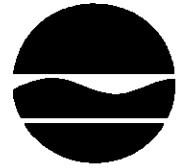


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Joe Martens  
 Commissioner

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 REGULATORY COMMISSION

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RECEIVED  
 SECRETARY OF THE  
 COMMISSION

Kimberly D. Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street, NE, Room 1A  
 Washington, DC 20426

July 17, 2013

**RE: Case No. CP13-499/ New York State Department of Environmental Conservation (NYSDEC) Preliminary Comments on the Notice of Application for Constitution Pipeline Company, LLC (Project).**

Dear Secretary Bose,

The New York State Department of Environmental Conservation (NYSDEC) respectfully submits the following preliminary comments and attached *Recommended Best Management Practices (BMP) for Gas Transmission Projects* in response the Federal Energy Regulatory Commission (FERC) *Notice of Application* dated June 26, 2013. As outlined below, a thorough evaluation of all environmental impacts in the Application and Draft Environmental Impact Statement, including cumulative impacts to resources, is warranted since the majority of the Project is proposed to be located within New York State.

### **Project Description**

As proposed, the Project would include new construction of approximately 120.6 miles of a 30-inch-diameter pipeline and associated pipeline facilities, providing about 650,000 dekatherms per day (Dth/d) of natural gas from two receipt points in Susquehanna County, Pennsylvania to two new delivery points in Schoharie County, New York. The majority of the Project would be located in New York and is proposed to be approximately 97.9 miles in length routed through Broome, Chenango, Delaware and Schoharie Counties.

### **NYSDEC Review and Approvals**

In accordance with Section 401 of the Clean Water Act, applicants seeking a Federal license or permit for activities that may result in a discharge to navigable waters must obtain a Water Quality Certification (WQC) from NYSDEC indicating that the proposed activity will comply with State water quality standards. Federally-delegated or authorized permits, such as a Title V permit for the proposed compressor station, and a State Pollution Discharge Elimination System (SPDES) Stormwater Permit for Construction Activities, must also be approved and granted by NYSDEC. The Applicant will also be expected to apply for State law permits relevant to the resources impacted by the Project. Along with the permit applications, NYSDEC also intends to rely upon the federal environmental review prepared pursuant to the National Environmental Protection Act to determine if the Project will comply with the applicable New York standards.

## **Water Resources, Fisheries, and Wetlands**

**Stormwater Runoff and Erosion:** The Applicant must provide detail sufficient for NYSDEC to make a determination regarding the applicability of the SPDES Stormwater General Permit for Construction Activities (GP-0-10-001) (General Permit) to the proposed Project, or whether an individual SPDES Permit would be required. A linear utility construction project of this nature may be granted authorization under the SPDES General Permit. However, Part I, Section D.7, of the General Permit does not authorize discharges from construction activities for linear utility projects that: a) are tributary to waters of the state classified as AA or AA-s; and b) disturb two or more acres of land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey for the County in which the disturbance will occur.

Additionally, Section D.4 of the General Permit does not authorize discharges from construction activities that adversely affect listed, or proposed to be listed, endangered or threatened species or its critical habitat. Furthermore, Section D.8 does not authorize construction activities that adversely affect property that is listed or is eligible for listing on the State or National Register of Historic Places (including Archeological sites), unless a written agreement is in place with the NYS Office of Parks, Recreation and Historic Preservation or other governmental agencies to mitigate the effects, or if local land use approvals evidencing the same are obtained. If the Project will include any of the activities described above, an individual SPDES Permit must be granted by NYSDEC for the entire length of the Project within New York State.

A preliminary Stormwater Pollution Prevention Plan (SWPPP) must be included as an appendix to the draft EIS, describing the proposed erosion and sediment control practices and, where required, post-construction stormwater management practices, that will be used and constructed to reduce the pollutants in stormwater discharges. Of particular concern in certain areas along the proposed Project route is the existence of karst topography, which warrants additional considerations in preparation of the SWPPP to ensure that by-products of the construction process do not enter karst inlets, including exposed soil, fuel, oil, hydrologic fluids and other construction-related chemicals. Work in and around streams, wetlands and karst inlets (including discharge of water withdrawn from surface water or groundwater for hydrostatic testing) must employ Best Management Practices (BMPs) to ensure that water quality standards are maintained. Strict attention to proper installation and maintenance of sediment and erosion controls in these areas is critical. Methods for maintaining water quality should include isolating work areas (e.g. piping, coffer dam, pumping around) from the flowing waters to ensure that work is accomplished in the dry such that no visible contrast to waters outside and downstream of the work site is apparent.

The Applicant should evaluate how the various erosion control techniques described in the SWPPP will be coordinated within the construction schedule to avoid the potential for catastrophic erosion events witnessed by NYSDEC staff in previous pipeline installations. For example, extensive time delays between vegetation clearing/grubbing, initial grading of the right-of-way (ROW) and actual installation of the pipe must be avoided and temporary mulching or the use of wood chips for ROWs should be evaluated. It is recommended that only a limited

length of the Project development area be opened up at any one time. Where forest cover will be removed, it is also recommended that stump removal and grubbing not be conducted until installation crews are ready to work in that area.

**Water Withdrawals:** The Applicant must evaluate potential water withdrawals that would exceed 100,000 gallons per day (gpd), either from surface or groundwater, and identify procedures to ensure that water withdrawals less than 100,000 gpd do not compromise the required bypass flow (the minimum stream flow at any particular stream point necessary to protect fisheries resources). If proposed NYSDEC regulations pertaining to water withdrawals that exceed 100,000 per day become effective prior to the start of project construction, withdrawal reporting or permit application obligations or updated withdrawal reporting may be required.

**Wetlands:** Wetland impacts that would result from construction of the proposed and alternate routes, including avoidance and minimization measures that would be employed, must be evaluated. If proposed construction in wetlands could result in a significant change in the type of wetland community (such as conversion of forested to non-forested wetland) or in a significant loss to the functions and benefits of the wetland, mitigation in the form of created wetlands or other acceptable measures would be required and should also be evaluated. All crossings of wetlands and streams must be confirmed with NYSDEC for determinations of regulatory jurisdiction. Although it is useful for informational purposes, the Environmental Resource Mapper does not show or establish all resources regulated by NYSDEC.

**Stream Crossings:** The classification of all stream segments proposed to be crossed, including alternative segments, and the proposed method for crossing for each segment must be discussed and evaluated by the Applicant. All waters of the State are provided a class and standard designation based on existing or expected best usage; these classifications include AA, A, B, C(t) and (Cts) which are classified as "protected." NYSDEC is currently reviewing stream classifications in NYSDEC Regions 4 and 7 and an initial review of the preferred Project route shows that seventy-three (73) known 'protected' class streams would be crossed by the proposed pipeline; at least an additional seven (7) which contain trout are also subject to protected class jurisdiction.

For streams and wetlands, the preferred method for crossing is Horizontal Directional Drilling (HDD) because it has the advantages of minimizing land disturbance, avoiding the need for dewatering of the stream, leaving the immediate stream bed and banks intact, and reducing erosion, sedimentation and Project-induced watercourse instabilities. The Applicant should also evaluate cases where other methods are proposed, for instance: the Applicant should explain why HDD will not work or is not practical for each specific crossing. Where HDD will be utilized, the Applicant should: ensure that HDD staging areas remain outside of regulated boundaries (e.g., state-wetland 100 foot adjacent area and 50 feet from protected streams); describe the typical work area required and protective measures that will be used to limit runoff of sediment and HDD fluids into streams and wetlands; and develop contingency plans for any HDD failure that results in sediment and/or drilling fluid entering a wetland or stream.<sup>1</sup>

<sup>1</sup> It is important to note that where HDD cannot be utilized, in-stream work for streams with a standard of Tor TS is permitted by NYSDEC only between the dates of June 15th to September 30th.

The Applicant should evaluate instances where the bed or bank of a stream would be disturbed and discuss the use of "Natural Stream Design" techniques and structures for restoration of the area instead of extensive use of rip-rap.<sup>2</sup> Many of the structures utilized to stabilize stream banks can also serve to enhance in-stream habitat for fish. Where the pipeline crosses under a stream, there should be an extended length on each side of the bank where the pipe is buried deeper.<sup>3</sup>

NYSDEC maintains strict adherence to in-stream work windows and all stream crossings, including temporary or permanent installation bridges and pipelines, must comply with appropriate warm and cold-water fishery windows. The allowable fishery construction window for (T) & (TS) designated waters is June 15 through September 30. Additionally, equipment access roads may also be subject to jurisdictional requirements and NYSDEC staff estimates that the proposed pipeline will include at least 11 such crossings over protected trout streams. Within stream crossings, pipelines should be buried at least 6' below a stream bottom. Minimum cover depth is not subject to variance based upon field conditions. NYSDEC also maintains jurisdiction of up to fifty feet (50') of stream bank width along protected streams, including any activity which would disturb the stream bank; stream crossings, right-of-ways or any other road or disturbance are also included within NYSDEC's jurisdiction.

### **Air Quality**

The Project facility description and source information used to calculate the anticipated air emission levels from operation of the facility, including the Best Available Control Technology (BACT) analysis for NO<sub>2</sub> and CO<sub>2</sub> equivalents and the modeling protocol for NO<sub>2</sub> and formaldehyde should be evaluated. Methane emissions from both emissions/leaks from compressor stations and from pipeline leaks and the measures that the Applicant would employ to ensure minimization of any such methane emissions should be identified and evaluated.

As proposed, the compressor station would require a Title V permit and is subject to Prevention of Significant Deterioration requirements due to anticipated CO<sub>2</sub> equivalents emissions levels. The Title V permit would require BACT for CO<sub>2</sub>. All other criteria air pollutants emission levels are anticipated to be below Attainment and Nonattainment Major New Source Review thresholds; however NO<sub>2</sub> emissions are expected to be greater than the 40 TPY significant project thresholds. Accordingly, air modeling must be conducted to demonstrate that NO<sub>2</sub> emissions from this facility will not cause or contribute to a violation of the NO<sub>2</sub> National Ambient Air Quality Standard; modeling for projected formaldehyde emissions should also be conducted.

### **Land Use**

State Land: NYSDEC is generally opposed to disturbances to State Forest lands and the Applicant should include maps, at an appropriate scale, that show the proposed routing

<sup>2</sup> See <http://www.dec.ny.gov/permits/49060.html>.

<sup>3</sup> NYSDEC has witnessed pipeline installations where pipeline became exposed because stream water flowed behind the installed rip-rap and exposed the shallow section of pipe adjacent to stream. Extending the setback of the deep bury would provide a significant buffer against this scenario.

alternatives and their proximity to State land. Although the proposed route was reportedly chosen to avoid crossing State land, alternative route segments under consideration would in fact cross land owned by the State.

**Forest Tax Law Program:** The Applicant should evaluate the adverse implications of timber removal along the preferred or alternate routes on land enrolled in the Forest Tax Law Program (Real Property Tax Law 480-a), and outline procedures that will be followed to ensure that affected landowners are not inadvertently penalized. Private landowners who are enrolled in the Forest Tax Law Program will be impacted if the Project crosses private lands. Specifically, construction resulting in the removal of timber resources on property enrolled in this program may subject the landowner to violations and penalties if not addressed correctly. As such, landowners must be fully aware of the impacts and process for withdrawing land from the program to avoid any serious tax implications.

**ROW Clearing and Disposal Methods:** The methods and rationale for cutting and disposition of timber and vegetation, and any use of open burning, should be evaluated by the Applicant. As a first priority, merchantable timber should be harvested for lumber; secondarily, timber should be harvested for firewood in accordance with NYSDEC's regulations pertaining to the movement of firewood and quarantine areas related to the Emerald Ash Borer infestation.<sup>4</sup> Clearing crews should be trained to identify and report the Asian Long-horned Beetle, the Emerald Ash Borer, and any other insect that NYSDEC identifies as a potential problem along the proposed route. Further, any use of open burning for disposal of wood waste should be evaluated relative to requirements in 6 New York Codes, Rules and Regulations (NYCRR) Part 215 including seasonal prohibitions on all open burning between March 15 and May 15 to limit the risk of wildfires.

### **Vegetation and Wildlife**

An invasive species control plan should be included within the Project construction/work plan section of the draft EIS. In order to address the potential impacts from invasive species, the plan should document BMPs that will be utilized to prevent the spread of invasive species between work sites, including the potential transport from withdrawal water sources to the receiving water body during hydrostatic testing. The plan should incorporate conducting preconstruction wetland and stream corridor habitat surveys to document population/percentage of invasive species present within the Project ROW so that post construction monitoring and an evaluation of increased populations resulting from Project construction can be accomplished. Although the draft construction plans include a discussion of invasive species, recently, a new site for the Emerald Ash Borer (EAB) was confirmed in the proximity of the proposed Project's route in northern Delaware County---about two 2 miles south of the village of Unadilla.

### **Rare, Threatened, and Endangered Species**

General information regarding the presence of any federal or State-listed rare, threatened or endangered (RTE) species or critical habitat areas, taking into consideration that detailed

<sup>4</sup> See 6 NYCRR Section 192.5.

information about the location of known occurrences of RTE species may be confidential, should be evaluated by the Applicant. Before including any sensitive RTE information in the draft EIS, the Project Sponsor should consult with NYSDEC staff and the United States Fish and Wildlife Service (USFWS). A description of proposed field surveys for RTE species and/or habitat, measures to avoid impacts to RTE species such as re-routing work areas, a discussion of the use of physical barriers such as fencing and warning signs, and seasonal timing of construction work should be included. If RTE species are present and would be permanently impacted, proposed habitat mitigation for these impacts should also be described in the draft EIS.

Further, the Applicant should also describe proposed contingency plans that will be put in place if an unanticipated encounter with an RTE species occurs during construction activities, including: training for workers; providing stop-work authority for the environmental monitor; ensuring proper handling of the RTE species; and reporting to the appropriate resource agency. Further, the draft EIS should include records of State or federal agency consultation, including any requests to the New York Natural Heritage Program for RTE information along the proposed and alternate routes, if these do not contain confidential information.

### **Cumulative Impacts**

Finally, the Applicant must evaluate whether the Project would be reasonably available for supply and distribution for communities along the Project route and whether the Project could reasonably serve as a collector line for additional supply from New York Marcellus and Utica Shale formations. Since the location of the proposed Project route has a high potential for development of natural gas extraction from Marcellus and Utica Shale formations, as indicated in the *revised NYSDEC draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program*, September 7, 2011, the draft EIS must evaluate the cumulative environmental impacts associated with these potential activities.

The draft EIS discussion should include the applicable procedures and requirements for the potential aforementioned activities and their associated Project upgrades and modifications. At a minimum, the draft EIS should describe and evaluate the following: 1) if the pipeline supply is available to additional customers along the route, describe what additional facilities or upgrades would be needed (i.e., additional compressor stations, metering stations) and their associated environmental impacts; 2) discuss whether additional suppliers could be accommodated by this pipeline with and without a need for pipeline upgrades should drilling and production occur in areas serviceable by the pipeline and describe their associated environmental impacts; and 3) discuss the FERC approval process relating to system upgrades or modification such as additional compressor stations, lateral collection and distribution lines.

In addition to the foregoing, the NYSDEC Best Management Practices (BMPs) for Gas Transmission Line Construction Projects are attached hereto for review. The BMPs include, among other things, recommended procedures relating to: erosion and sediment controls; operational stormwater management; clearing and slash disposal; stream and wetland protection; horizontal drilling; general clean-up and restoration; access roads; invasive species control; and the protection of rare, threatened and endangered flora and fauna species and significant natural communities.

**Thank you for your consideration of these important issues and please contact me if you have any questions or comments.**

**Very truly yours,**

***Patricia J. Desnoyers***

**Patricia J. Desnoyers**

**Attachment**

**CC: Service list via email**

## **RECOMMENDED BEST MANAGEMENT PRACTICES (BMP) FOR GAS TRANSMISSION LINE CONSTRUCTION PROJECTS**

**May 16, 2013**

### **1.0 EROSION AND SEDIMENT CONTROL PROCEDURES**

**The purpose of stormwater management is to prevent erosion both on the construction site itself and on adjacent undisturbed areas, as well as to prevent environmental degradation and prevent erodible soils from entering wetlands and waterbodies. This generally is accomplished through both stabilization and structural control procedures. Stormwater management also addresses pollution prevention through both the implementation of measures to reduce pollutants in stormwater and good housekeeping practices on the construction site.**

**All construction activities associated with the construction of new gas transmission lines which involve soil disturbances of one acre or more of land, shall obtain coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity prior to the commencement of the construction activity. Construction Activity, for purposes of the SPDES General Permit for Stormwater Discharges, is defined as "any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal or brush root removal. Construction drawings should indicate the likely areas of soil disturbance.**

**The Certificate Holder shall supply a Stormwater Pollution Prevention Plan (SWPPP) for the project which will include project specific erosion and sediment control measures in accordance with New York State Department of Environmental Conservation's (NYSDEC) "Standards and Specifications for Erosion and Sediment Control" and the NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activities (for projects disturbing one acre or more of soils) issued for the specific project. NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activities shall control over all inconsistent provisions related to storm water discharges from construction activities. Typical erosion and sediment control procedures expected to be utilized are enumerated below:**

#### **1.1 SOIL EROSION AND SEDIMENT CONTROL**

**The site specific types of construction access and construction activities necessary to construct the gas transmission line shall be described. The project plan and profile drawings will illustrate and prescribe the location and details of the soil erosion and sediment-control program to be followed during construction of the pipeline. The procedures enumerated herein are designed and maintained in accordance with the latest version of New York Standards and Specifications for Erosion and Sediment Control.**

#### **1.2 CONSTRUCTION SEQUENCING**

**Construction activities will proceed in logical phases for installing a new gas transmission line. Proper sequencing and coordination of the construction activities represents a key element in the**



soil erosion and sediment-control program for the project. To the maximum extent practicable, wetlands will be avoided, and to the extent reasonably practicable, all areas adjacent to wetlands will be avoided. At no time will more than five (5) acres of ground disturbance be allowed without a waiver from the Regional Water Engineer. Representative construction activities for the gas transmission line consist of the following: 1) Staking and flagging construction limits (i.e., ROW, off-ROW access roads, and extra work areas); 2) Marking out of utilities; 3) Installation of erosion- and sediment-control measures; 4) Pruning and clearing of the work zone; 5) Excavation and setting in connection with structure removal and replacement; 6) Fabrication and installation of above-ground structure components; 7) Gas pipeline installation below ground; 8) Restoration of structure site; and 9) Conducting of inspections and maintenance of records.

On completion of the construction activities, all disturbed areas shall be stabilized in accordance with the most current version of the New York Standards and Specifications for Erosion and Sediment Control, the project SWPPP and SPDES General Permit. Devices for erosion and sediment control will be installed early in the construction process and implemented prior to starting any activities that may cause soil disturbances, such as before the start of grading and excavation activities. Early controls will include the installation of stabilized construction entrances at locations not previously paved or graveled, and the installation of erosion- and sediment control measures at existing, nearby storm water management features, such as catch basins and open storm ditches.

The following sections describe the general construction sequence and erosion controls to be implemented during the construction of the project. Based on observed site conditions and the anticipated construction activities, this procedure prescribes the use of stabilized construction entrances, silt fencing, check dams, dust control, temporary sediment traps and basins, temporary access waterway crossings, concrete washouts, and swamp mats. Applicable figures from the NYS Standard and Specification for Erosion and Sediment Control, other structural-control "typicals," and typicals of other relevant project related features are available on-line at <http://www.dec.ny.gov/chemical/29066.html>. Narrative descriptions of general controls are as follows.

### 1.3 STRUCTURAL CONTROLS

Structural controls are used to divert stormwater runoff flows away from disturbed areas, or otherwise limit to the extent possible the discharge of pollutants from exposed areas of the site. Structural controls will be installed prior to the start of work at any structure site within or adjacent to a resource, and will remain in place throughout the construction effort until final restoration and landscaping has been established. Routine inspections will be undertaken to ensure that the integrity of these structural controls is maintained. The types of structural controls to be implemented during construction are described in the sections below. Their locations shall be provided on the plan and profile drawings.

### 1.3.1 Stabilized Construction Entrance

To prevent the deposit of materials onto paved roadways or parking areas, and to prevent runoff from entering wetlands or streams, stabilized construction entrances will be installed and maintained at all points where construction-access roads intersect with these surfaces. To prevent rutting, typical construction entrances will be covered with a #4 stone over filter fabric, unless slope or stability requires different, for a distance of fifty (50) feet into the construction roads prior to site access and disturbance.

### 1.3.2 Silt Fence and Straw Bale Barriers

A silt fence consists of 1" X 1" X 4' oak posts with filter fabric and is used as a temporary measure. The silt fence is installed along the down slope or side slope of a disturbed area. When runoff passes through openings in the fabric, the sediment is trapped by the fabric and settles on the uphill side. Silt fences will be placed, as appropriate, along perimeter areas that drain away from disturbed surfaces. A straw bale barrier acts as a temporary measure in a manner similar to that of a silt fence. Straw bales will be tightly packed in a linear or crenellated fashion, and each bale will be secured with two stakes. Silt fence or straw bale barriers will be provided as follows:

- Along the downhill perimeter edge of all areas disturbed;
- Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas;
- Along the toe of all cut slopes and fill slopes of the construction areas;
- Perpendicular to flow in the bottom of existing drainage ditches, channels, swales, etc., that traverse disturbed areas or carry runoff from disturbed areas;
- Perpendicular to flow in the bottom of new drainage ditches, channels, and swales;
- At the entrance to culverts that receive runoff from disturbed areas;
- Across the ROW on any slope leading into wetlands or streams;
- Along the edge of the construction area with slopes that lead into wetlands or streams; and
- On the down slope side of temporary soil piles.

### 1.3.3 Water-diversion Structures

Water-diversion devices will be used to control surface runoff on the ROW and adjacent work areas. For construction activities within the gas transmission line ROW, water-diversion devices will not extend off the ROW by more than five (5) feet. This will prevent water from returning to the disturbed construction area. The water-diversion devices that may be used during construction include:

#### 1.3.3.1 Waterbars

Waterbars will be used on slopes in the ROW to intercept and divert surface runoff from the work area to a stabilized location. Silt fencing or staked straw bales will be installed at the down-slope outfall to prevent erosion and sedimentation into adjacent off ROW property. Waterbars must be checked and maintained regularly and, at a minimum, before and after each major rain event during construction.

### 1.3.3.2 Driveable Berms

Similar in construction to waterbars, these berms may be used temporarily in the ROW access road to divert runoff from entering wetlands from upland roads or work sites. Driveable berms typically are used where straw bales also may be appropriate because using berms eliminates the need for moving straw bales or silt fencing each workday. Driveable berms will be compacted, inspected, and kept in good repair throughout the construction process. This type of berm also can interact with existing erosion control structures, such as the aforementioned silt fencing and staked straw bales. At all equipment crossings spanning water bodies, only a silt fence or staked straw bale barrier will be permitted.

### 1.3.3.3 Swales and Earthen Berms

Swales and earthen berms are designed to divert large amounts of runoff that would exceed the capacity of water bar situations. Their size, angle, and spacing depend on the soil type, slope, and other terrain features. They will be used primarily along and at the top of stream banks, at the base of slopes, on steep slopes in excess of 25%, and wherever conditions warrant a greater measure of runoff control.

### 1.3.3.4 Side Ditches

In areas of severe grade and unstable soils, side ditches adjacent to the ROW may be constructed to channel excess runoff not handled by other drainage structures. On long, steep slopes, periodic breaks and escapes will be constructed to slow runoff velocity and minimize channel erosion. Their spacing will vary according to site conditions and as recommended by the Project Engineer or Environmental Monitor. Side ditches will be maintained regularly to prevent blockage and slumping, particularly after major storm events. Rock or jute-net liner should be considered on steep slopes or severe terrain and in sandy or silty soils to stabilize the ditch.

### 1.3.3.5 French Drains

A French drain is a stone-filled trench, with or without drain tile. It is used to intercept both surface runoff and subsurface flow, and to firm unstable soils. French drains will be installed where needed for equipment crossings or during restoration under the supervision of the Environmental Monitor and, if applicable, the affected landowner. French-drain construction is similar to diversion-ditch construction except that with the former, geo-textile fabric lines the trench, which then is filled with cobble or stone (six (6) inches or larger). During construction, if it is necessary to cross the French drain with construction equipment, the crossing will be covered with filter fabric and clean fill to prevent clogging with dirt from tires and treads.

## 1.3.4 Temporary Access Bridges and Culverts

The certificate holder shall install temporary bridges to provide access across a stream or waterway, unless doing so is impracticable. Temporary mat bridge (figure 5A.36 and LS-6817-0) is the preferred bridge type to be utilized. Temporary mat bridges will be used where the span of the crossing can be accomplished with the length of mats available, without compromising the immediate bed or bank of the stream or waterway. Temporary culverts will be installed to channel water runoff from farm ditches and road swales across the ROW, in work areas, and in

construction-access areas. They shall be installed just below grade at each end, with headwalls, except where used only to equalize drainage in flat areas, such as wetlands. Where the outfall must be above grade, large stone will be placed around the downstream pipe invert to minimize scouring and erosion. Culverts will be sized by calculating flows from the contributing watershed. In some situations, with landowner and agency approval, temporary culverts may be upgraded to permanent installations. Installation and removal of crossings are not permitted in streams with a classification of C (T) or higher during the period of time from the start of trout spawning until the eggs have hatched (generally beginning October 1 and ending May 31). In other protected streams, disturbance shall not occur during the warmwater fish spawning season, generally May 1 to June 15.

### 1.3.5 Sediment Trap

Should appropriate runoff control become a concern during high construction-access use, temporary sediment traps will be installed where needed to control heavy runoff near public roads, access roads, streams, wetlands, adjacent land uses, and at construction and equipment sites. Trapped sediment will be either disposed of or graded into the ROW.

### 1.3.6 Stone Check Dams

A stone check dam is a small dam constructed across a drainage ditch, swale, or channel to lower the speed of concentrated flow to reduce erosion and gully formation and allow sediments and other pollutants to settle out. Stone check dams, which can be either temporary or permanent, will be used where it is otherwise not possible to divert flow and stabilize the channel. The maximum drainage area above a check dam will not exceed two (2) acres. When a given stone check dam no longer is required, it will be removed and the area disturbed will be re-seeded and mulched.

### 1.3.7 Level Spreader

A level spreader will be installed at the end of each swale and berm to distribute a concentrated discharge to sheet flow and minimize its erosion potential. The outlet area downstream of the level spreader will be stabilized with stone and be no steeper than 10 percent.

### 1.3.8 Concrete Washouts

After placement of concrete, wash water used to clean the concrete truck will be directed to a concrete washout structure. Self-installed or pre-fabricated containers may be used and are intended to capture the wash water to allow for evaporation or offsite disposal. Washout structures or containers will be inspected after each use to determine if they are filled to 75% of capacity and to make sure that the plastic linings are intact and not leaking. Refer to Environmental Protection Agency Best Management Practices for additional information on concrete washout requirements (<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=117>)

### 1.3.9 Swamp Mats

Swamp mats will be installed in delineated wetland areas and also may be installed at other sensitive areas (e.g., agricultural land) to prevent rutting and other kinds of impact to the soils below. The mats allow for disbursement of the load and the least disturbance to the root zone of existing vegetation.

## 1.4 DE-WATERING PROCEDURES

During construction it may be necessary to remove surface or subsurface water from work areas. In relatively minor saturated conditions, where soils consist of consolidated silty loam material and are saturated in static ground water conditions, wet soils will be excavated and stockpiled directly adjacent to the excavation within a circular contained area made from straw bales, silt fence, or both to prevent siltation into surrounding areas, wetlands, and waterbodies. The discharge from the settling basin or any other discharge shall not show a visible contrast from the receiving water.

In the event that ground water seeps into the excavated hole at a rate not suitable for the above method, but nevertheless is manageable with the use of a portable pump, the discharges of water from the excavation area will be pumped into a silt fence barrier or other sediment trap, as approved by the Environmental Monitor, to settle suspended silt material. In situations where water must be pumped from the excavated hole, the water will be removed, controlled, and discharged using temporary pumps, piping, drainage lines, and ditches in consultation with the Environmental Monitor and according to approved procedures. Pumped water will not be pumped onto gravel fill. Excess soil excavated from the hole will be stockpiled separately within a straw bale/silt fence barrier. Water then will be allowed to infiltrate back into the ground or filter through and/or overtop the straw bale/silt fence dike, depending on the pump rate required.

Under extremely saturated conditions where ground water infiltration rates and surrounding water volumes exceed the ability to de-water the excavated hole, a double work-shell arrangement that provides the ability to pump the space between the work-shells and the excavated hole may be necessary. This control arrangement also may be necessary to provide de-watering capability while safely excavating and installing a new structure in incompetent or slumping soils. The straw bale/silt fence barrier described above also will be implemented around the structure and the excavated soils.

When there is not sufficient room in the work area to install a temporary retention structure as described above, commercial filter bags or an approved sediment tank may be used to remove sediments from dewatered effluent. Once the de-watered effluent passes through the filter bag or sediment tank, the clear water will be allowed to drain onto vegetated areas. Additional erosion and sediment controls will be installed as determined necessary in the field.

While in use, pumps employed for de-watering of trenches within one hundred (100) feet of a water body, wetland, or rare plant or unique natural community will be placed in secondary containment devices of the proper size and structure.

Trapped sediment collected during de-watering activities will be graded on the ROW at least one hundred (100) feet from wetlands, streams, karst features and other sensitive resources to prevent sediment transport to these resources.

Installation of a small temporary water control structure/cofferdam to isolate and de-water a work area involving less than one hundred (100) cubic yards of temporary fill and less than five thousand (5,000) square feet of working area is authorized, subject to the below-listed conditions. (Associated activities may include maintenance and repair of existing facilities.)

1. Specifications: Any temporary cofferdam shall be constructed of non-erodible materials, so that failure will not occur at two-year ("Q2") or lower flow conditions. Where practicable, an upstream or interior membrane shall be installed to control percolation and erosion. Sandbags shall be of the filter fabric type, double-bagged, and individually tied to prevent sand leakage, and only clean sand (*i.e.*, free of debris, silt, fine particles, or other foreign substance) shall be used as fill. They shall be placed and removed manually to prevent spillage. Straw-bale sediment control basins are preferred.
2. Fill materials must not come from the waterbody.
3. The water control structure/cofferdam shall not impair water flow in the waterbody or water flow into and/or out of a wetland.
4. Excavated or temporarily stockpiled soils or other materials that will be exposed for longer than two (2) weeks should be covered and protected to reduce runoff of fines (which could lead to a turbidity problem) and to prevent rainwater from soaking the materials and rendering them unsuitable for backfill.
5. All temporary water-control structures shall be removed in their entirety upon completion of maintenance activity, unless elements of the structure can be converted into habitat enhancement features.
6. Any temporary cofferdam shall be constructed of materials that will not contribute to turbidity or siltation in a waterbody. In connection with water being returned to a stream, lake, or wetland from the coffered work area, there shall be no discernible difference in water clarity between water upstream and water downstream in that waterbody.

## 1.5 DUST CONTROL

High-traffic areas will be covered with gravel and exposed soils and roadways will be wetted as needed during extended dry periods to minimize dust generation. Typically only plain water will be used for dust suppression; chemical dust suppressants will be used only in situations where plain-water dust suppression is not effective and where no sensitive resource (*e.g.*, wetland, stream, karst inlet, potable water supply, organic farm) is present

## 1.6 CLEARING, EXCAVATION, AND GRADING

In general, the ROW will be cleared to provide safe operation of construction equipment. Typical clearing methods are described in Section 2.5. Access roads and work pads require Type I clearing (clear-cut), ROW-edge clearing typically will use Type II (selective) clearing. Excavated material will be stockpiled temporarily within the ROW, away from stormwater conveyance areas in a manner that prevents erosion and the transport of sediments (*e.g.*, by installing silt fencing). Following backfilling around each pole structure, excess or unsuitable

material will be removed from the ROW to an approved upland disposal location on or off the ROW, spread evenly, seeded, and mulched in accordance with approved seed mixes and application.

The construction contractor will exercise all necessary and reasonable precautions to minimize sedimentation, soil erosion, and permanent impacts to wetlands and watercourses in the work areas and along the ROW. Special conditions and erosion and sedimentation controls shall be set out on the plan and profile drawings by work location in these special areas. Any excess excavated material to be removed from wetlands, watercourses, or adjacent areas will not be stored in wetlands, streambeds, or adjacent areas. Excavated material will be stockpiled with proper stabilization, erosion controls, and drainage outside the wetland or watercourse, and thereafter disposed of at approved upland locations.

## 1.7 SITE STABILIZATION

In addition to the structural controls described above, stabilization measures that will or may be used during project construction also include non-structural controls. Although work sites around pole locations generally are confined to small areas, surface-stabilization techniques will be used during construction to reduce the potential of sediment loading in stormwater runoff from disturbed areas. All disturbed areas that will be left exposed more than fourteen (14) days, and not subject to construction traffic, will receive temporary seeding or stabilization in accordance with the New York Standards and Specifications for Erosion and Sediment Control, and will be specified on the detail sheets of the Plan and Profile drawings.

Stabilization procedures will be initiated as soon as practicable, but no more than seven (7) days after construction activities have temporarily or permanently ceased on any portion of the site. If weather (i.e., snow cover or frozen ground conditions) precludes immediate initiation of stabilization, then such measures will be undertaken as soon as practicable. Where construction activity will resume on a portion of the site within fourteen (14) days from the cessation of activities, then stabilization procedures do not have to be initiated on that portion of the site where the erosion hazard is low (i.e., greater than one hundred (100) feet from streams and wetlands, where steep grades or adverse soil conditions are absent). Temporary and permanent vegetative cover standards will be provided and will be developed in accordance with applicable New York Standards and Specifications for Erosion and Sediment Control.

If excavated or temporarily stockpiled soils or other materials will be exposed for longer than two (2) weeks, they shall be covered and protected to reduce runoff of fines (which may cause turbidity) and to prevent rainwater from soaking the materials and rendering them unsuitable for backfill.

Non-structural controls include the following:

### 1.7.1 Protection of Vegetation Cover

Natural vegetation will be preserved to the extent practicable because, where feasible, this will reduce soil erosion.

### 1.7.2 Mulching

Mulching is the placement of material preferably straw or biodegradable rolled erosion-control products, on the soil surface to cover and hold in place disturbed soils. When applying final seeding, mulch is also useful for enhancing the soil conditions for seeding. Wood chips might be used as mulch in some areas for temporary protection. Biodegradable rolled erosion-control products may be used across the site and will be used where the grade exceeds a one-foot (1') rise in a four-foot (4') horizontal run. The rolled erosion-control product will be nailed, staked, or stapled into the ground per the manufacturer's installation instructions.

### 1.7.3 Temporary Seeding and Stabilization

Temporary vegetation cover (*i.e.*, seeding) will be used to the maximum extent practicable for areas disturbed for periods longer than fourteen (14) days. Seed mixture rates will be in accordance with applicable New York Standards and Specifications for Erosion and Sediment Control. Seeding mixtures must not include any invasive species, such as reed canary grass. Embankments and ditches of areas that are left exposed for more than seven (7) days, or are subject to heavy rain before permanent stabilization, shall be mulched temporarily with straw and anchored with the mulch binder of the type in, and at the rate specified by, the construction specifications.

### 1.7.4 Final Seeding

Final seeding and stabilization shall occur as soon as possible after the completion of that portion of the ROW. Final seeding shall include native grass and wildflower mixtures at the appropriate seeding rate. The seeding shall be monitored and corrected as needed to ensure that there is 90% vegetative coverage and the site is stable.

## 1.8 EROSION CONTROL MAINTENANCE

To ensure proper operation of the soil erosion and sediment controls, routine maintenance activities will be conducted at the project site. These will include, but will not be limited to, the following maintenance activities:

1. Maintenance of stabilized construction entrances to ensure their proper function.
2. Inspection of all structural controls receiving flows from areas that have not been stabilized permanently will occur at least once each week and always within twenty-four (24) hours after a 0.5-inch rain event.
3. Inspection of silt fences for depth of sediment, tears, or sags in the fabric, and to see if the fabric, to ensure the fabric remains adequately dug into the ground, is attached securely to the posts. Posts also will be inspected to ensure that they are firmly set in the ground. In the event that fabric on the silt fence should decompose or become ineffective while the barrier still is necessary, the fabric will be promptly replaced.
4. Removal and subsequent grading into the ROW of built-up sediment from silt fences where accumulations reach 20% the above ground height of the silt fence.
5. Inspection of straw bale barriers for depth of sediment, broken strings, and barrier integrity. Straw bale barriers will be replaced when the strings have broken. Two stakes



will be maintained in every bale. Firm contact will be maintained between adjacent bales and between the bales and the ground.

6. Removal and subsequent grading into the ROW of built-up sediment where accumulations reach 20% the above ground height of any straw bale barrier.
7. Inspection of each stone check dam to ensure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam will be corrected immediately. Immediate adjustment of any stone check dam if evidence of siltation in the water is apparent downstream from that dam.
8. Removal and subsequent grading into the ROW, or off-site disposal, of built-up sediment where accumulations reach 20% of the capacity of the stone check dam.
9. Maintenance of conveyance structures, such as waterbars and diversion ditches, to ensure they operate in design condition. When necessary, velocity-attenuating devices, such as rip rap or other measures, will be used to accomplish the desired result. Foreign debris will not be allowed to accumulate in any swales, drainage ditches, or temporary sediment-retention ponds.
10. Removal of accumulated silt, broken branches, and other debris that interferes with drainage or sediment collection.

## 1.9 INSPECTION AND RECORD-KEEPING

For construction activities along the transmission line ROW, the Environmental Monitor will perform inspections of all erosion- and sediment-control measures at least once every seven (7) calendar days in accordance with requirements established in SPDES GP-0-10-001. Inspections are to be performed on all disturbed areas that have not undergone final stabilization, at all stormwater discharges from the site, on areas used for storage of materials that are exposed to precipitation, on structural control measures, and on vehicle entrances and exits.

For areas that have undergone final stabilization, or where runoff is unlikely due to winter conditions, inspections are to be performed at least once every month by the Environmental Monitor, and the Certificate Holder shall notify DEC regional staff of this change in the frequency of inspections. Material storage areas and disturbed areas also will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures implemented with respect to erosion and sediment control will be inspected to ensure that they are operating correctly. Vehicle construction entrances and exits will be inspected for evidence of off-site sediment tracking.

Inspection reports will be prepared for each inspection performed and retained as part of the project specific SWPPP. Each inspection report will provide the name(s), title(s), and qualifications of the personnel conducting the inspection, date(s) of the inspection, a description of the weather and soil conditions, and major observations resulting from the inspection relevant to the implementation of the SWPPP. Observations will include the identification and reporting of the following information:

1. Locations, if any, of sediment or other pollutant discharges;
2. Locations, if any, requiring maintenance;
3. Locations, if any, failing to operate adequately or as designed;
4. Locations, if any, where additional procedures are required;

5. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
6. Digital, date-stamped photographs of any sites and/or practices that require corrective action;
7. Descriptions of activities, if any, conducted in contravention of the project-specific SWPPP or otherwise contributing to stormwater pollution; and
8. Anticipated construction activities and the appropriate erosion and sedimentation controls.

The inspection report will also identify any incidents of non-compliance and concomitant responses to be implemented. For incidents of non-compliance, the inspection report also will describe the modifications to the project or control measures to be implemented to prevent further incidents of non-compliance. Inspection reports will be provided to the construction contractor, who will be required to begin implementation of any identified corrective actions needed within twenty-four (24) hours of receipt of the inspection report. All required repairs will be completed before the next anticipated storm event. The inspection reports will be maintained at the construction field office during the course of the project. In addition, the Certificate Holder will retain the inspection reports and in the project files for a period of five (5) years after completing the project and submitting the Notice of Termination (NOT) to the NYSDEC.

## **1.10 OPERATIONAL STORMWATER MANAGEMENT**

Typically, permanent stormwater management controls (e.g., detention basins, drainage conveyance structures like catch basins) are not installed for the construction of transmission facilities in ROWs. The ROWs will be vegetated and maintained by the Certificate Holder in accordance with a vegetation maintenance plan that effectively minimizes and controls stormwater runoff from the ROW. Periodically, culverts that were installed for drainage under access roads or permanent stabilized construction entrances will be inspected and maintained. Permanent stormwater management controls may be required in site specific locations. Permanent structures will be inspected and maintained periodically, as necessary.

## **2.0 CLEARING AND SLASH DISPOSAL PROCEDURES**

### **2.1 SITE ANALYSIS SURVEY**

The Certificate Holder conducts clearing activities for new ROW and for vegetation management of existing ROWs. For new ROW and existing ROW, the Certificate Holder Forester or assigned forestry consultant (either, the "Forester") conducts the following clearing-assessment procedure:

### **2.2 CLEARING ASSESSMENTS**

The purpose of the site-by-site clearing-assessment analysis is to collect and analyze site data to prepare a Clearing and Slash Disposal Plan for the proposed gas transmission line facility. An Environmental Monitor will flag all sensitive areas (e.g. protected streams, wetlands, adjacent areas, threatened and endangered species locations/habitat) before clearing begins.

### 2.2.1 NEW ROW

After establishment of centerline and tentative structure locations, the Certificate Holder conducts a site by-site analysis survey of land to be traversed by the proposed facility. During the survey, each site's characteristics are entered on a Site Analysis field form for that site. The ROW is divided into areas, and each area is assigned a site number. Such numbers change with a change in land use, cover type, or "sensitive area" status. Along with land use, geographic, topographic, and vegetative characteristics are noted on the Site Analysis field form. The forester should recommend clearing and slash disposal methods are recommended based on the site data collected. The forester should also note the merchantability of timber as well as the estimated slash accumulation. Remarks should be entered concerning brush treatment, restoration measures, and treatment of sensitive areas. The presence of uncommon vegetation, wildlife, and habitats should also be noted. Features such as fences, dwellings, constructed ponds, etc., also are noted in remarks. Field maps are an integral part of the site analysis survey. Indicated on these maps are area boundary lines, clearing and slash disposal types, structure lay-down areas, and access-route layouts, including areas of earthen, gravel, or corduroy road construction, culvert and stream ford placement, off-ROW access routes, restricted-activity areas, no-equipment access areas, and other pertinent information. This information later is transferred to aerial mosaics that also show gas transmission line design information, ownership of land, profile of line, and profile of terrain. The aerial mosaics are included in the construction bid document.

### 2.3 CLEARING AND SLASH DISPOSAL METHODS

During the site analysis survey, clearing and slash disposal methods are determined and entered on Site Analysis field forms. The Definition of Clearing Methods, the Definition of Slash Disposal Methods and Analysis of Slash Disposal Methods are criteria used to determine the appropriate clearing and slash disposal procedures. Information from the Site Analysis field forms is summarized on Site-by-Site Analysis tabular forms.

Clearing and slash disposal methods also are noted by area on field maps. Later, this information is transferred to aerial mosaics and construction-bidding documents.

### 2.4 SELECTIVE CLEARING AND SLASH DISPOSAL

#### 2.4.1 Policy for Initial Clearing of Gas Transmission ROW

The Certificate Holder employs selective clearing and slash disposal procedures when clearing a new or existing ROW, utilizing techniques which are consistent with the safe, reliable transmission of natural gas in an economic manner, and which are compatible with the environment.

#### 2.4.2 Initial Clearing Program

The objectives of the initial clearing program include the following activities:

- a. Initially clearing the ROW in such a manner that it shall be free from interruptions from trees and brush, and reasonably accessible for various line-construction activities. Specifically, the ROW will be cleared of trees and brush at access road and construction-

workspace locations that are necessary for line construction. These objectives will be accomplished via the implementation of: sound clearing and slash management techniques, sound vegetation-control techniques, and other new and improved techniques.

- b. As a secondary objective, selectively clearing the ROW to maximize vegetation diversity on the ROW, thereby improving the total wildlife benefits of the ROW. This will be accomplished through the selective retention of compatible and where such retention is reasonably practicable. Clearing the ROW in a manner which is compatible with environmentally sensitive areas or areas with high riparian sensitivity and that maintains

aquatic and aesthetic values to the extent practicable. This will be accomplished through the selective retention of, among other phenomena, vegetative buffer zones at rivers, significant streams, other sensitive water bodies, high-use road crossings, scenic areas, and potential softwood shelters, as well as through the application of selective slash management techniques designed to minimize environmental or aesthetic impacts.

- c. Clearing the ROW in a manner that is reasonably compatible with other types of land use, such as, among others, active agricultural, residential, recreational, and other multiple-use activities. This will be accomplished, to the extent practicable, through the application of selective clearing techniques designed to eradicate undesirable growth while retaining those low-growing species which are compatible with the facility and ongoing land use activities, as well as through the selective application of slash disposal techniques in a manner which is harmonious with the ongoing land use.
- d. Utilizing the wood resources generated by the clearing activities to the extent practicable and in accordance with sound environmental techniques and applicable quarantine restrictions. This will be accomplished through the application of appropriate slash

- c. Where maintenance clearing is required to maintain line of sight, selective vegetation-clearing techniques within state-regulated wetlands and wetland adjacent areas, and within other water bodies. Low-growing herbaceous plants should remain.
- d. In state-regulated wetlands, slash that is cut may be left in place (drop and lop). Any slash that is not left in place must be removed from the wetland. No slash shall be collected and permanently piled in the state-regulated wetland, whether adjacent to an access road or not.

## 2.5 DEFINITION OF CLEARING METHODS

### 2.5. Type I Clearing

Type I clearing consists of clearing the designated areas of all woody plants, including desirable species. All plants shall be cut as close to the ground as practicable, and after cutting the height of no plant shall exceed six inches above ground line. Type I clearing shall be utilized in circumstances where woody plants would hinder access and construction activities (*i.e.*, in connection with clearing access roads, and structure work areas.

### 2.5.2 Type II Clearing

Type II clearing consists of clearing the designated areas of any woody plant species that have the potential to interfere with the pipeline. Reasonable care shall be taken, insofar as is practical, to retain desirable shrub species found within Type II clearing zones. The Forester will make a field determination as to whether such retention would impose an unreasonable burden on clearing or construction activities. Type 2 clearing shall be used along the edges of the ROW, where shrub growth will not interfere with the actual pipeline.

## 2.6 PRUNING PROCEDURES

When a tree is specified to be pruned, the specified portion(s) shall be removed to prevent excessive broken limbs or other serious damage to the portion of the tree left in place or to adjacent or nearby trees and shrubs. All pruning is done in accordance with ANSI A-300 arboricultural standards

## 2.8 SLASH DISPOSAL

### 2.8.1 Type A

Slash disposal will not occur in state-regulated wetlands or adjacent areas.

In wetland and stream areas, slash disposal will adhere to the following conditions:

- a. Only a selective portion of vegetation, as needed to prevent the blocking of flow and the trapping of debris, is to be removed from the watercourse, and all cuttings (regardless of location) are to be cut and bucked to lie near ground level. However, where tree root bases are attached to the bank, they shall be left in place. The remainder of the tree will be cut from the base prior to removal. There shall be no grubbing.
- b. Dense root systems of wetland grasses, forbs, and brush generally should not be disturbed, not only for environmental protection, but also because these root systems have engineering value; they can help support vehicles and stabilize access routes.

All woody material that is chipped shall be disposed of on the ROW unless otherwise noted on detailed drawings. No chips shall be stored or disposed of in wetlands, active agricultural fields, or in close proximity (typically not within fifty (50) feet) of streams or drainages.

## 2.9 PROCEDURE FOR HERBICIDE APPLICATION

The Certificate Holder shall utilize registered herbicides, applied in accordance with sound ROW management principles. All herbicide applications shall be made in accordance with the rules and regulations of NYS Department of Environmental Conservation, Bureau of Pesticides, and in compliance with label instructions.

Describe the herbicide use plan for all vegetation clearing and such a plan shall be prepared in compliance with the Certificate Conditions. For construction-related clearing activities, herbicide applications typically are limited to cut-and-stump treatments with Accord Concentrate or Pathway herbicide products. Pathway herbicide is approved for use in wetland areas. Herbicides shall not be used within one hundred (100) feet of a potable water supply or wetland, or applied to any open water.

## 2.10 PROCEDURE FOR SELECTIVE RETENTION OF HERBACEOUS SPECIES

The desirable species for the Gas Transmission Right-of-way Management Program consists of typical shrub and grasses which may be considered to be compatible with the operation of the line for line of sight operations. These species shall be retained, to the extent practicable, as they occur along the ROW. The personnel employed for the clearing operation shall be fully informed of these vegetation-retention requirements, and directly supervised by a person or persons capable of identifying all compatible species native to the area of the ROW.

## 2.11 PROCEDURE FOR MINIMIZING POTENTIAL ADVERSE ENVIRONMENTAL OR VISUAL IMPACT

Due to the lineal dimension of a gas transmission line ROW, any given line is likely to traverse areas of significant environmental or visual sensitivity. While the selective retention procedure previously discussed will effectively minimize environmental or visual impacts in most areas of the ROW, dependent upon species composition, these normal clearing procedures may not be adequate in areas with potentially high sensitivity and sparse densities of compatible vegetation. Therefore, special consideration and selectivity may be necessary to maintain environmental or aesthetic values in such areas. Included among the techniques for minimizing impacts in these areas is the retention of screens or buffer zones.

## 2.12 SCREENS OR BUFFER ZONES

Within areas with a potentially high environmental or visual sensitivity such as streams, high-use road crossings, scenic areas, etc., it may be that the density of compatible vegetation would be too sparse or too small to provide effective screening if all the tall-growing trees were to be removed. Therefore, to minimize the potential adverse impacts that may be associated with ROW-clearing of these sensitive areas, the Certificate Holder may utilize selective clearing techniques to retain an effective screen of small or pruned undesirable species. Future

maintenance activities shall be directed at thinning out and removing these tall-growing species as compatible low-growing vegetation becomes dominant at the site. Depending on site-specific conditions, slash shall be disposed of in an economical manner, and within the recognized parameters of slash-disposal method, in order to minimize any visual or environmental impact. Large slash accumulations should not remain in areas of high visual sensitivity or within streambeds.

### **3.0 STREAM AND WETLAND PROTECTION PROCEDURES**

#### **3.1 STREAMS, WETLANDS, AND OTHER WATER RESOURCE PROTECTION**

Streams, wetlands, and other water resources will be field-delineated, and such delineations shall be delivered for review to DEC. Stream- and wetland-protection procedures employed during construction will be developed on a site-specific basis. An Environmental Monitor will oversee the construction and restoration of the project and ensure that all protection procedures are adhered to. All necessary precautions will be taken to ensure that there is no contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate, or any other environmentally deleterious materials used during the project. Typical standards and procedures to be followed during development and construction of the project are provided in Section 3.2. Additionally, procedures will be in compliance with the Invasive Species Control Procedures discussed in Section 7.

#### **3.2 TYPICAL STANDARDS AND PROCEDURES FOR WETLAND, WETLAND ADJACENT, AND WATER RESOURCE PROTECTION**

All streams, rivers, unnamed tributaries, drainages, and wetlands within the ROW are identified during field surveys with protection measures prescribed, as appropriate. Standards and procedures for protecting streams, wetlands, and other water resources include:

- a. The Environmental Monitor will re-flag all sensitive areas before work begins.
- b. Procedures for erosion and sediment control will be implemented prior to the start of soil disturbance; appropriate procedures will be maintained throughout the construction period and in accordance with New York Standards and Specifications for Erosion and Sediment Control, SPDES General Permit and the project-specific SWPPP.
- c. During the construction, re-construction, operation, and maintenance of the project, there will be a minimization of disruption to waters and State-regulated wetlands, including both on- and off-ROW resources, encountered along the ROW.
- d. To the maximum extent practicable, streams, wetlands and adjacent areas to State-regulated wetlands will be avoided during the siting and embedment of gas transmission line structures.
- e. Where alternative access can be provided, vehicular access through streams and wetlands will be prohibited.
- f. All lay-down areas and equipment storage areas must be a minimum of one hundred (100) feet from streams and wetlands.
- g. Construction-vehicle access across wetlands, wetland adjacent areas, streams, and watercourses will be limited to existing bridges, fords, and culverts and to temporary

- crossings installed in accordance with environmental standard details and specifications enumerated in New York Standards for Erosion and Sediment Control.
- h. Temporary Roads and parking areas used during construction activity will be graded to direct runoff away from streams, wetlands, and wetland adjacent areas.
  - i. The edge of temporary roads or mats which are located near streams and wetlands and wetland adjacent areas will be marked. All construction traffic will remain on established roads.
  - j. During construction activities involving streams and wetlands and wetland adjacent areas, unless the ground is frozen, tracked equipment and low-ground-pressure vehicles typically will be used.
  - k. Use of such equipment, especially when grades exceed 2%, may create well-defined and erosive ruts, as well as shallow channels. To reduce the potentially-damaging effects of the erosive conditions, all depressions will be filled and leveled in areas that exceed 2% in grade prior to the end of each workday.
  - l. Dragging equipment or pipeline through streams or wetlands will not be allowed.
  - m. Soil or excavated materials should be set back a sufficient distance from stream banks, wetlands, and wetland adjacent areas to prevent their entry into any stream, wetland, wetland adjacent area, or other waterbody, or their causing the bank to collapse, unless the bank or materials has/have been protected adequately, and no other storage area is available. No material to be removed from wetlands or wetland adjacent areas will be stored inside wetlands or wetland adjacent areas. Excavated material will be stockpiled outside wetlands and wetland adjacent areas, and all excess material will be disposed of in approved upland locations.
  - n. Chemicals and petroleum products will not be stored, mixed, or loaded, nor will equipment be refueled, within one hundred (100) feet of any watercourse or wetland.
  - o. Spill-response and clean-up procedures will be implemented to minimize and respond to any accidental spills of chemicals, fuel, or hazardous liquids.
  - p. On-site temporary stockpiling of granular material (e.g., gravel, excavated spoils, select backfill, topsoils) is expected. Where it may pose a health or safety risk to the general public or a risk to the water quality of any waterbodies or wetlands within the vicinity of the project, as determined by the Environmental Monitor, stockpiling of granular material will not be permitted. At all times during construction, stockpiled material susceptible to erosion and sedimentation will be protected appropriately with silt fencing, and covered or stabilized.
  - q. Soil-stabilization measures of disturbed areas will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased (either, a "cessation"), and in no case within longer than seven (7) days following a cessation, except in the following circumstances:
    - i) Where the initiation of stabilization measures by the seventh (7th) day after a cessation is precluded by snow cover or frozen ground conditions, stabilization measures will be initiated as soon as practicable.
    - ii. Where earth-disturbing activities will resume within fourteen (14) days after a cessation on a portion of the site, temporary stabilization measures need not be initiated on that portion. All installed silt fencing, straw bales, and/or other soil-stabilization and erosion-prevention devices will be maintained during this period.



- r. Water from de-watering operations will be pumped into a temporary silt fence barrier or filter bag to settle suspended silt material prior to discharge (see NG EG303 NY Figure LS-6831-0). There will be no direct discharges to watercourses or wetlands.
- s. No wet or fresh concrete or leachate will be allowed to escape into any wetlands, wetland adjacent areas, or waters, nor will washings from trucks dispensing ready-mixed concrete; mixers, or other devices be allowed to enter any wetland, wetland adjacent areas, or waters. Only watertight or waterproof forms will be used. Wet concrete will not be poured to displace water within the forms.
- t. Equipment and machinery will not be washed in any watercourse or wetland, or wetland adjacent area, and runoff resulting from washing operations will not be permitted to enter any watercourses, wetlands or wetland adjacent areas directly, except to comply with the Invasive Species Control Procedures.

### 3.2.1 Stream and Watercourse Protection

In addition to the standards and procedures identified in section 3.2, the following standards and procedures will be followed when addressing streams and other watercourses encountered by the project.

- a. Work that must occur within any identified NYSDEC-protected streams (Class C/Standard T or higher Class/Standard streams or regulated adjacent area) will be highly restricted to avoid or minimize impacts to stream banks and water quality. Where equipment crossings of such protected streams cannot be avoided, they typically will consist of temporary crossing devices. Appropriate, temporary erosion and sediment controls also will be installed to prevent erosion of soils into streams and any associated wetlands.
- b. In order to avoid destruction of existing stream bank vegetative cover, when access trails to work areas are necessary, such trails must be set back a sufficient distance from stream banks and buffered. Such access trails should avoid running parallel to a watercourse.
- c. During periods of work activity, flow immediately downstream of the worksite will equal flow immediately upstream of the worksite.
- d. There will be no increase in turbidity downstream of the construction activity that will cause a substantial visible contrast to natural conditions.
- e. Whenever possible, bridges (permanent or temporary) should be used in lieu of culverts, provided: the bridge meets appropriate structural integrity criteria; the minimum span (abutment to abutment) is at least 1.25 times the active channel width; and the crossing site is designed to pass the two-year ("Q2") flood event instantaneously and ensure the roadway will not be overtopped by the fifty-year ("Q50") flood event.
- f. All crossings structures will be completed in the dry. A temporary diversion channel, culvert, or pump-around will be constructed to prevent running water from entering the work area.
- g. For all crossings, the pre-disturbance flow regime will be maintained.
- h. Unless otherwise specified, work in streams, when necessary, will be prohibited between October 1st and May 31st for cold water fisheries habitat, and between March 1st and July 15th for warm water fisheries habitat.
- i. For stream- and shoreline-erosion protection, materials will be of a type, size, and placement that do not interfere with navigation or water discharge, and which are not moved and dispersed by normal high-flow volumes. Natural-stream-design structures for

erosion protection are preferred, as they reduce the need for rip rap. They will be developed on a site-by-site basis.

- j. For permanent culverts, bottomless culverts should be used whenever possible. The minimum width/span (abutment to abutment) will be 1.25 times the active channel width (Note: This presumes frequent monitoring and maintenance of the roadway. Less frequent monitoring/ maintenance activities will require a substantially greater width). The crossing site must be designed to pass the Q2 flood event instantaneously and prevent overtopping of the roadway by the Q50 flood event. As well, the crossing structure must meet appropriate structural integrity criteria. At low flows, water depths and velocities should be similar to undisturbed upstream and downstream reaches.
- k. Round culverts should be used only when a stream has an active channel width of four (4) feet or less and a slope of three percent (3%) or less. At least twenty percent (20%) of the vertical height will be embedded below the existing stream bed at the inlet and outlet of the culvert and the culvert will be installed with a zero percent (0%) grade. The culvert diameter will be no less than 1.25 times the active channel width (Note: This presumes frequent monitoring and maintenance of the roadway. Less frequent monitoring/ maintenance activities will require a substantially greater diameter). The culvert length, whenever possible, must be less than twenty (20) feet. The crossing site must be designed to pass the Q2 flood event instantaneously and prevent overtopping of the roadway by the Q50 flood event. As well, the culvert must meet appropriate structural integrity criteria. At low flows, water depths and velocities should be similar to undisturbed upstream and downstream reaches.
- l. Excavated streambed material may be used to line the culvert provided it matches the streambed materials upstream and downstream of the crossing site. Otherwise, natural materials, which match that of the streambed materials upstream and downstream of the crossing site, will be installed and spread evenly within the culvert.
- m. Small amounts of streambank fill (less than one hundred (100) cubic yards) or riprap may be used to protect the edge/abutments of a crossing structure.
- n. Installation of stream crossings, diversions of water during construction, and removal or restoration of crossings generally will maintain the original stream conditions and characteristics, unless minor manipulations to prevent stream bank erosion or aquatic enhancements for fisheries (e.g., placements of boulders, root wads, wing deflectors) are requested or approved by the NYSDEC.

### 3.2.1.1 Stream Bank Restoration

- a. To prevent erosion, stream banks must be re-established to original grade immediately after stream bank work is completed.
- b. If bank protection consists of native seeding and mulching, growth of protective cover must be successful. If initial growth is unsatisfactory, re-seeding will be performed. Where possible, bed and bank re-vegetation should be of appropriate and comparable on-site types (e.g., cattail or sedge plugs, willow or dogwood splints), and protected from sun scald or desiccation until cover is re-established.
- c. To stabilize a stream bank, re-vegetation will be considered as an alternative to riprap whenever possible. Maximum allowable amount of rip rap is less than one hundred (100) linear feet per site location. The rip rap type will be greater than or equal to six-inch-diameter angular shot rock, unless it can be demonstrated that the near-bank shear stress

can allow for a smaller size of rock. Bank-stabilization projects will not exceed one hundred (100) feet in length. Bank-protection activity will not exceed an average of one (1) cubic yard per running foot of stream bank from the plane of ordinary high-water level or the high tide line, and flow is not to be impaired. Details will be developed on a site-by-site basis.

- d. Stabilize disturbed areas: all disturbed stream banks below the normal high-water elevation must be graded no steeper than a 1 to 2 slope and adequately stabilized (preferably with native stone). Using natural-channel-design structures is preferred. All other areas of soil disturbance, whether above the ordinary high-water/active channel elevation or elsewhere, should be seeded with native grasses, mulched, and planted with native shrub seedlings.
- e. For the purposes of this requirement, "active channel," or "ordinary high-water-level mark," will be determined by (i) vegetative characteristics (*e.g.*, location, presence, absence, or destruction of terrestrial or aquatic vegetation); (ii) physical characteristics (*e.g.*, clear natural line impressed on a bank, scouring, shelving, or the presence of sediments, litter, or debris); and (iii) other appropriate means that consider the characteristics of the surrounding area.

### 3.2.2 Wetland Protection

In general, the following protection measures will be applied to construction activities involving federal and NYSDEC wetlands:

- a. Construction access through wetland areas will be restricted to identified access roads and work zones. The use of multiple access or construction routes that would increase vehicle trips through a wetland is not allowed, and only equipment necessary for an authorized activity may enter the specified waterbody, wetland, or approved ford.
- b. Where necessary to provide vehicular access through wetland areas, temporary access roads will be installed in accordance with the SPDES General Permit and the project-specific SWPPP, and removed following construction.
- c. To the extent possible, work which must be in a wetland will be scheduled to be started and completed in the dry season or when the ground is frozen.
- d. Swamp mats, tracked equipment, and low-ground-pressure vehicles will be used to minimize effects to wetland areas (see NG EG303 NY, Figure LS-6815-0 & Figure 5A.35).
- e. Swamp mats will be removed in reverse order of placement as soon as practicable but no later than four (4) months following placement, unless a different period is specified.
- f. Swamp mats will be cleaned of invasive species prior to placement in a wetland in compliance with the Invasive Species Control Procedures identified in Section 7.
- g. Selective vegetation-clearing techniques will be used within State-regulated wetlands and adjacent areas.
- h. Excavated material resulting from structure installation that is to be removed from wetlands or wetland adjacent areas will not be stored inside wetlands or wetland adjacent areas. Excavated material will be stockpiled outside wetlands and wetland adjacent areas and all excess material will be disposed of in approved upland ROW or off-ROW locations (*e.g.*, licensed landfills).
- i. Only that excavation minimally necessary for proper placement of the allowed structure is authorized. Excavation, including but not limited to the dredging of other waterways or

freshwater wetland bottom sediments, for any purpose other than those authorized by the certificate is expressly prohibited.

- j. During the trenching for the pipeline installation, or any other construction activity, sidecasting of excavated materials shall not be allowed unless there is no demonstrated alternative. Excavated materials shall be placed directly into an appropriate receptacle (e.g., dump truck) for removal.

#### 4.0 Horizontal drilling procedures

- a. Whenever feasible the applicant shall consider crossing State-regulated wetlands and protected streams via directional boring:
- b. Biodegradable drilling solution shall be used, to minimize harm to aquatic species in the event of a drilling fracture, which releases the solution to the surrounding areas.
- c. Stream and wetland crossings shall be subject to the following:
  - i. Exit and entry points shall be distanced from the stream bank so as to minimize disturbance, to the extent practicable.
  - ii. Prior to boring, all sediment stabilization measures shall be in place to prevent unnecessary erosion and associated turbidity and sedimentation.
  - iii. No increase in downstream turbidity or sedimentation is permitted.
  - iv. Any water accumulated in the isolated work area shall be managed in a manner that prevents a visible contrast in the stream below the work area.
  - v. Prior to boring, all sediment stabilization measures shall be in place to prevent unnecessary erosion and associated turbidity and sedimentation.
  - vi. Equipment and provisions of the Frac-Out Contingency Plan shall be readily accessible, for locations where streams are crossed using horizontal directional drilling technology.

### 5.0 GENERAL CLEAN-UP AND RESTORATION PROCEDURES

#### 5.1 CLEAN-UP PROCEDURES

Clean-up and disposal of cleared vegetation will be ongoing during pruning and clearing activities and in accordance with specifications and procedures. Cleared vegetation will not be burned or buried; it will be disposed of in accordance with the appropriate area specific disposal technique and Invasive Species Control Procedures.

During construction, the ROW will be kept free of debris and discarded material to the extent possible. As construction continues, each section of the ROW will be thoroughly cleaned within one week after construction is completed on that particular section. All fabricated debris

resulting from construction will be disposed of at an approved disposal site in compliance with all appropriate environmental regulations. Fabricated debris generated during construction includes piping, fencing, wiring, and any other materials used during construction. Trucks leaving the construction area will be loaded, pruned, and covered in accordance with applicable regulations. Under no circumstances will any fabricated debris be burned or buried either on or off the ROW.

Before completion of site restoration and to the extent possible, all debris lost from the work area by wind or high water will be recovered for proper re-use or disposal.

Excavated materials removed from culverts during maintenance shall be disposed of at an approved upland site located at least one hundred (100) feet from any waterbody, including freshwater wetlands and freshwater wetland adjacent areas.

## 5.2 RESTORATION

Restoration is the final stage of gas transmission line construction. Considering the primary need of the ROW to remain compatible with the operation of the gas transmission line or substation, to the extent practicable, the ROW will be restored to its original condition when construction is completed, to inspect, analyze, and maintain gas line integrity. Restoration activities may vary with the specific area to be restored. Restoration activities for agricultural lands and wetland areas are presented in separate procedures. Restoration activities for nonagricultural, non-residential, and urban/residential areas are presented here.

## 5.3 RESTORATION IN NON-AGRICULTURAL AND NON-RESIDENTIAL AREAS

### 5.3.1 Grading

To prevent erosion and to hasten restoration of rutted skidways, access roads, staging areas, and stream banks, all disturbed areas in a particular segment of ROW will be back-bladed and restored to original contours within three (3) months after the completion of construction along that segment unless seasonal limitations preclude final restoration within this timeframe. Where gas transmission line construction has changed the grade and contour along the ROW, the area will be restored to original grade. Ruts and rills will be filled during grading. Exceptions will be made only when changes in grade are desired and requested by the landowner to improve the area, or are necessary for the safe and efficient maintenance and operation of the facility. Where the trench or pole-backfill area has settled below ground level, it may be necessary to import topsoil to return an area to grade.

All permanent drainage and erosion-control measures will be installed during final grading. These devices will be detailed on the Profile drawings. Where needed for ongoing drainage and erosion control, permanent devices will replace temporary devices installed during construction. Unless a plow, jacking, or "Ditch Witch"-style trenching tool is used, double-ditching for trenching (*i.e.*, the separation of topsoil from subsoil) and backfill/restoration will be required in wetlands. Subsoil will be back-filled first. Topsoil then will be replaced to maintain original contours. Disposal of surplus subsoil in wetlands or wetland adjacent areas is prohibited.

Appropriate native upland or wetland vegetation must be established (as appropriate) on all disturbed areas no later than upon completion of the project. Restored areas should demonstrate an 85%+ (by cover area) survival after two growing seasons. Restoration typically is accomplished through either allowing the native seed bank to re-establish or using an approved conservation seed mix. Upland spoil-disposal areas and areas of soil disturbance in the wetland adjacent area will be graded, seeded with a native seed mix, and mulched at each job location as the project advances. All seeding will take place within one week of final grading at each location. If seeding is impractical due to the time of year, temporary mulch will be applied as soon as practical, and will be maintained until the completion of final restoration. Final restoration will take place during the first period after project completion, as soon as weather conditions favor germination and growth. High-organic soils will be graded back to original contours and left unmulched and unseeded to facilitate the germination of native seeds and the sprouting of rhizomes from the soil bank. Soil disturbances within mineral soil, wetlands, or wetland adjacent areas must be mulched within one week of final grading to stabilize the soils.

### 5.3.2 Soil Stabilization, Aeration, and Fertilization in Landscaped Areas

Soil compaction in construction areas frequently occurs as a result of the movement of heavy equipment over soil. Soil compaction will be avoided to the maximum extent possible through the use of low-impact equipment (*i.e.*, high-flotation-tracked vehicles or vehicles equipped with flotation tires), particularly in previously-landscaped areas; however, if compaction occurs, soils will be aerated. Aeration in grassy areas will be accomplished through the use of a mechanical power aerator. Following use of the aerator, the area will be thoroughly raked. If soil is compacted below trees, the area below the tree canopy will be aerated by probing holes in the soil, which then will be backfilled with clean sand.

In non-residential or non-agricultural areas where landscaping is to be provided, topsoil will be applied to an appropriate depth where vegetation plantings are to be re-established. When appropriate, the subsoil surface will be scarified or tilled to permit the bonding of the topsoil to the subsoil. Excess soils may be removed from the site.

To permit maximum vegetative reproduction of lawns in the ROW, the topsoil will be cultivated to a depth of six (6) inches by a mechanical tiller, with special care taken around trees to avoid root damage. If a mechanical tiller cannot be used, then the inaccessible areas will be cultivated by hand. Foreign materials and contaminated soils will not be used for topsoil. Following placement of topsoil, the area will be raked and large stones, rocks, and weeds will be removed. The replaced soil will be properly graded to conform to the original contours and grade. The topsoil will be workable and applied under dry conditions, and will be either obtained from the immediate area or imported.

Fertilizer will be applied to all areas receiving vegetation plantings. Planting strips and other areas where grasses will be planted will receive fertilizer. Fertilizer rates will depend on tree size and fertilizer type. Fertilizer over grassy areas will be evenly broadcast and cultivated or watered into the soil. Fertilizer application for trees will be distributed manually or with approved hydro-pressure equipment in holes eighteen (18) inches deep within the tree canopy. Fertilizer for planting strips and other areas where grasses will be planted will be applied at a depth of four (4) inches with discs, a spring-tooth harrow, or other equivalent piece of equipment. Fertilizer will be applied under the direction and supervision of the Environmental Monitor.

### 5.3.3 Mulch Application

Mulch will be applied to areas that will be seeded in erosion-prone locations and also can be used to protect areas brought to final grade at an unfavorable time for seeding or transplanting. The areas then can be planted when the time is appropriate without removing the mulch. Mulch also will be applied in the immediate vicinity of replacement plants to encourage the downward movement of surface water. Mulching will reduce loss of soil moisture by evaporation and will decrease the possibility of seedling damage from soil-heaving caused by freezing and thawing.

Mulch will be spread uniformly in a continuous blanket of sufficient thickness (typically one (1) to two (2) inches). The mulch may be spread by hand or machine. Mulch may be spread before, but no later than three days after, planting. Anchorage such as jute mesh will be used as required. For standard mulching, the construction contractor will provide clean, weed-free, salt-free threshed straw of wheat, rye, oats, or barley. Straw mulch will be used whenever possible. When used after seeding, mulch will be applied at a rate of seventy (70) to ninety (90) pounds per one thousand (1,000) square feet (2 tons/acre).

### 5.3.4 Groundcover Restoration

Grass areas that are damaged will be seeded under supervision of the Environmental Monitor. Grass seed will be of fresh, clean, certified native grass and wildflower seed. Seeding operations will commence only after an acceptable seedbed has been established, as presented above. Seed will be applied by hand, cyclone seeder, drill, or culti-packer-type seeder at a depth of ¼ to ½ inch. Hydro-seedings which are mulched need not be worked into the soil. The seedbed will be firmed following seeding operation with a roller or light drag, except where culti-packer-type seeders or hydro-seeders are used. The entire seeded area will be watered with a fine spray until a uniform moisture depth of one inch (1") has been obtained. Mulching and anchoring the mulch may be necessary in some areas. Fertilizer will be added at the appropriate rates after seed is applied. All seedbag tags will be provided to the Environmental Monitor.

## 5.4 PLANT INSPECTION, GUARANTEE, AND MAINTENANCE

The Environmental Monitor Forester will inspect plant locations to verify compliance with local guidelines and requirements. To ensure that any previous deficiencies have been cured, the Environmental Monitor shall also conduct: (1) an inspection after completion of planting; and (2) a final inspection at the end of the maintenance period. Restored areas should have ninety percent (90%) permanent ground cover within one growing season following construction. Seeded areas will be evaluated and re-seeded as necessary to achieve ninety percent (90%) cover at the optimum time or by the following growing season. All plants will be guaranteed to survive for at least one year or for the duration of one full growing season, beginning after the last planting is complete, whichever is longer. At the end of the guarantee period, any dead, unhealthy, or badly-impaired plants will be replaced. All replacement plants will be of the same species and size as the plants they are replacing.

## 6.0 ACCESS ROAD TYPES AND DEFINITIONS

### 6.1 TYPES OF CONSTRUCTION ACCESS ROADS

Before commencement of construction, contractors will review the project specific EM&CS&P and the plan and profile drawings relating to access to each structure in the ROW. Generally, construction access will be accomplished within the project transmission ROW. ROW and off-ROW access-road alignments will be shown on the plan and profile drawings. In certain specified areas, off-ROW access will be required in order to avoid crossing sensitive resources, provide safe work areas, or facilitate equipment-staging. As much as possible, access is routed to avoid areas of unstable soils, steep banks, wetlands, and streams. The types of access to be used during the project are described below.

### 6.2 ACCESS TO ROW FROM PUBLIC ROADS

A stabilized construction entrance will be installed at the intersection of the ROW and each public road or street where equipment could track mud onto public travel lanes. Detailed specifications, which include the placement of approximately six (6) inches of crushed stone on geo-textile fabric extending fifty (50) feet into the ROW, are provided as Figure 5A.35 in Exhibit A, and locations will be provided on the plan and profile drawings.

### 6.3 MAINTENANCE OF EXISTING ACCESS ROADS AND ROUTES

In many cases, an existing access road may need to be repaired or improved to allow passage of the heavy equipment needed for construction activities, and to avoid excessive rutting. Ruts and depressions along existing access routes and within the existing ROW may be leveled and graded. Minor improvements may include adding gravel fill or crushed stone to fill depressions and washed-out areas that present unsafe conditions or might jeopardize environmental compliance. For access roads where vegetation impedes construction access, the need for hand-clearing, mechanical clearing, mowing, or a combination of any of these methods will be identified to establish the alignment and width of the access road. Cleared material will be either:

(a) chipped and spread along the access road, or (b) hand-piled or mechanically piled along the edge of the access road or ROW, except that in state-regulated wetlands, all slash not cut and left in place shall be removed from the wetland. No slash shall be collected and permanently piled in the state-regulated wetland, whether adjacent to an access road or not. Access-road improvement areas will be identified on the Plan & Profile drawings. There are three types of access roads typically used and specified on the plan and profile drawings for the project.

#### 6.3.1 Type 1: Unimproved Access Roads

Type 1 access roads, which are unimproved access roads, and which can be either temporary or permanent, include: (a) those existing roads or paths specified for use across upland areas, and (b) existing agricultural roads. Type 1 access roads may occur within wetlands or other sensitive lands in the ROW with special provisos, such as: only low-ground-pressure, flotation, or tracked vehicles may use these roads. Where necessary in non-sensitive areas, drainage-conveyance and erosion controls will be installed by the construction contractor. To the extent that Type 1 access



roads are used for continued ROW maintenance in non-sensitive areas, these roads may be considered permanent.

### 6.3.2 Type 2: Permanent, Stabilized Access Roads

Type 2 access roads, which are permanent, stabilized access roads, are specified for those areas where work related to certain structure types, including dead-end or angle structures with concrete foundations, requires particularly heavy equipment. Work relating to these structures requires large excavators, all terrain cranes, haul trucks, and concrete trucks. Construction standards specific to Type 2 access roads will apply to the upgrading of existing access roads to Type 2 specifications and where new Type 2 access roads may be required. Type 2 access roads will be located only in upland areas and will consist of a compacted sub-grade and a surface course of crushed stone on filter fabric. Type 2 access roads may be used for long-term ROW maintenance activities. Where necessary, drainage and erosion-control devices will be installed at the direction of the Construction Manager or the Environmental Monitor.

### 6.3.3 Type 3: Temporary Access Roads

Type 3 access roads are temporary access roads used in sensitive areas (*e.g.*, wetlands, agricultural lands) or areas of unstable soils. Some Type 3 access roads are wetland-specific. In delineated wetland areas and State Wetlands, the use of low-impact equipment (*i.e.*, low-load-bearing tracked vehicles or vehicles equipped with flotation tires) or swamp mats will be used in conjunction with temporary, Type 1 access roads or paths to the maximum extent practicable. The use of multiple access or construction routes within a wetland in order to increase the number of vehicle trips through a wetland without using swamp mats is not an authorized Type 3 access. The allowable options for Type 3 wetland access roads include: (1) swamp mats; (2) bridges; and (3) flotation devices. The type of access road to be installed in a particular wetland area will be determined by the Construction Manager and the Environmental Monitor. Vehicular travel through the wetland area with low-ground-pressure equipment will be confined to the access road or path alignment- and-structure work zones, as shown on the Plan and Profile drawings. When suitable conditions exist for the use of low-impact equipment, particularly if unsaturated, dry, or frozen conditions prevail at the time of construction, the use of low-impact equipment could result in less disruption to the wetland than would the installation and subsequent removal of temporary access roads. The edges of access roads in wetlands will be marked to ensure equipment stays on the roads.

## 6.4 ROAD CONSTRUCTION IN WETLANDS

To the greatest extent possible, permanent road construction in wetlands will be avoided, and where such road construction is unavoidable, its impacts will be minimized. In limited cases, a permanent access road may be needed to allow frequent access for inspection, maintenance, and repair. When permanent road construction in wetlands is unavoidable, the following guidelines shall apply:

- a. To prevent turbidity problems and to provide stability, the use of new, clean, stabilized stone fill (*i.e.*, crusher run, screened gravel, or cobble-absent fines passing an N 200 sieve) is required.
- b. The width of the road will be the minimum needed to pass a single vehicle safely through the wetland.

- c. Construction activity in wetlands will be avoided during the breeding season for any wetland dependent, endangered, threatened, or special-concern species; or species of greatest conservation need.
- d. Flow through the wetland will not be altered.
- e. Any culverts installed will comply with all conditions for culvert placement as identified on the plan and profile drawings.
- f. Any road constructed through a wetland shall follow the shortest practicable distance through it.

## 6.5 MAINTENANCE OF EXISTING CULVERTS

- a. Existing culverts that must be repaired will be identified and located. Repair specifications will be provided on the Plan & Profile drawings.
- b. Ordinary repairs to existing functional structures and facilities, repair of rip rap, and removal of debris from culverts, sediment traps, and adjacent drainage channels shall be made, providing that there is no dredging or filling involved, and providing that there is only minimal disturbance to aquatic life and minimal riparian effect.
- c. Culvert and Sediment-basin Maintenance: Mechanical removal of debris, silt, gravel, trash, etc., from culverts, water-intake structures, or sediment basins may be allowed at regular-but infrequent intervals. Extracted materials shall be disposed of at a facility duly authorized to receive such materials.
- d. Small excavations, including, but not limited to, digging jacking pits and jacking for conduit, provided that the disturbance is temporary and excavation volumes are less than seventy-five (75) cubic yards per pit, may be allowed to avoid permanent degradation of wetland and wetland adjacent area contours, as well as conversion of habitat. In this case, excavation will not exceed seventy-five (75) cubic yards per pit, and any excess excavated materials (*i.e.*, those not to be re-used in backfills) shall be removed and disposed of at an upland site as soon as possible, and in no case later than thirty (30) days after excavation. No side-casting of excavated materials will be allowed. No fill -- whether from excavation or imported from an off-site area -- will be stored in the wetland or wetland adjacent areas.
- e. Prior to inclement weather, or if they will be exposed for more than fourteen (14) days, excavated or temporarily stockpiled soils and materials will be covered and protected to: (a) reduce runoff of fines (which may cause a turbidity problem); and (b) prevent rain water from soaking the materials and rendering them unsuitable for backfill. Erosion-control measures will be implemented effectively at all times.

## 7.0 INVASIVE SPECIES CONTROL

### 7.1 HAZARD IDENTIFICATION

The Certificate Holder will perform the following activities to identify and address potential invasive plant species hazards:

- a. Contact applicable NYSDEC Regional Natural Resource Supervisor(s) and NYS Department of Agriculture and Markets for any project-area information about known or potential occurrences of invasive plant species that are included in the NYSDEC's "Interim List of Invasive Plant Species in New York State" (included as Section 7.6) and

that also may be of special concern to the applicable NYSDEC Regional Natural Resource Supervisor(s).

- b. In conjunction with performing site-by-site field analyses and the wetland delineation efforts, identify obvious locations of invasive plant species that may occur along the existing or proposed ROW.
- c. Assess which identified locations of invasive plant species constitute an environmental or human health hazard and warrant the prescription of measures to control the spread of such species during construction. Consider each species in its landscape context, such as whether a species is contributing positively to vegetation management of the ROW and whether the same species has been observed, or otherwise is known to be abundant, on adjacent lands.
- d. Develop a tiered evaluation to categorize the level of priority for further action during the construction process and specific measures to be employed within each tier.
- e. Along with applicable erosion and sediment controls, clearing and slash-disposal methods, and other environmental protection measures, prescribe site-specific measures for controlling the potential spread and transport of identified invasive plant species within each tier identified on the Plan and Profile drawings.

## 7.2 MEASURES TO PREVENT OR CONTROL THE TRANSPORT OF INVASIVE PLANT SPECIES

On a project-wide basis, the Certificate Holder will perform the following measures to prevent or control the transport of invasive plant species:

- a. Train and educate project contractor(s) and subcontractor(s) on identifying invasive plant species and locations and site-specific prescriptions for preventing or controlling their transport throughout or off of the project site.
- b. In order to prevent the potential introduction of invasive plant species from other areas or regions to the project area: Require that vehicles, equipment, and materials (including swamp mats) be inspected for, and cleaned of, any visible soils, vegetation, and debris before bringing them to the project area.
- c. Where practicable in upland areas identified for higher invasive species control (identified by tier), brush and wood will be chipped into a layer of between six (6) and eight (8) inches over access pathways on the ROW, thus providing a barrier between plant material and equipment. Areas where this will be attempted will be noted on the project Plan and Profile drawings and the method will be noted as an alternative to the designated wood-and-slash disposal method. The condition of this access will be monitored by the Environmental Monitor during construction. Provided this barrier remains intact, the Environmental Monitor may exempt specific types of potential transporters, e.g., pickup trucks and pedestrians, from decontamination requirements.
- d. Train project contractor(s) and subcontractor(s) on the various cleaning and/or decontamination methods to be used on the project, and as prescribed on a site-by-site basis, on the project Plan & Profile drawings.
- e. To prevent or minimize the potential introduction of invasive plant species from the project area to other areas or regions: Require that vehicles, equipment, and materials (including swamp mats) be inspected for, and cleaned of, any visible soils, vegetation, and debris before leaving the project ROW for another area of the project.

- f. Install appropriate erosion and sediment controls to work sites to help prevent or control the potential transport of invasive plant species via soil erosion.
- g. Minimize ground disturbances and vegetation removal as much as possible. The contractor(s) and subcontractor(s) will be instructed to stay within access paths and work areas that are designated on the Plan & Profile drawings.
- h. To the extent practicable, water for dust control and other uses will come from municipal water supplies/sources. If surface waters are used, equipment will be disinfected afterwards.
- i. To the extent practicable, avoid moving invasive-plant-infested soils, gravel, rock, and other fill materials to relatively-invasive-plant-free locations. Soil, gravel, rock, and other fill material will come from invasive-plant-free sources on the site, if such sources are available. Off-site fill materials also will come from invasive-plant-free sources, if such sources are available.
- j. To the extent practicable, stabilize and re-vegetate disturbed sites using soil components and mulches obtained from non-invasive plant sources. Utilize seed and other plant materials that have been checked and certified as noxious-weed-free and that have a weed content of no more than 0.05 percent and a high likelihood of survival. On a site-by-site basis and as prescribed on the project Plan & Profile drawings, equipment and material used within the project ROW will be power-washed and cleaned with clean water (no soaps or chemicals are to be used) before leaving the project ROW or any heavily-infested area in order to prevent or control the transport of seeds, roots, or other viable plant parts. Wash water, including spray, will not be discharged into or within one hundred (100) feet of any stream, wetland, wetland adjacent area, or stormwater conveyance (ditch, catch basin, etc.). If sufficient space is unavailable to provide, or is precluded by terrain from providing, an on-site cleaning station, the equipment used within the infested area may be power-washed adjacent to the area. In such situations, however, the wash water, including the spray, will not be discharged within one hundred (100) feet of any stream, wetland, wetland adjacent area, or stormwater conveyance.

### 7.3 WETLANDS AND WATERBODIES

The Certificate Holder will assume: that (a) all wetlands and waterbodies within the project area, irrespective of federal or State designation, are infested by one or more of the invasive species contained within the NYSDEC's "Interim List of Invasive Plant Species in New York State," March 13, 2009; and (b) such areas will continue to be infested by one or more such species after work activities are completed.

To prevent the potential introduction of invasive plant species into wetland and waterbodies from other areas the following measures will be taken: Before equipment and materials are used in any project work area involving wetlands and waterbodies, regardless of the federal or State designation, the equipment will be inspected for, and cleaned of, any visible soils, vegetation, and debris. To prevent the spread of seeds, roots, or other viable parts of invasive plant species to and from these specific water-related resources, in connection with work activities in and adjacent to wetlands and waterbodies, irrespective of federal or State designation, The Certificate Holder will implement the following equipment-cleaning procedures :

“Equipment used in areas containing invasive plant species shall be power-washed and cleaned with clean water (no soaps or chemicals) before leaving the invasive-infested area, to prevent the spread of seeds, roots or other viable plant parts, and the wash water, including spray, shall not be discharged within 100 feet of any stream, existing or proposed wetland or adjacent area, or stormwater conveyance (ditch, catch basin, etc). If sufficient space is not available or precluded by terrain to provide a cleaning station on site, upon approval by Engineer, equipment used within an infested area may be power-washed adjacent to the area, provided that the wash water, including spray, does not discharge within 100 feet of any stream, existing or proposed wetland or adjacent area, or stormwater conveyance (ditch, catch basin, etc).

- a. Loose plant and soil material that has been removed from clothing, boots and equipment, or generated from cleaning operations shall be a) rendered incapable of any growth or reproduction, b) disposed of off-site, or c) handled as per paragraph iii) below. If disposed of off-site, the plant and soil material shall be transported in a secure manner. Any off-site disposal must occur at either a landfill-incinerator or a State-approved disposal facility.
- b. If upon completion of work, the area remains infested with invasive plant species, the invasive material cleaned from equipment used within the same construction area may remain within the infested area, provided that no filling of a wetland shall occur.”
- c. Upon the completion of construction activities in wetlands and waterbodies within the project area, irrespective of federal or State designation, wetland mats will be removed, by lifting in reverse order, and then power-washed with clean water (no soaps or chemicals) before being transported from the site. The wash water, including spray, will not be discharged into or within one hundred (100) feet of any stream, wetland, or stormwater conveyance (ditch, catch basin, etc.). Any matter cleaned from equipment and material will remain within the infested area, provided that no filling of a wetland will occur as a result. If sufficient space is not available to provide a one-hundred-foot (100') buffer, a cleaning station site will be placed in a location that allows it to be utilized and managed so as to prevent the discharge of wash water into any stream, wetland, or stormwater conveyance.
- d. Where NYSDEC has identified the presence of *Didymospheniageminata* (Rock Snot or Didymo), any footwear used in streams or waterbodies will be soaked in a 1% solution of Virkon® Aquatic for ten (10) minutes before leaving the site. After crossing any water known to be infected with Didymo, equipment will be disinfected by power-washing with hot water (>140° F) prior to entering any other waterbodies.

#### **7.4 UPLAND INVASIVE PLANT SPECIES**

If upland invasive species must be cut within the project area during construction, the slash will be disposed of as described in Section 7.5. The Forester and the Environmental Monitor will determine the best method of control (*i.e.* slash removal, spraying stumps, or both) on a species-specific and a site specific basis, and as prescribed on the Plan & Profile drawings.

#### **7.5 DISPOSAL OF WOOD, PLANT MATERIAL, SOIL, AND DEBRIS**

Loose plant and soil material that has been removed from vehicles, equipment, and materials, or generated from the cleaning operations will be rendered incapable of any growth or reproduction; or placed in plastic bags at least 3 mil thick, hauled in a covered truck, and

properly disposed of offsite; or used within the same construction area that is infested, provided that no filling of any wetlands or adjacent areas will occur as a result.

## 7.6 INVASIVE INSECT CONTROL

In an effort to control the spread of invasive insects, the Certificate Holder shall:

- a. coordinate with outside logging contractors for sale and use of the merchantable timber that will be cleared pursuant to section 2.15 of these procedures; and
- b. provide unmerchantable timber as firewood to adjacent landowners or the general public pursuant to section 2.15 of these procedures and pursuant to the NYSDEC's firewood restrictions to protect forests from invasive species found in 6 NYCRR Part 192.5; and
- c. insure crews are trained to identify the Asian Longhorned Beetle and the Emerald Ash Borer and any other insects that the DEC identifies as a potential problem. If these insects are found, they will be reported to the DEC regional forester.

## 7.7 LIST OF INVASIVE PLANT SPECIES

Invasive species are defined in Section 19-1703(10) of the Environmental Conservation Law as a species that is:

- a) non-native to the ecosystem under consideration; and
- b) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. For the purposes of this paragraph, the harm must outweigh significantly any benefits.

Currently, the Interim Invasive Species Plant list compiled by NYS Department of Environmental

Conservation includes:

### **Floating and Submerged Aquatic Plants**

#### **Common Name Scientific Name**

Carolina Fanwort *Cabombacaroliniana*

Rock Snot (diatom) *Didymospheniageminata*

Brazilian Elodea *Egeriadensa*

Water thyme *Hydrillaverticillata*

European Frog's Bit *Hydrocharismorus-ranae*

Floating Water Primrose *Ludwigiaeploides*

Parrot-feather *Myriophyllumaquaticum*

Variable Watermilfoil *Myriophyllumheterophyllum*

Eurasian Watermilfoil *Myriophyllumspicatum*

Brittle Naiad *Najas minor*

Starry Stonewort (green alga) *Nitellopsisobtusa*

Yellow Floating Heart *Nymphoidespeltata*

Water-lettuce *Pistiastratiotes*

Curly-leaf Pondweed *Potamogetoncrispus*

Water Chestnut *Trapanatans*

### **Emergent Wetland and Littoral**

#### **Common Name Scientific Name**

Flowering Rush *Butomusumbellatus*

Japanese Knotweed *Fallopia japonica*

Giant Knotweed *Fallopia sachalinensis*  
 Yellow Iris *Iris pseudacorus*  
 Purple Loosestrife *Lythrum salicaria*  
 Reed Canarygrass *Phalaris arundinacea*  
 Common Reed-nonnative variety *Phragmites australis* var. *australis*

#### **Herbaceous Terrestrial**

##### **Common Name Scientific Name**

Garlic Mustard *Alliaria petiolata*  
 Mugwort *Artemisia vulgaris*  
 Brown Knapweed *Centaurea jacea*  
 Black Knapweed *Centaurea nigra*  
 Spotted Knapweed *Centaurea stoebe* ssp. *micranthos*  
 Canada Thistle *Cirsium arvense*  
 Bull Thistle *Cirsium vulgare*  
 Crown vetch *Coronilla varia*  
 Black Swallow-wort *Cynanchum louiseae* (*nigrum*)  
 European Swallow-wort *Cynanchum rossicum*  
 Fuller's Teasel *Dipsacus fullonum*  
 Cutleaf Teasel *Dipsacus laciniatus*  
 Giant Hogweed *Heracleum mantegazzianum*  
 Japanese Stilt Grass *Microstegium vimineum*

#### **Vines**

##### **Common Name Scientific Name**

Porcelain Berry *Ampelopsis brevipedunculata*  
 Oriental Bittersweet *Celastrus orbiculatus*  
 Japanese Honeysuckle *Lonicera japonica*  
 Mile-a-minute Weed *Persicaria perfoliata*  
 Kudzu *Pueraria montana* var. *lobata*

#### **Shrubs and Trees**

##### **Common Name Scientific Name**

Norway Maple *Acer platanoides*  
 Tree of Heaven *Ailanthus altissima*  
 Japanese Barberry *Berberis thunbergii*  
 Russian Olive *Elaeagnus angustifolia*  
 Autumn Olive *Elaeagnus umbellata*  
 Glossy Buckthorn *Frangula alnus*  
 Border Privet *Ligustrum obtusifolium*  
 Amur Honeysuckle *Lonicera maackii*  
 Shrub Honeysuckles *Lonicera morrowii/tatarica/x bella*  
 Bradford Pear *Pyrus calleryana*  
 Common Buckthorn *Rhamnus cathartica*  
 Black Locust *Robinia pseudoacacia*  
 Multiflora Rose *Rosa multiflora*

It is important to recognize that some of the listed shrub and tree species, such as Multiflora Rose, honeysuckle species, pear, and Common Buckthorn, generally have previously been considered to be desirable or compatible plant species for Transmission ROW Management

Programs. The occurrences of some of the listed shrub and tree species on existing ROWs are due at least partially to decades of vegetation management efforts that have been aimed at promoting and managing such low growing plant communities. Some, but not all, of these plants may occur in varying degrees on the Certificate Holder's ROWs. Plants on this list that do not grow to great heights, such as common buckthorn and honeysuckle, have been managed as desirable plants. Those plants that do grow to great heights, such as Norway Maple, always have been managed as undesirable in transmission line ROWs.

## **8.0 MEASURES TO PROTECT RARE, THREATENED AND ENDANGERED FLORA AND FAUNA SPECIES AND SIGNIFICANT NATURAL COMMUNITIES**

Information pertaining to the location and habitat of rare, threatened and endangered (RTE) flora and fauna species and Significant Natural Communities is typically included as part of the Article VII application. The Certificate Holder will contact the NYSDEC Regional Supervisor, NYS Natural Heritage Program and USFWS to check for any updates or changes of known RTE species or habitat or Significant Natural Communities in the project area. The Certificate Holder will, in consultation with NYSDEC Staff, identify appropriate protection measures for RTE species and habitat and Significant Natural Communities. Both known and potential sensitive resources need to be protected to the maximum extent practical during construction and operation of the project. Specific protection measures will vary by resource specific considerations and be developed on a case by case basis. Typical protection procedures for these sensitive resources are described as follows:

### **8.1 RARE, THREATENED AND ENDANGERED SPECIES**

#### **8.1.1 *Known RTE Species***

If the project ROW crosses a known habitat or location of RTE species, the Certificate Holder will contact NYSDEC, NYS Natural Heritage Program and the USFWS for species specific protection measures.

- a) All RTE species habitat will be clearly marked on the Plan and Profile drawings and clearly distinguished (flagged) in the field to ensure protection.
- b) Along with the RTE habitat and community locations being shown on the plans, crews will be trained on the locations and identification of the species in the identified areas.
- c) Access through any area which is known to contain a RTE species or is the habitat of a RTE species shall be avoided to the maximum extent practicable.
- d) If access through the an area known to be inhabited by an RTE species or which is known habitat of an RTE species is unavoidable the Certificate Holder will contact NYSDEC, NYS Natural Heritage Program and the USFWS to determine appropriate protection measures to minimize impacts and identify measures to mitigate those impacts which are unavoidable.
- e) The Plan and Profile drawings will be provided to the NYSDEC, NYS Natural Heritage Program for approval.
- f) Any documents or information which identifies the location or habitat of any known RTE species shall be labeled CONFIDENTIAL and access shall be restricted to only those



persons who need to know this information. The Certificate Holder will provide appropriate training to employees and contractors as to the confidential nature of this information.

### **8.1.2 Unanticipated Discovery of RTE Species During Construction**

If any RTE species is encountered during the construction, operation or maintenance of the project or discovered during the environmental inspection prior to construction-related activity, the Environmental Monitor will identify the extent of the area of concern, clearly mark it in the field, and GPS its location. The Certificate Holder shall promptly notify the DEC Regional Natural Resources Supervisor and if appropriate USFWS, in order to determine the appropriate measures to be taken to avoid and minimize direct impacts and protect such species and species habitat. If necessary to protect the species or their habitat from immediate harm, the Certificate Holder shall stabilize the area and cease construction or ground-disturbing activities in the area until protective measures are implemented. The Environmental Monitor will work with the Construction Manager to implement necessary protective measures identified above.

- a) Plans will be updated to reflect the new RTE species area of concern and the site will be clearly marked in the field.
- b) Crews will be updated on the new sensitive area location and species identification.
- c) Any documents or information which identify the location or habitat of any known RTE species shall be labeled CONFIDENTIAL and access shall be restricted to only those persons who need to know this information. The Certificate Holder will provide appropriate training to employees and contractors as to the confidential nature of this information.

## **8.2 SIGNIFICANT NATURAL COMMUNITIES**

- a) All Significant Natural Communities will be clearly marked on the project plans along with being clearly distinguished in the field to ensure protection.
- b) Access through or impact to any Significant Natural Communities will be avoided to the maximum extent practicable.
- c) If access through a Significant Natural Community is unavoidable, the Certificate Holder will develop appropriate protection measures in order to minimize impact.
- d) The Plan and Profile drawings will be provided to the NYSDEC, NYS Natural Heritage Program for review prior to start of construction.

## **9.0 INSPECTION AND MONITORING**

During construction of the project, multiple inspector/monitor(s) will be employed to ensure that all requirements, plans and specifications are appropriately adhered to. The qualifications and duties of each inspector/Monitor are provided as follows.

### **9.1 ENVIRONMENTAL MONITOR**

At least one Environmental Monitor will be employed full-time on the project during construction and restoration. Additional Environmental Monitors will be utilized as appropriate.

#### **9.1.1 Qualifications**

- a) Sufficient knowledge and experience to manage the environmental compliance procedures described; and

- b) A four-year degree in forestry or related environmental discipline or a demonstrated equivalent knowledge, in either case including courses in ecological sciences and experience in environmental construction inspection; and**
- c) Necessary qualifications consistent with a “Qualified Inspector” pursuant to the New York State DEC SPDES General Permit for Stormwater Discharges from Construction Activity permit conditions.**

#### **9.1.2 Responsibilities**

- a) Monitoring all reconstruction activities, including clearing, access and drainage improvements/installations, structure removals, replacement structure installations, wire stringing, installation and maintenance of temporary erosion controls, work involving wetlands, streams, agricultural lands, etc.;**
- b) Monitoring and supporting compliance with the environmental management and protection requirements specified by the DEC permits, 401 Water Quality Certificate, and applicable U.S. Army Corps of Engineers Permits;**
- c) Performing or coordinating the role and responsibilities of the agricultural inspector in order to address all requirements for work involving affected agricultural lands;**
- d) Providing DEC personnel with weekly status reports summarizing construction and indicating construction activities and locations scheduled for the next two weeks;**
- e) Organizing and conducting site compliance audit inspections, with the construction inspector, agricultural inspector (as applicable to affected agricultural lands), and other Project team personnel;**
- f) Coordinating NYSDEC, NYS Department of Agriculture & Markets (“Ag & Mkts”), and U.S. ACOE inspections of the Project;**
- g) Monitoring and managing all environmental protection requirements and closely coordinating same with the construction inspector and contractor; and**
- i) Monitoring Contractor compliance with the provisions of the Certificate and permits.**

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