



# **DURAND MITIGATION PLAN WESTERN ST. LAWRENCE RIVER SERVICE AREA Ducks Unlimited New York In-Lieu Fee Program**

To be considered by:

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## **0.0 INTRODUCTION**

Ducks Unlimited, Inc. (DU) established the Ducks Unlimited, Inc. New York In-Lieu Fee Program (DU-NY ILF Program) to provide a third party compensatory mitigation option to permit applicants under the permit programs of the U.S. Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC). The DU-NY ILF Program has sold 10.71 credits to permit applicants to compensate for wetland impacts in the Western St. Lawrence River Service Area (i.e., United States Geological Survey [USGS] 8-digit Hydrologic Unit Code [HUC 8] watersheds 04150301 – 04150304). Credits were purchased to compensate for impacts to 7.62 acres of wetlands in the Western St. Lawrence River Service Area (Appendix A).

DU identified and evaluated an extensive list of potential mitigation sites in coordination with State, Federal and NGO partners. The Durand property (hereinafter Mitigation Site) was selected as having the highest opportunity for restoration and meaningful preservation based on location, size, likelihood of success, and types of existing and potential aquatic resources. The following mitigation plan has been prepared and will be implemented by DU in accordance with 33 CFR 332.4, the U.S. Army Corps of Engineers New York District’s “Compensatory Mitigation Plan Guidelines” (2005), and the U.S. Army Corps of Engineers’ “Guidelines for Wetland Mitigation Banking in Ohio” (currently used by the U.S. Army Corps of Engineers Buffalo District).

## **1.0 GOALS AND OBJECTIVES**

The overall goal of this compensatory wetland mitigation plan is to generate 12.71 credits in the Western St. Lawrence Service Area (Appendix A). The functions and values that will be realized by this proposed wetland mitigation plan aim to replace, at a minimum, the functions and values of the wetlands impacted. These functions and values include groundwater recharge/discharge, floodflow alteration, sediment retention, nutrient removal and wildlife habitat.

The wetland restoration plan will take into consideration the priority issues and recommendations set forth by the New York State Wildlife Action Plan (NYSDEC, 2015), New York State Coastal Management Program, and Save the River – Upper St. Lawrence Riverkeeper. Priority issues in the St. Lawrence Valley are habitat loss and fragmentation, degraded water quality, altered hydrology, and invasive species.

The Mitigation Site is adjacent to agricultural land, therefore present and ongoing agricultural land use is a threat to the Mitigation Site’s conservation value. Restoring and protecting wetlands at the Mitigation Site will increase wildlife habitat and prevent further habitat fragmentation. The history of agricultural activity in the St. Lawrence Valley has negatively affected water quality. Agriculture is the greatest source of impacts to stressed water bodies in the St. Lawrence River Basin. Nutrients and sediment enter streams in the watershed due to agricultural runoff. Restoring wetlands at the Mitigation Site will improve water quality by removing nutrients and retaining sediment from surface flow.

The hydrology of the Upper St. Lawrence River has been altered by water-level regulation from the Moses-Saunders Power Dam. Re-establishing and rehabilitating wetlands upstream of the Moses Saunders Power Dam will lessen the effects of altered hydrology. This altered hydrology

has reduced water-level fluctuations necessary for diverse wetlands and aquatic communities. Invasive species have reduced the diversity of wetlands and aquatic communities in the Upper St. Lawrence River sub-basin.

This wetland mitigation plan will provide breeding and migration habitat for waterfowl species such as black duck and wood duck. Other species that will benefit from this project include NYSDEC Species of Greatest Conservation Need (SGCN) such as American bittern, black tern, northern harrier, pied-billed grebe, golden-winged warbler, brown thrasher, wood thrush and scarlet tanager.

Freshwater wetlands in the St. Lawrence Valley are critical habitats and the NYSDEC recommends protection and restoration of these critical habitats. (NYSDEC, 2015). The objectives of this mitigation work plan are to re-establish 4.46 acres of wetlands, rehabilitate 3.57 acres of wetlands, preserve 12.95 acres of wetlands, rehabilitate 7.60 acres of upland buffer and preserve 57.92 acres of upland buffer.

## **2.0 MITIGATION SITE SELECTION**

The Mitigation Site was selected for the following reasons:

1. It is in the Western St. Lawrence River Service Area
2. It has the hydric soils, adequate hydrology, and topography conducive to successful wetland restoration.
3. The Mitigation Site is adjacent to a state-designated significant coastal fish & wildlife habitat with an extensive system of wetlands classified as a significant natural community (New York State Department of State [DOS], 1993).
4. The Mitigation Site presents a cost-effective opportunity to create a greater amount of wetland habitat than the minimum required amount and with a high likelihood of success in replacing wetland functions lost at the impact sites.
5. Wetland mitigation at the Mitigation Site will realize positive impacts to a diversity of wildlife species and will not negatively impact known endangered or threatened plants or animals.
6. Wetland mitigation at the Mitigation Site will not negatively impact cultural resources.
7. There are no logistical or design constraints at the Mitigation Site that would inhibit successful wetland re-establishment.

## **3.0 BASELINE INFORMATION**

### Location

The Mitigation Site is located at Latitude: 44.348165° and Longitude: -75.812811° at 46949 County Road 111 in the Town of Alexandria, Jefferson County, New York in the Upper St. Lawrence sub-basin (HUC 04150301) (Appendix B, Fig. 1 and Fig. 2).

## Site Information

The Mitigation Site encompasses the western 86.5 acres of a 184 acre privately owned property. The land use composition of the work area and protected area of the Mitigation Site is detailed in Table 1 and Appendix B, Fig. 12.

**Table 1. Mitigation Site Land Cover Class Composition**

<b>Land Cover Class</b>	<b>Acres</b>	<b>Percent</b>
Deciduous Forest	46.6	53.9
Emergent Herbaceous Wetlands	1.1	1.3
Evergreen Forest	12.6	14.6
Herbaceous	12.1	14.0
Open Water	0.6	0.7
Scrub-Shrub	3.5	4.0
Woody Wetlands	10	11.6

The Mitigation Site can be divided into three areas based on land composition and geographic position. The eastern area of the Mitigation Site is composed of a northern field and southern field separated by forests. The middle area of the Mitigation Site is composed primarily of upland forests with some woody wetlands. PEM wetlands occur at the western area along the boundary of the Mitigation Site. The surrounding land use consists of agriculture, upland forests, and wetlands. All adjacent properties are in private ownership. The Mitigation Site is actively used for grazing for beef cattle. There are no known hazardous material sites in the vicinity of the site. There are no known contaminants in the soil or water at the site.

## Cultural Resources

A request for an environmental review submitted to New York's State Historic Preservation Office (SHPO) has resulted in a determination that the project is unlikely to negatively impact cultural resources and no further investigation is warranted. If cultural resources are found during construction of the project, SHPO will be notified immediately and construction activities in that area will be ceased until clearance is granted by SHPO. The response letter from SHPO is found in Appendix C.

## Wildlife Usage

The Mitigation Site is part of the Atlantic Coast Joint Venture's (ACJV) Lower Great lakes/St. Lawrence Plain Bird Conservation Region's (BCR 13) Upper St. Lawrence/Lake Ontario Priority Region, which is one of the most important areas to advance conservation objectives for bird species in BCR 13. The Mitigation Site is in an area where several state-listed threatened and endangered birds were observed during the New York State Breeding Bird Atlas 2000 - 2005 Survey: pied-billed grebe, northern harrier and black tern. The New York Natural Heritage Program (NYNHP) confirmed the presence of the state-listed threatened northern harrier and least bittern within 0.5 miles of the Mitigation Site (Appendix D). Activities at the Mitigation Site will provide habitat for northern harrier and least bittern.

Species of greatest conservation need (SGCN) observed during the survey were American bittern, American kestrel, bobolink, brown thrasher, eastern meadowlark, golden-winged warbler, northern harrier, scarlet tanager and wood thrush. Activities at the Mitigation Site will provide habitat for most of these SGCN and not negatively impact any of them. The Mitigation Site is adjacent to Crooked Creek Marsh, which supports other state-listed threatened species such as least bittern and common tern. Crooked Creek Marsh is one of the principal migratory stopover areas on the St. Lawrence River used by waterfowl and is a waterfowl winter concentration area according to NYNHP (Appendix D). Waterfowl observed in the area during the New York State Breeding Bird Atlas 2000 – 2005 survey included wood duck, gadwall, green-wing teal and common merganser. The St. Lawrence Plains is the most important area for breeding habitat for mallards in the eastern US (ACJV, 2005). According to the US Fish and Wildlife Service's (USFWS) Official Species List for the Mitigation Site the federally-listed endangered Indiana bat and federally-listed threatened northern long-eared bat may occur within the Mitigation Site's boundary (Appendix D). The wetland restoration would not negatively impact Indiana bat and northern long-eared bat habitat. Efforts will be made within the restoration area to improve Indiana bat and northern long-eared bat habitat if possible. It is unlikely there is suitable habitat for Indiana bat and northern long-eared bat at the Mitigation Site, because the ecological communities associated with these animals (e.g., caves and mines) are not present at the Mitigation Site.

### Watershed

The Mitigation Site is part of the Upper St. Lawrence sub-basin (HUC 04150301) (Appendix B, Fig 1.) which is a long and narrow watershed in the St. Lawrence basin (HUC 041503). All surface waters in the Upper St. Lawrence sub-basin drain into the St. Lawrence River, which is one of the largest rivers in North America.

The Mitigation Site is immediately upstream of Crooked Creek Marsh, which is a large (i.e., ~1,250 acre) system of wetlands designated as a significant coastal fish and wildlife habitat by the State of New York. Crooked Creek Marsh is the least disturbed of the four largest coastal wetland systems on the St. Lawrence River, and this ecological community is rare in the St. Lawrence Plains region (DOS, 1993).

Habitat loss and fragmentation is a cause of concern in the watershed. Grasslands and agricultural lands account for 36.9% of the area in the Upper St. Lawrence sub-basin, while wetlands account for 19.4% of the area (United States Department of Agriculture – Natural Resources Conservation Service [USDA-NRCS], 2010). The St. Lawrence Valley is known for its large grassland areas which support large populations of grassland bird species. Much of the grassland area in the St. Lawrence Valley is used for farmland, and this land conversion has reduced the value of these areas for wildlife habitat due to poor agricultural practices. The interspersed of different habitats such as wetlands and grasslands provides critical habitat for SGCN in the St. Lawrence Valley (ACJV 2005).

### Wetlands

According to the National Wetland Inventory (NWI) and the NYSDEC, there are already wetlands present at the Mitigation Site (Appendix B, Fig. 5 & Appendix B, Fig. 6). The PEM wetland in the northwest corner of the site is part of the NYSDEC regulated freshwater wetland

R-4; which is Crooked Creek Marsh, and classified by the NYSDEC as a significant natural community of high quality deep emergent marshes. The Mitigation Site also includes palustrine scrub-shrub (PSS) wetlands that are part of the New York State-regulated freshwater wetland R-24. A palustrine forested/scrub-shrub (PFO/SS) wetland and several small PEM wetlands are located throughout the site. The wetland delineation report is found in Appendix E. The wetland delineation map of the site (Appendix B, Fig. 7) shows the exact locations of these wetlands. These delineated wetlands should be classified as PEM and PEM/SS due to the prevalence of emergent hydrophytic herbaceous plants and shrubs. Surface water was present in several of these delineated wetlands.

### Hydrology

The primary inputs of water to the Mitigation Site are direct precipitation, surface runoff and groundwater seepage. The Mitigation Site drains an area of 152.6 acres, including the footprint of the Mitigation Site (Appendix B, Fig. 8).

According to the National Oceanic and Atmospheric Association's National Climatic Data Center, the Mitigation Site is in an area where the average annual precipitation is 43.1 inches. The precipitation is generally well distributed throughout the year. According to the Northeast Regional Climate Center, the Mitigation Site is in an area where a 2.5 inch rainfall event is likely to occur once every two years. A field study conducted with reed canary grass (*Phalaris arundinacea*) in Iowa (Schilling and Kiniry, 2007) was used as a conservative approach to estimating water loss due to evapotranspiration. The value of 23.9 inches of water loss due to evapotranspiration during the growing season (May – October) will be used.

In an average year the mitigation wetlands will have enough water from direct precipitation to overcome the water lost due to evapotranspiration by 19.2 inches. A high water table will help the mitigation wetlands retain water and contribute to the Mitigation Site's hydrology.

There is a steep bedrock shelf with outcroppings upslope from the proposed mitigation wetlands that have many small groundwater seeps. A perched water table occurs in this upslope area, and water flowing downslope from this perched water table will contribute to the hydrology of the proposed mitigation wetlands.

### Vegetation

The Mitigation Site is currently grazed by beef cattle. Cattle are allowed to graze in some of the existing wetlands on the site. The existing vegetation consists mostly of grasses with some early colonizing species such as thistle and clover. The herbaceous community of these delineated wetlands consists of emergent hydrophytic vegetation such as common fox sedge (*Carex vulpinoidea*), lakebank sedge (*Carex lacustris*), cottongrass bulrush (*Scirpus cyperinus*) and lamp rush (*Juncus effusus*). The shrub community of these delineated wetlands consists of hydrophytic shrubs such as white meadowsweet (*Spiraea alba*) and black willow (*Salix nigra*). Goldenrods (*Solidago* spp.) were present in both the wetlands and upland fields of work area at the Mitigation Site. The tree community of the protected area at the Mitigation Site consists of evergreen trees such as eastern hemlock (*Tsuga canadensis*) and red pine (*Pinus resinosa*); and deciduous trees such as red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and northern white oak (*Quercus alba*).

## Soils

The following soil series are present at Mitigation Site based on the soil map (Appendix B, Fig. 4). The depth to the water table at the Mitigation Site is illustrated in Appendix B, Fig. 11.

Carlisle series consists of very deep, very poorly drained soils formed in woody and herbaceous organic deposits. Carlisle muck (Cd) is classified as a hydric soil with a hydric rating of 100%. Cd has a water table at the soil surface. Saturated hydraulic conductivity is high in Cd. Chatfield series consists of moderately deep, well drained and somewhat excessively drained soils formed in till on low-lying ridges. Chatfield-Rock outcrop complex, steep (CkE) is not classified as a hydric soil and has a hydric rating of 0%. CkE has a depth to water table greater than 78 inches. Saturated hydraulic conductivity is high in CkE.

Galoo series consists of very shallow, excessively drained and somewhat excessively drained soils formed in a thin layer of glacial till overlying limestone or calcareous sandstone bedrock. Galoo, Acid-Rock outcrop complex, 0 – 8% slopes (GcB) is classified as a hydric soil and has a hydric rating of 2%. GcB has a depth to water table greater than 79 inches. Saturated hydraulic conductivity is moderately high in GcB.

Hollis series consists of shallow, well drained somewhat excessively drained soils formed in a thin mantle of till. Hollis-Rock outcrop complex, 0 – 8% slopes (HrB) is classified as a hydric soil with a hydric rating of 4%. HrB has a depth to water table greater than 78 inches. Saturated hydraulic conductivity is high in HrB.

Kingsbury series consists of very deep, somewhat poorly drained soils formed in lacustrine or marine sediments. Kingsbury silty clay, 2 – 6% slopes (KgB) is classified as a hydric soil with a hydric rating of 4%. KgB has a depth to water table of 12 inches. Saturated hydraulic conductivity is moderately low in KgB.

Livingston series consists of very deep, very poorly drained soils that formed in calcareous estuarine and glaciolacustrine clays on glacial lake plains. Livingston mucky silty clay (Lc) is classified as a hydric soil with a hydric rating of 85%. Lc has a depth to water table of 6 inches. Saturated hydraulic conductivity is moderately high in Lc.

Rhinebeck series consists of very deep, somewhat poorly drained soils formed in clayey lacustrine sediments. Rhinebeck-Chatfield-Rock outcrop complex, rolling (RkC) is classified as a hydric soil with a hydric rating of 4%. RkC has a depth to water table of 12 inches. Saturated hydraulic conductivity is moderately high in RkC.

Vergennes series consists of very deep, moderately well drained soils on glacial lake plains. Vergennes silty clay loam, 3 – 8% slopes (VeB) is not classified as a hydric soil and has a hydric rating of 0%. VeB has a depth to water table of 20 inches. Saturated hydraulic conductivity is low in VeB.

Wetland re-establishment activities will occur primarily on KgB soil map unit. KgB already supports wetlands delineated at the Mitigation Site. KgB has high runoff potential when thoroughly wet. KgB is suitable for wetland re-establishment.



## 4.0 MITIGATION WORK PLAN

### 4.1 CONSTRUCTION AND PLANNED HYDROLOGY

The following work plan is for a wetland mitigation plan based on site visits and existing data including USGS topographic maps, USDA soil surveys, state and federal wetland and floodplain maps, tax maps, aerial photos and topographic survey. The preliminary wetland design plan has been attached to this plan (Appendix F).

- Wetland re-establishment will occur in the north and south fields.
- Wetland rehabilitation will occur in wetlands already present in the planned wetland units.
- Areas not re-established or rehabilitated will be preserved.

The preliminary and final design will include a full-size construction plan with the following components:

1. Overall property map showing the property boundary and Mitigation Site boundary. The overall map will show areas to be re-established, rehabilitated, and protected.
2. Project site plan and grading plan showing the proposed restored wetland areas including current and proposed elevations.
3. Details for construction of water control structures.
4. Cross-sections of proposed earth-moving activities.
5. A planting plan showing the types of planting regimes.
6. An Erosion and Sediment Control Plan.
7. A Monitoring Plan detailing the location of vegetation monitoring plots, photo points, and hydrology sampling points.
8. Specifications that include applicable construction methods and materials.

Construction of the mitigation wetlands shall commence in summer 2016, depending on permit approval and appropriate site conditions. DU will secure a qualified contractor to construct the wetland mitigation plan. An erosion and sediment control plan will be implemented and maintained during construction. DU staff shall be on-site during critical parts of construction to monitor construction of the wetland mitigation areas to ensure compliance with the mitigation plan and to make adjustments when appropriate to meet mitigation goals.

The mitigation work plan will establish several wetland sites connected by protection of existing wetland and upland forest. An upland grass buffer will be provided within the protection boundary surrounding the proposed mitigation wetlands. There is a steep bedrock shelf up gradient from the sites that has many small groundwater seeps to provide hydrology to the proposed wetlands. Each wetland will be established by excavating a small area to provide embankment material for a low-level berm. Water control structures will also be installed to back the water into the establishment area and provide a controlled outlet for water leaving the wetlands. As part of the project, fencing will be installed to keep the cattle from entering the protected area.

## 4.2 PLANNED VEGETATION AND HABITAT FEATURES

In the northern and southern fields, the ponded areas adjacent to the berms will be planted to re-establish PEM wetlands. The edges of these re-established PEM wetlands will be planted with hydrophytic shrubs to transition to PSS wetlands. Hydrophytic woody vegetation will be planted adjacent to the PSS wetlands to transition to PFO wetlands. Woody vegetation will be planted adjacent to the PFO wetlands to transition to an upland forested buffer.

Hydrophytic perennials observed at the Mitigation Site during the wetland delineation indicated the presence of a hydrophytic seed bank. Evidence of a robust hydrophytic seed bank and seed source at the Mitigation Site and in Crooked Creek Marsh guarantees the presence and natural recruitment of desirable wetland vegetation. Seeding and planting will be used to supplement the hydrophytic seed bank and establish diverse wetland plant communities.

- The planned PEM wetlands (5.05 acres) will be seeded with a seed mix to re-establish wet meadows grading into shallow emergent marshes as described in “Ecological Communities of New York State” (New York State Heritage Program, 2014). (Table 2)
- The planned PSS wetlands (0.58 acres) will be planted and seeded to re-establish shrub swamps as described in “Ecological Communities of New York State” (New York State Heritage Program, 2014). (Table 3 and 5)
- The planned PFO (2.40 acres) wetlands will be planted and seeded to re-establish hardwood swamps. (Tables 3, 4 and 5)
- The planned upland grass buffer (7.6 acres) will be seeded with grasses and ground cover. (Table 6)
- The planned berm (1.90 acres) will be planted with a mix of cool season grasses, warm season grasses and ground cover. (Table 6)

**Table 2.** Seeding list for planned PEM wet meadow/shallow emergent marsh wetland plant community with an estimated VIBI-FQ metric of 50

Common Name	Scientific Name	WIS*	CoC**	Percent by weight
Several-Vein Sweetflag	<i>Acorus americanus</i>	OBL	6	2
American Water Plantain	<i>Alisma subcordatum</i>	OBL	4	4
Bearded Sedge	<i>Carex comosa</i>	OBL	4	5
Shallow Sedge	<i>Carex lurida</i>	OBL	3	15
Common Fox Sedge	<i>Carex vulpinoidea</i>	OBL	2	20
Common Spike-Rush	<i>Eleocharis palustris</i>	OBL	5	2
Rattlesnake Manna Grass	<i>Glyceria canadensis</i>	OBL	5	2
Lamp Rush	<i>Juncus effuses</i>	OBL	2	5
Rice Cut-Grass	<i>Leersia oryzoides</i>	OBL	3	4
Fowl Blue Grass	<i>Poa palustris</i>	FACW	4	15
Hard-stem Club-rush	<i>Schoenoplectus acutus</i>	OBL	7	1
Three-square	<i>Schoenoplectus pungens</i>	OBL	7	1
Dark-Green Bulrush	<i>Scirpus atrovirens</i>	OBL	5	5
Cottongrass Bulrush	<i>Scirpus cyperinus</i>	OBL	5	3
Broad-Fruit Burr-Reed	<i>Sparganium americanum</i>	OBL	5	4
American Burr-Reed	<i>Sparganium eurycarpum</i>	OBL	5	4
Simpler's Joy	<i>Verbena hastate</i>	FACW	4	8
<b>Seed mix application rate</b>			<b>20 lbs. per acre</b>	

\*WIS: Wetland Indicator Status

\*\*CoC: Coefficient of Conservatism

**Table 3.** Planting list for shrub community in the planned PFO and PSS wetlands (all plantings are 3 – 4’ tall bare root plants [BRP])

Common Name	Scientific Name	WIS	CoC	PFO Shrubs/Acre	PSS Shrubs/Acre
Speckled Alder	<i>Alnus incana</i>	FACW	3	15	30
Black Chokeberry	<i>Aronia melanocarpa</i>	FAC	6	25	
Common Hackberry	<i>Celtis occidentalis</i>	FAC	7	25	
Common Buttonbush	<i>Cephalanthus occidentalis</i>	OBL	6.5		70
Red Osier	<i>Cornus alba</i>	FACW	3	25	50
Silky Dogwood	<i>Cornus amomum</i>	FACW	4	25	50
Spicebush	<i>Lindera benzoin</i>	FACW	7	30	60
Swamp Rose	<i>Rosa palustris</i>	OBL	6		50
Silky Willow	<i>Salix sericea</i>	OBL	3.5		30
White Meadowsweet	<i>Spiraea alba</i>	FACW	5	30	60
American Bladdernut	<i>Staphylea trifolia</i>	FAC	7	25	
<b>TOTAL</b>				200	400

**Table 4.** Planting list for planned PFO hardwood swamp wetland plant community (all plantings are 3 – 4’ tall BRP)

Common Name	Scientific Name	WIS	CoC	Woody stems per acre
Red Maple	<i>Acer rubrum</i>	FAC	2.5	15
Silver Maple	<i>Acer saccharinum</i>	FACW	5	20
Black Gum	<i>Nyssa sylvatica</i>	FAC	7	25
American Sycamore	<i>Platanus occidentalis</i>	FACW	6.5	25
Eastern Cottonwood	<i>Populus deltoids</i>	FAC	3	20
Swamp White Oak	<i>Quercus bicolor</i>	FACW	5	35
Pin Oak	<i>Quercus palustris</i>	FACW	7.5	30
Pussy Willow	<i>Salix discolor</i>	FACW	3	15
Black Willow	<i>Salix nigra</i>	OBL	4.5	15
			<b>TOTAL</b>	200

**Table 5.** Seeding list for PSS and PFO wetlands with an estimated VIBI-FQ of 54.

Common Name	Scientific Name	WIS	CoC	Percent by weight
Greater Bladder Sedge	<i>Carex intumescens</i>	FACW	4	10
Pointed Broom Sedge	<i>Carex scoparia</i>	FACW	2	10
Squarrose Sedge	<i>Carex squarrosa</i>	OBL	4	10
Common Buttonbush	<i>Cephalanthus occidentalis</i>	OBL	6.5	10
Red Osier	<i>Cornus alba</i>	FACW	3	10
Silky Dogwood	<i>Cornus amomum</i>	FACW	4	10
Spotted St. John's-Wort	<i>Hypericum punctatum</i>	FAC	5	2
Lesser Poverty Rush	<i>Juncus tenuis</i>	FAC	2	3
Spicebush	<i>Lindera benzoin</i>	FACW	7	20
Narrow-leaf Mountain-Mint	<i>Pycnanthemum tenuifolium</i>	FAC	5	1
Swamp Rose	<i>Rosa palustris</i>	OBL	6	5
Crooked-Stem American-Aster	<i>Symphotrichum prenanthoides</i>	FAC	5	4
Golden Alexanders	<i>Zizia aurea</i>	FAC	4	5
<b>Seeding rate</b>			<b>15 lbs./acre</b>	

**Table 6.** Seeding list for upland buffer and planned berm

Common Name	Scientific Name	WIS	Percent by Weight
Rough Bent	<i>Agrostis scabra</i>	FAC	5
Big Bluestem	<i>Andropogon gerardii</i>	FAC	10
Nodding Wild Rye	<i>Elymus canadensis</i>	FACU	20
Red fescue	<i>Festuca rubra</i>	FACU	10
Perennial Rye Grass	<i>Lolium perenne</i>	FACU	30
Garden Bird's-Foot-Trefoil	<i>Lotus corniculatus</i>	FACU	5
Wand Panic Grass	<i>Panicum virgatum</i>	FAC	5
Kentucky Blue Grass	<i>Poa pratensis</i>	FACU	10
Red Clover	<i>Trifolium pratense</i>	FACU	5
<b>Seeding rate</b>			<b>10 lbs./acre</b>

## 5.0 PERFORMANCE AND SUCCESS STANDARDS

The following performance standards are based on the goals and objectives of the mitigation project as well as the character of existing wetlands surrounding the mitigation site. These standards will be used to evaluate development and overall success of the mitigation project:

1. Construction has been completed in accordance with approved plans and specifications in the permit.
2. The soils on the site will be stable and any non-biodegradable erosion controls will be removed.
3. The wetland reestablishment areas have soil saturation and/or evidence of inundation via water potential or water height measurements during the growing season.
4. At the end of the 10-year monitoring period:
  - a. The wetlands shall have 90% relative coverage by native perennial hydrophytic plants (those with a regional indicator status of FAC, FACW, or OBL in the report entitled “Northcentral and Northeast 2014 Regional Wetland Plant List”).
  - b. The planned PFO and PSS areas will have at least 400 woody stems per acre, and the PFO areas will have at least 200 trees per acre
  - c. The planned wetland areas shall have no more than 5% coverage of the following invasive plant species: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), cattails (*Typha angustifolia* and *Typha x glauca*), buckthorn (*Rhamnus cathartica*) and Japanese knotweed (*Polygonum cuspidatum*).
  - d. Upland buffer rehabilitation areas will have 80% coverage of native perennials and no more than 10% coverage of the following invasive plant species: buckthorn (*Rhamnus cathartica*), honeysuckles (*Lonicera* spp.), and reed canary grass (*Phalaris arundinacea*).
  - e. The re-established and re-habilitated wetlands will meet the federal wetland criteria outlined in the report entitled “Corps of Engineers Wetlands Delineation Manual”, dated January, 1987, with current Corps of Engineers Northcentral and Northeast Regional Supplement.

In addition to the performance standards mentioned above, three interim goals must be met during the 10-year monitoring period. Each interim goal will release 15% of the credits for re-establishment and rehabilitation when the goal has been met.

### 1<sup>st</sup> Interim Goal:

- The planned wetland areas will have 50% coverage by native perennial hydrophytes.
- The planned wetland areas are demonstrating progress in vegetative development towards meeting the final vegetation index of biotic integrity “floristic quality” VIBI-FQ performance standard.
- The planned PFO and PSS areas will have at least 150 trees/shrubs per acre.
- The planned wetland areas will have no more than 25% coverage of the following invasive plant species: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), cattails (*Typha angustifolia* and *Typha x glauca*), buckthorn (*Rhamnus cathartica*), and Japanese knotweed (*Polygonum cuspidatum*).

- Upland buffer rehabilitation areas will have 50% coverage of native perennials.
- The upland buffer rehabilitation area will have no more than 35% coverage of the following invasive plant species: buckthorn (*Rhamnus cathartica*), honeysuckles (*Lonicera* spp.), and reed canary grass (*Phalaris arundinacea*).

#### 2<sup>nd</sup> Interim Goal:

- The planned wetland areas will have 60% coverage by native perennial hydrophytes.
- The planned wetland areas are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard.
- The planned PFO and PSS areas will have at least 250 trees/shrubs per acre.
- The planned wetland areas will have no more than 20% coverage of the following invasive plant species: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), cattails (*Typha angustifolia* and *Typha x glauca*), buckthorn (*Rhamnus cathartica*), and Japanese knotweed (*Polygonum cuspidatum*).
- The upland buffer rehabilitation area will have no more than 25% coverage of the following invasive plant species: buckthorn (*Rhamnus cathartica*), honeysuckles (*Lonicera* spp.), and reed canary grass (*Phalaris arundinacea*).

#### 3<sup>rd</sup> Interim Goal:

- The planned wetland areas will have 75% coverage by native perennial hydrophytes.
- The planned wetland areas are demonstrating progress in vegetative development towards meeting the final VIBI-FQ performance standard.
- The planned PFO and PSS areas will have at least 350 trees/shrubs per acre.
- The planned wetland areas will have no more than 15% coverage of the following invasive plant species: purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), cattails (*Typha angustifolia* and *Typha x glauca*), buckthorn (*Rhamnus cathartica*), and Japanese knotweed (*Polygonum cuspidatum*).
- The upland buffer rehabilitation area will have no more than 15% coverage of the following invasive plant species: buckthorn (*Rhamnus cathartica*), honeysuckles (*Lonicera* spp.), and reed canary grass (*Phalaris arundinacea*).

The success of this wetland mitigation project will be assessed based on the performance standards and interim goals outlined above and include any additional conditional standards identified and agreed upon by the USACE upon final design and during the permitting process.

## 6.0 CREDIT DETERMINATION

The mitigation site will generate 12.71 credits based on the following ratios and acreages for each mitigation activity.

<b>Mitigation Activity</b>	<b>Acreage</b>	<b>Ratio</b>	<b>Credits</b>
<b>Wetland Re-Establishment</b>	<b>4.46</b>	<b>1:1</b>	<b>4.46</b>
<b>Wetland Rehabilitation</b>	<b>3.57</b>	<b>3:1</b>	<b>1.19</b>
<b>Preservation (Wetland)</b>	<b>12.95</b>	<b>10:1</b>	<b>1.295</b>
<b>Preservation (Upland)</b>	<b>57.92</b>	<b>15:1</b>	<b>3.86</b>
<b>Upland Buffer Restoration</b>	<b>7.60</b>	<b>4:1</b>	<b>1.90</b>

The credit release schedule will include:

- All of the credits associated with the preservation will be released upon documentation of preservation (recorded deed) with associated approved stewardship plan (long-term management plan).
- 10% of the credits for re-establishment and rehabilitation will be released upon approval of this mitigation plan
- 20% of the credits for re-establishment and rehabilitation will be released at as-built production and approval by the IRT.
- 15% of the credits for re-establishment and rehabilitation will be released after meeting the first interim goal.
- 15% of the credits for re-establishment and rehabilitation will be released after meeting the second interim goal.
- 15% of the credits for re-establishment and rehabilitation will be released after meeting the third interim goal.
- 25% of the credits for re-establishment and rehabilitation will be released after the final vegetation goals have been met for 10-year monitoring period.

## 7.0 MITIGATION SITE PROTECTION

The Mitigation Site will be privately owned.

A management plan and agreement between DU and the title holder of the property will be established to maintain the mitigated wetland areas and buffers to protect them from incompatible use and habitat management activities. DU will hold a conservation easement on the established wetlands and the designated protected area. A sample conservation easement is located in Appendix G.



A long-term protection endowment will be established per the approved project budget for long-term protection monitoring in perpetuity.

## 8.0 MONITORING

DU staff, experienced with wetland restoration and mitigation, will coordinate and oversee monitoring activities. A surveyed drawing showing the As-Built conditions of the mitigated area will be submitted within 60 days following the completion of the mitigation project. The site will be monitored and a monitoring report will be submitted annually to the USACE for years 1, 2,3,5,7, and 10 or when performance and success standards have been met. Observations will occur in late summer/early fall.

The reports will address the performance standards in the summary data section and will address the additional items noted in the monitoring report requirements, in the appropriate section. The reports will also include the monitoring-report appendices. The first year of monitoring will be the first year that the Mitigation Site has been through a full growing season after completion of construction and planting. Each annual monitoring report, in the format provided in the New York District Compensatory Mitigation Guidelines, will be submitted to the Corps, Regulatory Division, Policy Analysis and Technical Support Branch, no later than December 15 of each monitoring year and include the following information:

1. A copy of the USACE permit referencing the approved mitigation plan.
2. A copy of the approved mitigation plan including the goals, objectives and performances standards.
3. Identification of any structural failures or external disturbances to the Mitigation Site.
4. A description of management activities and remedial actions implemented during the past year.
5. A surveyed drawing of the mitigation area, including water level elevations and acreage of wetlands. The locations of focused 20 m x 50 m VIBI-FQ plots, random 10 m x 10 m VIBI-FQ plots, vegetation communities, and planting zones will also be identified on the drawings. The plans will include overlays to show pre-construction conditions and changes from monitoring year to monitoring year. The focused 20 m x 50 m VIBI-FQ plots are described in Appendix H.
6. Color photographs from monitoring stations and a photograph location map showing all representative areas of each cover type within the mitigation site.
7. A plant species list that gives USFWS Wetland Indicator Status and strata (herb, shrub, tree). Dominant plants will be highlighted and the percent of the aerial cover noted. Plants introduced through seeding or planting will be indicated. A vegetation cover map based on the collected plant data will be provided.
8. Water depth and the date of measurement from fixed locations within the wetland will be recorded. These sample points will be plotted on the survey drawings.
9. Anecdotal list of wildlife species observed using the wetlands.
10. Methodologies used to control nuisance vegetation (e.g., *Phalaris arundinacea*, *Phragmites australis*, *Lythrum salicaria*).
11. A quantitative assessment of monitoring data (e.g., VIBI-FQ, percent coverage of invasive species, and woody stems per acre) and a statement as to whether or not the

goals of the mitigation project are being met and a plan with an implementation time table to correct any deficiencies.

12. A narrative summary of the monitoring data and conclusions of the monitoring.

A post-construction assessment report and wetland delineation survey will be submitted to the USACE in conjunction with the monitoring reports for the fifth and tenth years of the monitoring period.

## **9.0 MAINTENANCE AND ADAPTIVE MANAGEMENT PLAN**

DU will conduct adaptive management activities during the monitoring period. When monitoring indicates that a performance standard is not being met, then that standard will be evaluated to determine if simply more time is needed or a remedial action may be required. This will be accomplished by consulting wetland experts and permitting agencies to determine an appropriate course of action. Remedial actions may include seeding or planting, non-native plant control, and erosion control measures. Remedial actions requiring earth movement or changes in hydrology will not be implemented without written approval from the USACE. Once the monitoring period is over, the completed wetland will be protected by the title holder and managed only as needed and specified in the site management plan.

## **10.0 LONG-TERM STEWARDSHIP PLAN**

Appropriate provisions will be made to support the Mitigation Site in perpetuity. DU will be responsible for the maintenance of the site during the monitoring period, and a third party long-term steward will be responsible for the long-term maintenance. A stewardship endowment will be provided to the long-term steward using DU-NY ILF program funds. DU has reached out to Ontario Bird Initiative (OBI) and Save the River – Upper St. Lawrence River Keepers to gage interest in being the long-term steward. The Conservation Fund is an alternative long-term steward, but the landowner would like a more local group to be the fiduciary of the endowment fund. Transfer of long-term management responsibilities from DU to the long-term steward will not occur until after performance standards have been met. The final title owner or conservation easement holder will be responsible for ensuring the Mitigation Site is in compliance with the permit in perpetuity.

The long-term management of the property will include annual maintenance of the cattle exclusion fencing and treatment of invasive species every three (3) years. It is anticipated that the only threat to the wetland beyond the initial 10 years of the project will be encroachment by invasive species. Although sufficient efforts will be made to eradicate invasive species from the site, it is likely that they will recolonize and need control. The stewardship endowment has been funded sufficiently to pay for these expenses with an expected three percent return on investment.

## **11.0 FINANCIAL ASSURANCES**

Financial assurances for the construction and performance of the Mitigation Site will be provided by DU in the form of a “letter of credit.” The letter of credit will extend sufficient financial resources to complete significant alterations to the project if necessary to achieve success. The letter of credit will be in the full amount of the construction estimate (for a maximum of three



years) and for the replanting of 25% of the PSS, and PFO areas if these areas fail to meet stem count performance objectives (for the duration of the monitoring period). The letter of credit will not be called upon unless DU has exhausted the existing project budget, including all money set aside for contingency and wetland maintenance.

## References:

- Atlantic Coast Joint Venture. (2005) *North American waterfowl management plan: Waterfowl implementation plan revision*. Retrieved from: <http://acjv.org/planning/waterfowl-implementation-plan/>
- New York State Department of State. (1993). *Crooked Creek Marsh coastal fish and wildlife habitat rating form*. Retrieved from [http://www.dos.ny.gov/opd/programs/consistency/Habitats/GreatLakes/Crooked\\_Creek\\_Marsh.pdf](http://www.dos.ny.gov/opd/programs/consistency/Habitats/GreatLakes/Crooked_Creek_Marsh.pdf)
- New York State Department of Environmental Conservation. (2015). *State wildlife action plan*. Retrieved from [http://www.dec.ny.gov/docs/wildlife\\_pdf/swapfinaldraft2015.pdf](http://www.dec.ny.gov/docs/wildlife_pdf/swapfinaldraft2015.pdf)
- Schilling, K.E, and Kiniry, J. R. (2007). Estimation of evapotranspiration by reed canarygrass using field observations and model simulation. *Journal of Hydrology*, 337(3), 356 – 363.
- United States Army Corps of Engineers, New York District. (2005). *Compensatory mitigation plan guidelines*. Retrieved from <http://www.nan.usace.army.mil/Portals/37/docs/regulatory/geninfo/mitigation/mitfinal.pdf>
- United States Army Corps of Engineers. (2011). *Guidelines for wetland mitigation banking in Ohio*. Retrieved from <http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/MitandMon/guidelineswetlandmitigation-Ohio.pdf>
- United States Department of Agriculture – Natural Resources Conservation Service. (2010). *New York rapid watershed assessment profile: Upper St. Lawrence watershed*. Retrieved from: [file:///C:/Users/mregan/Downloads/04150301\\_upr\\_stlawrence.pdf](file:///C:/Users/mregan/Downloads/04150301_upr_stlawrence.pdf)

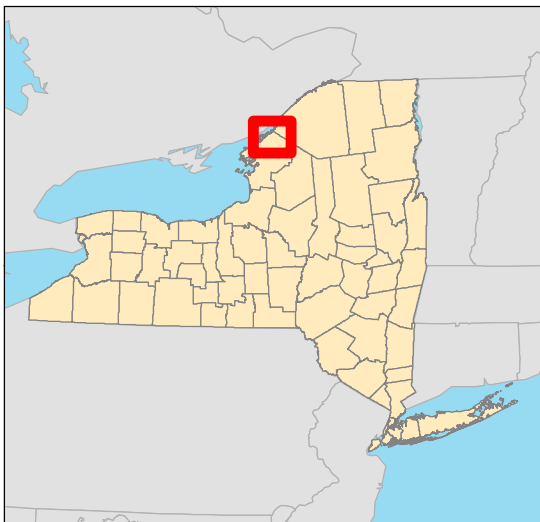
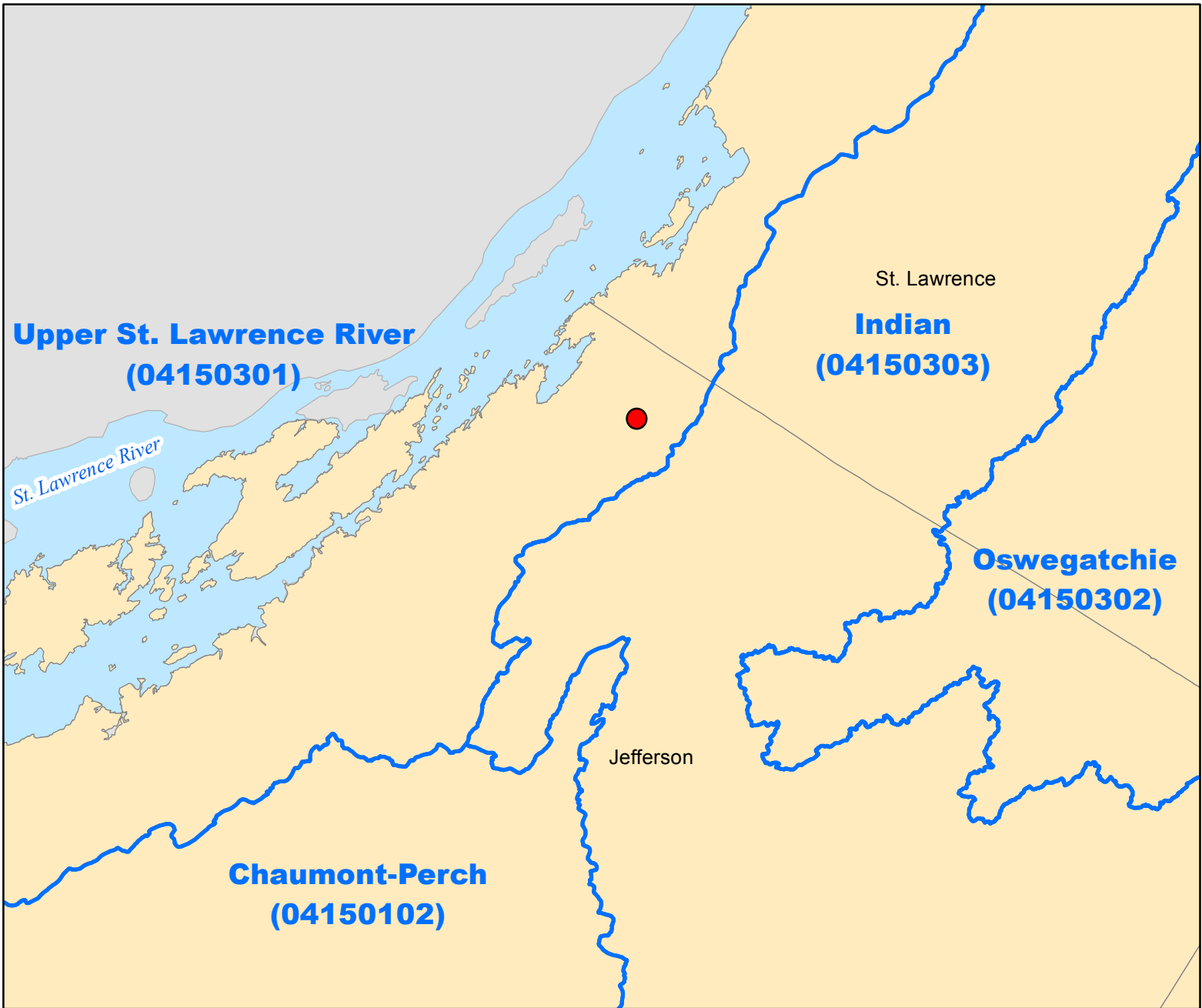
**APPENDIX A**  
**Summary of Impacts**

**Table 1: Summary of DU-NY ILF Program Credits Purchased by Permit Applicants to Compensate for Authorized Wetland Impacts in the Western St. Lawrence River Service Area (HUC 04150305 - 8)**

<b>USACE Permit</b>	<b>Location</b>	<b>Credits Purchased</b>	<b>Permanent Impacts (Acres)</b>	<b>Wetland Type (Cowardin)</b>
<b>2011-01470</b>	Alexandria Bay	0.50	0.30	PEM
<b>1995-09928</b>	Massena	0.50	0.40	PEM
<b>2004-01478</b>	Clayton	1.00	0.50	PEM
<b>2001-01199</b>	Ogdensburg	7.99	5.98	PEM (2.05 acres), PSS (3.93 acres)
<b>2014-01111</b>	Alexandria	0.42	0.21	PEM
<b>2014-00116</b>	Alexandria	0.30	0.235	PEM
<b>TOTAL</b>		<b>10.71</b>	<b>7.62</b>	

## **APPENDIX B**

### **Baseline Information**

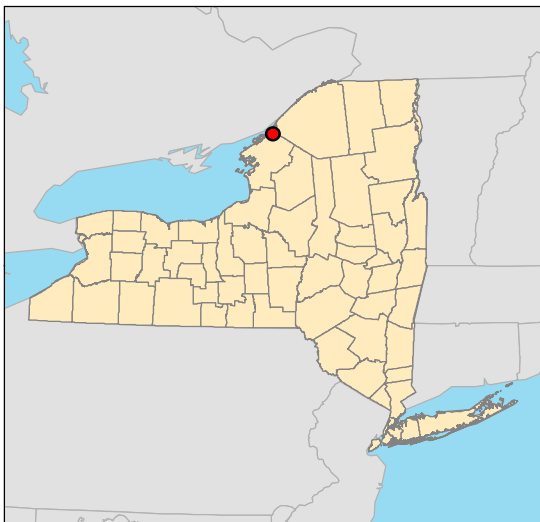
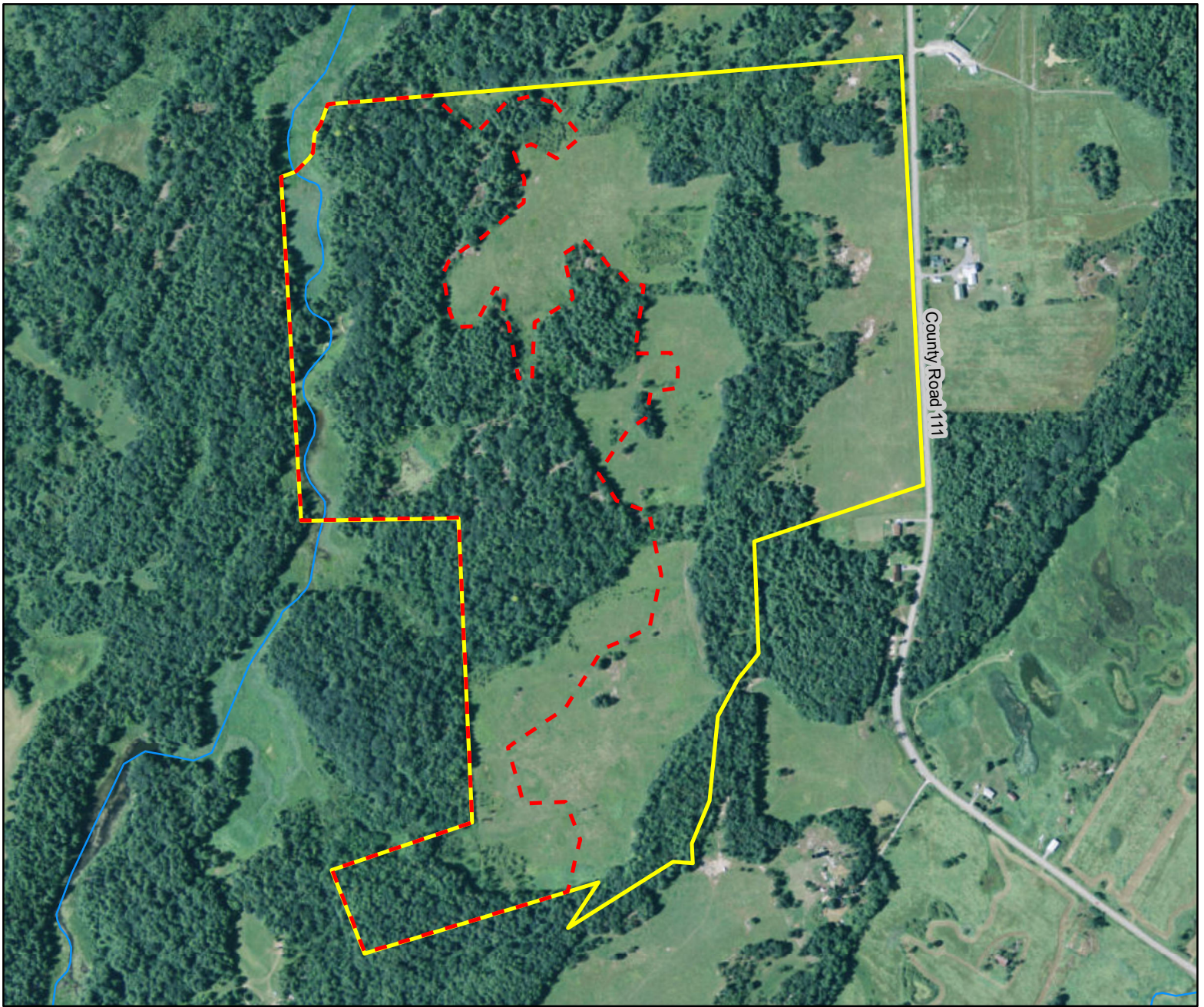


**Fig. 1: DU NY-ILF Western St. Lawrence Mitigation Site Watershed**



- Mitigation Site
- ⬭ Watershed (HUC8)

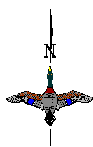


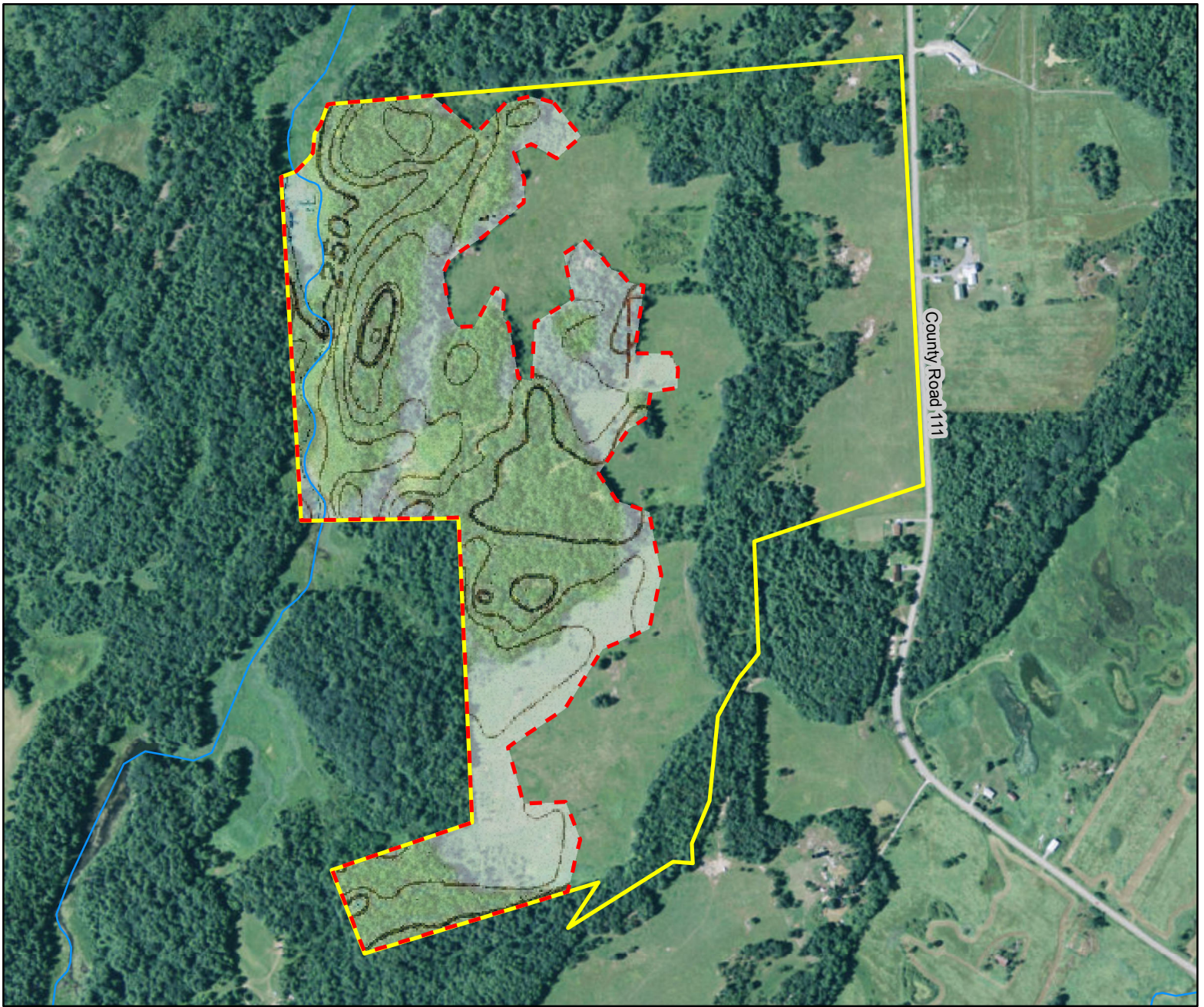




**Fig. 2: DU-NY ILF Western St. Lawrence Mitigation Site Aerial**

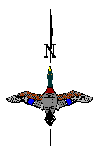
-  Mitigation Site (86.5 Acres)
-  Property Boundary (184 Acres)

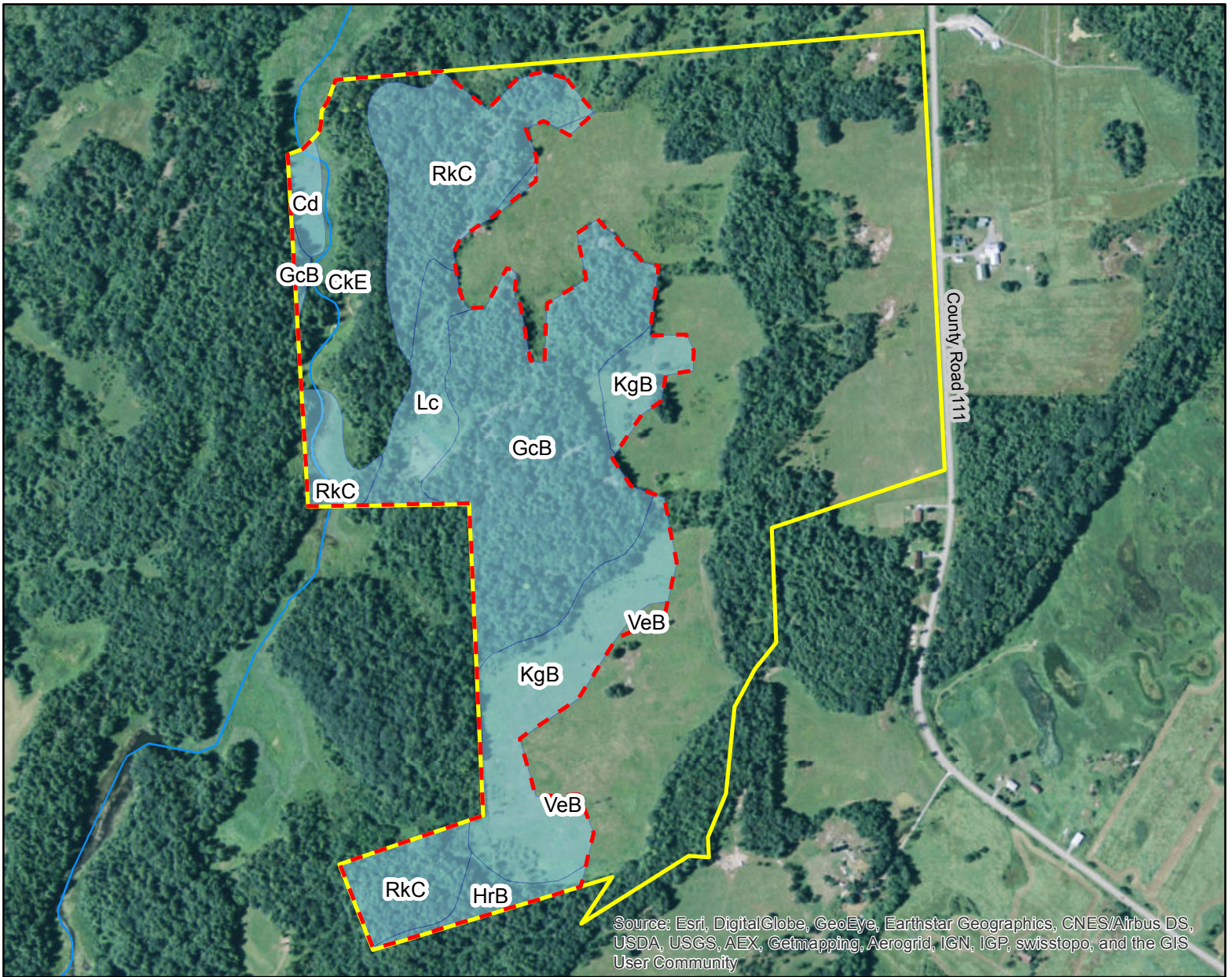




**Fig. 3: DU-NY ILF Western St. Lawrence Mitigation Site Topography**

- Mitigation Site (86.5 Acres)
- Property Boundary (184 Acres)



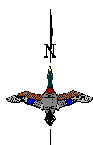


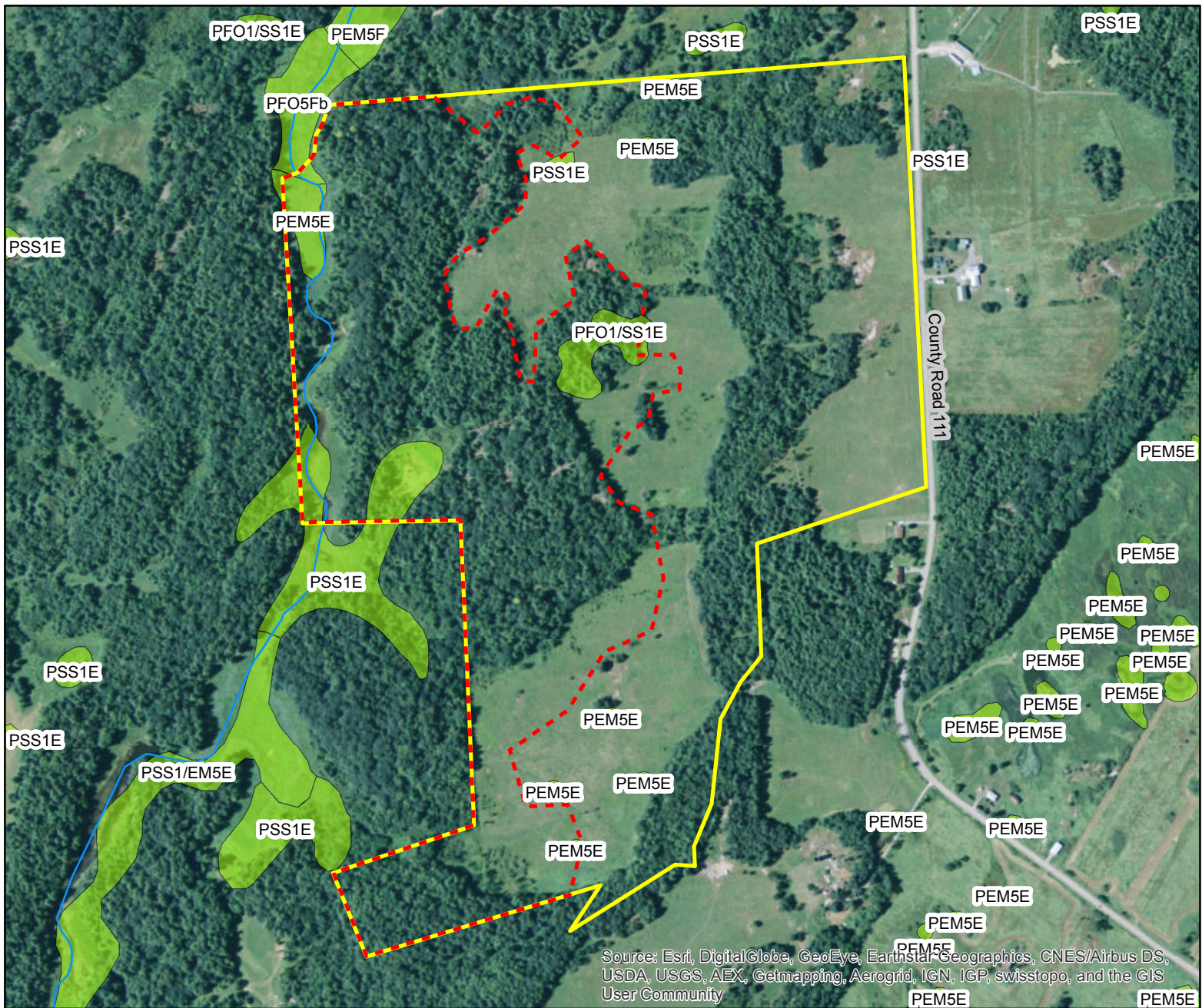
**Fig. 4: DU-NY-ILF Western St. Lawrence Mitigation Site Soils (SSURGO)**



- Property Boundary (184 Acres)
- Hydric Soils
- Mitigation Site (86.5 Acres)

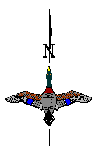
Map Unit Sym	Map Unit Name
Cd	Carlisle muck
CkE	Chatfield-Rock outcrop complex, steep
GcB	Galoo, acid-Rock outcrop complex, 0 to 8 percent slopes
HrB	Hollis-Rock outcrop complex, 0 to 8 percent slopes
KgB	Kingsbury silty clay, 2 to 6 percent slopes
Lc	Livingston mucky silty clay
RkC	Rhinebeck-Chatfield-Rock outcrop complex, rolling
VeB	Vergennes silty clay loam, 3 to 8 percent slopes

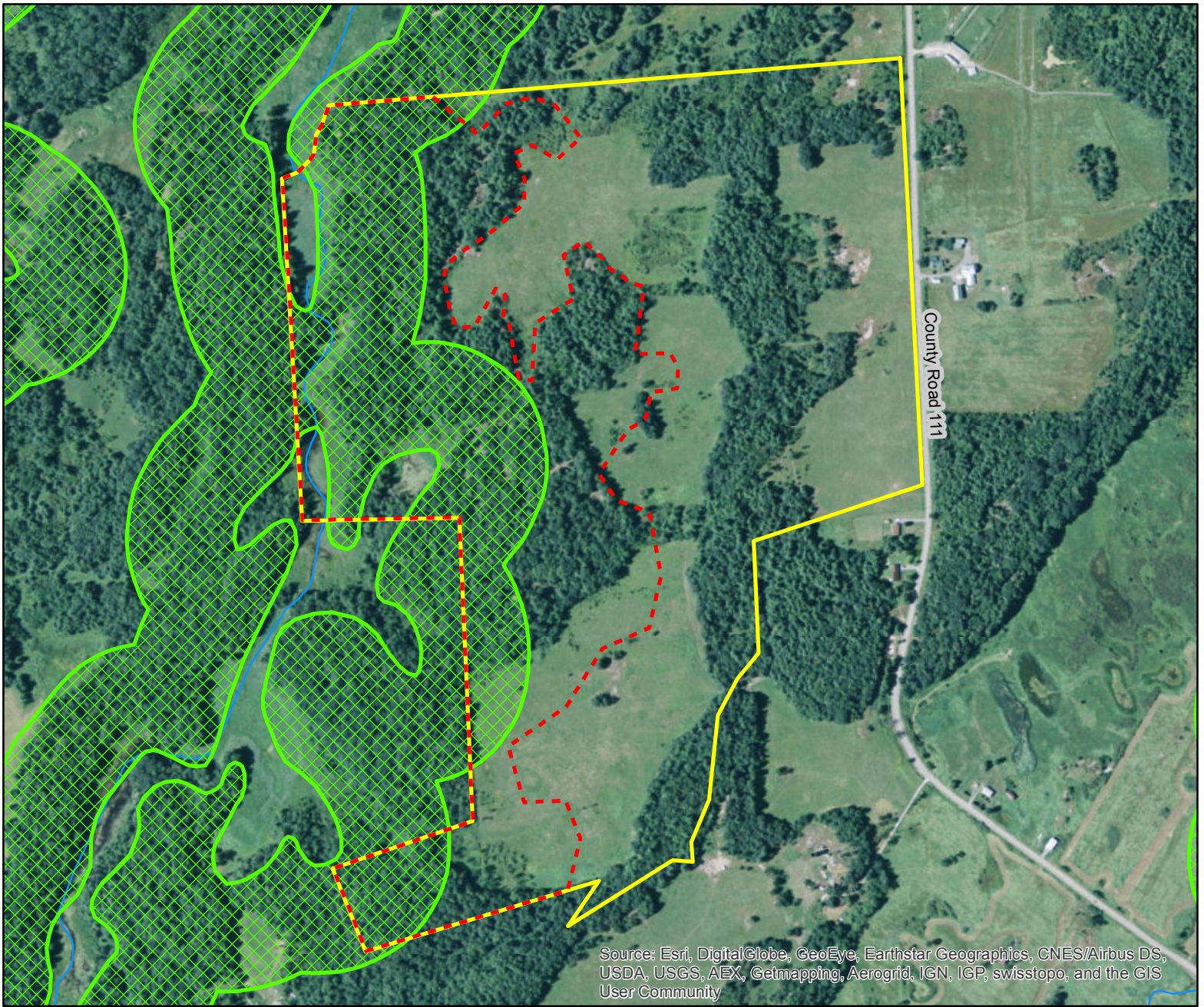




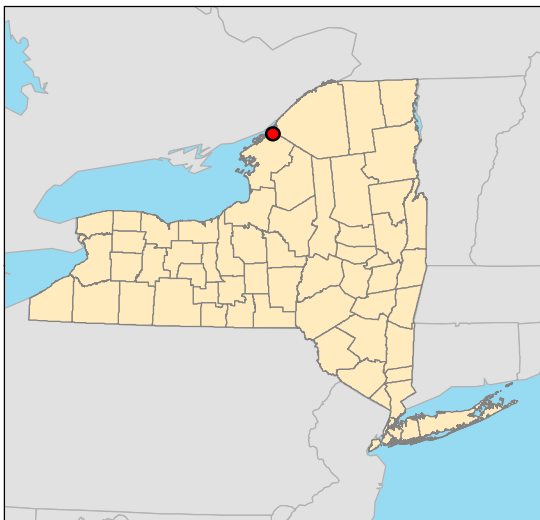
**Fig. 5: DU-NY-ILF Western St. Lawrence Mitigation Site Wetlands (NWI)**




- Property Boundary (184 Acres)
- Mitigation Site (86.5 Acres)
- Wetlands (NWI)

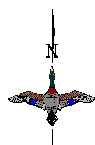


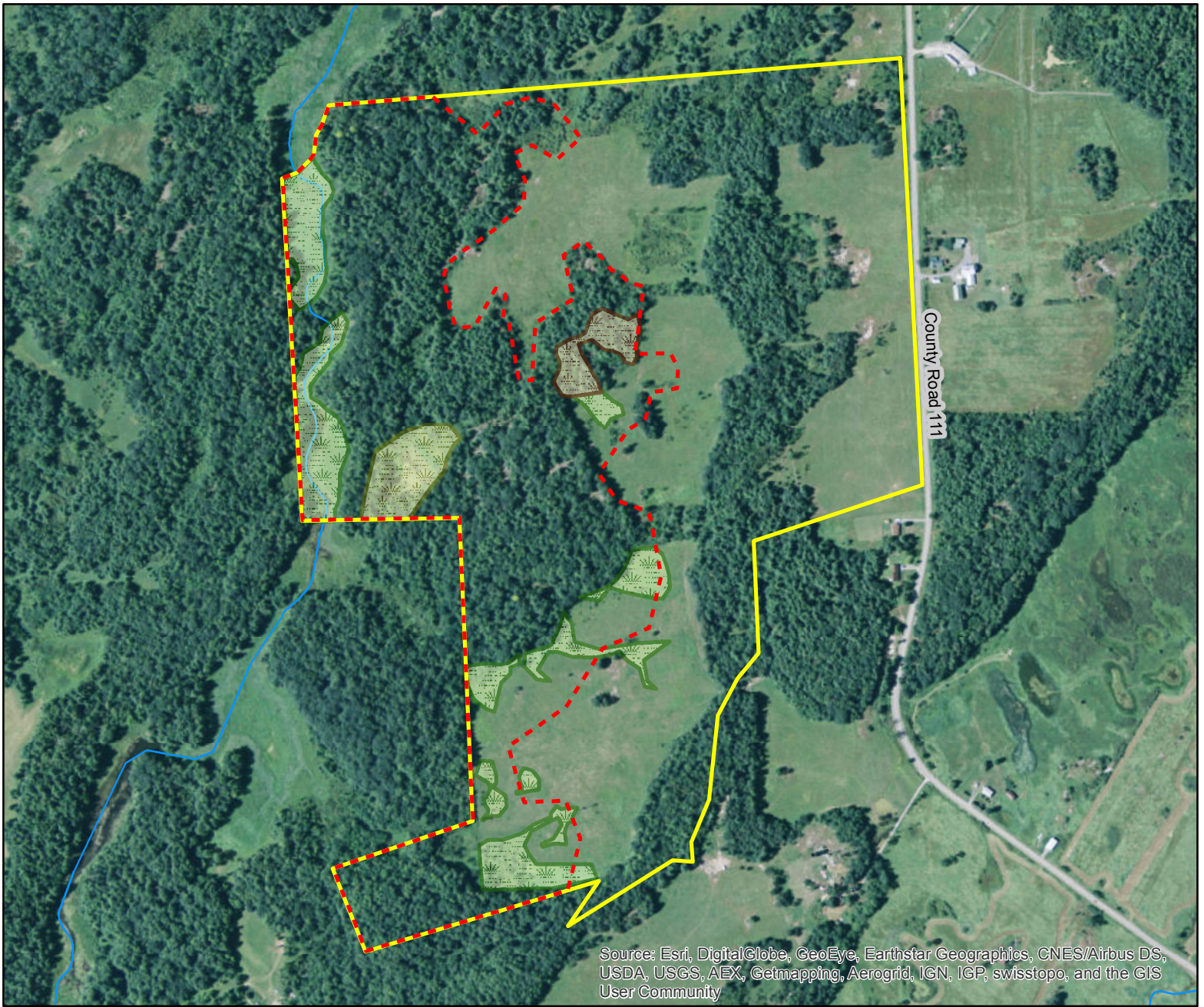


**Fig. 6: DU-NY-ILF Western St. Lawrence Mitigation Site Wetlands (NYSDEC)**

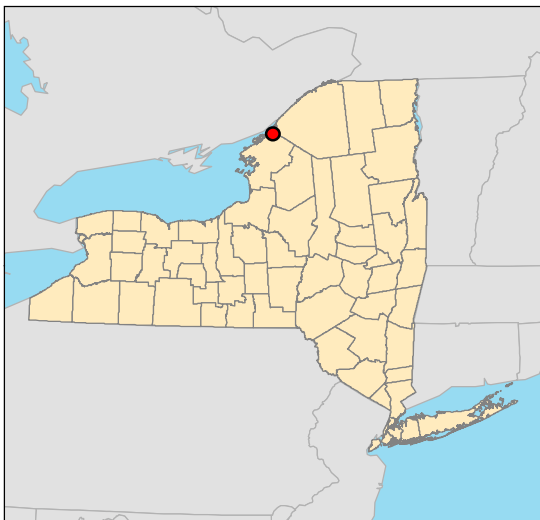


-  Mitigation Site (86.5 Acres)
-  Property Boundary (184 Acres)
-  NYSDEC Wetlands Checkzones

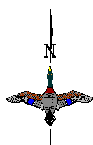


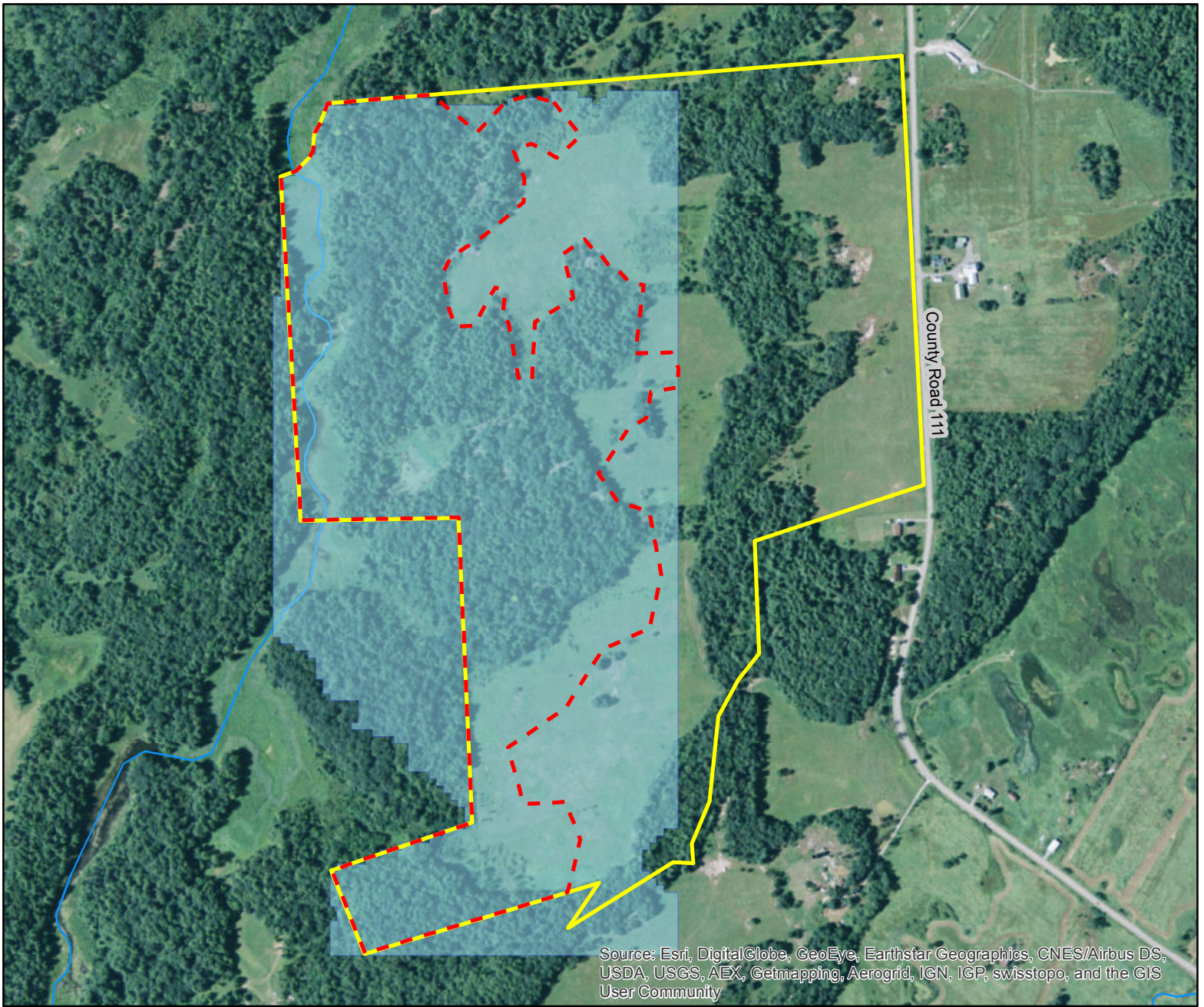


**Fig. 7: DU-NY-ILF Western St. Lawrence Mitigation Site Delineated Wetlands**

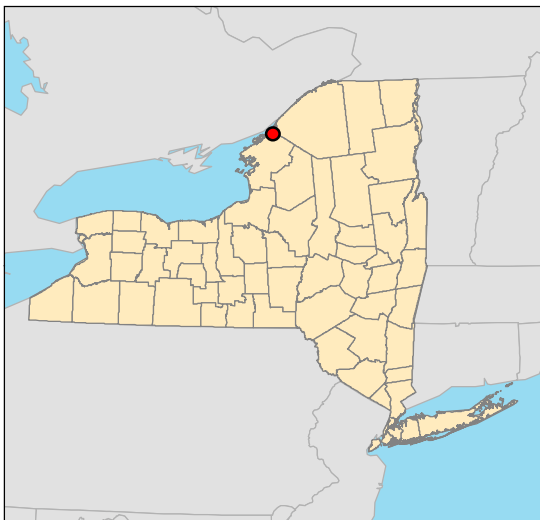





- Mitigation Site (86.5 Acres)
- Property Boundary (184 Acres)
- PEM
- PEM/PSS
- PFO/PSS

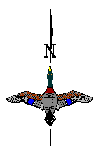


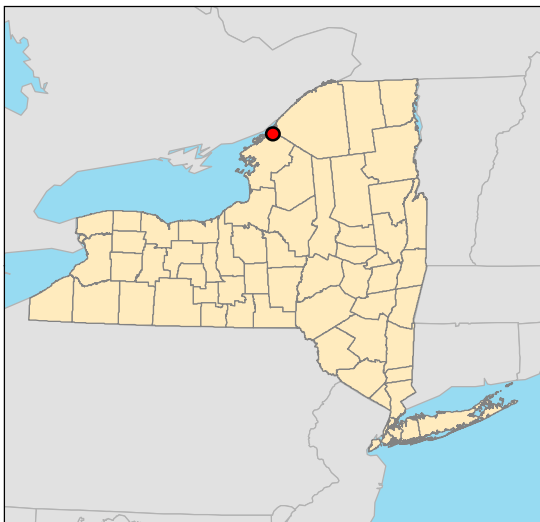
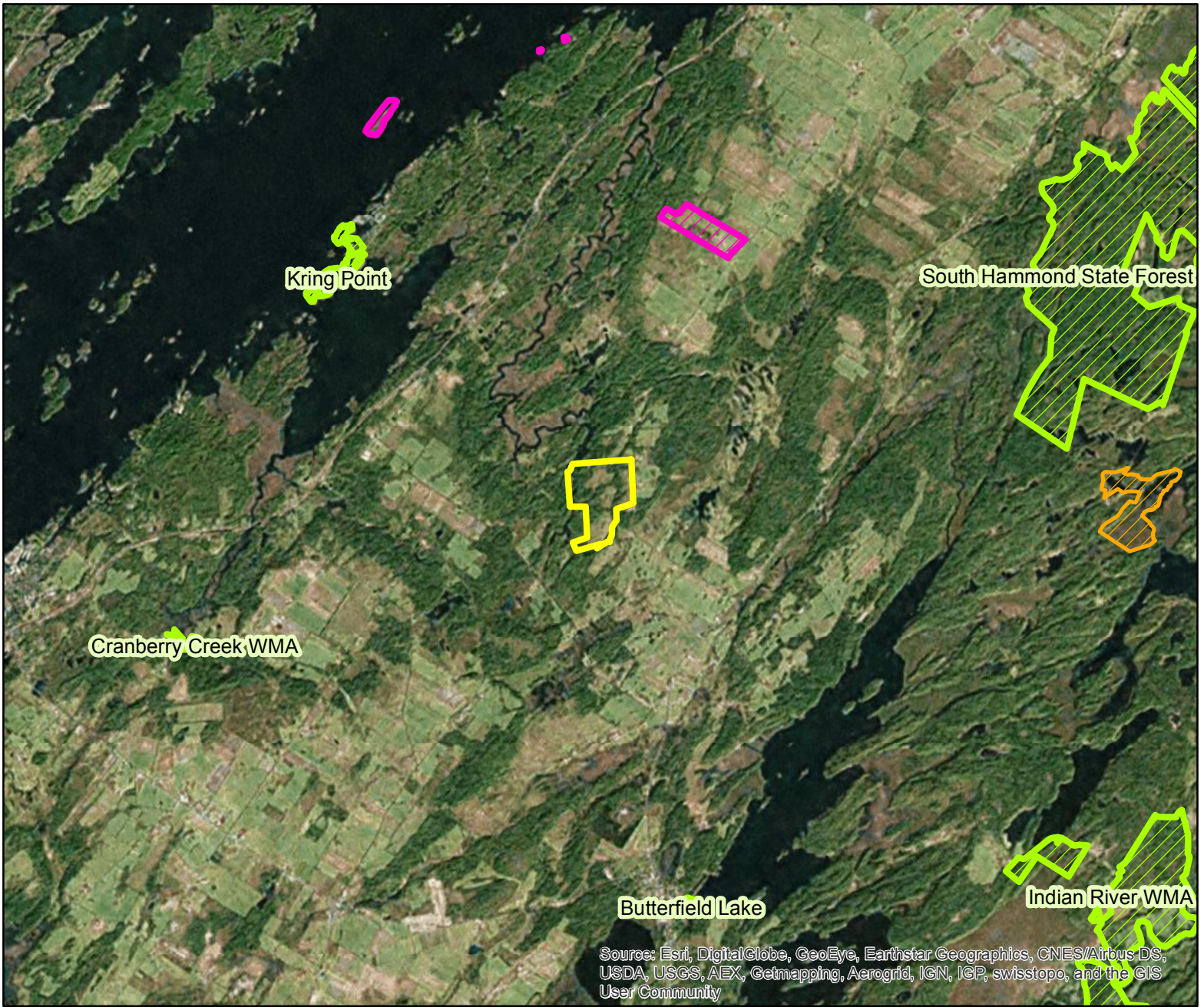


**Fig. 8: DU NY-ILF Western St. Lawrence Mitigation Site Drainage Area**







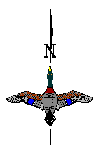
-  Mitigation Site (86.5 Acres)
-  Property Boundary (184 Acres)
-  Drainage Area (152.6 Acres)



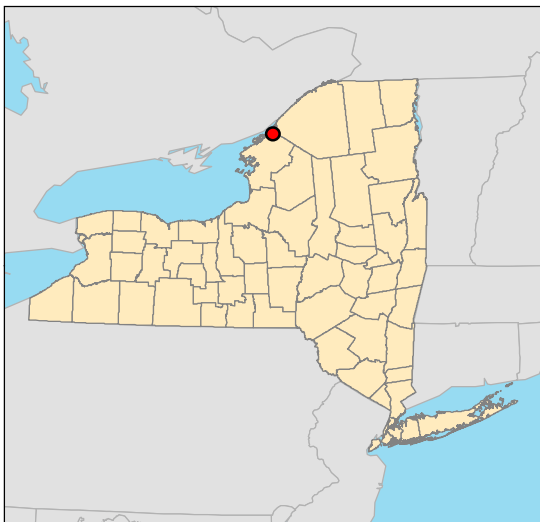
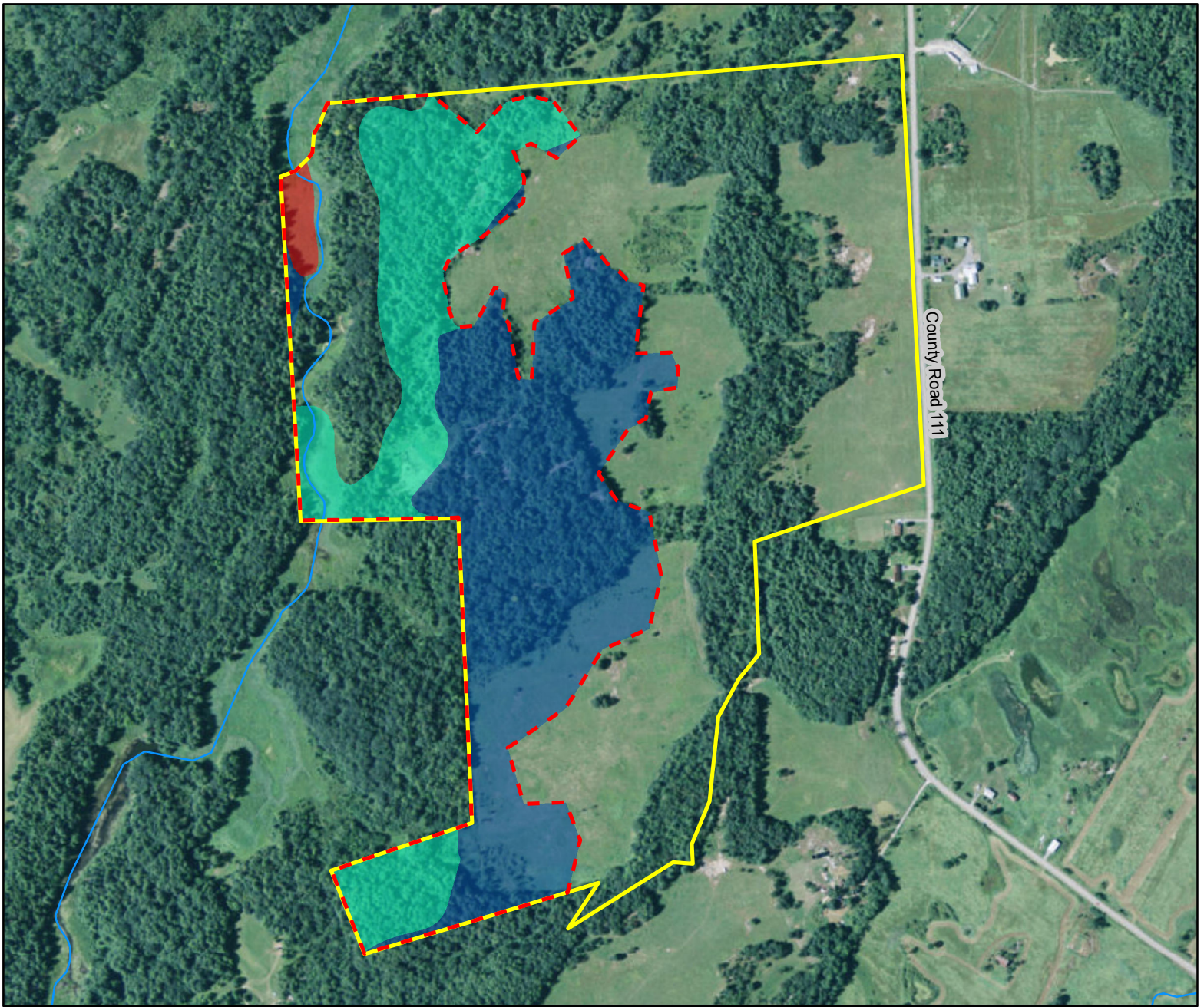


# Durand Protected Lands

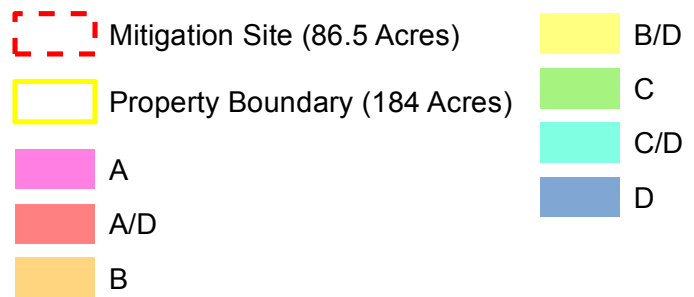
-  Property Boundary (184 Acres)
-  Wetland Reserve Program
-  State
-  Non-Profit

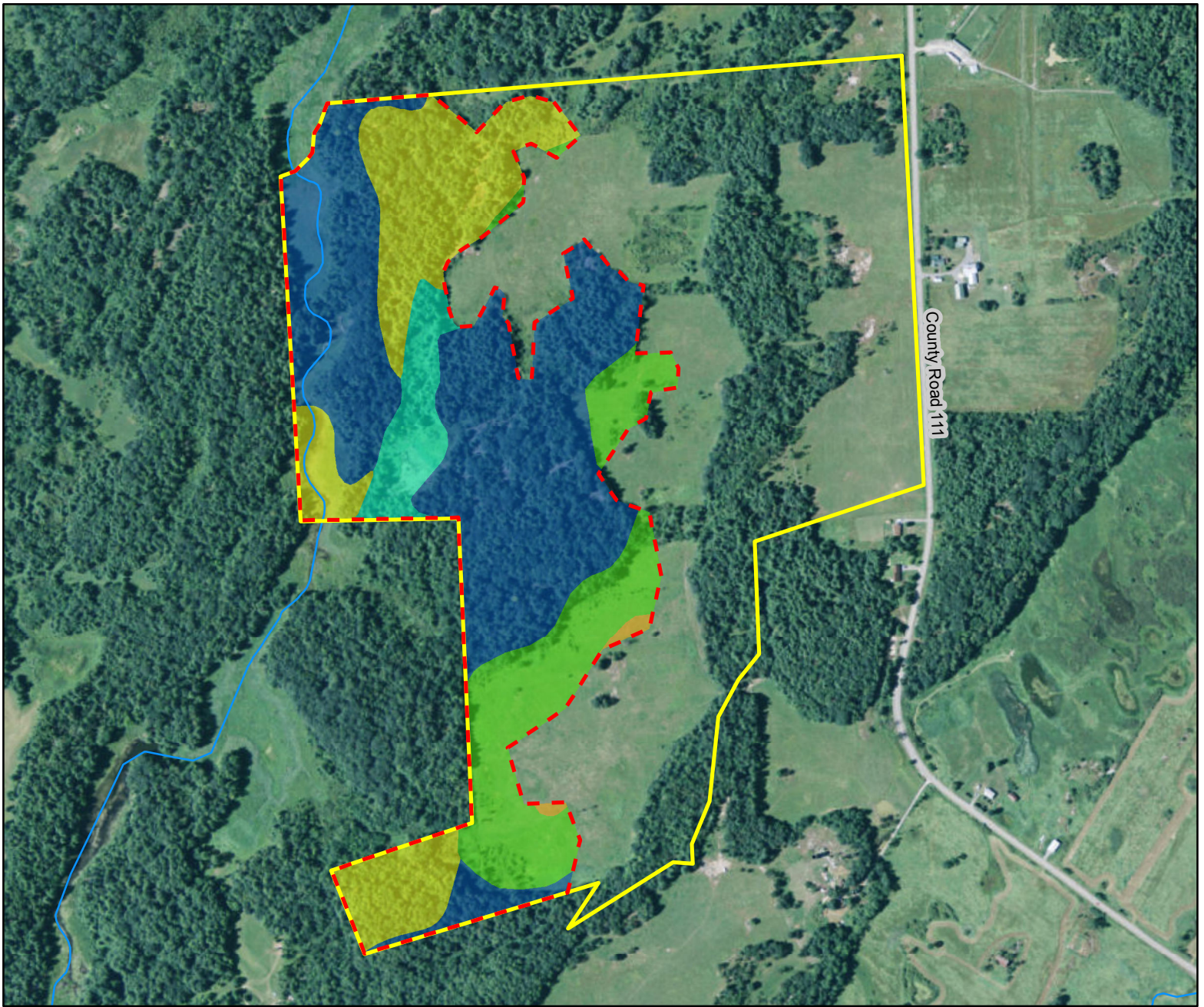




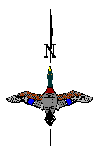
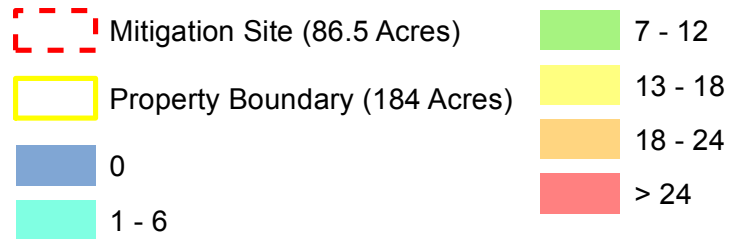


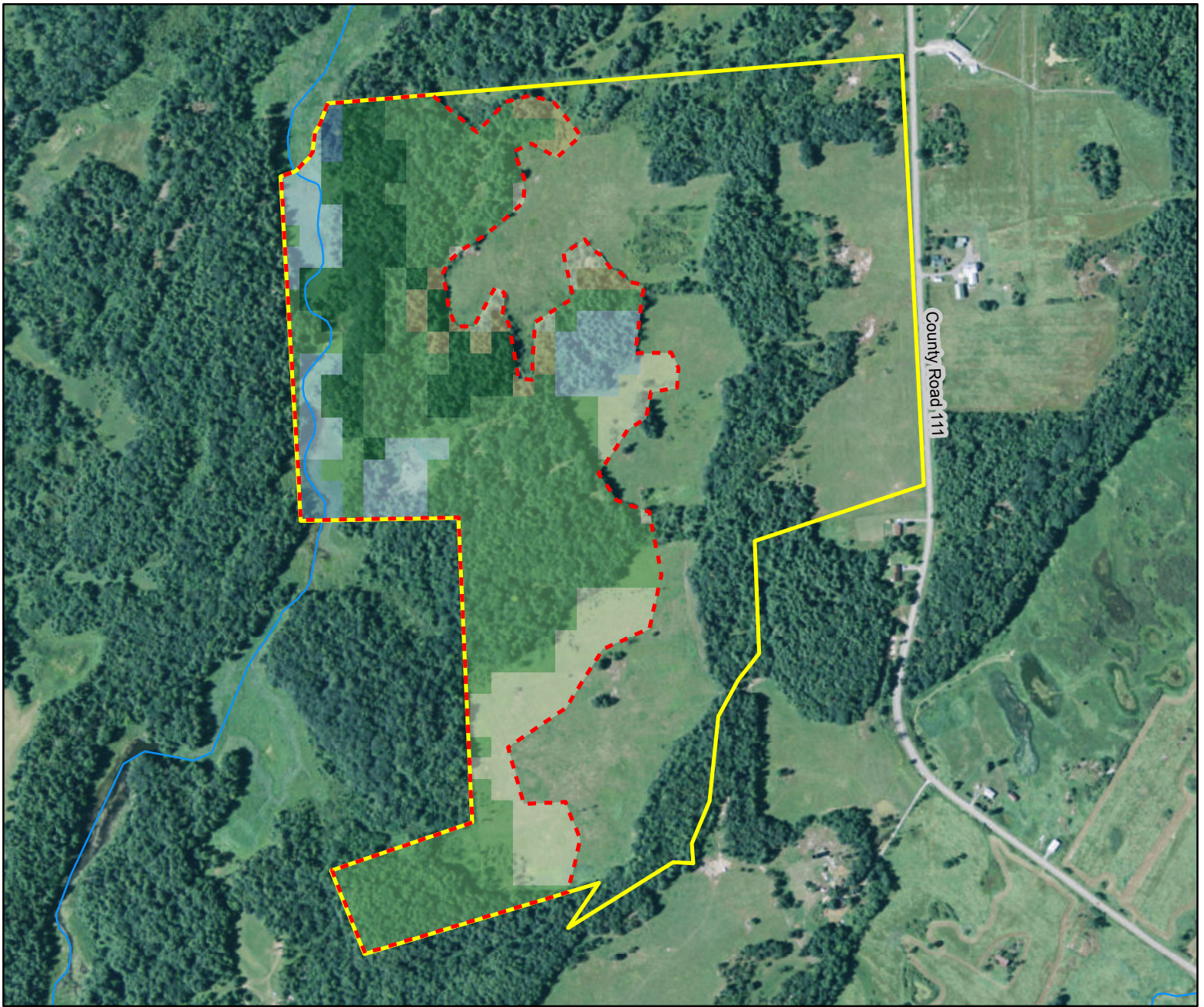
**Fig. 10: DU NY-ILF Western St. Lawrence Mitigation Site Hydrologic Soil Groups**



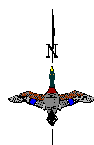
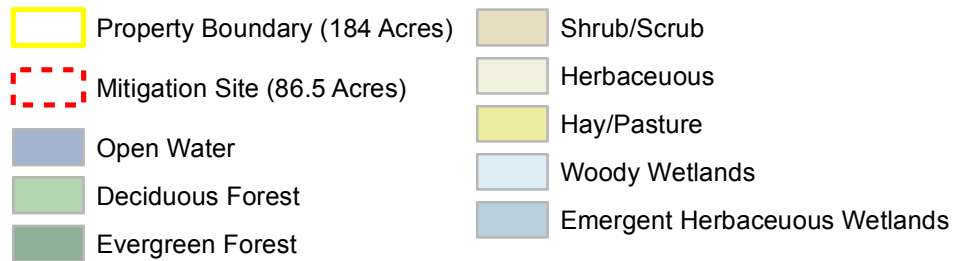


**Fig. 11: DU NY-ILF Western St. Lawrence Mitigation Site Depth to Water Table (in.)**





**Fig. 12: DU-NY-ILF Western St. Lawrence Mitigation Site Land Use (NLCD)**



**APPENDIX C:**  
**CULTURAL RESOURCES**



# Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO  
Governor

ROSE HARVEY  
Commissioner

November 24, 2015

Mr. Matthew Regan  
Wetland Mitigation Specialist  
Ducks Unlimited, Inc.  
159 Dwight Park Circle  
Suite 205  
Syracuse, NY 13209

Re: USACE  
Durand Wetland Mitigation Project  
46949 CR111, Alexandria, Jefferson County, NY  
15PR06362

Dear Mr. Regan:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, the New York SHPO has determined that no historic properties will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Deputy Commissioner for Historic Preservation

**APPENDIX D:**  
**WILDLIFE USAGE**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Division of Fish, Wildlife and Marine Resources**  
**New York Natural Heritage Program**  
**625 Broadway, 5th Floor, Albany, New York 12233-4757**  
**Phone: (518) 402-8935 • Fax: (518) 402-8925**  
**Website: [www.dec.ny.gov](http://www.dec.ny.gov)**



December 11, 2015

Matthew Regan  
Ducks Unlimited, Inc.  
159 Dwight Park Circle, Suite 205  
Syracuse, NY 13209

Re: Proposed wetland mitigation project, 46949 County Route 111  
Town/City: Alexandria. County: Jefferson.

Dear Matthew Regan:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at [www.dec.ny.gov/about/39381.html](http://www.dec.ny.gov/about/39381.html).

Sincerely,

Andrea Chaloux  
Environmental Review Specialist  
New York Natural Heritage Program



**The following state-listed animals have been documented  
in the vicinity of your project site.**

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

**For information about any permit considerations for your project, contact the Permits staff at the NYSDEC Region 6 Office. For information about potential impacts of your project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Wildlife Manager.**

**A listing of Regional Offices is at <http://www.dec.ny.gov/about/558.html>.**

**The following species have been documented near the project site, within 0.5 mile. Potential onsite and offsite impacts from the project may need to be addressed.**

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
<b>Birds</b>			
<b>Northern Harrier</b> <i>Breeding</i>	<i>Circus cyaneus</i>	Threatened	3272
<b>Least Bittern</b> <i>Breeding</i>	<i>Ixobrychus exilis</i>	Threatened	11010

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at [www.guides.nynhp.org](http://www.guides.nynhp.org), and from NYSDEC at [www.dec.ny.gov/animals/7494.html](http://www.dec.ny.gov/animals/7494.html).





**The following rare plants, rare animals, and significant natural communities have been documented in the vicinity of your project site.**

We recommend that potential onsite and offsite impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

**The following animals, while not listed by New York State as Endangered or Threatened, are of conservation concern to the state, and are considered rare by the New York Natural Heritage Program.**

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>HERITAGE CONSERVATION STATUS</i>
--------------------	------------------------	-------------------------	-------------------------------------

**Animal Assemblages**

**Waterfowl Winter Concentration Area**

Crooked Creek Marsh, no date: Crooked Creek is a sizeable warmwater stream with a broad floodplain occupied by extensive emergent marsh communities (predominantly cattail). Little flow is discernible during the summer and the maximum water depth of about 10 feet occurs in the lower creek channel. The surrounding uplands consist almost entirely of undeveloped forest land. In 1969 there was 10% open water, 85% open marsh, and 5% flooded woods.

1525

**The following significant natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. They are either occurrences of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.**

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>HERITAGE CONSERVATION STATUS</i>
--------------------	------------------------	-------------------------	-------------------------------------

**Wetland/Aquatic Communities**

**Deep Emergent Marsh**

High-quality Occurrence

Crooked Creek Marsh: This is a large, mature, dynamic, unfragmented, rich, and diverse marsh, surrounded by natural communities. The marsh has some invasive exotics, including 10% cover of *Hydrocharis morsus-ranae*, and is crossed by two roads and bridges. Water level fluctuations have been reduced since the New York Power Authority dam was completed in 1958, probably resulting in greater abundance of *Typha spp.* and a general reduction in habitat and species diversity.

7167

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at [www.guides.nynhp.org](http://www.guides.nynhp.org), from NatureServe Explorer at [www.natureserve.org/explorer](http://www.natureserve.org/explorer), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at [www.guides.nynhp.org](http://www.guides.nynhp.org). For descriptions of all community types, go to [www.dec.ny.gov/animals/97703.html](http://www.dec.ny.gov/animals/97703.html) for Ecological Communities of New York State.

**APPENDIX E:**  
**Wetland Delineation Report**

## **1.0 INTRODUCTION**

Ducks Unlimited, Inc. (DU) investigated site conditions at the Durand site (hereinafter Mitigation Site). The wetland delineation was performed to estimate total restorable acreage and if wetlands existing on the Mitigation Site are federal jurisdictional wetlands.

The goal of the Mitigation Site's work plan is to re-establish and rehabilitate wetlands to compensate for wetland impacts to 7.62 acres of wetlands in the Western St. Lawrence River Service Area (Appendix A).

## **2.0 METHODS**

Onsite data collection and wetland boundary flagging of the 86.5 acre delineation area was performed by DU on November 2 – 4, 2015. Climatic/hydrologic conditions were non typical for this time of year. According to the National Oceanic and Atmospheric Association (NOAA), the temperature for the week of November 1 – November 7, 2015 was 9 - 15° F above the 1981 – 2010 normal for the area. According to NOAA, the precipitation for the week of November 1 – November 7, 2015 was extremely dry compared to the 1981 – 2010 normal for the area. The boundaries were delineated following the protocols outlined in the United States Army Corps of Engineers' (USACE) 1987 "Wetland Delineation Manual" and data were collected on the "Regional Supplement to the Corps of Engineers Wetland Delineations Manual: Northcentral and Northeast Region (Version 2.0)" (Regional Supplement). A routine on-site determination was performed as specified in Section D of Chapter IV of the 1987 Delineation Manual. Prior to the delineation survey, the property was walked to identify general topography, drainage patterns, major plant communities, and potential areas of disturbance. A representative data point was selected in each plant community. A total of 15 data points were sampled for the delineation. Vegetation, soils, and hydrology data were collected at each data point using the USACE's methods for vegetation, soils, and hydrology.

Data were collected for each vegetation stratum (i.e., herb, sapling/shrub, tree, and woody vine stratum). The size (i.e., radius in feet) for sampling each stratum at each data point followed USACE guidelines unless topography or other site conditions restricted the sampling area, (i.e., herb: 5 ft, sapling/shrubs: 15 ft, trees: 30 ft, and woody vines: 30 ft). Hydrophytic plants had an indicator status of obligate (OBL), facultative-wet (FACW), or facultative (FAC) as listed on the USACE's "Northcentral and Northeast 2014 Regional Wetland Plant List" (Lichvar, Butterwick, Melvin and Kirchner, 2014).

An assessment of the vegetation began with a rapid field test for hydrophytic vegetation to determine if there was a need to collect additional detailed vegetative data. If there was a need to collect additional detailed vegetation data, then the percent coverage of all plant species classified in each stratum were visually estimated, recorded, and ranked in decreasing order of percent coverage. The presence/absence of wetland vegetation was determined by a quantitative assessment of the dominance and prevalence of hydrophytic plants across all strata at each data point. The plant community was evaluated using hydrophytic vegetation indicator procedures (i.e., indicators 1-4), as outlined in the Regional Supplement. Hydrophytic vegetation was present wherever any of these indicators were met.

Soils data were collected by observing soil profiles. Soil pits were dug to a depth of 12 – 20 inches with a sharpshooter shovel to observe soil profiles. Characteristics of the soil profiles

were described by using the Munsell soil color chart, identifying soil texture, and measuring the depth and thickness of each soil matrix layer. The soil profiles were evaluated for hydric soil indicators as defined in the Regional Supplement. The soil data collected from the field were compared with a soil map of the Mitigation Site according to the National Resource Conservation Services' (USDA-NRCS) Web Soil Survey.

Hydrology was evaluated based on direct field observations, and primary and secondary indicators of wetland hydrology as defined in the Regional Supplement.

Data points and wetland boundary points were recorded with a hand-held GPS unit accurate to within 3 meters.

### 3.0 RESULTS

The most prevalent type of wetland delineated at the Mitigation Site was palustrine emergent marsh (PEM; 12.1 acres). An area of palustrine forested/scrub-shrub (PFO/SS; 1.85 acres) wetlands and a palustrine emergent marsh/scrub-shrub (PEM/SS, 2.95 acres) wetland were delineated at the Mitigation Site.

**Table 1. Delineated Wetlands at the Mitigation Site**

Wetland Name	Wetland Type	Wetland Acres
Wetland A	PEM	0.44
Wetland B	PEM	1.11
Wetland C	PEM	1.18
Wetland D	PEM	0.73
Wetland E	PEM	0.42
Wetland F	PEM	0.19
Wetland G	PEM	2.23
Wetland H	PEM	2.48
Wetland I	PEM	3.32
Wetland J	PEM/SS	2.95
Wetland K	PFO/SS	1.85

The herbaceous stratum in the PEM and PEM/SS wetlands were typically characterized by common fox sedge (*Carex vulpinoidea*, OBL), cottongrass bulrush (*Scirpus cyperinus*, OBL), lamp rush (*Juncus effusus*, OBL), and tall goldenrod (*Solidago altissima*, FACU). The shrub stratum in the PEM/SS and PFO/SS wetlands were characterized by white meadowsweet (*Spiraea alba*, FACW) and black willow (*Salix nigra*). The tree stratum in the PFO/SS wetlands were characterized by red maple (*Acer rubrum*, FAC). The herb stratum in the upland fields were characterized by tall goldenrod and red fescue (*Festuca rubra*, FACU). The tree stratum in the upland forests was characterized by red pine (*Pinus resinosa*, FACU) and eastern hemlock (*Tsuga canadensis*, FACU).

**Table 2.** Dominant vegetation in the delineated wetlands

<b>Scientific Name</b>	<b>Common Name</b>	<b>WIS</b>
<i>Acer rubrum</i>	Red Maple	FAC
<i>Carex lacustris</i>	Lakebank Sedge	OBL
<i>Carex vulpinoidea</i>	Common Fox Sedge	OBL
<i>Juncus effusus</i>	Lamp Rush	OBL
<i>Phalaris arundinacea</i>	Reed Canary Grass	FACW
<i>Salix nigra</i>	Black Willow	OBL
<i>Solidago altissima</i>	Tall Goldenrod	FACU
<i>Spiraea alba</i>	White Meadowsweet	FACW
<i>Typha X glauca</i>	Hybrid Cat-tail	OBL

Field observations of soil profiles at the Mitigation Site confirmed the NRCS Web Soil Survey where soils were classified as Kingsbury silty clay (KgB) based on texture and soil color. Soil saturation and hydrological conditions at the Mitigation Site were of sufficient frequency and duration to support hydrophytic vegetation and wetland conditions for the PEM, PEM/SS and PFO/SS wetlands. The texture of the soils were typically loamy and clayey, therefore the hydric soil indicators for loamy and clayey soils detailed in the Regional Supplement were used. Five of the soil profiles had layer with a depleted matrix where 60% or more of the matrix had a chroma of 2 or less, a layer above the depleted matrix with a value of 3 and chroma of 2 or less, and met the minimum thickness requirements for hydric soil indicator A11: depleted below dark surface. Three of the soil profiles where A11: depleted below dark surface was observed co-occurred with prominent redox concentrations, and met the thickness requirements for hydric soil indicator F3: depleted matrix. Four of the soil profiles had a layer with matrix value of 3 or less and chroma of 2 or less, 5% prominent redox concentrations, and met the minimum thickness requirements for hydric soil indicator F6: redox dark surface. Prominent redox concentrations were observed in six of the soil profiles and ranged in starting depth from 1 – 8 inches beneath the soil surface.

The Mitigation Site was visited during a time of below normal precipitation. The most observed primary wetland hydrology indicator was saturation. Surface water was observed at three data points and ranged in depth from 1.5 – 3 inches. A water table was observed at eight data points and ranged in depth from 0 – 20 inches below soil surface.

#### **4.0 CONCLUSIONS**

Most of the Mitigation Site delineated as upland, including most of the area in the fields and forests. The Mitigation Site supports 16.9 acres of wetlands. The invasive reed canary grass was a dominant herbaceous plant species in one of the PEM wetlands. The PEM wetlands were found in low-lying areas bordering upland forests. One of the PEM wetlands is part of the Crooked Creek Marsh wetland complex.

**APPENDIX F:**  
**MITIGATION WORK PLAN**



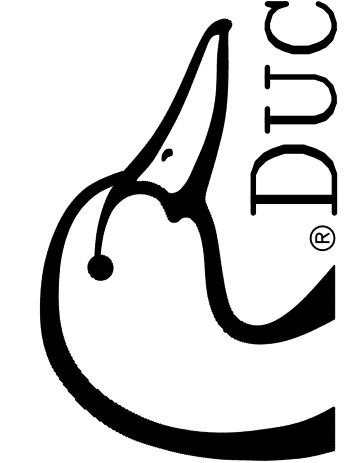
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**NEW YORK IN-LIEU FEE PROGRAM  
WESTERN ST. LAWRENCE RIVER  
SERVICE AREA  
DURAND MITIGATION SITE  
JEFFERSON COUNTY, NEW YORK**

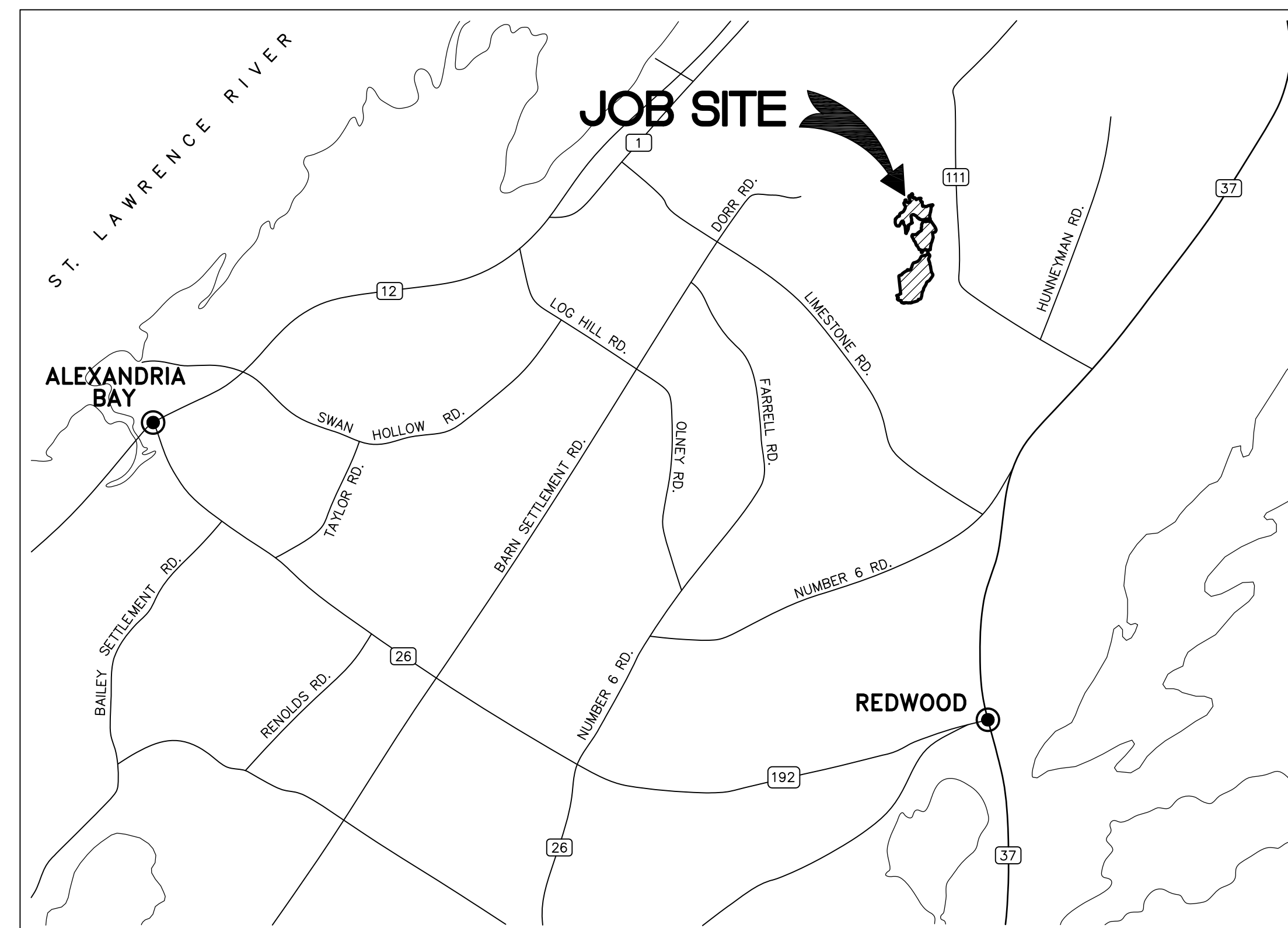
**SPECIFICATIONS**

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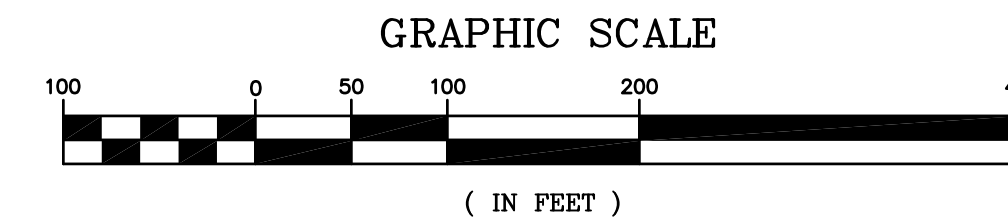
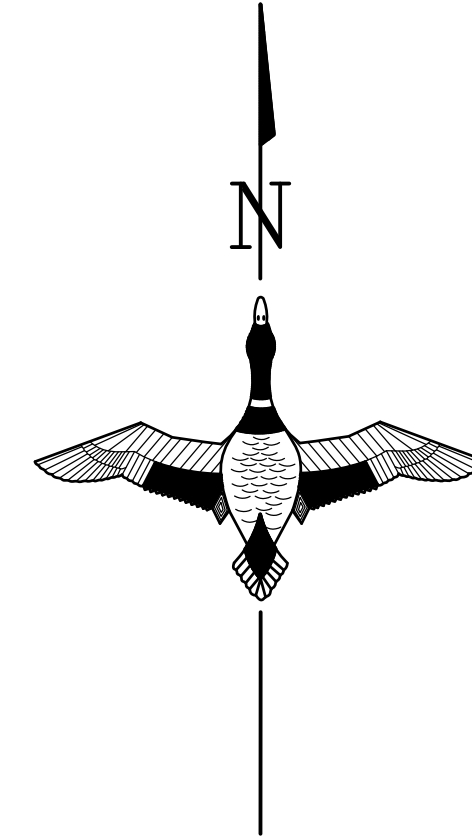
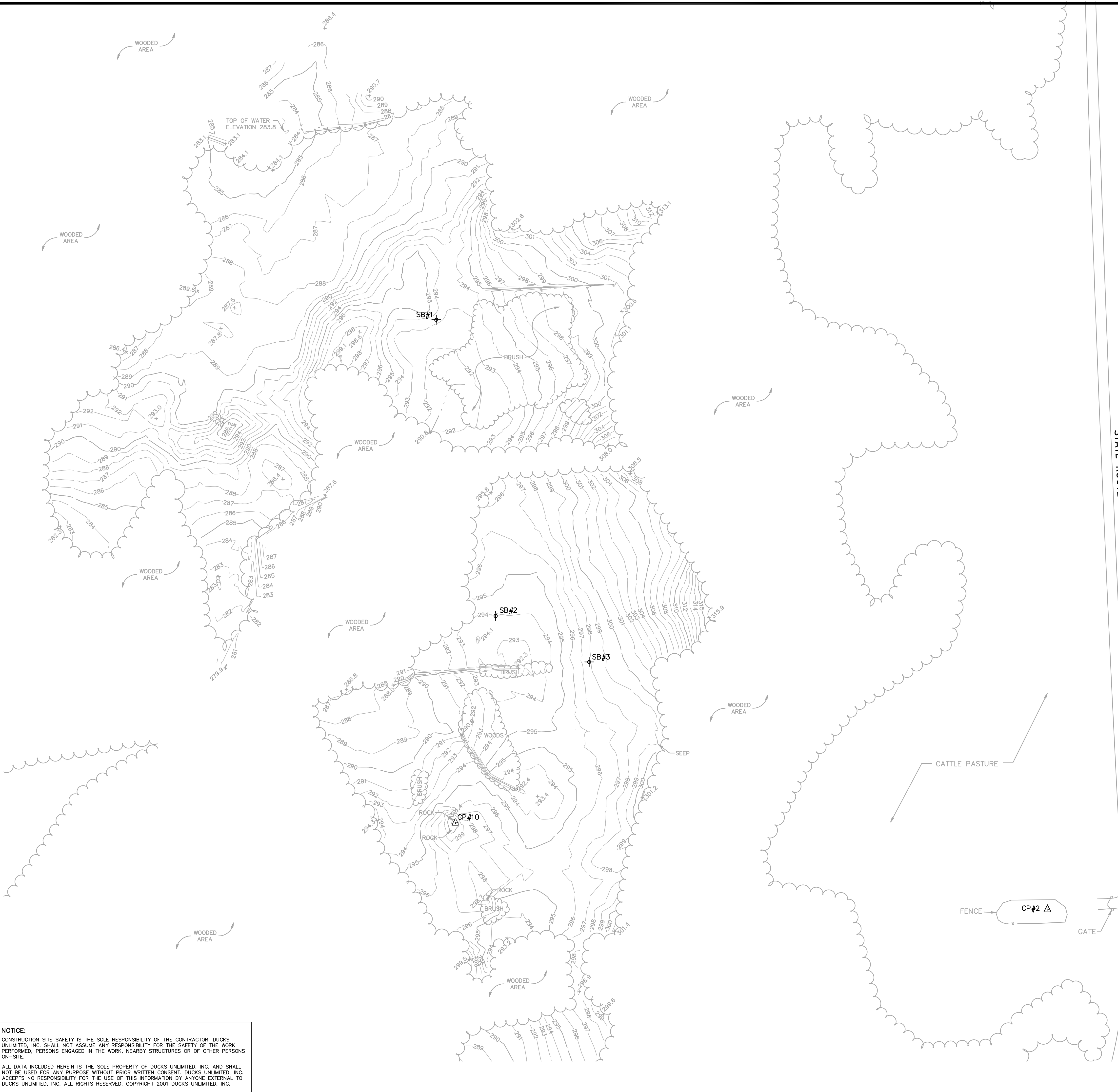
COVER SHEET  
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 WESTERN ST. LAWRENCE RIVER  
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 DESIGNED BY: PW  
 DRAWN BY: DA  
 SURVEYED BY: GB & JP  
 BOOK NO. 17  
 DATE:  
 1/7/15  
 PROJECT NO.:  
 US-NY-183-1  
 GLARO-NY1-25-1







**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL

**Soil Boring #1 Elevation = 293.2**  
 0-1 inches Grass root mat  
 1-20 inches Clay, olive gray, stiff, medium plasticity  
 20-27 inches Clay, olive gray, stiff, medium plasticity  
 Note: No ground water or rock encountered

**Soil Boring #2 Elevation = 293.9**  
 0-1/2 inches Grass root mat  
 1/2-6 inches Clay, light gray, medium stiffness, medium plasticity  
 6-36 inches Clay, brown, stiff, medium to high plasticity, mottling (rust & white)  
 Note: No ground water or rock encountered

**Soil Boring #3 Elevation = 297.8**  
 0-1 inches Grass root mat  
 1-17 inches Clay, brown, stiff, medium plasticity, minimal mottling  
 17-29 inches Clay, brown, stiff, medium plasticity, mottling (white)  
 Note: No ground water or rock encountered

**HORIZONTAL & VERTICAL CONTROL** – Coordinates are NAD 83 (CORS 2011), New York State Plane Coordinates, Central, Zone 3102, units U.S. Survey Feet. Coordinates established from NGS OPUS (National Geodetic Survey, Online Positioning User Service) solution for control point 2. Raw data was collected for 7 hours on October 11, 2014 using a Trimble R6 GPS base receiver. OPUS solution for control point 2, North 1585539.6729, East 1023348.6095, Elevation 354.58 NAVD 88.

**ONSITE CONTROL, HORIZONTAL AND VERTICAL**

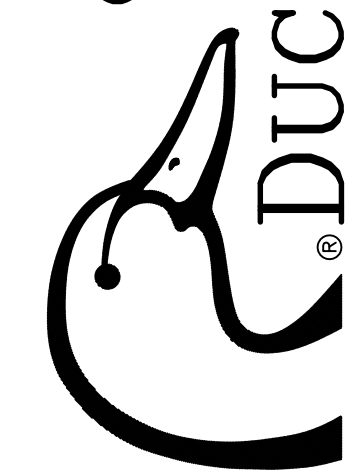
**Control Point # 2** – Set 18" by 5/8" re-rod with red plastic DU cap, point is located near well pump fenced off from the main cattle pasture, 170 feet west of centerline of State Route 111.  
 N. 1585539.6729 sft  
 E. 1023348.6095 sft  
 Elev. 354.58 NAVD88

**Control Point # 10** – Cut "x" in rock outcropping.  
 N. 1585722.7202 sft  
 E. 1022099.8264 sft  
 Elev. 302.16 NAVD88

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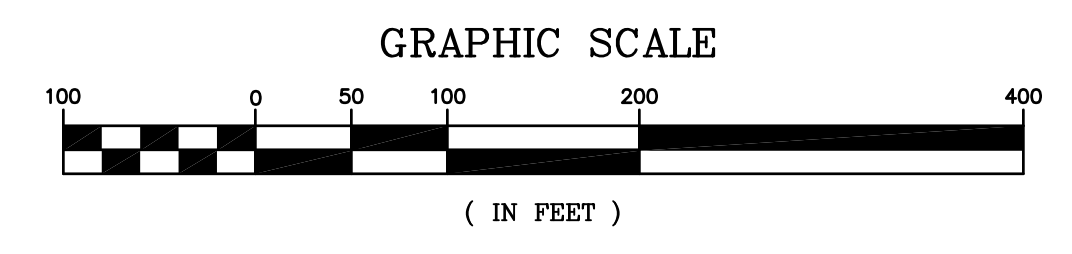
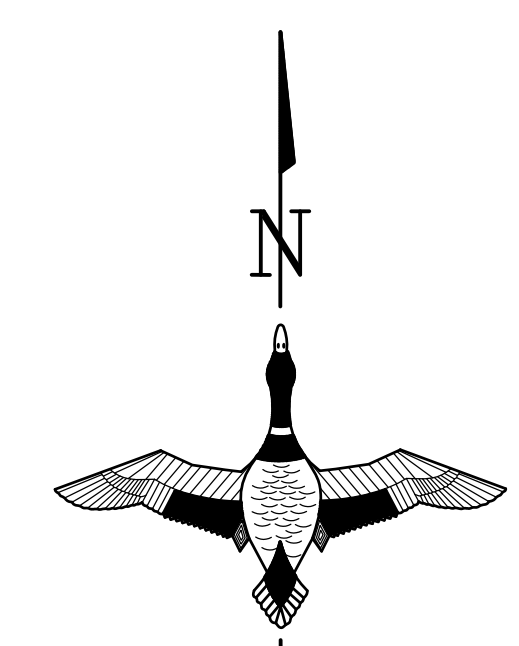
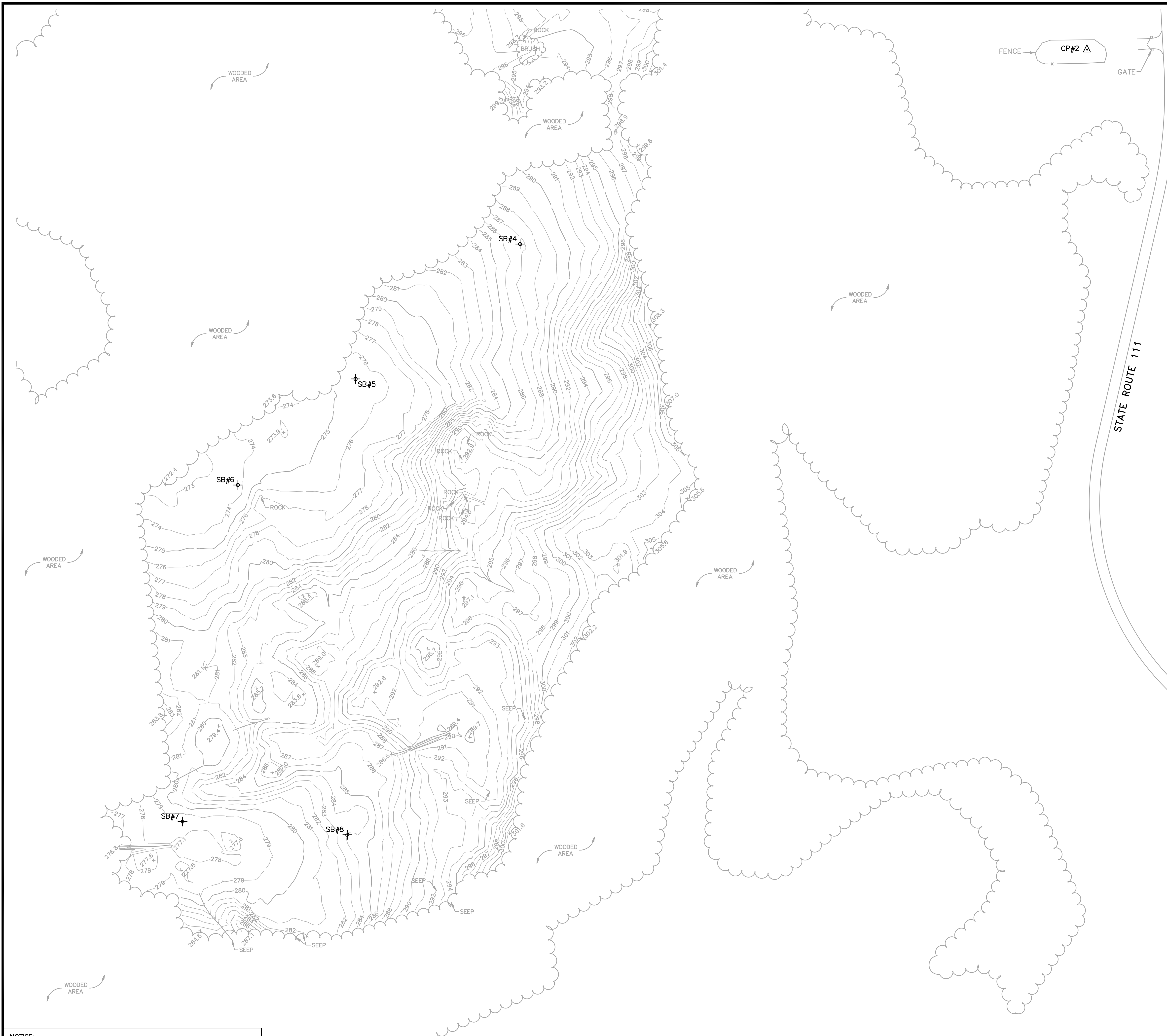
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GLARO-NY1-25-3



**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL

**Soil Boring #4 Elevation = 286.6**  
 Water on the surface  
 0-1/2 inches Grass root mat  
 1/2-25 inches Clay, stiff, medium plasticity, slight mottling (rust)  
 20-35 inches Clay, stiff, medium plasticity, slight mottling (rust)  
 Note: No rock encountered

**Soil Boring #5 Elevation = 275.2**  
 Water on the surface  
 0-1 inches Grass root mat  
 1-17 inches Clay, brown, stiff, high plasticity slight mottling  
 17-29 inches Clay, brown, stiff, high plasticity slight mottling  
 Note: No ground water or rock encountered

**Soil Boring #6 Elevation = 273.7**  
 0-2 inches Grass root mat  
 2-7 inches Clay, dark gray, stiff, medium plasticity  
 7-27 inches Clay, brown, stiff, medium plasticity, mottling (rust), very dry  
 27-35 inches Clay, brown, stiff, medium plasticity, mottling (rust), very dry  
 Note: No ground water or rock encountered

**Soil Boring #7 Elevation = 278.7**  
 0-2 inches Grass root mat  
 2-8 inches Clay, dark brown, medium stiffness, medium plasticity  
 12 inches Ground water  
 8-18 inches Clay, gray, stiff, mottling (rust)  
 18-29 inches Clay, gray, no mottling, high plasticity  
 Note: No rock encountered

**Soil Boring #8 Elevation = 284.2**  
 0-2 inches Grass root mat  
 1-20 inches Clay, brown, stiff, medium plasticity, mottling (rust)  
 20-32 inches Clay, brown, stiff, medium plasticity, mottling (rust)  
 Note: No Rock or ground water encountered

**HORIZONTAL & VERTICAL CONTROL** - Coordinates are NAD 83 (CORS 2011), New York State Plane Coordinates, Central, Zone 3102, units U.S. Survey Feet. Coordinates established from NGS OPUS (National Geodetic Survey, Online Positioning User Service) solution for control point 2. Raw data was collected for 7 hours on October 11, 2014 using a Trimble R6 GPS base receiver. OPUS solution for control point 2, North 1585539.6729, East 1023348.6095, Elevation 354.58 NAVD 88.

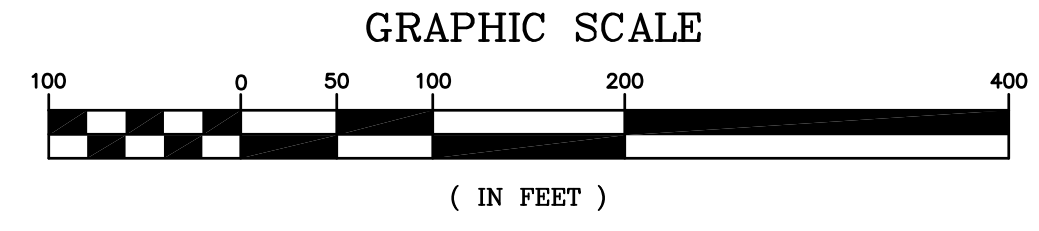
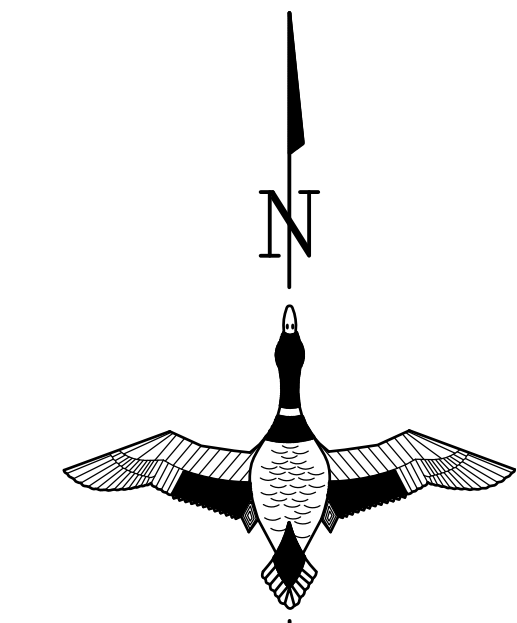
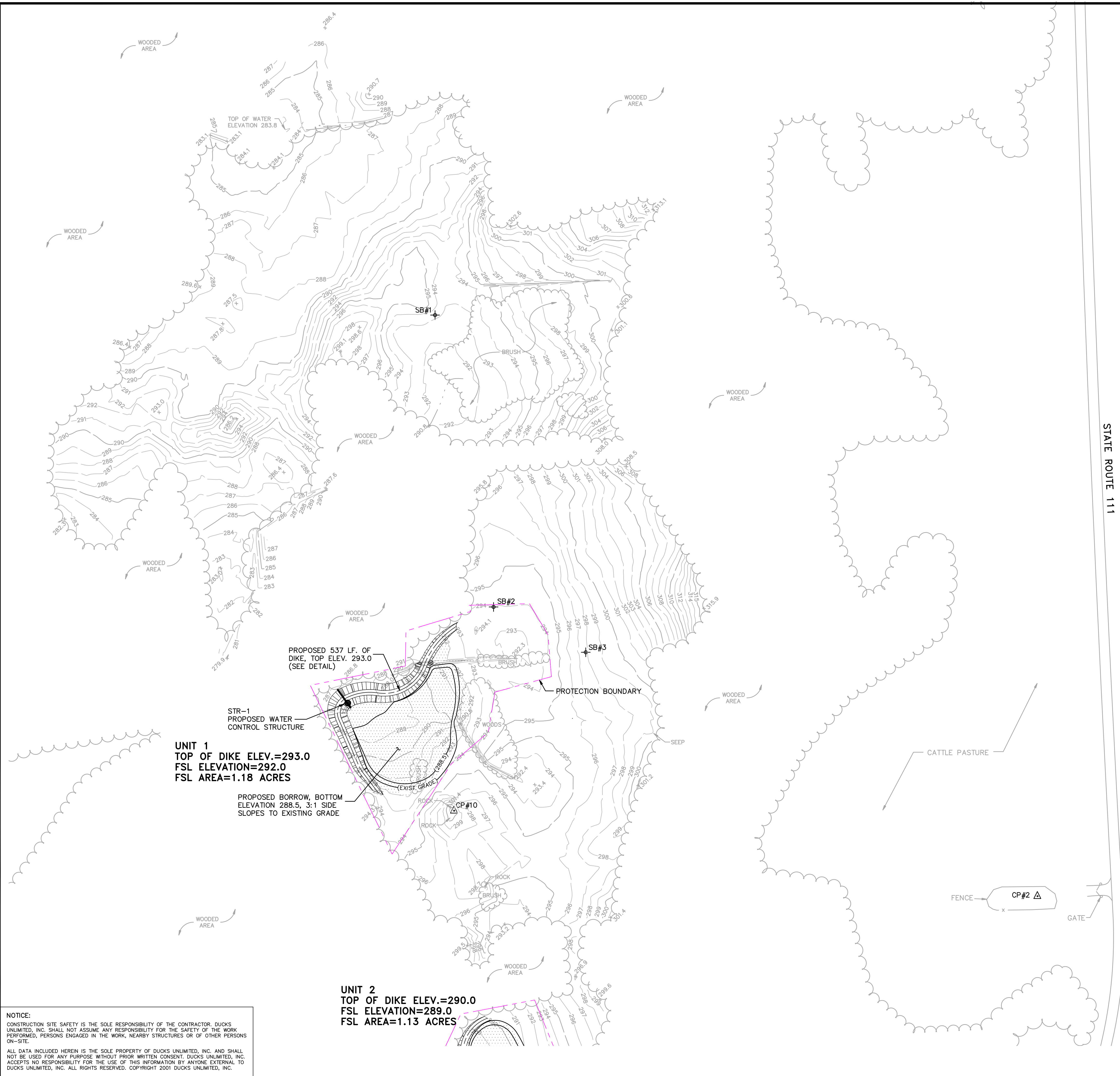
**ONSITE CONTROL, HORIZONTAL AND VERTICAL**

**Control Point # 2** - Set 18" by 5/8" re-rod with red plastic DU cap, point is located near well pump fenced off from the main cattle pasture, 170 feet west of centerline of State Route 111.  
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**Control Point # 10** - Cut "x" in rock outcropping.  
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BOOK NO. 17
DATE: 1/7/15
PROJECT NO.: US-NY-183-1
GLARO-NY1-25-4



**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL
- PROPOSED DIKE
- PROPOSED WATER CONTROL STRUCTURE
- PROPOSED CONTOUR
- FULL SERVICE LEVEL (FSL)

<b>EARTHWORK (NORTH &amp; SOUTH AREAS)</b>	
SITE PREPARATION	1526 CY. CUT
DIKE CONSTRUCTION	10,545 CY. FILL

**UNIT 1**  
TOP OF DIKE ELEV.=293.0  
FSL ELEVATION=292.0  
FSL AREA=1.18 ACRES

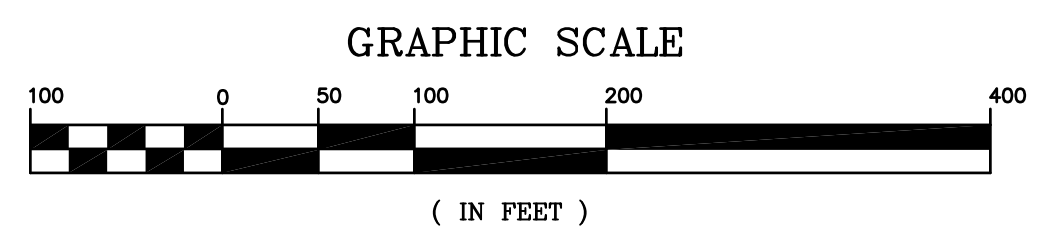
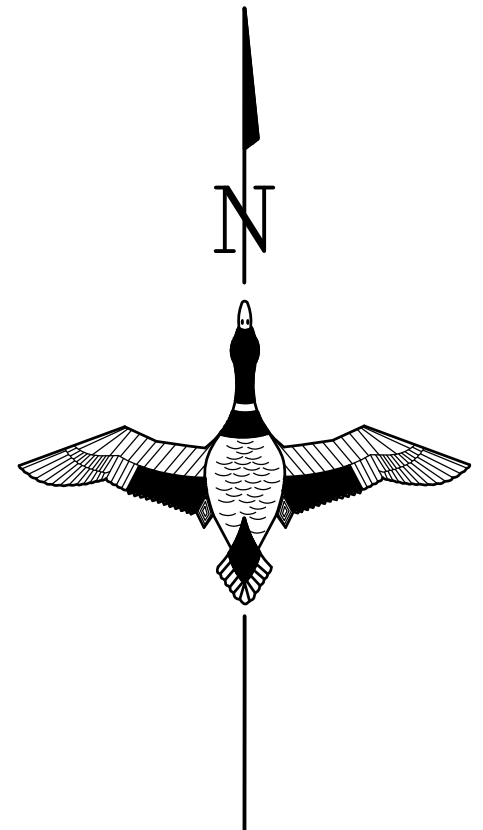
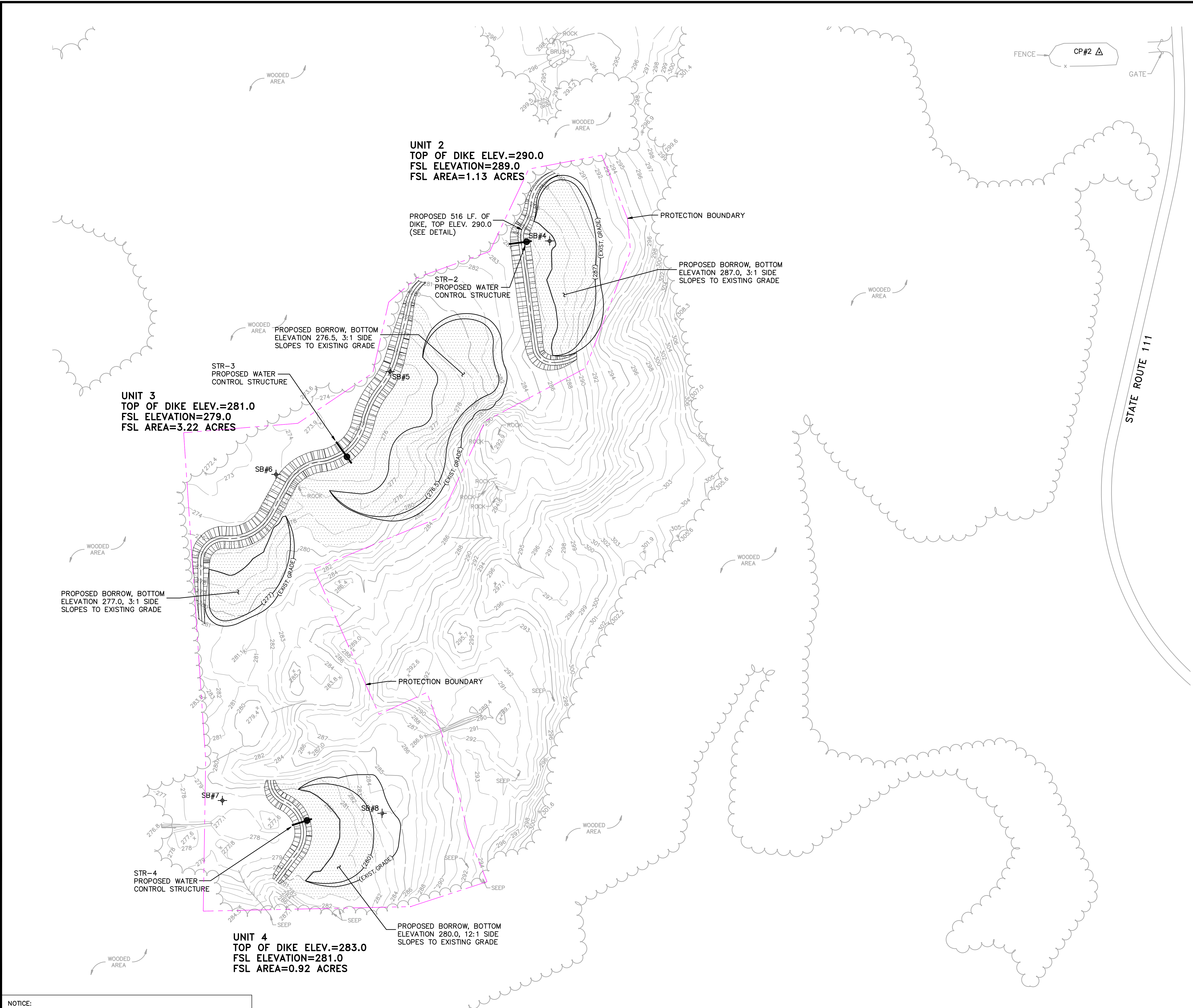
**UNIT 2**  
TOP OF DIKE ELEV.=290.0  
FSL ELEVATION=289.0  
FSL AREA=1.13 ACRES

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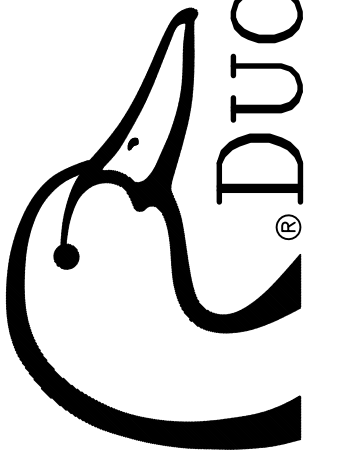
**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH C
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL
- PROPOSED DIKE
- PROPOSED WATER CONTROL STRUCTURE
- PROPOSED CONTOUR
- FULL SERVICE LEVEL (FSL)

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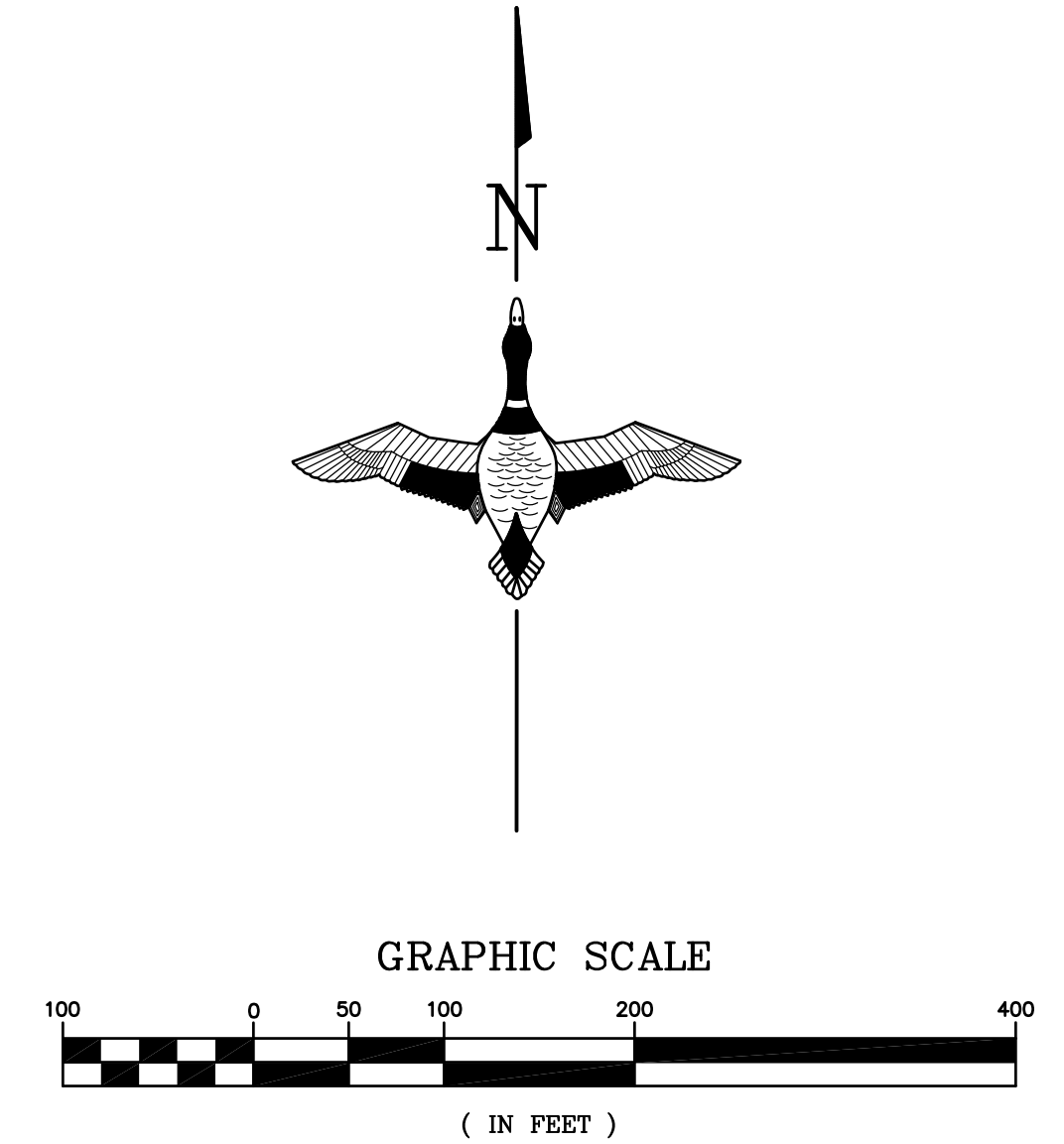
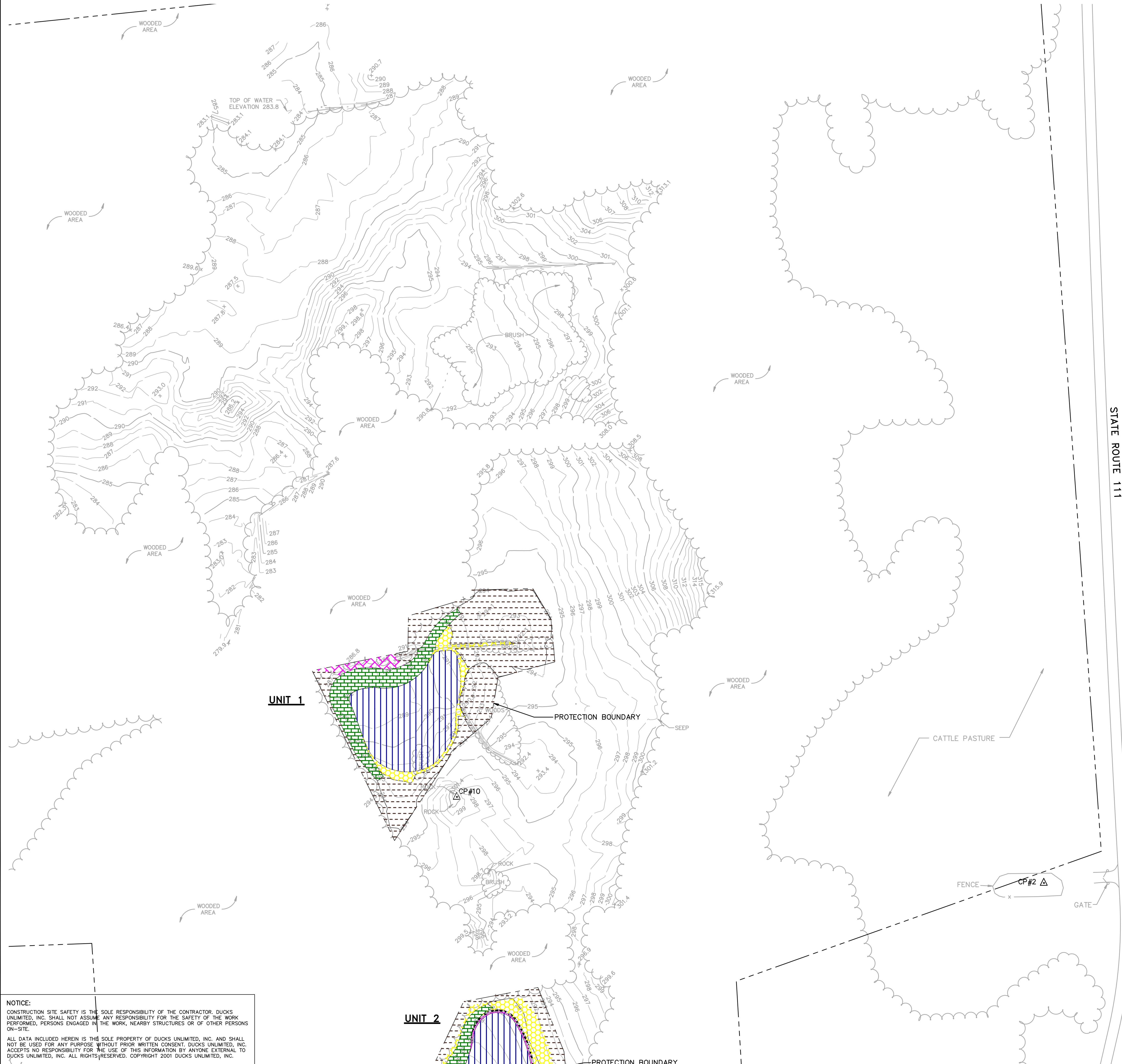
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 (734) 623-2000



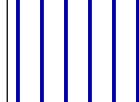
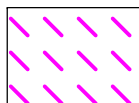
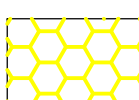
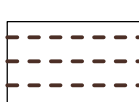
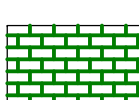
**SITE PLAN - SOUTHERLY AREA**  
 DURAND MITIGATION SITE  
 NEW YORK IN-LIEU FEE PROGRAM  
 WESTERN ST. LAWRENCE RIVER  
 SERVICE AREA  
 JEFFERSON COUNTY, NEW YORK

REVISIONS:

CAD FILE:	SITE PLAN
DESIGNED BY:	PW
DRAWN BY:	DA
SURVEYED BY:	GB & JP
BOOK NO. -	
DATE:	1/7/15
PROJECT NO.:	US-NY-183-1
GLARO-NY1-25-6	



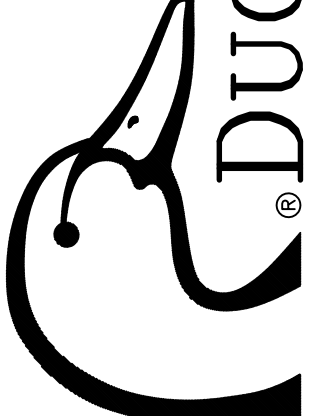
**PLANTING LEGEND**

-  PROPOSED PALUSTRINE EMERGENT MARSH (PEM)  
SEED MIX AS SPECIFIED IN SECTION 4.2, TABLE 2-MITIGATION WORK PLAN  
5.05 ACRES (TOTAL NORTH & SOUTH AREAS)
-  PROPOSED PALUSTRINE SCRUB-SHRUB WETLAND (PSS)  
SHRUB PLANTING AND SEED MIX AS SPECIFIED IN SECTION 4.2, TABLES 3 & 5-MITIGATION WORK PLAN  
0.58 ACRES (TOTAL NORTH & SOUTH AREAS)
-  PROPOSED PALUSTRINE FORESTED WETLAND (PFO)  
SEED MIX AS SPECIFIED IN SECTION 4.2, TABLES 3, 4 & 5 MITIGATION WORK PLAN  
2.40 ACRES (TOTAL NORTH & SOUTH AREAS)
-  PROPOSED UPLAND WARM SEASON GRASS BUFFER  
AS SPECIFIED IN SECTION 4.2, TABLE 6-MITIGATION WORK PLAN  
7.60 ACRES (TOTAL NORTH & SOUTH AREAS)
-  WARM SEASON GRASS BERM MIX  
SEED MIX AS SPECIFIED IN SECTION 4.2, TABLE 6-MITIGATION WORK PLAN  
1.90 ACRES (TOTAL NORTH & SOUTH AREAS)

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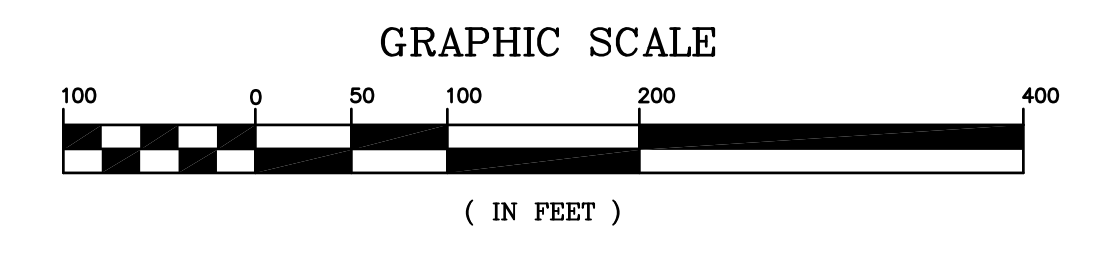
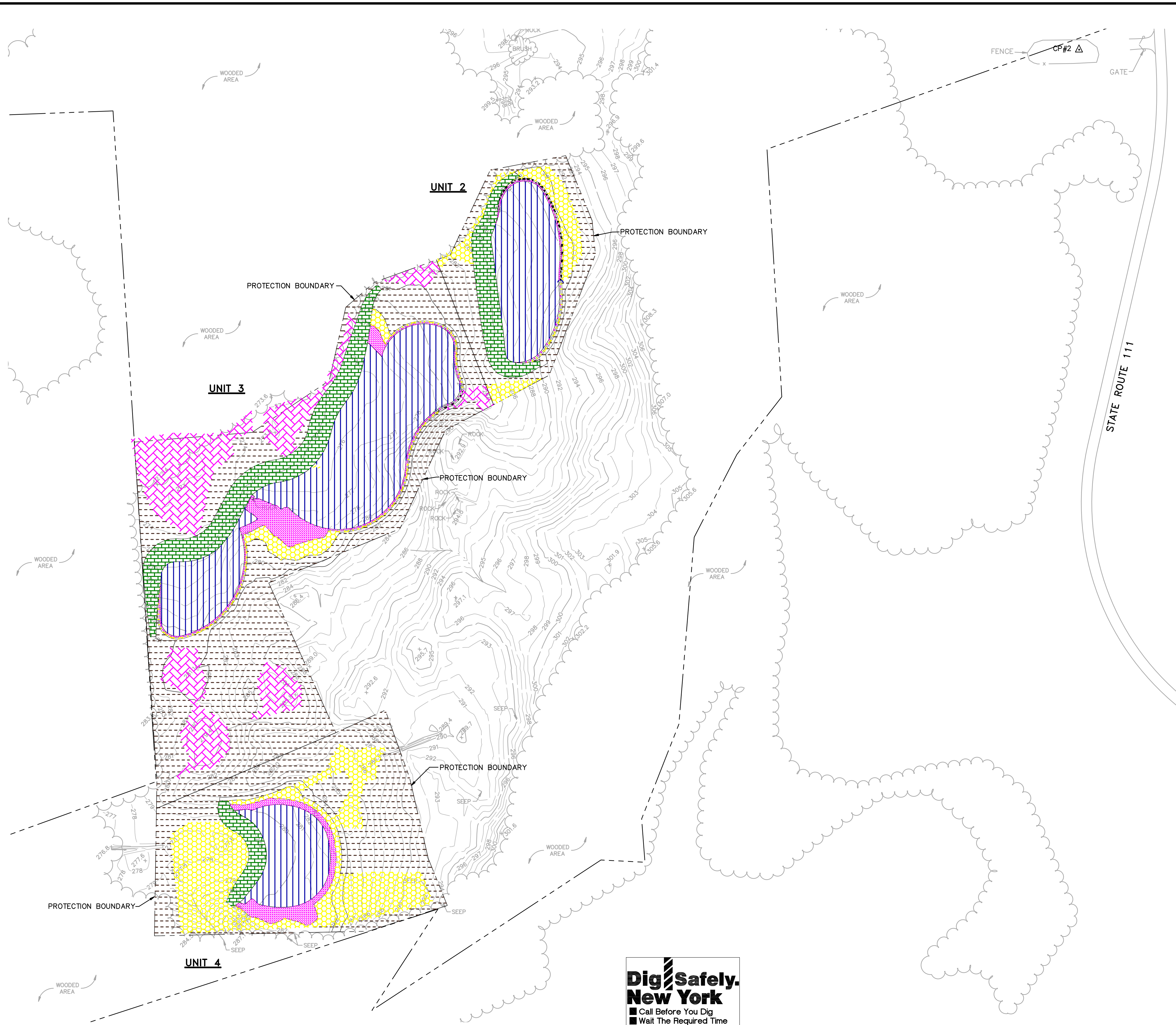
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**PLANTING PLAN - NORTHERLY AREA  
DURAND MITIGATION SITE  
NEW YORK IN-LIEU FEE PROGRAM  
WESTERN ST. LAWRENCE RIVER  
SERVICE AREA  
JEFFERSON COUNTY, NEW YORK**

REVISIONS:


CAD FILE:  
PLANTING PLAN REVISED 2\_15\_16  
DESIGNED BY: PCW  
DRAWN BY: GHB  
SURVEYED BY: MR  
BOOK NO. -  
DATE:  
2-2-2016  
PROJECT NO.:  
US-NY-183-1  
GLARO-NY1-025-7



**PLANTING LEGEND**

	PROPOSED PALUSTRINE EMERGENT MARSH (PEM) SEED MIX AS SPECIFIED IN SECTION 4.2, TABLE 2—MITIGATION WORK PLAN 5.05 ACRES (TOTAL NORTH & SOUTH AREAS)
	PROPOSED PALUSTRINE SCRUB—SHRUB WETLAND (PSS) SHRUB PLANTING AND SEED MIX AS SPECIFIED IN SECTION 4.2, TABLES 3 & 5—MITIGATION WORK PLAN 0.58 ACRES (TOTAL NORTH & SOUTH AREAS)
	PROPOSED PALUSTRINE FORESTED WETLAND (PFO) SEED MIX AS SPECIFIED IN SECTION 4.2, TABLES 3, 4 & 5 MITIGATION WORK PLAN 2.40 ACRES (TOTAL NORTH & SOUTH AREAS)
	PROPOSED UPLAND WARM SEASON GRASS BUFFER AS SPECIFIED IN SECTION 4.2, TABLE 6—MITIGATION WORK PLAN 7.6 ACRES (TOTAL NORTH & SOUTH AREAS)
	WARM SEASON GRASS BERM MIX SEED MIX AS SPECIFIED IN SECTION 4.2, TABLE 6—MITIGATION WORK PLAN 1.90 ACRES (TOTAL NORTH & SOUTH AREAS)

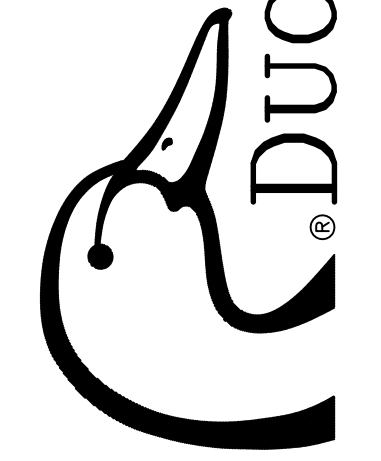
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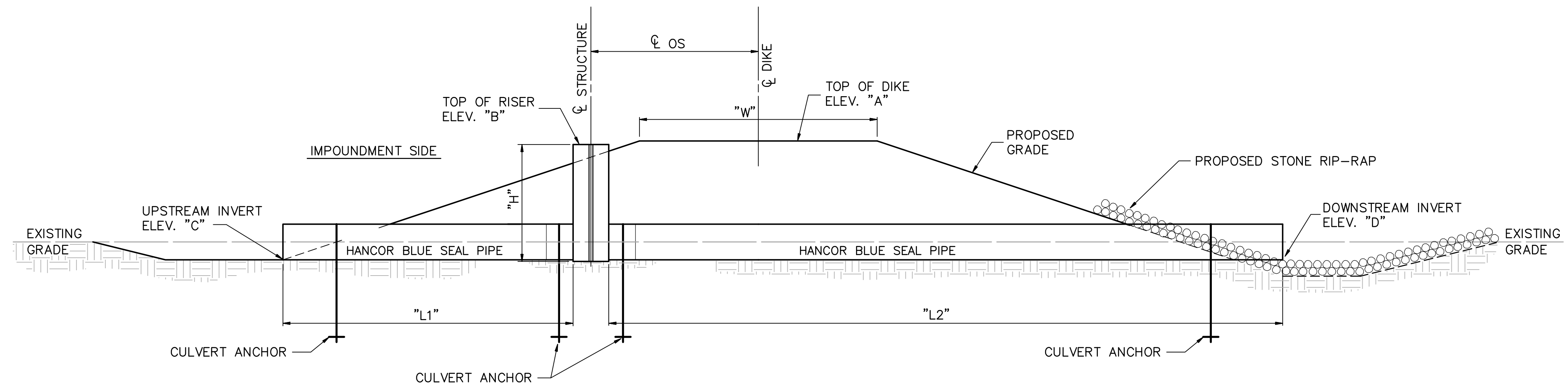
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**PLANTING PLAN — SOUTHERLY AREA  
DURAND MITIGATION SITE  
NEW YORK IN-LIEU FEE PROGRAM  
WESTERN ST. LAWRENCE RIVER  
SERVICE AREA  
JEFFERSON COUNTY, NEW YORK**

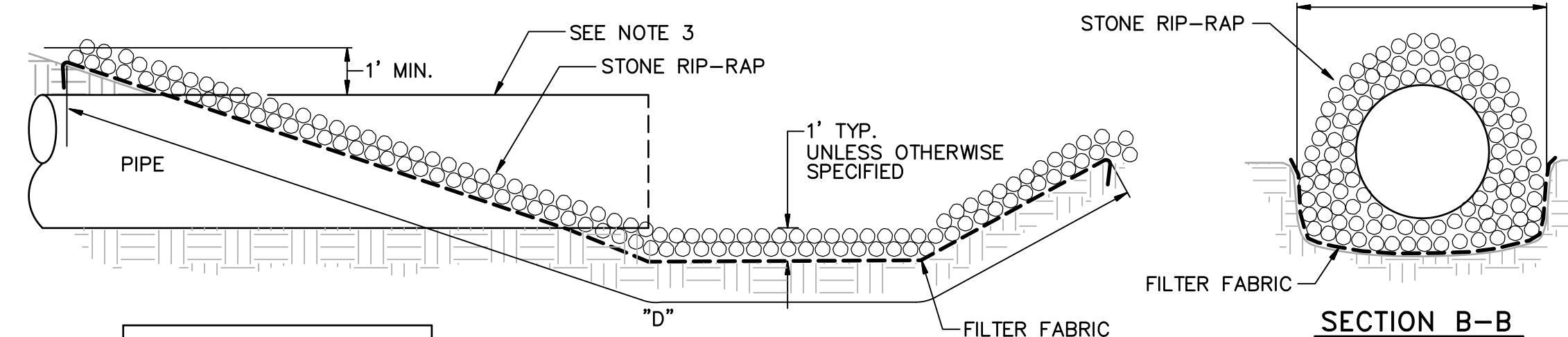
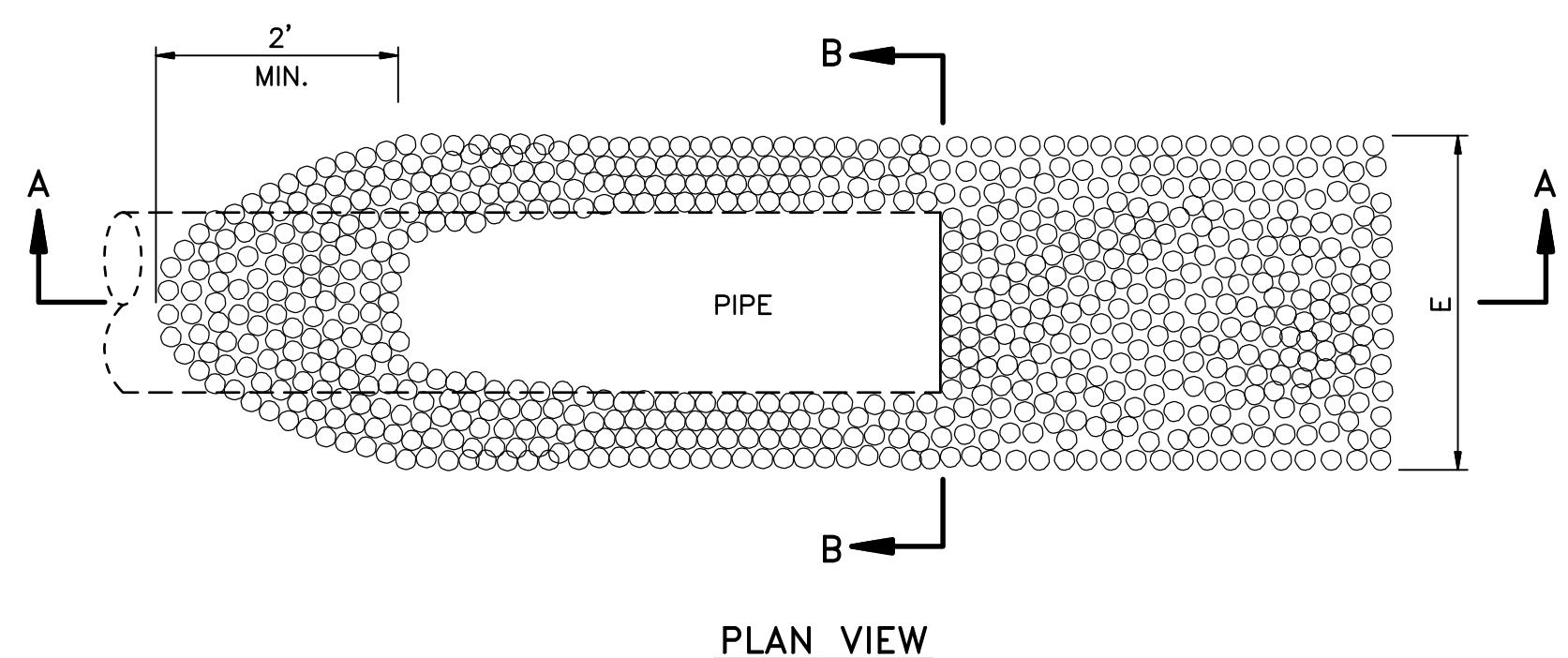
REVISIONS:

CAD FILE:	PLANTING PLAN REVISED 2_15_16
DESIGNED BY:	PCW
DRAWN BY:	GHB
SURVEYED BY:	MR
BOOK NO.:	-
DATE:	2-2-2016
PROJECT NO.:	US-NY-183-1
GLARO-NY1-025-8	



**PROFILE OF AGRI-DRAIN® WATER CONTROL STRUCTURE**  
NOT TO SCALE

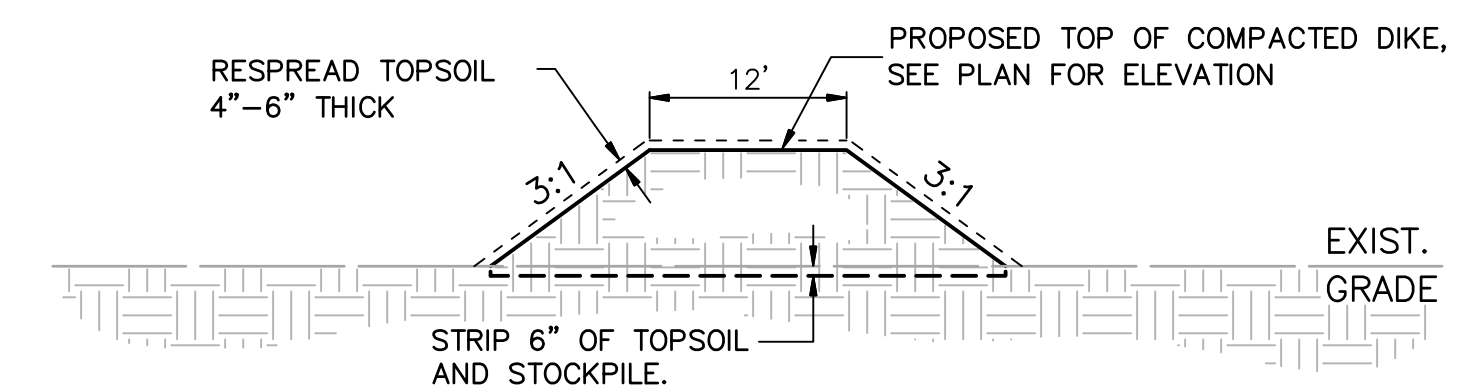
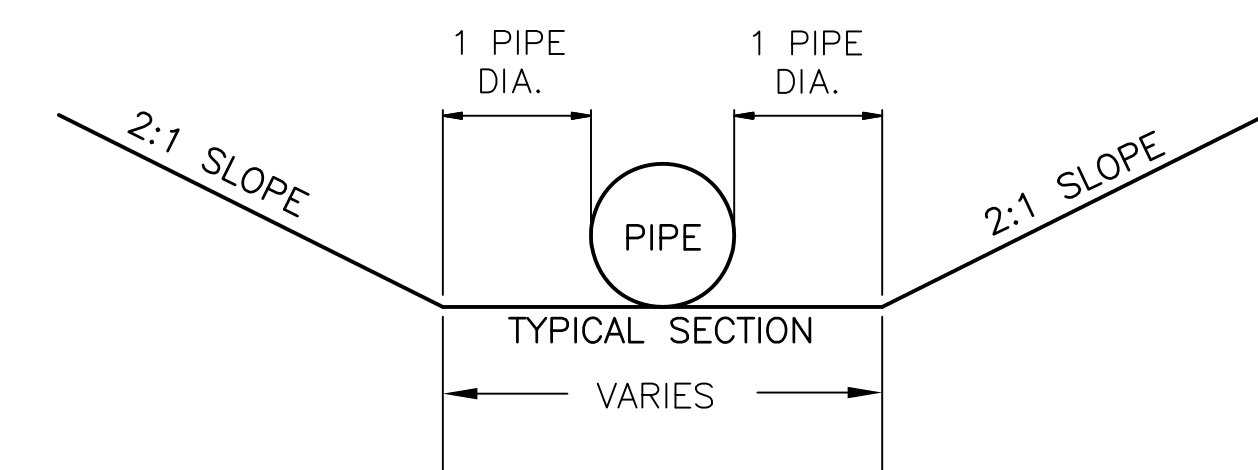
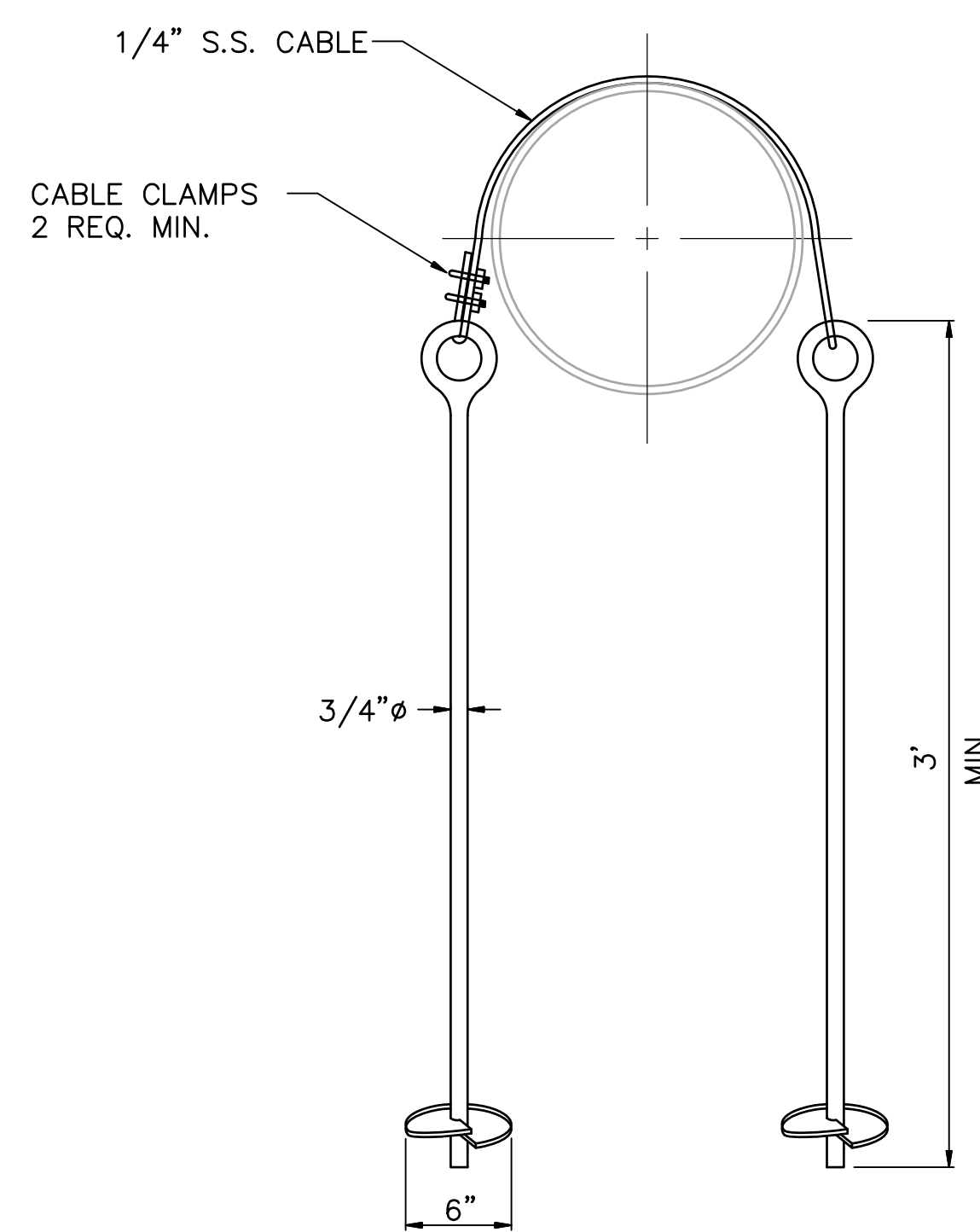
STRUCTURE	PIPE SIZE	RISER SIZE	TOP OF DIKE EL. "A"	TOP OF RISER EL. "B"	FULL SERVICE LEVEL	INLET I.E. EL. "C"	OUTLET I.E. EL. "D"	TOP WIDTH "W"	INLET LENGTH "L1"	OUTLET LENGTH "L2"	℄ - ℄ OFFSET	RISER HEIGHT "H"
STR-1	18"	24"x 28"	293.0	294.0	292.0	286.0	286.0	12'	14'	37'	8'	8'
STR-2	18"	24"x 28"	290.0	290.0	289.0	284.0	284.0	12'	18'	34'	8'	6'
STR-3	18"	24"x 28"	281.0	282.0	279.0	274.0	274.0	12'	14'	14'	8'	8'
STR-4	18"	24"x 28"	283.0	283.0	281.0	278.0	278.0	12'	12'	31'	8'	5'



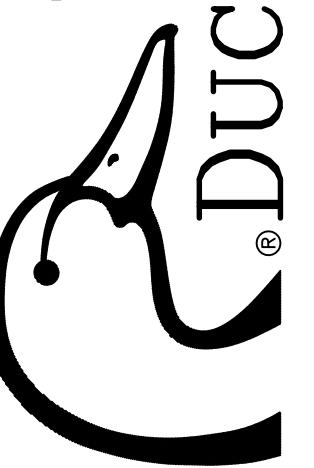
CLASS I STONE			
PIPE DIA.	D	E	Sq.Yds.
12"	17'	3'	5.5
15"	18'	3.75'	7.2
18"	19'	4.5'	8.3
21"	20'	5.25'	11.0
24"	21'	6'	13.2
27"	22'	6.75'	15.4
30"	27'	10'	28.7
36"	29'	10'	30.3
42"	31'	10'	31.8
48"	33'	10'	33.2
54"	35'	10'	34.5
60"	37'	10'	35.7

- NOTES:**
- IF THE RIPRAP CLASS DESIGNATION IS NOT SPECIFIED ON THE CONSTRUCTION PLANS, CLASS 1 ROCK RIPRAP SHALL BE UTILIZED. THE ROCK SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
  - UNLESS OTHERWISE SPECIFIED, FILTER FABRIC SHALL BE UTILIZED IN THE INSTALLATION OF RIP RAP.
  - DOWNSTREAM PIPE OUTLET SHALL CONFORM TO SLOPE FOR PIPE DIAMETERS 30" AND LARGER

**OUTLET AND STONE RIP-RAP DETAIL**  
NOT TO SCALE



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REVISIONS:

CAD FILE:  
DETAIL SHEETS

DESIGNED BY: PW

DRAWN BY: DA

SURVEYED BY: GB & JP

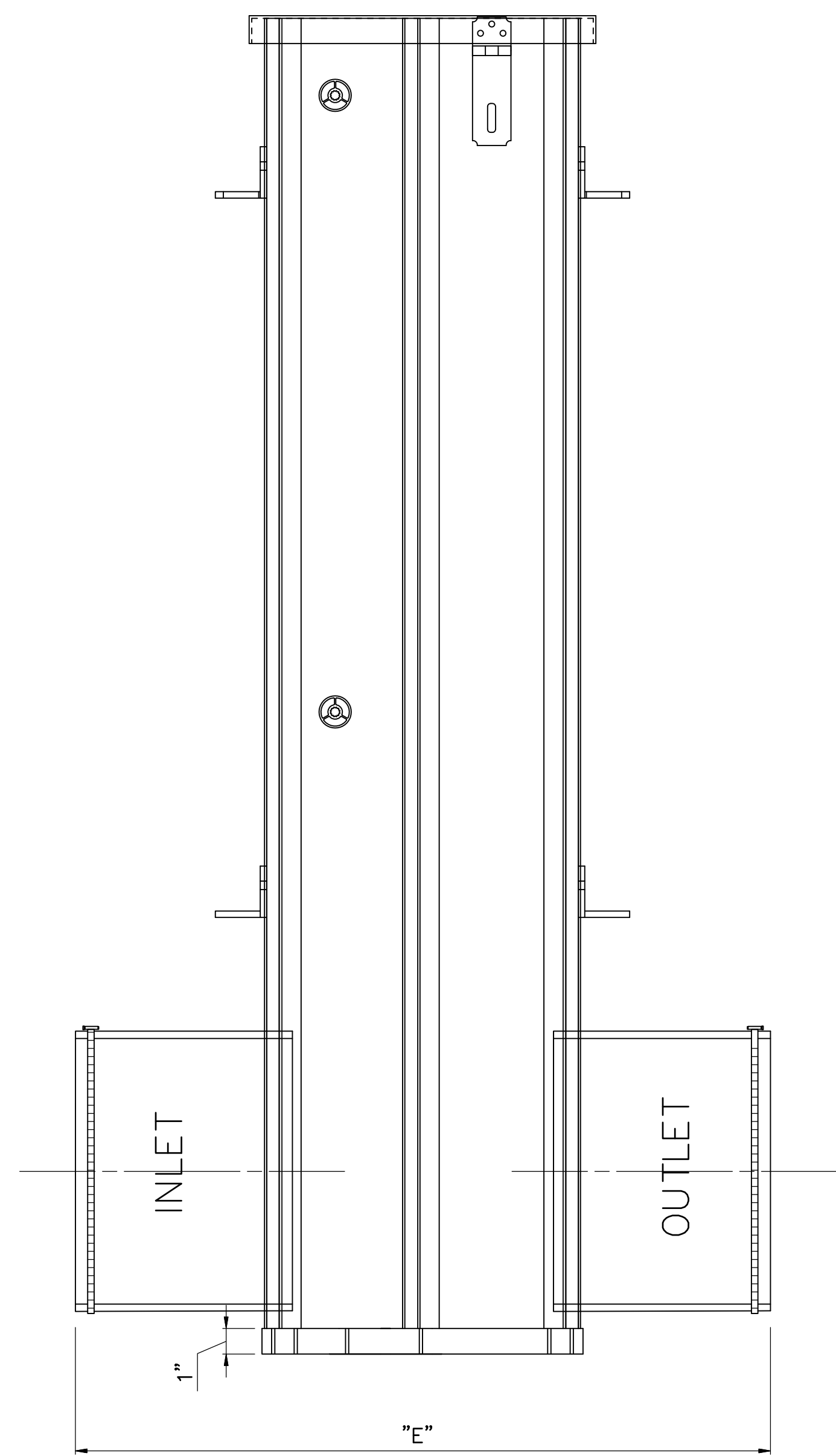
BOOK NO. -

DATE:  
1/7/15

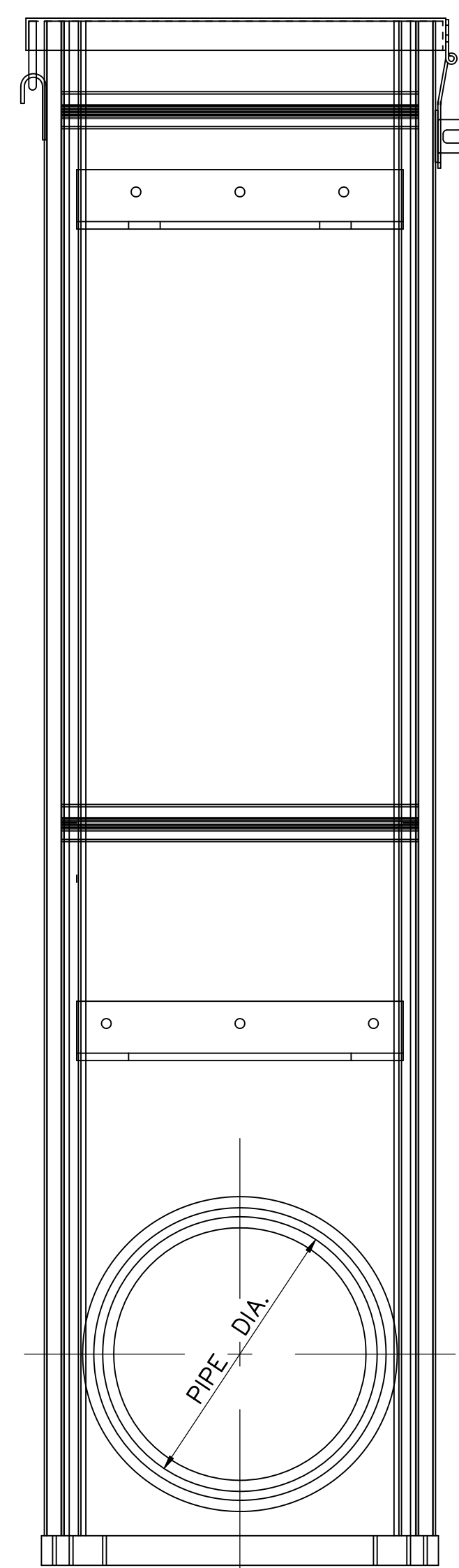
PROJECT NO.:  
US-NY-183-1

GLARO-NY1-25-9

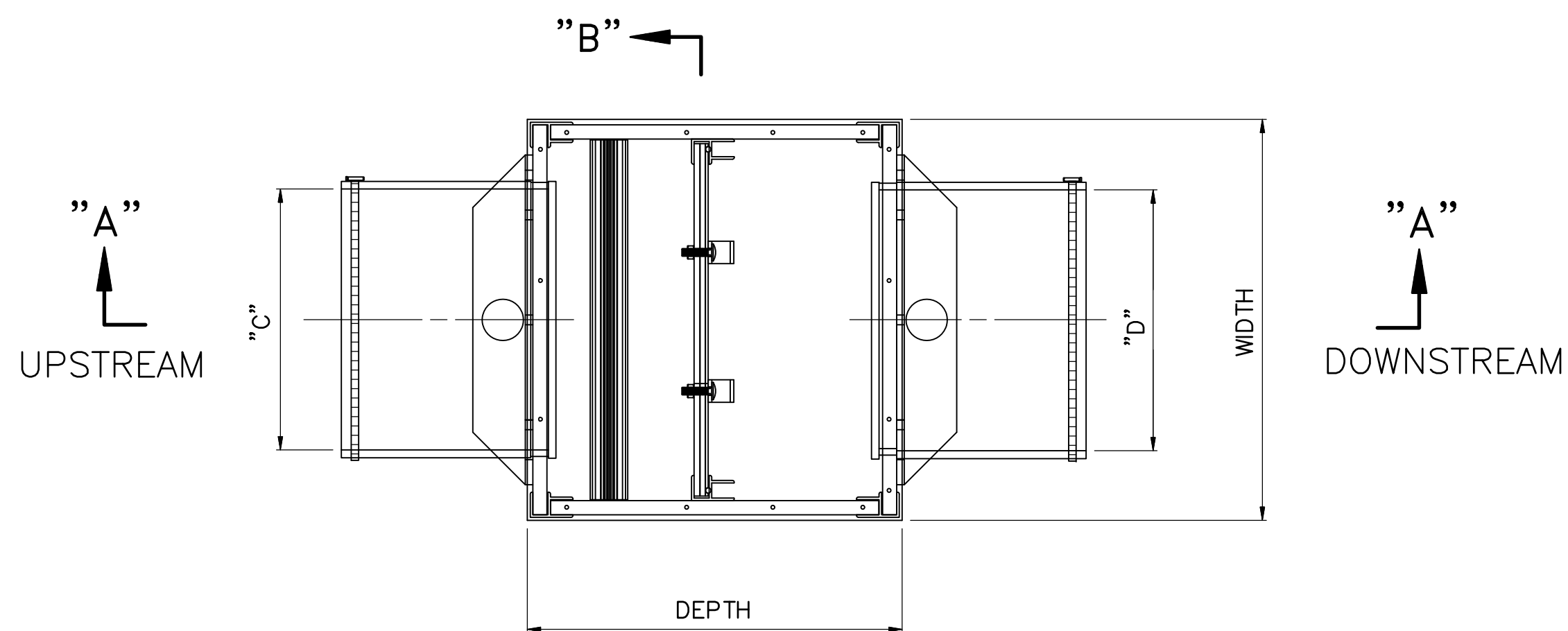




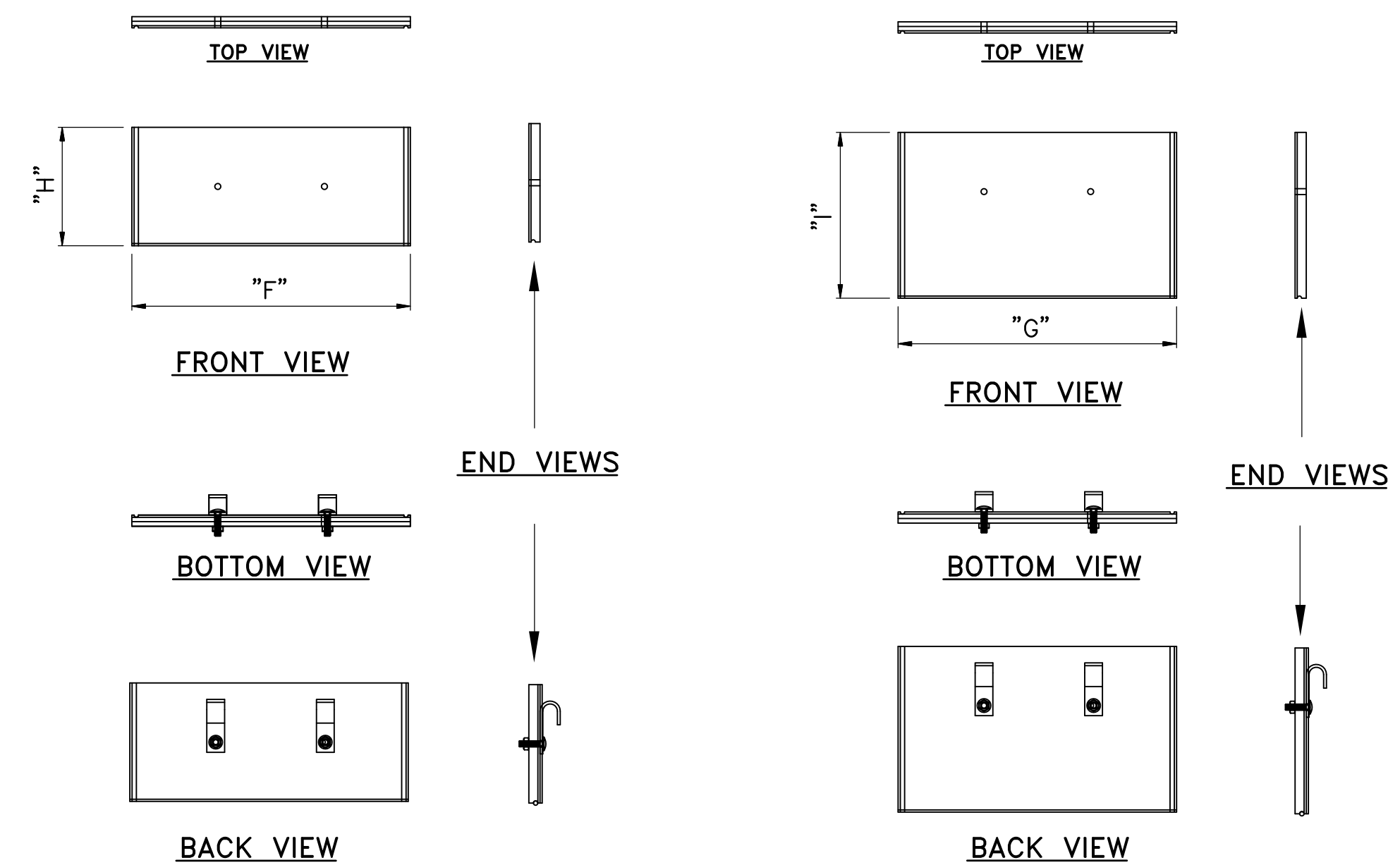
SECTION "A"-"A"



SECTION "B"-"B"



PLAN VIEW  
(DRAWN WITH FERNCO 1056 COUPLER)



STOPLOG DETAIL  
NOT TO SCALE

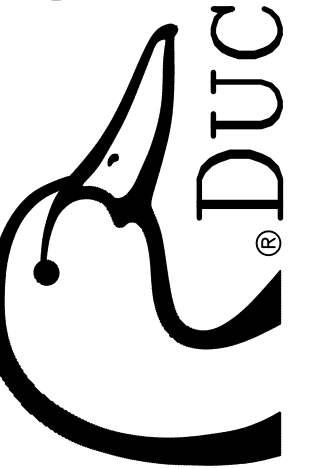
PIPE* DIA.	INSIDE DIM.		COUPLING DIM.		COUPLING LENGTH "E"	STOPLOG DIM.			
	WIDTH	DEPTH	"C" (I.D.)	"D" (I.D.)		WIDTH		HEIGHT	
	"F"	"G"	"H"	"I"	"F"	"G"	"H"	"I"	
4"	8"	10"	4.42"	4.42"	17.5"	7.75"	7.75"	5"	7"
6"	8"	10"	6.38"	6.38"	17.5"	7.75"	7.75"	5"	7"
8"	12"	12"	8.50"	8.50"	23.5"	11.75"	11.75"	5"	7"
10"	14"	16"	10.60"	10.60"	27.5"	13.75"	13.75"	5"	7"
12"	16"	20"	12.83"	12.83"	31.5"	15.75"	15.75"	5"	7"
15"	20"	24"	17.85"	17.85"	43.5"	19.75"	19.75"	5"	7"
18"	24"	28"	21.70"	21.70"	47.5"	23.75"	23.75"	5"	7"
24"	31"	39"	29.00"	29.00"	58.5"	30.75"	30.75"	5"	7"

\* ALL APPLICATIONS WILL UTILIZE DUAL WALL HANCOR BLUE SEAL PIPE OR APPROVED EQUAL FOR ATTACHMENT TO INLINE WATER CONTROL STRUCTURE

AGRI-DRAIN<sup>®</sup> INLINE WATER LEVEL CONTROL STRUCTURE DETAIL  
NOT TO SCALE

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DETAIL SHEET 2  
DURAND MITIGATION SITE  
NEW YORK IN-LIEU FEE PROGRAM  
WESTERN ST. LAWRENCE RIVER  
SERVICE AREA  
JEFFERSON COUNTY, NEW YORK

REVISIONS:

CAD FILE:  
DETAIL SHEETS

DESIGNED BY: PW

DRAWN BY: DA

SURVEYED BY: GB & JP

BOOK NO. -

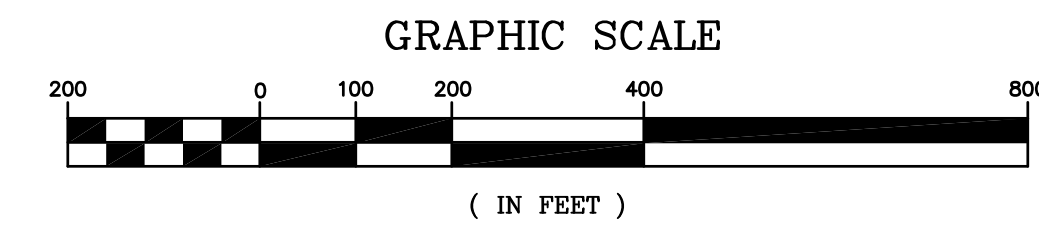
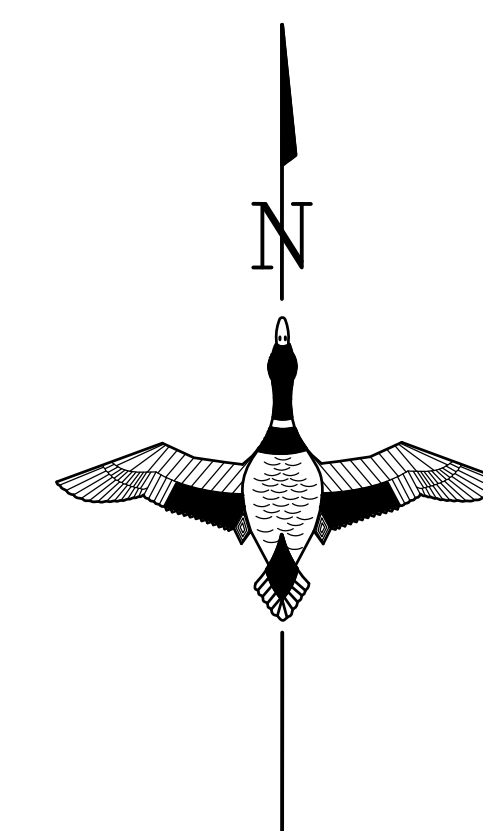
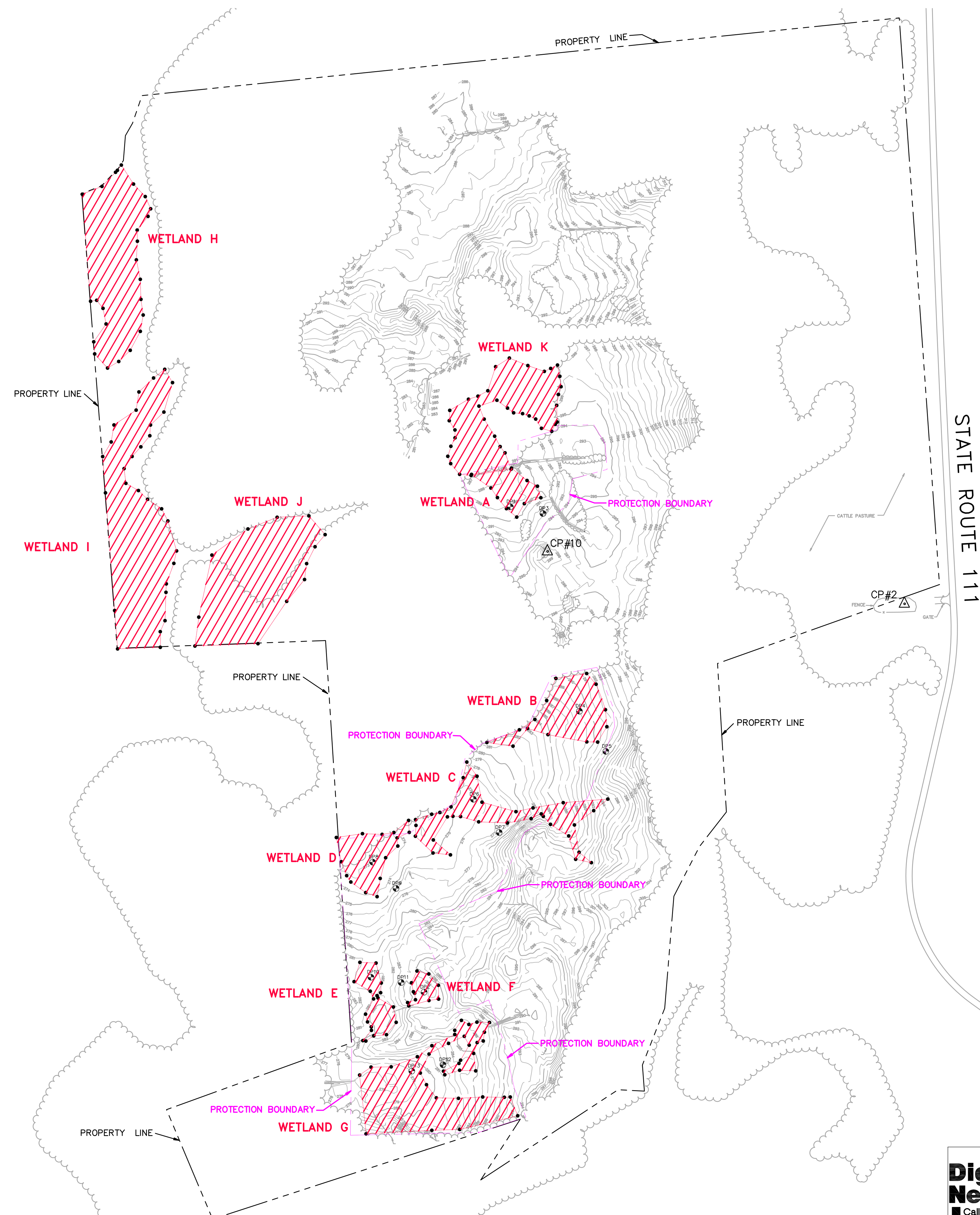
DATE:

1/7/15

PROJECT NO.:

US-NY-183-1

GLARO-NY1-25-10



**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL
- WETLAND DELINEATION POINT
- WETLAND DATA POINT
- WETLAND DELINEATION LINE
- PROTECTION BOUNDARY
- PROPERTY LINE

WETLAND NAME	COWARDIN CLASS	ACRES
A	PEM	0.44
B	PEM	1.11
C	PEM	1.18
D	PEM	0.73
E	PEM	0.42
F	PEM	0.19
G	PEM	2.23
H	PEM	2.48
I	PEM	3.32
J	PEM/PSS	2.95
K	PFO/PSS	1.85
PROTECTION BOUNDARY	N/A	19.19

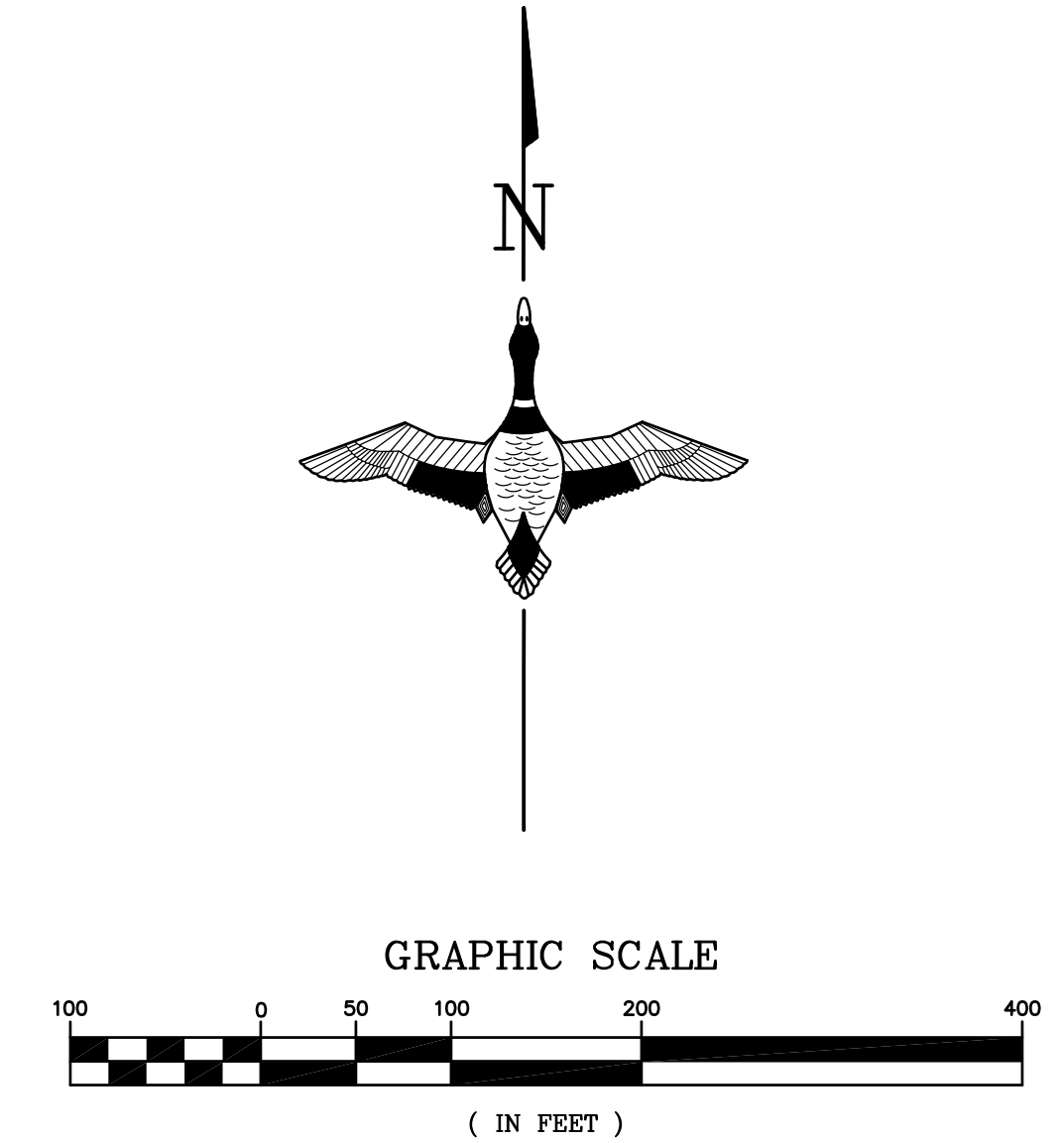
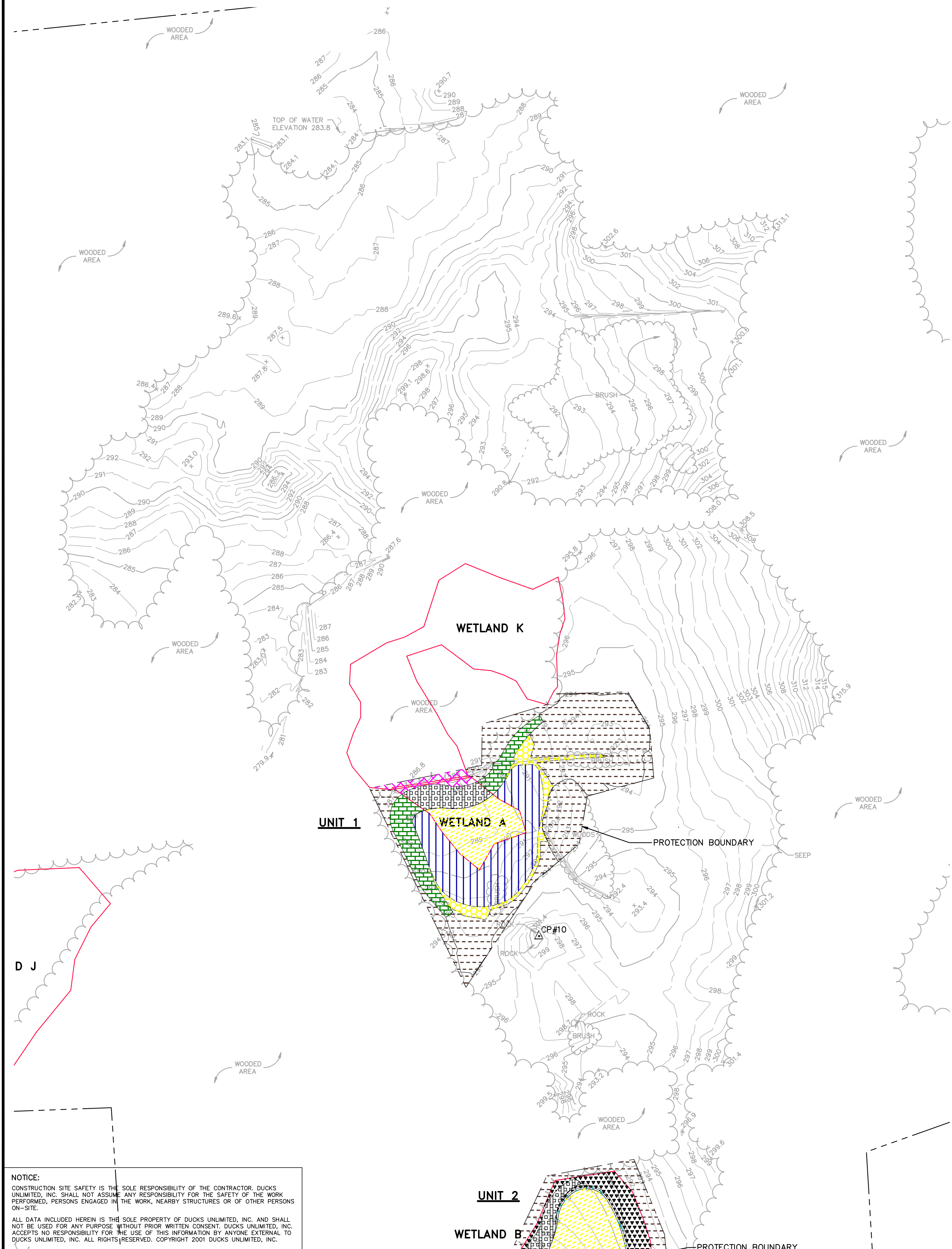
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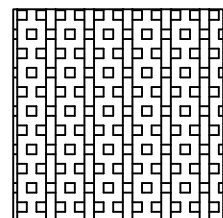
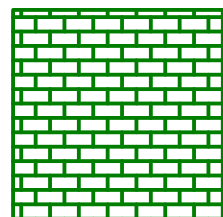
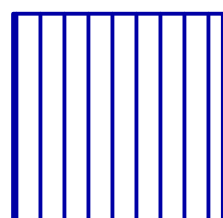
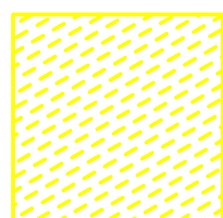
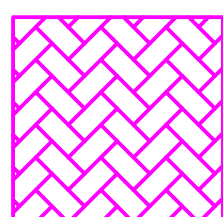
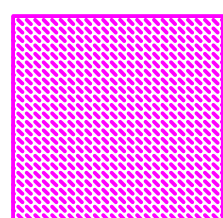
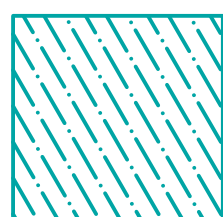
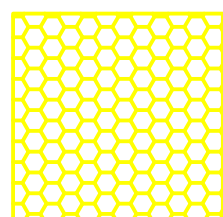
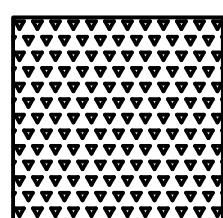
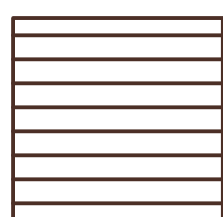
OVERALL WETLAND DELINEATION  
 DURAND MITIGATION SITE  
 NEW YORK IN-LIEU FEE PROGRAM  
 WESTERN ST. LAWRENCE RIVER  
 SERVICE AREA  
 JEFFERSON COUNTY, NEW YORK

REVISIONS:

CAD FILE: OVERALL SITE VIEW
DESIGNED BY: PW
DRAWN BY: GHB
SURVEYED BY: MR
BOOK NO. -
DATE: 2/2/2016
PROJECT NO.: US-NY-183-1
GLARO-NY1-025-11



**LEGEND**

-  WETLAND IMPACT
-  WSG BERM REESTABLISHMENT
-  PEM REESTABLISHMENT
-  PEM REHABILITATION
-  PEM PRESERVATION
-  PSS REESTABLISHMENT
-  PSS REHABILITATION
-  PFO REESTABLISHMENT
-  PFO REHABILITATION
-  UPLAND BUFFER WSG REESTABLISHMENT

**UNIT # 1** UNIT 1 - TOTAL AREA = 2.93 AC. (ALL AREAS GIVEN IN ACRES)

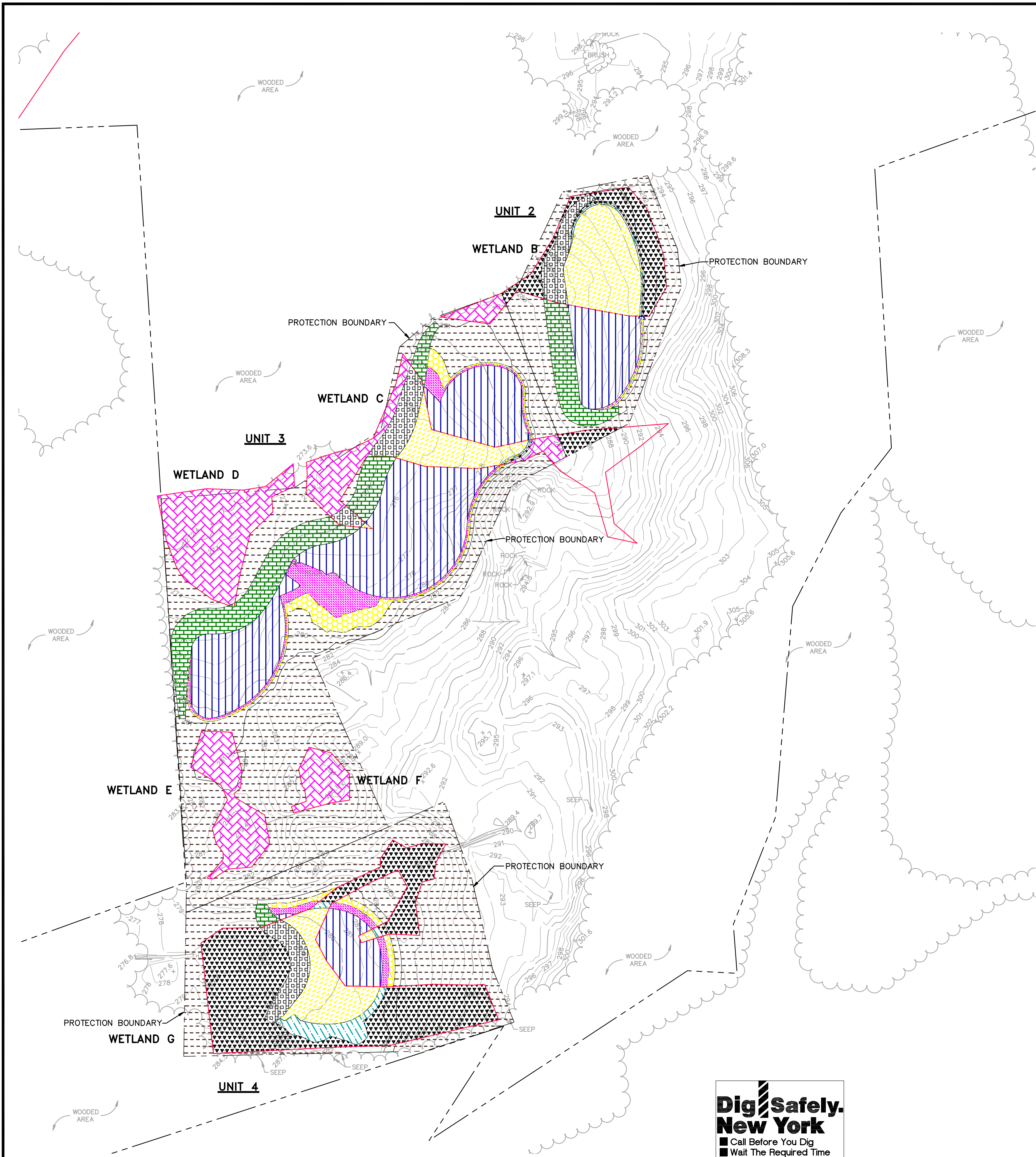
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REESTABLISHMENT	0.62	N/A	0.15	0.26	1.42
REHABILITATION	0.28	N/A			
PRESERVATION	0.07				
WETLAND IMPACT	0.13				

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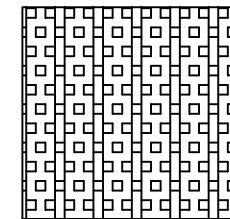
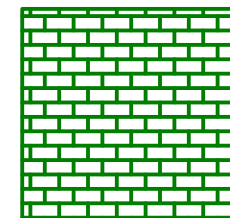
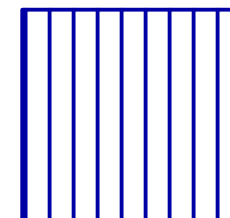
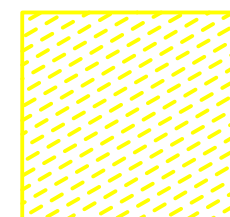
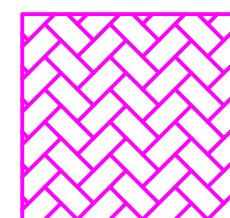
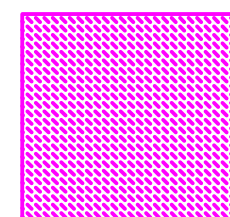

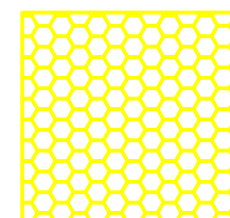
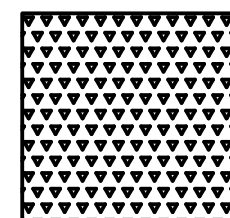

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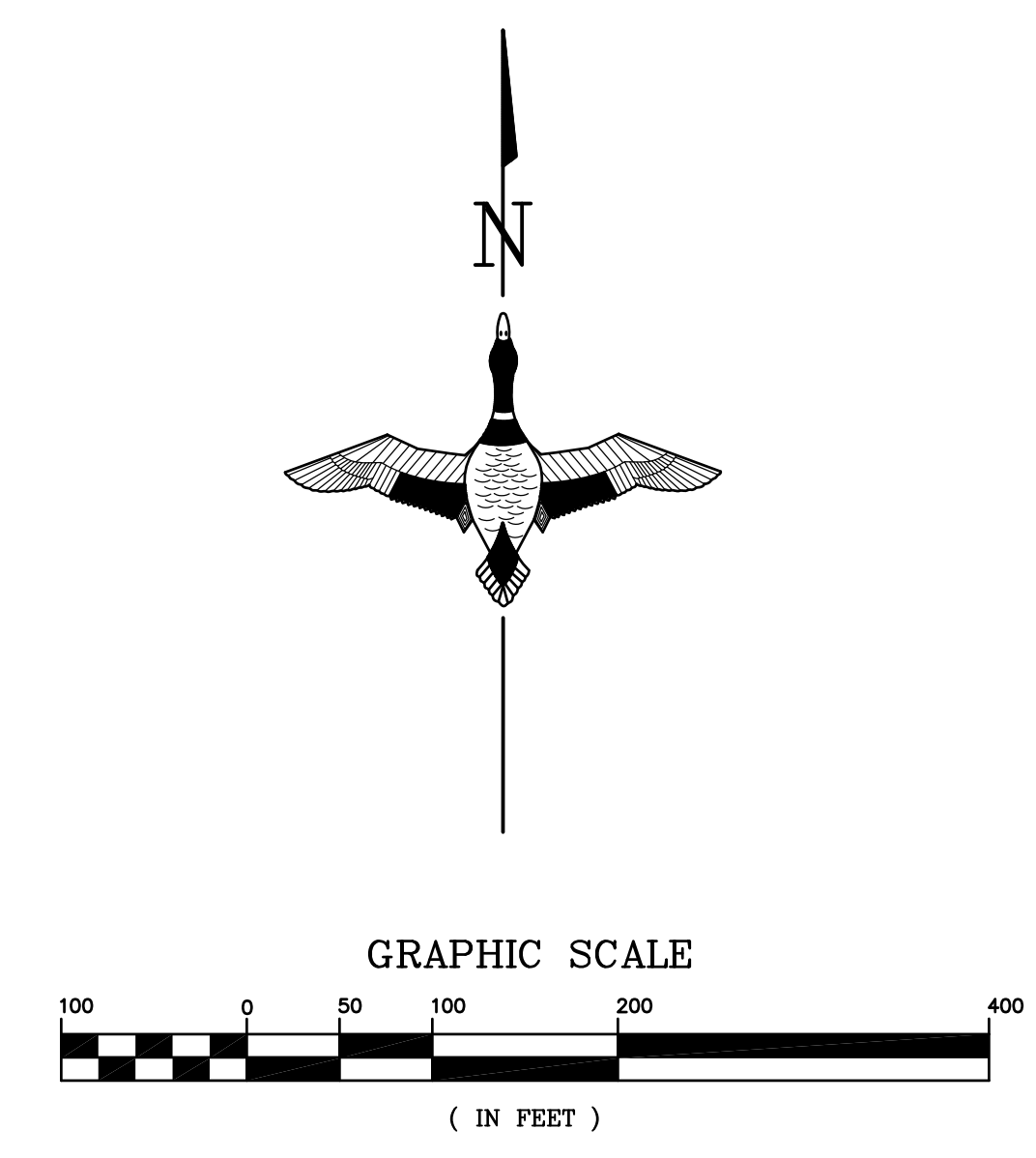
REVISIONS:

CAD FILE:	CREDIT DETERMINATION
DESIGNED BY:	-
DRAWN BY:	GHB
SURVEYED BY:	MR
BOOK NO.:	-
DATE:	2-2-2016
PROJECT NO.:	US-NY-183-1
GLARO-NY1-025-12	



**LEGEND**

-  WETLAND IMPACT
-  WSG BERM REESTABLISHMENT
-  PEM REESTABLISHMENT
-  PEM REHABILITATION
-  PEM PRESERVATION
-  PSS REESTABLISHMENT
-  PSS REHABILITATION
-  PFO REESTABLISHMENT
-  PFO REHABILITATION
-  UPLAND BUFFERWSG REESTABLISHMENT



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**UNIT # 2** UNIT 2 - TOTAL AREA = 2.58 AC. (ALL AREAS GIVEN IN ACRES)

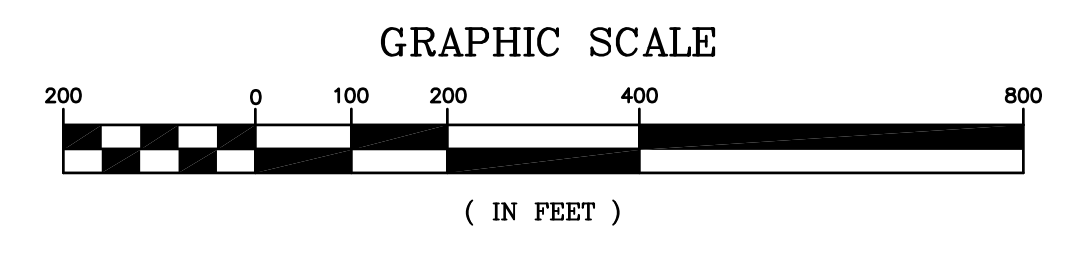
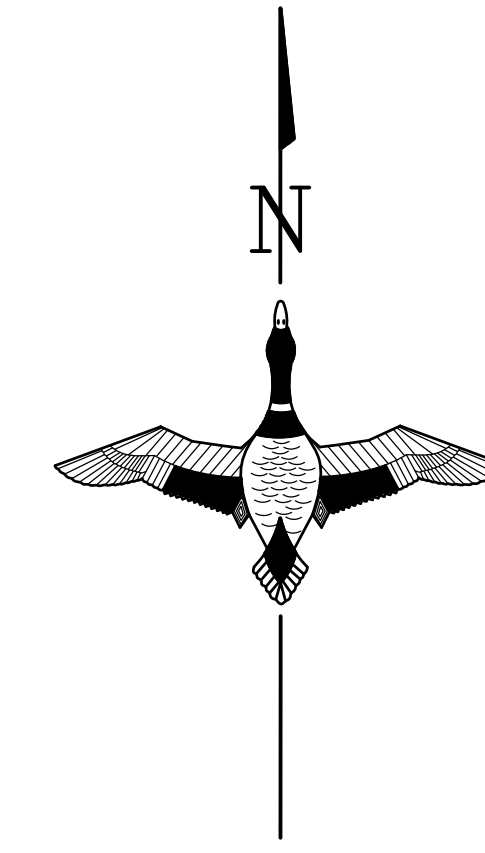
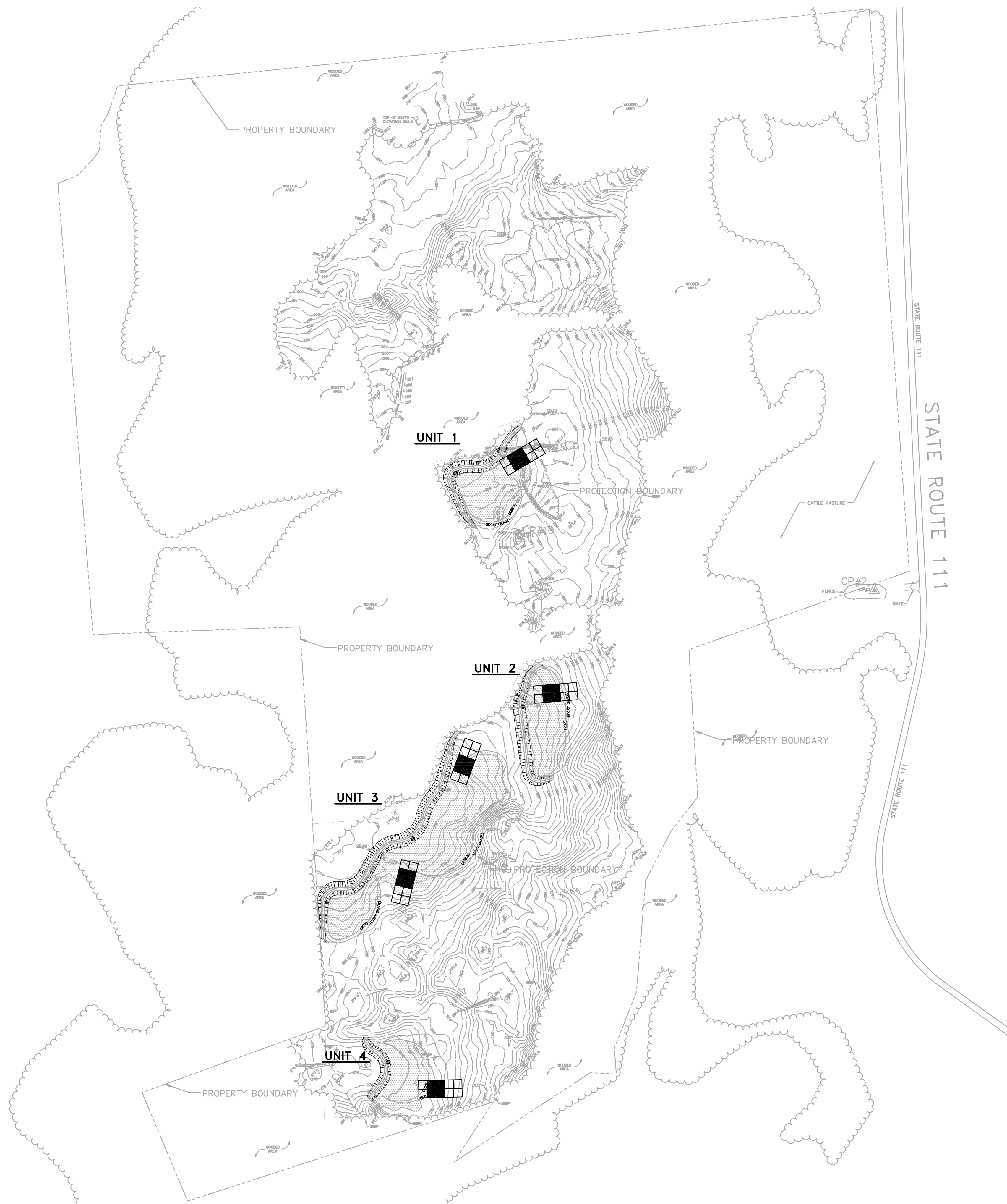
TYPE	PEM	PSS	PFO	WSG	UWSG
REESTABLISHMENT	0.45	0.01	0.01	0.25	0.76
REHABILITATION	0.54	0.02	0.39		
PRESERVATION	N/A				
IMPACT	0.15				

**UNIT # 3** UNIT 3 - TOTAL AREA = 9.14 AC. (ALL AREAS GIVEN IN ACRES)

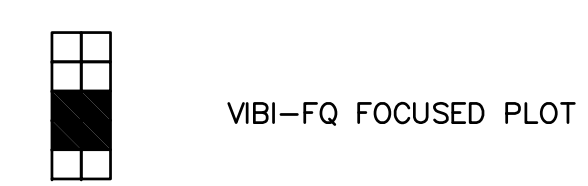
TYPE	PEM	PSS	PFO	WSG	UWSG
REESTABLISHMENT	2.22	0.31	0.24	0.70	3.44
REHABILITATION	0.28	0.01	N/A		
PRESERVATION	1.74				
IMPACT	0.20				

**UNIT # 4** UNIT 4 - TOTAL AREA = 4.69 AC. (ALL AREAS GIVEN IN ACRES)

TYPE	PEM	PSS	PFO	WSG	*UWSG
REESTABLISHMENT	0.29	0.08	0.08	0.03	1.98
REHABILITATION	0.37	0.15	1.53		
PRESERVATION	N/A				
IMPACT	0.18				



**LEGEND**

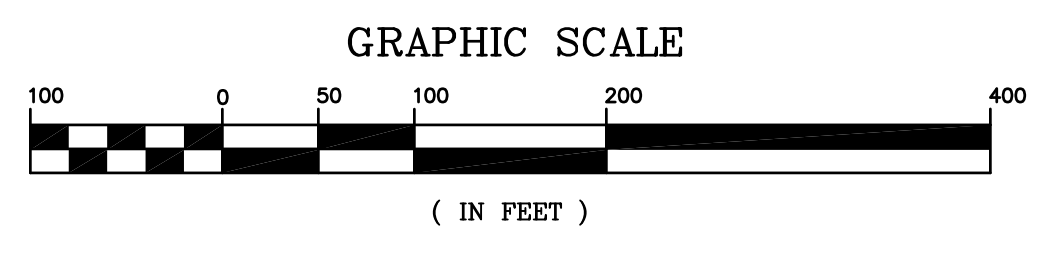


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REVISIONS:


CAD FILE: MONITORING PLAN
DESIGNED BY: PCW
DRAWN BY: DA & PCW
SURVEYED BY: GB & JP
BOOK NO. 17
DATE: 2/15/16
PROJECT NO.: US-NY-183-1
GLARO-NY1-25-14





**LEGEND**

- EXISTING TREE/BRUSH LINE
- EXISTING DITCH C
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- HORIZONTAL & VERTICAL CONTROL
- PROPOSED DIKE
- PROPOSED WATER CONTROL STRUCTURE
- PROPOSED CONTOUR
- FULL SERVICE LEVEL (FSL)
- PROPOSED SILT FENCE

**QUANTITIES:**  
 SILT FENCE SOUTHERLY AREA: 1725 LF.

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 SESC PLAN - SOUTHERLY AREA  
 DURAND MITIGATION SITE  
 NEW YORK IN-LIEU FEE PROGRAM  
 WESTERN ST. LAWRENCE RIVER  
 SERVICE AREA  
 JEFFERSON COUNTY, NEW YORK  
 REVISIONS:  
 CAD FILE:  
 SESC PLAN  
 DESIGNED BY: PW  
 DRAWN BY: DA  
 SURVEYED BY: GB & JP  
 BOOK NO. -  
 DATE:  
 1/7/15  
 PROJECT NO.:  
 US-NY-183-1  
 GLARO-NY1-25-16

**APPENDIX G**

**Mitigation Site Protection Instruments**



## Model Conservation Easement

*Note: The numbers underlined in the text of the easement correspond with the subheading numbers in the commentary that follows.*

### DEED OF CONSERVATION EASEMENT 1

THIS GRANT DEED OF CONSERVATION EASEMENT is made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, by \_\_\_\_\_ and \_\_\_\_\_, corporation, having an address at \_\_\_\_\_ (“Grantors”) in favor of \_\_\_\_\_ a nonprofit \_\_\_\_\_ [state of corporation] \_\_\_\_\_ corporation/agency organized under \_\_\_\_\_ qualified to do business in \_\_\_\_\_ [state where property is located], having an address at \_\_\_\_\_ (“Grantee”). 2

#### WITNESSETH:

WHEREAS, 3 Grantors are the sole owners in fee simple of certain property in \_\_\_\_\_ County, \_\_\_\_\_ [State] \_\_\_\_\_, more particularly described in Exhibit A attached hereto and incorporated by this reference (the “Property”); 4 and

WHEREAS, the property possesses \_\_\_\_\_ [wetland, streams, other water resources, buffer areas, wildlife habitats, endangered species, watershed protection values, wild/scenic rivers, endangered species critical habitat areas, critical resource areas, etc.] values (collectively, “conservation values” of great importance to the Grantors, the people of \_\_\_\_\_ [locale or region] \_\_\_\_\_ and the people of the State of \_\_\_\_\_; 5 and

WHEREAS, in particular, \_\_\_\_\_ [describe specific conservation values] \_\_\_\_\_; 6 and

WHEREAS, the specific conservation values of the Property are documented in the inventory of relevant features of the Property, dated \_\_\_\_\_, 20\_\_, \_\_\_\_\_ [on file at the offices of ...] \_\_\_\_\_ and incorporated by this reference (“Baseline Documentation”), which consists of maps, reports, photographs and other documentation that the parties agree provide, collectively, an accurate representation of the Property at the time of this grant and which is intended to serve as an objective information baseline for monitoring compliance with the terms of this grant; and 7

WHEREAS, Grantors intend that the conservation values of the Property be preserved and maintained by the established land use patterns, including, without limitation, those relating to \_\_\_\_\_ [public access, parks, etc.] \_\_\_\_\_ proposed/existing at the time of this grant and further described in Exhibit C, that do not significantly impair or interfere with those values; and 8

WHEREAS, Grantors intend to protect the Property in perpetuity as part of a mitigation requirement for Department of the Army permit number \_\_\_\_\_ affirmed

for/issued to Grantor requiring the protection of valuable public water resources. The permit was issued/affirmed in accordance with the provisions of the Water Pollution Control Act of 1972, 33 USC Sections 1251-1387; Section 1344 Wetlands permitting, aka Section 404 of the Clean Water Act. The Corps of Engineers has endorsed the area as containing wetlands pursuant to a wetland delineation performed as prescribed in the 1987 Corps of Engineers Wetland Delineation Manual; and

WHEREAS, Grantors further intend, as the owners of the property, to convey the Grantee the right to preserve and protect the conservation values of the Property in perpetuity; and

WHEREAS, Grantor agrees, in accordance with ECL Section 49-0305.5, that rights of enforcement of the terms of this Conservation Easement shall be held by the Grantee, and that third-party rights of enforcement shall also be held by the Corps of Engineers or other appropriate enforcement agencies of the United States and that these rights are in addition to, and do not limit, the rights of enforcement under the Permit; 9

WHEREAS, Grantee is a \_\_\_\_\_ [publicly supported, tax exempt nonprofit organization/] qualified under \_\_\_\_\_ [Section 501(c)(3) and 170(h) of the Internal Revenue Service Code or Chapter 15XX of the New York Revised Code ], and a New York public body or not-for-profit conservation organization qualified to hold a Conservation Easement in accordance with ECL Section 49-0305 whose primary purpose is \_\_\_\_\_ [the preservation, protection of land in its natural, scenic, historical, forested, etc. condition] \_\_\_\_\_; 10;

WHEREAS, Grantee agrees by accepting this grant to honor the intentions of the Grantors stated herein and to preserve and protect in perpetuity the conservation values of the Property for the benefit of this generation and the generations to come; 11

NOW, THEREFORE, in consideration of the above and mutual covenants, terms, conditions and restrictions contained herein, and pursuant to the laws of \_\_\_\_\_ [state where property is located] and in particular \_\_\_\_\_ [specific state statutory authority] \_\_\_\_\_, Grantor hereby creates, gives, grants, bargains and conveys to the Grantee a perpetual easement in, to, over and across, the Protected Property for the purposes of preservation, protection, maintenance and conservation of the Protected Property and the aquatic resources thereon. Grantor shall ensure compliance with the following Restrictions on the Protected Property, which shall run with the Protected Property in perpetuity, and be binding on the Grantor, the Grantee, and their respective successors, assigns, lessees, and other occupiers and users. These Restrictions are subject to Grantor's Reserved Rights, which follow. 12

1. Purpose. It is the purpose of this easement to assure that the Property will be retained forever in its [e.g. natural, wetland, scenic, historic, forested, etc.] conditions and to prevent any use of the Property that will impair or interfere with the conservation values of the Property. Grantors intend that this Easement will confine the use of the

Property to such activities, including, without limitation, those involving [e.g. hiking, wildlife observation, etc.], as are consistent with the purpose of this Easement. 13

2. Rights of the Grantee. To accomplish the purpose of this Easement the following rights are conveyed to the Grantee and the Corps of Engineers by this Easement:

- (a) To preserve and protect the conservation values of the Property;
- (b) To enter upon the Property at reasonable times in order to monitor Grantors' compliance with and otherwise enforce the terms of this Easement; provided that such entry shall be upon prior reasonable notice to the Grantors, and Grantee shall not unreasonably interfere with the Grantors' use and quiet enjoyment of the Property; and
- (c) To prevent any activity on or use of the Property that is inconsistent with the purpose of this Easement and to require the restoration of such areas or features of the Property that may be damaged by any inconsistent activity or use, pursuant to paragraph 6. 14

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the purpose of this Easement is prohibited. Without limiting the generality of the foregoing, the following activities and uses are expressly prohibited: 15

- A. Clearing, cutting or mowing;
- B. Earthmoving, grading, removal of topsoil, cultivation, burning, filling or material changes in the topography of the land in any manner, unless associated with a permitted reserved right;
- C. Placement of refuse, wastes, sewage, dredged spoil, solid waste, incinerator residue, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, or agricultural waste on the Property;
- D. Draining, ditching, diking, dredging, channelizing, pumping, impounding, excavating;
- E. Diverting or affecting the natural flow of surface or underground waters within, or out of the Property; manipulating or altering any natural water course, body of water or water circulation and any activities or uses detrimental to water quality;
- F. All methods of surface and subsurface exploration and extraction of

oil, gas, minerals, sand, gravel, soil, and any other materials for commercial and non-commercial use on or off of the Protected Property. This includes, mining and drilling activities.

- G. Burning, systematically removing or cutting timber or otherwise materially destroying any vegetation. Upon approval from the Grantee selective pruning, unsafe trees or exotic non-native vegetation may be removed in accordance with current scientific best management practices as set out by the U.S. Forest Service or the New York Forestry Commission;
- H. Spraying with biocides or use of herbicides only in those amounts and with that frequency of application as approved by the laws and regulations of the United States and the State of New York and as constituting the minimum necessary to accomplish reasonable activities permitted by the terms of this Easement.;
- I. Introducing exotic species on the Property, altering the natural state of the wetlands or streams or causing erosion or sedimentation;
- J. Grazing or use by domesticated animals such that animal wastes enter soil and water;
- K. Releasing, generating, treating, disposing, or abandoning any substance defined, listed, or otherwise classified pursuant to any federal, state, or local law, regulation or requirement as hazardous, toxic, polluting or otherwise contaminating to the air, water, soil, or in any way harmful or threatening to human health or the environment on the Protected Property.
- L. Construction of any kind in the wetlands, streams, buffers or upland, whether temporary or permanent.
- M. Any other use of, or activity on, the Restricted Property which is or may become inconsistent with the purposes of this Declaration, the preservation of the Restricted Property substantially in its natural condition, or the protection of its environmental systems, is prohibited.
- N. As permitted or approved in writing by USACE the property may have: (1) a narrow pedestrian walking trail in the uplands or upland buffer using pervious materials, (2) minimal structures and boardwalks for the observation of wildlife and wetland/stream ecology, (3) crops for wildlife or placement of temporary hunting stands in uplands.
- O. Display of billboards, signs, or advertisements on or over the Property, except for the posting of no trespassing signs, temporary signs indicating

the property is for sale, signs identifying the trees, vegetation, wetlands or conservation values of the property and/or signs identifying the owner of the property.

- P. Conservation and wildlife habitat management plans may be implemented by the New York Department of Environmental Conservation, US Forest Service, conservation land trusts holding conservation easements, or other conservation management entities where the habitat, wildlife or forest management does not result in any impacts to the wetlands/streams/riparian corridors and its buffers, or to property protected for its historical, cultural and/or archeological value, and where the proposal would enhance the management of the property for its conservation use.

16

Reserved Rights. Grantors reserve to themselves, and their personal representatives, heirs, successors, and assigns, all rights accruing from their ownership of the property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not expressly prohibited herein and are not inconsistent with the purpose of this Easement. Nothing herein shall be deemed to modify or amend any other or additional agreements between or among the Grantor, the Grantee and the Corps of Engineers. In the event any of the Grantor's acts or uses, whether on the Protected Property or on the Permitted Property, are subject to review under the New York State Environmental Quality Review Act (SEQRA), the Grantee shall be designated as an interested party and notified of the review process. [Without limiting the generality of the foregoing, the following rights are expressly reserved:] 17

[Insert Express Reservation, if desired] 18

4. Notice of Intention to Undertake Certain Permitted Actions. The purpose of requiring the Grantors to notify Grantee prior to undertaking certain permitted activities, as provided in paragraphs \_\_\_\_\_ [e.g. maintenance of constructed wetlands or streams]\_\_\_\_, is to afford Grantee an opportunity to ensure that activities in question are designed and carried out in a manner consistent with the purpose of this Easement. Whenever notice is required Grantors shall notify Grantee in writing not less than \_\_\_\_ days prior to the date Grantors intend to undertake the activity in question. The notice shall describe the nature, scope design, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit Grantee to make an informed judgment as to the consistency with the purpose of this Easement.

4.1 Grantee's Approval. Where Grantee's approval is required, as set forth in paragraphs \_\_\_\_\_, Grantee shall grant or withhold its approval in writing within \_\_\_\_ days of receipt of the Grantors' written request therefore. Grantee's approval may be withheld only upon a reasonable determination by the Grantee that the proposed action would be inconsistent with the purpose of this Easement. 19

5.

6. Grantee's Remedies. If Grantee or the Corps of Engineers determines that the Grantors are in violation of the terms of this Easement or that a violation is threatened, Grantee shall give notice to Grantors of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Property resulting from any use or activity inconsistent with the purpose of this Easement, to restore the portion of the Property so injured. If the Grantors fail to cure the violation within \_\_\_\_\_ days after receipt of notice thereof from Grantee, or under circumstances where the violation cannot be reasonably within a \_\_\_\_\_ day period, fail to begin curing such violation within the \_\_\_\_ day period until finally cured, Grantee may bring an action at law or in equity in court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Easement, including damages for loss of scenic, aesthetic, or environmental values, and to require the restoration of the Property to the condition that existed prior to any such injury. Without limiting the Grantors' liability therefore, Grantee in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action. If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to conserve the conservation values of the Property, Grantee may pursue its remedies under this paragraph without prior notice to the Grantors or without waiting for the period provided for the cure to expire. Grantee's rights under this paragraph apply equally in the event of either actual or threatened violations of the terms of this Easement, and Grantors agree that Grantee's remedies at law for any violation of the terms of this Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this paragraph, both prohibitive and mandatory, in addition to such other relief to which the Grantee may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now and hereafter existing at law or in equity. 20

6.1 Costs of Enforcement. Any costs incurred by the Grantee in enforcing the terms of this Easement against Grantors, including, without limitation, costs of suit and attorneys' fees, and any costs or restoration necessitated by Grantors' violation of the terms of this Easement including Corps of Engineers costs shall be borne by Grantors.

6.2 Grantee's Discretion. Enforcement of the terms of this Easement shall be at the discretion of the Grantee or the Corps of Engineers, and any forbearance by Grantee to exercise its rights under this Easement in the event of any breach of any term of this Easement by Grantors or the Corps of Engineers shall not be deemed or construed to be a waiver of such term of any subsequent breach of the same or any other term of this Easement or of any of rights of Grantee to the Corps of Engineers under this Easement. No delay or omission by Grantee or the Corps of Engineers in the exercise of any right or remedy upon any breach by Grantors shall impair such right or remedy or be

construed as a waiver. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel or waiver.

7. Waiver of Certain Defenses. Grantors hereby waive any defense of laches, estoppel, or prescription. 22

8. Acts Beyond the Grantors' Control. Nothing Contained in this Easement shall be construed to entitle Grantee to bring any such action against Grantors for any injury to or change in the Property resulting from the causes beyond Grantors' control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken by Grantors under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes. 23

9. Access. No right of access by the general public [other than those.....] to any portion of the Property is conveyed by this Easement. 24

10. Costs and Liabilities. Grantors retain all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property, including the maintenance of adequate comprehensive general liability insurance coverage. Grantors shall keep Property free from any liens arising out of any work performed for, materials furnished to, or obligations incurred by the Grantors. Any liens, mortgages or other encumbrances affecting the Protected Property shall be subject to the terms of this Conservation Easement. The Grantee or the Corps of Engineers shall not be responsible for any costs or liability of any kind related to the ownership, operation, insurance, upkeep, or maintenance of the Protected Property, except as expressly provided herein. Nothing herein shall relieve the Grantor of the obligation to comply with federal, state or local laws, regulations and permits that may apply to the exercise of ownership or rights under this Conservation Easement, by Grantor. 25

11. Taxes. Grantors shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority (collectively "taxes"), including any taxes imposed upon, or incurred as a result of, this Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Grantee is authorized but in no event obligated to make or advance any payment of taxes upon \_\_\_\_ days prior written notice to Grantors, in accordance with any bill, statement, or estimated procures from appropriate authority, without inquiry into the validity of the taxes or the accuracy of the bill, statement or estimate, and the obligation created by such payment shall bear interest until paid by Grantors at the lesser of \_\_\_\_ percentage points over the prime rate of interest from time to time charged by \_\_\_\_\_ bank or the maximum rate allowed by law. 26

12. Hold Harmless. Grantors shall hold harmless, indemnify, and defend Grantee and its members, directors, officers, employees, agents, and contractors and the heirs, [personal representatives, successors, and assigns of each of them (collectively "Indemnified Parties") from and against all liabilities, penalties, costs, losses, damages,

expenses, causes of action, claims, demands, or judgments, including, without limitation, reasonable attorneys' fees, arising from, or in any way connected with: (1) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, regardless of cause, unless due solely to the negligence of any of the Indemnified Parties; (2) the obligations specified in paragraphs 2 and 5; and (3) the existence or the administration of this Easement. 27

13. Extinguishment. If circumstances arise in the future such as render the purpose of this Easement impossible to accomplish, this Easement can only be terminated or extinguished, whether in whole or in part, by judicial proceeding under authority of ECL Section 49-0307 in a court of competent jurisdiction, and the amount of the proceeds to which Grantee shall be entitled, after the satisfaction of prior claims, from any sale, exchange, or involuntary conversion of all or any portion of the Property subsequent to such termination or extinguishment, shall be determined, unless otherwise provided by [state] law at the time, in accordance with paragraph 13.1. Grantee shall notify the Buffalo District Corps of Engineers of any such court-approved decision within 30 days of that decision. The Grantee shall propose, in writing to the Buffalo District Corps of Engineers and shall use all proceeds in a manner consistent with the conservation purposes of its mission . 28

13.1 Proceeds. The Easement constitutes a real property interest immediately vested in Grantee, which, for purposes of paragraph 13, the parties stipulate to have a fair market value determined by multiplying the fair market value of the Property unencumbered by the Easement (minus any increase in value after the date of this grant attributable to improvements) by the ratio of the value of the Easement at the time of this grant to be the value of the Property, without deduction for the value of the Easement, at the time of this grant. For the purposes of this paragraph, the ratio of the value of the Easement to the value of the Property unencumbered by the Easement shall remain constant. 29

13.2 Condemnation. If the Easement is taken, in whole by the exercise of the power of eminent domain, Grantee shall be entitled to compensation in accordance with applicable law. Grantee shall apply proceeds of the action of eminent domain to the purchase of additional property that meets the purpose of this Easement. Grantee shall notify and coordinate such actions with the Buffalo District Corps of Engineers within 30 days of the condemnation. Once the Buffalo District Corps of Engineers has approved the purchase of suitable easements, Grantee shall complete the new grant within \_\_\_\_ days of receipt of the approval. 30

14. Assignment. This Easement is Transferable, but Grantee may assign its rights and obligations under this Easement only but only to a Grantee qualified under ECL Section 49-0305.3 that is approved by Buffalo District Corps of Engineers for this grant. As a condition of such transfer, Grantee shall require that the conservation purposes that this grant is intended to advance continue to be carried out. Assignments



shall be accomplished by amendment of this Conservation Easement in accordance with paragraph 20. 31

15. Subsequent Transfers. Grantors agree to incorporate the terms of this Easement in any deed or other legal instrument by which they divest themselves of any interest in all or a portion of the Property, including without limitation, a leasehold interest. Grantors further agree to give written notice to Grantee of the transfer of any interest at least \_\_\_\_\_ days prior to the date of such transfer. The failure of Grantors to perform any act required by this paragraph shall not impair the validity of this Easement or limit its enforceability in any way. 32

16. Estoppel Certificates. Upon request by Grantors, Grantee shall within \_\_\_\_\_ days execute and deliver to grantors any document, including an estoppel certificate, which certifies the Grantors' compliance with any obligation of Grantors contained in this Easement and otherwise evidences the status of this Easement as requested by Grantors. 33

17. Failure of Grantee. If at any time the Grantee is unable or fails to enforce this Conservation Easement, or if the Grantee ceases to be a Grantee qualified under ECL Section 49-0305, and if within a reasonable period of time after the occurrence of one of these events the Grantee fails to make an assignment pursuant to paragraph 13, then the Grantee's interest shall become vested in another grantee qualified in accordance with an appropriate (*e.g., cy pres*) proceeding, to be brought by the Grantor in a court of competent jurisdiction.

18. Recording. The Grantor shall have this Conservation Easement duly recorded and indexed as such in the Office of the County Clerk of \_\_\_\_\_ County, New York, as described in ECL Section 49-0305.4. Upon recording, the Grantor shall forward a copy of this Conservation Easement as recorded to the Grantee, to the Corps of Engineers and, as described in ECL Section 49-0305.4, the New York Department of Environmental Conservation. The Grantor's recording and transmission to the Grantee, the Corps of Engineers and the Department of Environmental Conservation shall take place prior to Grantor's commencing work as authorized by the Permit.

19. Subsequent Transfer. This Conservation Easement shall be perpetual and run with the land and shall be binding upon all future owners of any interest in the Protected Property. The conveyance of any portion of or any interest in the Protected Property, by sale, exchange, devise or gift, shall be made by an instrument which expressly provides that the interest thereby conveyed is subject to this Conservation Easement, without modification or amendment of the terms of this Easement, and such instrument shall expressly incorporate this Conservation Easement by reference, specifically setting forth the date, office, liber and page of the recording of this Conservation Easement. The failure of any such instrument to comply with the provisions hereof shall not affect the validity or enforceability of this Conservation Easement, nor shall such failure affect the Grantee's or the Corps of Engineers' rights hereunder. No less than thirty (30) days prior to conveyance of any interest in the Protected Property,

Grantor (to include any successor Grantor) shall notify the Grantee and the Corps of Engineers of such intended conveyance, providing the full names and mailing addresses of all Grantees, and the individual principals thereof, under any such conveyance.

20. No Merger of Interests. In the event the same person or entity ever simultaneously holds an interest in the Protected Property under this Conservation Easement, and holds the underlying title in fee, the parties intend that the separate interests shall not merge.

21. Amendment. This Conservation Easement may be amended in accordance with ECL Section 49-0307, but only in a writing signed by the Grantor and the Grantee, or their successors or assigns, and approved in writing by the Corps of Engineers, its successors or assigns; provided such amendment does not affect the qualification of this Conservation Easement or the status of the Grantee under ECL Section 49-0305 or any other applicable law; and provided such amendment is consistent with the conservation purposes of this grant and its perpetual duration. Any amendment to this Conservation Easement shall be recorded and provided to the Grantee, the Corps of Engineers and the New York State Department of Environmental Conservation, in the manner set forth in paragraph 24.

22. Warranties by Grantor. Grantor warrants that it owns the Protected Property in fee simple, and that Grantor owns all interests in the Protected Property that may be impaired by the granting of this Conservation Easement. Grantor further warrants that there are no outstanding mortgages, tax liens, encumbrances, or other interests in the Protected Property that have not been expressly subordinated to this Conservation Easement. Grantor further warrants that no structures of any kind, to include roads, trails or walkways, and no violations of the restrictions of this Conservation Easement exist on the Protected Property at the time of execution hereof. Grantor further warrants that the Grantee shall have the use of and enjoy all the benefits derived from and arising out of this Conservation Easement.

23. At the time conveyance of this Easement, the Property is subject to the mortgage identified in Exhibit \_\_\_\_ attached hereto and incorporated by this reference, the Grantee of which has agreed by separate instrument, will be recorded immediately after this Easement, to subordinate its rights in the Property to this Easement to the extent necessary to permit the Grantee to enforce the purpose of the Easement in perpetuity and to prevent any modification or extinguishment of this Easement by the exercise of any rights of the mortgage Grantee. The priority of the existing mortgage with respect to any valid claim on the part of the existing mortgage Grantee to the proceeds of any sale, condemnation proceedings, or insurance or to the leases, rents, and profits of the Property shall not be affected thereby, and any lien that may be created by Grantee's exercise of any of its rights under this Easement shall be junior to the existing mortgage. Upon request, Grantee agrees to subordinate its rights under this Easement to the rights of any future mortgage Grantees or beneficiaries of deeds of trust to the proceeds, leases, rents and profits described above and likewise to subordinate its rights under any lien and to execute any documents required with respect to such subordination, except that the

priority of lien created by Grantee’s exercise of its rights under this easement prior to the creation of a mortgage or deed of trust shall not be affected thereby, nor shall the Easement be subordinated in any other respect. 43

24. No Gift or Dedication. Nothing contained in this Conservation Easement shall be deemed to be a gift for dedication of all or any part of either the Permitted Property or the Protected Property to the public, or for public use.

25. Notices. Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and served personally or sent by first class mail, postage prepaid, addressed as follows:

To  
Grantor(s): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

To Grantee:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

To the Corps of Engineers:  
U.S. Army Corps of Engineers, Buffalo District  
ATTN: Regulatory Branch  
1776 Niagara Street  
Buffalo, NY 14207

or to such other address as either party from time to time shall designate by written notice to the other. 34

26. General Provisions.

(a) Controlling Law. The interpretation and performance of this Easement shall be governed by the laws of the State of \_\_\_\_\_.

(b) Liberal Construction. Any general rule of construction to the contrary notwithstanding, this Easement shall be liberally construed in favor of the grant to

effect the purpose of this Easement, of the application and the policy and the purpose of \_\_\_[state statute]\_\_\_. If any provision in this instrument is found to be ambiguous and interpretation consistent with the purpose of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If any provision of this Easement, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of this Easement, or the application of such provisions to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

(d) Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to the Easement and supercedes all prior discussions, negotiations, understandings, or agreements relating to the Easement, all of which are merged herein. No alteration or variation shall be valid or binding unless contained in an amendment that complies with paragraph \_\_\_\_\_ (see supplementary provision re: Amendment).

(e) No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor’s title in any respect.

(f) Joint Obligation. The obligations imposed by this Easement upon the Grantors shall be joint and several.

(g) Termination of Rights and Obligations. A party’s rights and obligations under this Easement terminate upon transfer of the party’s interest in the Easement or Property, except that liability for acts or omissions occurring prior to transfer shall survive transfer.

(h) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not part of this instrument and shall have no effect upon construction or interpretation.

(i) Counterparts. The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it.

TO HAVE AND TO HOLD unto Grantee, its successors, and assigns forever. 36

INTO WITNESS WHEREOF Grantors and Grantee have set their hands on the day and year first above written.

\_\_\_\_\_

Grantor(s)

\_\_\_\_\_

Grantee

By \_\_\_\_\_  
Its \_\_\_\_\_ [Official  
Capacity] \_\_\_\_\_

**Execution by Mortgagee**  
For Purposes of Paragraph 22 Only:

\_\_\_\_\_  
**By:** \_\_\_\_\_  
Name:  
Title: 38

STATE OF NEW YORK )) ss.:  
COUNTY OF )  
On the day of in the year 200\_\_ before me, the undersigned, a notary public in  
and for said state, personally appeared the Grantor \_\_\_\_\_, personally  
known to  
me or proved to me on the basis of satisfactory evidence to be the individual whose name  
is  
subscribed to the within instrument and acknowledged to me that he executed the same in  
his  
capacity, and that by his signature on the instrument, the individual, or the person upon  
behalf of  
which the individual acted, executed this instrument.  
Notary Public

STATE OF NEW YORK )) ss.:  
COUNTY OF )  
On the day of in the year 200\_\_\_ before me, the undersigned,  
a notary public in and for said state, personally appeared the Grantee  
\_\_\_\_\_,  
personally known to me or proved to me on the basis of satisfactory evidence to be the  
individual  
whose name is subscribed to the within instrument and acknowledged to me that he  
executed the  
same in his capacity, and that by his signature on the instrument, the individual, or the  
person  
upon behalf of which the individual acted, executed this instrument.  
Notary Public

STATE OF NEW YORK )) ss.:

COUNTY OF )

On the day of in the year 200\_\_\_ before me, the undersigned,  
a notary public in and for said state, personally appeared the Mortgagee

\_\_\_\_\_

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personally known to me or proved to me on the basis of satisfactory evidence to be the individual

whose name is subscribed to the within instrument and acknowledged to me that he executed the

same in his capacity, and that by his signature on the instrument, the individual, or the person

upon behalf of which the individual acted, executed this instrument.

Notary Public

### SCHEDULE OF EXHIBITS

- A. Legal Description of Property Subject to Easement
- B. Site Descriptions, Map
- C. Identification of Prior Mortgage

### Supplementary Provisions 39

5.2 Arbitration. 40

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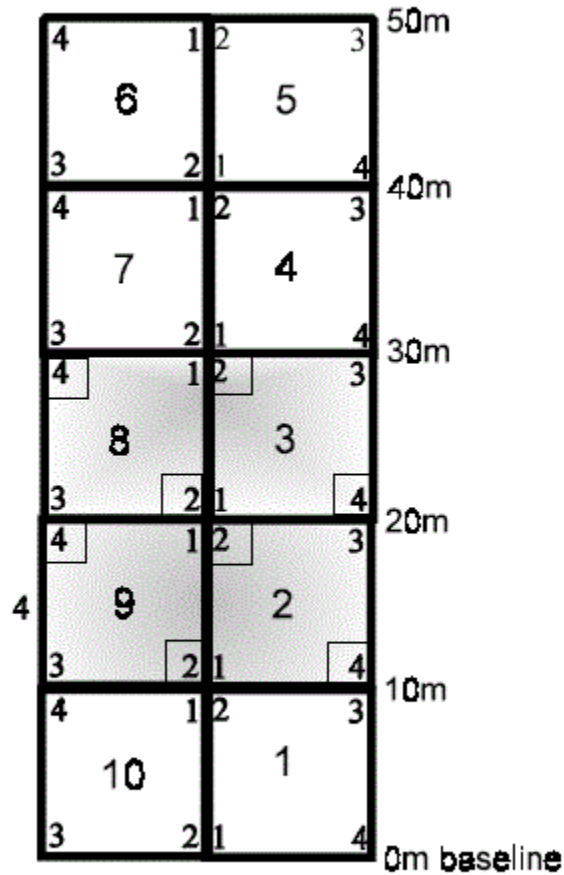
10.1 Executory Limitation. If Grantee shall cease to exist or be qualified organization under Section 170(h) of the Internal Revenue Code, as amended, or has been determined by the Buffalo District Corps of Engineers to not hold firm the interest in protecting of water resources regulated under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, or to be authorized to acquire and hold conservation easements under state statute, and a prior assignment is not made pursuant to Paragraph 10, then the Grantee's rights and obligations under this Easement shall be immediately vested in \_\_\_[designated back-up grantee]\_\_\_. If \_\_\_[designated back-up grantee]\_\_\_ is no longer in existence at the time the rights and obligations under this Easement would otherwise vest in it, or if \_\_\_[designated back-up grantee]\_\_\_ is not qualified or authorized to hold conservation easements as provided for an assignment pursuant to paragraph 14, or if it shall refuse such rights and obligations, then the rights and obligations under this Easement shall vest in such organization as a court of competent jurisdiction shall direct pursuant to the applicable state law and with due regard to the requirements for an assignment pursuant to paragraph 14. 42



**APPENDIX H**  
**Monitoring Protocol**



Vegetation monitoring will occur in focused 20m x 50m vegetation plots (Fig. 1) and random 10m x 10m vegetation plots. Vegetation data will be collected to calculate the Vegetation Index of Biotic Integrity – Floristic Quality (VIBI-FQ).



**Figure 1.** Standard fixed 20m x 50m vegetation sampling plot.