

**NEW YORK STATE
DEPARTMENT OF AGRICULTURE AND MARKETS**

**Guidelines for
Electric Transmission Right-of-Way Projects**

The following Guidelines apply to linear Right-of-Way (ROW) construction projects on agricultural land. The project sponsor should coordinate with the New York State Department of Agriculture and Markets (NYSDAM) to develop an appropriate schedule for inspections to assure that the goals of these Guidelines are being met. The project sponsor should hire an Agricultural Monitor to oversee the construction and restoration on agricultural lands.

Agricultural Monitoring

The Project Sponsor should retain the services of a qualified Agricultural and Soil Conservation Specialist/Inspector (Agricultural Inspector) for each project phase: project design and development, construction, initial restoration, post-construction monitoring and follow-up restoration. The Agricultural Inspector should be available to provide site-specific agricultural information as necessary for project development through field review and direct contact with affected farm operators, County Soil and Water Conservation Districts, the Department of Agriculture and Markets (NYSDAM) and others. The Agricultural Inspector should maintain regular contact with the Environmental Monitor and appropriate on-site Project Inspectors throughout the construction phase. The Agricultural Inspector also should maintain regular contact with the affected farmers and County Soil and Water Conservation Districts concerning farm resources and management matters pertinent to the agricultural operations and the site-specific implementation of agricultural resource protection measures. The Project Sponsor should consult with NYSDAM whenever construction changes occur on agricultural lands.

Siting Goals

The Project Sponsor should identify Black Cherry trees located on the right-of-way near active livestock use areas during project development. During the clearing phase of the project, such vegetation should be disposed of in a manner which prevents access by livestock.

The Project Sponsor should design the Project to the extent possible to avoid or limit the placement of structures and guying wires on crop fields or other active agricultural land where the structures may significantly interfere with normal agricultural operations or activities. Where the location of a structure or guying wires on such sites is unavoidable, the Project Sponsor should make reasonable attempts to site structures in locations which minimize impacts to normal farming operations. Pole structures should be located along field edges and in nonagricultural areas where possible.

When transmission lines must cross farmland, the Project Sponsor should minimize agricultural impacts by using taller pole structures that provide longer spanning distances and locate pole structures on field edges to the greatest extent practicable. ROW centerline location and pole placement should be reviewed with the Department and the Agricultural Monitor prior to final design.

Avoid dividing larger fields into smaller fields, which are more difficult to farm, by locating access roads along the edges of agricultural fields (hedgerows and field boundaries) and in nonagricultural areas where possible.

All existing drainage and erosion control structures such as diversions, ditches, and tile lines should be avoided or appropriate measures taken to maintain the design and effectiveness of the existing structures. Any structures disturbed during construction should be repaired to as close to original condition as possible, as soon as possible, unless such structures are planned to be eliminated based on a new design.

Construction Requirements

Where construction entrances are required from public roadways to the ROW in agricultural fields, select fill over geotextile fabric should be placed over the exposed subsoil. Culverts and other drainage structures may be required at construction entrances.

Segments of farm roads utilized for access should be improved as required following consultation with the farm operator and NYSDAM prior to use. Such improvements should include the installation of geotextile fabric and crushed stone.

Where repeated temporary access is necessary across agricultural portions of the ROW and agricultural fields are utilized for access, timber mats should be utilized as an alternative to topsoil stripping. The mats should be layered where necessary to provide a level access surface. Once access is no longer required across agricultural areas, the mats should be removed and the Agricultural Inspector should use a soil penetrometer to determine if soil compaction has occurred as a result of construction activities. All compacted areas should be remediated as specified below.

Where repeated temporary access is necessary across agricultural portions of the ROW, and where mats are not utilized, topsoil should be removed, including all of the "A" horizon down to the beginning of the subsoil "B" horizon, generally not to exceed a maximum of 12 inches. Topsoil removal up to a depth of 16 inches may be required in specially-designated soils. All topsoil should be stockpiled and separated from other excavated materials. The Agricultural Inspector should determine depth of topsoil stripping on each affected farm during Project development by means of the County Soil Survey and on-site soil augering, if necessary. All topsoil material should be stripped, stockpiled, and uniformly returned to restore the original soil profile during restoration. During the clearing/construction phase, site specific depths of topsoil stripping should be monitored by the Agricultural Inspector. Topsoil stripping in lieu of heavy timber matting should be conducted under the direction of a qualified Agricultural Inspector.

Temporary workspace in agricultural areas should be of sufficient size to allow for positioning conductor reels, tensioners, pullers, wire spools and other mechanized equipment required during pulling activities.

Excavated subsoil material and stockpiled topsoil should be used to restore the original soil profile at new structure locations. All holes created by structure installation should be filled to the same level as the adjacent area, plus 6 to 12 inches of additional soil to allow for settling. Excess subsoil material not used for backfill should be removed from agricultural areas.

The Project Sponsor should provide all farm owners/operators with a telephone number to facilitate direct contact with the Project Sponsor and the Agricultural Inspector(s) through all of the stages of the project. The farm owner/operators should also be provided with a telephone phone number to facilitate direct contact with the Project Sponsor's Project Manager for the Project during operation and maintenance of the transmission line.

In pasture areas, work areas will be fenced to prevent livestock access, consistent with landowner agreements.

The Agricultural Inspector(s) should coordinate with the farm operators during the planning phase to develop a plan to delay the pasturing of livestock within the restored portion of the ROW, following construction until pasture areas are fully re-vegetated. The Project Sponsor should be responsible for maintaining the temporary fencing on the ROW until the Agricultural Inspector determines that the vegetation on the ROW is established and able to accommodate grazing. At such time, the Project Sponsor should be responsible for removal of the fences.

Restoration Requirements

In all agricultural sections of the ROW disturbed during construction, the Project Sponsor should break up the soil compaction to a minimum depth of 18 inches (unless bedrock is encountered at a depth of less than 18 inches) with deep tillage by such devices as a deep-ripper (subsoiler). Soil compaction results should be no more than 250 pounds per square inch (PSI) as measured with a soil penetrometer. Following deep ripping, all stone and rock material four inches and larger in size which has been lifted to the surface should be collected and taken off site for disposal. The topsoil that has been temporarily removed for the period of construction should then be replaced. Finally, deep subsoil shattering should be performed with a subsoiler tool having angled legs. Stone removal should be completed, as necessary, to eliminate any additional rocks and stones brought to the surface as a result of the final subsoil shattering process. In the event that subsequent construction or clean-up activities result in additional compaction, additional deep tillage should be performed to alleviate such compaction.

On affected farmland, any restoration practices should be postponed until favorable (workable, relatively dry) topsoil/subsoil conditions exist. Restoration should not be conducted while soils are in a wet or plastic state. Topsoil should be removed and stockpiled directly adjacent to the travel way on the ROW. Stockpiled topsoil should not be re-graded until plasticity, as determined by the Atterberg field test is significantly reduced. No Project restoration activities should occur in agricultural fields between the months of October through May unless favorable soil moisture conditions exist. The Project Sponsor should coordinate with NYSDAM and the landowner regarding tentative restoration planning. Potential schedules will be determined by conducting the Atterberg field test at appropriate depths into topsoil stockpiles, and below the traffic zone for a mutual determination of adequate field conditions for the restoration phase of the Project.

Topsoil stockpiles on agricultural areas left in place prior to October 31 should be seeded with Aroostook Winter Rye or equivalent at an application rate of 3 bushels (168 #) per acre and mulched with straw mulch at rate of 2 to 3 bales per 1000 Sq. Ft. Topsoil stockpiles left in place between October 31 and May 31 should be mulched with straw at a rate of 2 to 3 bales per 1000 Sq. Ft. to prevent soil loss.

After topsoil replacement, seedbed preparation (final tillage, fertilizing, liming) and seeding should follow NYSDAM recommendations as contained in *New York State Farmland: Seeding, Fertilizing and Lime Recommendations for Gas Pipeline Right-of-Way Restoration In Farmlands* (revised 6-15-2005) or as specified by the landowner.

All structures and guy anchors removed from agricultural areas as part of the construction activities should be removed to a minimum depth of 48 inches below the soil surface. All holes created by the removal of the old facilities should be filled to the same level as the adjacent area, plus 6 to 12 inches of additional soil to allow for settling. All material used for fill should be similar to native soil. All fill material will be slightly mounded to accommodate for settling.

Wherever existing structures are removed from agricultural fields, the immediate area will be restored to allow agricultural production. Such restoration should include the removal of concrete foundations and steel structures down to a minimum of 48" below the ground surface, removal of all vegetation from the structure area and grading of the ground surface to match the adjacent field. All rocks 4 inches and greater in size should be removed from the surface.

At the end of all construction, the ROW and respective work areas, including guying wire assembly and disassembly sites, and wire pulling areas should be thoroughly cleared of debris such as nuts, bolts, spikes, wire, pieces of steel, and other assorted items.

All surface or subsurface drainage structures damaged during construction should be repaired to as close to preconstruction conditions as possible, unless said structures are to be removed as part of the project design. Any surface or subsurface drainage problems resulting from construction of the Project will be corrected with the appropriate mitigation as determined by the Agricultural Monitor, The NYSDAM and the Landowner.

Monitoring and Remediation

The Project Sponsor will provide a monitoring and remediation period of no less than two years immediately following the completion of initial restoration. The two year period allows for the effects of climatic cycles such as frost action, precipitation and growing seasons to occur, from which various monitoring determinations can be made. The monitoring and remediation phase will be used to identify any remaining agricultural impacts associated with construction that are in need of mitigation and to implement the follow-up restoration.

General conditions to be monitored include topsoil thickness, relative content of rock and large stones, trench settling, crop production, drainage and repair of severed fences, etc. Impacts will be identified by the Agricultural Monitor through on site monitoring of all agricultural areas impacted by construction and through contact with respective farmland operators and NYSDAM.

Topsoil deficiency and trench settling should be mitigated with imported topsoil that is consistent with the quality of topsoil on the affected site. Excessive amounts of rock and oversized stone material will be determined by a visual inspection of disturbed areas as compared to portions of the same field located outside the ROW construction area. All excess rocks and large stones will be removed and disposed of by the Project Sponsor.

When the subsequent crop productivity within affected areas is less than that of the adjacent unaffected agricultural land, the Project Sponsor as well as other appropriate parties, will help to determine the appropriate rehabilitation measures to be implemented. Because conditions which require remediation may not be noticeable at or shortly after the completion of construction, the signing of a release form prior to the end of the monitoring and remediation period will not obviate the Project Sponsor's responsibility to fully redress all project impacts.

Soil compaction should be tested using an appropriate soil penetrometer or other soil compaction measuring device. Compaction tests will be made for each soil type identified on the affected agricultural fields. The soil compaction test results within the affected area will be compared with those of the adjacent unaffected portion of the farm field/soil unit. Where representative subsoil density of the affected area exceeds the representative soil density of the unaffected areas, additional shattering of the soil profile will be performed using the appropriate equipment. Deep shattering will be applied during periods of relatively low soil moisture to ensure the desired mitigation and to prevent additional soil compaction. Oversized stone/rock material which is uplifted to the surface as a result of the deep shattering will be removed.

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