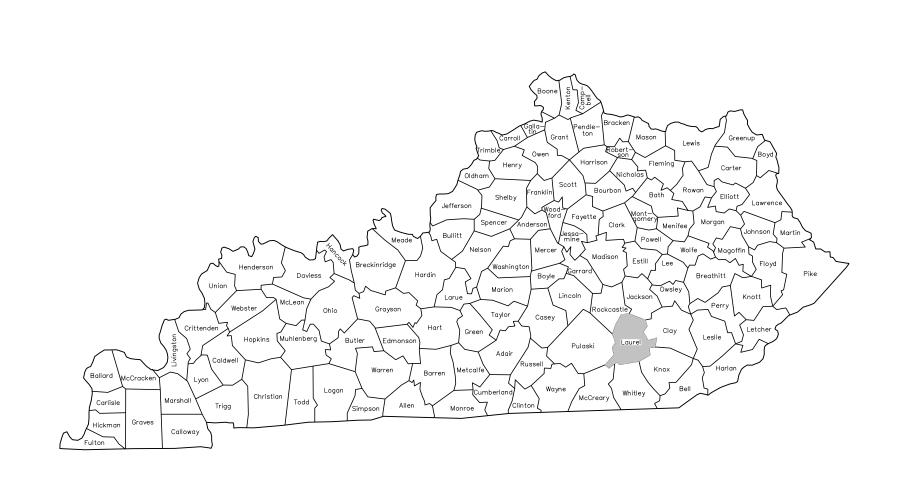
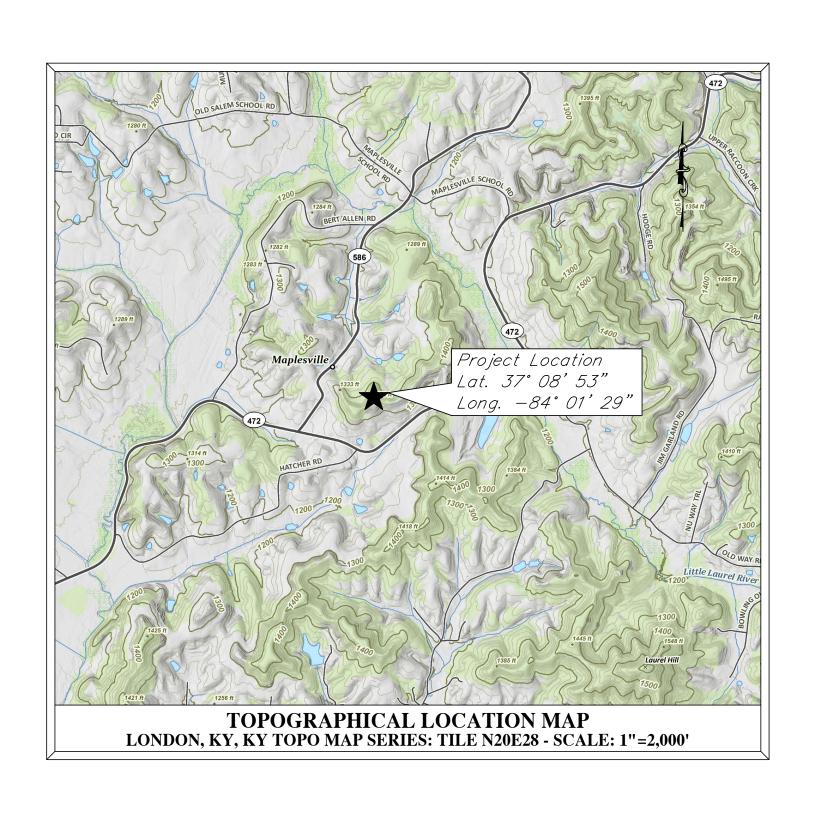
EAST LAUREL WATER DISTRICT OLD SALEM ROAD/McWHORTER ROAD SYSTEM IMPROVEMENTS CONTRACT NO. 3 LAUREL COUNTY, KENTUCKY



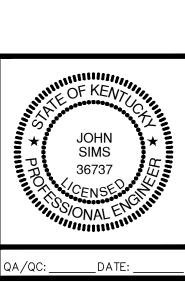


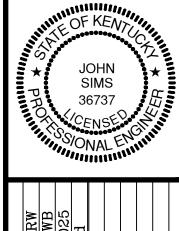
INDEX OF SHEETS

DESCRIPTION	SHEET NO		
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Prepared By:







2020052

SHEET NO.

SHEET NOTES

1. All Yard Piping shall be Ductile Iron, Class 350.

2. The Contractor shall remove the three existing

3. The Contractor shall take down the existing radio tower and place it on the Jackson

4. Any exposed rebar, bolts, hardware, etc.

piers may be removed and disposed of.

a predetermined location.

concrete pads south of the existing concrete tower piers and dispose of the concrete.

property which is adjacent to the tank site at

remaining on the existing concrete piers shall be removed, or ground smooth to the top of

the remaining concrete pier. Alternatively, the

-Hydrant, extend to concrete splashpad

PROJECT NO.

SITE PLAN & GENERAL NOTES

GENERAL NOTES 1. Drawings of tank and associated elements are for illustrative purposes only. The tank Contractor shall provide the tank and foundation design certified by a professional engineer registered in the State of Kentucky.

Existing Utility Pole—

2. Drawings represent the desired result of construction. The methods of construction and risks involved during construction are the responsibility of the Contractor.

3. Geotechnical investigation of the site has been done. The associated report is contained in the Specifications.

4. The final tank subgrade conditions shall be approved by the geotechnical engineer prior to any concrete placement.

5. Contractor shall verify all dimensions and elevations prior to construction and promptly report any discrepancies noted to the Engineer.

6. Contractor's proposed substitutions shall be approved by the Engineer prior to commencing any pertinent Work.

7. Regrade of the sites shall be such that drainage is away from tank foundation.

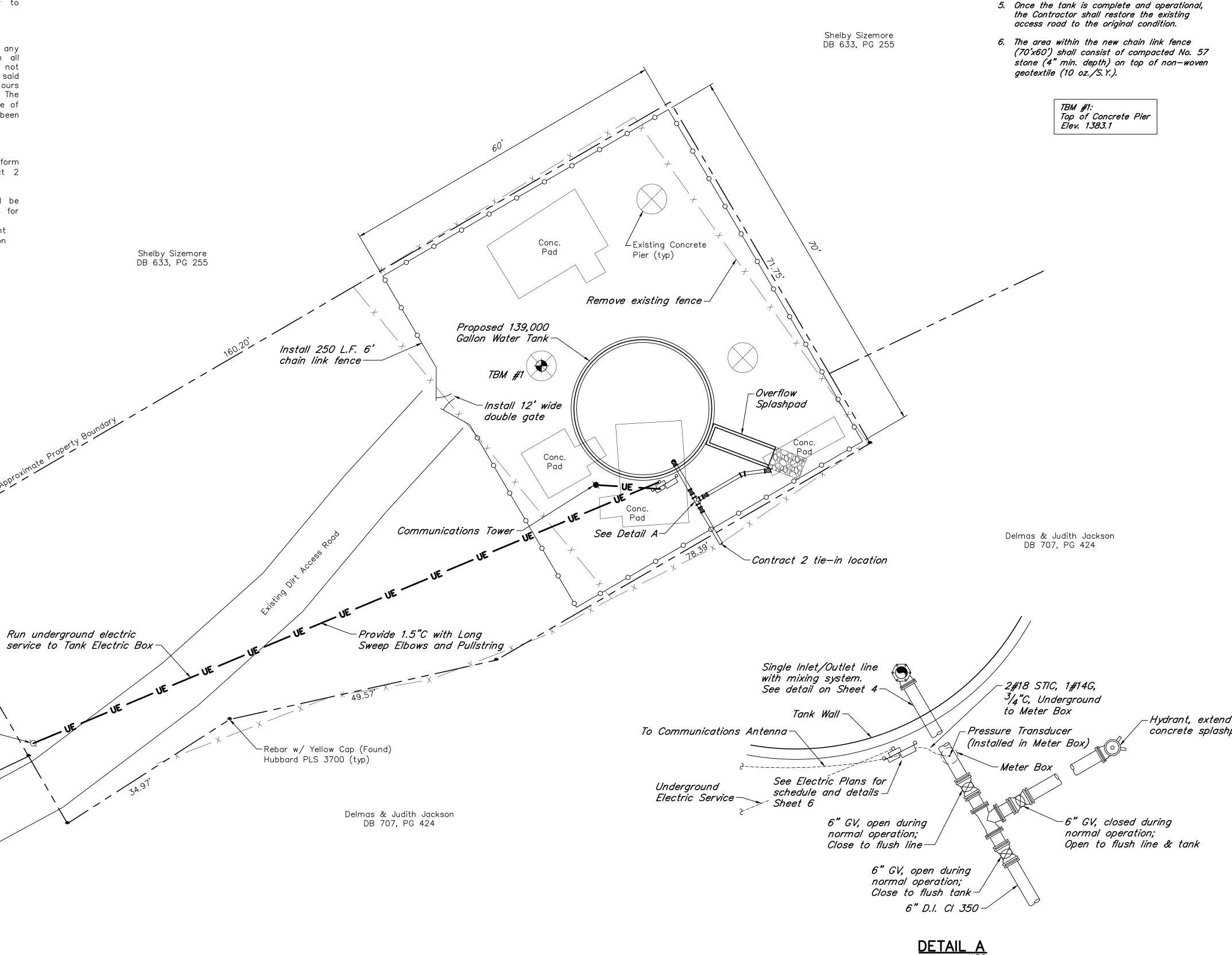
8. The Contractor shall obtain and pay for all grading, storm water, etc. permits, if any required to complete the Work. The Contractor shall maintain compliance with all conditions, limitations and stipulations of all permits. The Contractor shall not commence Work, except mobilization, until he has obtained all required permits for said Work. The Contractor shall supply the Owner with copies of all permits within 24 hours of receipt. A KPDES Storm Water Discharge Permit will be required for this Project. The Contractor shall fill out, sign and submit the Notice of Intent (NOI) and the Notice of Termination (NOT). The Notice to Proceed will not be issued until the Permit has been provided.

9. All yard piping shall be DI, CI 350 with Romac Grip Ring Pipe Restraints (or equal).

10. It shall be the responsibility of the Contract 3 Contractor to coordinate and perform the final connection between the Contract 3 (Tank) Contractor and Contract 2 (Waterline) Contractor.

11. A tank level control pressure transducer and wiring in underground conduit will be installed by the Contract 3 (Tank) as shown on this Drawing. See Electric Plans for —The Contract 3 (Tank) Contractor shall be responsible for the repair or replacement

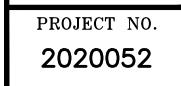
of Contract 2 (Waterline) Work caused by Contract 3 (Tank) Work, to the satisfaction of the Owner and at no additional cost to the Owner.



(SCALE IN FEET

1 inch = 10 ft.

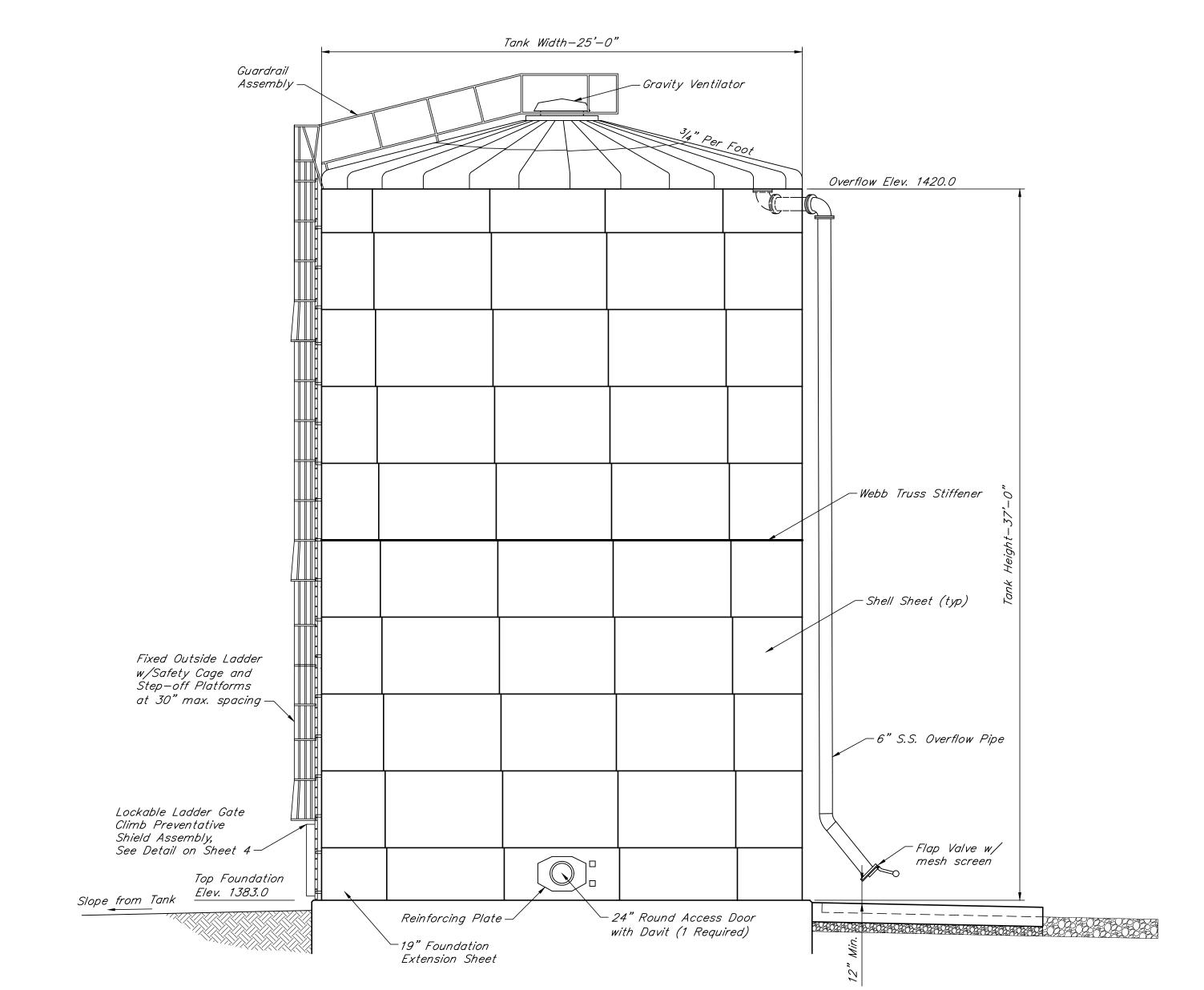
The approximate property lines shown hereon were taken from a boundary & easement survey plat prepared by Hubbard Land boundary locations was performed or is implied by Kenvirons, LLC The approximate property lines shown DO NOT represent a legal survey and shall not be used for recording and/or land transfer.



SHEET NO.

02

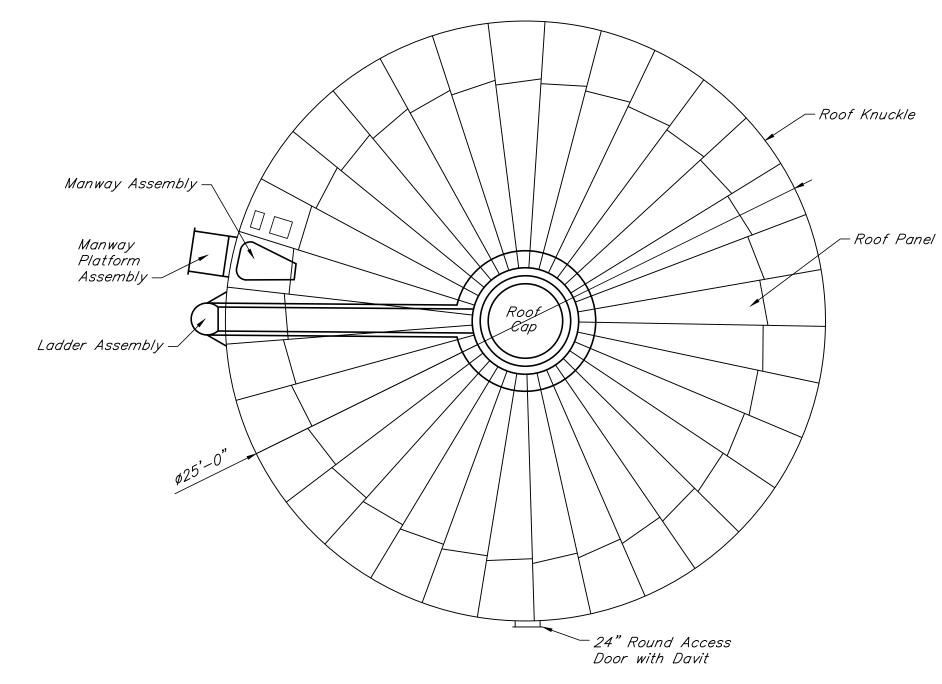
GLASS COATED BOLTED STEEL TANK



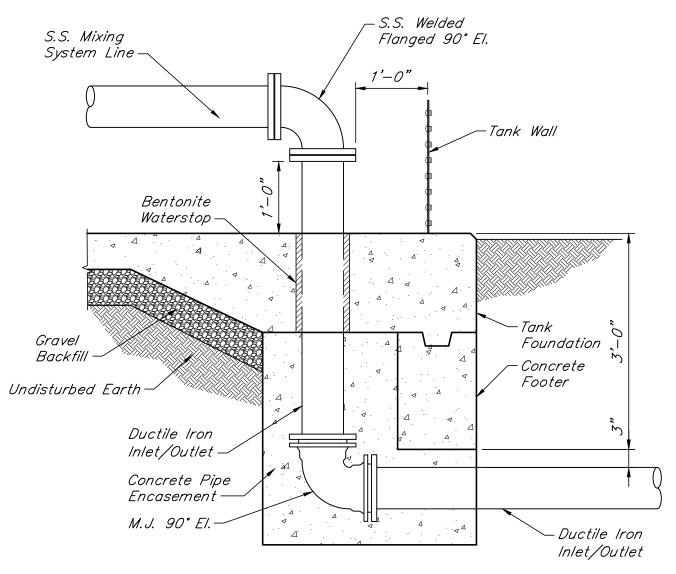
NOTES:

- 1. This drawing is intended as a general representation of the proposed tank, actual design shall be provided by the tank manufacturer, therefore, it is not to be used for construction.
- Locations for ladder, manway, water level gauge, access door, and overflow are to be field located by the Engineer to fit site conditions.

GLASS COATED BOLTED STEEL TANK Scale: 1/4"=1'-0"



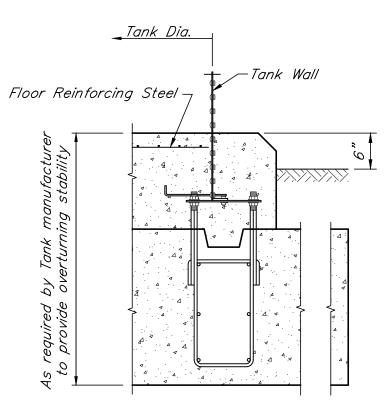




NOTES:

- This drawing represents a typical floor penetration. It is intended as a general representation and should not be used for construction, refer to tank manufacturer drawings for site specific instructions.
- Provided dimensions are also typical, and should be superseded by any dimensions provided by the manufacturer.
- 3. Mechanical joint fittings are to be restrained with EBAA Iron megalugs, or approved equal.

TYPICAL TANK FLOOR PENETRATION



NOTES:

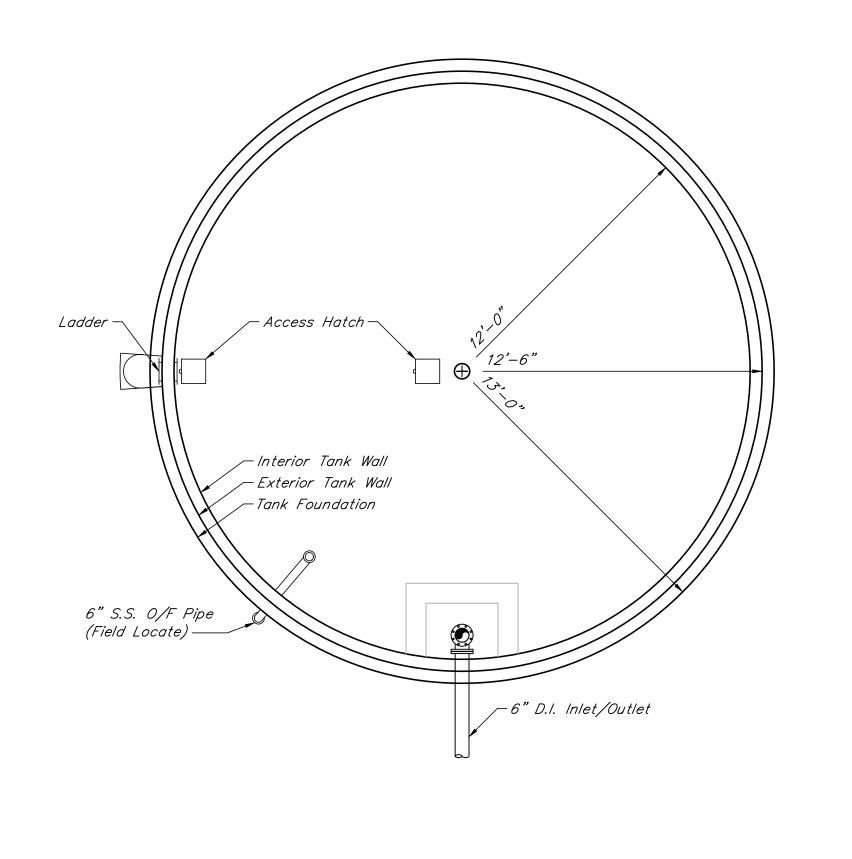
- Required bearing area is based on the recommendations contained in the geotechnical exploration report.
- Floor reinforcing steel is to be installed per tank manufacturer's foundation design.

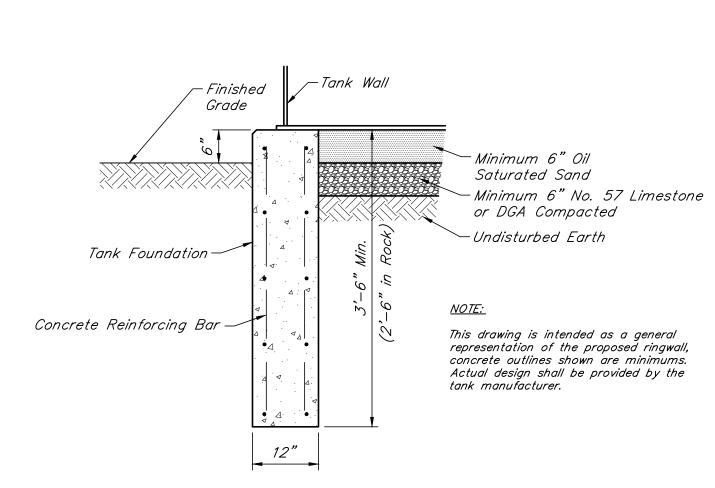
CONCRETE TANK BOTTOM

SHEET NO.

03

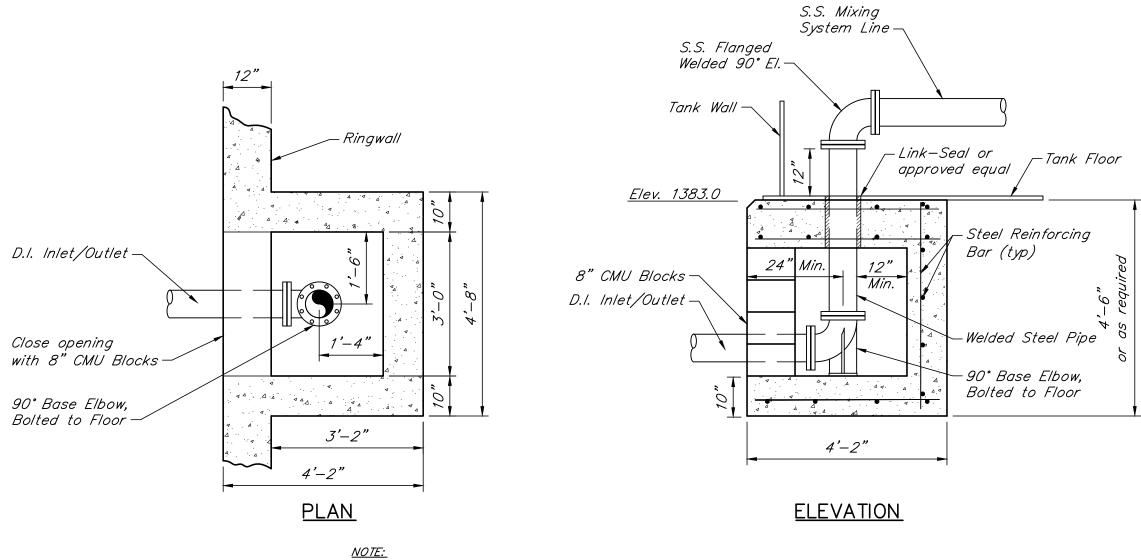
WELDED STEEL TANK





WELDED STEEL TANK PLAN Scale: 1/4"=1'-0"

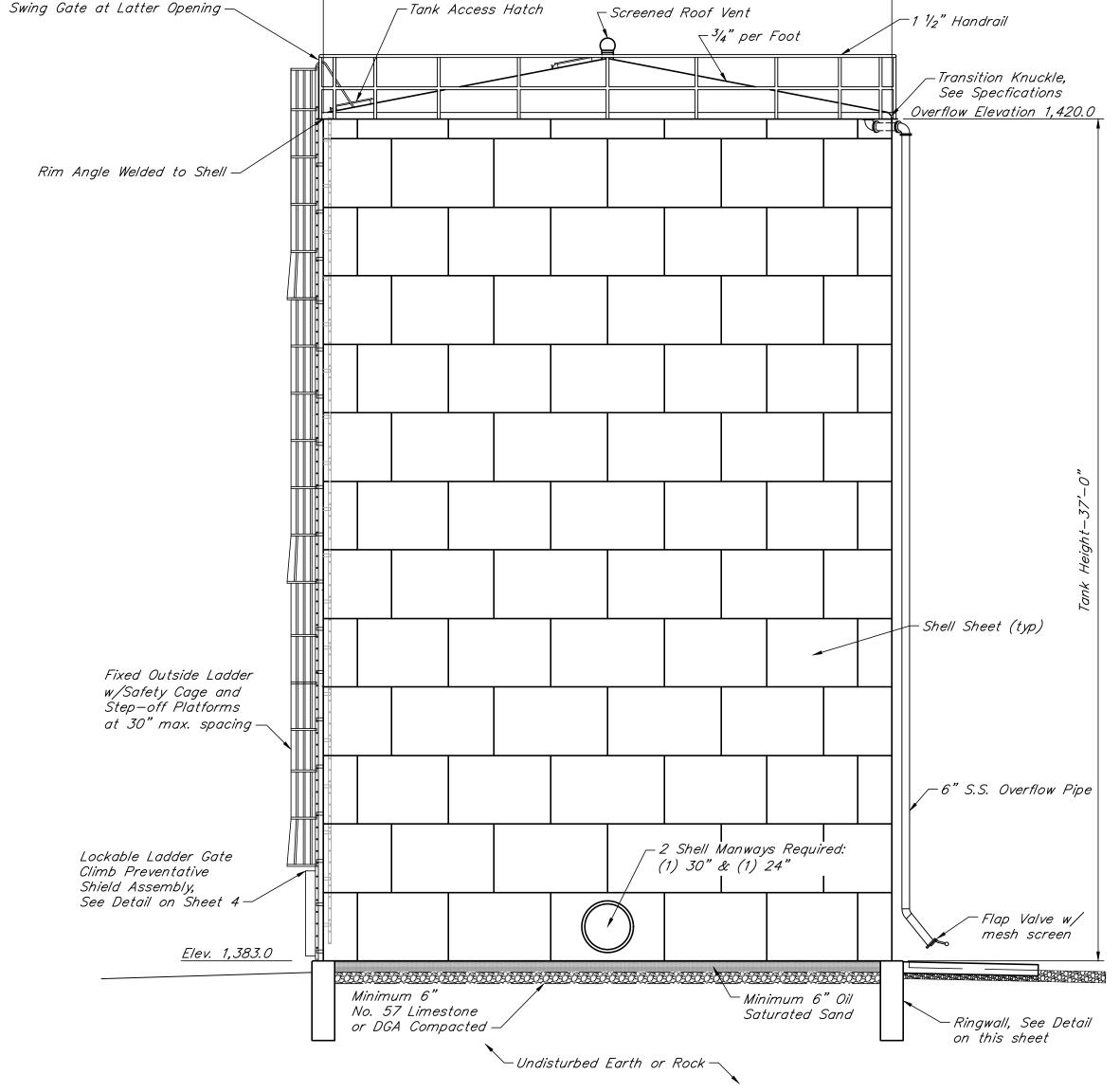
TANK FOUNDATION RINGWALL



Pipe vault is an integral part of the tank foundation design. The concrete outlines and steel reinforcement are for illustration only, and shall not be used for construction. The foundation design shall be provided by the tank manufacturer.

WELDED STEEL TANK PIPE VAULT

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



Tank Width-25'-0"

NOTES:

1. This drawing is intended as a general representation of the proposed tank, actual design shall be provided by the tank manufacturer, therefore, it is not to be used for construction.

Locations for ladder, manway, water level gauge, access door, and overflow are to be field located by the Engineer to fit site conditions.

WELDED STEEL TANK

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

– 2"x2"xl/4"Ls @ top, bottom & Sides of ope

-4" Butt Hinge (3 Reg'.

-2"x2"x¾₁₆"∠s @ top, bottom & Sides of

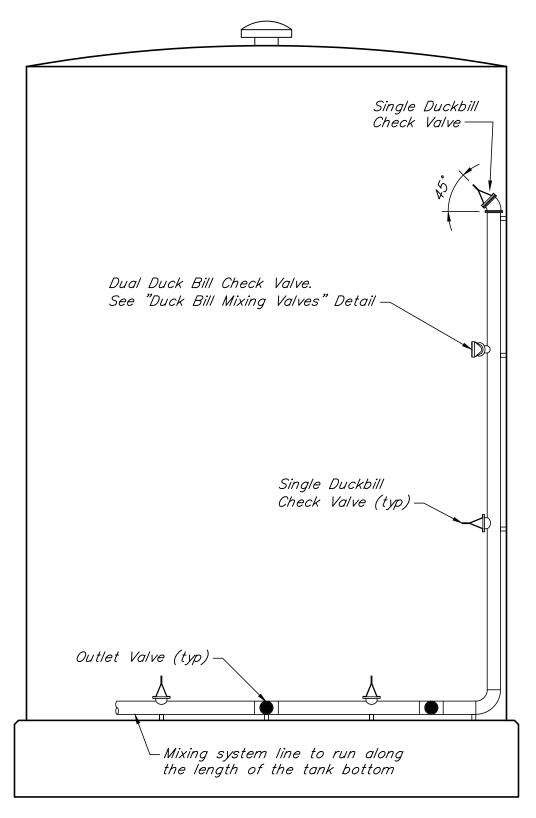
opening

PROJECT NO. 2020052

SHEET NO.

04

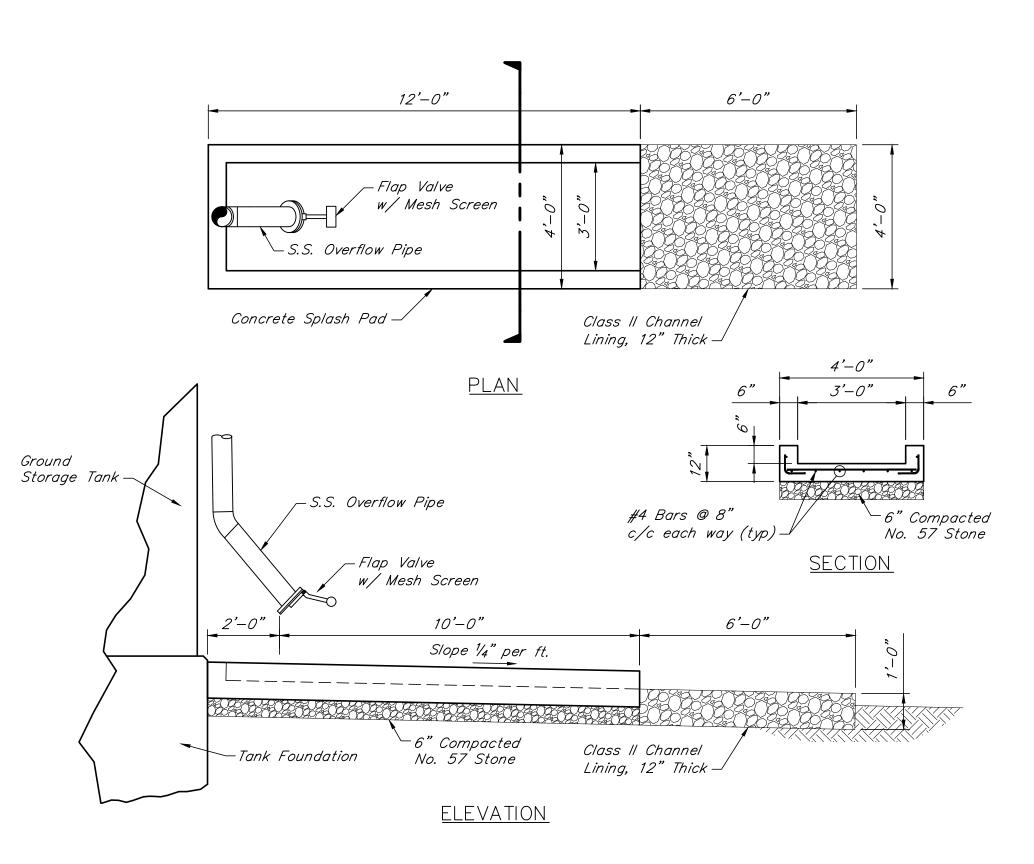
TANK DETAILS



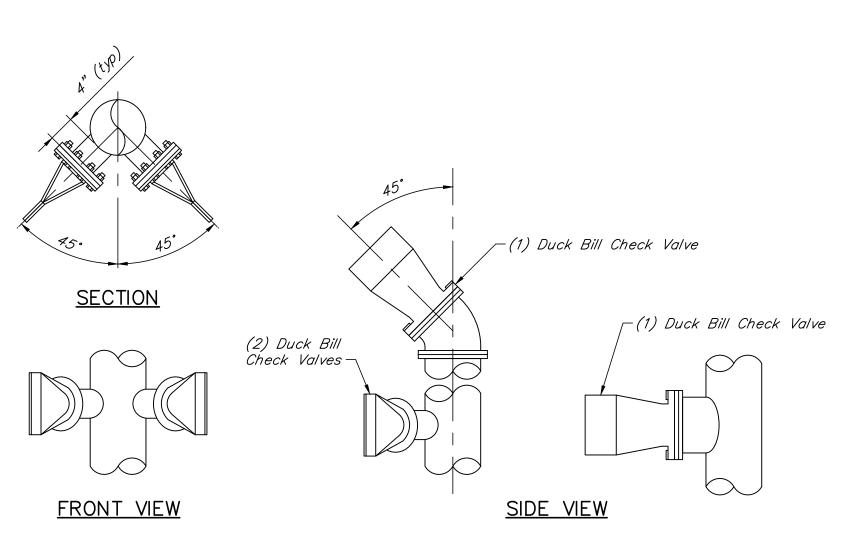
MIXING SYSTEM NOTES:

- 1. This drawing is not to be used for construction, it is intended as a general representation only. Actual mixing system design for the valves shall be provided by the manufacturer of the mixing system with approval of Engineer.
- 2. Quantity, size, elevations, locations and discharge angles of inlet nozzles are tank specific and are shown for general illustration purposes only. The bid price shall include site specific mixing system design, prepared and submitted by the mixing system manufacturer and approved by the Engineer.
- 3. Duckbill check valves shall be NSF approved elastomeric, flanged—end valves as manufactured by Red Valve Company, Inc., Series 35, or approved equal.
- 4. Outlet check valves shall be NSF approved elastomeric, flanged—end valves as manufactured by Red Valve Company, Inc., Waterflex Series WF—3, or approved equal.
- 5. Piping shall be provided by the Contractor.

GROUND STORAGE TANK MIXING SYSTEM



OVERFLOW SPLASH PAD



Tank Wall —

Wall Thickness Varies —

Hinged Hasp —

Ladder -

4" Butt Hinge -

ELEVATION

LADDER ACCESS CAGE

Ladder Safety Post -

12 Gauge Steel

Ladder Access Cage —

Hinged Hasp -

Top Foundation

3/4" Rung @ 12" O.C.

12 Gauge Steel Ladder Access Cage —

This detail is applicable to Glass Coated and Bolted Steel Tanks.

Galvanized Pipe -

 $-\frac{3}{4}$ " wide x 3" long

2. Gauge board is to be painted per paint specifications. Face to be painted white with black numbers. Numbering shall be done prior to erection, with touch—ups and necessary.

_ Cast Alum. Housing w/3" ø Plastic Wheel & St. Shaft

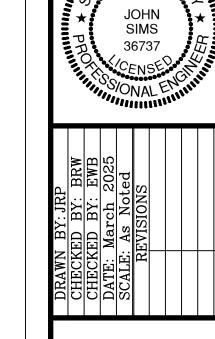
— Indicator Float

OVERFLOW AND WATER LEVEL INDICATOR

MIXING VALVE NOTES:

- This drawing is not to be used for construction, it is intended as a general representation only.
 Actual design for the valves shall be provided by the manufacturer with approval of Engineer.
- Duckbill Check Valves shall be NSF approved elastomeric, flanged—end valves as manufactured by Red Valve Company, Inc., Series 35, or approved equal.

DUCKBILL MIXING VALVES

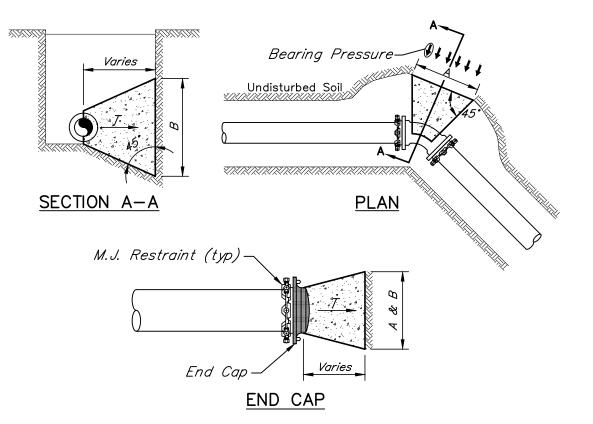




PROJECT NO. 2020052 SHEET NO.

05

MISCELLANEOUS DETAILS



- 1. Thrust restraint table is based on pipeline pressure of 200 psi and earthbearing capacity of 1500 psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the Engineer.
- On large diameter pipes where space limitations or construction difficulties render concrete thrust blocks not feasible or impractical, a joint restraint system may be used. This restrained joint system must be approved by the Engineer.
- 3. Concrete shall be 3000 psi minimum conforming to KYTC Specifications 601.

2" O.D. Gate Frame—

To Slope 4" O.D. Gate Post-

Outward

3" O.D. Corner Post—,

#9 Wire 2" Mesh —

Tension Band & #9 Tension Wire (Typ.)—

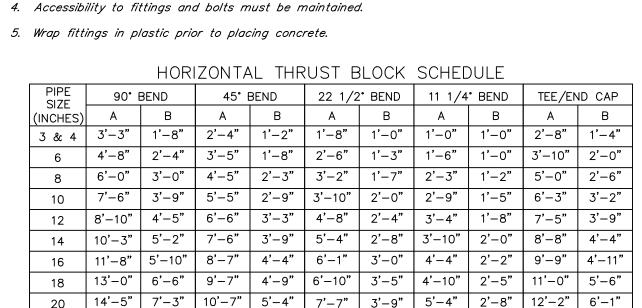
From

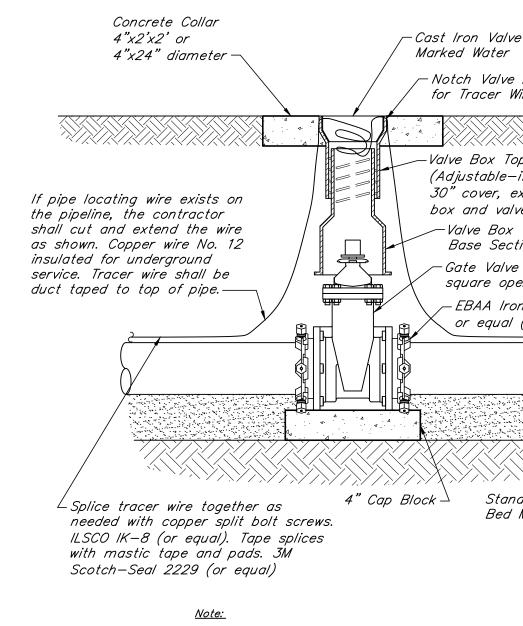
		⊔∩РІ	ZONTA	J TUE	RUST E	BLOCK	SCHEL) 			
PIPE	90° (90° BEND		45° BEND		22 1/2° BEND		SCHEDULE 11 1/4° BEND		TEE/END CAP	
SIZE (INCHES)	Α	В	Α	В	Α	В	Α	В	Α	В	
3 & 4	3'-3"	1'-8"	2'-4"	1'-2"	1'-8"	1'-0"	1'-0"	1'-0"	2'-8"	1'-4"	
6	4'-8"	2'-4"	3'-5"	1'-8"	2'-6"	1'-3"	1'-6"	1'-0"	3'-10"	2'-0"	
8	6'-0"	3'-0"	4'-5"	2'-3"	3'-2"	1'-7"	2'-3"	1'-2"	5'-0"	2'-6"	
10	7'-6"	3'-9"	5'-5"	2'-9"	3'-10"	2'-0"	2'-9"	1'-5"	6'-3"	3'-2"	
12	8'-10"	4'-5"	6'-6"	3'-3"	4'-8"	2'-4"	3'-4"	1'-8"	7'-5"	3'-9"	
14	10'-3"	5'-2"	7'-6"	3'-9"	5'-4"	2'-8"	3'-10"	2'-0"	8'-8"	4'-4"	
16	11'-8"	5'-10"	8'-7"	4'-4"	6'-1"	3'-0"	4'-4"	2'-2"	9'-9"	4'-11"	
18	13'-0"	6'-6"	9'-7"	4'-9"	6'-10"	3'-5"	4'-10"	2'-5"	11'-0"	5'-6"	
20	14'-5"	7'-3"	10'-7"	5'-4"	7'-7"	3'-9"	5'-4"	2'-8"	12'-2"	6'-1"	
24	17'-3"	8'-8"	12'-8"	6'-4"	9'-0"	4'-6"	6'-5"	3'-3"	14'-6"	7'-3"	

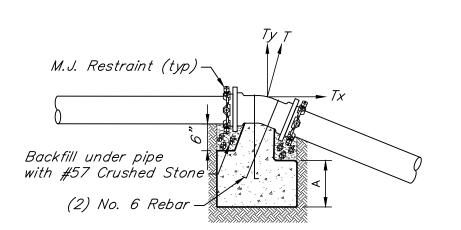
HORIZONTAL THRUST BLOCK

-3 Strands

Barbed Wire







<u>NOTES:</u>

- 1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500 psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the Engineer.
- 2. On large diameter pipes where space limitations or constuction difficulties render concrete thrust blocks not feasible or impractical, a joint restraint system may
- 4. Concrete shall be 3000 psi minimum conforming to KYTC Specifications 601.

3. be used. This restrained joint system must be approved by the Engineer.

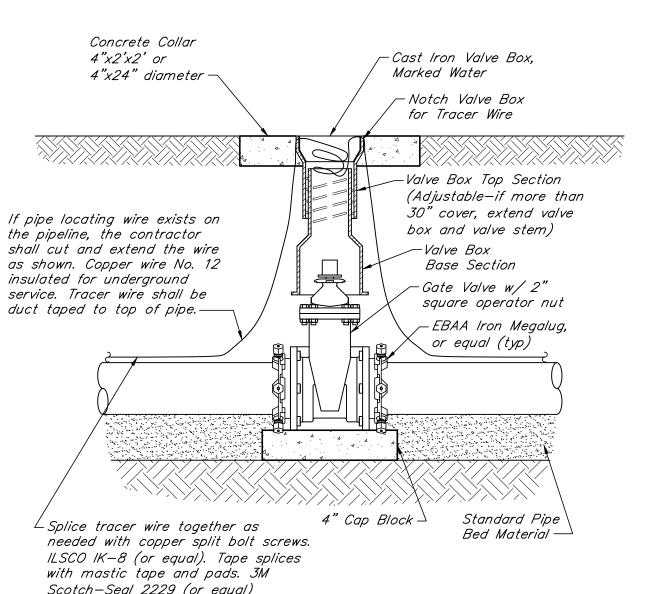
- 5. Accessibility to fittings and bolts must be maintained.
- 6. Wrap fittings in plastic prior to placing concrete.

V=Volume of gravity block in C.F.

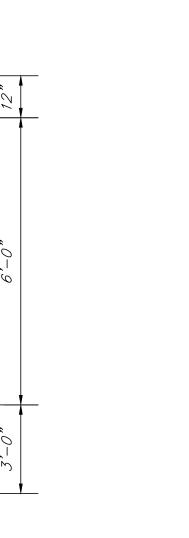
A=Bearing Area for T in S.F.

VERTICAL THRUST BLOCK SCHEDULE 45° BEND | 22 1/2° BEND | 11 1/4° BEND 3 & 4 | 29 | 2 | 20 11 | 1 | 174 | 12 | 123 | 337 23 238 18 | 555 | 37 | 393 | 16 | 211 | 5 46 484 24 | 985 | 66 | 696 | 29 | 374 | 8 | 197 | 2

VERTICAL THRUST BLOCK



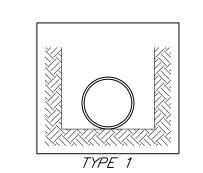
See Specifications for piping materials and piping joints.



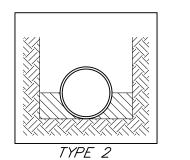
-23/8" O.D. Post | Spa. 10' O.C.

18"

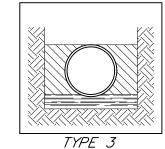
VALVE BOX INSTALLATION



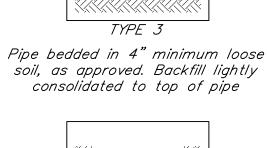
Flat-bottom trench Loose Backfill



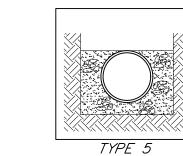
Flat-bottom trench in undisturbed earth. Backfill lightly consolidated



to centerline of pipe



Pipe bedded in sand, gravel, or crushed stone to depth of 4"



minimum. Backfill hand compacted to top of pipe (approximately 80% Standard Proctor).

Pipe bedded in compacted granular material to centerline of pipe, 4" minimum under pipe. Compacted granular or select material to top of pipe (approximately 90% Standard Proctor)

Connection -

—Base Plate –

−1" Grout

FLANGED PIPE SUPPORT

<u>NOTES:</u>

Support to be as

Pipe Size

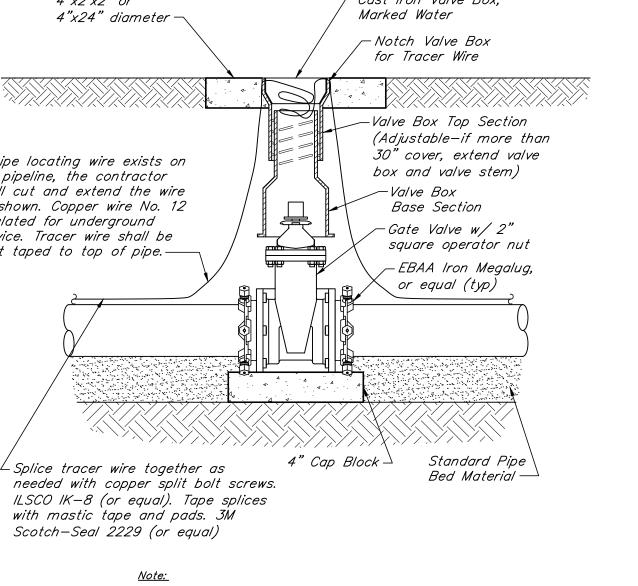
manufactured by Material Resources, Inc., or equal.

Support Min. Dist. Post Size to Floor

Sch. 40 Steel

- 1. Referenced from AWWA C150
- 2. Laying condition shall be Type 3, unless otherwise specified

LAYING CONDITIONS FOR DUCTILE IRON PIPE





Conc. Anchor

PROJECT NO. 2020052

SHEET NO. ELECTRICAL DETAILS 06

ELECTRICAL ABBREVIATIONS AMPERE ATS AUTOMATIC TRANSFER SWITCH AWG AMERICAN WIRE GAUGE CONDUIT (RACEWAY)

CIRCUIT BREAKER CONTROL PANEL DELTA/WYE DPST DOUBLE POLE-SINGLE THROW

ELEC ELECTRIC EOL END-OF-LINE **EMERG EMERGENCY** EXISTING FΑ FIRE ALARM

GEC GROUNDING ELECTRODE CONDUCTOR GFCI OR GROUND FAULT CURRENT INTERRUPTING GND GROUND

HAND-OFF-AUTO SELECTOR SWITCH HOA HORSEPOWER J OR JB JUNCTION BOX

KCMIL THOUSAND CIRCULAR MILS LIMIT SWITCH

LOW VOLTAGE MCB MAIN CIRCUIT BREAKER MCC MOTOR CONTROL CENTER MFR MANUFACTURER

MANHOLE MINIMUM NOT APPLICABLE NORMALLY CLOSED NEC NATIONAL ELECTRICAL CODE

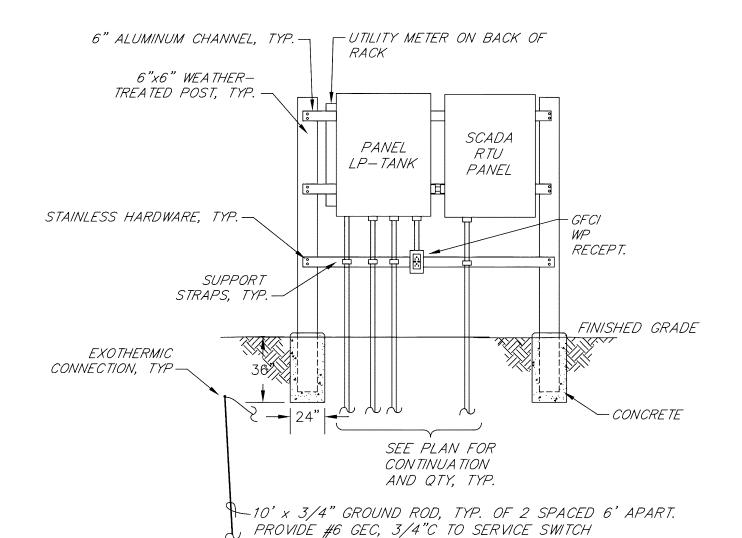
NORMALLY OPEN NOT TO SCALE OVERHEAD OVERLOAD OVER TEMPERATURE PH OR Ø PHASE

PANEL POWER PWR RECEPT RECEPTACLE SHEET SINGLE POLE

SPD SURGE PROTECTION DEVICE STAINLESS STEEL STATION

STD STANDARD STIC SHIELDED TWISTED INSTRUMENT CABLE SW

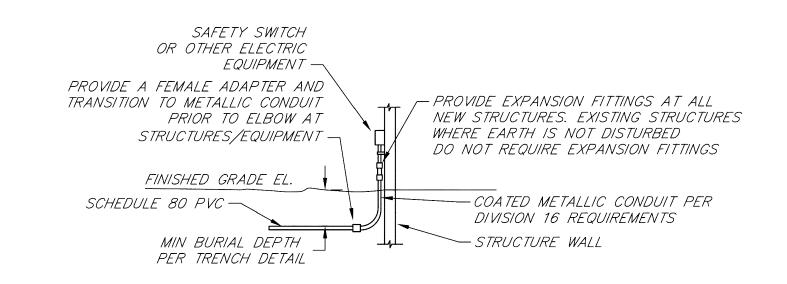
SWITCH TERMINAL BOX



WATER TANK ELECTRICAL RACK DETAIL, TYP.

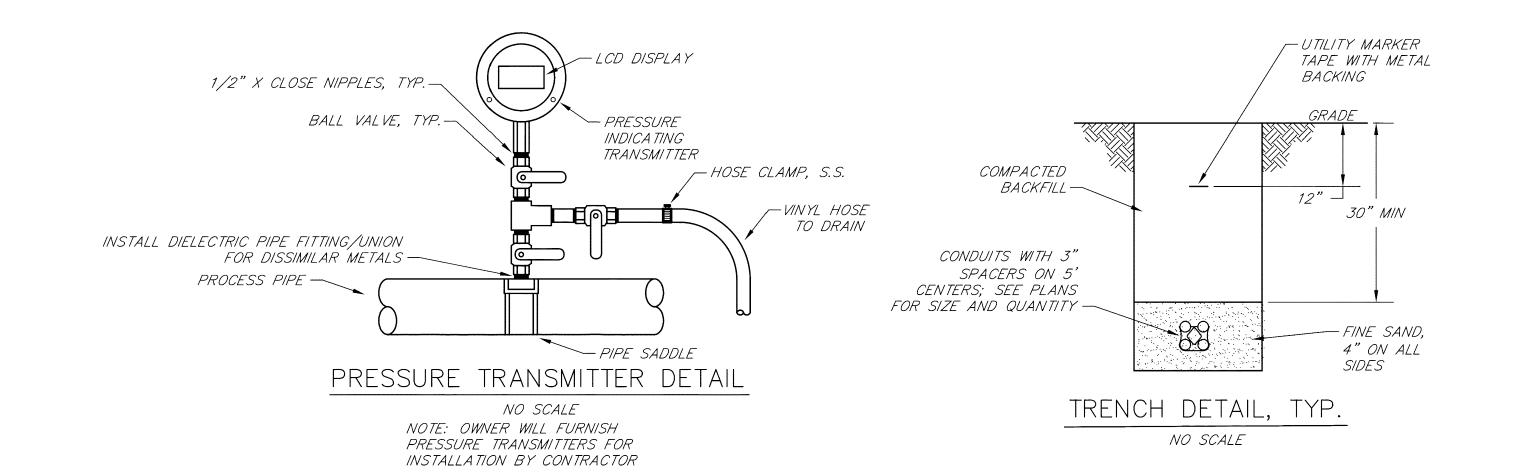
NOT TO SCALE

* OWNER WILL FURNISH SCADA RTU PANEL FOR CONTRACTOR INSTALLATION



ALL UNDERGROUND PVC CONDUITS SHALL TRANSITION TO METALLIC PRIOR TO EMERGING FROM GRADE OR SLAB.

TYPICAL UNDERGROUND PVC CONDUIT TRANSITION TO METALLIC CONDUIT NO SCALE



PANEL: ENCLOSURE: MOUNTING: LOCATION:	LP-TANK (TYP. FOR 2 PANELS) NEMA 3R SURFACE KY 472					VOLTAGE: MAINS AMPACITY: MAIN C.B. SIZE: TOTAL SPACES:				120/240V, 1Ø, 3W 100A 60A SERVICE-RATED 18 (MIN)		
					PHASE A		1 1					
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	VA	VA	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION	
SPD		2	30A	1	500		2	20A	1	500	RECEPTACLE	
				3		500	4	20A	1	500	SCADA RTU	
SPARE		1	20A	5	0		6	20A	1		SPARE	
SPARE		1	20A	7		0	8	20A	1		SPARE	
SPARE		1	15A	9	0		10	15A	1		SPARE	
				11		0	12					
				13	0		14					
				15		0	16					
				17	0		18					
		TOTAL \	/A PER PHA	SE:	500	500			`		`	
	TO	TAL AMF	PS PER PHA	\SE:	4.2	4.2	TO	OTAL PANEL VA:	1000			
NOTES: 1. PROVIDE INTEGRAL SI	JRGE SI	JPPRES:	SION WITH [DISC	ONNECT							

ELECTRICAL DEVICE MOUNTING HEIGHT SCHEDULE							
DEVICE	HEIGHT AFF	REMARKS					
RECEPTACLE - LOW	1'-4"	TO BOTTOM OF DEVICE BOX					
RECEPTACLE - MEDIUM	4'-0"	TO TOP OF DEVICE BOX					
LIGHT SWITCH	4'-0"	TO BOTTOM OF DEVICE BOX					
CONTROL STATIONS & PUSH-BUTTONS	4'-0"	TO BOTTOM OF DEVICE BOX					
PANELBOARDS & CONTROL PANELS	6'-6"	TO TOP OF BOX					
SAFETY SWITCH	4'-0"	TO TOP OF BOX					

ELEC	CTRICAL PLAN SYMBOLS
-	ELECTRICAL CIRCUIT: SHORT=PHASE CONDUCTOR; LONG = NEUTRAL, DASHED = EQUIPMENT GROUND
хф ×ф	DUPLEX RECEPTACLE: WP = WEATHERPROOF; GFI = GROUND FAULT; NUMBER = MOUNTING HEIGHT SINGLE RECEPTACLE
ф	208 or 240 VOLT RECEPTACLE
M	MOTOR
0	JUNCTION BOX — SMALL
J	JUNCTION BOX — FLUSH—MOUNTED
4	SAFETY SWITCH — NONFUSED UNLESS NOTED OTHERWISE
0	EXISTING POWER POLE
•	NEW POWER POLE
□ +X OR□-	LIGHTING POLE
	KEYNOTE
EU	ELECTRICAL LINE UNDERGROUND
E0 -	ELECTRICAL LINE OVERHEAD