



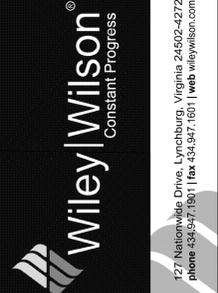
# PARKVIEW TANK REPLACEMENT

## 0.5 MILLION GALLON ELEVATED WATER TANK

### CITY PROJECT ITB 2016017-PU-B/HPU NO. 474-12-13

### HARRISONBURG, VIRGINIA

### JANUARY 21, 2016

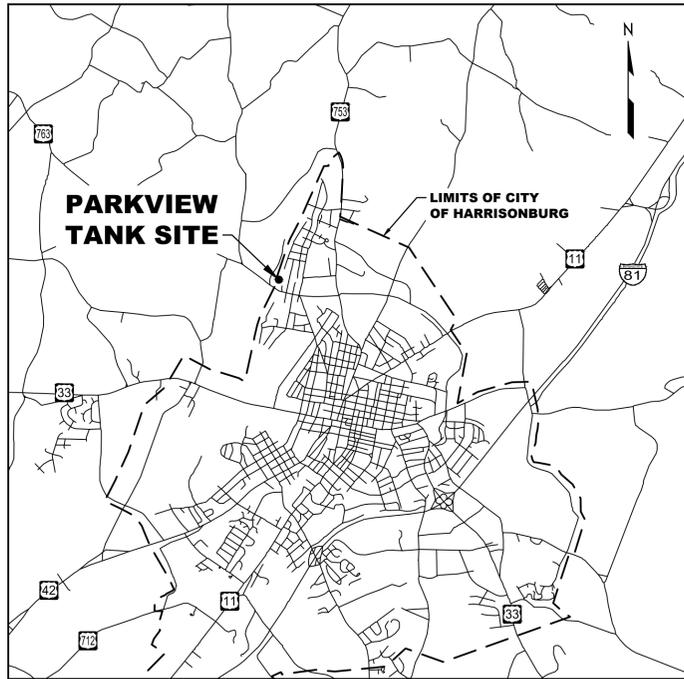
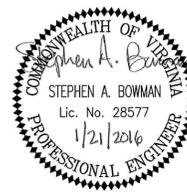
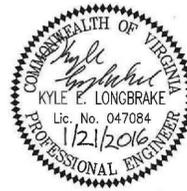


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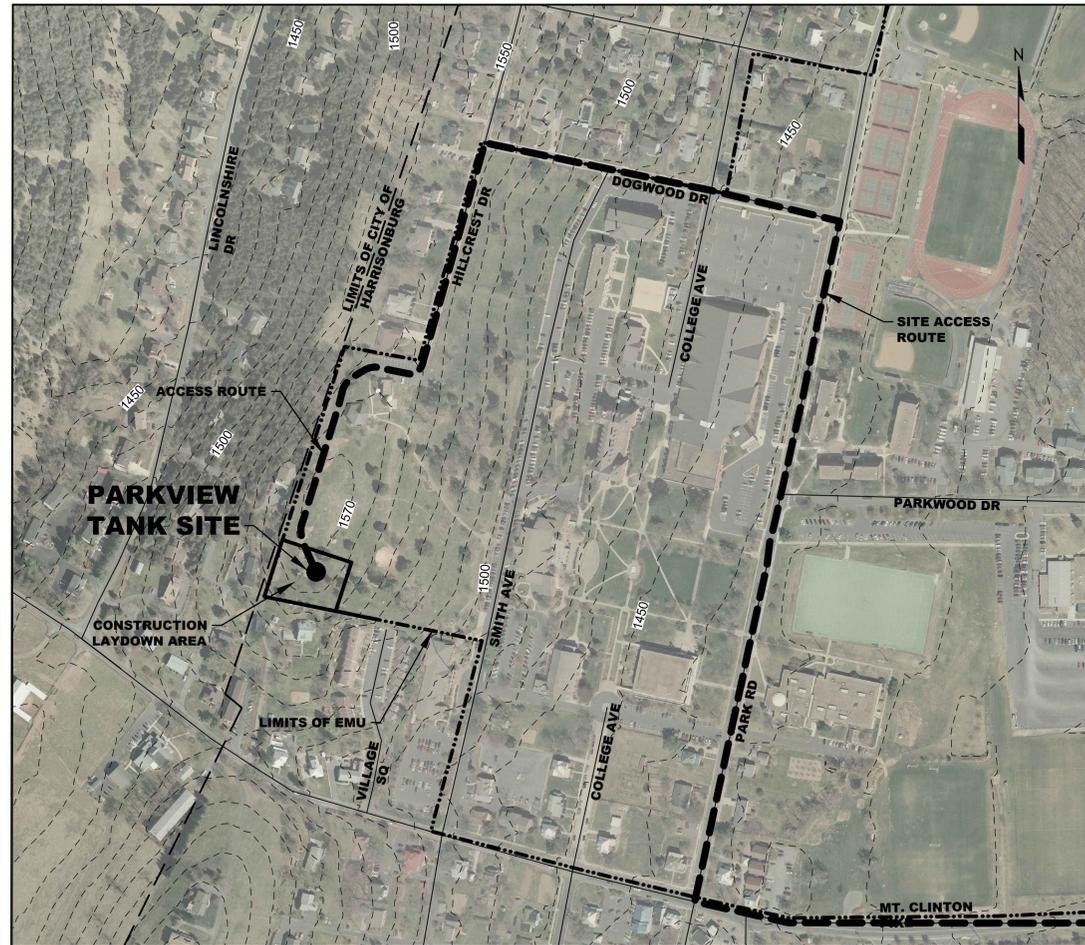


PARKVIEW TANK  
 0.5 MILLION GALLON ELEVATED  
 WATER TANK

HARRISONBURG, VIRGINIA



VICINITY MAP  
 SCALE: 1" = 5000'



LOCATION MAP  
 SCALE: 1" = 250'

#### LIST OF DRAWINGS

SHEET NUMBER	SHEET TITLE
G-001	COVER SHEET
G-002	PROJECT MANAGEMENT & COORDINATION
C-101	SITE LAYOUT
C-201	COMPOSITE TANK PLAN, ELEVATION, AND SECTIONS
C-202	COMPOSITE TANK PLAN, ELEVATION, AND SECTIONS
C-301	DETAILS
M101	COMPOSITE TANK PLAN, HVAC
M102	COMPOSITE TANK PLAN, HVAC
E001	ELECTRICAL LEGEND, ABBREVIATIONS AND SCHEDULES
E101	WATER TANK ELECTRICAL SITE PLAN
E201	TANK PLAN - POWER & LIGHTING
E202	TANK PLAN - HVAC POWER

#### ABBREVIATIONS

DI	DUCTILE IRON
EL	ELEVATION
ELEV	ELEVATION
EMU	EASTERN MENNONITE UNIVERSITY
HP	HIGH POINT
INV	INVERT
LF	LINEAR FEET
LP	LOW POINT
TYP	TYPICAL
L	LENGTH
MJ	MECHANICAL JOINT
SD	STORM DRAIN
PVC	POLYVINYL CHLORIDE
FT	FOOT
LWL	LOW WATER LEVEL
HWL	HIGH WATER LEVEL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN

MRK	DATE	REVISION DESCRIPTION
	2/4/2016	REV1 - NOTES/ERRATA

COMM NO: 215192  
 DATE: 1/21/2016  
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SHEET TITLE  
 COVER SHEET

SHT. NO. G-001 REV. NO. 0

**SCOPE OF WORK:**

THE PROJECT INCLUDES THE CONSTRUCTION OF A 500,000 GALLON ELEVATED COMPOSITE WATER STORAGE TANK AND RELATED APPURTENANCES AND CONTROLS. THE SITE WILL BE PREPARED FOR THIS CONSTRUCTION WITH AN ACCESS ROAD FROM HILLCREST DRIVE. THE GRADING OF THE ROAD AND ROUGH GRADING OF THE SITE WILL BE PERFORMED BY SEPARATE CONTRACT PRIOR TO THE AWARD OF THE TANK CONSTRUCTION CONTRACT. THE CITY WILL CONSTRUCT THE CONNECTING WATERLINE TO THE TANK. THE TANK CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTION OF ALL WATER PIPING WITHIN THE TANK AND TO THE EXTERIOR AS SHOWN ON SHEET C-201 OF THE DRAWINGS. THE TANK CONTRACTOR SHALL PROVIDE ALL ELECTRICAL, MECHANICAL AND HVAC AS SHOWN. THE TANK CONTRACTOR SHALL PROVIDE CONDUIT AND WIRING FOR THE SCADA EQUIPMENT AS SHOWN. WIRES SHALL BE PULLED BETWEEN THE SCADA PANEL AND EACH CONNECTING DEVICE PER THE I/O SCHEDULE ON THIS SHEET. THE TANK CONTRACTOR SHALL INSTALL AND CONNECT THE SCADA DEVICES (SWITCHES, MONITORS, ETC.) AND MOUNT THE SCADA CABINET AS SHOWN ON THE DRAWINGS. ALL WIRING SHALL BE LABELED ENTERING THE SCADA CABINET PER THE I/O SCHEDULE. THE SCADA CONTRACTOR SHALL INSTALL THE SCADA UNIT WITHIN THE CABINET AND FINISH WIRING PER THE I/O SCHEDULE.

THE CITY OF HARRISONBURG WILL INSTALL A CATHODIC PROTECTION SYSTEM AT A TIME TO BE DETERMINED. THE TANK CONTRACTOR SHALL PROVIDE MOUNTING SUPPORTS, ELECTRICAL CONNECTIONS, AND CONTROL CONNECTORS PER DRAWINGS AND ACCOMPANYING SPECIFICATIONS.

THE CITY WILL BE RESPONSIBLE FOR THE STORMWATER POLLUTION PREVENTION PLAN THROUGHOUT THE PROJECT AND SHALL HAVE AUTHORITY TO DIRECT THE TANK CONTRACTOR TO REMEDIATE DAMAGING ACTIVITIES.

**GENERAL NOTES:**

- CONTRACTOR SHALL BE INFORMED AND SHALL COMPLY WITH THE VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT. ANY COSTS TO COVER LINES OR DISCONNECT SERVICE TO NEARBY POWER LINES SHALL BE AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL RETAIN FULL LIABILITY FOR COMPLIANCE WITH OSHA REGULATIONS AND THE SAFETY ACT. THE CONTRACTOR SHALL BEAR EXPENSE FOR POLE SUPPORT WHERE REQUIRED.
- ALL EXISTING UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THESE PLANS ARE APPROXIMATE AND MAY NOT REPRESENT ALL UNDERGROUND UTILITIES OR SERVICE LINES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION, DEPTH, SIZE AND TYPE OF UTILITIES SHOWN AND NOTIFYING ENGINEER OF DISCREPANCIES. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS UTILITY TO HAVE ALL UNDERGROUND UTILITIES LOCATED AND MARKED. CONTRACTOR IS SOLELY RESPONSIBLE FOR DAMAGE TO PROPERTY, UTILITIES OR PHYSICAL IMPROVEMENTS.
- ALL WORK NOT COVERED BY THE PROJECT DOCUMENTS SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF HARRISONBURG DESIGN AND CONSTRUCTION STANDARDS.
- SEE PROJECT MANUAL FOR ADDITIONAL PROJECT REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH ALL VIRGINIA EROSION & SEDIMENT CONTROL REGULATIONS.
- ALL PROPERTY PINS DISTURBED BY CONTRACTOR ACTIVITIES SHALL BE REPLACED BY A VIRGINIA LICENSED LAND SURVEYOR.
- CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED PERMITS AS REQUIRED BY THE GOVERNING JURISDICTION. (BUILDING, PLUMBING, ELECTRICAL, ETC.)
- A GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THE SITE AND IS INCLUDED IN THE PROJECT MANUAL.
- FOLLOW GENERAL SITE NOTES AS FOUND ON SHEET C-201.
- FOLLOW GENERAL MECHANICAL/HVAC NOTES AS FOUND ON SHEET M-101.
- FOLLOW GENERAL ELECTRICAL NOTES AS FOUND ON SHEET E-201

**SITE MANAGEMENT:**

THE CITY SHALL APPOINT A SITE MANAGER FOR THIS PROJECT. THIS MANAGER SHALL BE RESPONSIBLE TO OVERSEE AND APPROVE ANY DEVIATIONS FROM THE APPROVED DESIGN. THE SITE MANAGER SHALL BE THE OWNER'S REPRESENTATIVE RESPONSIBLE FOR ENSURING COORDINATION BETWEEN THE TANK CONTRACTOR AND OUTSIDE STAKEHOLDERS.

THE SITE WILL BE PROVIDED TO THE CONTRACTOR WITH A STONE ACCESS ROAD. THE TANK CONTRACTOR SHALL MAINTAIN THE ROAD IN GOOD CONDITION THROUGH CONSTRUCTION AND SHALL RETURN THE ROAD TO THE CITY AT THE END OF THE PROJECT IN THE SAME CONDITION AS WHEN THE PROJECT BEGINS. SITE PHOTOGRAPHS WILL BE PROVIDED FOR DOCUMENTATION.

ACCESS TO THE SITE WILL ONLY BE PERMITTED THROUGH THE DESIGNATED ACCESS ROAD. THE TANK LOT AND TEMPORARY EASEMENTS MAY BE USED FOR CONSTRUCTION TRAFFIC AND STAGING. SURROUNDING LANDS MAY NOT BE USED WITHOUT PERMISSION. ANY REQUESTS FOR PERMISSION SHALL BE DIRECTED TO THE CITY'S REPRESENTATIVE SITE MANAGER WHO SHALL MAKE CONTACT WITH THE APPROPRIATE LAND OWNER.

THE CITY WILL REMAIN RESPONSIBLE FOR THE BIORENTENTION FACILITIES ON THE SITE THROUGH CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIVE TO REQUESTS FROM THE SITE MANAGER TO CEASE ANY ACTIVITIES DEEMED BY THE CITY TO BE DESTRUCTIVE TO THESE FACILITIES.

**DESIGN TABLE**

NOMINAL TANK CAPACITY: 500,000 GALLONS  
 NOMINAL DIMENSIONS: 50' DIAMETER STEEL BOWL  
 37.5' STEEL BOWL HEIGHT  
 28' DIAMETER CONCRETE  
 1671.37 TANK HIGHEST ELEVATION  
 1667.04 FULL BOWL ELEVATION (OVERFLOW)  
 1629.54' BASE BOWL ELEVATION (EMPTY)  
 1566.00 GROUND ELEVATION  
 DESIGN FLOWS: 0.50 MGD MAX DAILY ZONAL DEMAND  
 3000 GPM FIRE FLOW (3HR DURATION)  
 GEOTECHNICAL SOIL DESIGN LOADS: MAXIMUM ALLOWABLE BEARING PRESSURE 70000 PSF FOR FOUNDATIONS AND CAISSONS BEARING ON LIMESTONE BEDROCK WITH SIDE SHEAR STRENGTH OF 8000 PSF.  
 SEISMIC DESIGN LOADS: REGION DEPENDENT TRANSITION PERIOD=12, SITE CLASS B, S<sub>0</sub>=0.19, S<sub>1</sub>=0.06  
 WIND DESIGN LOADS: 115 MPH BASIC WIND SPEED (BWS)

**PARK VIEW TANK I/O WIRE REFERENCE**

**ANALOG INPUTS TO PLC**

I/O #	Description of Functionality through SCADA programming	Contract 4 SCADA Terminate	Contract 1 Connect	SCADA PANEL WIRE #	SCADA SIGNAL & WIRE TAG (by C1)
1	SCADA monitors chlorine residual from chlorine analyzer				CL2_RESIDUAL
2	SCADA monitors upstairs room temperature				US_ROOM_TEMP
3	SCADA monitors pedestal room temperature				DS_ROOM_TEMP
4	SCADA monitors water level in tank		Rosemont		TANK_LEVEL

**DIGITAL INPUTS TO PLC**

I/O #	Description of Functionality through SCADA programming	Contract 4 SCADA Terminate	Contract 1 Connect	SCADA PANEL WIRE #	SCADA SIGNAL & WIRE TAG (by C1)
5	SCADA monitors if HEC power is available from power monitor relay				TANK_PWRIN
6	SCADA monitors if entry (man and veh) door switch circuit is broken		GE Sentrol 2500 Series Door Sw		DOOR_ENTRY
7	SCADA monitors if upper tube hatch door switch circuit is broken		GE Sentrol 2500 Series Door Sw		TUBE_HATCH_ALARM
8	SCADA monitors if tank hatch door switch circuit is broken		GE Sentrol 2500 Series Door Sw		TANK_HATCH_ALARM
9	SCADA monitors status of Alarm system (On/Off) as configured with toggle switch as other stations		Security Panel Toggle Switch		ARMED_IN



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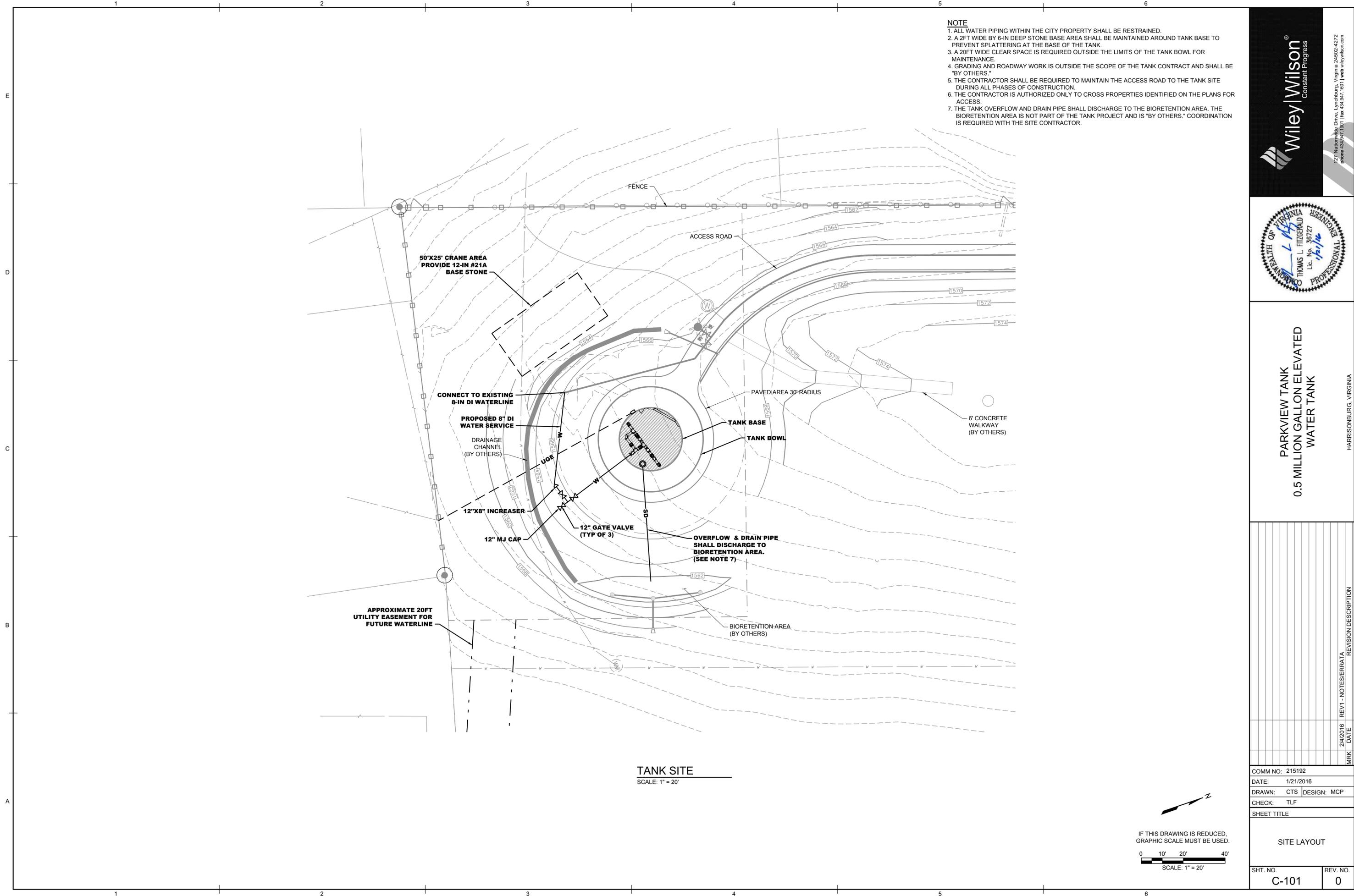
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PROJECT MANAGEMENT & COORDINATION

SHT. NO. **G-002** REV. NO. **0**

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- NOTE**
1. ALL WATER PIPING WITHIN THE CITY PROPERTY SHALL BE RESTRAINED.
  2. A 2FT WIDE BY 6-IN DEEP STONE BASE AREA SHALL BE MAINTAINED AROUND TANK BASE TO PREVENT SPLATTERING AT THE BASE OF THE TANK.
  3. A 20FT WIDE CLEAR SPACE IS REQUIRED OUTSIDE THE LIMITS OF THE TANK BOWL FOR MAINTENANCE.
  4. GRADING AND ROADWAY WORK IS OUTSIDE THE SCOPE OF THE TANK CONTRACT AND SHALL BE "BY OTHERS."
  5. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE ACCESS ROAD TO THE TANK SITE DURING ALL PHASES OF CONSTRUCTION.
  6. THE CONTRACTOR IS AUTHORIZED ONLY TO CROSS PROPERTIES IDENTIFIED ON THE PLANS FOR ACCESS.
  7. THE TANK OVERFLOW AND DRAIN PIPE SHALL DISCHARGE TO THE BIORETENTION AREA. THE BIORETENTION AREA IS NOT PART OF THE TANK PROJECT AND IS "BY OTHERS." COORDINATION IS REQUIRED WITH THE SITE CONTRACTOR.



**Wiley Wilson**  
Constant Progress

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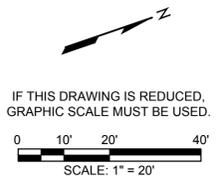
HARRISONBURG, VIRGINIA

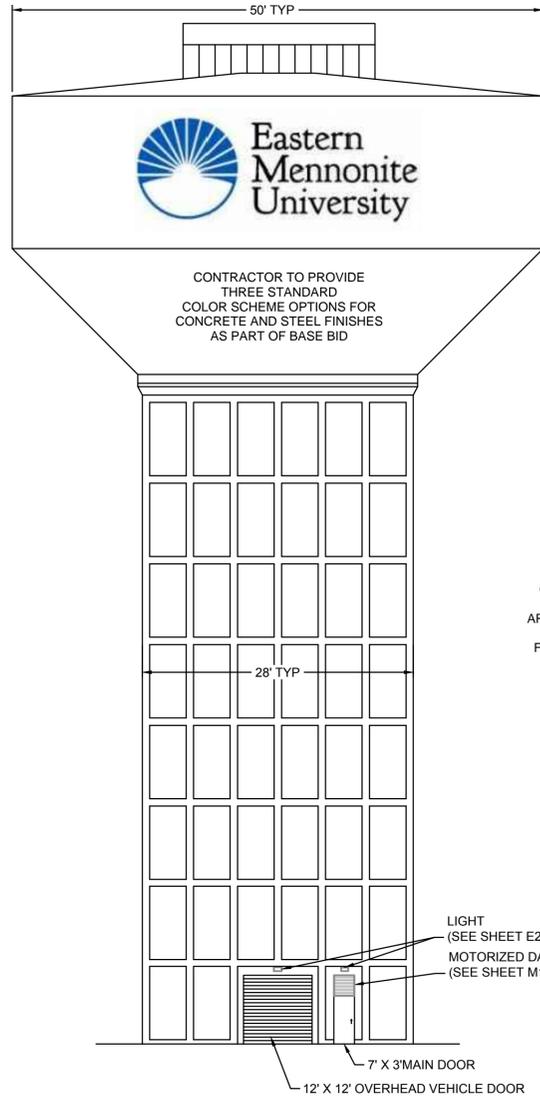
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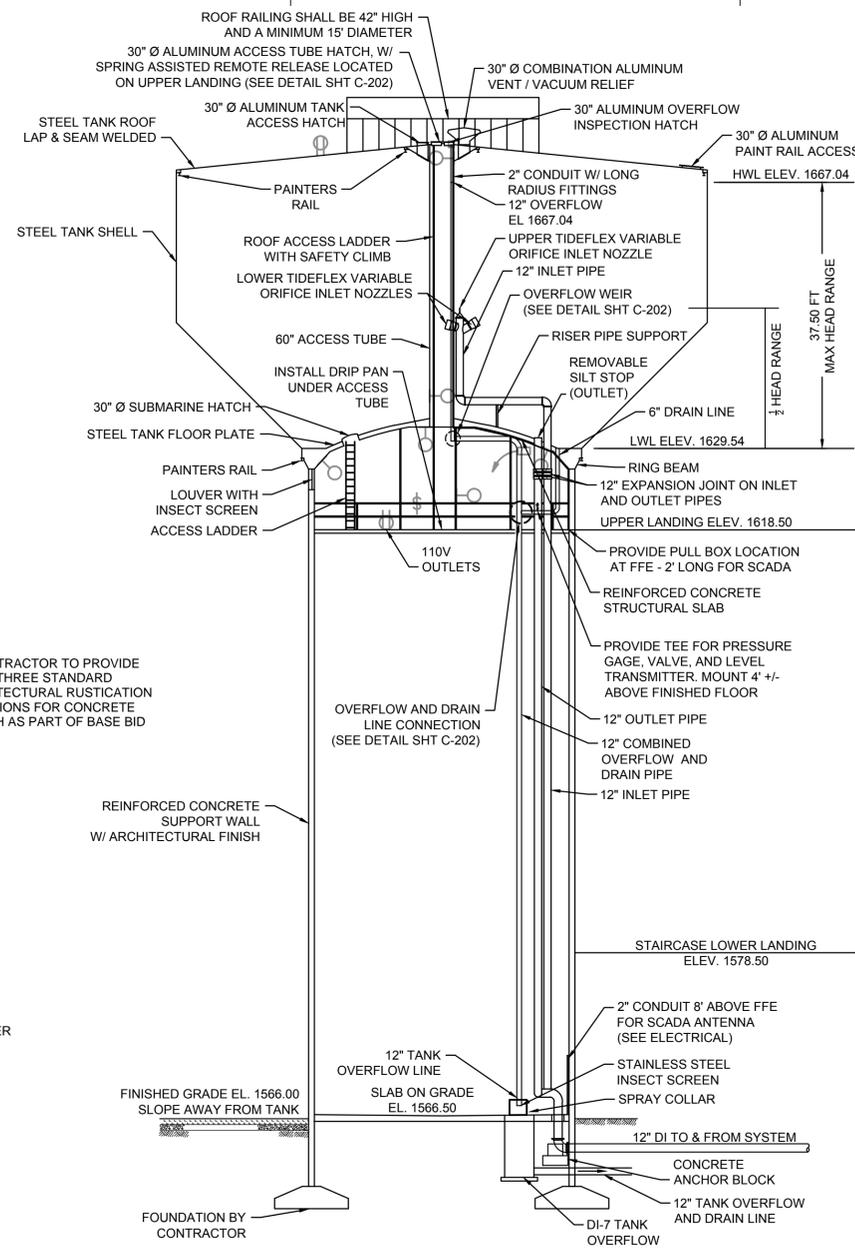
SHEET TITLE  
**SITE LAYOUT**

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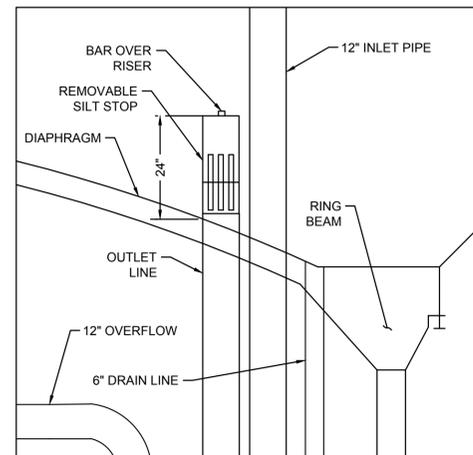




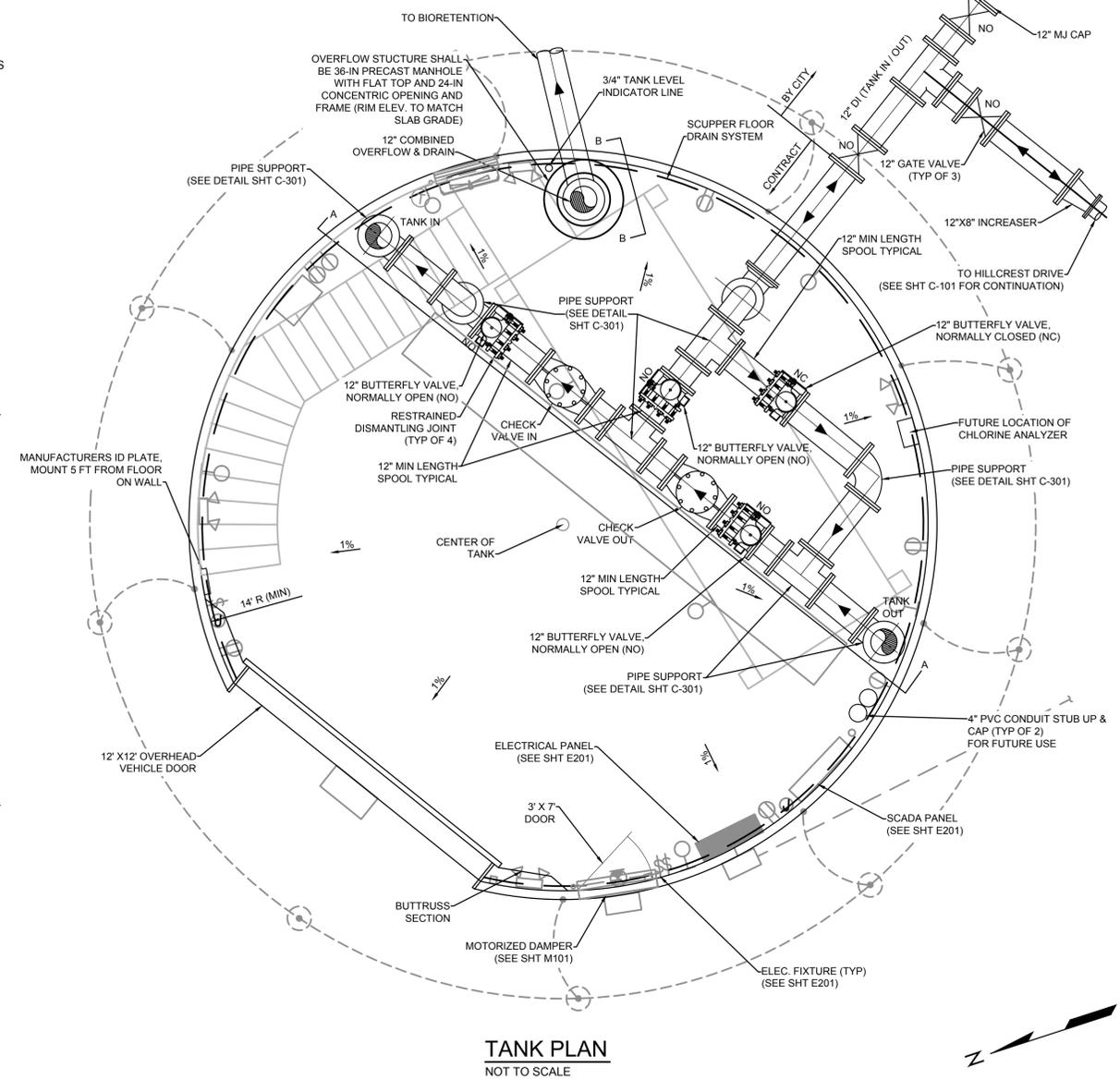
**SCHEMATIC ELEVATION**  
NOT TO SCALE



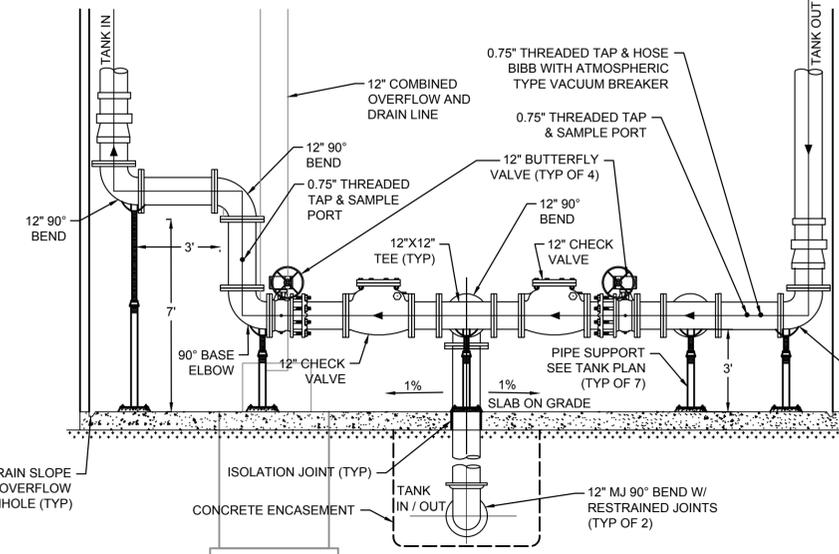
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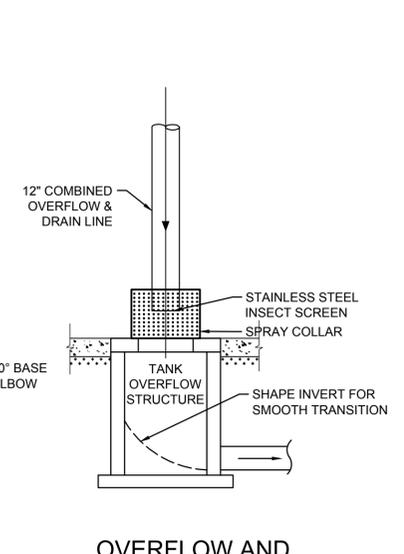
**DETAIL-REMOVABLE SILT STOP**  
NOT TO SCALE



**TANK PLAN**  
NOT TO SCALE

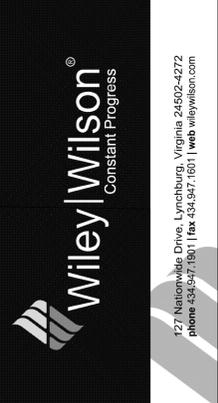


**SCHEMATIC PIPE ELEVATION**  
NOT TO SCALE (SEE SECTION A-A)



**OVERFLOW AND DRAIN LINE ELEVATION**  
NOT TO SCALE (SEE SECTION B-B)

- GENERAL:**
1. COMPOSITE TANK, ROOF, PEDESTAL, FOUNDATION, AND TANK APPURTENANCES ARE DEDICATED DESIGN AND SHALL BE PER AWWA D-107-13.
  2. PERSONAL DOOR - 3' WIDE X 7' HIGH, HOLLOW GALV. METAL DOOR WITH 16 GA. FRAME AND HEAVY DUTY CLOSURE (POWDER COATED).
  3. VEHICLE DOOR - 12' WIDE X 12' HIGH ROLLING STEEL AND INSULATED WITH 22 GA. GALVANIZED SLATS AND MANUAL CHAIN OPERATOR.
  4. PROVIDE MONOLITHIC REINFORCED CONCRETE INTERNAL BUTTRESS SECTION ON EACH SIDE OF VEHICLE DOOR. BUTTRESS TO BE MINIMUM 3'-6" WIDE AND 6" THICKER THAN NOMINAL WALL DIMENSION.
  5. ALL HATCHES AND MANWAYS SHALL BE 30" DIAMETER MINIMUM OR 30" Ø ALUMINUM AS NOTED.
  6. ALL LADDERS, WALKWAYS, STAIRS, HANDRAILS, AND ATTACHMENTS INSIDE THE SHAFT PEDESTAL SHALL BE GALVANIZED IRON.
  7. WELDING IN THE BOWL, MANWAY, AND OVERFLOW CONNECTION SHALL BE COMPLETE SEAL WELDING.
  8. NO PIPE SPOOLS LESS THAN 12" IN LENGTH ON PIPE ≥ 4" Ø.
  9. ALL WATER TAPS SHALL BE 3/4 INCH.
  10. VERTICAL PIPES SHALL BE BRACED TO THE WALL OF THE TANK SUPPORT STRUCTURE OR STAIRS.
  11. ALL PIPE ≥ 4" Ø ABOVE GRADE TO BE FLANGED DUCTILE IRON PIPE.
  12. ALL PIPING WITHIN THE CITY PROPERTY SHALL BE RESTRAINED.
  13. 12" OF WORKABLE SPACE IS REQUIRED FOR ALL DISMANTLING JOINTS.
  14. CONTRACTOR SHALL PROVIDE FOUNDATION AND REINFORCING SUBMITTALS FOR ALL PIPE AND CONDUIT PENETRATIONS.
- TANK MIXER:**
1. TANK MIXER SHALL BE TIDEFLEX MIXING SYSTEM (TMS) OR TANK MANUFACTURER PRE-APPROVED EQUAL.
  2. TANK MIXER SHALL BE A DELEGATED-DESIGN, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA AS INDICATED ON THE PLANS.
  3. DELEGATED-DESIGN SUBMITTAL SHALL INCLUDE SHOP DRAWINGS, CFD MODELING, MIXING ANALYSIS, AND WATER AGE ANALYSIS. SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA.
  4. THE TANK INSTALLER SHALL PROVIDE INSTALLATION, STARTUP, AND ON-SITE WATER TESTING SERVICES TO INSURE PROPER MACHINE SPATIAL PLACEMENT IN THE RESERVOIR, AND PROPER DEPTH SETTING.
  5. A COMPLETE INSTALLATION, OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE OWNER.
  6. THE MIXER SHALL BE WARRANTED TO BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF FIVE (5) YEARS. THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THIS WARRANTY WITH THE CLOSEOUT DOCUMENTS.
- ELECTRICAL:**
1. MOUNT EXTERIOR DOOR LIGHTS PER E-201.
  2. MOUNT INTERIOR PEDESTAL BASE LIGHTS 10' ABOVE SLAB ON GRADE.
- BID OPTIONS:**
1. SEE SECTION 00400 BID FORM OF THE SPECIFICATION FOR DETAILED BID OPTIONS.
  2. BID OPTIONS SHALL BE INCLUDED WITH THE BASE BID.
  3. OPTION ONE (1) - GRAPHIC LOGO



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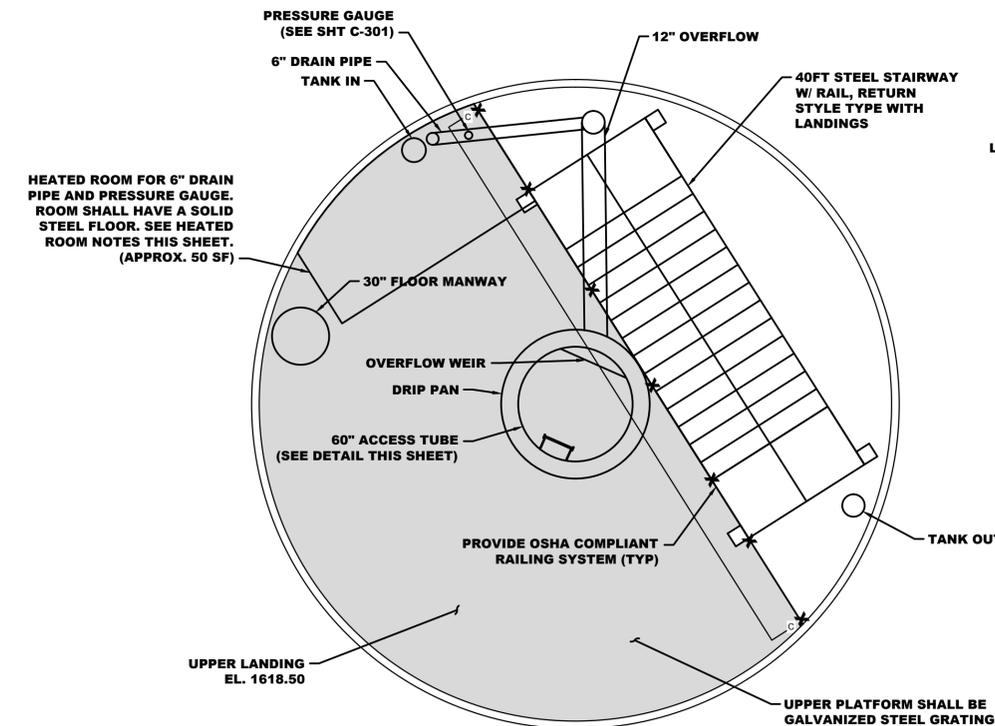
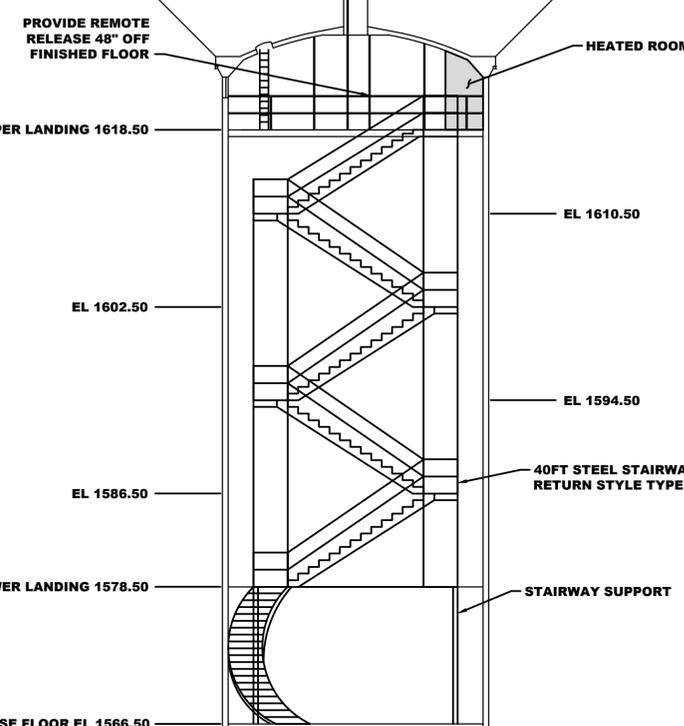
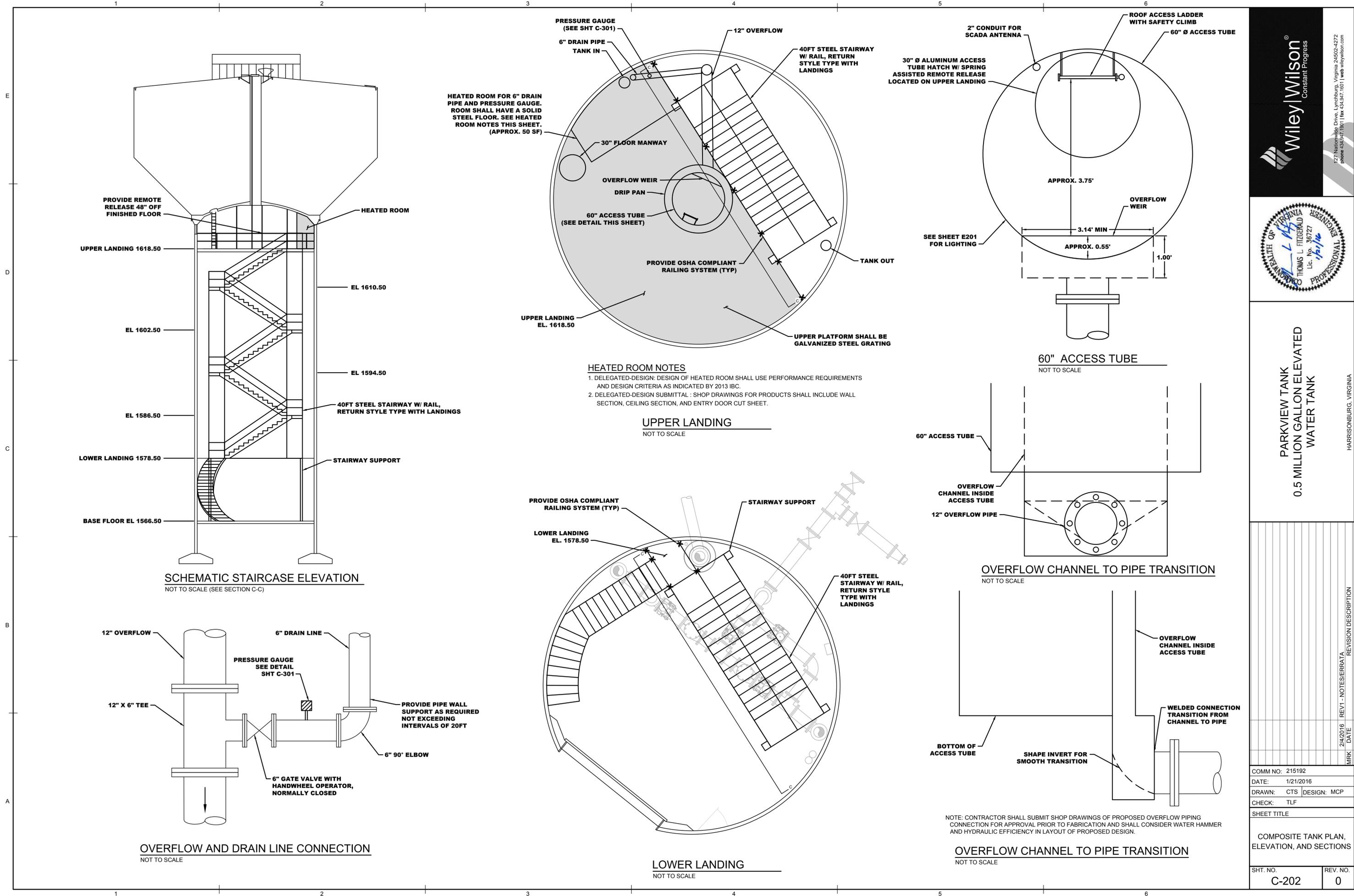
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COMPOSITE TANK PLAN, ELEVATION, AND SECTIONS

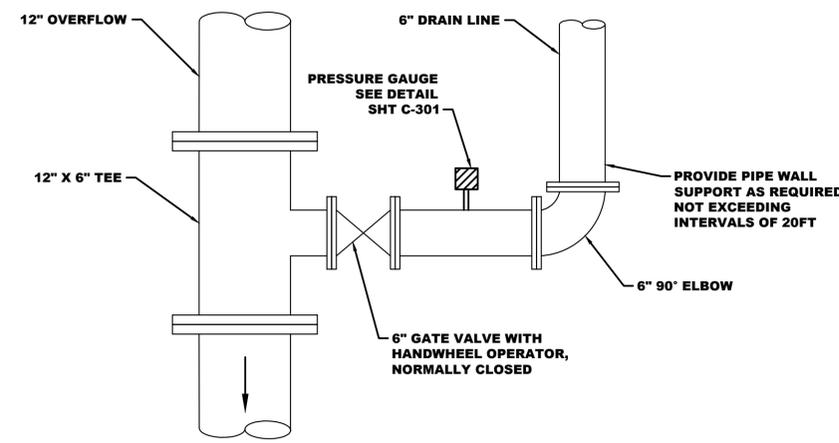
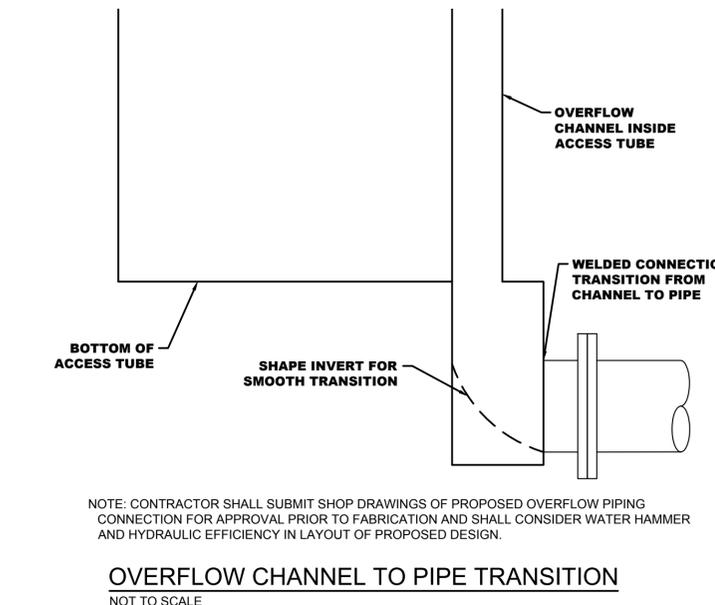
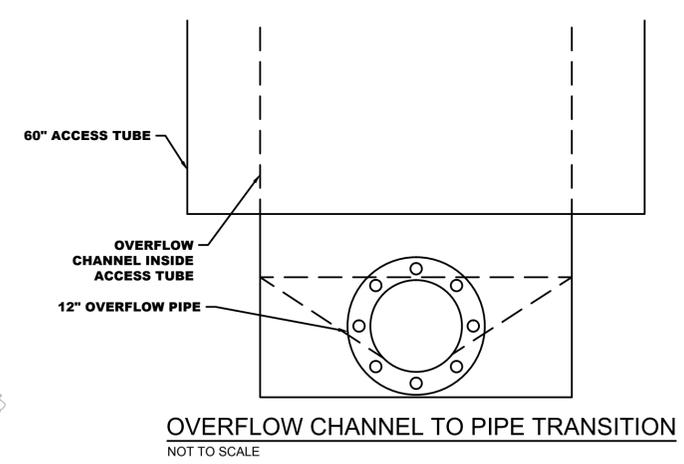
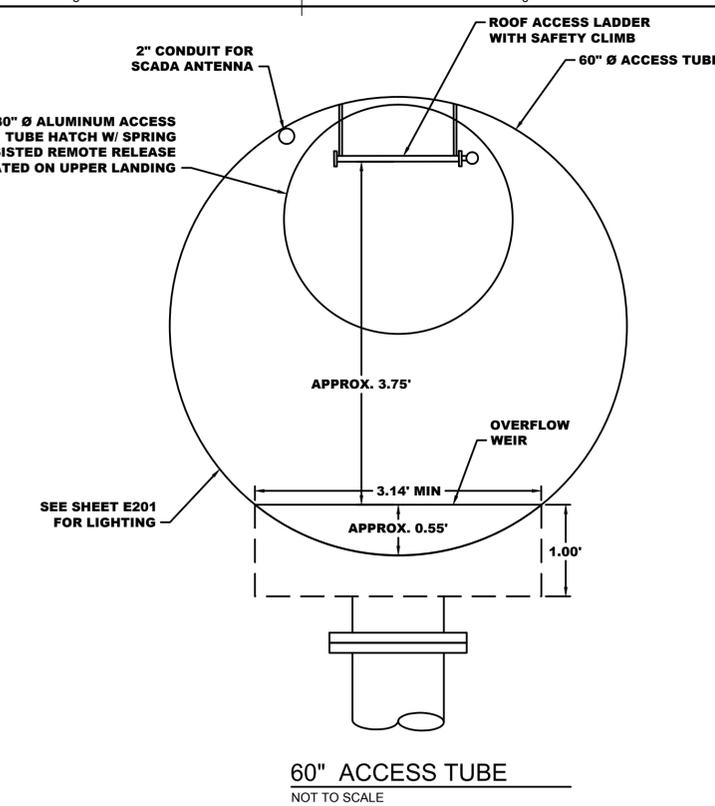
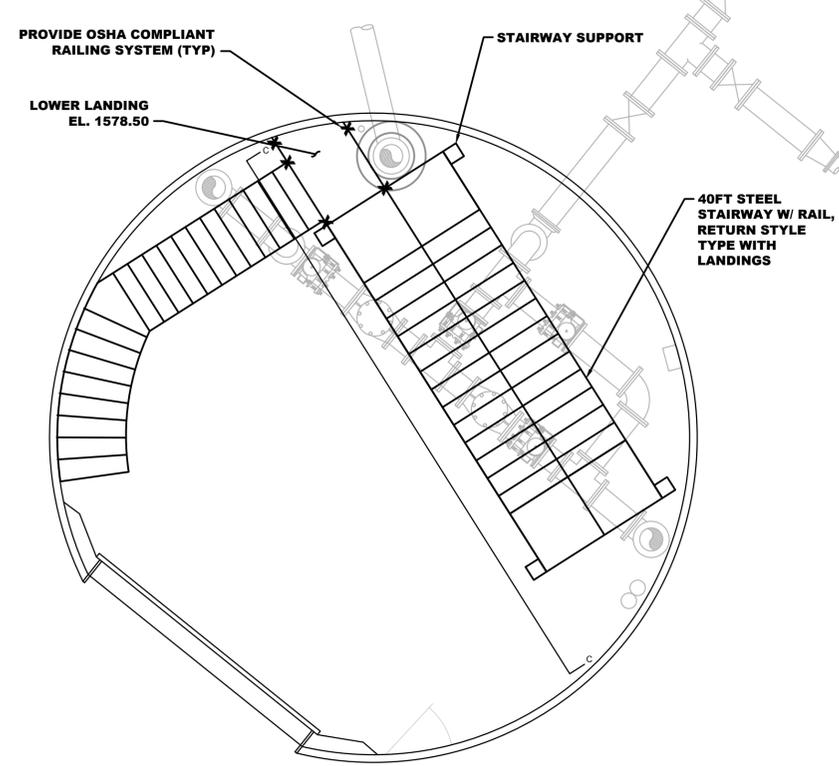
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**HEATED ROOM NOTES**

1. DELEGATED-DESIGN: DESIGN OF HEATED ROOM SHALL USE PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA AS INDICATED BY 2013 IBC.
2. DELEGATED-DESIGN SUBMITTAL: SHOP DRAWINGS FOR PRODUCTS SHALL INCLUDE WALL SECTION, CEILING SECTION, AND ENTRY DOOR CUT SHEET.



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**COMPOSITE TANK PLAN, ELEVATION, AND SECTIONS**

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TOPSOIL IS NOT ALLOWED UNDER PAVEMENT, SIDEWALK, ROAD, OR BUILDING. NO STONE LARGER THAN 5" IN ANY DIMENSION. COMPACTED IN 24" MAXIMUM LIFTS. NO STONE LARGER THAN 1" IN ANY DIMENSION. COMPACTED IN 6" LIFTS.

PLACE AND COMPACT UNDER PIPE TO PROVIDE SIDE SUPPORT. AVOID DISPLACEMENT OF PIPE FROM PROPER ALIGNMENT.

INSTALL & SHAPE TO PROVIDE CONTINUOUS PIPE SUPPORT AT HORIZONTAL & VERTICAL ALIGNMENT SHOWN ON PLANS. WHERE ROCK IS ENCOUNTERED IN THE TRENCH BOTTOM IT SHALL BE EXCAVATED TO A MINIMUM OF 6" BELOW THE PIPE.

LAYING CONDITION	BEDDING	HAUNCHING	INITIAL BACKFILL	REMAINING BACKFILL
1	CONCRETE ENCASEMENT (SEE CITY STANDARD DETAIL)	CRA #88	CRA #88	#2 1/2 AGGREGATE
2	CRA #88	CRA #88	CRA #88	LM (85% NO LOAD - 95% LIVE LOAD)
3	CRA #88	CRA #88	SLM (95%)	LM (85% NO LOAD - 95% LIVE LOAD)
4	CRA #88	CRA #88	SLM (95%)	LM (85% NO LOAD - 95% LIVE LOAD)
5	SH (95%)	(REFER TO LAYING CONDITION 6 OR 7)		
6	SLM (95%)	SLM (95%)	SLM (95%)	LM (85% NO LOAD - 95% LIVE LOAD)
7	SLM (95%)	SLM (95%)	SLM (95%)	#2 1/2 AGGREGATE

**PIPE TRENCH APPLICATIONS:**

DUCTILE IRON WATER PIPE	LAYING CONDITION 6
DUCTILE IRON WATER PIPE IN EXISTING PAVEMENT	LAYING CONDITION 7
DUCTILE IRON WATER PIPE WITH ROCK UNDERCUT	LAYING CONDITION 5
DUCTILE IRON SEWER PIPE	LAYING CONDITION 4
DUCTILE IRON SEWER PIPE IN EXISTING PAVEMENT	LAYING CONDITION 2
PVC SEWER PIPE	LAYING CONDITION 3
PVC SEWER PIPE IN EXISTING PAVEMENT	LAYING CONDITION 2

**NOTES:**

A) COMPACTION SHOWN IN PARENTHESES SHALL BE DETERMINED BY ASTM D 698

B) MINIMUM SPECIFICATION: TRENCHES UNDER PAVEMENTS, SIDEWALKS, ROADS, & BUILDINGS SHALL BE COMPACTED TO 95% DENSITY AS DETERMINED BY ASTM D 698. 6 INCH MAXIMUM LIFTS.

C) IF NOT SPECIFIED OTHERWISE, MINIMUM COMPACTION SHALL BE BY ROLLING WITH EARTH-MOVING EQUIPMENT.

D) CRA SHALL BE VIBRATED USING A PLATE VIBRATOR OR SIMILAR EQUIPMENT TO REDUCE VOIDS AND UNIFORM SETTLEMENT.

DESIGNATION: DESCRIPTION OF BACKFILL MATERIALS

DESIGNATION	DESCRIPTION OF BACKFILL MATERIALS
CRA	COARSE AGGREGATE: VDOT SIZE AS SHOWN IN PARENTHESES
SLM	SELECT LOCAL MATERIAL, FREE OF DEBRIS, ROOTS, FROZEN MATERIAL, ORGANIC MATTER, STONES GREATER THAN 1" DIAMETER, UNIFIED SOILS CLASSIFICATION: MCL/CLAY/CH
LM	LOCAL MATERIALS, FREE OF STONES GREATER THAN 9" DIAMETER AND FOREIGN MATERIALS
SH	WHERE USED AS BEDDING FOR ROCK UNDERCUT, USE MATERIAL WITH SOME PLASTIC TENDENCIES SUCH TO SEAL ROCK FISSURES, SUCH AS SHALE/CLAY/ML

NOT TO SCALE DWG. NO. 1 PAGE 15

PIPE SIZE INCHES	DEGREE OF BEND	100 PSI WORKING PRESSURE		150 PSI WORKING PRESSURE		VOLUME OF CONCRETE CU. YD. (1)
		L	H	L	H	
6"	90°	2.5	1.5	2.5	2.0	0.24
	45°	2.0	1.0	2.5	1.0	0.13
	22 1/2°	1.0	1.0	1.5	1.0	0.08
	11 1/4°	1.0	1.0	1.5	1.0	0.08
	TEE/PLUG	2.5	1.5	2.5	2.0	0.24
8"	90°	2.5	2.5	4.0	2.0	0.40
	45°	2.0	1.5	2.5	2.0	0.19
	22 1/2°	1.5	1.0	2.5	1.0	0.10
	11 1/4°	1.5	1.0	2.0	1.0	0.09
	TEE/PLUG	2.5	2.5	4.0	2.0	0.40
12"	90°	4.0	3.0	5.0	4.0	0.76
	45°	3.5	2.0	4.0	2.5	0.46
	22 1/2°	2.5	1.5	2.5	1.0	0.24
	11 1/4°	2.5	1.5	2.0	1.5	0.19
	TEE/PLUG	4.0	3.0	5.0	4.0	0.76
16"	90°	5.5	4.0	7.5	4.5	1.43
	45°	4.0	3.0	5.0	3.5	0.76
	22 1/2°	3.0	2.0	3.0	3.0	0.30
	11 1/4°	3.0	2.0	4.5	3.0	0.20
	TEE/PLUG	5.5	4.0	7.5	4.5	1.43
20"	90°	6.5	5.5	8.5	6.0	1.99
	45°	5.0	4.0	6.0	4.5	1.11
	22 1/2°	3.5	3.0	4.5	3.0	0.58
	11 1/4°	3.5	3.0	4.5	3.0	0.58
	TEE/PLUG	6.5	5.5	8.5	6.0	1.99
24"	90°	8.0	6.0	11.0	6.5	2.37
	45°	5.5	5.0	7.0	5.5	1.38
	22 1/2°	4.0	3.5	5.0	4.0	0.50
	11 1/4°	4.0	3.5	5.0	4.0	0.50
	TEE/PLUG	8.0	6.0	11.0	6.5	2.37

(1) APPROXIMATE VOLUME OF CONCRETE BASED ON 100 PSI WORKING PRESSURE

**NOTES:**

- CONCRETE SHALL HAVE 3,000 PSI STRENGTH AT 28 DAYS.
- THE ABOVE TABLE IS BASED ON 2,000 PSF SOIL BEARING CAPACITY AND WORKING PRESSURE AS INDICATED.
- ANCHOR BLOCK DESIGN FOR OTHER DESIGN CIRCUMSTANCES OR PIPE LARGER THAN 24" SHALL BE REVIEWED ON AN INDIVIDUAL BASIS BY THE DIRECTOR.
- HEIGHT OF CONCRETE ANCHOR BLOCK ABOVE PIPE CENTERLINE IS 1/3 THE H DIMENSION.
- PROVIDE A 10 MIL PLASTIC BARRIER BETWEEN CONCRETE AND PIPE. OBTAIN INSPECTOR'S APPROVAL PRIOR TO PLACEMENT OF CONCRETE.

NOT TO SCALE DWG. NO. 10 PAGE 24

CONTROL JOINTS AND PIPE JOINTS FOR ENCASEMENTS SHALL COINCIDE FOR SPACING. THE MAXIMUM DISTANCE BETWEEN CONTROL JOINTS SHALL BE 24 FEET.

FOUR #4 STEEL REINFORCING BARS 4' LONG SHALL BE PROVIDED ACROSS CONTROL JOINTS FOR ENCASEMENTS.

DURING INSTALLATION, PROTECT PIPE AGAINST FLOTATION.

AT UTILITY CROSSINGS, THE CONCRETE ENCASEMENT SHALL EXTEND TEN FEET MINIMUM ON EACH SIDE OF THE LINE AT THE POINT OF CROSSING.

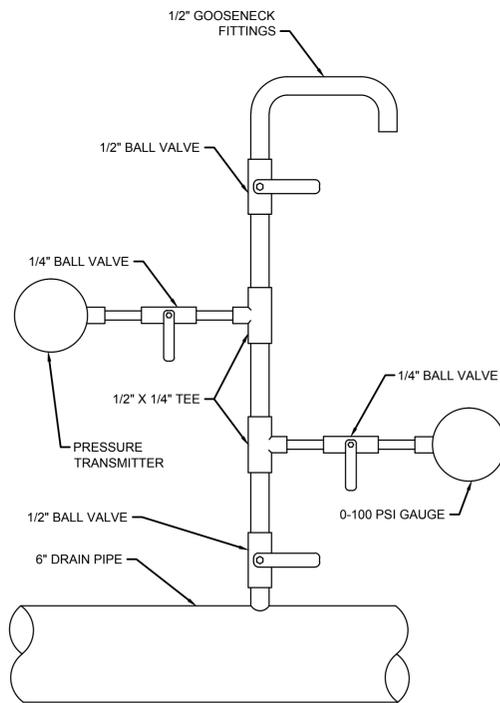
REFER TO PIPE TRENCH DETAIL FOR ADDITIONAL INFORMATION.

ENCASEMENT GENERALLY APPLICABLE WHERE TRENCH BOTTOM IS UNSTABLE, IN DRAINAGE SWALES OR STREAM CROSSINGS.

**REVISIONS**

NO.	DATE	DESCRIPTION	INIT.
1.	7/01/04	2004 D/CSM UPDATE	SDC

NOT TO SCALE DWG. NO. 13 PAGE 27

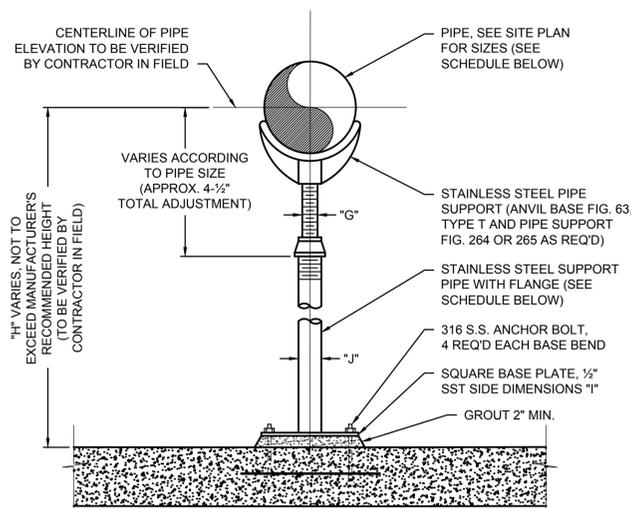


SECTION A-A

NOTE:  
1. ALL FITTINGS AND PIPE NIPPLES SHALL BE BRASS.  
2. MINIMIZE NIPPLE LENGTHS TO COMPACT DESIGN.  
3. LOCATE GAUGES APPROXIMATELY 5' ABOVE FLOOR.

PRESSURE GAUGE CONFIGURATION

NOT TO SCALE



NOMINAL PIPE DIAMETER	STAINLESS STEEL ANCHOR BOLTS		SUPPORT DETAILS			
	SIZE	LENGTH (MIN.)	"G"	"H"	"J"	"K"
12"	5/8"	9"	2-1/2"	VARIES	18"	3"

ADJUSTABLE PIPE SUPPORT

NOT TO SCALE



PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK

MRK	DATE	REV. 1 - NOTES/ERRATA	REVISION DESCRIPTION
	2/4/2016		

COMM NO:	215192
DATE:	1/21/2016
DRAWN:	CTS
DESIGN:	MCP
CHECK:	TLF
SHEET TITLE:	

DETAILS

SHT. NO.	REV. NO.
C-301	0

**GENERAL NOTES**

- COORDINATE MECHANICAL EQUIPMENT AND MATERIAL LOCATIONS WITH ELECTRICAL, STRUCTURAL, AND CIVIL DRAWINGS TO AVOID CONFLICTS.
- INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- REFER TO THE CIVIL PLANS FOR EXACT LOCATION OF ALL LOUVERS THAT PENETRATE EXTERIOR WALLS.
- THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF WORK WITH THE WORK OF OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID CONFLICTS.
- ALL DUCTWORK, ETC., SHALL BE SLEEVED THROUGH WALL PENETRATIONS.
- ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER SO THE EQUIPMENT IS COMPLETELY ACCESSIBLE AND SERVICEABLE, INCLUDING ACCESS DOORS IF REQUIRED.
- COMPLETE AND PROPER INSTALLATION OF THERMOSTATS AND ALL OTHER NECESSARY FIELD MOUNTED CONTROL COMPONENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE MANUFACTURER OF HVAC UNITS, ETC. SHALL FURNISH COMPLETE WIRING CONTROLS. ALL CONTROL WIRING SHALL BE IN CONDUIT AND INSTALLED PER ELECTRICAL REQUIREMENTS.
- ALL MISCELLANEOUS MATERIAL REQUIRED TO ENSURE PROPER INSTALLATION AND IS SHOWN IN DETAILS FOR EQUIPMENT INSTALLATION (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN A MANNER WHICH MINIMIZES NOISE AND VIBRATION.
- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE THE GENERAL AND APPROXIMATE LOCATION OF EQUIPMENT.

**SPECIFICATIONS**

**EQUIPMENT**

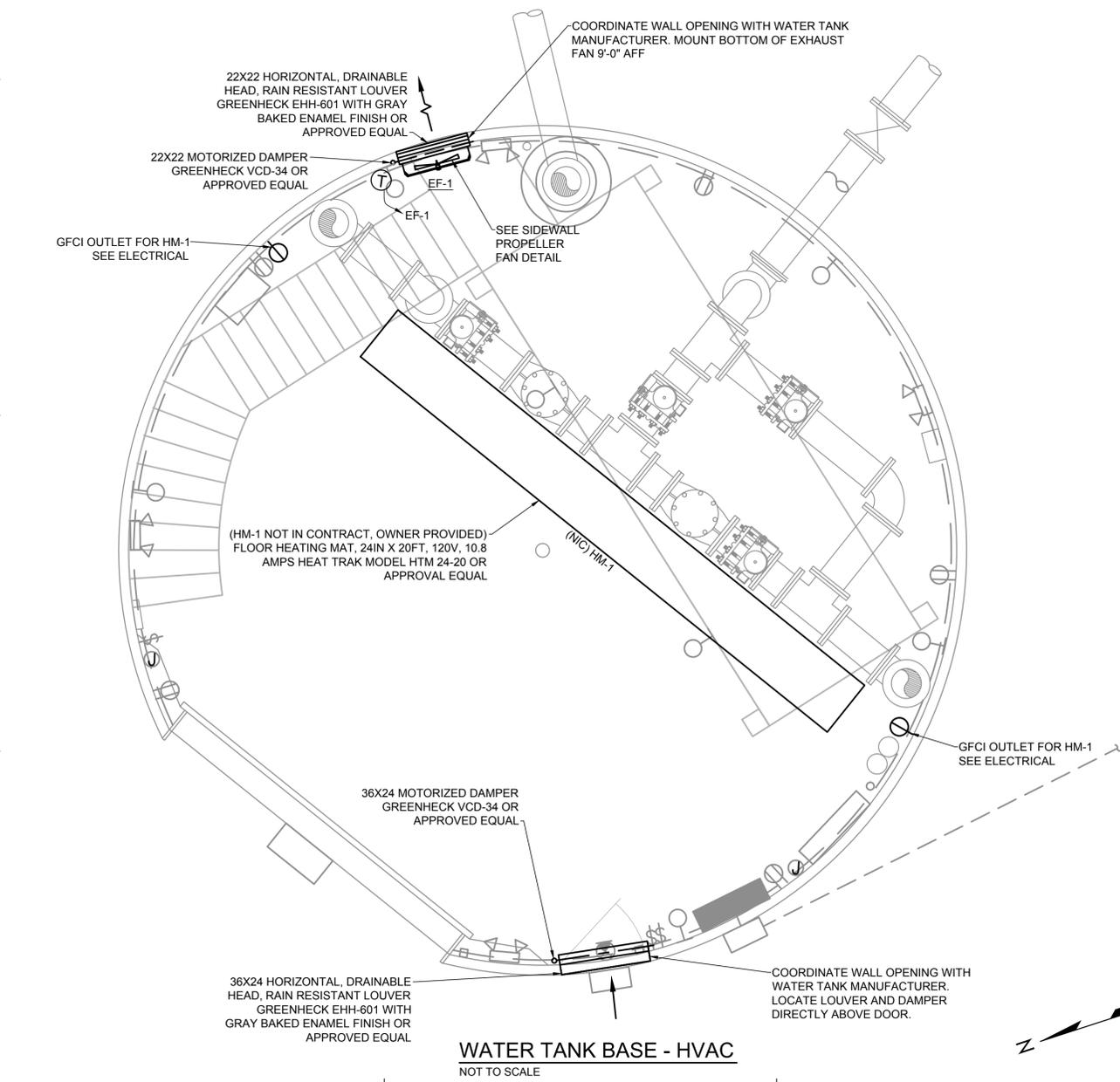
- PROVIDE SCHEDULED/NOTED EQUIPMENT OR APPROVED EQUAL.

**SHEET METAL**

- DUCT SYSTEMS SHALL BE IN ACCORDANCE WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE" LATEST EDITION. COMPLY WITH SMACNA FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESS, DUCT CONSTRUCTION METHODS, SUPPORT AND INSTALLATION UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS AND OTHER IMPERFECTIONS.
- SHEET METAL SHALL BE GALVANIZED SHEET STEEL, LOCK-FORMING QUALITY COMPLYING WITH ASTM A653/A653M, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANEAL) BY THE HOT DIP PROCESS HAVING G90 COATING DESIGNATION.

**PIPE INSULATION**

- DRAIN PIPE SHALL BE INSULATED WITH 1-1/2" THICK MINERAL-FIBER PRE-FORMED PIPE INSULATION. COMPLY WITH ASTM C547, TYPE 1, GRADE A, WITH FACTORY-APPLIED ASJ-SSL. PROVIDE ASTM C552, TYPE II CELLULAR GLASS THERMAL-HANGER SHIELD INSERTS AT ALL HANGERS AND SUPPORTS. PROVIDE A CONTINUOUS VAPOR BARRIER. SEAL JOINTS, SEAMS AND PENETRATIONS IN INSULATION AT HANGERS, SUPPORTS, AND OTHER PROJECTIONS WITH VAPOR-BARRIER MASTIC. PIPING TO ALSO HAVE FIELD APPLIED ALUMINUM SMOOTH JACKET.



**WATER TANK BASE - HVAC**  
NOT TO SCALE

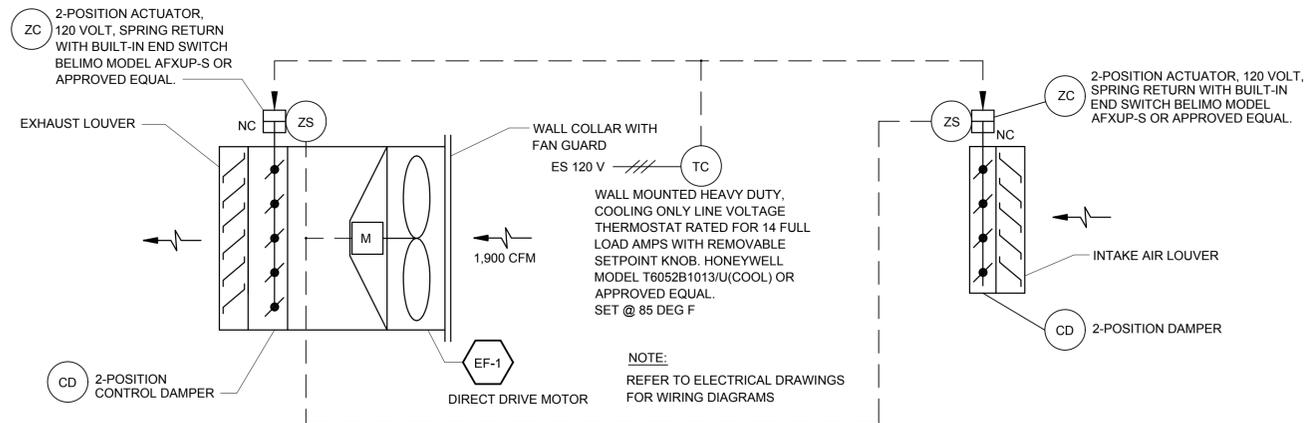
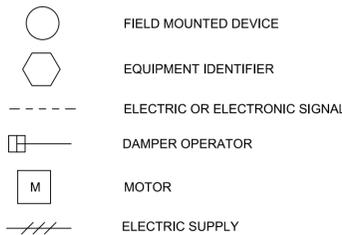
**HVAC AND PIPING ABBREVIATIONS**

AFF	ABOVE FINISHED FLOOR	IN	INCHES
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
DEG	DEGREE	MBH	THOUSAND BRITISH THERMAL UNIT PER HOUR
DIA / Ø	DIAMETER	MIN	MINIMUM
DWG(S)	DRAWING(S)	NO	NUMBER
EA	EACH	RPM	REVOLUTIONS PER MINUTE
EF	EXHAUST FAN	TEMP	TEMPERATURE
F	FAHRENHEIT	T'STAT	THERMOSTAT
FPM	FEET PER MINUTE	TYP	TYPICAL
FT	FEET	UH	UNIT HEATER
HP	HORSEPOWER	W	WITH
H2O	WATER		

**CONTROL ABBREVIATIONS**

ADJ	ADJUSTABLE	MIN	MINIMUM
CD	CONTROL DAMPER	NC	NORMALLY CLOSED
ES	ELECTRICAL SUPPLY	NO	NORMALLY OPEN
F	FAHRENHEIT	TC	TEMPERATURE CONTROLLER
FT	FOOT	ZC	POSITION CONTROLLER (ACTUATOR)
HS	HAND SWITCH	ZS	POSITION SWITCH

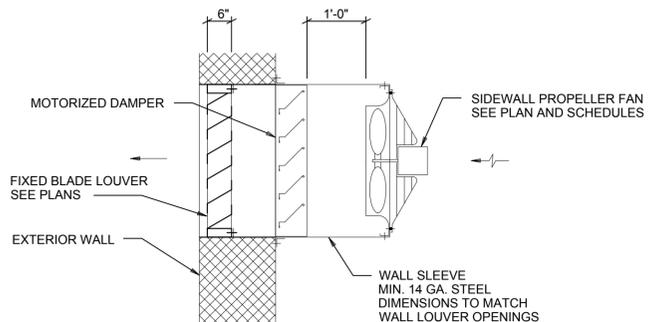
**CONTROL DIAGRAM LEGEND**



**VENTILATION CONTROL DIAGRAM**  
SCALE: NONE

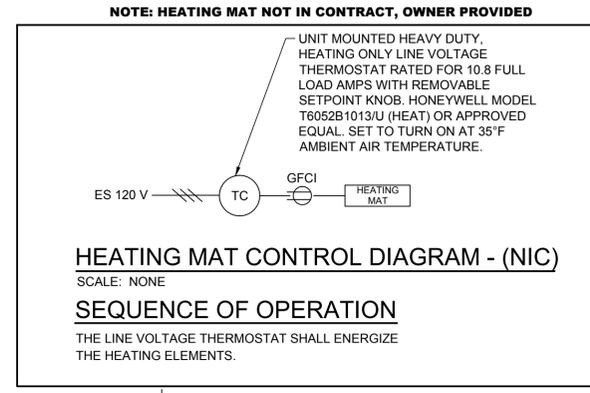
**SEQUENCE OF OPERATION**

**VENTILATION - EXHAUST FAN (EF-1)**  
THE WALL MOUNTED LINE VOLTAGE THERMOSTAT SHALL OPEN THE OUTSIDE AIR INTAKE DAMPER AND EXHAUST DAMPER AND ONCE PROVEN OPEN VIA ASSOCIATED END SWITCHES, THE EXHAUST FAN SHALL BE ENERGIZED TO MAINTAIN SETPOINT.



**SIDEWALL PROPELLER FAN DETAIL**  
NOT TO SCALE

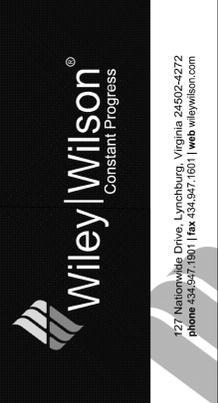
FAN SCHEDULE	
DESIGNATION	EF-1
AREA SERVED	WATER TANK BASE
TYPE OF SERVICE	GENERAL VENTILATION
UNIT LOCATION	WALL MOUNTED
FAN TYPE	SIDEWALL
MANUFACTURER	GREENHECK
MODEL NUMBER	SEI-16-436-3VG
ARRANGEMENT	HORIZONTAL
CONSTRUCTION	GALVANIZED STEEL FRAME AND HOUSING, ALUMINUM PROPELLER
CAPACITY - CFM	1,200
STATIC PRESSURE - INCHES H2O	0.4
MOTOR POWER - HP	3/4
FAN SPEED - RPM	1152
DRIVE	DIRECT
OUTLET VELOCITY - FPM	822
FAN WHEEL DIAMETER - INCHES	20
ELECTRICAL VOLTAGE/PHASE	120/1
REMARKS:	DIRECT DRIVE MOTOR. PROVIDE WALL COLLAR, FAN GUARD, AND MOTORIZED DAMPER. PROVIDE LISTED MANUFACTURER OR APPROVED EQUAL.



**HEATING MAT CONTROL DIAGRAM - (NIC)**  
SCALE: NONE

**SEQUENCE OF OPERATION**

THE LINE VOLTAGE THERMOSTAT SHALL ENERGIZE THE HEATING ELEMENTS.



**PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK**

HARRISONBURG, VIRGINIA

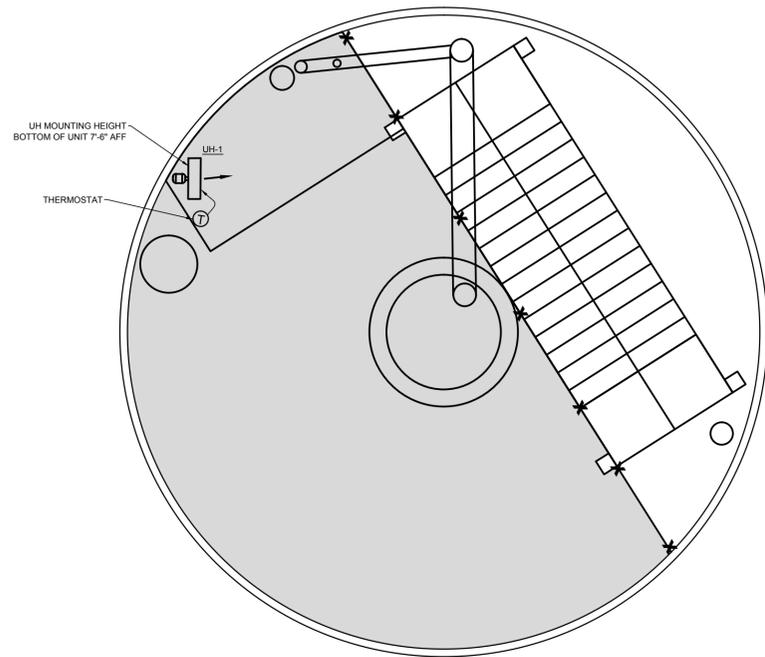
MRK	DATE	REVISION DESCRIPTION
2/4/2016		REV1 - NOTES/ERRATA

COMM NO: 215192  
DATE: 1/21/2016  
DRAWN: CTS DESIGN: KEL  
CHECK: KEL

SHEET TITLE  
**COMPOSITE TANK PLAN,  
HVAC**

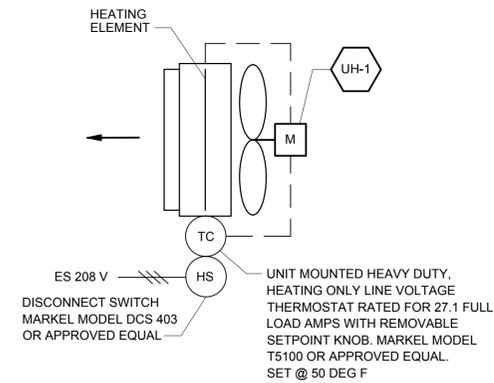
SHT. NO. **M101** REV. NO. **0**

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**UPPER LANDING - HVAC**  
NOT TO SCALE

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
AREA SERVED	WATER TANK BASE
MANUFACTURER	MARKEL
MODEL NUMBER	HF2B5107CA1L
TYPE UNIT	HORIZONTAL FAN FORCED UNIT HEATER
REQUIRED CAPACITY - MBH	25.6
POWER - KW	7.5
ENTERING AIR TEMPERATURE - DEG F	50
FAN CAPACITY - CFM	700
FAN DRIVE	DIRECT
VOLTAGE/PHASE/HERTZ	240/1/60
REMARKS:	PROVIDE ADJUSTABLE WALL MOUNTING BRACKET, UNIT MOUNTED THERMOSTAT, AND UNIT MOUNTED DISCONNECT SWITCH. PROVIDE LISTED MANUFACTURER OR APPROVED EQUAL.



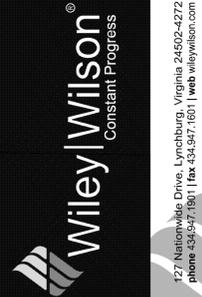
**HEATING CONTROL DIAGRAM**

SCALE: NONE

**SEQUENCE OF OPERATION**

**HEATING - UNIT HEATER (UH-1)**

THE UNIT MOUNTED LINE VOLTAGE THERMOSTAT SHALL ENERGIZE THE UNIT HEATER'S SUPPLY FAN AND HEATING ELEMENTS TO MAINTAIN SETPOINT.



**PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK**

HARRISONBURG, VIRGINIA

MRK	DATE	REV.1 - NOTES/ERRATA	REVISION DESCRIPTION
	2/4/2016		

COMM NO:	215192
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CHECK:	KEL
SHEET TITLE	

COMPOSITE TANK PLAN,  
HVAC

SHT. NO.	REV. NO.
M102	0

ELECTRICAL LEGEND	
	CONCEALED CONDUIT
	CONCEALED CONDUIT IN FLOOR OR UNDERGROUND
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD = 1 CIRCUIT
	NO. OF CONDUCTORS IN CONDUIT (EACH CROSSHATCH = 1 WIRE) (GROUND WIRE IS NOT INDICATED WITHIN CROSSHATCH WIRES)
	240/120V ELECTRICAL PANELBOARD
	EXIT SIGN FIXTURE
	EMERGENCY EGRESS LIGHT
	EXIT SIGN/ EMERGENCY LIGHT COMBO FIXTURE
	TOGGLE LIGHT SWITCH.
WP	WEATHERPROOF
	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION (18" AFF UNLESS OTHERWISE NOTED)
	DUPLEX RECEPTACLE (18" AFF UNLESS OTHERWISE NOTED)
	TELEPHONE/COMMUNICATIONS JACK (CONTRACTOR SHALL PROVIDE AND INSTALL JUNCTION BOX WITH 3/4" EMPTY CONDUIT WITH PULLSTRING TO UP ABOVE ACCESSIBLE CEILING
	TELEPHONE BACKBOARD
	DISCONNECT SWITCH
	MOTOR
	JUNCTION BOX

### ABBREVIATIONS

A	AMP	AMP, AMPERE
AFF	ABOVE FINISH FLOOR	
DEG	DEGREES	
C	CONDUIT	
CONN	CONNECTED	
EF	EXHAUST FAN	
EMERG	EMERGENCY	
GB	GROUND BUS	
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	
GRC	GALVANIZED RIGID CONDUIT	
KAIC	THOUSAND AMPERE INTERRUPTING CURRENT	
KVA	THOUSAND VOLT-AMPERE	
KW	THOUSAND WATTS	
LED	LIGHT EMITTING DIODE	
LTS	LIGHTS	
MCB	MAIN CIRCUIT BREAKER	
MIN	MINIMUM	
NIC	NOT IN CONTRACT	
NO.	NUMBER	
O.C.	ON CENTER	
PH	PHASE	
PVC	POLY VINYL CHLORIDE	
REC	RECEPTACLE	
SHT	SHEET	
SN	SOLID NEUTRAL	
TEMP	TEMPERATURE	
V	VOLTS	
W	WATT	
WP	WEATHER-PROOF	

PANEL A SCHEDULE																			
200A BUS, 200A MCB, 240/120V, 1PH, 3W, SN, GB										MOUNT: SURFACE					22.0 kaic				
										LOCATION: BASE									
LOAD SERVED	LOAD (KVA)		BKR TRIP	WIRE SIZE	NEU SIZE	GND SIZE	COND SIZE	CKT NO	PHASE		CKT NO	COND SIZE	GND SIZE	NEU SIZE	WIRE SIZE	BKR TRIP	LOAD (KVA)		LOAD SERVED
	A	B							A	B							A	B	
LTS EMERG - 1ST FLOOR	0.5	—	20	12	12	12	3/4"	1	A	2	3/4"	10	10	10	20	0.5	—	LTS STAIRS	
LTS PLATFORM / TUBE	—	0.5	20	10	10	10	3/4"	3	B	4	3/4"	12	12	12	20	—	0.5	LTS ELEC ROOM	
LTS 1ST FLOOR	0.5	—	20	12	12	12	3/4"	5	A	6	3/4"	12	12	12	20	0.5	—	LTS 2ND FLOOR	
REC TANK TUBE	—	0.6	20	10	10	10	3/4"	7	B	8	3/4"	12	12	12	20	—	1.2	EF-1 AND DAMPERS	
REC TANK FLOOR	0.6	—	20	12	12	12	3/4"	9	A	10	3/4"	12	12	12	20	0.5	—	LTS EXT BLDG	
SCADA PANEL	—	0.3	20	12	12	12	3/4"	11	B	12	3/4"	12	12	12	20	—	1.0	CATHODIC PROTECTION	
FLOOR HEATER	1.5	—	20	12	12	12	3/4"	13	A	14	3/4"	12	12	12	20	0.1	—	EMERG LTG INVERTER	
FLOOR HEATER	—	1.5	20	12	12	12	3/4"	15	B	16	3/4"	12	12	12	20	—	0.6	REC 2ND FLOOR	
UNIT HEATER	3.8	—	40	8	—	10	.3/4"	17	A	18	—	—	—	—	20	0.1	—	SURGE PROTECTOR	
	—	3.8	8	—	—	—	—	—	B	20	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	22	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	B	24	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	26	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	B	28	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	30	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	B	32	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	34	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	B	36	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	38	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	B	40	—	—	—	—	20	—	—	SPARE	
SPARE	—	—	20	—	—	—	—	—	A	42	—	—	—	—	20	—	—	SPARE	
TOTAL	6.9	6.7														1.7	3.3	TOTAL	
CONN. LOAD:	18.6 KVA						77.7 A				TOTAL PHASE KVA:				A: 8.6		B: 10.0		
DEMAND LOAD:	23.3 KVA						97.1 A				TOTAL PHASE AMPS:				A: 72.0		B: 83.3		

LIGHT FIXTURE SCHEDULE				
TYPE	DESCRIPTION	LAMPS	MANUFACTURER (OR APPROVED EQUAL)	NOTES
A	EXTERIOR LED WALL PACK WITH MOTION SENSOR	72W LED	LITHONIA #THW LED-20C-1000-50K-T3M-PER-SF-ELCW	WALL MOUNTED
B	LED WALL PACK	72W LED	LITHONIA #THW LED-20C-1000-50K-T3M-PER-SF-ELSW	WALL MOUNTED
C	LED FIXTURE WITH GUARD	11W LED	HUBBELL #VWGL-1	WALL MOUNTED
CA	LED FIXTURE WITH GUARD	11W LED	HUBBELL #VBGL-1	CEILING/PENDANT MOUNT
D	EXTERIOR LED WALL PACK WITH MOTION SENSOR	39W LED	LITHONIA #THW LED-10C-1000-50K-T3M-PER-SF-ELCW	WALL MOUNTED
EM	EMERGENCY LIGHT PACK WITH BATTERY	3.8W LED	LITHONIA #WLTU LED	WALL MOUNTED
X	LED EXIT SIGN WITH RED LETTERS AND BATTERY	2.7W LED	LITHONIA #WLTE-W-1-R-EL-SD	SURFACE MOUNTED



PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK

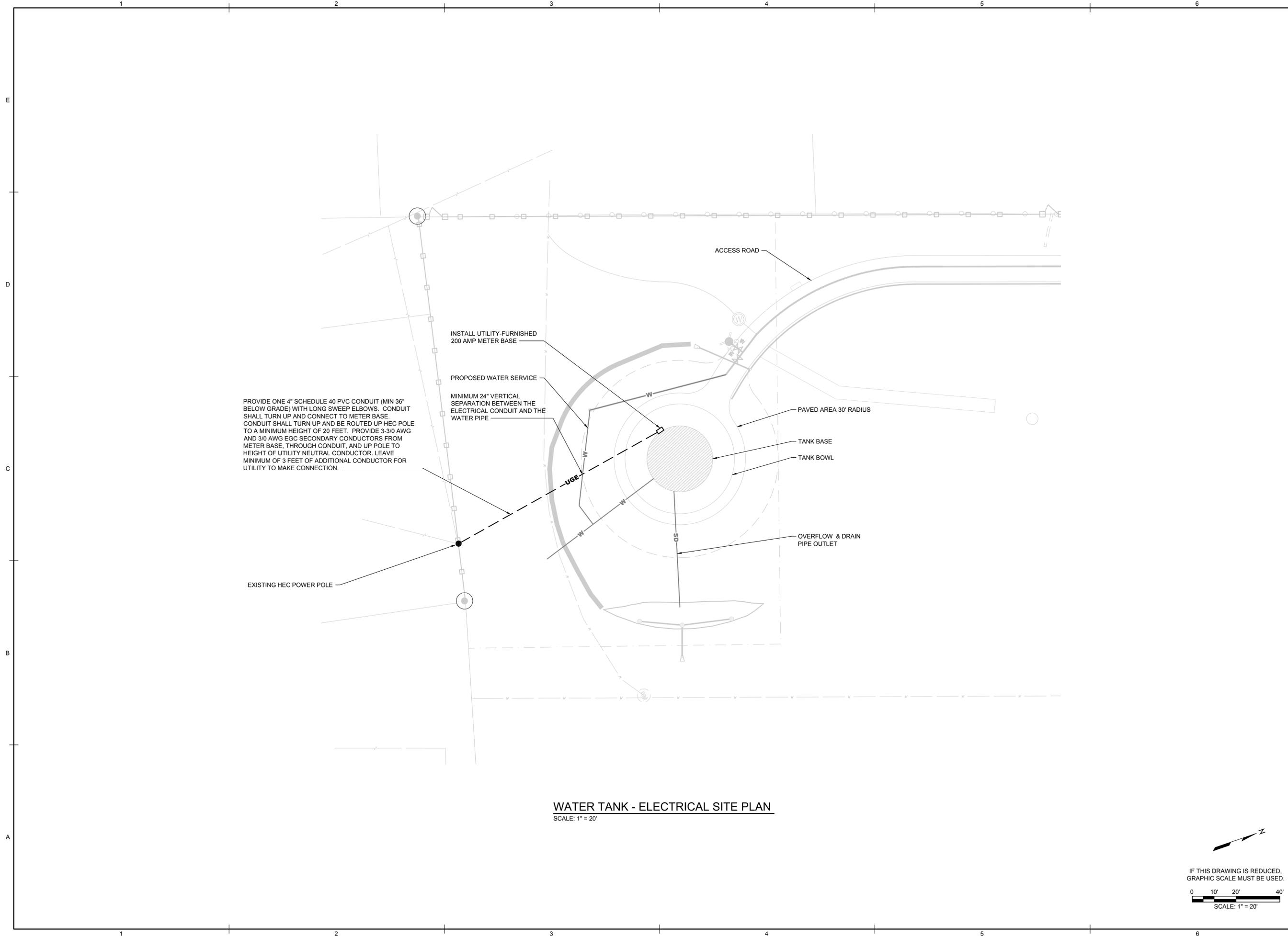
HARRISONBURG, VIRGINIA

MRK	DATE	REVISION DESCRIPTION
	2/4/2016	REV1 - NOTES/ERRATA

COMM NO:	215192
DATE:	1/21/2016
DRAWN:	CTS DESIGN: MJC
CHECK:	SAB
SHEET TITLE	

ELECTRICAL LEGEND,  
ABBREVIATIONS, AND  
SCHEDULES

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PROVIDE ONE 4" SCHEDULE 40 PVC CONDUIT (MIN 36" BELOW GRADE) WITH LONG SWEEP ELBOWS. CONDUIT SHALL TURN UP AND CONNECT TO METER BASE. CONDUIT SHALL TURN UP AND BE ROUTED UP HEC POLE TO A MINIMUM HEIGHT OF 20 FEET. PROVIDE 3-3/0 AWG AND 3/0 AWG EGC SECONDARY CONDUCTORS FROM METER BASE, THROUGH CONDUIT, AND UP POLE TO HEIGHT OF UTILITY NEUTRAL CONDUCTOR. LEAVE MINIMUM OF 3 FEET OF ADDITIONAL CONDUCTOR FOR UTILITY TO MAKE CONNECTION.

INSTALL UTILITY-FURNISHED 200 AMP METER BASE

PROPOSED WATER SERVICE

MINIMUM 24" VERTICAL SEPARATION BETWEEN THE ELECTRICAL CONDUIT AND THE WATER PIPE

ACCESS ROAD

PAVED AREA 30' RADIUS

TANK BASE

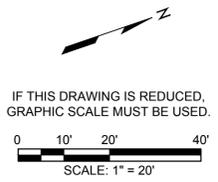
TANK BOWL

OVERFLOW & DRAIN PIPE OUTLET

EXISTING HEC POWER POLE

**WATER TANK - ELECTRICAL SITE PLAN**

SCALE: 1" = 20'



**PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK**

MRK	DATE	REVISION DESCRIPTION
	2/4/2016	REV1 - NOTES/ERRATA

COMM NO: 215192  
DATE: 1/21/2016  
DRAWN: CTS DESIGN: MJC  
CHECK: SAB

**WATER TANK  
ELECTRICAL SITE PLAN**

SHT. NO. **E101** REV. NO. **0**

**Wiley Wilson**  
Constant Progress

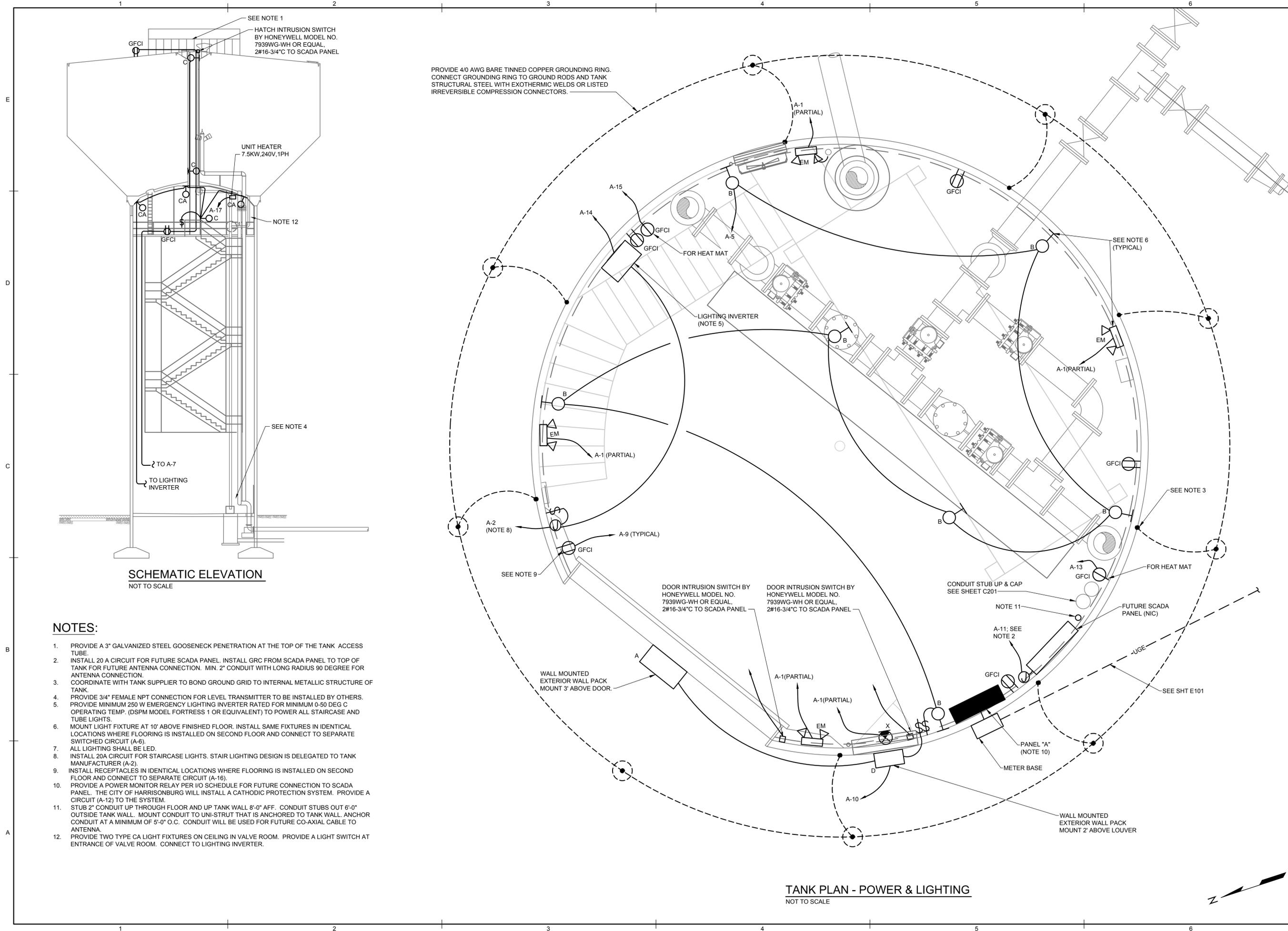
127 Nationwide Drive, Lynchburg, Virginia 24502-4272  
phone 434.947.1901 | fax 434.947.1801 | web wileywilson.com

MRK	DATE	REV. 1 - NOTES/ERRATA	REVISION DESCRIPTION
	2/4/2016		

COMM NO: 215192  
DATE: 1/21/2016  
DRAWN: CTS DESIGN: MJC  
CHECK: SAB

SHEET TITLE  
**TANK PLAN -  
POWER & LIGHTING**

SHT. NO. **E201** REV. NO. **0**



PROVIDE 4/0 AWG BARE TINNED COPPER GROUNDING RING. CONNECT GROUNDING RING TO GROUND RODS AND TANK STRUCTURAL STEEL WITH EXOTHERMIC WELDS OR LISTED IRREVERSIBLE COMPRESSION CONNECTORS.

SEE NOTE 1  
HATCH INTRUSION SWITCH BY HONEYWELL MODEL NO. 7939WG-WH OR EQUAL, 2#16-3/4" C TO SCADA PANEL

UNIT HEATER  
7.5KW, 240V, 1PH

**SCHEMATIC ELEVATION**  
NOT TO SCALE

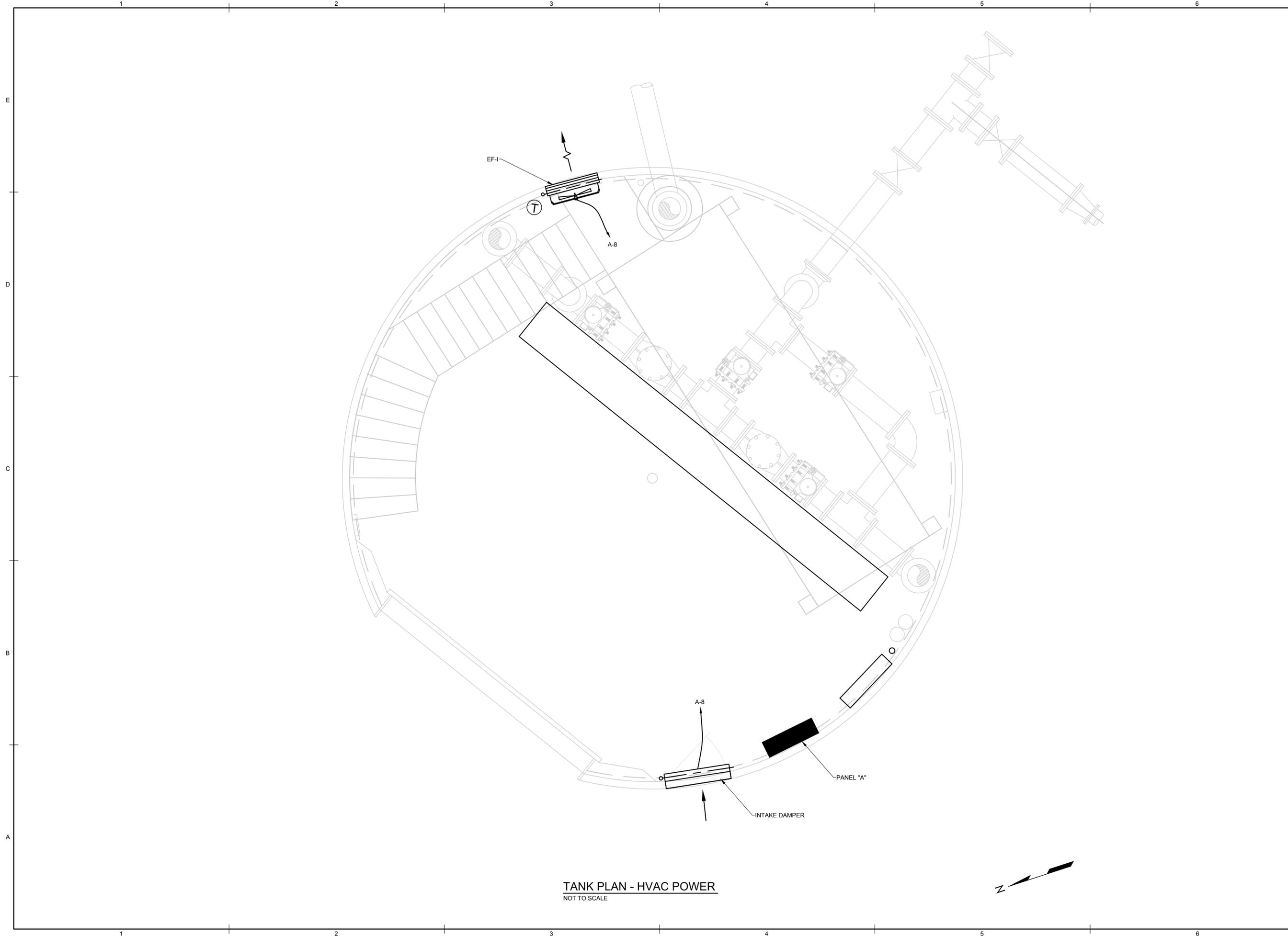
**NOTES:**

1. PROVIDE A 3" GALVANIZED STEEL GOOSENECK PENETRATION AT THE TOP OF THE TANK ACCESS TUBE.
2. INSTALL 20A CIRCUIT FOR FUTURE SCADA PANEL. INSTALL GRC FROM SCADA PANEL TO TOP OF TANK FOR FUTURE ANTENNA CONNECTION. MIN. 2" CONDUIT WITH LONG RADIUS 90 DEGREE FOR ANTENNA CONNECTION.
3. COORDINATE WITH TANK SUPPLIER TO BOND GROUND GRID TO INTERNAL METALLIC STRUCTURE OF TANK.
4. PROVIDE 3/4" FEMALE NPT CONNECTION FOR LEVEL TRANSMITTER TO BE INSTALLED BY OTHERS.
5. PROVIDE MINIMUM 250 W EMERGENCY LIGHTING INVERTER RATED FOR MINIMUM 0-50 DEG C OPERATING TEMP. (DSPM MODEL FORTRESS 1 OR EQUIVALENT) TO POWER ALL STAIRCASE AND TUBE LIGHTS.
6. MOUNT LIGHT FIXTURE AT 10' ABOVE FINISHED FLOOR. INSTALL SAME FIXTURES IN IDENTICAL LOCATIONS WHERE FLOORING IS INSTALLED ON SECOND FLOOR AND CONNECT TO SEPARATE SWITCHED CIRCUIT (A-6).
7. ALL LIGHTING SHALL BE LED.
8. INSTALL 20A CIRCUIT FOR STAIRCASE LIGHTS. STAIR LIGHTING DESIGN IS DELEGATED TO TANK MANUFACTURER (A-2).
9. INSTALL RECEPTACLES IN IDENTICAL LOCATIONS WHERE FLOORING IS INSTALLED ON SECOND FLOOR AND CONNECT TO SEPARATE CIRCUIT (A-16).
10. PROVIDE A POWER MONITOR RELAY PER I/O SCHEDULE FOR FUTURE CONNECTION TO SCADA PANEL. THE CITY OF HARRISONBURG WILL INSTALL A CATHODIC PROTECTION SYSTEM. PROVIDE A CIRCUIT (A-12) TO THE SYSTEM.
11. STUB 2" CONDUIT UP THROUGH FLOOR AND UP TANK WALL 8'-0" AFF. CONDUIT STUBS OUT 6'-0" OUTSIDE TANK WALL. MOUNT CONDUIT TO UNI-STRUT THAT IS ANCHORED TO TANK WALL. ANCHOR CONDUIT AT A MINIMUM OF 5'-0" O.C. CONDUIT WILL BE USED FOR FUTURE CO-AXIAL CABLE TO ANTENNA.
12. PROVIDE TWO TYPE CA LIGHT FIXTURES ON CEILING IN VALVE ROOM. PROVIDE A LIGHT SWITCH AT ENTRANCE OF VALVE ROOM. CONNECT TO LIGHTING INVERTER.

**TANK PLAN - POWER & LIGHTING**  
NOT TO SCALE

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**TANK PLAN - HVAC POWER**  
NOT TO SCALE

**Wiley Wilson**  
Constant Progress

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**PARKVIEW TANK  
0.5 MILLION GALLON ELEVATED  
WATER TANK**

HARRISONBURG, VIRGINIA

MRK	DATE	REVISION DESCRIPTION
	2/4/2016	REV1 - NOTES/ERRATA

COMM NO: 215192  
DATE: 1/21/2016  
DRAWN: CTS DESIGN: MJC  
CHECK: SAB

SHEET TITLE  
**TANK PLAN -  
HVAC POWER**

SHT. NO. **E202** REV. NO. **0**