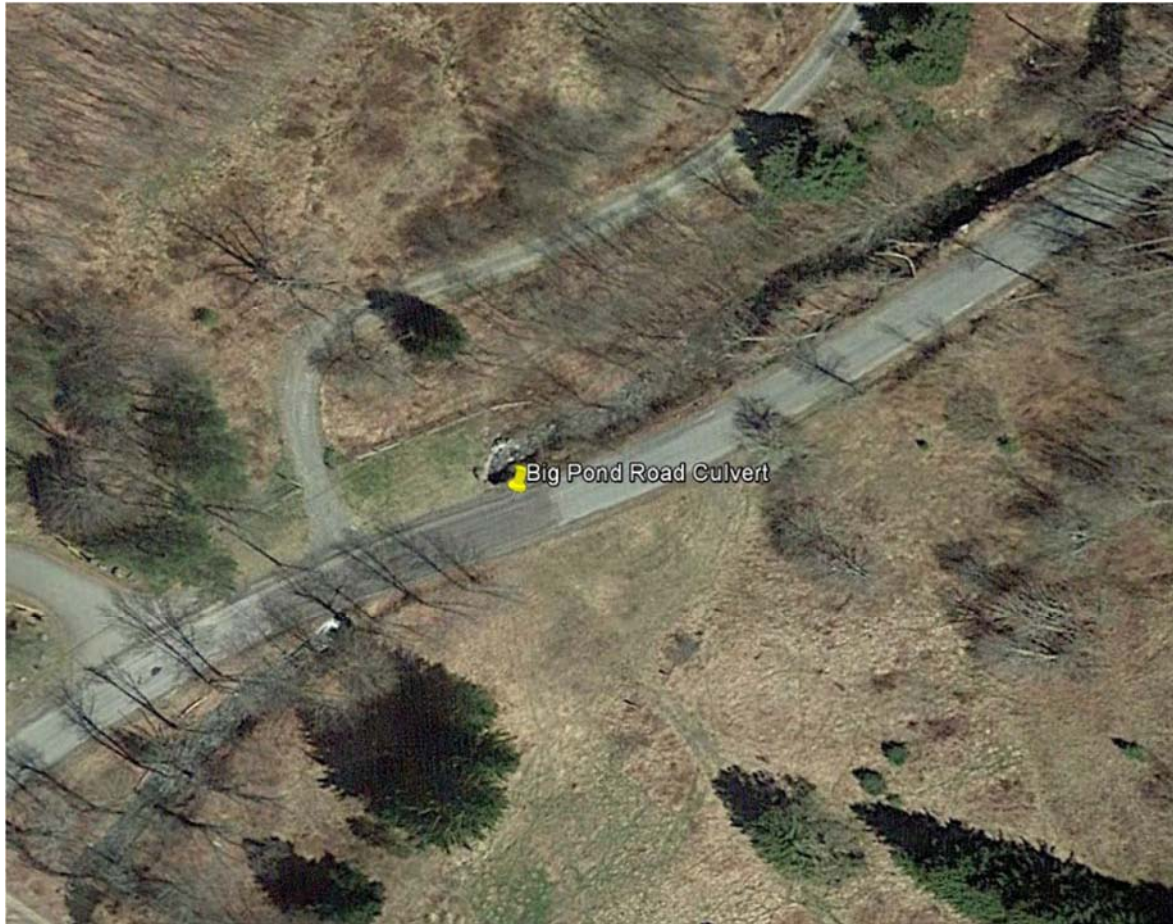


BIG POND ROAD CULVERT REPLACEMENT HARDENBURGH, NY

Environmental Review Record



Prepared by LiRo Engineering, Inc.
3 Aerial Way
Syosset, NY 11791

**New York State Homes and Community Renewal
US Department of Housing and Urban Development**
38-40 State Street
Albany, NY 12207

August 29, 2018

BIG POND ROAD CULVERT REPLACEMENT

Environmental Assessment

August 29, 2018

Project Name: Big Pond Road Culverts Replacement

Project Location: Vicinity of Big Pond & Little Pond Roads, Town of Hardenburgh,
Ulster County, NY 12406

Federal Agency: U.S. Department of Housing and Urban Development
Responsible Entity: New York State Homes and Community Renewal

**Responsible Agency's
Certifying Officer:** Lori A. Shirley, Certifying Officer
38-40 State Street, Albany, NY 12207
(580) 474-0755, LoriShirley@nyshcr.org

Project Sponsor: Town of Hardenburgh, 51 Rider Hallow Road, Arkville, New York
12406

Primary Contact: Jerry A. Fairbairn, Supervisor
(845) 586-4108, jaf.hardenburghsup@gmail.com

Project NEPA Classification: 24 CFR 58.36 (Environmental Assessment)

Environmental Finding:

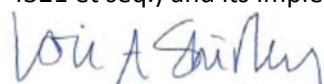
☒ Finding of No Significant Impact - The project will not result in a significant impact on the quality of the human environment.

☐ Finding of Significant Impact - The project may significantly affect the quality of the human environment.

Certification

The undersigned hereby certifies that New York State Homes and Community Renewal has conducted an environmental review of the project identified above and prepared the attached environmental review record in compliance with all applicable provisions of the National Environmental Policy Act of 1969, as amended (42 USC Sec. 4321 et seq.) and its implementing regulations at 24 CFR Part 58.

Signature



Lori A. Shirley, Director and Certifying Officer, Bureau of
Environmental Review and Assessment, GOSR

Environmental Review Prepared By: Consultant: LiRo Engineering Inc.
Address: 3 Aerial Way, Syosset, NY 11791

CERTIFICATION OF NEPA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activity(ies) proposed in its 2017 NYS CDBG-DR project, Big Pond Road Culvert Replacement are:

Check the applicable classification.

- ☐ Exempt as defined in 24 CFR 58.34 (a).
- ☐ Categorically Excluded as defined in 24 CFR 58.35(b).
- ☐ Categorically Excluded as defined in 24 CFR 58.35(a) and no activities are affected by federal environmental statutes and executive orders [i.e., exempt under 58.34(a)(12)].
- ☐ Categorically Excluded as defined in 24 CFR 58.35(a) and some activities are affected by federal environmental statutes and executive orders.
- ☒ "Other" neither exempt (24 CFR 58.34(a)) nor categorically excluded (24 CFR 58.35).
- ☒ Part or all of the project is located in an area identified as a floodplain or wetland. For projects located in a floodplain or wetland, evidence of compliance with Executive Orders 11988 and/or 11990 is required.

For activities excluding those classified as "Other," attached is the appropriate Classification Checklist (Exhibit 2-4) that identifies each activity and the corresponding citation.



Signature of Certifying Officer

Lori A. Shirley

Print Name

August 29, 2018

Date

Certifying Officer,
Governor's Office of Storm Water
Recovery

Title

CERTIFICATION OF SEQRA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activity(ies) proposed in its 2017 NYS CDBG-DR project, Big Pond Culvert Replacement are:

Check the applicable classification:

- ☐ Type I Action (6NYCRR Section 617.4)
- ☐ Type II Action (6NYCRR Section 617.5)
- ☒ Unlisted Action (not Type I or Type II Action)

Check if applicable:

- ☐ Environmental Impact Statement (EIS) Prepared
- ☐ Draft EIS
- ☐ Final EIS



Signature of Certifying Officer

Lori A. Shirley

Print Name

August 29, 2018

Date

Certifying Officer,
Governor's Office of Storm Water
Recovery

Title

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:

The project is located 0.25-mile northeast of the intersection of Big Pond Road and Beaverkill Road in the Town of Hardenburgh, New York and involves the removal and replacement of an undersized Town road culvert on Big Pond Road. The private driveway culvert immediately downstream of the Big Pond Road culvert will also be removed and replaced. The project will replace two 4' high x 6' wide corrugated metal arched (CMA) culverts with an embedded 5' high x 8' wide x 84' long precast concrete box culvert on Big Pond Road and an embedded 5' high x 8' wide x 24' long precast concrete box culvert on the private driveway. The culverts will include wing-walls or stacked stone headwalls.

The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project will increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route for residents of the area to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The project includes the following elements:

- Install erosion and sediment control measures,
- Install stream protection measures,
- Construct temporary bypass road,
- Remove existing Big Pond Road culvert and install temporary stream bypass piping
- Install replacement culvert,
- Install road embankment stabilization east of the culvert site,
- Reconstruct Big Pond Road,
- Repeat sequence for the private driveway culvert downstream

The construction will require stream disturbance, the clearing and grubbing of the construction area and tree removal. The right-of-way survey at the Big Pond Road culvert site shows that this is a "road by use" with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements will be obtained for any culvert replacement construction work located outside of the public right-of-way. The easement areas have been identified and the preparation for obtaining the easements is underway.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

During Hurricane Irene and Tropical Storm Lee, nearly 11 inches of rain fell in Hardenburgh. This caused excessive stormwater from an unnamed stream that commences at Big Pond and flows into Beaverkill to overflow the existing culvert located at the intersection of Big Pond and Little Pond Roads. After damaging protective measures at the culvert opening, stormwater eroded and undermined the road's top and base surfaces, and washed part of the road downstream. Damage to the road resulted in the isolation and stranding of residents during and following the storms.

The section of Hardenburgh served by Big Pond Road is remote and not easily served by the Town's emergency services during flooding events. During and following Hurricane Irene and Tropical Storm Lee, the closure of area roads greatly hindered the Town's ability to render assistance to residents isolated or stranded by stormwater and damages caused by the storms. The Town employed alternate methods to reach storm victims, including use of all-terrain vehicles and even horses. Given the Town's

extremely mountainous terrain, this resulted in residents being isolated for several days following the storm. The objective of this project will be to maintain a crucial evacuation route and increase safety for vehicular traffic and emergency vehicles during future storm events by increasing the size of the culvert at this location to allow for increased water capacity caused by excessive rain events.

Existing Conditions and Trends [24 CFR 58.40(a)]:

Big Pond Road is in the western part of Ulster County in the Town of Hardenburgh. Big Pond Road is a twenty feet wide, two-lane Town roadway that becomes Barkaboom Road in Delaware County (to the north).

The project will replace two 4' high by 6' wide corrugated metal arched (CMA) culverts with embedded 5' high by 8' wide precast concrete box culverts with wing-walls or stacked stone headwalls. During large rain events the existing culverts do not have adequate hydraulic capacity to convey the unnamed stream, causing the stream to over-top its embankments and resulting in the closure of Big Pond Road and repeated damage to the roadway.

The section of Hardenburgh served by Big Pond Road is remote and not easily served by the Town's administration during flooding events. During and following Hurricane Irene and Tropical Storm Lee, the closure of area roads greatly hindered the Town's ability to render assistance to residents isolated or stranded by stormwater and damages caused by the storms. The town was forced to employ alternate methods to reach storm victims, including the use of all-terrain vehicles and even horses. Given the Town's extremely mountainous terrain, this resulted in residents being isolated for several days following the storm. The objective of this project will be to maintain a crucial evacuation route and increase safety for vehicular traffic and emergency vehicles during future storm events by increasing the size of the culvert at this location, which will allow for increased water capacity caused by excessive rain events.

Standard Conditions for All Projects

Any change to the approved scope of work will require re-evaluation by the GOSR Environmental Certifying Officer for compliance with the National Environmental Policy Act (NEPA) and other laws and Executive Orders.

This review does not address all federal, state, and local requirements. Acceptance of federal funding requires the recipient to comply with all federal state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding

Funding Information

Estimated Total HUD Funded Amount: Big Pong Road Culvert Replacement **\$731,688.00**

Estimated Total Project Cost

(HUD and non-HUD funds) [24 CFR 58.32(d)]:

Big Pong Road Culvert Replacement **\$731,688.00**

Compliance with 24 CFR 58.5 and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>Based on HUD guidance in Fact Sheet #D1, the National Plan of Integrated Airport Systems (NPIAS) was reviewed for civilian, commercial service airports near the Project sites, as projects within 2,500 feet of a civil airport require consultation with the appropriate civil airport operator.</p> <p>No civilian airports are within 2,500 feet of the Project site, and no military airports are within 15,000 feet of the Project site (see Appendix A, Figure 5). No further analysis required. (Source: Reference 7)</p>
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>According to the Coastal Barrier Resources System map (see Appendix A, Figure 6), the Project site is not located within a coastal barrier resources area. No further analysis required. (Source: Reference 16).</p>
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>Based on Flood Insurance Map 36111C0175F, the Project site area is within mapped Special Flood Hazard Area (SFHA) Zone A, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate (see Appendix A, Figure 7).</p> <p>The project will increase the ability of the flood plain to resist damage due to storm events and decrease the amount of damage caused by storm events to adjacent properties. The project will not increase the size of the flood plain and temporary disturbance of the flood plain will be mitigated by design and Federal and State permits. A five-step analysis for compliance with executive order 11988 has been completed (see Flood Plan Management section). (Source: Reference 2). No further analysis is required</p>

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>The Project site is not included in the most recent listing of nonattainment or maintenance areas for inhalable particulate matter (PM2.5) or the 2008, 8- hour ozone standard, as defined by the US Environmental Protection Agency (EPA) Green Book Nonattainment Areas for Criteria Pollutants.</p> <p>The Project will not require an NYS Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit. The Project activities will not substantively affect air quality.</p> <p>The Project is consistent with the New York State Implementation Plan (SIP) as it will not involve new sources.</p> <p>Air quality impacts will be short term and localized during construction, so no significant adverse impacts to air quality are anticipated.</p> <p>The implementation of standard best management practices (BMPs) will control dust and other emissions during construction. Air quality impacts will be short term and localized during construction, so no significant adverse impacts to air quality are anticipated. No further analysis is required. (Source: References 7, 14)</p>
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>The project site is not located within the boundaries of a New York State Coastal Zone (see Appendix A, Figure 8). No further analysis is required. (Source: Reference 10)</p>
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<p>Based on review of NEPA Assist and the NYSDEC Environmental Spills, Site Remediation and Bulk Storage databases there are no known hazardous materials, contaminants, toxic chemicals, gases, or radioactive substances that could affect health and safety within the project area.</p> <p>The proposed project will not result in any significant adverse impacts related to toxic, hazardous, or radioactive materials.</p> <p>No petroleum, chemical or major oil bulk storage facilities were identified within one mile of the Project area in a search of the NYSDEC Bulk Storage Program Database.</p> <p>No remediation sites were identified within one mile of any of the Project area in a search of the NYSDEC Environmental Site Remediation Database, containing records of the sites being addressed under one of NYSDEC's remediation programs (State Superfund, Brownfield Cleanup, Environmental Restoration and Voluntary Cleanup, the Registry of Inactive Hazardous Waste Disposal Sites, and Institutional and Engineering Controls).</p>

		<p>EPA's NEPA assist mapping tool identified zero RCRA waste generators within one mile of the Project and one no further action remediation site from New York Department of Environmental Conservation.</p> <p>The Project would not result in the exposure of people or sensitive environmental resources to the facilities identified in these databases.</p> <p>No further analysis is required. (Source: References 22, 23).</p>
<p>Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>On February 6, 2018, GOSR initiated consultation with the NYSDEC Natural Heritage Program (NHP) to identify the potential presence of rare, threatened or endangered species in the project area. On February 9, 2018, NHP responded that two NYS endangered, threatened or rare plants may be located within the project site: Northern Monkshood (<i>Aconitum noveboracense</i>) and Jacob's Ladder (<i>Polemonium vanbruntiae</i>).</p> <p>On May24, 2018 GOSR submitted a consultation letter to the USFWS regarding the potential impacts of the project activities on endangered and threatened species. The letter included the USFWS IPaC Trust Resource Report for the Project site, which lists one mammal, the Northern Long-eared Bat (<i>Myotis septentrionalis</i>) as a threatened species, one flowering plant, Northern Wild Monkshood (<i>Aconitum noveboracense</i>) as a threatened species and 15 species of migratory birds. According to the IPaC Report, there is no critical habitat within the project area</p> <p>In the consultation letter, GOSR determined that the project may affect the Northern Long-eared bat (NLEB), but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule. GOSR also determined that the project may affect Northern Wild Monkshood, and committed to conducting a field survey in July, during the plant's flowering period, to determine whether it is present at the project location.</p> <p>On July 26, 2018, environmental scientists conducted a plant survey at the project site to determine the presence or absence of Northern Wild Monkshood and Jacob's Ladder. It should be noted that the water was running high due to a recent storm event. No confirmed or potential individual plants of either species were observed with the proposed limit of disturbance or within the immediate vicinity of the proposed project. The survey report was provided to John Wiley, Jr., a Fish and Wildlife Biologist at USFWS by email on August 1, 2018. On August 2, 2018, Mr. Wiley conducted a follow up survey and confirmed the absence of any Northern Wild Monkshood at lower water conditions. Based on the negative survey data, GOSR determined that the proposed project will have no effect on Northern Wild Monkshood and submitted a letter to USFWS on August 7, 2018 documenting</p>

		the determination. On August 13, 2018, USFWS submitted an Acknowledgment of GOSR's "no effect" determination. (See Appendix B). (Source: References 9 and 15)
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The Project does not involve explosive or flammable operations. The Project does not constitute a HUD- funded hazardous facility; therefore, 24 CFR part 51 Subpart C does not apply. No further analysis is required.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Based on the New York State Department of Agriculture and Markets Agricultural District maps, the proposed project is not located within any Agricultural Districts. No further analysis is required. (Source: Reference 5)
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	The Project site is within mapped Special Flood Hazard Area (SFHA) Zones, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (see Figure 7) A 5-step Floodplain Management Analysis under Executive Order 11988 was conducted for the project and is provided in Appendix C .
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800; Tribal notification for new ground disturbance.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Consultation with the New York State Historic Preservation Office (SHPO) in accordance with Section 106 of the National Historic Preservation Act of 1966 was initiated on February 6, 2018. The SHPO provided its finding in a letter dated February 15, 2018, determining that no historic properties would be affected by the proposed Project. (See Appendix D , SHPO Correspondence) Representatives of the Delaware Tribe of Indians, the Mohawk Nation, the Saint Regis Mohawk Tribe, the Stockbridge-Munsee Community Band of Mohicans, and the Delaware Nation were sent consultation letters on February 16, 2018. Responses were received from the Stockbridge-Munsee Community (on February 20, 2018) finding no concerns and from Delaware Nation (March 13, 2018) concurring with the proposed plan. No responses were received from the Mohawk Nation, the Saint Regis Mohawk Tribe or the Delaware Tribe. (See Appendix D , THPO Correspondence) (Source: References 11 and 12). No further analysis is required
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The Project is not a noise sensitive use and the policies of 24 CFR 51.101(a)(3) do not apply to any action or emergency assistance under disaster assistance provisions or appropriations that are provided to save lives and protect public health and safety. The Project would not introduce any new or rehabilitate any existing noise-sensitive uses. No further analysis required.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The project site is not located in a Sole Source Aquifer (see Appendix A Figure 11). No further analysis required. (Source: Reference 1)

Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	The Project site is located within unnamed tributary of the Beaver Kill a class C(T) stream with NYSEC index number D 70-20-45a. The Project will occur in a Federal designated riverine wetland (see Appendix A, Figure 10). A 5-step Wetlands Protection analysis under Executive Order 11990 was conducted for the project (see Appendix C). Federal and State permits will be required for the stream disturbance during construction. A Joint Application has been submitted. (Source: References 7, 14, and 18). No further analysis is required
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Not applicable. The project site is not located within the vicinity of any designated wild, scenic, or recreational rivers. No further analysis is required. (Source: Reference 4)
ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	The project site is not located within a potential environmental justice area identified by the New York State Department of Environmental Conservation (see Appendix A Figure 9), (Source: Reference 6). No further analysis is required.
CLIMATE CHANGE		
Climate Change Executive Order 13653	Executive Order 13653 has been revoked by Executive Order 13783. No evaluation required.	

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.

- (1) Minor beneficial impact
- (2) No impact anticipated
- (3) Minor Adverse Impact – May require mitigation
- (4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	The current design replacing and improving the existing culverts and roadway does not change any existing plans, land use and zoning requirements, or scale and urban designs. No impacts are evident
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	1	By increasing the size of the culverts and adding bank protection the project will increase slope stability, reduce soil erosion, increase drainage and better control storm water run off. The project will have beneficial impacts to the community.
Hazards and Nuisances including Site Safety and Noise	2	Public safety will be increased by allowing Big Pond Road to better withstand storm surges. No increase in hazards, nuisances or noises area anticipated after construction. Site safety, dust and noise will be mitigated during construction. No impacts are evident after construction.
Energy Consumption	2	No energy will be used once construction is complete. No impacts evident.
SOCIOECONOMIC		
Employment and Income Patterns	2	No employment or income patterns will be impacted by this project. As the project will only replace and upgrade existing culverts and Big Pond Road
Demographic Character Changes, Displacement	2	No demographic character changes or displacement will be caused by this project. As the project will only replace and upgrade existing culverts and Big Pond Road

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to educational or cultural facilities.
Commercial Facilities	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to educational or commercial facilities.
Health Care and Social Services	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to health care and social services.
Solid Waste Disposal / Recycling	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to solid waste disposal/recycling
Waste Water / Sanitary Sewers	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to waste water or sanitary sewers.
Water Supply	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to water supply.
Public Safety - Police, Fire and Emergency Medical	1	By increasing the size of the culverts, adding stream bank protection and roadway improvements, Big Pond Road has an increased chance of surviving storm events and will allow emergency vehicles to use the road to access the community. The project will have beneficial impacts on Public Safety
Parks, Open Space and Recreation	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to parks, open space and recreation.
Transportation and Accessibility	1	By increasing the size of the culverts, adding stream bank protection and roadway improvements, Big Pond Road has an increased chance of surviving storm events and will allow emergency vehicles to use the road to access the community. The project will have beneficial impacts on transportation and accessibility.
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to unique natural features or water resources.
Vegetation, Wildlife	2	This project replaces and upgrade existing culverts and Big Pond Road. Impacts vegetation and wildlife during construction will be of short and limited duration. No long term impact to vegetation and wildlife.
Other Factors	2	This project replaces and upgrade existing culverts and Big Pond Road. No impacts to other factors are evident..

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

1. Environmental Protection Agency – Region 2 Sole Source Aquifers
<http://www.epa.gov/region2/water/aquifer/index.html>
2. Federal Emergency Management Agency – Flood Map Center
<https://msc.fema.gov/portal>
3. Federal Emergency Management Agency Community Status Book Report – New York
<http://www.fema.gov/cis.NY.pdf>
4. National Wild and Scenic Rivers Systems
<http://www.rivers.gov/maps/new-york.php>
5. New York State Department of Agriculture and Markets
<http://www.agriculture.ny.gov/ap/agsservices/maps>
6. New York State Department of Environmental Conservation – County Maps Showing Potential Environmental Justice Areas (Ulster County)
http://www.dec.ny.gov/docs/permits_ej_operations_pdf/ulsterej.pdf
7. New York State Department of Environmental Conservation – EAF Mapper
<http://www.dec.ny.gov/eafmapper/>
8. New York State Department of Environmental Conservation – Division of Fish, Wildlife and Marine Resources
Letter dated February 6, 2018 to Nicholas Conrad
9. New York State Department of State Office of Planning and Development – NYS Coastal Boundary Map http://appext20.dos.ny.gov/coastal_map_public/map.aspx
10. New York State Office of Parks, Recreation and Historic Preservation, NYS Historic Preservation Office (SHPO)
11. New York State Office of Parks, Recreation and Historic Preservation - Cultural Resource Information System
<https://cris.parks.ny.gov>
12. United States Environmental Protection Agency NEPAssist Data Base
<https://nepassisttool.epa.gov/nepassist/nepamap.aspx>
13. United States Fish and Wildlife Service
Letters dated April 19, 2018 and May 25, 2018 and August 7, 2018 to Robyn A. Niver, Endangered Species Biologist
14. United States Fish and Wildlife Service – Coastal Barrier Resources System Mapper
<http://www.fws.gov/cbra/maps/mapper.html>
15. United States Fish and Wildlife Service – IPaC – Information, Planning, and Conservation System
<http://ecos.fws.gov/ipac>
16. United States Fish and Wildlife Service – National Wetlands Inventory – Wetland Mapper
<http://www.fws.gov/wetlands/Data/Mapper.html>
17. Town of Hardenburgh Bridge and Culvert Repair, Upgrade and Replacement CDBG-DR Pre-Application Report, Authorized by Jerry Fairbairn, November 22, 2014
18. Environmental Protection Agency (EPA), Greenbook:
https://www3.epa.gov/airquality/greenbook/anayo_ny.html
19. NYSDEC Spills Database,
<http://www.dec.ny.gov/cfm/externalapps/derexternal/index.cfm?pageid=2>

20. NYSDEC Remediation Database,
<http://www.dec.ny.gov/cfm/external/index.cfm?pageid=3>
21. *NY Rising Community Reconstruction (NYRCR) Plan for Ulster Communities*, March 2014
https://stormrecovery.ny.gov/sites/default/files/crp/community/documents/ulstercounty_nyrcr_plan.pdf
22. Environmental Protection Agency (EPA) NEPAAssist web page,
<https://www.epa.gov/nepa/nepassist>

List of Appendices

Appendix A - Figures

Appendix B - U.S. Fish and Wildlife Service Trust Resources List and NYSDEC Natural Heritage Program Determinations

Appendix C – Five Step Floodplain Management and Wetland Protection Analysis

Appendix D– New York State Historic Preservation Office and Tribal Historic Preservation Office

Appendix E- 100 Percent Design Plans

Additional Studies Performed:

SEQRA Review (Unlisted, Coordinated review) per Section 617.5.

Field Inspection (Date and completed by):

July 26, 2018- Plant survey completed by Shumaker Engineering and Land Surveying, LLC to determine the presence or absence of Northern Wild Monkshood and Jacob's Ladder. John Wiley, Jr., a Fish and Wildlife Biologist at USFWS by email on August 1, 2018.

August 2, 2018- follow up plant survey completed by John Wiley, Jr., Fish and Wildlife Biologist, USFWS

List of Permits Obtained or Required:

USACE Nationwide Permit 3
NYSDEC Article 15, Stream Disturbance
Clean Water Act Section 401, Water Quality Certification

Public Outreach [24 CFR 50.23 & 58.43]:

Initial project recommendations were generated by the Ulster NYRCR Planning Committee, which was comprised of residents, business owners and municipal representatives from the ten NYRCR Ulster Communities. The Committee met approximately every other week from September 2013 through March 2014. Materials were circulated to the Planning Committee before and after each meeting and also posted to the NYRCR website. The Planning Committee members also created Facebook pages, posted relevant materials to their municipal websites, held additional meetings within their communities, and attended municipal meetings to report on their NYRCR Plan progress.

Four public engagement meetings were held throughout the eight-month planning process. These meetings provided the opportunity for Ulster County residents to learn about the NYRCR planning process and provide input to help develop community-driven plans for a more resilient future. The format and venue of the Public Engagement Meetings varied, but generally included power point presentations, display boards and mapping, workgroups with maps and markers, survey sheets and comment boxes.

Cumulative Impact Analysis [24 CFR 58.32]:

Flooding impacts do not adhere to municipal jurisdictional boundaries. According to the NY Rising Community Reconstruction Plan for the Ulster Communities, several strategies were developed to concentrate the resiliency efforts toward resolving critical issues identified within the entire Ulster County region. One strategy listed was to repair, upgrade and protect existing infrastructure assets and critical facilities from flood damage to reduce their vulnerability. This is a culvert replacement project and, as such, cumulative environmental impacts of the project are not expected.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]:

Current stream crossing standards call for box and pipe culverts to be embedded into the streambed to reduce stream barriers and impediments to fish and wildlife. Box and round culverts should be embedded to at least twenty percent (20%) of the culvert height at the downstream invert and should only be used on streambeds with slopes less than three percent (3%). The slope of the Big Pond Road culvert is approximately one percent (1%) and therefore, use of a culvert is consistent with the stream crossing standards.

An initial culvert replacement evaluation was performed to assess different sizes and types of culverts including embedded round culverts, embedded four-sided box culverts and embedded arch structures and considered equivalent bridge structures. The initial evaluation found that a round or arch type structure would have to be at least eight feet (8') in diameter to convey the 100-year storm flows. The topography of the existing roadway at the Big Pond Road culvert crossing can only accommodate up to a six foot (6') tall drainage structure. A drainage structure taller than 6' would necessitate a road regrading plan which would exceed the funding available for this culvert replacement project. The remainder of the hydraulic analysis evaluated rectangular culvert drainage structures.

No Action Alternative [24 CFR 58.40(e)]:

During Hurricane Irene and Tropical Storm Lee, nearly 11 inches of rain fell in Hardenburgh. This caused excessive stormwater from an unnamed stream that commences at Big Pond and flows into Beaverkill to overflow the existing culvert located at the intersection of Big Pond and Little Pond Roads. After damaging protective measures at the culvert opening, stormwater eroded and undermined the road's top and base surfaces, and washed part of the road downstream. Damage to the road resulted in the isolation and stranding of residents during and following the storms. The No Action Alternative would result in further road damage and erosion, and threaten human health and safety if residents again become isolated or stranded during future storm events.

Summary of Findings and Conclusions:

Based upon the current project design and review of all data presented in the environmental review no adverse impacts to human health or the environment were found that could not be mitigated. Furthermore, the project will have long term benefits to the community by allow Big Pond Road to survive storm surges and mitigate flooding. In conclusion, the project will not result in a significant impact on the quality of the human environment.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure
Permit Requirements	<ul style="list-style-type: none">• USACE Nationwide Permit 3• NYSDEC Article 15 - Protection of Waters for to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified as "protected," which all four streams are.• CWA Section 401 Water Quality Certification• Time restriction may be required for protection of cold water trout fisheries (waters classified under Article 15 of the ECL with a "T" or "TS" designation), beginning October 1 and ending April 30.
Mitigation	<ul style="list-style-type: none">• Erosion and Sediment Control Plan• Stream Protection Plan

Standard Conditions for All Projects

Any change to the approved scope of work will require re-evaluation by the Certifying Officer for compliance with NEPA and other laws and Executive Orders.

This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.

Determination:

- ☒ **Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]
The project will not result in a significant impact on the quality of the human environment.
- ☐ **Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]
The project may significantly affect the quality of the human environment.



Preparer Signature

August 29, 2018

Date

Thomas A. Fralick PG

Senior Geologist

LiRo Engineers Inc.

Name/Title/Organization



Signature of Certifying Officer

August 29, 2018

Date

Certifying Environmental Officer

Governor's Office of Storm Recovery

Title

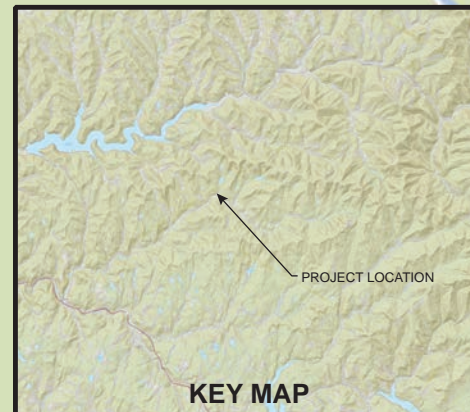
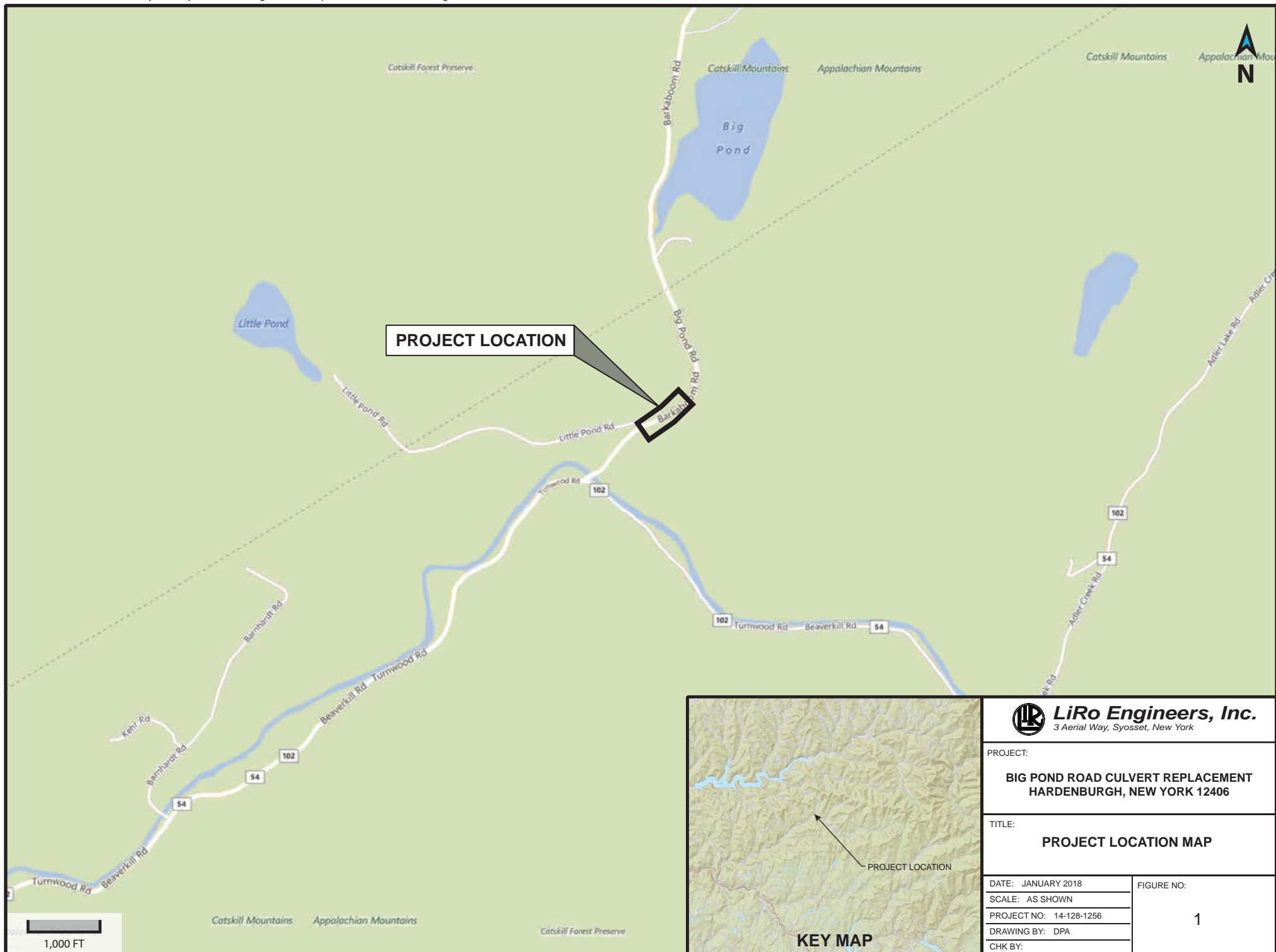
Lori A. Shirley

Print Name

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

Appendix A

Figures



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION MAP

DATE: JANUARY 2018

SCALE: AS SHOWN

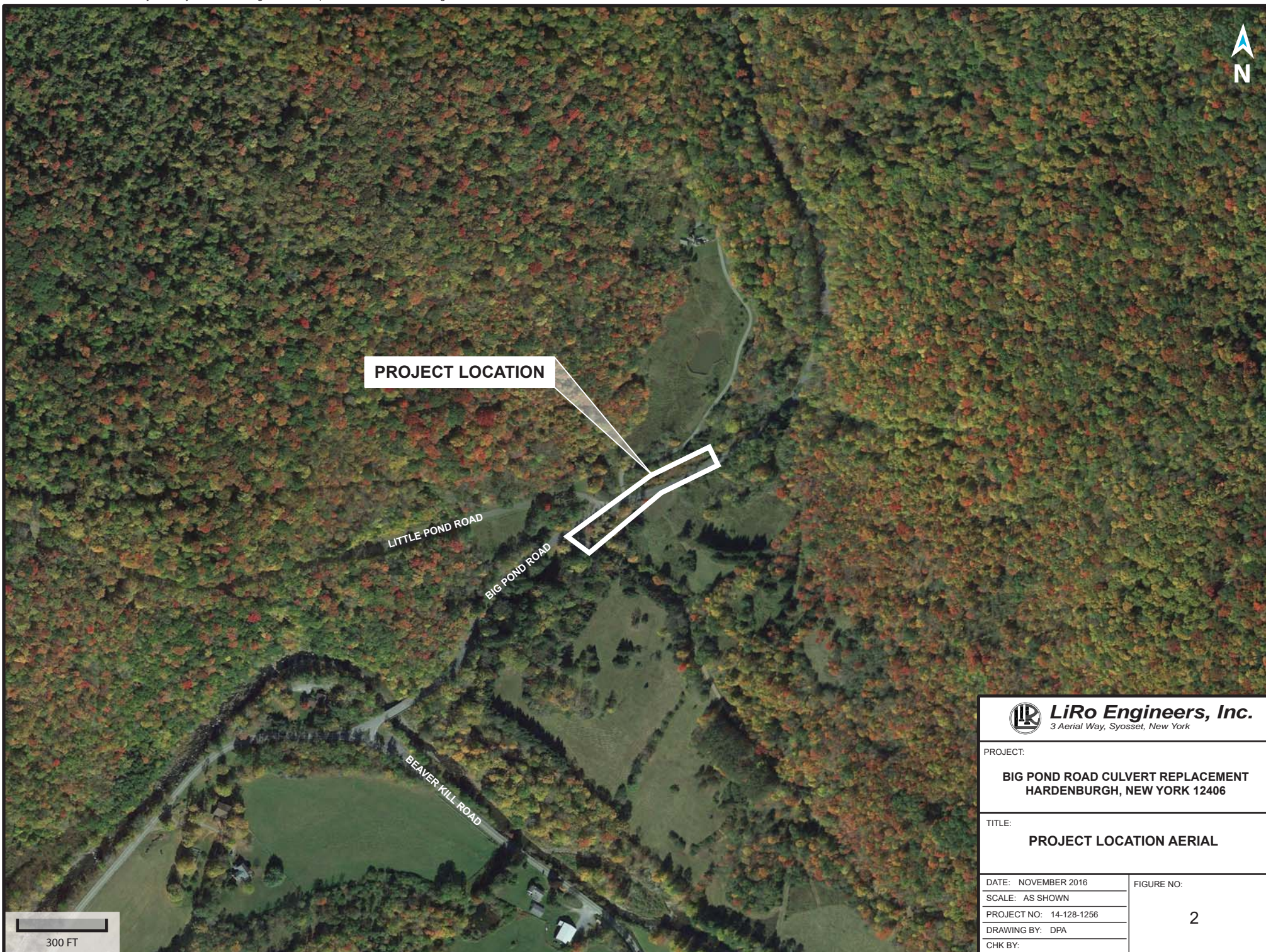
PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

1



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

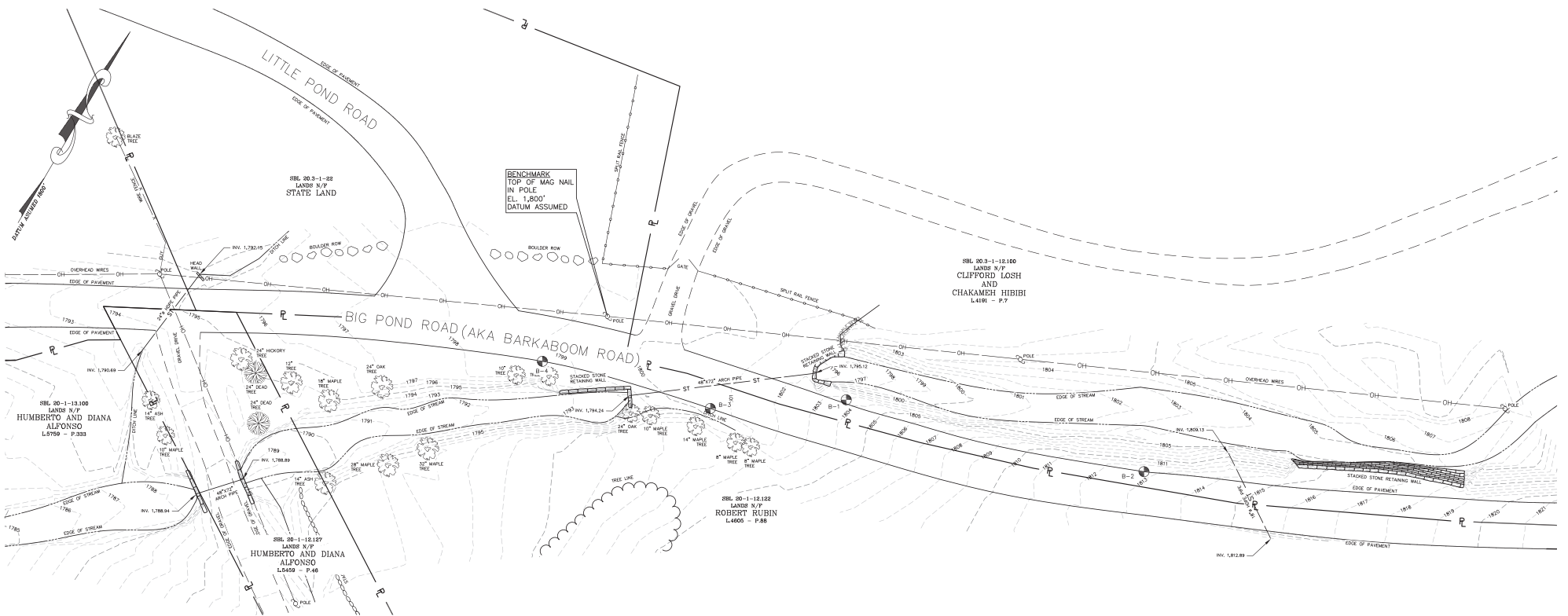
PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

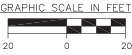
2



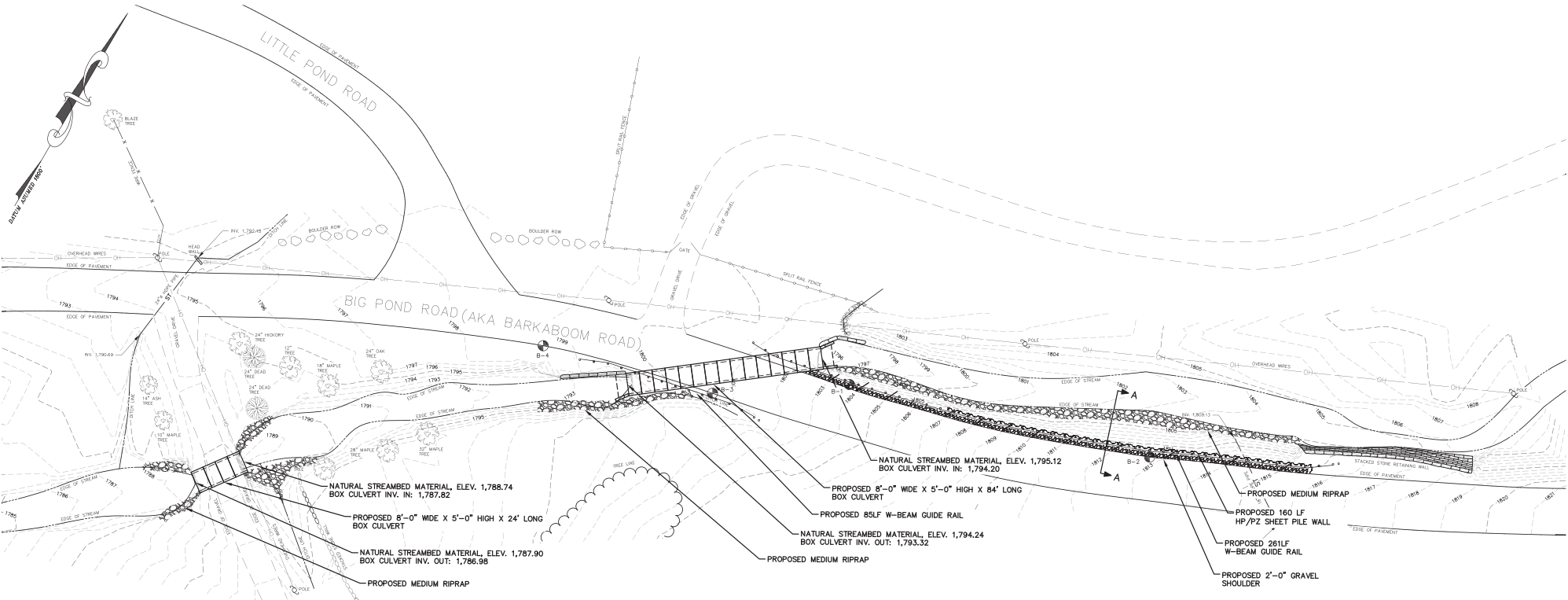
LEGEND

- | | | | |
|-------------|------------------|---|------------------------------|
| --- 50 --- | CONTOURS (MINOR) | ○ | UTILITY POLE |
| --- 52 --- | CONTOURS (MAJOR) | ● | SIGN |
| — P — | PROPERTY LINE | ○ | TREE |
| — | EDGE OF WATER | ○ | BORING |
| — x — x — | SPLIT RAIL FENCE | ○ | BOULDER |
| — OH — | WIRE FENCE | — | STACKED STONE RETAINING WALL |
| — | OVERHEAD WIRES | | |
| — | GUIDERAIL | | |
| ○ ○ ○ ○ ○ ○ | STACK STONE WALL | | |

SOURCE:
BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS
BIG POND ROAD CULVERT REPLACEMENT, CONTRACT NO. THA-181,
EXISTING CONDITIONS, DRAWING SHEET 2 OF 5, DATED SEPTEMBER 2017



PROJECT: BIG POND ROAD CULVERT REPLACEMENT HARDENBURGH, NEW YORK 12406	
TITLE: EXISTING CONDITIONS	
DATE: JANUARY 2018 SCALE: AS SHOWN PROJECT NO: 14-128-1256 DRAWING BY: DPA CHK BY:	FIGURE NO: 3



LEGEND

- | | | | |
|------------|------------------|--|------------------------------|
| --- 50 --- | CONTOURS (MINOR) | | UTILITY POLE |
| --- 52 --- | CONTOURS (MAJOR) | | SIGN |
| --- | PROPERTY LINE | | TREE |
| --- | EDGE OF WATER | | BORING |
| --- | SPLIT RAIL FENCE | | BOULDER |
| x x | WIRE FENCE | | STACKED STONE RETAINING WALL |
| OH | OVERHEAD WIRES | | |
| o | GUIDERAIL | | |
| oooo | STACK STONE WALL | | |

SOURCE:
BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS
BIG POND ROAD CULVERT REPLACEMENT, CONTRACT NO. THA-181,
SITE PLAN, DRAWING SHEET 4 OF 5, DATED SEPTEMBER 2017



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

**CULVERT AND ROAD
STABILIZATION PLAN**

DATE: JANUARY 2018

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

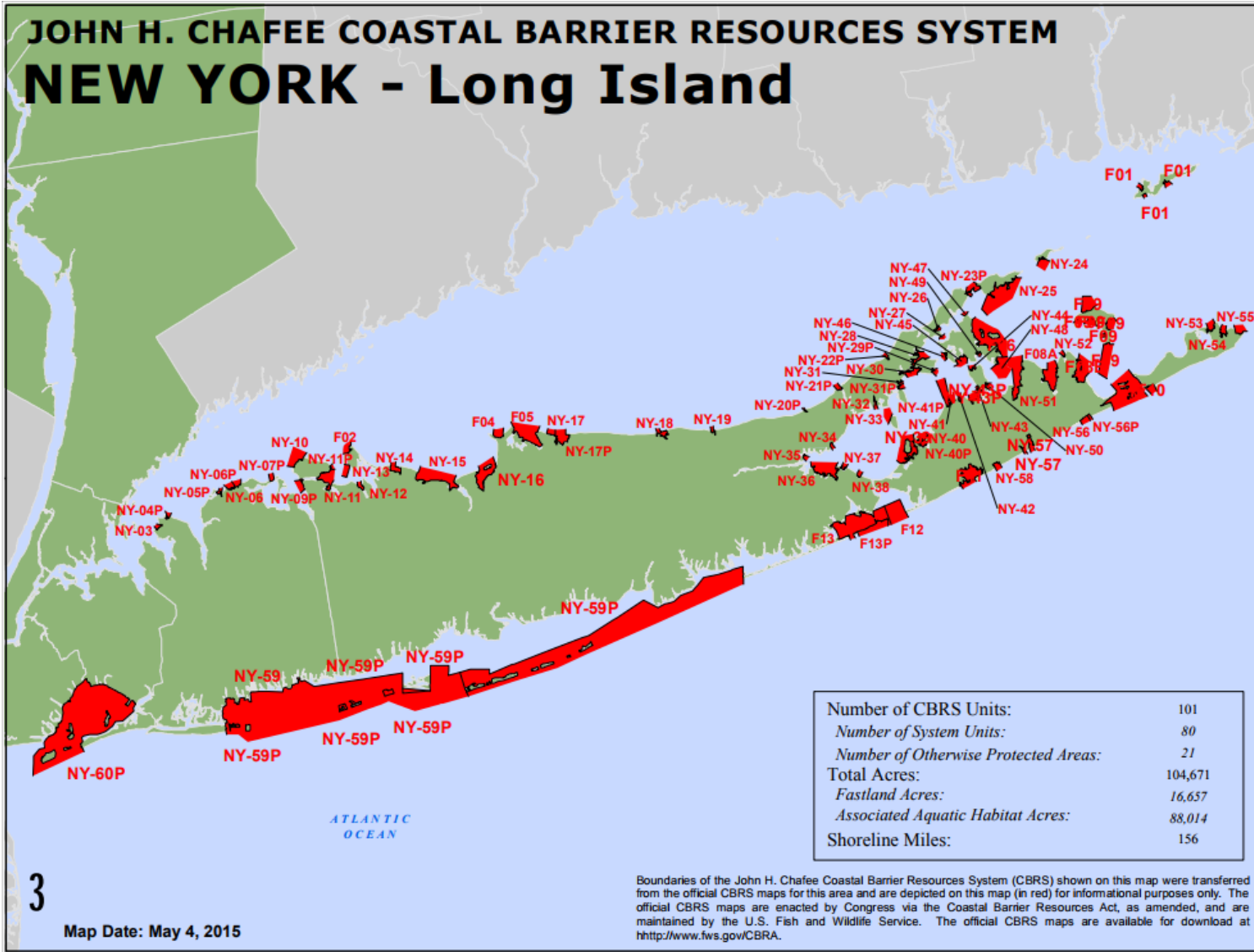
FIGURE NO:

4



BIG POND ROAD CULVERT REPLACEMENT Hardenburgh, NY 12406

JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM NEW YORK - Long Island



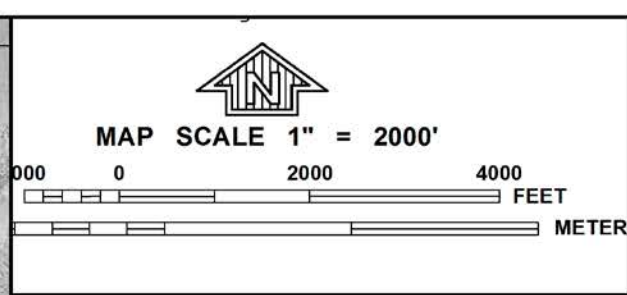
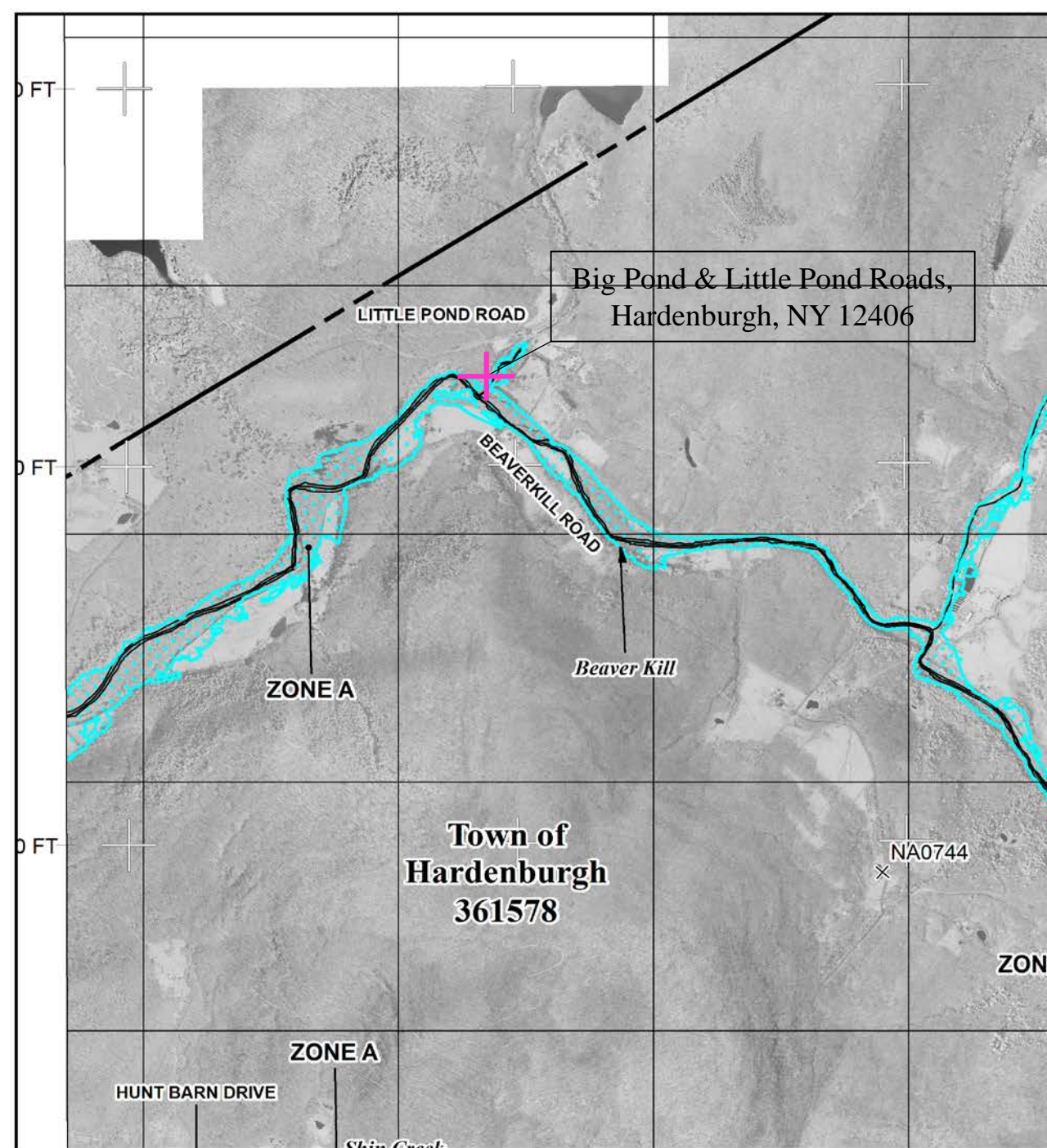
Big Pond & Little Pond Roads,
Hardenburgh, NY 12406

LOCATION NOT DEPICTED
ON COASTAL BARRIER
RESOURCES SYSTEM MAP

**BIG POND ROAD CULVERT
REPLACEMENT
Hardenburgh, NY 12406**



Coastal Barrier Resources
System Map
FIGURE 6



NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0175F

FIRM

FLOOD INSURANCE RATE MAP

for ULSTER COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
HARDENBURGH, TOWN	361578
OF	

PANEL 175 OF 910

MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
36111C0175F

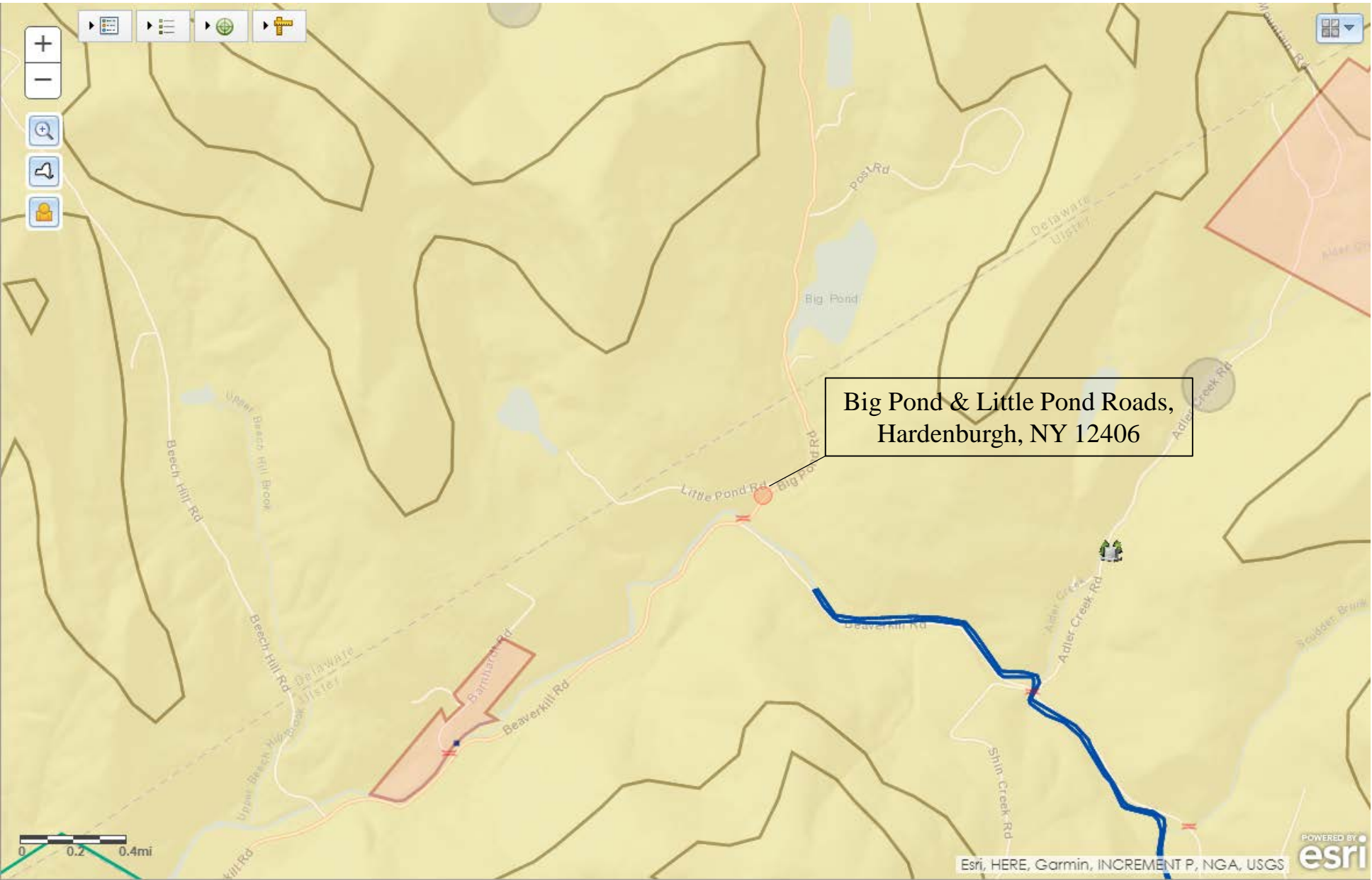
MAP REVISED
NOVEMBER 18, 2016

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

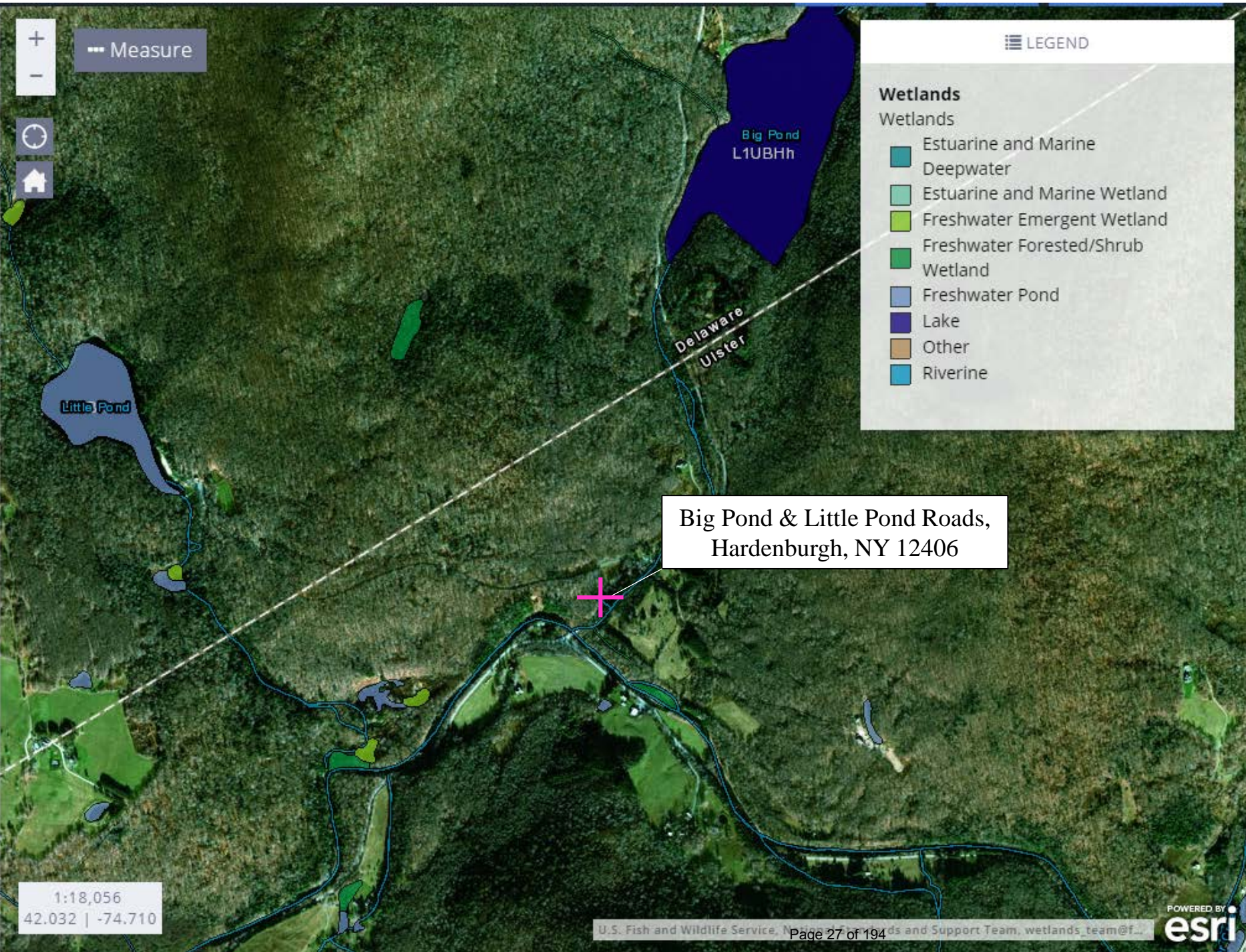
**BIG POND ROAD CULVERT
REPLACEMENT
Hardenburgh, NY 12406**

 Flood Insurance Map
FIGURE 7



**BIG POND ROAD CULVERT
REPLACEMENT
Hardenburgh, NY 12406**

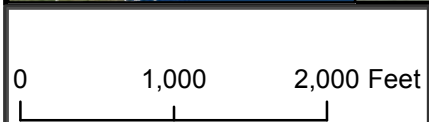
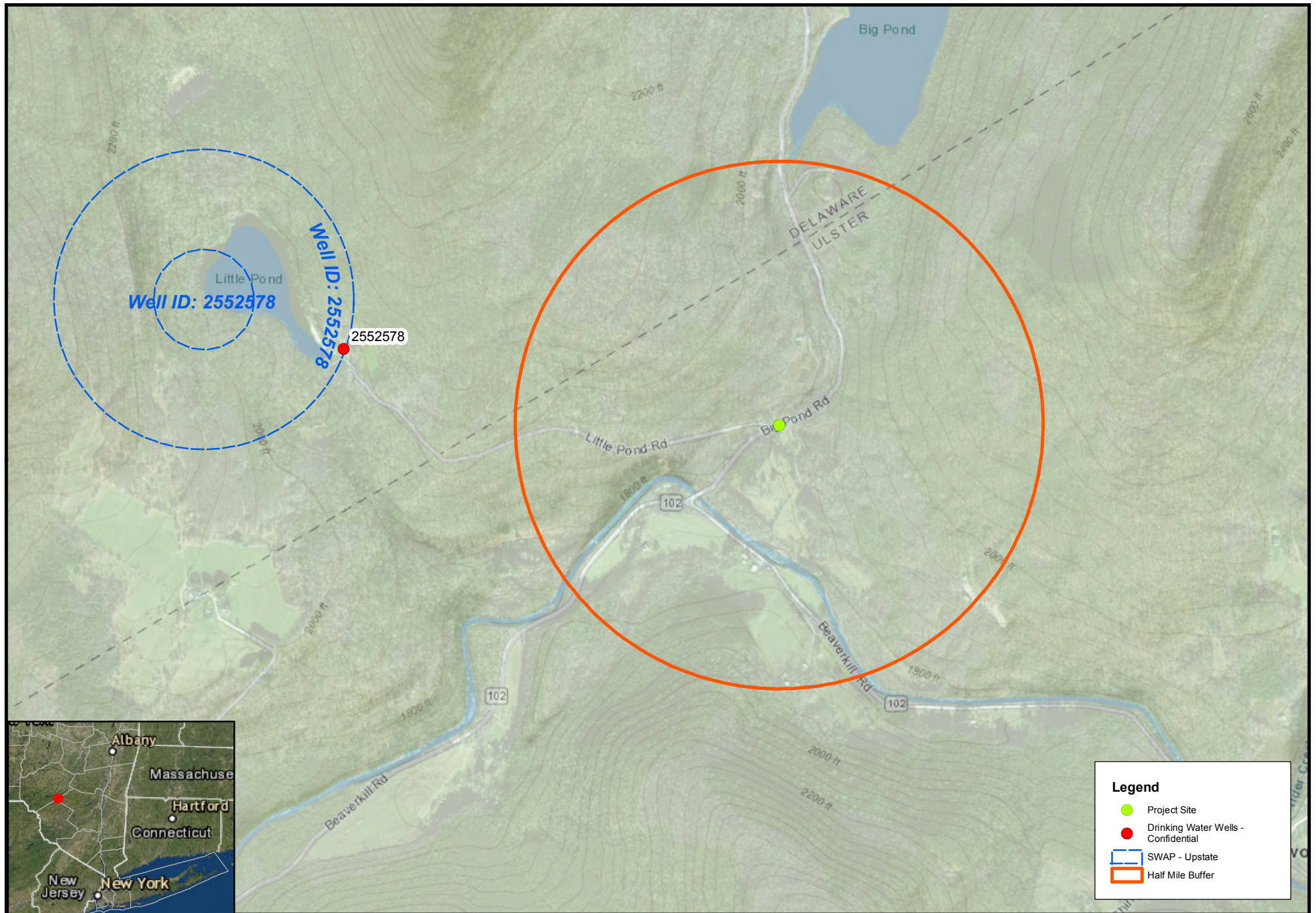
 Cultural Resources Map
FIGURE 9



**BIG POND ROAD
CULVERT REPLACEMENT
Hardenburgh, NY 12406**



Wetlands Map
FIGURE 10



Big Pond Road Culvert Replacement
 Near Intersection of Big Pond Rd & Little Pond Rd, Hardenburgh, Ulster County, NY 13731
 Half Mile Buffer SSA and SWAP Analysis



Governor's Office of
Storm Recovery

Figure 11



Drawn By: AMM | Version: 1.0 | Date: 1/22/2018

The information contained may be incorrect, incomplete or outdated and New York State disclaims any responsibility for the accuracy or correctness of the information. New York State, its officers, employees or agents shall not be liable for damages or losses of any kind, consequential or otherwise, incurred as a result of the use of this information, directly or indirectly. In using this information, users further agree to indemnify, defend, and hold harmless New York State for any and all liability of any nature arising out of or resulting from the lack of accuracy or correctness of the information, or the use of the information. New York State reserves the right to make changes and updates to the information at any time and without notice.

Appendix B

**U.S. Fish And Wildlife Service Trust Resources List And Endangered
Species Act Determinations**

USFWS Consultation



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office

3817 Luker Road

Cortland, NY 13045

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo>



To: Lori Shirley

Date: Aug 13, 2018

USFWS File No: 18TA1842

Regarding your: Letter Fax ☒ Email

Dated: Aug 7, 2018

For project: Big Pond Road Culvert Replacement

Located: near the intersection of Big Pond and Little Pond Roads

In Town/County: Town of Hardenburgh, Ulster County

Pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service:

☒ Acknowledges receipt of your "no effect" and/or no impact determination. No further ESA coordination or consultation is required.

☐ Acknowledges receipt of your determination. Please provide a copy of your determination and supporting materials to any involved Federal agency for their final ESA determination.

☐ Is taking no action pursuant to ESA or any legislation at this time, but would like to be kept informed of project developments.

As a reminder, until the proposed project is complete, we recommend that you check our website (<http://www.fws.gov/northeast/nyfo/es/section7.htm>) every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current. Should project plans change or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

USFWS Contact(s):

John Wiley

Supervisor:

Robyn A. Ashby
Branch Chief

Date:

8/13/18



Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

Via Electronic Mail

August 7, 2018

Robyn A. Niver
U.S. Fish and Wildlife Service
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045

Re: ESA/MBTA/BGEPA Consultation for the Big Pond Road Culvert Replacement, Hardenburgh, NY

Dear Ms. Niver:

The purpose of this letter is to provide the United States Fish and Wildlife Service (USFWS) – New York Ecological Services Field Office with a follow up to our May 24, 2018 consultation and provide the results of the Northern Wild Monkshood survey, in compliance with Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

1.0 PROJECT DESCRIPTION

The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The project will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel.

The construction will require stream disturbance, clearing and grubbing of the construction area and removal of seven trees. The right-of-way survey at the Big Pond Road culvert site indicates that this is a "road by use" with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements will be obtained for any culvert replacement construction work located outside of the public right-of-way. Easement areas have been identified and preparation for obtaining the easements is underway.

2.0 ENDANGERED SPECIES ACT (ESA)

The USFWS Official Species List for the project area lists Northern wild monkshood (*Aconitum noveboracense*) as potentially occurring within the project area. NYSDEC NHP data found that the monkshood was identified in the Beaverkill on 07-23-2012 and the plants were among rocks in cool areas along the Beaverkill. Stream banks were shaded by birch, beech, and hemlock. The project site includes stream banks are vegetated with trees and bushes. Plants are known to occur on sloped soils of stream banks under partial canopy near the project area.

The project site does provide the typical habitat required by the Northern wild monkshood. In order to move the Environmental Assessment forward so that project construction can be completed during late summer 2018, when the water is low, GOSR initially determined that the proposed project may affect monkshood and proposed to conduct a specimen survey in July, when the plants are blooming, to determine whether the species is present.

The survey was conducted on July 26, 2018. No monkshood was found during the survey. It should be noted that the water was running high due to a recent storm event. The survey report was provided to John Wiley, Jr., a Fish and Wildlife Biologist at USFWS by email on August 1, 2018 (see Attachment). On August 2, 2018, Mr. Wiley conducted a follow up site survey and confirmed the absence of any monkshood at lower water conditions. Based on the negative survey data, GOSR has determined that the proposed project **will have no effect** on Northern wild monkshood.

3.0 CONCLUSION

I am submitting this letter to request acknowledgement from USFWS that you have no objection to GOSR's **no effect** determination. GOSR requests your concurrence with this determination. If USFWS does not respond within 30 days from submittal of this letter, then GOSR may presume that its determination for the project is informed by the best available information and its project responsibilities under Section 7 of the ESA have been fulfilled. GOSR understands that the USFWS presumes that all activities will be implemented as described herein. GOSR will promptly report any departures from the described activities to the New York Field Office.

If you have questions or require additional information regarding this request, please contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,



Lori A. Shirley
Director, Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

Attachment – Northern Monkshood and Jacob's Ladder Plant Survey, July 27, 2018

July 27, 2018

Lori Shirley
Senior Environmental Scientist
New York State Homes & Community Renewal
38-40 State St., 408N, Hampton Plaza
Albany, New York 12207

**Re: Northern Monkshood and Jacob's Ladder Plant Survey
Big Pond Road Culvert Replacement
Town of Hardenburgh, Ulster County, New York**

Dear Ms. Shirley,

Shumaker Consulting Engineering & Land Surveying, D.P.C. (SCE) conducted a site survey for northern monkshood (*Aconitum noveboracense*) and Appalachian Jacob's ladder (*Polemonium vanbruntiae*) within the proposed limit of disturbance at the Big Pond Road culvert replacement project site on July 26, 2018. The survey was conducted by Richard Bolton (Environmental Scientist) of SCE within the flowering and fruiting period of Appalachian Jacob's Ladder and the flowering period of northern monkshood. Neither species was observed within the proposed limit of disturbance or within the immediate vicinity of the project site. Attached to this letter are photographs taken during the survey and a figure depicting the location of each photograph.

Northern Monkshood is listed as threatened by the United States Fish and Wildlife Service (USFWS) and as endangered by the New York Natural Heritage Program (NYNHP). USFWS has no defined critical habitat for this species. Suitable northern monkshood habitat is described as occurring along streams and cliff seeps in shaded and cool environments (NYNHP 2017). Cold water streams, cold groundwater discharge and cool soil conditions are often present (USFWS 2007). A cold water stream is located within the limit of disturbance. The survey concentrated on the stream banks, small floodplain areas directly adjacent to the stream and within the interstices of the stone and boulder walls adjacent to the stream.

Appalachian Jacobs's Ladder is not listed federally but is listed as rare by the NYNHP. Suitable Appalachian Jacobs's Ladder habitat is described as beaver meadows, seepage areas, edges of streams and sometimes ditches, a high elevation and high gradient seepage slope or a narrow meandering stream (NYNHP 2017). A high gradient stream is present within the limit of disturbance. The survey concentrated on the stream banks, the small floodplain areas directly adjacent to the stream and within the interstices of the stone and boulder walls adjacent to the stream.

The plant survey was conducted for an hour and a half on site within the limit of disturbance. The area labeled on the plan sheet for the temporary bypass road consists of a drier upland plant community dominated, at the herbaceous level, by northern bracken fern (*Pteridium aquilinum*) and Canada goldenrod (*Solidago canadensis*). The stream banks within the limit of disturbance were dominated by Morrows honeysuckle (*Lonicera morrowii*), Virginia creeper (*Parthenocissus quinquefolia*), jewel weed (*Impatiens capensis*), rough-stemmed goldenrod (*Solidago rugosa*) and

bittersweet nightshade (*Solanum dulcamara*). The roadway embankment upstream of the culvert is mowed along the roadside and allows for a sunnier and drier environment. No confirmed or potential individual plants of northern monkshood or Appalachian Jacob's ladder were observed within the proposed limit of disturbance or within the immediate vicinity of the project site. Based on the results of this field survey SCE has determined that northern monkshood and Appalachian Jacob's ladder are not present at the project site and the proposed project will have no effect on northern monkshood.

If you have any questions or require additional information please do not hesitate to contact me.

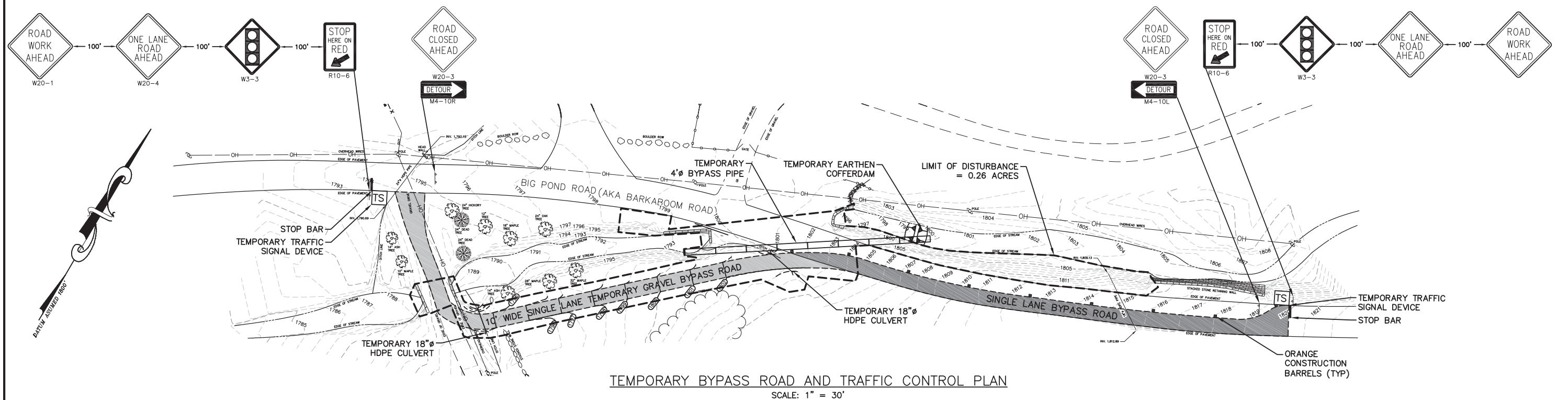
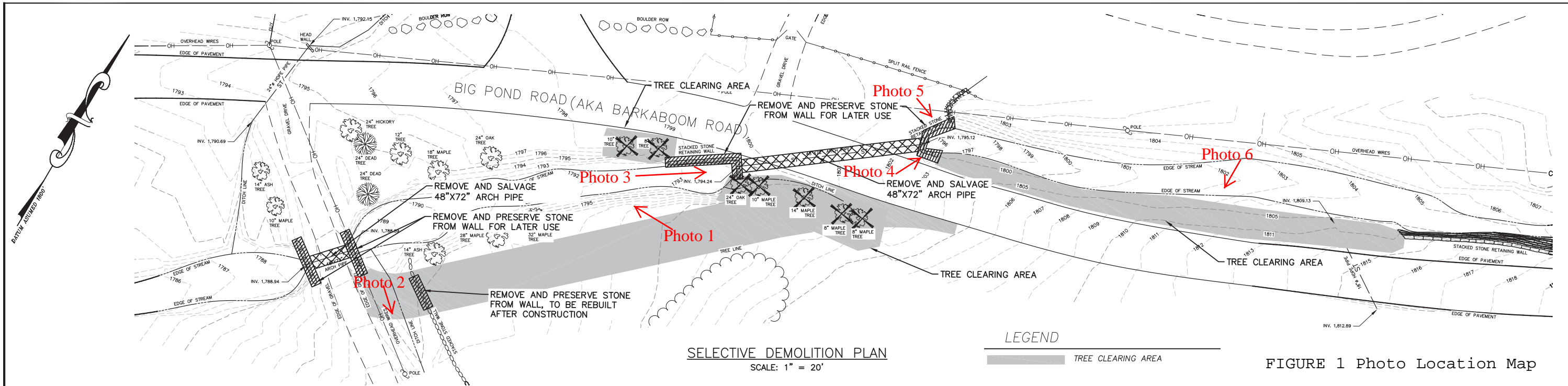
Very truly yours,

**SHUMAKER CONSULTING ENGINEERING
& LAND SURVEYING, D.P.C.**



Richard M Bolton
Environmental Scientist II

Enclosures














NOTE:
1. FIELD SURVEY BY BRINNIE AND LARIOS P.C. ON
AUGUST 24, 2017.

NOTE: The location of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work, and agrees to be fully responsible for any and all damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

LEGEND

-----50-----	CONTOURS (MINOR)
-----52-----	CONTOURS (MAJOR)
=====P=====	PROPERTY LINE
----- -----	EDGE OF WATER
----- -----	SPLIT RAIL FENCE
-----x-----x-----	WIRE FENCE
-----OH-----	OVERHEAD WIRES
-----P-----	GUIDERAIL
-----o-----o-----o-----	STACK STONE WALL

	UTILITY POLE
	SIGN
	TREE
	BORING
	BOULDER
	STACKED STONE RETAINING WALL

	TEMPORARY SINGLE LANE GRAVEL BYPASS ROAD
	TEMPORARY SINGLE LANE BYPASS ROAD
	TO BE REMOVED AND DISCARDED
	TO BE REMOVED AND RESERVED
	TREE TO BE REMOVED

GRAPHIC SCALE IN FEET

A horizontal scale bar with alternating black and white segments. Below the bar, the numbers 20, 0, and 20 are marked, indicating distances in feet.

Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.



SELECTIVE DEMOLITION AND
TEMPORARY BYPASS ROAD PLANS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT			
NY RISING COMMUNITY RECONSTRUCTION PROGRAM			
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN		
SCALE	DATE	SHEET NO.	
AS SHOWN	JAN. 2018	3 OF 5	
	DWG. CHK.		
R.I.S.			



Photo No. 1 Photo Date: 7/26/18

Description: The stream side area between the temporary bypass road and the stream. This area is just beyond the proposed limit of disturbance.

Photo Locations are depicted on Figure 1



Photo No. 2 Photo Date: 7/26/18

Description: A portion of driveway ditch within the limit of disturbance. This area is adjacent to the stream and a recent storm has resulted in water flowing down the ditch and flattening vegetation.

Photo Locations are depicted on Figure 1

**Northern Monkshood and Jacob's Ladder Plant Survey
New York State Homes and Community Renewal
Big Pond Road Culvert Replacement Project
Town of Hardenburgh, Ulster County, NY**



Photo No. 3 Photo Date: 7/26/18

Description: The outlet of the culvert under Big Pond Road. Boulder and stone walls line the stream banks. This area is within the limit of disturbance.

Photo Locations are depicted on Figure 1



Photo No. 4 Photo Date: 7/9/18

Description: The stream bank and boulder wall adjacent to Big Pond Road at the culvert inlet. This area is within the limit of disturbance.

Photo Locations are depicted on Figure 1

Northern Monkshood and Jacob's Ladder Plant Survey
New York State Homes and Community Renewal
Big Pond Road Culvert Replacement Project
Town of Hardenburgh, Ulster County, NY



Photo No. 5 Photo Date: 7/26/18

Description: The stream bank and boulder wall at the culvert inlet opposite
Big Pond Road. This area is within the limit of disturbance.

Photo Locations are depicted on Figure 1



Photo No. 6 Photo Date: 7/26/18

Description: The roadway embankment and stream bank area upstream of
the culvert inlet. This area is within the limit of disturbance.

Photo Locations are depicted on Figure 1

Northern Monkshood and Jacob's Ladder Plant Survey
New York State Homes and Community Renewal
Big Pond Road Culvert Replacement Project
Town of Hardenburgh, Ulster County, NY

Via Electronic Mail

May 24, 2018

Robyn A. Niver
U.S. Fish and Wildlife Service
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045

Re: ESA/MBTA/BGEPA Consultation for the Big Pond Road Culvert Replacement, Hardenburgh, NY

Dear Ms. Niver:

The Governor's Office of Storm Recovery (GOSR), acting under the auspices of New York State Homes and Community Renewal's (HCR) Housing Trust Fund Corporation (HTFC), on behalf of the Department of Housing and Urban Development (HUD) is preparing an Environmental Assessment (EA) for the Big Pond Road Culvert Replacement (the "Proposed Action") (**Attachments 1 and 2**). Funding is being provided by the HUD Community Development Block Grant Disaster Recovery (CDBG-DR) program.

The purpose of this letter is to provide the United States Fish and Wildlife Service (USFWS) – New York Ecological Services Field Office notice of the proposed project and to document compliance with Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act of 1940 (BGEPA) (54 Stat. 240, as amended; 16 U.S.C. 668-668c). As discussed below, we have reviewed the project and found that it does not jeopardize the continued existence of ESA species or destroy or adversely modify their critical habitat.

1.0 PROJECT DESCRIPTION

The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The infrastructure will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The Big Pond Road replacement culvert was designed to maintain the existing streambed elevation profile. The replacement culvert is wider and taller than the existing culvert. The width was selected to provide the necessary hydraulic capacity. The height of the replacement culvert was select to allow installation of an embedded culvert with a natural stream bottom sediment base to comply with NYSDEC stream crossing criteria and to provide highway vehicle load capacity. (See **Attachment 8**, Design Report).

The current project design requires the following construction elements:

- Removal and replacement of an existing 48 inch by 72 inch arched culvert running under an unnamed gravel drive southwest of the intersection of Little Pond Road and Bid Bond Road with 8 feet wide by 5 feet high by 23 feet long box culvert.
- Removal and replacement of a second 48 inch by 72 inch arched pipe running under Big Pond Road southeast of the intersection of Little Pond Road and Big Pond Road with a 8 feet wide by 5 feet high by 23 feet long and a 8 feet wide by 5 feet high by 84 feet long box culvert.
- Removal and replacement of associated riprap and sheet piling.
- Stabilization of Big Pond Road
- Construction of a temporary gravel bypass road
- Construction of a temporary earthen coffer dam
- Construction of stone retaining walls along Big Pond Road (See **Attachment 7**, Site Plans)

The construction will require stream disturbance, clearing and grubbing of the construction area and removal of seven trees. The right-of-way survey at the Big Pond Road culvert site indicates that this is a “road by use” with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements must be obtained for any culvert replacement construction work located outside of the public right-of-way. Easement areas have been identified and preparation for obtaining the easements is underway.

2.0 ENDANGERED SPECIES ACT (ESA) and MIGRATORY BIRD TREATY ACT AND THE BALD and GOLDEN EAGLE PROTECTION ACT SPECIES

Endangered Species Act

According to the United States Fish and Wildlife Service (USFWS) Information, Planning and Conservation (IPaC) online planning tool and Trust Resource List generated for the proposed project (**Attachment 3**) there are no listed endangered species; however, the Northern Long-eared bat (NLEB) (*Myotis septentrionalis*) and the Northern Wild Monkshood (*Aconitum noveboracense*) are listed as threatened species that may be found within the vicinity of the project area. The official species list for the proposed project states that there is no critical habitat in the project area. The Bald Eagle (*Haliaeetus leucocephalus*) and numerous migratory birds were also identified on the USFWS Resource List.

GOSR requested a bat review from the New State Department of Environmental Conservation (NYSDEC). NYSDEC responded that the *available information in the New York Natural Heritage Program database on known occurrences of rare or state-listed bat species indicates that the project area does not occur in the immediate vicinity of known occurrences of rare or state-listed bat species. The major concern for bat species in relation to this project would be the destruction of potential roosts and roosting habitat that may occur if tree*

clearing is required. Because this project does not take place within known occupied habitat, there are no restrictions on cutting (see **Attachment 4**).

GOSR requested a Natural Heritage Program (NHP) data base search from NYSDEC. The results identified potential presence of the Northern Wild Monkshood (*Aconitum noveboracense*), State Endangered, and Jacobs Ladder (*Polemonium vanbruntiae*), State Rare, within the vicinity of project area. Northern Wild Monkshood was identified in the Beaverkill on 07-23-2012 and the plants were among rocks in cool areas along the Beaverkill. Stream banks were shaded by birch, beech, and hemlock.

A description of each federally threatened species identified by USFWS, and the likelihood that the species occurs within the project areas, is provided below. Species descriptions are summarized from NYSDEC fact sheets and USFWS species profiles unless otherwise referenced.

Northern Long-eared bat

The Northern Long-eared bat (NLEB) is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases - reproduction and hibernation. NLEB hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remain solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. No caves or mines occur near the project site. Summer habitat of the NLEB generally includes upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008). Roost trees are usually intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). As illustrated on the NYS Resource Map provided by NYSDEC on February 8, 2018, included as **Attachment 4**, there are no known NLEB (or Indiana bat) hibernacula or maternity colonies within five miles of the project area. Also, according to geospatial data provided by USFWS, there are currently no known maternity roost trees or hibernacula known to be occupied by NLEB within five miles of the project location.

The project involves excavation and other earthwork. It is the intent to minimize ground disturbance to the greatest extent possible; however, due to uncertain construction schedules, trees and brush may need to be removed during the active season of the NLEB.

Due to the potential for active season tree removal, GOSR determines that this project **may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule (Attachment 5).**

All activities associated with the proposed project will not:

- 1) disturb hibernating NLEBs in a known hibernaculum;
- 2) alter the entrance or interior environment of a known hibernaculum;
- 3) remove any trees within 0.25 miles of a known hibernaculum at any time of year; or
- 4) cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree, during the pup season (June 1 through July 31).

Northern Wild Monkshood

Northern wild monkshood (monkshood) is an herbaceous perennial with distinctive blue, hood-shaped flowers. It has only been found in Iowa, Wisconsin, Ohio, and New York. The plants range from one to four feet in height, with wide, toothed leaves. They prefer to occupy cool sites such as stream sides or shaded cliff sides. All existing occurrences in New York have been found on sandstone-derived rocky or sandy soils, at elevations

ranging between 400 and 1000 meters. Flowers typically bloom between June and September. Degradation and loss of habitat are the primary threats to species survival.

The USFWS Official Species List for the project area lists Northern wild monkshood as potentially occurring within the project area. The NYSDEC NHP data found that the monkshood was identified in the Beaverkill on 07-23-2012 and the plants were among rocks in cool areas along the Beaverkill. Stream banks were shaded by birch, beech, and hemlock. The project site includes stream banks are vegetated with trees and bushes. Plants are known to occur on sloped soils of stream banks under partial canopy near the project area.

The project site does provide the typical habitat required by the Northern wild monkshood. In order to move the Environmental Assessment forward so that project construction can be completed during late summer 2018, when the water is low, GOSR has initially determined that the proposed project **may affect** monkshood. GOSR proposes to conduct a specimen survey in early July, when the plants are blooming, to determine whether the species is present. The survey will be completed in all areas of bank disturbance. Results of the survey will be provided to the USFWS - New York Field Office within 10 days of completing the survey and an updated determination will be provided after consultation with the Service regarding the results of the survey. If the absence of the Northern wild monkshood can be confirmed based on the survey results, tree clearing will be performed after July 31. If monkshood presence is confirmed based on the survey results, GOSR will coordinate with the USFWS - New York Field Office to determine the appropriate steps necessary to proceed with project implementation.

Migratory Bird Treaty Act

According to the USFWS IPaC Trust Resource Report, there are fifteen species of migratory birds that are protected by the Migratory Bird Treaty GOSR has determined that the project would have **no significant adverse impact** on migratory birds or their habitat. The area proposed for tree clearing is within or directly adjacent to roads and residential properties. It is anticipated that passerine birds would temporarily leave the area during construction due to noise and disturbance. Extensive areas of high quality woodland habitat are available near to the project site (see **Figure 2**).

Bald and Golden Eagle Protection Act

The iPaC review process identified the bald eagle as having year-round habitat in Ulster County that may be potentially affected by activities in the project area. GOSR has determined that the proposed project would have **no effect** on bald eagles. The project area is not located within the vicinity of documented bald eagle breeding. The NYSDEC NHP database search did not identify any bald eagles or nests in the vicinity of the project location. As with other migratory birds, foraging bald eagles may temporarily avoid the area during construction due to noise and disturbance. The area proposed for tree clearing is within or directly adjacent to roads and residential and commercial properties that experience frequent human disturbance. Removal of these trees would not significantly affect foraging bald eagle as extensive areas of suitable, undisturbed foraging habitat are available nearby the site.

3.0 CONCLUSIONS

GOSR is submitting the above information to request acknowledgement from USFWS that they have no objections to the determination made by GOSR that the proposed project **may affect the NLEB, but that any**

resulting incidental take of the NLEB is not prohibited by the final 4(d) rule, and that the proposed project **may affect** Northern wild monkshood. A field survey will be completed for the presence monkshood prior to any invasive or construction activities and the result provided to USFWS for further consultation.

GOSR further determines that the proposed project will have **no significant adverse impact** on migratory birds and **no effect** on breeding bald eagles. GOSR requests to be alerted if USFWS becomes aware of a Bald or Golden Eagle nest within 660 feet of the project site.

GOSR requests your concurrence with this determination. If USFWS does not respond within 30 days from submittal of this letter, then GOSR may presume that its determination for each project is informed by the best available information and its project responsibilities under Section 7 of the ESA have been fulfilled. GOSR understands that the USFWS presumes that all activities will be implemented as described herein. GOSR will promptly report any departures from the described activities to the New York Field Office.

If you have questions or require additional information regarding this request, please contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,



Lori A. Shirley
Director, Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

Attachments: Attachment 1 - Project Location Map Figure 1
Attachment 2 - Project Location Aerial Figure 2
Attachment 3 - IPaC Trust Resource Report
Attachment 4 - NYSDEC Bat Review
Attachment 5 - NYSDEC NHP
Attachment 6 - Site Photographs
Attachment 7 – Site Plans
Attachment 8 – Design Report

Literature Cited

Broders, H.G., G.J. Forbes, S. Woodley, and I.D. Thompson. 2006. Range extent and stand selection for forest-dwelling northern long-eared and little brown bats in New Brunswick. *Journal of Wildlife Management* 70: 1174-1184.

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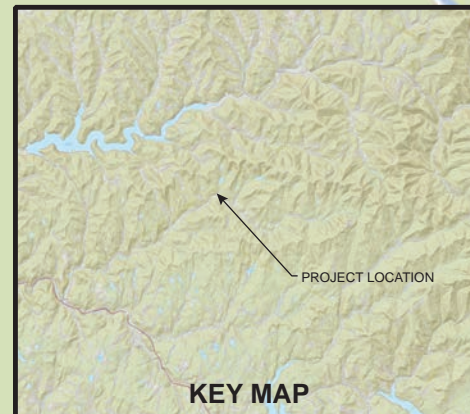
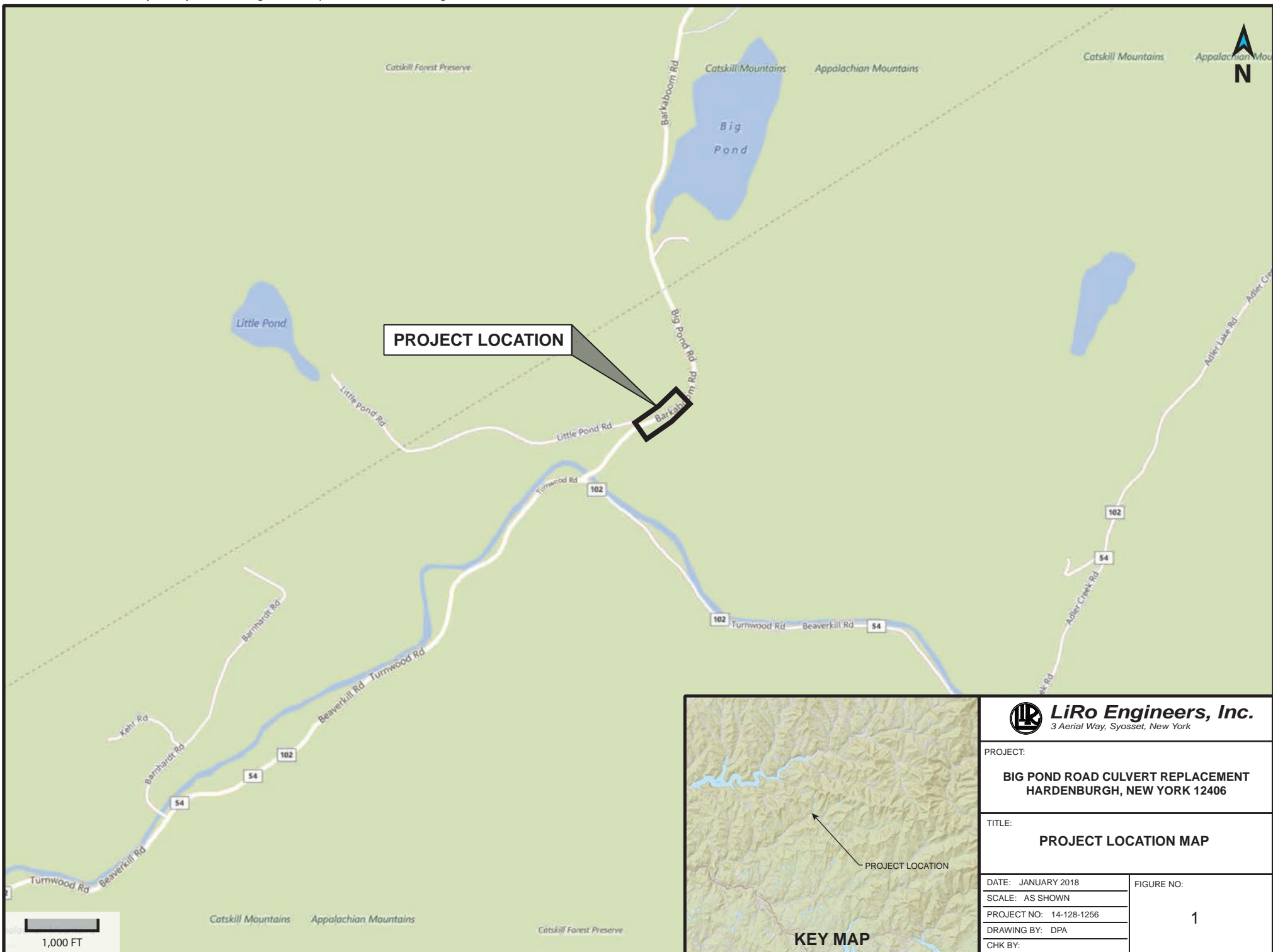
simple habitat measures in a central Appalachian forest. *Biological Conservation* 126: 528-539.

Foster, R.W. and A. Kurta, A. 1999. Roosting ecology of the northern bat (*Myotis septentrionalis*) and comparisons with the endangered Indiana bat (*Myotis sodalis*). *Journal of Mammalogy* 80: 659-672.

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- Owen, S.F., M.A. Menzel, W.M. Ford, B.R. Chapman, K.V. Miller, J.W. Edwards, and P.B. Wood. 2003. Home-range size and habitat used by the northern myotis (*Myotis septentrionalis*). *American Midland Naturalist* 150:352-359.

ATTACHMENT 1
PROJECT LOCATION MAP



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

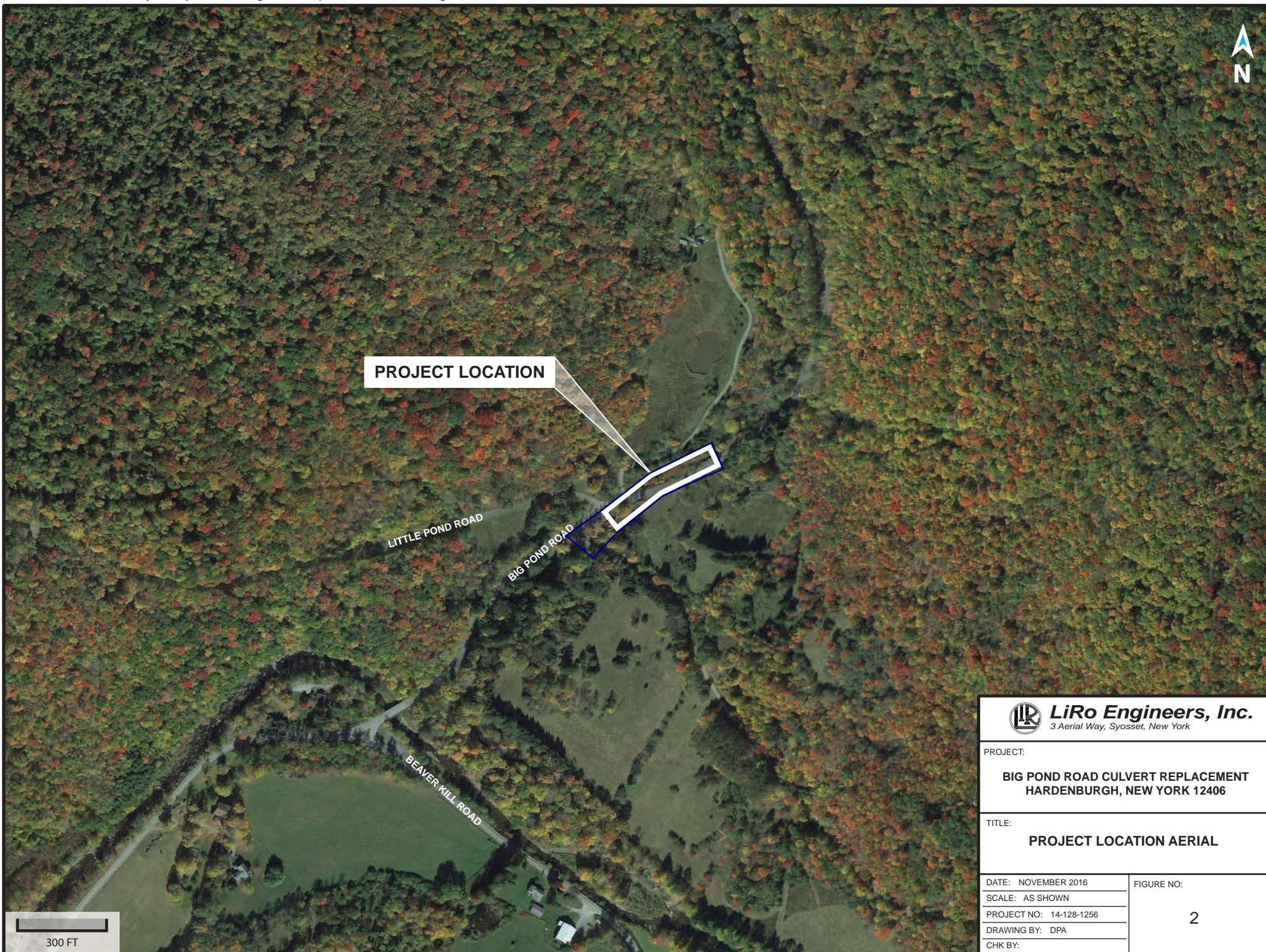
PROJECT:
**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:
PROJECT LOCATION MAP

DATE: JANUARY 2018
SCALE: AS SHOWN
PROJECT NO: 14-128-1256
DRAWING BY: DPA
CHK BY:

FIGURE NO:
1

ATTACHMENT 2
PROJECT LOCATION AERIAL



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

2

ATTACHMENT 3
IPaC TRUST RESOURCE REPORT

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Ulster County, New York



Local office

New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road
Cortland, NY 13045-9349

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Northern Wild Monkshood <i>Aconitum noveboracense</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1450	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31
Yellow-bellied Sapsucker <i>sphyrapicus varius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8792	Breeds May 10 to Jul 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

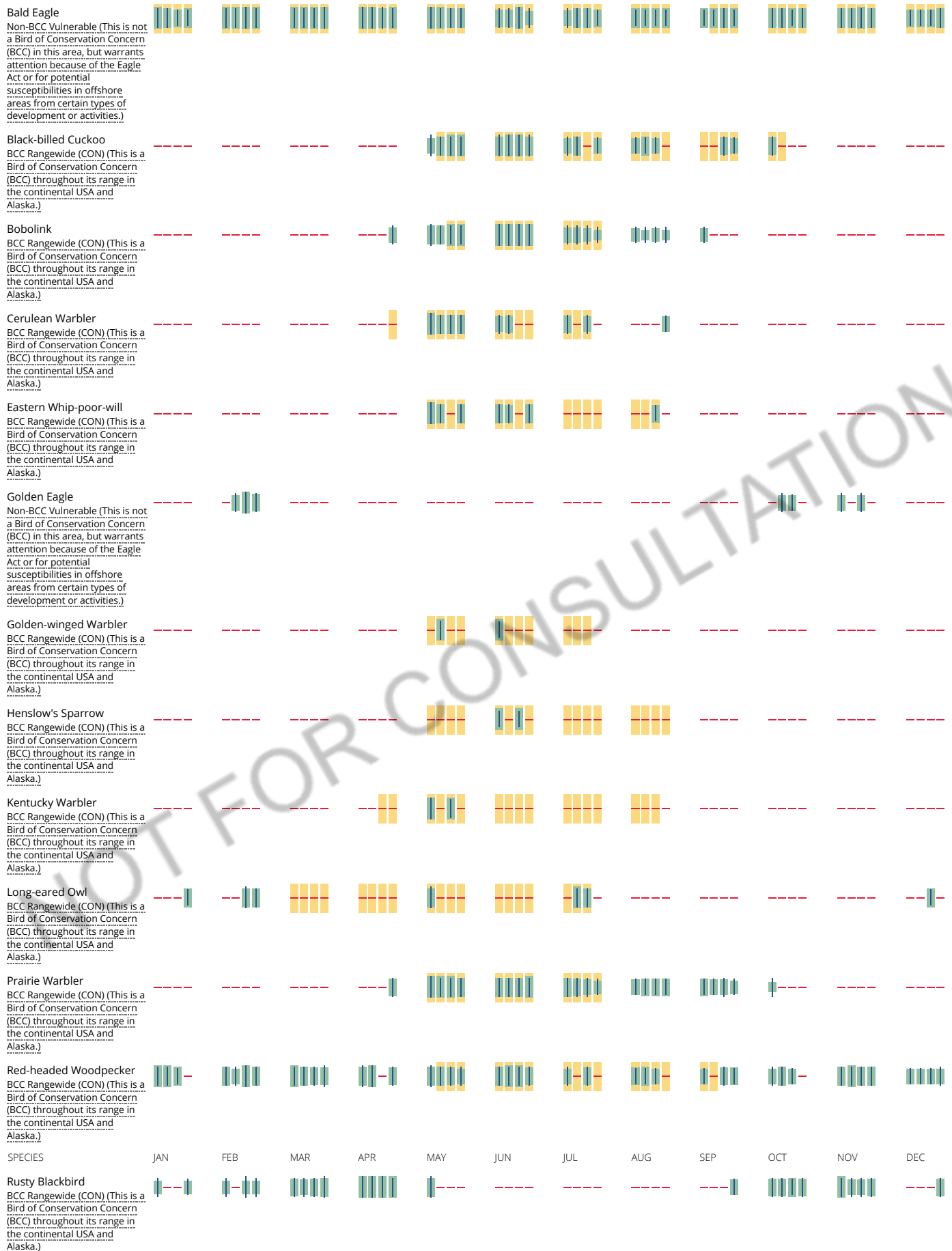
No Data (—)

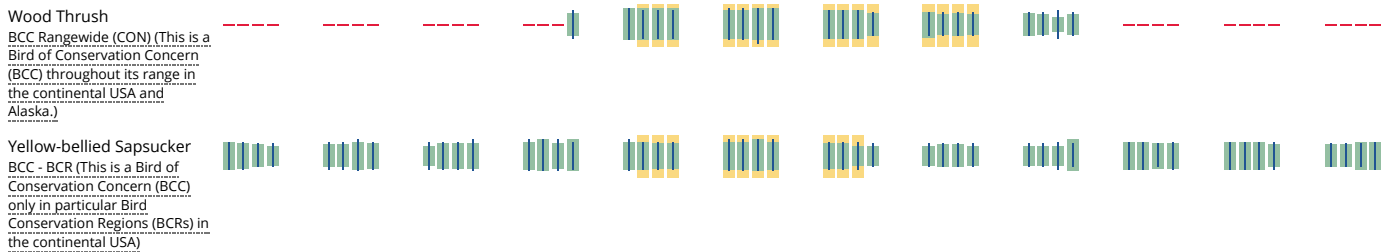
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

ATTACHMENT 4

NYSDEC BAT REVIEW 02/08/2018

February 8, 2018

Ms. Lori Shirley
Governor's Office of Storm Recovery
99 Washington Avenue
Suite 1224
Albany NY 12260

RE: Big Pond Road Culvert Replacement
Town of Hardenburgh, Ulster County, NY

Dear Ms. Shirley,

We received your jurisdictional inquiry request for the Big Pond Road culvert replacement project located in Hardenburgh, Ulster County. It is our understanding that an undersized culvert at the intersection of Big Pond and Little Pond Roads will be removed and replaced with higher capacity culvert infrastructure. This project will require stream disturbance, clearing and grubbing of the construction area and removal of trees. Based on our understanding of the project and the NYS Resources map created by Amanda Bailey on 2/8/2018 (attached), we have the following comments on the project:

STATE-LISTED SPECIES

All threatened or endangered species are subject to regulation under Article 11, Title 5 of the Environmental Conservation Law and a permit is required for a taking of that species pursuant to 6 NYCRR Part 182. Besides death of individuals, taking includes harassment, interference with essential behaviors, and adverse modification of habitat. **If the site is in close proximity to known occurrences of state-protected species, additional information on the proposal will be required by the appropriate regional office for a determination on the need for an incidental take permit.**

We have reviewed the available information in the New York Natural Heritage Program database on known occurrences of rare or state-listed bat species. This project area does not occur in the immediate vicinity of known occurrences of rare or state-listed bat species (see NYS Resources map, attached). The major concern for bat species in relation to this project would be the destruction of potential roosts and roosting habitat that may occur if tree clearing is required. Because this project does not take place within known occupied habitat, there are no restrictions on cutting.

The absence of data does not necessarily mean that any rare or state-listed bat species do not exist on or adjacent to the proposed site. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence of all rare or state-listed bat species. To avoid potential take, DEC *recommends* that any tree clearing be conducted between November 1 and March 31, when bats are inactive in hibernation sites. DEC also recommends that all snag and cavity trees remain uncut, unless their removal is necessary for protection of human life and property. For more information, please refer to the

DEC Northern long-eared bat protective measures guidance, available at:
<http://www.dec.ny.gov/animals/106090.html>.

This document is only intended to address state-listed bat species. Other rare or state-listed species, natural communities or other significant habitats may exist within the project area and would require additional review. 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.

OTHER

USFWS Cortland Field Office

If a federal agency is involved in the project, or if federal funding is used, there are additional considerations for federally listed species. Section 7(a)(1) of the Endangered Species Act requires federal agencies to use their authorities to conserve listed species. Section 7(a)(2) requires federal agencies to consult on any action that may affect a listed species.

Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under "Programs" then "Division of Environmental Permits."

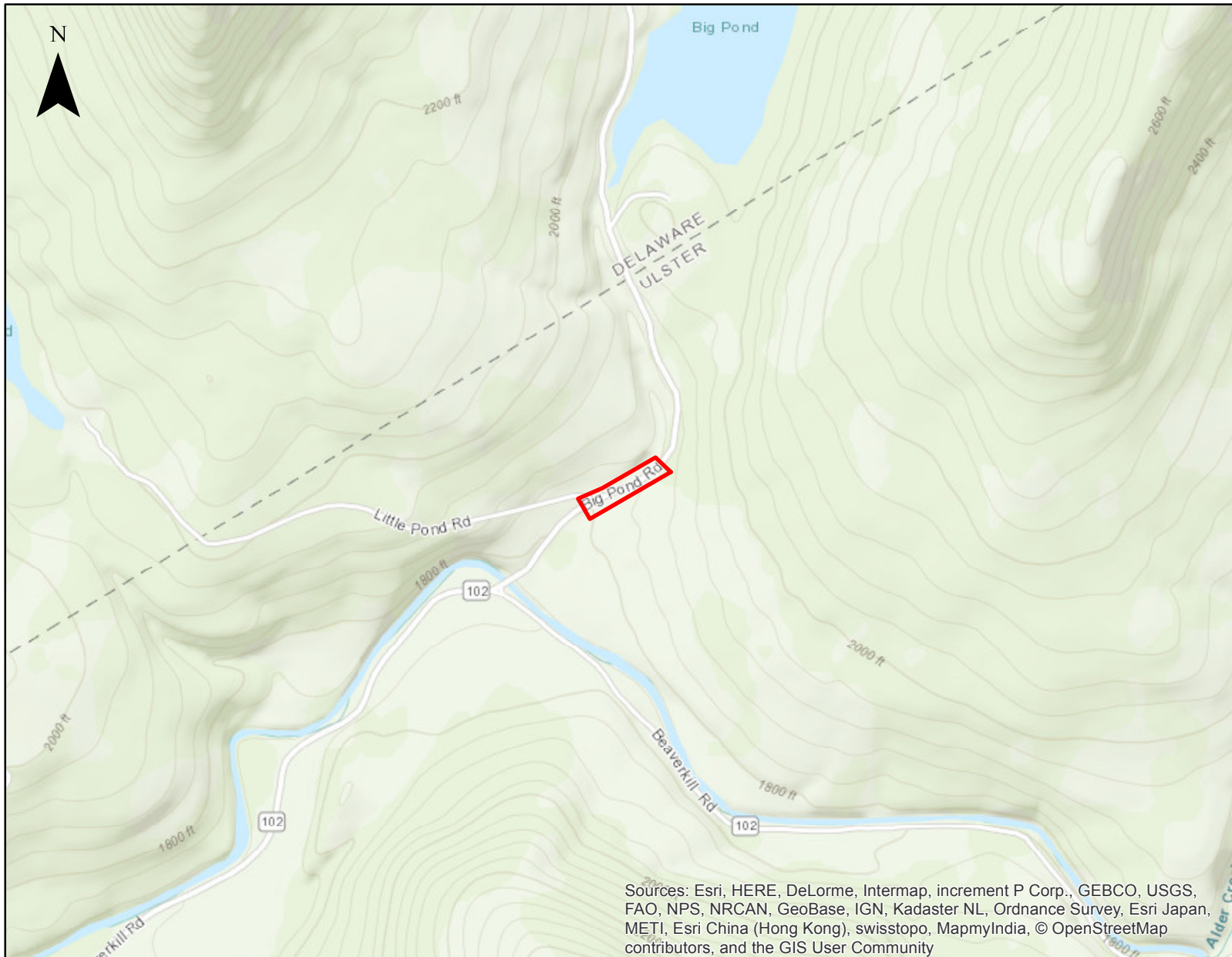
Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

A handwritten signature in black ink that reads "Amanda Bailey". The script is cursive and fluid.

Amanda Bailey
Division of Fish and Wildlife
Amanda.bailey@dec.ny.gov
518-402-8859

Cc: Bill Blankenship; Hunt, Guillot & Associates, LLC
May O'Malley, NYSDEC Division of Environmental Permits





NEW YORK
STATE OF
OPPORTUNITY

**Department of
Environmental
Conservation**

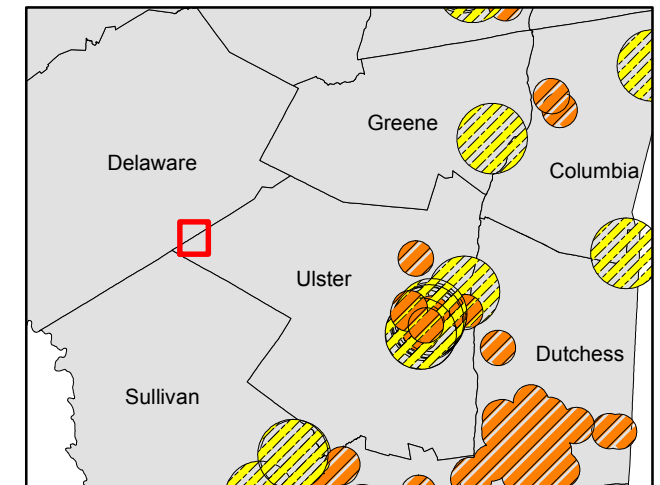
0 0.075 0.15 0.3 0.45 0.6 Miles

1 inch = 1,250 feet

NYS Resources Map

Big Pond Road Culvert Replacement Town of Hardenburgh, Ulster County

Prepared by AMB on 2/8/2018



Project Area

Bat Occurrences

Indiana Bat

Northern Long-eared Bat

Disclaimer: this map was prepared by the NYSDEC using the most current data available. It is deemed accurate but is not guaranteed. NYSDEC is not responsible for any inaccuracies in the data and does not necessarily endorse any interpretations or products derived from the data. This map may contain information that is considered sensitive and therefore the distribution of this map is strictly prohibited.

ATTACHMENT 5

NYSDEC NHP REVIEW 02/09/2018

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

February 9, 2018

Lori Shirley
Governor's Office of Storm Recovery
30-40 State St., Hampton Plaza
Albany, NY 12207

Re: Big Pond Road Culvert Replacement (Vicinity of Big Pond & Little Pond Roads)
County: Ulster Town/City: Hardenburgh

Dear Ms. Shirley:

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 in the vicinity of the project 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 in the enclosed report may result in this project requiring additional review. 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 NYS DEC Region 3 Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program



**The following rare plants have been documented
in the vicinity of the project site.**

We recommend that potential onsite and offsite impacts of the proposed project on these species 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 plants are listed as Endangered, Threatened, or Rare by New York State, and so are a vulnerable natural resource of conservation concern.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
Northern Monkshood	<i>Aconitum noveboracense</i>	Endangered and Federally Listed as Threatened	Critically Imperiled in NYS and Globally Uncommon
Beaverkill, 2012-07-23: The plants are among rocks in cool areas along the Beaverkill. Stream banks are shaded by birch, beech, and hemlock.			
Jacob's Ladder	<i>Polemonium vanbruntiae</i>	Rare	Vulnerable in NYS
Beaverkill below Turnwood, 1989-06-09: A deciduous swamp with alluvial floodplain soils in a linear depression with deep organic muck layer, under a dense overstory of trees.			

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 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, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

ATTACHMENT 6

SITE PHOTOS

BIG POND ROAD CULVERT - 2500 FT ELEVATION

Big Pond Road Culvert

BIG POND ROAD CULVERT - PATH



BIG POND ROAD CULVERT - INLET



BIG POND ROAD CULVERT - VIEW FROM BIG POND ROAD (WEST)



BIG POND ROAD CULVERT - OUTLET

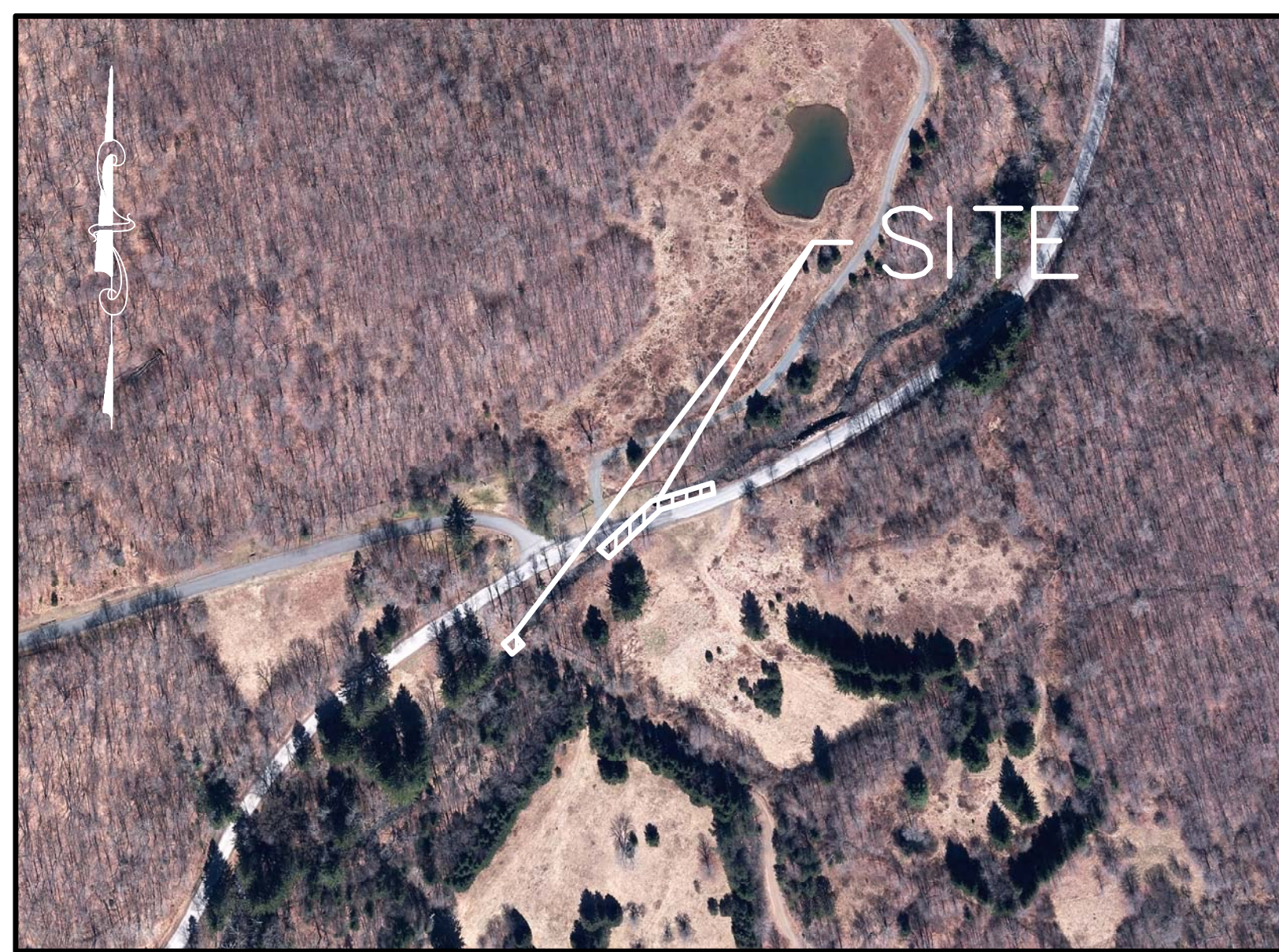


ATTACHMENT 7

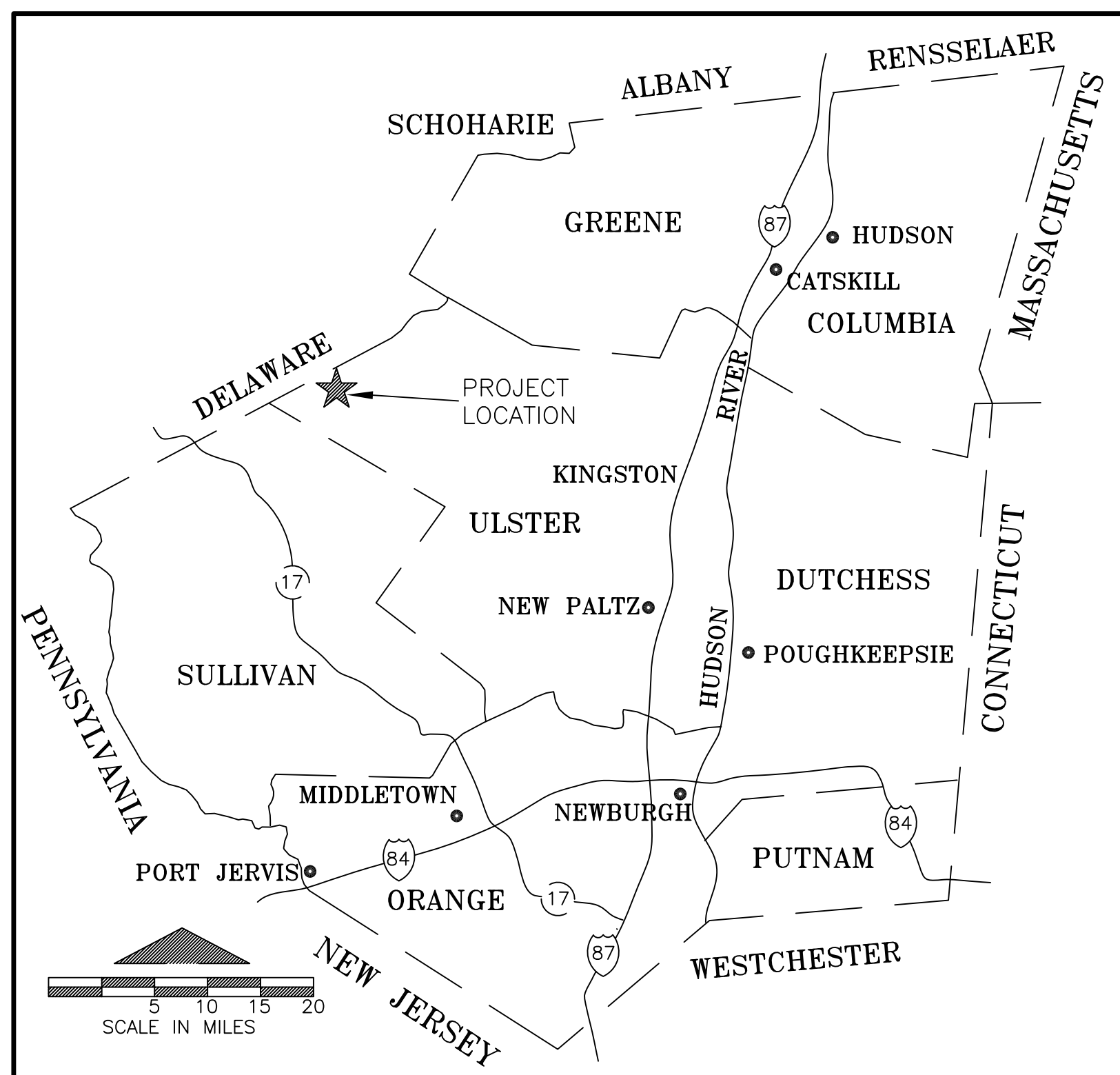
SITE PLANS



REFERENCE: 7.5 MINUTE USGS QUADRANCE - HARDENBURGH
LOCATION MAP
SCALE 1" = 2000'



N.Y.S. GIS
AERIAL MAP
SCALE 1" = 200'



GENERAL LOCATION MAP

CONTRACT THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNOR'S OFFICE OF STORM RECOVERY

TOWN OF HARDENBURGH ULSTER COUNTY NEW YORK

TOWN OFFICIALS

JERRY FAIRBAIRN, TOWN SUPERVISOR

TOWN COUNCIL

JOHN SACKEL
WENDY O'REILLY
WILLIAM SCHLUTER
SHERRY BELLOWS

THOMAS DELEHANTY, TOWN CLERK

CHARLES STORMS, HIGHWAY SUPERINTENDENT

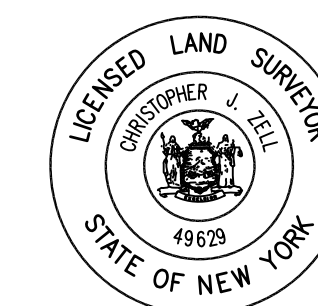
JANUARY 2018

30% DESIGN FOR AGENCY REVIEW

BRINNIER AND LARIOS, P. C.
PROFESSIONAL ENGINEERS AND LAND SURVEYORS
67 MAIDEN LANE
KINGSTON, NEW YORK
(845) 338-7622

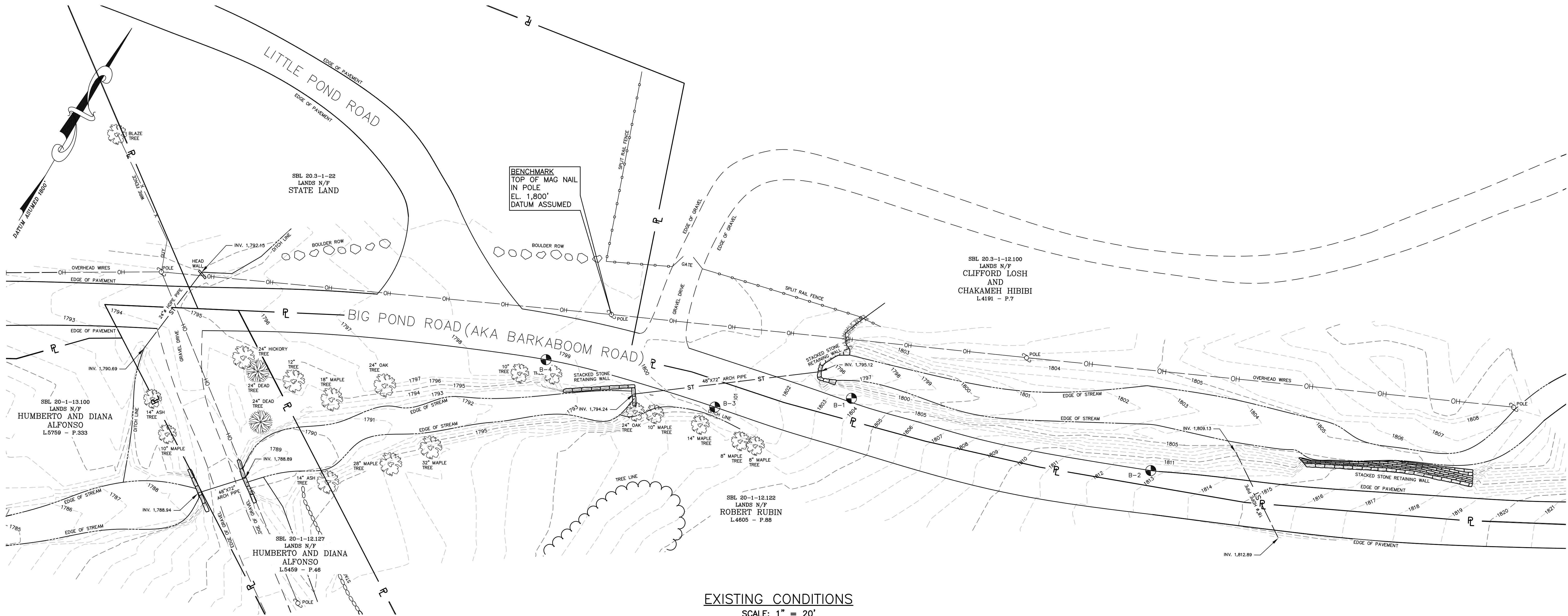


Unauthorized alteration or addition to a plan
bearing a licensed engineer's seal is a
violation of section 7209, subdivision 2, of the
New York State Education Law.



INDEX OF DRAWINGS

SHEET NO.	DRAWING
1.	COVER SHEET
2.	EXISTING CONDITIONS
3.	SELECTIVE DEMOLITION/STREAM PROTECTION
4.	SITE PLAN
5.	DETAILS



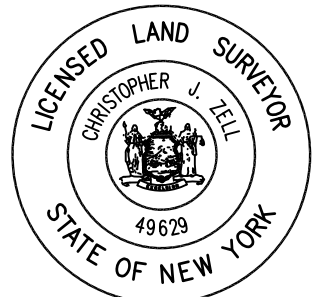
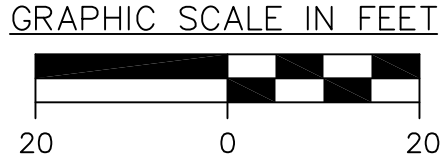
EXISTING CONDITIONS
SCALE: 1" = 20'

LEGEND

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| ---52--- | CONTOURS (MAJOR) | | SIGN |
| —P— | PROPERTY LINE | | TREE |
| —W— | EDGE OF WATER | | BORING |
| —S— | SPLIT RAIL FENCE | | BOULDER |
| —X—X— | WIRE FENCE | | STACKED STONE RETAINING WALL |
| —OH— | OVERHEAD WIRES | | |
| —G— | GUIDERAIL | | |
| —O—O—O— | STACK STONE WALL | | |

NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON
AUGUST 24, 2017.

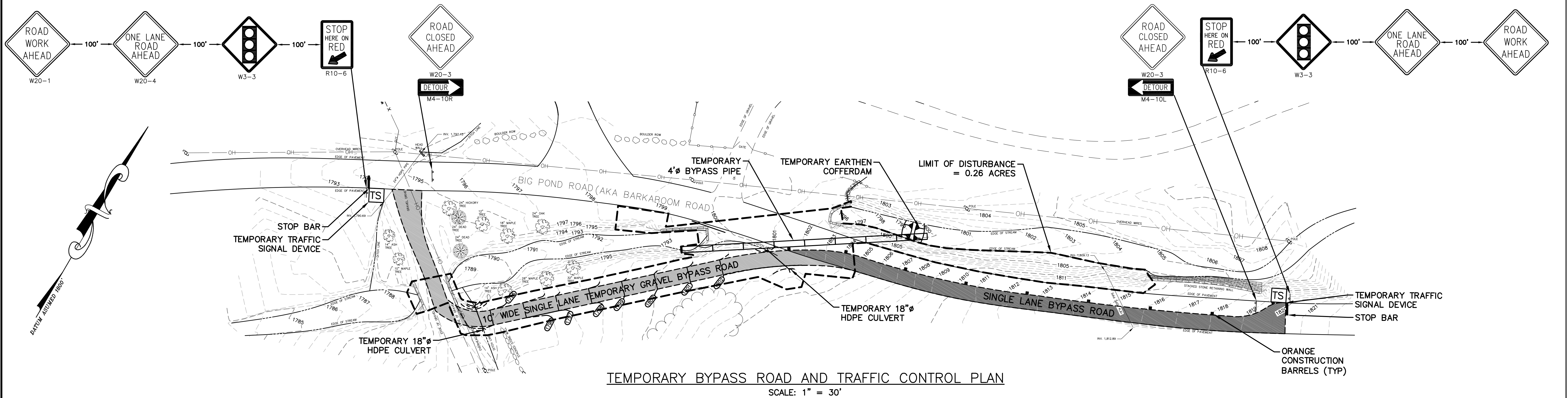
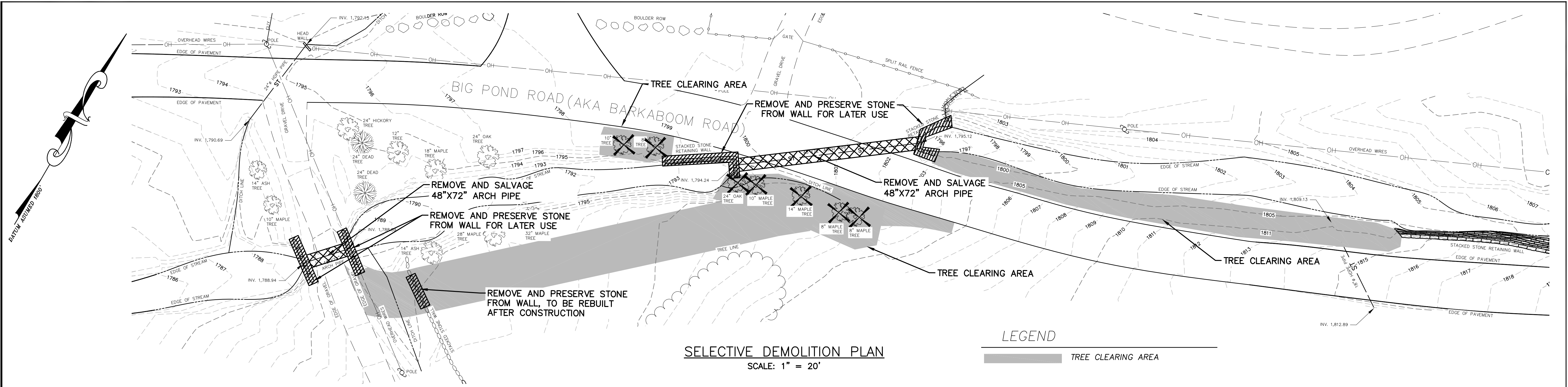
NOTE:
The location of existing underground utilities are shown in an
approximate way only and have not been independently verified by
the owner or its representative. The contractor shall determine
the exact location of all existing utilities before commencing work,
and agrees to be fully responsible for any and all damages which
might be occasioned by the contractor's failure to exactly locate
and preserve any and all underground utilities.



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bearing a licensed engineer's seal is a violation
of section 7209, subdivision 2, of the New York
State Education Law.

EXISTING CONDITIONS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN		
SCALE	DATE	SHEET NO.	
1" = 20'	JAN. 2018	2 OF 5	
DWG	CHK		
RJS			



NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON AUGUST 24, 2017.

NOTE:
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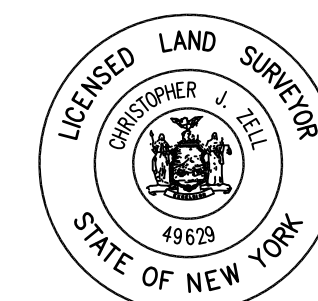
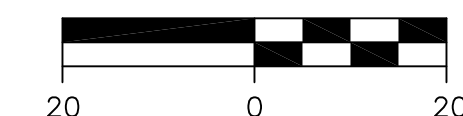
LEGEND

- 50--- CONTOURS (MINOR)
- 52--- CONTOURS (MAJOR)
- R— PROPERTY LINE
- E— EDGE OF WATER
- S— SPLIT RAIL FENCE
- X—X— WIRE FENCE
- OH— OVERHEAD WIRES
- G— GUIDERAIL
- S— STACKED STONE WALL

- UTILITY POLE
- SIGN
- TREE
- BORING
- BOULDER
- STACKED STONE RETAINING WALL

- TEMPORARY SINGLE LANE GRAVEL BYPASS ROAD
- TEMPORARY SINGLE LANE BYPASS ROAD TO BE REMOVED AND DISCARDED
- TO BE REMOVED AND RESERVED
- TREE TO BE REMOVED

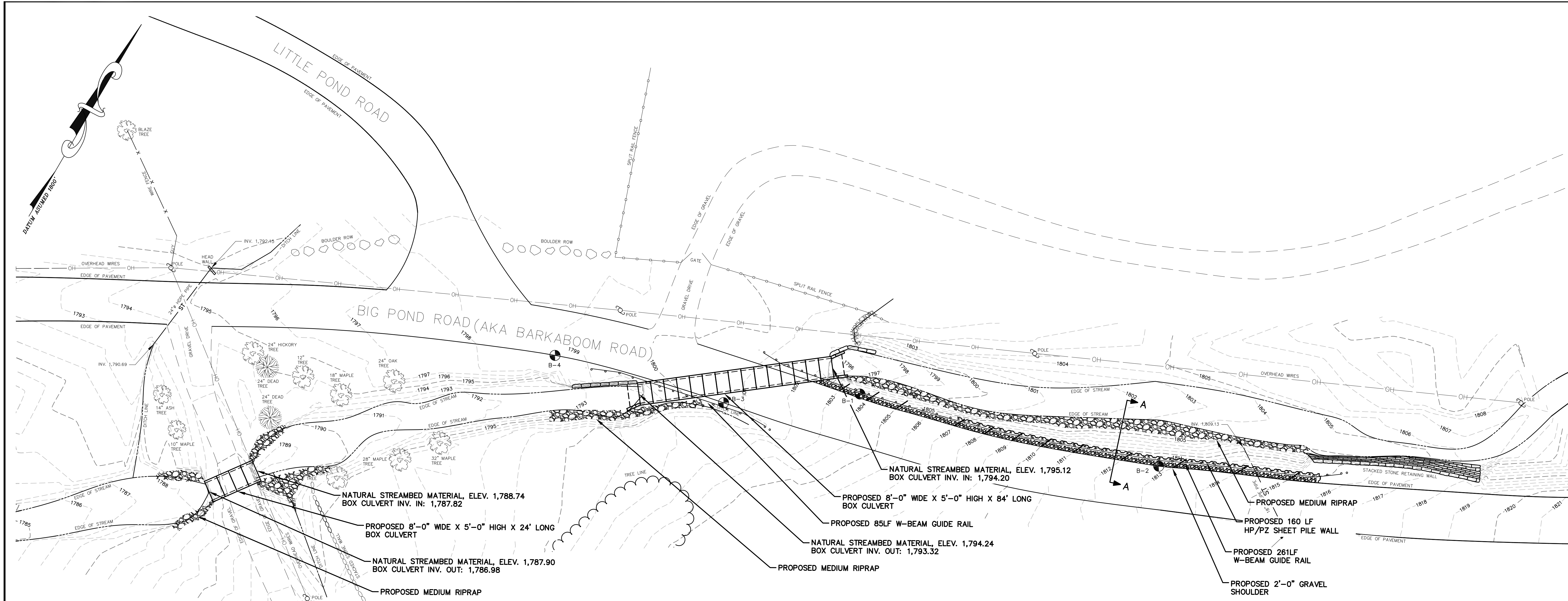
GRAPHIC SCALE IN FEET



Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.

SELECTIVE DEMOLITION AND TEMPORARY BYPASS ROAD PLANS CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
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AS SHOWN	JAN. 2018	3 OF 5	
	DWG	CHK	
	RJS		



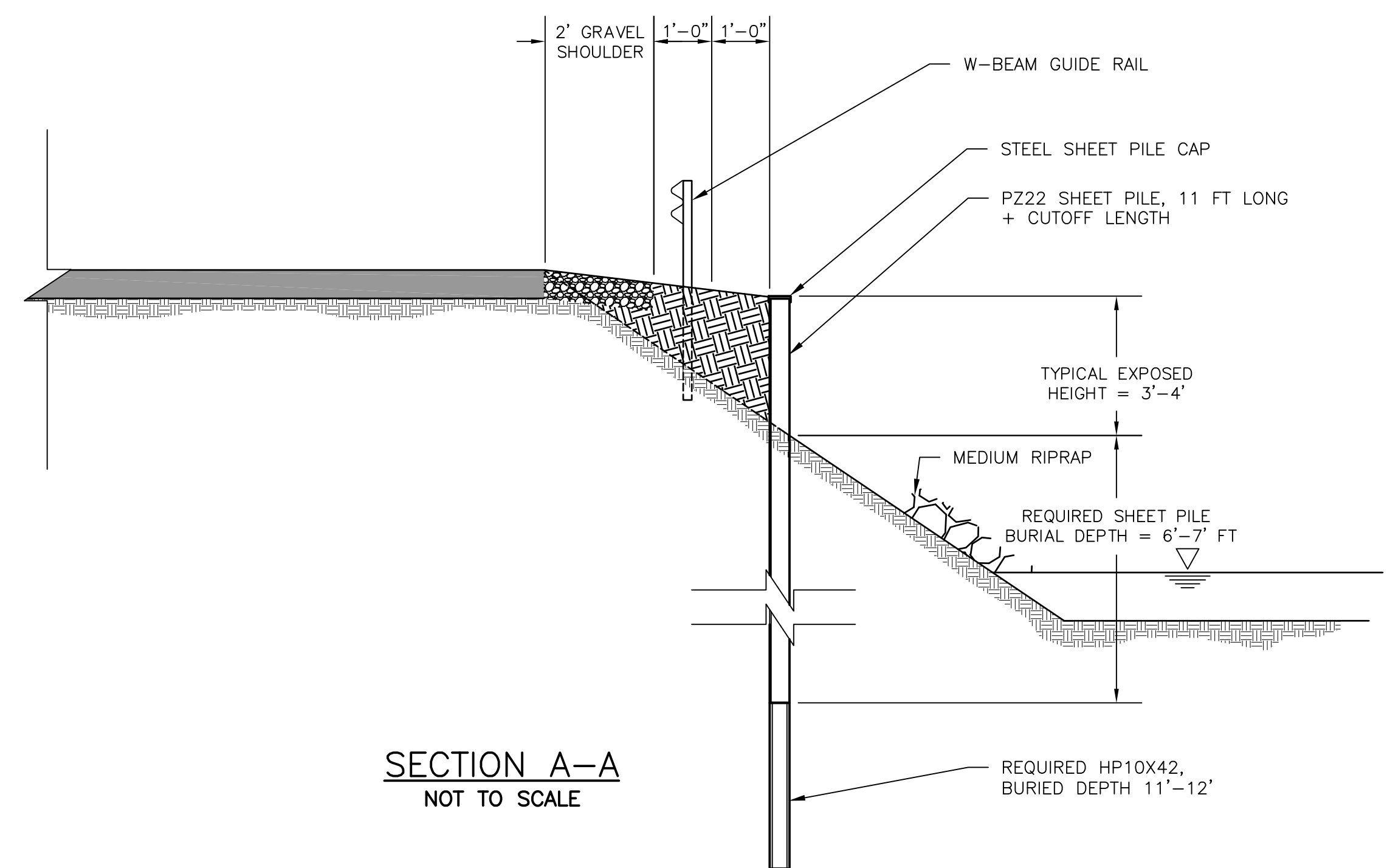
CULVERT AND ROAD STABILIZATION PLAN VIEW
SCALE: 1" = 20'

LEGEND

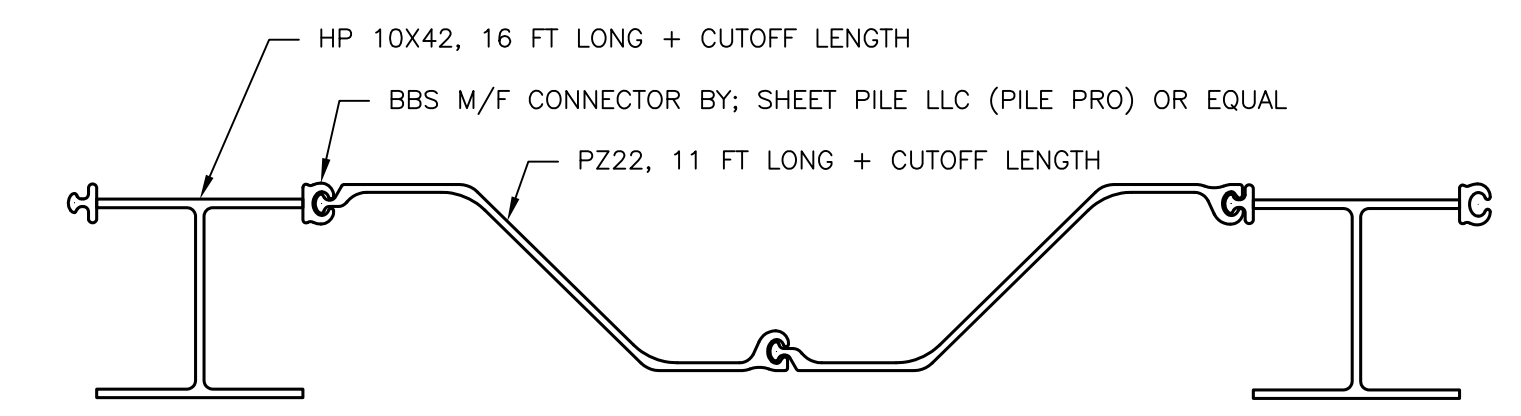
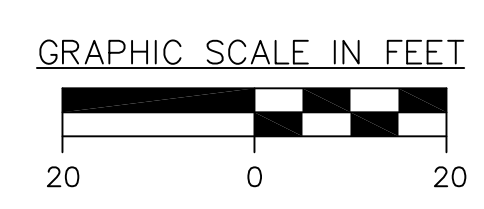
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|----------|------------------|--|------------------------------|
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| ---52--- | CONTOURS (MAJOR) | | TREE |
| —R— | PROPERTY LINE | | BORING |
| — — — | EDGE OF WATER | | BOULDER |
| —x—x— | SPLIT RAIL FENCE | | STACKED STONE RETAINING WALL |
| —x—x— | WIRE FENCE | | |
| —OH— | OVERHEAD WIRES | | |
| —o— | GUIDERAIL | | |
| —o—o—o— | STACK STONE WALL | | |

NOTE:
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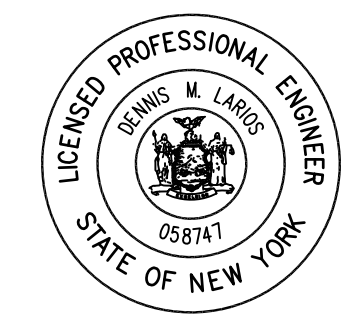
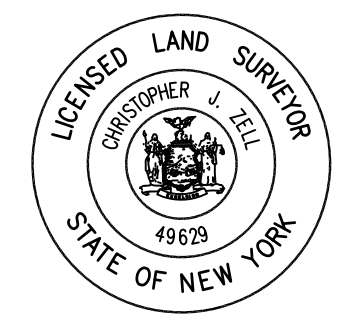
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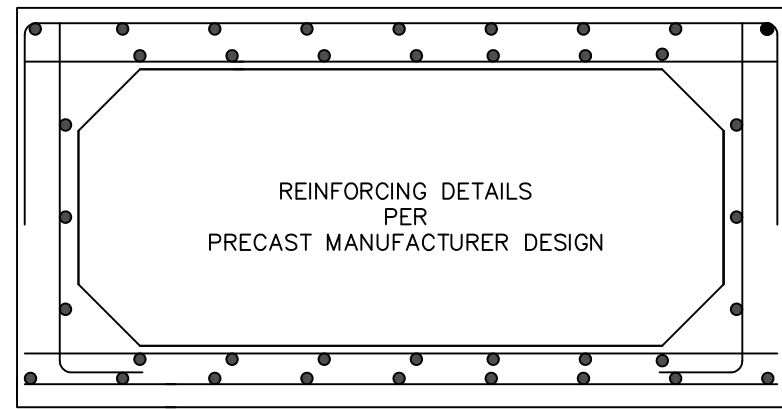
SECTION VIEW
NOT TO SCALE

SITE PLAN
CONTRACT NO. THA-181

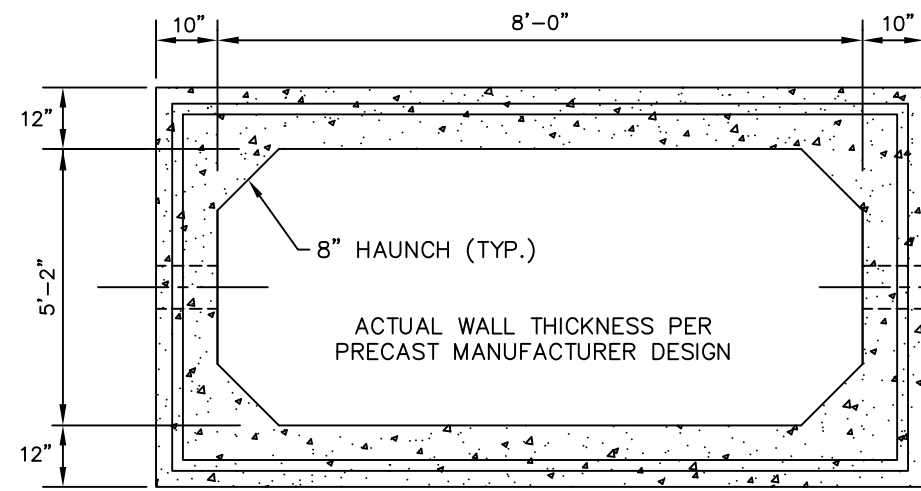
BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY TOWN OF HARDENBURG ULSTER COUNTY NEW YORK			
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN	SCALE	SHEET NO.
		1" = 20'	4 OF 5
		DATE	
		JAN. 2018	
		DWG	CHK
		RJS	



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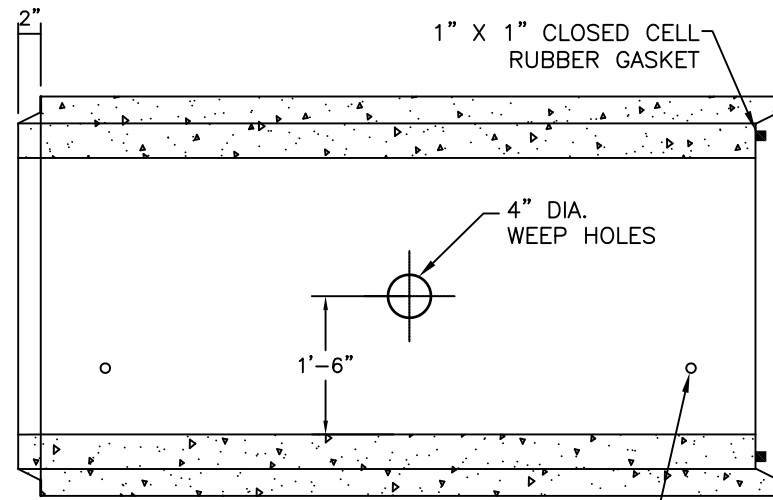


REINFORCEMENT DETAIL
NOT TO SCALE

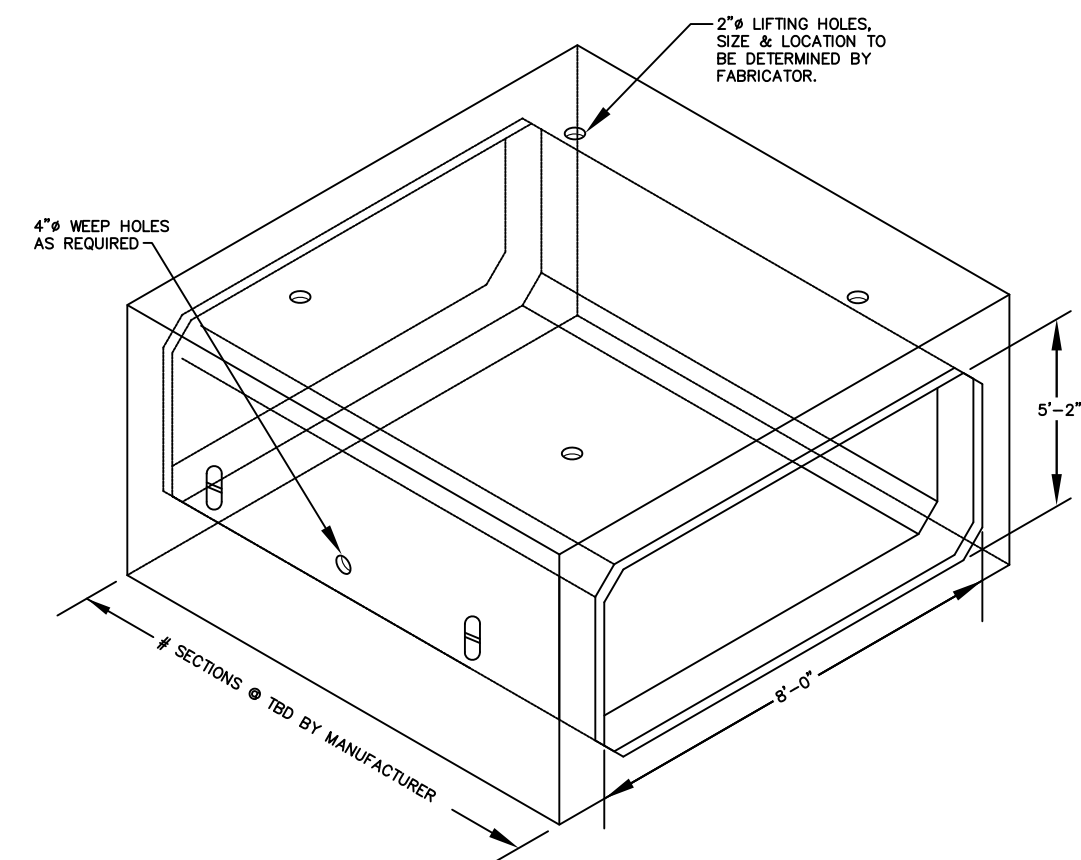


FRONT VIEW
NOT TO SCALE

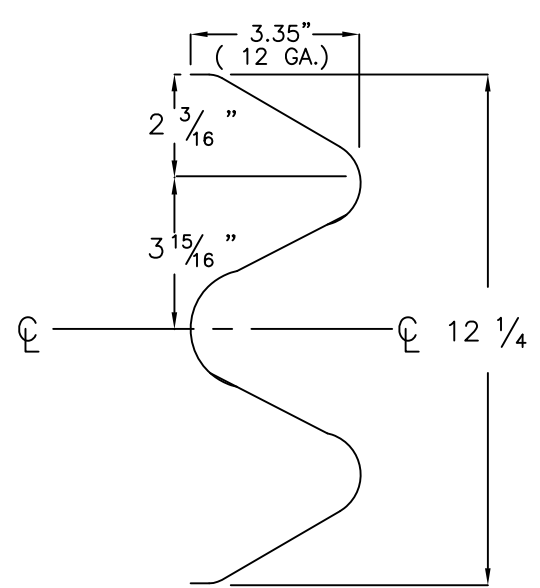
- NOTES:
1. CULVERT TO BE DESIGNED TO MEET STANDARD AASHTO SPECIFICATIONS WITH HS-25 LIVE LOADING.
 2. CONCRETE: 5,000 PSI, MINIMUM STRENGTH @ 28 DAYS.
 3. STEEL REINFORCING - ASTM A-615, GRADE 60. (REINFORCEMENT SHOWN IS SCHEMATIC ONLY. CONTRACTOR TO VERIFY REINFORCEMENT FOR HS-25 LOADING). REINFORCING STEEL SCHEDULE AND PLAN OF PRECAST SECTION LOCATIONS SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
 4. COVER TO STEEL - 1" MINIMUM.
 5. CONSTRUCTION JOINT SEALED WITH 1" BUTYL RUBBER OR EQUIVALENT.
 6. EARTH COVER = 0 TO 2 FEET MAXIMUM.
 7. APPROXIMATE BOX CULVERT WEIGHT PER FT. = TBD LBS.
 8. LIFTING HOLES SHALL BE FILLED WITH CONCRETE PLUGS AND MASTIC AFTER THE BOX SECTIONS ARE IN PLACE.



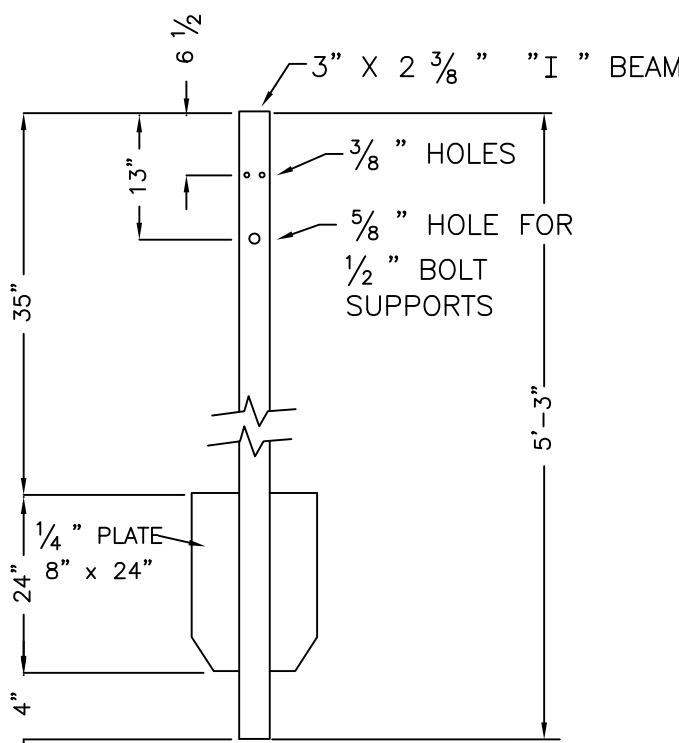
LONGITUDINAL VIEW
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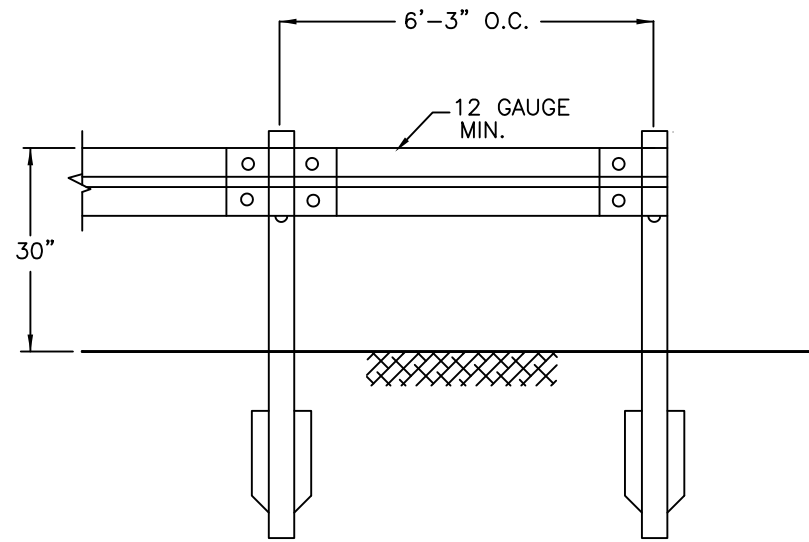
ISOMETRIC VIEW
NOT TO SCALE



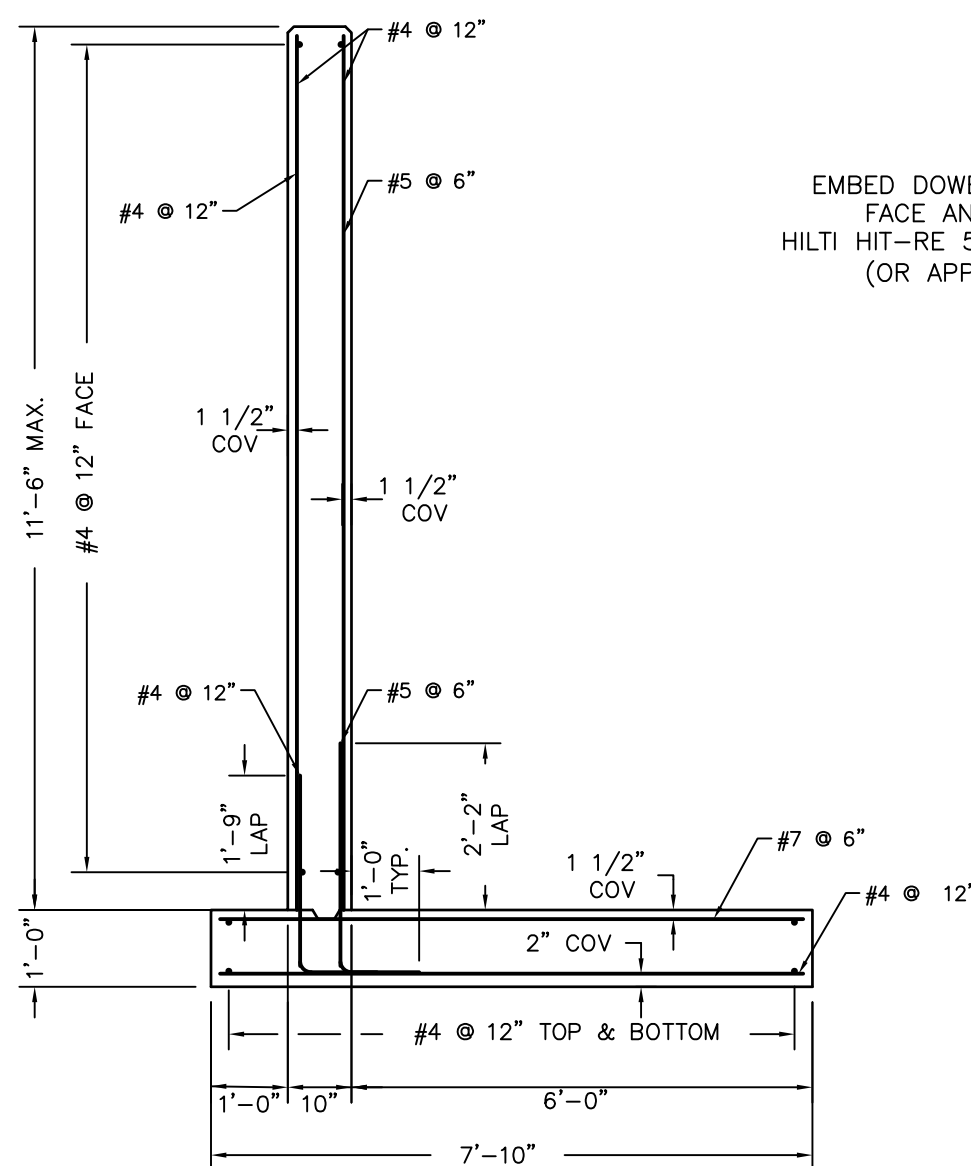
TYPICAL CORRUGATED
BEAM DETAIL
NOT TO SCALE



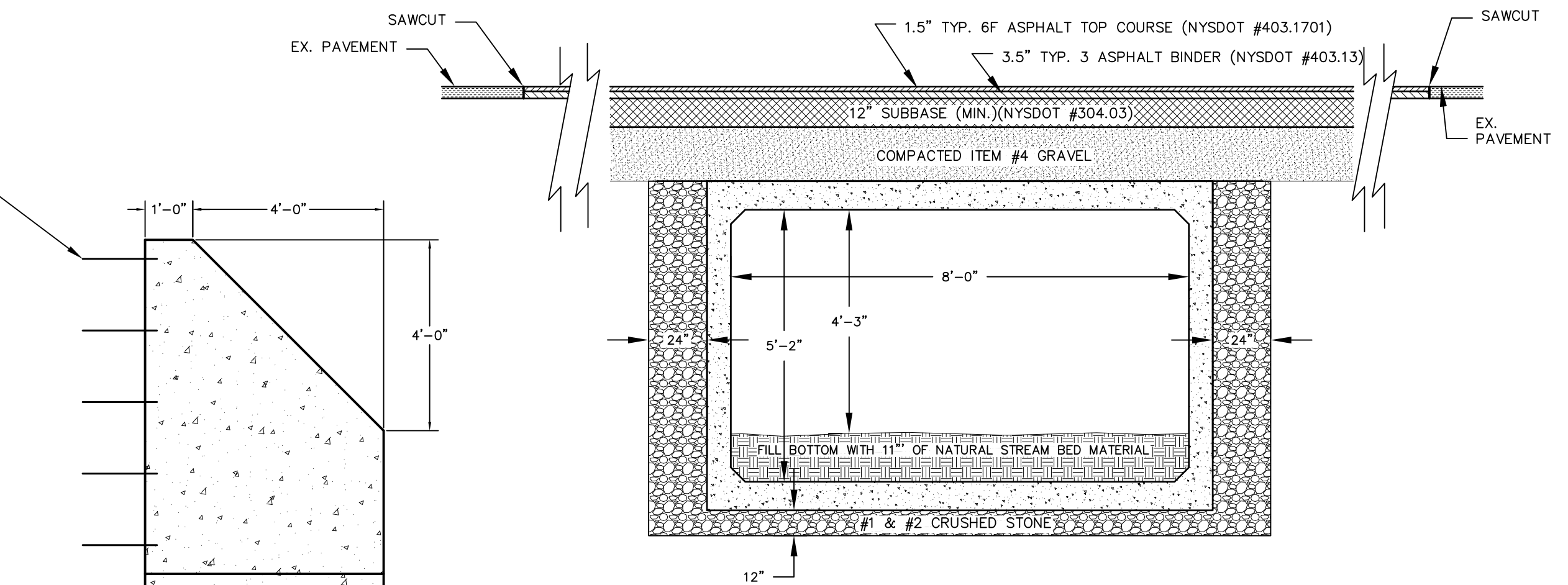
TYPICAL POST DETAIL
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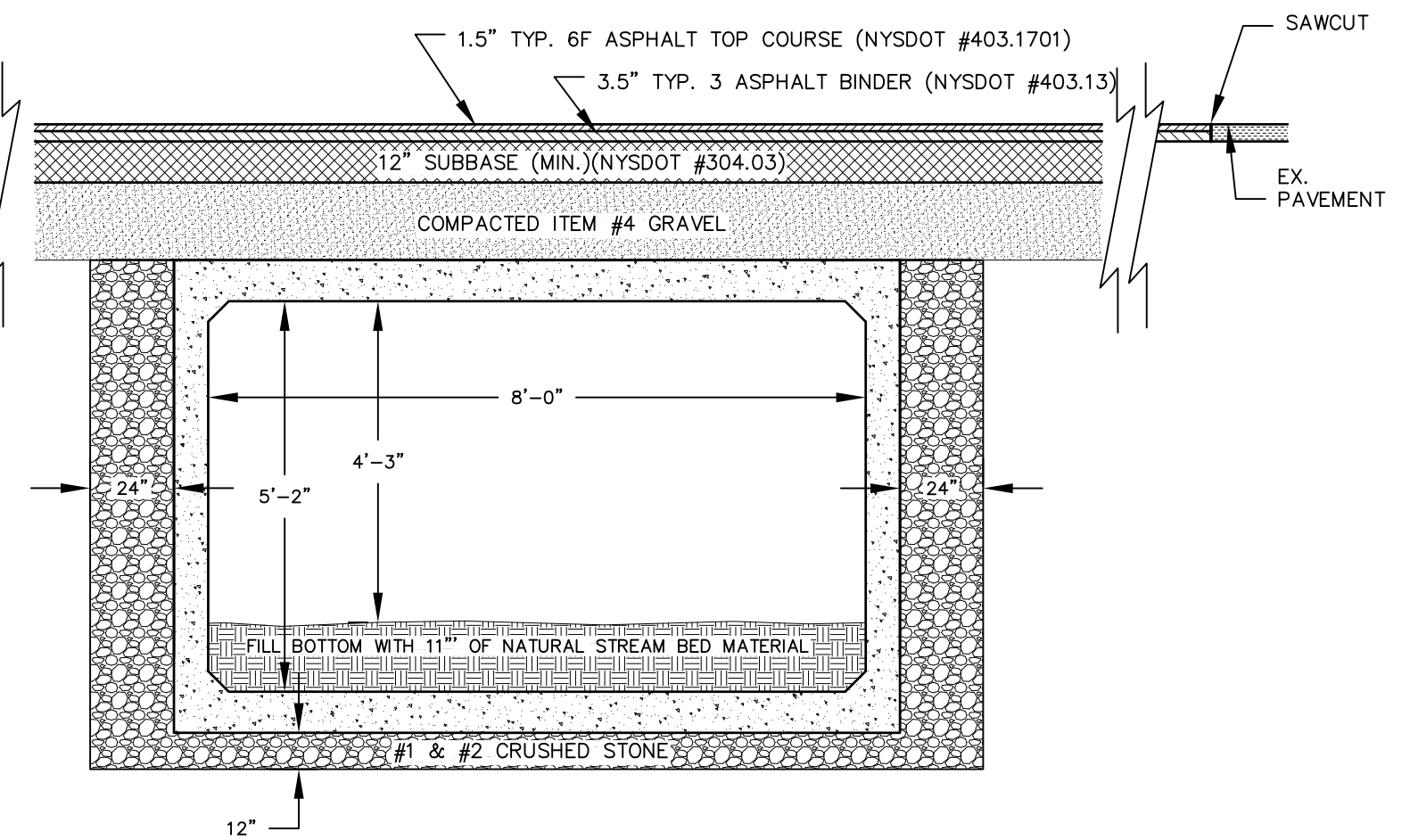
GUIDE RAIL DETAIL
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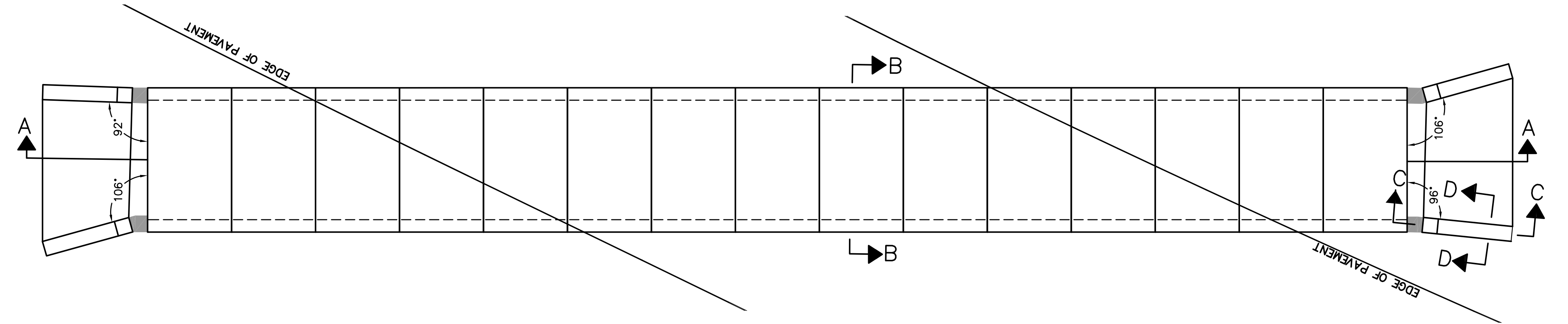
WINGWALL SECTION D-D
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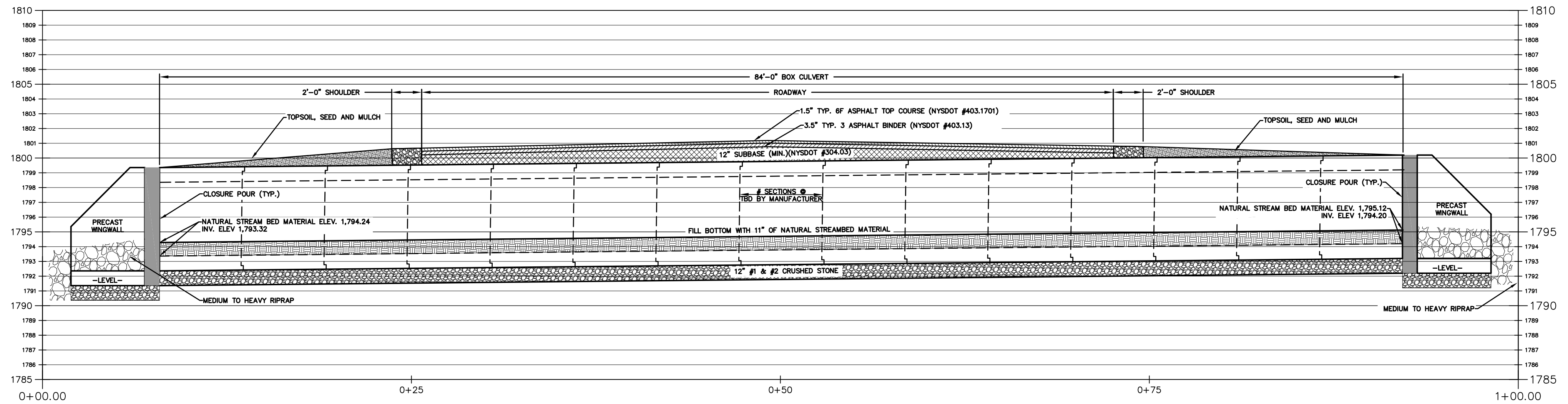
WINGWALL SECTION C-C
NOT TO SCALE



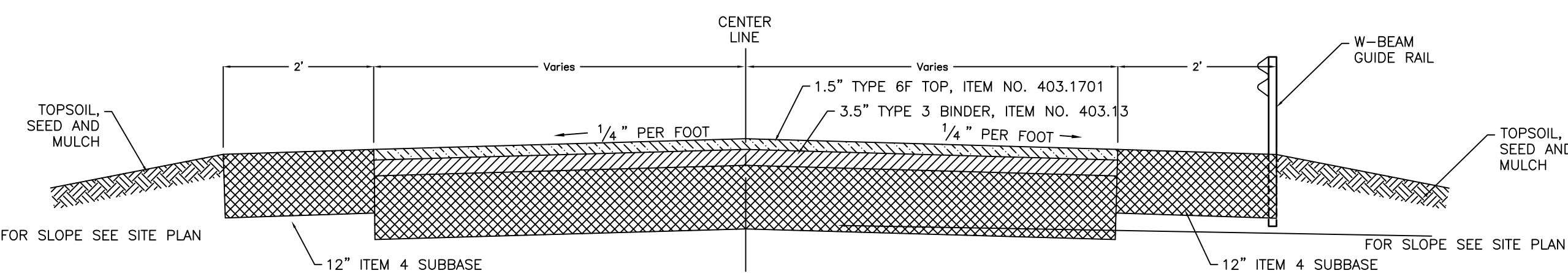
SECTION B-B
NOT TO SCALE



CULVERT PLAN VIEW
NOT TO SCALE

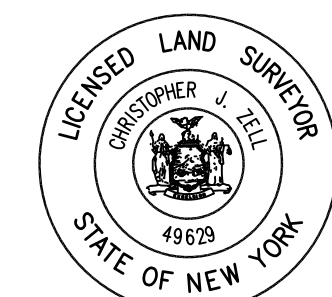


SECTION A-A
NOT TO SCALE



TYPICAL PAVING DETAIL
NOT TO SCALE

DETAILS
CONTRACT NO. THA-181



Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.

BIG POND ROAD CULVERT REPLACEMENT			
NY RISING COMMUNITY RECONSTRUCTION PROGRAM			
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY	
NEW YORK		NEW YORK	
DATE	REVISION RECORD	BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN		
SCALE	DATE	CHK	SHEET NO.
1" = 20'	JAN. 2018	RUS	5 OF 5

ATTACHMENT 8

Design Report

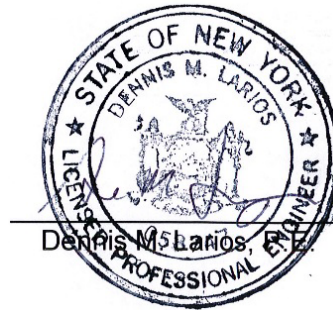
Brinnier & Larios, P.C.

Design Report

With H&H Study

January 2018

Big Pond Road Culvert Replacement Project Town of Hardenburgh



Funding By:

Governor's Office of Storm Recovery

N.Y. Rising Community Reconstruction Program

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Figure 1 – Watershed Boundary

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Appendix A – USDA Soils Report of Drainage Area
Appendix B – Hydrocad Model Output
Appendix C – 30% Design Drawings

I. PURPOSE AND SCOPE

The Town of Hardenburgh is addressing a chronic flooding problem along Big Pond Road through the design and construction of a new stormwater drainage system. The location of the project area is shown on Figure 1. The project is being funded by a U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant for Disaster Recovery (CBDG-DR) administered by the Governor's Office of Storm Recovery (GOSR), an office of the NYS Homes and Community Renewal's (NYSHCR) Housing Trust Fund Corporation.

The existing Big Pond Road culvert is an eighty-two feet long (82 LF) galvanized corrugated arch pipe with inside dimensions of forty-eight inches high by seventy-two inches wide (48"x72" CMP) with stacked stone wingwalls. This 48"x72" CMP creates a restriction in the unnamed stream. During large rain events the 48"x72" CMP does not have adequate hydraulic capacity to convey the unnamed stream resulting in the stream over-topping its embankments causing closure of the Big Pond Road and repeated damage to the roadway.

The design includes a hydrologic and hydraulic study (H&H Study) of the project area to determine the peak rates of stormwater runoff. The design evaluates different types of replacement culvert alternatives to convey the design storm event. The recommended storm drainage alternative is then be advanced to the thirty percent (30%) design stage in this report.

The Town of Hardenburgh subdivision design standards call for drainage improvements to accommodate runoff from a 50 year storm event (Subdivision Section 505B). GOSR goals is for drainage structures to be capable of handling a 100 year storm event. The design will evaluate both the 50 year and 100 year storm event conditions for the replacement drainage infrastructure.

The remainder of design report is organized into the following sections:

Section 2 – Review of existing conditions

Section 3 – Hydrologic analysis

Section 4 – Hydraulic analysis

Section 5 – Design

Section 6 – Permitting requirements

Section 7 – Opinion of probable costs and schedule considerations

Section 8 – Summary and recommendations

II. EXISTING CONDITIONS

Big Pond Road is located in the extreme western part of Ulster County in the Town of Hardenburgh. Big Pond Road is a twenty feet wide, two-lane Town roadway that becomes Barkaboom Road in Delaware County to the north. Approximately 0.2 miles south of the Big Pond Road culvert site, Big Pond Road connects to Beaverkill Road (County Road 54) which is the primary access road to the southern half of the Town of Hardenburgh. The Big Pond Road culvert is located approximately 100 feet east of the Big Pond Road-Little Pond Road intersection. The 48"x72" CMP culvert crosses diagonally under Big Pond Road. The roadway grade near the Big Pond Road culvert site is a nine percent (9%) slope east of the culvert location and a 2.5% slope west of the culvert location.

There is an overhead electric utility line on the north side of Big Pond Road. There are no other underground or overhead utilities in the vicinity of the Big Pond Road culvert.

The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. This unnamed stream is classified by NYSDEC as a Class C(T) stream. The Waters Index Number for this stream is D-71-9 according to 6NYCRR 815.6 Table 1. As such, the culvert replacement work will require a NYSDEC Stream Disturbance Permit and a Water Quality Certification.

The portion of Big Pond Road near the culvert replacement site is located outside of the 100 year flood plain for the Beaver Kill according to Flood Insurance Rate Map (FIRM) Panel 36025C0836D effective June 19, 2012.

There are no Federal or NYSDEC Freshwater wetlands in the immediate vicinity of the culvert site.

To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement design will include work to stabilize the northern roadway embankment.

The right-of-way survey at the Big Pond Road culvert site indicates that this is a "road by use" with a two rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1-12.100 and SBL# 20-1-12.122). Easements will have to be obtained for any culvert replacement construction work located outside of the public right-of-way.

III. HYDROLOGIC ANALYSIS

A. Methodology Used

The hydrologic analysis of the Big Pond Road culvert was performed using the methodology developed by the U.S.D.A. Soil Conservation Service known as the Technical Release 55 (TR-55), Urban Hydrology for Small Watersheds. The hydrologic runoff calculations will be performed by the computer software program titled HydroCAD (version 10) developed by HydroCAD Software Solutions LLC. HydroCAD. The watershed was modeled as two subcatchment areas; Subcatchment 1S which drains to Big Pond and Subcatchment 2S which is the additional drainage area that flows to the Big Pond Road culvert. The complete HydroCAD output including runoff hydrographs can be found in Appendix B.

B. Watershed Conditions

Figure 1 shows the watershed boundary of the area that drains to the Big Pond Road culvert. The watershed area is 1,984 acres in size and extends from Barkaboom Mountain on the north (peak at USGS Elevation 3,000 feet), to Touchmenot Mountain on the west (peak at USGS Elevation 2,760 feet) to the mountain ridge east of Big Pond (peak at USGS Elevation 3,100 feet). Located within this watershed boundary are Mountain Lake (USGS Elevation 2,150 feet) and Big Pond (USGS Elevation 1,920 feet). The Big Pond Road culvert is at approximately USGS Elevation 1,810 feet.

The land use in the Big Pond Road culvert watershed area is mainly undeveloped woods with good ground cover. There are scattered residential buildings in the watershed area but there are no concentrated developed areas with larger amounts of impervious area.

C. Soils

The soil type information in the watershed area was obtained from the USDA Soil Resource Report which is included in Appendix A. The primary surficial soils are Halcott, Mongaup and Vly soils which are Hydrologic Soil Group D soils having low infiltration rates. A complete listing of surficial soils in the watershed area is given in Appendix A.

Soil borings were completed to gather geotechnical information on the subsurface conditions in the vicinity of the proposed culvert replacement. Four soil borings were drilled to depths ranging from twenty feet (20') to twenty-five feet (25'). The boring logs are given in Appendix A. The locations of the soil borings are shown on Sheet 2 of 5. The subsurface soils below the bottom of the proposed replacement culvert are dense silty sands with gravel that is underlain by dense red-brown sandstone.

D. Design Storms

The design storms for the 50 and 100 year frequencies utilized in this analysis were obtained from the Cornell University's Northeast Regional Climate Center (NRCC) precipitation database (<http://precip.eas.cornell.edu/>). This database provides site-specific design storms including the rainfall distribution thereby allowing more accurate modeling of the hydrologic conditions at the exact site. The 24-hour rainfall depths for the design storms are shown below in Table 1.

Table 1. Design Storm Rainfall Depths

Design Storm	Rainfall Depth (inches)
50-year 24 hour	5.80
100-year 24 hour	6.81

E. Hydrologic Analysis

A reconnaissance of conditions along the unnamed stream from Big Pond to the Beaver Kill was performed to gather information for the H&H Study. There are four structures along the unnamed stream that regulate the flow:

1. A laid-up stone dam on the south end of Big Pond which has been breached and is partially collapsed.
2. A six feet (6') diameter steel culvert under Big Pond Road located approximately 300 feet downstream of the Big Pond dam. Because of the topography of the area, the Big Pond Road embankment with its 6' diameter culvert (Big Pond Culvert) essentially function as a backup dam for the Big Pond laid-up stone dam that has deteriorated.
3. The 48"x72" CMP culvert pipe that crosses under Big Pond Road which is the subject of this culvert replacement design.
4. A 48"x72" CMP culvert pipe under the driveway for SBL#20.1-12.127 (Alfonso property). The Alfonso culvert is located approximately 120 feet south of the Big Pond Road culvert.

There are no other culvert structures between the Alfonso property and the confluence with the Beaver Kill.

The hydrologic model of the site was set up to simulate the runoff into Big Pond and its outflow via the Big Pond Culvert plus runoff from the additional watershed area upstream of the Big Pond Road culvert and finally a hydraulic reach to simulate the Big Pond Road replacement culvert. The input parameters for the HydroCAD model are given in Appendix B.

The peak rate of runoff to the Big Pond Road culvert for the different design storm events are:

Table 2. Peak Stormwater Runoff Rates

Design Storm	Peak Rate of Runoff (cfs)
50 year 24 hour	620
100 year 24 hour	823

IV. HYDRAULIC ANALYSIS

The hydrologic analysis given in Section 3 determined the peak rates of runoff to the Big Pond Road culvert. This section provides a hydraulic analysis of replacement culvert alternatives.

Current stream crossing standards call for box and pipe culverts to be embedded into the streambed to reduce stream barriers and impediments to fish and wildlife. Box and round culverts should be embedded to at least twenty percent (20%) of the culvert height at the downstream invert and should only be used on streambeds with slopes less than three percent (3%). The slope of the Big Pond Road culvert is approximately one percent (1%) and therefore, use of a culvert is consistent with the stream crossing standards.

An initial culvert replacement evaluation was performed to assess different sizes and types of culverts including embedded round culverts, embedded four-sided box culverts and embedded arch structures and considered equivalent bridge structures. The initial evaluation found that a round or arch type structure would have to be at least eight feet (8') in diameter to convey the 100 year storm flows. The topography of the existing roadway at the Big Pond Road culvert crossing can only accommodate up to a six foot (6') tall drainage structure. A drainage structure taller than 6' would necessitate a road regrading plan which would exceed the funding available for this culvert replacement project. The remainder of the hydraulic analysis evaluated rectangular culvert drainage structures.

The HydroCAD model determined that an eight feet (8') wide rectangular drainage structure would have an average depth of flow of 3.45' and 4.26' during a 50 year and 100 year storm event respectively.

V. DESIGN

The hydraulic analysis given in Section IV determined that the Big Pond Road replacement culvert must have a minimum hydraulic opening size of 8' wide by 4.26' tall. Providing for a 20% embedment depth (0.85') would require a replacement box culvert with interior dimensions of 8'-0" wide by 5'-2" high.

The design of the Big Pond Road replacement culvert was laid out based on the following considerations:

- Pipe Sizing – the minimum embedded culvert size is of 8'-0" wide by 5'-2" high (internal dimensions). This size culvert is capable of conveying the 100 year storm event runoff amount;
- Type of Pipe – for optimal hydraulic flow properties a smooth interior wall culvert is desired. A precast reinforced concrete culvert structure can be fabricated at this size with smooth interior walls. A precast rectangular concrete structure offers excellent hydraulic characteristics, 50 year design life and has the shorter construction duration;
- Pipe Slope – the replacement culvert slope will be installed at the same 1% slope as the existing culvert but embedded into the streambed.

Utilizing the considerations listed above, the Big Pond Road replacement culvert was laid out as shown on Sheet 4 of 5 of the design plans provided in Appendix C.

The Big Pond Road culvert is being enlarged from a 48"x72" CMP to an 8'-0" wide by 5'-2" high (4.26' high hydraulic open flow area). The stream channel downstream of the Big Pond Road culvert is adequately sized to handle the flow from the enlarged culvert because it has historically conveyed the large storm flows which overtopped Big Pond Road. However, the one drainage structure located one hundred twenty feet (120') downstream of the Big Pond Road culvert at the Alfonso driveway (SBL#20.1-12.127) will be impacted by enlarging the Big Pond Road culvert. The design calls for removing and replacing the Alfonso driveway culvert with the same sized 8'-0" wide by 5'-2" high (internal dimensions) culvert as the Big Pond Road culvert. The layout of the Alfonso driveway replacement culvert is shown on Sheet 4 of 5 of the design plans.

The road embankment on the north side of Big Pond Road for a length of approximately two hundred ten feet (210') upstream of the Big Pond Road culvert was found to be unstable as evidenced by the cracked asphalt and settling of the road shoulder. The northern road embankment is extremely steep with slopes ranging from two horizontal to one vertical (2H:1V) to nearly 1H:1V at some locations. The unnamed stream is located directly at the toe of the slope. Remedies that were considered to stabilize the northern road embankment included:

- Slope flattening with a wider road shoulder. A slope flattening remedy would encroach into the stream area and would require relocating the stream further north on private property. Relocating the stream is not a viable option and therefore slope flattening was not considered further.
- Install a retaining wall. A retaining wall could be constructed along the edge of the stream to create a stable road embankment. A conventional cantilever retaining wall would require excavation for a footing below the bottom of the stream and would result in significant stream disturbance and restoration work. A segmental block retaining wall could be installed with its base just below the stream bottom but installation would require temporary diversion of the stream and costly mass excavation of the embankment and a portion of the road. While constructible, the cost of a retaining wall is high.
- Steel sheetpile support wall. Steel sheeting could be driven on the north side of the road shoulder to stabilize the roadway. Because of the dense soil conditions at the site and to minimize the required length of the steel sheeting to support highway loadings, the steel sheeting could be enhanced with H-piles to provide a stable support wall. The steel sheetpile support wall could be installed without causing a disturbance to the adjacent stream. This road embankment remedy was advanced to the 30% design stage using a H-pile and steel sheetpile wall.

Using the geotechnical data on the subsurface soils obtained from the boring logs, the design of a steel sheetpile wall with deeper H-pile supports to support an ASSHTO HS20 loading was prepared. The design determined that eleven feet (11') long PZ22 steel sheets with sixteen feet (16') long HP 10"x42' piles would have an adequate factor of safety to support the road embankment. The layout of the steel sheetpile wall is shown on Sheet 4 of 5 of the design plans. The steel sheetpile wall starts near road elevation 1807 feet and extends eastward to the stacked stone wall near road elevation 1815 feet.

The road would be finished with a two feet (2') gravel shoulder and W-beam guide railing. The ground surface in front of the steel sheetpile wall would be armored with medium sized (average 12" dimension, 100 pound) riprap stone to protect it from stream erosion during large flood events.

A temporary construction bypass road was designed on the south side of Big Pond Road. The temporary construction bypass road is located on two private properties (Rubin, SBL #20-1-12.122 and Alfonso, SBL #20-1-12.127) and temporary construction easements will have to be obtained.

The 30% design plans for the culvert replacement and road embankment stabilization project are given in Appendix C.

VI. PERMITTING

The Big Pond Road culvert conveys water from the unnamed stream that is classified by NYSDEC as a Class C(T) stream with a Waters Index Number of D-71-9 according to 6NYCRR 815.6 Table 1. A NYSDEC stream disturbance permit and Water Quality Certification must be obtained for the culvert replacement work. There are no wetlands in the project area and therefore wetland permitting is required.

The proposed culvert replacement work is along a navigable stream which is regulated by the United State Army Corps of Engineers (USACE). USACE Nationwide Permit NWP 3 – Maintenance provides for replacement of previously authorized structures such as culverts. As long as the culvert replacement plans comply with the general conditions of NWP 3, a Preconstruction Notification to the USACE is not required.

The project will require preparation of both a stream protection plan and an erosion and sediment control plan. The project will disturb less than one acre of land and therefore the construction activity will not have to obtain coverage for stormwater discharges from construction activities under NYSDEC Permit GP-0-15-002.

A review of the NYSDEC online Environmental Resource Mapper indicates that there may be some rare plants in the project area. This will be addressed in the SEQRA review being done by GOSR.

The proposed culvert replacement work is being done on a Town road which is a “road by use”. The Town of Hardenburgh is the project sponsor and therefore a Town Highway Work permit is not required.

The Town will have to obtain a permanent easement for long term maintenance of the portions of the replacement culvert that are outside of the “road by use” boundary. A temporary construction easement will be necessary for any type of construction bypass road.

VII. OPINION OF PROBABLE COST AND SCHEDULE CONSIDERATIONS

An opinion of probable costs for Big Pond Road culvert replacement is given in Table 3. The opinion of probable cost is based on the Town contracting out the work at prevailing wage rates. The opinion of probable cost is \$614,400.00.

The estimated duration of the Big Pond Road culvert replacement project is as follows:

- Obtaining all necessary temporary construction easements and permanent drainage maintenance easements – 3 months
- Agency design reviews and approvals– 2 months
- Construction of the Big Pond Road and Alfonso driveway replacement culverts and road embankment stabilization – 4 months

Table 3. Opinion of Probable Cost

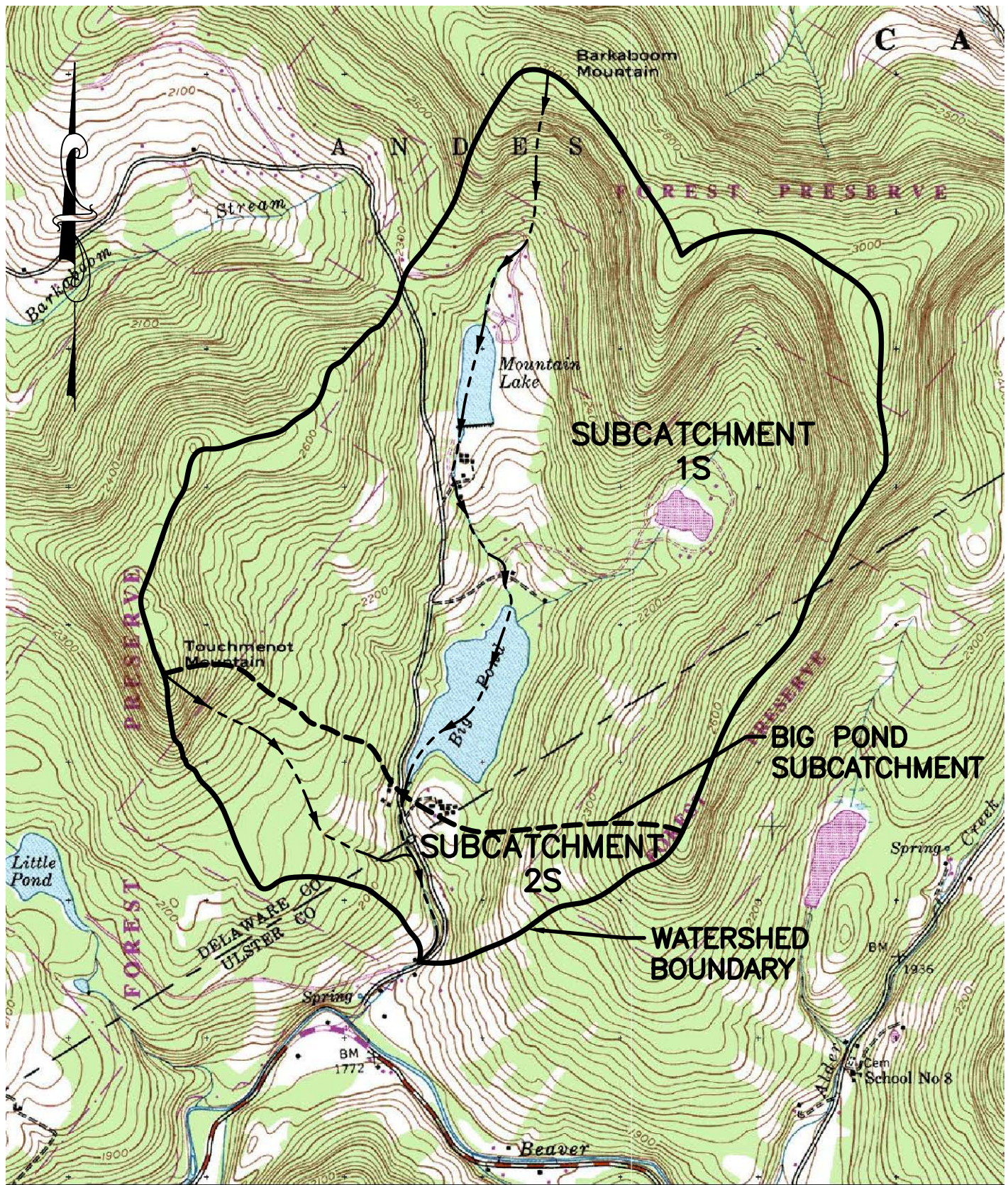
<p>Table 1 Opinion of Probable Construction Costs - 30% Design Big Pond Road Culvert Replacement Project Town of Hardenburgh January 2018</p>					
Item No.	Description	Unit	Quantity	Unit Cost	Estimate
1	Mobilization	L.S.	1	\$10,000	\$10,000
2	Site Preparation	L.S.	1	\$5,000	\$ 5,000
3	Construct Temporary Gravel Bypass Road - 300 LF	L.S.	1	\$15,000	\$15,000
4	Maintenance and Protection of Traffic	Per Month	2	\$10,000	\$20,000
5	Install & Maintain Erosion and Sediment Control Measures	Per Month	2	\$3,000	\$6,000
6	Install & Maintain Stream Protection Measures	Per Month	2	\$5,000	\$10,000
7	Selective Demolition of Existing Culverts and Stacked Stone Walls	L.S.	1	\$6,000	\$6,000
8	F&I 8' Wide x 5'-2" High ID Precast Concrete Box Culvert - 84' + 24'	L.F.	108	\$1,300	\$140,400
9	Tree Clearing Along Northern Road Embankment	Acre	0.5	\$10,000	\$5,000
10	F&I Steel Sheetpile Road Embankment Support Wall - 11 LF PZ22 Sheet Pile and 16 LF HP 10x42 Piles	LF	157	\$1,600	\$251,200
11	Riprap Inlet and Outlet Protection	Tons	180	\$50	\$9,000
12	F&I 12" Subbase Course	CY	260	\$45	\$11,700
13	F&I 3.5" Base Course Asphalt, Type 37.5 mm F9	Tons	20	\$110	\$2,200
14	F&I 1.5" Top Course, Type 6F, Asphalt Overlay - 350 LF	Tons	80	\$110	\$8,800
15	F&I W-Beam Guide Rail	L.F.	345	\$45	\$15,500
16	4' Chainlink Fencing Fall Protection Along Embankment Support Wall	L.F.	212	\$40	\$8,500
17	Site Restoration	L.S.	1	\$10,000	\$10,000
18	Construction Contingency (10%)	%	15%	\$534,300	\$80,100
	Opinion of Probable Construction Cost				\$614,400

VIII. SUMMARY AND RECOMMENDATIONS

The Town of Hardenburgh is undertaking a project to replace the Big Pond Road culvert with funding provided through GOSR. The hydrologic and hydraulic analysis (H&H Study) evaluated the site conditions and determined that an embedded culvert size with internal dimensions of 8'-0" wide by 5'-2" high was required to convey the 100 year storm flow. The design also provided for stabilizing the northern embankment of Big Pond Road upstream of the culvert which was found to be failing. The 30% design plans are provided in Appendix C.

The opinion of probable costs for the Big Pond Road culvert replacement, the Alfonso driveway culvert replacement and the Big Pond Road embankment stabilization is \$614,400.00.

Construction of the culvert replacement and road embankment stabilization is estimated to take four months to complete.



LEGEND

- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- 1S SUBCATCHMENT NUMBER

SOURCE:
USGS 7.5 MINUTE QUADRANGLE, ARENA
20' CONTOUR INTERVALS

BRINNIE & LARIOS, P.C.
ENGINEERS & LAND SURVEYORS
67 MAIDEN LANE KINGSTON, N.Y.

WATERSHED BOUNDARY
BIG POND ROAD CULVERT REPLACEMENT

TOWN OF HARDENBURGH

ULSTER COUNTY, N. Y.

SCALE
1"=2000'

DATE
JAN. 2018
DWG RJS CHK JEM

FIGURE NO.
1

Via Electronic Mail

April 19, 2018

Robyn A. Niver
U.S. Fish and Wildlife Service
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045

Re: ESA/MBTA/BGEPA Consultation for the Big Pond Road Culvert Replacement, Hardenburgh, NY

Dear Ms. Niver:

The Governor's Office of Storm Recovery (GOSR), acting under the auspices of New York State Homes and Community Renewal's (HCR) Housing Trust Fund Corporation (HTFC), on behalf of the Department of Housing and Urban Development (HUD) is preparing an Environmental Assessment (EA) for the Big Pond Road Culvert Replacement (the "Proposed Action") (**Attachments 1 and 2**). Funding is being provided by the HUD Community Development Block Grant Disaster Recovery (CDBG-DR) program.

The purpose of this letter is to provide the United States Fish and Wildlife Service (USFWS) – New York Ecological Services Field Office notice of the proposed project and to document compliance with Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act of 1940 (BGEPA) (54 Stat. 240, as amended; 16 U.S.C. 668-668c). As discussed below, we have reviewed the project and found that it does not jeopardize the continued existence of ESA species or destroy or adversely modify their critical habitat.

1.0 PROJECT DESCRIPTION

The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The infrastructure will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The current project design requires the following construction elements:

- Removal and replacement of an existing 48 inch by 72 inch arched culvert running under an unnamed gravel drive southwest of the intersection of Little Pond Road and Bid Bond Road with 8 feet wide by 5 feet high by 23 feet long box culvert.
- Removal and replacement of a second 48 inch by 72 inch arched pipe running under Big Pond Road southeast of the intersection of Little Pond Road and Big Pond Road with a 8 feet wide by 5 feet high by 23 feet long and a 8 feet wide by 5 feet high by 84 feet long box culvert.
- Removal and replacement of associated riprap and sheet piling.
- Stabilization of Big Pond Road
- Construction of a temporary gravel bypass road
- Construction of a temporary earthen coffer dam
- Construction of stone retaining walls along Big Pond Road (See **Attachment 7**, Site Plans)

The construction will require stream disturbance, clearing and grubbing of the construction area and removal of seven trees. The right-of-way survey at the Big Pond Road culvert site indicates that this is a “road by use” with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements must be obtained for any culvert replacement construction work located outside of the public right-of-way. Easement areas have been identified and preparation for obtaining the easements is underway.

2.0 ENDANGERED SPECIES ACT (ESA) and MIGRATORY BIRD TREATY ACT AND THE BALD and GOLDEN EAGLE PROTECTION ACT SPECIES

Endangered Species Act

According to the United States Fish and Wildlife Service (USFWS) Information, Planning and Conservation (IPaC) online planning tool and Trust Resource List generated for the proposed project (**Attachment 3**) there are no listed endangered species; however, the Northern Long-eared bat (NLEB) (*Myotis septentrionalis*) and the Northern Wild Monkshood (*Aconitum noveboracense*) are listed as threatened species that may be found within the vicinity of the project area. The official species list for the proposed project states that there is no critical habitat in the project area. The Bald Eagle (*Haliaeetus leucocephalus*) and numerous migratory birds were also identified on the USFWS Resource List.

GOSR requested a bat review from the New State Department of Environmental Conservation (NYSDEC). NYSDEC responded that the *available information in the New York Natural Heritage Program database on known occurrences of rare or state-listed bat species indicates that the project area does not occur in the immediate vicinity of known occurrences of rare or state-listed bat species. The major concern for bat species in relation to this project would be the destruction of potential roosts and roosting habitat that may occur if tree clearing is required. Because this project does not take place within known occupied habitat, there are no restrictions on cutting (see Attachment 4).*

GOSR requested a Natural Heritage Program (NHP) data base search from NYSDEC. The results identified potential presence of the Northern Wild Monkshood (*Aconitum noveboracense*), State Endangered, and Jacobs Ladder (*Polemonium vanbruntiae*), State Rare, within the vicinity of project area. Northern Wild Monkshood was identified in the Beaverkill on 07-23-2017 and the plants were among rocks in cool areas along the Beaverkill. Stream banks were shaded by birch, beech, and hemlock.

A description of each federally threatened species identified by USFWS, and the likelihood that the species occurs within the project areas, is provided below. Species descriptions are summarized from NYSDEC fact sheets and USFWS species profiles unless otherwise referenced.

Northern Long-eared bat

The Northern Long-eared bat (NLEB) is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases - reproduction and hibernation. NLEB hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remain solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. No caves or mines occur near the project site. Summer habitat of the NLEB generally includes upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008). Roost trees are usually intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). As illustrated on the NYS Resource Map provided by NYSDEC on February 8, 2018, included as **Attachment 4**, there are no known NLEB (or Indiana bat) hibernacula or maternity colonies within five miles of the project area. Also, according to geospatial data provided by USFWS, there are currently no known maternity roost trees or hibernacula known to be occupied by NLEB within five miles of the project location.

The project involves excavation and other earthwork. It is the intent to minimize ground disturbance to the greatest extent possible; however, due to uncertain construction schedules, trees and brush may need to be removed during the active season of the NLEB.

Due to the potential for active season tree removal, GOSR determines that this project **may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule (Attachment 5).**

All activities associated with the proposed project will not:

- 1) disturb hibernating NLEBs in a known hibernaculum;
- 2) alter the entrance or interior environment of a known hibernaculum;
- 3) remove any trees within 0.25 miles of a known hibernaculum at any time of year; or
- 4) cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree, during the pup season (June 1 through July 31).

Northern Wild Monkshood

Northern wild monkshood (monkshood) is an herbaceous perennial with distinctive blue, hood-shaped flowers. It has only been found in Iowa, Wisconsin, Ohio, and New York. The plants range from one to four feet in height, with wide, toothed leaves. They prefer to occupy cool sites such as stream sides or shaded cliff sides. All existing occurrences in New York have been found on sandstone-derived rocky or sandy soils, at elevations ranging between 400 and 1000 meters. Flowers typically bloom between June and September. Degradation and loss of habitat are the primary threats to species survival.

The USFWS Official Species List for the project area lists monkshood as potentially occurring within the project area. The NYSDEC NHP data found that the monkshood was identified in the Beaverkill on 07-23-2017 and the plants were among rocks in cool areas along the Beaverkill. Stream banks were shaded by birch, beech, and hemlock. The project site includes stream banks are vegetated with trees and bushes and to do not have the rock surfaces typical known to provide habitat for monkshood. The project site does provide the

typical habitat required by the Northern Monkshood. In order to move the Environmental Assessment forward so that project construction can be completed during late summer 2018, when the water is low, GOSR has initially determined that the proposed project **may affect, but is not likely to adversely affect** monkshood based on the assumption that the monkshood is not located within the project area due to the absence of preferred habit. However, GOSR proposes to conduct a specimen survey in early July, when the plants are blooming, to determine whether the species is present. The survey will be completed in all areas of bank disturbance. Results of the survey will be provided to the USFWS - New York Field Office within 10 days of completing the survey. If the absence of the monkshood can be confirmed based on the survey results, tree clearing will be performed after July 31. If monkshood presence is confirmed based on the survey results, GOSR will coordinate with the USFWS - New York Field Office to determine the appropriate steps necessary to proceed with project implementation.

Migratory Bird Treaty Act

According to the USFWS IPaC Trust Resource Report, there are fifteen species of migratory birds that are protected by the Migratory Bird Treaty GOSR has determined that the project would have **no significant adverse impact** on migratory birds or their habitat. The area proposed for tree clearing is within or directly adjacent to roads and residential properties. It is anticipated that passerine birds would temporarily leave the area during construction due to noise and disturbance. Extensive areas of high quality woodland habitat are available near to the project site (see **Figure 2**).

Bald and Golden Eagle Protection Act

The iPaC review process identified the bald eagle as having year-round habitat in Ulster County that may be potentially affected by activities in the project area. GOSR has determined that the proposed project would have **no effect** on bald eagles. The project area is not located within the vicinity of documented bald eagle breeding. The NYSDEC NHP database search did not identify any bald eagles or nests in the vicinity of the project location. As with other migratory birds, foraging bald eagles may temporarily avoid the area during construction due to noise and disturbance. The area proposed for tree clearing is within or directly adjacent to roads and residential and commercial properties that experience frequent human disturbance. Removal of these trees would not significantly affect foraging bald eagle as extensive areas of suitable, undisturbed foraging habitat are available nearby the site.

3.0 CONCLUSIONS

GOSR is submitting the above information to request acknowledgement from USFWS that they have no objections to the determination made by GOSR that the proposed project **may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule**, and that the proposed project **may affect, but is not likely to adversely affect** Northern wild monkshood. A field survey will be completed for the presence monkshood prior to any invasive or construction activities and the result provided to USFWS for further consultation.

GOSR further determines that the proposed project will have **no significant adverse impact** on migratory birds and **no effect** on breeding bald eagles. GOSR requests to be alerted if USFWS becomes aware of a Bald or Golden Eagle nest within 660 feet of the project site.

GOSR requests your concurrence with this determination. If USFWS does not respond within 30 days from submittal of this letter, then GOSR may presume that its determination for each project is informed by the best available information and its project responsibilities under Section 7 of the ESA have been fulfilled. GOSR understands that the USFWS presumes that all activities will be implemented as described herein. GOSR will promptly report any departures from the described activities to the New York Field Office.

If you have questions or require additional information regarding this request, please contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,



Lori A. Shirley
Director, Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

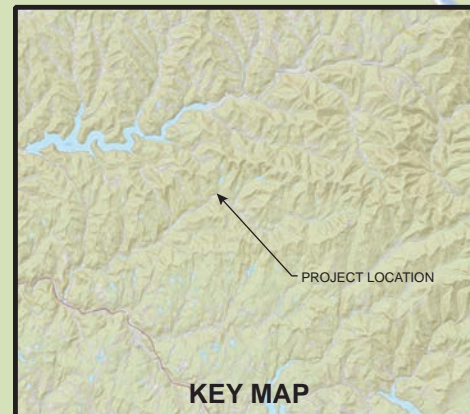
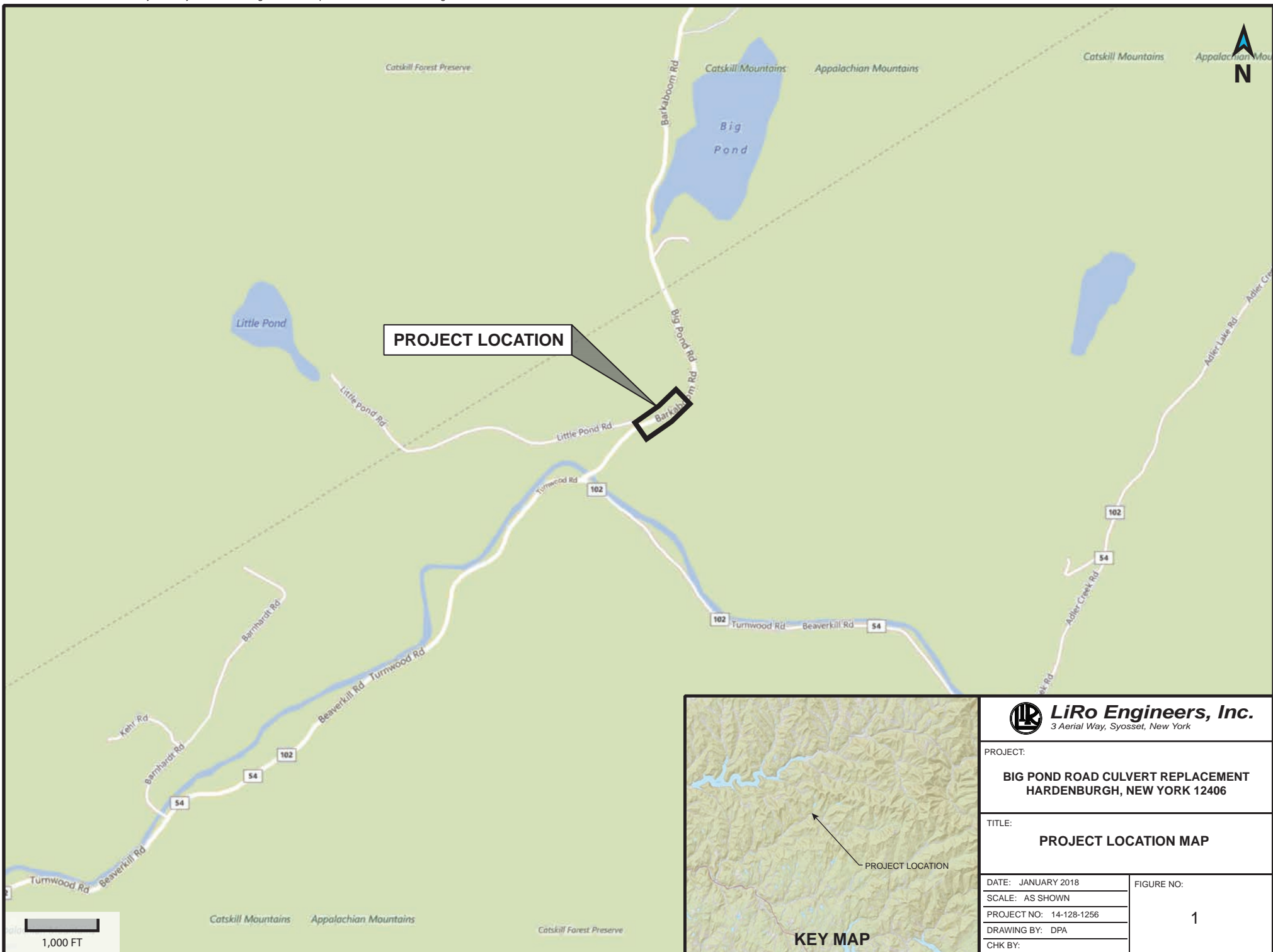
Attachments: Attachment 1 - Project Location Map Figure 1
Attachment 2 - Project Location Aerial Figure 2
Attachment 3 - IPaC Trust Resource Report
Attachment 4 - NYSDEC Bat Review
Attachment 5 - NYSDEC NHP
Attachment 6 - Site Photographs
Attachment 7 – Site Plans

Literature Cited

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- Foster, R.W. and A. Kurta, A. 1999. Roosting ecology of the northern bat (*Myotis septentrionalis*) and comparisons with the endangered Indiana bat (*Myotis sodalis*). *Journal of Mammalogy* 80: 659-672.
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- Owen, S.F., M.A. Menzel, W.M. Ford, B.R. Chapman, K.V. Miller, J.W. Edwards, and P.B. Wood. 2003. Home-range size and habitat used by the northern myotis (*Myotis septentrionalis*). *American Midland Naturalist* 150:352-359.

ATTACHMENT 1
PROJECT LOCATION MAP



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION MAP

DATE: JANUARY 2018

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

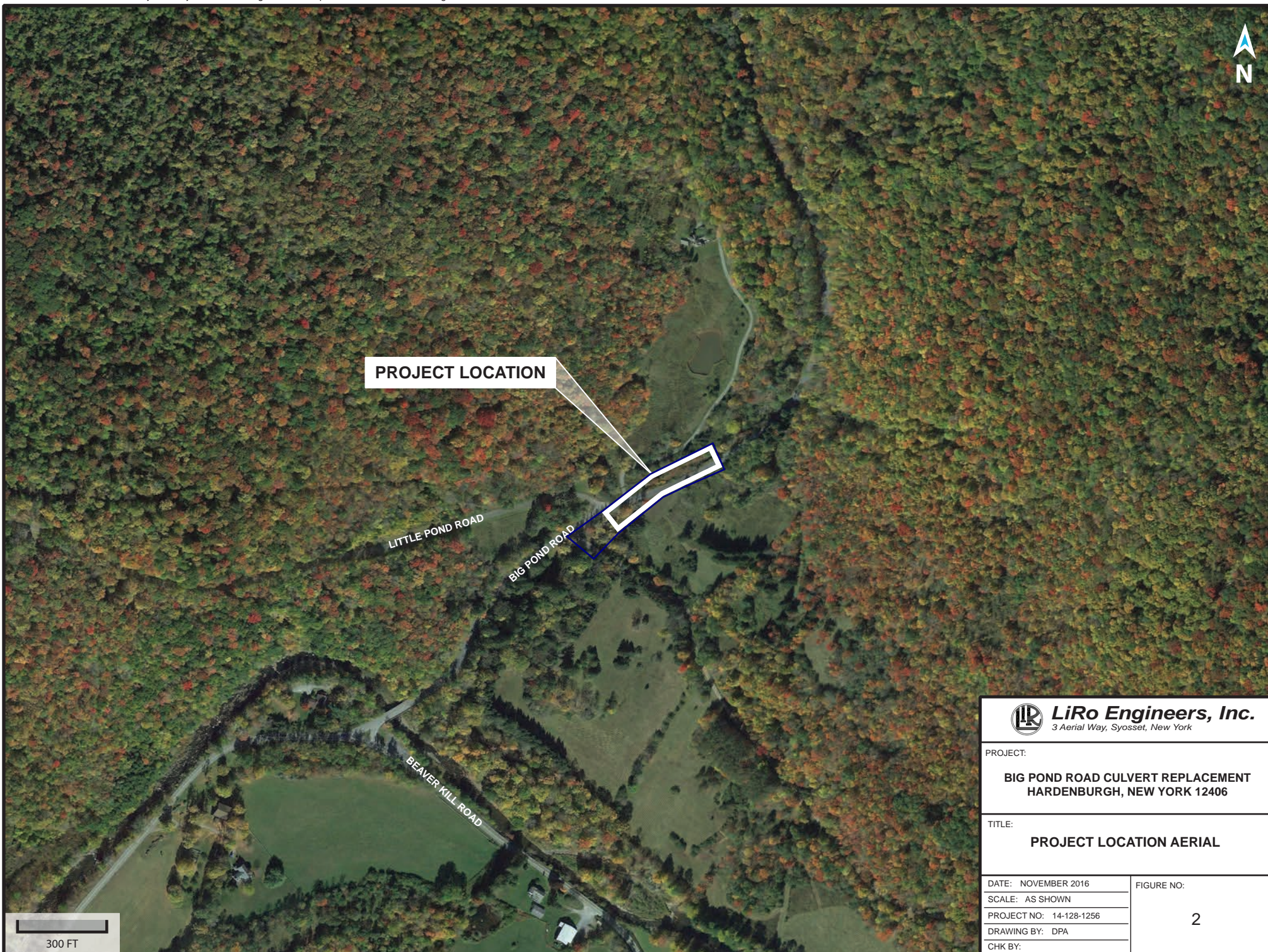
DRAWING BY: DPA

CHK BY:

FIGURE NO:

1

ATTACHMENT 2
PROJECT LOCATION AERIAL



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

2

ATTACHMENT 3
IPaC TRUST RESOURCE REPORT

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Ulster County, New York



Local office

New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road
Cortland, NY 13045-9349

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Northern Wild Monkshood <i>Aconitum noveboracense</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1450	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31
Yellow-bellied Sapsucker <i>sphyrapicus varius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8792	Breeds May 10 to Jul 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

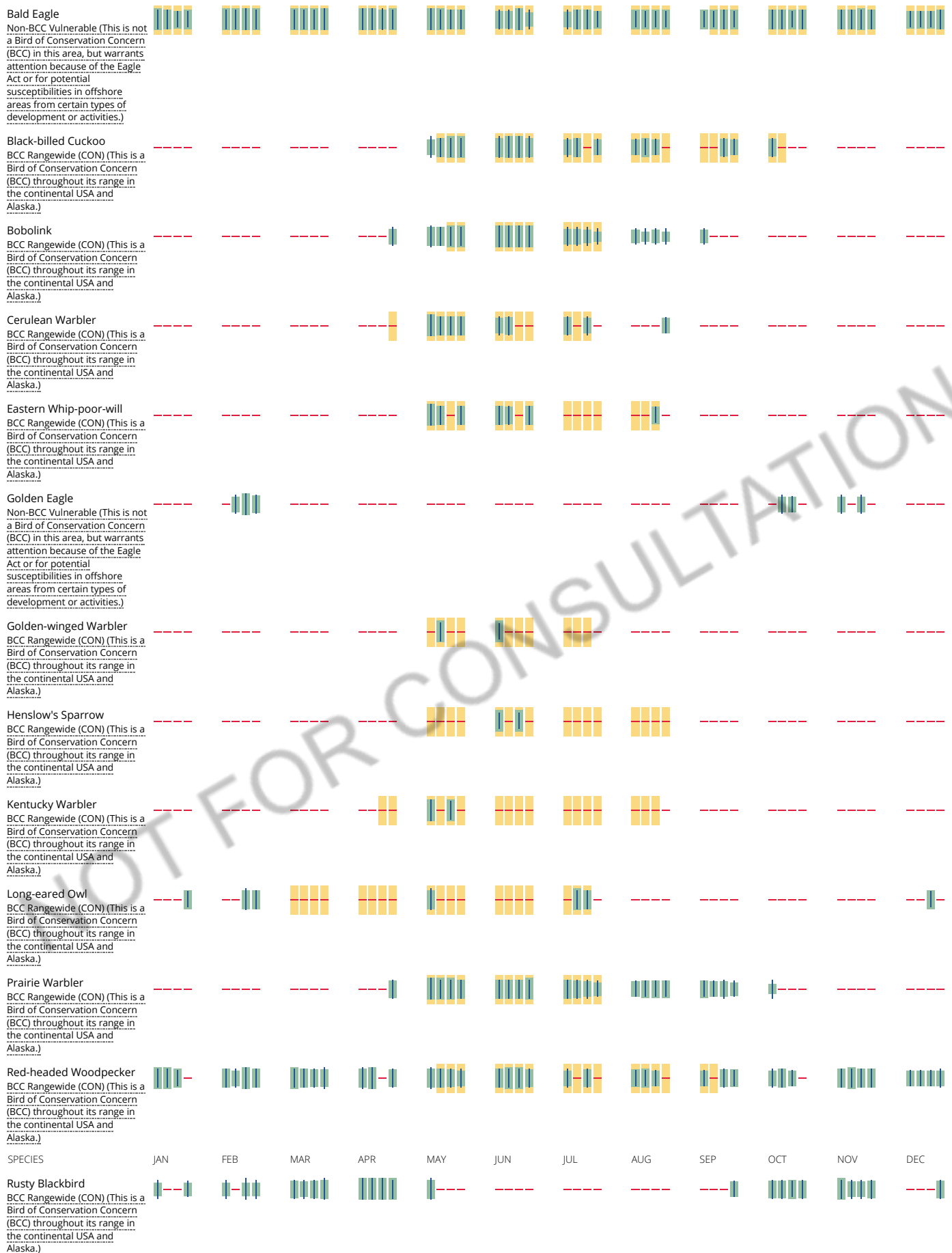
No Data (—)

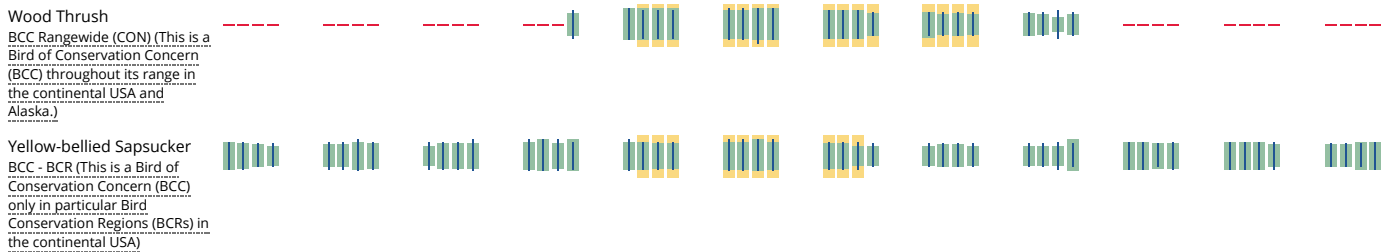
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

ATTACHMENT 4

NYSDEC BAT REVIEW 02/08/2018

February 8, 2018

Ms. Lori Shirley
Governor's Office of Storm Recovery
99 Washington Avenue
Suite 1224
Albany NY 12260

RE: Big Pond Road Culvert Replacement
Town of Hardenburgh, Ulster County, NY

Dear Ms. Shirley,

We received your jurisdictional inquiry request for the Big Pond Road culvert replacement project located in Hardenburgh, Ulster County. It is our understanding that an undersized culvert at the intersection of Big Pond and Little Pond Roads will be removed and replaced with higher capacity culvert infrastructure. This project will require stream disturbance, clearing and grubbing of the construction area and removal of trees. Based on our understanding of the project and the NYS Resources map created by Amanda Bailey on 2/8/2018 (attached), we have the following comments on the project:

STATE-LISTED SPECIES

All threatened or endangered species are subject to regulation under Article 11, Title 5 of the Environmental Conservation Law and a permit is required for a taking of that species pursuant to 6 NYCRR Part 182. Besides death of individuals, taking includes harassment, interference with essential behaviors, and adverse modification of habitat. **If the site is in close proximity to known occurrences of state-protected species, additional information on the proposal will be required by the appropriate regional office for a determination on the need for an incidental take permit.**

We have reviewed the available information in the New York Natural Heritage Program database on known occurrences of rare or state-listed bat species. This project area does not occur in the immediate vicinity of known occurrences of rare or state-listed bat species (see NYS Resources map, attached). The major concern for bat species in relation to this project would be the destruction of potential roosts and roosting habitat that may occur if tree clearing is required. Because this project does not take place within known occupied habitat, there are no restrictions on cutting.

The absence of data does not necessarily mean that any rare or state-listed bat species do not exist on or adjacent to the proposed site. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence of all rare or state-listed bat species. To avoid potential take, DEC *recommends* that any tree clearing be conducted between November 1 and March 31, when bats are inactive in hibernation sites. DEC also recommends that all snag and cavity trees remain uncut, unless their removal is necessary for protection of human life and property. For more information, please refer to the

DEC Northern long-eared bat protective measures guidance, available at:
<http://www.dec.ny.gov/animals/106090.html>.

This document is only intended to address state-listed bat species. Other rare or state-listed species, natural communities or other significant habitats may exist within the project area and would require additional review. 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.

OTHER

USFWS Cortland Field Office

If a federal agency is involved in the project, or if federal funding is used, there are additional considerations for federally listed species. Section 7(a)(1) of the Endangered Species Act requires federal agencies to use their authorities to conserve listed species. Section 7(a)(2) requires federal agencies to consult on any action that may affect a listed species.

Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under "Programs" then "Division of Environmental Permits."

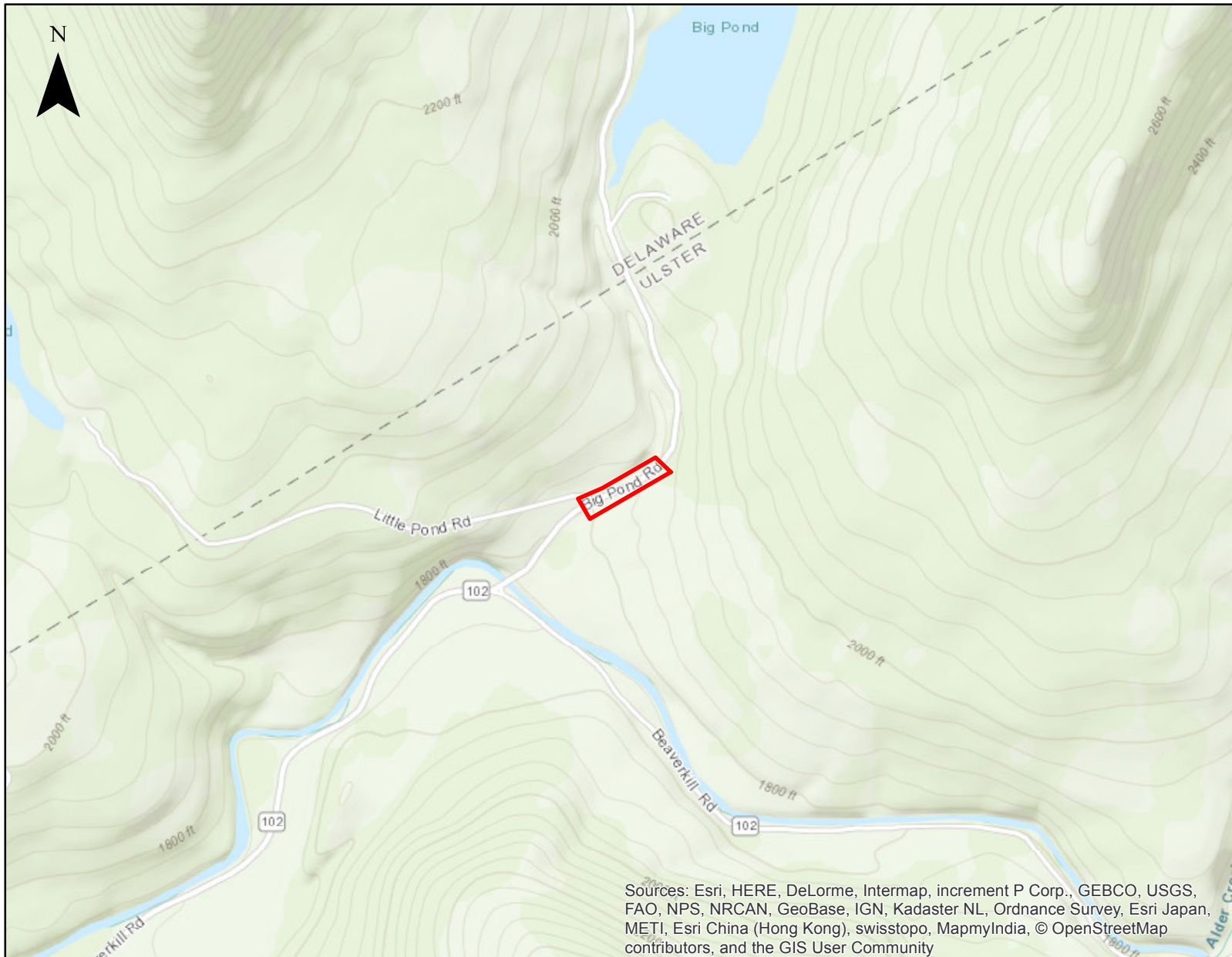
Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

A handwritten signature in black ink that reads "Amanda Bailey". The script is cursive and fluid, with the first letters of each name being capitalized and prominent.

Amanda Bailey
Division of Fish and Wildlife
Amanda.bailey@dec.ny.gov
518-402-8859

Cc: Bill Blankenship; Hunt, Guillot & Associates, LLC
May O'Malley, NYSDEC Division of Environmental Permits



**Department of
Environmental
Conservation**

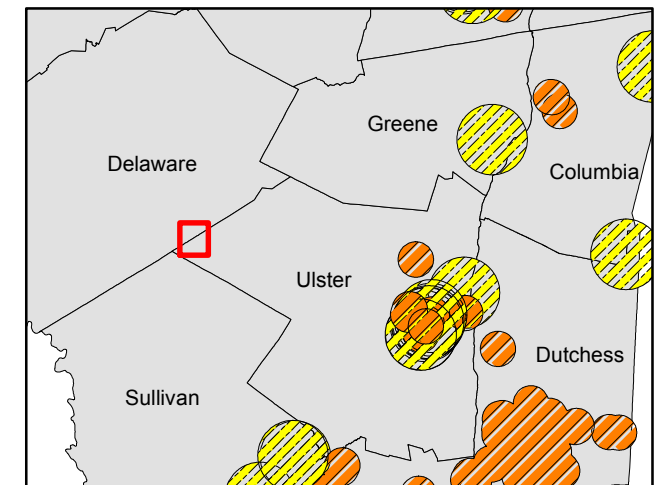
0 0.075 0.15 0.3 0.45 0.6 Miles

1 inch = 1,250 feet

NYS Resources Map

Big Pond Road Culvert Replacement Town of Hardenburgh, Ulster County

Prepared by AMB on 2/8/2018



 Project Area

Bat Occurrences

 Indiana Bat

 Northern Long-eared Bat

Disclaimer: this map was prepared by the NYSDEC using the most current data available. It is deemed accurate but is not guaranteed. NYSDEC is not responsible for any inaccuracies in the data and does not necessarily endorse any interpretations or products derived from the data. This map may contain information that is considered sensitive and therefore the distribution of this map is strictly prohibited.

ATTACHMENT 5

NYSDEC NHP REVIEW 02/09/2018

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

February 9, 2018

Lori Shirley
Governor's Office of Storm Recovery
30-40 State St., Hampton Plaza
Albany, NY 12207

Re: Big Pond Road Culvert Replacement (Vicinity of Big Pond & Little Pond Roads)
County: Ulster Town/City: Hardenburgh

Dear Ms. Shirley:

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 in the vicinity of the project 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 in the enclosed report may result in this project requiring additional review. 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 NYS DEC Region 3 Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program





**The following rare plants have been documented
in the vicinity of the project site.**

We recommend that potential onsite and offsite impacts of the proposed project on these species 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 plants are listed as Endangered, Threatened, or Rare by New York State, and so are a vulnerable natural resource of conservation concern.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
Northern Monkshood	<i>Aconitum noveboracense</i>	Endangered and Federally Listed as Threatened	Critically Imperiled in NYS and Globally Uncommon
Beaverkill, 2012-07-23: The plants are among rocks in cool areas along the Beaverkill. Stream banks are shaded by birch, beech, and hemlock.			
Jacob's Ladder	<i>Polemonium vanbruntiae</i>	Rare	Vulnerable in NYS
Beaverkill below Turnwood, 1989-06-09: A deciduous swamp with alluvial floodplain soils in a linear depression with deep organic muck layer, under a dense overstory of trees.			

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 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, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

ATTACHMENT 6

SITE PHOTOS

BIG POND ROAD CULVERT - 2500 FT ELEVATION

Big Pond Road Culvert

BIG POND ROAD CULVERT - PATH



BIG POND ROAD CULVERT - INLET



BIG POND ROAD CULVERT - VIEW FROM BIG POND ROAD (WEST)



BIG POND ROAD CULVERT - OUTLET

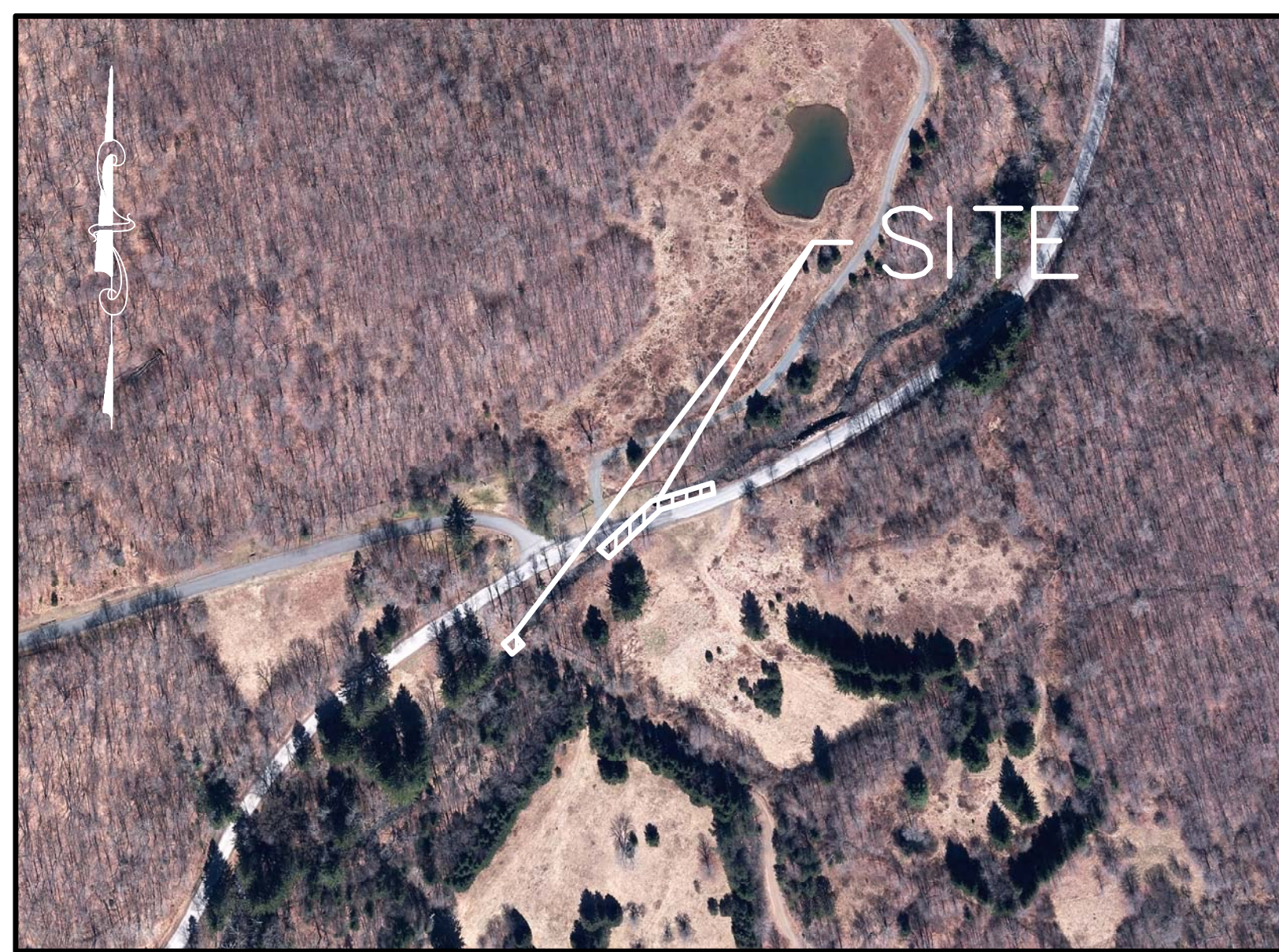


ATTACHMENT 7

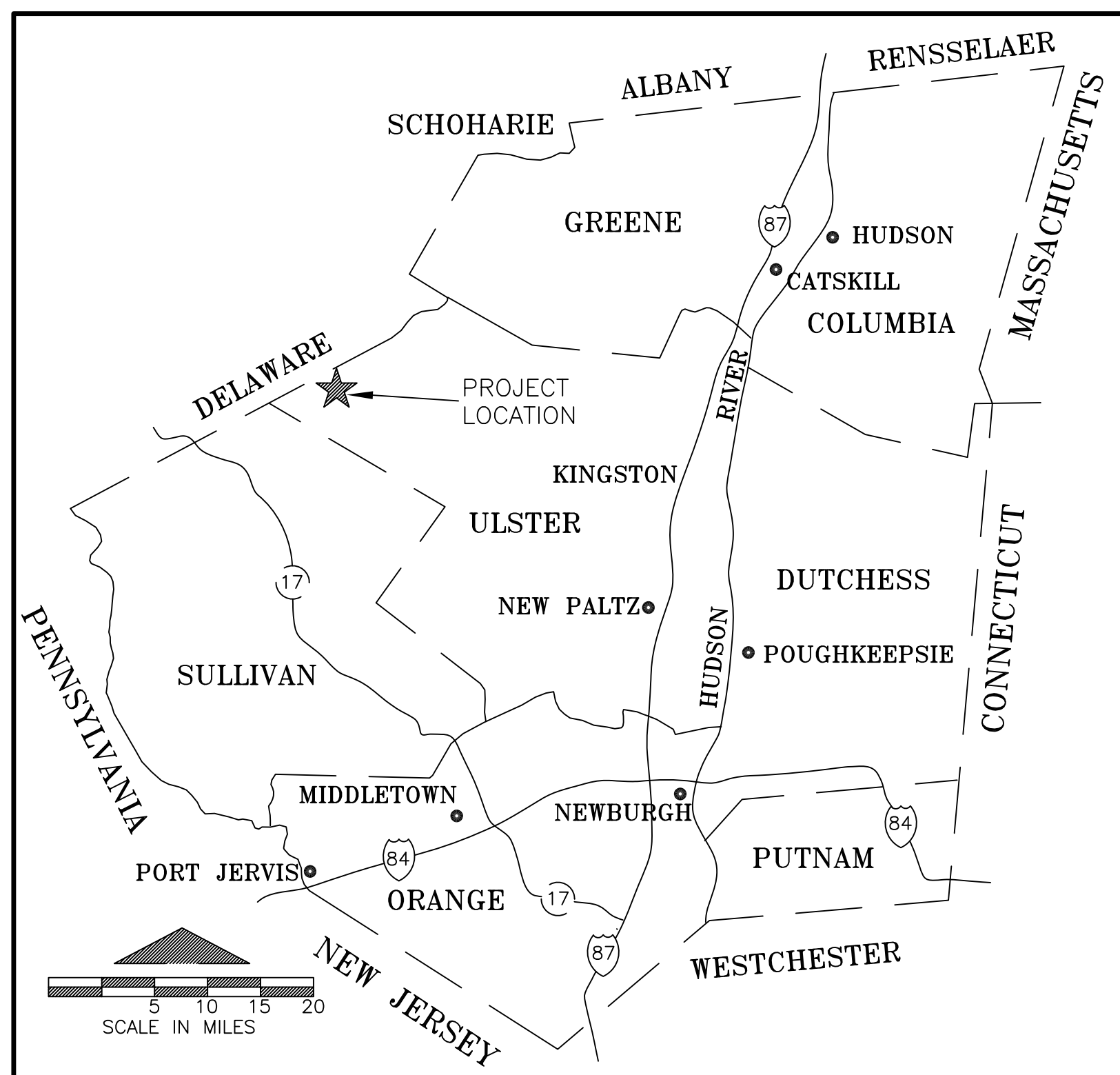
SITE PLANS



REFERENCE: 7.5 MINUTE USGS QUADRANCE - HARDENBURGH
LOCATION MAP
SCALE 1" = 2000'



N.Y.S. GIS
AERIAL MAP
SCALE 1" = 200'



GENERAL LOCATION MAP

CONTRACT THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNOR'S OFFICE OF STORM RECOVERY

TOWN OF HARDENBURGH ULSTER COUNTY NEW YORK

TOWN OFFICIALS

JERRY FAIRBAIRN, TOWN SUPERVISOR

TOWN COUNCIL

JOHN SACKEL
WENDY O'REILLY
WILLIAM SCHLUTER
SHERRY BELLOWS

THOMAS DELEHANTY, TOWN CLERK

CHARLES STORMS, HIGHWAY SUPERINTENDENT

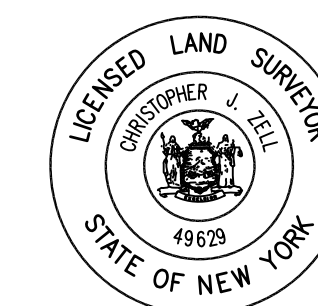
JANUARY 2018

30% DESIGN FOR AGENCY REVIEW

BRINNIER AND LARIOS, P. C.
PROFESSIONAL ENGINEERS AND LAND SURVEYORS
67 MAIDEN LANE
KINGSTON, NEW YORK
(845) 338-7622

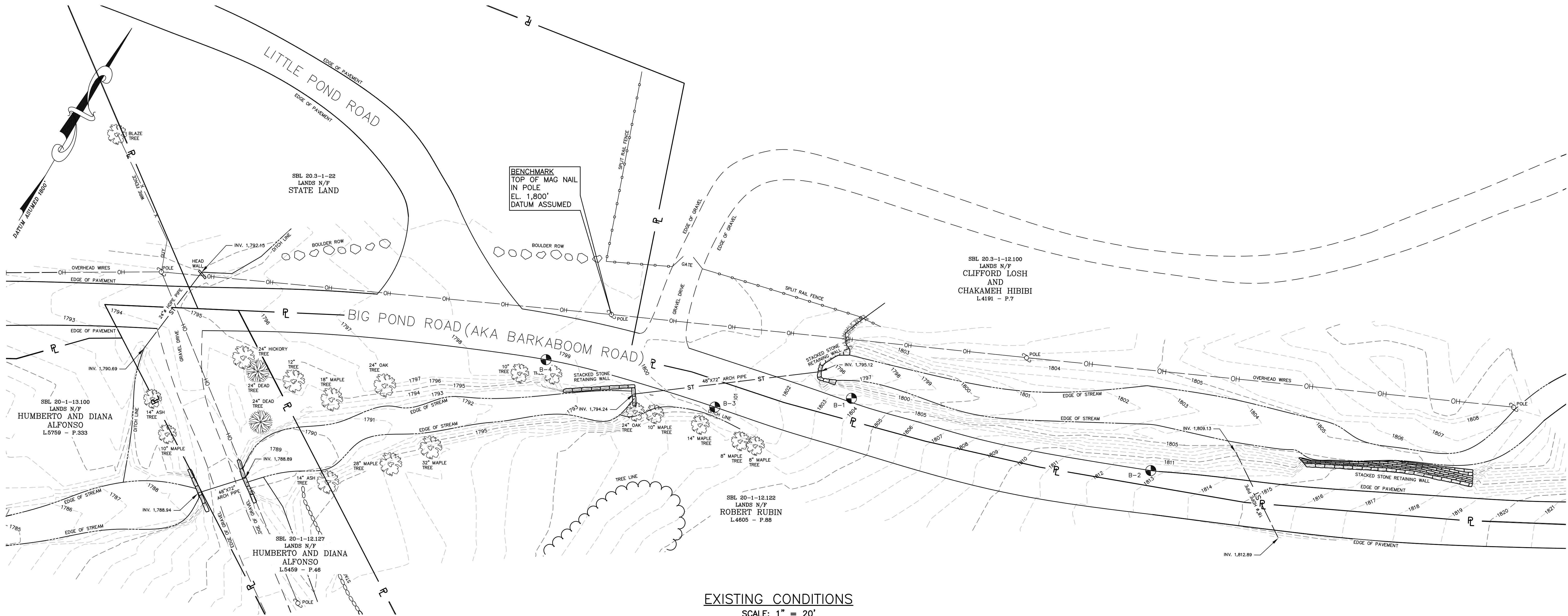


Unauthorized alteration or addition to a plan
bearing a licensed engineer's seal is a
violation of section 7209, subdivision 2, of the
New York State Education Law.



INDEX OF DRAWINGS

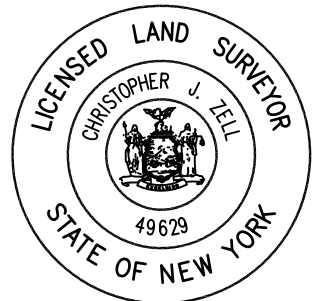
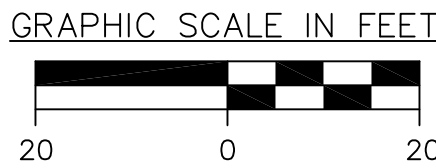
SHEET NO.	DRAWING
1.	COVER SHEET
2.	EXISTING CONDITIONS
3.	SELECTIVE DEMOLITION/STREAM PROTECTION
4.	SITE PLAN
5.	DETAILS



LEGEND		
---	50	CONTOURS (MINOR)
---	52	CONTOURS (MAJOR)
---	P	PROPERTY LINE
---	---	EDGE OF WATER
---	---	SPLIT RAIL FENCE
---	x x	WIRE FENCE
---	OH	OVERHEAD WIRES
---	o	GUIDERAIL
---	o o o o o o	STACK STONE WALL
---	---	UTILITY POLE
---	---	SIGN
---	---	TREE
---	---	BORING
---	---	BOULDER
---	---	STACKED STONE RETAINING WALL

NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON
AUGUST 24, 2017.

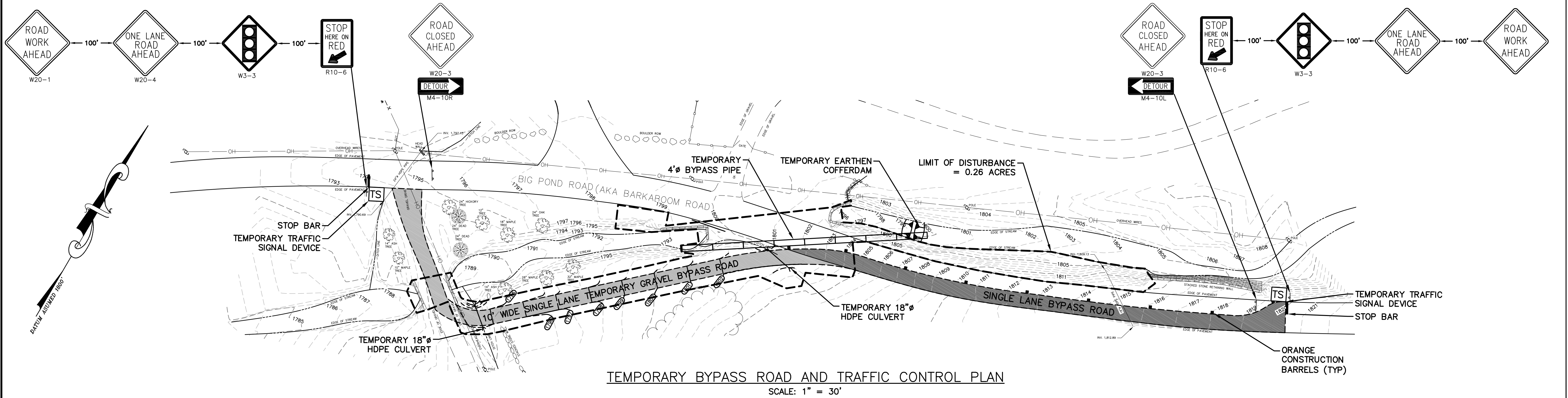
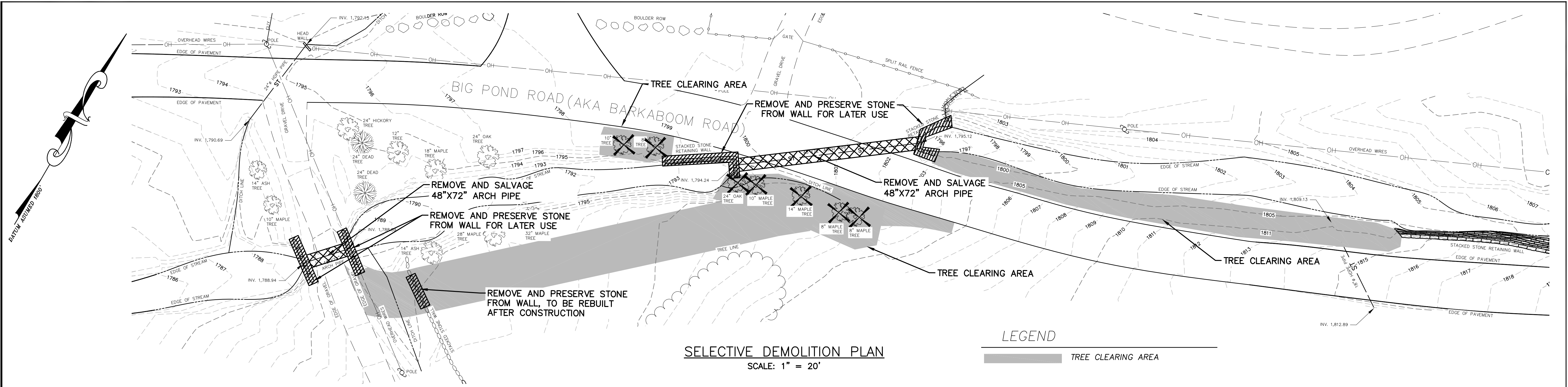
NOTE:
The location of existing underground utilities are shown in an
approximate way only and have not been independently verified by
the owner or its representative. The contractor shall determine
the exact location of all existing utilities before commencing work,
and agrees to be fully responsible for any and all damages which
might be occasioned by the contractor's failure to exactly locate
and preserve any and all underground utilities.



Unauthorized alteration or addition to a plan
bearing a licensed engineer's seal is a violation
of section 7209, subdivision 2, of the New York
State Education Law.

EXISTING CONDITIONS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT			
NY RISING COMMUNITY RECONSTRUCTION PROGRAM			
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN		
		SCALE	
		1" = 20'	
		DATE	SHEET NO.
		JAN. 2018	2 OF 5
		DWG	CHK
		RJS	



NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON AUGUST 24, 2017.

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The location of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work, and agrees to be fully responsible for any and all damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

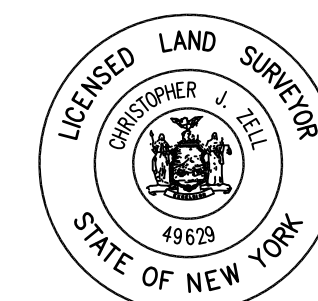
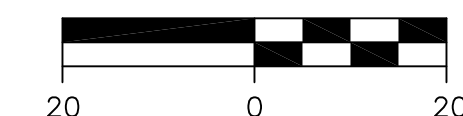
LEGEND

- 50--- CONTOURS (MINOR)
- 52--- CONTOURS (MAJOR)
- R— PROPERTY LINE
- E— EDGE OF WATER
- S— SPLIT RAIL FENCE
- X—X— WIRE FENCE
- OH— OVERHEAD WIRES
- G— GUIDERAIL
- S— STACKED STONE WALL

- UTILITY POLE
- SIGN
- TREE
- BORING
- BOULDER
- STACKED STONE RETAINING WALL

- TEMPORARY SINGLE LANE GRAVEL BYPASS ROAD
- TEMPORARY SINGLE LANE BYPASS ROAD TO BE REMOVED AND DISCARDED
- TO BE REMOVED AND RESERVED
- TREE TO BE REMOVED

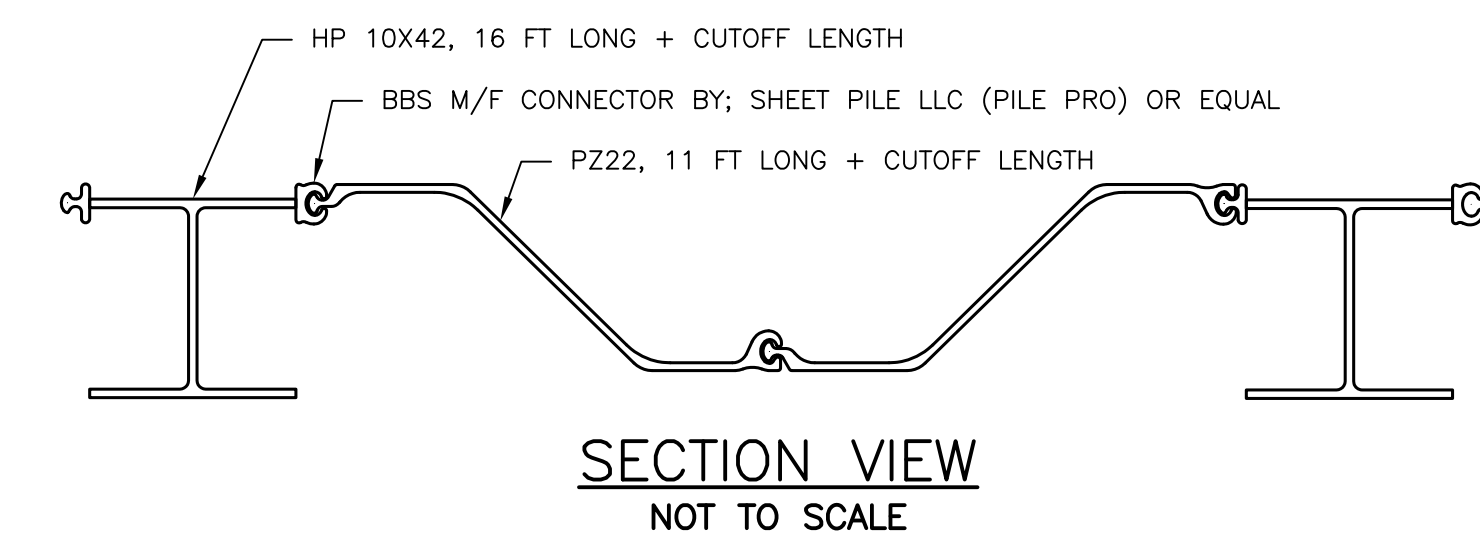
GRAPHIC SCALE IN FEET



Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.

SELECTIVE DEMOLITION AND TEMPORARY BYPASS ROAD PLANS CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURG		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
1/18	30% DESIGN		
SCALE	DATE	SHEET NO.	
AS SHOWN	JAN. 2018	3 OF 5	
	DWG	CHK	
	RJS		




SITE PLAN
CONTRACT NO. THA-181

DATE	REVISION RECORD	BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660			
1/18	30% DESIGN	SCALE	DATE	SHEET NO.	
		1" = 20'	JAN. 2018	4 OF 5	
			DWG. CHK.		
			DES.		

	- 50 -	CONTOURS (MINOR)		UTILITY POLE
	- 52 -	CONTOURS (MAJOR)		SIGN
	P	PROPERTY LINE		TREE
		EDGE OF WATER		BORING
		SPLIT RAIL FENCE		BOULDER
	x x	WIRE FENCE		STACKED STONE RETAINING WALL
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	O	GUIDRAIL		
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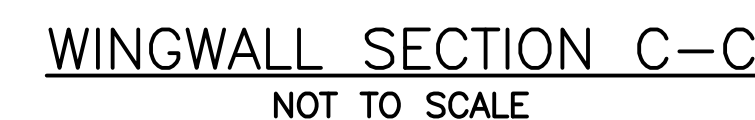
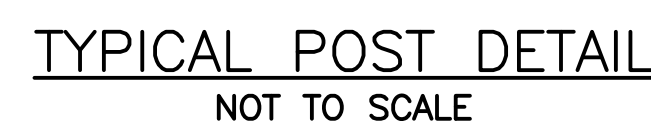
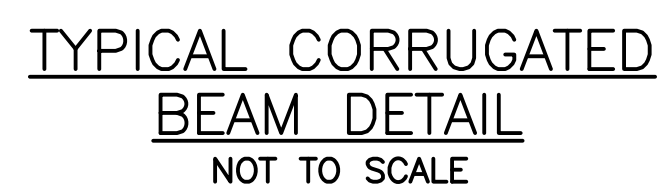
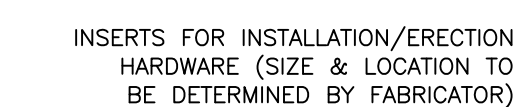
GRAPHIC SCALE IN FEET

20 0 20

Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.



- NOTES:
1. CULVERT TO BE DESIGNED TO MEET STANDARD AASHTO SPECIFICATIONS WITH HS-25 LIVE LOADING.
 2. CONCRETE: 5,000 PSI, MINIMUM STRENGTH @ 28 DAYS.
 3. STEEL REINFORCING - ASTM A-615, GRADE 60.
(REINFORCEMENT SHOWN IS SCHEMATIC ONLY.
CONTRACTOR TO VERIFY REINFORCEMENT FOR HS-25 LOADING).
REINFORCING STEEL SCHEDULE AND PLAN OF PRECAST SECTION LOCATIONS SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
 4. COVER TO STEEL - 1" MINIMUM.
 5. CONSTRUCTION JOINT SEALED WITH 1"Ø BUTYL RUBBER OR EQUIVALENT.
 6. EARTH COVER = 0 TO 2 FEET MAXIMUM.
 7. APPROXIMATE BOX CULVERT WEIGHT PER FT. = TBD LBS.
 8. LIFTING HOLES SHALL BE FILLED WITH CONCRETE PLUGS AND MASTIC AFTER THE BOX SECTIONS ARE IN PLACE.



Unauthorized alteration or addition to a plan bearing a licensed engineer's seal is a violation of section 7209, subdivision 2, of the New York State Education Law.

DETAILS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT
NY RISING COMMUNITY RECONSTRUCTION PROGRAM
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY

TOWN OF HARDENBURG ULSTER COUNTY NEW YORK

DATE 1/18	REVISION RECORD 30% DESIGN	BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
SCALE		DATE	SHEET NO.
1" = 20'		JAN. 2018	5 OF 5
		DWG. CHK	
		3-15	

NHP Consultation

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

February 9, 2018

Lori Shirley
Governor's Office of Storm Recovery
30-40 State St., Hampton Plaza
Albany, NY 12207

Re: Big Pond Road Culvert Replacement (Vicinity of Big Pond & Little Pond Roads)
County: Ulster Town/City: Hardenburgh

Dear Ms. Shirley:

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 in the vicinity of the project site.

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Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program



**The following rare plants have been documented
in the vicinity of the project site.**

We recommend that potential onsite and offsite impacts of the proposed project on these species 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 SEQ. 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.

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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 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, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

February 6, 2018

Nicholas Conrad
New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program – Information Services
625 Broadway, 5th Floor
Albany, New York 12233-4757

Re: Natural Heritage Compliance Process Request for the Big Pond Road Culvert
Replacement (Vicinity of Big Pond & Little Pond Roads, Hardenburgh, NY 12406)

Dear Mr. Conrad:

The Governor's Office of Storm Recovery (GOSR), acting under the auspices of New York State Homes and Community Renewal's (HCR) Housing Trust Fund Corporation (HTFC), on behalf of the Department of Housing & Urban Development (HUD), is currently preparing an Environmental Review for the Big Pond Road Culvert Replacement (see Figure 1). GOSR is acting as HUD's non-federal representative for the purposes of conducting consultation pursuant to Section 7 of the Endangered Species Act. The proposed project area is defined as the Big Pond Road Culvert Replacement, located at the Vicinity of Big Pond & Little Pond Roads, Hardenburgh, NY 12406.

GOSR is contacting your office for assistance in identifying the potential presence of any rare or Federal and/or State threatened, endangered, proposed or candidate species in the vicinity of the proposed projects. In addition, information regarding the presence of any other species or habitats of special concern in the vicinity of the proposed projects is also requested. The purpose of this letter is to provide the New York State Department of Environmental Conservation (NYSDEC) Natural Heritage Program (NYNHP) notice of the proposed project and determine the presence of any State or Federal endangered, threatened, or rare species or significant natural communities.

Project Description

The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The infrastructure will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater

incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The current project design requires the following construction elements:

- Removal and replacement of an existing 48 inch by 72 inch arched culvert running under an un-named gravel drive southwest of the intersection of Little Pond Road and Bid Bond Road with 8 feet wide by 5 feet high by 23 feet long box culvert.
- Removal and replacement of a second 48 inch by 72 inch arched pipe running under Big Pond Road southeast of the intersection of Little Pond Road and Big Pond Road with a 8 feet wide by 5 feet high by 23 feet long and a 8 feet wide by 5 feet high by 84 feet long box culvert.
- Removal and replacement of associated riprap and sheet piling.
- Stabilization of Big Pond Road
- Construction of a temporary by gravel pass road
- Construction of a temporary earthen coffer dam
- Construction of stone retaining walls along Big Pond Road

The construction will require stream disturbance, clearing and grubbing of the construction area and removal of trees. The right-of-way survey at the Big Pond Road culvert site indicates that this is a “road by use” with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements will have to be obtained for any culvert replacement construction work located outside of the public right-of-way. Easement areas have been identified and preparation for obtaining the easements is underway.

Project Purpose and Need

During Hurricane Irene and Tropical Storm Lee, nearly 11 inches of rain fell in Hardenburgh. This caused excessive stormwater from an unnamed stream that commences at Big Pond and flows into Beaverkill to overflow at an 18” round culvert located at the intersection of Big Pond and Little Pond Roads. After damaging protective measures at the culvert opening, stormwater eroded and undermined the road’s top and base surfaces, and washed part of the road downstream. Damage to the road resulted in the isolation and stranding of residents south of the breach during and following the storms.

The section of Hardenburgh served by Big Pond Road is remote and not easily served by the town’s administration during flooding events. During and following Hurricane Irene and Tropical Storm Lee, closure of area roads greatly hindered the town’s ability to render assistance to residents isolated or stranded by stormwater and damages caused by the storms. The town employed alternate methods to reach storm victims, including use of all-terrain vehicles and even horses. Given the town’s extremely mountainous terrain, this resulted in residents being isolated for several days following the storm. The objective of this project will be

to maintain a crucial evacuation route and increase safety for vehicular traffic and emergency vehicles during future storm events by increasing the size of the culvert at this location to allow for increased water capacity caused by excessive rain events.

Compliance

According to the U.S. Fish and Wildlife Services (USFWS) Information, Planning, and Consultation (IPaC) Trust Resource Report, there are no endangered species and two threatened species – the Northern Long-eared Bat and Northern Wild Monkshood (see attached list), that have been identified as being located in the area. In addition, there are several migratory birds of identified (see attached list). None of these species would be impacted by the proposed action based on the type of improvements, the limited size of the area disturbed, nature of the site, and the lack of suitable habitat for these species.

The Bald Eagle (*Haliaeetus leucocephalus*) is not listed as a Bird of Conservation Concern, but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore area from certain types of development or activities. As stated above the project construction will be performed within a limited area, adjacent to a paved road and farmland and is not the type of project that has the potential to impact the Bald eagle.

According to information reviewed from the New York State Environmental Resource Mapper, significant natural communities and rare plants or animals are shown to be at or near the site (see Figure 3). These layers are generalized areas and no detailed information is provided by the NYS Environmental Resource Mapper database on what and how these determinations were made. The purpose of this letter is to confirm that there are no significant communities or rare plants and animals in the project area. Considering the nature of the proposed construction and the limits of the construction to area, the potential impact to any existing natural communities and rare plants or animals should be minimal.

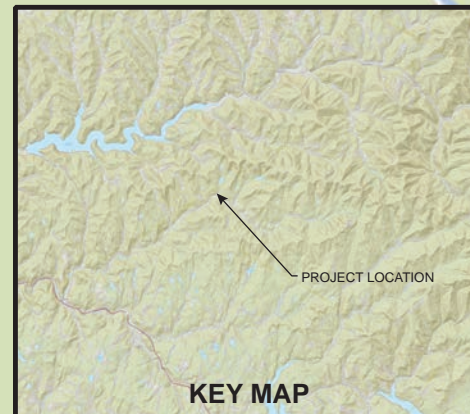
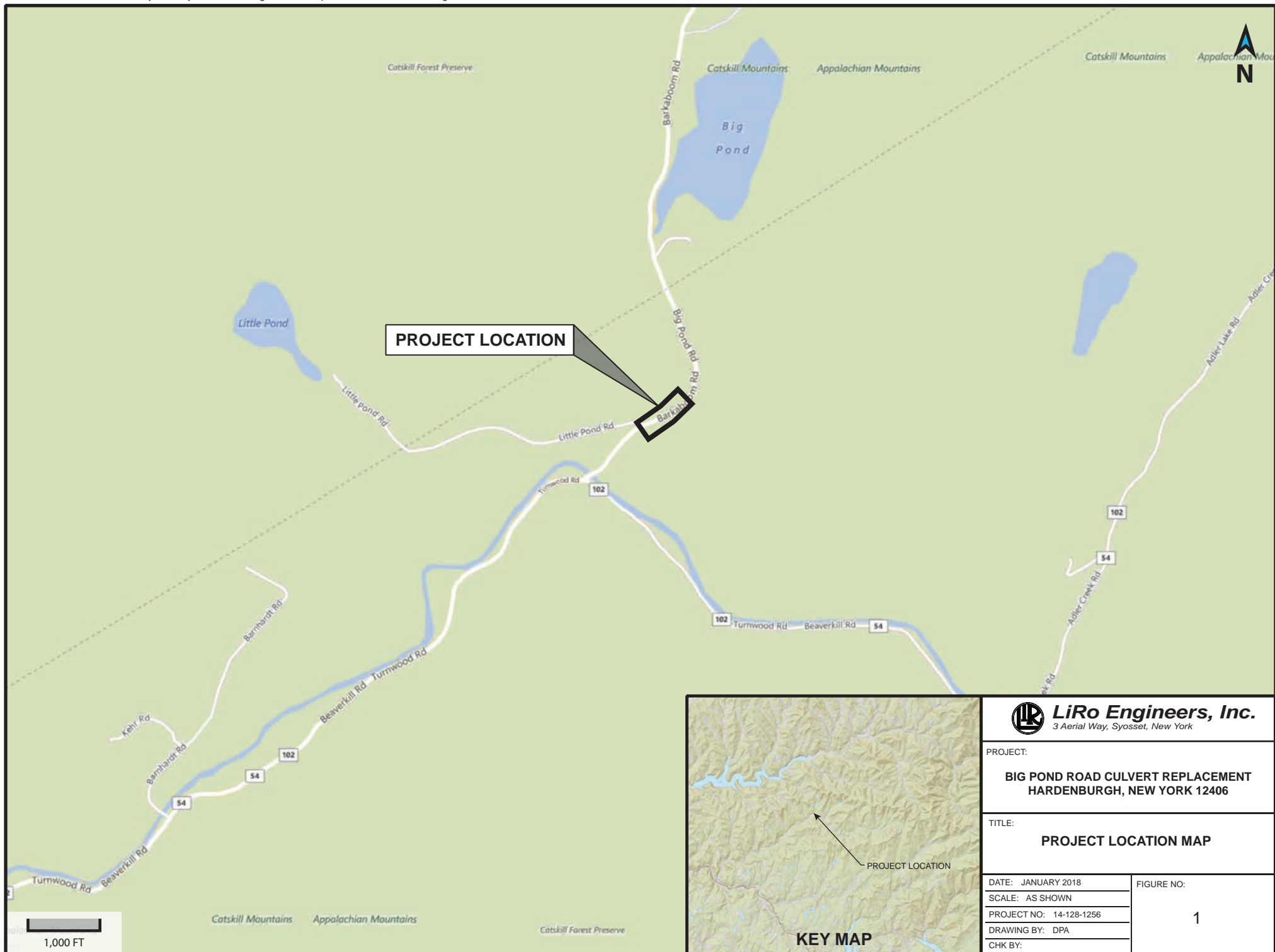
Your assistance with this matter is greatly appreciated. We respectfully request your cooperation and are seeking a response within 30 days of receipt of this letter. If you have questions or require additional information regarding this request, please contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,



Lori A. Shirley
Director, Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street, Albany, NY 12207

Attachments: Figure 1 Site Map
Figure 2 Aerial Map
Figure 3 NYS Environmental Resource Mapper
IPaC Resource List



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION MAP

DATE: JANUARY 2018

SCALE: AS SHOWN

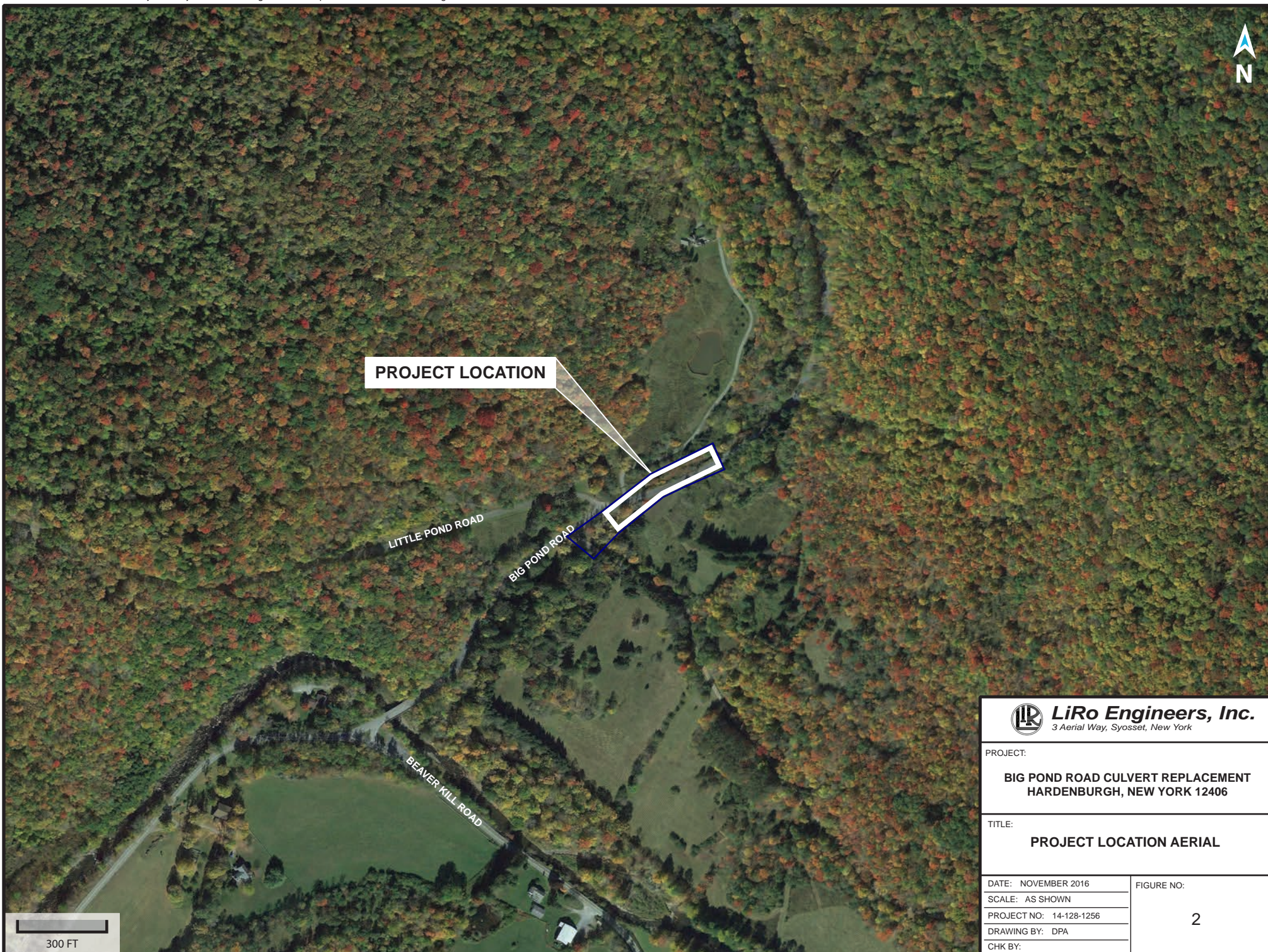
PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

1



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

2

Environmental Resource Mapper

Base Map: Streets [Using this map](#)

Search

Tools

Layers and Legend

- ☐ ★ Unique Geological Features
- ☐ Waterbody Classifications for Rivers/Streams
- ☐ Waterbody Classifications for Lakes
- ☐ State Regulated Freshwater Wetlands
- ☐ State Regulated Wetland Checkzone
- ☒ Significant Natural Communities
- ☐ Natural Communities Near This Location
- ☒ Rare Plants or Animals

Other Wetland Layers

Reference Layers

Tell Me More...

Need A Permit?

Contacts

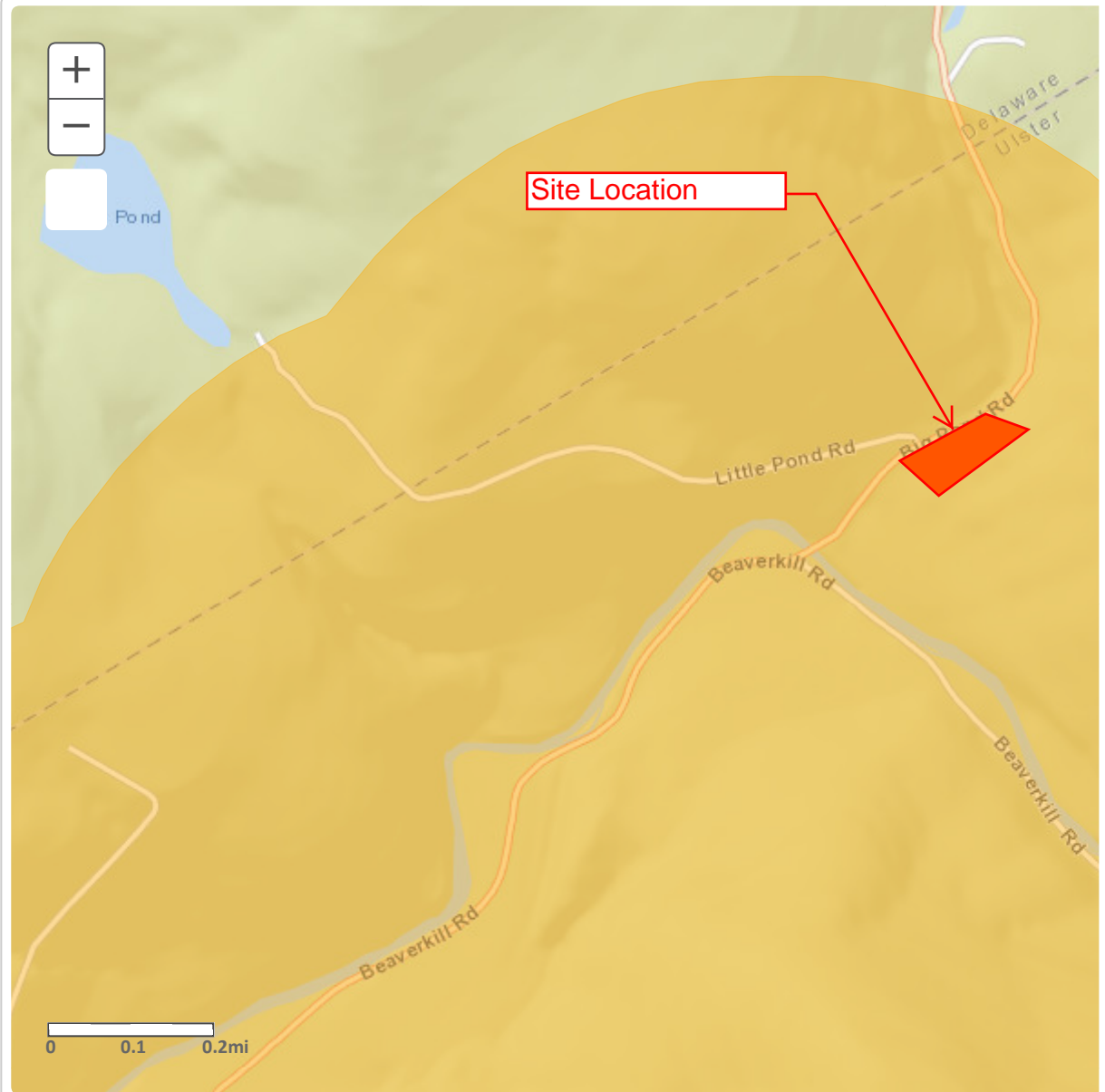


FIGURE 3
BIG POND ROAD CULVERT REPLACEMENT
HARDENBURG, NEW YORK 12406
NYS ERM SIGNIFICANT NATURAL COMMUNITIES AND RARE PLANT OR ANIMALS

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Ulster County, New York



Local office

New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road
Cortland, NY 13045-9349

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Northern Wild Monkshood <i>Aconitum noveboracense</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1450	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31
Yellow-bellied Sapsucker <i>sphyrapicus varius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8792	Breeds May 10 to Jul 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

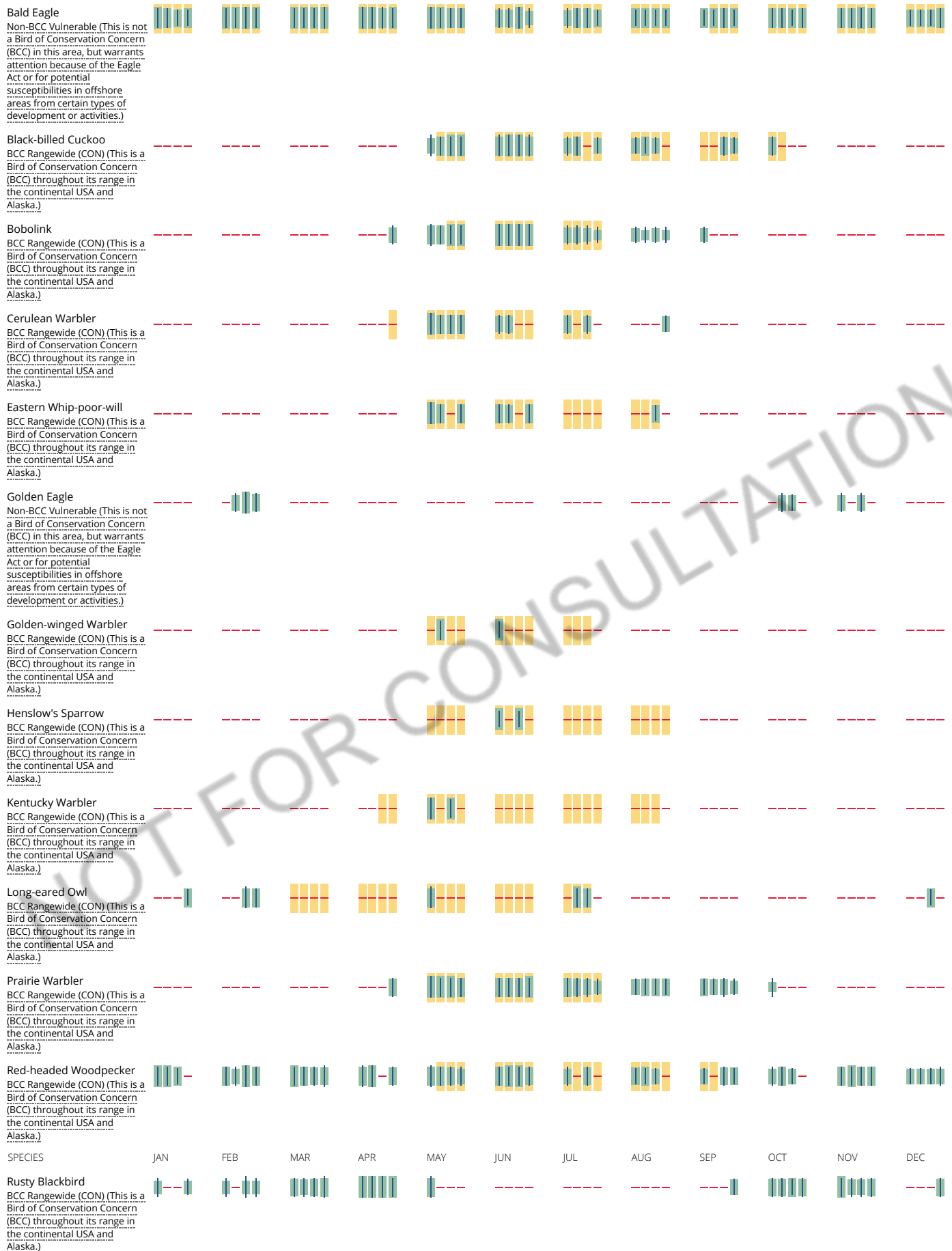
No Data (—)

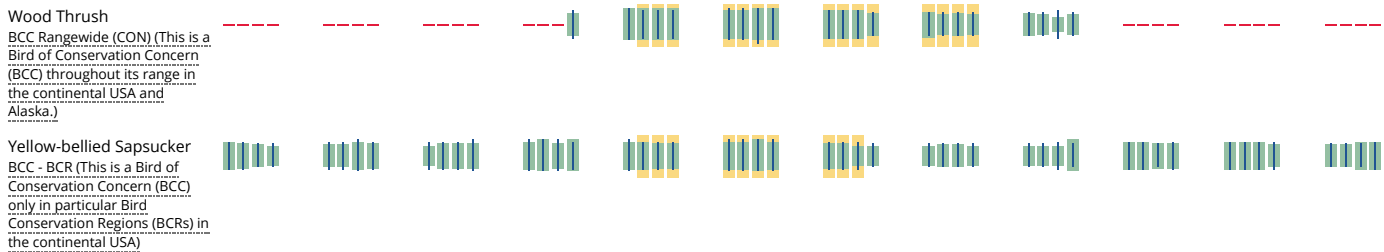
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix C
Five Step Floodplain Management and Wetland
Protection Analysis

**SUMMARY 5-STEP FLOODPLAIN AND WETLAND ANALYSIS FOR
THE BIG POND CULVERT REPLACEMENT
VICINITY OF BIG POND & LITTLE POND ROADS, TOWN OF HARDENBURG,
ULSTER COUNTY, NEW YORK**

Governor's Office of Storm Recovery
U.S. Department of Housing and Urban Development Community Development Block Grant –
Disaster Recovery

Lori A. Shirley – Certifying Environmental Officer
August 22, 2018

Below is a summary of the analysis conducted in accordance with 24 CFR Part 55 (Floodplain Management and Protection of Wetlands) and Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).

Pursuant to 24 CFR §55.12(a)(4), steps 2, 3, and 7 of the 8-step process for floodplain management and protection of wetlands and does not apply to projects involving the improvement of existing nonresidential buildings and structures, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the action does not meet the thresholds for “substantial improvement” under §55.2(b)(10) and that the footprint of the structure and paved areas is not significantly increased.

The project is located 0.25-mile northeast of the intersection of Big Pond Road and Beaverkill Road in the Town of Hardenburgh, New York and involves the removal and replacement of an undersized Town road culvert on Big Pond Road. The private driveway culvert immediately downstream of the Big Pond Road culvert will also be removed and replaced. The project will replace two 4' high x 6' wide corrugated metal arched (CMA) culverts with an embedded 5' high x 8' wide x 84' long precast concrete box culvert on Big Pond Road and an embedded 5' high x 8' wide x 24' long precast concrete box culvert on the private driveway. The culverts will include wing-walls or stacked stone headwalls.

The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project will increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route for residents of the area to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The project includes the following elements:

- Install erosion and sediment control measures,
- Install stream protection measures,
- Construct temporary bypass road,

- Remove existing Big Pond Road culvert and install temporary stream bypass piping
- Install replacement culvert,
- Install road embankment stabilization east of the culvert site,
- Reconstruct Big Pond Road,
- Repeat sequence for the private driveway culvert downstream

The construction will require stream disturbance, the clearing and grubbing of the construction area and tree removal. The right-of-way survey at the Big Pond Road culvert site shows that this is a “road by use” with a two-rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements will be obtained for any culvert replacement construction work located outside of the public right-of-way. The easement areas have been identified and the preparation for obtaining the easements is underway.

During Hurricane Irene and Tropical Storm Lee, nearly 11 inches of rain fell in Hardenburgh. This caused excessive stormwater (from an unnamed stream that commences at Big Pond and flows into Beaverkill) to overflow the existing culvert located at the intersection of Big Pond and Little Pond Roads. After damaging protective measures at the culvert opening, stormwater eroded and undermined the road’s top and base surfaces, and washed part of the road downstream. Damage to the road resulted in the isolation and stranding of residents south of the breach during and following the storms.

The section of Hardenburgh served by Big Pond Road is remote and not easily served by the Town’s administration during flooding events. During and following Hurricane Irene and Tropical Storm Lee, closure of area roads greatly hindered the Town’s ability to render assistance to residents isolated or stranded by stormwater and damages caused by the storms. The Town employed alternate methods to reach storm victims, including use of all-terrain vehicles and even horses. Given the Town’s extremely mountainous terrain, this resulted in residents being isolated for several days following the storm. The objective of this project will be to maintain a crucial evacuation route and increase safety for vehicular traffic and emergency vehicles during future storm events by increasing the size of the culvert at this location to allow for increased water capacity caused by excessive rain events.

Step 1: Determine if the proposed action is in a floodplain or a wetland.

Approximately 0.14 acres (6,000 square feet) of the proposed Project site is located in the Zone A (100-year Floodplain) and a federal “Riverine” wetland. See attached Figures. This 5-step analysis is provided for this project because it represents an improvement of existing structures that does not meet the thresholds for “substantial improvement” under §55.2(b) (10) and where the footprint of the structure and paved areas is not significantly increased.

Step 4: Identify and describe the proposed action’s direct and indirect effects associated with occupying or modifying the floodplain or wetland.

The floodplain would be temporarily disturbed by the improvements related to this project. Construction activities would involve excavation within waters of the United States. The stream rehabilitation and replacement of the existing culverts with box culverts with larger flow capacity will take place within the un-named tributary of Beaverkill. The project would not increase the

amount of impervious surface in the area.

Step 5: Identify methods to minimize the potential adverse impacts within a floodplain and wetland and to restore and preserve the natural and beneficial values.

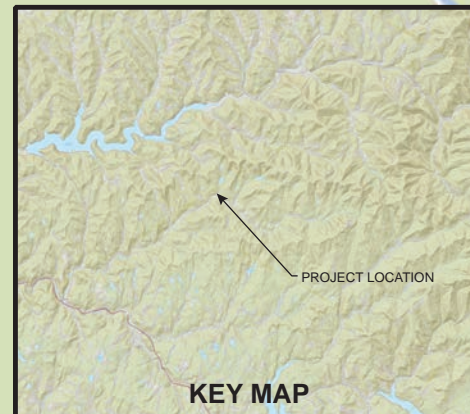
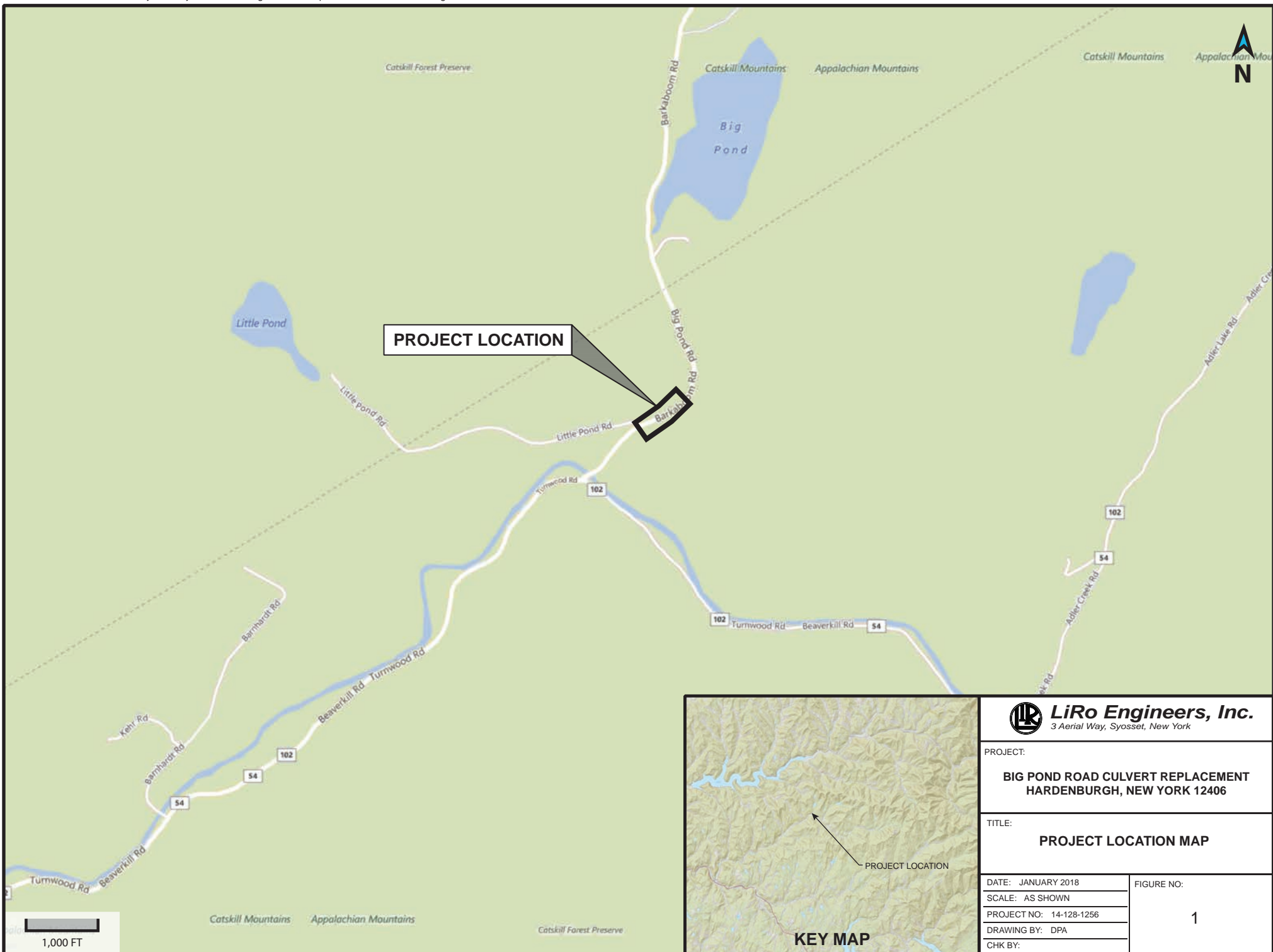
Because the project is a replacement of the existing Big Pond culvert, the addition of riprap and the new construction of a retaining wall and pavement of Big Pond Road, the proposed construction does not increase the lateral extents of the surface water drainage systems. The construction does include the removal of the old Big Pond culvert and the replacement with greater capacity box culverts, the addition of riprap erosion protection near the new culverts, and the construction of roadway improvements to Big Pond Road. The surface water drainage replacements will allow an additional flow during storm events thereby allowing Big Pond Road to better withstand floodwaters. There are no alternatives that do not involve work in these areas. Precautions would be taken during construction to minimize the area of disturbance and time of construction.

Step 6: Reevaluate the proposed action to determine if it is still practicable given its floodplain and wetland effects.

The implementation of this Project would mitigate storm water damage to Big Pond Road and allow for emergency response during storm water conditions and quicker recovery efforts after a flood event. The proposed Project will ensure a safe and healthy environment for the local residents, businesses, and visitors. No changes in land use and no long-term damage or increase in size of the associated floodplain would occur as a result of this project. As a result, the proposed action is still practicable.

Step 8: The proposed action can be implemented after the above steps have been completed.

The implementation of the proposed action will require additional federal and state permits, which could place additional design modifications or mitigation requirements on the project. A joint application for disturbance of streams has been submitted to the NYSDEC and the US Army Corps of Engineers. The proposed project will adhere to all applicable conditions noted in the permit.



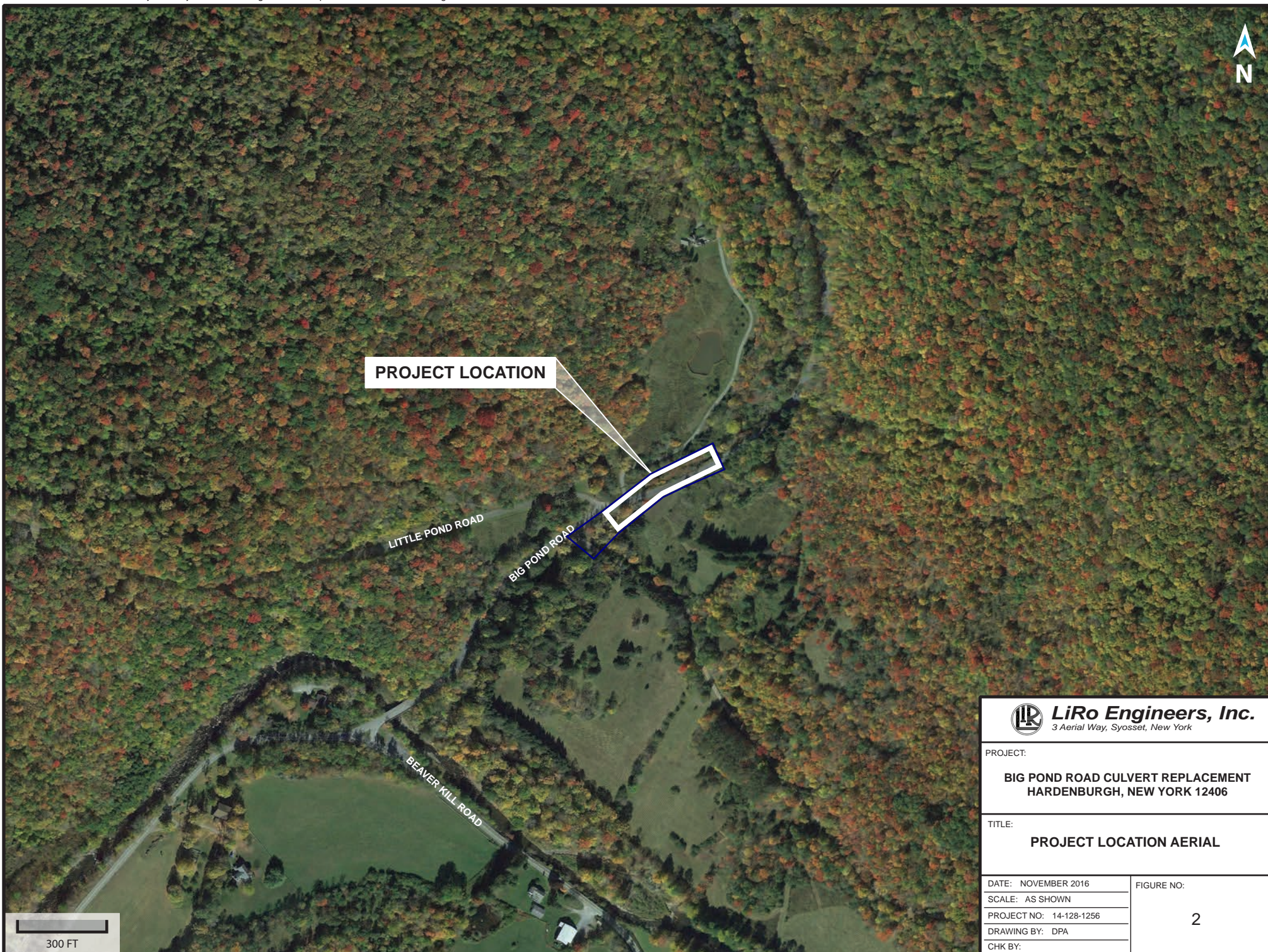
LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:
**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:
PROJECT LOCATION MAP

DATE: JANUARY 2018
SCALE: AS SHOWN
PROJECT NO: 14-128-1256
DRAWING BY: DPA
CHK BY:

FIGURE NO:
1



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

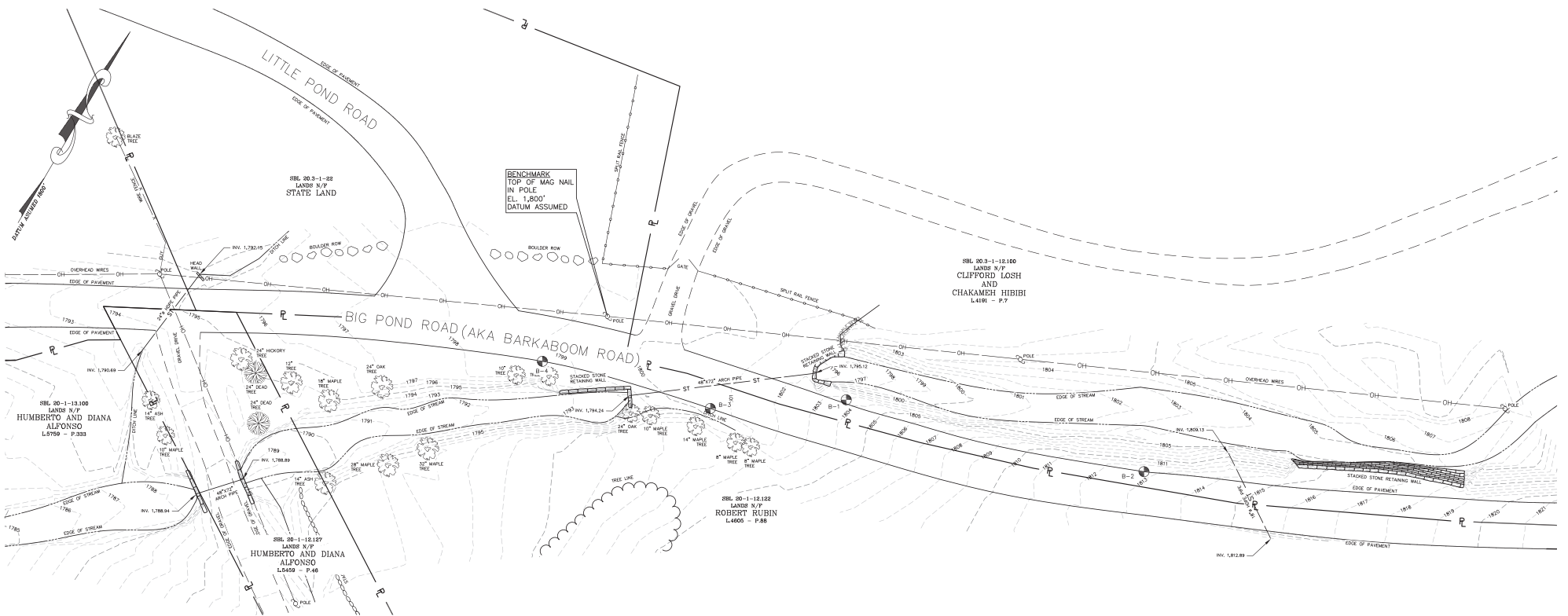
PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

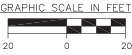
2



LEGEND

- | | | | |
|-------------|------------------|---|------------------------------|
| --- 50 --- | CONTOURS (MINOR) | ○ | UTILITY POLE |
| --- 52 --- | CONTOURS (MAJOR) | ● | SIGN |
| — P — | PROPERTY LINE | ○ | TREE |
| — | EDGE OF WATER | ○ | BORING |
| — x — x — | SPLIT RAIL FENCE | ○ | BOULDER |
| — OH — | WIRE FENCE | — | STACKED STONE RETAINING WALL |
| — | OVERHEAD WIRES | | |
| — | GUIDERAIL | | |
| ○ ○ ○ ○ ○ ○ | STACK STONE WALL | | |

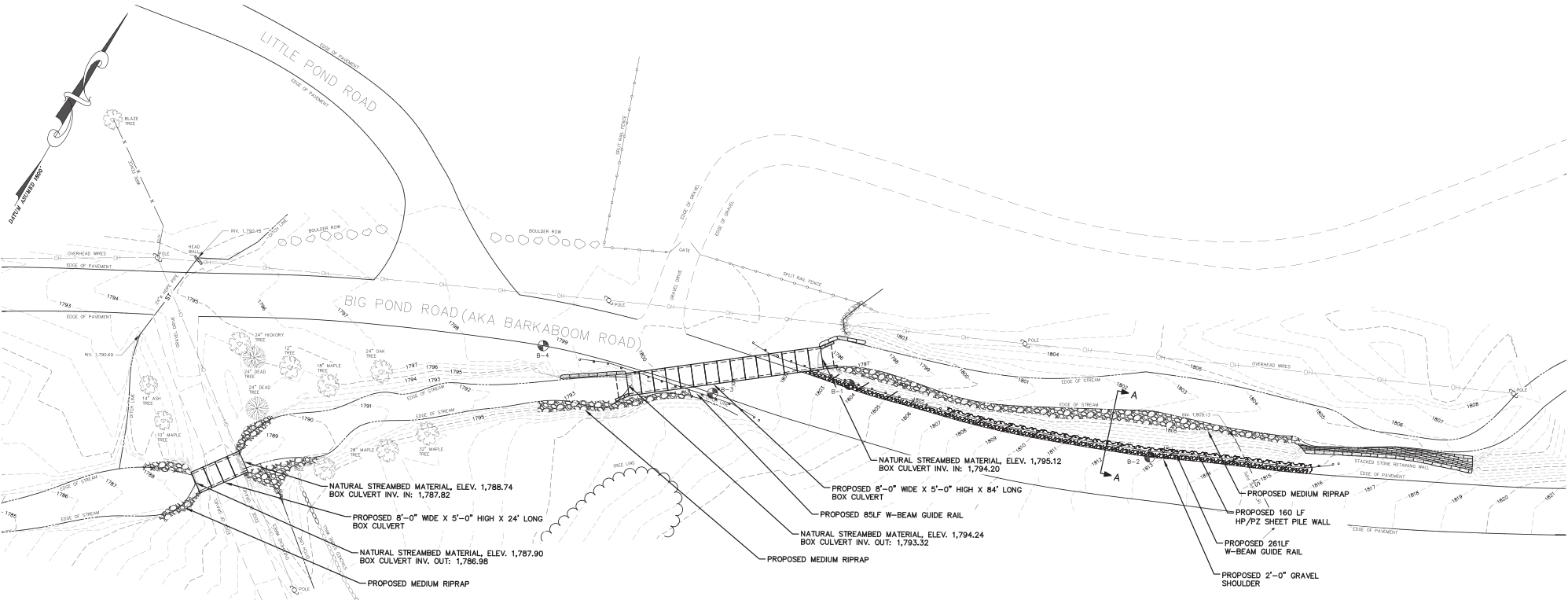
SOURCE:
BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS
BIG POND ROAD CULVERT REPLACEMENT, CONTRACT NO. THA-181,
EXISTING CONDITIONS, DRAWING SHEET 2 OF 5, DATED SEPTEMBER 2017



PROJECT:
**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:
EXISTING CONDITIONS

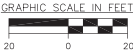
DATE: JANUARY 2018	FIGURE NO: 3
SCALE: AS SHOWN	
PROJECT NO: 14-128-1256	
DRAWING BY: DPA	
CHK BY:	



LEGEND

- | | | | |
|------------|------------------|--|------------------------------|
| --- 50 --- | CONTOURS (MINOR) | | UTILITY POLE |
| --- 52 --- | CONTOURS (MAJOR) | | SIGN |
| --- | PROPERTY LINE | | TREE |
| --- | EDGE OF WATER | | BORING |
| --- | SPLIT RAIL FENCE | | BOULDER |
| -x-x- | WIRE FENCE | | STACKED STONE RETAINING WALL |
| -OH- | OVERHEAD WIRES | | |
| -o-o- | GUIDERAIL | | |
| oooo | STACK STONE WALL | | |

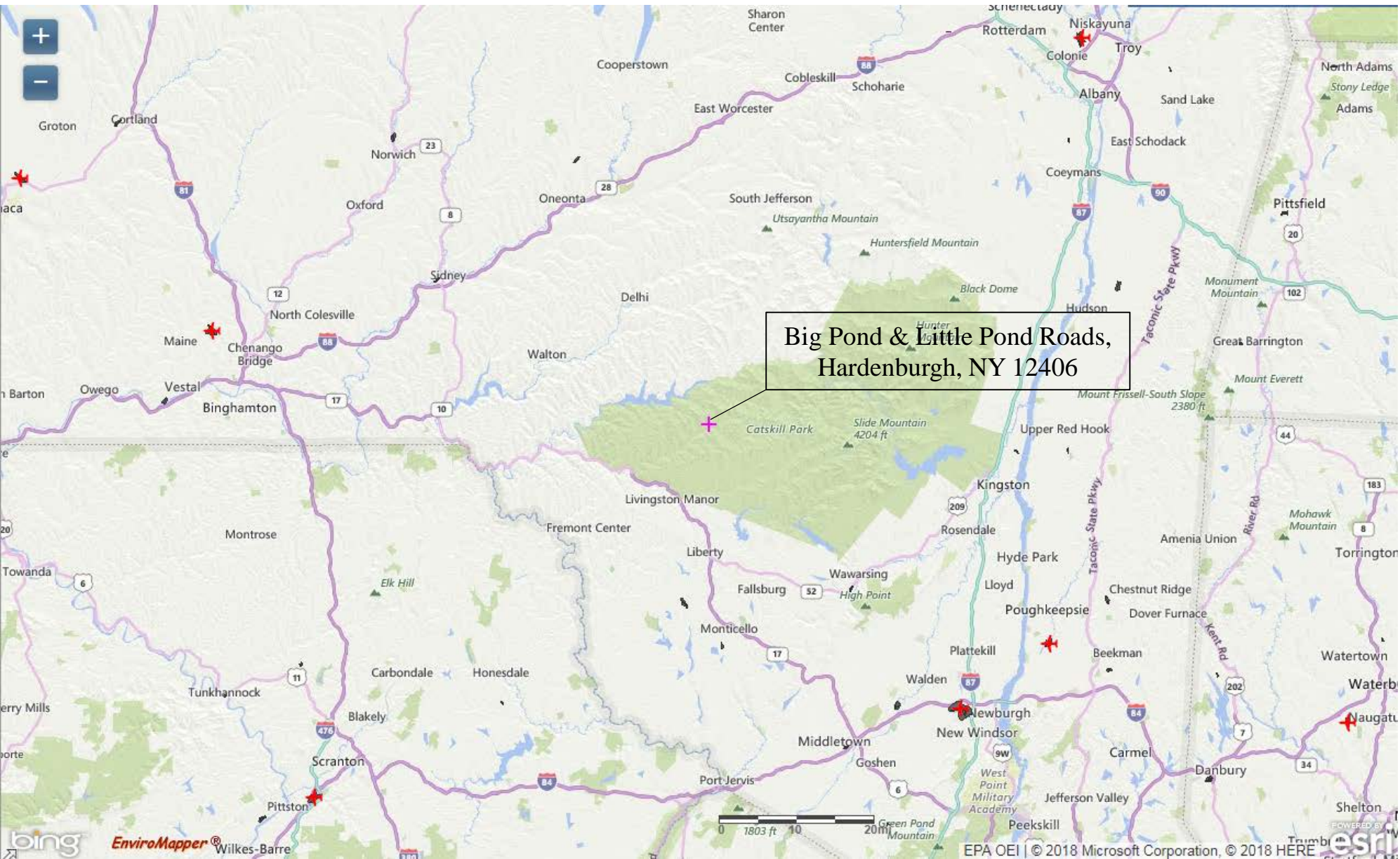
SOURCE:
BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS
BIG POND ROAD CULVERT REPLACEMENT, CONTRACT NO. THA-181,
SITE PLAN, DRAWING SHEET 4 OF 5, DATED SEPTEMBER 2017



PROJECT:
**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

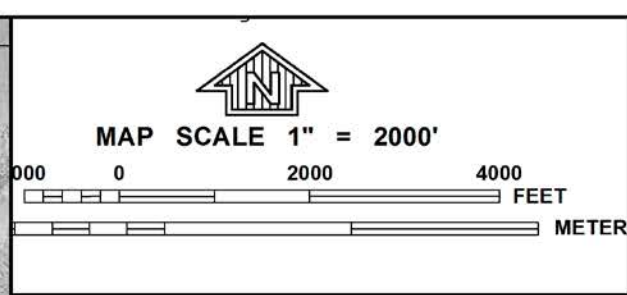
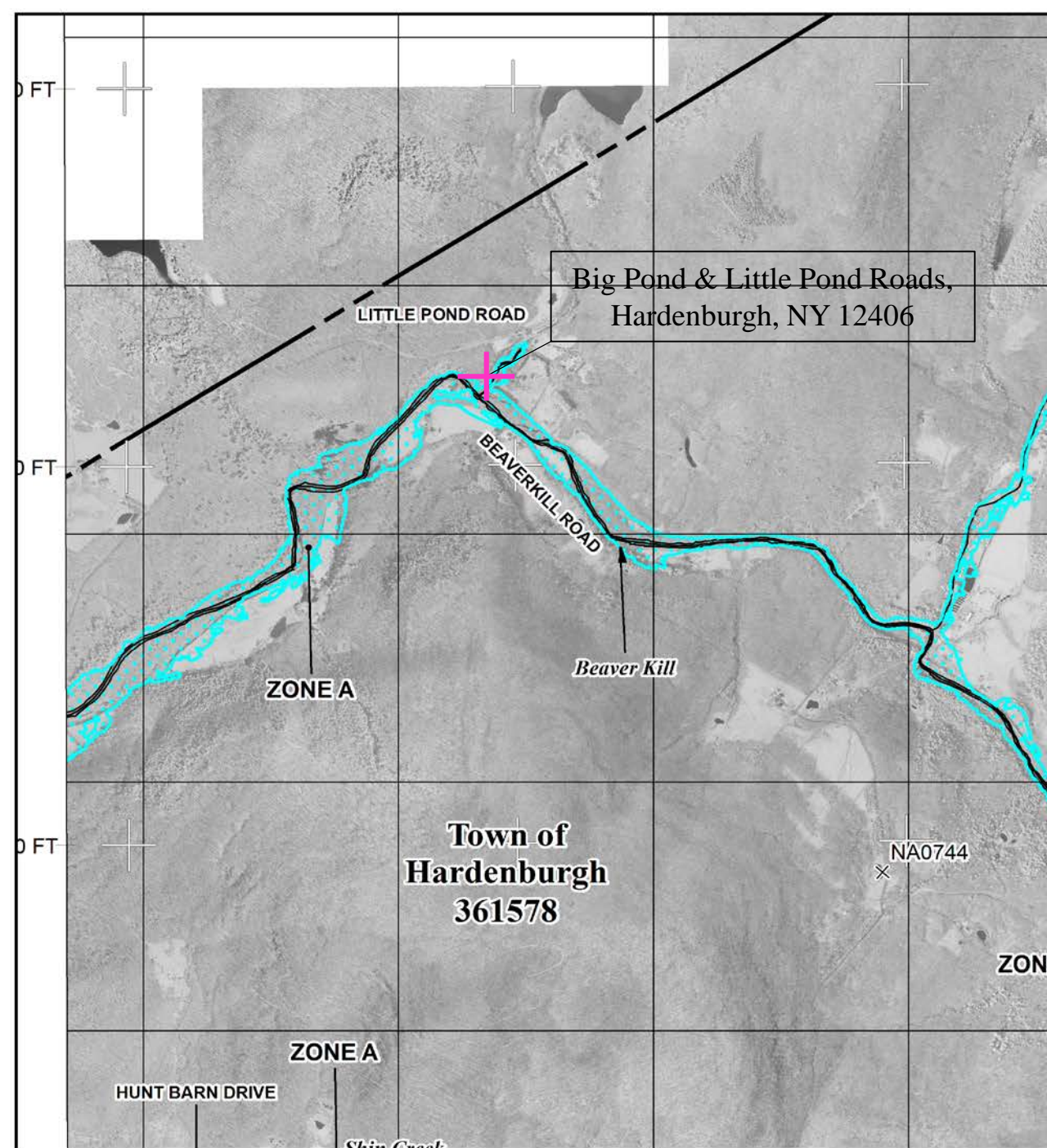
TITLE:
**CULVERT AND ROAD
STABILIZATION PLAN**

DATE: JANUARY 2018	FIGURE NO:
SCALE: AS SHOWN	4
PROJECT NO: 14-128-1256	
DRAWING BY: DPA	
CHK BY:	



**BIG POND ROAD
CULVERT REPLACEMENT
Hardenburgh, NY 12406**

Airport Location Map
FIGURE 5



NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0175F


FIRM
FLOOD INSURANCE RATE MAP
for ULSTER COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
HARDENBURGH, TOWN	361578
OF	

PANEL 175 OF 910
MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
36111C0175F

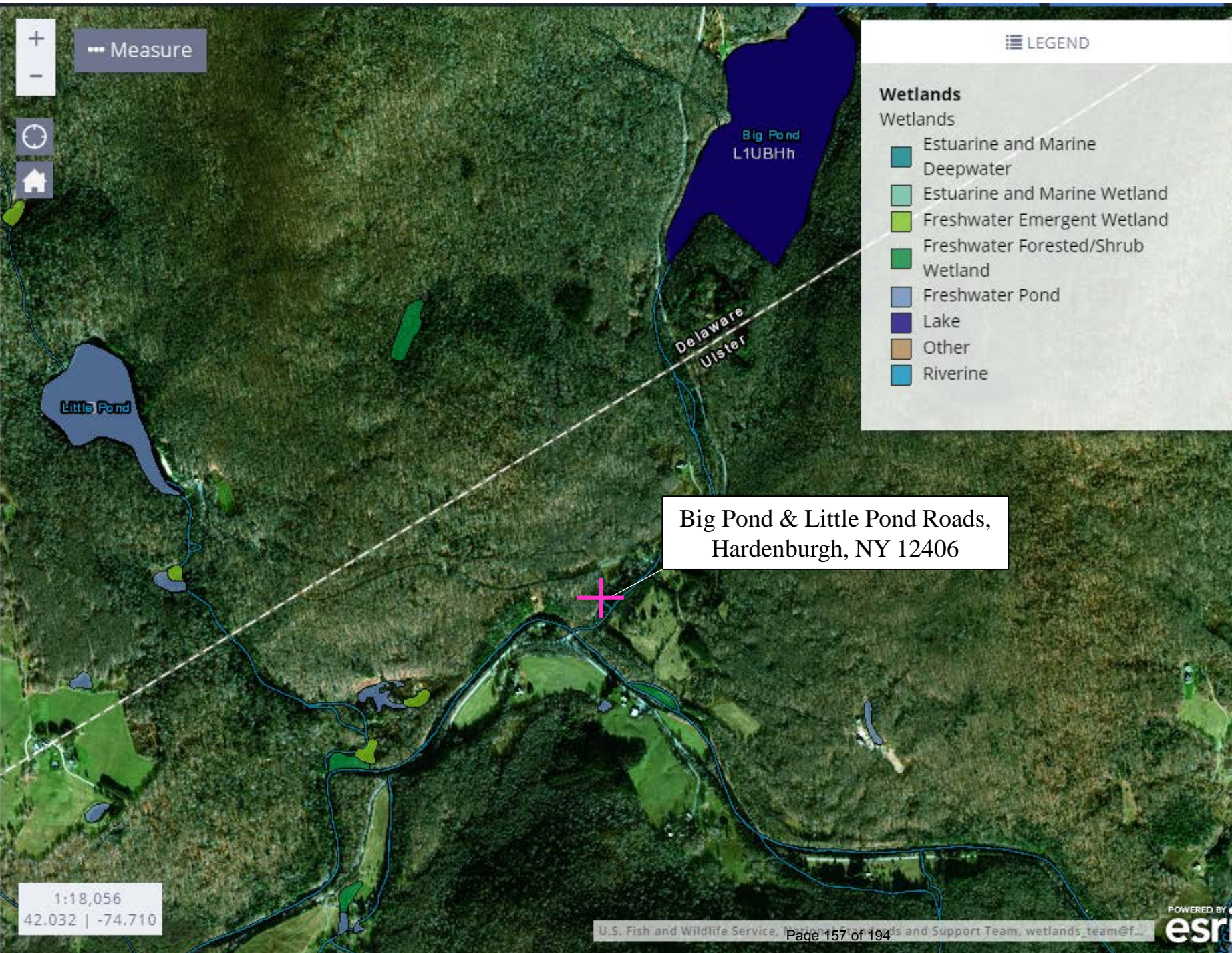
MAP REVISED
NOVEMBER 18, 2016

Federal Emergency Management Agency


This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

**BIG POND ROAD CULVERT
REPLACEMENT
Hardenburgh, NY 12406**

 Flood Insurance Map
FIGURE 7



**BIG POND ROAD
CULVERT REPLACEMENT
Hardenburgh, NY 12406**

 Wetlands Map
FIGURE 10

Appendix D
NYS State Historic Preservation Office And Tribal Historic
Preservation Office Letters



ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

February 15, 2018

Lori Shirley
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

Re: HTF/ GOSR/ NYSHCR/ Replacement of Culverts:
Big Pond Road Culverts
Vicinity of Big Pond & Little Pond Roads, Hardenburgh/ Ulster County.
18PR00731

Dear Ms. Shirley:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials 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 other 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 on this review, it is the opinion of SHPO that the proposed undertaking will have No Adverse Effect to Historic Properties listed in or eligible for inclusion in the State or National Register of Historic Places, with the following condition: Remove and salvage existing stone from walls surrounding culverts and reuse in the new construction.

If I can be of further assistance, please contact me at (518) 268-2187 Larry.moss@parks.ny.gov

Sincerely,

A handwritten signature in black ink that reads "Larry K Moss". The signature is written in a cursive, flowing style.

Larry K Moss
Historic Preservation Technical Specialist

CC: Thomas Fralick, Liro

Shirley, Lori (NYSHCR)

From: Bonney Hartley <Bonney.Hartley@mohican-nsn.gov>
Sent: Tuesday, February 20, 2018 8:33 PM
To: Shirley, Lori (NYSHCR)
Cc: HistoricPres Intern
Subject: Big Pond Road Culvert Replacement-SMC comment
Attachments: THPO Consult Letter_Hardenburgh Big Pond Culvert_Stockbridge-Munsee Consulation Letter.pdf

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

STOCKBRIDGE-MUNSEE COMMUNITY CULTURAL RESOURCES REVIEW RESPONSE FORM

Project Details:

Received: 02/16/2018

☐ Mail ☒ Email

Project Name: Big Pond Road Culvert Replacement

Agency/Consultant/ Firm: GOSR

Proposed Project Description: The proposed project would consist of the design and construction of a culvert structure at the intersection of Big Pond and Little Pond Roads, to replace and undersized existing culvert. It would also include work to stabilize the northern roadway embankment.

City, County, State: Hardenburgh, Ulster County NY

Point of Contact: Lori Shirley lori.shirley@nyshcr.org (518)474-0755

Response:

X We have no concerns related to the proposed project. We anticipate no adverse effects to our sites of Mohican cultural significance.

The project is not located in our cultural area of interest; therefore, we do not have comment or need to consult further.

We have no further comment at this time, but request to be included in future correspondence on the matter.

We consider this project to be compliant with the Stockbridge-Munsee Tribal Historic Preservation Office's Section 106 review process, with agreed upon mitigations as detailed below:

This site will require the on-site presence of a Tribal Cultural Resource Monitor during ground disturbing activities. Contact our office with construction schedule.

A review fee is requested, information on which is attached.

\$500 standard fee \$1,000 site visit required

Upon initial review of your project proposal, we request further information as detailed below:

This project has the potential to have adverse effects to historic or cultural resources which are important to our tribe. We recommend the following actions:

Additional Comments:

****Condition: If archeological resources or human remains are found during construction, you must immediately stop construction and notify our office immediately.**

Thank you for your consideration,

Bonney

Bonney Hartley

Tribal Historic Preservation Officer

Stockbridge-Munsee Mohican Tribal Historic Preservation

Extension office

65 1st Street

Troy, NY 12180

(518) 244-3164

Bonney.Hartley@mohican-nsn.gov

www.mohican-nsn.gov

From: Kimberly Penrod [<mailto:kpenrod@delawarenation.com>]

Sent: Tuesday, March 13, 2018 9:03 AM

To: Barthelme, Mary (STORMRECOVERY) <Mary.Barthelme@stormrecovery.ny.gov>

Subject: RE: Section 106 Compliance for Hardenburgh Big Pond Road Culvert Replacement Project, Town of Hardenburgh, Ulster County, New York

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Mary,

The protection of our tribal cultural resources and tribal trust resources will take all of us working together.

We look forward to working with you and your agency.

With the information you have submitted we can concur at present with this proposed plan.

As with any new project, we never know what may come to light until work begins.

The Delaware Nation asks that you keep us up to date on the progress of this project and if any discoveries arise please contact us immediately.

Our department is trying to go as paper free as possible. If it is at all feasible for your office to send email correspondence we would greatly appreciate.

If you need anything additional from me please do not hesitate to contact me.

Respectfully,

*Kim Penrod
Delaware Nation
Director, Cultural Resources/106
Archives, Library and Museum
31064 State Highway 281
PO Box 825
Anadarko, OK 73005
(405)-247-2448 Ext. 1403 Office
(405)-924-9485 Cell
kpenrod@delawarenation.com*

Unless someone like you cares a whole awful lot, nothing is going to get better. It's not. ~Dr. Seuss

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From: Barthelme, Mary (STORMRECOVERY) [<mailto:Mary.Barthelme@stormrecovery.ny.gov>]
Sent: Friday, February 16, 2018 12:20 PM
To: Kimberly Penrod <kpenrod@delawarenation.com>
Cc: Shirley, Lori (NYSHCR) <Lori.Shirley@nyshcr.org>
Subject: Section 106 Compliance for Hardenburgh Big Pond Road Culvert Replacement Project, Town of Hardenburgh, Ulster County, New York

Dear Kim,

Please find attached to this email a Section 106 consultation request for the above-mentioned project in New York State, Ulster County.

Please let me know if you have any questions.

Thank you,

Mary Barthelme

Mary Barthelme
Grant Administrator
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224, Albany NY 12260
O: (518) 473-0154 | C: (646) 706-6748 | F: (518) 474-6102 |
Mary.Barthelme@stormrecovery.ny.gov
www.stormrecovery.ny.gov

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February 6, 2018

Mr. Larry Moss
Historic Preservation Technical Specialist
New York State Office of Parks, Recreation and Historic Preservation
Division of Historic Preservation
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

Re: Section 106 Compliance for Big Pond Road Culvert Replacement, Hardenburgh, NY
12406

Dear Mr. Moss:

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery ("CDBG-DR") funds from the United States Department of Housing and Urban Development ("HUD"), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and request for consultation.

GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis. A consultation request for the project described herein will also be sent to The Delaware Nation, Delaware Tribe of Indians, Mohawk Nation, Saint Regis Mohawk Tribe, Stockbridge-Munsee Community Band of Mohicans, and Unkechaug. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470f), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, this letter serves as notification of the proposed action.

Area of Potential Effect: Vicinity of Big Pond & Little Pond Roads, Hardenburgh, NY 12406

Proposed Project Description: The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The infrastructure will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

The current project design requires the following construction elements:

- Removal and replacement of an existing 48 inch by 72 inch arched culvert running under an un-named gravel drive southwest of the intersection of Little Pond Road and Bid Bond Road with 8 feet wide by 5 feet high by 23 feet long box culvert.
- Removal and replacement of a second 48 inch by 72 inch arched pipe running under Big Pond Road southeast of the intersection of Little Pond Road and Big Pond Road with a 8 feet wide by 5 feet high by 23 feet long and a 8 feet wide by 5 feet high by 84 feet long box culvert.
- Removal and replacement of associated riprap and sheet piling.
- Stabilization of Big Pond Road
- Construction of a temporary by gravel pass road
- Construction of a temporary earthen coffer dam
- Construction of stone retaining walls along Big Pond Road

The construction will require stream disturbance, clearing and grubbing of the construction area and removal of trees. The right-of-way survey at the Big Pond Road culvert site indicates that this is a "road by use" with a two rod width (33 feet) right-of-way. The land on the north and south sides of Big Pond Road is privately owned (parcels SBL# 20.3-1- 12.100 and SBL# 20-1-12.122). Easements will have to be obtained for any culvert replacement construction work located outside of the public right-of-way. Easement areas have been identified and preparation for obtaining the easements is underway.

The purpose of this letter is to initiate consultation pursuant to Section 106 of the NHPA per the implementing regulations at 36 Code of Federal Regulations (CFR) Part 800. GOSR respectfully requests your review of the proposed project described herein. Your assistance with this matter is greatly appreciated. We respectfully request your cooperation and are seeking a response within 30 days of receipt of this letter. If you have any questions or require additional information

regarding this request, please feel free to contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,

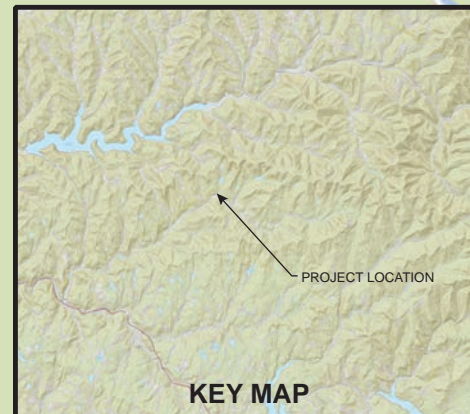
A handwritten signature in blue ink that reads "Lori A. Shirley". The signature is written in a cursive, flowing style.

Lori A. Shirley
Director
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

Enclosures:

Attachment 1: Project Location Map

Attachment 2: Project Site Map



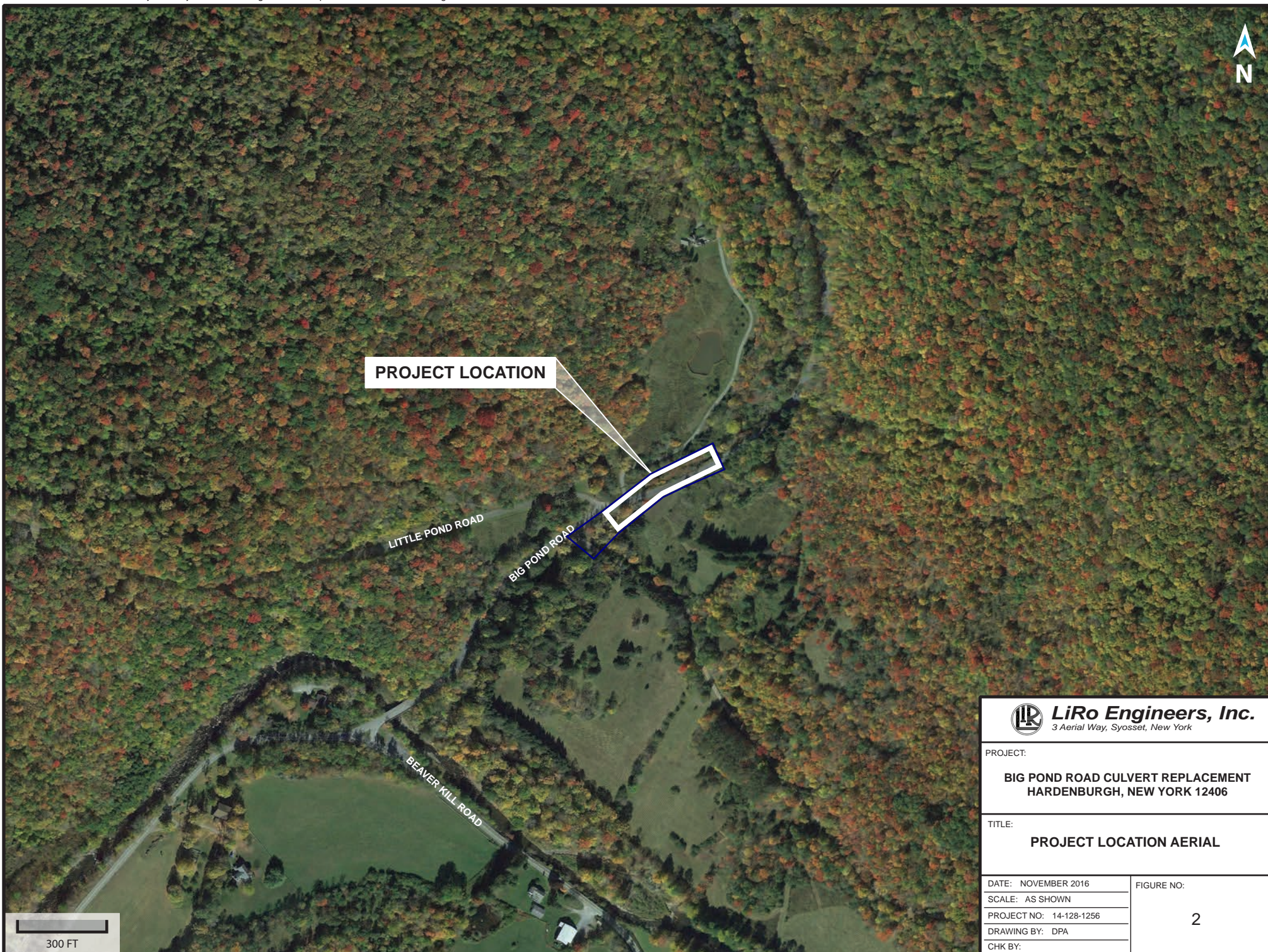
LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:
**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:
PROJECT LOCATION MAP

DATE: JANUARY 2018
SCALE: AS SHOWN
PROJECT NO: 14-128-1256
DRAWING BY: DPA
CHK BY:

FIGURE NO:
1



LiRo Engineers, Inc.
3 Aerial Way, Syosset, New York

PROJECT:

**BIG POND ROAD CULVERT REPLACEMENT
HARDENBURGH, NEW YORK 12406**

TITLE:

PROJECT LOCATION AERIAL

DATE: NOVEMBER 2016

SCALE: AS SHOWN

PROJECT NO: 14-128-1256

DRAWING BY: DPA

CHK BY:

FIGURE NO:

2

February 16, 2018

Chet Brooks, Chief
Delaware Tribe of Indians, Delaware Tribal Headquarters
5100 Tuxedo Blvd
Bartlesville, OK 74006

Re: Section 106 Compliance for the Big Pond Road Culvert Replacement Project,
Town of Hardenburgh, Ulster County, New York

Dear Chief Chet Brooks,

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Tribe to respond with any concerns or comments.

GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470a), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, this letter serves as notification of the proposed action. This consultation is being sent to the Delaware Nation, Delaware Tribe of Indians, Mohawk Nation, Saint Regis Mohawk Tribe, and Stockbridge-Munsee Community Band of Mohicans.

Area of Potential Effect: The project is located at one (1) location near the vicinity of Big Pond & Little Pond Roads, Hardenburgh, New York 12406 (see location maps).

During Hurricane Irene and Tropical Storm Lee, nearly 11 inches of rain fell in Hardenburgh. This caused excessive stormwater from an unnamed stream that commences at Big Pond and flows into Beaverkill to overflow at an 18” round culvert located at the intersection of Big Pond and Little Pond Roads. After damaging protective measures at the culvert opening, stormwater eroded and undermined the road's top and base surfaces, and

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Proposed Project Description: The project is for the design and construction of culvert infrastructure at a site located near the intersection of Big Pond and Little Pond Roads, in the Town of Hardenburgh. The infrastructure will replace an undersized culvert that allows stormwater to back-up and overflow the present culvert, destroying Big Pond Road's road surface. The Big Pond Road culvert conveys water from the unnamed stream that drains Big Pond located 3,200 feet to the north. The project is to increase the capacity of culvert infrastructure at the site to mitigate the impacts of stormwater incurred by 100-year storm events and prevent future collapse and closure of Big Pond Road, which is the only evacuation route that residents of the area may utilize to reach critical emergency services outside of the area. To the east of the Big Pond Road culvert site the northern edge of Big Pond Road asphalt roadway surface is severely cracked due to the sloughing of the road embankment towards the unnamed stream channel. The culvert replacement will include work to stabilize the northern roadway embankment.

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With this letter, GOSR respectfully submits for your review the attached documentation for the proposed project(s) described herein. GOSR initiated consultation with the New York State Historic Preservation Office (SHPO) and SHPO issued a finding of No Adverse Effect with the condition of removing and salvaging the existing stone from the walls surrounding the culverts and reusing them in the new construction. If the Area of Potential Effect encompasses historic properties of religious or cultural significance to your Tribe, please respond within 30 days or sooner. Additionally, please indicate if there are other sources of information or other parties, Nations, Tribes, or members of the public you believe should be included in the consultation process. Please respond by email or in writing to the address listed below.

Lori A. Shirley
Director
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

If you have any questions or require additional information regarding this request, please feel free to contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,



Lori A. Shirley, Director
Bureau of Environmental Review and
Assessment
Governor's Office of Storm Recovery

Enclosures

Attachment 1: Project Location Map
Attachment 2: Project Location Aerial
Attachment 3: SHPO Effect Finding Letter

Electronic letter sent to:

Susan Bachor

Delaware Tribe of Indians Historic Preservation Representative

P.O. Box 64

Pocono Lake, PA 73005

February 16, 2018

Mohawk Nation Council of Chiefs
Of Haudenosaunee Six Nations Confederacy
Akwasasne Territory Box 336
Via Rooseveltown, NY 13683-0366

Re: Section 106 Compliance for the Big Pond Road Culvert Replacement Project,
Town of Hardenburgh, Ulster County, New York

Dear Mohawk Nation Council of Chiefs:

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Nation to respond with any concerns or comments.

GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470a), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, this letter serves as notification of the proposed action. This consultation is being sent to the Delaware Nation, Delaware Tribe of Indians, Mohawk Nation, Saint Regis Mohawk Tribe, and Stockbridge-Munsee Community Band of Mohicans.

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Lori A. Shirley
Director
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

If you have any questions or require additional information regarding this request, please feel free to contact me at (518) 474-0755 or Lori.Shirley@nyshcr.org. Thank you for your time and consideration.

Sincerely,

A handwritten signature in blue ink that reads "Lori A. Shirley".

Lori A. Shirley, Director
Bureau of Environmental Review and
Assessment
Governor's Office of Storm Recovery

Enclosures

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February 16, 2018

Ron LaFrance, Jr.; Paul Thompson; and Beverly Cook, Chiefs
St. Regis Mohawk Tribe
412 State Route 37
Akwesasne, NY 13655

Re: Section 106 Compliance for the Big Pond Road Culvert Replacement Project,
Town of Hardenburgh, Ulster County, New York

Dear Chiefs of the St. Regis Mohawk Tribe:

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Tribe to respond with any concerns or comments.

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Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
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Lori A. Shirley, Director
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Electronic letter sent to:

Arnold Printup

Saint Regis Mohawk Tribe, THPO

412 State Route 37

Akwesasne, NY 13655

February 16, 2018

Shannon Holsey, President
Stockbridge-Munsee Community, Band of the Mohicans
N8476 Moh He Con Nuck Road
Bowler, WI 54416

Re: Section 106 Compliance for the Big Pond Road Culvert Replacement Project,
Town of Hardenburgh, Ulster County, New York

Dear Ms. White,

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery ("CDBG-DR") funds from the United States Department of Housing and Urban Development ("HUD"), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Community to respond with any concerns or comments.

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Governor's Office of Storm Recovery

Enclosures

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Electronic letter sent to:

Bonney Hartley
THPO, New York Office
Stockbridge-Munsee Community, Band of the Mohicans
65 1st Street
Troy, NY 12180

February 16, 2018

Deborah Dotson, President
Delaware Nation
P.O. Box 825
Anadarko, OK 73005

Re: Section 106 Compliance for the Big Pond Road Culvert Replacement Project,
Town of Hardenburgh, Ulster County, New York

Dear President Deborah Dotson:

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”), is serving as the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with Nation to respond with any concerns or comments.

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Sincerely,



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Electronic letter sent to:

Kim Penrod, Director of Cultural Resources/Section 106

Delaware Nation

P.O. Box 825

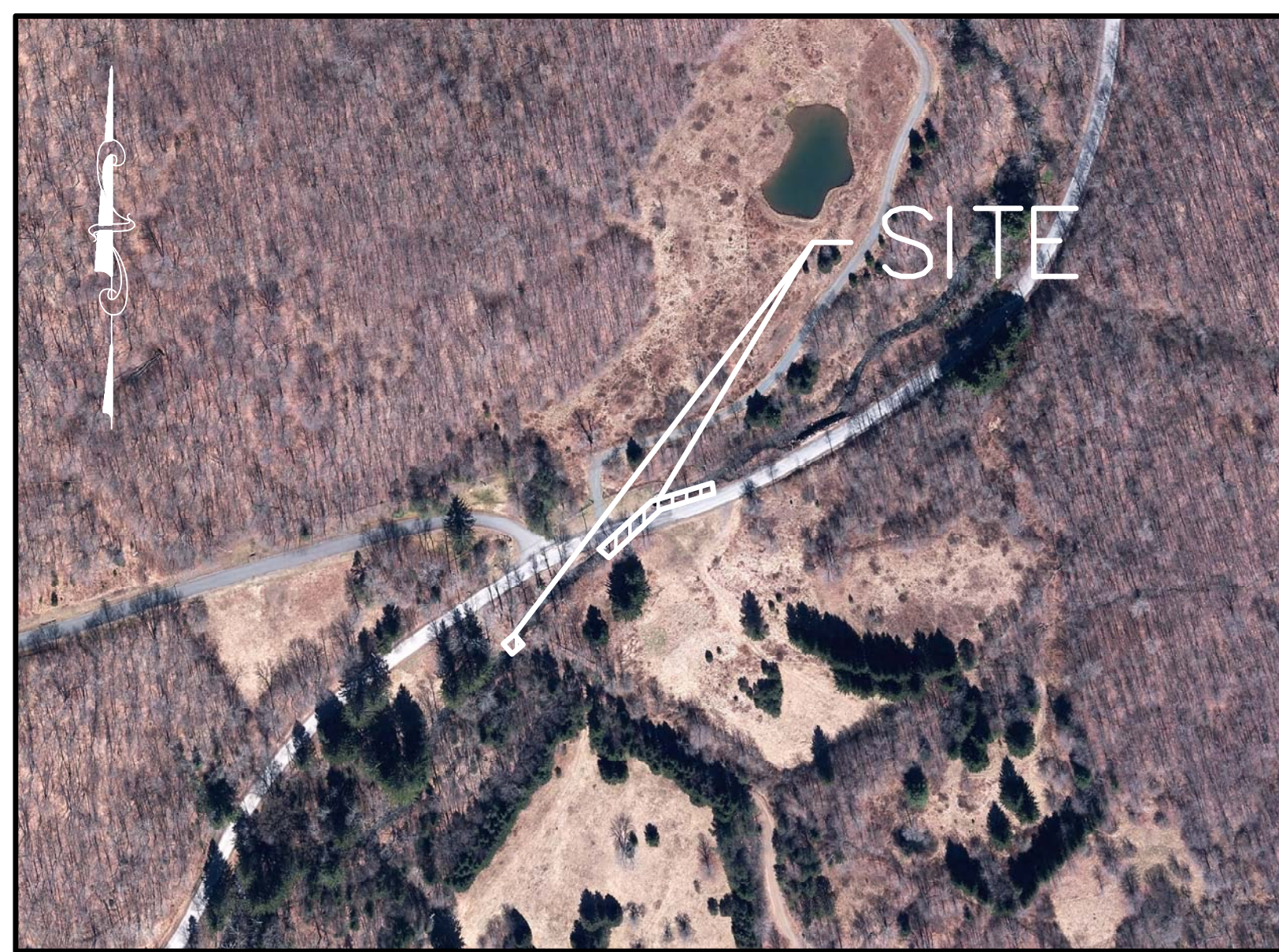
Anadarko, OK 73005

Appendix E

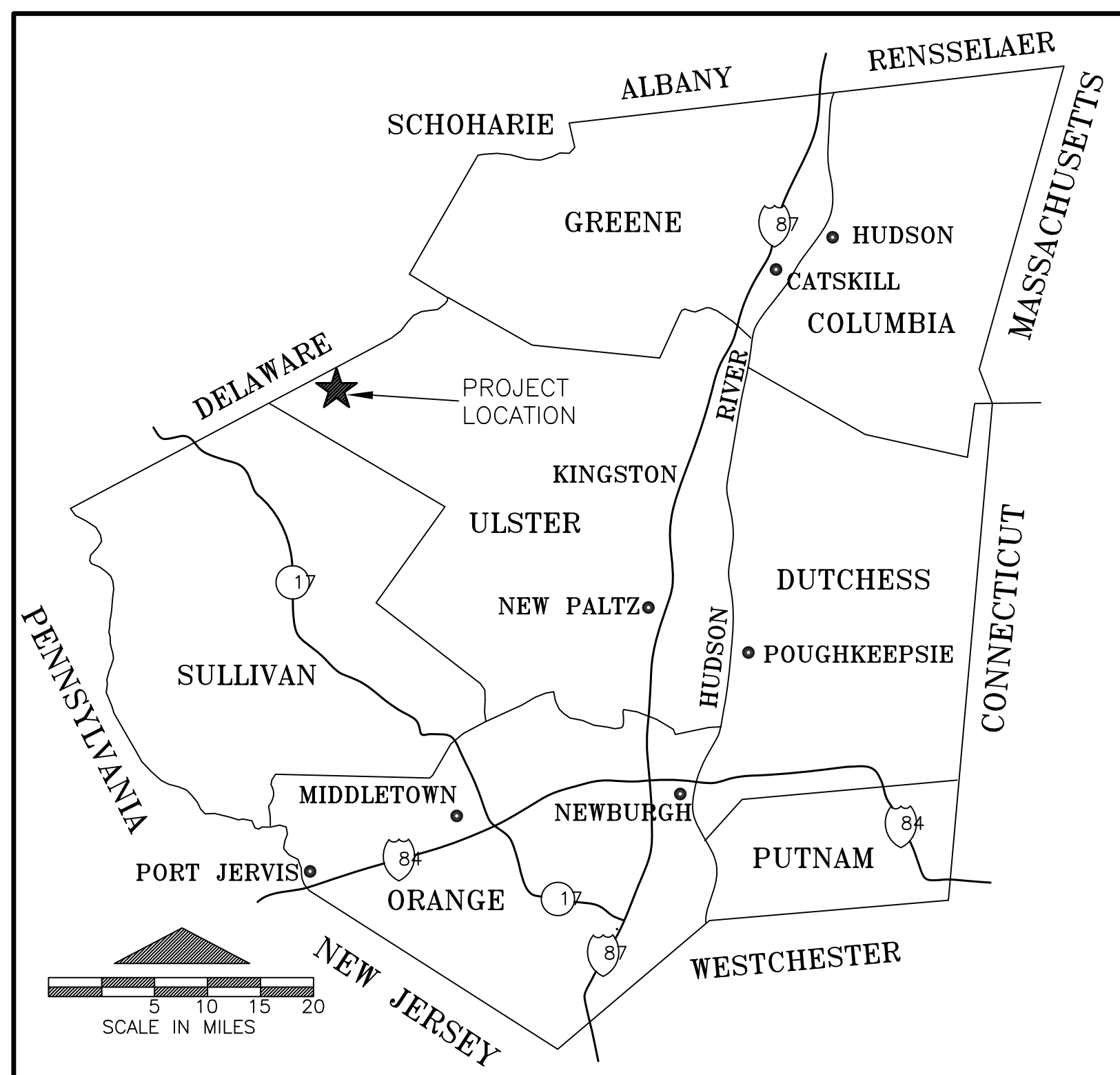
100 Percent Design Plans



REFERENCE: 7.5 MINUTE USGS QUADRANCE - HARDENBURGH
LOCATION MAP
SCALE 1" = 2000'



N.Y.S. GIS
AERIAL MAP
SCALE 1" = 200'



GENERAL LOCATION MAP

CONTRACT THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNOR'S OFFICE OF STORM RECOVERY

TOWN OF HARDENBURGH ULSTER COUNTY NEW YORK

TOWN OFFICIALS

JERRY FAIRBAIRN, TOWN SUPERVISOR

TOWN COUNCIL

JOHN SACKEL
WENDY O'REILLY
WILLIAM SCHLUTER
SHERRY BELLOWS

THOMAS DELEHANTY, TOWN CLERK

CHARLES STORMS, HIGHWAY SUPERINTENDENT

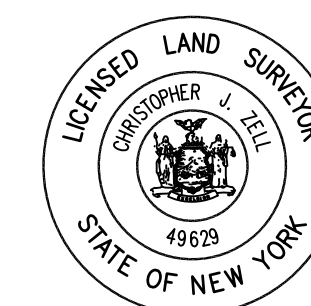
JULY 2018

FINAL DESIGN

BRINNIER AND LARIOS, P. C.
PROFESSIONAL ENGINEERS AND LAND SURVEYORS
67 MAIDEN LANE
KINGSTON, NEW YORK
(845) 338-7622

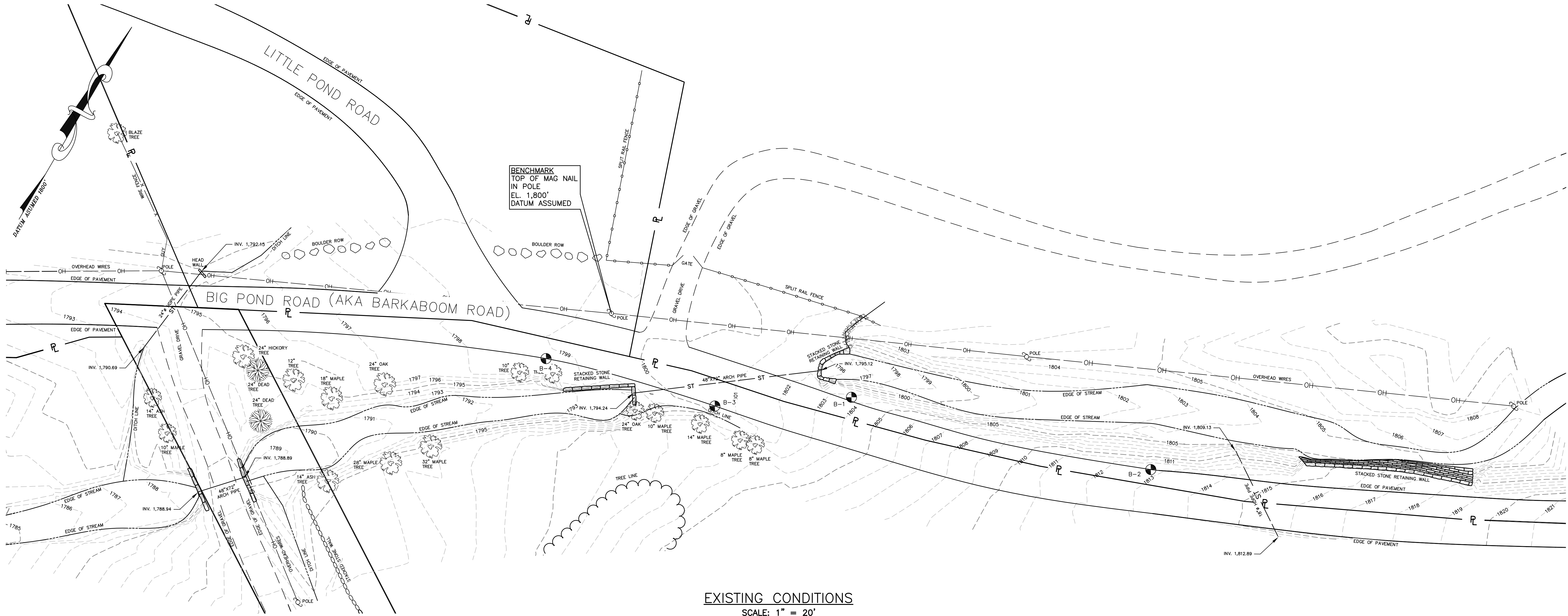


Unauthorized alteration or addition to a plan
bearing a licensed engineer's seal is a
violation of section 7209, subdivision 2, of the
New York State Education Law.



INDEX OF DRAWINGS

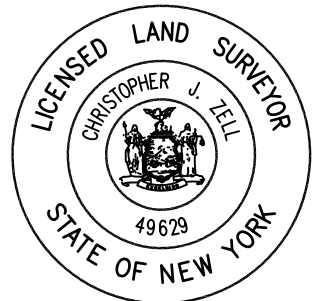
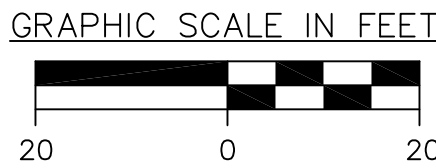
SHEET NO.	DRAWING
1.	COVER SHEET
2.	EXISTING CONDITIONS
3.	SELECTIVE DEMOLITION/STREAM PROTECTION
4.	SITE PLAN
5.	DETAILS
6.	BYPASS ROAD TRAFFIC CONTROL PLAN



LEGEND		
---50---	CONTOURS (MINOR)	UTILITY POLE
---52---	CONTOURS (MAJOR)	SIGN
—P—	PROPERTY LINE	TREE
—W—	EDGE OF WATER	BORING
—S—S—	SPLIT RAIL FENCE	BOULDER
—X—X—	WIRE FENCE	STACKED STONE RETAINING WALL
—OH—	OVERHEAD WIRES	
—G—	GUIDERAIL	
—O—O—O—	STACK STONE WALL	

NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON AUGUST 24, 2017.

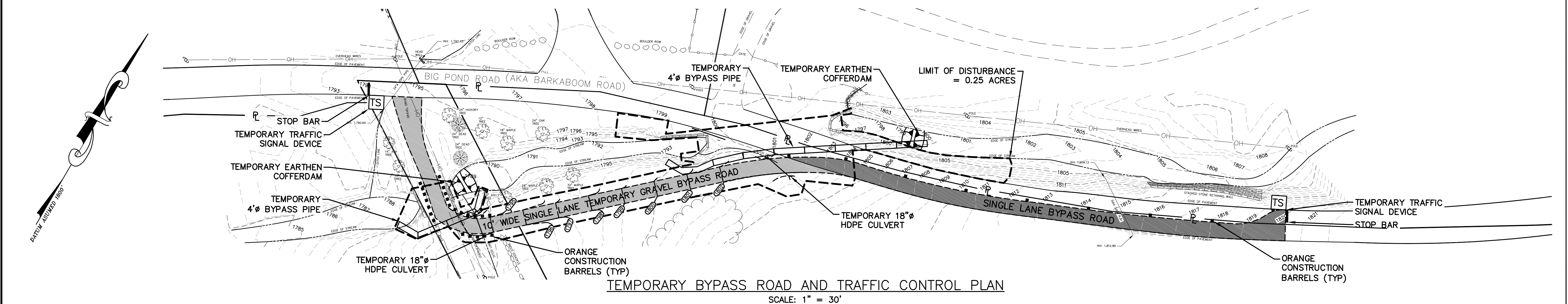
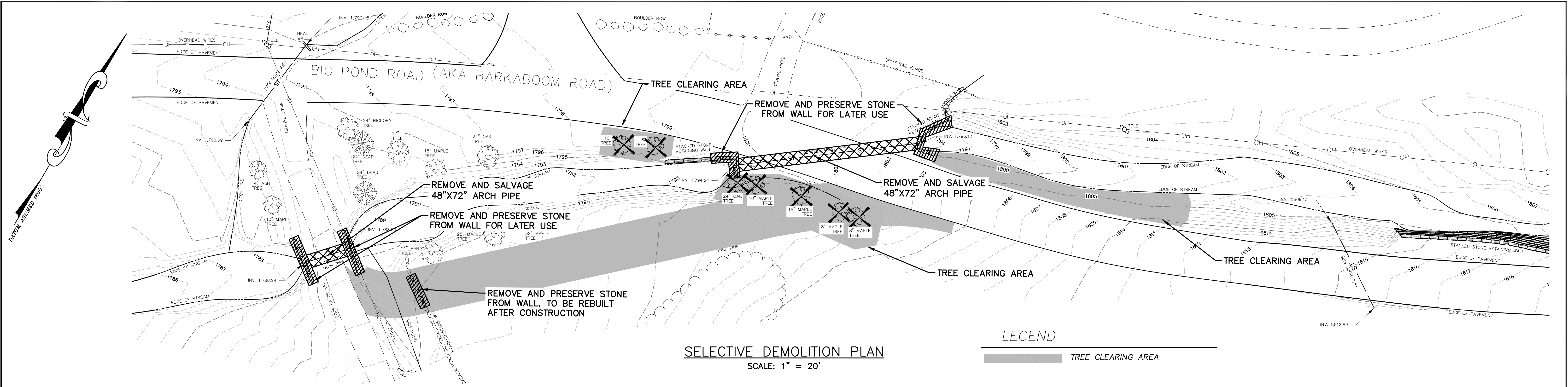
NOTE:
The location of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work, and agrees to be fully responsible for any and all damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.



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EXISTING CONDITIONS
CONTRACT NO. THA-181

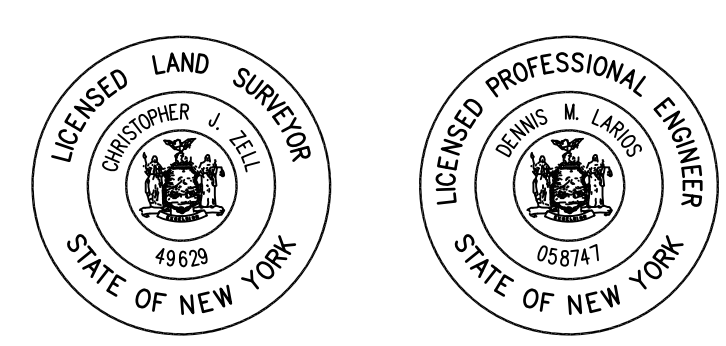
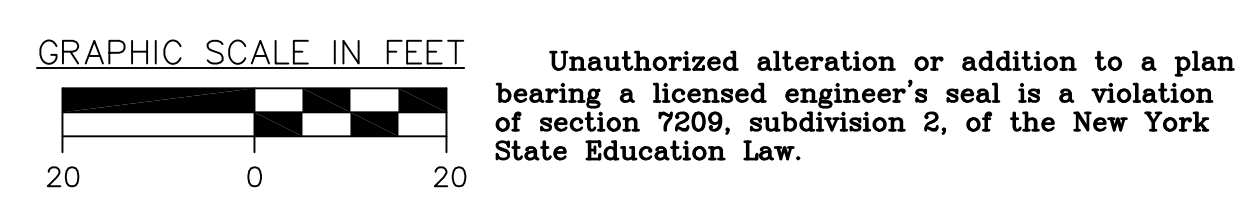
BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURGH		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD	BRINNIER & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660	
SCALE	DATE	SHEET NO.	
1" = 20'	JULY 2018	2 OF 6	
DWG	CHK		
RJS			



NOTE:
1. FIELD SURVEY BY BRINNIER AND LARIOS P.C. ON AUGUST 24, 2017.

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LEGEND			
---	50	---	CONTOURS (MINOR)
---	52	---	CONTOURS (MAJOR)
---		---	PROPERTY LINE
---		---	EDGE OF WATER
---		---	SPLIT RAIL FENCE
---		---	WIRE FENCE
---		---	OVERHEAD WIRES
---		---	GUIDERAIL
---		---	STACK STONE WALL
---		---	UTILITY POLE
---		---	SIGN
---		---	TREE
---		---	BORING
---		---	BOULDER
---		---	STACKED STONE RETAINING WALL
---		---	TEMPORARY SINGLE LANE GRAVEL BYPASS ROAD
---		---	TEMPORARY SINGLE LANE BYPASS ROAD TO BE REMOVED AND DISCARDED
---		---	TO BE REMOVED AND RESERVED
---		---	TREE TO BE REMOVED



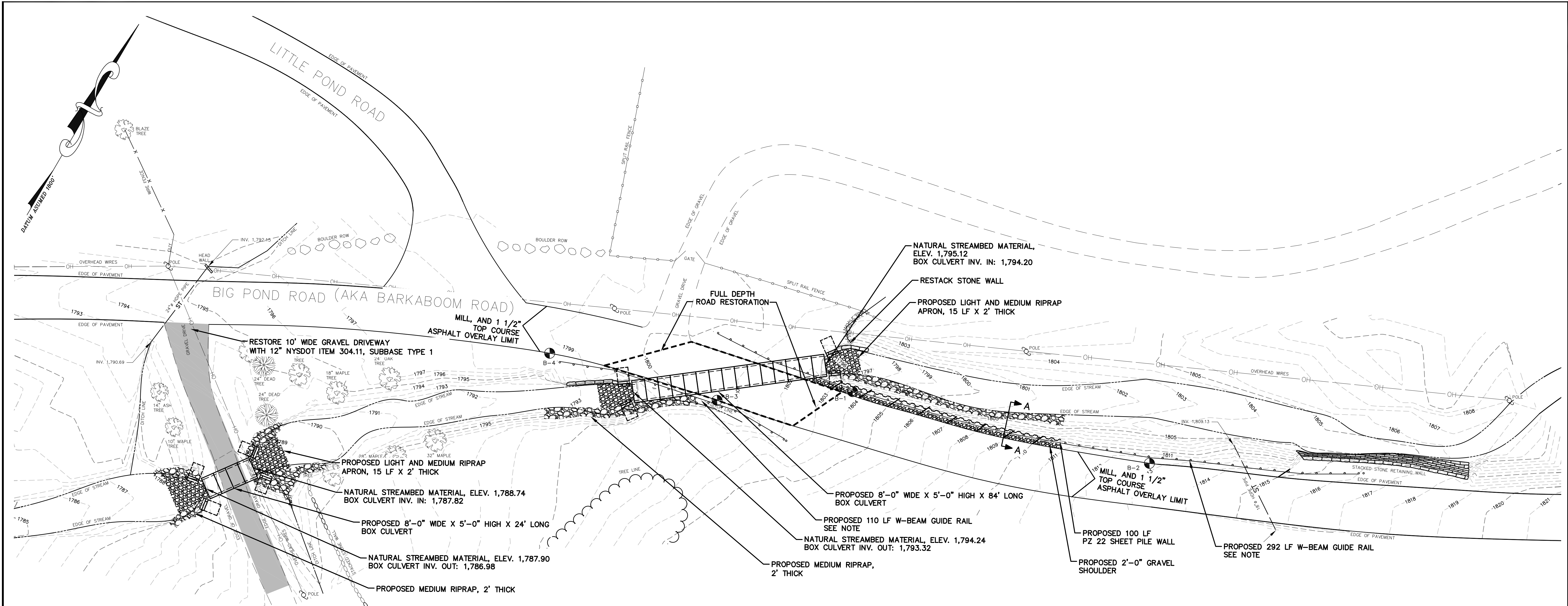
SELECTIVE DEMOLITION AND TEMPORARY BYPASS ROAD PLANS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT
NY RISING COMMUNITY RECONSTRUCTION PROGRAM
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY
TOWN OF HARDENBURGH ULSTER COUNTY NEW YORK

DATE	REVISION RECORD

BRINNIER & LARIOS, P.C.
ENGINEERS & LAND SURVEYORS
67 MAIDEN LANE KINGSTON, N.Y.
Phone: 845-338-7622 Fax: 845-338-7660

SCALE	DATE	SHEET NO.
AS SHOWN	JULY 2018	3 OF 6
DWG	CHK	
RJS		

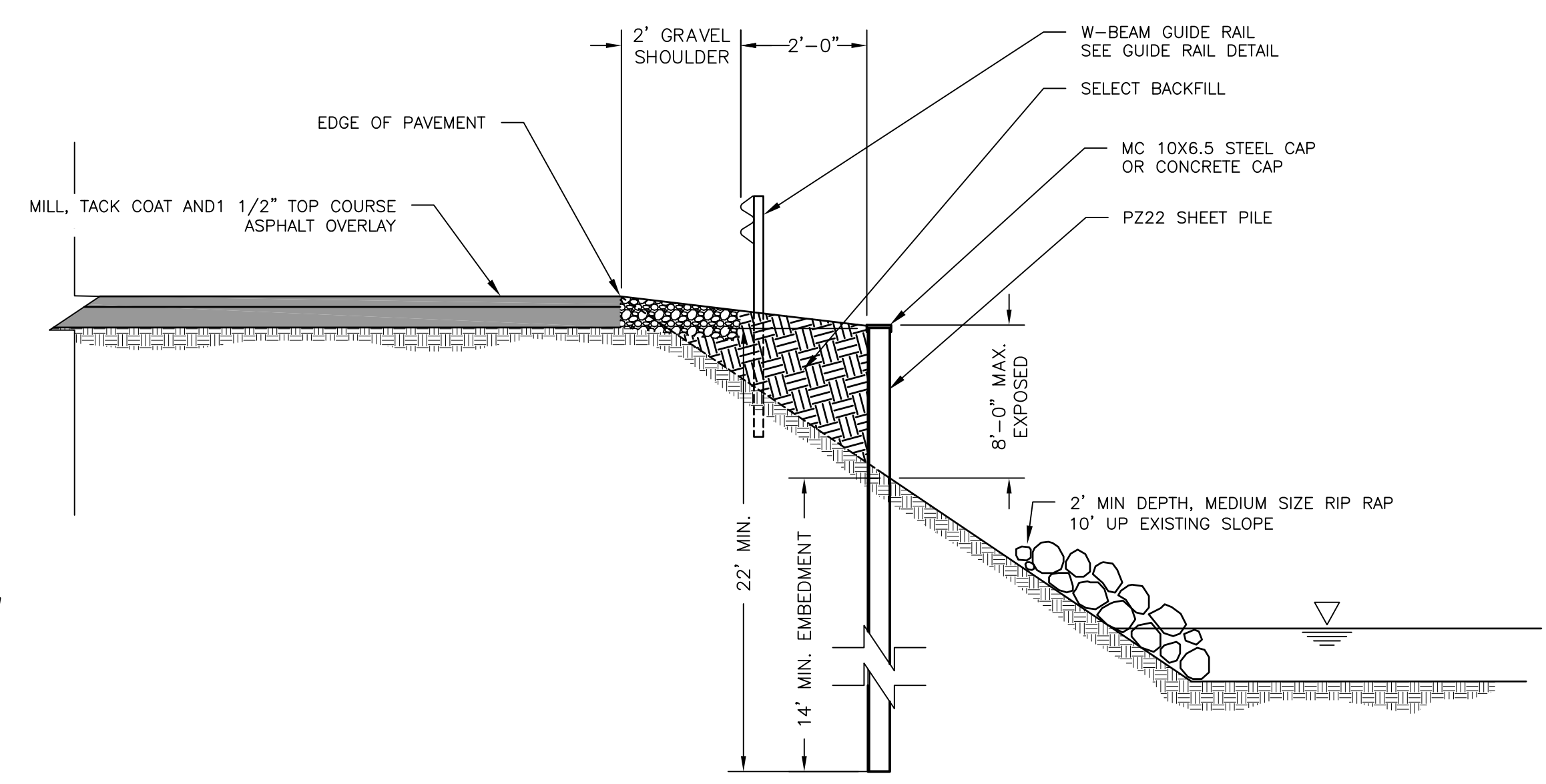


CULVERT AND ROAD STABILIZATION PLAN VIEW
SCALE: 1" = 20'

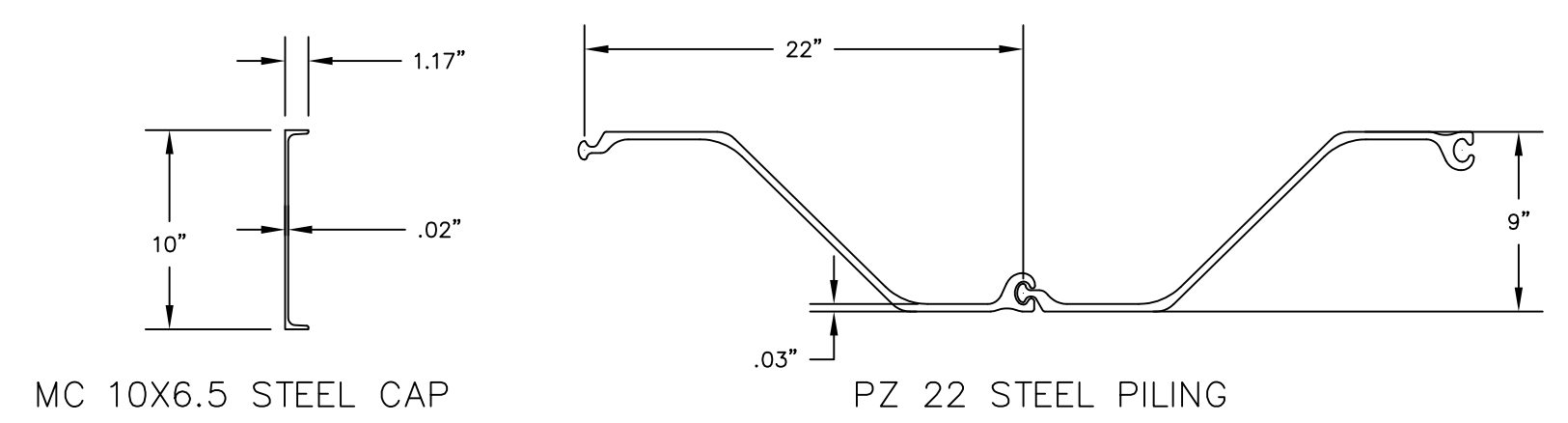
NOTE:
1. GUIDE RAIL SHALL HAVE STANDARD NYSDOT ANCHOR END SECTIONS AS PER NYSDOT STANDARD SHEET 606-07.

LEGEND

- | | | | |
|----------|------------------|--|--------------------------------------|
| ---50--- | CONTOURS (MINOR) | | UTILITY POLE |
| ---52--- | CONTOURS (MAJOR) | | SIGN |
| —R— | PROPERTY LINE | | TREE |
| —W— | EDGE OF WATER | | BORING |
| —X—X— | SPLIT RAIL FENCE | | BOULDER |
| —OH— | WIRE FENCE | | STACKED STONE RETAINING WALL |
| —OH— | OVERHEAD WIRES | | PROPOSED MEDIUM RIPRAP, 2' THICK |
| —O— | GUIDERAIL | | PROPOSED LIGHT & MEDIUM RIPRAP APRON |
| —O—O—O— | STACK STONE WALL | | PROPOSED GRAVEL RESTORATION |



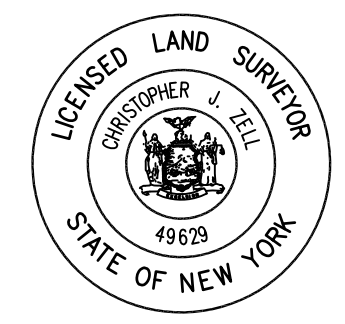
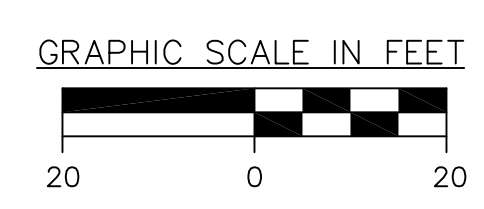
SECTION A-A
NOT TO SCALE



STEEL PILING DETAILS
NOT TO SCALE

NOTE:
1. FIELD SURVEY BY BRINNIE AND LARIOS P.C. ON AUGUST 24, 2017. ALL UNITS IN FEET.

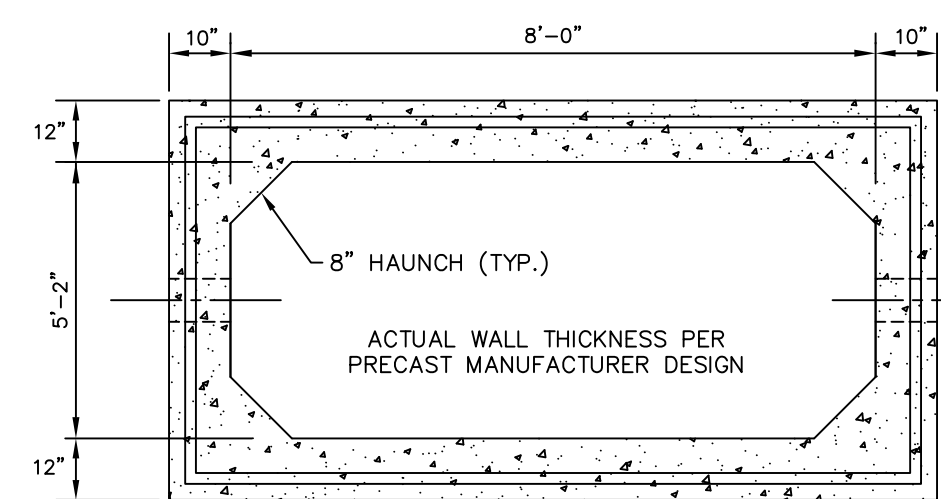
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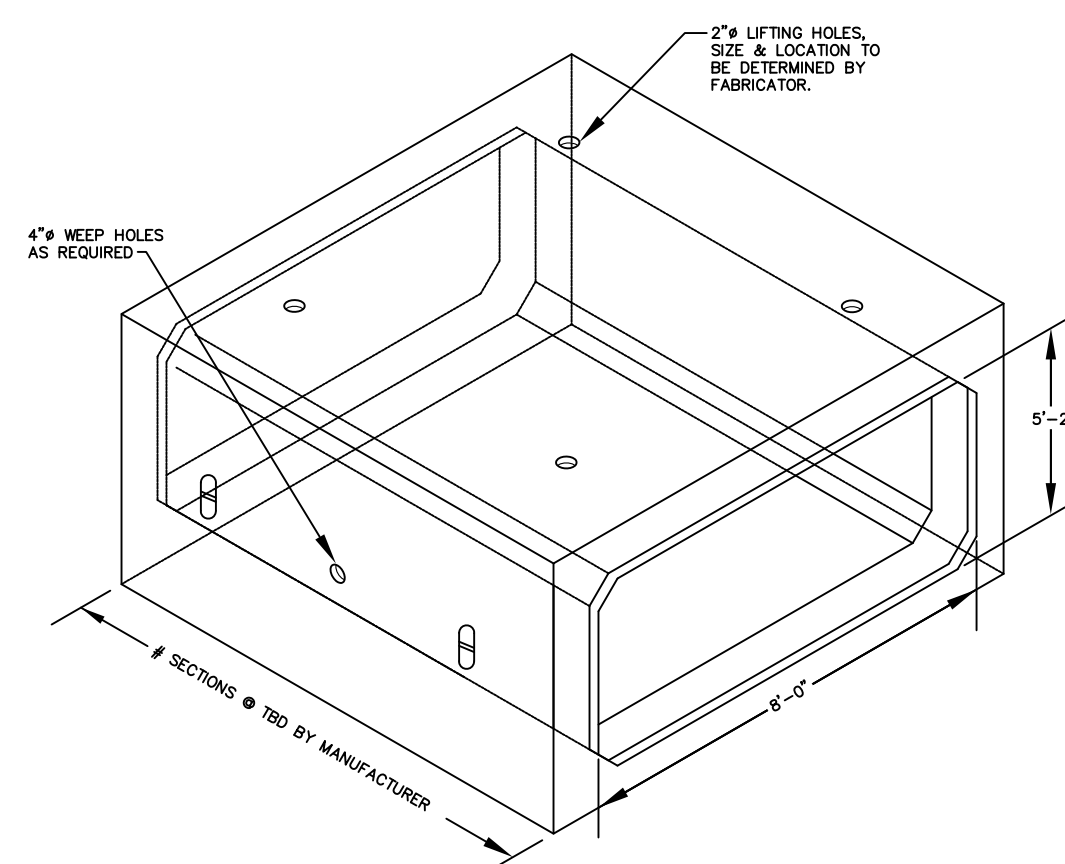
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SITE PLAN
CONTRACT NO. THA-181

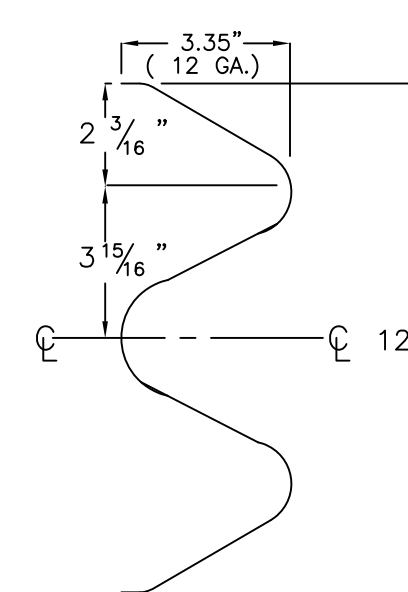
BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURGH		ULSTER COUNTY NEW YORK	
DATE	REVISION RECORD		
BRINNIE & LARIOS, P.C. ENGINEERS & LAND SURVEYORS 67 MAIDEN LANE KINGSTON, N.Y. Phone: 845-338-7622 Fax: 845-338-7660		SHEET NO. 4 OF 6	
SCALE 1" = 20'	DATE JULY 2018	CHK RJS	DWG RJS



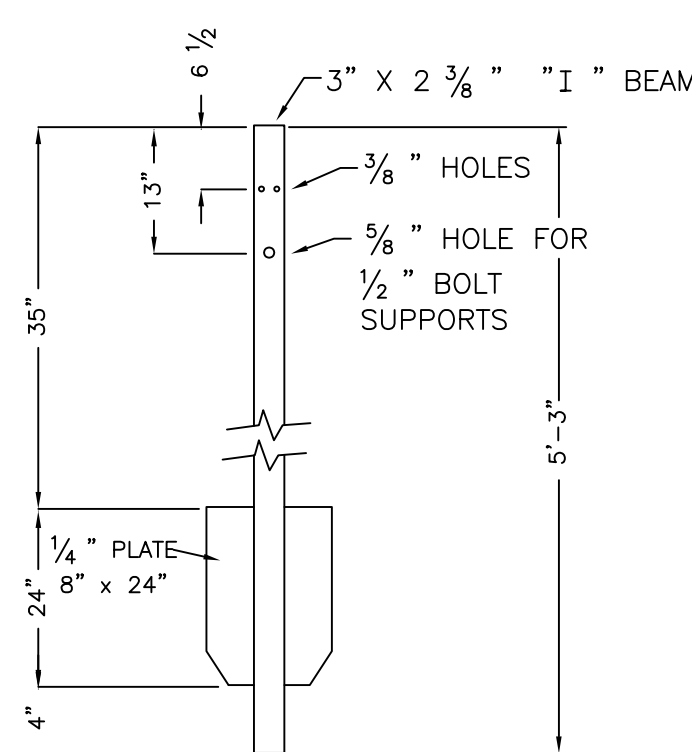
FRONT VIEW
NOT TO SCALE



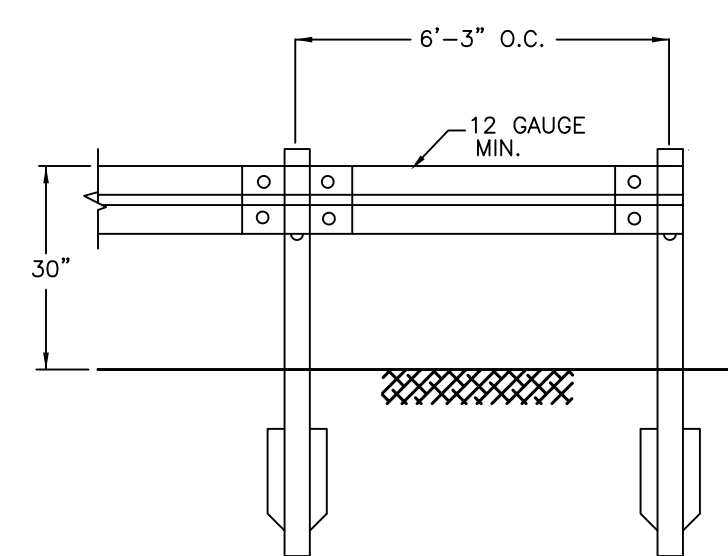
ISOMETRIC VIEW
NOT TO SCALE



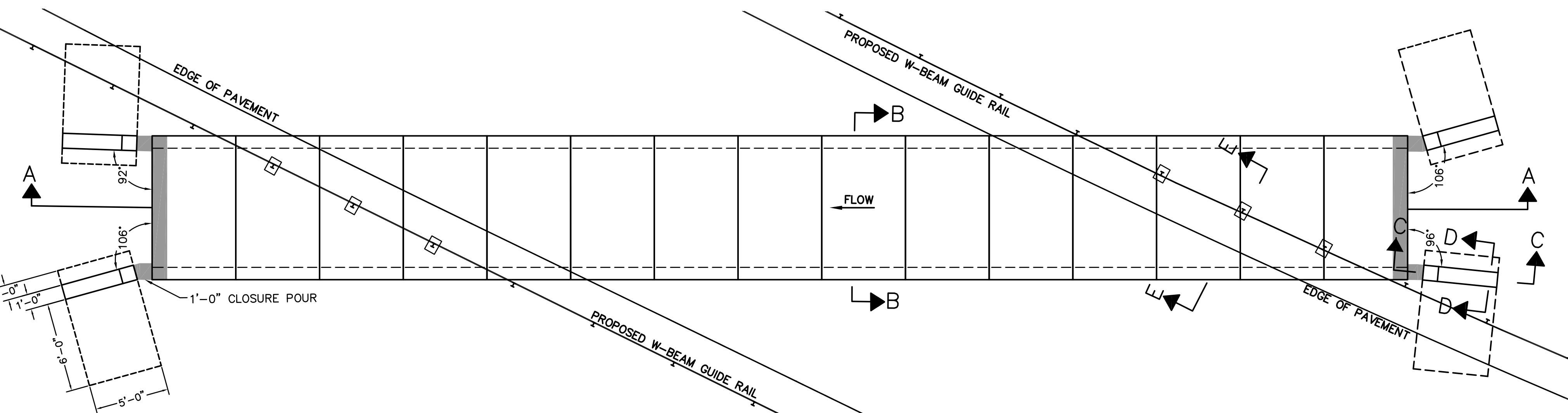
TYPICAL CORRUGATED
BEAM DETAIL
NOT TO SCALE



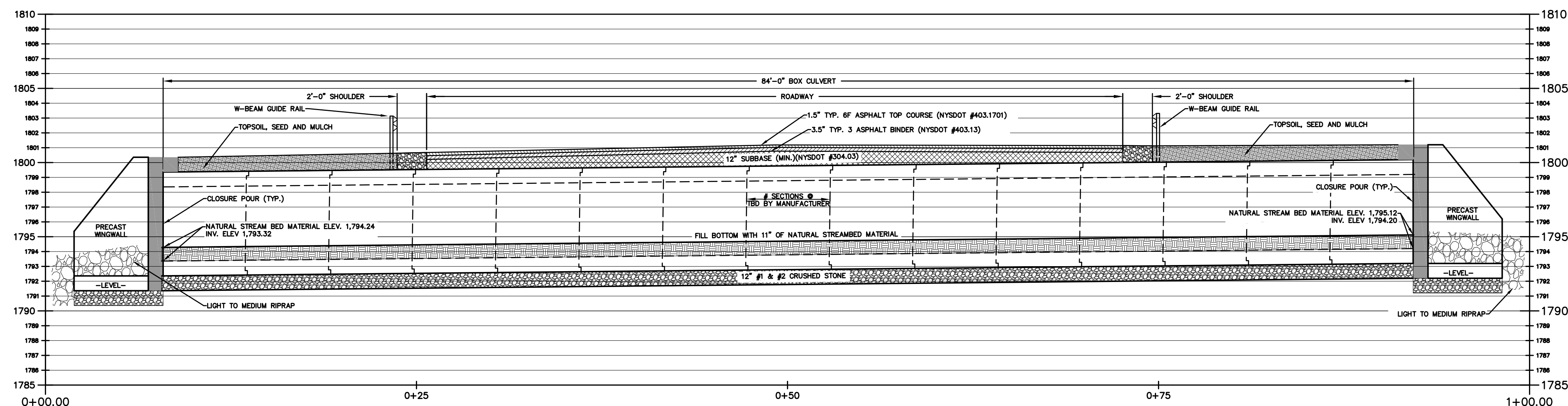
TYPICAL POST DETAIL
NOT TO SCALE



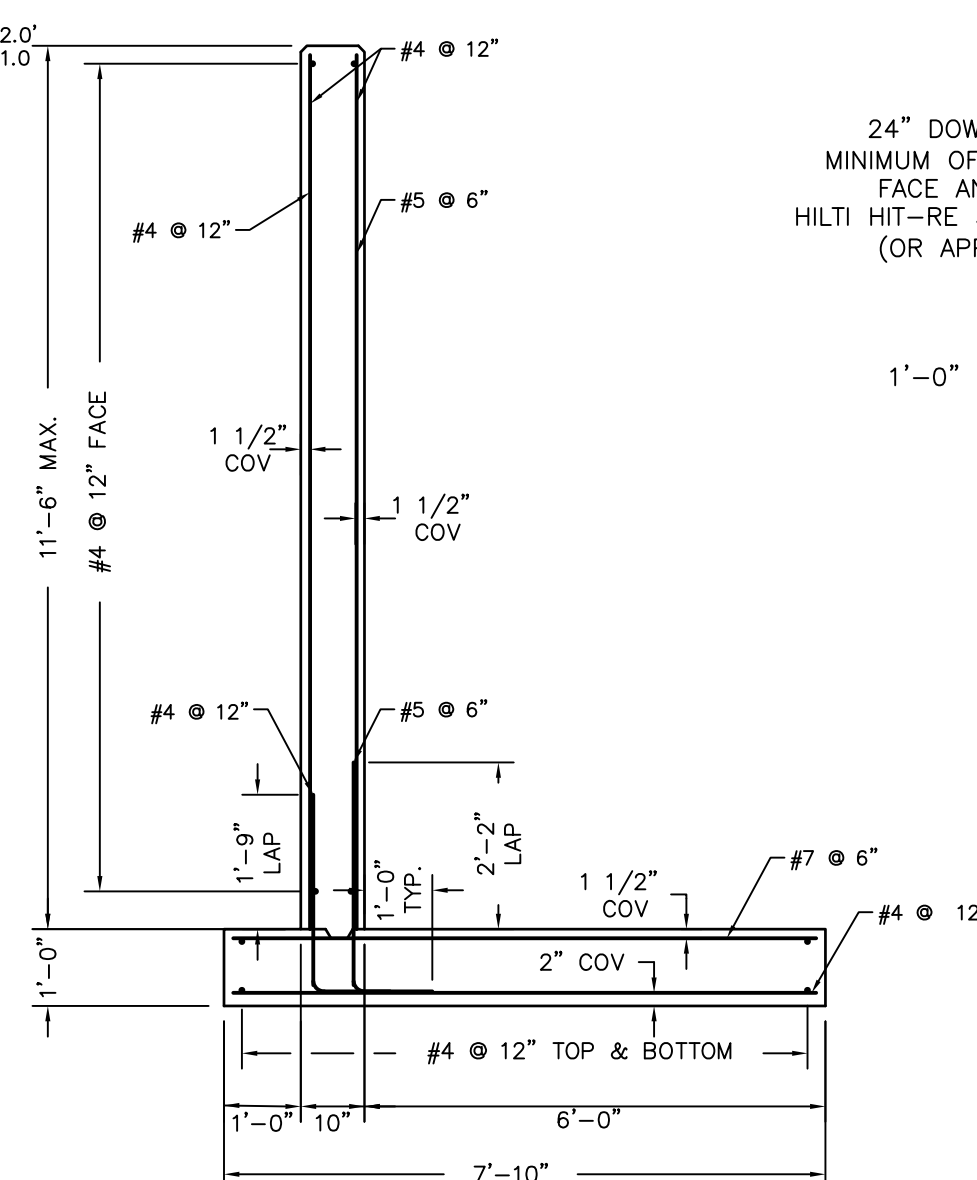
GUIDE RAIL DETAIL
NOT TO SCALE



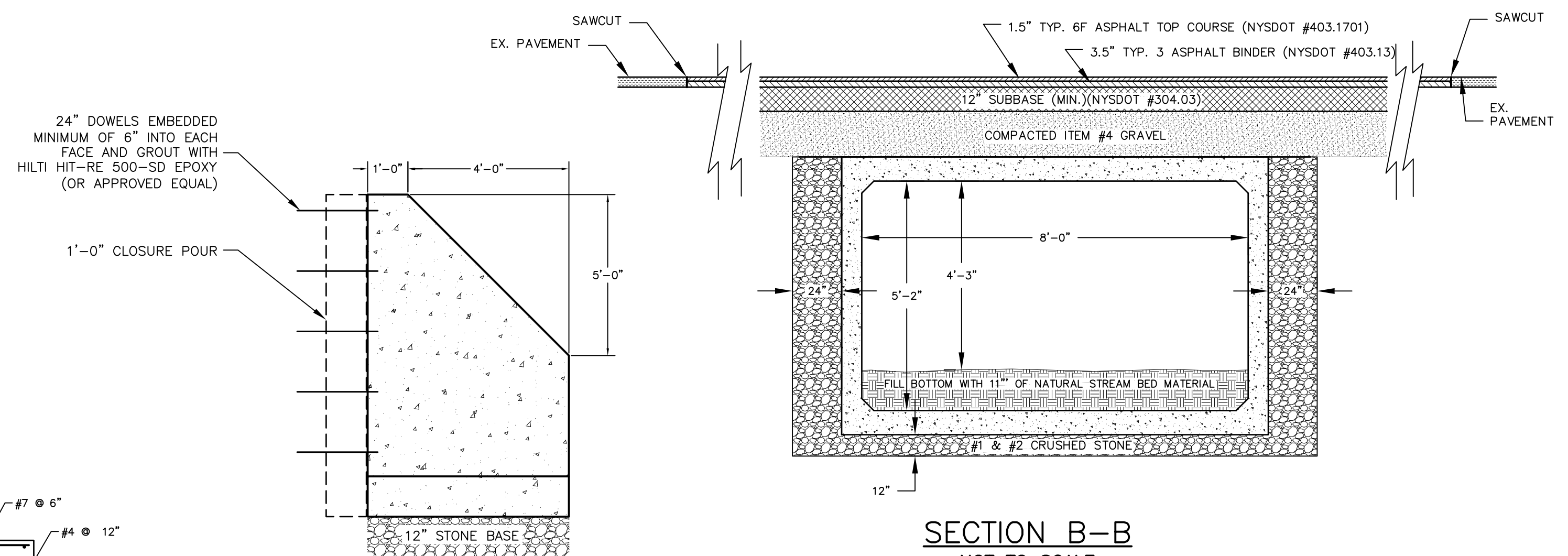
CULVERT PLAN VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE



WINGWALL SECTION D-D
NOT TO SCALE



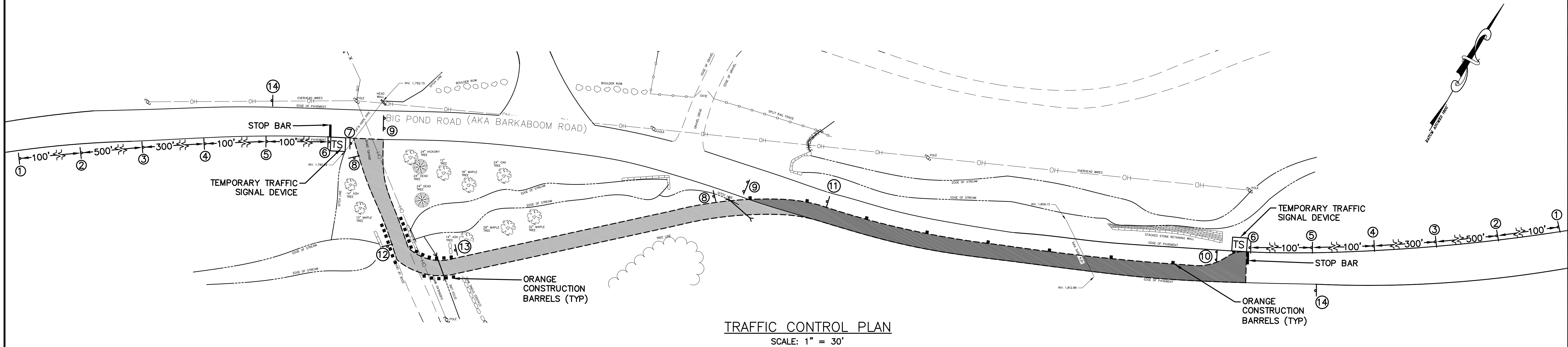
SECTION B-B
NOT TO SCALE

DETAILS
CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT
NY RISING COMMUNITY RECONSTRUCTION PROGRAM
NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY



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SIGN NO.	DETOUR SIGN SCHEDULE	QNTY. REQ.
①	W20-1	2
②	W20-3	2
③	W20-3	2
④	W20-4	2
⑤	W3-3	2

SIGN NO.	DETOUR SIGN SCHEDULE	QNTY. REQ.
⑥	R10-6	2
⑦	M4-8 M6-1	1
⑧	R2-1 W8-7	2
⑨	R11-2 WITH ITEM 619.04 TYPE III CONSTRUCTION BARRICADES W8-3	2

SIGN NO.	DETOUR SIGN SCHEDULE	QNTY. REQ.
⑩	W20-1 M4-10L	1
⑪	M4-8 W1-2L	1
⑫	M4-8 W16-6P	1
⑬	M4-8 W16-6P	1
⑭	G20-2	2



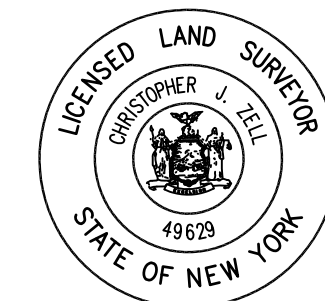
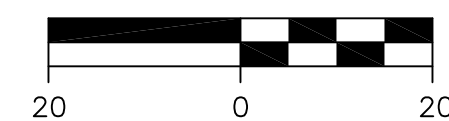
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LEGEND

---	50---	CONTOURS (MINOR)		UTILITY POLE
---	52---	CONTOURS (MAJOR)		SIGN
---	R---	PROPERTY LINE		TREE
---	---	EDGE OF WATER		BORING
---	---	SPLIT RAIL FENCE		BOULDER
---	x---	WIRE FENCE		STACKED STONE RETAINING WALL
---	OH---	OVERHEAD WIRES		
---	---	GUIDERAIL		
---	---	STACK STONE WALL		

GRAPHIC SCALE IN FEET



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BYPASS ROAD TRAFFIC CONTROL PLAN CONTRACT NO. THA-181

BIG POND ROAD CULVERT REPLACEMENT NY RISING COMMUNITY RECONSTRUCTION PROGRAM NEW YORK STATE GOVERNORS OFFICE OF STORM RECOVERY			
TOWN OF HARDENBURGH		ULSTER COUNTY NEW YORK	
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SCALE	DATE	SHEET NO.	
AS SHOWN	JULY 2018	6 OF 6	
	DWG	CHK	
	RJS		