

NORTHERN KENTUCKY WATER DISTRICT LUMLEY TANK REPLACEMENT

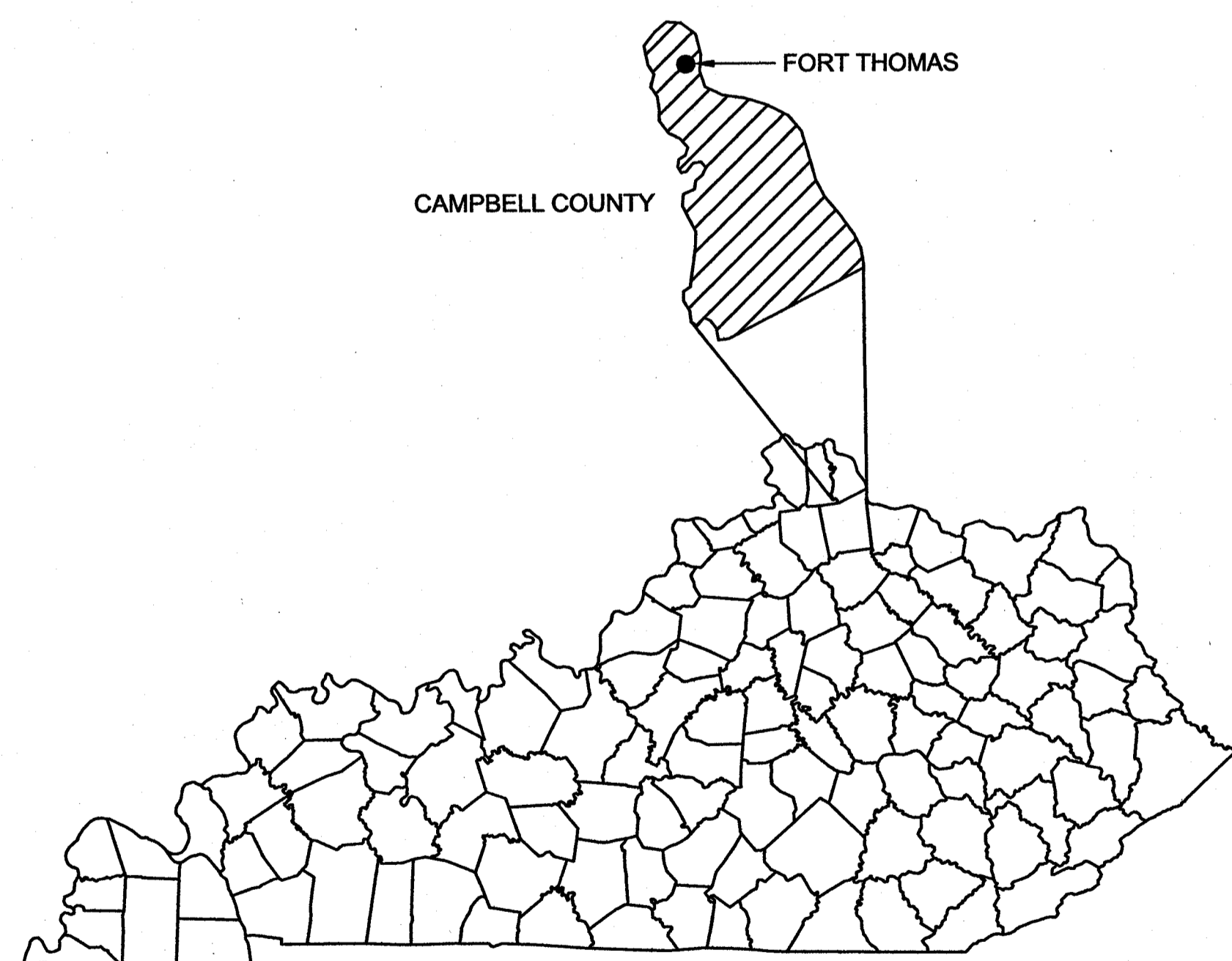
FORT THOMAS, KENTUCKY

GOVERNING BODY

COMMISSIONERS:

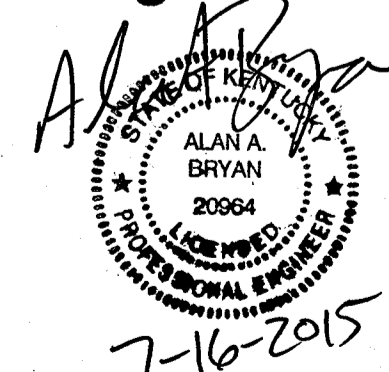
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FRED A. MACKE, JR. - SECRETARY
CLYDE CUNNINGHAM - TREASURER
ANDREW C. COLLINS - COMMISSIONER
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DAVID LOVAN, PRESIDENT/CEO



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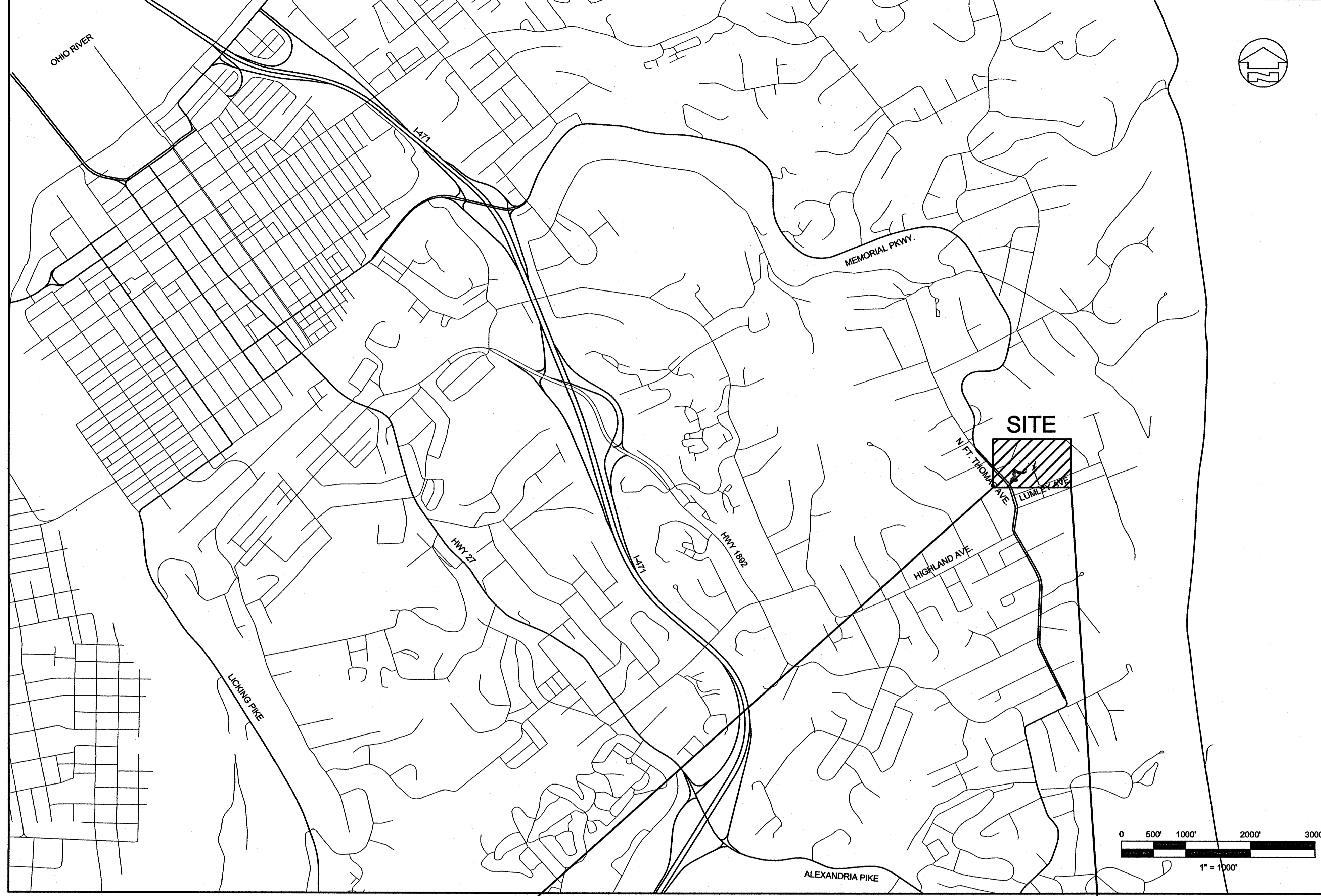
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JULY, 2015

BID SET

KIA LOAN NO. F15-011
SAI # KY20140903-0958
GRW PROJECT NO. 4383



GRW PROJECT NO. 4983
 CLIENT PROJECT NO.
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LOCATION MAP
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
 DRAWN: MBS
 REVIEWER: AAB
 APPROVED: AAB

NO.	REVISIONS	DATE	BY
	DESCRIPTION		

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DATE: JULY, 2015
 SCALE: AS NOTED
 SHEET NO.

G-0-001

ABBREVIATIONS

CL	CENTERLINE	LF	LINEAR FEET
CONC	CONCRETE	MAX	MAXIMUM
CONT	CONTINUOUS	MIN	MINIMUM
		MISC	MISCELLANEOUS
DEMO	DEMOLISH/DEMOLITION	NaOCL	SODIUM HYPOCHLORITE
DI	DUCTILE IRON	NPT	NATIONAL PIPE THREAD
DIA	DIAMETER	NTS	NOT TO SCALE
EA	EACH	OD	OUTSIDE DIAMETER
ELEV	ELEVATION	OHU	OVERHEAD UTILITY
EX	EXISTING		
FLG	FLANGE	PE	PLAIN END
FRP	FIBERGLASS REINFORCED PRODUCT	PSI	POUNDS PER SQUARE INCH
FT	FEET	PVC	POLYVINYL CHLORIDE
		PVMT	PAVEMENT
GAL	GALLON	SCH	SCHEDULE
		SPEC	SPECIFICATIONS
HDXLPE	HIGH DENSITY CROSS LINKED POLYETHYLENE	STD	STANDARD
HGL	HYDRAULIC GRADE LINE		
ID	INSIDE DIAMETER	TBD	TO BE DEMOLISHED
IE	INVERT ELEVATION	TYP	TYPICAL
IMFO	INTEGRALLY MOLDED FLANGED OUTLET	W/	WITH
IN	INCH	WTP	WATER TREATMENT PLANT

GENERAL NOTES

- CONTRACTOR SHALL CALL "KENTUCKY 811" TO LOCATE EXISTING UTILITY LINES AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. ALL DAMAGED UTILITY MAINS AND SERVICES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMMEDIATELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION IN THEIR OPERATIONS IN AREAS WHERE PLANS INDICATE THE PRESENCE OF A GAS LINE OR OTHER LINES CARRYING HAZARDOUS MATERIAL.
- CONTRACTOR SHALL NOT DISRUPT ANY UTILITY SERVICES WITHOUT SCHEDULING AND OBTAINING APPROVAL FROM OWNER.
- CONTRACTOR SHALL KEEP ALL WORK INSIDE THE NKWD PROPERTY BOUNDARIES.
- THE UTILITIES AND THEIR LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND VERIFY ALL UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING UTILITY WORK INCLUDING POSSIBLE TEMPORARY SUPPORT OF UTILITY POLES AS REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID EXISTING UTILITIES AND PERFORM ANY REQUIRED REPAIRS IF UTILITIES ARE DAMAGED. IN ADDITION TO ALL UTILITY LINES, THE CONTRACTOR SHALL AVOID AND REPAIR ANY DAMAGE TO FIELD DRAINAGE TILES AND PRIVATE IRRIGATION SYSTEMS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN UTILITIES OR OTHER SUBSURFACE LINES ARE DAMAGED.
- PROPERTY LINES AND RIGHT-OF-WAYS SHOWN ARE NOT THE RESULT OF DEED RESEARCH AND SHALL BE CONSIDERED APPROXIMATE.
- THE AERIAL PHOTOGRAPHS ARE SUBJECT TO SCALE INACCURACIES AND SHOULD NOT BE USED FOR SCALED QUANTITY TAKEOFFS. STATIONS SHOWN ARE FIELD MEASURED.
- THE CONTRACTOR IS RESPONSIBLE FOR INSURING CONTINUED OPERATION OF EXISTING WATER SYSTEM DURING CONSTRUCTION.
- ALL DISTURBED AREAS SHALL BE RESTORED TO EQUAL TO OR BETTER THAN ORIGINAL CONDITIONS.
- ALL MATERIALS AND WORKMANSHIP SHALL BE TO THE SATISFACTION OF THE OWNER AND SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, COUNTY AND TOWNSHIP ROAD DEPARTMENTS, KY DOT, THE ENGINEER, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
- CONTRACTOR SHALL NOT OPEN CUT ANY PAVEMENT ALONG ANY STATE ROUTES.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS INCLUDING BUT NOT LIMITED TO EROSION CONTROL PERMITS.
- GENERAL NOTES, WHEREVER THEY ARE FOUND, APPLY TO ALL WORK IN THE PROJECT. SHEET NOTES, UTILIZING NOTE SYMBOLS, APPLY ONLY TO THE SHEET ON WHICH THEY ARE FOUND. THE MEANING OF SHEET NOTES SYMBOLS AND NUMBERS VARIES FROM SHEET TO SHEET.
- ALL SOILS ON THE PROJECT SITE ARE UNCLASSIFIED. ALL EARTHWORK, EXCAVATION (INCLUDING ROCK EXCAVATION), BACKFILLS, COMPACTION AND INCLUSION OF SUITABLE SOILS ARE THE CONTRACTORS RESPONSIBILITY. NO ADDITIONAL COST WILL BE ALLOWED FOR SOIL OR ROCK ISSUES.

LEGEND

	EXISTING	NEW
FENCE	— X — X —	— ○ —
PROPERTY LINE	— P/L —	
UNDERGROUND ELECTRIC	— E —	
OVERHEAD UTILITY LINE	— OHU —	
UNDERGROUND COMMUNICATION	— C —	
WATER LINE	— W —	
CONTOUR	— 470 —	— 470 —
YARD HYDRANT	⊕	
VALVE	⊕	
TREE	⊕	
GUY WIRE	⊕	
WATER METER	⊕	
BORING LOCATION	⊕	
POWER POLE	⊕	
UNDERGROUND ELECTRIC	— UGE —	
OVERHEAD UTILITY	— OHU —	
BENCHMARK	⊕	
UNDERGROUND TELECOMM.	— UGT —	
TELECOMMUNICATIONS BOX	⊕	
RIGHT-OF-WAY	— R/W —	
OVERHEAD ELECTRIC	— OHE —	

For Buried Line/Cable Locations

** Contact Two Business Days Before **

TWO WORKING DAYS BEFORE YOU DIG CALL 1-800-752-6007 (TOLL FREE) KENTUCKY UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY



GENERAL

- G-0-001 LOCATION MAP
- G-0-002 DRAWING INDEX, LEGEND, ABBREVIATIONS & GENERAL NOTES

CIVIL

- C-0-100 EXISTING CONDITIONS/DEMOLITION PLAN
- C-0-101 SITE LAYOUT
- C-0-500 STANDARD DETAILS
- C-0-501 NKWD STANDARD DETAILS
- C-0-502 EROSION CONTROL DETAILS
- C-0-503 EROSION CONTROL DETAILS
- C-0-700 NKWD STANDARD SPECIFICATIONS
- C-0-701 NKWD STANDARD SPECIFICATIONS
- C-1-100 BASE BID OPTION NO. 1 - 500,000 GALLON MULTI-COLUMN TANK - PLAN VIEWS
- C-1-101 BASE BID OPTION NO. 2 - 500,000 GALLON PEDESHERE TANK - PLAN VIEW
- C-1-300 BASE BID OPTION NO. 1 - 500,000 GALLON MULTI-COLUMN TANK - SECTION VIEW
- C-1-301 BASE BID OPTION NO. 2 - 500,000 GALLON PEDESHERE TANK - SECTION VIEW
- C-1-500 BASE BID OPTION NO. 1 - MULTI-COLUMN TANK RESERVOIR MIXING SYSTEM DETAILS
- C-1-501 BASE BID OPTION NO. 2 - PEDESHERE TANK RESERVOIR MIXING SYSTEM DETAILS
- C-1-502 CELLULAR EQUIPMENT ATTACHMENT DETAILS
- C-1-503 CELLULAR EQUIPMENT ATTACHMENT DETAILS
- C-2-100 BASE BID OPTION NO. 1 ALTITUDE VALVE VAULT - PLAN VIEW
- C-2-300 BASE BID OPTION NO. 1 ALTITUDE VALVE VAULT - SECTION VIEW

ELECTRICAL

- E-0-001 ELECTRICAL STANDARD SYMBOLS
- E-0-100 ELECTRICAL SITE PLAN - DEMOLITION
- E-0-101 ELECTRICAL SITE PLAN - NEW WORK
- E-0-501 ELECTRICAL DETAILS
- E-0-601 ELECTRICAL SCHEDULES
- E-2-101 PREFABRICATED BUILDING AND PEDESHERE - ELECTRICAL PLAN

STRUCTURAL

- S-2-001 STRUCTURAL NOTES
- S-2-100 STRUCTURAL ALTITUDE VALVE VAULT PLANS
- S-2-300 STRUCTURAL ALTITUDE VALVE VAULT DETAILS & SECTIONS

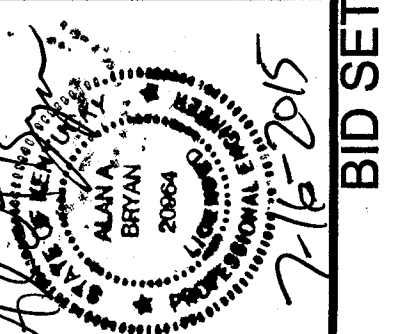
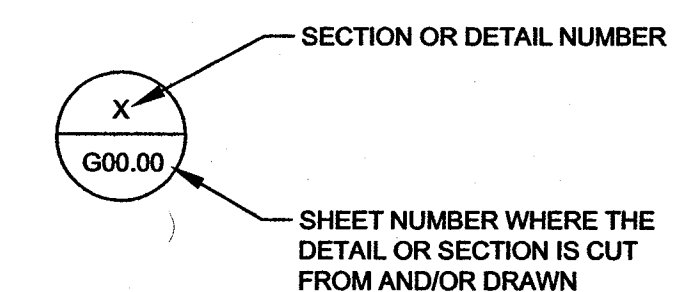
PROCESS/BUILDING NUMBER INDEX

- 0 SITE PLAN
- 1 500,000 GAL TANK
- 2 ALTITUDE VALVE VAULT

SHEET NUMBERING LEGEND

- X-X-XXX
- 00X - GENERAL (SYMBOLS LEGEND, NOTES, ETC.)
 - 1XX - PLANS
 - 2XX - ELEVATIONS
 - 3XX - SECTIONS
 - 4XX - LARGE-SCALE VIEWS
 - 5XX - DETAILS
 - 6XX - SCHEDULES AND DIAGRAMS
 - 7XX - USER DEFINED
 - 8XX - USER DEFINED
- BUILDING DESIGNATOR
- DISCIPLINE DESIGNATOR
- G - GENERAL
 - C - CIVIL
 - S - STRUCTURAL
 - A - ARCHITECTURAL
 - F - FIRE PROTECTION
 - P - PLUMBING
 - M - MECHANICAL
 - E - ELECTRICAL
 - I - INSTRUMENTATION

BUBBLE & SECTIONING CONVENTIONS



GRW PROJECT NO. 4883
CLIENT PROJECT NO.



DRAWING INDEX, LEGEND, ABBREVIATIONS & GENERAL NOTES
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
DRAWN: KAR
REVIEWED: AAB
APPROVED: AAB

NO.	REVISIONS	DATE	BY

DATE: JULY, 2015
SCALE: NOT TO SCALE
SHEET NO.

G-0-002

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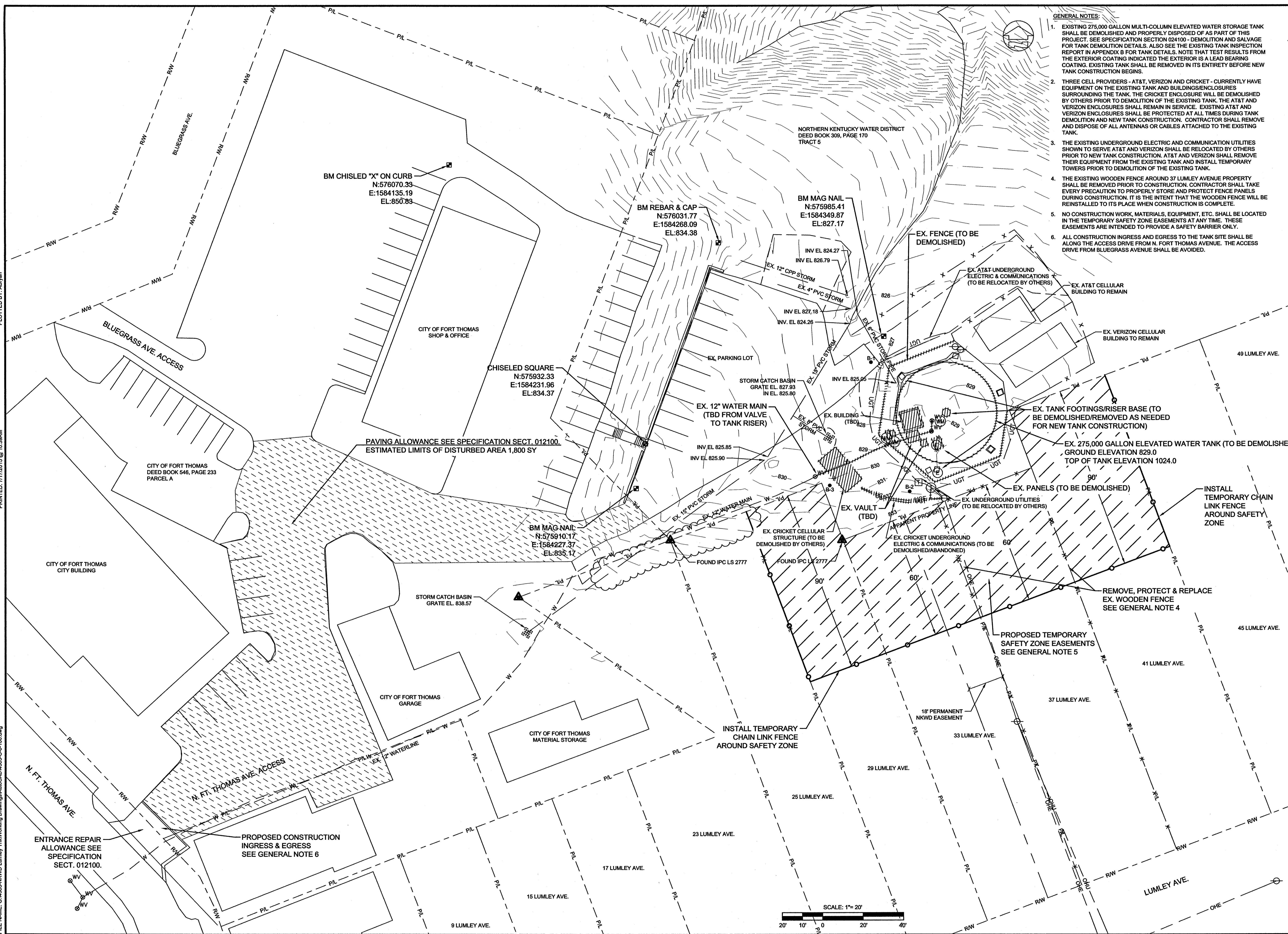
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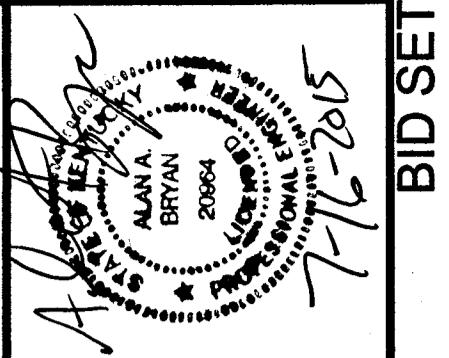
PLOTTED BY: ABryan

PRINTED: 7/17/2015 @ 10:39AM

FILE NAME: G:\4383-NKWD Lumley Tank\Working Drawings\AutoCAD\4383-C-0-100.dwg



- GENERAL NOTES:**
- EXISTING 275,000 GALLON MULTI-COLUMN ELEVATED WATER STORAGE TANK SHALL BE DEMOLISHED AND PROPERLY DISPOSED OF AS PART OF THIS PROJECT. SEE SPECIFICATION SECTION 024100 - DEMOLITION AND SALVAGE FOR TANK DEMOLITION DETAILS. ALSO SEE THE EXISTING TANK INSPECTION REPORT IN APPENDIX B FOR TANK DETAILS. NOTE THAT TEST RESULTS FROM THE EXTERIOR COATING INDICATED THE EXTERIOR IS A LEAD BEARING COATING. EXISTING TANK SHALL BE REMOVED IN ITS ENTIRETY BEFORE NEW TANK CONSTRUCTION BEGINS.
 - THREE CELL PROVIDERS - AT&T, VERIZON AND CRICKET - CURRENTLY HAVE EQUIPMENT ON THE EXISTING TANK AND BUILDINGS/ENCLOSURES SURROUNDING THE TANK. THE CRICKET ENCLOSURE WILL BE DEMOLISHED BY OTHERS PRIOR TO DEMOLITION OF THE EXISTING TANK. THE AT&T AND VERIZON ENCLOSURES SHALL REMAIN IN SERVICE. EXISTING AT&T AND VERIZON ENCLOSURES SHALL BE PROTECTED AT ALL TIMES DURING TANK DEMOLITION AND NEW TANK CONSTRUCTION. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ANTENNAS OR CABLES ATTACHED TO THE EXISTING TANK.
 - THE EXISTING UNDERGROUND ELECTRIC AND COMMUNICATION UTILITIES SHOWN TO SERVE AT&T AND VERIZON SHALL BE RELOCATED BY OTHERS PRIOR TO NEW TANK CONSTRUCTION. AT&T AND VERIZON SHALL REMOVE THEIR EQUIPMENT FROM THE EXISTING TANK AND INSTALL TEMPORARY TOWERS PRIOR TO DEMOLITION OF THE EXISTING TANK.
 - THE EXISTING WOODEN FENCE AROUND 37 LUMLEY AVENUE PROPERTY SHALL BE REMOVED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROPERLY STORE AND PROTECT FENCE PANELS DURING CONSTRUCTION. IT IS THE INTENT THAT THE WOODEN FENCE WILL BE REINSTALLED TO ITS PLACE WHEN CONSTRUCTION IS COMPLETE.
 - NO CONSTRUCTION WORK, MATERIALS, EQUIPMENT, ETC. SHALL BE LOCATED IN THE TEMPORARY SAFETY ZONE EASEMENTS AT ANY TIME. THESE EASEMENTS ARE INTENDED TO PROVIDE A SAFETY BARRIER ONLY.
 - ALL CONSTRUCTION INGRESS AND EGRESS TO THE TANK SITE SHALL BE ALONG THE ACCESS DRIVE FROM N. FORT THOMAS AVENUE. THE ACCESS DRIVE FROM BLUEGRASS AVENUE SHALL BE AVOIDED.



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EXISTING CONDITIONS/DEMOLITION PLAN
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

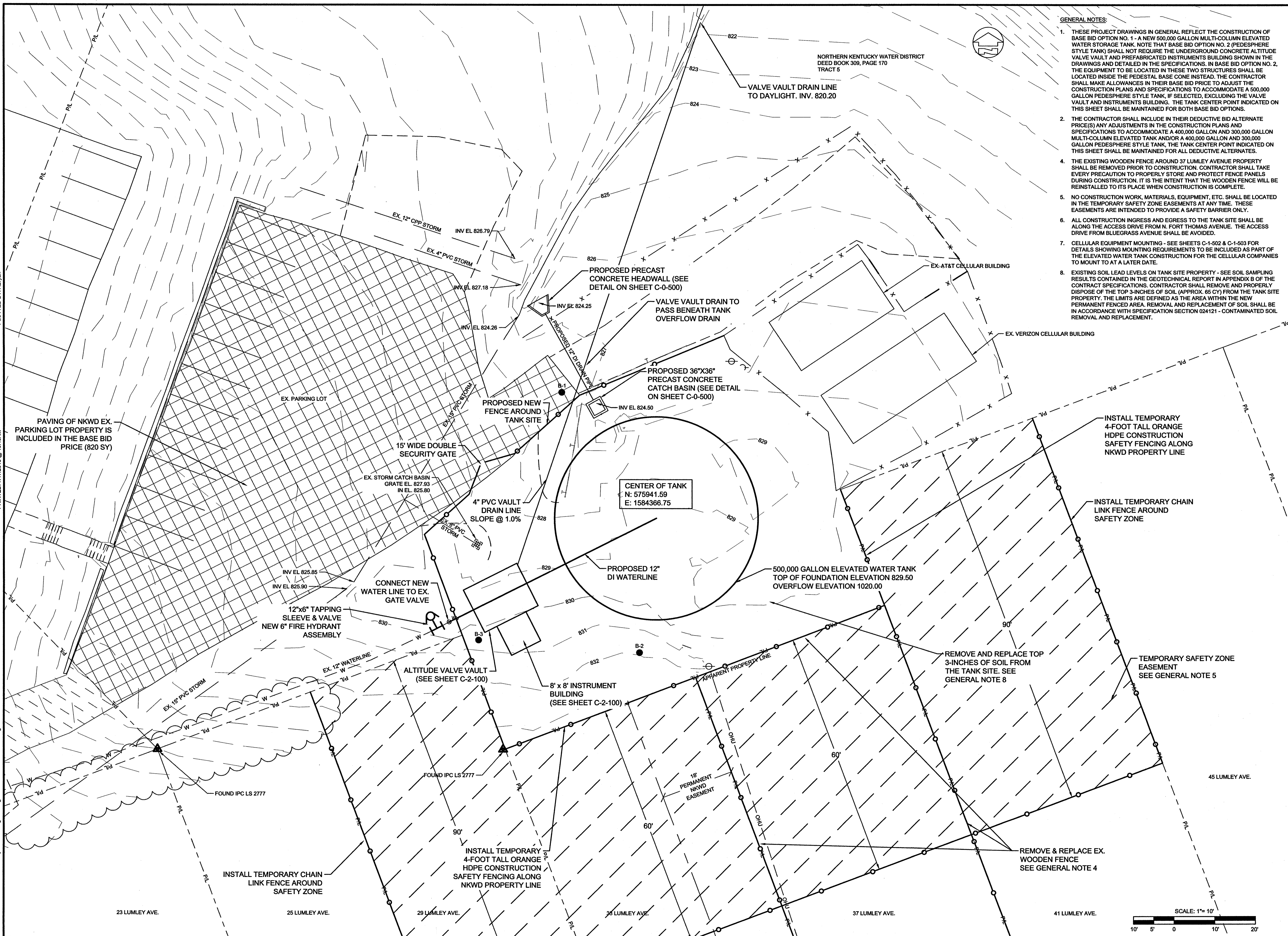
NO.	DATE	BY	REVISIONS

DESIGNED:	ADH
DRAWN:	BTR
REVIEWED:	AAB
APPROVED:	AAB

DATE: JULY, 2015
 SCALE: 1"=20'
 SHEET NO. C-0-100

BID SET

FILE NAME: G:\4383-NKWD Lumlery Tank\Working Drawings\AutoCAD\4383-C-0-101.dwg
 PRINTED: 7/17/2015 @ 10:40AM
 PLOTTED BY: AByan



- GENERAL NOTES:**
- THESE PROJECT DRAWINGS IN GENERAL REFLECT THE CONSTRUCTION OF BASE BID OPTION NO. 1 - A NEW 500,000 GALLON MULTI-COLUMN ELEVATED WATER STORAGE TANK. NOTE THAT BASE BID OPTION NO. 2 (PEDESHERE STYLE TANK) SHALL NOT REQUIRE THE UNDERGROUND CONCRETE ALTITUDE VALVE VAULT AND PREFABRICATED INSTRUMENTS BUILDING SHOWN IN THE DRAWINGS AND DETAILED IN THE SPECIFICATIONS. IN BASE BID OPTION NO. 2, THE EQUIPMENT TO BE LOCATED IN THESE TWO STRUCTURES SHALL BE LOCATED INSIDE THE PEDESTAL BASE CONE INSTEAD. THE CONTRACTOR SHALL MAKE ALLOWANCES IN THEIR BASE BID PRICE TO ADJUST THE CONSTRUCTION PLANS AND SPECIFICATIONS TO ACCOMMODATE A 500,000 GALLON PEDESHERE STYLE TANK, IF SELECTED, EXCLUDING THE VALVE VAULT AND INSTRUMENTS BUILDING. THE TANK CENTER POINT INDICATED ON THIS SHEET SHALL BE MAINTAINED FOR BOTH BASE BID OPTIONS.
 - THE CONTRACTOR SHALL INCLUDE IN THEIR DEDUCTIVE BID ALTERNATE PRICE(S) ANY ADJUSTMENTS IN THE CONSTRUCTION PLANS AND SPECIFICATIONS TO ACCOMMODATE A 400,000 GALLON AND 300,000 GALLON MULTI-COLUMN ELEVATED TANK AND/OR A 400,000 GALLON AND 300,000 GALLON PEDESHERE STYLE TANK. THE TANK CENTER POINT INDICATED ON THIS SHEET SHALL BE MAINTAINED FOR ALL DEDUCTIVE ALTERNATES.
 - THE EXISTING WOODEN FENCE AROUND 37 LUMLEY AVENUE PROPERTY SHALL BE REMOVED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROPERLY STORE AND PROTECT FENCE PANELS DURING CONSTRUCTION. IT IS THE INTENT THAT THE WOODEN FENCE WILL BE REINSTALLED TO ITS PLACE WHEN CONSTRUCTION IS COMPLETE.
 - NO CONSTRUCTION WORK, MATERIALS, EQUIPMENT, ETC. SHALL BE LOCATED IN THE TEMPORARY SAFETY ZONE EASEMENTS AT ANY TIME. THESE EASEMENTS ARE INTENDED TO PROVIDE A SAFETY BARRIER ONLY.
 - ALL CONSTRUCTION INGRESS AND EGRESS TO THE TANK SITE SHALL BE ALONG THE ACCESS DRIVE FROM N. FORT THOMAS AVENUE. THE ACCESS DRIVE FROM BLUEGRASS AVENUE SHALL BE AVOIDED.
 - CELLULAR EQUIPMENT MOUNTING - SEE SHEETS C-1-502 & C-1-503 FOR DETAILS SHOWING MOUNTING REQUIREMENTS TO BE INCLUDED AS PART OF THE ELEVATED WATER TANK CONSTRUCTION FOR THE CELLULAR COMPANIES TO MOUNT TO AT A LATER DATE.
 - EXISTING SOIL LEAD LEVELS ON TANK SITE PROPERTY - SEE SOIL SAMPLING RESULTS CONTAINED IN THE GEOTECHNICAL REPORT IN APPENDIX B OF THE CONTRACT SPECIFICATIONS. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF THE TOP 3-INCHES OF SOIL (APPROX. 65 CY) FROM THE TANK SITE PROPERTY. THE LIMITS ARE DEFINED AS THE AREA WITHIN THE NEW PERMANENT FENCED AREA. REMOVAL AND REPLACEMENT OF SOIL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 024121 - CONTAMINATED SOIL REMOVAL AND REPLACEMENT.

GRW PROJECT NO. 4383
 CLIENT PROJECT NO.

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SITE LAYOUT
LUMLEY TANK REPLACEMENT, KENTUCKY
 CITY OF FORT THOMAS, KENTUCKY

REVISIONS	DATE	BY	ADH	BTR	AAB	AAB
DESCRIPTION			DESIGNED	DRAWN	REVIEWED	APPROVED

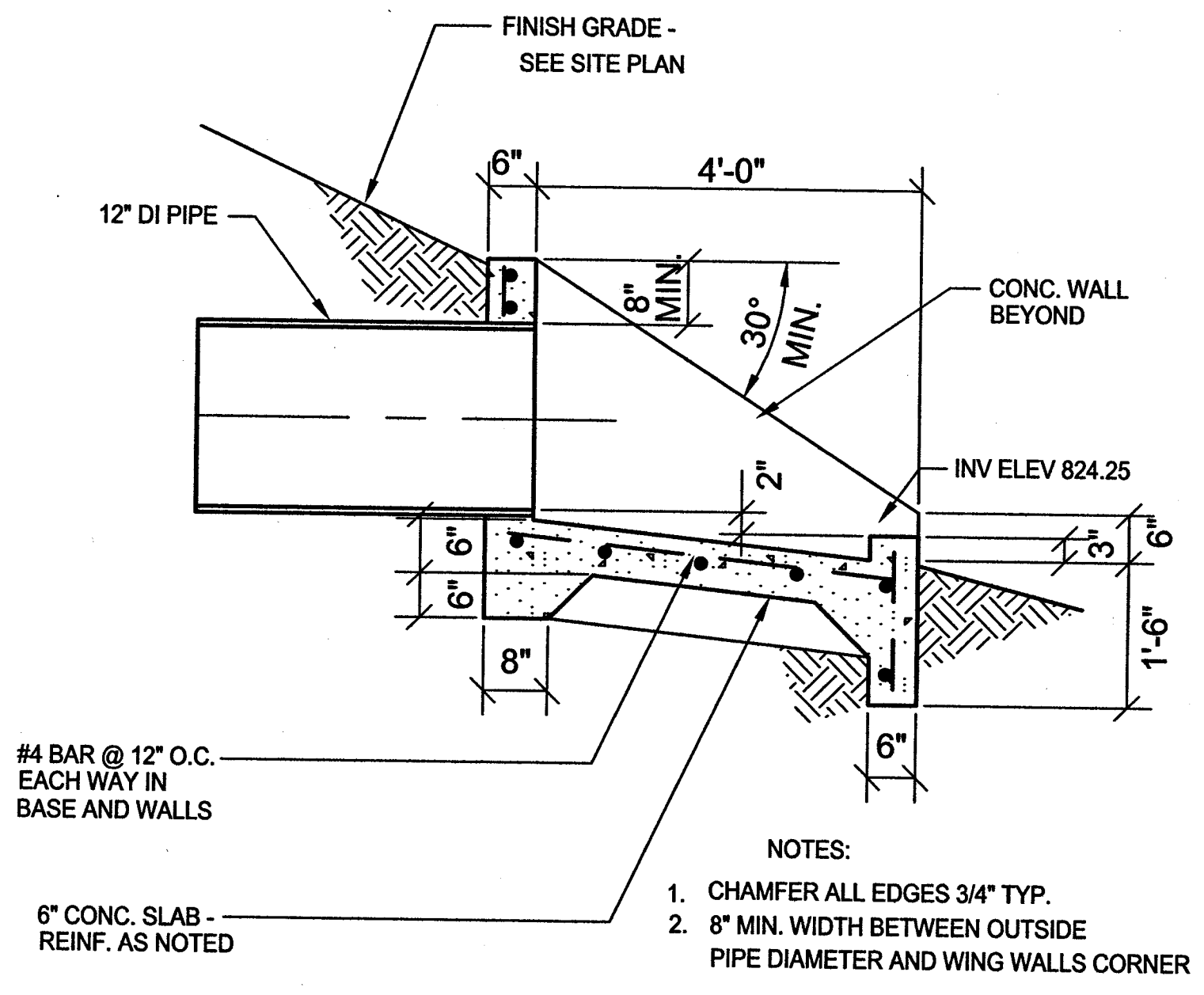
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 SHEET NO.

C-0-101

PLOTTED BY: ABryan

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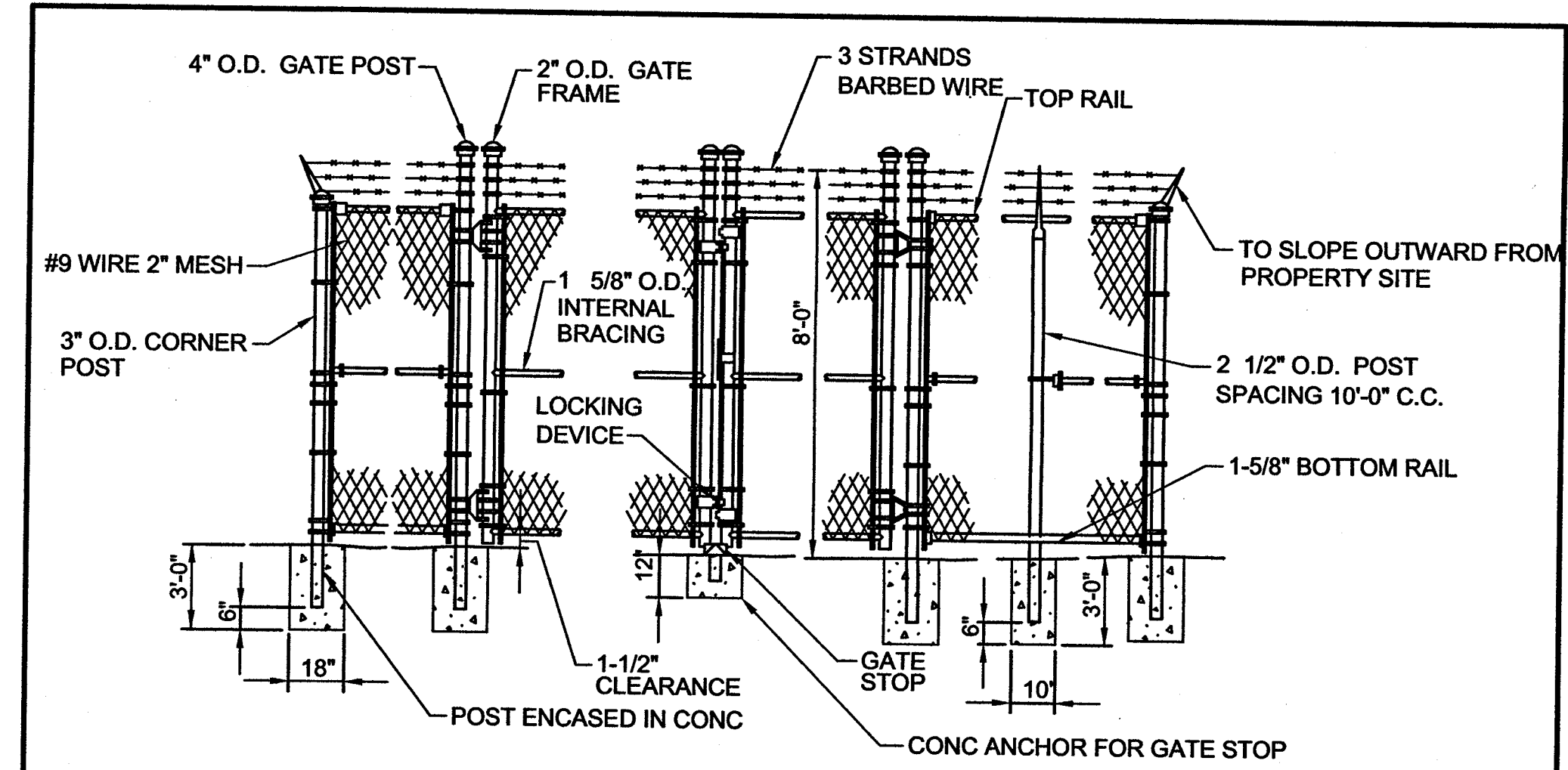
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HEADWALL DETAIL

NOT TO SCALE

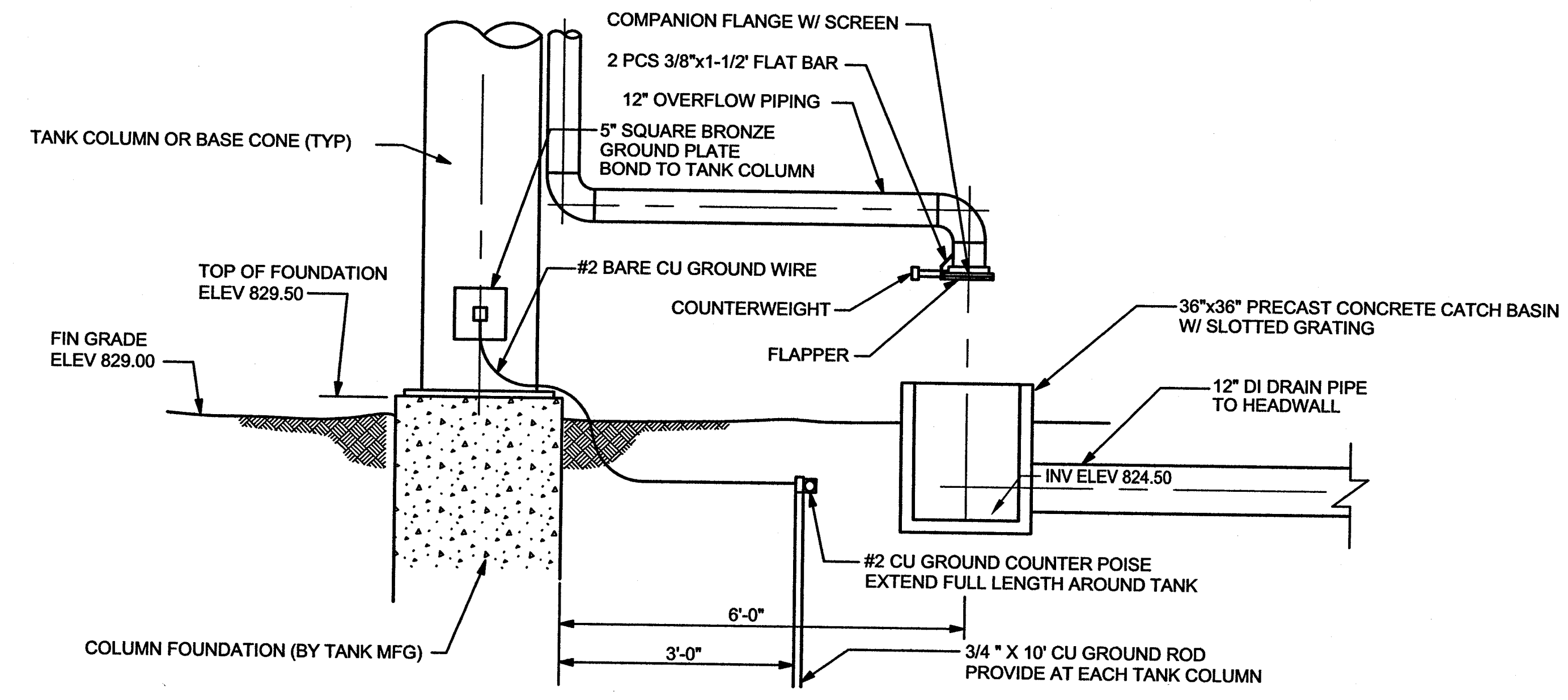
- NOTES:
1. CHAMFER ALL EDGES 3/4" TYP.
 2. 8" MIN. WIDTH BETWEEN OUTSIDE PIPE DIAMETER AND WING WALLS CORNER



CHAIN LINK SECURITY FENCE & GATE DETAIL

NOT TO SCALE

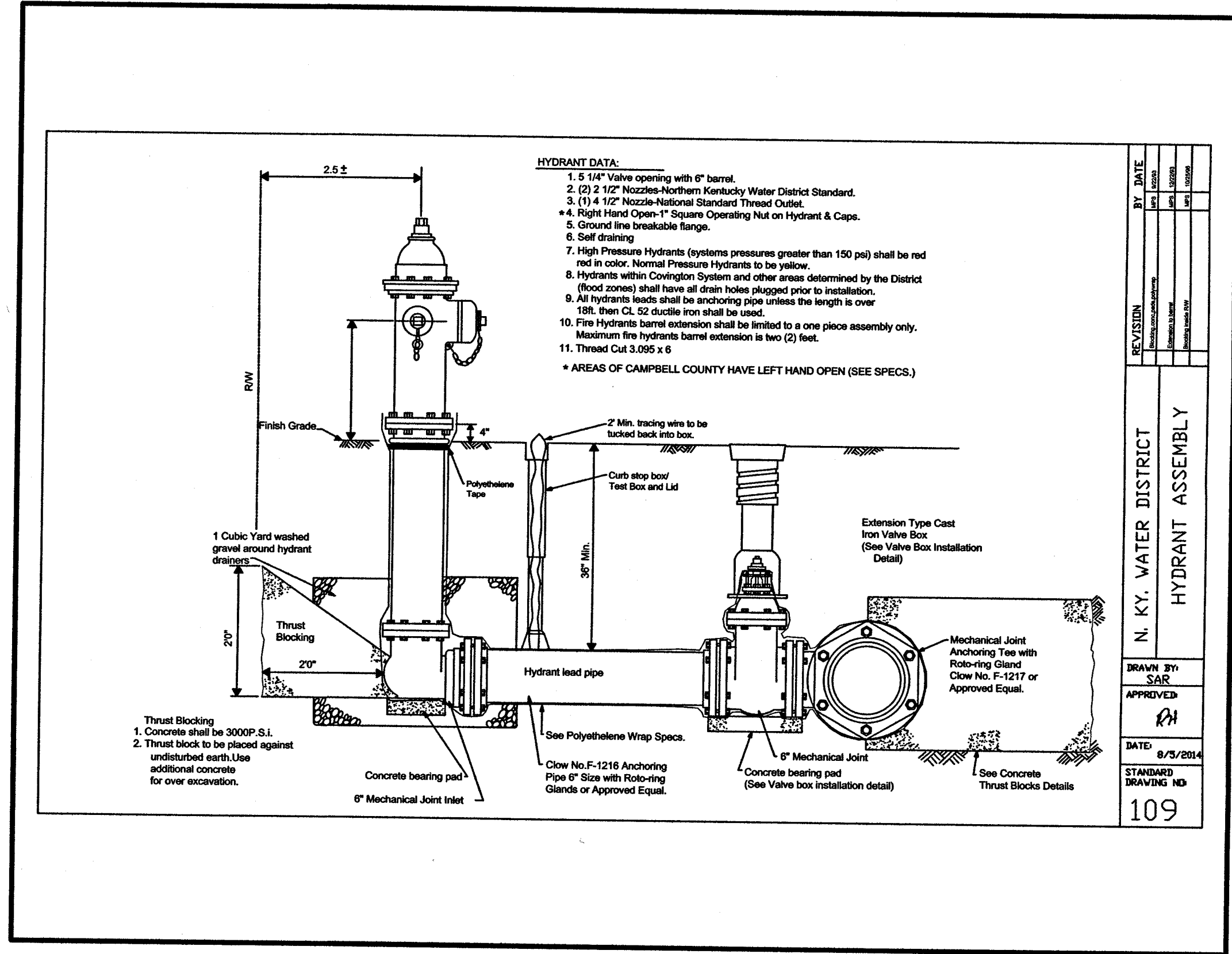
NOTE: FOR GATE SIZES, SEE SITE PLAN



TANK OVERFLOW DETAIL

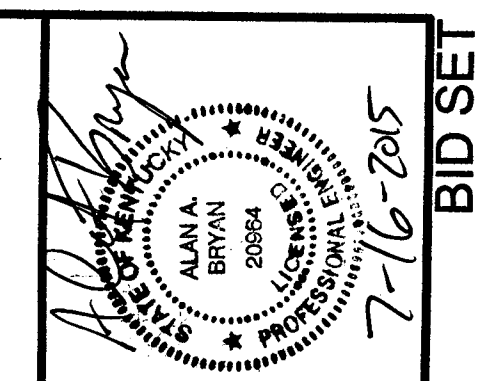
NOT TO SCALE

- NOTES:
1. PEDESHERE TANK OVERFLOW PIPING TO BE SIMILAR AFTER PIPE LEAVES BOTTOM CONE SECTION OF STRUCTURE.
 2. PEDESHERE GROUNDING PLATE TO BE BONDED SIMILARLY TO THE BOTTOM CONE SECTION OF THE TANK STRUCTURE.
 3. ALL GROUND CONNECTIONS TO BE EXOTHERMIC WELD.



- HYDRANT DATA:
1. 5 1/4" Valve opening with 6" barrel.
 2. (2) 3 1/2" Nozzles-Northern Kentucky Water District Standard.
 3. (1) 4 1/2" Nozzle-National Standard Thread Outlet.
 4. Right Hand Open 1" Square Operating Nut on Hydrant & Caps.
 5. Ground line breakable flange.
 6. Soil draining.
 7. High Pressure Hydrants (systems pressures greater than 150 psi) shall be red in color. Normal Pressure Hydrants to be yellow.
 8. Hydrants within Coverage System and other areas determined by the District (flood zones) shall have all drain holes plugged prior to installation.
 9. All hydrant leads shall be anchoring pipe unless the length is over 150', then CL 50 orifice iron shall be used.
 10. Fire Hydrant barrel extension shall be limited to a one piece assembly only. Maximum the hydrant barrel extension is two (2) feet.
 11. Thread Cut 3.085 x 6
- * AREAS OF CAMPBELL COUNTY HAVE LEFT HAND OPEN (SEE SPECS.)

REVISION	DATE	BY	DATE	BY



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CLIENT PROJECT NO.

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STANDARD DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
DRAWN: BTR
REVIEWED: AAB
APPROVED: AAB

NO.	REVISIONS	DESCRIPTION	DATE	BY

DATE: JULY, 2015
SCALE: AS NOTED
SHEET NO.

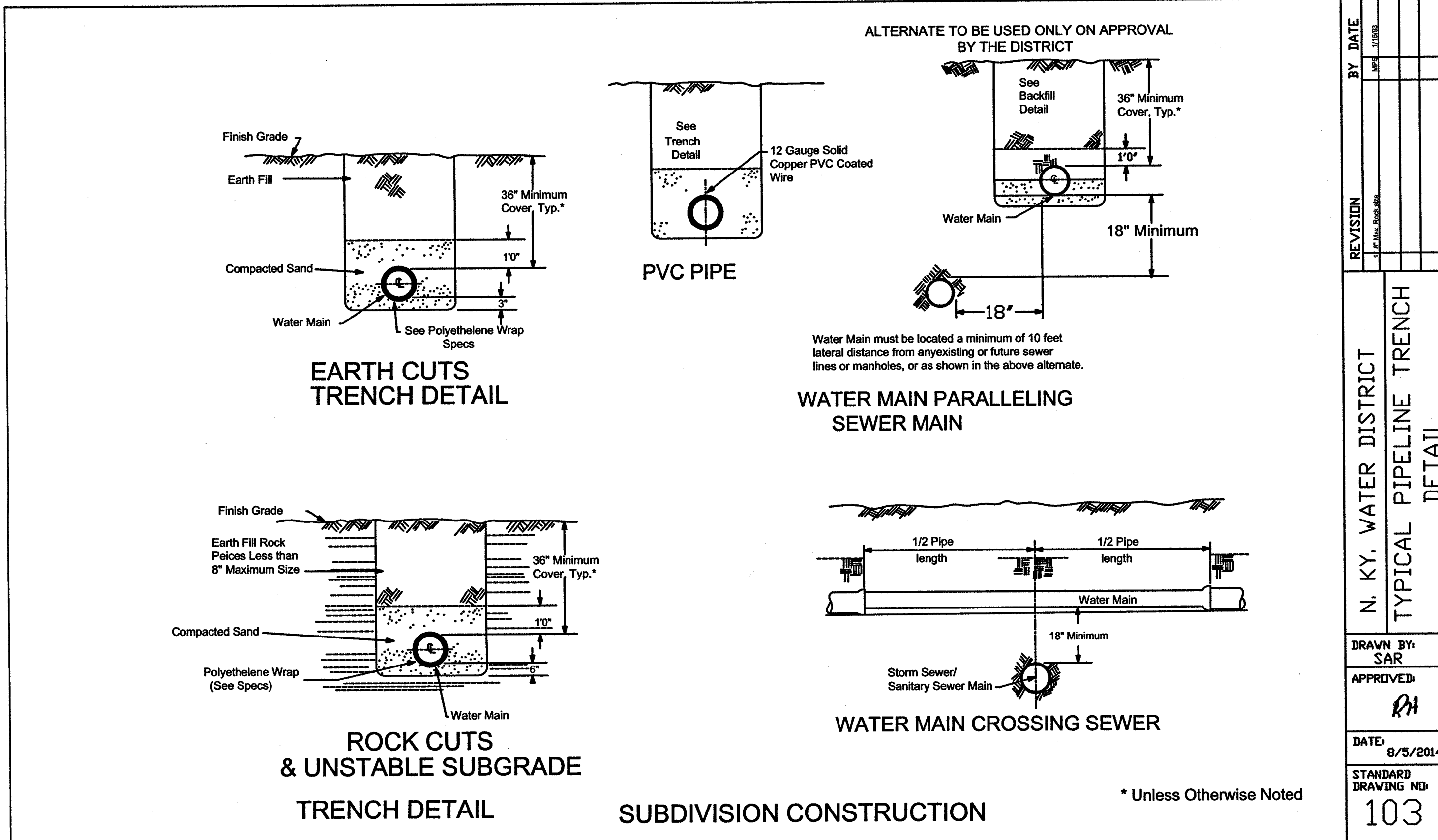
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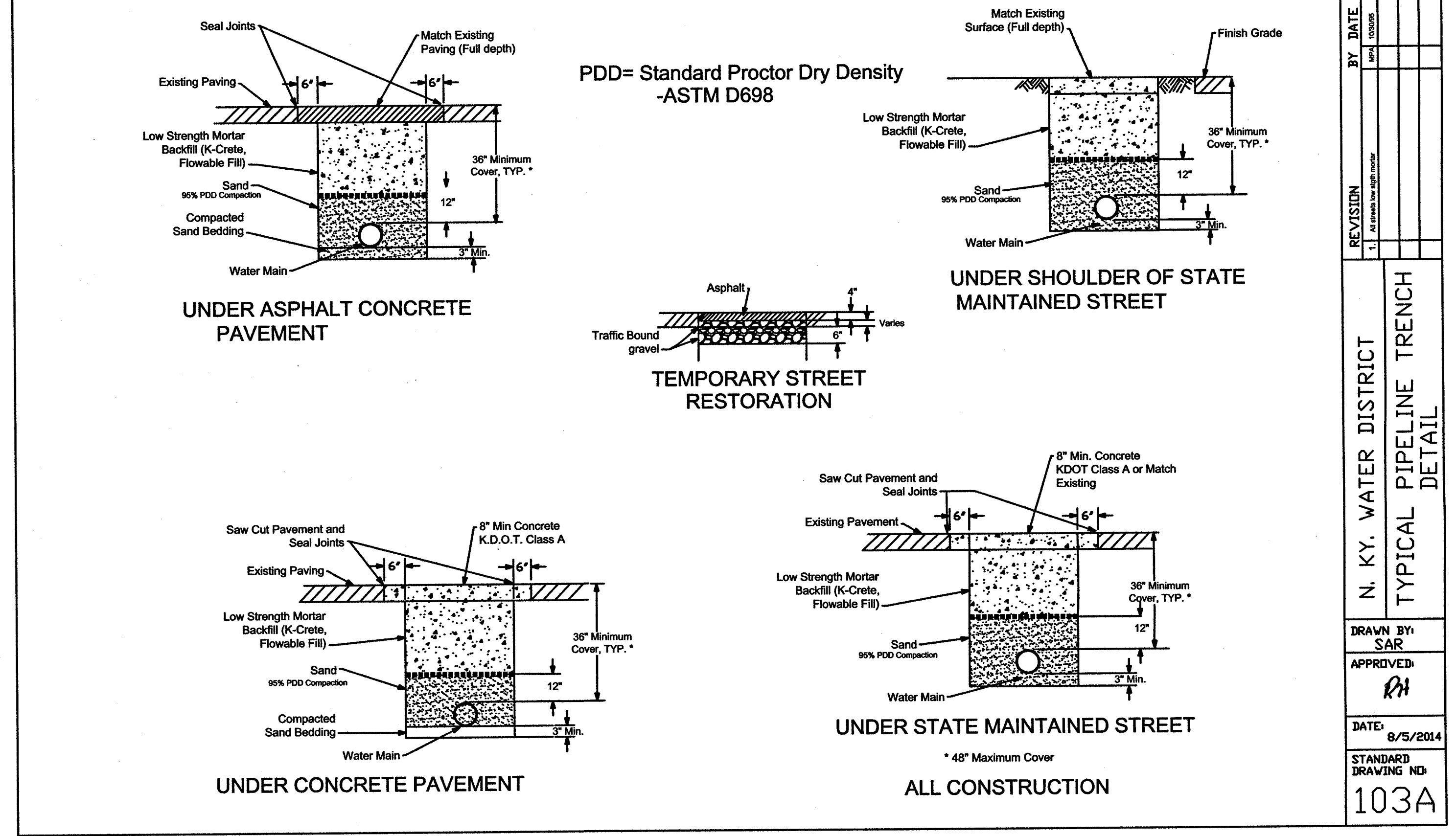
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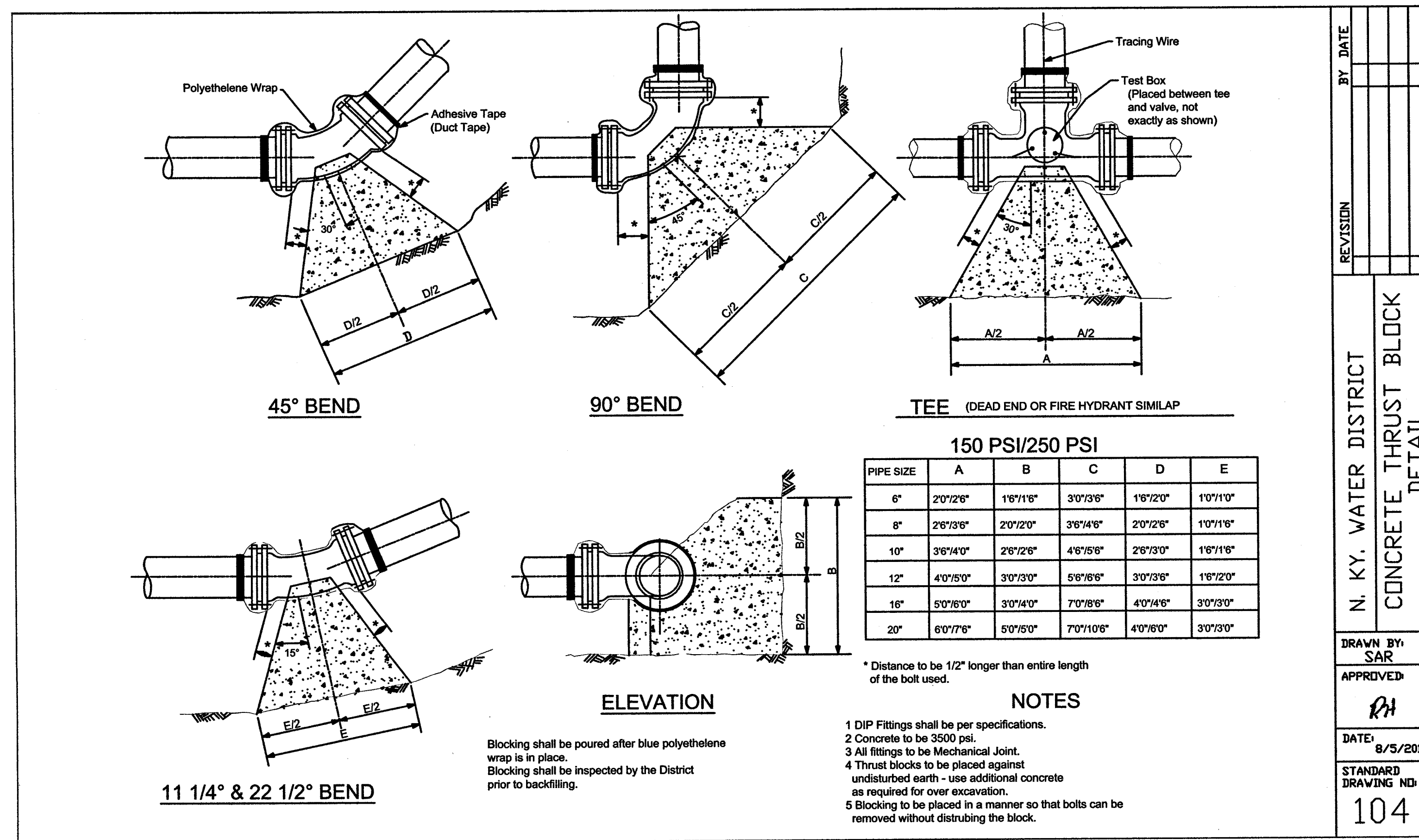
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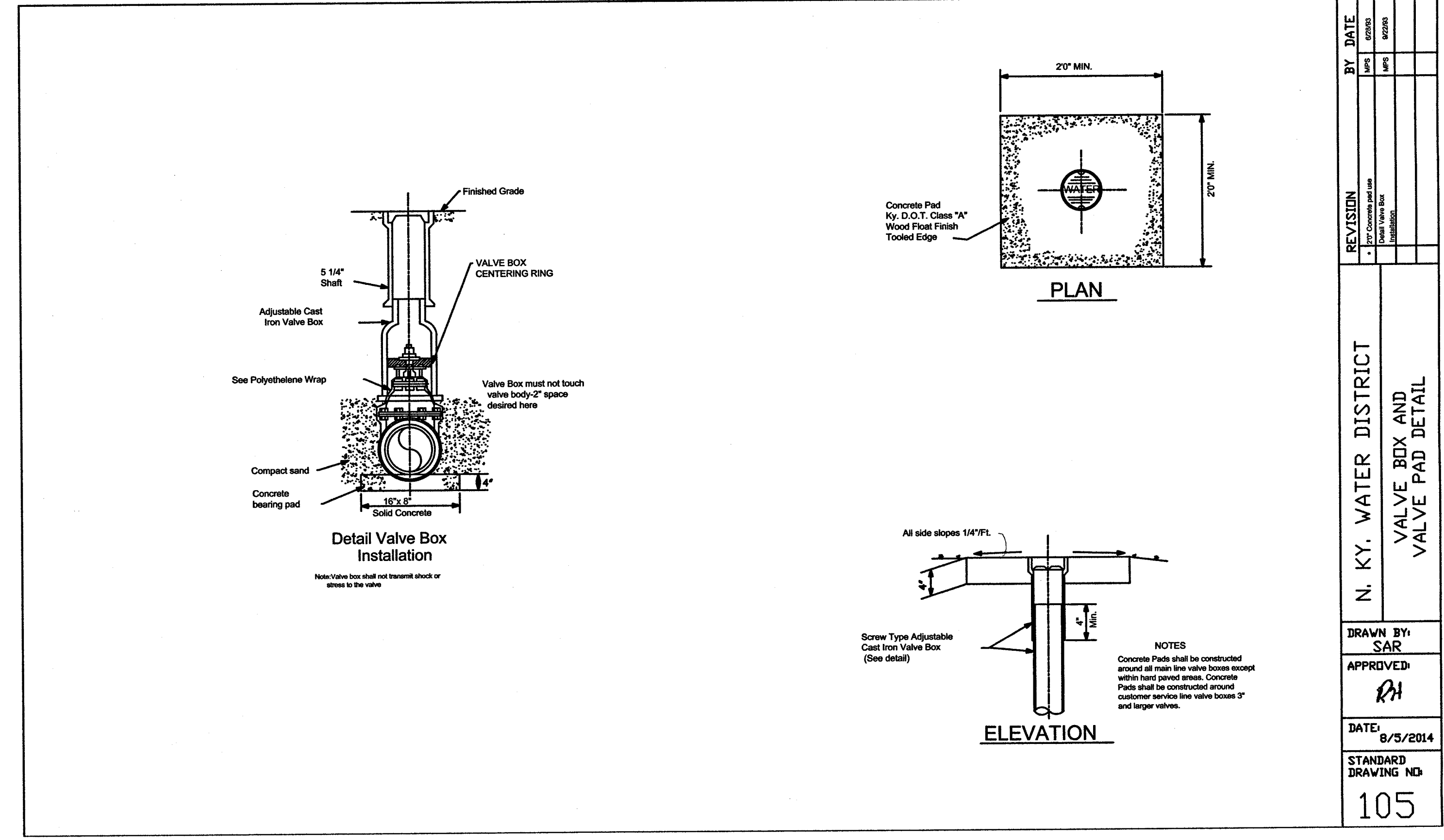
BY DATE	
REVISION	
N. K. Y. WATER DISTRICT	
TYPICAL PIPELINE TRENCH DETAIL	
DRAWN BY	SAR
APPROVED	RH
DATE	8/5/2014
STANDARD DRAWING NO.	103



BY DATE	
REVISION	
N. K. Y. WATER DISTRICT	
TYPICAL PIPELINE TRENCH DETAIL	
DRAWN BY	SAR
APPROVED	RH
DATE	8/5/2014
STANDARD DRAWING NO.	103A



BY DATE	
REVISION	
N. K. Y. WATER DISTRICT	
CONCRETE THRUST BLOCK DETAIL	
DRAWN BY	SAR
APPROVED	RH
DATE	8/5/2014
STANDARD DRAWING NO.	104



BY DATE	
REVISION	
N. K. Y. WATER DISTRICT	
VALVE BOX AND VALVE PAD DETAIL	
DRAWN BY	SAR
APPROVED	RH
DATE	8/5/2014
STANDARD DRAWING NO.	105

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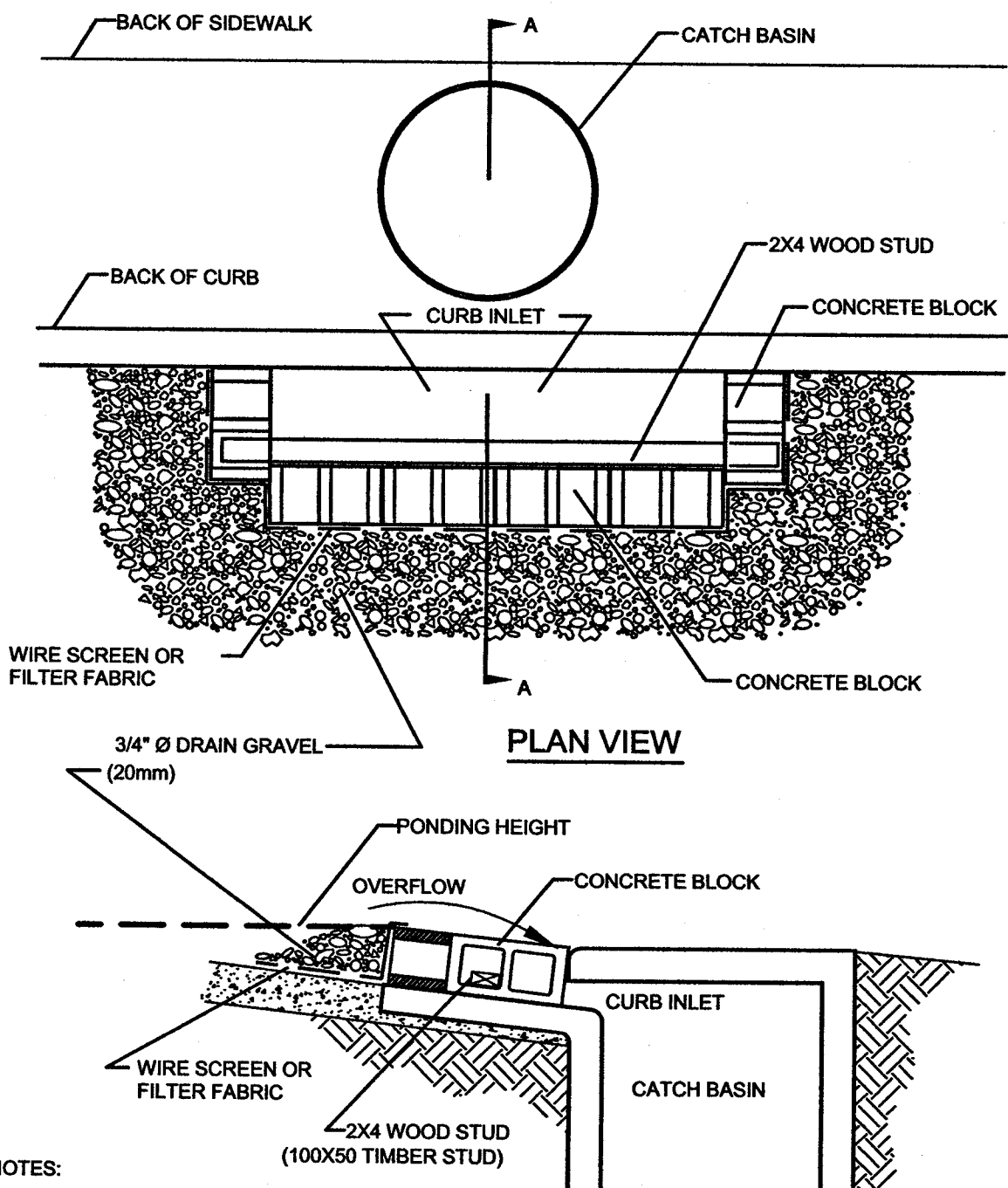
NKWD STANDARD DETAILS
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

ADH
 BTR
 AAB
 AAB

DATE: JULY, 2015
 SCALE: AS NOTED
 SHEET NO. C-0-501

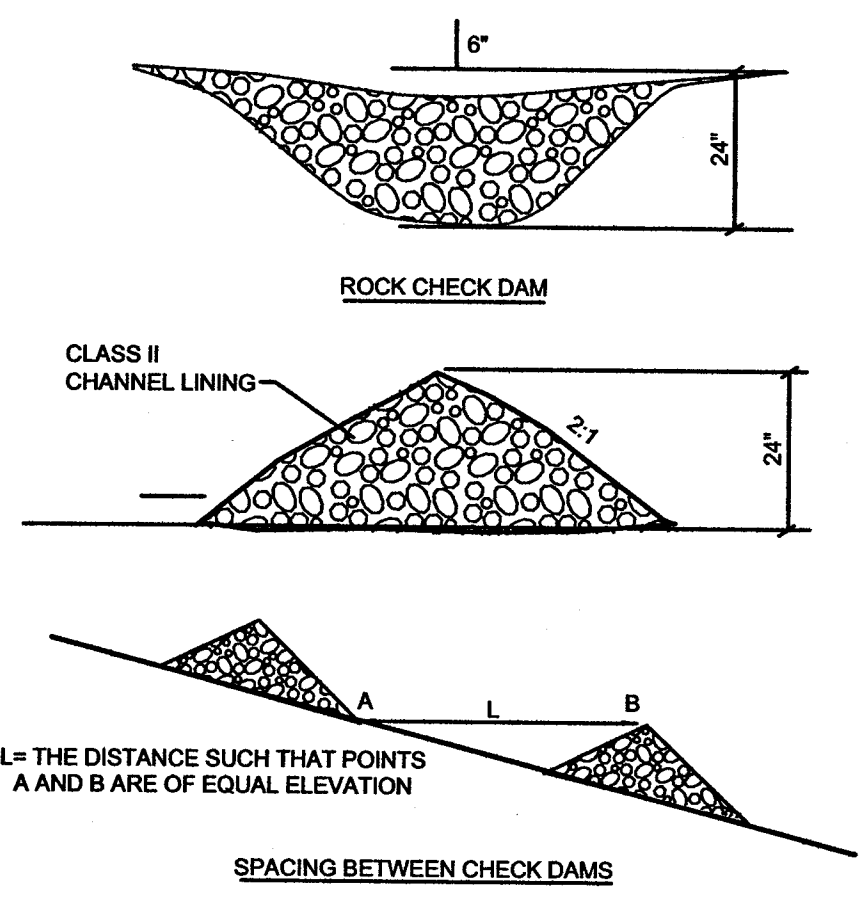
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

BID SET



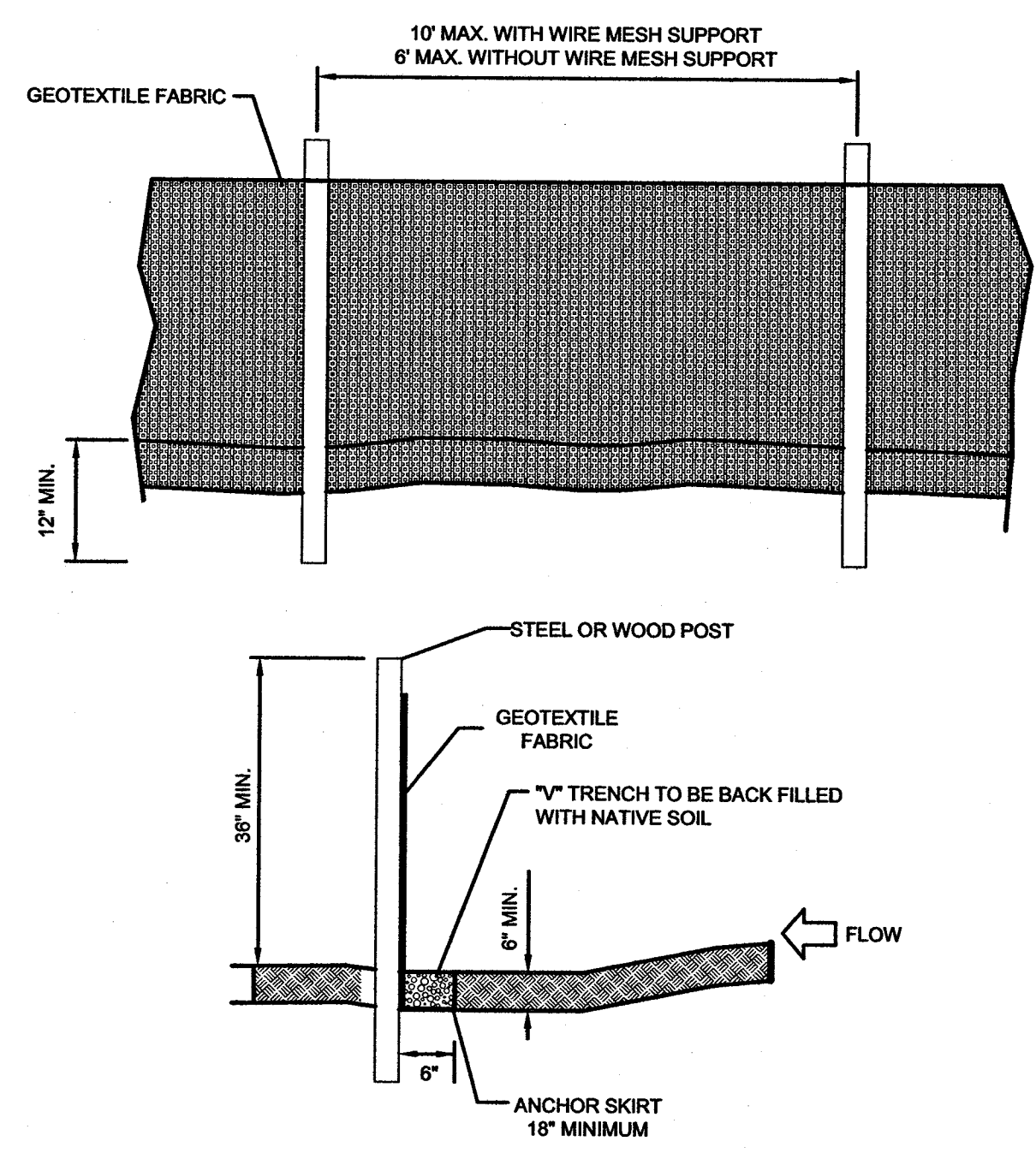
CURB INLET SEDIMENT BARRIER
NOT TO SCALE

NOTES:
1. USE BLOCK AND GRAVEL TYPE SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET SEGMENT, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.



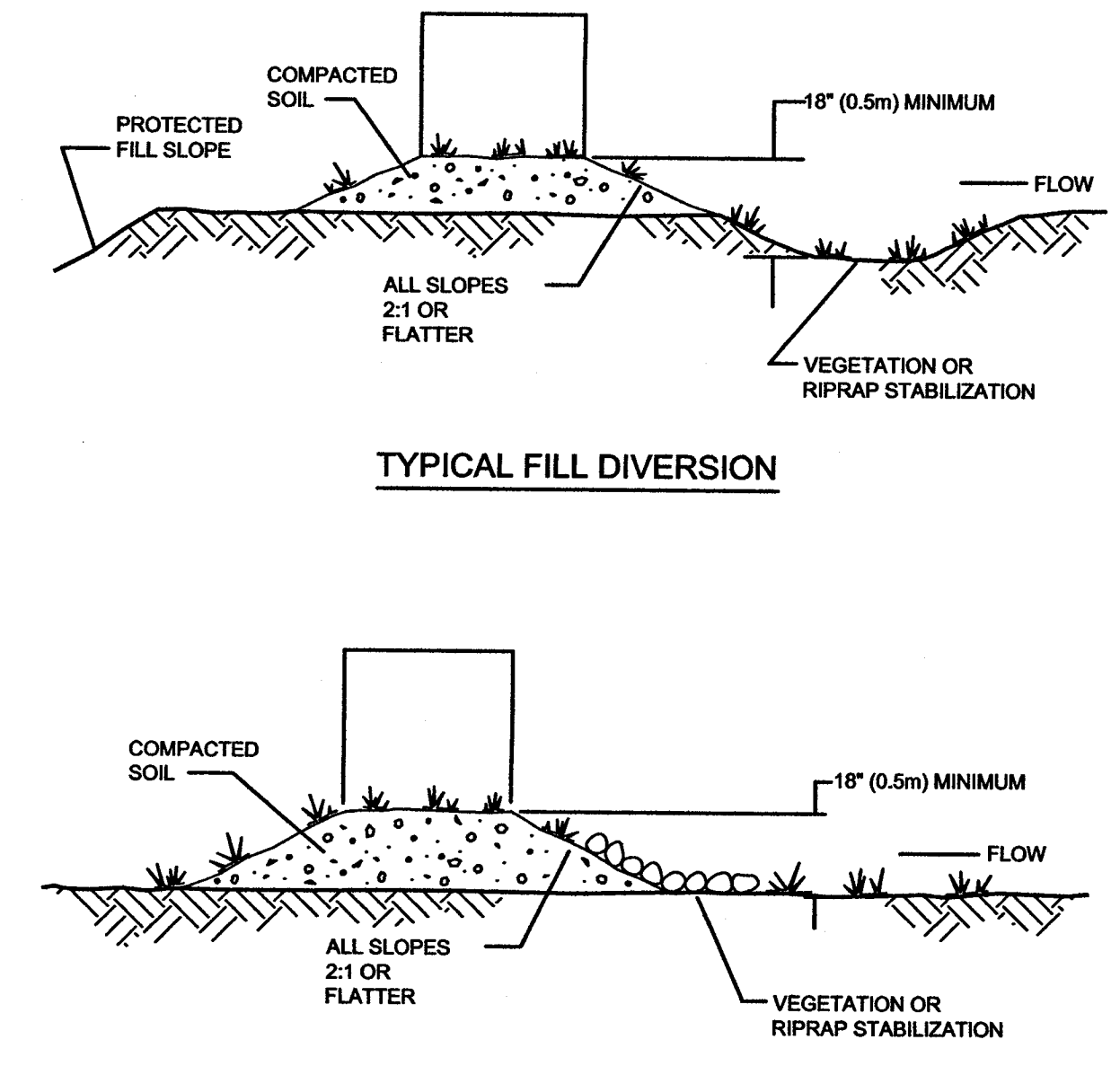
CHECK DAM
NOT TO SCALE

NOTE:
STONE BAGS MAY BE USED FOR TEMPORARY CHECK DAMS. INSTALL IN SAME CONFIGURATION.



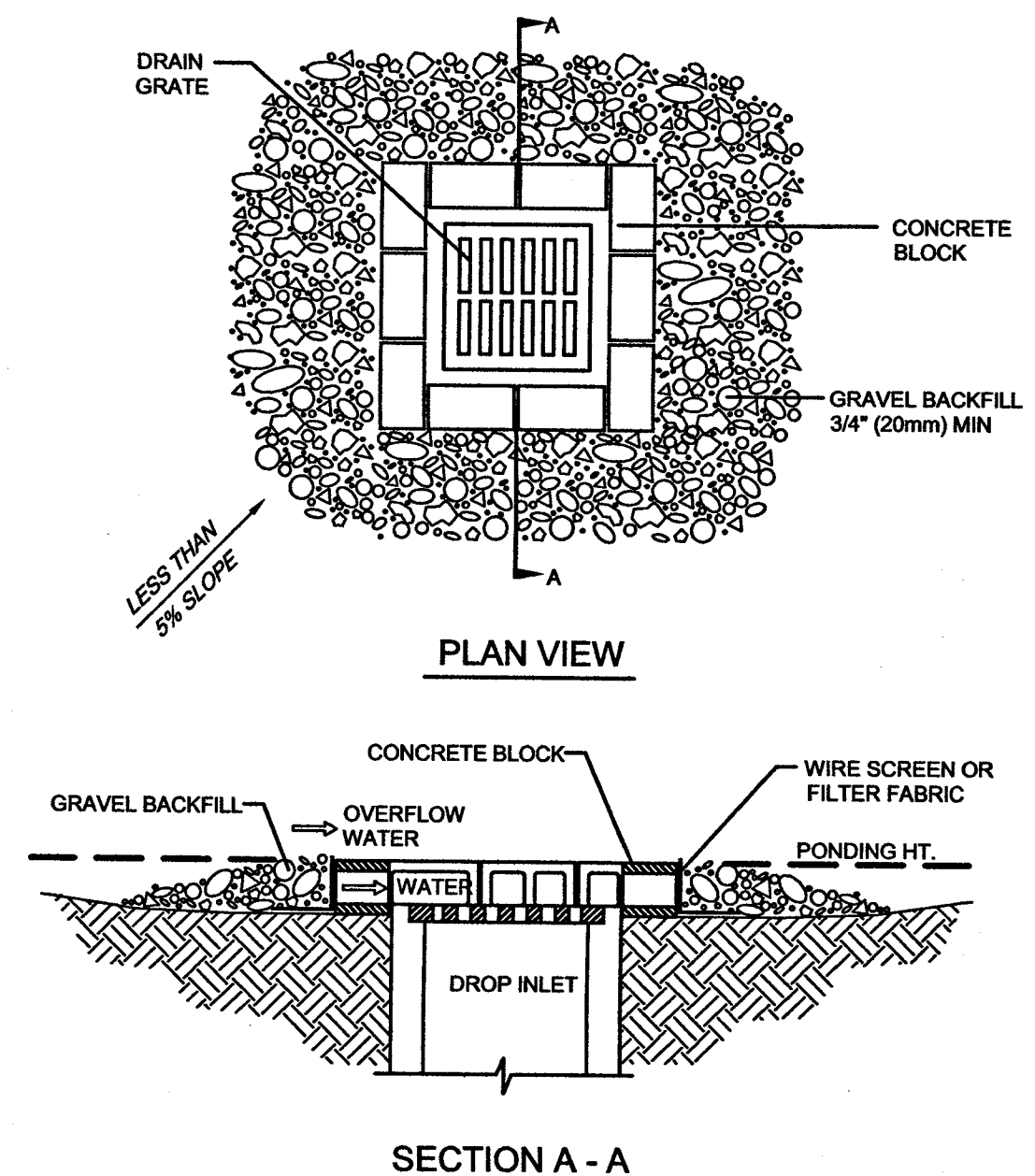
SILT FENCE
NOT TO SCALE

NOTES:
1. GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, GEOTEXTILE FABRIC SHALL BE SPliced TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE AT LEAST 5 FEET IN LENGTH.
3. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC.
4. WOOD POSTS SHALL BE 2 INCHES BY 2 INCHES OR EQUIVALENT. STEEL POSTS SHALL BE 1.33 LBS PER LINEAR FOOT.
5. IF REQUIRED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH IN LENGTH, WIRE TIES OR HOOK RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. TURN SILT FENCE UP SLOPE AT ENDS.



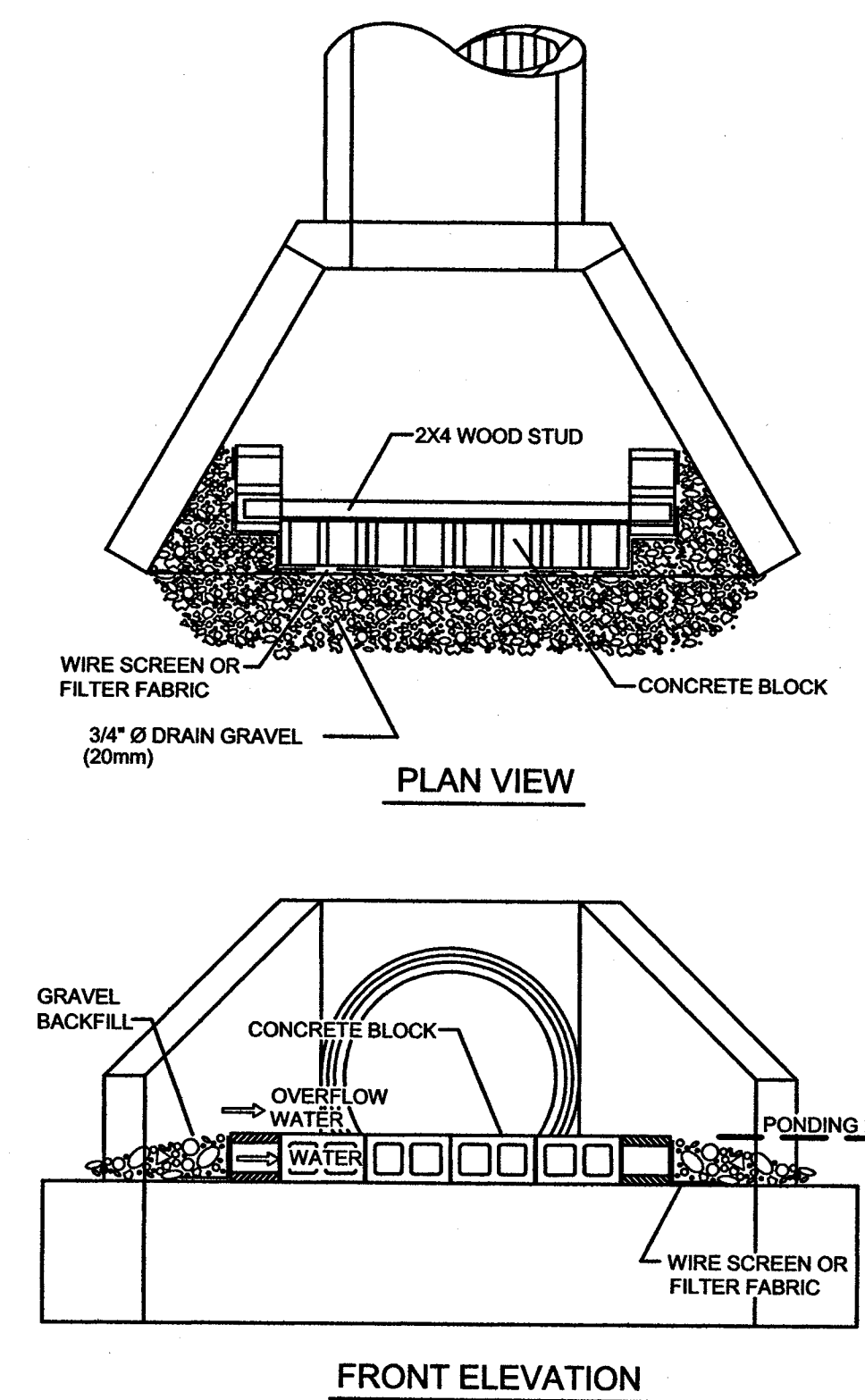
DIVERSION CHANNEL
NOT TO SCALE

NOTES:
1. THE CHANNEL BEHIND THE DIKE SHALL HAVE POSITIVE GRADE TO A STABILIZED OUTLET.
2. THE DIKE SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
3. THE DIKE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT SEEDING OR RIPRAP.

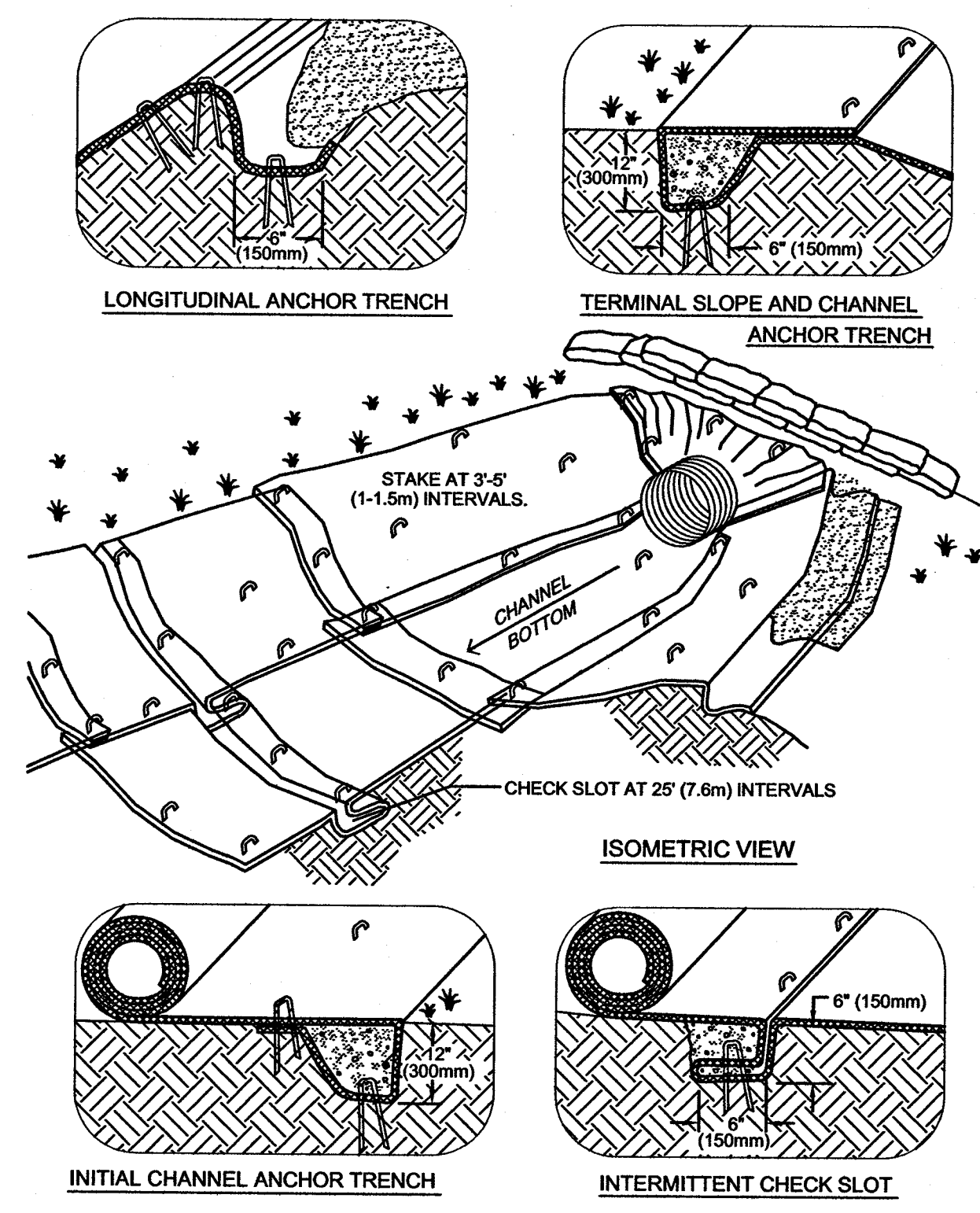


DROP INLET SEDIMENT BARRIER
NOT TO SCALE

NOTES:
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

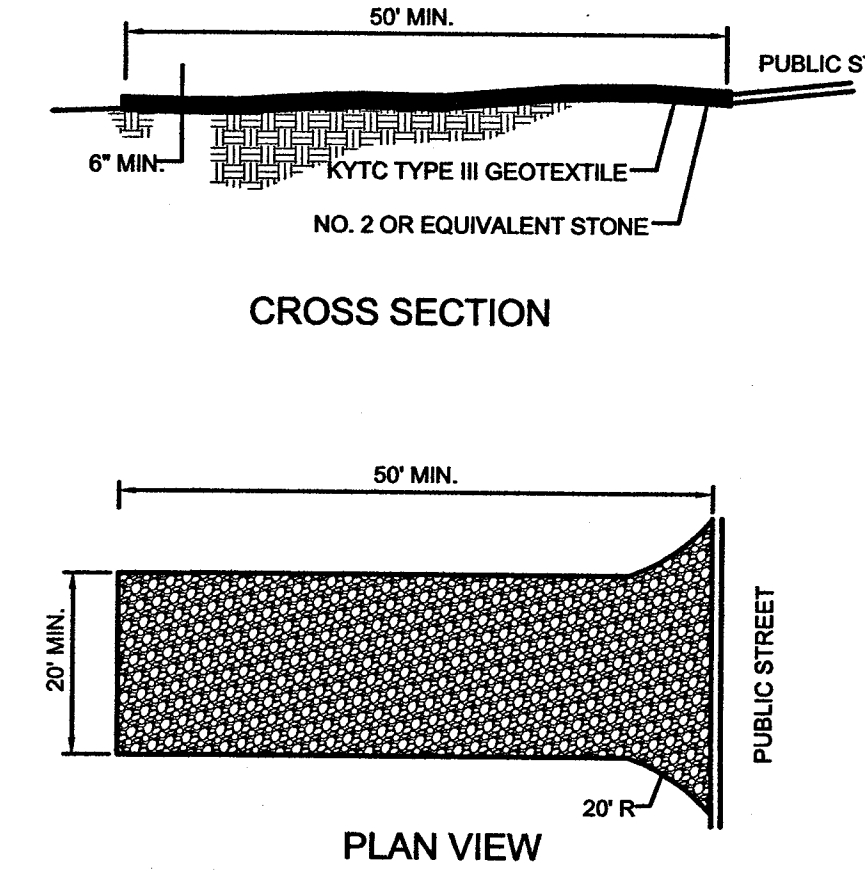


CULVERT INLET SEDIMENT BARRIER
NOT TO SCALE



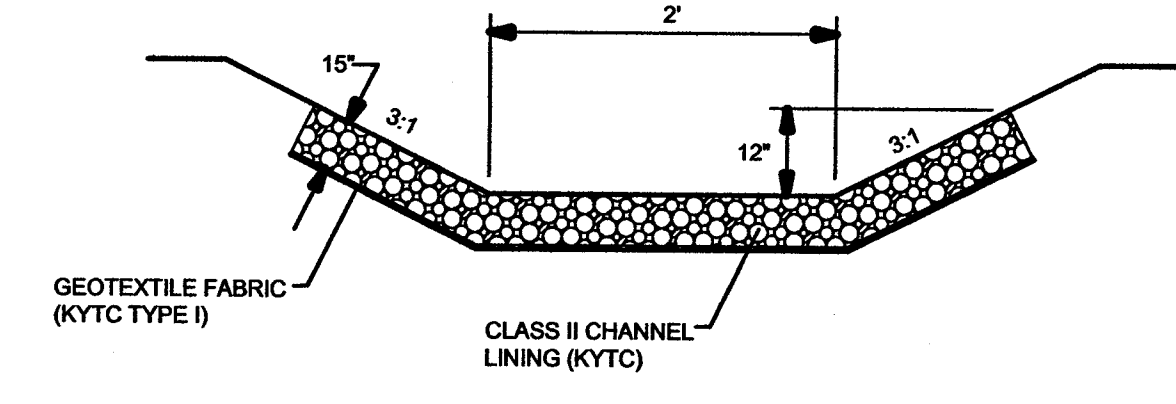
EROSION BLANKETS & TURF REINFORCEMENT MATS
NOT TO SCALE

NOTES:
1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURERS SPECIFICATIONS.
2. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:
1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. GEOTEXTILE (KYTC TYPE III) SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.



RIPRAP CHANNEL LINING
NOT TO SCALE

PLOTTED BY: JBY/11/16/15
PRINTED: 7/17/2015 @ 11:16AM
FILE NAME: G:\383-NKVID Lumley Tank\Working Drawings\AutoCAD\383-C-0-502.dwg

GRV PROJECT NO. 4383

CLIENT PROJECT NO.

DATE: 7-16-2015

engineering | architecture | geospatial

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EROSION CONTROL DETAILS

LUMLEY TANK REPLACEMENT

CITY OF FORT THOMAS, KENTUCKY

NO.	REVISIONS	DATE	BY	ADH	BTR	AAB	AAB

DATE: JULY, 2015

SCALE: AS NOTED

SHEET NO.

C-0-502

EROSION CONTROL NOTES

1. A KPDES STORMWATER PERMIT IS REQUIRED FOR THIS PROJECT. COVERAGE STARTS WHEN THE KY DIVISION OF WATER ACKNOWLEDGES RECEIPT OF A NOTICE OF INTENT FOR COVERAGE.
2. THE KPDES PERMIT REQUIRES THAT THE PERMITTEE SHALL MINIMIZE DISTURBANCE AND THE PERIOD OF TIME THAT THE DISTURBED AREA IS WITHOUT STABILIZATION PRACTICES.
3. FINAL STABILIZATION SHALL BEGIN WITHIN 14 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE BEEN SUSPENDED FOR MORE THAN 180 DAYS. WHEN SNOW COVER CAUSES DELAYS, STABILIZATION SHALL BEGIN AS SOON AS POSSIBLE. STABILIZATION PRACTICES INCLUDE SEEDING, MULCHING, PLACING SOD, PLANTING TREES OR SHRUBS, AND USING GEOTEXTILE FABRICS AND OTHER APPROPRIATE MEASURES. SEEDING RATES, DATES AND MATERIALS MAY BE OBTAINED FROM THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE FIELD OFFICE.
4. FOR ALL CRITICAL AREAS (WITHIN 25' OF A STREAM), SOIL STABILIZATION TECHNIQUES SHALL BE IMPLEMENTED WITHIN 24 HOURS OR AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OR DISTURBANCE. TEMPORARY STABILIZATION PRACTICES SHALL BE INITIATED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES.
5. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED AND IMPLEMENTED AS OUTLINED IN THE KPDES STORMWATER PERMIT KYR 10.
6. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE PROPERLY DESIGNED.
7. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE INSTALLED DURING INITIAL GRADING AT LOCATIONS THAT WILL PROVIDE THE BEST PROTECTION FROM OFF-SITE DAMAGES.
8. ALL SLOPES EXCEEDING 3:1 SHALL HAVE EXTRA SLOPE PROTECTION SUCH AS NETTING.
9. A MULTI-PURPOSE BASIN USED FOR A SEDIMENT TRAP THAT IS THEN CONVERTED TO A DETENTION/RETENTION BASIN SHALL BE DREDGED PERIODICALLY DURING CONSTRUCTION ACTIVITIES AND AFTER STABILIZATION IN ORDER TO PROVIDE ADEQUATE STORAGE.
10. INLET PROTECTION IS REQUIRED TO MINIMIZE DISCHARGE OF SEDIMENT LADEN WATER.
11. SITE PERIMETER CONTROLS ARE REQUIRED AND SHALL BE INSTALLED TO PREVENT THE DEPOSIT OF SOIL AND DEBRIS FROM GRADED SURFACES ONTO PUBLIC STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.
12. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AND REVISE THE CONTROLS AS NEEDED.

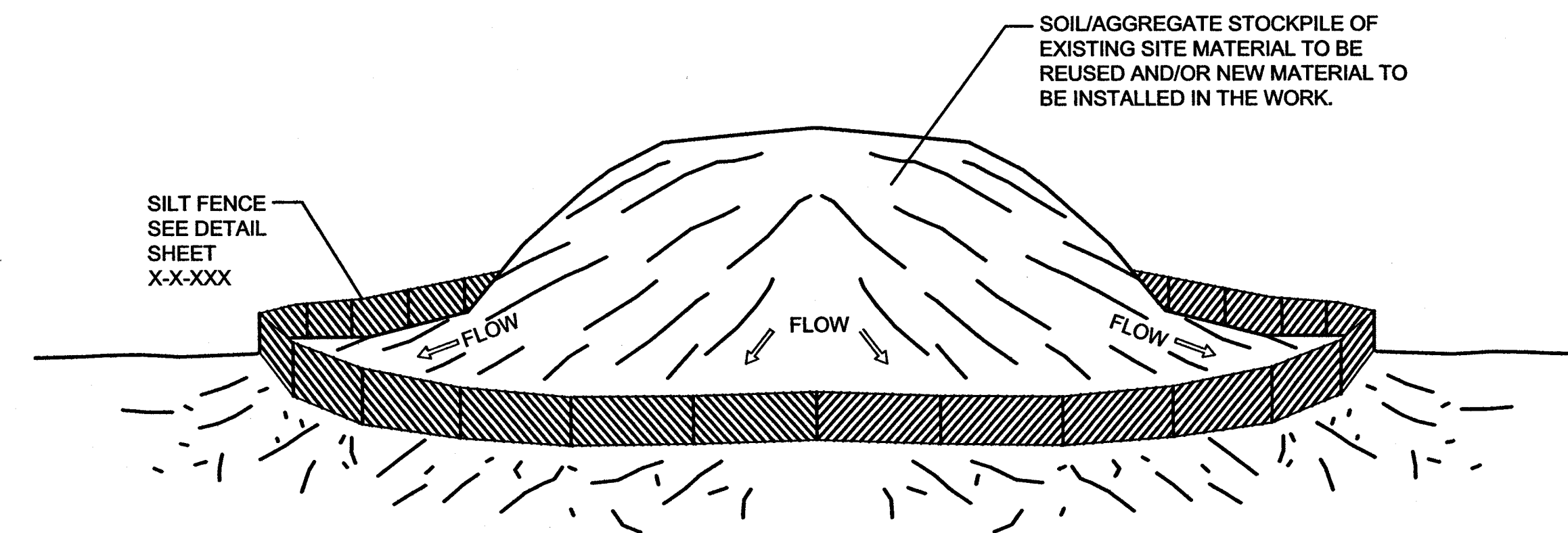
INSPECTIONS AND MAINTENANCE

1. ALL EROSION CONTROL MEASURES, DISCHARGE LOCATIONS, VEHICLE EXITS, DISTURBED AREAS OF THE SITE, AND MATERIALS STORAGE AREAS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. EACH INSPECTION MUST BE DOCUMENTED IN ACCORDANCE WITH THE KPDES GENERAL PERMIT FOR STORMWATER POINT SOURCE DISCHARGES FROM CONSTRUCTION ACTIVITIES (KYR10).
2. SEDIMENT ACCUMULATED AT THE SILT FENCES, INLET PROTECTION AREAS, AND OTHER SILT CHECK DEVICES SHOULD BE REMOVED NO LATER THAN WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. SEDIMENT MUST BE REMOVED FROM ANY SEDIMENT BASINS WHEN THE NO MORE THAN 1/3 OF THE VOLUME HAS BEEN FILLED WITH COLLECTED SEDIMENT.
4. ALL REQUIRED REPAIRS ARE TO BE MADE IMMEDIATELY.
5. REMOVED SEDIMENT MUST BE SPREAD AND VEGETATED OR OTHERWISE STABILIZED IN A MANNER THAT DOES NOT RESULT IN MUDDY RUNOFF TO NEARBY DITCHES AND WATERBODIES.
6. INSPECT THE CONSTRUCTION ENTRANCE DAILY TO ENSURE NO TRACKING OF DIRT ONTO LOCAL ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD MUST BE REMOVED IMMEDIATELY. SEE NOTE 3 FOR HANDLING OF REMOVED SEDIMENT.
7. MAINTAIN THE ENTRANCE AS NECESSARY TO PREVENT TRACKING OF DIRT.

UNTIL THE DISTRICT PERFORMS A FINAL INSPECTION AND THE LAND DISTURBING PERMIT IS CLOSED, THE PERSON RESPONSIBLE SHALL TAKE SUCH MEASURES AS ARE NECESSARY TO PREVENT EROSION OF GRADED STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.

SEQUENCE OF EROSION CONTROL PLAN ACTIVITIES (FROM KY DOW GUIDANCE)

1. IDENTIFY AND FLAG OFF AREAS NOT TO BE DISTURBED AND/OR COMPACTED.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
3. INSTALL UPGRADIENT DIVERSION SWALES AND BERMS.
4. INSTALL SEDIMENT BARRIERS (SILT FENCES)
5. INSTALL SEDIMENT BASIN.
6. CONSTRUCT OTHER SWALES.
7. CONSTRUCT STORM CONVEYANCE SYSTEM (INLETS AND STORM SEWERS)
8. BEGIN CLEARING AND GRADING FOR THE ROADS, BUILDINGS, AND TANKS.
9. STABILIZE BARE AREAS AFTER FINAL GRADE IS REACHED.
10. CONSTRUCT ROADS, BUILDINGS, TANKS AND PARKING LOTS.
11. INSTALL LANDSCAPING.
12. DREDGE SEDIMENT BASIN AND INSTALL TEMPORARY EROSION CONTROL BLANKET ON ALL SLOPES.
13. REMOVE ALL CONTROLS ONCE THE SITE HAS BEEN FULLY STABILIZED.
14. FINAL INSPECTION FOR LAND DISTURBANCE PERMIT.
15. TEMPORARY DIVERSION DITCHES MAY BE REQUIRED DURING CONSTRUCTION TO MITIGATE EROSION OF THE DISTURBED CONSTRUCTION AREA, BY DIRECTING OFF-SITE DRAINAGE AROUND THE DISTURBANCE AREAS.

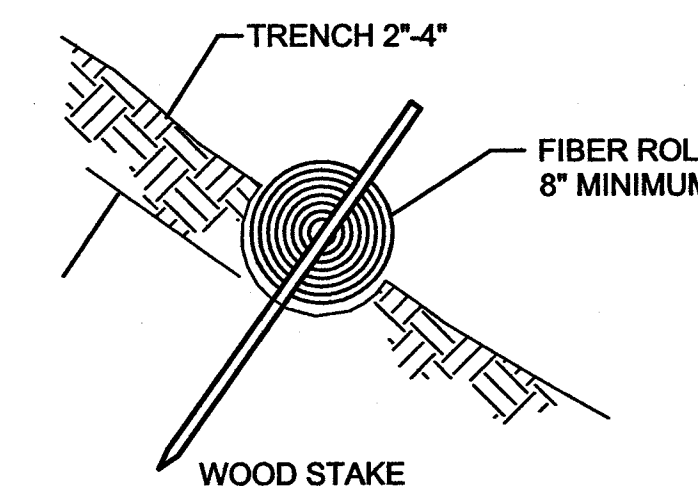


NOTES:

1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE

NOT TO SCALE

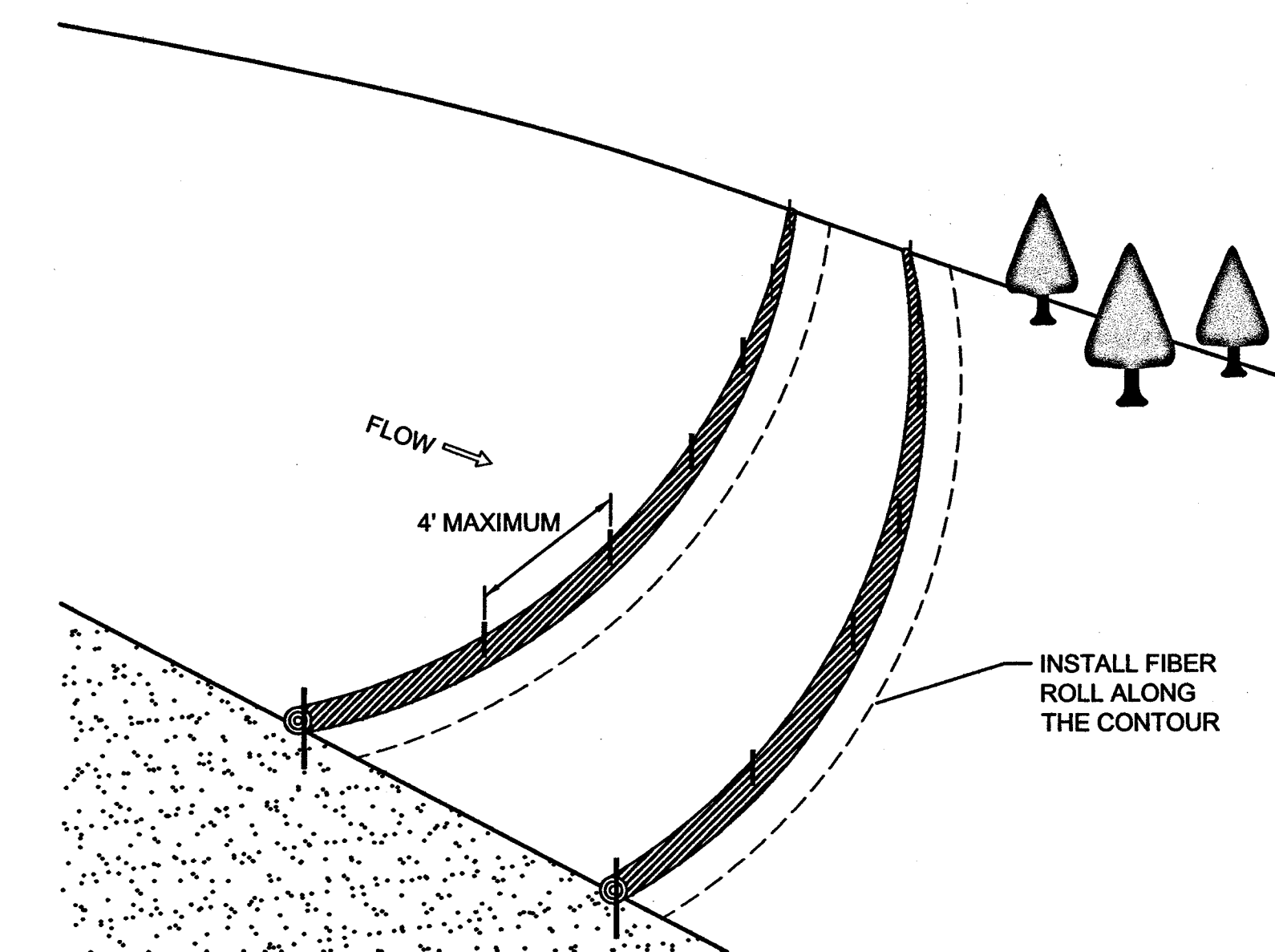


NOTES:

1. FIBER ROLLS AND OTHER COMMERCIAL PRODUCTS MADE FROM COCONUT FIBER, PLASTIC, WOOD SHAVINGS, COMPOST, OR OTHER MATERIAL CAN BE USED AS SEDIMENT BARRIERS ON SLOPES FLATTER THAN 10:1.
2. FOLLOW MANUFACTURERS' INSTALLATION INSTRUCTIONS AND ENSURE THAT SEDIMENT FILTER SPACING ON SLOPES IS CORRECT.

FIBER ROLLS

NOT TO SCALE



GRW PROJECT NO. 4393
CLIENT PROJECT NO.



EROSION CONTROL DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED:	ADH	BY:	ADH
DRAWN:	BTR	DATE:	
REVIEWED:	AAB	DATE:	
APPROVED:	AAB	DATE:	

NO.	DATE	DESCRIPTION

DATE: JULY, 2015
SCALE: AS NOTED

SHEET NO. C-0-503

PLOTTED BY: ABYH

PRINTED: 7/17/2015 @ 10:47AM

FILE NAME: G:\385-NKVID Lumley Tank\Working Drawings\AutoCAD\4393-C-0-503.dwg

BID SET

PLOTTED BY: AByan

PRINTED: 7/17/2015 @ 10:54AM

FILE NAME: C:\4383\NKWD\Working Drawings\AutoCAD\4383-C-0701.dwg

The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing, and testing mains. All securing and blocking shall be inspected by the District prior to backfilling of ditch.

If the existing water main material being tapped or connected to is asbestos concrete, then during the process of tapping the asbestos concrete water main, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos concrete resulting from the tap shall be doubled bagged, placed in a rigid container and disposed of in an approved landfill.

3.02 CONTRACTORS RESPONSIBILITY All work performed on any water mains and/or appurtenances that are owned or anticipated to be owned by the District shall be completed under the direction of the District adhering to an acceptable plan approved by the District. A minimum 24 hours notice shall be given to the District by the contractor prior to the start of water main work. One set of District approved plans shall be on the job site during construction. Water main construction will not be permitted to start until all approvals are received. There shall be no deviation from the approved plans without written approval from the District.

A. If the interruption of service to any customer of the District is necessary, the Contractor shall make arrangements to provide such shutdown and notify District customers at the direction of the District Inspector. All private residents shall be notified no less than 48 hours and all businesses commercial and industrial customers shall be notified no less than 1 week prior to the interruption of service. All shutdowns shall be coordinated with the affected residents, with priority given to any special needs customers such as hospitals, schools, and customers with medical needs.

B. Contractor shall be responsible for relieving any water main pressure (whether air or water) before removing any cap, plug, fire hydrant, valve, etc.

3.03 HANDLING Pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. Pipe handled on skid ways shall not be skidded or rolled against other pipe. All bolts shall be tightened with proper wrenches and must have equal tension. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C., P.V.C.O. & P.E. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bell ends.

3.04 TRENCHING, GRADE, AND COVER Typically no trenching or laying of pipe or fittings shall be done until pavement (curbs) has been installed. In cases where water main installation is required under new pavement (side streets) main may be installed from trench stakes. When main installation is done prior to the pavement completion, test holes may be required by the District if valve depth, service taps or other evidence indicates that the minimum or maximum cover requirements are not met or that the main is in the wrong location. The contractor will be responsible for digging test holes at intervals required by the District to verify depth and location.

All trenching, grade, and cover work shall conform to the lines and grades established, and shall be done according to the drawings and specifications, subject to such modifications as the District may determine to be necessary during the execution of the work. Trenches for water lines shall be of a depth that will provide a minimum cover over the top of pipe of three (3) feet and a maximum of four (4) feet from the final finished grade. Cover over four feet in depth will not be allowed unless approved by the District to avoid interference with other utilities. Kentucky Dept. of Transportation requires a minimum of 42" of cover for water mains along state highways.

The Contractor shall establish all locations, lines, and grades in advance of all work where practical. In addition the Contractor will keep the Northern Kentucky Water District informed a reasonable time in advance of the times and places in which the Contractor intends to work. (minimum advance notice shall be one working day, 24 hours).

3.05 TRENCH EXCAVATION

A. TRENCH WIDTH Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:

Earth
Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inches each side of pipe.
Maximum - nominal pipe diameter plus 24 inches.

Rock
Minimum - 24" or less, nominal pipe size: outside diameter of pipe barrel plus 12 inches, @ 6 inches each side.
Minimum - Larger than 24", nominal pipe size: outside diameter of pipe barrel plus 18 inches, @ 9 inches each side.
Maximum - nominal pipe diameter plus 24 inches.

B. BUTTERFLY VALVES

Trench width shall be over excavated 24" on the side that the operating mechanism is located on the butterfly valve when the surrounding area cannot be hand dug.

3.06 BOTTOM PREPARATION The Contractor shall use excavation equipment that produces an even foundation. For the entire length of the trench, a compacted 3" layer of sand, shall be installed below the pipe. Bell holes and depressions for joints, valves, and fittings shall be dug after the trench bedding has been graded in order that the pipe rest upon the prepared bedding for as nearly its full length as practicable. Bell holes and depressions shall be only of such length, depth, and width as required for properly making the particular type of joint.

3.07 UNSTABLE SUB-GRADE MATERIAL When the sub-grade is found to include non-approved backfill material (rock, refuse, organic material, etc.), such material shall be removed to a minimum of six (6) inches below the bottom of the pipe and backfilled with sand, backrun or granular material and thoroughly compacted.

3.08 UNSTABLE SUB-GRADE If the material forming the trench bottom is not suitable for a good foundation, a further depth shall be excavated and backfilled with an approved backfill material and thoroughly compacted or a foundation shall be constructed using piling, treated timbers, concrete, or other materials as directed and approved by the District.

3.09 PIPE LAYING Pipe shall be laid with bell ends facing in the direction of laying. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations shall not be permitted. Caps or plugs shall be installed to prevent the entrance of foreign material whenever pipe laying operations are not in progress.

3.10 PIPE CUTTING Cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted.

BY DATE	
REVISION	
N. KY. WATER DISTRICT SPECIFICATIONS	
DRAWN BY: SAR	
APPROVED: RH	
DATE: 8/5/2014	
STANDARD DRAWING NO: 100-E	

3.11 PUSH-ON JOINTS The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant, per manufacturers recommendation, shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water). With the spigot end centered in the bell, the spigot is pushed home per manufacturers recommendations. Insertion of spigot into PVC type pipe bell should be inserted until the reference mark is flush with the end of the bell. Over insertion of the pipe is not recommended per the manufacturer. Pipe joint materials which prevent permeation by petroleum products shall be used within 200 foot radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.

3.12 MECHANICAL JOINTS Mechanical joints for D.I.P. and P.V.C. type pipe require that the spigot be carefully located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. These clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed on each gasket prior to installation to remove the loose dirt and lubricate the gasket as it is force into its retaining space. P.V.C. type pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fittings. Care shall be taken to ensure that the P.V.C. plain end is completely home into the mechanical joint fittings.

3.13 RESTRAINED JOINTS Restrained joint-type pipe and fittings shall only be used as approved by the District. Retaining glands, field lock gaskets, or retaining flanges may be used as temporary blocking but shall not be considered as providing a permanent restrained joint or as an alternate for permanent concrete blocking. The use of these type of restraining joints need to be approved by the District prior to installation.

3.14 SETTING VALVES Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the side property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum 2' by 2' by 4" concrete pad as shown in Standard Drawing No. 105, unless a smaller pad is approved by the District.

3.15 SETTING FIRE HYDRANTS Hydrants shall be located as shown on the plans or as directed by the District. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. All hydrants shall stand plumb with the pumper nozzle facing the curb. Hydrant shall be set to the established grade, with the traffic flange within 4" above final grade in accordance to Standard Drawing No. 109. Each hydrant shall be controlled by an independent gate valve with valve box. All valves used for hydrant control shall be anchored to the branch tee. Fire hydrant barrel extension shall be limited to a one piece assembly only, stacking two or more extensions is prohibited. Maximum fire hydrant barrel extension is 2 feet.

3.16 CROSS-COUNTRY WATER MAINS All cross-country water mains shall be installed with a tracing wire as described in Part II, Section 2.01 - F - Tracing Wire.

3.17 THRUST BLOCKING All bends over five (5) degrees shall be securely blocked against movement with concrete thrust blocks placed against undisturbed earth in accordance with Standard Drawing No. 104 & 104-A. Thrust blocks shall be approved by the District prior to backfilling. Water mains shall have concrete thrust block at all pipe intersections and changes of direction to resist forces acting on the pipeline. All concrete thrust blocks shall be poured in such a manner that the bolts can be replaced without disturbing the blocking. All caps or plugs used in mains to undergo hydrostatic test shall be properly installed and blocked in advance of testing mains. All caps or plug installations shall be approved by the District representative before the main is subjected to the pressure test. The District may permit the use of restrained type glands, gaskets, 3/4" welded eye bolts @ a 90 degree bend & 3/4" threaded rods or other means as prior approved by the District for temporary restraint only. Permanent concrete thrust restraint shall be provided with any temporary restraint. Duc-Lucs are prohibited for use.

3.18 TRENCH BACKFILL TO 12" OVER PIPE BARREL All trench excavations shall be backfilled immediately after pipe is laid with the exception of thrust blocks. Compacted sand material shall be used to backfill the trench from the bottom of the pipe barrel to the 12" over the pipe barrel. Backfill material shall be free from cinders, refuse, organic material, boulders, top soil, frozen material, material with a high void content, rocks 1 1/2" or larger measured in any direction, sharp stones and crushed rocks larger than 3/4", or other materials which in the opinion of the District is unsuitable. No flushing of backfill shall be permitted to achieve compaction.

3.19 REMAINING TRENCH BACKFILL IN NON-PAVEMENT AREAS From 12" above the pipe barrel to the surface, excavated trench material may be used as backfill material or as required by local or county authorities. No material shall be used for backfill that contains frozen earth, vegetable or organic material, debris, rocks 8" or larger measured in any direction, or earth with an exceptionally high void content. Compaction of remaining trench backfill shall be as required by local or county authorities.

3.20 REMAINING TRENCH BACKFILL IN EXISTING PUBLIC ROADWAYS Roadway opening permits shall be obtained from the local City, County or Ky. State Dept. of Highways if applicable. The minimum requirements for backfill beneath all existing public roadways from 12" above the pipe barrel to sub-grade shall be flowable fill unless City, County, or State have additional requirements. The flowable fill shall comply with the latest edition of the Kentucky Transportation Cabinet/ Department of Highways "Standard Specifications for Road and Bridge Construction". The remaining trench backfill to final grade shall match the existing pavement/surface conditions.

3.21 DISINFECTION Water Mains designed to carry water for domestic consumption shall be thoroughly cleaned, flushed, and disinfected before being put in service and before acceptance by the District. Disinfection shall be done by the addition of suitable amounts of chlorine or liquid sodium hypochlorite in such amounts to produce a concentration of at least fifty (50) ppm and a residual of at least twenty five (25) ppm at the end of 24 hours and followed by thorough flushing. The application shall be as approved by the District and in accordance with AWWA C651 and applicable Ky. Division of Water requirements. The contractor shall be responsible for de-chlorination of the disinfection water. All non-disinfected fittings used for tie-ins or repairs shall be cleaned and swabbed with a hypochlorite disinfecting solution prior to installation. New water distribution lines shall not be placed into service until bacteriological samples taken at the points specified in 401 KAR 8:150 Section 4 (2) are examined and are shown to be negative following disinfection. Disposal of chlorinated water will be in accordance with 401 KARSS:031. Coliform samples must be taken at connection points to existing mains, 1 mile intervals along new mains, and at all dead ends.

BY DATE	
REVISION	
N. KY. WATER DISTRICT SPECIFICATIONS	
DRAWN BY: SAR	
APPROVED: RH	
DATE: 8/5/2014	
STANDARD DRAWING NO: 100-F	

A. TABLET METHOD Calcium hypochlorite tablets shall be installed in each length of pipe to insure a sufficient dosage of 50 ppm based on the following table:

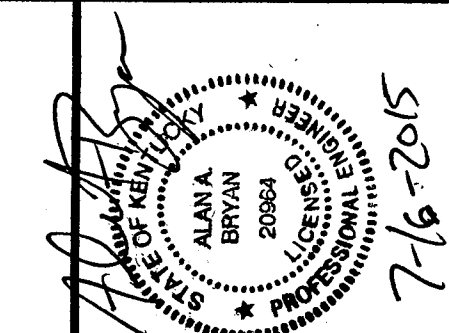
Pipe Diameter	Tablets per Length
6"	2 ea. -5 gram tablets
8"	4 ea. -5 gram tablets
10"	6 ea. -5 gram tablets
12"	8 ea. -5 gram tablets
16"	14 ea. -5gram tablets

The tablets shall be attached by a food-grade adhesive such as Permatax No. 2 or Permatax Clear RTV Silicone Adhesive Sealant. Tablets shall be attached inside and at the top of the main with approximately equal numbers of tablets at each end of the pipe. Tablets must be water soluble.

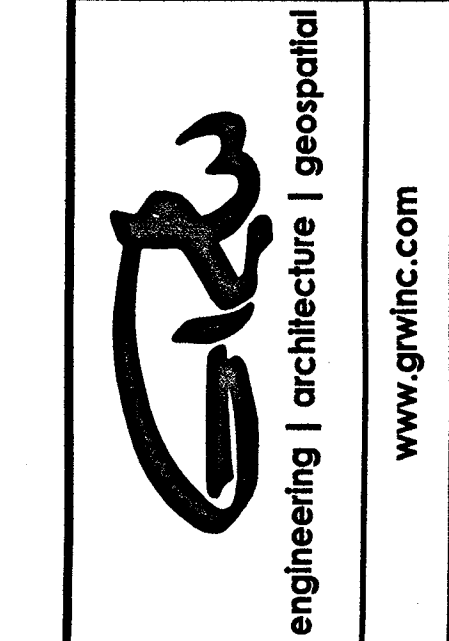
B. LIQUID CHLORINE METHOD Disinfection may be done by the addition of suitable amounts of chlorine in the form of liquid sodium hypochlorite as per AWWA B300 to obtain the results as the previous method described. Note: Permission for this method of disinfection shall be obtained by the District prior to construction.

3.22 PRESSURE TESTING Pressure Testing must be in accordance with AWWA Standards C600. The water main being tested shall have all air expelled by additional flushing or the installation of taps on high points in the line. The pressure of the water main shall be gradually increased to obtain a minimum pressure of 100 psi over the design pressure (250 psi minimum) at the lowest elevation point of the water main or as directed by the District. The test will be for a two (2) hour duration and will not vary by more than 5 psi. All tests performed for each test section shall be witnessed and approved by a representative of the District, in the event any test is performed without a representative of the District, the Contractor shall be required to test the section again. Leakage is defined as the amount of water used to maintain the test pressure.

BY DATE	
REVISION	
N. KY. WATER DISTRICT SPECIFICATIONS	
DRAWN BY: SAR	
APPROVED: RH	
DATE: 8/5/2014	
STANDARD DRAWING NO: 100-G	



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CLIENT PROJECT NO.
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NKWD STANDARD SPECIFICATIONS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

REVISIONS	DATE	DESCRIPTION

DATE: JULY, 2015
SCALE: AS NOTED
SHEET NO. C-0-701

BID SET

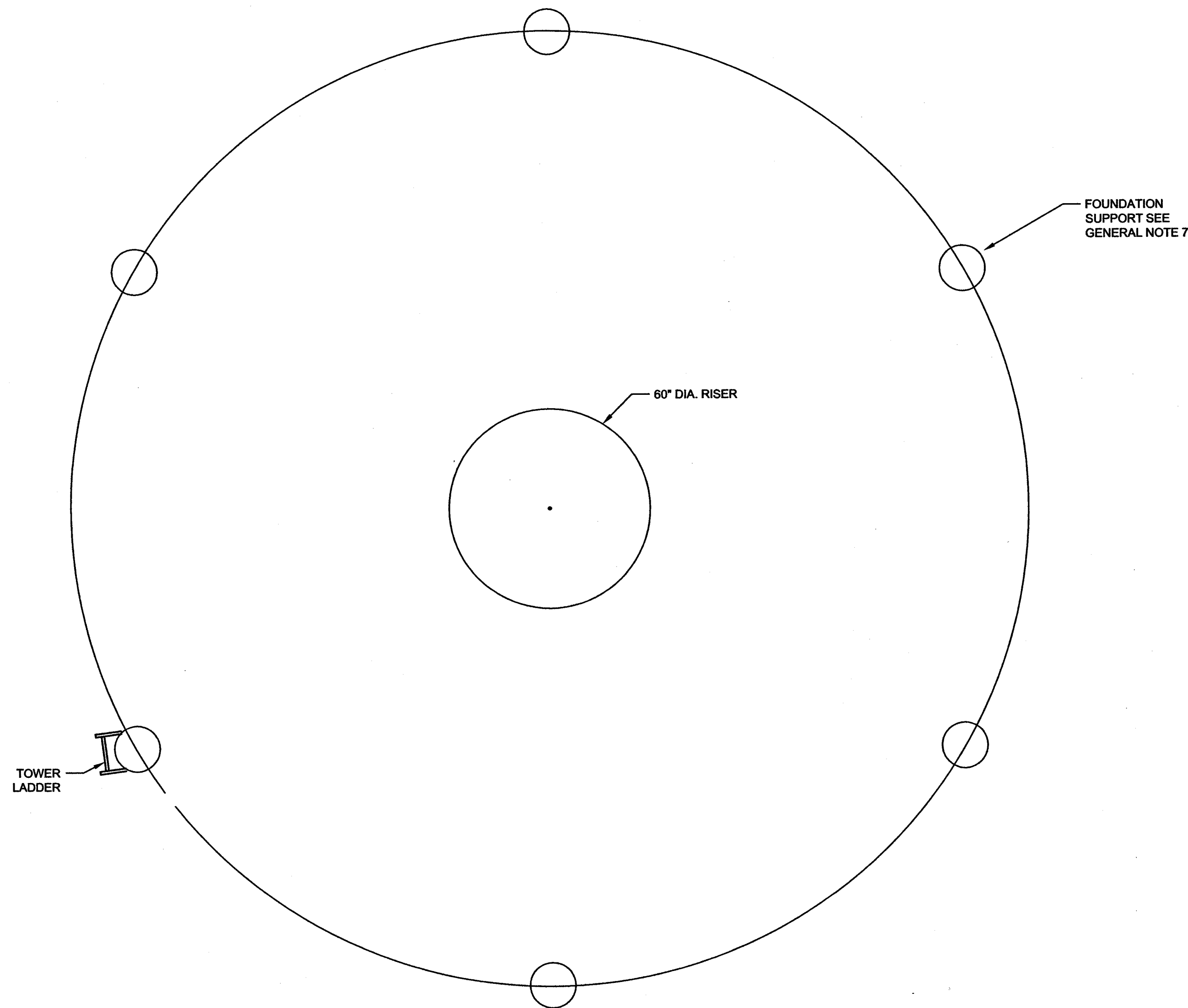
PLOTTED BY: A.Bryan

PRINTED: 7/17/2015 @ 10:58AM

FILE NAME: G:\4383\AKW\DWG\Lumley Tank\Working Drawings\AutoCAD\4383-C-1-100.dwg

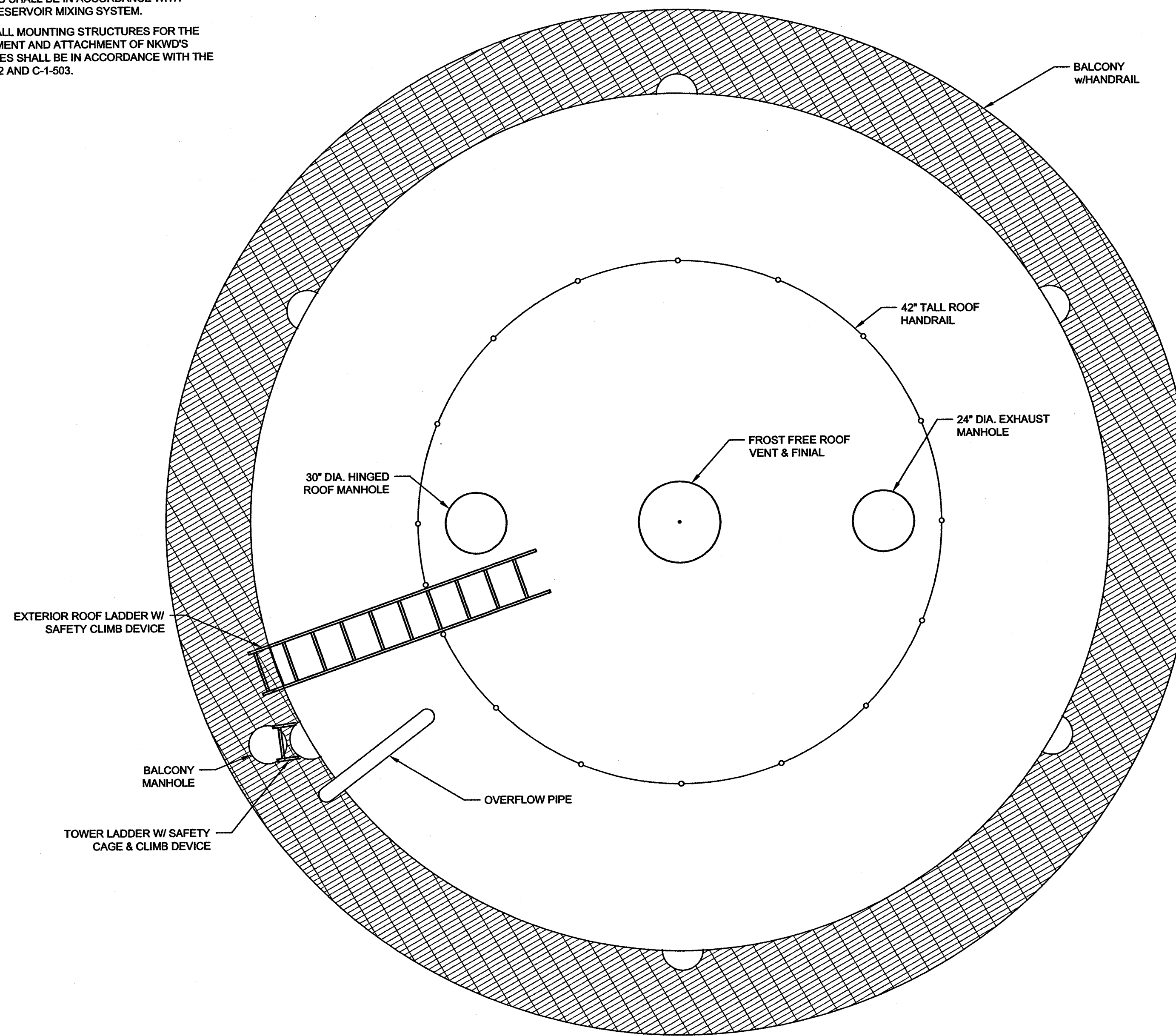
GENERAL NOTES:

1. THESE PROJECT DRAWINGS IN GENERAL REFLECT THE CONSTRUCTION OF BASE BID OPTION NO. 1 - A NEW 500,000 GALLON MULTI-COLUMN ELEVATED WATER STORAGE TANK.
2. TANK MANUFACTURER SHALL DESIGN, FABRICATE AND ERECT THE WATER TANK IN ACCORDANCE WITH D-100.
3. NUMBER OF TOWER LEGS SHALL BE PER THE TANK MANUFACTURER'S DESIGN.
4. MATERIALS USED IN THE FABRICATION OF THE WATER TANK SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
5. ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS, AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS.
6. WATER TANK SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATION SECTION 099720 - STEEL TANK COATINGS.
7. WATER TANK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C652 AND AS DESCRIBED MORE IN THE CONTRACT SPECIFICATIONS.
8. CONTRACTOR SHALL REMOVE EXISTING CONCRETE TANK FOUNDATION FOOTINGS AND CONCRETE PIPING SUPPORTS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE NEW TANK FOUNDATION.
9. THE NEW TANK FOUNDATION SHALL BE DESIGNED BY THE TANK MANUFACTURER AND BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT'S RECOMMENDATION FOR DEEP FOUNDATION DESIGN. THE GEOTECHNICAL REPORT IS ATTACHED AS AN APPENDIX TO THE CONTRACT SPECIFICATIONS.
10. CONCRETE FOR THE NEW FOUNDATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 033100 - CAST IN PLACE CONCRETE.
11. TANK MANUFACTURER SHALL INSTALL PASSIVE MIXING SYSTEM INSIDE TANK. SEE DETAILS ON SHEET C-1-500, AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 331220 - RESERVOIR MIXING SYSTEM.
12. TANK MANUFACTURER SHALL INSTALL MOUNTING STRUCTURES FOR THE ATTACHMENT OF CELLULAR EQUIPMENT AND ATTACHMENT OF NIKO'S TELEMETRY. MOUNTING STRUCTURES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS C-1-502 AND C-1-503.



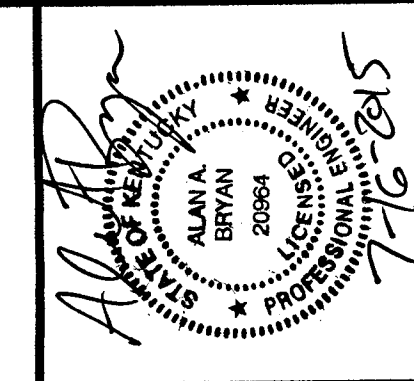
500,000 GALLON MULTI-COLUMN TANK FOUNDATION PLAN

NOT TO SCALE



500,000 GALLON MULTI-COLUMN TANK UPPER PLAN

NOT TO SCALE



GRW PROJECT NO. 4983
 CLIENT PROJECT NO.
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BASE BID OPTION NO.1
 PLAN VIEW - 500,000 GAL. MULTI-COLUMN TANK
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

DESIGNED BY	ADH
DRAWN BY	BTR
REVIEWED BY	AAB
APPROVED BY	AAB

NO.	REVISIONS DESCRIPTION	DATE	BY

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: JULY, 2015
 SCALE: AS NOTED
 SHEET NO.

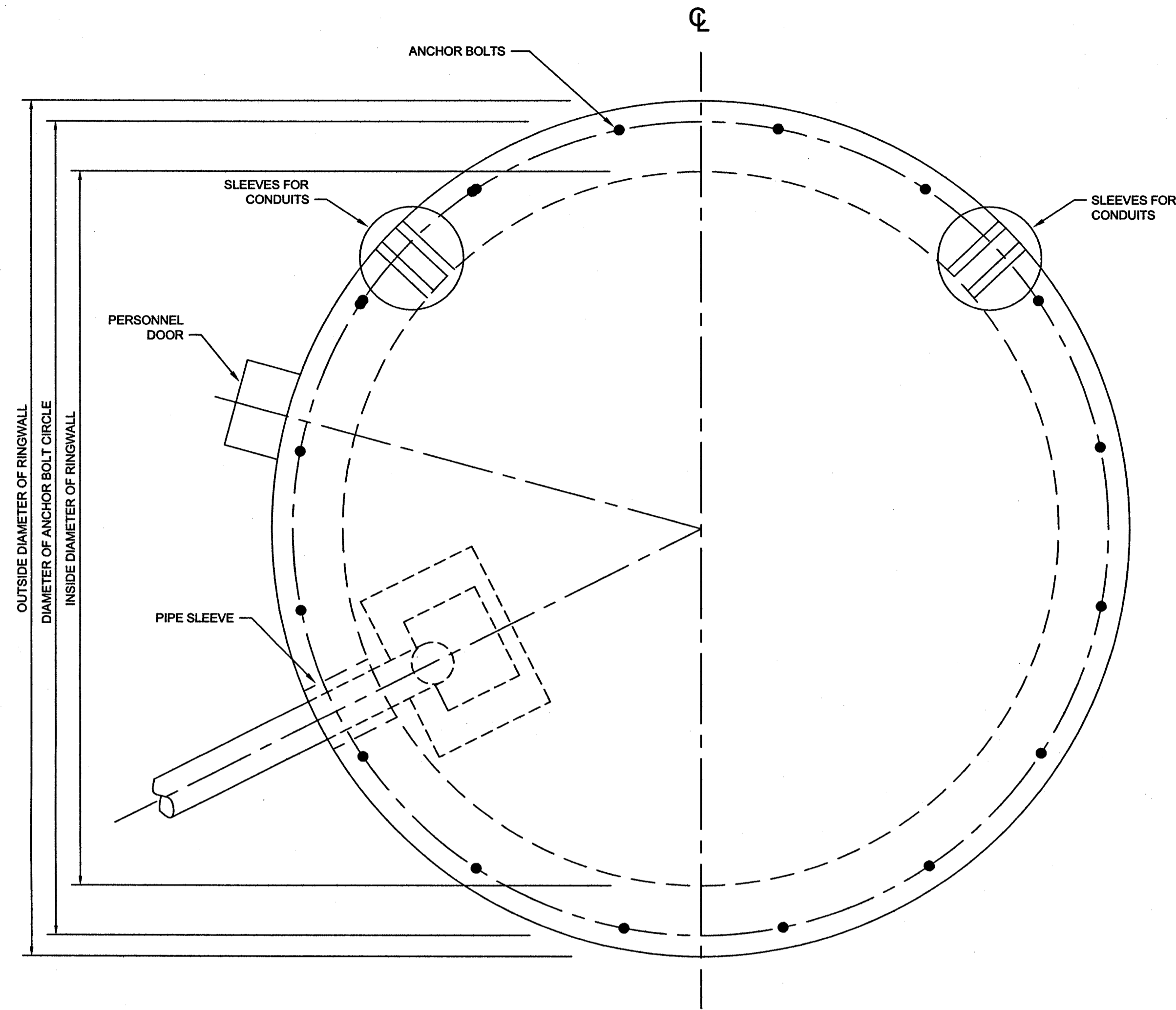
C-1-100

BID SET

PLOTTED BY: ABRYAN

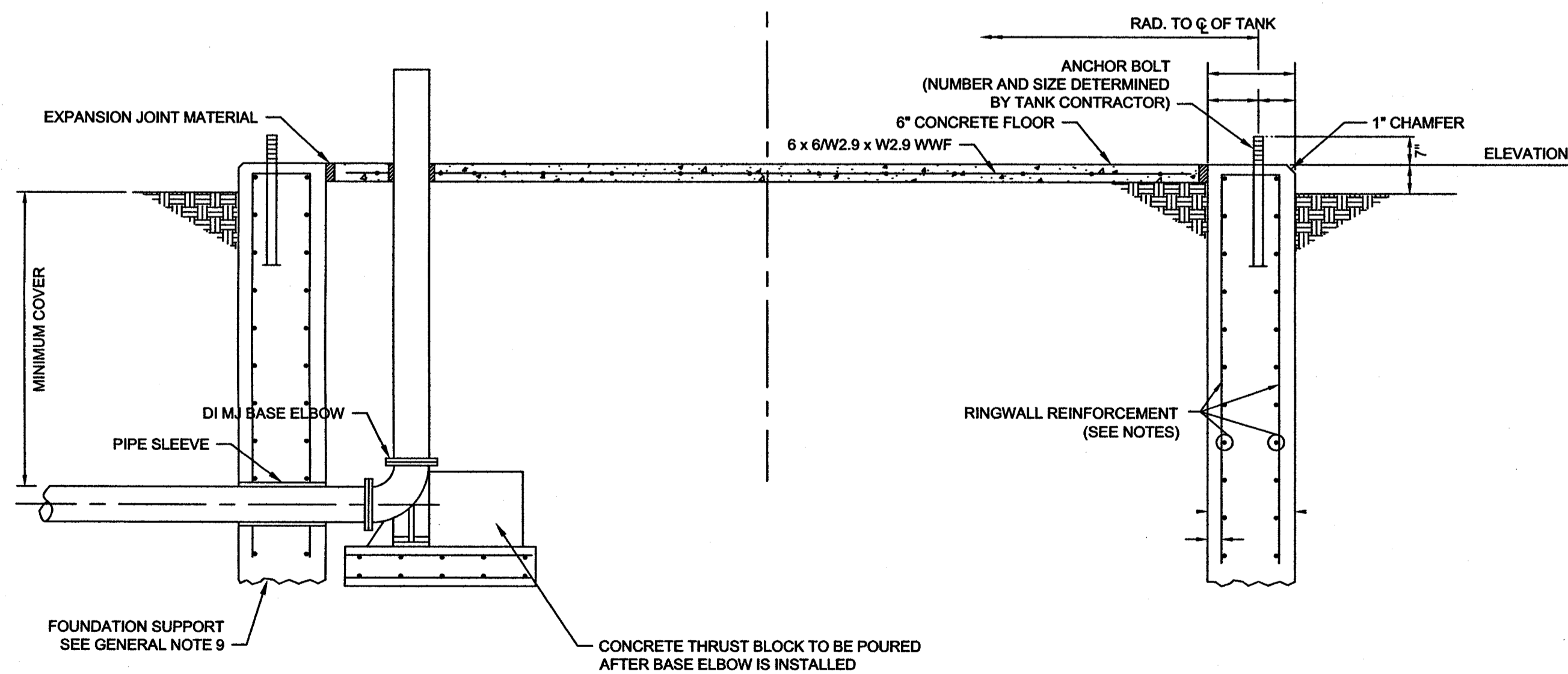
PRINTED: 7/17/2015 @ 10:58AM

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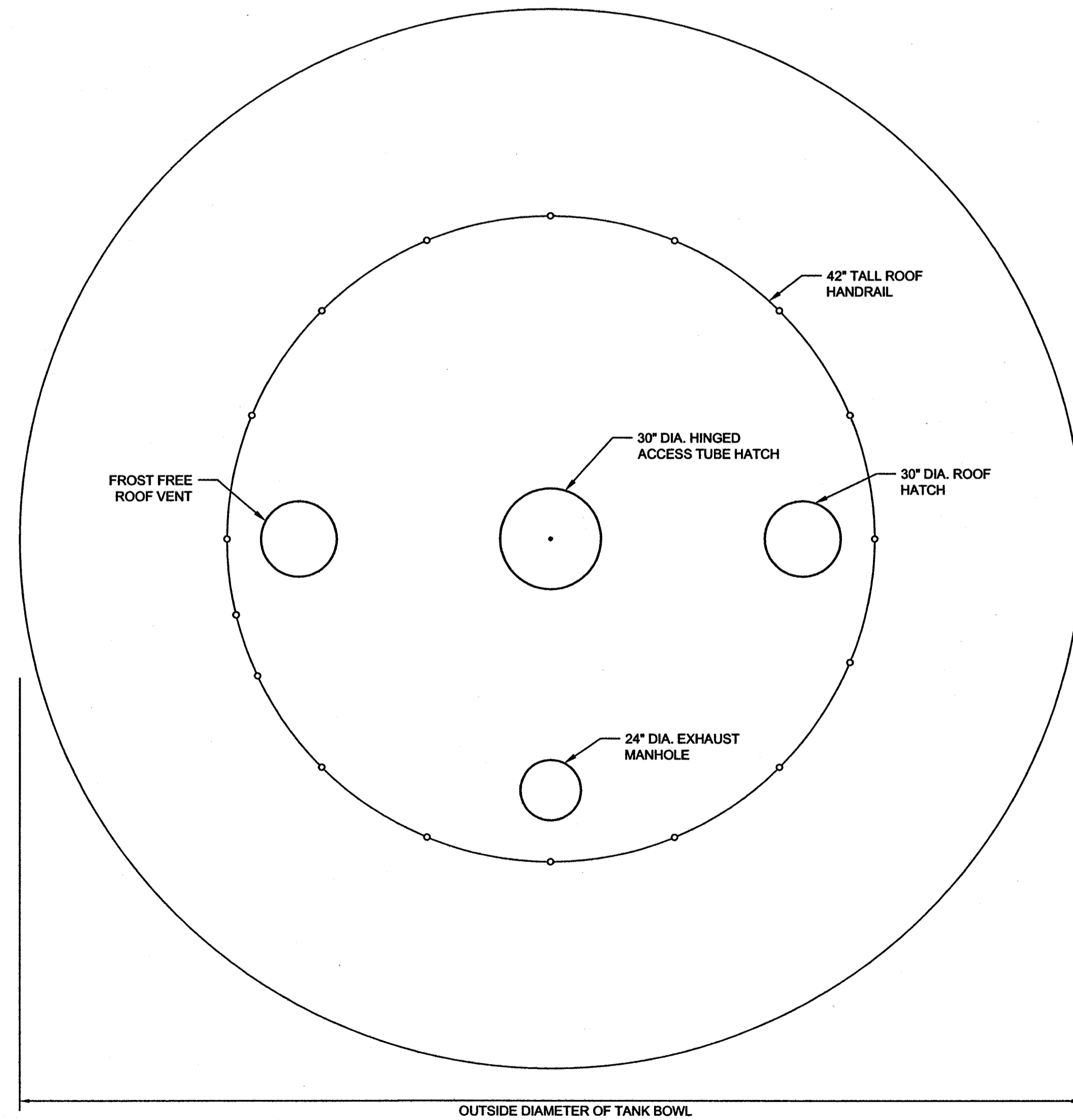
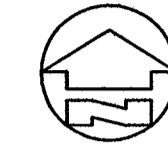
500,000 GALLON PEDESHERE TANK FOUNDATION PLAN

NOT TO SCALE



500,000 GALLON PEDESHERE TANK FOUNDATION SECTION

NOT TO SCALE

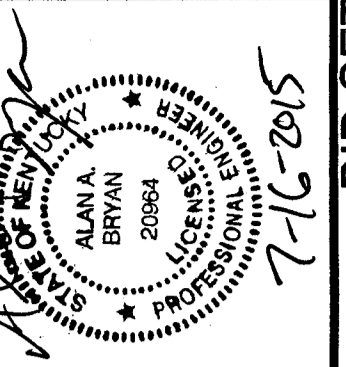


500,000 GALLON PEDESHERE TANK UPPER PLAN

NOT TO SCALE

GENERAL NOTES:

1. THESE PROJECT DRAWINGS IN GENERAL REFLECT THE CONSTRUCTION OF BASE BID OPTION NO. 2 - A NEW 500,000 GALLON PEDESHERE ELEVATED WATER STORAGE TANK.
2. TANK MANUFACTURER SHALL DESIGN, FABRICATE AND ERECT THE WATER TANK IN ACCORDANCE WITH D-100.
3. NUMBER OF TOWER LEGS SHALL BE PER THE TANK MANUFACTURER'S DESIGN.
4. MATERIALS USED IN THE FABRICATION OF THE WATER TANK SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
5. ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS, AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS.
6. WATER TANK SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATION SECTION 099720 - STEEL TANK COATINGS.
7. WATER TANK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C652 AND AS DESCRIBED MORE IN THE CONTRACT SPECIFICATIONS.
8. CONTRACTOR SHALL REMOVE EXISTING CONCRETE TANK FOUNDATION FOOTINGS AND CONCRETE PIPING SUPPORTS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE NEW TANK FOUNDATION.
9. THE NEW TANK FOUNDATION SHALL BE DESIGNED BY THE TANK MANUFACTURER AND BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT'S RECOMMENDATION FOR DEEP FOUNDATION DESIGN. THE GEOTECHNICAL REPORT IS ATTACHED AS AN APPENDIX TO THE CONTRACT SPECIFICATIONS.
10. CONCRETE FOR THE NEW FOUNDATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 033100 - CAST IN PLACE CONCRETE.
11. RINGWALL AND FOOTING DIMENSIONS AND CONCRETE REINFORCEMENT SHALL BE DESIGNED BY THE TANK MANUFACTURER.
12. TEH TOP OF TEH RING WALL SHALL BE LEVEL WITHIN $\pm 1/8"$ IN 30' WITH A MAXIMUM DIFFERENTIAL OF $\pm 1/4"$ BETWEEN ANY TWO POINTS ON THE CIRCUMFERENCE.
13. ANCHOR BOLTS SHALL BE PLACED WITHIN $\pm 1/8"$ OF THE PLAN DIMENSION, PLUMB WITHIN $1/4"$ IN 12", AND EXTENDED ABOVE TEH TOP OF THE FOUNDATION TO WITHIN $1/2"$ OF THE SPECIFIED PROJECTION.
14. PROVIDE $1/2"$ THICK EXPANSION JOINT MATERIAL BETWEEN FLOOR AND RINGWALL AND AT ALL PIPING PENETRATIONS.
11. TANK MANUFACTURER SHALL INSTALL PASSIVE MIXING SYSTEM INSIDE TANK. SEE DETAILS ON SHEET C-1-500, AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 331220 - RESERVOIR MIXING SYSTEM.
12. TANK MANUFACTURER SHALL INSTALL MOUNTING STRUCTURES FOR THE ATTACHMENT OF CELLULAR EQUIPMENT AND ATTACHMENT OF NKWD'S TELEMETRY. MOUNTING STRUCTURES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS C-1-502 AND C-1-503.



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BASE BID OPTION NO.2
PLAN VIEW - 500,000 GAL. PEDESHERE TANK
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

REVISIONS	DATE	BY	DESCRIPTION

DESIGNED: ADH	BY: ADH
DRAWN: BTR	BY: BTR
REVIEWED: AAB	BY: AAB
APPROVED: AAB	BY: AAB

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: JULY, 2015
 SCALE: AS NOTED
 SHEET NO.

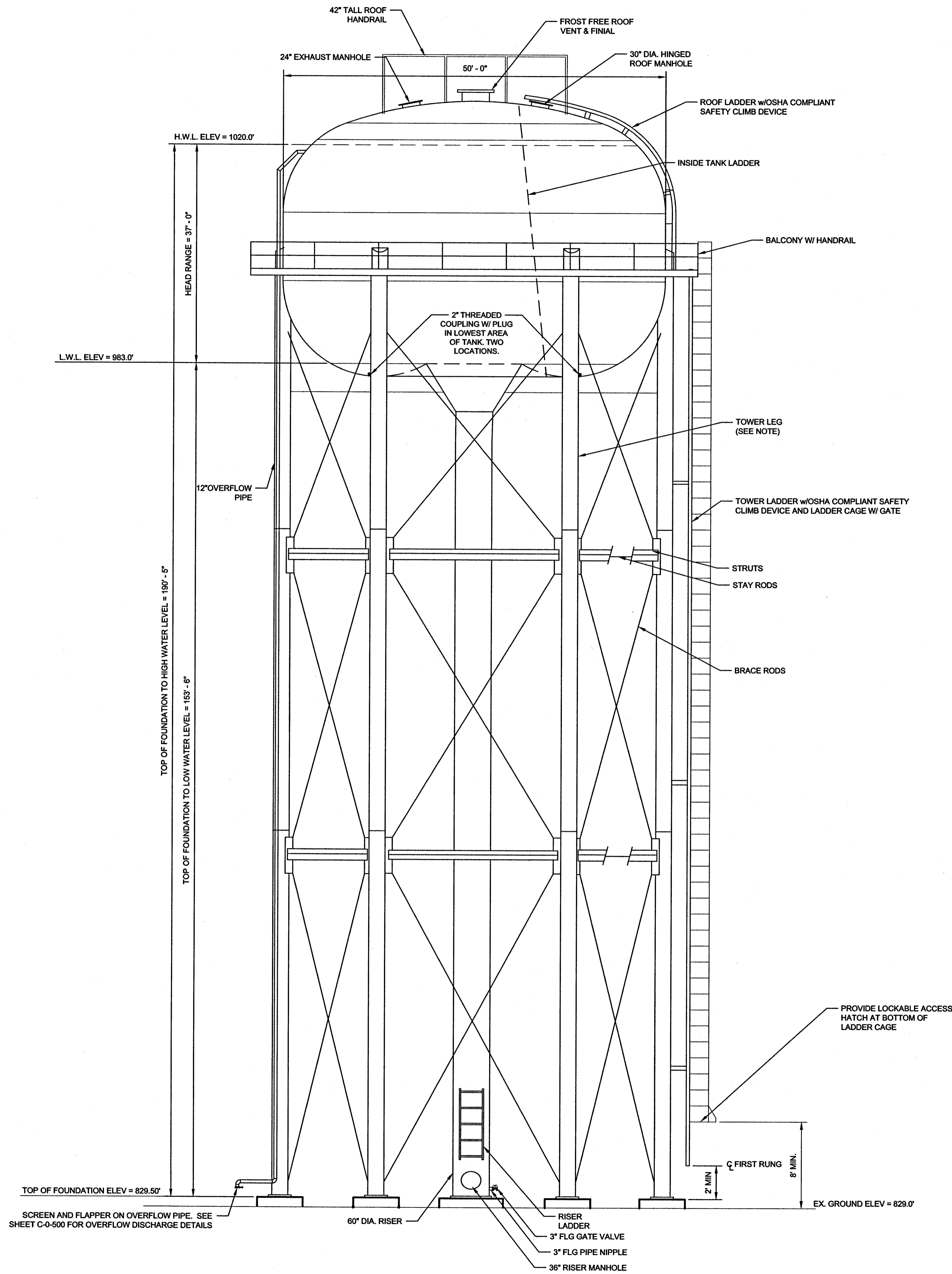
C-1-101

BID SET

PLOTTED BY: AByrn

PRINTED: 7/17/2015 @ 10:58AM

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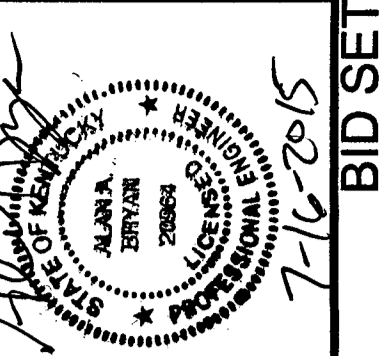


500,000 GALLON MULTI-COLUMN TANK SECTION

NOT TO SCALE

GENERAL NOTES:

1. THESE PROJECT DRAWINGS IN GENERAL REFLECT THE CONSTRUCTION OF BASE BID OPTION NO. 1 - A NEW 500,000 GALLON MULTI-COLUMN ELEVATED WATER STORAGE TANK.
2. TANK MANUFACTURER SHALL DESIGN, FABRICATE AND ERECT THE WATER TANK IN ACCORDANCE WITH D-100.
3. NUMBER OF TOWER LEGS SHALL BE PER THE TANK MANUFACTURER'S DESIGN.
4. MATERIALS USED IN THE FABRICATION OF THE WATER TANK SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
5. ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS, AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS.
6. WATER TANK SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATION SECTION 099720 - STEEL TANK COATINGS.
7. WATER TANK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C652 AND AS DESCRIBED MORE IN THE CONTRACT SPECIFICATIONS.
8. CONTRACTOR SHALL REMOVE EXISTING CONCRETE TANK FOUNDATION FOOTINGS AND CONCRETE PIPING SUPPORTS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE NEW TANK FOUNDATION.
9. THE NEW TANK FOUNDATION SHALL BE DESIGNED BY THE TANK MANUFACTURER AND BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT'S RECOMMENDATION FOR DEEP FOUNDATION DESIGN. THE GEOTECHNICAL REPORT IS ATTACHED AS AN APPENDIX TO THE CONTRACT SPECIFICATIONS.
10. CONCRETE FOR THE NEW FOUNDATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 033100 - CAST IN PLACE CONCRETE.
11. TANK MANUFACTURER SHALL INSTALL PASSIVE MIXING SYSTEM INSIDE TANK. SEE DETAILS ON SHEET C-1-500, AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 331220 - RESERVOIR MIXING SYSTEM.
12. TANK MANUFACTURER SHALL INSTALL MOUNTING STRUCTURES FOR THE ATTACHMENT OF CELLULAR EQUIPMENT AND ATTACHMENT OF NKWD'S TELEMETRY. MOUNTING STRUCTURES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS C-1-502 AND C-1-503.



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CLIENT PROJECT NO.
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BASE BID OPTION NO. 1
SECTION - 500,000 GAL. MULTI-COLUMN TANK
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED BY	ADH
DRAWN BY	BTR
REVIEWED BY	AAB
APPROVED BY	AAB

NO.	DATE	DESCRIPTION

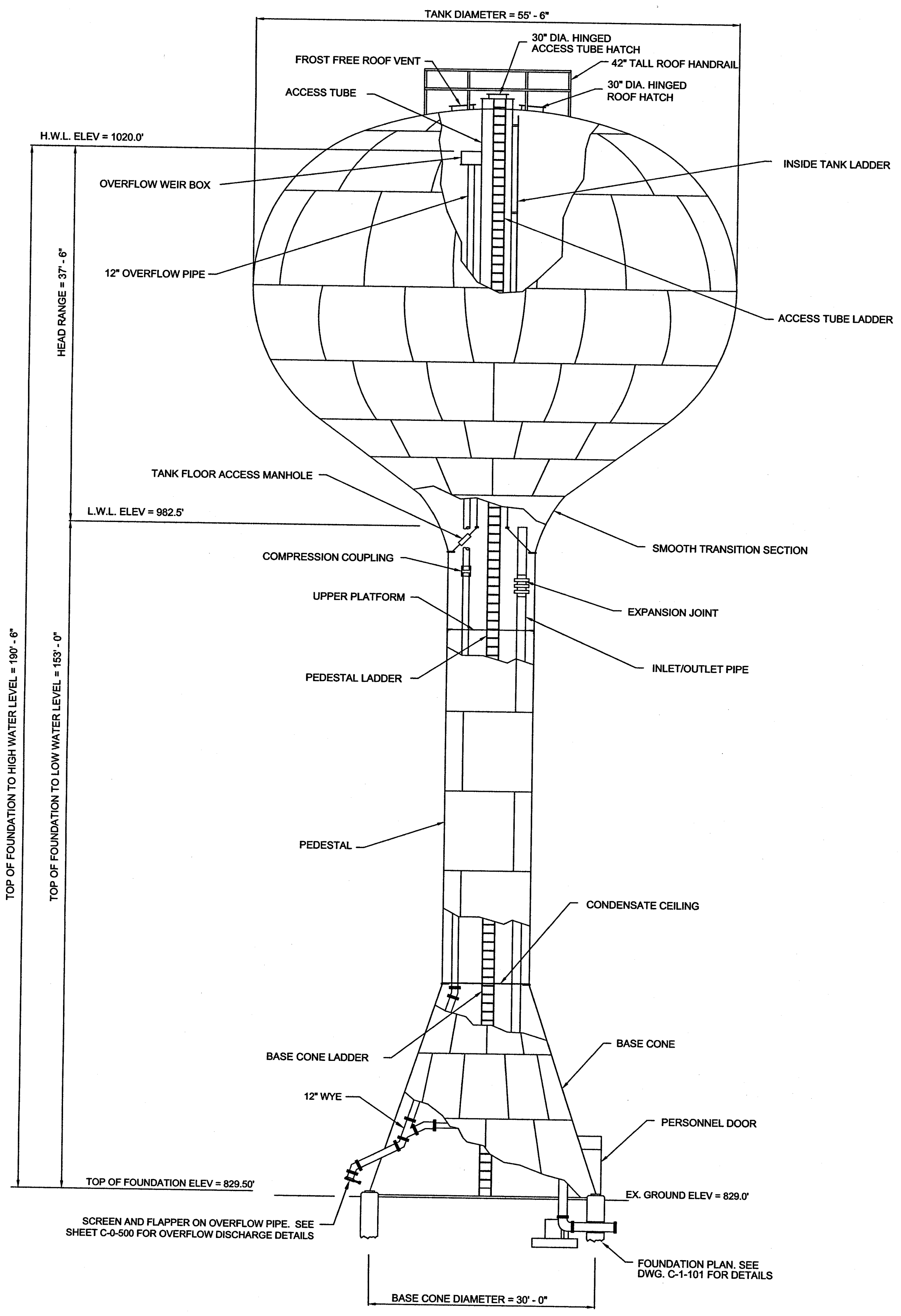
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DATE: JULY, 2015
SCALE: NOT TO SCALE
SHEET NO.

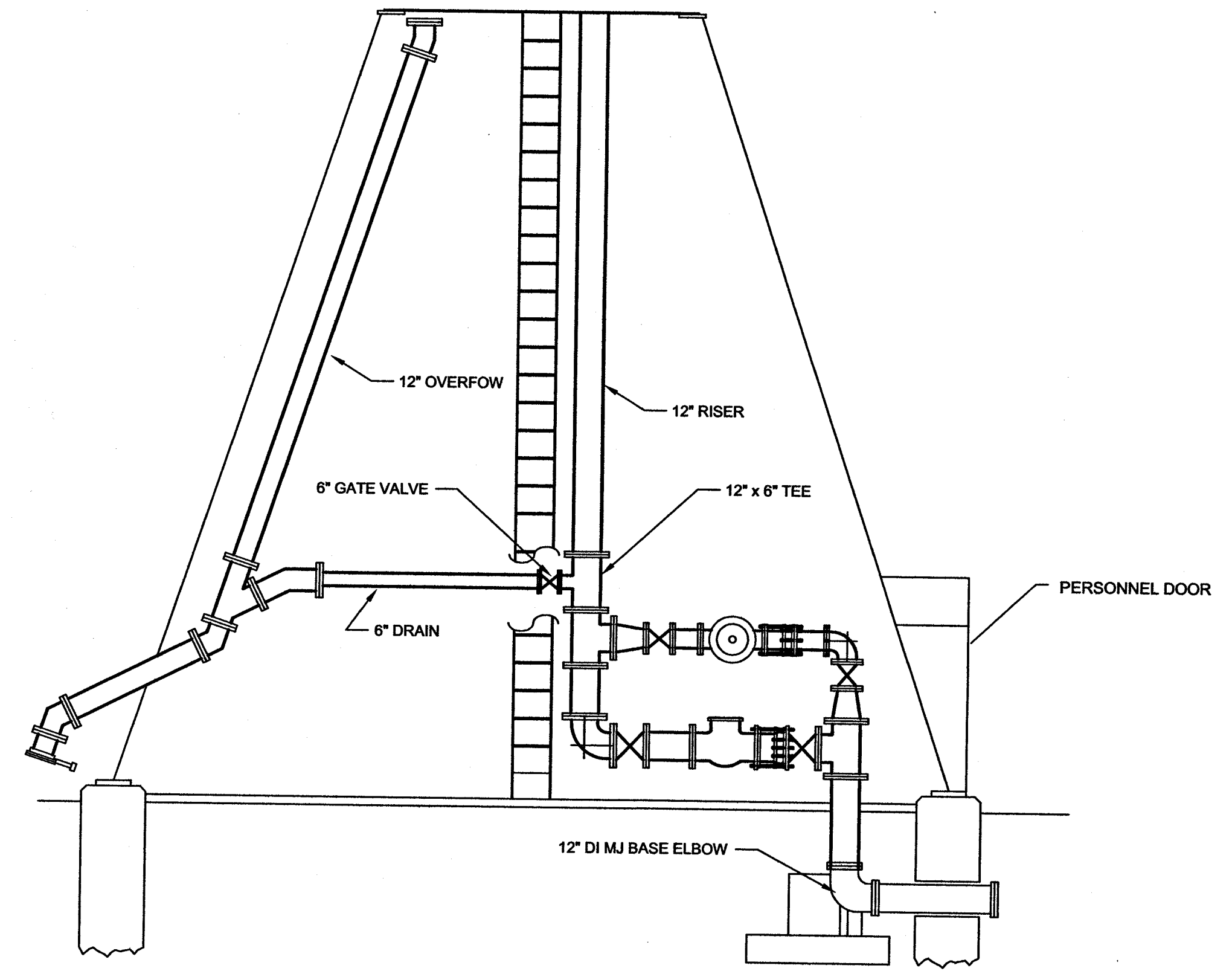
C-1-300

BID SET

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 PLOTTED BY: AByran

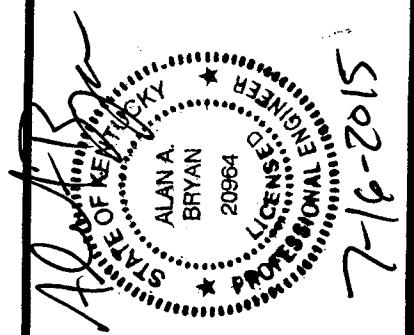


500,000 GALLON PEDESHERE TANK SECTION
NOT TO SCALE

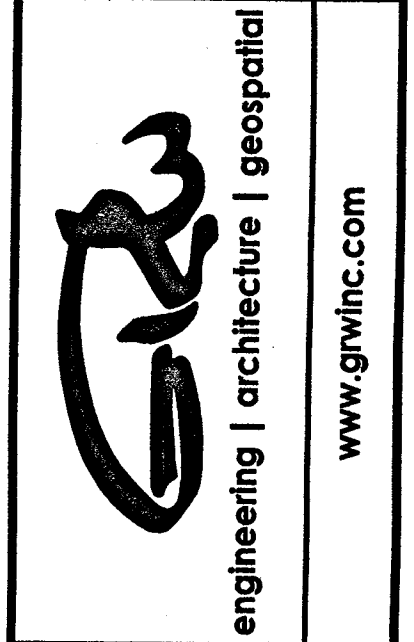


500,000 GALLON PEDESHERE TANK ENLARGED SECTION
NOT TO SCALE

- GENERAL NOTES:**
- THESE PROJECT DRAWINGS IN GENERAL REFLECT THE CONSTRUCTION OF BASE BID OPTION NO. 2 - A NEW 500,000 GALLON PEDESHERE ELEVATED WATER STORAGE TANK.
 - TANK MANUFACTURER SHALL DESIGN, FABRICATE AND ERECT THE WATER TANK IN ACCORDANCE WITH D-100.
 - NUMBER OF TOWER LEGS SHALL BE PER THE TANK MANUFACTURER'S DESIGN.
 - MATERIALS USED IN THE FABRICATION OF THE WATER TANK SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
 - ALL HANDRAILS, PLATFORM LANDINGS, WALKWAYS, LADDERS, AND SAFETY CLIMB DEVICES SHALL CONFORM WITH CURRENT OSHA STANDARDS.
 - WATER TANK SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATION SECTION 099720 - STEEL TANK COATINGS.
 - WATER TANK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C652 AND AS DESCRIBED MORE IN THE CONTRACT SPECIFICATIONS.
 - CONTRACTOR SHALL REMOVE EXISTING CONCRETE TANK FOUNDATION FOOTINGS AND CONCRETE PIPING SUPPORTS AS NECESSARY TO ALLOW FOR THE INSTALLATION OF THE NEW TANK FOUNDATION.
 - THE NEW TANK FOUNDATION SHALL BE DESIGNED BY THE TANK MANUFACTURER AND BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT'S RECOMMENDATION FOR DEEP FOUNDATION DESIGN. THE GEOTECHNICAL REPORT IS ATTACHED AS AN APPENDIX TO THE CONTRACT SPECIFICATIONS.
 - CONCRETE FOR THE NEW FOUNDATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 033100 - CAST IN PLACE CONCRETE.
 - RINGWALL AND FOOTING DIMENSIONS AND CONCRETE REINFORCEMENT SHALL BE DESIGNED BY THE TANK MANUFACTURER.
 - TEH TOP OF TEH RING WALL SHALL BE LEVEL WITHIN $\pm 1/8"$ IN 30' WITH A MAXIMUM DIFFERENTIAL OF $\pm 1/4"$ BETWEEN ANY TWO POINTS ON THE CIRCUMFERENCE.
 - ANCHOR BOLTS SHALL BE PLACED WITHIN $\pm 1/8"$ OF THE PLAN DIMENSION, PLUMB WITHIN $1/4"$ IN 12", AND EXTENDED ABOVE TEH TOP OF THE FOUNDATION TO WITHIN $1/2"$ OF THE SPECIFIED PROJECTION.
 - PROVIDE $1/2"$ THICK EXPANSION JOINT MATERIAL BETWEEN FLOOR AND RINGWALL AND AT ALL PIPING PENETRATIONS.
 - TANK MANUFACTURER SHALL INSTALL PASSIVE MIXING SYSTEM INSIDE TANK. SEE DETAILS ON SHEET C-1-500, AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 331220 - RESERVOIR MIXING SYSTEM.
 - TANK MANUFACTURER SHALL INSTALL MOUNTING STRUCTURES FOR THE ATTACHMENT OF CELLULAR EQUIPMENT AND ATTACHMENT OF NKWD'S TELEMETRY. MOUNTING STRUCTURES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEETS C-1-502 AND C-1-503.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPE HANGERS, INSERTS, BRACKETS, PLATES, ANCHORS, AND OTHER SUPPORTS NOT SPECIFICALLY INCLUDED UNDER OTHER ITEMS. GENERALLY PIPE SUPPORTS ARE NOT SHOWN ON THE DRAWINGS, BUT SHALL BE SUPPLIED AS SPECIFIED HEREIN. SUPPORTS AND HANGERS SHALL BE AS MANUFACTURED BY GRINNELL, ELCEM, OR FEE & MASON, OR EQUAL OR FABRICATED BY THE CONTRACTOR. FIELD FABRICATED SUPPORTS MAY BE USED ONLY FOR SPECIAL CONDITIONS WHERE MANUFACTURED ITEMS MAY NOT BE SUITABLE. IN SUCH CASES, DETAILS OF PROPOSED SUPPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL SUCH SUPPORTS SHALL BE GALVANIZED.



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BASE BID OPTION NO.2
SECTION - 500,000 GAL. PEDESHERE TANK
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

NO.	REVISIONS	DATE	BY	APPROVED

DESIGNED BY: ADH	REVIEWED BY: AAB
DRAWN BY: BTR	APPROVED BY: AAB
CHECKED BY: AAB	SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: JULY, 2015
 SCALE: AS NOTED
 SHEET NO.

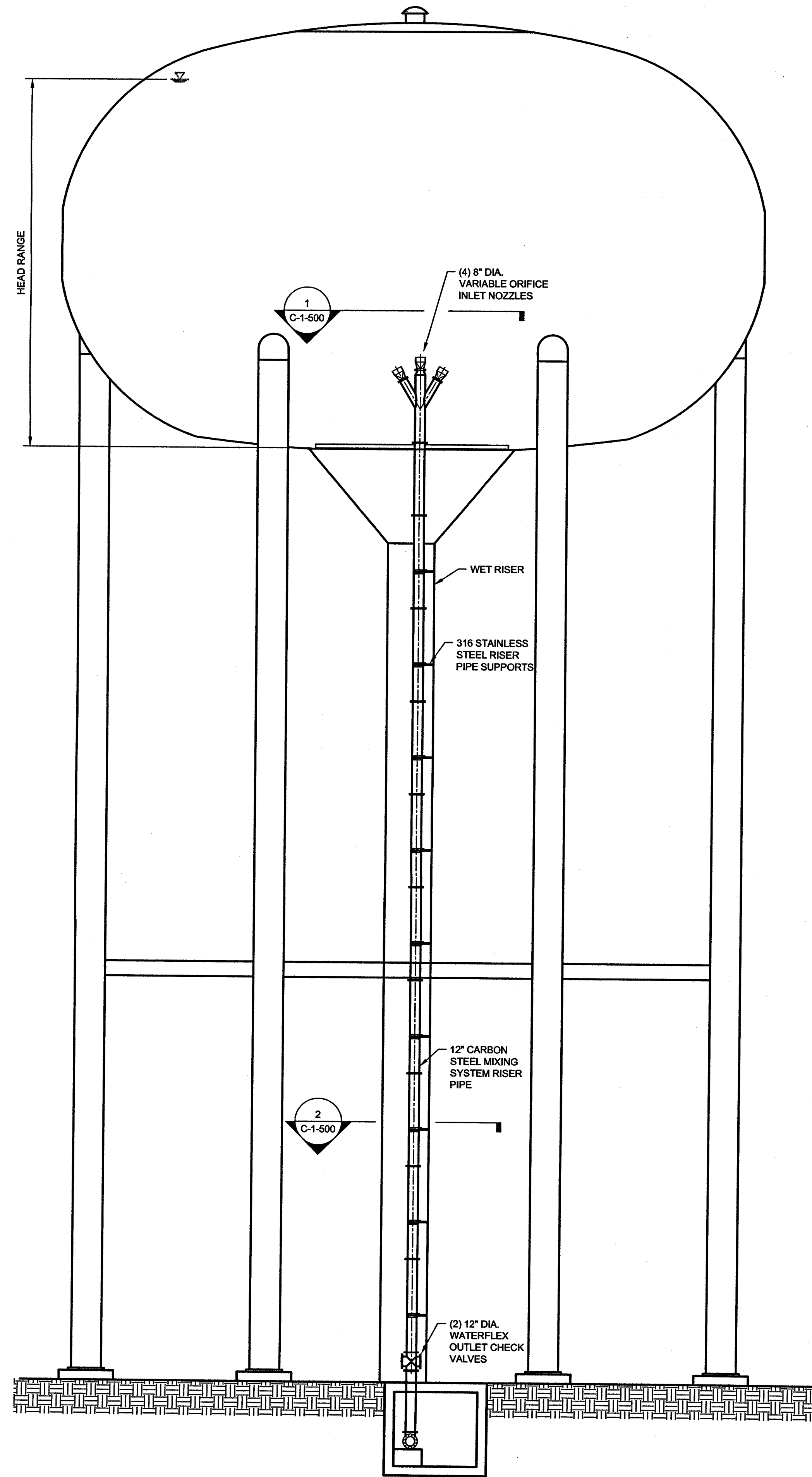
C-1-301

BID SET

PLOTTED BY: AByran

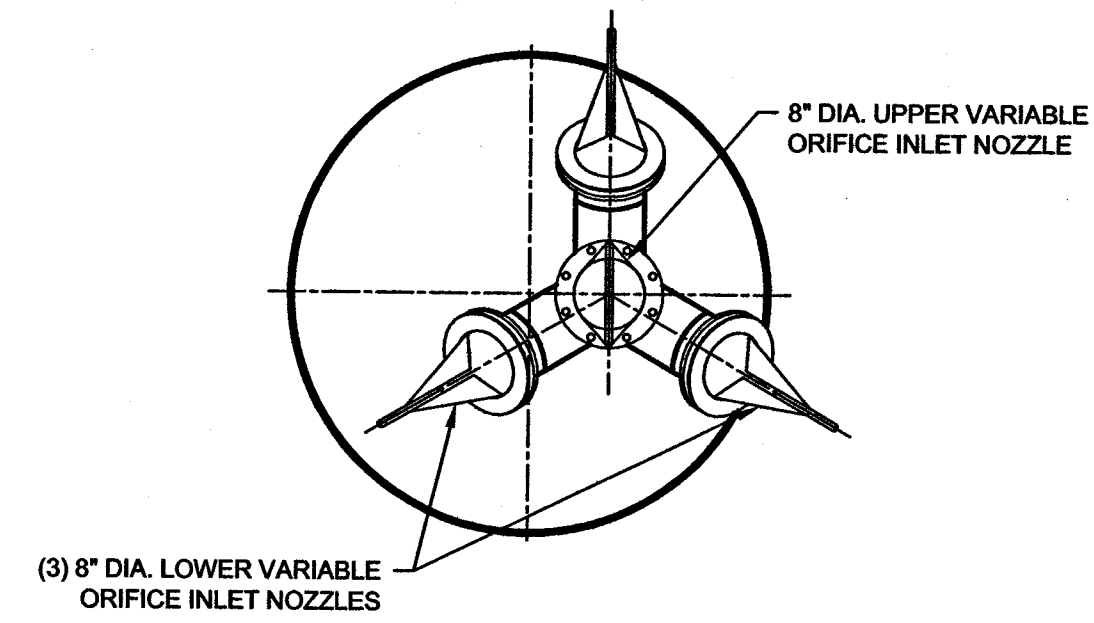
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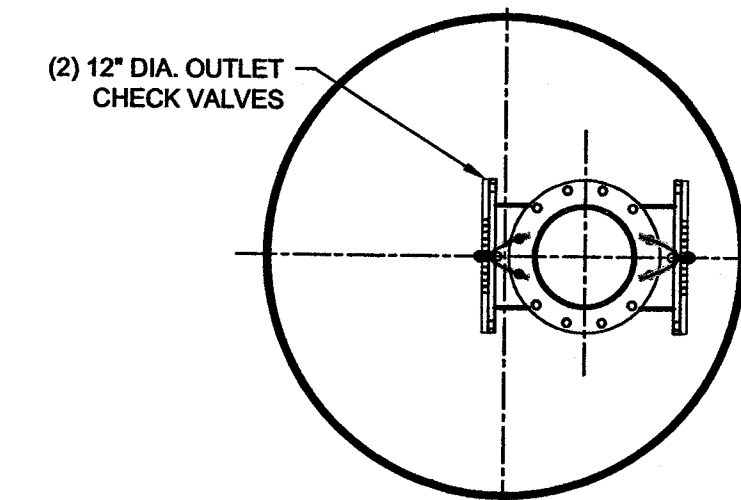


TANK ELEVATION

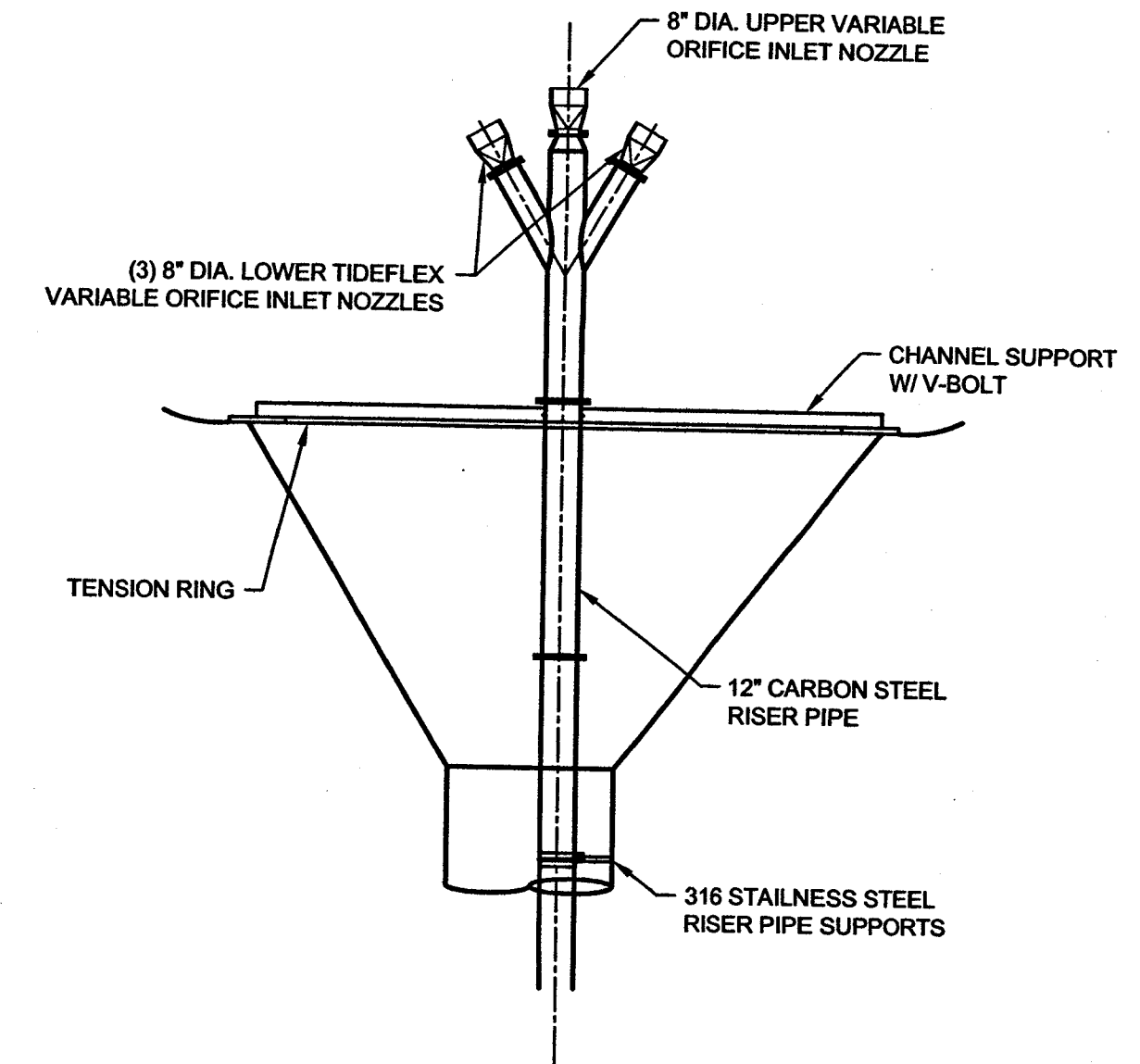
NOT TO SCALE



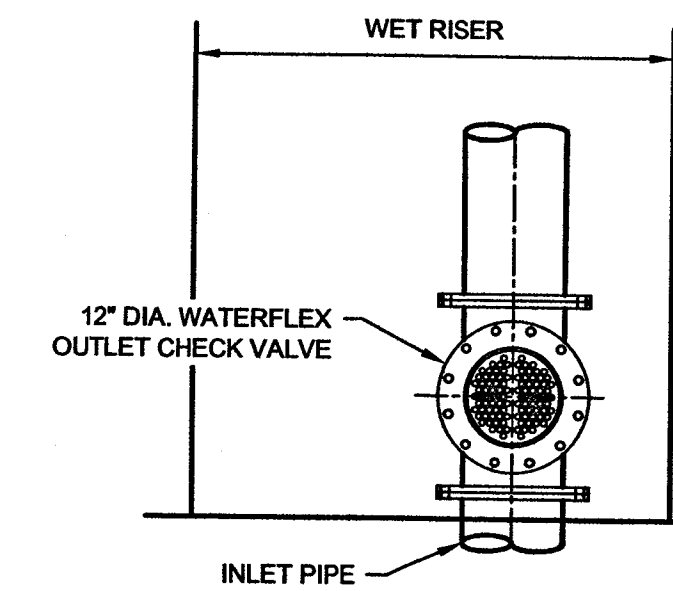
1 SECTION
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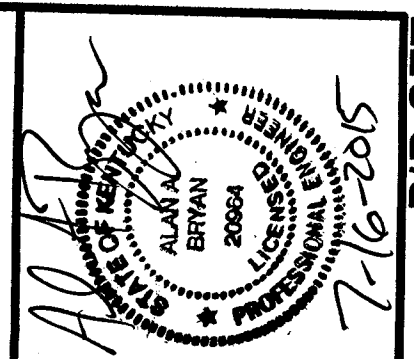
2 SECTION
NOT TO SCALE



ELEVATION - INLETS
NOT TO SCALE



ELEVATION - OUTLETS
NOT TO SCALE



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 CLIENT PROJECT NO.
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BASE BID OPTION NO. 1
MULTI-COLUMN TANK RESERVOIR MIXING SYSTEM DETAILS
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
 DRAWN: BTR
 REVIEWED: AAB
 APPROVED: AAB

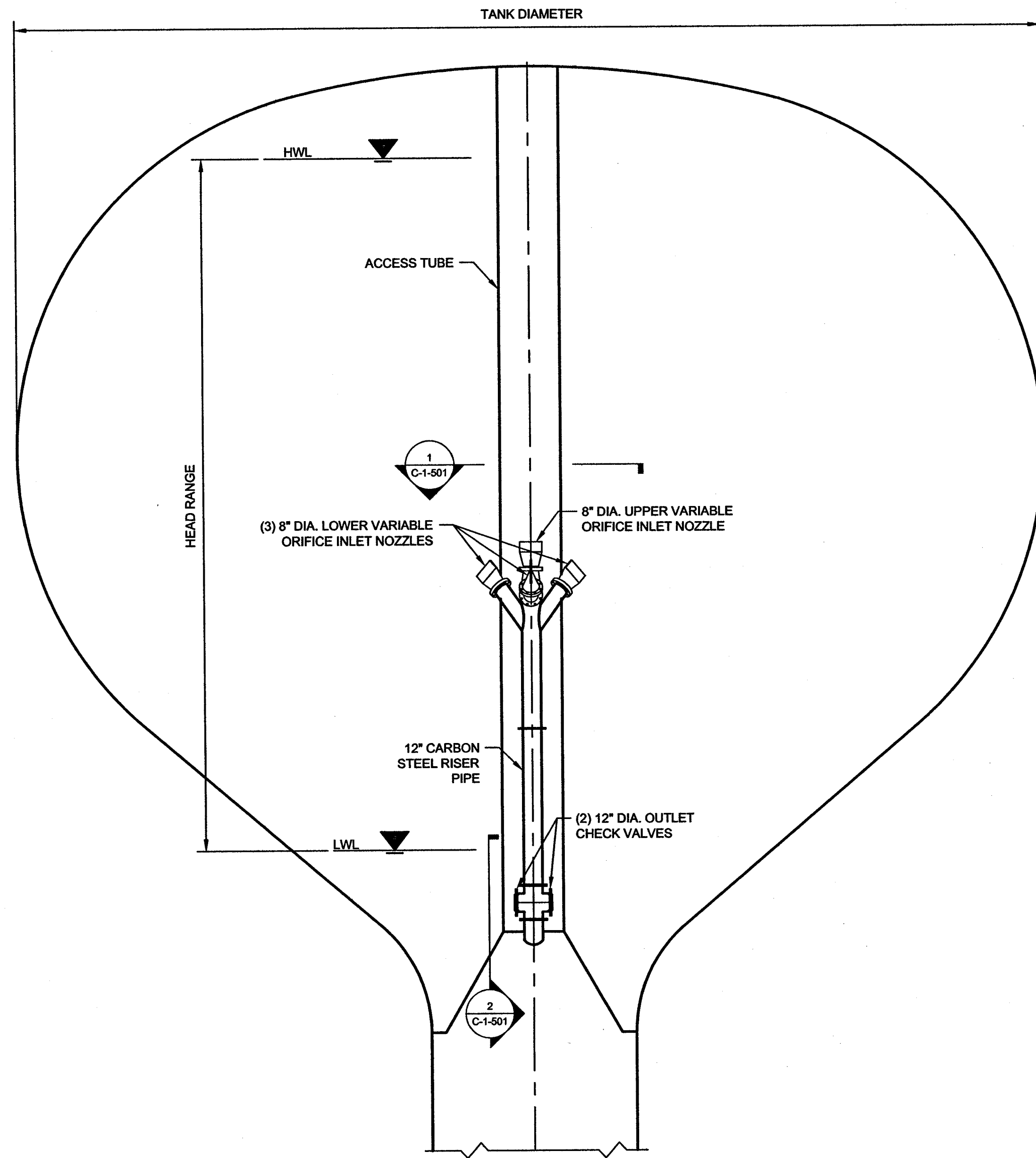
NO.	DATE	BY	DESCRIPTION

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED

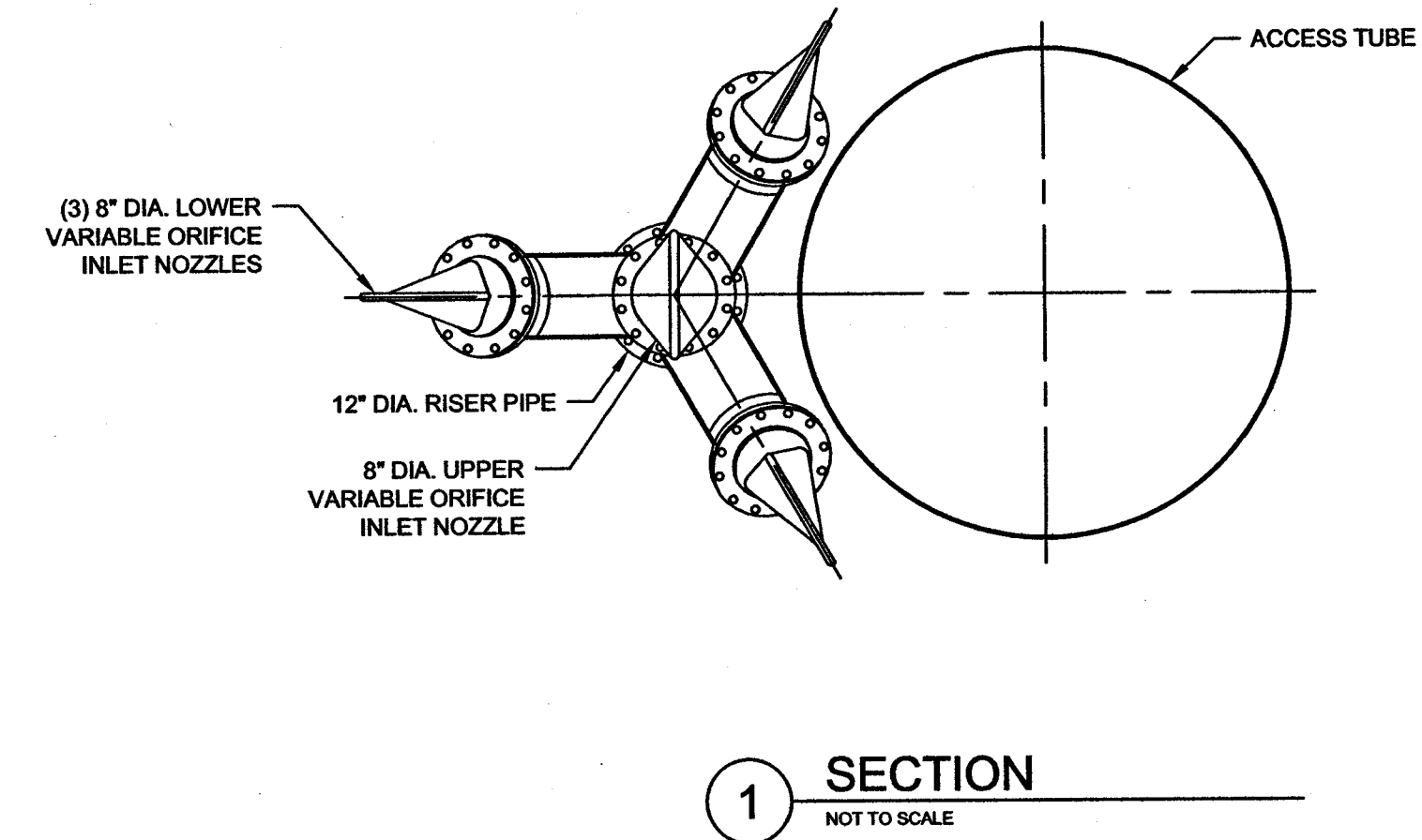
DATE: JULY, 2015
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 SHEET NO.

C-1-500

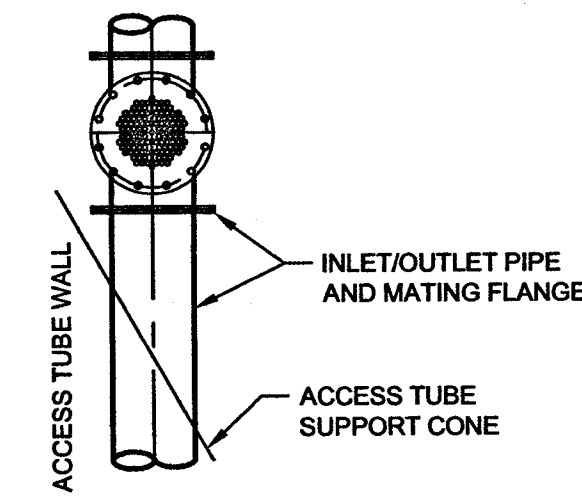
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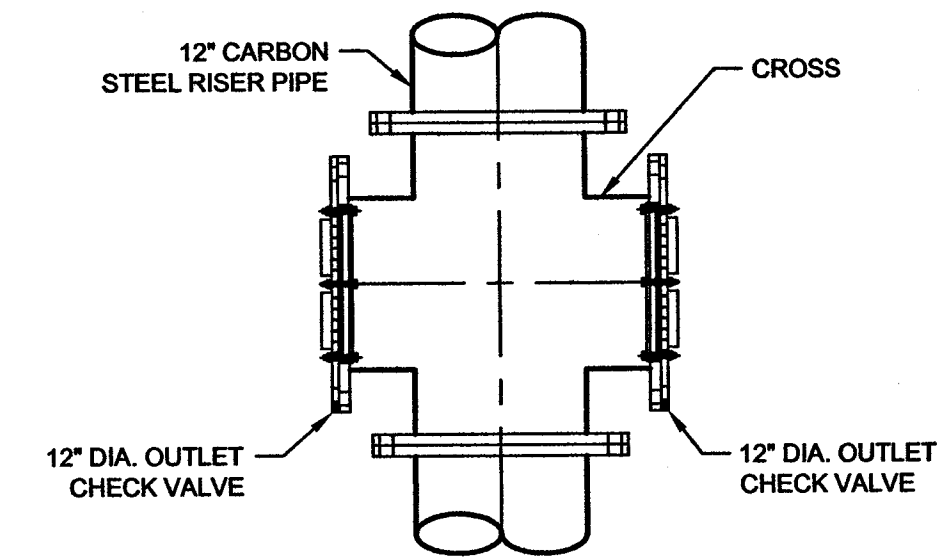
FRONT ELEVATION - PEDESHERE TANK RESERVOIR
NOT TO SCALE



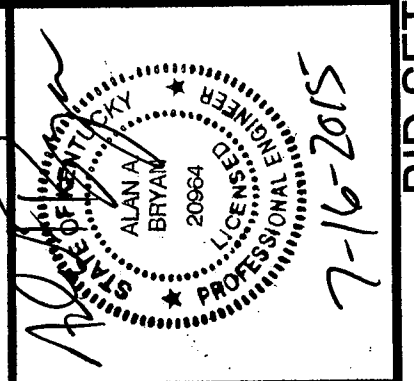
1 SECTION
NOT TO SCALE



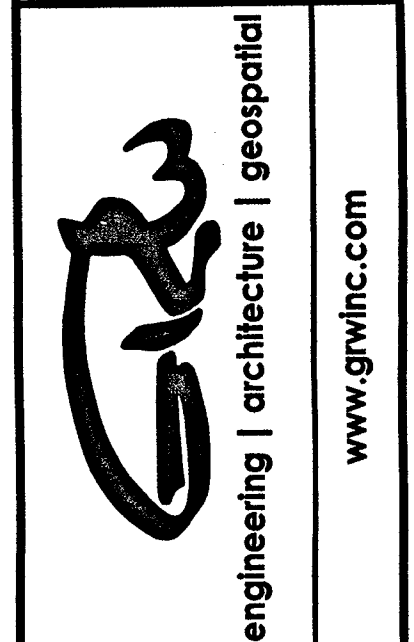
2 SECTION
NOT TO SCALE



OUTLET CHECK VALVES
NOT TO SCALE



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CLIENT PROJECT NO.
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BASE BID OPTION NO. 2
PEDESHER TANK RESERVOIR MIXING SYSTEM DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
DRAWN: BTR
REVIEWED: AAB
APPROVED: AAB

NO.	REVISIONS DESCRIPTION	DATE	BY

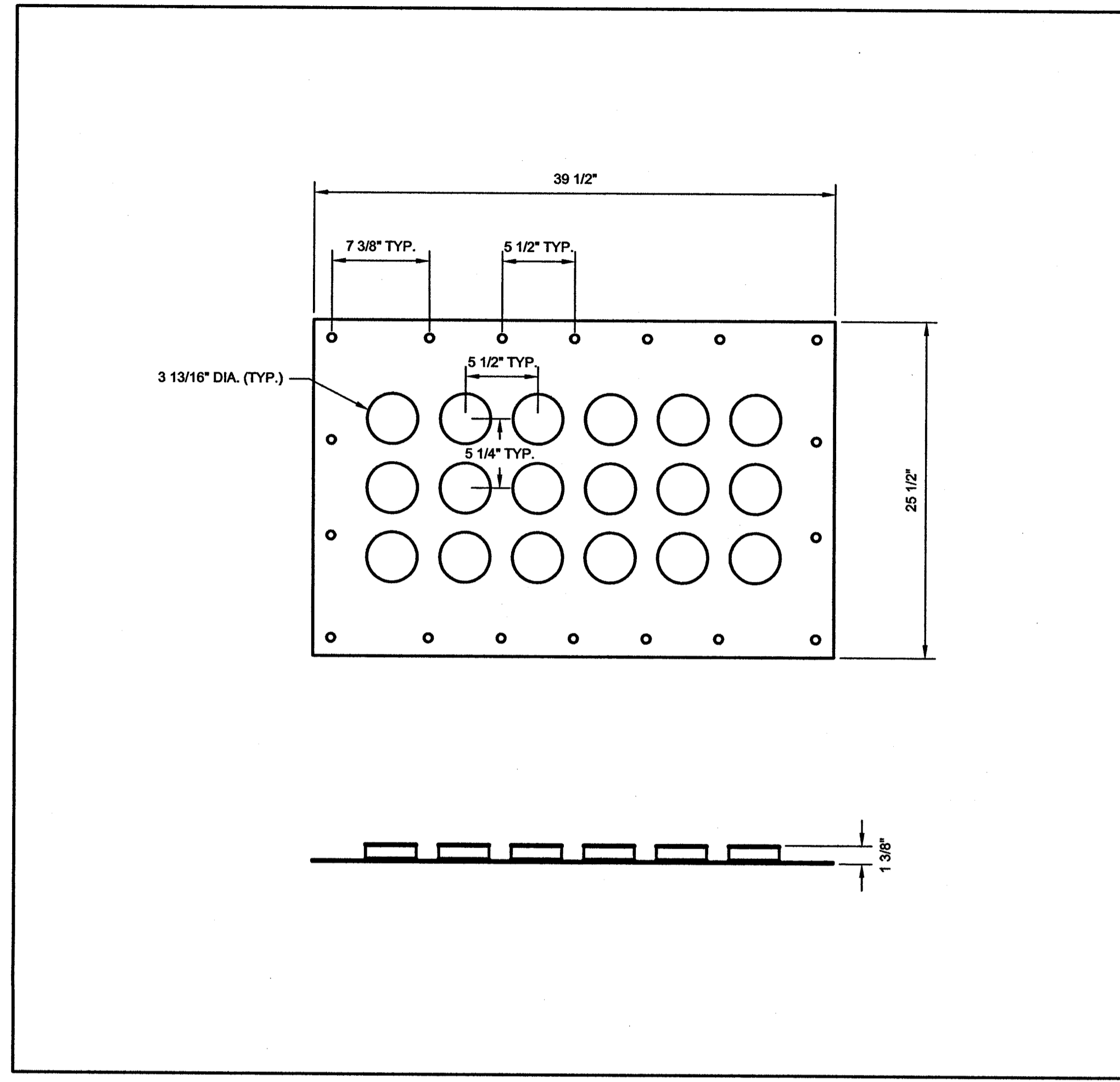
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DATE: JULY, 2015
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SHEET NO.

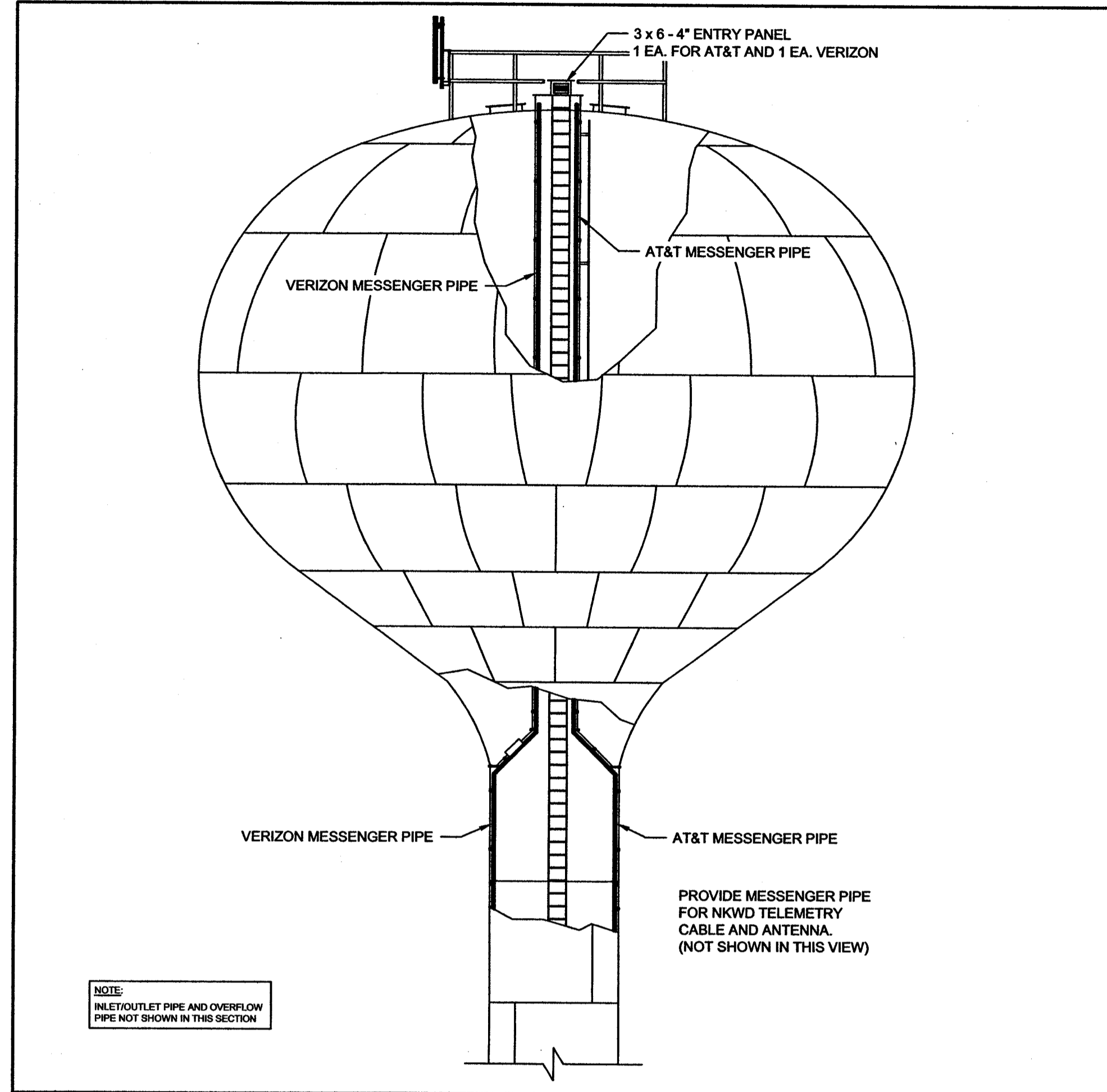
C-1-501

PRINTED: 7/17/2016 @ 11:00AM

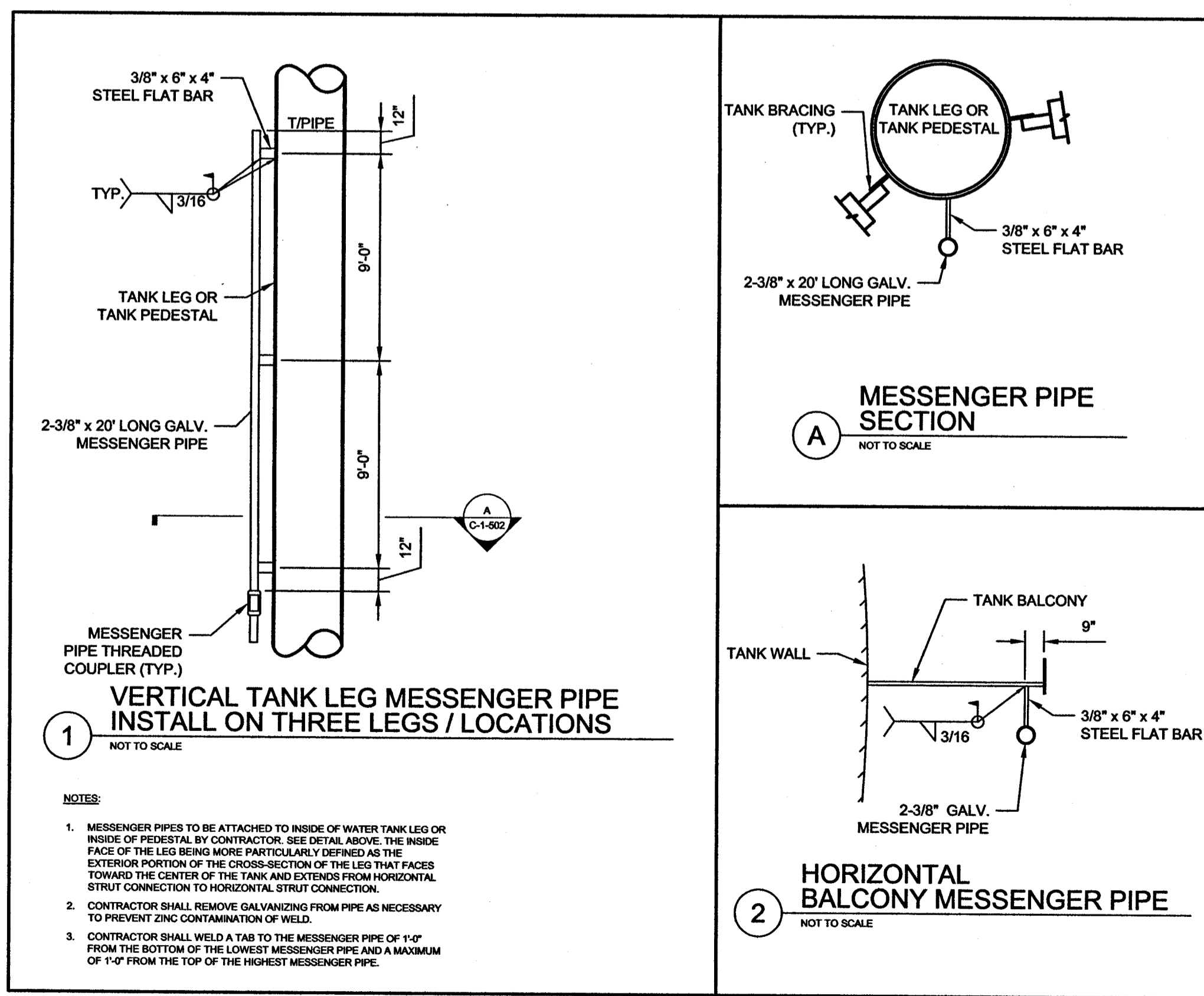
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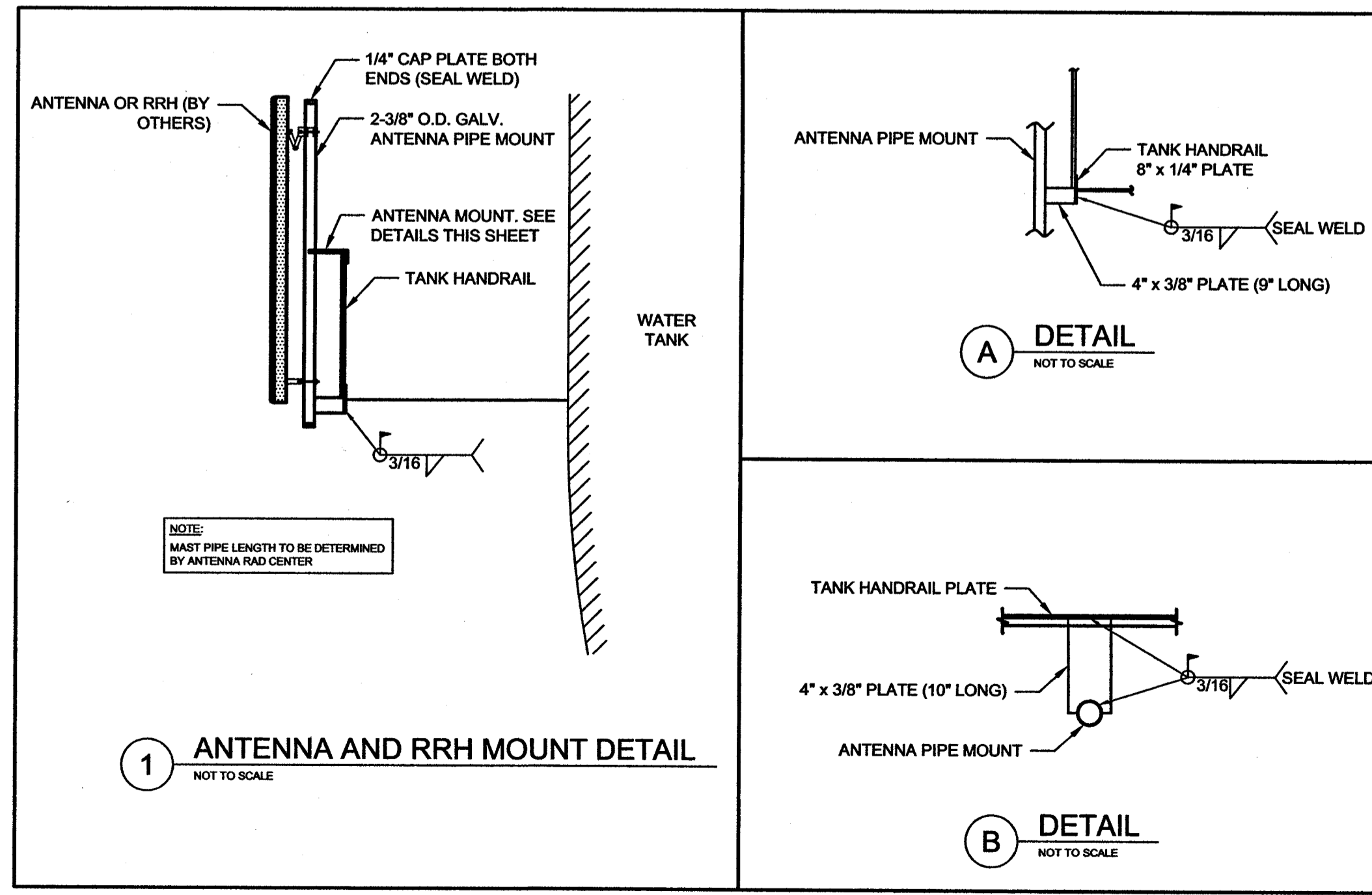
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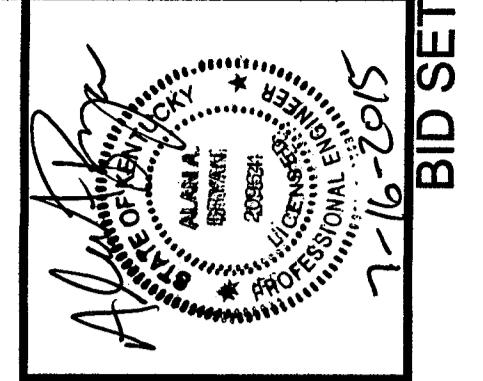
PEDESHERE MESSENGER PIPING
NOT TO SCALE



MESSENGER PIPE DETAILS
NOT TO SCALE



ANTENNA AND RRH MOUNT DETAILS
NOT TO SCALE



GRW PROJECT NO. 4383
CLIENT PROJECT NO.
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CELLULAR EQUIPMENT ATTACHMENT DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED	ADH	DATE	BY	DATE	DESCRIPTION
DRAWN	BTR				
REVIEWED	AAB				
APPROVED	AAB				

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED.

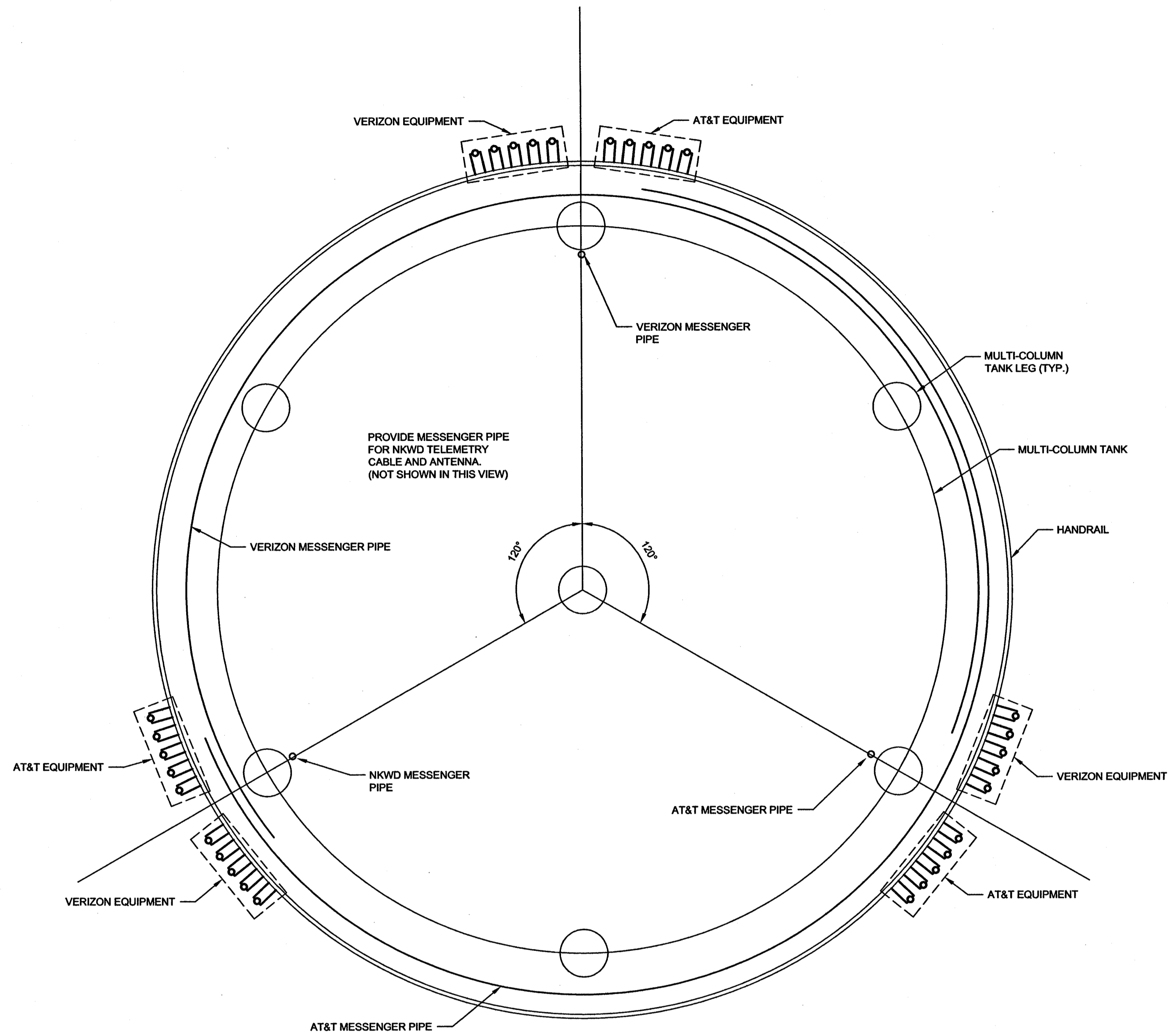
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BID SET

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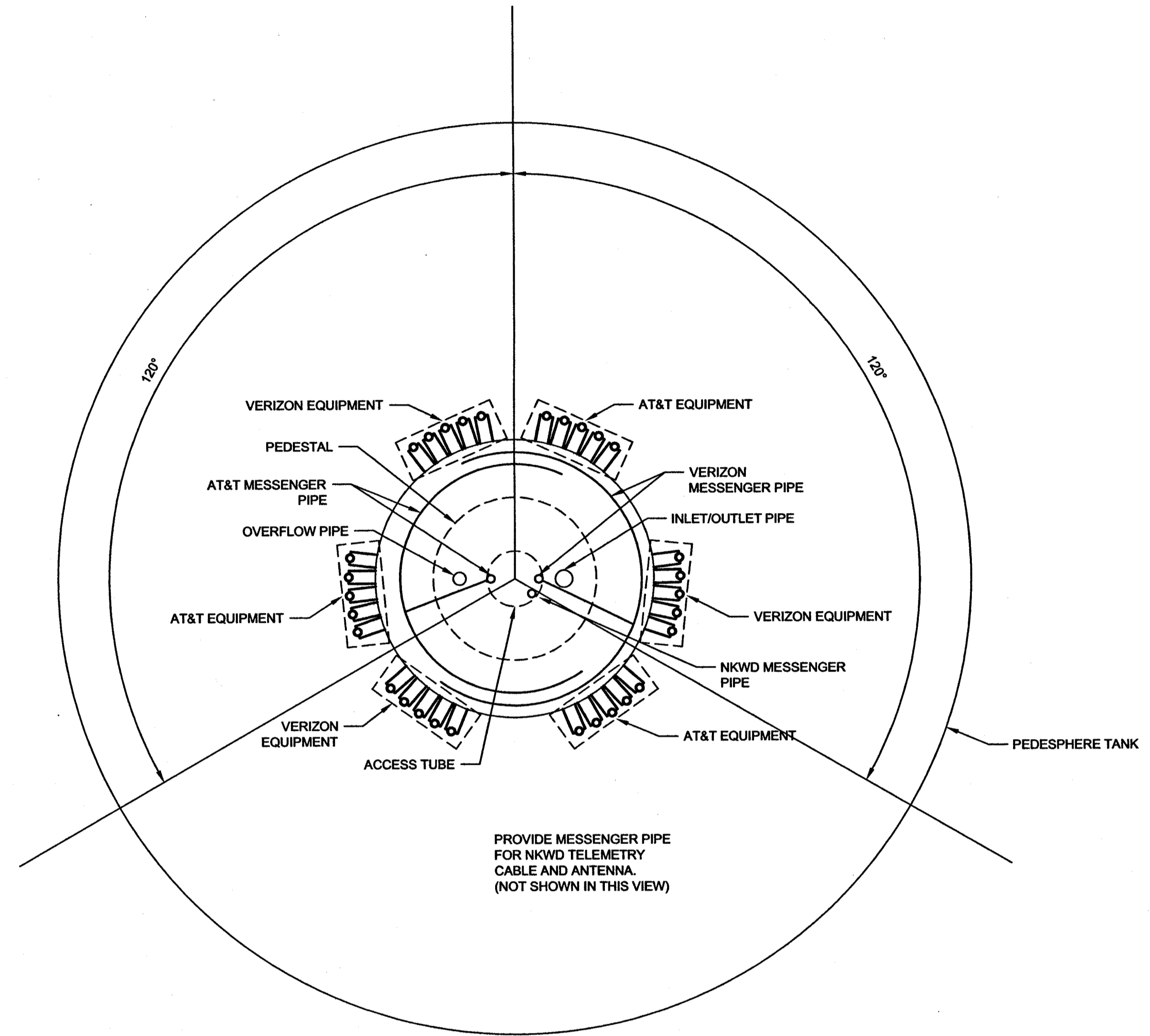
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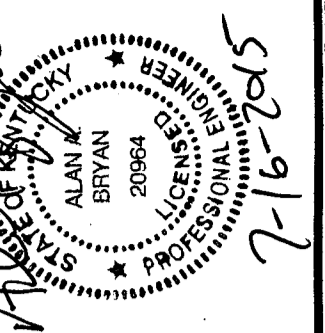
**BASE BID OPTION NO. 1
MULTI-COLUMN TANK**

NOT TO SCALE



**BASE BID OPTION NO. 2
PEDESHERE TANK**

NOT TO SCALE



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CLIENT PROJECT NO.
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**CELLULAR EQUIPMENT
ATTACHMENT DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY**

DESIGNED: ADH
DRAWN: BTR
REVIEWED: AAB
APPROVED: AAB

NO.	DATE	DESCRIPTION

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: JULY, 2015
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SHEET NO.

C-1-503

BID SET

PLOTTED BY: ABryan

PRINTED: 7/17/2015 @ 2:34PM

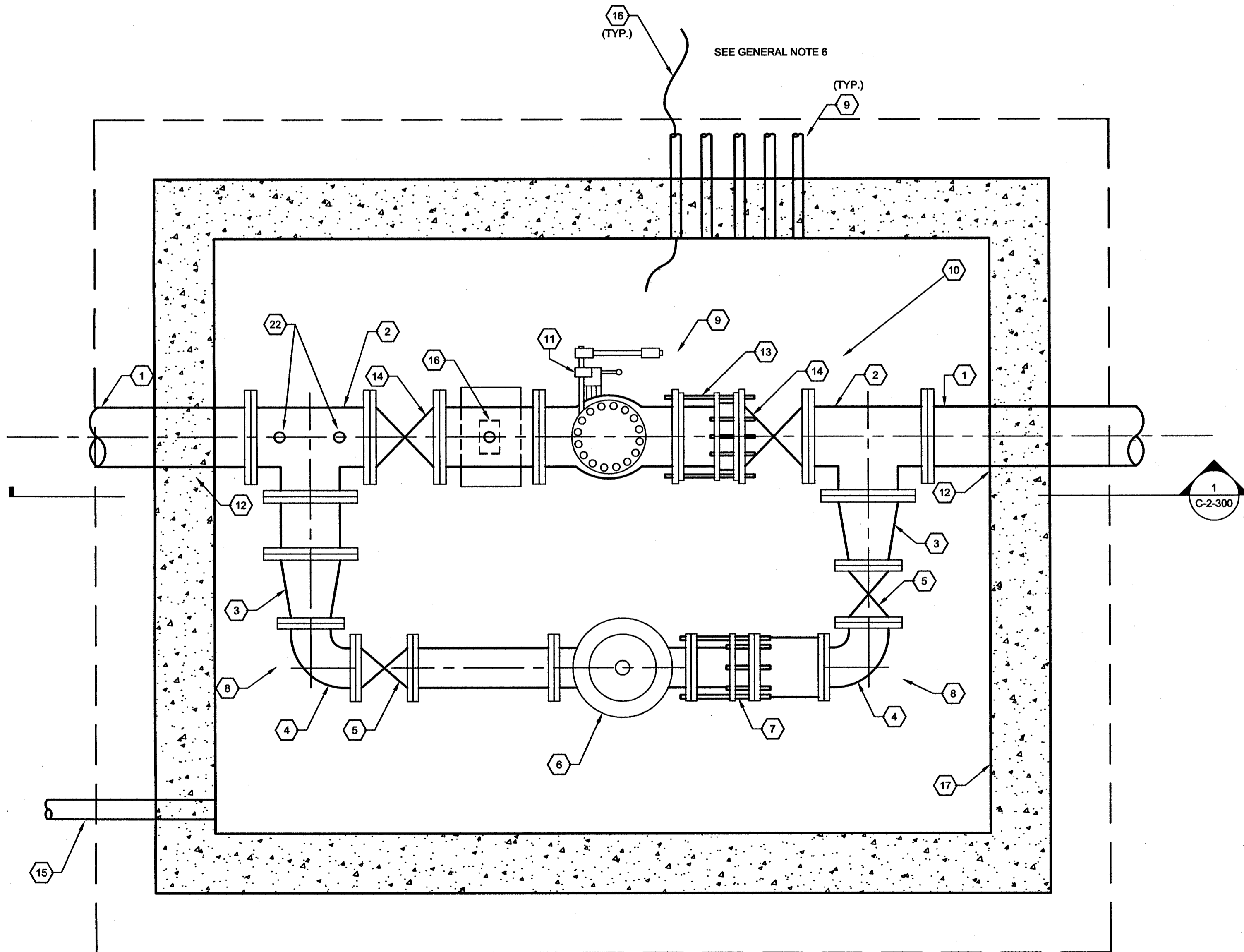
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SHEET KEYNOTES:

- 1. 12" DI PIPE, FLG x PE
- 2. 12" x 12" x 8" DI TEE, FLG
- 3. 12" x 8" DI CONCENTRIC REDUCER, FLG
- 4. 8" DI 90° BEND, FLG
- 5. 8" GATE VALVE, FLG
- 6. 8" SOLENOID CONTROL VALVE, FLG
- 7. 8" DISMANTLING JOINT, FLG
- 8. CONCRETE THRUST BLOCK
- 9. 48" x 72" DOUBLE DOOR ALUMINUM ACCESS HATCH (ROUTE HATCH DRAIN PIPE TO VAULT SUMP)
- 10. GROUT & SLOPE VAULT FLOOR TO DRAIN PIPE
- 11. 12" CHECK VALVE, LEVER & WEIGHT
- 12. EMBEDDED RESILIENT CONNECTOR
- 13. 12" DISMANTLING JOINT, FLG
- 14. 12" GATE VALVE, FLG
- 15. 4" PVC DRAIN LINE
- 16. PIPE SUPPORT (TYP) SEE GENERAL NOTE 4
- 17. CONCRETE VALVE VAULT (SEE STRUCTURAL SHEETS)
- 18. HVAC
- 19. ROOF PERIMETER OUTLINE
- 20. CONCRETE SLAB - PRE-FABRICATED BUILDING
- 21. PRE-FABRICATED INSTRUMENTS BUILDING
- 22. 1/2" CORPORATION STOP (1 TO PRESSURE TRANSDUCER, 1 TO SAMPLE LINE FOR TURBIDIMETER, CHLORINE/pH ANALYZER)
- 23. 2" PVC CONDUIT
- 24. 3/8" FLEXIBLE TUBING FOR SAMPLE LINE

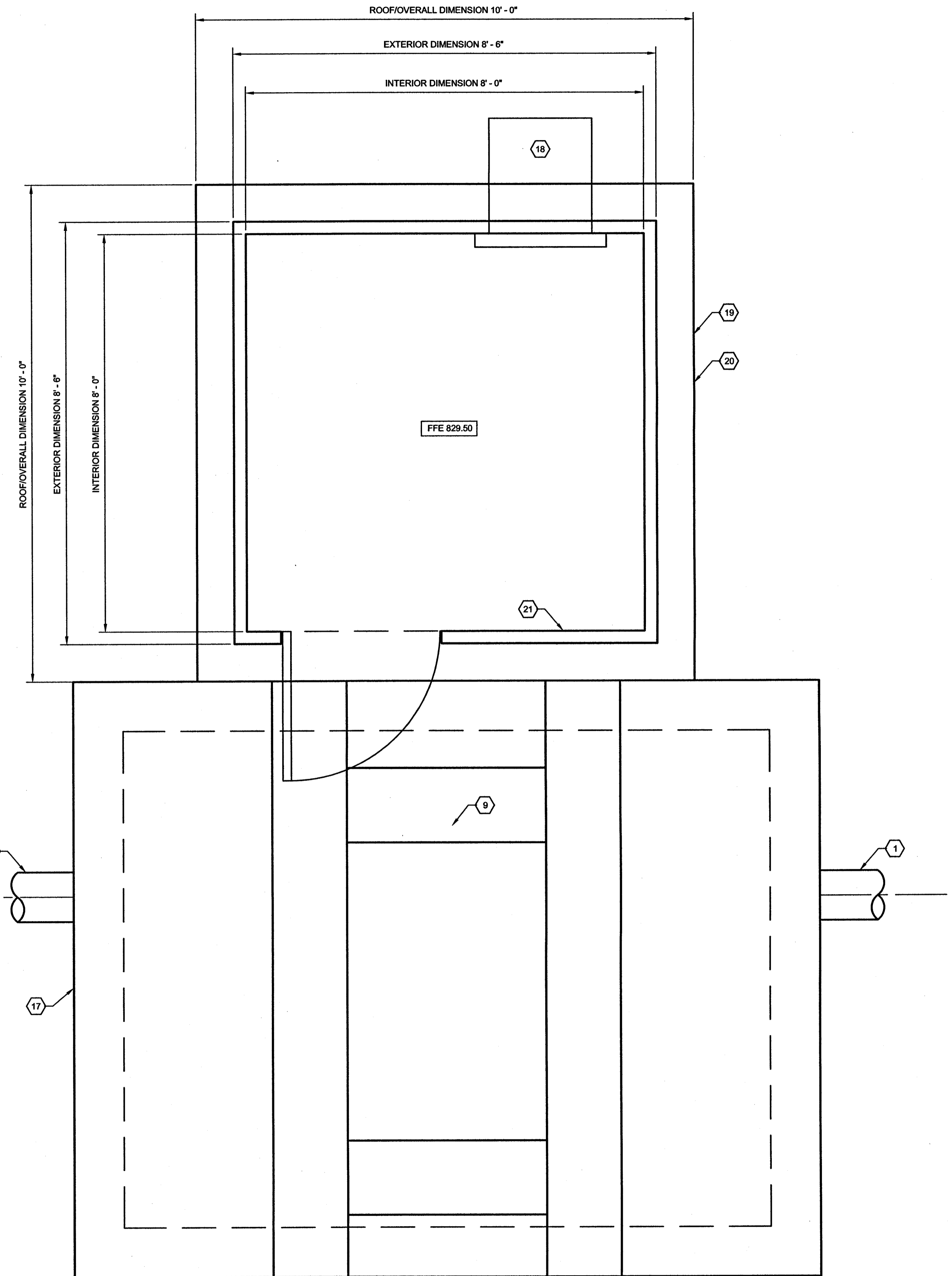
GENERAL NOTES:

- 1. ALTITUDE VALVE VAULT TO HOUSE SOLENOID ALTITUDE VALVE, CHECK VALVE, ETC. IN BASE BID OPTION NO. 1. THESE ITEMS SHOWN IN THE VALVE VAULT SHALL BE LOCATED IN THE PEDESTAL BASE CONE IN BASE BID OPTION NO. 2.
- 2. INSTRUMENTS BUILDING TO HOUSE INSTRUMENTATION PANELS (SCADA, TELEMETRY, ALTITUDE VALVE PANEL, ETC.) IN BASE BID OPTION NO. 1. IN BASE BID OPTION NO. 2, THESE ITEMS SHALL BE LOCATED IN THE PEDESTAL BASE CONE. SEE SHEET E-3-101 FOR MORE DETAILS.
- 3. INSTRUMENTS BUILDING TO BE OF PRE-FABRICATED CONSTRUCTION. SEE SPECIFICATION SECTION 107450 PRE-FABRICATED INSTRUMENTS BUILDING FOR BUILDING DETAILS.
- 4. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPE HANGERS, INSERTS, BRACKETS, PLATES, ANCHORS, AND OTHER SUPPORTS NOT SPECIFICALLY INCLUDED UNDER OTHER ITEMS. GENERALLY PIPE SUPPORTS ARE NOT SHOWN ON THE DRAWINGS, BUT SHALL BE SUPPLIED AS SPECIFIED HEREIN. SUPPORTS AND HANGERS SHALL BE AS MANUFACTURED BY GRINNELL, ELCEN, OR FEE & MASON, OR EQUAL OR FABRICATED BY THE CONTRACTOR. FIELD FABRICATED SUPPORTS MAY BE USED ONLY FOR SPECIAL CONDITIONS WHERE MANUFACTURED ITEMS MAY NOT BE SUITABLE. IN SUCH CASES, DETAILS OF PROPOSED SUPPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL SUCH SUPPORTS SHALL BE GALVANIZED.
- 5. PIPING AND VALVES SHALL BE PAINTED WITH TWO COATS OF HIGH BUILD POLYAMIDE EPOXY. SEE SPECIFICATION SECTION 099720 - STEEL TANK COATINGS.
- 6. PROVIDE 2" PVC CONDUITS FROM VAULT TO INSTRUMENTATION BUILDING. CONDUITS SHALL HOUSE: SIGNAL WIRES TO ALTITUDE VAULT, FEED LINE TO SAMPLING EQUIPMENT, FEED LINE TO PRESSURE TRANSDUCER, DRAIN LINE FROM SAMPLING EQUIPMENT, A SPARE.



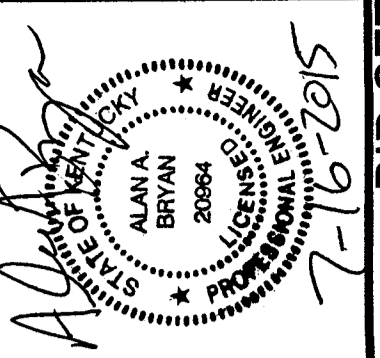
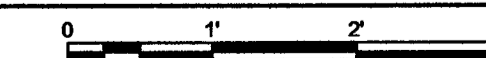
ALTITUDE VALVE VAULT LOWER PLAN

SCALE: 3/4"=1'-0"

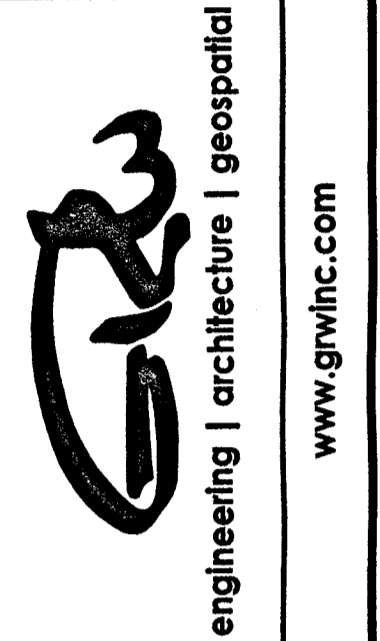


ALTITUDE VALVE VAULT / INSTRUMENT BUILDING UPPER PLAN

SCALE: 3/4"=1'-0"



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BASE BID OPTION NO. 1
ALTITUDE VALVE VAULT - PLAN
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

DESIGNED:	ADH
DRAWN:	BTR
REVIEWED:	AAB
APPROVED:	AAB

NO.	DATE	DESCRIPTION

DATE: JULY, 2015
 SCALE: 3/4"=1'
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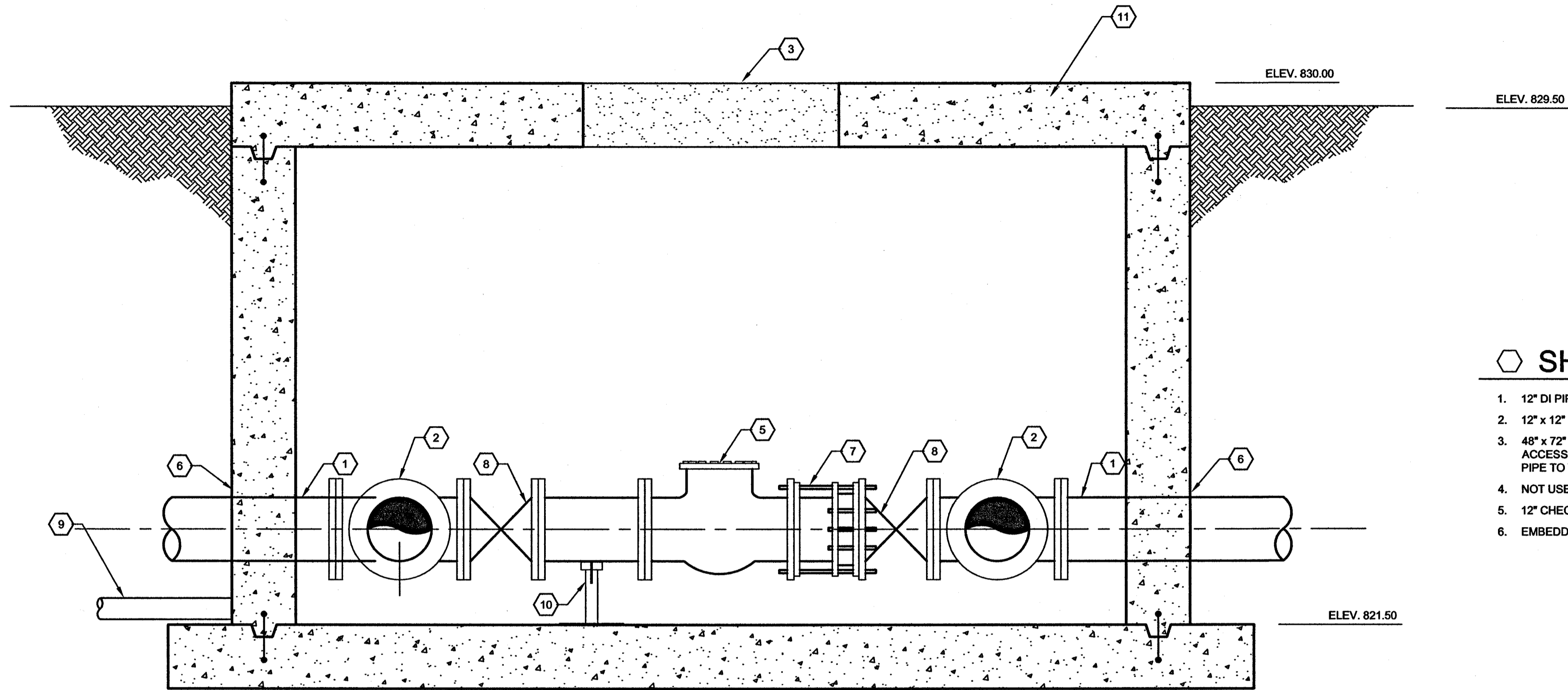
C-2-100

BID SET

PLOTTED BY: AByan

PRINTED: 7/17/2015 @ 11:09AM

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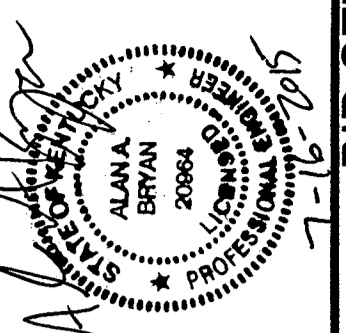
GENERAL NOTES:

1. ALTITUDE VALVE VAULT TO HOUSE SOLENOID ALTITUDE VALVE, CHECK VALVE, ETC. IN BASE BID NO. 1. THESE ITEMS SHOWN IN THE VALVE VAULT SHALL BE LOCATED IN THE PEDESTAL BASE CONE IN BASE BID OPTION NO. 2.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PIPE HANGERS, INSERTS, BRACKETS, PLATES, ANCHORS, AND OTHER SUPPORTS NOT SPECIFICALLY INCLUDED UNDER OTHER ITEMS. GENERALLY PIPE SUPPORTS ARE NOT SHOWN ON THE DRAWINGS, BUT SHALL BE SUPPLIED AS SPECIFIED HEREIN. SUPPORTS AND HANGERS SHALL BE AS MANUFACTURED BY GRINNELL, ELCEN, OR FEE & MASON, OR EQUAL OR FABRICATED BY THE CONTRACTOR. FIELD FABRICATED SUPPORTS MAY BE USED ONLY FOR SPECIAL CONDITIONS WHERE MANUFACTURED ITEMS MAY NOT BE SUITABLE. IN SUCH CASES, DETAILS OF PROPOSED SUPPORTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL SUCH SUPPORTS SHALL BE GALVANIZED.
3. PIPING AND VALVES SHALL BE PAINTED WITH TWO COATS OF HIGH BUILD POLYAMIDE EPOXY. SEE SPECIFICATION SECTION 099720 - STEEL TANK COATINGS

⬡ SHEET KEYNOTES:

1. 12" DI PIPE, FLG x PE
2. 12" x 12" x 8" DI TEE, FLG
3. 48" x 72" DOUBLE DOOR ALUMINUM ACCESS HATCH (ROUTE HATCH DRAIN PIPE TO VAULT SUMP)
4. NOT USED
5. 12" CHECK VALVE, LEVER & WEIGHT
6. EMBEDDED RESILIENT CONNECTOR
7. 12" DISMANTLING JOINT, FLG
8. 12" GATE VALVE, FLG
9. 4" PVC DRAIN LINE (ROUTE TO DAYLIGHT)
10. PIPE SUPPORT (TYP) SEE GENERAL NOTE 2
11. CONCRETE VALVE VAULT (SEE STRUCTURAL SHEETS)

1 ALTITUDE VALVE VAULT SECTION
 SCALE: 3/4"=1'-0"



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 CLIENT PROJECT NO.
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BASE BID OPTION NO. 1
 ALTITUDE VALVE VAULT - SECTION
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

DESIGNED: ADH
 DRAWN: BTR
 REVIEWED: AAB
 APPROVED: AAB

NO.	REVISIONS DESCRIPTION	DATE	BY

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED

DATE: JULY, 2015
 SCALE: 3/4"=1'
 SHEET NO.

C-2-300

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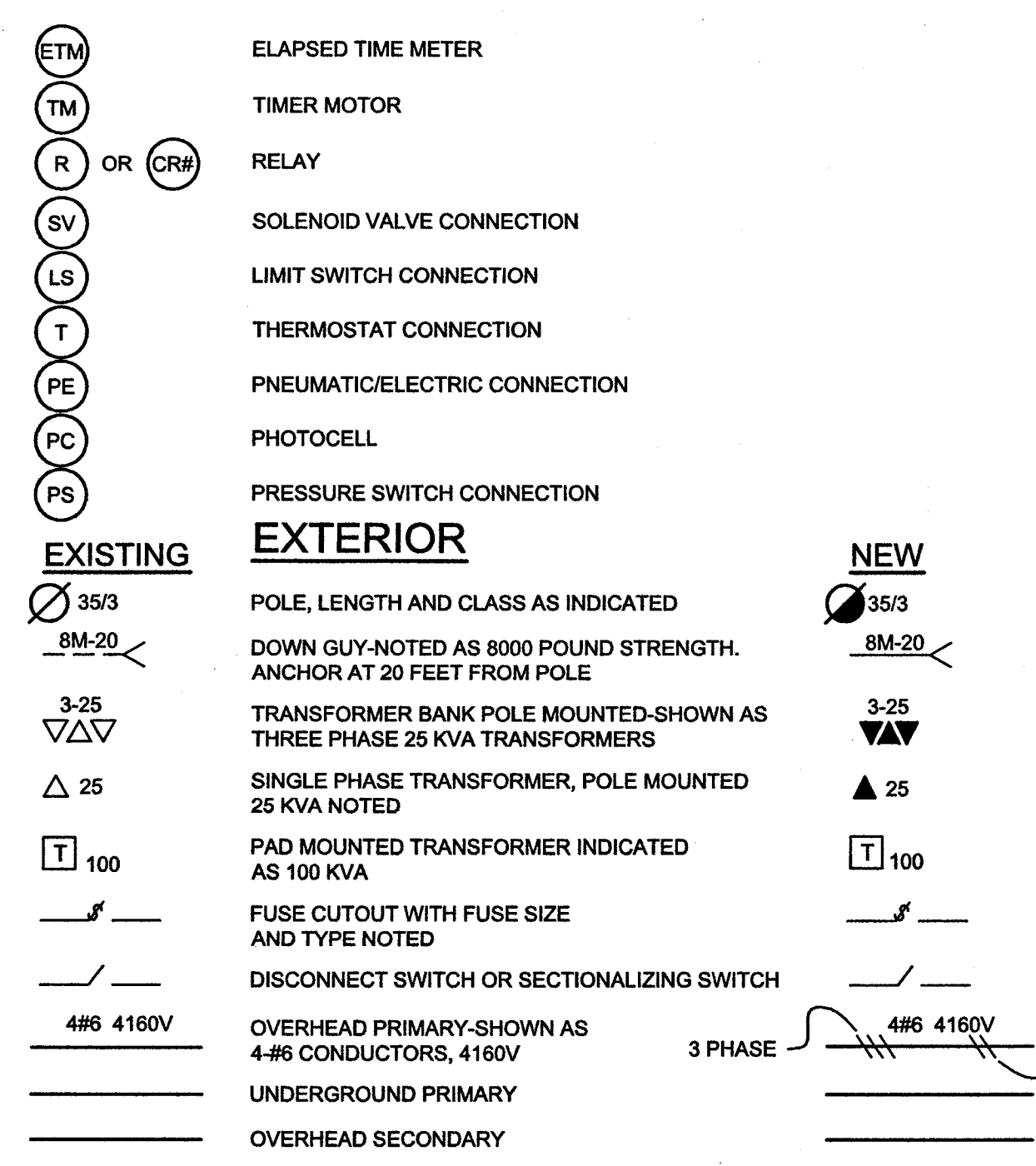
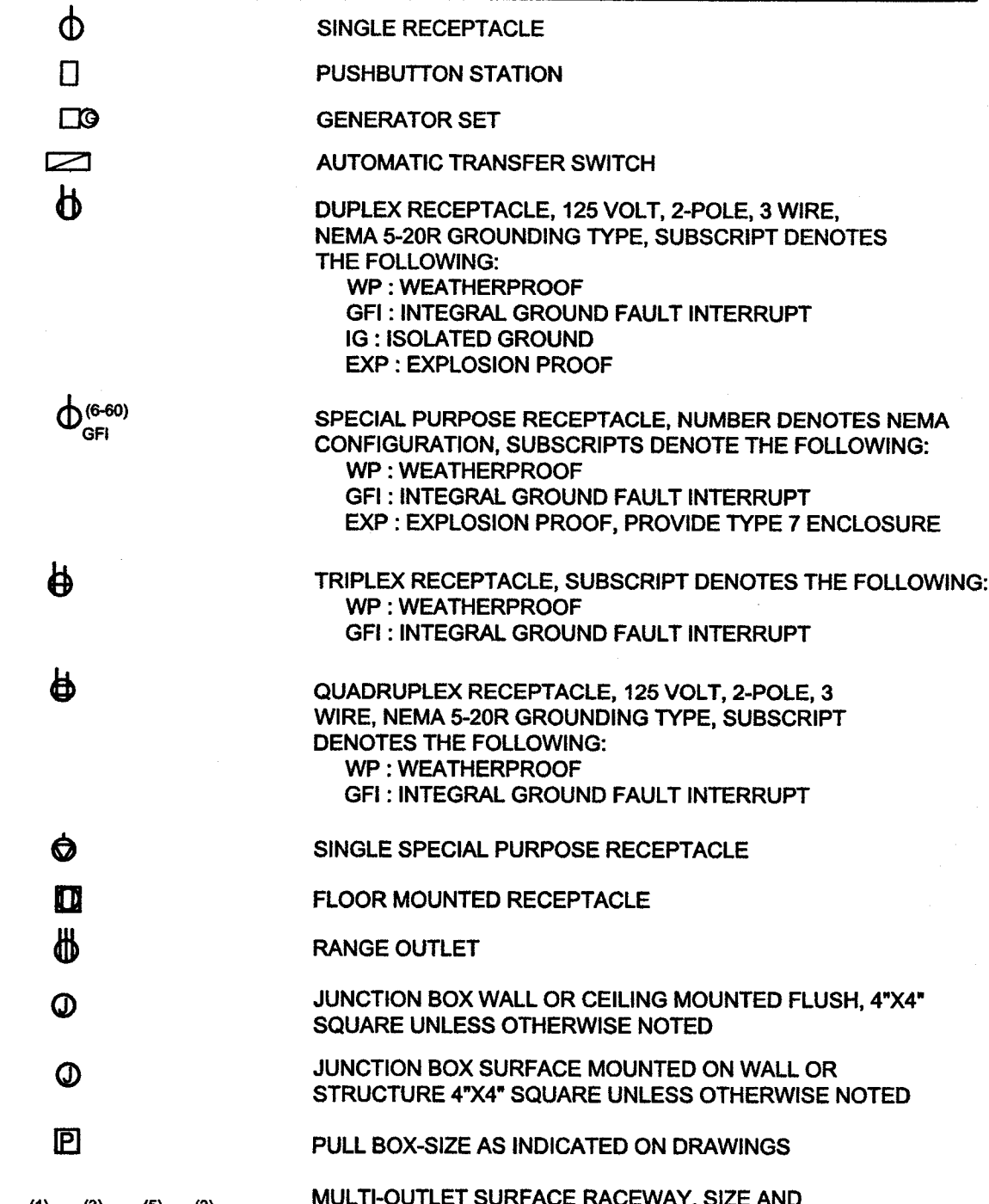
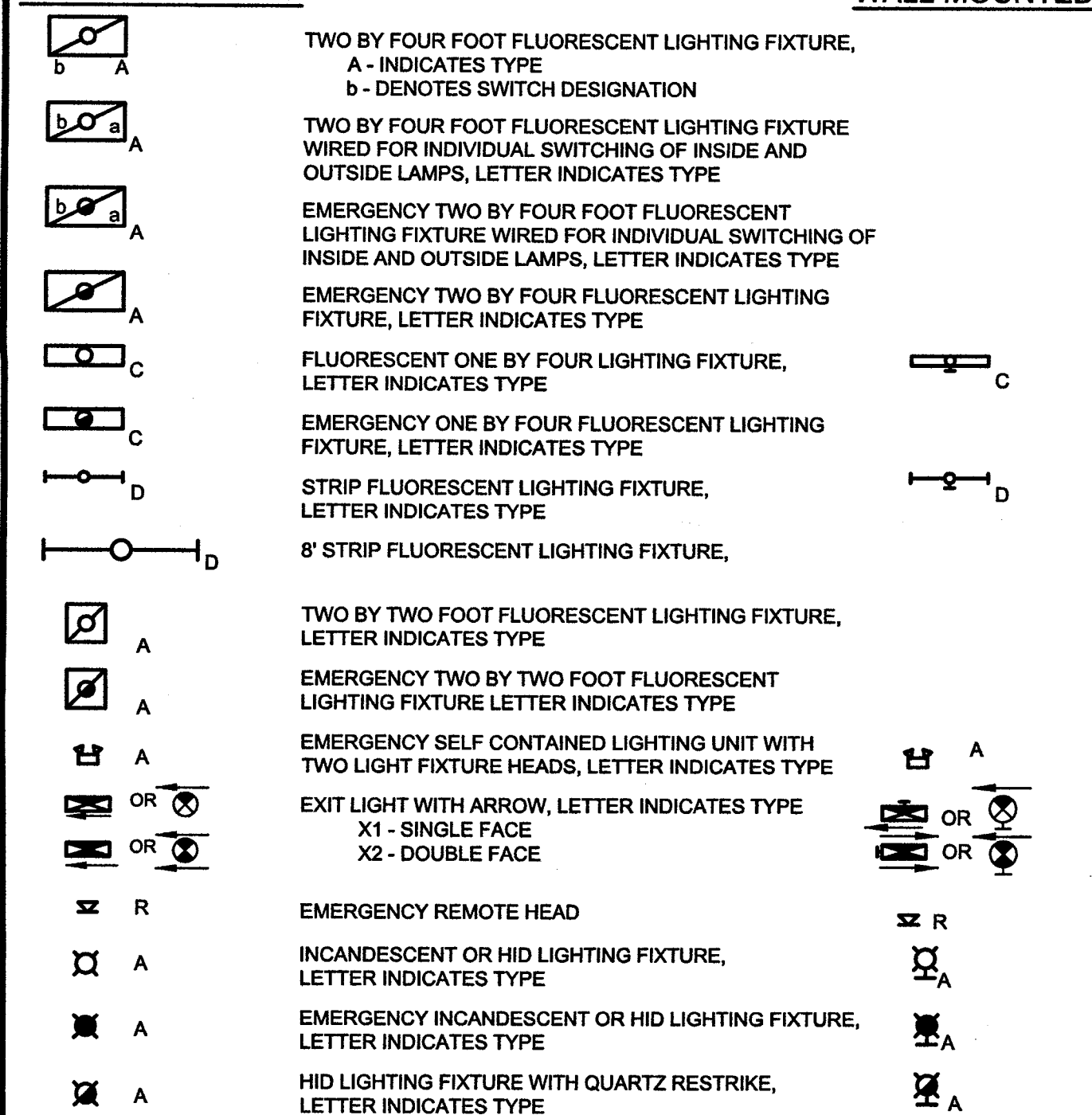
CEILING MOUNTED

INTERIOR LIGHTING

WALL MOUNTED

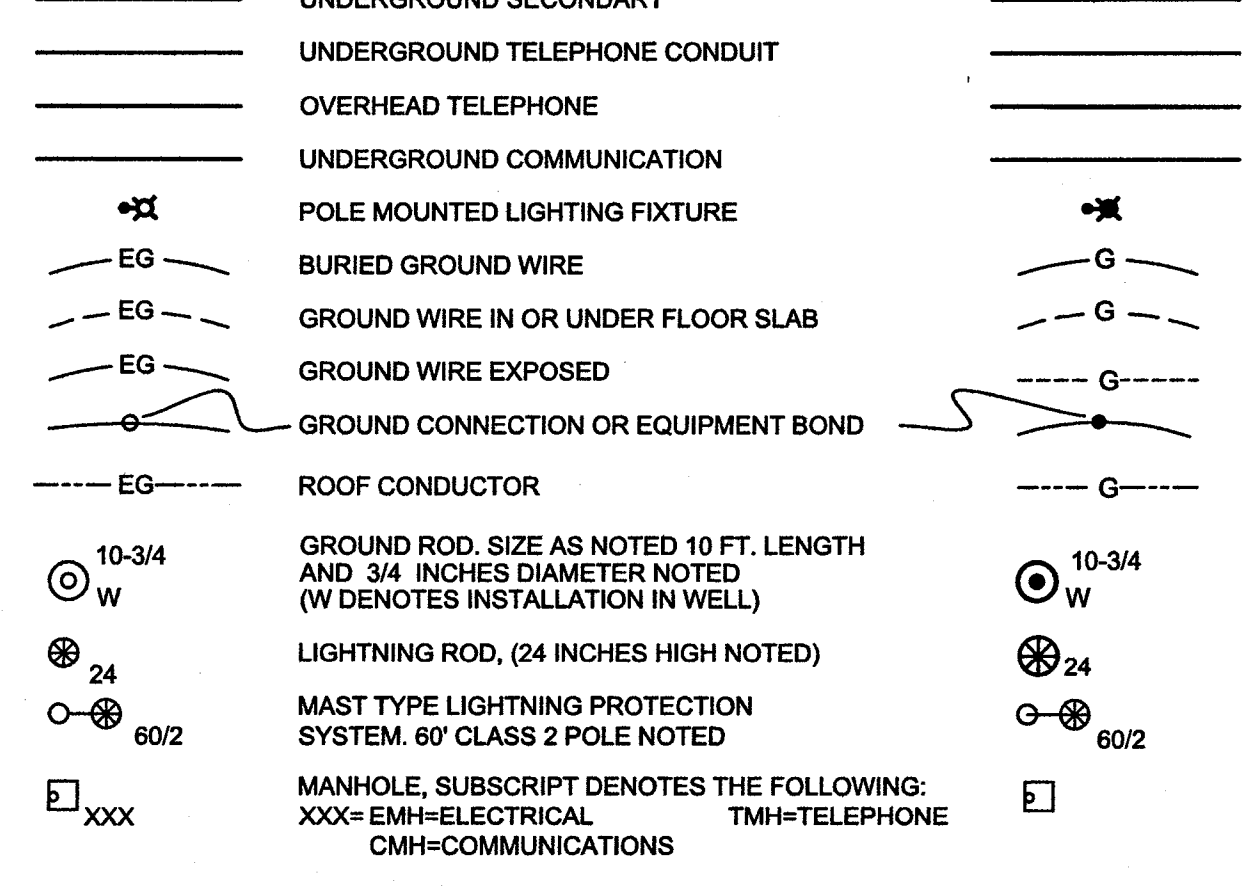
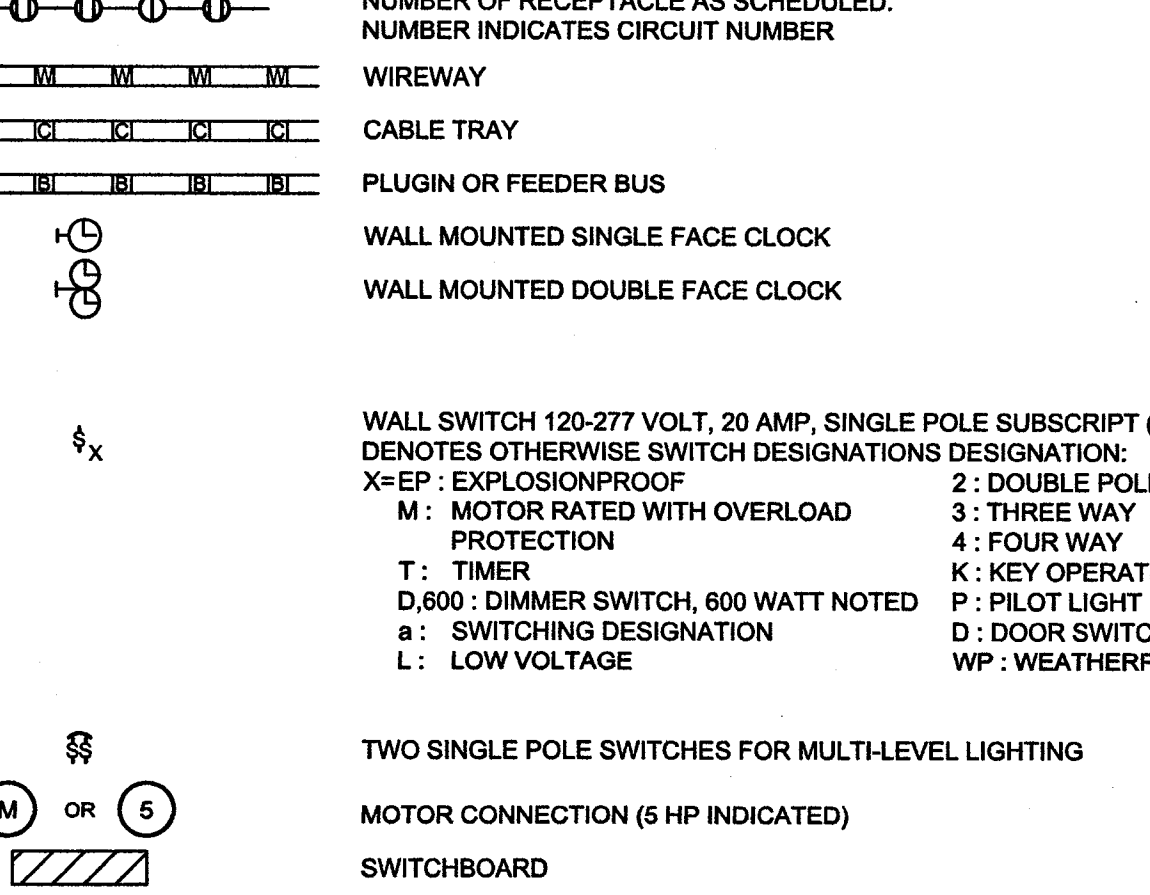
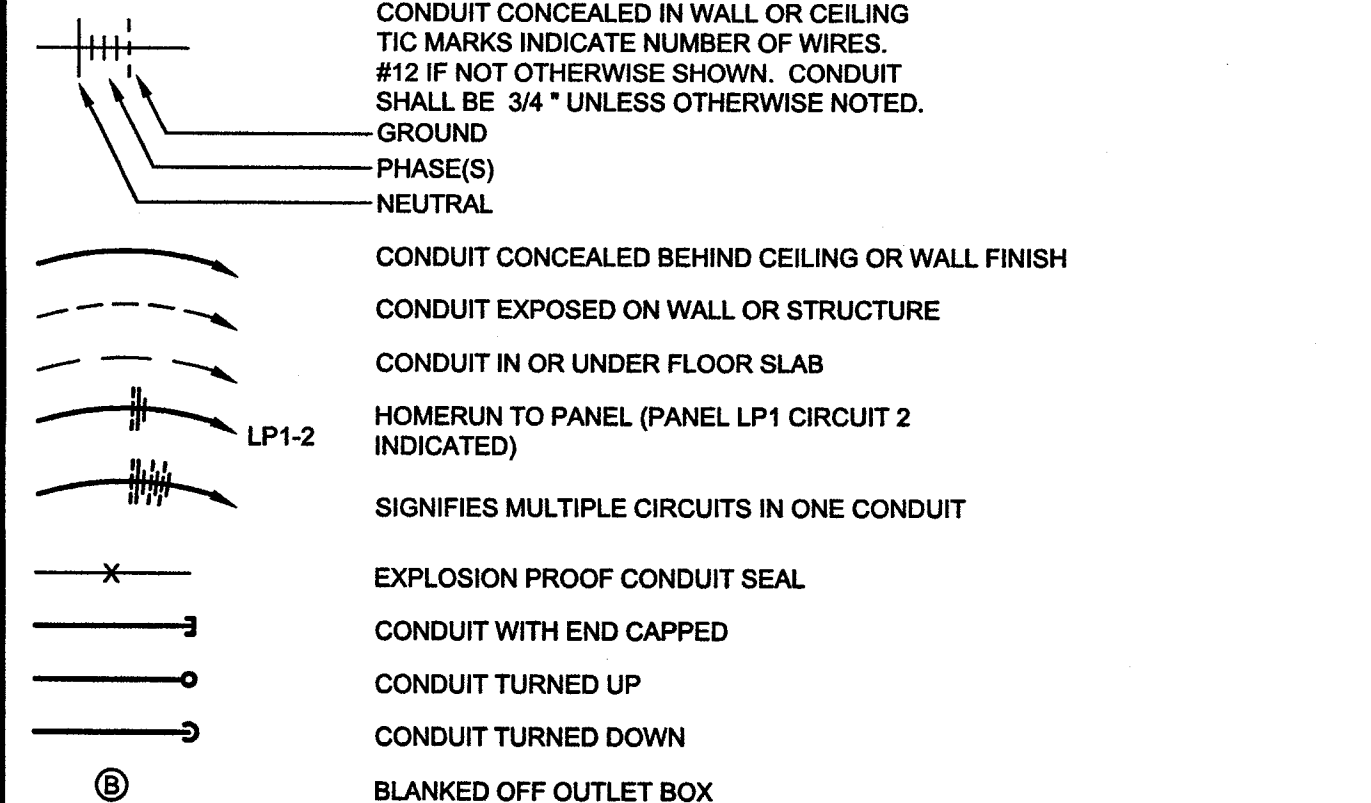
INTERIOR POWER EQUIPMENT AND DEVICES

ABBREVIATIONS



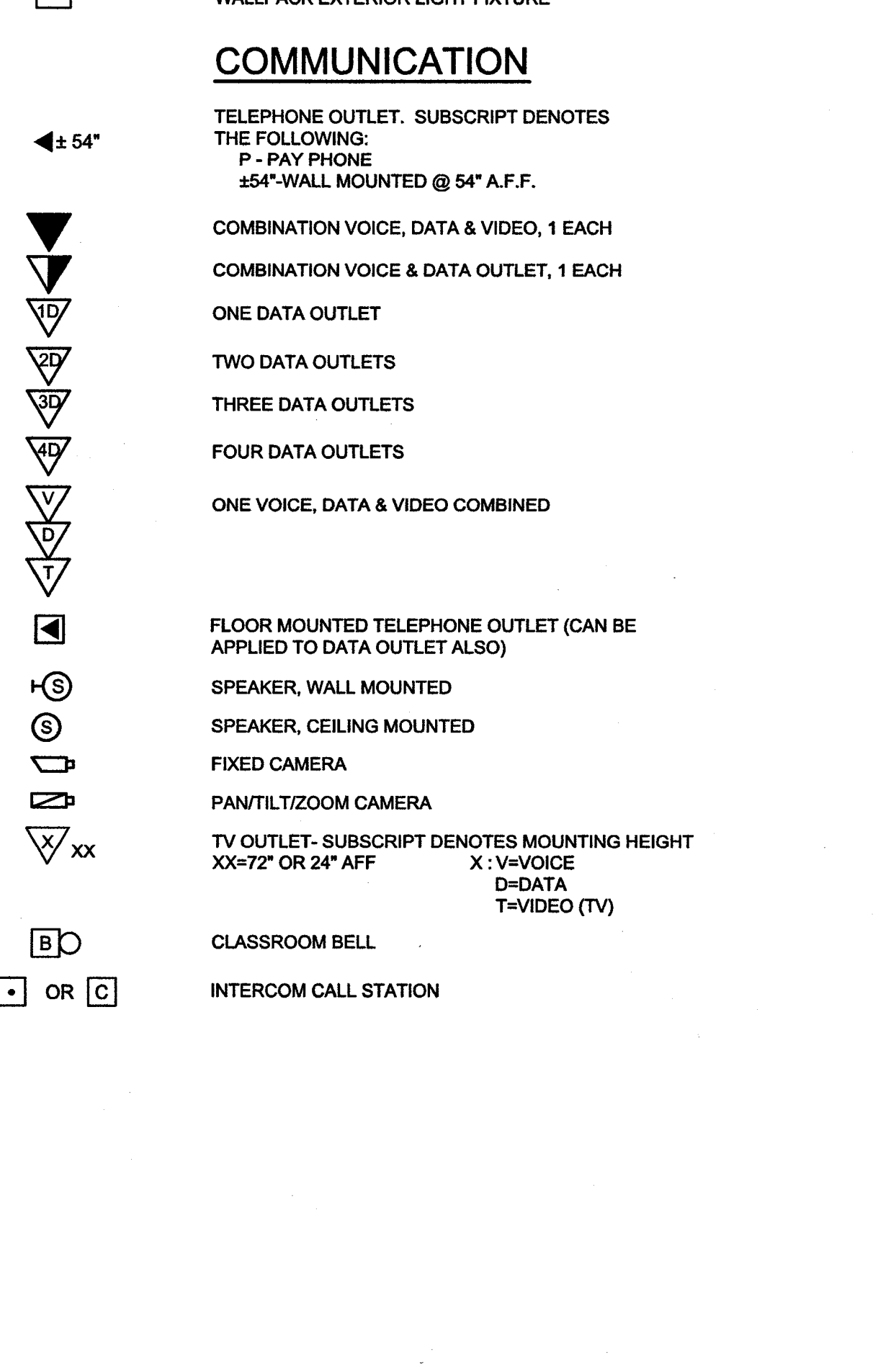
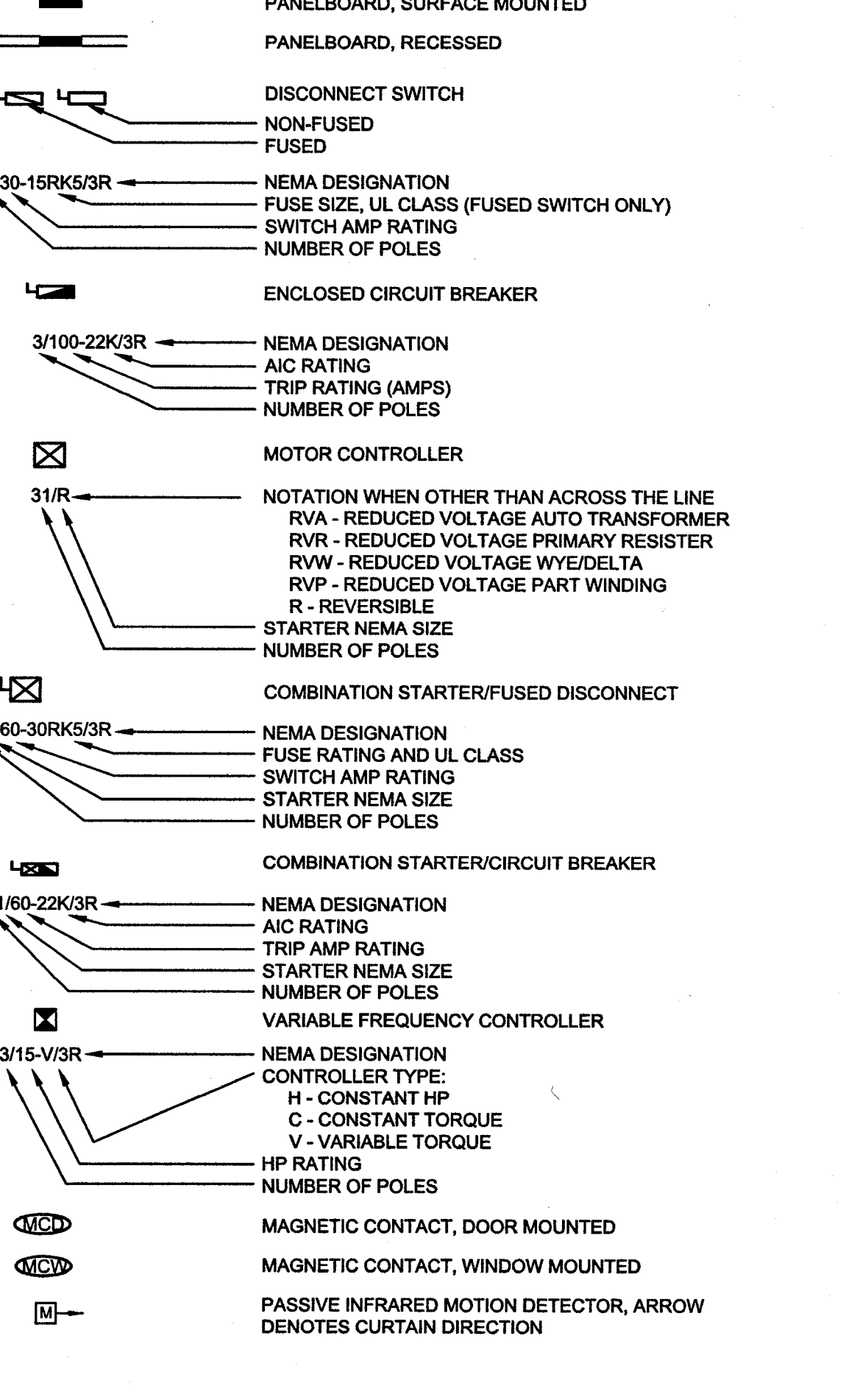
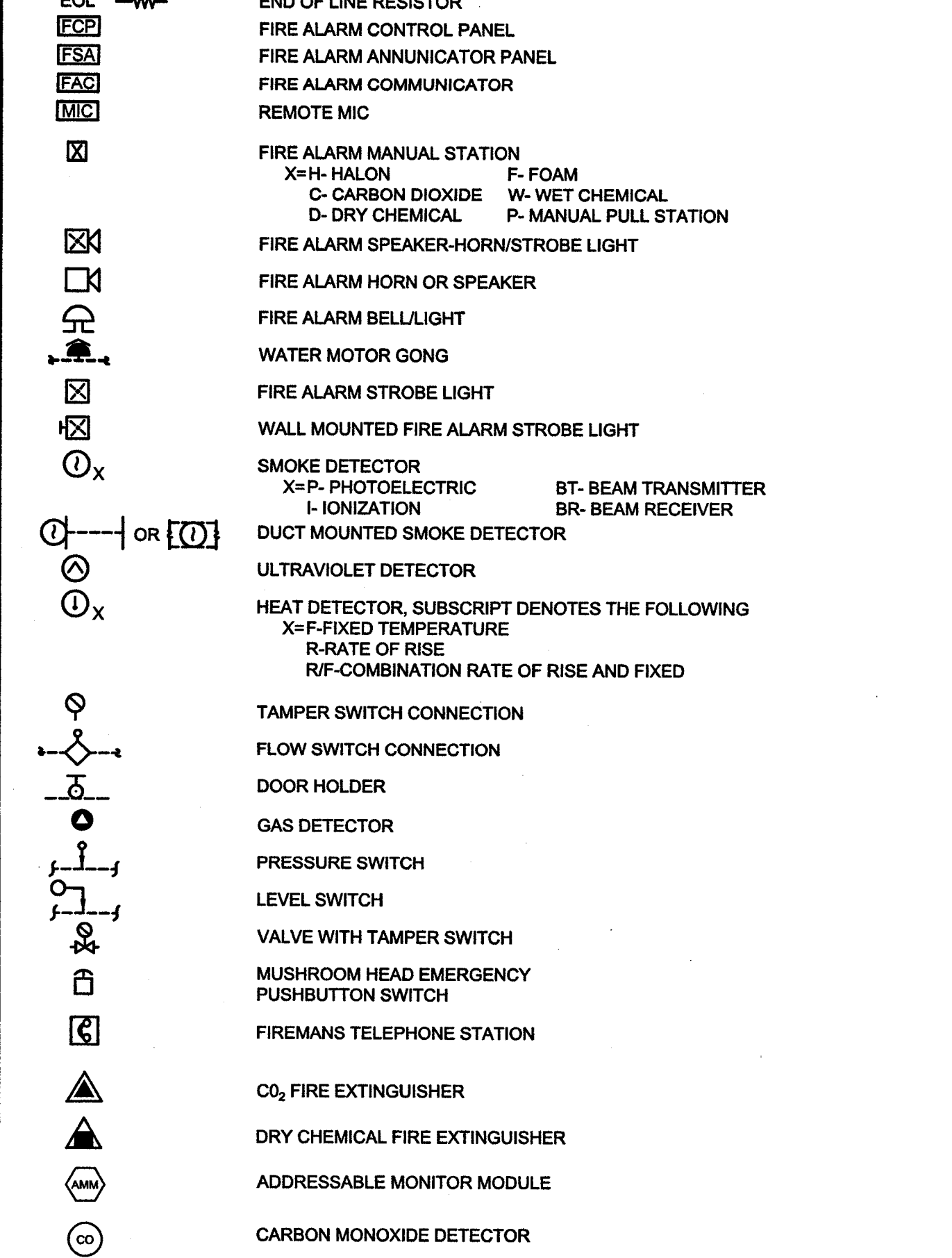
ABBREVIATIONS: A, AMP - AMPERES; AF - AMPERE FRAME; AFF - ABOVE FINISHED FLOOR; AFG - ABOVE FINISHED GRADE; AHU - AIR HANDLING UNIT; AL - ALUMINUM; AT - AMPERE TRIP; ATRV - AUTOTRANSFORMER REDUCED VOLTAGE; ATSS - AUTOMATIC TRANSFER SWITCH; AWG - AMERICAN WIRE GAUGE; BLDG - BUILDING; CB - CIRCUIT BREAKER; CCTV - CLOSED CIRCUIT TELEVISION; CKT - CIRCUIT; INC - INCANDESCENT; J-BOX, JB - JUNCTION BOX; KCMIL - 1000 CIRCULAR MILS; KVA - KILOVOLT AMPS; KVAFL - KILOVOLT AMPS REACTIVE; KW - KILOWATT; KWH - KILOWATT HOUR; LA - LIGHTNING ARRESTER; LG - LIGHTING; LV - LOW VOLTAGE; LVDI - LINEAR VARIABLE DIFFERENTIAL TRANSFORMER; MAU - MAKEUP AIR UNIT; MAX - MAXIMUM; MCB - MAIN CIRCUIT BREAKER; MCC - MOTOR CONTROL CENTER; MCP - MOTOR CIRCUIT PROTECTOR; MDP - MAIN DISTRIBUTION PANEL; MFR - MANUFACTURER; MG - MOTOR GENERATOR; MH - MANHOLE, METAL HALIDE, MOUNTING HEIGHT; MIC - MICROPHONE; MIN - MINIMUM; MLO - MAIN LUGS ONLY; MTD - MOUNTED; MV - MEDIUM VOLTAGE; N/A - NOT APPLICABLE; NEC - NATIONAL ELECTRICAL CODE; NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION; NESC - NATIONAL ELECTRICAL SAFETY CODE; NFPA - NATIONAL FIRE PROTECTION ASSOCIATION; NIC - NOT IN CONTRACT; NTS - NOT TO SCALE; NO - NORMALLY OPEN, NUMBER; OH - OVERHEAD; OL - OVERLOAD; P - POLE; PB - PULL BOX, PUSH BUTTON; PH - PHASE; PNL - PANEL; POC - POINT OF CONNECTION; PS - PULL SWITCH OR PRESSURE SWITCH; QL - QUANTITY; REF - REFERENCE, REFER; RCPT - RECEPTACLE; RGS - RIGID GALVANIZED STEEL; SCHAF - SCHEDULED; SMR - SURFACE METAL RACEWAY; SIN - SOLID NEUTRAL; SQ FT - SQUARE FOOT; SS - STAINLESS STEEL; STD - STANDARD; STP - SHIELDED TWISTED PAIR; SW - SWITCH; SYS - SYSTEM; TEL - TELEPHONE; TM - THERMAL MAGNETIC; TV - TELEVISION; TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR; TYP - TYPICAL; UG - UNDERGROUND; UH - UNIT HEATER; V - VOLTAGE; VFD - VARIABLE FREQUENCY DRIVE; W - WIRE; W/ - WITH; W/O - WITHOUT; WP - WEATHERPROOF; WT - WEIGHT; XFMR, XFMR - TRANSFORMER

INTERIOR CONDUIT AND WIRE



ABBREVIATIONS: A, AMP - AMPERES; AF - AMPERE FRAME; AFF - ABOVE FINISHED FLOOR; AFG - ABOVE FINISHED GRADE; AHU - AIR HANDLING UNIT; AL - ALUMINUM; AT - AMPERE TRIP; ATRV - AUTOTRANSFORMER REDUCED VOLTAGE; ATSS - AUTOMATIC TRANSFER SWITCH; AWG - AMERICAN WIRE GAUGE; BLDG - BUILDING; CB - CIRCUIT BREAKER; CCTV - CLOSED CIRCUIT TELEVISION; CKT - CIRCUIT; INC - INCANDESCENT; J-BOX, JB - JUNCTION BOX; KCMIL - 1000 CIRCULAR MILS; KVA - KILOVOLT AMPS; KVAFL - KILOVOLT AMPS REACTIVE; KW - KILOWATT; KWH - KILOWATT HOUR; LA - LIGHTNING ARRESTER; LG - LIGHTING; LV - LOW VOLTAGE; LVDI - LINEAR VARIABLE DIFFERENTIAL TRANSFORMER; MAU - MAKEUP AIR UNIT; MAX - MAXIMUM; MCB - MAIN CIRCUIT BREAKER; MCC - MOTOR CONTROL CENTER; MCP - MOTOR CIRCUIT PROTECTOR; MDP - MAIN DISTRIBUTION PANEL; MFR - MANUFACTURER; MG - MOTOR GENERATOR; MH - MANHOLE, METAL HALIDE, MOUNTING HEIGHT; MIC - MICROPHONE; MIN - MINIMUM; MLO - MAIN LUGS ONLY; MTD - MOUNTED; MV - MEDIUM VOLTAGE; N/A - NOT APPLICABLE; NEC - NATIONAL ELECTRICAL CODE; NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION; NESC - NATIONAL ELECTRICAL SAFETY CODE; NFPA - NATIONAL FIRE PROTECTION ASSOCIATION; NIC - NOT IN CONTRACT; NTS - NOT TO SCALE; NO - NORMALLY OPEN, NUMBER; OH - OVERHEAD; OL - OVERLOAD; P - POLE; PB - PULL BOX, PUSH BUTTON; PH - PHASE; PNL - PANEL; POC - POINT OF CONNECTION; PS - PULL SWITCH OR PRESSURE SWITCH; QL - QUANTITY; REF - REFERENCE, REFER; RCPT - RECEPTACLE; RGS - RIGID GALVANIZED STEEL; SCHAF - SCHEDULED; SMR - SURFACE METAL RACEWAY; SIN - SOLID NEUTRAL; SQ FT - SQUARE FOOT; SS - STAINLESS STEEL; STD - STANDARD; STP - SHIELDED TWISTED PAIR; SW - SWITCH; SYS - SYSTEM; TEL - TELEPHONE; TM - THERMAL MAGNETIC; TV - TELEVISION; TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR; TYP - TYPICAL; UG - UNDERGROUND; UH - UNIT HEATER; V - VOLTAGE; VFD - VARIABLE FREQUENCY DRIVE; W - WIRE; W/ - WITH; W/O - WITHOUT; WP - WEATHERPROOF; WT - WEIGHT; XFMR, XFMR - TRANSFORMER

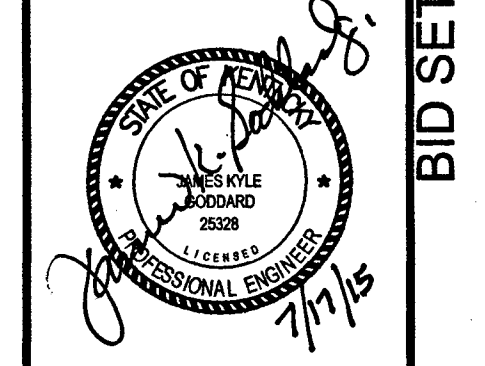
FIRE ALARM/SUPPRESSION SYSTEM DEVICES



ABBREVIATIONS: A, AMP - AMPERES; AF - AMPERE FRAME; AFF - ABOVE FINISHED FLOOR; AFG - ABOVE FINISHED GRADE; AHU - AIR HANDLING UNIT; AL - ALUMINUM; AT - AMPERE TRIP; ATRV - AUTOTRANSFORMER REDUCED VOLTAGE; ATSS - AUTOMATIC TRANSFER SWITCH; AWG - AMERICAN WIRE GAUGE; BLDG - BUILDING; CB - CIRCUIT BREAKER; CCTV - CLOSED CIRCUIT TELEVISION; CKT - CIRCUIT; INC - INCANDESCENT; J-BOX, JB - JUNCTION BOX; KCMIL - 1000 CIRCULAR MILS; KVA - KILOVOLT AMPS; KVAFL - KILOVOLT AMPS REACTIVE; KW - KILOWATT; KWH - KILOWATT HOUR; LA - LIGHTNING ARRESTER; LG - LIGHTING; LV - LOW VOLTAGE; LVDI - LINEAR VARIABLE DIFFERENTIAL TRANSFORMER; MAU - MAKEUP AIR UNIT; MAX - MAXIMUM; MCB - MAIN CIRCUIT BREAKER; MCC - MOTOR CONTROL CENTER; MCP - MOTOR CIRCUIT PROTECTOR; MDP - MAIN DISTRIBUTION PANEL; MFR - MANUFACTURER; MG - MOTOR GENERATOR; MH - MANHOLE, METAL HALIDE, MOUNTING HEIGHT; MIC - MICROPHONE; MIN - MINIMUM; MLO - MAIN LUGS ONLY; MTD - MOUNTED; MV - MEDIUM VOLTAGE; N/A - NOT APPLICABLE; NEC - NATIONAL ELECTRICAL CODE; NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION; NESC - NATIONAL ELECTRICAL SAFETY CODE; NFPA - NATIONAL FIRE PROTECTION ASSOCIATION; NIC - NOT IN CONTRACT; NTS - NOT TO SCALE; NO - NORMALLY OPEN, NUMBER; OH - OVERHEAD; OL - OVERLOAD; P - POLE; PB - PULL BOX, PUSH BUTTON; PH - PHASE; PNL - PANEL; POC - POINT OF CONNECTION; PS - PULL SWITCH OR PRESSURE SWITCH; QL - QUANTITY; REF - REFERENCE, REFER; RCPT - RECEPTACLE; RGS - RIGID GALVANIZED STEEL; SCHAF - SCHEDULED; SMR - SURFACE METAL RACEWAY; SIN - SOLID NEUTRAL; SQ FT - SQUARE FOOT; SS - STAINLESS STEEL; STD - STANDARD; STP - SHIELDED TWISTED PAIR; SW - SWITCH; SYS - SYSTEM; TEL - TELEPHONE; TM - THERMAL MAGNETIC; TV - TELEVISION; TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR; TYP - TYPICAL; UG - UNDERGROUND; UH - UNIT HEATER; V - VOLTAGE; VFD - VARIABLE FREQUENCY DRIVE; W - WIRE; W/ - WITH; W/O - WITHOUT; WP - WEATHERPROOF; WT - WEIGHT; XFMR, XFMR - TRANSFORMER

GENERAL NOTES: 1. ALL CONDUIT AND WIRING SHALL GENERALLY BE CONCEALED. IN PLACES WHERE THIS IS NOT PRACTICAL, SURFACE METAL RACEWAY SHALL BE USED. WHERE ALLOWED, THE COLOR SHALL CLOSELY MATCH EXISTING BACKGROUND COLOR OF SURFACES IN THE AREA. EXPOSED RUNS OF CONDUIT SHALL BE UTILIZED IN ALL UNFINISHED MECHANICAL SPACES. 2. FIRESTOP ALL CONDUITS PENETRATING FIRE RATED WALLS. 3. CONTRACTOR SHALL VISIT SITE(S) PRIOR TO BIDDING.

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ELECTRICAL STANDARD SYMBOLS LUMLEY TANK REPLACEMENT CITY OF FORT THOMAS, KENTUCKY

Table with columns for REVISIONS, DESIGNED (JKG), DRAWN (JTR), REVIEWED (JKG), APPROVED (JKG), and a section for DATE, SCALE (NOT TO SCALE), SHEET NO., and DRAWING NO. (E-0-001).

BID SET

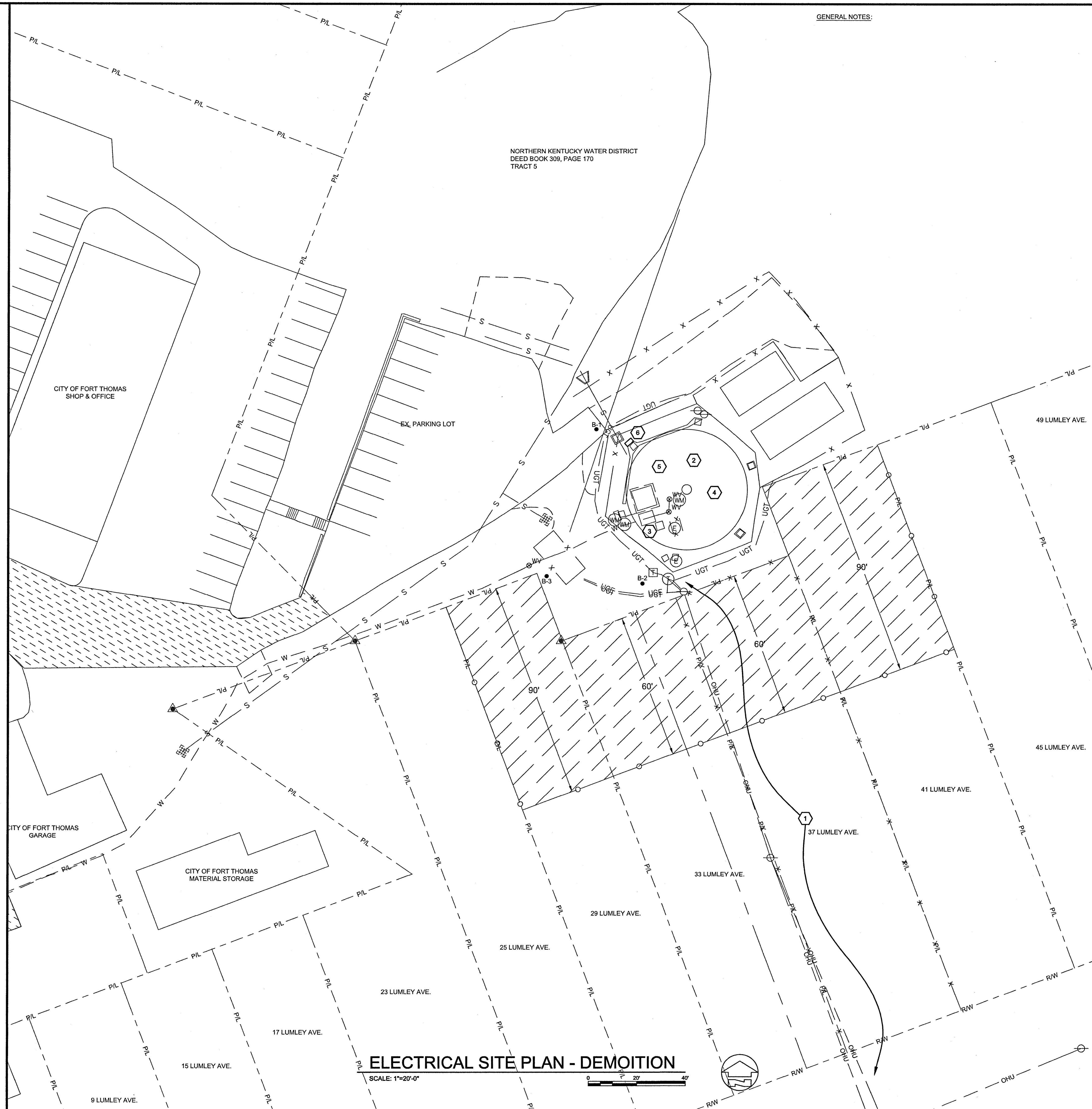
SEQUENCE OF ELECTRICAL CONSTRUCTION:

1. INSTALL NEW SERVICES TO AT&T AND VERIZON BUILDINGS (BY OTHERS).
2. AT&T AND VERIZON WILL INSTALL A TEMPORARY ANTENNA TOWER (BY OTHERS).
3. AT&T AND VERIZON WILL TRANSFER ANTENNAS TO TEMPORARY TOWER (BY OTHERS).
4. DUKE ENERGY WILL REMOVE THREE (3) EXISTING OVERHEAD POWER SERVICES.
5. EXISTING ELEVATED WATER TANK AND VALVE VAULT TO BE REMOVED.
6. CONSTRUCT NEW METERING PEDESTAL WITH MAIN SERVICE DISCONNECT AND MAIN GROUNDING ELECTRODE SYSTEM.
7. INSTALL NEW UNDERGROUND 200 AMPERE SERVICE FROM PADMOUNTED TRANSFORMER TO SERVICE PEDESTAL.
8. ERECT NEW ELEVATED WATER TANK - MULTI-LEG (BID ALTERNATE ONE) OR PEDESHERE (BID ALTERNATE TWO).
9. INSTALL LIGHTNING PROTECTION SYSTEM AS PER MANUFACTURER RECOMMENDATION AND NFPA 780. MASTER LABEL REQUIRED (BOTH BID ALTERNATE ONE AND BID ALTERNATE TWO).
10. CONSTRUCT NEW POURED IN PLACE VALVE VAULT AND PRE-FABRICATED BUILDING (BID ALTERNATE ONE).
11. CONSTRUCT NEW POWER AND INSTRUMENT PANEL PEDESTAL INSIDE PEDESHERE (BID ALTERNATE TWO).
12. TRANSFER AT&T AND VERIZON ANTENNAS TO NEW ELEVATED WATER TANK (BY OTHERS).
13. INSTALL NEW 200 AMPERE UNDERGROUND FEEDER FROM SERVICE PEDESTAL TO POWER PANEL IN INSTRUMENT BUILDING AND INSTALL GROUNDING ELECTRODE FOR POWER PANEL (BID ALTERNATE ONE).
14. INSTALL NEW 200 AMPERE UNDERGROUND FEEDER FROM SERVICE PEDESTAL TO POWER PANEL IN PEDESHERE AND INSTALL GROUNDING ELECTRODE FOR POWER PANEL (BID ALTERNATE TWO).
15. COMPLETE BONDING OF SERVICE PEDESTAL, POWER PANEL, LIGHTNING PROTECTION SYSTEM, MAIN GROUNDING ELECTRODE SYSTEM, WATER PIPING, WATER TOWER STRUCTURE, AND PERIMETER FENCE (ALL ITEMS BOTH BID ALTERNATE ONE AND BID ALTERNATE TWO).
16. WIRE PRE-FABRICATED INSTRUMENT BUILDING - POWER, LIGHTS, CONTROLS, SECURITY, SCADA, ETC. (BID ALTERNATE ONE).
17. WIRE PEDESHERE - POWER, LIGHTS, CONTROLS, SECURITY, SCADA, ETC. (BID ALTERNATE TWO).
18. MAKE CONNECTIONS TO ALTITUDE VALVE IN VALVE VAULT.
19. INSTALL SCADA PANEL, TELEMTRY PANEL, AND CHEMICAL/WATER QUALITY MONITORING PANEL IN INSTRUMENT BUILDING (BID ALTERNATE ONE).
20. INSTALL SCADA PANEL, TELEMTRY PANEL, AND CHEMICAL/WATER QUALITY MONITORING PANEL IN PEDESHERE (BID ALTERNATE TWO).
21. INSTALL NEW TELEMTRY ANTENNA ON NEW ELEVATED WATER TANK.
22. MAKE FINAL CONNECTIONS TO ALTITUDE VALVE, SCADA PANEL, TELEMTRY PANEL, TELEMTRY ANTENNA, AND CHEMICAL/WATER QUALITY MONITORING PANEL.
23. FINAL CHECK OUT OF ALL SYSTEMS.

NOTE: NEW ELECTRICAL SERVICES FOR AT&T AND VERIZON AND TEMPORARY ANTENNAS MUST BE ESTABLISHED AND IN SERVICE BEFORE COMMENCEMENT OF THE WATER TANK PROJECT.

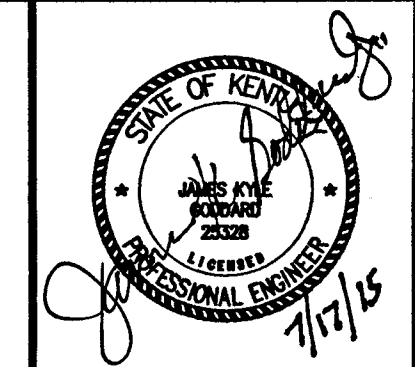
SHEET KEYNOTES:

1. EXISTING OVERHEAD SERVICE TO BE REMOVED BY DUKE ENERGY.
2. ALL ELECTRICAL CABLES, WIRING, APPARATUSES, EQUIPMENT, AND DEVICES TO BE REMOVED FROM THE OLD ELEVATED WATER TANK. ALL CELL ANTENNAS AND ASSOCIATED CABLING TO BE REMOVED (BY OTHERS).
3. ALL ELECTRICAL CABLES, WIRING, APPARATUSES, EQUIPMENT, AND DEVICES TO BE REMOVED FROM THE EXISTING VALVE VAULT, SERVICE ENTRANCE, SCADA PANEL, TELEMTRY PANEL, ETC. SCADA PANEL AND TELEMTRY PANEL TO BE REUSED.
4. ALL LIGHTING PROTECTION CONDUCTORS TO BE REMOVED.
5. ALL SECURITY DEVICES AND WIRING TO BE REMOVED.
6. ALL FAA OBSTRUCTION LIGHTS AND CONTROLS TO BE REMOVED.



GENERAL NOTES:

NORTHERN KENTUCKY WATER DISTRICT
DEED BOOK 308, PAGE 170
TRACT 5



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CLIENT PROJECT NO.
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ELECTRICAL SITE PLAN - DEMOLITION

LUMLEY TANK REPLACEMENT

CITY OF FORT THOMAS, KENTUCKY

DESIGNED BY	JKG
DRAWN BY	JTR
REVIEWED BY	JKG
APPROVED BY	JKG

REVISIONS	DATE	DESCRIPTION

DATE: JULY, 2015
SCALE: 1"=20'
SHEET NO.

E-0-100

PLOTTED BY: JRadmon

PRINTED: 7/16/2015 @ 2:54PM

FILE NAME: G:\4383-NKWD Lumley Tank\Working Drawings\A\AucCAD\4383_E-0-100.dwg

BID SET



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ELECTRICAL SITE PLAN - NEW WORK
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED BY	JKG
DRAWN BY	JTR
REVIEWED BY	JKG
APPROVED BY	JKG

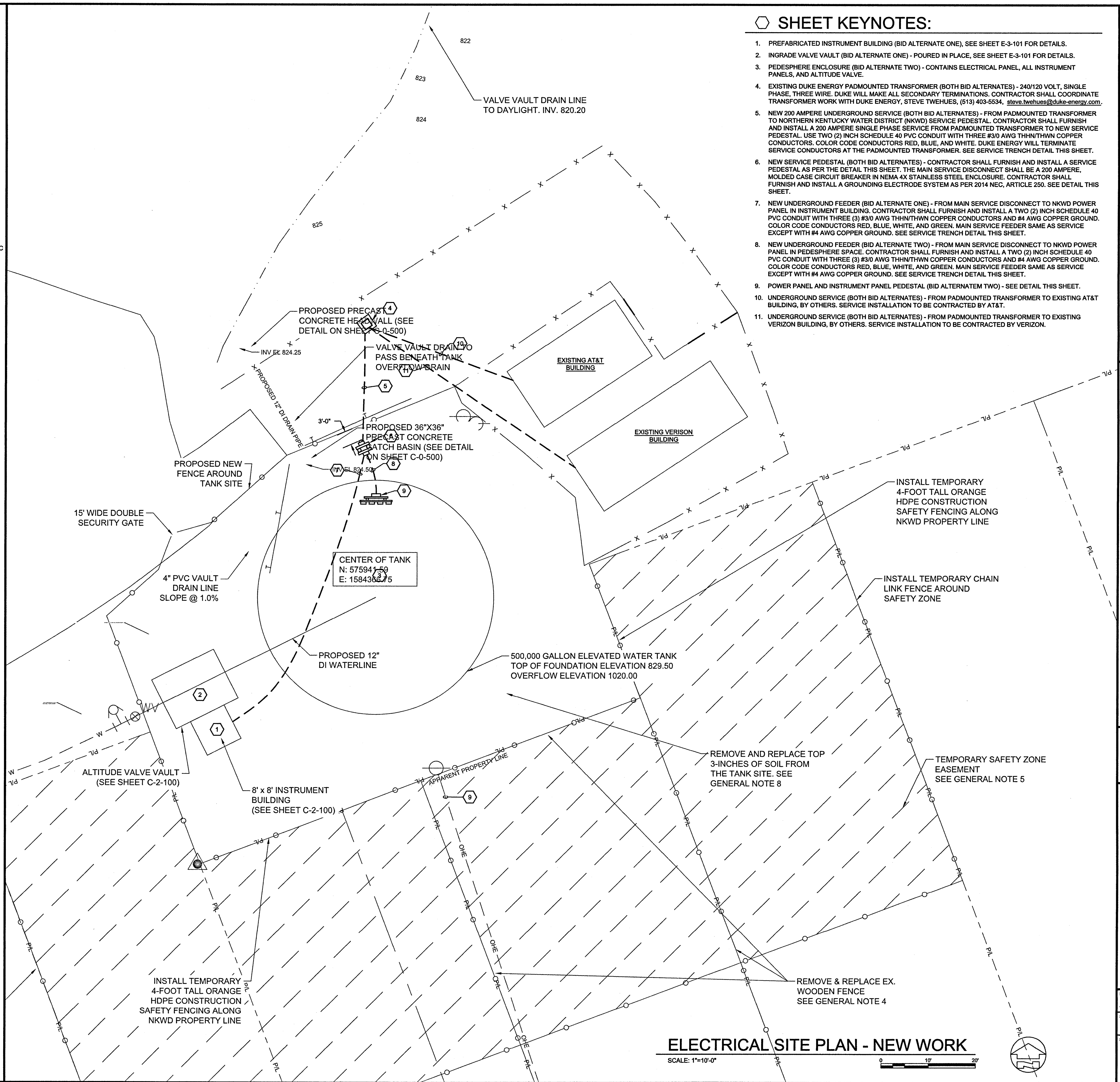
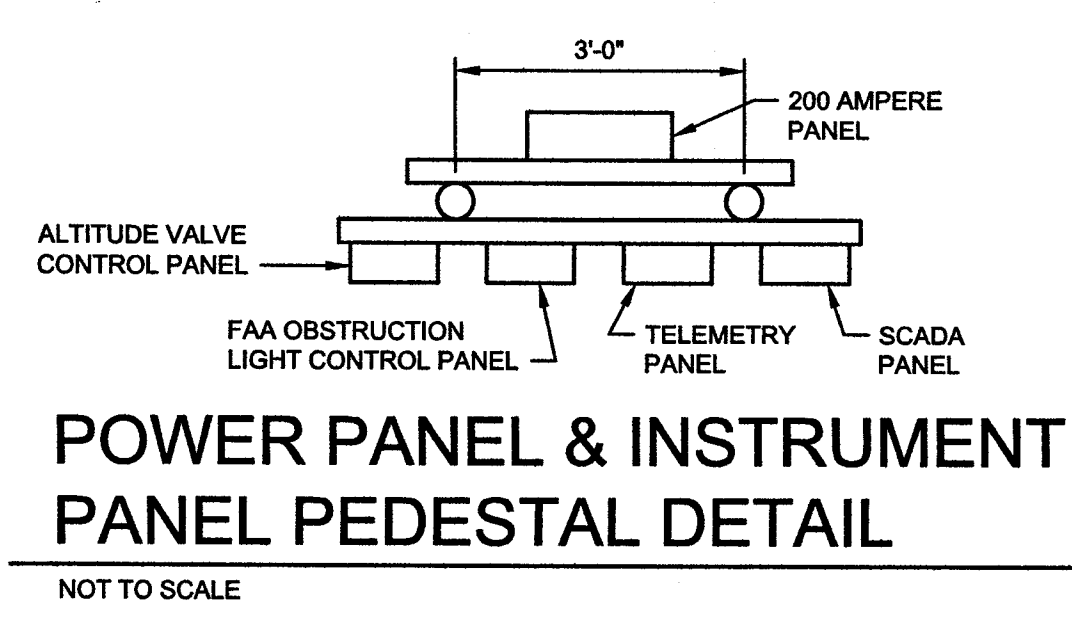
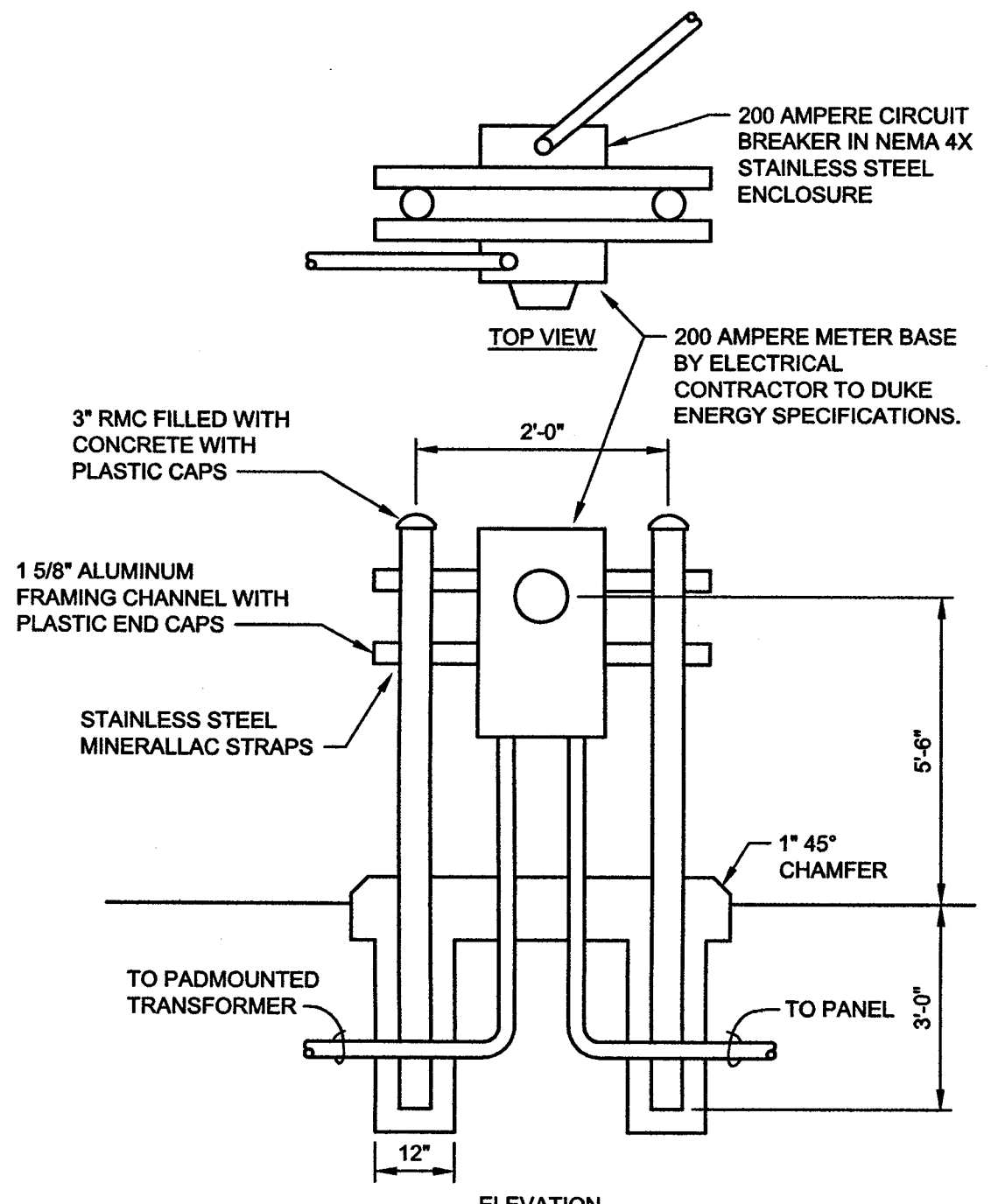
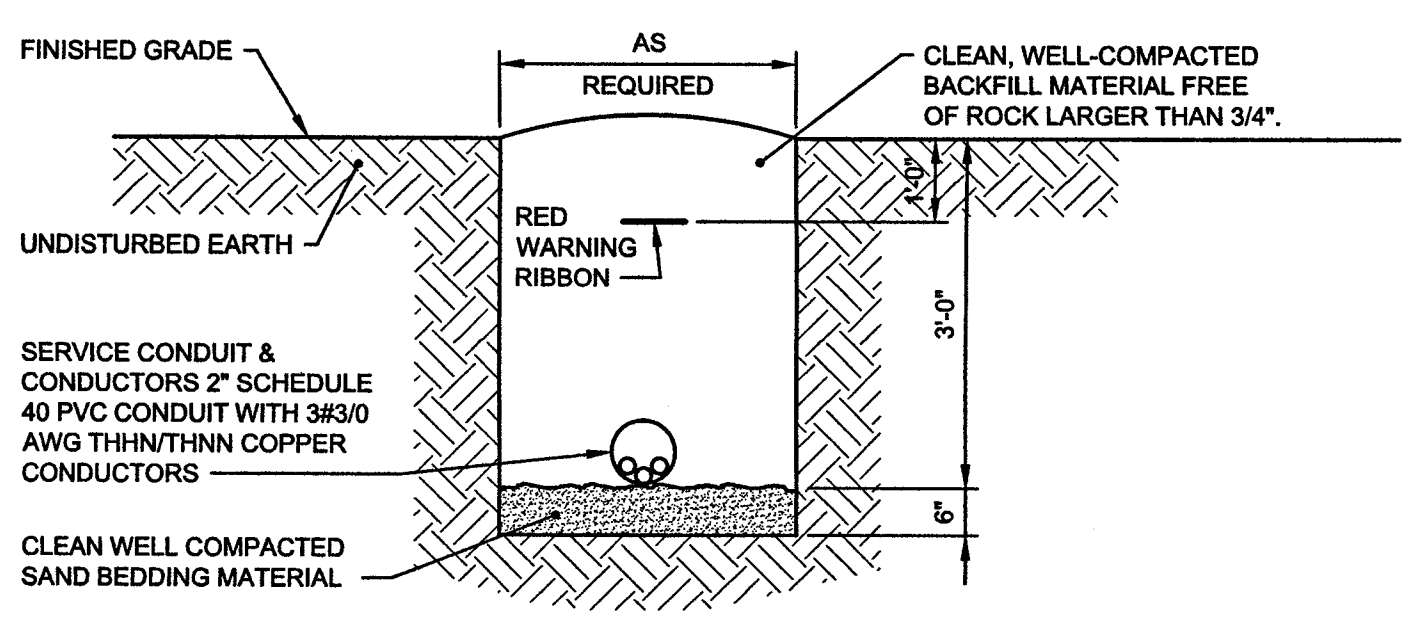
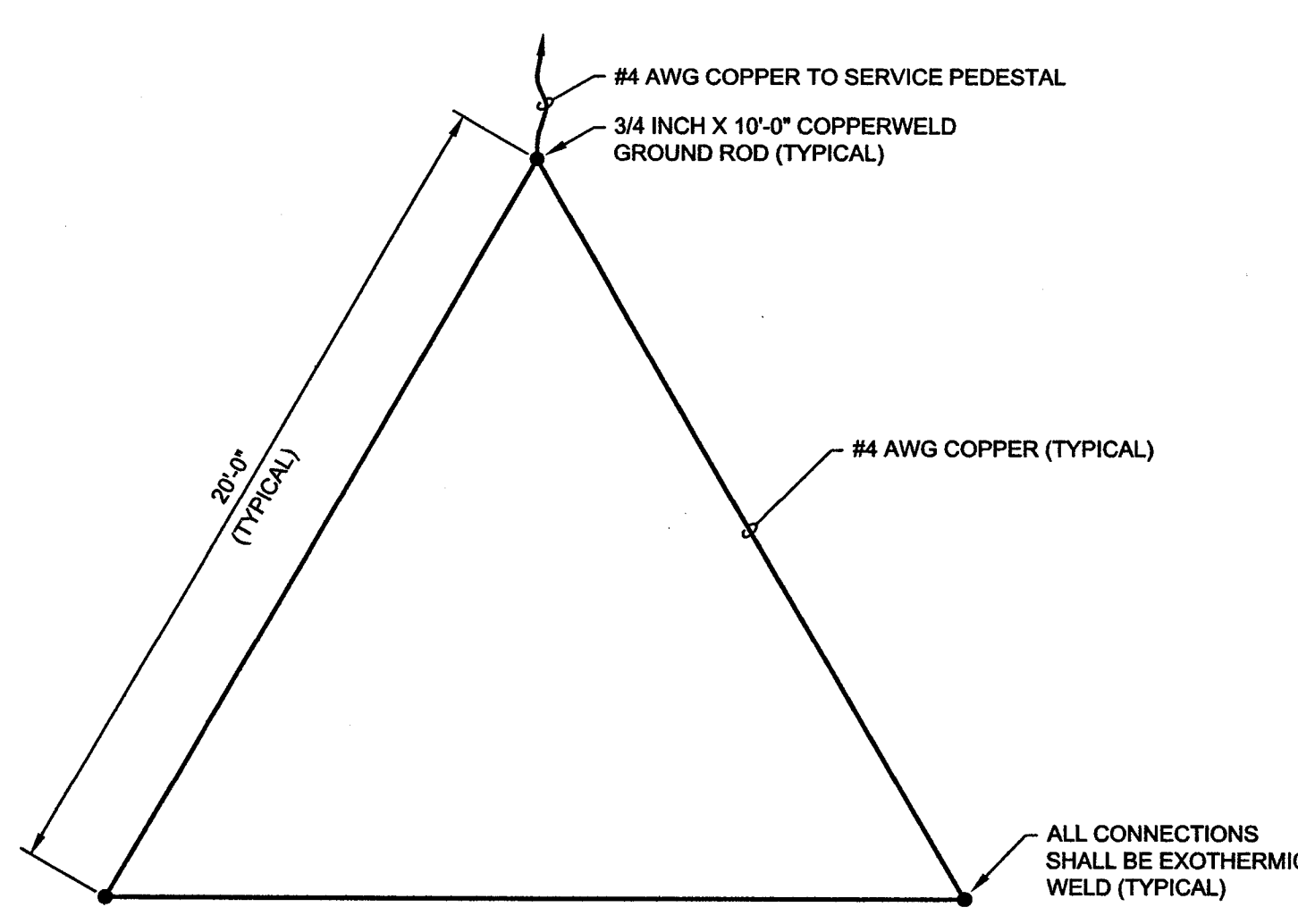
NO.	REVISIONS DESCRIPTION	DATE

DATE: JULY, 2015
SCALE: 1"=10'
SHEET NO.

E-0-101

SHEET KEYNOTES:

1. PREFABRICATED INSTRUMENT BUILDING (BID ALTERNATE ONE), SEE SHEET E-3-101 FOR DETAILS.
2. INGRADE VALVE VAULT (BID ALTERNATE ONE) - POURED IN PLACE, SEE SHEET E-3-101 FOR DETAILS.
3. PEDESHERE ENCLOSURE (BID ALTERNATE TWO) - CONTAINS ELECTRICAL PANEL, ALL INSTRUMENT PANELS, AND ALTITUDE VALVE.
4. EXISTING DUKE ENERGY PADMOUNTED TRANSFORMER (BOTH BID ALTERNATES) - 240/120 VOLT, SINGLE PHASE, THREE WIRE. DUKE WILL MAKE ALL SECONDARY TERMINATIONS. CONTRACTOR SHALL COORDINATE TRANSFORMER WORK WITH DUKE ENERGY, STEVE TWEHUES, (513) 403-5534, steve.twehues@duke-energy.com.
5. NEW 200 AMPERE UNDERGROUND SERVICE (BOTH BID ALTERNATES) - FROM PADMOUNTED TRANSFORMER TO NORTHERN KENTUCKY WATER DISTRICT (NKWD) SERVICE PEDESTAL. CONTRACTOR SHALL FURNISH AND INSTALL A 200 AMPERE SINGLE PHASE SERVICE FROM PADMOUNTED TRANSFORMER TO NEW SERVICE PEDESTAL. USE TWO (2) INCH SCHEDULE 40 PVC CONDUIT WITH THREE #3/0 AWG THHN/THWN COPPER CONDUCTORS. COLOR CODE CONDUCTORS RED, BLUE, AND WHITE. DUKE ENERGY WILL TERMINATE SERVICE CONDUCTORS AT THE PADMOUNTED TRANSFORMER. SEE SERVICE TRENCH DETAIL THIS SHEET.
6. NEW SERVICE PEDESTAL (BOTH BID ALTERNATES) - CONTRACTOR SHALL FURNISH AND INSTALL A SERVICE PEDESTAL AS PER THE DETAIL THIS SHEET. THE MAIN SERVICE DISCONNECT SHALL BE A 200 AMPERE, MOLDED CASE CIRCUIT BREAKER IN NEMA 4X STAINLESS STEEL ENCLOSURE. CONTRACTOR SHALL FURNISH AND INSTALL A GROUNDING ELECTRODE SYSTEM AS PER 2014 NEC, ARTICLE 250. SEE DETAIL THIS SHEET.
7. NEW UNDERGROUND FEEDER (BID ALTERNATE ONE) - FROM MAIN SERVICE DISCONNECT TO NKWD POWER PANEL IN INSTRUMENT BUILDING. CONTRACTOR SHALL FURNISH AND INSTALL A TWO (2) INCH SCHEDULE 40 PVC CONDUIT WITH THREE (3) #3/0 AWG THHN/THWN COPPER CONDUCTORS AND #4 AWG COPPER GROUND. COLOR CODE CONDUCTORS RED, BLUE, WHITE, AND GREEN. MAIN SERVICE FEEDER SAME AS SERVICE EXCEPT WITH #4 AWG COPPER GROUND. SEE SERVICE TRENCH DETAIL THIS SHEET.
8. NEW UNDERGROUND FEEDER (BID ALTERNATE TWO) - FROM MAIN SERVICE DISCONNECT TO NKWD POWER PANEL IN PEDESHERE SPACE. CONTRACTOR SHALL FURNISH AND INSTALL A TWO (2) INCH SCHEDULE 40 PVC CONDUIT WITH THREE (3) #3/0 AWG THHN/THWN COPPER CONDUCTORS AND #4 AWG COPPER GROUND. COLOR CODE CONDUCTORS RED, BLUE, WHITE, AND GREEN. MAIN SERVICE FEEDER SAME AS SERVICE EXCEPT WITH #4 AWG COPPER GROUND. SEE SERVICE TRENCH DETAIL THIS SHEET.
9. POWER PANEL AND INSTRUMENT PANEL PEDESTAL (BID ALTERNATE TWO) - SEE DETAIL THIS SHEET.
10. UNDERGROUND SERVICE (BOTH BID ALTERNATES) - FROM PADMOUNTED TRANSFORMER TO EXISTING AT&T BUILDING, BY OTHERS. SERVICE INSTALLATION TO BE CONTRACTED BY AT&T.
11. UNDERGROUND SERVICE (BOTH BID ALTERNATES) - FROM PADMOUNTED TRANSFORMER TO EXISTING VERIZON BUILDING, BY OTHERS. SERVICE INSTALLATION TO BE CONTRACTED BY VERIZON.



PLOTTED BY: jrdmiron

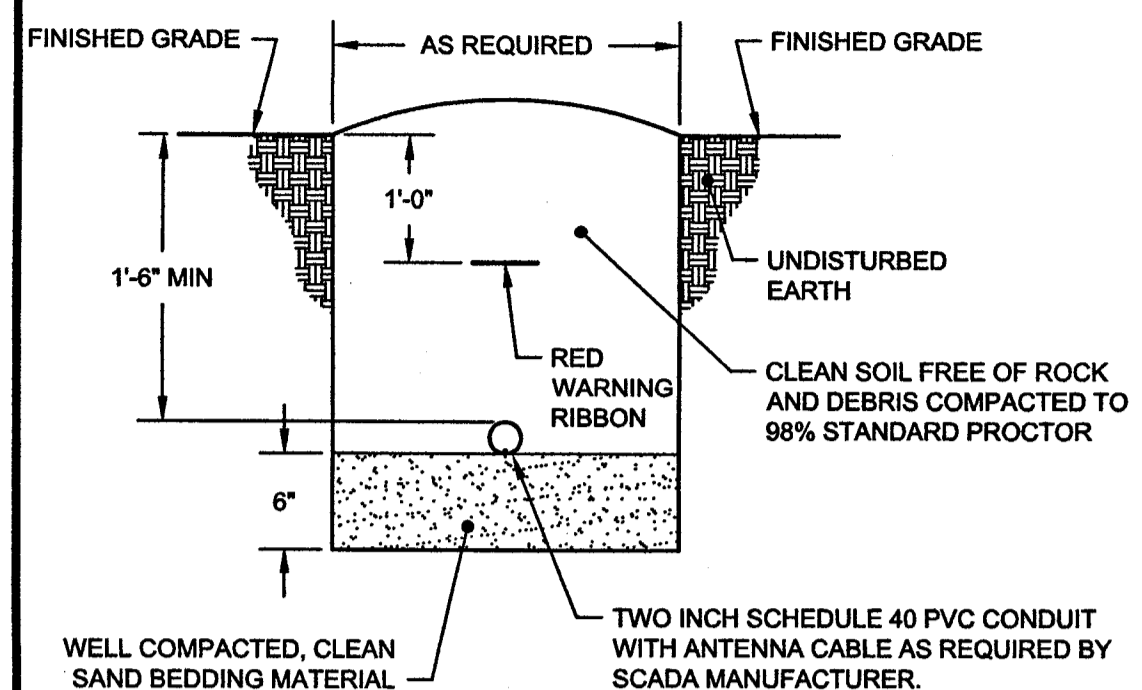
PRINTED: 7/16/2015 @ 2:54PM

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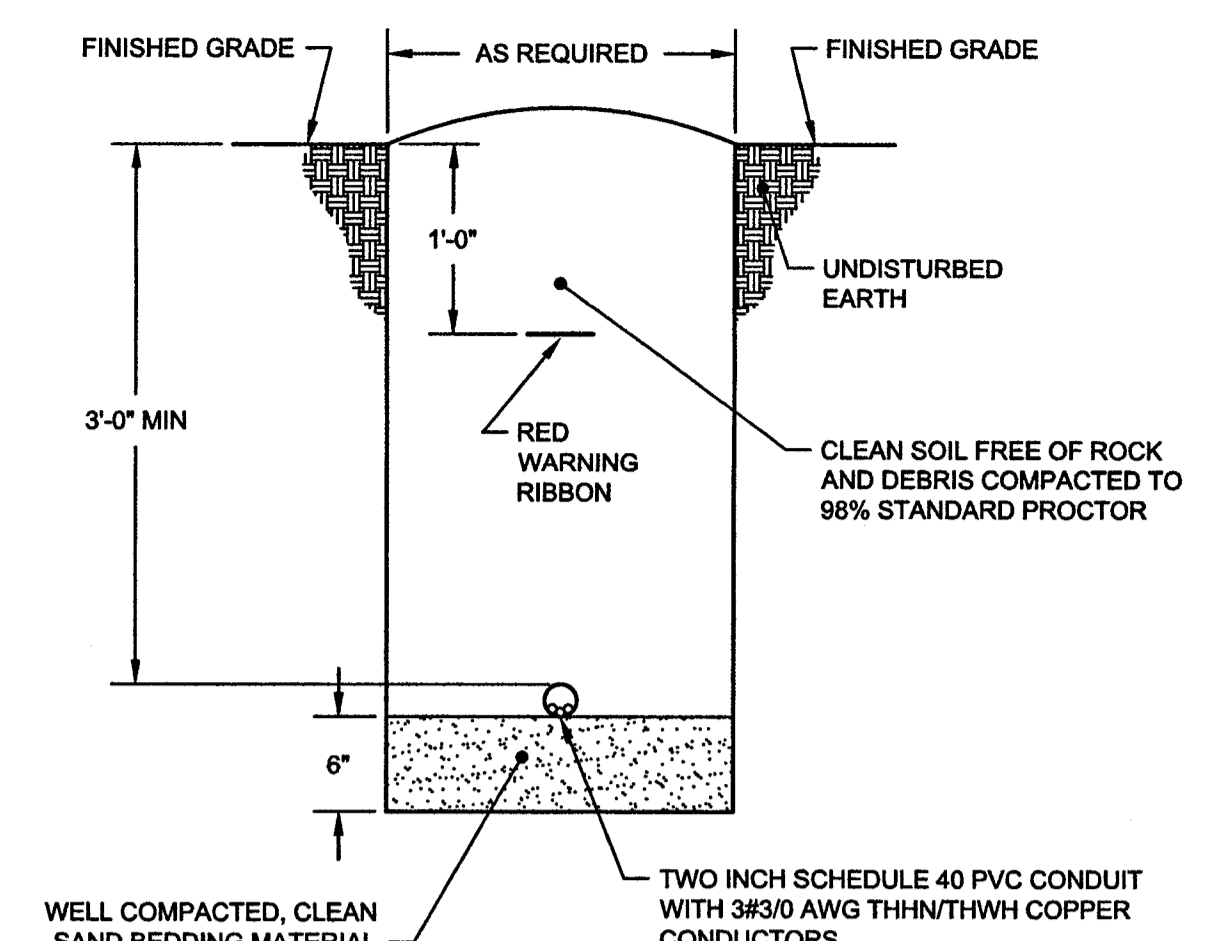
PLOTTED BY: jRedmond

PRINTED: 7/16/2015 @ 2:55PM

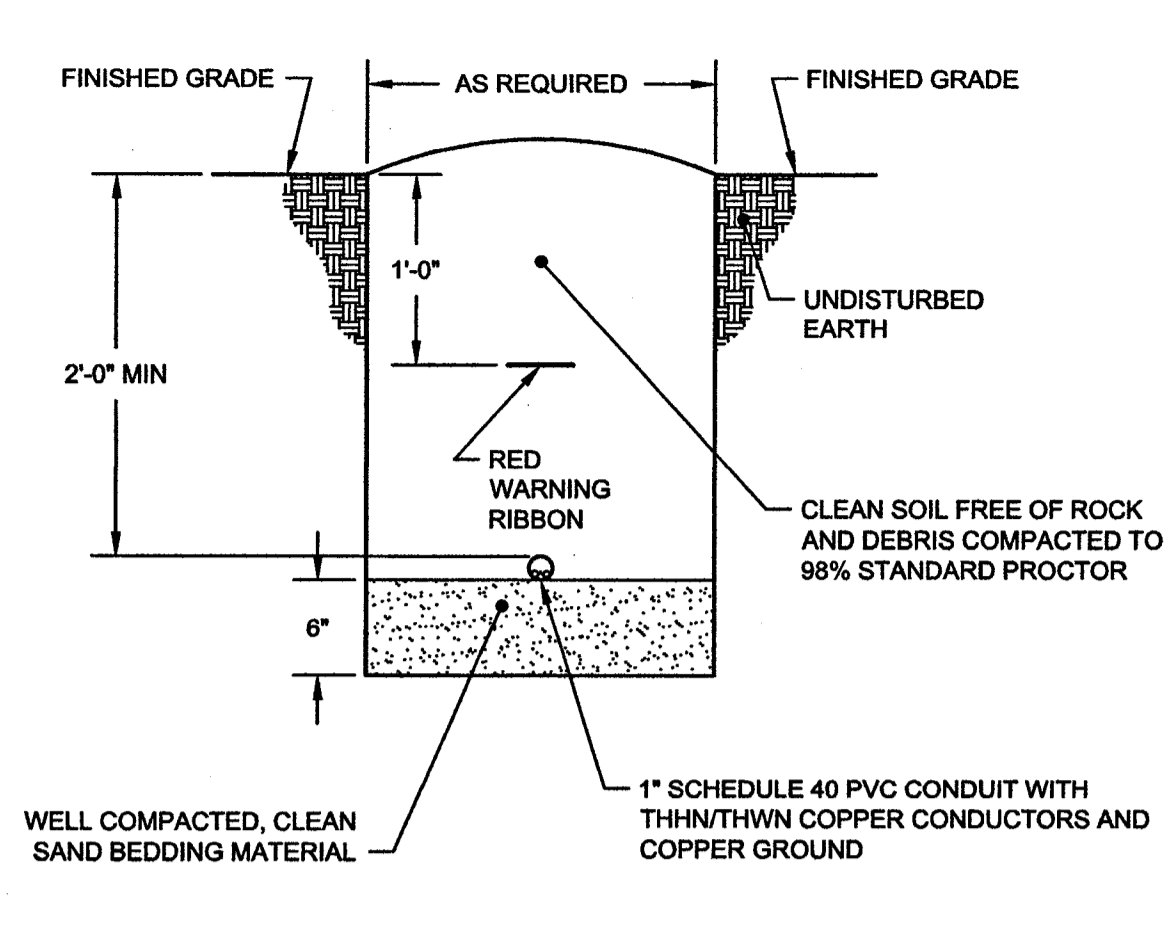
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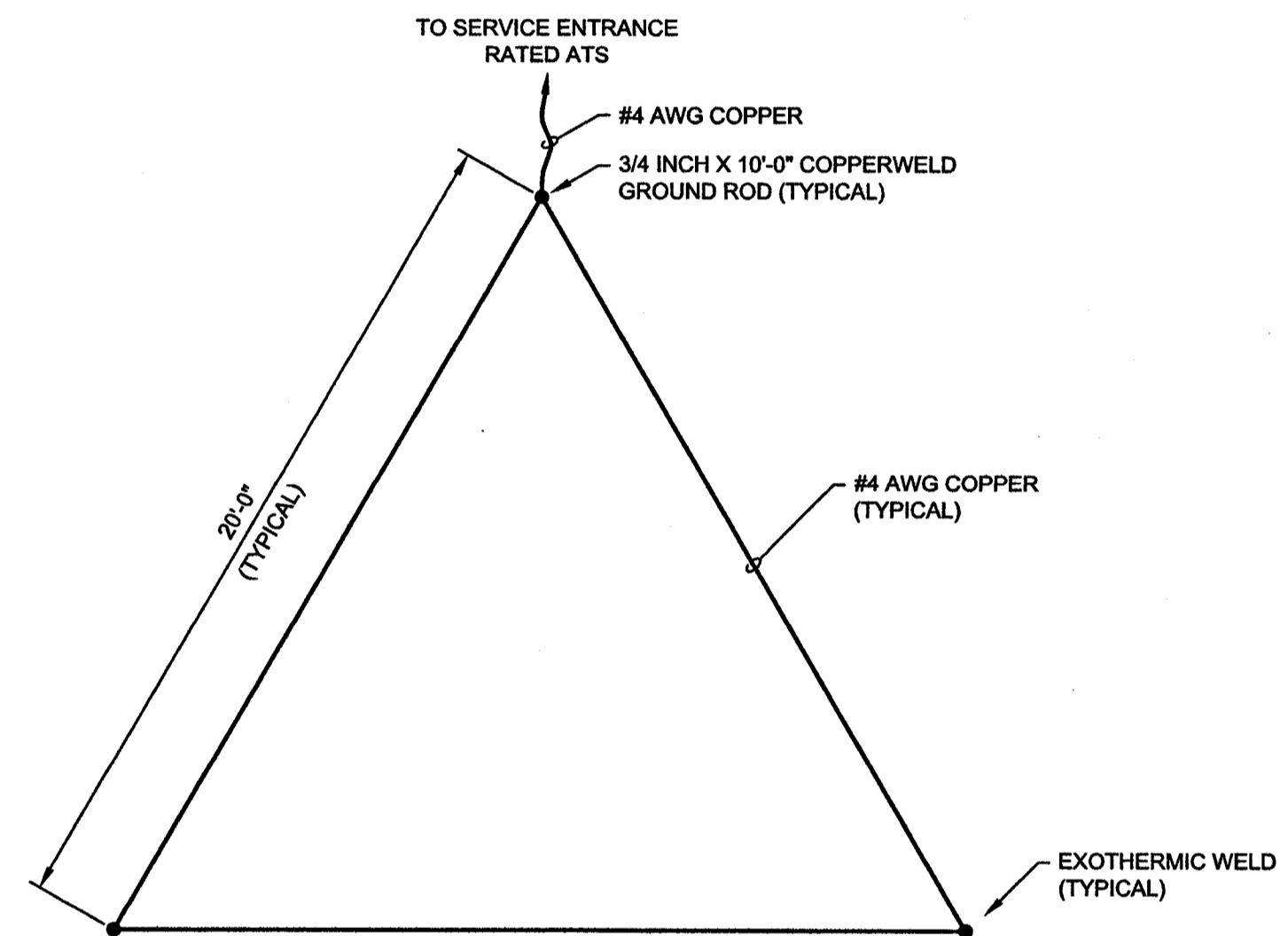
ANTENNA CABLE TRENCH DETAIL
NOT TO SCALE



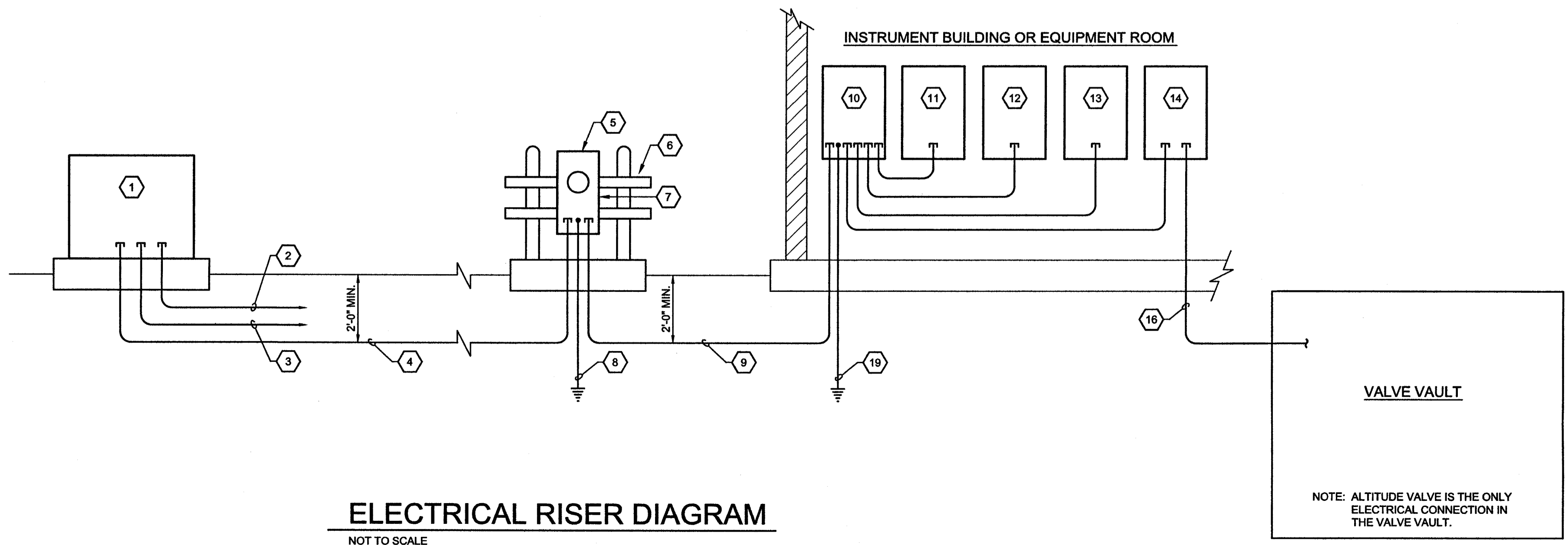
SERVICE TRENCH DETAIL
NOT TO SCALE



TYPICAL BRANCH CIRCUIT TRENCH DETAIL
NOT TO SCALE



GROUNDING ELECTRODE SYSTEM DETAIL
NOT TO SCALE



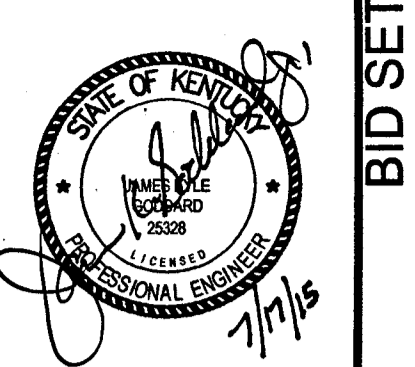
ELECTRICAL RISER DIAGRAM
NOT TO SCALE

○ RISER DIAGRAM KEYNOTES:

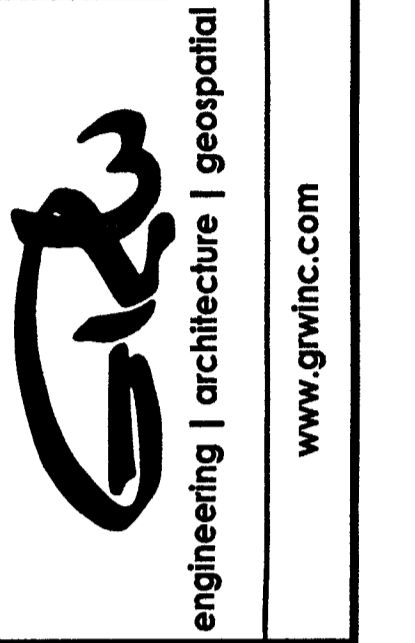
- EXISTING PADMOUNTED TRANSFORMER BY DUKE ENERGY - 240/120 VOLTS, SINGLE PHASE.
- NEW UNDERGROUND SERVICE TO AT&T BUILDING - BY OTHERS.
- NEW UNDERGROUND SERVICE TO VERIZON BUILDING - BY OTHERS.
- NEW 200 AMPERE, 240/120 VOLT, SINGLE PHASE, UNDERGROUND SERVICE TO NKWD SERVICE PEDESTAL BY ELECTRICAL CONTRACTOR. USE 2 INCH SCHEDULE 40 PVC CONDUIT WITH 3 #3/0 AWG THHN/THWN COPPER CONDUCTORS AND #4 AWG COPPER GROUND. COLOR CODE CONDUCTORS RED, BLUE, WHITE, AND GREEN.
- NEW 200 AMPERE, NEMA 4X STAINLESS STEEL METER BASE BY ELECTRICAL CONTRACTOR AS PER DUKE ENERGY SPECIFICATIONS.
- NEW SERVICE PEDESTAL BY ELECTRICAL CONTRACTOR AS PER DETAILS PROVIDED ON SHEET E-0-101.
- 200 AMPERE, 240/120 VOLT, MAIN SERVICE DISCONNECT (BACK SIDE OF METER) BY ELECTRICAL CONTRACTOR - 200 AMPERE, 2 POLE, MOLDED CASE CIRCUIT BREAKER IN NEMA 4X STAINLESS STEEL ENCLOSURE.
- NEW GROUNDING ELECTRODE SYSTEM AS PER 2014 NEC, ARTICLE 250, BY ELECTRICAL CONTRACTOR - SEE DETAIL PROVIDED.
- NEW UNDERGROUND 200 AMPERE FEEDER FROM SERVICE PEDESTAL TO PANEL IN EQUIPMENT SPACE.
- NEW 200 AMPERE, 240/120 VOLT, SINGLE PHASE PANEL IN EQUIPMENT SPACE.
- FAA OBSTRUCTION LIGHTS CONTROL PANEL (NEW).
- NEW CHEMICAL/WATER QUALITY MONITORING PANEL - ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL. MAKE ALL ELECTRICAL, SCADA, AND PLUMBING CONNECTIONS REQUIRED.
- EXISTING TELEMETRY PANEL RELOCATED FROM OLD WATER TANK.
- EXISTING SCADA PANEL RELOCATED FROM OLD WATER TANK - MAKE CONNECTIONS TO SECURITY DEVICES, DOOR CONTACTS, NEW ALTITUDE VALVE IN METER VAULT, TELEMETRY PANEL, CHEMICAL/WATER QUALITY PANEL, AND ALL OTHER MONITORED/CONTROLLED EQUIPMENT AND DEVICES.
- GROUNDING ELECTRODE SYSTEM AS PER 2014 NEC, ARTICLE 250. BOND TO NEUTRAL, WATER TANK, VALVE VAULT, WATER MAINS, SECURITY FENCE, AND ALL PANELS.
- 48 VOLT ELECTRICAL CONNECTION FROM ALTITUDE VALVE SOLENOID AS PER MANUFACTURER RECOMMENDATION.

GENERAL NOTES:

- THE CITY OF FORT THOMAS, KENTUCKY, IS REPLACING THE LUMLEY ELEVATED WATER STORAGE TANK WITH A NEW ELEVATED WATER STORAGE TANK.
- THE CENTER OF THE NEW ELEVATED WATER STORAGE TANK WILL BE LOCATED A FEW FEET SOUTHWEST OF THE EXISTING TANK.
- THERE ARE TWO BID ALTERNATES FOR THE NEW ELEVATED TANK - MULTIPLE LEG TANK AND PEDESHERE.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT AND MATERIALS FOR A COMPLETE AND FULLY OPERATIONAL ELEVATED WATER STORAGE TANK FACILITY.
- THE SERVING ELECTRICAL UTILITY IS DUKE ENERGY. MR. STEVE TWIHUES, (613) 403-5534, STEVE.TWIHUES@DUKE-ENERGY.COM, IS THE CONTACT PERSON AT DUKE ENERGY.
- THE EXISTING SCADA PANEL IS TO BE REUSED. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING SCADA CABINETS, CABLES, ANTENNA, ETC. THE EXISTING SCADA PANELS TO BE REINSTALLED FOR THE NEW WATER TANK. CONTRACTOR SHALL FURNISH AND INSTALL A NEW ANTENNA AND ALL NEW CABLING FOR A FULLY FUNCTIONAL SYSTEM. INSTALL NEW ANTENNA CABLE IN ONE INCH SCHEDULE 40 PVC CONDUIT. ELECTRICAL CONTRACTOR SHALL COORDINATE SCADA WORK WITH MR. WILLIAM STEWART, (659) 981-1719, STEWART@KYWATER.ORG, CITY OF FORT THOMAS IT DIRECTOR. NEW ANTENNA, CONDUITS, CONDUCTORS, CABLES, CONNECTORS, FASTENERS, ETC. WILL BE REQUIRED FOR THE REINSTALLATION. CONTRACTOR SHALL PROVIDE NEW MATERIALS COMPATIBLE WITH EXISTING SYSTEM.
- THE EXISTING TELEMETRY SYSTEM IS TO BE REUSED. ELECTRICAL CONTRACTOR SHALL REMOVE AND REINSTALL ALL TELEMETRY EQUIPMENT AND MATERIALS FOR A FULLY OPERATIONAL TELEMETRY SYSTEM. ADDITIONAL CONDUITS, CONDUCTORS, CABLES, CONNECTORS, FASTENERS, ETC. WILL BE REQUIRED FOR THE REINSTALLATION. CONTRACTOR SHALL PROVIDE NEW MATERIALS COMPATIBLE WITH EXISTING SYSTEM.
- THE NEW ELEVATED WATER STORAGE TANK WILL HAVE AN ALTITUDE VALVE REQUIRING ELECTRICAL CONNECTIONS. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT AND MATERIALS FOR A FULLY FUNCTIONAL ALTITUDE VALVE.
- VALVE ACTUATOR WILL REQUIRE ELECTRICAL CONNECTIONS. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT AND MATERIALS FOR A FULLY FUNCTIONAL MOTORIZED VALVE ACTUATOR.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A NEW NKWD ELECTRIC SERVICE AS PER THE RISER DIAGRAM ON SHEET E-0-1. THE NKWD NEW ELECTRICAL SERVICE SHALL BE 200 AMPERE, 240/120 VOLT, SINGLE PHASE, THREE WIRE - METER, MAIN SERVICE DISCONNECT, PANEL, AND GROUNDING ELECTRODE SYSTEM. CONTRACTOR SHALL COORDINATE WITH DUKE ENERGY FOR INSTALLATION OF THE NEW SERVICE.
- THERE ARE THREE EXISTING ELECTRICAL SERVICES ATTACHED TO THE ELEVATED WATER STORAGE TANK TOWER LEG. THERE ARE SERVICES FOR: NKWD, AT&T, AND VERIZON. THE EXISTING ELEVATED WATER STORAGE TANK SHALL BE DEMOLISHED AND ALL SERVICES SHALL BE REMOVED. ALL THREE NEW SERVICES SHALL BE FED FROM A DUKE ENERGY PADMOUNTED TRANSFORMER. NEW ELECTRIC SERVICES FOR THE AT&T BUILDING AND THE VERIZON BUILDING SHALL BE INSTALLED AND OPERATIONAL BEFORE REMOVING THE EXISTING SERVICES.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A NEW 200 AMPERE, 240/120 VOLT, SINGLE PHASE, UNDERGROUND SERVICE FROM DUKE ENERGY PADMOUNTED TRANSFORMER TO THE NEW SERVICE PEDESTAL. USE TWO (2) INCH SCHEDULE 40 PVC CONDUIT WITH THREE (3) #3/0 AWG THHN/THWN COPPER CONDUCTORS. COLOR CODE CONDUCTORS RED, BLUE, AND WHITE.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A 200 AMPERE, 240/120 VOLT, THREE (3) WIRE METER BASE IN NEMA 4X STAINLESS STEEL ENCLOSURE AS PER DUKE ENERGY SPECIFICATIONS.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A NEW MAIN GROUNDING ELECTRODE SYSTEM AS PER 2014 NEC, ARTICLE 250. USE THREE (3) 3/4" X 10'-0" COPPERWELD RODS IN A TRIAD WITH #4 AWG COPPER GROUNDING ELECTRODE CONDUCTORS. ALL GROUNDING CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. BOND THE MAIN GROUNDING ELECTRODE SYSTEM WITH: 1) MAIN SERVICE DISCONNECT; 2) STEEL ELEVATED WATER TANK SUPPORT STRUCTURE; 3) DISTRIBUTION PANEL; 4) WATER PIPING; AND 5) PERIMETER FENCE.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A 200 AMPERE, 240/120 VOLT, THREE (3) WIRE, SINGLE PHASE PANEL, 14,000 AIC, WITH 200 AMPERE, TWO POLE, MAIN BREAKER. PANEL SHALL HAVE 42 SPACES WITH BRANCH CIRCUIT BREAKERS AS REQUIRED FOR: 1) VALVE ACTUATORS; 2) ALTITUDE VALVES; 3) HEAT TRACE; 4) TELEMETRY PANEL; 5) SCADA PANEL; 6) SPACE LIGHTING; 7) SPACE RECEPTACLES; 8) ALTITUDE CONTROL PANEL; 9) OBSTRUCTION LIGHTS CONTROL PANEL; AND 10) ALL OTHER EQUIPMENT REQUIRING POWER. PANEL SHALL HAVE A NEMA 4X STAINLESS STEEL ENCLOSURE AND SPD.
- UNDERGROUND BRANCH CIRCUITS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUITS WITH THHN/THWN COPPER CONDUCTORS. COLOR CODE CONDUCTORS RED, BLUE, WHITE, AND GREEN. BRANCH CIRCUITS SHALL HAVE A MINIMUM OF TWO (2) FEET OF COVER. SEE TRENCH DETAILS THIS SHEET. RED WARNING RIBBONS ARE REQUIRED FOR ALL UNDERGROUND CONDUITS.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS AND INSPECTIONS. ELECTRICAL CONTRACTOR SHALL SCHEDULE ALL INSPECTIONS AS REQUIRED. ELECTRICAL CONTRACTOR SHALL PROVIDE A CERTIFICATE OF COMPLIANCE TO THE ENGINEER.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH CITY OF FORT THOMAS PERSONNEL FOR IMPLEMENTATION OF THE SCADA AND TELEMETRY SYSTEMS.
- ALL BRANCH CIRCUITS SHALL HAVE GFCI PROTECTION.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS FOR A LIGHTNING PROTECTION SYSTEM. LIGHTNING PROTECTION SYSTEM SHALL HAVE AN UNDERWRITERS LABORATORY MASTER LABEL. THE WATER TANK STRUCTURE MAY INCLUDE LIGHTNING PROTECTION COMPONENTS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TELECOMMUNICATIONS COMPANIES INSTALLING ANTENNAS AND CABLING ON THE NEW ELEVATED WATER STORAGE TANK.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL 20 AMPERE, 125 VOLT, DUPLEX RECEPTACLE OUTLETS WITH GFCI PROTECTION AND WEATHERPROOF WHILE IN USE COVERS AT LOCATIONS AS DESIGNATED BY THE CITY OF FORT THOMAS.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL FAA OBSTRUCTION LIGHTING AND CONTROLS AS PER ADVISORY CIRCULAR AC 707480-1K, OBSTRUCTION MARKING AND LIGHTING. OBSTRUCTION LIGHTING AND CONTROLS SHALL BE FAA COMPLIANT AND FULLY FUNCTIONAL.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A PRESSURE TRANSDUCER AND RADAR DEPTH INDICATOR AND CONNECT BOTH TO THE SCADA PANEL.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A PH METER, A CHLORINE RESIDUAL METER, AND A TURBIDITY METER AND CONNECT ALL THREE TO THE SCADA PANEL. INSTALLATION AND CONNECTIONS AS PER MANUFACTURER RECOMMENDATION.



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ELECTRICAL DETAILS
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED:	JKG	DATE:	
DRAWN:	JTR	DATE:	
REVIEWED:	JKG	DATE:	
APPROVED:	JKG	DATE:	

DATE: JULY, 2015
SCALE: NOT TO SCALE
SHEET NO.

E-0-501

BID SET

PANELBOARD SCHEDULE - PANEL A - BASE BID OPTION NO. 1
 240/120 VOLT, SINGLE PHASE, THREE WIRE
 200 AMP MAIN BREAKER
 14,000 AIC, SERIES RATED, SURFACE MOUNTED IN NEMA 1 ENCLOSURE

CKT	AMP	POLE	WIRE	DESCRIPTION	LOAD	I	II	LOAD	DESCRIPTION	WIRE	POLE	AMP	CKT
1	20	1	12	INSTRUMENT BLDG LIGHTING	500.0	1,000.0	---	500.0	TELEMETRY PANEL	12	1	20	2
3	20	1	12	INSTRUMENT BLDG RECEPTACLES	1,500.0	---	2,000.0	500.0	SCADA PANEL	12	1	20	4
5	30	2	12	A/C UNIT	1,500.0	2,500.0	---	1,000.0	OBSTRUCTION LGTS CNTRL PNL	12	1	20	6
7	30	2	12	A/C UNIT	1,500.0	---	1,800.0	300.0	ALTITUDE VALVE SOLENOID	12	1	20	8
9	20	1	12	RADAR DEPTH	200.0	200.0	---	---	---	12	1	20	10
11	20	1	12	---	---	0.0	---	---	---	12	1	20	12
13	20	1	12	---	---	0.0	---	---	---	12	1	20	14
15	20	1	12	---	---	0.0	---	---	---	12	1	20	16
17	20	1	12	---	---	0.0	---	---	---	12	1	20	18
19	20	1	12	---	---	0.0	---	---	---	12	1	20	20
21	20	1	12	---	---	0.0	---	---	---	12	1	20	22
23	20	1	12	---	---	0.0	---	---	---	12	1	20	24
25	20	1	12	---	---	0.0	---	---	---	12	1	20	26
27	20	1	12	---	---	0.0	---	---	---	12	1	20	28
29	20	1	12	---	---	0.0	---	---	---	12	1	20	30
31	20	1	---	SPARE	0.0	---	0.0	0.0	SPARE	---	1	20	32
33	20	1	---	SPARE	0.0	0.0	---	0.0	SPARE	---	1	20	34
35	20	1	---	SPARE	0.0	---	0.0	0.0	SPARE	---	1	20	36
37	20	1	---	SPARE	0.0	0.0	---	0.0	SPARE	---	1	20	38
39	20	1	---	SPARE	0.0	---	0.0	0.0	SPD	10	2	30	40
41	20	1	---	SPARE	0.0	0.0	---	0.0	SPD	10	2	30	42

3,700.0 3,800.0 WATTS PER PHASE
 7,500.0 TOTAL WATTS
 31.3 TOTAL AMPERES

PANELBOARD SCHEDULE - PANEL A - BASE BID OPTION NO. 2
 240/120 VOLT, SINGLE PHASE, THREE WIRE
 200 AMP MAIN LUGS ONLY
 14,000 AIC, SERIES RATED, SURFACE MOUNTED IN NEMA 1 ENCLOSURE

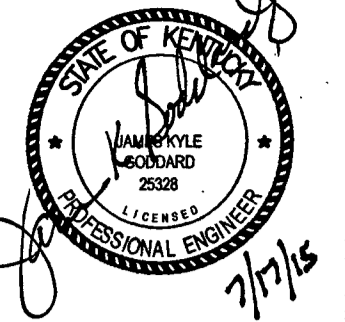
CKT	AMP	POLE	WIRE	DESCRIPTION	LOAD	I	II	LOAD	DESCRIPTION	WIRE	POLE	AMP	CKT
1	20	1	12	EQUIP RM LIGHTING	1,600.0	2,100.0	---	500.0	TELEMETRY PANEL	12	1	20	2
3	20	1	12	EQUIP RM RECEPTACLES	1,500.0	---	2,000.0	500.0	SCADA PANEL	12	1	20	4
5	20	1	12	RADAR DEPTH	200.0	1,200.0	---	1,000.0	OBSTRUCTION LGTS CNTRL PNL	12	1	20	6
7	20	1	12	LADDER LIGHTS	1,600.0	---	1,900.0	300.0	ALTITUDE VALVE SOLENOID	12	1	20	8
9	20	1	12	---	---	0.0	---	---	---	12	1	20	10
11	20	1	12	---	---	0.0	---	---	---	12	1	20	12
13	20	1	12	---	---	0.0	---	---	---	12	1	20	14
15	20	1	12	---	---	0.0	---	---	---	12	1	20	16
17	20	1	12	---	---	0.0	---	---	---	12	1	20	18
19	20	1	12	---	---	0.0	---	---	---	12	1	20	20
21	20	1	12	---	---	0.0	---	---	---	12	1	20	22
23	20	1	12	---	---	0.0	---	---	---	12	1	20	24
25	20	1	12	---	---	0.0	---	---	---	12	1	20	26
27	20	1	12	---	---	0.0	---	---	---	12	1	20	28
29	20	1	12	---	---	0.0	---	---	---	12	1	20	30
31	20	1	---	SPARE	0.0	---	0.0	0.0	SPARE	---	1	20	32
33	20	1	---	SPARE	0.0	0.0	---	0.0	SPARE	---	1	20	34
35	20	1	---	SPARE	0.0	---	0.0	0.0	SPARE	---	1	20	36
37	20	1	---	SPARE	0.0	0.0	---	0.0	SPARE	---	1	20	38
39	20	1	---	SPARE	0.0	---	0.0	0.0	SPD	10	2	30	40
41	20	1	---	SPARE	0.0	0.0	---	0.0	SPD	10	2	30	42

3,300.0 3,900.0 WATTS PER PHASE
 7,200.0 TOTAL WATTS
 30.0 TOTAL AMPERES

PLOTTED BY: JRadmon

PRINTED: 7/16/2015 @ 2:55PM

FILE NAME: C:\4383-NKWD\Lumley Tank\Working Drawings\Auc\CD\4383-E-0-601.dwg



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 CLIENT PROJECT NO.
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ELECTRICAL SCHEDULES
 LUMLEY TANK REPLACEMENT
 CITY OF FORT THOMAS, KENTUCKY

DESIGNED: JKG
 DRAWN: JTR
 REVIEWED: JKG
 APPROVED: JKG

NO.	REVISIONS DESCRIPTION	DATE	BY

SCALE CHECK: _____ THE MARK SHOULD MEASURE EXACTLY * WHEN PLOTTED

DATE: JULY, 2015
 SCALE: NOT TO SCALE
 SHEET NO.

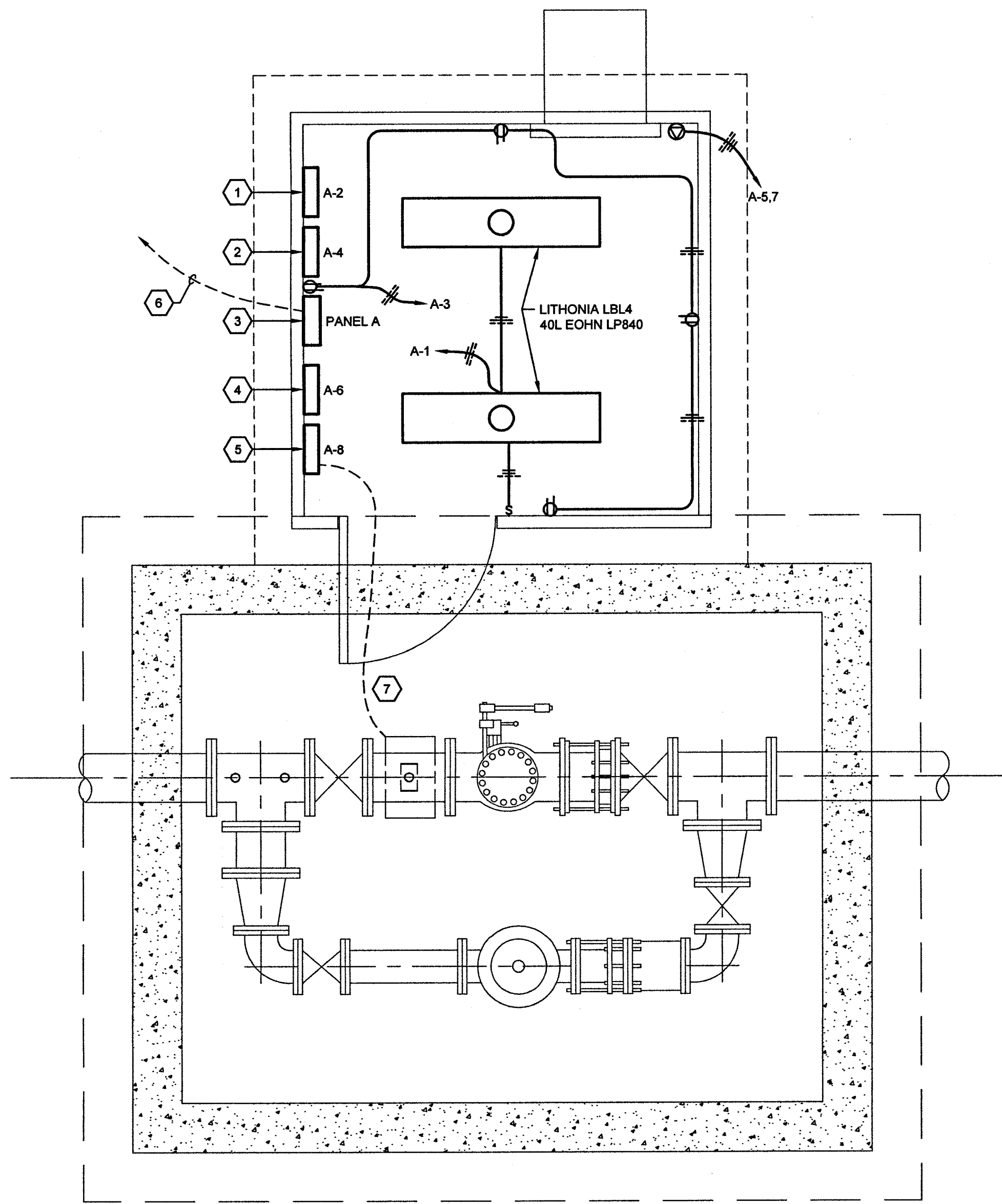
E-0-601

BID SET

PRINTED: 7/17/2015 @ 2:33PM

PLOTTED BY: jRedmon

FILE NAME: G:\383-NKWD Lumley, Trk\Working Drawings\AutoCAD\383-E-2-101.dwg

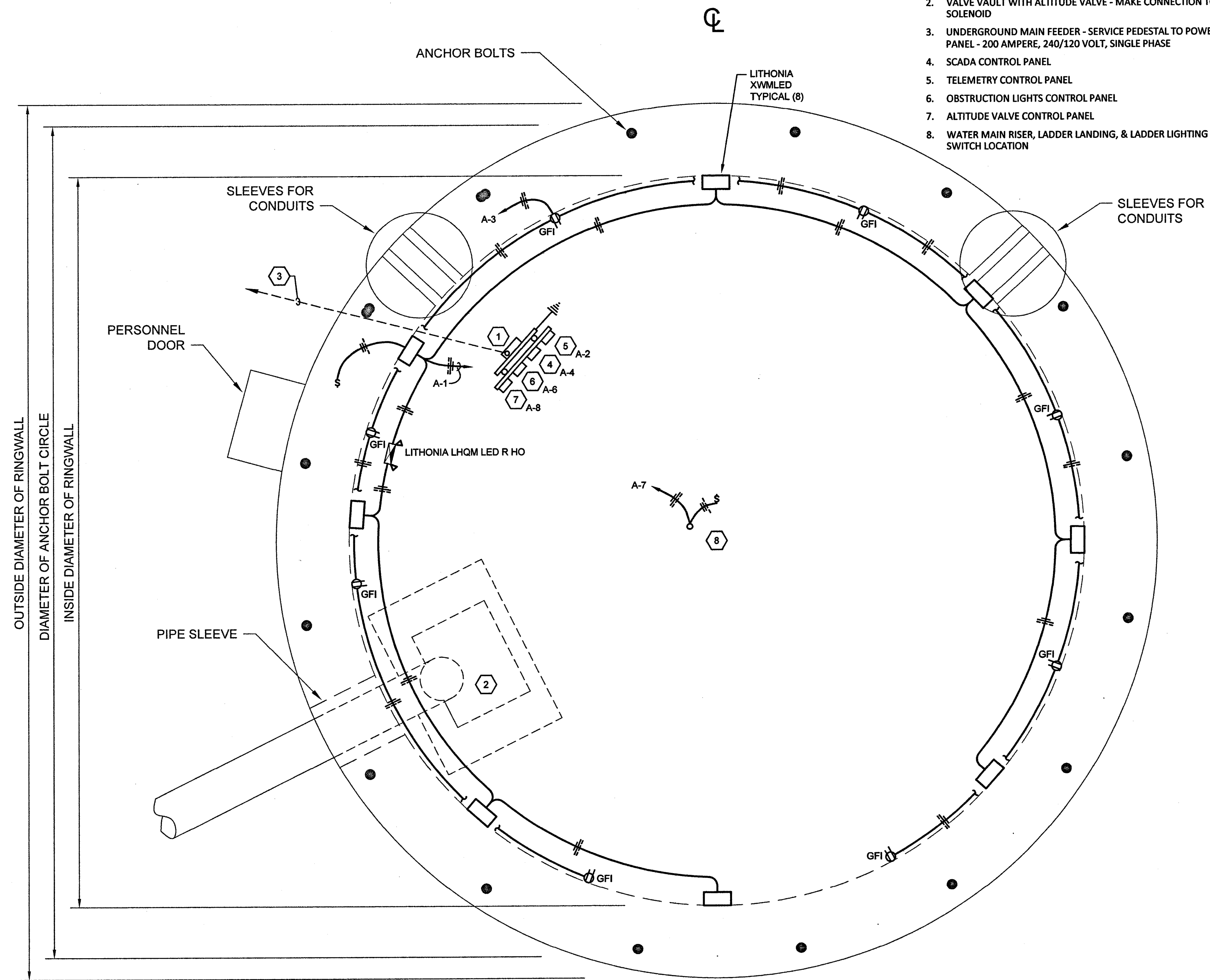


BASE BID OPTION NO. 1 - ALTITUDE VALVE VAULT AND PRE-FAB BUILDING - ELECTRICAL PLAN

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

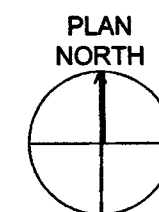


CONTRACTOR TO FURNISH AND INSTALL E & H OR EQUAL SEIMENS-OMAR-VEGA RADAR DEPTH DETECTOR AND FOXBORO OR E & H PRESSURE TRANSDUCER FOR BOTH BID OPTIONS.



**BASE BID OPTION NO. 2
500,000 GALLON PEDESHERE TANK - ELECTRICAL**

NOT TO SCALE



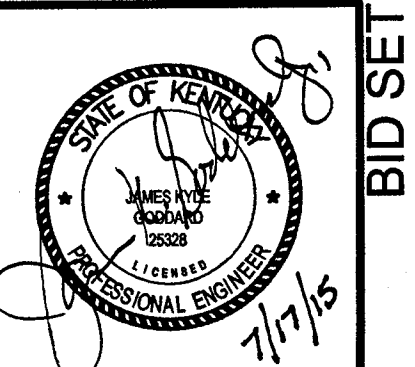
SHEET KEYNOTES:

BASE BID OPTION NO. 1

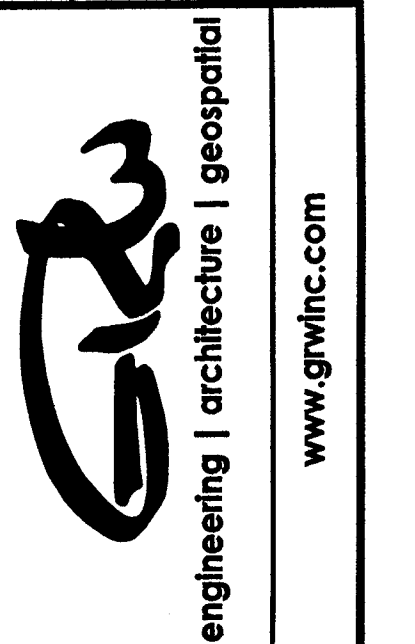
1. TELEMETRY CONTROL PANEL
2. SCADA CONTROL PANEL
3. POWER PANEL - 200 AMPERE, 240/120 VOLT, SINGLE PHASE, THREE WIRE
4. OBSTRUCTION LIGHTS CONTROL PANEL
5. ALTITUDE VALVE CONTROL PANEL
6. UNDERGROUND MAIN FEEDER - SERVICE PEDESTAL TO POWER PANEL - 200 AMPERE, 240/120 VOLT, SINGLE PHASE
7. ALTITUDE VALVE SOLENOID - 48 VOLTS

BASE BID OPTION NO. 2

1. POWER PANEL - 200 AMPERE, 240/120 VOLT, SINGLE PHASE, THREE WIRE
2. VALVE VAULT WITH ALTITUDE VALVE - MAKE CONNECTION TO SOLENOID
3. UNDERGROUND MAIN FEEDER - SERVICE PEDESTAL TO POWER PANEL - 200 AMPERE, 240/120 VOLT, SINGLE PHASE
4. SCADA CONTROL PANEL
5. TELEMETRY CONTROL PANEL
6. OBSTRUCTION LIGHTS CONTROL PANEL
7. ALTITUDE VALVE CONTROL PANEL
8. WATER MAIN RISER, LADDER LANDING, & LADDER LIGHTING SWITCH LOCATION



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PRE-FABRICATED BUILDING AND PEDESHERE - ELECTRICAL PLAN
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED BY	JKG
DRAWN BY	JTR
REVIEWED BY	JKG
APPROVED BY	JKG

NO.	REVISIONS DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED

DATE: JULY, 2015
SCALE: AS SHOWN
SHEET NO.

E-2-101

BID SET

GENERAL STRUCTURAL NOTES

- THESE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH ALL OTHER DRAWINGS, SPECIFICATIONS & CONTRACT DOCUMENTS.
- THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT SHALL CONFORM TO THE REFERENCED CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITH THE LATEST EDITIONS SHALL APPLY UNLESS NOTED.
- BUILDING CODE: INTERNATIONAL BUILDING CODE - 2012, KENTUCKY BUILDING CODE - 2013
- COUNTY/STATE: CAMPBELL / KENTUCKY
- DESIGN LIVE LOADS:
TOP SLAB: 100 PSF
- ALL CONTRACTOR PROPOSED STRUCTURAL SUBSTITUTIONS, INCLUDING CONCRETE ADDITIVES, SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY PERTINENT WORK AND PRIOR TO THE AWARD OF A SUBCONTRACTOR.
- SHOP DRAWINGS, TEST REPORTS, AND CERTIFICATIONS ARE REQUIRED FOR THE FOLLOWING STRUCTURAL ITEMS:
 - CONCRETE CYLINDER TESTS
 - CONCRETE MIX DESIGNS
 - REINFORCING STEEL SHOP DRAWINGS
 - PREFAB METAL BUILDING DRAWINGS

*THE SHOP DRAWINGS SPECIFIED BY THE ENGINEER ARE AN INTEGRAL PART OF THE COMPLETE DESIGN. THEY SERVE AS BOTH A CHECK ON THE CONTRACTOR'S INTERPRETATION OF THE ENGINEER'S DRAWINGS AND SPECIFICATIONS AND AS A FINAL CHECK ON THE COORDINATED, DETAILED DESIGN PRIOR TO CONSTRUCTION. THEREFORE, ANY MATERIAL ORDERED OR WORK PERFORMED PRIOR TO THE ENGINEER'S REVIEW AND APPROVAL OF THE SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S SOLE FINANCIAL RISK. THIS MEANS THAT WHERE DIFFERENCES OF INTERPRETATION EXIST, WORK DONE PRIOR TO THE APPROVAL OF THE SHOP DRAWINGS THAT IS ADJUDGED BY THE ENGINEER TO BE NOT IN CONFORMANCE WITH THE SPECIFICATIONS MAY BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S SOLE EXPENSE. AT A MINIMUM, WHERE REASONABLE ADDITIONS TO THE WORK ARE INDICATED ON THE SHOP DRAWINGS, THE ADDITIONAL COST OF THE REMOVAL AND REWORK THAT WOULD NOT HAVE BEEN REQUIRED HAD THE CONTRACTOR NOT PROCEEDED PRIOR TO SHOP DRAWING APPROVAL SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.
- CONSTRUCTION METHODS, PROCEDURES, AND SEQUENCES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEANS TO MAINTAIN AND PROTECT THE STRUCTURAL INTEGRITY OF ALL CONSTRUCTION AT ALL STAGES.
- COORDINATION WITH THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS TO VERIFY THE LOCATIONS AND SIZES OF ALL CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, AND OTHER PROJECT REQUIREMENTS ARE THE CONTRACTOR'S RESPONSIBILITY. ALL REQUIRED OPENINGS, SLEEVES, OR OTHER COMPONENTS MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS.
- IMPOSED CONSTRUCTION LOADS, INCLUDING CRANE LOADS, IN EXCESS OF THE STATED DESIGN LOADS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO THE IMPOSITION OF SUCH LOADS.
- IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, DETAILS AND SPECIFICATIONS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.

GENERAL FOUNDATION/GEOTECHNICAL NOTES

- VERIFY LOCATIONS OF COLUMNS, UNDERGROUND UTILITIES, ETC., WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND CIVIL DRAWINGS PRIOR TO PLACEMENT OF FOUNDATIONS.
- THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL EXTEND A MINIMUM OF 3'-0" BELOW FINISHED GRADE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO BRACE FOUNDATION WALLS WHEN BACKFILLING AND WHEN THERE IS A POSSIBILITY OF DAMAGE BY EXCESS WATER.
- COMPACTION OF BACKFILL WITHIN 2 FEET OF FOUNDATION WALLS SHALL BE ACCOMPLISHED WITH HAND EQUIPMENT. WHERE FILL IS REQUIRED ON BOTH SIDES OF FOUNDATION WALL, BRING THE FILL UP EACH SIDE SIMULTANEOUSLY AND UNIFORMLY.
- THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.
- IF FOOTING EXCAVATIONS ENCOUNTER ISOLATED AREAS OF RELATIVELY HARD ROCK AT OR ABOVE THE PLANNED FOOTING ELEVATIONS, THE ROCK SHALL BE OVER EXCAVATED TO A DEPTH OF APPROXIMATELY ONE FOOT BELOW THE FOUNDATION BEARING ELEVATION AND BACKFILLED WITH STRUCTURAL FILL.
- FOUNDATIONS SHALL NOT BE PLACED ON MUD OR MUCK, SOFT OR LOOSE SOIL, IN STANDING WATER OR ON FROZEN GROUND.
- ALL NON-CANTILEVER WALLS SHALL BE ADEQUATELY BRACED PRIOR TO BACKFILL.
- CANTILEVER AND NON-CANTILEVER RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL THE CONCRETE HAS DEVELOPED 100% OF THE REQUIRED 28-DAY COMPRESSIVE STRENGTH FOR THE CLASS OF CONCRETE SPECIFIED.

CAST-IN-PLACE CONCRETE

- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
"BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318-11", AMERICAN CONCRETE INSTITUTE
"ACI MANUAL OF CONCRETE PRACTICE - PARTS 1 THROUGH 5", LATEST EDITION
"MANUAL OF STANDARD PRACTICE", CONCRETE REINFORCING STEEL INSTITUTE
"ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES, ACI 350-06", AMERICAN CONCRETE INSTITUTE (FOR CONCRETE TANKS)
ACI 305 AND ACI 306 FOR HOT AND COLD WEATHER CONCRETE CONSTRUCTION
ACI 347 FOR SHORING AND RESHORING OF CONCRETE STRUCTURES
- CONTRACTOR SHALL PROVIDE MATERIALS WHICH COMPLY WITH THE FOLLOWING ASTM REQUIREMENTS, AS REQUIRED:

CEMENT	ASTM C150: TYPE I OR TYPE II
AGGREGATES	ASTM C33
FLY ASH	ASTM C618
PLAIN REINFORCING BARS	ASTM A615, GRADE 60
AIR-ENTRAINING ADMIXTURE:	ASTM C260
- CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, U.N.O. ON THE CONSTRUCTION DRAWINGS:

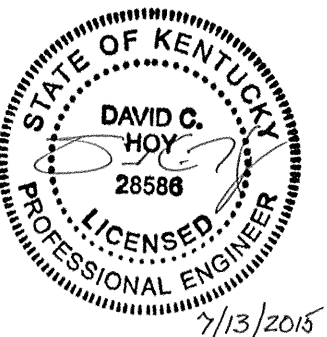
APPLICATION	COVER
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	3"
- CONCRETE EXPOSED TO WEATHER: #6 THROUGH #18 BARS: #5 BAR, W31 OR D31 WIRE AND SMALLER:	2" 1-1/2"
- CONCRETE MIXES SHALL BE AS FOLLOWS:

APPLICATION	COMP. STRENGTH, AIR
- CONCRETE USED FOR FOUNDATION CONSTRUCTION (STRIP/SPREAD FOOTINGS, GRADE BEAMS, FOUNDATION WALLS ETC.), OR CONCRETE EXPOSED TO CYCLES OF FREEZE THAW (SIDEWALKS, EXTERIOR SLAB ON GRADE ETC.):	4,500 PSI, 6%

- SHOP DRAWINGS SHOWING THE SIZE, LENGTH, QUANTITY, LOCATION AND MARK OF ALL REINFORCING BARS, SUPPORTS AND ACCESSORIES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
- MIX DESIGNS AND ADMIXTURE PRODUCT DATA SHALL BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING CONCRETE.
- THE TYPICAL DETAILS, PLANS, AND SECTIONS ON THESE DRAWINGS CONTAIN ADDITIONAL GENERAL CONCRETE CONSTRUCTION NOTES AND INFORMATION.
- ALL CONCRETE SHALL BE REINFORCED UNLESS NOTED OTHERWISE.
- SUPPORTS TO ADEQUATELY POSITION REINFORCING BARS DURING CONSTRUCTION SHALL BE INSTALLED.
- FOUNDATION DOWELS OF THE SAME SIZE AND SPACING AS VERTICAL STEEL SHALL BE INSTALLED FOR ALL WALLS, PIERS, AND COLUMNS.
- ALL REINFORCING AT WALL AND FOOTING CORNERS AND INTERSECTIONS SHALL BE CONTINUOUS BY THE USE OF BENT BARS OR CORNER BARS UNLESS INDICATED OTHERWISE.
- CONSTRUCTION JOINTS SHALL BE POSITIONED SO AS NOT TO ADVERSELY AFFECT THE STRUCTURAL PERFORMANCE. CONSTRUCTION JOINT LOCATIONS NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
- PIPE SLEEVES AND INSERTS SHALL BE INSTALLED IN CONCRETE WORK AT ALL PENETRATIONS. PENETRATIONS OF BEAMS, JOISTS, COLUMNS OR STRUCTURAL SLABS NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
- ADMIXTURES CONTAINING CHLORIDE OR OTHER CORROSIVE CHEMICALS SHALL NOT BE USED IN CONCRETE.
- AGGREGATES SHALL BE FREE OF DELETERIOUS OR NON-DURABLE MATERIALS SUCH AS CHERTS.
- REINFORCING SHALL BE ADEQUATELY TIED AND SUPPORTED TO HOLD IT IN THE CORRECT POSITION DURING CONSTRUCTION AND THE PLACEMENT OF CONCRETE.
- CONCRETE SHALL BE CONSOLIDATED ADEQUATELY DURING PLACEMENT BY MECHANICAL VIBRATION IN ACCORDANCE WITH PUBLISHED PRACTICES.
- PLASTIC CHAIRS SHALL BE USED IN ALL CONCRETE THAT WILL BE EXPOSED TO VIEW IN THE COMPLETED STRUCTURE.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED MINIMUM 3/4", OR AS INDICATED ON THE STRUCTURAL/ARCHITECTURAL DRAWINGS.
- FILL POCKETS AROUND CONNECTIONS WITH CONCRETE FLUSH AND SMOOTH UNLESS INDICATED OTHERWISE.
- FORMED SURFACES SHALL HAVE A SMOOTH-FORM FINISH WHERE EXPOSED TO VIEW AND A ROUGH-FORM FINISH WHERE NOT EXPOSED TO VIEW UNLESS INDICATED OTHERWISE.
- UNFORMED SURFACES SHALL HAVE A TROWEL FINISH WHERE EXPOSED TO VIEW AND A FLOAT FINISH WHERE NOT EXPOSED TO VIEW U.N.O. EXCEPT THAT STAIRS AND EXTERIOR WALKING SURFACES SHALL HAVE A BROOM FINISH U.N.O.
- SLABS-ON-GRADE SHALL BE PLACED ON A VAPOR BARRIER.
- PROVIDE ISOLATION JOINTS IN SLABS AS FOLLOWS:
 - BETWEEN SLABS-ON-GRADE AND FOUNDATION WALLS
 - BETWEEN SLABS AND INSERTS SUCH AS PIPES

SPECIAL INSPECTIONS

- SPECIAL INSPECTION IS REQUIRED ACCORDING TO SECTION 1704.0 OF THE KENTUCKY BUILDING CODE AND THE 2012 INTERNATIONAL BUILDING CODE.
- SPECIAL INSPECTIONS SHALL BE PERFORMED FOR THE FOLLOWING WORK AS REQUIRED IN THE KENTUCKY BUILDING CODE:
 - FABRICATORS IN ACCORDANCE WITH SECTION 1704.02.
 - CONCRETE CONSTRUCTION IN ACCORDANCE WITH SECTION 1704.4
 - SOILS CONSTRUCTION IN ACCORDANCE WITH SECTION 1704.7
- THE TYPE AND EXTENT OF EACH TEST AND INSPECTION REQUIRED FOR EACH TYPE OF WORK SHALL BE AS INDICATED IN THE SPECIFICATIONS AND/OR THE BUILDING CODE AND THE REFERENCES INCORPORATED THEREIN.
- SPECIAL INSPECTION SERVICES SHALL BE CONTRACTED AND PAID FOR BY THE OWNER.
- WORK REQUIRING SPECIAL INSPECTION SHALL BE INSPECTED BY THE SPECIAL INSPECTOR FOR CONFORMANCE WITH THE APPROVED DRAWINGS AND SPECIFICATIONS. INSPECTION REPORTS INDICATING THE RESULTS OF SPECIAL INSPECTIONS SHALL BE PROMPTLY SUBMITTED TO THE CONTRACTOR, THE ARCHITECT, THE STRUCTURAL ENGINEER.
- ALL SPECIAL INSPECTIONS INDICATING NON-CONFORMING WORK SHALL BE REPORTED IMMEDIATELY TO THE CONTRACTOR, THE ARCHITECT AND THE STRUCTURAL ENGINEER. IMPENDING CONSTRUCTION WORK THAT WOULD IMPEDE ECONOMICAL CORRECTION OF NON-CONFORMING WORK SHALL NOT PROCEED WITHOUT WRITTEN APPROVAL.
- A FINAL REPORT DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY NON-CONFORMING WORK NOTED IN THE INSPECTIONS SHALL BE SUBMITTED BY THE SPECIAL INSPECTOR AT THE COMPLETION OF THE PROJECT.
- THE SPECIAL INSPECTION AGENCY SHALL NOT BE ENGAGED BY THE CONTRACTOR FOR OTHER TESTING OR INSPECTION SERVICES ON THIS PROJECT.
- SPECIAL INSPECTION SHALL BE PERFORMED BY A QUALIFIED INSPECTION AND TESTING AGENCY APPROVED BY THE BUILDING OFFICIAL, THE ARCHITECT AND THE STRUCTURAL ENGINEER.



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STRUCTURAL ALTITUDE VALVE VAULT NOTES
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

DESIGNED:	DCH
DRAWN:	KJW
REVIEWED:	DCH
APPROVED:	DCH

NO.	REVISIONS DESCRIPTION	DATE	BY

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED

DATE: JULY, 2015
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SHEET NO.

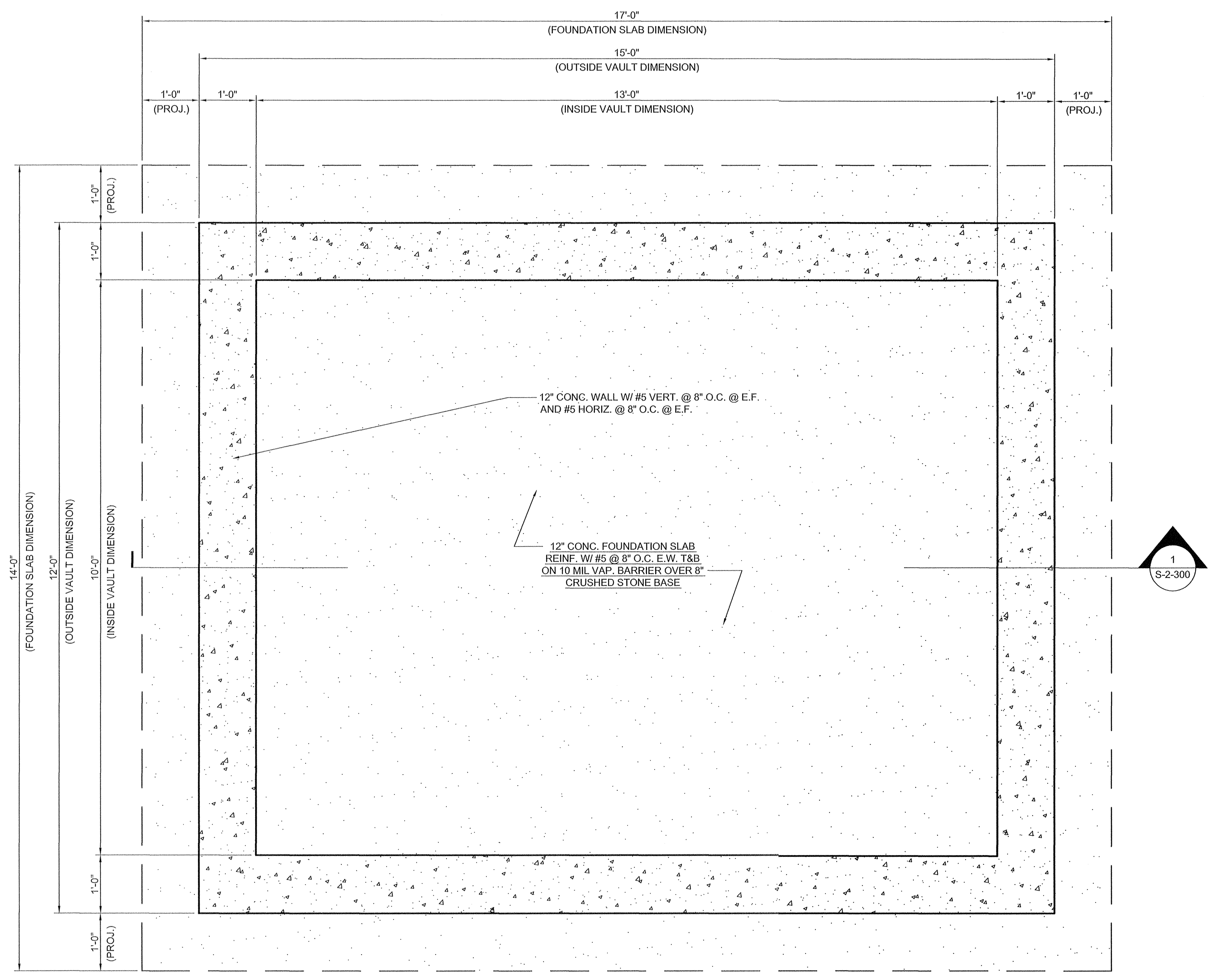
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PRINTED: 7/16/2015 @ 2:43PM

PLOTTED BY: kjb/bb

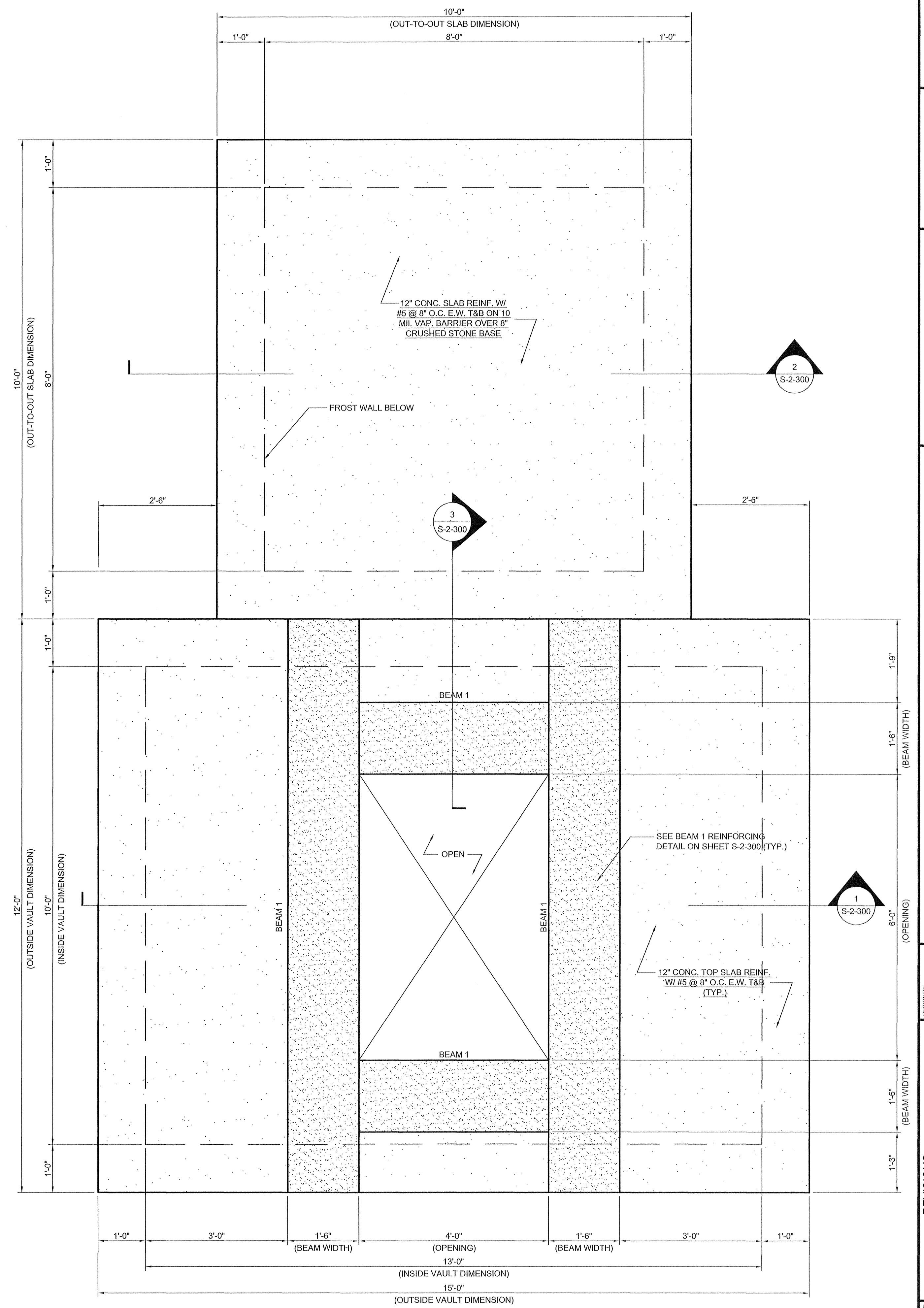
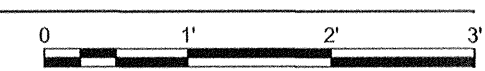
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NOTE: PROVIDE CORNER BARS SAME SIZE AND SPACING AS HORIZ. REINFORCING.

**ALTITUDE VALVE VAULT
FOUNDATION PLAN**

SCALE: 3/4"=1'-0"



**ALTITUDE VALVE VAULT
TOP SLAB PLAN**

SCALE: 3/4"=1'-0"



NO.	REVISIONS	DATE	BY	DESIGNED	DCH
	DESCRIPTION				

DATE: JULY, 2015
SCALE: 3/4"=1'
SHEET NO.

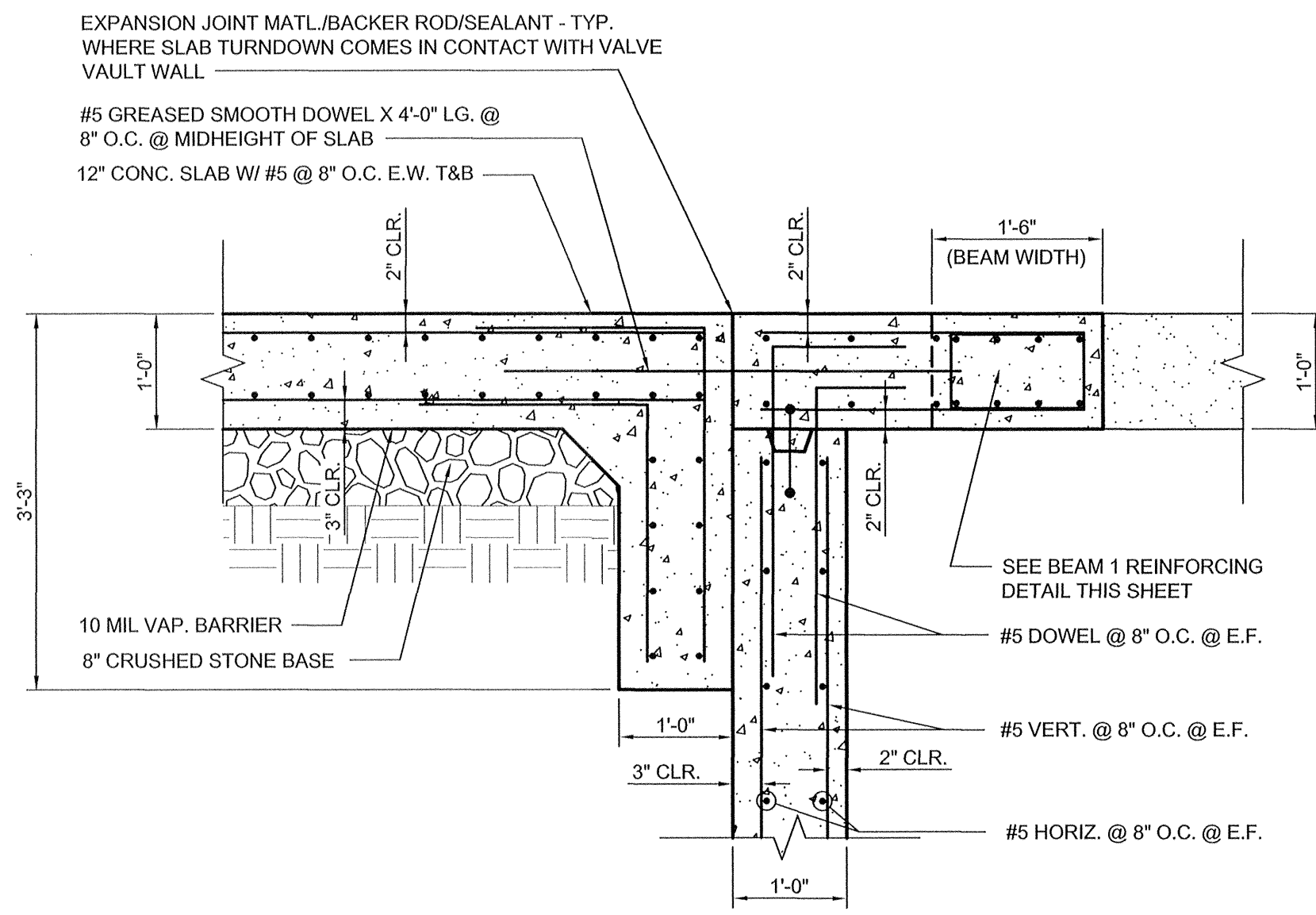
S-2-100

**STRUCTURAL ALTITUDE VALVE VAULT
PLANS**
LUMLEY TANK REPLACEMENT
CITY OF FORT THOMAS, KENTUCKY

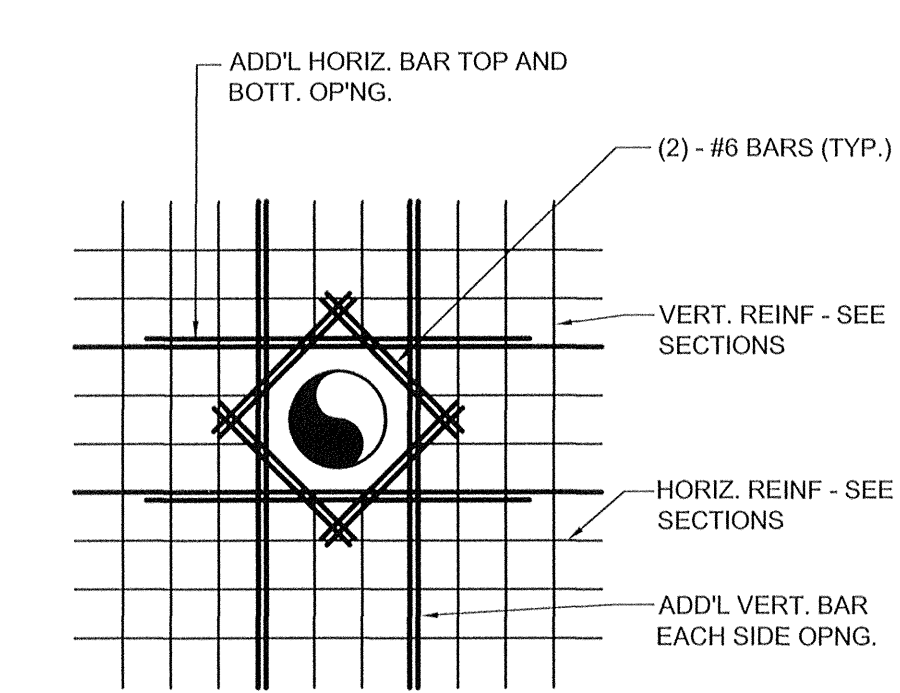


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CLIENT PROJECT NO.
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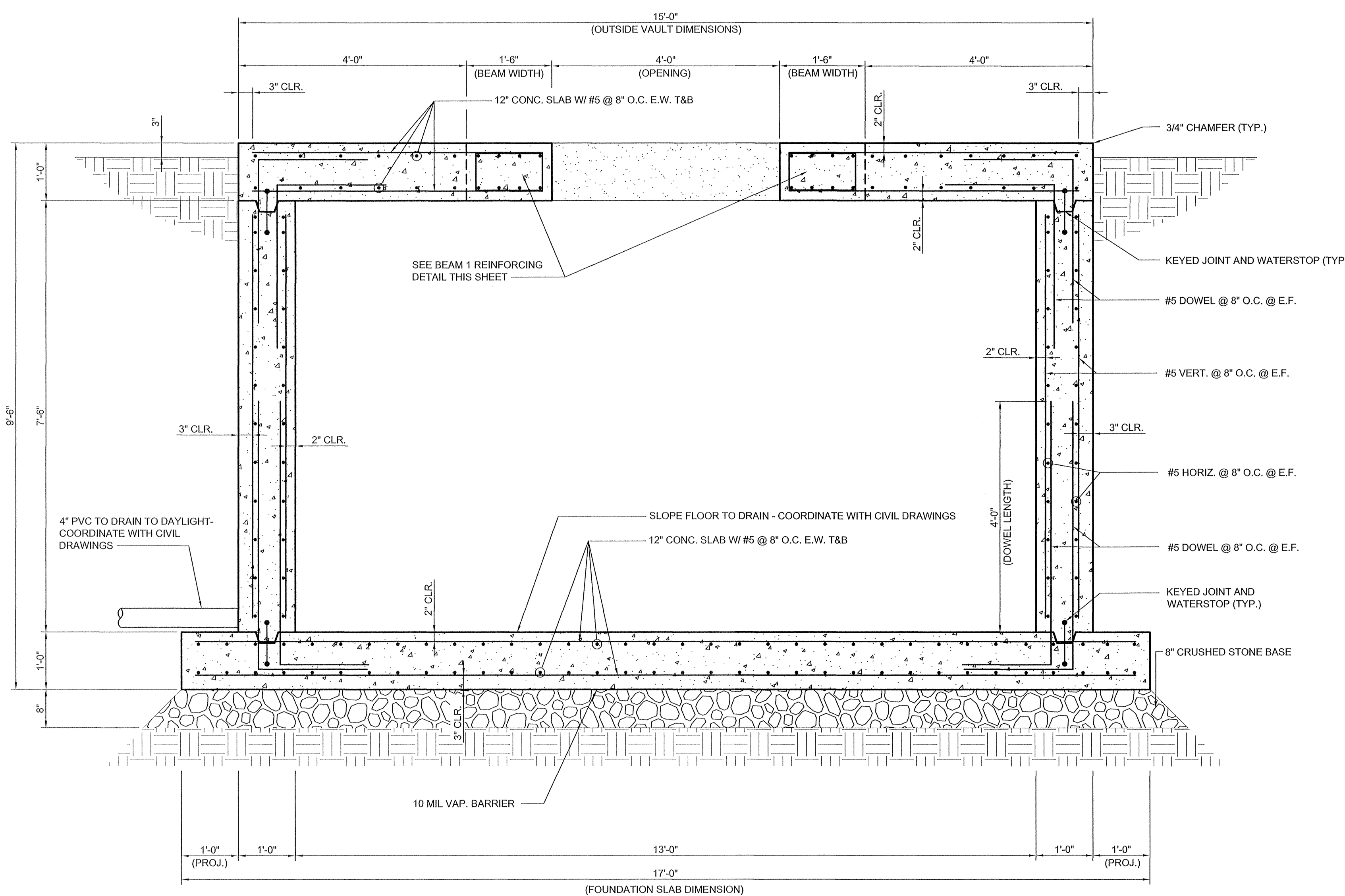
STATE OF KENTUCKY
DAVID C. HOY
28588
LICENSED PROFESSIONAL ENGINEER
7/13/2015



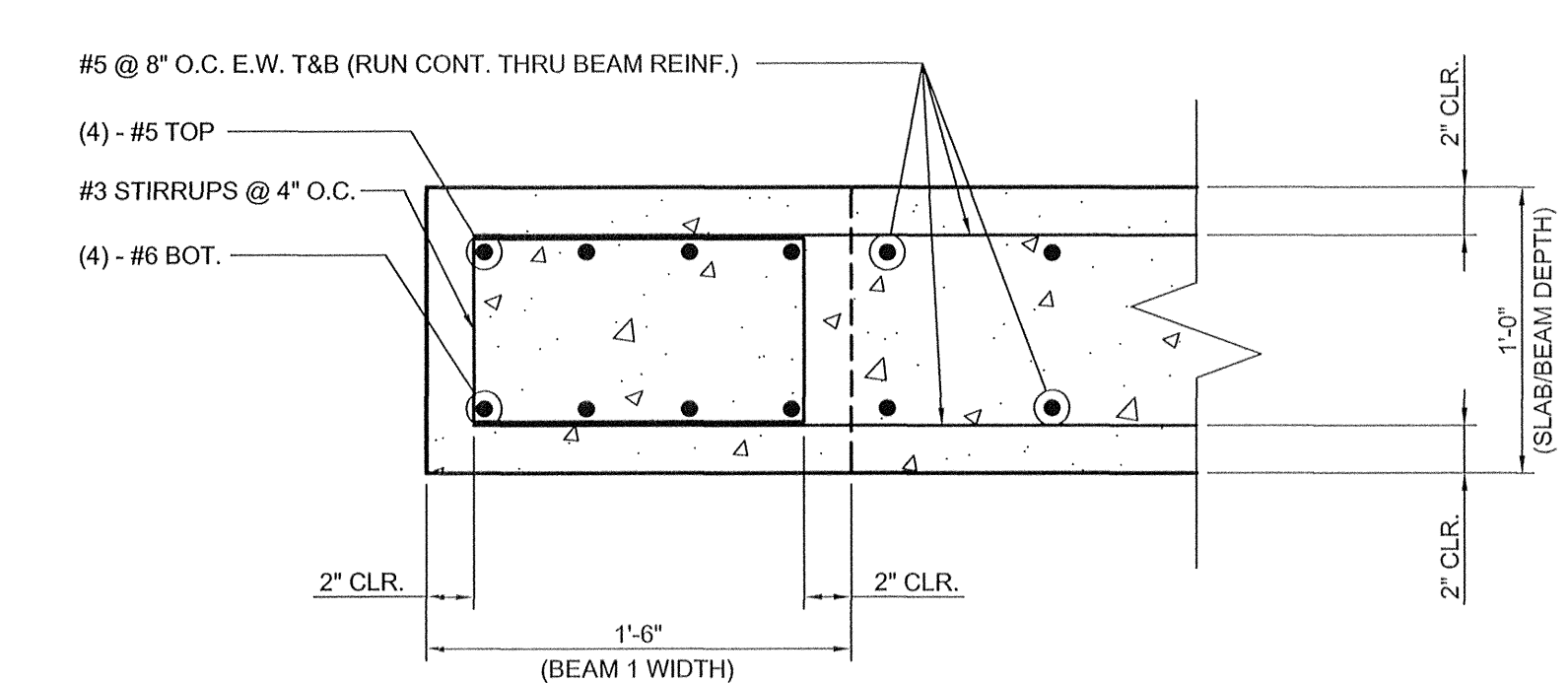
SECTION 3
 SCALE: 3/4"=1'-0"



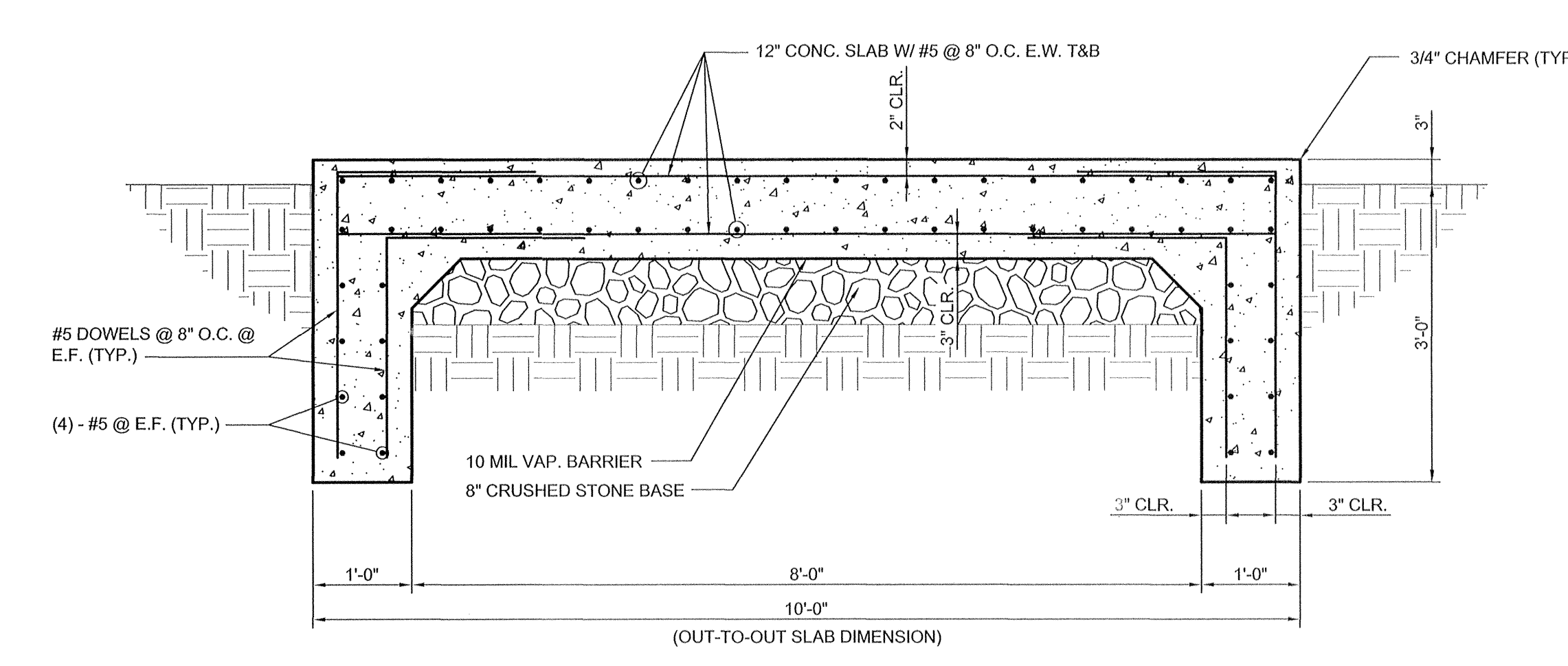
TYPICAL OPENING THRU WALL/SLAB DETAIL
 SCALE: NONE
 NOTE: DETAIL APPLIES TO PENETRATIONS THAT ARE LARGER THAN THE CLEAR DISTANCE BTWN. VERT./HORIZ. REINFORCING.



SECTION 1
 SCALE: 3/4"=1'-0"



BEAM 1 REINFORCING DETAIL
 SCALE: 1 1/2"=1'-0"



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