MAINE POWER RELIABILITY PROGRAM

A CENTRAL MAINE POWER COMPANY PROGRAM

BUCKSPORT, MAINE
LAND USE PERMIT APPLICATION

Section 3023 and Section 254 Transmission Line Construction
Section 388 Transmission Line Rebuild
and
Sections 205 and 65 Double Circuit Tower Separation

Prepared for:

Central Maine Power Company
83 Edison Drive
Augusta, Maine 04336

Prepared by:

TRC

TRC Engineers, LLC
14 Gabriel Dr.
Augusta, Maine 04330

June, 2010

Application Form

TOWN OF BUCKSPORT
APPLICATION FOR A
LAND USE/BUILDING PERMIT
COMMERCIAL & NONCOMMERCIAL LAND USES
(EXCEPT HOME-BASED BUSINESSES)

APPLICANT INFORMATION

NAME: TRC Engineers, LLC, c/o Douglas Ide (Agent for Central Maine Power Co., Inc.)
MAIL ADDRESS: 14 Gabriel Drive
Augusta, ME 04330
HOME PHONE: _____ WORK PHONE: (207) 620-3836

LOCATION OF PROPOSED LAND USE/BUILDING PROJECT: TAX MAP 22 et seq. LOT 05 et seq.

STREET ADDRESS: CMP transmission line corridors (varies)

LOT SIZE: ~97 ACRES STREET FRONTAGE: varies FT. SHORE FRONTAGE: 500 FT.

IS THE APPLICANT THE OWNER OF THE ABOVE-DESCRIBED LOT? ☒ YES ☐ NO

IF THE APPLICANT IS NOT THE PROPERTY OWNER, THEN THE PROPERTY OWNER MUST PROVIDE WRITTEN AUTHORIZATION FOR THE APPLICANT TO CONDUCT THE PROPOSED LAND USE ACTIVITY ON THE PROPERTY. THE AUTHORIZATION MUST BE SUBMITTED WITH THIS APPLICATION.

EVIDENCE OF THE PROPERTY OWNER'S RIGHT, TITLE OR INTEREST TO THE PROPERTY MUST ALSO BE SUBMITTED.

THE EXISTING LAND USE ON THE PROPERTY IS: (CHECK WHERE APPLICABLE)

☐ RESIDENTIAL ☒ COMMERCIAL ☐ NONCOMMERCIAL (NONPROFIT, GOVERNMENTAL)
☐ AGRICULTURE ☐ UNDEVELOPED

THE APPLICANT REQUESTS APPROVAL TO: (CHECK WHERE APPLICABLE)

☐ ESTABLISH A LAND USE ON UNDEVELOPED PROPERTY
☐ ADD A LAND USE TO A DEVELOPED PROPERTY
☐ REPLACE A LAND USE WITH ANOTHER LAND USE
☐ MOVE A LAND USE TO A DIFFERENT LOCATION ON THE PROPERTY
☒ EXPAND A LAND USE
☐ REESTABLISH A LAND USE

☒ CONSTRUCT A NEW STRUCTURE ☐ INSTALL A MANUFACTURED STRUCTURE
☐ CONSTRUCT AN ADDITION ☐ RENOVATE A STRUCTURE
☐ REHABILITATE A STRUCTURE ☐ RELOCATE A STRUCTURE
☐ DEMOLISH OR REMOVE A STRUCTURE

PLEASE PROVIDE A DETAILED DESCRIPTION OF THE PROPOSED PROJECT. FOR NEW STRUCTURES OR ADDITIONS, PLEASE PROVIDE DIMENSIONS AND TYPE OF OCCUPANCY. A FLOOR PLAN IS ALSO REQUIRED.
Please see attached application text.

TOTAL FLOOR AREA OF PROPOSED CONSTRUCTION: zero (0) SQ. FT.
TOTAL FLOOR AREA OF PROPOSED RENOVATED OR REHABILITATED SPACES: zero (0) SQ. FT.

ESTIMATED COST OF PROPOSED LAND USE ACTIVITY (EXCLUDING PROPERTY ACQUISITION COSTS): $ 7,861,000 (approx.)

(CONTINUED ON PAGE 2)

THE PROPOSED PROJECT WILL INCLUDE THE FOLLOWING SITE IMPROVEMENT ACTIVITIES. (CHECK WHERE APPLICABLE)

- ☒ CLEARING OF VEGETATION
- ☒ EARTH MOVING, FILLING OR EXCAVATION
- ☐ STORMWATER DRAINAGE
- ☐ PUBLIC SEWER CONNECTION
- ☐ WATER WELL
- ☐ DRIVEWAY ENTRANCE
- ☐ LANDSCAPING, BUFFERS, SCREENING
- ☒ BLASTING OF LEDGE (possible)
- ☐ SEPTIC SYSTEM
- ☐ PUBLIC WATER CONNECTION
- ☐ ELECTRIC SERVICE
- ☐ OTHER (DESCRIBE)

IF THE PROPOSED LAND USE REQUIRES A NEW OR REPLACEMENT SEPTIC SYSTEM, A DESIGN PREPARED BY A QUALIFIED PROFESSIONAL MUST BE SUBMITTED WITH THE APPLICATION. IF THE APPLICANT PROPOSES TO USE AN EXISTING SEPTIC SYSTEM, EVIDENCE MUST BE SUBMITTED VERIFYING THAT THE SYSTEM IS SUITABLE FOR THE USE AND NOT MALFUNCTIONING.

IF THE PROPOSED LAND USE REQUIRES A NEW DRIVEWAY ENTRANCE OR A RECLASSIFICATION OF AN EXISTING ENTRANCE, AN ENTRANCE PERMIT MUST BE SUBMITTED WITH THE APPLICATION.

IF YOU ARE SEEKING APPROVAL TO CONDUCT A NEW COMMERCIAL OR NONCOMMERCIAL LAND USE ON UNDEVELOPED PROPERTY, PLEASE BE ADVISED THAT THESE USES ARE SUBJECT TO LEVEL 2 REVIEW BY THE PLANNING BOARD, AS IDENTIFIED IN SECTION 9.5 OF THE TOWN'S LAND USE ORDINANCE. A SITE PLAN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 11.5 OF THE LAND USE ORDINANCE MUST BE SUBMITTED WITH THIS APPLICATION. PLEASE ALSO COMPLETE PAGE 4 OF THIS APPLICATION.

IF YOU ARE SEEKING APPROVAL TO OCCUPY AN EXISTING DEVELOPED PROPERTY OR STRUCTURE WITH A COMMERCIAL OR NONCOMMERCIAL LAND USE, OR TO MAKE CHANGES TO AN EXISTING COMMERCIAL OR NONCOMMERCIAL LAND USE, PLEASE BE ADVISED THAT, UPON RECEIPT OF YOUR APPLICATION, THE LEVEL OF REVIEW WILL BE IDENTIFIED BY THE CODE ENFORCEMENT OFFICER IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 10 OF THE TOWN'S LAND USE ORDINANCE. A SITE PLAN PREPARED FOR LEVEL 1 REVIEW MUST BE SUBMITTED WITH THIS APPLICATION, EXCEPT FOR ANY PROPOSED CHANGE THAT IS CURRENTLY IDENTIFIED IN SECTION 10 AS BEING SUBJECT TO LEVEL 2 REVIEW. SEE PAGE 3 FOR INFORMATION ON SITE PLAN REQUIREMENTS FOR LEVEL 1 REVIEW.

IF THE CODE ENFORCEMENT OFFICER DETERMINES THAT LEVEL 2 REVIEW IS REQUIRED FOR A PROPOSED CHANGE, A SITE PLAN PREPARED AS DESCRIBED ABOVE FOR A NEW COMMERCIAL OR NONCOMMERCIAL LAND USE MUST BE SUBMITTED. YOU WILL BE NOTIFIED OF THIS REQUIRMENT.

A COPY OF THE LAND USE ORDINANCE MAY BE FOUND ON THE TOWN'S WEBSITE (BUCKSPORT.BIZ) OR OBTAINED AT THE TOWN OFFICE FOR A FEE.

SOME LAND USES MAY ALSO REQUIRE OTHER LOCAL, STATE AND/OR FEDERAL PERMITS OR APPROVALS. PLEASE CONTACT THE CODE ENFORCEMENT OFFICER FOR FURTHER INFORMATION.

AS PROPERTY OWNER OR AUTHORIZED AGENT OF THE PROPERTY OWNER, I CERTIFY THAT ALL THE INFORMATION CONTAINED WITHIN THIS APPLICATION, INCLUDING ATTACHMENTS, IF ANY, IS ACCURATE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

D Robe
OWNER OR AUTHORIZED AGENT

DATE 6/11/10

OWNER OR AUTHORIZED AGENT

DATE

PLEASE RETURN THIS APPLICATION AND ATTACHMENTS TO: BUCKSPORT TOWN OFFICE, 50 MAIN STREET
TEL. 207-469-7368 FAX 207-469-7369 P.O DRAWER X, BUCKSPORT, ME 04416

APPLICATION REVISED ON 1-14-10 OFFICE USE

DATE REC. _____ ZONING _____

LAND USE DESCRIPTION _____

REQUIRED REVIEW ___LEVEL 1 ___LEVEL 2 FEE _____

ABUTTER NOTICE SENT ON _____ REVIEW DATE _____

NONCONFORMING CONDITION _____

SITE PLAN

A SITE PLAN FOR LEVEL 1 REVIEW DOES NOT NEED TO BE DRAWN TO SCALE. THE SITE PLAN MAY BE DRAWN BELOW OR SUBMITTED ON A SEPARATE SHEET. THE SITE PLAN MUST INCLUDE THE FOLLOWING INFORMATION, AS APPLICABLE:

- LOT LINES AND LOCATION OF STREET PROVIDING ACCESS TO THE LOT
- LOCATION OF EXISTING STRUCTURES ON THE LOT
- LOCATION OF PROPOSED NEW CONSTRUCTION OR INSTALLATION ON THE LOT
- LOCATION OF DRIVEWAY.
- LOCATION OF SEPTIC SYSTEM & WELL, IF ANY.
- LOCATION OF PUBLIC SEWER AND WATER LINES, IF ANY.
- SETBACK OF STRUCTURES FROM LOT LINES & WATERBODIES OR WETLANDS, IF ANY.

Please see Exhibits 1, 2, and 3, attached to the application.

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH ANY SITE PLAN THAT IS SUBJECT TO LEVEL 2 REVIEW. PLEASE CHECK EACH BOX TO INDICATE THAT THE REQUIREMENT HAS BEEN MET ON THE SITE PLAN, IF APPLICABLE.

Site plans must comply with the following basic format:

- [X] Black ink on white paper at a scale of one inch equals not more than 100 feet. 10 copies must be provided.
- [X] Paper size no larger than 24" x 36", with a margin of at least one inch, and two inches on the left side for binding purposes.

Site plans must include the following basic identifying information:

- [X] The project name, the name of the municipality, name and address of the record owner of the property being developed and the name and address of the project developer.
- [X] Districts affecting the lot to be developed and contiguous lots.
- [ ] Name, address, license number, seal and signature of the surveyor providing surveying data. *NOTE: Waiver requested--see application cover letter.*
- [X] Name, address, license number, seal and signature of the engineer providing engineering data, if any.
- [X] Tax map and lot identification of the property.
- [X] A location map based on a U.S.G.S. topographic map.
- [X] A north point arrow and a graphic scale.

Site plans must include the following basic dimensional information:

- [X] Size, in acres, of the property.
- [ ] Bearings and lengths of the boundary lines of the property to be developed, as identified by a standard boundary survey. *NOTE: Waiver requested--see application cover letter.*
- [X] Width of street frontage and shoreline frontage.
- [X] Footprint and height dimensions of buildings and other structures.
- [X] Setback dimensions of buildings and other structures.
- [X] Percent of lot coverage by structures and non-vegetated surfaces in any shoreland district.

Site plans must include identification of the following natural features of the property to be developed, as may be applicable:

- [X] Topography, shown as contour lines at intervals not to exceed 20 feet
- [X] Cleared or natural openings in the vegetation, including timber harvests.
- [X] Water bodies, including ponds, rivers, streams, tributary streams and wetlands.
- [X] The location of essential habitat for rare, threatened and endangered plants and animals.
- [X] Approximate locations of ledge outcroppings.
- [X] Surface water drainage flow patterns.
- [X] The location of significant sand and gravel aquifers.
- [X] The location of any other natural features or unique site elements.

Site plans must include the following site development information, as may be applicable:

- [X] The location of proposed and existing structures.
- [X] The location and size of sewer and water utilities, including manholes and hydrants.
- [X] The location of power, telephone and cable utilities including the location of utility poles for above-ground service.
- [X] The location of proposed utility service connections.
- [X] The location, width, typical cross-section, grades and profiles of all proposed streets and sidewalks.
- [X] The location of street lamps.
- [X] The location of subsurface wastewater disposal system soil test pits.
- [X] A stormwater management plan, including erosion and sedimentation control measures, and the location and dimensions of culverts, ditches, catch basins and curbing.
- [X] The location and right-of-way width of any street providing direct access to the property to be developed.
- [X] The location, dimensions and purpose of any existing or proposed easement.
- [X] The location of parking areas.
- [X] The location of any pedestrian ways, open spaces, parks and other areas to be reserved for or dedicated to public use and/or ownership.
- [X] A planting plan and schedule keyed to the site plan indicating the general species and sizes of trees, shrubs, and other plants to be planted on the site.

Agent Authorization Letter

Introduction

This application is divided into the following four parts.

- Part A: Project Overview and Description, beginning on page 2.
- Part B: Land Use Application, beginning on page 5.
- Exhibits: Beginning on page 17.

The Maine Public Utilities Commission has issued a Certificate of Public Convenience and Necessity and The Maine Department of Environmental Protection has issued a Site Location of Development and Natural Resources Protection Act permit for the proposed project. A permit application to the Army Corps of Engineers has been submitted and is under review by that agency.

PART A:
PROJECT OVERVIEW AND DESCRIPTION

Maine Power Reliability Program Description

The Maine Power Reliability Program (MPRP) is a project by Central Maine Power Company (CMP) to upgrade Maine's bulk power system. The vast majority of Maine's bulk power transmission system was placed into service in the early 1970s and is now reaching the limits of its ability to meet the growing electrical demand of Maine customers. Since the last major transmission infrastructure was completed more than 30 years ago, the patterns of both available generation and customer load have shifted significantly. For example, population has become more concentrated in the southern part of the state, while the generation needed to serve that load is now more distant and dispersed. When these pattern changes are combined with the increasing peak demand, the current transmission infrastructure in Maine will, in very few years, become inadequate. In addition, the reliability and security standards mandated by law and administered by the North American Electric Reliability Corporation (NERC), the Northeast Power Coordinating Council, Inc. (NPCC), and ISO New England (ISO-NE) have changed significantly in recent years. CMP must upgrade its bulk power system with this proposed project in order to meet the mandatory standards and to provide reliable electric service to Maine customers into the future.

CMP's 345 kV transmission system was built and put into service in 1971. Since then power consumption has more than doubled. In recent years, both CMP and ISO-NE have identified certain reliability issues with the 345 kV transmission system which need to be assessed and addressed.

In January of 2007, the MPRP began a comprehensive needs assessment of CMP's bulk power transmission system. The study included a 10-year forecast to evaluate the system in Maine, including a review of system reliability and performance under various system conditions and operating scenarios, as well as a needs assessment to ensure a reliable transmission system in the most cost-effective manner possible. The study identified a number of significant reliability issues with Maine's bulk transmission system, including insufficient 345 kV transmission

capacity, insufficient 115/345 kV transformation capacity, and insufficient transmission support and/or infrastructure in all regions served by CMP.

After completing the needs assessment, the MPRP team went to work to study possible solutions. This included both transmission and non-transmission alternatives, before designating its preferred solution.

CMP ultimately selected a primarily transmission solution (a small geographic area known as the South Portland loop will be addressed through non-transmission alternatives) based on a number of factors, including electrical performance, cost effectiveness, impacts to landowners, and Maine's environment under various forecasts of future conditions. The proposed solution consists of a network of 345 kV and 115 kV transmission lines and associated substations throughout CMP's service territory where particular needs were identified. The proposed transmission solution ranges from Eliot in the south, Rumford in the west, Warren and Searsport in the east, and Orrington and Pittsfield to the north. In all, MPRP will encompass nearly 80 Maine towns, and will require approvals from each of them. Many of those approvals have been granted already.

The proposed upgrades in Bucksport, outlined below, are a part of the MPRP and are intended to help improve the reliability, safety, and security of the bulk power transmission system in Maine, while at the same time meeting the increasing demands for electrical power.

Project Description in Bucksport

The part of the MPRP located in Bucksport involves work in two areas of the town.

Northwestern Portion of the Town

This transmission line corridor, which is referred to as Section 388, runs from the Orrington town line westerly to the Penobscot River. What follows is a description of the construction activities which will take place within the corridor.

- Rebuilding Section 388, an existing 345 kV transmission line. Section 388 will be removed from its existing structures and placed on 11 new H-frame structures which will be typically 75' above ground.[1] These structures will be installed on the southern side of the corridor. In order to achieve the necessary spacing requirements approximately 100' of additional right-of-way is being acquired by CMP for the easternmost portion of the corridor within Bucksport (see Exhibit 6 for Title, Right, and Interest information and Exhibits 2 & 3). At the Penobscot River crossing a steel lattice tower with concrete footing will be installed approximately 350' above ground in order to achieve the necessary clearances across the river.

[1] Please note that structure heights will vary due to varying terrain and the need to achieve spans that will avoid or minimize impacts to natural resources. Typical above-ground structure heights are described below, although some structures may exceed those heights in specific instances. See the attached table (Exhibit 4) and maps (Exhibit 3) for a description of the height and type of each structure associated with the project.

- Constructing Section 3023, a new 345 kV transmission line, roughly near the center of the existing transmission line corridor. From the Orrington town line westerly for a distance of approximately 0.3 miles, the new Section 3023 will be installed on three existing Section 388 structures, numbered 435, 436, and 437. From that point to the Penobscot River crossing, a distance of approximately 1 mile, 11 new structures will be installed. Nine of these structures will be H-frame structures which are typically 75' above ground. As Section 3023 nears the Penobscot River, two new steel lattice towers with concrete footings will be installed, similar in size and style to the existing Section 388 lattice towers. Structure 486 will be 124' above ground, and Structure 487, at the river crossing, will be 360' above ground. These steel lattice towers are needed to achieve the necessary clearances for crossing the river.

- Constructing Section 254, a new 115 kV transmission line. From the Orrington town line westerly for approximately 0.6 miles, Section 254 will be constructed on 5 H-frame structures which are typically 55' above ground. These structures will be installed on the northern side of the corridor. From that point to the Penobscot River crossing, a distance of approximately 0.5 miles, Section 254 will be installed on the existing Section 388 lattice tower structures.

- One existing Section 388 structure will be removed: #433.

- In order to operate the lines safely and reliably, trees within the transmission line corridor that are capable of growing tall enough to interfere with the transmission lines (so-called "capable species") will be cleared. Vegetation which does not interfere with the safe operation of the line will be allowed to remain.

Southwestern Portion of the Town

Here the transmission line corridor, which is known as Section 205, runs from the Bucksport substation northerly along the Penobscot River, then northeasterly into Orrington. The work described below encompasses only the first 0.4 miles of this line from the substation. No work is planned within the rest of this corridor within Bucksport.

This portion of the project involves what is known as a "double circuit tower separation". From the Bucksport substation north for approximately 0.4 miles Section 65 and Section 205, which are both 115 kV transmission lines, currently run on a single set of 3 steel lattice towers which are typically 100' above ground. These 3 lattice towers will be removed and Sections 65 and 205 will be separated onto two separate sets of structures. A total of 6 new structures will be installed, and they will be a mix of monopole and H-frame style structures ranging in height from approximately 130' above ground to approximately 56' above ground. Please see Exhibit 3 and Exhibit 4 for more detailed information. Section 17, a 34.5 kV distribution line which shares the right-of-way with Sections 65 and 205, will not be altered.

Town of Bucksport Ordinance Requirements

The project, as an Intrastate/Interstate Transmission Line, is considered an Industry use, as defined in Section 8.5.6 of the Ordinance. At a preapplication meeting with Bucksport Code

Enforcement Officer Jeff Hammond on April 12, 2010, it was determined that the project represents an expansion of an existing use, pursuant to Section 10.8.11 of the Ordinance. Mr. Hammond further determined that the project is subject to Level 2 review, pursuant to Section 10.8.11(2) of the Ordinance. Construction will take place in the following Districts:

- Sections 388, 3023, and 254 (northwestern portion of the town)

  This portion of the project is located in the Rural 2 (R2) and Route 15 Residential-Commercial (RT15RC) Districts. While the project area encompasses the Resource Protection Shoreland Overlay (RPO) District, there will be no construction activity within this District; the conductors will span the District.

- Sections 205 and 65 (southwestern portion of the town)

  This portion of the project is located entirely within the Industry Development District (ID).

Part B
Land Use Application

Section 12 General Land Use Standards

ENVIRONMENT STANDARDS

12.2 Soils

Based on the applicant's analysis of the Soil Survey Geographic Database compiled by the United States Department of Agriculture – Natural Resources Conservation Service, soils within the transmission line corridor will accommodate the proposed MPRP construction and maintenance activities. Soil constraints within the transmission line corridor will be managed and mitigated through implementation of erosion and sedimentation control measures (see Exhibit 7), proper site and project design, and special construction procedures.

The proposed project will be located, constructed, and maintained so as to avoid adverse environmental impacts, including severe erosion, mass soil movement, improper drainage, and water pollution. Temporary access ways for structure installation or removal will be established for use during the construction phase (see Exhibit 3). All access ways are temporary and will be removed once construction is complete. Grading will be limited to that which is necessary for the safe access of construction vehicles and workers. Areas where soils have been disturbed will then be mulched with hay. Vegetation will be allowed to reestablish itself once the temporary access ways have been removed, typically within one year of their installation.

Areas of excavation for the installation of structures will experience some soil disturbance. Once structures are placed in the holes, the holes are filled with the spoil. Topsoil, which will have been set aside during excavation, will be placed on top of the

spoil. Unused spoil will be transferred to an approved facility or will be removed, spread out in uplands, and mulched.

There will be no subsurface wastewater generated by the project.

12.3 Stormwater

After consultation with the Maine Department of Environmental Protection, which has issued a permit for the project, it was determined that a stormwater management analysis is not required for the transmission line portion of the MPRP. With the exception of the immediate area occupied by the support structures, there is no increase in impervious surface area associated with the proposed upgrades, therefore, there will be no significant storm water run-off generated from the project. All new construction will be designed to minimize storm water runoff from the site in excess of the natural predevelopment conditions.

Erosion and sedimentation control measures, described at Exhibit 7, will be used during construction of the project. Once construction is complete restoration activities are designed to restore the site contours to pre-construction conditions and to ensure that areas disturbed during construction will be revegetated. The corridor will become dominated by a scrub-shrub environment, similar to what currently exists in the cleared portion of the corridor. As a result, no stormwater storage facilities are planned as part of this project.

12.4 Erosion and Sedimentation

Exposed soils will be adequately protected from unreasonable erosion and sedimentation. CMP has developed a standard manual, "Environmental Guidelines for Construction and Maintenance Activities on Transmission line and Substation Projects" (2010), which it uses as a routine part of all transmission and substation projects (A copy of the manual is attached as Exhibit 7). This manual contains erosion and sedimentation control requirements, standards, and methods that will be used to protect soil and water resources during construction of the various MPRP components. The manual, which was developed in consultation with the Maine Department of Environmental Protection (DEP), is largely based on DEP's *Maine Erosion and Sediment Control BMPs*, dated March 2003 and DEP's Chapter 500 Stormwater Management Regulations, and contains specific Best Management Practices appropriate for electric transmission line and substation construction.

The project is designed to preserve the natural contours of the site to the greatest extent practical. There are no areas of steep slopes associated with the project area.

12.5 Surface and Subsurface Waters

CMP has developed a set of standards and practices which will ensure that surface and subsurface waters will be adequately protected from pollution. Possible threats posed by this project to the quality of surface and subsurface waters are very limited.

To minimize spill potential during construction, no fueling or maintenance of vehicles will be performed within 100 feet of wetlands, streams or other sensitive natural resources.

After construction, the electrical transmission line corridor is maintained to encourage the growth of scrub-shrub vegetation. Trees within the corridor that are capable of growing up into the conductors ("capable species") must be removed for safety and reliability reasons. CMP uses a selective herbicide program to treat an area once every four years to maintain an early successional stage of growth. Herbicide is selectively and individually applied (using a low-pressure backpack applicator) on a plant-by-plant basis to capable species to prevent growth (or re-growth of a cut plant) of individual plants. CMP does not use herbicides within 25 feet of any waterbody, wetland with standing water at the time of application, or significant vernal pool depression, or within 100 feet of any known well or spring. Crew forepersons are certified by the Maine Pesticide Control Board, and all herbicides are EPA registered. In addition, CMP will not store, mix, or load herbicides within 100 feet of any wetland or surface water. The selective use of herbicides within the transmission line corridor does not impose a threat to surface water or groundwater quality and will not impair designated uses or the water classification of any water body.

The project is not located within any shoreland district adjacent to a great pond or adjacent to a river or stream that flows to a great pond.

The project is not located within 250 feet of the boundaries of any significant sand and gravel aquifer that is identified in the Bucksport Comprehensive Plan.

There will be no permanent storage facilities for fuel, chemicals, chemical or industrial wastes, or biodegradable raw materials associated with the project.

12.6 Air Environment

Not applicable. No pollutants will be emitted into the air as a result of this project.

12.7 Wildlife Habitat

No significant wildlife habitat is located within the project area (see Exhibit 3), and no rare, threatened, or endangered species have been identified as occurring within the project area. The project is designed to avoid, and where unavoidable to minimize, impacts to wildlife habitat. The project is located entirely within and immediately adjacent to an existing transmission line corridor. Once the project is complete the area

will largely exhibit the prevailing natural characteristics of the existing transmission line corridor.

12.8 Clearing or Removal of Vegetation, Excluding Timber Harvesting

Trees may be removed from the RPO District at the point where the transmission line crosses the Penobscot River. The amount of clearing will be limited to that which is necessary for development of the project, and is generally limited to removal of "capable species". Non-capable species are allowed to remain to ensure that the corridor is vegetated, which prevents erosion and provides wildlife habitat. Unless required to create a safe working area, no grubbing (i.e., stump removal) will take place as part of the clearing operations. The cutting work will be performed using equipment typical of logging operations, including cable and hook skidders, forwarders, tree movers, chain saws, and logging trucks. In general all trees, saplings of capable species, and sometimes tall shrubs are cut at ground level. All root systems are left intact, as the ground is not grubbed or graded. All slash (i.e., limbs, tree trunks, wood chips, etc.) from the cutting operation is disposed of in accordance with the Maine Slash Law (12 M.R.S.A. § 9333). The remaining vegetation is typically composed of scattered growth of small shrubs of non-capable species and herbaceous plants. After initial clearing, the condition of these cleared areas generally resembles that of a high-quality forestry operation. Great care is taken to prevent rutting and erosion.

After construction is completed, non-capable species are allowed to grow to ensure that the corridor is vegetated, which prevents erosion and provides wildlife habitat. Over a relatively short period of time (generally within one calendar year), the newly cleared portions of the corridors will exhibit the early-successional habitat type that is typical of existing transmission line corridors in Maine.

Please see Exhibit 3.

SPECIAL AREA STANDARDS

12.9 Areas of Prehistorical and Historical Importance

Following consultation with the Maine Historic Preservation Commission (MHPC), CMP's qualified professional has conducted comprehensive investigations of archaeological resources along the entire scope of the Maine Power Reliability Program (MPRP). These surveys included Phase 0, Phase I, and where required by the MHPC Phase II pre-European contact archaeology and post-European contact (or Historic) archaeology (both subsurface) surveys. The MHPC has reviewed CMP's reports and has made the following determinations:

- The MHPC has determined that there are no pre-contact archaeological resources that are listed on or eligible for listing on the National Register of Historic Places (NRHP) within the project area in Bucksport.

- The MHPC has determined that there is one eligible post-contact archaeological site located within the project area in Bucksport. In consultation with the MHPC, CMP developed a Memorandum of Agreement regarding the avoidance, protection, and mitigation of eligible historic sites potentially impacted by MPRP, including the eligible site located in Bucksport. In accordance with the Agreement, CMP has located the transmission structures and temporary access road outside the boundaries of the archaeological site in Bucksport and has agreed to conditions to prevent disturbance of the ground in the vicinity of the eligible site from vehicles or vegetation removal. The Agreement also requires CMP to retain a qualified professional to monitor any work in this area to ensure the terms of the Agreement are followed.

- Following consultation with the MHPC, CMP's qualified professional also conducted comprehensive investigations for architectural resources along the entire scope of the MPRP. The purpose of the architectural surveys was to identify any historic structures, districts, or landscapes located within the area of MPRP's potential effect that are listed on or eligible for listing on the NRHP and, if so, to determine any potential adverse impacts on those resources from MPRP. The MHPC reviewed CMP's reports and has determined that there are no architectural resources within the vicinity of the project area in Bucksport listed, or eligible for listing, on the NRHP that would be adversely impacted by MPRP.

12.10 Areas of Scenic Value

Not applicable. The project area does not impact any scenic views at locations identified in the town's comprehensive plan.

12.11 Areas of Shoreline Access

Not applicable. The project area does not encompass any areas for public access to waterbodies or wetlands.

12/12. Areas of Flood Hazard

Not applicable. The project is not located within an area of flood hazard. While the project area crosses the Penobscot River, there will be no structures located within the flood hazard area; the conductors will span the area.

12.13 Areas of Unique Natural Character

Not applicable. The project area is not located within or adjacent to any area designated as a unique natural area identified in the Bucksport Comprehensive Plan.

LOCAL AREA STANDARDS

12.14 Development Patterns

In both project areas within the town the proposed project will be located within an existing transmission line corridor which already contains structures of a similar scale and style. Once construction is complete the area will exhibit site features much like those which currently exist. In the northwestern portion of the town (Sections 388, 254, & 3023) the transmission line corridor will be expanded in some areas through the acquisition of adjacent properties or through agreements with abutting property owners. Since these areas of expansion are directly adjacent to the existing transmission line corridor, the proposed development in these areas will be consistent with the scale and site features of the existing development.

12.15 Buffers and Screening

The upgrades proposed for Bucksport will be located entirely within or adjacent to existing transmission line corridors. Once the project is complete these areas will continue to exhibit characteristics that are already common to these areas.

In order to meet federal and industry safety and reliability standards, the transmission line corridor will be cleared of capable species. Once construction is complete vegetation will be allowed to reestablish itself and the corridor will become characterized by a shrub/scrub environment, similar to conditions which currently exist.

The project area in the southwestern portion of the town (Section 205/65) is located entirely within a heavily industrialized part of the town. There are no residences adjacent to the project area. The proposed upgrades will not cause any detrimental effects beyond its property lines.

The project area in the northwestern portion of the town (Sections 388/254/3023) is located in a heavily wooded rural area. Adjacent residential properties generally have dense vegetative buffers between the residences and the transmission line corridor. There will be minimal to no detrimental effect of the proposed project on these residences.

12.16 Electromagnetic Fields

Electric and magnetic fields, also known as electromagnetic fields or EMF, are produced by both natural and man-made sources that surround us in our daily lives. Man-made EMF is found wherever electricity is generated, delivered, or used, including power lines, wiring in homes, workplace equipment, electrical appliances, power tools, and electric motors.

Electric and magnetic fields can cause interference with certain communications devices such as radio and television signals. However, the existing transmission line,

which already generates EMF, is not currently associated with any interference with communications devices.

Once the project is complete, based on EMF modeling conducted by Dr. William Bailey of ExPonent, EMF levels are expected to either decrease significantly or increase only slightly at the edge of the ROW.

While EMF levels may rise somewhat in some locations as a result of the proposed upgrades, these new levels are not expected to adversely affect electromagnetic communications. This is due to the fact that both electric and magnetic field levels diminish significantly with distance from the source, which in this case are the electric power transmission lines. As a result EMF levels at the edge of the transmission line corridor will be significantly lower than at its midpoint, and lower still at locations farther from the edge of the corridor, such as homes and businesses. In addition, electric fields, which are more often associated with interference with communications devices, are easily blocked by objects such as fences, trees, shrubbery, and buildings. As a result the proposed project should not result in undue interference with electromagnetic communications.

A health concern that is sometimes expressed revolves around the electric and magnetic fields produced by transmission lines. As noted above, these fields are produced by any electric equipment or anything that carries electric current. The World Health Organization and numerous other scientific agencies around the world have studied the issue extensively. These studies have been unable to establish that electric and magnetic fields produced by transmission lines such as those being proposed as part of the MPRP cause any adverse health effects. There is no scientific basis to project any adverse health effects as a result of the electric and magnetic fields produced by transmission lines associated with this project.

12.17 Lighting

Not applicable. There is no lighting proposed as part of this project.

12.18 Noise

Noise levels generated by the project will not create detrimental effects. For electric transmission lines, audible noise (AN) is relative to conductor (wire) size. CMP has selected conductor sizes that under ideal, dry conditions are designed to be noise free. Under adverse weather conditions (e.g., very high humidity and storm conditions) these same conductors will emit only a slight crackling sound, usually quieter than the sound of the adverse weather conditions. AN is produced when protrusions on the conductor surface--particularly water droplets on or dripping off of the conductors--cause the electric field intensity at the conductor surface to exceed the breakdown strength of air, producing AN. This AN can be characterized as a hissing, crackling sound. Therefore, AN from transmission lines is typically a foul-weather/wet conductor phenomenon. Based on the modeling done by CMP's expert, Dr. William Bailey, it was determined

that the sound produced by the conductors at the edge of the transmission corridor right-of-way will be a maximum of about 40 decibels during foul weather (comparable to a quiet office) as the result of the proposed upgrades, usually quieter than the sound of the foul weather conditions themselves. AN levels will be lower than the anticipated maximum as one moves away from the edge of the right-of-way. Accordingly, the project will meet the DEP noise standard of 45 dBA at any residence and 55 dBA at the property line.

12.18 Odors

Not applicable. There will be no odors generated by the project.

12.19 Solar Gain

The project will not impact any passive or active solar energy collection.

12.20 Smoke and Dust

Not applicable. There will be no smoke or dust generated by the project.

12.21 Vibration

Not applicable. There will be no vibration generated by the project.

PUBLIC SAFETY STANDARDS

12.23 Drinking Water

There will be no water supplied to or used by the project.

The project does not pose a threat to drinking water quality. To minimize spill potential during construction, no fueling or maintenance of vehicles will be performed within 100 feet of wetlands, streams or other sensitive natural resources. The multiple methods, plans, and procedures to prevent groundwater degradation during construction, operation, and maintenance of the proposed MPRP transmission lines are incorporated in CMP's Environmental Control Requirements for Contractors and Subcontractors - Oil and Hazardous Material Contingency Plan (see Exhibit 10). These procedures establish a set of minimum requirements for spill prevention and response. The procedures incorporated into the plan have proven successful for preventing spills and for addressing spills if they occur. CMP's environmental inspectors will ensure that all personnel working on the site follow these procedures.

In addition, CMP employees follow the procedures outlined in CMP's Spill Management and Prevention section of CMP's Environmental Procedures Manual for response to any spills of oil, gasoline, hydraulic oil, or other similar substance. These procedures are similar to those outlined in Exhibit 10 for contractors, and cover

reporting, immediate response, cleanup, and documentation. Employees operating construction vehicles will be trained to promptly contain, report, and clean up any spill in accordance with standard procedures. In the event of a spill of oil or hazardous material, on-site personnel will immediately invoke standard spill reporting and clean-up procedures. Spills that are properly cleaned up will not pose a threat to groundwater quality.

After construction, the electrical transmission line corridor is maintained to encourage the growth of scrub-shrub vegetation. Capable species of trees within the corridor must be removed for safety and reliability reasons. CMP uses a selective herbicide program to treat an area once every four years to maintain an early successional stage of growth. Herbicide is selectively and individually applied (using a low-pressure backpack applicator) on a plant-by-plant basis to capable species to prevent growth (or re-growth of a cut plant) of individual plants. CMP does not use herbicides within 25 feet of any waterbody, wetland with standing water at the time of application, or significant vernal pool depression, or within 100 feet of any known well or spring. Crew forepersons are certified by the Maine Pesticide Control Board, and all herbicides are EPA registered. In addition, CMP will not store, mix, or load herbicides within 100 feet of any wetland or surface water. The selective use of herbicides within the transmission line corridor does not impose a threat to surface water or groundwater quality and will not impair designated uses or the water classification of any water body. The selective use of herbicides on the MPRP's transmission line corridors does not pose a threat to groundwater quality.

12.24 Energy Supply Services

Not applicable. There will be no fuel nor electricity supplied to the project.

12.25 Public Safety Services

The Applicant provides safety training to local fire, police, and EMT departments on request. As a practical matter, there is no difference in safety procedures for incidents involving the existing transmission line corridor and structures or with the proposed project; the standards and practices are the same.

12.26 Public Wastewater

Not applicable. There will be no wastewater generated by the project.

12.27 Solid Wastes

Once the project is constructed there will be no waste generated at the site. CMP anticipates that solid waste generated from the proposed project will be limited to minimal land clearing and construction debris. This debris is inert, non-hazardous material that will be handled in accordance with the Maine State Solid Waste Management and Recycling Law (38 M.R.S.A. § 2101 *et seq.*).

All of the existing Section 203 transmission line poles and associated crossarms and hardware will be removed as a result of the proposed 115 kV line rebuild along the project corridor. Removed poles and crossarms will either be transferred to private entities or shipped to an approved special waste landfill for disposal. CMP requires recipients of surplus treated wood to sign a Pole Transfer Agreement, in which they agree to utilize the treated wood beneficially in accordance with Maine DEP Regulations Chapter 418 (Beneficial Reuse), as well as any other applicable federal, state, and local laws. This Agreement also obligates recipients to accept full responsibility for the use and proper disposal of these treated wood items. In this way, CMP alerts treated wood recipients of management requirements so that this material is utilized in a way that does not adversely affect any natural resources.

The project will generate other construction-related debris during the construction phase. Waste electrical system and construction process components such as scraps of cable, cable spools, and ceramic insulators will be generated. Most of these materials will be recycled or reused. Small amounts of waste plastic containers for oils and lubricants, broken filters and belts, and damaged tires, etc., will be generated from the use of construction equipment. Construction and managerial staff will generate some incidental waste such as paper, bottles, cans, plastics, and food scraps. All of these materials will be recycled or shipped to a licensed landfill, transfer station, or incinerator. Contractors will hire a licensed waste management company for the collection and disposal or recycling of such incidental waste. Please refer to the table below.

MATERIAL	DISPOSITION
Wood (timber, slash, stumps, etc.)	Chipped on site or hauled off site to boiler, chip plant, or mulch production facility
Treated wood (poles, crossarms)	Donated or landfilled in licensed special waste landfill
Galvanized Steel	Maine Metals Recycling (Auburn)
Porcelain Insulators	Commercial Paving Recycling Corporation, Scarborough (CPRC), crushed and used as road sub-base material
Food waste, plastics, common trash	Shipped to licensed MSW landfill, transfer station, or incinerator
Redeemable drink containers	Redeemed for recycling
Ferrous Metals	Maine Metals Recycling
Wooden Cable Spools & Pallets	Stuart C. Irby Company (Waterville) for reuse
Wooden Insulator Crates	Shipped to licensed MSW landfill, transfer station, or incinerator
Paper	Recycled thru FCR Goodman (various Maine locations)
Scrap Cable	Maine Metals Recycling
Aluminum	Maine Metals Recycling
Concrete Debris	CPRC for use in road sub-base

In addition, wood cut and cleared from the MPRP right of way will be limited to capable species. All merchantable wood will be hauled off and sold for lumber or firewood. All other woody material will be managed in compliance with the Maine

Slash Law (12 M.R.S.A. §§ 9331-9338). All other wood waste generated in the process of land clearing will be shipped off site to be used as fuel at an appropriate licensed boiler, provided to a licensed chip processing plant, or transferred to a facility to be utilized in the production of erosion control mulch.

12.28 Traffic, Streets, & Sidewalks

Not applicable. There will be no vehicular or pedestrian traffic generated by the project. During construction there will be limited, intermittent, and temporary traffic generated by the project. This low volume of traffic will not significantly impact the operation of area streets.

SECTION 13 SPECIFIC LAND USE STANDARDS

13.7 Industry Uses

13.7.6 Intrastate/Interstate Transmission Lines

The proposed project avoids and minimizes any detrimental effects on surrounding uses and resources, and visual impacts to scenic views, primarily by co-locating the project entirely within and immediately adjacent to the existing transmission line corridor, which has been in existence for decades and already contains structures of a similar nature. In general, given the existing landscape characteristics of the site, construction and maintenance of the project is not expected to create conditions that are not already common to the project area. In this way the project largely preserves the character of the areas through which it passes. Please also see the responses to Sections 12.5, 12.7, 12.9, 12.13, 12.14, 12.15, and 12.18, above, for more detailed information about how the project will avoid or minimize detrimental impacts.

SECTION 14 DIMENSIONAL STANDARDS

14.2 Land Area

Not applicable, pursuant to Section 14.2.1(8) of the Ordinance. As a result, the dimensional standards of Section 14.3, Street Frontage, and 14.4, Shoreline Frontage are also not applicable.

14.5 Front, Side, and Rear Setbacks

Front and rear setback standards do not apply due to the long linear nature of the project. The project meets all side setback standards in each district in which it is located (see Exhibit 2).

14.6 Shoreline Setback

The project meets all shoreline setback standards. There will be no structures located within any shoreland district (see Exhibit 3).

14.7 Lot Coverage

The total amount of impervious surface added to the project area will be less than 1% of the total project area once construction is complete. As a result the project meets the lot coverage requirements in each district in which it is located.

14.8 Structure Height

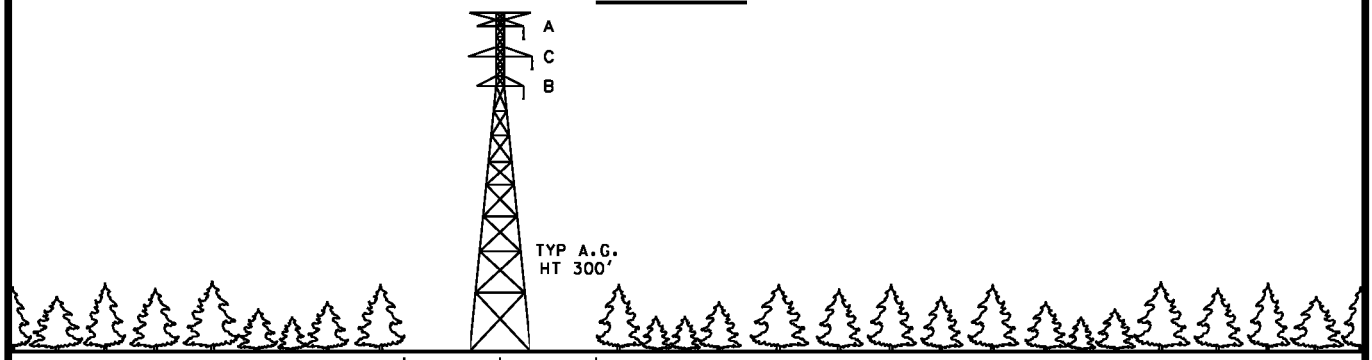
Not applicable, pursuant to Section 14.8.2(2) of the Ordinance.

Exhibit 1
Project Overview Maps

Exhibit 2
Transmission Line Configuration Cross Sections

NOTE 1: GAS PIPELINE LOCATION VARIES ALONG R.O.W.

EXISTING



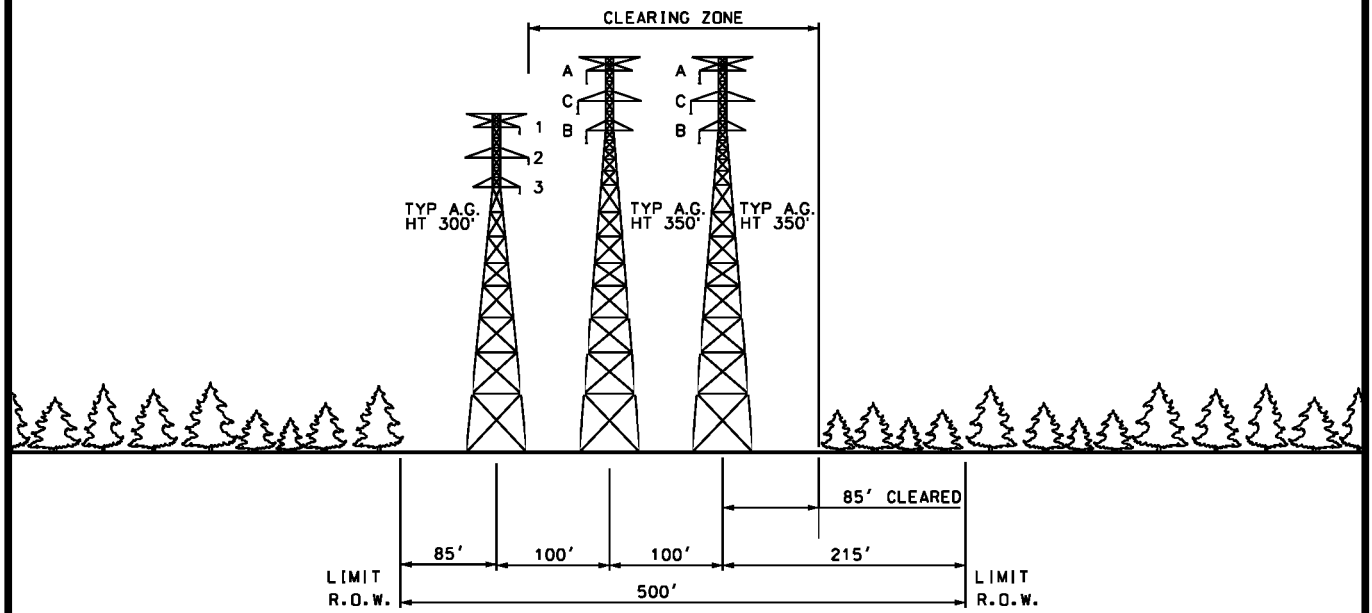
LOOKING FROM COOPERS MILLS RD S/S TOWARDS ORRINGTON S/S
(APPROX. 0.4 MILES)

PROPOSED

CS-1-4
COOPERS MILLS RD S/S TO ORRINGTON S/S
SECTION 254
115 kV

CS-1-5
ALBION RD S/S TO ORRINGTON S/S
SECTION 3023
345 kV

CS-1-2
REBUILD
SECTION 388
345 kV



LOOKING FROM COOPERS MILLS RD S/S TOWARDS ORRINGTON S/S
(APPROX. 0.4 MILES)

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

-DRAFT-
FOR REVIEW ONLY

ENG. CONTRACTOR

NO.	REVISION	DATE	BY
F	REVISED VOLTAGE NOTE S254/S3023 REVISED S3023 & S388	12/1/09	PEI
E	ADDED CLEARING ZONE	9/23/09	PEI
D	ADDED SEQUENCING/PHASING UPDATED STATION NAME	8/7/09	PEI
C	REVISED STRUCTURES	2/05/09	PEI
B	ADDED SECTION NO.	4/11/08	PEI
A	ISSUED FOR REVIEW	9/27/07	PEI

SECTION 388	POLE 427 TO 428	STA. 3920+98.5 TO 3941+63.5

MAINE POWER RELIABILITY PROGRAM

EXISTING AND PROPOSED R.O.W.
ALTERNATIVE N5 FOR N-1-1 ANALYSIS

CHECKED		DESIGNED KJF	DATE 8/27/07
SGW	8/4/09	DRAWN SAT	APPR.
		CENTRAL MAINE POWER CO.	
SCALE NTS		TRANSMISSION ENGINEERING	

SEGMENT 1

SHEET N5-1-8

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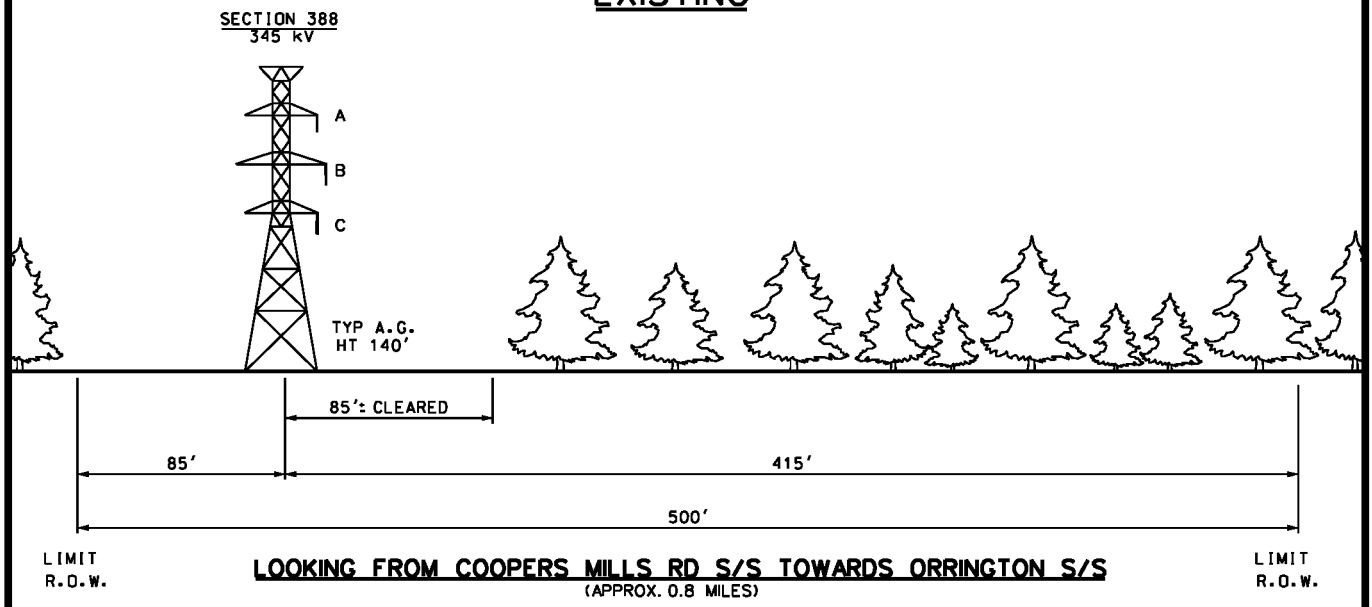

LOOKING FROM COOPERS MILLS RD S/S TOWARDS ORRINGTON S/S
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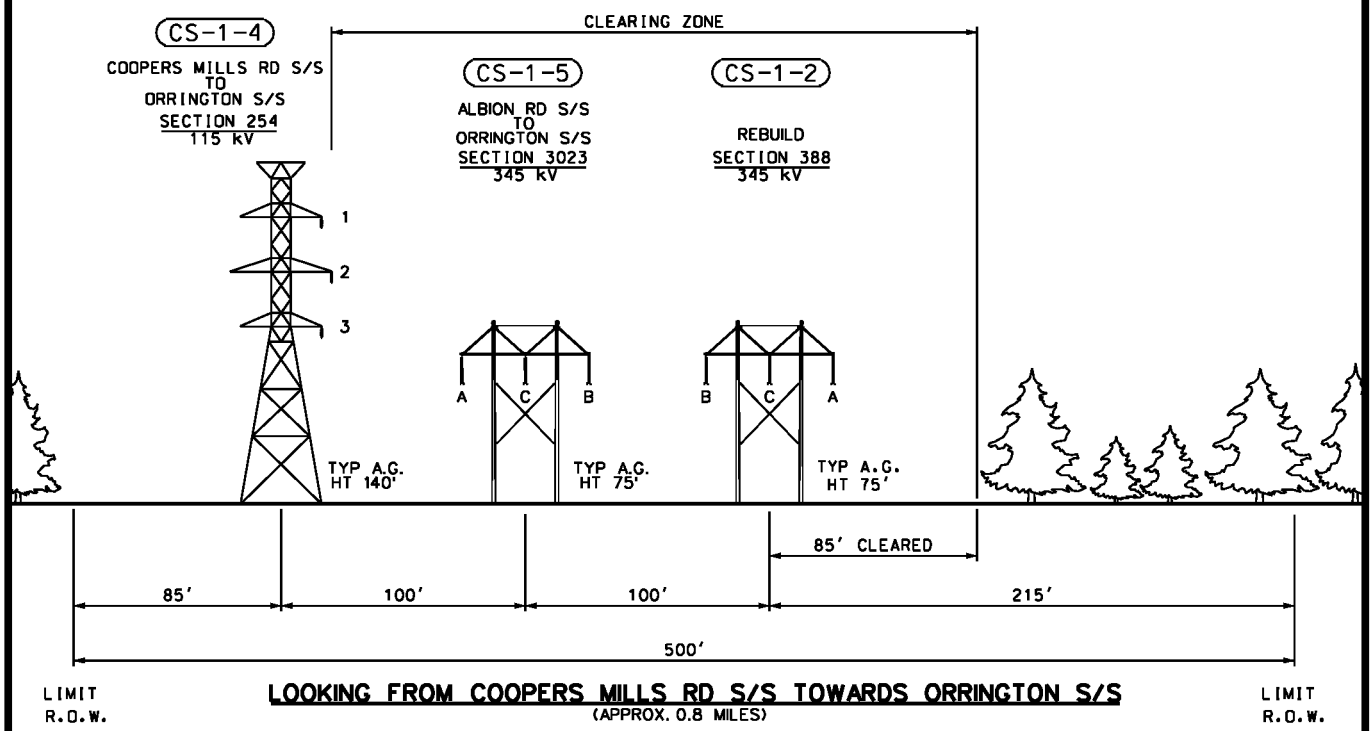
PROPOSED



LOOKING FROM COOPERS MILLS RD S/S TOWARDS ORRINGTON S/S
(APPROX. 0.8 MILES)

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

-DRAFT-
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ENG. CONTRACTOR

NO.	REVISION	DATE	BY
F	REVISED VOLTAGE NOTE S254/S3023 REVISED S3023 & S388	12/1/09	PEI
E	ADDED CLEARING ZONE	9/23/09	PEI
D	ADDED SEQUENCING/PHASING UPDATED STATION NAME	8/7/09	PEI
C	REVISED STRUCTURES	2/05/09	PEI
B	ADDED SECTION NO.	4/11/08	PEI
A	ISSUED FOR REVIEW	9/28/07	PEI

SECTION 388	POLE 428 TO 433	STA. 3941+63.5 TO 3984+43.3

MAINE POWER RELIABILITY PROGRAM

EXISTING AND PROPOSED R.O.W.
ALTERNATIVE N5 FOR N-1-1 ANALYSIS

CHECKED		DESIGNED KJF	DATE 8/27/07
SGW	8/4/09	DRAWN SAT	APPR.
		CENTRAL MAINE POWER CO.	
SCALE NTS		TRANSMISSION ENGINEERING	

SEGMENT 1

SHEET N5-1-9

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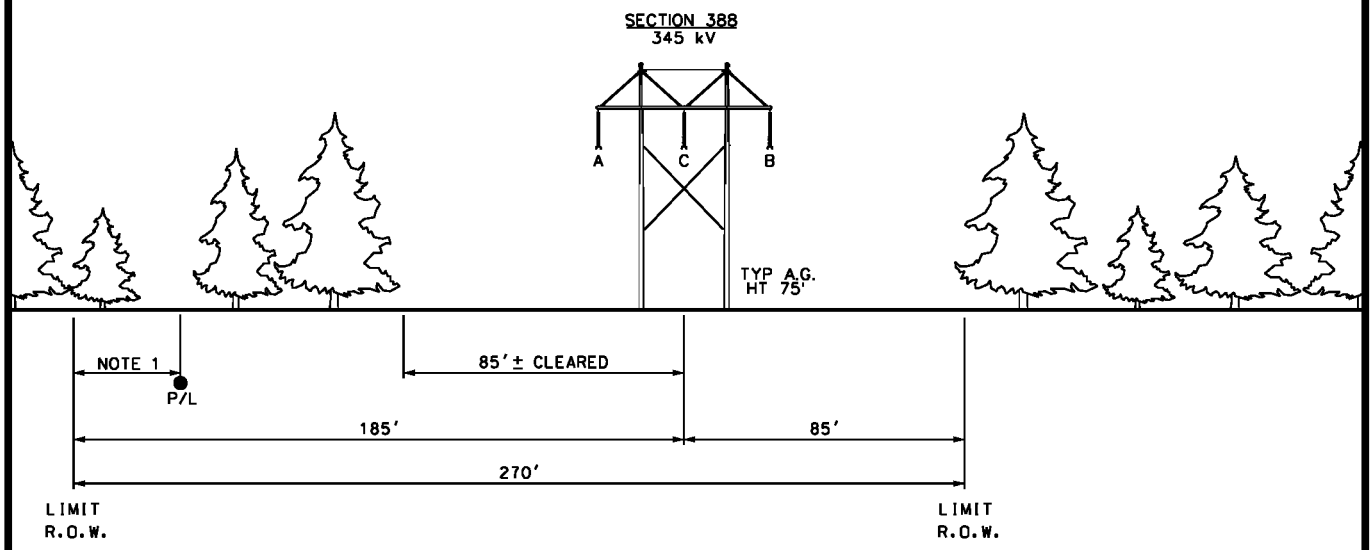
NOTE 1: GAS PIPELINE LOCATION VARIES ALONG R.O.W.

EXISTING



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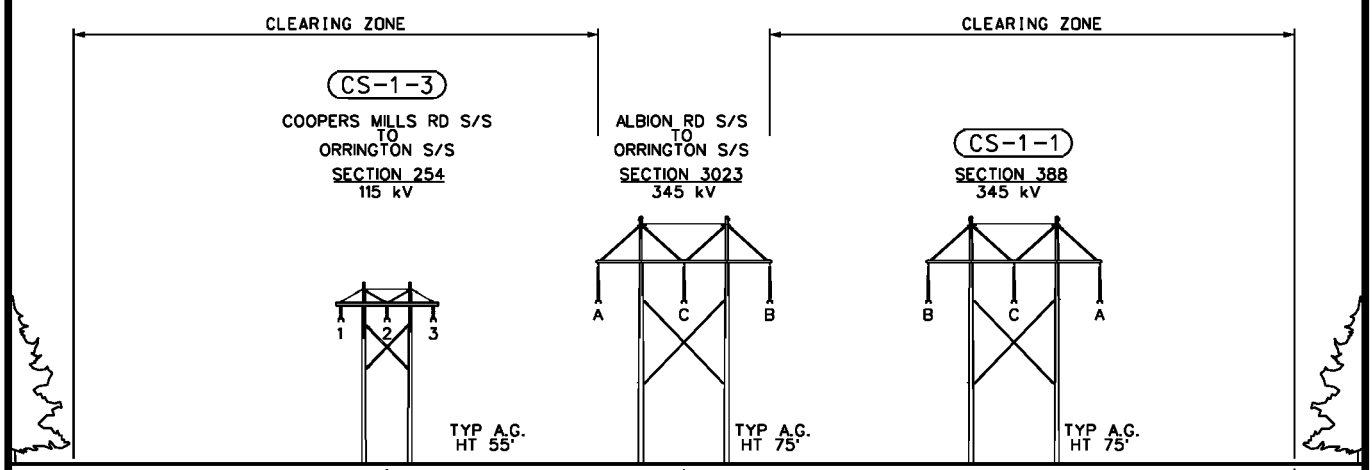
PROPOSED



LOOKING FROM COOPERS MILLS RD S/S TOWARDS ORRINGTON S/S
(APPROX. 3.0 MILES)

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

-DRAFT-
FOR REVIEW ONLY

ENG. CONTRACTOR

NO.	REVISION	DATE	BY
G	REVISED CLEARING ZONE	2/12/10	PEI
F	REVISED S254 STRUCTURE/SPACING/ REVISED S3023 & S388/CLEARING ZONE	12/1/09	PEI
E	ADDED CLEARING ZONE	9/23/09	PEI
D	ADDED SEQUENCING/PHASING UPDATED STATION NAME	8/7/09	PEI
C	REVISED STRUCTURES	2/05/09	PEI
B	ADDED SECTION NO.	4/11/08	PEI

SECTION 388	POLE 433 TO 460	STA. 3984+43.3 TO 4142+92-4142+93

MAINE POWER RELIABILITY PROGRAM

EXISTING AND PROPOSED R.O.W.
ALTERNATIVE N5 FOR N-1-1 ANALYSIS

CHECKED		DESIGNED KJF	DATE 8/27/07
SGW	8/4/09	DRAWN SAT	APPR.
		CENTRAL MAINE POWER CO.	
SCALE NTS		TRANSMISSION ENGINEERING	

SEGMENT 1

SHEET N5-1-10

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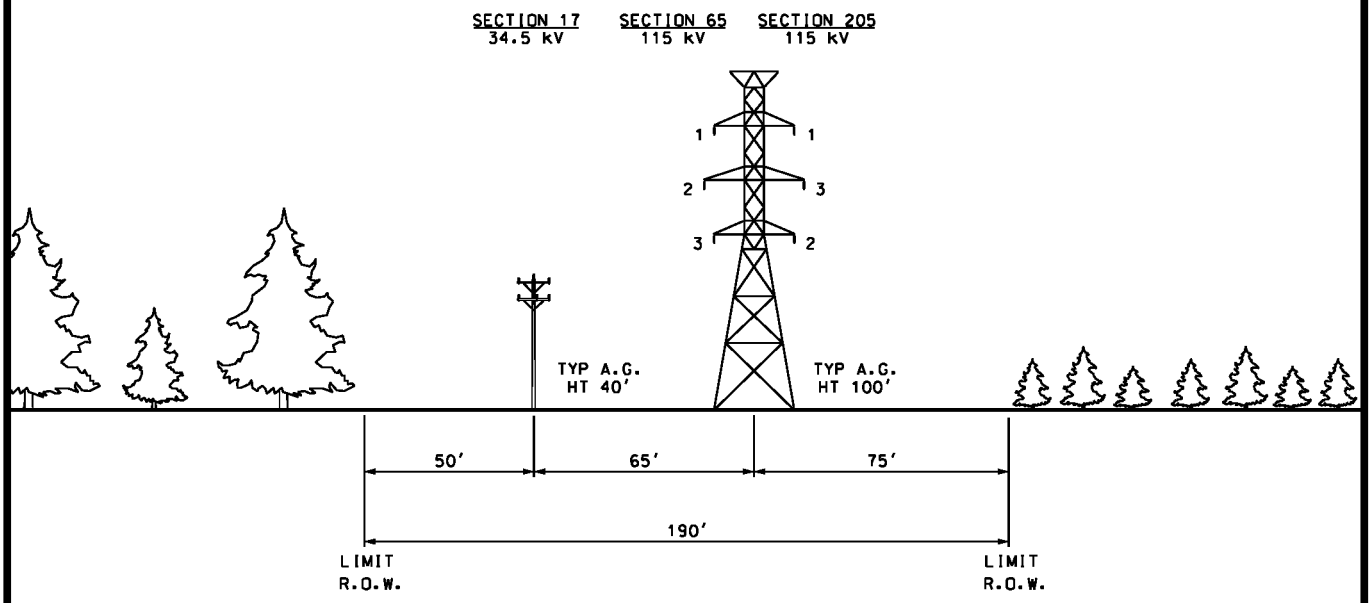
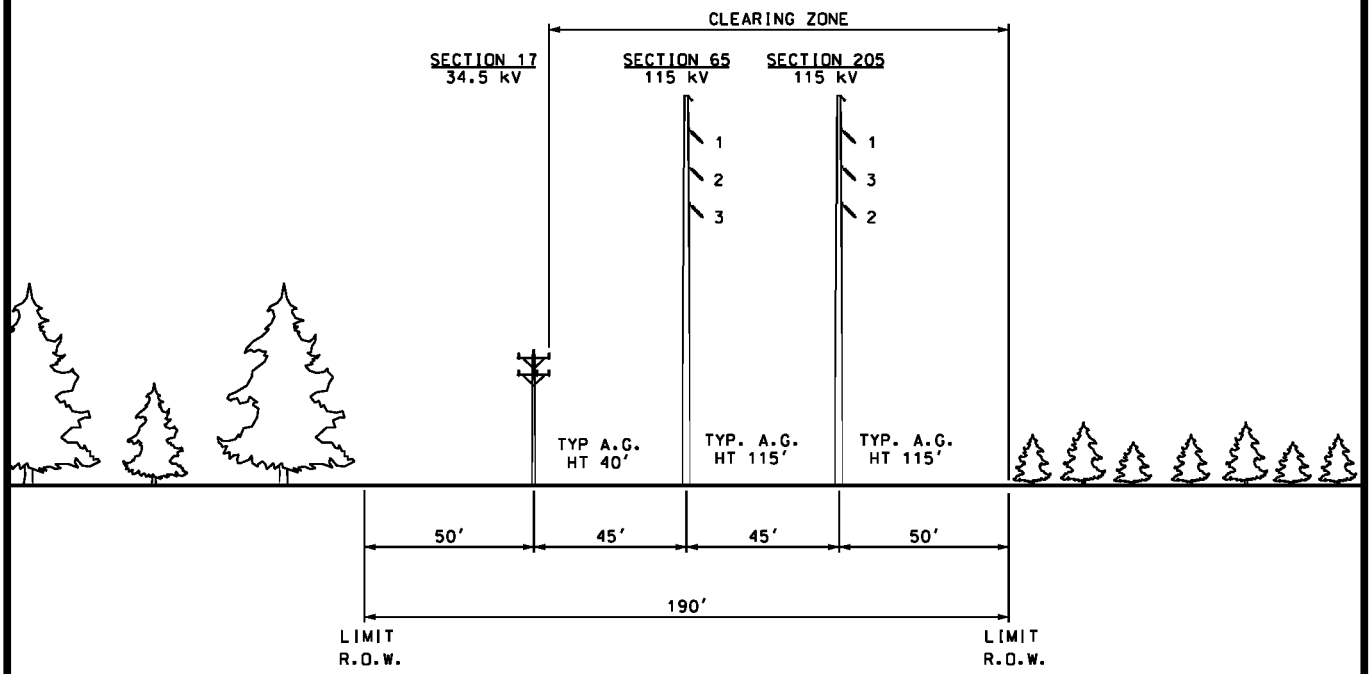


LOOKING FROM BUCKSPORT S/S TOWARDS BANGOR HYDRO INTERCONNECTION
(APPROX. 0.4 MILES)

PROPOSED



LOOKING FROM BUCKSPORT S/S TOWARDS BANGOR HYDRO INTERCONNECTION
(APPROX. 0.4 MILES)

THIS DRAWING SHALL BE REVISED ON THE CADD SYSTEM ONLY

-DRAFT-
FOR REVIEW ONLY

ENG. CONTRACTOR

NO.	REVISION	DATE	BY
		/ /	
		/ /	
		/ /	
		/ /	
B	REVISED STRUCTURES	4/30/10	PEI
A	ISSUED FOR REVIEW	6/5/08	PEI

SECTION 205	S/S TO STR 4	STA. 0+00 TO 19+52.6

MAINE POWER RELIABILITY PROGRAM

EXISTING AND PROPOSED R.O.W.
ALTERNATIVE N5 FOR N-1-1 ANALYSIS

CHECKED		DESIGNED KJF	DATE 5/30/08
SGW	6/4/08	DRAWN KGH	APPR.
		CENTRAL MAINE POWER CO.	
SCALE	NTS	TRANSMISSION ENGINEERING	

SEGMENT 2 DCT

SHEET N5-2-1

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SCANNED

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Exhibit 3
Project Scope and Natural Resources Maps

Exhibit 4
Table of Structure Heights and Types

MPRP Structure Heights and Types in the Town of Bucksport, Maine

Section 254

Section	Structure #	Structure Type	Height (ft.)	Material	Voltage	Foundation	Number of Poles	Impact (sq. ft.)
254	494	Existing Lattice Tower	300		115kV	No	0	0
254	495	Lattice Tower	122	Steel	115kV	Yes	0	1000
254	496	Existing Lattice Tower	166		115kV	No	0	0
254	497	Existing Lattice Tower	166		115kV	No	0	0
254	498	Lattice Tower	124	Steel	115kV	Yes	0	1000
254	499	H-Frame Dead End	70	Wood	115kV	Yes	3	120
254	500	H-Frame Tangent	88	Wood	115kV	No	2	60
254	501	H-Frame Tangent	52	Wood	115kV	No	2	60
254	502	H-Frame Tangent	61	Wood	115kV	No	2	60
254	503	H-Frame Angle	47.5	Wood	115kV	No	3	90

Section 3023

Section	Structure #	Structure Type	Height (ft.)	Material	Voltage	Foundation	Number of Poles	Impact (sq. ft.)
3023	487	Lattice Tower	360	Steel	345kV	Yes	0	1000
3023	488	H-Frame Dead End	80	Steel	345kV	Yes	3	120
3023	489	H-Frame Tangent	101.5	Wood	345kV	No	2	60
3023	490	H-Frame Tangent	88	Wood	345kV	No	2	60
3023	491	H-Frame Tangent	79	Wood	345kV	No	2	60
3023	492	H-Frame Tangent	74.5	Wood	345kV	No	2	60
3023	493	H-Frame Tangent	70	Wood	345kV	No	2	60
3023	494	H-Frame Tangent	92.5	Wood	345kV	No	2	60
3023	495	H-Frame Dead End	70	Steel	345kV	Yes	3	120
3023	496	H-Frame Tangent	0	Wood	345kV	No	2	60
3023	497	H-Frame Tangent	0	Wood	345kV	No	2	60
3023	498	H-Frame Tangent	0	Wood	345kV	No	2	60
3023	499	H-Frame Angle	0	Wood	345kV	No	3	90

Section 388

Section	Structure #	Structure Type	Height (ft.)	Material	Voltage	Foundation	Number of Poles	Impact (sq. ft.)
388	431	Lattice Tower	360	Steel	115kV	Yes	0	1000
388	432	H-Frame Dead End	85	Wood	115kV	Yes	3	120
388	433	H-Frame Tangent	101.5	Wood	115kV	No	2	60
388	434	H-Frame Tangent	83.5	Wood	115kV	No	2	60
388	435	H-Frame Tangent	74.5	Wood	115kV	No	2	60
388	436	H-Frame Tangent	74.5	Wood	115kV	No	2	60
388	437	H-Frame Tangent	101.5	Wood	115kV	No	2	60
388	438	H-Frame Angle	88	Wood	115kV	No	3	90
388	439	H-Frame Tangent	97	Wood	115kV	No	2	60
388	440	H-Frame Tangent	70	Wood	115kV	No	2	60
388	441	H-Frame Tangent	79	Wood	115kV	No	2	60
388	442	H-Frame Angle	70	Wood	115kV	No	3	90

Section 65

Section	Structure #	Structure Type	Height (ft.)	Material	Voltage	Foundation	Number of Poles	Impact (sq. ft.)
65	1	Self Supporting Single Pole Dead End	115	Steel	115kV	Yes	1	115
65	2	Self Supporting Single Pole Angle	125	Steel	115kV	Yes	1	40
65	3	Self Supporting Single Pole Angle	105	Steel	115kV	Yes	1	40
65	4	H-Frame Dead End	56.5	Wood	115kV	Yes	3	120

Section 205

Section	Structure #	Structure Type	Height (ft.)	Material	Voltage	Foundation	Number of Poles	Impact (sq. ft.)
205	1	Self Supporting Single Pole Dead End	115	Steel	115kV	Yes	1	115
205	2	Self Supporting Single Pole Angle	125	Steel	115kV	Yes	1	40
205	3	Self Supporting Single Pole Angle	105	Steel	115kV	Yes	1	40
205	4	H-Frame Dead End	56.5	Wood	115kV	Yes	3	120

Exhibit 5
Table of Project Abutters

MPRP Project Abutters in Bucksport, Maine

Segment	Map	Lot	First	Last	Address	City	State	Zip
002	1	10		Verso Bucksport Llc	PO Box 1200	Bucksport	ME	04416
001	46	15	Gregory	Geagan	352 Center Drive	Orrington	ME	04474
001	46	39	Dana	Harlow	247 Swetts Pond Rd	Orrington	ME	04474
001	46	14	Steven	Gray	60 Mountain Side Lane	Bucksport	ME	04416
001	22	12	Betty	Larsen	30 Mountain Side Lane	Bucksport	ME	04416
001	46	18	David	Sametz	1656 River Road	Bucksport	ME	04416
001	46	30	Kevin	Chadbourne	1648 River Road APT 1	Bucksport	ME	04416
001	46	21	Gregory	Geagan	352 Center Drive	Orrington	ME	04474
001	46	19	Jeffrey	Jacobs	300 Houlton Pond Road	West Bath	ME	04530
001	22	6	Loren	Gallup	P.O. Box 822	Bucksport	ME	04416
001	46	38	Forrest	Wardwell	36 Appalachian Trail	Bucksport	ME	04416
001	22	4	Larry	Mobraa	PO Box 157	Hulls Cove	ME	04644
001	22	6A	Loren	Gallup	P.O. Box 822	Bucksport	ME	04416
001	22	3	John	Ellis	89 Swan Lake Avenue	Belfast	ME	04915
001	22	13	Jeffrey	Camber	452 Main Street	Ellsworth	ME	04605
001	22	2	John	Ellis	89 Swan Lake Avenue	Belfast	ME	04915
001	46	29	Roger	Miller	95 Castine Road	Orland	ME	04472

Exhibit 6
Proof of Title, Right, or Interest

Proof of Title, Right or Interest for the MPRP in the Town of Bucksport, Maine*

Existing Corridor--Section 388						
Town	**Grantor**	**Grantee**	**Date**	**Book/Page**	**Dimensions**	**Type**
Bucksport	Bennett, Bradley B.	MEPCO	14-Oct-1970	1106/611	270'	Fee
Bucksport	Stubbs, Myrtle J. and Ruth A.	MEPCO	24-Aug-1970	1105/135	270'	QC
Bucksport	Colson, David M.	MEPCO	11-Sep-1970	1105/138	Triangle 354x36	Fee
Bucksport	Stubbs, Myrtle J. and Ruth A.	CMP	23-Apr-1969	1078/41	Irregular	Fee
Bucksport	Colson, David M.	CMP	11-Jun-1969	1080/605	Irregular	Fee
Bucksport	Cloukey, Elmer L. & Joyce J.	CMP	9-May-1969	1078/607	Irregular	Fee
Bucksport	Nacovsky, Barbara A. & Green Annabelle	CMP	9-Apr-1969	1077/48	Irregular	Fee
Bucksport	Jacobs, James J.	CMP	30-Oct-1969	1088/34	Irregular	Fee

Expanded Corridor--Section 388						
Town	**Grantor**	**Grantee**	**Date**	**Book/Page**	**Dimensions**	**Type**
Bucksport	Mobraaten, Larry and Phyllis & Buzzell, Robert	CMP	2/5/2010	5366/257	100'	Fee
Bucksport	Ellis, John	CMP	5/18/2009	5204/298	100'	Fee
Bucksport	Gallup	CMP	1/16/2009	5121/152	100'	Option-Fee

Section 65, 205						
Town	**Grantor**	**Grantee**	**Date**	**Book/Page**	**Dimensions**	**Type**
Town	Grantor	Grantee	Date	Book/Page	Irregular	Type
Bucksport	Maine Seaboard Paper Company	CMP	1-May-33	640/464	Irregular	Easement
Bucksport	St. Regis Paper Company	CMP	30-Apr-62	908/113	Irregular	QC
Bucksport	St. Regis Paper Company	CMP	16-Mar-65	979/156	Irregular	Easement

*** NOTE: Copies of the deeds to the project area parcels have been supplied to the Code Enforcement Officer.**

Exhibit 7
CMP's Environmental Guidelines for Construction and Maintenance Activities on Transmission Line and Substation Projects

Central Maine Power Company

Environmental Guidelines For Construction and Maintenance Activities on Transmission Line And Substation Projects

Prepared for:

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December 2007

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CENTRAL MAINE POWER COMPANY

Environmental Guidelines for Construction and Maintenance Activities on Transmission Line And Substation Projects

1.0 INTRODUCTION

These guidelines contain standards and methods used to protect soil and water resources during construction, reconstruction, and maintenance of transmission lines and substations. They are based on practical methods developed for construction in utility corridors and their use is enforced by both State of Maine and Federal regulatory agencies. The construction practices described in this manual are typically required by the regulatory agencies for all projects. These practices are commonly referred to as Best Management Practices (BMPs). Illustrations have been provided as part of this manual (Appendix D) which demonstrate both the proper and improper techniques used for the more common construction activities.

All contracts for work performed on Central Maine Power Company (CMP) transmission line rights-of-way and substation sites will include these specific guidelines to ensure the project is constructed in an environmentally conscious manner. CMP personnel or their designated representatives will ensure that the guidelines are followed by inspecting all work and prescribing corrective steps to be taken where necessary. While this manual takes into consideration legal requirements, project personnel are still responsible for compliance with all federal, state, and local requirements.

This guide uses a number of scientific and technical terms. Definitions of these terms are provided in Appendix A.

2.0 PLANNING AND DESIGN CONSIDERATIONS

Planning is an important practice that will reduce the risk of erosion on a construction site, saving both time and money for Central Maine Power Company and its contractors. An erosion control plan should be prepared during project planning and design phases. It will likely be required for any Maine Department of Environmental Protection and/or local permits.

The erosion control plan should consist of:

- A narrative.
- A map.
- Plan details.

The narrative should describe the proposed project, existing site conditions, adjacent land uses, and any natural resources or properties that might be affected by the project. Other important details to include are descriptions of critical areas, proposed construction start and end dates, construction sequence, and brief descriptions of erosion and sedimentation control measures,

inspections and maintenance programs, and other clearing or construction that has taken place on the site in the last five years.

The map should include pre-development site contours at a scale to identify runoff patterns (minimum 5-foot contour interval), final contours, limits of clearing and grading, existing buffers, critical areas, natural resources, erosion control measures, and other clearing or construction that has taken place on the site in the last five years.

The plan details should include drawing of the erosion control structures and measures, design criteria and calculations, seeding specifications, and inspection and maintenance notes.

Key considerations include resource identification, familiarizing all parties with the construction site and limitations, and construction sequence.

2.1 Resource Identification

Sensitive natural areas which will receive priority treatment include:

- Streams and rivers.
- Great ponds.
- Wetlands.
- Steep slopes.
- Unstable soil conditions.

Sensitive natural areas which may receive priority treatment, depending upon the specifics of the project, include:

- Stream, river, pond, and wetland buffers.
- Significant wildlife habitats.
- Habitat for rare species.
- Historic and prehistoric sites.

During the planning phase, all sensitive natural areas that require priority treatment will be identified. The method of avoiding or crossing the sensitive natural areas to minimize impacts will be identified and incorporated into the project plans. Project plans should be designed and drawn to provide contractors and inspectors with a comprehensive reference guide that include, but is not limited to, locations of sensitive natural areas, access, and abutter and landowner issues. If modifications to the plans need to be made in the field, a designated person shall make necessary changes and shall notify all necessary personnel promptly. Copies of these plans should be provided and explained to equipment operators to assure that construction practices meet the intent of avoiding or minimizing impacts to the identified sensitive natural areas. In addition to the plans, the proposed access ways and water/wetland crossing locations, as well as other environmentally sensitive areas where activities will be restricted or prohibited, will be flagged and/or have signs posted.

Prior to crossings or construction in or near any sensitive natural areas, a "walk-through" will be conducted. Attendees at the walk-through will include: 1) the contractor, 2) CMP and/or any designated representative, and may include 3) any assigned Third Party Inspector. The purpose of the walk-through is to establish the following objectives, **prior to any clearing or construction work**:

- Identify available or alternate points of access to the project site.
- Identify sensitive natural areas.
- Identify future "No-Access" areas.
- Review color designation for all flagging used.
- Establish the Communication Chain of Command (Contact Point).
- Identify and flag access/construction roads within the ROW and/or project area.
- Establish methods of access over water resource areas (mats, timber corduroy, frozen ground, tracked equipment).

In order to minimize impacts to sensitive natural areas, the above objectives will continually be evaluated throughout the construction process. Project superintendents, foremen, and inspectors should also monitor weather conditions and reports on an on-going basis. Knowledge of changing or anticipated wet weather will allow time to address erosion control needs. In this way, CMP and its contractors will be prepared to respond to changing environmental conditions (e.g., unusually wet or dry weather) and other unknowns that are inherent in the construction and maintenance of transmission lines.

2.2 "Walk-Through" Mechanics

2.2.1 Use of Flagging and Signs

Flagging will be conducted at the time of the walk-through in order to visually identify select features or construction methods to be used. Wetlands may be flagged earlier as part of project permitting. Signs may also be installed following the walk-through to direct construction to approved access routes and away from "no access" areas. The CMP flagging color-code is as follows:

- ***Glow-pink*** with the printed words "Wetland Delineation", "Wetland Boundary" or "Wetlands". This flagging denotes the edge of wetlands.
- ***Red*** with or without the printed words – "Do Not Cross". This flagging denotes a No-Access area where no equipment is allowed.
- ***Yellow*** – no printed words. This flagging denotes the location of an environmental measure such as a waterbar, hay bale barrier, or silt fence.
- ***Blue*** – no printed words. This flagging denotes approved travel ways. This is typically flagged on each side of the access-way to denote the designated travel lane for all access.
- ***Glow-pink with black stripes*** or otherwise printed with the words Buffer or Wetland Buffer. This denotes a setback from a water resource and should be treated the same as No-Access area.

2.2.2 Identification and Use of Existing Roads

Available logging, farm, or access roads, as well as other existing rights-of-way, will be utilized for access to and from transmission line rights-of-way with permission of the respective landowners. In order to minimize ground disturbance, existing roads within the right-of-way and wetland/stream crossing areas will be used whenever possible for travel during construction, unless a better route is agreed upon during the walk-through. The movement of equipment and materials within the transmission line right-of-way will be confined as much as possible to a single road or travel path.

For example, it may be better to construct new access roads in order to: (1) minimize the span of a wetland or stream crossing, or (2) avoid the more environmentally sensitive or "wetter" portions of a wetland or stream crossing.

In all cases, CMP and its contractors will attempt to avoid and minimize impacts to sensitive natural areas. As a result of this procedure, wetland and stream crossings, steep slopes, unstable soils, and other sensitive natural areas will be avoided and adverse impacts minimized whenever practicable.

2.3 Construction Sequencing

Although a "Project Plan" may be specific in identifying the *locations* of water resource areas (wetlands, streams, etc), and the *methods* of access over water resource areas (crane mats, frozen ground, etc) it should not dictate *when* construction activities should occur. It would be impractical to include day to day activities in the "Project Plan" such as, 'pole X will be installed on Y date'. However, including environmental considerations in the daily and weekly project planning is very important. Factors such as the project schedule and weather often determine where and when construction activities occur; environmental impacts should also be considered. Below are some guidelines:

- Work closely with the individual(s) in charge of environmental compliance to plan project activities.
- Construction activities that cause soil disturbance should not occur during or just prior to forecast heavy rain events.
- Coordinate access planning with all of the contractors on the project. Often temporary access roads are used by several different contractors and the construction and use of temporary access roads can cause significant soil disturbance. Minimize equipment and vehicle travel on temporary access ways.
- Stabilize/restore disturbed areas as soon as possible, preferably while equipment is on site. Additional trips with equipment can create more soil disturbance which will need to be stabilized. Often a site can and should be stabilized within hours of when the soil disturbance occurred.
- Use frozen conditions to your advantage. There may be instances where water resource areas can be crossed during frozen conditions in lieu of installing crane mats. Before using this technique consult with the project environmental inspector.

- Crane mats should be removed as soon as they are no longer needed and/or when conditions are favorable.

3.0 STANDARDS FOR CONSTRUCTION

3.1 Road Construction

The following five standards apply to the construction and/or upgrade of all roads, skid trails, yarding areas, or work pads whether temporary or permanent.

1. Where construction will be located near water resources, such that material or soil may be washed into them, these disturbances will be set back from the edge of the water resource to maximize the amount of undisturbed filtering area between the disturbed area and the resource. These "filter strips" will consist of an area of undisturbed vegetation between the edge of disturbed area and/or silt fence/hay bale barriers placed to intercept any sediment load in runoff water before it can enter the resource area. In order to maintain the integrity and effectiveness of filter strips, sediment barriers should be installed very early in the construction sequence, and they need to be monitored to make sure they are functional. Effective filter strip widths may vary from only a few feet in relatively well drained flat areas to as much as several hundred feet in steeper areas with more impermeable soils. The minimum width of the buffer strip shall be 25 feet or in accordance with local CEO or DEP regulations. The width of the filter strip shall be increased proportionately for slopes longer than 150 feet or for higher sediment concentrations. **Table 1** below provides the recommended widths for the filter strips according to the slope of land between the edge of the resource and any exposed soil.

Table 1
Recommended Widths For Filter Strips Between Disturbed Areas And Water Resources

Slope of Land Between Disturbance and the Resource (Percent)	Width of Filter Strip* (Feet)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

*Measured along surface of the ground

2. Wherever possible, construction equipment will either avoid steep slopes or proceed across the slope in a safe manner to avoid excessive disturbance of vegetation and soils. Equipment will not travel straight up or down any slopes with a grade steeper than 10 percent, except where necessary due to safety concerns and/or terrain constraints.

3. Where access roads or construction areas are to be built across the slope, the area will be properly sloped, slanting away from the cut bank to the outside edge of the roadbed in order to facilitate road surface drainage.
4. Slopes of cut-and-fill banks will be no steeper than 1 horizontal to 1 vertical. If located within 100 feet of water resources, the slopes will be no steeper than 2 horizontal to 1 vertical.
5. Rivers, streams, and wetland areas will be crossed, where necessary, at right angles to the channel and/or at points of minimum impact. To insure that natural drainage patterns will not be altered or restricted as a result of construction activities, crossings will be designed and constructed according to specific standards outlined below.

3.2 Stream or Wetland Crossings

The following standards apply to all unavoidable stream, drainage way, or wetland crossings encountered while accessing the project site or on the project site itself.

3.2.1 Types of Crossings Used

The type of crossing used for access is dependent on: the purpose and use of the crossing, the nature of the resource being crossed, ground conditions present at the time of construction, and construction materials available. Some planning guidance is provided below. The appropriate means and location of the crossing will be determined at the time of the formal walk-through. It is important to consult with the project environmental inspector prior to installing any crossing.

- Permanent culverts and bridges will be used only where long-term, continued, and frequent access is required (such as substation access roads).
- Temporary crossings will be used at all other locations. Temporary bridges, culverts, or crane mats must be used to cross any streams, drainage ways, or wetland swales that contain: (1) flowing water, (2) standing water, (3) saturated soils, or (4) organic/mucky soils.
- The use of corduroy as crossing material will be limited to wetlands which are not anticipated to have flowing or standing water during the construction period.
- In certain cases, no crossing material will be required if the stream bottom or drainage way is dry and contains a gravel or solid rock bottom (a “ford”). Fords can only be used if they will cause no unreasonable sedimentation of the stream and no unreasonable alteration of the stream banks and bottom.
- All crossings should include water bars or broad based dips or turn outs on the access, approximately 50 feet from each side of the crossing, to promote filter-strip treatment of runoff.
- All temporary crossings must be stabilized within seven (7) days of its removal, unless specified otherwise.

3.3 Construction in Wetlands

Where structures are to be placed in wetlands, topsoil must be excavated first, and stockpiled separate from subsoil. Be sure that stockpile soils are placed in such a manner that they are readily replaced into the excavated area. Soils shall be replaced into the excavated area in the

opposite order they were removed. Excavation and pole placement in wetland areas should be completed within the same day. After pole installation, topsoil must be restored to the original surface grade, except where mounding around a structure is necessary for structure stability.

4.0 INSTALLATION OF CROSSINGS

4.1 Bridges

Bridges are a preferred method for temporary access waterway crossings. Normally, bridge construction causes the least disturbance to the waterway bed and banks when compared to the other waterway crossing methods. Most bridges can be quickly removed and reused without significantly affecting the stream or its banks and without interfering with fish migration.

Materials
Access bridge construction typically entails the use of log stringers as construction materials.

Sizing
Table 2 below illustrates the log sizing requirements depending on the span and anticipated loads.

Table 2
Log Bridge Stringer Requirements

Span	Minimum Log Diameter* (80,000 lb. Load)	(40,000 lb. Load)
8 ft.	16 in.	12 in.
12 ft.	18 in.	14 in.
16 ft.	20 in.	16 in.

Wheel guards: 10" diameter
- Size of deck planks: 4" x 12" x 12'
* Assume 6 stringers at 24" centers

Positioning
The following is guidance for the positioning and installation for all permanent and temporary bridges:

- Access roads will cross streams at right angles to the channel at a location with firm banks and level approaches whenever possible.
- Bridge piers and abutments will be aligned parallel to the stream flow so that the original direction of stream flow is not altered.
- Piers and abutments will be imbedded in good foundation material. The grade of the bridge should coincide with that of the road wherever practicable.

For additional specifications on bridge construction, refer to section F-2 of the Maine Erosion and Sediment Control BMPs (see full citation in Appendix C).

4.2 Culverts

Materials
Permanent culverts will be either corrugated metal or plastic pipe. Temporary culverts will be corrugated metal, plastic pipe, or lumber ties. Chemically-treated wood will be not used.

Sizing
Permanent culverts will be sized to have a diameter of at least 3 times the cross-sectional area of the stream channel or will be designed to accommodate 25-year frequency flows. Multiple culverts may be used in place of one large culvert if they have the equivalent capacity of a larger one. A culvert sizing criteria table (3x Rule) produced by the MDEP can be found in Appendix G. However, it is recommended that an engineer be consulted when installing any permanent culvert.

Temporary culverts will also be sized to provide an opening at least 3 times the cross-sectional area of the stream channel and sized to accommodate a 25-year frequency storm flow. The stream channel cross-section will be determined at highest flows or will be approximated during periods of lower flows using the apparent natural high water marks remaining on the stream banks. For small intermittent streams, drainage ways or wetland crossings, the minimum sized culvert that may be used is 18 inches. Multiple culverts may be used in place of one larger culvert if they have the equivalent capacity of a larger one.

Positioning
The following is guidance for the positioning of all permanent and temporary culverts:

- Culverts should be placed to allow for the crossing to take place at right angles to the channel to assure that natural drainage patterns will not be altered.
- Culverts should be placed at the point of narrowest crossing and where firm banks and level approach slopes are available. Slopes should be no greater than 1.5 to 1.

Installation
The following is guidance for the installation of all permanent and temporary culverts:

- Culverts should be of sufficient length to allow both ends to extend at least one foot beyond the toe of any fill used to cover the culvert.
- Inlet and outlet armoring shall extend at least one pipe diameter beyond the upstream and downstream end of the culvert. See Table 3 below for outlet protection in erodible areas.
- Culverts should be bedded on firm ground. Supplemental use of geotextile with gravel can be used to create this firm base. Permanent culvert installation should include firm compaction of the foundation and the fill around the sides of the culvert. Compaction should be done in no less than 8-inch lifts.
- Both the inlet and outlet ends of the culverts will be set at or slightly below the natural stream bottom to allow passage of fish and other aquatic life at all levels of flow. At no point should either end of an installed culvert be positioned in the air out of the water.
- Multiple culverts must be offset in order to concentrate low flows into the culvert within the natural channel.

- When working in and around a perennial stream, temporary stream diversion may be necessary to avoid creating turbidity in the stream water. This type of work requires a permit from Maine DEP, and must be coordinated with the project environmental inspector.
- Fill used to bury the culvert will be compacted at least half-way up the side of the culvert for its full length in insure that flowing water will not undermine the culvert.
- Culverts will be covered with fill to a depth of at least one foot or one and a half times the culvert diameter, whichever is greater.
- Road fill at the upstream (headwall) and downstream (out-fall) ends of culverts will be armored with either rock rip rap or logs to protect the road fill from being eroded by the action of water or road traffic. This material will be installed up to the level of anticipated high water.
- In areas where the streambed appears highly erodible, the streambed at the outlet end of the culvert will be lined with riprap to prevent erosion and potential stream bed scour. Table 3 below indicates the distances away from the culvert to install such riprap.

Table 3
Culvert Size - Length of Rock Protection

Culvert Diameter (Inches)	Length of Rock Protection From Culvert (Feet)
12 – 20	7
21 – 24	9
30	11
36	13
42 – 48	18
54 – 60	24
66 – 78	32

Removal

Temporary culverts will be removed once their use is no longer necessary. The fill material can be redistributed and spread out on the nearby uplands at a distance sufficient to prevent its reentry into the resource. Silt fence/hay bales, seeding, and mulching may be necessary to stabilize this material. The banks and bottoms of the stream, drainage way, or wetland should be restored to original conditions. Exposed soils on the banks and within 100 feet of the crossing should be stabilized using seed and mulch. Some banks and steep slopes adjacent to streams may require stabilization with curlex or jute matting in combination with seed and mulch.

4.3 Mats (Crane or Swamp Mats)

CMP construction projects require that adequate mats are present at the project site prior to construction. A readily accessible source of mats should also be available in case construction conditions change and necessitate the need for more mats.

Materials

A number of different sized and constructed crane mats are typically available. CMP requires that the appropriate mats be used for the appropriate crossing. For example:

- Longer mats should be used for the longer crossing spans. This practice avoids the need to install additional mats within the crossing area in order to support the "span" mats.
- Mats should be in good condition to allow for their "clean" installation. Having mats in good condition prevents them from being dragged in versus them being carried in due to broken hitching cables, breaking apart on the job site, or becoming imbedded in mud due to their inability to support the required weight.
- Mats with partial/short timbers joined end to end should generally not be used to cross stream channels.

Installation

- Whenever possible, mats should be carried and not dragged. Dragging mats creates more soil disturbance which requires additional erosion control or final restoration work.
- At the crossing location, the ends of the crane mats should extend at least two feet onto firm banks or several feet into the upland edge of a wetland to assure a dry, firm approach onto the mats.
- At crossings which contain open or flowing water, the mats should be supported within the span using cross mats as abutments in order to prevent the impoundment of water or having water flow over the mats.
- At "dry" crossings where no water is present or anticipated during project construction, the mats may be placed directly onto the sensitive natural area in order to prevent excessive rutting, provided stream banks and bottoms are not altered.

Maintenance

Matted crossings should be continually monitored to assure their correct functioning. Mats which become covered with dirt should be kept clean and the material removed must be disposed of in an upland location. The material must not be scraped and shoveled into the water resource. Mats which become imbedded must be reset or layered to prevent mud from covering them or water passing over them.

Removal

Mats should not be removed until their use is absolutely no longer necessary. Specifically, all final restoration work should be completed prior to the mats being removed from the crossings. The planned removal of mats should be coordinated with CMP (or designated representative), the project environmental inspector, and any Third Party Inspector. As temporary structures, they should be removed within one year from the date of installation. All areas disturbed during ford removal shall be stabilized with seed and mulch.

4.4 Corduroy

Materials

Corduroy material will consist of de-limbed trees or logs. The logs must have a diameter greater than three inches at the small end and lengths greater than 18 feet. Shorter length material may be used only as described in the Installation section below.

Positioning
Corduroy should be placed perpendicular to the direction of travel. Corduroy should be placed at the point of narrowest crossing and where firm banks and level approach slopes are available.

Installation
The corduroy should be placed with the longer length pieces laid down first. The bed of corduroy should not only be placed within the low portions of the crossing but also for at least three feet up the sides of any upland side slopes in order to prevent rutting and sedimentation from the approaches to the crossing.

Once a thick base of corduroy has been laid, pieces shorter than 18 feet can be used to fill gaps and raise the elevation of the corduroy to provide for a more stable crossing.

Removal
Removal is the reverse of installation. Once the corduroy has been removed from the crossing, it may be moved off the right-of-way, burned, or chipped. The material may also be spread and distributed on the ROW over the nearby upland if in accordance with the Maine Slash Law (see Appendix E) and approved by a CMP representative. The banks of streams and drainage ways must be graded back to original conditions. Exposed soils on the banks and within 100 feet of the crossing must be stabilized using seed and mulch. Banks of drainage ways that are expected to receive high flows should be stabilized with seed and curlex or jute matting.

5.0 SURFACE WATER DIVERSION STRUCTURES (WATER BARS)

A number of above-ground structures or techniques are available to divert water out of travel ways and work areas in order to prevent subsequent runoff and erosion. The terminology and definitions for these techniques (i.e., broad-based dips, water bars, skid humps, water turnouts, and cross-drainage box culvert) vary, but the purpose of all is to redirect water moving down a slope into adjacent vegetated areas (filter strips). Any activities that involve land grading have the potential to cause sedimentation. Their use and installation needs to be carefully planned. Planning for these techniques must include timing, use of natural buffers (filter strips), mulching, and temporary and permanent seeding. Minimizing the area of soil exposed at one time is a key component of ensuring that surface water diversion structures function effectively. General standards for their construction are as follows.

Materials
Most of these structures are constructed by excavating or moving and shaping earth from within the access way or work area. The cross-drainage culvert structure typically uses logs or timber to form a box-like structure to catch water from travel ways or side ditches in order to direct it across the travel way and away from disturbed areas.

Positioning
These structures should be installed immediately above and along steep pitches in the road and below seepage areas on natural or cut banks. They should be sited to take advantage of existing vegetation for filtering and slope away from the travel surface. The interval for installing these diversion structures depends on the slope of the road, as well as the nature of the road surface, soils, and wetness. Generally speaking, steeper slopes require shorter distances between

diversion structures. The following table contains recommended distances between installed structures depending on slope.

Table 4
Recommended Distances Between Water Diversion Structures

Slope (Percent)	Spacing (Feet)
0 – 2	500 – 300
3 – 5	250 – 180
6 – 10	167 – 140
11 – 15	136 – 127
16 – 20	125 – 120
21+	100

All of these structures should be sized in anticipation of greater flows resulting from snow melt, spring runoff, and storm rains.

Installation

These structures should be installed at 30-degrees angled down grade. The shape of the backside portion of the structure should have a reverse slope of about 3 percent. Use of a pop-level is recommended to ensure that drainage is away from the road. Structures should be constructed with rounded (not vertical) mounds and dips to allow for firm compaction and to allow re-vegetation.

In the case of the cross-drainage culvert, the minimum width of the open face of the culvert should be 18 inches. The travel surface should consist of at least 12 inches of gravel or soil over the culvert. The slope of the culvert should be a drop of at least 5 inches in every 10 feet of length to ensure proper drainage.

The inlet end of all structures should extend beyond the edge of the access road so that it fully intercepts water flows that may flow onto the access road. The outlet end of the structure should extend out enough to prevent water from flowing around and re-entering the road or work area.

The discharge ends of any of these diversion structures should outlet into a vegetated filter strip. Where heavy flows are encountered or anticipated, the outlet end of the structures should incorporate an apron of rock, gravel, or brush to reduce water velocities. If construction will extend into fall and winter months, be sure to upgrade to meet winter standards all erosion control measures (e.g., increase amount of mulch, etc.), to protect the site from spring runoff.

Where the structure is within 100 feet of a stream or wetland, the incorporation of a small, excavated settling basin or ditch turnout to reduce the velocity of flows and the continued movement of sediment downslope should be considered. In addition, some type of sediment barrier (silt fencing or staked hay bales) will be installed at the outlet of the diversion structure, where vegetated filter strips are narrow or sparsely vegetated, in order to prevent sediment from eroding into water resources.

Maintenance
Due to repeated travel over these structures, maintenance is critical to their effective functioning. As the structure becomes flattened or rutted, it needs to be re-excavated or graded to ensure the interception and redirection of water runoff. The ends of any cross-drainage culverts should be maintained by clearing away any potential blockages.

Removal
After the completion of the construction project, removal of these structures is not a requirement, with the exception of the cross-drainage culvert. The structures can be left in place provided they have been suitably stabilized with seed and mulch. Any hay bale barriers or silt fence at the outlet end should be removed when the site has a healthy vegetative cover.

6.0 SEDIMENT BARRIERS (STRUCTURAL MEASURES)

6.1 Introduction

The use of properly installed erosion and sediment control barriers is a fundamental and critical component for preventing erosion at CMP construction projects. Erosion control barriers include silt fence, hay bales, and/or erosion control mix berms. In some cases, these barriers may be deemed unnecessary by CMP, its representatives, or a Third Party Inspector due to factors including slope and filter strip width within project boundaries. A typical CMP construction project will use a combination of barriers to effectively control erosion near water resources. Installation and diligent maintenance of these barriers serves the following purposes:

- Assures the environmental integrity of those upland and water resource areas not designated or permitted for disturbance. Specifically, it maintains the onsite vegetative community and water quality of the surface water within the watershed.
- Assures compliance with all applicable federal, state, and local environmental and land use regulations or permit conditions.

Generally, silt fence is the preferred barrier because: it traps a much higher percentage of suspended sediments than hay bales; it can be easier to install, obtain, and transport; and is less costly. In addition, the structural longevity of silt fence is 60 days or longer unlike straw or hay bales' longevity which is 60 days or less.

The standards and procedures outlined in this section of the manual are meant to address a majority of the situations encountered during transmission line and substation construction activities. For additional information on sediment and erosion control methods and techniques, or to address a particularly problematic situation, this manual should be used in conjunction with and supplemented by the Maine Erosion and Sediment Control BMPs. For other recommended references, see Appendix C.

6.2 Silt Fence

Materials

Silt fence is provided by a number of manufacturers and is generally a synthetic fabric pre-attached to wooden staking. The fabric should be pervious to water allowing a flow through rate of 0.3 gallon per square foot per minute. The fabric should contain stabilizers and ultraviolet ray inhibitors to allow it to sustain exposure of a minimum of 6 months. The height of the filter fabric should not exceed 4 feet in height.

Placement

Silt fence is to be utilized at the edge of any planned work area or area which will cause the disturbance of soil. It will be installed to intercept any sheet flow of water and detain sediment from entering water resources or leaving the project site. It should be installed prior to starting work. Given the expansiveness of CMP transmission line projects in particular, the amount of silt fence placement must be selective; however, it should still be used in amounts sufficient to meet potential changing conditions in a pro-active manner. After the primary stabilization measures (temporary and permanent) have been implemented, silt fence use is encouraged in the following selected locations, as appropriate:

- Around all substation project sites.
- Along all access roads or work areas that are within 100 feet of water resources.
- Along all access roads or work areas in upland settings that encounter seepage moving across slope.
- Around all stockpiled soils.

In general, the placement of silt fence is appropriate when:

- Serving a drainage area of no more than .25 acre per 100 feet of silt fence length.
- The maximum slope length behind the fence is 100 feet or less.
- The maximum gradient behind the fence is 50% or 2:1 horizontal/vertical.
- Where the filter strip is not of an adequate width (see Table 1).

Installation

The following installation guidelines are the minimum which should be implemented; however, appropriate changes to silt fence installation should be made as conditions change during the construction operation.

Silt fence will be placed an adequate distance (6-10 feet) beyond the toe of the slope (if there is sufficient room) to allow for sediment accumulation between the disturbed area and the down-gradient water resources. If there is not sufficient room to place the silt fence an adequate distance beyond the toe of the slope, CMP, a representative of CMP, or the Third Party Inspector should be consulted. The barrier should be installed along the contour, within reason. The goal is to slow and pool the sediment-laden runoff to allow fine sediments to settle-out before the runoff enters the water resource. The ends of the barrier should be up-turned to maintain the pool volume.

A trench shall be excavated approximately 6 inches wide and 6 inches deep on the up-slope side of the silt fence alignment. The lower edge of the silt fence fabric should be entrenched for a distance of at least 4 inches up-slope and then back-filled. Should frozen or rocky ground conditions prevent the effective or practical use of trenching, materials such as bark/wood chips, wood fiber mulch, or a soil erosion control mixture can be used. This material is to be mounded on top of at least 4 inches of filter fabric which would otherwise be trenched.
Silt fence should be installed in a continuous roll to avoid the need of a joint between different pieces of fence. If joints are necessary, filter fabric shall be "spliced" together at a support post, securely sealed, and with a minimum of 6 inches of overlap. Splicing rolls of silt fence entails twisting end posts together, creating a continuous section of silt fence.

Support posts should be placed on the down-slope side or the side closest to or facing the water resource. The posts should be placed 6 feet apart (a maximum of 10 feet may be acceptable in some locations) and driven securely into the ground, typically about one foot deep. Silt fence usually has posts pre-attached.

Silt fence should not be installed in streams or drainage ways where concentrated water flow is present or concentrated flows are anticipated.

Maintenance
Once a week, or after rainstorms producing at least ½ inch of rainfall, whichever is more frequent, the contractor is responsible for inspecting all temporary erosion and sediment control barriers. Such inspection is necessary to assure that the barriers are functioning properly as well as identifying new areas requiring installation. A maintenance log should be kept of all erosion control changes, improvements, and maintenance performed.

If any barriers are not functioning properly, they will be repaired or replaced. A sediment control barrier is not functioning if:

1. Water is flowing around the sides or under the barrier.
2. Soil has built up behind the barrier to the point more than half-way up the fence.
3. There is excessive sag in the fence.
4. There is evidence of sedimentation such as gully erosion, slumping of banks, or the discoloration of water outside of the perimeter silt fence.

Corrective measures include removing accumulated sediment from behind the barrier, restaking, extending the ends of the fence, or installing another fence further upslope.

Removal
Installed silt fence will be removed once it is evident that the soils have become stabilized and the potential for erosion no longer exists. In most cases, the silt fence will not be removed until at least one growing season has past. Removal of silt fence should be coordinated with CMP or their designated representative.

Any ridges or mounds of soil or caught sediment remaining in place after the silt fence has been removed, must be leveled-off to conform to the existing grade. Any newly exposed soil that may erode must be seeded and mulched.

All removed silt fence must be properly disposed of off the project area.

6.3 Hay Bales

Placement

Like silt fence, hay bale barriers can be utilized at the edge of any planned work area or areas where soil disturbance has occurred or will occur. Barriers are installed to intercept sheet flow of water and detain sediment from entering water resources or leaving the project site. Given the expansiveness of CMP transmission line projects in particular, the amount of hay bale barrier placement must be selective, but still in amounts sufficient to meet potential changing conditions in a pro-active manner. Hay bale barriers will be used, as appropriate, in the following locations:

- Around all substation project sites.
- Along all access roads or work areas that are within 100 feet of a water resource area.
- Along all access roads or work areas in upland settings that encounter seepage moving across slope.
- Around all stockpiled soils.

In general, the placement of hay bales is appropriate when:

- Serving a drainage area of no more than .25 acre per 100 feet of barrier length.
- The maximum slope length behind the barrier is 100 feet or less.
- The maximum gradient behind the barrier of 50% or 2:1 horizontal/vertical.
- Where the filter strip is not of an adequate width (see Table 1).

Installation

The following installation guidelines are the minimum which should be implemented; however, appropriate changes to hay bale installation should be made as conditions change during the construction operation.

The barrier will be placed an adequate distance (6-10 feet) beyond the toe of the slope (if there is sufficient room) to allow for sediment accumulation between the disturbed area and the down-gradient sensitive areas. If there is not sufficient room to place the hay bales an adequate distance beyond the toe of the slope, CMP, a representative of CMP, the project environmental inspector, or the Third Party Inspector should be consulted. Within reason, the barrier should be installed along the contour. The goal is to slow and pool the sediment-laden runoff to allow fine sediments to settle-out before the runoff enters the water resource. The ends of the barrier should be up-turned to maintain the pool volume.

A shallow trench shall be excavated the width of the bale and to a minimum depth of 4 inches in which to bed the bale. The excavated soils are then used to seal the lower inside (up-slope) edge of the barrier. The bales should be set tightly together and entrenched with the baling string oriented on the sides (i.e., not touching the ground) in order to prevent deterioration of the string.

Every bale should be staked using 2 stakes per bale. The stakes should be driven in at angles such that it binds and forces abutting hay bales together.

Gaps between bales shall be packed with loose hay to prevent water from escaping between the bales.

Hay bales will not be placed in streams where flow is present or anticipated.

Maintenance
Once a week, or after rainstorms producing at least ½ inch of rainfall, whichever is more frequent, the contractor is responsible for inspecting all temporary erosion and sediment control barriers. Such inspection is necessary to ensure the structures are functioning properly as well as identifying new areas requiring installation. A maintenance log should be kept of all erosion control changes, improvements, and maintenance performed.

If any barriers are not functioning properly, they must be repaired or replaced. A sediment barrier is not functioning if:

- Water is flowing around the sides or under the barrier.
- Soil has built up behind the barrier to the point more than half-way up the hay bale or where there is excessive lean to the barrier.
- There is evidence of sedimentation such as gully erosion, slumping of banks, or the discoloration of water outside of the hay bale barrier.

Corrective measures include removing accumulated sediment from behind the barrier, re-staking, extending the barrier at the ends, or installing another barrier further up-slope.

It is not recommended that straw or hay bales be used for periods greater than 60 days.

Removal
Installed hay bales will be removed once it is evident that the soils have become stabilized and the potential for erosion no longer exists. In most cases, the hay bale barrier will not be removed until at least a healthy growth of vegetation is established on the disturbed site. Removal of hay bale barriers should be coordinated with CMP or their designated representative.

Any ridges, mounds of soil, or caught sediment remaining in place after the hay bales have been removed, must be leveled-off to conform to the existing grade. Any newly exposed soil that may erode must be seeded and mulched.

All removed hay bales must be properly disposed of, or broken up and used as mulch on the bare soils near the barrier.

6.3.1 Problems With Straw or Hay Bale Barriers

There are several situations where straw or hay bale barriers may be ineffective or cause problems:

1. When improperly placed and installed (such as staking the bales directly to the ground with no soil seal or entrenchment), hay bales allow undercutting and end flow.

2. When used in streams and drainage ways, high water velocities and volumes destroy or impair their effectiveness.
3. When bales are not inspected and maintained adequately.
4. When hay bale barriers are removed before up-slope areas have been permanently stabilized.
5. When hay bale barriers have not been removed after they have served their usefulness.

6.4 Erosion Control Mix Berms

Composition

Erosion control mix berms are made up of shredded bark, stump grindings, and composted bark. It may be made on a project site if adequate materials are available, however its composition needs to be a well-graded mix of different particle sizes. Wood chips, bark chips, ground construction debris and processed wood cannot make up the organic component of the mix. Be sure to consult with the project environmental inspector regarding the suitability of any erosion control mix material proposed for use.

Installation

Erosion control mix berms are simply placed on the surface of the ground and do not require any soil disturbance. The berm should be located in a similar manner to other sediment control barriers along contour, downslope of disturbed soils. Also similar to other sediment barriers, they should not be placed in areas of concentrated runoff, below culvert outlets, around catch basins, or at the bottom of a large contributing subwatershed. At the toe of shallow slopes less than 20 feet long, at a minimum berms should be 12" high and a minimum of 2 feet wide at their base. For longer or steeper slopes, the berms should be wider to accommodate additional runoff. They are ideal for installation on frozen ground, on shallow to bedrock soils, outcrops of bedrock, and heavily rooted forested areas (i.e., those areas where other barriers are difficult to install).

Erosion control mix can also be placed in a synthetic "sock" to create a contained stable sediment barrier. This is especially useful in areas where trenching is not feasible, such as frozen ground, across pavement, or compacted gravel. When in a sock, erosion control mix can staked in an area of concentrated flow (i.e., ditch or swale) as the netting prevents movement of the mulch mixture.

Maintenance

As with other barriers, inspection should be performed after each rainfall or daily during prolonged periods of rain. Accumulations of sediment should be removed when they reach half the height of the barrier, and the berms can be reshaped and new material can be added as needed.

Removal

In most cases, erosion control mix berms do not need to be removed. They will continue to function as they decompose, become part of the soil on the site and will naturally revegetate. If synthetic socks are used, the erosion control mix can be emptied from the sock and the socks can be disposed of off site.

7.0 NONSTRUCTURAL EROSION CONTROL MEASURES

7.1 Nonstructural Measures Defined

Nonstructural measures are temporary or permanent methods used to cover exposed soil areas to prevent erosion from occurring. Their purpose is to cover whole areas of exposed soil to prevent initial erosion of soil from a construction site.

Examples of nonstructural measures include hay or straw mulch, erosion control mix, matting, or seeding.

7.2 Importance of Nonstructural Measures

Nonstructural measures are important because they provide both temporary and permanent protective cover to exposed soils. Generally, they provide the first line of protection against erosion, and can be the most effective means of preventing erosion. This protection is important because exposed soils are easily eroded by wind or water. Some soils such as silts can easily be removed from a construction site by rainwater. The impact of individual raindrops on exposed soils can loosen soil particles, and these particles can then be carried off the work site by runoff and deposited into water resources including streams, rivers, wetlands, ponds, and lakes. Silt particles don't settle out of water easily, and water siltation can pollute surface waters and harm aquatic creatures such as insects and fish. For example, brook trout, one of Maine's premier game fish species, requires clear, high quality water in order to survive. Silty water can reduce spawning habitat, irritate fish gills, lower oxygen content in water, and make fish susceptible to diseases.

Dry soil conditions and high winds can also cause siltation. When small particle soils such as silts become dry, they have a baby powder-like texture and can easily be swept away by winds. Nonstructural measures help prevent wind erosion because they hold moisture next to the soil, keep the soil from drying out due to wind exposure, and prevent winds from carrying away dry soil particles. Keep in mind, however, that proper construction sequencing is invaluable (See Section 2.3).

7.3 Placement of Nonstructural Measures

Nonstructural measures should be used whenever there is a possibility that exposed soils on a construction site could wash into adjacent sensitive water resources. Temporary nonstructural measures such as hay or straw mulch should be spread on exposed soils within 100-feet of water resources within 48 hours of initial soil disturbance, or before any predicted storm event. There are two types of nonstructural measures: temporary and permanent. Temporary measures are typically used <u>during</u> construction, while permanent measures are usually applied <u>after</u> construction is complete (i.e., restoration). Provided below are general discussions and explanations of the common nonstructural measures that are used on CMP construction sites.

7.3.1 Temporary Measures

- Hay or straw mulch (unanchored on slopes less than 8%, anchored on slopes greater than 8%) on exposed soil areas and soil stockpiles in the construction area.
- Temporary seeding covered by hay or straw mulch on soil stockpiles or areas of exposed soil next to sensitive resources that are not scheduled for final restoration for 30 days (this only applies between the dates of April 16 to October 31 of any given year). Temporary seeding is not required during the Winter Construction Season.
- Erosion control mix can be used as a stand-alone temporary mulch on slopes that are 2 horizontal to 1 vertical, or less, on frozen ground, in forested areas, or at the edge of gravel parking and areas under construction. It should be applied at a thickness of 4 to 6 inches.
- Rolled Erosion Control Products (RECP's) such as Curlex or Jute matting, can be used on areas of high wind exposure, steep slopes (steeper than 8% grade), unstable soils, and stream/river bank restoration areas. Matting is typically anchored (usually 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.

Table 5
Temporary Seeding Rates and Dates

Seed	Lb./Ac	Seeding Depth	Recommended Seeding Dates	Remarks
Winter Rye	112(2.0 bu)	1-1.5 in.	8/15-10/1	Good for fall seeding. Select a hardy species, such as Aroostook Rye.
Oats	80 (2.5 bu)	1-1.5 in.	4/1-7/1 8/15-9/15	Best for spring seeding. Early fall seeding will die when winter weather moves in, but mulch will provide protection.
Annual Ryegrass	40	.25 in.	4/1-7/1	Grows quickly but is of short duration. Use where appearance is important. With mulch, seeding may be done throughout growing season.
Sudangrass Perennial	40 (1.0 bu) 40 (2.0 bu)	.5-1 in. .25 in.	5/15-8/15 8/15-9/15	Good growth during hot summer periods. Good cover, longer lasting than Annual Ryegrass. Mulching will allow seeding throughout growing season.
Temporary mulch with or without dormant seeding			10/1-4/1	Refer to TEMPORARY MULCHING BMP and/or PERMANENT VEGETATION BMP.

Proper application rates, location, and seasonal consideration are provided in Table 6 on page 22 of this manual.

7.3.2 Permanent Measures

Uplands

- Permanent grass and legume seeding covered by hay or straw mulch on all areas that have been restored to final grade (this seeding generally applies between the dates of April 16 to October 31 of any given year). This is required to establish permanent, perennial, vegetative cover on exposed soils. Permanent seeding is not required during the Winter Construction Season, although dormant seeding may be performed. (See Section 8.0 for details on winter construction.)
- Seeds covered by anchored (usually with large staples) Curlex or jute matting in areas of high wind exposure, on steep slopes (steeper than 8% grade), unstable soils, and stream/river bank restoration areas.
- The soil may need to be properly prepared before any seeds are placed on the ground. This preparation may include addition of fertilizer (only in designated upland areas not adjacent to, or near waterbodies or wetlands, if in doubt ask the environmental or construction inspector) in areas that have been tested, and are found to be deficient in plant nutrients.
- Erosion control mix can also be used as a permanent mulch to provide a buffer around disturbed areas. It can be left in place to decompose and naturalize. It will eventually support vegetation, which should be promoted. If vegetation is desired in the short-term, legumes and woody vegetation can be planted, which will create additional stability.

Wetlands

- Wetland areas are to be seeded only with resource agency approved wetland seed mixes. If it is decided that wetlands will not be seeded, disturbed wetland will be graded to original contours, mulched with straw, and allowed to revegetate naturally.

As with the Temporary Measures, refer to Table 6 on page 22 for proper application rates, locations, and seasonal considerations.

For permanent seeding mixtures refer to Appendix A of the Maine Erosion and Sediment Control BMPs.

8.0 WINTER CONSTRUCTION CONSIDERATIONS

If a project is actively being constructed between November 1 and April 15 of any given year, sediment and erosion control guidelines developed by the Maine Department of Environmental Protection for projects occurring during the winter months must be followed.

Of course, nothing can replace good common sense. These guidelines may not be necessary at all times during the winter construction dates for several reasons. For example, if there is no snow on the ground or the ground isn't frozen by November 1, only the standard BMPs must be followed. Also, if the ground thaws and all the snow is gone before April 15, the standard BMPs may be appropriate. Nothing substitutes good judgment, being familiar with the construction site, and being aware of the site-specific conditions. Proper construction sequencing (Section 2.3) can greatly minimize environmental impact during winter construction. When in doubt, contact the project construction manager or environmental inspector with any questions.

Table 6 on page 22 highlights some of the major differences between the winter construction guidelines and normal BMPs used during construction and for temporary stabilization. The table presents differences for temporary measures that should be used during construction, and permanent measures when construction is completely done.

Table 6
Nonstructural Erosion Control Measures (Seasonal Differences in Construction BMP Requirements)

Dates	General Construction April 16 through October 31 of every year	Winter Construction November 1 through April 15 of every year
Mulch on slopes less than 8%	Within 100-feet of sensitive water resources apply hay and/or straw mulch at a minimum of 70 lbs./1000 square feet of exposed soil (about 2 bales). Must be done within 7 days of initial soil disturbance and before storm forecasted events, unless specified otherwise.	Within 100-feet of sensitive water resources apply and maintain properly anchored hay and/or straw mulch at a minimum of 150 lbs./1000 square feet of exposed soil (about 5 bales) at all times. (double the April 16 – October 31 rate)
Mulch on slopes greater than 8%	Hay or straw mulch can be applied without being anchored, though specific site conditions may require use of anchoring.	Apply mulch as specified above. Properly anchor with Curlex, jute matting, or similar mulch netting on upland slopes exceeding 8% and within 100 feet of streams if no construction activities are anticipated for 7 or more days.
Area of exposed soils allowed at any one time	No restriction on area exposed, but contractor must attempt to minimize amount of exposed soil at any one time, especially next to water resources.	Not more than one (1) acre of exposed (not mulched or otherwise devoid of vegetative cover) soil.
Sediment barriers	A single line of sediment barriers including silt fence, hay bales, or wood waste filter berms must be installed between water resources and disturbed soils.	If soil is frozen, wood waste filter berms **or** 2 lines of sediment barriers (including hay bales and silt fence) must be placed between water resources and disturbed soils.
Temporary seeding in uplands	If required, apply at the rate specified by the supplier, CMP Environmental Department, or Environmental Inspector. Cover with mulch.	Not required, but if temporary seeding is desired, it must be applied at a rate 3 times higher than the General Construction Season, and covered with mulch.
Temporary seeding in wetlands	Wetlands are not to be seeded unless done so with an agency approved seed mix. Annual Rye Grass is not acceptable and shall not be used. Disturbed wetland areas will be mulched exclusively with straw.	Wetlands are not to be seeded unless done so with an agency approved seed mix. Annual Rye Grass is not acceptable and shall not be used. Disturbed wetland areas will be mulched exclusively with straw.
Permanent seeding in uplands	Site must be seeded at rate specified by the supplier and covered with hay or straw mulch. If needed, the site can be limed and fertilized.	Not required before April 16, but if dormant seeding is desired, the site should receive an adequate cover of loam, if necessary, be seeded at a rate 3 times higher than the General Construction Season, and covered with mulch at a minimum of 150 lbs./1000 square feet.
Permanent seeding in wetlands	Do not apply permanent seed mixes to wetland areas unless they are specially designated wetland seed mixes approved by a resource agency.	Do not apply permanent seed mixes to wetland areas unless they are specially designated wetland seed mixes approved by a resource agency.
Temporary seedbed preparation	Apply limestone and fertilizer (uplands only) according to soil test data. If soil test is not possible, 10-10-10 fertilizer may be applied at a rate of 600 lbs./acre and limestone at 3 tons/acre.	Not required, but seedbed can be prepared according to General Construction requirements.
Permanent seedbed preparation	Apply limestone and fertilizer (uplands only) according to soil test data. If soil test is not possible, 10-20-20 fertilizer may be applied at a rate of 800 lbs./acre and limestone at 3 tons/acre.	Not required before April 16, but if dormant seeding is desired, the seedbed can be prepared according to the General Construction requirements.

Dates	General Construction April 16 through October 31 of every year	Winter Construction November 1 through April 15 of every year
Temporary slope stabilization	Same as winter construction season, but mulch does not need to be anchored.	Anchored hay or straw mulch on slopes greater than 8% and drainage ways with greater than 3% slope as necessary. Wood waste mix can be used on slopes in place of anchored hay or straw mulch.
Maintenance of erosion controls	Same as winter construction guidelines.	All erosion controls should be inspected periodically to ensure proper function. If any evidence of erosion or sedimentation is evident, repairs should be made to existing controls or other methods should be used.
Inspection and monitoring	Monitoring should be performed as needed until a new, healthy vegetative cover is attained on the site. This applies to both temporary and permanent seeding.	Monitoring should be performed as needed to ensure proper stabilization and re-vegetation (both temporary and permanent). Starting in the spring following completion of the project, inspections should be performed until new, healthy vegetative cover is attained.

9.0 SITE RESTORATION STANDARDS

Following completion of the construction work, the contractor will be responsible for conducting site restoration work. The following guidelines will apply to all activities, including temporary and permanent roads, stream/wetland crossings, staging and work areas, and substation sites.

9.1 Procedure

At the completion of project construction in an area or at the end of the construction, CMP or their designated representative, the contractor, and any Third Party Inspector will review the project's restoration needs and prioritize the areas. This prioritization should consider time of year, ground conditions, re-vegetation probabilities, and equipment availability. A restoration "walk-through" is strongly recommended.

In many cases a site can and should be restored within hours of when the soil disturbance occurred. Often getting the equipment to a site that needs to be restored only creates more disturbed area to restore. It is important to "restore as you go" to reduce the equipment travel on temporary access roads. It can be particularly difficult to restore an area that was disturbed during winter construction activities in the spring or summer.

Likely areas of restoration include, but are not limited to:

- Around substation construction areas.
- Around pole and anchor pole placement.
- All wetland, stream, or brook crossings, particularly the approaches and any stream banks.
- Drainage ways or ditches.
- All temporary or permanent constructed roads, yarding, and staging areas.
- Cut banks.
- Steep slopes (over 8%).

9.2 Methods for Restoration

There are several methods of restoration for different areas.

1. All soil that is excavated, mounded, or deposited during construction will be re-graded or removed from the site as directed by CMP. All re-grading and redistribution of soil will be done to match existing grade.
2. The banks and bottoms of brooks, streams, and rivers will be restored to natural conditions. In general, any material or structure used at temporary crossings will be removed, and the bank and bottoms restored to their original depth and contour.
3. On permanent access roads, stream culverts and bridges will be left intact and in good repair to remain available for maintenance operations and/or public access (woods roads, camp roads, etc.).
4. On those construction roads to be closed to future vehicle traffic (as determined by CMP), bridges, culverts, and other temporary crossing or water diversion structures will be removed and the banks and bottoms restored to original conditions.

5. Previously installed water bars may remain or new ones will be installed at locations designated by CMP, their designated representative, or the Third Party Inspector. To prevent accelerated soil erosion, such water bars will be installed on all access and construction roads to be closed to vehicle traffic and on steep sections of permanent roads. Permanent water bars will be constructed to a sufficient height and width to divert the amount of water anticipated at each location as well as to provide some post-project permanence to the site. Water bars on permanent roads will be constructed in such a manner that they will remain effective and require minimal maintenance, and will be permanently seeded to ensure their long-term stability.
6. All areas severely rutted by construction equipment will be re-graded and permanently revegetated.
7. Upon completion of the project, the following areas will be permanently revegetated or otherwise permanently stabilized:
    a) All exposed soil within 100-feet of the edge of any water resource, including, but not limited to, discontinued roads, staging areas, and fill around the base of transmission line structures.
    b) Areas of exposed soil on slopes in excess of eight (8) percent, including discontinued roads and construction trails.
    c) Cut and fill banks subject to erosion.
8. Liming, fertilizing, and seeding requirements for permanent re-vegetation will depend upon the soil type and drainage condition of the site. In the absence of soil tests, permanent seeding will generally be done in accordance with "Procedures for Permanent Seeding for Erosion Control" found in Table 6 on page 22.
9. The contractor will be responsible for the proper maintenance of all revegetated areas until the project has been completed and accepted. Where seed areas have become eroded or damaged by construction operations, the affected areas will be promptly re-graded, limed, fertilized, and re-seeded as originally required.
10. The contractor will perform all erosion control work to the complete satisfaction of Central Maine Power Company before the work is accepted. Central Maine Power Company will base acceptance of the erosion control and stabilization work on a final inspection.

APPENDIX A

DEFINITION OF TERMS

APPENDIX A
DEFINITION OF TERMS

Adjacent to a natural resource: Within 75 feet of, or in a position to wash into, a water resource (river, stream, brook, pond, wetland, or tidal area).
Annual seed mix: Seed mixture largely made up of plants that only persist one growing season.
Brook: Essentially the same as a stream, a water course that has a defined channel, a gravel, sand, rock or clay base, and flows at least part of the year. It may be a dry channel part of the year.
Corduroy: Logs greater than 3 inches in diameter at the small end and at least 18 feet long that are placed perpendicular to travel direction, on approaches to and in wetlands for crossings. The purpose of the logs is to prevent rutting and preserve vegetation root integrity in and adjacent to wetland areas. May also be used on approaches to mats or bridge stream crossings.
Crossing: Any activity extending from one side to the opposite side of a sensitive natural resource whether under, through, or over that resource. Such activities include, but are not limited to, roads, fords, bridges, culverts, utility lines, water lines, sewer lines, and cables, as well as maintenance work on these crossings. Crossings should be done to minimize impact. For example, crossing at a right angle to the resource and finding the driest or narrowest spot is one method for minimizing impact.
Cross-sectional area: The cross-sectional area of a stream channel is determined by multiplying the stream channel width by the average stream channel depth. The stream channel width is the straight-line distance from the normal high water line on one side of the channel to the normal high water line on the opposite side of the channel. The average stream channel depth is the average of the vertical distances from a straight line between the normal high water marks of the stream channel to the bottom of the channel.
Culvert: A pipe or box structure of wood, metal, plastic, or concrete used to convey water.
Erosion: Movement of earthen material by water or wind.
Erosion control blanket (matting): Manufactured material made out of natural or synthetic fiber designed to control movement of earthen material when installed properly.
Erosion control mix: Erosion control mix consists primarily of organic materials such as shredded bark, wood chips, stump grindings, composted bark, or similar materials. Ground construction debris or reprocessed wood products are not acceptable for use in erosion control mix. It contains a well-graded mix of particle sizes and may contain rocks up to 4 inches in diameter. Properly manufactured mix will have organic matter content between 80 and 100 percent (dry weight), 100 percent of particles must pass a 6-inch screen, the organic portion needs to be fibrous and elongated, it may contain only small proportions of silts, clays, or fine sand, and its pH should be between 5.0 and 8.0. Its applications include erosion control berms and mulch.
Erosion control plans: Written guidelines specific to a project or activity, describing various techniques and methods to control erosion for specific construction activities.
Fill: Any earth, rock, gravel, sand, silt, clay, peat, or debris that is put into or upon, supplied to, or allowed to enter a water body or wetland. Material, other than structures, placed in or adjacent to a water body or wetland.
Filter strip: Undisturbed areas of ground consisting of natural vegetation and natural litter such as leaves, brush, and branches, located between a water resource and access road, skid road or trail, or other area of disturbed soil.

Ford: A permanent crossing of a stream utilizing an area of existing, non-erodible substrate of the stream, such as ledge or cobble, or by placing non-erodible material such as stone or geotextile on the stream bottom.
Geotextile, Non-woven: Synthetic material made of spun polypropylene fiber used to support wetland fill or stabilize soils.
Geotextile, Woven: Synthetic material of woven polypropylene used to stabilize soils and make sediment barriers (silt fence).
Great pond: An inland water body which in a natural state has a surface area in excess of 10 acres, and any inland water body which is artificially formed or increased which has a surface area in excess of 30 acres.
Intermittent watercourse: Water course that has water in it only part of the year. It is still considered a natural resource.
Mats: Pre-constructed, portable, timber platforms used to support equipment or travel in or over wetlands or water bodies.
Mulch: Temporary erosion control such as hay, bark, or some similar natural material utilized to stabilize disturbed soil.
Perennial seed mix: Seed mixture made up of seeds from plants that persist for several years.
Perennial watercourse: A river, stream, or brook depicted as a solid blue line on the most recent edition of a United States Geological Survey 7.5 minute series topographic map. Typically has water in it year round.
Permanent access road: Project access road that is not restored after project construction completion. Permanent access roads should be designed and constructed so they are not an erosion problem.
Permanent stabilization: Establishment of a permanent vegetative cover on exposed soils where perennial vegetation is needed for long-term protection.
Permanent vegetative cover: Perennial seed stock, including but not limited to grasses and legumes that persist for more than several growing seasons.
Protected Natural Resource: Coastal sand dune system, coastal wetlands, significant wildlife habitat, fragile mountain areas, freshwater wetlands, community public water system primary protection areas, great ponds or rivers, streams, or brooks. (From the Maine Natural Resources Protection Act, 38 M.R.S.A. Section 480-B., revised 2007).
Riprap: Heavy, irregular-shaped rocks that are fit into place, usually without mortar, on a slope in order to stabilize and prevent soil erosion.
Sediment barrier: Staked hay bales, silt fence, or similar materials placed in a manner to intercept silt and sediment laden water runoff.
Sedimentation: Deposition of earthen material in a water body or wetland.
Sensitive Natural Resource: Area that deserves special attention because it is significant wildlife habitat, fisheries habitat, or has other natural resource values. These areas may require the use of minimum impact construction techniques such as use of mats, leaving vegetation intact for buffers, special timing of construction, or other specific techniques.
Settling basin (sediment/catch basin): Excavated pit placed to intercept water running off disturbed soils or dirt road bed. Usually used only where filter strip is inadequate to protect a stream, pond, or wetland from silt and sediment.
Silt fence: Woven geotextile sediment barrier. Proper installation requires placement on-contour and keying the fabric in at ground level.
Steep slopes: Slopes in excess of eight (8) percent.

Stone check dam: A small, temporary dam constructed across a swale or drainage ditch. The purpose is to reduce the velocity of concentrated flows, reducing erosion and trapping sediment generated in the ditch.
Stream: Generally, a channel between defined banks with a gravel, sand, rock, or clay base that flows at least part of the year. It may be a dry channel part of the year. The Maine Natural Resources Protection Act contains a more detailed definition.
Structure: Anything built for the support, shelter, or enclosure of persons, animals, goods, or property of any kind, together with anything constructed or erected with a fixed location on or in the ground. Examples of structures include buildings, utility lines, and roads.
Temporary access road: Road constructed solely for project access which is restored to original grade upon project completion, if not sooner. All exposed soils on access road adjacent to water bodies or on slopes steeper than eight percent must be stabilized with a permanent seed mix and mulch or matting.
Temporary stabilization: Mulch, matting, or seed, or a combination thereof, utilized to stabilize soil. Soil stockpiles left in place longer than 14 days must have temporary stabilization.
Temporary vegetative cover: An annual seed mixture, typically annual rye and oats.
Topography: The contour and elevation of the surface of the ground.
Turn out: Water diversion that directs water out of a ditch or off a travel-way and into a vegetated buffer.
Upland edge: The area of uplands alongside a wetland, stream, or water body.
Wastes requiring special handling: Wastes generated from construction activity including engine oil, hydraulic oil, gear oil, diesel, gasoline, or coolants.
Water bar: Constructed bar across an access road or skid trail that directs surface water off the road or trail into a stable vegetated surface or filter strip. They are used as a temporary measure on active roads or when closing roads permanently to prevent erosion.
Water body: River, stream, brook, pond, wetland, or tidal area.
Water resource: River, stream, brook, pond, wetland, or tidal area.
Wetland: An area that is inundated or saturated by surface or groundwater at a frequency and for a duration sufficient to support, and which under normal circumstance do support, a prevalence of wetland vegetation typically adapted for life in saturated soils. The Maine Natural Resources Protection Act contains a more detailed definition.

APPENDIX B

CONSTRUCTION MATERIALS SOURCE LIST

APPENDIX B

CONSTRUCTION MATERIALS SOURCE LIST

The following list of vendors has been selected given the wide variety of construction materials they offer. The list is not meant to be all-inclusive or an indication of favored vendors.

W.H. Shurtleff Company (Culverts, Geotextiles)

One Runway Road
Suite 8
South Portland, Maine 04106-6169
1-800-633-6149
www.whshurtleff.com

A. H. Harris (Geotextiles, i.e. Curlex Excelsior Blankets)

22 Leighton Road
Augusta, Maine 04332
(207) 622-0821
www.ahharris.com

585 Riverside Street
Portland, Maine 04103
(207) 775-5764

North American Green (Erosion control materials)

Maine Distributor:
E.J. Prescott
P.O. Box 600
32 Prescott Street, Libby Hill Business Park
Gardiner, Maine 04345
(207) 582-1851
www.ejprescott.com

New England Organics (Erosion Control Mulch)

135 Presumpscot Street, Unit 1
Portland, ME 04103
1-800-933-6474
www.newenglandorganics.com

APPENDIX C

OTHER RECOMMENDED REFERENCE MANUALS

APPENDIX C

OTHER RECOMMENDED REFERENCE MANUALS

Maine Erosion and Sediment Control BMPs. Bureau of Land and Water Quality, Maine Department of Environmental Protection, Augusta, Maine. March 2003. DEPLW0588.

Best Management Practices for Forestry: Protecting Maine's Water Quality. Maine Forest Service, Augusta, Maine. 2004. www.maine.gov/doc/mfs/pubs/bmp_manual.htm

Forest Transportation Systems: Roads and Structures Manual. Seven Islands Land Company, Bangor, Maine. Third Edition, 1999.

APPENDIX D

CONSTRUCTION TECHNIQUE ILLUSTRATIONS

APPENDIX E

EROSION AND SEDIMENTATION CONTROL LAW* 38 M.R.S.A. § 420-C

APPENDIX E

EROSION AND SEDIMENTATION CONTROL LAW*

38 M.R.S.A. § 420-C

A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in section 480-B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken and the site must be maintained to prevent unreasonable erosion and sedimentation.

This section applies to a project or any portion of a project located within and organized area of this State. This section does not apply to agriculture fields. Forest management activities, including associated road construction or maintenance, conducted in accordance with applicable standards of the Maine Land Use Regulation Commission, are deemed to comply with this section. This section may not be construed to limit a municipality's authority under home rule to adopt ordinances containing stricter standards than those contained in this section.

* The Erosion and Sedimentation Control Law is administered by the Maine Department of Environmental Protection (MDEP), Augusta, Maine. Please contact the MDEP with specific questions regarding this law.

APPENDIX F

MAINE SLASH LAW* 12 M.R.S.A. § 9333

APPENDIX F

MAINE SLASH LAW*

12 M.R.S.A § 9333

§9333. Disposal along railroad and utility lines

*1. **Stumpage owner**. A stumpage owner, operator, landowner or agent who cuts or causes or permits to be cut any forest growth on lands that are within or border the right-of-way of a railroad, a pipeline, or an electric power, telegraph, telephone or cable line may not place slash or allow it to remain on the ground within the right-of-way or within 25 feet of the nearer side of the right-of-way.*

*2. **Construction**. Slash accumulated by the construction and maintenance of a railroad, a highway, a pipeline or electric power, telegraph, telephone or cable line may not be left on the ground but must be hauled away, burned or chipped. Slash may not be left or place within the right-of-way or within 25 feet of the nearer side of the right-of-way. If a burning permit is denied or revoked under this chapter, the director may allow logs that are too large to be chipped to remain in the right-of-way until the director determines that their removal is economically feasible.*

*3. **Utility line maintenance**. Slash accumulated by the periodic maintenance of a pipeline or an electric power, telegraph, telephone or cable line may be disposed of in the following manner.*

- *A. Slash with a diameter of 3 inches or less may be left in piles on the ground within the maintained portion of the right-of-way. A pile may not be higher than 18 inches from the ground or longer than 50 feet and must be separated from other piles by a minimum of 25 feet in every direction. A buffer strip with a minimum width of 10% of the total width of the maintained right-of-way must be kept totally free of slash with a diameter of 3 inches or less.*
- *B. Slash with a diameter of more than 3 inches must be removed, chipped or limbed and placed on the ground surface. The pieces must be separated and may not be piled one piece over another. Slash of this size may be left within the maintained buffer strips.*
- *C. If a utility line right-of-way is adjacent to a road, slash that is 3 inches or less in diameter must be removed, burned or chipped. Slash with a diameter of more than 3 inches may be left on the ground within the right-of-way and must not be limbed and separated and may not be piled one piece over another. Usable timber products generated from the maintenance of a utility right-of-way may be piled within the right-of-way but must be removed within 30 days.*

* Note that this is an excerpt from the full text of the law. Please contact the Maine Forest Service, Augusta, Maine, for the full text of the law or with specific questions regarding the Slash Law.

APPENDIX G

CULVERT SIZES FOR STREAM CROSSINGS

(3X RULE)

CULVERT SIZES (ROUND) FOR STREAM CROSSINGS (3x RULE)

AVERAGE STREAM WIDTH

Take two measurements across the stream from bank to bank where you intend to place the culvert. Measurements should be taken at the normal high water line (NHWL). To find the NHWL during low flow periods look for water stains on rocks or a debris line along the bank. Add the first measurement to the second and divide this number by 2. This equals the average stream width.
Example: 36in. + 47 in. = 83in. 83÷2 = avg. stream width of 41.5 inches. (Round up to 42in.)

AVERAGE STREAM DEPTH

Take 3 measurements from the bottom of the stream to the NHWL.
Add the measurements together and divide this number by 3. This equals the avg. stream depth.
Example: 12in. + 16in. + 14in. = 42in. 42÷3 = average stream depth of 14 inches.

USING THE TABLE

Take the average width and depth figures and determine where they intersect on the table above.
*For example, for an average stream width of 42 inches (on the left side of the table), and an average stream depth of 14 inches (along the top of the table), the intersect shows a culvert diameter of 48 inches.

Average Stream Width		Average Stream Depth (Inches)														
Feet	Inches	2	4	6	8	10	12	**14***	16	18	20	22	24	26	28	30
1	12	12	15	18	21	21	24	30	30	30	30	36	36	36	36	42
1.5	18	12	18	21	24	30	30	36	36	36	42	42	42	42	48	48
2	24	15	21	24	30	30	36	36	42	42	48	48	48	54	54	54
2.5	30	15	21	30	30	36	42	42	48	48	48	54	54	60	60	60
3	36	18	24	30	36	42	42	48	48	54	54	60	60	60	66	66
3.5	**42***	18	30	36	36	42	48	**48**	54	54	60	60	66	66	72	72
4	48	21	30	36	42	48	48	54	54	60	66	66	66	72	72	78
4.5	54	21	30	36	42	48	54	54	60	66	66	72	72	78	78	84
5	60	21	30	42	48	48	54	60	66	66	72	72	78	78	84	84
5.5	66	24	36	42	48	54	60	60	66	72	72	78	78	84	84	90
6	72	24	36	42	48	54	60	66	66	72	78	78	84	90	90	96
6.0	78	24	36	42	54	60	60	66	72	78	78	84	90	90	96	96
7	84	30	36	48	54	60	66	72	72	78	84	84	90	96	96	102
7.5	90	30	42	48	54	60	66	72	78	84	84	90	96	96	102	102
8	96	30	42	48	54	66	66	72	78	84	90	90	96	102	102	108
8.5	102	30	42	48	60	66	72	78	84	84	90	96	102	102	108	108
9	108	30	42	54	60	66	72	78	84	90	96	96	102	108	108	114
9.5	114	30	42	54	60	66	72	78	84	90	96	102	102	108	114	114
10	120	30	48	54	66	72	78	84	90	96	96	102	108	114	114	120
10.5	126	36	48	54	66	72	78	84	90	96	102	108	108	114	120	120
11	132	36	48	60	66	72	78	84	90	96	102	108	114	114	120	126
11.5	138	36	48	60	66	78	84	90	96	102	108	108	114	120	126	126
12	144	36	48	60	66	78	84	90	96	102	108	114	120	120	126	132
12.5	150	36	48	60	72	78	84	90	96	102	108	114	120	126	132	132
13	156	36	54	60	72	78	90	96	102	108	114	114	120	126	132	138
13.5	162	36	54	66	72	84	90	96	102	108	114	120	126	132	132	138
14	168	36	54	66	72	84	90	96	102	108	114	120	126	132	138	144
14.5	174	36	54	66	78	84	90	96	108	114	120	126	126	132	138	144
15	180	42	54	66	78	84	96	102	108	114	120	126	132	138	144	144

Exhibit 8
Plan and Profile Drawings

Exhibit 9
Project Area With Town Tax Map Overlay

Exhibit 10
CMP's Environmental Control Requirements for Contractors and Subcontractors - Oil and Hazardous Material Contingency Plan

ENVIRONMENTAL CONTROL REQUIREMENTS FOR CONTRACTORS AND SUBCONTRACTORS OF CENTRAL MAINE POWER COMPANY – OIL AND HAZARDOUS MATERIAL

The criteria listed in Section I below are the requirements for oil and hazardous material use compliance by contractors and subcontractors of Central Maine Power Company (CMP). All contractors and subcontractors are required to comply with these requirements while working for or on behalf of CMP.

Penalties: Failure to abide by these requirements will constitute grounds for termination of contractor/subcontractor services.

Section I
General Requirements:

• Contractors/subcontractors will store, transport, and use oil, hazardous materials, and wastes in accordance with all applicable local, state, and federal regulations and these requirements.

• At a minimum, contractors/subcontractors will follow best management practices when storing, transporting or using oil, hazardous materials, and wastes.

• Contractors/subcontractors, at all times, will take care not to cause an uncontrolled spill or release of oil or hazardous materials to the environment.

• Contractors/subcontractors will provide and maintain on-site sufficient spill cleanup and containment supplies (absorbent pads, containment booms, protective clothing, debris containers, etc.) to control releases of oil, hazardous materials, or wastes.

• Contractors/subcontractors will remove all oils, hazardous materials, wastes and unused materials from the work site at the completion of the job. This includes full and partially full containers of waste material such as, but not limited to, rags, gloves, trash, scrap material, and empty containers.

NOTE: If large quantities of oil or hazardous materials are involved, written agreements with emergency response contractors may be required.

Storage and Handling Requirements:

• Contractors/subcontractors will store only the minimal amount of material (at each work site) necessary to complete the work.

• Handling and application of pesticides and herbicides shall only be in accordance with regulations under the Maine Pesticide Control Act of 1975, as amended, Title 7M.R.S.A., Section 601.

• Materials will be stored in D.O.T. approved containers or approved tanks in areas not consideredto be environmentally sensitive.

• Containers will be kept closed unless material is being transferred.

• Contractors/subcontractors will ensure that all transferring operations are monitored and not leftunattended.

• Containers will not be stored on the ground, but will be stored in cabinets or on a firm working surface such as a portable trailer bed or other secure decking.

• If at any time a contractor/subcontractor needs to store oil including, but not limited to, fuel oil, petroleum products, sludge, and oil refuse in excess of an aggregate amount of 1,320 gallons (excluding 55-gallon or less containers) that is located near a pathway to navigable waters, the Federal requirements for oil pollution prevention (40 CFR Part 112) must be met. Contractor/Subcontractor Spill Prevention Control and Countermeasure (SPCC) plans will be approved by a licensed, professional engineer and a copy will be sent to CMP no later than one week prior to the commencement of the oil storage activities.

• Storage and handling of flammable and combustible liquids including gasoline and diesel fuel will be in accordance with rules developed under Title 25 M.R.S.A., Section 2441 (Fire Prevention and Fire Protection), as amended (See also Code of Maine Rules 16-219 Chapter 317). These regulations include, but are not limited to, bonding and grounding during transfer operations, fire protection requirements, storage quantity limitations, and spacing and location requirements.

• All gasoline and fuel storage tanks must have secondary containment constructed of an impervious material and be capable of holding 110% of tank capacity.

• Handling and disposal of hazardous wastes will be in accordance with Maine Department of Environmental Protection (DEP) Hazardous Waste Management rules (06-096 Chapters 853 through 857) developed pursuant to Title 38 M.R.S.A., Section 1301 et. seq., and U.S. Environmental Protection Agency regulations (40 CFR 260 through 272). Handling and disposal of waste oil will be in accordance with Maine Department of Environmental Protection Waste Oil Management Rules (06-096 Chapter 860) and U.S. Environmental Protection Agency regulations (40 CFR 279).

Spill Reporting Requirements:

All spill reporting requirements are the responsibility of the contractor/subcontractor. As required by Title 38 M.R.S.A., Section 543 and Department of Environmental Protection regulations (06-096 Chapters 600 4.B and 800 4.1), spills of oil or hazardous materials in any amount and under any circumstances must be reported to the Department within two hours from the time the spill was discovered at 1-800-482-0777.

As required by the Federal Clean Water Act (40 CFR Part 110.4), a discharge of oil "which causes a sheen upon the surface of the water or adjoining shore line or oily sludge deposits beneath the surface of the water" must be reported within 24 hours to the National Response Center at 1-800-424-8802.

The need to report spills to the National Response Center of hazardous materials other than oil will be determined by the contractor/subcontractor by consulting the CERCLA list of hazardous substances and reportable quantities (40 CFR Table 302.4). Any spills that involve a reportable quantity of any hazardous substance must be reported to the National Response Center by the contractor/subcontractor. The contractor/subcontractor must also report all spills immediately to CMP.

Spill Cleanup Requirements:

It is the contractor's/subcontractor's responsibility to ensure and oversee immediate and complete cleanup of all spills involving oil or hazardous materials. The contractor/subcontractor is also responsible for all health and safety issues related to the cleanup of oil or hazardous materials. The contractor/subcontractor is also responsible for expediting the disposal of spill debris waste and restoring the site to its original condition.