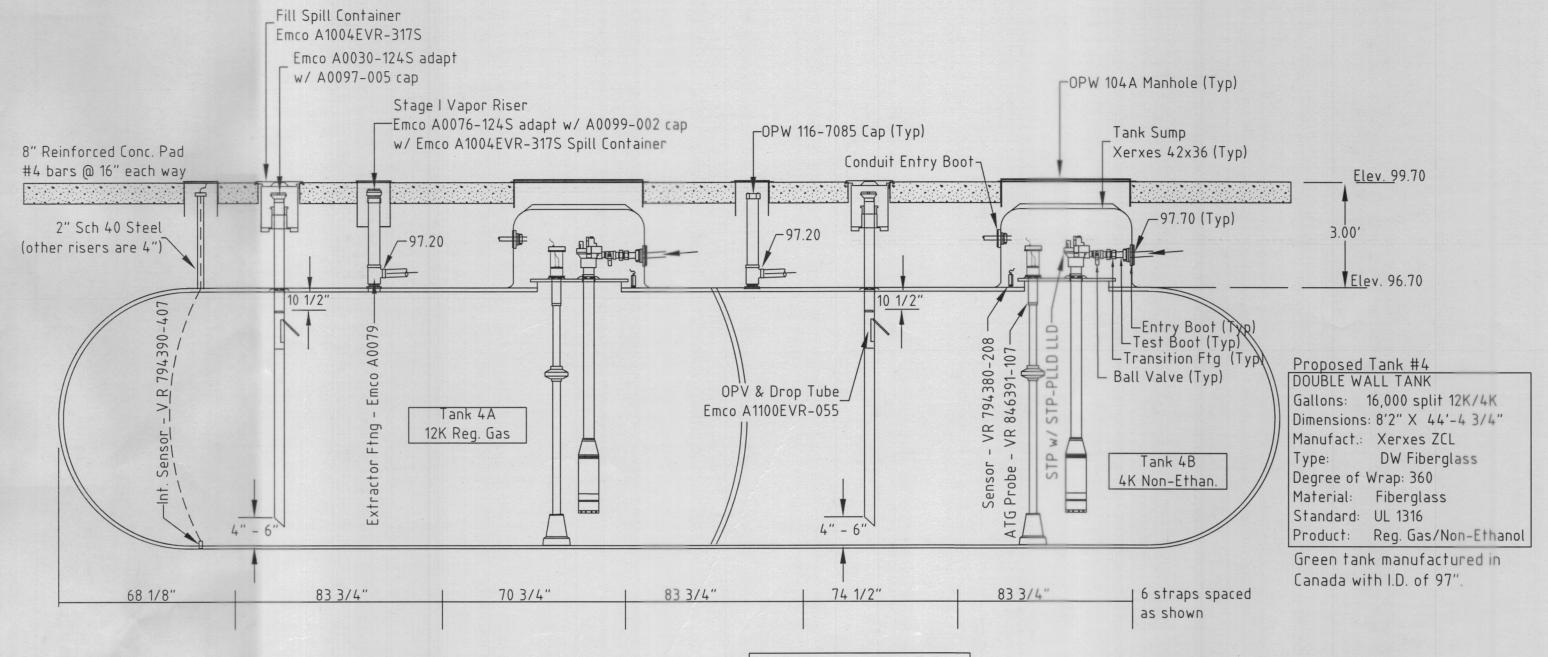
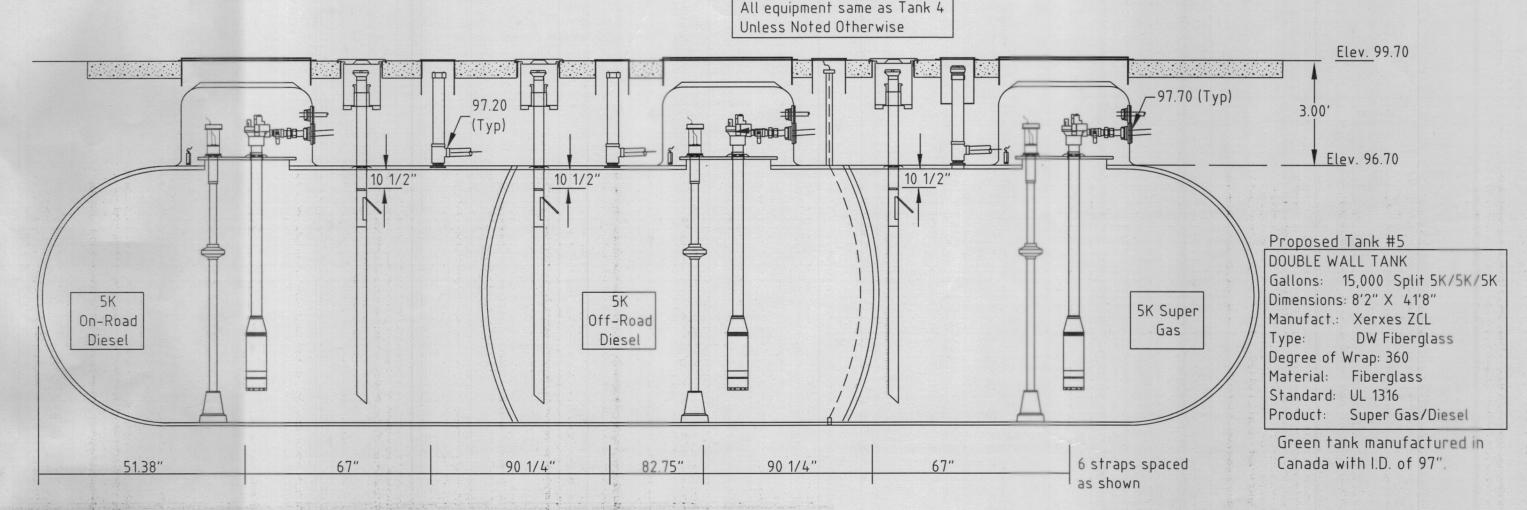




- 1. The sump sensors and interstitial sensors will be monitored by the proposed Veeder Root TLS-350 Tank monitor.
- 2. Overfill protection will be provided by an Overfill Prevention Valve (OPV) on the fill pipe.
- 3. The overfill dimension shown is to the 95% mark on the valve, where flow into the tank will be restricted.

- 1. All product and vent piping shall slope at a minimum of 1/8" per foot towards the tank or a sump with a sump
- 2. These systems are designed for gravity delivery of product into tank.
- 3. Overfill protection setting is measured from the inside of the top tank wall. 4. Sealant used on sump entry boots shall be applied on the exterior of the sump enclosures <u>only</u> as directed by
- 5. The sump sensor must be secured within the sump so it remains in the vertical position as well as positioned at the lowest portion of the sump.
- 6. For APT piping, the scuff guard must be removed outside or even with the sump wall.





Proposed Equipment Chart

	Size	Manufacturer	Model	Duct	Entry Boot	Transition Ftg.	Test Boot
Product	1 1/2"	APT	XP-150-SC		FBB-150-SC	MS-XP-150-150	STB-150
Vent Pipe	2" & 3"	Ameron	Dualoy 3000/L				
Conduit	1"				FEB-075-D		

HYDROSTATIC SUMP TESTING (per Env-Or 406.15)

- A hydrostatic tightness test shall be conducted: 1. After all seams and fittings have been completed and all piping
- and conduits have been installed; 2. At a level that is within one inch of the top of the containment
- sump, or 10 inches above the top of the highest containment sump penetration fitting, whichever is lower;
- 3. By recording the liquid level measurements at the beginning and end of the test;
- 4. For a minimum of 3 hours for containment sumps; and
- 5. With no addition of liquid to the containment sump after the start of the test.

SPILL CONTAINER DW VACUUM TESTING-EMCO WHEATON 1. Replace the gauge in the primary manhole with a 494343 test

- 2. Attach vacuum source and apply vacuum to 30" wc.
- 3. Let stabilize for 30 seconds. If vacuum reading decreases
- initially, reapply to restore back to 30" wc. 4. Let stand undisturbed for 1 minute and take reading. To pass the test, the gauge must read at least 26" wc.

UNDERGROUND STEEL COATING REQUIREMENTS:

- . All underground steel risers, fittings and pipes, to include the underground portion of the vent stack, shall be coated to prevent corrosion.
- ?. The coating shall be either fiberglass or a two-part epoxy paint and shall be applied according to the manufacturer's instructions.
- Acceptable epoxy paints currently approved for use are the Royston A51/TC Mastic and Sikagard 62. Other epoxy paints will not be allowed without written approval from the Engineer prior to the application of paint.

Xerxes FRP Straps TANK CROSS SECTION (Install straps at SEE TANK ELEVATION FOR ADDITIONAL DETAILS locations designated by arrows stenciled Backfillon tank) <u>Deadman Notes</u> Concrete to be 4000 psi at 28 days. 2.Reinforcement bars to be deformed bars All exposed metal surfaces (ASTM A615, grade 60) of the anchoring hardware to be coated. See Steel dry for 7 days. Coating Requirements 4. Reinforcing bars to be lapped at splices 36 bar diameters. 5. Deadmen to rest on undisturbed or compacted soil. Galv. Turnbuckle (supplied_ 6.Top of deadmen at bottom tank elevation/ by Manufacturer) 12" (min) approved Bedding Material 1" Concrete Anchor (typ) 2 - #7 longitudinal bars, UNDISTURBED SOIL one on each side of -Concrete Deadmen anchor (typ.) 18"W x 12"H x 44' L each side - Tank 4 18"W x 12"H x 40' L each side - Tank 5

BUOYANCY CALCULATIONS - TANK 4 1. Seasonal High Water Table is assumed

- at grade for buoyancy calculations.
- 2. This site in NOT in the 100 year flood
- 3. 3' cover used in calculations.
- BUOYANT FORCE SMPS: 2X282 galX8.33 lb/gal = 4,698 lb
- TOTAL UPLIFT = 137,978 lb HOLD-DOWN FORCE TANKS (weight) = 8,100 lb Conc. Deadmen (@87 lb/cu.ft.) (12" x 18" x 44' x 2)=132.0 CF =11,484 lb
- (0.67'X10.17'x46.40')=316.2 CF = 27,509 lbSOIL (@ 60 lb/cu.ft.) 2473.8 cu.ft. = 148,428 lb TOTAL HOLD-DOWN = 195,521 lb
- FACTOR OF SAFETY= 195,521/137,978 FACTOR OF SAFETY = 1.42

R.C. Traffic Pad (@87 lb/cu.ft.)

- BUOYANCY CALCULATIONS TANK 5 1. Seasonal High Water Table is assumed at grade for buoyancy calculations.
- 2. This site in NOT in the 100 year flood
- 3. 3' cover used in calculations

BUOYANT FORCE TNKS: $12,000 \text{ gal} \times 8.33 \text{ lb/gal} = 133,280 \text{ lb} \mid \text{TNKS}: 15,000 \text{ gal} \times 8.33 \text{ lb/gal} = 124,950 \text{ lb}$ SMPS: 3X282 gal X 8.33 lb/gal = 7,047 lb

TOTAL UPLIFT = 131,997 lb

- HOLD-DOWN FORCE TANKS (weight) = 8,200 lb Conc. Deadmen (@87 lb/cu.ft.) $(12" \times 18" \times 40' \times 2) = 120.0 = 10,440 \text{ lb}$ R.C. Traffic Pad (@87 lb/cu.ft.) (0.67'X10.17'x43.67')=297.6 CF = 25,891 lb
- SOIL (@ 60 lb/cu.ft.) 2238.5 cu.ft. = 134,310 lb TOTAL HOLD-DOWN = 178,841 lb
- FACTOR OF SAFETY = 178,841/131,997 FACTOR OF SAFETY = 1.35

GENERAL TANK INSTALLATION NOTES

- 1. All tanks shall be provided with secondary containment which shall enclose 360 degrees of
- 2. No alteration of any kind shall be made to the tank without written approval of the
- 3. New underground storage tanks shall bear a stencil, label or plate with the following
- 3.1. The standard of design by which the tank was manufactured.
- 3.2. The year of manufacture,
- 3.3. The dimensions and capacity of the tank.
- 3.4. The name of the manufacturer.
- 4. A certificate which shows all of the information required above and also shows the date of installation and the regulated substances and percentages by volume of any additives which may be stored permanently and compatibly within, shall be displayed in such a way as to be visible to a division inspector and permanently affixed on the facility premises.
- 5. Documents describing the manufacturer's warranties, equipment items, contractors, equipment maintenance, repairs or testing, and all other information pertinent to the tank installation and system components shall be kept at the facility for the life of the system(s). These records shall be transferred to the new owner at the time of transfer of facility ownership.
- 6. If dewatering is required, contractor must obtain a Temporary Groundwater Discharge Permit from: Mitchell D. Locker, Groundwater Permits Coordinator, NHDES Water Division, 29 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095, (603) 271-2858
- 7. If wet or unstable soil is encountered, filter fabric must be installed to prevent backfill
- 8. In the absence of local building codes, a minimum of 5 feet from the tank to buildings or property lines is recommended.

XERXES FIBERGLASS TANK INSTALLATION NOTES:

The following notes provide a summary of the installation instructions that are provided with the tank, and laminated to the tank shell. For a dry interstitial tank shipped with a factory vacuum, the tank may be installed and backfilled provided that the vacuum was applied at least 7 days prior and the the vacuum gauge reads 12 inches of mercury or more. If these requirements are not met, the testing shown below is

- 1. It is REQUIRED that the tank be tested by the installer prior to installation. Plug and tighten all fittings, close the valve on the Xerxes Hose/Valve Assembly
- (shipped with tank) and pressurize the inner tank to 5 P.S.I. for a minimum of 1 hour. 2. NEVER PRESSURIZE THE SECONDARY TANK WITHOUT CONNECTING IT TO THE PRIMARY TANK. Open the valve on the Xerxes Hose/Valve Assembly and pressurize to 5 P.S.I. (for at least 1 hour). Soap the entire tank and check for evidence of
- 3. Bedding and Backfill material must be clean, Pea-Gravel with a 1/8" 3/4" particle size OR washed and free-flowing Crushed Stone with an 1/8" - 1/2" angular particle
- 4. A minimum of 12" of Bedding Material to be placed under the tank.
- 5. A minimum of 18" of Backfill Material to be placed along the sides of the tanks and
- 6. Backfill uniformly with the same material used for bedding. First, backfill a 12" lift of material evenly around the tank. Work material completely beneath the tank body by hand in order to provide full support. After the first 18-24 inches of material is in place, work the backfill into the voids under the bottom quadrants of the tank. Remaining backfill can now be done without further handwork.

UNDERGROUND TANK SYSTEM DIAGRAM

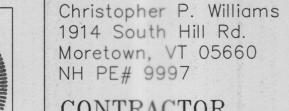
FACILITY

Aloha Effington 41 Route 25 Effingham NH 03882 Facility ID#0113566

OWNER Ramco LLC

PO Box 2262 N Conway, NH 03860-2262

ENGINEER



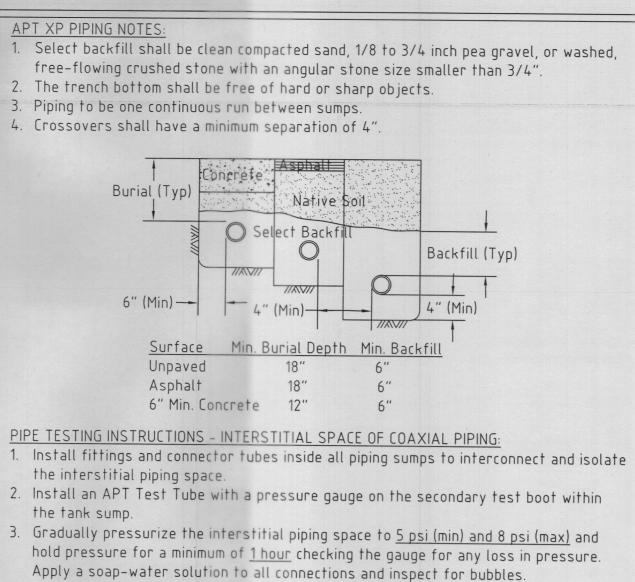
CONTRACTOR Marwin Construction 227 Gray Road Falmouth, ME 04105

DATE

11/5/20; Resub 12/13/20

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12/13/2020



2. Install an APT Test Tube with a pressure gauge on the secondary test boot within

3. Gradually pressurize the interstitial piping space to 5 psi (min) and 8 psi (max) and

4. Maintain the required pressure for a minimum period of <u>2 hours after the backfill</u>

5. After testing, the test boot shall be pulled back to open the piping secondary to the sump to allow leak monitoring of piping.

PIPE TESTING INSTRUCTIONS - PRIMARY PIPING:

Slowly release pressure from interstitial piping space, then reseal the interstitial space with the test gauge still attached.

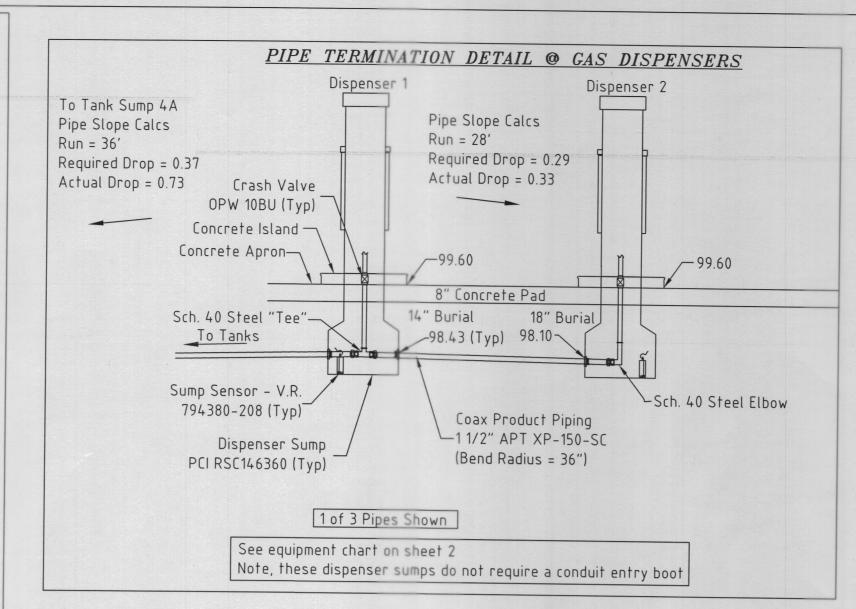
2. Seal all shear valves and riser pipes with pressure rated plugs or caps. 3. Make sure that the tank is isolated from the primary piping by a valve or plug.

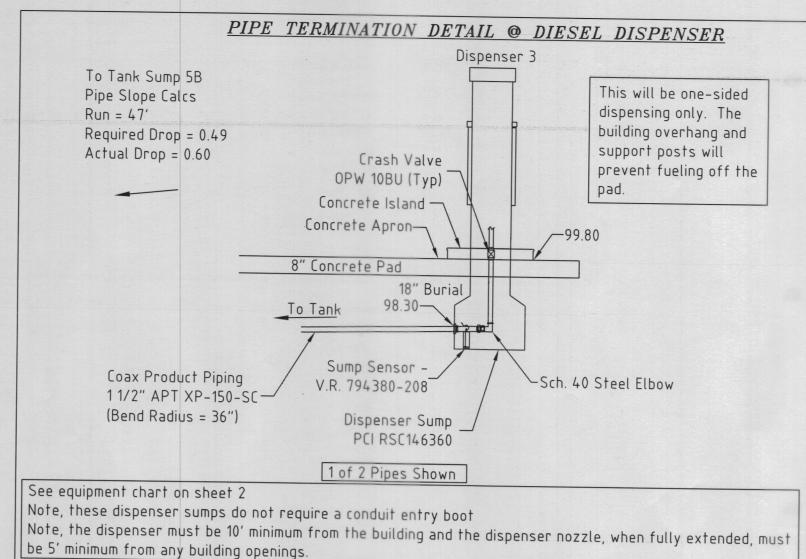
4. Gradually pressurize the primary piping to 50 psi (min) and 60 psi (max). Allow the pipe to stabilize under pressure approximately 15 minutes. During pressurization, check the reading of the test gauge connected to the interconnected interstitial lines. Any increase in the interstitial pressure or decrease in the primary pressure indicates a leak in the primary piping. Apply a soap-water solution to all piping connections and inspect for bubbles. Maintain this pressure for a minimum of 1 hour.

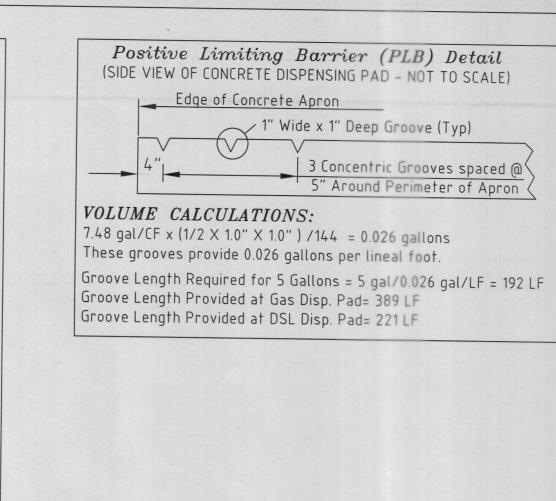
. If a leak is detected in any couplers, tees or elbows, they must be cut off and replaced. If a leak is detected in the piping, it cannot be repaired. It must be replaced by a new length of piping.

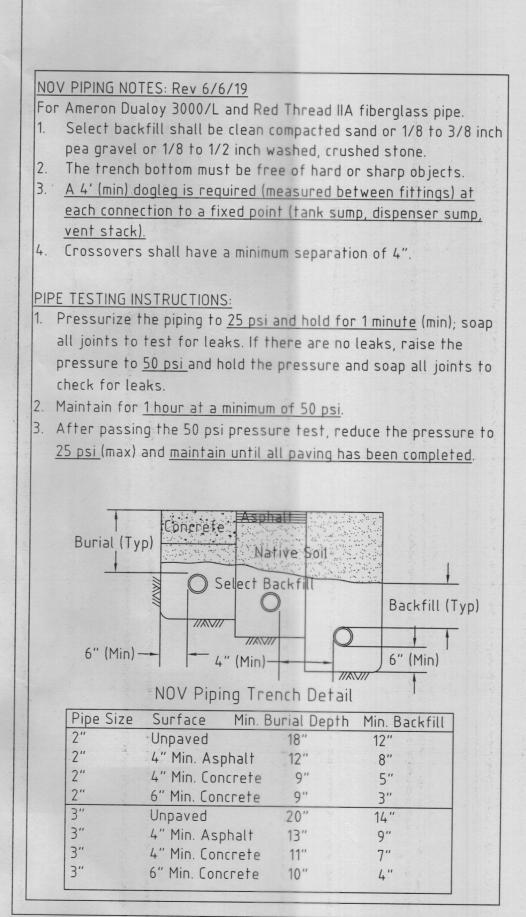
MINIMUM BEND RADIUS:

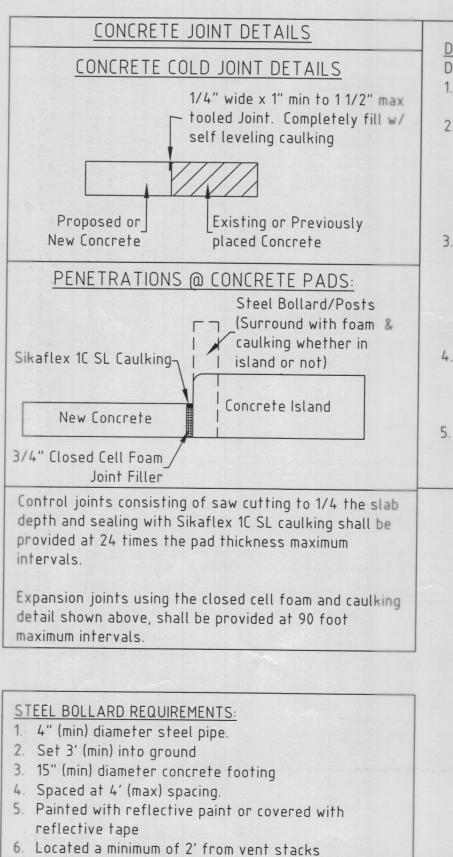
1. The minimum bend radius for all APT piping and Duct (regardless of size) is 36".



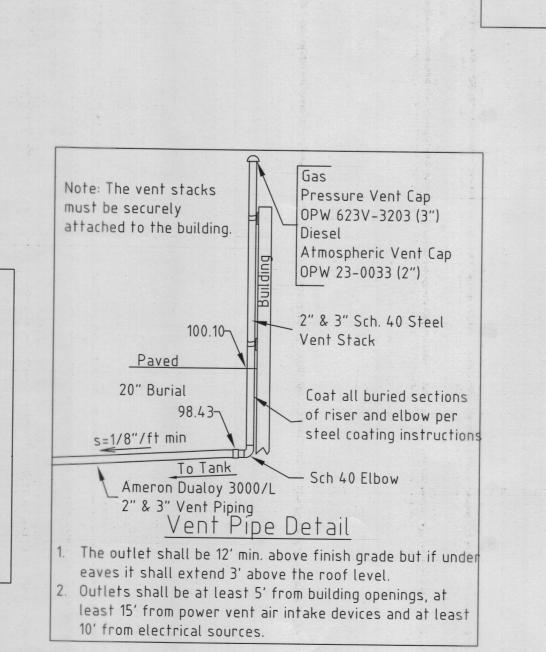








DISPENSING PAD REQUIREMENTS: Dispensing pads shall be constructed: 1. Of reinforced Portland cement concrete that meets the requirements of NHDOT Standard Specifications for Road and Bridge Construction dated 2016; 2. With liquid tight joints at all expansion, contraction, crack control, and cold joints in all components of the dispensing area, including but not limited to dispensing islands, bollards, canopy supports, canopy drainage pipes, and utility sleeves, that have been sealed and maintained with a sealant that is compatible with the regulated substance and has been installed as provided in its manufacturer's instructions; 3. With control joints that are: 3.1. Spaced at a maximum of 24 times the pad thickness, but not located directly in front of a dispenser: 3.2. Cut or formed into the pad surface to a depth of 25% of the pad thickness; and 3.3. Sealed per note 2 above 4. Without any manways, spill containment, other such tank pad appurtenances, drains, or other avenues that could allow spills to seep into the ground, unless these plans show these appurtenances as part of an island that is raised above the tank pad: Such that all nozzles, held 3' above the pad, do not extend beyond ANY PLB GROOVE, INCLUDING THE MOST INNER GROOVE. VENT PIPE SLOPE CALCS ELEVATION @ TOP OF TANK ELEV @ TOP OF VENT PIPE @ TANK ELEVATION @ Vent Stack BURIAL DEPTH OF PIPE ELEV @ Top of Vent @ Stack PIPE SLOPE DIFFERENTIAL



Sump 4B

96.70

-97.20

100.10

98.43

1.23

0.77

LENGTH OF PIPING RUN

REQUIRED PIPE SLOPE DIFF (1/8"/FT)

THE VENT PIPING SLOPE EXCEEDS 1/8"/FT. TOWARD THE

1.67

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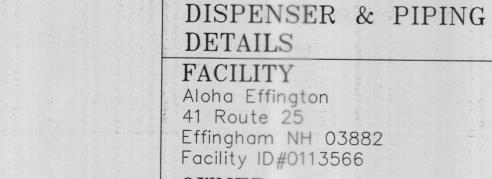
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ENGINEER

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SHEET 3 OF 3

