

# PHASE 11 WATER SYSTEM IMPROVEMENTS

## CONTRACT 2 - NEW ELEVATED STORAGE TANKS

FOR

# RATTLESNAKE RIDGE

# WATER DISTRICT

## CARTER COUNTY, KENTUCKY

BOARD MEMBERS

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 STEVE ISON  
 MIKE COPLEY

GENERAL MANAGER

W. C. GILBERT


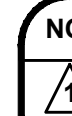
NOVEMBER, 2017

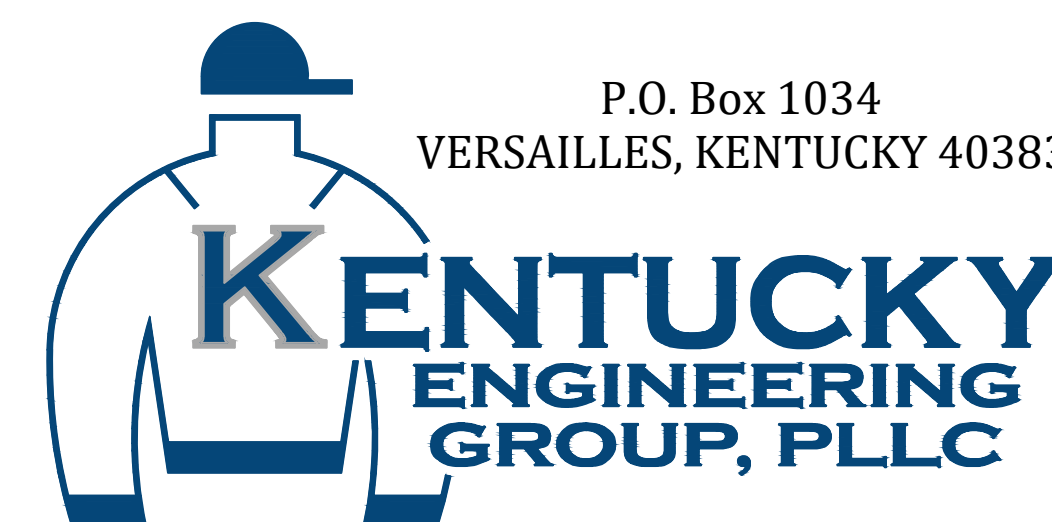
**RECORD DRAWINGS**

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF THIS SET OF RECORD DRAWING SHOWS THE REPORTED LOCATION OF THE WORK AND SIGNIFICANT CHANGES MADE DURING THE CONSTRUCTION PROCESS. THESE RECORD DOCUMENTS ARE BASED ON UNVERIFIED INFORMATION PROVIDED BY OTHER PARTIES WHICH WILL BE ASSUMED RELIABLE. THE DESIGN PROFESSIONAL CANNOT AND DOES NOT WARRANT THEIR ACCURACY.

BY: BLUEGRASS ENGINEERING, PLLC DATE: 01/20

**RECORD DRAWINGS**

 <small>222 East Main Street, Ste. 1 • Georgetown, KY 40324</small>	NO.	DATE	REVISIONS	BY
		JANUARY 2020	REVISIONS PER FIELD NOTES, RECORD DRAWING REVISIONS	BKL



PROJECT NO. 15036



**GENERAL NOTES**

- CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND THE ENGINEER TWO WORKING DAYS (MINIMUM) BEFORE BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH CITY, COUNTY AND STATE REQUIREMENTS.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
- EXISTING UTILITIES, ESPECIALLY GAS LINES AND OIL LINES, MAY BE CATHODICALLY PROTECTED. THEREFORE, DUCTILE IRON PIPE, FITTINGS, GATE VALVES, AND/OR BOXES LAID WITHIN 100' OF LINES WITH CATHODIC PROTECTION SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT. MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF AWWA'S LATEST REVISION.
- ALL CONSTRUCTION AND INSTALLATION OF MATERIALS BEING USED SHALL BE IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SUBSTITUTIONS AND DEVIATION SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
- SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
- EXISTING UTILITIES HAVE BEEN SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH A REPRESENTATIVE WHEN WORKING NEAR EXISTING UTILITIES.
- THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND ALL OTHER UTILITIES AND OTHER IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION.
- UNLESS OTHERWISE NOTED, A SEPARATE BID ITEM HAS NOT BEEN ESTABLISHED FOR FITTINGS. THE FITTINGS INCLUDED BUT NOT LIMITED TO ARE: TEES, BENDS, PLUGS, REDUCERS, CROSSES, COUPLINGS, ETC. CONTRACTORS SHALL INCLUDE THE COST OF THESE ITEMS IN THE BID PRICE FOR THE PIPE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY REMOVAL/RELOCATION OF TRAILERS, BUILDINGS, FENCES, TREES, SHRUBS, ETC. AND REPLACEMENT OF SAID ITEMS AFTER CONSTRUCTION ACTIVITIES.
- CONTRACTOR IS TO COORDINATE WITH THE PROPERTY OWNERS AS TO WHETHER OR NOT TEMPORARY FENCING IS REQUIRED AND CONSTRUCT IF NECESSARY.
- ALL PIPING SHALL HAVE 36" MINIMUM COVER.
- WHERE UNSTABLE MATERIAL IS ENCOUNTERED OR WHERE THE DEPTH OF EXCAVATION IN EARTH EXCEEDS FIVE (5) FEET, THE SIDES OF THE TRENCH OR EXCAVATION SHALL BE SUPPORTED BY SUBSTANTIAL SHEETING, BRACING, SHORING OR THE TRENCH SIDES SLOPED. SLOPING THE SIDES OF THE DITCH WILL NOT BE PERMITTED IN STREETS, ROADS, NARROW RIGHTS-OF-WAY OR OTHER CONSTRICTED AREAS UNLESS OTHERWISE SPECIFIED. THE STANDARDS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT AND THE KENTUCKY LABOR CABINET SHALL BE FOLLOWED.
- ALL EXCAVATION IS UNCLASSIFIED. COMPENSATION FOR ALL EXCAVATION SHALL BE INCLUDED IN LUMP SUM BID.
- REGRADE OF SITE SHALL BE SUCH THAT DRAINAGE IS AWAY FROM ALL STRUCTURES.
- BACKFILL AROUND ALL STRUCTURES SHALL BE SUFFICIENTLY COMPACTED TO PRECLUDE SETTLEMENT AND PONDING OF WATER AROUND STRUCTURES AND GRADED TO DIVERT RUNOFF AWAY FROM THE STRUCTURES.
- DIMENSIONS, DETAILS AND REINFORCEMENT MAY VARY WITH MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL OBTAIN AND MAINTAIN ON SITE, APPROVED SHOP DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- ALL VALVES & HYDRANTS SHALL BE LOCATED AT THE BACKSIDE OF THE DITCHLINE.
- FINAL LOCATION OF SERVICES, VALVES, & HYDRANT ORIENTATION ARE TO BE FIELD LOCATED DURING CONSTRUCTION & APPROVED BY THE ENGINEER.
- AT THE CONTRACTORS OPTION, CLASS 350 DUCTILE IRON PIPE MAY BE SUBSTITUTED FOR ANY PIPE PARTICULARLY SPECIFIED, BUT AT NO ADDITIONAL COST TO THE OWNER.
- NO PAY ITEM FOR EXTRA TRENCH DEPTH HAS BEEN SET UP. CONTRACTOR SHALL INCLUDE THE COST OF THE ADDITIONAL DEPTH IN HIS BID PRICE.
- ROCK SOUNDINGS WERE NOT PERFORMED BY THE ENGINEER, THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO DETERMINE SUBSURFACE CONDITIONS.
- CONTRACTOR TO DIG/EXPOSE EXISTING WATER MAIN FAR ENOUGH AHEAD OF NEW WATER MAIN CONSTRUCTION TO AVOID DAMAGE TO EXISTING WATER MAIN AND/OR INTERRUPTION OF EXISTING CUSTOMER SERVICES.
- ALL NEW SERVICE LINE FROM THE NEW MAIN TO THE SETTERS SHALL BE 3/4" PE CTS TUBING UNLESS SHOWN DIFFERENTLY ON THE PLANS
- THE MAXIMUM ALLOWABLE LENGTH OF SERVICE LINE FROM THE WATER MAIN TO THE CUSTOMER'S METER SERVICE SHALL BE AS FOLLOWS:

SERVICE LINE DIAMETER	MAXIMUM LENGTH
3/4 INCH	150 FEET
1-1/2 INCH	200 FEET
2 INCH	250 FEET

- CONNECTIONS TO EXISTING DISTRIBUTION SYSTEM SHALL BE MADE AS FOLLOWS:
  - CONNECT TO EXISTING (SIZE) W.M. (WET TAP) - CONTRACTOR SHALL PROVIDE, FURNISH AND INSTALL ALL FITTINGS, VALVES AND APPURTENANCES TO CONNECT THE PROPOSED WATER MAIN TO THE EXISTING WATER MAIN UNDER PRESSURE.
  - CONNECT TO EXISTING (SIZE) W.M. - CONTRACTOR SHALL PROVIDE, FURNISH AND INSTALL ALL FITTINGS AND APPURTENANCES TO CONNECT THE PROPOSED WATER MAIN TO THE EXISTING WATER MAIN. VALVES ARE A SEPARATE PAY ITEM.
- NO BLASTING WILL BE PERMITTED ON THIS PROJECT
- ALL STEEL AND IRON ON THIS JOB SHALL COMPLY WITH AIS REQUIREMENTS.

**RECORD DRAWINGS**

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BY: BLUEGRASS ENGINEERING, PLLC DATE: 01/20



**GENERAL NOTES (CONTINUED)**

- NEW LINE AND EXISTING LINES MUST REMAIN IN SERVICE UNTIL ALL METERS ASSEMBLED HAVE BEEN REPLACED AND RECONNECTED TO THE NEW LINE
- NO METERS CAN BE RECONNECTED TO THE NEW WATER MAIN UNTIL TESTING, STERILIZATION AND SAMPLING HAS BEEN SUCCESSFULLY COMPLETED
- COPIES OF ALL BACTIE RESULTS MUST BE PROVIDED TO THE ENGINEER PRIOR TO RECONNECTS OF ANY METER.
- A NO. 12 AWG INSULATED COPPER LOCATOR WIRE SHALL BE PLACED IN THE TRENCH SIX INCHES ABOVE ALL PLASTIC LINES. THE INSULATION SHALL BE BLUE FOR WATER. THE WIRE SHALL BE LOOPED INTO ALL VALVE BOXES W/ ENOUGH SLACK TO ALLOW ACCESS TO THE LOOPS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PLUMBING PERMITS NECESSARY TO RELOCATE OR RECONNECT ANY CUSTOMERS METER SERVICE OR SERVICE LINE. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES AND EMPLOY THE NECESSARY LICENSED PLUMBER.

**FINAL CLEANUP AND RESTORATION**

UNLESS SPECIFICALLY APPROVED BY THE OWNER AND ENGINEER, CLEANUP OF DISTURBED AREAS SHALL BE KEPT CURRENT WITH CONSTRUCTION AND RESTORATION EFFORTS BY THE CONTRACTOR INITIATED NO LONGER THAN SEVEN (7) DAYS AFTER THE TRENCH EXCAVATION WORK HAS STARTED. ALL EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILLING OF THE TRENCH AND ANY LARGE ROCKS, STONES OR DEBRIS SHALL BE REMOVED FROM THE SITE, AND SHALL NOT BE A BURDEN TO THE PROPERTY OWNER(S) AND/OR ADJACENT PROPERTIES. THE CONTRACTOR MAY WINDROW OR TRACK-IN THE EXCAVATED MATERIAL OVER THE TRENCH PRIOR TO FINAL CLEANUP TO ALLOW FOR AND TO ASSIST IN THE INITIAL SETTLEMENT OF THE TRENCH. ALL DISTURBED AREAS MUST BE SEEDED AT LEAST WITH A TEMPORARY SEED MIX IF FOR SOME REASON THE AREA CANNOT BE PERMANENTLY SEEDED WITHIN TWO (2) WEEKS.

**DEPARTMENT OF HIGHWAYS - GENERAL NOTES**

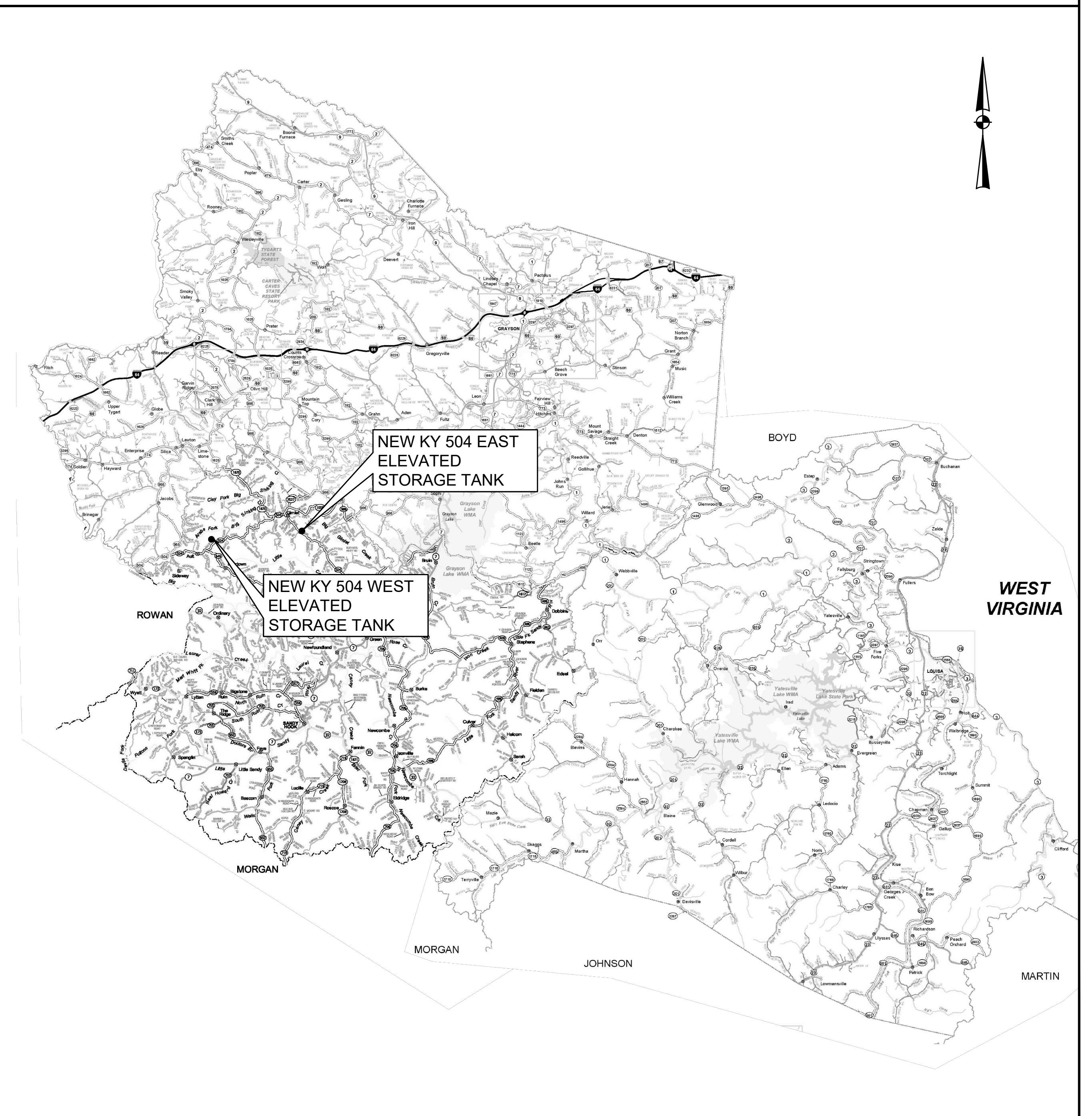
- ALL EFFECTED KYTC DITCHLINES SHALL REMAIN FREE OF EXCESS SILT OR EROSION AND CONSTRUCTED TO THE NORMAL TYPICAL SECTION OF THE ROADWAY WITH A MINIMUM DEPTH OF 18 INCHES FROM THE SHOULDER BREAK POINT.
- ALL NECESSARY STEPS SHALL BE TAKEN TO PREVENT EROSION OR SILTATION OF THE PUBLIC RIGHT-OF-WAY, ADJOINING PROPERTY AND WATERWAYS.
- ALL VALVES TO BE FLUSH W/ EXISTING GRADE.
- ALL WATER LINE LOCATED WITHIN STATE HIGHWAY R.O.W. SHALL BE CONSTRUCTED OUT AND AROUND THE END OF ALL EXISTING CULVERTS AND HEADWALLS.
- UNDERGROUND UTILITIES INSTALLED INSIDE STATE RIGHT-OF-WAY SHALL BE LOCATED WITHIN 3-5 FEET FROM THE EDGE OF THE RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON THE PLANS.
- UNDERGROUND UTILITIES SHOWN MORE THAN 5 FEET FROM THE EDGE OF THE RIGHT-OF-WAY SHALL BE INSTALLED WITH A MINIMUM DEPTH OF COVER OF 42 INCHES WITH PRIOR APPROVAL ON A CASE BY CASE BASIS.
- UNDERGROUND UTILITIES CROSSING ANY ENTRANCE OR CROSSROAD PAVED WITH CONCRETE OR ASPHALT SURFACE INSIDE STATE RIGHT-OF-WAY SHALL BE INSTALLED BY BORING UNLESS WRITTEN PERMISSION TO OPEN CUT IS OBTAINED FROM THE PROPERTY OWNER AND APPROVED BY THE KYTC DISTRICT PERMITS ENGINEER.
- UNDERGROUND UTILITIES SHALL NOT BE INSTALLED IN EMBANKMENT FILLS OR BETWEEN EDGE OF PAVEMENT AND DITCHLINE UNLESS SPECIFICALLY NOTED ON PERMITTED PLANS.
- FIRE HYDRANTS OR UTILITY SERVICE BOXES SHALL BE LOCATED WITHIN 2 FEET FROM THE EDGE OF RIGHT-OF-WAY LINE, OR OFF RIGHT-OF-WAY.

**INDEX OF DRAWINGS**

SHT. NO.	DESCRIPTION:
-	COVER
01	SHEET LOCATION MAP, INDEX OF DRAWINGS, UTILITIES and LEGEND
02	NEW KY 504 EAST TANK AERIAL & SITE PLAN
03	NEW KY 504 WEST TANK AERIAL & SITE PLAN
04	ELEVATED WATER TANK
05	WATER STORAGE TANK STANDARD DETAILS
06	STANDARD DETAILS
07	EROSION CONTROL DETAILS
08	DEMOLITION PLAN EXISTING KY 504 EAST & KY 504 WEST TANKS

NO.	DATE	REVISIONS	BY
1	JANUARY 2020	REVISIONS PER FIELD NOTES, RECORD DRAWING REVISIONS	BKL

**SHEET LOCATION MAP**



**LEGEND**

EXISTING	PROPOSED	DESCRIPTION
PVC	PVC	POLYVINYL CHLORIDE
DIP	DIP	DUCTILE IRON PIPE
WM	WM	WATER MAIN
⊕	⊕	HYDRANT ASSEMBLY
⊕	⊕	FLUSHING/BLOWOFF ASSEMBLY
△	▲	AIR RELEASE VALVE (ARV)
⊗	⊗	GATE VALVE (GV)
---	---	WATER MAIN (WM)
---	---	SPECIAL CROSSING OR CASING PIPE
---	---	WATER MAIN TO BE ABANDONED
---	---	RIGHT-OF-WAY LINE
---	---	CENTERLINE
---	---	PROPERTY LINE
---	---	EASEMENT ACQUIRED

**UTILITIES**

**BUD - Before You Dig**  
1-800-752-6007  
or DIAL 811

**NOTE:**  
IN ACCORDANCE WITH KENTUCKY STATE LAW, ANY ACTIVITY THAT RESULTS IN MOVEMENT, PLACEMENT, BORING, PROBING OR DIGGING IN OR ON THE GROUND SHALL CONTACT THE ONE CALL CENTER FOR UNDERGROUND UTILITY LOCATIONS.

**WATER DISTRICT**

RATTLESNAKE RIDGE WATER DISTRICT

PHONE: 606-474-7570  
FAX: 606-474-8531

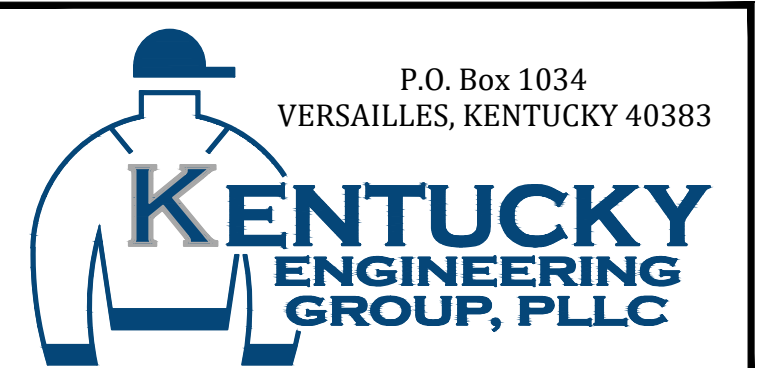
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THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE DRAWING OR TITLE BLOCK TO DETERMINE THE ACTUAL SCALE.

NO.	DATE	REVISIONS	BY

DATE:	NOVEMBER, 2017
PROJECT MGR:	LRS
DRAWN BY:	JAB
CHECKED BY:	JCT
SCALE:	AS NOTED
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**PHASE 11 WATER SYSTEM IMPROVEMENTS**  
FOR THE  
RATTLESNAKE RIDGE WATER DISTRICT

**CONTRACT 2 - NEW ELEVATED STORAGE TANKS**

SHEET LOCATION MAP, LEGEND, UTILITIES and INDEX OF DRAWINGS

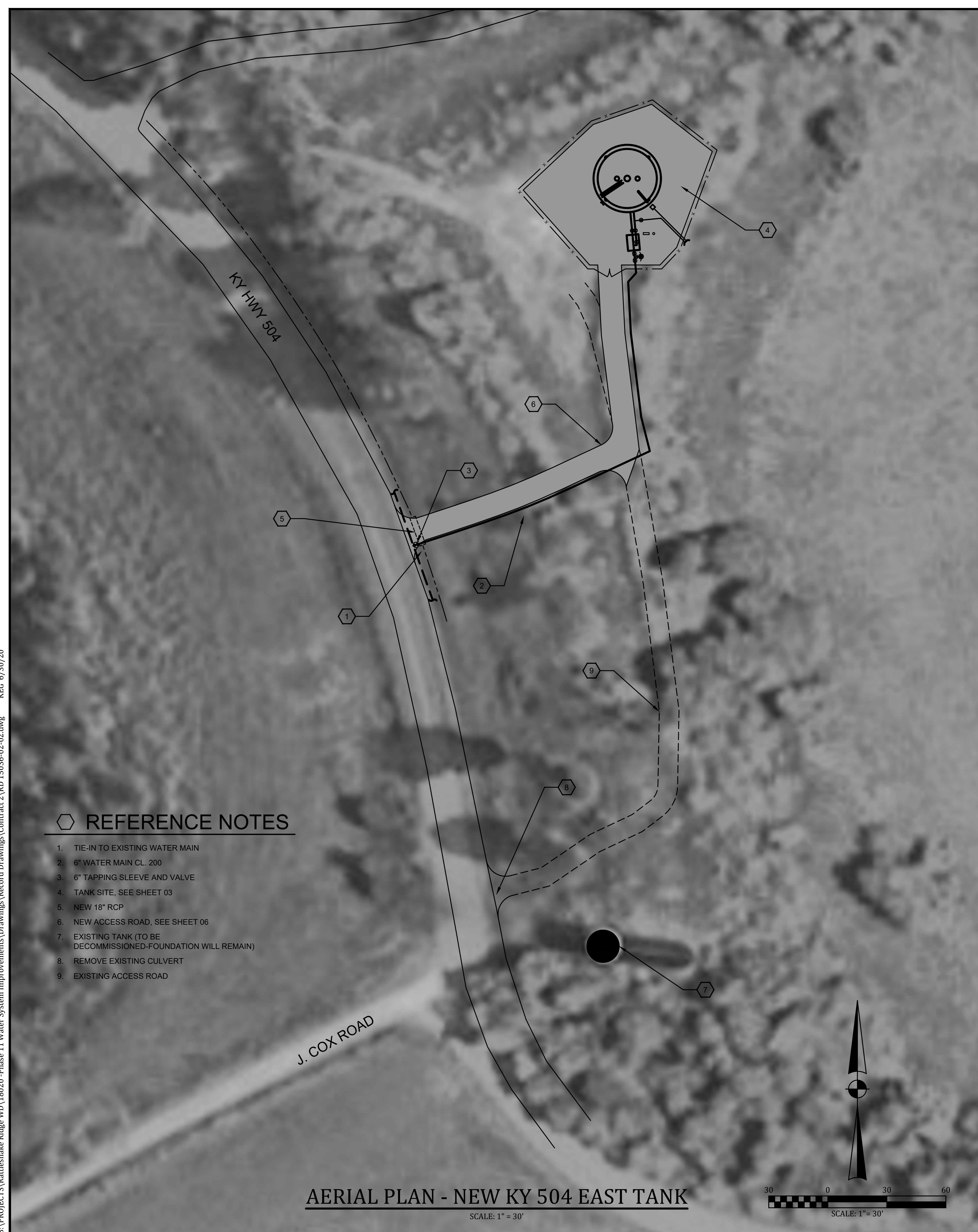
PROJECT NO.	15036
SHEET NO.	01

BID DOCUMENTS



NO.	DATE	REVISIONS	BY
1	JANUARY 2020	REVISIONS PER FIELD NOTES, RECORD DRAWING REVISIONS	BKL

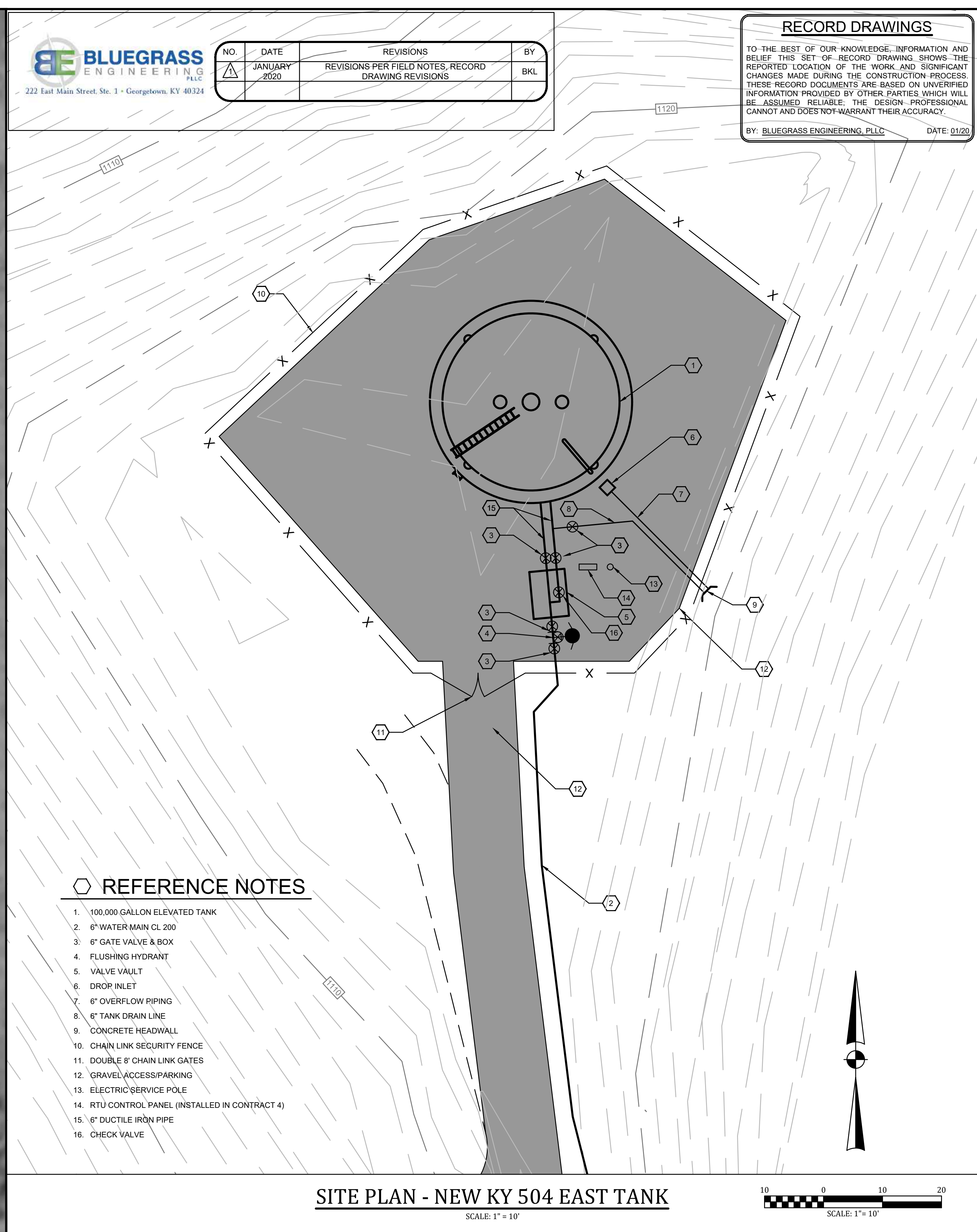
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 BY: BLUEGRASS ENGINEERING, PLLC DATE: 01/20



**REFERENCE NOTES**

1. TIE-IN TO EXISTING WATER MAIN
2. 6" WATER MAIN CL. 200
3. 6" TAPPING SLEEVE AND VALVE
4. TANK SITE, SEE SHEET 03
5. NEW 18" RCP
6. NEW ACCESS ROAD, SEE SHEET 06
7. EXISTING TANK (TO BE DECOMMISSIONED-FOUNDATION WILL REMAIN)
8. REMOVE EXISTING CULVERT
9. EXISTING ACCESS ROAD

**AERIAL PLAN - NEW KY 504 EAST TANK**  
 SCALE: 1" = 30'



**REFERENCE NOTES**

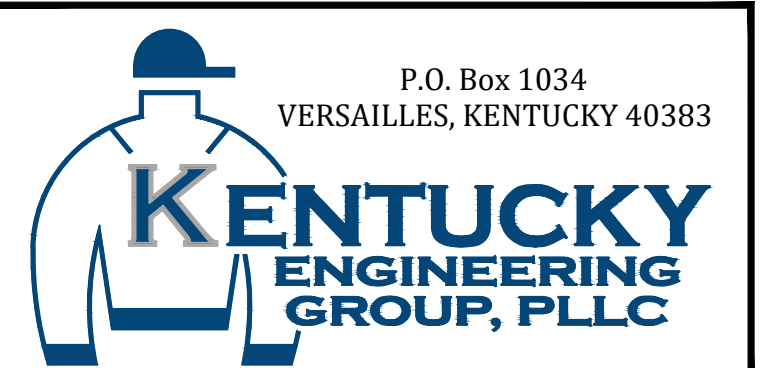
1. 100,000 GALLON ELEVATED TANK
2. 6" WATER MAIN CL. 200
3. 6" GATE VALVE & BOX
4. FLUSHING HYDRANT
5. VALVE VAULT
6. DROP INLET
7. 6" OVERFLOW PIPING
8. 6" TANK DRAIN LINE
9. CONCRETE HEADWALL
10. CHAIN LINK SECURITY FENCE
11. DOUBLE 8' CHAIN LINK GATES
12. GRAVEL ACCESS/PARKING
13. ELECTRIC SERVICE POLE
14. RTU CONTROL PANEL (INSTALLED IN CONTRACT 4)
15. 6" DUCTILE IRON PIPE
16. CHECK VALVE

**SITE PLAN - NEW KY 504 EAST TANK**  
 SCALE: 1" = 10'

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NO.	DATE	REVISIONS	BY

DATE: NOVEMBER, 2017  
 PROJECT MGR: LRS  
 DRAWN BY: JAB  
 CHECKED BY: JCT  
 SCALE: AS NOTED  
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**PHASE 11 WATER SYSTEM IMPROVEMENTS**  
 FOR THE  
**RATTLESNAKE RIDGE WATER DISTRICT**

**CONTRACT 2 - NEW ELEVATED STORAGE TANKS**  
 NEW KY 504 EAST TANK  
 AERIAL & SITE PLAN

PROJECT NO.  
**15036**  
 SHEET NO.  
**02**

PROJECT NO.  
**15036**  
 SHEET NO.  
**02**



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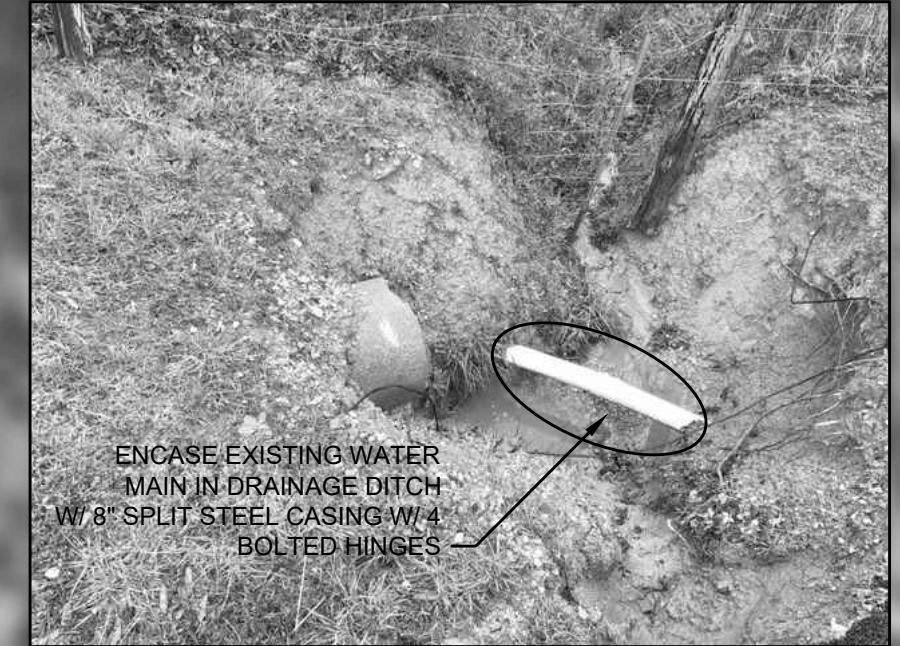
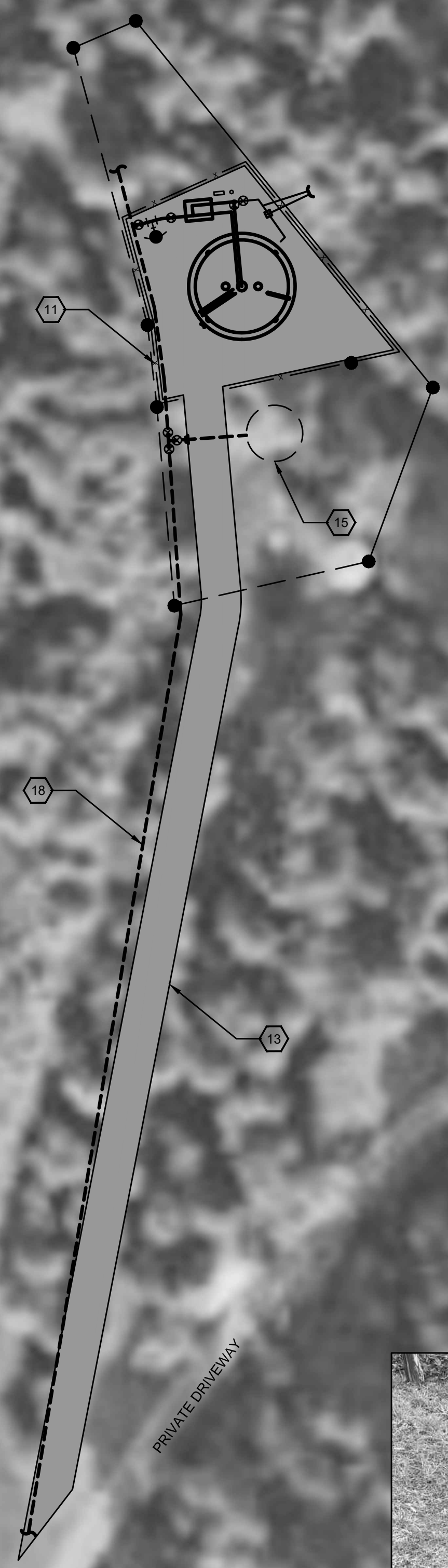
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NO.	DATE	REVISIONS
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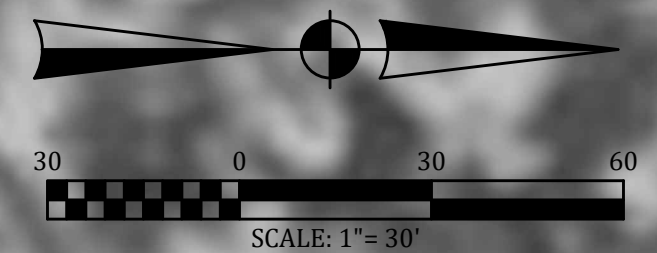
**AERIAL PLAN - NEW KY 504 WEST TANK**

SCALE: 1" = 30'



ENCASE EXISTING WATER MAIN IN DRAINAGE DITCH W/ RIP RAP (SEE PHOTO THIS SHEET)

ENCASE EXISTING WATER MAIN IN DRAINAGE DITCH W/ RIP RAP (SEE PHOTO THIS SHEET)

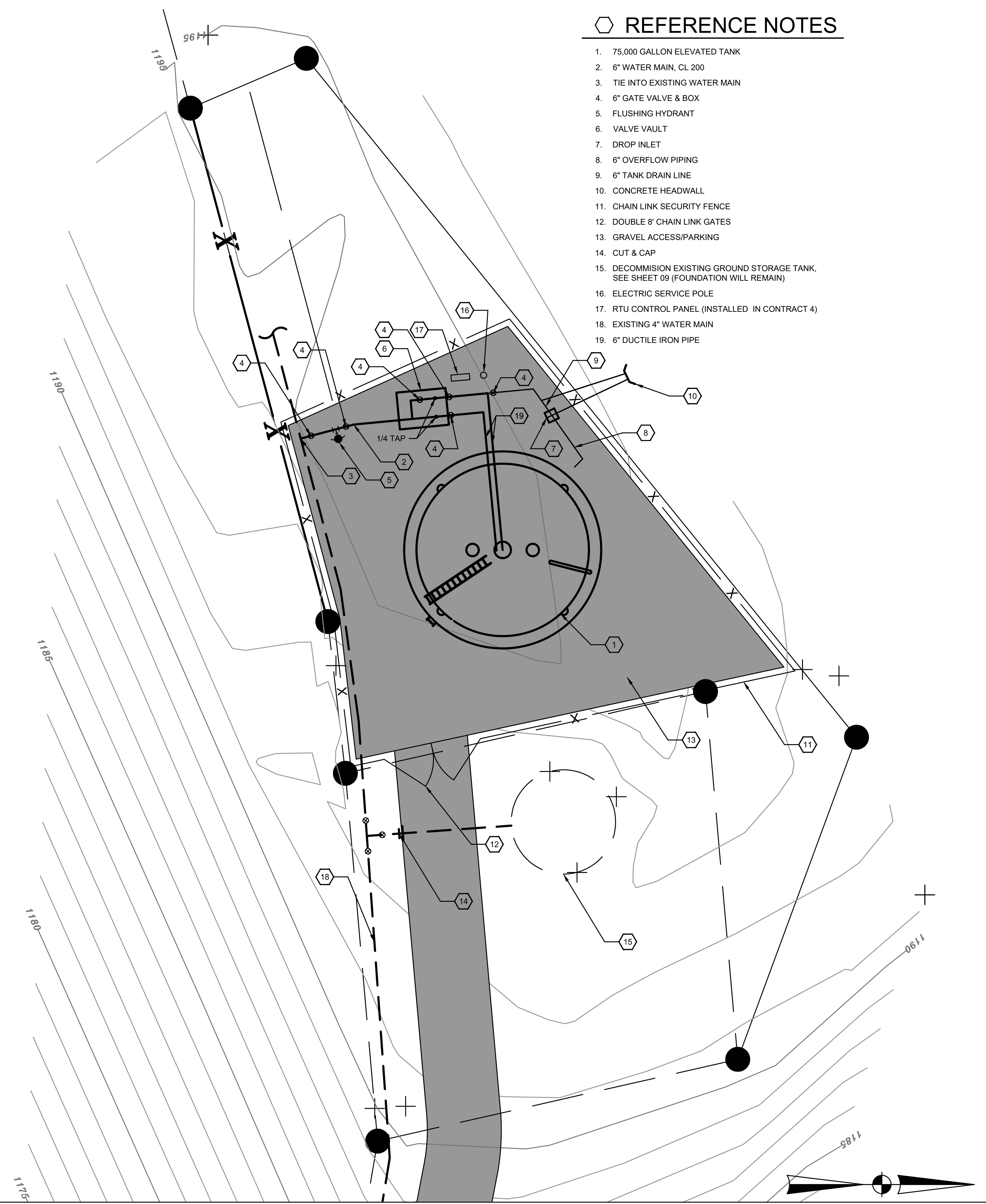


**REFERENCE NOTES**

- 75,000 GALLON ELEVATED TANK
- 6" WATER MAIN, CL 200
- TIE INTO EXISTING WATER MAIN
- 6" GATE VALVE & BOX
- FLUSHING HYDRANT
- VALVE VAULT
- DROP INLET
- 6" OVERFLOW PIPING
- 6" TANK DRAIN LINE
- CONCRETE HEADWALL
- CHAIN LINK SECURITY FENCE
- DOUBLE 8" CHAIN LINK GATES
- GRAVEL ACCESS/PARKING
- CUT & CAP
- DECOMMISSION EXISTING GROUND STORAGE TANK. SEE SHEET 09 (FOUNDATION WILL REMAIN)
- ELECTRIC SERVICE POLE
- RTU CONTROL PANEL (INSTALLED IN CONTRACT 4)
- EXISTING 4" WATER MAIN
- 6" DUCTILE IRON PIPE

**SITE PLAN - NEW KY 504 WEST TANK**

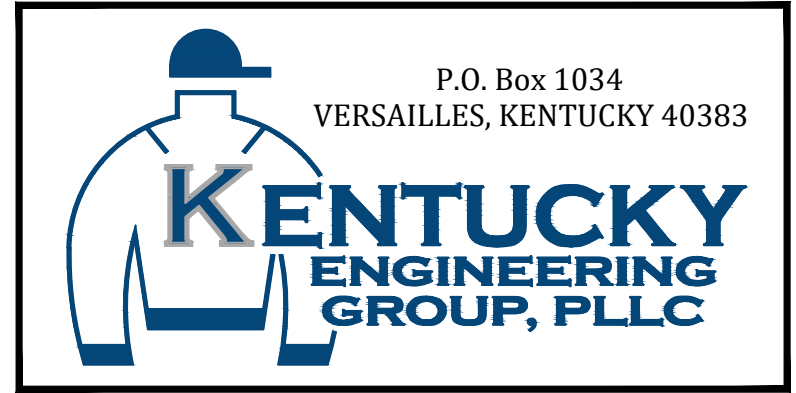
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DATE:	NOVEMBER, 2017
PROJECT MGR:	LRS
DRAWN BY:	JAB
CHECKED BY:	JCT
SCALE:	AS NOTED
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**PHASE 11 WATER SYSTEM IMPROVEMENTS**  
 FOR THE  
**RATTLESNAKE RIDGE WATER DISTRICT**

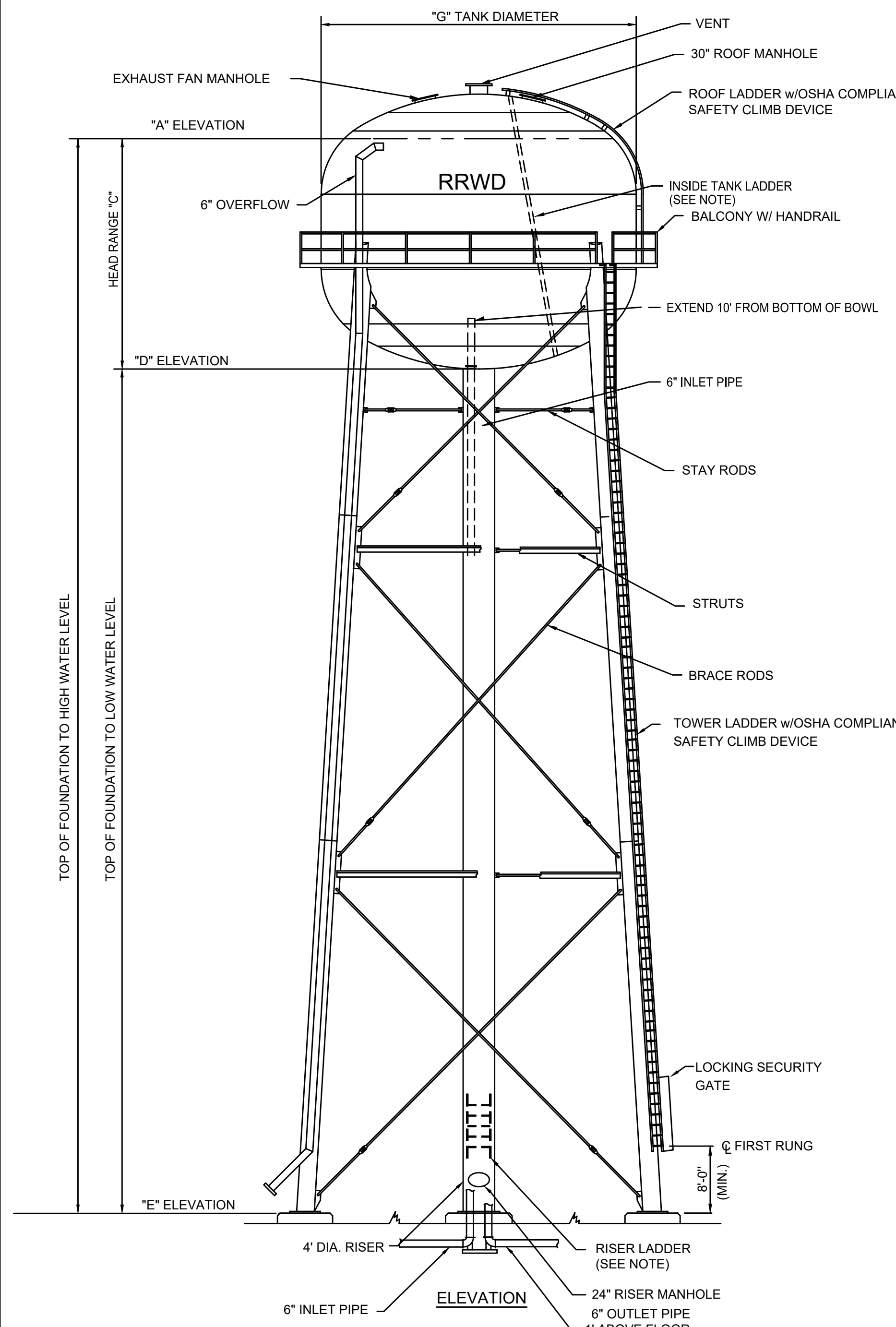
**CONTRACT 2 - NEW ELEVATED STORAGE TANKS**  
 NEW KY 504 WEST TANK  
 AERIAL & SITE PLAN

PROJECT NO.  
**15036**  
 SHEET NO.  
**03**

BID DOCUMENTS



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**ELEVATED TANK - ELEVATION VIEW**  
NOT TO SCALE

ELEVATED WATER TANK SCHEDULE		
DESCRIPTION	KY 504 EAST TANK	KY 504 WEST TANK
"A" TANK OVERFLOW ELEVATION	1208'	1292'
"B" NOMINAL TANK CAPACITY	100,000 GALS.	75,000 GALS.
"C" HEAD RANGE	22'-0"	19'-3"
"D" BOTTOM OF BOWL EL.	1186'	1272.7'
"E" TOP OF FOUNDATION EL.	1125'	1194'
"F" INLET/OUTLET PIPE DIA.	6"	6"
"G" TANK DIAMETER	30"	28"
"H" GROUND EL.	1125'	1190'

**MATERIALS:**

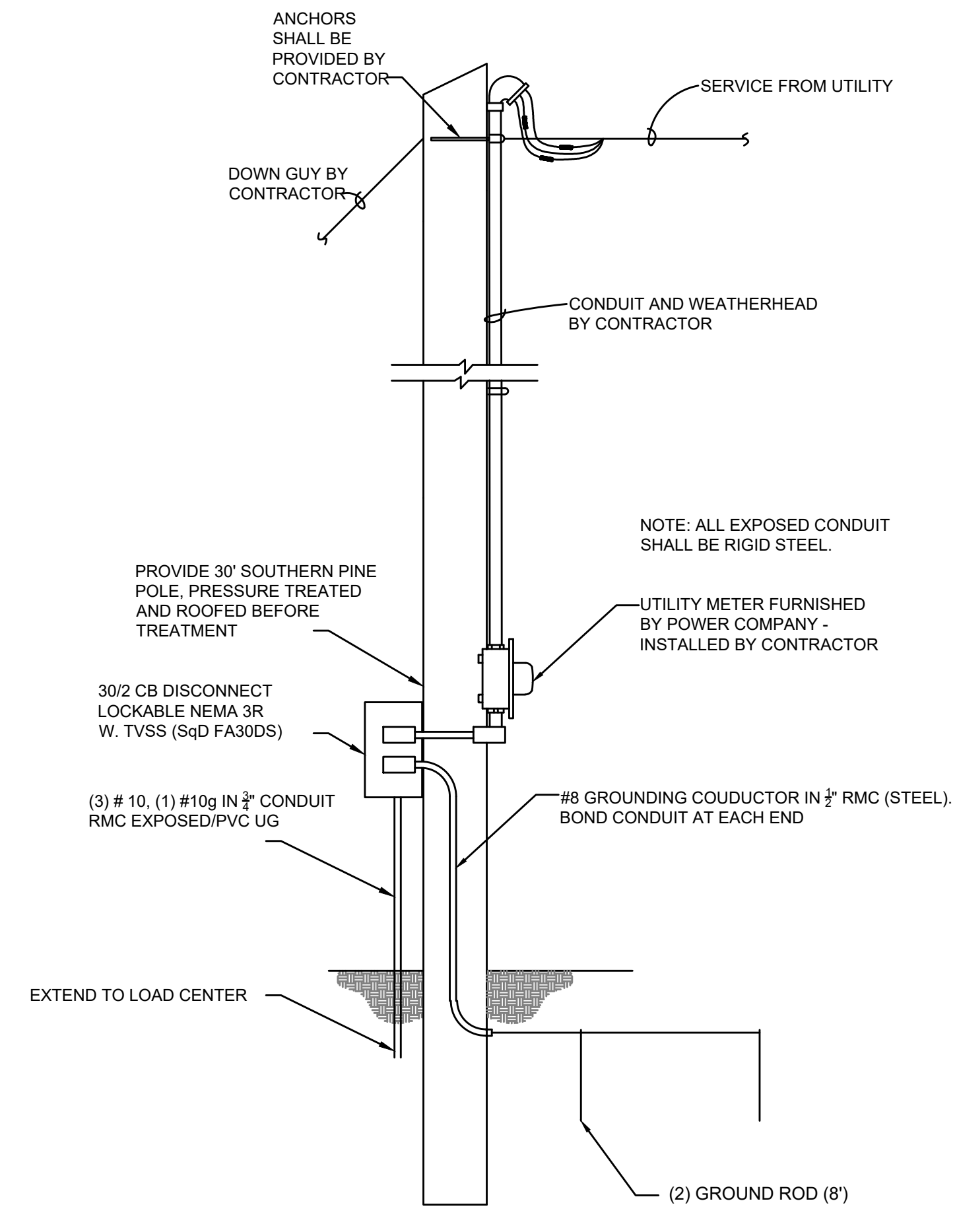
- STEEL PLATE: ASTM A283 GR. C / A36
- STRUCTURAL STEEL SHAPES: ASTM A36
- BRACE RODS AND STAY RODS: ASTM
- A36 LADDER RUNGS: ASTM A706

**GENERAL:**

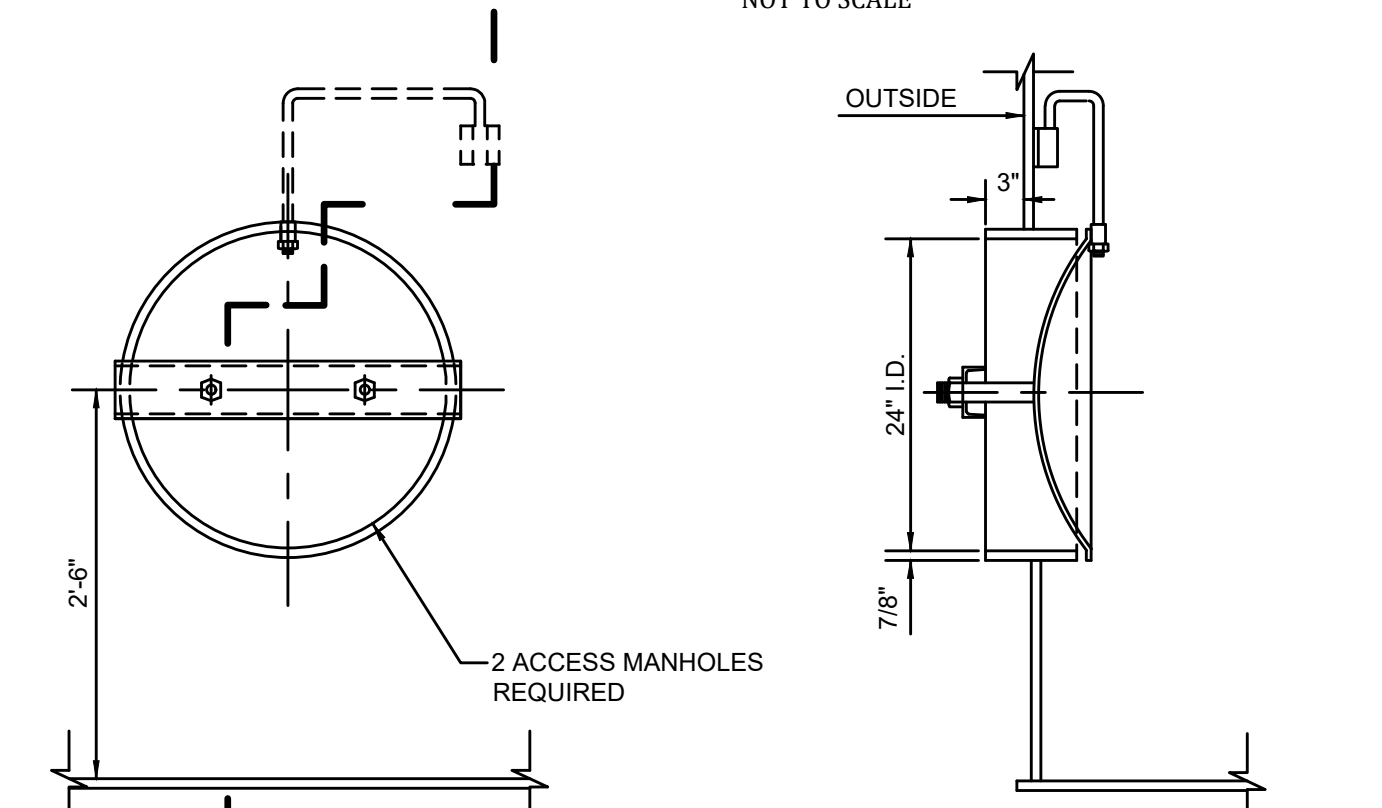
- ACCESSORIES SHOWN ON ELEVATION DRAWING ARE ROTATED FOR CLARITY
- ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS, AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS
- SEE PROJECT SPECIFICATIONS FOR SHOP AND FIELD PAINT REQUIREMENTS.
- STERILIZE TANK IN ACCORDANCE WITH AWWA C652-92 AND PROJECT SPECIFICATIONS.
- FOR TANKS LOCATED IN REGIONS WHERE FREEZING CONDITIONS MAY OCCUR CONSIDERATION SHALL BE GIVEN TO OMISSION OF INSIDE TANK & RISER LADDERS.

**FOUNDATION NOTES:**

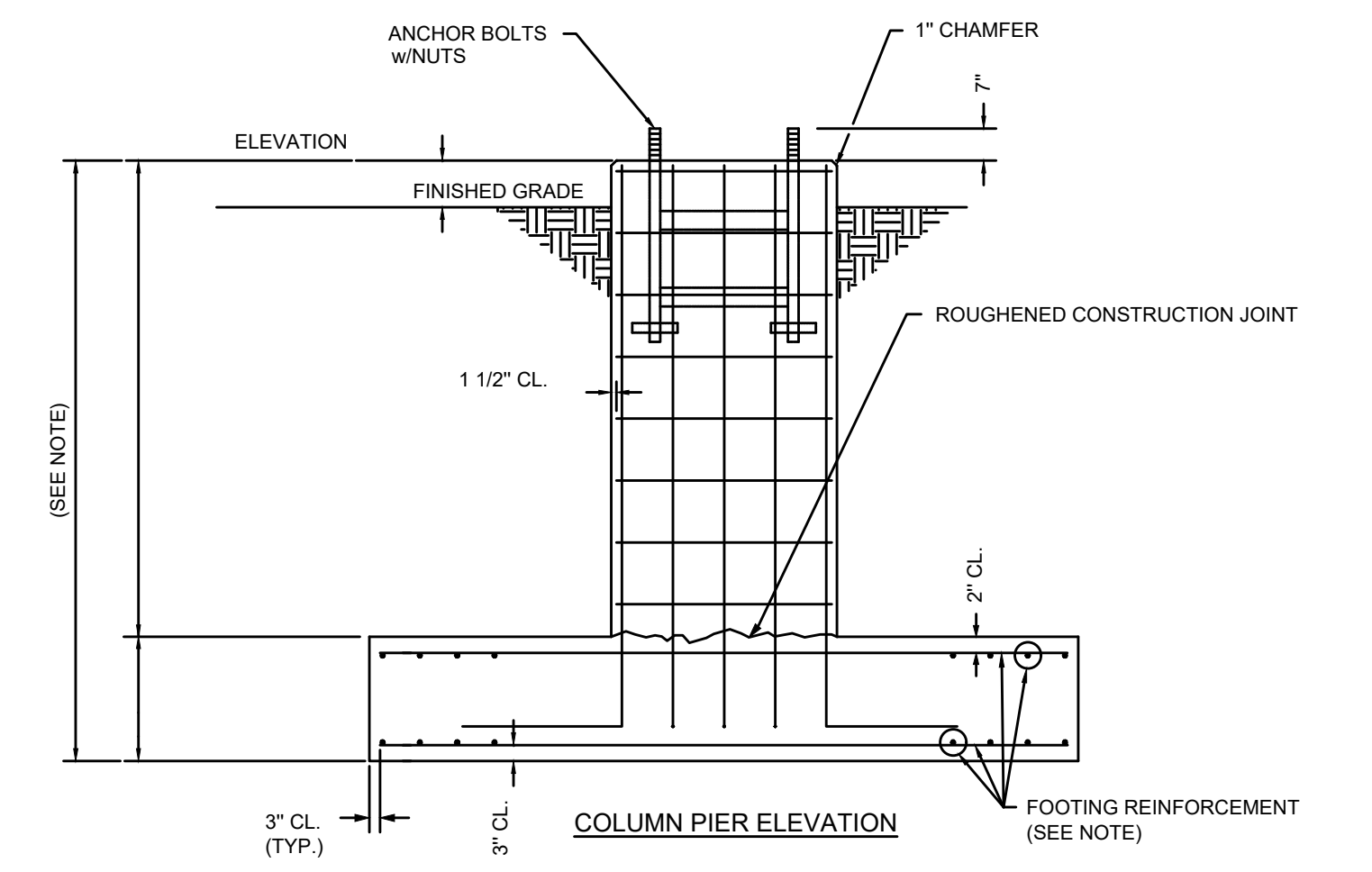
- FOUNDATION DESIGN WILL BE THE RESPONSIBILITY OF THE TANK CONTRACTOR.
- PEDESTAL & FOOTING DIMENSIONS & CONCRETE REINFORCEMENT SHALL BE DETERMINED BY THE TNAK CONTRACTOR.
- FOUNDATION CONSTRUCTION SHALL COMPLY WITH AWWA D100-98, A.C.I. 301-96 & APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS & GEOTECHNICAL REPORT.
- CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI @ 28 DAYS.
- REINFORCEMENT SHALL CONFORM TO ASTM A615 GR.60.
- CONSTRUCTION JOINTS SHALL BE ROUGHENED ACROSS ENTIRE FACE WITH 1/4" MIN. INDENTATIONS.
- THE TOP OF CONCRETE FOR ALL PIERS INCLUDING THE CENTER PIER SHALL BE LEVEL & SHALL BE THE SAME ELEVATION (UNLESS OTHERWISE NOTED BY THE PLANS) WITH A MAX. DIFFERENTIAL OF (+/-) 1/2".
- ANCHOR BOLTS SHALL BE PLACED WITHIN (+/-) 1/8" OF THE PLAN DIMENSIONS AT THE TOP OF THE CONCRETE, PLUMB WITHIN 1/2" IN 12" AND EXTEND WITHIN 1/2" OF THE SPECIFIED PROJECTION ABOVE THE TOP OF THE FOUNDATION.
- CONTRACTOR SHALL NOTIFY GEOTECHNICAL ENGINEER TO CONFIRM SUB-SURFACE UPON EXCAVATION OF FOUNDATION.



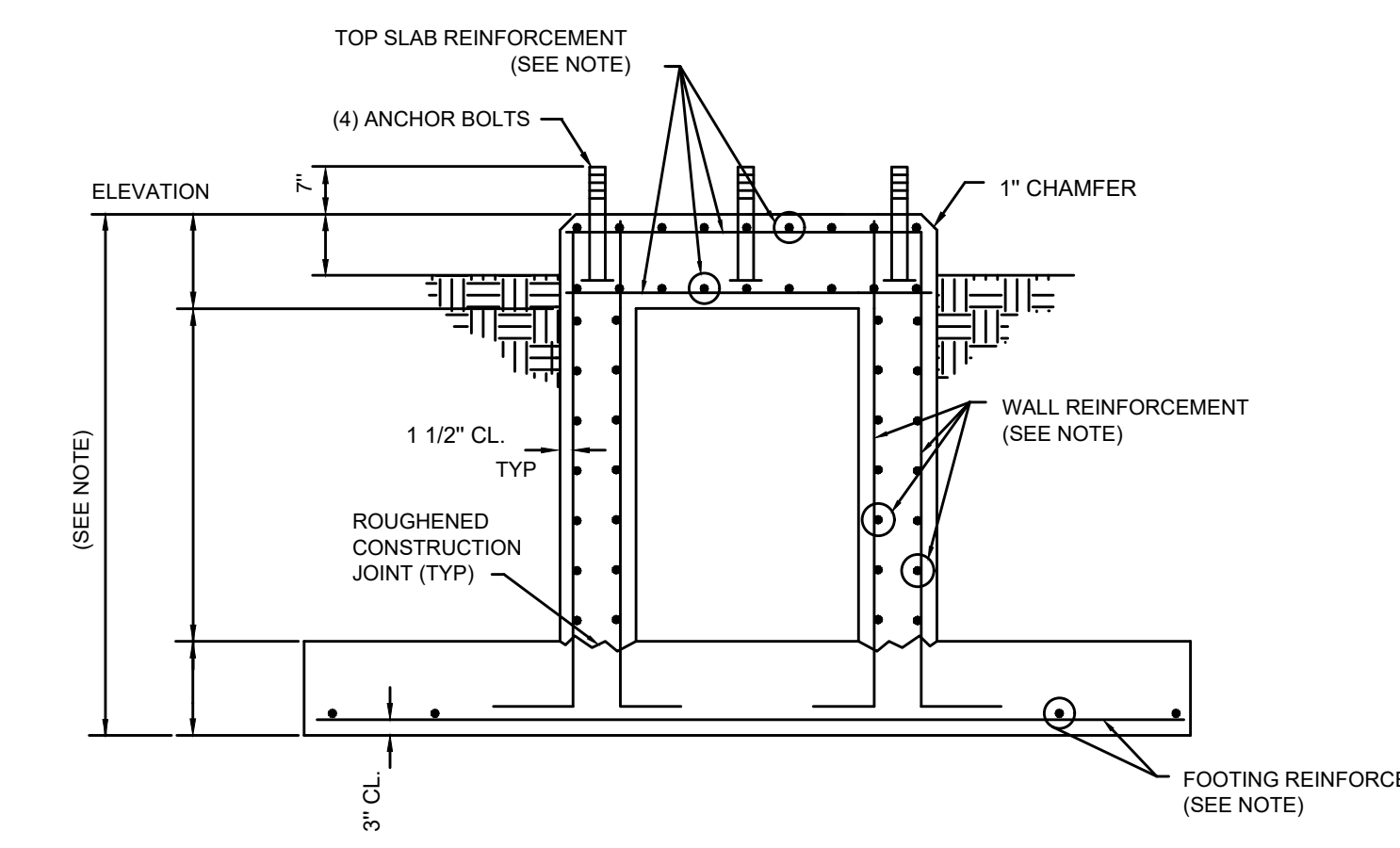
**ELECTRICAL SERVICE POLE DETAIL**  
NOT TO SCALE



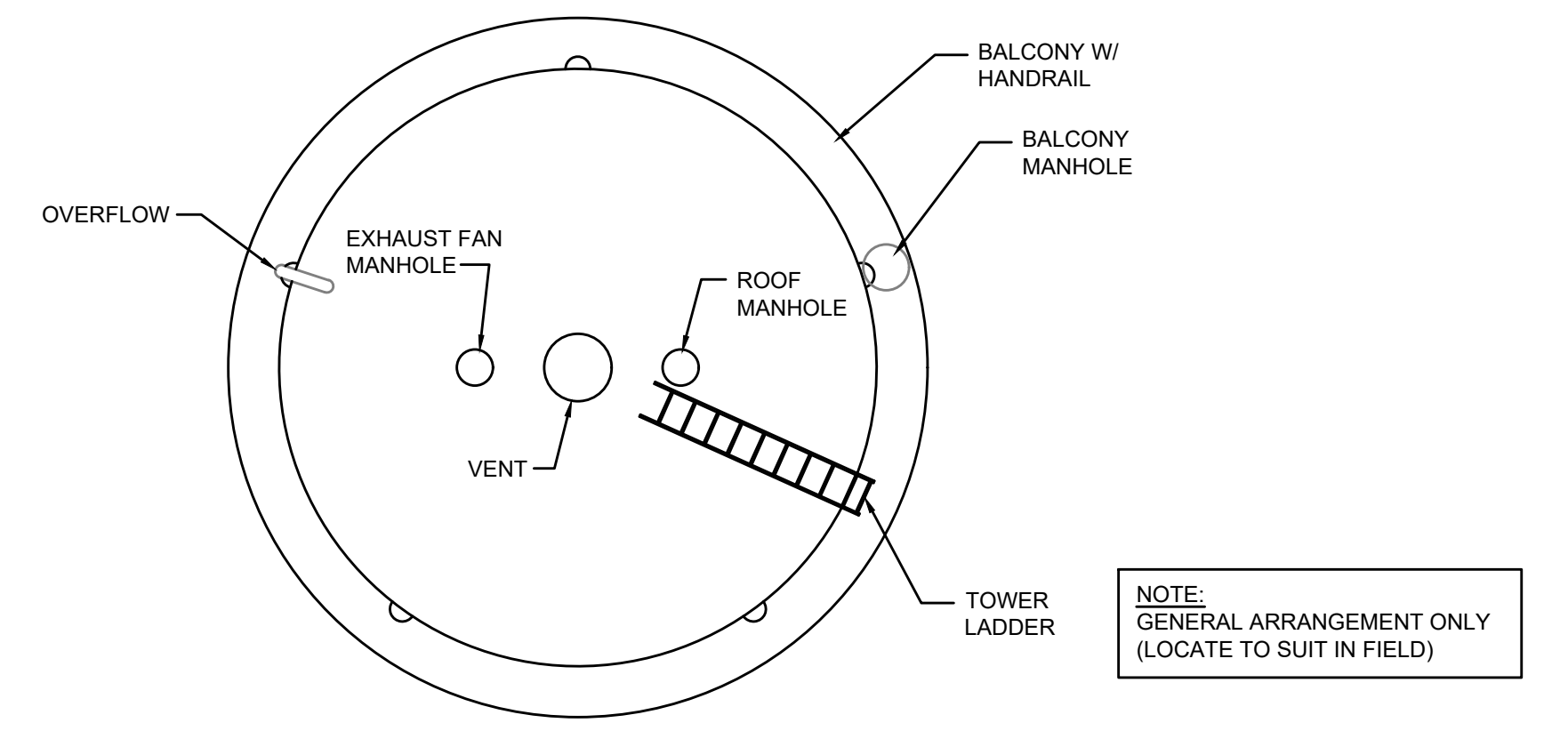
**24" ACCESS MANWAY W/DAVIT**  
NOT TO SCALE



**COLUMN PIER ELEVATION**  
NOT TO SCALE



**SECTION THRU CENTER PIER**  
NOT TO SCALE



**ELEVATED TANK - PLAN VIEW**  
NOT TO SCALE

**RECORD DRAWINGS**

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BY: **BLUEGRASS ENGINEERING, PLLC** DATE: **01/20**

**BLUEGRASS ENGINEERING PLLC**  
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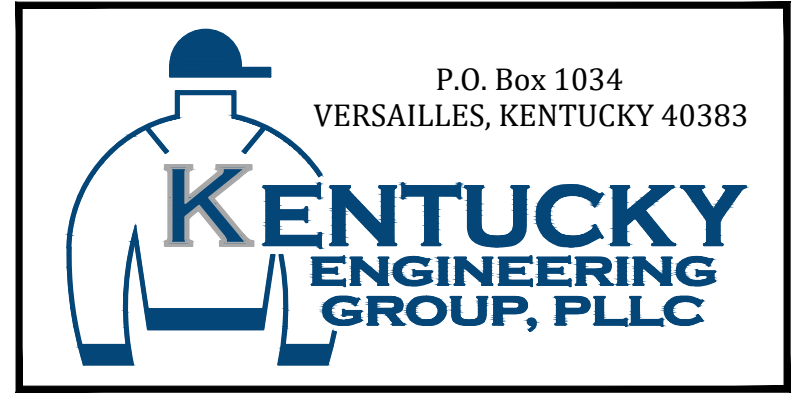
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DRAWN BY: JAB  
CHECKED BY: JCT  
SCALE: AS NOTED  
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**PHASE 11 WATER SYSTEM IMPROVEMENTS**  
FOR THE  
RATTLESNAKE RIDGE WATER DISTRICT

**CONTRACT 2 - NEW ELEVATED STORAGE TANKS**

ELEVATED TANK

PROJECT NO.  
**15036**

SHEET NO.  
**04**

BID DOCUMENTS



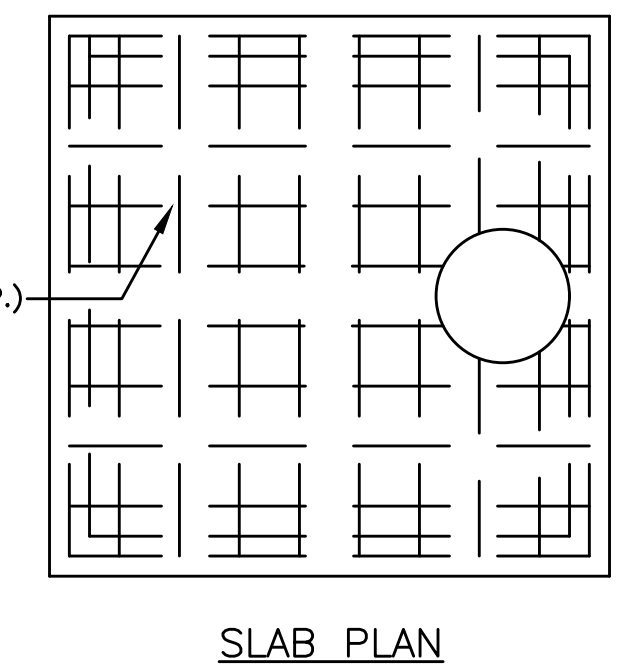
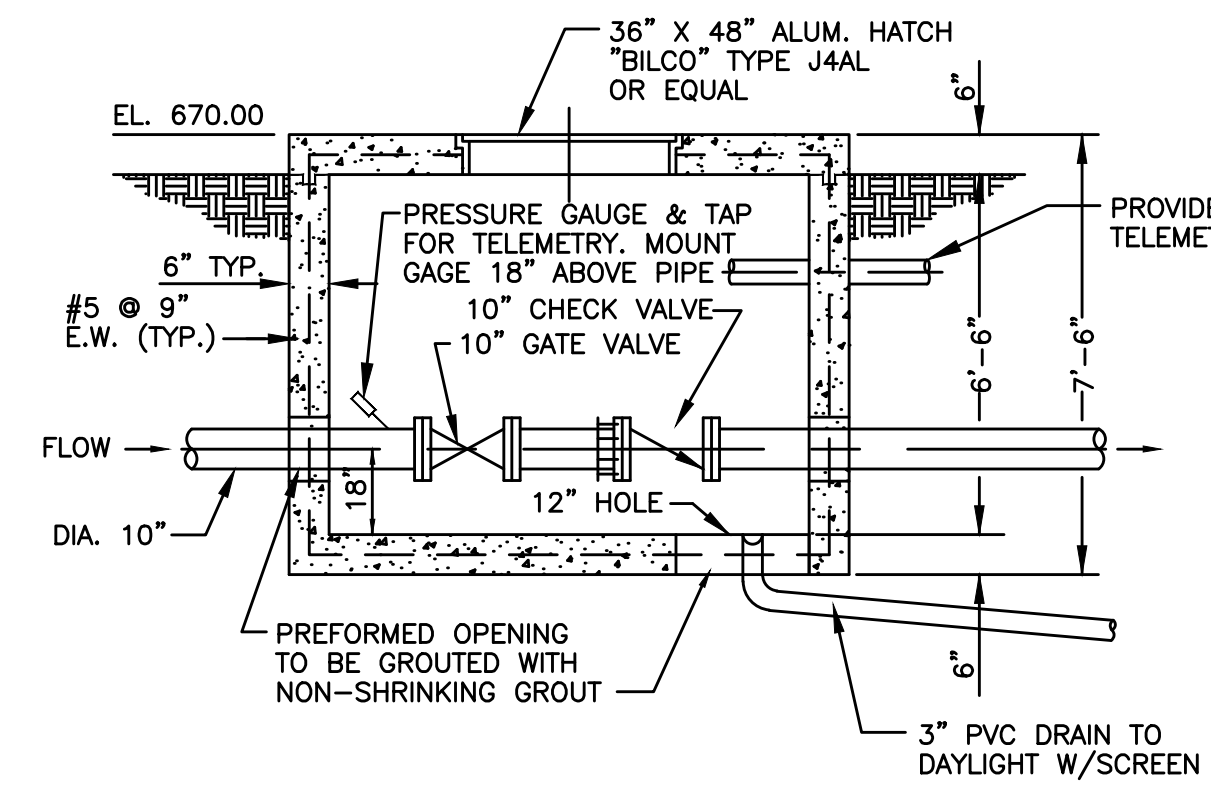
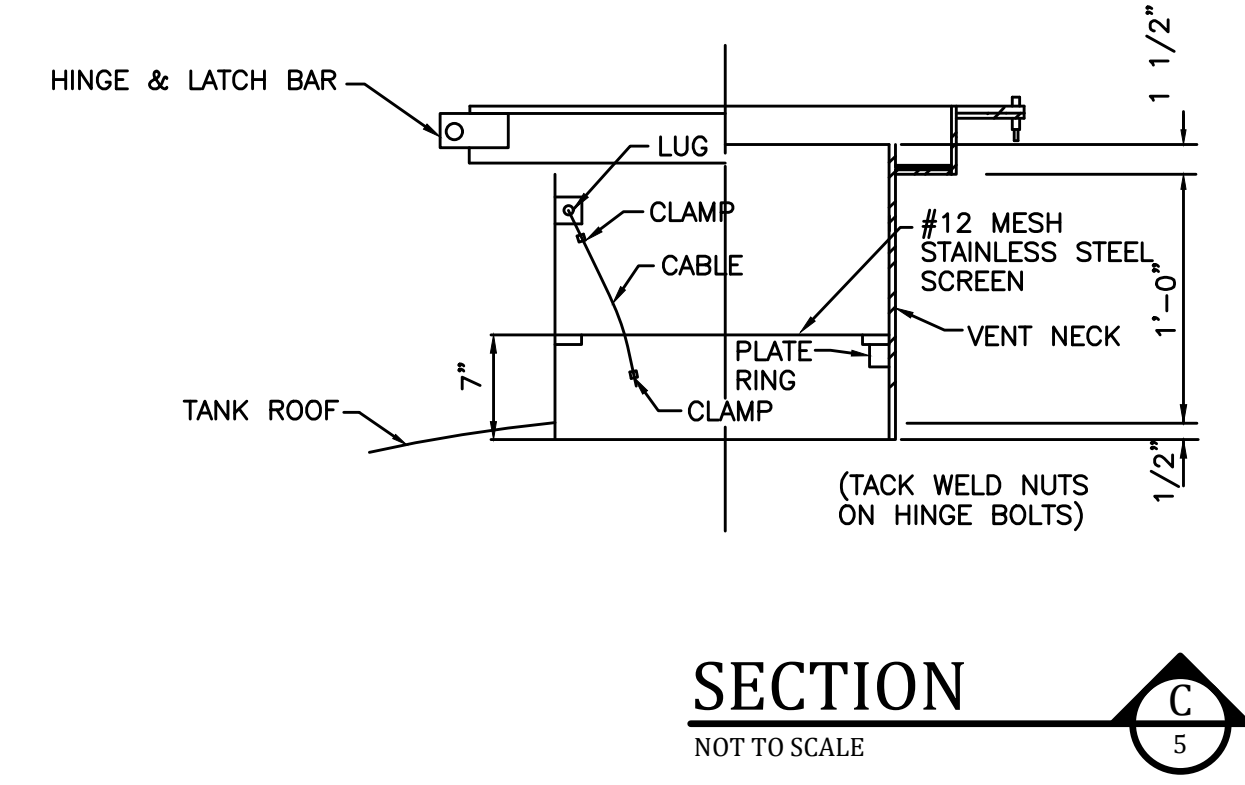
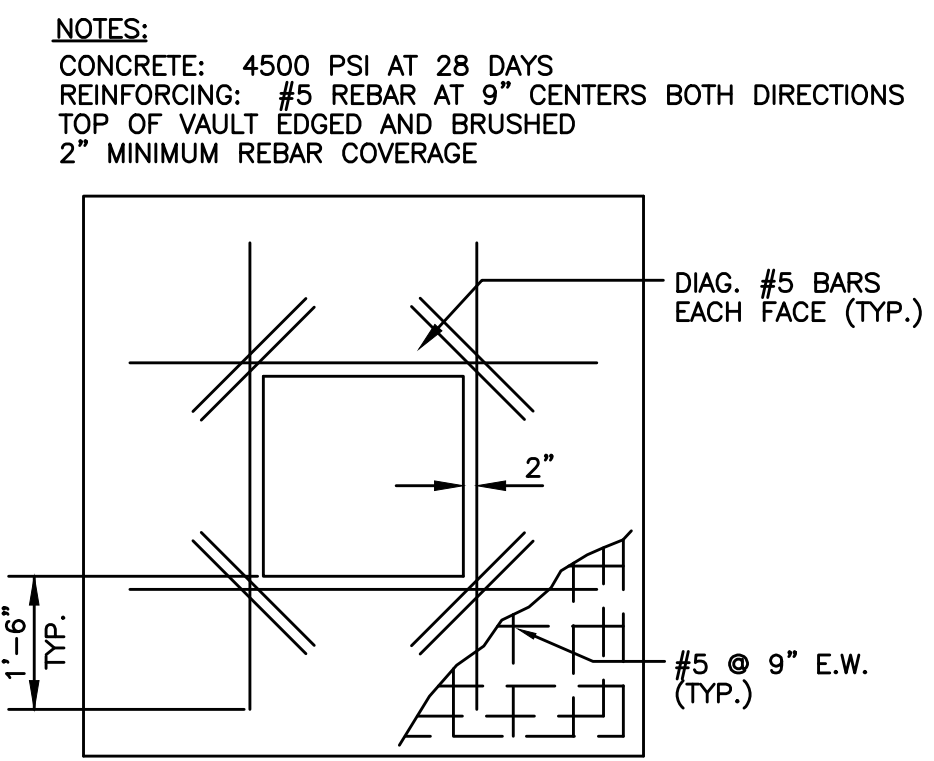
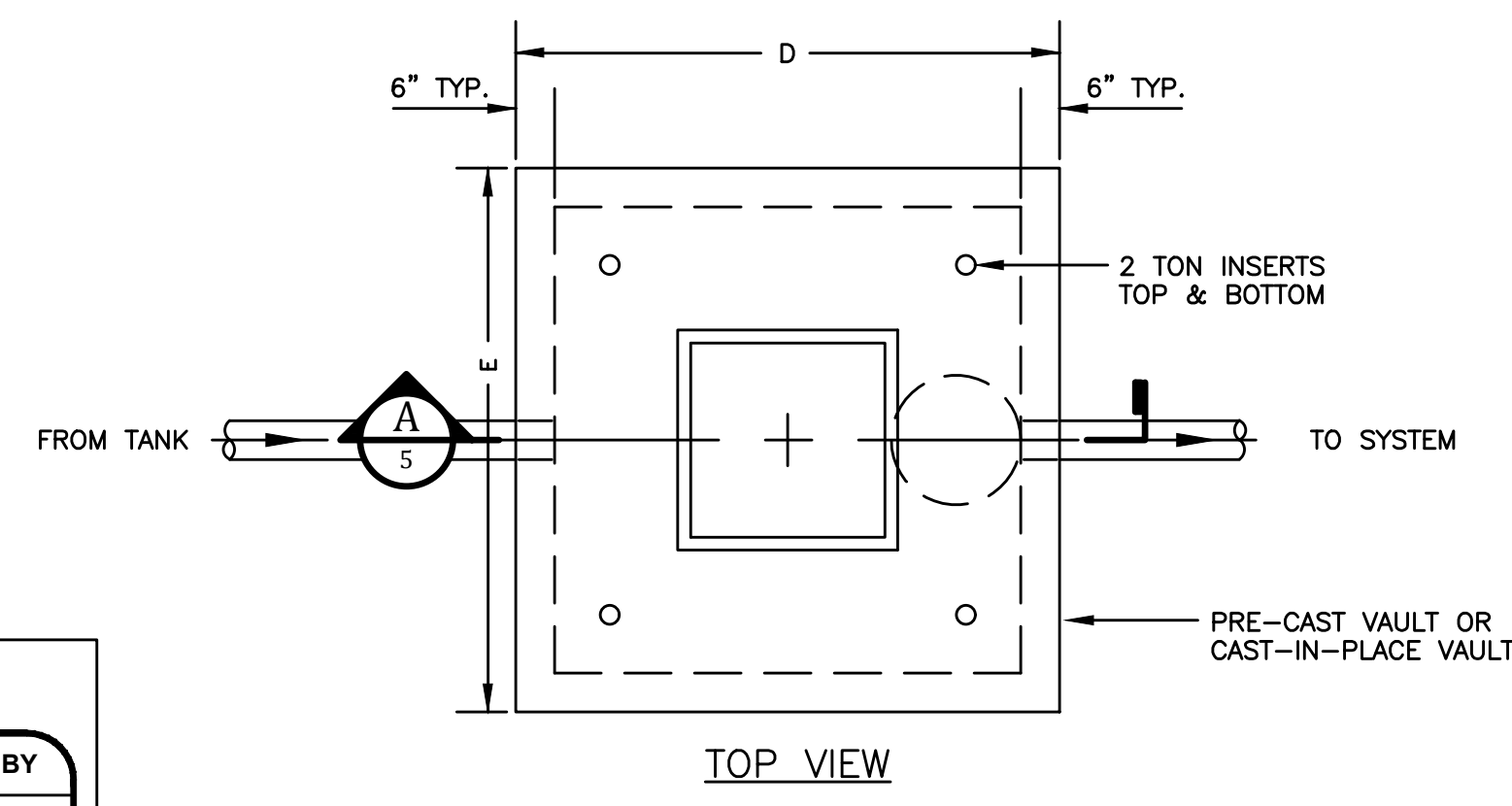
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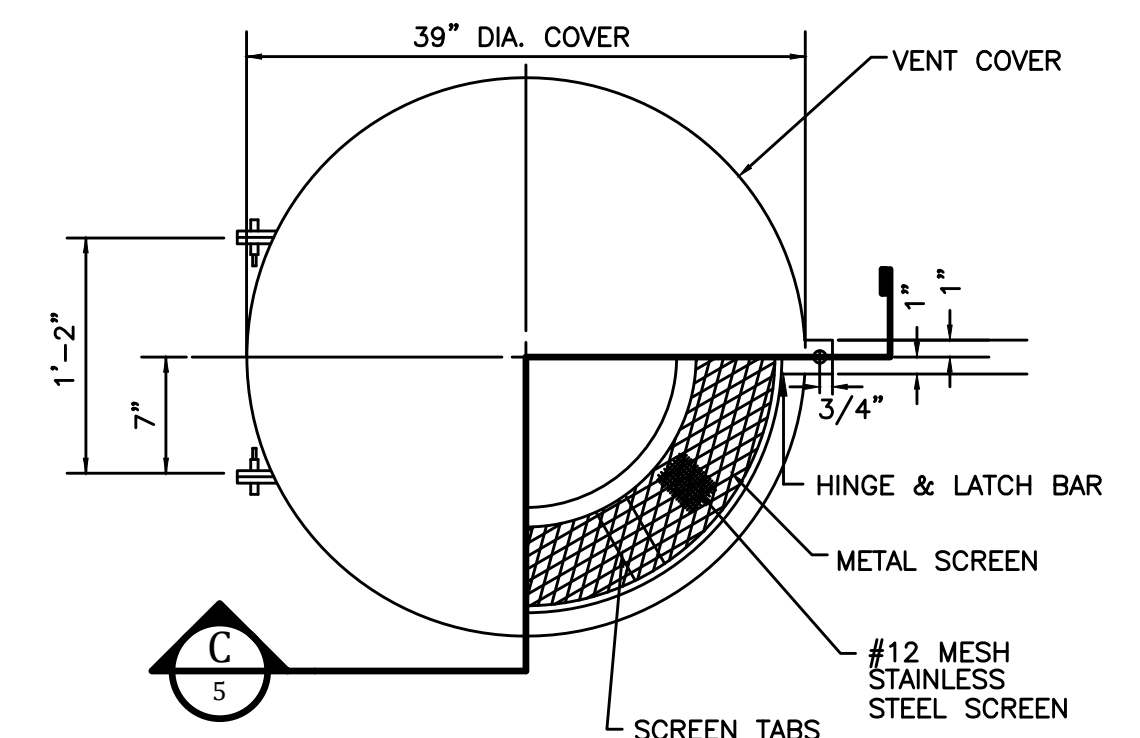
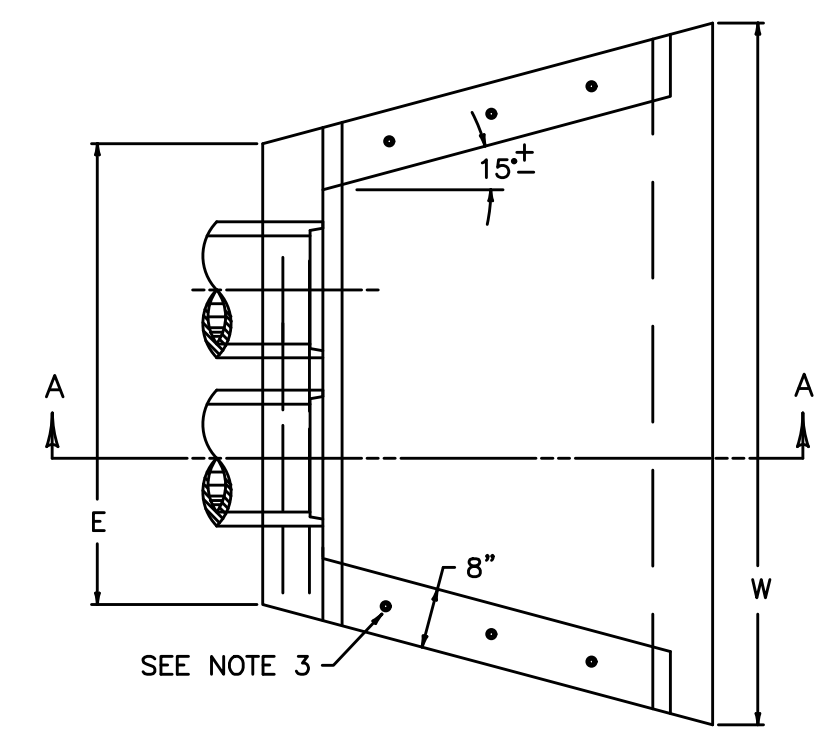
NO.	DATE	REVISIONS	BY
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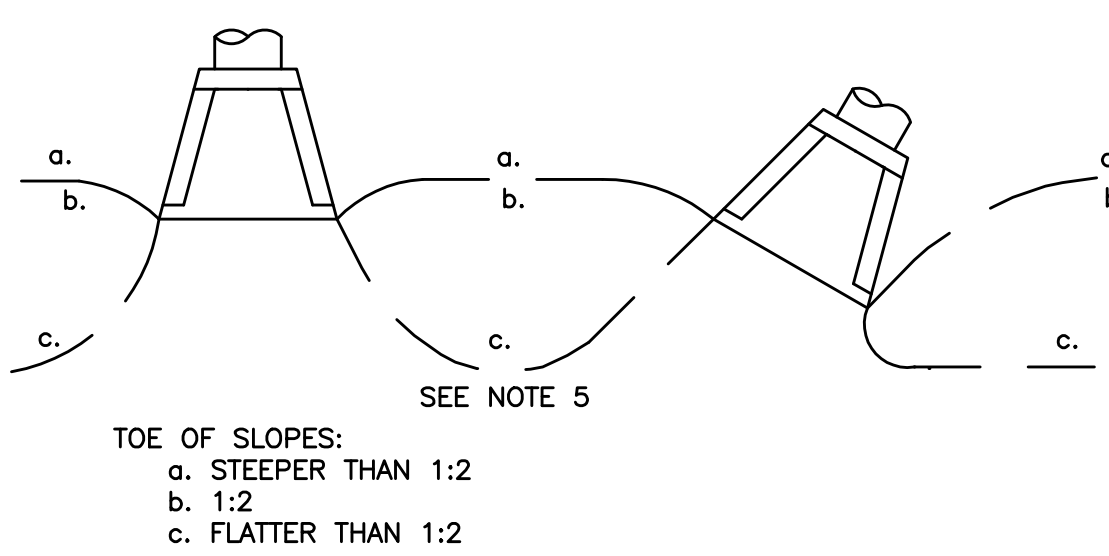
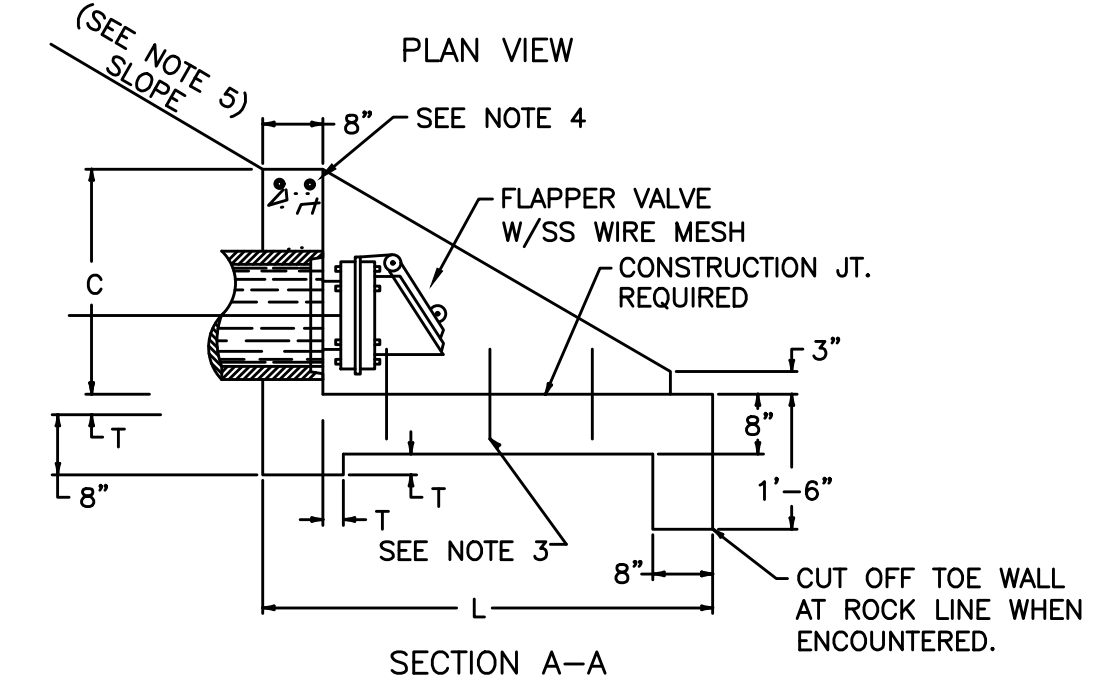
NOTE: THE EXTRA REINF. SHOWN SHALL BE PLACED AROUND ALL OPENINGS 6" OR LARGER IN POURED CONC. - WHERE VERT. OR HORIZ. STL. IS CUT BY OPENING. TWO EXTRA BARS SHALL BE PLACED ON EACH SIDE OF THE OPENING.

**SECTION A-A**  
NOT TO SCALE

**TANK VALVE VAULT**  
NOT TO SCALE



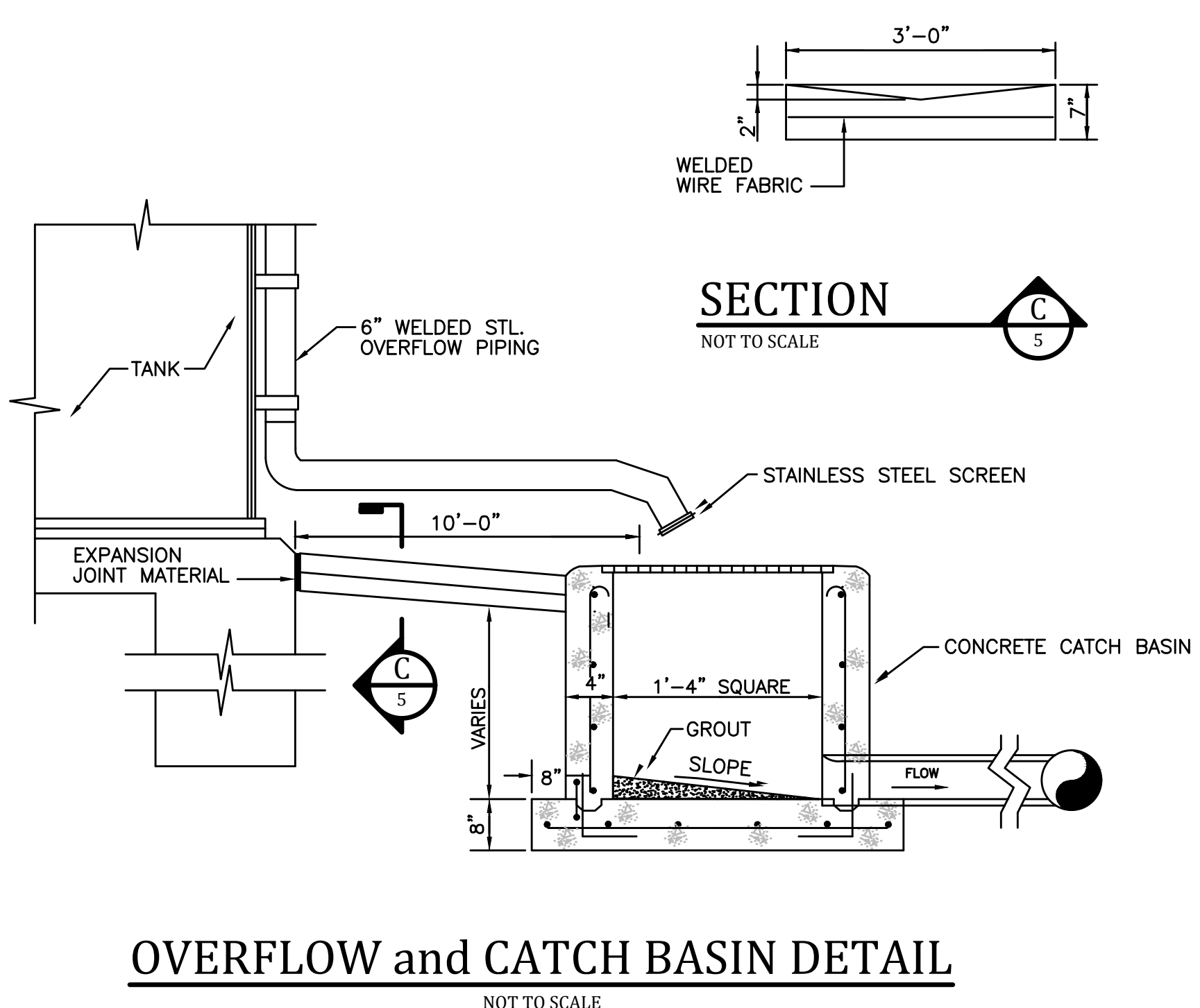
**24" DIAMETER ROOF VENT**  
NOT TO SCALE



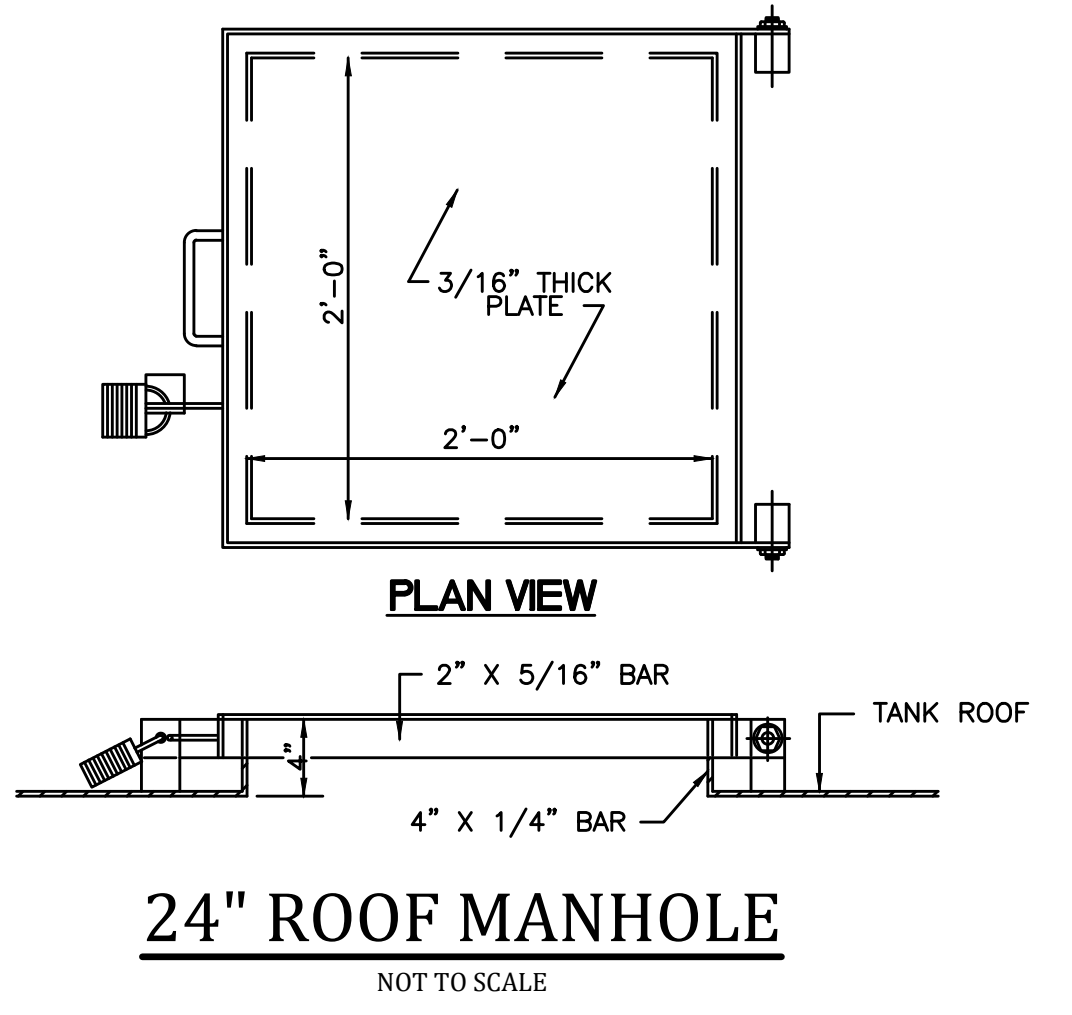
**TANK DRAIN and HEADWALL DETAIL**  
NOT TO SCALE

PIPE DIA. OR EQUIV. DIA.	SHAPE	DIMENSIONS							CLASS A CONC CY	REINF STEEL Lbs.
		C	E	F	L	W	T			
PER SITE PLAN	○	1'-9"	3'-6"	2'-3"	3'-6"	5'-0"	2"	0.58	7	

- NOTES
- DIMENSIONS AND QUANTITIES ARE BASED ON CONCRETE PIPE AND WILL VARY INSIGNIFICANTLY FOR CORRUGATED METAL PIPE.
  - REINFORCING STEEL : MINIMUM GRADE 40, BARS EVENLY SPACED.
  - 6 - NO. 4 x 12 INCH DOWEL BARS.
  - 2 - NO. 4 x (E DIMENSION MINUS 4 INCHES).
  - SLOPES SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 1:2.
  - VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.
  - WING ANGLES AND/OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.
  - APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE. FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.
  - HEADWALLS ARE FOR CIRCULAR, ARCH, AND HORIZONTAL ELLIPTICAL 12" TO 27" EQUIVALENT PIPE SIZES. SEE CURRENT STD. DWG. ROI-001, FOR NON-CIRCULAR PIPE EQUIVALENT SIZES.
  - ALL DIMENSIONS ARE IN INCHES UNLESS SHOWN OTHERWISE.
  - FINAL LOCATION OF HEADWALL TO BE FIELD LOCATED FOR EACH TANK SITE FOR POSITIVE DRAINING.



**OVERFLOW and CATCH BASIN DETAIL**  
NOT TO SCALE



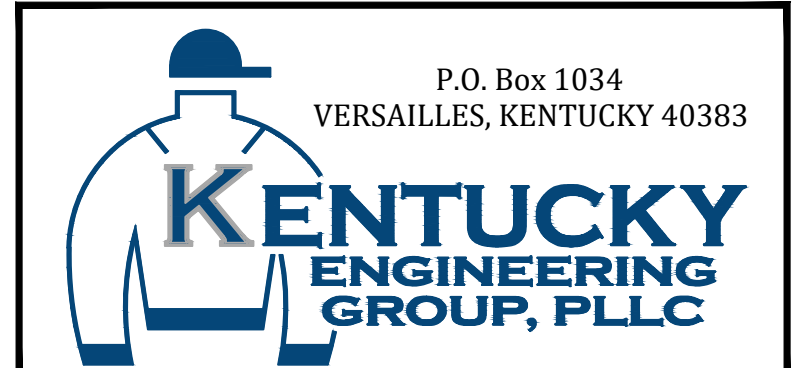
**24" ROOF MANHOLE**  
NOT TO SCALE

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PROJECT MGR: LRS  
DRAWN BY: JAB  
CHECKED BY: JCT  
SCALE: AS NOTED  
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PHASE 11 WATER SYSTEM IMPROVEMENTS FOR THE RATTLESNAKE RIDGE WATER DISTRICT

CONTRACT 2 - NEW ELEVATED STORAGE TANKS  
WATER STORAGE TANK STANDARD DETAILS

PROJECT NO. 15036  
SHEET NO. 05

PROJECT NO. 15036  
SHEET NO. 05

BID DOCUMENTS



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NO.	DATE	REVISIONS PER FIELD NOTES RECORD DRAWING REVISIONS	BY
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 222 East Main Street, Ste. 1 - Georgetown, KY 40324

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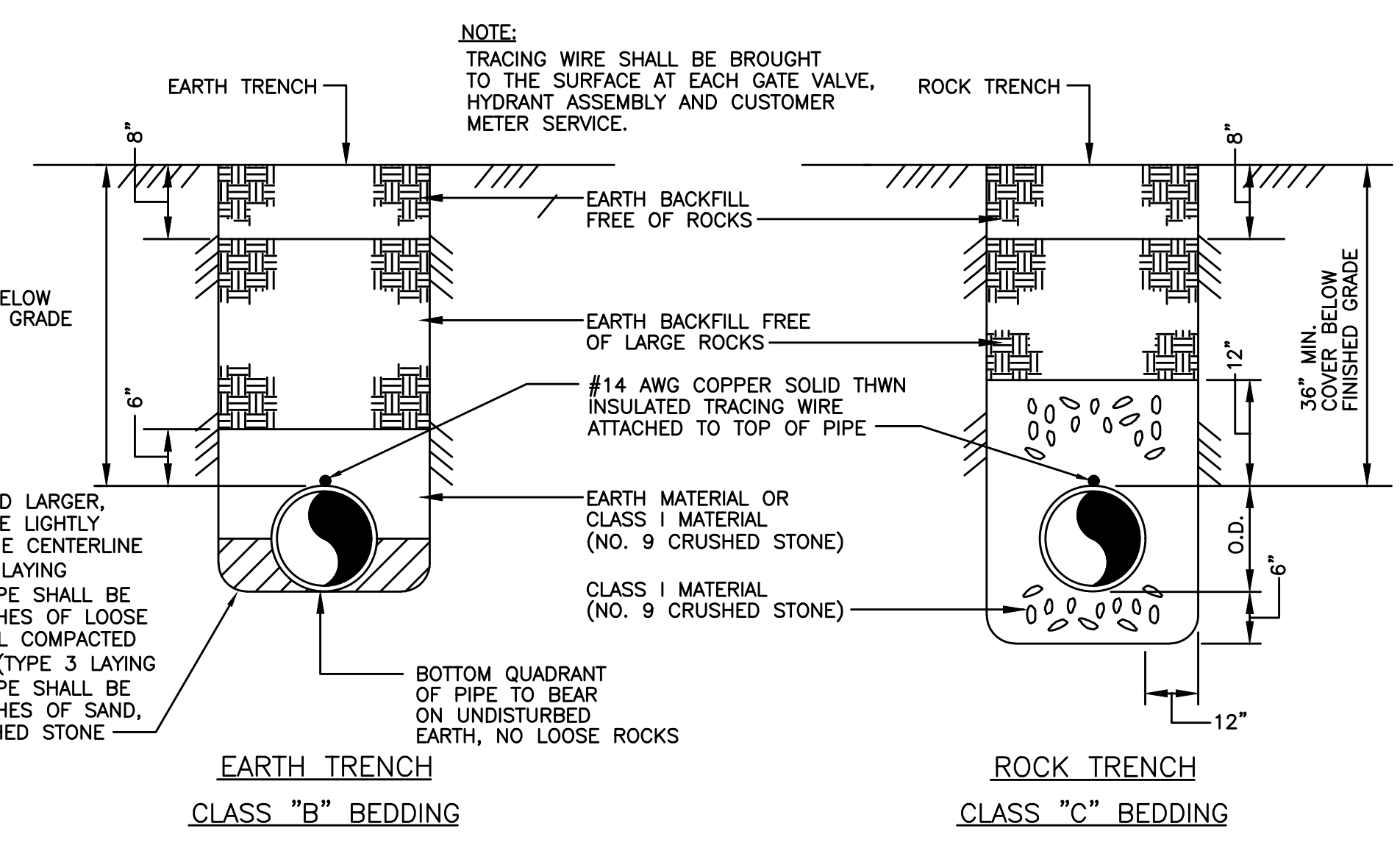
**KENTUCKY ENGINEERING GROUP, PLLC**

**PHASE 11 WATER SYSTEM IMPROVEMENTS**  
 FOR THE RATTLESNAKE RIDGE WATER DISTRICT

**CONTRACT 2 - NEW ELEVATED STORAGE TANKS**  
 STANDARD DETAILS

PROJECT NO. 15036  
 SHEET NO. 06

BID DOCUMENTS



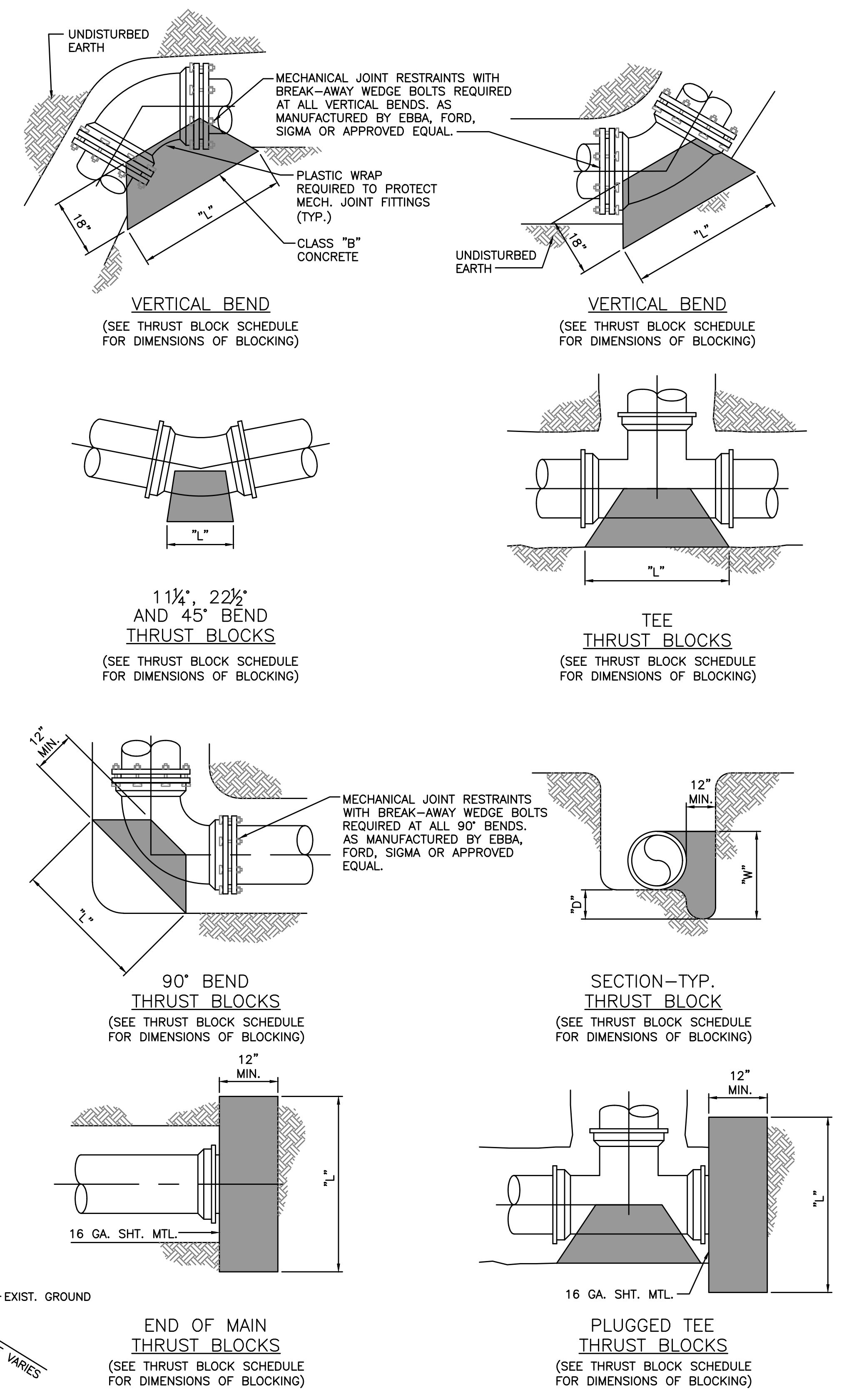
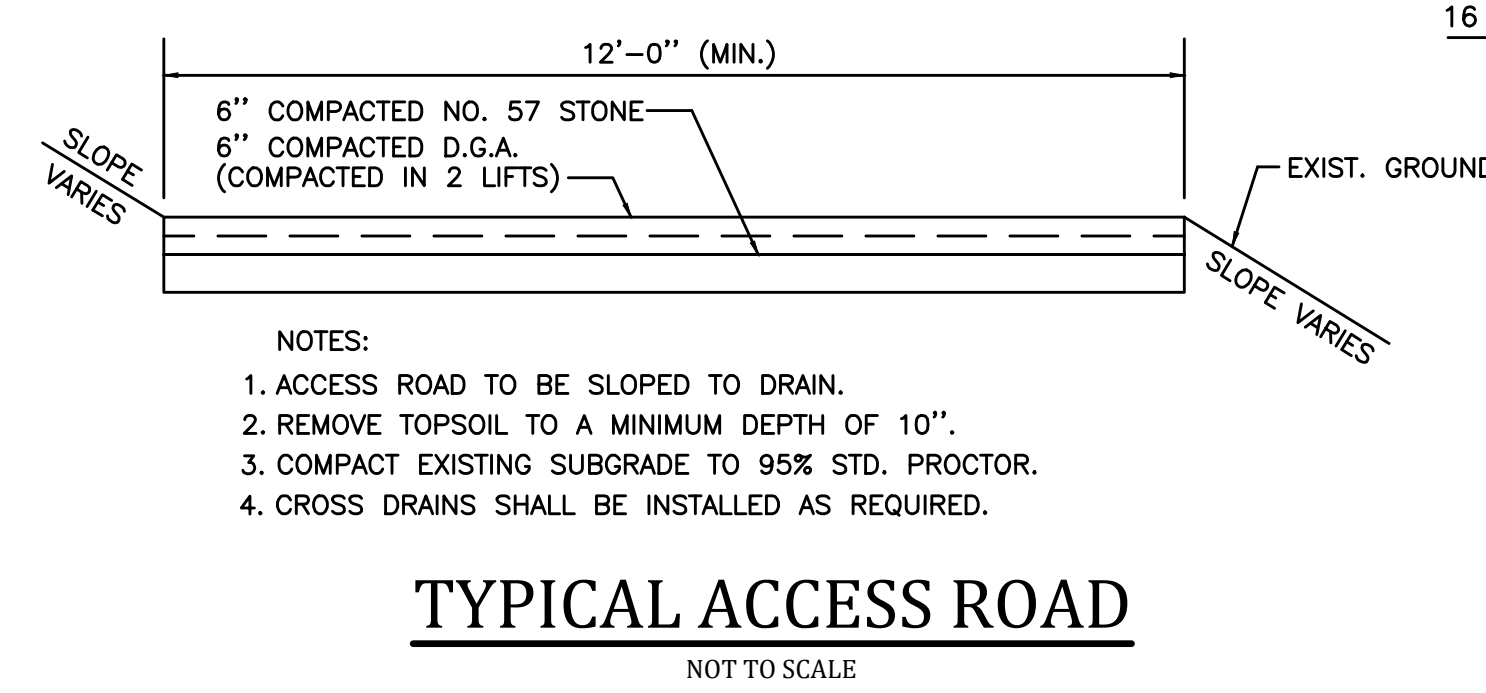
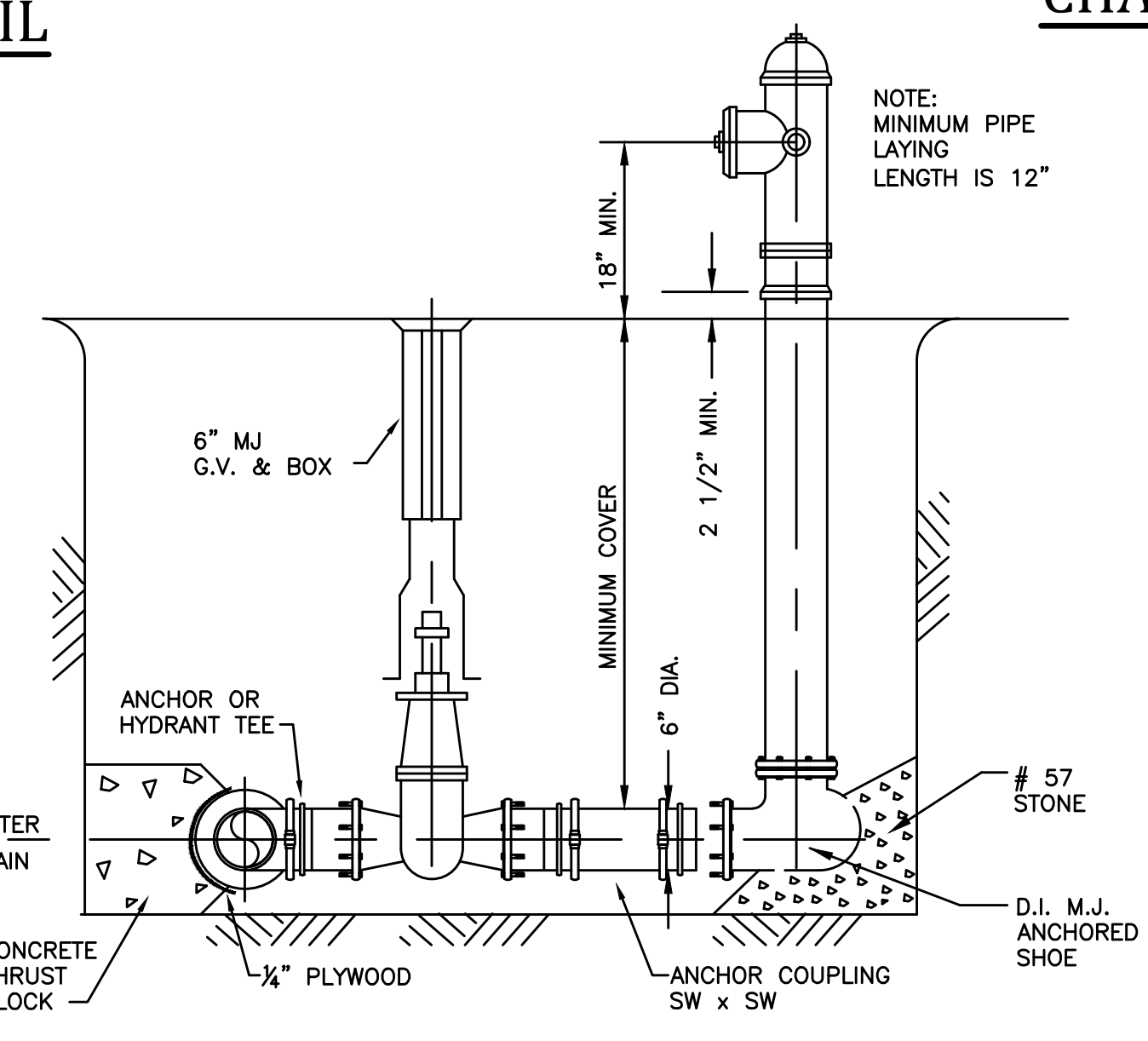
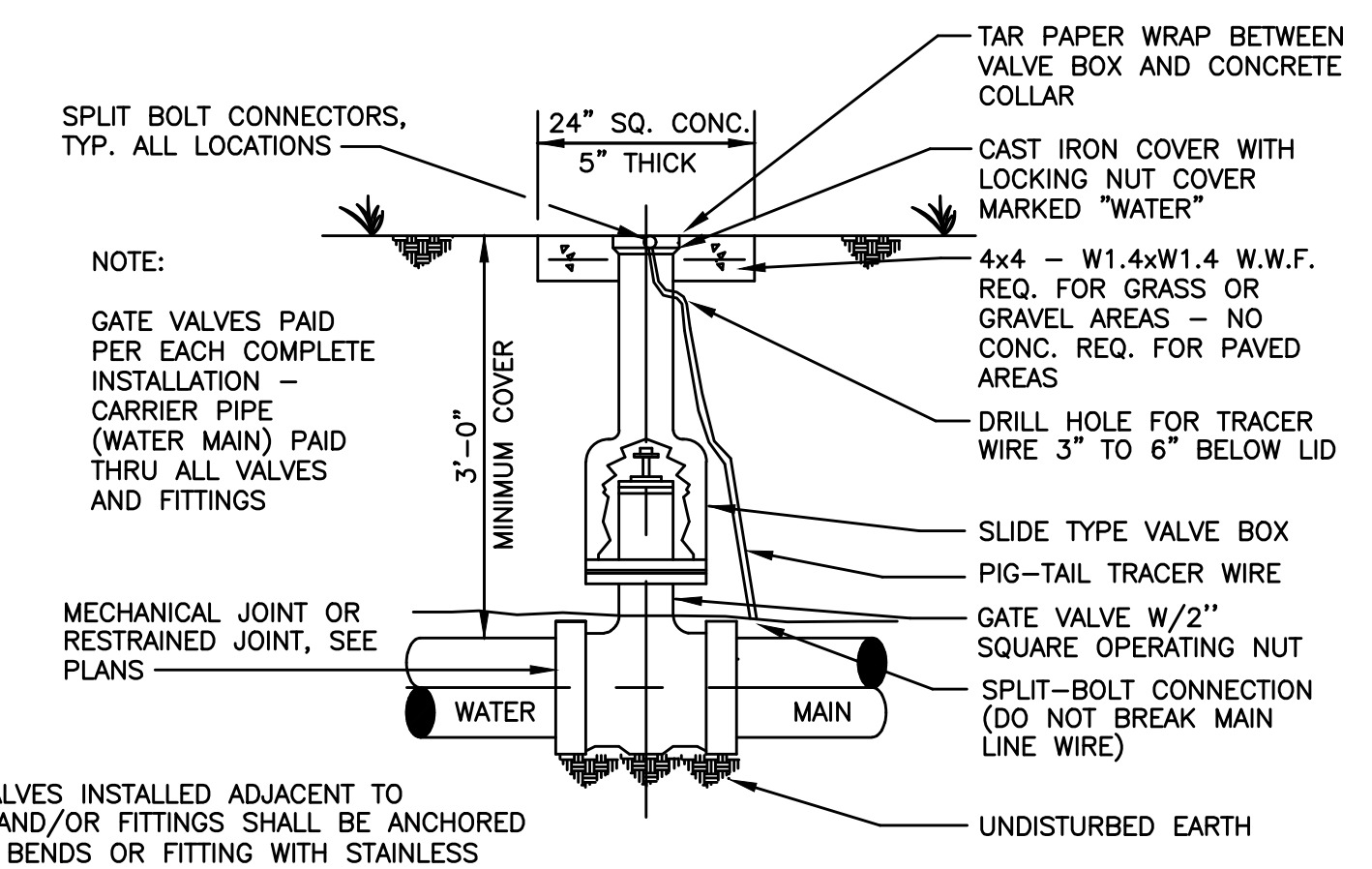
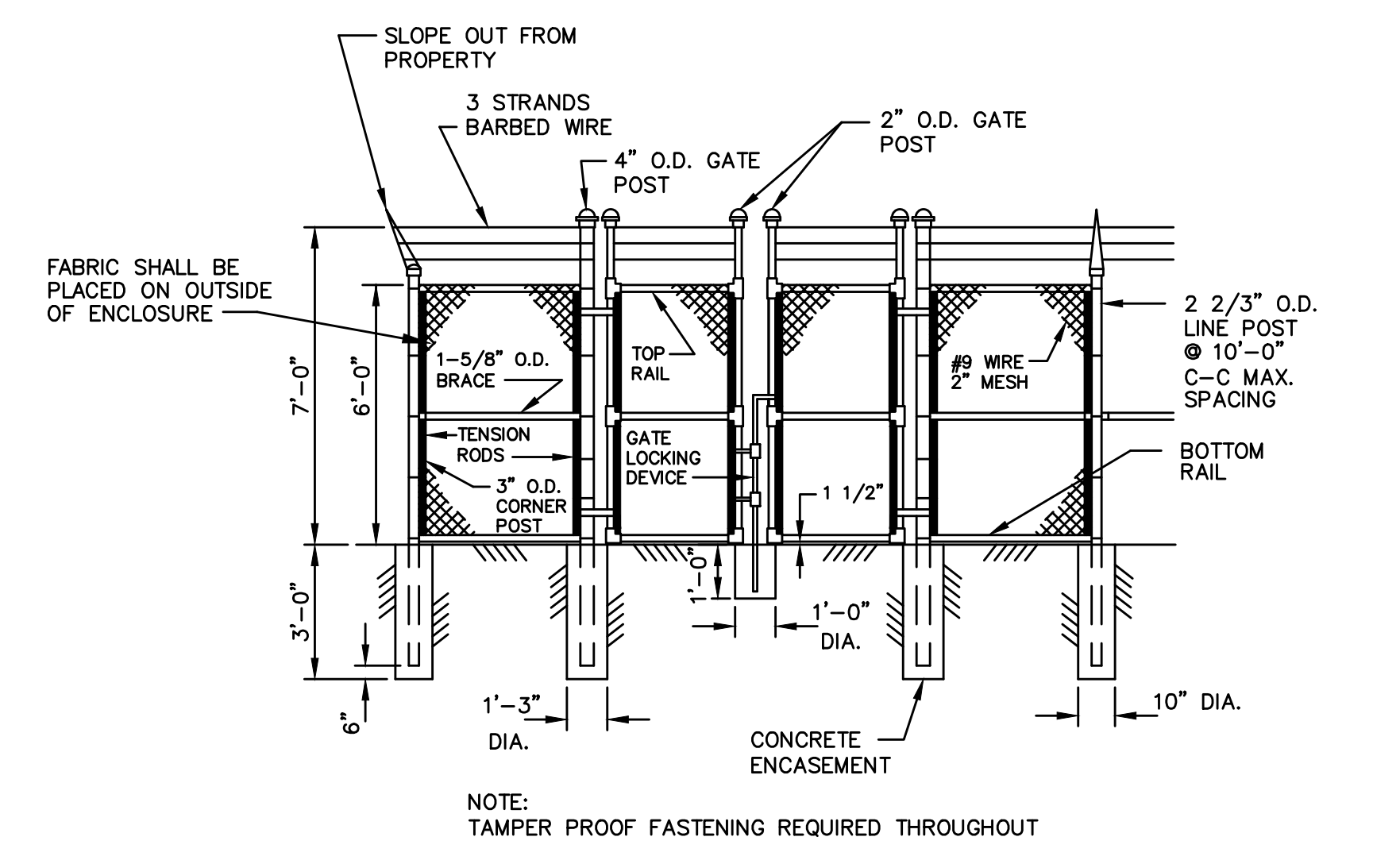
**THRUST BLOCK SCHEDULE - CLASS 200 PVC** SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 3000 PSF

PIPE SIZE	90° BEND				45° BEND				22 1/2° BEND				11 1/2° BEND				TEE & DEAD ENDS								
	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L					
4"	1.78	0.07	12"	16"	16"	1.00	0.04	12"	12"	12"	0.50	0.02	12"	12"	6"	6"	6"	1.50	0.06	12"	18"	12"			
6"	4.00	0.15	12"	24"	24"	2.25	0.08	12"	18"	18"	1.33	0.05	12"	16"	12"	0.56	0.01	6"	8"	8"	3.00	0.11	12"	24"	18"
8"	7.50	0.42	18"	36"	30"	4.00	0.22	18"	24"	24"	2.00	0.11	18"	18"	16"	1.00	0.04	12"	12"	12"	5.00	0.28	18"	30"	24"
10"	11.67	0.65	18"	42"	40"	6.25	0.35	18"	30"	30"	3.33	0.19	18"	24"	20"	2.00	0.07	12"	16"	16"	8.75	0.49	18"	42"	30"
12"	16.00	0.89	18"	48"	48"	9.00	0.50	18"	36"	36"	5.00	0.28	18"	30"	24"	2.22	0.08	12"	20"	16"	14.00	0.78	18"	48"	42"
14"	22.50	1.67	24"	60"	54"	12.25	0.91	24"	42"	42"	6.25	0.46	24"	30"	30"	3.33	0.19	18"	24"	20"	17.50	1.30	24"	60"	42"
16"	30.00	2.22	24"	72"	60"	16.00	1.19	24"	48"	48"	9.00	0.67	24"	36"	36"	4.00	0.22	18"	24"	24"	20.00	1.48	24"	60"	48"

**THRUST BLOCK SCHEDULE - CLASS 250 PVC** SOIL TYPE - SAND & GRAVEL BEARING STRENGTH = 3000 PSF

PIPE SIZE	90° BEND				45° BEND				22 1/2° BEND				11 1/2° BEND				TEE & DEAD ENDS								
	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L	BEARING AREA	YES OF CONCRETE	D	W	L					
4"	2.667	.10	12	24	16	1.500	.06	12	18	12	.750	.03	12	9	9	.500	.01	6	12	6	1.667	.06	12	24	10
6"	5.000	.19	12	36	20	3.000	.11	12	24	18	1.500	.06	12	18	12	.750	.01	6	12	9	4.000	.15	12	24	24
8"	9.000	.50	18	36	36	5.000	.28	18	36	20	3.000	.17	18	24	18	1.500	.06	12	18	12	7.000	.39	18	42	24
10"	9.255	.78	18	48	42	7.500	.42	18	36	30	4.167	.23	18	30	20	2.250	.08	12	18	18	10.500	.58	18	42	36
12"	13.327	1.11	18	60	48	12.000	.67	18	48	36	6.000	.33	18	36	24	3.000	.11	12	24	18	14.000	.78	18	48	42
14"	18.139	2.00	24	72	54	15.750	1.17	24	54	42	7.500	.56	24	36	30	4.000	.22	18	24	24	20.000	1.48	24	60	48
16"	23.692	2.65	24	78	66	20.000	1.48	24	60	48	10.500	.78	24	42	36	5.000	.28	18	30	24	27.000	2.00	24	72	54

**THRUST-BLOCKING SCHEDULE**  
 NOT TO SCALE



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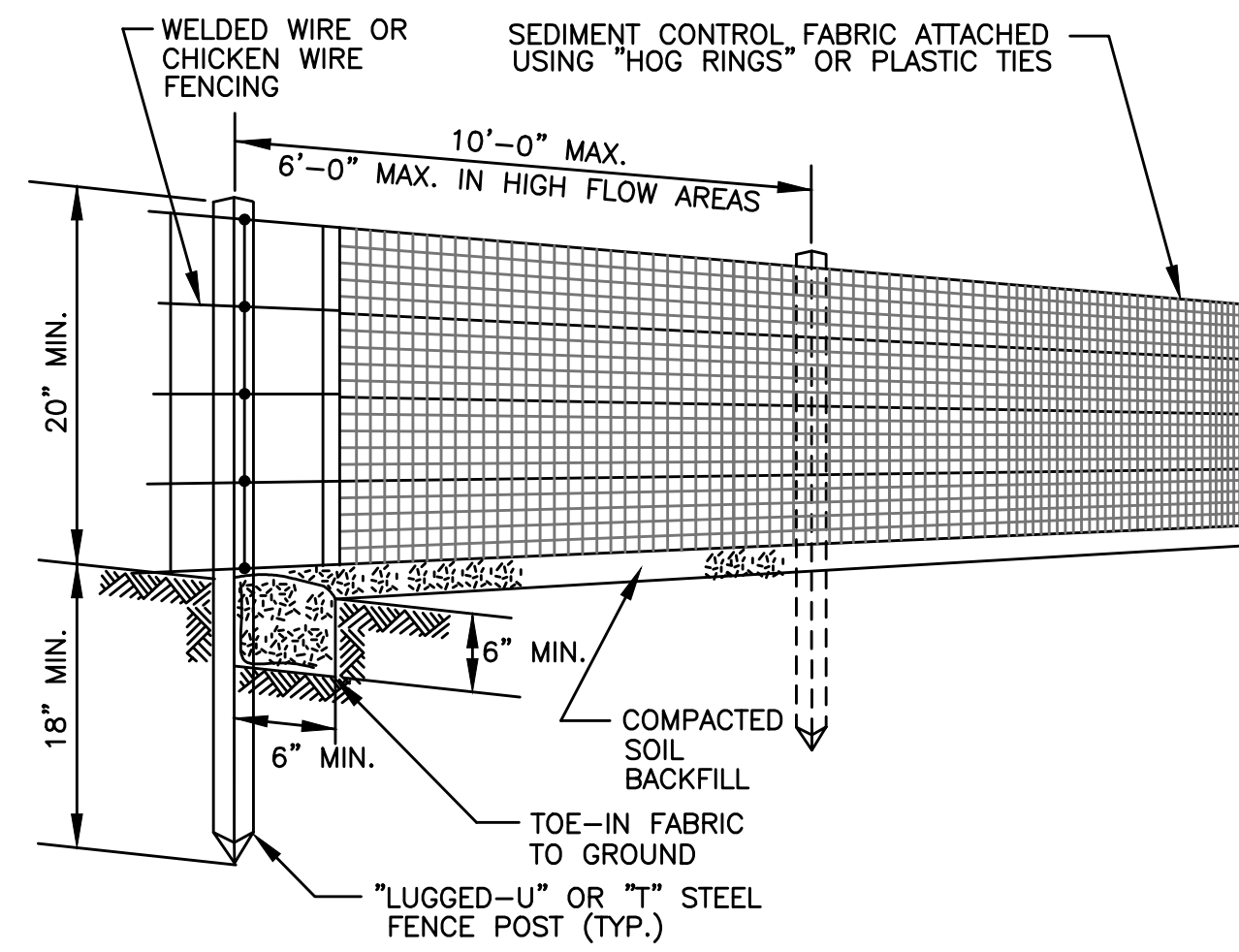
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER- LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. FENCE TO BE INSTALLED ACROSS PIPE TRENCHES AT 200' INTERVALS. INSTALL AT CLOSER INTERVALS IF CONDITIONS WARRANT.
6. PRIOR TO CONSTRUCTION, INSTALL SILT FENCING ON THE DOWN SLOPE SIDE OF ALL AREAS TO BE DISTURBED, INCLUDING DOWNSTREAM SIDE OF ALL WATERWAYS CROSSED AND AT ALL CULVERTS OR STORM SEWER INLETS.

**POSTS:**  
STEEL - EITHER T OR U TYPE OR 2" HARDWOOD

**FENCE:**  
WOVEN WIRE 14.5 GAUGE 6" MAX MESH OPENING

**FILTER CLOTH:**  
MINIMUM TENSILE STRENGTH OF 120 LBS. (ASTM D-1682)

**PREFABRICATED UNIT:**  
MIRAFI ENVROFENCE, OR EQUAL

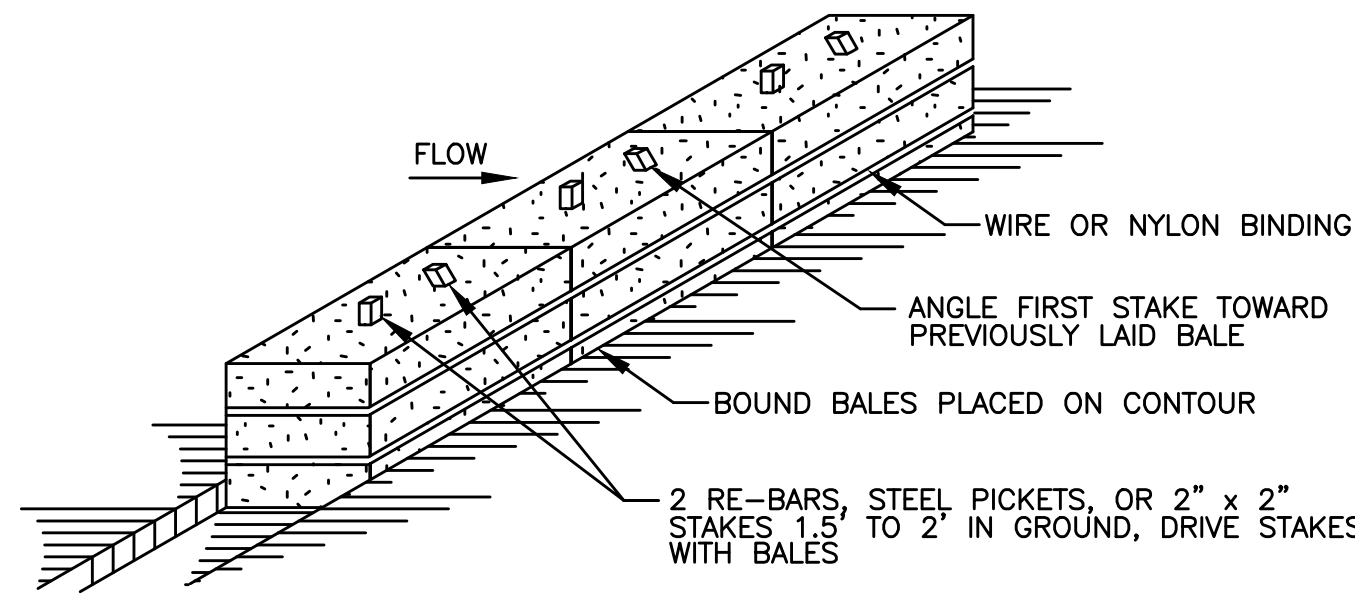
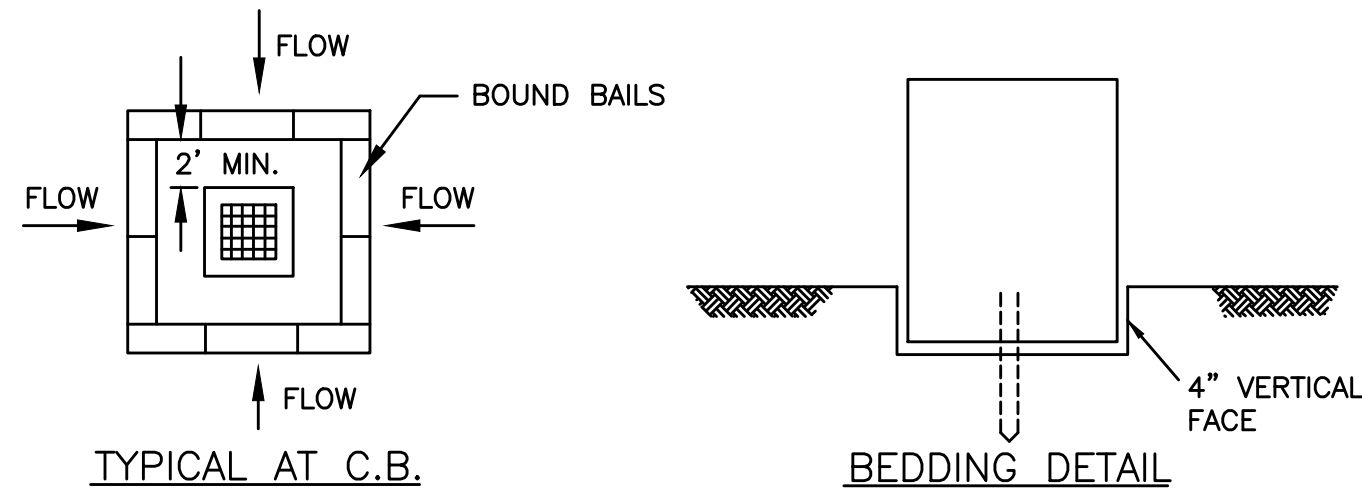


**TYPICAL SILT FENCE DETAIL**

NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS:**

1. BALES SHALL BE PLACED AT INTERVALS (BETWEEN SILT FENCING), ACROSS ALL PIPING TRENCHES ON SLOPING GRADES. PLACE BALES IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN AT AN ANGLE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. UPON COMPLETION OF CONSTRUCTION AND STABILIZATION OF ALL DISTURBED AREAS, SILTATION CONTROL MEASURES ARE TO BE REMOVED.



**ANCHORING DETAILS**

**TYPICAL STRAW BALE DIKE DETAIL**

NOT TO SCALE

**SEDIMENTATION CONTROL NOTES:**

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A KPDES STORMWATER PERMIT FROM THE KENTUCKY DIVISION OF WATER.
2. CONTRACTOR SHALL PLACE STAKED STRAW BALES OR SILT FENCE AROUND HEADWALLS AND IN EXISTING DITCHES AS SHOWN TO PREVENT CLOGGING AND DOWNSTREAM SILTATION.
3. CONTRACTOR SHALL SURROUND THE PROPERTY PERIMETER WITH STAKED STRAW BALES OR SILT FENCE.
4. CONTRACTOR MUST RETAIN EXISTING VEGETATION ON THE CONSTRUCTION SITE WHENEVER POSSIBLE.
5. NO AREA OF DISTURBED LAND IS TO BE LEFT UNPROTECTED FOR MORE THAN TWENTY DAYS AFTER GRADING ACTIVITY HAS CEASED. THESE AREAS SHALL BE RE-STABILIZED USING TEMPORARY SEEDING AND MULCHING OR OTHER SUITABLE MEANS. MULCHING MUST COVER AT LEAST 75% OF THE SOIL SURFACE.
6. CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL MEASURES IN PLACE AFTER EVERY STORM EVENT, AS WELL AS ON A WEEKLY BASIS. DAMAGED OR INEFFECTIVE MEASURES MUST BE RESTORED IMMEDIATELY TO PROPER FUNCTIONING CONDITION.
7. CONTRACTOR SHALL MINIMIZE THE TRACKING OF SEDIMENT ONTO ROADWAYS BY PLACING A 50 FOOT LONG, 5-INCH THICK GRAVEL DRIVE OFF EACH ENTRANCE FROM A PUBLIC ROADWAY. ENTRANCE MUST BE 12 FEET WIDE OR WIDER CONSTRUCTED WITH GRAVEL 2 TO 3 INCHES IN DIAMETER.
8. ANY SEDIMENT, DEBRIS, ETC. THAT IS TRACKED ONTO A PUBLIC ROADWAY WILL BE CLEARED ON A DAILY BASIS.
9. ADDITIONAL EROSION CONTROL NOT SHOWN ON THESE PLANS MAY BE REQUIRED. THIS CONTROL SHALL INCLUDE SEEDING, MULCHING, SILT FENCE, STRAW BALES, ETC. AS NECESSARY TO PREVENT SOIL EROSION.
10. CONTRACTOR SHALL INSTALL EROSION CONTROL BLANKETS ON ALL SLOPES GREATER THAN 3:1.
11. CONTRACTOR TO INSTALL STRAW BALE DROP INLET SEDIMENT FILTER FOR DRAINS RECEIVING CONCENTRATED OR HEAVY FLOWS.
12. CONTRACTOR TO INSTALL WIRE AND MESH INLET SEDIMENT FILTER FOR INLET DRAINS RECEIVING CONCENTRATED OR HEAVY FLOWS.

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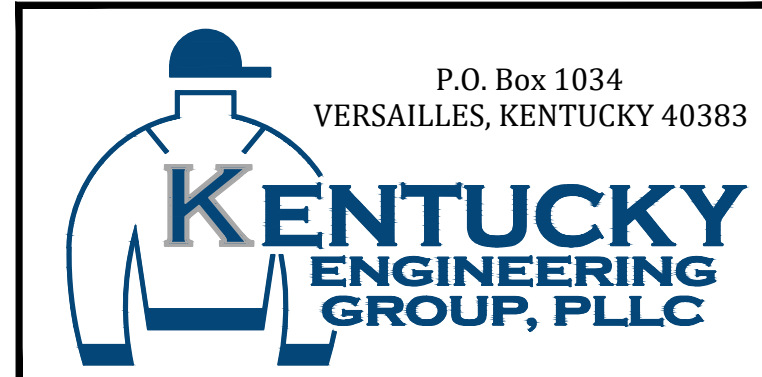
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DRAWN BY:	JAB
CHECKED BY:	JCT
SCALE:	AS NOTED
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PHASE 11 WATER SYSTEM IMPROVEMENTS  
FOR THE RATTLESNAKE RIDGE WATER DISTRICT

CONTRACT 2 - NEW ELEVATED STORAGE TANKS  
STANDARD DETAILS - EROSION CONTROL

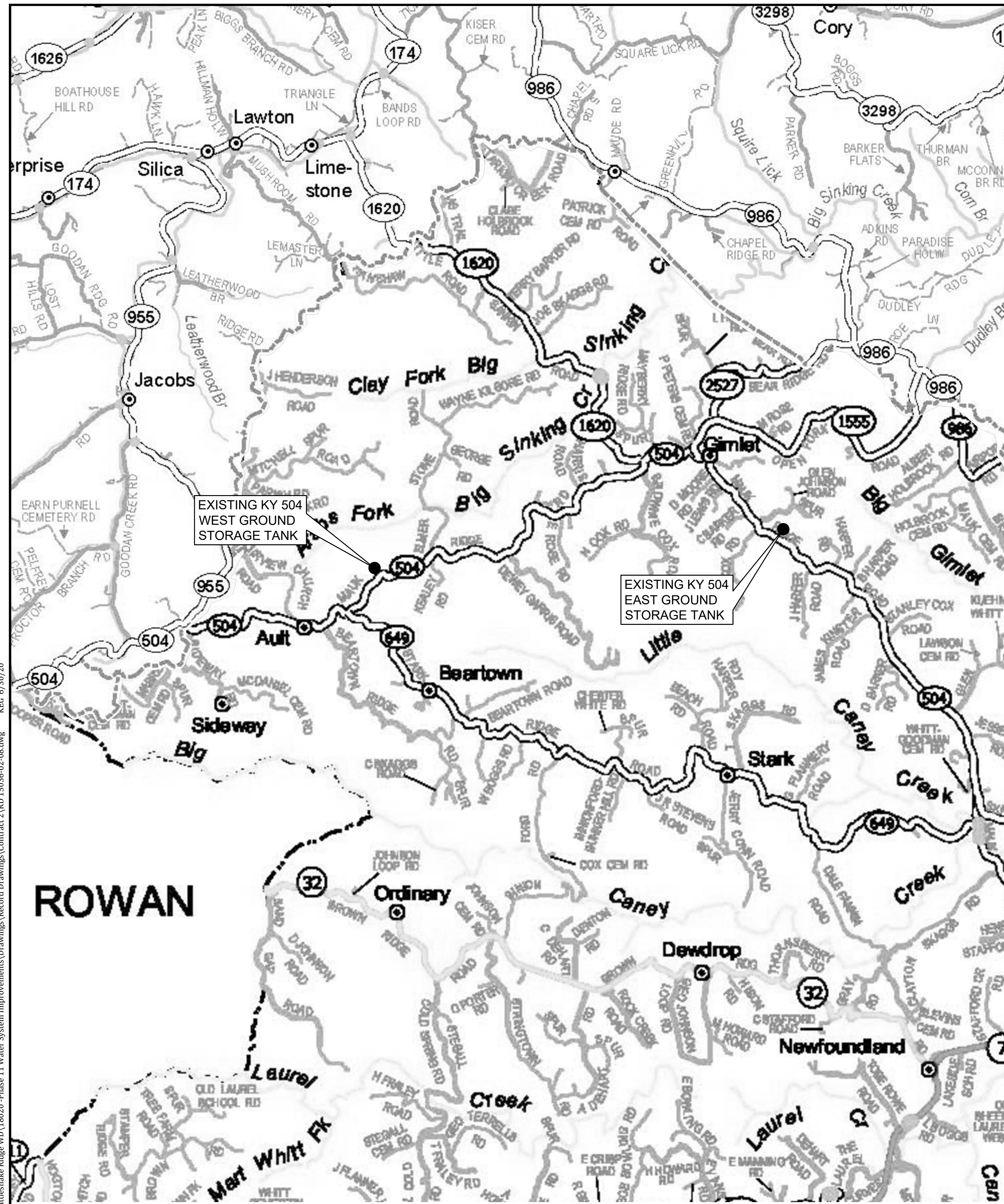
PROJECT NO. 15036  
SHEET NO. 07

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SHEET NO. 07

BID DOCUMENTS



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**LOCATION MAP**  
NOTE TO SCALE



**ELEVATION VIEW - KY 504 EAST TANK**  
NOT TO SCALE



**ELEVATION VIEW - KY 504 WEST TANK**  
NOT TO SCALE

**NOTES:**

- EXISTING 86,000 GALLON GLASS LINED STANDPIPE SHALL BE DEMOLISHED, INCLUDING VALVE VAULT. FOUNDATION SHALL REMAIN.
- CONTRACTOR SHALL GIVE OWNER 72 HOURS PRIOR NOTICE TO COMMENCING DEMOLITION ACTIVITIES. TANK MUST BE DRAINED IN PROPER FASHION AS TO NOT FLOOD PROPERTIES ADJACENT TO TANK SITE PRIOR TO DEMOLITION.
- NO DEMOLITION ACTIVITIES SHALL BE ALLOWED PRIOR TO THE NEW 504 EAST TANK BEING FULLY OPERATIONAL INCLUDING PROPER COMMUNICATION OF SCADA SYSTEM.
- ALL DEMOLITION METHODS AND DISPOSAL OF MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS AT THE EXPENSE OF THE CONTRACTOR.
- ANY APPURTENANCES, (INCLUDING VALVES, VALVE BOX, RTU, HYDRANT ASSEMBLY, ETC.) SHALL BE RETURNED TO THE OWNER AT NO ADDITIONAL COST.
- CAP EXISTING HOLE IN FOUNDATION.
- REGRADE THE ENTIRE SITE TO PROVIDE POSITIVE DRAINAGE AND RESEED AND MULCH WITH STRAW THE ENTIRE SITE IN ACCORDANCE WITH SPECIFICATIONS.

**RECORD DRAWINGS**

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF THIS SET OF RECORD DRAWING SHOWS THE REPORTED LOCATION OF THE WORK AND SIGNIFICANT CHANGES MADE DURING THE CONSTRUCTION PROCESS. THESE RECORD DOCUMENTS ARE BASED ON UNVERIFIED INFORMATION PROVIDED BY OTHER PARTIES WHICH WILL BE ASSUMED RELIABLE. THE DESIGN PROFESSIONAL CANNOT AND DOES NOT WARRANT THEIR ACCURACY.

BY: BLUEGRASS ENGINEERING, PLLC DATE: 01/20

**NOTES:**

- EXISTING 50,000 GALLON WELDED STEEL STANDPIPE SHALL BE DEMOLISHED, INCLUDING VALVE VAULT. FOUNDATION SHALL REMAIN.
- CONTRACTOR SHALL GIVE OWNER 72 HOURS PRIOR NOTICE TO COMMENCING DEMOLITION ACTIVITIES. TANK MUST BE DRAINED IN PROPER FASHION AS TO NOT FLOOD PROPERTIES ADJACENT TO TANK SITE PRIOR TO DEMOLITION.
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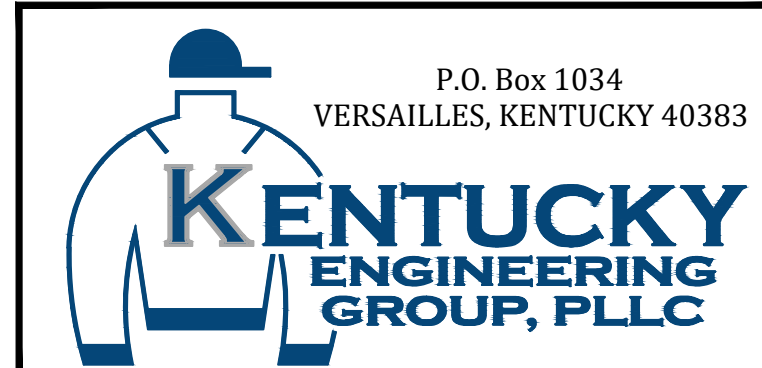
NO.	DATE	REVISIONS	BY
1	JANUARY 2020	REVISIONS PER FIELD NOTES, RECORD DRAWING REVISIONS	BKL

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NO.	DATE	REVISIONS	BY

DATE: NOVEMBER, 2017  
PROJECT MGR: LRS  
DRAWN BY: JAB  
CHECKED BY: JCT  
SCALE: AS NOTED  
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PHASE 11 WATER SYSTEM IMPROVEMENTS  
FOR THE RATTLESNAKE RIDGE WATER DISTRICT

CONTRACT 2 - NEW ELEVATED STORAGE TANKS  
DEMOLITION PLAN  
EXISTING KY 504 EAST & KY 504 WEST TANK

PROJECT NO.  
15036

SHEET NO.  
08

PROJECT NO.  
15036

SHEET NO.  
08

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