARTIAL ELECTRICAL PLAN

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO. E15	SHEET NO.: 40 OF 48



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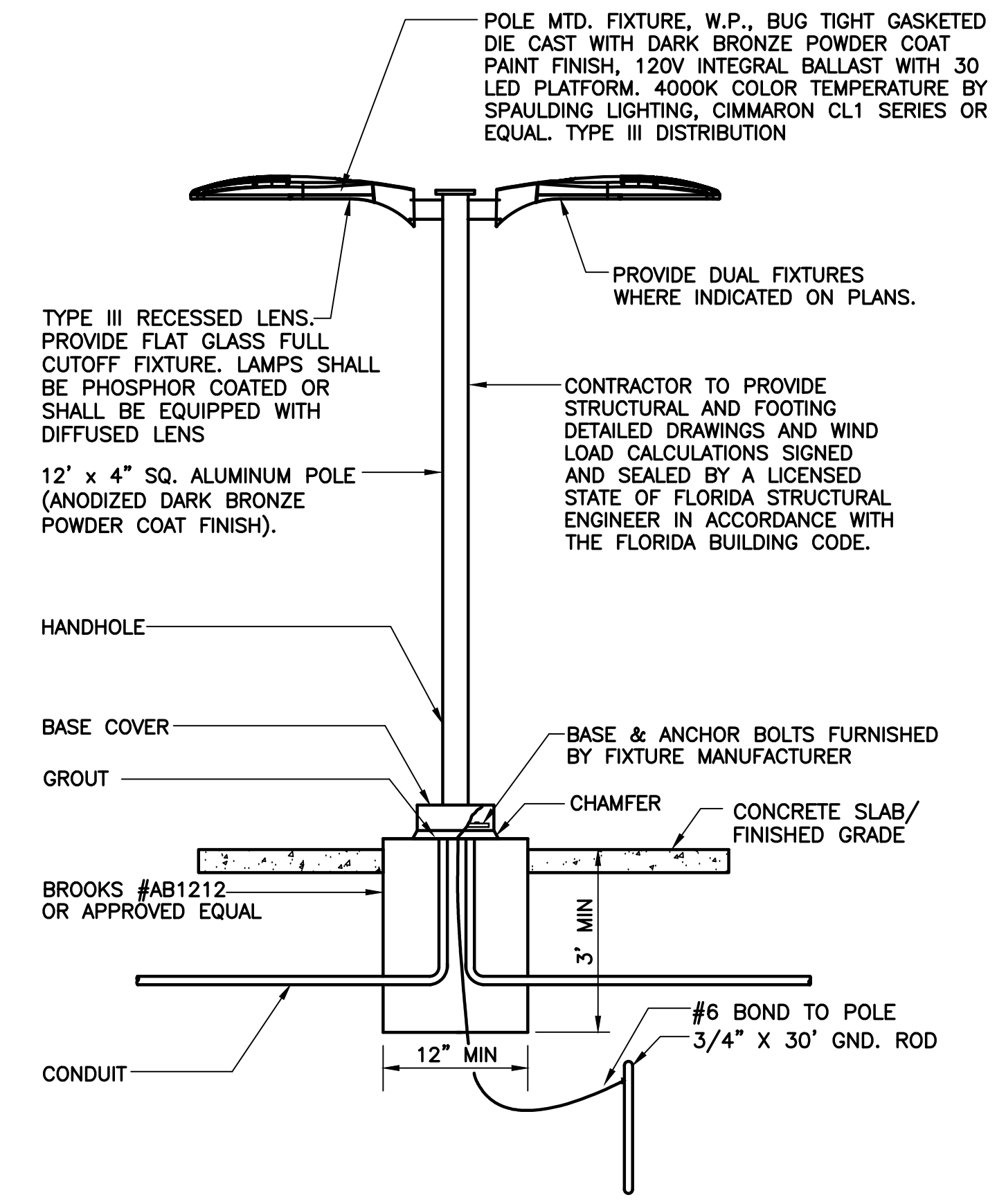
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Parent Sheet: Set: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS\ORANGE COUNTY\11-902-PH-SWR FOG & SEPTAGE RECEIVING STATIONS\BID SUBMITTAL\DWG

PANEL: PPF										BUS: 225 AMP			VOLT: 480V-3φ-3W					
LOCATION: FOG RECEIVING STATION										MAINS: 125A,3P			REMARKS: PROVIDE SPD					
MOUNTING: EQUIPMENT RACK										POLES: 42			A.I.C. SYMM: SEE SPECIFICATIONS					
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA			BUS A B C	BUS KVA			LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
						A	B	C		A	B	C						
30	3	10	10	1"	BIOFILTER C.P. (BCP)	5.50			1	2	5.82		GRINDER C.P. #2 (GCP2)	8	10	1"	3	40
									3	4	5.82							
									5	6	5.82							
70	3	4	8	1 1/4"	FOG STATION C.P. (FSCP)	9.14			7	8	5.50		FOG RECEIVING PNL (FRP)	10	10	1"	3	30
									9	10	5.50							
									11	12	5.50							
20	3	12	12	1"	MOV-1-1	0.50			13	14	0.50		MOV-1-2	12	12	1"	3	20
									15	16	0.50							
									17	18	0.50							
20	3	12	12	1"	MOV-2-1	0.50			19	20	0.50		MOV-2-2	12	12	1"	3	20
									21	22	0.50							
									23	24	0.50							
20	3	12	12	1"	MOV-3-1	0.50			25	26	0.50		MOV-3-2	12	12	1"	3	20
									27	28	0.50							
									29	30	0.50							
20	3	12	12	1"	MOV-5	0.50			31	32	2.00		MPZ1	8	10	1"	3	40
									33	34	2.00							
									35	36	2.00							
20	3	12	12	1"	MOV-6	0.50			37	38	0.10		SPD	6	6		3	60
									39	40	0.10							
									41	42	0.10							
TOTAL (PHASE):						17.14	17.14	17.14			14.92	14.92	14.92	NOTES:				
TOTAL KVA:									96.18			PROVIDE SPD. SEE SPECIFICATION SECTION 16709.						
TOTAL AMPS:									115.69									
TOTAL DEMAND AMPS:									115.69									

PANEL: MPZ1										BUS: 45A SEC. MB			VOLT: 120/208V, 3φ, 4W					
LOCATION: FOG RECEIVING STATION										MAINS: 15 KVA			REMARKS: NEMA 3R 316 SS ENCL.					
MOUNTING: EQUIPMENT RACK										POLES: 24			A.I.C. SYMM: SEE SPECIFICATIONS					
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA			BUS A B C	BUS KVA			LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
						A	B	C		A	B	C						
20	1	12	12	1"	INTERIOR LTG	0.77			1	2	0.72		RECEPTACLES	12	12	1"	1	20
									3	4	0.88		EXTERIOR LIGHTING (LCP1)	12	12	1"	1	20
									5	6	0.10		FIT (LP1001)	12	12	1"	1	20
									7	8	0.50		HEAT TRACE	12	12	1"	1	20
									9	10	0.50		HEAT TRACE	12	12	1"	1	20
									11	12	0.50		HEAT TRACE	12	12	1"	1	20
									13	14			SPARE				1	20
									15	16			SPARE					
									17	18			SPARE					
									19	20	0.10		SPD	6	6		3	60
									21	22	0.10							
									23	24	0.10							
TOTAL (PHASE):						1.27	1.27	0.60			1.32	1.48	0.20	NOTES:				
TOTAL KVA:									6.14			PROVIDE SPD. SEE SPECIFICATION SECTION 16709.						
TOTAL AMPS:									17.04									
TOTAL DEMAND AMPS:									17.04									

PANEL: MPZ2										BUS: 40A SEC. MB			VOLT: 120/240V, 1φ, 3W					
LOCATION: SEPTAGE RECEIVING STATION										MAINS: 7.5 KVA			REMARKS: NEMA 3R 316 SS ENCL.					
MOUNTING: EQUIPMENT RACK										POLES: 24			A.I.C. SYMM: SEE SPECIFICATIONS					
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA			BUS A B	BUS KVA			LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
						A	B	C		A	B	C						
20	1	12	12	1"	INTERIOR LIGHTING	0.20			1	2			SPARE				1	20
									3	4			RECEPTACLES	12	12	1"	1	20
									5	6			EXIT SIGN	12	12	1"	1	20
									7	8	0.10		SPD	8	8		2	20
									9	10	0.10							
TOTAL (PHASE):						0.20	0.20				0.10	0.64	NOTES:					
TOTAL KVA:									1.14			PROVIDE SPD. SEE SPECIFICATION SECTION 16709.						
TOTAL AMPS:									4.75									
TOTAL DEMAND AMPS:									4.75									



1 POLE MOUNTED TYPE 'B' FIXTURE DETAIL
E16 SCALE: N.T.S.

LIGHTING FIXTURE SCHEDULE		
TYPE	WATT	DESCRIPTION
A	144	4 FOOT LOW PROFILE, CLASS 1, DIVISION 2 LED LINEAR FIXTURE, SUITABLE FOR INDUSTRIAL AND HAZARDOUS LOCATIONS, RUGGED SOLID STATE DESIGN, FULLY GASKETED IP 66/67 RATED ENCLOSURE SUITABLE FOR DUST AND WET LOCATIONS, 1598A RATING, 120V, CLEAR LENS (5000K COOL WHITE) 7000 LUMENS, TOP MOUNT.
A1	144	SAME AS TYPE "A" EXCEPT WITH EMERGENCY BATTERY PACK.
B	42	SEE LIGHTING FIXTURE DETAIL ON THIS SHEET.
C	71	FULL CUT-OFF WALLPACK. DECORATIVE, DIE-CAST ALUMINUM HOUSING AND DOOR. WHITE POWDER PAINT FINISHES PROVIDING A LASTING APPEARANCE IN OUTDOOR ENVIRONMENTS. 30 HIGH POWER LEDS, 4673 LUMENS. 5000K/70 CRI. 120V, TYPE III DISTRIBUTION.
D	50	4 FT. ONE-PIECE SEAM WRAP AROUND POLYCARBONATE LENS. SURFACE MOUNTED FIXTURE WITH 16 GAUGE COLD ROLLED STEEL. BASEPLATE WITH SIX-POINT MOUNTING. 4000K LED 50W 8955 LUMENS WITH DIMMER CONSTANT CURRENT LED DRIVER. UL LISTED FOR DAMP AND WET LOCATIONS 120V WITH SINGLE FUSE AND HOLDER. SUITABLE FOR CORROSIVE AND HAZARDOUS AREAS
⊗	5	NEMA 4X LED EXIT SIGN, SUITABLE FOR USE IN DAMP LOCATIONS, WATERTIGHT AND DUST TIGHT SEAL, CORROSION RESISTANT POLYCARBONATE HOUSING AND COVER, RED HIGH OUTPUT LEDS, MAINTENANCE FREE NICKEL CADMIUM BATTERY, 120V.



REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

Issue Certification William C. Nelson, P.E. Florida P.E. No. 42017 Electrical Design Associates Certificate of Authorization No. 8079 6965 Piazza Grande Ave., Ste. 412 Orlando, FL 32835	Designed_DD _____ Drawn_RBM _____ Checked_LMR _____ Reviewed_DD _____ Approved_LMR _____
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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

ELECTRICAL

PANEL SCHEDULES AND LIGHTING DETAILS

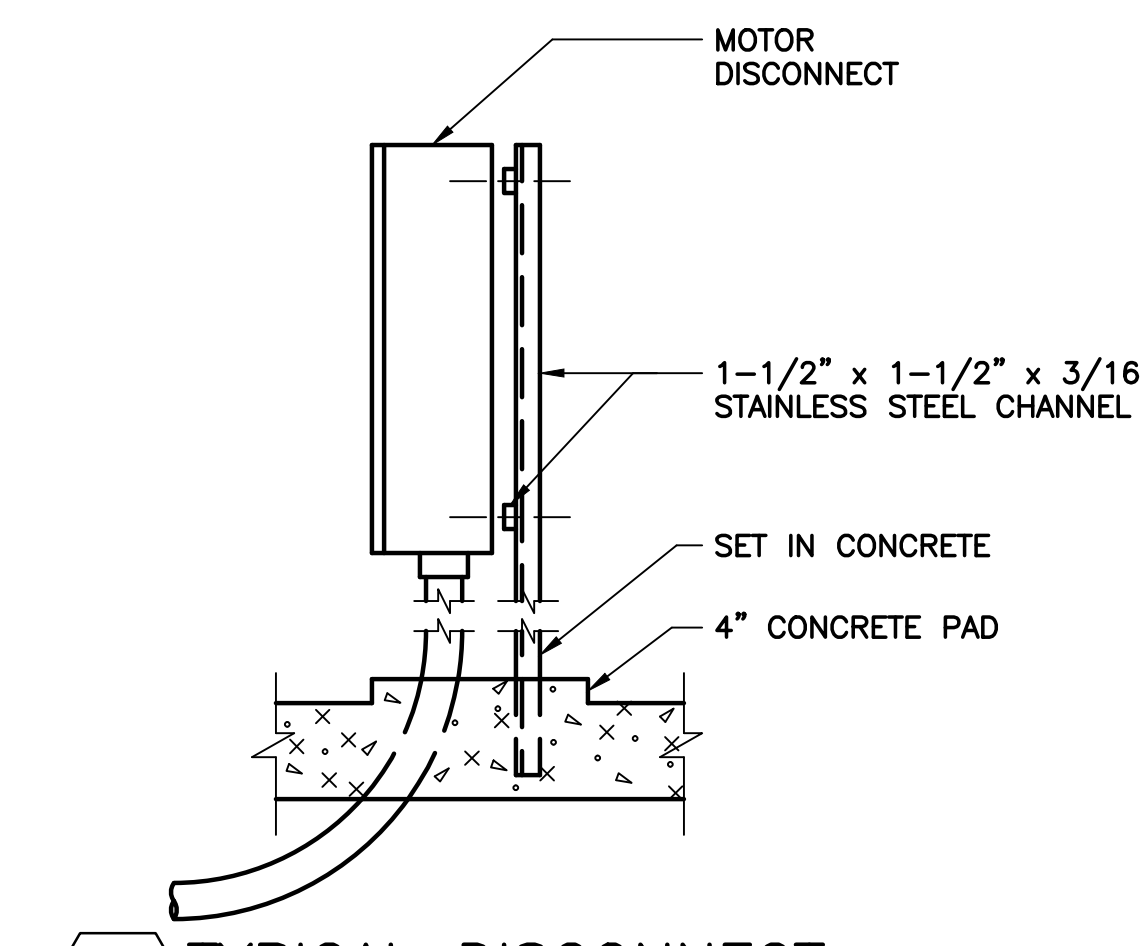
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SCALE: NOTED	REVISION: 0
DRAWING NO. E16	SHEET NO.: 41 OF 48



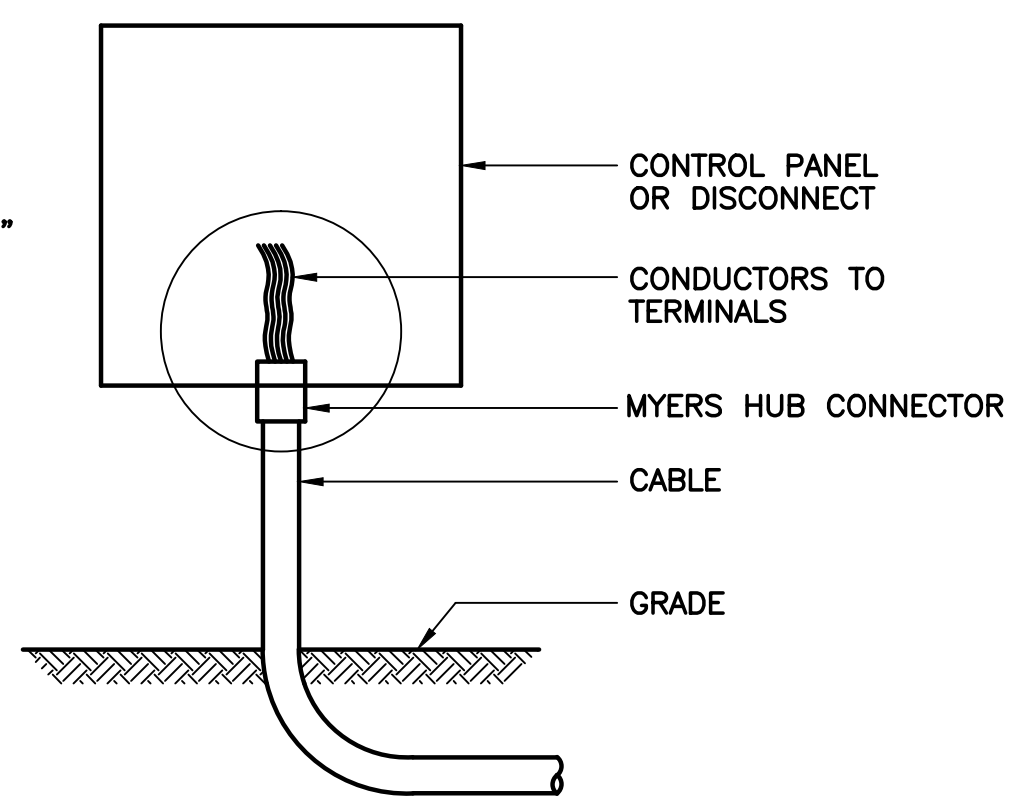
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Electrical Design Associates
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PHONE: (407) 745-5604
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WILLIAM C. NELSON, P.E.
Florida P.E. No. 42017

REISS ENGINEERING, INC.
1016 SPRING VILLAS PT
WINTER SPRINGS, FL 32708
(407) 679-5358

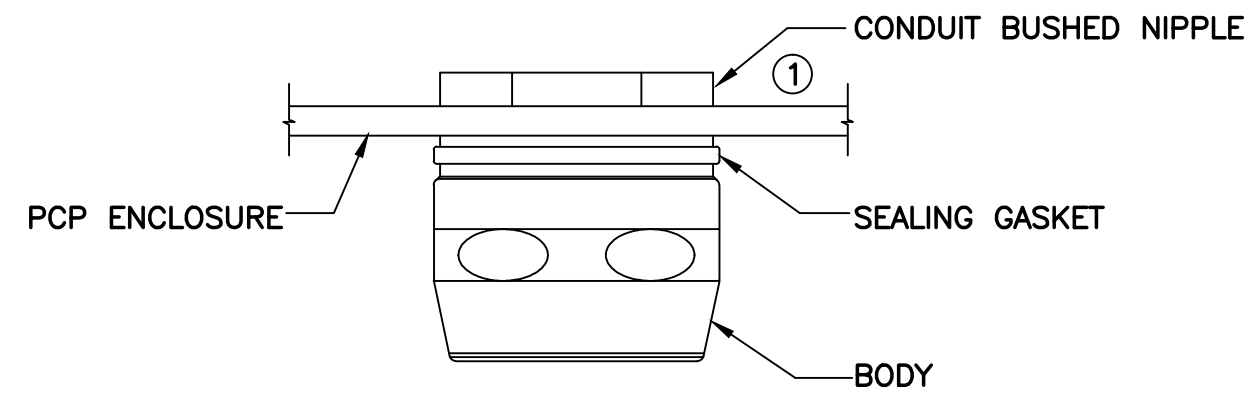
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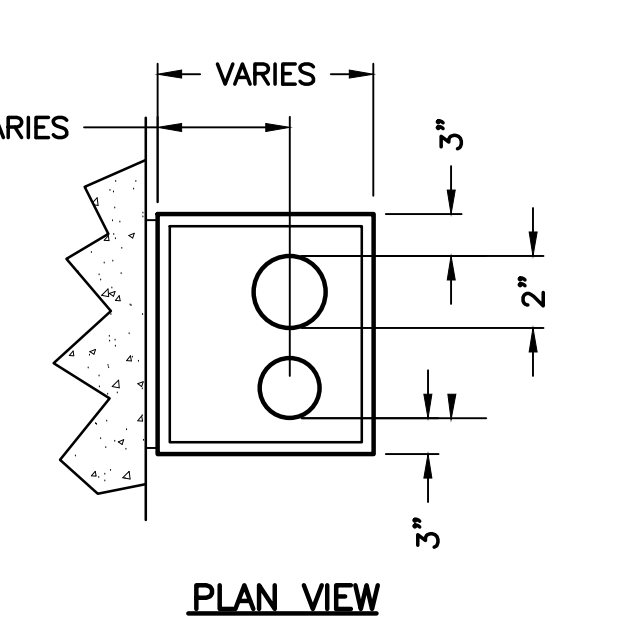
2 TYPICAL DISCONNECT
E17 N.T.S.



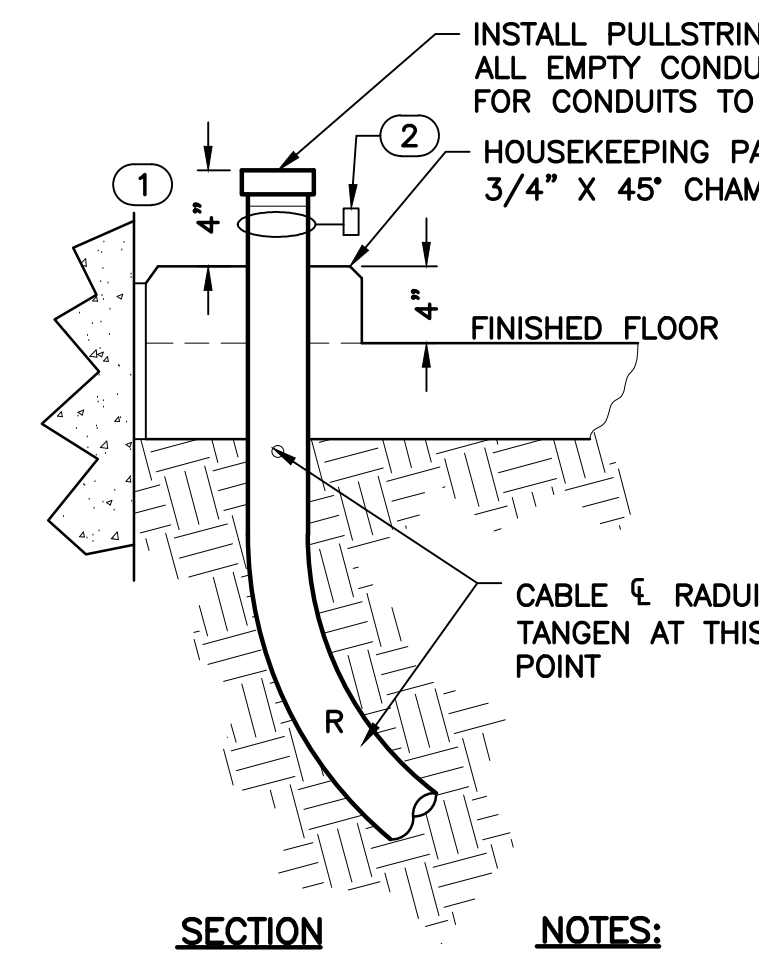
3 WATER TIGHT CONNECTION DETAIL
E17 N.T.S.



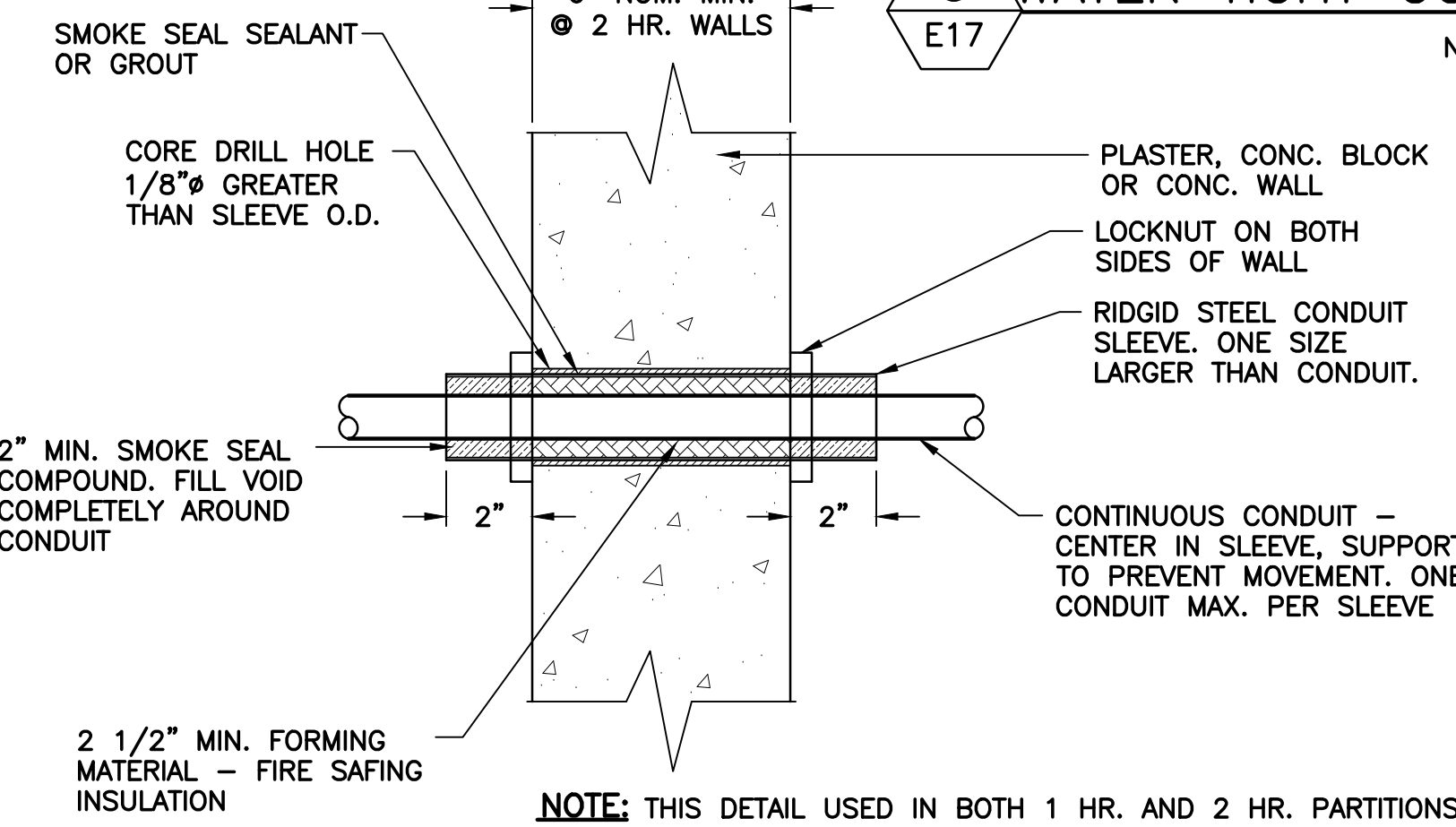
4 CONDUIT HUB CONNECTION DETAIL
E17 N.T.S.



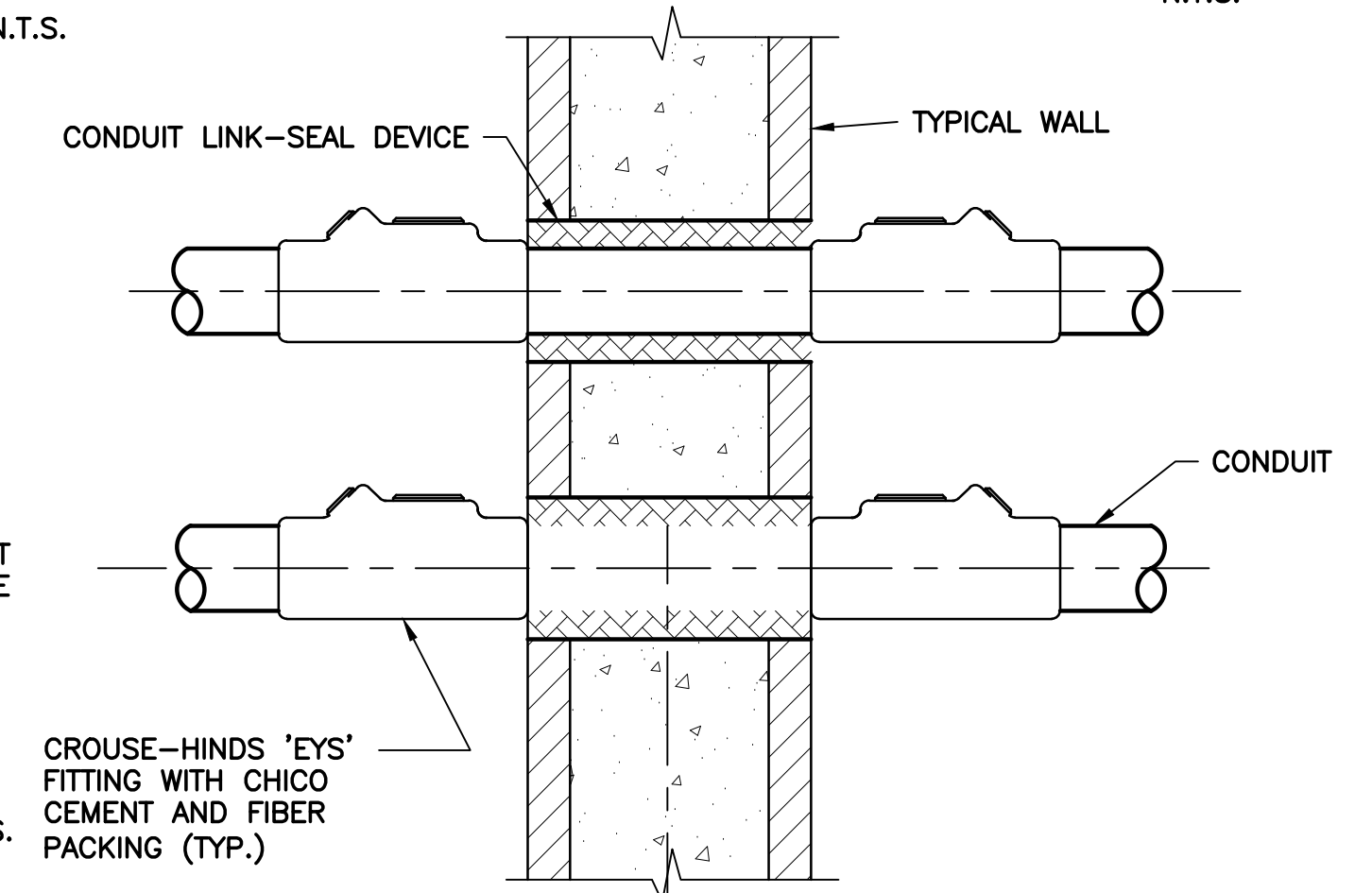
5 TYPICAL CONDUIT THRU SLAB
E17 SCALE: N.T.S.



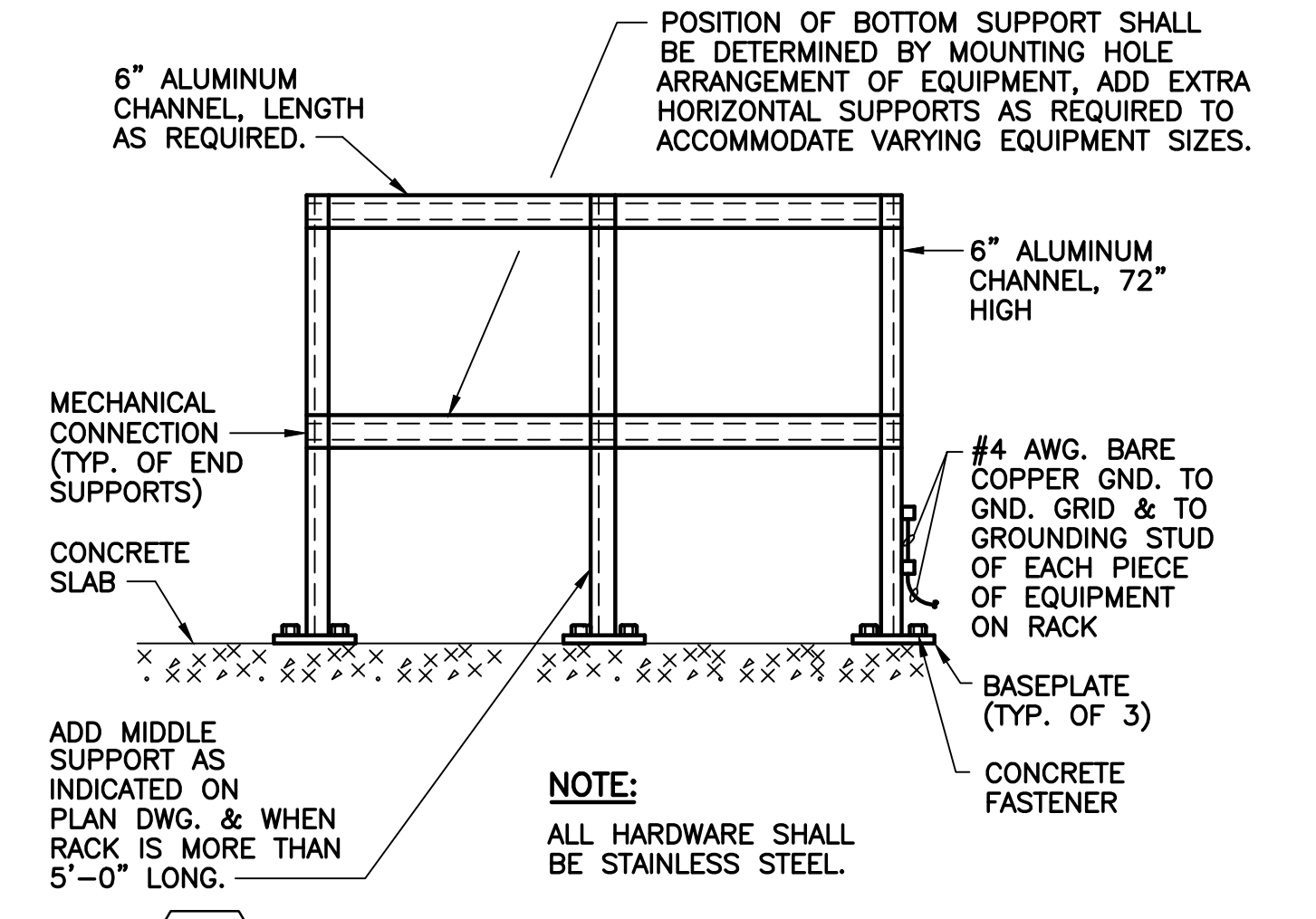
6 DETAIL OF CONDUIT TERMINATION STUB OUT
E17 SCALE: N.T.S.



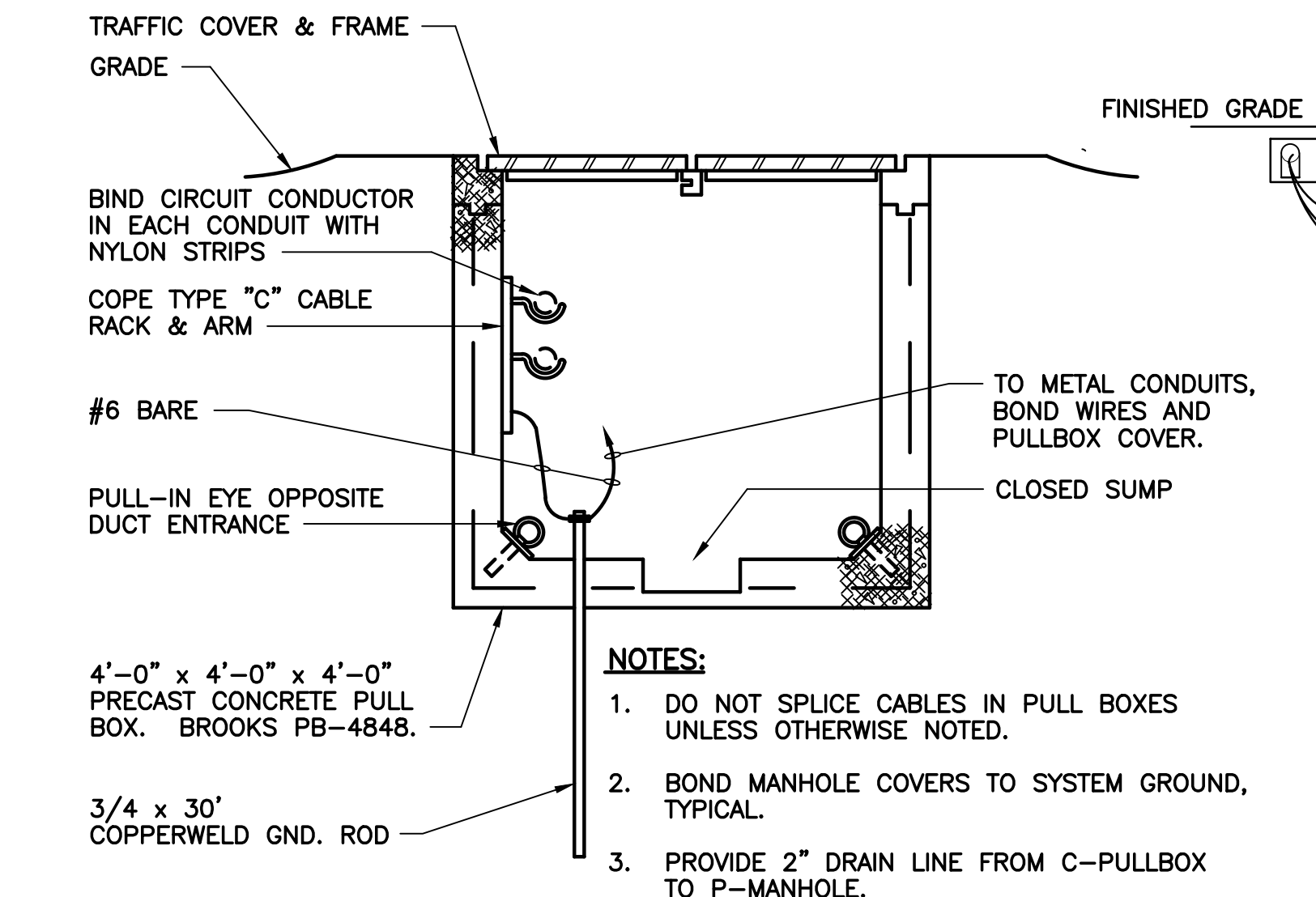
7 CONDUIT SLEEVE DETAIL AT WALL
E17



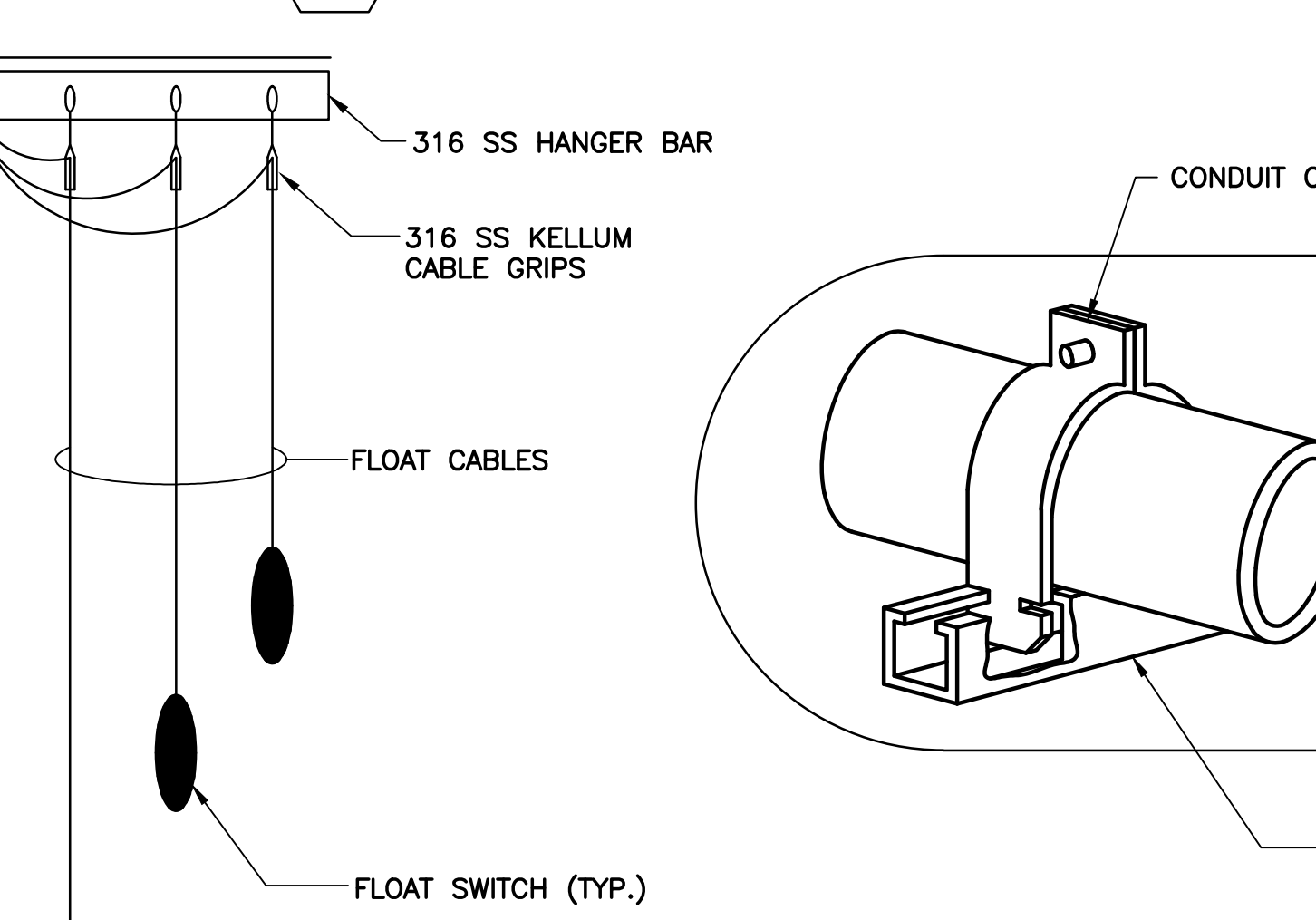
8 WALL PENETRATION DETAIL
E17 N.T.S.



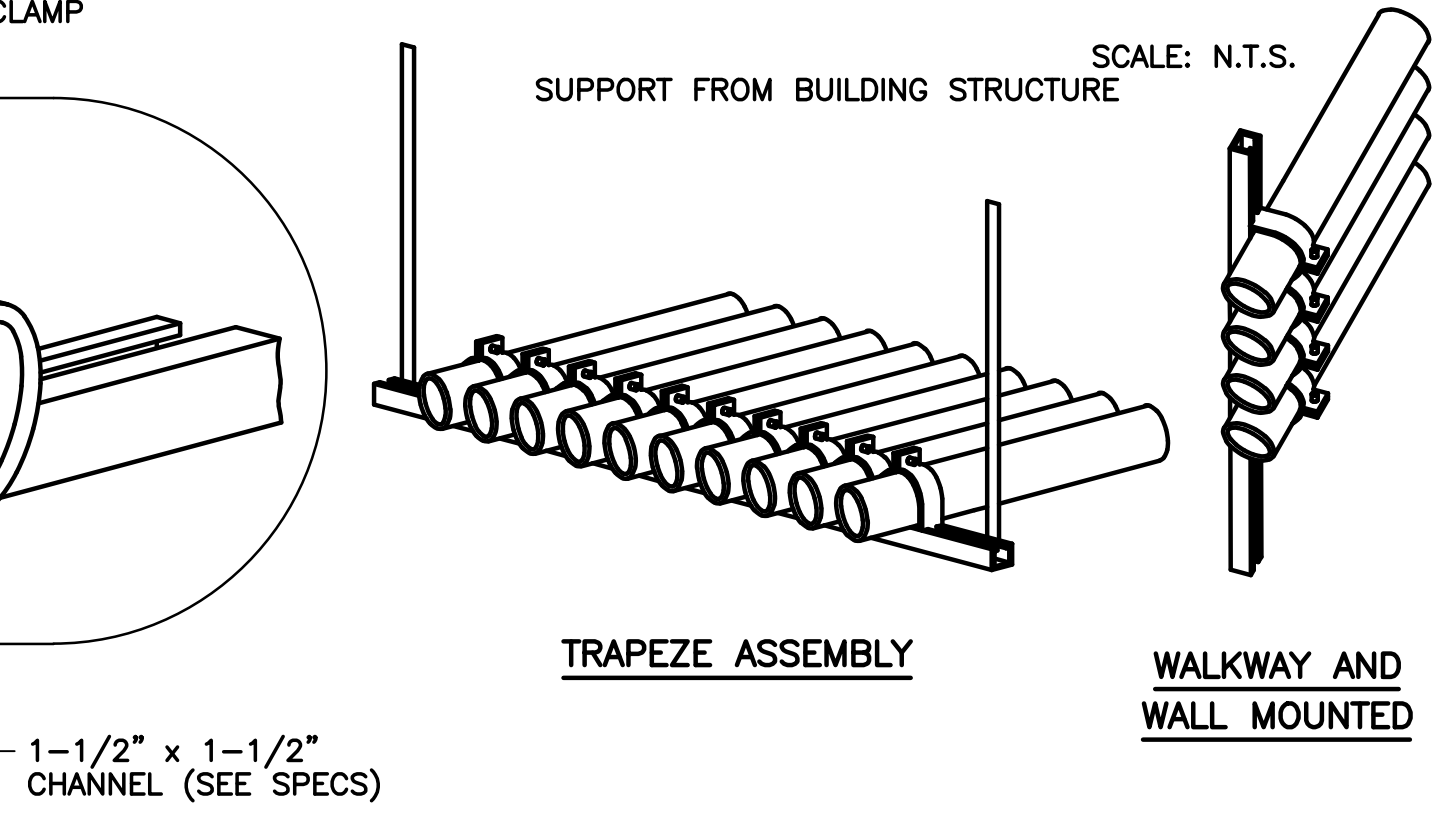
9 EQUIPMENT RACK DETAIL
E17 N.T.S.



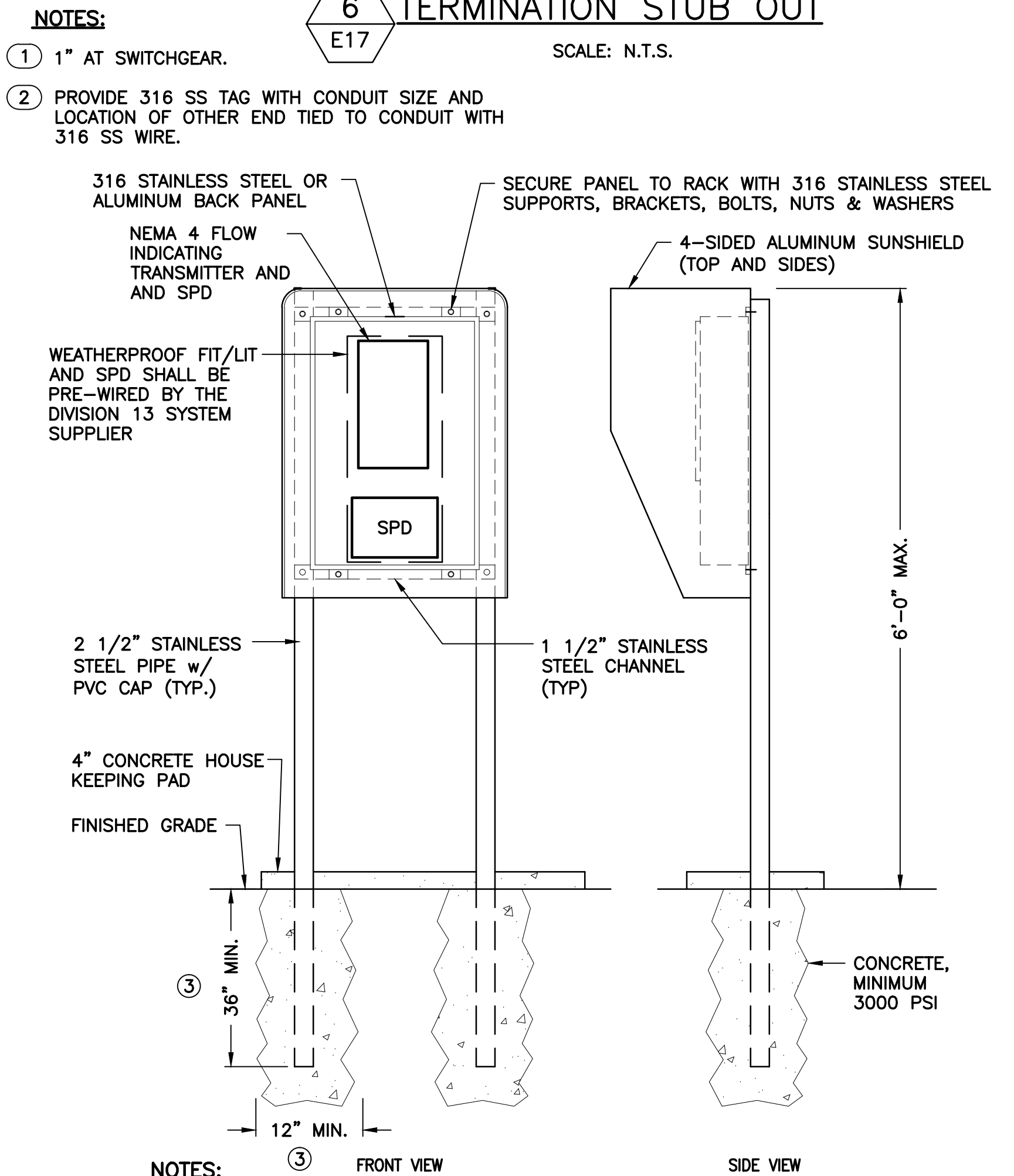
10 PULL BOX DETAIL
E17 N.T.S.



11 FLOAT SWITCH MOUNTING DETAIL
E17 N.T.S.



12 CONDUIT PIPE STRAP MOUNTING DETAILS
E17 N.T.S.



13 TRANSMITTER MOUNTING DETAIL
E17 SCALE: N.T.S.

13 TRANSMITTER MOUNTING DETAIL
E17 SCALE: N.T.S.

- NOTES:**
- 1" AT SWITCHGEAR.
 - PROVIDE 316 SS TAG WITH CONDUIT SIZE AND LOCATION OF OTHER END TIED TO CONDUIT WITH 316 SS WIRE.
 - 316 STAINLESS STEEL OR ALUMINUM BACK PANEL
 - WEATHERPROOF FIT/LIT AND SPD SHALL BE PRE-WIRED BY THE DIVISION 13 SYSTEM SUPPLIER
 - 2 1/2" STAINLESS STEEL PIPE w/ PVC CAP (TYP.)
 - 4" CONCRETE HOUSEKEEPING PAD
 - FINISHED GRADE
 - 36" MIN.
 - 12" MIN.
 - 316 STAINLESS STEEL OR ALUMINUM BACK PANEL
 - SECURE PANEL TO RACK WITH 316 STAINLESS STEEL SUPPORTS, BRACKETS, BOLTS, NUTS & WASHERS
 - NEMA 4 FLOW INDICATING TRANSMITTER AND AND SPD
 - 4-SIDED ALUMINUM SUNSHIELD (TOP AND SIDES)
 - 6'-0" MAX.
 - CONCRETE, MINIMUM 3000 PSI
- RACK NOTES:**
- RACK STRUCTURE TO BE CERTIFIED PER FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.
 - ALL HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.



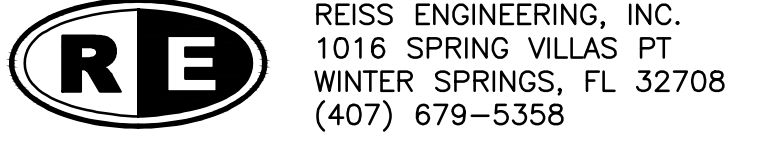
REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

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 Certificate of Authorization No. 8079
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 Orlando, FL 32835

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 Drawn_RRM
 Checked_LMR
 Reviewed_DD
 Approved_LMR

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 ELECTRICAL DETAILS - 1

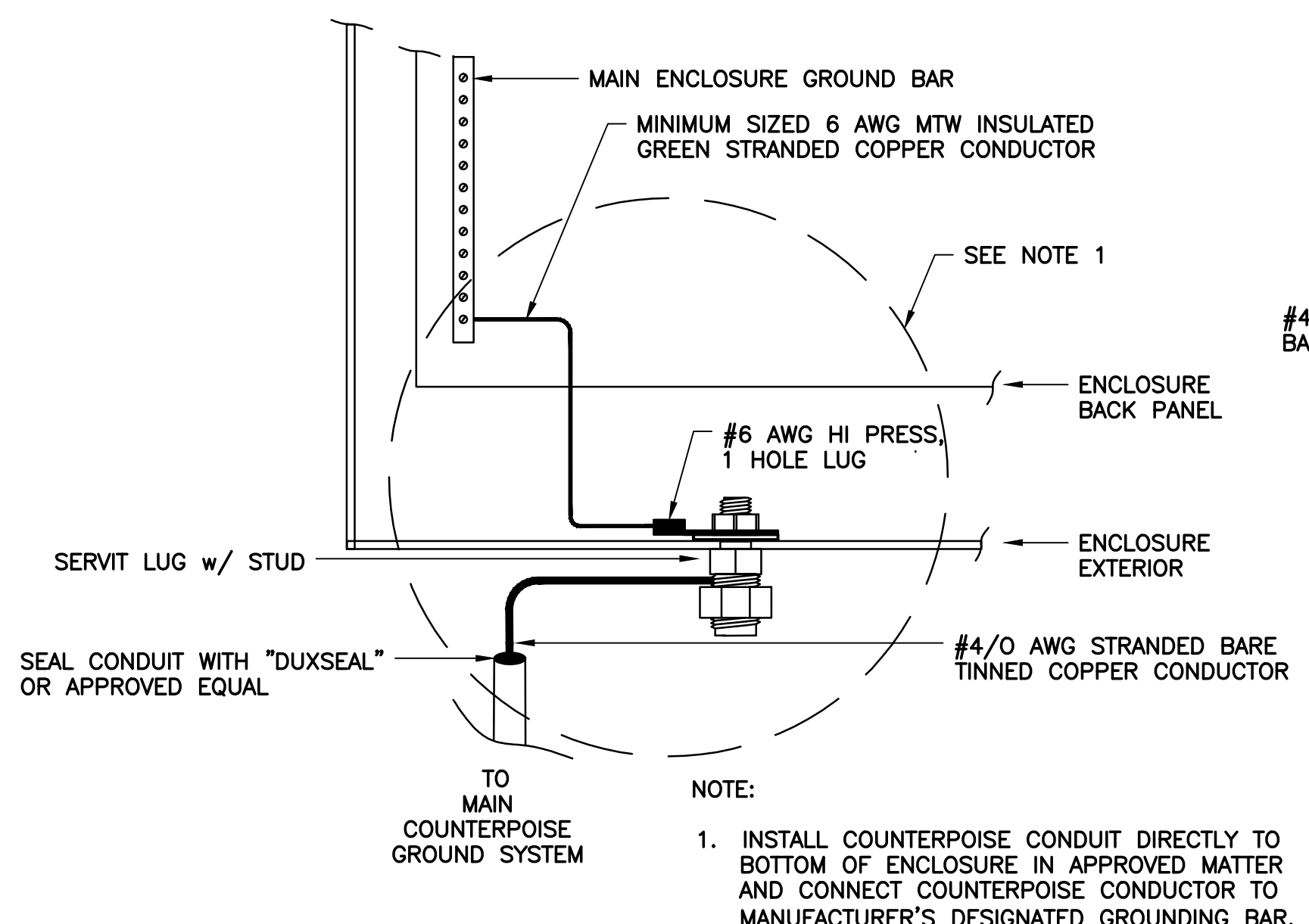
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SCALE:	NOTED
REVISION:	0
DRAWING NO.:	E17
SHEET NO.:	42 OF 48



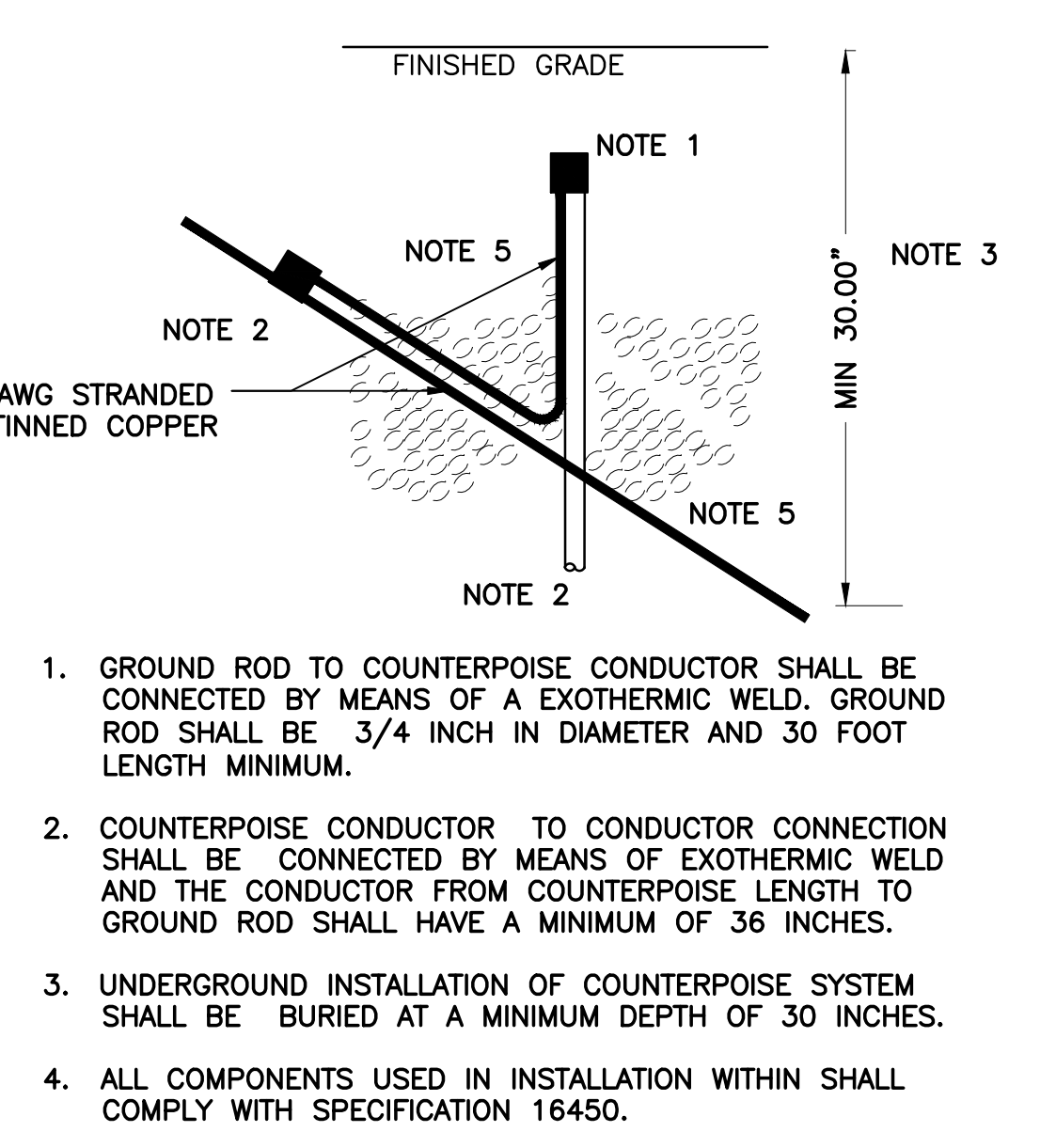
EDA
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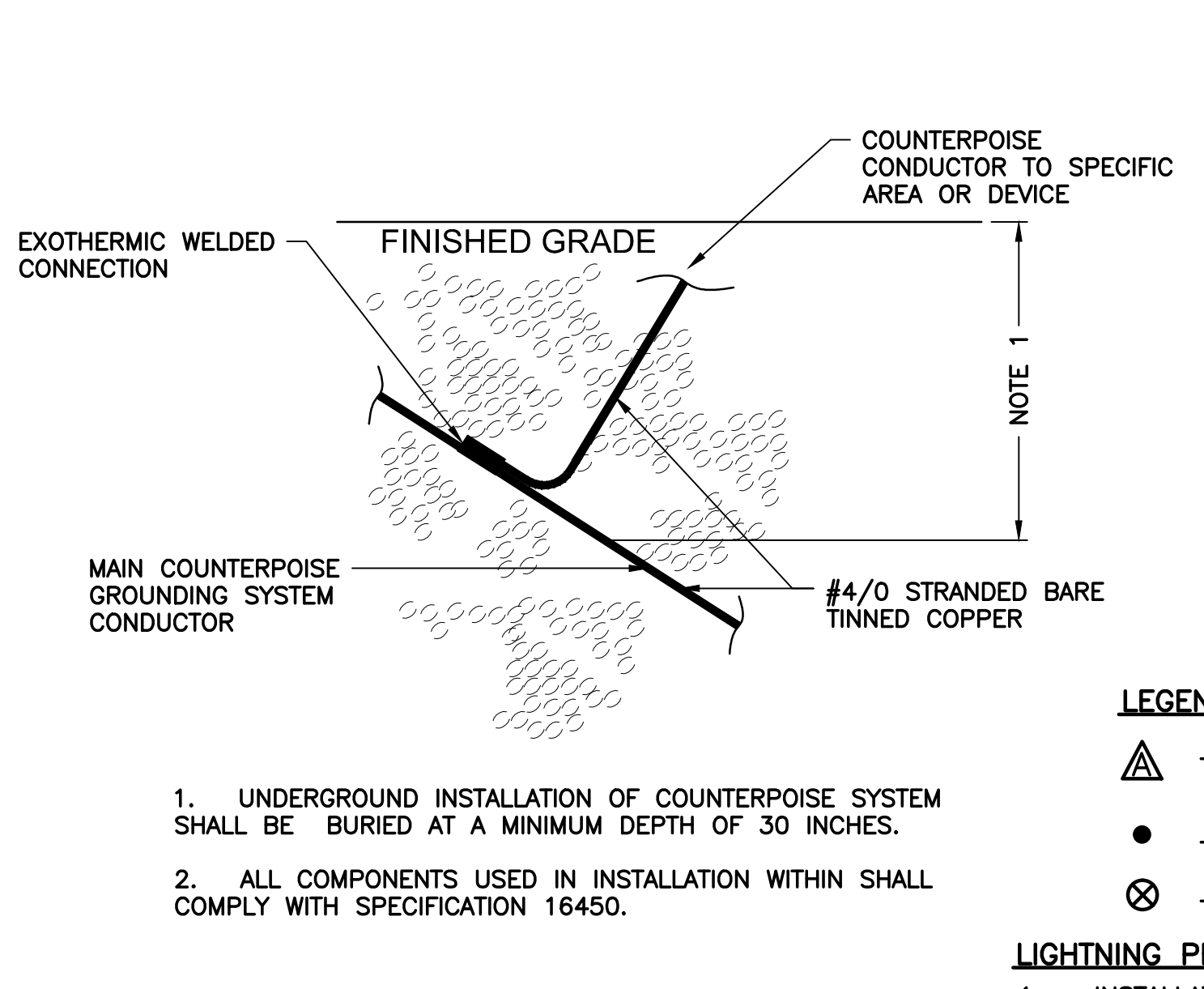
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 Rev: 09/2016 5:51 PM
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 PH: 407-241-5151
 SWR FOG & SEPTAGE RECEIVING STATIONS
 B: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS
 DWG: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS
 E: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS
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 R: 110025_SWR FOG & SEPTAGE RECEIVING STATIONS



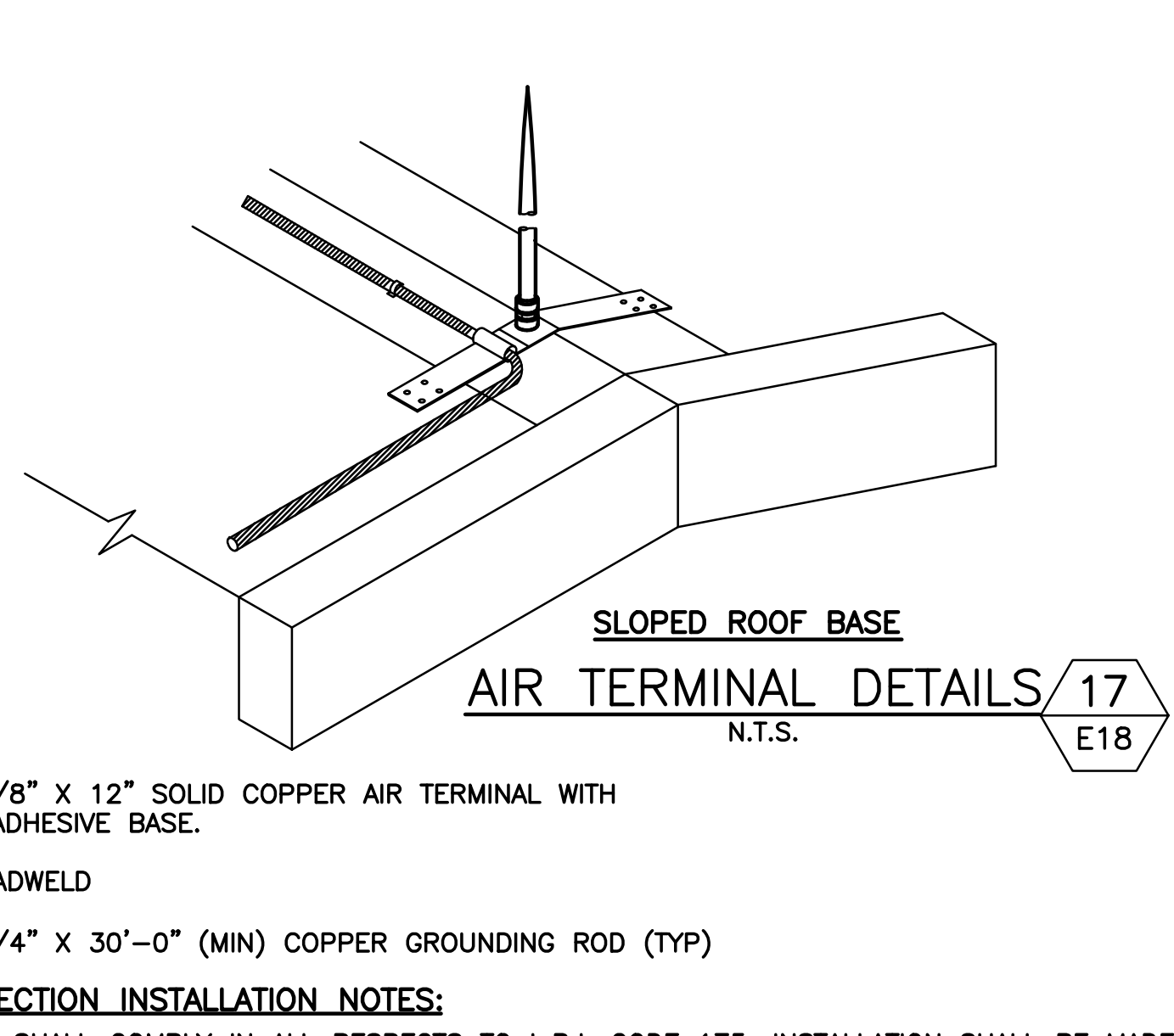
14 PEDESTAL ENCLOSURES GROUNDING DETAIL
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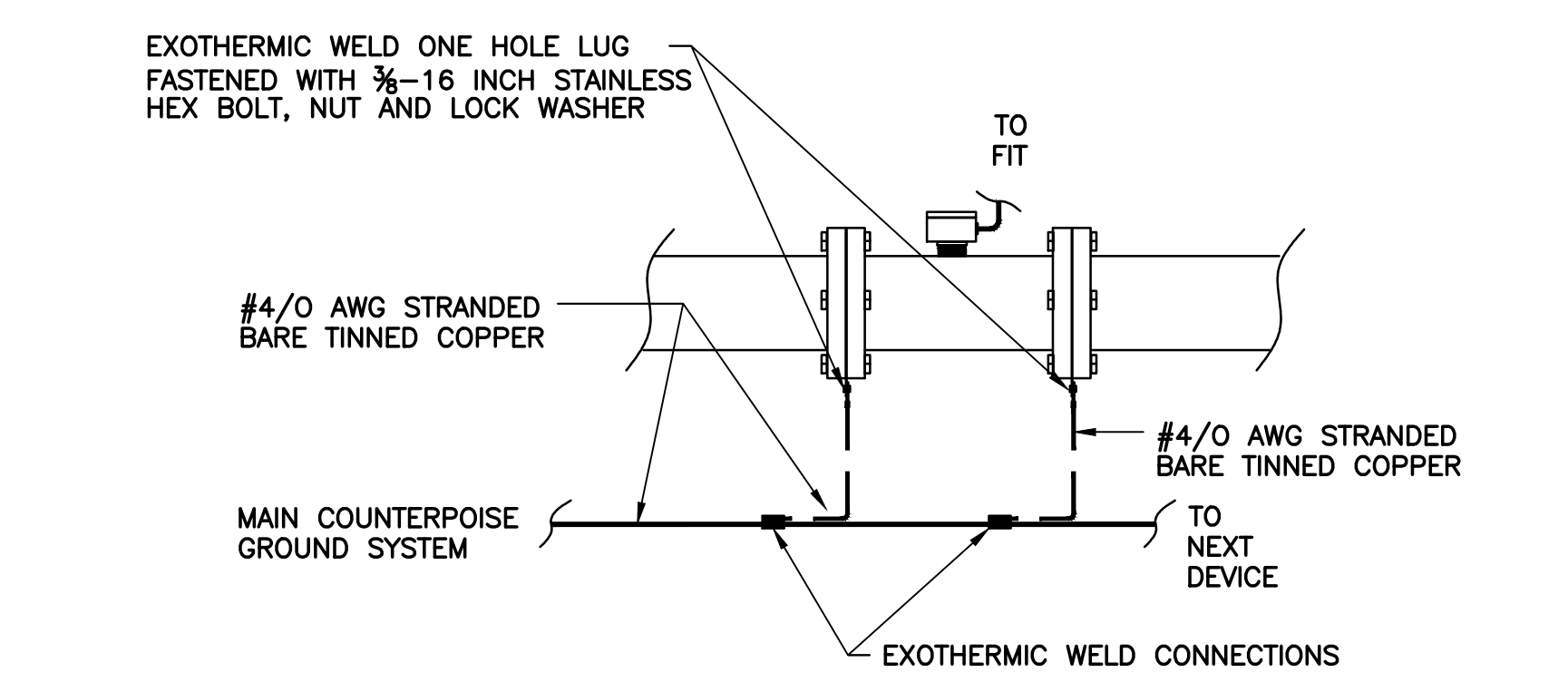
15 COUNTERPOISE GROUND ROD CONNECTION DETAIL
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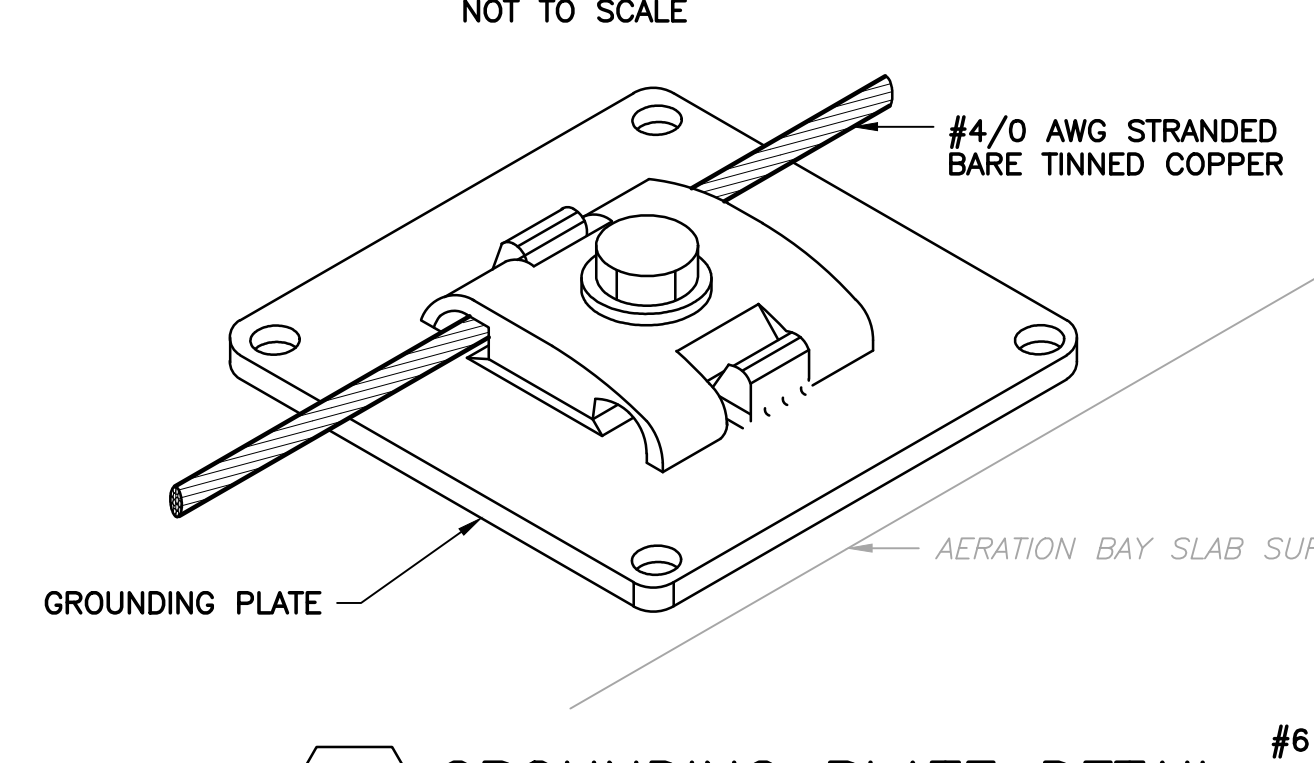
16 COUNTERPOISE CONDUCTOR CONNECTION DETAIL
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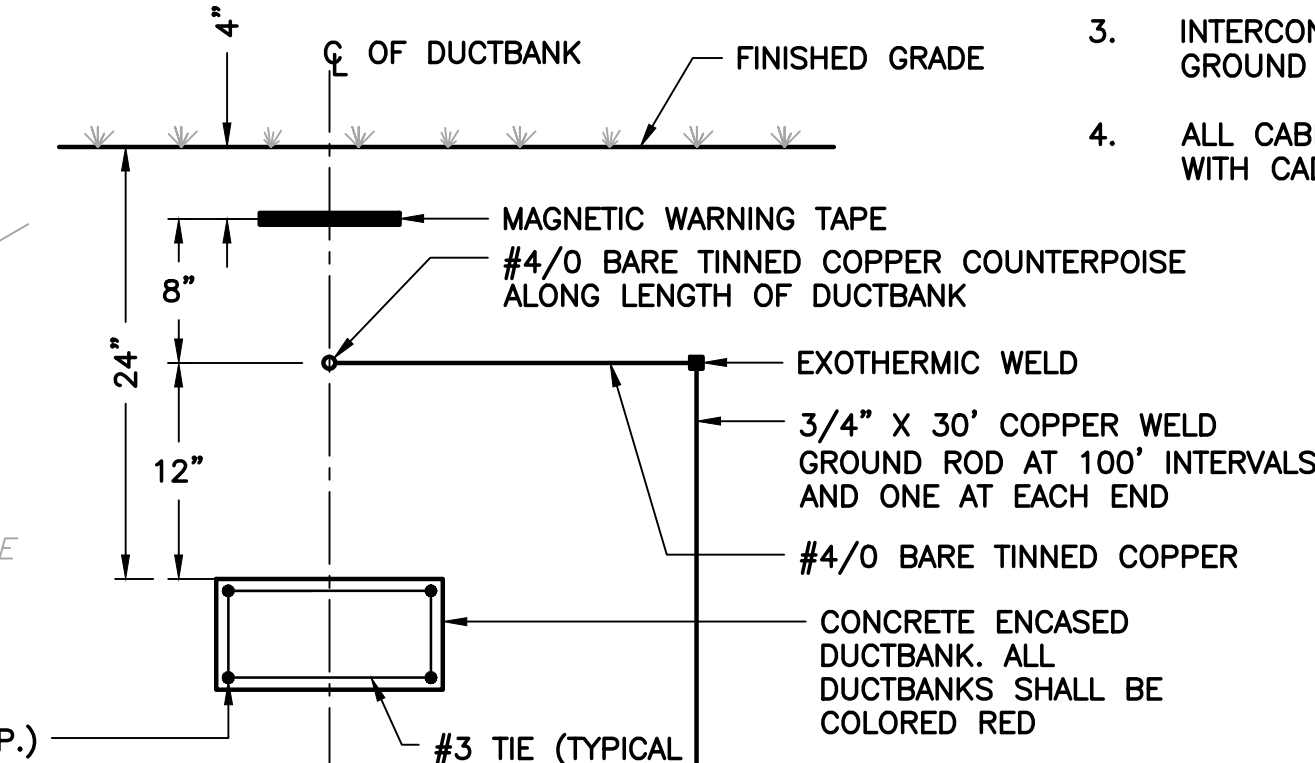
17 AIR TERMINAL DETAILS
E18 N.T.S.



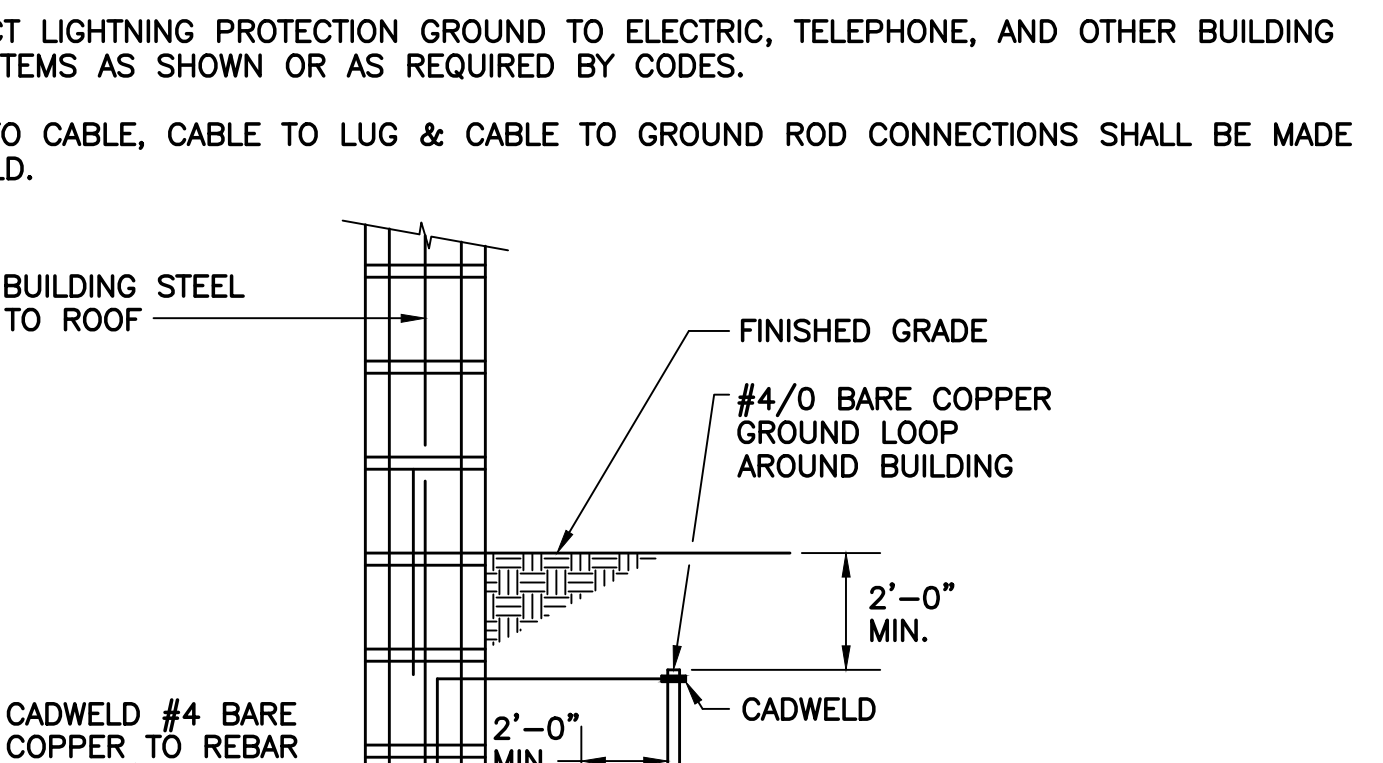
18 FLOW METER/ACTUATOR PIPE GROUNDING DETAIL
E18 NOT TO SCALE



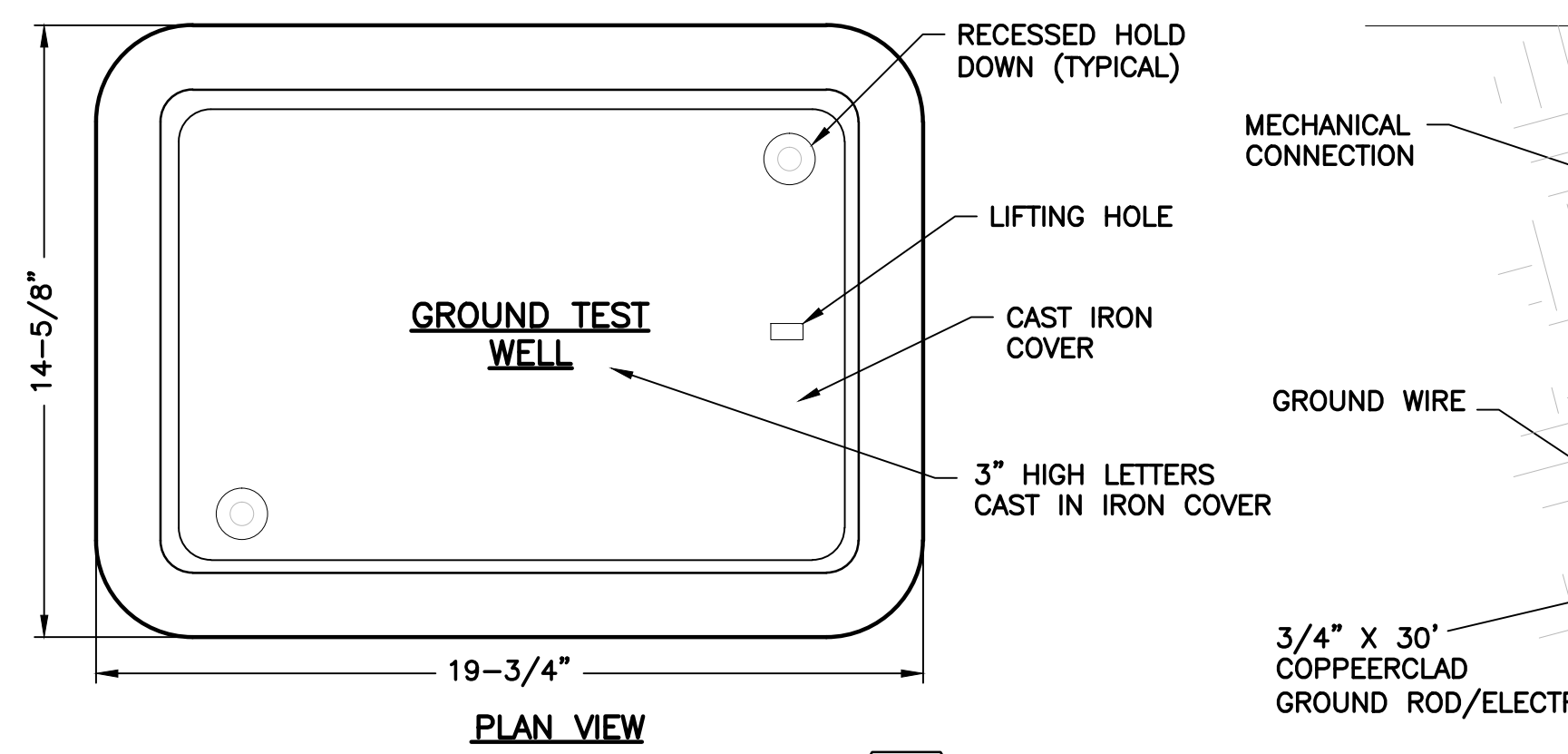
19 GROUNDING PLATE DETAIL
E18 NOT TO SCALE



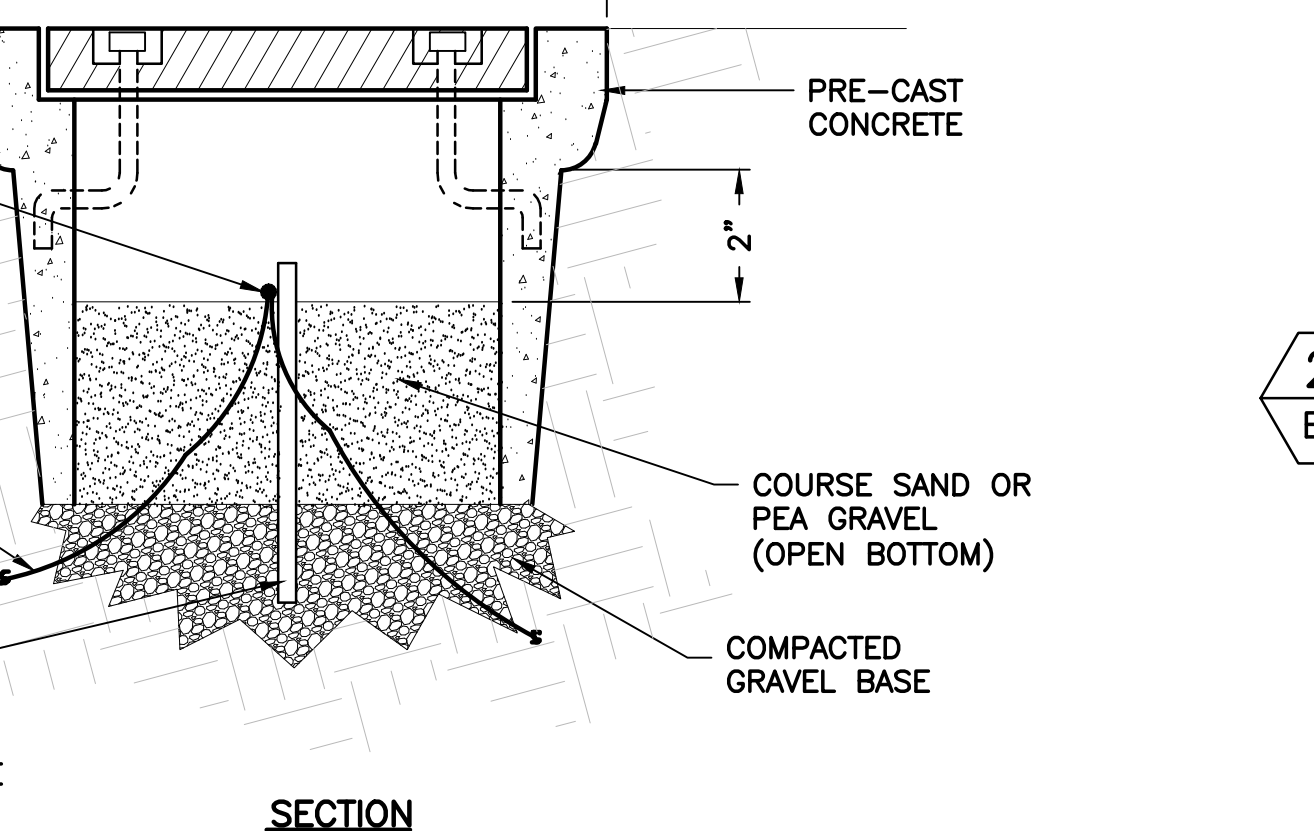
20 TYPICAL DUCTBANK DETAIL
E18 N.T.S.



21 BUILDING STRUCTURE BONDING
E18 N.T.S.



22 GROUND TEST WELL
E18 N.T.S.



23 EQUIPMENT GROUNDING DETAIL
E18 SCALE = N.T.S.

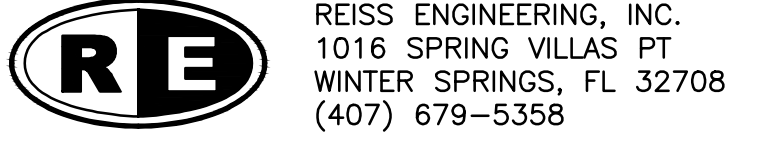


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Drawn_RRM	
Checked_LMR	
Reviewed_DD	
Approved_LMR	

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 ELECTRICAL
 ELECTRICAL DETAILS - 2

PROJECT NO.:	110025
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	E18
SHEET NO.:	43 OF 48



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Parent Sheet Set: 110025-SWRF FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:52 PM I:\Projects\110025-SWRF FOG & Septage Receiving Stations\BID SUBMITTAL\DWGS

GENERAL INSTRUMENT OR FUNCTION SYMBOLS		PROCESS DEVICE SYMBOLS		PROCESS DEVICE SYMBOLS (CONTINUED)		FUNCTION SYMBOLS & ABBREVIATIONS		
	DISCRETE INSTRUMENT - FIELD MOUNTED		REDUCER OR ENLARGER		VALVE: GLOBE OR OTHER IN-LINE TYPE, UNLESS OTHERWISE INDICATED.	K	PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPUT)	HAND SWITCH ABBREVIATIONS: A AUTOMATIC C COMPUTER OR CLOSE H HAND L LOCAL M MODULATE O OFF OR OPEN R REMOTE S START OR STOP
	DISCRETE INSTRUMENT - PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR ①		PRIMARY ELEMENT VENTURI TUBE		BUTTERFLY VALVE	-K	REVERSE PROPORTIONAL GAIN OR ATTENUATE (INPUT:OUTPUT)	
	DISCRETE INSTRUMENT - AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR ②		PRIMARY ELEMENT MAGNETIC FLOWMETER		CHECK VALVE WITH FLOW DIRECTION AS INDICATED	Σ	SUMMING	
	INSTRUMENTS SHARING COMMON HOUSING		PRIMARY ELEMENT ULTRASONIC DOPPLER FLOWMETER		PLUG VALVE	Σ/n	AVERAGING	
	HATCHED ITEMS INDICATE TO BE PROVIDED BY OTHERS		PRIMARY ELEMENT PARSCHALL FLUME		BALL VALVE	Δ	SUBTRACTING	
	NORMALLY INACCESSIBLE OR BEHIND-THE-PANEL DEVICES OR FUNCTIONS MAY BE DEPICTED BY USING THE SAME SYMBOL, BUT WITH DASHED HORIZONTAL BARS.		PRIMARY ELEMENT ORIFICE PLATE		PRESSURE REGULATING VALVE - SELF CONTAINED	√	EXACT SQUARE ROOT	
	CONTROL INTERLOCK		PRIMARY ELEMENT WEIR FLOWMETER		FLOW CONTROL GATE OR GATE VALVE	+	DIVIDE	
	CONTROL SYSTEM I/O INTERFACE - ANALOG SIGNAL. DIRECTION OF TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.		PRIMARY ELEMENT TURBINE OR PROPELLER TYPE METER		CENTRIFUGAL BLOWER	x	MULTIPLY	
	CONTROL SYSTEM I/O INTERFACE - DISCRETE SIGNAL. DIRECTION OF TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.		PRIMARY ELEMENT PITOT TUBE		CENTRIFUGAL PUMP	S	INTEGRATE	
	PNEUMATIC SIGNAL		PRIMARY ELEMENT STRAP ON ULTRASONIC TRANSIT TIME METER		SUBMERSIBLE PUMP	+	BIAS POSITIVE	
	EXISTING EQUIPMENT		PRIMARY ELEMENT STRAP ON ULTRASONIC DOPPLER METER		DIAPHRAGM PUMP & MOTOR	-	BIAS NEGATIVE	
	FUTURE EQUIPMENT		PRIMARY ELEMENT ULTRASONIC FLOW OR LEVEL METER		DISC FLOW OR PROGRESSIVE CAVITY PUMP	ƒ(X)	NONLINEAR OR UNSPECIFIED FUNCTION	
	DIAPHRAGM SEAL		FLOAT SWITCH		MIXER	>	HIGH SELECT	
	BUBBLER SYSTEM		DRAIN		MOTOR - MAY BE ELECTRIC, HYDRAULIC, OR PNEUMATIC. ARROW DENOTES VARIABLE SPEED.	<	LOW SELECT	
	PURGE OR FLUSHING DEVICE		CHEMICAL INJECTION POINT		CALIBRATION COLUMN	↑	HIGH LIMIT	
						↓	LOW LIMIT	

INSTRUMENTATION IDENTIFICATION LETTERS

FIRST LETTER	SUCCEEDING LETTERS	
	MEASURED OR INITIATING VARIABLE	MODIFIER
A	ANALYSIS	
B	BURNER, COMBUSTION	
C	USER'S CHOICE	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL
E	VOLTAGE (EMF)	
F	FLOW RATE	RATIO (FRACTION)
G	GAUGING (DIMENSIONAL)	
H	HAND (MANUALLY INITIATED)	
I	CURRENT (ELECTRICAL)	
J	POWER	SCAN
K	TIME OR TIME SCHEDULE	
L	LEVEL	
M	USER'S CHOICE	MOMENTARY
N	USER'S CHOICE	
O	USER'S CHOICE	
P	PRESSURE OR VACUUM	
Q	QUANTITY	INTEGRATE OR TOTALIZE
R	RUN	
S	SPEED OR FREQUENCY	SAFETY
T	TEMPERATURE	
U	MULTIVARIABLE	
V	VISCOSITY, VIBRATION	
W	WEIGHT OR TORQUE	
X	FAILURE	X AXIS
Y	EVENT, STATE, OR PRESENCE	Y AXIS
Z	POSITION, DIMENSION	Z AXIS

GENERAL NOTES

- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS & ABBREVIATIONS MAY NOT APPLY TO THIS SPECIFIC PROJECT.
- THIS LEGEND APPLIES TO INSTRUMENTATION DIAGRAMS ONLY, & ITS SYMBOLS MAY NOT BE APPLICABLE TO NON-INSTRUMENTATION DRAWINGS.
- THIS LEGEND SHEET & THE INSTRUMENTATION DIAGRAMS & I-DRAWINGS ARE GENERALLY BASED ON THE INSTRUMENT SOCIETY OF AMERICA'S STANDARDS FOR PRACTICES IN INSTRUMENTATION. SOME MODIFICATIONS, ADDITIONS, & ALTERATIONS MAY HAVE BEEN MADE TO ACCOMMODATE INDIVIDUAL PROJECT REQUIREMENTS.
- SOME PROCESS ITEMS (SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC.) WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE INSTRUMENTATION SHEETS.
- SEE ELECTRICAL SHEETS & SPECIFICATIONS FOR ADDITIONAL CONTROL & INTERLOCK REQUIREMENTS FOR EQUIPMENT NOT SHOWN OR NOT PROVIDED BY THE INSTRUMENTATION SUPPLIER.
- SLANTED TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES. NON-SLANTED TEXT DENOTES NEW EQUIPMENT, STRUCTURES, & WORK.

VALVE ACTUATOR SYMBOLS

VALVE OR GATE ACTUATOR WITH DEFINED AS FOLLOWS:

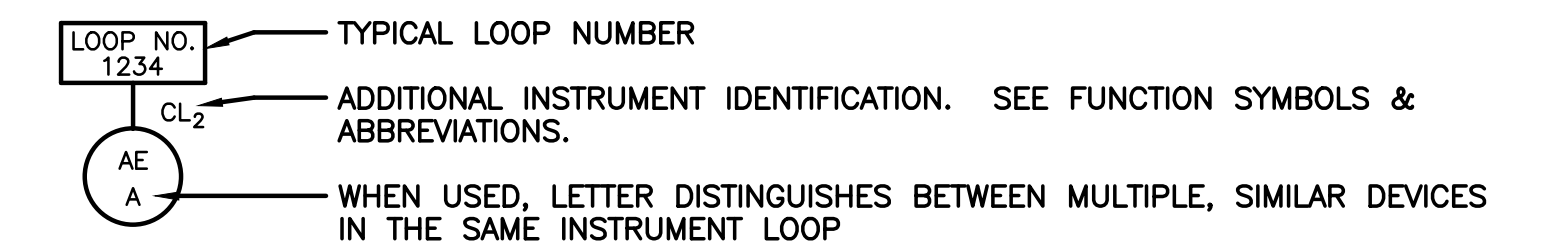
- P: AIR CYLINDER
- S: SOLENOID
- P/O: AIR/OIL CYLINDER
- E: ELECTRIC MOTOR
- H: HYDRAULIC CYLINDER
- EH: ELECTROHYDRAULIC
- Z: MISCELLANEOUS

FOR PRESSURE RELIEF OR SAFETY VALVES ONLY

MANUALLY (HAND) OPERATED

OR SYMBOL

TAG NUMBER & DESIGNATION EXAMPLE



REV	DATE	DESCRIPTION	BY
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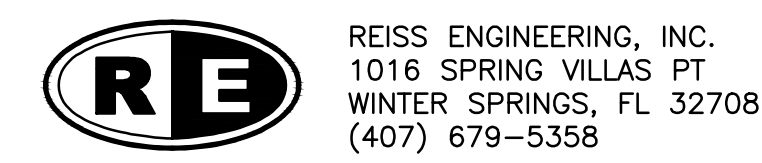
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6965 Piazza Grande Ave., Ste. 412
Orlando, FL 32835

Designed_DD _____
Drawn_RRM _____
Checked_LMR _____
Reviewed_DD _____
Approved_LMR _____

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS

INSTRUMENTATION & CONTROLS
INSTRUMENTATION NOTES, SYMBOLS AND ABBREVIATIONS

PROJECT NO.: 110025	SCALE: NOTED	REVISION: 0
DRAWING NO. 101	SHEET NO.: 44 OF 48	





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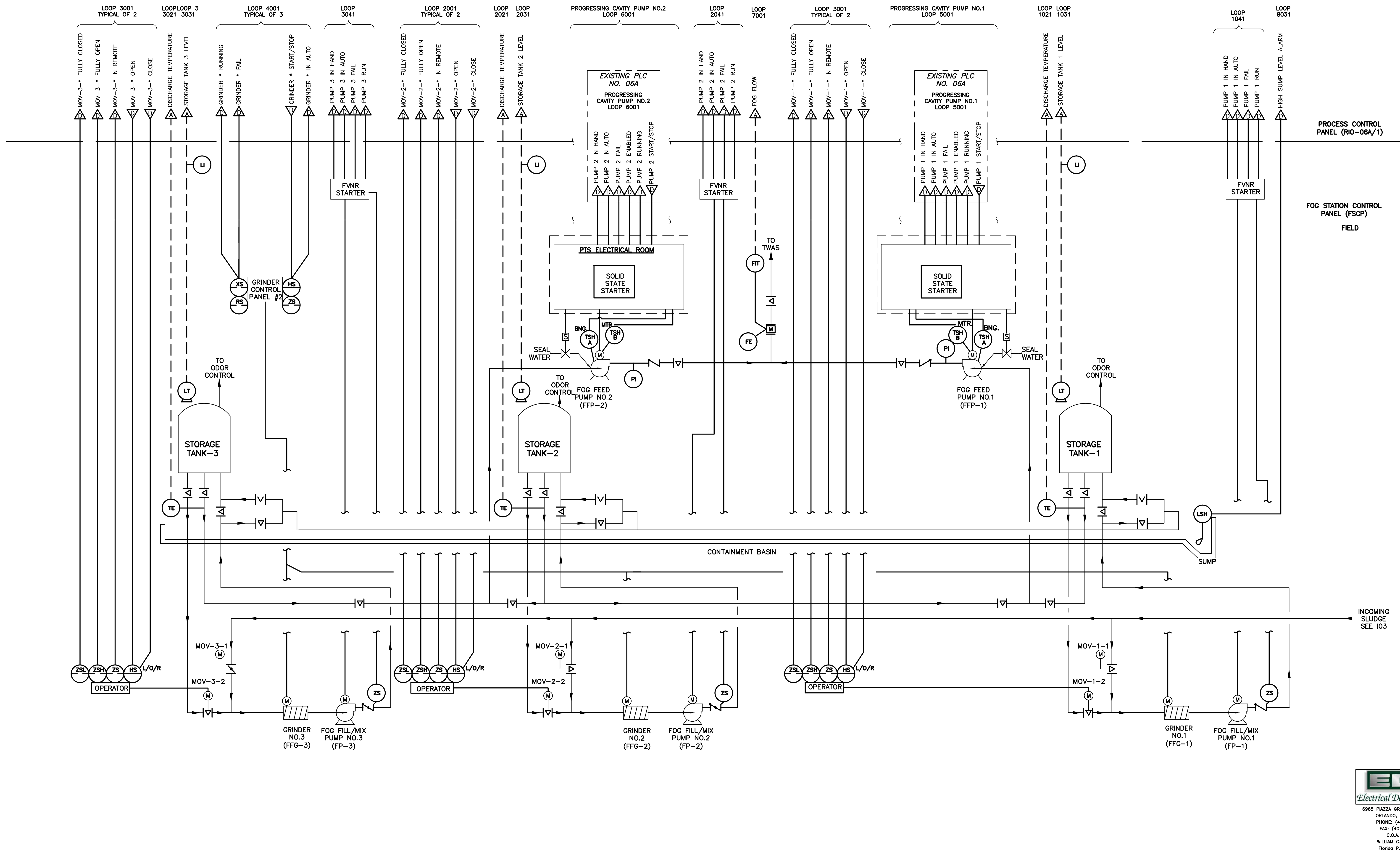
Designed_DD
 Drawn_RRM
 Checked_LMR
 Reviewed_DD
 Approved_LMR

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 INSTRUMENTATION & CONTROLS
 FOG RECEIVING STATION - P&ID 1

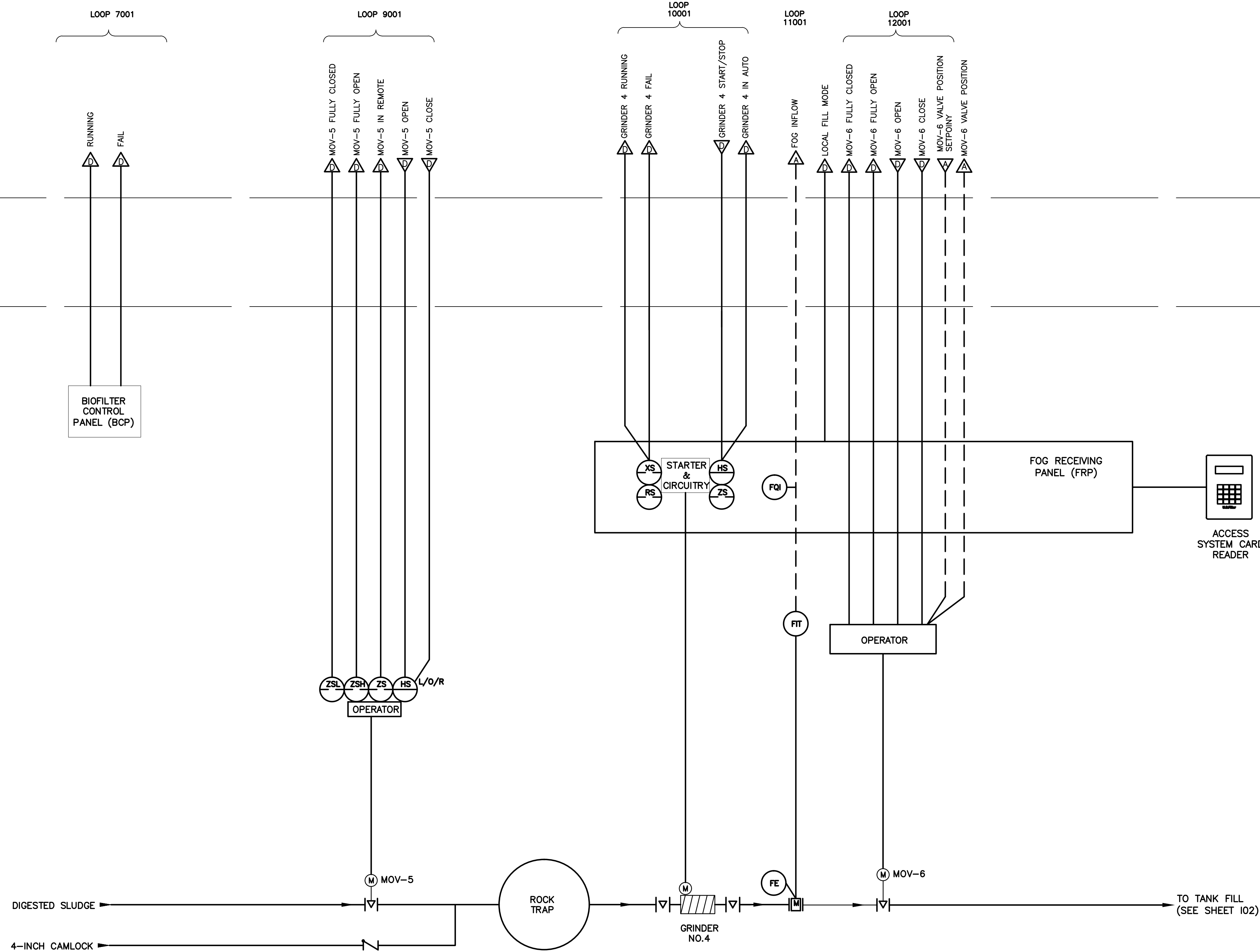
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SCALE:	NOTED
DRAWING NO.:	102
REVISION:	0
SHEET NO.:	45 OF 48

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 WILLIAM C. NELSON, P.E.
 Florida P.E. No. 42017



Parent Sheet Set: 110025-SWR FOG Rev/Plot by: RYAN MEEKS Rev. on: 2/17/2016 5:50 PM Individual File Path: F:\ACTIVE PROJECTS\REISS ENGINEERING\ORANGE COUNTY Y11-902-PH\SWFR FOG & SEPTAGE RECEIVING STATIONS\8_BID SUBMITTAL\DWGS\03.DWG



PROCESS CONTROL
PANEL (RIO-06A/1)

FOG STATION CONTROL
PANEL (FSCP)
FIELD

FOG RECEIVING
PANEL (FRP)

ACCESS
SYSTEM CARD
READER

OPERATOR

OPERATOR



REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

Issue Certification
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Designed_DD
 Drawn_RBM
 Checked_LMR
 Reviewed_DD
 Approved_LMR

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 INSTRUMENTATION & CONTROLS
 FOG RECEIVING STATION - P&ID 2

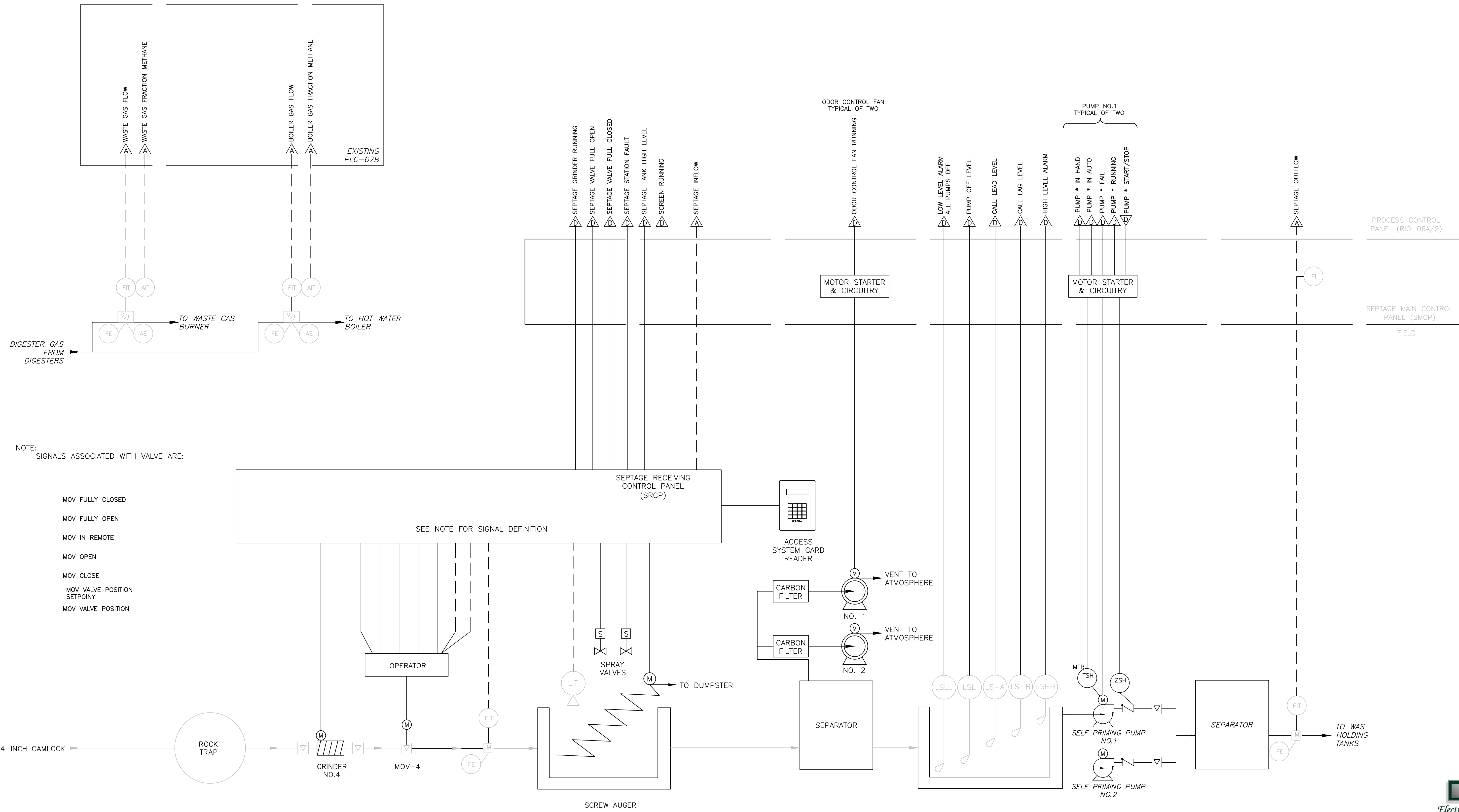
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SCALE: NOTED	REVISION: 0
DRAWING NO. 103	SHEET NO.: 46 OF 48



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NOTE:
SIGNALS ASSOCIATED WITH VALVE ARE:

- MOV FULLY CLOSED
- MOV FULLY OPEN
- MOV IN REMOTE
- MOV OPEN
- MOV CLOSE
- MOV VALVE POSITION SETPOINT
- MOV VALVE POSITION

SEPTAGE RECEIVING CONTROL PANEL (SRCP)
SEE NOTE FOR SIGNAL DEFINITION

OPERATOR



REV	DATE	DESCRIPTION	BY
0	9/2016	ISSUED FOR BID	LMR

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Approved_LMR

ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
INSTRUMENTATION & CONTROLS
SEPTAGE RECEIVING STATION - P&ID

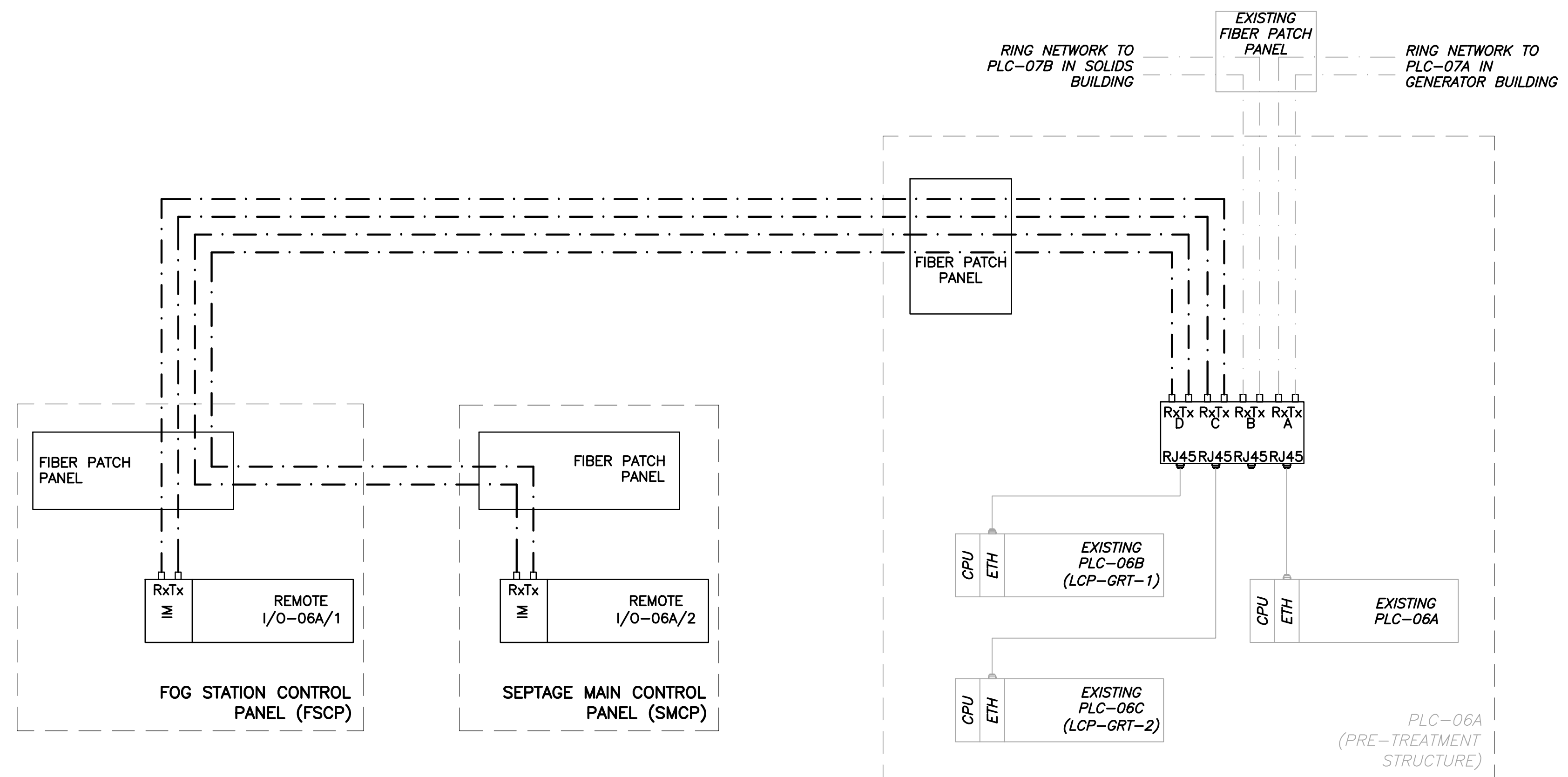
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SCALE: NOTED	REVISION: 0
DRAWING NO. 104	SHEET NO.: 47 OF 48



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 Orlando, FL 32835

Designed_DD
 Drawn_RRM
 Checked_LMR
 Reviewed_DD
 Approved_LMR

LINE IS 1" AT FULL SIZE
 LINE IS 1/2" AT HALF SIZE

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY FOG & SEPTAGE RECEIVING STATIONS
 INSTRUMENTATION & CONTROLS
 PARTIAL NETWORK BLOCK DIAGRAM

PROJECT NO.: 110025	
SCALE: NOTED	REVISION: 0
DRAWING NO.: 105	SHEET NO.: 48 OF 48



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