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[MailTo:ContractAdministration@TampaGov.net](mailto:ContractAdministration@TampaGov.net)

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

CONSTRUCTION DRAWINGS
FOR THE
**PALMA CEIA ELEVATED STORAGE TANK
IMPROVEMENTS**

SECTION 28, TOWNSHIP 29 SOUTH, RANGE 18 EAST
TAMPA, HILLSBOROUGH COUNTY, FLORIDA

PREPARED FOR
CITY OF TAMPA WATER DEPARTMENT

City of Tampa Water Department
306 E. Jackson Street, 5N
Tampa, FL 33602



100% DRAWINGS



REISS ENGINEERING, INC.
CONSULTING ENGINEERS
REISS ENGINEERING, INC.
3030 NORTH ROCKY POINT DR
SUITE 161
TAMPA, FL 33607
(813) 549-0919
CERTIFICATE OF AUTH. 8181

Weston T. Haggan, P.E.
Florida P.E. No. 77777



WEKIVA ENGINEERING
WEKIVA ENGINEERING LLC
711 N ORANGE AVE, SUITE A
WINTER PARK, FL 32789

John Sobczak, P.E.
Florida P.E. No. 71407

REI Project No. 0816



Parent Sheet: Set: 0816_PALMA Rev: Plot by: PAUL HELLER Rev on: 3/19/2018 11:47 AM Individual File Path: 0816_GENERAL SHEETS.DWG

A	03/2018	100% DRAWINGS	PFH
REV	DATE	DESCRIPTION	BY

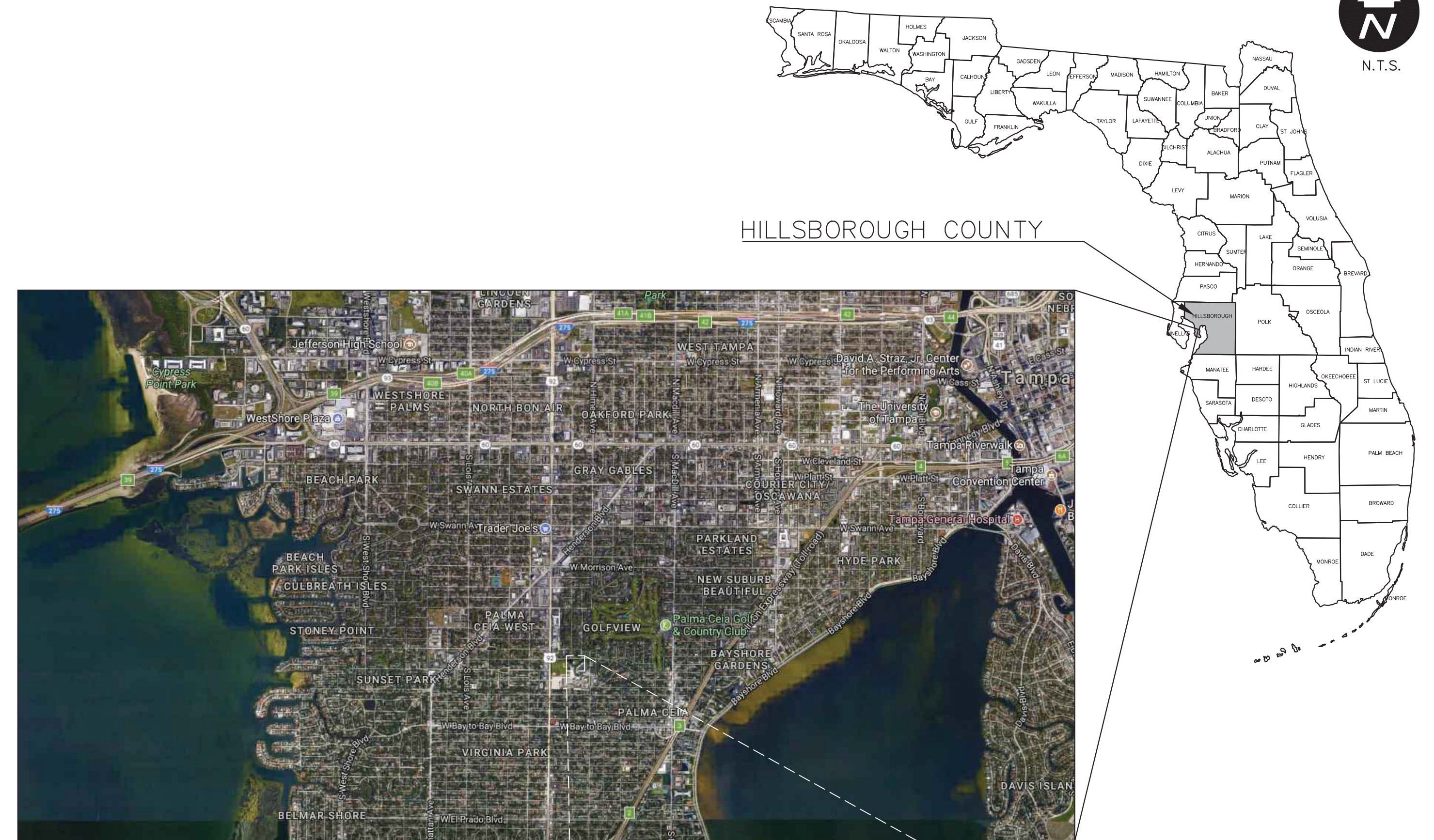
GENERAL NOTES

1. LOCATION, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AT TIME OF THE PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK AND SHALL COMPLY WITH ALL STATE, AND LOCAL ORDINANCES AND OBTAIN ANY NECESSARY WORK PERMITS THAT MAY BE REQUIRED PRIOR TO CONSTRUCTION.
3. CONTRACTOR'S OPERATIONS, INCLUDING STAGING, PARKING, STORAGE OF MATERIALS, ETC, SHALL BE CONFINED TO THE PROJECT SITE. THE PROVISION OF ADDITIONAL SPACE FOR SUCH USE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S EXPENSE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
5. ANY DISTURBANCE CAUSED BY CONTRACTOR'S OPERATIONS TO ROADS, SIDEWALKS, GUTTERS OR OTHER STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER. NO PAYMENT SHALL BE MADE FOR SUCH WORK.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING EQUIPMENT OR MATERIALS. ALL SUBMITTALS SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR TO INDICATE CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. SUBMITTALS THAT ARE NOT STAMPED AND SIGNED WILL BE RETURNED WITHOUT REVIEW. PROCUREMENT OF ANY EQUIPMENT OR MATERIALS PRIOR TO ENGINEER'S REVIEW AND ACCEPTANCE OF SHOP DRAWINGS SHALL BE AT CONTRACTOR'S OWN RISK.
8. "SCREENED" (LIGHT) DELINEATION INDICATED ON THE DRAWINGS DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM EXISTING CONSTRUCTION DRAWINGS AND DATA, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING OF CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
9. THE CONTRACTOR'S OPERATIONS SHALL CONFORM TO THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS PERTAINING TO EXCAVATION AND TRENCHING.
10. THE DRAWINGS INDICATE TYPES OF PIPE SUPPORT SYSTEMS AT VARIOUS LOCATIONS. HOWEVER, ALL PIPE SUPPORTS, HANGERS, BRACKETS, INSERTS OR BRACES ARE NOT SHOWN. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS AND PROVIDE A COMPLETE SUPPORT SYSTEM AS REQUIRED.
11. PRIOR TO COMMENCING WITH WORK ASSOCIATED WITH CONNECTIONS TO EXISTING INFRASTRUCTURE, CONTRACTOR SHALL FIELD VERIFY PRECISE LOCATION, ELEVATION, AND REQUIRED ARRANGEMENT OF CONNECTIONS. THIS SHALL INCLUDE EXPOSING EXISTING INFRASTRUCTURE TO THE EXTENT NECESSARY TO CONDUCT THESE INVESTIGATIONS. CONTRACTOR SHALL PROVIDE ALL FITTINGS, ADAPTERS, CLOSURE ASSEMBLIES, OFFSETS (TO ACCOUNT FOR DIFFERING CENTERLINE ELEVATIONS), ETC REQUIRED TO SUCCESSFULLY MAKE THE SUBJECT CONNECTION AS PER THE DESIGN INTENT.
12. ALL WATER WORK FOR THE CITY OF TAMPA (CITY) SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT'S TECHNICAL SPECIFICATIONS, CONSTRUCTION DETAILS, AND THE TAMPA WATER DEPARTMENT TECHNICAL MANUAL (LATEST EDITION). IN THE EVENT OF A DISCREPANCY, THE MOST STRINGENT CRITERIA AS DETERMINED BY THE CITY SHALL APPLY.
13. WATER MAIN TAPS SHALL BE PERFORMED BY THE CITY WATER DEPARTMENT ONLY. CONTRACTOR SHALL EXCAVATE, INSTALL TAPPING SLEEVE AND VALVE, CONDUCT PRESSURE TEST (WITNESSED BY INSPECTOR) AND COORDINATE PERFORMANCE OF TAP WITH THE CITY INSPECTOR. CONTRACTOR SHALL PROVIDE NOTICE TO THE CITY INSPECTOR A MINIMUM OF 5 WORKING DAYS NOTICE PRIOR TO NECESSARY WORK.
14. NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER/INSPECTOR.
15. CONSTRUCTION AT THE WATER FACILITY SHALL BE COORDINATED WITH THE WATER DEPARTMENT PRIOR TO THE START OF THE CONSTRUCTION. CONTRACTOR TO CONTACT CITY OF TAMPA CONTRACT ADMINISTRATION DEPARTMENT @ 813-635-3432 TO COORDINATE/SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY FOR REVIEW OF INSTALLATION TECHNIQUES AND PROCEDURES A MINIMUM OF 10 WORKING DAYS PRIOR TO THE PLANNED CONSTRUCTION.
16. VALVES ON EXISTING PUBLIC WATER MAINS TO BE OPERATED BY CITY PERSONNEL ONLY.

PERMITS

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS AND ROADWAY CLOSURES ASSOCIATED WITH THE WORK SHOWN IN THE PLANS.
2. IN ORDER TO OBTAIN ROADWAY CLOSURES OR RIGHT-OF-WAY PERMITS, AT MINIMUM, THE CONTRACTOR MUST SUBMIT DETAILED MAINTENANCE OF TRAFFIC (MOT) PLANS ALONG WITH APPLICATIONS TO THE APPROPRIATE AGENCY. THE MOT(S) SHALL CONFORM TO APPLICABLE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) DRAWINGS (MOST CURRENT EDITION). THE GOVERNING AGENCIES MAY REQUIRE ADDITIONAL INFORMATION AND DICTATE SPECIFIC WORK TIME DURING NON-PEAK TRAFFIC HOURS.

DRAWING INDEX		
DWG NO.	DWG TITLE	DESCRIPTION
GENERAL		
01	G01	COVER SHEET
02	G02	LOCATION MAP, GENERAL NOTES, AND DRAWING INDEX
03	G03	STANDARD LEGEND AND ABBREVIATIONS
CIVIL		
04	C01	DEMOLITION PLAN
05	C02	PLAN VIEW
DETAILS		
06	C03	STORAGE TANK COATING PLAN AND SECTION
07	C04	DETAILS (1 OF 2)
08	C05	DETAILS (2 OF 2)
09	C06	SITE PICTURES (1 OF 4)
10	C07	SITE PICTURES (2 OF 4)
11	C08	SITE PICTURES (3 OF 4)
12	C09	SITE PICTURES (4 OF 4)
STRUCTURAL		
13	S01	GENERAL NOTES, ELEVATION, AND DETAILS
14	S02	DETAILS (1 OF 3)
15	S03	DETAILS (2 OF 3)
16	S04	DETAILS (3 OF 3)



LOCATION MAP
NTS

Parent Sheet Set:0816_PALMA Rev on:3/19/2018 11:47 AM Individual File Path:0816_GENERAL SHEETS.DWG Rev/Plot by:PAUL HELLER



A	03/2018	100% DRAWINGS	PFH
REV	DATE	DESCRIPTION	BY

Issue Certification	Designed_PGK _____
	Drawn_PFH _____
	Checked_WTH _____
	Reviewed_AWD _____
	Approved_WTH _____
	DATE 03/2018
Weston T. Hoggen, P.E. Florida P.E. No. 77777	

CITY OF TAMPA WATER DEPARTMENT PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
GENERAL
LOCATION MAP, GENERAL NOTES, AND DRAWING INDEX

PROJECT NO.: 0816
SCALE: NOTED
DRAWING NO. G02
REVISION: A
SHEET NO.: 02 OF 16

REISS ENGINEERING, INC. 3030 NORTH ROCKY POINT DR SUITE 161 TAMPA, FL 33607 (813) 549-0919 CERTIFICATE OF AUTH. 8181
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CIVIL SYMBOLS LEGEND

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			TYPICAL PIPE IDENTIFICATION
			SINGLE-LINE PIPE (GENERAL)
			DOUBLE-LINE PIPE (GENERAL)
			DOUBLE-LINE PIPE (GRAVITY)
			FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)
			AIR RELEASE VALVE
			BENCHMARK
			RIGHT OF WAY (R/W)
			PROPERTY LINE (R/L)
			FENCE, SIZE & TYPE
			RAILROAD TRACKS (R/R)
			CONTOURS
			SPOT ELEVATIONS
			WATER/SURFACE WATER FLOW
			TREE LINE

DRAFTING LEGEND

	NOTE (TYP)	ANNOTATION, SINGLE LEADER (INDICATING TYPICAL AT MULTIPLE LOCATIONS)
	NOTE	ANNOTATION, MULTIPLE LEADERS INDICATING DISCRETE TARGETS
	LINEAR DIMENSION	
	ANGULAR DIMENSION	
	VIEWPORT OR FEATURE BREAK INDICATOR	
	NON-LINEAR SECTION CUT DIRECTION PATH	
	VIEW FRAME EXTENT (WITH DRAWING LOCATION REFERENCE)	
	NORTH ARROW	STANDARD NORTH ARROW (ROTATED AS REQUIRED)
	GRAPHIC SCALE	0 10' 20'

STANDARD ABBREVIATIONS

(A)ARV	(AUTOMATIC) AIR RELEASE VALVE	EGO	ELEVATED GEAR OPERATOR	ML	MIXED LIQUOR	SDR	STANDARD DIMENSION RATIO
A/C	AIR CONDITIONING	EJ	EXPANSION JOINT	MPH	MILES PER HOUR	SE	SOUTHEAST
A/VV	AIR/VACUUM AIR VALVE	EL(EV)	ELEVATION	MRPP	METAL REINFORCED PLASTIC PIPE	SEC	SECTION
AAV	AUTOMATIC AIR VENT	ELAST	ELASTOMERIC	MTD	MOUNTED	SEFF	SECONDARY EFFLUENT
ABAN	ABANDON(ED)	ELL	ELBOW	MV	MOTORIZED VALVE	SF	SQUARE FOOT OR FEET
ABFV	ACTUATED BUTTERFLY VALVE	EMER	EMERGENCY	MW	MANWAY	SHT	SHEET(ED)(ING)
ABRSV	ABRASIVE	EOP	EDGE OF PAVEMENT	N	NORTH(ING)	SIM	SIMILAR
ABS	ACRYLONITRILE BUTADIENE STYRENE	EPDM	ETHYLENE PROPYLENE DIENE MONOMER	N.C.	NORMALLY CLOSED	SLV	SLEEVE
AB-xx	ASPHALT-COATED CORRUGATED METAL PIPE	EQUIP	EQUIPMENT	N.I.C.	NOT IN CONTRACT	SM	SHEET METAL
ACCMP	ACCUMULATOR	EST	ESTIMATE(D)	N.O.	NORMALLY OPEN	SOL	SOLUTION
ACCV	AIR CUSHION CHECK VALVE	EVA	ELECTRIC VALVE ACTUATOR	N/A	NOT APPLICABLE	SP	SOIL PIPE
ACP	ASBESTOS CEMENT PIPE	EX(IST)	EXISTING	NaOCI	SODIUM HYPOCHLORITE	SPEC(S)	SPECIFICATION(S)
ADH	ADHESIVE	EXP	EXPANSION	NE	NORTHWEST	SPT-xx	STANDARD PENETRATION TEST BORING (e.g. SPT-1)
ADJ	ADJUSTABLE	EXT	EXTERIOR	NF	NANO FILTRATION	SQ	SQUARE
AFF	ABOVE FINISHED FLOOR	F/F	FACE TO FACE	NIC	NOT IN CONTRACT	SS	SANITARY SEWER
AFG	ABOVE FINISHED GRADE	FAB	FABRICATE(D)	NO.	NUMBER	SSE	STANDARD EFFLUENT
AFS	ABOVE FINISHED SLAB	FC	FLEXIBLE COUPLING	NOM	NOMINAL	ST	NATIONAL PIPE TAPER
AG	AMMONIA GAS	FCA	FLANGED COUPLING ADAPTER	NPT	NATIONAL PIPE TAPER	NPW	NON-POTABLE WATER
AIR	AIR PIPE	FCV	FLOOR CONTROL VALVE	NSFC	NOT SHOWN FOR CLARITY	NSFC	NOT SHOWN FOR CLARITY
AL	ALUMINUM	FD	FLOOR DRAIN	NTS,N.T.S.	NOT TO SCALE	STD	STANDARD
ALT	ALTERNATE	FE	FILTER(ED) EFFLUENT	NW	NORTHWEST	STL	STEEL
AMM	AMMONIATOR	FF	FINISH FLOOR	STORM	STORMWATER	STR	STRAIGHT
AOD	ANGLE OF DEFLECTION	FH	FIRE HYDRANT	O&M	OPERATION AND MAINTENANCE	STR	STRAIGHT
APPROX	APPROXIMATE	FIG	FIGURE	O.C.	ON CENTERS	SV	SOLENOID VALVE
AS	AMMONIA SOLUTION	FIN	FINISH(ED)	O/E	OR EQUAL	SVC	SERVICE
ASSY	ASSEMBLY	FL	FLUORIDE	O/D	OUTSIDE TO OUTSIDE	SVW	SERVICE WATER
B/W	BOTH WAYS	FLEX	FLEXIBLE	OD	OUTSIDE DIAMETER	SW	SOUTHWEST
BCV	BALL CHECK VALVE	FLG	FLANGE(D)	OF	OUTSIDE FACE	SWD	SIDEWATER DEPTH
BF	BLIND FLANGE	FLR	FLOOR	OFF	OFFSET	SYM	SYMBOL
BFP	BACKFLOW PREVENTER	FM	FORCE MAIN	OH	OVER HEAD	SYMM	SYMMETRICAL
BFV	BUTTERFLY VALVE	FOL(L)⊙	FIBER OPTIC (LINE)(CONDUIT)	OP	ORIFICE PLATE	T&B	TOP AND BOTTOM
BGO	BURIED GEAR OPERATOR	FPM	FEET PER MINUTE	OPER	OPERATOR	T.O.C.	TOP OF CONCRETE
BI	BLACK IRON	FPS	FEET PER SECOND	OPP	OPPOSITE	T.O.S.	TOP OF SLAB
BITUM	BITUMINOUS OR BITUMASTIC	FRP	FIBERGLASS REINFORCED PLASTIC	OPT	OPTION(AL)	T.S.	TAPPING SLEEVE
BLDG	BUILDING	FT	FOOT OR FEET	OVF	OVERFLOW	T.V.	TAPPING VALVE
BM	BENCH MARK	FV	FOOT VALVE	P/L	PROPERTY LINE	TAN	TANGENT
BOC	BACK OF CURB	FW	FINISHED WATER	PA	PROCESS AIR	TBM	TEMPORARY BENCH MARK
BOS	BOTTOM OF SLAB	GA	GAUGE	PBV	PLASTIC BALL VALVE	TB-xx	TEST BORING-xx (e.g. TB-1)
BOT	BOTTOM	GAL	GALLON(S)	PC	POINT OF CURVE	TDH	TOTAL DYNAMIC HEAD
BSP	BLACK STEEL PIPE	GALV	GALVANIZED	PE	PLAIN END	TEL	TELEPHONE
BTWN	BETWEEN	GBW	GAC BACKWASH	PEP	POLYETHYLENE PIPE	TEMP	TEMPORARY
BV	BALL VALVE	GIP	GALVANIZED IRON PIPE	PERM	PERMANENT	TH	TEST HOLE
BW	BUTT WELD	GJ	GROOVE JOINT	PG	PRESSURE GAUGE	THD	THREAD(ED)
BWW	BACKWASH WATER	GND	GROUND	PGL	PROPOSED GRADE LINE	THK	THICK(NESS)
B-xx	BORING (e.g. B-1)	GO	GEAR OPERATED	PJ	PUSH-ON JOINT	TJ	TIED JOINT
C&G	CURB AND GUTTER	CPD	GALLONS PER DAY	PM	PROCESS MECHANICAL	TOB	TOP OF BANK
C.F.	CUBIC FOOT	GPH	GALLONS PER HOUR	PNV	PINCH VALVE	TOC	TOP OF CURB
C.I.	CUBIC INCH	GPM	GALLONS PER MINUTE	POB	POINT OF BEGINNING	TOS	TOE OF SLOPE
C.Y.	CUBIC YARD	GPS	GALLONS PER SECOND	POI	POINT OF INTERSECTION	TS	THICKENED SLUDGE
C/C	CENTER TO CENTER	GR	GRADE	POJ	PUSH-ON JOINT	TV	TELEVISION
CA	COMPRESSED AIR	GS	GALVANIZED STEEL	POL	POLYMER	TWP	TOWNSHIP
CAP	CAP	GSP	GALVANIZED STEEL PIPE	PPD	POUNDS PER DAY	TYP	TYPICAL
CATV	CABLE TELEVISION	GSR	GROUND STORAGE RESERVOIR	PPM	PARTS PER MILLION	UD	UNDERDRAIN
CAV	COMBINATION AIR VALVE	GST	GROUND STORAGE TANK	PREFAB	PREFABRICATED	UG	UNDERGROUND
CBP	CHLORINE BOOSTER PUMP	GV	GATE VALVE	PRES	PRESSURE	UGE	UNDERGROUND ELECTRIC
CC	CHLORINE CONTACT CHAMBER	HB	HOSE BIBB	PROP	PROPOSED	UON	UNLESS OTHERWISE NOTED
CE	CHLORINATED EFFLUENT	HD	HEAVY-DUTY	PRV	PRESSURE REDUCING VALVE	UTC	UNDERGROUND TELEPHONE CABLE
CFM	CUBIC FEET PER MINUTE	HDD	HORIZ. DIRECTIONAL DRILL	PRW	PROCESS WATER	UTIL	UTILITY
CFS	CUBIC FEET PER SECOND	HDPE	HIGH-DENSITY POLYETHYLENE	PSF	POUNDS PER SQUARE FOOT	UV	ULTRAVIOLET
CI	CAST IRON	HFA	HARNESSED FLANGED COUPLING	PSI	POUNDS PER SQUARE INCH	VAC	VACUUM
CIP	CAST IRON SOIL PIPE	HFC	HARNESSED FLANGED COUPLING ADAPTER	PT	POINT OF TANGENCY	VAR	VARIABLES
CISP	CAST IRON SOIL PIPE	HORIZ	HORIZONTAL	PV	PLUG VALVE	VB	VALVE BOX
CJ	CONSTRUCTION JOINT	HP	HORSEPOWER	PVC	POLYVINYL CHLORIDE	VC	VERTICAL CURVE
CL, ⊕	CENTER LINE	HPA	HIGH PRESSURE AIR	PVC-D	POLYVINYLCHLORIDE (DOUBLE CONTAINED)	VCP	VITRIFIED CLAY PIPE
CL2	CHLORINE GAS	HR	HOUR	PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)	VCL	VELOCITY
CLF	CHAIN LINK FENCE	HSP	HIGH SERVICE PUMP	PVMT	PAVEMENT	VFD	VARIABLE FREQUENCY DRIVE
CLR	CLEAR(ANCE)	HT	HEIGHT	PW	POTABLE WATER	VOL	VOLUME
CMP	CORRUGATED METAL PIPE	HVA	HYDRAULIC VALVE ACTUATOR	Q	QUANTITY	VTR	VENT THROUGH ROOF
CMPA	CORRUGATED METAL PIPE ARCH	HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	QTY	QUANTITY	W	WEST
CO	CLEAN OUT	HW	HOT WATER	R,RT	RIGHT	W.L.	WATER LEVEL
CO2	CARBON DIOXIDE	HWL	HIGH WATER LEVEL	R/W, R.O.W.	RIGHT OF WAY	W.P.	WALL PIPE (WITH WATER STOP)
COAG	COAGULANT	HYD	HYDRAULIC	RAD., R.	RADIUS	W/	WITH
CONC	CONCENTRATE	ID	INSIDE DIAMETER	RAS	RETURN ACTIVATED SLUDGE	W/O	WITHOUT
CONN	CONNECTION	IN	INCH(ES)	RAW	RAW WATER	WAS	WASTE ACTIVATED SLUDGE
CONSTR	CONSTRUCT(ION)	INF	INFILTRANT	RCB	REINFORCED CONCRETE BOX	WCO	WALL CLEAN OUT
CONT	CONTINUATION	INV	INVERT	RCF	REINFORCED CONCRETE PIPE	WFL	WIDE FLANGE
COP	COPPER PIPE	IP	IRON PIPE	RCFA	REINFORCED CONCRETE PIPE ARCH	WH	WALL HYDRANT
CP	CONCRETE PIPE	IPS	INTERNATIONAL PIPE STANDARD	RCW	RECLAIMED WATER	WM	WATER MAIN
CPA	CONCRETE PIPE ARCH	IR	INTERNAL RECYCLE	REBAR	REINFORCING STEEL	WPR	WORKING PRESSURE
CPLG	COUPLING	IW	IRRIGATION WATER	RED	REDUCER	WS(P)	WELDED STEEL (PIPE)
CPP	CONCRETE PRESSURE PIPE	JB	JUNCTION BOX	REEW	REUSE EFFLUENT WATER	WT	WEIGHT
CPVC	CHLORINATED POLYVINYL CHLORIDE	JT	JOINT	REF	REFERENCE	WTF	WATER TREATMENT FACILITY
CR	CONCENTRIC REDUCER	KGV	KNIFE GATE VALVE	REINF	REINFORCE(D)(ING)(MENT)	WTP	WATER TREATMENT PLANT
CS	CHLORINE SOLUTION	L,L,T	LEFT	REJ	RO REJECT	WW	WASTEWATER
CV	CHECK VALVE	LAB	LABORATORY	REQ'D	REQUIRED	WWF	WELDED WIRE FABRIC
CYL	CYLINDER	LAM	LAMINATE OR LAMINATION	REW	RETURN EFFLUENT WATER	WWM	WELDED WIRE MESH
DEG	DEGREE	LAT	LATERAL	RJ	RESTRAINED JOINT (BELL)	WWTF	WASTEWATER TREATMENT FACILITY
DEMO	DEMOLITION	LB(S)	POUND(S)	RMJ	RESTRAINED MECHANICAL JOINT	WWTP	WASTEWATER TREATMENT PLANT
DF	DIESEL FUEL	LEN	LENGTH	RNG	RANGE	XFER	TRANSFER
DI	DUCTILE IRON	LF	LINEAR FEET	RO	REVERSE OSMOSIS	XLHDP	CROSS LINKED HIGH-DENSITY POLYETHYLENE
DIA.	DIAMETER	LHDPE	LINEAR HIGH-DENSITY POLYETHYLENE	ROC	RADIUS OF CURVATURE	YD	YARD(S)
DIM	DIMENSION	LS	LIME SLURRY	RPM	REVOLUTIONS PER MINUTE	YH	YARD HYDRANT
DIP	DUCTILE IRON PIPE	LSS	LIME STABILIZED SLUDGE	RPZBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER	YR	YEAR(S)
DIR	DIRECTION	LWL	LOW WATER LEVEL	RR	RAILROAD		
DISCH	DISCHARGE	MAINT	MAINTAIN OR MAINTENANCE	RS	RAW SEWAGE		
DJ	DISMANTLING JOINT	MAN	MANUAL(LY)	RW	RECLAIMED WATER		
DMH	DROP MANHOLE	MAX	MAXIMUM	RWW	RAW WASTEWATER		
DN	DOWN	MCC	MOTOR CONTROL CENTER	S	SOUTH		
DR	DIMENSION RATIO	ME(S)	MITERED END (SECTION)	S.F.	SQUARE FOOT		
DV	DIAPHRAGM VALVE	MECH	MECHANICAL	S.I.	SQUARE INCH		
DW	DISINFECTED WATER	MFR	MICROFILTRATION	S.O.	SIDE OPERATED		
DWG	DRAWING	MC	MANUFACTURE(R)	S.S.TL	STAINLESS STEEL		
DWV	DRAIN, WASTE, AND VENT	MGD	MILLION GALLONS PER DAY	S.Y.	SQUARE YARD		
E	EAST(ING)	MH	MANHOLE	SA	SAMPLE LINE		
E.F.	EACH FACE	MH	MANHOLE	SAN	SANITARY		
E.W.	EACH WAY	MI	MILE(S)	SB-xx	SOIL BORING (e.g. SB-1)		
EA	EACH	MIN	MINIMUM	SCH	SCHEDULE		
ECC	ECCENTRIC	MISC	MISCELLANEOUS	SCV	SILENT CHECK VALVE		
EFF	EFFLUENT	MJ	MECHANICAL JOINT	SD	STORM DRAIN		

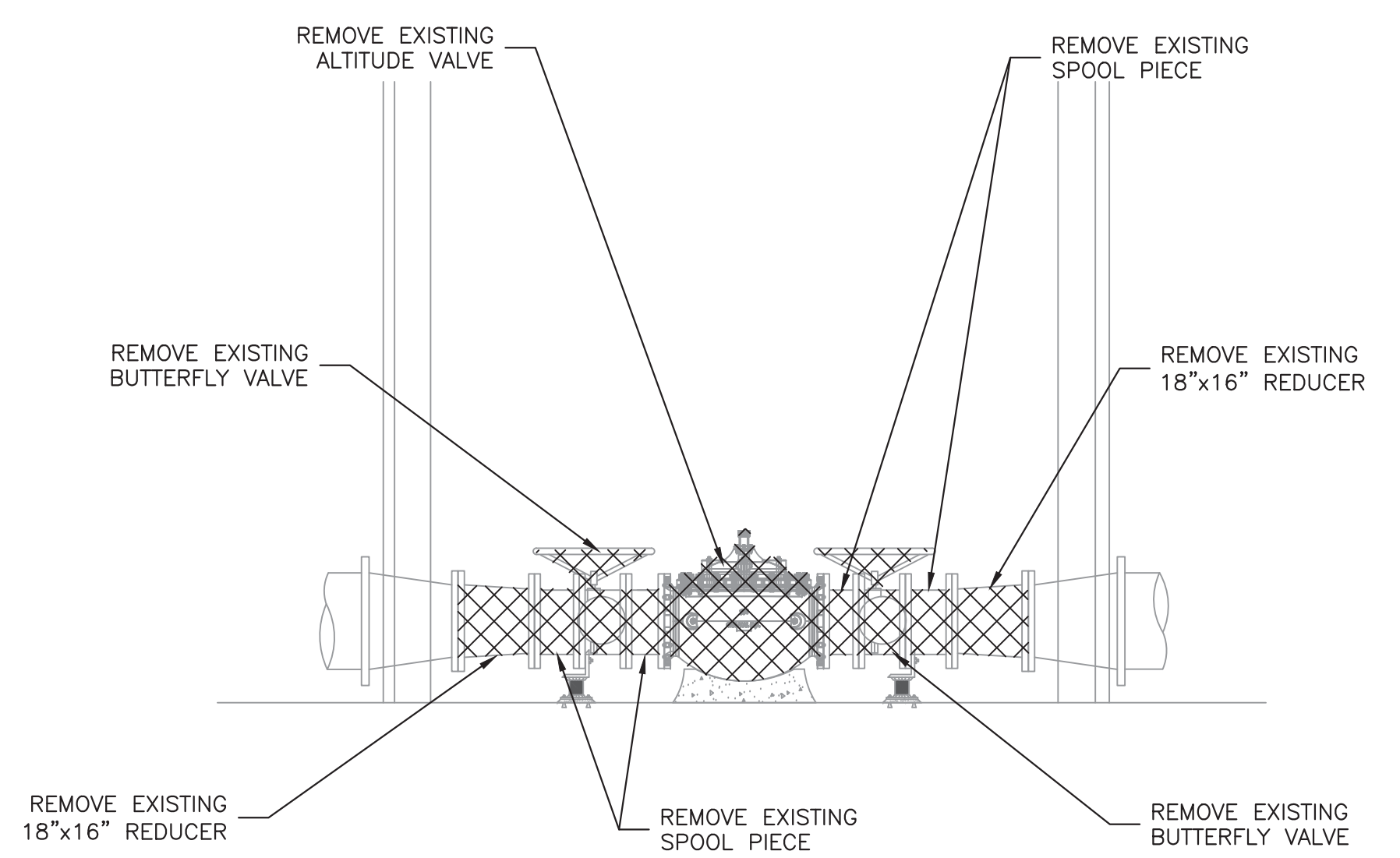
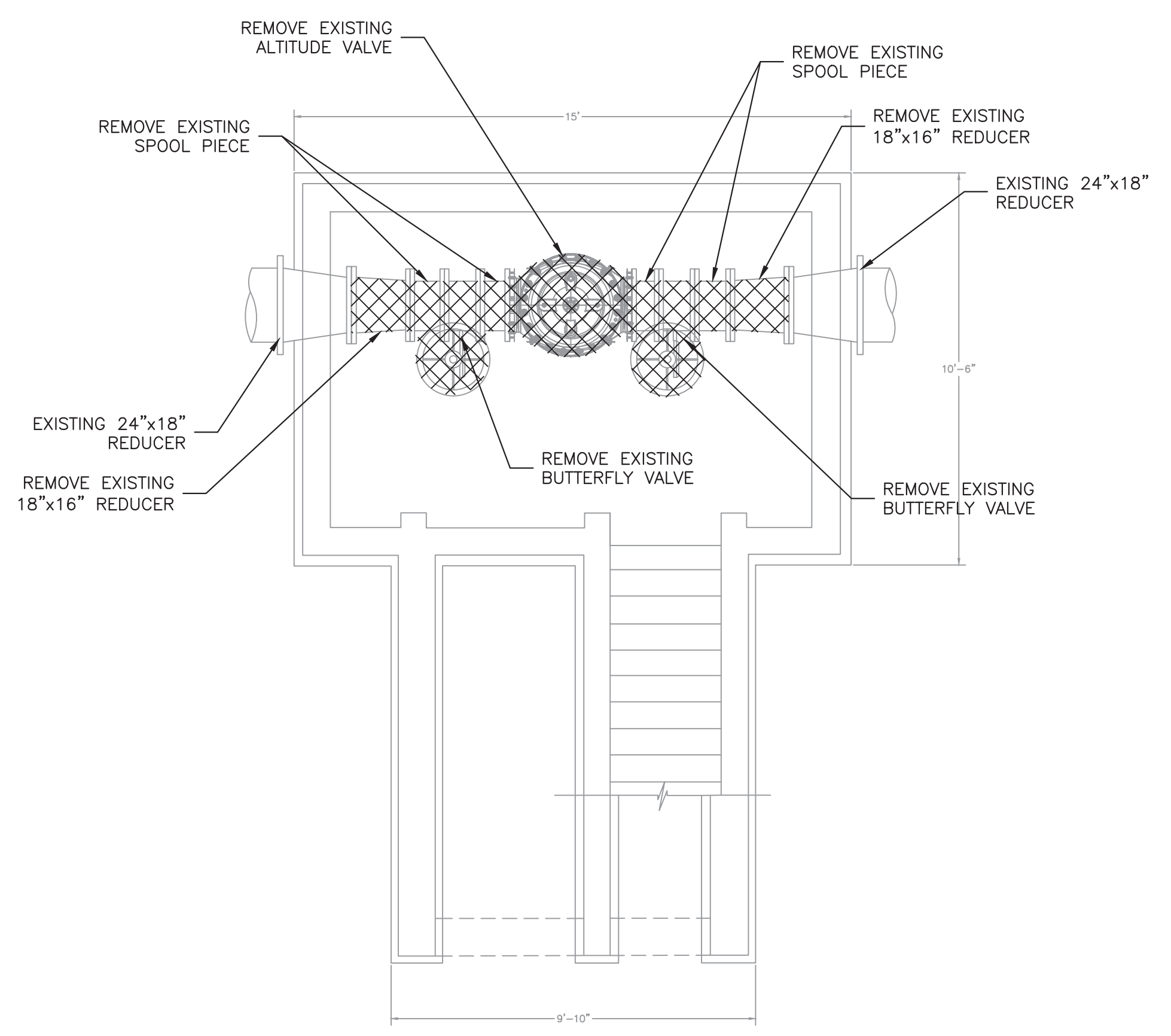
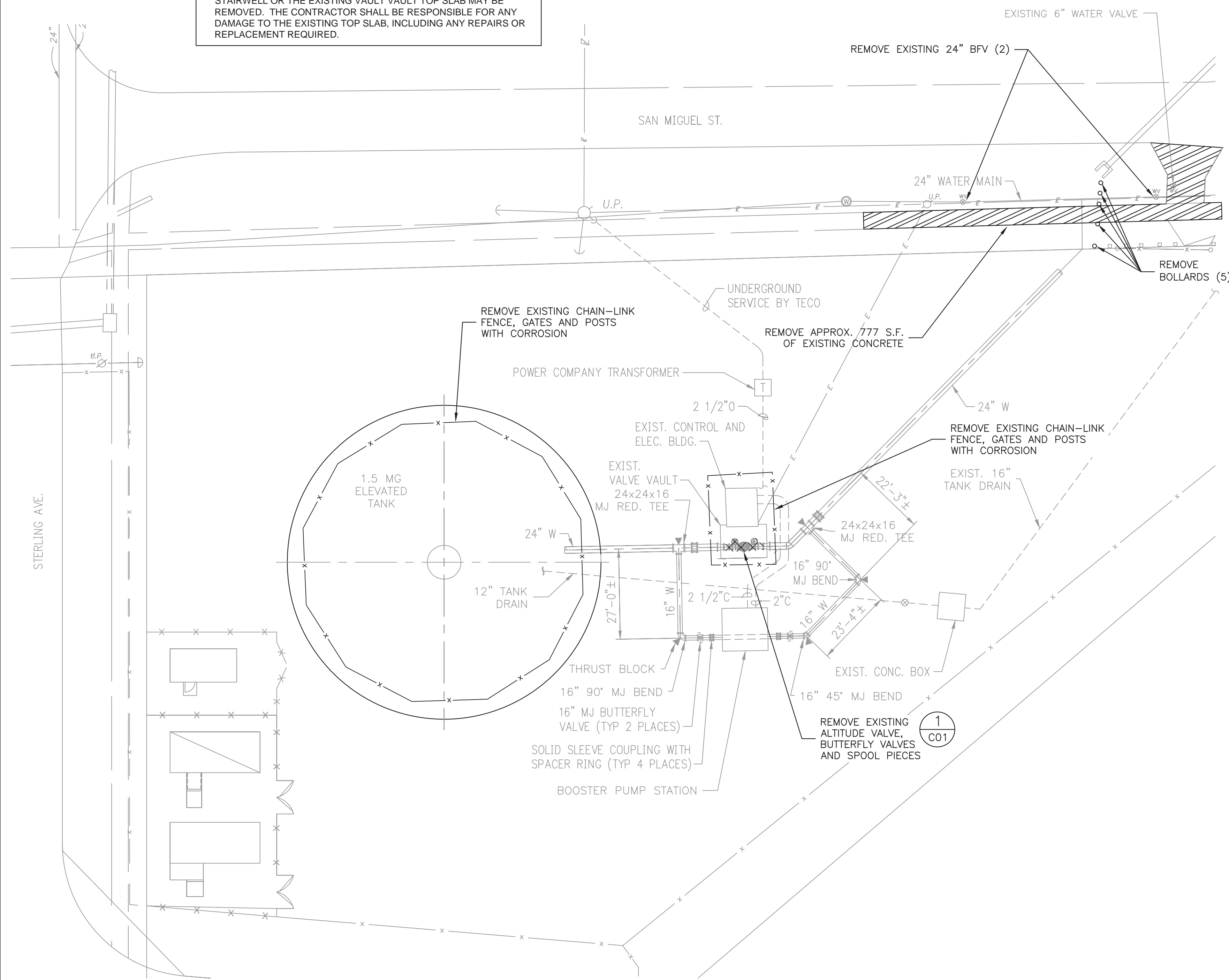
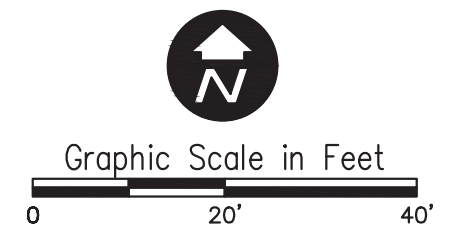
PROCESS PIPING LEGEND (SINGLE-LINE, PLAN VIEW)

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			UNCLASSIFIED, TYPE AS SHOWN ON DRAWINGS ADJACENT TO SYMBOL
			FLOW METER
			UNION
			PRESSURE CONTROL VALVE
			GATE VALVE
			KNIFE GATE VALVE
			BALL VALVE (SHOWN N.C.)
			DIAPHRAGM VALVE
			BUTTERFLY VALVE
			PLUG VALVE
			CHECK VALVE, GENERAL SYMBOL
			FLAP VALVE
			SHEAR GATE
			FLOW CONTROL VALVE
			BACKFLOW PREVENTER
			ELECTRIC MOTOR ACTUATOR
			SOLENOID ACTUATOR
			REDUCER OR REDUCING BUSHING
			WYE-STRAINER
			PIPE COUPLING, GENERAL SYMBOL
			FLEXIBLE COUPLING
			PIPE DOWN
			PIPE CROSSING (NO CONNECTION)
			PUMPS (TYPE AS IDENTIFIED)

PROCESS PIPING LEGEND (DOUBLE-LINE OR 3D, PLAN VIEW)

EXISTING	PROPOSED	FUTURE (UON)	DESCRIPTION
			MECHANICAL JOINT FITTINGS
			FLANGED FITTINGS
			SOLVENT WELD FITTINGS
			BALL VALVE (SOLVENT WELD SHOWN)
			GATE VALVE (FLANGED SHOWN)
			PLUG VALVE (FLANGED SHOWN)

NOTES:
 1. CONTRACTOR SHALL PROVIDE CITY OF TAMPA WATER DEPARTMENT STAFF WITH A MINIMUM OF 72 HOURS NOTICE PRIOR TO INSTALLATION OF LINE STOP SO THAT THE CITY CAN MAKE APPROPRIATE PREPARATIONS. TANK SHALL BE DRAINED PRIOR TO INSTALLATION OF LINE STOP. TAPPING SLEEVES FOR LINE STOP SHALL BE INSTALLED AND PRESSURE TESTED PRIOR TO SCHEDULING LINE STOP INSTALLATION.
 2. EXISTING ALTITUDE VALVE, BUTTERFLY VALVES AND APPURTENANCES SHALL BE REMOVED THROUGH THE EXISTING STAIRWELL OR THE EXISTING VAULT VAULT TOP SLAB MAY BE REMOVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING TOP SLAB, INCLUDING ANY REPAIRS OR REPLACEMENT REQUIRED.



1 DEMOLITION PLAN & PROFILE DETAIL
 -- SCALE: NTS

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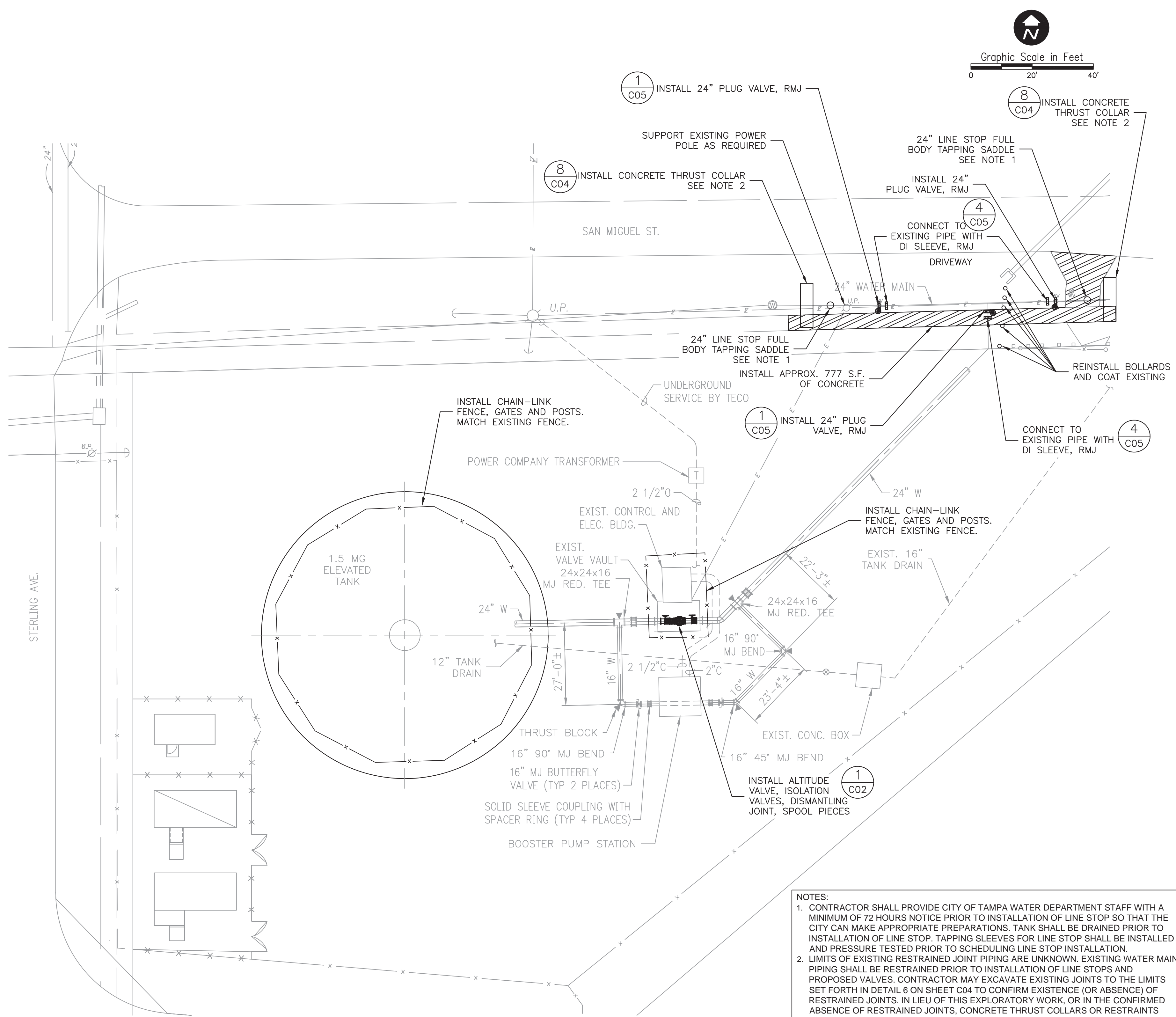
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 Drawn_PFH
 Checked_WITH
 Reviewed_AWD
 Approved_WITH
 Date_03/2018

CITY OF TAMPA WATER DEPARTMENT
 PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
 CIVL
 DEMOLITION PLAN

PROJECT NO.: 0816
 SCALE: NOTED
 DRAWING NO. C01
 REVISION: A
 SHEET NO.: 04 OF 16

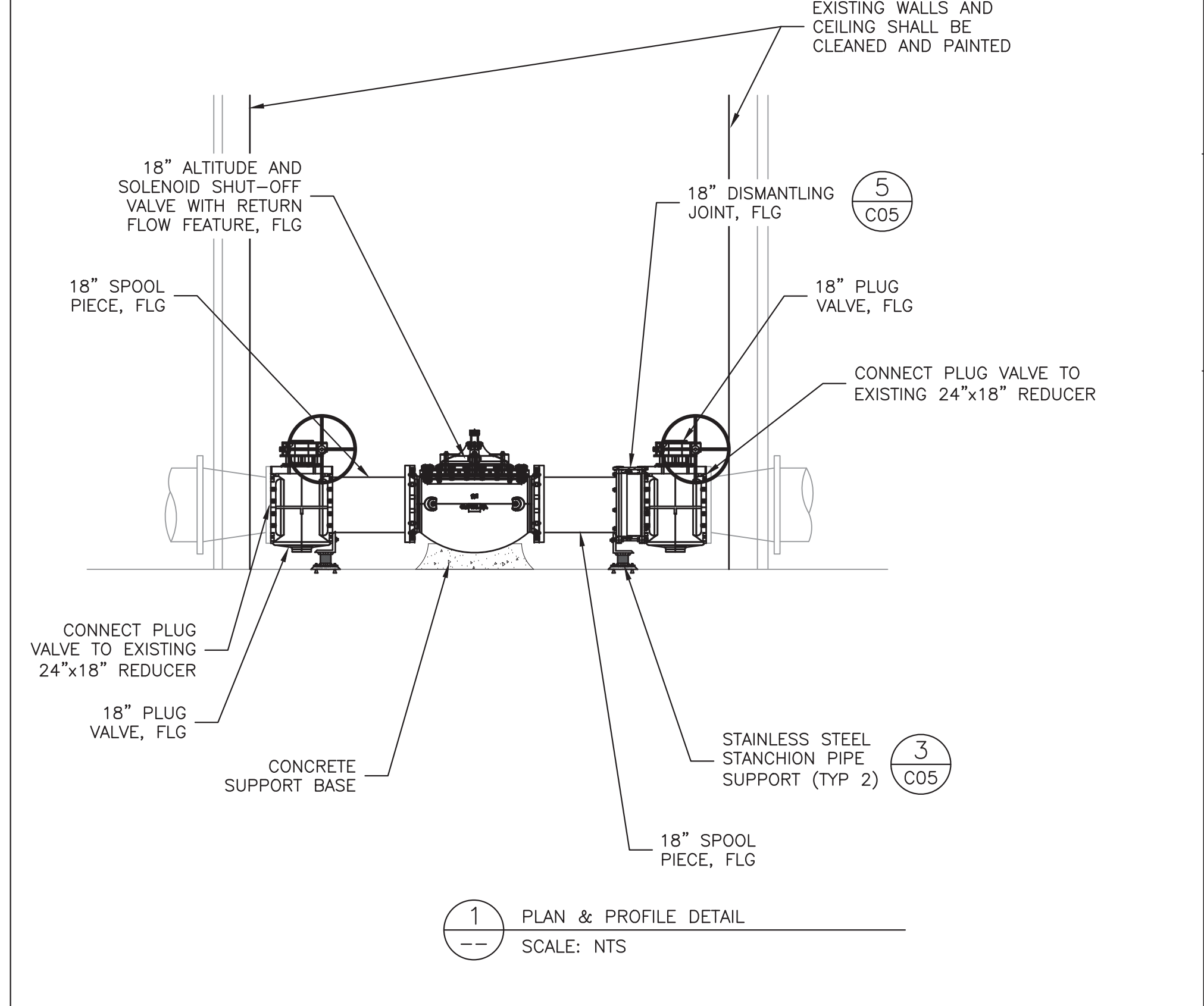
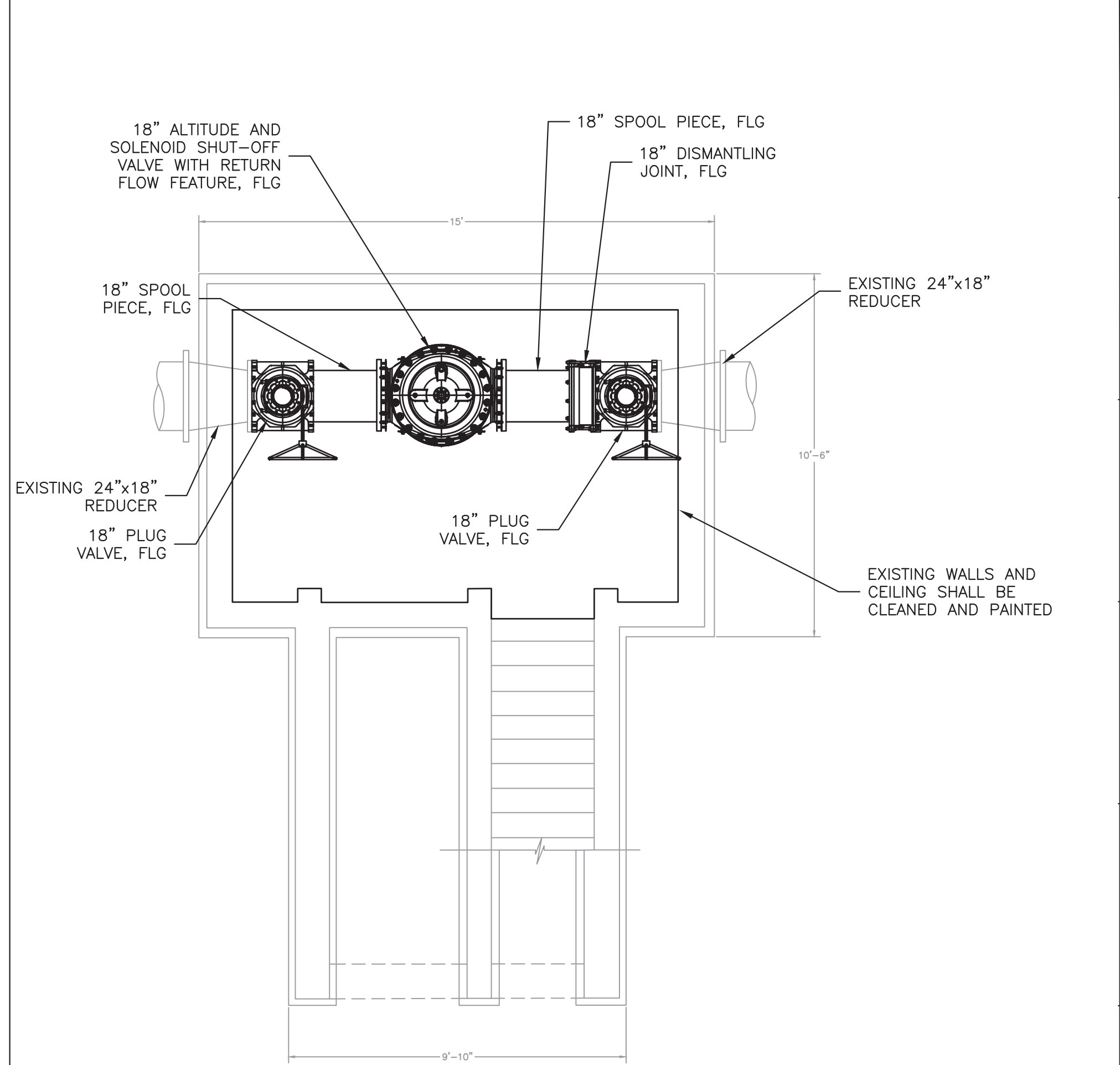
REISS ENGINEERING, INC.
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 SUITE 161 TAMPA, FL 33607
 (813) 549-0919
 CERTIFICATE OF AUTH. 8181

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NOTES:

- CONTRACTOR SHALL PROVIDE CITY OF TAMPA WATER DEPARTMENT STAFF WITH A MINIMUM OF 72 HOURS NOTICE PRIOR TO INSTALLATION OF LINE STOP SO THAT THE CITY CAN MAKE APPROPRIATE PREPARATIONS. TANK SHALL BE DRAINED PRIOR TO INSTALLATION OF LINE STOP. TAPPING SLEEVES FOR LINE STOP SHALL BE INSTALLED AND PRESSURE TESTED PRIOR TO SCHEDULING LINE STOP INSTALLATION.
- LIMITS OF EXISTING RESTRAINED JOINT PIPING ARE UNKNOWN. EXISTING WATER MAIN PIPING SHALL BE RESTRAINED PRIOR TO INSTALLATION OF LINE STOPS AND PROPOSED VALVES. CONTRACTOR MAY EXCAVATE EXISTING JOINTS TO THE LIMITS SET FORTH IN DETAIL 6 ON SHEET C04 TO CONFIRM EXISTENCE (OR ABSENCE) OF RESTRAINED JOINTS. IN LIEU OF THIS EXPLORATORY WORK, OR IN THE CONFIRMED ABSENCE OF RESTRAINED JOINTS, CONCRETE THRUST COLLARS OR RESTRAINTS MUST BE INSTALLED AND DEEMED FULLY FUNCTIONAL PRIOR TO EXCAVATION AND MODIFICATION OF EXISTING PIPING. FINAL LOCATION OF CONCRETE THRUST COLLARS SHALL BE AS APPROVED BY THE ENGINEER.
- ALL BELOW GRADE JOINTS SHALL BE MECHANICAL JOINT, RESTRAINED. ALL ABOVE GRADE JOINTS SHALL BE FLANGED UNLESS OTHERWISE NOTED.
- ALL BURIED DUCTILE IRON PIPE SHALL BE POLY WRAPPED AS PER THE SPECIFICATIONS.
- NEW ALTITUDE VALVE, PLUG VALVES AND APPURTENANCES SHALL BE INSTALLED THROUGH THE EXISTING STAIRWELL OR THE EXISTING VAULT VAULT TOP SLAB MAY BE REMOVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING TOP SLAB, INCLUDING ANY REPAIRS OR REPLACEMENT REQUIRED.
- ALL ABOVE GRADE PIPING, FITTING AND ISOLATION VALVES SHALL BE FACTORY PRIMED COATED AND PAINTED IN FIELD PER THE SPECIFICATIONS.



1 PLAN & PROFILE DETAIL
SCALE: NTS



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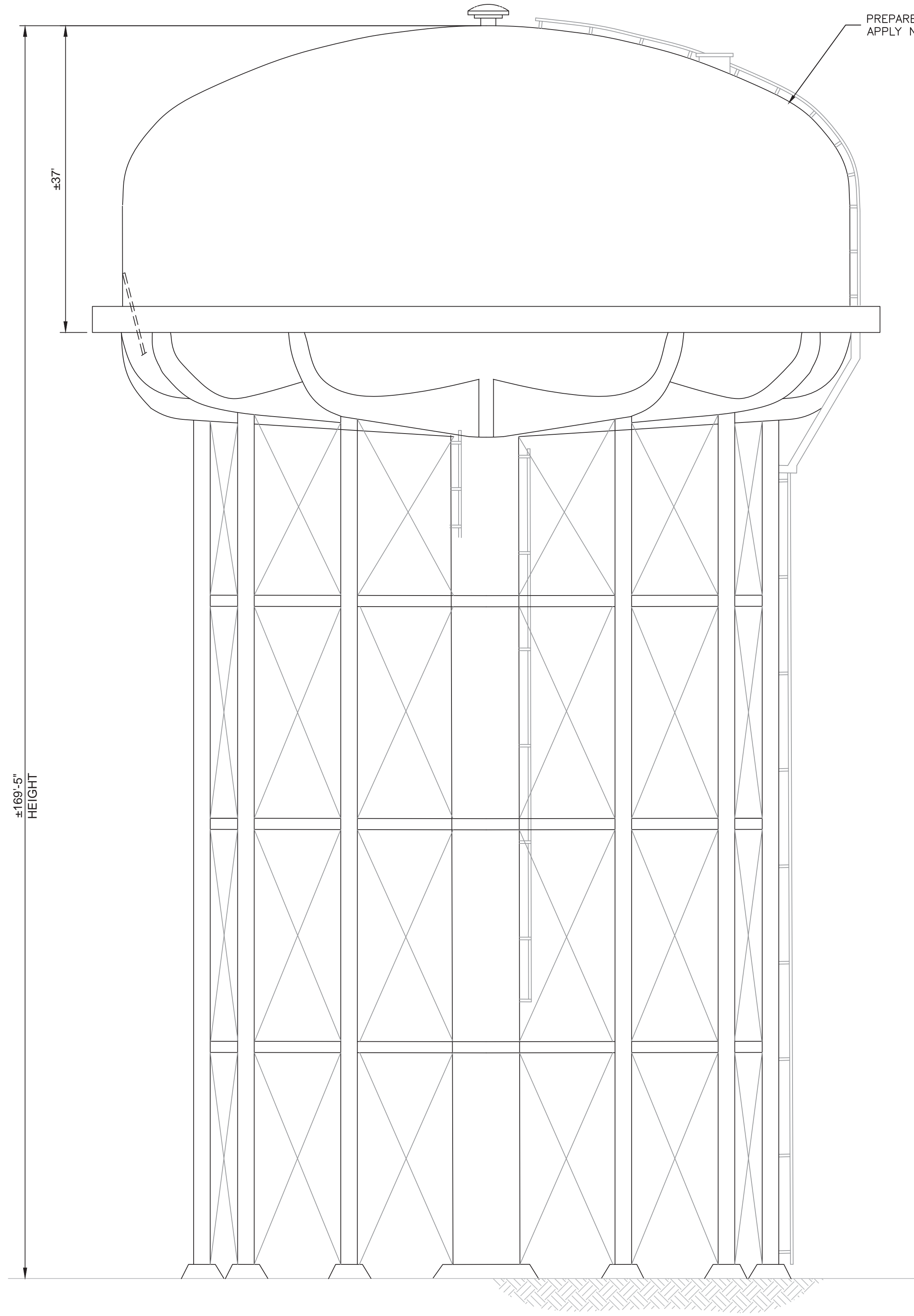
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Reviewed_AWD
Approved_WTH
Date_03/2018

CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
CIVIL
PLAN VIEW

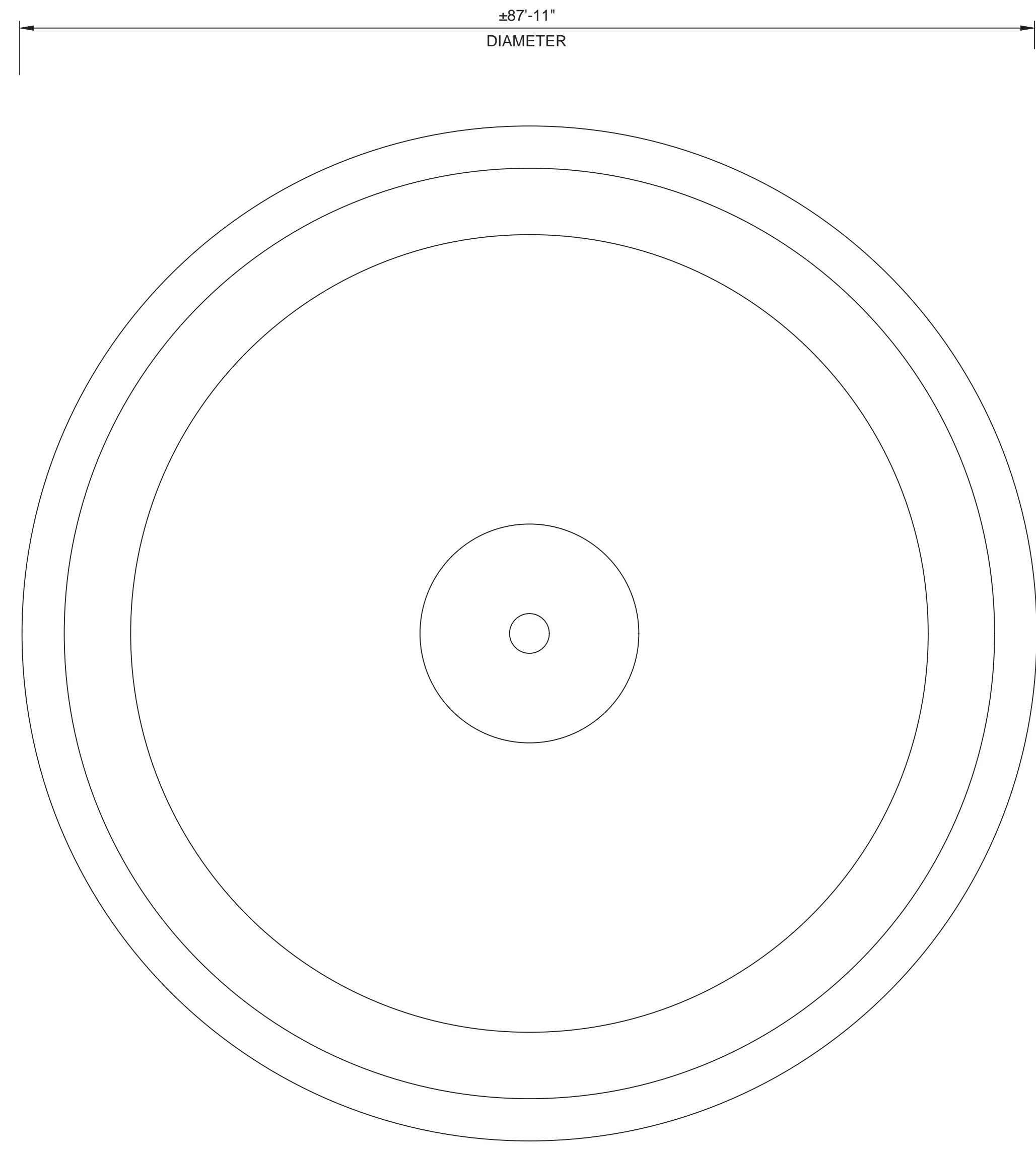
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SCALE:	NOTED
REVISION:	A
DRAWING NO.:	C02
SHEET NO.:	05 OF 16

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SUITE 161 TAMPA, FL 33607
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PREPARE TANK EXTERIOR AND APPLY NEW COATING AS SPECIFIED



ELEVATION
N.T.S.

- NOTES:**
1. NOTES ARE INTENDED TO COMPLEMENT EXTERIOR AND INTERIOR COATING SPECIFICATIONS AND ARE FURNISHED FOR CONVENIENCE. THE CONTRACTOR SHALL REFER TO THE TECHNICAL SPECIFICATIONS.
 2. EXTERIOR COATING
 - a. ALL EXTERIOR SURFACES EXHIBITING RUST SHALL BE CLEANED WITH A POWER TOOL TO BARE METAL SSPC SP11, WITH THE APPLICATION OF A MODIFIED POLYAMIDOAMINE EPOXY PRIMER.
 - b. THE BASE, ANCHOR BOLTS, AND LOWER TWO-FEET OF COLUMNS SHALL BE SPOT BLASTED AND A TOPCOAT PER CITY APPROVED COLOR.
 - c. COATINGS THAT EXHIBIT HEAVE CHECKING SHALL BE COMPLETELY REMOVED IN ACCORDANCE WITH NACE/SSPC WJ4 (LIGHT WATER CLEANING) PRIOR TO APPLICATION OF NEW COATING SYSTEM.
 - d. PERFORM STRUCTURAL REPAIRS PER STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO COATING.
 - e. THE ENTIRE EXTERIOR OF THE TANK AND SUPPORT FRAMEWORK SHALL BE COATED WITH A PRIME COAT, STRIPE COAT, INTERMEDIATE COAT AND A TOP COAT PER SPECIFICATIONS.
 3. INTERIOR COATING
 - a. AREAS ON THE FLOOR THAT ARE PITTED ARE TO BE FILLED WITH WELD MATERIAL.
 - b. SURFACES THAT CANNOT BE PROPERLY ACCESSED FOR ABRASIVE BLAST CLEANING SHALL BE POWER TOOL CLEANED TO SSPC SP11 "POWER TOOL CLEANING TO BARE METAL", THEN COATED WITH THE THREE-COAT EPOXY SYSTEM.
 - c. PERFORM STRUCTURAL REPAIRS PER STRUCTURAL DRAWINGS AND SPECIFICATIONS PRIOR TO COATING.
 - d. SURFACE PREPARATION – SSPC 10/ NACE 2 "NEAR WHITE BLAST CLEANING".
 - e. THE ENTIRE INTERIOR OF THE TANK SHALL BE COATED WITH A PRIME COAT, STRIPE COAT, INTERMEDIATE COAT AND A TOP COAT PER SPECIFICATIONS. ALL COATINGS AND REPAIR MATERIALS UTILIZED INSIDE THE TANK SHALL BE NSF 61 APPROVED.
 - f. ALL LOCATIONS IDENTIFIED BY THE ENGINEER OR INSPECTOR SHALL BE CAULKED USING SIKA-FLEX 1A, ONE COMPOUND POLYURETHANE SEALANT THAT IS NSF 61 APPROVED.



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Issue Certification

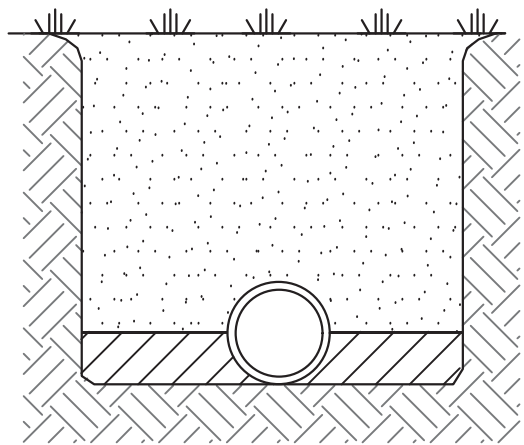
Weston T. Hoggen, P.E.
Florida P.E. No. 77777

Designed PGK
 Drawn PFH
 Checked WITH
 Reviewed AWD
 Approved WITH
 Date 03/2018

CITY OF TAMPA WATER DEPARTMENT
 PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
 DETAILS
 STORAGE TANK COATING PLAN AND SECTION

PROJECT NO.:	0816
SCALE:	NOTED
REVISION:	A
DRAWING NO.:	C03
SHEET NO.:	06 OF 16





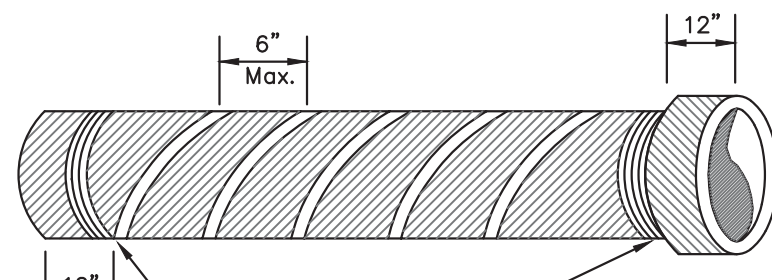
Suitable backfill compacted in 12-inch lifts to a minimum 98% of the maximum modified proctor density as determined by AASHTO T-180-57

Compaction by hand in layers of 6 inches, lightly consolidated to centerline

NOTES:

- Type 2 trench is defined as a flat-bottom trench. Lightly consolidate backfill to centerline of pipe.
- This standard shall be utilized in the absence of specific standards. The standard of the agency controlling the Right-of-Way shall govern unless otherwise directed by the Engineer.
- Suitable backfill shall be defined as material free from cinders, ashes, refuse, clay, organic matter, boulders, rocks or stones, or other material that in the opinion of the Engineer is unsuitable.

1 TRENCHING, BEDDING & BACKFILL DETAIL FOR NON-PAVED AREAS
SCALE: NTS

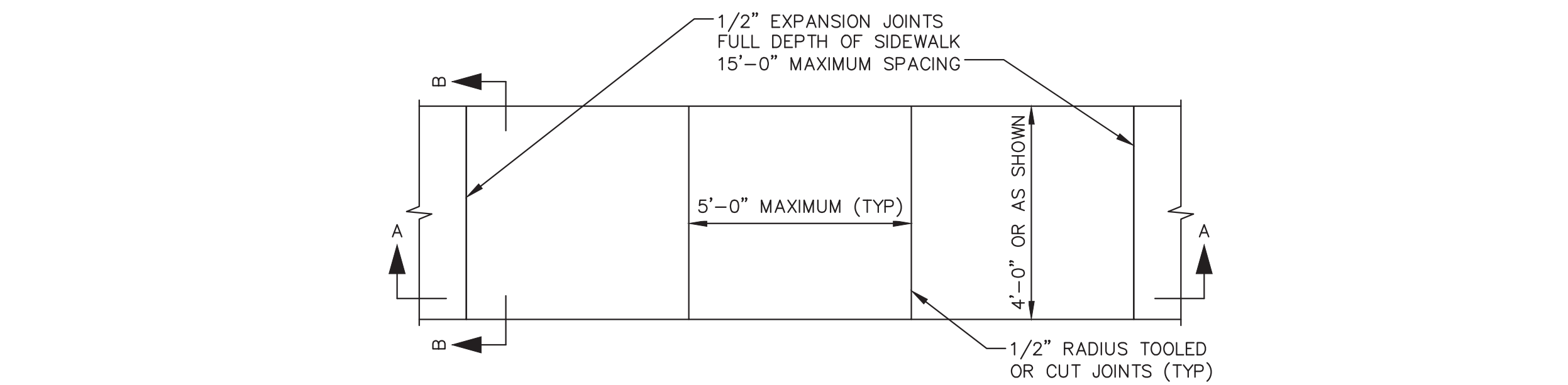


SPIRAL WRAP

NOTES:

- To ensure proper adhesion, each pipe run shall be wrapped with a continuous run of tape.
- All tape shall be min. 2" blue vinyl tape for potable water.

2 PIPE IDENTIFICATION DETAIL D.I.P. ONLY
SCALE: NTS

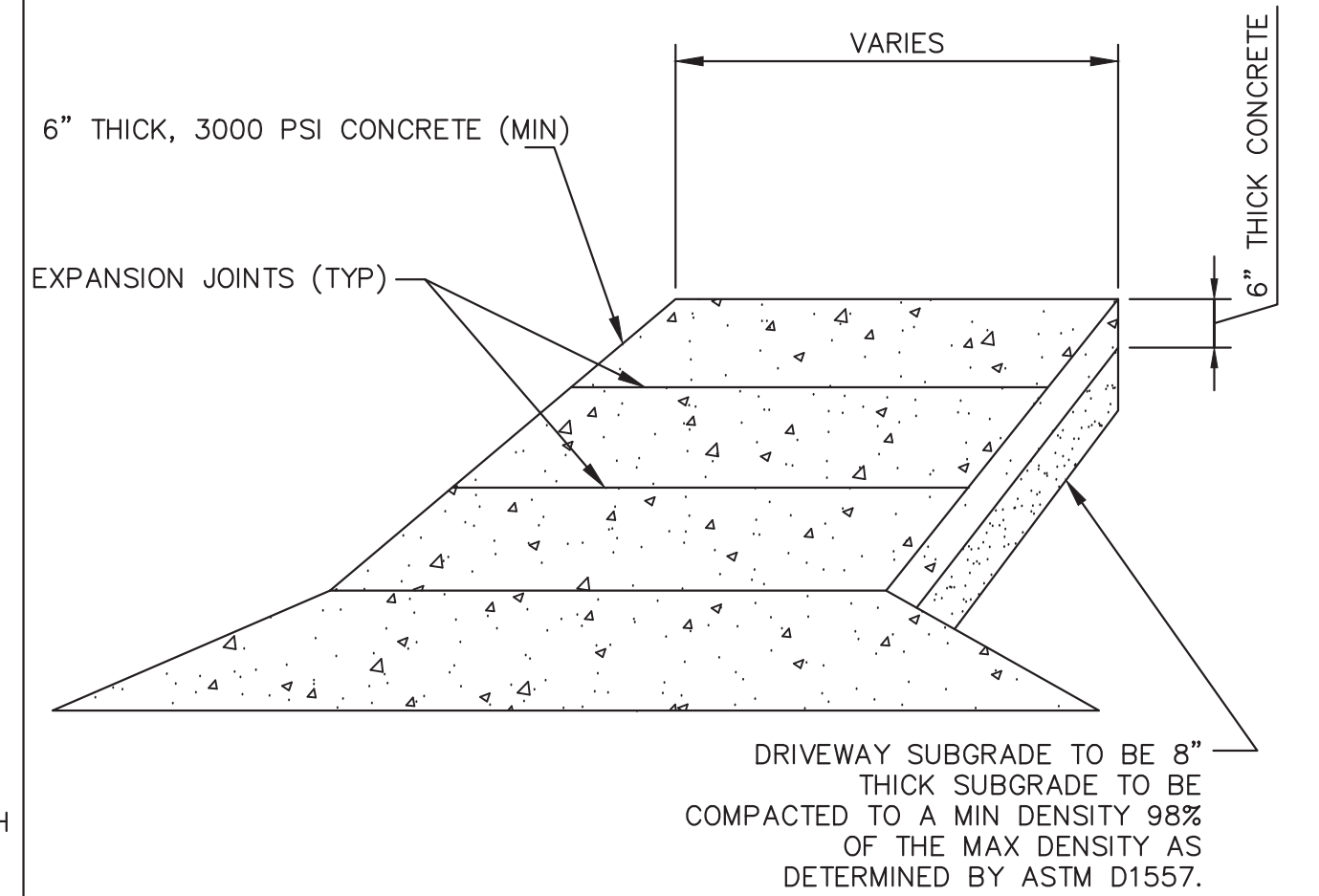


PLAN

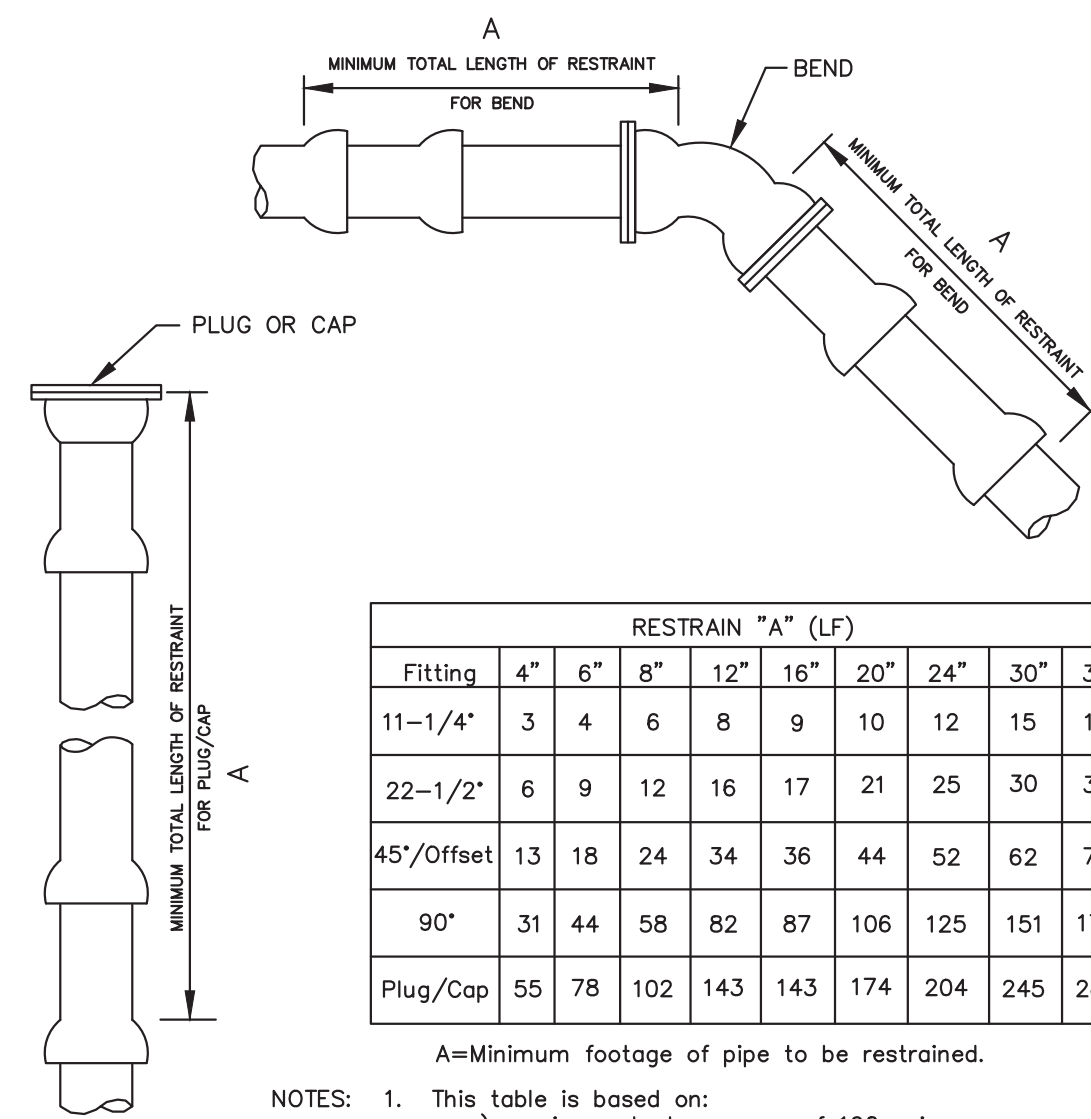
SECTION A

SECTION B

3 CONCRETE SIDEWALK DETAIL
SCALE: NTS



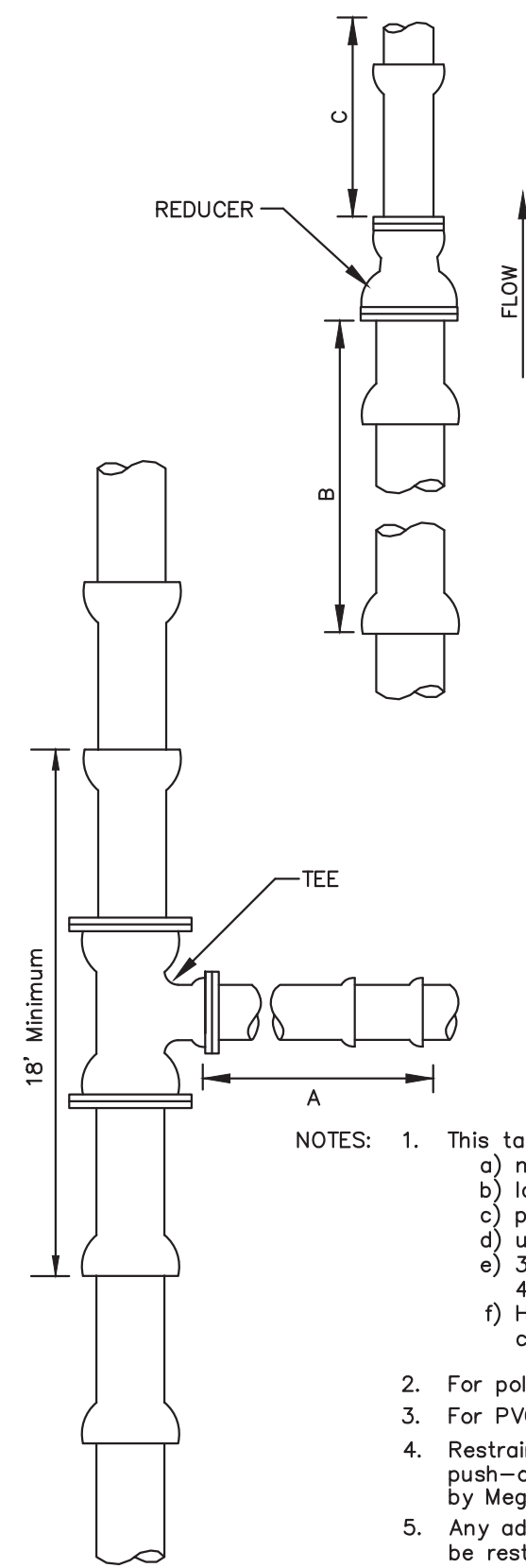
4 DRIVEWAY DETAIL
SCALE: NTS



Fitting	RESTRAIN "A" (LF)									
	4"	6"	8"	12"	16"	20"	24"	30"	36"	
11-1/4"	3	4	6	8	9	10	12	15	17	
22-1/2"	6	9	12	16	17	21	25	30	35	
45'/Offset	13	18	24	34	36	44	52	62	73	
90°	31	44	58	82	87	106	125	151	176	
Plug/Cap	55	78	102	143	143	174	204	245	285	

- A=Minimum footage of pipe to be restrained.
- NOTES:
- This table is based on:
 - maximum test pressure of 190 psi
 - laying condition type 2 (see Details 2.01 and 2.02)
 - poor soil conditions
 - using D.I.P.
 - 3 feet of cover for 12" and smaller mains; 4 feet of cover for 16" and larger mains
 - Horizontal bends only - Engineer to submit calculations for vertical restraints
 - For polywrapped D.I.P., multiply the footage by 1.25
 - For PVC pipe, multiply footage by 1.2
 - Restrained pipe shall be manufactured restrained pipe, push-on restraints or mechanical joint pipe restrained by Megalug or equivalent.
 - Any additional fittings within the restrained section shall be restrained accordingly.

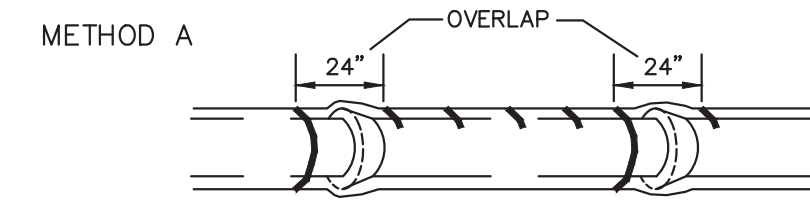
5 RESTRAINED JOINT STANDARD FOR BENDS, PLUGS, AND CAPS
SCALE: NTS



Fitting Size	Restrained (LF)			Unrestrained Straight Run (LF)
	Tee "A"	Reducer "B"	Reducer "C"	
4x4	25	*	*	*
6x4	11	40	59	*
6x6	48	*	*	*
8x4	A.T.	73	142	*
8x6	38	43	56	*
8x8	72	*	*	*
12x4	A.T.	124	364	*
12x6	19	104	208	*
12x8	57	76	115	*
12x12	114	*	*	*
16x6	A.T.	121	321	*
16x8	27	104	212	*
16x12	77	61	82	*
16x16	118	*	*	*
20x6	A.T.	156	527	*
20x8	14	144	369	*
20x12	68	109	186	*
20x16	111	61	77	*
20x20	149	*	*	*
24x6	A.T.	189	777	*
24x8	A.T.	179	560	*
24x12	59	150	313	*
24x16	104	111	172	*
24x20	144	61	74	*
24x24	179	*	*	*
30x6	A.T.	234	1227	*
30x8	A.T.	226	904	*
30x12	45	204	542	*
30x16	94	173	341	*
30x20	135	134	208	*
30x24	172	86	110	*
30x30	220	*	*	*
36x6	A.T.	276	1784	*
36x8	A.T.	269	1328	*
36x12	30	251	824	*
36x16	83	226	551	*
36x20	127	195	373	*
36x24	165	156	245	*
36x30	215	86	106	*
36x36	261	*	*	*

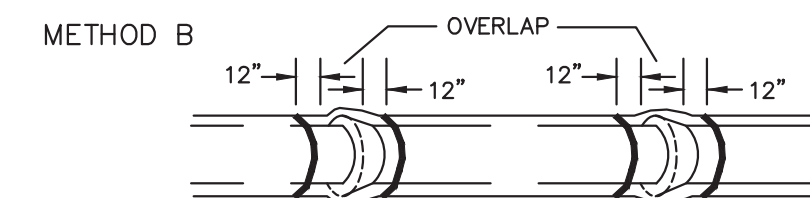
- A.T.—Restrained required at Tee only. *—not applicable
- NOTES:
- This table is based on:
 - maximum test pressure of 190 psi
 - laying condition type 2 (see Details 2.01 and 2.02)
 - poor soil conditions
 - using D.I.P.
 - 3 feet of cover for 12" and smaller mains; 4 feet of cover for 16" and larger mains
 - Horizontal bends only - Engineer to submit calculations for vertical restraints
 - For polywrapped D.I.P., multiply the footage by 1.25
 - For PVC pipe multiply footage by 1.2
 - Restrained pipe shall be manufactured restrained pipe, push-on restraint or mechanical joint pipe restrained by Megalug or equivalent.
 - Any additional fittings within the restrained section shall be restrained accordingly.
 - For Reducers: If "C" straight run of pipe downstream of reducer not available, then restrain "B" upstream of reducer.

6 RESTRAINED JOINT STANDARD FOR TEES AND REDUCERS
SCALE: NTS



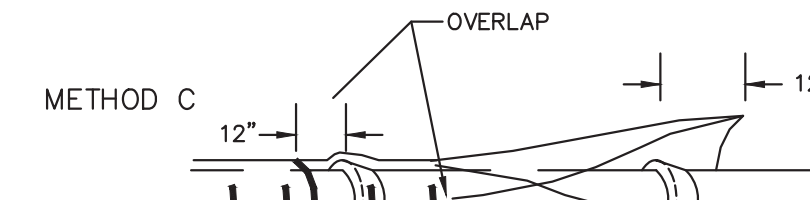
METHOD A

Polyethylene tube is cut into lengths approximately two feet longer than the pipe section and placed around it. After the pipe joint is assembled, the polyethylene tube is made to overlap the joint and the overlap secured in place. Since the tube is considerably larger than the barrel of pipe, it is made to fit snugly by folding over at the top and securing at quarter points along the pipe section.



METHOD B

Polyethylene tube is cut one foot shorter than the length of the pipe section. After placement of the pipe, it is folded and secured snugly overall. A three foot length of polyethylene tube placed over the end of the preceding section is then pulled in place over the joint after assembly and secured.

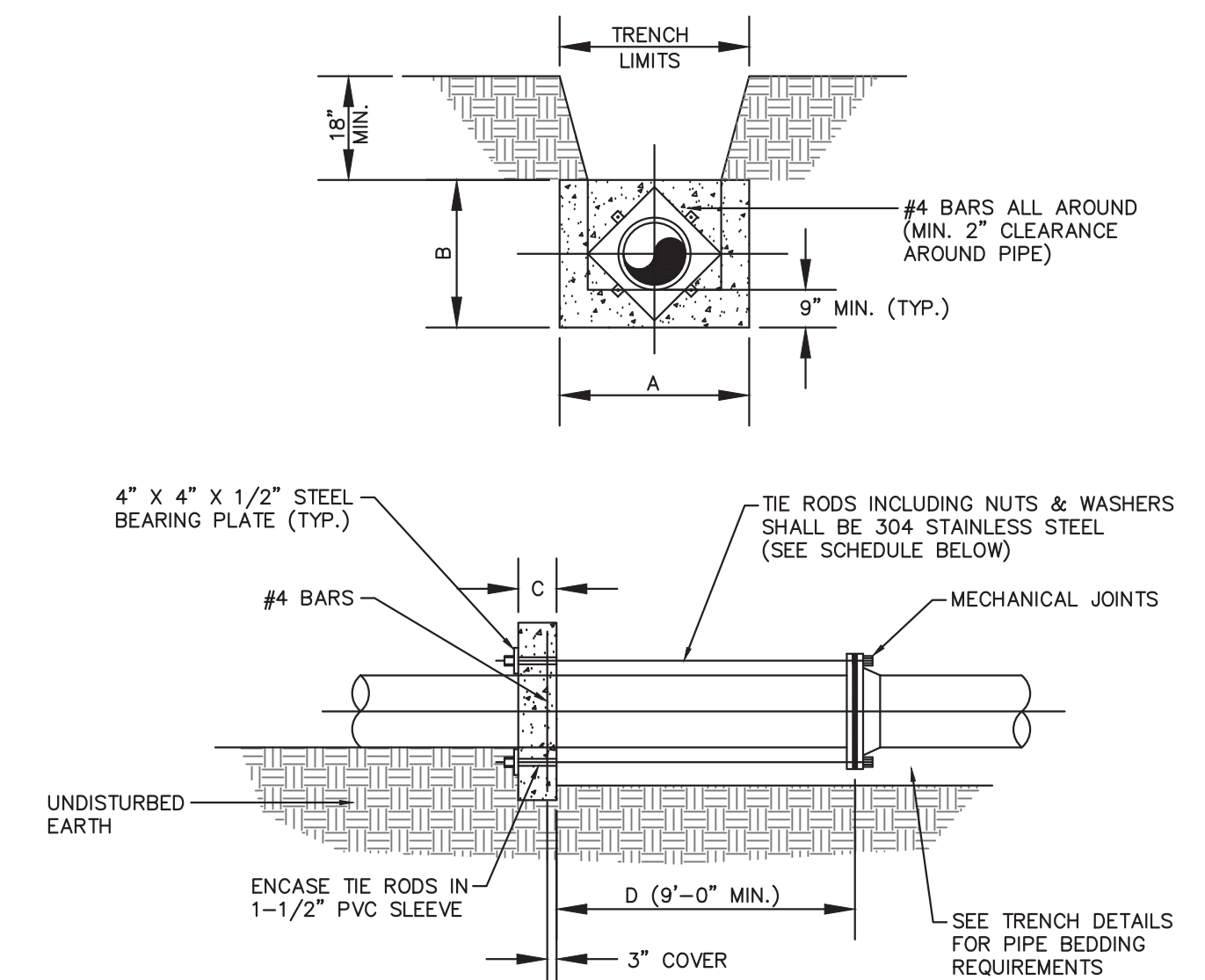


METHOD C

Polyethylene sheet is cut to a length two feet longer than the pipe section. The sheet is wrapped around the pipe so that it overlaps circumferentially over the top quadrant of the pipe, then secured. After joint assembly, the surplus length of polyethylene film is secured around the joint, providing an overlap of each joint. Tape at each joint or at 3' intervals in between.

- NOTES:
- Use blue polyethylene film and tape only.
 - Polyethylene film shall be a minimum of 8 mil. thickness.

7 INSTALLATION OF POLYETHYLENE ENCASEMENT DETAIL
SCALE: NTS



- NOTES:
- ADDITIONAL REINFORCEMENTS SHALL BE SPECIFIED BY THE ENGINEER.
 - MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
 - BEDDING, BACKFILL AND COMPACTION SHALL BE SPECIFIED IN THE STANDARD DRAWING.
 - ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILLING.
 - NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL.
 - DESIGN PRESSURE: 150 PSI.
 - REQUIRED FOR LINE STOP OPERATIONS WHERE APPLICABLE.

PIPE SIZE (INCHES)	DIMENSIONS (FT.)				TIE RODS REQ'D	
	A	B	C	D	DIA.	NO.
6	2.0	2.0	1.0		3/4"	2
8	2.5	2.5	1.0		3/4"	2
10	3.5	3.0	1.0		3/4"	2
12	5.0	3.0	1.0		3/4"	2
16	6.0	4.0	1.5		3/4"	4
20	8.0	5.0	1.5		3/4"	6
24	9.0	6.0	1.5		3/4"	8

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

8 THRUST COLLAR DETAIL
SCALE: NTS

Issue Certification

Designed PGK
 Drawn PFH
 Checked WTH
 Reviewed AWD
 Approved WTH

DATE: 03/2018

CITY OF TAMPA WATER DEPARTMENT
 PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS

DETAILS

DETAILS (1 OF 2)

PROJECT NO.: 0816

SCALE: NOTED REVISION: A

DRAWING NO. C04 SHEET NO.: 07 OF 16

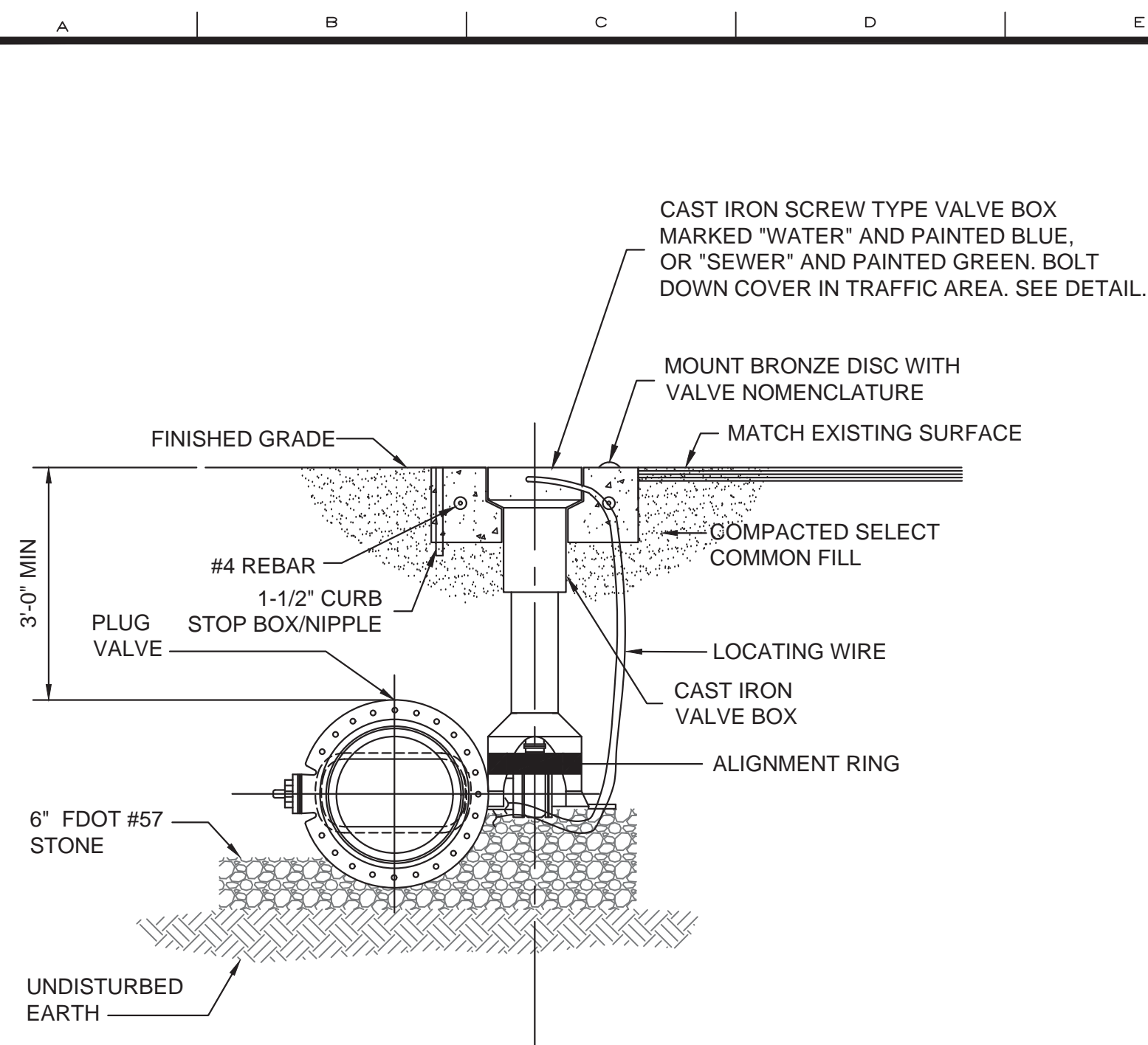


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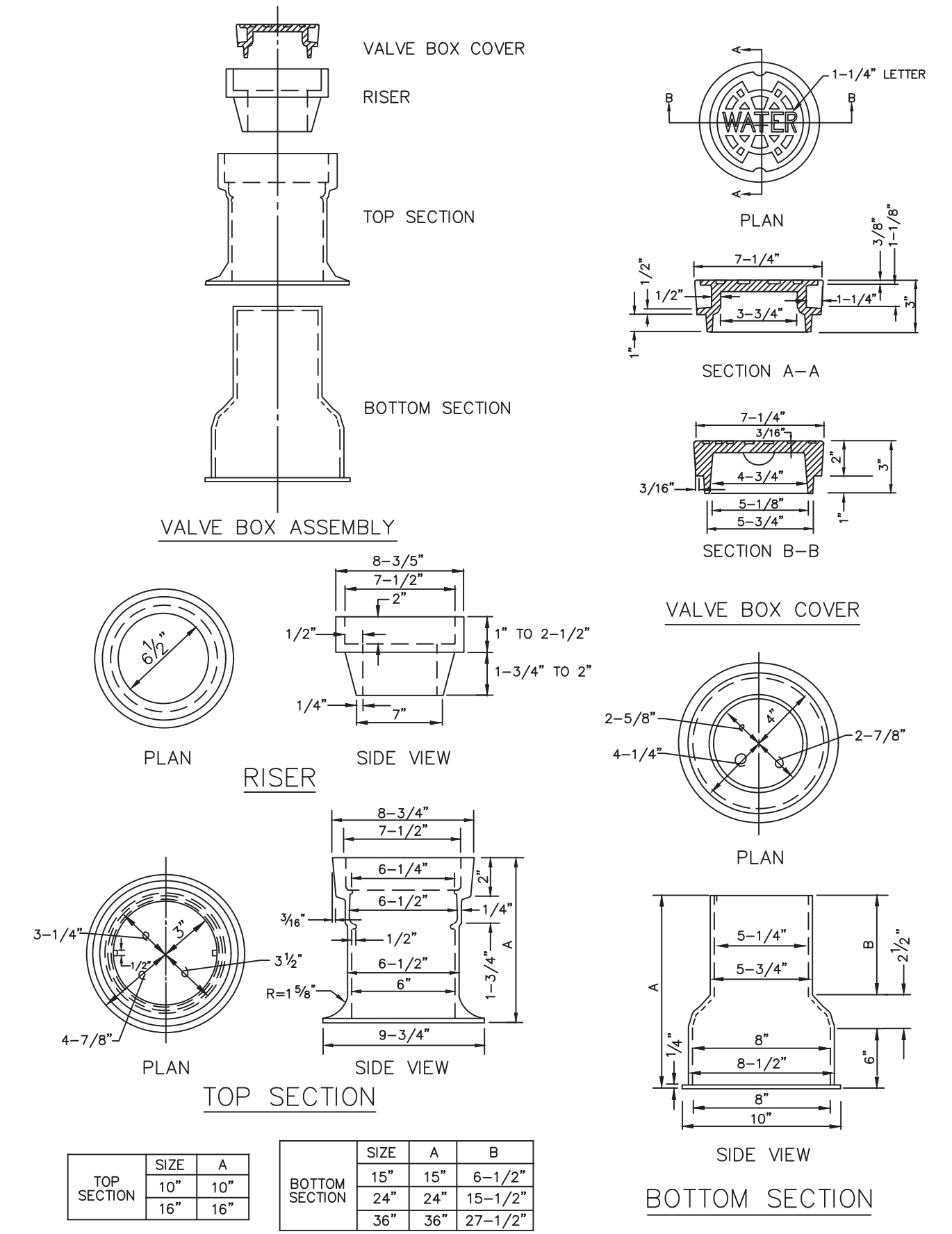


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 SUITE 161 TAMPA, FL 33607
 (813) 549-0919
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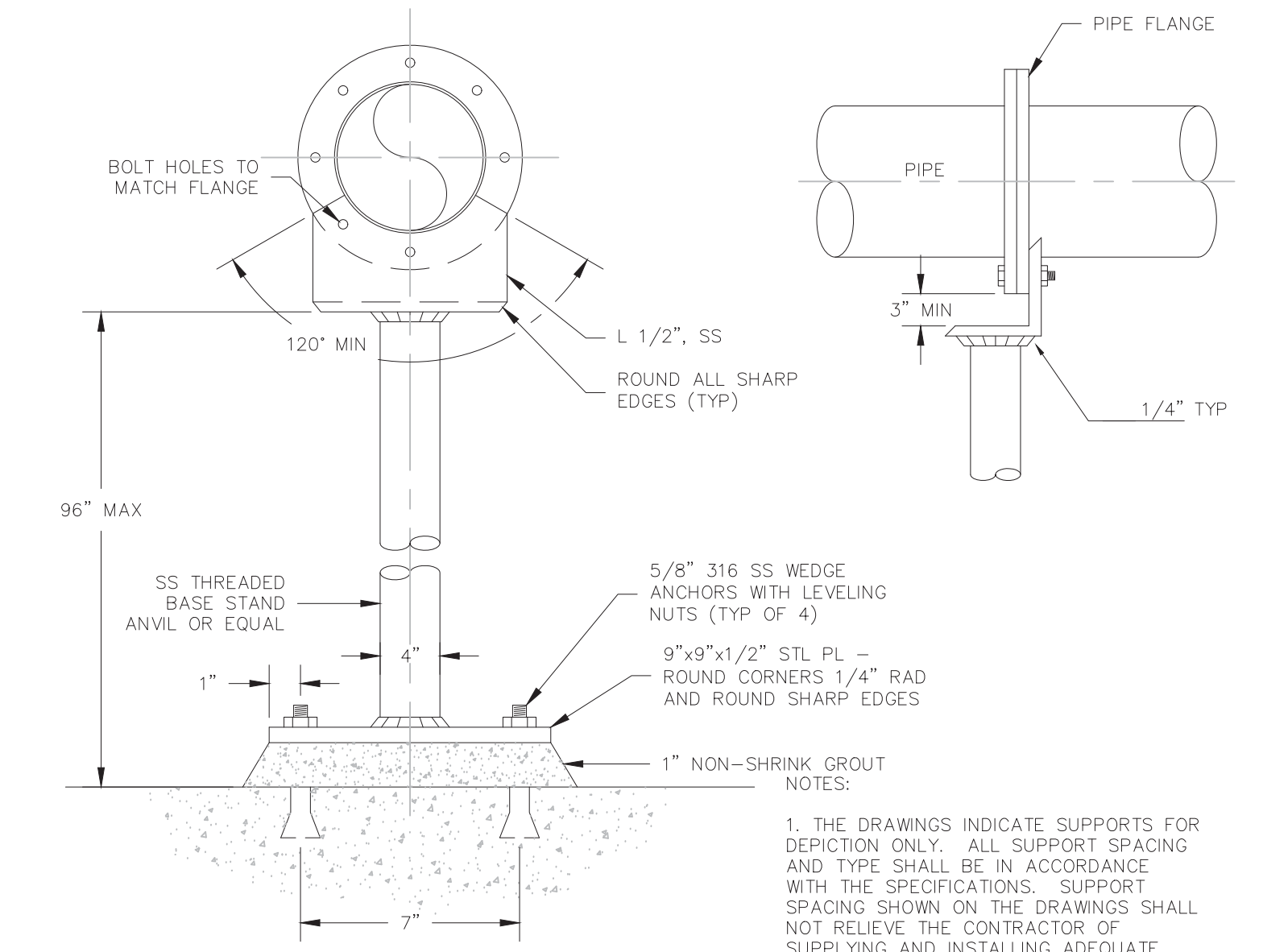


- NOTES:
1. WHEN TOP OF OPERATING NUT IS DEEPER THAN 42", A HIGH STRENGTH STEEL EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 12" BELOW FINISHED GRADE. A STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
 2. COVER SHALL BE PAINTED FEDERAL SAFETY BLUE FOR WATER MAINS AND GREEN FOR SEWER MAINS. BOLT DOWN COVER IN TRAFFIC AREAS.
 3. C900 PVC OR DIP RISER PIPE SHALL BE ADDED TO EXTEND THE VALVE BOX.
 4. REFLECTIVE PAVEMENT PARKERS (RPM) SHALL BE 6" FROM THE EDGE OF PAVEMENT AS PER DOT INSTALLATION SPECIFICATIONS. WATER RPM'S "BLUE" AND SEWER RPM'S "GREEN."

1 PLUG VALVE AND VALVE BOX
SCALE: NTS



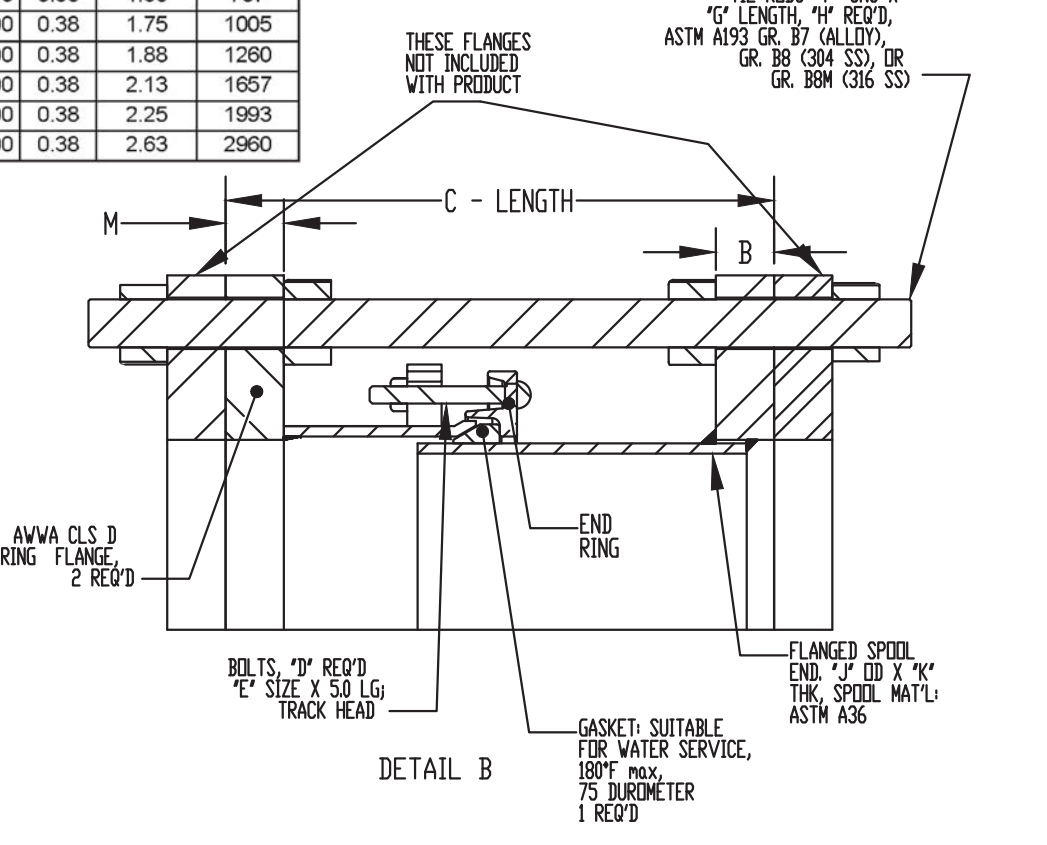
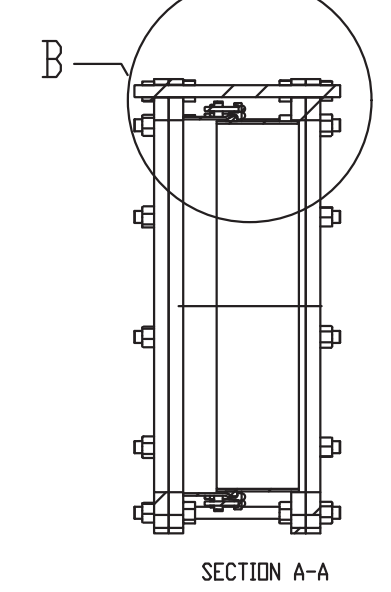
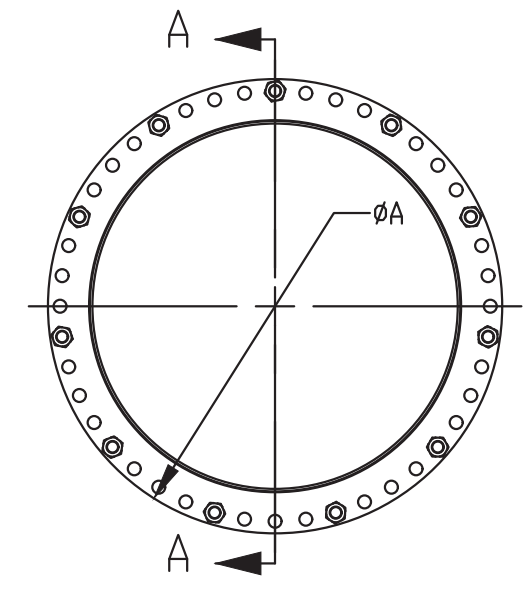
2 VALVE BOX
SCALE: NTS



- NOTES:
1. THE DRAWINGS INDICATE SUPPORTS FOR DEPICTION ONLY. ALL SUPPORT SPACING AND TYPE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. SUPPORT SPACING SHOWN ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF SUPPLYING AND INSTALLING ADEQUATE SUPPORTS PER THE SPECIFICATIONS.
 2. SEE PLANS AND SECTIONS FOR PIPE GRADE REQUIREMENT.
 3. PIPE SUPPORT SUITABLE FOR PIPE SIZES 3" THROUGH 24" DIA.

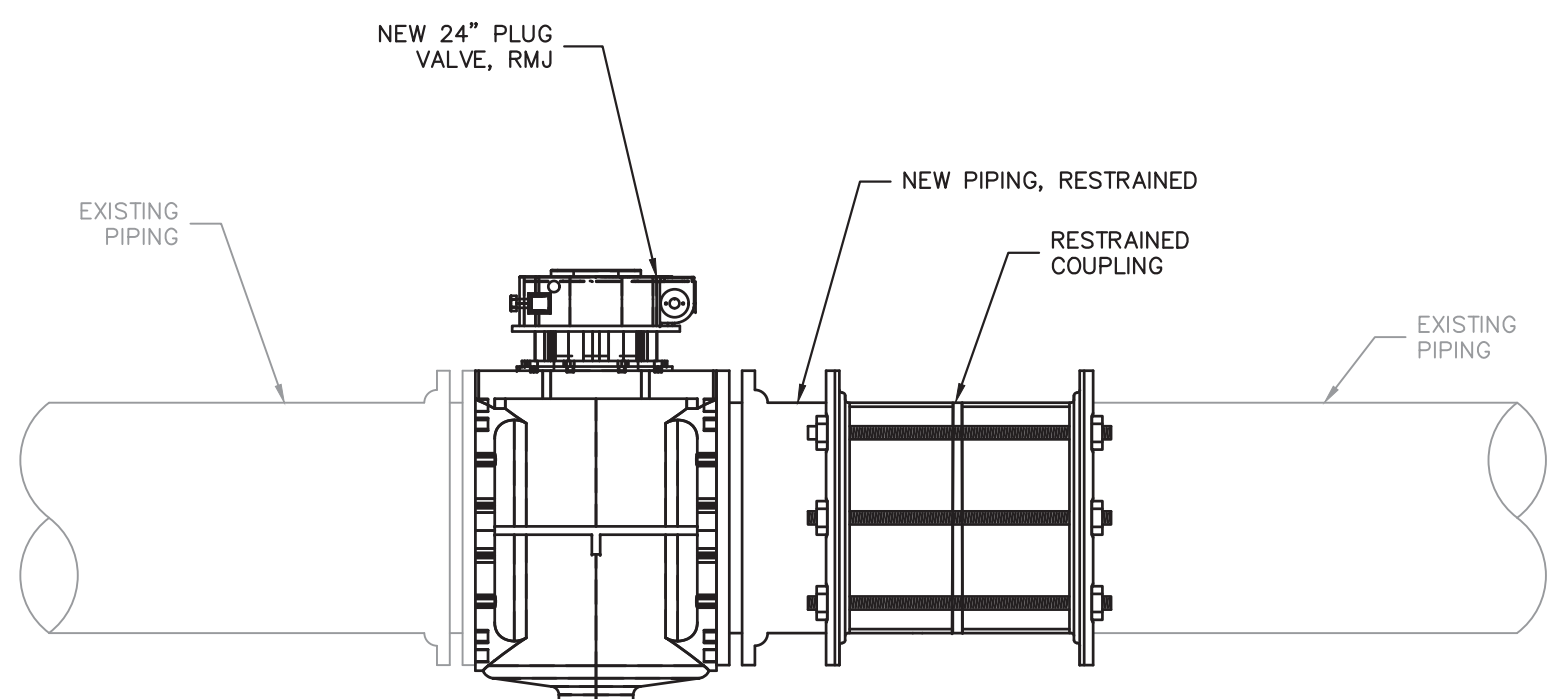
3 STANCHION FLANGE PIPE SUPPORTS
SCALE: NTS

NOM SIZE	DIMENSIONS				BOLTS				TIE RODS				SPOOL			
	FLANGE OD	FLANGE THK	LENGTH		QTY	SIZE (UNC)		QTY	SIZE (UNC)		QTY	OD	PIPE THK	FLANGE THK	APPROX WEIGHT	
			NOM	MAX		D	E		F	G						H
14	21.00	0.94	13.50	12.00	15.00	8	5/8-11	1-8	22.00	2	2	14.00	0.25	0.94	152	
16	23.50	1.00	13.50	12.00	15.00	10	5/8-11	1-8	22.00	2	4	18.00	0.25	1.00	185	
18	25.00	1.06	13.75	12.25	15.25	10	5/8-11	1 1/8-7	23.25	2	4	18.00	0.25	1.06	201	
20	27.50	1.13	13.75	12.25	15.25	12	5/8-11	1 1/8-7	23.25	2	4	20.00	0.25	1.13	238	
24	32.00	1.25	14.25	12.75	15.75	14	5/8-11	1 1/4-7	25.50	2	4	24.00	0.25	1.25	338	
30	38.75	1.38	14.75	13.25	16.25	16	5/8-11	1 1/4-7	25.50	4	6	30.00	0.38	1.38	506	
36	46.00	1.63	15.75	14.25	17.25	18	5/8-11	1 1/2-6	27.50	4	6	36.00	0.38	1.63	757	
42	53.00	1.75	16.50	15.00	18.00	20	5/8-11	1 1/2-6	29.25	4	8	42.00	0.38	1.75	1005	
48	59.50	1.88	16.75	15.25	18.25	22	5/8-11	1 1/2-6	29.25	6	10	48.00	0.38	1.88	1260	
54	66.25	2.13	17.75	16.25	19.25	24	5/8-11	1 3/4-5	31.75	6	10	54.00	0.38	2.13	1657	
60	73.00	2.25	18.00	16.50	19.50	28	5/8-11	1 3/4-5	31.75	6	12	60.00	0.38	2.25	1993	
72	86.50	2.63	18.75	17.25	20.25	32	5/8-11	1 3/4-5	33.50	10	16	72.00	0.38	2.63	2960	



- NOTES:
1. NSF 61 CERTIFIED COATING: FUSION BONDED EPOXY IS STANDARD. OTHER COATINGS AVAILABLE UPON REQUEST.
 2. FASTENERS: HSLA PER ASTM A588 IS STANDARD. STAINLESS STEEL TYPE 304 OR 316 PER ASTM A193 AVAILABLE UPON REQUEST.
 3. PRESSURE RATED UP TO FLANGES PROVIDED. 14\"/>

5 DISMANTLING JOINT DETAIL
SCALE: NTS



4 PLUG VALVE CONNECTION DETAIL
SCALE: NTS

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Drawn PFH
Checked WITH
Reviewed AWD
Approved WITH

WESTON T. HOGGEN, P.E.
FLORIDA P.E. NO. 77777

Date 03/2018

CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
DETAILS
DETAILS (2 OF 2)

PROJECT NO.: 0816
SCALE: NOTED
DRAWING NO. C05
REVISION: A
SHEET NO.: 08 OF 16

REISS ENGINEERING, INC.
3030 NORTH ROCKY POINT DR
SUITE 161 TAMPA, FL 33607
(813) 549-0919
CERTIFICATE OF AUTH. 8181



Figure 1. Exterior Tank Bowl
Provided for reference



Figure 2. Column Anchor Bolt and Nut
Repair corrosion on column anchor bolts and nuts.



Figure 3. Stairs Leading from Landing at Top of Exterior Column-Mounted Ladder to Bowl Platform
Repair corrosion at floor plate of landing.



Figure 4. Exterior Bowl Platform
Repair floor plate corrosion



Figure 5. Exterior Bowl Platform
Repair floor plate corrosion

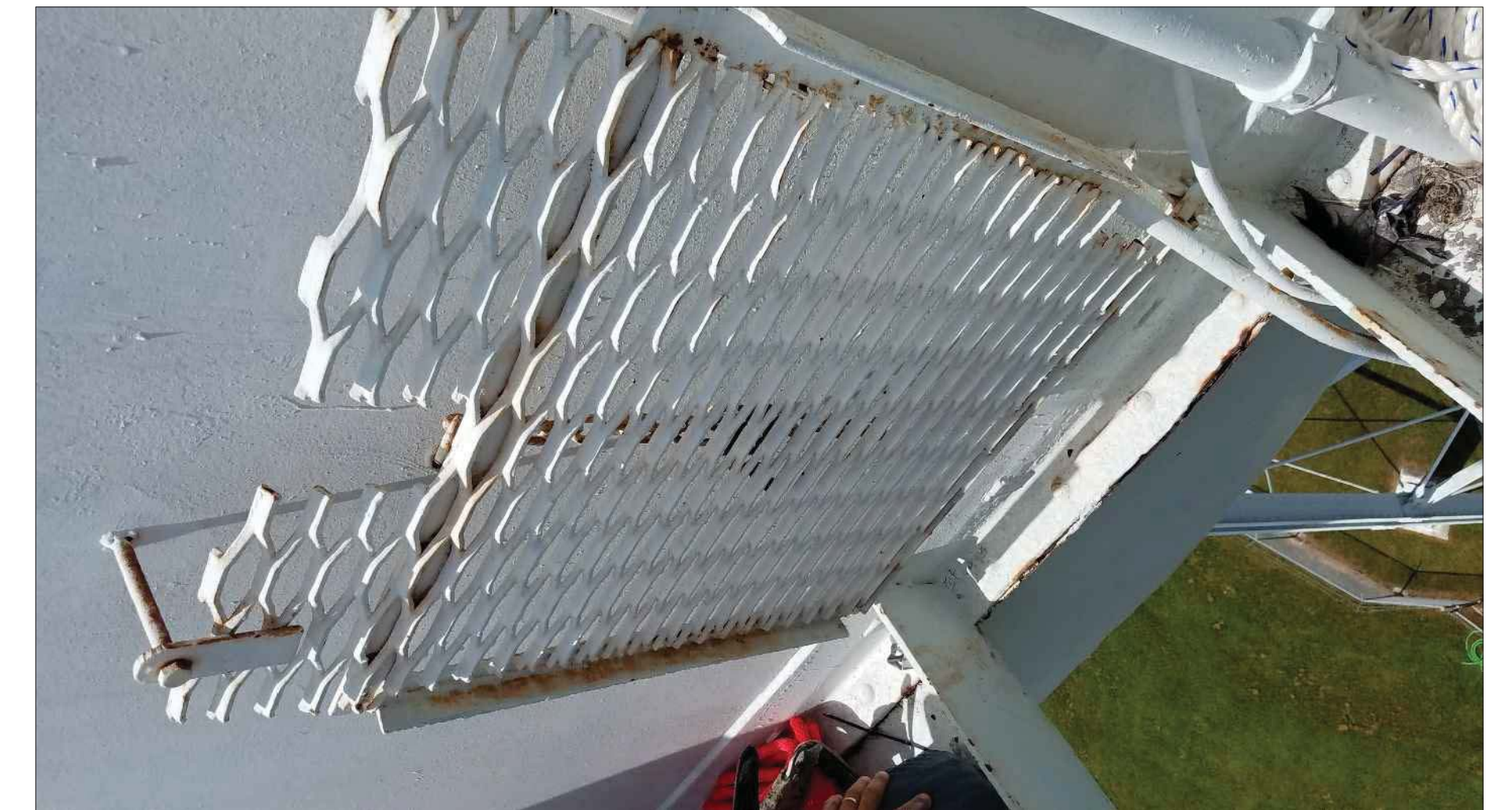


Figure 6. Ladder to Platform Access Way
Repair access way structural deficiencies

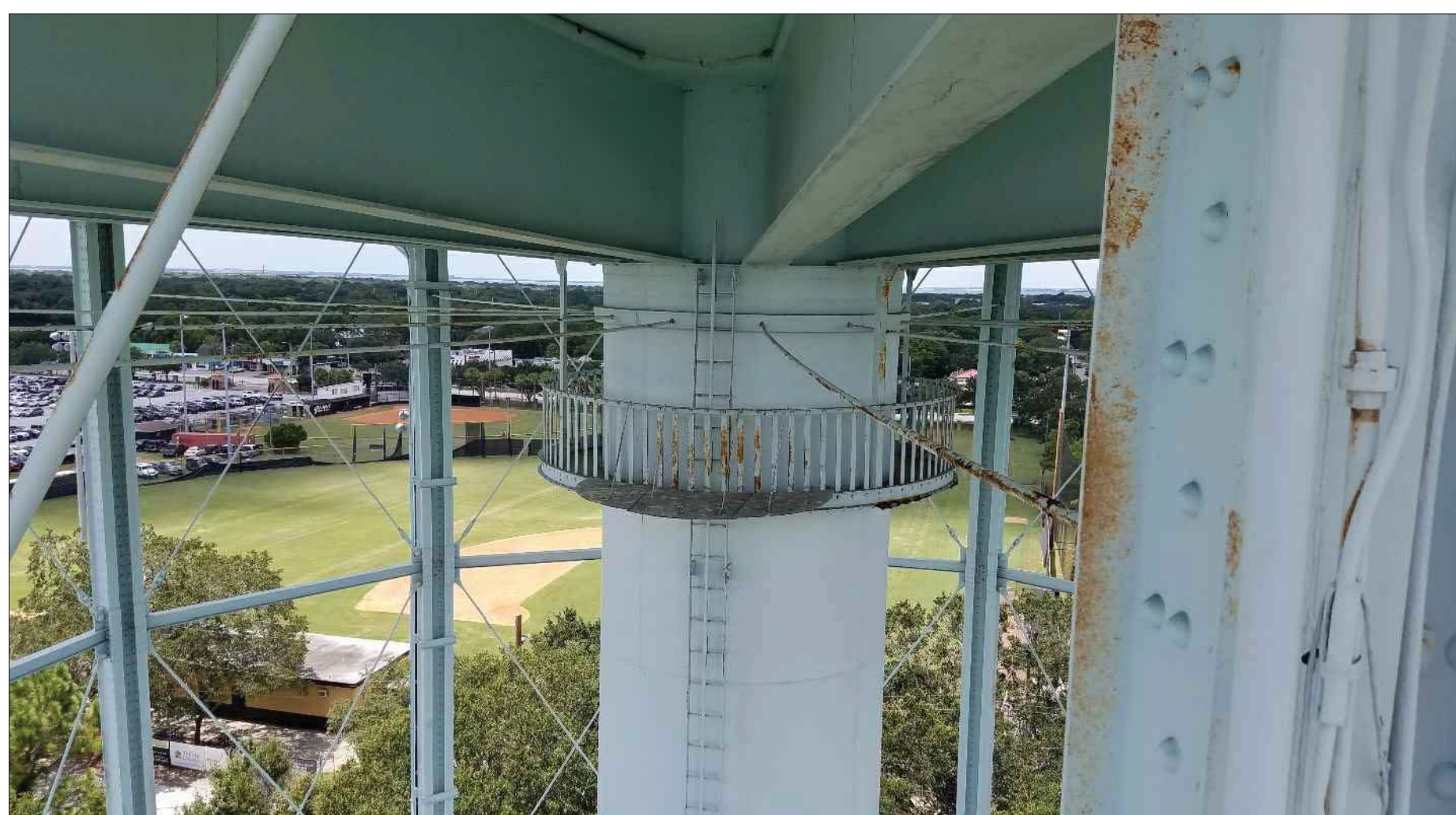


Figure 7. Exterior Tank Bowl
Repair minor corrosion on the riser railing and support columns



Figure 8. Top of Bowl Vent
Repair corrosion at flange bolts and replace missing insect screen



Figure 9. Top of Bowl Vent
Repair corrosion on bowl vent and replace missing insect screen

Parent Sheet Set: 0816_PALMA Rev on: 3/20/2018 10:52 AM Individual File Path: 0816_DETAILS.DWG Rev/Plot by: PAUL HELLER



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Issue Certification

Weston T. Hoggen, P.E.
Florida P.E. No. 77777

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Approved_WTH
Date_03/2018

CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
DETAILS
SITE PICTURES (1 OF 4)

PROJECT NO.: 0816
SCALE: NOTED
DRAWING NO.: C06
REVISION: A
SHEET NO.: 09 OF 16





Figure 10. Top of Bowl Access Way
Repair minor corrosion on access way



Figure 11. Exterior Bowl Access Portal
Repair corrosion on bowl access portal hardware



Figure 12. Interior Riser Access Way
Repair minor corrosion on access way



Figure 13. Interior Bowl Cathodic Projection System and Influent Pipe
Provided for reference



Figure 14. Bowl Interior Pipe
Repair corrosion on influent pipe

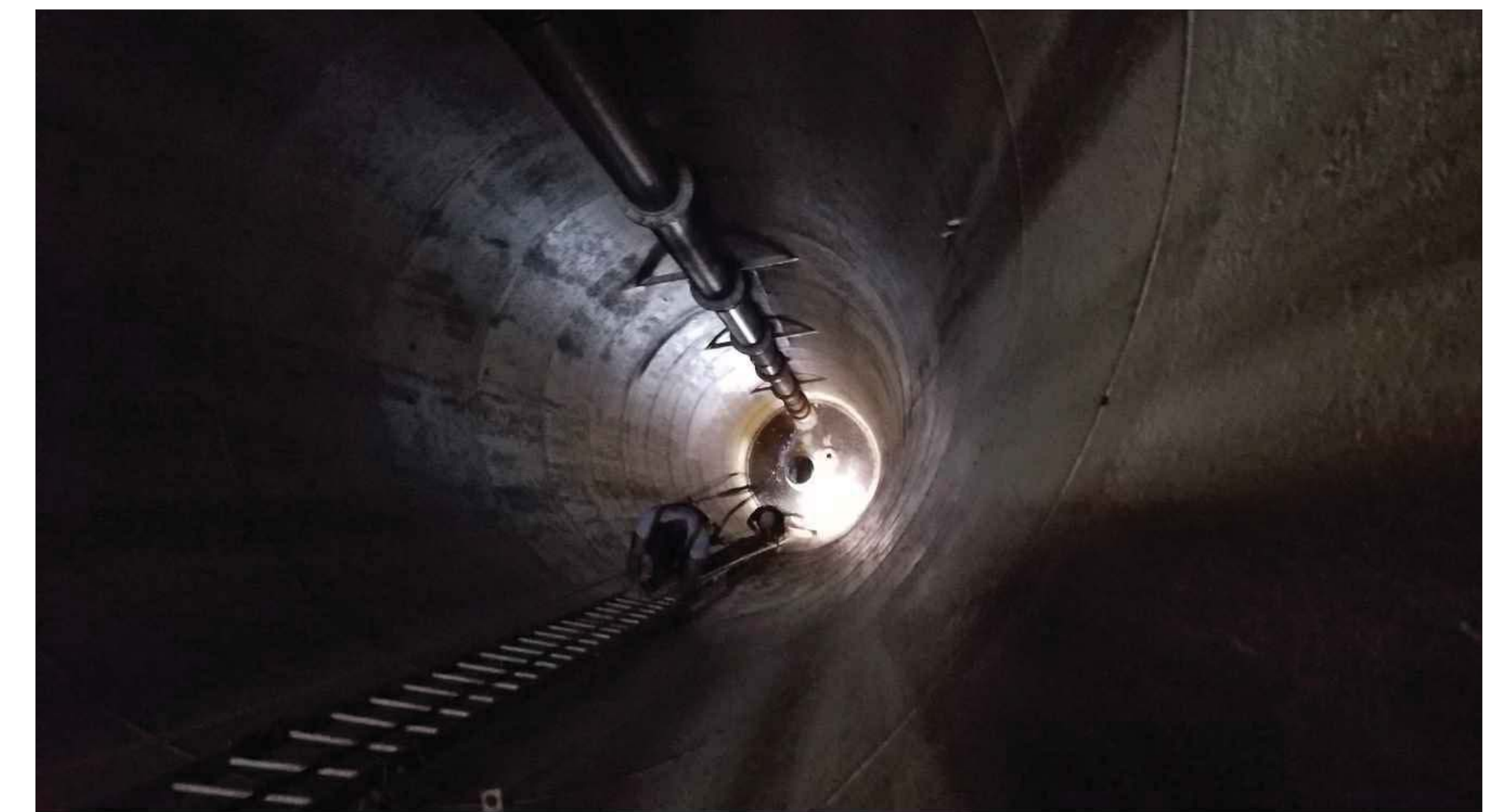


Figure 15. Inside Tank Riser
Repair corrosion on ladder and influent pipe



Figure 16. Tank Bowl Interior
Repair pitted tank bowl as viewed from interior of the tank



Figure 17. Tank Bowl Interior
Repair pitted tank bowl as viewed from interior of the tank



Figure 18. Grating at Top of Tank Riser
Repair corrosion of grating

Parent Sheet Set:0816_PALMA Rev on: 3/20/2018 10:52 AM Individual File Path:0816_DETAILS.DWG

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Parent Sheet Set:0816_PALMA



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Date	03/2018
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CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS

DETAILS

SITE PICTURES (2 OF 4)

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SHEET NO.:	10 OF 16

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Figure 19. Interior Tank Bowl
Provided for reference



Figure 20. Interior Tank Bowl
Provided for reference



Figure 21. Cathodic Protection System Roof Plates on Top on Bowl
Repair minor corrosion on cathodic protection system



Figure 22. Aviation Lighting
Repair minor corrosion peeling on aviation lighting



Figure 23. Exterior fence
The exterior fence has corrosion on the support poles and chain link

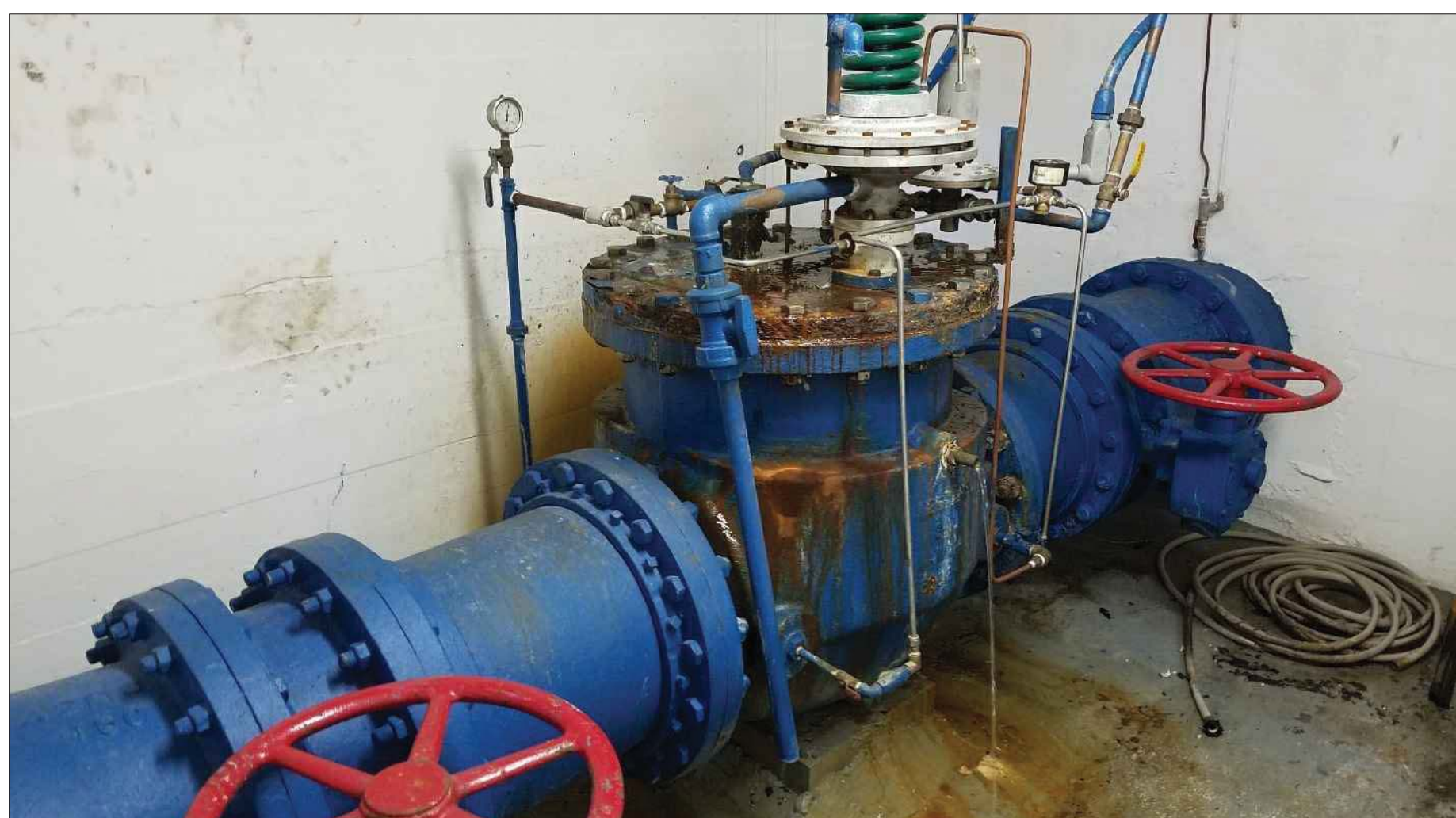


Figure 24. Altitude Valve
Remove and replace existing altitude valve



Figure 25a. Isolation Valves
Remove and replace Isolation Valves



Figure 25b. Isolation Valves
Remove and replace Isolation Valves

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Date	03/2018			

CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS

DETAILS

SITE PICTURES (3 OF 4)

PROJECT NO.:	0816	
SCALE:	NOTED	REVISION: A
DRAWING NO.:	C08	SHEET NO.: 11 OF 16

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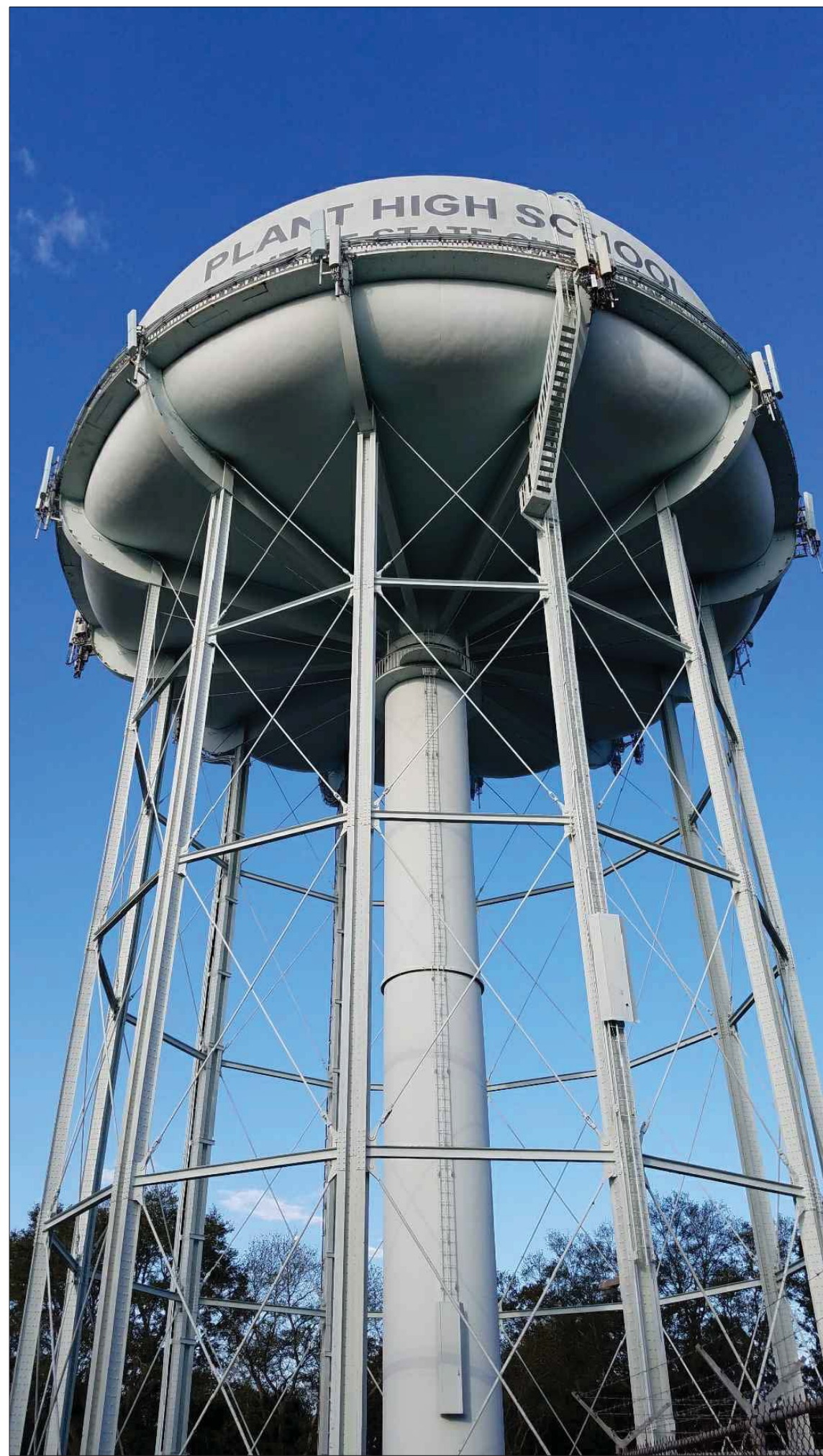


Figure 26. Palma Ceia EST Exterior
Remove and replace exterior ladder



Figure 27. Exterior Inner Riser Ladder
This ladder and associated platform was not inspected



Figure 28. Exterior Outer Riser Ladder



Figure 29. Tank Influent and Effluent Pipe Lines
Repair minor corrosion on influent and effluent pipe lines



Figure 30. Exterior Ladder Leading to Top of Bowl
Remove and replace exterior ladder



Figure 31. Interior Riser Ladder
The rails have been spliced just above the grating and have been installed such that the ladder curves to one side to be more centrally located within the grating opening.



Figure 32. Interior Bowl Ladder
Remove and replace interior ladder. Repair corrosion at ladder base and on tank interior.

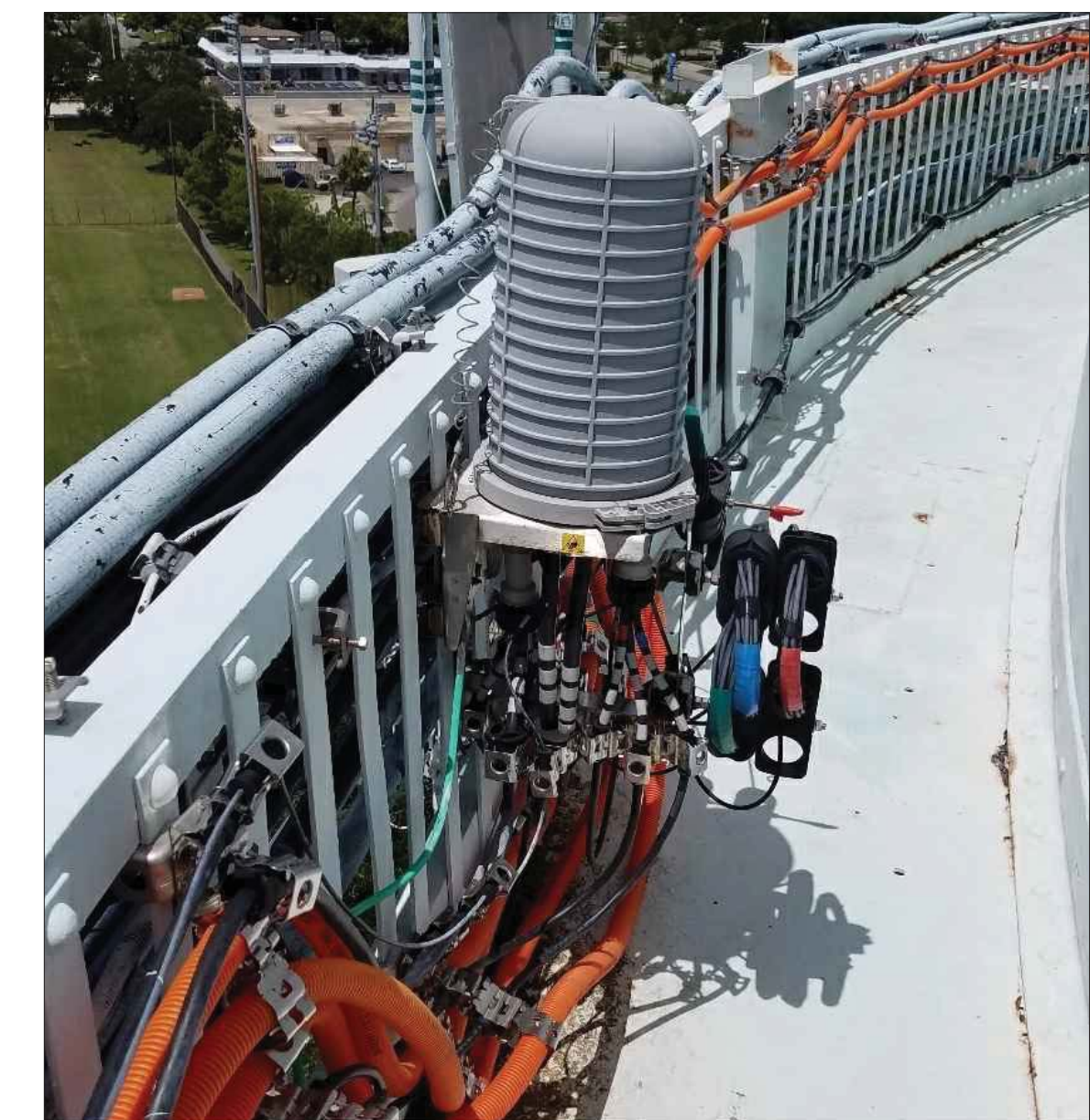


Figure 33. Communication Equipment on Exterior Bowl Platform
Provided for reference

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CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
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DRAWING NO.:	C09
SHEET NO.:	12 OF 16

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GENERAL STRUCTURAL NOTES

GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE 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 CIVIL 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.
- 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.
- STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

DESIGN CRITERIA

BUILDING CODES AND REFERENCES:

- 2012 INTERNATIONAL BUILDING CODE (IBC)
- STRUCTURAL STEEL: AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION
- ALUMINUM: ADM1-2010, ALUMINUM DESIGN MANUAL
- ANSI/AWWA STANDARD FOR WELDED CARBON STEEL TANKS FOR WATER STORAGE
- LIVE LOADS:
 - ELEVATED PLATFORM: 60 PSF
- WIND DESIGN CRITERIA:
 - RISK CATEGORY III
 - ULTIMATE DESIGN WIND SPEED, V_{ULT} 147 MPH
 - NOMINAL DESIGN WIND SPEED, V_{ASD} 113 MPH
 - EXPOSURE CATEGORY C

STRUCTURAL STEEL

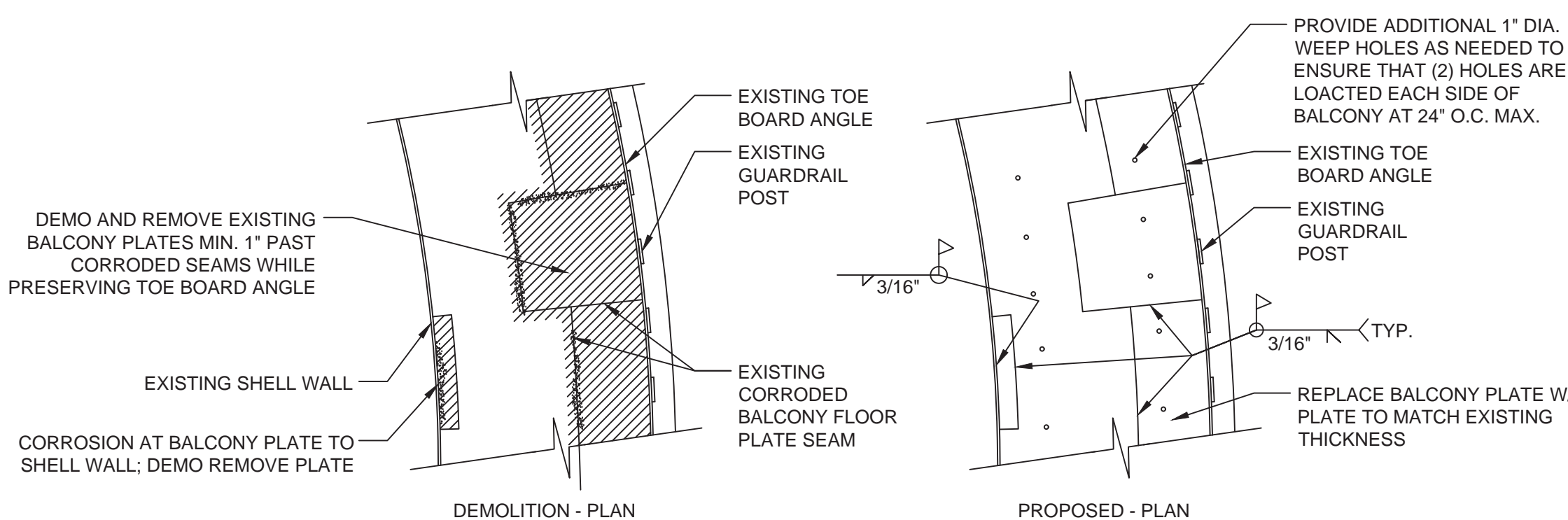
- DESIGN, FABRICATION, ERECTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND THE DESIGN DRAWINGS.
- STEEL MATERIAL:
 - W-SHAPED SECTIONS: ASTM A992, GRADE 50
 - HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B
 - ALL OTHER STRUCTURAL STEEL: ASTM A36
 - ALL PIPE: 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 RESISTANT 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.

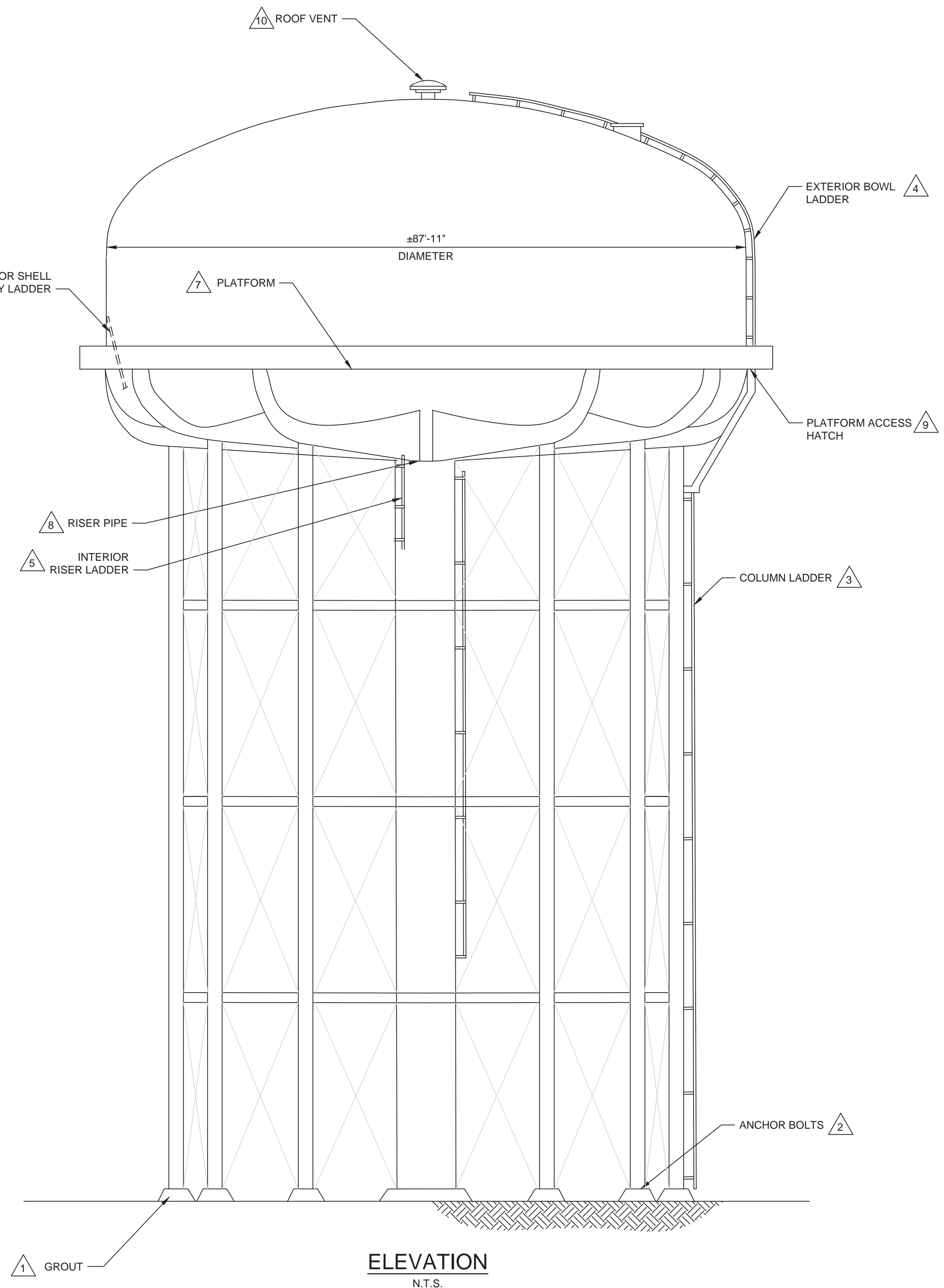
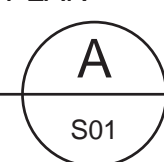
REPAIR/MODIFICATION NOTES

- ALL LOOSE GROUT IS TO BE CHIPPED AWAY TO SOLID MATERIAL. ANY CORRODED STEEL AND LOOSE PAINT SHALL BE CLEANED AND REMOVED. VOIDS IN THE GROUT ARE TO BE FILLED WITH A NON-SHRINKING, NON-STAINING, STRUCTURAL GROUT MATERIAL. PLACE GROUT AS FAR UNDER BASE PLATES AS POSSIBLE AND SQUARE OFF VERTICALLY WITH THE EDGE OF THE BASE PLATES. FILL ANY GAPS BETWEEN THE STEEL BASE PLATE AND GROUT WITH A FLEXIBLE SEALANT.
- CLEAN AREA AROUND THE ANCHOR BOLTS OF ANY DEBRIS. REMOVE AND REPLACE ANY CORRODED ANCHOR BOLT NUTS. ALL ANCHORS SHOULD BE CLEANED AND INSPECTED ONCE THE NUTS HAVE BEEN REMOVED. IF NECESSARY, REPLACE ANY ANCHORS THAT MAY SHOW SIGNS OF CORROSION AND DETERIORATION. ALL ANCHOR NUTS ARE TO BE FIELD TIGHTENED TO SPECIFICATIONS.
- DEMO AND REPLACE EXISTING EXTERIOR COLUMN LADDER W/ NEW LADDER PER DETAILS J/S-03. PROVIDE STANDOFFS EVERY 10' ON CENTER, A CABLE-TYPE FALL PROTECTION DEVICE, AND A LOCKABLE LADDER GUARD. PROVIDE A "FALL PROTECTION REQUIRED" SIGN. LADDER SHALL BE IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- DEMO AND REPLACE EXISTING EXTERIOR BOWL LADDER W/ NEW LADDER PER DETAIL M/S-03. PROVIDE NEW CABLE-TYPE FALL PROTECTION DEVICE. LADDER SHALL BE IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- DEMO AND REPLACE EXISTING INTERIOR RISER LADDER. PROVIDE NEW RISER LADDER EQUIPPED WITH A CABLE-TYPE LADDER SAFETY DEVICE AND STANDOFFS EVERY 10'. LADDER SHALL BE IN ACCORDANCE WITH ALL OSHA REQUIREMENTS. SEE DETAIL L/S-03.
- DEMO AND REPLACE EXISTING INTERIOR SHELL MANWAY LADDER W/ NEW LADDER PER DETAIL K/S-03. PROVIDE NEW CABLE-TYPE FALL PROTECTION DEVICE. LADDER SHALL BE IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- DEMO AND REMOVE CORRODED PORTIONS OF PLATFORM AND REPLACE WITH STEEL PLATE WHERE NEEDED. PROVIDE WEEP HOLES TO PREVENT POOLING OF WATER. SEE DETAIL A/S-01. IT IS ESTIMATED THAT APPROXIMATELY 50 SQUARE FEET OF FLOOR PLATE WILL NEED TO BE REPLACED.
- DEMO AND REPLACE SAFETY GRATING DESIGNED FOR FALL PROTECTION OVER RISER PIPE OPENING. GRATING SHALL BE IN ACCORDANCE WITH ALL AWWA AND OSHA REQUIREMENTS AND SHOULD BE COORDINATED WITH THE NEW RISER ACCESS LADDER TO PROVIDE MINIMUM OSHA REQUIRED OPENING SIZE. INSTALL OSHA APPROVED GUARDRAIL AROUND RISER OPENING. SEE DETAILS B/S-02 AND O/S-04.
- DEMO AND REPLACE EXISTING PLATFORM ACCESS HATCH. SEE DETAIL G/S-02 AND H/S-02.
- REPLACE EXISTING ROOF VENT WITH A NEW ALUMINUM VENT WITH INSECT SCREEN. SEE DETAIL N/S-04.
- CLEAN AND FILL ALL INTERIOR TANK PITS WITH WELD MATERIAL AND PREP THE SURFACE FOR A NEW COATING SYSTEM.
- INTERIOR AND EXTERIOR OF THE TANK SHALL BE PAINTED PER THE SPECIFICATIONS.



PLATFORM FLOOR REPAIR PLAN

DETAIL
N.T.S.



ELEVATION
N.T.S.

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Reviewed	AWD
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Date	11/14/2017

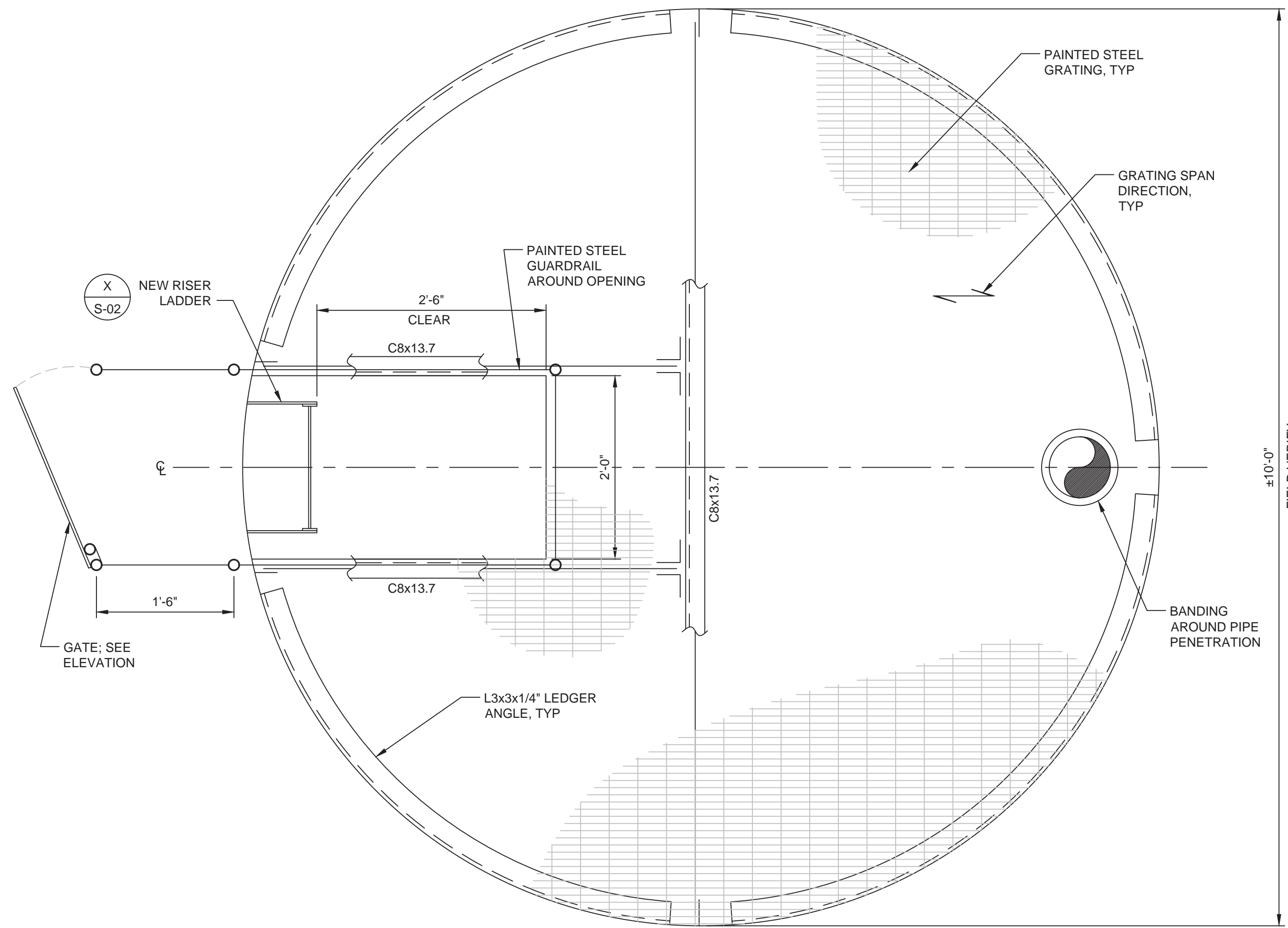
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Date	11/14/2017

CITY OF TAMPA WATER DEPARTMENT
PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
STRUCTURAL
GENERAL NOTES, ELEVATION, AND DETAILS

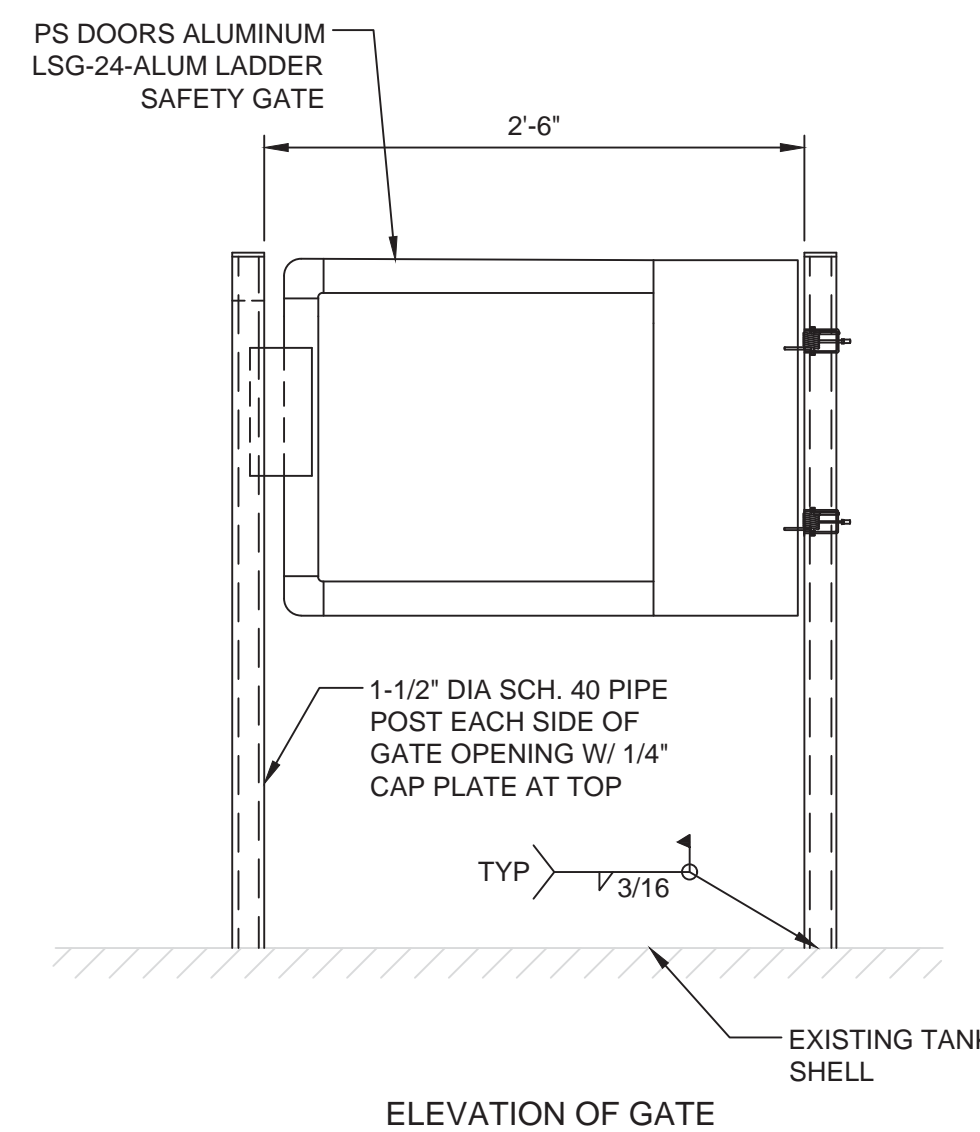
PROJECT NO.:	0816
SCALE:	NOTED
REVISION:	A
DRAWING NO.:	S01
SHEET NO.:	13 OF 16

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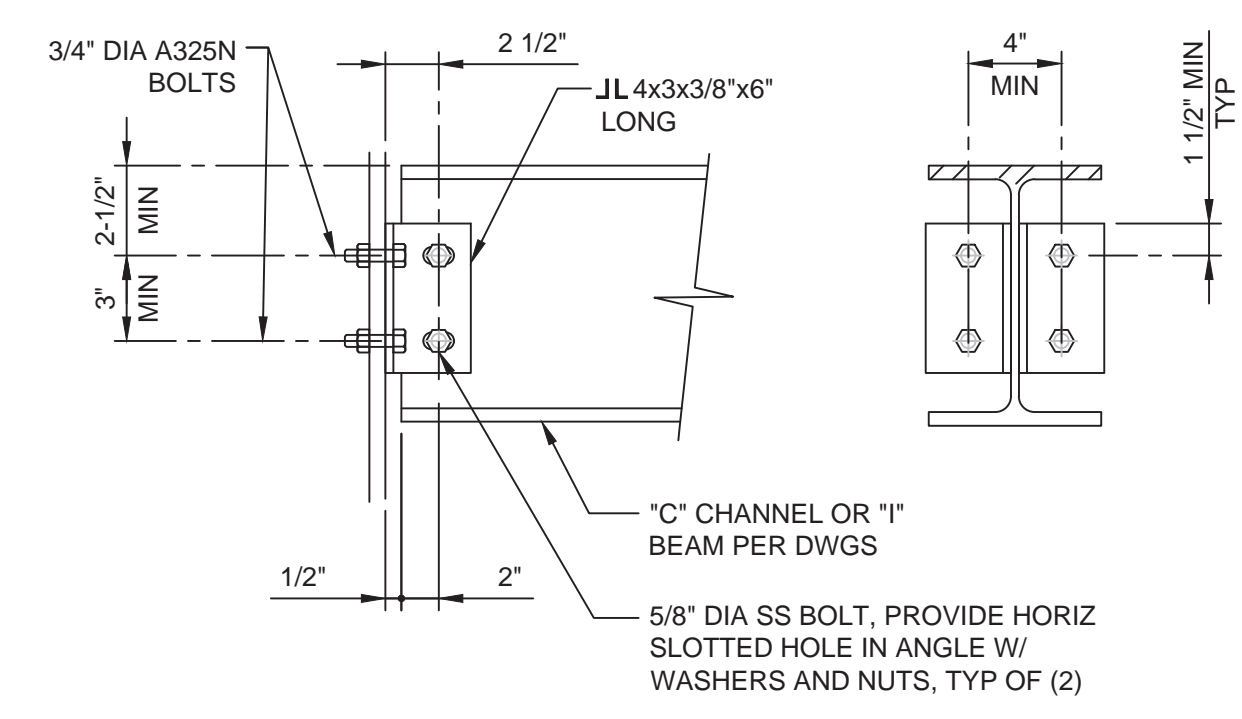
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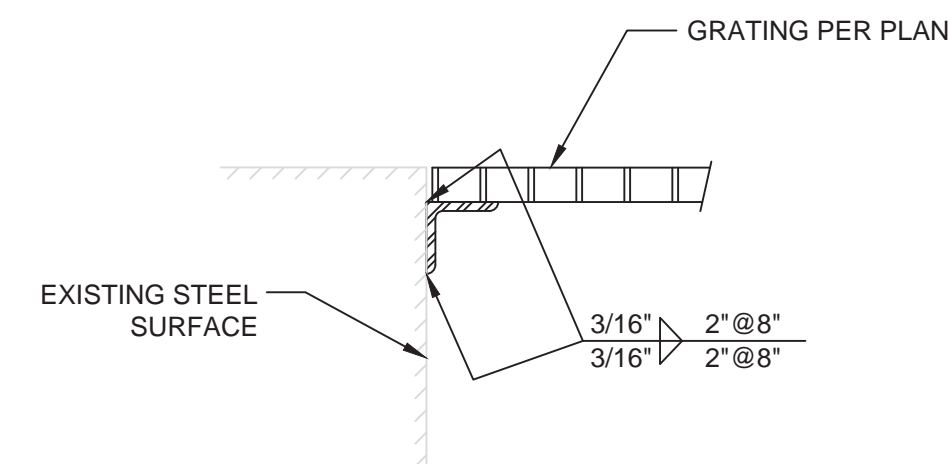
GRATING AT TOP OF RISER COLUMN
DETAIL B
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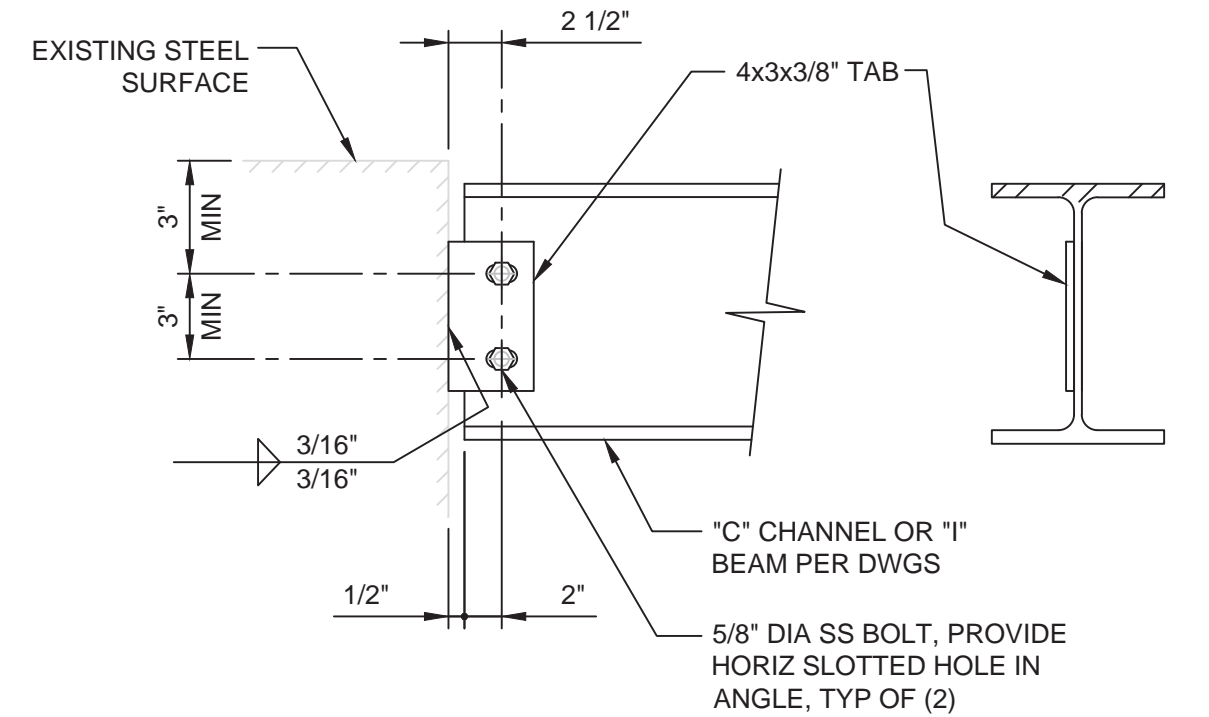
ELEVATION OF GATE
DETAIL C
 1"=1'-0" S01



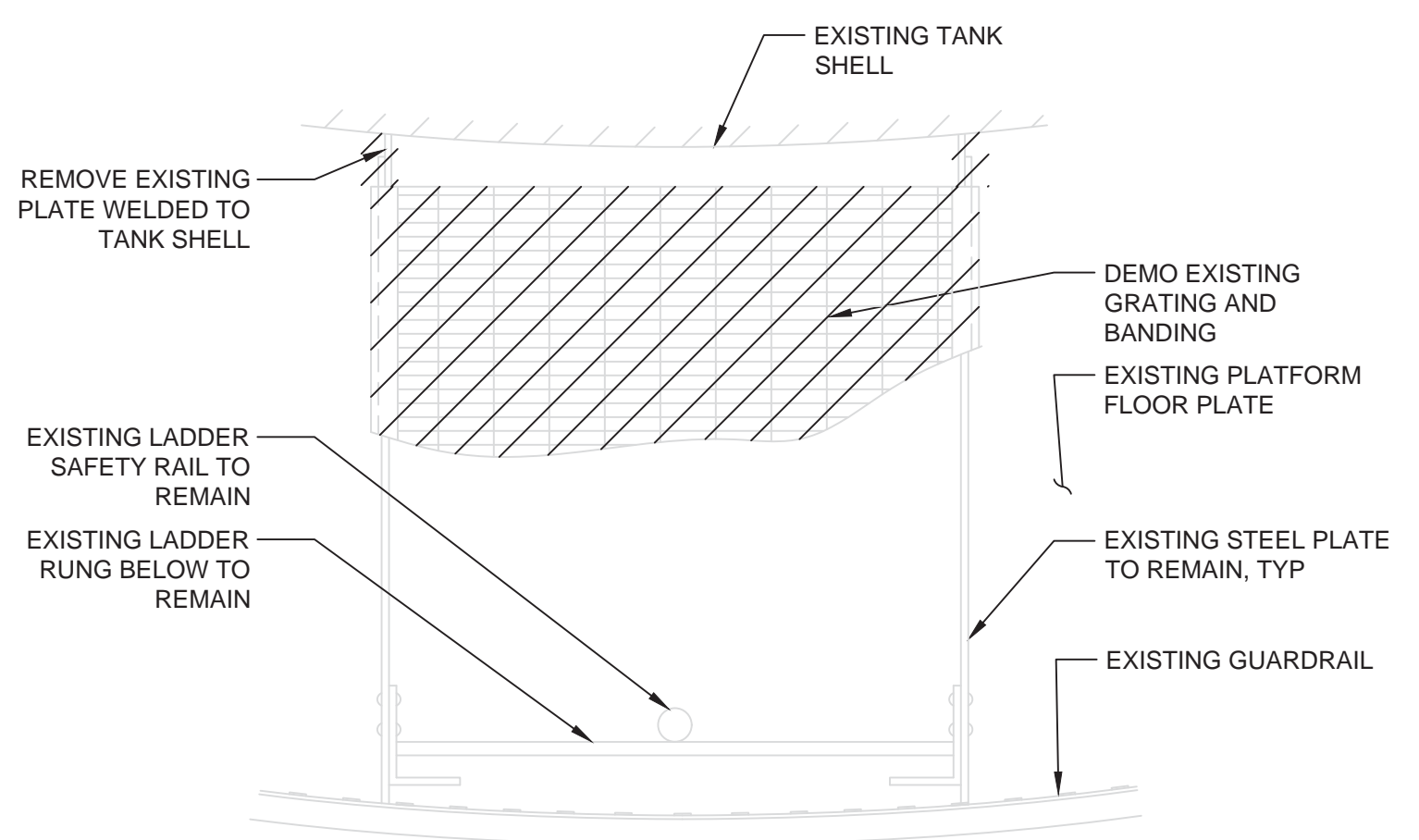
TYPICAL FRAMING CONNECTION
DETAIL D
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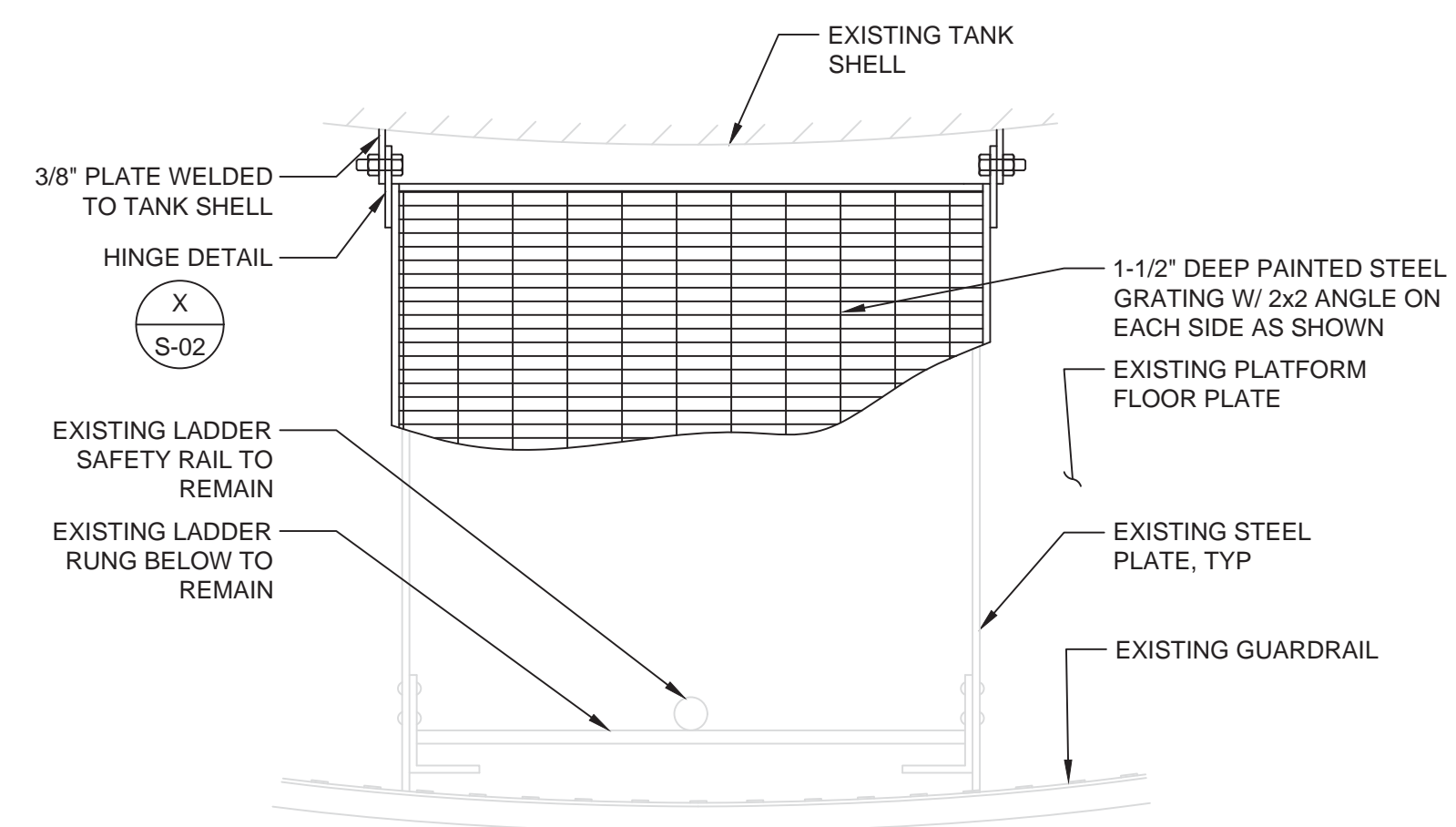
TYPICAL LEDGER ANGLE CONNECTION
DETAIL E
 NTS



TYPICAL FRAMING CONNECTION TO EXISTING STEEL
DETAIL F
 NTS

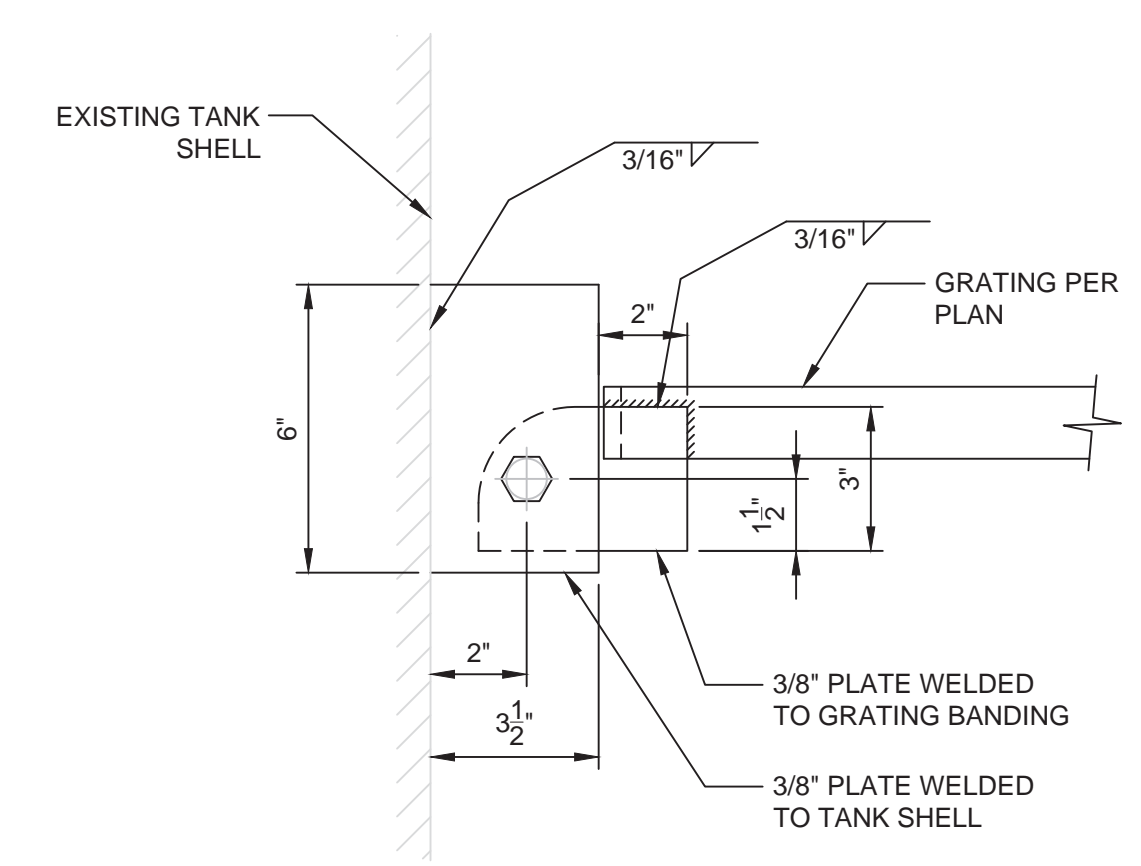


DEMOLITION PLAN



PROPOSED PLAN

PLATFORM ACCESS HATCH
DETAIL G
 1"=1'-0" S01



PLATFORM ACCESS HATCH HINGE
DETAIL H
 NTS S01

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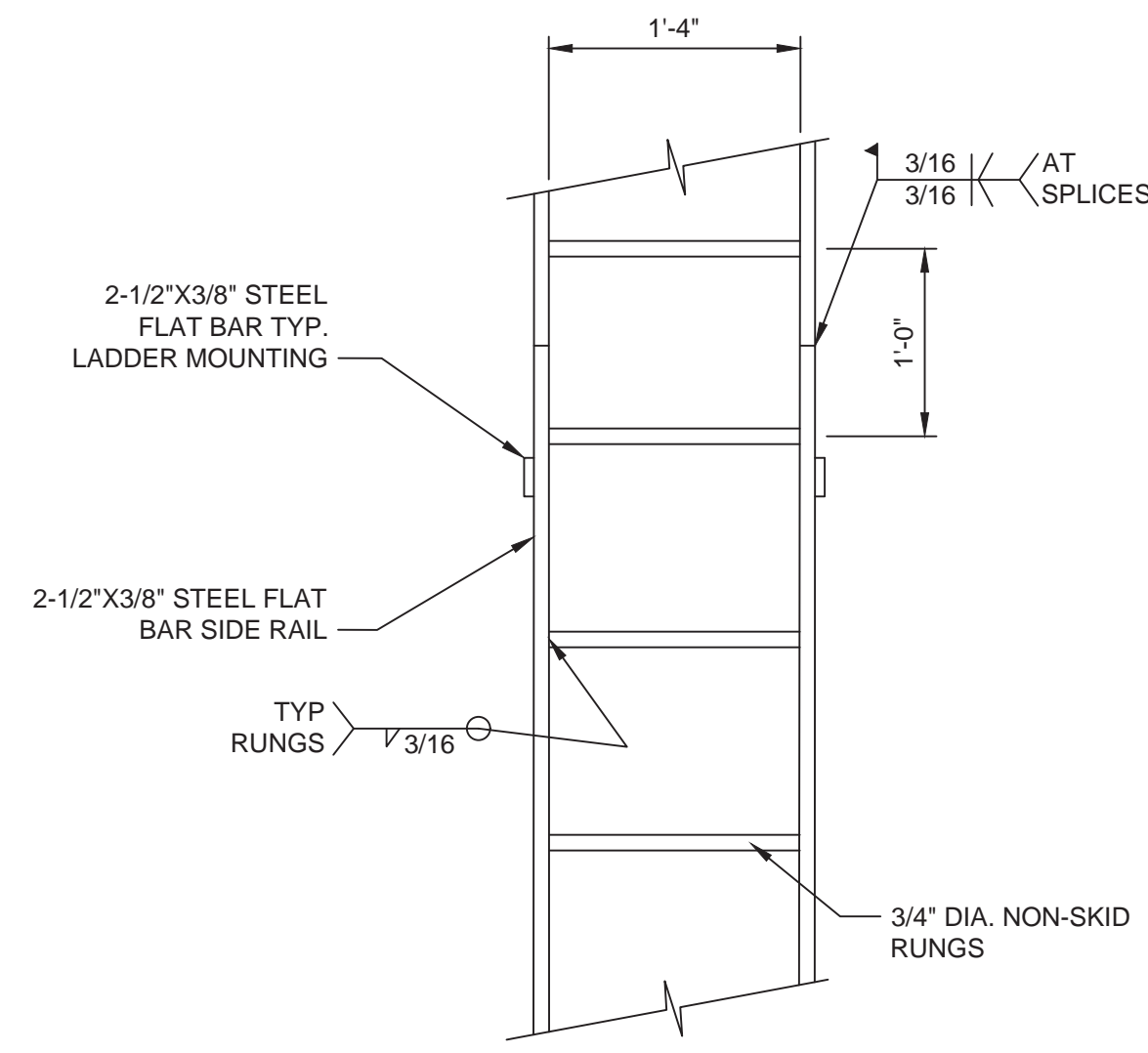
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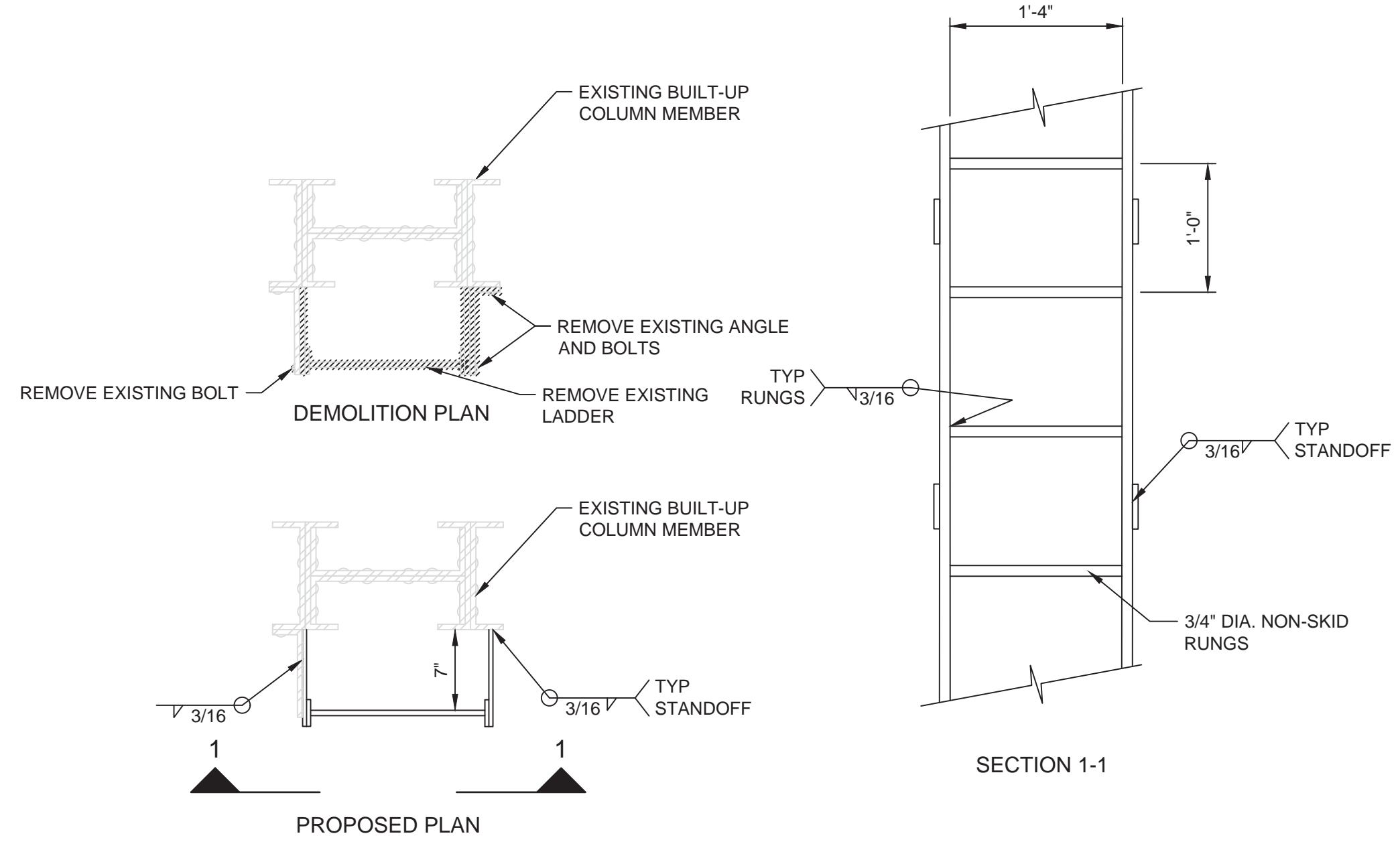
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 PALMA CEIA ELEVATED STORAGE TANK IMPROVEMENTS
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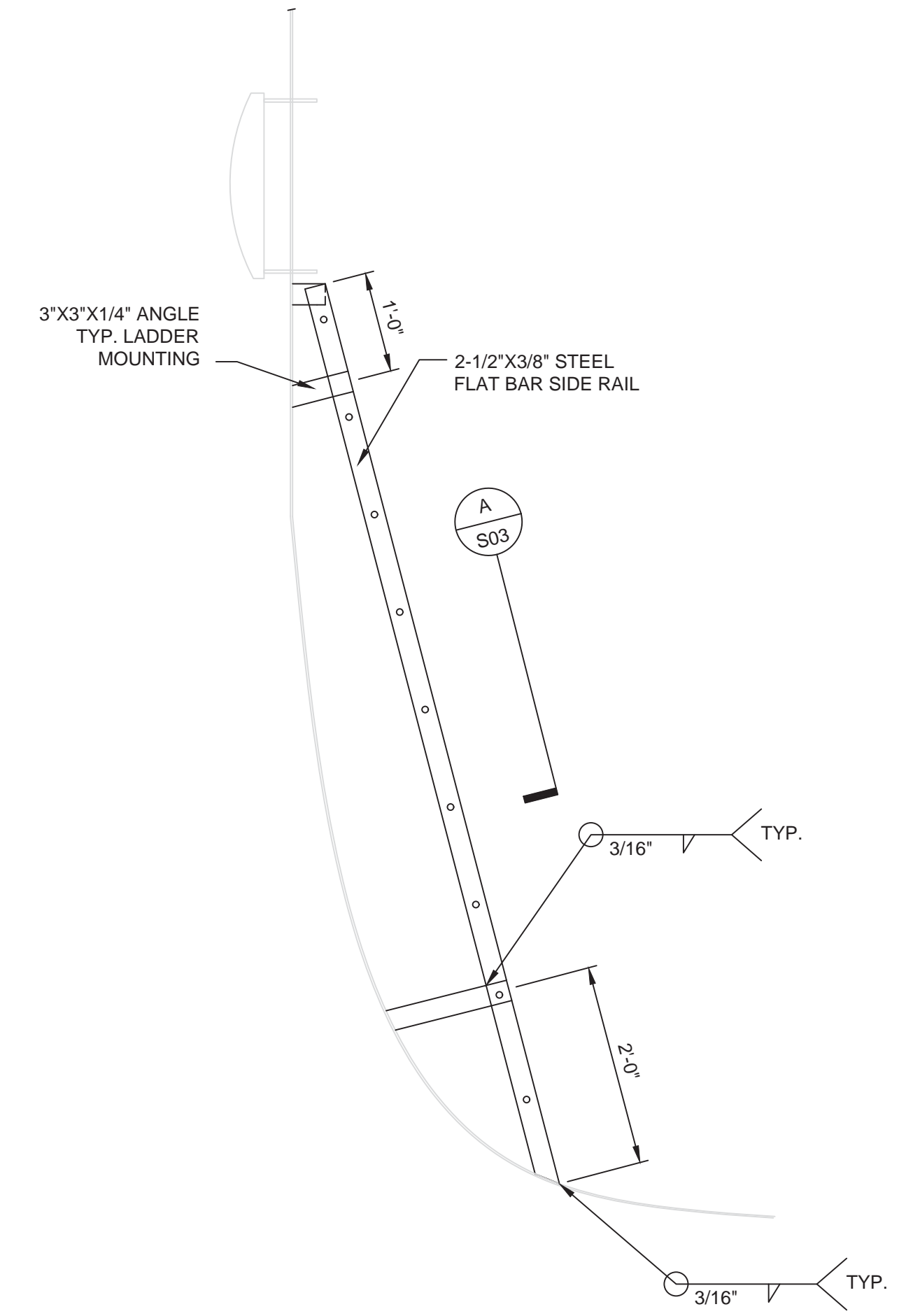
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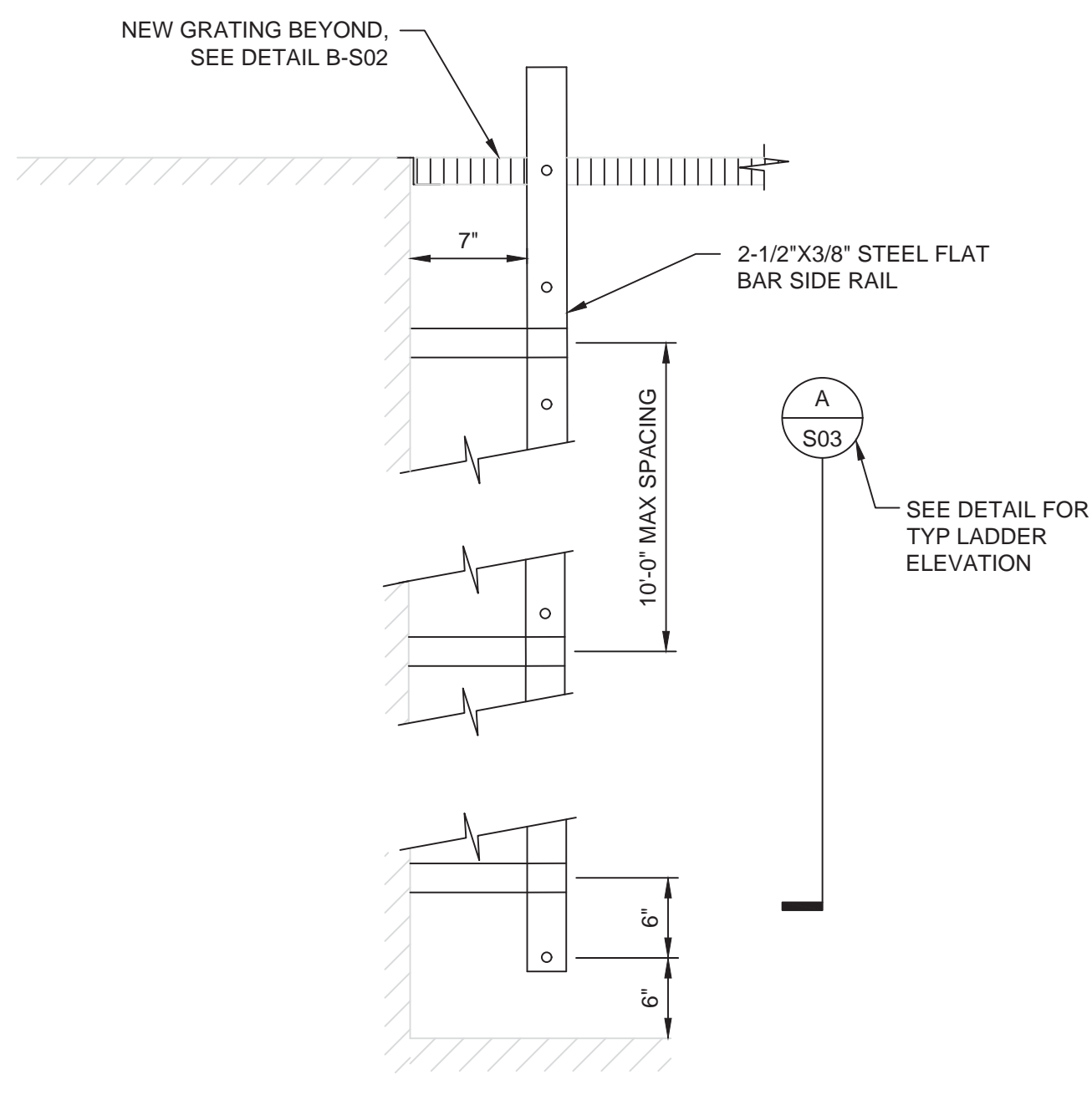
TYPICAL LADDER ELEVATION
DETAIL I
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 S01
 S03



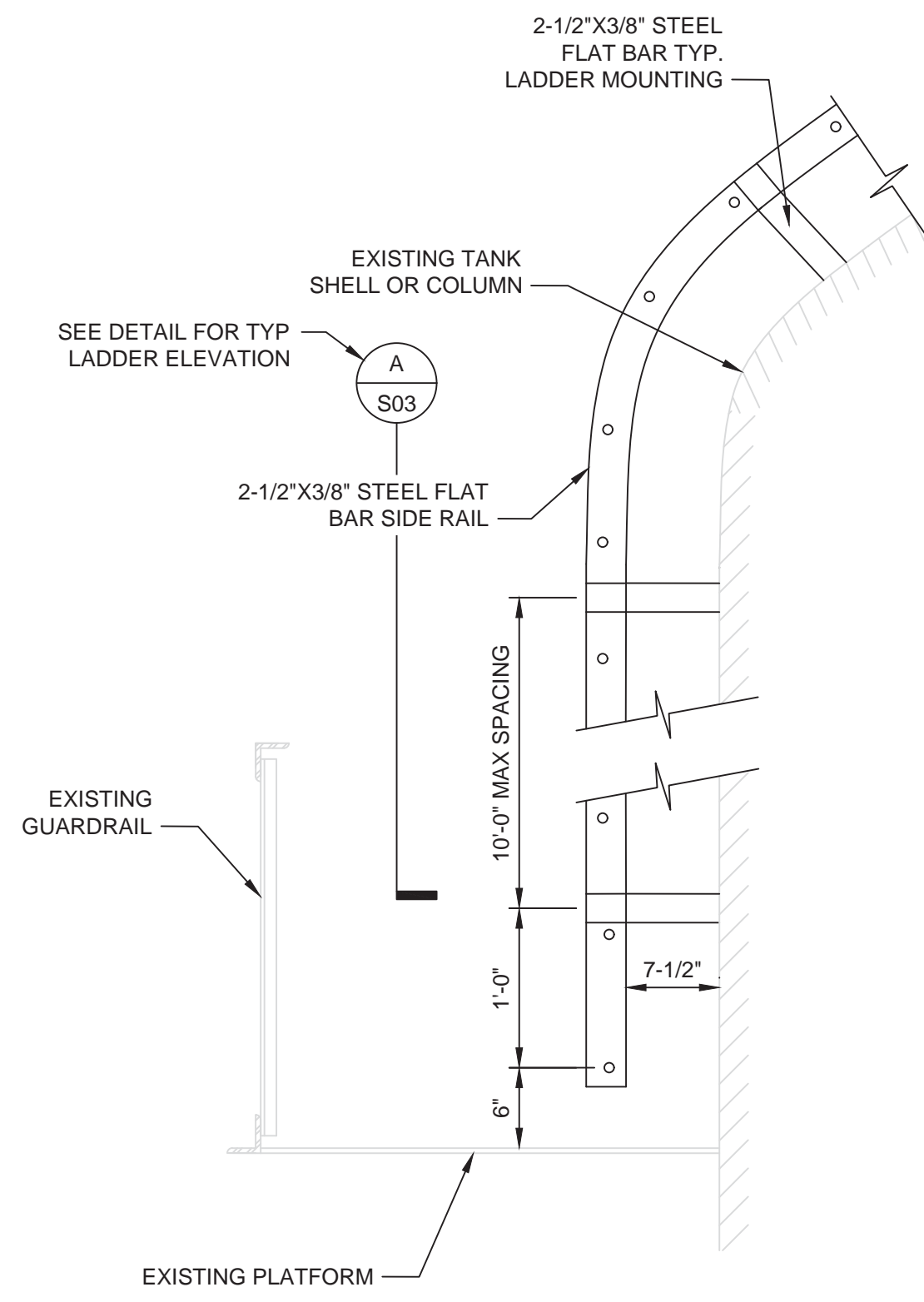
EXTERIOR COLUMN LADDER
DETAIL J
 1"=1'-0"
 S01



SHELL MANWAY LADDER
DETAIL K
 3/4"=1'-0"
 S01



RISER LADDER
DETAIL L
 1"=1'-0"
 S01



EXTERIOR BOWL LADDER
DETAIL M
 1"=1'-0"
 S01

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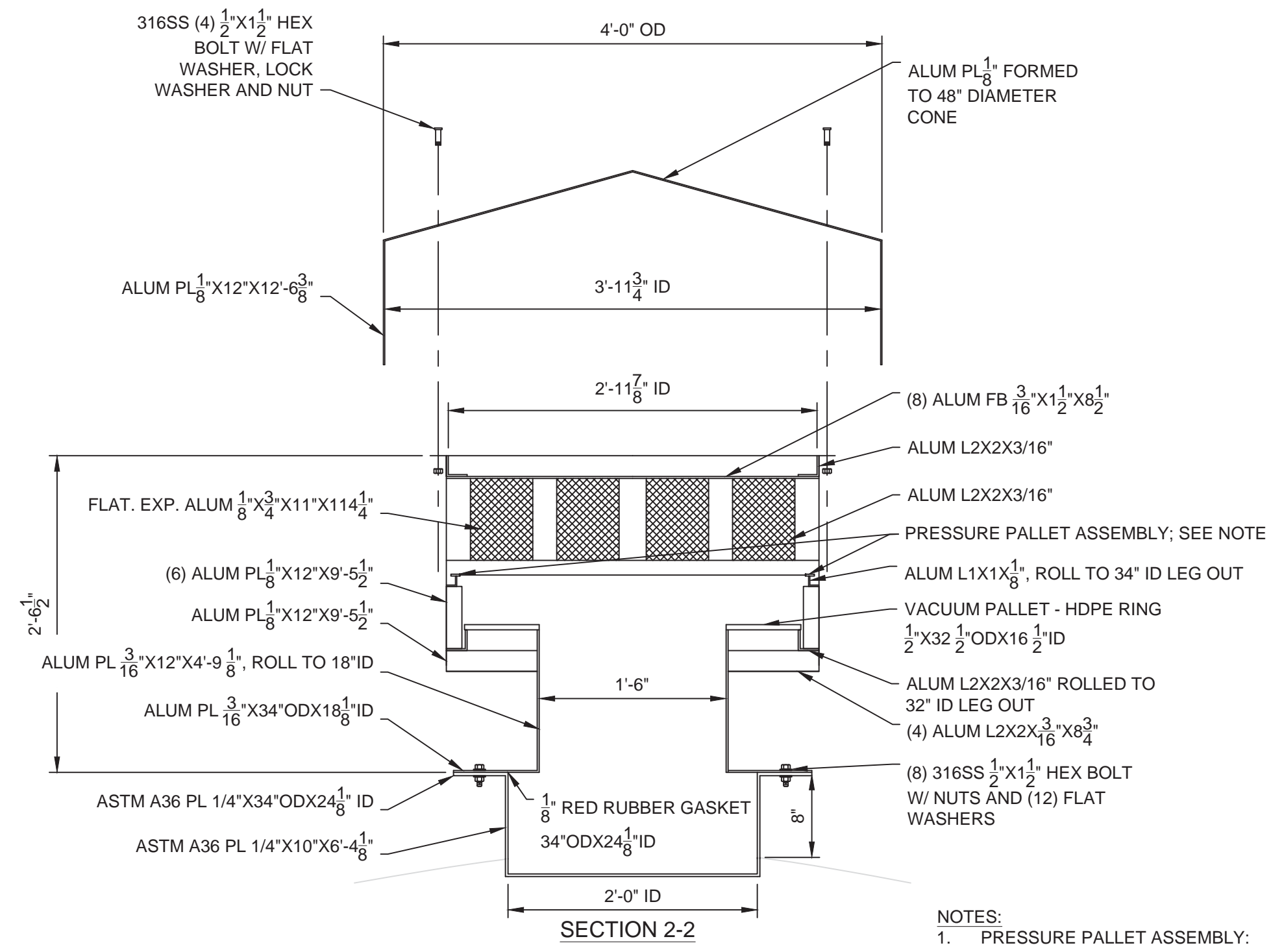
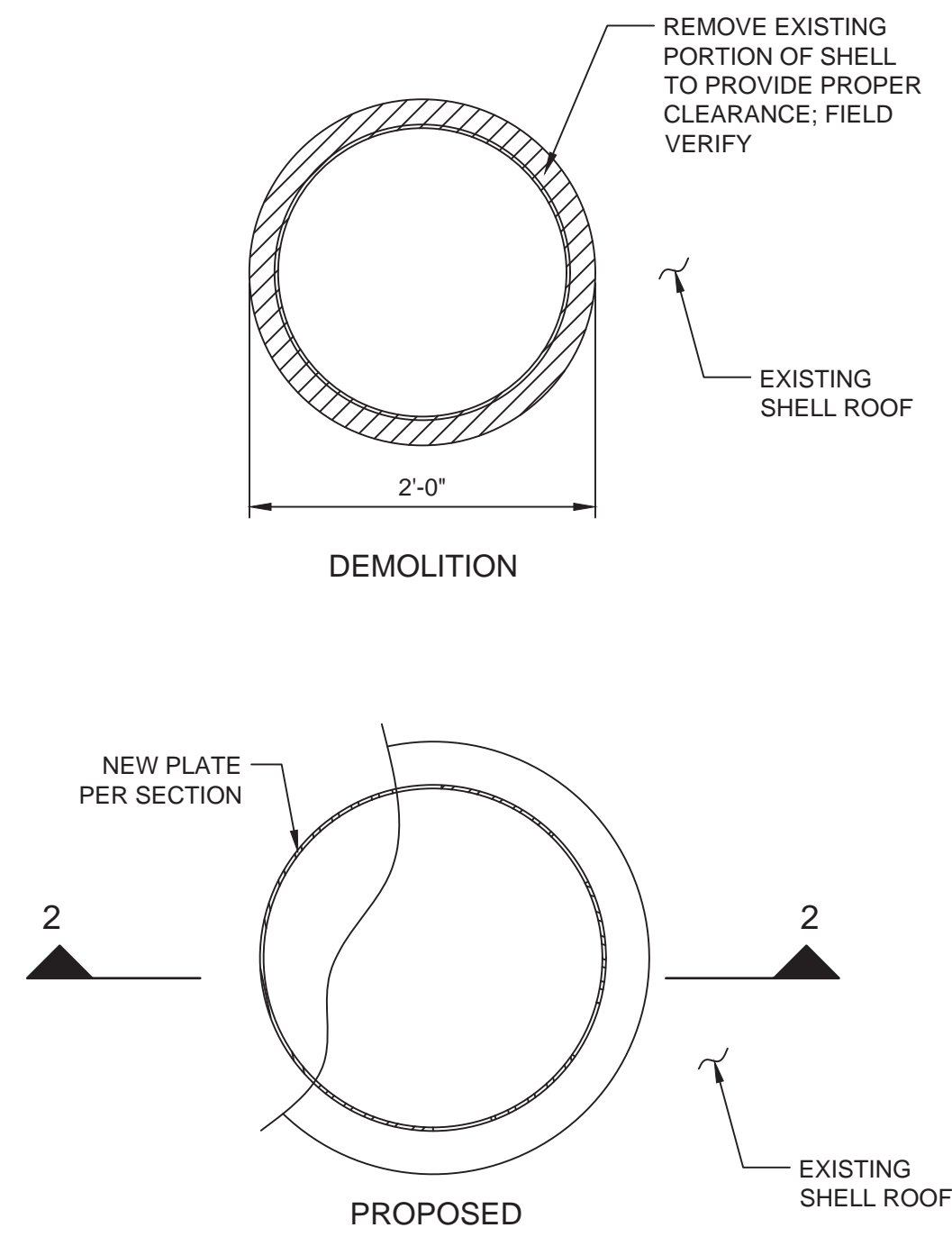
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CITY OF TAMPA WATER DEPARTMENT
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SHEET NO.:	15 OF 16

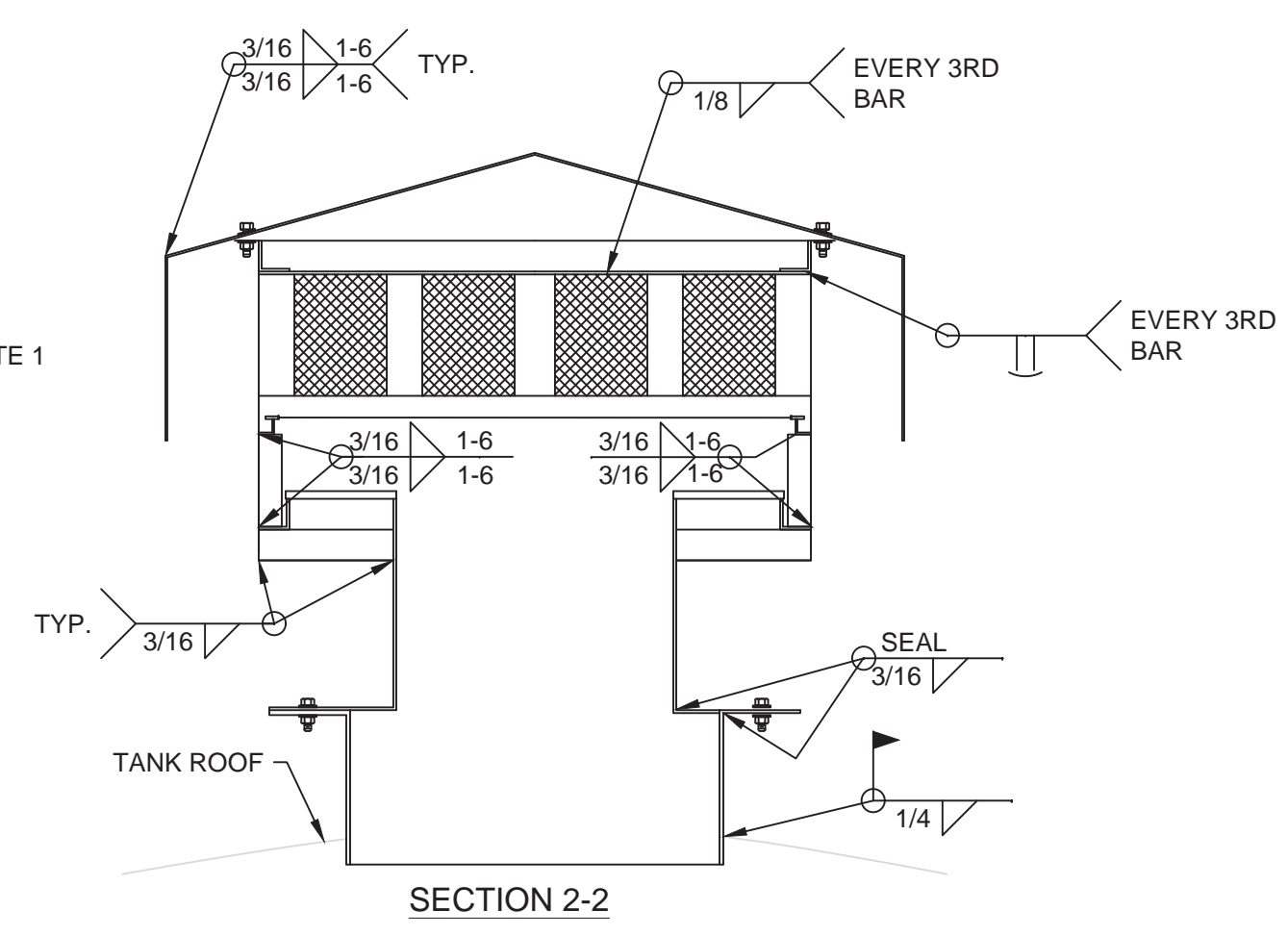
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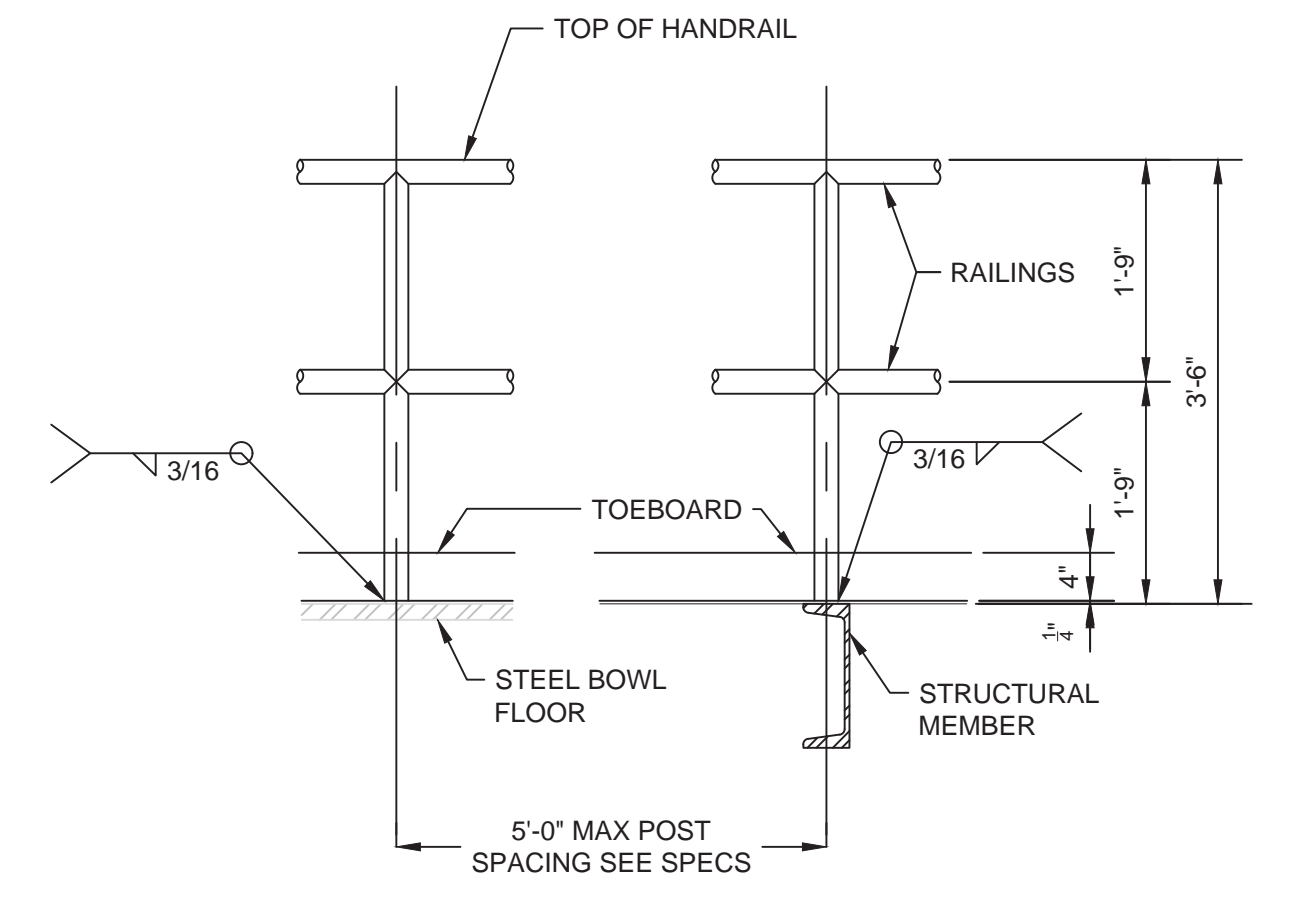


ALUMINUM VENT
DETAIL
 1"=1'-0"
 N
 S01

- NOTES:
 1. PRESSURE PALLET ASSEMBLY:
 - HDPE RING - 1/2" x 35 1/2" ODX 32 1/2" ID W/ 26 HOLES ON 33 3/4" BC
 - 316SS #24 MESH X 0.018 WIRE MESH X 35" OD
 - 316 SS 1/2" X 1" MACHINE BOLT W/ FLAT WASHER, LOCK WASHER AND NUT



SECTION 2-2



GUARDRAILS
DETAIL
 NTS
 O
 S01



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