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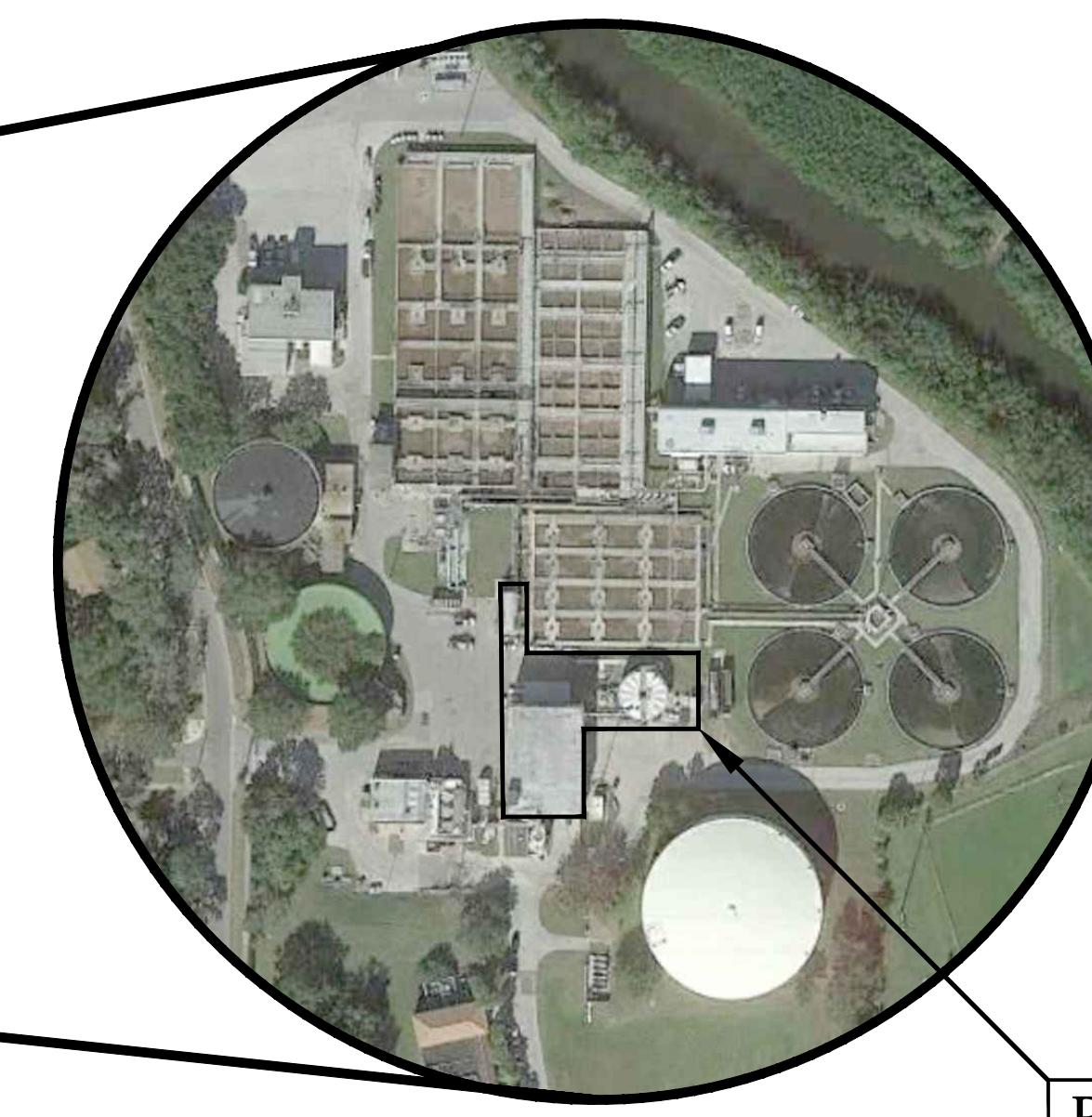
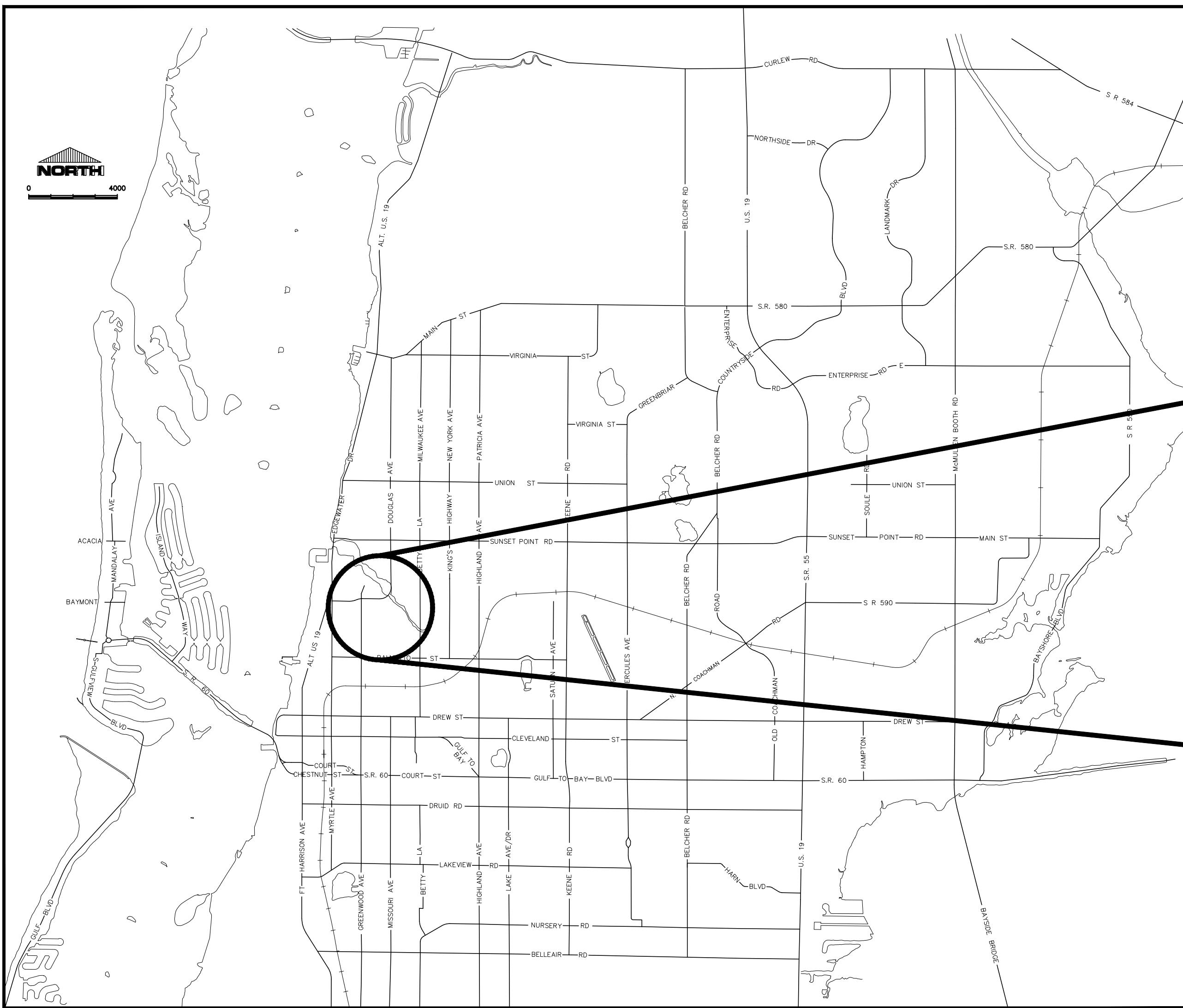


CLEARWATER
BRIGHT AND BEAUTIFUL • BAY TO BEACH



MARSHALL STREET WATER RECLAMATION FACILITY (MS WRF) BLEND TANK MIXER PROJECT

Y:\03720-City of Clearwater\Projects\054-01-MS WRF Blend Tank Mixer\Design&Construction\CAD Drawings\General\0372005401-001.dwg



Project Location

Address: 1605 Harbor Drive
Clearwater, FL
33755

CITY OFFICIALS

Frank Hibbard
Mark Bunker
Kathleen Beckman
David Allbritton
Hoyt Hamilton
William B. Horne II

Mayor
Councilmember
Councilmember
Councilmember
Councilmember
City Manager

Tara Kivett, P.E.
City Engineering Director

Approved By

Date Approved

CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611

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JUNE 2020

BID SET
Contract No. 18-0057-UT
Plan Set No. 2019016

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REFERENCED DATA

- THE EXISTING CONDITION INFORMATION CONTAINED HEREIN WAS OBTAINED FOR DESIGN PURPOSES AND MAY NOT BE AN ADEQUATE REPRESENTATION OF ACTUAL CONDITIONS FOR PROJECT CONSTRUCTION. ALL RISKS RESULTING FROM THE USE OR INTERPRETATION OF THE EXISTING DATA SHOWN SHALL BE BORNE BY THE CONTRACTOR.
- THE RECORD DRAWINGS REFERENCED WERE OF DATUM NGVD '29. THE EXISTING ELEVATIONS PROVIDED IN THESE CONTRACT DRAWINGS WERE APPROXIMATED AS 0.86 FEET BELOW THIS ELEVATION IN ACCORDANCE WITH THE NOAA ORTHOMETRIC HEIGHT CONVERSION FROM NGVD '29 TO NAVD '88 FOR LATITUDE 27°58'51" AND LONGITUDE OF 82°47'14". CONTRACTOR RESPONSIBLE FOR VERIFYING THE EXISTING ELEVATIONS. IF DIMENSIONS ARE NOT PROVIDED, THE DIFFERENCE IN TWO ELEVATIONS AS SHOWN ON THE CONTRACT DRAWINGS SHALL BE TAKEN AS MEASUREMENT, NOT NECESSARILY THE LISTED ELEVATION.
- FLOODPLAIN AND ELEVATIONS NOTED ON THE DRAWINGS ARE REFERENCED FROM THE FEMA FIRM PANEL 12103C0106H, EFFECTIVE DATE 5/17/2005, AND FLOOD INSURANCE STUDY 12103V000C.

GENERAL

- THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS OBTAINED FOR THIS PROJECT.
- CONSTRUCTION, MATERIALS, QUALITY, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS ADVISED NOT TO SCALE FROM DRAWINGS BUT TO FIELD VERIFY ALL DIMENSIONS. THE DIMENSIONS OF SPECIFIED AND FURNISHED PRODUCTS AND MATERIALS TAKE PRECEDENCE OVER DIMENSIONS INDICATED ON THE DRAWINGS. IF SIGNIFICANT DEVIATIONS OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND AT LEAST 72 HOURS PRIOR TO CONSTRUCTION FOR A DETERMINATION AND RESOLUTION.
- THE CONTRACTOR IS RESPONSIBLE TO MAKE SURE THAT THERE ARE NO SPILLS OF SEWAGE, RECLAIMED WATER, SLUDGE, OR OTHER REGULATED FLUIDS. CONTRACTOR SHOULD MAKE PROVISIONS SUCH AS CATCHMENTS WHEN OPENING PIPES, DEMOLITION, HYDRAULIC TESTING, ETC.

CONSTRUCTION LAYOUT/LIMITS OF CONSTRUCTION

- NO DISTURBANCE SHALL BE ALLOWED OUTSIDE OF THE RIGHT OF WAYS AND/OR THE LIMITS OF CONSTRUCTION SHOWN ON THE DRAWINGS UNLESS APPROVED BY THE OWNER OR SPECIFICALLY NOTED ON THE DRAWINGS.

EXISTING CONDITIONS

- LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE DRAWINGS BUT ARE NOT PURPORTED TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA. CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, DIMENSIONS, TYPES, AND CONDITIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE DRAWINGS) AFFECTING HIS WORK.
- PRIOR TO SHOP DRAWING PREPARATION AND SUBMITTAL AND PURCHASE OF RELATED MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES (LOCATION, SIZE, MATERIALS OF CONSTRUCTION, OUTSIDE DIAMETER, WALL THICKNESS, ROUNDNESS, ELEVATIONS, ETC.) TO WHICH CONNECTION(S) WILL BE MADE. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SHOP DRAWINGS.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IN WRITING IMMEDIATELY IF CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE CONTRACTOR SHALL ACCURATELY RECORD ANY SUCH CONFLICTS ON THE RECORD DRAWINGS.
- ANY PROPERTY CORNERS, MONUMENTS, OR BENCH MARKS WITHIN THE PROJECT AREA SHALL BE PROTECTED UNLESS OTHERWISE INDICATED FOR DEMOLITION. IF ANY SUCH ITEMS ARE IN DANGER OF DAMAGE OR HAVE BEEN DAMAGED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY AND REPLACE/RESTORE THESE ITEMS AT NO ADDITIONAL COST TO THE OWNER. IF THE OWNER CHOOSES TO SELF PERFORM THE WORK OR INCURS RELATED EXPENSES, THE COSTS SHALL BE DEDUCTED FROM THE CONTRACT PRICE.

UTILITY COORDINATION

- THE CONTRACTOR SHALL NOTIFY ALL UTILITIES NEAR THE PROJECT AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE NOTIFYING "SUNSHINE STATE ONE CALL OF FLORIDA" AT LEAST 48 HOURS PRIOR TO ANY DIGGING WORK TO HAVE ALL EXISTING UTILITIES LOCATED. THE PHONE NUMBER IS 811 OR 1-800-432-4770 AND THE WEB SITE IS WWW.CALLSUNSHINE.COM. IN INSTANCES WHERE DIGGING OCCURS IN WETLANDS, THE NOTIFICATION PERIOD SHALL BE INCREASED FROM AT LEAST 48 HOURS TO AT LEAST 10 DAYS.
- FLORIDA LAW (FS 553.851) REQUIRES THAT PERSONS MAKING EXCAVATIONS IN PUBLIC STREETS, ALLEYS, RIGHT-OF-WAYS OR UTILITY EASEMENTS MUST FIRST OBTAIN INFORMATION ON LOCATIONS OF UNDERGROUND GAS PIPELINES.

- THE CONTRACTOR SHALL PRESERVE AND MAINTAIN EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES WITHIN THE PROJECT AREA. ANY DAMAGE SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (EXPOSED OR UNEXPOSED) THAT MAY BE IMPACTED BY HIS WORK.

SAFETY

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE OSHA EXCAVATION SAFETY STANDARDS AND TO ABIDE BY THEM AS COVERED UNDER THE FLORIDA TRENCH SAFETY ACT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY.

RESTORATION

- ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, CULVERTS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL RESTORE EXISTING DRAINAGE PATTERNS DISTURBED BY CONSTRUCTION ACTIVITIES. FINAL GRADING SHALL PROVIDE FOR PROPER DRAINAGE WITH NO PONDING OF WATER.

ACCESS/MAINTENANCE OF FACILITIES

- THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL EXISTING UTILITIES/FACILITIES AND MAINTAIN UNINTERRUPTED SERVICES THROUGHOUT THE CONTRACT PERIOD.
- THE CONTRACTOR SHALL COORDINATE WITH WRF OPERATOR TO ENSURE FACILITIES REMAIN IN OPERATION. IN THE EVENT FACILITIES MUST BE SHUT DOWN, THE CONTRACTOR SHALL COORDINATE WITH THE WRF OPERATOR IN ACCORDANCE WITH SPECIFICATIONS.

PIPING NOTES

- LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
- SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE AS SPECIFIED FOR THE ADJACENT STRAIGHT RUN OF PIPE UNLESS NOTED OTHERWISE.
- PIPE HANGERS AND SUPPORTS ARE NOT SHOWN UNLESS A SPECIAL TYPE OR CONFIGURATION IS REQUIRED. FINAL SUPPORTS, LOCATIONS, AND TYPES SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND INCLUDED IN THE PIPELINE DRAWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.
- ALL PRESSURIZED PIPING, FITTINGS, ETC. SHALL BE RESTRAINED. CONNECTIONS OF NEW PIPING TO EXISTING PIPING SHALL BE RESTRAINED, AND THE CONTRACTOR SHALL VERIFY EXISTING PIPING SYSTEMS ARE RESTRAINED PRIOR TO AND AFTER MAKING CONNECTIONS.

UTILITY SEPARATION

- EACH PROPOSED UTILITY SHALL BE LAID TO ACHIEVE THE MINIMUM HORIZONTAL SEPARATION BETWEEN IT AND OTHER UTILITIES IN ACCORDANCE WITH THE TYPICAL UTILITY HORIZONTAL SEPARATION DETAIL SHOWN IN THE DRAWINGS.
- UNLESS OTHERWISE NOTED OR SHOWN, AT LOCATIONS WHERE A PROPOSED UTILITY CROSSES ANOTHER UTILITY, THE PROPOSED UTILITY SHALL BE INSTALLED IN ACCORDANCE WITH THE TYPICAL UTILITY CONFLICT DETAIL SHOWN IN THE DRAWINGS.
- IN THE EVENT THAT A UTILITY CONFLICT CANNOT BE RESOLVED BY MAKING A MINOR ROUTE ADJUSTMENT OR BY UTILIZING THE TYPICAL UTILITY CONFLICT DETAIL, THE CONTRACTOR SHALL SUBMIT A RELOCATION PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALL RELOCATIONS EFFORTS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND ANY Affected UTILITY COMPANIES.

EROSION CONTROL AND DRAINAGE

- THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.

- ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED TO RESTORE PRE-CONSTRUCTION DRAINAGE FEATURES. THE AREAS SHALL THEN BE SODDED AS SPECIFIED, FERTILIZED, AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. SOD SHALL MATCH EXISTING TURF. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED AND MULCHED.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

- THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES STATE WATER QUALITY STANDARDS.

- THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL EROSION AND TRANSPORT OF SEDIMENTS WITHIN AND FROM THE PROJECT AREA, SO AS TO PREVENT THE DEGRADATION OF RECEIVING WATERS, DETRIMENTAL EFFECTS ON PUBLIC OR PRIVATE PROPERTY ADJACENT TO THE PROJECT AND DAMAGE WITHIN THE PROJECT AREA. THESE MEASURES WILL INCLUDE THE CONSTRUCTION AND MAINTENANCE OF TEMPORARY AND PERMANENT EROSION CONTROLS.

- MONITORING OF OFFSITE TRACKING OF SEDIMENTS AT THE ENTRANCES IS REQUIRED WHERE SILT FENCE WILL NOT BE PLACED TO ENABLE ACCESS TO THE SITE. IF IT APPEARS THAT SIGNIFICANT AMOUNTS OF SEDIMENT ARE BEING TRACKED OFF THE SITE, THEN THE CONTRACTOR SHALL CONSTRUCT GRAVEL ENTRANCES OR OTHER EQUIVALENT MEASURES TO HELP DISLODGE THE SOIL, SEDIMENT AND DIRT BEFORE THE VEHICLES LEAVE THE SITE.
- AREAS WHERE THE GROUND HAS BEEN DISTURBED AND CONSTRUCTION ACTIVITIES TEMPORARILY WILL CEASE FOR MORE THAN 21 DAYS SHALL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA WHERE THE GROUND HAS BEEN DISTURBED, THAT AREA SHALL BE STABILIZED WITH SOD OR OTHER SUITABLE STABILIZATION MATERIALS. AFTER THE SITE IS STABILIZED, ALL EXCESS SEDIMENTS AND DEBRIS SHALL BE REMOVED FROM THE PONDS AND STORMWATER CONVEYANCE SYSTEM/STRUCTURES RECEIVING DIRECT RUNOFF FROM THE AREA.

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
DRAWING INDEX AND
GENERAL NOTES

DWG NAME: 0372005401-G02.dwg	FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO.: 18-J057-UT	DATE DRAWN:	DRAWN BY:	VERT.
JUNE 2020		SMENARD	
JOB NO.: 03720-054-01	DESIGNED BY:	CHECKED BY:	HORIZ. NONE
DYONGE		TFRIEDRICH	SHEET NO.: G2
	APPROVED FOR CONSTRUCTION		
			DAVID T. YONGE, P.E. # 85457
			DATE

STANDARD ABBREVIATIONS

&	AND	D	DRAIN	HOA	HAND-OFF-AUTO	NTS	NOT TO SCALE	ST	SHUNT TRIP
@	AT	DB	DUCT BANK	HOR	HAND-OFF-REMOTE	NW	NORTH WEST	ST	STREET
A	AUTOMATIC	DBI	DITCH BOTTOM INLET	HORIZ	HORIZONTAL	OC	ON CENTER(S), OPEN-CLOSE(D)	STA	STATION
AA STD	ALUMINUM ASSOCIATION STANDARD	DC	DIRECT CURRENT	HP	HORSEPOWER	OCA	OPEN-CLOSE-AUTO	STD	STANDARD
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	DES	DESIGNATION	HPS	HIGH PRESSURE SODIUM	OCR	OPEN-CLOSE-REMOTE	STL	STEEL
AC	ASBESTOS CEMENT	DET	DETAIL	HR	HANDRAIL	OD	OUTSIDE DIAMETER	STS	STORMWATER SEWER
AC	ALTERNATING CURRENT	DI	DUCTILE IRON	HSPS	HIGH SERVICE PUMP STATION	OFL	OVERFLOW	SW	SOUTH WEST, SWITCH
AC	AIR CONDITIONER	DIA	DIAMETER	HT	HEIGHT	OO	ON-OFF	SWD	SIDE WATER DEPTH
ACI	AMERICAN CONCRETE INSTITUTE	DIPS	DUCTILE IRON PIPE SIZE	I&C	INSTRUMENTATION AND CONTROL	OOA	ON-OFF-AUTO	SWJ	SOLVENT WELD JOINT
ADJ	ADJUSTABLE	DIV	DIVISION	IC	INTERRUPTING CAPACITY	OOR	ON-OFF-REMOTE	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
AFF	ABOVE FINISHED FLOOR	DN	DOWN, DAMPER	ID	INSIDE DIAMETER	OPP	OPPOSITE	SY	SQUARE YARD
AFG	ABOVE FINISHED GRADE	DR	DIMENSION RATIO	ID	IDENTIFICATION	OS&Y	OUTSIDE STEM AND YOKE	T, THK	THICK
AIP	ABANDONED IN PLACE	DR	DRAIN OR DRIVE	IE	INVERT ELEVATION	OSC	OPEN-STOP-CLOSE	T/	TOP OF
AISI	AMERICAN IRON STEEL INSTITUTE	DWG	DRAWING	IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS	OSHA	OCUPATIONAL SAFETY AND HEALTH ADMINISTRATION	T/B,T&B	TOP AND BOTTOM
AIT	ANALYTICAL INDICATING TRANSMITTER	DXS	DOUBLE EXTRA STRONG	IF	INSULATED FLANGE	P&ID	PIPING AND INSTRUMENTATION DIAGRAM	TBM	TEMPORARY BENCHMARK
ALT	ALTERNATIVE	E	EAST	IJ	ISOLATION JOINT	P/L	PROPERTY LINE	TEMP	TEMPERATURE
ALUM	ALUMINUM	E	ELECTRIC ACTUATOR	INC	INCORPORATED	PCCP	PRESTRESSED CONCRETE CYLINDER PIPE	TGS	THREADED GALVANIZED STEEL
AM	AUTO-MANUAL	EA	EACH	IPS	IRON PIPE SIZE	PCV	PRESSURE CONTROL VALVE	TH	TOTAL HEAD
AMPS	AMPERES	ECC	ECENTRIC	J, JB	JUNCTION BOX	PE	PLAIN END, POLYETHYLENE	TJB	TERMINAL JUNCTION BOX
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	EES	EMERGENCY EYEWASH AND SHOWER	JT	JOINT	PET	POLYETHYLENE TUBING	TK	TANK
AP	ANALYZER PANEL	EF	EACH FACE, EXHAUST FAN	KA	KILOAMPERES	PF	POWER FACTOR	TOC	TOP OF CONCRETE
APP	APPROVE, APPROVED	EG	SUCH AS	KB	KNEE BRACE	pH	HYDROGEN ION CONCENTRATION	TOS	TOP OF STEEL
APPROX	APPROXIMATE	EJ	EXPANSION JOINT	KCMIL	THOUSAND CIRCULAR MILS	PH	PHASE	TOSJ	TOP OF STEEL JOIST
AR	AIR RELEASE	EL, ELEV	ELEVATION	KV	KILOVOLT	PI	PRESSURE INDICATOR/GAUGE	TOW	TOP OF WALL
ARV	AIR RELEASE VALVE	ELB	ELBOW	KVA	KILOVOLT AMPERES	PID	PROPORTIONAL INTEGRAL DERIVATIVE	TS	TUBULAR STEEL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	ELEC	ELECTRICAL	KW	KILOWATTS	PIT	PRESSURE INDICATING TRANSMITTER	TSF	THICKENED SLAB FOOTING
ASD	ADJUSTABLE SPEED DRIVE	EOP	EDGE OF PAVEMENT	KWH	KILOWATT HOUR	PIV	POST INDICATOR VALVE	TSP	TWISTED SHIELDED PAIR
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	EQ	EQUAL	L	LOWER	PL	PLATE	TURB	TURBIDITY
ATS	AUTOMATIC TRANSFER SWITCH	ERCP	ELLiptical REINFORCED CONCRETE PIPE	LB, LBS	POUND(S)	PLC	PROGRAMMABLE LOGIC CONTROLLER	TYP	TYPICAL
AUTO	AUTOMATIC	EST	ELEVATED STORAGE TANK	LE	LEVEL ELEMENT	PLCS	PLACES	UG	UNDERGROUND
AUX	AUXILIARY	ETC	ETCETERA	LEL	LOWER EXPLOSIVE LIMIT	POC	POINT OF CONNECTION	UL	UNDERWRITER'S LABORATORIES
AVE	AVENUE	EW	EACH WAY	LF	LINEAR FEET	POE	POINT OF ENTRY	ULC	ULTRASONIC LEVEL CONTROLLER
AWG	AMERICAN WIRE GUAGE	EXIST	EXISTING	LG	LONG	POJ	PUSH ON JOINT	UNO	UNLESS NOTED OTHERWISE
AWS	AMERICAN WELDING SOCIETY	FBC	FLORIDA BUILDING CODE	LIT	LEVEL INDICATING TRANSMITTER	PP	POWER POLE	UPS	UNINTERRUPTIBLE POWER SUPPLY
AWWA	AMERICAN WATER WORKS ASSOCIATION	F, FU	FUSE	LIU	LIGHT INTERFACE UNIT	PPE	PERSONAL PROTECTIVE EQUIPMENT	V	VOLTAGE, VOLTS
B/	BOTTOM OF	F/F	FINISHED FLOOR	LLH	LONG LEG HORIZONTAL	PRV	PRESSURE REDUCING VALVE	VERT	VERTICAL
B/L	BASELINE OF CONSTRUCTION	FAB	FABRICATED	LLV	LONG LEG VERTICAL	PSF	POUNDS PER SQUARE FOOT	VFD	VARIABLE FREQUENCY DRIVE
BC	BARE COPPER	FAC	FLORIDA ADMINISTRATIVE CODE	LLWL	LOW LOW WATER LEVEL	PSI	POUNDS PER SQUARE INCH	VH	VAPOR HEATER
BE	BURIED ELECTRICAL	FCA	FLANGED COUPLING ADAPTER	LOS	LOCKOUT STOP	PSIA	POUNDS PER SQUARE INCH ABSOLUTE	VIB	VIBRATION
BF	BLIND FLANGE	FCV	FLOW CONTROL VALVE	LR	LONG RADIUS, LOCAL-REMOTE	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL	VIF	VERIFY IN FIELD
BFP	BACKFLOW PREVENTER	FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	LS	LIFT STATION	PSIG	POUNDS PER SQUARE INCH GAUGE	VP	VAPORIZER
BFV	BUTTERFLY VALVE	FDN	FOUNDATION	LSIG	LONG SHORT INSTANTANEOUS GROUND	PSV	PRESSURE SUSTAINING VALVE	W	WIDE, WATT
BKR	BREAKER	FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	LWL	LOW WATER LEVEL	PT	PRESSURE TREATED, POTENTIAL	W/	WITH
BLD	BLIND	FDR	FEEDER	M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL	TRANSFORMER	W/O	WITHOUT	
BLDG	BUILDING	FE	FLOW ELEMENT	M/F	MALE/FEMALE	PV	PLUG VALVE	WCJ	WALL CONTROL JOINT
BLVD	BOULEVARD	FF	FINISHED FLOOR	MAX	MAXIMUM	PVC	POLYVINYL CHLORIDE	WF	WALL FOOTING
BM	BENCH MARK	FFE	FINISHED FLOOR ELEVATION	MC	MODULATE-CLOSE	PVMT	PAVEMENT	WGT	WEIGHT
BO	BLOW-OFF	FG	FINISHED GRADE, FIBERGLASS	MCC	MOTOR CONTROL CENTER	PWR	POWER	WP	WORK POINT, WEATHERPROOF
BT	BURIED TELEPHONE	FH	FIRE HYDRANT	MCJ	MASONRY CONTROL JOINT	R	RADIUS	WSE,	WATER SURFACE ELEVATION
BTM	BOTTOM	FIG	FIGURE	MECH	MECHANICAL	R/W, ROW	RIGHT-OF-WAY	WSEL	WSE, WATER SURFACE ELEVATION
BTM/	BOTTOM OF	FIN	FINISHED	MES	METERED END SECTION	RCP	REINFORCED CONCRETE PIPE	WT	WEIGHT
BV	BALL VALVE	FIT	FLOW INDICATING TRANSMITTER	MFR	MANUFACTURER	RCPT	RECEPTACLE	WV	WATER VALVE
BYP	BYPASS	FJ	FLANGED JOINT	MG	MILLION GALLON(S)	RD	ROAD	WWF	WELDED WIRE FABRIC
C	CONDUIT, CONDUCTOR, CLOSE	FLEX	FLEXIBLE	MH	MANHOLE	RED	REDUCER	XFMR	TRANSFORMER
C/L, CL	CENTERLINE	FL	FLOOR	MIN	MINIMUM	REF	REFERENCE	XS	EXTRA STRONG
CAM	COMPUTER-AUTO-MANUAL	FLG	FLANGE(D)	MISC	MISCELLANEOUS	REINF	REINFORCEMENT, REINFORCING REQUIRED		
CAT	CATALOGUE	FND	FOUNDATION	MJ	MECHANICAL JOINT	REQ'D			
CB	CIRCUIT BREAKER	FNPT	FEMALE NATIONAL PIPE THREAD	MNPT	MALE NATIONAL PIPE THREAD	RGS	RIGID GALVANIZED STEEL		
CC	CENTER TO CENTER	FO	FIBER OPTIC CABLE	MO	MOTOR OPERATOR	RJ	RESTRAINED JOINT		
CCS	CENTRAL CONTROL SYSTEM	FOS	FAST-OFF-SLOW	MOT	MAINTENANCE OF TRAFFIC	RM	REMOTE MULTIPLEXING MODULE		
CF	COLUMN FOUNDATION	FOSA	FAST-OFF-SLOW-AUTO	MP	METERING PUMP	RMS	ROOT MEAN SQUARE		
CFWE	CABLE FURNISHED WITH EQUIPMENT	FOSR	FAST-OFF-SLOW-REMOTE	MPH	MILES PER HOUR	RPZ	REDUCED PRESSURE ZONE		
CI	CAST IRON	FP	FULL PENETRATION, FIELD PANEL	MS	MOTOR STARTER	RT	RIGHT		
CIP	CAST IN PLACE, CAST IRON PIPE	FR	FORWARD-REVERSE	MSC	MANUFACTURER SUPPLIED CABLE	RTU	REMOTE TELEMETRY UNIT		
CISP	CAST IRON SLIP PIECE	FREQ	FREQUENCY	MT, MTD	OUNT(ED)	S	SOUTH		
CJ	CONSTRUCTION/CONTRACTION JOINT	FRP	FIBER REINFORCED PLASTIC	MTL	METAL	SARV	SURGE ANTICIPATOR RELIEF VALVE		
CLF	CHAIN LINK FENCE	FS	FLORIDA STATUTES, FAR SIDE, FLOW SWITCH	MV	MEDIUM VOLTAGE	SBC	STANDARD BUILDING CODE		
CLR	CLEAR	FT	FOOT	N	NORTH(ING), NEUTRAL, NORMAL	SCH	SCHEDULE		
CM	COMPUTER-MANUAL	G	GROUND	N/A	NOT APPLICABLE	SCJ	SAW CUT JOINT		
CMP	CORRUGATED METAL PIPE	GAL	GALLON	NAD	NORTH AMERICAN DATUM	SDI	STEEL DECK INSTITUTE		
CMU	CONCRETE MASONRY UNIT	GALV	GALVANIZED	NAVD	NORTH AMERICAN VERTICAL DATUM	SE	SOUTH EAST		
CO	CLEANOUT	GEN	GENERATOR	NC	NORMALLY CLOSED	SEC	SECOND		
CO	COMPANY	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NE	NORTH EAST	SF	SLOWER-FASTER, SQUARE FOOT		
COL	COLUMN	GND	GROUND	NEUT	NEUTRAL	SHC	SHOULDERED-END COUPLING		
COM	COMMUNICATION	GYM	GALLONS PER MINUTE	NEC	NATIONAL ELECTRICAL CODE	SHEC	SHEET		
CON	CONCENTRIC	GR	GRADE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	SHT	SIMILAR		
CONC	CONCRETE	GRTG	GRATING	NEUT	NEUTRAL	SJI	STEEL JOINT INSTITUTE		
CONSTR	CONSTRUCTION	GS	GALVANIZED STEEL	NEUT	NEUTRAL	SM	STATIC MIXER		
CONT	CONTINUOUS	GSP	GALVANIZED STEEL PIPE	NGVD	NATIONAL GEODETIC VERTICAL DATUM	SP	SPACING, SPACED		
CORP	CORPORATION	GST	GROUND STORAGE TANK	NIC	NOT IN CONTRACT	SPD	SURGE PROTECTIVE DEVICE		
CP	CONTROL PANEL	GV	GATE VALVE	No.	NUMBER	SQ	SQUARE		
CPT	CONTROL POWER TRANSFORMER	H	HIGH	NO	NORMALLY OPEN	SR	STATE ROAD, SURGE RELIEF		
CRE	CORROSION RESISTANT	HD	HAND	NOM	NOMINAL	SRV	SURGE RELIEF VALVE		
CRSI	CONCRETE REINFORCING STEEL INSTITUTE	HDD	HORIZONTAL DIRECTIONAL DRILL	NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	SS	START-STOP		
CS	CARBON STEEL	HDNS	HARDNESS	NPT	NATIONAL PIPE THREAD	SST	STAINLESS STEEL		
CT	CURRENT TRANSFORMER, CABLE TRAY	HDPE	HIGH DENSITY POLYETHYLENE	NRS	NONRISING STEM	SSC	SUPERVISORY SET POINT CONTROL		
CTR	CONTACTOR	HHWL	HIGH HIGH WATER LEVEL	NS	NEAR SIDE	SSRV	SOLID STATE REDUCED VOLTAGE		
CV	CENTERED	HK	HOOK	NSF	NATIONAL SANITATION FOUNDATION				

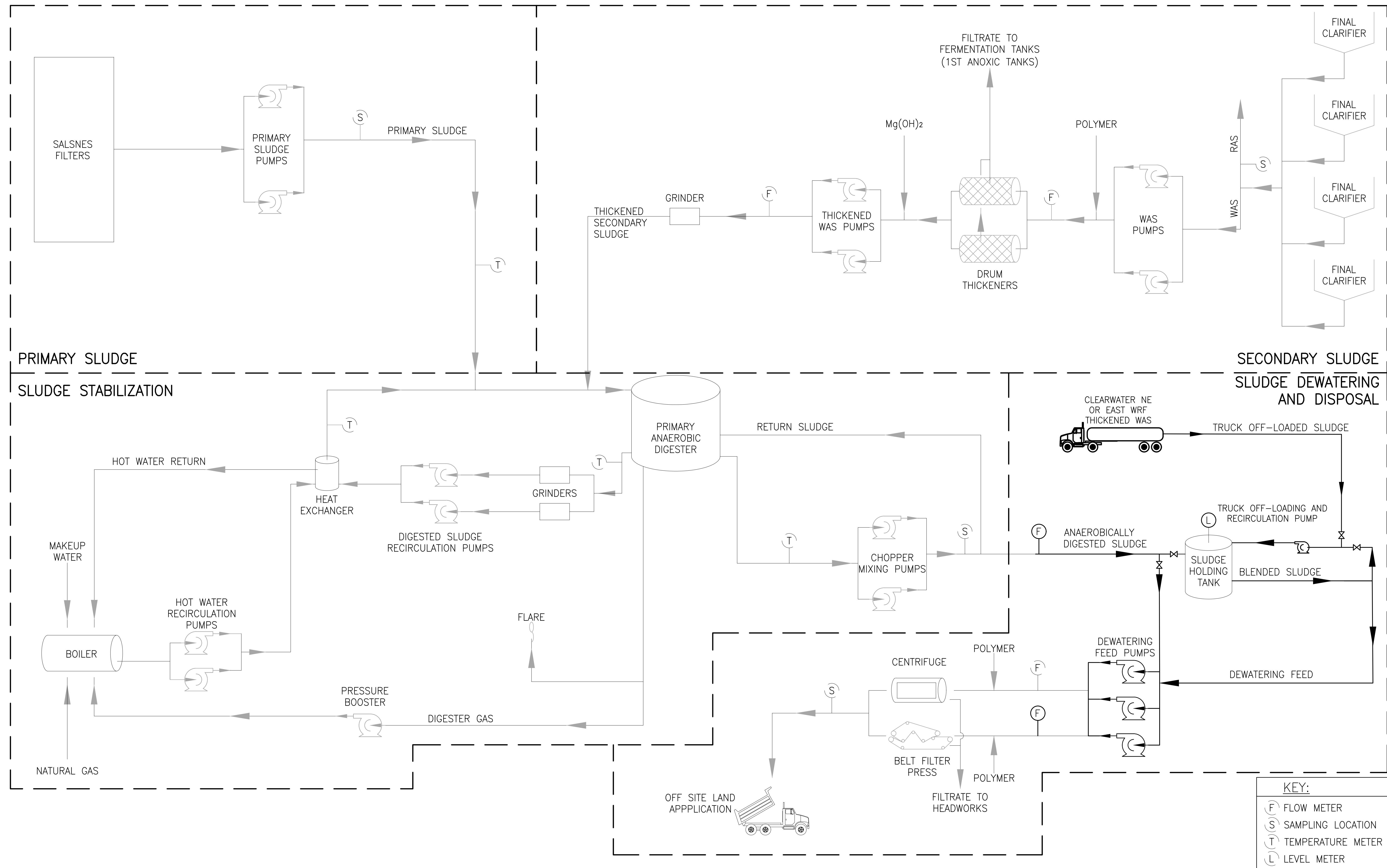
RECORD DRAWINGS

SURVEYED BY: DRAWN BY:

REVIEWED BY:

APPROVED BY: PROJECT ENGINEER DATE

APPROVED BY: CITY ENGINEERING DIRECTOR TARA K



RECORD	DRAWINGS		
SURVEYED BY:	DRAWN BY:		
REVIEWED BY:			
PROJECT ENGINEER	DATE		
APPROVED BY:			
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE		
REVISION	BY	DATE	

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

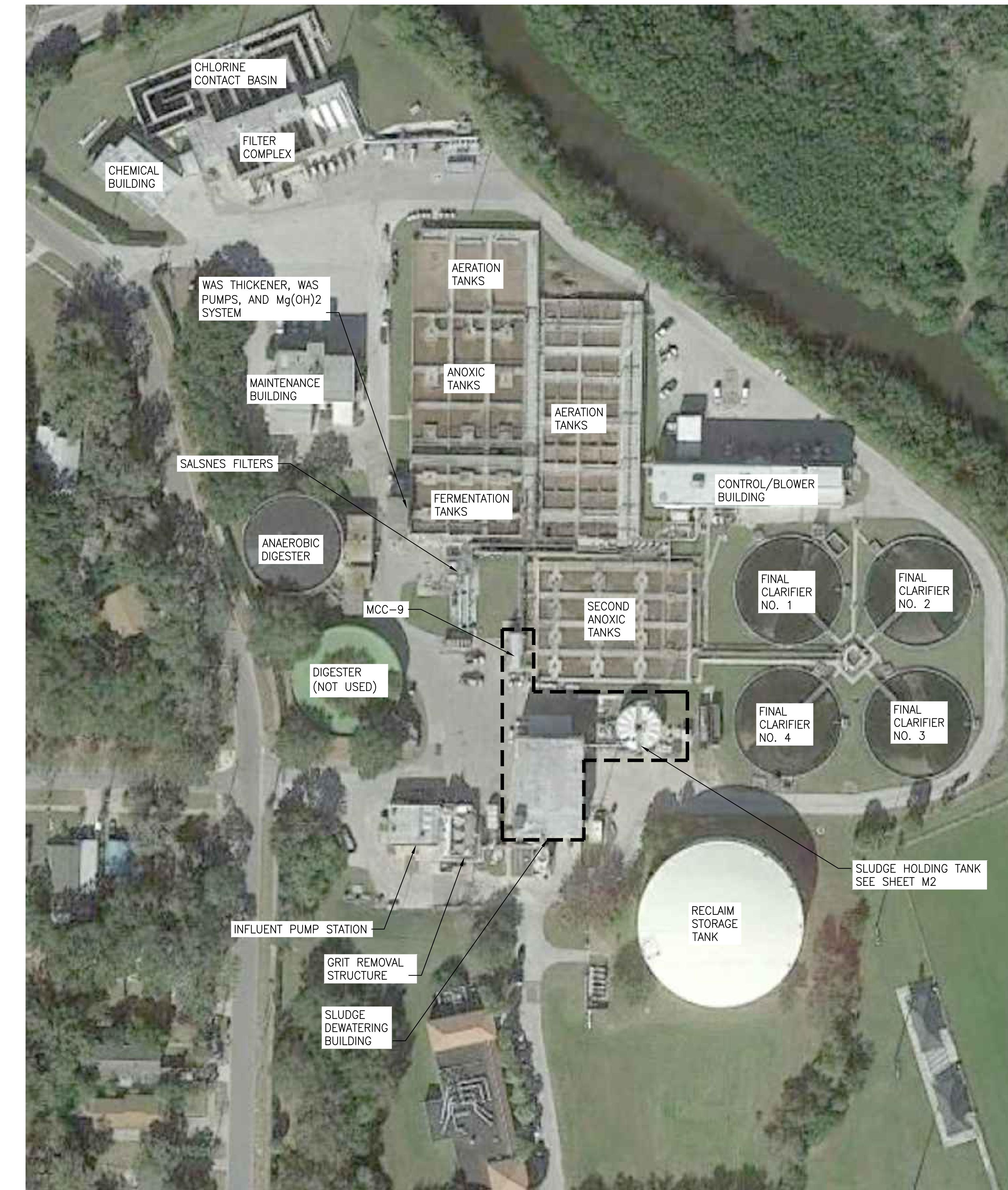


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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33608 / (813) 238-0703

MS WRF BLEND TANK MIXER PROJECT PROCESS FLOW DIAGRAM

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
0372005401-G04.dwg			
8-0057-UT	JUNE 2020	DRAWN BY: SMENARD	VERT.
03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	HORIZ. NONE
	APPROVED FOR CONSTRUCTION		SHEET NO.: G4
			DATE



N

RECORD	DRAWINGS		
SURVEYED BY:	DRAWN BY:		
REVIEWED BY:			
PROJECT ENGINEER	DATE		
APPROVED BY:			
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE		

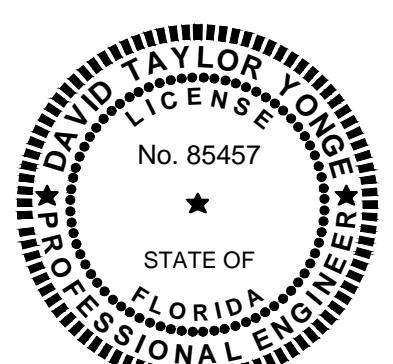
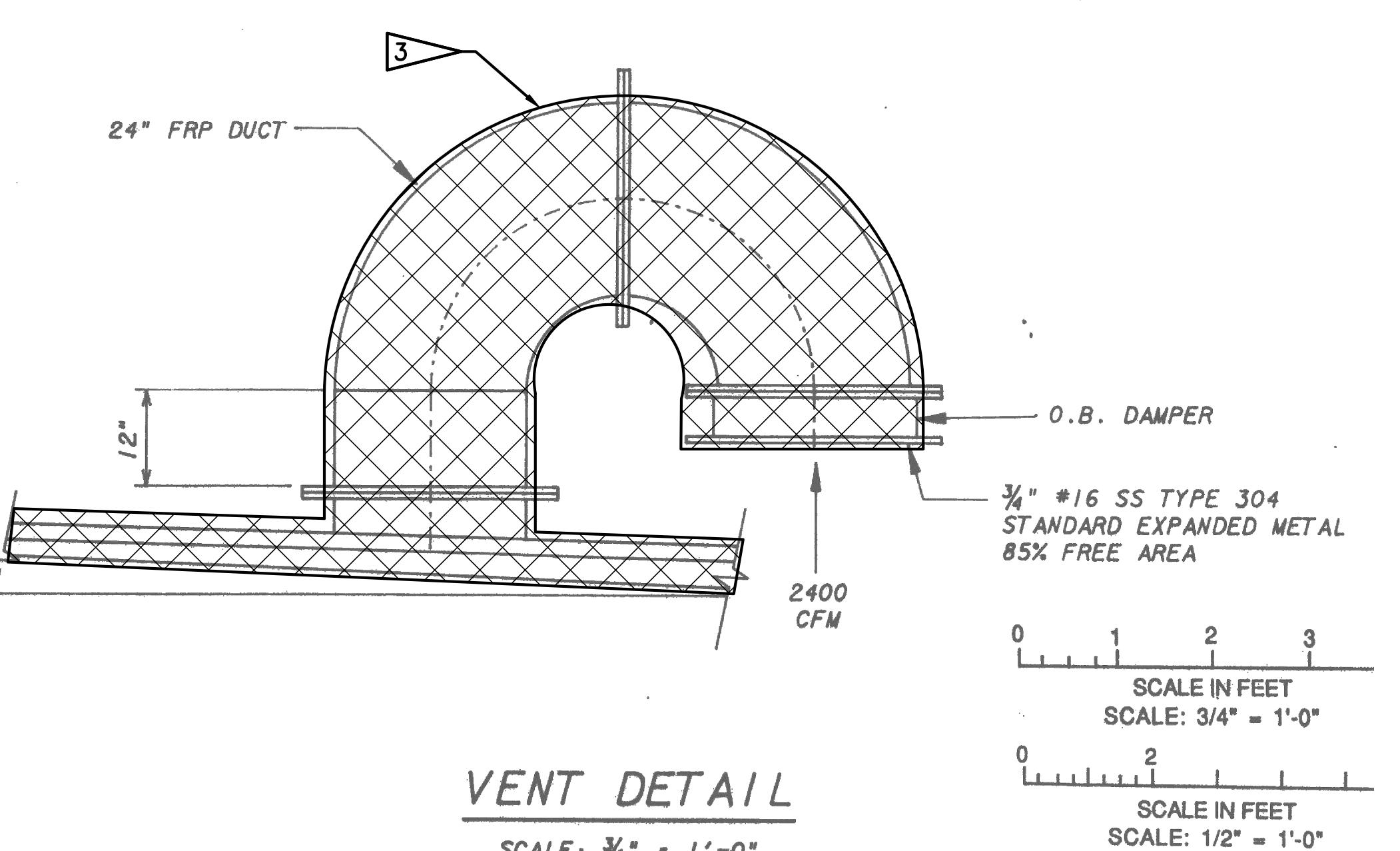
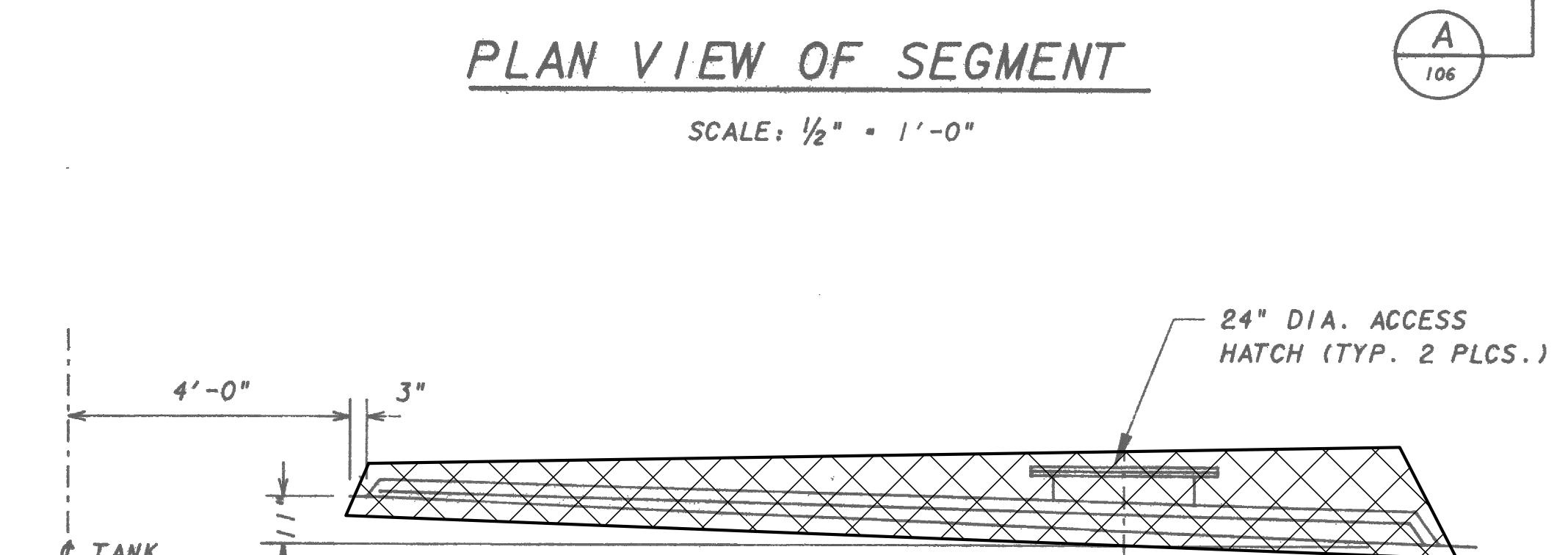
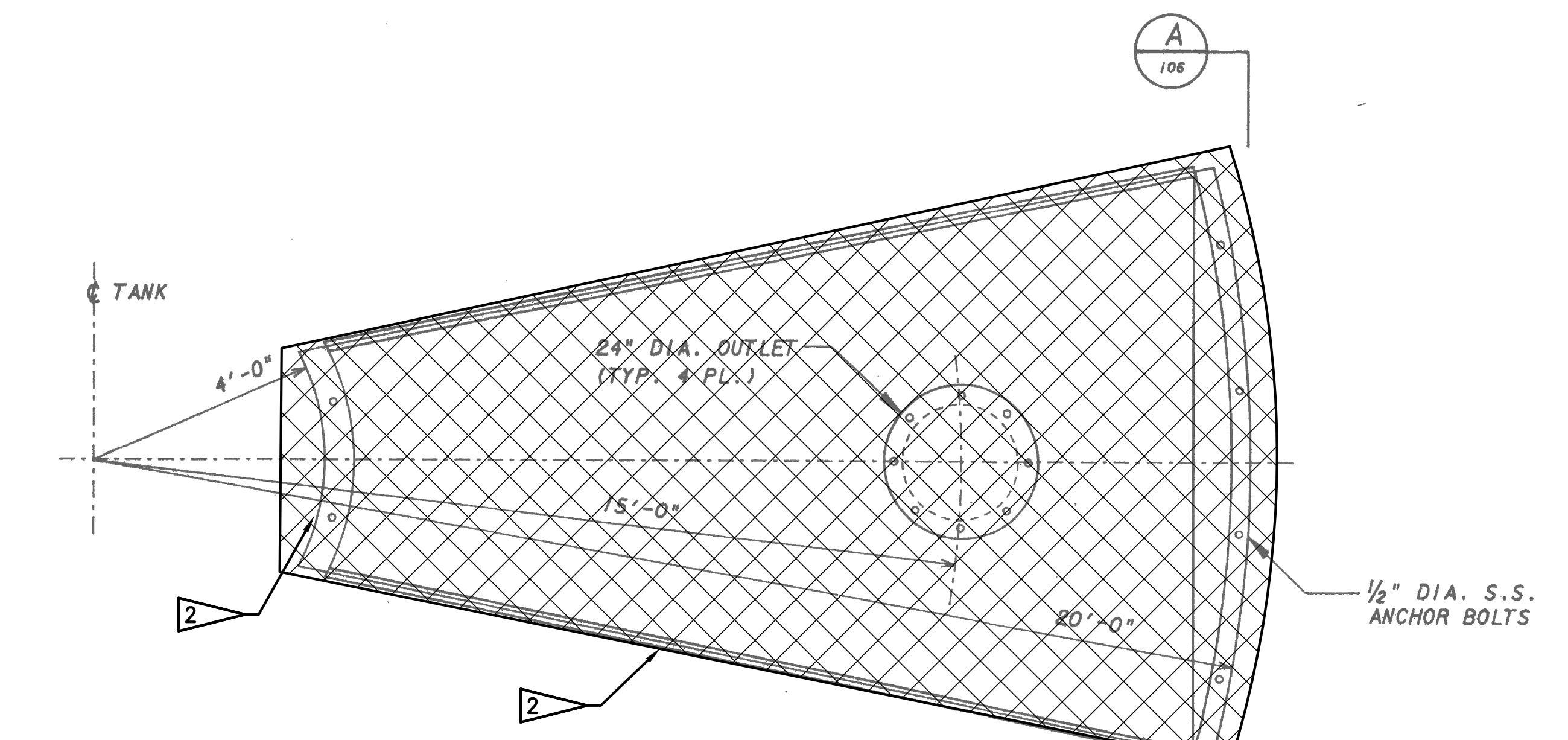
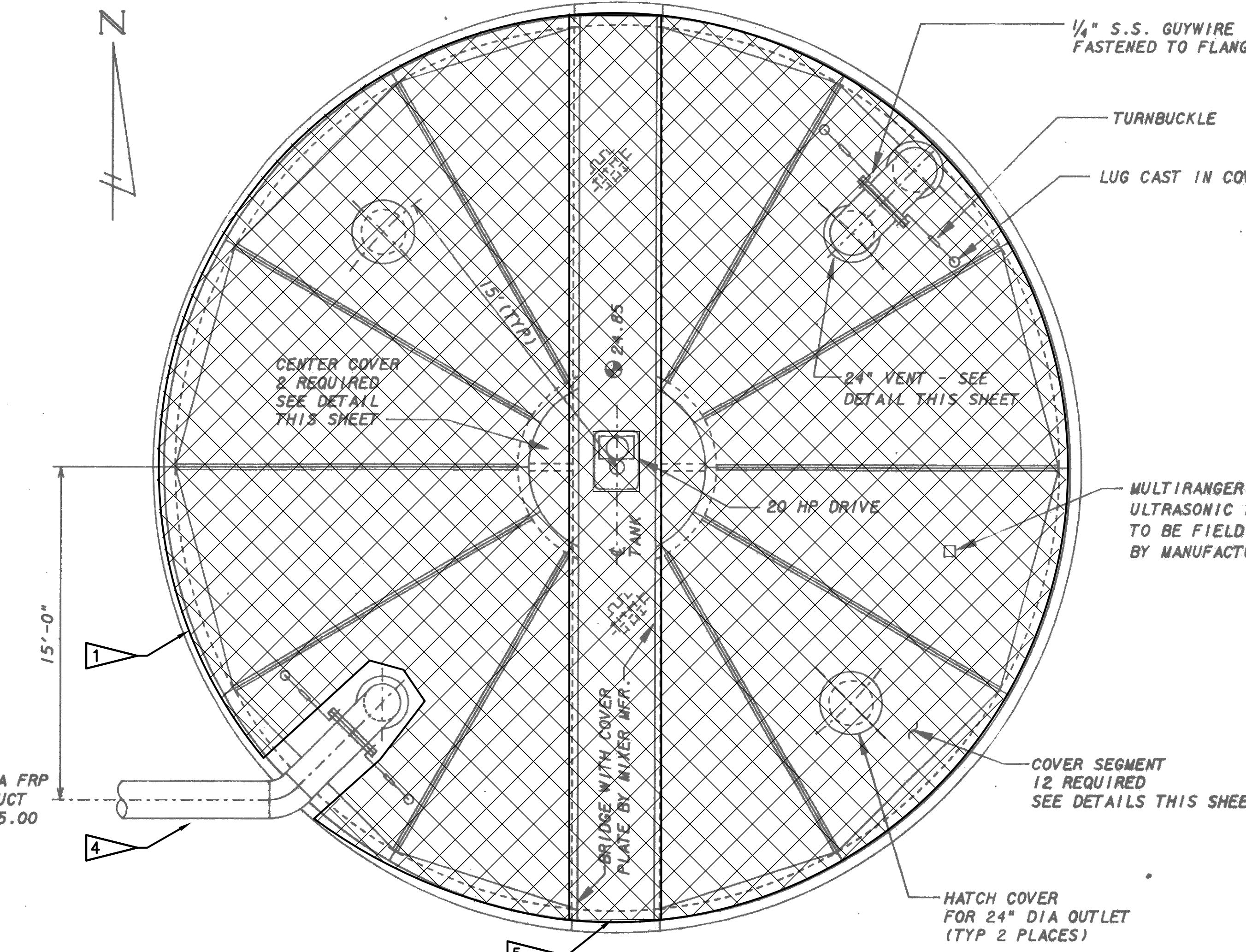
REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



MS WRF BLEND TANK
MIXER PROJECT
KEY MAP

DWG NAME: 0372005401-G05.dwg	FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO: 8-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	VERT. HORIZ. NONE
JOB NO: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: G5
APPROVED FOR CONSTRUCTION	DAVID T. YONGE, P.E. # 85457		DATE



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SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
APPROVED BY:					
PROJECT ENGINEER	DATE				
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE	REVISION	BY	DATE	

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



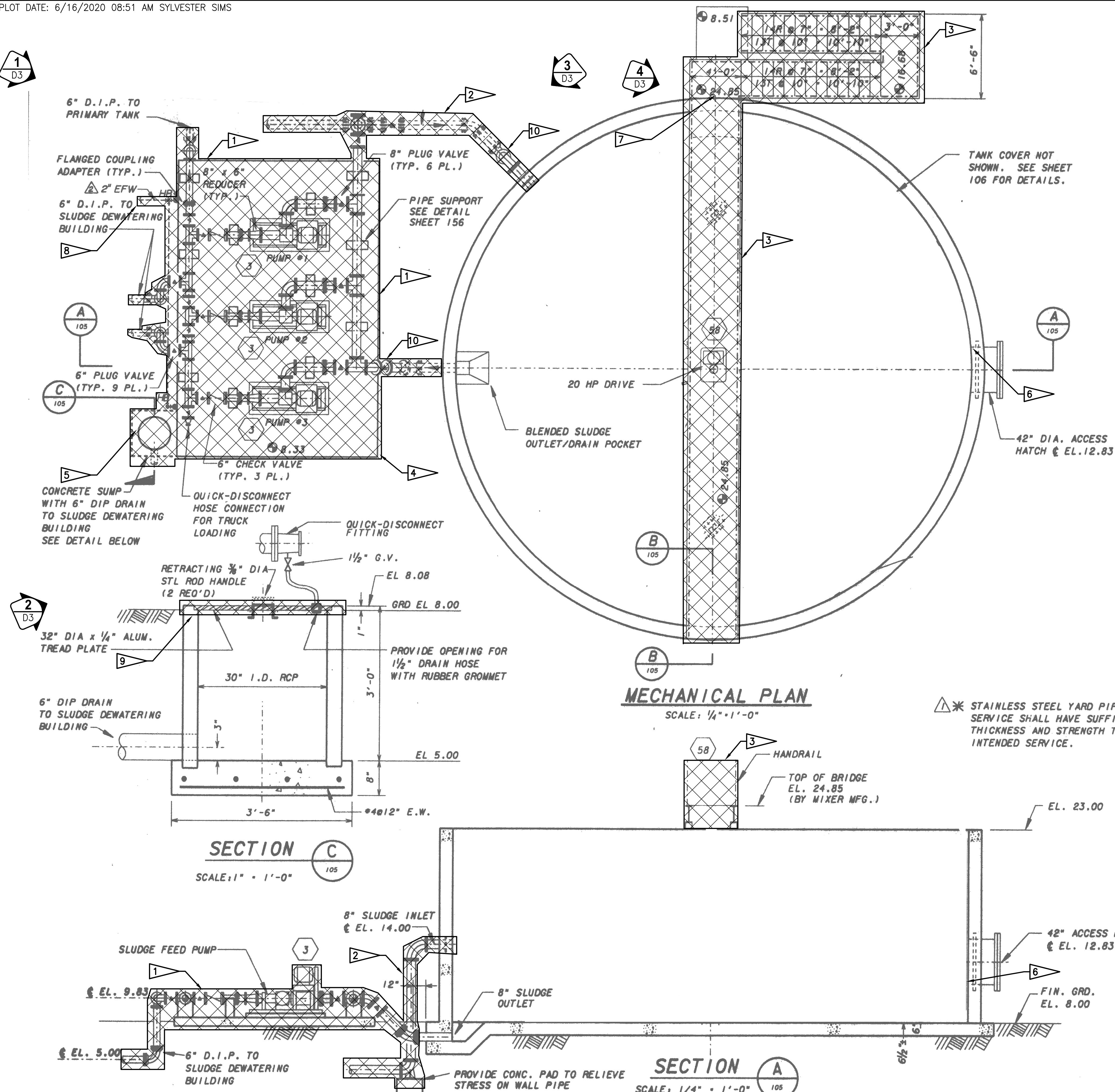
JonesEdmunds

CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
TANK COVER DEMOLITION

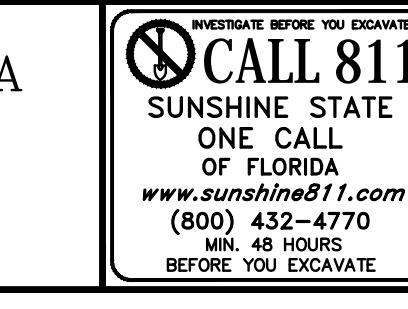
DWG NAME: 0372005401-D01.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 18-J057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENDAR	SCALE: HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO: D1
APPROVED FOR CONSTRUCTION			

DAVID T. YONGE, P.E. # 85457 DATE



RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE
REVISION	BY DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

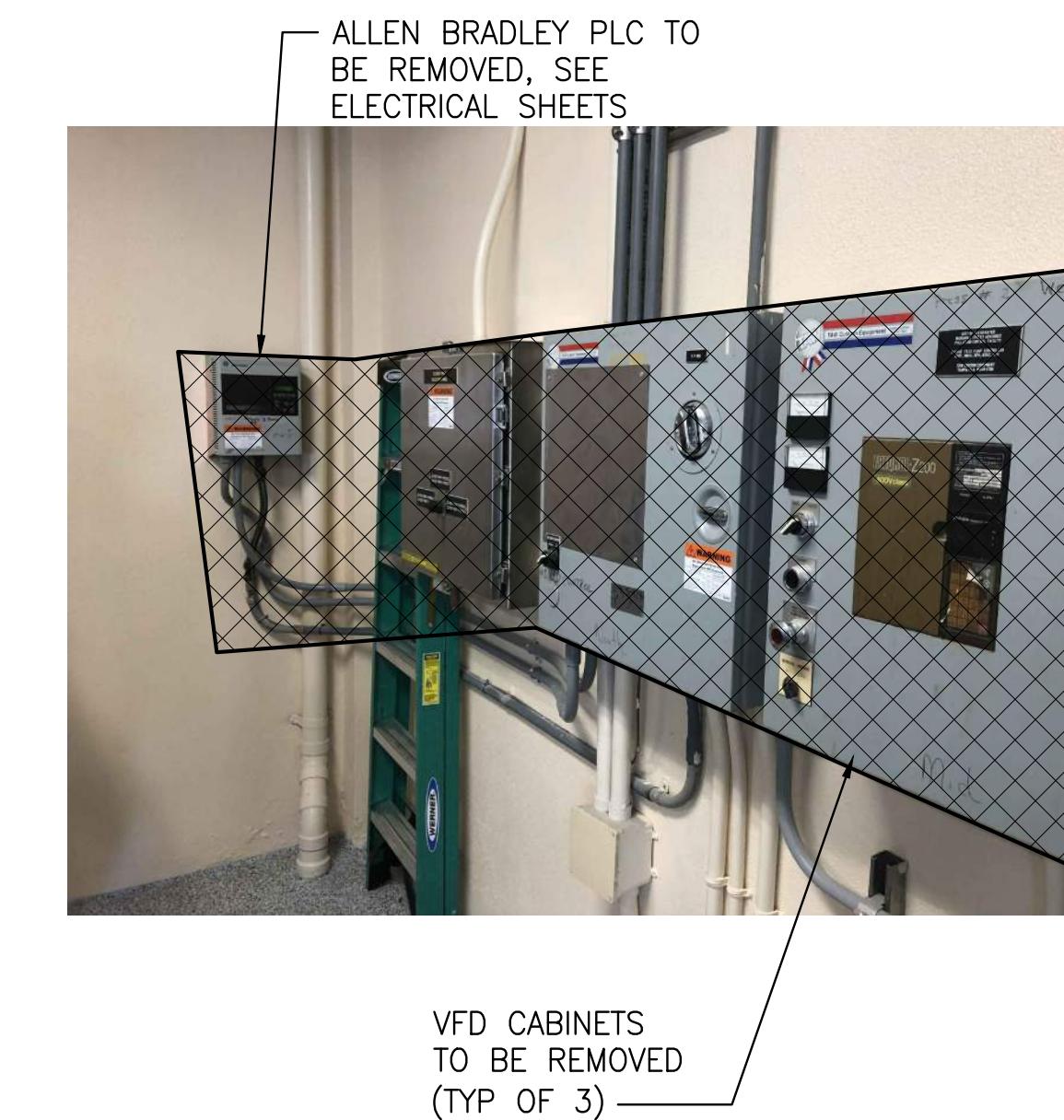
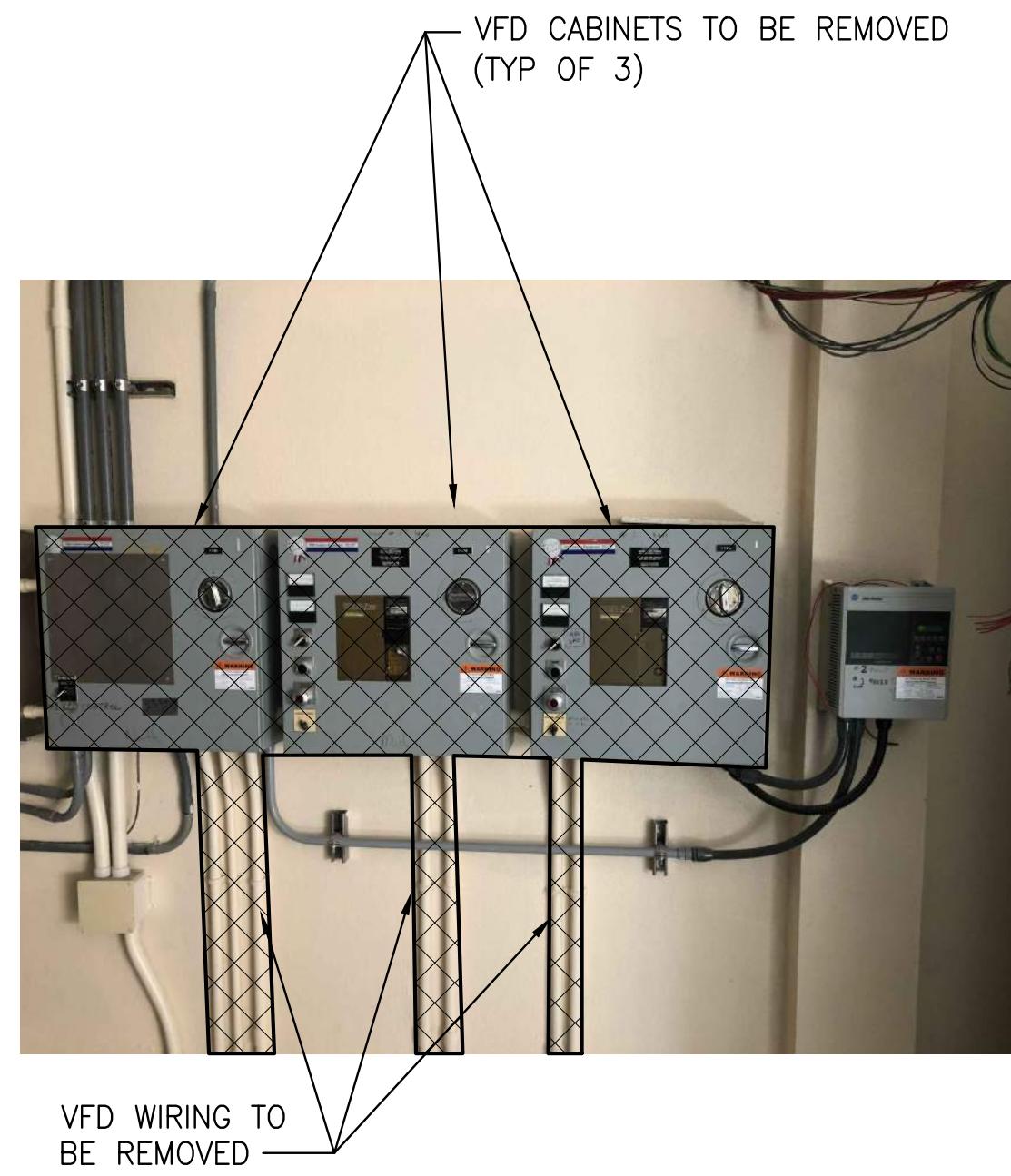
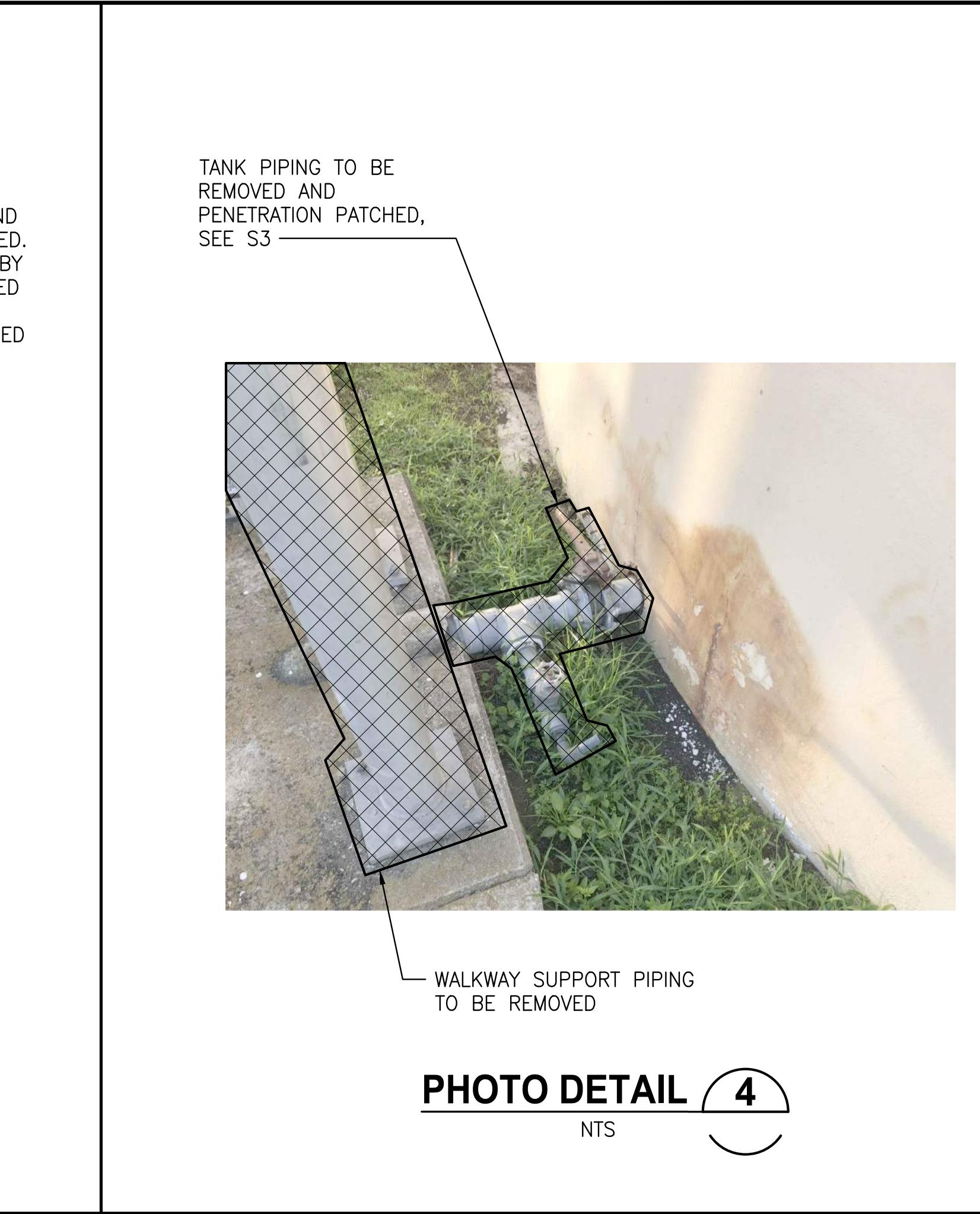
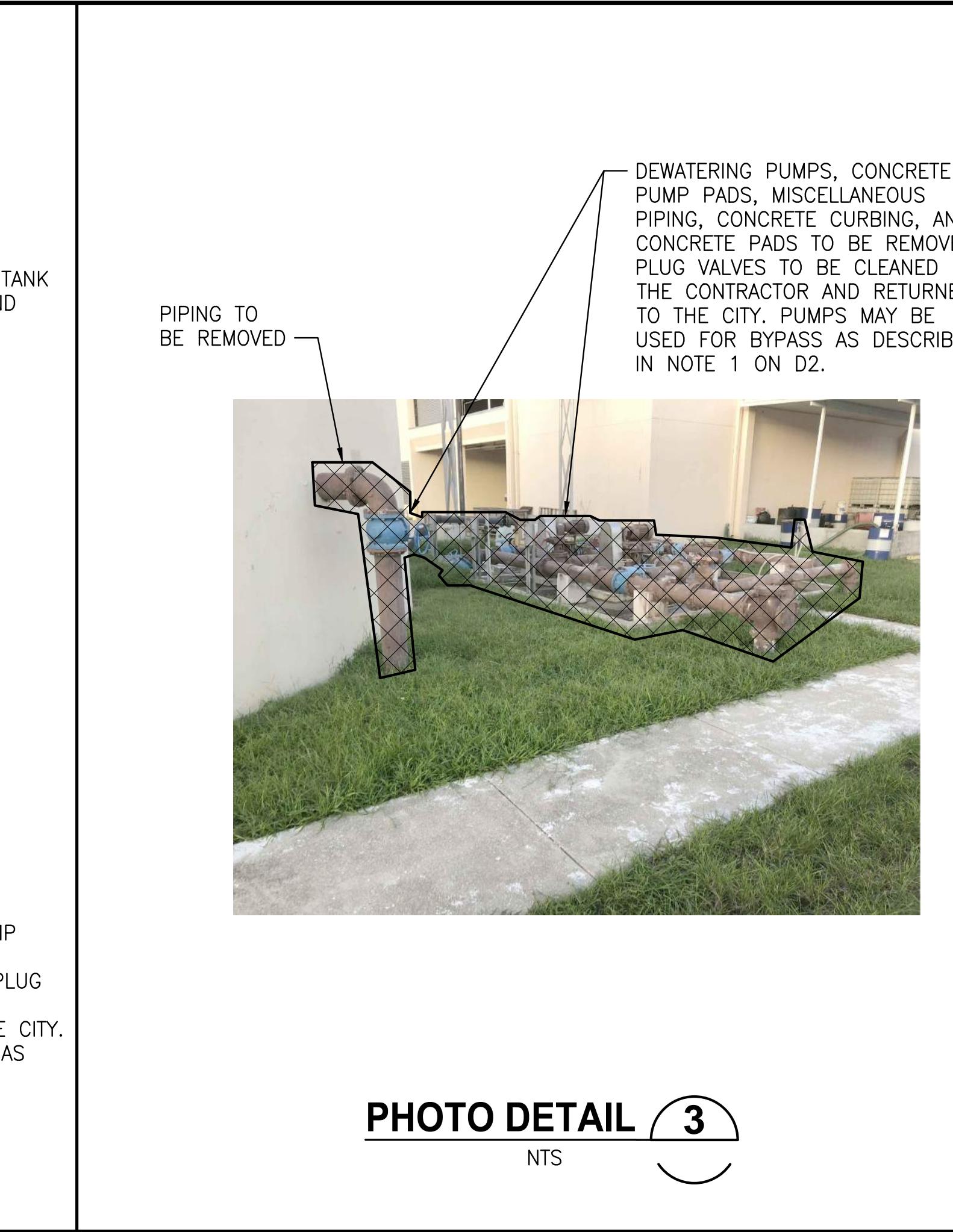
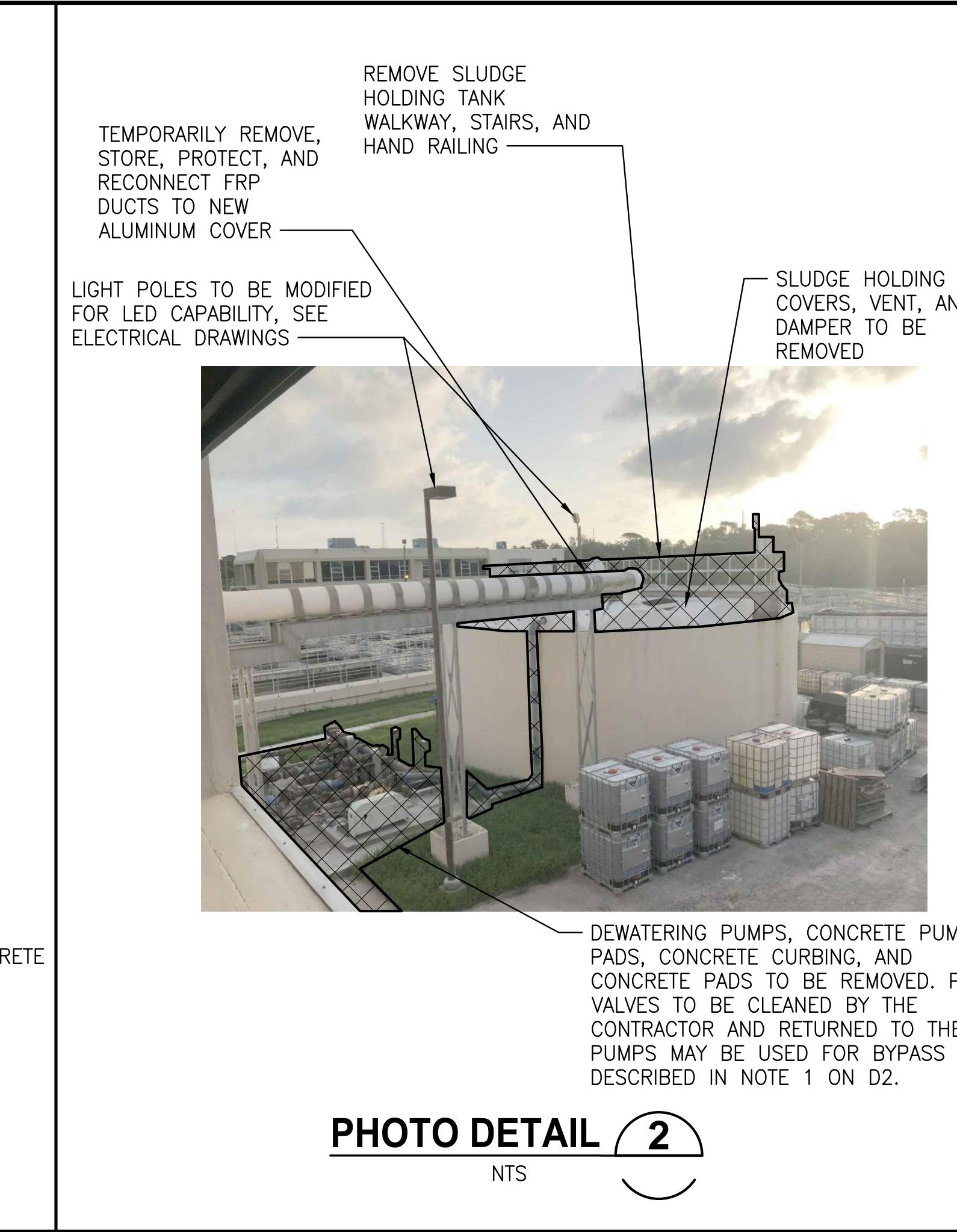
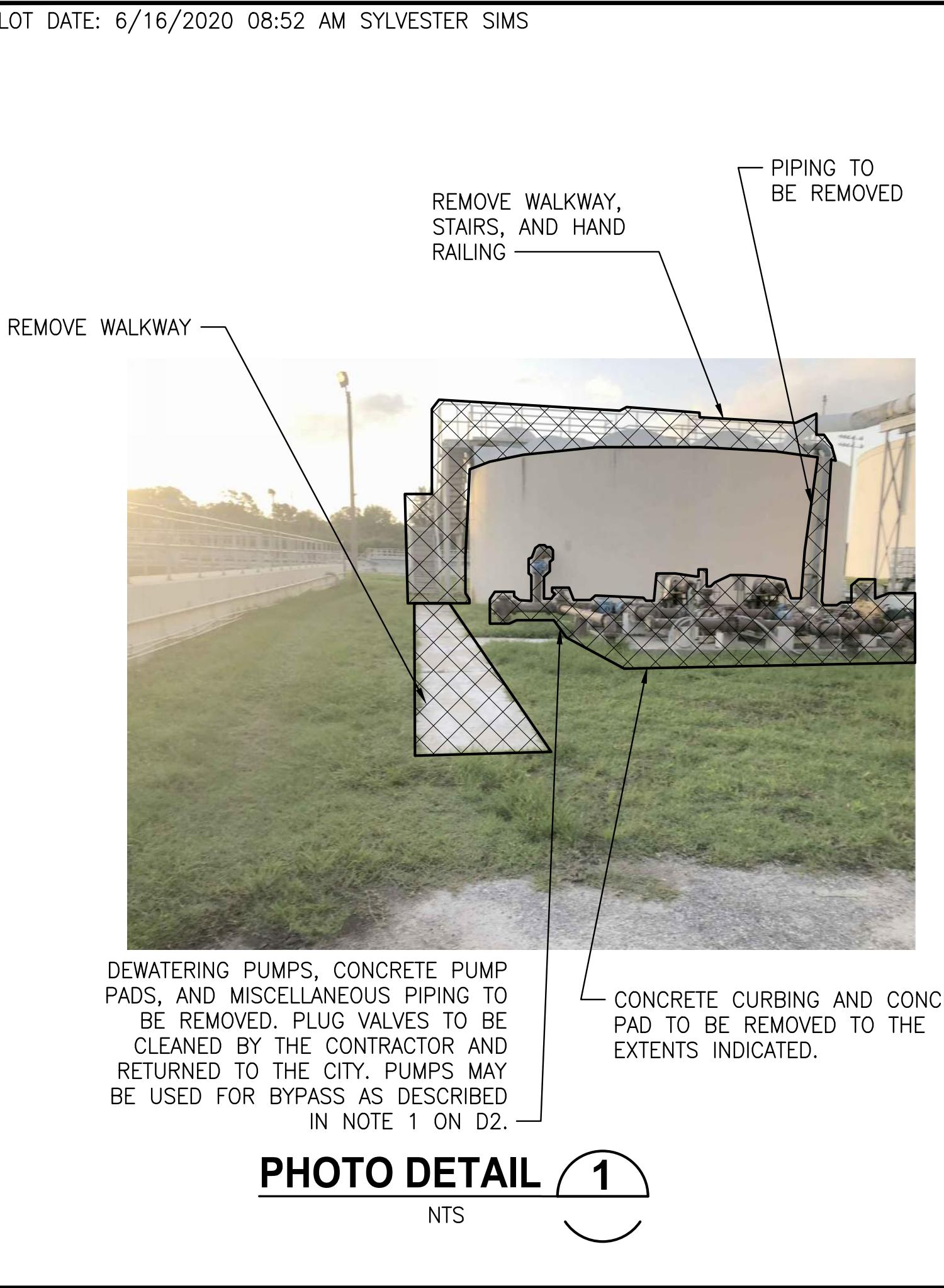


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MS WRF BLEND TANK
MIXER PROJECT
DEMOLITION

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
DEMOLITION.dwg			VERT.
CONTRACT NO.:			HORIZ. AS NOTED
18-0057-UT			
DATE DRAWN:		DRAWN BY:	
JUNE 2020		SMENARD	
JOB NO.:		DESIGNED BY:	
03720-054-01		DYONGE	CHECKED BY:
		T.FRIEDRICH	SHEET NO.:
		D2	
APPROVED FOR CONSTRUCTION			

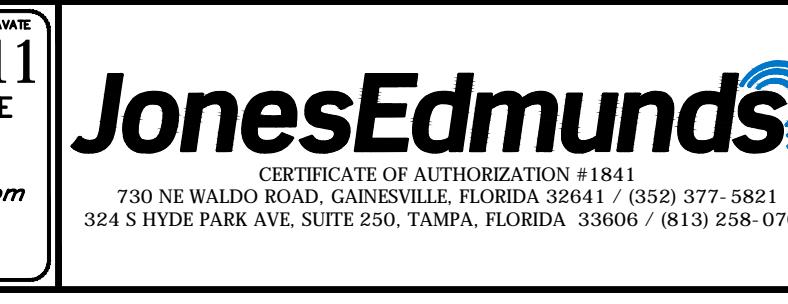
DAVID T. YONGE, P.E. # 85457 DATE



RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE

REVISION		BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



MS WRF BLEND TANK
MIXER PROJECT
DEMOLITION PHOTOS

DWG NAME: 0372005401-D03.dwg	FIELD BOOK: VER.	SURVEYED BY: HORIZ. AS NOTED	SCALE: VERT.
CONTRACT NO.: 18-J057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: D3
	APPROVED FOR CONSTRUCTION		



GRAPHIC SCALE

0 2.5 5 10

SCALE IN FEET

9

EXISTING DEWATERING PUMP DESIGN AND OPERATING CONDITIONS

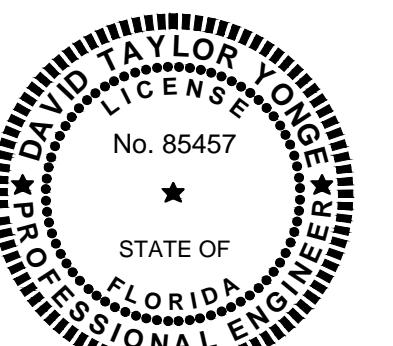
(SEE NOTE 6)

NUMBER OF PUMPS	3 - (1 BELT FILTER PRESS, 1 CENTRIFUGE, 1 STANDBY)
PUMP TYPE	PROGRESSING CAVITY
MANUFACTURER	MOYNO
DESIGN FLOW	200 GPM
DESIGN TDH	120 FT
EXISTING PUMP HORSEPOWER	10 HP
VOLTAGE	230/460V
PHASE	3
HERTZ	60 HZ

SLUDGE HOLDING TANK AND PUMP PAD BYPASS PLAN LAYOUT

NOTES:

- CONTRACTOR TO COORDINATE WITH SPECIFICATION 01815, MAINTENANCE OF PLANT OPERATION AND SEQUENCE OF CONSTRUCTION.
- CONTRACTOR TO PROVIDE BYPASS OF DEWATERING PUMPS TO CONSTRUCT IMPROVEMENTS WITHOUT INTERRUPTING PLANT OPERATION.
- PIPING CONFIGURATION AND ARRANGEMENT IS SHOWN FOR INTENT ONLY TO COMPLETELY BYPASS THE SLUDGE HOLDING TANK AND EXISTING DEWATERING PIPING AND PUMPING EQUIPMENT TO ALLOW THE ANAEROBIC DIGESTER TO FEED DIRECTLY TO THE DEWATERING BELT FILTER PRESS AND CENTRIFUGE. CONTRACTOR TO SUBMIT PROPOSED BYPASS PLAN, ALONG WITH PIPE CONFIGURATION, MATERIALS, PIPE SUPPORTS, CONTAINMENT FOR THE TEMPORARY BYPASS PUMP PAD, AND PROPOSED DISCHARGE INTO DEWATERING BUILDING.
- CONTRACTOR SHALL PROVIDE ALL TEMPORARY INSTRUMENTATION AND CONTROL TO ELECTRICAL TO OPERATE BYPASS DEWATERING PUMPS PRIOR TO DISCONNECTING DEWATERING TANK PIPING.
- SUCTION PIPING SHALL BE MINIMUM 8" AND DISCHARGE SHALL BE MINIMUM 6".
- THE CITY TYPICALLY OPERATES THE DEWATERING FEED SYSTEM DURING SPECIFIC HOURS. CONTRACTOR TO COORDINATE DIRECTLY WITH THE CITY TO DETERMINE OPTIMAL TIMES TO CONVERT TO BYPASS.
- CONTRACTOR SHALL REMAIN WITHIN THE DEDICATED STAGING AREA DURING CONSTRUCTION. CONTRACTOR TO COORDINATE STAGING AREA WITH FACILITY CHIEF OPERATOR.
- BYPASS PIPING TO TIE INTO EXISTING DEWATERING LINES FEEDING BELT FILTER PRESS AND CENTRIFUGE IN PERMEABLE SPACE. CONNECTION POINT WILL BE DETERMINED AND COORDINATED WITH OWNER AND ENGINEER AS PART OF SUBMITTED BYPASS PLAN



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SURVEYED BY:	
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER DATE	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #856811 DATE	

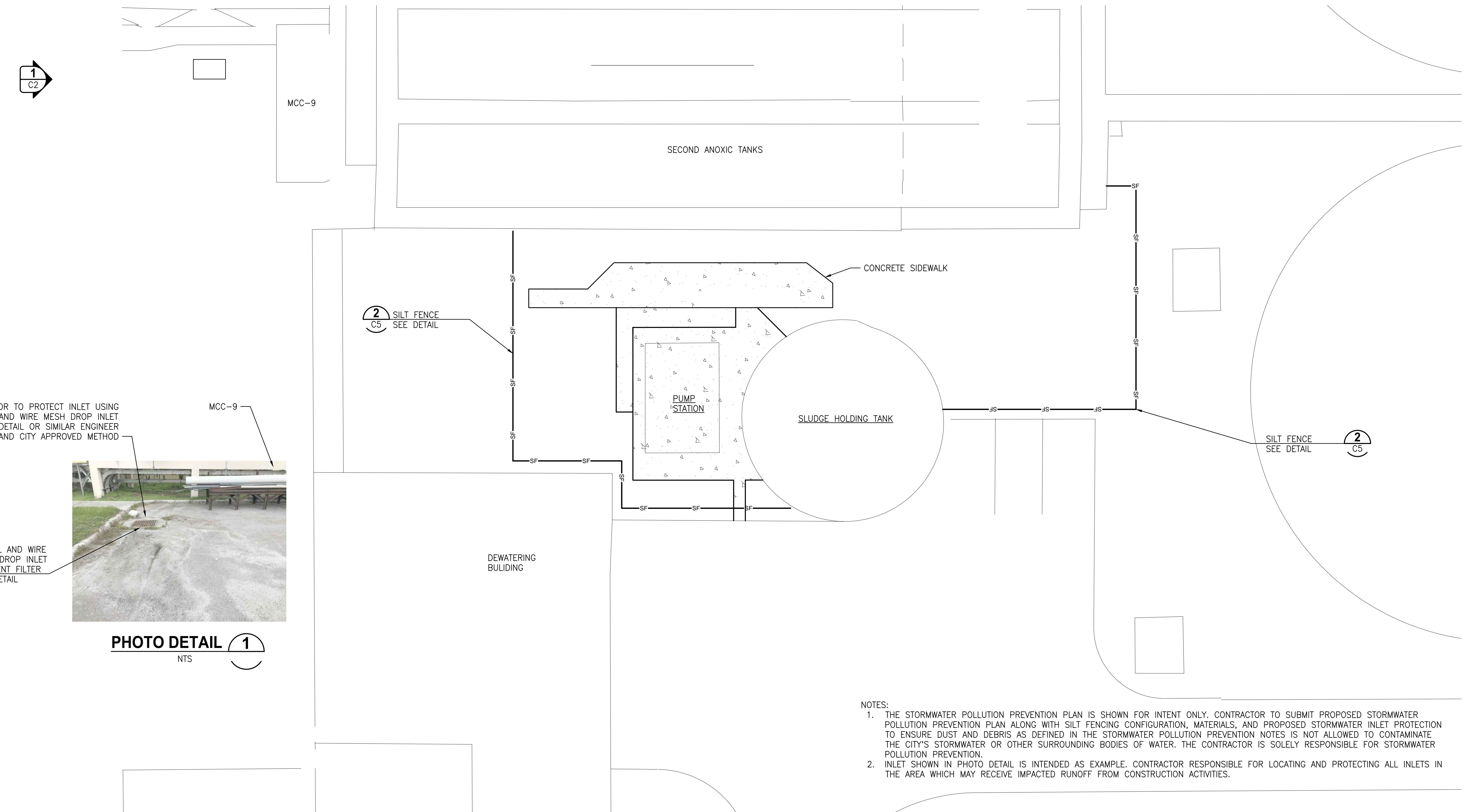
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



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730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
DEWATERING BYPASS PLAN

DWG NAME: 0372005401-C01.dwg	FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	VERT. HORZ. NONE
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: C1
APPROVED FOR CONSTRUCTION			DAVID T. YONGE, P.E. # 85457



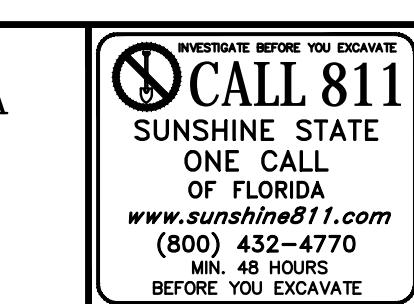
STORMWATER POLLUTION PREVENTION PLAN

1"=10'

RECORD DRAWINGS	DRAWN BY:	DATE
SURVEYED BY:		
REVIEWED BY:		
APPROVED BY:		
PROJECT ENGINEER	DATE	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE	

REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32601 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
STORMWATER POLLUTION
PREVENTION PLAN

DWG NAME: 0372005401-C02.dwg	FIELD BOOK:	SURVEYED BY: SMENARD	SCALE: VERT. NONE
CONTRACT NO.: 18-J057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: C2
	APPROVED FOR CONSTRUCTION		

DAVID T. YONGE, P.E. # 85457 DATE

STORMWATER POLLUTION PREVENTION PLAN

THIS PLAN SHALL BE IN ACCORDANCE WITH THE FLORIDA EROSION AND SEDIMENT CONTROL MANUAL.

SITE DESCRIPTION AND GENERAL INFORMATION**PROJECT NAME AND LOCATION**

THIS STORMWATER POLLUTION PREVENTION PLAN INCLUDES SITE IMPROVEMENTS AT THE MARSHALL STREET WATER RECLAMATION FACILITY. THE SITE IS LOCATED 0.5 MILES NORTHEAST OF THE ALTERNATE 19 AND PALMETTO ST INTERSECTION IN CLEARWATER.

OWNER NAME AND ADDRESS

CITY OF CLEARWATER MARSHALL STREET WATER RECLAMATION FACILITY
1605 HARBOR DRIVE
CLEARWATER, FL

PROJECT DESCRIPTION

THESE MODIFICATIONS WILL NOT INCREASE DISCHARGE FROM THE SITE OR ALTER ANY FLOW PATHS.

SEQUENCE OF MAJOR ACTIVITIES

THE ORDER OF MAJOR ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL SILT FENCE AS SHOWN ON PLANS.
2. STABILIZE CLEARED AREAS WITHIN 7 DAYS OF LAST DISTURBANCE.
3. COMPLETE GRADING AND INSTALL PERMANENT SODDING.
4. WHEN ALL CONSTRUCTION IS COMPLETE, STABILIZE (E.G. SOD, SEED/MULCH, ETC) ANY REMAINING DISTURBED AREAS.

SUFFICIENT PRECAUTIONS SHALL BE TAKEN TO PREVENT POLLUTION OF STREAMS, CANALS, LAKES, RESERVOIRS, WETLANDS, AND OTHER WATER IMPOUNDMENTS. ALSO, OPERATIONS SHALL BE CONDUCTED AND SCHEDULED SO AS TO AVOID POLLUTION OR SILTATION OF STREAMS, WATER BODIES, ETC.

**STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM**

(Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater)

FDEP NPDES Stormwater Identification Number: FLR10_____

Location	Rain Data	Type of Control (see below)	Date Installed/Modified	Current Condition (see below)	Corrective Action/Other Remarks

Condition Code:

G=Good

M=Marginal, needs maintenance or replacement soon

P=Poor, needs immediate maintenance or replacement

C=Needs to be cleaned O=Other

Control Type Codes:

1. Silt Fence	10. Storm drain inlet protection	19. Reinforced soil retaining system	28. Tree protection
2. Earth dikes	11. Vegetative buffer strip	20. Gabion	29. Detention pond
3. Structural Diversion	12. Vegetative preservation area	21. Sediment basin	30. Retention pond
4. Swale	13. Retention pond	22. Temporary seed/sod	31. Waste disposal/housekeeping
5. Sediment Trap	14. Construction entrance stabilization	23. Permanent seed/sod	32. Dam
6. Check dam	15. Perimeter ditch	24. Mulch	33. Sand bag
7. Subsurface drain	16. Curb and gutter	25. Hay bales	34. Other
8. Pipe slope drain	17. Paved road surface	26. Geotextile	
9. Level spreaders	18. Rock outlet protection	27. Rip-rap	

Inspector Information:

Name_____

Qualification_____

Date_____

The above signature also shall certify that this facility is in compliance with the Stormwater Pollution Prevention Plan and the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities if there are not any incidents of non-compliance identified above.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

CITY OF CLEARWATER PUBLIC UTILITIES
1650 NORTH ARCTURES AVE.
CLEARWATER, FL 33765-1945

SIGNED: _____ PRINT NAME: _____

DATE: _____

CONTRACTOR'S CERTIFICATION

THIS SWPPP MUST CLEARLY IDENTIFY, FOR EACH MEASURE IDENTIFIED WITHIN THE SWPPP, THE CONTRACTOR(S) OR SUBCONTRACTOR(S) THAT WILL IMPLEMENT EACH MEASURE. ALL CONTRACTOR(S) AND SUBCONTRACTOR(S) IDENTIFIED IN THE SWPPP MUST SIGN THE FOLLOWING CERTIFICATION:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THERE UNDER."

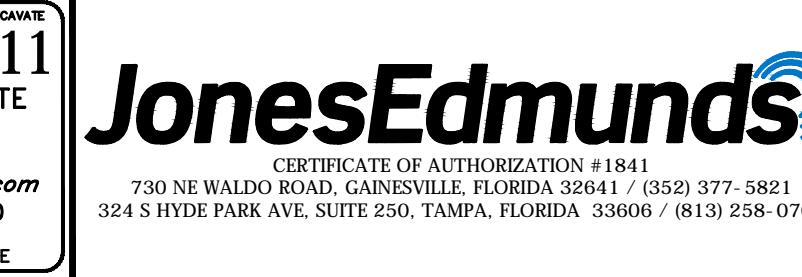
SIGNATURE/DATE:
NAME: _____

COMPANY NAME:
ADDRESS: _____

TELEPHONE NO:
RESPONSIBILITY: _____

RECORD DRAWINGS	DRAWN BY:		
SURVEYED BY:	DRAWN BY:		
REVIEWED BY:			
APPROVED BY:	PROJECT ENGINEER	DATE	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



MS WRF BLEND TANK
MIXER PROJECT
STORMWATER POLLUTION
PREVENTION PLAN NOTES (1)

DWG NAME: 0372005401-C03.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 18-J057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: C3
APPROVED FOR CONSTRUCTION		DAVID T. YONGE, P.E. # 85457	

STORMWATER POLLUTION PREVENTION NOTES

- THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
- IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.
- STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT ONLY AS DIRECTED BY THE OWNER.
- FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO FDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
- ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED AS SPECIFIED IN THE PLANS, FERTILIZED, AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED AND MULCHED AS SHOWN ON THE PLANS.
- ALL CUT OR FILL SLOPES SHALL BE 4 (HORIZONTAL): 1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES STATE WATER QUALITY STANDARDS.

EROSION AND SEDIMENT TRANSPORT PREVENTION

- THE WORK SPECIFIED IN THIS SECTION CONSISTS OF MEASURES REQUIRED TO CONTROL EROSION AND TRANSPORT OF SEDIMENTS WITHIN AND FROM THE PROJECT AREA, SO AS TO PREVENT THE DEGRADATION OF RECEIVING WATERS, DETRIMENTAL EFFECTS ON PUBLIC OR PRIVATE PROPERTY ADJACENT TO THE PROJECT AND DAMAGE WITHIN THE PROJECT AREA. THESE MEASURES WILL INCLUDE THE CONSTRUCTION AND MAINTENANCE OF TEMPORARY AND PERMANENT EROSION CONTROLS.
- CONSTRUCTION OPERATIONS SHALL BE RESTRICTED TO THOSE AREAS WHERE IT IS NECESSARY TO PERFORM FILLING OR EXCAVATION TO ACCOMPLISH THE WORK SHOWN ON THE DRAWINGS AND TO THOSE AREAS WHICH MUST BE ENTERED TO CONSTRUCT TEMPORARY OR PERMANENT STRUCTURES. AS SOON AS THE CONDITIONS WILL PERMIT, RIVERS, STREAMS, IMPOUNDMENT, STORMWATER STORAGE AND CONVEYANCE SYSTEMS AND ANY ONSITE RECEIVING WATER BODIES SHALL BE PROMPTLY CLEARED OF ALL OBSTRUCTIONS PLACED THEREIN OR CAUSED BY CONSTRUCTION OPERATIONS. RUNOFF FROM UNSTABILIZED AREAS SHALL BE DIRECTED TO EITHER THE OFFSITE POND OR TREATED THROUGH SILT FENCES BEFORE DISCHARGING FROM THE PROPERTY.

EROSION PRACTICES

- PERMANENT EROSION CONTROL FEATURES SHALL BE INCORPORATED INTO THE PROJECT AT THE EARLIEST PRACTICAL TIME. TEMPORARY CONTROL FEATURES WILL BE USED TO CORRECT CONDITIONS THAT DEVELOP DURING CONSTRUCTION WHICH WERE NOT FORESEEN AT THE TIME OF DESIGN TO CONTROL EROSION PRIOR TO THE TIME IT IS PRACTICAL TO CONSTRUCT PERMANENT CONTROL FEATURES.
- TEMPORARY EROSION CONTROL MAY BE USED IN CONTROLLING EROSION IN AREAS WHERE CONDITIONS NOT UNDER THE CONTROL OF THE CONTRACTOR, PRECLUDE COMPLETION OF A SECTION OF A PROJECT IN A CONTINUOUS MANNER, AND FOR CONTROLLING EROSION IN AREAS WHERE CONSTRUCTION OPERATIONS MUST BE PERFORMED SUBSEQUENTLY THAT WILL CAUSE DAMAGE TO PERMANENT EROSION CONTROL FEATURES. TEMPORARY EROSION AND WATER POLLUTION CONTROL FEATURES SHALL CONSIST OF, BUT NOT BE LIMITED TO, GRASS, TEMPORARY MULCHING, SANDBAGGING, SEDIMENT BASINS, SEDIMENT CHECKS/EARTH DITCH CHECKS, BERMS, FLOATING TURBIDITY BARRIERS, HAY BALES AND SILT FENCE.

STABILIZATION PRACTICES

- TEMPORARY STABILIZATION – SOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 21 DAYS WILL BE STABILIZED WITHIN 7 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THESE AREAS SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH. THE SURFACE AREAS OF UNPROTECTED ERODIBLE EARTH EXPOSED BY CLEARING AND GRUBBING, EXCAVATION OR FILLING OPERATIONS SHALL BE KEPT TO A MINIMUM AS PRACTICAL.
- PERMANENT STABILIZATION – ALL DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED WILL BE STABILIZED BY SOD OR SEED AND MULCH IN ACCORDANCE WITH THE LANDSCAPING PLANS AND/OR CONSTRUCTION PLANS.

STRUCTURAL PRACTICES

- STAKED SILT SCREENS – WILL BE INSTALLED ACCORDING TO THE PLANS TO PROTECT OFFSITE AREAS FROM ANY POSSIBLE ADVERSE EFFECTS FROM SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM SIDE OF ANY SILT SCREEN ONCE THE ACCUMULATED SEDIMENT REACHES 1/3 THE HEIGHT OF THE SILT SCREEN. ANY SEDIMENT DEPOSITS OR SOIL DISTURBANCE CREATED DURING THE INSTALLATION AND REMOVAL OF SILT SCREEN SHALL BE DRESSED TO CONFORM TO THE FINISHED GRADE. THE SILT SCREEN SHALL BE INSPECTED ALONG WITH THE REST OF THE PROJECT ONCE EVERY SEVEN DAYS OR WITHIN 24 HOURS OF A RAINFALL EVENT EXCEEDING 0.5". WHERE DEFICIENCIES EXIST, ADDITIONAL SILT FENCES SHALL BE INSTALLED OR REPLACED. ATTACHMENT OF SILT SCREEN TO EXISTING TREES WILL NOT BE PERMITTED UNLESS APPROVED BY THE PROJECT ENGINEER.

NOTE: THE FOLLOWING CONTROLS CONCERN DAY-TO-DAY ACTIVITIES ON THE SITE. THE SITE SUPERINTENDENT IS RESPONSIBLE FOR SEEING THAT THEY ARE CARRIED OUT APPROPRIATELY.

WASTE DISPOSAL

- WASTE MATERIALS – ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN METAL DUMPSTERS AND THEN HAULED TO AN APPROVED DISPOSAL SITE. THE DUMPSTERS WILL MEET ALL COUNTY AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. NO CONSTRUCTION WASTE WILL BE BURIED ON THE SITE. ALL PERSONNEL WILL BE INSTRUCTED IN THE CORRECT PROCEDURE FOR WASTE DISPOSAL. EMPLOYEE WASTE AND OTHER LOOSE MATERIALS, E.G., CUPS, CANS, BAGS, ETC., WILL BE COLLECTED SO AS TO PREVENT THE RELEASE OF "FLOATABLES" DURING RUNOFF EVENTS.
- HAZARDOUS WASTE – ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS, OR BY THE MANUFACTURER.
- SANITARY WASTE – ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS IN A TIMELY MANNER MEETING ALL LOCAL AND STATE REGULATIONS.

OFFSITE VEHICLE TRACKING

- MONITORING OF OFFSITE TRACKING OF SEDIMENTS AT THE ENTRANCES IS ESSENTIAL WHERE SILT FENCE WILL NOT BE PLACED TO ENABLE ACCESS TO THE SITE. IF IT APPEARS THAT SIGNIFICANT AMOUNTS OF SEDIMENT ARE BEING TRACKED OFF THE SITE, GRAVEL ENTRANCES OR OTHER EQUIVALENT MEASURES ARE RECOMMENDED TO HELP DISLODGE THE SOIL, SEDIMENT AND DIRT BEFORE THE VEHICLES LEAVE THE SITE.

TIMING OF CONTROL MEASURES

- AREAS WHERE THE GROUND HAS BEEN DISTURBED AND CONSTRUCTION ACTIVITIES TEMPORARILY WILL CEASE FOR MORE THAN 21 DAYS SHALL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA WHERE THE GROUND HAS BEEN DISTURBED, THAT AREA WILL BE STABILIZED WITH SOD OR OTHER SUITABLE STABILIZATION MATERIALS. AFTER THE SITE IS STABILIZED, ALL EXCESS SEDIMENTS AND DEBRIS WILL BE REMOVED FROM THE PONDS AND STORMWATER CONVEYANCE SYSTEM/STRUCTURES RECEIVING DIRECT RUNOFF FROM THE AREA.

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



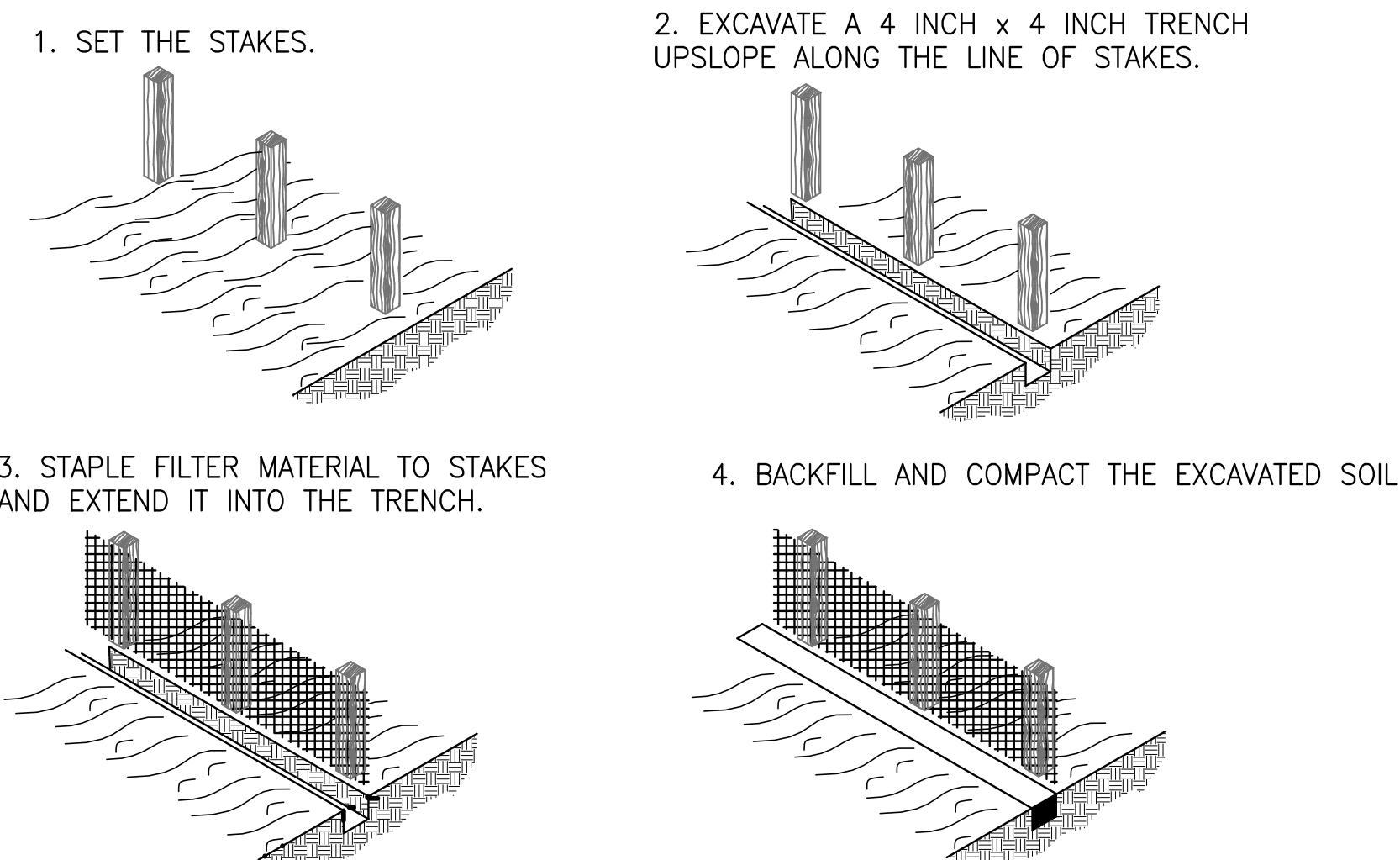
JonesEdmunds

MS WRF BLEND TANK
MIXER PROJECT
STORMWATER POLLUTION
PREVENTION PLAN NOTES (2)

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0372005401-C04.dwg			
CONTRACT NO.:	DATE DRAWN:	DRAWN BY:	VERT.
18-J057-UT	JUNE 2020	SMENARD	HORIZ. NONE
JOB NO.:	DESIGNED BY:	CHECKED BY:	SHEET NO.:
03720-054-01	DYONGE	TFRIEDRICH	C4
APPROVED FOR CONSTRUCTION			

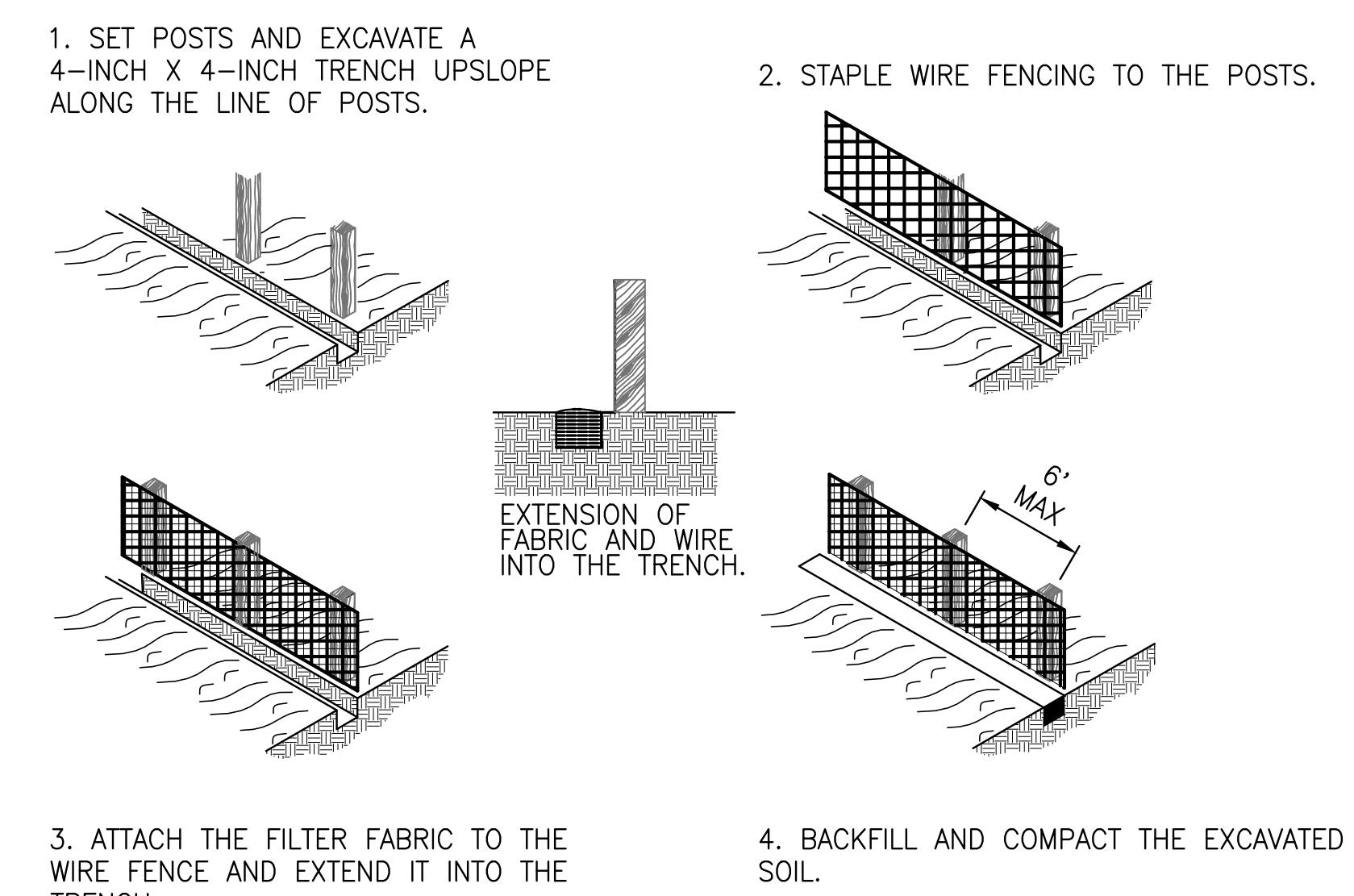
PLOT DATE: 6/16/2020 08:53 AM SYLVESTER SIMS

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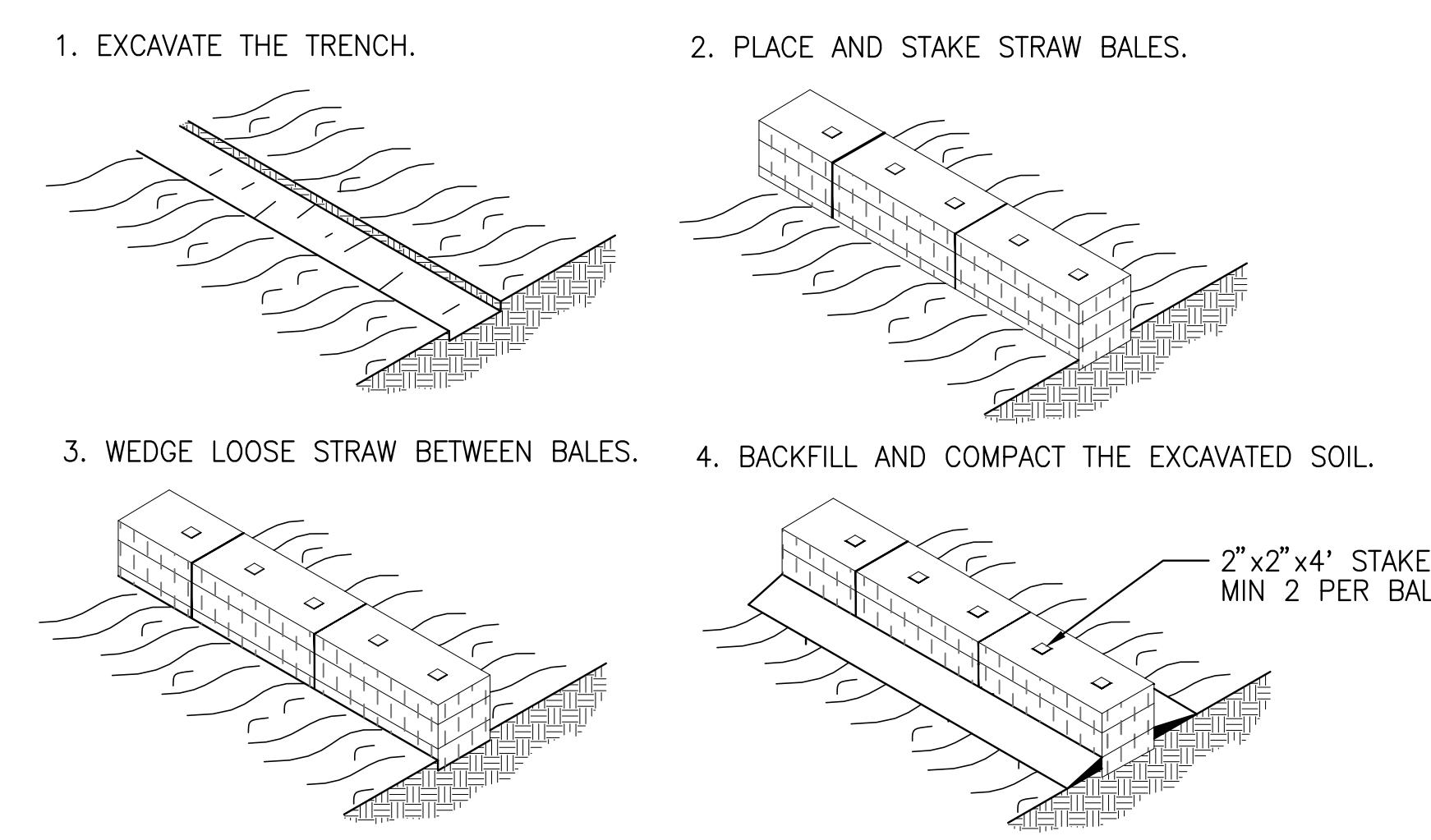
CONSTRUCTION OF A FILTER BARRIER 1

NTS



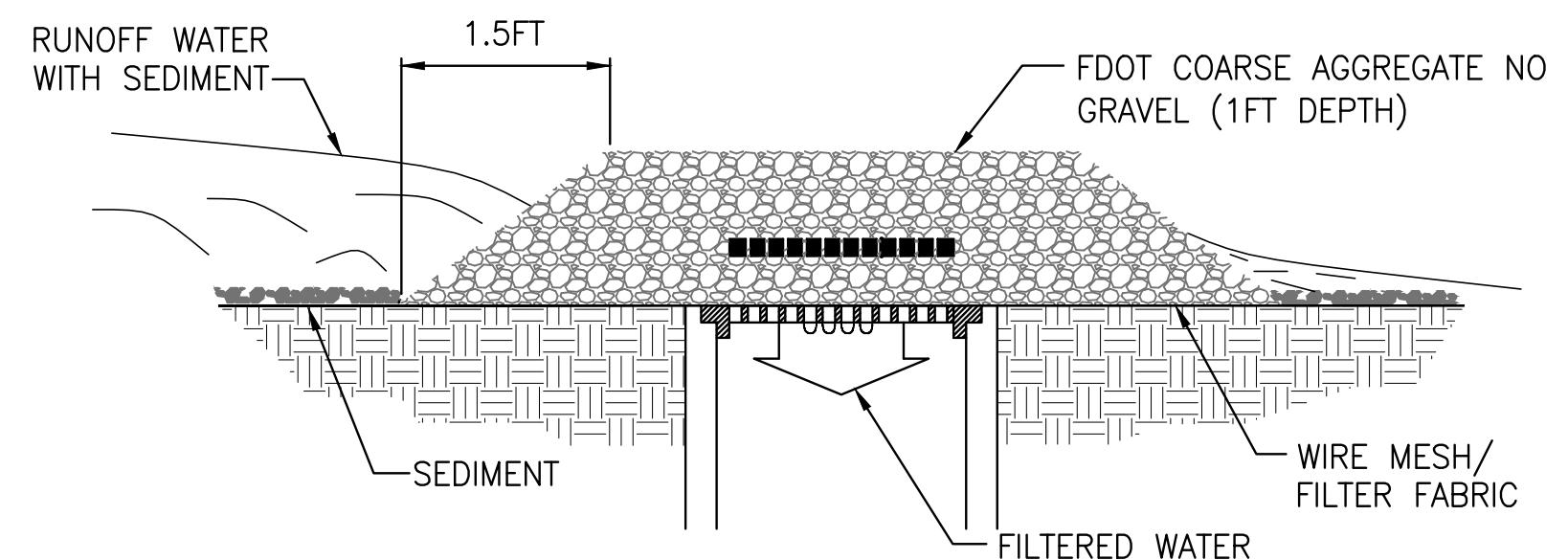
CONSTRUCTION OF SILT FENCE 2

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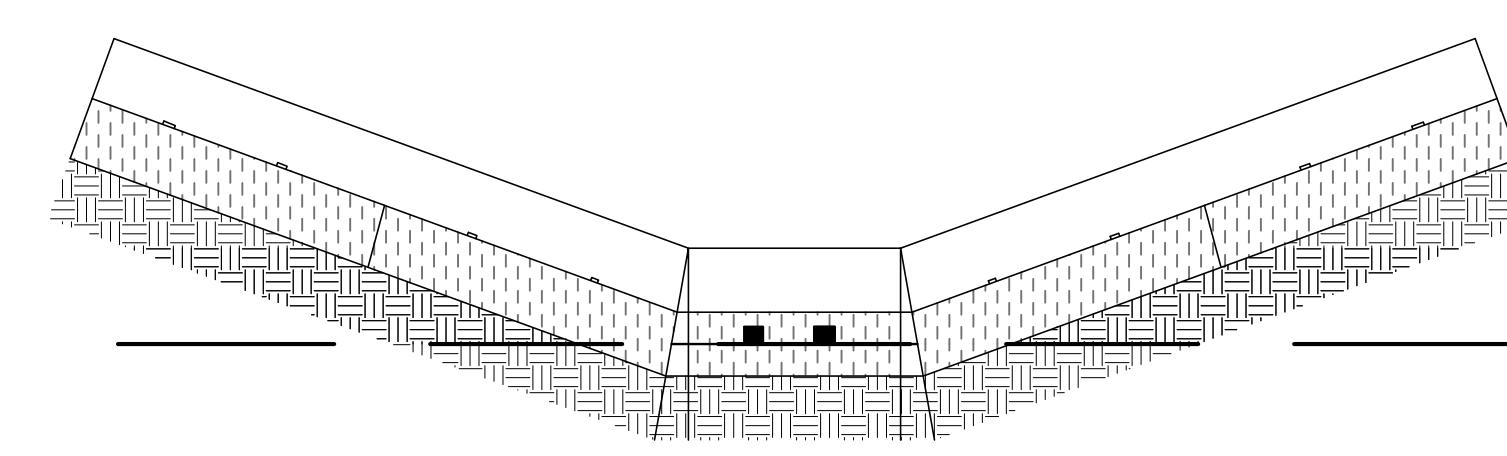
CONSTRUCTION OF A STRAW BAILE BARRIER 3

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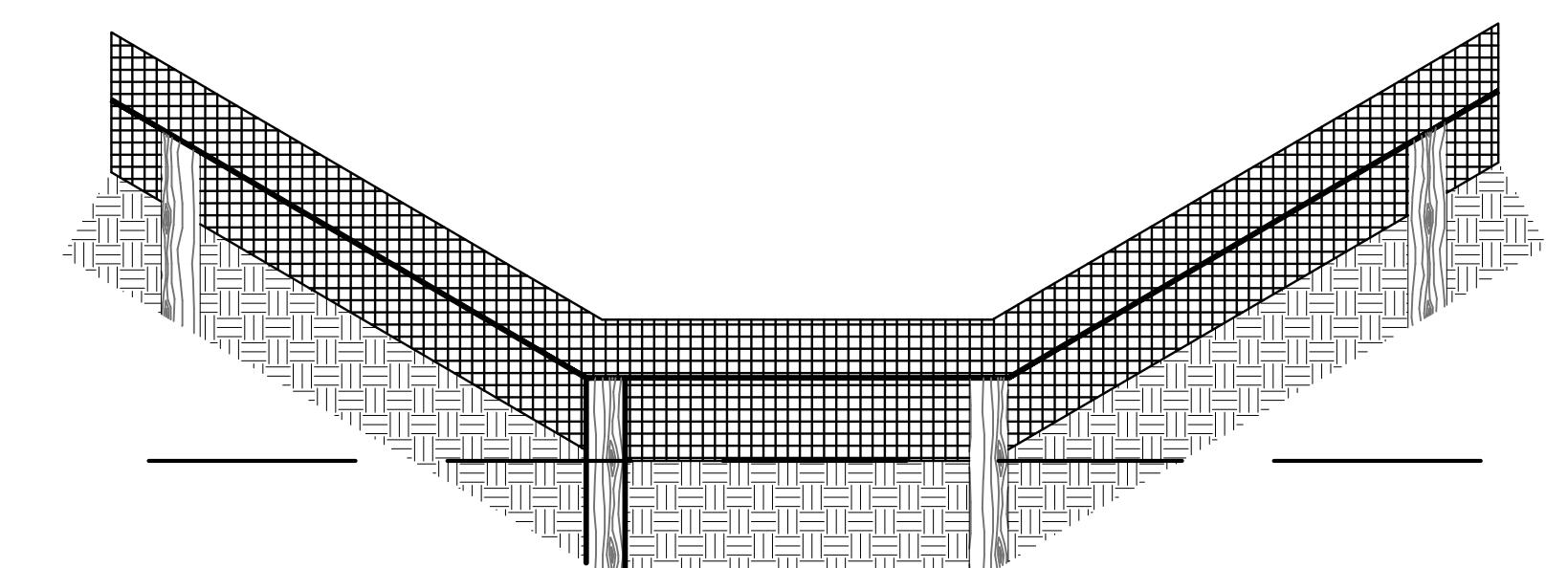
**GRAVEL AND WIRE MESH
DROP INLET SEDIMENT FILTER** 4

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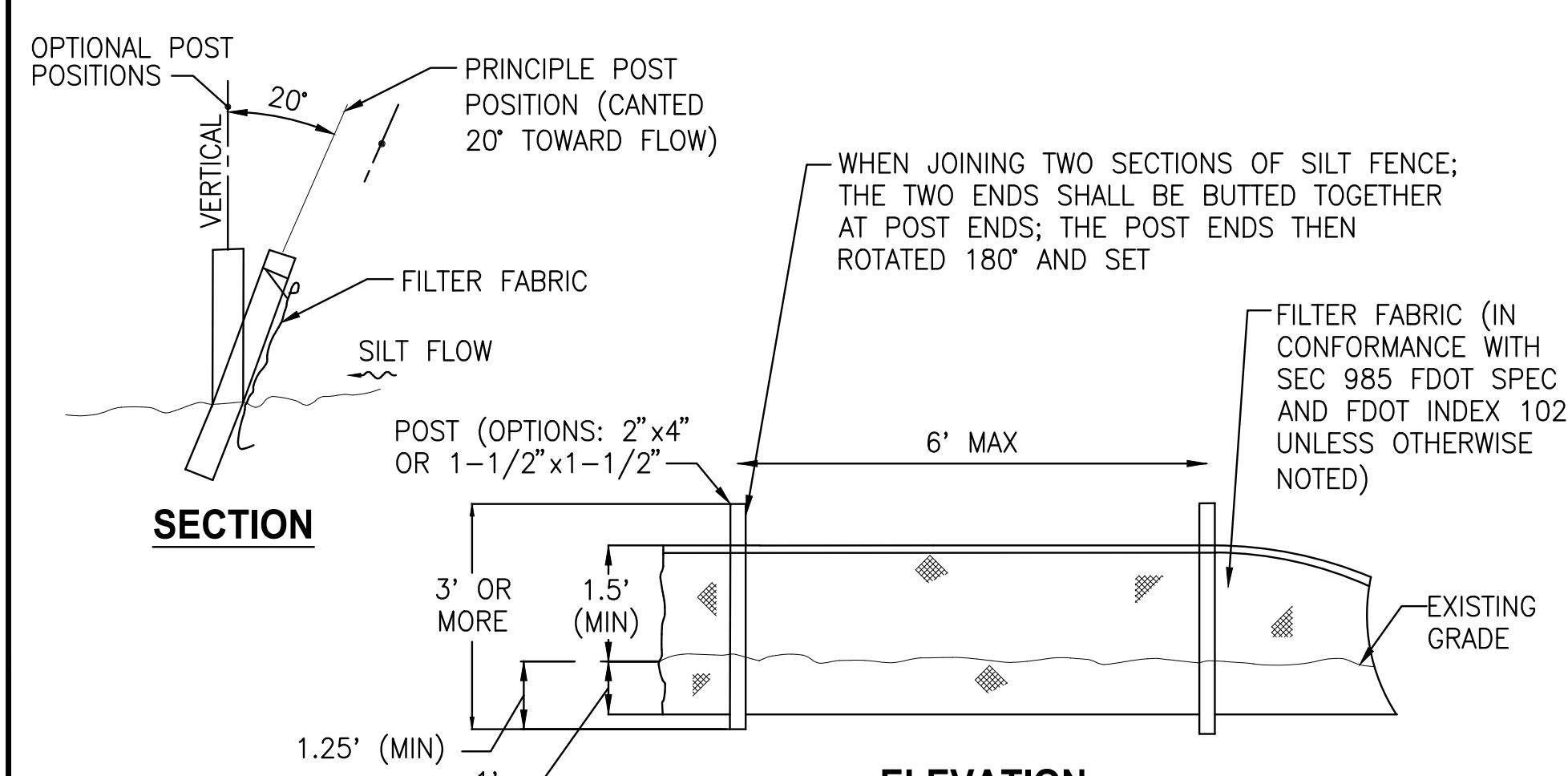
**PROPER PLACEMENT OF STRAW
BALE IN A DRAINAGE WAY** 5

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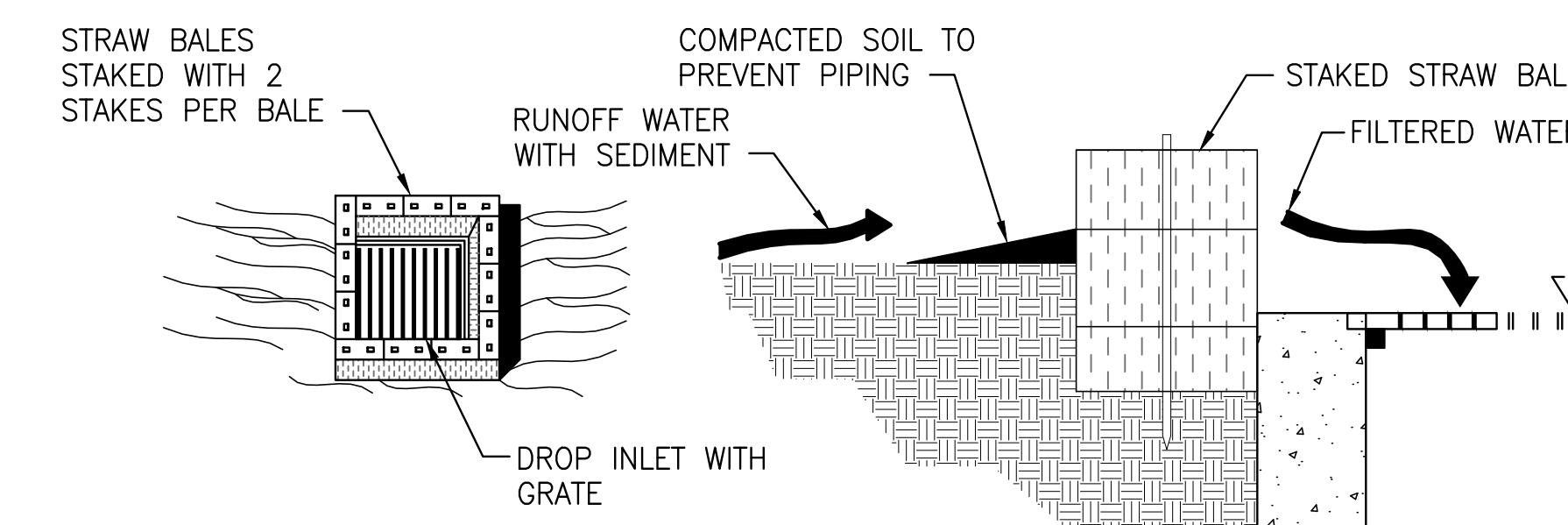
**PROPER PLACEMENT OF A FILTER
BARRIER IN A DRAINAGE WAY** 6

NTS



TYPICAL SILT FENCE DETAIL 7

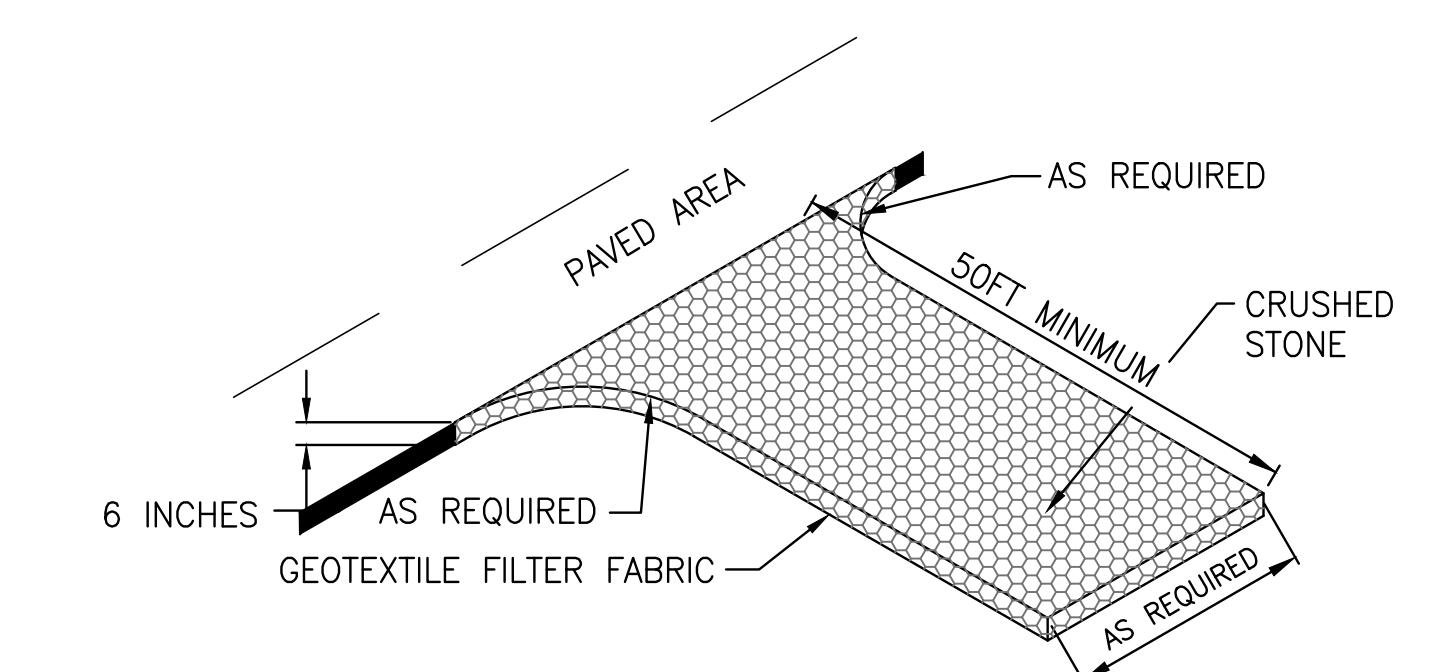
NTS



SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.15 CMS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIAN.

**STRAW BAILE DROP
INLET SEDIMENT FILTER** 8

NTS



**STABILIZED
CONSTRUCTION ENTRANCE** 9

NTS

RECORD DRAWINGS

SURVEYED BY: DRAWN BY:

REVIEWED BY:

APPROVED BY:

PROJECT ENGINEER DATE

</

GENERAL STRUCTURAL NOTES**GENERAL CONDITIONS**

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL DRAWINGS FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- ANY CONSTRUCTION EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURE.
- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

DESIGN CRITERIA**BUILDING CODES AND REFERENCES:**

- 2017 FLORIDA BUILDING CODE (FBC) SIXTH EDITION

REINFORCED CONCRETE:

WATER RETAINING ENVIRONMENTAL STRUCTURES: ACI 350-06 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"

ALL OTHER STRUCTURES: ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"

STRUCTURAL STEEL: AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION

ALUMINUM: ADM1-2010, ALUMINUM DESIGN MANUAL

LIVE LOADS:**-PROCESS RELATED STRUCTURES:**

WALKWAYS, STAIRWAYS AND LANDINGS: 100 PSF
SLABS ON GRADE: 300 PSF

WIND DESIGN CRITERIA:

RISK CATEGORY III
ULTIMATE DESIGN WIND SPEED, V_{ULT} 156 MPH
NOMINAL DESIGN WIND SPEED, V_{ASD} 121 MPH
EXPOSURE CATEGORY C

CONCRETE (CAST-IN-PLACE)

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRAINED WITH A MINIMUM OF 4,000 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 THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS 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 SHALL CONFORM TO ASTM A315 REQUIREMENTS. 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"
 - 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.
- UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR WALLS AND SLABS SHALL BE AS FOLLOWS:

MINIMUM REINFORCING						
THICKNESS	6"	8"	10"	12" - 16"	18" - 22"	24"
REINF. EACH WAY	#4 @ 12"	#5 @ 12"	#5 @ 12"	#5 @ 12"	#6 @ 12"	#7 @ 12"
LOCATION	CTR	CTR	EF	EF	EF	EF

STRUCTURAL ABBREVIATIONS

&	AND	EXP	EXPANSION	P&MB	PRE-ENGINEERED
@	AT	FE	FIRE EXTINGUISHER	PERP	METAL BUILDING
#	NUMBER	FF	FAR FACE, FINISHED	PL	PERPENDICULAR
ADDTL	ADDITIONAL	FG	FLOOR	PLF	PLATE
ALUM	ALUMINUM	FRP	FINISHED GRADE		POUND PER LINEAR
AEWS	AUTOMATIC END		FIBER REINFORCED		FOOT
	WELDED STUD(S)		PLASTIC	PT	PRESSURE TREATED
ALT	ALTERNATE	FT	FOOT	PROJ	PROJECTION
APROX	APPROXIMATE(LY)	FTG	FOOTING	PSF	POUNDS PER SQUARE
BLD	BUILDING	FV	FIELD VERIFY		FOOT
BM	BEAM	GA	GAGE	PSI	POUNDS PER SQUARE
BOT	BOTTOM	GALV	GALVANIZED		INCH
CJ	CONTROL JOINT	HK	HOOK	PVC	POLYVINYL CHLORIDE
CL	CENTER LINE	HORIZ	HORIZONTAL	R	RADIUS
CLR	CLEAR	HSS	HOLLOW STRUCTURAL	REINF	REINFORCING
CMU	CONCRETE MASONRY	SECTION	SECTION	REQD	REQUIRED
	UNIT	HP	HIGH POINT	SCHED	SCHEDULE(D)
COL	COLUMN	ID	INSIDE DIAMETER	SIM	SIMILAR
CONC	CONCRETE	JT	JOINT	SJ	SAWCUT JOINT
CONN	CONNECTION	LB(S)	POUND(S)	SMS	SHEET METAL SCREW
CONST JT	CONSTRUCTION JOINT	LONG	LONGITUDINAL	SPECS	SPECIFICATIONS
CONT	CONTINUOUS	LP	LOW POINT	SQ	SQUARE
DIA	DIAMETER	MANUF	MANUFACTURER	SS	STAINLESS STEEL
DEG	DEGREE(S)	MATL	MATERIAL	STD	STANDARD
DO	DTTO	MAX	MAXIMUM	STL	STEEL
DWG	DRAWING	MECH	MECHANICAL	T/L	TOP OF
DWL	DOWEL(S)	MFR	MANUFACTURER	TB	TIE BEAM
(E)	EXISTING	MIN	MINIMUM	T&B	TOP AND BOTTOM
EA	EACH	MISC	MISCELLANEOUS	THK	THICK
EF	EACH FACE	MO	MASONRY OPENING	THRU	THROUGH
EJ	EXPANSION JOINT	MTL	METAL	TOC	TOP OF CONCRETE
EL	ELEVATION	NO	NUMBER	TOS	TOP OF STEEL
ELEC	ELECTRICAL	NTS	NOT TO SCALE	TYP	TYPICAL
EMBED	EMBEDMENT	OC	ON CENTER	UNO	UNLESS NOTED
EQ	EQUAL	OD	OUTSIDE DIAMETER		OTHERWISE
EW	EACH WAY	OH	OPPOSITE HAND	VERT	VERTICAL
EXIST	EXISTING	OPNG	OPENING	WT	WEIGHT
		PCS	PIECES	WWF	WELDED WIRE FABRIC

STRUCTURAL STEEL

- DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND THE DESIGN DRAWINGS.
- STEEL MATERIAL:
 - W-SHAPED SECTIONS : ASTM A992, GRADE 50
 - HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B
 - ALL OTHER STRUCTURAL STEEL: ASTM A36
 - ALL PIPE: ASTM A53, GRADE B
- WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE REQUIREMENTS. ELECTRODES SHALL BE E-70XX.
- BOLTED CONNECTIONS:
 - MAIN CONNECTIONS: 3/4" DIA, ASTM A325 BOLTS, HOLES: 13/16" DIA CONNECTION SHALL BE "BEARING" TYPE WITH THREADS EXCLUDED FROM THE SHEAR PLANE.
 - SECONDARY CONNECTION: 3/4" DIA, ASTM A307 GRADE A BOLTS.
- ALL CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS. GUSSET PLATES SHALL BE A MINIMUM OF 3/8" THICK.

ALL COLUMNS AND POSTS SHALL HAVE MILLED ENDS FOR FULL BEARING AT BASE PLATES.

ALUMINUM

- ALUMINUM DESIGN, DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM DESIGN MANUAL.
- ALUMINUM IN CONTACT WITH OR EMBEDDED IN CONCRETE OR MASONRY SURFACES SHALL BE COATED WITH A HEAVY COATING OF ALKALI RESISTANCE BITUMINOUS PAINT.
- ALL BOLTS USED IN CONNECTIONS WITH ALUMINUM MEMBERS SHALL BE STAINLESS STEEL A316, UNLESS NOTED OTHERWISE.
- ALL WELDING OF ALUMINUM STRUCTURES SHALL CONFORM TO "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, LATEST EDITION.

STAINLESS STEEL

- STAINLESS STEEL PLATES, SHEETS AND STRUCTURAL SHAPES SHALL BE IN ACCORDANCE TO ASTM A240.
- STAINLESS STEEL MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - EXTERIOR AND SUBMERGED USE: TYPE 316 TYPE 316L (WHERE WELDED)
 - INTERIOR AND ARCHITECTURAL USE : TYPE 304 TYPE 304L (WHERE WELDED)
- ALL WELDING OF STRUCTURAL STAINLESS STEEL SHALL CONFORM TO "STRUCTURAL WELDING CODE - STAINLESS STEEL", AWS D1.6, LATEST EDITION.
- STAINLESS STEEL BOLTS, NUTS AND WASHERS SHALL BE TYPE 316 IN ACCORDANCE TO ASTM F593 UNLESS NOTED OTHERWISE.

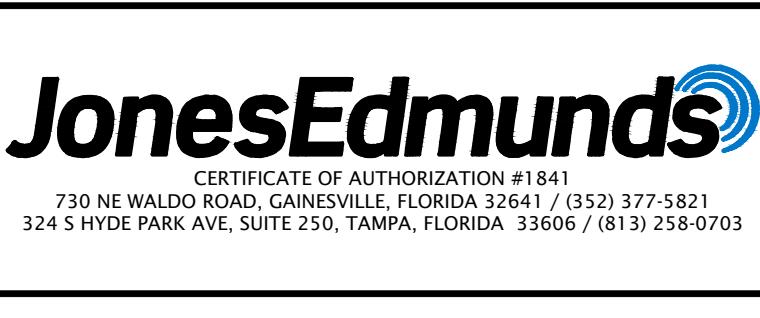
WATERPROOFING OF REINFORCED CONCRETE WATER RETAINING STRUCTURES

- HYDROSTATIC TEST REINFORCED CONCRETE STRUCTURES WHICH WILL CONTAIN WATER PER SPECIFICATIONS AND IN ACCORDANCE TO ACI 350.1-TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING STRUCTURES PRIOR TO INSTALLATION OF COATING SYSTEMS. ALL REPAIRS AND RETESTING OF TANKS SHALL BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE OWNER.

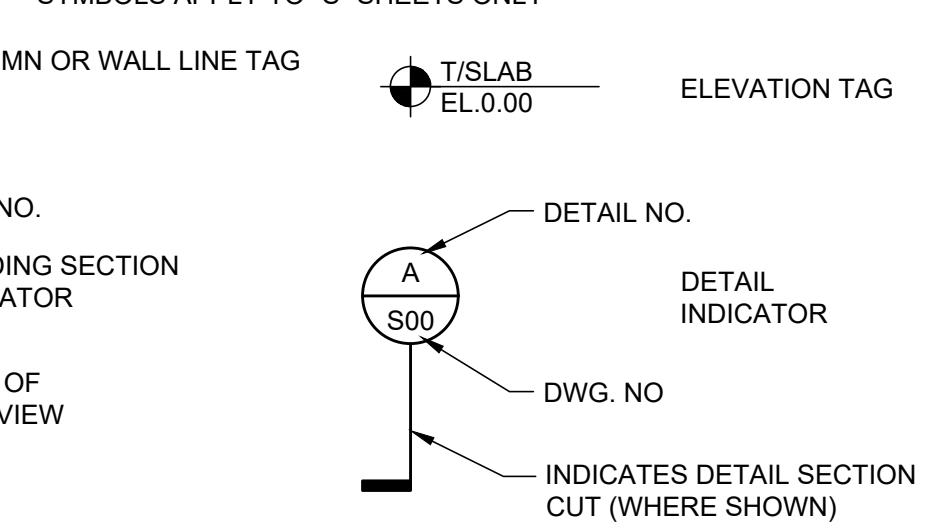
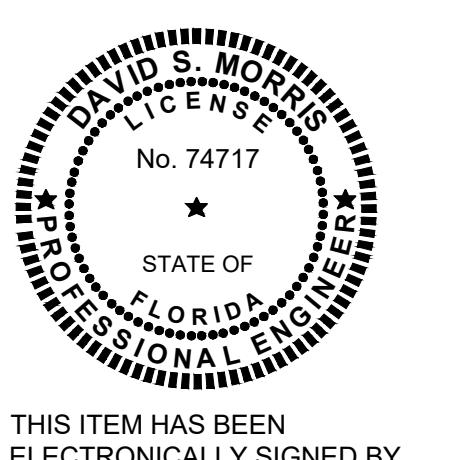
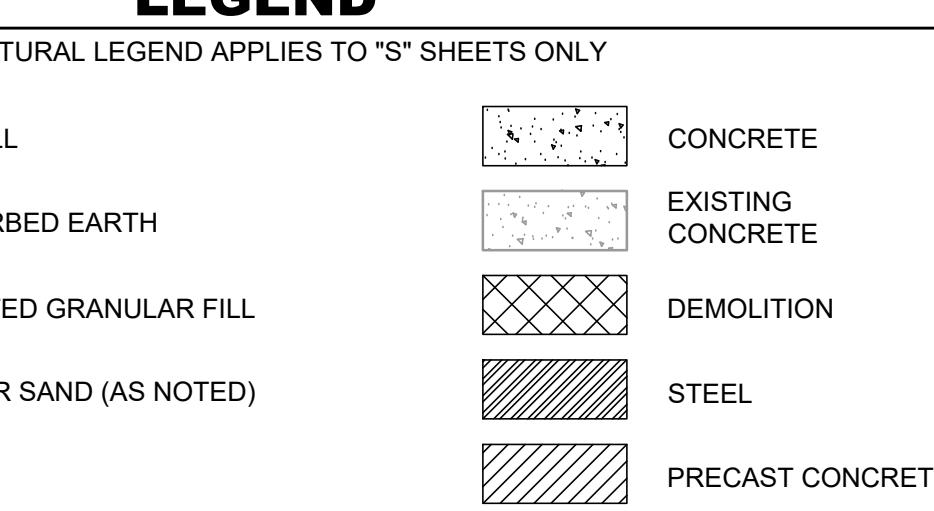
WEKIVA
ENGINEERING
711 N ORANGE AVE, SUITE A
WINTER PARK, FL 32789
P: 321.972.4989 COA Lic. No: 31920
WEKIVA PROJECT #18-126

RECORD DRAWINGS
SURVEYED BY: DRAWN BY:
REVIEWED BY:
APPROVED BY: PROJECT ENGINEER DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611 DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



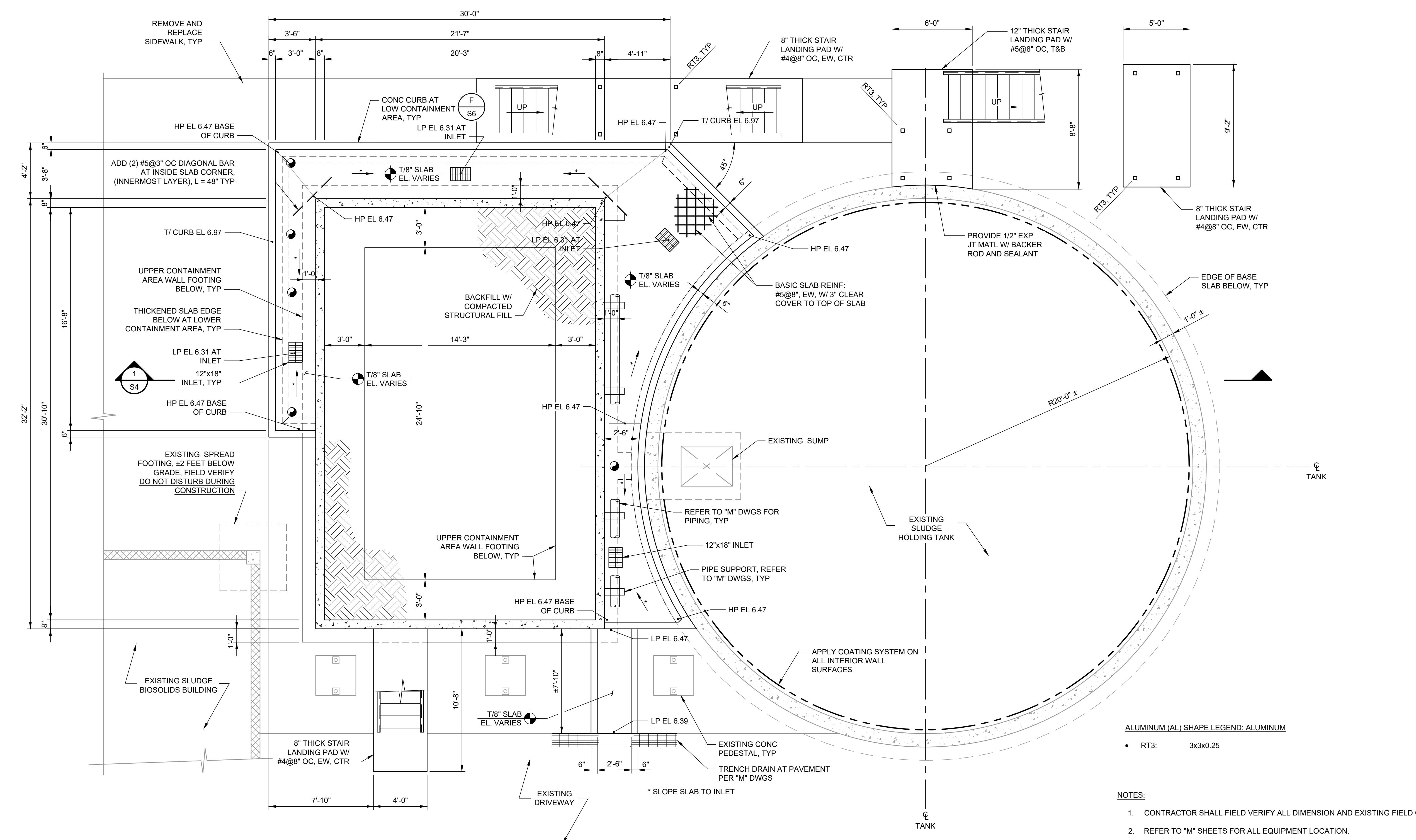
MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
GENERAL NOTES, ABBREVIATIONS,
SYMBOLS, AND LEGEND

SYMBOLS**LEGEND**

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REVIEWED BY:		
APPROVED BY:		
PROJECT ENGINEER	DATE	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE	
REVISION	BY	DATE

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ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



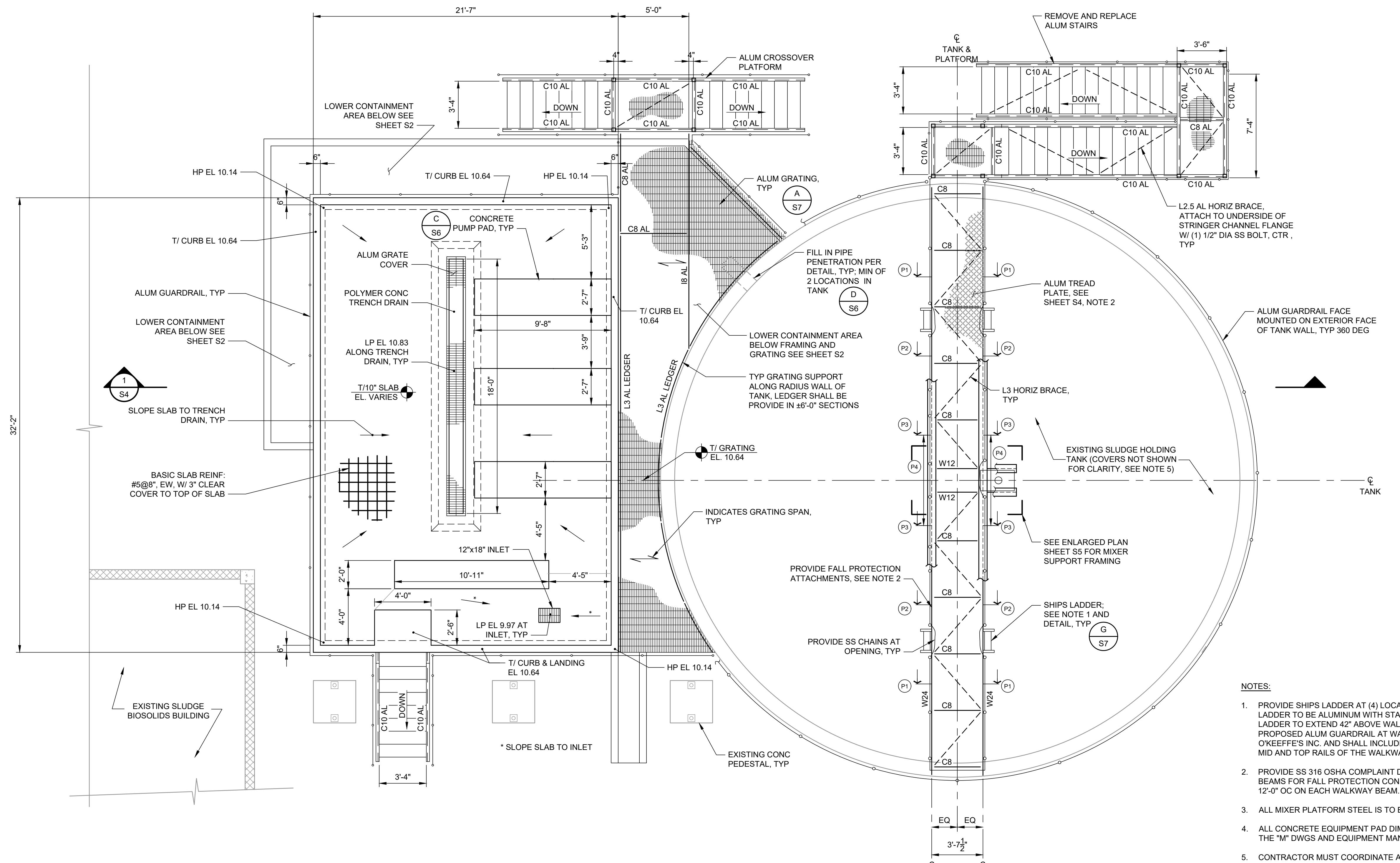
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MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
SLUDGE HOLDING TANK AND
PS FOUNDATION PLAN

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
S2.4.dwg			VERT.
CONTRACT NO:	DATE DRAWN:	DRAWN BY:	HORIZ. AS NOTED
18-0057-UT	JUNE 2020	JVS	
JOB NO:	DESIGNED BY:	CHECKED BY:	SHEET NO.: S2
03720-054-01	JVS	DSM	
	APPROVED FOR CONSTRUCTION		

GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET



711 N ORANGE AVE, SUITE A
WINTER PARK, FL 32789
P: 321.972.4989 COA Lic. No: 31920
WEKIVA PROJECT #18-126

RECORD DRAWINGS	DRAWN BY:
SURVEYED BY:	
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE
REVISION	BY DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

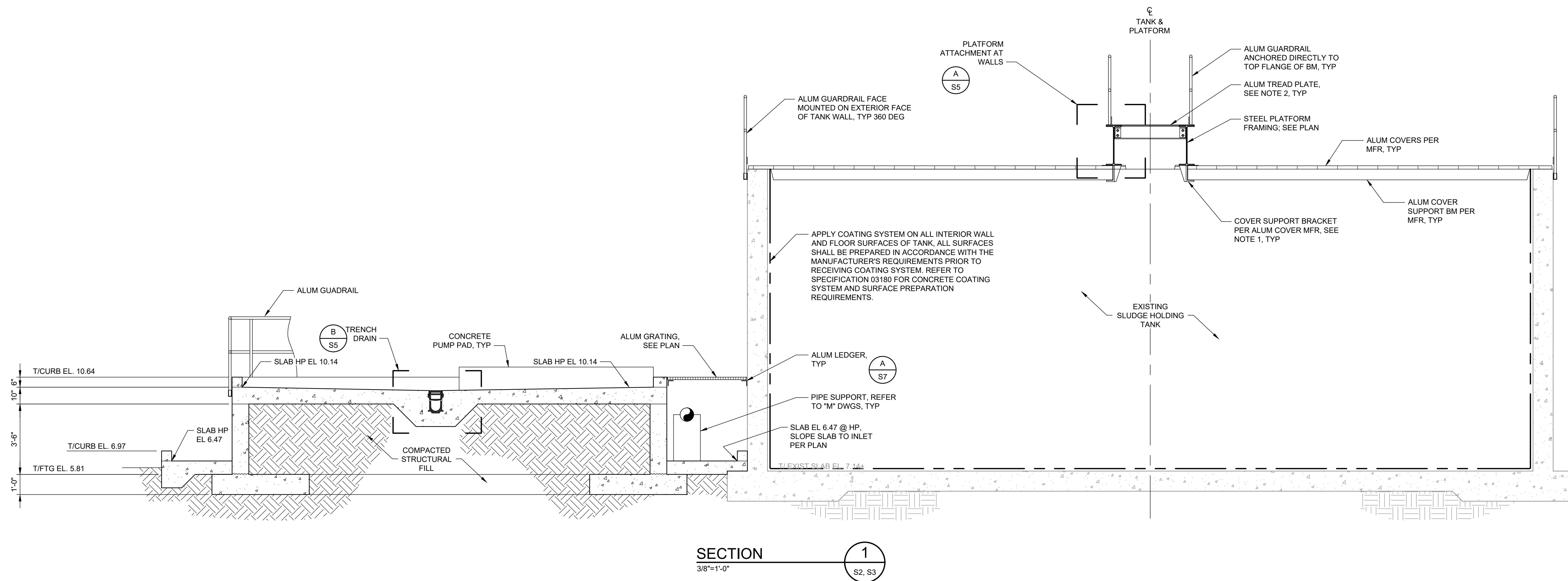


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MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
SLUDGE HOLDING TANK AND PS
T/STRUCTURE PLAN

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03720-054-01	JVS	DSM	S3
APPROVED FOR CONSTRUCTION			

NOTES:

1. THE DESIGN OF THE BRACKET SHALL BE PROVIDED BY THE COVER MANUFACTURER'S ENGINEER. SUPPORT BRACKET MAY BE BOLTED OR WELDED TO THE WALKWAY SUPPORT BEAMS. THE COVER SUPPORT BRACKET LOCATIONS MUST BE COORDINATED WITH COVER MANUFACTURER AND STEEL WALKWAY FABRICATOR DURING SHOP DRAWING REVIEW.
2. PROVIDE 3/8" THICK x 3'-6" WIDE ALUMINUM TREAD PLATE AT ELEVATED PLATFORM WALKING SURFACE. PLATE SHALL BE PROVIDED IN PANELS NOT EXCEEDING 8'-0" LONG. PLATES SHALL BE FASTENED USING 1/4" SS 316 COUNTERSUNK SCREWS SPACED AT 18" OC (MAX) AND WITHIN 1/2" OF EACH PANEL EDGE. 3'-6" PLATE WIDTH DIMENSION TO BE VERIFIED WITH THE RAILING POST BASES DURING SHOP DRAWING REVIEW. GAPS SHALL BE MINIMIZED FOR ODOR CONTROL.



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APPROVED BY:			
PROJECT ENGINEER	DATE		
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE		
REVISION	BY	DATE	

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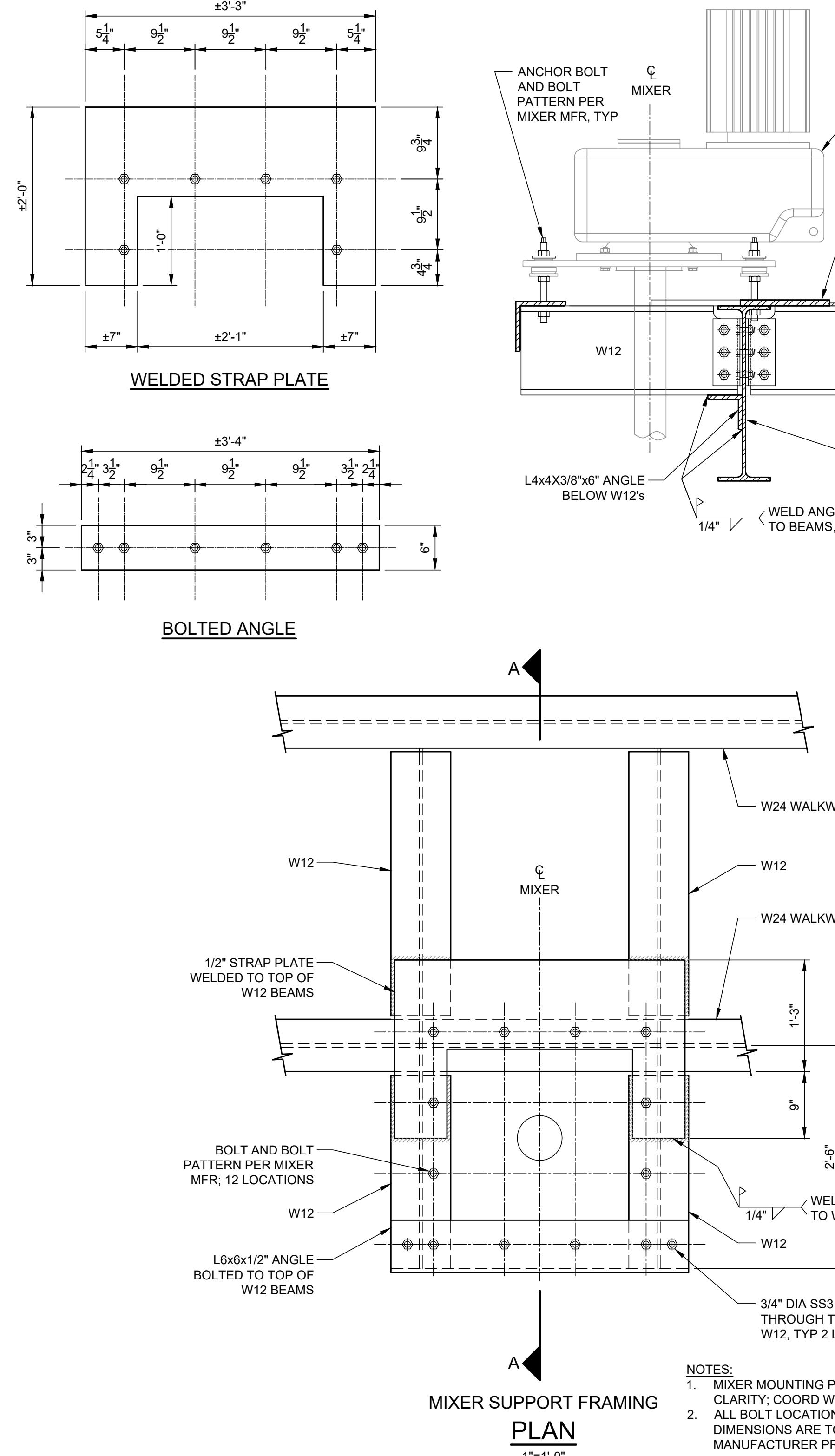
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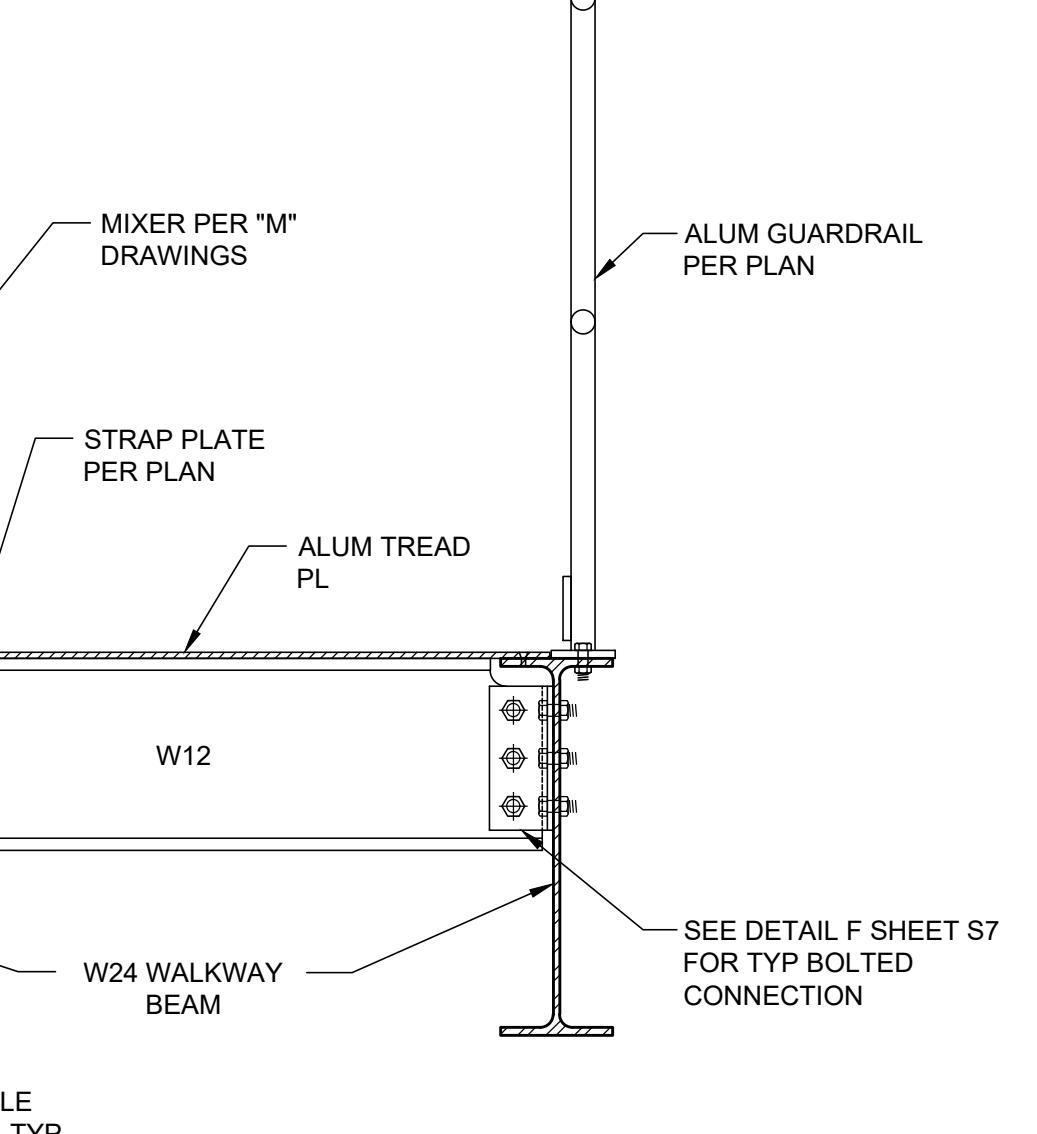
MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
SLUDGE HOLDING TANK AND
PS SECTIONS

DWG NAME: S2,4.dwg	FIELD BOOK: 18-0057-UT	SURVEYED BY: JVS	SCALE: VERT.
CONTRACT NO: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JVS	HORIZ. AS NOTED
JOB NO: 03720-054-01	DESIGNED BY: JVS	CHECKED BY: DSM	SHEET NO.: S4
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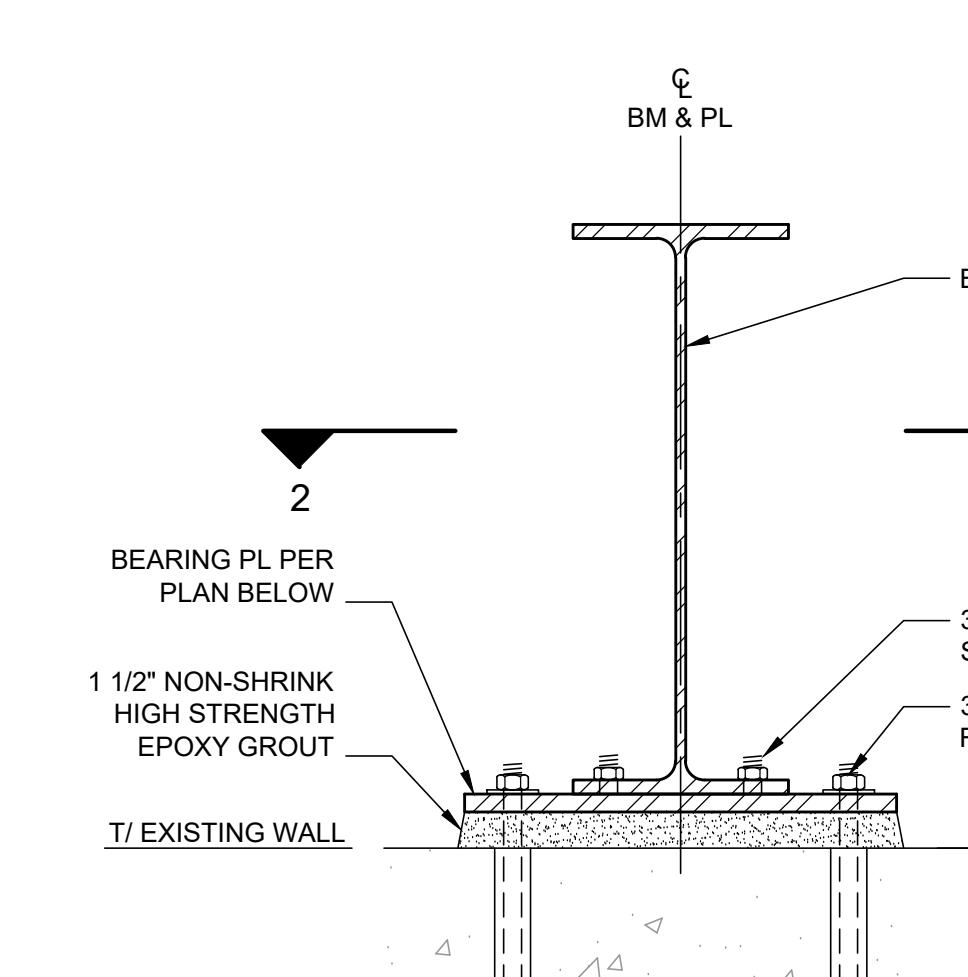


NOTES:

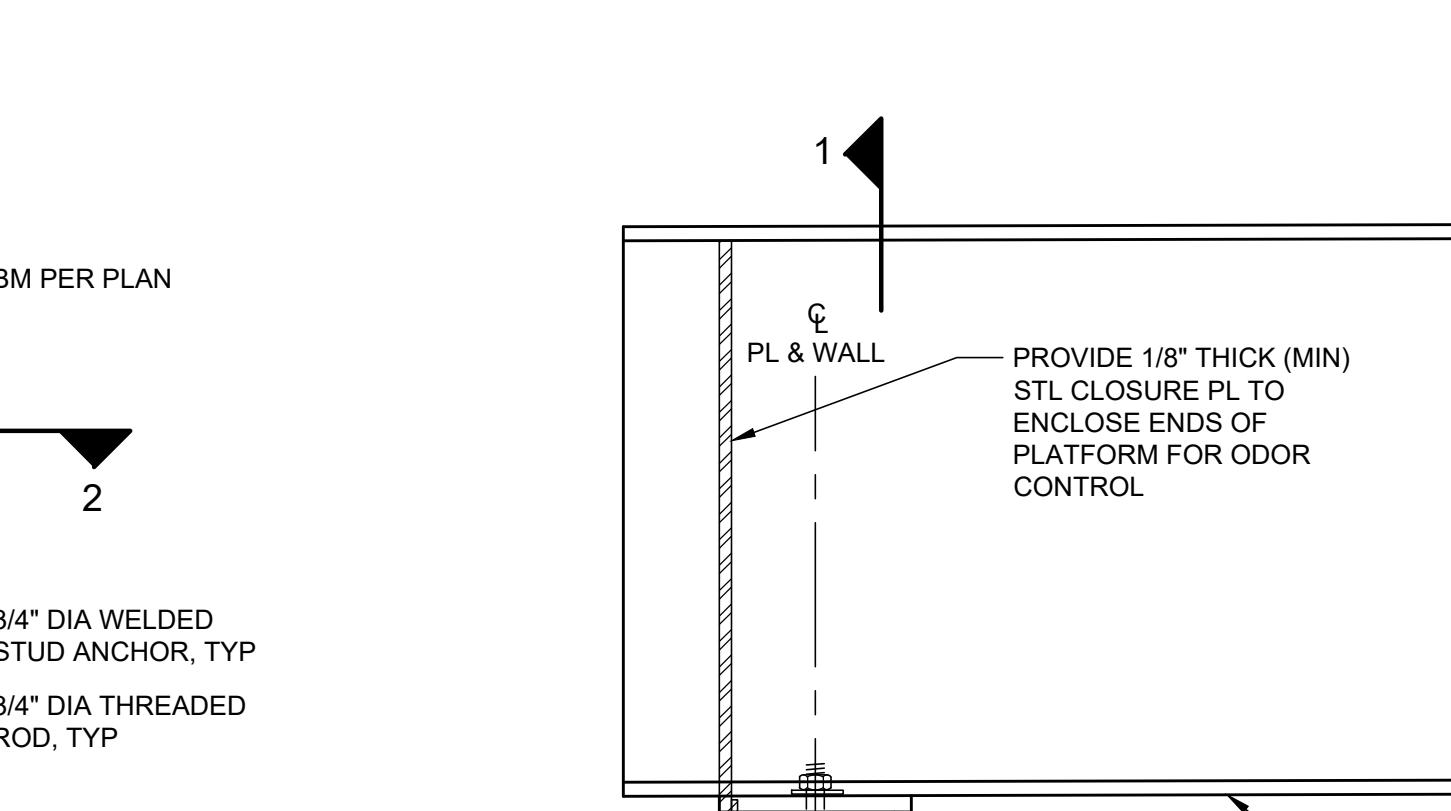
1. MIXER MOUNTING PLATE NOT SHOWN FOR CLARITY; COORD W/ MANUF FOR DIMENSIONS.
2. ALL BOLT LOCATIONS AND STRAP PLATE DIMENSIONS ARE TO BE CONFIRMED WITH MIXER MANUFACTURER PRIOR TO ANY FABRICATION.



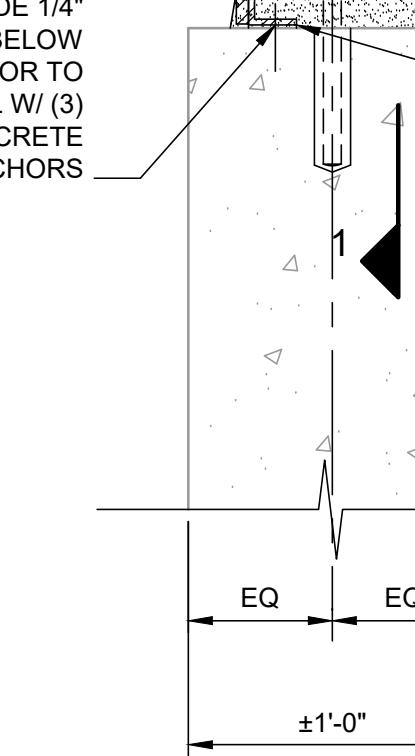
SECTION A-A



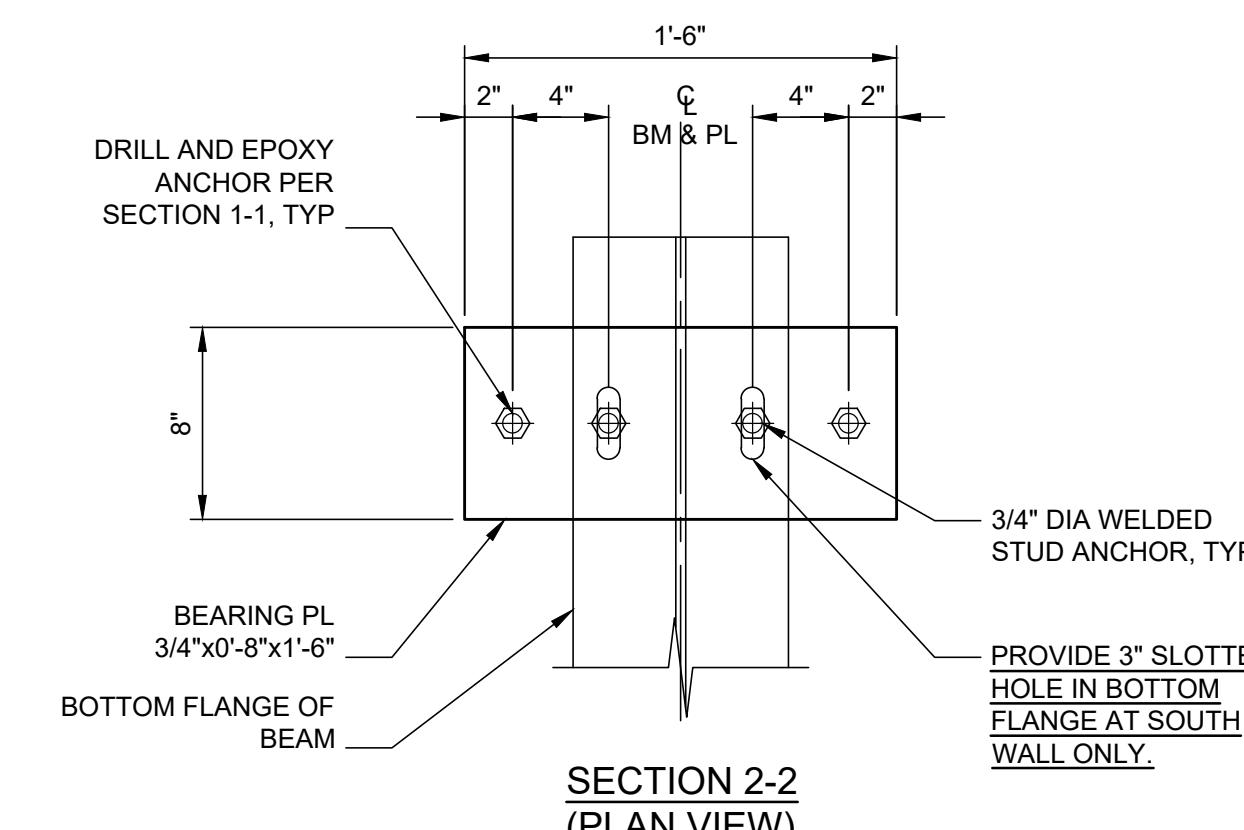
SECTION 1



IN)



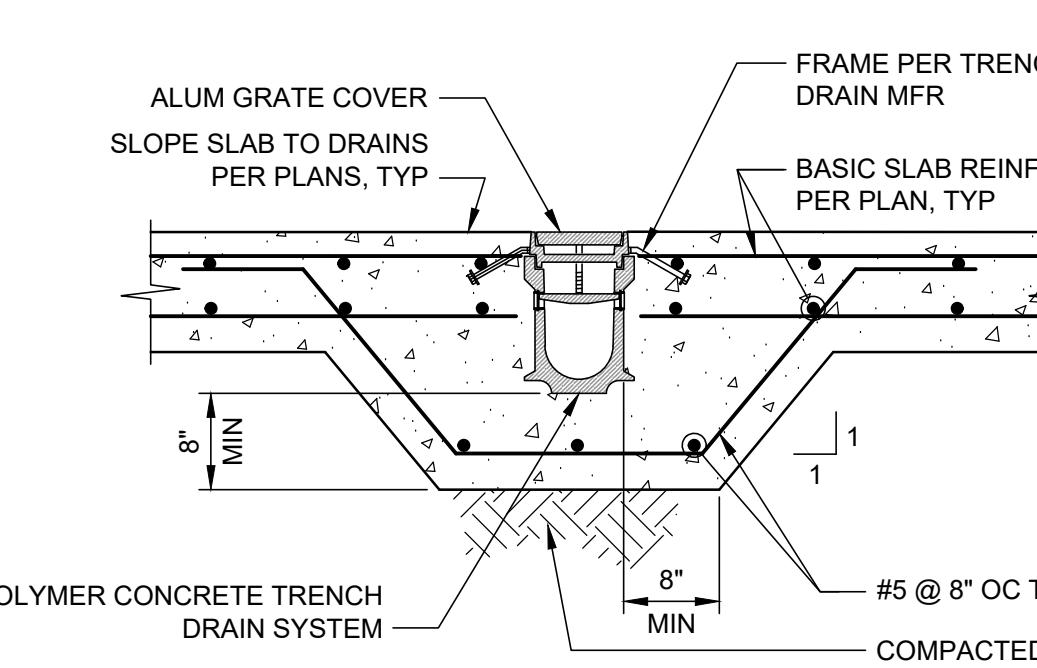
1



SECTION 2 (PLAN VIEW)



DE



TRENCH D



020-12:
ENGINEERING
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WINTER PARK, FL 32789
P: 321.972.4989 COA Lic. No: 31920
WEKIVA PROJECT #12-126

RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY: _____ PROJECT ENGINEER	
APPROVED BY: _____ CITY ENGINEERING DIRECTOR, TARA KIVETT, P.E. #86611	
DATE _____	
DATE _____	

CITY ENGINEERING DIRECT

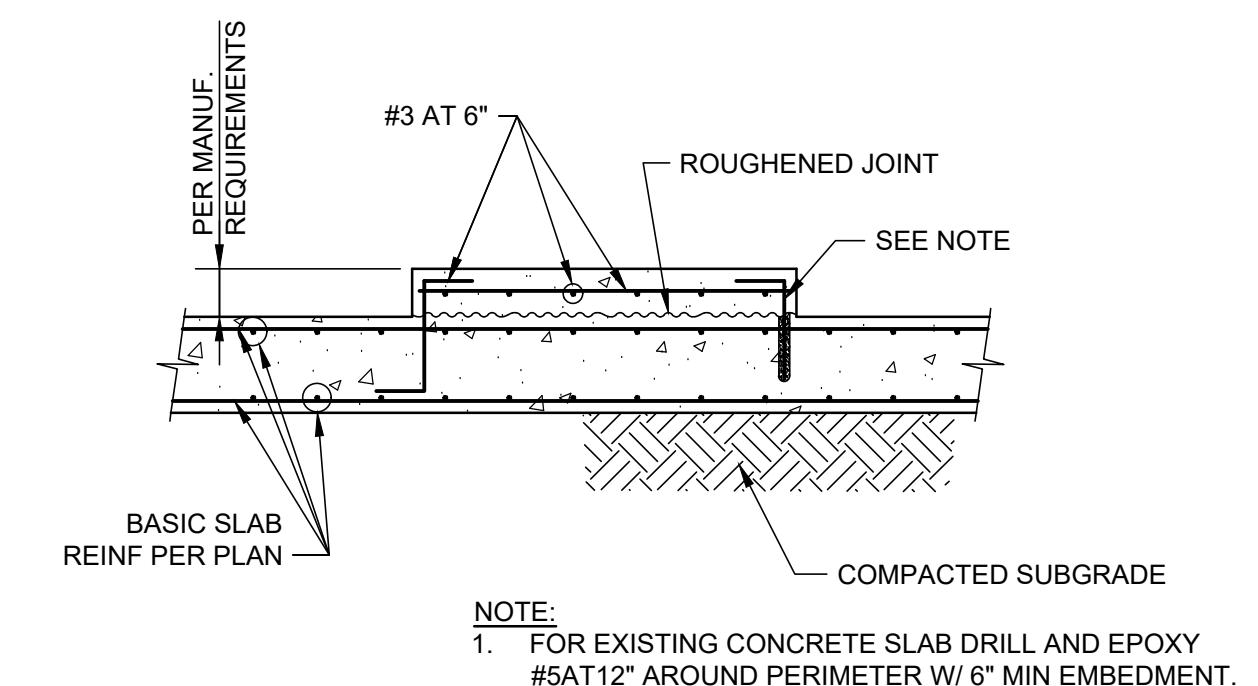
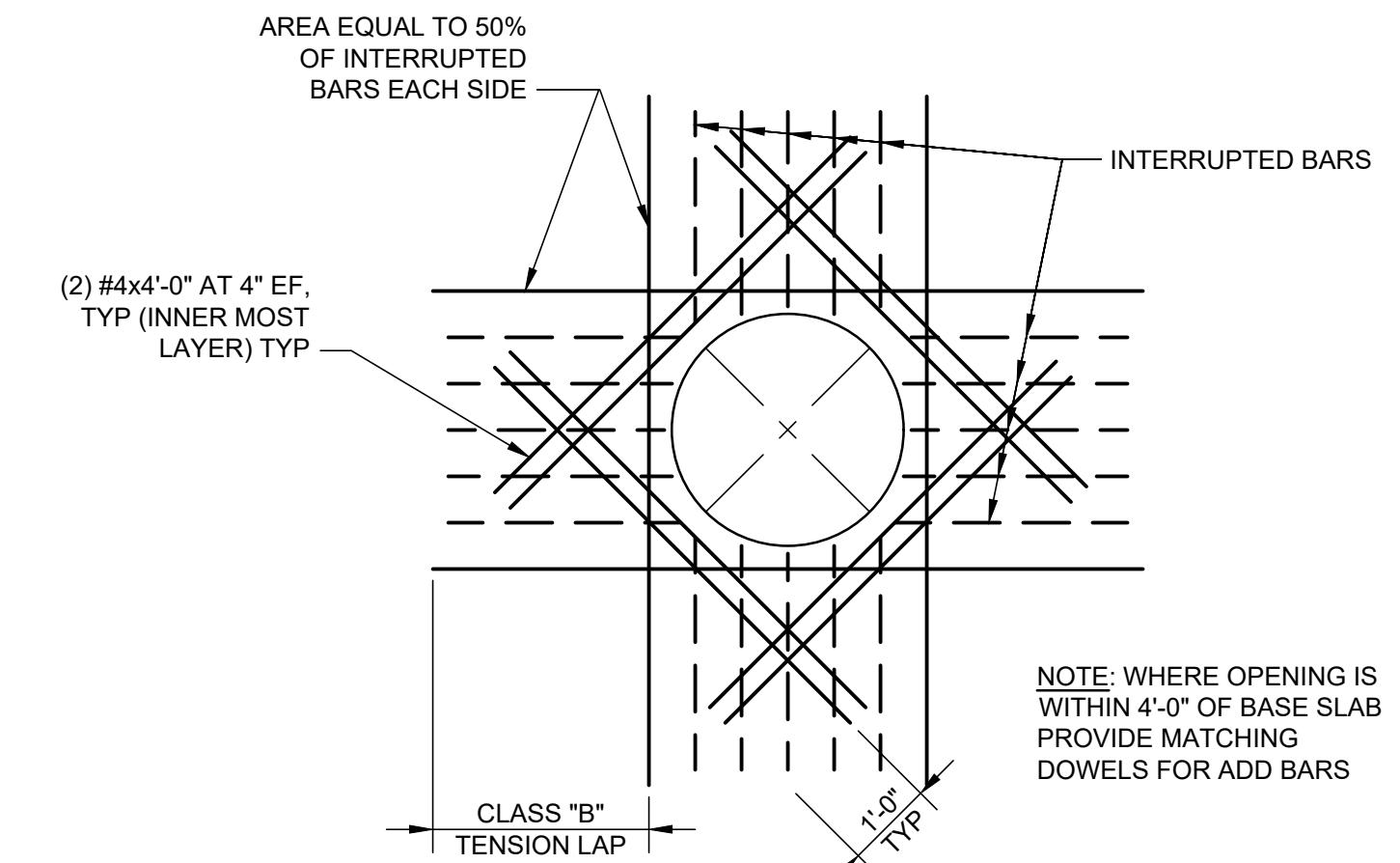
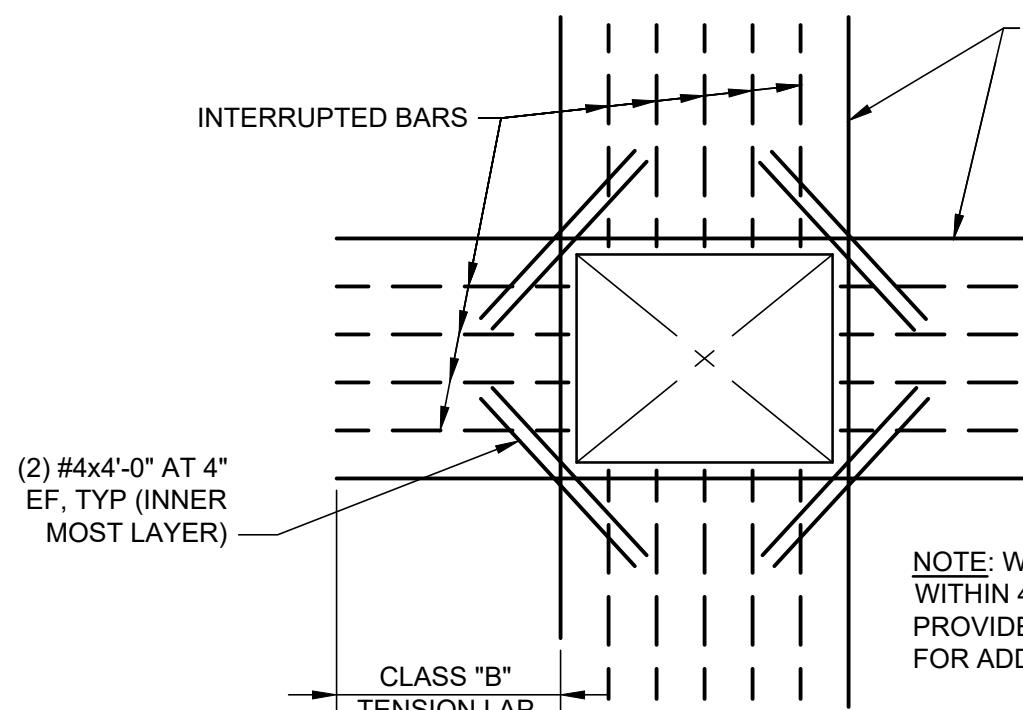
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MS WRF SLUDGE BLEND TANK IMPROVEMENTS MIXER SUPPORT AND MISCELLANEOUS DETAILS

DWG NAME: S5.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. _____
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JVS	HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: JVS	CHECKED BY: DSM	SHEET NO.: S5
APPROVED FOR CONSTRUCTION			
<hr/> DAVID S. MORRIS, P.E. # 74717 <hr/>			DATE _____



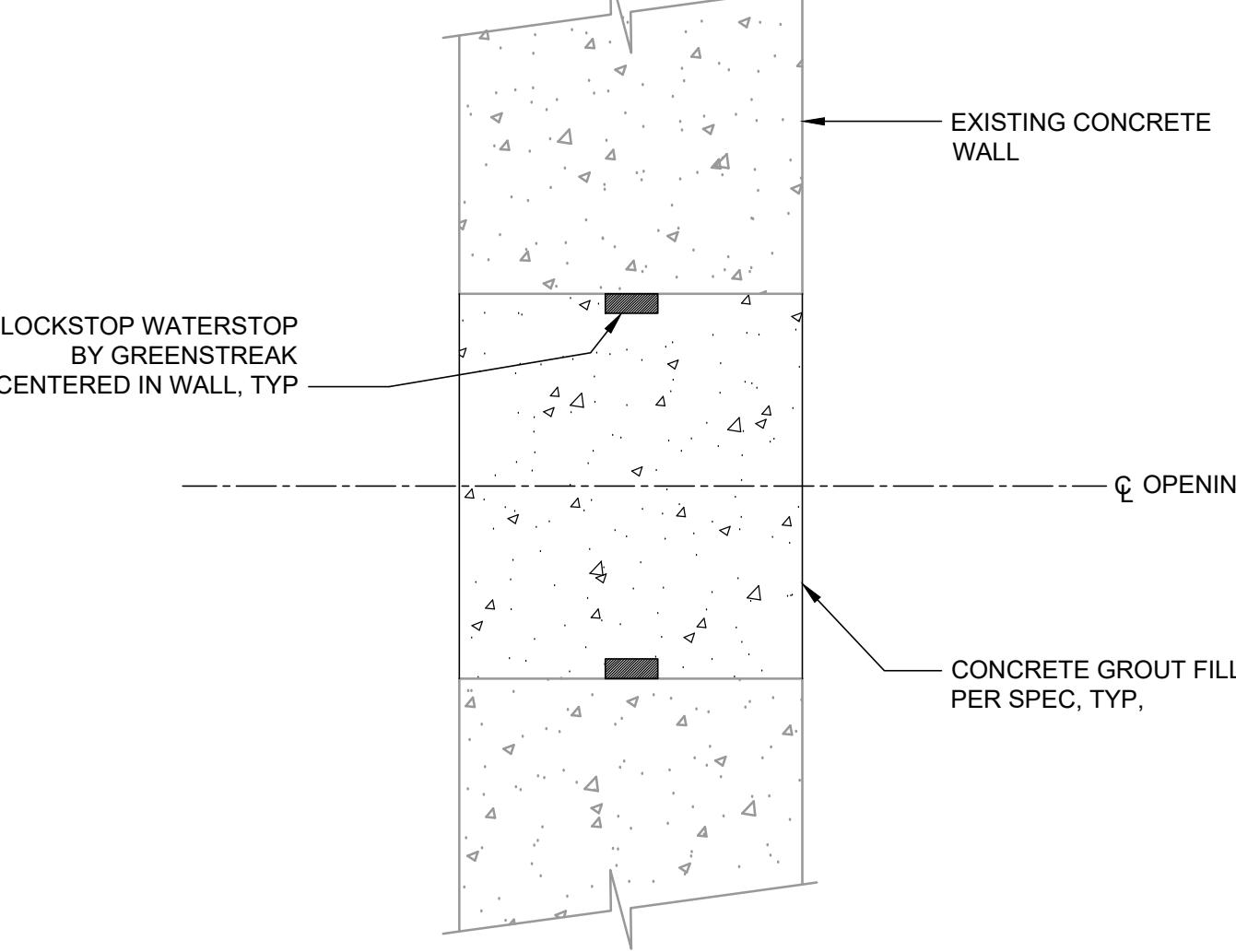
REBAR MINIMUM TENSION DEVELOPMENT & LAP LENGTHS					
BAR SIZE	DEVELOPMENT LENGTH, l_d		LAP LENGTH (CLASS B SPLICING)		BAR SIZE
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	1'-7"	1'-3"	2'-0"	1'-7"	#3
#4	2'-1"	1'-7"	2'-8"	2'-0"	#4
#5	2'-7"	2'-0"	3'-4"	2'-7"	#5
#6	3'-1"	2'-4"	4'-0"	3'-1"	#6
#7	4'-6"	3'-6"	5'-10"	4'-6"	#7
#8	5'-2"	3'-11"	6'-8"	5'-2"	#8
#9	5'-10"	4'-6"	7'-6"	5'-10"	#9
#10	6'-6"	5'-0"	8'-6"	6'-6"	#10
#11	7'-3"	5'-7"	9'-6"	7'-3"	#11

NOTES:
1. GRADE 60 UNCOATED REINFORCEMENT
2. SPLICE LENGTHS GIVEN ABOVE ARE TO BE USED UNLESS NOTED OTHERWISE ON DESIGN DRAWINGS.

MAXIMUM BAR SPACING AT NON-CONTACT LAPS:
*
SPACING NOT TO BE GREATER THAN 1/5 LAP LENGTH OR 6in. WHICH EVER IS LESS

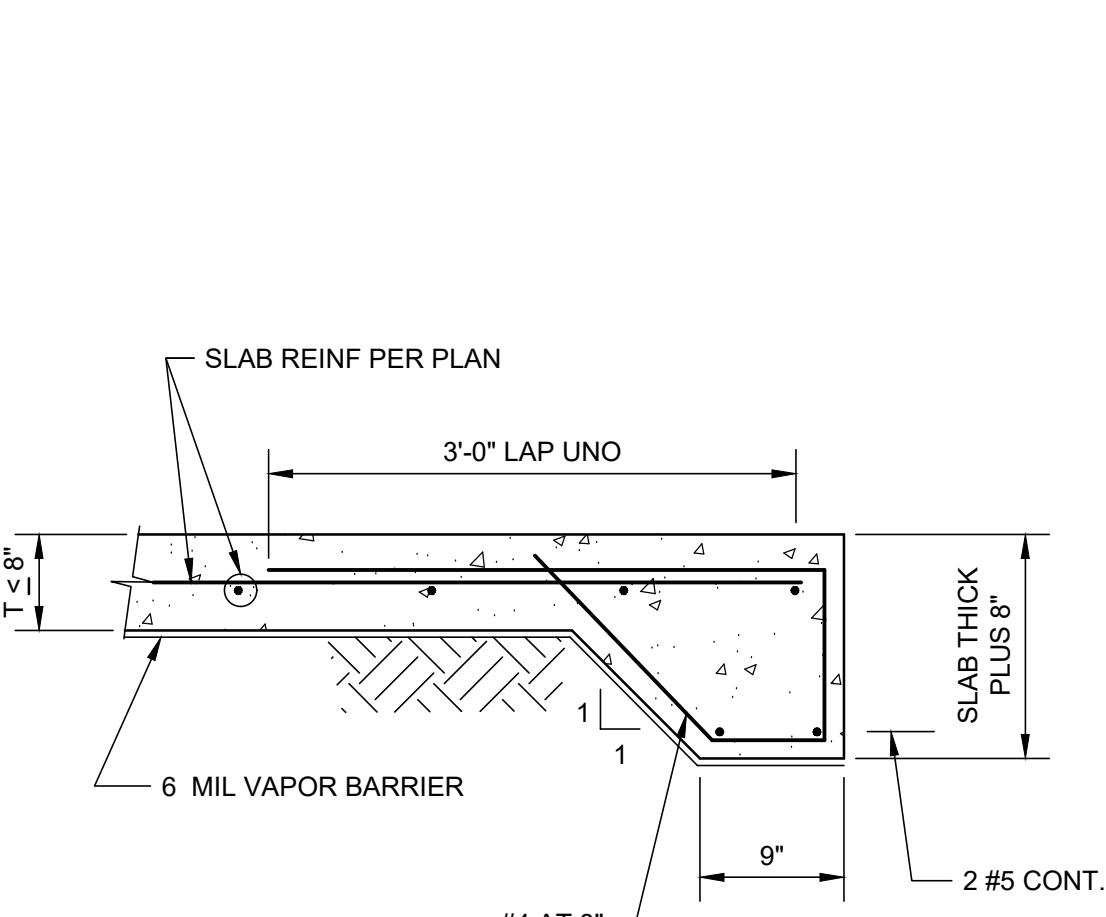
REINF AT RECTANGULAR OPENINGS GREATER THAN 12"

DETAIL NTS TYP



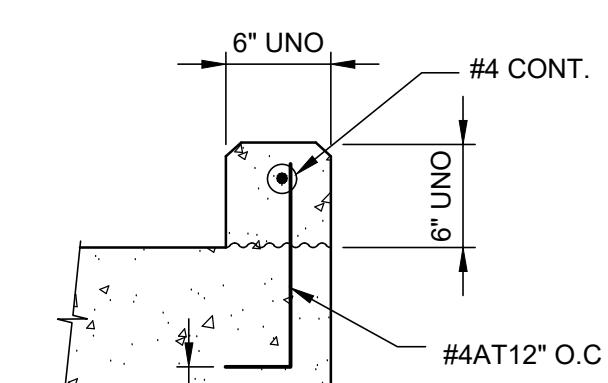
REINF AT CIRCULAR OPENINGS GREATER THAN 12"

DETAIL NTS TYP



EQUIPMENT PAD

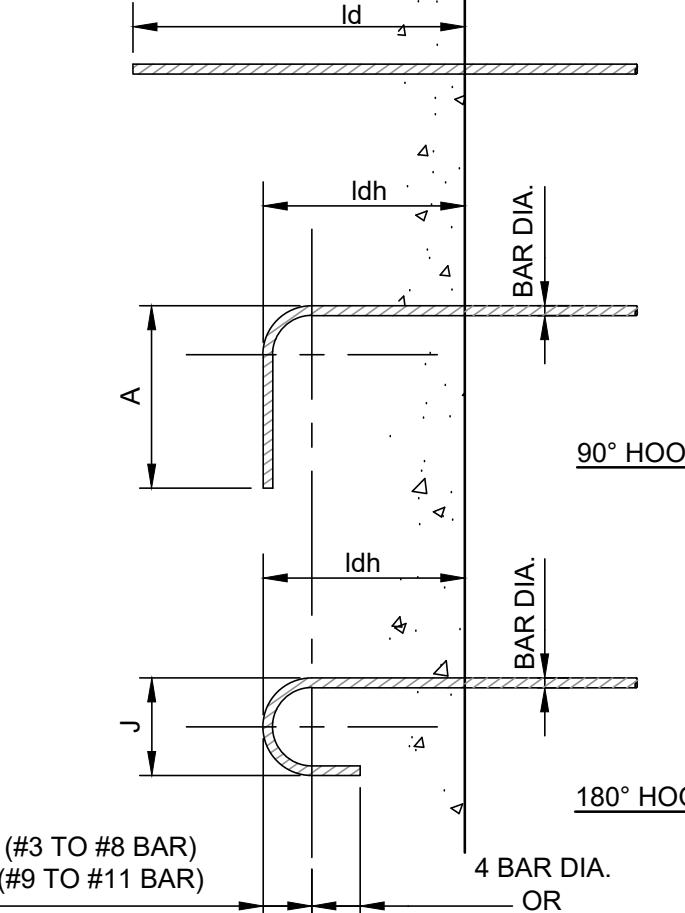
DETAIL NTS TYP



STANDARD HOOK DEVELOPMENT LENGTH

BAR SIZE	90° STD. HOOK "A"	180° STD. HOOK "J"	DEVELOPMENT LENGTH, l_d
#3	6"	3"	6"
#4	8"	4"	7"
#5	10"	5"	9"
#6	1'-0"	6"	10"
#7	1'-2"	7"	1'-0"
#8	1'-4"	8"	1'-2"
#9	1'-7"	11 $\frac{3}{4}$ "	1'-3"
#10	1'-10"	1'-1 $\frac{1}{4}$ "	1'-5"
#11	2'-0"	1'-2 $\frac{1}{4}$ "	1'-7"

*FOR STD HOOK BAR GEOMETRY NOT SHOWN REFER TO MINIMUM ACI REQUIREMENTS

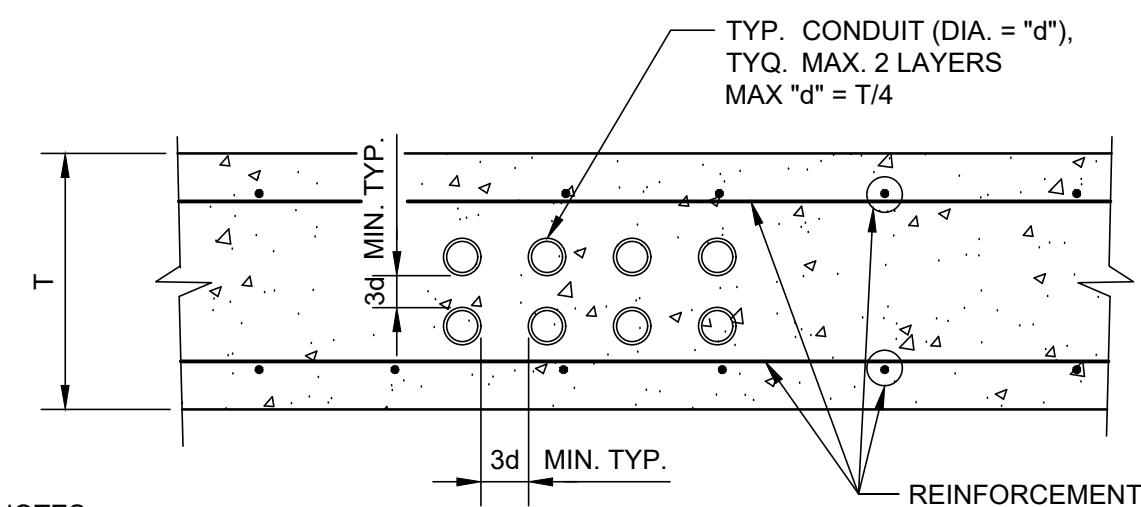


STANDARD REINFORCEMENT DETAILS

DETAIL NTS TYP

TYPICAL EXISTING PIPE PENETRATION THROUGH WALL

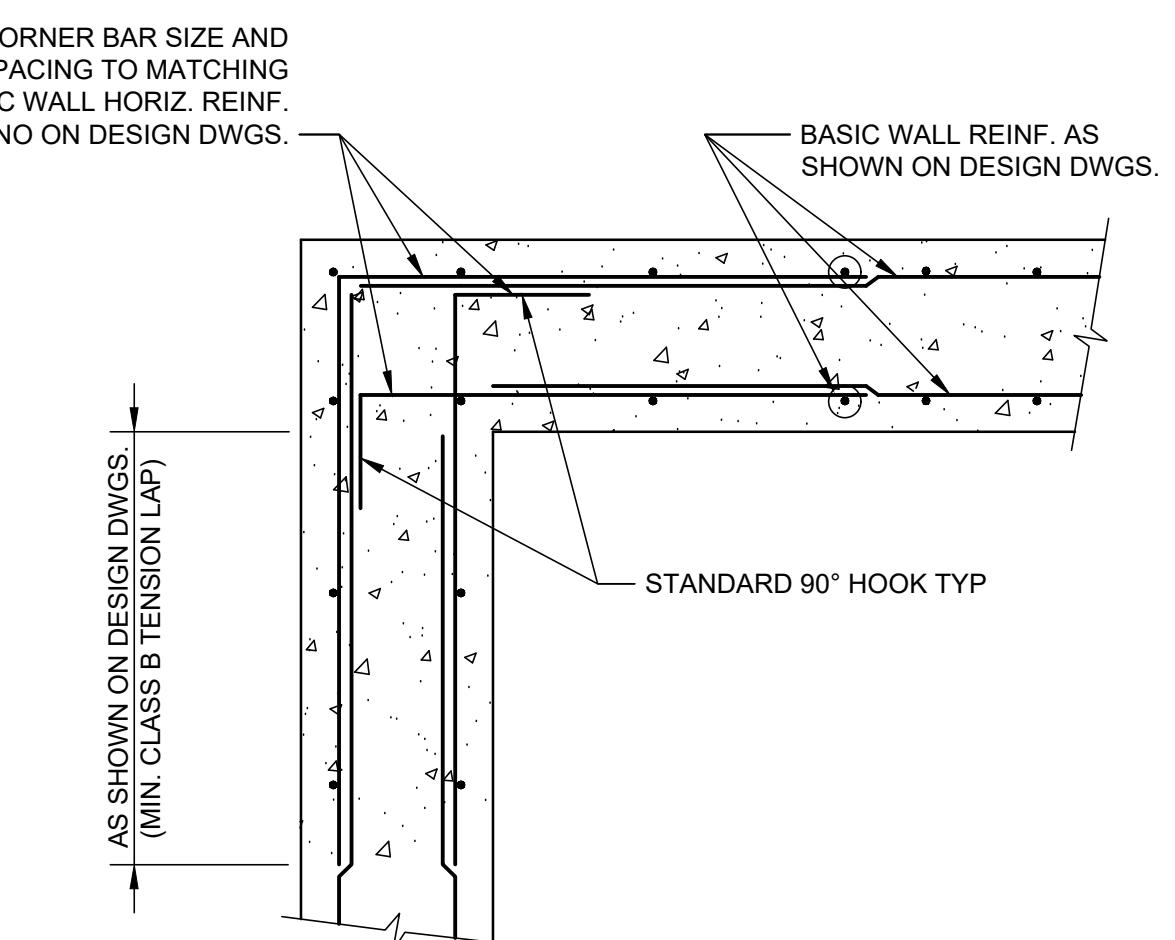
DETAIL NTS TYP



- NOTES:
1. COORDINATE W/ ENGINEER FOR PLACEMENT OF CONDUIT WHERE DIMENSION REQUIREMENTS SHOWN CAN NOT BE MET.
2. NO REINFORCEMENT MAY BE CUT, RELOCATED, OR BEND TO ALLOW FOR CONDUIT PLACEMENT WITHOUT PERMISSION FROM ENGINEER.

THICKENED EDGE SLAB

DETAIL NTS TYP

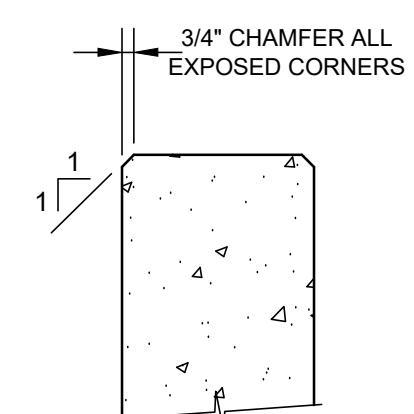


WALL CORNER REINFORCING

DETAIL NTS TYP

TYPICAL CONCRETE CURB

DETAIL NTS TYP



CHAMFER

DETAIL NTS TYP

TYPICAL CONDUIT PLACEMENT IN SLAB

DETAIL NTS TYP

REVISION BY DATE

REVISION BY DATE



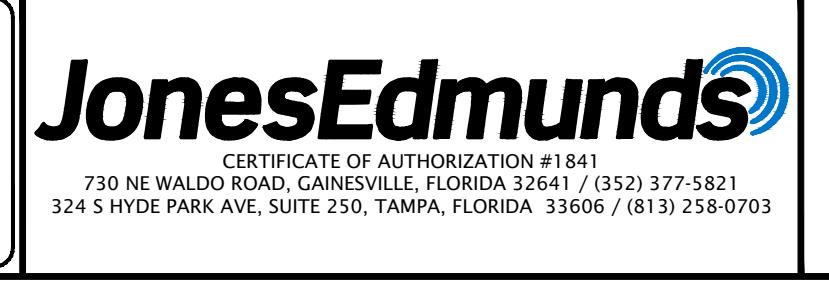
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REVIEWED BY:			
APPROVED BY:			

PROJECT ENGINEER DATE

CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611 DATE



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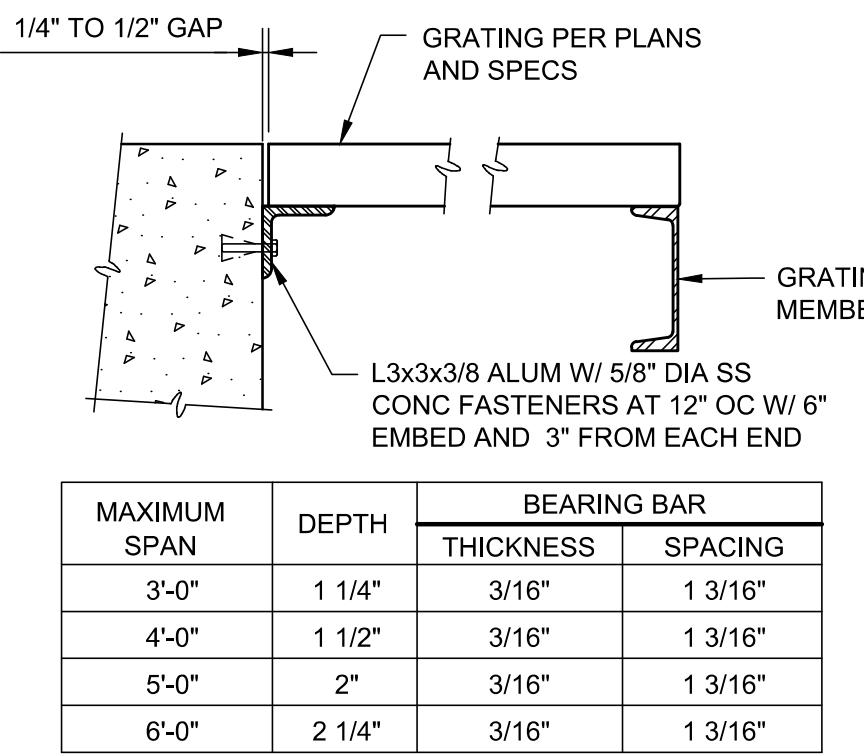


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MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
TYPICAL DETAILS

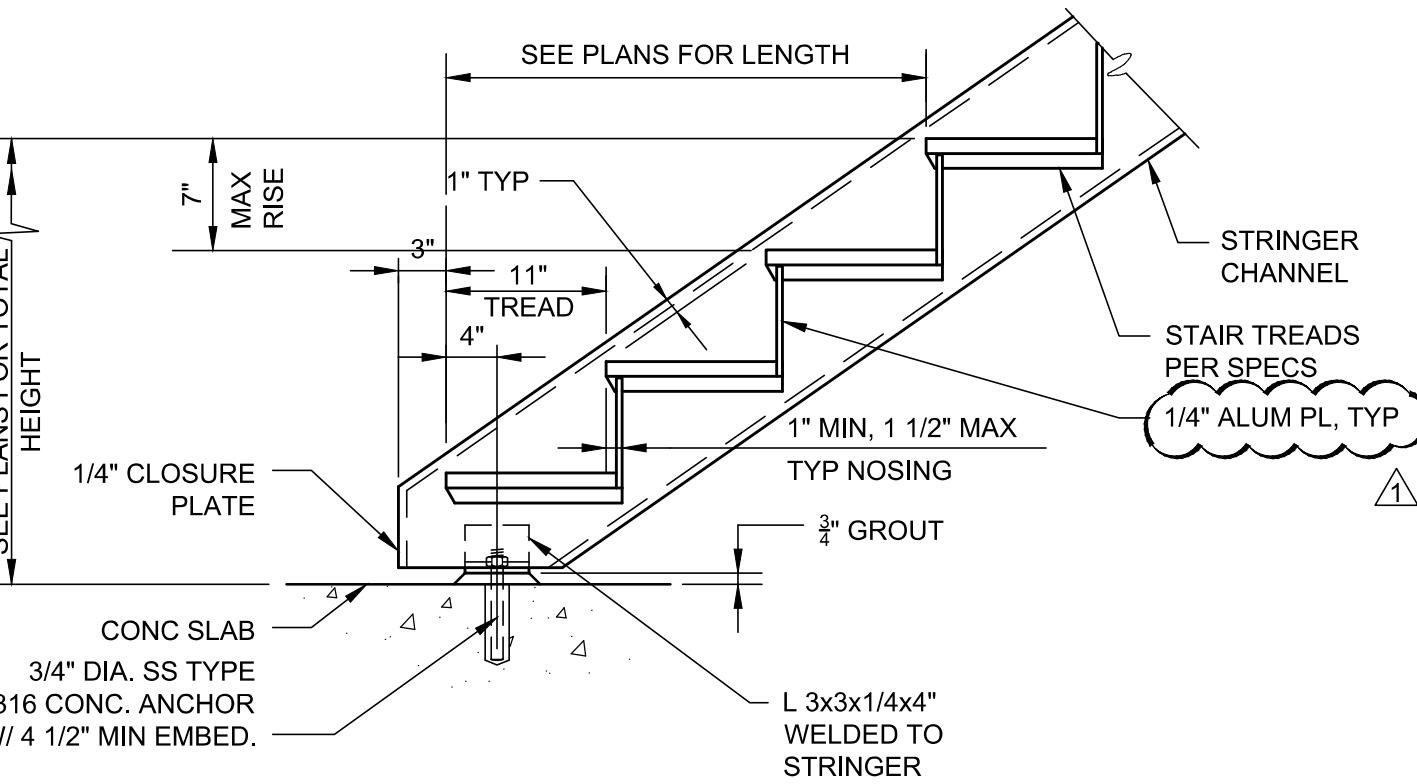
DWG NAME	FIELD BOOK:	SURVEYED BY:	SCALE:
S6,7.dwg			VERT. _____
CONTRACT NO:	DATE DRAWN:	DRAWN BY:	HORZ. AS NOTED
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	APPROVED FOR CONSTRUCTION		

DAVID S. MORRIS, P.E. #74717 DATE



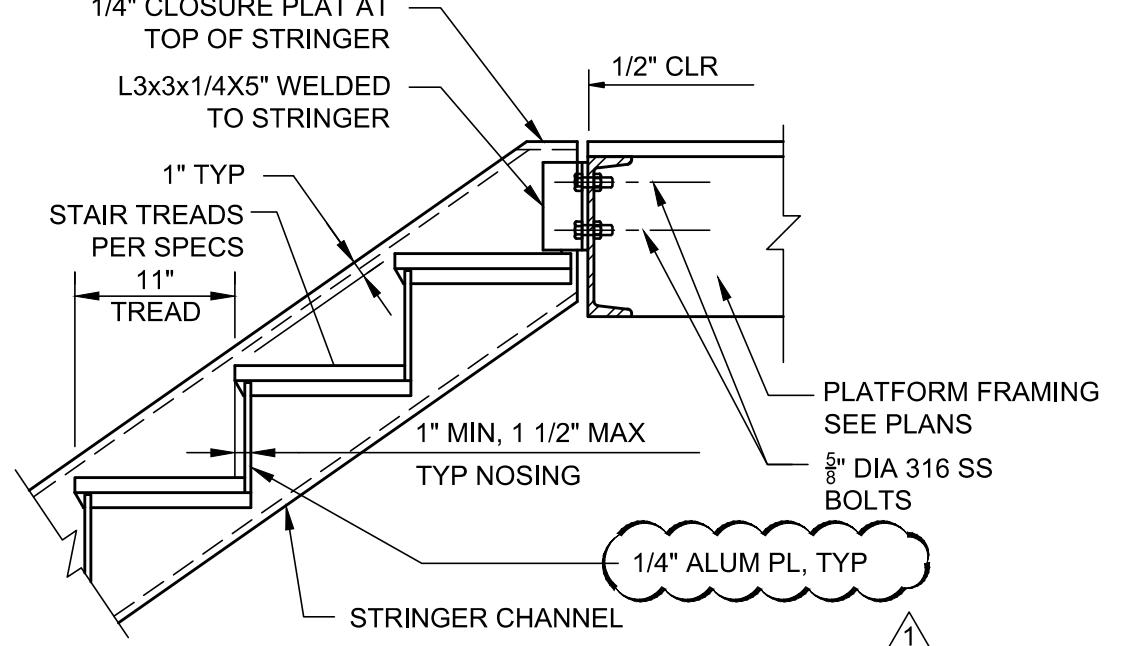
ALUM GRATING AND GRATING SUPPORT
DETAIL A
NTS TYP

NOTE: ALL STAIR TREADS SHALL HAVE SLIP RESISTANT NOSINGS AND SHALL BE PAINTED SAFETY YELLOW.

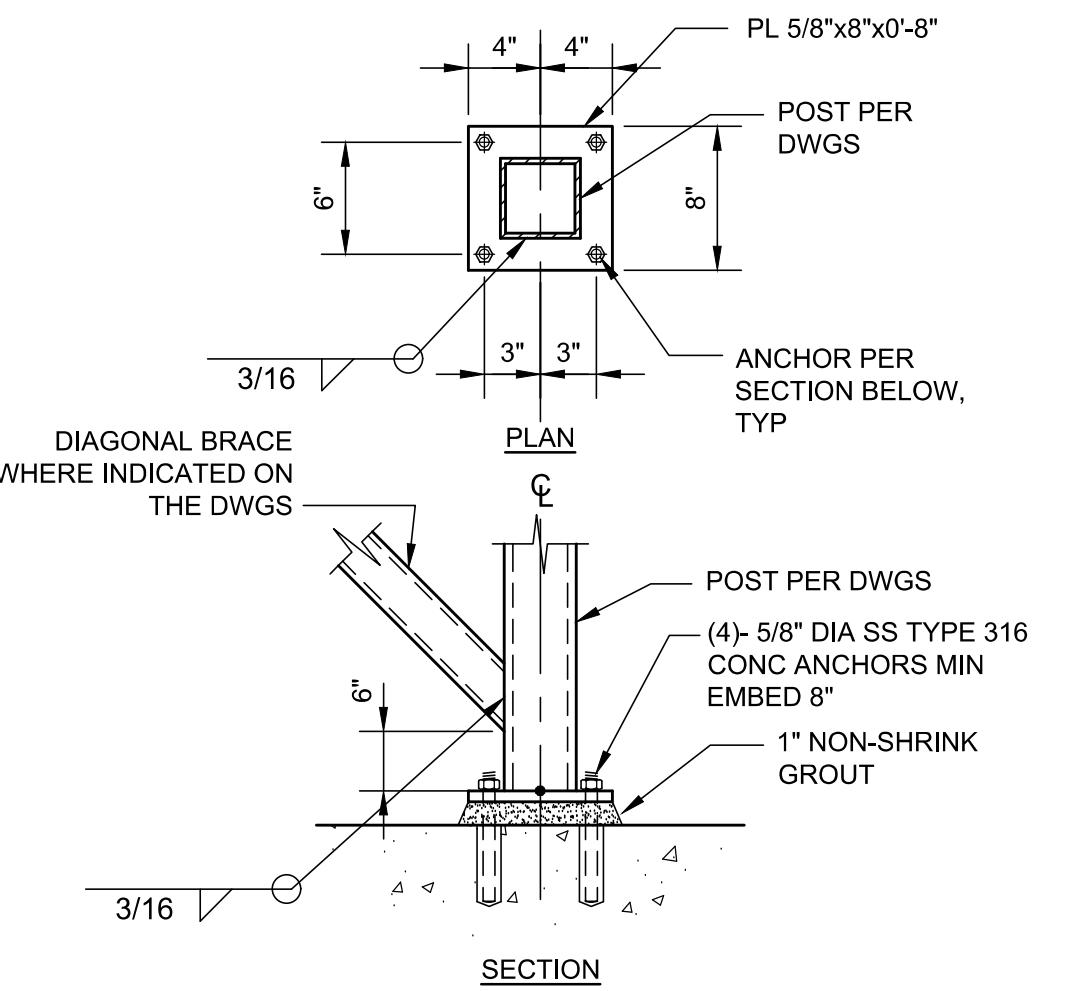


ALUM STAIR STRINGER TO CONCRETE
DETAIL B
NTS TYP

NOTE: ALL STAIR TREADS SHALL HAVE SLIP RESISTANT NOSINGS AND SHALL BE PAINTED SAFETY YELLOW.

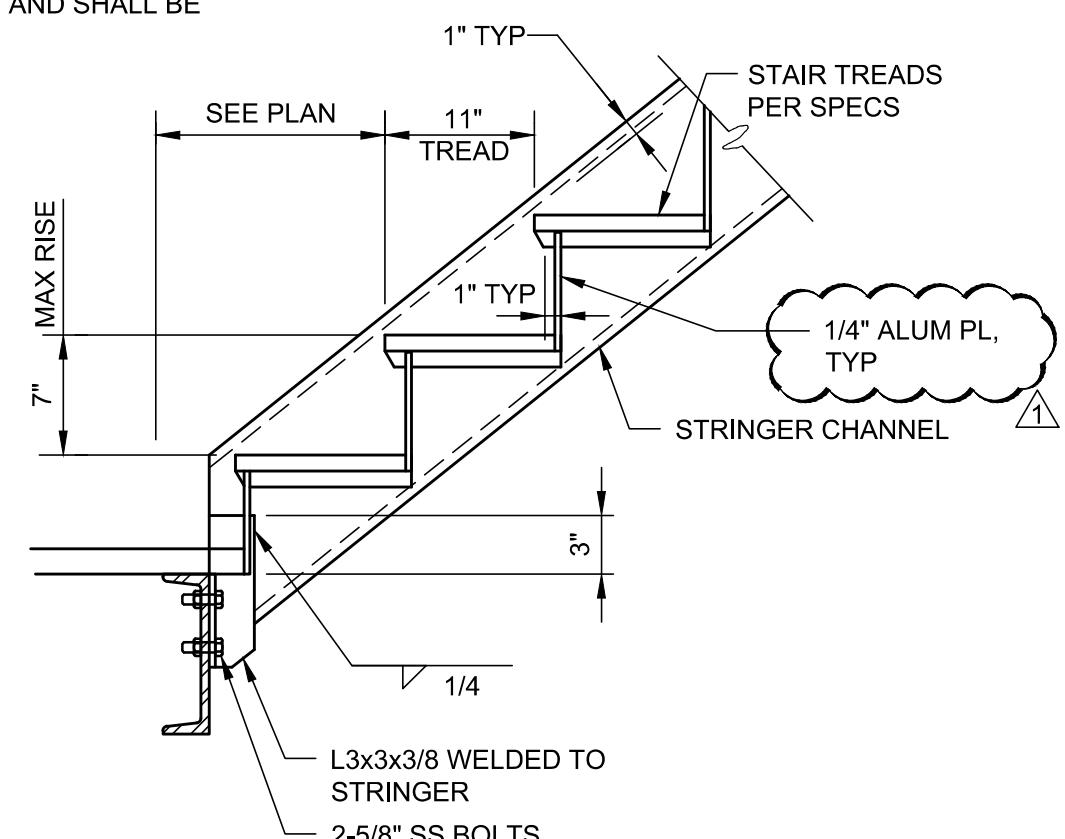


ALUM STAIR STRINGER TO PLATFORM TOP
DETAIL C
NTS TYP

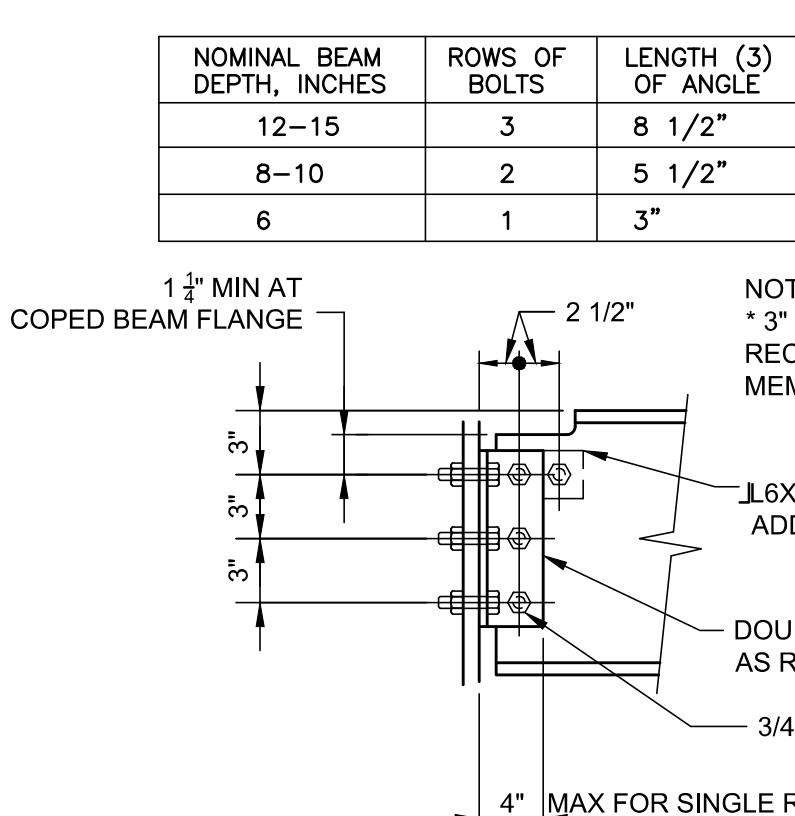


TYPICAL PLATFORM POST BASE CONNECTION
DETAIL D
NTS TYP

NOTE: ALL STAIR TREADS SHALL HAVE SLIP RESISTANT NOSINGS AND SHALL BE PAINTED SAFETY YELLOW.

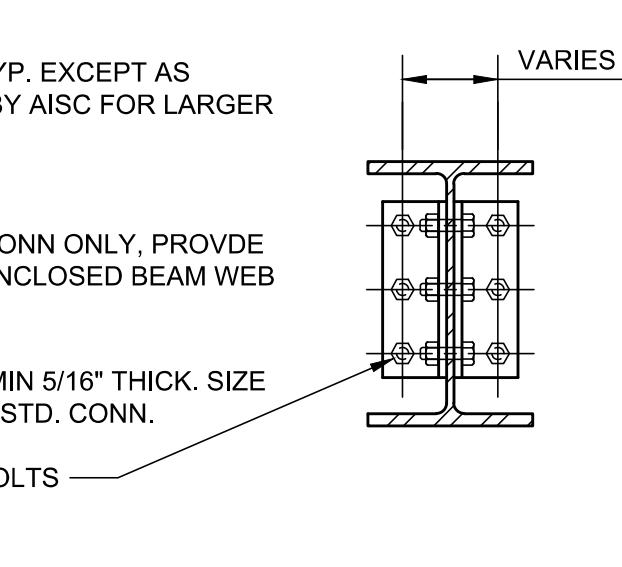


ALUM STAIR STRINGER TO CONCRETE PLATFORM
DETAIL E
NTS TYP

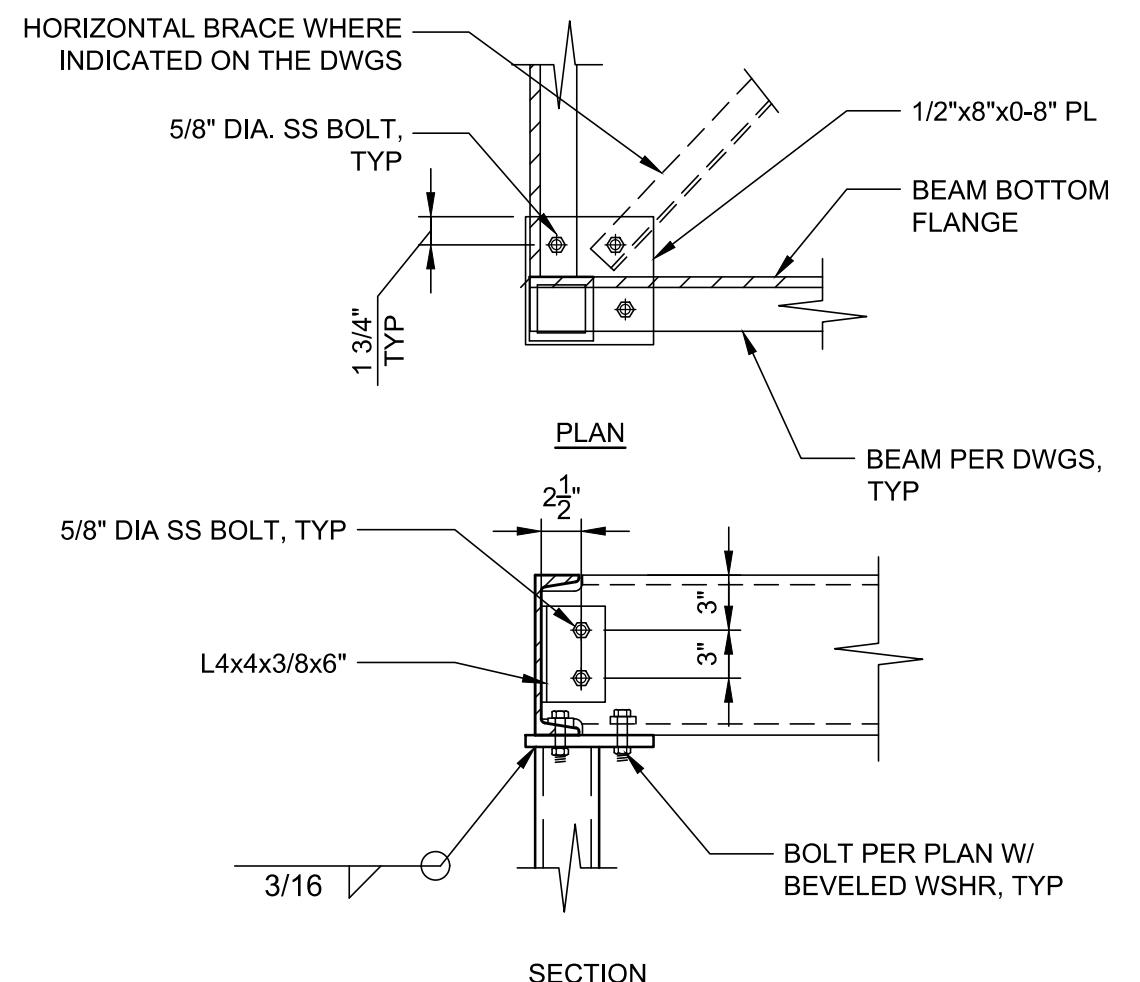


TYPICAL FRAMING CONNECTION
DETAIL F
NTS TYP

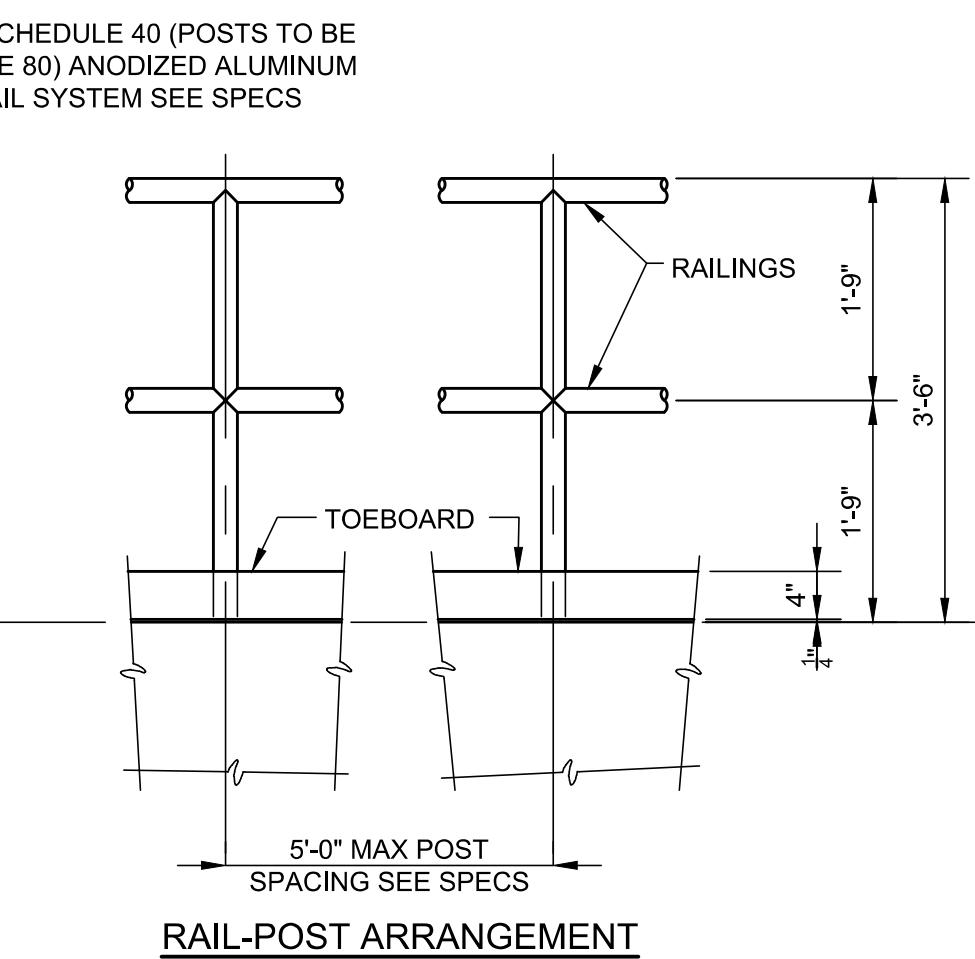
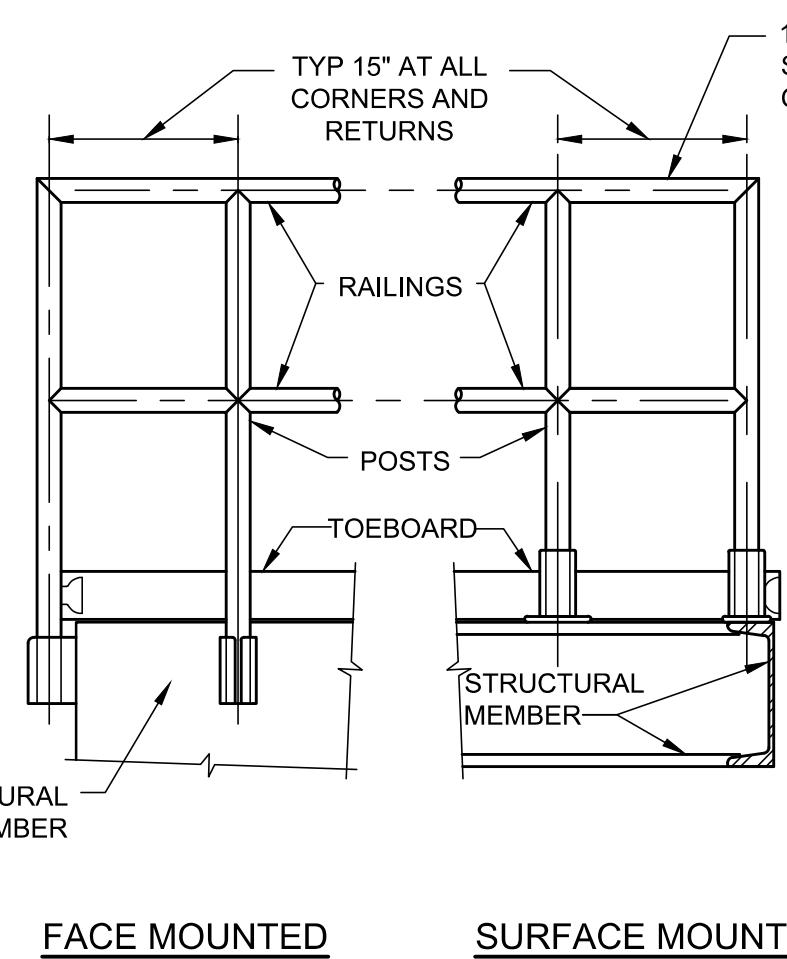
NOTES:



TYPICAL SHIP LADDER
DETAIL G
NTS S3



LANDING CONNECTION TO POST
DETAIL H
NTS TYP



GUARDRAILS
DETAIL J
NTS TYP



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RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
REVISION 1 - PLAN REVIEW COMMENTS	DSM 7/13/20
REVISION	BY DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #8661	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



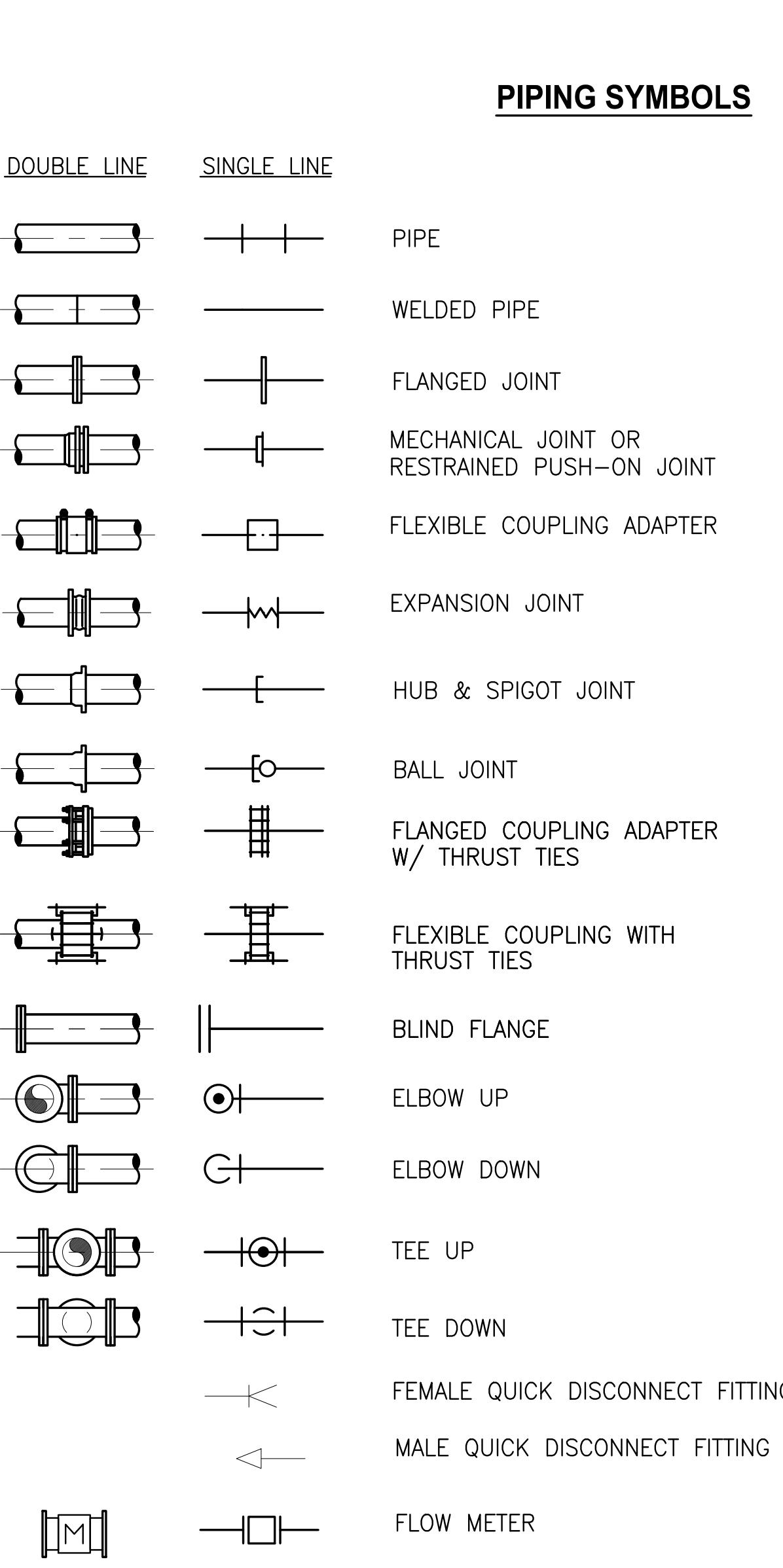
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MS WRF SLUDGE BLEND
TANK IMPROVEMENTS
TYPICAL DETAILS

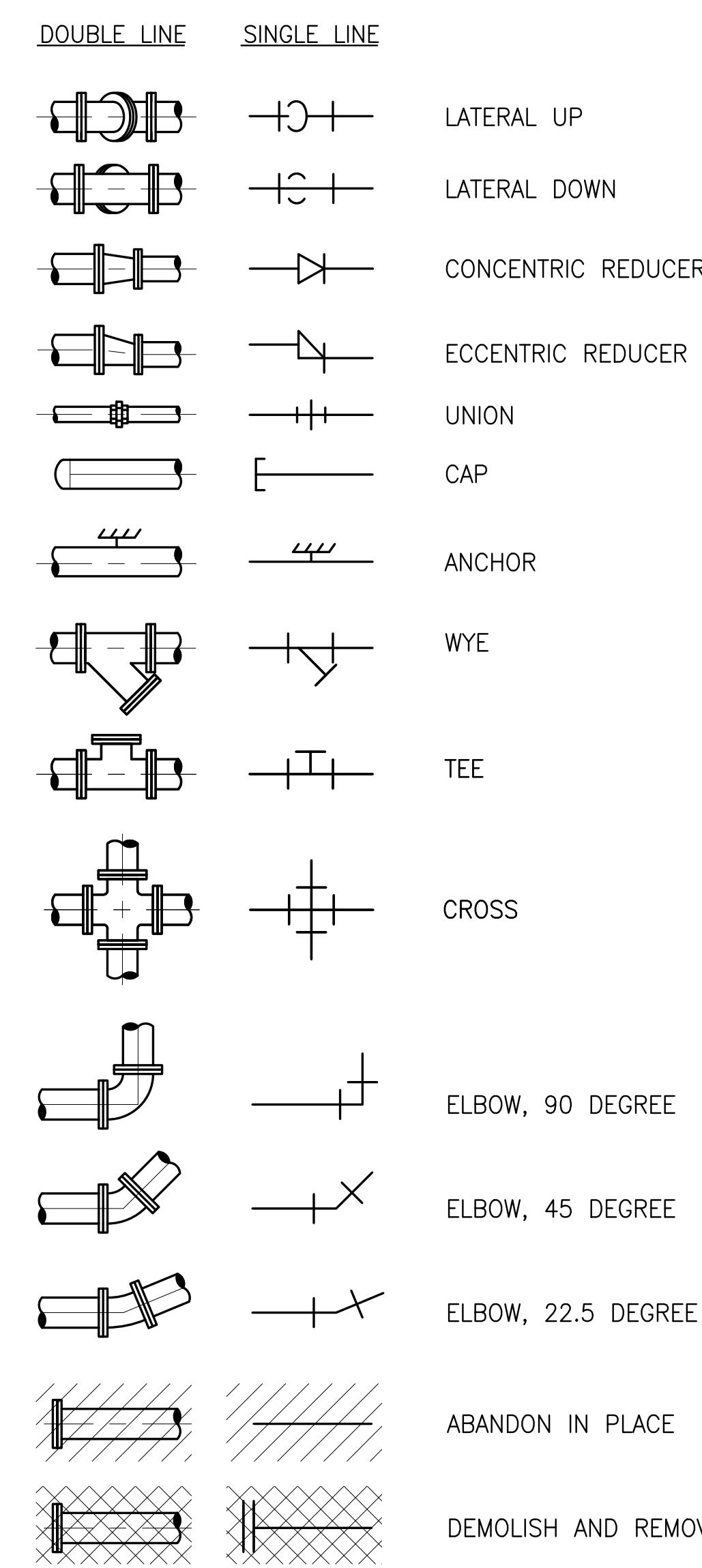
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	DAVID S. MORRIS, P.E. #74717		DATE



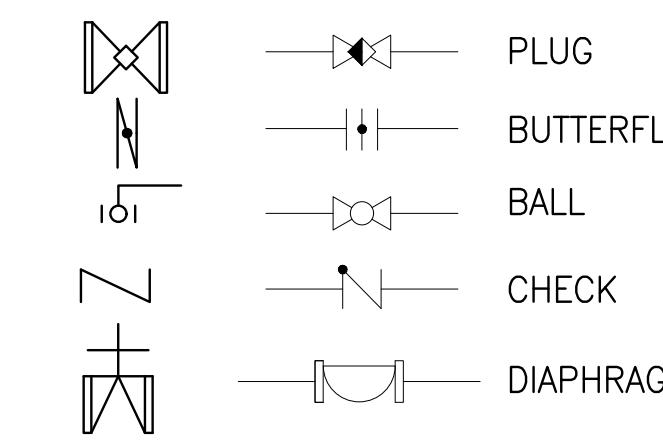
NOTE:
EXISTING PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS LIGHT-LINED AND/OR SCREENED. PROPOSED PIPE AND EQUIPMENT ARE SHOWN IN THE DRAWINGS AS HEAVY-LINED. ABOVE GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS SOLID-LINED. BELOW GRADE PIPE AND EQUIPMENT ARE SHOWN IN DRAWINGS AS DASHED-LINED. SEE BELOW EXAMPLES:

OR EXISTING PIPE (ABOVE GRADE)
 OR NEW PIPE (BELOW GRADE)
 REUSE EXISTING PIPE

MECHANICAL LEGEND



VALVE SYMBOLS



PIPE SCHEDULE

PIPE ABBREVIATION	FLOW STREAM IDENTIFICATION	PIPE/DUCT MATERIAL	PIPE/DUCT MATERIAL ABBREVIATION	SPECIFICATION REFERENCE	PIPE LINING	OPERATING PRESSURE (PSIG)	FIELD TEST PRESSURE (PSIG)	ABOVE GRADE PAINT SYSTEM	COLOR CODE	RESTRAINT SYSTEM NOTES
ADIG-1	ANAEROBICALLY DIGESTED SLUDGE	DUCTILE IRON	DI	15155	EPOXY	50	150	2/12	DARK BROWN	J,V,F
DR-1	DRAIN	POLYVINYL CHLORIDE	PVC	15290	N/A	0	25	51	BLACK	J,V,F
DWF-1	DEWATERING FEED	DUCTILE IRON	DI	15155	EPOXY	50	150	2/12	DARK BROWN	J,V,F
EFW-1	EFFLUENT FLUSHING WATER	PVC (SCH 80)	PVC	15290	N/A	50	150	51	PANTONE PURPLE	J,V,F
TSL-1	TRUCKED SLUDGE LINE	DUCTILE IRON	DI	15155	EPOXY	50	150	2/12	DARK BROWN	J,V,F

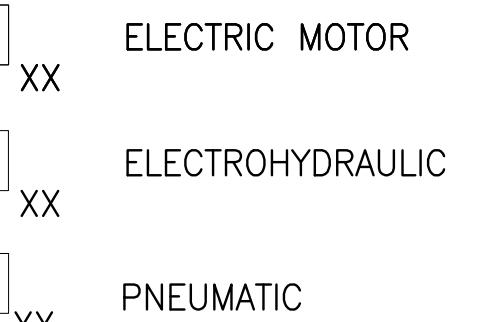
GENERAL NOTES:

- (1) COAT EXTERIOR OF BURIED PIPE PER SPECIFICATIONS
- (2) TEST LINES PER PROCEDURE IN SECTION 15144 UNLESS SPECIFIED AND/OR NOTED OTHERWISE
- (3) PAINT SYSTEM PRESENTED IN SECTION 09900
- (4) FLOW STREAM IDENTIFICATION SHALL BE ABOVE GRADE PIPING IN ACCORDANCE WITH SECTION 15075

CAST-IRON, NON-LUBRICATED, ECCENTRIC, MANUAL GEAR PLUG VALVE SCHEDULE

VALVE NO.	PIPE ABBV	TYPE	SIZE (INCHES)	PURPOSE	ACTUATION	NORMAL STATUS
TRUCK OFF-LOADING AND RECIRCULATION PUMP STATION						
101-V-1	TSL-1	4V920	4	ISOLATION VALVE FOR DRAIN OF TRUCK OFF-LOADING CONNECTION	HANDWHEEL	CLOSED
101-V-2	TSL-1	6V920	6	ISOLATION VALVE FOR TRUCK OFF-LOADING CONNECTION	HANDWHEEL	CLOSED
101-V-3	TSL-1	6V920	6	PUMP DISCHARGE ISOLATION VALVE FOR PUMP 400-P-1	HANDWHEEL	OPEN
101-V-4	TSL-1	8V920	8	SUCTION HEADER ISOLATION FOR RECIRCULATION	2" NUT	OPEN
DEWATERING FEED PUMP STATION						
102-V-1	DWF-1	8V920	8	ISOLATION VALVE FROM SUCTION MANIFOLD TO PUMP 100-P-1	HANDWHEEL	OPEN
102-V-2	DWF-1	8V920	8	ISOLATION VALVE FROM SUCTION MANIFOLD TO PUMP 100-P-2	HANDWHEEL	OPEN
102-V-3	DWF-1	8V920	8	ISOLATION VALVE FROM SUCTION MANIFOLD TO PUMP 100-P-3	HANDWHEEL	OPEN
102-V-4	DWF-1	6V920	6	PUMP DISCHARGE ISOLATION VALVE FOR PUMP 100-P-1	HANDWHEEL	OPEN
102-V-5	DWF-1	6V920	6	PUMP DISCHARGE ISOLATION VALVE FOR PUMP 100-P-2	HANDWHEEL	OPEN
102-V-6	DWF-1	6V920	6	PUMP DISCHARGE ISOLATION VALVE FOR PUMP 100-P-3	HANDWHEEL	OPEN
102-V-7	DWF-1	6V920	6	PUMP ISOLATION VALVE BETWEEN PUMP 100-P-1 AND 100-P-2	HANDWHEEL	VARIABLE
102-V-8	DWF-1	6V920	6	PUMP ISOLATION VALVE BETWEEN PUMP 100-P-1 AND 100-P-3	HANDWHEEL	VARIABLE
102-V-9	DWF-1	6V920	6	ISOLATION VALVE FOR BYPASS PUMP-OUT CONNECTION	HANDWHEEL	CLOSED
102-V-10	DWF-1	6V920	6	ISOLATION VALVE TO CENTRIFUGE	HANDWHEEL	OPEN
102-V-11	DWF-1	6V920	6	ISOLATION VALVE TO BELT FILTER PRESS	HANDWHEEL	OPEN
SLUDGE HOLDING TANK MISCELLANEOUS						
103-V-1	ADIG-1	8V920	8	ANAEROBIC DIGESTER ISOLATION VALVE FOR SLUDGE HOLDING TANK ENTRANCE	HANDWHEEL	OPEN
103-V-2	DWF-1	8V920	8	ISOLATION VALVE TO DIRECT ANAEROBIC DIGESTER DIRECTLY TO DEWATERING PUMPS	2" NUT	CLOSED
103-V-3	DWF-1	8V920	8	ISOLATION VALVE FOR SLUDGE HOLDING TANK DISCHARGE	SIDE ACTUATED 2" NUT	OPEN
103-V-4	PSL-1	6V920	6	ISOLATION VALVE BETWEEN EXISTING ANAEROBIC DIGESTER FEED AND EXISTING 6-INCH SLUDGE LINES	HANDWHEEL	CLOSED
103-V-5	ADIG-1	8V920	8	ISOLATION VALVE UPSTREAM OF ANAEROBIC DIGESTER FEED METER	HANDWHEEL	OPEN
103-V-6	ADIG-1	8V920	8	ISOLATION VALVE DOWNSTREAM OF ANAEROBIC DIGESTER FEED METER	HANDWHEEL	OPEN
103-V-7	ADIG-1	8V920	8	ISOLATION VALVE FOR ANAEROBIC DIGESTER FEED METER BYPASS	2" NUT	CLOSED

ACTUATOR SYMBOLS

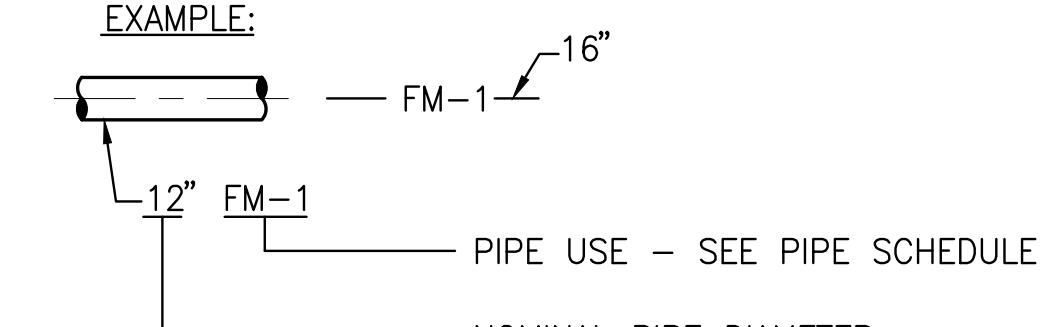


NOTE:
ON LOSS OF PRIMARY POWER
(PNEUMATIC, ELECTRICAL OR HYDRAULIC)
XX = FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

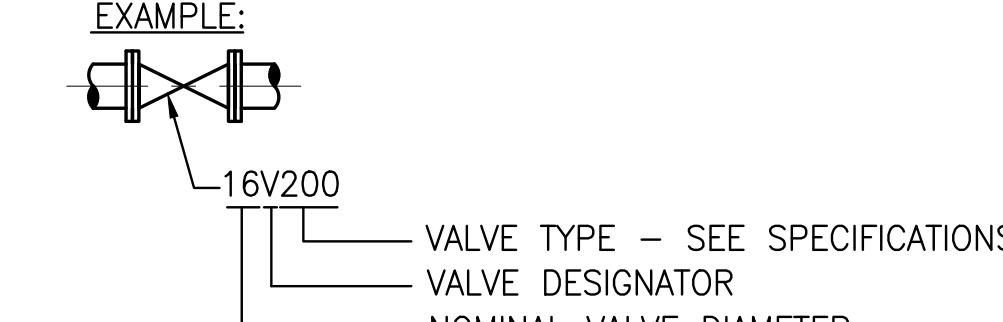
RESTRAINT NOTES:

- (J) RESTRAIN ALL BURIED PIPE JOINTS
- (F) RESTRAIN ALL BURIED PIPE FITTINGS
- (V) RESTRAIN ALL BURIED PIPE VALVES

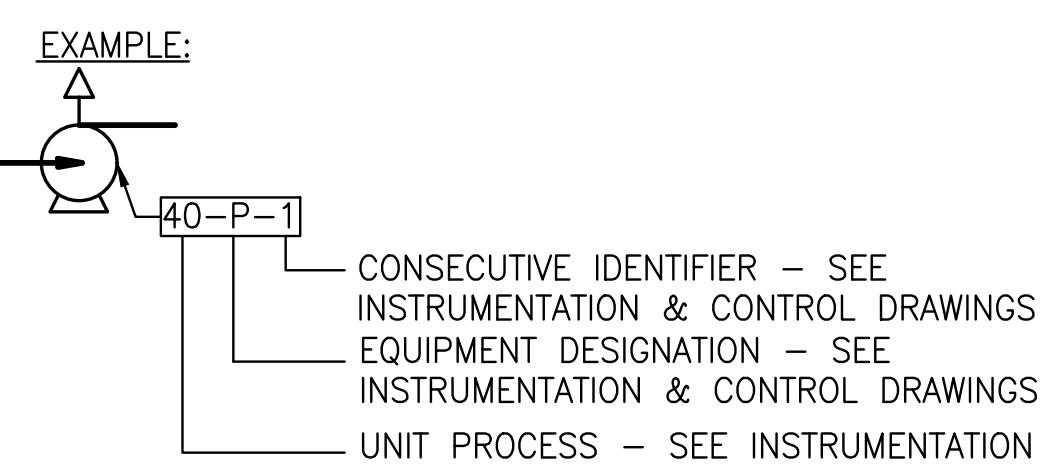
PIPING DESIGNATION



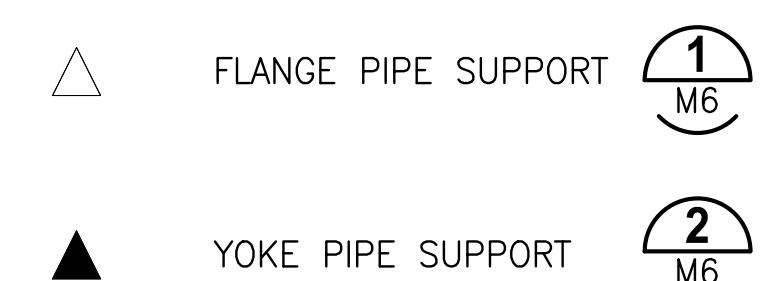
VALVE DESIGNATION



EQUIPMENT DESIGNATION



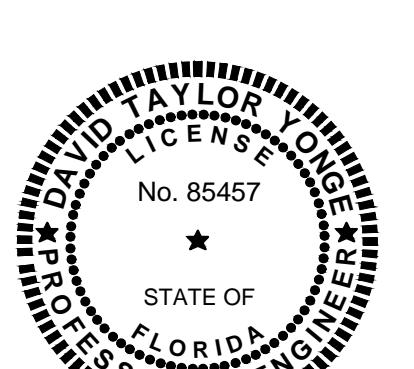
PIPE SUPPORT SYMBOLS



DEMOLITION



DEMOLITION



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY DAVID TAYLOR YONGE, PE ON THE DATE ADJACENT TO THE SEAL.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

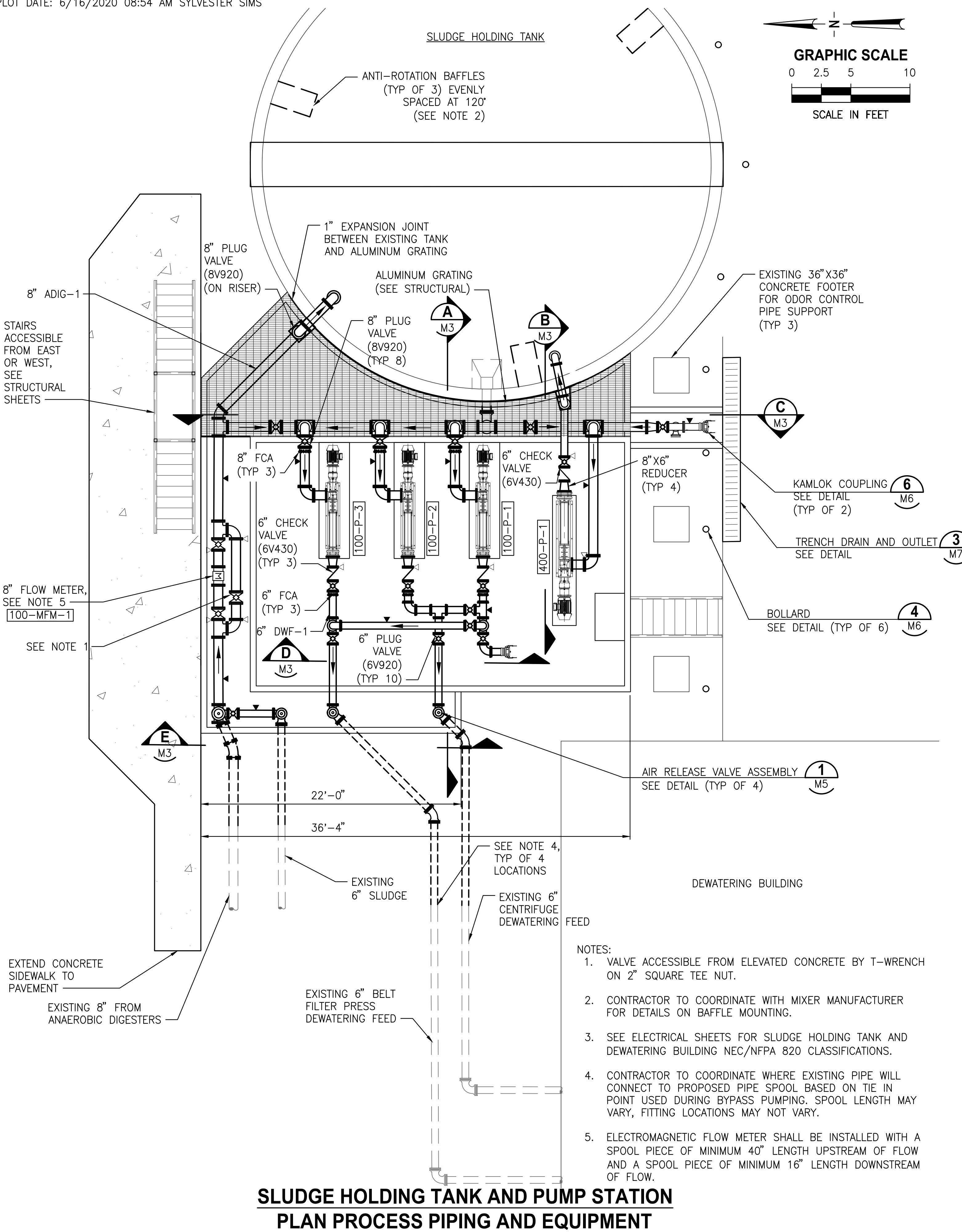
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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(800) 424-8110
24 HRS
BEFORE YOU EXCAVATE

CERTIFICATE OF AUTHORIZATION #1841
7320 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
MECHANICAL NOTES, LEGEND,
AND PIPE SCHEDULE

DWG



RECORD DRAWINGS	DRAWN BY:
SURVEYED BY:	
REVIEWED BY:	
APPROVED BY:	

PROJECT ENGINEER DATE
 CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #866811 DATE
 DRAWN BY: DATE
 REVISION BY: DATE

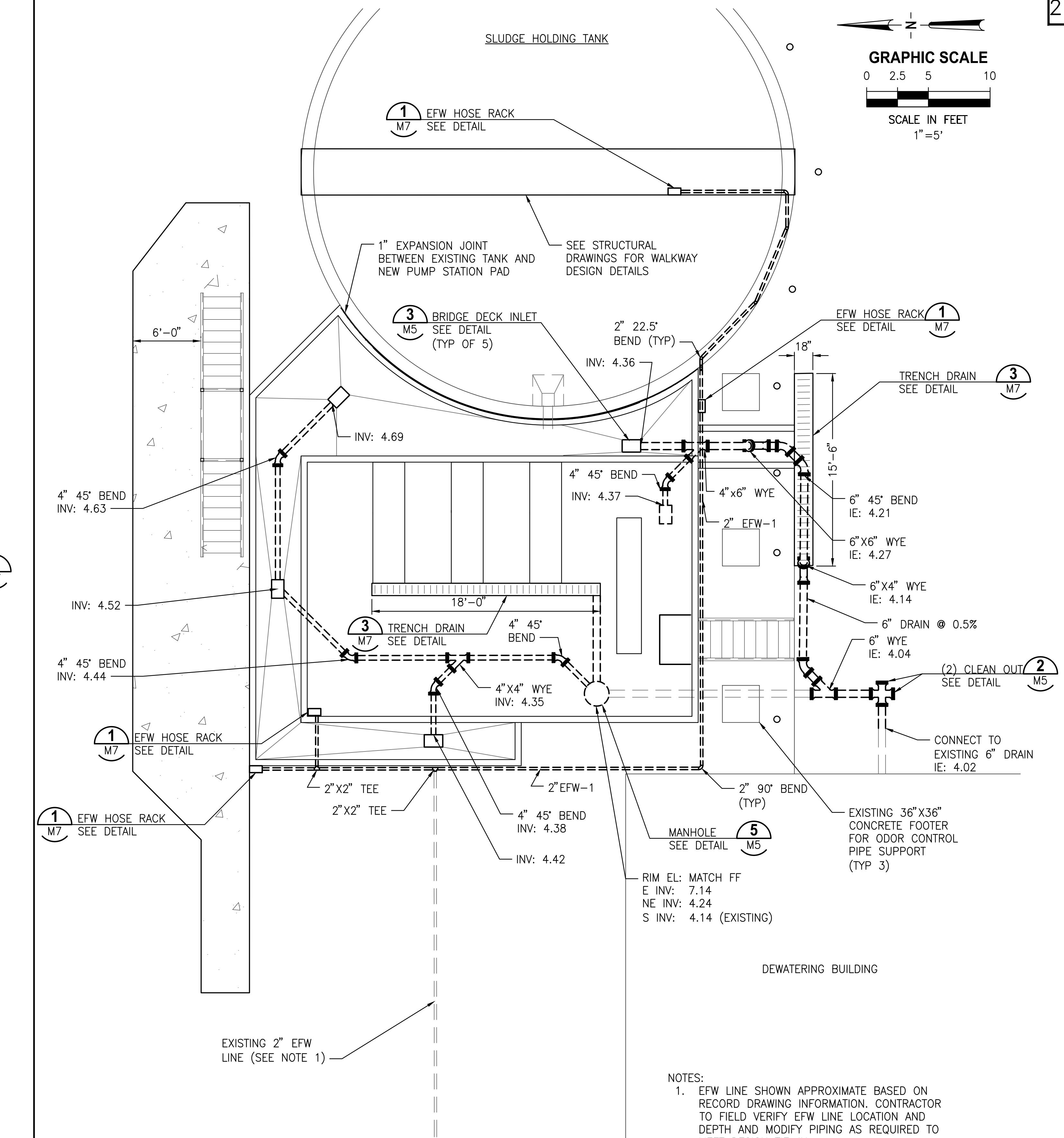
CITY OF CLEARWATER, FLORIDA
 ENGINEERING DEPARTMENT
 100 S. MYRTLE AVE.
 CLEARWATER, FL 33756



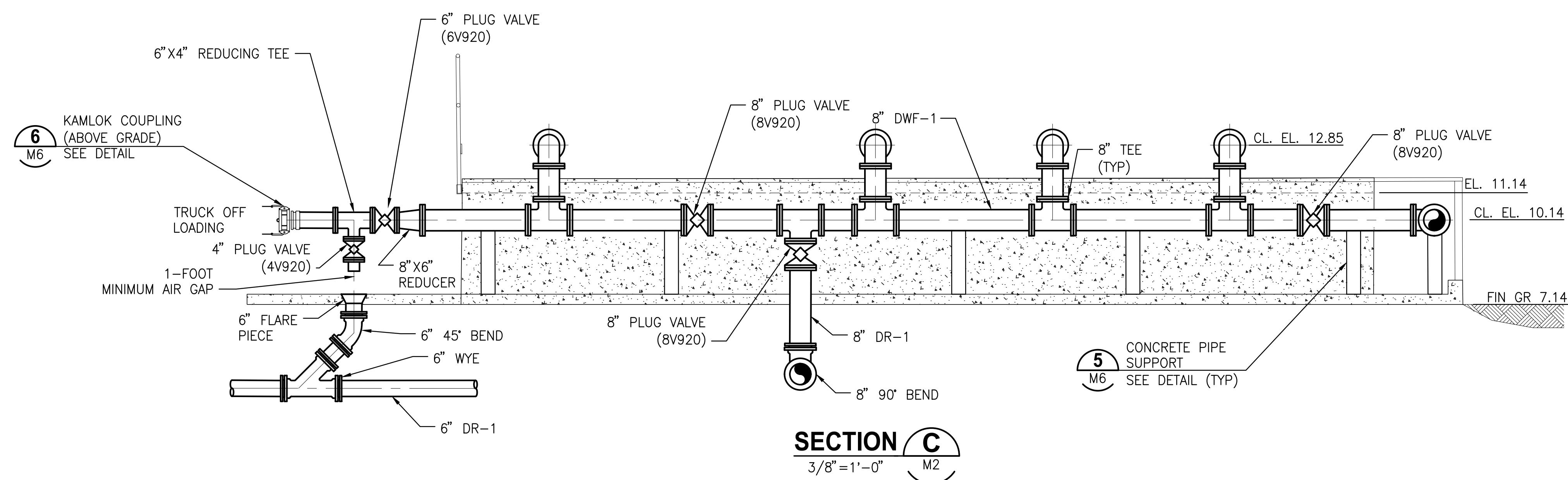
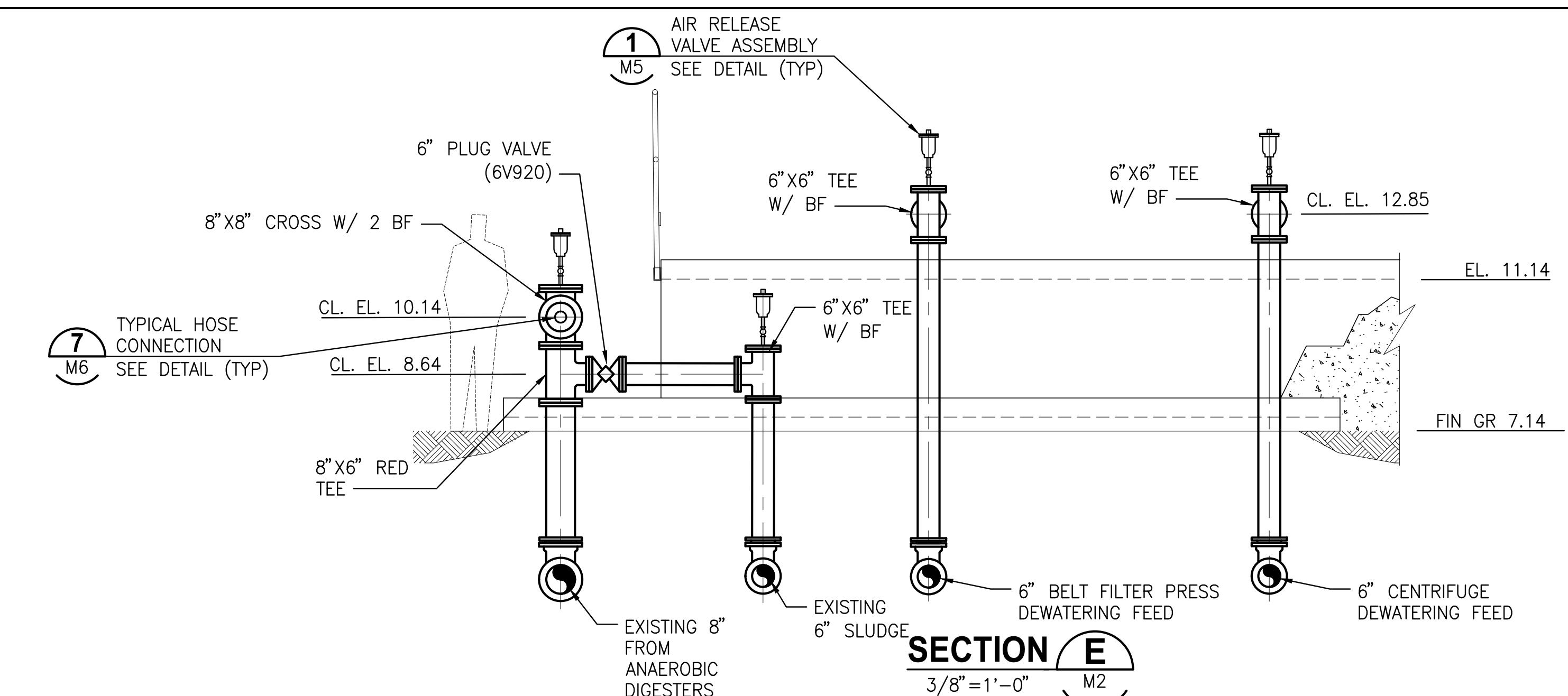
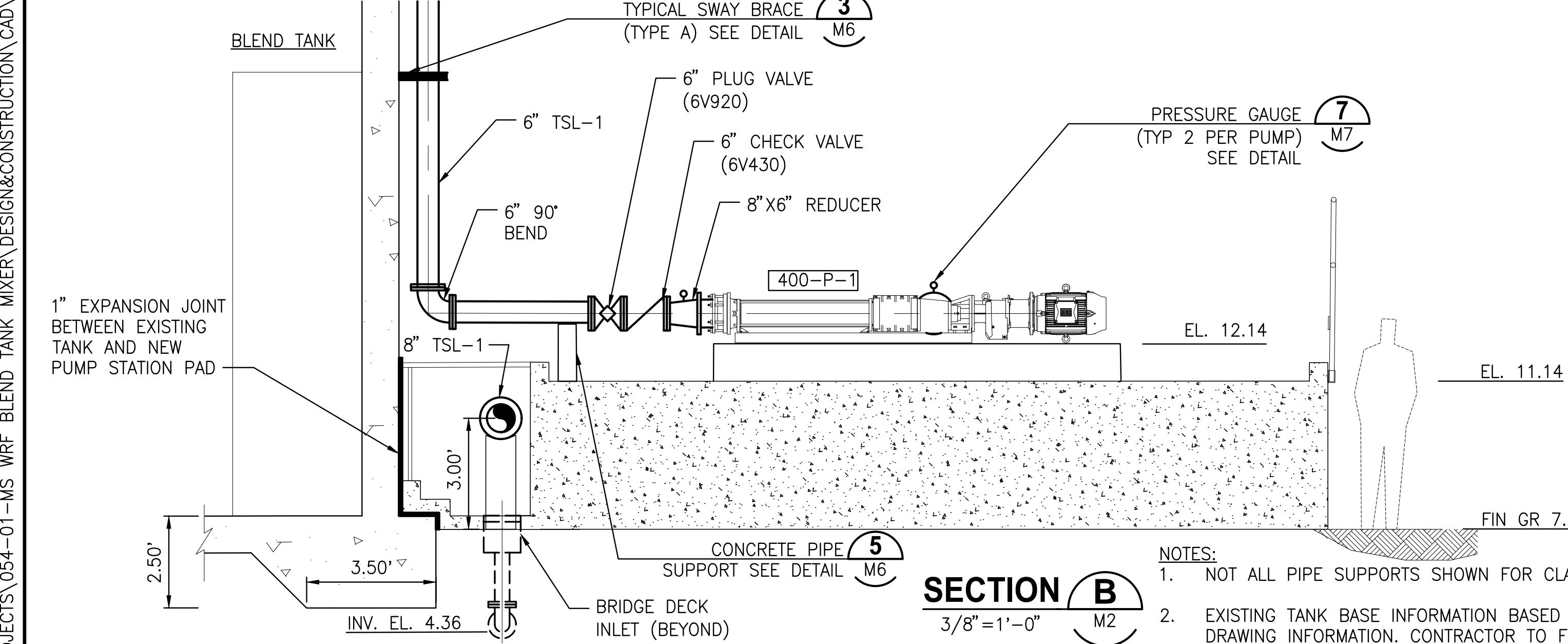
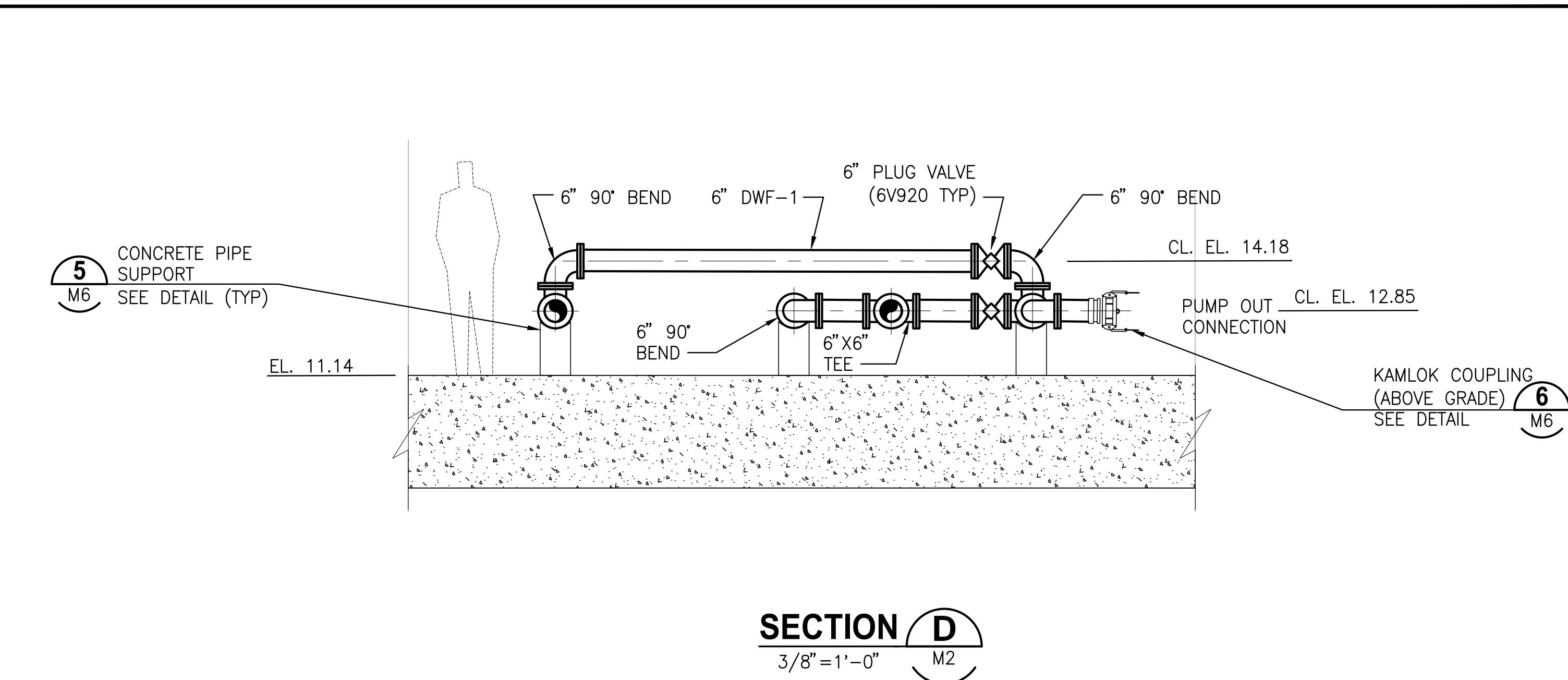
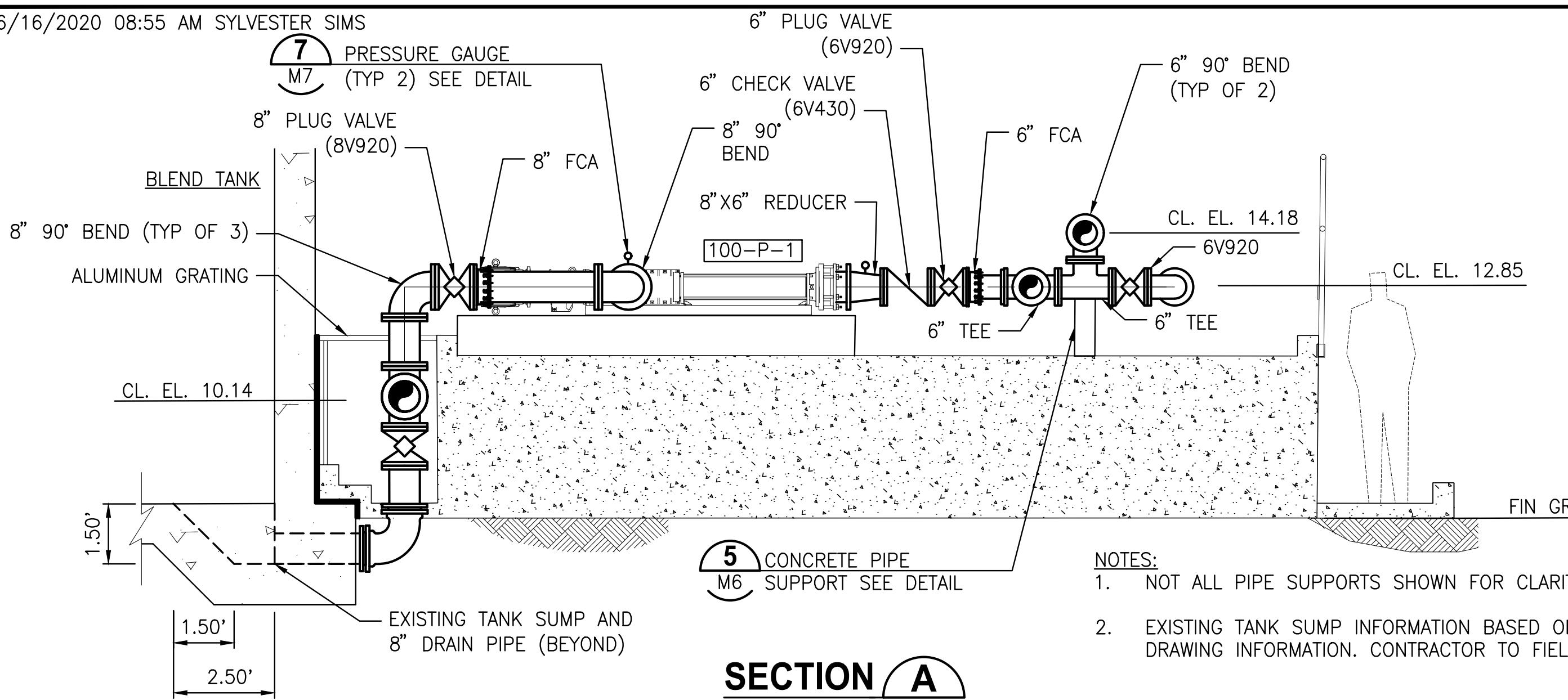
JonesEdmunds
 CERTIFICATE OF AUTHORIZATION #1841
 730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
 324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

**MS WRF BLEND TANK
 MIXER PROJECT
 SLUDGE HOLDING TANK AND
 PUMP STATION PLANS**

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
0372005401-M02.dwg			VERT.
CONTRACT NO.:	DATE DRAWN:	DRAWN BY:	HORIZ. NONE
18-0057-UT	JUNE 2020	SMENARD	
JOB NO.:	DESIGNED BY:	CHECKED BY:	SHEET NO.:
03720-054-01	DYONGE	TFRIEDRICH	M2
APPROVED FOR CONSTRUCTION	DAVID T. YONGE, P.E. # 85457		DATE



PLOT DATE: 6/16/2020 08:55 AM SYLVESTER SIMS



RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE
REVISION	BY DATE

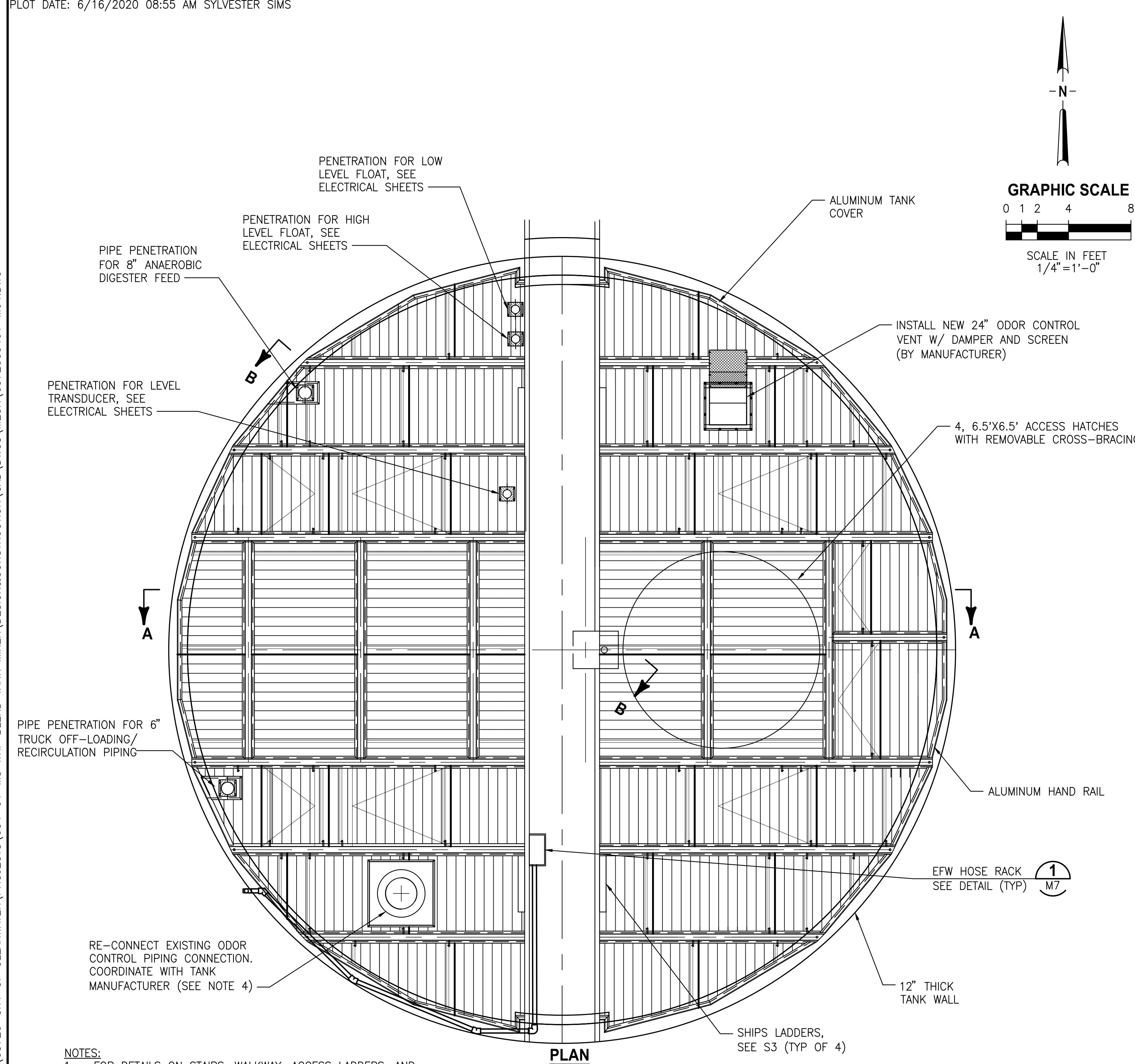
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



MS WRF BLEND TANK
MIXER PROJECT
SLUDGE PUMP STATION
SECTIONS

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
0372005401-M03.dwg			
CONTRACT NO.:	DATE DRAWN:	DRAWN BY:	VERT.
18-0057-UT	JUNE 2020	SMENARD	
JOB NO.:	DESIGNED BY:	CHECKED BY:	SHEET NO.: M3
03720-054-01	DYONGE	TFRIEDRICH	
APPROVED FOR CONSTRUCTION			
	DAVID T. YONGE, P.E. # 85457		DATE

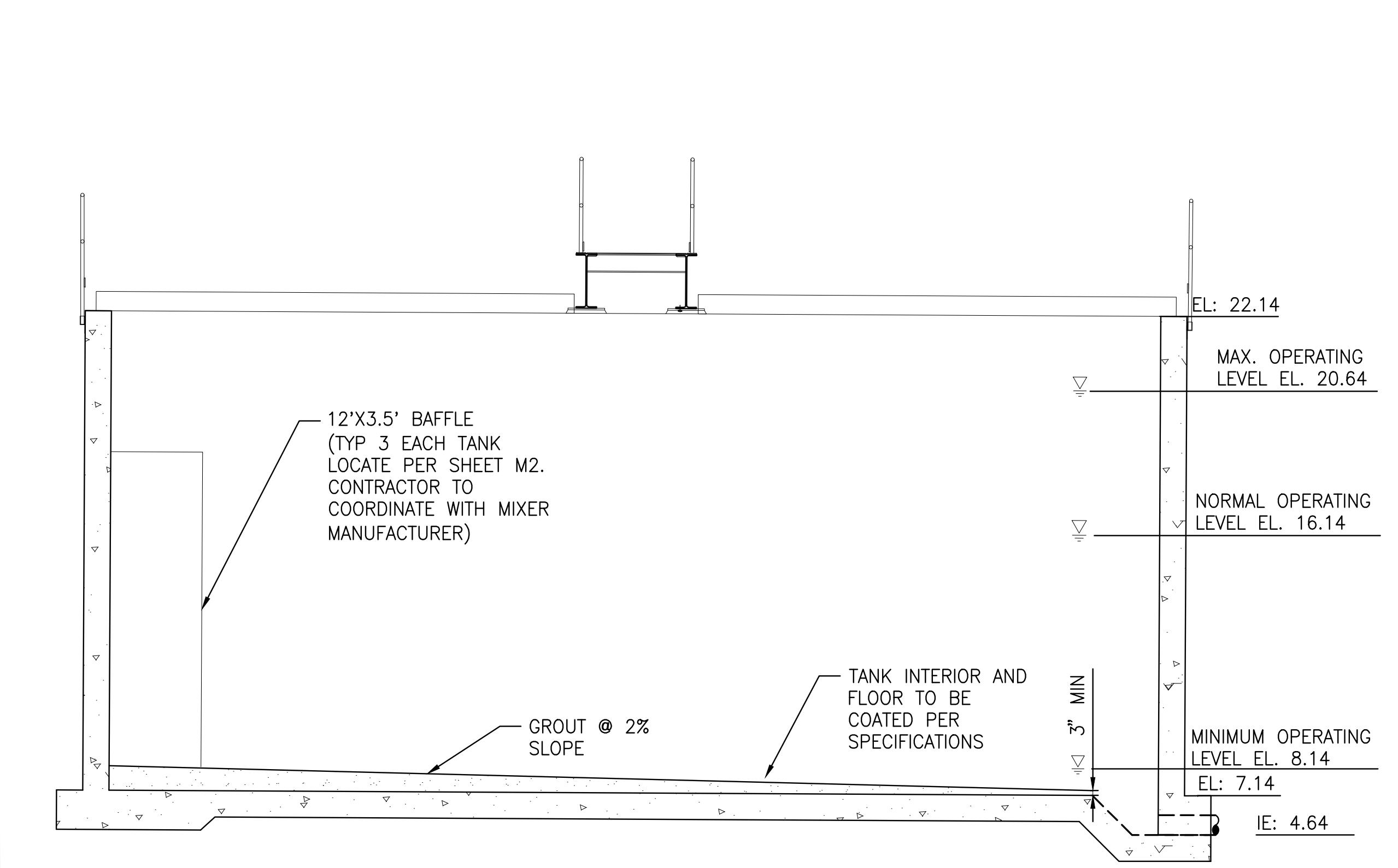
[LAST SAVED: 3/19/2020 10:26 AM SMENARD DWG LOCATION:\0372005401-M04.DWG WRF BLEND TANK MIXER\ DESIGN&CONSTRUCTION\ CAD\ DWGS\ MECH\ 0372005401-M04.DWG]



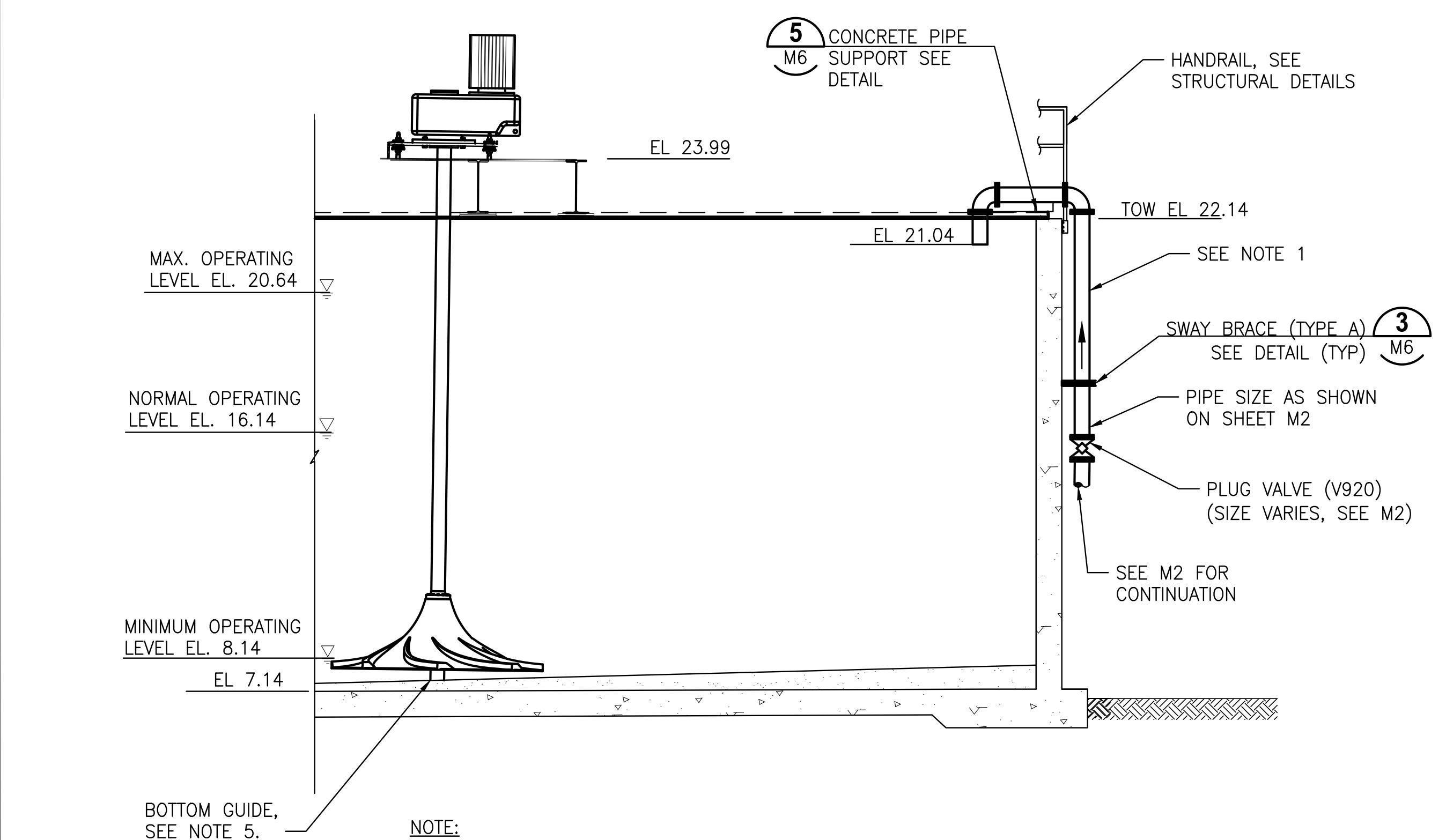
NOTES:

1. FOR DETAILS ON STAIRS, WALKWAY, ACCESS LADDERS, AND TANK COVER, SEE STRUCTURAL SHEETS.
2. CONTRACTOR TO COORDINATE WITH MIXER MANUFACTURER FOR DETAILS ON MIXER BAFFLE MOUNTING.
3. CONTRACTOR TO COORDINATE ALL PIPE PENETRATIONS WITH COVER MANUFACTURER.
4. CONTRACTOR TO PROVIDE ADDITIONAL FRP PIPING TO RECONNECT EXISTING FRP ODOR CONTROL DUCT PER SPECIFICATION 15860.
5. CONTRACTOR TO COORDINATE WITH MIXER MANUFACTURER ON BOTTOM GUIDE LOCATION AND INSTALLATION.
6. CONTRACTOR SHALL PROVIDE STRUCTURAL CALCULATIONS FOR COVER. CALCULATIONS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF FLORIDA.

SLUDGE HOLDING TANK



SECTION A-A



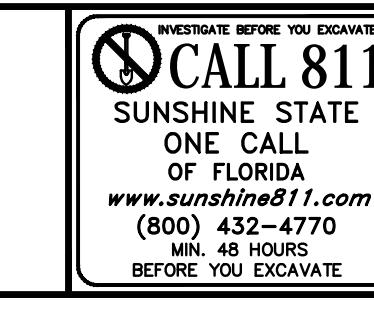
SECTION B-B

NOTE:

1. GENERAL WALL RISER PIPING SHOWN. WALL PIPING DETAILS, VALVES, SUPPORTS, AND LAYOUT TYPICAL FOR ALL WALL RISER PIPES.

RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
PROJECT ENGINEER	
APPROVED BY:	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



JonesEdmunds

CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-07

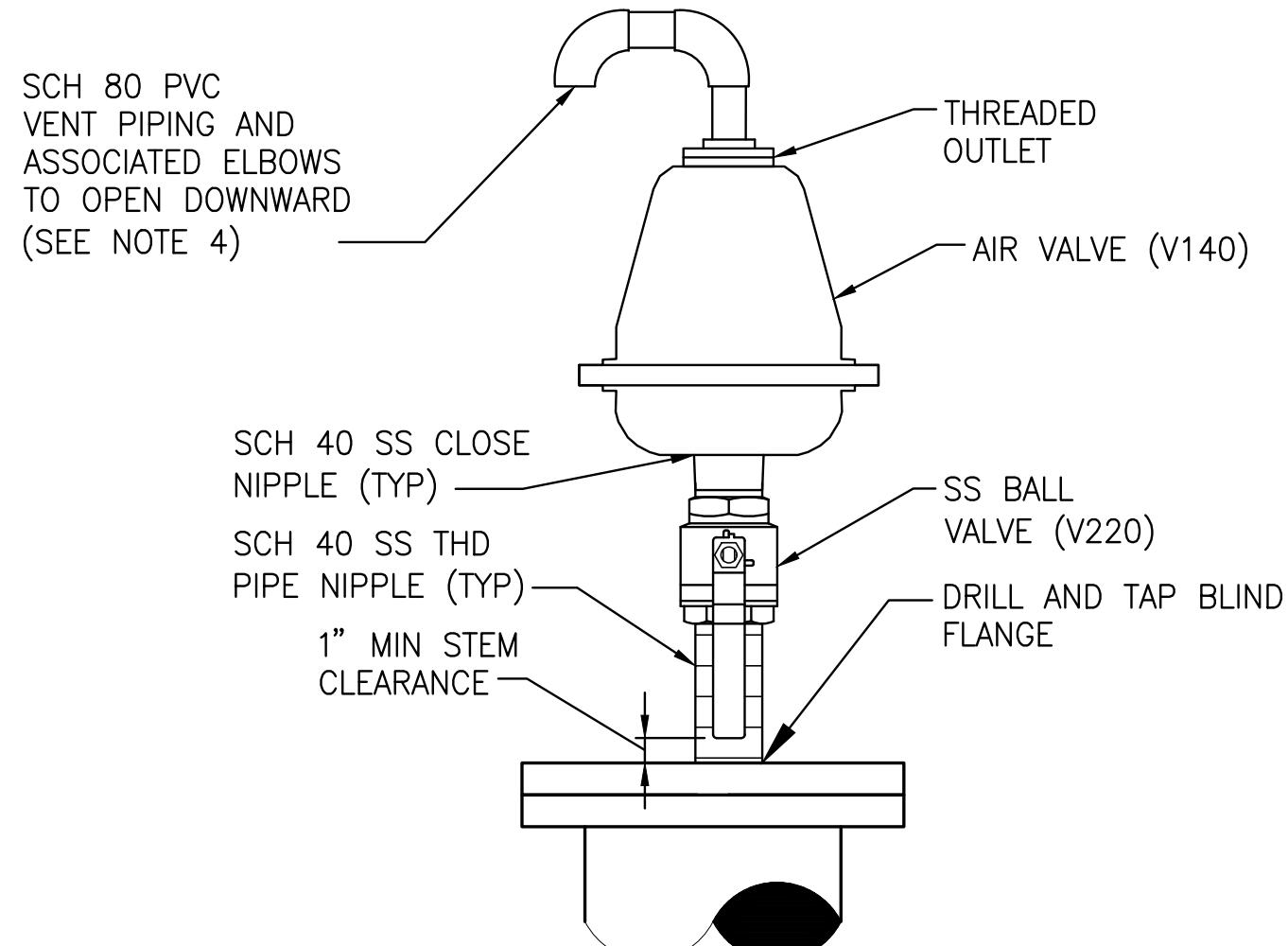
MS WRF BLEND TANK MIXER PROJECT

SLUDGE TANK PLAN AND SECTION

DWG NAME: 0372005401-M04.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. _____
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	SHEET NO.: M4
APPROVED FOR CONSTRUCTION			
		DAVID T. YONGE, P.E. # 85457	DATE

PLOT DATE: 6/16/2020 08:55 AM SYLVESTER SIMS

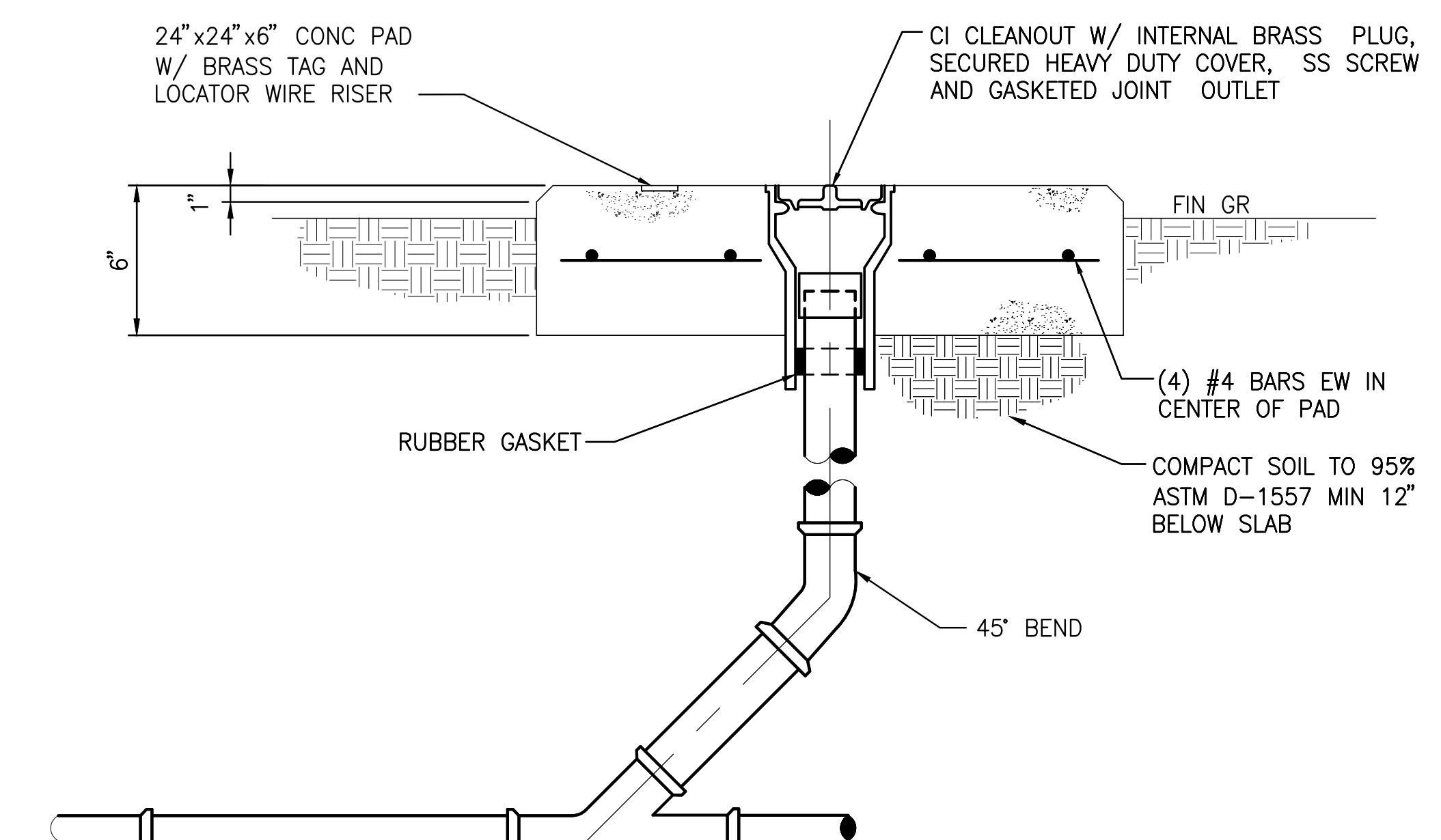
DWG LOCATION:\03720-CITY OF CLEARWATER\PROJECTS\054-01-MS WRF BLEND TANK MIXER\DESIGN&CONSTRUCTION\CAD\DWGS\MECH\0372005401-M05.DWG



- NOTES:
1. SEE DRAWINGS FOR AIR VALVE INLET DIAMETER.
 2. BALL VALVE AND NIPPLES SHALL HAVE THE SAME DIAMETER AS THE AIR VALVE INLET.
 3. VERIFY SIZE OF VALVE PRIOR TO ORDERING ANCILLARY PARTS, DRILLING OR TAPPING.
 4. UNLESS NOTED OTHERWISE, EXTEND VENT PIPING TO 6" AFF. PROVIDE SS BUG SCREEN, AND UNI-STRUT SUPPORT.

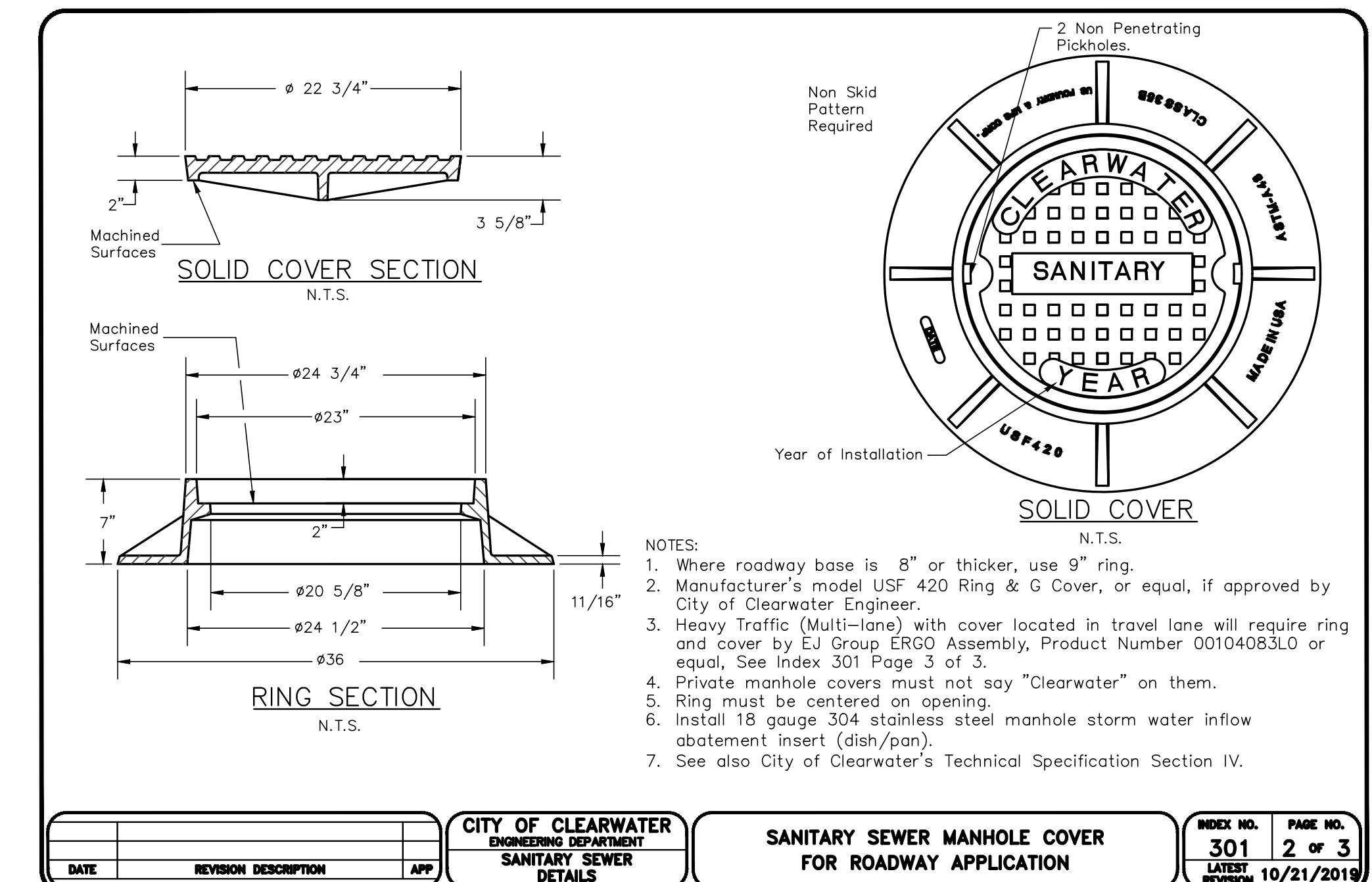
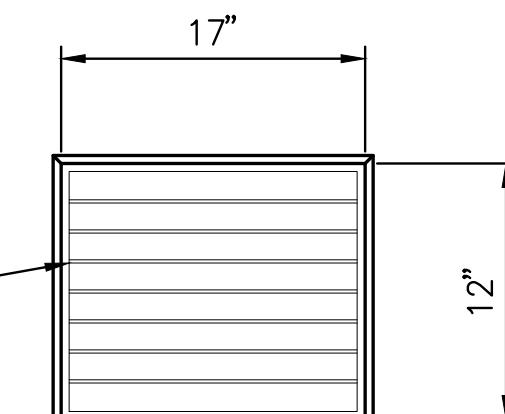
AIR RELEASE VALVE ASSEMBLY DETAIL 1

NTS

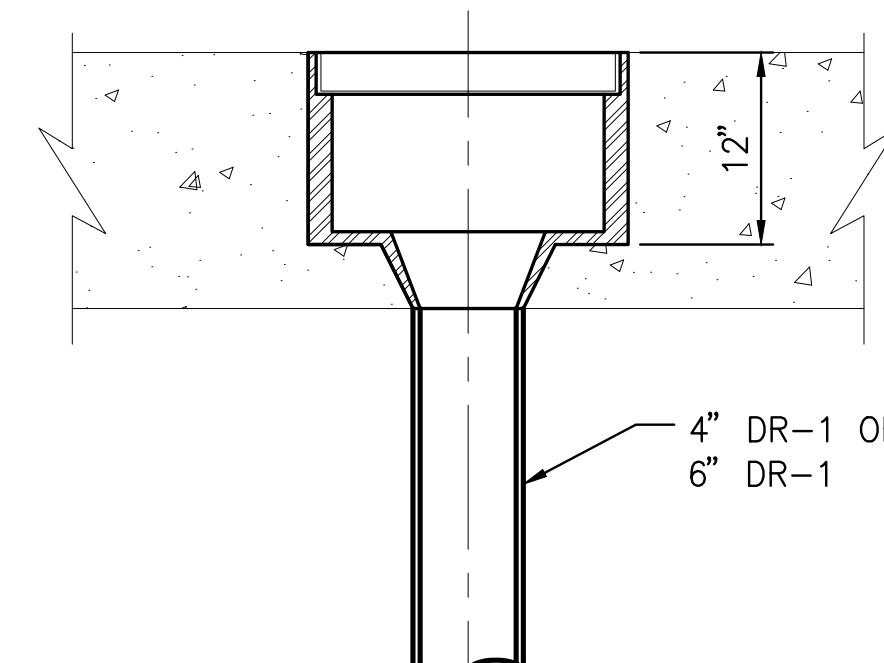


GRAVITY CLEANOUT DETAIL 2

NTS

NEENAH R-4016-B
TYPE A OR
APPROVED EQUAL

PLAN VIEW



SECTION VIEW

BRIDGE DECK INLET DETAIL 3

NTS

TIE ROD SCHEDULE

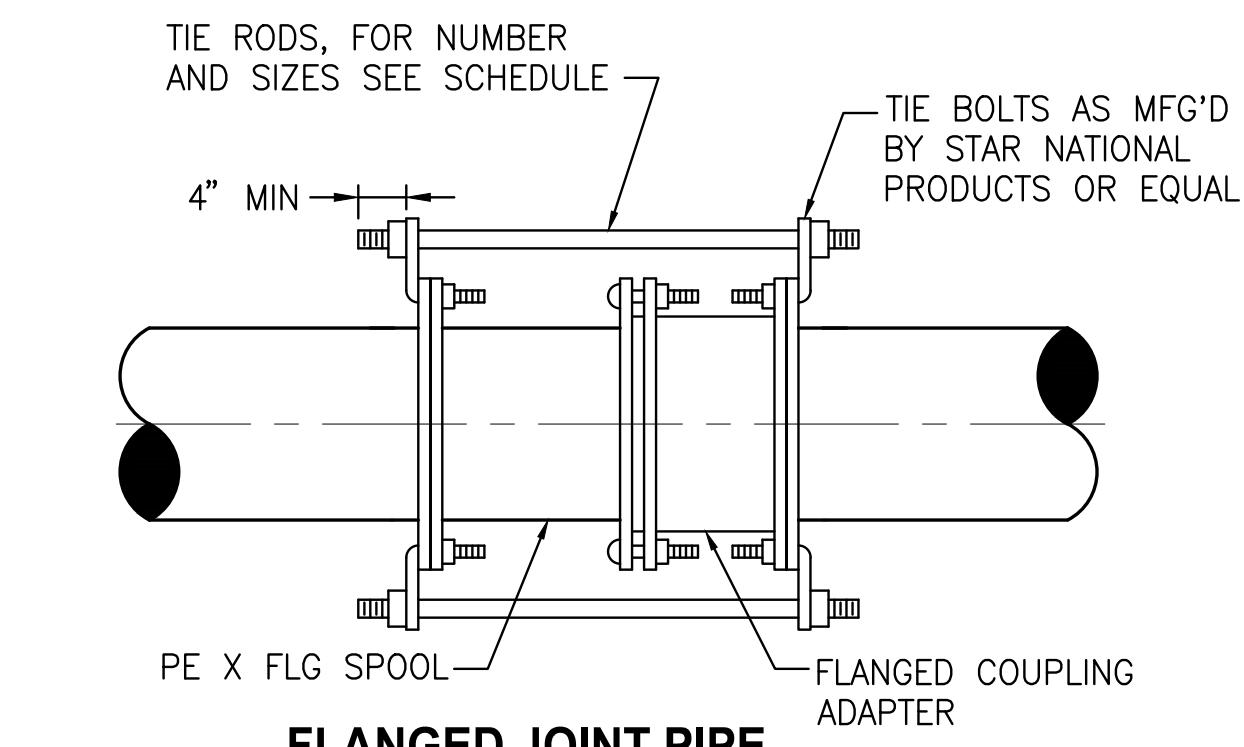
PIPE DIAMETER (IN)	TEST PRESSURE	25 PSI		50 PSI		100 PSI	
		TIE RODS (IN)	NO REQ'D	TIE RODS (IN)	NO REQ'D	TIE RODS (IN)	NO REQ'D
6	3/16	—	—	—	—	5/8	2
8	3/16	—	—	—	—	5/8	2
10	3/16	—	—	—	—	5/8	2
12	3/16	5/8	2	5/8	2	5/8	2
14	3/16	5/8	2	5/8	2	3/4	2
16	3/16	5/8	2	5/8	2	3/4	2
18	1/4	5/8	2	5/8	2	7/8	2
20	1/4	5/8	2	3/4	2	7/8	2
22	1/4	5/8	2	3/4	2	3/4	4
24	1/4	5/8	2	3/4	2	7/8	4
30	1/4	5/8	4	3/4	4	7/8	6
36	1/4	3/4	4	7/8	4	1	6
42	1/4	3/4	4	1	4	1	8
48	5/16	7/8	4	7/8	8	1	10

TIE RODS, FOR NUMBER AND SIZES SEE SCHEDULE

4" MIN

PE X PE SPOOL

MECHANICAL JOINT PIPE



TYPICAL THRUST TIE ROD DETAIL 4

NTS

SEE

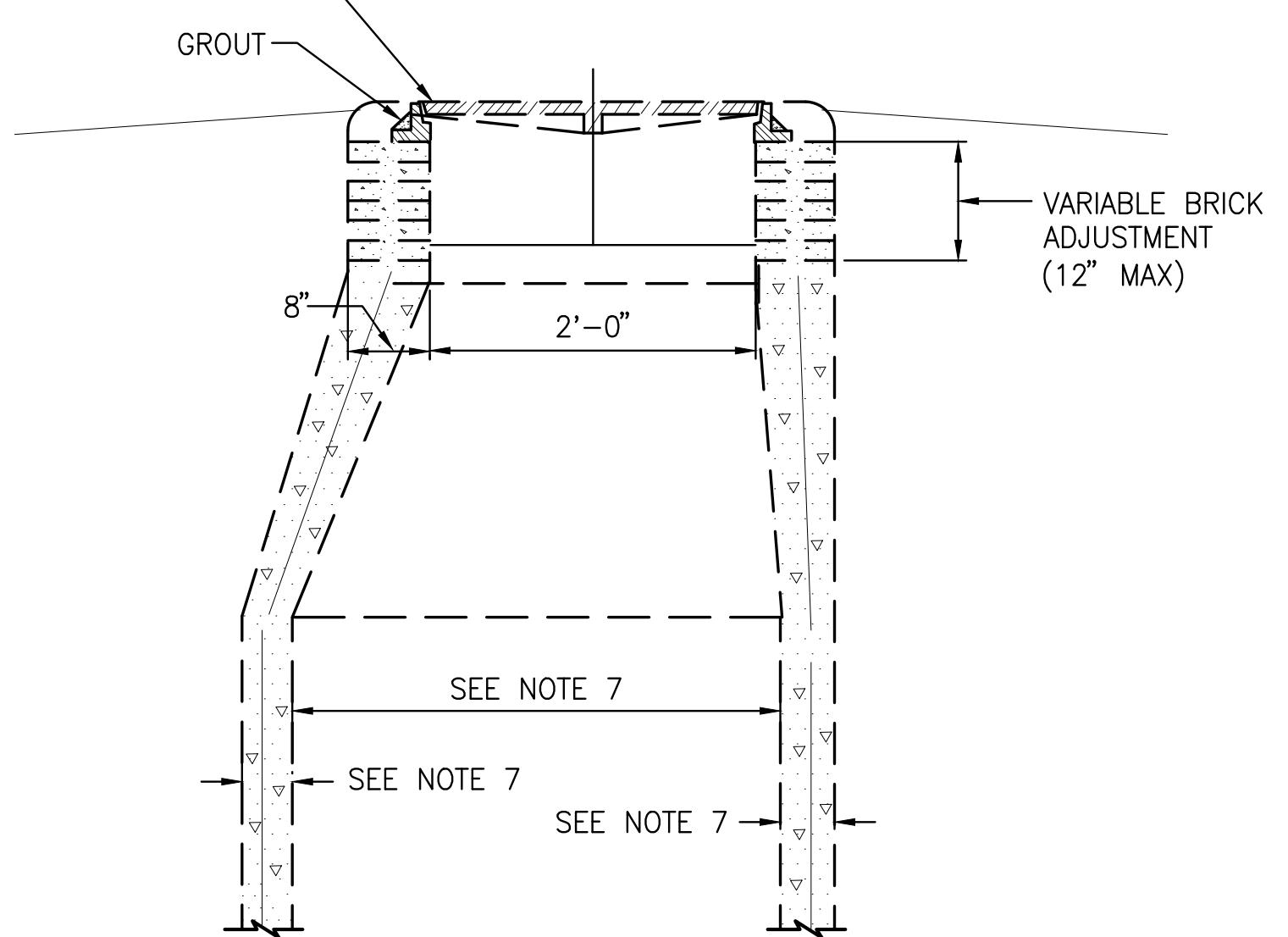
NOTE 7

SEE

NOTE 7

SEE

NOTE 7

MANHOLE FRAME AND COVER
SEE DETAIL THIS SHEET

- NOTES:
1. PRECAST CONCRETE TYPE II 4000 P.S.I.
 2. "RAMNEK" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH WIDTH AT LEAST 1/2 THE WALL THICKNESS) WITH GROUT INSIDE AND OUTSIDE.
 3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
 4. LIFT HOLES ARE PERMITTED AND SHALL BE SEALED AFTER PLACEMENT OF RISER.
 5. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
 6. CONNECTIONS AND GROUTING IN MANHOLE NOT SHOWN. SEE DRAWINGS FOR PIPE SIZES, LOCATIONS AND INVERTS.
 7. AS REQUIRED BY PRECAST MANUFACTURER.

MANHOLE DETAIL 5

NTS

RECORD DRAWINGS

SURVEYED BY:

DRAWN BY:

REVIEWED BY:

APPROVED BY:

PROJECT ENGINEER

DATE

REVISION

BY

DATE

REVISION

BY

DATE

CITY OF CLEARWATER, FLORIDA

ENGINEERING DEPARTMENT

100 S. MYRTLE AVE.

CLEARWATER, FL 33756

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OF FLORIDA

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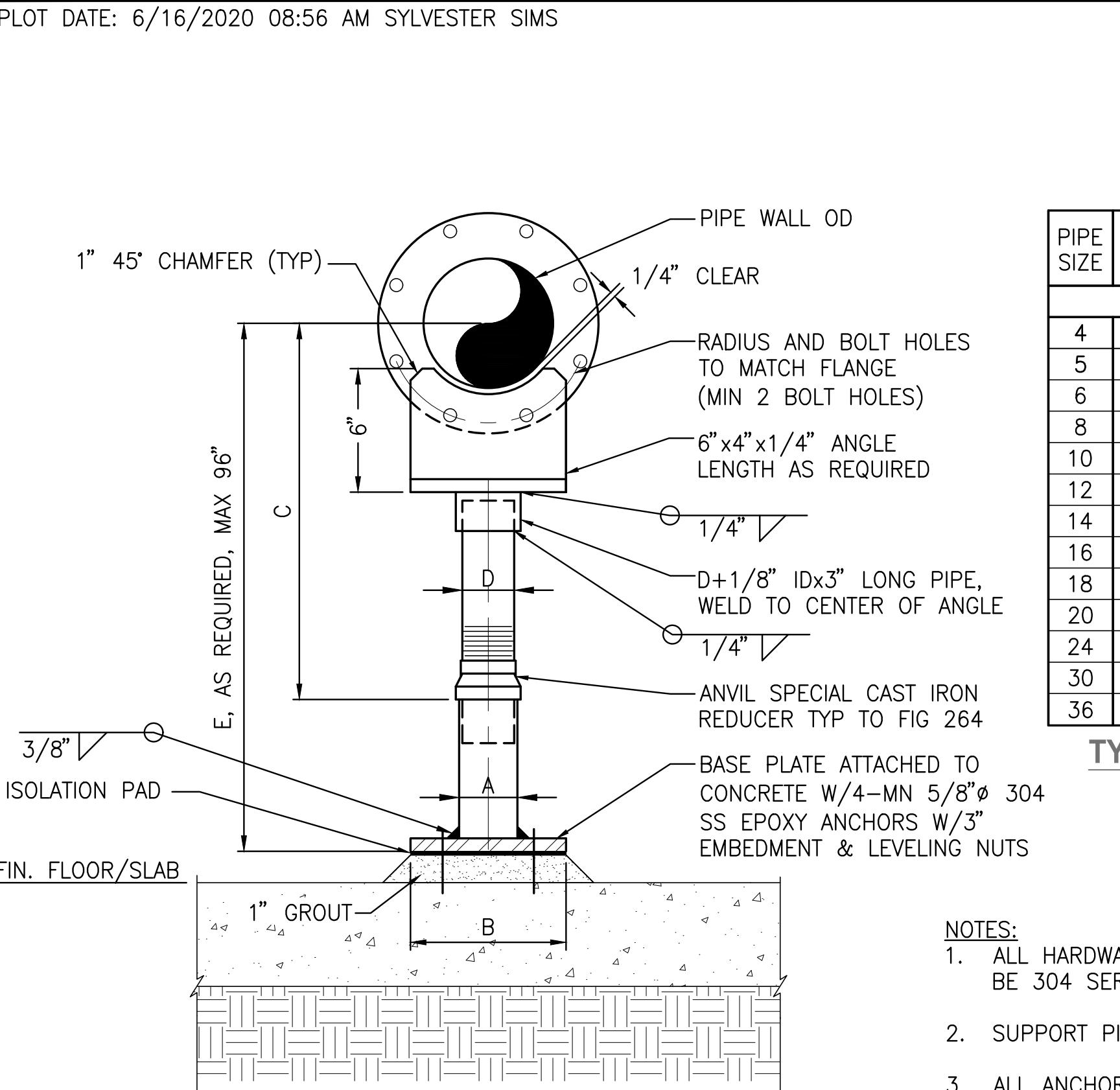
MAY 48 HOURS

BEFORE YOU EXCAVATE



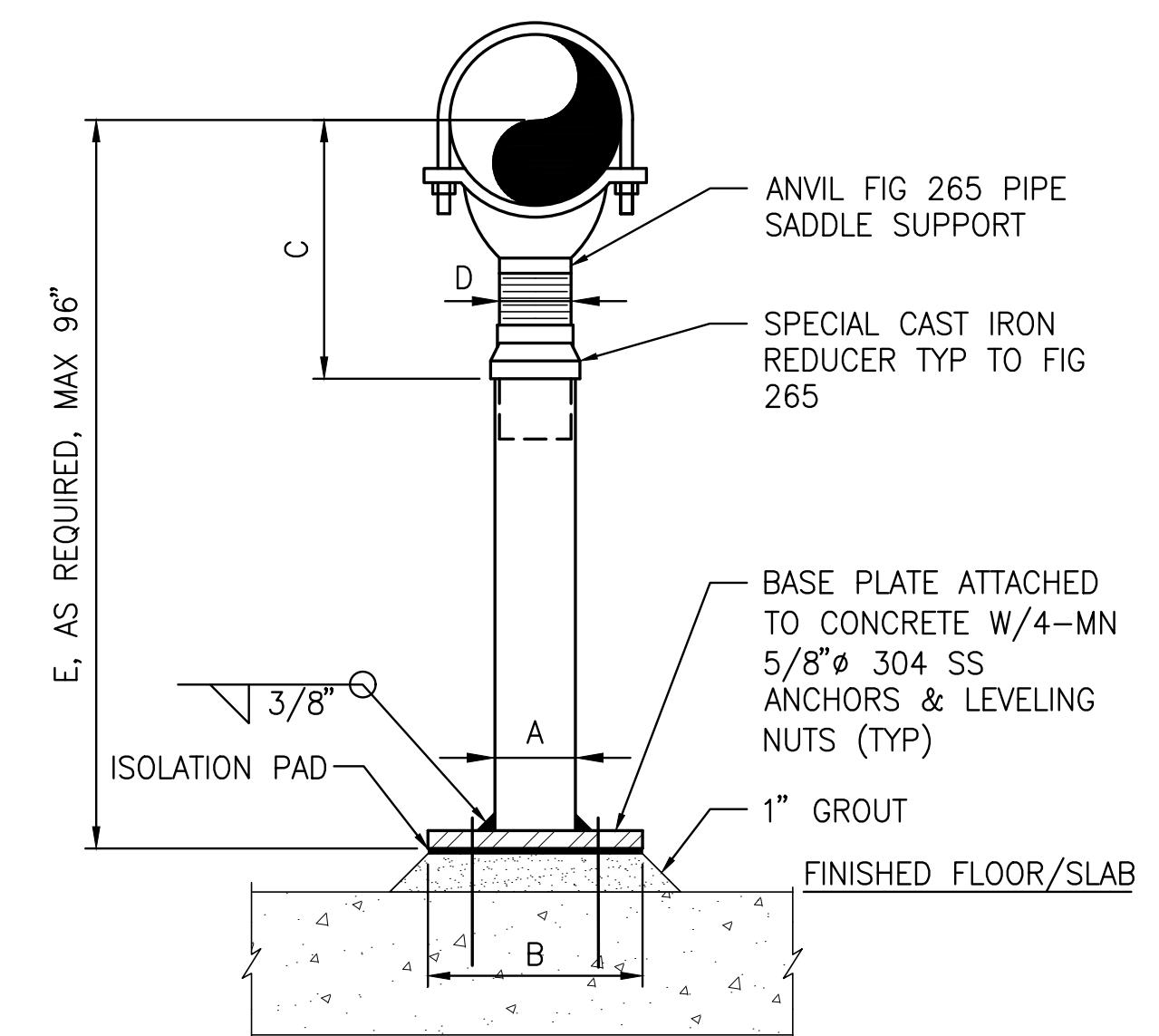
MS WRF BLEND TANK MIXER PROJECT MECHANICAL DETAILS (1)

DWG NAME: 0372005401-M05.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 18-0057-UT	DATE DRAWN:	DRAWN BY:	
JUNE 2020		SMENARD	
JOB NO.: 03720-054-01	DESIGNED BY:	CHECKED BY:	
DYONGE	T.FRIEDRICH	sheet no.: M5	
APPROVED FOR CONSTRUCTION			
			DATE

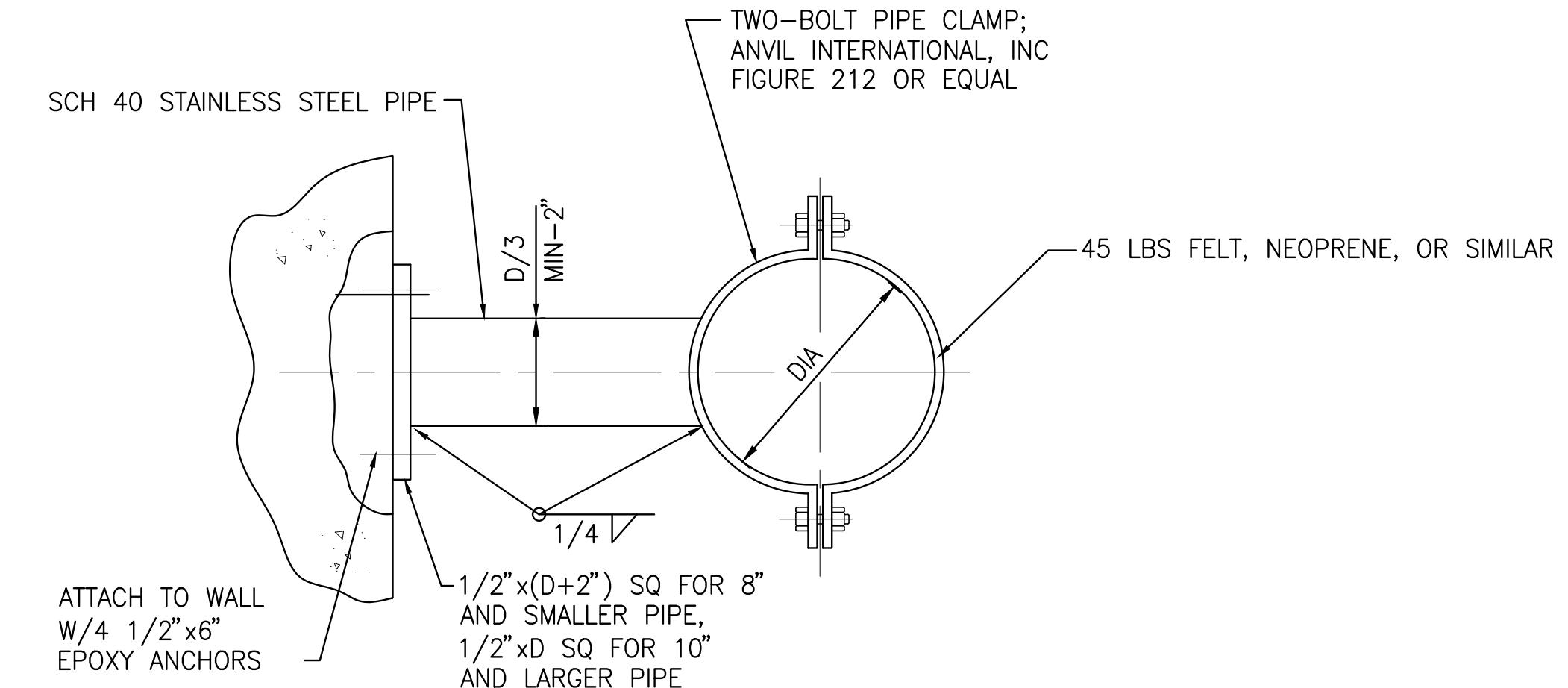


PIPE SIZE	A	B	C	MIN	MAX	D
INCHES						
4	4	9	9 1/4	14	3	3
5	4	9	10	14 3/4	3	3
6	4	9	10 1/2	15 1/4	3	3
8	4	9	11 3/4	16 1/2	3	3
10	4	9	13 1/2	18 1/4	3	3
12	4	9	15	19 3/4	3	3
14	4	11	16 1/4	20 3/4	3	3
16	4	11	17 3/4	22 1/4	3	3
18	6	13 1/2	19 1/2	24	4	4
20	6	13 1/2	21	25 1/2	4	4
24	6	13 1/2	23 3/4	28 1/4	4	4
30	6	13 1/2	27	31 1/2	4	4
36	6	16	30	36	4	4

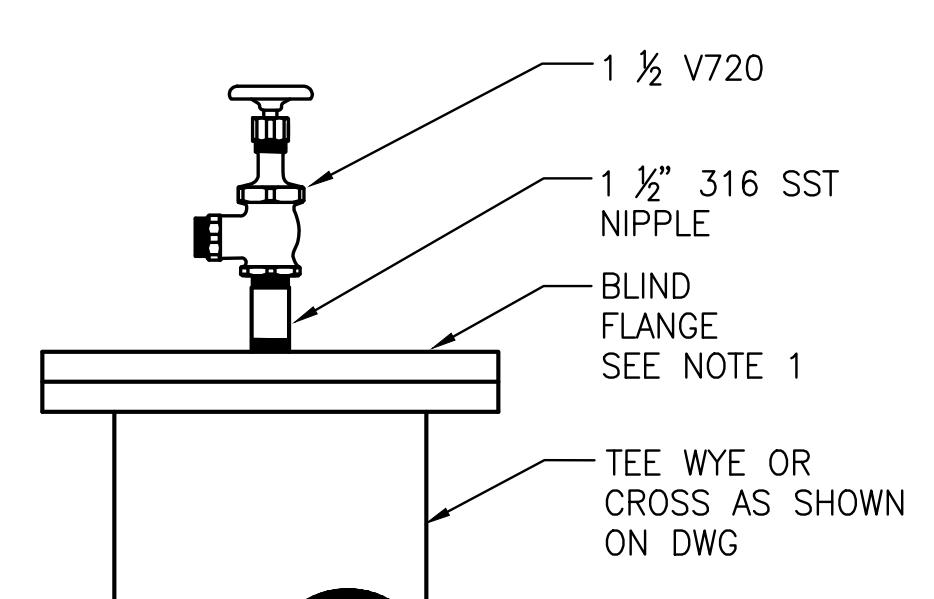
- NOTES:**
1. ALL HARDWARE, PLATE, SADDLE, ETC, SHALL BE 304 SERIES SS.
 2. SUPPORT PIPE SHALL BE 304 SS.
 3. ALL ANCHOR BOLTS SHALL BE 304 SS.



- NOTES:**
1. REFER TO DETAIL **1** FOR TYPICAL PIPE SUPPORT DIMENSION TABLE
 2. ALL HARDWARE, PLATE, SADDLE, ETC, SHALL BE 304 SERIES SS.
 3. SUPPORT PIPE SHALL BE 304 SS.
 4. ALL ANCHOR BOLTS SHALL BE 304 SS.
 5. 45 LBS FELT, NEOPRENE, OR SIMILAR WILL BE BETWEEN PIPE AND SUPPORT

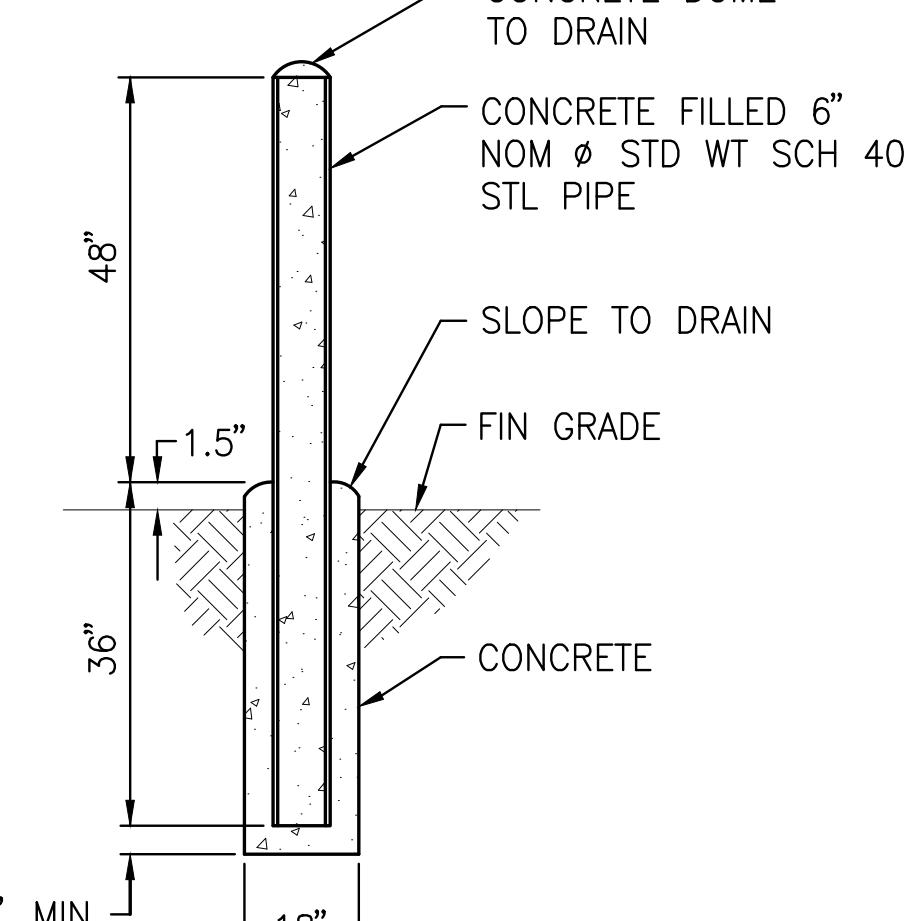


TYPICAL SWAY BRACE (TYPE A)
DETAIL (3)



TYPICAL FLANGE TYPE PIPE SUPPORT DETAIL

NTS

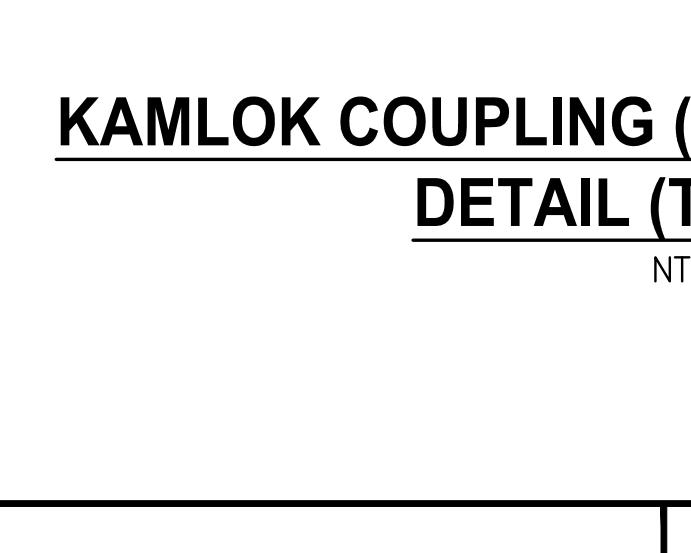
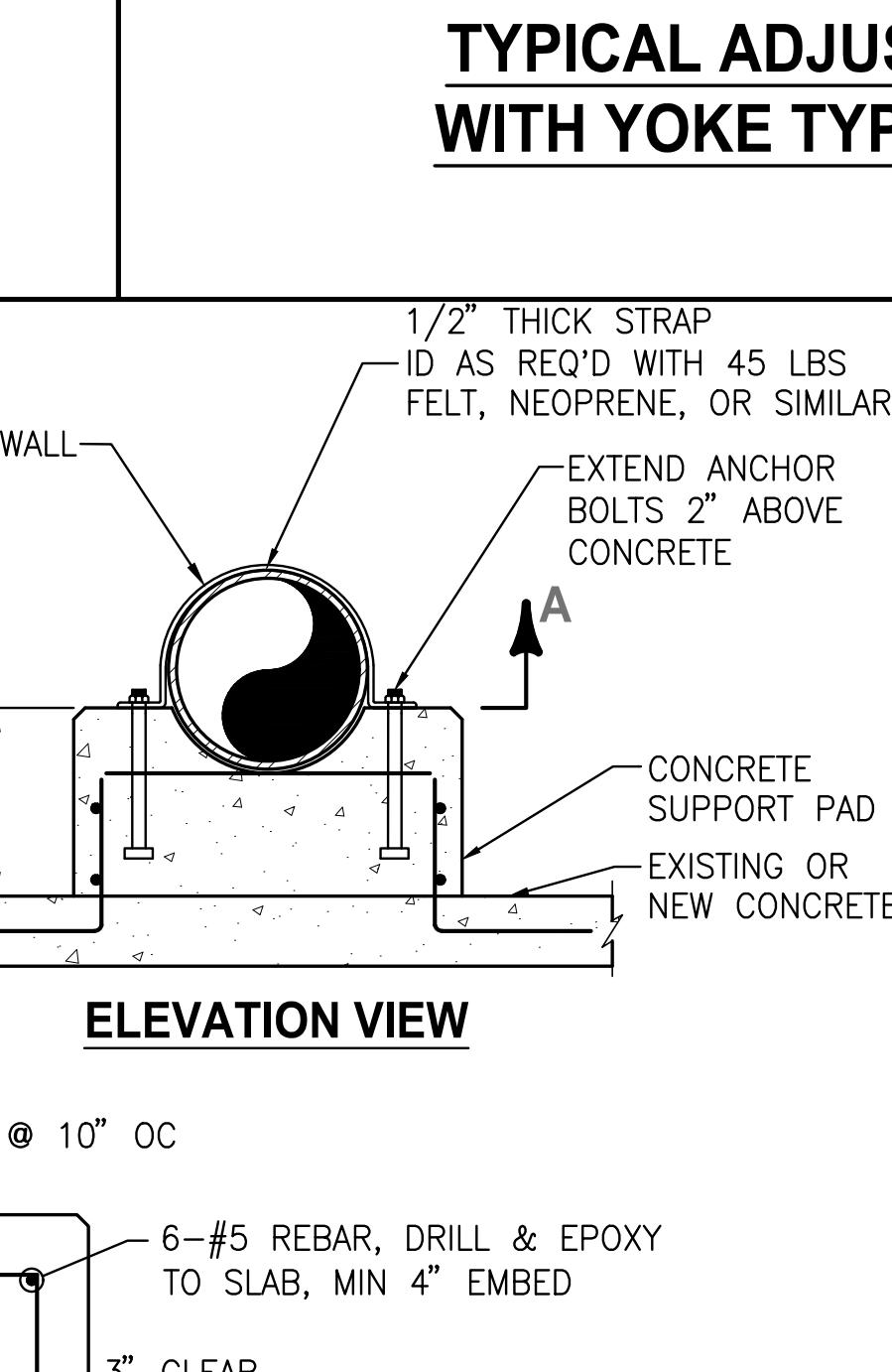


BOLLARD DETAIL

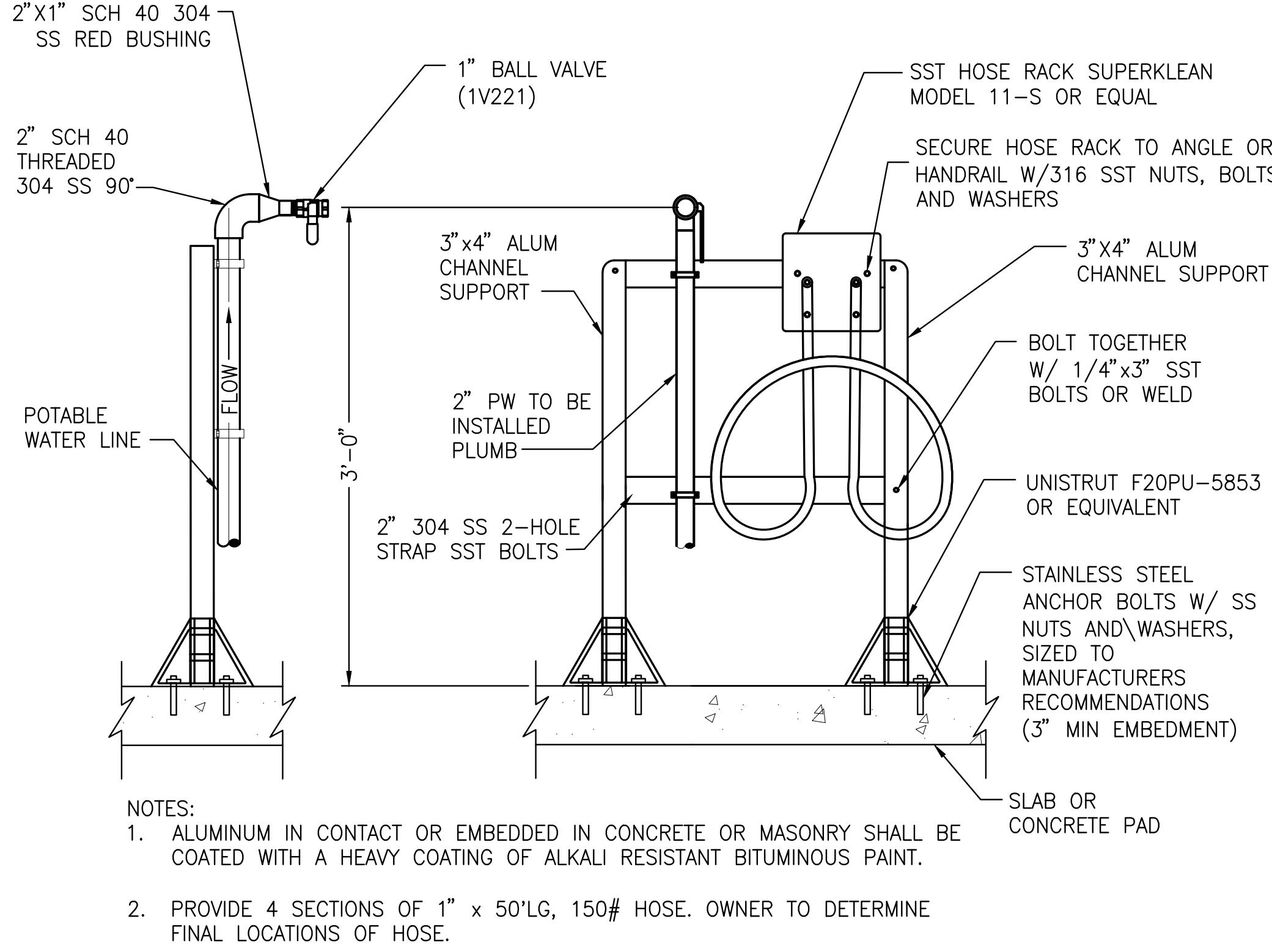
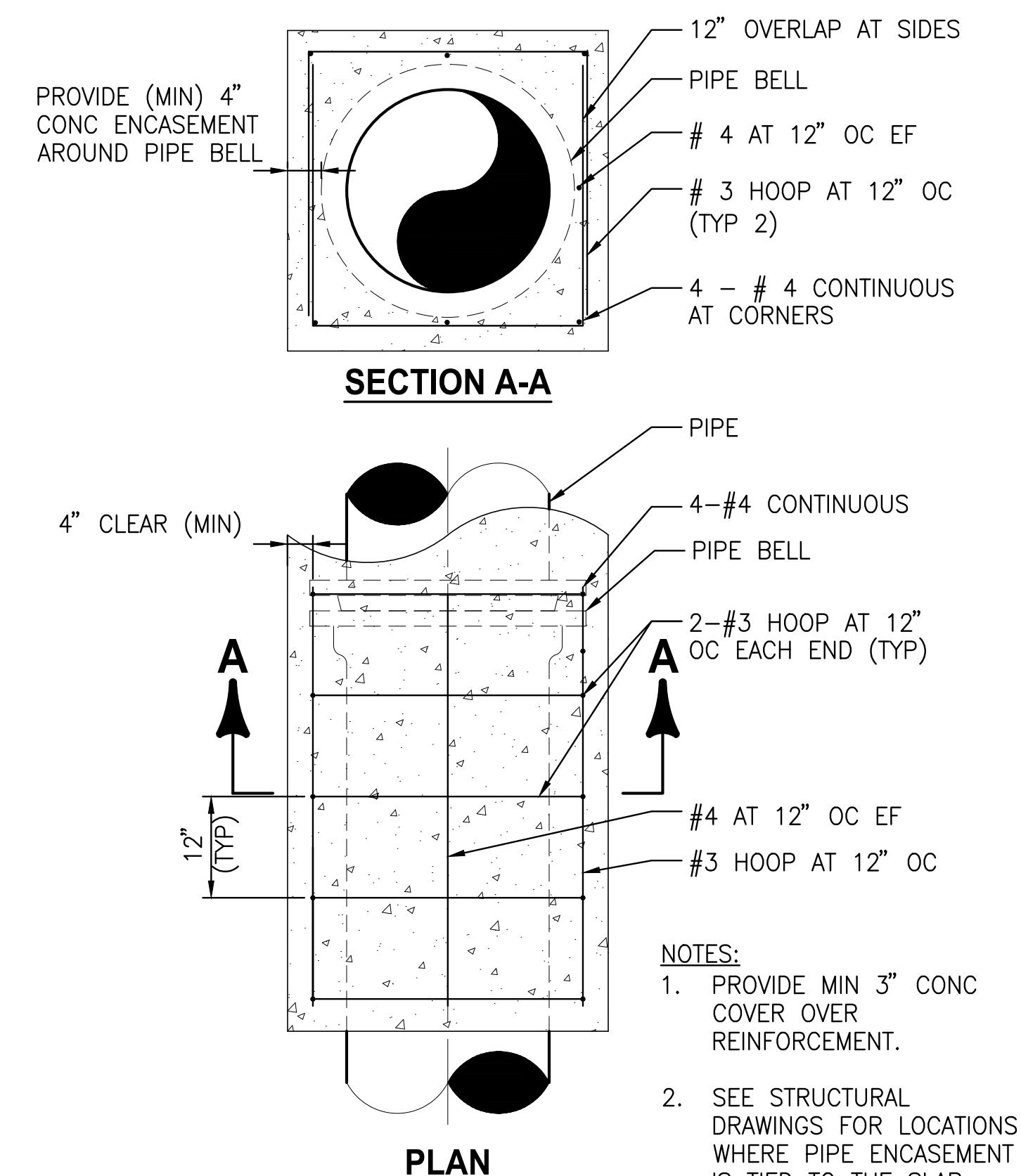
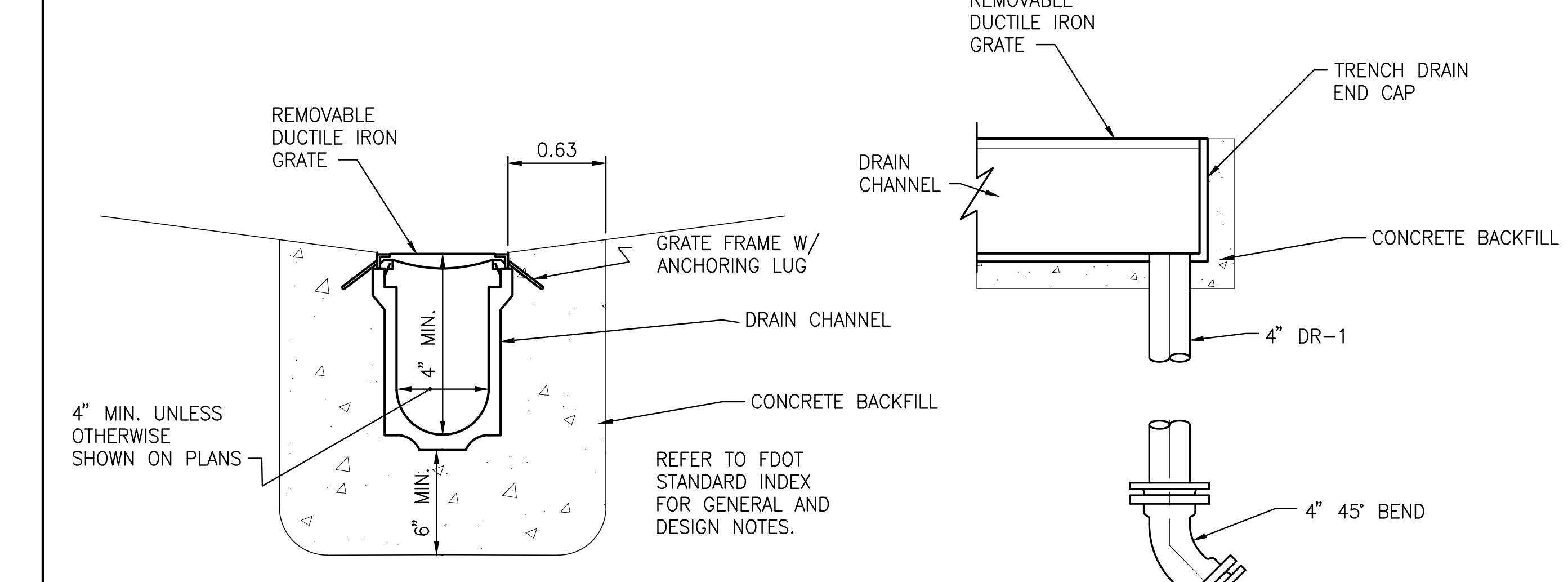
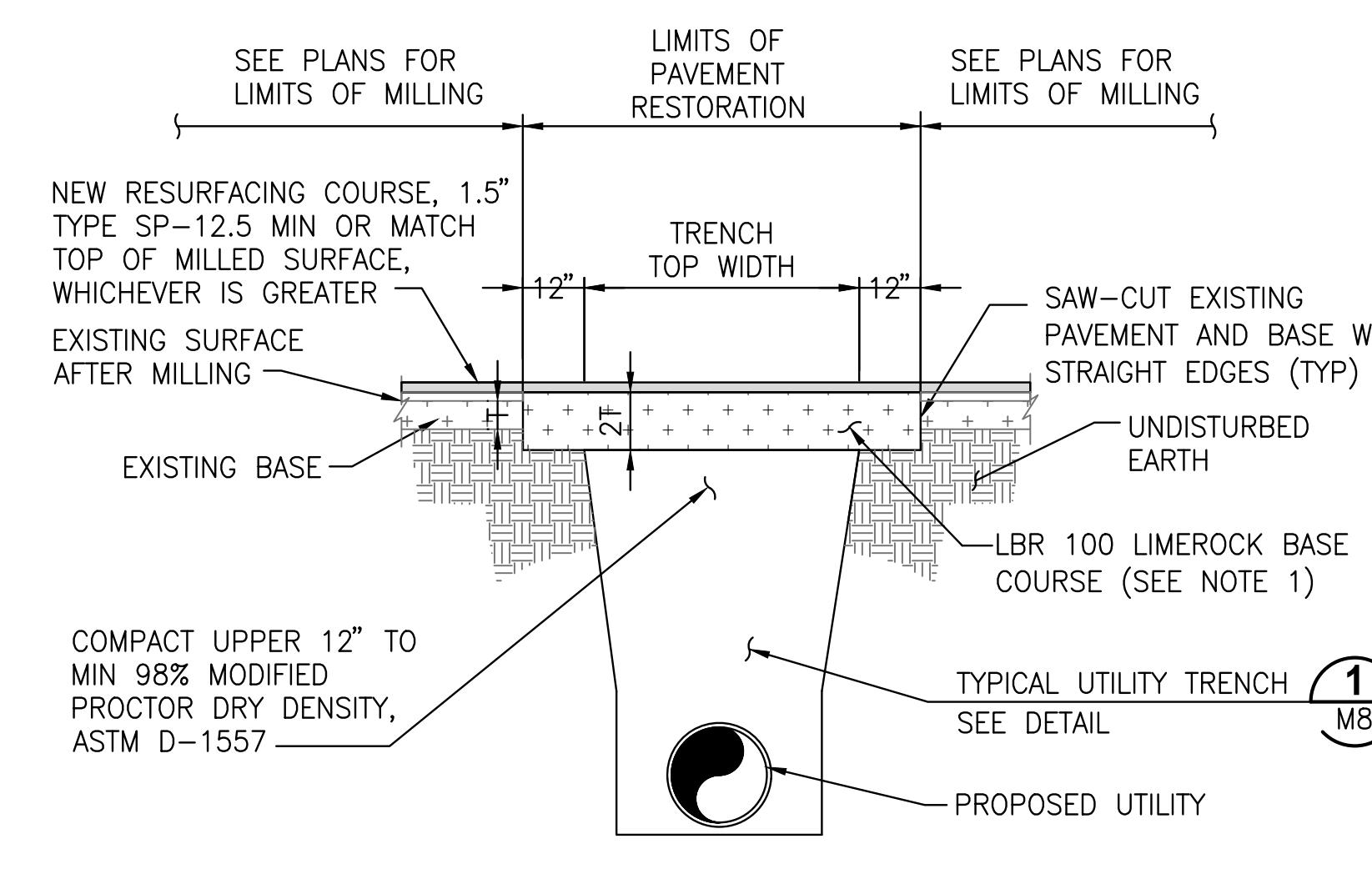
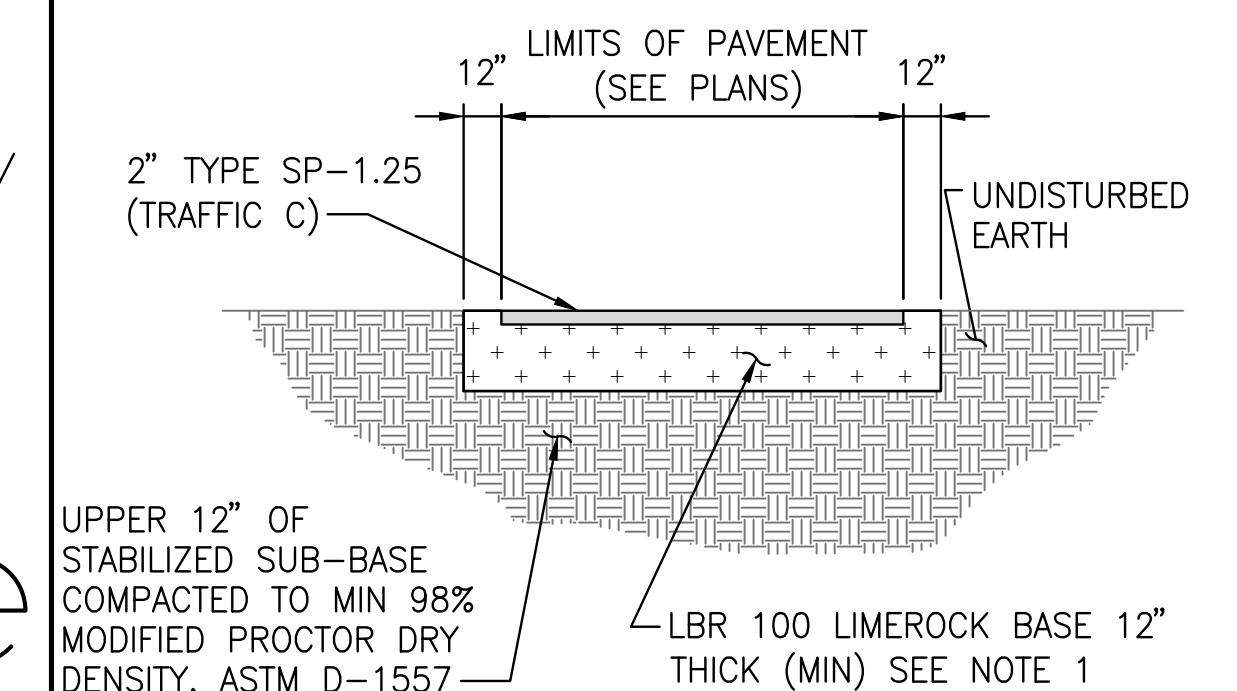
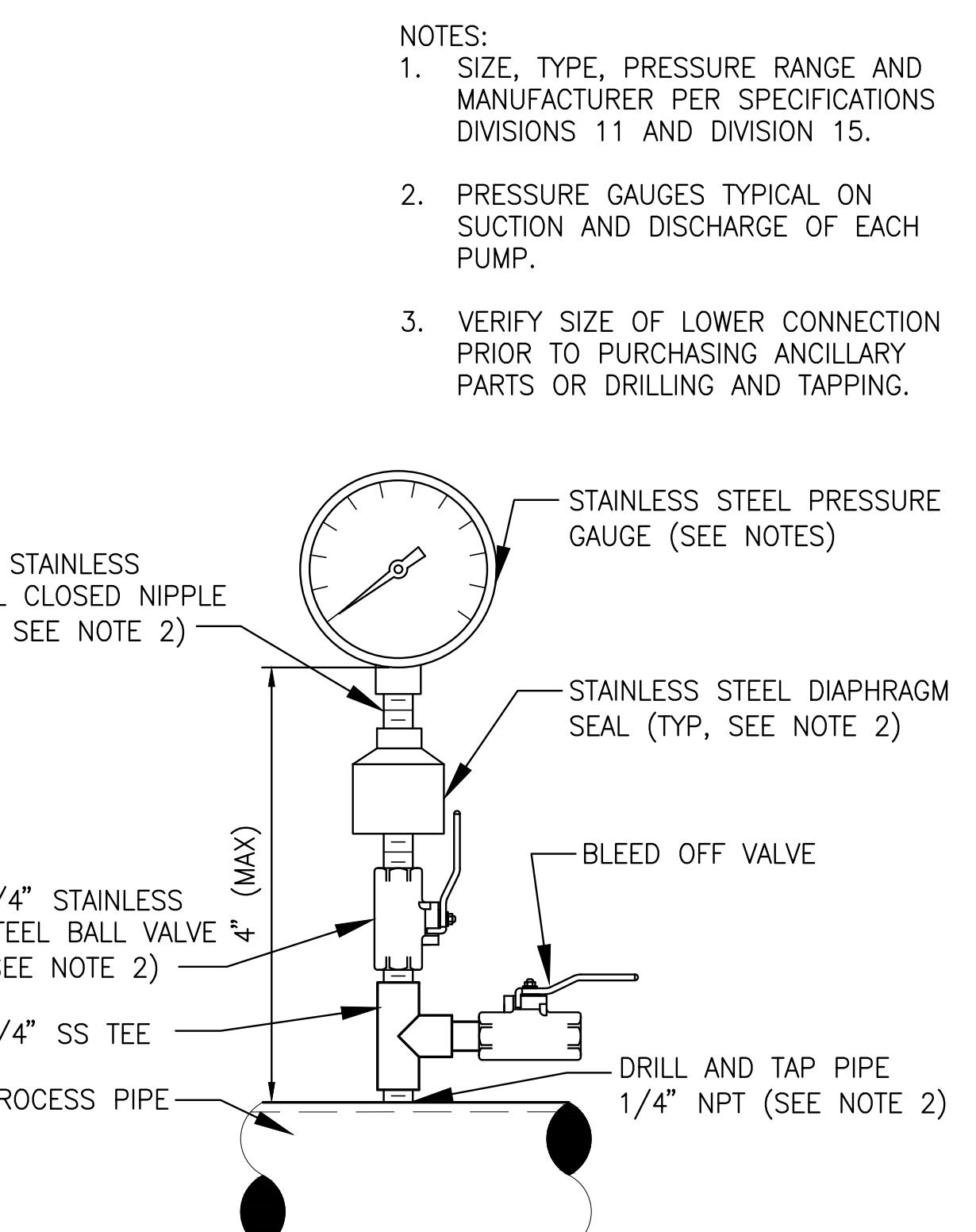
NTS

TYPICAL CONCRETE PIPE SUPPORT DETAIL

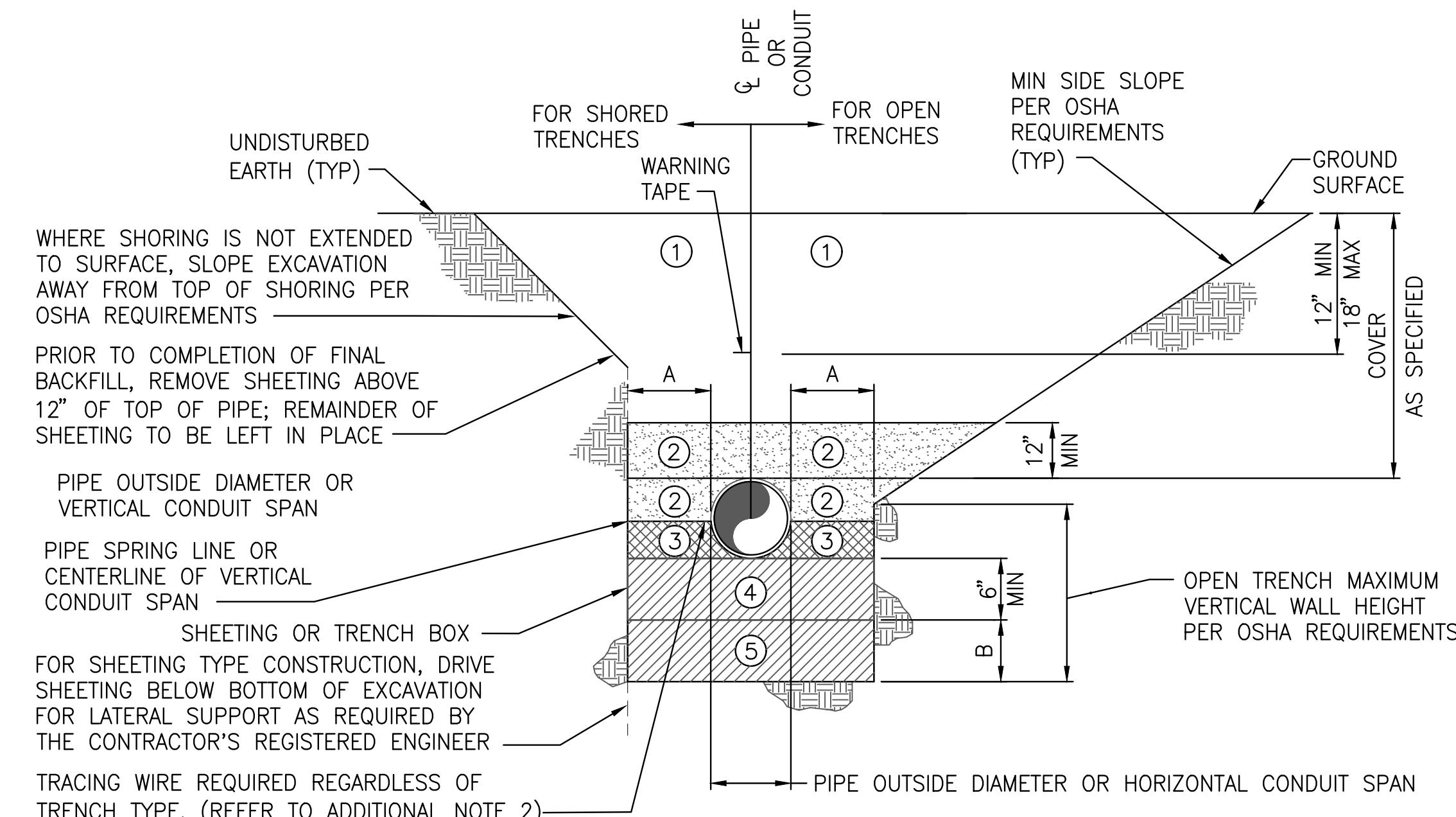
NTS



MS WRF BLEND TANK

**TYPICAL EFW HOSE RACK DETAIL** 1**TYPICAL CONCRETE
ENCASEMENT DETAIL** 2**TRENCH DRAIN AND OUTLET DETAILS** 3**BELT FILTER PRESS FLOW METER** 4**ASPHALT PAVEMENT REPLACEMENT
WITH MILLING AND UTILITY TRENCH DETAIL** 5**ASPHALT PAVEMENT DETAIL** 6**PRESSURE GAUGE DETAIL** 7

RECORD DRAWINGS	DRAWN BY:	DATE:
SURVEYED BY:		
REVIEWED BY:		
APPROVED BY:		
PROJECT ENGINEER	DATE	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86811	DATE	
REVISION	BY	DATE



NOMINAL PIPE DIAMETER OR HORIZONTAL CONDUIT SPAN (INCHES)	MINIMUM SIDEWALL CLEARANCE A (INCHES)	ADDITIONAL EXCAVATION DEPTH (1) B (INCHES)	ZONE NO.	ZONE NAME	MATERIAL	COMPACTATION
LESS THAN 24	12	12	①	FINAL BACKFILL	AS SPECIFIED	AT LEAST 95% MODIFIED PROCTOR
24 AND GREATER	18	18	②	INITIAL BACKFILL		MAXIMUM DRY DENSITY ASTM D-1557 (98% WHEN UNDER PAVEMENT)

(1) REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.

TRENCH ZONE NOTES:

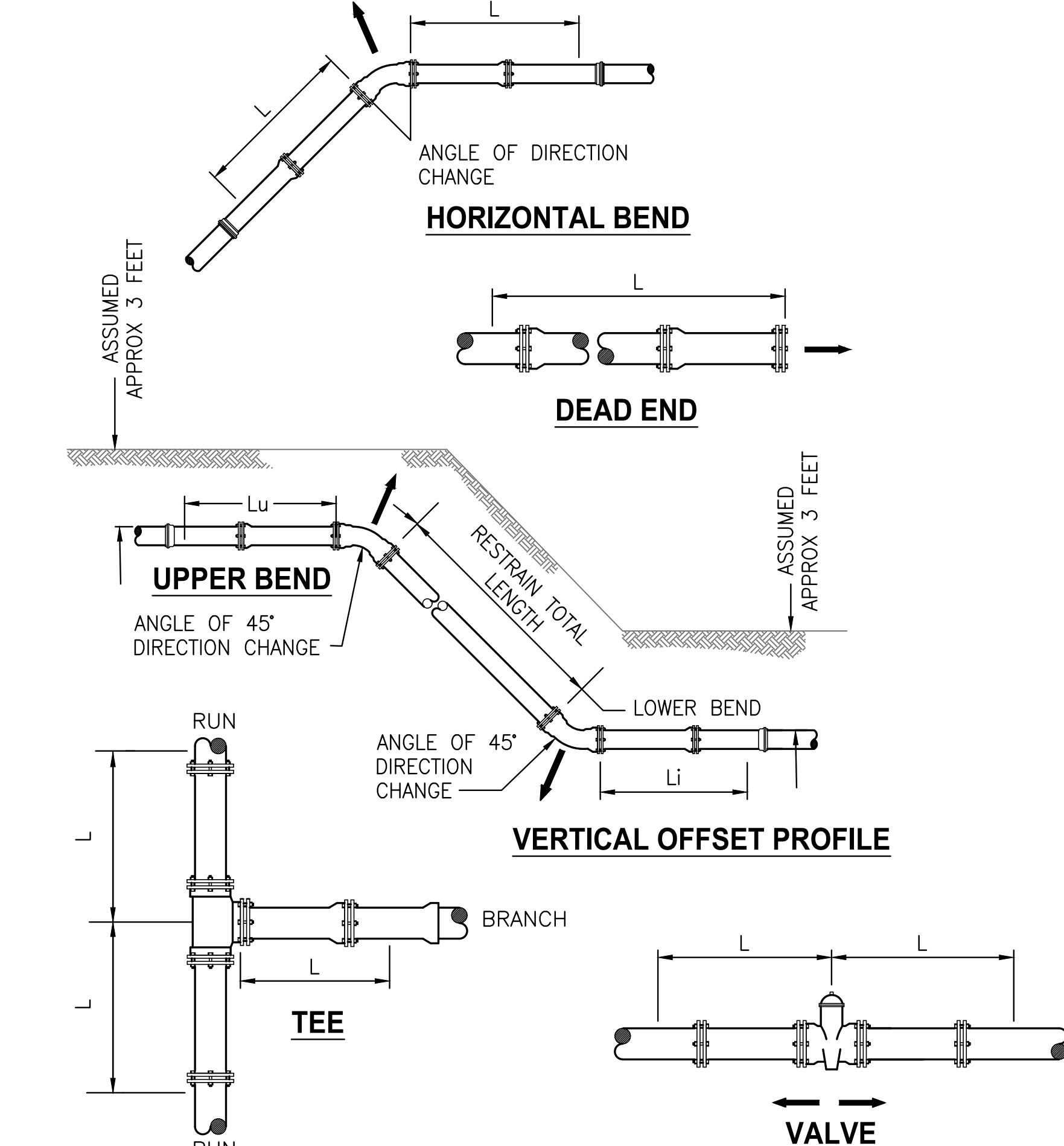
- ① FINAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. REFER TO ADDITIONAL NOTE 3.
- ② INITIAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPAKTED BY HAND TAMPING OR AN APPROVED METHOD OF MECHANICAL TAMPING. REFER TO ADDITIONAL NOTE 3.
- ③ HAUNCHING SHALL BE IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPAKTED BY HAND TAMPING. HAUNCHING SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE PIPE.
- ④ BEDDING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPAKTED BY HAND OR MECHANICAL TAMPING. PROPERLY SHAPED BELL HOLES SHALL BE EXCAVATED IN THE BEDDING TO PERMIT ASSEMBLY OF THE PIPE. REFER TO ADDITIONAL NOTE 3.
- NATIVE, UNDISTURBED MATERIAL IN COMPLETELY DEWATERED TRENCHES MEETING THE COMPAKCTION AND MATERIAL REQUIREMENTS FOR COMPACTED BEDDING MATERIAL NEED NOT BE REPLACED OR REWORKED, EXCEPT FOR SHAPING OF THE BELL HOLES, AND WHERE REFILL IS REQUIRED.
- ⑤ FOUNDATION SHALL BE REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED. FOUNDATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR BEDDING. REFER TO ADDITIONAL NOTE 3.

ADDITIONAL NOTES:

1. FOR TRENCHES IN VEHICULAR TRAFFIC AREAS OR BENEATH SURFACE IMPROVEMENTS (EG, SLABS, ASPHALT, ETC.) SEE CONTRACT SPECIFICATIONS FOR ADDITIONAL COMPAKCTION REQUIREMENTS. SEE DRAWINGS FOR SURFACE IMPROVEMENT AND /OR RESTORATION DETAILS WHERE APPLICABLE.
2. TRACING WIRE SHALL BE INSTALLED ON THE SIDE OF THE PIPE AND ATTACHED TO THE PIPE EVERY 10' W/ A NYLON WIRE TIE. IF THE WIRE IS DAMAGED OR NEEDS TO BE EXTENDED A 3M WATERPROOF TYPE OF SPLICE SHALL BE INSTALLED TO REPAIR THE WIRE. THE ENDS OF THE TRACING WIRE SHALL BE BROUGHT UP IN EVERY VALVE BOX ON THE LINE AND AT THE HYDRANT VALVES. THERE SHALL BE A MINIMUM COIL OF 3' LEFT UNDER THE VALVE BOX COVER. THE WIRE SHALL BE TESTED TO VERIFY CONDUCTIVITY.
3. ALTERNATIVE LIFT THICKNESSES, NOT EXCEEDING 12 INCHES LOOSE MEASUREMENT, ARE ACCEPTABLE IN TRENCH ZONES 1, 2, 4, AND 5 PROVIDED 1) THE LIFT THICKNESS DOES NOT EXCEED THE MAXIMUM VALUE RECOMMENDED IN WRITING BY THE APPLICABLE PIPE MANUFACTURER AND 2) FIELD TEST RESULTS CONFIRM THAT THE SPECIFIED COMPAKCTION REQUIREMENTS ARE BEING MET.

TYPICAL UTILITY TRENCH DETAIL 1

NTS



NOMINAL SIZE	TEES, VALVES, OR DEAD-ENDS	HORIZONTAL BENDS				VERTICAL OFFSET	
		90° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS	Lu	Li
6	53	24	10	5	3	22	10
8	70	31	13	7	4	29	13
10	84	37	16	85	4	35	16
12	99	43	18	9	5	41	18
16	173	82	34	17	9	80	34
24	243	112	47	23	12	110	47

- NOTES:
1. THE SCHEDULE SHOWN IS FOR THE FOLLOWING SERVICE CONDITIONS: 150 PSIG; SOIL TYPE: GM SPECIFIED TRENCH ZONE MATERIAL: 36 INCHES COVER; TYPE 3 LAYING CONDITIONS; AND 1.5 SAFETY FACTOR.
 2. RESTRAINED LENGTHS SHOWN IN TABLE ARE IN FEET AND ARE MINIMUM LENGTHS REQUIRED IN EACH DIRECTION FROM FITTING OR VALVES.
 3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING RESTRAINED JOINTS.
 4. ALL PIPE SHALL BE RESTRAINED TO THE NEXT JOINT BEYOND THE RESTRAINED LENGTH GIVEN.

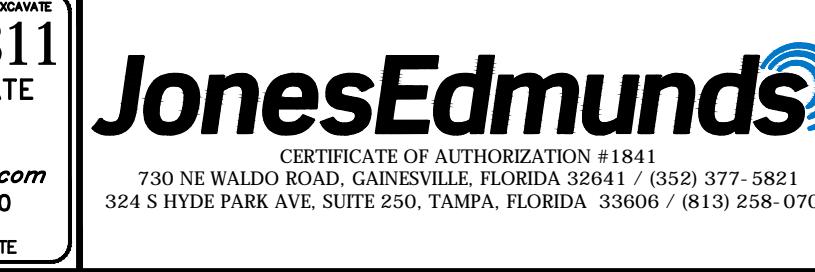
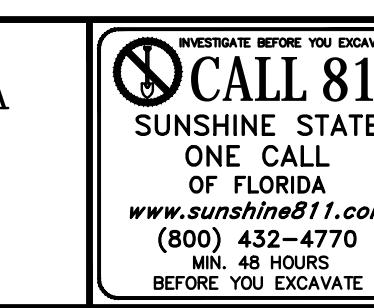
TYPICAL RESTRAINED JOINT DETAIL 2

NTS

RECORD DRAWINGS	DRAWN BY:
SURVEYED BY:	
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86811	DATE

REVISION	BY	DATE
----------	----	------

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



MS WRF BLEND TANK
MIXER PROJECT
MECHANICAL DETAILS (5)

DWG NAME: 0372005401-M09.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: SMENARD	HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: DYONGE	CHECKED BY: TFRIEDRICH	sheet no.: M8
APPROVED FOR CONSTRUCTION	DAVID T. YONGE, P.E. # 85457		

PROPOSED UTILITY	MINIMUM VERTICAL SEPARATION EXISTING UTILITY						
	POTABLE WATER	GRAVITY SANITARY SEWER	SEWAGE FORCE MAIN	STORM	RECLAIMED WATER	ELECTRIC TELECOMMUNICATIONS	COMMENTS
POTABLE WATER	1'-0"	1'-6"	1'-6"	1'-0"	1'-0"	1'-0"	SEE NOTE 1 & 2
GRAVITY SANITARY SEWER	1'-6"	1'-0"	1'-0"	1'-6"	1'-6"	1'-0"	
SEWAGE FORCE MAIN	1'-6"	1'-0"	1'-0"	1'-6"	1'-0"	1'-0"	SEE NOTE 1 & 2
STORM	1'-0"	1'-6"	1'-0"	1'-0"	1'-0"	1'-0"	
RECLAIMED WATER	1'-0"	1'-6"	1'-6"	1'-0"	1'-0"	1'-0"	SEE NOTE 1 & 2
ELECTRIC TELECOMMUNICATIONS	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	

NOTE:

1. ONLY OPTION 1, CONSTRUCTION IS ALLOWED WITHOUT APPROVAL OF ENGINEER.
2. WITH APPROVAL OF ENGINEER, CONTRACTOR MAY DEFLECT PIPE AS SPECIFIED
INSTEAD OF THE USE OF FITTINGS.

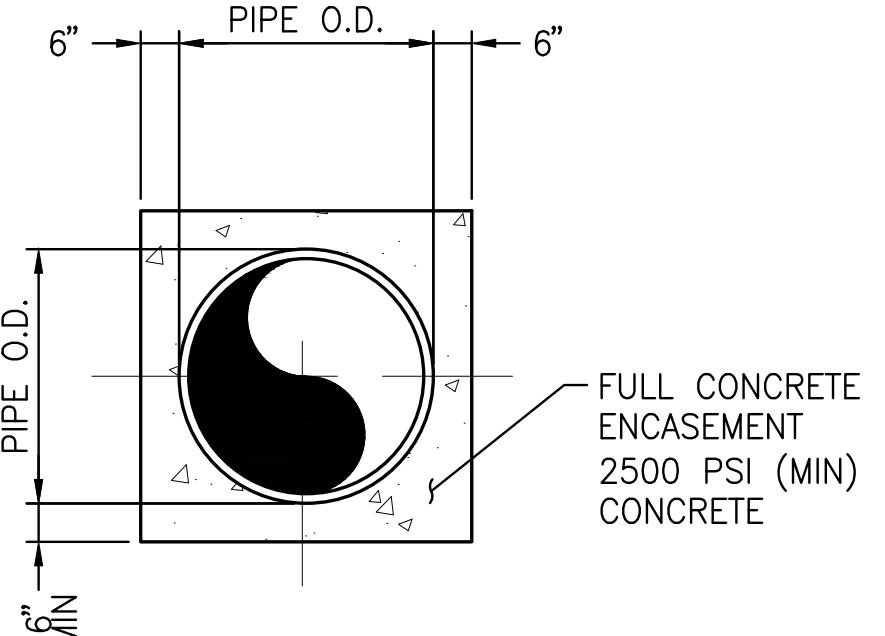
UTILITY VERTICAL SEPARATION (1)

NTS

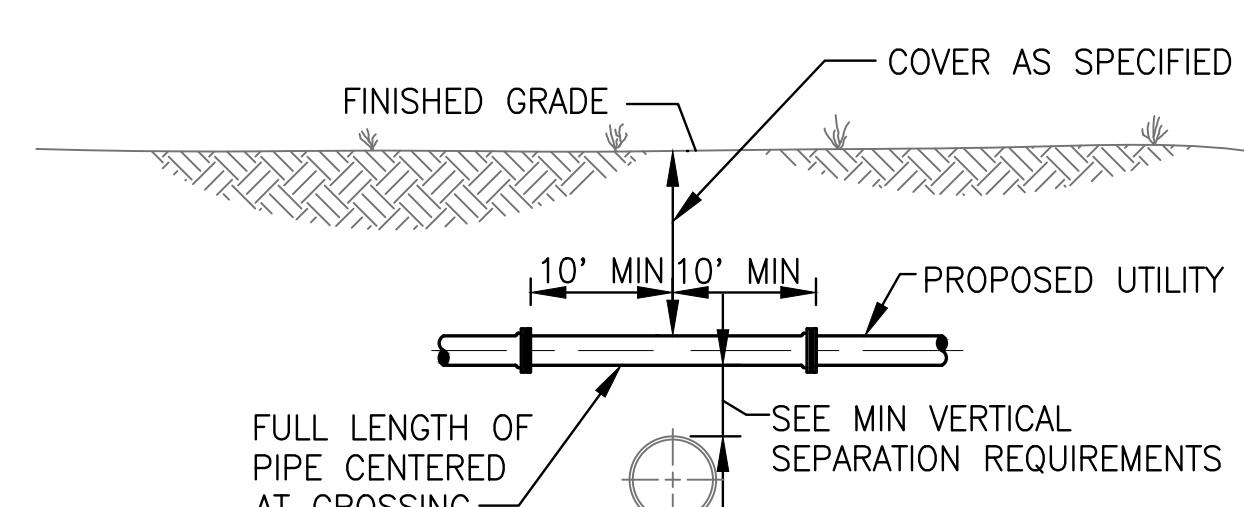
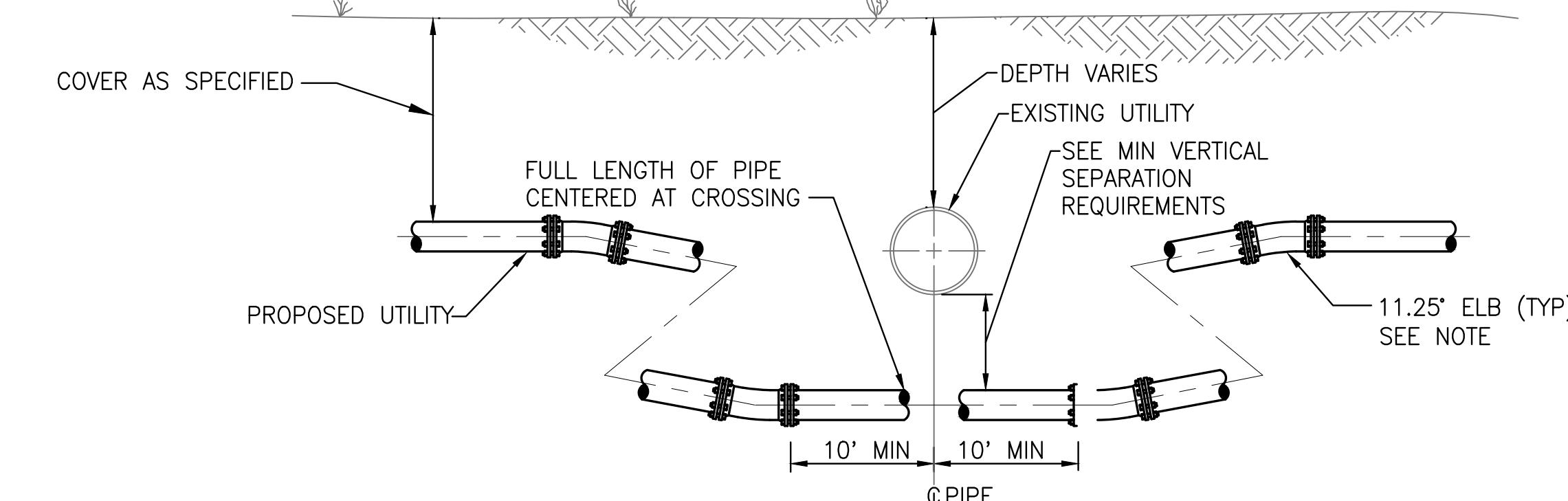
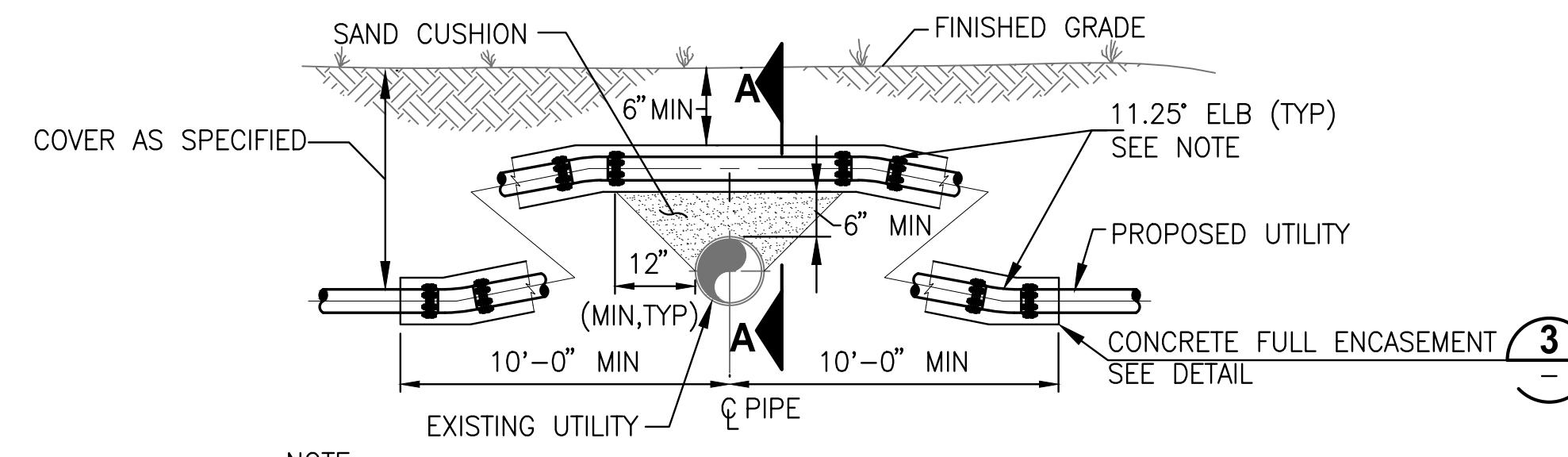
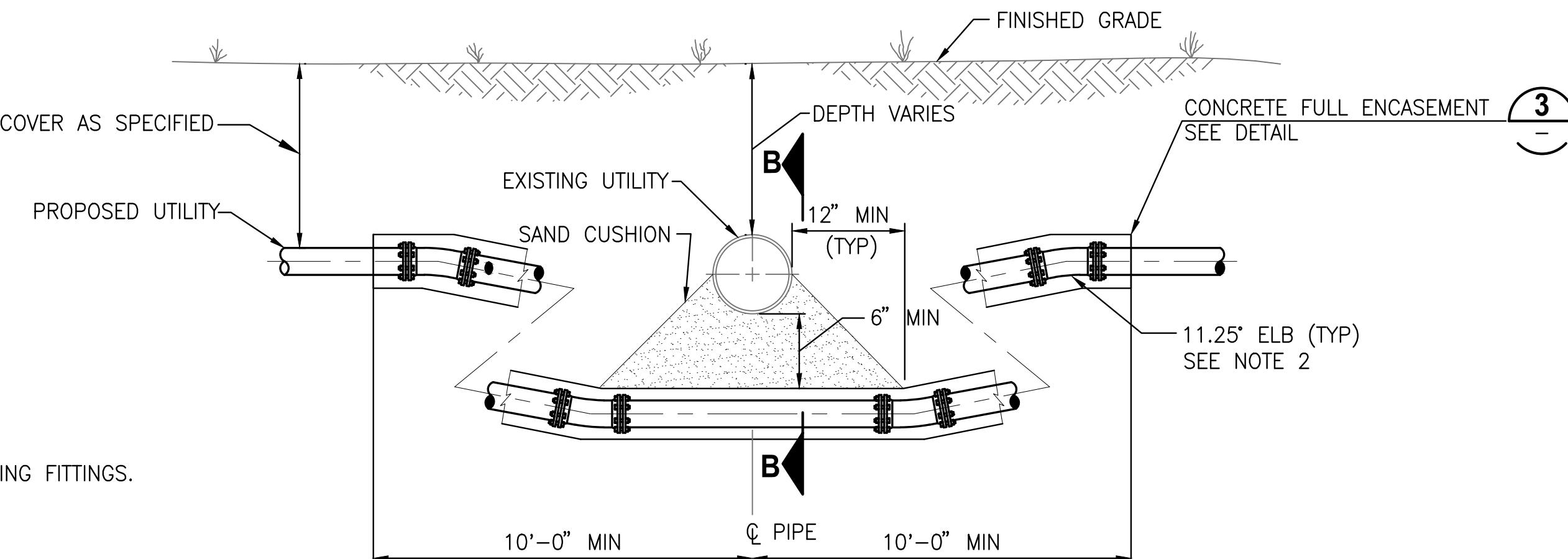
PROPOSED UTILITY	MINIMUM HORIZONTAL SEPARATION EXISTING UTILITY					
	POTABLE WATER	GRAVITY SANITARY SEWER	SEWAGE FORCE MAIN	STORM	RECLAIMED WATER	ELECTRIC TELECOMMUNICATIONS
POTABLE WATER	1'-0"	10'-0"	10'-0"	3'-0"	3'-0"	3'-0"
GRAVITY SANITARY SEWER	10'-0"	1'-0"	1'-0"	3'-0"	3'-0"	3'-0"
SEWAGE FORCE MAIN	10'-0"	1'-0"	1'-0"	3'-0"	3'-0"	3'-0"
STORM	3'-0"	3'-0"	3'-0"	1'-0"	3'-0"	3'-0"
RECLAIMED WATER	3'-0"	3'-0"	3'-0"	3'-0"	1'-0"	3'-0"
ELECTRIC TELECOMMUNICATIONS	3'-0"	3'-0"	3'-0"	3'-0"	3'-0"	2'-0"

NOTES:

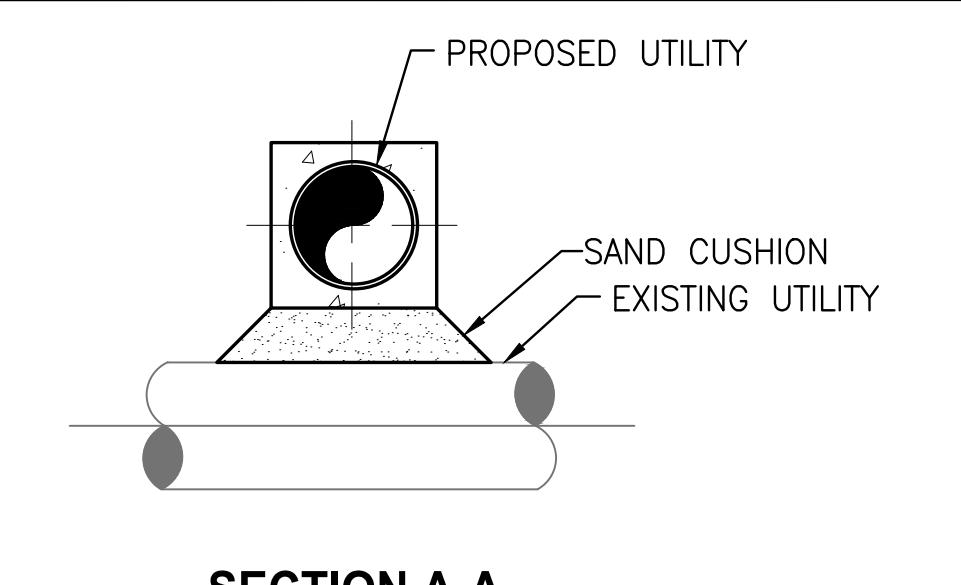
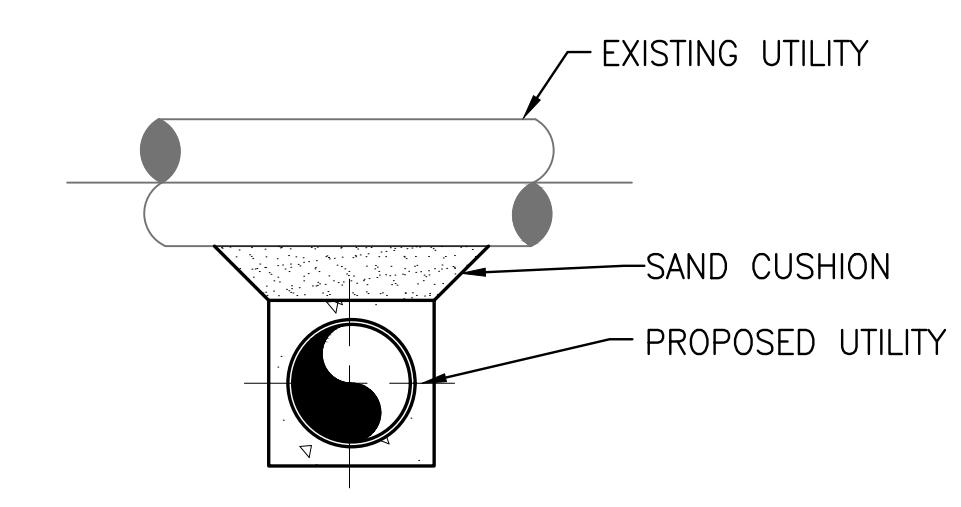
1. UTILITIES SHALL NOT BE INSTALLED WITHIN THE DRIP LINE OF TREES WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.
2. SEPARATIONS SHOWN IN TABLE ABOVE SHALL BE USED UNLESS SHOWN OTHERWISE IN THE DRAWINGS.

CONCRETE ENCASEMENT (3)

NTS

OPTION 1 (SUFFICIENT COVER AND SEPARATION AVAILABLE)OPTION 2 (SUFFICIENT SEPARATION AVAILABLE)ALTERNATE OPTION 1 (SUFFICIENT COVER OR SEPARATION NOT AVAILABLE)

- NOTES:
1. FOR PROPOSED WATER MAINS, THIS OPTION IS ONLY ALLOWED WITH APPROVAL OF THE ENGINEER AND FDEP ON A CASE BY CASE BASIS.
2. WITH APPROVAL OF ENGINEER, CONTRACTOR MAY DEFLECT PIPE AS SPECIFIED INSTEAD OF USING FITTINGS.

ALTERNATE OPTION 2 (SUFFICIENT SEPARATION NOT AVAILABLE)SECTION A-ASECTION B-B

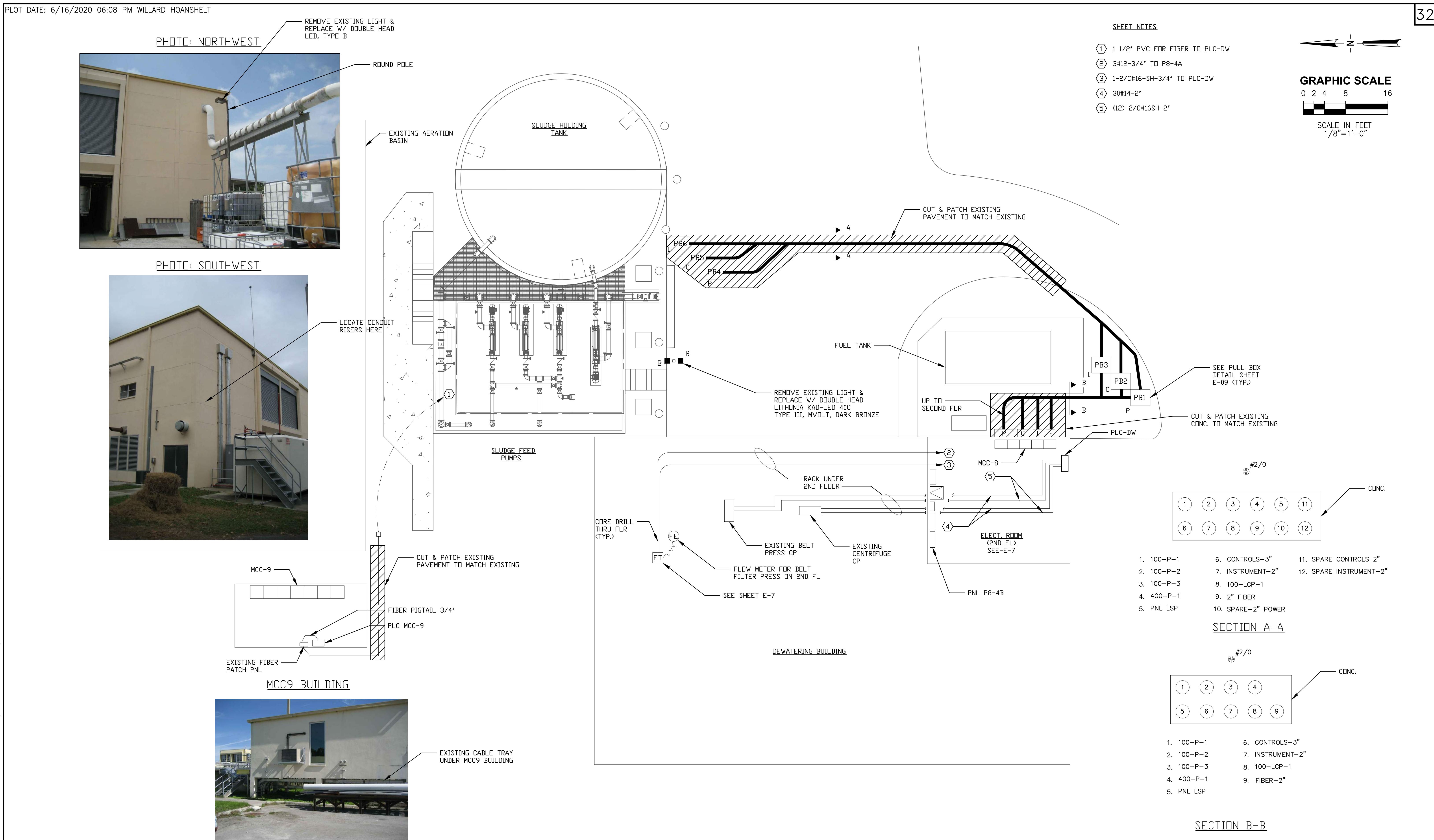
ELEMENTARY SYMBOLS		ELEMENTARY SYMBOLS (CON'T)	SWITCH SYMBOLS	SERVICE AND DISTRIBUTION	LIGHTING OUTLETS
WIRE INTERSECTION POINT	LIMIT SWITCH (NORMALLY CLOSED)	S SINGLE POLE SWITCH	□ 00 MAGNETIC MOTOR STARTER OR CONTACTOR SIZE AS NOTED	CEILING	WALL SURFACE OR PENDANT MOUNTED
EXTERNAL CONNECTION POINT	LIMIT SWITCH (NORMALLY CLOSED, HELD OPEN)	S ₂ DOUBLE POLE SWITCH	5 MOTOR CONNECTION, AS NOTED	○ ₁	RECESSED FIXTURE
NORMALLY OPEN CONTACT	DIFFERENTIAL PRESSURE SWITCH (NORMALLY OPEN, CLOSING ON INCREASING DIFF.)	S ₃ THREE-WAY SWITCH	5 MOTOR CONNECTION, FUTURE OR EXISTING AS NOTED	□ ₁	SURFACE OR PENDANT MOUNTED FLUORESCENT FIXTURE
NORMALLY CLOSED CONTACT	DIFFERENTIAL PRESSURE SWITCH (NORMALLY CLOSED, OPENING ON INCREASING DIFF.)	S ₄ FOUR-WAY SWITCH	□ DISCONNECT SWITCH, SIZE AS NOTED	○ R ₁	RECESSED FLUORESCENT FIXTURE
STARTER, CONTACTOR OR RELAY COIL	FIRE ALARM SYSTEM	SWP WEATHERPROOF SWITCH	□ COMBINATION MAGNETIC MOTOR STARTER, SIZE AS NOTED	1	TANDEM FLUORESCENT FIXTURE
NORMALLY OPEN PUSH BUTTON	HORN/LIGHT COMBINATION	Sp SWITCH WITH PILOT LAMP	BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, SURFACE MOUNTED	1	RECESSED TANDEM FLUORESCENT FIXTURE
NORMALLY CLOSED PUSH BUTTON	SMOKE DETECTOR	Sk KEY OPERATED SWITCH	BRANCH CIRCUIT PANEL BOARD, UNDER 250 VOLTS, FLUSH MOUNTED	1	BARE LAMP FLUORESCENT STRIP WITH GUARD
MAINTAINED PUSH BUTTON	DUCT SMOKE DETECTOR	Sh HAZARDOUS AREA SWITCH	BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS, SURFACE MOUNTED	1	FLUORESCENT TROFFER
MOMENTARY MUSHROOM HEAD	CIRCUIT BREAKER	D DIMMER SWITCH	15 TRANSFORMER, SIZE AS NOTED	○ R	SURFACE OR PENDANT MOUNTED EXIT LIGHT
NORMALLY CLOSED GEARED LIMIT SWITCH	COMBINATION MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, FULL VOLTAGE, NON-REVERSING, SINGLE SPEED	Sl SWITCH FOR LOW VOLTAGE SWITCHING SYSTEM	SYSTEMS CABINET	□ R	RECESSED EXIT LIGHT
NORMALLY OPEN GEARED LIMIT SWITCH	REDUCE VOLTAGE SOLID STATE SINGLE SPEED	Slm MASTER SWITCH FOR LOW VOLTAGE SWITCHING SYSTEM	TELEPHONE TERMINAL BOARD	○ B	BLANKED OUTLET
INDICATING LIGHT	FULL VOLTAGE REVERSING SINGLE SPEED	Os SWITCH AND SINGLE RECEPTACLE	RACEWAY SYSTEM	□ B	JUNCTION BOX
FUSE	FULL VOLTAGE, TWO SPEED	Os SWITCH AND DOUBLE RECEPTACLE	JUNCTION BOX	○ J	POLE MOUNTED FIXTURE
POTENIOMETER	TWO WINDING	Sd DOOR SWITCH	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.	□ J	EMERGENCY LIGHT FIXTURE
CAPACITOR	THermal OVERLOADS	Scb CIRCUIT BREAKER SWITCH	CONDUIT CONCEALED IN WALL OR ABOVE CEILING	1	NOTE 1:
DIODE	AC MOTOR, NUMBER INDICATES HORSEPOWER	Smc MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALING SYSTEM	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND	1	LETTER SUBSCRIPT INDICATES FIXTURE TYPE AS DESCRIBED IN THE LIGHTING FIXTURE SCHEDULE.
RESISTOR	DC MOTOR, NUMBER INDICATES HORSEPOWER	Start/Stop SWITCH	CONDUIT RUN EXPOSED, RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL	1	PLAN SYMBOLS
CONTROL POWER TRANSFORMER	G GENERATOR, SIZE AS NOTED	Speed CONTROL	PBX GRADE MTD PULL BOX	TT	TEMPERATURE TRANSMITTER
SWITCH	LOW VOLTAGE CIRCUIT BREAKER DRAW-OUT TYPE	Local CONTROL SWITCH	X = DESIGNATIONS 1,2,3... P = POWER C = CONTROL I = INSTRUMENTATION DATA F = FIBER	PT	PRESSURE TRANSMITTER
MANUAL STARTER	MEDIUM VOLTAGE CIRCUIT BREAKER DRAW-OUT TYPE	RECEPTACLE OUTLET SYMBOLS		FIT	FLOW INDICATING TRANSMITTER
ELECTRODE	LIGHTNING ARRESTOR	Single RECEPTACLE OUTLET		FE	FLOW ELEMENT
FLOAT SWITCH (CLOSING ON RISING LEVEL)	SURGE SUPPRESSOR	DUPLEX RECEPTACLE OUTLET		DIT	DENSITY INDICATING TRANSMITTER
FLOAT SWITCH (OPENING ON RISING LEVEL)	SURGE CAPACITOR	TRIPLEX RECEPTACLE OUTLET-SPLIT WIRED		LIT	LEVEL INDICATING TRANSMITTER
PRESSURE SWITCH (CLOSING ON RISING PRESSURE)	FUSE	1 SINGLE SPECIAL PURPOSE RECEPTACLE OUTLET (SEE NOTE 1)		LE	LEVEL ELEMENT
PRESSURE SWITCH (OPENING ON RISING PRESSURE)	POTENTIAL TRANSFORMER, QUANTITY AS NOTED	1 DUPLEX RECEPTACLE SPECIAL PURPOSE OUTLET (SEE NOTE 1)		VM	VOLT METER
VACUUM SWITCH (CLOSING ON INCREASING VACUUM)	CURRENT TRANSFORMER, QUANTITY AS NOTED	1 RANGE OUTLET (SEE NOTE 1)		VS	VOLT SWITCH
VACUUM SWITCH (OPENING ON INCREASING VACUUM)	K KEY INTERLOCK	1 SPECIAL PURPOSE CONNECTION OR PROVISION FOR CONNECTION (SEE NOTE 1)		AM	AMPMETER
TEMPERATURE SWITCH (CLOSING ON RISING TEMPERATURE)	POWER PANEL	1 MULTIOUTLET ASSEMBLY (SEE NOTE 1)		AS	AMP SWITCH
TEMPERATURE SWITCH (OPENING ON RISING TEMPERATURE)	LIGHTING PANEL	1 CLOCK HANGER RECEPTACLE (SEE NOTE 1)		MS	MOTION SWITCH
FLOW ACTUATED SWITCH (CLOSING ON INCREASE IN FLOW)		1 FAN HANGER RECEPTACLE (SEE NOTE 1)		FT	FLOAT SWITCH
FLOW ACTUATED SWITCH (OPENING ON INCREASE IN FLOW)		1 FLOOR SINGLE RECEPTACLE OUTLET		FS	FLOW SWITCH
ON TIME DELAY SWITCH (NORMALLY OPEN WITH TIME DELAY CLOSING AFTER COIL IS ENERGIZED)		1 FLOOR DUPLEX RECEPTACLE		LS	LIMIT SWITCH
OFF TIME DELAY SWITCH (NORMALLY OPEN WITH TIME DELAY CLOSING AFTER COIL IS DE-ENERGIZED)		1 FLOOR SPECIAL PURPOSE OUTLET (SEE NOTE 1)		TS	TORQUE SWITCH
ON TIME DELAY SWITCH (NORMALLY CLOSED WITH TIME DELAY OPENING AFTER COIL IS ENERGIZED)				PS	PRESSURE SWITCH
OFF TIME DELAY SWITCH (NORMALLY CLOSED WITH TIME DELAY CLOSING AFTER COIL IS DE-ENERGIZED)				T	THERMOSTAT
TORQUE SWITCH (NORMALLY OPEN)				V	VIBRATION SWITCH
TORQUE SWITCH (NORMALLY CLOSED)				SV	SOLENOID VALVE
LIMIT SWITCH (NORMALLY OPEN)				ZS	LIMIT SWITCH
LIMIT SWITCH (NORMALLY OPEN, HELD CLOSED)					
		NOTE 1: NUMERICAL SUBSCRIPT INDICATES THE SHEET NOTE WHERE THE TYPE OF RECEPTACLE AND USAGE IS NOTED.			



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MS WRF BLEND TANK MIXER PROJECT SYMBOLS

DWG NAME: E-02 SYMBOLS.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. _____
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JPH	HORIZ. AS NOTED
JOB NO.: 03720-054-01	DESIGNED BY: WCH	CHECKED BY: WCH	SHEET NO.: E2
APPROVED FOR CONSTRUCTION			
<hr/> WILLARD C. HOANSHELT, P.E. # 42593 <hr/>			<hr/> DATE <hr/>



COA 6160

5742 Riverber Rd,

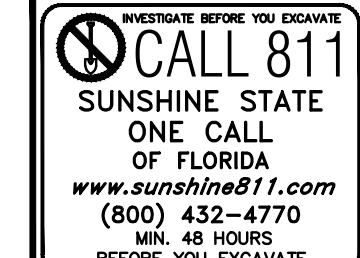
Groveland, Fl 34736

P: 352.460.4035

PHOTO: WEST WALL OF MCC9 BLDG

RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
PROJECT ENGINEER	DATE
APPROVED BY:	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE
REVISION	BY DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



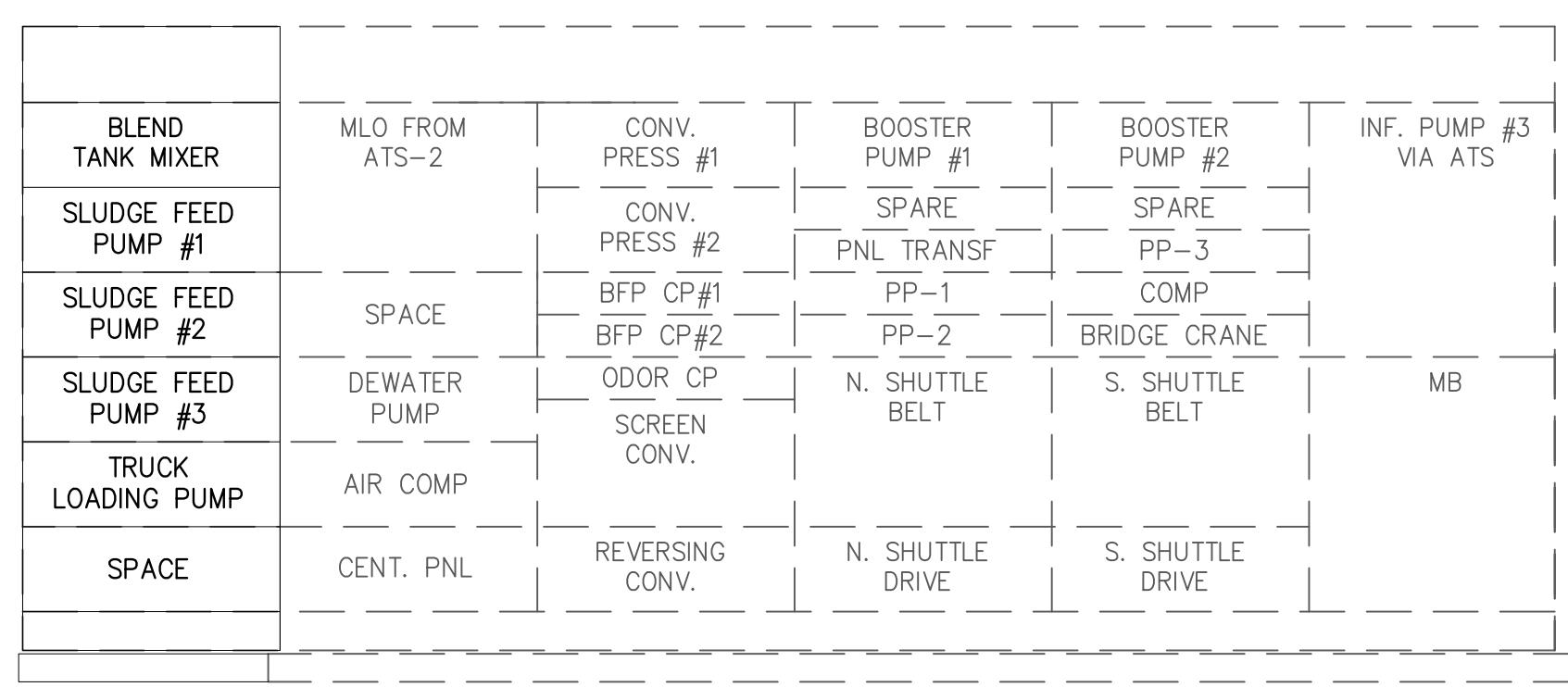
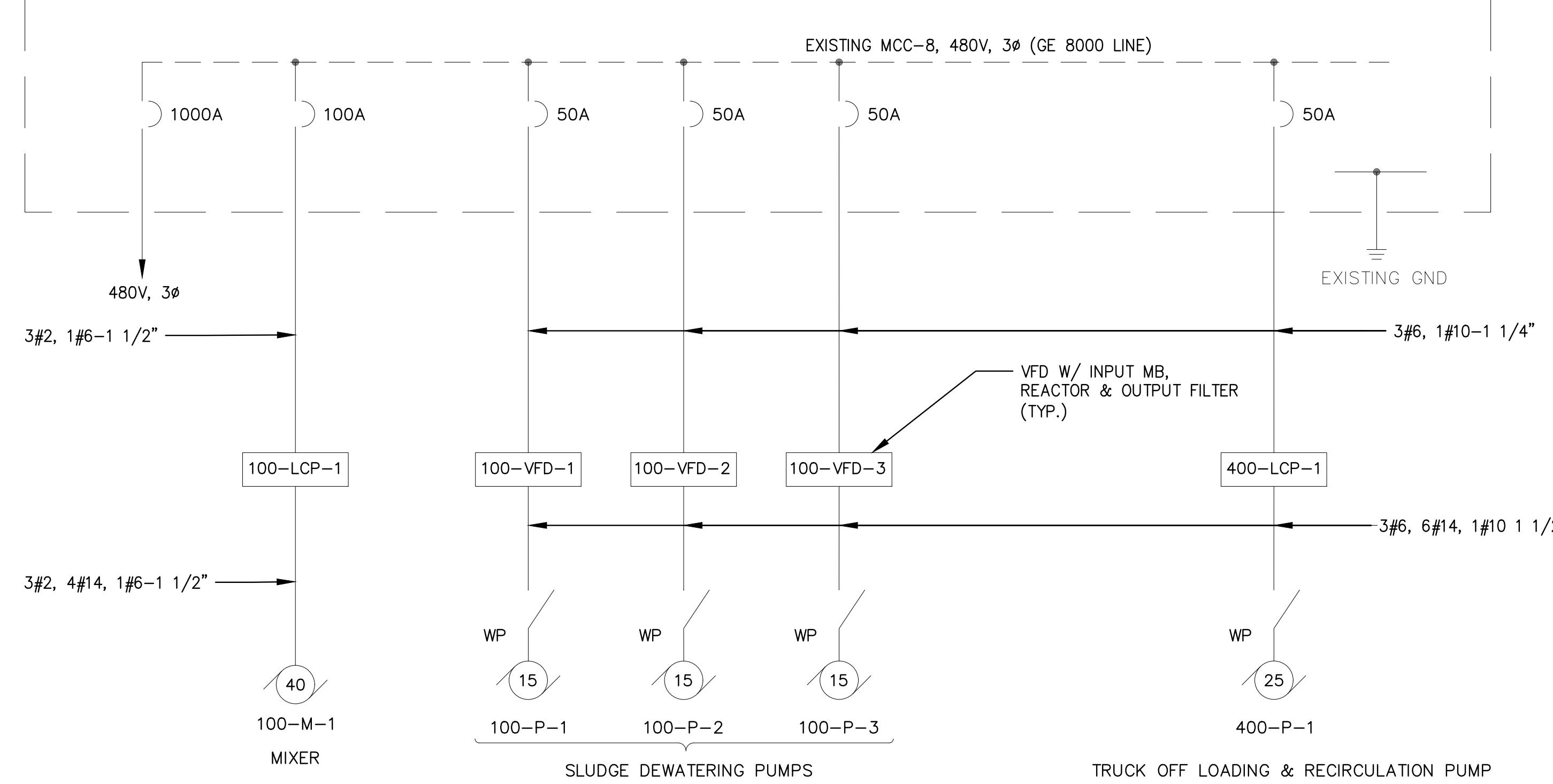
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730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK MIXER PROJECT SITE PLAN

DWG NAME: E-03 SITE PLAN.dwg	FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JPH	VERT.
JOB NO.: 03720-054-01	DESIGNED BY: WCH	CHECKED BY: WCH	HORIZ. NONE
APPROVED FOR CONSTRUCTION			SHEET NO: E3



MCC-8 FRONT VIEW

PANEL NAME: LSP MOUNTING: SURFACE INTERRUPTING RATING: 10,000 AIC
TOTAL LOAD: - VOLTAGE: 120/208V, 3Ø, 4W MAIN BREAKER: 60A, 3P BUS: 100
LOCATION: SLUDGE TANK MFR: REMARKS: NEMA 4X

LOCATION: SLUDGE TANK		MFR:		REMARKS: NEMA 4X															
LOAD SERVED		AMPS		BKR	POLE	CKT NO.	ØA	ØB	ØC	CKT NO.		BKR SIZE	POLE	AMPS			LOAD SERVED		
		ØA	ØB	ØC										ØA	ØB	ØC			
SPD	-	X	X	X	30	3	1						2	20	1	3	X	X	AREA LTG
SPD		X	-	X	30	3	3						4	20	1	X	X	3	AREA RECPT
SPD		X	X	X	-	30	3	5					6	20	1	X	X	-	SPARE
DIG, FLOW METER	1	X	X	X	20	1	7						8	20	1	1	X	X	PUMP 1 TEMP. PNL
PUMP 2 TEMP. PNL		X	-	X	20	1	9						10	20	1	X	X	1	PUMP 3 TEMP. PNL
RECIR PUMP TEMP. PNL		X	X	X	1	20	1	11					12	20	1	X	X	-	SPARE
TANK LEVEL METER	1	X	X	X	20	1	13						14	20	1	-	X	X	SPARE
SPARE		X	-	X	20	1	15						16	20	1	X	X	-	SPARE
SPARE		X	X	X	-	20	1	17					18	20	1	X	X	-	SPARE
SPACE	-	X	X	X	20	1	19						20	20	1	-	X	X	SPACE
SPACE		X	-	X	20	1	21						22	20	1	X	X	-	SPACE
SPACE		X	X	X	-	20	1	23					24	20	1	X	X	-	SPACE
SPACE	-	X	X	X	20	1	25						26	20	1	-	X	X	SPACE
SPACE		X	-	X	20	1	27						28	20	1	X	X	-	SPACE
SPACE		X	X	X	20	1	29						30	20	1	X	X	-	SPACE



COA 6160
5742 Riverber Rd,
Groveland, Fl 34736
P: 352.460.4035

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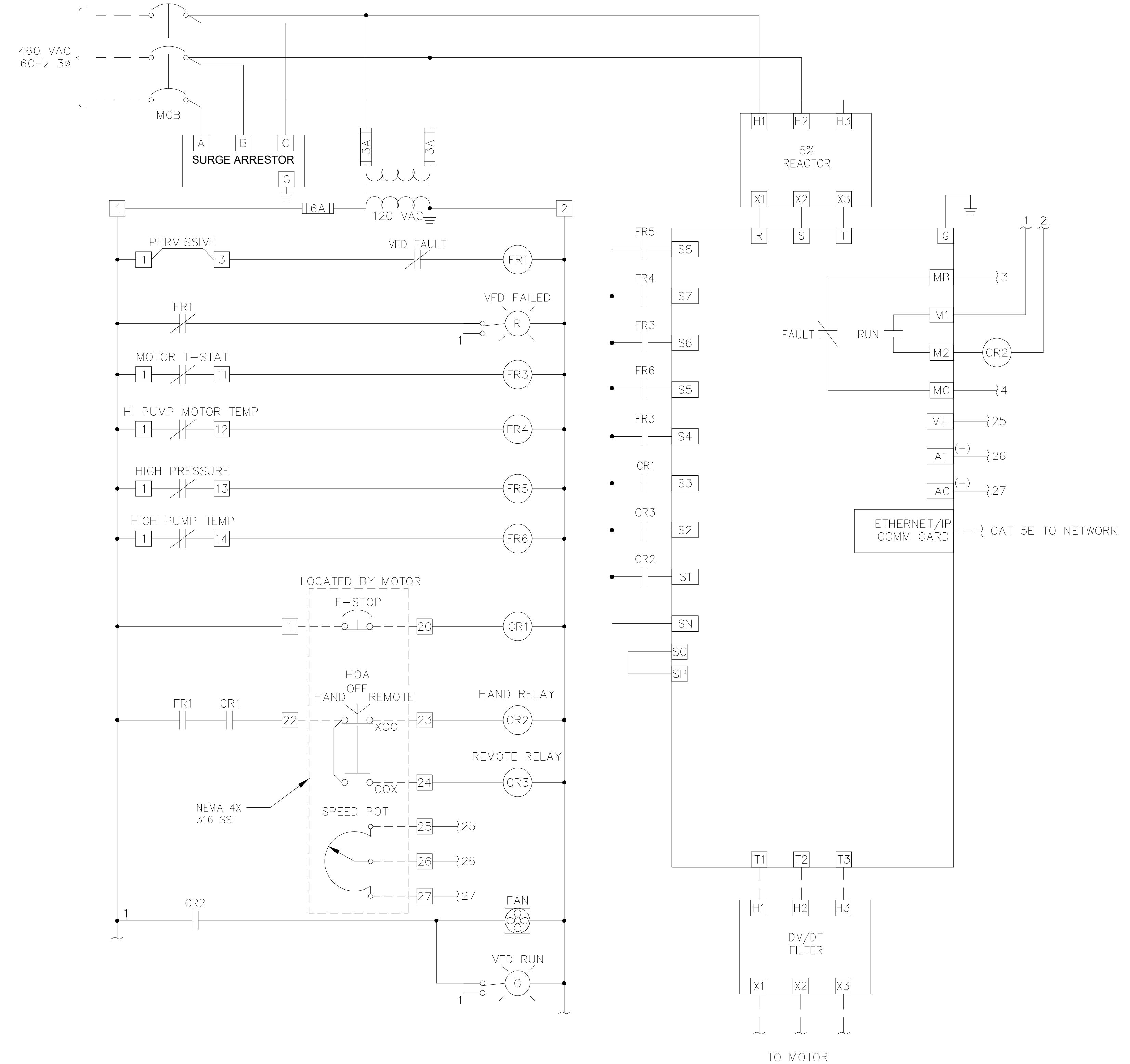
REVIEWED BY:

[View Details](#)

APPROVED BY:

— [REDACTED]

CITY



TYPICAL VFD

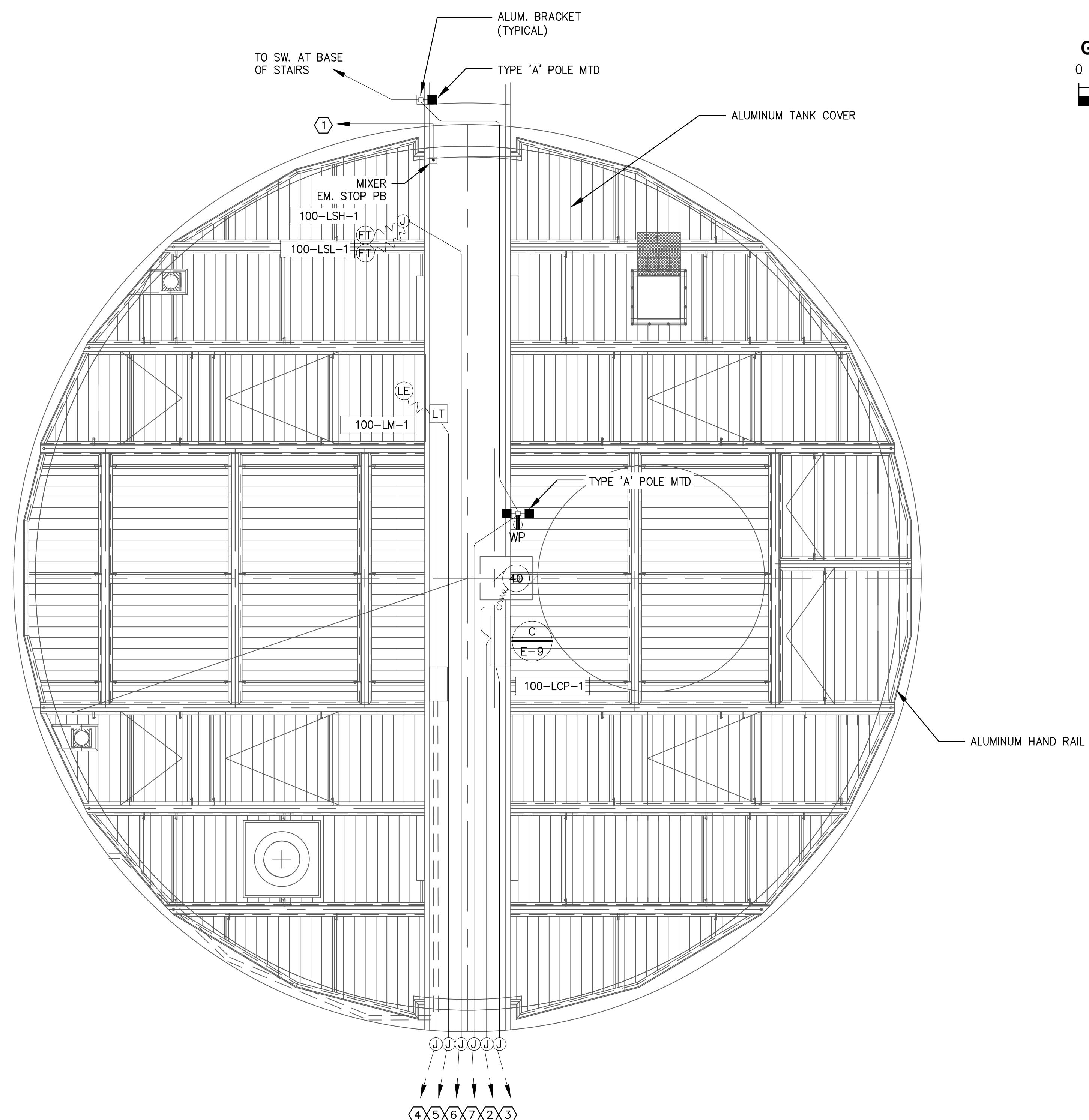
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



JonesEdmunds

MS WRF BLEND TANK MIXER PROJECT POWER RISER

NAME: <u>E-04 POWER RISER.dwg</u>	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. _____
TRACT NO.: <u>18-0057-UT</u>	DATE DRAWN: <u>JUNE 2020</u>	DRAWN BY: <u>JPH</u>	HORIZ. <u>AS NOTED</u>
OWNER: <u>3720-054-01</u>	DESIGNED BY: <u>WCH</u>	CHECKED BY: <u>WCH</u>	SHEET NO.: <u>E4</u>
APPROVED FOR CONSTRUCTION			
WILLARD C. HOANSHELT, P.E. # 42593			DATE _____



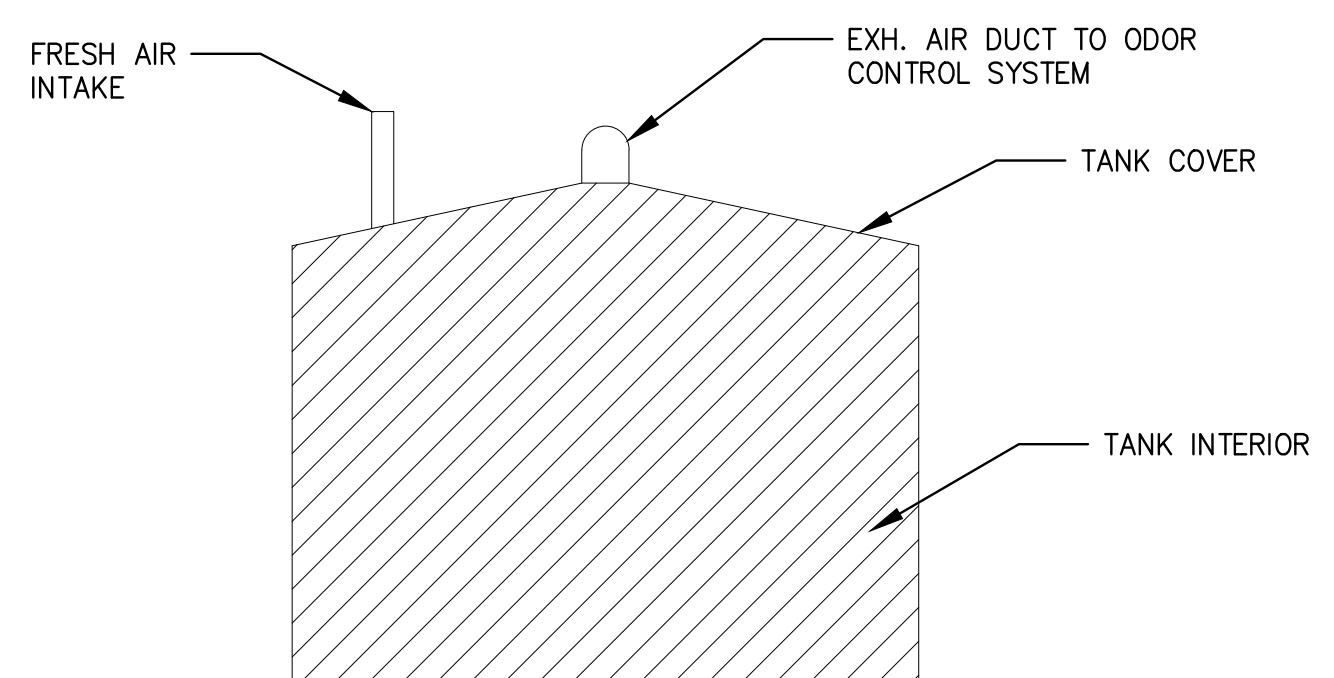
SLUDGE HOLDING TANK

GRAPHIC SCALE

0 1 2 4 8
SCALE IN FEET
 $1/4'' = 1'-0''$

SHEET NOTES

- ① 2#14-3/4" TO TB-C
- ② MCC-8
- ③ 10#14-3/4" TO TB-C
- ④ LSP-2,4
- ⑤ 1-2/C#16SH-3/4" TO TB-I
- ⑥ 4#14-3/4" TO TB-C
- ⑦ LSP-13



CLASS 1 DIV. 2

ELECTRICAL CLASSIFICATION



COA 6160
5742 Riverber Rd.
Groveland, FL 34736
P: 352.460.4035

RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
REVISION	BY DATE

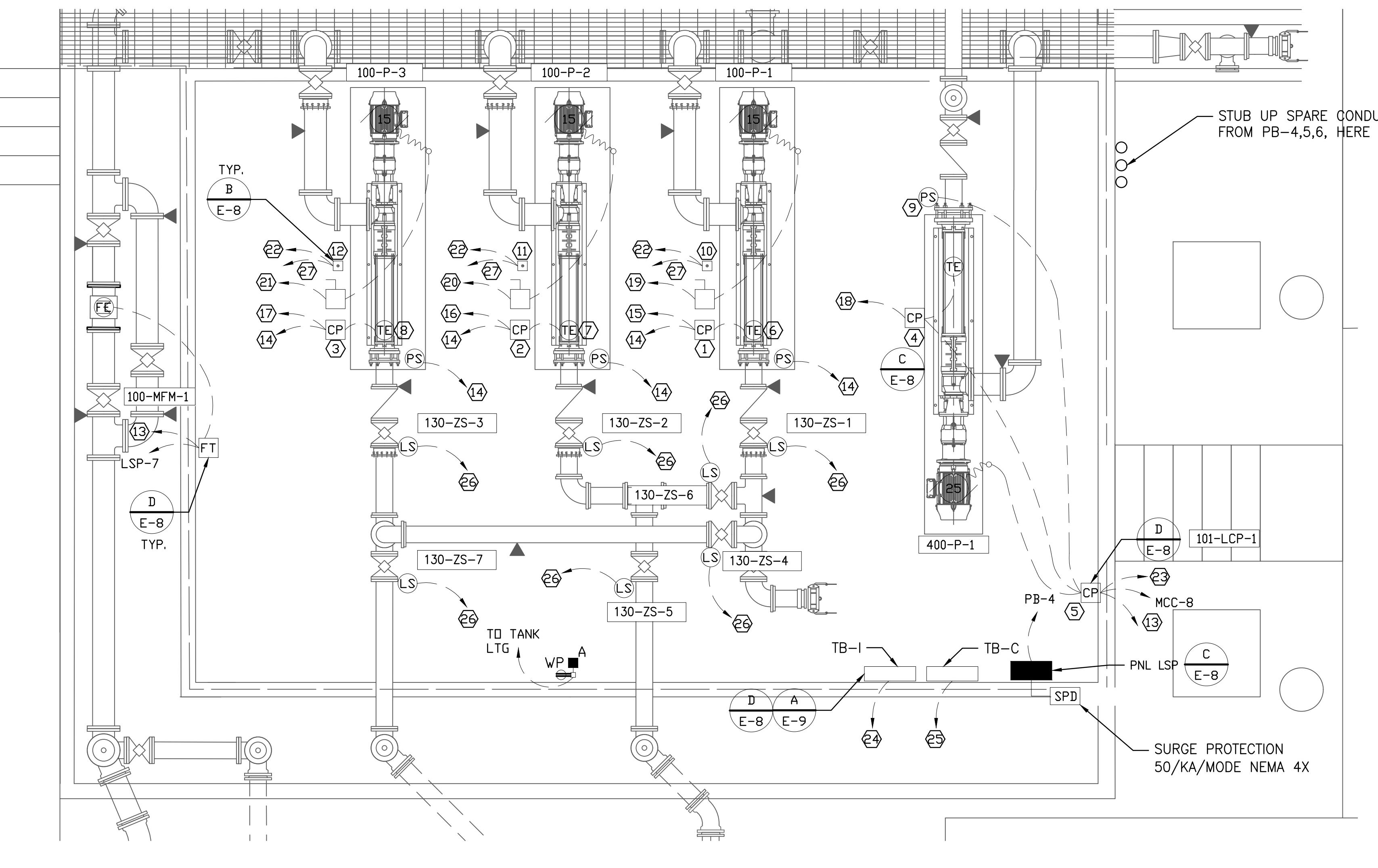
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



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CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703
www.sunshine811.com
(800) 322-8110
MIN. 48 HOURS
BEFORE YOU EXCAVATE

MS WRF BLEND TANK
MIXER PROJECT
SLUDGE HOLDING TANK PLAN

DWG NAME: E-05 BLEND TANK.dwg		FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO.:	18-0057-UT	DATE DRAWN:	DRAWN BY:	VERT.
JOB NO.:	03720-054-01	DESIGNED BY:	WCH	HORIZ. AS NOTED
APPROVED FOR CONSTRUCTION		WILLARD C. HOANSHELT, P.E. # 42593	WCH	E5



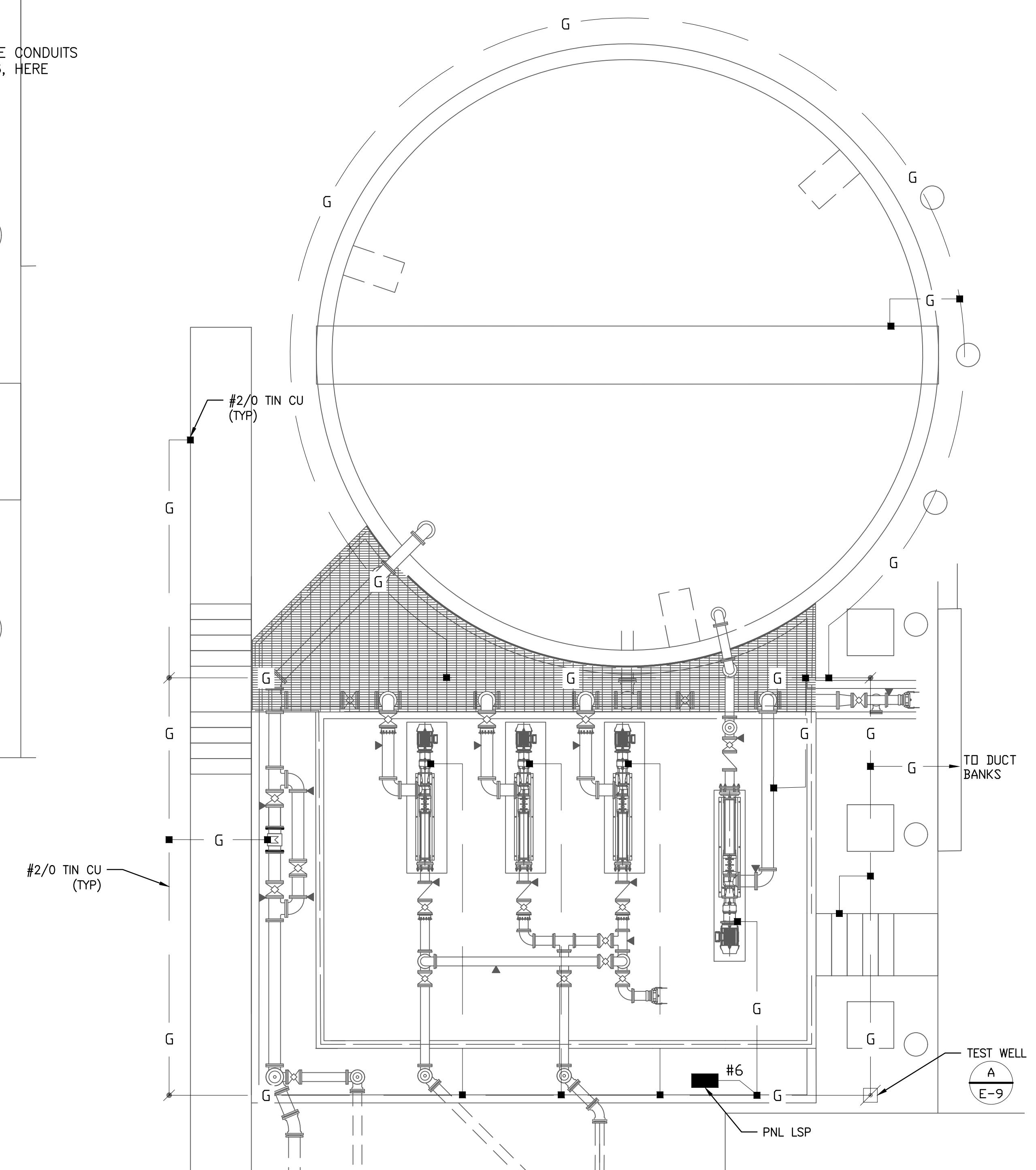
POWER PLAN

SHEET NOTES

- (1) 100-LCP-1 (13) 1-2/C#16SH-3/4" TO TB-I
- (2) 100-LCP-2 (14) 2#14-3/4" TO TB-C
- (3) 100-LCP-3 (15) LSP-8
- (4) 400-LCP-2 (16) LSP-9
- (5) 400-LCP-1 (17) LSP-10
- (6) 100-PS-1 (18) LSP-11
- (7) 100-PS-2 (19) 100-VFD-1
- (8) 100-PS-3 (20) 100-VFD-2
- (9) 400-PS-1 (21) 100-VFD-3
- (10) 100-HS-1 (22) 5#14-3/4" TO TB-C
- (11) 100-HS-2 (23) 15#14-1" TO TB-C
- (12) 100-HS-3 (24) (6)-2/C#16SH, & (3)-3/C#16SH-2"
- (25) (2)-37/C#14-3" TO PLC-DW
- (26) 2#14-3/4" TO TB-C
- (27) 3/C#16SH-3/4"

GRAPHIC SCALE

0 2.5 5 10
SCALE IN FEET



GROUNDING PLAN

GROUNDING NOTES

1. ALL EXPOSED GND WIRES WIRES SHALL BE ALUMINUM

GRAPHIC SCALE
0 2.5 5 10
SCALE IN FEET

COA 6160
5742 Riverber Rd,
Groveland, FL 34736
P: 352.460.4035

RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE

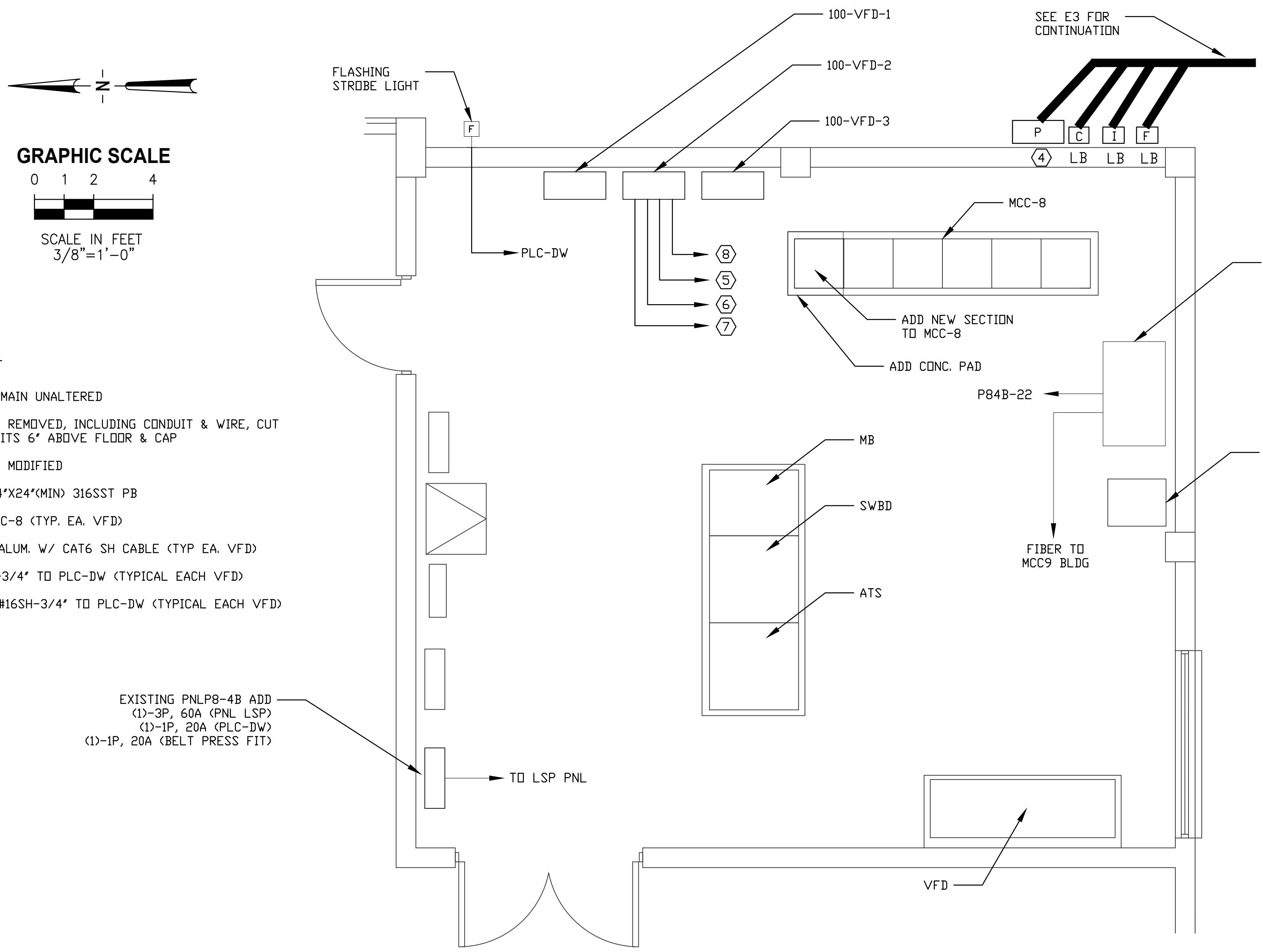
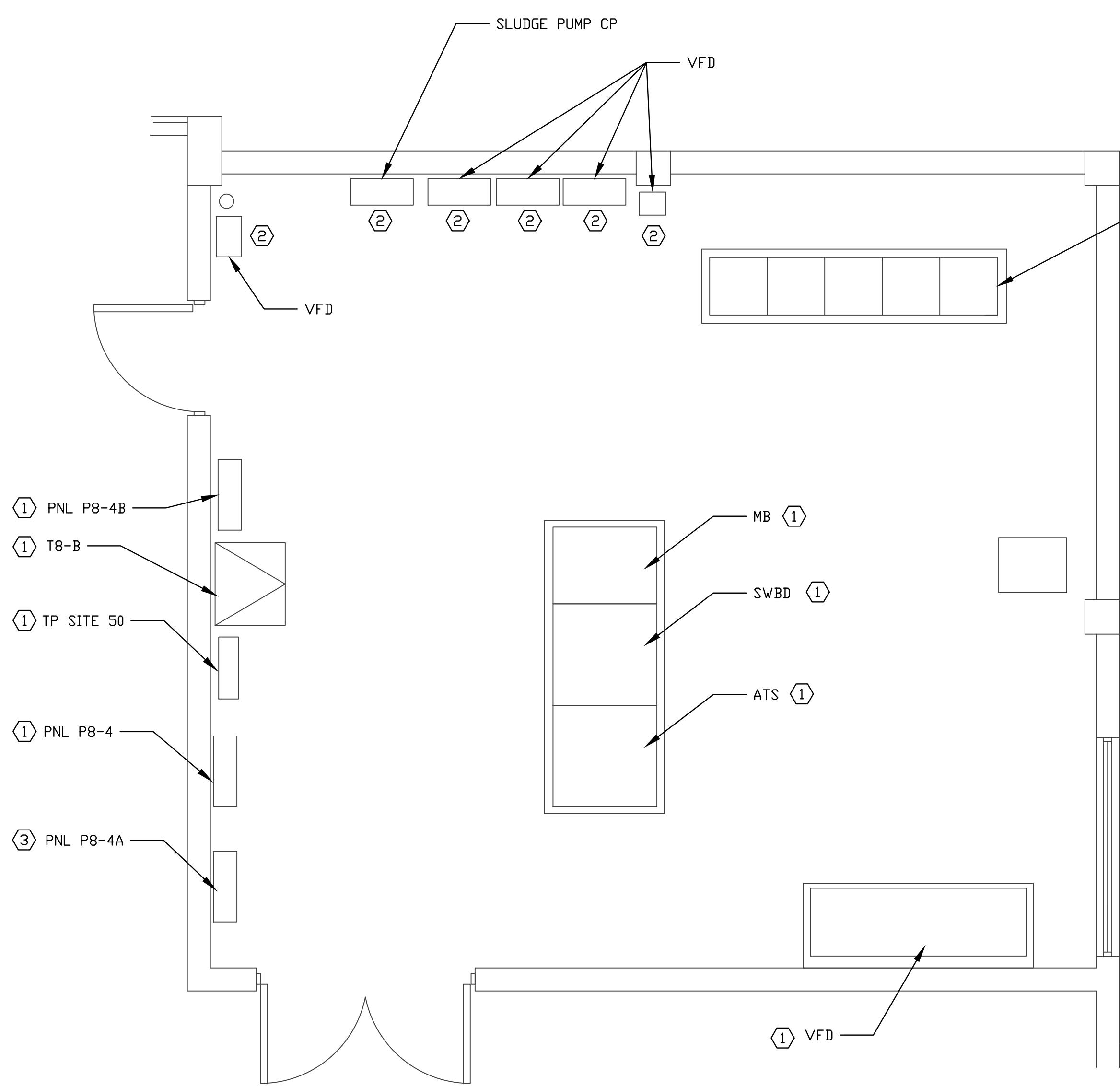
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1841
7324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
SLUDGE PUMP STATIONS

DWG NAME	FIELD BOOK:	SURVEYED BY:	SCALE:
E-06 SLUDGE PS.dwg			
18-0057-UT	JUNE 2020	JPH	
03720-054-01	DESIGNED BY:	WCH	SHEET NO.: E6
APPROVED FOR CONSTRUCTION			
	WILLARD C. HOANSHELT, P.E. #42593		DATE



36

SLUDGE DEWATERING BUILDING ELECTRICAL ROOM - DEMOLITION PLAN



PHOTO - EAST WALL

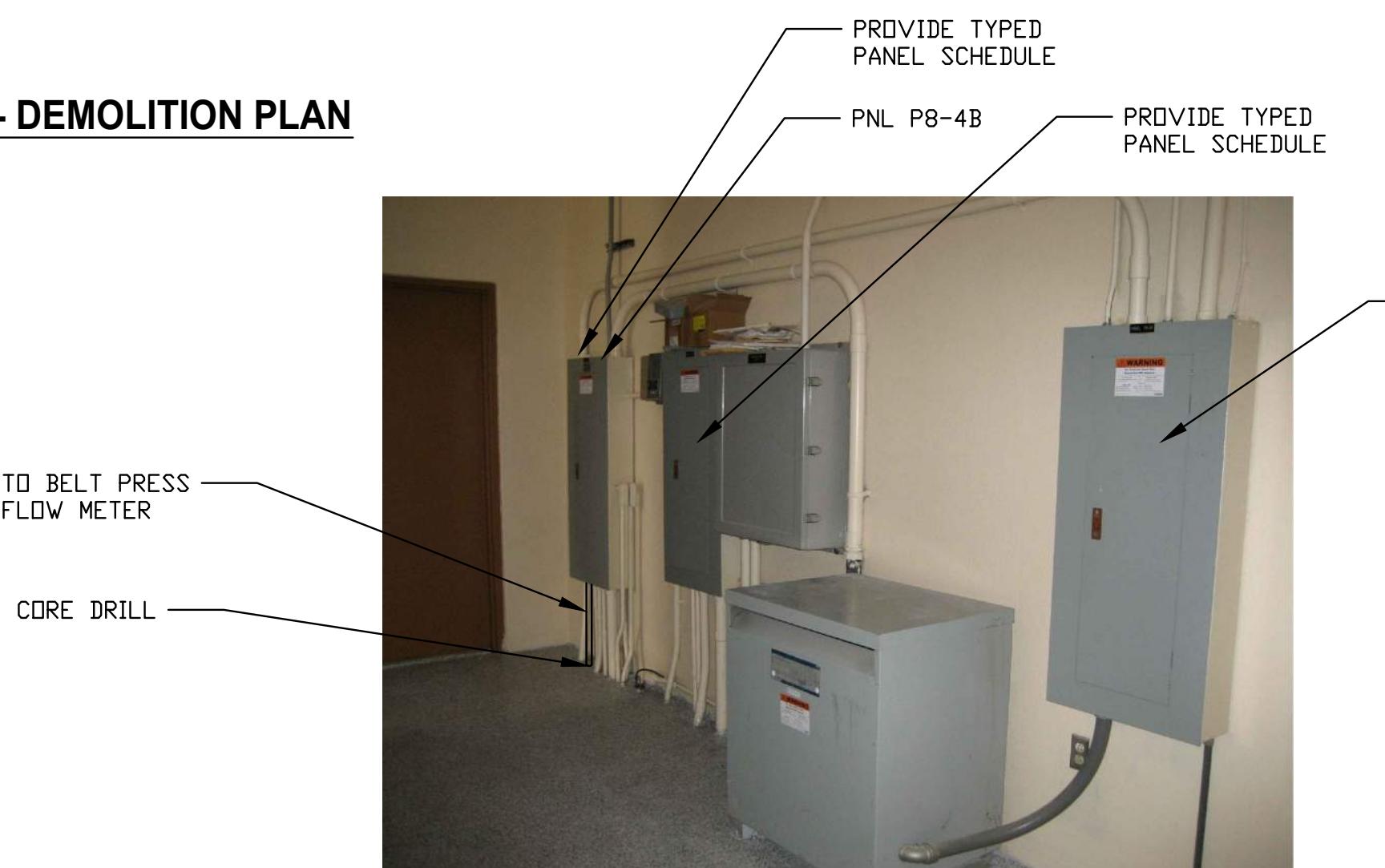


PHOTO - NORTH WALL ELECT. ROOM

SLUDGE DEWATERING BUILDING ELECTRICAL ROOM - PLAN



PHOTO - BELT PRESS FLOW METER

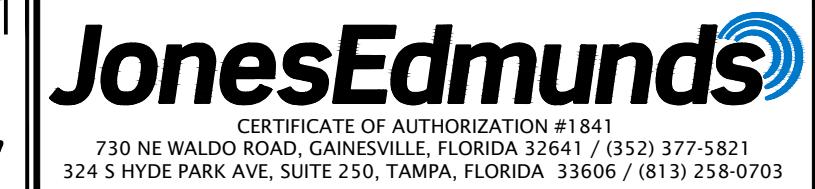


RECORD DRAWINGS	DRAWN BY:		
SURVEYED BY:			
REVIEWED BY:			
APPROVED BY:	PROJECT ENGINEER	DATE	

CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611 DATE

REVISION BY DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



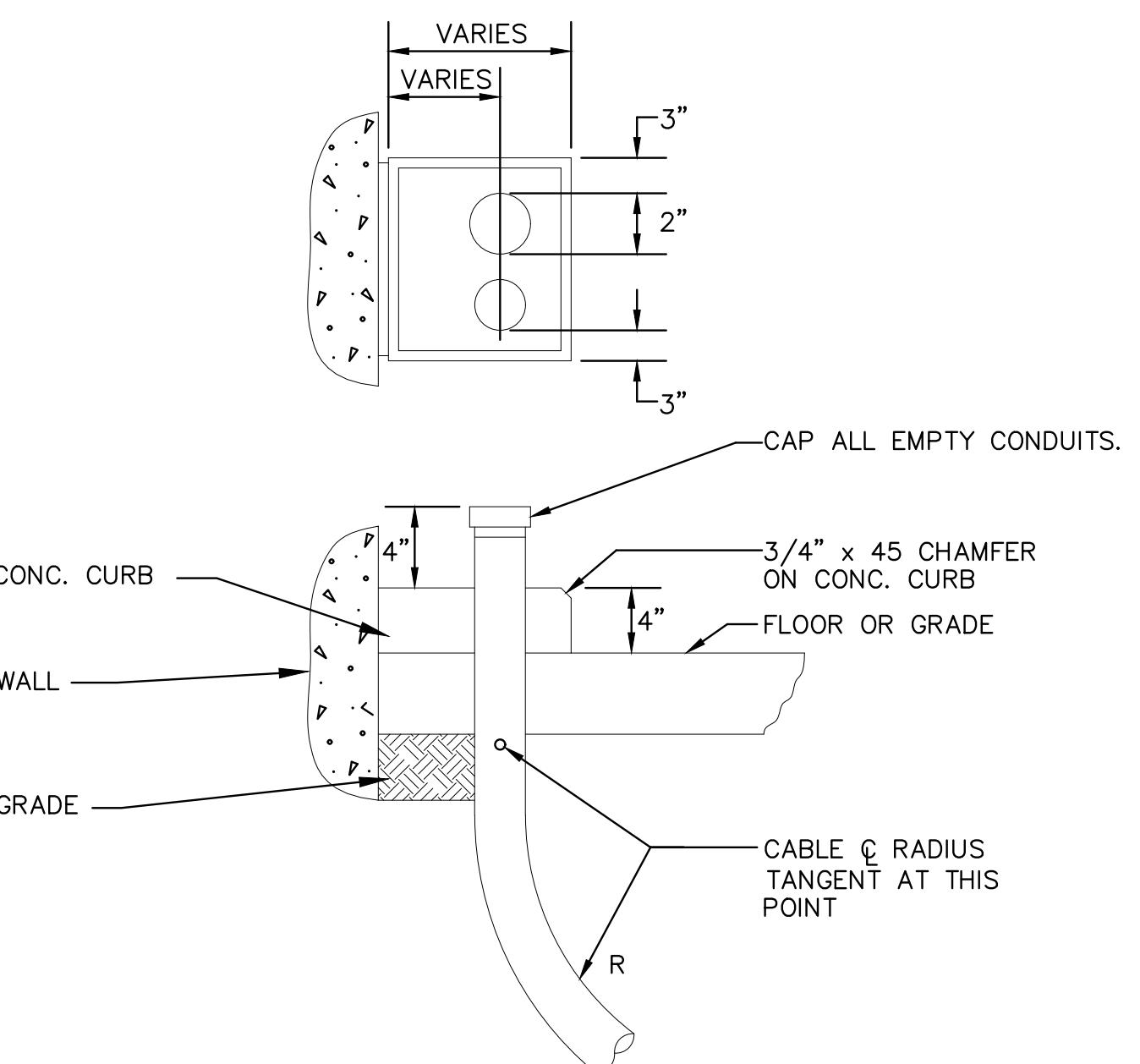
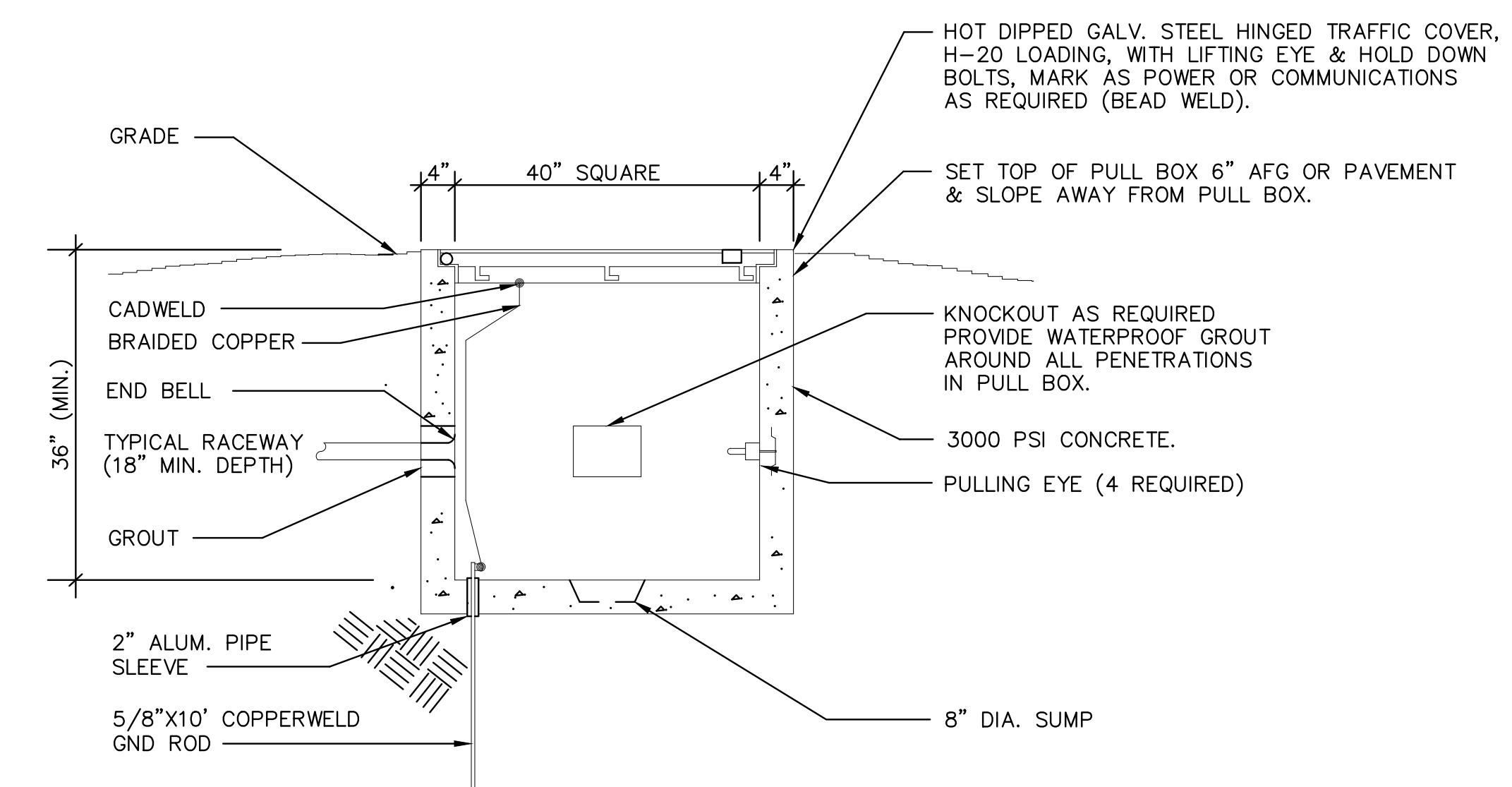
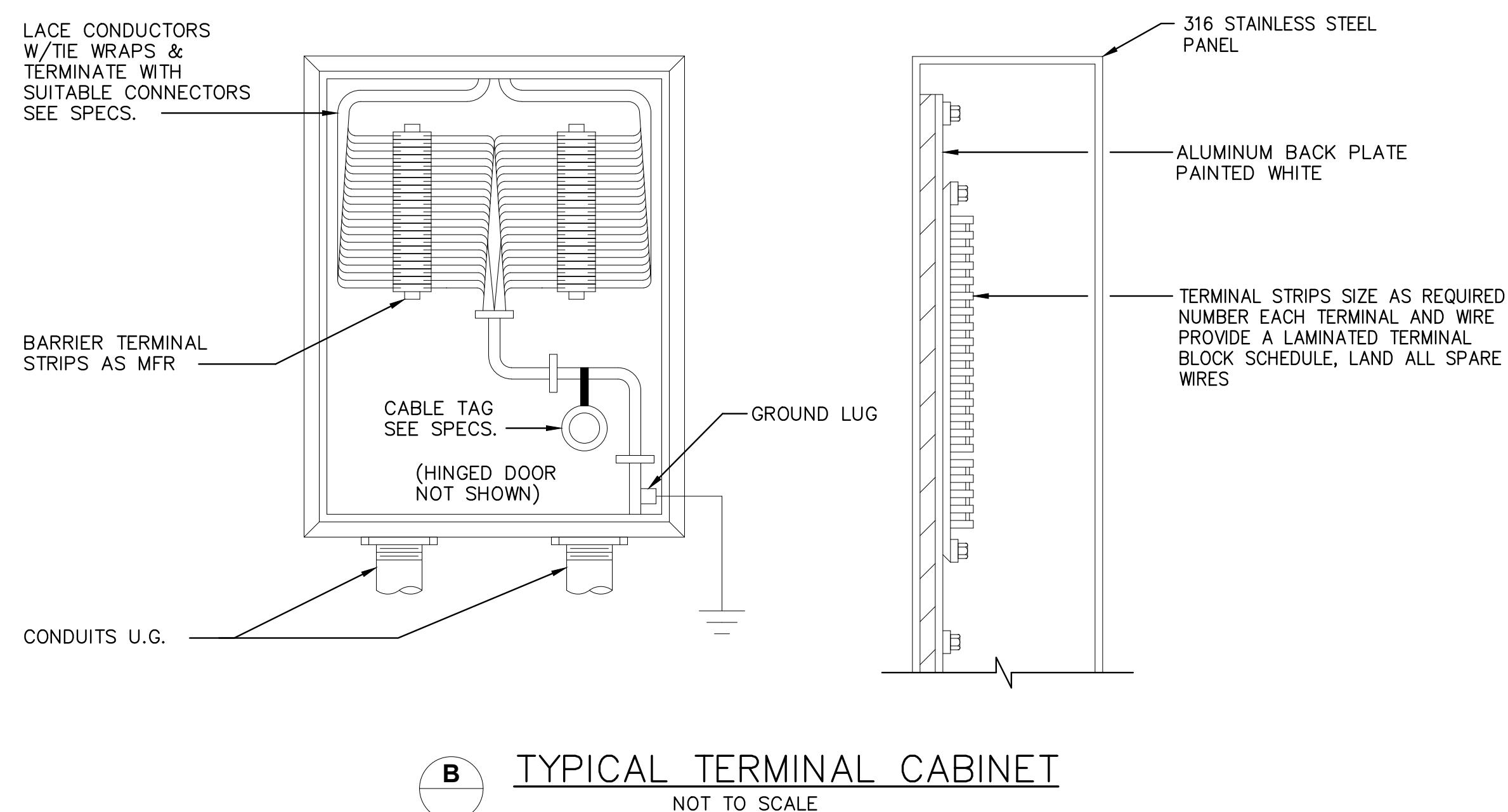
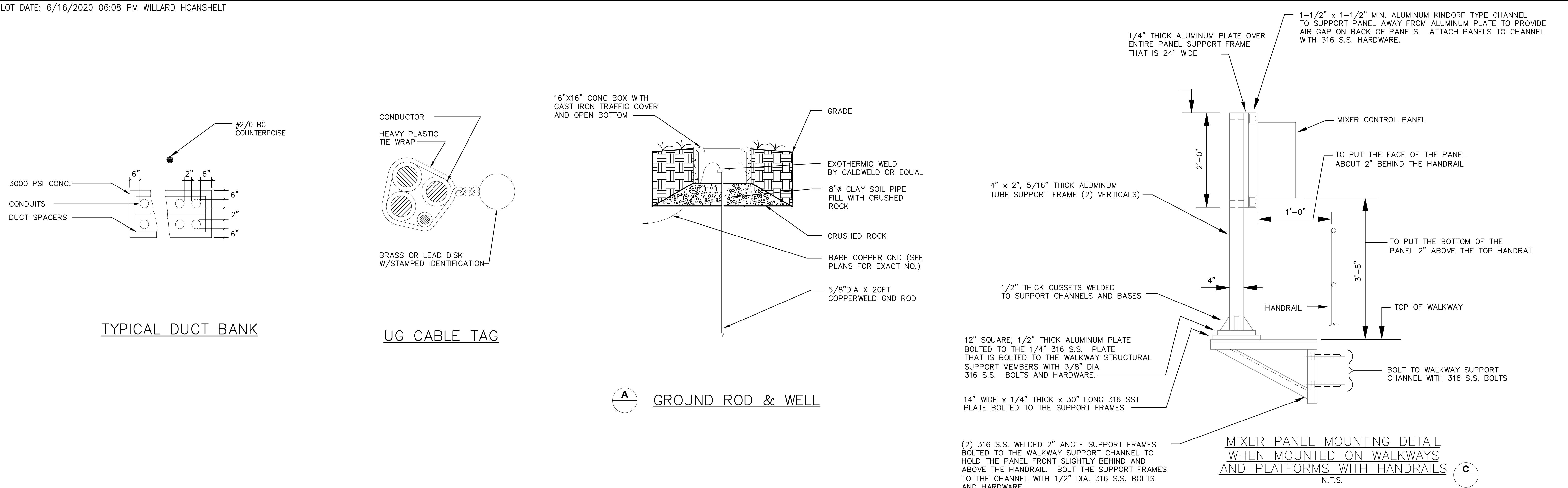
CERTIFICATE OF AUTHORIZATION #1841
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

**MS WRF BLEND TANK
MIXER PROJECT
ELECTRICAL ROOM**

DRAWN NAME	ELECTRICAL	FIELD BOOK:	SURVEYED BY:	SCALE:
CONTRACT NO.:				VERT.
18-0057-UT	JUNE 2020	DRAWN BY:	JPH	HORIZ. NONE
JOB NO.:		DESIGNED BY:	WCH	SHEET NO.: E7
03720-054-01		CHECKED BY:	WCH	
APPROVED FOR CONSTRUCTION				

WILLARD C. HOANSHELT, P.E. #42593 DATE

BID SET



RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
APPROVED BY:	
PROJECT ENGINEER	DATE
REVISION	BY DATE
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611	DATE

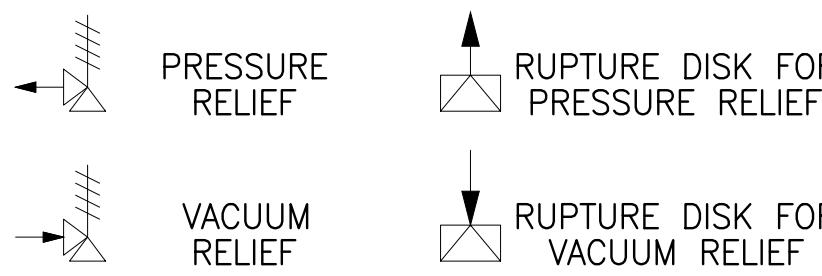
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CONTRACT NO.:	DATE DRAWN:	DRAWN BY:	VERT.
18-0057-UT	JUNE 2020	JPH	HORZ. AS NOTED
JOB NO.:	DESIGNED BY:	CHECKED BY:	SHEET NO.:
03720-054-01	WCH	WCH	E9
APPROVED FOR CONSTRUCTION			
WILLARD C. HOANSHELT, P.E. #42593			DATE

PLOT DATE: 6/16/2020 06:09 PM WILLARD HOANSHELT

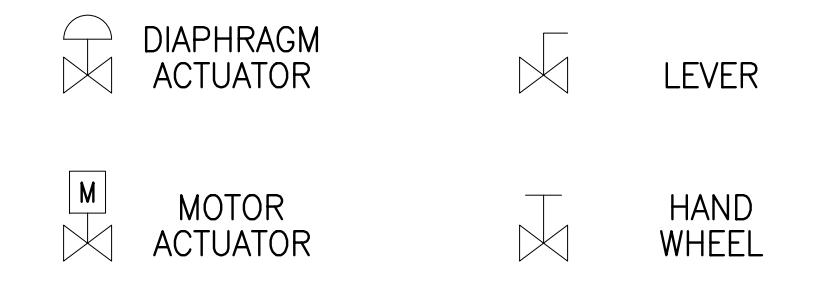
MCC	MOTOR CONTROL CENTER	
LCP	LOCAL CONTROL PANEL	
SCADA	SUPER VISORIAL CONTROL & DATA ACQUISITION	
PIPE MATERIAL ABBR		
304SS	304 STAINLESS STEEL	
DI	DUCTILE IRON	
PVC	POLYVINYL CHLORIDE	
FLUID CODE ABBR		
CA	CLEANING AIR	
CDS	CHEMICAL DOSING	
INF LT	INFLOW	
OVR FL	OVERFLOW	
PA	PLANT AIR	
PRMT	PERMEATE	
PW	PLANT WATER	
RECYC	RECYCLE	
RNS	RINSE	
LINE CODES		
	MAJOR PROCESS LINE	
	MINOR PROCESS LINE	
	PROCESS/CLEANING AIR	
	ELECTRICAL	
	DIGITAL/DATA TO SCADA COMMUNICATION	
	PROCESS CONTINUATION	

DESCRIPTION 1
REF SHT #

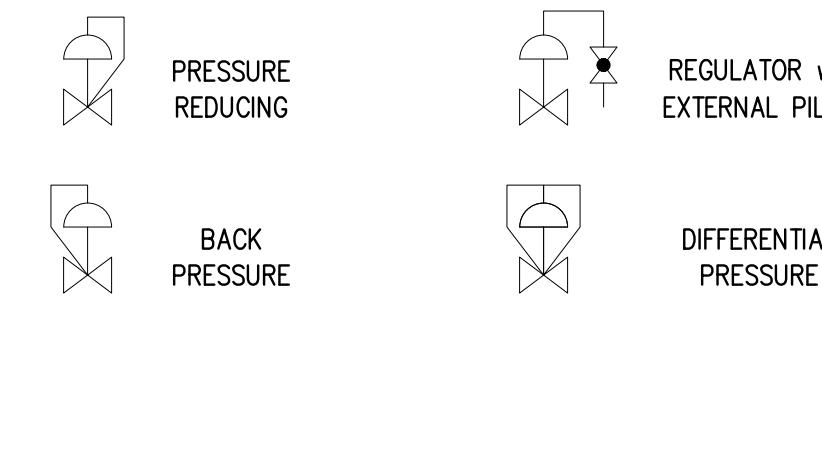
DESCRIPTION 2



VALVE ACTUATORS



SELF-ACTING REGULATORS



FIRST LETTERS		INITIATING OR MEASURED VARIABLE			CONTROLLERS			READOUT DEVICES			SWITCHES AND ALARM DEVICES			TRANSMITTERS			SOLENOIDS, RELAYS, COMPUTING DEVICES		PRIMARY ELEMENT	TEST POINT	WELL OR PROBE	VIEWING DEVICE, GLASS	SAFETY DEVICE	FINAL ELEMENT
					RECORDING	INDICATING	BLIND	SELF-ACTUATED CONTROL VALVES	RECORDING	INDICATING	HIGH	LOW	COMB	RECORDING	INDICATING	BLIND								
A	Analysis	ARC	AIC	AC	-	AR	AI	ASH	ASL	ASHL	ART	AIT	AT	AY	AE	AP	AW	-	-	AZ				
B	Burner/Combustion	BRC	BIC	BC	-	BR	BI	BSH	BSL	BSHL	BRT	BIT	BT	BY	BE	-	BW	BG	-	BZ				
C	User's Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
D	User's Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
E	Voltage	ERC	EIC	EC	-	ER	EI	ESH	ESL	ESHL	ERT	EIT	ET	EY	EE	-	-	-	-	EZ				
F	Flow Rate	FRC	FIC	FC	FCV	FR	FI	FSH	FSL	FSHL	FRT	FIT	FT	FY	FE	FP	-	FG	-	FZ				
FQ	Flow Quantity	FQRC	FQIC	-	-	FQR	FQI	FQSH	FQSL	FQSHL	-	FQIT	FQT	FQY	FQE	-	-	-	-	FQZ				
FF	Flow Ratio	FFRC	FFIC	FFC	-	FFR	FFI	FFSH	FFSL	FFSHL	-	-	-	-	-	-	-	-	-	FFZ				
G	User's Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
H	Hand	-	HIC	HC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
I	Current	IRC	IIC	-	-	IR	II	ISH	ISL	ISHL	IRT	IIT	IT	IY	IE	-	-	-	-	IZ				
J	Power	JRC	JIC	-	-	JR	JI	JSH	JSL	JSHL	JRT	JIT	JT	JY	JE	-	-	-	-	JZ				
K	Time	KRC	KIC	KC	KCV	KR	KI	KSH	KSL	KSHL	KRT	KIT	KT	KY	KE	-	-	-	-	KZ				
L	Level	LRC	LIC	LC	LCV	LR	LI	LSH	LSL	LSHL	LRT	LIT	LT	LY	LE	-	LW	LG	-	LZ				
M	User's Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
N	PLC Digital User Interface *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
O	User's Choice	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
P	Pressure/Vacuum	PRC	PIC	PC	PCV	PR	PI	PSH	PSL	PSHL	PRT	PIT	PT	PY	PE	PP	-	-	PSE	PZ				
PD	Pressure Differential	PDRC	PDIC	PDC	PDCV	PDR	PDI	PDSH	PDSL	PDSHL	PDRT	PDIT	PDT	PDY	PDE	PDP	-	-	-	PDZ				
Q	Quantity	QRC	QIC	-	-	QR	QI	QSH	QSL	QSHL	QRT	QIT	QT	QY	QE	-	RW	-	-	QZ				
R	Radiation	RRC	RIC	RC	-	RR	RI	RSH	RSL	RSHL	RRT	RIT	RT	RY	RE	-	-	-	-	RZ				
S	Speed/Frequency	SRC	SIC	SC	SCV	SR	SI	SSH	SSL	SSHSL	SRT	SIT	ST	SY	SE	-	-	-	-	SZ				
T	Temperature	TRC	TIC	TC	TCV	TR	TI	TSH	TSL	TSHL	TRT	TIT	TT	TY	TE	TP	TPW	-	TSE	TZ				
TD	Temperature Differential	TDRC	TDIC	TDC	TDCV	TDR	TDI	TDSH	TDSL	TDSHL	TDRT	TDIT	TDT	TDY	TDE	TDP	TDPW	-	-	TDZ				
U	Multivariable	-	-	-	-	UR	UI	-	-	-	-	-	-	-	-	-	-	-	-	-				
V	Vibration/Machinery Analysis	-	-	-	-	VR	VI	VSH	VSL	VSHL	VRT	VIT	VT	VY	VE	-	-	-	-	VZ				
W	Weight/Force	WRC	WIC	WC	WCV	WR	WI	WSH	WSL	WSHL	WRT	WIT	WT	WY	WE	-	-	-	-	WZ				
WD	Weight/Force Differential	WDRC	WDIC	WDC	WDCV	WDR	WDI	WDSH	WDSL	WDSHL	WDRT	WDIT	WDT	WDY	WDE	-	-	-	-	WDZ				
X	Unclassified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Y	Event/State/Presence	-	YIC	YC	-	YR	YI	YSH	YSL	YSHL	YRT	YIT	YT	YY	YE	-	-	-	-	YZ				
Z	Position/Dimension	ZRC	ZIC	ZC	ZCV	ZR	ZI	ZSH	ZSL	ZSHL	ZRT	ZIT	ZT	ZY	ZE	-	-	-	-	ZZ				
ZD	Gauging/Deviation	ZDRC	ZDIC	ZDC	ZDCV	ZDR	ZDI	ZDSH	ZDSL	ZDSHL	ZDRT	ZDIT	ZDT	ZDY	ZDE	-	-	-	-	ZDZ				

NOTE: This table is not all-inclusive.

* TRANSMIT AND DISPLAY ALL AVAILABLE DATA, REFER TO THE SPECIFICATIONS FOR ADDITIONAL CONTROL/STATUS AND ALARM FUNCTIONS.

PIPING SYMBOLS		INSTRUMENTS		MECHANICAL EQUIPMENT	
NC	NO				
	GATE VALVE				
	GLOBE VALVE				
	BALL VALVE				
	3-WAY BALL VALVE				
	PLUG VALVE				
	LUGGED BUTTERFLY VALVE				
	BUTTERFLY VALVE				
	CHECK VALVE				
	DOUBLE LEAF CHECK VALVE				
	BLIND SPECTACLE				
	SLIDE GATE				
	BLIND FLANGE				
	WELDED CAP				
	SCREWED CAP				
	CAMLOCK FITTING				
	FLEXIBLE LINE				
	FUNNEL				
<img alt="Union symbol					

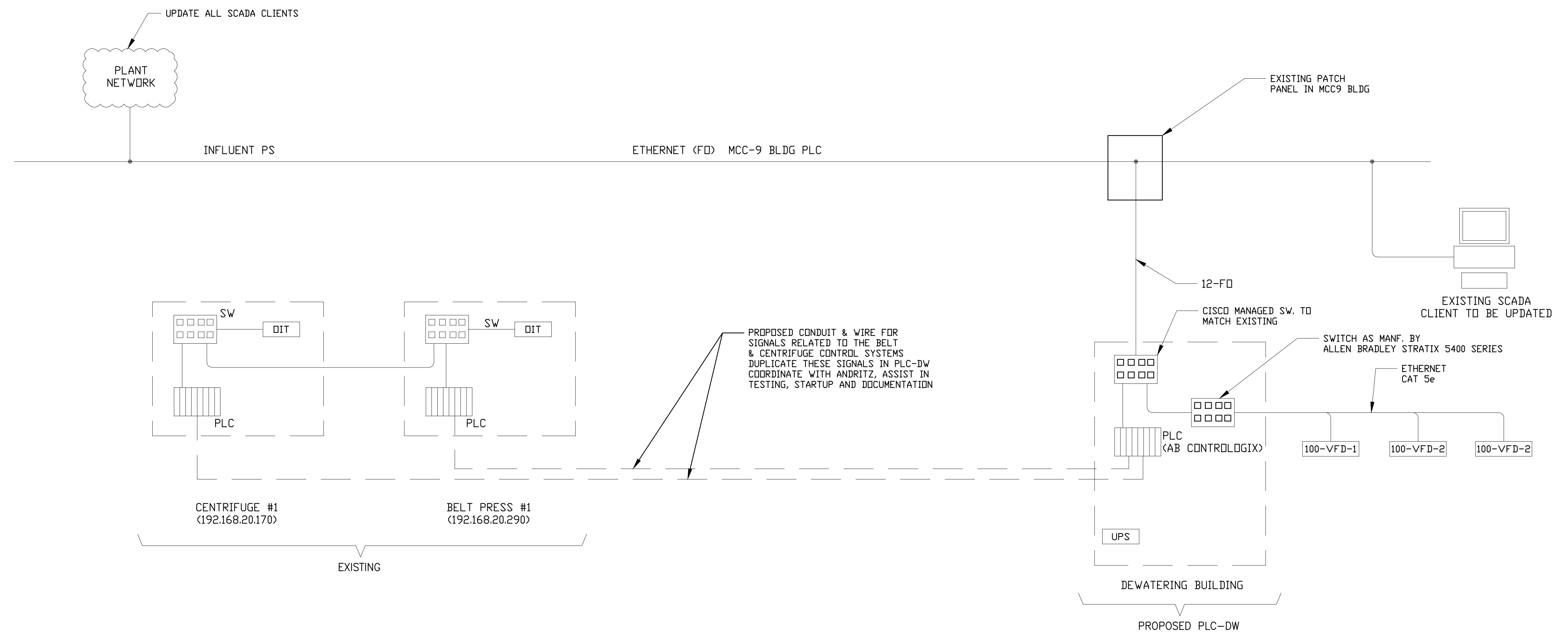


PHOTO: PLC MCC9 SWITCH



PHOTO: MCC9 FIBER PATCH PANEL

EMI
DOA 6160
5742 Riverber Rd.
Groveland, FL 34736
P: 352.460.4035

RECORD DRAWINGS				
SURVEYED BY:	DRAWN BY:			
REVIEWED BY:				
APPROVED BY:	PROJECT ENGINEER	DATE		
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #06611	REVISION	BY	DATE	

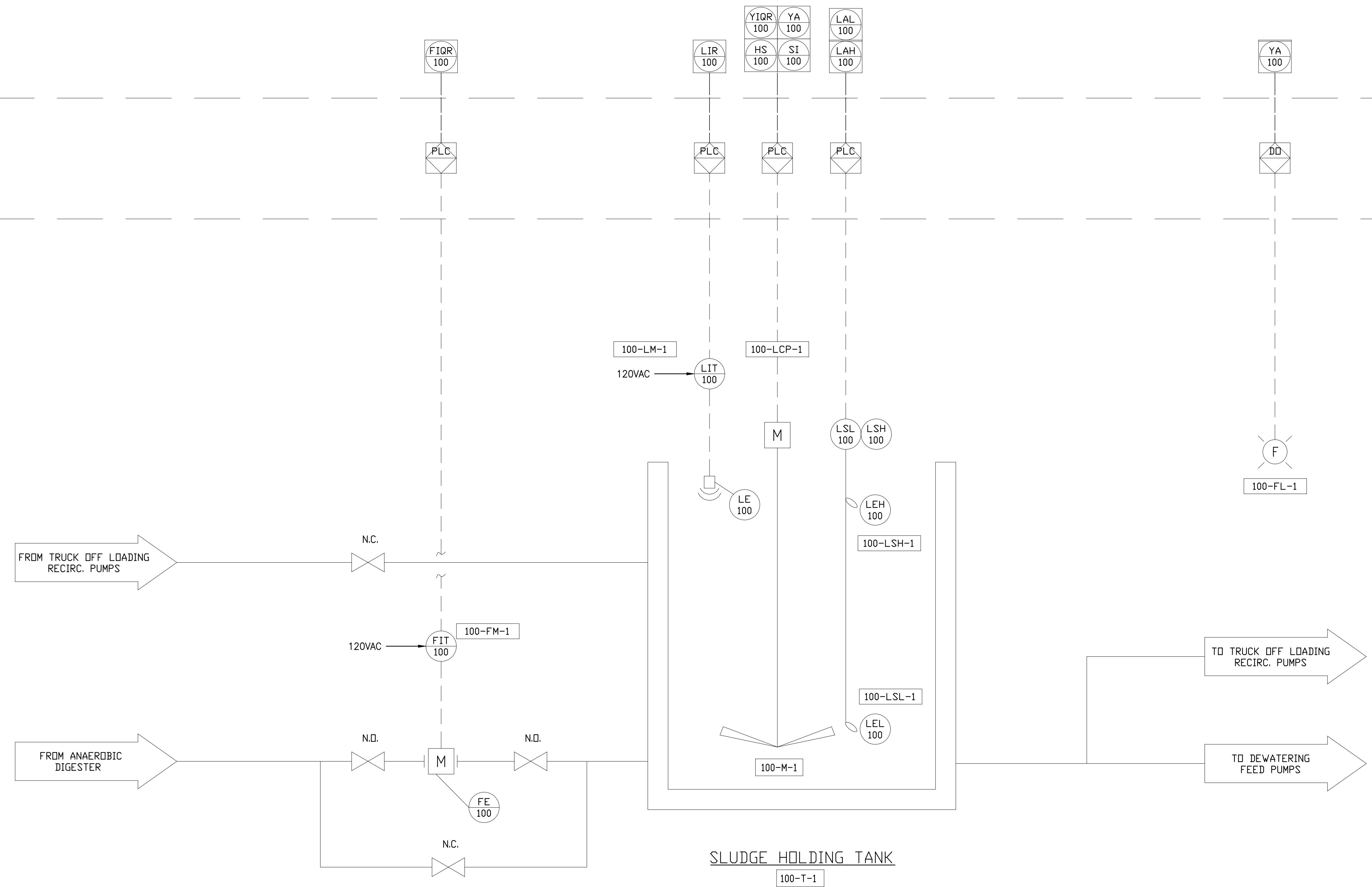
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



JonesEdmunds
CERTIFICATE OF AUTHORIZATION #1541
730 NE WALDRIDGE ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
324 S HYDE PARK AVE, SUITE 250, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK MIXER PROJECT BLOCK DIAGRAM

DOC NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
I-02 BLOCK DIAGRAM.dwg			
CONTRACT NO.:	DATE DRAWN:	DRAWN BY:	VERT.
18-0057-UT	JUNE 2020	JPH	
JOB NO.:	DESIGNED BY:	CHECKED BY:	SHEET NO.:
03720-054-01	WCH	WCH	I2
APPROVED FOR CONSTRUCTION			
	WILLARD C. WHOANSHELT, P.E. # 42593		DATE



THIS DRAWING DOES NOT INDICATE ALL OF THE I/O
REQUIRED TO PERFORM THE INTENDED CONTROL AND
MONITORING FUNCTIONS. REFER TO SPEC. SECTION
AND CONTROL DESCRIPTIONS FOR COMPLETE I/O.

REFER TO CIVIL & MECHANICAL DRAWINGS FOR EXACT
PIPE AND FITTING CONFIGURATION.



COA 6160
1442 Riverstar Rd.
Gainesville, FL 34336
P: 352.460.4035

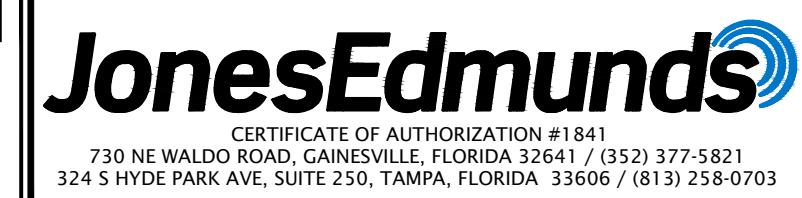
RECORD DRAWINGS	
SURVEYED BY:	DRAWN BY:
REVIEWED BY:	
PROJECT ENGINEER	DATE
APPROVED BY:	
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #05611	DATE

CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #05611 DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



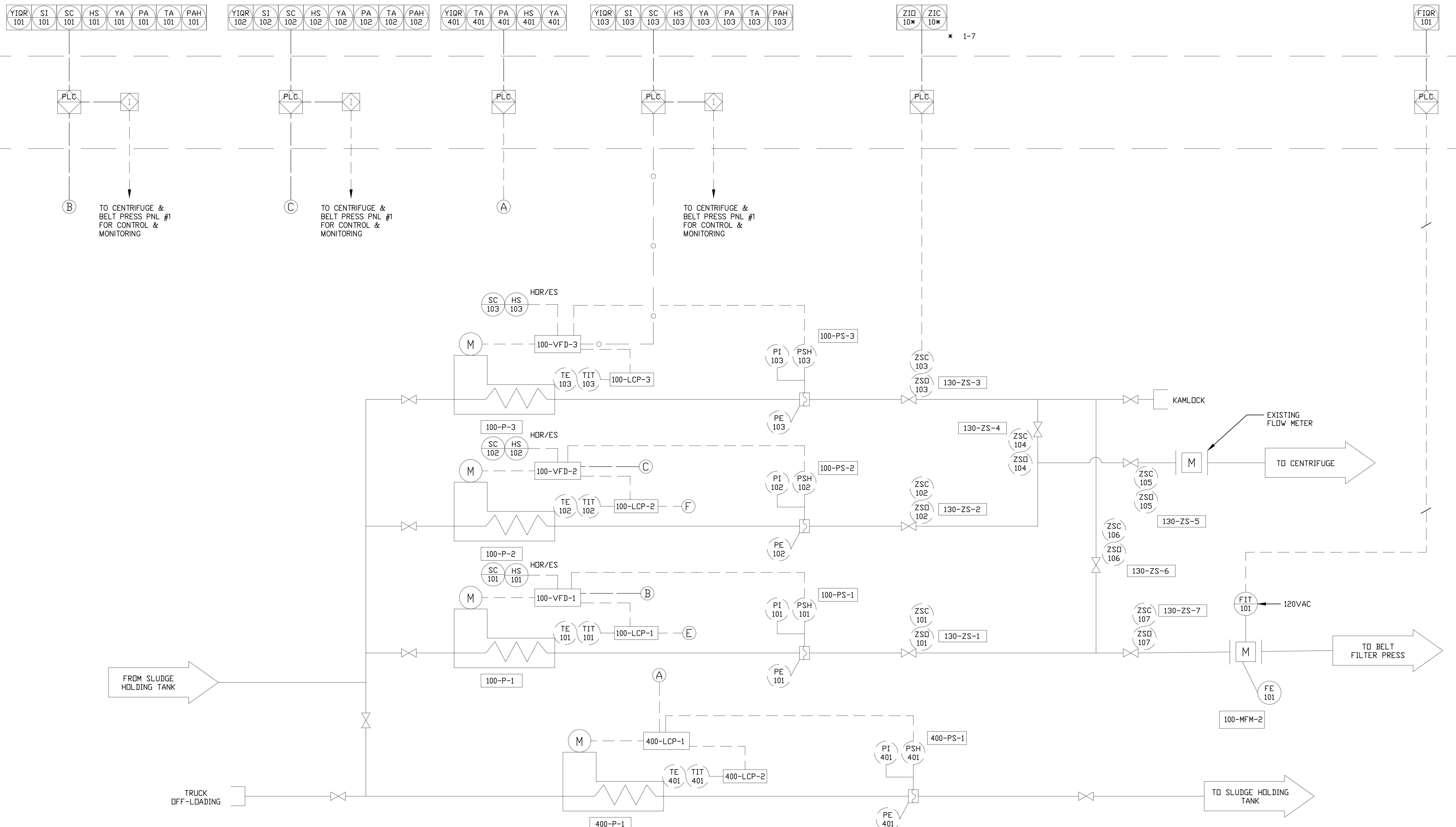
INVESTIGATE BEFORE YOU EXCAVATE
CALL 811
SUNSHINE STATE
ONE CALL
OF FLORIDA
www.sunshine811.com
(800) 432-4770
MIN. 48 HOURS
BEFORE YOU EXCAVATE



CERTIFICATE OF AUTHORIZATION # 1841
730 NE WALDRIDGE, GAINESVILLE, FLORIDA 32641 (352) 377-5821
324 S HYDE PARK AVE, SUITE 230, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
SLUDGE HOLDING TANK -
P&ID

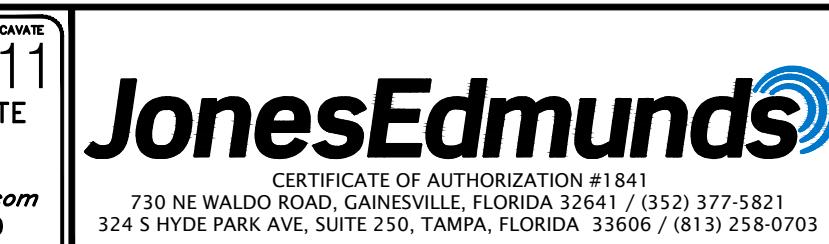
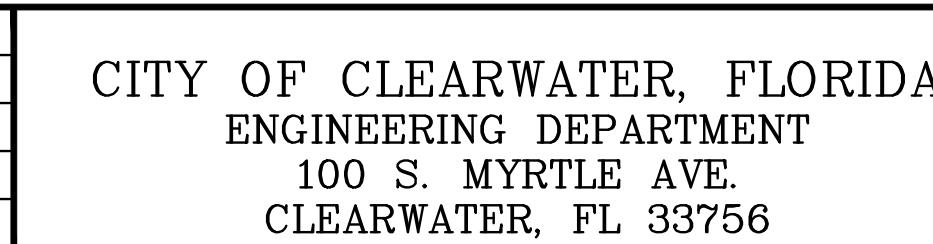
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CONTRACT NO.:	18-0057-UT	DATE DRAWN:	JUNE 2020	VERT.
JOB NO.:	03720-054-01	DESIGNED BY:	WCH	HORZ. AS NOTED
APPROVED FOR CONSTRUCTION		CHECKED BY:	WCH	SHEET NO.: 13
			WILLARD C. HOANSHELT, P.E. # 42593	DATE



THIS DRAWING DOES NOT INDICATE ALL OF THE I/O REQUIRED TO PERFORM THE INTENDED CONTROL AND MONITORING FUNCTIONS. REFER TO SPEC. SECTION AND CONTROL DESCRIPTIONS FOR COMPLETE I/O.

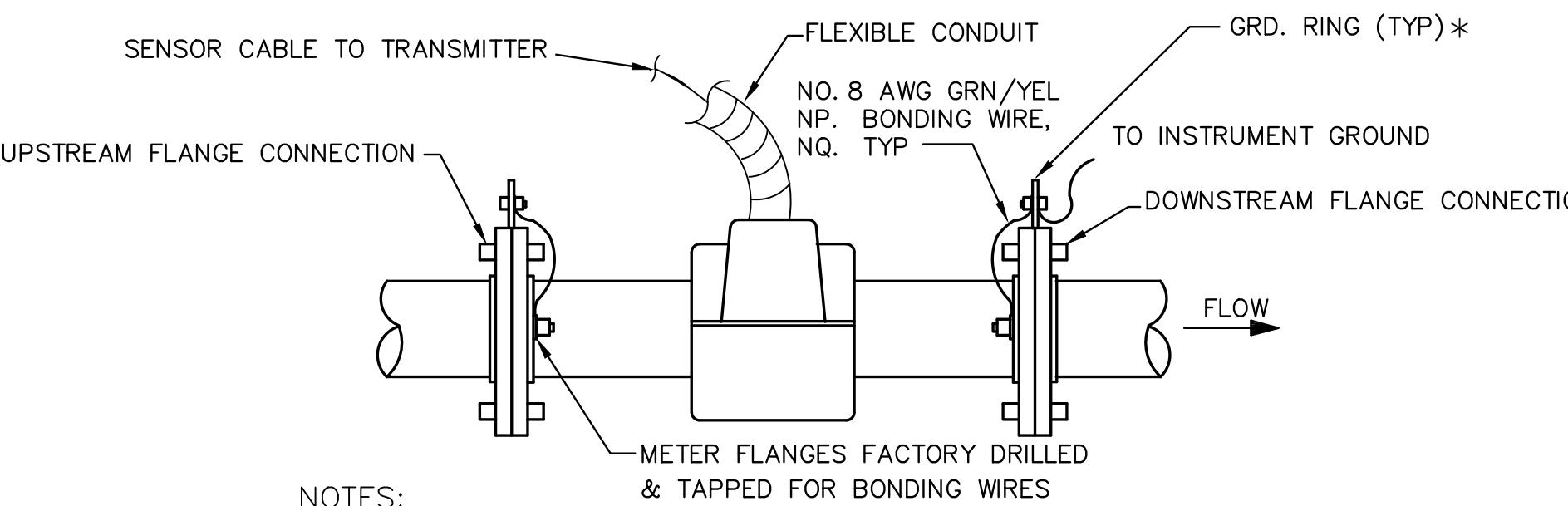
REFER TO CIVIL & MECHANICAL DRAWINGS FOR EXACT PIPE AND FITTING CONFIGURATION.

RECORD DRAWINGS		
SURVEYED BY:	DRAWN BY:	
REVIEWED BY: PROJECT ENGINEER _____ DATE _____		
APPROVED BY: CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #86611 _____ DATE _____		REVISION



**MS WRF BLEND TANK
MIXER PROJECT
SLUDGE PUMPING – P&ID**

NAME: I-04 P&ID.dwg	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. _____
TRACT NO.: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JPH	HORIZ. AS NOTED
NO.: 03720-054-01	DESIGNED BY: WCH	CHECKED BY: WCH	SHEET NO.: 14
APPROVED FOR CONSTRUCTION			
WILLARD C. HOANSHELT, P.E. # 42593			DATE _____

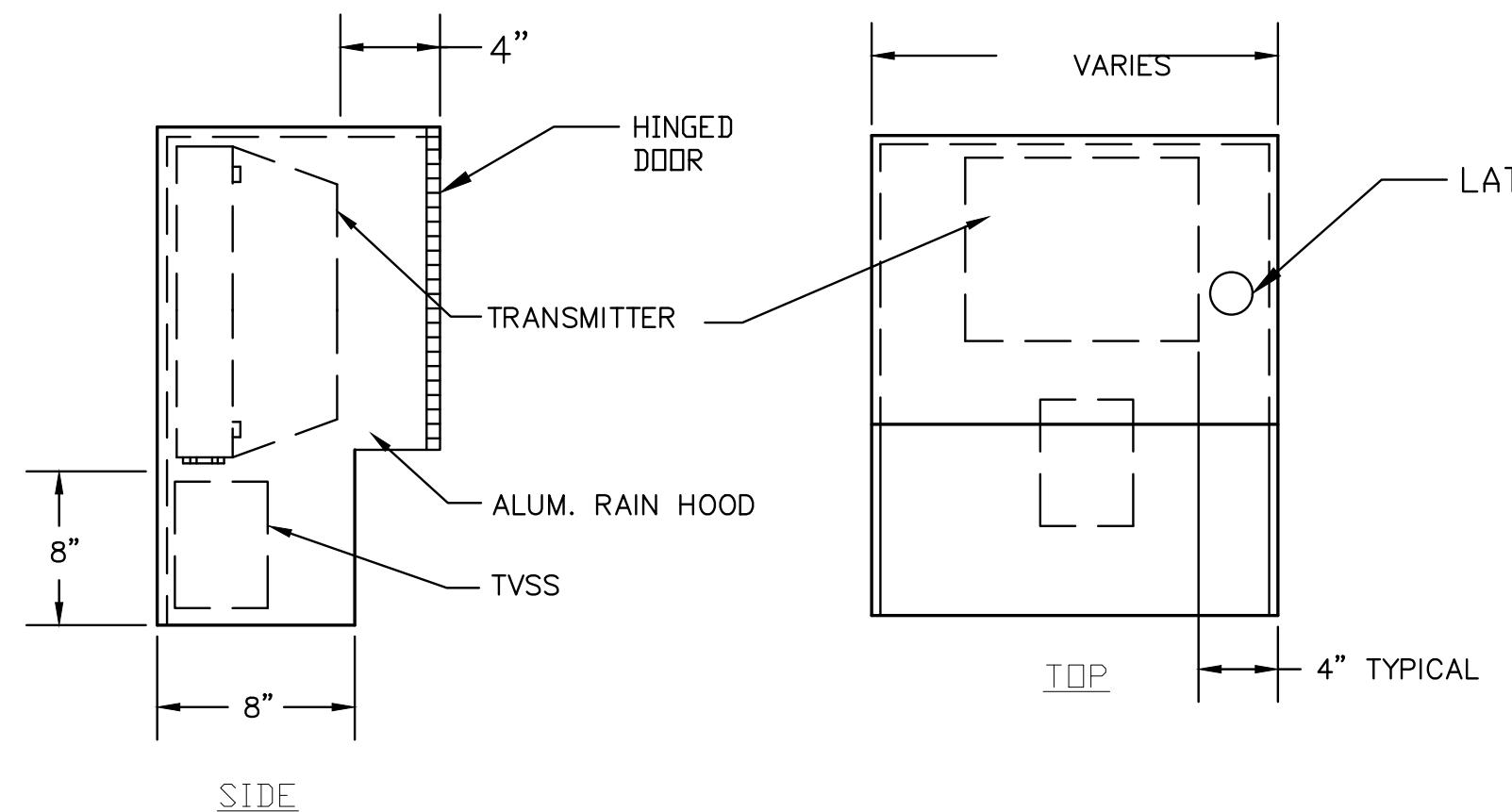


NOTES:

1. COMPONENTS DESIGNATED BY * ARE SUPPLIED BY INSTRUMENT MANUFACTURER.
2. IF PIPE IS NON-CONDUCTIVE BOND MAGMETER TO ONE OF THE FOLLOWING ACCEPTABLE GROUNDS:
A) METALLIC WATER PIPE IF BURIED PORTION IS MORE THAN 10'.
B) STRUCTURAL STEEL.

MAGNETIC FLOWMETER
INSTALLATION DETAIL

NOT TO SCALE

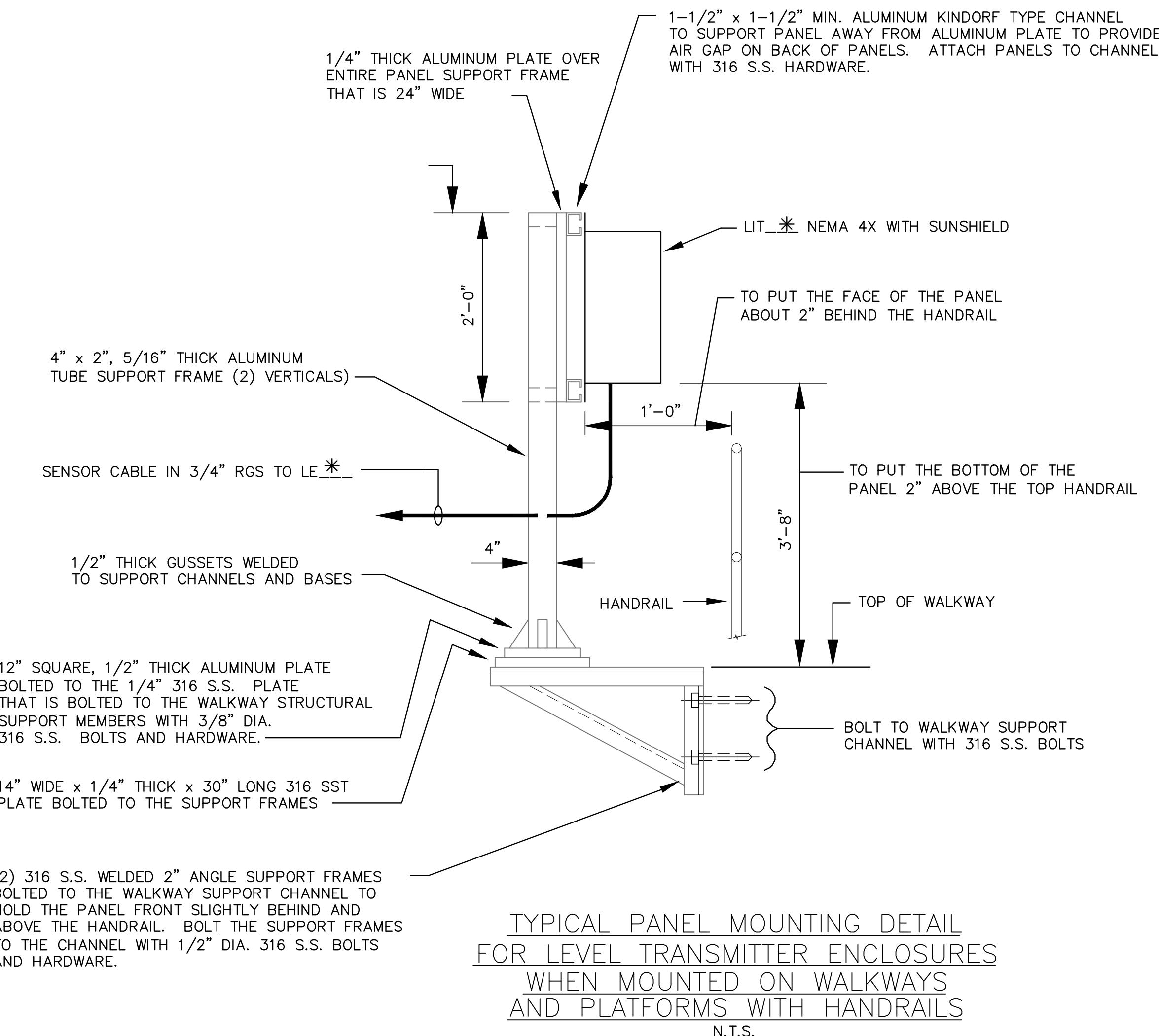


NOTES:

1. SUN SHIELD SHALL BE 10 GA. ALUMINUM CONTINUOUS WELD, GROUND SMOOTH AND BURR FREE. DRILL HOLES AS PER MOUNTING HOLES FOR INSTRUMENT.

TYPICAL SUNSHIELD MOUNTING DETAIL

NOT TO SCALE



TYPICAL PANEL MOUNTING DETAIL
FOR LEVEL TRANSMITTER ENCLOSURES
WHEN MOUNTED ON WALKWAYS
AND PLATFORMS WITH HANDRAILS
N.T.S.

RECORD DRAWINGS					
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
PROJECT ENGINEER	DATE				
APPROVED BY:					
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #05611	DATE	REVISION	BY	DATE	

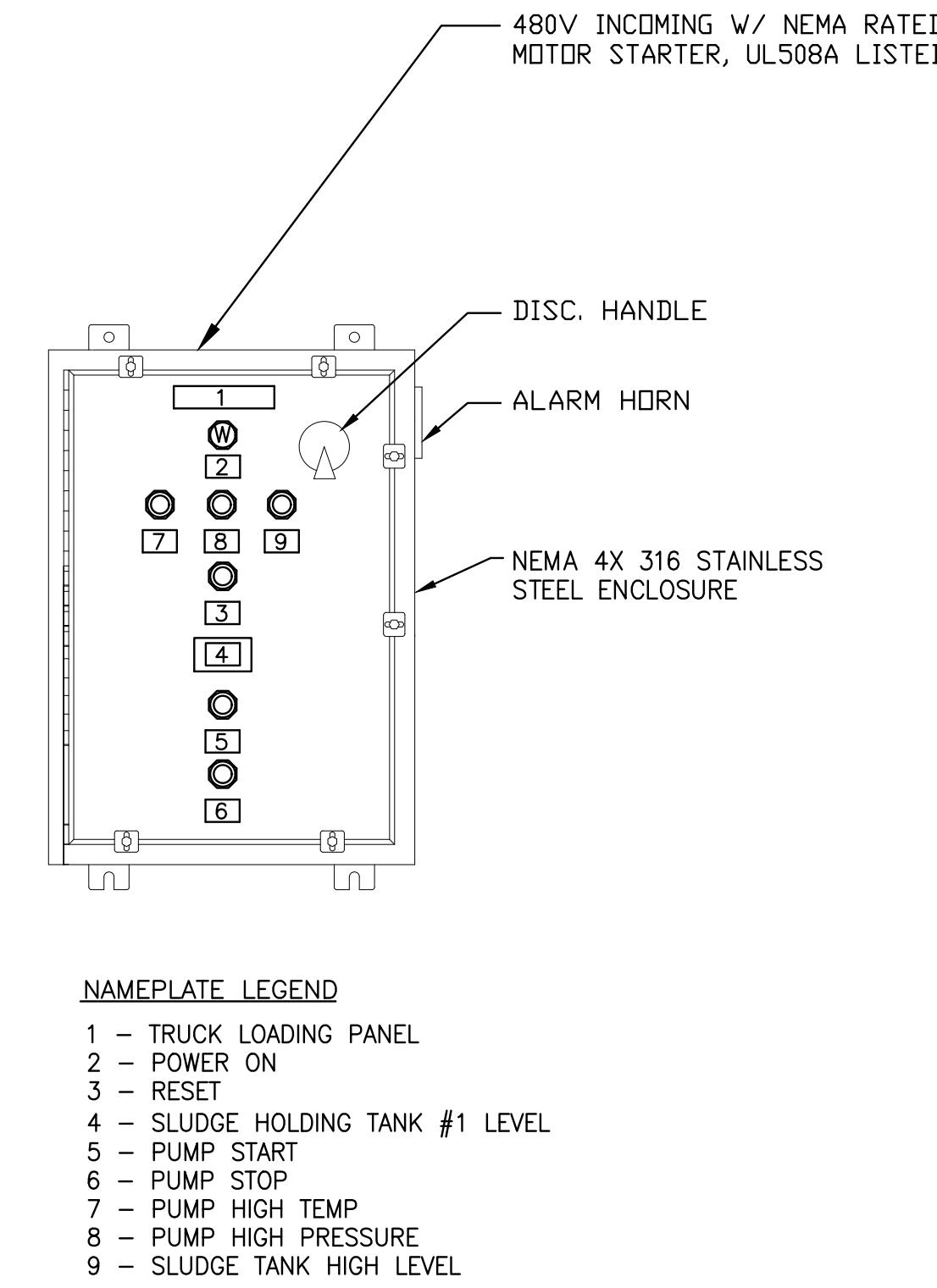
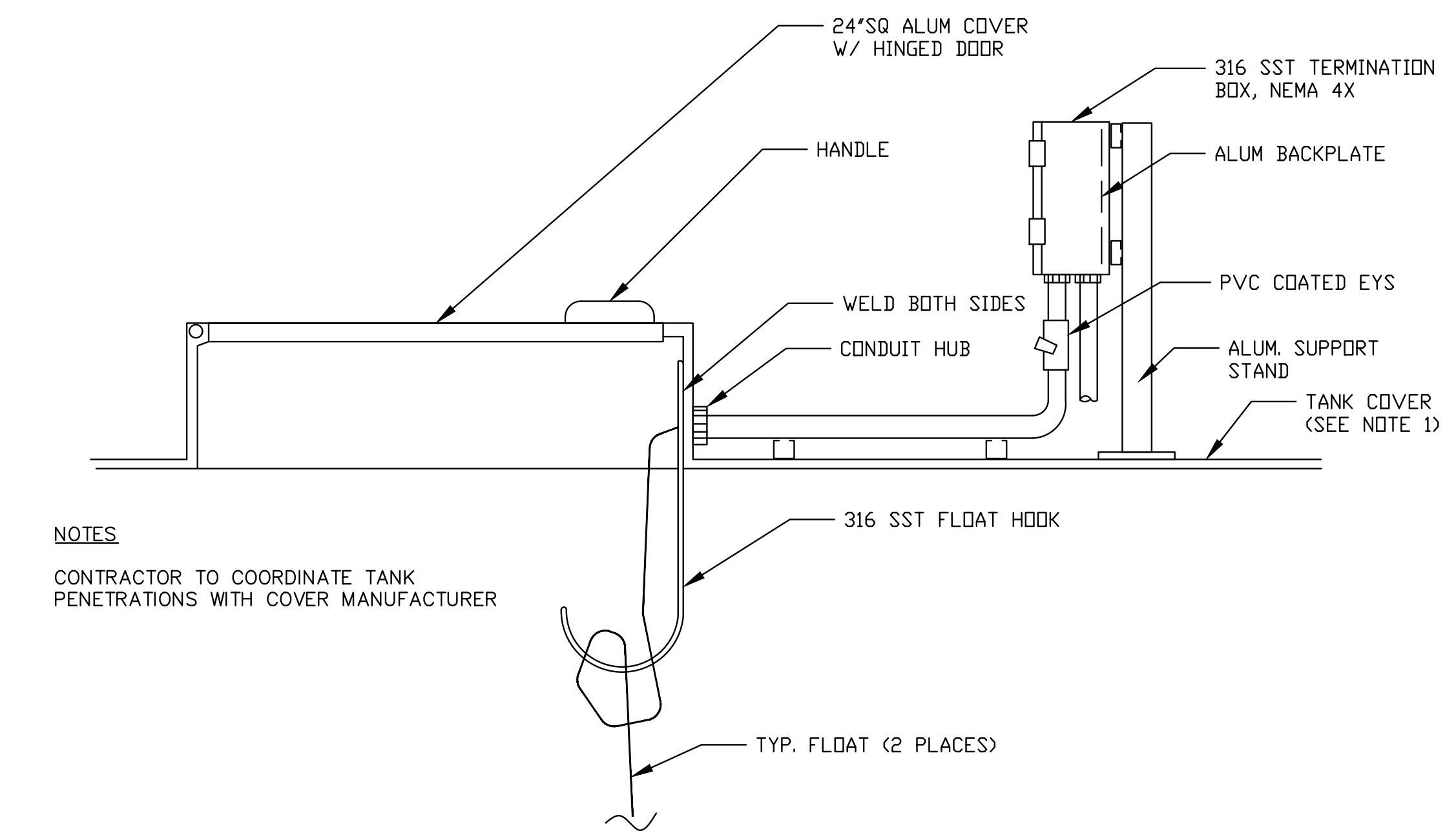
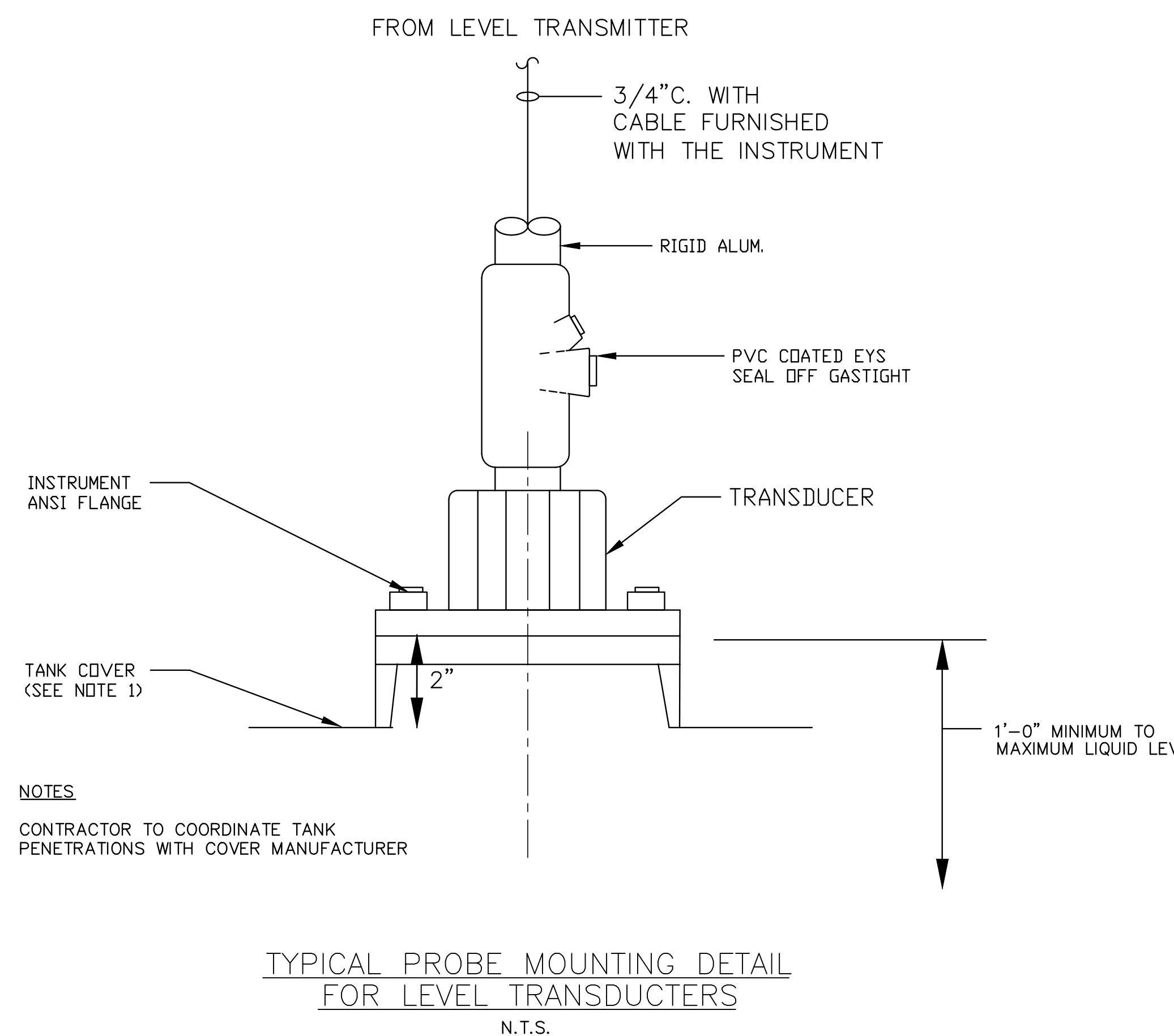
CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



CERTIFICATE OF AUTHORIZATION # 841
730 NE WALDEN RD., GAINESVILLE, FLORIDA 32604 (352) 377-5821
324 S HYDE PARK AVE, SUITE 230, TAMPA, FLORIDA 33606 / (813) 258-0703

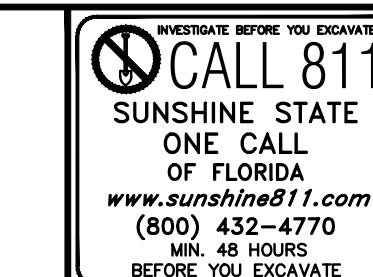
MS WRF BLEND TANK
MIXER PROJECT
DETAILS 1

DWG NAME: I-05 DETAILS.dwg		FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO:		DATE DRAWN:	JUNE 2020	DRAWN BY: JPH
18-0057-UT				
JOB NO:	03720-054-01	DESIGNED BY:	WCH	CHECKED BY: WCH
				SHEET NO: 15
APPROVED FOR CONSTRUCTION				
WILLARD C. HOANSHELT, P.E. # 42593				DATE



RECORD DRAWINGS					
SURVEYED BY:	DRAWN BY:				
REVIEWED BY:					
APPROVED BY:					
PROJECT ENGINEER	DATE				
CITY ENGINEERING DIRECTOR TARA KIVETT, P.E. #05611	DATE	REVISION	BY	DATE	

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756



JonesEdmunds

CERTIFICATE OF AUTHORIZATION # 1841
730 NE WALDEN RD., GAINESVILLE, FLORIDA 32604 (352) 377-5821
324 S HYDE PARK AVE, SUITE 230, TAMPA, FLORIDA 33606 / (813) 258-0703

MS WRF BLEND TANK
MIXER PROJECT
DETAILS 2

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
1-06 DETAILS.dwg			
CONTRACT NO: 18-0057-UT	DATE DRAWN: JUNE 2020	DRAWN BY: JPH	
JOB NO.: 03720-054-01	DESIGNED BY: WCH	CHECKED BY: WCH	SHEET NO.: 16
APPROVED FOR CONSTRUCTION			
	WILLARD C. HOANSHELT, P.E. # 42593		DATE