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SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN 41 NH Route 25 Effingham, New Hampshire

Meena, LLC
June 2022



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**SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN
FOR
MEENA LLC
41 NH ROUTE 25
EFFINGHAM, NEW HAMPSHIRE**

JUNE 28, 2022

**Prepared For:
Meena, LLC
PO Box 2262
North Conway, NH 03860
603-662-7805**

Pankaj Garg
Facility Manager

**Prepared By:
Horizons Engineering, Inc.
34 School Street
Littleton, New Hampshire 03561
(603) 444-4111**

Certification Requirement (112.3(d))

The undersigned Licensed Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the Code of Federal Regulations (40 CFR part 112) and has visited and examined the facility or has supervised examination of the facility by appropriately qualified personnel. The undersigned Licensed Professional Engineer attests that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR part 112; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility. [112.3(d)]

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR part 112.

Mark Lucy, P.E.



**Project No. 220473
Horizons Engineering, Inc.**

Horizons Engineering, Inc.

MAINE • NEW HAMPSHIRE • VERMONT

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FIGURES

<u>Figure</u>	<u>Title</u>
1	USGS Locus Map
2	Site Plan – Overall Facility Plan
3	UST Design Plan Prepared by Christopher Williams, P.E.

ATTACHMENTS

<u>Attachment</u>	<u>Title</u>
1	Site Inspection Form
2	Personnel Training Log
3	SPCC Plan Location Log

1.0 OBJECTIVE

The objective of Spill Prevention, Control, and Countermeasure (SPCC) plans is to establish procedures, methods, equipment or other requirements to help prevent the discharge of oil into or upon the navigable waters of the U.S. or adjoining shorelines. The SPCC Plan, developed for Meena LLC. located at 41 NH Route 25 Effingham, NH, has been prepared to comply with Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112), New Hampshire Department of Environmental Services (NHDES) guidelines, and in accordance with current accepted engineering practices. This plan has been prepared to complement other existing laws, regulations, rules, standards, policies, and procedures related to safety standards and fire and spill prevention rules.

This SPCC Plan has been prepared as a requirement of Article 22 Groundwater Protection, Section 2211 of the Town of Effingham Zoning Ordinance that includes the specific requirements for the preparation of a Spill Prevention, Control and Countermeasure (SPCC) Plan.

In accordance with the Environmental Protection Agency (EPA) Oil Pollution Prevention regulations promulgated under the federal Clean Water Act, SPCC plans shall address the following three areas:

- Operating procedures that prevent oil spills;
- Control measures installed to prevent a spill from reaching navigable waters; and
- Countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches navigable waters.

A copy of this plan shall be maintained at the Facility and will be available to the EPA for on-site review and inspection during normal business hours (**Attachment 3**). This SPCC Plan has the full approval of management at a level with authority to commit any necessary resources required to implement and maintain the plan.

2.0 SITE INFORMATION

2.1 INTRODUCTION

Per the requirements 40 CFR 112, SPCC plans must be prepared for facilities meeting any of the following requirements.

- Any Facility with a total aboveground storage of oil greater than 1,320 gallons;
- Any Facility with an underground oil storage capacity of greater than 42,000 gallons.

Although the facility may not be subject to the US EPA's SPCC Rule, it is required to implement an SPCC Plan per Section 2211 of the Town of Effingham Zoning Ordinance.

Oil is defined by 40 CFR 112 to include petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredge spoil. Total oil storage at the Facility was estimated by Horizons Engineering, Inc. to be approximately 31,000 gallons based on the design plans prepared by Christopher Williams, P.E (**Figure 3**) at the time of preparation of this SPCC Plan. All 31,000 gallons are from the proposed USTs (16,000 gallon from UST 4 and 15,000 gallons from UST 5, which are subject to the SPCC Plan).

2.2 PROPERTY AND FACILITY DESCRIPTION

Horizons Engineering, Inc. of 34 School Street, Littleton NH 03561 (HEI) has prepared this SPCC Plan for Meena, LLC for the convenience store and gas station known as Aloha Effingham located on 41 NH Route 25 Effingham, NH. The overall site layout of the Facility is shown on **Figure 2**.

The Facility is developed as a convenience store and gas station located at 41 NH Route 25 in Effingham, New Hampshire. The lot's ground cover is a mix of pavement and landscaped areas. The local topography gradually slopes to the southeast towards low-lying wetlands located across NH Route 25, and the property abuts residential properties to the west and north, undeveloped land to the east, and NH Route 25 to the south.

3.0 OIL STORAGE

The Facility has been approved for the installation of two new underground storage tanks (USTs) which will be located off the southwestern side of the existing Site building (See **Figure 2**). The identified oil storage containers and are discussed below.

3.1 UNDERGROUND STORAGE TANKS

Oil is stored on site in two split-compartment, double walled fiberglass tanks.

TANK 4A - 12,000-gallon Regular gasoline
TANK 4B - 4,000-gallon Non-Ethanol gasoline
TANK 5A - 5,000-gallon On-Road Diesel
TANK 5B - 5,000-gallon Off-Road Diesel
TANK 5C - 5,000-gallon Super Gasoline

4.0 PREVIOUS SPILL EVENTS (112.7(a))

The SPCC Plan must include a description of any spill events that occurred within the past twelve months, including any corrective actions taken and any plans for preventing recurrence.

This facility has not had USTs present since 2015. No spill events occurred at the Facility in the past twelve months according to site management.

5.0 SPILL POTENTIAL/FACILITY DRAINAGE (112.7(b))

The Facility was assessed to determine where there is reasonable potential for equipment failure, which could result in a potential release of oil. In this case the tanks are all underground, were designed by an engineer, and approved by the NHDES. The discussion will include those safety measures incorporated in the trucking, delivery, storage and dispensing of petroleum/diesel products at the Facility.

Appropriate secondary containment and/or diversionary structures or equipment is provided for all oil handling containers, equipment, and transfer areas to prevent a discharge to navigable waters or adjoining shorelines.

5.1 UNDERGROUND STORAGE TANKS (USTs) / UST PAD / TANKER DELIVERY LOCATION

The concrete pad located over the double walled fiberglass USTs will be constructed with a concrete apron that has a Positive Limiting Barrier (PLB) consisting of 3 grooves at its perimeter which can contain a minimum of 5 gallons of product at the fuel delivery location.

The concrete pad/apron will be sloped towards the south/southeast. Three deep sump catch basins will be installed off the south and southeastern sides of the gasoline dispenser island as shown in **Figure 2 – Overall Facility Plan** to capture any petroleum products that are spilled during fueling which may escape the PLB. Any spills that are not contained by the PLB or as a result of mishandling during fuel truck delivery will be diverted to the deep sump catch basins which will separate any solids from the gray water. The gray water will be diverted to a 3,000-gallon oil water separator, where the oil will be separated from the water. The outlet pipe will divert the outflow of the oil water separator to a treatment swale, where the runoff will be infiltrated.

5.2 DISPENSERS / DISPENSER ISLANDS

Three dispenser islands with dispensers will be located directly northeast (gasoline) and west (diesel) of the UST location underneath canopies and on concrete pads. The concrete dispenser island pads will be constructed with concrete aprons that have a Positive Limiting Barrier (PLB) consisting of 3 grooves at its perimeter. The apron for the westerly diesel dispensing island will provide containment of 5.75 gallons. The apron for the northeasterly dispensing island (gasoline) will provide containment for 9.87 gallons. The design is such that no nozzle can extend beyond the innermost PLB groove when held 3' above the pad.

The concrete pad/apron will be sloped towards the south/southeast. Three deep sump catch basins will be installed off the south and southeastern sides of the gasoline dispenser island as shown in **Figure 2 – Overall Facility Plan** to capture any petroleum products that are spilled during consumer fueling which may escape the PLB.

Any spills that are not contained by the PLB will be diverted to the deep sump catch basins which will separate any solids from the gray water. The gray water will be diverted to a 3,000-gallon oil water separator, where the oil will be separated from the water. The outlet pipe will divert the outflow of the oil water separator to a treatment swale, where the runoff will be infiltrated.

6.0 CONTAINMENT STRUCTURES & SPILL MITIGATION (112.7(c))

Under the SPCC regulation requirements, the Facility was assessed for appropriate containment and diversionary structures or equipment, which can prevent discharged oil from reaching navigable watercourses. Each of the areas identified at the Facility as having a reasonable potential for a release of oil was inspected to determine if one of the following preventative systems or its equivalent was available:

- Dikes, berms, or retaining walls that are sufficiently impervious to contain spilled oil (N/A – all tanks are underground);
- Curbing: Sloped concrete pads are installed for the USTs and both dispenser islands. Granite curbing will be installed as shown on the facility plans to assist with the diversion of stormwater runoff to the deep sump catch basins.
- Culverts, gutters, or other drainage systems: On the southerly side of the pads, deep sump catch basins are to be installed. Any spills that are not contained by the PLB are diverted to the deep sump catch basins which will separate any solids from the gray water. The gray water will be diverted to a 3,000-gallon oil water separator, where the oil will be separated from the water. The outlet pipe will divert the outflow of the oil water separator to a treatment swale, where the runoff will be treated and infiltrated);
- Spill diversion ponds; (Not present)
- Weirs, booms, or other barriers; (Not present)
- Retention ponds; (Not present),
- Spill Materials (Spill kits are placed at the dispenser islands and inside the store. Spill kits inventories are checked monthly).

6.1 UNDERGROUND STORAGE TANK (UST) CONCRETE PAD / TANKER DELIVERY LOCATION

Tanks are double walled fiberglass with sensors between the walls. These sensors will detect if there are any water leaks in from the ground or if any product leaks in through the interior containment tank wall. There are sensors under the submersible pumps, sensors in access manholes for submersible pumps. All sensors are continuously monitored by FS450 Veeder Root system. The Class A operator is notified directly to their cell phone when any sensor signals to the Veeder Root system. The store operators are simultaneously notified if there is any tripped sensor.

The sensors are all "fail safe", so if one is not operating properly a signal is sent to the control system and the Class A operator. The FS450 Veeder Root is a NH DES required monitoring system. The Veeder Root system performs a required system self-testing every 30 to 60 minutes, depending on the volume of product sales, an automatic highly sensitive pressure decay test is performed on the tanks and the piping by the Veeder Root system. If a test fails, then the whole system is shut down and a licensed technician must come and inspect system and correct the reason for the failure before the system can be reactivated.

The concrete pad/apron will be sloped towards the south/southeast. Three deep sump catch basins will be installed off the south and southeastern sides of the gasoline dispenser island as shown in **Figure 2 – Overall Facility Plan** to capture any petroleum products that are spilled during fueling which may escape the PLB. Any spills that are not contained by the PLB or as a result of mishandling during fuel truck delivery will be diverted to the deep sump catch basins which will separate any solids from the gray water. The gray water will be diverted to a 3,000-gallon oil water separator, where the oil will be separated from the water. The outlet pipe will divert the outflow of the oil water separator to a treatment swale, where the runoff will be infiltrated.

All deliveries are monitored for gallons loaded onto the trucks and gallons delivered, this is reported to the state by the site Class A operator, monthly.

Spill kits are placed at the dispenser islands and inside the store. In the event that a spill does occur within the UST fueling area, absorbent pads and/or booms should be used to contain the spill. For large spills, placing absorbent media and booms along the edge of the transfer pad by Facility staff will provide time for emergency personnel to respond.

6.2 DISPENSERS / DISPENSER ISLANDS

Dispensers have double walled piping with continuously monitored sensors. There is a shutoff valve in the submersible pump in the UST. When tripped by a sensor all flow out of the tank will be stopped. There are multiple sensors and situations that can trip the shutoff valve. Some of the things that can trip the shutoff valve are, but not limited to, a drive off with hose still attached the vehicle, a seeping nozzle, a fire, an inside operator activation of the manually shut off, activation of the "emergency trip" at side of the store adjacent to the vent piping, which can be tripped by anyone if they see something wrong. There are additional check valves and situations that trip the sensors. There is a check valve in the dispenser pump and one at the nozzle that will stop all flow from the USTs from any sensor related issue.

The dispensers will be located underneath canopies on concrete pads/aprons that will be sloped towards the south/southeast. Three deep sump catch basins will be installed off the south and southeastern sides of the gasoline dispenser island as shown in **Figure 2 – Overall Facility Plan** to capture any petroleum products that are spilled during consumer fueling which may escape the PLB.

Any spills that are not contained by the PLB will be diverted to the deep sump catch basins which will separate any solids from the gray water. The gray water will be diverted to a 3,000-gallon oil water separator, where the oil will be separated from the water. The outlet pipe will divert the outflow of the oil water separator to a treatment swale, where the runoff will be infiltrated.

Spill kits are placed at the dispenser islands and inside the store. In the event that a spill does occur at the dispenser islands, absorbent pads and/or speedi-dry should be used to contain the spill. For large spills, placing absorbent media and booms along the edge of the pad by Facility staff will provide time for emergency personnel to respond.

7.0 PROOF OF IMPRACTICALITY (112.7(d))

Structures or equipment to prevent the discharge of oil to navigable waters are in place or scheduled to be installed in all oil storage areas located at the Facility. The minimal preventative structures, systems, or equipment listed under Section 112.7(c) for oil spill prevention are currently installed in those areas containing oil and oil products or are scheduled for installation as part of this plan. Horizons Engineering has determined that use of the containment and diversionary structures and the use of readily available spill equipment to prevent discharged oil from reaching navigable water, is practical and effective at this facility.

8.0 PREVENTION CONFORMANCE (112.7(e))

In addition to oil spill prevention and containment structures listed in previous sections of this plan, SPCC regulations also require a description of other spill prevention and control measures and conformance with guidelines presented in 40 CFR 112.7(e) under the following areas:

- Facility Tank Car/Truck Loading/Unloading Procedures;
- Personnel, Training, and Discharge Prevention Procedures;
- Security;
- Inspections and Records; and
- Facility Transfer Operations;

8.1 FUELING PROCEDURES

The UST filling/delivery procedures are outlined below. Regular inspection of all tanks and associated fill pipes, drains, and outlets at the Facility is incorporated in the inspection requirements for the Facility. During fueling procedures of any tank or equipment, personnel should use care to prevent a release of petroleum products to the ground surface. Any releases should be reported to the Plan Coordinator and cleaned up immediately using booms, pads, and/or other appropriate methods.

8.1.1 UNDERGROUND STORAGE TANK / TANKER DELIVERY LOCATION

Upon arrival the driver parks and puts out cones to create a highly visible protection area. The truck has a feature such that the tanker portion can be raised slightly to facilitate complete emptying. Once the delivery truck is parked and shut off the driver will have access to drop hoses and equipment. If the truck engine is still running the driver will not have access to any delivery equipment or systems. All hoses on truck have clamp covers on each end to prevent any residual product in hoses from leaking or evaporating. This is an issue because the ribbed hoses can retain a slight amount of product, and this prevents any of that from leaking or evaporating.

The driver first connects the fill line to the truck. Then the fill line is connected to the UST's fill connection. This fill connection is in a 5-gallon double walled fiber glass spill bucket, and the connection can swivel so that any movement of the hose does not weaken the connection or cause to disconnect. Next there is a vapor recovery hose attached to the truck tank and the receiving UST. This connection allows the vapor pushed out of the receiving UST to move back into the truck tank as the product is delivered. This contains the vapor in a controlled loop and out of the atmosphere. The spill bucket has an integrity sensor that will signal if there are any issues with the spill bucket. The spill buckets are inspected before and after each delivery and each day when the store opens and at closing. All fill caps are locked. There is a clear glass port on the truck so the driver can see when product is gone from the tank. Once the truck tank compartment is empty a steel bucket is placed under the truck disconnect point to catch any possible drips. The delivery hose is then disconnected from the truck and the end cap is placed on the hose and clamped shut. The hose is then drained into the UST. The hose is then disconnected, and the end clamp is attached sealing any possible product in the hose. As an additional precaution to prevent over filling, the USTs cannot be filled past 90% capacity. If the 90% fill level is reached a flapper valve closes and prevents any over fill of the UST. Once tripped, it blocks any more product to drain from delivery truck until driver shuts off all flow from truck. Once shut off, the driver can drain the contents of the hose into the tank, up to a maximum of 95% which is the state allowance.

8.1.2 DISPENSERS / DISPENSER ISLANDS

Fueling at the pumps is achieved through customer use. Signs should be installed at the pumps stating that customers are to remain at the pumps until fueling is complete and to report any spills to the employees on site.

8.2 INSPECTIONS AND RECORDS

The area at the Facility that were identified as having a reasonable potential for a release of oil will be inspected regularly in accordance with this plan. Visual inspections of areas containing oil product storage tanks, containers, and associated piping and fixtures shall be conducted to assess that these areas are properly maintained, and are free of hazards, spills, or visible leaks. Routine inspections of these areas shall be conducted at least monthly. Any evidence of a spill, or potential spill source, shall be reported and the situation shall be promptly remedied.

In addition to monthly routine inspections, comprehensive inspections of the Facility shall be conducted annually. The site compliance inspection will provide the basis for assessing the overall effectiveness of the SPCC Plan. The inspection will be performed by the Plan Coordinator, Plan Manager or his/her designee, and a representative of Facility. They shall be accompanied by other employees who are familiar with the Facility operations, and the goals and requirements of the SPCC Plan.

The goals of the comprehensive site inspection are to:

- Confirm the accuracy of the description of potential oil spill sources contained in the SPCC;
- Determine the effectiveness of the SPCC Plan; and
- Assess compliance with the terms and conditions of the SPCC Plan.

The process for conducting the comprehensive site inspection will include reviewing the SPCC; developing a list of those items which are part of the material handling, storage, and transfer areas covered by the plan; and reviewing the Facility's past year operations to determine if any additional areas should be included in the plan. The inspection will determine whether spill prevention measures are accurately identified in the SPCC Plan and that they are in place and working properly.

During the site inspection, the compliance inspection team will:

- Visually inspect the following locations and equipment for evidence of spills or of oil entering drainage systems:
 - Concrete pad over the USTs (delivery location)
 - Concrete dispenser pads
 - Dispensers
 - Deep sump catch basins
 - Oil water separator
 - Treatment swale
- Evaluate the effectiveness of control measures to reduce oil spills and determine whether additional measures are needed.
- Observe structural measures and other spill prevention controls to ensure that they are properly maintained and operated.

- Inspect any equipment needed to implement the plan, such as spill response equipment.

The description of spill prevention practices and potential oil spill sources may need to be revised, based on the results of the comprehensive Facility inspection. If necessary, the SPCC Plan will be revised within six months of the date of the inspection. Changes in the control measures will be documented and scheduled for implementation in a timely manner.

The comprehensive site inspection shall utilize the monthly inspection form and shall be changed as necessary to reflect the goals of the inspection. The report will summarize inspection results, identify any incidences of noncompliance, and describe corrective actions. The Annual Site Compliance Report must note all plan revisions that have taken place during the preceding year. If the Facility is in compliance, the report must contain certification that the Facility is in compliance with the plan.

In addition, the report will include the following information:

- Scope of the inspection
- Personnel making the inspection
- Date(s) of the inspection
- Major observations relating to the implementation of the SPCC Plan

Site Inspection Forms are included as **Attachment 1**. Site Inspection Forms shall be signed by the inspector or supervisor and will be made a part of this SPCC Plan. Inspection records will be maintained for a minimum period of three years.

8.3 SECURITY

The facility is currently non-operational. Once operational, Facility personnel will be present seven days a week during normal operating hours. A control panel to activate the pumps is located inside the convenience store building, and during times when employees are not present, the building is locked. After hours the facility is locked, and the gas pumps are off and not operational. Security cameras that are installed will be fully replaced with a fully updated system. Monitors will be located in the control room, behind the counter at the register, and on the SPCC Plan Manager's phone or any computer he/she uses. These are reviewed daily by Facility staff and managers. Lighting is present around the convenience store and dispensers.

8.4 PERSONNEL TRAINING AND SPILL PREVENTION PROCEDURES

The management and operators of the Facility will provide training of on-site personnel regarding the operation and maintenance of equipment having the potential to release oil or oil products. At a minimum, annual training sessions should be held for personnel involved with operations to better understand the SPCC Plan.

Additional training sessions for all site employees will be conducted in the event of any significant changes in the plan. These changes may include, but are not limited to, changes in applicable laws or regulations, changes in operation or maintenance procedures, or the occurrence of a significant spill event. The annual training sessions shall include training in the following areas:

- Operation and maintenance of equipment to prevent discharges;
- Discharge procedure protocols;
- Applicable pollution control laws, rules, and regulations;
- General Facility operations;
- Contents of the Facility SPCC Plan;
- Record keeping procedures;
- Spill Containment procedures and use of clean-up equipment and materials;
- Emergency reporting requirements;
- Debriefing after any discharges, equipment failures or malfunctions, or precautionary measures taken; and
- Responsible management individuals and communication channels

A record of the training sessions shall be incorporated into the SPCC Plan. A personnel training log is included as **Attachment 2**.

Site personnel will be trained to recognize and appropriately report oil spills at the Facility. In the event of an oil spill, Facility personnel will safely assess the oil spill and conduct the following immediate response actions, as appropriate and feasible:

- Apply absorbent pads or booms to the spill area to immediately contain the oil spill;
- Place additional pads or booms in the direction of flow; and
- Notify the SPCC coordinator and emergency contacts (as required).

The Local Fire Department and the New Hampshire Department of Environmental Services (NHDES) must be notified of a release or the imminent threat of a release of oil, greater than or equal to 25-gallon volume, that is not entirely contained within a building or a vault, unless contamination associated with the spill is completely removed within 24 hours and there is no impact to surface or groundwater.

Furthermore, under such circumstances, the NHDES must be notified within two hours of the time that Facility staff first obtained knowledge of the release.

While a release of less than 25 gallons that is not entirely contained within the spill control area does not require NHDES notification, the Local Fire Department shall be contacted, and appropriate response and environmental cleanup is still required.

In addition, an oil spill, of any volume, that results in persistent oil sheen on a surface water body or an oil release to a sewer requires NHDES notification. An oil spill which results in a persistent sheen on a navigable waterway should also be reported to the National Response Center, which will notify the appropriate federal authorities, such as the EPA or Coast Guard.

Notification of a release of oil should initially be made to the Facility SPCC Plan Coordinator, the SPCC Plan Manager or to the Facility owner. The plan Coordinator and/or Manager will then instruct Facility personnel as to the proper NHDES or EPA notification requirements specific to the release.

EMERGENCY CONTACTS

SPCC Plan Manager and Coordinator

Pankaj Garg

Cell (603) 662-4805

Site Manager / Maintenance Manager

Steve Goyatte

Cell (603) 707-7744

Local Fire Department

603-539-7956 or (911)

Huggins Hospital

603-569-7500

New Hampshire Department of Environmental Services Spill Response

603-271-3644

USEPA National Response Center

800-424-8802

SPILL RESPONSE CONTRACTORS

Clean Harbors, Bow, NH

1-800-645-8265

Safety Kleen, Barre, VT

1-800-479-1200

The responsibilities of the SPCC Plan Coordinator who will work under the supervision of the Plan Manager are as follows:

- Maintain Facility with clean-up materials and equipment;
- Maintain Facility with containment equipment;
- Conduct personnel training;
- Ensure compliance with the SPCC Plan and applicable regulations;
- Update the SPCC Plan, as required;
- Conduct or supervise visual inspections;
- Ensure record keeping of inspection logs;
- Appoint trained personnel to supervise oil deliveries; and
- Notify appropriate officials of any spill events.

Personnel shall also be trained in the following spill management procedures for oil spills that occur at the Facility. Any spill event shall be reported to the SPCC Coordinator.

Personnel shall assess the spill area for safety conditions and conduct the following immediate response actions, as appropriate and feasible;

- Apply absorbent pads or booms to the spill area to immediately contain the oil spill;
- Place additional pads or booms in the direction of flow; and
- Notify the SPCC Coordinator and emergency contacts (as required).

Additionally, personnel will comply with the training requirements of the EPA Worker Protection Rule 40 CFR 311.

8.5 TASK LIST AND SCHEDULE

As part of this SPCC Plan, the following tasks will be completed in accordance with the schedule.

Task #1: Tank Registration

- The oil water separator tank is required to be registered with the NHDES.

Task #2: Tank Inspections (Yearly)

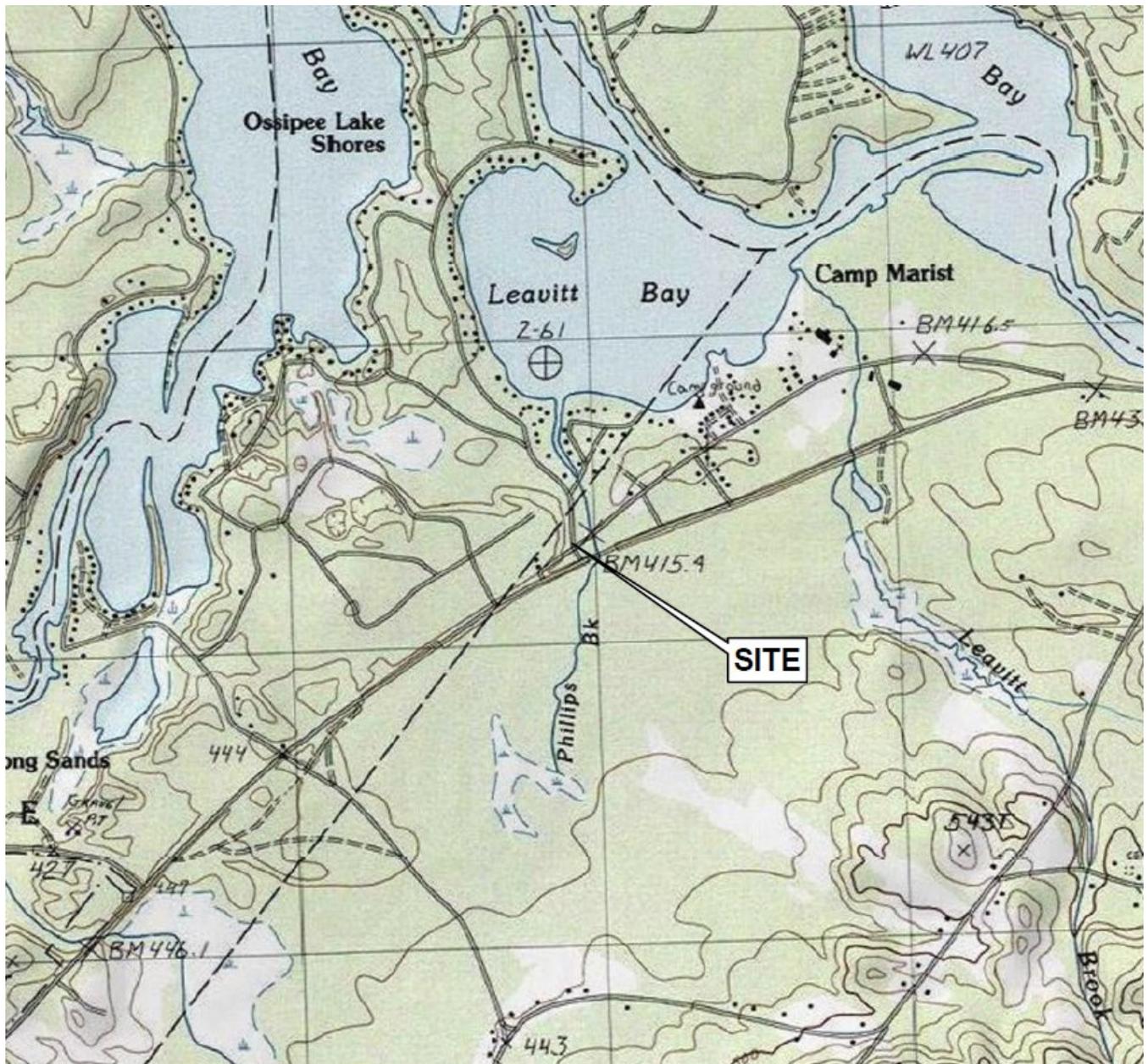
- Retain a certified tank inspector/tester to conduct annual leak monitoring of the underground tanks and oil/water separator tank.

Task #3: Update SPCC Plan (5 years)

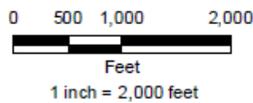
- Review, Revise & Update SPCC Plan (June 2027)

FIGURES

Figure 1 - USGS Locus Map



USGS Topographic Map
Freedom, NH
Revised 1987



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MEENA, LLC
SPILL PROTECTION, CONTROL, AND
COUNTERMEASURE PLAN

41 NH Route 25
EFFINGHAM, NEW HAMPSHIRE

SITE LOCATION MAP

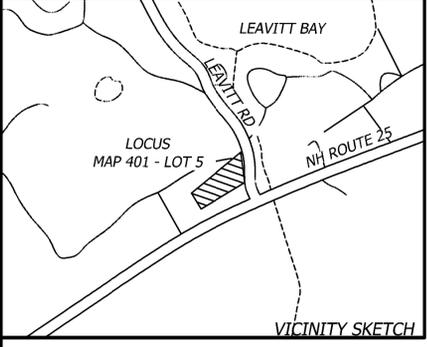
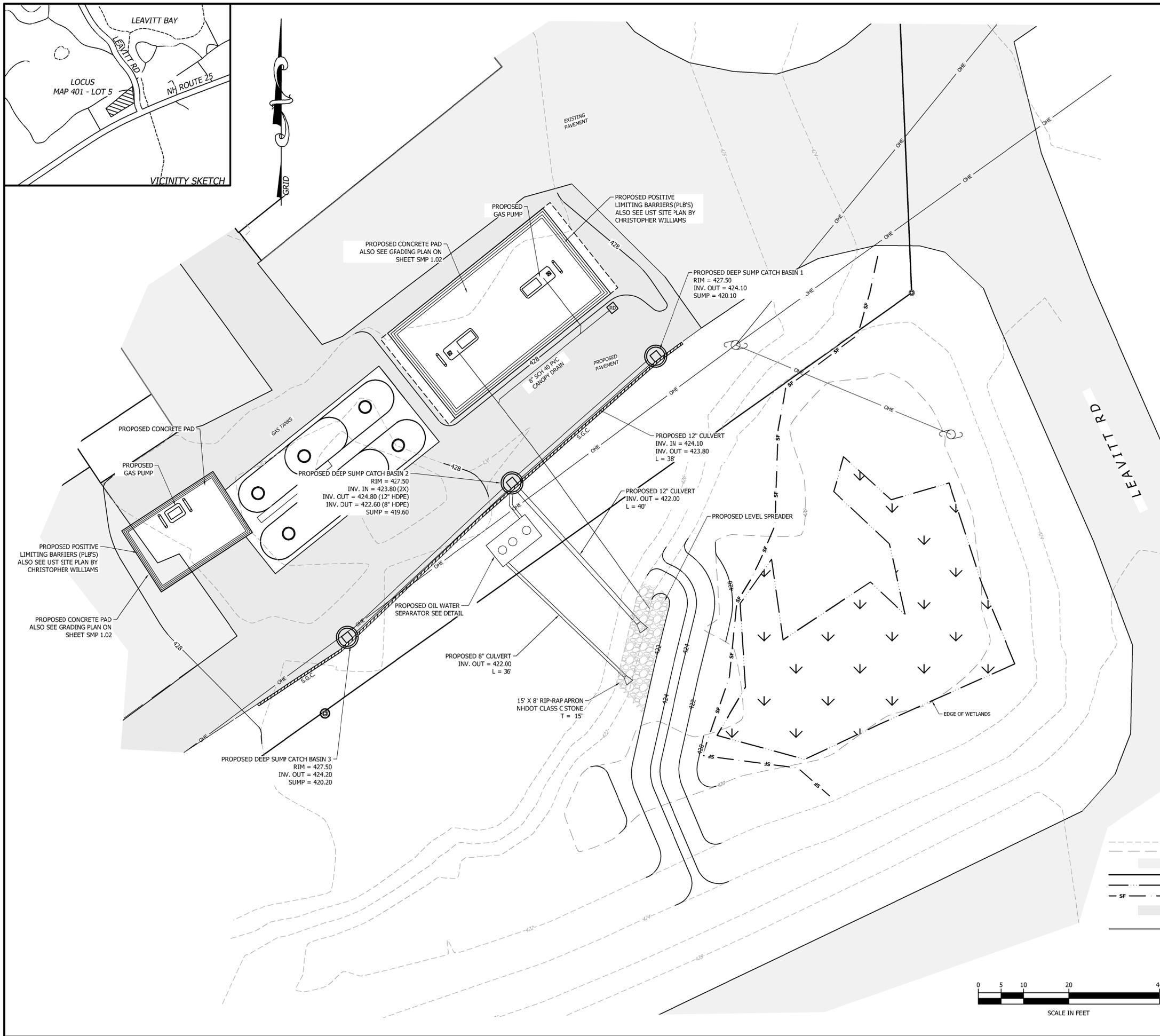
PROJECT #:	220473
ENGINE'D BY:	VJC
DRAWN BY:	VJC
DATE:	JUNE 2022

Figure 2 - Overall Facility Layout Plan

STORMWATER MANAGEMENT GUIDELINES

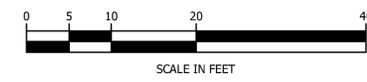
GENERAL EXCEPT WHERE MODIFIED HEREIN, ALL CONDITIONS, MEANS, METHODS AND MATERIALS SHALL COMPLY WITH THE NHDOT'S MOST RECENT EDITIONS OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND AS MAY BE FURTHER SPECIFIED WITHIN THE TOWN'S MOST RECENTLY ADOPTED ROAD OR STREET REGULATIONS.

- (1) CURBING
ALL PROPOSED GRANITE CURBING SHALL BE SLOPED OR VERTICAL FACE CURBING MEETING NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, HIGHWAY DESIGN MANUAL, STANDARD CR-1 PLATES 1 THROUGH 4. "BACKFILL MATERIAL" DEPICTED ON PLATE 1 SHALL BE CLASS B CONCRETE PLACED ON VEHICLE SIDE OF CURB.
- (2) PRECAST CONCRETE DRAINAGE STRUCTURES
ALL PROPOSED DRAINAGE STRUCTURES SHALL MEET NEW HAMPSHIRE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DIVISION 600, SECTION 604.
- (3) CULVERTS AND STORM DRAINS
ALL PROPOSED PIPING SHALL BE AS INDICATED IN PLAN VIEW:
A. CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR HDPE PIPE COMPLYING WITH AASHTO M294, TYPE S.
B. FLARED STEEL END SECTIONS SHALL BE GALVANIZED COMPLYING WITH AASHTO M 309/M 36 AND SHALL BE INSTALLED WHERE STONE RIPRAP OUTLET PROTECTION IS NOT USED.
C. ALL STREET CROSS CULVERTS SHALL HAVE PRECAST CONCRETE, CAST IN PLACE CONCRETE OR MORTARED RUBBLE MASONRY HEADWALLS AT BOTH ENDS OF THE CULVERTS.
- (4) LOAMING AND LOAM AMENDMENTS
A. ALL REMAINING DISTURBED AREAS SHALL HAVE FOUR INCHES OF LOAM INSTALLED. LOAM SHALL BE FRIABLE, FREE OF STUMPS, ROOTS AND OTHER UNSUITABLE MATERIAL AND SHALL NOT BE SPREAD WHEN WET.
B. ALL LOAMED AREAS SHALL BE FERTILIZED AND SEEDED BY HAND, BROADCAST OR HYDROSEED, AS FOLLOWS:
NO FERTILIZER SHALL BE APPLIED TO VEGETATION OR SOILS WITHIN 25 FEET OF THE REFERENCE LINE OF ANY PUBLIC WATER FERTILIZER
C. BETWEEN 25 FEET AND 100 FEET FROM ANY RIVER, STREAM, POND OR LAKE, ONLY LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER MAY BE USED. LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER THAT IS GUARANTEED, AS INDICATED ON THE PACKAGE LABEL, TO CONTAIN:
1. NOT MORE THAN 2% PHOSPHOROUS; AND
2. A NITROGEN COMPONENT WHICH IS AT LEAST 50% SLOW RELEASE NITROGEN COMPONENTS.
D. BEYOND 100 FEET FROM ANY RIVER, STREAM, POND OR LAKE, THE FOLLOWING MAY BE USED:
PERMANENT SEED MIXES:
LIMESTONE AT 100 LBS PER 1000 SF 10-20-20 AT 12 LBS PER 1,000 SF
AREAS WITHIN ROAD ROW AND DITCHES AND SWALES: NHDOT SLOPE SEED TYPE 44 AT 80 LBS PER ACRE
AREAS OUTSIDE OF THE ROAD WORK: NHDOT PARK SEED TYPE 15 AT 120 LBS PER ACRE
TEMPORARY SEED MIX
SPRING PLANTING (BEFORE MAY 15): OATS AT 34 LBS PER ACRE OR ANNUAL RYEGRASS AT 16 LBS. PER ACRE
FALL PLANTING (AFTER AUGUST 15): WINTER RYE AT 45 LBS. PER ACRE OR ANNUAL RYEGRASS AT 16 LBS. PER ACRE
E. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING UNLESS HYDROSEEDING IS USED THAT INCLUDES A MULCH AND TACKIFIER. HYDROSEEDING NOTWITHSTANDING, MULCH SHALL CONSIST OF DRY STRAW OR SEEDLESS HAY SPREAD BY HAND OR MACHINE AND SHALL EITHER CONTAIN A TACKIFIER OR HAVE A TACKIFIER APPLIED.
F. DRAINAGE BASINS AND CUT/FILL SLOPES STEEPER THAN 3:1 SHALL BE TREATED WITH EROSION CONTROL BLANKET PER MANUFACTURER'S SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 400. THESE AREAS NEED NOT BE MULCHED.
G. SLOPES SHOWN STEEPER THAN 2:1, IF NOT PROTECTED BY STONE RIPRAPING, SHALL BE PROTECTED WITH JUTE EROSION CONTROL BLANKET INSTALLED PER MANUFACTURER'S SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. JUTE EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 700. THESE AREAS NEED NOT BE MULCHED.
H. DITCHES AND SWALES' SIDESLOPES AND INVERTS, IF NOT PROTECTED BY STONE RIPRAPING, SHALL BE PROTECTED WITH JUTE EROSION CONTROL BLANKET INSTALLED PER MANUFACTURER'S SPECIFICATIONS FOLLOWING THE LOAMING AND LOAM AMENDMENTS' APPLICATION. JUTE EROSION CONTROL BLANKET SHALL BE EQUIVALENT TO GEOCOIR DEKOWE 900. THESE AREAS NEED NOT BE MULCHED.
- (5) ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.



LEGEND

- - - - - 852	EXISTING 2 FOOT CONTOURS
- - - - - 850	EXISTING 10 FOOT CONTOURS
—————	EXISTING PAVEMENT
—————	PROPERTY LINE
—————	WETLAND LINE
- SF - SF -	PROPOSED SEDIMENT FENCE
—————	PROPOSED PAVEMENT
————— 420	PROPOSED CONTOUR



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MEENA LLC

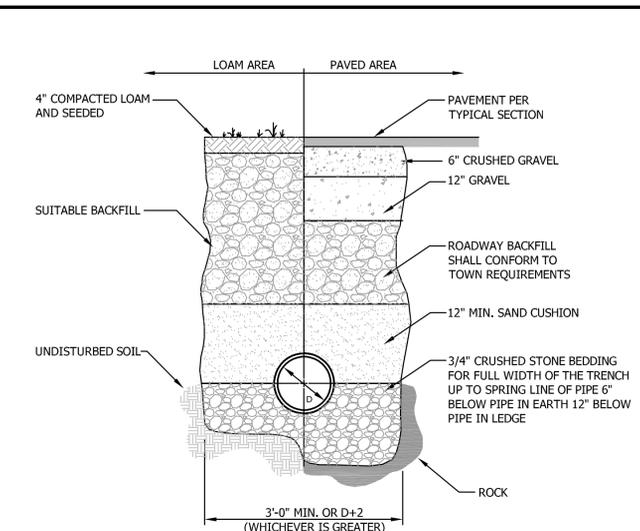
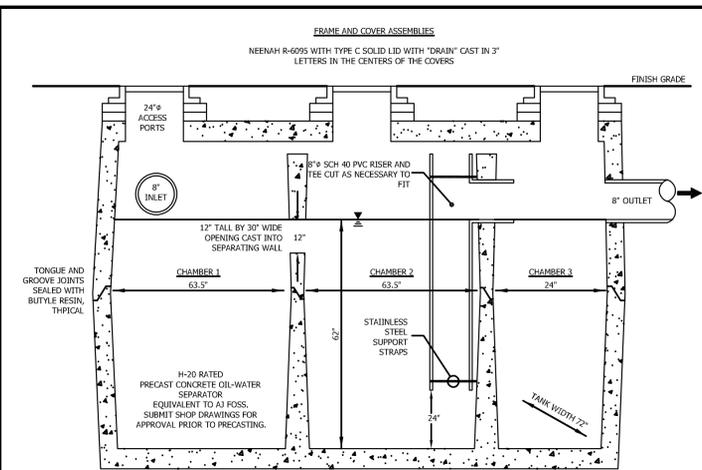
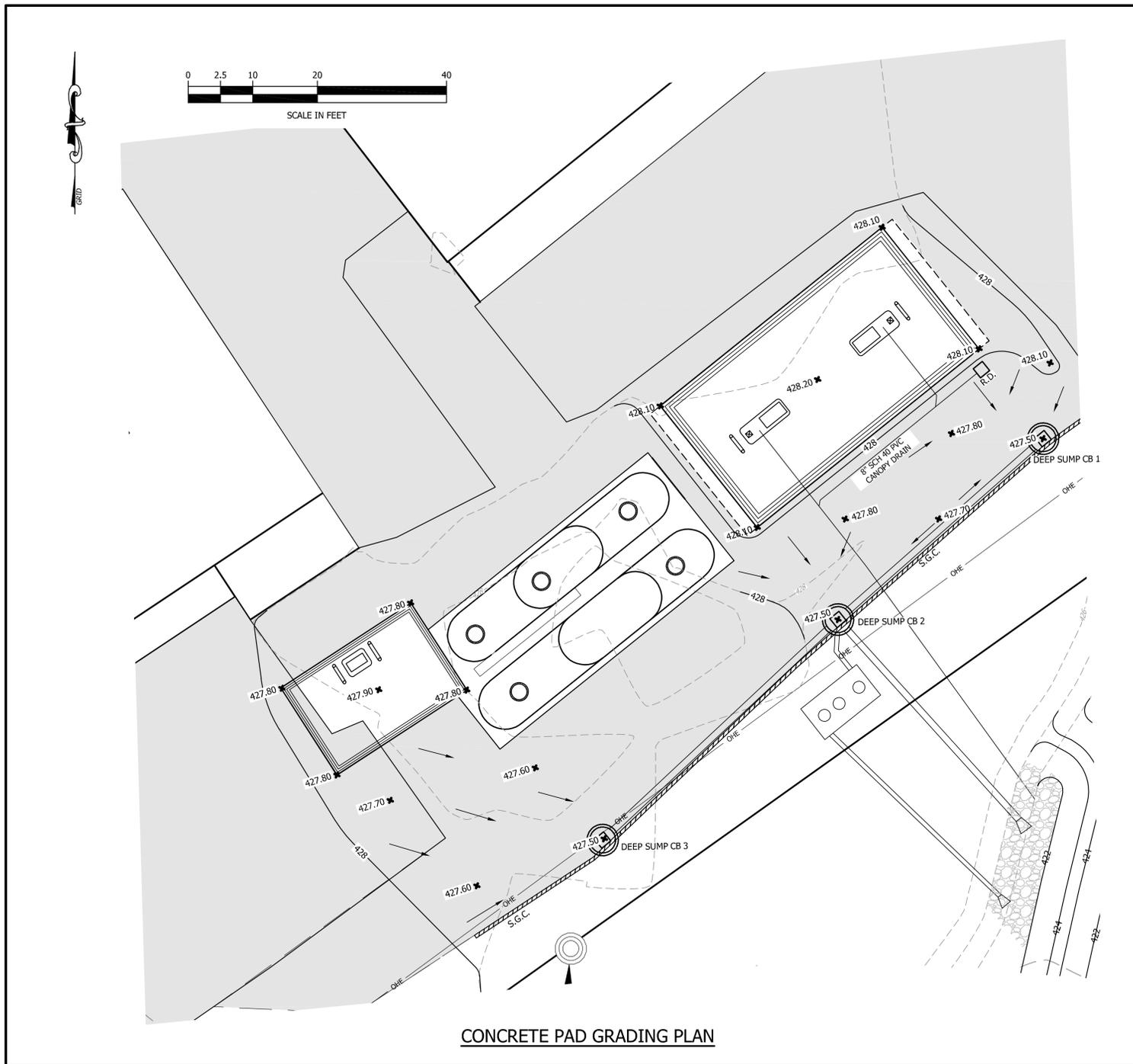
43 NH ROUTE 25
EFFINGHAM, NEW HAMPSHIRE

STORMWATER MANAGEMENT PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE:	PROJECT #:
JUNE 2022	220473
ENGIN'D BY:	DRAWN BY:
JFH	JFH
CHECK'D BY:	ARCHIVE #:
DEB	H-___

SMP 1.01



SPECIFICATIONS

A. FILTER FABRIC AND POSTS

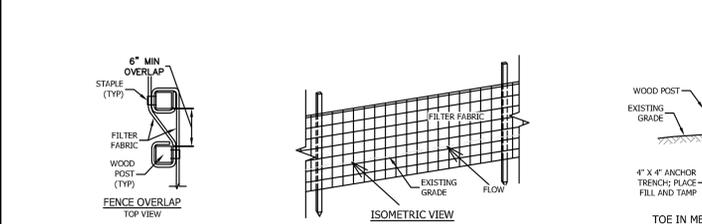
1. FILTER FABRIC SHALL BE A PERMEABLE SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN CERTIFIED TO CONTAIN ULTRAVIOLET RAY INHIBITORS/STABILIZERS WITH A MINIMUM 6 MONTHS USABLE CONSTRUCTION BETWEEN TEMPERATURES OF 0-120° F.
2. FILTER FABRIC SHALL BE PURCHASED IN A ROLL AND CUT TO THE LENGTH OF THE BARRIER.
3. POSTS FOR SILT FENCES SHALL BE 1-1/2 INCH SQUARE HARDWOOD STAKES OR 60" LONG 1-3/4 LBS/FT STEEL POSTS WITH PROJECTIONS FOR FASTENING WIRE.
4. ALTERNATIVELY, A MANUFACTURED SYSTEM WITH INTEGRAL POSTS SPACED AT 6 FEET MAX MAY BE USED WITH SUPPORT POSTS SIZED AND ANCHORED PER MANUFACTURER'S INSTRUCTIONS.

B. INSTALLATION

1. FENCES SHALL BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, FLARED UPHILL WITH 4-HOOKS AT THE ENDS.
2. EXCAVATE A TRENCH A MINIMUM OF 4 INCHES WIDE AND 4 INCHES DEEP UPSLOPE OF POSTS AND BARRIER. EMBED A MINIMUM OF 8 INCHES OF FILTER FABRIC IN TRENCH AND BACKFILL OVER THE FILTER FABRIC. ALTERNATIVELY, INSTALL WITH SPECIFICALLY DESIGNED MECHANICAL EQUIPMENT.
3. IF UNABLE TO TRENCH, ANCHOR THE BASE OF THE FABRIC WITH 3/4-INCH CRUSHED STONE, MINIMUM 8 INCHES THICK. FILTER FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE EXISTING GRADE.
4. PLACE POSTS DOWNSLOPE OF THE FABRIC SPACED 6 FEET APART MAX. DO NOT STAPLE OR NAIL TO TREES.
5. JOIN SECTIONS BY OVERLAPPING FABRIC (MIN 6 INCHES, 24 INCHES PREFERRED), FOLD AND STAPLE TO A SUPPORT POST. FOR METAL POSTS, WIRE-TIE FABRIC DIRECTLY TO THE POSTS WITH THREE DIAGONAL TIES.

C. MAINTENANCE

1. THE USEFUL LIFE OF SILT FENCE IS ONE SEASON. REPLACE PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS ON PROJECTS.
2. INSPECT AND MAINTAIN IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
3. AT A MINIMUM, REMOVE SEDIMENT WHEN DEPOSITION ACCUMULATES TO HALF THE HEIGHT OF THE FENCE AND REMOVE TO A LOCATION NOT UPSLOPE OF SILT FENCE.
4. REPAIR SILT FENCE IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION DOWNSLOPE. REPLACE WITH A TEMPORARY CHECK DAM IF UNDERCUTTING OR IMPOUNDING OF LARGE VOLUMES OF WATER OCCURS.
5. EXTEND SILT FENCE UPHILL OR REPLACE WITH TEMPORARY DIVERSIONS OR SEDIMENT TRAPS IF THERE IS EVIDENCE OF END FLOW.
6. REPLACE IMMEDIATELY IF DECOMPOSITION OR INEFFECTIVENESS OCCURS PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND IS STILL REQUIRED.
7. SEDIMENT DEPOSITS TO REMAIN AFTER REMOVAL SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEED.
8. REMOVE SILT FENCE ONCE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.



DEEP SUMP CATCH BASIN DETAIL

NO SCALE

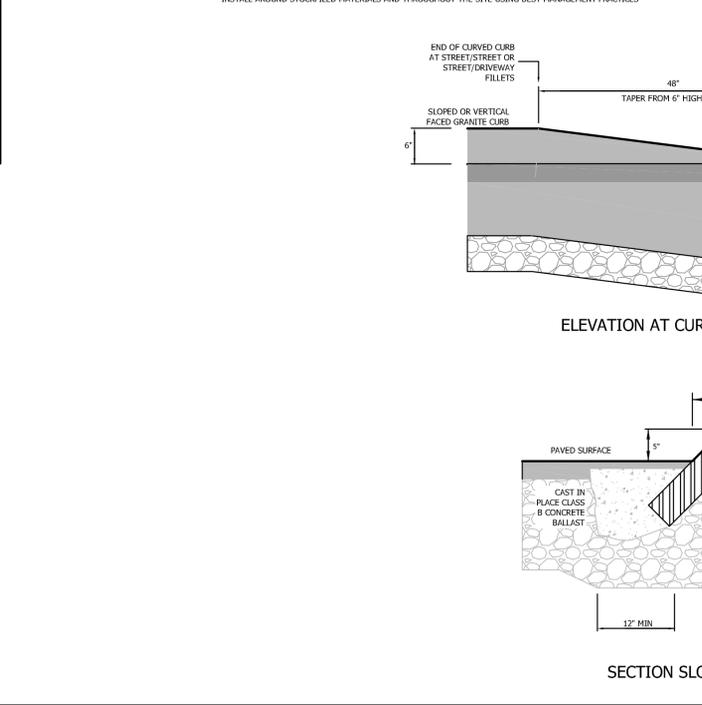
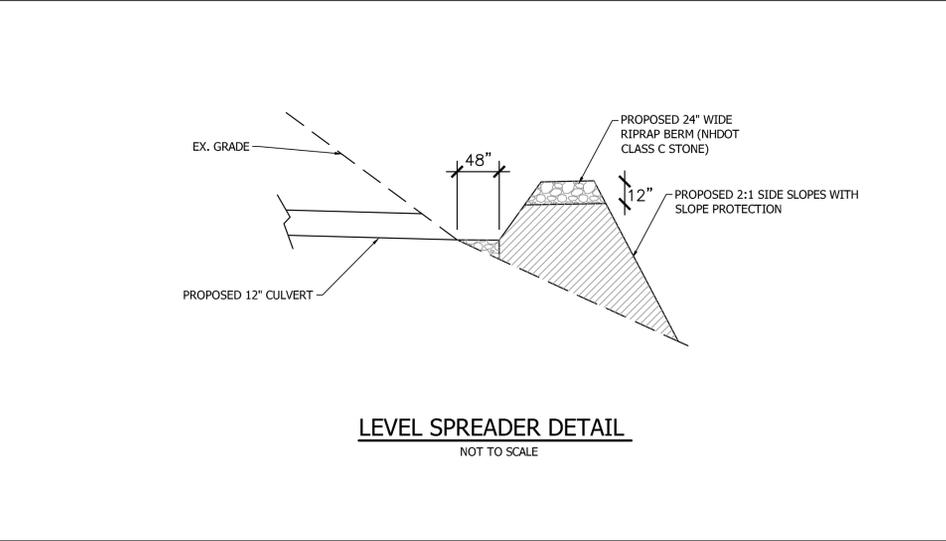
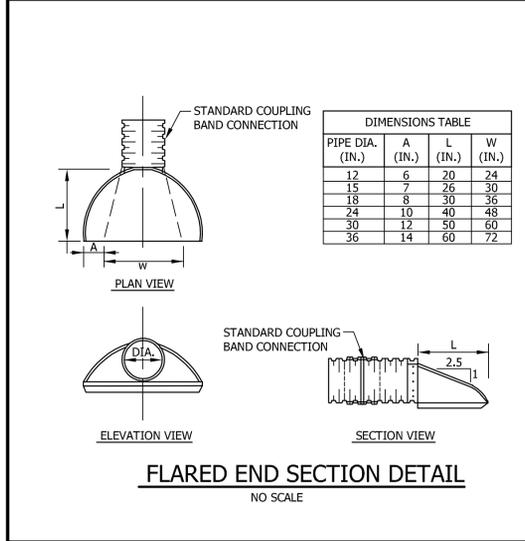
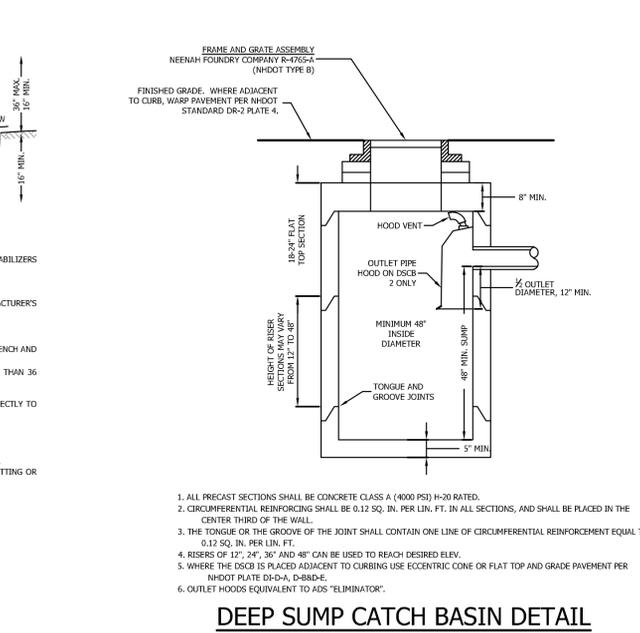
Key features and dimensions:

- HOOD VENT
- OUTLET PIPE HOOD ON DSOB - 2 ONLY
- MINIMUM 48" INSIDE DIAMETER
- TONQUE AND GROOVE JOINTS
- 18"x24" FLAT TOP SECTION
- 8" MIN.
- 1/2" OUTLET DIAMETER, 12" MIN.
- 48" MIN. SUPP.
- 5" MIN.
- 18"x24" FLAT TOP SECTION
- 18"x24" FLAT TOP SECTION
- 18"x24" FLAT TOP SECTION

DEEP SUMP CATCH BASIN DETAIL

NO SCALE

1. ALL PRECAST SECTIONS SHALL BE CONCRETE CLASS A (4000 PSI) H-20 RATED.
2. CIRCUMFERENTIAL REINFORCING SHALL BE 0.12 SQ. IN. PER LIN. FT. IN ALL SECTIONS, AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL 0.12 SQ. IN. PER LIN. FT.
4. RISERS OF 12", 24", 36" AND 48" CAN BE USED TO REACH DESIRED ELEV.
5. WHERE THE DSOB IS PLACED ADJACENT TO CURBING USE ECCENTRIC CONE OR FLAT TOP AND GRADE PAVEMENT PER RHODOT PLATE D3-D4, D-88D-E.
6. OUTLET HOODS EQUIVALENT TO JOSS' ELIMINATOR.



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MEENA LLC

43 NH ROUTE 25
EFFINGHAM, NEW HAMPSHIRE

STORMWATER MANAGEMENT DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: MAY 2022 PROJECT #: 220473
 ENGIN'D BY: JFH DRAWN BY: JFH
 CHECK'D BY: DEB ARCHIVE #: H-____

SMP 1.02

**Figure 3 – Approved UST Design Plans Prepared by
Christopher Williams, P.E.**

GENERAL NOTES FOR UST FACILITIES:

- Contractor is responsible for the location of underground utilities.
- Dig-safe is required per NH RSA 374:51.
- Facility owner is responsible for meeting all local regulations.
- All spot elevations represent final grade based on an assumed elevation unless shown otherwise.
- All new concrete pads will be crowned and/or installed with sufficient elevation above the surrounding grade so that surface water does not drain across these pads.
- Liquid-tight entry fittings shall be used on all sumps and spill containers.
- Storm water runoff from underground storage tank facilities shall not be discharged to the subsurface.
- The closure and removal of any existing tanks or piping shall be performed in accordance with Env-Or 408.06 to Env-Or 408.10.
- The contractor is made aware of the notification and inspection requirements pursuant to Env-Or 407.07.
- ICC certifications of "U1" for UST installations and "U2" for UST removal are required.
- All electrical and conduit installations/materials/offsets shall meet NFPA 70-14 Article 514 requirements.
- This facility shall be provided with fire extinguishers installed, inspected, and maintained as required by NFPA 10, Standard for Portable Fire Extinguishers and located within 100 feet of the dispensers.
- Warning signs shall be conspicuously posted in the dispensing area and shall incorporate the wording from NFPA 30A 9.2.5.4 or equivalent.
- Galvanized pipe shall not be used for systems storing diesel fuel, kerosene or jet fuel per PEI/RP100-11 10.2. A vent riser is an exception to this rule.

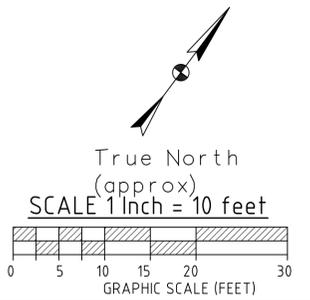
WATER NOTES:

- This facility is supplied by Public Water Well 0738030.
- A review of the NH DES database and field observations show Public water well 0738030 is located 175' from the existing facility (measured to nozzle radius of prior system). This well is owned by the facility owner and this distance will not be reduced.
- A review of the NH DES database shows one non-public water well (075.0079) within the 250 foot setback distance. This water well could not be found in or around the area shown on the database during the site visit.
- A review of the NH DES database and field observations show no surface water within the 75 foot setback distance.

PROJECT NOTES:

- The scope of this project is to install 2 new tanks along with new piping and equipment. The existing canopy and posts will remain. The existing canopy drain daylight as shown and will be reused if deemed acceptable.
- The proposed tanks are Xerxes tanks manufactured in Canada (referred to as ZCL), are green in color and have an internal diameter of 97". This is an important distinction since Xerxes also manufactures tanks in the United States that are Red in color and have an internal diameter of 90".
- This is an attended, self service facility.
- Per NFPA 30A 6.7, an emergency disconnect switch (ESO) is shown located such that it will be more than 20' and less than 100' (walking path distance) from the dispensing devices they serve.
- Primary Containment system testing is required before fuel can be dispensed to public, with passing results submitted to DES, and shall only be done after authorization to operate is issued by DES.
- The dispensing pad length has been determined based on a nozzle radius of 8'. A dispensing hose length shall be used such that this radius is not increased.
- Line Leak Detectors (LLDs) are to be tested after authorization to operate is issued, with passing tests forwarded to NHDES before fuel is dispensed to the public.
- Provide a swale between the tank pad and the dispensing pads to facilitate drainage as shown by the flow arrows.
- An existing UST system at this facility was closed in 2015 and all equipment was removed. The minimum distance to the existing public well, as measured from the dispensing nozzle radius, was 175 feet. The proposed dispensers will be located at the same location as the prior dispensers thereby maintaining the existing setback to this well.
- The existing building overhang near Dispenser 3 has been determined to be part of the building with respect to the offset between dispenser and building. Therefore, this overhang will be removed back to the limits of the main building so the 10 foot offset shown is maintained.

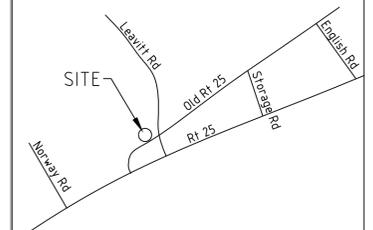
Public Water Well #0738030



LEGEND

- ⊕ FILL
- ⊖ VENT
- ⊙ INTERSTITIAL SENSOR
- ⊕ GAUGE PROBE
- ⊕ SUBMERSIBLE PUMP
- ⊖ VAPOR RECOVERY
- ⊙ TANK SUMP
- ⊕ TANK MONITOR CONSOLE
- SLOPE OF PIPING

LOCATION MAP



The site is 3.5 miles north of the Rte 25/Rte 16 junction

UST SITE PLAN

SCOPE: To install two new tanks, piping and equipment at an existing Facility

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

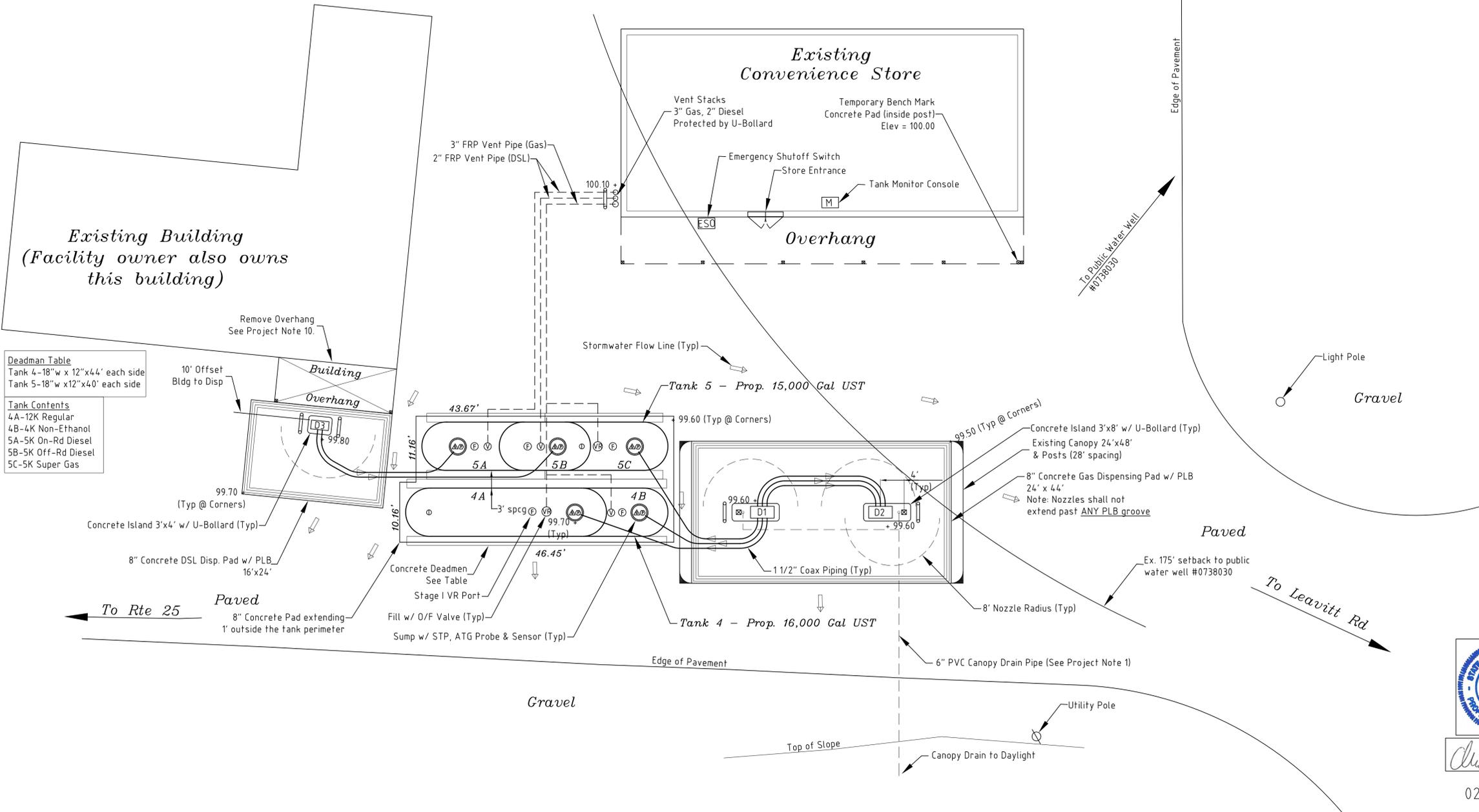
OWNER
Ramco LLC
PO Box 2262
N Conway, NH 03860-2262

ENGINEER
Christopher P. Williams
1914 South Hill Rd.
Moretown, VT 05660
NH PE# 9997

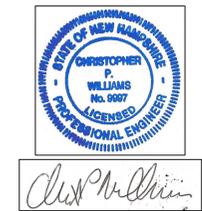
CONTRACTOR
Marwin Construction
227 Gray Road
Falmouth, ME 04105

DATE
11/5/20; Resub 12/13/20; Rev 2/9/21
2/22/21

SHEET 1 OF 3



Deadman Table	
Tank 4	18" x 12" x 44" each side
Tank 5	18" x 12" x 40" each side
Tank Contents	
4A	12K Regular
4B	4K Non-Ethanol
5A	5K On-Rd Diesel
5B	5K Off-Rd Diesel
5C	5K Super Gas



02/22/2021

MONITOR AND OVERFILL NOTES:

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

TANK SYSTEM NOTES:

- All product and vent piping shall slope at a minimum of 1/8" per foot towards the tank or a sump with a sump sensor.
- These systems are designed for gravity delivery of product into tank.
- Overflow protection setting is measured from the inside of the top tank wall.
- Sealant used on sump entry boots shall be applied on the exterior of the sump enclosures only as directed by the manufacturer.
- 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.
- For APT piping, the scuff guard must be removed outside or even with the sump wall.

HYDROSTATIC SUMP TESTING (per Env-Or 406.15)

- A hydrostatic tightness test shall be conducted:
- After all seams and fittings have been completed and all piping and conduits have been installed;
 - 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;
 - By recording the liquid level measurements at the beginning and end of the test;
 - For a minimum of 3 hours for containment sumps; and
 - With no addition of liquid to the containment sump after the start of the test.

SPILL CONTAINER DW VACUUM TESTING-EMCO WHEATON

- Replace the gauge in the primary manhole with a 494343 test adapter.
- Attach vacuum source and apply vacuum to 30" wc.
- Let stabilize for 30 seconds. If vacuum reading decreases initially, reapply to restore back to 30" wc.
- 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:

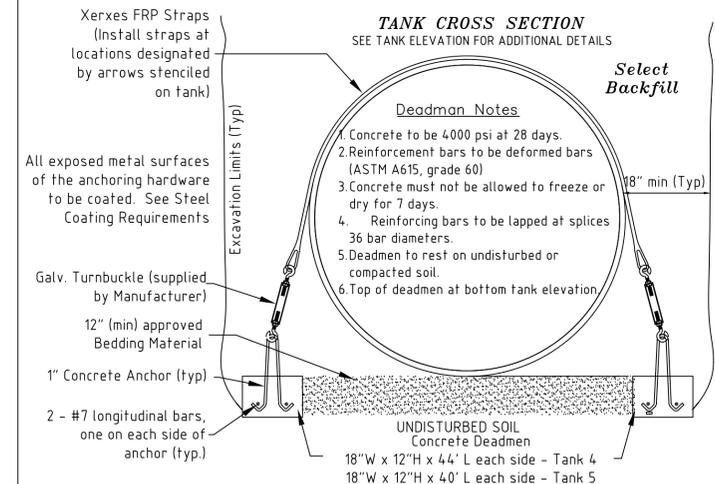
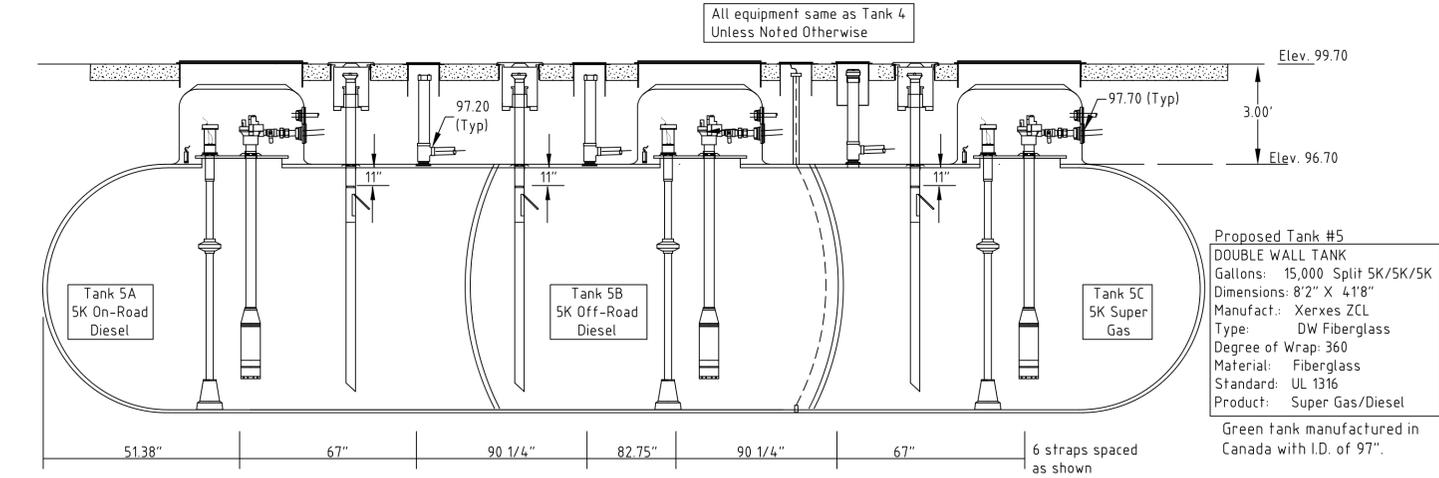
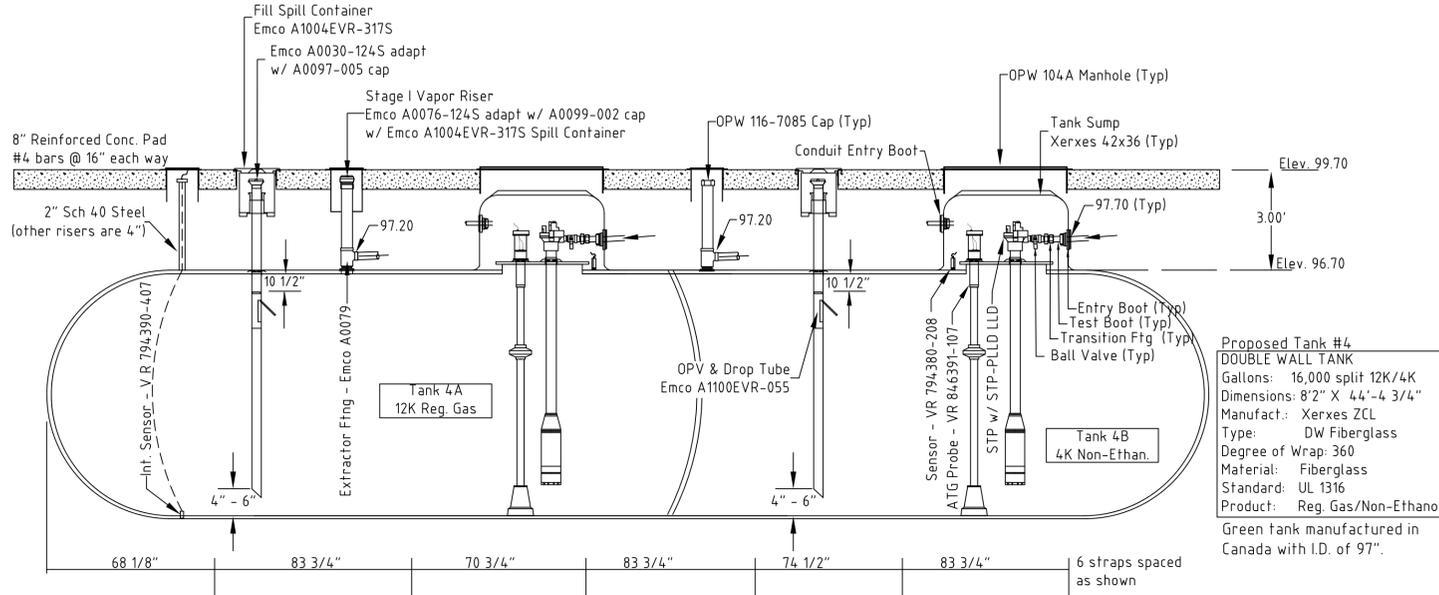
- All underground steel risers, fittings and pipes, to include the underground portion of the vent stack, shall be coated to prevent corrosion.
- The coating shall be either fiberglass or a two-part epoxy paint and shall be applied according to the manufacturer's instructions.
- Acceptable epoxy paints 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.

GENERAL TANK INSTALLATION NOTES

- All tanks shall be provided with secondary containment which shall enclose 360 degrees of the inner tank.
- No alteration of any kind shall be made to the tank without written approval of the manufacturer.
- New underground storage tanks shall bear a stencil, label or plate with the following information:
 - The standard of design by which the tank was manufactured.
 - The year of manufacture.
 - The dimensions and capacity of the tank.
 - The name of the manufacturer.
- 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.
- 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.
- 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
- If wet or unstable soil is encountered, filter fabric must be installed to prevent backfill migration.
- 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 vacuum gauge reads 12 inches of mercury or more. If these requirements are not met, the testing shown below is required.
- 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.
 - 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 leaks.
 - 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 size.
 - A minimum of 12" of Bedding Material to be placed under the tank.
 - A minimum of 18" of Backfill Material to be placed along the sides of the tanks and between adjacent tanks.
 - 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.



Proposed Equipment Chart

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

BUOYANCY CALCULATIONS - TANK 4

- Seasonal High Water Table is assumed at grade for buoyancy calculations.
- This site is NOT in the 100 year flood plain.
- 3' cover used in calculations.

BUOYANT FORCE
TNKS: 12,000 gal X 8.33 lb/gal = 133,280 lb
SMPS: 2X282 gal X 8.33 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 4' x 2) = 132.0 CF = 11,484 lb
R.C. Traffic Pad (@87 lb/cu.ft.) (0.67' X 10.17' x 4.6' 4.0') = 316.2 CF = 27,509 lb
SOIL (@ 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

BUOYANCY CALCULATIONS - TANK 5

- Seasonal High Water Table is assumed at grade for buoyancy calculations.
- This site is NOT in the 100 year flood plain.
- 3' cover used in calculations.

BUOYANT FORCE
TNKS: 15,000 gal X 8.33 lb/gal = 124,950 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" x 18" x 4' x 2) = 120.0 CF = 10,440 lb
R.C. Traffic Pad (@87 lb/cu.ft.) (0.67' X 10.17' x 4.3' 6.7') = 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

UNDERGROUND TANK SYSTEM DIAGRAM

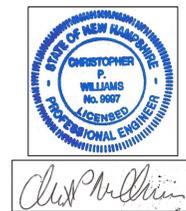
FACILITY
Aloha Effingham
41 Route 25
Effingham NH 03882
Facility ID#0113566

OWNER
Ramco LLC
PO Box 2262
N Conway, NH 03860-2262

ENGINEER
Christopher P. Williams
1914 South Hill Rd.
Moretown, VT 05660
NH PE# 9997

CONTRACTOR
Marwin Construction
227 Gray Road
Falmouth, ME 04105

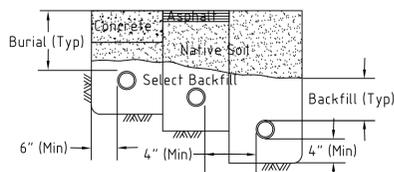
DATE
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02/09/2021

APT XP PIPING NOTES:

- Select backfill shall be clean compacted sand, 1/8 to 3/4 inch pea gravel, or washed, free-flowing crushed stone with an angular stone size smaller than 3/4".
- The trench bottom shall be free of hard or sharp objects.
- Piping to be one continuous run between sumps.
- Crossovers shall have a minimum separation of 4".



Surface	Min. Burial Depth	Min. Backfill
Unpaved	18"	6"
Asphalt	18"	6"
6" Min. Concrete	12"	6"

PIPE TESTING INSTRUCTIONS - INTERSTITIAL SPACE OF COAXIAL PIPING:

- Install fittings and connector tubes inside all piping sumps to interconnect and isolate the interstitial piping space.
- Install an APT Test Tube with a pressure gauge on the secondary test boot within the tank sump.
- Gradually pressurize the interstitial piping space to 5 psi (min) and 8 psi (max) and hold pressure for a minimum of 1 hour checking the gauge for any loss in pressure. Apply a soap-water solution to all connections and inspect for bubbles.
- Maintain the required pressure for a minimum period of 2 hours after the backfill process has been completed.
- 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.
- Seal all shear valves and riser pipes with pressure rated plugs or caps.
- Make sure that the tank is isolated from the primary piping by a valve or plug.
- 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:

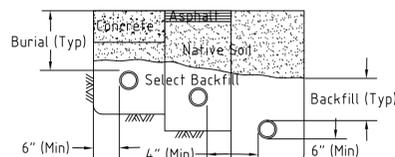
- The minimum bend radius for all APT piping and Duct (regardless of size) is 36".

NOV PIPING NOTES: Rev 6/6/19

- For Ameron Dualoy 3000/L and Red Thread IIA fiberglass pipe.
- Select backfill shall be clean compacted sand or 1/8 to 3/8 inch pea gravel or 1/8 to 1/2 inch washed, crushed stone.
 - The trench bottom must be free of hard or sharp objects.
 - A 4" (min) dogleg is required (measured between fittings) at each connection to a fixed point (tank sump, dispenser sump, vent stack).
 - Crossovers shall have a minimum separation of 4".

PIPE TESTING INSTRUCTIONS:

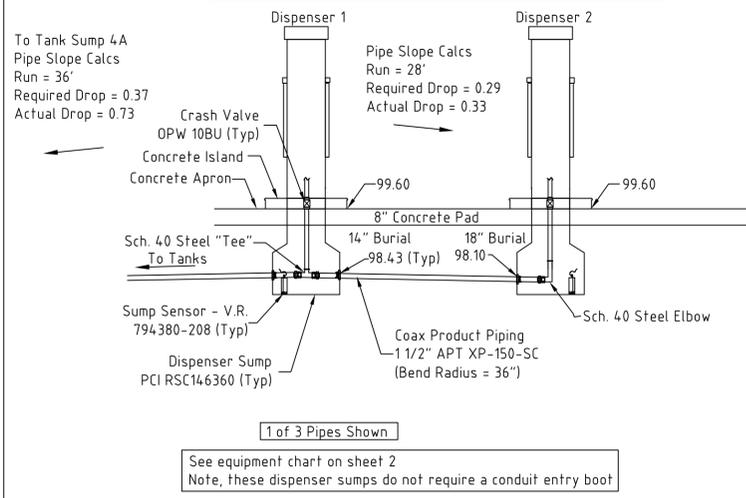
- Pressurize the piping to 25 psi and hold for 1 minute (min); soap all joints to test for leaks. If there are no leaks, raise the pressure to 50 psi and hold the pressure and soap all joints to check for leaks.
- Maintain for 1 hour at a minimum of 50 psi.
- After passing the 50 psi pressure test, reduce the pressure to 25 psi (max) and maintain until all paving has been completed.



NOV Piping Trench Detail

Pipe Size	Surface	Min. Burial Depth	Min. Backfill
2"	Unpaved	18"	12"
2"	4" Min. Asphalt	12"	8"
2"	4" Min. Concrete	9"	5"
2"	6" Min. Concrete	9"	3"
3"	Unpaved	20"	14"
3"	4" Min. Asphalt	13"	9"
3"	4" Min. Concrete	11"	7"
3"	6" Min. Concrete	10"	4"

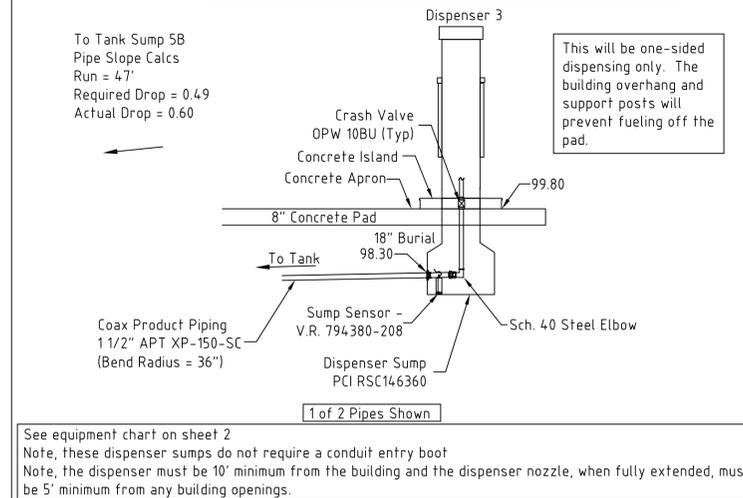
PIPE TERMINATION DETAIL @ GAS DISPENSERS



1 of 3 Pipes Shown

See equipment chart on sheet 2
Note, these dispenser sumps do not require a conduit entry boot

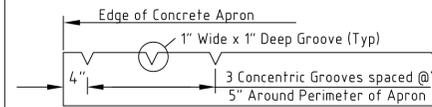
PIPE TERMINATION DETAIL @ DIESEL DISPENSER



1 of 2 Pipes Shown

See equipment chart on sheet 2
Note, these dispenser sumps do not require a conduit entry boot
Note, the dispenser must be 10' minimum from the building and the dispenser nozzle, when fully extended, must be 5' minimum from any building openings.

Positive Limiting Barrier (PLB) Detail
(SIDE VIEW OF CONCRETE DISPENSING PAD - NOT TO SCALE)

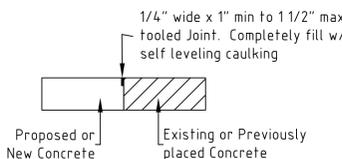


VOLUME CALCULATIONS:

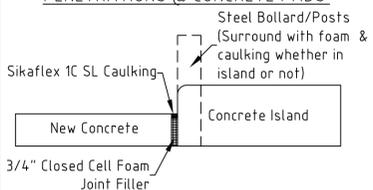
7.48 gal/CF x (1/2 X 1.0" X 1.0") /144 = 0.026 gallons
These grooves provide 0.026 gallons per lineal foot.
Groove Length Required for 5 Gallons = 5 gal/0.026 gal/LF = 192 LF
Groove Length Provided at Gas Disp. Pad= 389 LF
Groove Length Provided at DSL Disp. Pad= 221 LF

CONCRETE JOINT DETAILS

CONCRETE COLD JOINT DETAILS



PENETRATIONS @ CONCRETE PADS:



Control joints consisting of saw cutting to 1/4 the slab depth and sealing with Sikaflex 1C SL caulking shall be provided at 24 times the pad thickness maximum intervals.

Expansion joints using the closed cell foam and caulking detail shown above, shall be provided at 90 foot maximum intervals.

STEEL BOLLARD REQUIREMENTS:

- 4" (min) diameter steel pipe.
- Set 3" (min) into ground and extending 3' above grade.
- 15" (min) diameter concrete footing
- Spaced at 4' (max) spacing.
- Painted with reflective paint or covered with reflective tape
- Located a minimum of 2' from vent stacks

DISPENSING PAD REQUIREMENTS:

- Dispensing pads shall be constructed:
- Of reinforced Portland cement concrete that meets the requirements of NHDOT Standard Specifications for Road and Bridge Construction dated 2016;
 - 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;
 - With control joints that are:
 - Spaced at a maximum of 24 times the pad thickness, but not located directly in front of a dispenser;
 - Cut or formed into the pad surface to a depth of 25% of the pad thickness; and
 - Sealed per note 2 above
 - 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	Sump 4B
ELEVATION @ TOP OF TANK	96.70
ELEV @ TOP OF VENT PIPE @ TANK	97.20
ELEVATION @ Vent Stack	100.10
BURIAL DEPTH OF PIPE	1.67
ELEV @ Top of Vent @ Stack	98.43
PIPE SLOPE DIFFERENTIAL	.123
LENGTH OF PIPING RUN	.74
REQUIRED PIPE SLOPE DIFF (1/8"/FT)	0.77

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

HYDROSTATIC SUMP TESTING (per Env-Dr 4.06.15)

- A hydrostatic tightness test shall be conducted:
- After all seams and fittings have been completed and all piping and conduits have been installed;
 - 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;
 - By recording the liquid level measurements at the beginning and end of the test;
 - For a minimum of 3 hours for containment sumps; and
 - With no addition of liquid to the containment sump after the start of the test.

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.

DISPENSER & PIPING DETAILS

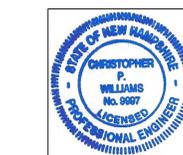
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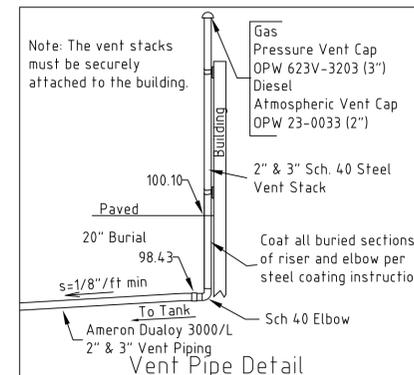
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- The outlet shall be 12' min. above finish grade but if under eaves it shall extend 3' above the roof level.
- Outlets shall be at least 5' from building openings, at least 15' from power vent air intake devices and at least 10' from electrical sources.

ATTACHMENTS

Attachment 1 - Site Inspection Form

Attachment 2 - Personnel Training Log

Attachment 3 - SPCC Plan Location Log

