



**Application for  
Natural Resources Protection Act and  
Clean Water Act Section 404 Permits**

**DCP Searsport, LLC  
Searsport, Maine**

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***Prepared for:***

DCP Midstream Partners, LP  
Denver, Colorado

***Submitted to:***

Maine Department of Environmental Protection  
Bangor, Maine

US Army Corps of Engineers  
Manchester, Maine

***Prepared by:***

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South Portland, Maine



**May 2011  
(As Revised June 2011)**

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**IMPORTANT:** IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

**DEP SIGNATORY REQUIREMENT**

**PRIVACY ACT STATEMENT**

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

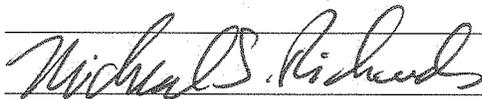
**USACE SIGNATORY REQUIREMENT**

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fined not more than \$10,000 or imprisoned not more than five years or both. I authorize the USACE to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

**DEP SIGNATORY REQUIREMENT**

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."

  
\_\_\_\_\_  
SIGNATURE OF AGENT/APPLICANT

Date: 5-12-2011

**NOTE:** Any changes in activity plans must be submitted to the DEP and the USACE in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

10MM  
Sr. Enviro. Spec.  
5-11-11



18. Nature of Activity (Description of project, include all features)

Construct and operate a liquid propane (LPG) terminal that is to be supplied by ships docking at the existing Mack Point pier, and from which LPG is to then be distributed by truck and rail.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Please refer to Attachment 1 in the accompanying NRPA and Clean Water Act Section 404 application.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Site development for LPG terminal with a 540,000 bbl storage tank, containment dike and other integrally-related operational, safety and security elements.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	clean terrigenous fill	Type		Type	
Amount in Cubic Yards		Amount in Cubic Yards		Amount in Cubic Yards	

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 2.0 Acres  
Or  
Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Please refer to Attachment 2 in the accompanying NRPA and Clean Water Act Section 404 application.

24. Is Any Portion of the Work Already Complete? Yes  No  IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list)

Address - Please refer to Appendix 10A in the accompanying NRPA and Clean Water Act Section 404 application.

City - State - Zip -

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
-Maine DEP	NRPA, SLODA & Minor Source Air Emission				
-US Coast Guard	Waterways Safety Assessment				
-Town of Searsport	Site Plan Review & Shoreland Zone				

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

*Michael S. Richards*  
SIGNATURE OF APPLICANT

5-12-2011  
DATE

\_\_\_\_\_  
SIGNATURE OF AGENT

\_\_\_\_\_  
DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

# **ATTACHMENT 1. DEVELOPMENT DESCRIPTION**

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This attachment provides a description and objectives of the proposed development, the site to be developed and affected land area, information regarding the construction timing and sequence, and detailed drawings that show both existing and proposed site conditions.

## **1.1 Project Description and Purpose**

DCP Midstream Partners, LP (DCP Partners) is submitting this application for a Natural Resources Protection Act (NRPA) and Clean Water Act Section 404 Permit to authorize the construction and operation of a liquid propane (LPG) terminal in Searsport, Maine. The DCP LPG Terminal (the DCP Terminal) would be owned and operated by DCP Searsport, LLC (DCP), a wholly-owned subsidiary of DCP Partners. The property to be developed is adjacent to two existing petroleum storage and distribution facilities operated by Sprague Energy Corporation (Sprague) and Irving Oil Corporation (Irving) and known as the Mack Point Intermodal Cargo Terminal (the Mack Point Terminal). The Mack Point Terminal has an existing Liquid Cargo Pier, an existing Dry Cargo Pier, numerous existing truck load out facilities for products other than LPG, and is serviced by a Montreal, Maine and Atlantic Railroad spur. The DCP Terminal would receive LPG from ships docked at the existing Dry Cargo Pier (the pier) pumped through a new, approximately one-mile long, predominantly above ground pipeline to a new bulk storage tank at the DCP Terminal. DCP would then load trucks and rail cars at the DCP Terminal for distribution of LPG throughout Maine and potentially to other locations in northern New England. The location of the proposed LPG terminal is shown on a United States Geological Survey (USGS) quadrangle map excerpt provided in Attachment 3 of this application.

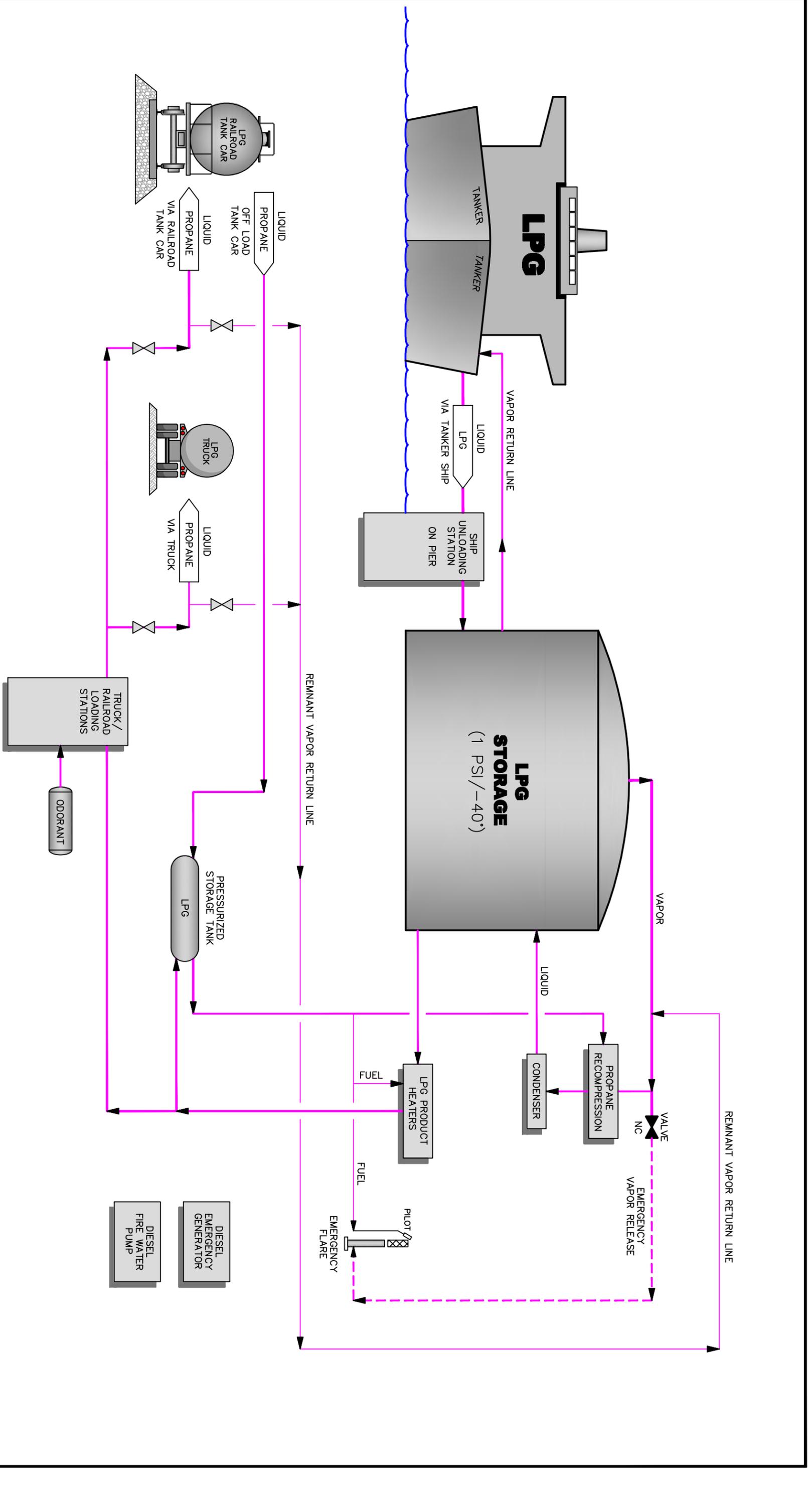
DCP Partners operates its wholesale propane business segment under the name Gas Supply Resources, the largest supplier of propane to the State of Maine. DCP Partners is owned by DCP Midstream, LLC, a private company headquartered in Denver, Colorado, and jointly owned by Spectra Energy Corp and ConocoPhillips Company.

### ***1.1.1 Proposed Facility Description***

Construction of the DCP Terminal will entail the installation of one LPG bulk storage tank, ship unloading facilities on the existing pier, a truck loading station, and a rail car loading station. The facility will also include the installation of ancillary equipment such as methyl-mercaptan storage tanks, an LPG fuel tank, three propane-fired heaters, an emergency propane flare, an emergency diesel-fueled generator, and an emergency diesel-fueled fire water pump and fire water storage tank. Administration, compressor and motor control center buildings, five electric compressors, an electric air fin cooler, and four electric loading pumps will also be required. The facility will operate 24 hours per day, typically seven days per week. The level of facility operation will be highest during the peak heating season. A simplified process flow illustration is provided as Figure 1. Pre- and Post-Development Site Plans are provided in Attachment 5.

#### **Ship Unloading**

The DCP Terminal will utilize the existing Dry Cargo Pier operated by Sprague Energy to receive shipments of liquid propane for offloading to its LPG storage tank. The maximum throughput of the DCP Terminal is based on receiving six ships per year, with each vessel carrying up to approximately 33,000 metric tons (MT) (approximately 410,000 barrels (bbl)) of liquid propane maintained at approximately -40 degrees Fahrenheit (°F). The actual number of ships per year could range from four to eight; however, the maximum amount of LPG received is not expected to exceed 200,000 MT (approximately



**SIMPLIFIED PROCESS FLOW DIAGRAM**

REV	DATE	REVISION	BY	CHK'D	ENGR.	ENGR. MGR.	REV	DATE	REVISION	BY	CHK'D	ENGR.	ENGR. MGR.
0	11-11-10	PROPOSED FACILITY LAYOUT	J.R.E.	D.W.G.			5	4-15-11	FUEL CONNECTION FROM BULLET TANK TO LPG HEATERS	J.R.E.	R.P.M.		
1	11-29-10	ADDED FIRE WATER PUMP	J.R.E.	D.W.G.									
2	12-6-10	REMOVED PROPANE BULLET TANKS	J.R.E.	D.W.G.									
3	2-28-11	ADDED VAPOR RETURN LINE & LPG BULLET TANKS	J.R.E.	D.W.G.									
4	4-1-11	ADDED RAILROAD TANK CAR OFF LOAD	J.R.E.	D.W.G.									



**SEARSPORT PROPANE DISTRIBUTION TERMINAL**

**Searsport, Maine**

2,476,000 bbl) annually. A portable marine unloading arm manifold will be available at the pier and will be used to connect the LPG discharge piping on the ship with a new 16-inch, insulated unloading pipe located beneath or alongside the pier. The unloading pipe will extend approximately one mile, generally above ground, and transfer the LPG to the bulk storage tank at the new terminal. An insulated 10-inch vapor return line will transfer excess vapors displaced from the storage tank during the fill process back to the vessel for cooling and reintroduction into the liquid propane being offloaded. Each vessel will be at the dock for approximately 36 to 48 hours for offloading.

### **LPG Bulk Storage Tank**

The outdoor LPG bulk storage tank will be a vertical, insulated domed tank with diameter of approximately 202 feet and height above ground of approximately 138 feet. The storage tank will have a capacity of 540,000 bbl (approximately 22.7 million gallons) and vertical walls approximately 102 feet high. The propane will be stored in a liquid state at essentially atmospheric pressure (0.5-1.5 pounds per square inch gauge (psig)) by maintaining the temperature between -44 and -42° F. Boil-off vapors will be collected and returned to the tank using refrigeration units. The refrigeration units will consist of three first stage and two second stage electric-powered compressors to pressurize the vapor followed by an electric-powered air fin cooler to condense the boil-off vapors into liquid for reintroduction back into the bulk storage tank. The compressors will be located inside a metal sided, acoustically treated building that is approximately 60 feet long by 40 feet wide and 50 feet high at the peak of the roof.

The storage tank will have an emergency control valve to route vapors to an emergency flare to protect against an over-pressurization situation of the storage tank. The emergency control valve will be set to begin flaring if the tank pressure reaches 1.8 psig.

The tank will also be equipped with process safety valves (PSV) that vent to atmosphere to prevent a catastrophic tank failure if flaring is insufficient to maintain the tank pressure at a safe level. Three PSVs will be set to open if the tank pressure reaches 2.0 psig, and six more will open if the tank pressure reaches 2.2 psig. Other PSVs will also be located throughout the facility. These additional PSVs will not vent vapor to the atmosphere; instead, they will route vapors for re-liquefaction and re-collection in the bulk storage tank.

### **Loading Stations**

The proposed terminal will have truck and rail car loading capabilities, although the rail loading facilities are to be constructed at a later date. To prepare the LPG for loading into either trucks and/or rail cars, it will be heated to near ambient temperature by three outdoor propane-fired heaters which also pressurize the propane. The warmed, pressurized LPG will be fed to the loading stations and into a truck or rail car. Methyl-mercaptan will be injected at the loading stations for odorization as a truck or rail car is filled.

The truck loading station will have three loading racks. One future rail car loading rack is also planned, which will be able to load up to four rail cars at a time. Each loading rack will be fed by a 500 gallon per minute (gpm) electric loading pump located near the bulk storage tank. The LPG that remains in the couplings connecting the fill pipes to the trucks and rail car will be allowed to vaporize in a vapor return line and be routed for re-liquefaction and re-collection in the bulk storage tank. Table 1-1 provides the maximum possible loading schedule, based on the design and maximum throughput of the facility.

**Table 1-1  
Maximum Loading Schedule**

<b>Loading Station</b>	<b>Loadouts per hour</b>	<b>Loadouts per day</b>	<b>Loadouts per year</b>
Truck	9	144	9,000
Rail Car	1	8	600

Table 1-2 provides a typical loading schedule during the peak heating season.

**Table 1-2  
Typical Loading Schedule**

<b>Loading Station</b>	<b>Loadouts per hour</b>	<b>Loadouts per day</b>
Truck	4-6	50-60
Rail Car	1	8

**Emergency Flare**

The proposed terminal will include a 75-foot tall emergency flare with a continuously operating propane pilot light. The flare will be sized to handle storage tank boil-off during process upsets, but is not expected to be used during ship unloading. In addition to infrequent process upsets such as the PSV venting described previously, emergency use of the flare will be required during any situation resulting in the loss of refrigeration for the LPG storage tank. Occurrences of insufficient refrigeration are expected to be limited to periods of commercial power loss since the proposed emergency generator will not be capable of powering the refrigeration units. While the facility will have redundant refrigeration capacity, there could be a limited number of occasions when multiple equipment failures could require the use of the flare as well. Typically, the flare is expected to operate less than a total of approximately 500 hours per year.

**Other Equipment**

Other significant equipment at the proposed facility would include:

- four pressurized outdoor 1,000-gallon methyl mercaptan storage tanks to odorize the propane as it enters a truck or rail car;
- a pressurized outdoor 90,000-gallon LPG storage tank that would provide the fuel for the heaters and flare pilot;
- a 150 kilowatt emergency generator with an associated 640-gallon diesel fuel storage tank located inside an approximately 60-foot long by 20-foot wide by 20-foot high motor control center building;
- a 175 horsepower emergency fire water pump with a separate 280-gallon diesel fuel storage tank located inside a small pump house;
- a 450,000-gallon fire water storage tank that will be approximately 40 feet in diameter by 50 feet tall; and
- an administration building approximately 120 feet long by 40 feet wide by 20 feet high to provide office, communications and bathroom facilities for terminal personnel; dispatcher facilities for truck and rail car loadout; house the terminal control and monitoring equipment; etc.

## 1.2 Existing Site Description and Facilities

The location of the proposed LPG terminal is displayed on the locus map in Attachment 3. The terminal property is situated between US Route 1 and the existing railroad spur terminating at Mack Point. A LPG storage tank and containment area, associated truck and rail car loading facilities, administration building, ancillary terminal equipment and a portion of the aboveground pipeline connecting the storage tank with the pier would be located on an approximately 23.6-acre parcel of land ( the upper parcel) to be owned by DCP. Approximately 19.8 acres of this land area is zoned for Industrial use by the Town of Searsport with the remaining approximately 3.8 acres zoned for Commercial use. This portion of the project area is currently almost entirely forested with early successional/hardwood sapling and more mature secondary growth components. The secondary growth areas are comprised of a mix of conifers and hardwoods. Several shallow to deep drainage swales, formed in silty textured glacio-marine surficial deposits and containing freshwater wetlands and stream components, run across the site in a general northwest to southeast orientation. Forested and scrub-shrub freshwater wetland pockets are also present. The topography slopes downward from US Route 1 towards Long Cove to the southeast. Existing elevations range from approximately 80 to 12 feet above mean sea level. The site is bounded by commercial and residential development along US Route 1 to the northwest; residential land, small forested patches, and the railroad to the north, northeast, and southeast; and small forested patches and residences along Station Avenue to the south and southwest. Of this 23.6-acre parcel, approximately 19.05 acres will be permanently developed and maintained as part of the LPG storage facility, and truck and rail loading stations.

A fifty-foot wide, approximately 3,840-foot long easement corridor for the remainder of the pipeline would extend from the upper parcel through the Industrially-zoned Irving facility to the pier. This easement would consist of approximately 4.4 acres of land, parts of which are owned by Sprague and the rest by the Maine Port Authority. Approximately 300 linear feet (approximately 0.3 acre) of this easement is primarily undeveloped, wooded land. The remainder is predominantly developed as portions of the existing Irving and Sprague facilities, the railroad spur, and roads, or appears to have been previously disturbed during the development of existing or previous land uses and now supports meadow and early successional growth. The topography along the easement corridor is generally flat, with silty textured glacio-marine sediments and fill materials.

The existing ship traffic at the two piers totals approximately 136 vessels per year on average with a maximum to date of 166 vessels per year. The number of trucks currently entering and exiting the Mack Point Terminal is approximately 20,000 per year on average with up to approximately 30,000 trucks per year as a maximum. The existing rail traffic is typically approximately 2,500 rail cars per year, averaging about 10 to 15 cars at a time.

An additional approximately 20.1-acre parcel of land, consisting of approximately 6 acres of forested upland between the railroad spur and Long Cove with the remainder consisting of tidal wetlands and mudflat, will be owned by DCP. The area above high tide contains similar drainages and associated bands of freshwater wetland, one of which originates on the upper parcel. No development is proposed for this area. This area is also zoned as Industrial.

Table 1-3 provides a summary of the land area requirements for the proposed facilities.

**Table 1-3  
Land Requirement Summary**

<b>Parcel</b>	<b>Total Area</b>	<b>Area Affected by Construction/Operation</b>
Purchased for Terminal Development	23.6 acres	19.7 acres
Purchased - to Remain Undeveloped	20.1 acres	-0-
Pipeline Easement	4.4 acres	4.4 acres
<b>TOTALS</b>	<b>48.1 acres</b>	<b>24.1 acres</b>

**1.3 Construction Schedule**

Construction of the DCP Terminal is expected to begin in the late fall of 2011 and take approximately 18 months of active construction to complete. The anticipated in-service date is August of 2013 for full operations using LPG distribution by truck. The schedule for construction and in-service of the rail car loading facility is unknown at this time.

**1.4 Drawings**

The following project drawings are included in support of this application and are located in Attachments 5, 6 and 8:

<b>Drawing No.</b>	<b>Attachment</b>	<b>Drawing Name</b>
None	5	Pre-Development Site Plans
2001-01, 2002-01	5	Post-Development Site Plans
5001-01 – 5100-01	5	Pipeline Drawing Set (14 drawings)
2003-01, 2004-01, 2004-02, 2005-01	6	LPG Tank Area Grading Sections & Details
179023-C3, Sheets 1 & 2	6	Cross Sections & Details
179023-C2	8	Post-Development Drainage Plan
179023-C4	8	Erosion Control Notes & Details

## **ATTACHMENT 2. DISCUSSION OF PRACTICABLE ALTERNATIVES**

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DCP Partners is proposing to develop a LPG terminal in Searsport, Maine, on industrially- and commercially-zoned land adjacent to the existing Mack Point Terminal. DCP would receive LPG from ships docked at Sprague Energy's existing Dry Cargo Pier, and transfer the LPG through a new, approximately one-mile long, predominantly above ground pipeline to a new bulk storage tank at the DCP Terminal. DCP would then load trucks and rail cars for distribution of LPG throughout Maine and potentially to other locations in northern New England.

### **2.1 Project Purpose and Need**

The primary purpose of the DCP Terminal is to establish and operate a LPG import and distribution facility to service the growing LPG market in Maine. Propane has become an increasingly important component of Maine's energy mix. Estimates indicate that up to approximately 90 million gallons of LPG are used annually in the state for industrial, commercial and residential heating needs. More than 26,000 Maine households heat with propane. The use of propane is expected to grow in the state in response to environmental requirements that demand increasingly lower emissions of air pollutants as well as the expected volatility expected in the price and supply of heating oil, which currently supplies approximately 75% of Maine's home heating needs – the highest in the nation. The benefits of dependable, diverse, competitively-priced sources of clean energy to the economic and environmental health of the state have been recognized for many years.

For the past 15 years, DCP, which operates its wholesale propane business segment under the name Gas Supply Resources (GSR), has utilized rail terminals in Bangor and Auburn, Maine to supply the Maine market area. The origin of the propane is western Canada, and the gas is shipped to the terminals via a Canadian rail line.

Over the past several years (since approximately 2005) there has been a steady decline in Canadian natural gas production due in part to lower natural gas prices as well as high crude oil prices which has resulted in an emphasis on drilling for oil. Since propane is a by-product of the natural gas recovery process, less production of natural gas means less production of propane. Natural gas production from Canada is forecasted to continue this decline, which will in turn lower propane exports further still. Gas supplies that are recovered in Canada will be used first to satisfy domestic demand and not for export to the US. At the same time, there has also been a significant increase in heavy, crude oil production in western Canada, which requires significant quantities of diluents to blend with the crude (i.e., to lighten or thin) for transport through pipelines. The dramatic increase in diluent demand has added a competing pressure on the availability of the rail infrastructure in western Canada for the transportation of propane. Additionally, there have been two labor strikes or threats thereof during recent winters that have impeded further the timely and effective distribution of propane during this critical time of year. Propane deliveries in Maine had to be rationed in 2007 due to a Canadian railroad strike, an interruption in pipeline imports into New York State and severe weather at sea. Coupling the lowered production of Canadian propane with restricted rail service has resulted in significant challenges for bringing a dependable supply of propane into Maine.

Another important factor in the need for a LPG import terminal in Maine is the cost of rail service, which has continued to escalate much faster than inflation.

GSR currently imports propane through two marine import terminals, one in Rhode Island and one in Virginia. Supplies of LPG are available from overseas (northern Africa, the North Sea, and the Middle East) that can be transported by ship dependably, safely and at a reasonable cost in large quantities.

Given the continuing challenges with both supply and transportation logistics from Canada, and DCP's experience with the waterborne import market, a similar marine import terminal and bulk storage facility in mid-coast Maine would ensure consistent access to an adequate supply of propane for the state. Propane is an important, growing component of a clean energy mix in Maine, and will help to address the current over-reliance on oil.

From the outset of project planning, a major DCP goal has been to utilize an existing deepwater cargo pier to avoid the obvious environmental concerns that would accompany the development of a new deepwater pier. The waterway should be currently in use for similar bulk cargo shipping traffic, and present minimal or no safety or security issues with regard to its suitability for LPG cargo vessels. To safely and dependably accommodate the LPG vessels, the pier must have a minimum water depth of 35 feet at low tide, be of sufficient size and construction to handle vessels up to approximately 800 feet long and 38,000 metric tons, and be compliant with current security and seismic standards administered by the US Coast Guard. The pier should have good access to major highways and to rail service, with a mid-coast Maine location preferred. Additionally, to be consistent with local development goals, the site should be suitably zoned for this type of industrial development and, preferably, existing land use in the area should be consistent and compatible with DCP's proposed terminal.

## **2.2 No Action Alternative**

The "no-action" alternative would preclude the construction of the DCP Terminal in Searsport. Without the DCP Terminal, Maine would forego numerous benefits. Those lost benefits include access to a sufficient, reliable supply of propane to meet existing demand and projected growth at a stable, more-predictable cost (along with the economic and environmental benefits that flow from use of propane); increased diversity of propane supply and sources of energy to the region; increased inter-fuel and propane-versus-propane competition to stabilize and lower energy costs; increased flexibility and efficiency in the operations of the LPG delivery systems in the region; and new infrastructure for future availability of additional propane supplies.

The "no-action" alternative would constrain the ability of propane distributors and retail outlets in Maine to meet their customer's needs during emergency situations that result in the lack of sufficient supply into the state under the current market conditions, and which are expected to become more prevalent as Canadian supplies decrease and in-state demand increases. It would eliminate the additional benefits to the state and local area that would accrue from a projected 50 – 100 construction jobs and 12 – 14 permanent, full-time jobs for ongoing operations. DCP has a proven track record for hiring locally, wherever possible, for both construction and operation, and has an expressed willingness to train and certify local people to fill technical positions and skilled labor needs before they are needed on the job site. DCP would pay significant state and local taxes, potentially becoming the highest taxpayer in Searsport, and make significant expenditures within the state and local community for goods and services. DCP also has a demonstrated and expressed willingness to provide other community benefits ranging from enabling the purchase of needed equipment and training for local emergency services to offering scholarships for secondary education to local students.

The no-action alternative would avoid all of the direct environmental impacts that would be associated with the proposed project. However, this critical source of energy, in terms of securing a reliable, stable and cost competitive supply and diversity of fuel options with the attendant air quality and economic benefits described, would not be realized.

## **2.3 Evaluation of Alternative Sites in Maine**

Maine has three existing seaports that are well suited to handle the requirements of international cargo vessels: Portland, Searsport and Eastport. Additional cargo ports are located at Brewer, Bucksport and Rockland. DCP evaluated these existing cargo port locations. Any of these locations would satisfy, to varying extents, the preference for existing, adjacent similar land uses. This attachment presents the locations considered and positive and negative aspects of each location.

### **2.3.1 Portland**

Portland Harbor has a several existing piers on the South Portland side in addition to the Intermodal Cargo Pier in Portland with sufficient water depths at all tides that could accommodate LPG cargo vessels. However, there is no undeveloped land with the exception of small areas near the Portland Pipeline facilities on Spring Point in South Portland which are not now served by rail. There is no nearby access to rail on the Portland side and access from South Portland pier locations exists only from the inner harbor options. In addition, it is Maine's busiest commercial harbor, which also gets extensive recreational use, all within a confined channel. Shipping traffic headed for the inner harbor piers is further confined by the obstruction to navigation presented by the Casco Bay Bridge (a drawbridge). Portland Harbor is centrally located between the cities of Portland and South Portland with combined populations of approximately 89,500 people and a larger metropolitan area containing approximately 230,000 people. Densely populated areas occur immediately adjacent or nearby the piers, all of which escalates safety/security concerns. Access to the highway system would have to utilize congested city roads.

Portland Harbor has been eliminated as a suitable location for this project due to the lack of undeveloped land and easy access to both highway and rail systems, and the safety and security drawbacks presented by its narrower, more congested channel, the Casco Bay Bridge, and its central location within a densely populated metropolitan area. To a lesser extent, it's southern versus central Maine location is also a drawback.

### **2.3.2 Eastport**

The Port of Eastport has two main piers; the first is the Estes Head Terminal and the second is the downtown pier. There are no obstructions to navigation and it is located in a low density population area. The downtown pier cannot handle a LPG cargo vessel. The Estes Head Cargo Terminal can accommodate a ship of 900 feet in Berth A and has 64 feet of water at low tide. The extreme tidal fluctuations and strong currents in the Bay of Fundy, while not prohibitive to safe navigation, present some additional risk, however. Undeveloped land near the Estes Head Terminal is zoned for Commercial Fisheries Marine Activities (CFMA), Industrial (I), and for a depth of approximately 250 ft from the shoreline, Shoreland General Development (SGD). The Industrial zone portion of Estes Head covers an area of approximately 25 acres and is now occupied by a large warehouse that presents a substantial constraint to the land area required to site the footprint of the DCP Terminal. Although access to the highway system from Estes Head is good but there is no rail access. A major drawback for Eastport is its remote location in extreme eastern Maine far from the markets in Maine's metropolitan areas. The Estes Head Marine Terminal was therefore eliminated as a suitable location due to the lack of available developable land, absence of rail service and its remote location.

### **2.3.3 Bucksport**

The only terminal in Bucksport is the Webber Dock on the Penobscot River. It can accommodate vessels up to 700 feet in length. Draft is limited to 35 feet (brackish water allowance) at high water transit. Due

to the tidal cycle and current effects, all vessels calling on Bucksport usually dock within one hour of high or low water slack. A draft limitation of 28 feet is in effect for vessels berthing at low water. Obstructions for transit to Bucksport include two bridges (located below Bucksport) with a vertical clearance of 135 feet. Due to this vertical obstruction, vessels over 10,000 tons are restricted to daylight transits only. Water depths and daylight transit requirements make the Bucksport facility unsuitable for LPG cargo vessels.

#### **2.3.4 Brewer**

Brewer's commercial traffic consists of small coastal passenger vessels during the summer and fall seasons. Cianbro Corporation is building modular parts for a refinery in Port Arthur, Texas. Barges are used to ship these modules to the refinery and present a significant increase in the commercial traffic on the Penobscot River. The draft limitation is 14 feet, however, and a vertical obstruction by the Veterans Memorial Bridge is at 74 feet. There are insufficient water depths for LPG vessels to transit up the Penobscot River to Brewer. In addition, there is no existing pier that could accommodate a LPG vessel.

#### **2.3.5 Rockland**

Portland cement is brought by rail from the Dragon Cement Plant in Thomaston to Rockland Harbor and shipped by barge to the Boston area. Neither sufficient water depths nor a suitable pier exist at Rockland Harbor to accommodate the LPG cargo vessels. Rockland Harbor is also very congested with insufficient maneuvering room for these large vessels.

#### **2.3.6 Mack Point, Searsport**

Mack Point offers essentially all of the desired attributes that support the development of a propane import and distribution terminal. The Dry Cargo Pier at the Mack Point Terminal has 40 feet of water depth at low water, it is a new pier of sufficient size to safely accommodate the LPG vessels, and is constructed in accordance with the latest codes. Searsport, most specifically Mack Point, has been an established port for bulk cargo vessels for many years and Town planning has already designated the currently undeveloped site for future industrial/commercial growth. Sprague Energy is an experienced terminal operator and the Mack Point Terminal is already in similar service to what is proposed. Bulk storage tanks owned by the Irving Oil Corporation and Sprague Energy also now exist at Mack Point. Finally the site is centrally located in Maine, and has existing, immediately adjacent access to both highway and rail transportation routes.

From a waterway suitability perspective, the Mack Point Terminal is superior to other potential options because:

- With regard to navigation safety, Penobscot Bay is wide and deep and has plenty of room to maneuver or anchor in case of an emergency;
- The tides and currents are very manageable, ship movements are not significantly limited by tide or currents;
- The characteristics of the waterway are such that ship meeting and crossing situations can be avoided, and there are no blind turns;
- The ship transit route does not cross or pass any critical infrastructure such as bridges;
- There are multiple navigation routes into and out of the port;
- The port is uncongested and does not have the amount of commercial, deep draft traffic that occurs in Portland;

- The terminal is well protected from the elements; and
- The population densities along the route are small and ship transit does not come close to a large urban area;

No other existing cargo pier on the Maine coast satisfies all of the project siting objectives.

In addition, in 2009, as part of Maine’s Three-Port Strategic Plan, the Maine Port Authority presented in a *Request For Expressions of Interest* (RFEI) parcels for potential development in Searsport including Sears Island and undeveloped land at the existing Mack Point Terminal. Although 330 acres on the west side of Sears Island is designated as a developable parcel, the Island is not yet served by a pier or other infrastructure necessary for receipt, transfer or land-based transport of cargo, and therefore did not meet the objective of utilizing an existing pier. Public and non-governmental organization (NGO) involvement in the designation of a portion of Sears Island for potential future port development also clearly favored the build out of Mack Point first, before Sears Island was affected.

As a result, DCP’s selection of the site at Mack Point for its terminal is entirely consistent with the State’s plan for strategic port development, and responds to earlier public and NGO concerns.

#### **2.4 Evaluation of Alternative Locations at Mack Point**

The Maine Port Authority RFEI identifies a total of approximately 70 acres of available undeveloped land at the Mack Point Terminal on the north and south sides of Station Avenue. The property on the south side of Station Avenue is dissected by the active railroad spur now serving both Irving Oil and Sprague Energy. Disruption or relocation of the rail spur is considered to be impracticable. Thus, the rail spur divides the available land on the south side of Station Avenue into parcels that cannot be joined and each one individually is too small for siting the LPG terminal. Consequently the 20.75-acre parcel designated in the RFEI on the north side of Station Avenue, which has since been reduced to approximately 19.8 acres by a recent land purchase, was selected as the only feasible location for the proposed DCP Terminal. As described further in Section 2.6.1, below, DCP’s proposed site also includes an additional, abutting 3.8-acre parcel at the corner of Station Avenue and US Route 1.

#### **2.5 Evaluation of Reducing the Size of the Terminal**

The primary factor that determines the size of the proposed terminal is that it must be able to accept the full cargo (approximately 33,000 MT or approximately 410,000 bbl) of liquid propane carried by today’s marine cargo vessels equipped to transport LPG at approximately -40 °F. Without this capacity the terminal would not be economically viable. As a result, the bulk storage tank must be able to hold this volume with additional room for dead space or “heel” (the amount of propane at the very bottom of the tank that cannot be pumped into trucks or rail cars), and head space (the volume required at the top of the tank to contain boil-off vapors that are then captured, compressed, cooled and sent back to the tank as liquid).

Most other parameters affecting the land area required for the facility follow from the size of the tank; namely, the size of the containment area that is required, the setback requirements to property lines, and separation distances between various components at the facility (e.g., between combustion sources and propane storage vessels), all of which are required for fire prevention and fire safety purposes. In addition, other facility safety/security requirements must be met, such as the location of fencing and its setback from property lines, as well as providing adequate parking area and turning radii for transport trucks so they are not parked along the sides of public roads while waiting to be loaded, etc.

The amount of land area required for an economically viable LPG terminal receiving product via maritime shipping is a function of all these parameters. In fact, extensive evaluation of design options and constraints was necessary to fit the terminal on the amount of available land at Mack Point.

## **2.6 Evaluation of Alternative Layouts for the Selected LPG Terminal Site**

### **2.6.1 Terminal Storage and Distribution Facilities**

As mentioned above, operation, safety and security requirements impose limitations on the flexibility of alternate site layouts that can be considered at the selected project site. Local zoning ordinances as well as Maine Department of Transportation requirements for access to/from US Route 1 are additional site development criterion that must be incorporated into an acceptable layout. Operationally, sufficient space must be provided for not only turning movements and off-street parking of trucks distributing LPG from the site but also for access by cranes and other equipment required during routine operation and maintenance at the facility. Safety requirements establish separation or setback distances between project elements such as truck loading racks, the bulk storage tank and LPG heaters as well as distances from abutting properties. Flammable material such as woody or dry vegetation is also prohibited in many parts of the facility and in combination with fencing is also maintained at a low height for achieving unobstructed views for security requirements. The interplay between these three overriding elements of site layout therefore imposes considerable limitations on implementing alternate site layouts that would otherwise avoid or minimize impacts to wetland resources.

In order to better address siting constraints and requirements, DCP has purchased the parcel of land at the corner of Route 1 and Station Avenue (Map 7, Lot 60) along with the lot initially proposed to be purchased from Sprague Energy (Map 7, Lot 56). This accomplishes several things, namely:

- It allows for the avoidance of wetland/stream impacts other than some clearing of trees to the first approximately 210 feet of the wetland/stream system that starts by Route 1 near the proposed exit drive by moving the facility entrance driveway to Station Avenue;
- Keeping the exit drive on Route 1 reduces the impact that would occur to the wetland located on Lot 60 if both the facility entrance and exit were from Station Avenue, and also provides some additional visual screening by retaining more of the trees located on Lot 60;
- It allows for sufficient land area at the facility entrance drive to ensure that trucks waiting to be filled will not have a tendency to wait on the shoulder of Route 1, which may have been the case if the plant entrance were located alongside the exit as originally discussed;
- It provides enough additional land area to allow other terminal components to be moved so that facility safety and security requirements such as setbacks from abutting property lines and separation distances between facility components are more readily met; and
- It provides improved internal traffic circulation.

Prior to purchasing the additional land at the corner of US Route 1 and Station Avenue, the entrance to, and exit from, the project site were initially contemplated within the 200 ft of frontage of Sprague land on US Route 1. However, as shown in Sections 4 (Photographs 6 and 7) and 5 and discussed in Attachment 9, a stream channel also originates in this area from the mouth of a culvert beneath Route 1. This would have required containing the stream flow within a culvert beneath the entrance/exit driveways and truck loading facilities. Relocation of the site entrance to Station Avenue resulted in avoidance of any impact other than minimal removal of tall trees right at the Route 1/exit driveway intersection to improve visibility for exiting traffic to approximately 210 feet of the stream channel and associated wetlands.

In addition, the length of the culverted portion of the stream in the downstream direction has been reduced as much as possible as well, and replaced by conveyance of the flow in a relocated stream channel along the southerly perimeter of the site around the terminal facilities to a point where it will then reconnect with the remaining existing stream channel.

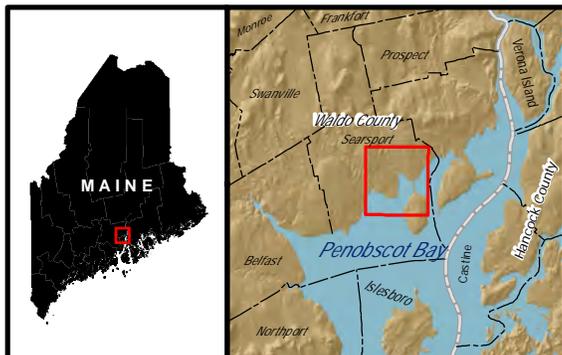
### ***2.6.2 Transfer Pipeline Route***

The pipeline route was essentially determined by Sprague Energy, and has only minimal wetland clearing impacts once off DCP's upper parcel. No pipe foundations will be placed in wetlands. Other routing options considered were to run the pipeline offshore until adjacent to DCP property but this was rejected due to the significant increase in environmental impact that would result; most notably that total avoidance of impacts to tidal wetlands would not have been achieved. In addition, the Montreal, Maine and Atlantic Railroad was approached about running the pipeline between the tracks and the shore (along the east side of the tracks); however, they would not agree to that approach citing constraints for potential future use of that area for their purposes.

## **ATTACHMENT 3. LOCATION MAP**

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The proposed DCP Terminal would be located off US Route 1 and Station Avenue in Searsport as shown on the following excerpt from the Searsport USGS 7.5 minute quadrangle maps.



**LEGEND**

- Site Boundary
- Transfer Pipeline
- County Boundary (MEGIS)
- Town Boundary (MEGIS)

Data Sources: Maine Office of GIS (MEGIS), United States Geological Survey (USGS) - Searsport and Casline Topo Quads.  
 Projection: NAD83, UTM Zone 19N, Grid North.

**DCP Midstream Partners, LP**

DCP Searsport Propane Terminal  
 Searsport, Maine

*Site Location Map*

Created by: **TRC** 5/11/2011

## ATTACHMENT 4. PHOTOGRAPHS OF WETLAND RESOURCES

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**Photograph 1** Seaward (south) view of Mack Point dry cargo pier where LPG tankers will dock on left (east) side of left pier. The tanker on the right is docked at the liquid cargo pier.



**Photograph 2** Landward view of the east side of dry cargo pier looking across Long Cove, a coastal wetland, with the proposed LPG terminal site appearing on the mainland at the right center of the photo. White tanks at the center are the Irving Terminal.



**Photograph 3a, 3b** The outlet to tidal Long Cove of the southerly stream channel is a 36" CMP beneath the Montreal, Maine and Atlantic Railroad. The hanging culvert outlet prevents upstream fish passage.



**Photograph 4** Downstream view of the southerly stream channel looking toward the mouth of 36" CMP beneath the railroad.



**Photograph 5** Upstream view from the 36" CMP of the cobble-boulder stream channel and PFO1 wetland B. Flow in the channel appears to be marginally perennial and flashy (exceeds extent displayed as evidenced by scoured width) in response to spring freshet, snowmelt and highway runoff.



**Photograph 6** Upstream view of the 24” RCP (center of photo under small log) beneath US Route 1 (car top center) where the southerly stream flows onto the site.



**Photograph 7** Close-up view of the 24” RCP outlet that conveys flow onto the site from the opposite side of US Route 1.



**Photograph 8** Upstream view of headwall for the 24"RCP on the northwest side of US Route 1. No eroded stream channel is evident in the wetland at this location.



**Photograph 9** Downstream view from the railroad of a drainage channel that drains the center and northern portion of project site.



**Photograph 10** The hanging outlet of this 24" culvert also prevents upstream fish passage in this drainage.



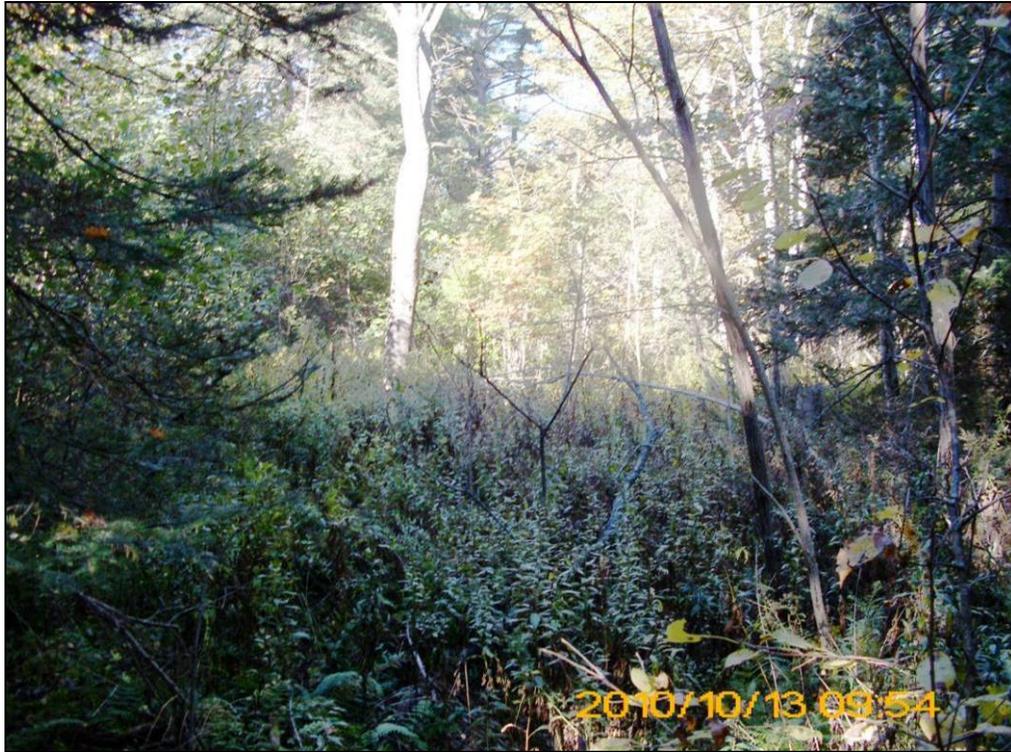
**Photograph 11** Downstream view of ephemeral drainage channel looking toward the mouth of the 24" CMP beneath the railroad.



**Photograph 12** Upstream view of the incised ephemeral drainage channel that drains the center and northern portion of the site.



**Photograph 13** Representative overview of the forested/scrub shrub wetland (PFO/PSS) wetland B near the center of the site that is drained by the channel in Photographs 9 – 12.



**Photograph 14** Representative overview of the broad-leaved deciduous forested/scrub shrub (PFO1/PSS1) wetland A near the north corner of the site that is drained by a ditch leading toward the railroad tracks.



**Photograph 15** Representative overview of the broad-leaved deciduous forested/scrub shrub (PFO1/PSS1) wetland D near the south corner of the site that drains into the stream located along the southerly side of the site.



**Photograph 16** Representative overview of the scrub shrub (PSS) wetland E located on the commercial lot that will be crossed to access the LPG terminal facility from Station Avenue.



**Photograph 17** Northward view toward Station Avenue (crosses center of Photo) of mown PSS1/PEM wetland F that will be crossed by a short, above grade segment of the transfer pipeline.

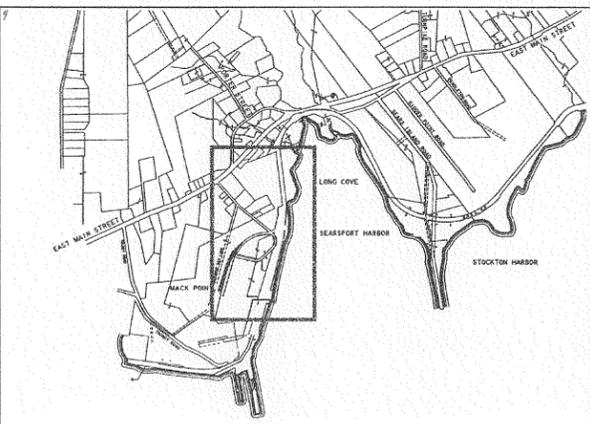
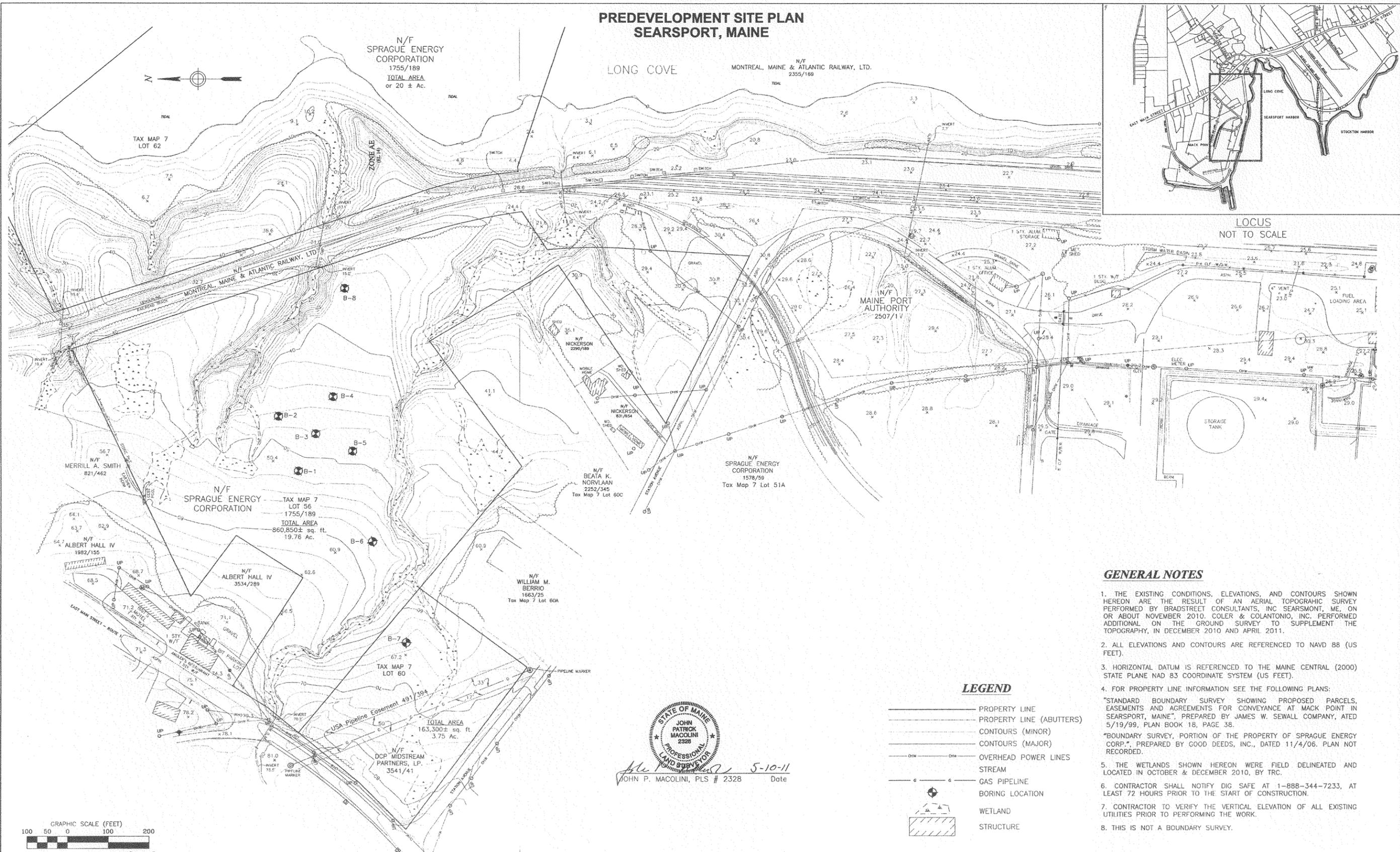
## **ATTACHMENT 5. OVERHEAD AND SIDE VIEW PLANS**

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An overview of the work to be conducted at the DCP Terminal is presented on the attached plans.

Drawing No.	Attachment	Drawing Name
None	5	Pre-Development Site Plans
2001-01, 2002-01	5	Post-Development Site Plans
5001-01 – 5100-01	5	Pipeline Drawing Set (14 drawings)

**PREDEVELOPMENT SITE PLAN  
SEARSPORT, MAINE**



**GENERAL NOTES**

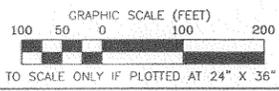
1. THE EXISTING CONDITIONS, ELEVATIONS, AND CONTOURS SHOWN HEREON ARE THE RESULT OF AN AERIAL TOPOGRAPHIC SURVEY PERFORMED BY BRADSTREET CONSULTANTS, INC SEARSMONT, ME, ON OR ABOUT NOVEMBER 2010. COLER & COLANTONIO, INC. PERFORMED ADDITIONAL ON THE GROUND SURVEY TO SUPPLEMENT THE TOPOGRAPHY, IN DECEMBER 2010 AND APRIL 2011.
2. ALL ELEVATIONS AND CONTOURS ARE REFERENCED TO NAVD 88 (US FEET).
3. HORIZONTAL DATUM IS REFERENCED TO THE MAINE CENTRAL (2000) STATE PLANE NAD 83 COORDINATE SYSTEM (US FEET).
4. FOR PROPERTY LINE INFORMATION SEE THE FOLLOWING PLANS:  
"STANDARD BOUNDARY SURVEY SHOWING PROPOSED PARCELS, EASEMENTS AND AGREEMENTS FOR CONVEYANCE AT MACK POINT IN SEARSPORT, MAINE", PREPARED BY JAMES W. SEWALL COMPANY, ATED 5/19/99, PLAN BOOK 18, PAGE 38.  
"BOUNDARY SURVEY, PORTION OF THE PROPERTY OF SPRAGUE ENERGY CORP.", PREPARED BY GOOD DEEDS, INC., DATED 11/4/06. PLAN NOT RECORDED.
5. THE WETLANDS SHOWN HEREON WERE FIELD DELINEATED AND LOCATED IN OCTOBER & DECEMBER 2010, BY TRC.
6. CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-344-7233, AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
7. CONTRACTOR TO VERIFY THE VERTICAL ELEVATION OF ALL EXISTING UTILITIES PRIOR TO PERFORMING THE WORK.
8. THIS IS NOT A BOUNDARY SURVEY.

**LEGEND**

- PROPERTY LINE
- PROPERTY LINE (ABUTTERS)
- CONTOURS (MINOR)
- CONTOURS (MAJOR)
- OVERHEAD POWER LINES
- STREAM
- GAS PIPELINE
- BORING LOCATION
- WETLAND
- STRUCTURE



JOHN P. MACOLINI, PLS # 2328 Date 5-10-11

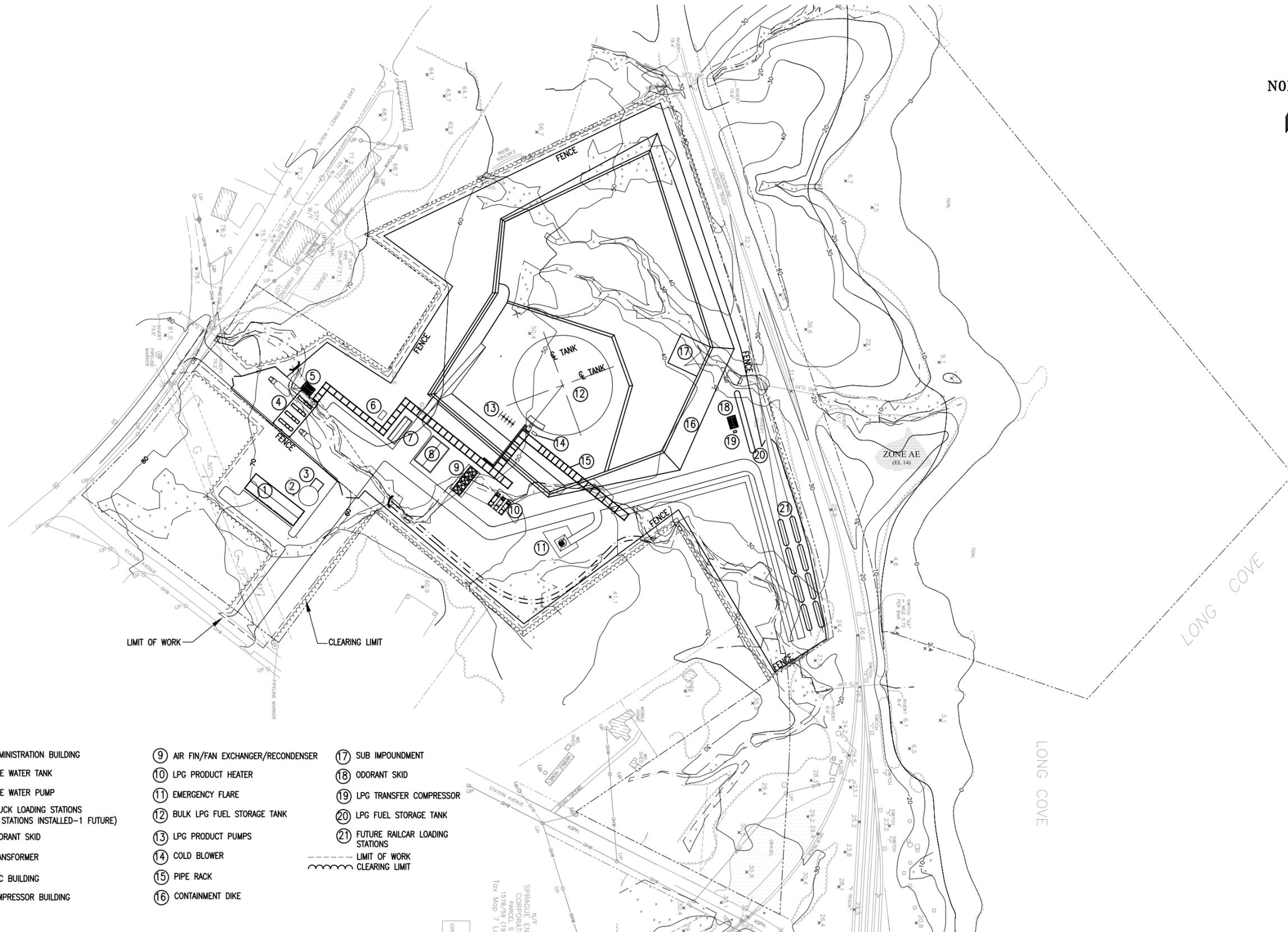


DRAWING NO.	TITLE	No.	DATE	DESCRIPTION	REV	DSN	CK

**25 COLER & COLANTONIO**  
ENGINEERS AND SCIENTISTS

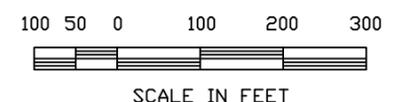
DRWN	CHKD	DATE

APPROVED BY  
**COLER & COLANTONIO, INC.**  
DATE: MAY 2011  
**SHEET 1 OF 1**  
DCP SEARSPORT  
**SEARSPORT, MAINE**



**LEGEND:**

- |   |                                     |                                   |
|---|-------------------------------------|-----------------------------------|
| ① ADMINISTRATION BUILDING                                   | ⑨ AIR FIN/FAN EXCHANGER/RECONDENSER | ⑰ SUB IMPOUNDMENT                 |
| ② FIRE WATER TANK   | ⑩ LPG PRODUCT HEATER                | ⑱ ODORANT SKID                    |
| ③ FIRE WATER PUMP   | ⑪ EMERGENCY FLARE                   | ⑲ LPG TRANSFER COMPRESSOR         |
| ④ TRUCK LOADING STATIONS<br>(3 STATIONS INSTALLED-1 FUTURE) | ⑫ BULK LPG FUEL STORAGE TANK        | ⑳ LPG FUEL STORAGE TANK           |
| ⑤ ODORANT SKID  | ⑬ LPG PRODUCT PUMPS                 | ㉑ FUTURE RAILCAR LOADING STATIONS |
| ⑥ TRANSFORMER   | ⑭ COLD BLOWER                       | --- LIMIT OF WORK                 |
| ⑦ MCC BUILDING  | ⑮ PIPE RACK                         | - - - CLEARING LIMIT              |
| ⑧ COMPRESSOR BUILDING                                       | ⑯ CONTAINMENT DIKE                  |                                   |



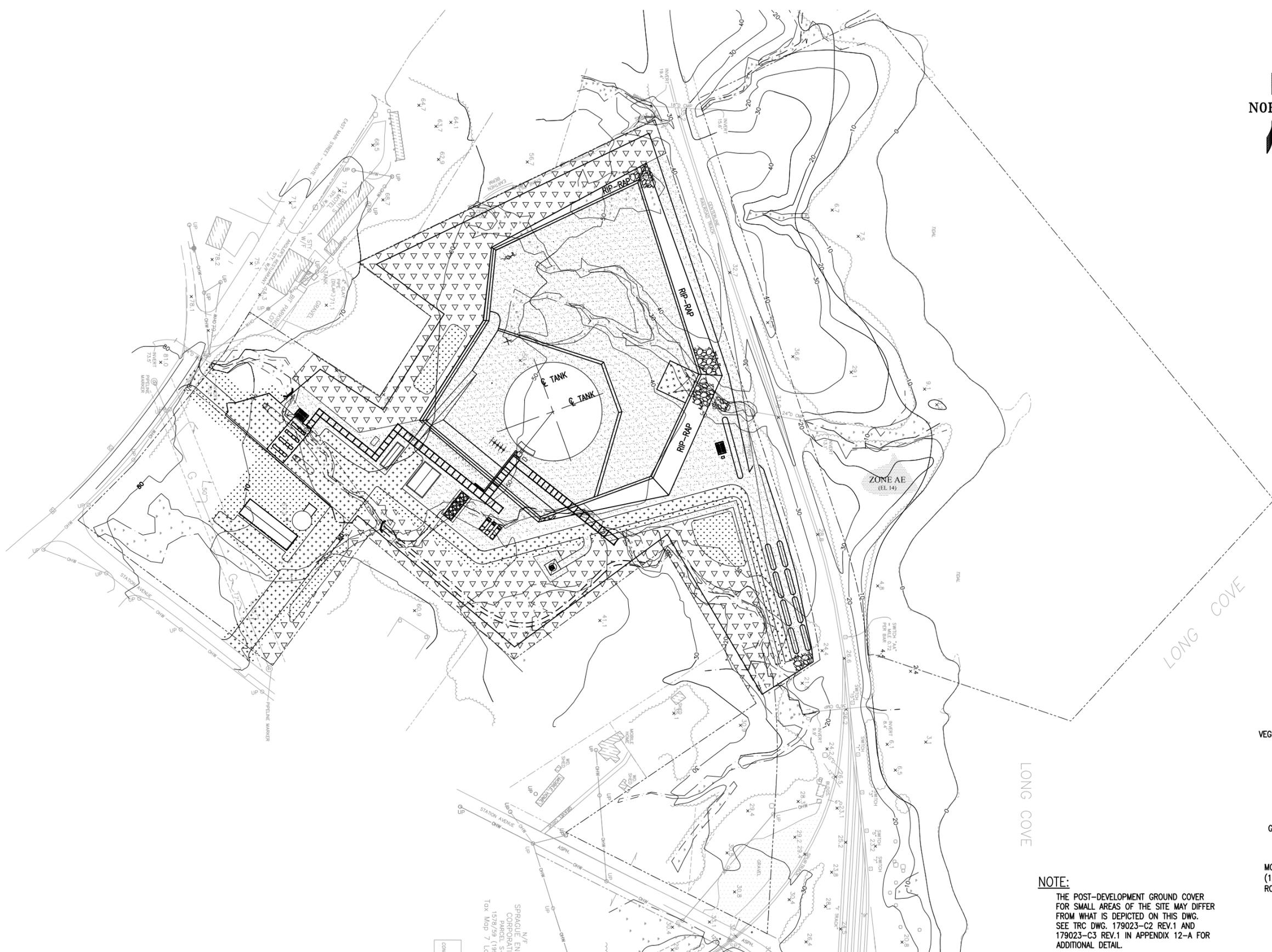
REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL
G	08JUN11	GENERAL SITE REVISIONS - ISSUED FOR PERMITTING	JRT	RPI	
F	25MAY11	IMPOUNDMENT REVISED - ISSUED FOR PERMITTING	JRT	RPI	
E	27APR11	ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION	JRT	RPI	
D	20APR11	TANK AND EQUIPMENT REVISED FOR NEW SITE LAYOUT	JRT	RPI	
C	11APR11	SITE UPDATED	JRT	MRM	
B	23MAR11	REVISED SITE LAYOUT	SEG	MRM	

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W/F SPRAGUE ENGINEERING CORPORATION  
PARCEL S-1578/79 (199)  
TOP MAP 7 LO

<p><b>MATRIX SERVICE</b> INDUSTRIAL SERVICE CONTRACTOR</p>	CUSTOMER: DCP MIDSTREAM LPG STORAGE FACILITY SEARSPORT, MAINE	DRAWN BY: SEG 13JUL10
	TITLE: POST - DEVELOPMENT SITE PLAN	CHECKED BY: MRM 14JUL10
	OFFICE: PITTSBURGH	CONTRACT: 4410-8173
	DWG. NO. 2001-01	SHEET 01 OF 01

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION

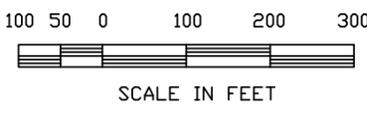


**LEGEND:**

- VEGETATED AREA
- PAVEMENT
- GRAVEL/STONE
- MOWED GRASS (12' WIDE ALONG ROADWAY)

**NOTE:**  
 THE POST-DEVELOPMENT GROUND COVER FOR SMALL AREAS OF THE SITE MAY DIFFER FROM WHAT IS DEPICTED ON THIS DWG. SEE TRC DWG. 179023-C2 REV.1 AND 179023-C3 REV.1 IN APPENDIX 12-A FOR ADDITIONAL DETAIL.

ISSUED FOR PERMITTING  
 NOT FOR CONSTRUCTION



REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL
B	08JUN11	GROUND COVER REVISED TO MATCH SITE REVISIONS	JRT	RPI	

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SPRAGUE/W/F  
 CORPORATION  
 1578/59 (198)  
 PARKER ST.  
 TOX MAP 7 LG

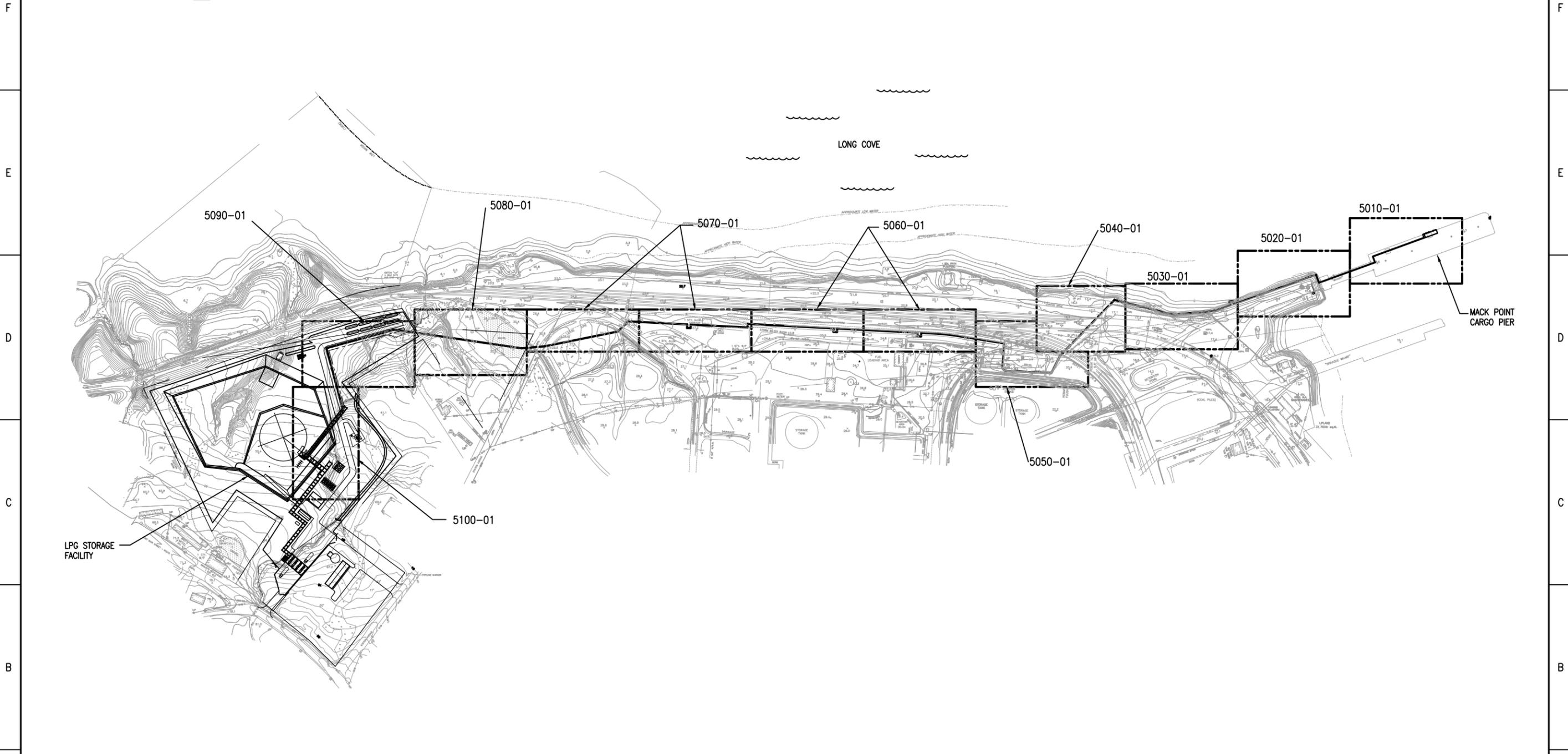
**MATRIX SERVICE**  
 INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
 LPG STORAGE FACILITY SEARSPORT, MAINE

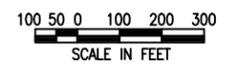
TITLE: SITE PLAN  
 POST DEVELOPMENT GROUND COVER

DRAWN BY:	JRT	02MAY11
CHECKED BY:	MRM	02MAY11
APPROV'D. BY:		
OFFICE:	CONTRACT	
PITTSBURGH	4410-8173	
DWG. NO.	SHEET	SHEET REV.
2002-01	OF	01

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL
B	8JUN11	REVISED DIKE	DJK	DCM	SCALE AS SHOWN

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

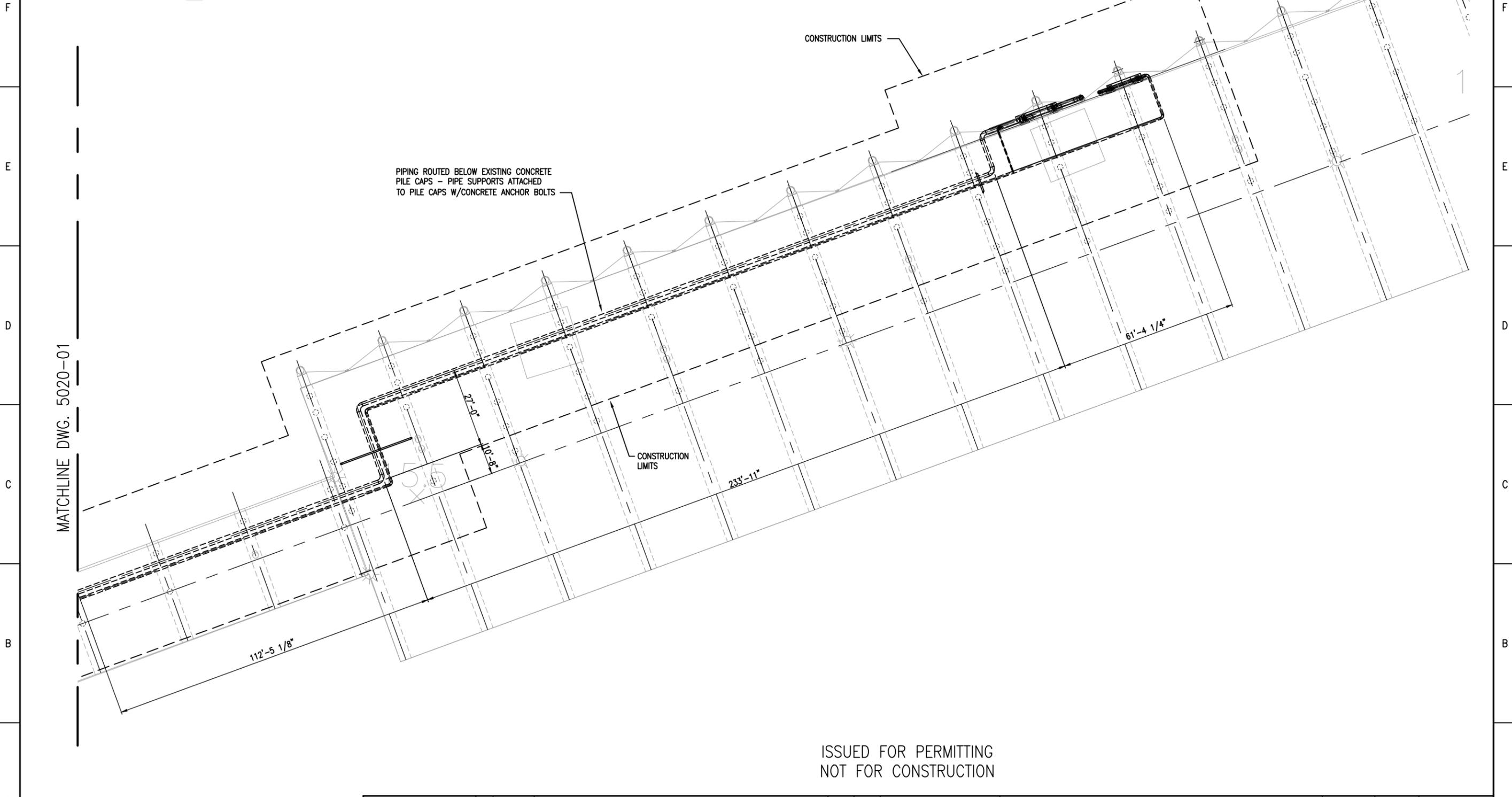
CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING KEY PLAN

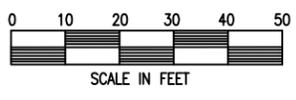
DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	SHEET	SHEET
	5001-01	OF 01
REV.		B

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

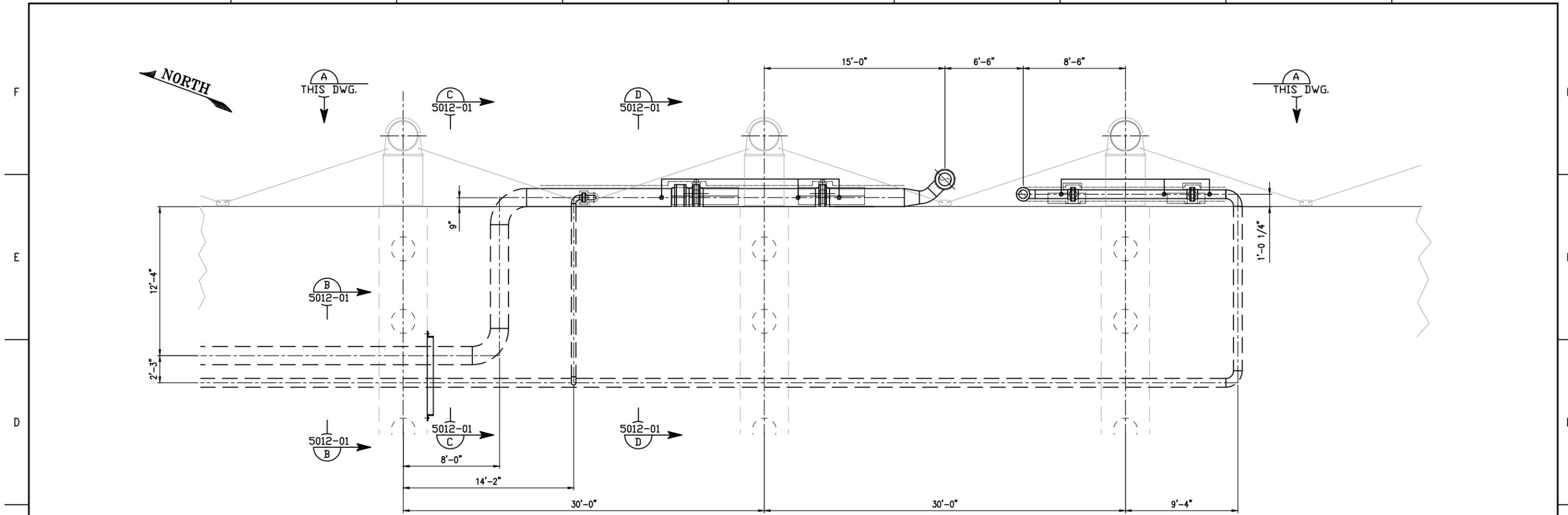
TITLE: PIPING PLAN  
DOCK & TRESTLE

SCALE: AS SHOWN

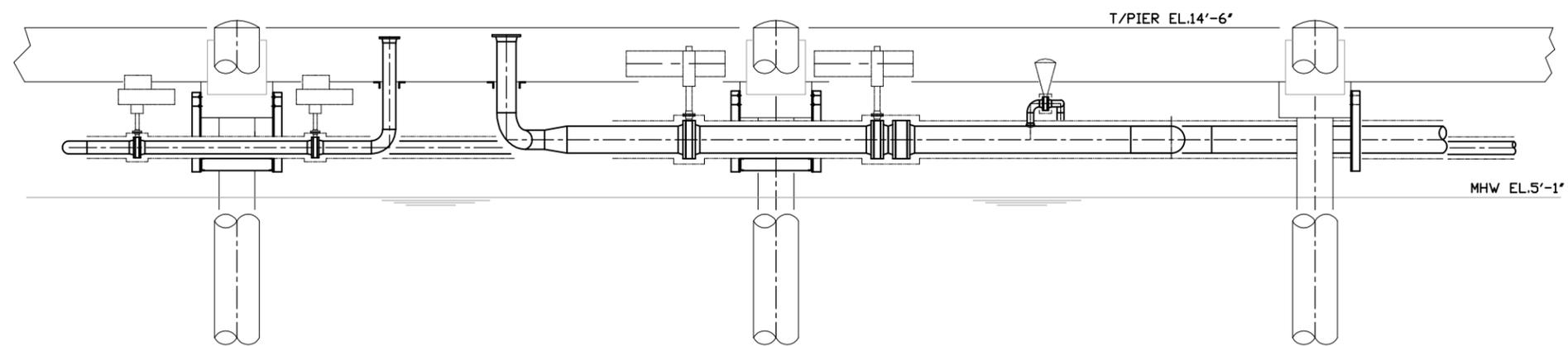
DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5010-01	SHEET 01 OF 01
		REV. A

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ENLARGED PLAN OF UNLOADING STATION ON PIER



SECTION "A-A"

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING PLAN & SECTION AT DOCK

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

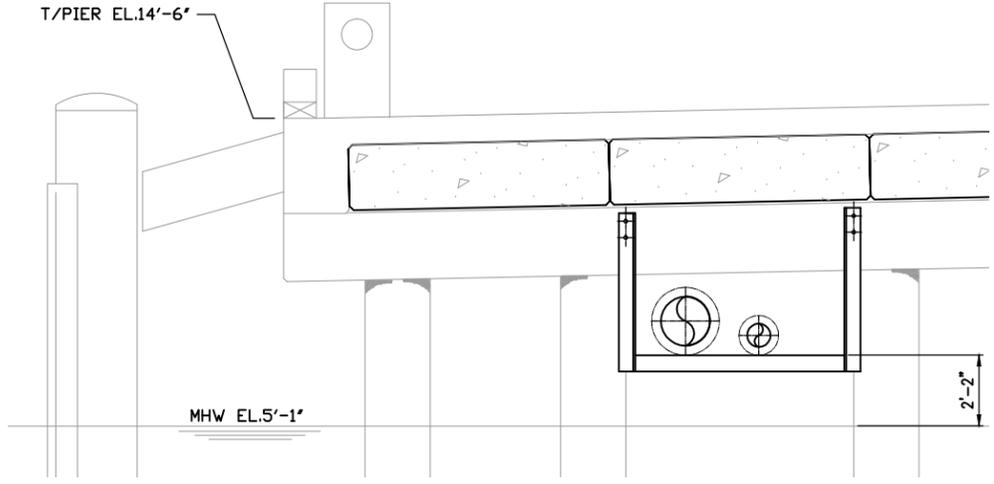
DRAWN BY:	DJK	14FEB11
CHECKED BY:	MRM	14FEB11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5011-01	SHEET 01 OF 01
		REV. A

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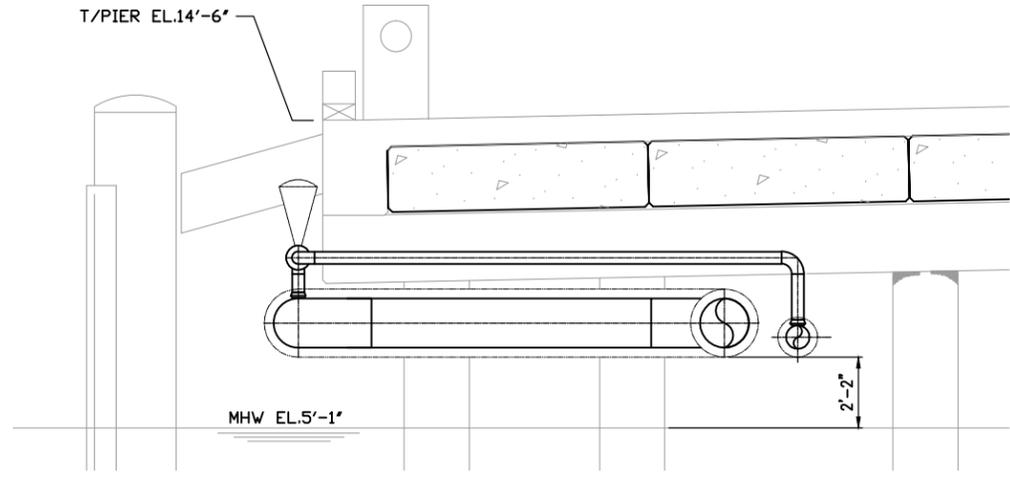
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D  
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A

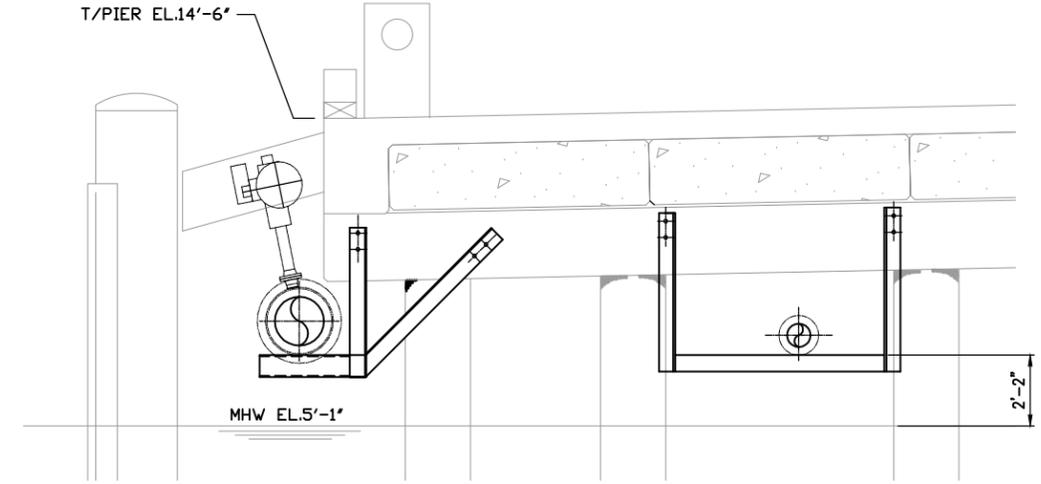
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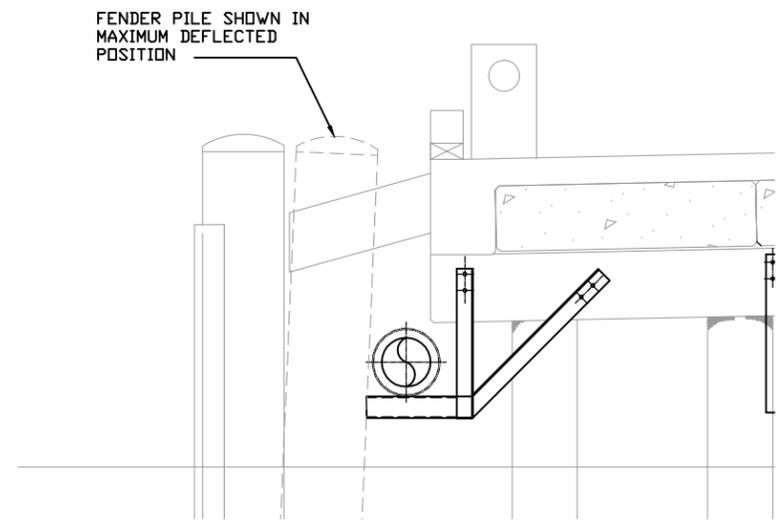
SECTION "B-B"



SECTION "C-C"



SECTION "D-D"



DETAIL OF DEFLECTED FENDER PILE

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

SCALE 3/8" = 1'-0"

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

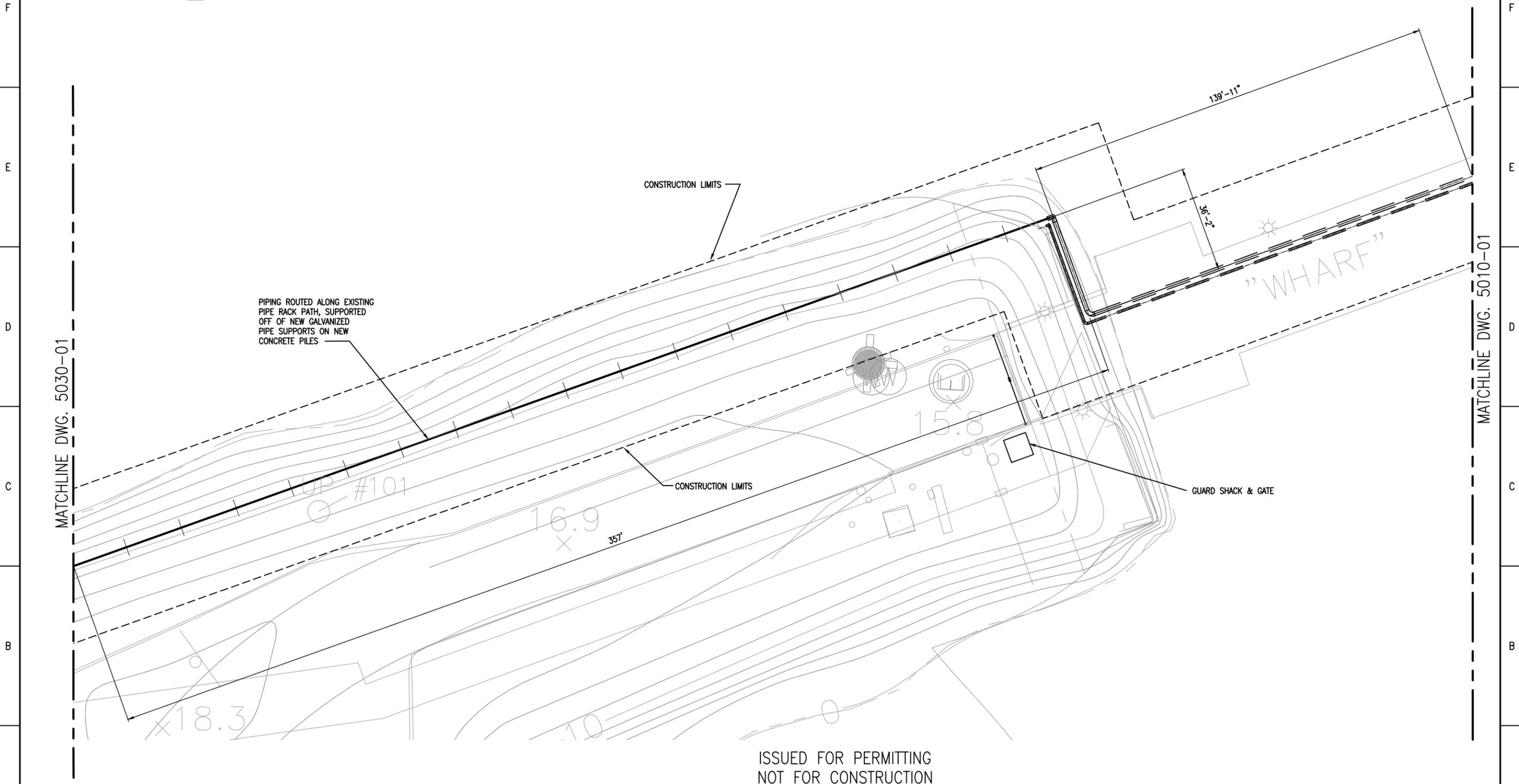
CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING SECTIONS AT DOCK

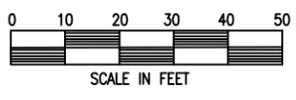
DRAWN BY:	DJK	14FEB11
CHECKED BY:	MRM	14FEB11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT 4410-8173
DWG. NO.	5012-01	SHEET 01 OF 01 REV. A

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**MATRIX SERVICE**  
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CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

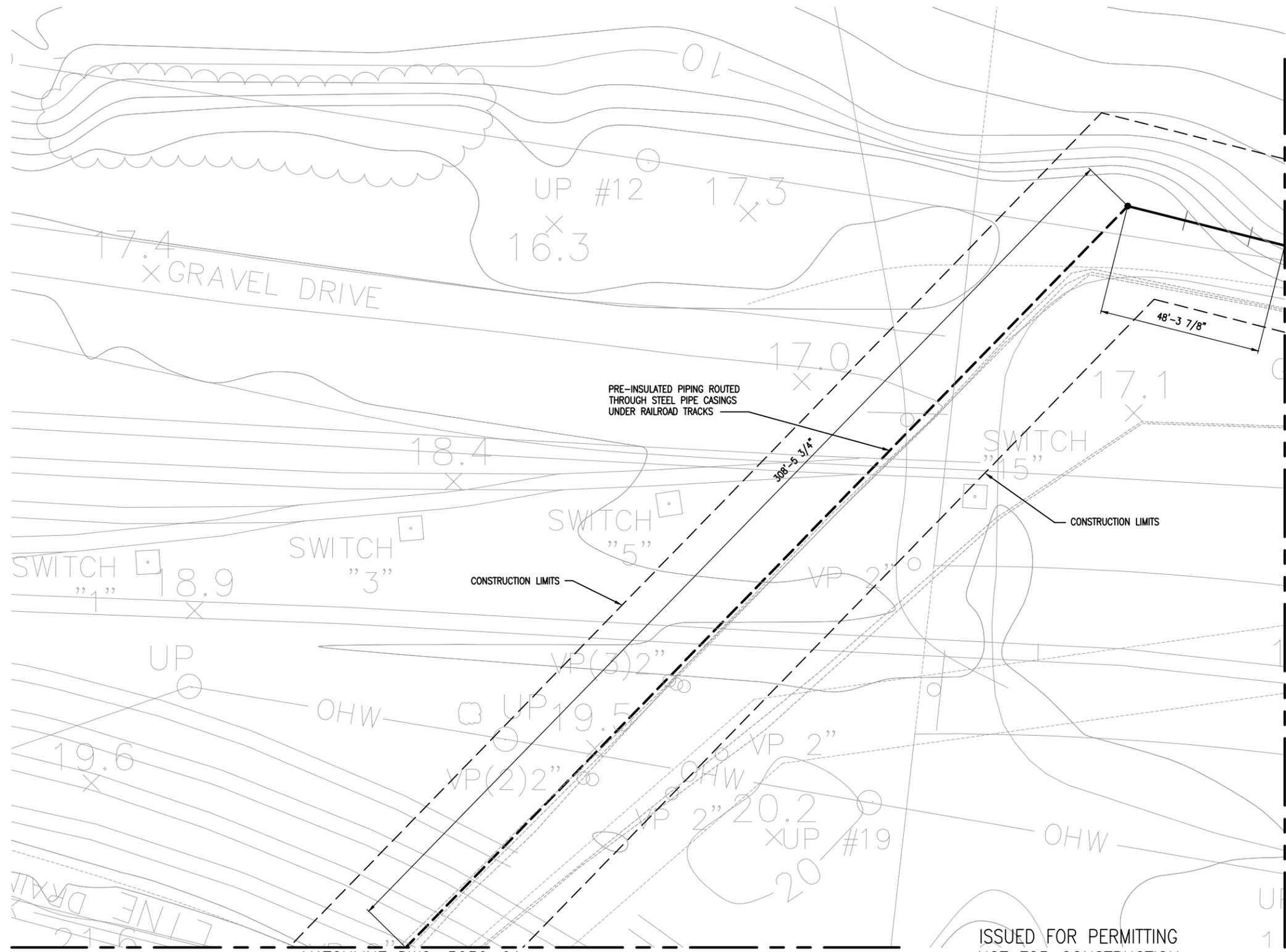
TITLE: PIPING PLAN  
TRESTLE & WHARF

SCALE: AS SHOWN

DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5020-01	SHEET 01 OF 01
		REV. A

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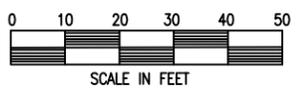




MATCHLINE DWG. 5050-01

MATCHLINE DWG. 5030-01

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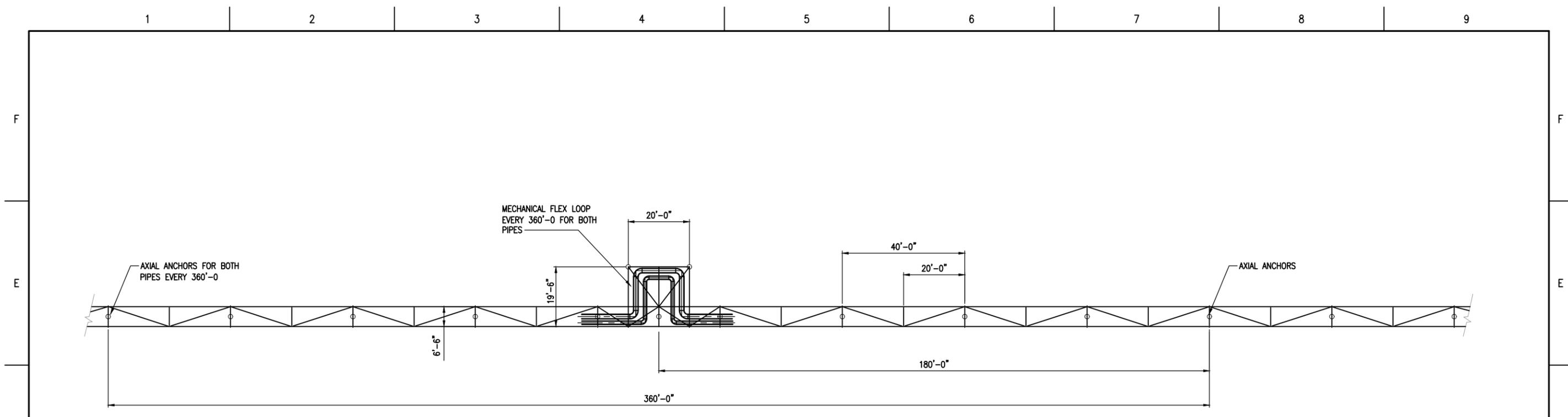
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SCALE: AS SHOWN

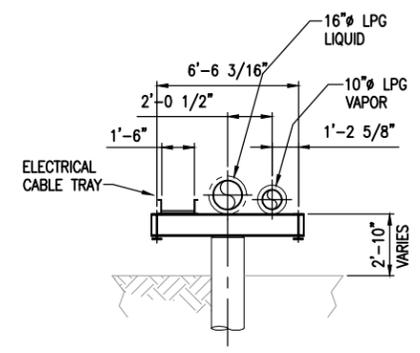


CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE  
TITLE: PIPING PLAN  
RAILROAD CROSSING

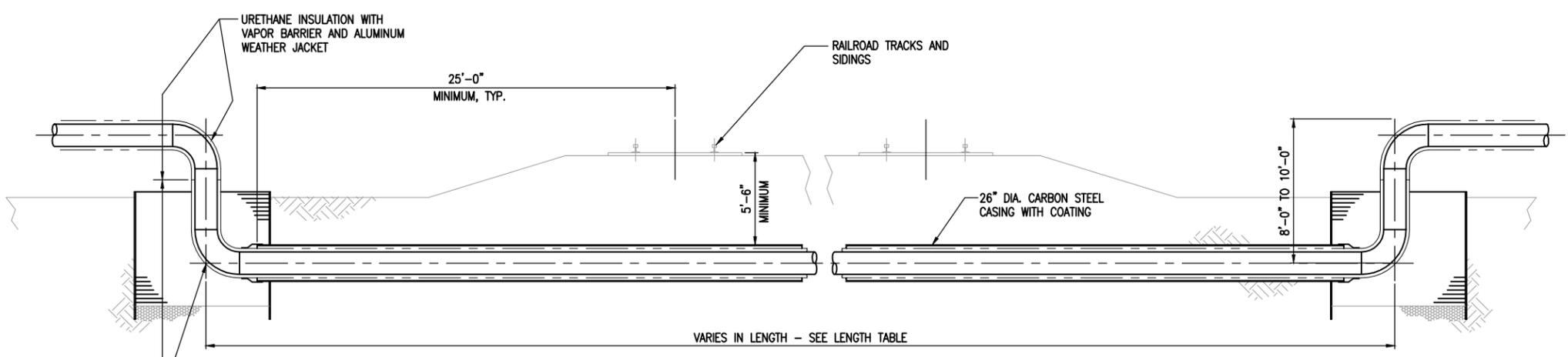
DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	SHEET	SHEET
	5040-01	OF 01
		REV.
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PLAN VIEW - PIPERACK



CROSS-SECTION THRU PIPERACK



TYPICAL CROSS-SECTION AT RAILROAD CROSSING

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

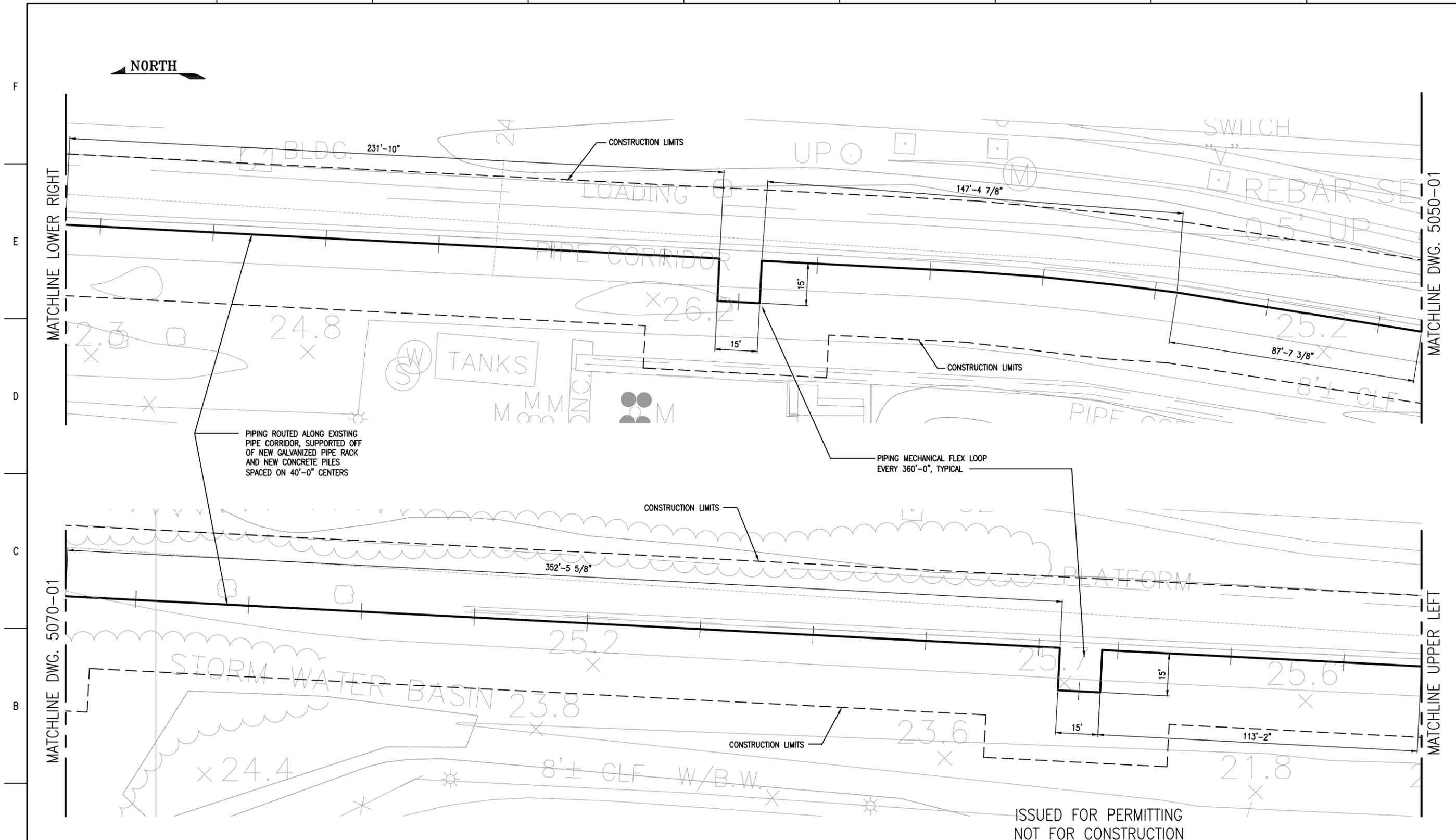
TITLE: PIPING DETAILS

SCALE: NTS

DRAWN BY:	DJK	14FEB11
CHECKED BY:	MRM	14FEB11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5041-01	SHEET 01 OF 01
		REV. A



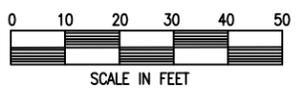
1 2 3 4 5 6 7 8 9



PIPING ROUTED ALONG EXISTING PIPE CORRIDOR, SUPPORTED OFF OF NEW GALVANIZED PIPE RACK AND NEW CONCRETE PILES SPACED ON 40'-0" CENTERS

PIPING MECHANICAL FLEX LOOP EVERY 360'-0", TYPICAL

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

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INDUSTRIAL SERVICE CONTRACTOR

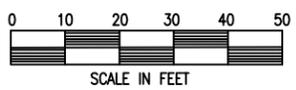
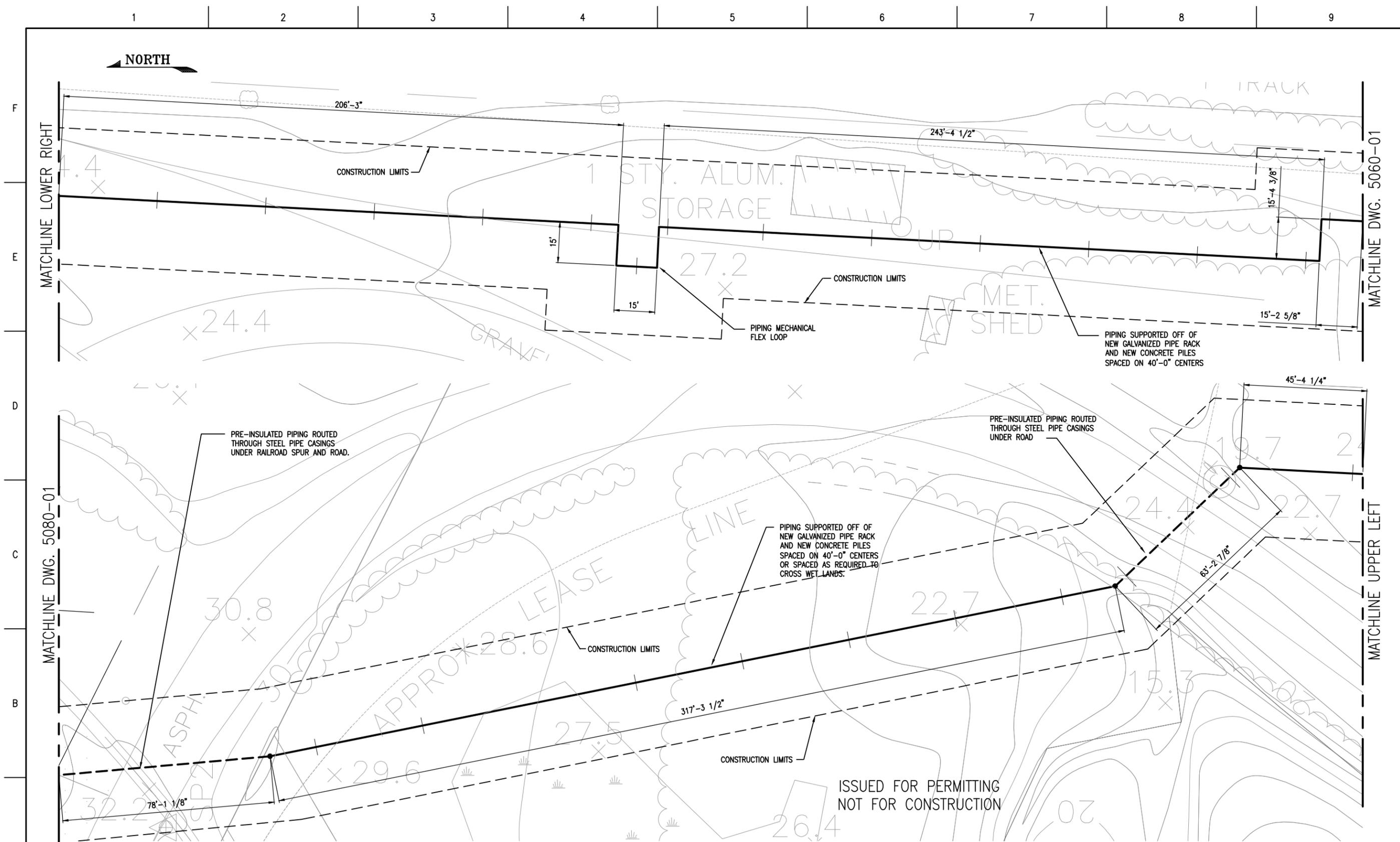
CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING PLAN  
ALONG RAILROAD

SCALE: AS SHOWN

DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5060-01	SHEET 01 OF 01
		REV. A

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

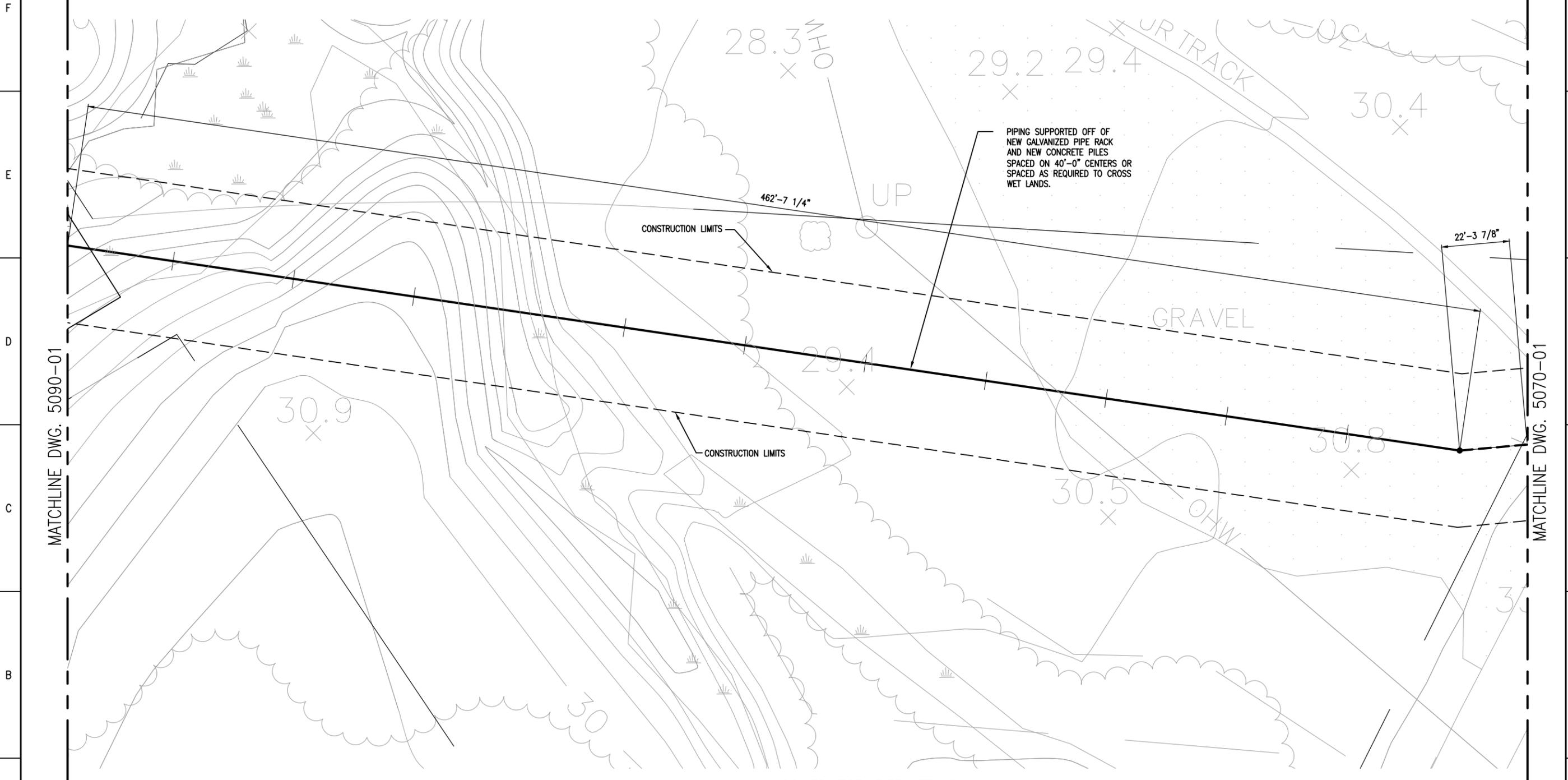
CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING PLAN  
ROAD & CREEK CROSSING

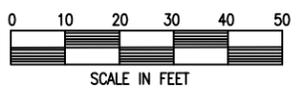
SCALE: AS SHOWN

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CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	CONTRACT	
PITTSBURGH	4410-8173	
DWG. NO.	SHEET	SHEET
5070-01	OF 01	REV. A

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

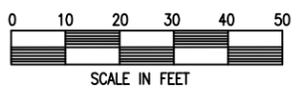
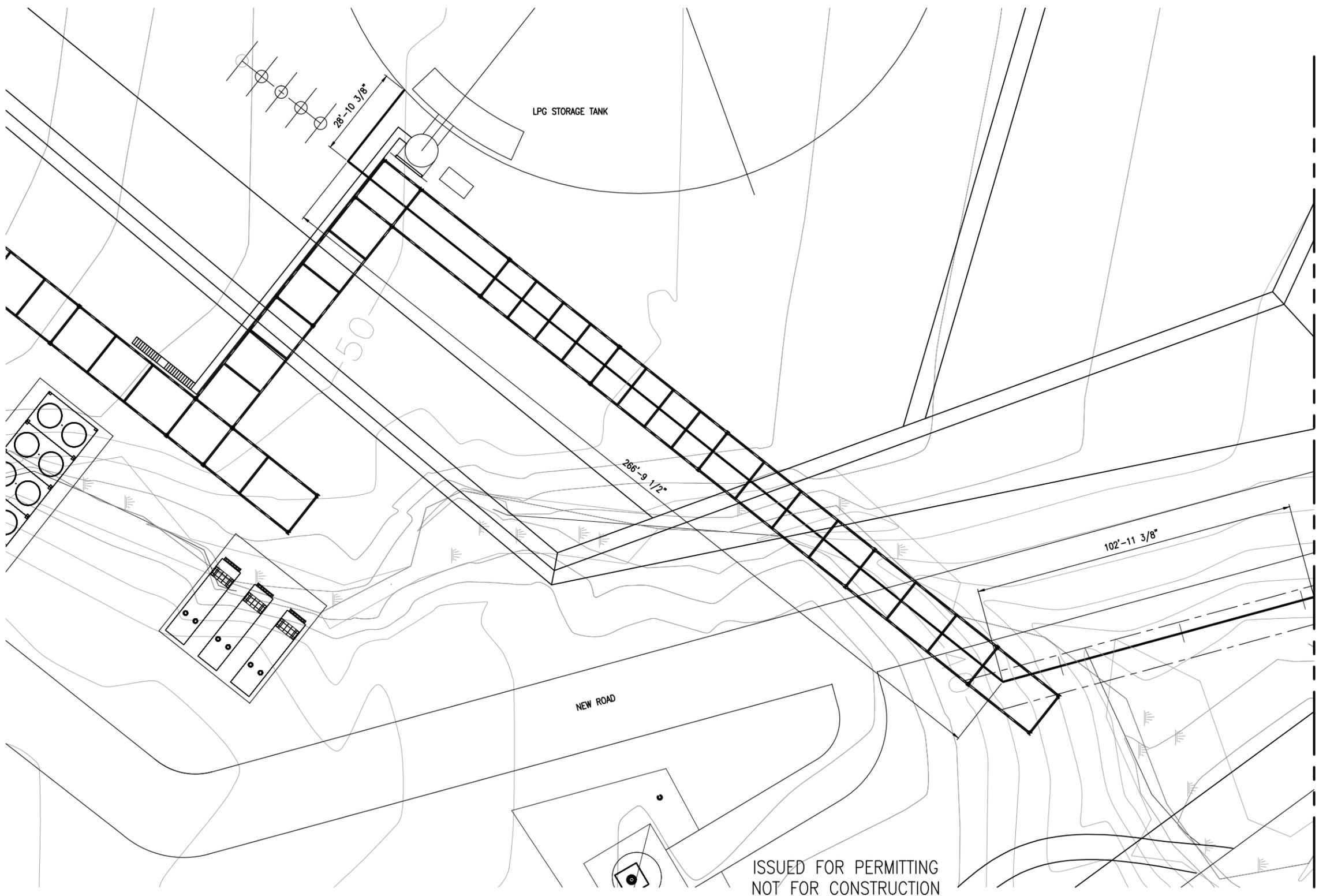
TITLE: PIPING PLAN  
WET LANDS CROSSING

SCALE: AS SHOWN

DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5080-01	SHEET 01 OF 01
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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL
B	8JUN11	REVISED DIKE	DJK	DCM	SCALE: AS SHOWN

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: PIPING PLAN  
LPG FACILITY

DRAWN BY:	DJK	16MAR11
CHECKED BY:	DCM	16MAR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	5100-01	SHEET 01 OF 01
REV.	B	

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MATCHLINE DWG. 5090-01

## **ATTACHMENT 6. CROSS SECTIONAL DRAWINGS AND STREAM RELOCATION PLAN**

---

The attached plans illustrate grading and impact footprints in and near impacted resources.

Drawing No.	Attachment	Drawing Name
2003-01 - 2005-01	6	LPG Tank Area Grading Sections & Details (3 drawings)
179023-C3, Sheets 1 & 2	6	Cross Sections & Details

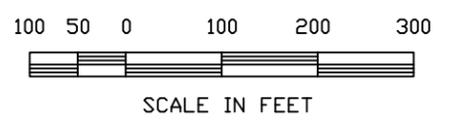


LONG COVE

LONG COVE

- NOTES:**
- 1.) SEE DWG. 2004-01 FOR SECTIONS A-A THRU D-D.
  - 2.) SEE DWG. 2004-02 FOR SECTIONS E-E, F-F & G-G.

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.
G	08JUN11	REVISED CONTOUR LINES	SEG	RPI
F	03JUN11	REVISED GRADING, DELETED SECTION D-D	SEG	RPI
E	24MAY11	SITE PLAN REVISED, ADDED SECTIONS AND NOTE 2	SEG	RPI
D	28APR11	SITE PLAN UPDATED	JRT	RPI
C	25APR11	ADDED SECTIONS AND NOTES	JRT	RPI
B	20APR11	SITE PLAN REVISED	JRT	RPI

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: POST - DEVELOPMENT SITE PLAN  
NEW CONTOUR DEVELOPMENT

SCALE: NTS

DRAWN BY:	JRT	14JUL10
CHECKED BY:	MRM	14JUL10
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	2003-01	SHEET SHEET REV. OF 01 G

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W/F  
SPRAGUE, ENR  
CORPORATION  
PARCEL S-2  
1576/59 / 1994  
Tax Map 7 Lot

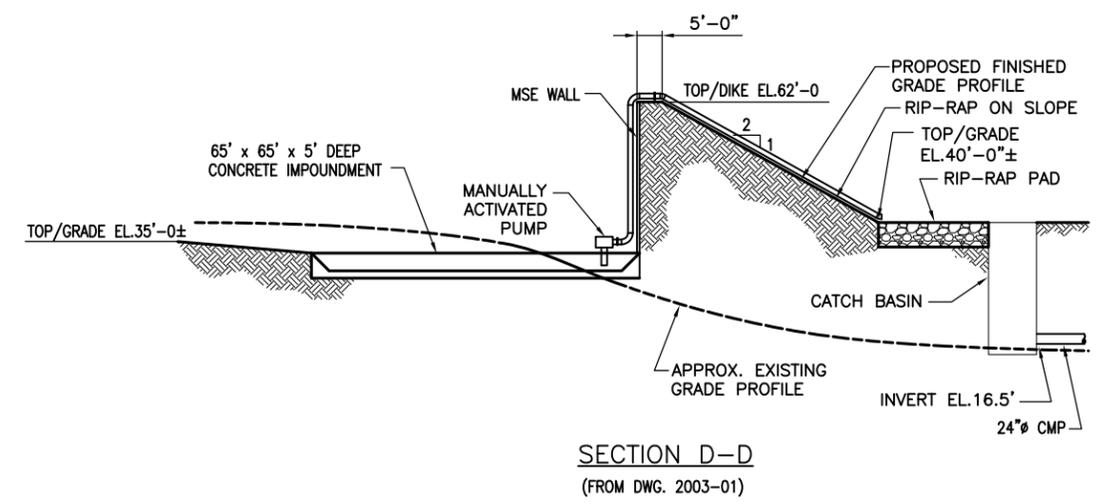
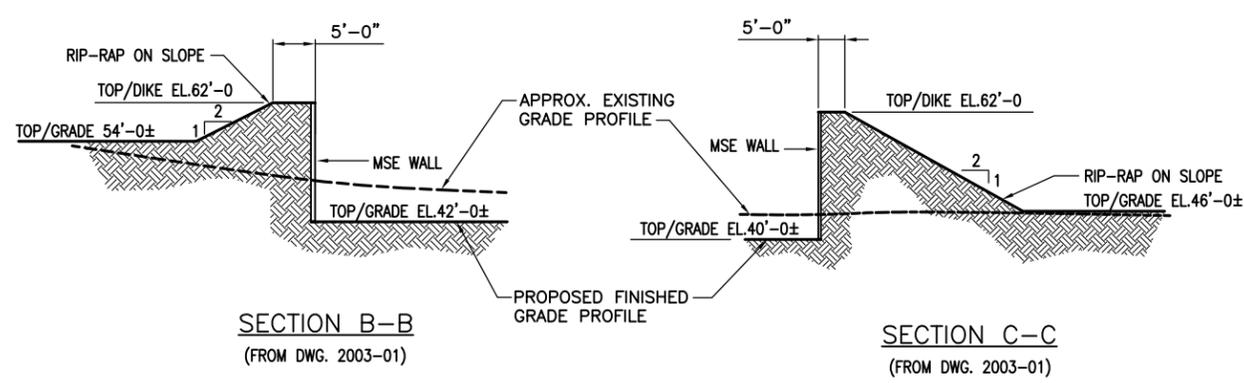
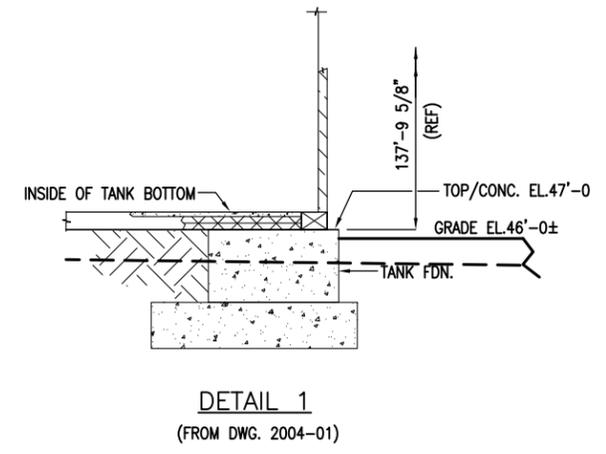
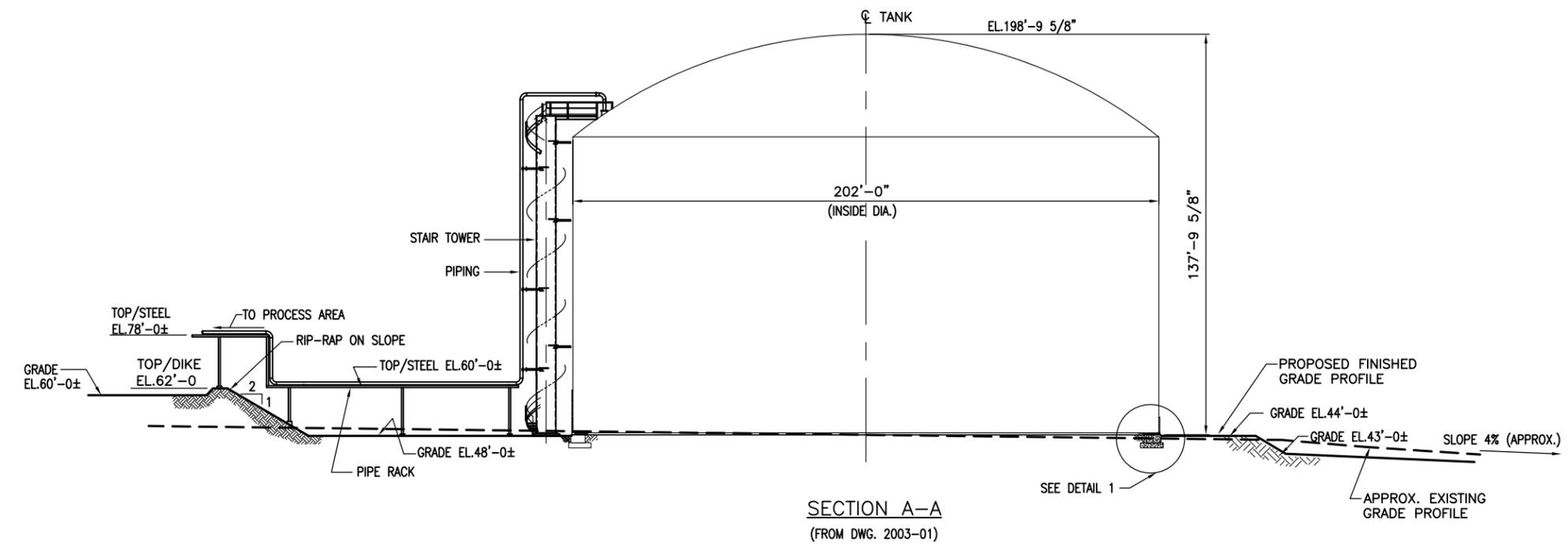
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REV.	DATE	REVISION DESCRIPTION	BY	APVD.	SEAL
D	08JUN11	REVISED SECTIONS	SEG	RPI	
C	01JUN11	REVISED ELEVATIONS, ADDED EXISTING GRADE	SEG	RPI	
B	28APR11	REVISED SECTIONS	JRT	RPI	

**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: LPG TANK AREA  
GRADING SECTIONS AND DETAILS

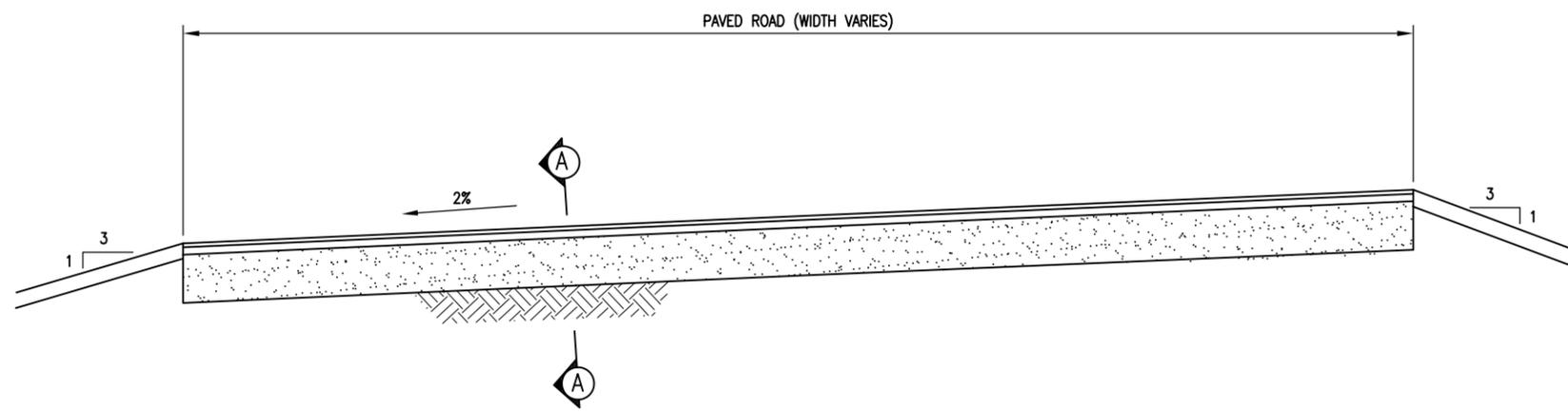
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CHECKED BY:	RPI	25APR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		<b>4410-8173</b>
DWG. NO.	2004-01	SHEET 02 OF 02
		REV. D

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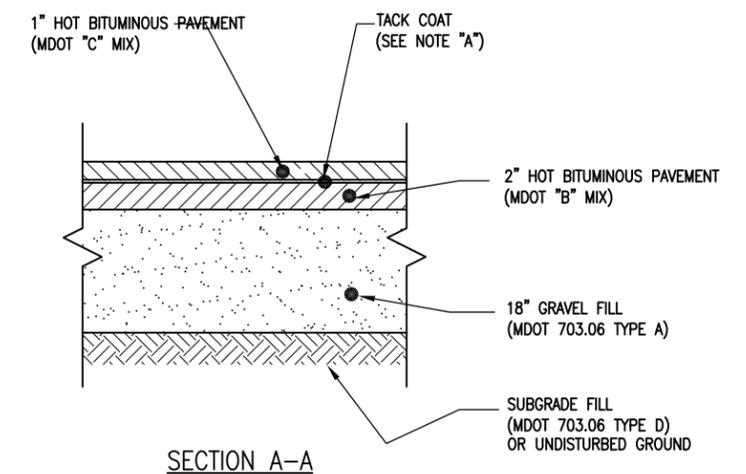
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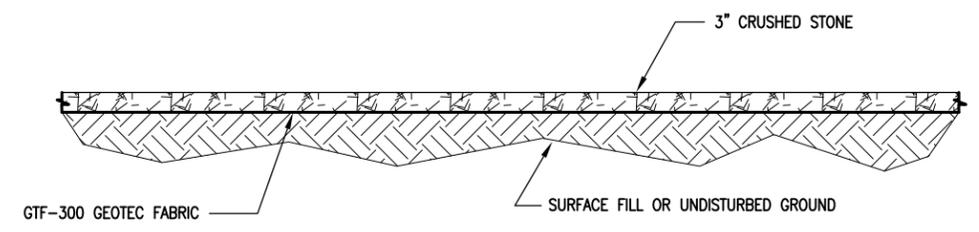


SECTION THRU TYPICAL PAVED ROADWAY



SECTION A-A

NOTE "A"  
ELIMINATE TACK COAT IF WEARING COURSE IS INSTALLED WITHIN 72 HOURS OF BINDER COURSE.



SECTION THRU GRAVEL COVERED AREA  
(TYPICAL SURFACE AROUND TANK AND EQUIPMENT AREAS)

NOTES:  
1.) WORK THIS DWG. WITH DWG. 2003-01 AND GROUND COVERAGE DWG. 2002-01.

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REV.	DATE	REVISION DESCRIPTION	BY	APVD.
B	08JUN11	REVISED PAVED ROAD SECTION	JRT	RPI

SCALE: NTS

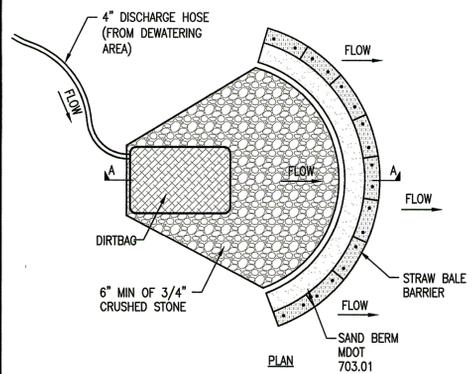
**MATRIX SERVICE**  
INDUSTRIAL SERVICE CONTRACTOR

CUSTOMER: DCP MIDSTREAM  
LPG STORAGE FACILITY SEARSPORT, MAINE

TITLE: ROADWAYS  
SECTIONS AND DETAILS

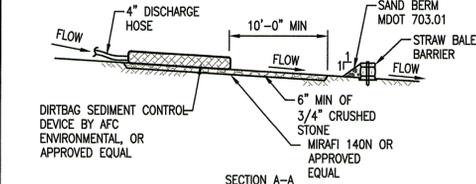
DRAWN BY:	JRT	28APR11
CHECKED BY:	RPI	28APR11
APPROV'D. BY:		
OFFICE:	PITTSBURGH	CONTRACT
		4410-8173
DWG. NO.	2005-01	SHEET 01 OF 01
REV.		B

1 2 3 4 5 6 7 8 9



**DEWATERING NOTES**

1. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND OPERATE ALL CHANNELS, SUMPS, AND ALL OTHER TEMPORARY DIVERSION AND PROTECTIVE WORKS NEEDED TO DIVERT STREAM FLOW AND OTHER SURFACE WATER THROUGH OR AROUND THE CONSTRUCTION SITE. CONTROL OF SURFACE WATER SHALL BE CONTINUOUS DURING THE PERIOD THAT DAMAGE TO CONSTRUCTION WORK COULD OCCUR.
2. OPEN EXCAVATIONS SHALL BE DEWATERED AND KEPT FREE OF STANDING WATER AND MUDDY CONDITIONS AS NECESSARY FOR THE PROPER EXECUTION OF THE WORK. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL DRAINS, SUMPS AND ALL OTHER EQUIPMENT REQUIRED TO PROPERLY DEWATER THE SITE. DEWATERING SYSTEMS THAT CAUSE A LOSS OF SOIL FINES FROM THE FOUNDATION AREAS WILL NOT BE PERMITTED.
3. INSTALL DIVERSION DITCHES OR BERMS IF NECESSARY TO MINIMIZE THE AMOUNT OF CLEAN STORM WATER RUNOFF ALLOWED INTO THE EXCAVATED AREA.
4. REMOVAL OF WATER FROM THE CONSTRUCTION SITE SHALL BE ACCOMPLISHED SO THAT EROSION AND THE TRANSPORTING OF SEDIMENT AND OTHER POLLUTANTS ARE MINIMIZED.
5. DISCHARGE DEWATERING EFFLUENT TO AREAS AS INDICATED ON THE SITE GRADING PLAN. DISCHARGE SHALL BE IN SHEET FLOW.
6. DEWATERING IN PERIODS OF INTENSE, HEAVY RAIN, WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHALL BE AVOIDED.
7. FLOW TO THE SEDIMENT REMOVAL STRUCTURE MAY NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR THE STRUCTURE'S VOLUME CAPACITY.
8. WHEN TEMPORARY WORKS ARE NO LONGER NEEDED, THE CONTRACTOR SHALL REMOVE AND RETURN THE AREA TO A CONDITION SIMILAR TO THAT WHICH EXISTED BEFORE CONSTRUCTION. AREAS WHERE TEMPORARY WORKS WERE LOCATED SHALL BE GRADED FOR SLIGHTLY APPEARANCE WITH NO OBSTRUCTION TO NATURAL SURFACE WATER FLOWS OR THE PROPER FUNCTIONING AND ACCESS TO THE WORKS OF IMPROVEMENT INSTALLED. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING THE REMOVAL STAGES TO MINIMIZE THE LOSS OF SOIL SEDIMENT AND DEBRIS THAT WAS TRAPPED DURING CONSTRUCTION.

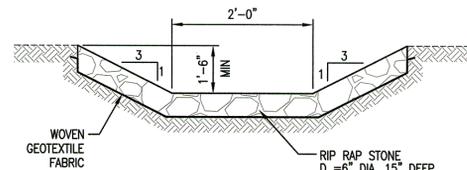


**DEWATERING DETAIL NOTES:**

1. DIRT BAG MATERIAL BASED ON PARTICLE SIZE IN DIRTY WATER, I.E. FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON-WOVEN MATERIAL.
2. DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND CAPACITY.
3. LOCATE DISCHARGE SITE AS INDICATED ON SITE GRADING PLAN.
4. DOWNGRADIENT RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, E.G. FOREST FLOOR OR COARSE GRAVEL/STONE.
5. DISCHARGE NOT PERMITTED WITHIN 75' OF A STREAM OR WETLAND.

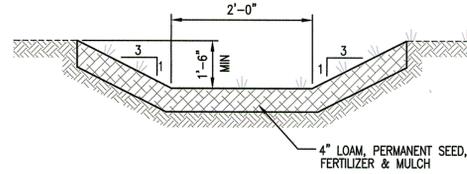
**DEWATERING SYSTEM DETAIL**

NOT TO SCALE



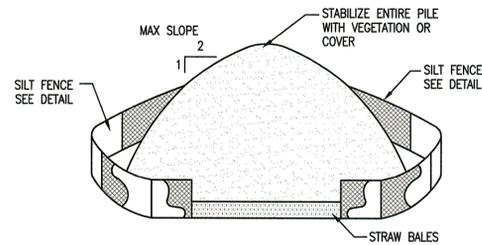
**TYPICAL RIP RAP DRAINAGE SWALE**

NOT TO SCALE



**TYPICAL VEGETATED DRAINAGE SWALE**

NOT TO SCALE



**INSTALLATION NOTES:**

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAW BALES, THEN STABILIZED WITH VEGETATION OR COVERED.

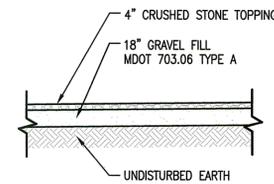
**TYPICAL TOPSOIL STOCKPILE**

NOT TO SCALE

**CONSTRUCTION NOTES:**

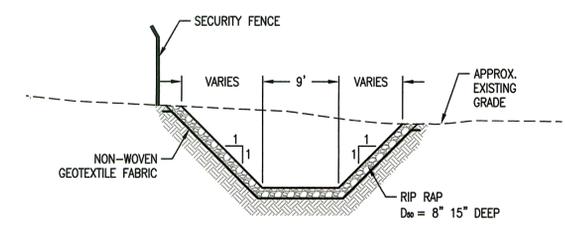
1. 6" STONE TOPPING
  - 1.1. CRUSHED STONE TOPPING SHALL BE OBTAINED FROM ROCK OF UNIFORM QUALITY AND SHALL CONSIST OF CLEAN, ANGULAR FRAGMENTS OF QUARRIED ROCK FREE FROM SOFT DISINTEGRATED PIECES OR OTHER OBJECTIONABLE MATTER.
  - 1.2. THE STONE TOPPING SHALL MEET THE FOLLOWING BLEND REQUIREMENTS:
 

SIEVE DESIGNATION	BLEND RATIO
1 1/2"	50% by weight
3/4"	50% by weight
2. 18" GRAVEL FILL - GRAVEL FILL SHALL MEET MDOT SPECIFICATION 703.06 "TYPE A"
3. RIP RAP - D<sub>50</sub>=6" DIAMETER (MDOT 703.29) 15" DEEP WHERE SHOWN ON PLANS INSTALL ON A NON-WOVEN GEOTEXTILE.
4. CULVERT PIPING - DRAINAGE PIPING RCP CLASS III.
5. GEOTEXTILE FABRIC - NON-WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 140N OR APPROVED EQUAL. WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI 500X OR APPROVED EQUAL.
6. 2" DIAMETER STONE USED FOR STONE CHECK DAMS AND STABILIZED CONSTRUCTION ENTRANCES SHALL CONFORM TO THE REQUIREMENTS OF MDOT 703.31.
7. EMBANKMENT FILL SLOPES - ALL FILL SLOPE FACES SHOULD BE CONSTRUCTED AS LEVEL BENCHES WHICH ARE OVERBUILT TO FACILITATE COMPACTION. THE FINAL SLOPE FACE SHOULD BE CONSTRUCTED BY CUTTING BACK INTO THE COMPACTED CORE.



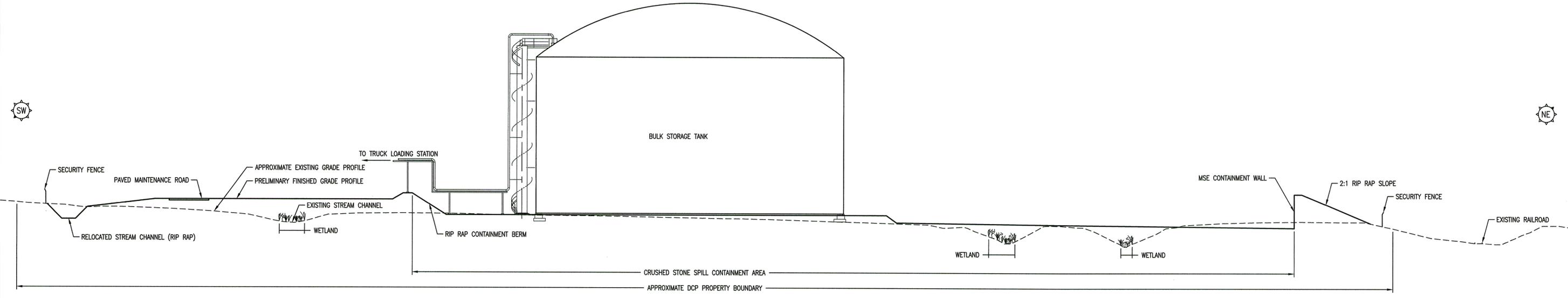
**FLARE AREA SECTION**

NOT TO SCALE



**TYPICAL RELOCATED STREAM SECTION**

NOT TO SCALE



**SECTION A-A**

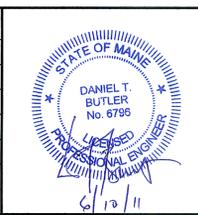
NOT TO SCALE

**NOTES**

1. SEE MATRIX SERVICE DRAWINGS 2004-01 & 2004-02 FOR ADDITIONAL CROSS SECTIONS.

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NOT FOR CONSTRUCTION

NO.	REVISION	DATE	BY	CK	P.E. STAMPED BY	P.E. No.



CLIENT APPROVAL	PCT DESIGNED
APPROVED BY	CMH DRAWN
COMPANY	PMM CHECKED
DATE	DTB APPROVED
	REVIEWED

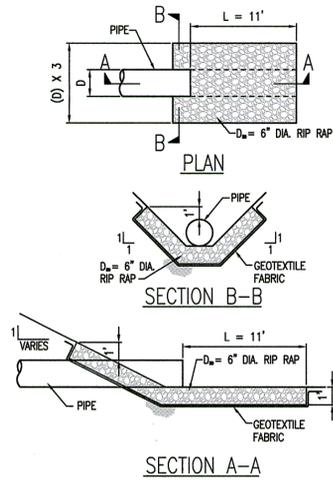
CROSS SECTIONS & DETAILS  
DCP SEARSPORT PROPANE TERMINAL

DCP MIDSTREAM PARTNERS, LLC  
SEARSPORT MAINE

249 WESTERN AVENUE  
AUGUSTA, ME 04330  
PROJECT NO: 179023  
SCALE: AS NOTED DATE: 05/12/11

179023-C3 SH. 1

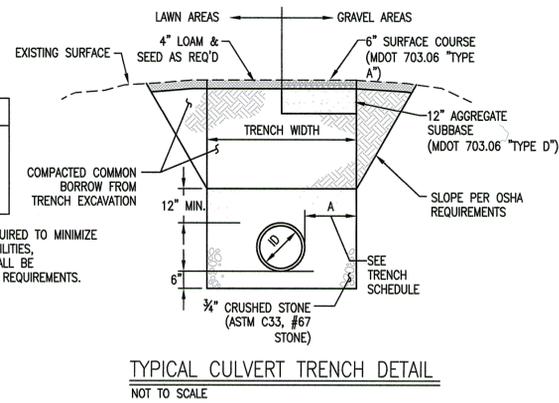
REV. B



CULVERT SCHEDULE					
ID	DIAMETER	TYPE	LENGTH	INVERT IN	INVERT OUT
C-1	12"	RCP	115'	70.00	67.00
C-2	15"	RCP	80'	64.00	63.00
C-3	15"	RCP	80'	63.50	63.00
C-4	12"	RCP	25'	44.00	43.00
C-5	18"	RCP	70'	32.50	32.00
C-6	24"	RCP	320'	60.50	50.00
C-7	15"	RCP	91'	60.50	51.00
C-8	15"	RCP	38'	57.50	57.00
C-9	15"	RCP	75'	29.50	50.00

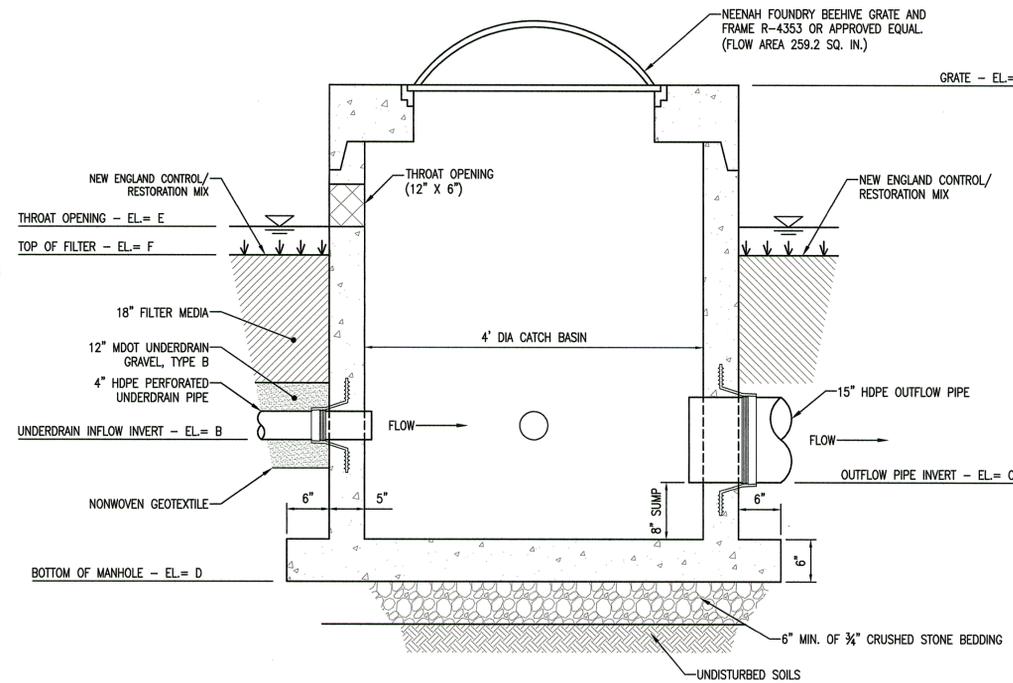
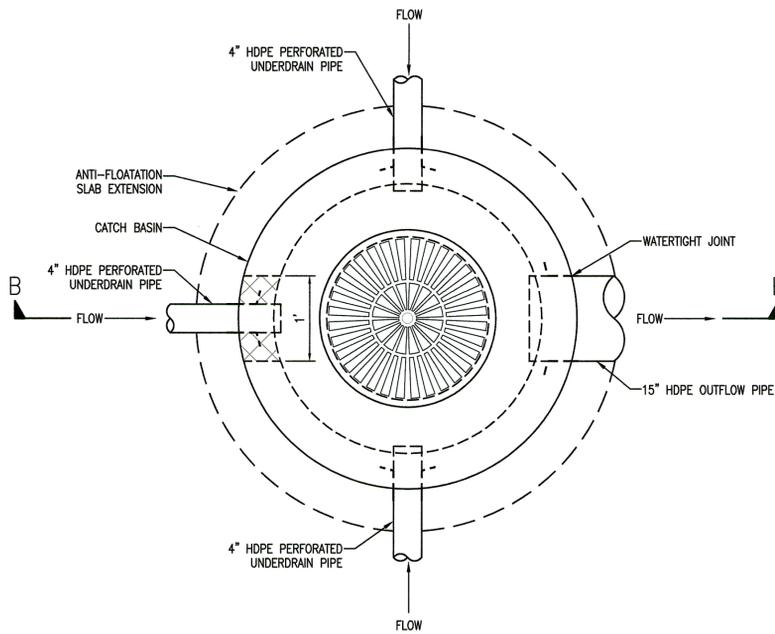
TRENCH SCHEDULE	
ID	A (MIN.)
4"-12"	0'-10"
15"	0'-10"
18"	0'-10"
24"	0'-6"
30"	0'-6"
36"	0'-6"

NOTE: SHORE TRENCH EXCAVATION AS REQUIRED TO MINIMIZE EXCAVATION AND IMPACTS TO ADJACENT UTILITIES, STRUCTURES OR PAVEMENT. TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH OSHA REQUIREMENTS.



TYPICAL CULVERT TRENCH DETAIL  
NOT TO SCALE

CULVERT INLET/OUTLET PROTECTION  
NOT TO SCALE



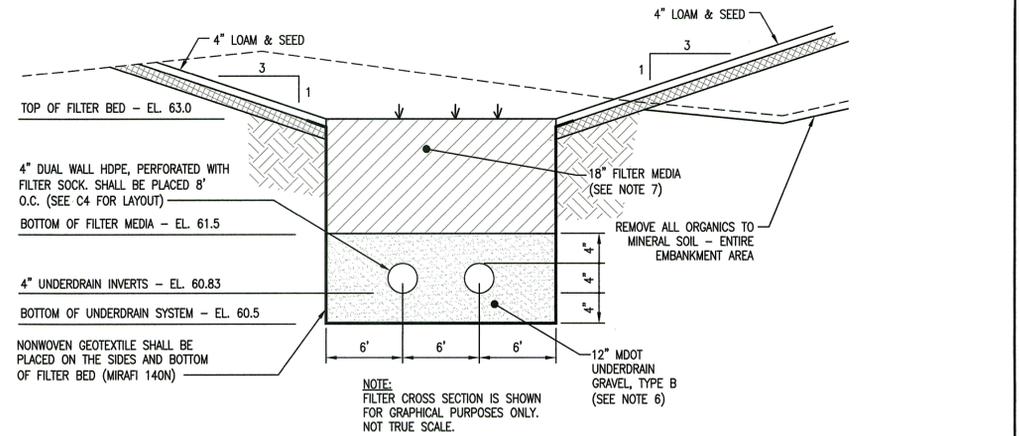
TYPICAL CATCH BASIN  
NOT TO SCALE

CATCH BASIN ELEVATION TABLE						
CATCH BASIN	A	B	C	D	E	F
#1	65.50	60.83	60.50	59.33	64.00	63.00
#2	62.00	57.83	57.50	56.33	60.67	60.00
#3	33.50	29.83	29.50	28.33	32.92	32.00

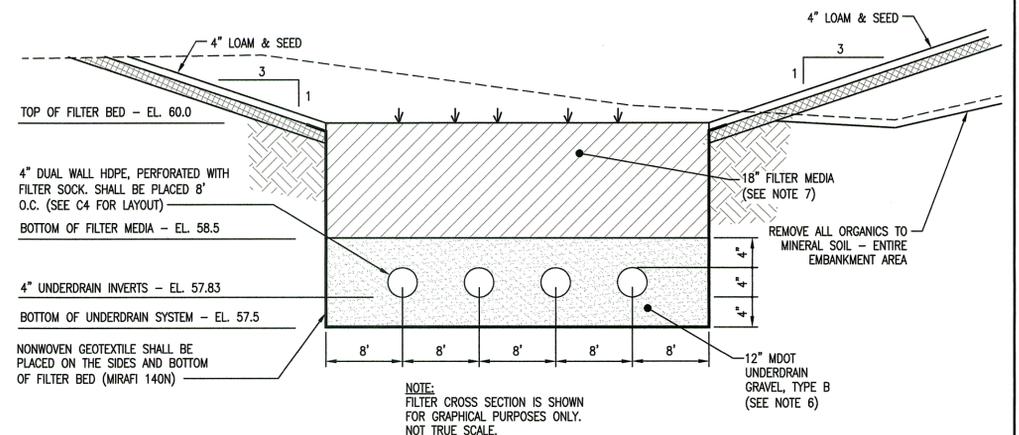
NOTES

- SEE MATRIX SERVICE DRAWINGS 2004-01 & 2004-02 FOR ADDITIONAL CROSS SECTIONS.

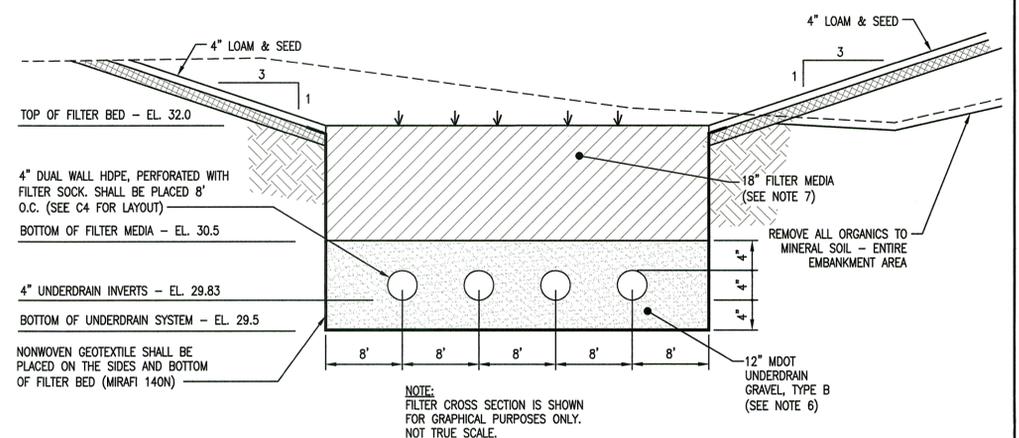
ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION



UNDERDRAIN SOIL FILTER WQ#1 CONSTRUCTION  
NOT TO SCALE



UNDERDRAIN SOIL FILTER WQ#2 CONSTRUCTION  
NOT TO SCALE



UNDERDRAIN SOIL FILTER WQ#3 CONSTRUCTION  
NOT TO SCALE

NO.	REVISION	DATE	BY	CK	P.E. STAMPED BY	P.E. No.		CLIENT APPROVAL  APPROVED BY  COMPANY  DATE	PGT DESIGNED CMH DRAWN PAM CHECKED DTB APPROVED	CROSS SECTIONS & DETAILS		DCP SEARSPORT PROPANE TERMINAL  DCP MIDSTREAM PARTNERS, LLC SEARSPORT MAINE	REV. A 179023-C3 SH. 2
										249 WESTERN AVENUE AUGUSTA, ME 04330 PROJECT NO: 179023 SCALE: AS NOTED DATE: 06/08/11	REV. A		

## **ATTACHMENT 7. CONSTRUCTION PLAN**

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The following narrative prepared by describes the how construction will take place at various locations and the sequence of when this work will occur.

### **7.1 Proposed Construction Schedule, Sequence, and Procedures**

Construction of the DCP Terminal is expected to begin in the late fall of 2011 and take approximately 18 months of active construction to complete. The anticipated in-service date is August of 2013 for full operations using LPG distribution by truck. The schedule for construction and in-service of the rail car loading facility is unknown at this time.

The general construction procedures consist of clearing and grading the site, installation of foundations, installation of the structures, facility equipment and the transfer pipeline, testing, and final clean up and stabilization of the site.

#### November 2011 through February 2012:

Construction workspace limits and protected natural resources will be surveyed and marked in the field with flagging tape. The upper parcel will be cleared of existing trees and woody vegetation. Stabilized construction entrances will be installed, and double rows of perimeter erosion and sedimentation control measures will be put in place concurrent with stumping and initial grading activities. The first phase of site grading will commence and will include completion of the stream culvert and relocation work to divert this source of surface water flow to the perimeter of the construction area. The stream will be relocated and any grading or fill areas, plunge pools, etc. associated with this work will be stabilized in accordance with the DCP Terminal overwinter stabilization measures described in Section 8.4.3 of this application. Rough grading of the remainder of the site will follow, focused primarily on the bulk storage tank containment area and berm. Foundation holes may also be excavated during the second phase of the site grading with the intent that, should any blasting be required, it will be completed during the "off-season" for tourism. Prior to the end of February the site will be stabilized for the remainder of the winter in accordance with Attachment 8. Erosion and sedimentation controls will be inspected weekly and repaired and enhanced, as needed, throughout this period.

#### March, 2012:

No earth moving activities are planned. Other activities to prepare for the next phase of construction may occur. Erosion and sedimentation controls will be inspected monthly during frozen ground conditions, and repaired or enhanced as needed. More frequent inspections will be made depending on ground conditions and snow cover.

#### April, 2012 through November, 2012:

Once the ground has thawed and saturated ground conditions are suitable for construction, foundation excavations will be cleaned up and pouring of foundations will commence, again focused initially on installation of the bulk storage tank. Installation of other terminal facility buildings, structures and equipment will get underway. Construction of the transfer pipeline from the pier to the bulk storage tank is expected to begin later in the summer. Work over the water would from above and below the pier and/or a jack-up barge or floating work boat tied off alongside the pier. Weekly erosion and sedimentation control inspection and maintenance will continue throughout this period. Final site grading, stabilization, and revegetation will be conducted as site work is completed in an area. During November, areas of disturbed ground that have not been stabilized previously and which are not expected to be subject to ongoing disturbance during the winter will be stabilized in accordance with Attachment 8.

December, 2012 through March, 2013:

Installation of terminal facility tanks, buildings, equipment and other structures, and the transfer pipeline will be ongoing. Electrical and internal piping work will be underway. Any disturbed areas brought to final grade will be heavily mulched for the remainder of the winter period, although major earth moving during this period is not expected to be required. Erosion and sedimentation control inspection and maintenance will be conducted on a monthly basis, with more frequent inspections if ongoing soil disturbance is required or frozen ground or significant snow cover are not present.

April, 2013 through August, 2013:

Final installation of terminal buildings and ancillary facilities will be completed, including construction of the bulk tank containment berm. Construction of the transfer pipeline will be completed, as needed. Final site grading, stabilization, and revegetation will be conducted throughout the period as work in areas of the site is completed. Hydrostatic testing will be completed; electrical and computer systems will be tested. Final site inspection and clean-up will occur, and the DCP Terminal will be commissioned and placed into operation. If any temporary construction erosion and sediment control measures remain in-place they will be removed unless unstable areas are identified. Unstable areas will be addressed accordingly and monitored post-construction until they are stable or revegetated.

## **7.2 Environmental Training for Construction**

Environmental training will be given to both DCP and contractor personnel whose activities may impact the environment during construction. The level of training will be commensurate with the type of duties of the personnel. Construction personnel from DCP's trade inspectors and chief inspector, the contractor on-site superintendents to loggers, welders, pipe fitters, equipment operators, and laborers will be given some form of environmental training. The training will be given prior to the start of construction and throughout the construction process, as needed. The training program will cover the Erosion and Sediment Control Plan; procedures for handling and storing petroleum products and hazardous materials; relevant conditions and requirements related to Site Law, Natural Resources Protection Act, and municipal permits; company policies; and any other pertinent information related to the Project. In addition to the chief inspector, all other construction personnel are expected to play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction.

## **ATTACHMENT 8. EROSION CONTROL PLAN**

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The following narrative description and attached plans constitute the Erosion and Sedimentation Control Plan (E&S Plan) for project construction.

The E&S Plan is based upon sound conservation practices such as those outlined in the MDEP *Maine Erosion and Sediment Control Best Management Practices* (BMPs), dated March 2003, and general construction experience on other projects. For detailed, site-specific information please refer to the Post-Development Drainage Plans, Erosion Control and Construction Detail Drawings located in Appendix 8A of this application.

This document, together with the illustrations and drawing set, will supply contractors, the DCP chief inspector, and agency inspectors with a complete, cohesive set of erosion control specifications for the project. These documents are designed to provide specifications for the installation and implementation of soil erosion and sedimentation control measures while allowing adequate flexibility to apply the most appropriate measures based on site-specific conditions, the construction sequence, timing and weather. Bid packages and contracts for work to be performed for the project will include these specific guidelines to ensure the work is completed in an environmentally sensitive manner. DCP personnel and their representatives will ensure that the procedures contained in this E&S Plan are followed by regularly inspecting all work and requiring corrective action when necessary.

### **8.1 Site Erosion and Sedimentation Potential**

The Soil Survey of Waldo County, Maine, and other soil information published by the USDA-NRCS was reviewed for the project site. The site's soil characteristics relative to parent materials, drainage class, texture, consistence, and hydric soil status have been further evaluated as part of the on-site wetland delineations and stormwater design.

Soils on the site are principally silty textured glacio-marine deposits, but fill materials are also present along previously developed or altered areas such as the existing railroad right-of-way vicinity and the unpaved parking area located to the north of Station Avenue and west of the railroad tracks. The topography of the upper parcels slopes from U.S. Route 1 towards Penobscot Bay to the southeast, with a number of drainage dissections containing wetland and stream components formed in the silty textured surficial deposits. Existing elevations range downward from approximately 80 to 12 feet above mean sea level. Within the area comprising the proposed LPG storage tank, truck loading, and office facility, slopes are generally less than 8%, although short, steep slopes exist along the drainage gullies that run across the site in a general northwest to southeast orientation. Slopes are generally flat along the proposed pipeline route near the existing railroad bed. The soils on the site have a seasonal high water table that generally ranges from 0 to 24 inches from the surface, depending on location. The natural soils mapped by the USDA-NRCS on the site (Boothbay and Swanville Series) are in Hydrologic Soil Group C. Areas mapped by the USDA-NRCS as Udorthents (filled and disturbed soils) are generally variable in their characteristics and have no assigned Hydrologic Soil Group.

The soils at the DCP Terminal are suitable for the proposed development with the implementation of construction BMP's and appropriate design measures. The gently to moderately sloping silty soils have a moderate erosion potential, which may be mitigated by implementation of construction erosion and sediment control BMP's, as discussed below. Areas with silty soils and steeper slopes (e.g. drainage gullies), and areas adjacent to waterbodies or wetlands pose a higher risk of erosion and sedimentation, and will need to be addressed accordingly during construction. Shallow subsurface groundwater management and/or diversion may need to be addressed during the winter and spring construction.

## **8.2 Construction Schedule, Sequence, and Procedures**

The general construction procedures for the DCP Terminal will consist of clearing and grading the site; installation of foundations; construction of the bulk storage tank and other structures and equipment; transfer pipeline construction; start-up and testing; and final clean up and stabilization of the site. Each stage of construction presents potential erosion and sediment issues that will require BMPs to mitigate. Construction of the DCP Terminal is expected to occur sequentially, beginning in November 2011 and ending in August 2013, when the facility is expected to be placed into operation using LPG distribution by truck. A preliminary construction schedule is provided in Attachment 7 of this application.

### **8.2.1 Identification of Construction Limits and Resource Areas**

Prior to the initiation of construction activities, a survey crew will locate the construction workspace limits in accordance with the project drawings. The construction workspace limits are shown on the Post-Development Site Plan, located in Attachment 5, and the Post-Development Drainage Plan, located in Appendix 8A. The construction limits will be clearly marked with flagging and maintained as needed. All construction activity, including material and equipment storage will be contained within the approved construction workspace.

In addition, prior to commencement of construction activities, the stream and wetland resource flagging will be "freshened" as necessary to clearly demarcate these resource areas. This flagging will be maintained through each stage of the construction process, as necessary, until final site stabilization is completed.

### **8.2.2 Erosion and Sedimentation Control Measure Installation**

Installation of various erosion and sedimentation controls will begin immediately following the clearing phase and will be completed concurrently with stump removal and site grading. These control measures will be installed and maintained in accordance with the specifications provided in this section and as shown on the Erosion Control Notes & Detail drawing located in Appendix 8A. All erosion and sedimentation controls installed will be reviewed by the chief inspector to insure their proper location and function prior to commencement of grading activities.

The general sequencing of erosion and sedimentation control installation that will be utilized for construction will be as follows:

1. Concurrent with the initiation of site clearing, construct and stabilize the construction entrance(s) and maintain until final paving is completed.
2. Install and maintain perimeter erosion control (sediment) barriers such as silt fencing, erosion control mix (ECM), and/or other erosion control barriers along the downhill limit of work, as shown on the Post-Development Drainage Plan and Erosion Control Detail drawings. Double rows of sediment barriers must be used during the winter construction period (November 1 through April 15). Sediment barrier locations may be adjusted in the field based on site conditions as determined by the chief inspector. Where silt fence cannot be toed-in properly due to tree roots, rocks or frozen ground, hay bales or an erosion control mix berm must be substituted. Erosion control barriers will be installed after clearing but concurrent with initial grubbing and grading activities. Any erosion issues developed during clearing will be temporarily stabilized with mulch, tree limbs or rock as necessary.

3. Stabilize construction access surface, parking areas, and equipment storage and laydown areas with matting and a gravel sub-base as necessary to minimize rutting and avoid ponding. These measures should be gauged based on the intended equipment and anticipated frequency of usage.
4. Concurrent with initiation of site grading, construct and stabilize temporary drainage swales, diversion berms, check dams, temporary sediment basins, and culverts with temporary inlet and outlet structures, as needed, to minimize sediment in site runoff during the construction of the facility.
5. Install check dams in temporary drainage swales within 24 hours of shaping swale and prior to final stabilization of permanent channels. Swales or channels constructed during the winter construction period must be rip rapped immediately upon completion and check dams installed.
6. Minimize the amount of disturbance at any one time by staging construction as much as practical for efficient construction of the facility. Existing vegetative ground cover should be left in place, where feasible, to aid in sediment retention and reduce erosion potential.
7. Stabilize any exposed slopes greater than eight percent and newly constructed drainage swales with anchored erosion control blankets or other approved mulching techniques.
8. Dust control methods will be employed after grading and prior to final stabilization to prevent the blowing and movement of dust through the application of water and/or calcium chloride to reduce wind erosion. Repetitive treatment will be applied as needed to accomplish control.
9. Apply temporary seed and mulch to any exposed areas where activity is not anticipated for 30 days or more, or where activity has not occurred within 30 days. Temporarily mulch any exposed areas within 100 feet of a wetland where activity is not anticipated or has not occurred in 7 days.
10. Unless clear water is present, any dewatering, such as the excavations for foundations, must be done through a geotextile-lined sediment-containment structure or through a filter bag that discharges to a vegetated area. Control and direct runoff from the excavation areas to the stabilized site drainage system using stabilized water bars, berms and/or hay bales. The structure or filter bag will be sized appropriately to accommodate the pumping rate and volumes. Sediment traps will be cleaned out and/or replaced as needed to prevent exceeding their capacity and effectiveness.
11. Remove excess spoils from the site that will not be used for the final design and stabilization. Stockpiled soils that remain undisturbed for 48 hours or more will be contained with sediment barriers such as silt fence, hay bales or equivalent. The sediment barriers shall be adequately located and reinforced to handle a significant rain event and the potential slumping of the pile. Between April 15 and October 1, apply temporary seed and mulch to a stockpile that is not expected to be disturbed within 30 days. Apply anchored mulch daily, as needed, during the winter construction period.

### **8.2.3 Clearing, Grading, and Foundation Excavation**

The first construction activity to take place will be to clear the existing trees and woody vegetation and establish construction access to the site for construction equipment. Only the area required for construction workspace to construct, install and maintain facility structures and equipment will be cleared. Stabilized construction entrance(s) from paved public roads will be installed in accordance with the Erosion Control Notes & Detail drawing (Appendix 8A). Stumps will be removed and either ground for use as ECM, or hauled off-site to an approved location for re-use as ECM or disposal. A limited number of stumps may be disposed of on-site in accordance with MDEP Solid Waste regulations. The

cleared areas of the site will then be graded, as necessary, to approximate final grade and to provide level surfaces for work areas. Large rocks dislodged during grading or other excavation will be properly disposed of on-site or hauled off-site for disposal in an approved area.

Initial grading work will be in the vicinity of the stream channel, a portion of which is to be relocated and a portion culverted. Completing this work first will direct the existing channelized surface drainage to the perimeter of the site, and will facilitate work in the middle of the site. The second phase of initial grading will involve the remainder of the upper parcel. Foundation holes may also be excavated at this time.

The site clearing, initial grading and foundation excavation is scheduled to occur during the winter construction period of 2011/2012 to take advantage of frozen ground conditions. Winter construction measures and overwinter stabilization measures are discussed in more detail in the Winter Construction Plan located in Section 8.4.3: Winter Construction Plan. The clearing, grading and foundation excavation phase is expected to be completed by the end of February 2012 and the site stabilized for the remainder of the winter construction period.

#### **8.2.4 Foundation Installation**

Once the site has been cleared and graded the building and tank foundations will be poured and allowed to set. The foundations for the bulk LPG and fire water storage tanks and the compressor building require a significant mass of reinforced concrete to provide a stable support. Forms and reinforcing bars will be installed and high strength concrete will be poured to the appropriate levels. Rigid controls on concrete quality and installation procedures will ensure a suitable foundation is obtained.

#### **8.2.5 Construction of Structures, Storage Tanks, Pipeline and other Facility Equipment Installation**

As the various foundations are completed and cured sufficiently, construction of tanks, buildings and other structures will begin, focused initially on the bulk storage tank. As structures are completed and facility equipment installed, electrical wiring will be installed for power and instrumentation, piping related to the truck loading station and other facilities will be installed and connected, and plumbing will be installed in the administration building. Commercial power and telephone will be established at the site as soon as possible. Town water and sewer will be connected to the administration building as those hook-ups are completed.

Very little additional clearing, grading or ground disturbance will be needed in order to construct the proposed transfer pipeline. The pipeline will be attached to the existing Dry Cargo Pier at the Sprague facility. Once over land, piling style foundations for the new pipe rack will be set, sections of pipe will be strung along the proposed pipeline route, the pipe will be welded, x-rayed, coated, painted and installed on the pipe racks. The portions of the pipeline that must cross railroad tracks and existing roads will be installed underground.

#### **8.2.6 Final Stabilization and Revegetation**

Final stabilization and revegetation of the DCP Terminal construction site will be an ongoing process throughout construction. Sections of the work area will be final graded, loamed, fertilized, seeded, and mulched as work is completed. Other areas will be paved or covered with crushed stone. Permanent erosion and stormwater management controls will be installed sequentially as well. Final stabilization of some areas may be feasible by September 2012. Other inactive work areas that are unable to be brought to final grade will be stabilized for the 2012-2013 winter season in accordance with the Winter Construction Plan. All remaining disturbed areas will be permanently stabilized as soon as possible.

before August 2013. The general sequence of the final stabilization and revegetation measures that will be utilized during the growing season is as follows:

1. Complete final grading and stabilization of earthen structures such as steep banks and containment walls, and diversion berms and swales that will control runoff.
2. Finish grade and replace topsoil or loam in all disturbed areas to be revegetated. Seed and mulch disturbed areas within two weeks of final grading, weather permitting.
3. Maintain all temporary erosion controls and sediment barriers until vegetation has been established over 85-90 percent of the area to be revegetated. Reseed sparsely vegetated areas.

#### **8.2.7 *Start-up and Testing***

As the various systems and subsystems of the DCP Terminal are completed they will be tested and calibrated for proper operation. The transfer pipeline, storage tanks that are constructed on-site, and other components that will contain propane will be pressure tested to ensure their integrity. Typically the testing is accomplished by pressurizing with water (hydrostatic testing); however, pneumatic testing may also be used for smaller components. Commissioning and start-up of the DCP Terminal will commence once the new facilities are tested, cleaned and prepared for use, and an initial LPG delivery by truck is made to the site.

#### **8.2.8 *Final Inspection and Clean-up***

When construction is completed the site will be inspected, and any areas in need of remedial measures will be cleaned-up, stabilized, and monitored until the site is stable and revegetated. If any temporary construction erosion and sediment control measures remain in-place they will be removed unless unstable areas are identified. Unstable areas will be addressed accordingly and monitored post-construction until they are stable and revegetated.

### **8.3 *Erosion and Sedimentation Control Plan Drawings***

The Post-Development Drainage Plan and Erosion Control Notes & Detail drawings provided in Appendix 8A include additional detailed information regarding the sequencing, applicability, installation and maintenance of the erosion and sedimentation control devices to be used. The information provided on these plans includes:

- ◆ Protected natural resources;
- ◆ Limits of disturbance;
- ◆ Construction entrance/exit stabilization details;
- ◆ General erosion and sedimentation implementation schedule;
- ◆ Temporary erosion and sedimentation control details, locations and installation specifications;
- ◆ Location and construction detail drawings of permanent structural erosion and sedimentation control measures such as culverts, plunge pools and swales;
- ◆ Pre- and post-development contours;
- ◆ Final ground cover type;
- ◆ Seed mix specifications and application rates;
- ◆ Mulching specifications and application rates;

- ◆ Winter construction specifications; and
- ◆ Inspection and maintenance requirements.

Adherence to this E&S Plan and associated drawings and specifications will insure the successful implementation of erosion and sediment control measures during the construction of the DCP Terminal. Each contractor and inspector on the Project site will have the E&S Plan and drawings available for reference on-site at all times.

## **8.4 BMPs – Erosion and Sediment Control Guidelines**

DCP is proposing to employ the methods described in the *Maine Erosion and Sediment Control BMPs*, or equivalent measures based on prior construction experience, to minimize erosion of disturbed soils and transportation of sediment into sensitive resource areas (streams, wetlands). The erosion and sedimentation control measures that DCP will utilize include both temporary and permanent nonstructural measures such as mulching, seeding, vegetated buffers, as well as temporary and permanent structural measures such as geotextile filter fabrics, ECM, sediment traps, water diversion berms and sedimentation basins.

### **8.4.1 Non-Structural Measures**

Nonstructural measures are temporary or permanent methods used to cover exposed soil areas to minimize erosion and the transport of sediment. Their purpose is to cover exposed soil to prevent initial erosion of soil from a construction site. Examples of nonstructural measures include mulch, ECM, erosion control matting, and/or seeding. Temporary measures are typically used during construction, while permanent measures are usually applied during the final restoration phase when construction is completed.

#### **8.4.1.1 Mulching**

If permanent stabilization has not been established on the construction area, temporary mulching must take place within 100 feet of the edge of all wetlands at any time when no activity is anticipated or occurs for more than a 7 day period, or prior to a severe storm event when erosion is likely to occur. For areas located more than 100 feet from the edge of waterbodies and wetlands, temporary mulch will be applied to all exposed areas if no activity occurs within 30 days. The contractor will apply mulch sooner than 30 days when it can be anticipated that activity is not going to occur within 30 days.

The determination of a severe storm event should be based on observation of the current weather and on reports by the National Weather Service for the relevant geographical area. The likelihood of erosion during a storm event (i.e., the definition of a severe storm event) should be based on anticipated total rainfall in excess of 1.0 inch within a 24-hour period, as predicted by the National Weather Service's advisory reports.

The selection of mulching materials will be based on the season, soil and site conditions. Mulching measures will be employed on all disturbed areas and as needed in wetlands. Mulch materials will be spread uniformly by hand or machine. Application rates, conditions, mulch type, and timing for both temporary and permanent mulch requirements are summarized in Table 8-1.

On slopes greater than 8 percent, hay or straw mulch will be firmly anchored into the soil utilizing one of the following methods:

- Crimping with a straight or notched mulch crimping tool (farm discs will not be allowed);
- Track walking with deep-cleated equipment operating up and down the slope (mulch crimped perpendicular to the slope) on slopes <25 percent;
- Application of mulch netting;
- Application of 500 lb./acre of wood fiber mulch over straw/hay mulch; and
- Commercially available tackifiers (except within 100 feet of waterbodies or wetlands).

<b>Table 8-1</b>			
<b>Summary Of Temporary And Permanent Mulch Application Requirements</b>			
<b>Condition</b>	<b>Timing</b>	<b>Mulch Type<sup>1,2</sup></b>	<b>Application Rates<sup>3</sup></b>
<b>Temporary</b>			
Within 100 feet of wetlands	If no activity in exposed areas for 7 days, or prior to a storm event	Hay/straw mulch  ECM or  Wood fiber mulch	2 tons/acre    2000 lb./acre
All disturbed areas of the construction workspace	Apply mulch to all exposed areas if no activity occurs within 30 days. Apply mulch and temporary seeding sooner when it can be anticipated that activity is not going to occur within 30 days.	Hay/straw mulch  ECM or  Wood fiber mulch	2 tons/acre    2000 lb./acre
All inactive, exposed work areas exposed are to be mulched immediately upon completion of disturbance and following subsequent disturbance	November 1 – April 15	Hay/straw mulch  ECM or  Wood fiber mulch	3 tons/acre    2000 lb./acre
<b>Permanent</b>			
On all exposed areas after seeding to stabilize the soil surface	Permanent grass and/or legume seeding covered by hay or straw mulch on all areas that have been restored to final grade. This does not apply to areas stabilized by other means such as jute matting or permanent erosion control mix.	Crimped hay/straw mulch or  Paper mulch or  Wood fiber mulch	2 tons/acre    1500 lbs./acre <sup>4</sup>  2000 lbs./acre
Wood chip application areas	Permanent grass and/or legume seeding covered by hay or straw mulch on all areas that have been restored to final grade. This does not apply to areas stabilized by other means such as jute matting or permanent erosion control mix.	Crimped hay/straw mulch or  Paper mulch or  Wood fiber mulch	2 tons / acre    1500 lbs./acre <sup>4</sup>  2000 lbs./acre
Notes:			
<ol style="list-style-type: none"> <li>1. Straw and hay mulch may be used interchangeably, except in wetland areas where straw mulch will be required.</li> <li>2. Double rate of wood fiber mulch when used in critical areas.</li> <li>3. Straw, hay, or hydromulch (wood fiber or paper mulch as appropriate) will provide 90 percent ground coverage. See ECM application rates in Section 8.4.1.3.</li> <li>4. Paper mulch is acceptable for use during the growing season. On slopes &gt;30 percent and in areas where vegetation has not established well, additional hay mulch will be added as a winterizing measure.</li> </ol>			

#### 8.4.1.2 Erosion Control Matting

Erosion control blankets or matting is a loosely woven burlap type material or other biodegradable plant fiber material. In lieu of anchored mulch, erosion control matting may be installed in drainage swales

following final seeding, as needed, to prevent erosion prior to revegetation. In addition, erosion control blankets may be installed on slopes greater than 3:1 (3 feet horizontal to 1 foot vertical).

Curlex or jute matting will be placed on areas of high wind exposure, steep slopes (steeper than eight percent grade), unstable soils, and stream bank restoration areas. Matting is typically anchored with large staples, as recommended by the manufacturer. Although this type of material is usually used during final restoration, it is considered a temporary measure because it generally deteriorates within two years and is eventually replaced by vegetation which serves as the permanent measure in the end. A detail drawing showing the proper installation of erosion control mats and blankets is provided on the Erosion Control Notes & Detail drawings in Appendix 8A.

Matting or blankets lining channels and slopes will be properly anchored and the fabric inspected for tears. Damaged matting will be replaced where necessary and the channel cleared of debris and obstructions. The disturbed area shall be free of brush, stumps and other debris that could damage the fabric. Inlet and outlet areas should be checked for scour and repaired until vegetation is established.

#### 8.4.1.3 *ECM*

ECM can be used as slope reinforcement or mulch on slopes that are 2:1 or less, on frozen ground or forested areas, and at the edge of gravel parking areas and active construction areas. ECM used as mulch is applied at different thicknesses depending on the slope and slope length.

- ◆ For slopes of 3:1 or less, apply erosion control mix 2 inches thick plus an additional 1/2 inch per 20 feet of slope up to 100 feet (e.g., 3 inches thick for 60 feet of slope; 4 inches thick for 100 feet of slope).
- ◆ For slopes between 3:1 and 2:1, apply erosion control mix 4 inches thick plus an additional 1/2 inch per 20 feet of slope up to 100 feet (e.g., 5 inches thick for 60 feet of slope; 6 inches thick for 100 feet of slope).

When the ECM is used as mulch, it must be spread evenly and must provide 100 percent soil coverage. The erosion control mix will not support grass, but will support clover and other legumes and woody vegetation. Vegetation can be promoted by seeding, or it can be left to occur naturally.

#### 8.4.1.4 *Vegetative Stabilization*

Proper vegetative stabilization is dependent on the selection of the appropriate seed for upland and wetland areas. Seed mixtures are generally composed of perennial and annual species. Perennials do not produce much top growth or seed the first year. Perennials develop a strong sturdy root structure that generally inhibits the growth of native vegetation. Annuals however, reproduce only from seed rather than roots, therefore they produce good top growth and seed the same year planted. Annual species are more suitable as a temporary vegetative measure and generally allow native vegetation to recolonize the disturbed area.

Depending on the area in which the seed is planted and whether temporary or permanent vegetation is desired will determine the best seed mix suitable for that area. Upland areas will be generally planted with a mix of perennial species during the growing season to establish permanent vegetative stabilization. Upland areas are generally suitable for supporting the growth of perennial species with strong rootstock since revegetation for permanent stabilization is the primary concern. Typically, annual ryegrass is the only vegetative measure used to stabilize restored wetlands, unless the native soils used for restoration don't provide a sufficient wetland seedbed for regrowth of wetland species.

Temporary Seeding

Planting of fast-growing grasses provides rapid stabilization of disturbed surfaces that will experience further disturbance or construction activity at a later date. Temporarily seeded surfaces will have greater resistance to storm water runoff and/or wind erosion. Disturbed areas on the site where further disturbance temporarily ceases for at least 30 days shall be stabilized with temporary seed and/or mulch. Temporary seeding is restricted to the period April 15 through October 1. Compacted soils will be loosened to a depth of four inches prior to seeding.

Permanent Seeding

Permanent seeding shall be used on graded and loamed surfaces with a mixture of fast growing and permanent species suitable to the site and regional conditions. Surfaces to be permanently seeded shall be properly prepared as a seed bed and treated with fertilizer as appropriate. Compacted soils will be loosened to a depth of 4 inches or topdress upland areas with 6 inches of topsoil, as needed. Seeded surfaces shall be mulched, and then watered and maintained until an adequate and permanent vegetative cover is established over 85 – 90 percent of the area. All disturbed areas are to receive permanent seeding within two weeks of final grading, weather permitting. Seed mix specifications are provided in Table 8-2 and a seeding requirements summary is provided in Table 8-3.

Seeding with the permanent upland seed mix will be allowed until October 1. After October 1, 120 pounds per acre of winter rye will be added to the permanent seed mix. Between October 15 and April 1, seeding and mulching at winter application rates can occur until final seeding can be applied outside of this window. Depending on weather conditions, supplemental winter rye may be added as early as September 15 (if freezing weather occurs early in the year). The supplemented seeding mixture will be applied to the construction area, weather permitting, until snow accumulation restricts the seeding operations. No seeding will take place if snow cover exceeds 1 inch. Dormant seeding may be performed after the first killing frost and before the first snow fall.

The construction area will be evaluated in the spring following the completion of construction. Areas where vegetation has not successfully established over 75 percent of the area will be re-seeded and mulched as soon as soil conditions are suitable.

<b>Seed Mix Name</b>	<b>Seed Mix Components</b>	<b>lb./acre<sup>1</sup></b>
Permanent Upland Seed Mix	Redtop	4
	Creeping Red Fescue	40
	Tall Fescue	40
	Birdsfoot Trefoil	16
Wood Chip Application Seed Mix	Creeping Red Fescue	20
	Redtop	4
	Tall Fescue	30
	Crownvetch	30
Wetland Seed Mix	Annual Ryegrass	40
Winter rye <sup>2</sup>	Winter Ryegrass	120
Notes:		
1. Increase seeding rates 10% when hydroseeding		
2. Winter rye will be added to Permanent Upland Mix at a rate of 120 lb. /acre after October 1.		

<b>Table 8-3</b>		
<b>Summary of Seeding Requirements</b>		
<b>Permanent Seeding</b>		
<b>Condition</b>	<b>Timing<sup>1,2</sup></b>	<b>Seed Mix</b>
Upland portions of the construction area	Disturbed area will be seeded within 2 weeks of final grading, weather permitting	Permanent Upland mix
Slopes >3:1	Disturbed area will be seeded immediately after seedbed preparation	Permanent Upland mix
Wetlands	Disturbed wetlands will be seeded within 6 days of final grading, weather permitting	Annual Ryegrass
Wood chip application areas	Disturbed area will be seeded within 2 weeks of final grading, weather permitting	Wood chip application seed mix
Notes:		
1. Weather conditions permitting		
2. Areas that do not successfully revegetate within the appropriate period of time will be reseeded as necessary.		

### Fertilizer and Limestone Requirements

In general, fertilizer and lime application rates will follow the guidelines identified below, if needed, or unless site specific soil tests identify the need for alternative fertilizer/lime application rates. Fertilizer will be applied to upland areas prior to seeding at a rate of 800 pounds per acre using 10-20-20 (N-P205-K20) or equivalent. Ground limestone (equivalent to 50 percent calcium plus magnesium oxide) will be applied at a rate of 3 tons per acre. An equivalent mixture of fertilizer and lime may be applied using the hydroseeding method. No lime or fertilizer will be applied to wetlands.

### Hydroseeding

Hydraulic application (hydroseeding) is an alternative method of revegetation, and is a suitable method for use. Hydroseeding combines the seed, fertilizer and lime, and may include paper mulch, wood fiber or straw, mixed with water that is sown in one application. Hydroseeding is generally limited to upland areas on slopes less than 2:1. This type of seeding application is recommended for use during the growing season, weather, accessibility, local restriction, and conditions permitting. Seeding rates will typically increase 10 percent when hydroseeding. Hydroseeding with mulch and annual rye seed only will be allowed in wetland areas.

Paper mulch and wood fiber mulch are normally used in hydroseeding applications. Paper mulch is generally comprised of recycled newspaper and wood fiber mulch is generally comprised of thin strands of wood fiber. Wood fiber mulch is more durable and more resistant to decomposition than paper mulch. Paper mulch typically decomposes within 30 days following application leaving the soil surface without adequate protection against erosion.

If hydroseeding methods are used for revegetation purposes, paper mulch will only be allowed for use during the growing season and will be spread at a minimum rate of 1,500 pounds per acre. If paper mulch is used on slopes greater than 30 percent, or vegetation has not become well established prior to the onset of winter, additional hay mulch will be spread as a winterizing measure on all surfaces treated with paper mulch to insulate and stabilize the exposed soil. If wood fiber mulch is used, it will be spread at a minimum rate of 1,500 pounds per acre during the growing season.

If it is anticipated that vegetation will not become established prior to the onset of winter, wood fiber mulch can be used as a winterizing measure and will be applied at a rate of 2,000 pounds per acre and will

not require additional hay mulch. The contractor and the chief inspector will determine the most appropriate method of revegetation to be used based on existing conditions at the time of application.

#### *8.4.1.5 Stabilized Construction Entrance/ Exit*

A construction entrance will consist of a stone pad, mud rack, or other materials used to reduce the tracking or flowing of sediment off the construction site. Where entrances cross poorly drained locations or drainage ditches, a subsurface drain will be installed prior to constructing the stabilized entrance.

The entrance will be maintained in a condition that will reduce tracking of sediment off the construction site. Periodic top dressing with additional stone or replacement with clean stone will be accomplished as needed. Roads adjacent to the construction site will be cleaned at the end of each day, as needed. The entrance will be removed following the completion of construction.

The disturbed area created for the access pad shall be free of brush, stumps and other objectionable material. Stone will be coarse aggregate with a minimum 2 inch size. Pad dimensions will be 50 feet long, 25 feet wide and 6 inches thick. A construction detail drawing of the stabilized construction entrance is provided in Appendix 8A.

#### *8.4.1.6 Dust Control*

Dust control methods will be employed to prevent the blowing and movement of dust through the application of temporary measures that are designed to reduce wind erosion. Construction roads, access points, and exposed soil surfaces will be moistened as needed with water and/or treated with calcium chloride. Repetitive treatment will be applied as needed to accomplish control. Maintain dust control measures through dry weather periods until all disturbed areas are stabilized. Avoid erosive quantities of water.

The use of temporary mulch will reduce the need for dust control in areas that will remain disturbed for longer than 30 days.

### *8.4.2 Structural Measures*

Structural measures are temporary or permanent methods used to control erosion and sedimentation at a construction site and range from temporary hay bale structures to permanent vegetated swales and ponds. Temporary earthen structures such as diversion berms, dikes, swales and sediment basins may be constructed to control off-site sedimentation. Structural measures that will be used for stormwater control can also play an effective role in erosion and sedimentation control. Permanent structures that are part of the stormwater management plan that will be established for the site are shown on the project drawings in Attachment 6 and Appendix 8A.

#### *8.4.2.1 Temporary Sediment Barriers*

Temporary structural sediment barriers include silt fence, hay/straw bale and ECM barriers that are constructed on-site to contain sediments carried by runoff.

##### *Silt Fence*

Silt fence is a temporary sediment filter device consisting of a barrier of geotextile fabric used to intercept sediment laden runoff from small drainage areas. Sedimentation control is accomplished by reducing runoff velocity and trapping transported sediment at the outlet end of newly constructed level spreaders,

ditch turnouts, diversion berms and along the construction limits where the land slopes downward from the disturbed area. Silt fence also provides a visual and physical barrier defining construction limits.

Silt fence will be placed in a single row, parallel with the land contour, or along the limits of the work area. Silt fence should be placed approximately 6 feet beyond the toe of the slope to allow for sediment accumulation; between disturbed areas and down gradient environmental resource areas; at the base of all slopes adjacent to wetland resource areas; and the inlet and outlet of open drainage structures. Silt fence may be installed backed with straw/hay bales for additional control of erosion and sedimentation.

Inspection will occur weekly in areas of active construction and following a major storm event. Repair or replacement will be made, as needed, to retain proper functioning. Accumulated sediment will be removed when it exceeds approximately one-third of the height of the barrier. Following construction, silt fence will be maintained until revegetation is complete (upslope areas have a healthy catch of vegetation over 85 – 90 percent of the area). Additional silt fence will be kept on site for replacement purposes.

The fabric will be securely fastened to wooden posts with wire or staples. Posts will be spaced a maximum of 10 feet apart. Spacing will be reduced, if necessary, to prevent sagging of the fence. Joints will overlap a minimum of 6 inches. A trench will be excavated approximately 6 inches wide and 6 inches deep along the post line with 8 inches of fabric placed in the trench and backfilled (see the Erosion Control Notes & Detail sheet in Appendix 8A). In areas where conditions prohibit trenching due to ledge, rocky soil, or many large tree roots within the top 4 inches of soil, sandbags or backfilling may be used to secure the bottom of the fence. The American Society of Testing Materials (“ASTM”) has specified minimum standards for geotextile fabric used for sediment control. The fabric shall conform to the following standards:

**SILT FENCE CRITERIA**

<b>Property</b>	<b>Requirement</b>
Grab Strength	100 lbs.
Elongation	15% Min. to 50% Max.
Permissivity	0.2 sec. -1
A.O.S. (Apparent Opening Size)	30-80 (Coarse soils)* 50-80 (Fine soils)
Ultraviolet Resistance	70% Minimum

\* Coarse soils with less than 50 percent of the particles passing through a #200 sieve, fine soils with greater than 50 percent of the particles passing through a #200 sieve.

Straw/Hay Bales

The use of silt fence or silt fence in combination with hay or straw bales is preferred over the use of hay/straw bales alone. However, in many instances, straw/hay bale sediment barriers are effective temporary sediment filter devices used to provide for sediment retention at stormwater drain inlets, settling basin and diversion berm outlets, and as drainage swale check dams. A temporary barrier of hay or straw bales can be used to intercept sediment laden runoff from small drainage areas exhibiting disturbed soil conditions. Sedimentation control is accomplished by reducing runoff velocity and trapping transported sediment. Hay/straw bales also provide a visual and physical barrier defining construction limits.

Bales may be placed in a single row, parallel with the land contour, or along the limits of the work area with ends tightly abutting. Hay bales should be placed approximately 6 feet beyond the toe of a slope to allow for sediment accumulation; between disturbed areas and down gradient environmental resource areas; at the base of all slopes adjacent to wetland resource areas; and the inlet and outlet of open drainage structures. Hay bales used as check dams in drainage swales shall be limited to drainage areas of 1/2 acre or less.

Inspection and maintenance of hay and straw bale sediment barriers is the same as for silt fence, keeping in mind that the bales may deteriorate more rapidly from exposure to the weather.

Bales should be bound around the sides with string oriented horizontally to prevent contact with the ground and deterioration of the bindings. Bales will be entrenched unless the ground surface consists of rocky soils or ledge, or there are many large tree roots within the top 4 inches of soil. In those situations, the upslope side must be backfilled. As subsurface conditions allow, the bales will be securely anchored with two wooden stakes driven flush with the top of the bale (see the Erosion Control Notes & Detail sheet in Appendix 8A). Gaps should be chinked (filled with loose straw or hay). Hay bales must be removed upon successful completion of permanent revegetation.

### ECM

ECM berms are often most effective for areas where the installation of silt fence and/or haybales is not practical due to frozen soils, shallow roots, or rock. The proper installation of ECM berms is shown on the Erosion Control Notes & Detail sheet in Appendix 8A. ECM consists primarily of organic materials such as shredded bark, stump grindings, composted bark, or similar materials. Wood and bark chips, ground construction debris, or reprocessed wood products are not acceptable for use in ECM. It can be manufactured on or off site, and will contain a well-graded mix of particle sizes and may contain rocks up to 4 inches in diameter. The following specifications are provided for ECM:

- ◆ organic matter content between 80 and 100 percent (dry weight),
- ◆ 100 percent of particles passing a 6-inch screen,
- ◆ between 70 and 85 percent passing a 0.75-inch screen,
- ◆ the organic portion will be fibrous and elongated,
- ◆ only small proportions will be silts, clays, or fine sands,
- ◆ soluble salts content will be <4.0 mmhos/cm, and
- ◆ pH will be between 5.0 and 8.0.

As with other barriers, to be most effective these berms must be placed along the contour of the slope. It will be necessary to cut tall grasses or woody vegetation to avoid creating voids and bridges that may enable runoff and sediment to wash under the barrier. For ECM berms, on slopes less than five percent or at the bottom of steeper slopes (<2:1) up to 20 feet long, the barrier must be a minimum of 12 inches high and a minimum of 2 feet wide. On longer or steeper slopes, the barrier must be wider to accommodate additional runoff. ECM berms should be inspected weekly in areas of active construction and following a major storm event, and replenished or reshaped as needed.

ECM berms will not be used at low points of concentrated runoff, below culvert outlet aprons, around catch basins and closed storm systems, and at the bottom of steep perimeter slopes that have large watersheds.

A continuous contained berm (or filter sock) is a fabric sock that is filled with ECM. It is also an effective barrier in areas that cannot be effectively trenched for installation of silt fence or hay bales. It is especially suited for use on pavement, since it can be driven over without adversely affecting its effectiveness. The netting holds the organic mix together and keeps it from being displaced.

8.4.2.2 *Slope Breakers/Diversion Berms*

Temporary or permanent slope breaker/diversion berms are useful for the management of surface water flow and are to be installed on disturbed areas as necessary to avoid excessive erosion. Berms can be placed depending on the slope in order to trap and divert sheet flow off the construction site to a stable area or settling basin.

Slope breakers/diversion berms are typically constructed of compacted earth and rock but are sometimes constructed with earth filled sacks and/or staked hay bales or other functionally equivalent material where appropriate. On long slopes, a series of berms can be used. Runoff water will be filtered at the outlet end by discharging into a well vegetated area, energy dissipating device typically constructed of a haybale and/or silt fence filter or into a settling basin. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction workspace to effectively drain water off of the disturbed area.

During and following construction, slope breaker/diversion berms will be inspected to insure proper functioning and repairs will be made as necessary. The channel will be kept cleared of debris and obstructions.

The berm shall be free of brush and stumps and other debris. Each berm will have a minimum height of 18 inches after compaction and a minimum width of 36 inches to ensure structural integrity and to allow easy passage of construction equipment.

Fill shall be compacted as needed to prevent unequal settlement. Following construction, if the berm will remain as a permanent water diversion structure, it will be seeded and mulched accordingly. Slope breakers must have a 2 to 8 percent outslope and be located so that they will outlet to a vegetated area without causing water to pool or erode behind the breaker. However, if no vegetation is present within a reasonable distance of where a slope breaker must be located to properly function, then an energy dissipating device, typically consisting of haybales, sandbags, silt fence, and or crushed stone, must be constructed at the outlet. With the preceding comments accounted for, breakers will be constructed and maintained at the following typical spacing:

<b>SPACING OF SLOPE BREAKERS</b>	
<b>SLOPE</b>	<b>SPACING</b>
5 - 15%	300 feet
15 - 30%	200 feet
> 30%	100 feet

Note: The spacing of slope breakers may be reduced as directed by the chief inspector.

#### 8.4.2.3 *Stone Check Dams*

Temporary check dams are small temporary dams constructed across a swale or drainage ditch. Their purpose is to reduce the velocity of concentrated stormwater flows, thereby reducing the erosion of the swale or ditch and associated sediment transport. The use of check dams is limited to small open channels that drain 10 acres or less. Check dams are typically constructed of clean, 2- to 3-inch crushed stone but, for very low flows, hay or straw bales can be used.

The maximum height of a check dam should be 2 feet and the center of the dam must be at least 6 inches lower than the outer edges to help prevent water movement around the ends of the dam. The proper installation of a stone check dam is shown on the Erosion Control Notes & Detail drawing (Appendix 8A). Installation of hay bales is discussed in Section 8.4.2.1, and also shown on the Erosion Control Notes & Detail sheet.

Inspection of check dams will occur weekly in areas of active construction and following a major storm event. Repair or replacement will be made, as needed, to retain proper functioning. Accumulated sediment will be removed when it exceeds approximately one-third of the height of the barrier. Following construction, check dams will be removed, provided that revegetation or other final stabilization of the site and drainage channel is completed.

#### 8.4.2.4 *Dewatering*

Dewatering of excavated areas may be required periodically. The discharge from dewatering will be directed to the on-site drainage system, or, alternatively, sediment laden discharge will be passed through a non-woven filter bag or sediment trap (such as a hay bale/filter fabric structure). Filter bag or sediment trap dewatering structures may at times be located outside of the marked workspace/disturbance limits to take advantage of vegetated areas.

Filter bags or the sediment trap will be placed as far away from waterbodies and wetlands as practical, keeping in mind that they need to be accessible for removal after construction. The discharge point must be well-vegetated (i.e. not impervious surface or exposed soil) to the maximum extent practicable; be at least 25 feet from the edge of a wetland or waterbody; and be on a slope of less than 20 percent. When a filter bag is placed within 250 feet of a waterbody (not wetland), the bag must be surrounded with secondary containment. In the case of wetlands, the discharge must meet the same criteria if the water can be easily pumped outside of the wetland. However, if the wetland is very large and it is not practical to discharge outside of the wetland, then the water should be pumped through a filter bag or sediment trap, as described, before discharging into the wetland.

#### *Filter Bags*

Non-woven filter bags, can be used as an effective filter medium to contain sand, silt and fines when dewatering excavated areas. The filter bag contains these sediment materials while allowing the water to flow through the fabric. Filter bags are constructed of non-woven geotextile fabric. A maximum of one 6-inch discharge hose will be allowed per filter bag. Bag capacity will not be exceeded beyond 2,000 gallons per minute. Typical bag dimensions are 15 feet by 13.25 feet.

To insure proper installation, filter bags will be placed on relatively flat terrain free of brush and stumps to avoid ruptures and punctures. To help prevent punctures, geotextile fabric may be placed beneath the filter bag when used in areas where wood debris or stones cannot be avoided. Proper installation requires cutting a small hole in the corner of the bag, inserting the pump discharge hose, and then securing the discharge hose to the bag with a hose clamp (no wire or string). Prior to removing a bag from the hose,

the bag will be tied off below the end of the hose allowing the bag to drain. Drainage will not be allowed through the inlet hole. To avoid rupture, the bags will be attended and pumping rates monitored. Once the bag is inflated to a height of 4 feet, pumping will stop to avoid rupture. Filter bags used during construction will be bundled and removed for proper disposal.

### **8.4.3 Winter Construction Plan**

The winter construction period defined by the MDEP BMPs runs from November 1 through April 15th. DCP will implement specific measures for erosion and sediment control during this period, and will also implement specific overwinter stabilization measures as necessary. The proposed winter construction erosion and sedimentation control measures and overwinter stabilization measures are discussed below and are based on a reasonable application of Section A-3 of the MDEP BMP's.

#### **8.4.3.1 Winter Construction Erosion and Sediment Control Measures**

As summarized in the preliminary construction schedule, DCP anticipates an approximately three- to four-month period of winter construction related to site clearing and initial grading activities beginning in November of 2011 and ending as soon as possible in February 2012, when special winter construction measures will be implemented. Completing these construction phases during this time is proposed to take advantage of frozen ground conditions for clearing and the major earth moving work and, in response to local concerns, to confine these activities, including any blasting that may be needed, to a time period when tourist activities in Searsport are at a minimum. DCP does not anticipate the need for significant earth moving or blasting during the winter construction period from November 1, 2012 to April 15, 2013. However, final site stabilization is not likely to be completed over the entire site by November 1, 2012, so winter construction measures will be implemented, as needed, during the 2012/2013 winter construction period as well.

Winter construction erosion and sediment control measures will be applied to any open disturbed areas where final stabilization has not occurred. More frequent and heavier applications of temporary mulch, increased dormant seeding rates, the substitution or additional use of ECM berms in erosion control barriers, and other supplemental erosion controls will be used as discussed below. Erosion and sedimentation risks during periods of winter construction, or at open soil areas where final site stabilization has not been completed prior to November 1, will be managed by implementing the following winter construction measures.

##### **8.4.3.1.1 Winter Construction Sequencing**

- The acreage of exposed soil at any given time will be minimized to the extent practical by strategically sequencing grading operations;
  - First, the stream segment will be culverted and relocated to maintain this drainage around the construction site perimeter, and the associated earthwork and stream channel will be stabilized;
  - Grading and excavation will then commence on the remainder of the terminal area;
- Exposed areas will be limited to those areas in which major earth work is needed to bring the terminal area to rough final grades and excavate for building and tank foundations;
- Exposed soil surfaces will be mulched for over winter conditions or otherwise stabilized as soon as initial earthwork in a given area is completed;

#### 8.4.3.1.2 Winter Construction Mulching

- The hay or straw mulch application rate during the winter shall be increased from 2 tons/ acre to 3 tons/ acre and properly anchored;
- If ECM is applied as a mulch material, the minimum thickness will be 4 inches;
- If there is snow over exposed soil that is not stabilized by mulch, the snow will be removed down to approximately a one-inch depth before mulch is applied;
- All hay or straw mulch will be anchored by either mulch netting, chemical non-petroleum tackifier, tracking, or wood cellulose fiber;
- When final grading is completed in an area and no further disturbance is required during the winter construction period, the area will be stabilized within 24 hours with anchored hay or straw, ECM, or erosion control matting, weather or other site conditions permitting;
- Soil stockpiles will be at least 100 feet from a protected natural resource, and will be mulched with hay or straw at twice the normal rate, or with a four-inch layer of ECM within 24 hours of stockpiling or new disturbance.

#### 8.4.3.1.3 Winter Construction Structural Erosion and Sedimentation Controls

- A double row of sediment barriers (i.e. silt fence backed with hay bales or ECM) will be placed around the down slope perimeter of the construction area, and between the disturbed area and any protected natural resource within 100 feet of the disturbed area;
- Stockpiled soils that are to remain in place over the winter will be contained with sediment barriers in addition to mulching as required above;

#### 8.4.3.1.4 Winter Construction Channel and Swale Stabilization

- Open channels and swales designed to carry and/or divert surface runoff, including the relocated stream segment, will be rip rapped immediately upon completion of the channel and temporary check dams installed before flow is allowed through the channel.

#### 8.4.3.1.5 Winter Construction Slope Stabilization

- By November 15 or the completion of construction for the winter, whichever is later, all stone covered slopes greater than 15% will be constructed and stabilized;
- Depending on the slope grade and the timing of construction completion, all slopes greater than 15% that are to be vegetated will be stabilized for the winter using one of the following measures:
  - By October 1, slopes will be stabilized with temporary vegetation (seeded with winter rye at a rate of 3 pounds per 1,000 square feet) and anchored with erosion control mats, or;
  - By October 1, slopes will be stabilized with wire-pinned sod, or;
  - By November 15 or the completion of construction for the winter, whichever is later, slopes will be stabilized with erosion control mix to a depth of four inches, or;
  - By November 15 or the completion of construction for the winter, whichever is later, slopes will be stabilized with stone riprap.

#### 8.4.3.1.6 Winter Construction Seeding

- Prior to October 1, temporary seeding will be used where feasible to limit the amount of exposed soil and temporarily stabilize exposed soils with vegetation. Temporary seeding will consist of seeding with winter rye at a rate of 3 pounds per 1,000 square feet, lightly mulching with hay or straw at 75 pounds per 1,000 square feet, and anchoring with plastic netting. It is unlikely this will be implemented during the first year of construction (2011), because initial site disturbance is not expected until after October 1. It is possible that temporary seeding will be applied to disturbed areas prior to the start of the 2012/2013 winter construction season if areas of open soil have not been permanently stabilized and seeded at that time. Temporary seeding for overwinter stabilization is not effective after October 1. Winter mulching or other winter stabilization measures must be used after that date.
- Between October 15 and April 1, loam or seed is not required.
- If permanent seeding is conducted after October 1, 120 pounds per acre of winter rye will be added to the permanent seed mix.
- Dormant seeding can be applied after final grading during winter construction and prior to the application of mulch, provided there is less than 1 inch of snow covering final grade and the area has been covered with four inches of loam. Areas where dormant seed is applied shall be monitored during the next growing season, and reseeded will take place where vegetation is less than 75 percent established.
- If dormant seeding is not used, all disturbed areas brought to final grade will be revegetated in the spring.

Before construction is completed for the winter, the site will be inspected to ensure that it is adequately stabilized. Areas in need of remedial measures to ensure that the site remains stable over the winter will be addressed as necessary.

#### **8.4.4 Training**

Environmental training will be given to both DCP and contractor personnel whose activities could impact the environment during construction. The level of training will be commensurate with the duties of the personnel. The training will be given prior to the start of construction and throughout the construction process, as needed. The training program will cover this E&S Plan; procedures for handling and storing petroleum products and hazardous materials; relevant conditions and requirements related to Site Law, Natural Resources Protection Act, and municipal permits; company policies; and any other pertinent information related to the job. In addition to the chief inspector, all other construction personnel are expected to play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction.

#### **8.4.5 Supervision and Inspection**

To effectively mitigate construction impacts, the E&S Plan must be properly implemented. The chief inspector, employed by DCP, will be trained and responsible for inspecting the site on a weekly basis during active construction and will supervise environmental compliance aspects of construction activities. The chief inspector will have the authority to stop activities that violate the environmental conditions, or other permits and authorizations, and to order corrective action. The chief inspector will have construction inspection experience and/or training, be experienced in erosion control techniques and have an understanding of the wetland and waterbody resources required to be protected.

Responsibilities of the chief inspector will include working with the contractors and DCP to ensure project compliance with the erosion control measures described in this Section, and environmental permits and conditions. Specific duties will include: verifying that all authorized construction work areas are marked before clearing, the proper installation and maintenance of erosion control devices, ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, working with construction contractors and DCP to ensure compliance with environmental permit conditions, verifying the proper implementation of dewatering and hydrostatic test water discharge procedures, documentation of temporary and permanent revegetation programs, ensuring restoration of contours and topsoil, coordination with environmental regulatory agencies, ensuring the contractor's appropriate implementation of the Construction Spill Plan, inspecting contractor activities to ensure implementation and function of stormwater control measures, determining corrective action and implementation of additional measures deemed necessary based on field or weather conditions, and identifying areas that should be given special attention to ensure stabilization and restoration following construction. Field decisions may sometimes be required regarding the timing of placement of erosion controls, dewatering, revegetation and other construction related items.

The chief inspector will meet with the construction contractor to review the sequence of construction and the placement of erosion control measures to be employed. He/she will conduct detailed inspections of erosion controls at least once a week during active construction and restoration, and following major storm events generating greater than 1.0 inch of rainfall within a 24-hour period. Following completion of final restoration, inspections will occur once per month until the site is considered to be stabilized and any remaining temporary erosion controls are removed. The chief inspector will keep records of any non-compliance with environmental permit conditions and the mitigation measures proposed by DCP in its applications submitted to the federal and state environmental permitting agencies. The inspector will also participate in periodic coordination meetings with the construction superintendent and contractor personnel during construction, and will advise the construction superintendent when conditions make it advisable to restrict construction activities to avoid and minimize rutting and erosion.

DCP will require the on-site contractor(s) to identify a qualified individual from their workforce(s) to be responsible for environmental compliance support such as observing the presence and effectiveness of erosion control measures and site conditions on a daily basis during active construction. The contractor's environmental coordinator will immediately report any areas of non-compliance or other concerns to the DCP chief inspector. The inspection and maintenance schedule of individual erosion and sedimentation control measures is included in Sections 8.4.1 and 8.4.2 with the description of each measure that may be employed. .

## **APPENDIX 8A**

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### **Post-Development Drainage Plan**

### **Erosion Control Notes & Details**



POST-DEVELOPMENT CONDITIONS									
WATERSHED	BRUSH	BLDG/FDN	GRASS	GRAVEL	IMPERVIOUS	RAILBED	STONE	WOODS	TOTAL
ID	C	98	C	C	98	55	70	C	AREA
1S	0.00	0.15	2.45	0.02	0.50	0.00	0.00	35.06	38.18
2S	4.45	0.18	3.86	0.94	0.53	0.50	0.12	6.26	16.84
2SA	0.31	0.15	0.94	0.00	0.78	0.00	0.01	2.06	4.25
2SB	0.11	0.15	0.57	0.00	0.76	0.00	1.47	0.00	3.06
3S	1.88	0.18	0.17	0.47	0.36	0.39	1.31	1.25	6.01
3SA	0.00	0.83	0.00	0.00	0.04	0.00	4.65	0.00	5.52
3SB	0.43	0.04	0.24	0.00	0.57	0.00	0.31	0.00	1.59
4S	1.38	0.34	3.23	0.95	0.97	0.00	0.00	10.74	17.61
(ALL AREAS ARE IN ACRES)									93.06

**SOILS LEGEND**

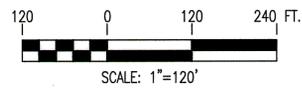
ABBREVIATION	SOIL TYPE	SLOPE (%)	HYDROLOGIC SOIL GROUP	VEGETATED PERMISSIBLE VELOCITY (FT/S)
BoB	BOOTHBAY	3 TO 8	C	3.0
BvB	BRAYTON	0 TO 8	C	3.0
BoB3	BOOTHBAY	25 TO 45	C	3.0
PaB	PERU	3 TO 8	C	3.5
PbB	PERU	3 TO 8	C	3.5
Sw	SWANVILLE	0 TO 8	C	3.0
Ud	UDORTHERTS	0 TO 3	C	3.0

**NOTES**

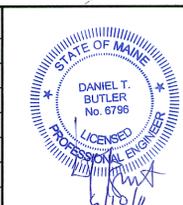
- SEE DRAWING 179023-C1 FOR GENERAL NOTES AND LEGEND.
- SEE MATRIX SERVICE DRAWING 2001-01 FOR SPECIFIC BUILDING AND EQUIPMENT LAYOUT.

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION

**POST-DEVELOPMENT DRAINAGE PLAN**  
SCALE: 1"=120'



NO.	REVISION	DATE	BY	CK	P.E. STAMPED TO	P.E. No.



CLIENT APPROVAL		PGT DESIGNED	
APPROVED BY		CMH	DRAWN
COMPANY		PMM	CHECKED
DATE		DTB	APPROVED
		REVIEWED	

POST-DEVELOPMENT DRAINAGE PLAN  
DCP SEARSPORT PROPANE TERMINAL

DCP MIDSTREAM PARTNERS, LLC

SEARSPORT MAINE

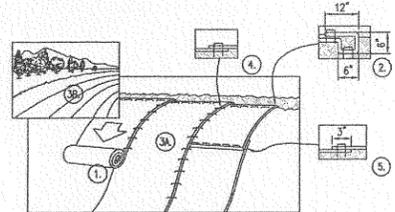
**CTRC** 249 WESTERN AVENUE  
AUGUSTA, ME 04330  
PROJECT NO: 179023  
SCALE: AS NOTED DATE: 06/08/11

179023-C2

REV. B

**CONSTRUCTION SEQUENCE**

1. ESTABLISH CONSTRUCTION WORKSPACE LIMITS, IDENTIFY AND MARK SENSITIVE RESOURCES.
2. CLEAR TIMBER AND BRUSH; DO NOT GRUB UNTIL JUST PRIOR TO PRELIMINARY GRADING AND ESTABLISHMENT AND STABILIZATION OF TEMPORARY OR PERMANENT DRAINAGE COURSES.
3. INSTALL AND MAINTAIN SEDIMENT BARRIERS SUCH AS SILT FENCING AND/OR OTHER EROSION CONTROL BARRIERS ALONG THE DOWNHILL LIMIT OF WORK, AS SHOWN ON THE DRAWINGS. SEDIMENT BARRIER LOCATIONS MAY BE ADJUSTED IN THE FIELD BASED ON SITE CONDITIONS AS DETERMINED BY THE ENGINEERING INSPECTOR. WHERE SILT FENCE CANNOT BE TOED-IN PROPERLY DUE TO TREE ROOTS, ROCKS OR FROZEN GROUND, HAY BALES OR AN EROSION CONTROL MIX BERM MAY BE SUBSTITUTED. SILT FENCING WILL BE INSTALLED AFTER CLEARING BUT PRIOR TO GRUBBING AND GRADING ACTIVITIES. ANY EROSION ISSUES DEVELOPED DURING CLEARING WILL BE TEMPORARILY STABILIZED AS NECESSARY.
4. STABILIZE CONSTRUCTION ACCESS ROAD SURFACE, PARKING AREAS AND EQUIPMENT STORAGE AND LAYDOWN AREAS WITH MATTING, CRUSHED STONE OR GRAVEL SUBBASE AS NECESSARY TO MINIMIZE RUTTING AND AVOID PONDING.
5. CONCURRENT WITH INITIATION OF SITE GRADING, CONSTRUCT AND STABILIZE TEMPORARY DRAINAGE SWALES, DIVERSION BERMS, CHECK DAMS, AND CULVERTS WITH TEMPORARY INLET AND OUTLET STRUCTURES TO MINIMIZE SEDIMENT IN SITE RUNOFF DURING THE CONSTRUCTION OF THE ROADWAY. DEWATER IN ACCORDANCE WITH DEWATERING NOTES BELOW.
6. INSTALL PROPERLY SPACED STONE CHECK DAMS IN ANY SECTION OF DITCH WITHIN 24 HOURS OF FORMING, SHAPING OR ROUGH GRADING THAT SECTION OF DITCH.
7. MINIMIZE THE AMOUNT OF DISTURBANCE AT ANY ONE TIME BY STAGING CONSTRUCTION AS MUCH AS PRACTICAL FOR EFFICIENT CONSTRUCTION OF THE FACILITY. EXISTING GROUND COVER SHOULD BE LEFT IN PLACE WHERE FEASIBLE TO AID IN SEDIMENT RETENTION AND REDUCE EROSION POTENTIAL.
8. STABILIZE ANY NEWLY GRADED SLOPE GREATER THAN EIGHT PERCENT AND ANY SECTION OF NEWLY CONSTRUCTED DITCH USING ANCHORED EROSION CONTROL BLANKETS OR OTHER APPROVED MULCHING TECHNIQUES. STABILIZE ANY SLOPE EXCEEDING EIGHT PERCENT AND BROUGHT TO FINAL GRADE USING THE APPROVED PERMANENT STABILIZATION MEASURES FOR SLOPES. STABILIZE ANY SECTION OF DITCH BROUGHT TO FINAL GRADE USING THE APPROVED PERMANENT STABILIZATION MEASURES FOR DITCHES.
9. DUST CONTROL METHODS WILL BE EMPLOYED AFTER GRADING AND PRIOR TO FINAL STABILIZATION TO PREVENT THE BLOWING AND MOVEMENT OF DUST THROUGH THE APPLICATION OF WATER AND/OR CALCIUM CHLORIDE TO REDUCE WIND EROSION. REPETITIVE TREATMENT WILL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.
10. APPLY TEMPORARY SEED AND/OR MULCH TO ANY EXPOSED AREAS WHERE ACTIVITY IS NOT ANTICIPATED FOR 30 DAYS OR MORE, OR WHERE ACTIVITY HAS NOT OCCURRED WITHIN 30 DAYS. TEMPORARILY MULCH ANY EXPOSED AREAS WITHIN 100 FEET OF A WETLAND WHERE ACTIVITY IS NOT ANTICIPATED OR HAS NOT OCCURRED IN 7 DAYS.
11. UNLESS CLEAR WATER IS PRESENT, DEWATERING OF EXCAVATIONS MUST BE DONE THROUGH A GEOTEXTILE-LINED SEDIMENT CONTAINMENT STRUCTURE OR THROUGH A FILTER BAG THAT DISCHARGES TO A VEGETATED AREA. CONTROL AND DIRECT RUNOFF FROM THE EXCAVATED AREAS TO THE STABILIZED SITE DRAINAGE SYSTEM USING STABILIZED WATER BARS AND/OR HAY BALES. THE STRUCTURE OR FILTER BAG WILL BE SIZED APPROPRIATELY TO ACCOMMODATE THE PUMPING RATE AND VOLUMES. SEDIMENT TRAPS WILL BE CLEANED OUT AND/OR REPLACED AS NEEDED TO PREVENT EXCEEDING THEIR CAPACITY AND EFFECTIVENESS.
12. REMOVE EXCESS SPOILS FROM SITE THAT WILL NOT BE USED FOR THE FINAL DESIGN AND STABILIZATION. STOCKPILED SOILS THAT REMAIN IN PLACE FOR 48 HOURS OR MORE WILL BE CONTAINED WITH SEDIMENT BARRIERS SUCH AS SILT FENCE, HAY BALES OR EQUIVALENT. THE SEDIMENT BARRIERS SHALL BE ADEQUATELY LOCATED AND REINFORCED TO HANDLE A SIGNIFICANT RAIN EVENT AND THE POTENTIAL SLUMPING OF THE PILE BETWEEN APRIL 15 AND OCTOBER 1. APPLY TEMPORARY SEED AND MULCH TO A STOCKPILE THAT IS NOT EXPECTED TO BE DISTURBED WITHIN 30 DAYS. APPLY ANCHORED MULCH DAILY, AS NEEDED, DURING WINTER CONSTRUCTION.
13. INSPECT AND REPAIR EROSION CONTROL MEASURES WEEKLY IN AREAS OF ACTIVE CONSTRUCTION AND AFTER RAINFALL OF 1 INCH OR GREATER WITHIN A 24-HOUR PERIOD. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 THE HEIGHT OF THE BARRIER.
14. MONITOR PUBLIC ROADS FOR SIGNS OF TRACKING OR SPILLING OF SPOIL MATERIAL AND CLEANUP AS NEEDED.
15. COMPLETE FINAL GRADING AND STABILIZATION OF EARTHEN STRUCTURES SUCH AS DIVERSION BERMS AND SWALES THAT WILL CONTROL RUNOFF.
16. FINISH GRADE AND REPLACE TOPSOIL OR LOAM IN DISTURBED AREAS. SEED AND MULCH DISTURBED AREAS WITHIN 2 WEEKS OF FINAL GRADING, WEATHER PERMITTING.
17. MAINTAIN ALL TEMPORARY EROSION CONTROLS AND SEDIMENT BARRIERS UNTIL VEGETATION HAS BEEN ESTABLISHED OVER 85-90% OF THE AREA TO BE REVEGETATED. RESEED SPARSELY VEGETATED AREAS.
18. REMOVE ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ONCE THE SITE IS PERMANENTLY STABILIZED.
19. FOR ADDITIONAL DETAILS, CONSULT THE MAINE EROSION CONTROL AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION BEST MANAGEMENT PRACTICES (2003) AND MOEP WINTER CONSTRUCTION GUIDELINES (1999).



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REWARDING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
  3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
  5. CONSECUTIVE BLANKETS SPUN DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
- NOTE:  
\*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

**EROSION CONTROL BLANKET INSTALLATION**  
NOT TO SCALE

**MULCH AND SEEDING SPECIFICATIONS**

SUMMARY OF TEMPORARY AND PERMANENT MULCH APPLICATION REQUIREMENTS			
CONDITION	TIMING	MULCH TYPE <sup>1,2</sup>	APPLICATION RATES <sup>3</sup>
TEMPORARY			
WITHIN 100 FEET OF WETLANDS	IF NO ACTIVITY IN EXPOSED AREAS FOR 7 DAYS, OR PRIOR TO A STORM EVENT	STRAW MULCH OR ERM OR WOOD FIBER MULCH	2 TONS/ACRES 2000 LB./ACRES
ALL DISTRIBUTED AREAS OF THE CONSTRUCTION WORKSPACE	APPLY MULCH TO ALL EXPOSED AREAS IF NO ACTIVITY OCCURS WITHIN 30 DAYS. APPLY MULCH AND TEMPORARY SEEDING SOONER WHEN IT CAN BE ANTICIPATED THAT ACTIVITY IS NOT GOING TO OCCUR WITHIN 30 DAYS.	STRAW MULCH OR ERM OR WOOD FIBER MULCH	2 TONS/ACRES 2000 LB./ACRES
ALL WORK AREAS EXPOSED ARE TO BE MULCHED DAILY EACH TIME SOIL IS DISTURBED	NOVEMBER 1 - APRIL 15	STRAW MULCH OR ERM OR WOOD FIBER MULCH	3 TONS/ACRES 2000 LB./ACRES
PERMANENT			
ON ALL EXPOSED AREAS AFTER SEEDING TO STABILIZE THE SOIL SURFACE	PERMANENT GRASS AND/OR LEGUME SEEDING COVERED BY HAY OR STRAW MULCH ON ALL AREAS THAT HAVE BEEN RESTORED TO FINAL GRADE. THIS DOES NOT APPLY TO AREAS STABILIZED BY OTHER MEANS SUCH AS JUTE MATTING OR PERMANENT EROSION CONTROL MIX.	CRIMPED STRAW MULCH OR PAPER MULCH OR WOOD FIBER MULCH	2 TONS/ACRES 1500 LB./ACRES <sup>4</sup> 2000 LB./ACRES
WOOD CHIP APPLICATION AREAS	PERMANENT GRASS AND/OR LEGUME SEEDING COVERED BY HAY OR STRAW MULCH ON ALL AREAS THAT HAVE BEEN RESTORED TO FINAL GRADE. THIS DOES NOT APPLY TO AREAS STABILIZED BY OTHER MEANS SUCH AS JUTE MATTING OR PERMANENT EROSION CONTROL MIX.	CRIMPED STRAW MULCH OR PAPER MULCH OR WOOD FIBER MULCH	2 TONS/ACRES 1500 LB./ACRES <sup>4</sup> 2000 LB./ACRES

NOTES:  
1. STRAW AND HAY MULCH MAY BE USED INTERCHANGEABLY, EXCEPT IN WETLAND AREAS WHERE STRAW MULCH WILL BE REQUIRED.  
2. DOUBLE RATE OF WOOD FIBER MULCH WHEN USED IN CRITICAL AREAS.  
3. STRAW, HAY, OR HYDROMULCH (WOOD FIBER OR PAPER MULCH AS APPROPRIATE) WILL PROVIDE 90 PERCENT GROUND COVERAGE (SEE EGM APPLICATION RATES BELOW).  
4. PAPER MULCH IS ACCEPTABLE FOR USE DURING THE GROWING SEASON, ON SLOPES >30 PERCENT AND IN AREAS WHERE VEGETATION HAS NOT ESTABLISHED WELL. ADDITIONAL HAY MULCH WILL BE ADDED AS A WINTERIZING MEASURE.

**MULCH ANCHORING REQUIREMENTS**

- ON SLOPES GREATER THAN 8 PER CENT, HAY OR STRAW MULCH WILL BE FIRMLY ANCHORED INTO THE SOIL UTILIZING ONE OF THE FOLLOWING METHODS:  
 -CRIMPING WITH A STRAIGHT OR NOTCHED CRIMPING TOOL (FARM DISCS WILL NOT BE ALLOWED);  
 -TRACK WALKING WITH DEEP-CLEATED EQUIPMENT OPERATING UP AND DOWN THE SLOPE (MULCH CRIMPED PERPENDICULAR TO THE SLOPE) ON SLOPES <25 PERCENT;  
 -APPLICATION OF MULCH NETTING;  
 -APPLICATION OF 500 LB./ACRE OF WOOD FIBER MULCH OVER STRAW/HAY MULCH; AND  
 -COMMERCIALLY AVAILABLE TACKIFIERS (EXCEPT WITHIN 100 FEET OF WATERBODIES OR WETLANDS).

SEED MIX SPECIFICATIONS		
SEED MIX NAME	SEED MIX COMPONENTS	LB./ACRE <sup>1</sup>
TEMPORARY SEED MIX	ANNUAL RYEGRASS	40
PERMANENT UPLAND SEED MIX	REDTOP	4
	CREeping RED FESCUE	40
	TALL FESCUE	40
	BIRDFOOT TREFOIL	16
WOODCHIP APPLICATION SEED MIX	CREeping RED FESCUE	20
	REDTOP	4
	TALL FESCUE	30
	GRASSWITCH	30
WETLAND SEED MIX	ANNUAL RYEGRASS	40
SUPPLEMENTAL WINTER SEED MIX <sup>2</sup>	WINTER RYEGRASS	120

NOTES:  
1. INCREASE SEEDING RATES 10% WHEN HYDROSEEDING.  
2. WINTER RYE WILL BE ADDED TO PERMANENT UPLAND MIX AT A RATE OF 120 LB./ACRE DURING OCTOBER 1 AND APRIL 15.

SUMMARY OF SEEDING REQUIREMENTS		
CONDITION	TIMING <sup>1,2</sup>	SEED MIX
TEMPORARY SEEDING <sup>3</sup>	TEMPORARY SEED BETWEEN APRIL 15 AND OCTOBER 1 ONLY. DISTURBED AREAS OR SPOIL STOCKPILES WILL BE SEEDDED IMMEDIATELY IF FURTHER DISTURBANCE IS NOT EXPECTED FOR 30 DAYS OR MORE.	ANNUAL RYEGRASS
PERMANENT SEEDING <sup>3,4</sup>	UPLAND PORTIONS OF THE CONSTRUCTION AREA	PERMANENT UPLAND MIX
	SLOPES > 3:1	DISTURBED AREA WILL BE SEEDDED IMMEDIATELY AFTER SEEDBED PREPARATION.
WETLANDS	DISTURBED WETLANDS WILL BE SEEDDED WITHIN 6 DAYS OF FINAL GRADING.	ANNUAL RYEGRASS
WOODCHIP APPLICATION AREAS	DISTURBED AREA WILL BE SEEDDED WITHIN 2 WEEKS OF FINAL GRADING.	WOODCHIP APPLICATION SEED MIX
WINTER DORMANT SEEDING	DORMANT SEED BETWEEN OCTOBER 1 AND APRIL 15 ONLY. NO SEEDING WILL OCCUR IF SNOW DEPTHS EXCEED 1 INCH.	PERMANENT UPLAND MIX PLUS WINTER RYEGRASS

NOTES:  
1. WEATHER CONDITIONS PERMITTING.  
2. AREAS THAT DO NOT SUCCESSFULLY REVEGETATE WITHIN APPROPRIATE PERIOD OF TIME WILL BE RESEEDDED AS NECESSARY.  
3. LOOSEN COMPACTED SOIL TO A MINIMUM DEPTH OF 4 INCHES.  
4. TOP DRESS WITH 6 INCHES LOAM, AS NEEDED.

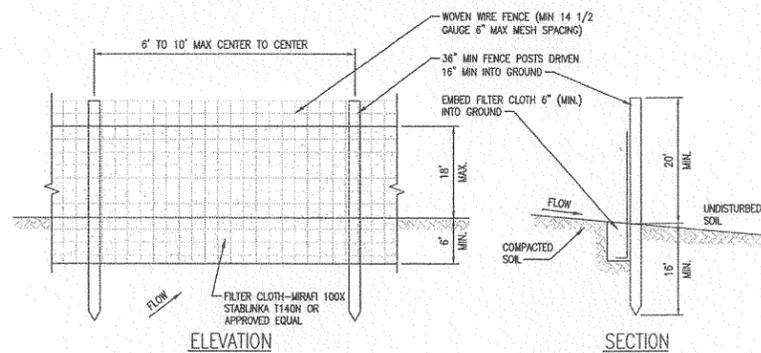
**FERTILIZER AND LIMESTONE REQUIREMENTS**

IN GENERAL, FERTILIZER AND LIME APPLICATION RATES WILL, IF NEEDED, FOLLOW THE GUIDELINES IDENTIFIED BELOW UNLESS SITE SPECIFIC SOIL TESTS IDENTIFY THE NEED FOR ALTERNATIVE FERTILIZER/LIME APPLICATION RATES. FERTILIZER WILL BE APPLIED TO UPLAND AREAS PRIOR TO SEEDING AT A RATE OF 800 POUNDS PER ACRE USING 10-20-20 (N-P205-K20) OR EQUIVALENT. GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) WILL BE APPLIED AT A RATE OF 3 TONS PER ACRE. AN EQUIVALENT MIXTURE OF FERTILIZER AND LIME MAY BE APPLIED USING THE HYDROSEEDING METHOD. NO LIME OR FERTILIZER WILL BE APPLIED TO WETLANDS.

**EGM APPLICATION RATES**

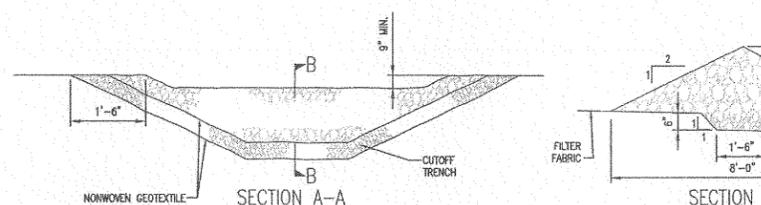
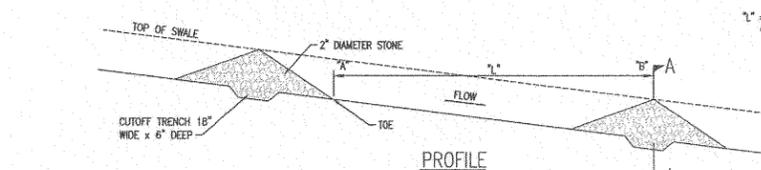
- EGM CAN BE USED AS A SLOPE REINFORCEMENT OR MULCH ON SLOPES THAT ARE 2:1 OR LESS, ON FROZEN GROUND OR FORESTED AREAS, AND AT THE EDGE OF GRAVEL PARKING AREAS AND ACTIVE CONSTRUCTION AREAS. EGM USED AS MULCH IS APPLIED AT DIFFERENT THICKNESS DEPENDING ON THE SLOPE AND SLOPE LENGTH:
- FOR SLOPES OF 3:1 OR LESS, APPLY EROSION CONTROL MIX 2 INCHES THICK PLUS AN ADDITIONAL 1/4 INCH PER 20 FEET OF SLOPE UP TO 100 FEET (E.G. 3 INCHES THICK FOR 60 FEET OF SLOPE; 4 INCHES THICK FOR 100 FEET OF SLOPE).
  - FOR SLOPES BETWEEN 3:1 AND 2:1, APPLY EROSION CONTROL MIX 4 INCHES THICK PLUS AN ADDITIONAL 1/4 INCH PER 20 FEET OF SLOPE UP TO 100 FEET (E.G. 5 INCHES THICK FOR 60 FEET OF SLOPE; 6 INCHES THICK FOR 100 FEET OF SLOPE).

WHEN THE EGM IS USED AS MULCH, IT MUST BE SPREAD EVENLY AND MUST PROVIDE 100 PERCENT SOIL COVERAGE. THE EROSION CONTROL MIX WILL NOT SUPPORT GRASS BUT WILL SUPPORT CLOVER AND OTHER LEGUMES AND WOODY VEGETATION. VEGETATION CAN BE PROMOTED BY SEEDING OR IT CAN BE LEFT TO OCCUR NATURALLY.

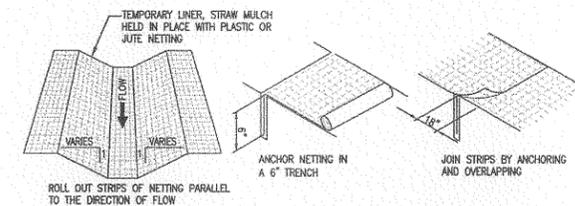


1. WOVEN WIRE FENCE TO BE FASTENED TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MIDSECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN BUILD-UP REACHES 1/3 THE HEIGHT OF THE FENCE.

**SILT FENCE DETAILS**  
NOT TO SCALE



**CHECK DAM DETAILS**  
NOT TO SCALE



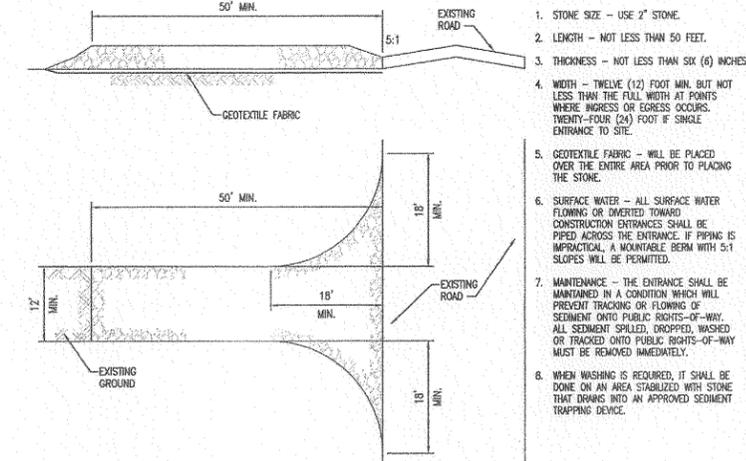
1. EXCAVATE THE CHANNEL AND SHAPE IT TO AN EVEN CROSS-SECTION AS SHOWN. WHEN STAKING INDICATE A 0.2' OVERCUT AROUND THE CHANNEL PERIMETER FOR SILTING AND BULKING.
2. GRADE SOIL AWAY FROM CHANNEL SO THAT SURFACE WATER MAY ENTER FREELY.
3. APPLY LIME, FERTILIZER AND SEED TO THE CHANNEL AND ADJOINING AREAS IN ACCORDANCE WITH THE EROSION CONTROL PLAN.
4. SPREAD HAY OR STRAW MULCH AT THE RATE OF 100LB/1000 SF.
5. HOLD MULCH IN PLACE IMMEDIATELY AFTER SPREADING WITH A PLASTIC NETTING INSTALLED AS SHOWN.
6. START LAYING THE NET FROM THE TOP OF THE UPSTREAM END OF THE CHANNEL AND UNROLL IT DOWN GRADE. DO NOT STRETCH THE NETTING.
7. BURY THE UP SLOPE END AND STAPLE THE NET EVERY 12" ACROSS THE TOP END. EVERY 3 FT AROUND THE EDGES AND ACROSS THE NET SO THAT THE STRAW IS HELD CLOSELY AGAINST THE SOIL. HOWEVER, DO NOT STRETCH THE NETTING WHEN STAPLING.
8. NETTING STRIPS SHOULD BE JOINED TOGETHER ALONG THE SIDES WITH A 3" OVERLAP AND STAPLED TOGETHER.
9. TO JOIN ENDS OF STRIPS, INSERT A NEW ROLL OF NET IN A TRENCH AS WITH THE UP SLOPE END AND OVERLAP IT 18" WITH THE PREVIOUSLY LAID UPPER ROLL. TURN UNDER 6" OF THE 18" OVERLAP AND STAPLE EVERY 12" ACROSS THE END.

**GRASS LINED CHANNEL**  
NOT TO SCALE



- EROSION CONTROL SOIL/BARK MIX SHALL CONSIST OF SHREDED BARK, STUMP CRUMBS, COMPOSTED BARK OR FLAKE, OR AFRAGMENTED WOOD GENERATED FROM WATER-FLOW LOG HANDLING SYSTEMS. THE MIX SHALL CONFORM TO THE FOLLOWING:
1. pH - 5.0 TO 8.0.
  2. SCREEN SIZE: 3/4" - 100% PASSING  
MIX SHALL NOT CONTAIN LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS.
  3. ORGANIC MATERIAL 20% - 100% (DRY WEIGHT BASIS)  
ORGANIC PORTION MUST BE FIBROUS AND ELONGATED
  4. SOLUBLE SALTS SHALL BE < 4.0 mmoles/cm

**EROSION CONTROL BERM**  
NOT TO SCALE



**STABILIZED CONSTRUCTION ENTRANCE**  
NOT TO SCALE

1. STONE SIZE - USE 2" STONE.
2. LENGTH - NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MIN. BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE FABRIC - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN REPAIRING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

NO.	REVISION	DATE	BY	CK	P.E. NUMBER	P.E. No.

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION

CLIENT APPROVAL

APPROVED BY: PGM CHECKED: DTB APPROVED: DATE: \_\_\_\_\_

EROSION CONTROL NOTES & DETAILS  
DCP SEARSPORT PROPANE TERMINAL

DCP MIDSTREAM PARTNERS, LLC  
SEARSPORT MAINE

SCALE: AS NOTED DATE: 05/12/11

PROJECT NO: 179023  
DATE: 05/12/11

REV. A

## **ATTACHMENT 9. SITE CONDITIONS AND WETLAND RESOURCES**

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Wetlands at the DCP site are regulated by the US Army Corps of Engineers (USACE) under the provisions of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbor Act. The Maine Department of Environmental Protection (MDEP) regulates activities in wetland resources at the site under the provisions of the NRPA (38 M.R.S.A. §480A–HH) and the associated Wetland and Waterbodies Protection Rules (Chapter 310 of MDEP Regulations).

Freshwater and coastal wetland communities at the site of the proposed DCP Terminal were field-delineated by TRC wetlands scientists in October and December of 2010. Delineated wetland boundaries were located with sub-meter accuracy GPS (global position system) and are shown on permit application drawings. The location of wetland resources was taken into consideration during project design to avoid and minimize impacts to the extent practicable. The resulting final layout was used to determine the location and extent of unavoidable wetland impacts required for construction and operation of the proposed project. The location and extent of wetlands in the vicinity of the proposed facility are displayed on Figure 2 and on the project drawings in Sections 5 and 6 of this application. Photographs of these on-site resources are provided in Attachment 4. Wetland Resources subject to the jurisdiction of the NRPA that are to be affected by (or in the vicinity of) the proposed LPG terminal are described in more detail below. Although not necessarily identified by the same resource name these same features are regulated by the USACE.

### **9.1 Coastal Wetland**

The project site and its freshwater wetlands drain to Long Cove a coastal wetland at the confluence of the Penobscot River and Penobscot Bay. “Coastal wetlands” are defined by the NRPA as “*all tidal and subtidal lands; all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water or estuarine habitat; and any swamp, marsh, bog, beach, flat or other contiguous lowland that is subject to tidal action during the highest tide level for the year in which an activity is proposed as identified in tide tables published by the National Ocean Service. Coastal wetlands may include portions of coastal sand dunes* (38 MRSA §480-B (2)).”

From its landward terminus at Mack Point, the existing pier, and the portion of the LPG transfer pipeline that will be installed along the pier, is therefore located “over” the coastal wetland with the existing supporting pilings and dolphins being “in” the coastal wetland (Attachment 4 Photographs 1, 2). Based on NOAA tide data, 7.9 feet (NGVD 29) is the landward boundary of the coastal wetland.

Since the new transfer pipeline will be attached to the pier, either beneath or alongside the existing structure and above the high annual tide line, there will be no impacts to coastal wetlands resulting from construction or operation of the project. Installation of the pipeline along the pier will occur by working from above and below the pier and/or a jack-up barge or floating work boat tied off alongside the pier.

### **9.2 Stream**

“Rivers streams or brooks” are defined by the NRPA (38 MRSA §480-B (9)) as: “*a channel between defined banks created by the action of surface water and has more than two of the following characteristics:*

- A. *It is depicted as a solid or broken blue line on the most recent edition of the US Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.*

- B. *It contains or is not to contain flowing water continuously for a period of at least 6 months of the year in most years.*
- C. *The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.*
- D. *The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if now surface water is present in the stream bed.*
- E. *The channel contains aquatic vegetation and is essentially devoid of upland vegetation.”*

Although not appearing as a blue line on a USGS topographic map, two of the five definitive characteristics of a “river, stream or brook” are exhibited by the drainage that flows from US Route 1 along the southerly side of the site and through a culvert beneath the railroad and into Long Cove. The two characteristics present in this drainage are: 1) *the channel bed is primarily composed of mineral material such as sand and gravel ... that has been deposited or scoured by water*, and 2) *it appears to ... contain or is known to contain flowing water continuously for a period of at least 6 months of the year in most years*. Flow contributing to the stream originates from beyond the site and the watershed extends to the opposite side of US Route 1 where no evidence of a stream channel exists in the wetland above the 24” RCP (Photo 8). Nevertheless, on the DCP site the southerly drainage course is therefore considered to be a NRPA-regulated stream (Attachment4: Photos 3, 4, 5, 6, and 7).

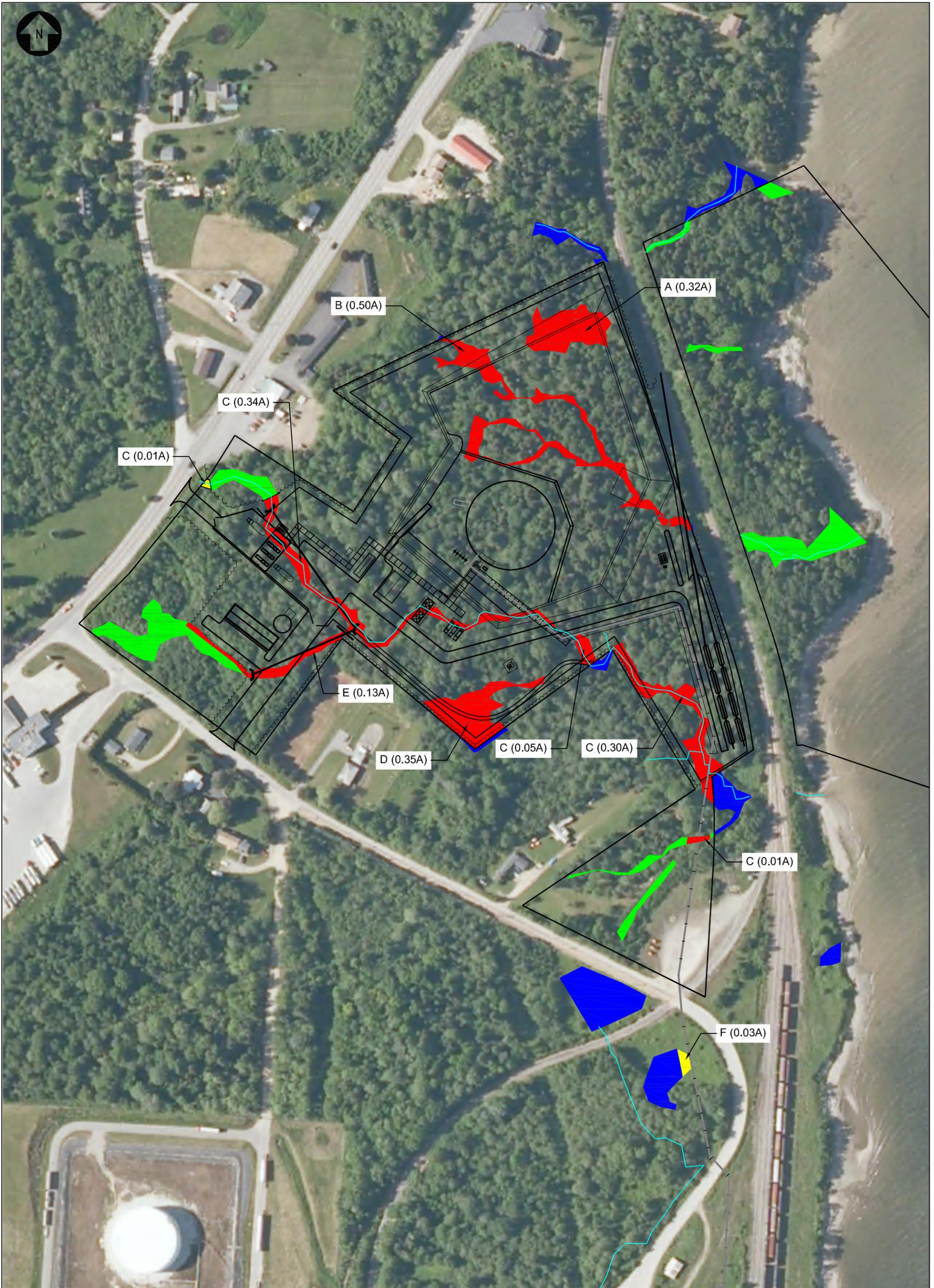
In a downstream direction across the site segments of the stream channel will be affected by the project as follows. For the first approximately 210 feet from the headwall at US Route 1 impacts to the channel will be avoided other than minimal clearing of trees near the headwall to improve site distance to the north on Route 1. The next approximately 365 ft of channel will be rerouted into approximately 330 ft of culvert passing beneath the truck loading area. Emerging from the downstream headwall for this new culvert approximately 670 ft of the stream channel will be rerouted for a distance of approximately 650 ft along the site perimeter in order to construct the containment dike, emergency flare and other essential project elements. Below this point the remaining approximately 445 ft of channel on the project site will remain in its existing location.

There is another drainage course through the center of the site with an eroded channel that is fed by relatively small wetlands on flatter parts of the site interior. The drainage course then flows through a 24-inch CMP beneath the railroad to Long Cove (Attachment4: Photos 9, 10, 11, and 12). Although criteria C of the above requisite NRPA criteria is present, due to the much smaller contributory watershed, the eroded channel appears to be maintained by irregular, ephemeral events such as heavy rainfalls or snowmelt unlikely to be at least 6 months in duration. Consequently, the remaining definitive attributes defining a river, stream or brook are also absent and therefore the central drainage course is not considered to be a NRPA-regulated stream.

### **9.3 Freshwater Wetlands**

North of Station Avenue, five distinct wetland systems were delineated by TRC on the project site (see Figure 2 and project drawings) and are characterized below in accordance with the National Wetland Inventory classification system (Cowardin et al., 1979).

A small, palustrine forested wetland dominated by broad-leaved deciduous vegetation (PFO1) occurs in the north corner of the site (See Wetland A on Figure 2 and Attachment4: Photo 13). Other than an apparent ditch leading to the railroad right of way, the wetland is not connected with other surface drainage to Long Cove. This wetland will be filled to construct the containment dike.



**LEGEND**

**TOTAL WETLAND AFFECTED (2.04 ACRES)**

- WETLAND FILL OR OTHER DIRECT IMPACT (2.00 ACRES)
- WETLAND CLEARED (NO GRUBBING) (0.04 ACRES)
- WETLAND UNDISTURBED INSIDE PROPERTY
- WETLAND UNDISTURBED OUTSIDE PROPERTY

**DCP Midstream Partners, LP**

DCP Searsport Propane Terminal  
Searsport, ME

**Figure 2:  
Delineated Wetlands & Impact Areas**

A small palustrine wetland dominated by a mixture of broad-leaved deciduous forested and scrub shrub vegetation (PFO1/PSS1) occurs near the center of the site (Wetland B; Photos 7, 14). The wetland system is drained by the central ephemeral drainage course described above. This wetland system will be filled to construct the bulk storage tank and surrounding containment area.

Palustrine forested wetland dominated by broad-leaved deciduous vegetation (PFO1) also occurs in segments of the narrow deeply incised stream valley (Wetland C; Photos 4, 5, 6, 7). Segments of this wetland system will be filled to construct the truck loading area, containment dike, emergency flare and its maintenance road. This system will also be cleared and some wetland fill will likely be necessary to construct the transfer pipeline and maintenance road along the new railroad spur.

A small palustrine wetland dominated by a mixture of broad-leaved deciduous forested and scrub shrub vegetation (PFO1/PSS1) is located along the south side of the site (Wetland D; Photo 15). This wetland system is a tributary of the PFO1 wetland along the stream and will be crossed by the relocated stream channel.

A palustrine scrub shrub wetland dominated by broad-leaved deciduous vegetation (PSS1) occurs on the portion of the site at the corner of US Route 1 and Station Avenue (Wetland E; Photo 16). The wetland system drains southeast to the stream channel and exhibits previous disturbance from scattered areas of fill and an existing pipeline right of way. The wetland will be crossed by the entrance driveway from Station Avenue.

South of Station Avenue there is a mown, palustrine wetland dominated by a mixture of broad-leaved deciduous scrub shrub and emergent (PSS1/EM) vegetation (Wetland F; Photo 17). A short, aboveground segment of the transfer pipeline will cross this wetland, which will require a small amount of ongoing cutting of vegetation for pipeline maintenance and safety/security purposes. No permanent fill will be placed in this wetland.

Boundaries of wetlands at the site were delineated based on methods described in the 2009 *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeastcentral and Northeast Region* that is to be used with the 1987 *US Army Corps of Engineers Wetlands Delineation Manual (Manual)*. Data forms documenting vegetation, soils and hydrologic characteristics used to identify the wetland boundaries appear in Appendix 9A. Three parameters (vegetation, soils and hydrology) established by the Manual are considered in identifying areas as wetland and, with the exception of disturbed sites or atypical situations, evidence indicative of wetland must be exhibited by all three parameters for an area to be designated a wetland. Evidence indicative of wetland for each of the three parameters is described below.

Freshwater wetlands at the site are dominated by woody species including: red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), balsam fir (*Abies balsamea*) and northern white cedar (*Thuja occidentalis*), trees and saplings or wetland shrubs, such as: speckled alder (*Alnus incana*), winterberry holly (*Ilex verticillata*), meadowsweet (*Spiraea latifolia*) and elderberry (*Sambucus canadensis*). Characteristic and dominant non-woody or herbaceous vegetation species include: creeping buttercup (*Ranunculus canadensis*), wrinkled goldenrod (*Solidago rugosa*), jewel weed (*Impatiens capensis*), manna grass (*Glyceria melicaria*), fowl manna grass (*G. striata*), water avens (*Geum rivale*), spinulose wood fern (*Dryopteris spinulosa*), sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), and sphagnum moss (*Sphagnum* spp.).

In contrast to the above hydrophytes, dominant vegetation indicative of upland at the site consists of red spruce (*Picea rubens*), white pine (*Pinus strobus*), northern red oak (*Quercus bicolor*), black cherry

(*Prunus serotina*) and paper birch (*Betula papyrifera*) trees and saplings with evergreen wood fern (*Dryopteris intermedia*) and marginal-shield fern (*D. marginalis*) commonly occurring in the understory.

The 1984 medium intensity *Soil Survey of the Waldo County* by the US Soil Conservation Service indicates poorly drained silt loams soils of the Swanville Series (Sw) occur beneath areas of the site delineated as wetland. Shallow (10-20" deep) test holes were excavated at various locations in the course of delineating wetland boundaries and confirm the presence of hydric soils with characteristics similar to those described for the Swanville Series. Such characteristics included: silt loam soils with a depleted matrix that is olive to olive gray (5Y5/3 – 5Y5/3) in color with light olive brown (2.5Y5/6) redox features.

Hydrologic evidence observed to be indicative of wetlands at the site included areas with: recent alluvial soils, shallow soil saturation, wetland drainage patterns, ponded water and water stained leaves.

#### 9.4 Wetland Resource Summary

Characteristics of the wetlands delineated at the site, related functions and values discussed in Attachment 12 and the footprint of area of impact are summarized in the Table 9-1:

Photo(s)	Fig. 9-1 ID	Wetland Type <sup>1</sup> (Location)	Wetland Function/Value(s) <sup>2</sup>	Impact Area <sup>3</sup>	
				Filled	Cleared
1, 2	NA	E2EM1 (Long Cove)	FFA, FSH, STPR, NRRT, PE, SS, WLH, R, A, ESH	No Impact	
3ab	NA	36" CMP Stream culvert (at Long Cove)			
4, 5, 6, 7	C	PFO1 wetland (along stream)	Surface water conveyance	0.64 acre	0.01 acre
8	NA	PSS (Offsite headwall)	Not evaluated	No Impact	
9, 10	NA	Ephemeral drainage (downstream of RR)	Not evaluated	No Impact	
11, 12, 13	B	PFO1/PSS1 (Central wetland ephemeral drainage)	Surface water conveyance	0.50 acre	
14	A	PFO1 (North corner)	Limited STPR and NRRT	0.32 acre	
15	D	PFO1/PSS1 (South corner)	Limited STPR and NRRT	0.35 acre	
16	E	PSS1 (along Station Avenue)	Limited STPR and NRRT	0.13 acre	
17	F	Mown PSS1/PEM (south of Station Avenue)	Not evaluated		0.03acre
<b>Total Impact Area</b>				<b>2.00 acres</b>	<b>0.04 acre</b>

<sup>1</sup> Wetland types from USFWS *Classification of Wetlands and Deepwater Habitats* (Cowardin et al, 1979):

E2EM – Estuarine, inter-tidal, persistent emergent  
PSS1 – Palustrine, broad-leaved deciduous scrub shrub  
PFO1 – Palustrine, broad-leaved deciduous forested

<sup>2</sup> Based on the September 1999 supplement to the New England Division of the USACE *Descriptive Approach* to assessing wetland functions and values described in *The Highway Methodology Workbook*. Functions and values present in wetlands at the DCP site include: FFA – floodflow alteration; F/SH – fish/shellfish habitat; STPR – sediment, toxicant, pollutant retention; NRRT – nutrient removal/retention/transformation; PE – production export; SS – sediment/shoreline stabilization; WLH – wildlife habitat; R – recreation; A – Visual quality/ aesthetics; ESH – threatened/endangered species habitat. Wetland functions and values are described in greater detail in Attachment 12 of the NRPA application.

<sup>3</sup> Solitary value refers to impact by permanent fill or excavation.

## 9.5 Regulatory Assessment

### 9.5.1 NRPA

Various characteristics of wetlands, as well as the extent of impacts, determine the level or Tier of permitting required under the NRPA. Alteration of wetlands with characteristics exemplifying “freshwater wetlands of special significance” usually require a Tier 3 permit (Ch 310 §4B). Impacts to wetlands that are not of special significance that exceed an area 43,560 square feet (one acre) also require a Tier 3 permit (38 MRSA §480-X2C). The DCP Terminal, as proposed, requires a Tier 3 NRPA permit since impacts to wetlands not of special significance exceed one acre and, as described further below, there will be impacts to a wetland of special significance.

Freshwater wetlands are defined as freshwater wetlands of special significance if they display one or more of eight specific characteristics (Ch 310 §4A). A comparison of the wetlands that would be impacted by construction and operation of the DCP Terminal with the “special significance” characteristics in Chapter 310 of MDEP Regulations is provided in the following paragraphs.

Wetland communities considered to be critically imperiled (S1) or imperiled (S2) by the Maine Natural Areas Program (Ch 310 §3F, 3L; 4A1), are wetlands of special significance. The palustrine deciduous scrub shrub (PSS1) and forested (PFO1) wetland communities that occur on the property are not critically imperiled or imperiled.

Wetlands containing “significant wildlife habitat”, as defined by the MDIFW (38 M.R.S.A. §480 B10), are considered to be “freshwater wetlands of special significance”. Significant wildlife habitat that can be found in freshwater wetlands includes: habitat for species on the state or federal list of endangered or threatened animal species, high and moderate value deer wintering areas and travel corridors, high and moderate value waterfowl and wading bird habitat, and significant vernal pools. Vernal pools do not occur on the property and MDIFW does not consider wetlands at the site that would be affected by the project to be other forms of significant wildlife habitat.

Coastal wetlands, great ponds or freshwater wetlands within 250 feet of a coastal wetland or great pond are defined as wetlands of special significance (Ch 310 §4A3, 4A4). The wetlands that would be affected by the project do not meet these criteria.

Freshwater wetlands that contain more than 20,000 square feet of open water or aquatic or specific emergent marsh vegetation are wetlands of special significance (Ch 310 §4A5). The affected wetlands do not contain more than 20,000 square feet of open water or aquatic or emergent marsh vegetation

Wetlands that are located within the 100-year storm floodplain are considered “wetlands subject to flooding” and therefore are defined as wetlands of special significance (Ch 310 §4A6). The Flood Insurance Rate Map for this part of Searsport (Panel Number 23085 0012B), dated May 17, 1990, indicates none of the affected wetlands occur within the 100-year floodplain.

Wetland communities at the site are not dominated by ericaceous species typifying peatlands; another type of wetlands of special significance (Ch 310 §3P, 4A7).

Wetlands within 25 feet of a stream channel are considered freshwater wetlands of special significance (Ch 310 §4A8). Therefore the portion of forested wetland C (Photographs 3, 4, 5, 6, 7) that are within 25 feet of the stream channel that flows along the southerly side of the property is considered to be wetland of special significance.

### **9.5.2 USACE**

With the possible exception of Wetland A (Photo 13), the wetland resources identified on the site are considered to be jurisdictional wetlands for purposes of Clean Water Act Section 404 permitting. On October 10, 2010, the USACE promulgated a Maine General Permit (MGP) that provides a streamlined, expedited review process for projects that are considered to have “minimal individual, secondary and cumulative effects on the aquatic environment”. The MGP further categorizes impacts to inland waters and wetlands that are greater than 15,000 square feet but less than three acres, including all temporary and permanent fill, and river stream or brook work and crossings not eligible for Category 1 as potentially eligible for a Category 2 MGP. The applicant must obtain the appropriate local or state approvals and meet all of the MGP permit conditions for the MGP to be valid.

Total impacts from construction and operation of the DCP Terminal are not expected to exceed 2.04 acres. Further, there will be no impact to coastal wetlands. As a result, DCP is requesting that the Searsport Terminal be permitted under the MGP as a Category 2 project.

**APPENDIX 9A**

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**Wetland Delineation Data Forms/Documentation**

**WETLAND A**  
**WETLAND A**  
**NRPA Figure 2**

**WETLAND SUMMARY FORM**

Project: SEASPORT - DCP Midstream Date: 10-13-10  
 Observers: SD JG  
 Town: SEASPORT Facility: DCP Crossing Name: A1 (1-27)  
 Crossing Type(s): X Wetland        Watchdog         
 Dominant NWI Class: PFD Other NWI Classes:         
 Representative Wetland Vegetation (by NWI Class):  
Herbs Shrubs Trees  
Rub. pub. Aln. rug. acer. rub.  
Div. Spm. Samb. can. Fray. sp.  
Rumex Reyners  
Silene dry int.

Loosestrife or Phragmites currently present in ROW or in vicinity of the wetland system? L / P Yes \_\_\_ No X  
 Representative Wetland Hydrology:        Seasonally Flooded        X Saturated         
 (approximate depth:       )  
 Hydrologic Indicators:        Silt Deposition        Water-Shedded Leaves        Water Marks        Drift Lines         
       Surface Scouring        Drainage Patterns        Infiltrated Trees        Elevated Roots         
 Other Observations: SATURATED 0.8"

Depth	Horizon	Color	Reids Features	Texture
0-5"	A	5Y 4/2	5Y 5/2	SIC
5-10"	B <sub>g</sub>	5Y 5/2	7.5Y 8/6	SIC

Representative Wetland Soils:  
X Mineral         
       Organic         
 Other Observations:       

Stream # 1 Data:  
 Width (Bank-Bank):        Depth @ Center:        Perch:        Intermittent         
 Water Quality Class:        Bank Configuration:        Undercut        Vertical        Gradual         
 Channel Substrate:        Silt-Mud        Sand        Gravel/Cobble        Boulder        Bedrock         
 Stream # 2 Data:  
 Width (Bank-Bank):        Depth @ Center:        Perch:        Intermittent         
 Water Quality Class:        Bank Configuration:        Undercut        Vertical        Gradual         
 Channel Substrate:        Silt-Mud        Sand        Gravel/Cobble        Boulder        Bedrock       

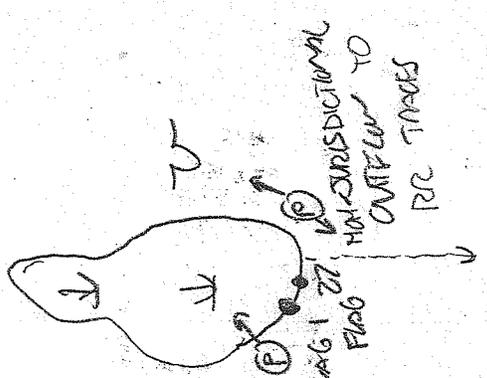
Wildlife Observations/Sign (e.g., tracks/marks, droppings, dens/nest/boxes, burrows, dens, egg masses, potential VP):  
      

Photo #        SKETCH ON BACK  
open wooded shrub sap wetland

NORTH →

**WETLAND SKETCH**

SLOPES ↓



Checklist:  
 Wetland IBI is A  
 North arrow         
 Detailed sketch of wetland boundary and flagging         
 Required and indicative features - roads, culverts,         
 signs, structures, etc.         
 Photo locations         
 Location of important wildlife signs

C-1 → DATA TAKEN AT  
 → HIGH RIPARIAN / DRAINAGE SWALE WETLANDS  
 COMPLEX OF WETLANDS NRPA FIG 2

WETLAND SUMMARY FORM

Project: DCP MIDSTREAM  
 Observers: SUD / JTB Date: 10/13/10  
 Town: SPOKANE Facility: \_\_\_\_\_  
 Crossing Type(s): Wetland  Waterbody  Crossing Name: C-1 S1/S2  
 Other NWI Classes: PSS  
 Dominant NWT Class: \_\_\_\_\_  
 Representative Wetland Vegetation (by NWI Class):  
 Herbs: \_\_\_\_\_  
 Row spp.: \_\_\_\_\_  
 Dry car: \_\_\_\_\_  
 Shrubs: \_\_\_\_\_  
 Trees: \_\_\_\_\_  
 Sapling: \_\_\_\_\_  
 Water outlets: \_\_\_\_\_  
 Lenticils or Phragmites currently present in ROW or in vicinity of the wetland system? L / P Yes \_\_\_ No

Representative Wetland Hydrology  
 Permanently Flooded \_\_\_\_\_ Seasonally Flooded  Saturated \_\_\_\_\_  
 (approximate depth) \_\_\_\_\_  
 Hydrologic Indicators:  Silt Deposition  Water-Stained Leaves  Water Marks  Drift Lines  
 Surface Scouring  Drainage Patterns  Buried Trees  Elevated Roots  
 Other Observations: \_\_\_\_\_

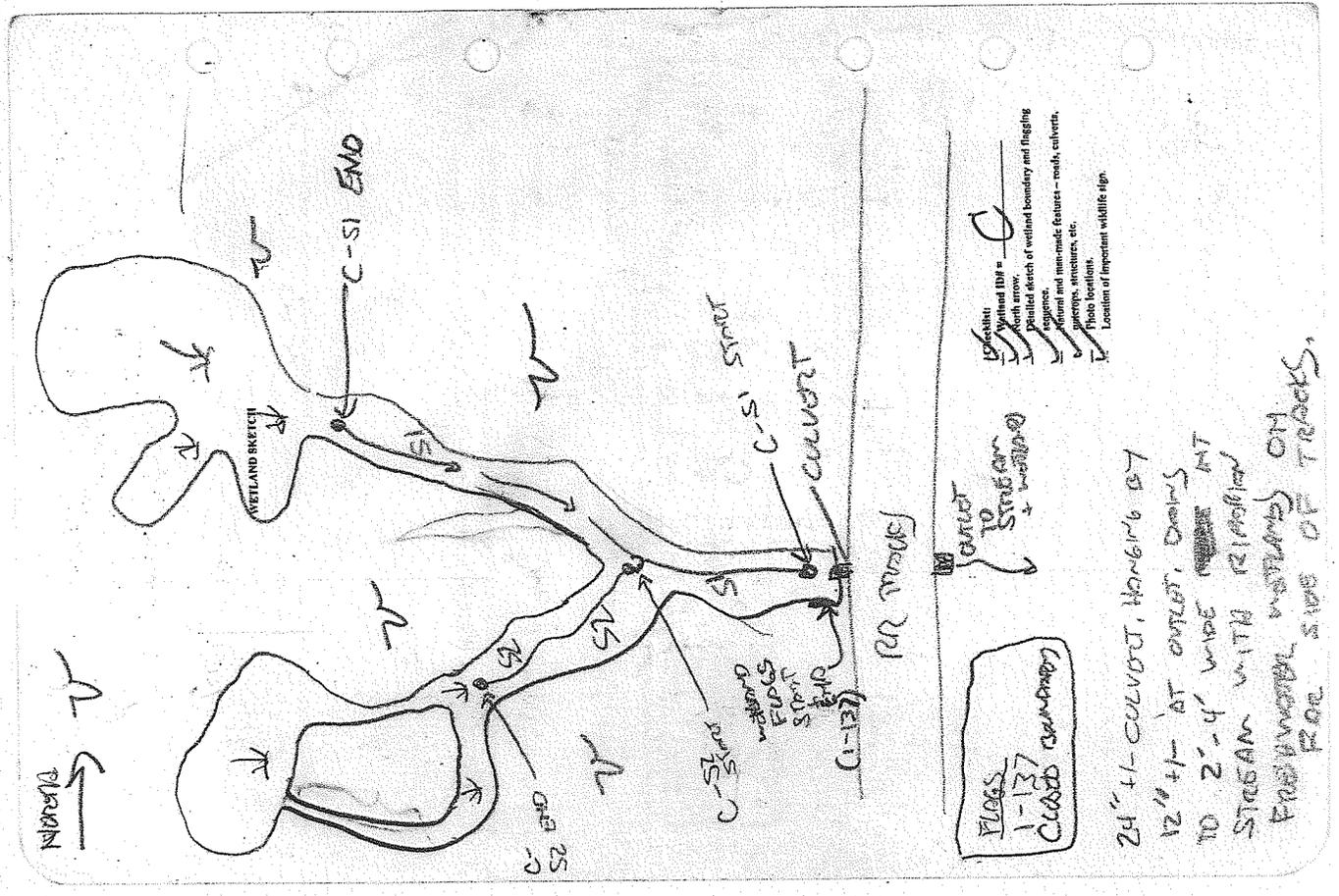
Depth	Horizon	Color	Redox Features	Texture
0-5	A/B	10YR2.3/4	7.5H/7.5B	SIL
5-12'	B	10YR5/2	10YR5/2	SIL
		2.5Y 6/1	2.5Y 6/1	SIL

Representative Wetland Soils:  
 Mineral  
 Organic  
 Other Observations: \_\_\_\_\_

Stream # 1 Data:  
 Width (Bank-Bank): 2-2 (2-4)  
 Depth @ Center: 6"  
 Water Quality Class:  Silt-Mud  Sand  Gravel/Cobbles  Boulder  Bedrock  
 Channel Substrate:  Peat-Muck  Silt-Mud  Sand  Gravel/Cobbles  Boulder  Bedrock  
 Stream # 2 Data:  
 Width (Bank-Bank): 2-2  
 Depth @ Center: 6"  
 Water Quality Class:  Peat-Muck  Silt-Mud  Sand  Gravel/Cobble  Boulder  Bedrock  
 Channel Substrate:  Peat-Muck  Silt-Mud  Sand  Gravel/Cobble  Boulder  Bedrock  
 Wildlife Observations/Sign (e.g., tracks/prints, droppings, dams/ledges, burrows, dens, egg masses, potential VP): \_\_\_\_\_

Photo # \_\_\_\_\_ SKETCH ON BACK

PRELIMINARY DRAINAGE SWALE WETLANDS  
 VERY UPPER REACHED INCLUDE WETLANDS IN  
 OLD NATURALIZED DITCHES, AND NATURAL SMALL  
 WETLAND PATCHES THAT OCCUR ON INSIDE



24" +/- CULVERT, HANGING BY  
 12" +/- AT OUTLET, DOWNS  
 TO 2'-4" WIDE NAT  
 STREAM WITH REMOVED  
 FRESHWATER WETLANDS ON  
 BOTH SIDES OF TRACKS.

**WETLAND B**  
**NRPA Figure 2**

Submittal 010  
Wetland C-1 Transfer (00000) 00000 1100 3313

Project/Site: DDP SEMPER City/County: SEMPER State: ME Sampling Point: 10/24/10

Investigator(s): DDP Section, Township, Range: \_\_\_\_\_

Landmark (Mileage, bearing, etc.): SEMPER Local relief (contour, contour, note): SEMPER

Slope (%): 3% Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_

Soil Map Unit Name: DRUMMOND NW classification: B3

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)

Are Normal Circumstances present? Yes  No  (If no, explain in Remarks.)

Are Vegetation  Soil  or Hydrology  significantly disturbed? Yes  No  (If needed, explain any answers in Remarks.)

Are Vegetation  Soil  or Hydrology  naturally problematic? Yes  No  (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS** - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes  No  Is the Sampled Area within a Wetland? Yes  No

Hydric Soil Present? Yes  No  If yes, optional Wetland Site ID: \_\_\_\_\_

Wetland Hydrology Present? Yes  No  If yes, optional Wetland Site ID: \_\_\_\_\_

Remarks: (Explain alternative procedures taken or in a separate report.)

RAIN PRECEDING WORK MAY CAUSE FALSE POSITIVE ON MONITORING BASED ON OBSERVED SATURATION / LATER TABLE.

**HYDROLOGY**

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required, check all that apply):

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mats or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surfaces (B8)

Secondary Indicators (minimum of two required):

- Surface Soil Cracks (B6)
- Diapycnole Patterns (B10)
- Moss Thin Lines (B16)
- Dry-Season Water Table (C1)
- Crayfish Burrows (C3)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquatics (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes  No  Depth (inches): 10"

Water Table Present? Yes  No  Depth (inches): 3"

Saturation Present? Yes  No  Depth (inches): 3"

Unsat. Exposed (dry) (inches): \_\_\_\_\_

Describe Recordable Data (pneum gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

EVIDENCE OF OLD PERMANENT DITCHING. POSITIVE W/IN WETLAND

**VEGETATION** - Use scientific names of plants.

Area Stratified (Photo size): \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

**Succulent/Straw Stratium** (Photo size: 15")

1. ALGAL MAT

2. SPERMATOPHYTES

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

**Herb Stratium** (Photo size: 5")

1. LIPTON RING

2. SOIL RING

3. ROUND TREES

4. WOOD SAP

5. CHOC SOIL

6. \_\_\_\_\_

7. \_\_\_\_\_

**Woody Vine Stratium** (Photo size: \_\_\_\_\_)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Remarks: (include photo numbers here or on a separate sheet.)

\_\_\_\_\_ = Total Cover

Sampling Point:

Dominance Test worksheets:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (AB)

Prevalence Index worksheet:

Total % Cover of: \_\_\_\_\_

OBL species: \_\_\_\_\_ x1 = \_\_\_\_\_

FACW species: \_\_\_\_\_ x2 = \_\_\_\_\_

FACU species: \_\_\_\_\_ x3 = \_\_\_\_\_

UPL species: \_\_\_\_\_ x4 = \_\_\_\_\_

Column Total: \_\_\_\_\_ (A)

Prevalence Index = B/A = \_\_\_\_\_

Hydrophytic Vegetation Indicators:

Rapid Test for Hydrophytic Vegetation

Dominance Test is >6%

Prevalence Index is >3.0

Morphological Adaptations? (Provide supporting data in Remarks or on a separate sheet) \_\_\_\_\_

Problematic Hydrophytic Vegetation? (Explain) \_\_\_\_\_

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic:

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes  No

SEWER, WETLAND, WETLAND B, NRPA FIGURE 2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)		Sampling Point:	
Depth (Inches)	Moisture (moist)	Color (moist)	Texture
0-6	25/37	9B	FC, AP, FRAGILE
6-9	51/50	3	FC, AP, FRAGILE
9-15	51/52	9D	FC, AP, FRAGILE
15-21	51/52	10	FC, AP, FRAGILE
21-27	51/52	10	FC, AP, FRAGILE
27-33	51/52	10	FC, AP, FRAGILE
33-39	51/52	10	FC, AP, FRAGILE
39-45	51/52	10	FC, AP, FRAGILE
45-51	51/52	10	FC, AP, FRAGILE
51-57	51/52	10	FC, AP, FRAGILE

Type: C-Concentration, D-Depletion, FM-Fine-Rooted Matrix, CS-Covered or Coated Sand Grains, Location: PL-Plum Limiting, M-Metals, Indicators for Problematic Hydric Soils:  
 2 cm Alack (A10) (LRR K, L, MLRA 1488)  
 Coast Prairie Redox (A19) (LRR K, L, R)  
 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  
 Dark Surface (S7) (LRR K, L)  
 Polyvalue Below Surface (S9) (LRR K, L)  
 Thin Dark Surface (S9) (LRR K, L)  
 Loamy Mucky Mineral (F1) (LRR K, L)  
 Loamy Gleyed Matrix (F2)  
 Depleted Matrix (F3)  
 Redox Dark Surface (F5)  
 Depleted Dark Surface (F7)  
 Redox Depressions (F8)  
 Iron-Manganese Masses (F12) (LRR K, L, R)  
 Piedmont Floodplain Sols (F19) (MLRA 1488)  
 Metic Spodic (T40) (MLRA 144A, 144, 148, 148B)  
 Red Parent Material (T2)  
 Very Shallow Dark Surface (T12)  
 Other (Specify in Remarks)

Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  
 Restrictive Layer (if observed):  
 Type: FC, AP, FRAGILE, 0-6  
 Depth (Inches): 157  
 Hydric Soil Present? Yes  No

Wetland L1, Transition BETWEEN FLGS 33 T 34

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region  
 Project Site: SCARSDALE PCL  
 City/County: SCARSDALE  
 State: MD  
 Sampling Point: JF

Investigator: DCP  
 Date: 10/20/10  
 Section, Township, Range: LINGAR  
 Soil Map Unit Name: MUDWAY  
 Local relief (concave, convex, none): LINGAR

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No   
 Are plants/soil N or hydrology N significantly disturbed? N Yes  No   
 Are vegetation N or hydrology N naturally problematic? N (if needed, explain any anomalies in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point localities, transects, important features, etc.  
 Normal circumstances, BUT PRECEDING WEEKS OF RAIN/RAIN STORMS MAY CAUSE EDGE POSITIVE ON HYDROLOGY.

Hydrology Indicators (minimum of one is required; check all that apply):  
 Surface Water (A1)  
 High Water Table (A2)  
 Water Shaded Leaves (B8)  
 Aquatic Fauna (B13)  
 Mud Deposits (B15)  
 Hydrogen Sulfide Odor (C1)  
 Wetland Hydrology Present? Yes  No   
 Wetland Hydrology Present? Yes  No

Remarks:  
 Sampled 12/1, heavy rain showers/rain preceding 0 days, post-growing season.

VEGETATION - Use scientific names of plants.  
 Sampling Point: JF  
 Dominance Test worksheet:  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (AB)

Prevalence Index worksheet:  
 Total % Cover of:  
 OBL species: 11%  
 FACW species: 52%  
 FAC species: 43%  
 UPL species: 4.8%  
 Column Totals: (A) (B)  
 Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:  
 Rapid Test for Hydrophytic Vegetation:  
 Dominance Test is >50%  
 Prevalence Index is >3.0  
 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation (Explain)  
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:  
 Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  
 Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  
 Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  
 Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

SEASANT DEP WETLAND B  
NRPA Figure 2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (inches)	Matrix Color (moist)	% Color (moist)	Type	Loc <sup>1</sup>	Texture	Remarks
0-7	2.5Y 3/2	9B			FSC Ap	
7-14	5Y 5/3	2			SIL Bw	
14-17	5Y 5/3	93			SIL Bw	
17-21						
21-25						
25-29						
29-33						
33-37						
37-41						
41-45						
45-49						
49-53						
53-57						
57-61						
61-65						
65-69						
69-73						
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77-81						
81-85						
85-89						
89-93						
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973-977						

**WETLAND SUMMARY FORM**  
**WETLANDS NEPA Figure 2**

**Project:** DCP AMBRESTREAM  
**Observer:** SMO/JS  
**Location:** SEASIDE  
**Date:** 10/13/10  
**Facility:** DCP  
**Wetland:** X  
**Other NWT Class:** PRO/RS  
**Other NWT Class:** HAZE

**Representative Wetland Vegetation (by NWT Class):**  
 AC BALS, AN INC, AS GRAS, SHOP, DOP SPIN, RANW REBBS, LAPAT CAP, DRC SENS, HAZE, GLYC MEL

**Lifeform or Phragmites currently present in ROW or in vicinity of the wetland system?** L, P, Ym, N, X  
**Representative Wetland Hydrology:**  
 Permanently Flooded: \_\_\_\_\_ Seasonally Flooded: \_\_\_\_\_ Stagnant: \_\_\_\_\_  
 Hydrologic Indicators:  Silt Deposition  Water-Soaked Leaves  Water Marks  DNR Lines  
 Surface Scouring  Drainage Patterns  Bulfinch Trees  Elevated Roots

**Other Observations:** ACTIVE ALLUVIAL EROSION/DEPOSITION, RIPARIAN ACCUMULATION

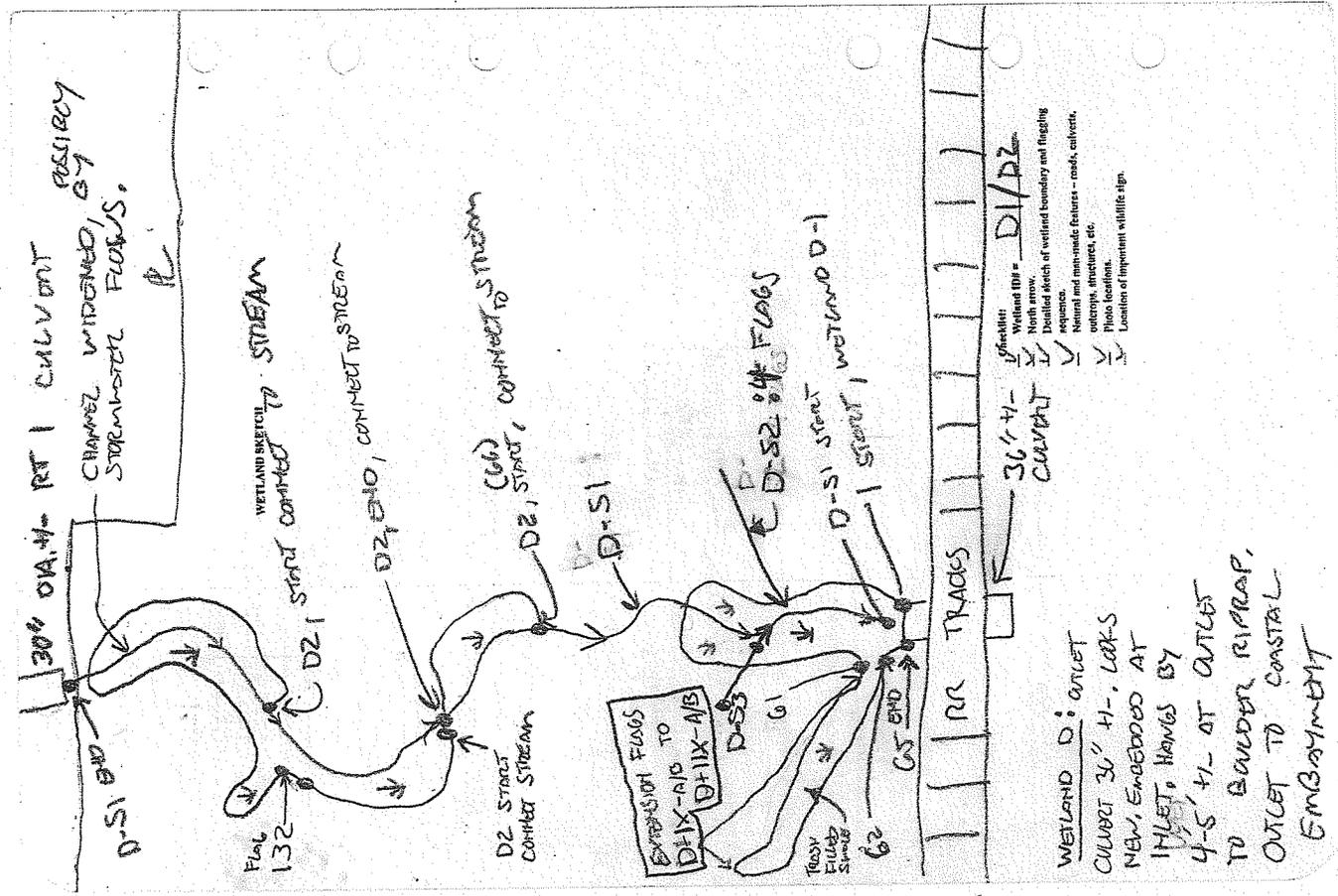
Depth	Height	Color	Redox Features	Texture
10-12"	AC	5/14/12BY 4/3, 5, 6"	SIL	SIL

**Stream # 1 Data:**  
 Width (Bank-Bank): 320' TYP  
 Depth @ Center: 67"  
 Bank Configuration:  Sand  Silt/Mud  Gravel/Cobble  Boulder  Bedrock  Channel Substrate:  Sand  Silt/Mud  Gravel/Cobble  Boulder  Bedrock

**Stream # 2 Data:**  
 Width (Bank-Bank): 2-4'  
 Depth @ Center: 6"  
 Bank Configuration:  Sand  Silt/Mud  Gravel/Cobble  Boulder  Bedrock  Channel Substrate:  Sand  Silt/Mud  Gravel/Cobble  Boulder  Bedrock

**D-52:** 2-4' wide, 1-3' deep, intermittent, silt, mud, gravel, coarse, vertical banks, connects to S1.  
**D-51:** 30' dia, RT 1 culvert, passively channel widened, stormwater flows.  
**D-53:** 2-4' wide, 1-3' deep, intermittent, silt, mud, gravel, coarse, vertical banks, connects to S1.  
**D1/D2:** RIPARIAN WETLANDS IN PRECIPITATION FORMATION DRAINAGE SHOULDER.

Photo # \_\_\_\_\_ SKETCH ON BACK



**WETLAND C  
NRPA Figure 2**

**DI WETLAND  
POOT, more FAC30**

**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

Project Site: DCP City/County: SEASONS Sampling Date: 10/14/10  
 Applicant/Owner: DCP State: ME Sampling Point: W  
 Landform (hillslope, terrace, etc.): SLOPING TERRACE Section, Township, Range: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Slope (%): 0 Lk: SITKENS Long: \_\_\_\_\_ Local relief (concave, convex, none): None  
 Soil Map Unit Name: \_\_\_\_\_ NWF classification: SP1P0  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are vegetation, soil, or hydrology significantly disturbed? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are vegetation, soil, or hydrology naturally problematic? Yes X No \_\_\_\_\_ (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes X No \_\_\_\_\_ In the Sampled Area within a Wetland? Yes X No \_\_\_\_\_  
 Hydric Soil Present? Yes X No \_\_\_\_\_ If yes, optional Wetland Site ID: WETLAND D  
 Wetland Hydrology Present? Yes X No \_\_\_\_\_  
 Remarks: (Explain alternative procedures here or in a separate report.)  
STREAM PLUNUM

**HYDROLOGY**

Wetland Hydrology Indicators:  
 Primary Indicators (minimum of one is required; check all that apply):  
 Surface Water (A1)  
 High Water Table (A2)  
 Saturation (A3)  
 Water Marks (B1)  
 Sediment Deposits (B2)  
 Drift Deposits (B3)  
 Algal Mat or Coast (B4)  
 Iron Deposits (B5)  
 Inundation Visible on Aerial Imagery (B7)  
 Sparingly Vegetated Concave Surface (B8)  
 Surface Water (A1)  
 Water-Stained Leaves (B9)  
 Aquatic Fauna (B13)  
 Mud Deposits (B15)  
 Hydrogen Sulfide Odor (C1)  
 Oxidized Rhizosphere on Living Plants (C3)  
 Presence of Reduced Iron (C4)  
 Ancient Iron Reduction in Tilled Soils (C5)  
 Thin Muck Surface (C7)  
 Other (Explain in Remarks)  
 Secondary Indicators (minimum of two required):  
 Surface Soil Cracks (B6)  
 Drainage Patterns (B10)  
 Moss Thin Layer (B16)  
 Dry-Season Water Table (C2)  
 Crayfish Burrows (C5)  
 Saturation Visible on Aerial Imagery (C9)  
 Stunted or Stressed Plants (D1)  
 Geomorphic Position (D2)  
 Shallow Aquiland (D3)  
 Microtopographic Relief (D4)  
 FAC-Neutral Test (D5)

Field Observations:  
 Surface Water Present? Yes X No \_\_\_\_\_ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes X No \_\_\_\_\_ Depth (inches): 19  
 Saturation Present? Yes X No \_\_\_\_\_ Depth (inches): 6  
 (Indicate sagging, fringes)  
 Describe Recorder Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
 Wetland Hydrology Present? Yes X No \_\_\_\_\_  
 Remarks:

**VEGETATION - Use scientific names of plants.**

WETLAND D - FAC30 Transverse Sampling Point: W

Tree Stratum (Plot size: H/A) Dominant Indicator Status: \_\_\_\_\_  
 1. \_\_\_\_\_ Absolute % Cover: \_\_\_\_\_  
 2. \_\_\_\_\_ Dominant Species: \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_  
 5. \_\_\_\_\_  
 6. \_\_\_\_\_  
 7. \_\_\_\_\_

Shrub/Strub Stratum (Plot size: 15') Total Cover: \_\_\_\_\_  
 1. ALN, INC, P, W 100%  
 2. VIX, VERT, P, W 10%  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_  
 5. \_\_\_\_\_  
 6. \_\_\_\_\_  
 7. \_\_\_\_\_

Herb Stratum (Plot size: 5') Total Cover: \_\_\_\_\_  
 1. DETRIT SP, H 40%  
 2. ROTHUNCULUS REPERENS 10%  
 3. OSA C, C, W 25%  
 4. SPARGANNA SP 30%  
 5. AVENUS (WATER) 5%  
 6. \_\_\_\_\_  
 7. \_\_\_\_\_

Woody Vine Stratum (Plot size: \_\_\_\_\_) Total Cover: \_\_\_\_\_  
 1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_  
 4. \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)



D1 -> UPLAND PLOT NEAR FLAG D1-30  
 WETLANDS  
 NRPA Figure 2

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project Site: DCP  
 Applicant/Owner: DCO M-YOSTER  
 City/County: SEASPRING  
 State: FL  
 Sampling Date: 10/14/10  
 Station, Township, Range: COLLIER  
 Local relief (concave, convex, none): COLLIER  
 Slope (%): 0%  
 Soil Map Unit Name: MYSLOPE  
 Soil: MYSLOPE  
 NMI classification: NONG  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No   
 Are there any "Normal Circumstances" present? Yes  No   
 Are there any "Abnormal Circumstances" present? Yes  No   
 Are there any "Other" circumstances present? Yes  No   
 Are there any "Other" circumstances present? Yes  No

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes  No   
 Hydric Soil Present? Yes  No   
 Wetland Hydrology Present? Yes  No   
 Remarks: (English alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators: NONE

Primary Indicators (Minimum of one is required, check all that apply):  
 Surface Water (A1) \_\_\_\_\_  
 High Water Table (A2) \_\_\_\_\_  
 Saturation (A3) \_\_\_\_\_  
 Water Marks (B1) \_\_\_\_\_  
 Sediment Deposits (B2) \_\_\_\_\_  
 Drift Deposits (B3) \_\_\_\_\_  
 Iron Deposits (B5) \_\_\_\_\_  
 Inundation Visible on Aerial Imagery (B7) \_\_\_\_\_  
 Sparsely Vegetated Chaparral Surface (B8) \_\_\_\_\_  
 Surface Water Pressure? Yes  No   
 Water Table Present? Yes  No   
 Saturation Present? Yes  No   
 (Indicate capillary fringe)  
 Descriptive Recorded Data (Invent groups, monitoring well, aerial photos, previous inspections), if available:  
 Remarks:

Secondary Indicators (Minimum of two required):  
 Surface Soil Cracks (B9) \_\_\_\_\_  
 Drainage Patterns (B10) \_\_\_\_\_  
 Moss Trim Lines (B16) \_\_\_\_\_  
 Dry-Season Water Table (C2) \_\_\_\_\_  
 Clayfish Burrows (C3) \_\_\_\_\_  
 Saturation Visible on Aerial Imagery (C9) \_\_\_\_\_  
 Sunken or Stressed Plants (D1) \_\_\_\_\_  
 Geomorphic Position (D2) \_\_\_\_\_  
 Shallow Aquifer (D3) \_\_\_\_\_  
 Microtopographic Relief (D4) \_\_\_\_\_  
 FAC-Neutral Test (D5) \_\_\_\_\_

Field Observations:  
 Surface Water Pressure? Yes  No   
 Water Table Present? Yes  No   
 Saturation Present? Yes  No   
 (Indicate capillary fringe)  
 Descriptive Recorded Data (Invent groups, monitoring well, aerial photos, previous inspections), if available:  
 Remarks:

US Army Corps of Engineers  
 Northcentral and Northeast Region - Interim Version

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30) Sampling Point: UPL

Dominance Test worksheet:  
 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (M)  
 Total Number of Dominant Species Across All Strata: 5 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (M8)

Prevalence Index worksheet:  
 OBL species: 4  
 FACW species: 1  
 FAC species: 0  
 UPL species: 0  
 Column Totals: (M)  
 Prevalence Index = BIA =

Hydrophytic Vegetation Indicators:  
 Rapid Test for Hydrophytic Vegetation:   
 Dominance Test is >50%:   
 Prevalence Index is >3.0:   
 Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet):  
 Problematic Hydrophytic Vegetation (Explain):  
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  
 Definitions of Vegetation Strata:  
 Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  
 Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  
 Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  
 Woody vines - All woody vines greater than 3.28 ft in height.

Tree Stratum (Plot size: 30) Sampling Point: UPL

1. PIC RUB 70% X FOL  
 2. BET PAP 5% FOL  
 3. 0%  
 4. 0%  
 5. 0%  
 6. 0%  
 7. 0%  
 8. 0%  
 9. 0%  
 10. 0%  
 11. 0%  
 12. 0%

Herb Stratum (Plot size: 5) Sampling Point: UPL

1. VIC CAN 1% X FOL  
 2. DIMP SPINA 1% X FOL  
 3. MINTH CAN 1% X FOL  
 4. 0%  
 5. 0%  
 6. 0%  
 7. 0%  
 8. 0%  
 9. 0%  
 10. 0%  
 11. 0%  
 12. 0%

Woody Vine Stratum (Plot size: 1) Sampling Point: UPL

1. 0%  
 2. 0%  
 3. 0%  
 4. 0%

Remarks: (include photo numbers here or on a separate sheet.)

Hydrophytic Vegetation Present? Yes  No

US Army Corps of Engineers  
 Northcentral and Northeast Region - Interim Version





# WETLAND E NRPA FIGURE 2

## WETLAND SUMMARY FORM

Project: SEABOARD DCP Date: 12/19/10  
 Observers: SJD, JTG Facility: DCP  
 Town: SEABOARD Waterbody: WETLAND D  
 Crossing Type(s): X Wetland: EXTENSION  
 Dominant NWI Class: ESS Other NWI Classes: PER  
 Representative Wetland Vegetation (by NWI Class):

TREE: SHAD  
BET. POP.  
AC RUS  
HERO  
ALV. RUG.  
SPIREA COT  
ONOC SENS

Loosestrife or Perogonites currently present LOW or in vicinity of the wetland system? (LIP) Yes X No X

Representative Wetland Hydrology  
 Permanently Flooded \_\_\_\_\_ Seasonally Flooded X Saturated \_\_\_\_\_  
 (approximate depth \_\_\_\_\_) (approximate depth \_\_\_\_\_)

Hydrologic Indicators:  
 Silt Deposition X Water-Shedded Leaves X Water Marks \_\_\_\_\_ Ditch Lines \_\_\_\_\_  
 Surface Scouring X Drainage Patterns \_\_\_\_\_ Buttressed Trees \_\_\_\_\_ Elevated Roots \_\_\_\_\_

Other Observations:  
WETLAND LIES IN DRAINAGE SWALE

Representative Wetland Soils:

Depth	Horizon	Color	Root Features	Texture

Other Observations:  
DISTURBED BY PREVIOUS PIPELINE CONSTRUCTION AND ASSOCIATED EROSION/DEPOSITION. 3 CHRONIC SOILS w/ROOT CONCENTRATIONS AND DELETIONS 0.0-4" OBSERVED.

Stream # 1 Data  
 Width (Bank-Bank): \_\_\_\_\_ Peren. \_\_\_\_\_  
 Water Quality Class: \_\_\_\_\_ Bank Configuration: \_\_\_\_\_ Vertical \_\_\_\_\_ Intermittent \_\_\_\_\_  
 Channel Substrate: \_\_\_\_\_ Peat-Muck \_\_\_\_\_ Silt-Mud \_\_\_\_\_ Sand \_\_\_\_\_ Gravel/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Bedrock \_\_\_\_\_

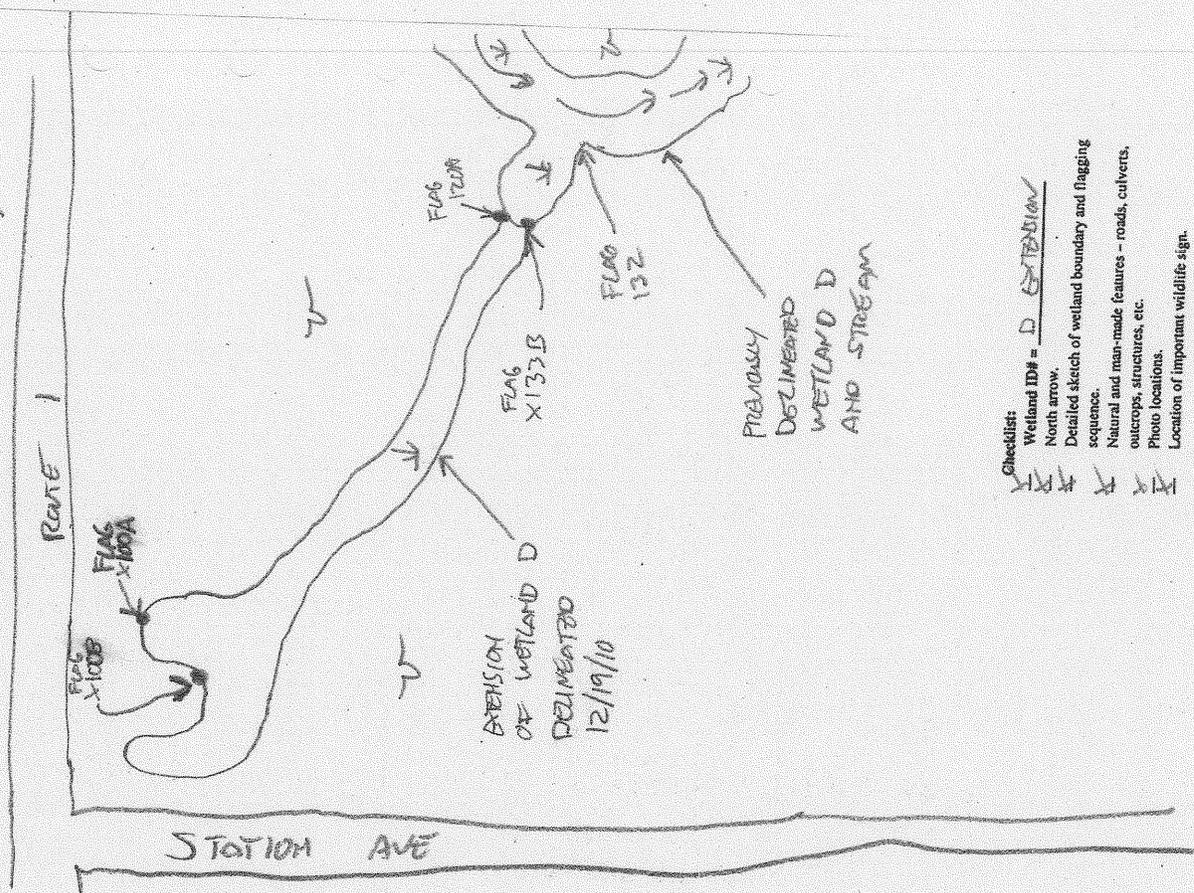
Stream # 2 Data  
 Width (Bank-Bank): \_\_\_\_\_ Peren. \_\_\_\_\_  
 Water Quality Class: \_\_\_\_\_ Bank Configuration: \_\_\_\_\_ Vertical \_\_\_\_\_ Intermittent \_\_\_\_\_  
 Channel Substrate: \_\_\_\_\_ Peat-Muck \_\_\_\_\_ Silt-Mud \_\_\_\_\_ Sand \_\_\_\_\_ Gravel/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Bedrock \_\_\_\_\_

Wildlife Observations/Sign (e.g., tracks/trails, droppings, dams/fedges, burrows, dens, egg masses, potential VP):

Photo # YES

SKETCH ON BACK

## WETLAND SKETCH



- Checklist:  
 Wetland ID# = D EXTENSION  
 North arrow: X  
 Detailed sketch of wetland boundary and flagging sequence: X  
 Natural and man-made features - roads, culverts, outcrops, structures, etc.: X  
 Photo locations: X  
 Location of important wildlife sign: X

**WETLAND F  
NRPA Figure 2**

**WETLAND SUMMARY FORM**

Project: DCP MIDSTREAM  
 Observers: SWS/SG Date: 10/14/10  
 Town: SEASIDE Facility: DCP  
 Crossing Type(s): X Wetland Wetland Crossing Name: Wetland

Dominant NWI Class: PER  
 Representative Wetland Vegetation (by NWI Class):  
ADJACENT PSS/PER  
RECENTLY BROWSHOGGED  
FIELD - NO IDENTIFIABLE  
VEG  
SL/SAP  
ALN/RUG  
ACER/AVE  
HERC  
DIOMY, SPIN.

Longicellular or Phragmites currently present in ROW or in vicinity of the wetland system? L / P Yes No  
 Representative Wetland Hydrology  
 Permanently Flooded X Seasonally Flooded X Saturated X  
 (approximate depth) (approximate depth) (approximate depth)  
 Hydrologic Indicators: SL Deposition X Water-Stained Leaves Water Marker Drill Lines  
Surface Scouring Drainage Patterns Battered Trees Elevated Roots  
 Other Observations: SATURATED/FIELD WITHIN 0.6"

Representative Wetland Soils:

Depth	Horizon	Color	Redox Features	Texture
0-10	Af	7.5Y/1.2	7.5Y/1.2/1.5F/1.5S	SL
10-16	Bg	5Y/1.2	7.5Y/1.5/1.5S	SL
			6.0P	

Stream # 1 Data:  
 Width (Bank-Bank): \_\_\_\_\_ Depth @ Center: \_\_\_\_\_ Peren. \_\_\_\_\_ Intermittent \_\_\_\_\_  
 Water Quality Class: \_\_\_\_\_ Bank Configuration: \_\_\_\_\_ Undercut \_\_\_\_\_ Vertical \_\_\_\_\_ Gravel \_\_\_\_\_  
 Channel Substrate: \_\_\_\_\_ Peat/Muck \_\_\_\_\_ Sand \_\_\_\_\_ Gravel/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Bedrock \_\_\_\_\_

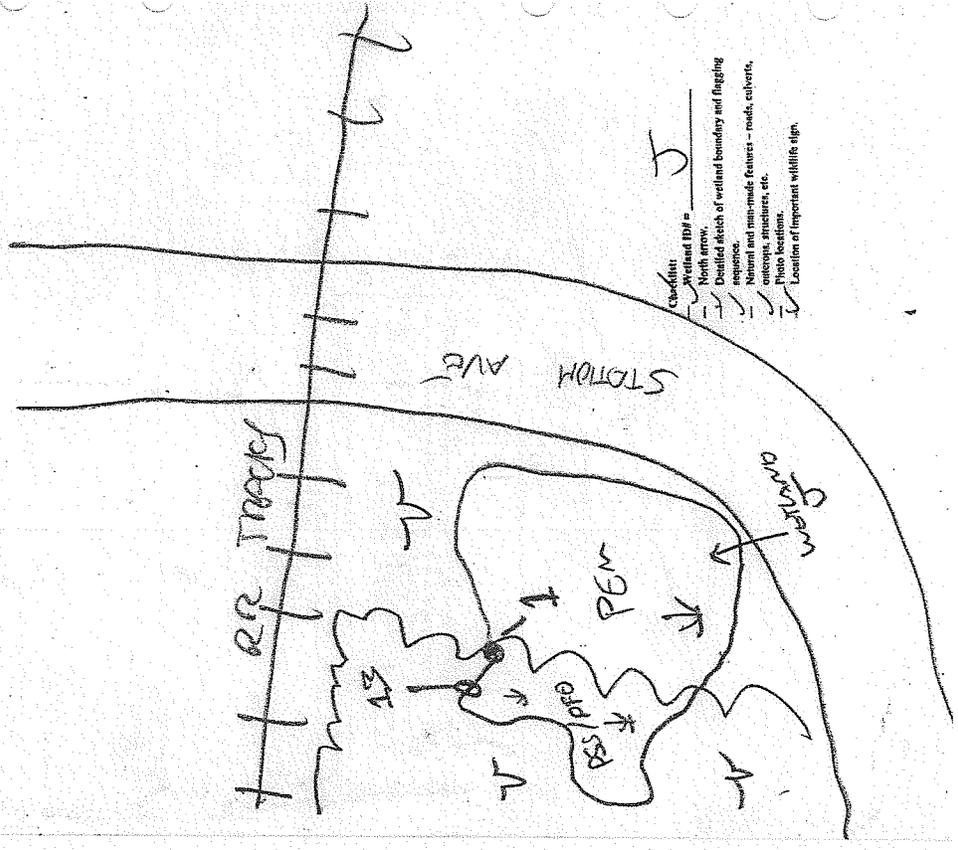
Stream # 2 Data:  
 Width (Bank-Bank): \_\_\_\_\_ Depth @ Center: \_\_\_\_\_ Peren. \_\_\_\_\_ Intermittent \_\_\_\_\_  
 Water Quality Class: \_\_\_\_\_ Bank Configuration: \_\_\_\_\_ Undercut \_\_\_\_\_ Vertical \_\_\_\_\_ Gravel \_\_\_\_\_  
 Channel Substrate: \_\_\_\_\_ Peat/Muck \_\_\_\_\_ Silt-Mud \_\_\_\_\_ Sand \_\_\_\_\_ Gravel/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Bedrock \_\_\_\_\_

Wildlife Observations/Sign (e.g., tracks/marks, droppings, dams/lodges, browse, dens, egg masses, potential VP):  
 \_\_\_\_\_  
 Photo # \_\_\_\_\_ SKETCH ON BACK

13 FLOBS - CUSCO

North

**WETLAND SKETCH**



Checklist:  
 Wetland ID# = \_\_\_\_\_  
 North arrow. \_\_\_\_\_  
 Detailed sketch of wetland boundary and flagging sequence. \_\_\_\_\_  
 Natural and man-made features - roads, culverts, outcrops, structures, etc. \_\_\_\_\_  
 Photo locations. \_\_\_\_\_  
 Location of important wildlife sign. \_\_\_\_\_

PHOTOS TAKEN

## **ATTACHMENT 10. NOTICE OF INTENT**

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Project abutters were identified based upon Searsport tax map information. The list of abutters is provided in Appendix 10A of this application.

A public informational meeting was held on December 14, 2010 in conjunction with the public information meeting required for the related Site Location of Development application. A notice of this meeting was published in the Bangor Daily News and Republican Journal. Abutters received this same notification by mail. A second public informational meeting was held on March 2, 2011. A notice of this meeting was published in the Bangor Daily News and Republican Journal.

A Notice of Intent to File this NRPA application was published in the Bangor Daily News and Republican Journal on May 11, 2011, and sent by certified mail to the abutters. Copies of the notices sent to abutters and published in the newspapers are contained in the MDEP Site Location Application, Section 25, Appendix 25A. .

**APPENDIX 10A**

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**List of Abutters**

Owner	Tax map	Lot Number	Street/P.O.	City/Town	State	Zip Code
Evans, Charles G. & Diana G.	7	35-B	200 E. Main St.	Searsport	ME	04974
Kado, Inc. c/o Victor Bouchard	7	36	PO Box 800	Searsport	ME	04974
Evans, Charles G. & Diana G. D/B/A The Rhumb Line Restaurant	7	37	200 E. Main St.	Searsport	ME	04974
Maine Port Authority C/O Irving Oil Corp ATTN: Cobalt Properties	7	52-B1	55 Union St., Suite 700	Saint John	NB., Canada	E2L-5B7
Montreal, Maine & Atlantic Railway, LTD.	7	54	15 Iron Rd.	Hermon	ME	04401
Montreal, Maine & Atlantic Railway, LTD.	7	54-A	15 Iron Rd.	Hermon	ME	04401
Maine Port Authority C/O John H. Henshaw	7	55	16 State House Station	Augusta	ME	04333
Sprague Energy Corp.	7	56	2 International Dr. Suite 200	Portsmouth	NH	03801
Nickerson, Anna	7	57	24 Station Ave.	Searsport	ME	04974
Nickerson, Mark E.	7	57-A	24 Station Ave.	Searsport	ME	04974
Tymeson, Dorothea C., C/O William Tymeson	7	58	430 Fitzwilliam Rd.	Richmond	NH	03470
Maritime Energy, Maritime Farms	7	59	PO Box 485	Rockland	ME	04841
Ritchie, Keith & Dawn	7	59-B	9 Station Avenue	Searsport	ME	04974
Curtis, Ashley & Alice	7	59-C	PO Box 326	Searsport	ME	04974
Lowe, Robert & Doris	7	59-E	15 Station Avenue	Searsport	ME	04974
Southstreet Development Co., LLC	7	60	15 South Street	Blue Hill	ME	04614
Berio, William M.	7	60-A	PO Box 833	Searsport	ME	04974
Norvlaan, Beata K.	7	60-C	40 Stargate dr.	Stockton Springs	ME	04981
Hall, Albert, IV, Baits Motel	7	61	64 W. Evergreen Ln.	Swanville	ME	04915
Hall, Albert, IV D/B/A Anglers Restaurant	7	61-A	64 W. Evergreen Ln.	Swanville	ME	04915
Sprague Energy Corp.	7	62	2 International Dr. Suite 200	Portsmouth	NH	03801
Smith, Merrill, Smith Memorials, Inc.	7	63-B	PO Box 500	Searsport	ME	04974
Russell, Jean	7	64	241 E. Main St.	Searsport	ME	04974
Gocze, Thomas E. & Bonnie L.	7	65	PO Box 883	Searsport	ME	04974
Gocze, Thomas E. & Bonnie L.	7	65-A	PO Box 883	Searsport	ME	04974
State of Maine, Department of Transportation	7	80	16 State House Station	Augusta	ME	04333
State of Maine, Department of Transportation	8	1	16 State House Station	Augusta	ME	04333
State of Maine, Department of Transportation	8	1-A	16 State House Station	Augusta	ME	04333
Sprague Energy Corp.	8	4-A	2 International Dr. Suite 200	Portsmouth	NH	03801
Montreal, Maine & Atlantic Railway, LTD.	8	5	15 Iron Rd.	Hermon	ME	04401
Montreal, Maine & Atlantic Railway, LTD.	8	5-A	15 Iron Rd.	Hermon	ME	04401
Montreal, Maine & Atlantic Railway, LTD.	8	5-B	15 Iron Rd.	Hermon	ME	04401
Montreal, Maine & Atlantic Railway, LTD.	8	5-C	15 Iron Rd.	Hermon	ME	04401
Sprague Energy Corp.	8	5-D	2 International Dr. Suite 200	Portsmouth	NH	03801
Maine Port Authority C/O John H. Henshaw	8	5-D1	16 State House Station	Augusta	ME	04333
Sprague Energy Corp.	8	5-E	2 International Dr. Suite 200	Portsmouth	NH	03801

## **ATTACHMENT 11. MAINE HISTORIC PRESERVATION COMMISSION**

DCP is submitting this same permit application to the USACE. Therefore the Maine Historic Preservation Commission (MHPC) and Historic Preservation Officers of Maine's Native American tribes have been contacted for information on the location and existence of historic or tribal resources. To date, responses have been received from the Passamaquoddy Tribe of Indians and the Penobscot Indian Nation. No concerns related to tribal resources were identified in the responses provided by the Passamaquoddy Tribe of Indians and the Penobscot Indian Nation.

In response to DCP's proposed project on November 12, 2010 and pursuant to Section 106 of the National Historic Preservation Act of 1996, the MHPC indicated the office has no concern regarding archeological resources. However, MHPC has required an architectural survey of architectural resources that are 50 years old or older. Within the designated Area of Potential Effects (APE) the survey must be completed according to the MHPC's Revised Above-Ground Cultural Resource Manual: Project Review Specific. . A review of MHPC records to determine if historic properties that are listed on the National Register of Historic Places (NRHP) are located within a one-mile APE from the proposed terminal was completed and an architectural field survey of other structures greater than 50 years old was conducted to determine if any of those properties are potentially eligible for listing on the NRHP. Four NRHP-listed properties and two other previously-surveyed properties that are contributing resources to Searsport's East Main Street Historic District were identified. In addition, 11 other properties within the APE were determined to be potentially eligible for listing on the NRHP. An Architectural Survey Report was prepared to address potential impacts to historic structures within the project's APE and has been submitted to the MHPC for its review and concurrence. The only potential impacts found from the proposed project are minor visual impacts to three potentially-eligible structures. The partial, screened views of the project from these locations are not considered to alter the characteristics of the properties that qualify them for listing on the NRHP. MHPC's response to the findings in the Architectural Survey Report will be provided to the MDEP as soon as it is available.

Copies of the correspondence with the MHPC and Native American tribes are included in Appendix 11A.

## **APPENDIX 11A**

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# **Maine Historic Preservation Commission and Native American Tribe Correspondence**



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

October 21, 2010

VIA EMAIL

Ms. Robin Stancampiano  
Maine Historic Preservation Commission  
#65 State House Station  
Augusta, ME 04333

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
Section 106 Initial Consultation and Documentation**

Dear Robin:

DCP Midstream, LP ("DCP"), based in Denver Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Maine Historic Preservation Commission ("MHPC"), specifically with regard to historic architectural resource surveys, to identify any such resources that may be located near the site. TRC is seeking information on previously surveyed architectural resources within approximately one mile of the site that is under evaluation, as well as resources listed in or determined eligible for listing in the National Register of Historic Places. A location map showing the proposed site is attached.

Assuming that cultural resource studies will be required, field investigations will include a Phase I/II (identification, evaluation and assessment of effects) architectural survey of buildings, structures, objects, and districts 50 years or older or that have achieved significance within the past fifty years. The survey will follow all applicable federal and state guidelines, including those contained in *Guidelines for Identification: Architecture and Cultural Landscapes—Section 106 Specific* (Maine Historic Preservation

Ms. Robin Stancampiano

October 21, 2010

Page 2

Commission: April 2010). Photographs produced during the survey will be processed and printed according to "Photographic Policy—Supplement to the Guidelines" (June 2008).

Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. As I mentioned on the phone on Tuesday, we have scheduled an interagency meeting for federal and state review agencies to discuss issues and permitting requirements for 9AM on November 18, 2010. The meeting will likely be held at the Maine DEP offices in Bangor. Please let me know if someone from your group would like to attend or if you would like me to set up a call-in number.

I look forward to hearing from you and may be reached at (207) 529-2900 or [swallace@trcsolutions.com](mailto:swallace@trcsolutions.com). Thank you.

Sincerely,

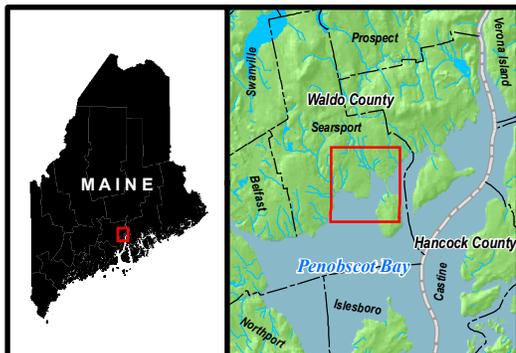
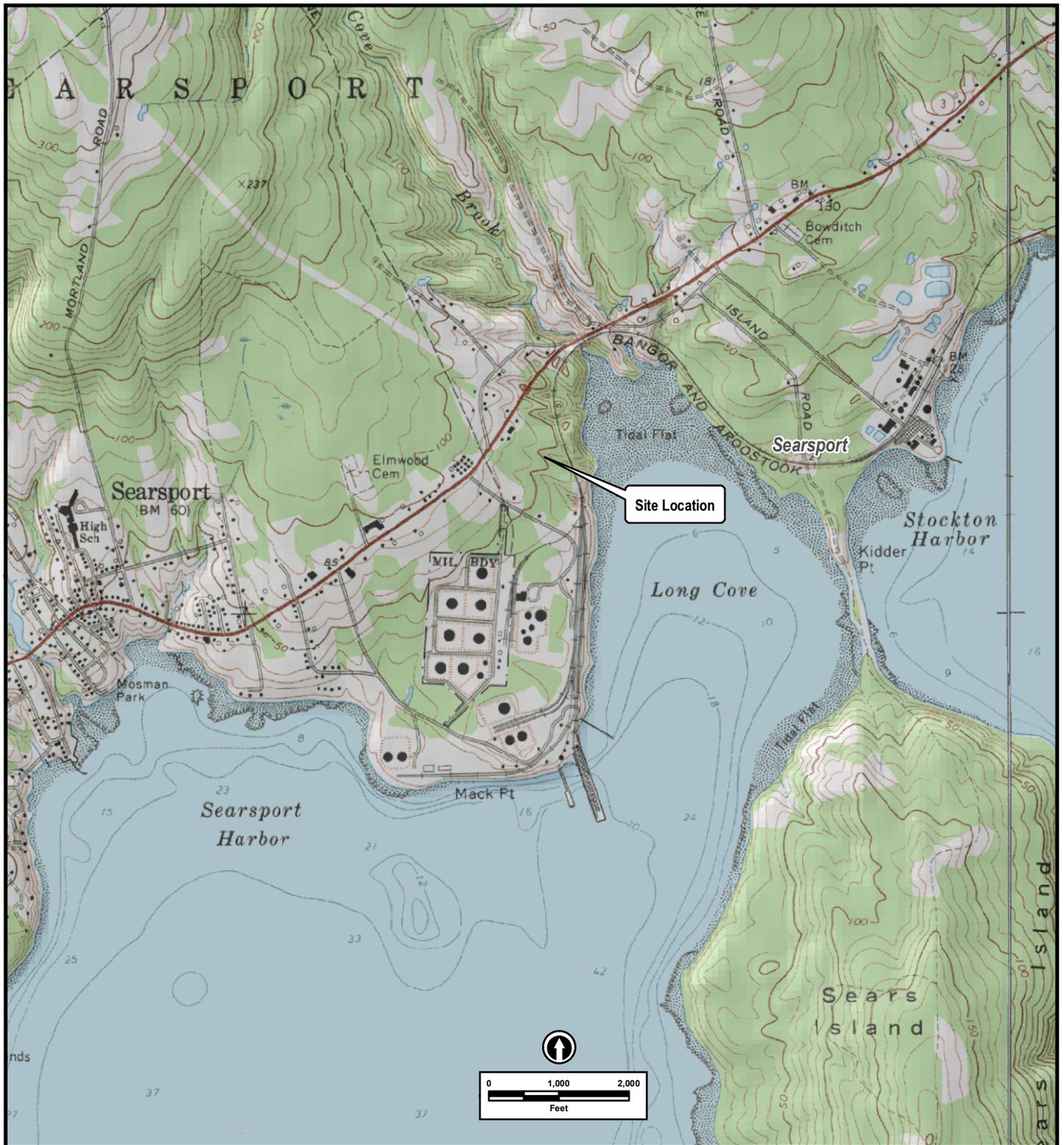


Steven Wallace  
Senior Project Manager  
TRC Environmental Corporation

Cc: Geoff Henry, Ellen Jenkins: TRC  
Becky Malloy: DCP

Attachment





- LEGEND**
- County Boundary (MEGIS)
  - Town Boundary (MEGIS)

Data Sources: Maine Office of GIS (MEGIS), United States Geological Survey (USGS) - Searsport and Castine Topo Quads.  
 Projection: NAD83, UTM Zone 19N, Grid North.

**DCP Midstream, LP**  
**Searsport Propane Terminal**  
**Searsport, Maine**  
**Site Location Map**

Created by: **TRC** 9/23/2010

**From:** [Stancampiano, Robin](#)  
**To:** [Wallace, Steve \(S.Portland,ME-US\)](#);  
**cc:** [Mohney, Kirk](#); [Neal, LeeAnn NAE](#);  
[Mitchell, Christi](#);  
**Subject:** RE: DCP Searsport Meeting 11.18.10  
**Date:** Friday, November 12, 2010 12:34:36 PM

---

## **MHPC# 2083-10 DCP Midstream; Mack Point; Sprague Facility; proposed liquid propane receiving terminal**

Steve-

Per your email below and your October 21 email, our office has reviewed the information received to initiate consultation on the above referenced undertaking pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. It is our understanding that there will be two federal agencies involved in this undertaking, the US Coast Guard and the US Army Corps of Engineers.

Our office has no concern regarding archaeological resources for this undertaking.

Regarding architectural resources, architectural survey is required for this project. We request that your proposed Area of Potential Effects (APE) for architectural resources be clearly outlined on a USGS topo map. Architectural survey will identify and record information on all resources within the APE that are 50 years old or older. Survey must be completed according to our "**Revised** Above Ground Cultural Resource Survey Manual Project Review Specific." All surveys must now be submitted electronically via the CARMA on-line database. See [http://www.maine.gov/mhpc/architectural\\_survey/survey\\_guidelines.html](http://www.maine.gov/mhpc/architectural_survey/survey_guidelines.html) for more information. Please note that the project area may include properties that have been surveyed as part of prior project reviews. In order to determine whether portions of the project area have been previously surveyed (including National Register listed or previously determined eligible properties), please contact Christi Mitchell of our office at 287-1453 or [christi.mitchell@maine.gov](mailto:christi.mitchell@maine.gov)

A list of historic preservation consultants may be found on our website: [http://www.maine.gov/mhpc/project\\_review/consultants/architectural\\_consultants.shtml](http://www.maine.gov/mhpc/project_review/consultants/architectural_consultants.shtml)

In addition, an assessment of effects must be made for historic properties that are

identified, pursuant to the Section 106 regulations.

Our office will not be participating in the 11.18.10 meeting.

We look forward to continuing consultation with you on this project.

Robin Stancampiano  
--Review & Compliance Coordinator  
--Certified Local Government Coordinator  
Maine Historic Preservation Commission  
55 Capitol Street  
65 State House Station  
Augusta, ME 04333  
phone: 207-287-2132 ext. 1  
fax: 207-287-2335  
<http://www.maine.gov/mhpc>

---

**From:** Wallace, Steve (S.Portland,ME-US) [mailto:SWallace@trcsolutions.com]  
**Sent:** Thursday, November 11, 2010 10:29 AM  
**To:** Clukey, Robin; Beyer, Jim R; 'Clement, Jay L NAE'; 'Wende Mahaney (wende\_mahaney@fws.gov)'; 'Jeff Murphy'; Timpano, Steve; Cameron, Don S.; Stancampiano, Robin; 'Matt Schweisberg (schweisberg.matt@epa.gov)'; Trish Garrigan; 'kern.mark@epa.gov'; Swan, Brian  
**Cc:** 'Malloy, Rebecca P'; 'Graham, David W'; 'Boden, Kelly'; Peters, Colen (S. Portland,ME-US); Donohue, Sean (S.Portland,ME-US); Kichner, Jerry  
**Subject:** RE: DCP Searsport Meeting 11.18.10

Attached is an agenda for our meeting at DEP/Bangor next Thursday, 11/18, at 9AM.

As I understand it, confirmed agency representation at the meeting will be Robin, Jim, Jay, Wende, and Steve. There will also be a US Coast Guard representative there. Don and Brian will not be participating.

I am still unsure if Jeff will be participating or if there will be a representative from the MHPO or EPA. If you are in this group please let me know if you will be in Bangor, want to call in, or won't be participating at all.

The call-in numbers for those who may need them are: Dial-in: 866-208-4552  
Access Code: 5386293.

Thanks, Steve

**Steven Wallace**  
**Senior Project Manager**



TRC Companies, Inc.  
312 Keene Neck Road  
Bremen, Maine 04551

Direct: (207) 529-2900  
Fax: (207) 529-2901  
Mobile: (207) 233-2020  
[swallace@trcsolutions.com](mailto:swallace@trcsolutions.com)

**Wallace, Steve (S.Portland,ME-US)**

---

**From:** Jenkins, Ellen (Atlanta,GA-US)  
**Sent:** Thursday, May 12, 2011 6:27 PM  
**To:** Christi A. Mitchell (Christi.Mitchell@maine.gov)  
**Cc:** Henry, Geoffrey (Baltimore,MD-US); Wallace, Steve (S.Portland,ME-US)  
**Subject:** DCP Searsport Terminal (MHPC # 2033-10)  
**Attachments:** MHPC Architectural Survey Report Form - FINAL.doc; Negative Table DCP Searsport.doc; DCP Report Figures.pdf; DCP Midstream USGS Map.pdf; SurveyMatrix DCP Searsport.doc

Christi,

Good afternoon! Attached is the report, survey matrix, negative table, report figures, and USGS map for the DCP Searsport Terminal Project (MHPC # 2033-10). I have submitted the forms in CARMA. Please let me know if you have any questions.

Ellen

TRC  
Architectural Historian  
4155 Shackleford Road, Suite 225  
Norcross GA 30093

O:770-270-1192, ext. 120  
C:404-226-9971

Wallace, Steve (S.Portland,ME-US)

---

From: Jenkins, Ellen (Atlanta,GA-US)  
Sent: Tuesday, May 17, 2011 1:35 PM  
To: Wallace, Steve (S.Portland,ME-US)  
Cc: Henry, Geoffrey (Baltimore,MD-US)  
Subject: FW: DCP Searsport Terminal (MHPC # 2033-10)

Steve,

Here is the email citing approval to submit.

Ellen Jenkins

TRC- Architectural Historian  
Phone: 770.270.1192 ext. 120  
Cell: 404.226.9971  
Fax: 770.270.1392  
[ejenkins@trcsolutions.com](mailto:ejenkins@trcsolutions.com)

-----Original Message-----

From: Mitchell, Christi [<mailto:Christi.Mitchell@maine.gov>]  
Sent: Monday, May 16, 2011 2:58 PM  
To: Jenkins, Ellen (Atlanta,GA-US)  
Subject: RE: DCP Searsport Terminal (MHPC # 2033-10)

Ellen,

I have completed my review of the above cited project and find that the submission is both complete and sufficient. I have approved the forms in CARMA. The Commission will begin consultation on this project upon receipt of the hard copy forms, maps, report, matrix, CD, negatives and index.

Sincerely,

Christi A. Mitchell  
Architectural Historian  
Maine Historic Preservation Commission  
[www.maine.gov/mhpc](http://www.maine.gov/mhpc)

"People ought to know about the past. If it's something to be proud of, they ought to take example from it; if it ain't, then they ought to buckle down and see to it that the present times should be better." Ruth Moore, The Walk Down Main Street.

-----Original Message-----

From: Jenkins, Ellen (Atlanta,GA-US) [<mailto:EJenkins@trcsolutions.com>]  
Sent: Thursday, May 12, 2011 6:27 PM  
To: Mitchell, Christi  
Cc: Henry, Geoffrey (Baltimore,MD-US); Wallace, Steve (S.Portland,ME-US)  
Subject: DCP Searsport Terminal (MHPC # 2033-10)

Christi,

Good afternoon! Attached is the report, survey matrix, negative table, report figures, and USGS map for the DCP Seasrport Terminal Project (MHPC # 2033-10). I have submitted the forms in CARMA. Please let me know if you have any questions.

Ellen

TRC

Architectural Historian

4155 Shackleford Road, Suite 225

Norcross GA 30093

O:770-270-1192, ext. 120

C:404-226-9971



4425 Forbes Boulevard  
Lanham, Maryland 20706

May 17, 2011

Robin Stancampiano  
Maine Historic Preservation Commission  
55 Capitol Street  
Augusta, Maine 04333-0065

Project: DCP Searsport Terminal Project - MHPC - #2083-10

Dear Ms. Stancampiano:

On behalf of DCP Midstream Partners, LP, TRC is submitting *Architectural Survey Report and Finding of Effects Report, DCP Searsport Terminal Project—Town of Searsport, Waldo County*. The accompanying map has been created per MHPC guidelines (April 2010) and resources are keyed on the completed forms. The completed Historic Building/Structure Survey Forms as well as the previous survey forms and accompanying digital photographs (along with a CD) and negatives with contact sheets for resources surveyed within the APE are also enclosed.

Please direct any written correspondence to Mr. Steve Wallace, TRC, 400 Southborough Drive, South Portland, ME 04106 or [SWallace@trcsolutions.com](mailto:SWallace@trcsolutions.com). Feel free to contact me at 301-306-6981 (office) or (202) 352-2109 (mobile) or [ghenry@trcsolutions.com](mailto:ghenry@trcsolutions.com) if you have questions about these materials. Thank you for your assistance with this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Geoffrey B. Henry", with a long, sweeping underline.

Geoffrey B. Henry  
Senior Architectural Historian

cc Steve Wallace TRC



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

www.TRCSolutions.com

March 14, 2011

*Passamaquoddy Tribe of Indians*  
Indian Township Reservation  
Attn: Donald Soctomah, THPO  
P.O. Box 301  
Princeton, Maine 04668

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
NHPA Section 106 Consultation**

Dear Mr. Soctomah:

DCP Midstream, LP ("DCP"), based in Denver, Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Passamaquoddy Tribe of Indians as required by Section 106 of the National Historic Preservation Act ("NHPA"). Specifically, TRC is seeking information regarding the presence of tribal resources that may be located on the site. A location map showing the proposed site is attached.

Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. If we don't hear back from you within 30 days we will assume that you have no concerns. I may be reached at (207) 879-1930 extension 120, or [sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com). Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean Donohue".

Sean Donohue  
TRC Environmental Corporation

Cc: Becky Malloy, DCP  
Attachment



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

March 14, 2011

*Penobscot Indian Nation*  
Indian Island Reservation  
Attn: Ms. Bonnie Newsom, THPO  
12 Wabanaki Way  
Indian Island, Maine 04468

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
NHPA Section 106 Consultation**

Dear Ms. Newsom:

DCP Midstream, LP ("DCP"), based in Denver, Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Penobscot Indian Nation as required by Section 106 of the National Historic Preservation Act ("NHPA"). Specifically, TRC is seeking information regarding the presence of tribal resources that may be located on the site. A location map showing the proposed site is attached.

Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. If we don't hear back from you within 30 days we will assume that you have no concerns. I may be reached at (207) 879-1930 extension 120, or [sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com). Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean Donohue", written over a light blue horizontal line.

Sean Donohue  
TRC Environmental Corporation

Cc: Becky Malloy, DCP  
Attachment



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

March 14, 2011

*Aroostook Band of Micmacs*  
Attn: Victoria Higgins, Chief  
7 Northern Road  
Presque Isle, Maine 04769

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
NHPA Section 106 Consultation**

Dear Ms. Higgins:

DCP Midstream, LP ("DCP"), based in Denver, Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Aroostook Band of Micmacs as required by Section 106 of the National Historic Preservation Act ("NHPA"). Specifically, TRC is seeking information regarding the presence of tribal resources that may be located on the site. A location map showing the proposed site is attached.

Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. If we don't hear back from you within 30 days we will assume that you have no concerns. I may be reached at (207) 879-1930 extension 120, or [sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com). Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean Donohue", written in a cursive style.

Sean Donohue  
TRC Environmental Corporation

Cc: Becky Malloy, DCP  
Attachment



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

March 14, 2011

*Passamaquoddy Tribe of Indians*  
Pleasant Point Reservation  
Attn: Donald Soctomah, THPO  
P.O. Box 343  
Perry, Maine 04667

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
NHPA Section 106 Consultation**

Dear Mr. Soctomah:

DCP Midstream, LP ("DCP"), based in Denver, Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Passamaquoddy Tribe of Indians as required by Section 106 of the National Historic Preservation Act ("NHPA"). Specifically, TRC is seeking information regarding the presence of tribal resources that may be located on the site. A location map showing the proposed site is attached.

Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. If we don't hear back from you within 30 days we will assume that you have no concerns. I may be reached at (207) 879-1930 extension 120, or [sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com). Thank you.

Sincerely,

A handwritten signature in black ink that reads "Sean Donohue". The signature is fluid and cursive.

Sean Donohue  
TRC Environmental Corporation

Cc: Becky Malloy, DCP  
Attachment



400 Southborough Drive  
South Portland, ME 04106

207.879.1930 PHONE  
207.879.9293 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

March 14, 2011

*Houlton Band of Maliseet Indians*  
Attn: Sharri Venno, Environmental Planner  
88 Bell Road  
Littleton, Maine 04730

**RE: DCP Midstream Project, Searsport, Waldo County, Maine  
NHPA Section 106 Consultation**

Dear Ms. Venno:

DCP Midstream, LP ("DCP"), based in Denver, Colorado, is evaluating an area adjacent to the Sprague and Irving oil and bulk products receiving terminals on Mack Point in Searsport as a site for a liquid propane ("LPG") receiving terminal. The area is zoned for industrial development by the Town of Searsport. Incoming LPG ships (on the order of half a dozen/year) would dock at an existing pier at the Sprague facility and off load through a new aboveground pipe to a LPG storage tank at the new terminal. The LPG would then be loaded into trucks at the storage facility for distribution throughout Northern New England. There is also an existing rail siding at the site that may be used for future distribution by rail.

On behalf of DCP, TRC Environmental Corporation ("TRC") is initiating consultation with the Houlton Band of Maliseet Indians as required by Section 106 of the National Historic Preservation Act ("NHPA"). Specifically, TRC is seeking information regarding the presence of tribal resources that may be located on the site. A location map showing the proposed site is attached.

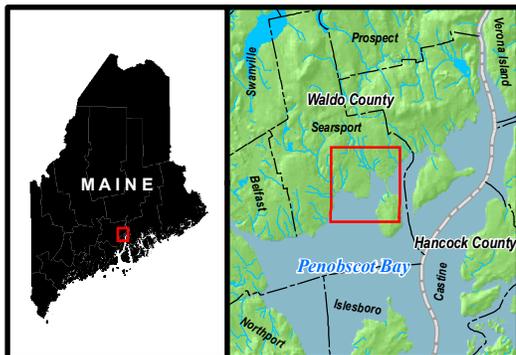
Please advise us should you have any questions or comments regarding this request for information or the proposed project or site. If we don't hear back from you within 30 days we will assume that you have no concerns. I may be reached at (207) 879-1930 extension 120, or [sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com). Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Sean Donohue", written over a light blue horizontal line.

Sean Donohue  
TRC Environmental Corporation

Cc: Becky Malloy, DCP  
Attachment



**LEGEND**

- Site Parcel (MEGIS)
- County Boundary (MEGIS)
- Town Boundary (MEGIS)

Data Sources: Maine Office of GIS (MEGIS), United States Geological Survey (USGS) - Searsport and Castine Topo Quads.  
 Projection: NAD83, UTM Zone 19N, Grid North.

**DCP Midstream, LP**  
**Searsport Propane Terminal**  
**Searsport, Maine**  
**Site Location Map**

Created by: **TRC** 9/23/2010

**From:** [Donald Soctomah](#)  
**To:** [Donohue, Sean \(S.Portland,ME-US\)](#);  
**Subject:** Searsport Project  
**Date:** Tuesday, March 22, 2011 12:56:35 PM

---

# Tribal Historic Preservation Office

## Passamaquoddy Tribe

207-796-2301

TRC

400 Southborough Dr

South Portland, ME

[sdonohue@trcsolutions.com](mailto:sdonohue@trcsolutions.com)

March 22, 2011

Re: Searsport – DCP Project

Dear Sean Donohue;

The Passamaquoddy THPO has reviewed the following application regarding the historic properties and significant religious and cultural properties in accordance with NHPA, NEPA, AIRFA, NAGPRA, ARPA, Executive Order 13007 Indian Sacred Sites, Executive Order 13175 Consultation and Coordination with Indian Tribal Governments, and Executive Order 12898 Environmental Justice.

The proposed project listed above will not have any impact on cultural and historical concerns of the Passamaquoddy Tribe.

Sincerely;

Donald Soctomah

Soctomah@ainop.com

THPO

Passamaquoddy Tribe



**PENOBSCOT INDIAN NATION**  
**BONNIE NEWSOM - ARCHAEOLOGY DEPARTMENT**  
**12 WABANAKI WAY, INDIAN ISLAND, ME 04468**  
**E-MAIL: [Bonnie.Newsom@penobscotnation.org](mailto:Bonnie.Newsom@penobscotnation.org) Fax: 207-817-7463**

NAME	Sean Donohue
ADDRESS	TRC Solutions 400 Southborough Drive South Portland, ME 04106
OWNER'S NAME	DCP Midstream, LP
TELEPHONE	(207) 879-1930
FAX	(207) 879-9293
EMAIL	<a href="mailto:sdonohue@trcsolutions.com">sdonohue@trcsolutions.com</a>
PROJECT NAME	Liquid Propane ("LPG") receiving terminal
PROJECT SITE	Searsport, ME
DATE OF REQUEST	March 14, 2011
DATE REVIEWED	April 20, 2011

Thank you for the opportunity to comment on the above referenced project. This project appears to have no impact on a structure or site of historic, architectural or archaeological significance to the Penobscot Nation as defined by the National Historic Preservation Act of 1966, and subsequent updates.

Also, if Native American cultural materials are encountered during the course of the project, please contact me at (207) 817-7332. Thank you.

**BONNIE NEWSOM, THPO**  
Penobscot Nation

## **ATTACHMENT 12. WETLAND FUNCTIONAL ASSESSMENT**

---

### **12.1 Wetland Functional Assessment Method**

A Descriptive Approach to assessing wetland functions and values described in a September 1999 supplement (the Supplement) to *The Highway Methodology Workbook* by the New England Division of the USACE is the assessment method currently preferred by the Maine Department of Environmental Protection (MDEP). Functions and values of wetlands to be impacted by DCP's proposed terminal have been evaluated by this method and are discussed below.

The Supplement indicates "Wetland functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society". Wetland functions relate to the ecological significance of wetland characteristics without regard to subjective values. Wetland functions are generally considered to be the result of biologic, geologic, hydrologic, biogeochemical, and/or physical processes that occur or take place in a wetland. Functions attributed to wetlands include the following:

- Groundwater Recharge/Discharge
- Floodflow Alteration (Storage and De-synchronization)
- Fish and Shellfish Habitat
- Sediment/Toxicant/Pathogen Retention
- Nutrient Removal/Retention/Transformation
- Production (Nutrient) Export
- Sediment/Shoreline Stabilization; and
- Wildlife Habitat

Wetland values are based on society's judgment of the ascribed worth, merit, quality, importance or benefit of wetlands which are derived from either these functions or other characteristics of wetlands (Mitsch and Gosselink 1993). Values attributed to wetlands include the following:

- Recreation
- Education/Scientific Value
- Uniqueness/Heritage
- Visual Quality/Aesthetics; and
- Threatened or Endangered Species Habitat

The functions and values identified above may vary slightly in terminology, but encompass all the functions identified in, and addressed by, the NRPA Wetland Protection Rules (Rules). As defined in these Rules, "functions" are:

*The roles wetlands serve which are of value to society or the environment, including but not limited to, flood storage, flood water conveyance, ground water recharge and discharge, erosion control, wave attenuation, water quality protection, scenic and aesthetic use, food chain support, fisheries, wetland plant habitat, aquatic habitat and wildlife habitat (Chapter 310 §3J).*

A basic concept presented by the Supplement is an identification of "Considerations/Qualifiers" that can be used as indicators or descriptors of the presence of particular functions or values. From as few as three

to as many as 32 of these “Considerations/Qualifiers” are identified in Appendix A of the Supplement for each of the respective wetland functions and values. These “Considerations/Qualifiers” therefore become a checklist or outline of indicators of functions and values for wetland scientists to observe, compare against, and structure assessments. The Supplement indicates these “Considerations” are intended to be flexible and are ultimately based on “best professional judgment.”

## 12.2 Onsite Wetland Summary

Forested wetland (PFO) covers approximately 20% of the 23.6 acre site on which the terminal is to be located. Drainage across the site is generally to the southeast toward Long Cove located at the mouth and west side of the confluence of the Penobscot River and Penobscot Bay. Wetlands on the site are generally associated with two separate, deeply incised drainage course and are therefore very narrow (less than 20 ft wide) and elongate. The southerly drainage course is largest and is represented by a marginally perennial stream that conveys flow onto the site via a 24-inch RCP (reinforced concrete pipe) under US Route 1 and continues on to Long Cove through a 36-inch CMP (corrugated metal pipe) under the Montreal, Maine and Atlantic Railroad. The central drainage course appears to be ephemeral and fed by relatively small wetlands on flatter parts of the interior of the site. It drains through a 24-inch CMP beneath the railroad into Long Cove.

## 12.3 Wetland Functions and Values

Functions and values of wetlands to be impacted by the DCP Terminal are dependent on, and influenced by, various physical characteristics at the site which contribute to and are thereby indicative of relative levels of function and value. These include: size and proximity of wetlands to ongoing development activity, geologic setting, soil characteristics, presence and duration of hydrology, landscape position, and wetland cover type. Consequently, the effects of changes to these physical characteristics are evaluated in assessing whether an activity or project impacts wetland-specific functions and values.

“Considerations/Qualifiers” listed in Appendix A of the Supplement and observed in wetlands at the site have been recorded for individual functions and values on a Wetland Function-Value Evaluation Form. Copies of these forms are included in Appendix 12A. The significance of these “Considerations/Qualifiers” to functions and values associated with the wetlands is discussed below.

- **Groundwater Recharge/Discharge** – *“This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area (USACE, 1999)”*. The 1984 medium intensity Soil Survey of Waldo County, Maine by the US Soil Conservation Service (SCS) indicates soils beneath wetlands at the site are the Swanville Series (Sw) which consists of deep, nearly level, poorly drained silt loams formed from fine-grained marine deposits. As a result of this texture and origin permeability is low and soils beneath wetlands at the site are not conducive to groundwater recharge. The Maine Geological Survey has not designated the unconsolidated deposits at the site as part of a significant sand and gravel aquifer (MGS Open-File No. 00-12). Consequently onsite wetlands have a limited role in groundwater recharge or groundwater discharge. Therefore, the proposed project will not detrimentally affect or diminish the occurrence of this function.
- **Floodflow Alteration (Storage and Desynchronization)** – *“This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters (USACE, 1999)”*. One hundred year VE and AE zones with an elevation of 14 ft MSL are identified along the west side of Long Cove by the Federal Emergency Management Agency (FEMA) on the Flood Insurance Rate Map (FIRM - Community Panel Number 23085 0012B dated May 17, 1990) for this part of

Searsport. Except in the immediate vicinity of the existing pier, the VE and AE zones do not cross or extend westward of the Montreal, Maine and Atlantic Railroad. No other 100 year floodplains are shown to exist at the DCP site on the FEMA maps. Occurring within 1,500 ft of tide water at the head of Penobscot Bay, due to this juxtaposition, wetland communities to be impacted by construction of the propane terminal essentially have little role in floodflow alteration. Stormwater flow analyses and drainage calculations have been used to design stormwater management at the site so that this wetland function will not be detrimentally affected by the propane terminal.

- **Fish and Shellfish Habitat** – *“This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat (USACE, 1999)”*. Habitat for fish and shellfish does not occur in the non-riparian PFO wetlands that occur at the site. Forested wetland also occurs along the small southeasterly flowing stream located along the southern side of the site. Flow in the channel may be perennial and would be greatest from snowmelt or after rains but during summer months is likely to be little more than severely restricted, small, shallow (less than 1 foot) pools. The stream flows onto the site from a 24-inch RCP beneath US Route 1 and no channel occurs on the opposite side of the highway. The stream exits the site through a hanging, 36-inch CMP beneath the railroad that forms the easterly site boundary. Due to the steep gradient and low flows within the approximately 1,800-foot reach of stream channel that is bounded by culverts at both ends of the site, fish and shellfish habitat in the stream is absent or would be of very low quality and therefore would not be detrimentally impacted by the proposed terminal. Also, in response to consultation with the Maine Department of Inland Fisheries and Wildlife (MDIFW), no documentation has been found for the existence of threatened or endangered, species or significant fisheries habitat at the site or in the vicinity of the proposed project.
- **Sediment/Toxicant/Pathogen Retention** – *“This function reduces or prevents degradation of water quality and relates to effectiveness of the wetland as a trap of sediment, toxicants or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas (USACE, 1999)”*. Both the steep gradient of the stream channel and ephemeral drainages on the site show evidence of flashy flow and therefore are not conducive to retention of sediment toxicants or pathogens from upgradient sources. This water quality improvement function will also be provided by the stormwater management measures to be constructed as part of the DCP facility.
- **Nutrient Removal/Retention/Transformation** – *“This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels (USACE, 1999)”*. Retention time in wetlands at the site is influenced by physical characteristics of the wetland landscape, and by the edaphic (soils), micro topographic, and vegetative conditions within the wetland. Since sources of excess nutrients are not evident in the watershed upstream of US Route 1, the opportunity for onsite wetlands to perform this function is very limited. As is the case for sediment/toxicant/pathogen retention, this wetland function will also be provided by the stormwater management measures to be constructed as part of the DCP facility.
- **Production (Nutrient) Export** – *“This function evaluates the effectiveness of a wetland to produce food or usable products for humans or other living organisms (USACE, 1999)”*. Downstream export of organic detritus originating from areas of wetland impact is minimal due the relatively small area of wetland aligning the stream channel and ephemeral drainage course.

- **Sediment/Shoreline Stabilization** – *“This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion (USACE, 1999)”. “Shore-line stabilization is the binding of soil at the shoreline or water’s edge by wetland plants, and the physical dissipation of erosive energy caused by waves, currents, tides, or ice in a basin or channel” (Marble 1992). This function is localized to shorelines of the southerly stream and given the narrow width of wetlands, stabilization of the channel during flashy erosive flows is not evident.*
- **Wildlife Habitat** – *“This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge (USACE, 1999)”. The quality of wildlife habitat provided by forested wetlands at the site is strongly influenced and limited by conditions surrounding the site. US Route 1, heavily used by commercial and tourist traffic, borders the site on the north and west along with residential and commercial development that includes a restaurant and motel. Residential lots bordering the site on the south are located along Station Avenue that provides truck access to the Mack Point Terminal. The easterly side of the site is bordered by the Montreal, Maine and Atlantic Railroad which provides direct access for cargo to and from the Irving Oil Terminal. While wooded conditions currently dominate the site and its small wetlands, it is not readily linked to other habitat of equal or better quality and is instead closely surrounded by intensive and persistent commercial and industrial activity.*

Also, in response to consultation with the MDIFW, no documentation has been found for the occurrence of State-listed Endangered, Threatened, or Species of Special Concern, or their habitats at the site. A similar response has been received from the US Fish and Wildlife Service (USFWS). In addition, although a Tidal Waterfowl and Wading Bird Habitat (TWWH) is located along the Long Cove shoreline on the opposite side of the railroad tracks, MDIFW has concluded the DCP facility will not result in direct impacts to the TWWH provided stormwater management is incorporated into project design in accordance with Chapter 500 of MDEP regulations.

- **Recreation** – *“This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating fishing, hunting, and other passive or active recreational activities (USACE, 1999)”. Wetlands support many types of direct recreation including hunting, trapping, fishing, wildlife watching, nature photography, berry picking, picnicking, hiking, and boating (Hammer, 1997). Attributes of wetlands at the site do not contribute to any of the above forms of recreation and therefore would be considered to be of low value; and therefore not detrimentally affected by the proposed project.*
- **Educational/Scientific Value** – *“This value considers the suitability of the wetland as a site for an “outdoor classroom” or as a location for scientific study and research (USACE, 1999)”. For reasons similar to those presented above describing the absence of recreational values of wetlands at the site, the wetlands to be impacted do not occur in a location or appear to contain characteristics that merit use for school field trips, scientific studies or research.*
- **Uniqueness/Heritage** – *“This value considers the suitability of the wetland and associated waterbodies to provide certain special values that may include archeological sites, critical habitat for endangered species or relative importance as a typical wetland class for the geographic region (USACE, 1999)”. The PFO wetlands at the site typify some of the most abundant wetland types in coastal Maine and are not a critically imperiled (S1) or imperiled (S2) wetland community identified by the Maine Natural Areas Program.*

- **Visual Quality/Aesthetics** – “*This value considers the visual and aesthetic quality or usefulness of the wetland (USACE, 1999)*”. Aesthetics, one of the most subjective values attributed to wetlands, generally is heightened by distant views or vistas with bodies of water. Wetlands to be impacted for the propane terminal are not now focal points and instead from most vantage points such US Route 1, Station Avenue and the Montreal, Maine and Atlantic Railroad right of way, are obscure in the landscape.
- **Endangered Species Habitat** – “*This value considers the suitability of the wetland to support threatened or endangered species (USACE, 1999)*”. As mentioned previously MDIFW has found no records of occurrence of State-listed Endangered, Threatened, or Species of Special Concern, or their habitats at the project location. The USFWS has concluded the project site does not occur in a watershed designated as critical habitat for the federally-endangered Atlantic salmon (*Salmo salax*) and that no other federally-listed under the jurisdiction of the USFWS are known to occur in the area. Consequently wetlands at the site are not known to provide endangered species habitat.

### 12.3 Summary

Construction of the propane terminal is anticipated to require approximately 2.00 acres of direct impacts to freshwater wetlands. An additional approximately 0.04 acres of secondary impacts associated with clearing of vegetation for operational, safety and security purposes is also required. Construction at the existing dry cargo pier will take place over or above the water surface of Long Cove wetland so that no direct or indirect impact will occur to coastal wetlands.

Presence and quality of wetland function and values at the site and potential impacts from the project are summarized as follows:

#### Functions

- |   |   |
|---|---|
| • Groundwater Recharge/Discharge            | Not affected by project   |
| • Floodflow Alteration                      | Not affected by project   |
| • Fish and Shellfish Habitat                | Absent  |
| • Sediment/Toxicant/Pathogen Retention      | Limited Role (Steep gradient, small size)                         |
| • Nutrient Removal/Retention/Transformation | Limited Role (Steep gradient small size)                          |
| • Production (Nutrient) Export              | Limited Role (Sparse vegetation, limited connectivity)            |
| • Sediment/Shoreline Stabilization          | Limited Role (Not affected by project design)                     |
| • Wildlife Habitat                          | Limited/low Quality (Size, character and surrounding development) |

#### Values

- |  |  |
|--|--|
| • Recreation                               | Low Quality/Absent (Not affected by project) |
| • Education/Scientific Value               | Low Quality/Absent (Not affected by project) |
| • Uniqueness/Heritage                      | Low Quality/Absent (Not affected by project) |
| • Visual Quality/Aesthetics                | Low Quality/Absent (Not affected by project) |
| • Threatened or Endangered Species Habitat | Not Present (Not affected by project)        |

Of the 13 functions and values commonly attributed to wetlands, as justified by the absence or quality of site-specific “Considerations/Qualifiers” used to identify presence or performance, evidence of functions and values are either not present, or are not indicative of high or moderate value.

**APPENDIX 12A**

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**Wetland Functional Assessment Data Forms**

# Wetland Function-Value Evaluation Form

Wetland I.D. A  
 Latitude 49°27'N Longitude 68°54'W  
 Prepared by: Cole Roberts Date 10/20/10 - 5/2011  
 Wetland Impact: Type PFO1 Area 0.32A

Total area of wetland 0.32 Human made? No but is wetland part of a wildlife corridor? Fragm. ditch or a "habitat island"? No  
 Adjacent land use Industrial/Commercial Distance to nearest roadway or other development <200'  
 Dominant wetland systems present PFO1/PSSI Contiguous undeveloped buffer zone present Mostly except RR  
 Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? Bottom  
 How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Evaluation based on:  
 Office  Field   
 Corps manual wetland delineation completed? Y  N

Function/Value	Suitability Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<input checked="" type="checkbox"/>			Underlain by impermeable marine sediments. Not on or near an aquifer mapped by Maine Geological Survey
Floodflow Alteration	<input checked="" type="checkbox"/>			Small watershed lacking vulnerable property that buffers tide water and is not within a FEMA mapped flood plain
Fish and Shellfish Habitat	<input checked="" type="checkbox"/>			Connects to waterway/water body is absent/restricted and water depth is inadequate.
Sediment/Toxicant Retention	<input checked="" type="checkbox"/>	<u>0</u>		Sources absent/not abundant, drains to RR
Nutrient Removal	<input checked="" type="checkbox"/>	<u>0, 1</u>		Sources absent not abundant, drains to RR
Production Export	<input checked="" type="checkbox"/>			Essentially isolated (No downstream connectivity)
Sediment/Shoreline Stabilization	<input checked="" type="checkbox"/>	<u>1</u>		No waterway/water body.
Wildlife Habitat	<input checked="" type="checkbox"/>			Limited opportunity due to intensity of active commercial/industrial development and traffic surrounding site
Recreation	<input checked="" type="checkbox"/>			Recreational attributes absent/low quality
Educational/Scientific Value	<input checked="" type="checkbox"/>			Educational attributes absent/low quality
Uniqueness/Heritage	<input checked="" type="checkbox"/>			Common wetland type, other attributes absent/low quality
Visual Quality/Aesthetics	<input checked="" type="checkbox"/>			Aesthetic attributes absent/limited/low quality
ES Endangered Species Habitat	<input checked="" type="checkbox"/>			Not present (ME FFW & USFWS)
Other				

Notes: \* Refer to backup list of numbered considerations.

# Wetland Function-Value Evaluation Form

Wetland I.D. B  
 Latitude 42° 27' N Longitude 68° 54' W  
 Prepared by: Cole Peltus Date 10/2010 - 5/2011  
 Wetland Impact:  
 Type PFO, PSSI Area 0.5 Acres

Evaluation based on:  
 Office  Field   
 Corps manual wetland delineation completed? Y  N

Total area of wetland 0.5 A Human made? Altered Is wetland part of a wildlife corridor? Fragment of or a "habitat island"? No  
 Adjacent land use Industrial/Commercial Distance to nearest roadway or other development < 200'  
 Dominant wetland systems present PFO, PSSI Contiguous undeveloped buffer zone present Mostly except ER  
 Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? Bottom  
 How many tributaries contribute to the wetland? One Wildlife & vegetation diversity/abundance (see attached list)

Function/Value	Suitability Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<input checked="" type="checkbox"/>	7		Underlain by impermeable marine sediments. Not an or near an aquifer mapped by Maine Geological Survey
Floodflow Alteration	<input checked="" type="checkbox"/>	7		Small watershed lacking vulnerable property that buffers tide/water and is not within a FEMA mapped flood plain
Fish and Shellfish Habitat	<input checked="" type="checkbox"/>			Connects to waterway/water body is absent/restricted and water depth is inadequate
Sediment/Toxicant Retention	<input checked="" type="checkbox"/>	8		Soil is absent/not abundant. Flow intense/flooding (not retained)
Nutrient Removal	<input checked="" type="checkbox"/>			Sources absent/not abundant and transported downstream by flashy flows
Production Export	<input checked="" type="checkbox"/>			Little exported due to engineered flows
Sediment/Shoreline Stabilization	<input checked="" type="checkbox"/>	1, 2, 8, 9		Flashy ephemeral flow is responsible for eroded channel
Wildlife Habitat	<input checked="" type="checkbox"/>			Limited upland due to intensity of active commercial/industrial development and traffic surrounding site
Recreation	<input checked="" type="checkbox"/>			Recreational attributes absent/low quality
Educational/Scientific Value	<input checked="" type="checkbox"/>			Educational attributes absent/low quality
Uniqueness/Heritage	<input checked="" type="checkbox"/>			Common wetland type, other attributes absent/low quality
Visual Quality/Aesthetics	<input checked="" type="checkbox"/>			Aesthetic attributes absent/limited/low quality
ES Endangered Species Habitat	<input checked="" type="checkbox"/>			Not present (ME FFW of USFWS)
Other				

Notes: \* Refer to backup list of numbered considerations.

# Wetland Function-Value Evaluation Form

Wetland I.D. C  
 Latitude 44°27'N Longitude 68°54'W  
 Prepared by: Colin Peters Date 10/2010-5/2011

Wetland Impact:  
 Type PFO1 Area 0.70 (0.70)

Evaluation based on:  
 Office  Field

Corps manual wetland delineation completed? Y  N

Total area of wetland ± 1A Human made? No Is wetland part of a wildlife corridor? Fragmented or a "habitat island"? No

Adjacent land use Industrial/Commercial Distance to nearest roadway or other development <200'

Dominant wetland systems present PFO1/PSSI Contiguous undeveloped buffer zone present Definitely Present

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? BOTTOM

How many tributaries contribute to the wetland? Two Wildlife & vegetation diversity/abundance (see attached list)

Function/Value Suitability (Y/N) Rationale (Reference #)\* Principal Function(s)/Value(s) Comments

Function/Value	Suitability (Y/N)	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X	7		Underlain by impermeable marine sediments. Not on or near an aquifer mapped by Maine Geological Survey
Floodflow Alteration	X	7		Small watershed lacking vulnerable property that both tideswater and is not within a FEMA mapped floodplain
Fish and Shellfish Habitat	X			Connections to waterway/waterbody is absent/restricted and water depth is inadequate.
Sediment/Toxicant Retention	X	B		Steep gradient, small size of wetland abutting fleshy stream provides little opportunity for retention.
Nutrient Removal	X			steep gradient/fleshy = brief opportunity for removal
Production Export	X			low productivity, little continuity downstream from PFO1 flow
Sediment/Shoreline Stabilization	X	1,2,B,9		Channel now eroded by fleshy flow with little benefit by narrow wetland
Wildlife Habitat	X			Limited opportunity due to intensity of active commercial/industrial development and traffic surrounding site
Recreation	X			Recreational attributes absent/low quality
Educational/Scientific Value	X			Educational attributes absent/low quality
Uniqueness/Heritage	X			Common wetland type, other attributes absent/low quality
Visual Quality/Aesthetics	X			Aesthetic attributes absent/limited/low quality
Endangered Species Habitat	X			Not present (ME FFW & USFWS)
Other				

Notes:

\* Refer to backup list of numbered considerations.

# Wetland Function-Value Evaluation Form

Wetland I.D. D  
 Latitude 44°27'N Longitude 68°54'W  
 Prepared by: Cole Polansky Date 10/20/2010 - 5/20/11  
 Wetland Impact: Type PFO/PSS Area 0.35A

Total area of wetland ±0.5A Human made? Altered Is wetland part of a wildlife corridor? No or a "habitat island"? No  
Stone walls etc residential  
 Adjacent land use Industrial/Commercial Distance to nearest roadway or other development <200'  
 Dominant wetland systems present PFO/PSS1 Contiguous undeveloped buffer zone present Partially (residential)

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? BOTTOM  
 How many tributaries contribute to the wetland? NONE Wildlife & vegetation diversity/abundance (see attached list)

Evaluation based on:  
 Office  Field   
 Corps manual wetland delineation completed? Y  N

Function/Value	Suitability Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<input checked="" type="checkbox"/>			Underlain by impermeable marine sediments. Not on or near an aquifer mapped by Maine Geological Survey
Floodflow Alteration	<input checked="" type="checkbox"/>			Small watershed lacking vulnerable property that buffers tide water and is not within a FEMA mapped flood plain
Fish and Shellfish Habitat	<input checked="" type="checkbox"/>			Connections to waterway/water body is absent/restricted and water depth is inadequate.
Sediment/Toxicant Retention	<input checked="" type="checkbox"/>	<u>B</u>		Sources absent/not abundant
Nutrient Removal	<input checked="" type="checkbox"/>	<u>B, 9</u>		Sources absent/not abundant
Production Export	<input checked="" type="checkbox"/>			Poor continuity w/ downstream limits Export
Sediment/Shoreline Stabilization	<input checked="" type="checkbox"/>			No waterway/water body
Wildlife Habitat	<input checked="" type="checkbox"/>			Limited suitability due to intensity of active commercial/industrial development and traffic surrounding site
Recreation	<input checked="" type="checkbox"/>			Recreational attributes absent/low quality
Educational/Scientific Value	<input checked="" type="checkbox"/>			Educational attributes absent/low quality
Uniqueness/Heritage	<input checked="" type="checkbox"/>			Common wetland type, other attributes absent/low quality
Visual Quality/Aesthetics	<input checked="" type="checkbox"/>			Aesthetic attributes absent/limited/low quality
ES Endangered Species Habitat	<input checked="" type="checkbox"/>			Not present (ME FFW & USFWS)
Other				

Notes: \* Refer to backup list of numbered considerations.

# Wetland Function-Value Evaluation Form

Wetland I.D. E  
 Latitude 44°27'N Longitude 68°54'W  
 Prepared by: Cole Polansky Date 10/2010-5/2011  
 Wetland Impact:  
 Type PSS1 Area 0.13 Ac

Total area of wetland ± 0.5A Human made? Altered Is wetland part of a wildlife corridor? No or a "habitat island"? No  
 by Pipeline  
 Adjacent land use Industrial/Commercial Distance to nearest roadway or other development < 200'  
 Dominant wetland systems present PFD1/PSS1 Contiguous undeveloped buffer zone present Rate 1, Station Area  
Residential on 3 sides  
 Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? BOTTOM  
 How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Evaluation based on:  
 Office  Field   
 Corps manual wetland delineation completed? Y  N

Function/Value	Suitability Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<input checked="" type="checkbox"/>			Underlain by impermeable marine sediments. Not on or near an aquifer mapped by Maine Geological Survey
Floodflow Alteration	<input checked="" type="checkbox"/>			Small watershed lacking vulnerable property that buffers tide/water and is not within a FEMA mapped flood plain
Fish and Shellfish Habitat	<input checked="" type="checkbox"/>			Connections to waterway/water body is absent/restricted and water depth is inadequate.
Sediment/Toxicant Retention	<input checked="" type="checkbox"/>			Limited source/absent
Nutrient Removal	<input checked="" type="checkbox"/>			Sources absent/not abundant
Production Export	<input checked="" type="checkbox"/>			No established connection downstream for transport
Sediment/Shoreline Stabilization	<input checked="" type="checkbox"/>			Waterbody/waterway not present.
Wildlife Habitat	<input checked="" type="checkbox"/>			Limited suitability due to intensity of active commercial/industrial development and traffic surrounding site
Recreation	<input checked="" type="checkbox"/>			Recreational attributes absent/low quality
Educational/Scientific Value	<input checked="" type="checkbox"/>			Educational attributes absent/low quality
Uniqueness/Heritage	<input checked="" type="checkbox"/>			Common wetland type, other attributes absent/low quality
Visual Quality/Aesthetics	<input checked="" type="checkbox"/>			Aesthetic attributes absent/limited/low quality
ES Endangered Species Habitat	<input checked="" type="checkbox"/>			Not present (ME FFW & USFWS)
Other				

Notes: \* Refer to backup list of numbered considerations.

## **ATTACHMENT 13. WETLAND COMPENSATION**

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### **13.1 Proposed Compensation**

As discussed at the March 29, 2011 pre-application meeting, DCP is proposing to utilize In Lieu Fee to compensate for the unavoidable impacts presented above. Based on impact rates established for Waldo County and a total of 2.00 acres of direct wetland impact plus 0.04 acres of secondary impact, the proposed In Lieu Fee would be \$305,835. Compensation for the secondary impact was calculated at a rate of 15% of the per acre rate for direct impacts. This compensation amount will be adjusted based on final impact numbers once site grading is complete, although a significant change from the 2.04-acre total is not expected.

DCP is working with the Town of Searsport to identify a culvert replacement or similar project to serve as additional mitigation for the proposed stream impacts. Specific information regarding supplemental mitigation will be provided if and when a suitable project is found.

## **ATTACHMENT 14. EXISTING SCENIC AND AESTHETIC USES**

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### **14.1 Introduction**

Standard 1 in Section 480-D of the NRPA requires an applicant to demonstrate that a proposed activity will not unreasonably interfere with existing scenic and aesthetic uses. The process for evaluating impacts to existing scenic and aesthetic uses resulting from activities “*in, on over or adjacent*” to natural resources subject to the NRPA is described in Chapter 315. “Scenic resources” encompass “*public natural resources or public lands visited by the general public, in part for the use, observation, enjoyment, and appreciation of natural or cultural visual qualities. The attributes, characteristics, and features of the landscape of a scenic resource provide varying responses from, and varying degrees of benefits to, humans.*” (Ch 315 §5H).

The types of “scenic resources” in the project vicinity that are regulated by the NRPA are identified on the *Visual Evaluation Field Survey Checklist*, attached as Appendix 14A of this application. In particular, four NRHP-listed properties and two other previously-surveyed properties that are contributing resources to Searsport’s East Main Street Historic District were identified within a one-mile APE of the project site. Eleven other properties within the APE were determined to be potentially eligible for listing on the NRHP. The only other resource(s) meeting the Chapter 315 definition of a scenic resource within the APE are Long Cove and Penobscot Bay since they are considered part of the Atlantic Ocean.

### **14.2 Existing Land Use and Scenic Quality**

The existing visual quality of the area within the DCP Terminal viewshed has two major elements: (1) the ongoing industrial, commercial and recreational marine activities on Penobscot Bay, most notably the heavy shipping traffic utilizing the two existing piers serving Sprague Energy and Irving Oil at the Mack Point Terminal, and (2) the existing commercial development and related tourism and traffic mixed with residential development along this portion of US Route 1. The truck traffic and land-based activities at the Sprague and Irving facilities, an Irving Oil gas station and convenience store, as well as restaurants, motels and other commercial establishments dominate the immediate area around the proposed site. These existing land uses and activities have been present in this area for many years, and the area has continued to benefit from its considerable scenic quality both on the water and on land.

A detailed description of the facilities and related activities proposed by DCP is provided in Attachment 1 of this application. The surveys and analysis completed to evaluate the visual impact of the proposed terminal on existing scenic resources is described and evaluated in the following sections.

### **14.3 Visual Impact Assessment Methodology**

#### **14.3.1 Research of Existing Documentation**

A review of MHPC records to determine if historic properties that are listed on the National Register of Historic Places (NRHP) are located within a one-mile APE from the proposed terminal was completed and an architectural field survey of other structures greater than 50 years old was conducted to determine if any of those properties are potentially eligible for listing on the NRHP. In addition, the following GIS data sources and data layers were searched for potential scenic resources as defined in Chapter 315.

1. Maine Office of GIS:
  - a. Geographic Name Information System (GNIS) datalayer
  - b. Maine Conserved Lands datalayer (Maine land in federal, state, municipal and non-profit ownership with easements)
2. National Registry of Natural Landmarks, June 2009, National Park Service
3. Maine Department of Conservation:
  - a. Parks and Public Reserved Land, [www.state.me.us/doc/parks/programs/db\\_search/index.html](http://www.state.me.us/doc/parks/programs/db_search/index.html)
  - b. Maine Natural Areas Program Ecological Reserves, <http://www.maine.gov/doc/nrimc/mnap/reservesys/index.htm>
4. Navigable Waters of the United States in New England, US Army Corps of Engineers New England District
5. National Park Service listings of national parks and national trails  
<http://www.nps.gov/state/me/index.htm?program=parks>
6. National Wildlife Refuges in Maine, US Fish & Wildlife  
<http://www.fws.gov/refuges/profiles/ByState.cfm?state=ME>

#### **14.3.2 Viewshed Analysis**

A Viewshed Analysis encompassing a three-mile radius surrounding the project was performed. This evaluation utilized a standard 10-meter resolution USGS digital elevation model (DEM) in order to establish baseline elevations within the Project area. To further enhance the accuracy of the viewshed model, landcover data at 5 meter resolution was obtained from the Maine Office of GIS. Deciduous and coniferous mature tree data was extracted from this dataset and processed as a visual impediment layer to be included with the base DEM. This vegetation layer was additionally cross-checked against more recent leaf-on aerial photography of the study area using high resolution 2-foot aerial imagery dated 2003 to 2005. In some cases, there were differences in tree cover observed on the aerial photograph that were not present within the Maine landcover data, and the vegetation layer was subsequently adjusted.

Following the cross-check of data, the vegetated tree layer was then assigned a height of 35-feet, as an average conservative height recorded by on-site field measurements. The x, y and z data of the Project components were then incorporated into the model. These data were controlled within the model to ensure that the surface elevation and the vertical offsets of the facility components were embedded properly against the vegetation. The viewshed model was further developed with the assumption that the project would not be visible to a viewer who is standing amongst trees in a forested area. The final resulting output grid identified those areas from which viewers would potentially see all or some part of the project. The Viewshed Analysis is provided in Appendix 14A.

#### **14.3.3 Photo-simulations**

Specific protocol for photo-documentation was followed for this effort, which included the use of a tripod, global positioning system (GPS) Trimble GEOXT Unit, and on-site references such as trees, fenceposts, street signs, or telephone poles, to record the accurate location of the vantage point and x, y, z of horizontal and vertical reference locations on the project site. A digital rangefinder was used to obtain vertical heights of high point references.

To create visual simulations, MAX 3DS 9 software was used to build a three dimensional model of the project according to engineering specifications in a geo-referenced environment. The model was then developed to position the viewer at the selected vantage point. All of these elements and parameters are entered or created within the visualization software to simulate the conditions of the project layout as well as the camera parameters of the photograph, and location and orientation of the photograph. These perspective views are then superimposed on site photographs to present a visual representation of the proposed project. For a given vantage point, the visualization software is capable of providing and adjusting a camera view that matches that of the actual photograph. Terrain modeling using elevations of the vicinity was also performed in order to provide a check for horizontal and vertical placement of the project. The x, y, z reference points and terrain modeling were further used to refine the position of the facility model within the digital photographic image. As such, relative dimensions in the model are proportionally represented.

Photographs were taken using a digital SLR camera set to a 50 millimeter (mm) equivalent focal length at selected viewpoints in order to document baseline conditions of the project site. This focal length most closely approximates the view of typical human eyesight.

#### **14.4 Conclusions**

The screening of potential visual impacts from the terminal facilities located on the upper parcel will be achieved through using a combination of existing and proposed topography and forest vegetation. The existing topography of the upper parcels drops significantly between U.S. Route 1 and the shoreline. This downward slope between U.S. Route 1 and the shoreline will limit views of the project from the south along U.S. Route 1. In addition, the base of the largest structure at the facility, the bulk storage tank, has been established at as low an elevation as feasible. Views of the project are further limited by retaining as much of the existing tree cover as can be allowed by facility safety and security requirements. Visual screening will also be enhanced in most directions by existing tree cover on surrounding properties.

##### **14.4.1 Historic Structures**

As described in Attachment 11 of this application, in response to DCP's initial consultations with the MHPC an Architectural Survey Report was prepared to address potential impacts to historic structures within the project's APE. The Architectural Survey Report, which includes the Viewshed Analysis and photo-simulations, has been submitted to the MHPC for its review and concurrence. The only potential impacts found from the proposed project are minor visual impacts to three potentially NRHP-eligible structures. The partial, screened views of the project from these locations are not considered to alter the characteristics of the properties that qualify them for listing on the NRHP. MHPC's response to the findings in the Architectural Survey Report will be provided as soon as it is available.

##### **14.4.2 Other Scenic Resources**

Only three additional scenic resources were identified within the three-mile radius used for the Viewshed Analysis in addition to the NPHP-listed and NRHP-eligible properties. They are: Long Cove and Penobscot Bay, which are part of the Atlantic Ocean, Mosman Park, a municipal park near downtown Searsport, and Moose Point State Park, located near the Searsport/Belfast town line.

Moose point State Park is at the three-mile limit of the analysis completed and, therefore, well outside the one-mile APE selected for more detailed evaluation of visual impacts. While the Viewshed Analysis indicates it may be possible that the very top of the bulk storage tank dome could be visible at some locations right along the shoreline within the Park, it would be very hard to distinguish the tank at that distance considering the intervening trees and topography that would effectively screen it from view.

Mosman Park is approximately one-third mile outside the one-mile APE. While again, the Viewshed Analysis indicates it may be possible that the top of the bulk storage tank dome could be visible from a few locations at this Park, the intervening houses and other buildings and tree cover, especially during the warmer months when the trees are leafed out, will provide effective screening for all but a very small portion of the tank, if that. Should the top of the storage tank dome actually be visible, its effect on the view from the Park, which is typically to the south and southeast out into the Bay, not overland to the northeast toward the project, would be minimal.

There are many areas within Long Cove and Penobscot Bay where components of the project, especially the bulk storage tank will be visible. To better evaluate the effect on the view from the water, a photo-simulation was prepared using a location on the shoreline of Sears Island as a representative view. The photo-simulation shows that approximately the top third of the bulk storage tank will be clearly visible from many points on the water, with less obvious views of a portion of the flare, the very top of the fire water storage tank, and perhaps some of the roof of the compressor building. Nevertheless, when taken into context with the existing development on Mack Point, the change in the view from this perspective is not dominating, and the quality of the view is not significantly diminished.

## **APPENDIX 14A**

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### **Visual Evaluation Checklist**

#### **Viewshed Analysis**

#### **Photo-simulation of View from the Water**

## MDEP VISUAL EVALUATION FIELD SURVEY CHECKLIST

(Natural Resources Protection Act, 38 M.R.S.A. §§ 480 A - Z)

Name of applicant: \_DCP Midstream Partners, LP Attn Becky Malloy\_ Phone: (303) 605-1961

Application Type: \_NRPA Tier 3 (freshwater wetlands and stream)\_

Activity Type: (brief activity description) LPG Terminal

Activity Location: Town: \_Searsport\_ Court: \_Waldo\_

GIS Coordinates, if known: \_44° 27' 50"N x 68° 54' 03"W\_

Date of Survey: \_April 2011\_ Observer: \_Colen R. Peters\_ Phone: (207) 879-1930 x122

### Distance Between the Proposed Visibility Activity and Resource (in Miles)

- |  |            | 0-¼                       | ¼-1                          | 1+                          |
|--|------------|---------------------------|------------------------------|-----------------------------|
| 1. Would the activity be visible from:   |            |                           |                              |                             |
| A. A National Natural Landmark or other outstanding natural feature?   | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| B. A State or National Wildlife Refuge, Sanctuary, or Preserve or a State Game Refuge?   | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| C. A state or federal trail?   | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| D. A public site or structure listed on the National Register of Historic Places?  | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| E. A National or State Park?   | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| F. 1) A municipal park or public open space?   | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| 2) A publicly owned land visited, in part, for the use, observation, enjoyment and appreciation of natural or man-made visual qualities?                 | <b>NO</b>  | <input type="checkbox"/>  | <input type="checkbox"/>     | <input type="checkbox"/>    |
| 3) A public resource, such as the Atlantic Ocean, a great pond or a navigable river?   | <b>YES</b> | <b>X</b>                  | <b>X</b>                     | <b>X</b>                    |
|  |            | (Long Cove/Penobscot Bay) |                              |                             |
| 2. What is the closest estimated distance to a similar activity?<br>(Sprague Energy and Irving Oil are also now at Mack Point Intermodal Cargo Terminal) | <b>X</b>   |                           | <input type="checkbox"/>     | <input type="checkbox"/>    |
| 3. What is the closest distance to a public facility intended for a similar use?<br>(Maine Port Authority's Mack Point Intermodal Cargo Terminal)        | <b>X</b>   |                           | <input type="checkbox"/>     | <input type="checkbox"/>    |
| 4. Is the visibility of the activity seasonal?<br>(i.e., screened by summer foliage, but visible during other seasons)                                   |            |                           | <input type="checkbox"/> Yes | <b>X</b> No                 |
| 5. Are any of the resources checked in question 1 used by the public during the time of year during which the activity will be visible?                  |            |                           | <b>X</b> Yes                 | <input type="checkbox"/> No |

- ✓ A listing of National Natural Landmarks and other outstanding natural features in the State of Maine can be found at: [www.nature.nps.gov/nnl/Registry/USA\\_map/states/Maine/maine.htm](http://www.nature.nps.gov/nnl/Registry/USA_map/states/Maine/maine.htm) . In addition, unique natural areas are listed in the Maine Atlas and Gazetteer published by DeLorme.  
(pink)
- ✓ Most Maine State and National Wildlife Refuges, Sanctuaries, and Preserves and State Game Refuges are listed in the Maine Atlas and Gazetteer published by DeLorme.
- ✓ Most State and federal trails are listed in the Maine Atlas and Gazetteer published by DeLorme. In addition, the Maine Department of Conservation maintains a list of state parks with trails that can be searched by county at: [www.state.me.us/doc/parks/programs/db\\_search/index.html](http://www.state.me.us/doc/parks/programs/db_search/index.html)
- ✓ Maine sites and structures listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, can be searched by town at: [www.cr.nps.gov/nr/research/nris.htm](http://www.cr.nps.gov/nr/research/nris.htm)
- ✓ In addition, State historic sites can be found at: [www.state.me.us/doc/parks/programs/db\\_search/index.html](http://www.state.me.us/doc/parks/programs/db_search/index.html) A partial listing of historic sites in Maine can be found in the Maine Atlas and Gazetteer published by DeLorme.
- ✓ A listing of Maine State Parks can be found at: [www.state.me.us/doc/parks/programs/db\\_search/index.html](http://www.state.me.us/doc/parks/programs/db_search/index.html) or in the Maine Atlas and Gazetteer published by DeLorme. Acadia National Park on Mount Desert Island is Maine's only National Park.

For guidance on completing this field survey checklist, please contact Licensing staff in the Division of Land Resource Regulation at the following offices:

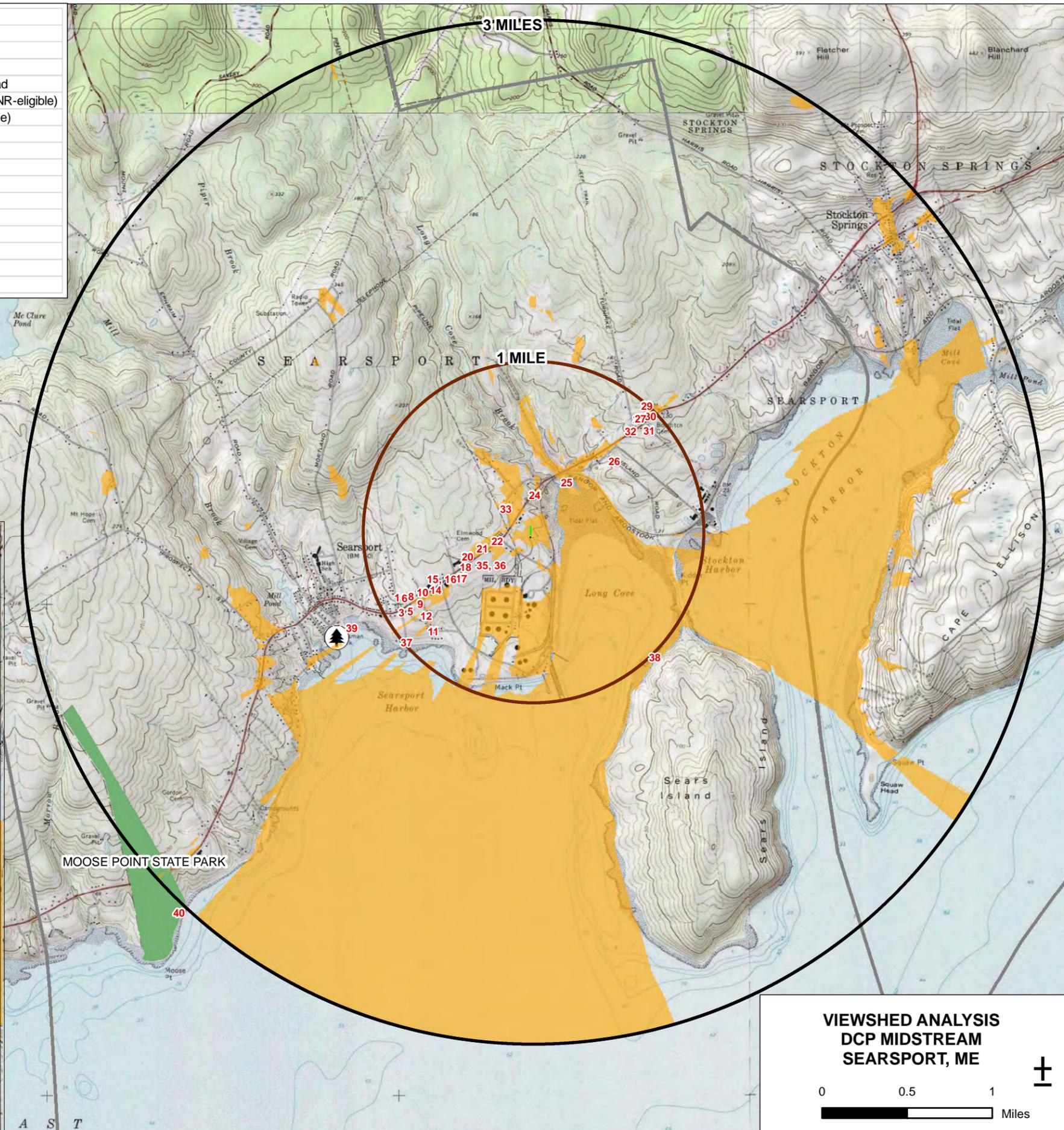
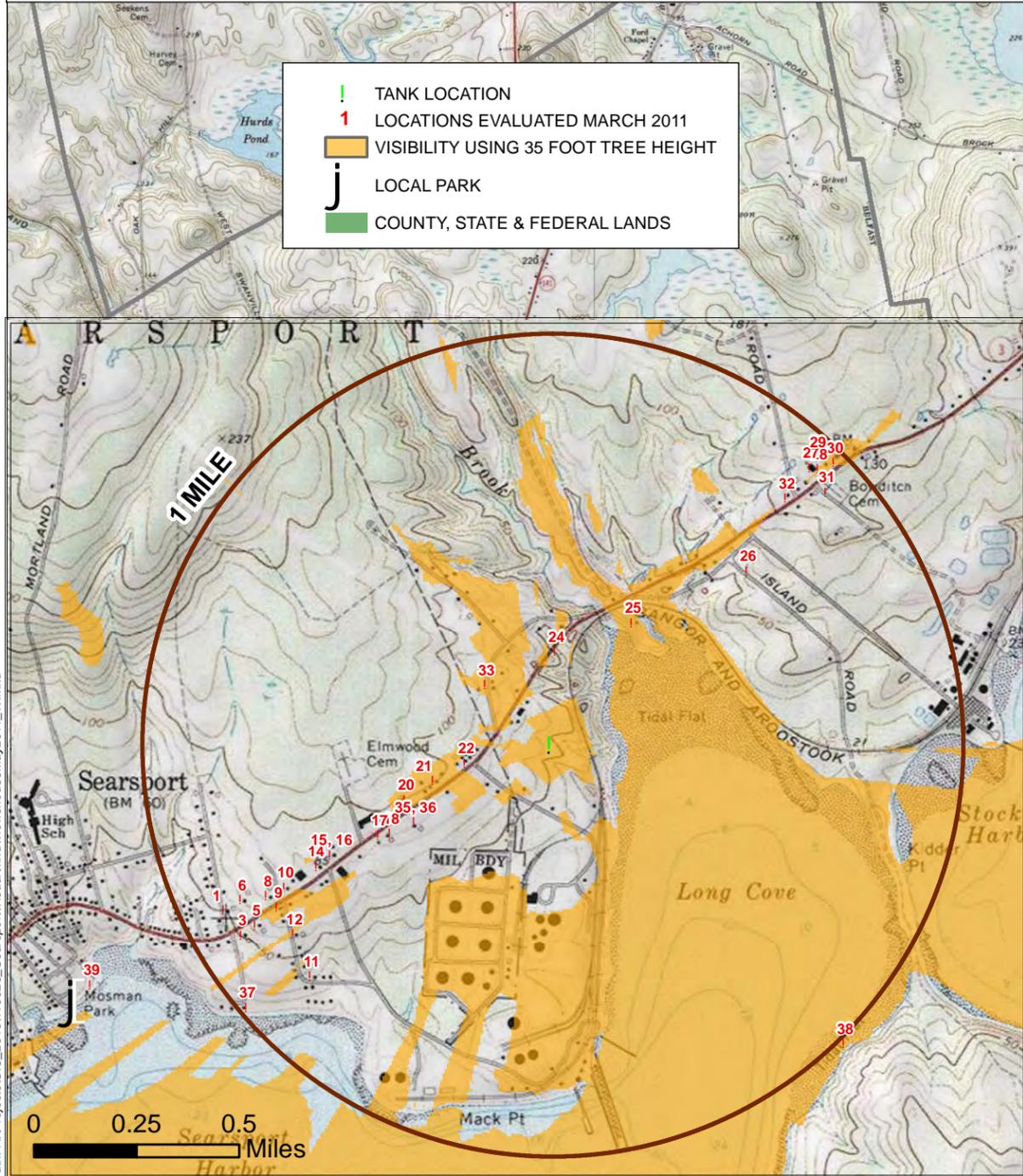
(Headquarters)  
 Central Maine Regional Office  
 17 State House Station  
 Ray Building, Hospital Street  
 Augusta, Maine 04333  
**(207) 287-3901** or  
 toll free at **1-800-452-1942**

Eastern Maine Regional Office  
 106 Hogan Road  
 Bangor, Maine 04401  
**(207) 941-4570** or  
 toll free at **1-888-769-1137**

Northern Maine Regional Office  
 1235 Central Drive  
 Presque Isle, Maine 04769  
**(207) 764-0477** or  
 toll free at **1-888-769-1053**

Southern Maine Regional Office  
 312 Canco Road  
 Portland, Maine 04103  
**(207) 822-6300** or  
 toll free at **1-888-769-1036**

ID	Site/Location	ID	Site/Location
1	Capt. John McGilvery House, 120 East Main Street (NR-listed)	22	J. Barre, 200 East Main Street (NR-eligible)
3	John P. Nichols House, East Main Street (NR-listed)	24	RR Station, 237 East Main Street
5	Albert V. Nickles, 127 East Main Street (NR-listed)	25	245 East Main Street
6	Jonathan C. Nickles, 126 East Main Street	26	Crary-Carlin-Coleman House, Sears Island Road
8	East Main Street, Capt. William McGilvery (NR-listed)	27	2nd Congregational Church, East Main Street (NR-eligible)
9	East Main Street and Navy Street, House	28	L. N. Harriman, 326 East Main Street (NR-eligible)
10	Radcliff House, 140 East Main Street	29	Barn, 320 East Main Street
11	House, Navy Street and Navy Street Extended	30	P. Griffin Jr., 328 East Main Street (NR-eligible)
12	8 Navy Street (NR-eligible)	31	Bowditch Cemetery, East Main Street
14	152 East Main Street	32	Park House, 308 East Main Street (NR-eligible)
15	B. Simpson House, 156 East Main Street (NR-eligible)	33	Trent House, Old US 1 (NR-eligible)
16	156 East Main Street, Barn	35	A. Nichols, East Main Street
17	W. Nichols, 167 East Main Street	37	Edge historic district (NR-listed)
18	A. Nichols, 171 East Main Street (NR-eligible)	38	Sears Island
20	N.M. Harmanns, 182 East Main Street (NR-eligible)	39	Mosman Park
21	N. Porter, 190 East Main Street (NR-eligible)	40	Moose Point State Park



! TANK LOCATION  
 1 LOCATIONS EVALUATED MARCH 2011  
 VISIBILITY USING 35 FOOT TREE HEIGHT  
 j LOCAL PARK  
 COUNTY, STATE & FEDERAL LANDS

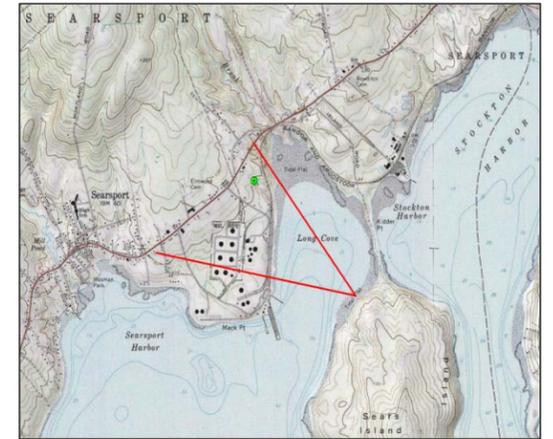
**VIEWSHED ANALYSIS**  
**DCP MIDSTREAM**  
**SEARSPORT, ME**

0 0.5 1 Miles

Path: R:\Projects\GIS\_2010\179023\_Searsport\Visual\mxd\Views\shed35May2011\_W.mxd  
 Date: 5/11/2011



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



PHOTOSIMULATION  
DCP MIDSTREAM  
SEARSPORT, ME

VIEWPOINT 38 – PROPOSED CONDITIONS