

Appendix B-2-1
Natural Resources Correspondence



STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION - REGION ONE
328 STATE STREET
SCHENECTADY, NEW YORK 12305
www.nysdot.gov

MARY E. IVEY
REGIONAL DIRECTOR

JOAN McDONALD
COMMISSIONER

March 29, 2011

United States Army Corps of Engineers (USACE)

Ms. Christine Delorier, (518) 266-6354, christine.delorier@usace.army.mil
1 Bond Street
Troy, NY 12182

National Marine Fisheries Service (NMFS)

Ms. Danielle Palmer, (978) 282-8468, danielle.palmer@noaa.gov
NMFS-Endangered Species
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Ms. Diane Rusanowsky, (203) 882-6504, diane.rusanowsky@noaa.gov
NMFS-Essential Fish Habitat
Milford Laboratory
212 Rogers Avenue
Milford, CT 06460

New York State Department of Environmental Conservation (NYSDEC)

Ms. Nancy Baker, (518) 357-2069, nmbaker@gw.dec.state.ny.us
1130 North Westcott Road
Schenectady, NY 12306

New York Natural Heritage Program (NYNHP)

Ms. Jean Pietrusiak, (518) 402-8935
625 Broadway, 5th Floor
Albany, NY 12233

United States Fish and Wildlife Service (USFWS)
Ms. Sandra Doran, (607) 753-9334 sandra_doran@fws.gov
U.S. Fish & Wildlife Service-New York Field Office
3817 Luker Road
Cortland, NY 13045

United States Coast Guard (USCG)
Mr. Gary Kassof, (212) 668-7021, gary.kassof@uscg.mil
One South Street
New York, NY 10004

**Re: New York State Department of Transportation, PIN 1935.49
Livingston Avenue Bridge over the Hudson River, Albany and Rensselaer Counties, NY
Threatened or Endangered Species and Essential Fish Habitat Information Request**

Environmental Stakeholders:

The Federal Railroad Administration (FRA) is joining the New York State Department of Transportation (NYSDOT) in the NEPA process to study measures to improve the operation of the Livingston Avenue Bridge, a two-track moveable swing-span rail bridge located over the Hudson River between the City of Rensselaer in Rensselaer County, New York and the City of Albany in Albany County, New York (see Figure 1).

The bridge is a critical link along the "Empire Rail Corridor", which traverses twenty-four counties from New York City to Niagara Falls and provides for the transport of both freight and passengers throughout New York State. The bridge is near the end of its serviceable life. The superstructure is more than a century old, and the sub-structure is approximately 145 years old. Additionally, freight and passenger trains operating over the bridge are subject to loading and speed restrictions. For these reasons, the bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State.

I am requesting information about threatened and endangered species, marine mammal species, species of special concern, habitats of special concern, essential fish habitat, and U.S. Fish and Wildlife Coordination Act species within a ½-mile of the proposed project site. This request is being sent, in part, to conform to Endangered Species Act Section 7 consultation requirements. The information provided will be used for evaluation of potential environmental effects associated with the proposed project. Map(s) showing specific locations of sensitive species or habitats developed from lists provided by regulatory agencies will not be published in any document.

Please send the requested information to the address indicated above and feel free to call me at (518) 388-5216 if you have any questions regarding this information request. If it will satisfy your agency's policy, you may defer the question to another regulatory agency with appropriate jurisdiction. If this is the case, please reply with your intention to defer the question to another agency, the name of that agency, and a contact person if possible. Thank you for your time in providing us with this information.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Filkins".

Richard Filkins
Project Manager

cc: Colleen Vaughn, FRA
Susan Andrews, NYSDOT Main Office
Barney Martin, Modjeski & Masters
Leslie Mesnick-Uretsky, AKRF





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

APR - 6 2011

Richard Filkins
State of New York
Department of Transportation-Region 1
328 State Street
Schenectady, New York 12305

Re: Livingston Avenue Bridge

Dear Mr. Filkins,

This is in response to your letter dated March 29, 2011, requesting information on the presence of species listed as threatened or endangered by NOAA's National Marine Fisheries Service (NMFS) in the vicinity of the Livingston Avenue Bridge, which spans the Hudson River between the City of Rensselaer and Albany, New York.

Shortnose Sturgeon

A population of the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Hudson River. Shortnose sturgeon have been documented in the Hudson River from New York Harbor (rkm -5.6) to the Troy Dam (rkm 245). From late fall to early spring, adult shortnose sturgeon concentrate in a few overwintering areas. Spawning adults concentrate near Kingston/Esopus Meadow (rkm 139-152), while one group of non-spawning adults concentrates near Kingston and the other near Haverstraw Bay (rkm 54-61). When water temperatures reach 8°C, typically in late March through early April, reproductively active adults begin their migration upstream to the spawning grounds that extend primarily from below the Federal Dam at Troy to Coeyman (rkm 245-212). Spawning typically occurs at water temperatures between 10-18°C (generally from late April through May) after which adults disperse quickly down river into their summer range. In fact, Dovel *et al.* (1992) reported that spawning fish tagged at Troy were recaptured in Haverstraw Bay in early June. The broad summer range occupied by adult shortnose sturgeon extends from approximately rkm 38 to rkm 177. Similar to non-spawning adults, most juveniles occupy the broad region of Haverstraw Bay (rkm 55-63) by late fall and early winter. Juveniles are distributed throughout the mid-river region during the summer (rkm 38-152) and move back into the Haverstraw Bay region during the late fall. Eggs and larvae are expected to be present within the vicinity of the spawning grounds (rkm 245-212) for approximately four weeks post spawning (i.e., at the latest, through June).

As listed species are likely to be present in the action area of this project, a consultation, pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, may be necessary. If the proposed project has the potential to affect listed species and it is being approved, permitted, funded, or



carried out by a Federal agency, the lead Federal agency, or their designated non-Federal representative, is responsible for determining whether the proposed action is likely to affect listed species. The lead Federal agency should submit their determination of effects, along with justification for the determination and a request for concurrence, to the attention of the Section 7 Coordinator, NMFS, Northeast Regional Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, NMFS would then be able to conduct a consultation under section 7 of the ESA.


Technical Assistance for the proposed New York Bight DPS of Atlantic sturgeon

Atlantic sturgeon are known to occur in the Hudson River. In 2005, NMFS initiated a status review for Atlantic sturgeon to determine if listing as threatened or endangered under the Endangered Species Act (ESA) is warranted. The Status Review Report was completed in February 2007¹. On October 6, 2010, NMFS published two rules proposing to list four distinct population segments (DPS) of Atlantic sturgeon as endangered (i.e., New York Bight, Chesapeake Bay, Carolina, and South Atlantic) and one DPS as threatened (Gulf of Maine DPS) under the ESA (75 FR 61872; 75 FR 61904). The New York Bight DPS of Atlantic sturgeon includes the following: all anadromous Atlantic sturgeon whose range occurs in watersheds that drain into coastal waters, including Long Island Sound, the New York Bight, and Delaware Bay, from Chatham, Massachusetts to the Delaware-Maryland border on Fenwick Island to Cape Henry, Virginia, as well as wherever these fish occur in coastal bays, estuaries, and the marine environment from the Bay of Fundy, Canada to the Saint Johns River, Florida. Within this range, Atlantic sturgeon have been documented in the Hudson and Delaware Rivers as well as within the mouth of the Connecticut and Taunton Rivers and throughout Long Island Sound.

As the listing status for this species may change, NMFS recommends updated status information is obtained from NMFS prior to the submission of any permit applications. NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on Atlantic sturgeon from any proposed project. Please note that once a species is proposed for listing, under the conference provisions of 50 CFR §402.10, federal agencies shall confer with NMFS on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.

Should you have any questions about these comments or about the section 7 consultation process in general, please contact Danielle Palmer at (978)282-8468 or by e-mail (Danielle.Palmer@noaa.gov).

Sincerely,


for Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

¹http://www.nero.noaa.gov/prot_res/CandidateSpeciesProgram/AtlSturgeonStatusReviewReport.pdf

EC: Rusanowsky
Palmer

File Code: Sec 7 Tech. Assistance 2011_Livingston Avenue Bridge
PCTS: T/NER/2011/01315

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



Joe Martens
Commissioner

April 11, 2011

Richard Filkins
NYS Department of Transportation
328 State Street
Schenectady, NY 12305

Dear Mr. Filkins:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Bridge Renovations – Livingston Bridge over the Hudson River, PIN 1935.49, area as indicated on the map you provided, located in the City of Albany, Albany County.

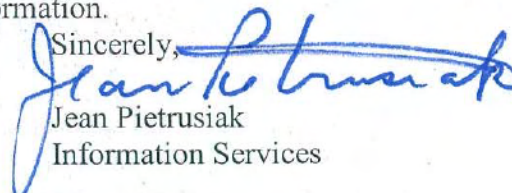
Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

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

Our databases are 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.

Sincerely,


Jean Pietrusiak
Information Services

Enc.

cc: Region 4
John Ozard, Nongame Unit, Albany
Shaun Keeler, Bureau of Fisheries, Albany

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Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~The information in this report includes only records entered into the NY Natural Heritage databases as of the date of the report. This report is not a definitive statement on the presence or absence of all rare species or significant natural communities at or in the vicinity of this site.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities



BIRDS

Falco peregrinus

Peregrine Falcon Breeding	NY Legal Status: Endangered Federal Listing: Last Report: ** County: Albany Town: Albany - City Location: At, or in the vicinity of, the project site. General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.	NYS Rank: S3B - Vulnerable Global Rank: G4 - Apparently secure EO Rank: **	Office Use 9965 ESU
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DRAGONFLIES and DAMSELFLIES

Gomphus vastus

Cobra Clubtail	NY Legal Status: Unlisted Federal Listing: Last Report: 2008-07-03 County: Albany, Rensselaer Town: Bethlehem, Rensselaer - City, Troy - City, Watervliet - City Location: Hudson River South Troy General Quality and Habitat: While these sites are primarily in residential areas, they support breeding populations of this species. The odonates were observed along a large river.	NYS Rank: SH - Historical Global Rank: G5 - Secure EO Rank: Fair or Poor	Office Use 13447
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FISH

Acipenser brevirostrum

Shortnose Sturgeon	NY Legal Status: Endangered Federal Listing: Endangered Last Report: ** County: Albany, Bronx, Columbia, Dutchess, Greene, New York, Orange, Putnam, Rensselaer, Rockland Town: Albany - City, Athens, Beacon - City, Bethlehem, Catskill, Clarkstown, Clermont, Coeymans, Colonie Location: At, or in the vicinity of, the project site. General Quality and Habitat: Shortnose sturgeon are found in the long tidal portion of Hudson River. The river constitutes the lower part of a 315 mile stream system. It is fed upstream by two large main channel streams, which provide 80% of the freshwater input, and numerous other For more information, including management considerations, please contact the NYS DEC Hudson River Fisheries Unit at 845-256-3071.	NYS Rank: S1 - Critically imperiled Global Rank: G3 - Vulnerable EO Rank: **	Office Use 1091 HRF BOF USFWS
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FRESHWATER MUSSELS



Anodonta implicata

Alewife Floater

NY Legal Status: Unlisted

NYS Rank: S1S2 - Critically imperiled

Office Use
9713

Federal Listing:

Global Rank: G5 - Secure

Last Report: 1984-fa

EO Rank: Fair

County: Albany, Rensselaer

Town: Albany - City, Bethlehem, Colonie, East Greenbush, Green Island, North Greenbush, Rensselaer - C

Location: Hudson River Troy to Albany

General Quality and Habitat: A long stretch of a river.

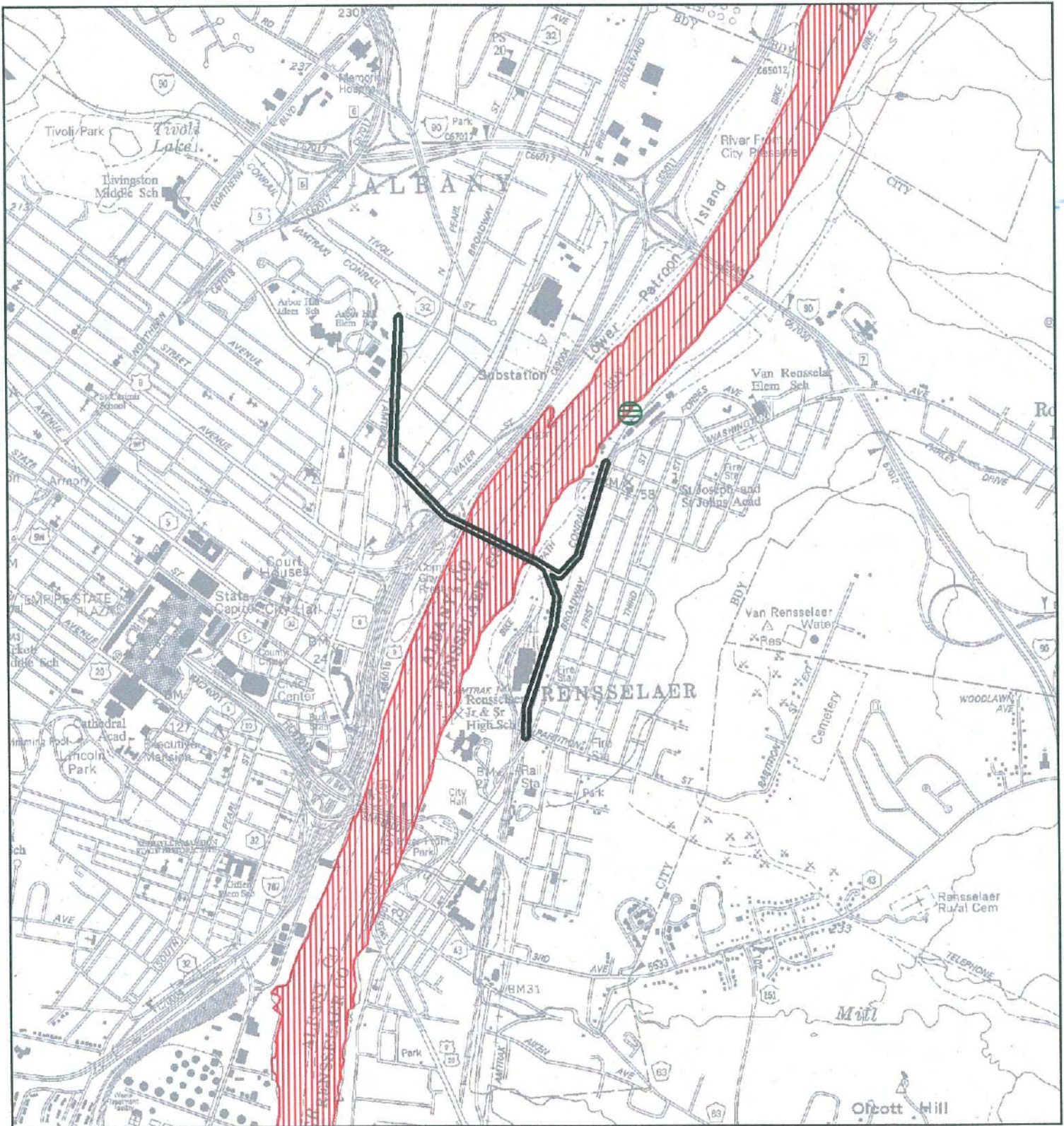
4 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to <http://www.dec.ny.gov/animals/29384.html> and click on Draft Ecological Communities of New York State.

Natural Heritage Map of Rare Species and Ecological Communities

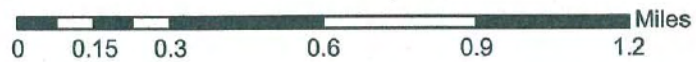
Prepared March 31, 2011 by the NY Natural Heritage Program, NYS DEC Albany, NY



Legend

-  Project Site
 -  Alewife Floater
 -  Cobra Clubtail
- NY Natural Heritage Program Database Records

1:24,000



This map, and the locations that are displayed, are considered sensitive information, and are intended for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from NY Natural Heritage. Some records listed in the accompanying report may not be shown on this map. Please see the report for details.

Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier, or there is uncertainty regarding their continued presence. There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided. If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

Natural Heritage Report on Rare Species and Ecological Communities



FRESHWATER MUSSELS

Lampsilis cariosa

Yellow
Lampmussel

NY Legal Status: Unlisted

NYS Rank: S3 - Vulnerable

Office Use
9775

Federal Listing:

Global Rank: G3G4 - Vulnerable

Last Report: no date

EO Rank: Historical, no recent
information

County: Albany, Rensselaer

Town: Albany - City, Rensselaer - City

Location: Hudson River Albany

Directions: The specimen was collected from the Hudson River in Albany.

General Quality
and Habitat: A river.

1 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

HOW TO REQUEST DATA FOR A PROJECT SITE from the New York Natural Heritage Program

Requests should be submitted in writing. Please send a request letter which provides all of the following information. We will provide a report on the rare species of plants and animals, and on the significant ecological communities, which are or may be in the vicinity of the project site.

Requests for data from the New York Natural Heritage Program are handled in the order in which they are received. Faxed requests are discouraged due to the poor quality of faxed maps. Since our office receives many requests each day, we strongly encourage you to contact us during the early stages of a project. You will receive the official response in writing.

NECESSARY INFORMATION. In order for us to determine what data you are requesting and respond to your request more quickly, the following information should be included. If your request lacks this information, our response will be delayed.

1. Write a brief description of the proposed project or activity. (e.g., residential development, landfill siting, bridge repair, cellular communication tower). Include the current use of the project site.
2. Tell us why you need the data (e.g., environmental assessment under SEQR, wetland permit, management plan, town planning). Include any documents which are expected to include the data (e.g., EAF, DEIS, Phase I Assessment), and, if applicable, the Lead Agency for SEQR review.
3. Include the name of all counties and towns where the proposed project is located.
4. Include the name of all 7 ½ minute U.S.G.S. topographical maps where the proposed project is located.
5. **Include a photocopy of the appropriate 7 ½ minute (1:24,000 or 1:25,000 scale) U.S.G.S. topographical or NYS DOT planimetric map(s), at a scale that includes identifiable geographic features. The preferred map size is 8 ½" x 11". Tax maps, architectural drawings, aerial photography, or road maps are generally not useful.**
6. **Clearly mark the boundary of the proposed project with a colored pen or highlighter.**

EXAMPLE OF A COMPLETE DATA REQUEST:

"A 250 unit housing development is proposed for 400 acres in the Town of Red Hook, Dutchess County. The site is currently undeveloped, and mostly wooded with some former agricultural fields. We have been contracted to review the environmental impacts of the project and prepare the Environmental Assessment Form under SEQR, to be reviewed by the Town of Red Hook acting as Lead Agency. In order to complete the EAF, we will need to know whether the proposed project would likely impact any ecologically significant areas or rare species of plants or animals. Enclosed is a photocopy of the Saugerties USGS quadrangle showing the location of the proposed development in red."

WHERE TO SEND YOUR DATA REQUEST:

Information Services
New York Natural Heritage Program
New York State Department of Environmental Conservation
625 Broadway, 5th Floor
Albany, New York 12233 -4757
phone: (518) 402-8935 fax: (518) 402-8925



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>



Project Number: 110271

To: Richard Filkins

Date: Apr 19, 2011

Regarding: Livingston Avenue bridge improvements over the Hudson River, PIN 1935.49

Town/County: City of Rensselaer / Rensselaer County to the City of Albany / Albany County

We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at <http://www.fws.gov/northeast/nyfo/es/section7.htm>. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran *Sandra Doran*

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to *take* (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

**National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Habitat Conservation Division
212 Rogers Avenue
Milford, Connecticut 06460**

TO: Mr. Richard Filkins
Project Manager
State of New York
Department of Transportation, Region One
328 State Street
Schenectady, New York 12305

DATE: 9 June 2011

SUBJECT: New York State Department of Transportation, PIN 1935.49; Livingston Avenue Bridge
Over the Hudson River at Albany and Rensselaer Counties, New York



Diane Rusanowsky
(Reviewing Biologist)

We have reviewed the information provided to us regarding the above referenced project. The following comments are offered pursuant to the Endangered Species Act, the Fish and Wildlife Coordination Act, and the Magnuson Stevens Fishery Conservation and Management Act:

Endangered and Threatened Species

XX Endangered or threatened species under the jurisdiction of this agency are known to occur in the Albany/Rensselaer reach of the Hudson River. In particular, please note the presence of various life stages of shortnose sturgeon (*Acipenser brevirostrum*). Please be advised that the Atlantic sturgeon (*Acipenser oxyrinchus*), a Candidate Species for listing under the ESA also inhabits the Hudson River. A final listing decision for this species remains pending and is expected to be concluded in approximately October, 2011. Due to the presence of at least shortnose sturgeon in the immediate project reach, federal funding, authorizations, project conduct or oversight will require additional consultation. For further information regarding ESA consultation procedures, please contact:

Ms. Mary Colligan
ARA for Protected Resources
55 Great Republic Drive
Gloucester, MA 01930

Fish and Wildlife Coordination Act

XX The following may be present in aquatic habitats in the general project area: Diadromous and resident fish, forage and/or benthic species.

Please contact the appropriate Regional Office of the New York State Department of Environmental Conservation to confirm the presence of diadromous or resident aquatic populations. Habitat use by some species may be seasonal (e.g., over-wintering) and this should be taken into account for project planning, design, and proposed timing to the extent that is practicable.

Essential Fish Habitat

_____ The project area has been designated as Essential Fish Habitat (EFH) for one or more species/life stages. When details of the project are made available and permit applications have been made, conservation recommendations may be given. For a listing of EFH and further information, please consult our website at: <http://www.nero.nmfs.gov/ro/doc/webintro.html>. Based on the information provided to date, it is not possible to determine whether or not an EFH assessment will be necessary.

XX No EFH presently designated in the immediate project area; *however, should this project incur impacts to diadromous fishes or other potential prey species, the associated cumulative and indirect adverse effects to EFH could result in conservation recommendations being made prior to federal permitting or similar actions being completed.* If you wish to discuss this matter further, please call 203/882-6504.



Environmental and Planning Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

April 1, 2013

Ms. Jean Peitrusiak
NYSDEC
Natural Heritage Program
Information Services
625 Broadway – 5th Floor
Albany, NY 12233-4757

Re: Threatened & Endangered Species Information Request: NYSDOT Region 1 PIN 1935.49 – Livingston Avenue Bridge over the Hudson River, Albany and Rensselaer Counties, NY

Dear Information Services/Ms. Peitrusiak:

I am writing to request a search of your Natural Heritage Program files for any records of endangered, threatened, or special concern plant or animal species, or significant habitats within 0.5 miles of the location of the Livingston Avenue Bridge, connecting Albany and Rensselaer Counties.

The Federal Railroad Administration and New York State Department of Transportation are preparing an Environmental Assessment (EA) to study measures to improve the operation of the Livingston Avenue Bridge, a two-track moveable swing-span rail bridge. The bridge is near the end of its serviceable life. The superstructure is more than a century old, and the substructure is approximately 145 years old. Additionally, freight and passenger trains operating over the bridge are subject to loading and speed restrictions. For these reasons, the bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State.

In support of the EA being prepared for the Project, I am requesting updated records of NYS threatened, endangered, and special concern species, and significant habitats within 0.5 miles of the areas indicated in Figure 1. More than one year has passed since such information was last requested from the NHP with regard to this project. Specific information on the location of sensitive species or habitats provided by NHP will not be published in any document unless permission is granted by the State.

Please send the requested information to me at the address above. I can be reached by phone at (914) 922-2384 or by email at cseewagen@akrf.com if you have any questions regarding this request. Thank you for your time and assistance.

Sincerely,

Chad Seewagen, Ph.D.
AKRF Department of Natural Resources



Environmental and Planning Consultants

34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

April 1, 2013

Mary Colligan
NOAA National Marine Fisheries Service
1 Blackburn Drive
Gloucester, MA 01930

Re: Threatened & Endangered Species Information Request: NYSDOT Region 1 PIN 1935.49 – Livingston Avenue Bridge over the Hudson River, Albany and Rensselaer Counties, NY

Dear Ms. Colligan:

I am writing to request information on the presence of any threatened and endangered species under the jurisdiction of NMFS and within 0.5 miles of the Livingston Avenue Bridge, connecting Albany and Rensselaer Counties, NY.

The Federal Railroad Administration and New York State Department of Transportation are preparing an Environmental Assessment (EA) to study measures to improve the operation of the Livingston Avenue Bridge, a two-track moveable swing-span rail bridge. The bridge is near the end of its serviceable life. The superstructure is more than a century old, and the substructure is approximately 145 years old. Additionally, freight and passenger trains operating over the bridge are subject to loading and speed restrictions. For these reasons, the bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State.

In support of the EA being prepared for the Project, I am requesting updated records of federally threatened and endangered aquatic species within 0.5 miles of the areas indicated in **Figure 1**. Nearly two years have passed since such information was last requested from NMFS with regard to this project.

Please send the requested information to me at the address above. I can be reached by phone at (914) 922-2384 or by email at cseewagen@akrf.com if you have any questions regarding this request. Thank you for your time and assistance.

Sincerely,

Chad Seewagen, Ph.D.
AKRF Department of Natural Resources



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

APR 15 2013

Chad Seewagen
AKRF
34 South Broadway
Suite 401
White Plains, New York 10601

Re: Livingston Avenue Bridge

Dear Mr. Seewagen,

This is in response to your letter dated April 1, 2013, requesting information on the presence of species listed by NOAA's National Marine Fisheries Service (NMFS) in the vicinity of the Livingston Avenue Bridge, which spans the Hudson River, connecting Albany and Rensselaer Counties, New York.

The following Endangered Species Act (ESA) listed species occur in the Hudson River:

Shortnose Sturgeon (Acipenser brevirostrum)

A population of the federally endangered shortnose sturgeon occurs in the Hudson River. Shortnose sturgeon have been documented in the Hudson River from upper Staten Island (approximately rkm -4.8) to the Troy Dam (approximately rkm 245). From late fall to early spring, adult shortnose sturgeon concentrate in a few overwintering areas. The largest overwintering area is just south of Kingston, New York, near Esopus Meadows (rkm 139-152) (Dovel *et al.*, 1992). The fish overwintering at Esopus Meadows are mainly spawning adults. Captures of shortnose sturgeon during the fall and winter from Saugerties to Hyde Park (greater Kingston reach), indicate that additional smaller overwintering areas may be present (Geoghegan *et al.*, 1992). Both Geoghegan *et al.* (1992) and Dovel *et al.*, (1992) also confirmed an overwintering site in the Croton-Haverstraw Bay area (rkm 54-61). Fish overwintering in areas below Esopus Meadows are mainly thought to be pre-spawning adults. Typically, movements during overwintering periods are localized and fairly sedentary.

When water temperatures reach 8-9°C, typically in late March through mid-April, reproductively active adults begin their migration upstream to the spawning grounds that extend from below the Federal Dam at Troy to about Coeymans, New York (rkm 245-212) (Dovel *et al.*, 1992). Spawning typically occurs at water temperatures between 10-18°C (generally from late April through May) after which adults disperse quickly down river into their summer range. In fact, Dovel *et al.* (1992) reported that spawning fish tagged at Troy were recaptured in Haverstraw



Bay in early June. The broad summer range occupied by adult shortnose sturgeon extends from approximately rkm 38 to rkm 177. Similar to non-spawning adults, most juveniles occupy the broad region of Haverstraw Bay (rkm 54-61) by late fall and early winter (Geoghegan *et al.*, 1992; Dovel *et al.*, 1992). Juveniles are distributed throughout the mid-river region during the summer (rkm 38-152) and move back into the Haverstraw Bay region during the late fall (Bain *et al.* 1998; Geoghegan *et al.*, 1992). Eggs and larvae are expected to be present within the vicinity of the spawning grounds for approximately four weeks post spawning (i.e., at the latest, through mid-June).

Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus)

Use of the river by Atlantic sturgeon has been described by several authors. The area around Hyde Park (approximately rkm134) has consistently been identified as a spawning area through scientific studies and historical records of the Hudson River sturgeon fishery (Dovel and Berggren, 1983; Van Eenennaam *et al.*, 1996; Kahnle *et al.*, 1998; Bain *et al.*, 2000). Habitat conditions at the Hyde Park site are described as freshwater year round with bedrock, silt and clay substrates and waters depths of 12-24 m (Bain *et al.*, 2000). Bain *et al.* (2000) also identified a spawning site at rkm 112 based on tracking data. The rkm 112 site, located to one side of the river, has clay, silt and sand substrates, and is approximately 21-27 m deep (Bain *et al.*, 2000).

Young-of-year (YOY) have been recorded in the Hudson River between rkm 60 and rkm 148, which includes some brackish waters; however, larvae must remain upstream of the salt wedge because of their low salinity tolerance (Dovel and Berggren, 1983; Kahnle *et al.*, 1998; Bain *et al.*, 2000). Catches of immature sturgeon (age 1 and older) suggest that juveniles utilize the estuary from the Tappan Zee Bridge through Kingston (rkm 43- rkm 148) (Dovel and Berggren, 1983; Bain *et al.*, 2000). Seasonal movements are apparent with juveniles occupying waters from rkm 60 to rkm 107 during summer months and then moving downstream as water temperatures decline in the fall, primarily occupying waters from rkm 19 to rkm 74 (Dovel and Berggren, 1983; Bain *et al.*, 2000). Based on river-bottom sediment maps (Coch and Bokuniewicz, 1986) most juvenile sturgeon habitats in the Hudson River have clay, sand, and silt substrates (Bain *et al.*, 2000). Newburgh and Haverstraw Bays in the Hudson River are areas of known juvenile sturgeon concentrations (Sweka *et al.*, 2007). Sampling in spring and fall revealed that highest catches of juvenile Atlantic sturgeon occurred during spring in soft-deep areas of Haverstraw Bay even though this habitat type comprised only 25% of the available habitat in the Bay (Sweka *et al.*, 2007). Overall, 90% of the total 562 individual juvenile Atlantic sturgeon captured during the course of this study (14 were captured more than once) came from Haverstraw Bay (Sweka *et al.*, 2007). At around 3 years of age, Hudson River juveniles exceeding 70 cm total length begin to migrate to marine waters (Bain *et al.*, 2000).

and summer individuals are most likely to occur within rkm 60-170. During the winter months, juvenile Atlantic sturgeon are most likely to occur between rkm 19 and 74. This seasonal change in distribution may be associated with seasonal movements of the saltwedge and differential seasonal use of habitats.

Please note, as the New York Bight DPS of Atlantic sturgeon is the only DPS of Atlantic sturgeon that spawns in the Hudson River, the information provided above only applies to this DPS. However, other DPSs of Atlantic sturgeon (i.e., Gulf of Maine, Chesapeake Bay, Carolina, and South Atlantic) are known to be present within the Hudson River, approximately up to the 0.5 ppt salinity threshold in the River. As such, subadult and adult Atlantic sturgeon from any DPS may be present within the Hudson River.

Conclusions

The proposed project is located within the reach of the Hudson River used by shortnose sturgeon as a spawning ground. As a result, we strongly recommend that no in-water work be undertaken from March 1 through June 30 of any calendar year. Outside of these time frames, early life stages, as well as juvenile and adult shortnose sturgeon will be found downstream of this site foraging or overwintering. In addition, as Atlantic sturgeon are believed to only use the lower reaches of the Hudson River, Atlantic sturgeon are not expected to occur in the project area.

Based on the information presented above, depending on the time of year in which work will be undertaken, ESA listed species of shortnose sturgeon may occur in the project area and thus, any proposed in-water work has the potential to impact these species. As project details become finalized, a consultation, pursuant to section 7 of the ESA of 1973, as amended, may be necessary as any discretionary federal action, such as the approval or funding of a project by a Federal agency, that may affect an ESA listed species must undergo consultation pursuant to section 7 of the ESA. If the proposed project has the potential to affect ESA listed species, and it is being approved, permitted or funded by a Federal agency, the lead Federal agency, or their designated non-Federal representative, is responsible for determining whether the proposed action is likely to affect the listed species. The Federal agency would submit their determination along with justification for their determination and a request for concurrence, to the attention of the ESA Section 7 Coordinator, NMFS Northeast Regional Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, NMFS would then be able to conduct a consultation under section 7 of the ESA. Should you have any questions about these comments or about the section 7 consultation process in general, please contact Danielle Palmer at (978)282-8468 or by e-mail (Danielle.Palmer@noaa.gov).

Sincerely,



Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

References

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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 19, 2019

Andrew Freed
AKRF, Inc.
7250 Parkway Drive, Suite 210
Hanover, MD 21076

Re: Livingston Ave Bridge Project
County: Albany, Rensselaer Town/City: City of Albany, City of Rensselaer

Dear Mr. Freed:

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 at the project site, or in its vicinity.

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

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

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 4 Office, Division of Environmental Permits, at dep.r4@dec.ny.gov, 518-357-2449.

Sincerely,



Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program



**The following state-listed animals have been documented
at the project site, or in its vicinity.**

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

For information about any permit considerations for the project, please contact the NYSDEC Region 4 Office, Division of Environmental Permits, at dep.r4@dec.ny.gov. For information about potential impacts of your project on the sturgeon, and how to avoid, minimize, or mitigate any impacts, please contact the Hudson River Fisheries Unit, 21 South Putt Corners Road, New Paltz, NY 12561, 845-256-3071, HudsonRiverFish@dec.ny.gov.

The following species have been documented at the project site, or within 0.5 mile.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Birds			
Peregrine Falcon <i>Breeding, within 0.5 mi of the project site</i>	<i>Falco peregrinus</i>	Endangered	9965
Fish			
Shortnose Sturgeon <i>In the Hudson River, at the project site</i>	<i>Acipenser brevirostrum</i>	Endangered	Endangered 1091

This report only includes records from the NY Natural Heritage database.

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

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



The following rare plants, rare animals, and significant natural communities have been documented at the project site, or in its vicinity.

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

The following animals, while not listed by New York State as Endangered or Threatened, are rare in New York and are of conservation concern.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>HERITAGE CONSERVATION STATUS</i>
Dragonflies and Damselflies			
Cobra Clubtail	<i>Gomphurus vastus</i>	Unlisted	Critically Imperiled in NYS
Hudson River South Troy, 2008-07-03: The odonates were observed along a large river, north of the project site.			13447
Freshwater Mussels			
Alewife Floater	<i>Anodonta implicata</i>	Unlisted	Critically Imperiled in NYS
Hudson River Troy to Albany, 1984-fall: A long stretch of a river, including at the project site.			9713

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

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

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

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



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

January 26, 2021

Ms. Karen Greene
Mid-Atlantic Field Offices Supervisor
National Marine Fisheries Service
Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732

Re: Essential Fish Habitat Consultation
Livingston Avenue Bridge Project
Hudson River
New York

Dear Ms. Greene:

The U.S. Department of Transportation's Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) and related federal environmental review requirements as well as the New York State Environmental Quality Review Act (SEQRA) for the Livingston Avenue Bridge Project (the Project) (**Figure 1**). FRA is the lead Federal agency under NEPA and NYSDOT is the lead state agency under SEQRA.

The Livingston Avenue Bridge provides a critical rail link on New York State's Empire Corridor rail route. The bridge, which CSX Transportation Inc. (CSX) owns and the National Railroad Passenger Corporation (Amtrak) maintains and operates, is nearing the end of its serviceable life. Amtrak uses the bridge for intercity passenger trains traveling on the Empire Corridor route and CSX and Canadian Pacific (CP) use the bridge for freight rail service. The bridge's existing superstructure and substructure are in fair to poor condition, and the mechanical portions of the movable swing span are significantly deteriorated. The swing span frequently malfunctions, resulting in delays to passenger trains, freight trains, and boat traffic, and the bridge does not meet current design standards or modern seismic codes. The existing bridge contributes to delays in the movement of freight and passengers throughout New York State, and its replacement is essential to implementing future rail plans and improving state-wide transport.

In accordance with the Magnuson-Stevens Fishery Conservation and Management Act, NYSDOT has completed an Essential Fish Habitat (EFH) Assessment Worksheet (**Enclosure 1**) for the two Build Alternatives for the Project being evaluated in the EA. Species included in the EFH Assessment Worksheet include winter flounder (*Pleuronectes americanus*), little skate (*Leucoraja erinacea*), Atlantic herring (*Clupea harengus*), red hake (*Urophycis chuss*), windowpane flounder (*Scophthalmus aquosus*), winter skate (*Leucoraja ocellata*), clearnose skate (*Raja eglanteria*), longfin inshore squid (*Doryteuthis pealeii*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish

(*Peprius triacanthus*), and summer flounder (*Paralichthys dentatus*). FRA has made the determination that adverse effects on EFH with both Build Alternatives would not be substantial, and is requesting an abbreviated EFH consultation. More information about the Project and supporting analysis for this determination are provided below and in the enclosures.

Project Description

The Project involves the replacement of the existing Livingston Avenue Bridge. Under Build Alternative 1, a new bridge would be constructed on a skewed alignment north of the existing bridge; the alignment would be approximately 200 feet north of the existing bridge on the east side of the river and would abut the existing bridge on the west side (see **Figure 2**). Under Build Alternative 2, which is the Preferred Alternative, a new bridge would be constructed parallel to and approximately 50 feet south of the existing bridge (see **Figure 3**). In-water activities associated with bridge construction and demolition would last about 3 to 3.5 years (Build Alternative 1) or 2.75 to 3 years (Build Alternative 2), ending in 2025 when the replacement bridge has been completed and the existing bridge decommissioned and demolished. NYSDOT will comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from March 1 through June 30 to protect spawning shortnose sturgeon and their eggs and larvae. Construction activities would typically occur between 7am and 7pm on weekdays, with some time-critical activities and activities affecting active railroad tracks occurring during nights and weekends.

Proposed In-Water Construction Activities

In-water construction activities include mobilization and staging of materials and equipment, construction of a new bridge, and demolition of the existing bridge. The following sections describe the activities associated with each in-water component as well as land-based activities. The land-based construction activities would not affect aquatic resources. The descriptions herein represent a conservative estimate based on the current level of conceptual design for the Project.

While most aspects of new bridge construction would be the same for both Build Alternatives, there are some important differences. These differences are discussed below and summarized in **Table 1**.

Table 1
Comparison of Build Alternatives, Based on Conceptual Design

Category	Build Alternative 1	Build Alternative 2 (Preferred)
Alignment	Skewed alignment north of existing bridge	Parallel alignment south of existing bridge
Construction Duration	Approximately 3 to 3.5 years	Approximately 2.75 to 3 years
Temporary Pier: Location	North of existing bridge	South of existing bridge
Temporary Pier: Dimensions	Approximately 20' wide by 150' long; up to 35 piles	Approximately 20' wide by 100' long; up to 25 piles
Temporary Pier: Overwater Coverage	Approximately 3,000 sq ft	Approximately 2,000 sq ft
Temporary Pier: Area of Piles	Up to approximately 37.5 sq ft	Up to approximately 27 sq ft
Bridge Piers: Benthic Footprint	Approximately 0.74 acres; 0.32 acres net (including removal of existing bridge piers)	Approximately 0.5 acres; 0.08 acres net (including removal of existing bridge piers)
Bridge Piers: Volume of Dredged Material	Approximately 19,500 cubic yards	Approximately 14,500 cubic yards

Mobilization and Staging

Prior to the start of work on the new bridge's eastern approach piers, the Project would require construction of a temporary pier (also known as falsework) located on the eastern shoreline, north of the existing bridge for Build Alternative 1 or south of the existing bridge for Build Alternative 2, to accommodate construction activities and equipment where the water is too shallow for barges to reach the shoreline. The temporary pier would measure up to approximately 150 feet long (Build Alternative 1) or up to approximately 100 feet long (Build Alternative 2); the temporary pier would be 20 feet wide and would consist of a platform supported by 14-inch diameter steel piles (up to 35 piles for Build Alternative 1; up to 25 piles for Build Alternative 2). The piles would be installed by pre-drilling followed by vibratory hammering to the greatest extent practicable. If necessary, the piles would be driven the last few feet to their final depth using an impact hammer in conjunction with a soft start and cushion block. Overall, pile installation for the temporary pier would occur over a duration of about five weeks. Water depths in the area of the river where these piles would be driven are approximately 25 to 30 feet at mean lower low water (MLLW) (NOAA Nautical Chart 12348). In total, the temporary pier would result in approximately 3,000 square feet of overwater coverage (Build Alternative 1) or approximately 2,000 square feet of overwater coverage (Build Alternative 2), but would allow some light to penetrate to the shallow water aquatic habitat over the course of a day. The pier would remain in place for the full duration of construction and would be removed when the construction of the replacement bridge is completed. A turbidity curtain would be installed around the work area during pile installation and pile removal for the temporary pier.

Construction staging areas would likely be established on land on both sides of the river to provide access for material and equipment deliveries via barge.

Construction of New Railroad Bridge

Construction of the replacement bridge would include construction of the new bridge piers, abutments, superstructure, and the dolphin and fender system. The bridge piers would be supported

by steel H-piles within a concrete tremie sealed shell encompassing a total of approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) in benthic footprint. To create the cell, steel sheet piles would be installed via vibratory hammer, followed by installation of the tremie seal and dewatering. The sheet pile shell for each bridge pier would require removal of sediments within the cell, for a total of approximately 19,500 cubic yards of dredged materials (Build Alternative 1) or 14,500 cubic yards of dredged material (Build Alternative 2) for the full span. Because it would be contained within the sealed shell, dredging would not have the potential to result in increased turbidity in the waterway. Dredged material would be placed in a scow, dewatered, and transported for disposal in compliance with applicable regulations. Approximately 20-25 disposal trips would be expected over the course of construction. Installation of the bridge piers, including the dredging efforts, would take approximately 12 months. The bridge abutments would also be supported by steel H-piles, which would be installed using land-based equipment. Once the bridge piers are in place, the superstructure truss spans would be constructed on barges and floated into place. The shorter girder spans would be placed using barge- or track-mounted cranes to lift the individual spans into place. Up to two barges would be used, each supported by four 14-inch square spud piles (total benthic footprint of 1,568 square feet). Using the self-weight of the piles, they would be pushed 5 to 10 feet into the bottom. Additional means to drive the spud piles to the desired depth would only be used as necessary and would likely comprise use of equipment available on the barge to push or hammer them to the desired depth. If hammering is required, a cushion block would be used. Use of equipment in this manner would not result in increased underwater noise that could affect protected species. The barges would move throughout the site for the duration of construction. Upon the completion of the replacement bridge construction, the temporary pier would be removed, including full removal of the piles. All temporary piles would be removed within a turbidity curtain using a vibratory hammer.

The dolphin and fender system would be installed using barge-mounted equipment following demolition of the existing bridge. The fender piles would comprise about 60 14-inch diameter piles made of either timber or fiberglass composite, and would be installed using pre-drilling followed by vibratory hammer. Dolphins would consist of sheet pile cells, which would be installed using a vibratory hammer. Installation of the dolphin and fender system would take approximately 6 months, and would be completed near the end of the overall construction period.

Demolition of Existing Bridge

Demolition of the existing bridge would occur once the new bridge is fully operational, including both water- and land-based components. The bridge superstructure could be removed span-by-span using a barge and a multi-wheeled crawler or crane, and then transported to and disassembled in a staging yard. The existing stacked stone piers would likely be pulled apart with an excavator situated on a barge, without the use of cofferdams. The excavator would then remove the pier footings, and the timber piles would be cut below the mudline. In total, removal of the existing bridge would restore approximately 0.42 acres of benthic habitat.

Vessels

In-water construction activities would be supported by approximately six self-powered vessels, including one crew boat, one safety boat, up to two staging spud barges, and two tug boats. Vessel drafts would likely range from five to 10 feet. Most of these boats would operate between the construction zone and a suitable landing site for construction activity, such as the Port of Coeymans, an industrial marine terminal on the Hudson River approximately 12 miles south of

the Livingston Avenue Bridge. Vessel speeds would likely be less than five knots for push boats and tugs and less than 10 knots for crew boats working within the immediate vicinity of the bridge.

Land-Based Activities

Following construction of the new bridge and prior to demolition of the existing bridge, landside railroad tracks would be constructed to connect the new bridge to the existing rail tracks. Retaining walls and embankments would be constructed, as necessary, to support the new connecting tracks as they gradually slope down from the bridge. A Stormwater Pollution Prevention Plan approved by the New York State Department of Environmental Conservation would implement erosion and sediment control measures to minimize the effects of stormwater runoff during construction. No impacts to aquatic resources from the land-based construction activities are anticipated.

Compliance

The EFH Assessment Worksheet and attachments are included as **Enclosure 1** to this letter. NYSDOT will comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from March 1 through June 30 to protect spawning shortnose sturgeon and their eggs and larvae. This restricted window would also avoid most of the spawning period for winter flounder and windowpane flounder, for which EFH is designated in the upper Hudson River.

In summary, the Project would result in:

- Temporary increase in vessel traffic on the Hudson River
- Temporary increase in sediment resuspension associated with pile installation and removal;
- Temporary increase in underwater noise from pile installation and removal;
- Temporary loss of up to approximately 37.5 square feet (Build Alternative 1) or 27 square feet (Build Alternative 2) of bottom habitat in the footprint of temporary pier piles, which will be in place for the duration of construction;
- Temporary loss of up to approximately 1,568 square feet of bottom habitat in the footprint of the spud piles for the construction barges while they are moored (which would be moved periodically over the duration of construction);
- Temporary shading of approximately 3,000 square feet (Build Alternative 1) or 2,000 square feet (Build Alternative 2) from the temporary pier;
- Permanent loss of approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) of bottom habitat in the footprint of the replacement bridge piers and
- Restoration of 0.42 acres of bottom habitat in the footprint of the existing bridge piers that will be removed, for a total net loss of bottom habitat of approximately 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2).

As the in-water activities are carried out, EFH and prey species would be temporarily displaced to other suitable habitat in the area, but would be likely to return to the Project site upon completion of the work, and intermittently during construction down-times. The use of up to two spud barges and four small vessels during construction would constitute a minimal increase in vessel activity in the Project area, and this would not be outside the range of typical vessel activity in the Albany area. As the barges would be moored in place in deep waters and smaller vessels would only be

used to transport personnel and materials, the potential for vessel interaction with EFH species would be limited.

The effects of sediment resuspension and temporary increases in turbidity associated with pile installation and removal of the temporary pier piles would be minimal and intermittent. Sediment types within the Project area are primarily sand and gravelly sand, which are not easily resuspended and would settle quickly. The use of a turbidity curtain during pile installation and removal would further minimize the potential for adverse effects from sediment resuspension.

The effects of elevated underwater noise levels from pile installation and removal of the temporary pier piles would be minimized through the use of either pre-drilling or vibratory hammering. When an impact hammer would be required for the temporary pier piles, a soft start and cushion block would be used to attenuate noise and encourage fish to move away from the area. At its maximum, the ensonified area reaching the behavioral threshold for sturgeon and other fish will extend 120 meters (394 feet) from the pile. It is unlikely that movement away from this area would adversely affect EFH, as the Hudson River is about 950 feet wide at the Project location and would allow sufficient area for fish passage both in the navigation channel and in the shallower waters closer to shore.

During construction, shading by the vessels and temporary pier necessary to construct the Project would not be expected to significantly affect benthic habitat, as light would still penetrate the water over the course of the day and similar habitat would continue to be available in the vicinity. Similarly, the temporary loss of approximately 37.5 square feet (Build Alternative 1) or 27 square feet (Build Alternative 2) of bottom habitat in the footprint of the temporary pier piles would not result in a substantial reduction in foraging opportunities for EFH species. This area would become available again when the temporary pier is removed upon completion of the replacement bridge. Spud piles supporting the construction barges would temporarily occupy up to 1,568 square feet of river bottom when the barges are moored. The spud barges would be moved periodically during construction, so the area occupied by the spud piles would change frequently and habitat would only be unavailable for short durations. There would be a permanent loss of approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) of benthic habitat in the footprint of the new bridge. However, upon removal of the existing bridge piers, which have a benthic footprint of 0.42 acres, the Project would result in a net permanent loss of approximately 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2) of benthic habitat. This is small in comparison to the surrounding habitat that would continue to be available to EFH species, and would not result in a significant adverse impact to EFH.

While construction of the Project would have the potential to result in temporary effects on EFH species in the upper Hudson River, the majority of the affected habitat would be available to EFH species once again following construction. The approximately 37.5-square-foot area (Build Alternative 1) or 27-square-foot area (Build Alternative 2) in the footprint of the temporary pier piles and the 0.42 acres currently occupied by the existing bridge would be restored as benthic habitat. The loss of approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) in the footprint of the replacement bridge piers would be partially offset by the removal of the existing bridge, and the net loss of approximately 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2) of bottom habitat would not result in significant adverse effects to EFH. In-water construction would be timed to avoid spawning shortnose sturgeon (thereby partially

January 26, 2021

Essential Fish Habitat Consultation
Livingston Avenue Bridge Project

avoiding spawning periods of EFH species), measures to minimize sediment resuspension and underwater noise effects would be implemented, and the temporary and permanent losses of habitat within the Hudson River would be minimal. Therefore, FRA has determined that the Project's adverse effect on EFH would not be substantial and is therefore requesting an abbreviated EFH consultation.

If you have questions or require additional information regarding this request or the Project, please contact Brandon Bratcher, FRA Environmental Protection Specialist, at brandon.bratcher@dot.gov with a copy to Mark Jakubiak, Project Manager/Environmental Manager at NYSDOT: mark.jakubiak@dot.ny.gov.

Thank you for your time and consideration.

Sincerely,

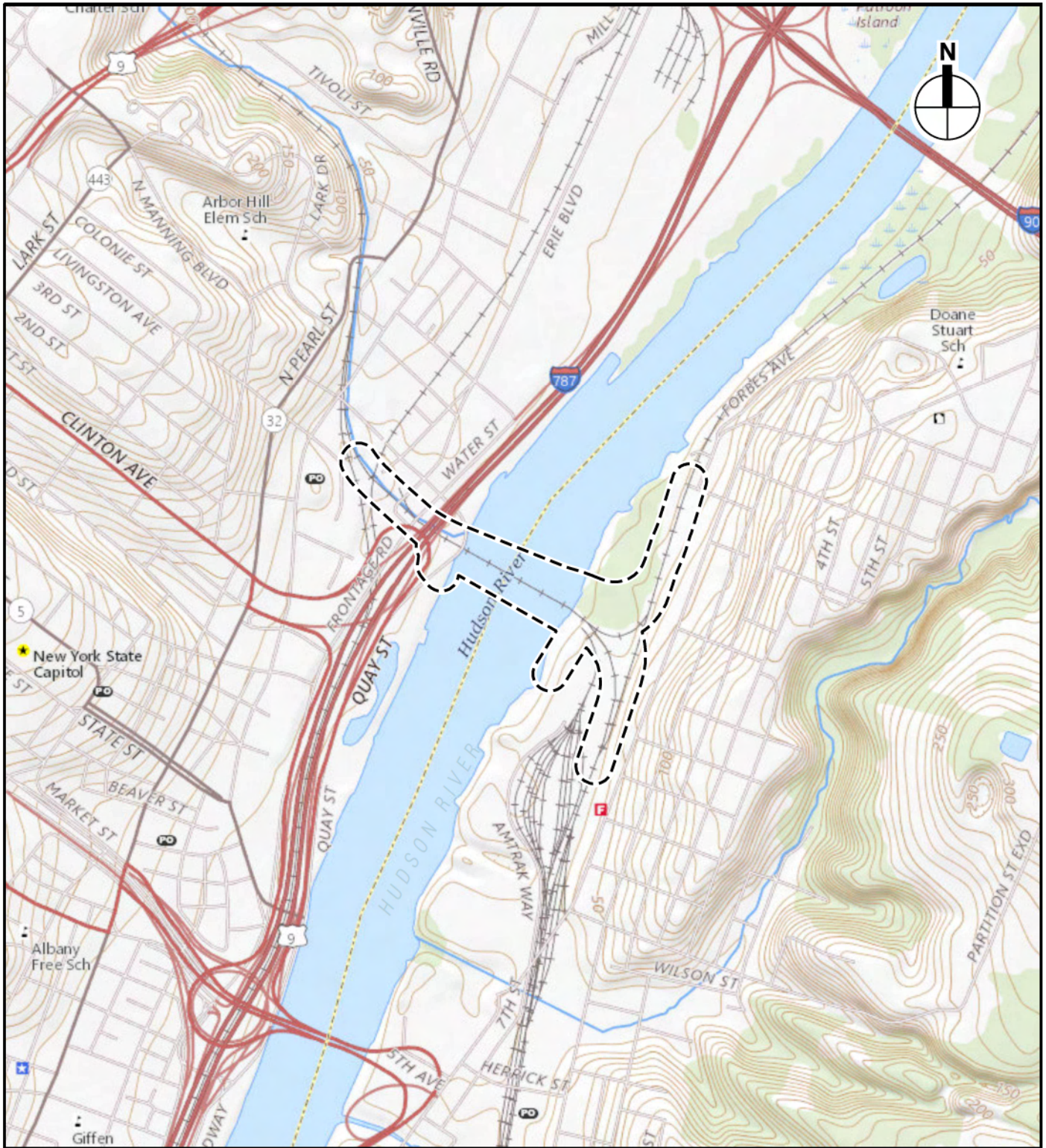


Laura Shick
Supervisory Environmental Protection Specialist
Environmental & Corridor Planning Division
Office of Railroad Policy & Development

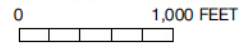
Enclosure 1 – EFH Assessment Worksheet

Cc: Brandon Bratcher, FRA
Mark Jakubiak, NYSDOT

9.23.20

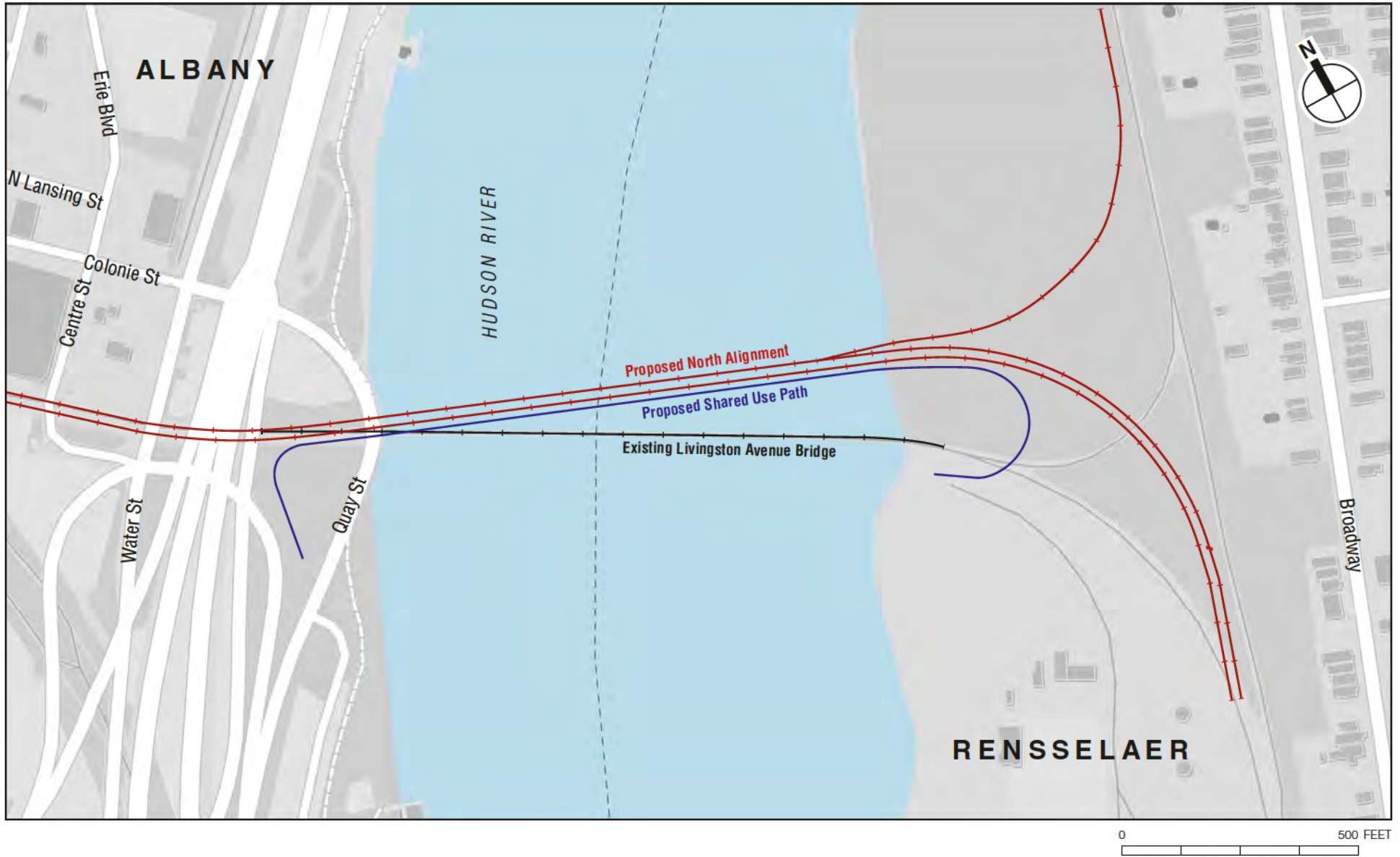


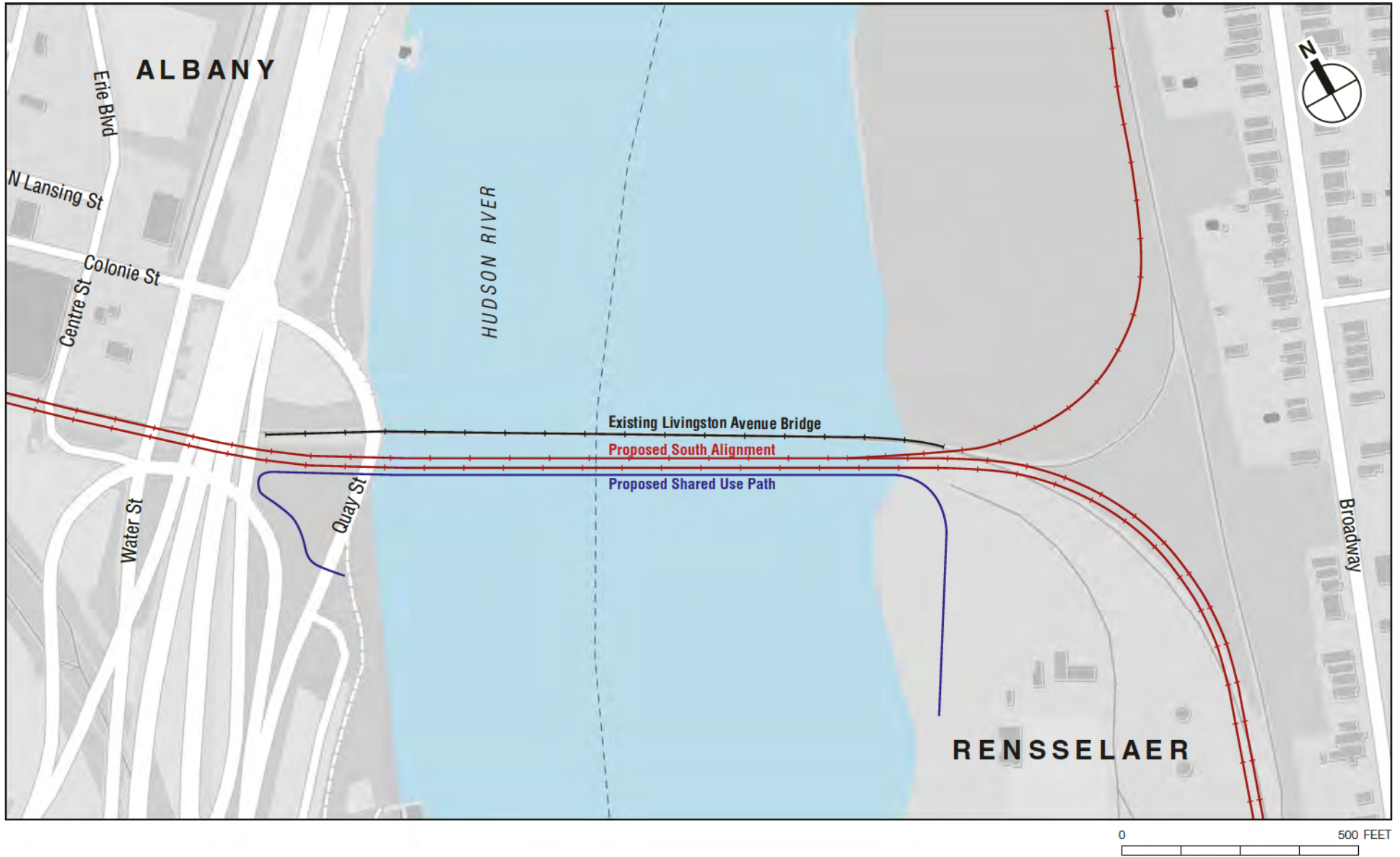
 Study Area



Approximate coordinates of Study Area:
73°44'29"W 42°39'15"N

USGS Topographic Map
Figure 1





NOAA Fisheries Greater Atlantic Regional Fisheries Office Essential Fish Habitat (EFH) Assessment & Fish and Wildlife Coordination Act (FWCA) Worksheet

This worksheet is your essential fish habitat (EFH) assessment. It provides us with the information necessary to assess the effects of your action on EFH under the Magnuson Stevens Fishery Conservation and Management Act and on NOAA trust resources under the Fish and Wildlife Coordination Act (FWCA). Consultation is not required if:

1. there is no adverse effect on EFH or NOAA trust resources (see page 10 for more info).
2. no EFH is designated and no trust resources may be present at the project site.

Instructions

Federal agencies or their non-federal designated lead agency should email the completed worksheet and necessary attachments to nmfs.gar.efh.consultation@noaa.gov. Include the public notice (if applicable) or project application and project plans showing:

- location map of the project site with area of impact.
- existing and proposed conditions.
- all waters of the U.S. on the project site with mean low water (MLW), mean high water (MHW), high tide line (HTL), and water depths clearly marked.
- sensitive habitats mapped, including special aquatic sites (submerged aquatic vegetation, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), hard bottom or natural rocky habitat areas, and shellfish beds.
- site photographs, if available.

We will provide our EFH conservation recommendations and recommendations under the FWCA, as appropriate, within 30 days of receipt of a complete EFH assessment (60 days if an expanded consultation is necessary). Please submit complete information to minimize delays in completing the consultation.

This worksheet provides us with the information required¹ in an EFH assessment:

1. A description of the proposed action.
2. An analysis of the potential adverse effects on EFH and the federally managed species.
3. The federal agency's conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable.

Your analysis **should focus on impacts that reduce the quality and/or quantity of the habitat or result in conversion to a different habitat type** for all life stages of species with designated EFH within the action area.

Use the information on the [HCD website](#) and [NOAA's EFH Mapper](#) to complete this worksheet. If you have questions, please contact the appropriate [HCD staff member](#) to assist you.

¹ The EFH consultation process is guided by the requirements of our EFH regulation at 50 CFR 600.905.

EFH ASSESSMENT WORKSHEET

General Project Information

Date Submitted:

Project/Application Number:

Project Name: Livingston Avenue Bridge Project

Project Sponsor/Applicant: FRA and NYSDOT

Federal Action Agency (if state agency acting as delegated): Federal Railroad Administration

Fast-41 or One Federal Decision Project: Yes No

Action Agency Contact Name:

Contact Phone:

Contact Email:

Latitude: 42.654210 N

Longitude: 73.741547 W

Address, City/Town, State:

Width of the river between Albany and Rensselaer at Livingston Avenue (Albany, NY 12207)

Body of Water: Hudson River

Project Purpose:

Existing bridge in fair to poor condition. Movable span frequently malfunctions, resulting in rail delays. Bridge does not meet modern design standards or seismic codes.

Project Description:

Replacement of the existing Livingston Avenue Bridge with a new rail bridge on an adjacent alignment either north or south of the existing bridge. Construction will use a temporary pier (pile footprint of 27-37.5 sf, overwater coverage of 2,000-3,000 sf) on the eastern shoreline to accommodate equipment where the water is too shallow for barges. The temporary pier will be removed when construction of the replacement bridge is complete. The new bridge piers will occupy 0.5-0.74 acres of river bottom and will be installed using steel H-piles in a concrete tremie sealed shell within a sheet pile perimeter. Sediments will be removed from within the dewatered sheet pile shells and transported to an off-site disposal location. A new dolphin and fender system comprising timber or fiberglass composite piles and sheet pile cells will be installed using pre-drilling and vibratory hammer after the existing bridge is demolished. Demolition of the existing bridge will occur once the new bridge is fully operational, and will result in the restoration of 0.42 acres of bottom habitat, for a net loss of 0.08-0.32 acres of bottom habitat considering the replacement and demolition. The bridge will be removed span-by-span and transported to and disassembled in a staging yard. All in-water work will be conducted from two staging barges and the temporary pier, and a turbidity curtain will be used during installation and removal of the temporary pier.

Anticipated Duration of In-Water Work or Start/End Dates:

2022 - 2025

Habitat Description

EFH includes the biological, chemical, and physical components of the habitat. This includes the substrate and associated biological resources (e.g., benthic organisms, submerged aquatic vegetation, shellfish beds, salt marsh wetlands), the water column, and prey species.

- Is the project in designated EFH²? Yes No
- Is the project in designated HAPC²? Yes No
- Is this coordination under FWCA only? Yes No

Total area of impact to EFH (indicate sq ft or acres): 0.9-1.2 acres

Total area of impact to HAPC (indicate sq ft or acres): 0

Current water depths: 20-36 ft Salinity: <0.5 ppt Water temperature range: 0-77F

Sediment characteristics³: Primarily sand and gravelly sand

What habitat types are in or adjacent to the project area and will they be permanently impacted?
 Select all that apply. Indicate if impacts will be temporary, if site will be restored, or if permanent conversion of habitat will occur. A project may occur in overlapping habitat types.

	Habitat Type	Total impact (sq ft/acres)	Impacts are temporary	Restored to pre-existing conditions	Permanent conversion of all or part of habitat
<input type="checkbox"/>	Marine				
<input type="checkbox"/>	Estuarine				
<input checked="" type="checkbox"/>	Riverine (tidal)	0.9-1.2 acres	27-37.5 sf	0.42 acres	0.5-0.74 acres
<input type="checkbox"/>	Riverine (non-tidal)				
<input type="checkbox"/>	Intertidal				
<input type="checkbox"/>	Subtidal				
<input type="checkbox"/>	Water column				
<input type="checkbox"/>	Salt marsh/ Wetland (tidal)				
<input type="checkbox"/>	Wetland (non-tidal)				

² Use the tables on pages 7-9 to list species with designated EFH or the type of designated HAPC present.

³ The level of detail is dependent on your project – e.g., a grain size analysis may be necessary for dredging.

	Habitat Type	Total impact (sq ft/acres)	Impacts are temporary	Restored to pre-existing conditions	Permanent conversion of all or part of habitat
<input type="checkbox"/>	Rocky/hard bottom ⁴ :				
<input checked="" type="checkbox"/>	Sand	0.9-1.2 acres	27-37.5 sf	0.42 acres	0.5-0.74 acres
<input type="checkbox"/>	Shellfish beds or oyster reefs				
<input type="checkbox"/>	Mudflats				
<input type="checkbox"/>	Submerged aquatic vegetation (SAV) ⁵ , macroalgae, epifauna				
<input checked="" type="checkbox"/>	Diadromous fish (migratory or spawning habitat)	0.9-1.2 acres	27-37.5 sf	0.42 acres	0.5-0.74 acres

Indicate type(s) of rocky/hard bottom habitat (pebble, cobble, boulder, bedrock outcrop/ledge) and species of SAV:

n/a

Project Effects

Select all that apply	Project Type/Category
<input type="checkbox"/>	Hatchery or Aquaculture
<input type="checkbox"/>	Agriculture
<input type="checkbox"/>	Forestry
<input type="checkbox"/>	Military (e.g., acoustic testing, training exercises)
<input type="checkbox"/>	Mining (e.g., sand, gravel)
<input type="checkbox"/>	Restoration or fish/wildlife enhancement (e.g., fish passage, wetlands, beach renourishment, mitigation bank/ILF creation)

⁴ Indicate type(s). The type(s) of rocky habitat will help you determine if the area is cod HAPC.

⁵ Indicate species. Provide a copy of the SAV report and survey conducted at the site, if applicable.

Select all that apply	Project Type/Category
<input checked="" type="checkbox"/>	Infrastructure/transportation (e.g., culvert construction, bridge repair, highway, port)
<input type="checkbox"/>	Energy development/use
<input type="checkbox"/>	Water quality (e.g., TMDL, wastewater, sediment remediation)
<input checked="" type="checkbox"/>	Dredging/excavation and disposal
<input checked="" type="checkbox"/>	Piers, ramps, floats, and other structures
<input type="checkbox"/>	Bank/shoreline stabilization (e.g., living shoreline, groin, breakwater, bulkhead)
<input type="checkbox"/>	Survey (e.g., geotechnical, geophysical, habitat, fisheries)
<input type="checkbox"/>	Other

Select all that apply	Potential Stressors Caused by the Activity	Select all that apply and if temporary or permanent		Habitat alterations caused by the activity
		Temp	Perm	
<input checked="" type="checkbox"/>	Underwater noise			
<input checked="" type="checkbox"/>	Water quality/turbidity/contaminant release	<input type="checkbox"/>	<input type="checkbox"/>	Water depth change
<input checked="" type="checkbox"/>	Vessel traffic/barge grounding	<input type="checkbox"/>	<input type="checkbox"/>	Tidal flow change
<input type="checkbox"/>	Impingement/entrainment ⁶	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fill
<input type="checkbox"/>	Prevent fish passage/spawning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat type conversion
<input checked="" type="checkbox"/>	Benthic community disturbance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other: Underwater noise, turbidity
<input checked="" type="checkbox"/>	Impacts to prey species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other: Underwater noise, turbidity

⁶ Entrainment is the voluntary or involuntary movement of aquatic organisms from a water body into a surface diversion or through, under, or around screens and results in the loss of the organisms from the population. Impingement is the involuntary contact and entrapment of aquatic organisms on the surface of intake screens caused when the approach velocity exceeds the swimming capability of the organism.

Details: project impacts and mitigation

The level of detail that you provide should be commensurate with the magnitude of impacts associated with the proposed project. Attach supplemental information if necessary.

Describe how the project would impact each of the habitat types selected above. Include temporary and permanent impact descriptions and direct and indirect impacts.

Temporary: Vessel activity during construction (2 boats, 2 barges, and 2 tugs at a given time) - Vessels will remain in close proximity to the project site except when transporting dredged material downstream (estimated 20 disposal trips total). Sediment resuspension during installation and removal of the temporary pier piles and installation of the dolphin and fender system piles - Turbidity increases will be minimal and localized and sediments will settle quickly. Underwater noise during pile installation and removal - Pre-drilling and vibratory hammer will be used for the bridge piers and dolphin/fender system, resulting in minimal noise increases. Temporary pier piles will be installed using vibratory hammer followed by minimal impact hammering (with soft start and cushion block). Noise levels reaching the behavioral threshold will extend up to 120m from the pile, leaving more than half the river width non-sonified and available for fish passage. Temporary pier will have overwater coverage of 2,000-3,000 sf.

Permanent: Loss of bottom habitat in the footprint of the new bridge piers (0.5-0.74 acres), restoration of bottom habitat in footprint of the existing bridge (0.42 acres). Net loss of 0.08-0.32 acres of bottom habitat.

What specific measures will be used to avoid impacts, including project design, turbidity controls, acoustic controls, and time of year restrictions? If impacts cannot be avoided, why not?

The project will comply with all regulatory restrictions for in-water construction activities, including no in-water activities from March 1 through June 30 to protect spawning shortnose sturgeon and their eggs and larvae. Dredging for the bridge piers will be done within dewatered sheet pile cells and will not result in sediment resuspension.

What specific measures will be used to minimize impacts?

Turbidity curtain will be deployed during installation and removal of the temporary pier piles and installation of dolphin/fender piles. Project vessels will maintain speeds less than 5 knots for push boats and tugs and less than 10 knots for crew boats. The use of pre-drilling and vibratory hammer for the bridge piers and dolphin/fender system will minimize the potential for effects from underwater noise. The use of a vibratory hammer and a soft start and cushion block when impact hammering for the temporary pier will also minimize noise impacts.

Is compensatory mitigation proposed?

Yes

No

If no, why not? If yes, describe plans for mitigation and how this will offset impacts to EFH. Include a conceptual compensatory mitigation and monitoring plan, if applicable.

Compensatory mitigation is not proposed because the net loss of bottom habitat is minimal, totaling 0.08-0.32 acres with the removal of the existing bridge. All other potential impacts described above will be intermittent and temporary.

Federal Action Agency's EFH determination (select one)	
<input type="checkbox"/>	There is no adverse effect ⁷ on EFH or EFH is not designated at the project site. EFH Consultation is not required. This is a FWCA-only request.
<input checked="" type="checkbox"/>	The adverse effect ⁷ on EFH is not substantial. This means that the adverse effects are no more than minimal, temporary, or can be alleviated with minor project modifications or conservation recommendations. This is a request for an abbreviated EFH consultation.
<input type="checkbox"/>	The adverse effect ⁷ on EFH is substantial. This is a request for an expanded EFH consultation. We will provide more detailed information, including an alternatives analysis and NEPA document, if applicable.

EFH and HAPC designations⁸

Use the [EFH mapper](#) to determine if EFH may be present in the project area and enter all species and lifestages that have designated EFH. Optionally, you may review the EFH text descriptions linked to each species in the EFH mapper and use them to determine if the described habitat is present. We recommend this for larger projects to help you determine what your impacts are.

Species	EFH is designated/mapped for:				Habitat present based on text description (optional)
	EFH: eggs	EFH: larvae	EFH: juvenile	EFH: adults/spawning adults	
Winter flounder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Little skate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Atlantic herring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Red hake	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

⁷ An **adverse effect** is any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

⁸ Within the Greater Atlantic Region, EFH has been designated by the New England, Mid-Atlantic, and South Atlantic Fisheries Management Councils and NOAA Fisheries.

Species	EFH is designated/mapped for:				Habitat present based on text description (optional)
	EFH: eggs	EFH: larvae	EFH: juvenile	EFH: adults/spawning adults	
Windowpane flounder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Winter skate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clearnose skate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Longfin inshore squid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bluefish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Atlantic butterfish	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Summer flounder	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HAPCs

Select all that are in your action area.

<input type="checkbox"/>	Summer flounder: SAV ⁹	<input type="checkbox"/>	Alvin & Atlantis Canyons
<input type="checkbox"/>	Sandbar shark	<input type="checkbox"/>	Baltimore Canyon
<input type="checkbox"/>	Sand Tiger Shark (Delaware Bay)	<input type="checkbox"/>	Bear Seamount
<input type="checkbox"/>	Sand Tiger Shark (Plymouth-Duxbury-Kingston Bay)	<input type="checkbox"/>	Heezen Canyon
<input type="checkbox"/>	Inshore 20m Juvenile Cod	<input type="checkbox"/>	Hudson Canyon
<input type="checkbox"/>	Great South Channel Juvenile Cod	<input type="checkbox"/>	Hydrographer Canyon
<input type="checkbox"/>	Northern Edge Juvenile Cod	<input type="checkbox"/>	Jeffreys & Stellwagen
<input type="checkbox"/>	Lydonia Canyon	<input type="checkbox"/>	Lydonia, Gilbert & Oceanographer Canyons
<input type="checkbox"/>	Norfolk Canyon (Mid-Atlantic)	<input type="checkbox"/>	Norfolk Canyon (New England)
<input type="checkbox"/>	Oceanographer Canyon	<input type="checkbox"/>	Retriever Seamount
<input type="checkbox"/>	Veatch Canyon (Mid-Atlantic)	<input type="checkbox"/>	Toms, Middle Toms & Hendrickson Canyons
<input type="checkbox"/>	Veatch Canyon (New England)	<input type="checkbox"/>	Washington Canyon
<input type="checkbox"/>	Cashes Ledge	<input type="checkbox"/>	Wilmington Canyon

⁹ Summer flounder HAPC is defined as all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH. In locations where native species have been eliminated from an area, then exotic species are included. Use local information to determine the locations of HAPC.

More information

The [Magnuson-Stevens Fishery Conservation and Management Act \(MSA\)](#) mandates that federal agencies conduct an [essential fish habitat \(EFH\) consultation](#) with NOAA Fisheries on any actions they authorize, fund, or undertake that may adversely affect EFH. An **adverse effect** is any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

We designed this worksheet to help you to prepare EFH assessments. It is important to remember that an adverse effect determination is a trigger to consult with us. It does not mean that a project cannot proceed as proposed, or that project modifications are necessary. It means that the effects of the proposed action on EFH must be evaluated to determine if there are ways to avoid, minimize, or offset adverse effects.

This worksheet should be used as your EFH assessment or as a guide to develop your EFH assessment. At a minimum, you should include all the information required to complete this worksheet in your EFH assessment. The level of detail that you provide should be commensurate with the magnitude of impacts associated with the proposed project. If your answers in the worksheet and supplemental information you attach do not fully evaluate the adverse effects to EFH, we may request additional information to complete the consultation.

You may need to prepare an expanded EFH assessment for more complex projects to fully characterize the effects of the project and the avoidance and minimization of impacts to EFH. While the EFH assessment worksheet may be used for larger projects, the format may not be sufficient to incorporate the extent of detail required, and a separate EFH assessment may be developed. However, regardless of format, you should include an analysis as outlined in this worksheet for an expanded EFH assessment, along with any additional necessary information. This additional information includes:

- the results of on-site inspections to evaluate the habitat and site-specific effects.
- the views of recognized experts on the habitat or the species that may be affected.
- a review of pertinent literature and related information.
- an analysis of alternatives that could avoid or minimize the adverse effects on EFH.

Please contact our Greater Atlantic Regional Fisheries Office, [Protected Resources Division](#) regarding potential impacts to marine mammals or threatened and endangered species.

Useful Links

[National Wetland Inventory Maps](https://www.fws.gov/wetlands/)

<https://www.fws.gov/wetlands/>

[EPA's National Estuary Program \(NEP\)](https://www.epa.gov/nep/local-estuary-programs)

<https://www.epa.gov/nep/local-estuary-programs>

[Northeast Regional Ocean Council \(NROC\) Data Portal](https://www.northeastoceandata.org/)

<https://www.northeastoceandata.org/>

Mid-Atlantic Regional Council on the Ocean (MARCO) Data Portal

<http://portal.midatlanticocean.org/>

Resources by State

Maine

[Maine Office of GIS Data Catalog](https://geolibrary-maine.opendata.arcgis.com/datasets#data)

<https://geolibrary-maine.opendata.arcgis.com/datasets#data>

[Town shellfish information including shellfish conservation area maps](https://www.maine.gov/dmr/shellfish-sanitation-management/programs/municipal/ordinances/towninfo.html)

<https://www.maine.gov/dmr/shellfish-sanitation-management/programs/municipal/ordinances/towninfo.html>

[State of Maine Shellfish Sanitation and Management](https://www.maine.gov/dmr/shellfish-sanitation-management/index.html)

<https://www.maine.gov/dmr/shellfish-sanitation-management/index.html>

[Eelgrass maps](https://www.maine.gov/dmr/science-research/species/eelgrass/index.html)

<https://www.maine.gov/dmr/science-research/species/eelgrass/index.html>

[Casco Bay Estuary Partnership](https://www.cascobayestuary.org/)

<https://www.cascobayestuary.org/>

[Maine GIS Stream Habitat Viewer](https://www.arcgis.com/home/item.html?id=5869c2d20f0b4c3a9742bdd8abef42cb)

<https://www.arcgis.com/home/item.html?id=5869c2d20f0b4c3a9742bdd8abef42cb>

New Hampshire

[NH's Statewide GIS Clearinghouse, NH GRANIT](http://www.granit.unh.edu/)

<http://www.granit.unh.edu/>

[NH Coastal Viewer](http://www.granit.unh.edu/nhcoastalviewer/)

<http://www.granit.unh.edu/nhcoastalviewer/>

[State of NH Shellfish Program](https://www.des.nh.gov/organization/divisions/water/wmb/shellfish/)

<https://www.des.nh.gov/organization/divisions/water/wmb/shellfish/>

Massachusetts

[MA Shellfish Sanitation and Management Program](https://www.mass.gov/shellfish-sanitation-and-management)

<https://www.mass.gov/shellfish-sanitation-and-management>

[MassGIS Data, Including Eelgrass Maps](http://maps.massgis.state.ma.us/map_ol/oliver.php)

http://maps.massgis.state.ma.us/map_ol/oliver.php

[MA DMF Recommended TOY Restrictions Document](https://www.mass.gov/files/documents/2016/08/ry/tr-47.pdf)

<https://www.mass.gov/files/documents/2016/08/ry/tr-47.pdf>

[Massachusetts Bays National Estuary Program](https://www.mass.gov/orgs/massachusetts-bays-national-estuary-program)

<https://www.mass.gov/orgs/massachusetts-bays-national-estuary-program>

[Buzzards Bay National Estuary Program](http://buzzardsbay.org/)

<http://buzzardsbay.org/>

[Massachusetts Division of Marine Fisheries](http://www.mass.gov/dmfs)

<https://www.mass.gov/orgs/division-of-marine-fisheries>

[Massachusetts Office of Coastal Zone Management](#)

<https://www.mass.gov/orgs/massachusetts-office-of-coastal-zone-management>

Rhode Island

[RI Shellfish and Aquaculture](#)

<http://www.dem.ri.gov/programs/fish-wildlife/marine-fisheries/shellfish-aquaculture.php>

[RI Shellfish Management Plan](#)

<http://www.shellfishri.com/>

Eelgrass Maps

<http://edc.maps.arcgis.com/apps/View/index.html?appid=db52bb689c1e44259c06e11fd24895f8>

[RI GIS Data](#)

<http://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id=87e104c8adb449eb9f905e5f18020de5>

[Narragansett Bay Estuary Program](#)

<http://nbep.org/>

[Rhode Island Division of Marine Fisheries](#)

<http://www.dem.ri.gov/programs/fish-wildlife/marine-fisheries/index.php>

[Rhode Island Coastal Resources Management Council](#)

<http://www.crmc.ri.gov/>

Connecticut

[CT Bureau of Aquaculture](#)

<https://www.ct.gov/doag/cwp/view.asp?a=3768&q=451508&doagNav=>

[CT GIS Resources](#)

https://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav_GID=1707

[Natural Shellfish Beds in CT](#)

<https://cteco.uconn.edu/viewer/index.html?viewer=aquaculture>

[Eelgrass Maps](#)

https://www.fws.gov/northeast/ecologicalservices/pdf/wetlands/2012_CT_Eelgrass_Final_Report_11_26_2013.pdf

[Long Island Sound Study](#)

<http://longislandsoundstudy.net/>

[CT GIS Resources](#)

<http://cteco.maps.arcgis.com/home/index.html>

[CT DEEP Office of Long Island Sound Programs and Fisheries](#)

<https://www.ct.gov/deep/site/default.asp>

[CT River Watershed Council](#)

<https://www.ctriver.org/>

New York

[Eelgrass Report](#)

http://www.dec.ny.gov/docs/fish_marine_pdf/finaleseagrassreport.pdf

[Peconic Estuary Program](#)

<https://www.peconicestuary.org/>

[NY/NJ Harbor Estuary](#)

<https://www.hudsonriver.org/estuary-program>

New York GIS Clearinghouse

<https://gis.ny.gov/>

New Jersey

[Submerged Aquatic Vegetation Mapping](http://www.crssa.rutgers.edu/projects/sav/)

<http://www.crssa.rutgers.edu/projects/sav/>

[Barnegat Bay Partnership](https://www.barnegatbaypartnership.org/)

<https://www.barnegatbaypartnership.org/>

[NJ GeoWeb](https://www.nj.gov/dep/gis/geoweb splash.htm)

<https://www.nj.gov/dep/gis/geoweb splash.htm>

[NJ DEP Shellfish Maps](https://www.nj.gov/dep/landuse/shellfish.html)

<https://www.nj.gov/dep/landuse/shellfish.html>

Pennsylvania

[Delaware River Management Plan](https://www.fishandboat.com/Fish/Fisheries/DelawareRiver/Documents/delaware_river_plan_exec_draft.pdf)

https://www.fishandboat.com/Fish/Fisheries/DelawareRiver/Documents/delaware_river_plan_exec_draft.pdf

[PA DEP Coastal Resources Management Program](https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/default.aspx)

<https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/default.aspx>

[PA DEP GIS Mapping Tools](https://www.dep.pa.gov/DataandTools/Pages/GIS.aspx)

<https://www.dep.pa.gov/DataandTools/Pages/GIS.aspx>

Delaware

[Partnership for the Delaware Estuary](http://www.delawareestuary.org/)

<http://www.delawareestuary.org/>

[Center for Delaware Inland Bays](http://www.inlandbays.org/)

<http://www.inlandbays.org/>

[Delaware FirstMap](http://delaware.maps.arcgis.com/home/index.html)

<http://delaware.maps.arcgis.com/home/index.html>

Maryland

[Submerged Aquatic Vegetation Mapping](http://web.vims.edu/bio/sav/)

<http://web.vims.edu/bio/sav/>

[MERLIN](http://dnrweb.dnr.state.md.us/MERLIN/)

<http://dnrweb.dnr.state.md.us/MERLIN/>

[Maryland Coastal Bays Program](https://mdcoastalbays.org/)

<https://mdcoastalbays.org/>

Virginia

[Submerged Aquatic Vegetation mapping](http://www.mrc.virginia.gov/regulations/Guidance_for_SAV_beds_and_restoration_final_approved_by_Commission_7-22-17.pdf)

http://www.mrc.virginia.gov/regulations/Guidance_for_SAV_beds_and_restoration_final_approved_by_Commission_7-22-17.pdf

[VDGIF Time of Year Restrictions \(TOYR\) and Other Guidance](https://www.dgif.virginia.gov/wp-content/uploads/VDGIF-Time-of-Year-Restrictions-Table.pdf)

<https://www.dgif.virginia.gov/wp-content/uploads/VDGIF-Time-of-Year-Restrictions-Table.pdf>



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric
Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

March 1, 2021

Laura Shick
Supervisory Environmental Protection Specialist
Environmental & Corridor Planning Division
Office of Railroad Policy & Development
U.S. Department of Transportation
Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: EFH Consultation for the Livingston Avenue Bridge Project

Dear Ms. Shick:

We have reviewed the information provided in your January 26, 2021, letter and accompanying essential fish habitat assessment (EFH) for the Livingston Avenue Bridge Project on the Hudson River, between Albany and Rensselaer, New York. The U.S. Department of Transportation's Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) and the New York State Environmental Quality Review Act (SEQRA). FRA is the lead federal agency under NEPA and the NYSDOT is the lead state agency under SEQRA as well as the non-federal representative for the purposes of environmental review of this project, including consultation with us under the Magnuson Stevens Fishery Conservation and Management Act (MSA).

According to the information provided, the existing Livingston Avenue Bridge has been determined to be structurally deficient and nearing the end of its serviceable life. The proposed project includes two potential build alternatives for the construction of a new bridge; Alternative 1 to the north of the existing bridge, and Alternative 2, which is the preferred alternative, to the south of the existing bridge. For both alternatives, the project will include the construction of the new bridge and demolition and removal of the existing bridge.

The project consists of the construction of a temporary pier, pile installation, construction of new piers, abutments, superstructure, and dolphin/fender system, dredging within coffer dams, and demolition and removal of the existing bridge. Between the two project alternatives, project activities anticipate the temporary disturbance of 27 to 37.5 square feet and net permanent



disturbance of 0.08 to 0.5 acres of tidal riverine area, which includes a disturbance of 0.5 to 0.74 acres from the installation of the new bridge and restoration of 0.42 acres from the removal of the existing bridge. Construction activities associated with the project may temporarily disrupt aquatic life in the vicinity of the project area due to turbidity, noise, and physical activity in the water column. Proposed best management practices (BMPs) include avoiding in-water disturbance as practical; the installation of a turbidity barrier around the work area and the installation and use of cofferdams to minimize sediment turbidity; and pre-drilling with use of vibratory hammer and soft start with cushion block if impact hammer needed to minimize noise. Construction will be performed from land and floating barges spudded into place and is proposed to begin in 2022 with completion by 2025.

The MSA and the Fish and Wildlife Coordination Act (FWCA) require federal agencies to consult with one another on projects such as this that may adversely affect EFH and other aquatic resources. In turn, we must provide recommendations to conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure. While our regulations also allow a federal agency such as FRA to designate a non-federal representative such as NYSDOT to conduct the EFH consultation, it is important to note that the FRA remains ultimately responsible for compliance with sections 305(b)(2) and 305(b)(4)(B) of the MSA.

Magnuson Stevens Fishery Conservation and Management Act

The estuarine portion of the Hudson River has been designated as EFH for a number of federally managed species including winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), winter skate (*Leucoraja ocellata*), bluefish (*Pomatomus saltatrix*), summer flounder (*Paralichthys dentatus*) and others. The Hudson River is also a migratory and spawning corridor for anadromous fish such as American shad (*Alosa sapidissima*), alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*).

We have reviewed the EFH assessment provided and agree with your conclusion that the adverse effects of this project on EFH will not be substantial. As discussed in the EFH assessment, project activities have been designed to avoid and minimize impacts as practical, which includes BMPs that reduce turbidity and noise and a construction schedule that limits in water work between March 1 and June 30 aimed to avoid migratory and breeding anadromous fish. Although two alternatives are presented for inclusion in the EA, we agree with the preferred alternative for its decreased disturbance footprint and construction duration. Based upon all of the information provided, we do not have any objections to the proposed project and additional EFH conservation recommendations are not warranted. Please note that further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(j) should the schedule change, if new information becomes available, or if the project is revised in such a manner that affects the basis for the above determination.

Endangered Species Act

Federally listed species may be present in the project area and consultation, pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, may be necessary. We understand that you are currently working with our Protected Resources Division on the submission of a request for ESA consultation. When project plans are complete, the determination of effects, along with justification for the determination, and a request for concurrence should be submitted to nmfs.gar.esa.section7@noaa.gov.

Conclusion

As always, we are available to coordinate with your staff so that this project can move forward efficiently and expeditiously as possible while still meeting our joint responsibilities to protect and conserve aquatic resources. If you have any questions or need additional information, please contact Jessie Murray in our Highlands, NJ field office at 732- 872-3023 or Jessie.Murray@noaa.gov. Should you have any questions about the Section 7 consultation process in general, please contact Edith Carson-Supino at 978-282-8490 Edith.Carson-Supino@noaa.gov.

Sincerely,

GREENE.KAREN
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Date: 2021.03.01 14:42:08
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Karen M. Greene
Mid-Atlantic Branch Chief
Habitat and Ecosystem Services Division

cc:

GARFO PRD – E. Carson-Supino
New York District ACOE – S. Ryba
FRA – B. Bratcher
NYSDOT – M. Jakubiak
AKRF – S. Collins



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

September 21, 2021

Ms. Jennifer Anderson
NOAA Fisheries
Greater Atlantic Regional Fisheries Office
Protected Resources Division
55 Great Republic Drive
Gloucester, MA 01930

Re: ESA Section 7 Consultation
NYSDOT Livingston Avenue Bridge Replacement Project
Hudson River
New York

Dear Ms. Anderson:

The U.S. Department of Transportation's Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) and related federal environmental review requirements as well as the New York State Environmental Quality Review Act (SEQRA) for the Livingston Avenue Bridge Project (the Project). **Enclosure 1** presents the plans, profiles, and typical sections for the two build alternatives described herein and evaluated in the EA. FRA is the lead Federal agency under NEPA and NYSDOT is the lead state agency under SEQRA.

The existing Livingston Avenue Bridge provides a critical rail link on New York State's Empire Corridor rail route. The bridge, which CSX Transportation Inc. (CSX) owns and the National Railroad Passenger Corporation (Amtrak) maintains and operates, is nearing the end of its serviceable life. Amtrak uses the bridge for intercity passenger trains traveling on the Empire Corridor route and CSX and Canadian Pacific (CP) use the bridge for freight rail service. The bridge's existing superstructure and substructure are in fair to poor condition, and the mechanical portions of the movable swing span are significantly deteriorated. The swing span frequently malfunctions, resulting in delays to passenger trains, freight trains, and boat traffic, and the bridge does not meet current design standards or modern seismic codes. The existing bridge contributes to delays in the movement of freight and passengers throughout New York State, and its replacement is essential to implementing future rail plans and improving state-wide transport.

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended, FRA has made the determination that both build alternatives for the Project being evaluated in the EA may affect, but are not likely to adversely affect, Critical Habitat or species listed as threatened or endangered by the National Marine Fisheries Service (NMFS). More information about the Project and supporting analysis for FRA's determination are provided below.

Project Description

The Project involves the replacement of the existing Livingston Avenue Bridge. Under Build Alternative 1, a new bridge would be constructed on a skewed alignment north of the existing bridge; the alignment would be approximately 200 feet north of the existing bridge on the east side of the river and would abut the existing bridge on the west side (see **Figure 2**). Under Build Alternative 2, which is the Preferred Alternative, a new bridge would be constructed parallel to and approximately 50 feet south of the existing bridge (see **Figure 3**). In-water activities associated with bridge construction and demolition would last about 3 to 3.5 years (Build Alternative 1) or 2.75 to 3 years (Build Alternative 2), beginning in late 2022 and ending in late 2025 when the replacement bridge has been completed and the existing bridge decommissioned and demolished. NYSDOT will comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from March 15 through September 30 to protect shortnose sturgeon spawning and early life stages known to occur in the action area through June, and Atlantic sturgeon and early life stages which have the potential to occur in the action area through September. Construction activities would typically occur between 7am and 7pm on weekdays, with some time-critical activities and activities affecting active railroad tracks occurring during nights and weekends. **Table 1** presents the general sequence of in-water and land-based construction activities. The effects of the land-based activities indicated in Table 1 will not impact listed endangered species or Critical Habitat and are not considered further.

**Table 1
General Construction Sequence**

Project Component	Construction Activities/Equipment	Duration (Alternative 1 or Alternative 2)	In-Water	Land-Based
Staging areas and access roads	Land-based equipment	2 months		X
Temporary pier ⁽¹⁾	Spud barge, vibratory hammer, impact hammer	5 weeks	X	
New bridge piers ⁽²⁾	Spud barge, cofferdams, vibratory hammer, dredging, pre-drilling, impact hammer	12 months	X	
Bridge abutments	Land-based equipment	3 months		X
Bridge superstructure	Crane barge, spud piles	6 months	X	
Track alignment work	Land-based equipment	3 years ⁽³⁾		X
Existing bridge demolition	Barge-mounted excavator, spud piles	6 months ⁽⁴⁾	X	
Dolphin and fender system	Spud barge, pre-drilling, vibratory hammer	6 months	X	
Notes:				
(1) Installation of the piles and spans will be sequential to extend the temporary pier out into the river, rather than installation of all piles first and then all decking second.				
(2) Cofferdams will be dewatered prior to dredging and pile installation.				
(3) Track alignment work, which does not require in-water work, will be ongoing throughout the full construction duration.				
(4) Bridge demolition may occur concurrently with the dolphin and fender installation.				

Proposed In-Water Construction Activities

The Project’s in-water construction activities include mobilization and staging of materials and equipment, construction of a new bridge, and demolition of the existing bridge. The descriptions herein represent a conservative estimate based on NYSDOT’s current level of conceptual design for the Project.

While most aspects of new bridge construction would be the same for both Build Alternatives, there are some important differences. These differences are discussed below and summarized in **Table 2**.

Table 2
Comparison of Build Alternatives, Based on Conceptual Design

Category	Build Alternative 1	Build Alternative 2 (Preferred)
Alignment	Skewed alignment north of existing bridge	Parallel alignment south of existing bridge
Construction Duration	Approximately 3 to 3.5 years	Approximately 2.75 to 3 years
Temporary Pier: Location	North of existing bridge	South of existing bridge
Temporary Pier: Dimensions	Approximately 20’ wide by 150’ long; up to 35 piles	Approximately 20’ wide by 100’ long; up to 25 piles
Temporary Pier: Overwater Coverage	Approximately 3,000 sq ft	Approximately 2,000 sq ft
Temporary Pier: Area of Piles	Up to approximately 37.5 sq ft	Up to approximately 27 sq ft
Bridge Piers: Benthic Footprint	Approximately 0.74 acres; 0.32 acres net (including removal of existing bridge piers)	Approximately 0.5 acres; 0.08 acres net (including removal of existing bridge piers)
Bridge Piers: Volume of Dredged Material	Approximately 19,500 cubic yards	Approximately 14,500 cubic yards

Mobilization and Staging

Prior to the start of work on the eastern approach piers for the new bridge, construction of a temporary pier (also known as falsework) located on the eastern shoreline, north of the existing bridge for Build Alternative 1 or south of the existing bridge for Build Alternative 2, would be required to accommodate Project construction activities and equipment where the water is too shallow for barges to reach the shoreline. The temporary pier would measure up to approximately 150 feet long (Build Alternative 1) or up to approximately 100 feet long (Build Alternative 2); the temporary pier would be 20 feet wide and would consist of a platform supported by 14-inch diameter steel piles (up to 35 piles for Build Alternative 1; up to 25 piles for Build Alternative 2). The piles would be installed by pre-drilling followed by vibratory hammering to the greatest extent practicable. If necessary, the piles would be driven the last few feet to their final depth using an impact hammer in conjunction with a soft start and cushion block. Overall, pile installation for the temporary pier would occur over a duration of about five weeks. Water depths in the area of the river where these piles would be driven are approximately 25 to 30 feet at mean lower low water (MLLW) (NOAA Nautical Chart 12348). In total, the temporary pier would result in approximately 3,000 square feet of overwater coverage (Build Alternative 1) or approximately 2,000 square feet of overwater coverage (Build Alternative 2), but would allow some light to penetrate to the shallow water aquatic habitat over the course of a day. The pier would remain in

place for the full duration of construction and would be removed when the construction of the replacement bridge is completed. A turbidity curtain would be installed around the work area during pile installation and pile removal for the temporary pier.

Construction staging areas would likely be established on land on both sides of the river to provide access for material and equipment deliveries via barge.

Construction of New Railroad Bridge

Construction of the replacement bridge would include construction of the new bridge piers, abutments, superstructure, and the dolphin and fender system. The bridge piers would be supported by steel H-piles within a concrete tremie sealed cell encompassing a total of approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) in benthic footprint. To create the cell, steel sheet piles would be installed via vibratory hammer, followed by installation of the tremie seal and dewatering, and then installation of the steel H-piles within the dewatered cell. The area within the cell will be checked for sturgeon once installed, and if any individuals are present, work will cease and NMFS will be contacted to facilitate proper removal of the sturgeon. The sheet pile cell for each bridge pier would require removal of sediments within the cell, for a total of approximately 19,500 cubic yards of dredged materials (Build Alternative 1) or 14,500 cubic yards of dredged material (Build Alternative 2) for the full span. Dredged material would be excavated using a mechanical bucket and placed in a scow, dewatered, and transported offsite for disposal at a licensed facility in compliance with applicable regulations. No dredged material would be stored in or adjacent to the waterway. Approximately 20-25 disposal trips would be expected over the course of construction. Installation of the bridge piers, including the dredging efforts, would take approximately 12 months.

The bridge abutments would also be supported by steel H-piles on land, which would be installed using land-based equipment. Once the bridge piers are in place, the superstructure truss spans would be constructed on barges and floated into place. The shorter girder spans would be placed using barge- or track-mounted cranes to lift the individual spans into place. Up to two barges would be used, each supported by four 14-inch square spud piles (total benthic footprint of 10.9 square feet). Using the self-weight of the piles, they would be pushed 5 to 10 feet into the bottom. Additional means to drive the spud piles to the desired depth would only be used as necessary and would likely comprise use of equipment available on the barge to push it hydraulically to the desired depth. The barges would move throughout the site for the duration of construction. Upon the completion of the replacement bridge construction, the temporary pier would be removed, including full removal of the piles. All temporary piles would be removed within a turbidity curtain using a vibratory hammer.

The dolphin and fender system would be installed within a turbidity curtain using barge-mounted equipment following demolition of the existing bridge. The fender piles would comprise about 60 14-inch diameter piles made of either timber or fiberglass composite, and would be installed using pre-drilling followed by vibratory hammer. Dolphins would consist of sheet pile cells, which would be installed using a vibratory hammer. Installation of the dolphin and fender system would take approximately 6 months and would be completed near the end of the overall construction period.

Demolition of Existing Bridge

Demolition of the existing bridge would occur once the new bridge is fully operational, including both water- and land-based components. The bridge superstructure could be removed span-by-span using a barge and a multi-wheeled crawler or crane, and then transported to and disassembled in a staging yard. During deconstruction of the superstructure, nets, tarps, and/or pans would be used to catch any falling debris, and any debris that falls into the water would be removed. The existing stacked stone piers would likely be pulled apart with an excavator situated on a barge, without the use of cofferdams. The excavator would then remove the pier footings, and the timber piles would be cut below the mudline. The demolition of each bridge pier would take place within a turbidity curtain. In total, removal of the existing bridge would restore approximately 0.42 acres of benthic habitat.

Vessels

In-water construction activities would be supported by approximately six self-powered vessels, including one crew boat, one safety boat, up to two staging spud barges, and two tug boats. Vessel drafts would likely range from five to 10 feet. Most of these boats would operate between the construction zone and a suitable landing site for construction activity, such as the Port of Coeymans, an industrial marine terminal on the Hudson River approximately 12 miles south of the Livingston Avenue Bridge. The homeport of the construction vessels is currently unknown. Vessel speeds would likely be less than five knots for push boats and tugs and less than 10 knots for crew boats working within the immediate vicinity of the bridge. As the Project is intended to improve rail transportation over the river, it would not result in an increase in vessel traffic on the river itself once the replacement bridge is constructed.

Land-Based Activities

Following construction of the new bridge and prior to demolition of the existing bridge, landside railroad tracks would be constructed to connect the new bridge to the existing rail tracks. Retaining walls and embankments would be constructed, as necessary, to support the new connecting tracks as they gradually slope down from the bridge. Implementation of erosion and sediment control measures identified in the Stormwater Pollution Prevention Plan (SWPPP) prepared in accordance with New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) would minimize discharge of sediment to the Hudson River during construction. No impacts to aquatic resources from the land-based construction activities are anticipated.

Best Management Practices and Minimization Measures

The Project will incorporate Best Management Practices (BMPs) to avoid and minimize to the greatest extent possible any potential direct and indirect to federally listed species and Critical Habitat. BMPs would be required as a condition of any permits authorizing the project, and the BMPs described below have been incorporated into the evaluations below under “Effects Evaluation” for shortnose sturgeon, Atlantic sturgeon, and Critical Habitat for Atlantic sturgeon. All in-water work would adhere to time-of-year restrictions for the protection of shortnose and Atlantic sturgeon spawning and early life stages. FRA has committed to avoiding pile driving and

sediment disturbing activities from March 15 through September 30 during bridge construction and demolition.

Consistent with NMFS and FHWA guidance¹ and in addition to the time-of-year restrictions, FRA is proposing the following measures to avoid and minimize potential direct and indirect effects to sturgeon and Critical Habitat resulting from: underwater noise during pile installation, turbidity and sedimentation, reduced water quality, vessel interaction, and habitat alteration.

Pile Installation

Components of the Project that would result in increased underwater noise include: vibratory and impact pile driving during construction of the temporary pier, bridge piers, and dolphin and fender system, and pre-drilling for the dolphin and fender system. Pile installation would be subject to the following avoidance and minimization measures:

- Use of pre-drilling prior to vibratory hammering for the dolphin and fender system;
- Use of a vibratory hammer to the extent possible;
- Use of a soft start (i.e., pile tapping) prior to full energy impact hammering;
- Use of a cushion block when impact hammering; and
- Installation of the bridge piers, including dredging and H-pile installation, would be completed within a dewatered sheet pile cell.

Turbidity and Sediment Resuspension

Sediment disturbing activities associated with the Project, including pile installation, dredging and sediment removal, bridge demolition, and removal of temporary piles, would be subject to the following avoidance and minimization measures:

- Use of a turbidity curtain during installation of temporary pier piles, fender and dolphin system, and during removal of temporary pier piles and existing bridge piers;
- Dredging and sediment removal for the new bridge piers would take place entirely within the dewatered sheet pile cells;
- Dredged sediments would be placed in a scow, dewatered, and transported offsite for disposal, and water would be treated prior to being discharged back to the river;
- Use of nets, tarps, and pans during demolition of the bridge superstructure, and removal of any debris that falls into the water;
- Removal of temporary piles using a vibratory hammer, and slowly to reduce sediment sloughing off in the water column;
- Striking or vibrating the pile to break the bond between the sediment and pile;
- Placement of removed piles on a barge equipped with a basin to contain attached sediment and runoff water; and
- Following construction, the new bridge piers would not alter the natural sediment accretion rates or patterns within the Hudson River when compared to the existing bridge.

¹ National Marine Fisheries Service (NMFS) and Federal Highway Administration (FHWA). *NMFS/FHWA Best Management Practices (BMPs) Manual for Transportation Actions in the Greater Atlantic Region*. April 2018.

Vessel Movement

During all construction and demolition activities for the Project, the use of construction vessels, including barges, tugs, and crew vessels, would be subject to the following avoidance and minimization measures:

- Number of vessels would be limited to approximately 6 self-powered vessels at any given time during construction (one crew boat, one safety boat, two tugs, and up to two spud barges);
- All vessels would be shallow draft (5 to 10 feet) and would maintain low speeds (less than 5 knots for push boats and tugs, and less than 10 knots for crew boats);
- Use of posted lookouts and measures to slow down and avoid any observed sturgeon when operating project vessels in areas where they may be present; and
- Following a submerged aquatic vegetation (SAV) survey conducted prior to construction activities, no wake zones would be established as necessary, and spud barges would not be positioned in a way that could shade SAV.

Habitat Alteration

Installation of temporary and permanent structures, use of spud barges, and shading from overwater structures for the Project could result in temporary and permanent habitat alteration. These activities would be subject to the following avoidance and minimization measures:

- Temporary pier and replacement bridge piers would be installed to avoid any indirect effects on SAV identified in the pre-construction survey to the greatest extent possible, and in a manner that minimizes bottom disturbance;
- If the construction survey identifies SAV in the footprint of the temporary pier or replacement bridge piers, the Project will coordinate with NYSDEC on relocation or restoration of SAV;
- Sturgeon would be prevented from entering areas within the turbidity curtains temporarily deployed around pile or bridge pier locations, but the turbidity curtains would be installed only around the immediate area undergoing sediment disturbance to minimize this area;
- Narrow width of the temporary pier (20 feet) and elevation above the surface of the water (25 feet) would allow light to reach the water beneath the pier over the course of a day;
- New bridge would have fewer footings compared to the existing bridge, thereby creating a larger zone of passage for migration;
- Existing bridge footings would be removed and their footprints would be filled with clean substrate similar to the surrounding habitat, rather than leaving these areas to undergo sediment deposition over time; and
- Artificial lighting on the bridge would be oriented to avoid illumination of the surrounding waters at night, with the exception of navigational lighting required by the U.S. Coast Guard to illuminate the navigation channel.

Description of the Action Area

The action area for purposes of ESA Section 7 review and consultation is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50CFR§402.02). The action area within the Hudson River is the full width of the river between Albany and Rensselaer at Livingston Avenue; the center of the existing bridge is located at river mile 145, approximately at 42.654210 N, -73.741547 W. For this Project, the action area includes the Hudson River within the approximately 3,000 square feet (Build Alternative 1) or 2,000 square feet (Build Alternative 2) of overwater coverage created by the temporary pier to be used during construction, the approximately 0.74-acre (Build Alternative 1) or 0.5-acre (Build Alternative 2) footprint of the replacement bridge piers within their sheet pile cells, the area surrounded by a turbidity curtain during each sediment disturbing activity (i.e., temporary pile installation and removal, and removal of the existing bridge piers), the extent of the sediment plume during the installation of sheet pile cells (approximately 300 feet, based on NMFS resources), and the 394-foot (120-meter) radius to account for the maximum distance of behavioral impacts on protected species due to sound from the pile driving activities. Within the overwater coverage of the temporary pier, up to approximately 37.5 square feet (Build Alternative 1) or 27 square feet (Build Alternative 2) would be occupied by the supporting piles. The piles supporting the temporary pier would be completely removed following completion of construction activities. Spud piles supporting the construction barges would temporarily occupy up to 10.9 square feet of river bottom when the barges are moored. The area affected by the spud piles would change as the barges are moved throughout the construction site. The action area also includes all routes that would be traversed by vessels necessary to construct the Project, which would typically be about 200 feet upstream and approximately 12 miles downstream of the Project site, as described above. For the most part, vessels would remain in the immediate Project area during construction and would only move downstream to dispose of dredge spoils and demolished bridge material. The area that would be permanently affected by the Project includes the approximately 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) within the footprint of the new bridge piers and dolphin and fender system, and the restoration of 0.42 acres of bottom habitat made available through the removal of the existing bridge. With the removal of the existing bridge, the Project would result in a net benthic footprint of approximately 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2). This area is expected to encompass all of the effects of the Project.

Habitat Characteristics in the Action Area

The Project site is located in the upper reach of the tidal Hudson River at Albany, New York, almost 8 miles downstream of the Federal Dam at Troy. Within this area, the Hudson River has a tidal range of about 5-7 feet, as measured at the Hudson River Environmental Conditions Observing System (HRECOS) Albany Hydrological Station. Tidal currents at the surface range from about 1 to 2 knots at the Project site during ebb and flood tides. The upper Hudson River is freshwater and salinity is typically below 0.5 ppt. An approximately 600-foot wide federal Navigation Channel runs down the center of the river within the study area. Water depths at the Project site range from about 20 feet to 36 feet, including areas in the channel and closer to shore. As illustrated in Enclosure 2, the substrate of the Hudson River in this area is characterized by gravelly sand² occupying the majority of the deeper channel waters, and sand³ occupying most of

² Sand with greater than 10 percent gravel.

³ Sand with less than 10 percent mud and less than 10 percent gravel.

the remaining area outside the channel with the exception of areas of muddy sand⁴ closer to shore. Outside the Project site, areas of sandy gravel⁵ occur upstream and downstream of the existing bridge, close to the center of the channel. Enclosure 3 illustrates locations of SAV within the vicinity of the Project site. The most recent survey from 2018 indicates the presence of SAV within the Project site. Benthic macroinvertebrates that can occur in the study area and may serve as prey for sturgeon are those typically found in sandy substrates. These species likely include oligochaetes and crustaceans, as well as the non-native invasive zebra mussel (*Dreissena polymorpha*).

NMFS Listed Species and Critical Habitat in the Action Area

According to correspondence with the NMFS Protected Resources Division, there are two species of fish listed under the ESA that occur or have the potential to occur in the action area and may be affected by the Project (NMFS 2020). ESA species include:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Endangered except for Gulf of Maine Distinct Population Segment (DPS), which is Threatened (77 FR 5880 and 77 FR 5914)
- Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered (32 FR 4001, Recovery Plan: NMFS & USFWS 1998)

Shortnose Sturgeon

Shortnose sturgeon are anadromous bottom-feeding fish that can be found throughout the Hudson River from the Battery at the mouth of the river to the Federal Dam at Troy. Peterson and Bain (2002) estimated that the Hudson River shortnose sturgeon population contained about 61,000 fish. Shortnose sturgeon of all life stages have the potential to be present in the vicinity of the Project site for at least some of the year. Spawning occurs from late March to mid-May in the region from the Federal Dam downstream to Coxsackie, NY (between river miles 152 and 118) (Dovel et al. 1992, Bain 1997), which includes the Project area. Early life stages from eggs to post yolk-sac larvae remain near the spawning grounds for approximately eight weeks post-spawn (Buckley and Kynard 1981) and larvae are most commonly concentrated in deeper channel waters where the current is stronger (Hoff et al. 1988, Dovel et al. 1992). Juveniles are distributed throughout the mid-river region during summer and are found in the Kingston and Haverstraw Bay regions, well downriver of the Project area, by late fall and early winter (Dovel et al. 1992, Bain et al. 1998, Geoghegan et al. 1992). Adult shortnose sturgeon range between river miles 23 and 110 during the summer months, at least 33 miles south of the Project site, and then congregate in overwintering areas at specific locations within that range (NMFS 2013). Based on the spatial distributions and seasonal movement patterns within the Hudson River, non-spawning adults are not likely to occur in the Project site, while spawning adults and early life stages occur during a short period of time in the spring and early summer, generally between March and mid-July. Juveniles could also be present in the spring, although they are more likely to occur downriver of the action area. Young-of-year could be present in the Project site year-round. No critical habitat has been designated for shortnose sturgeon. Based on the time of year the Project will be constructed, adults, juveniles, and young-of-year are expected to be present in the Action Area.

⁴ Sand with greater than 10 percent mud.

⁵ Gravel with less than 10 percent sand and less than 10 percent mud.

Atlantic Sturgeon

There are five Distinct Population Segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered; the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida. Therefore, Atlantic sturgeon from any DPS could be present in the action area.

Atlantic sturgeon are anadromous bottom-feeding fish that spawn in freshwater sections of the Hudson River and overwinter throughout the New York Bight, off the south shore of Long Island, and throughout Long Island Sound (Waldman et al. 1996, Bain 1997, Savoy and Pacileo 2003). Adults migrate from the ocean upriver to spawn in fresh water above the salt front from late April to July (Breece et al. 2021). The primary spawning area for Atlantic sturgeon is near Hyde Park, New York (river mile 83) (NMFS 2013), well downriver from the Project site. Additional data collected in 2014 confirmed the presence a few spawning individuals upstream of river mile 120 from late April through late July (Fox and Hattala 2014). Given the time of year, the reproductive conditions of these fish, and the known presence of suitable spawning substrate upstream of river mile 120, the presence of these individuals suggests that Atlantic sturgeon spawn further upstream in the Hudson River than previously suspected, including within the action area. Females migrate from the river back to marine waters following spawning, but males may remain in the river until October or November. Early life stages (i.e., eggs, larvae, and young-of-year) are intolerant of salinity and occur primarily in freshwater habitats; young-of-year Atlantic sturgeon exhibit poor survival at salinities ranging from 5 to 10 ppt, and older juveniles may tolerate salinities up to 12 ppt (Kynard and Horgan 2002, ASMFC 2012). Juveniles may forage throughout the river during most of the year and may be found as far upriver as the Troy Dam, with the exception of the winter months when they migrate to marine overwintering areas (Dovel and Berggren 1983). According to surveys conducted by NMFS and multiple state agencies in the region, the majority of Atlantic sturgeon occurred in waters between 10 and 15 meters (32 and 49 feet) in depth (Dunton et al. 2010). Based on the spatial distributions and seasonal movement patterns within the Hudson River, all life stages of Atlantic sturgeon could be present in the action area. Spawning adults and early life stages could be present from approximately March through September, and non-spawning adults could occur year-round. Juveniles could also be found in the action area year-round, although they are more likely to migrate downriver or to marine habitats in the winter months. Based on the time of year the Project will be constructed, adults, subadults, juveniles, and young-of-year Atlantic sturgeon are expected to be present in the Action Area.

Designated Critical Habitat for Atlantic Sturgeon

The proposed project and its associated action area is located within designated Atlantic sturgeon critical habitat (New York Bight DPS, Hudson River Unit). Critical habitat is defined by section 3 of the ESA as "(1) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species (NOAA 2016)."

River features crucial to the reproduction and recruitment in Atlantic sturgeon were considered when determining critical habitat NMFS identified the following physical and biological features (PBFs) as essential to the conservation of Atlantic sturgeon (NMFS 2017):

- PBF #1—Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0 to 0.5 parts per thousand (ppt) range) for settlement of fertilized eggs, refuge, growth, and development of early life stages.
- PBF #2—Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 ppt and soft substrate downstream (e.g., sand, mud) between the river mouth and spawning sites for juvenile foraging and physiological development.
- PBF #3—Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: unimpeded movement of adults to and from spawning sites; seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g., at least 1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.
- PBF #4—Water between the river mouth and spawning sites, especially in the bottom meter of the water column, with temperature, salinity, and oxygen values that, combined, support: spawning; annual and interannual adult, subadult, larval, and juvenile survival; and larval, juvenile, and subadult growth, development, and recruitment (e.g., 13°C to 26°C for spawning habitat and no more than 30°C for juvenile rearing habitat, and 6 mg/L dissolved oxygen or greater for juvenile rearing habitat).

The Project's action area contains physical and biological features identified under PBFs 1, 3, and 4. Optimal habitat for juvenile foraging and physiological development (PBF 2) does not occur in the action area, which is in lower salinity waters typically less than 0.5 ppt. While salinity is lower than preferred for extended occupancy by juveniles, Atlantic sturgeon adult, subadult, juvenile, and young-of-year life stages have the potential to occur in the action area during the time of year the Project is conducted (October through November). Shortnose sturgeon adult, juvenile, and young-of-year could occur in the action area during this time of year.

Effects Determination

The effects or stressors of the Project that could potentially have an effect on threatened or endangered species and Critical Habitat include vessel traffic, sediment resuspension, underwater noise during pile driving, temporary loss of foraging habitat, and permanent loss of habitat in the footprint of the replacement bridge piers. The steel sheet pile installed around the bridge piers prior to dredging will prevent sturgeon from entering the area and being exposed to the dredging equipment, and therefore, effects of dredging will not be considered further. The potential effects of vessel traffic, sediment resuspension, underwater noise, and habitat loss are discussed below.

Vessel Traffic

The analysis considered three elements: 1) the existing baseline conditions, 2) the action and what it adds to existing baseline conditions, and 3) new baseline conditions (the existing baseline conditions and the action together). FRA has determined that vessel traffic added to baseline

conditions as a result of the Project would be unlikely to adversely affect ESA-listed species for the following reasons.

Adding vessels necessary to construct the Project to the existing baseline would not increase the risk that any vessel in the area will strike an individual or would increase it to such a small extent that the effect of the action (i.e., any increase in risk of a strike caused by the Project) cannot be meaningfully measured or detected. The baseline risk of a vessel strike within the upper Hudson River is unknown. Existing maritime traffic on the river in the Project area includes freight and barge traffic, and other commercial and recreational boats. A navigation study conducted for the Livingston Avenue Bridge Project in 2018 showed an average of approximately 300 bridge openings per year for large vessels, plus daily passage by barges that do not require opening the bridge, amounting to an average of approximately 600-700 large vessels traversing the Project area each year. This average does not include the numerous recreational vessels that also operate within this area.

As discussed above under the description of the Project, during the Project activities, a minimal number of vessels would be added to the baseline (2 boats for crew and material delivery each day, up to 2 spud barges moored-in-place during construction, and 2 tugs to maneuver the barges). This represents a small increase in vessel activity in addition to the baseline. Movement of vessels necessary to construct the Project would largely be limited to areas of the river just upstream and downstream of the Project site, and vessel speeds would be relatively slow (i.e., less than 5 knots for larger vessels and less than 10 knots for smaller crew boats). During dredging, which would be contained within the sheet pile being installed for the bridge piers, and demolition of the existing bridge, barges would make periodic trips to a suitable landing site for construction activity, such as the Port of Coeymans, an industrial marine terminal on the Hudson River approximately 12 miles south of the Livingston Avenue Bridge. Drafts would likely range from 5 to 10 feet across vessel types, which would provide at least 15 to 25 feet of clearance from the river bottom at MLLW across the majority of the navigation channel where sturgeon are most likely to occur, should they be present in the Project area. The addition of vessels would also be intermittent, temporary, and restricted to a small portion of the overall action area on any given day. As such, any increased risk of a vessel strike caused by the Project would be too small to be meaningfully measured or detected. As a result, the effect of the action on the risk of a vessel strike in the action area would be too small to be meaningfully measured or detected and would be insignificant.

The bridge replacement itself would enable vessels to travel safely in the area. Allowing safe passage in the navigation channel would not change the number of vessels that use the action area. Preserving the status quo with regard to vessel routes and numbers would not change the risk of a vessel strike during operation of the replacement bridge. Any slight increase in risk from altered patterns of use would be too small to be detected or measured. As a result, the effect of the action on the risk of a vessel strike in the action area would be too small to be meaningfully measured or detected and would be insignificant.

Sediment Resuspension

Because it would be contained within the sealed cell, dredging would not have the potential to result in increased turbidity in the waterway. The cell would also prevent sturgeon from entering the dredged area and thus would prevent them from being exposed to turbidity from the dewatering and dredging process. Therefore, because the dredging would be conducted within a dewatered

cell and there is no potential for sturgeon to be exposed to the dredging equipment or turbidity associated with sediment removal, dredging will not result in impacts to sturgeon and is not considered further.

Sediment disturbance associated with installation and removal of the temporary pier piles and installation of the bridge piers would result in minor, short-term increases in total suspended sediment (TSS) of between 5 to 10 mg/L within approximately 300 feet of the pile being driven (FHWA 2012), and re-deposition of sediments. The greatest potential for increased turbidity would occur when the temporary pier piles are removed (MPCA 2017). NMFS Sediment types within the study area are primarily sand and gravelly sand, which are not easily resuspended and would settle quickly. The use of a turbidity curtain during pile installation and removal would further minimize the potential for adverse effects from sediment resuspension from the temporary pier. The turbidity curtain would also prevent sturgeon from entering the area, further minimizing the potential exposure of sturgeon to the sediment plumes. The new bridge piers would be constructed within the dredged sheet pile cell and would not result in sediment disturbance. Resuspended sediments from sheet pile installation and other activities would not result in long-term effects to either species. The TSS concentrations expected for pile driving or removal in the Hudson River (5 to 10 mg/L) are below levels shown to have adverse effects on fish (typically up to 1,000 mg/L), and the small resulting sediment plume is expected to settle out of the water column within a few hours. Sediment resuspension resulting from pile installation would have insignificant effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability for Atlantic sturgeon to migrate in the action area. Post yolk-sac larvae that could be present in the action area up to 8 weeks post-spawn would be able to swim away from areas temporarily affected by sediment resuspension. Given that increases in suspended sediment would be temporary, minimal, and localized to the vicinity of construction activities, any effects would be too small to be meaningfully measured or detected. As a result, the effect of sediment resuspension on ESA species would be insignificant.

Underwater Noise

The greatest potential for underwater noise impacts to shortnose or Atlantic sturgeon from the Project would be associated with vibratory and impact pile driving during construction of the temporary pier, the bridge piers, and the dolphin and fender system. The temporary pier piles would be driven using a vibratory hammer to the extent possible and using a soft start and cushion block when impact hammering is required. The bridge piers would be constructed within a steel sheet pile cell that would be installed using pre-drilling followed by a vibratory hammer. The dolphin and fender system would also be installed using a vibratory hammer after pre-drilling. Pre-drilling for the sheet pile could result in elevated noise levels, but not at a level that could impact sturgeon behavior. Drills generate noise and vibration when in operation as a result of friction between the drill bit face and the material it is boring through (Transit Link Consultants 2008), which in turn produces sound waves that travel through the substrate. Unmitigated sound levels from underwater geotechnical drills, for example, have been estimated at 118 to 145 dB re 1 μ Pa at 1 meter, with noise decreasing to 101.5 dB at 150 meters, 97 dB at 250 meters, and 94.1 dB at 350 meters. Analysis by NOAA in Washington State concluded that rotating steel casements for drilled shafts are not prone to elevate underwater sound to a level that is likely to cause injury or noise that would induce adverse changes to fish behavior. Based on this analysis, we expect there would be no behavioral or physical effects from pre-drilling for the Project on Atlantic or shortnose

sturgeon in the action area when added to the baseline conditions, and effects of underwater noise from pre-drilling are not assessed further.

As recommended by NMFS, a vibratory hammer would be used to the extent feasible, and the minimal impact hammering that could be required for the temporary pier piles would be conducted using a cushion block to minimize underwater noise impacts. Pile tapping just prior to cushioned impact hammering would deter fish from the immediate vicinity of pile driving. The projected noise at the source and distance to relevant thresholds for species in the action area was determined based on the NMFS Greater Atlantic Regional Fisheries Office (GARFO) Acoustic Tool spreadsheet (version updated 9/23/2019). The estimated sound levels and distances to species injury and behavioral thresholds associated with the Project are presented in **Tables 3 through 5**. Plastic piles were used to estimate the potential underwater noise increases associated with the fender piles, should fiberglass composite be used instead of timber. Pile installation would be limited to periods outside of the spawning season for shortnose and Atlantic sturgeon and outside periods when early life stages of both species could be present (March 15 through September 30) in order to avoid impacts to this species from underwater noise, and thus would only have the potential to affect foraging, resting, or migratory behaviors.

Table 3
Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Not available	15	24	AZ Steel Sheet	Vibratory	5
Not available	15	14	Steel Pipe	Cushioned Impact	5
San Rafael, CA – San Francisco	>15	14	Steel Pipe	Vibratory	2
Norfolk, VA	12.2	12-16	Timber	Vibratory	5
Not available	10	13	Plastic	Impact	5

Table 4
Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB _{Peak})	Estimated Pressure Level (dB _{RMS})	Estimated Single Strike Sound Exposure Level (dB _{sSEL})
24" AZ Steel Sheet	Vibratory	175	60	160
14" Steel Pipe	Cushioned Impact	189	173	163
14" Steel Pipe	Vibratory	186	170	160
12-16" Timber	Vibratory	176	165	165
13" Plastic	Impact	177	153	152

Table 5
Estimated Distances to Sturgeon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to 206dB _{Peak} (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB _{RMS})
24" AZ Steel Sheet	Vibratory	NA	30	30
14" Steel Pipe	Cushioned Impact	NA	36	56
14" Steel Pipe	Vibratory	NA	70	120
12-16" Timber	Vibratory	NA	39	39
13" Plastic	Impact	NA	14	16

Exposure to underwater noise levels of 206 dB Peak and 187 dB cSEL can result in injury to sturgeon. In addition to the “peak” exposure criteria which relates to the energy received from a single pile strike, the potential for injury exists for multiple exposures to noise over a period of time; this is accounted for by the cSEL threshold. The cSEL is not an instantaneous maximum noise level but is a measure of the accumulated energy over a specific period of time (e.g., the period of time it takes to install a pile). While it is not possible to accurately calculate the distance to the 187 dB cSEL isopleth, we calculate the distance to the 150 dB sSEL isopleth. The further a fish is away from the pile being driven, the more strikes it must be exposed to in order to accumulate enough energy to result in injury. At some distance from the pile, a fish is far enough away that, regardless of the number of strikes it is exposed to, the energy accumulated is low enough that there is no potential for injury.

As described in detail above, for this Project, the distance to the 187 dB cSEL (or 150 dB sSEL) isopleth associated with vibratory or cushioned impact hammering is no greater than 70 meters (230 feet) for sturgeon. In order to be exposed to potentially injurious levels of noise during installation of the piles, a sturgeon would need to be within 70 meters of the pile being driven to be exposed to this noise for any prolonged time period. This would be extremely unlikely to occur as it is expected that sturgeon would modify their behavior at 120 meters from the installed piles and quickly move away from the area before cumulative injury levels are reached, as described above. Given the small distance a sturgeon would need to move to avoid the disturbance levels of noise, any effects will not be able to be meaningfully measured or detected. Therefore, the effects of noise on sturgeon would be insignificant.

Behavioral effects, such as avoidance or disruption of foraging activities, may occur in sturgeon exposed to noise above 150 dB RMS. Considering all of the pile-driving activities, it is expected that underwater noise levels would be below 150 dB RMS at distances beyond a maximum of approximately 120 meters (394 feet) from the pile being installed for sturgeon. It is reasonable to assume that a sturgeon, upon detecting underwater noise levels at or above the 150 dB RMS isopleth, would modify its behavior such that it redirects its course of movement away from the ensonified area surrounding the Project site. If any movements away from the ensonified area do occur, it is extremely unlikely that these movements would affect essential sturgeon behaviors, as the Hudson River is sufficiently large enough (about 950 feet wide) to allow sturgeon to avoid the ensonified area while continuing to forage and migrate. At its maximum, the width of the

enssonified area would extend 41 percent of the width of the Hudson River in the action area. Therefore, the effect of underwater noise on ESA species would be too small to be meaningfully measured or detected and would be insignificant.

Habitat Modification

Shading by the vessels and temporary pier necessary to construct the Project would not significantly affect benthic habitat, as light would still penetrate the water over the course of the day and similar habitat would continue to be available in the vicinity. The temporary pier would occupy up to approximately 38 square feet (Build Alternative 1) or 28 square feet (Build Alternative 2) of benthic habitat within the footprint of the piles while in use, and the spud piles for the two construction barges would occupy up to 10.9 square feet when the barges are moored. The spud barges would be moved periodically during construction, so the area occupied by the spud piles would change frequently and habitat would only be unavailable for short durations. These areas would be temporarily unavailable for foraging in the substrate. During construction of the new bridge and prior to removal of the existing bridge, the loss of benthic habitat in the footprint of the new foundations, and temporary loss within the footprint of the piles supporting the temporary pier, and spud piles would not be expected to result in a substantial reduction in foraging opportunities for sturgeon, which feed on benthic macroinvertebrates. Foraging habitat would continue to be available within the action area, and additional foraging habitat would be restored when the temporary pier is removed and the existing bridge demolished upon completion of the replacement bridge. Benthic organisms are expected to quickly recolonize the areas previously occupied by the temporary pier piles, as similar habitat is present in the surrounding area that would be unaffected or minimally affected by the project activities and would serve as the source of colonizing invertebrates.

There would be a permanent loss of 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2) of benthic habitat in the footprint of the new bridge, due to the bridge piers and the dolphin and fender system. However, upon removal of the existing bridge piers, which have a benthic footprint of 0.42 acres, the Project would result in a net loss of 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2) of benthic habitat in the action area. The majority of this loss would occur over gravelly sand substrate documented in the navigation channel, which provides potential habitat for spawning and early life stages of both sturgeon species. The area affected by the replacement bridge piers is small in comparison to the surrounding habitat that would continue to be available to sturgeon, including spawning shortnose sturgeon and Atlantic sturgeon within the action area. Additionally, similar areas of sandy gravel are present upstream and downstream of the action area, bordered by sand and gravelly sand, and since it has a greater proportion of gravel compared to sand, would provide more favorable habitat for shortnose and Atlantic sturgeon. Habitat would be restored through the removal of the existing bridge piers and allowing natural redistribution of river bottom material into the former pier footprint. The replacement bridge would not create a physical barrier to passage between the river mouth and spawning sites necessary to support unimpeded movement of Atlantic sturgeon and shortnose sturgeon adults to and from spawning sites (which occur downstream of the action area), seasonal movement of juveniles, and staging, resting, or holding of subadults or spawning condition adults. The conversion of a small amount of soft bottom habitat would not have significant effects on water flow, dissolved oxygen levels, salinity, or water temperature. Therefore, the effect of habitat modification on sturgeon would be too small to be meaningfully measured or detected and would be insignificant.

Effects on Critical Habitat

As proposed, the project has the potential to have both temporary and long-term direct and indirect observed effects to PBFs 1, 3, and 4. Temporary effects from the proposed activities may result in an increase in suspended sediments during pile installation and removal and demolition of the existing bridge piers, and underwater noise produced during pile installation. As constructed, the project will result in the permanent conversion of waters resulting in the loss of benthic habitat. The sections below provide evaluations of potential impacts of the proposed action on each PBF present in the action area.

PBF 1

The Hudson River in the vicinity of the action area is characterized by sand and gravelly sand substrates in its deeper waters and salinity levels less than 0.5 ppt; therefore the project area contains physical and biological features identified under PBF 1. The Project would not result in changes to salinity but would result in modification of the river bottom. The available substrate information is based on a bathymetric survey performed throughout the Hudson River Estuary in 2013. While the substrate assumptions for this evaluation are currently based on the 2013 survey, a geotechnical investigation planned to be conducted for the Project in the summer of 2021 will provide updated substrate information for the proposed location of each replacement bridge pier. This data will be provided to NMFS as it becomes available. Based on the available data, the Project would have temporary and permanent impacts on spawning habitat for Atlantic sturgeon associated with modification of the river bottom. FRA has completed consultation with NMFS for the geotechnical survey, and NMFS issued a letter of concurrence on August 9, 2021 stating that the geotechnical survey activities are not likely to adversely affect any NMFS ESA-listed species or designated critical habitat.

Installation of the temporary pier would result in modification of the river bottom in up to about 39 square feet in the footprint of the piles, in substrate comprising sand, on the western shore of the river outside the navigation channel. The temporary pier would be in place for approximately 2.5 to 3 years and would be removed when the replacement bridge is fully constructed. While this bottom habitat would be unavailable for spawning during the construction period, it would be restored following removal of the temporary pier and piles. The area occupied by the temporary pier would be small in comparison to the similar habitat that would continue to be available within the action area. Both installation and removal of the temporary pier would avoid the spawning period and times when early life stages of Atlantic sturgeon are present (March 15 through September 30) and would be conducted within a turbidity curtain to minimize the impacts of resuspended sediment on surrounding habitat, which comprises similar substrate. Given that there would only be temporary alteration of the bottom habitat with the temporary pier, the effects of this activity on the value of PBF 1 for conservation are too small to be meaningfully measured or detected and would be insignificant.

Construction of the replacement bridge and demolition of the existing bridge would both result in the modification of bottom habitat, including gravelly sand substrate identified in the navigation channel. The replacement bridge, including the dolphin and fender system, would install 9 new bridge piers occupying 0.74 acres (Build Alternative 1) or 8 new bridge piers occupying 0.5 acres (Build Alternative 2) of the river bottom comprising sand, gravelly sand, or muddy sand. However, the demolition of the existing bridge would include removal of the 9 existing bridge piers, which

occupy 0.42 acres of river bottom comprising sand, gravelly sand, or muddy sand. Where bridge piers are removed, the bottom habitat would be restored through natural redistribution of river bottom material into the former pier footprint, making it available for spawning. With the replacement bridge and the restoration of habitat in the footprint of the existing bridge, the Project would result in a net loss of either 0.32 acres (Build Alternative 1) or 0.08 acres (Build Alternative 2) of bottom habitat within an area containing sand and gravelly sand. While the Project would result in an overall loss of potential spawning habitat, this area is small in comparison to similar bottom habitat that would remain available in the action area and within the upper Hudson River. The net footprint of the Project would also comprise several smaller footprints (i.e., bridge piers, dolphin and fender system), rather than one area of 0.74 acres (Build Alternative 1) or 0.5 acres (Build Alternative 2). As identified in the 2013 survey, most of the navigation channel in the action area comprises gravelly sand, and the Project would only impact a small, disconnected area within the channel. Areas of sandy gravel are also present upstream and downstream of the action area, bordered by sand and gravelly sand, and since it has a greater proportion of gravel compared to sand, would provide more favorable spawning habitat for Atlantic sturgeon. Given that the benthic habitat that would be lost as a result of the Project is small (0.32 acres or 0.08 acres) in comparison to the amount of similar habitat in the vicinity, there is more favorable habitat (i.e., sandy gravel) just upstream and downstream of the existing bridge, and the substrate in the footprint of the existing bridge would be restored with material similar to the surrounding substrate, effects of the Project on the value of PBF 1 for conservation of the species would be too small to be meaningfully measured or detected and would be insignificant.

PBF 3

No portion of the action area is dammed, and the movement of Atlantic sturgeon is unimpeded to and from spawning sites; therefore, PBF 3 is present within the action area. The replacement bridge would not create a physical barrier to passage between the river mouth and areas upstream and would not impede the seasonal movement of adult, subadult, or juvenile Atlantic sturgeon. The construction activities would not affect water depths or salinity levels that could result in an impediment to fish passage. Installation of the sheet pile cells would result in temporary resuspension of sediments that are not expected to adversely affect Atlantic sturgeon. As described above under *Sediment Resuspension*, the TSS concentrations expected for pile driving or removal in the Hudson River (5 to 10 mg/L) are below levels shown to have adverse effects on fish (typically up to 1,000 mg/L), and the small resulting sediment plume is expected to settle out of the water column within a few hours. The deployment of turbidity curtains around the temporary pier, the dolphin and fender system, and the existing bridge piers upon their demolition would temporarily exclude Atlantic sturgeon from the areas within the curtains. However, the turbidity curtains would be localized to the immediate areas of pile installation, pile removal, and demolition activities, and would never extend the full width of the river or even the full width of the navigation channel. Further, the use of turbidity curtains would prevent resuspended sediments from entering the water column outside the immediate area of sediment disturbing activity, thereby minimizing the potential impacts of increased turbidity on Atlantic sturgeon. Sturgeon would be able to move upriver and downriver around the turbidity curtains at all times during construction and demolition activities, and sheet pile installation would not result in turbidity levels that would adversely affect sturgeon. The turbidity curtains would also prevent sturgeon from entering the area and thus would prevent them from being exposed to the highest levels of resuspended sediment and turbidity

plumes. Therefore, effects on the value of PBF 3 for conservation would be too small to be meaningfully measured or detected and would be insignificant.

Based on the *Underwater Noise* evaluation above, up to 120 meters (394 feet) of noise disturbance during pile installation could act as a partial barrier to Atlantic sturgeon. This maximum extent of ensonified waters would result from installation of the 150-foot-long temporary pier piles on the western shoreline. The sheet pile installed for the bridge piers in the center of the river would result in a smaller ensonified area (up to 30 meters, or 98 feet). Thus, the maximum width of the river that would be ensonified during pile installation would occur during the installation of piles at the end of the temporary pier and would result in increased underwater noise levels exceeding the behavioral threshold for sturgeon extended approximately 544 feet across the river. This represents about 57% of the full river width (950 feet) that would be exposed to sound levels resulting in behavioral modifications and potential avoidance. Pile driving would not be conducted during the spawning and early life stage periods for Atlantic sturgeon (March 15 through September 30). Therefore, this disturbance would not affect the reach's ability to provide unimpeded movement of adults to and from spawning sites as the activities would occur outside of the spawning period. However, some activities may overlap with the movement of Atlantic sturgeon post-yolk sac larvae, which could be present in the action area from July through September (Breece et al. 2021). Given that about 43% of the river's width, including the eastern side of the navigation channel, would not be exposed to sound levels that could result in avoidance (at the maximum extent of pile driving), a zone of passage would be maintained at all times during project activities. Further, pile driving would occur intermittently such that any impacts from sound would occur during a fraction of the duration for pile installation. The physical component of the reach associated with PBF 3 (i.e., appropriate depth and absent physical barriers to passage) would revert back to the baseline conditions during times when no pile driving occurs. Given the action would not impede movements and would only result in temporary alteration of the passable width of the river, any effects of pile driving for the project on the value of PBF 3 for the conservation of the species would be too small to be meaningfully measured or detected and would be insignificant.

PBF 4

Temperature, salinity, and oxygen levels in the action area provide conditions that could support: spawning, annual and interannual adult, subadult, and larval survival; and larval and subadult growth, development, and recruitment. Therefore, the action area contains physical and biological features identified under PBF 4. The Project would only intermittently produce low concentrations of total suspended solids of between 5 to 10 mg/L (FHWA 2012), and would have discountable effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability for Atlantic sturgeon to migrate in the action area. The effects of sediment resuspension would be minimized through the use of turbidity curtains for certain activities, and turbidity associated with the installation of sheet pile cells would be minimal and sediments would settle quickly. The project would not affect water depth, flow, dissolved oxygen, salinity, temperature, or the ability for sturgeon to migrate through the area. Therefore, the effects of the Project on the value of PBF 4 for the conservation of the species would be too small to be meaningfully measured or detected and would be insignificant.

Conclusions

Based on the analysis that all effects of the Build Alternatives when added to the baseline would be insignificant and/or discountable, FRA has determined that the Project is not likely to adversely affect any listed species or critical habitat under NOAA Fisheries' jurisdiction. We certify that we have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

If you have questions or require additional information regarding this request or the Project, please contact Brandon Bratcher, FRA Environmental Protection Specialist, at brandon.bratcher@dot.gov with a copy to Mark Jakubiak, Project Manager/Environmental Manager at NYSDOT: mark.jakubiak@dot.ny.gov.

Sincerely,

Marlys Osterhues, Chief
Environment and Project Engineering Division
Office of Railroad Policy & Development

cc:
Laura Shick, Supervisory EPS, FRA
Brandon Bratcher, FRA
Mary Catherine Murray, FRA
Mark Jakubiak, NYSDOT

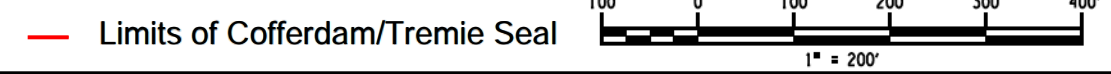
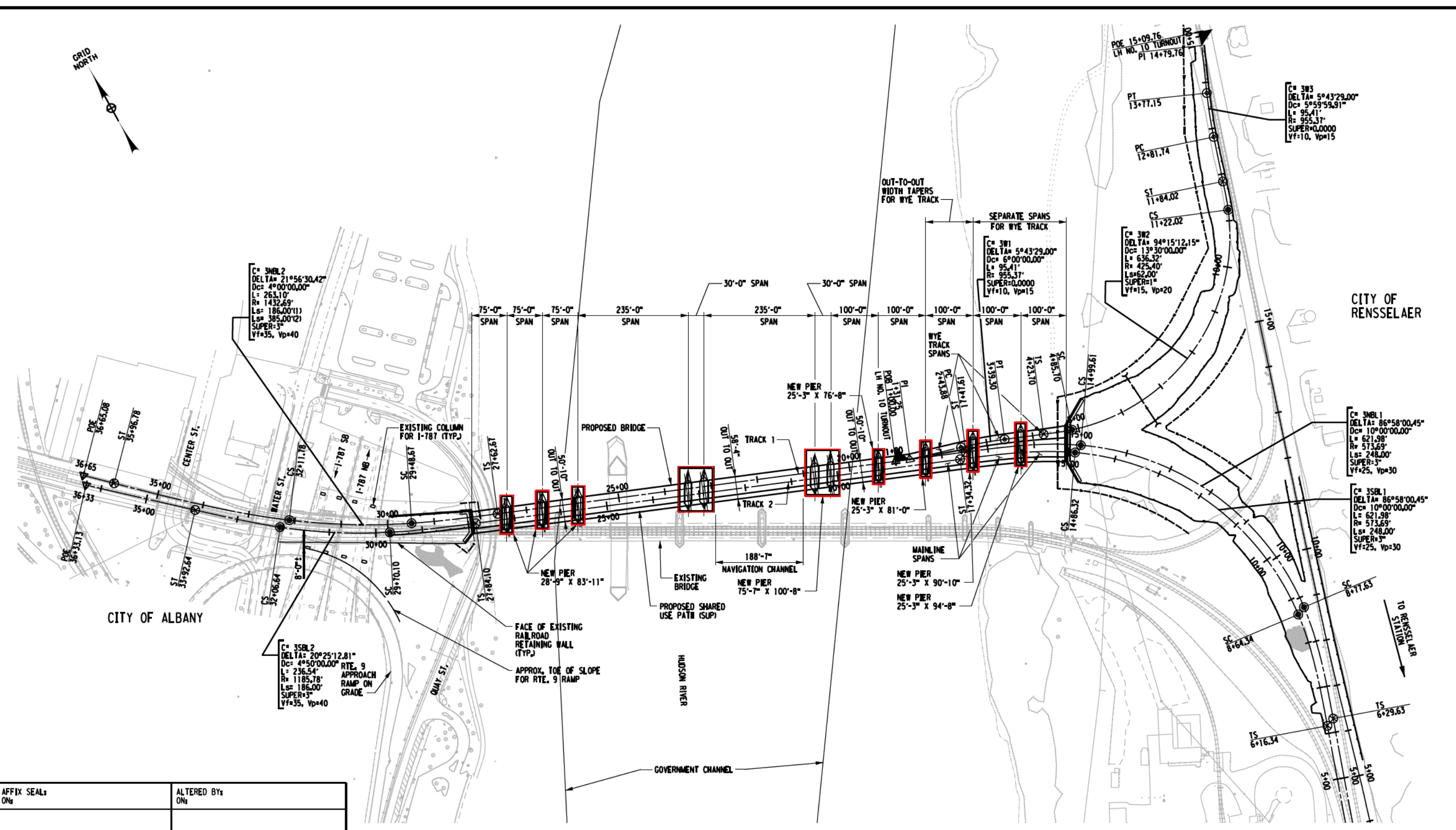
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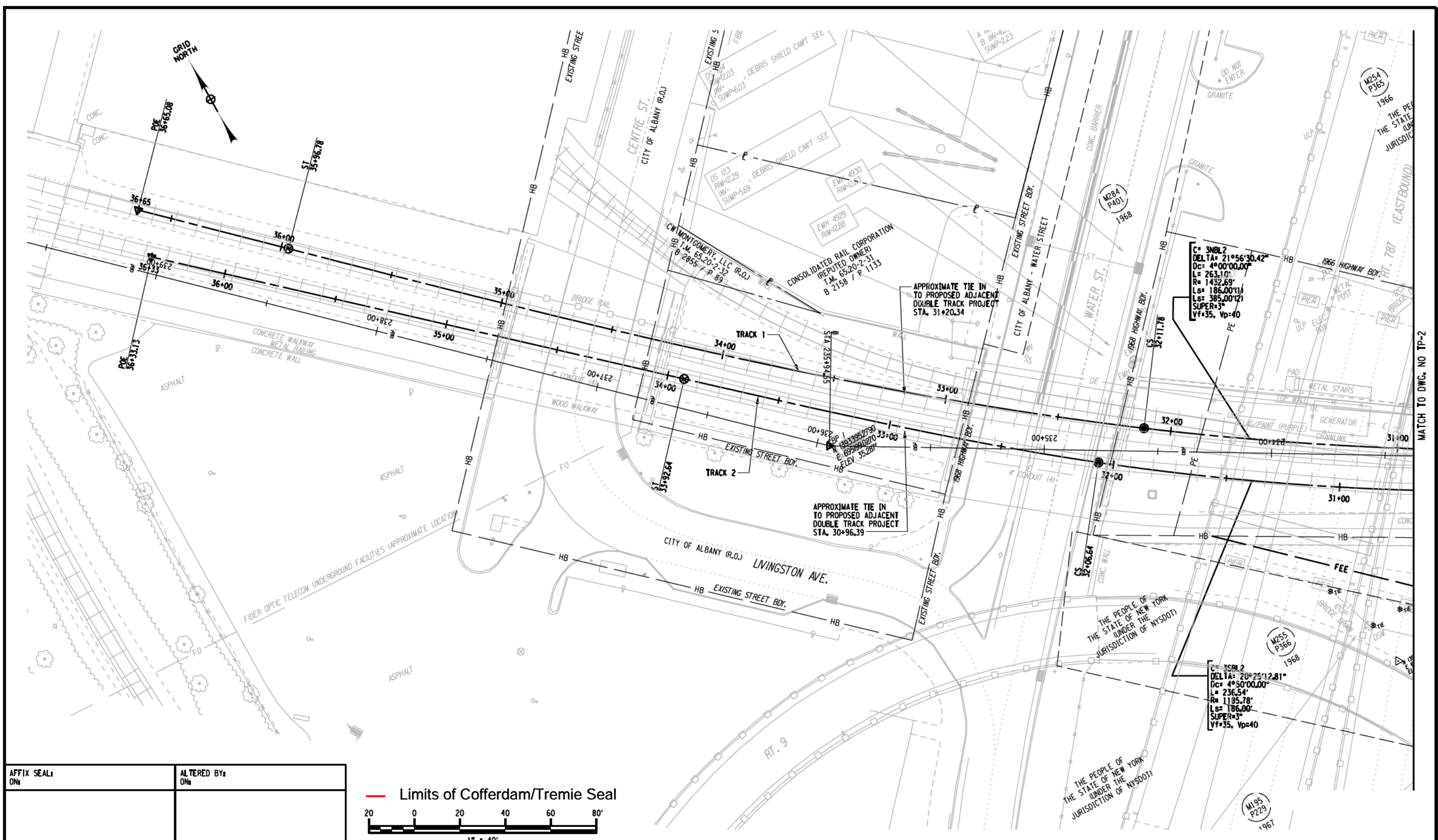
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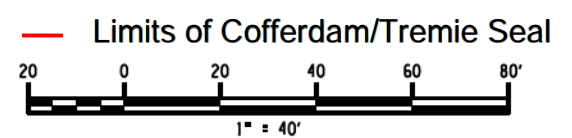
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.			MODJESKI-MASTERS	Department of Transportation

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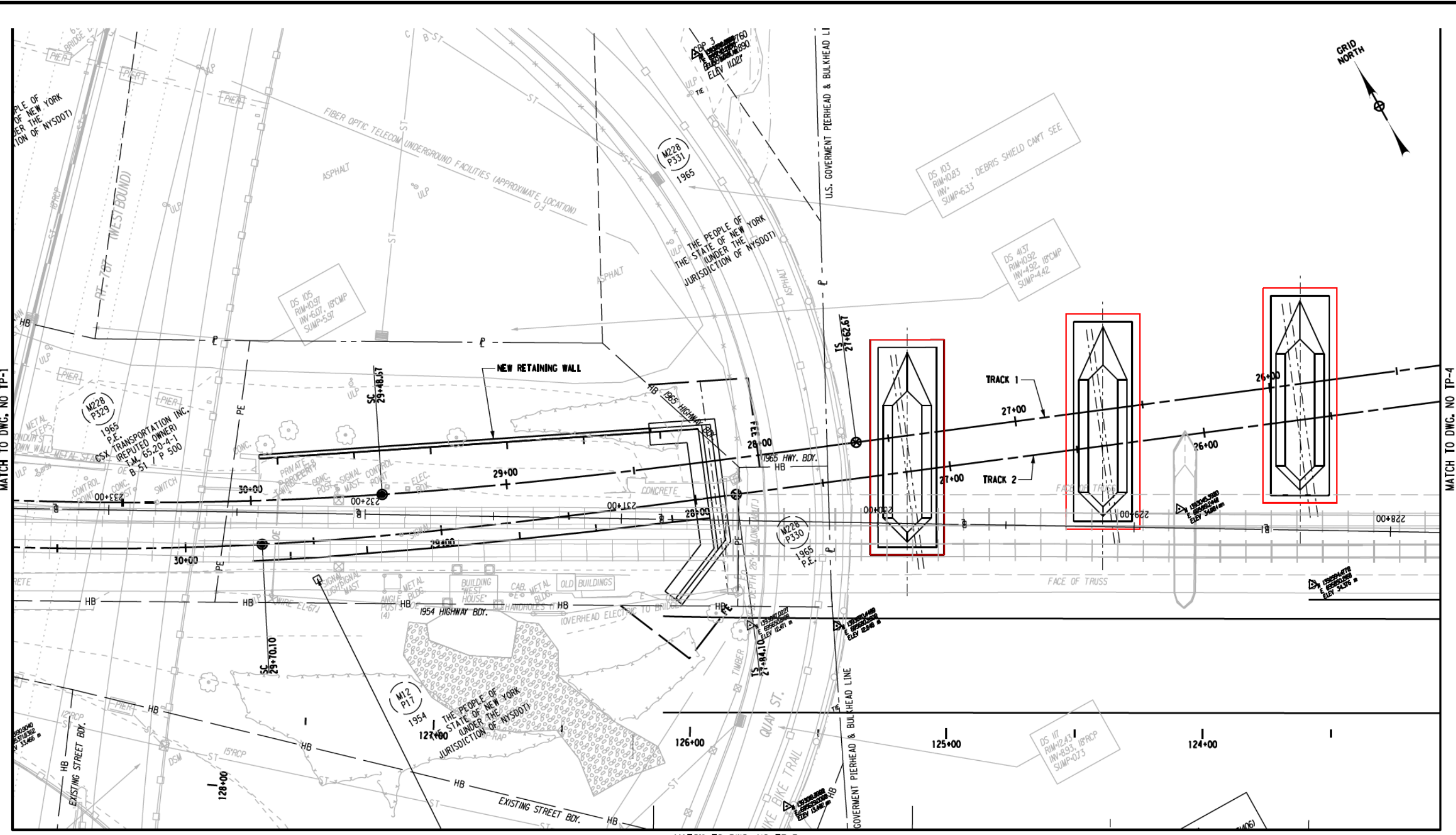


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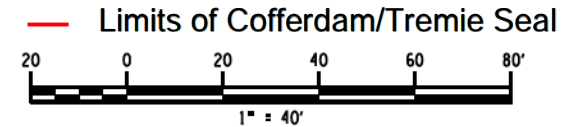
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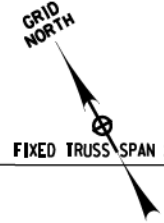
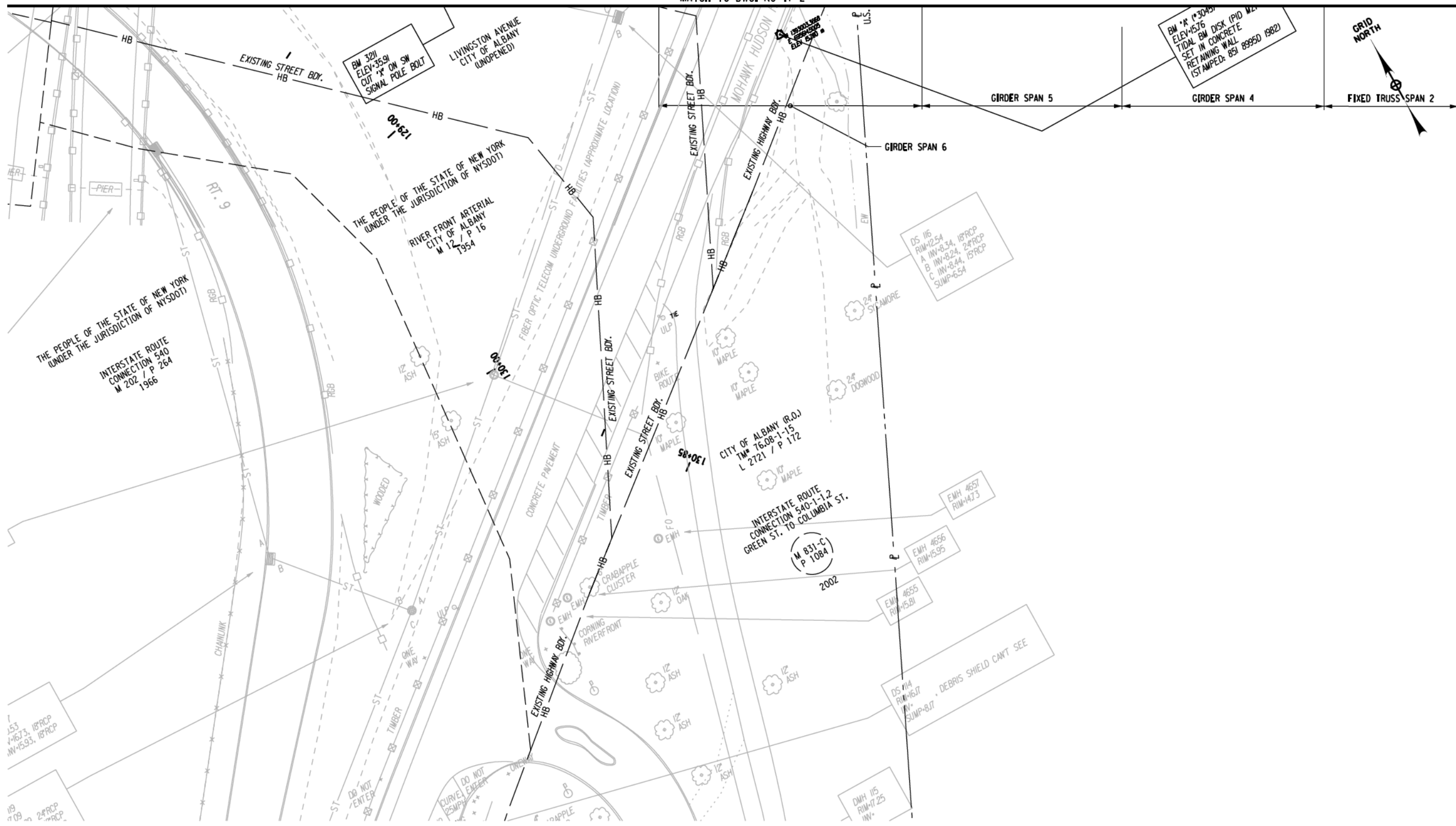
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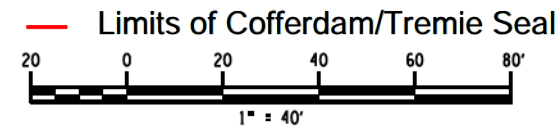
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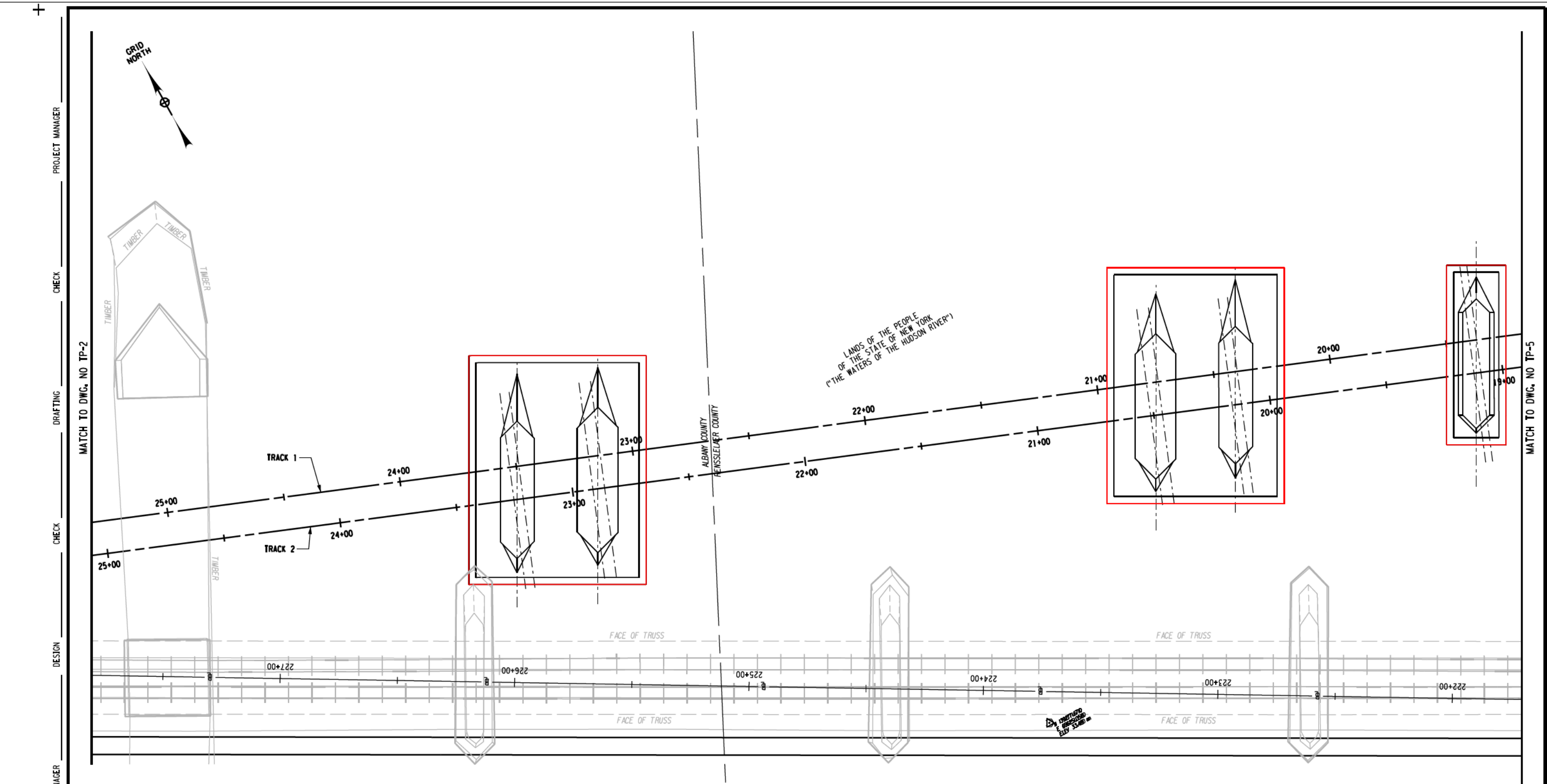
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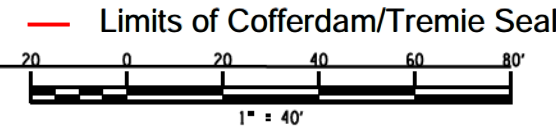
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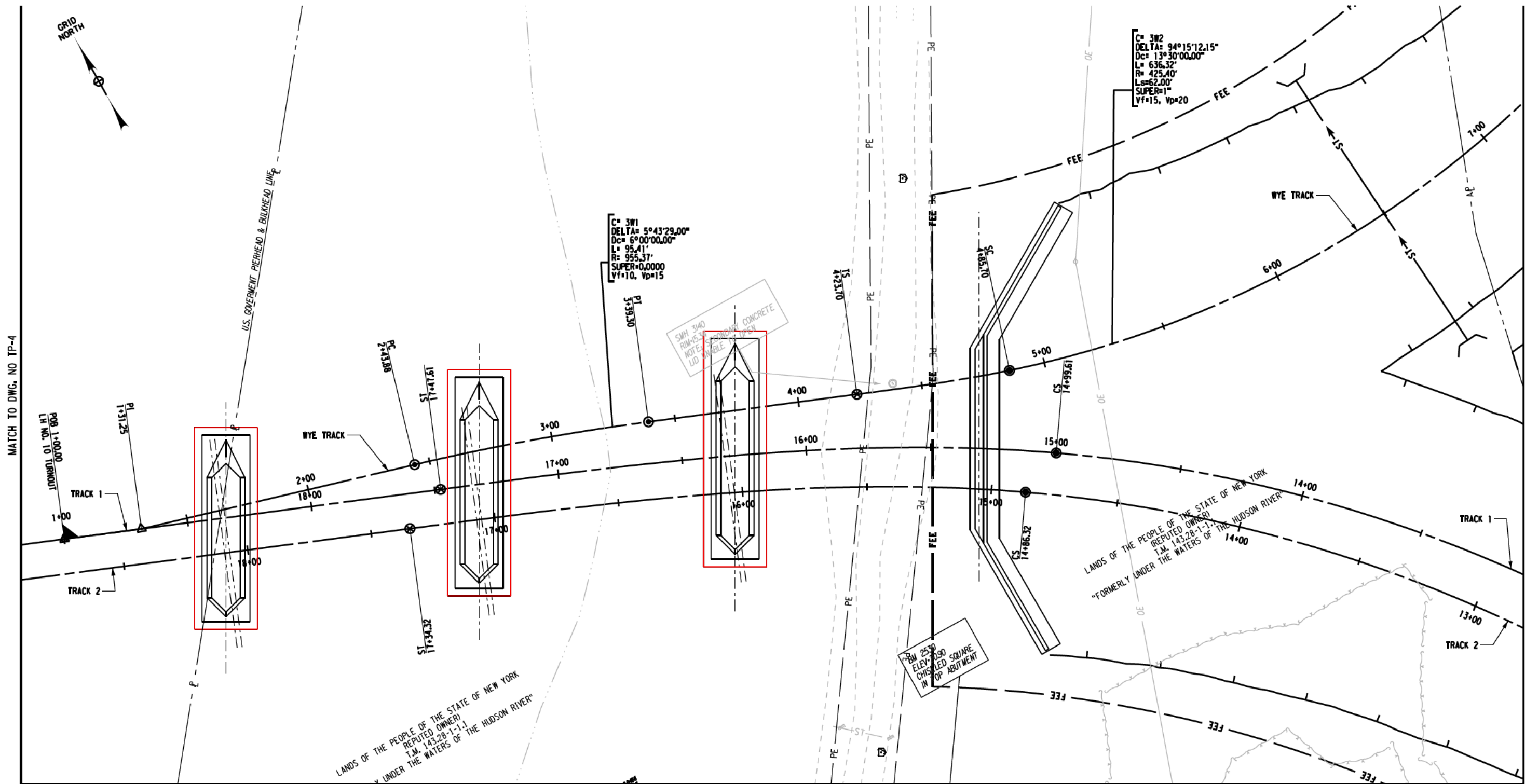
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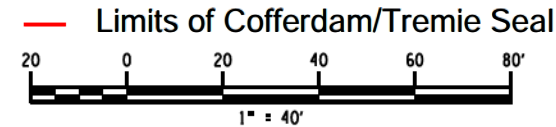
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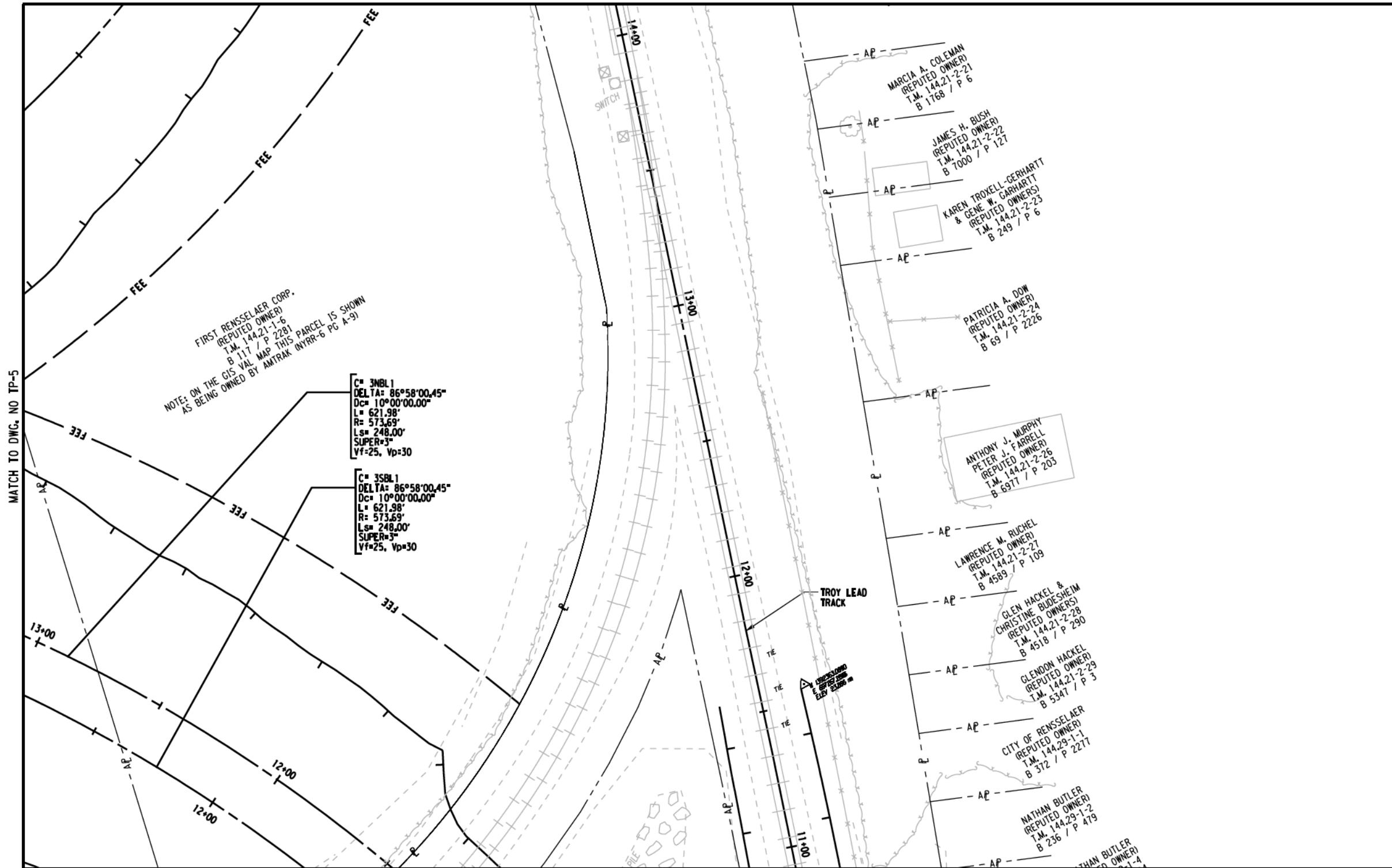


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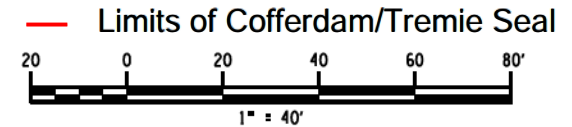


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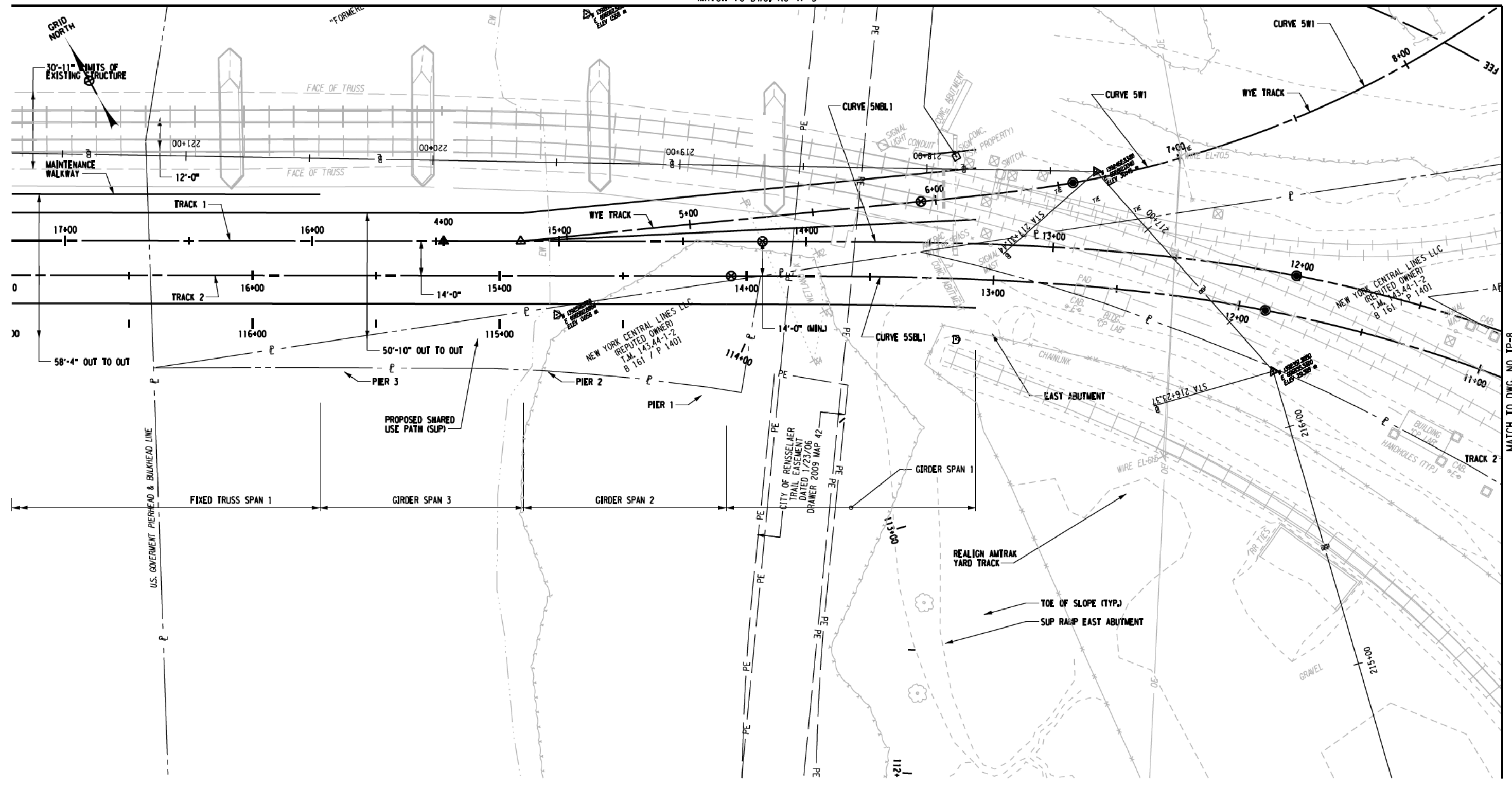
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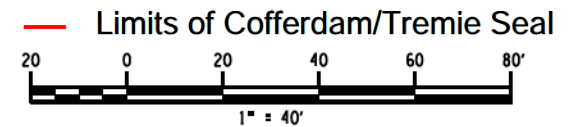
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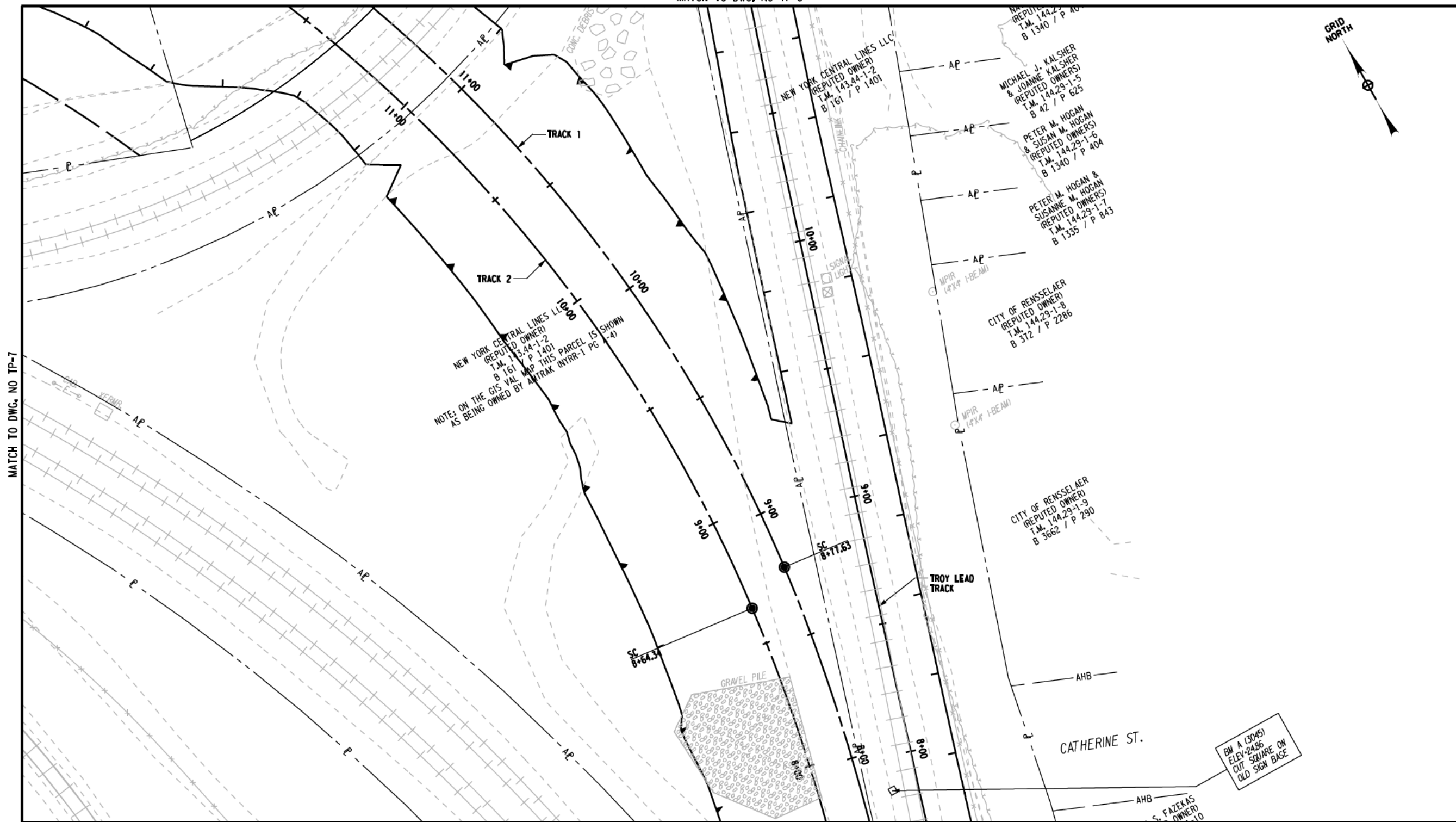
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COUNTY: ALBANY	REGION: 1				
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					Department of Transportation

FILE NAME =
DATE/TIME = 3/18/2021
USER = ONClescert



MATCH TO DWG. NO TP-6

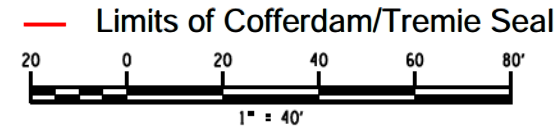


MATCH TO DWG. NO TP-9

PROJECT MANAGER
CHECK
DRAFTING
CHECK
DESIGN
JOB MANAGER

AFFIX SEAL: ON:	ALTERED BY: ON:

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PLAN NORTH ALTERNATIVE	DRAWING NO. TP-8 SHEET NO.
COUNTY: ALBANY	REGION: 1	  Department of Transportation			
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					

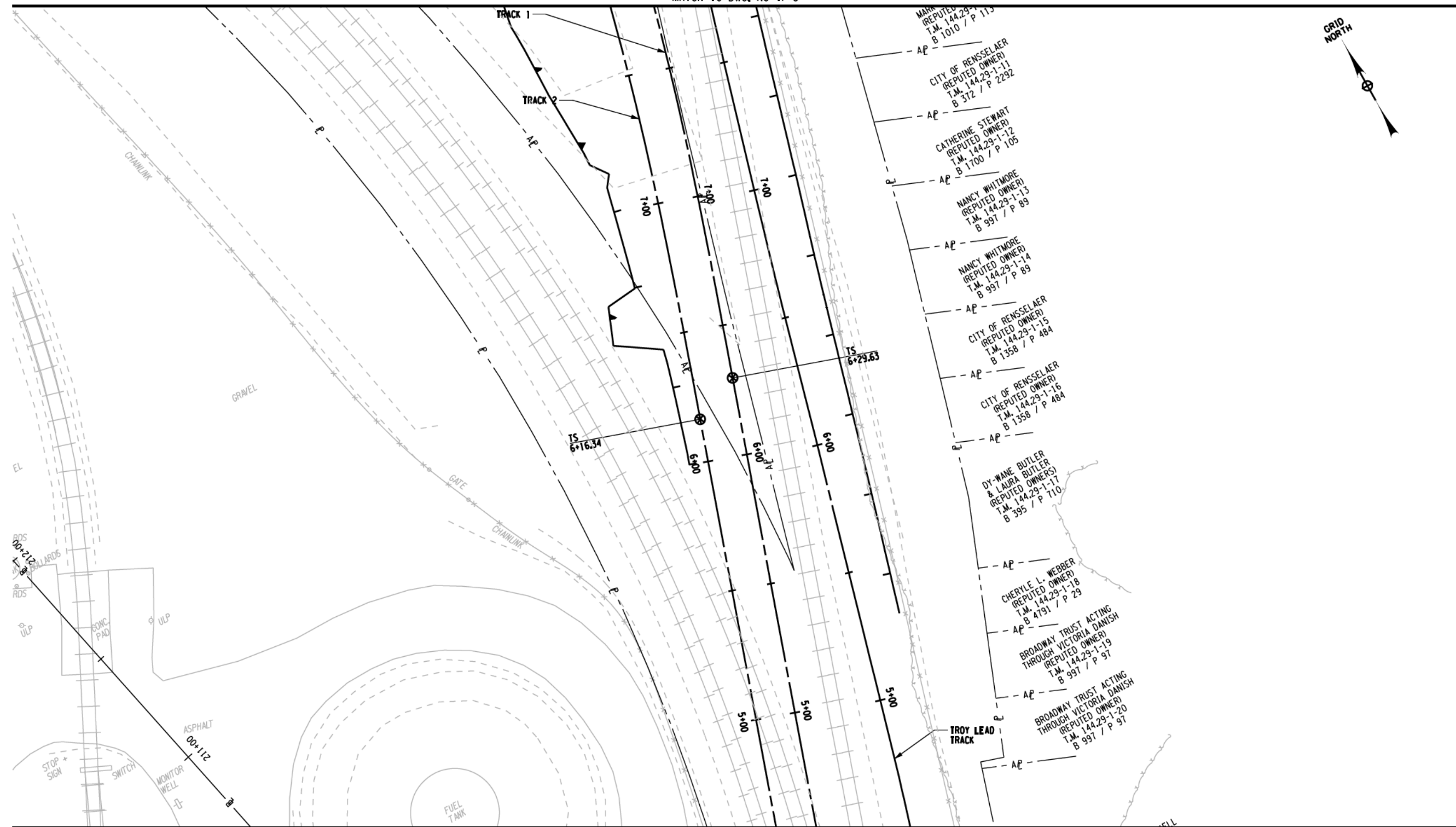


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PROJECT MANAGER
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DRAFTING
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DESIGN SUPERVISOR

MATCH TO DWG. NO TP-8

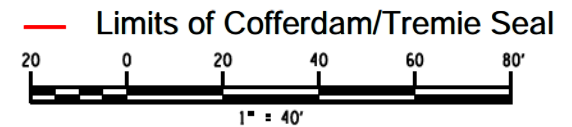


MATCH TO DWG. NO TP-10

AFFIX SEAL: ON	ALTERED BY: ON
<p>AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:</p>	
<p>COUNTY: ALBANY REGION: 1</p>	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN NORTH ALTERNATIVE	DRAWING NO. TP-9 SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.
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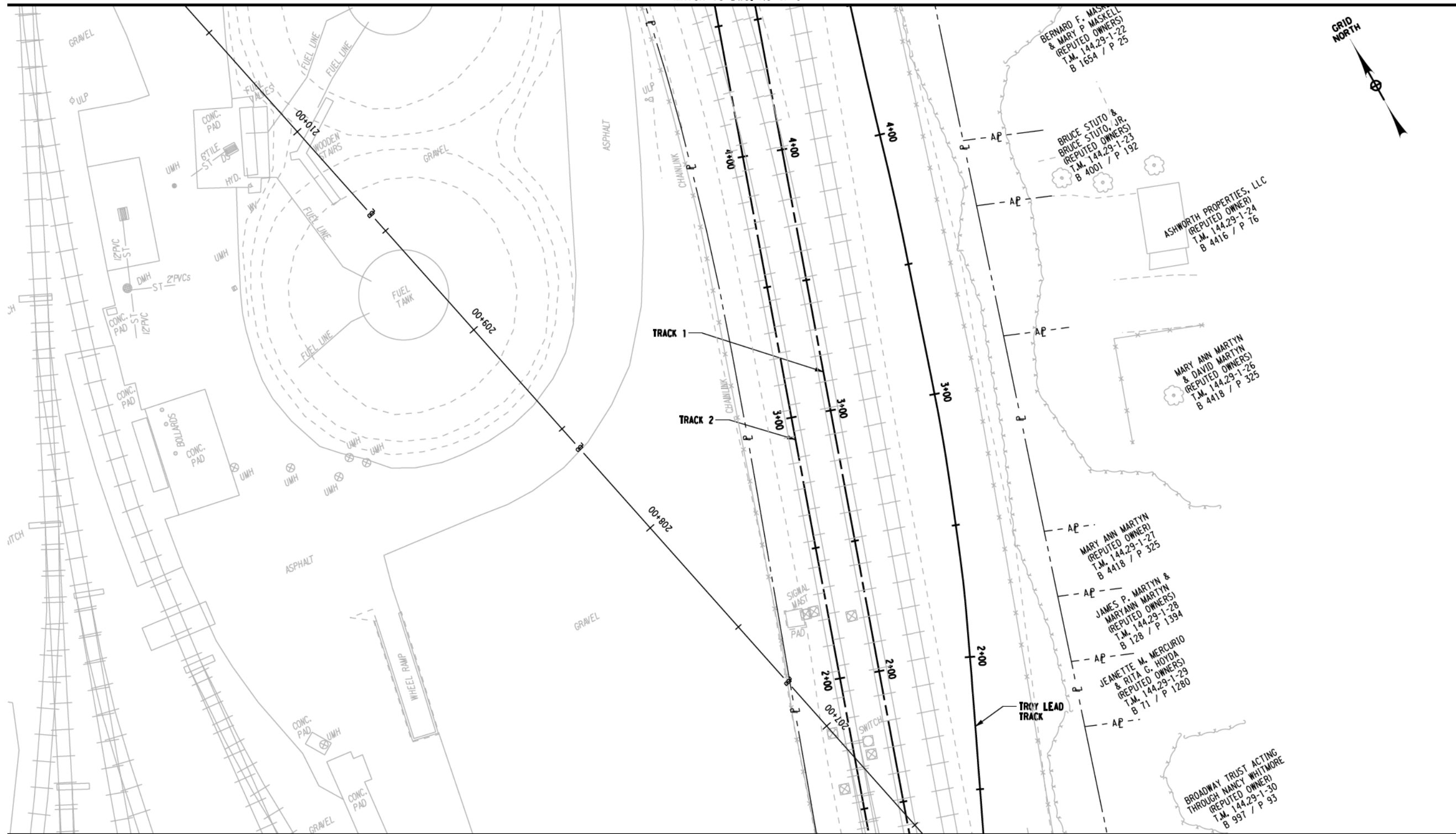


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MATCH TO DWG. NO TP-9

MATCH TO DWG. NO TP-11

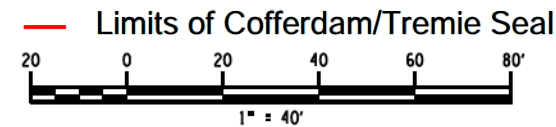


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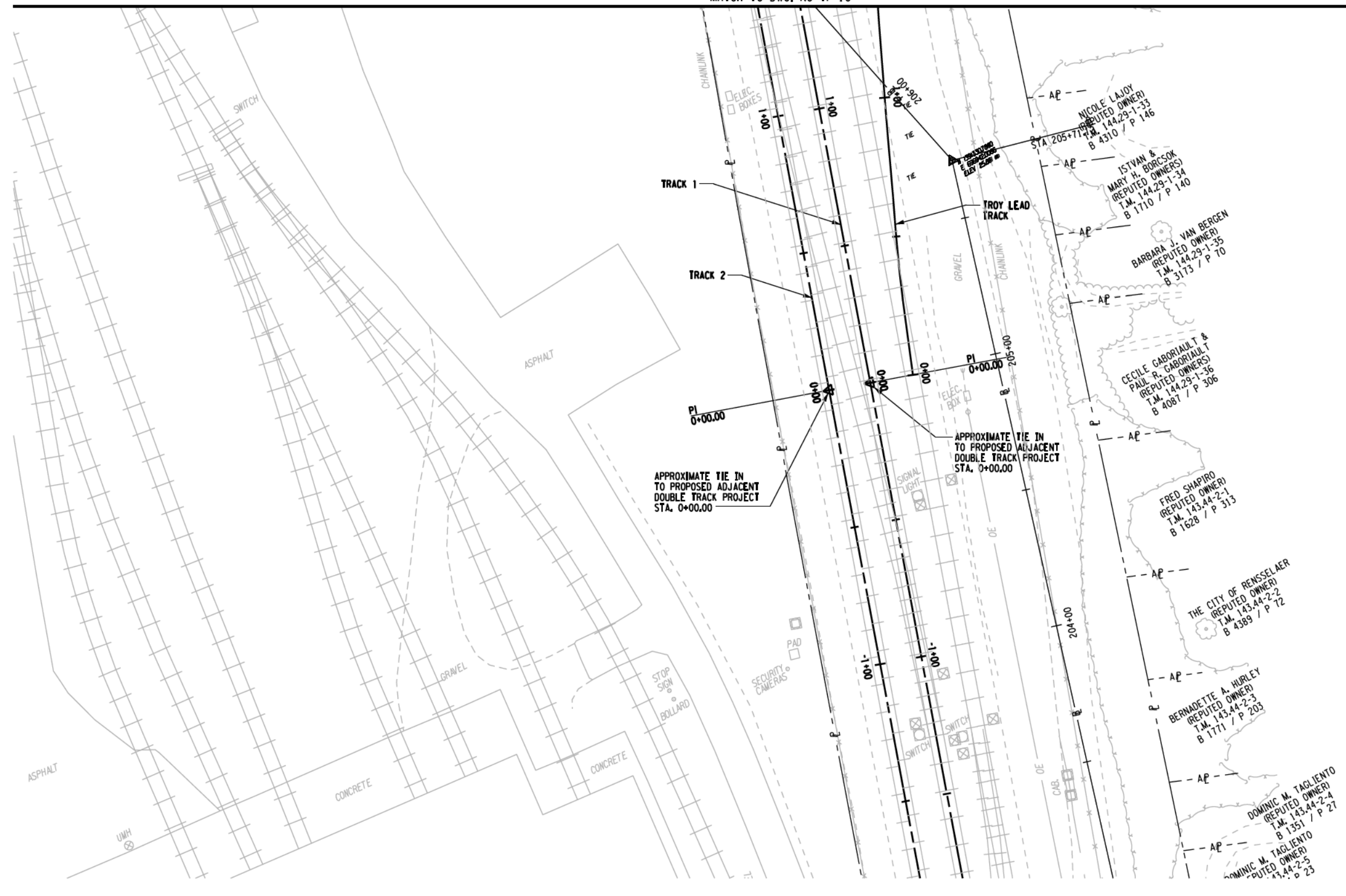
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

PIN 1935.49 MARCH 2021 COUNTY: ALBANY REGION: 1	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED TRACK PLAN NORTH ALTERNATIVE	CONTRACT NUMBER DRAWING NO. TP-10 SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				 Department of Transportation

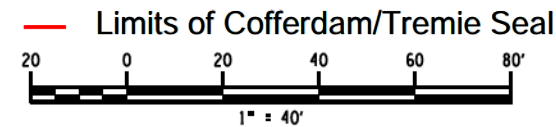


MATCH TO DWG. NO TP-10



PROJECT MANAGER
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AFFIX SEAL ON ₁	ALTERED BY ON ₂
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS ₃	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PLAN NORTH ALTERNATIVE	DRAWING NO. TP-11 SHEET NO.
COUNTY: ALBANY	REGION: 1				

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

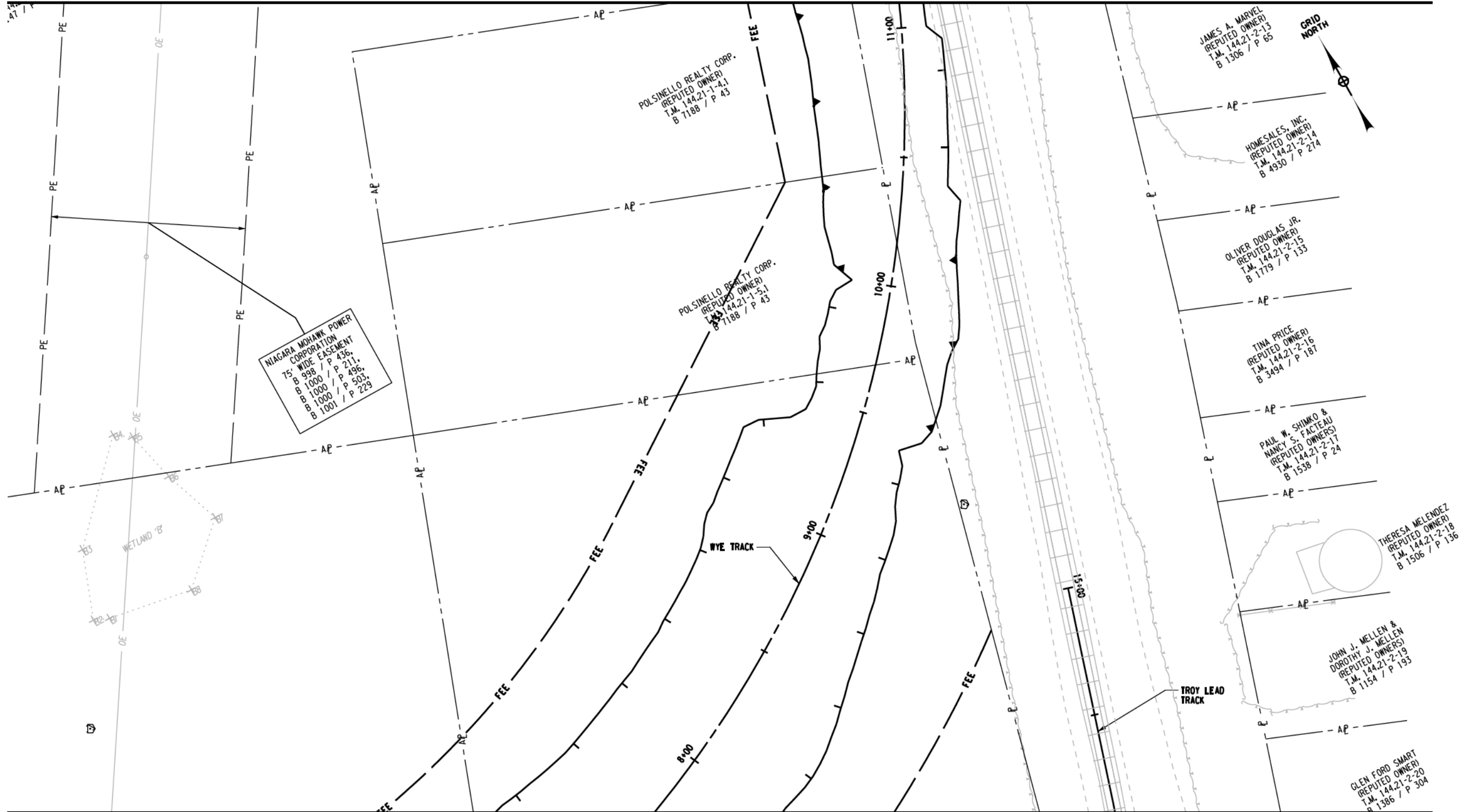


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MATCH TO DWG. NO TP-13

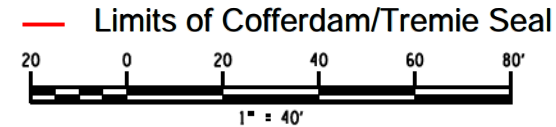
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AFFIX SEAL: ON _A	ALTERED BY: ON _A

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PLAN NORTH ALTERNATIVE	DRAWING NO. TP-12
					SHEET NO.
COUNTY: ALBANY		REGION: 1		Department of Transportation	



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

MATCH TO DWG. NO TP-14

GRID NORTH

PROJECT MANAGER

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DRAFTING

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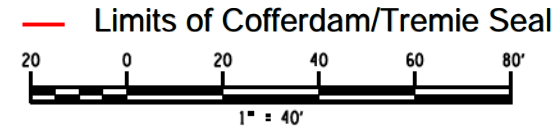
JOB MANAGER

DESIGN SUPERVISOR



MATCH TO DWG. NO TP-12

AFFIX SEAL: ON	ALTERED BY: ON
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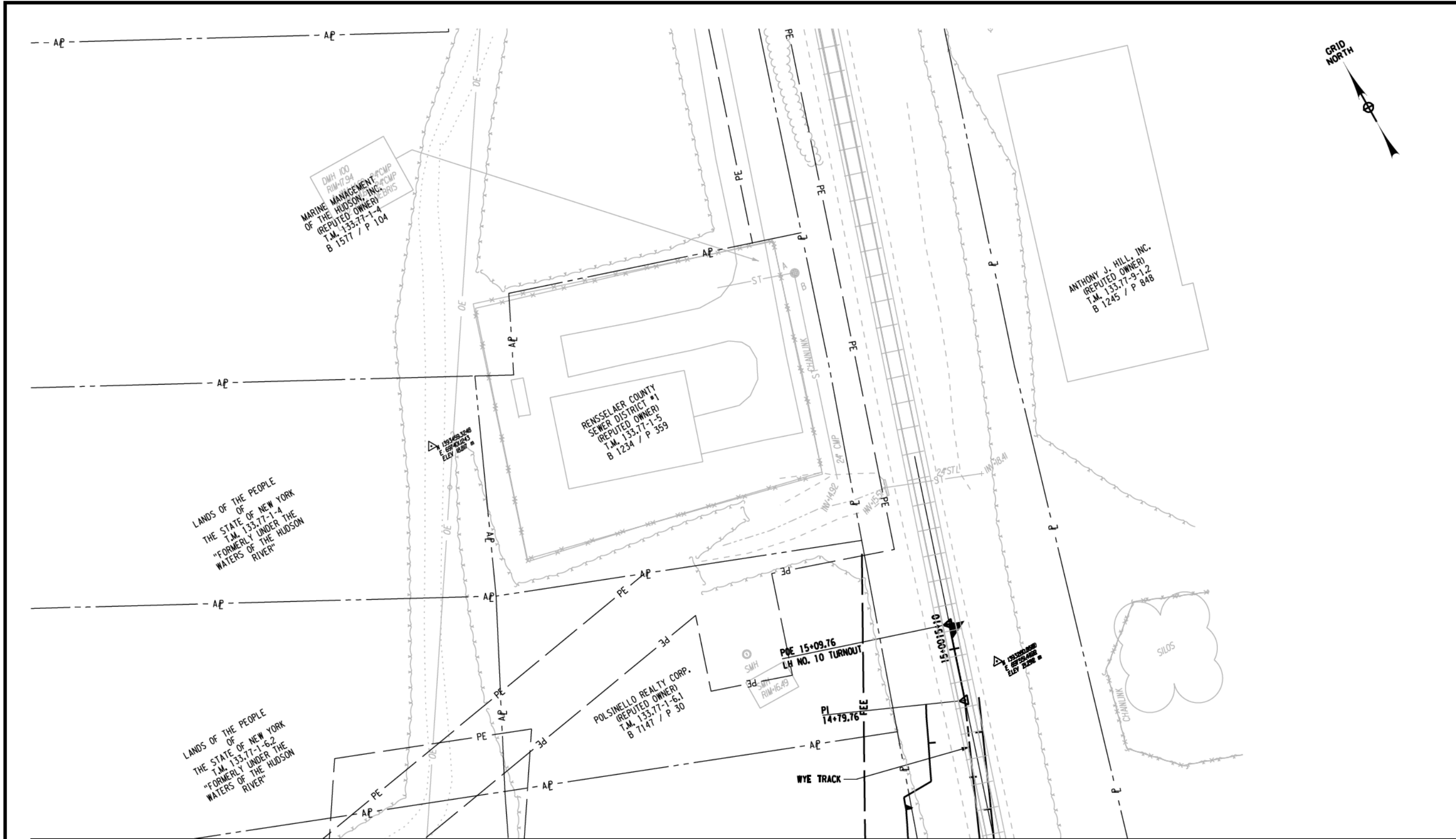
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	MARCH 2021			TRACK PLAN NORTH ALTERNATIVE	DRAWING NO. TP-13 SHEET NO.
	COUNTY: ALBANY	REGION: 1			

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



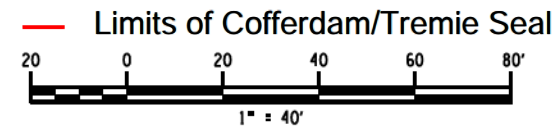
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MATCH TO DWG. NO TP-13

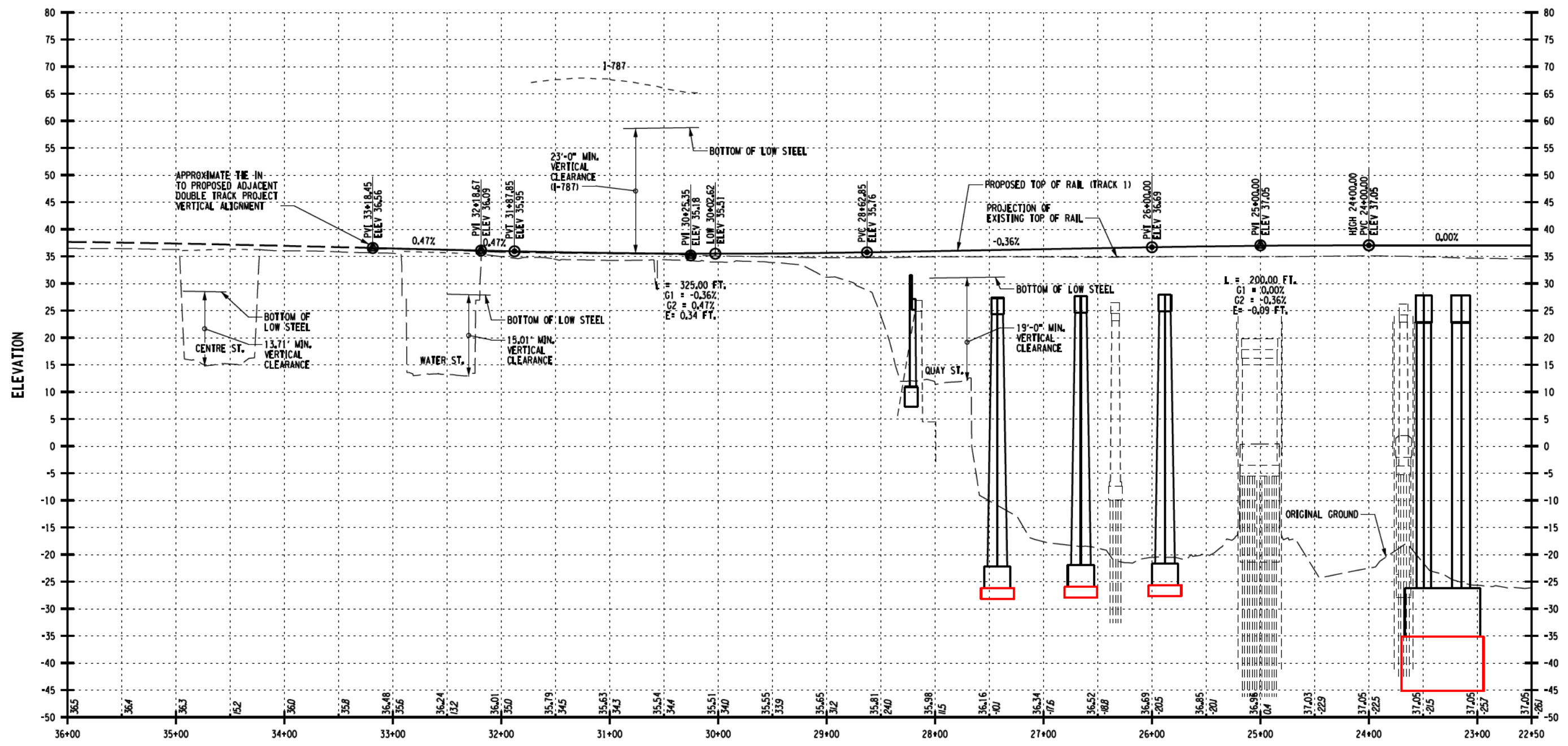
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021				
COUNTY: ALBANY	REGION: 1	TRACK PLAN NORTH ALTERNATIVE			DRAWING NO. TP-14 SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				  Department of Transportation	

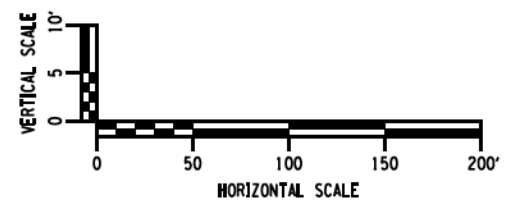
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STATION
TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

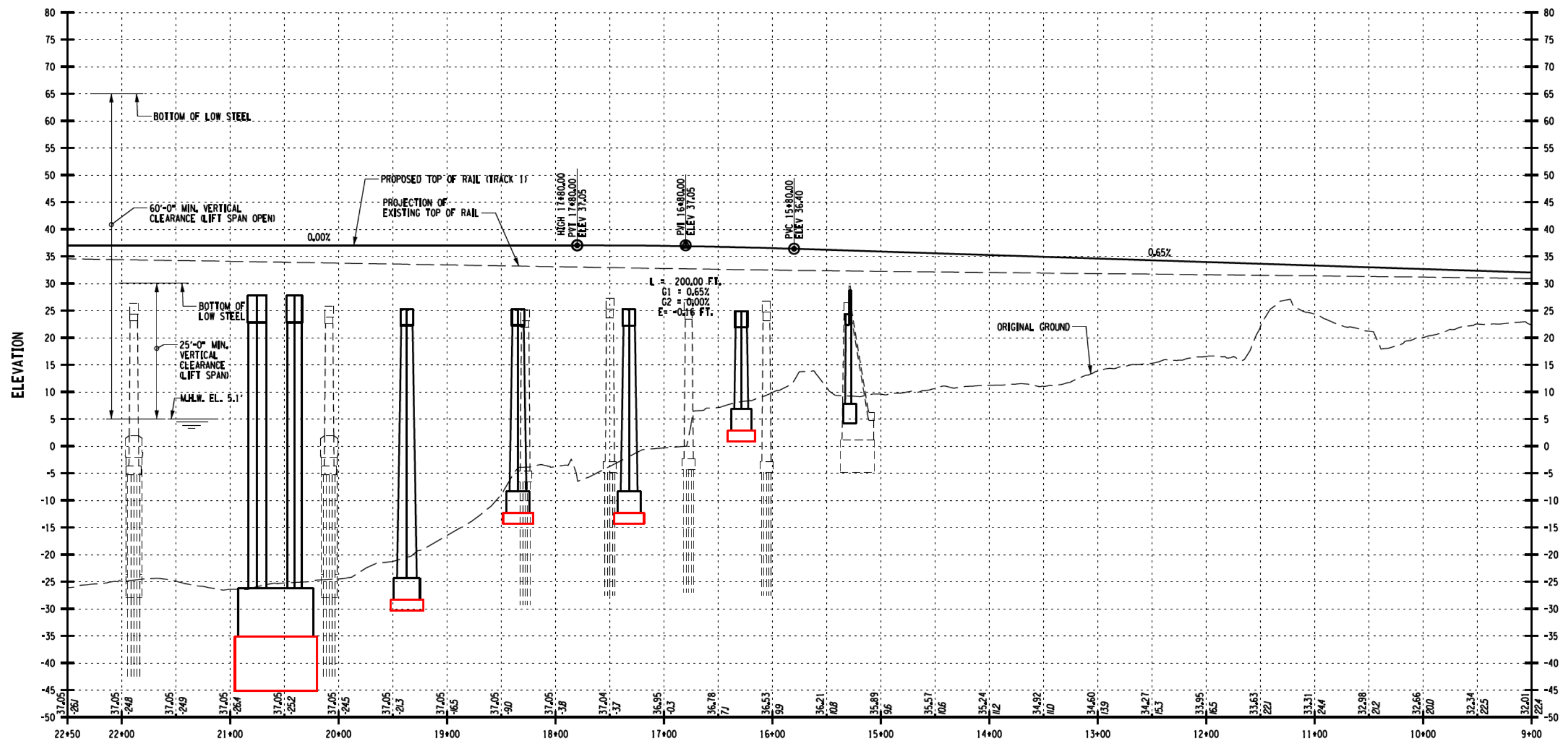


AFFIX SEAL: ON	ALTERED BY: ON
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COUNTY: ALBANY	REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021					TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-1
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						SHEET NO.
					Department of Transportation	

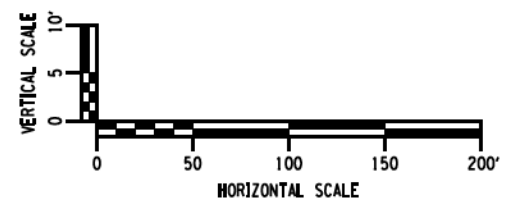
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— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₂

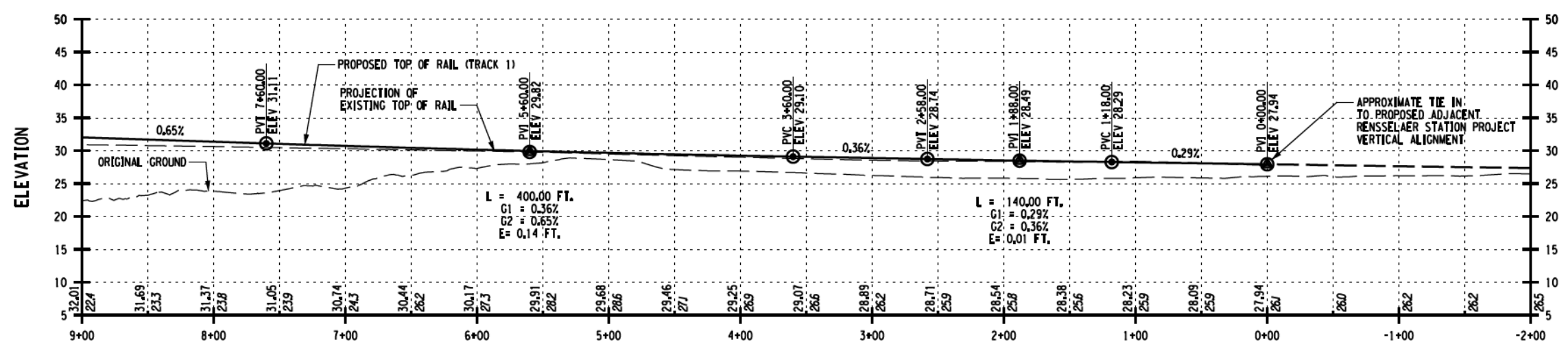


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
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	COUNTY: ALBANY	REGION: 1			SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					Department of Transportation

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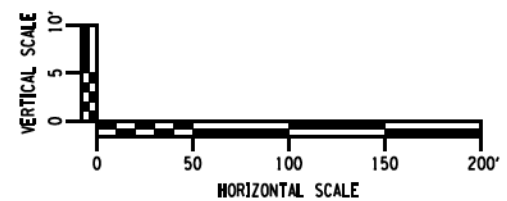
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STATION
 TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

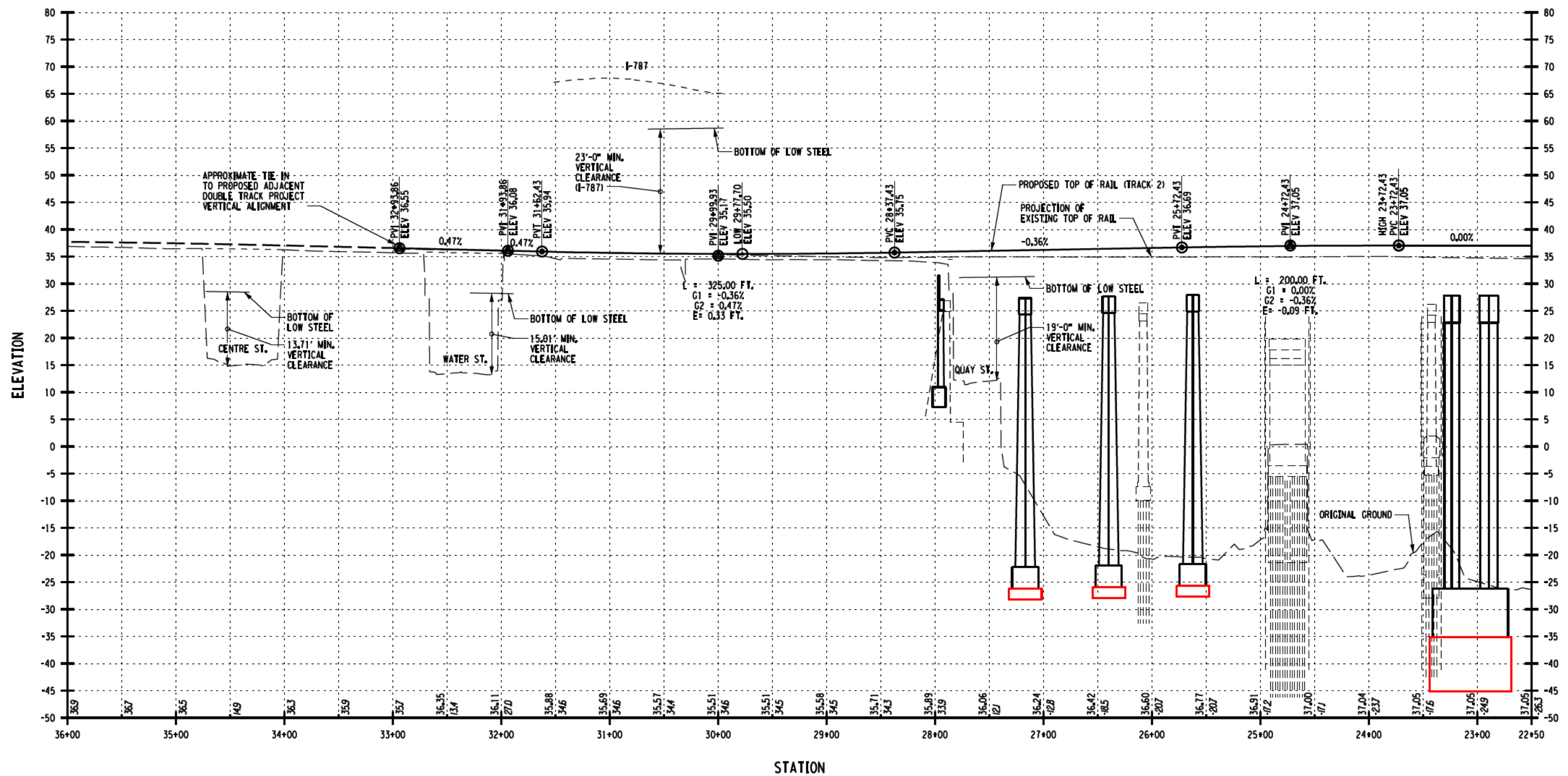
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	MARCH 2021			TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-3 SHEET NO.
COUNTY: ALBANY	REGION: 1	Department of Transportation			

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

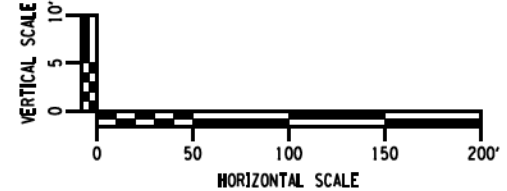
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 DESIGN SUPERVISOR



TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON
 ALTERED BY: ON



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED
TRACK PROFILE NORTH ALTERNATIVE	

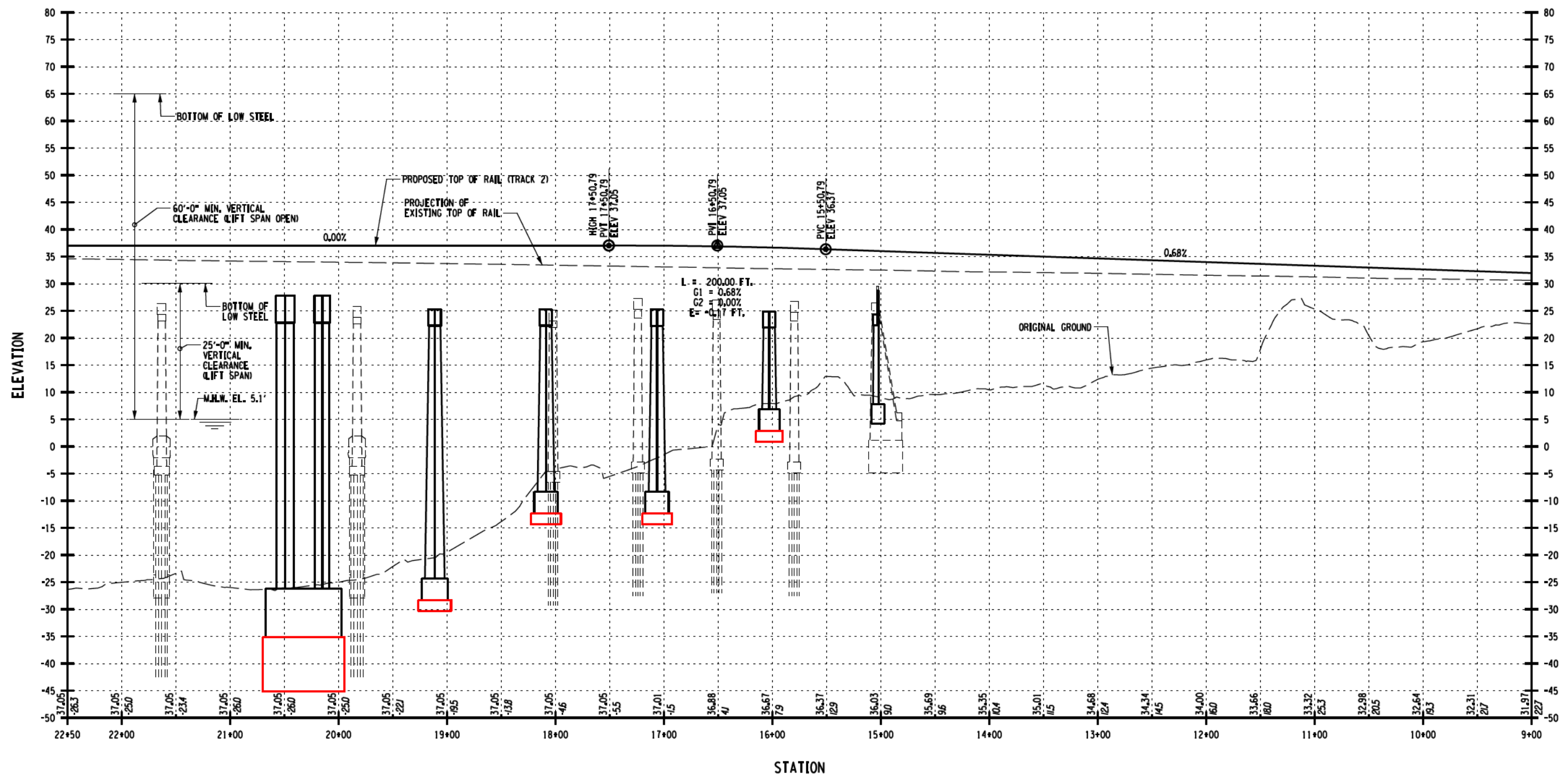
CONTRACT NUMBER	DRAWING NO. TPR-4
	SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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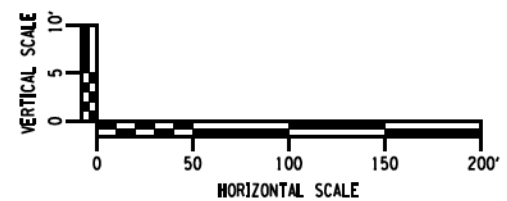
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TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal

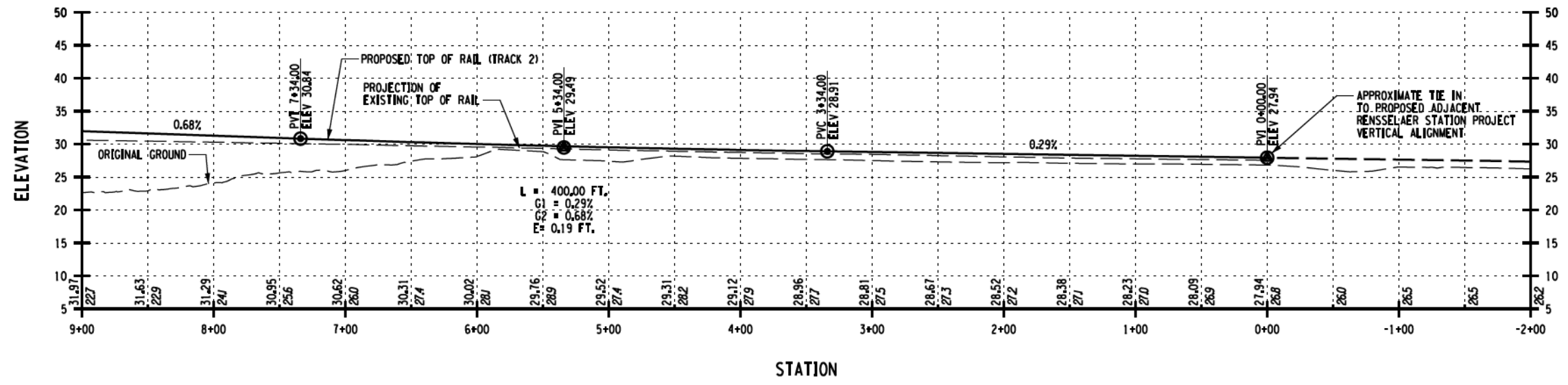
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-5 SHEET NO.
COUNTY: ALBANY	REGION: 1				
<small>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</small>					

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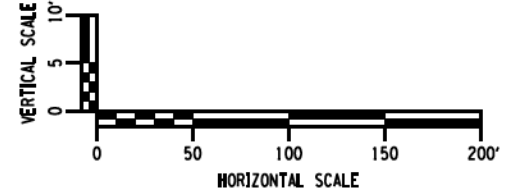
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TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

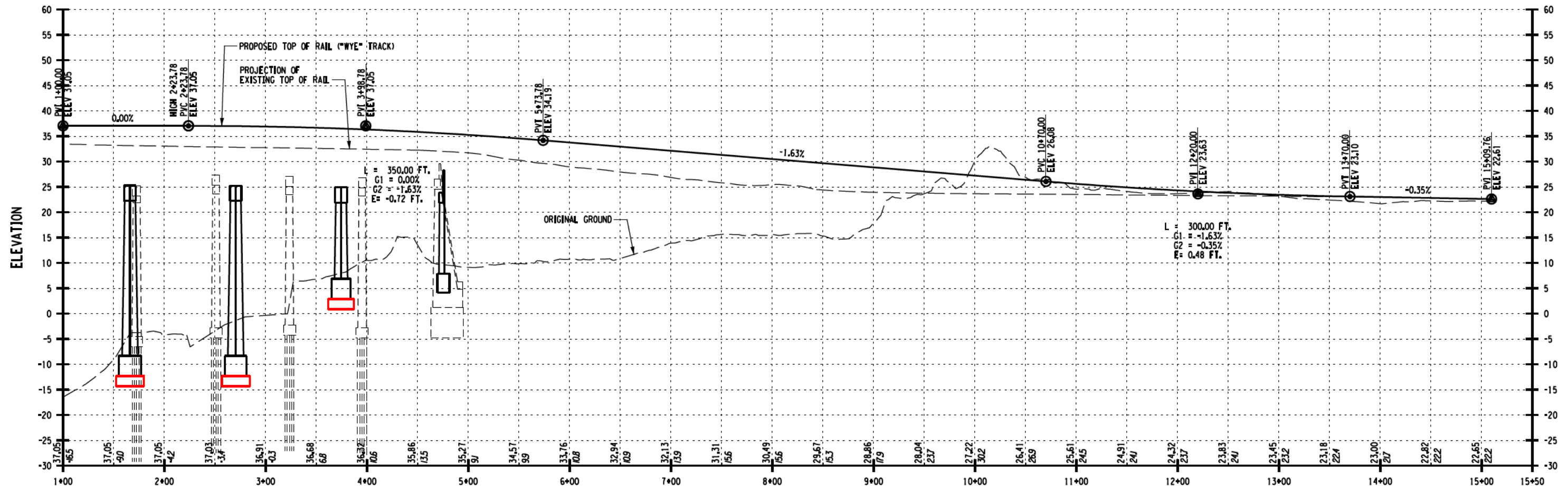
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SHEET NO.	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



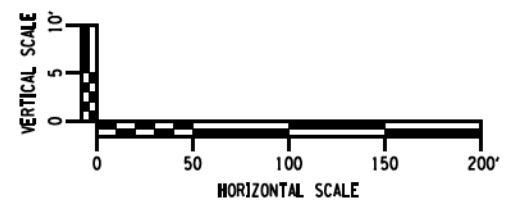
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PROJECT MANAGER
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STATION
"WYE" TRACK PROFILE

— Limits of Cofferdam/Tremie Seal



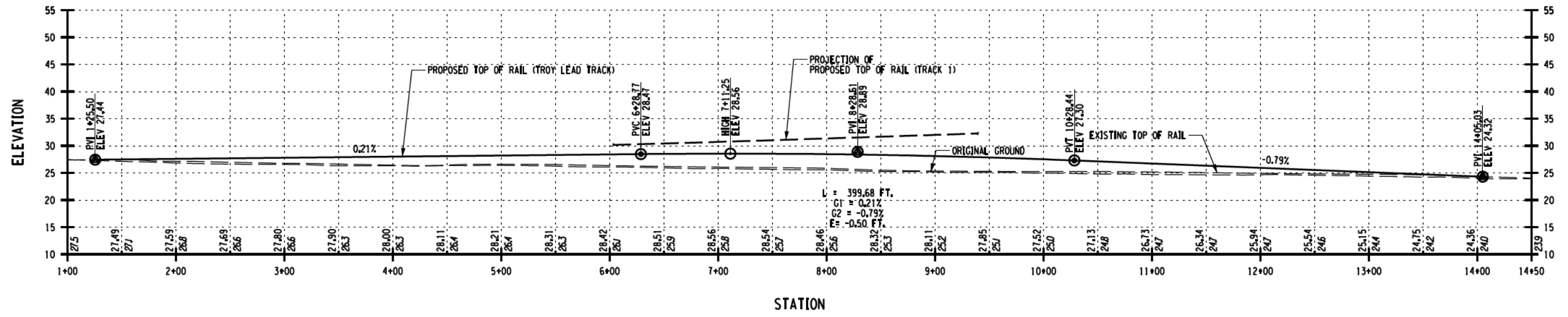
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		MARCH 2021			TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-7 SHEET NO.
COUNTY: ALBANY REGION: 1		IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				
					 Department of Transportation	

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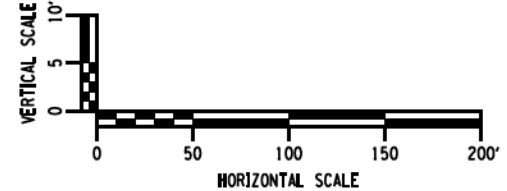
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TROY LEAD TRACK PROFILE

— Limits of Cofferdam/Tremie Seal

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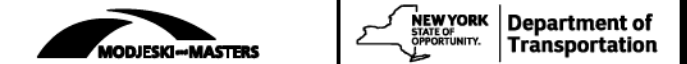


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COUNTY: ALBANY	REGION: 1

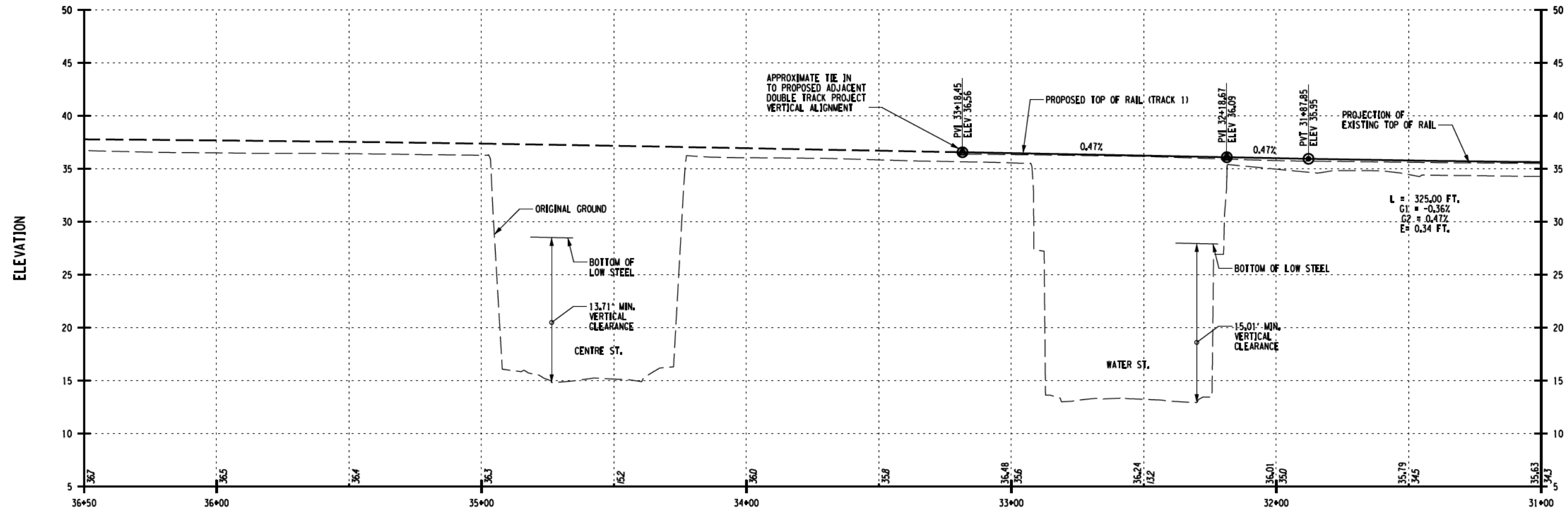
PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-8 SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

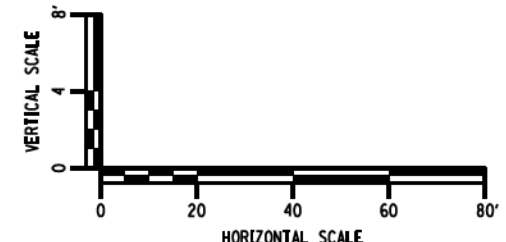


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— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁



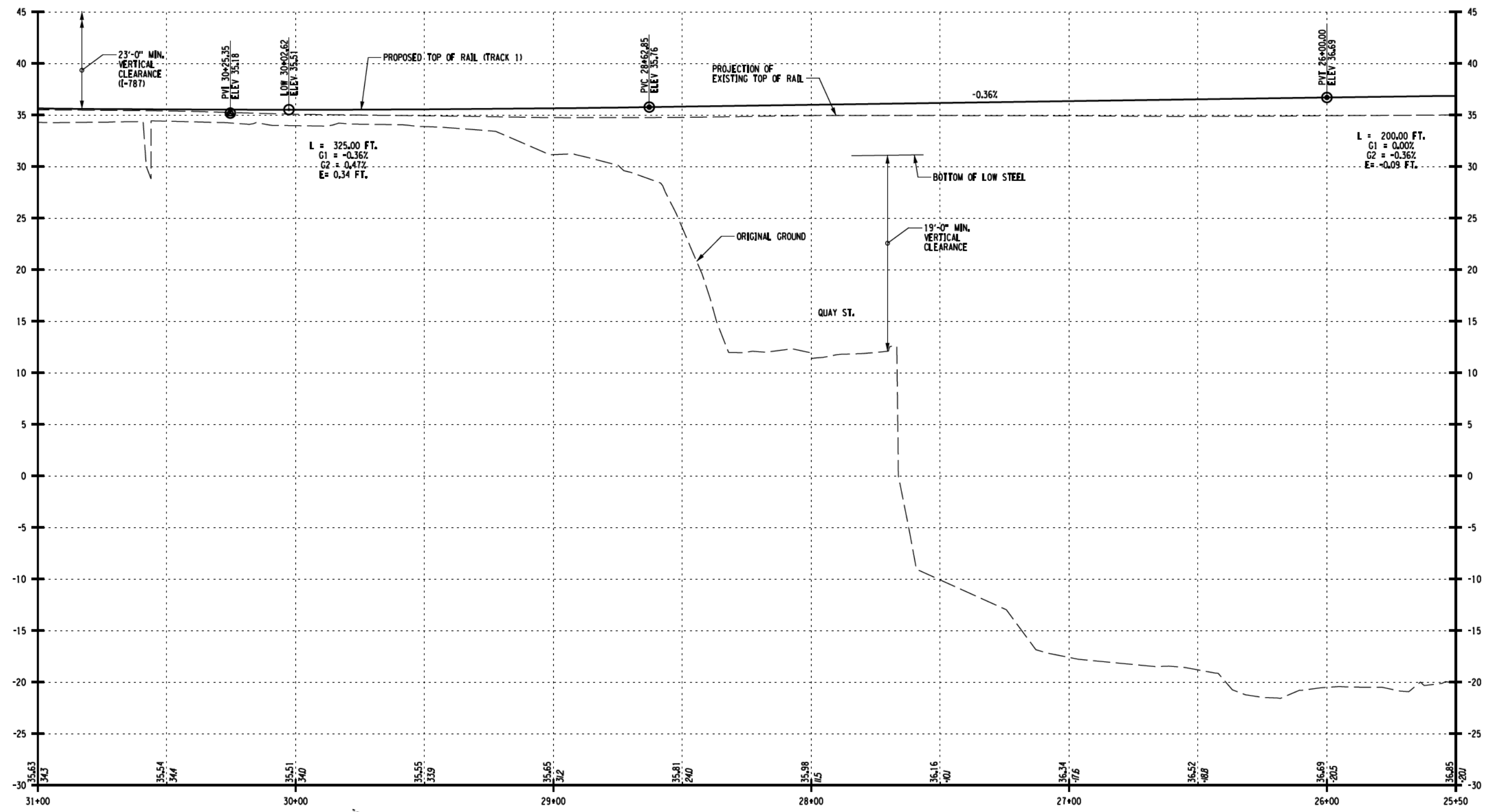
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					SHEET NO.
COUNTY: ALBANY		REGION: 1		Department of Transportation	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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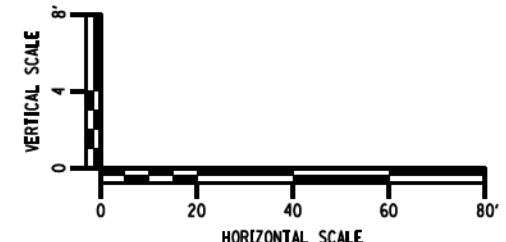
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ELEVATION



— Limits of Cofferdam/Tremie Seal

STATION
TRACK 1 PROFILE



AFFIX SEAL: ON ₁	ALTERED BY: ON ₂

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED
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	SHEET NO.

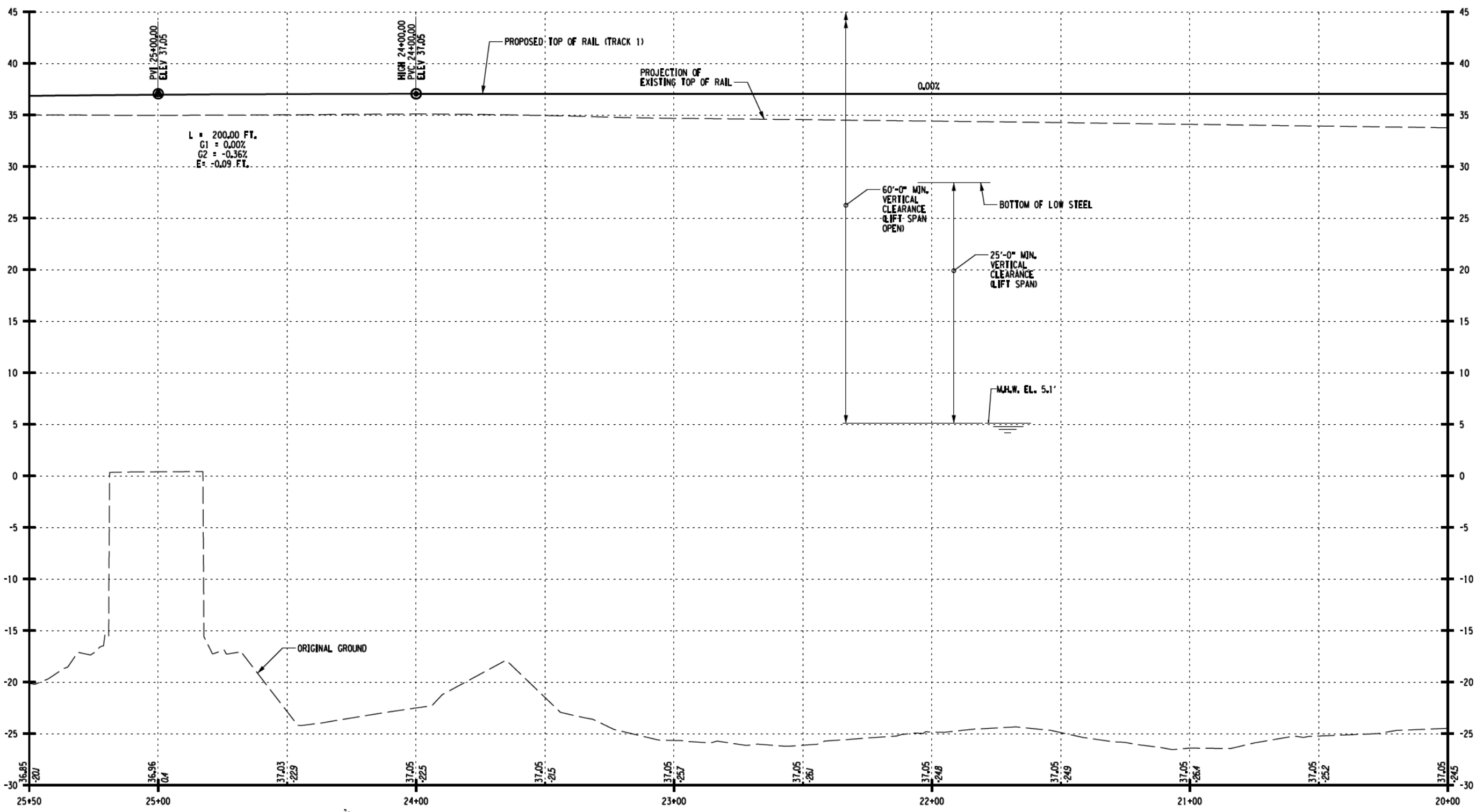
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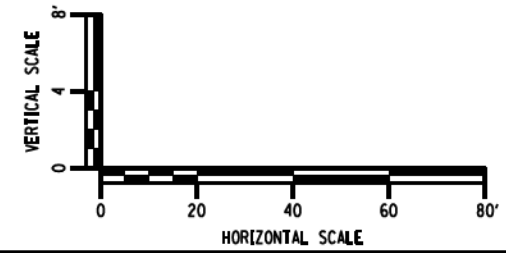
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ELEVATION



— Limits of Cofferdam/Tremie Seal



STATION
TRACK 1 PROFILE

AFFIX SEAL: ON ₁	ALTERED BY: ON ₂

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COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

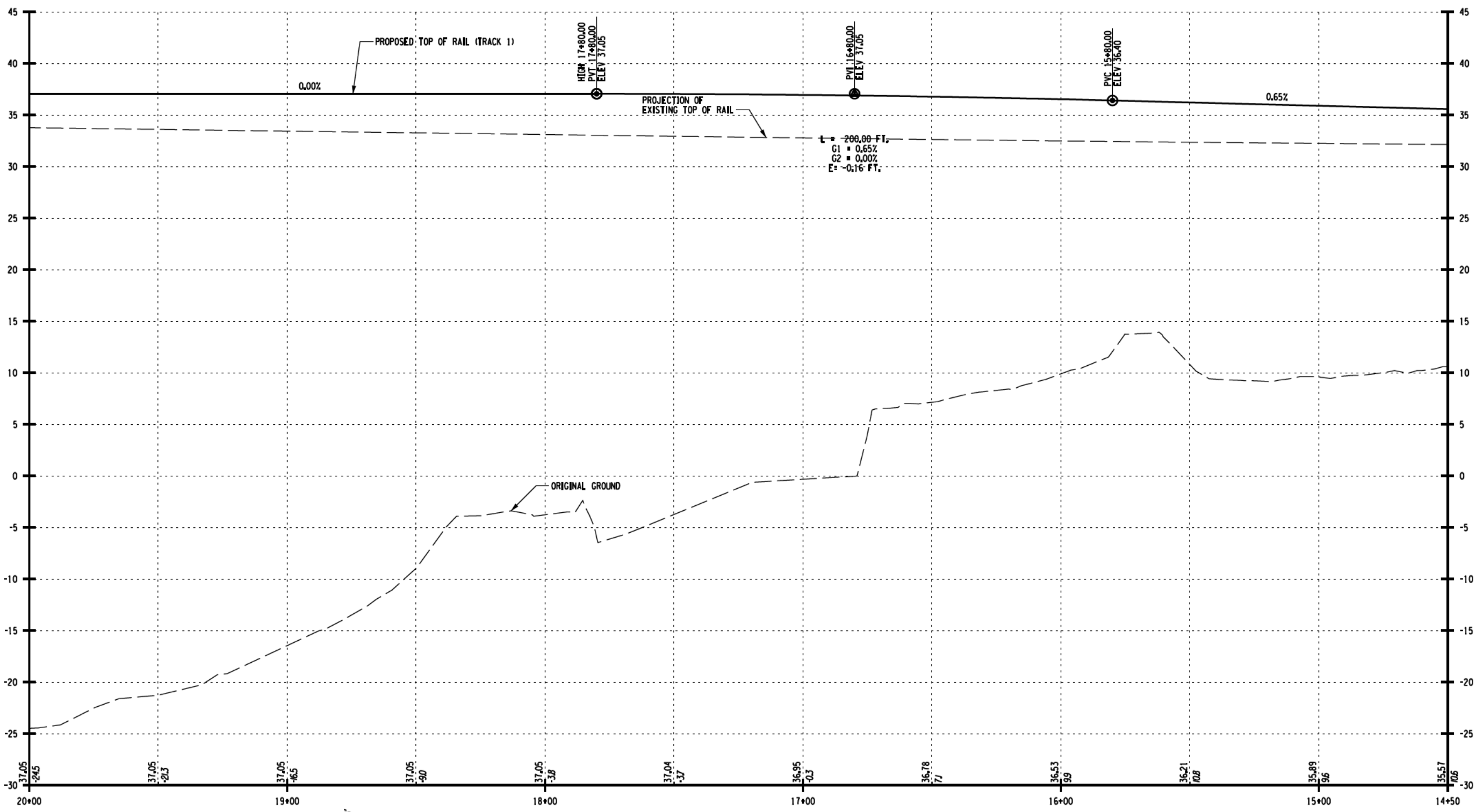
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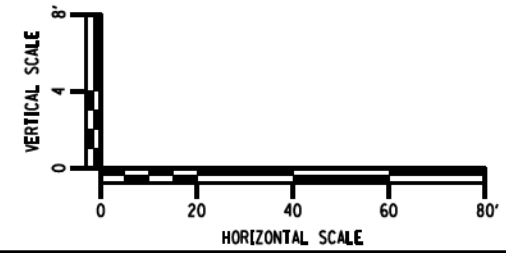
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ELEVATION



— Limits of Cofferdam/Tremie Seal

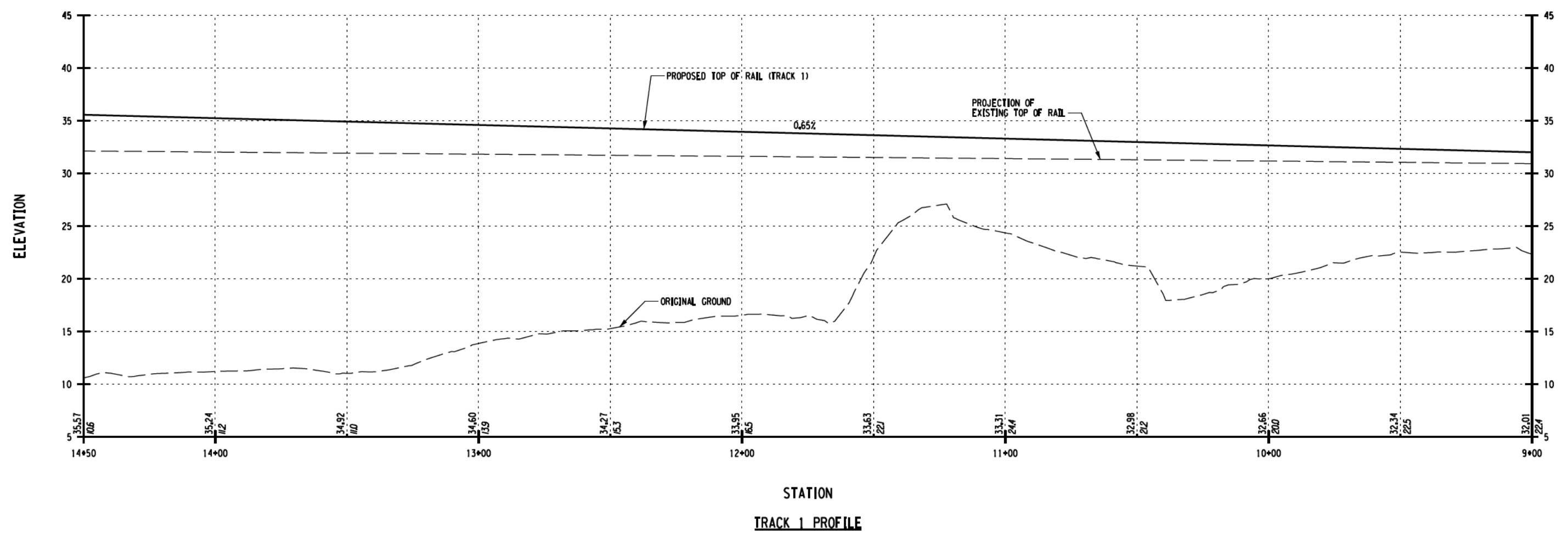


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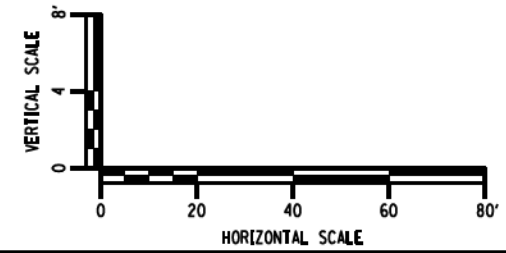
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— Limits of Cofferdam/Tremie Seal



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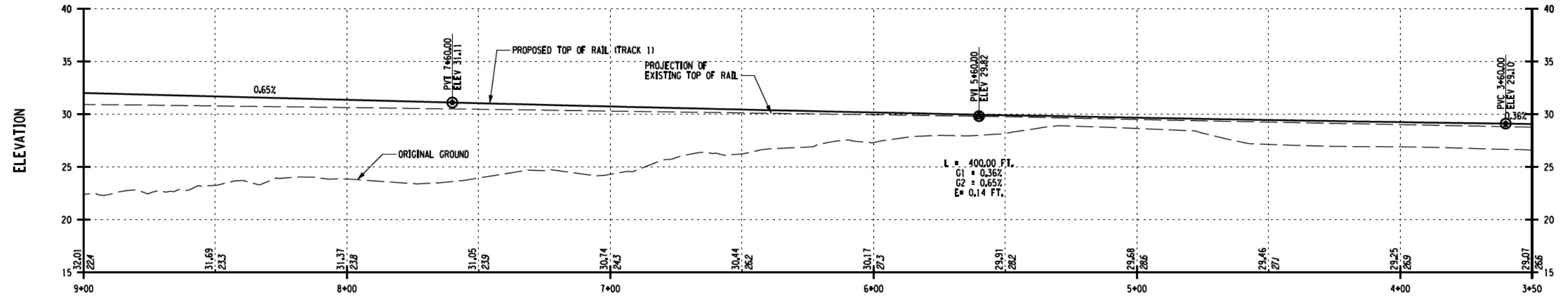
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

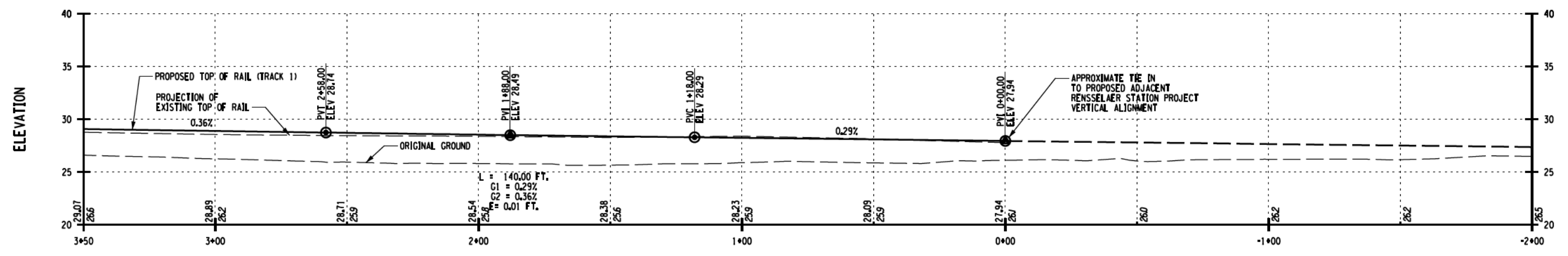
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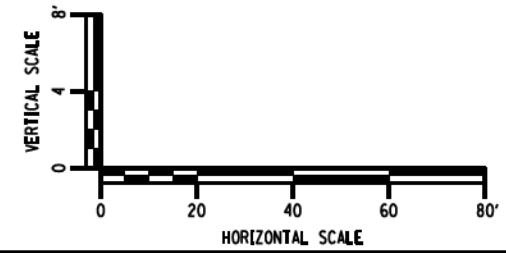


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— Limits of Cofferdam/Tremie Seal

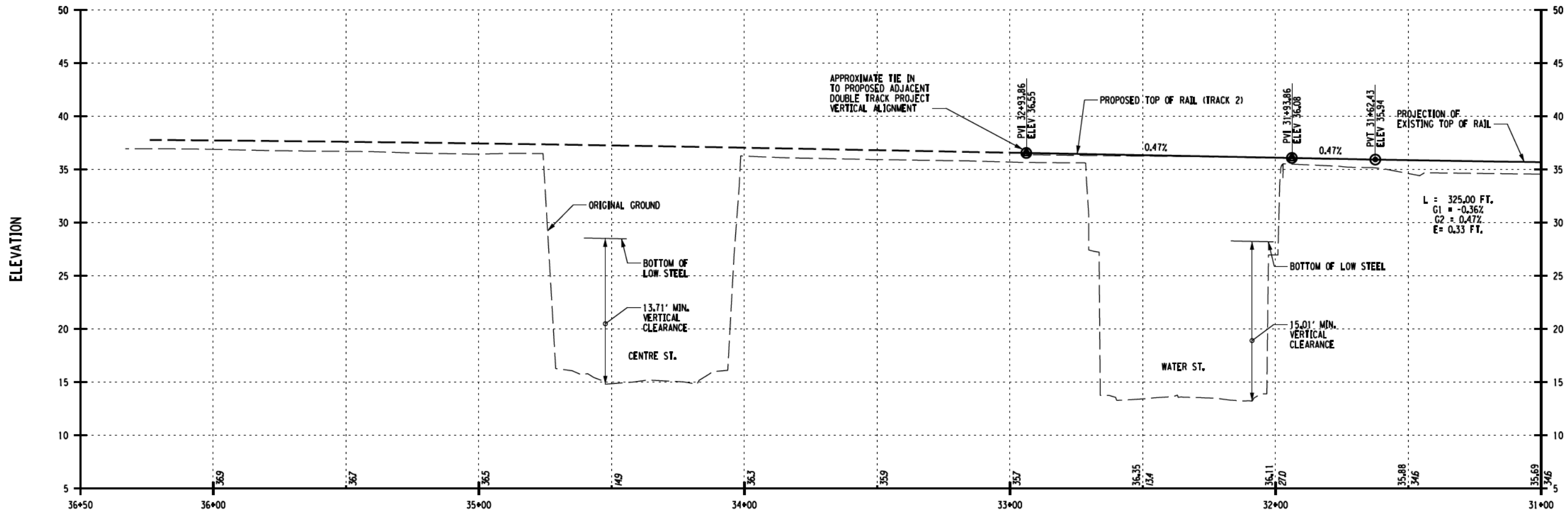


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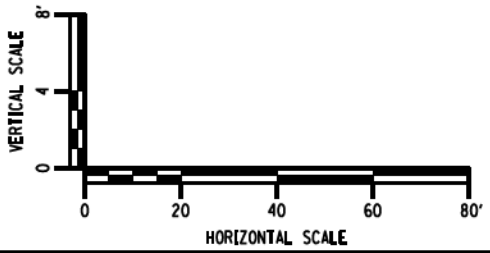
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STATION
TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal



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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

CONTRACT NUMBER
DRAWING NO. TPR-7
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

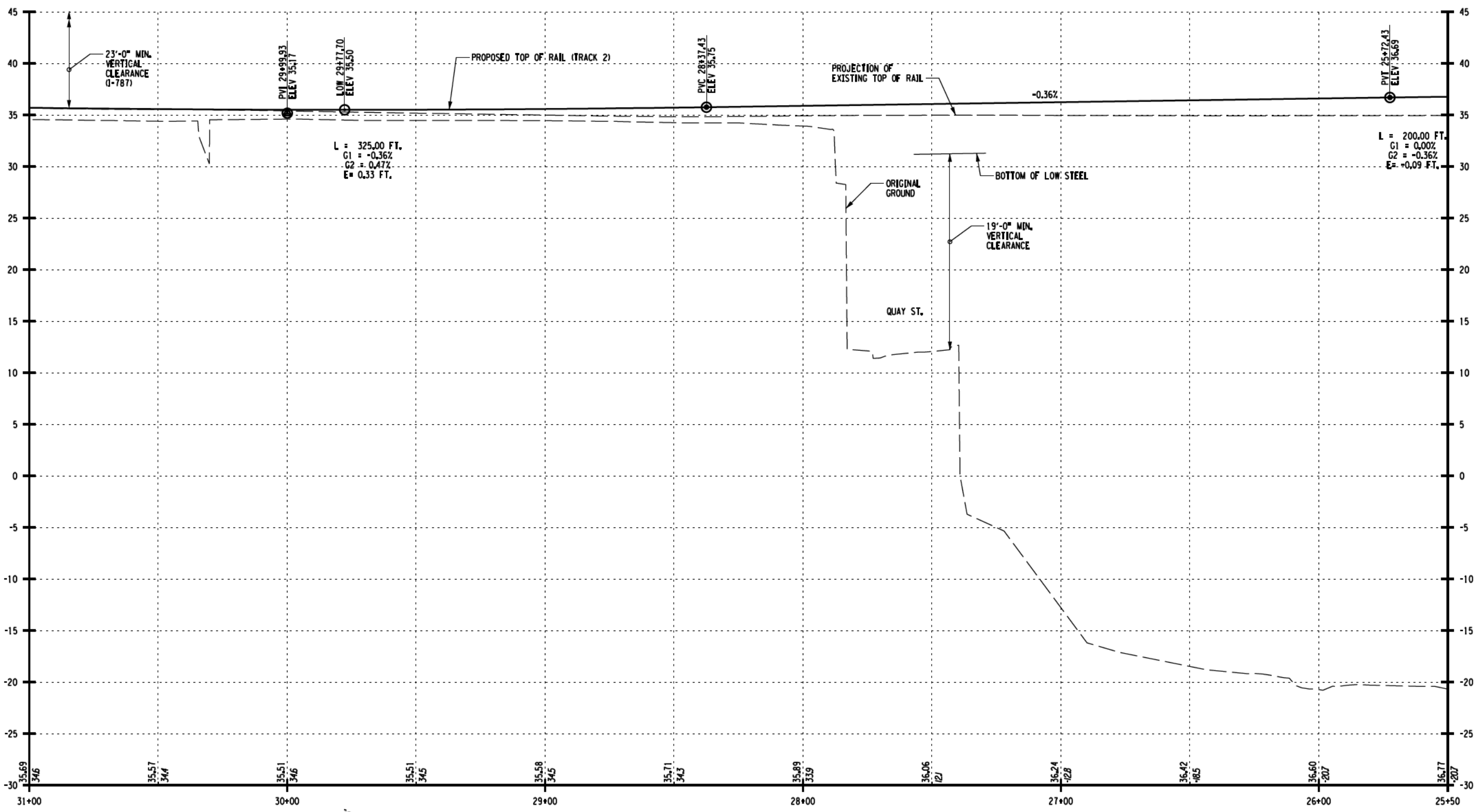


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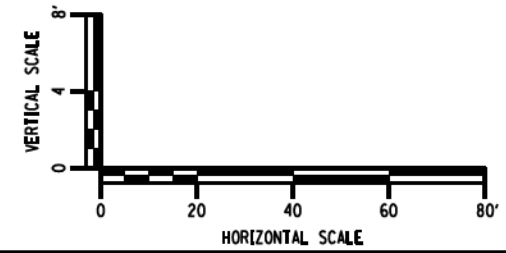
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ELEVATION



— Limits of Cofferdam/Tremie Seal

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COUNTY: ALBANY	REGION: 1
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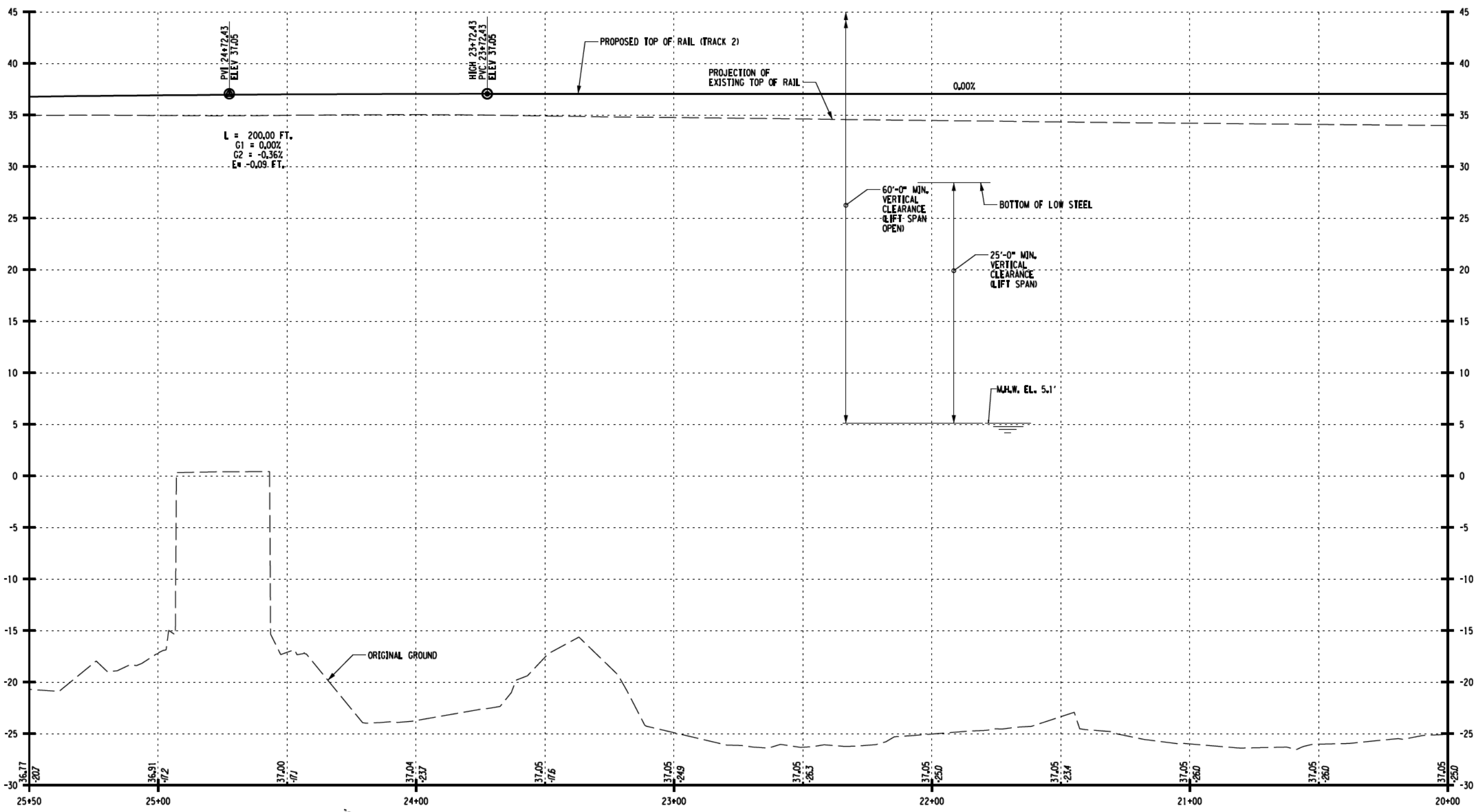
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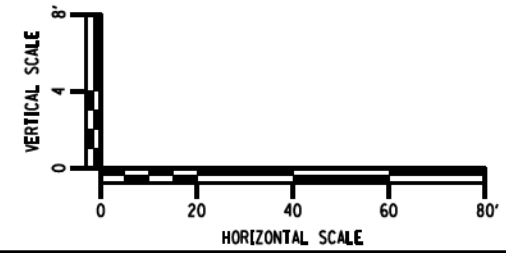
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— Limits of Cofferdam/Tremie Seal



STATION
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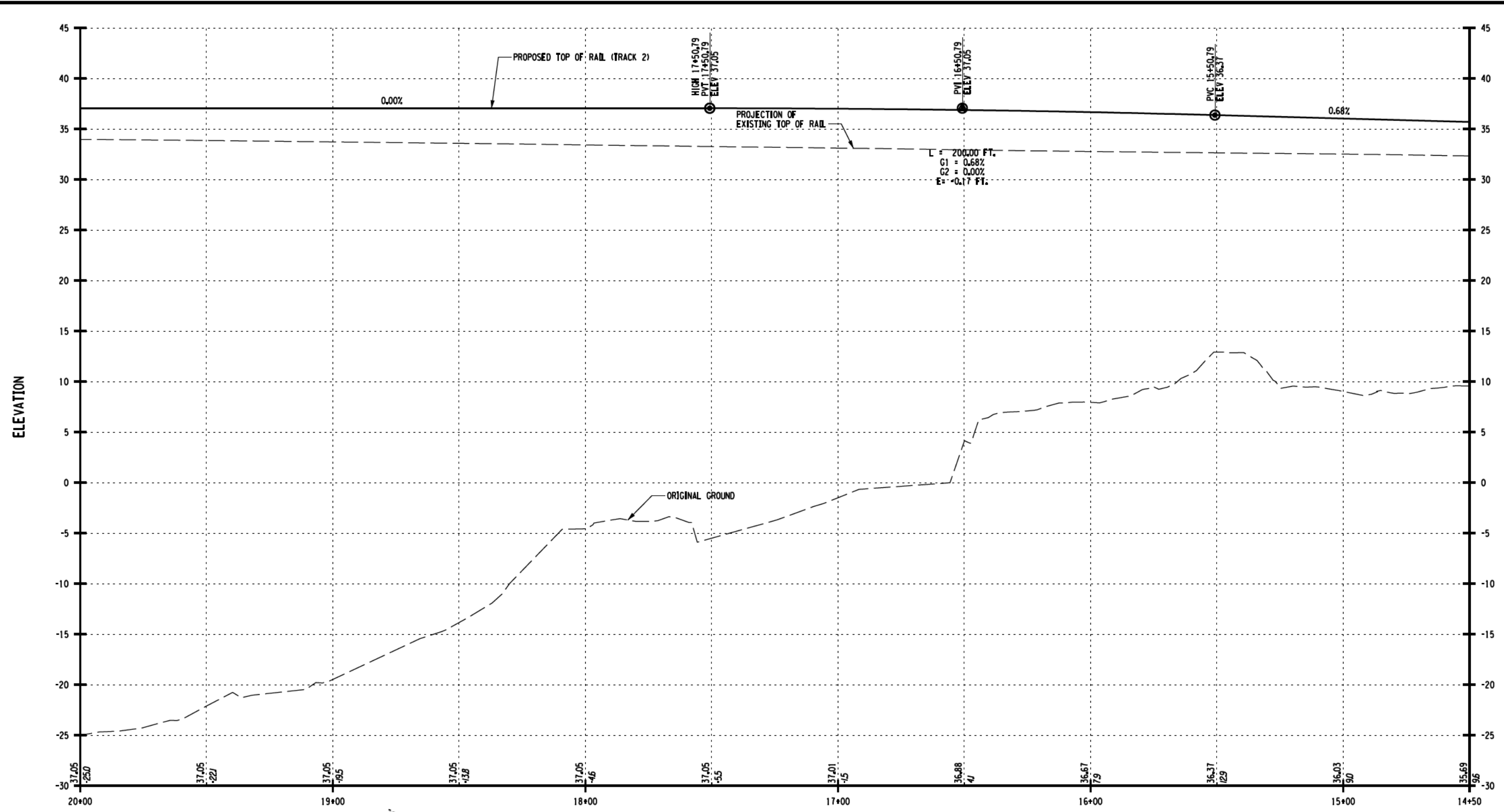
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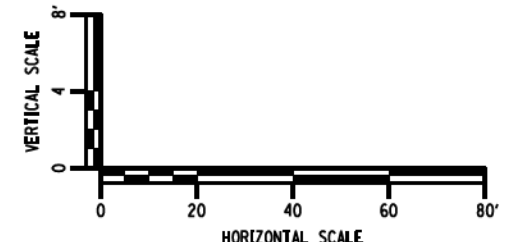


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— Limits of Cofferdam/Tremie Seal

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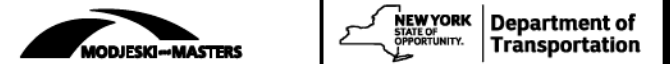
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BRIDGES 7092890	CULVERTS
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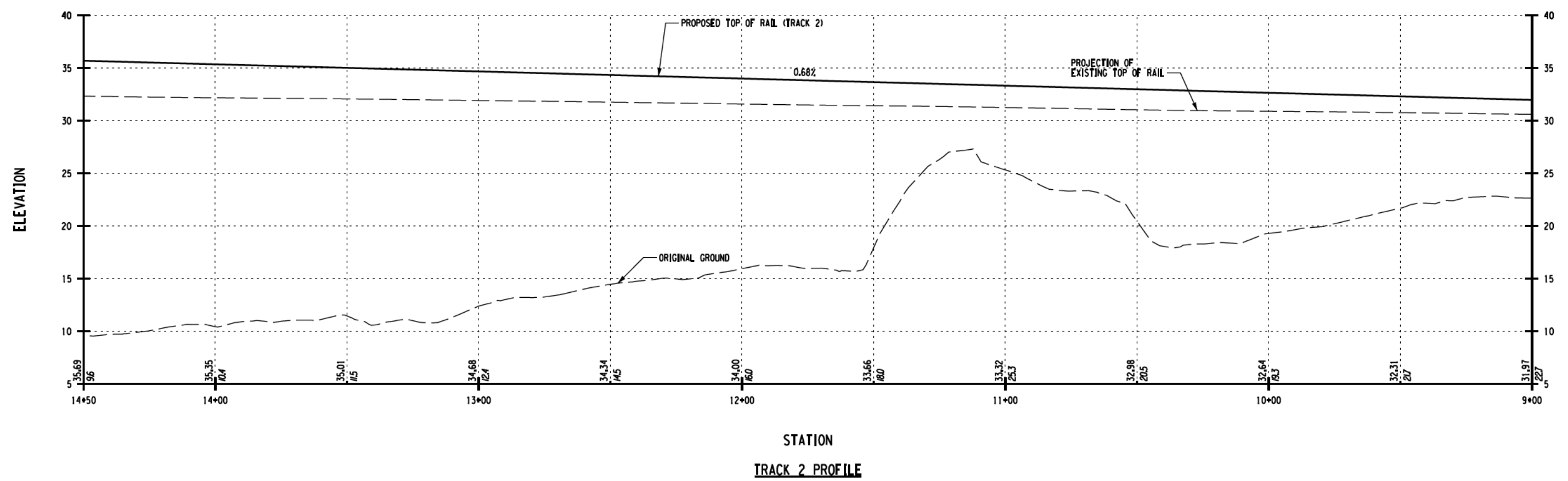
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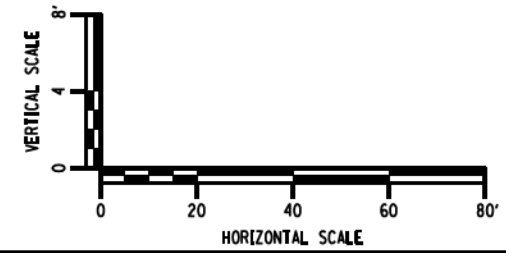


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— Limits of Cofferdam/Tremie Seal



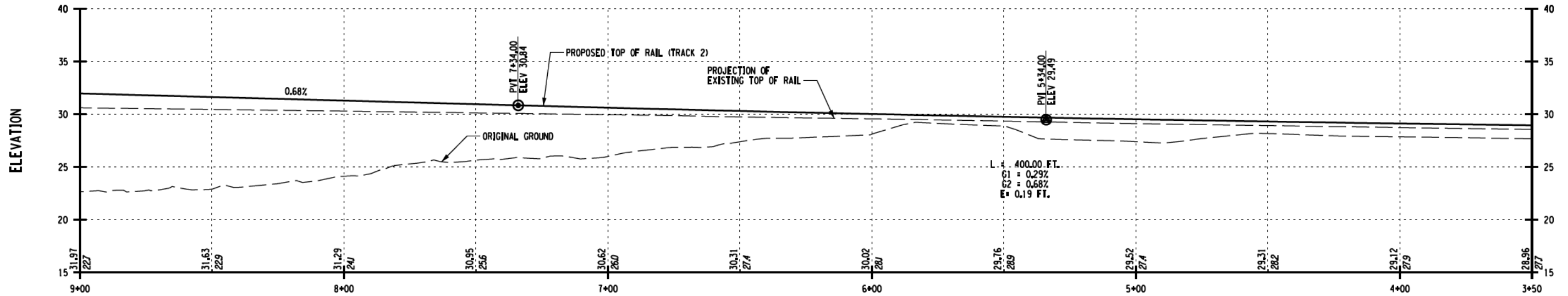
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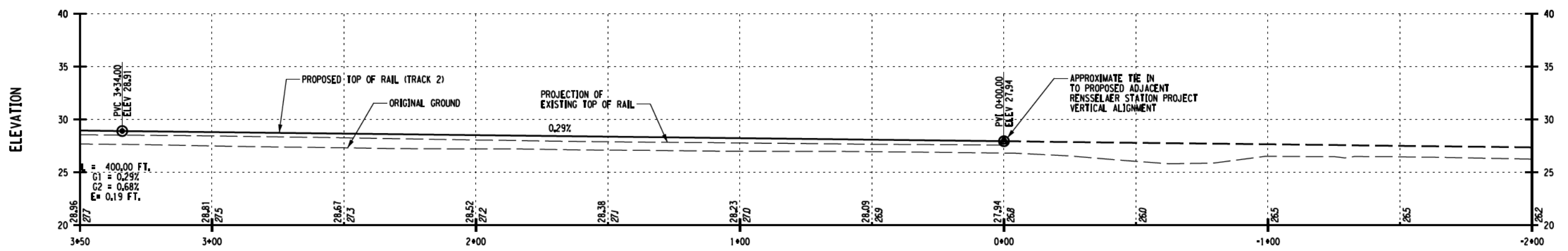
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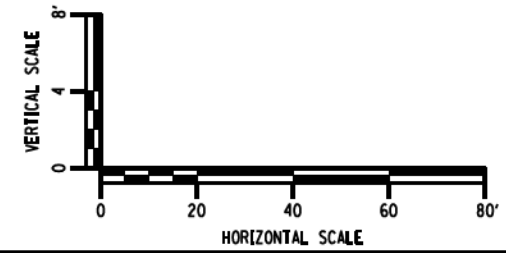


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— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON ₁	ALTERED BY: ON ₂

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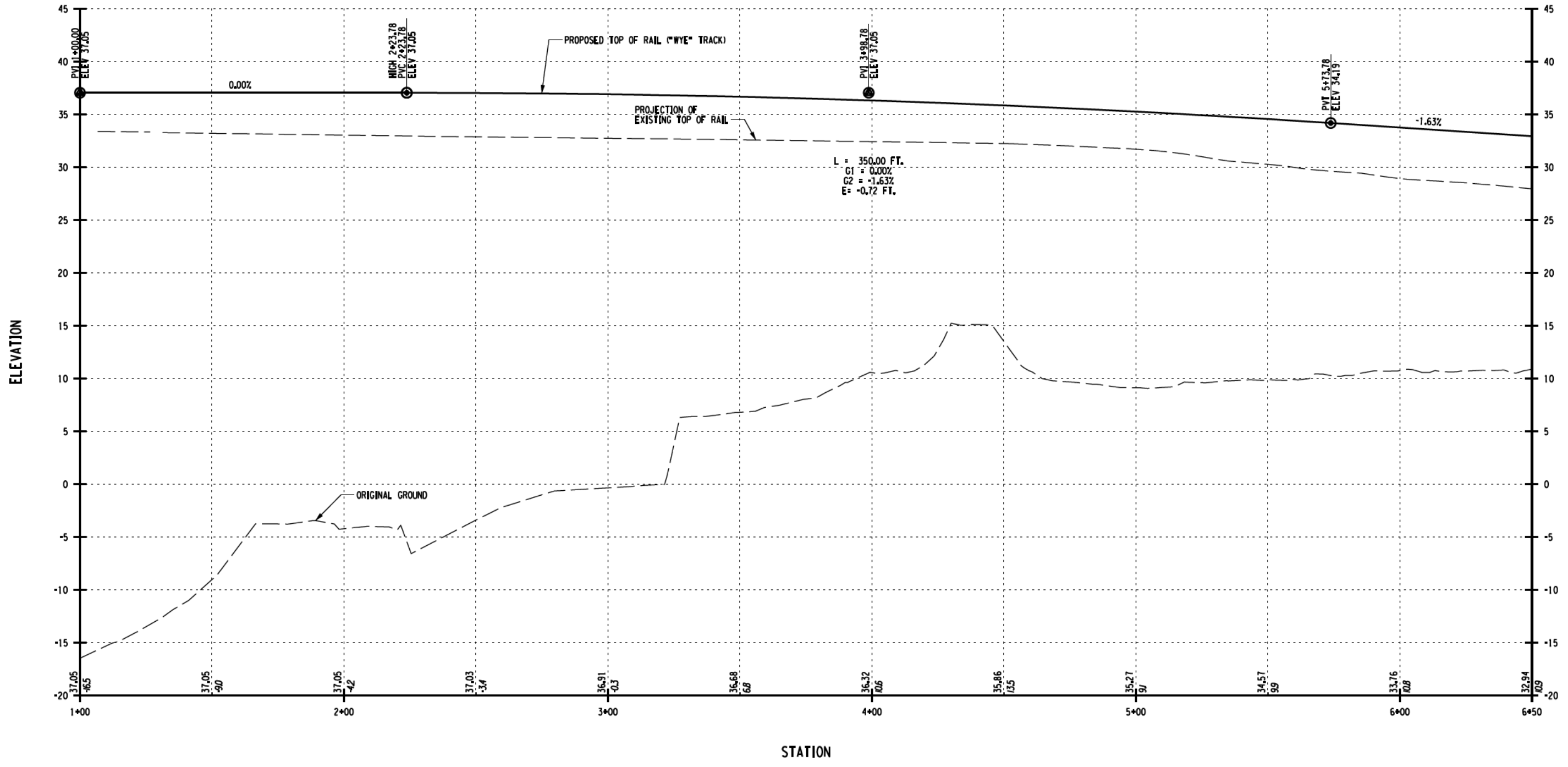
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CONTRACT NUMBER	DRAWING NO. TPR-12
	SHEET NO.

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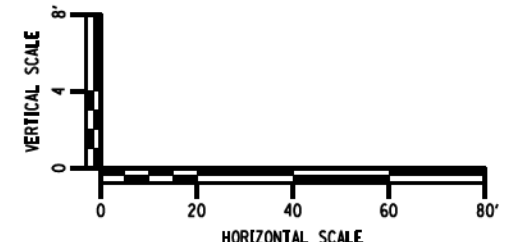
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— Limits of Cofferdam/Tremie Seal

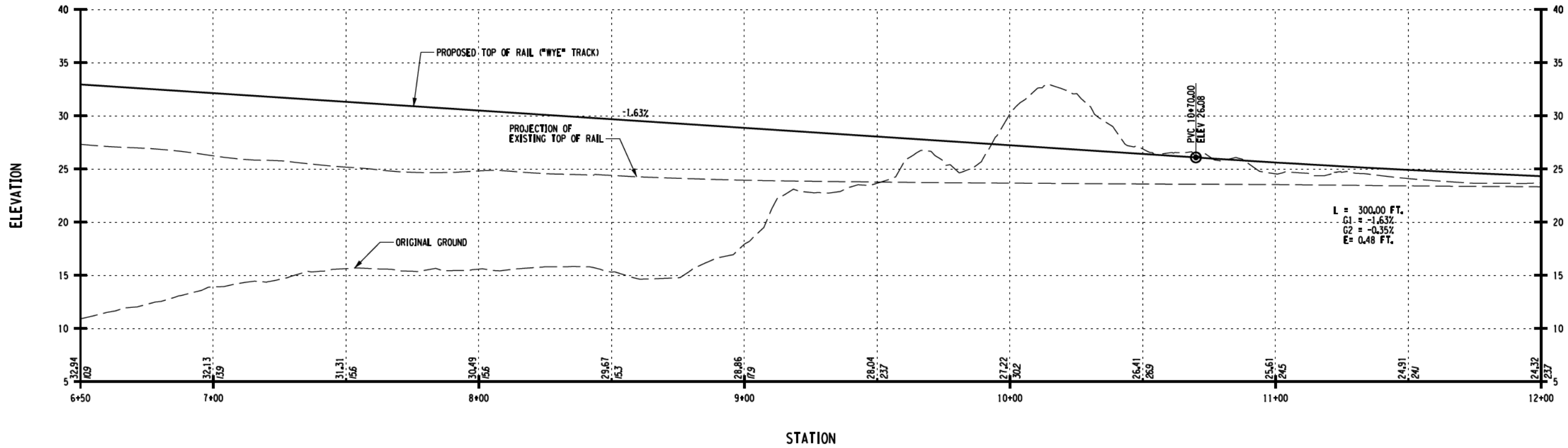
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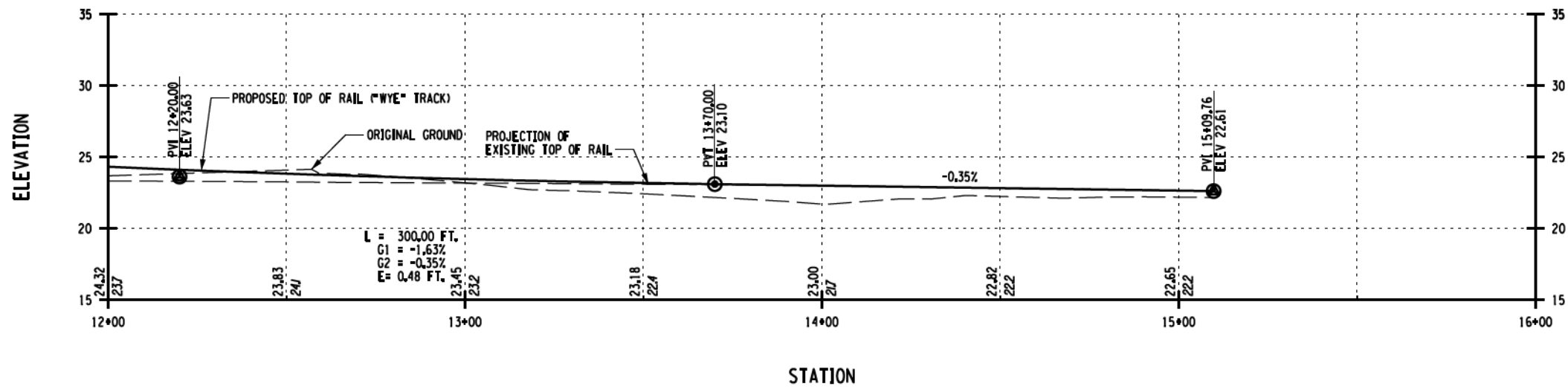
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 DESIGN SUPERVISOR

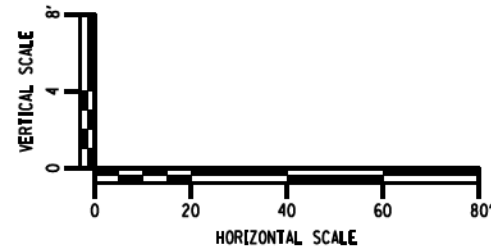


"WYE" TRACK PROFILE



"WYE" TRACK PROFILE

— Limits of Cofferdam/Tremie Seal



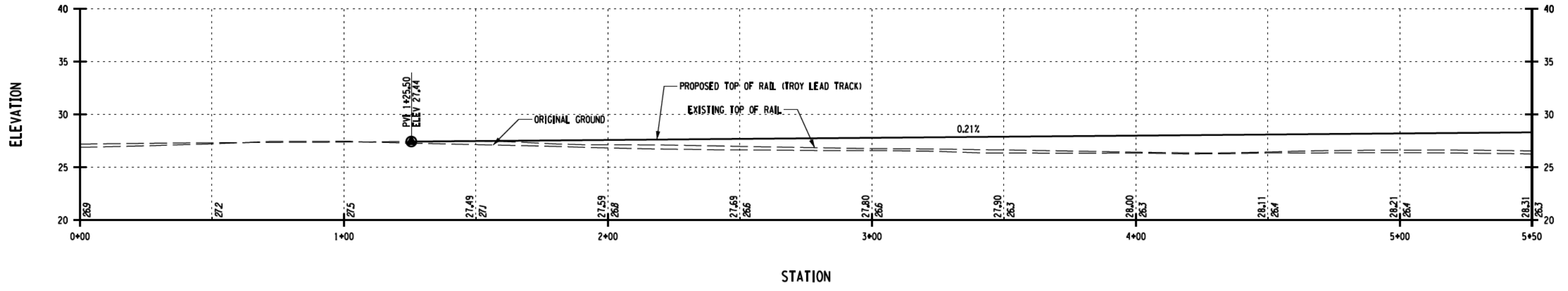
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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PROFILE NORTH ALTERNATIVE	DRAWING NO. TPR-14 SHEET NO.
COUNTY: ALBANY	REGION: 1				Department of Transportation

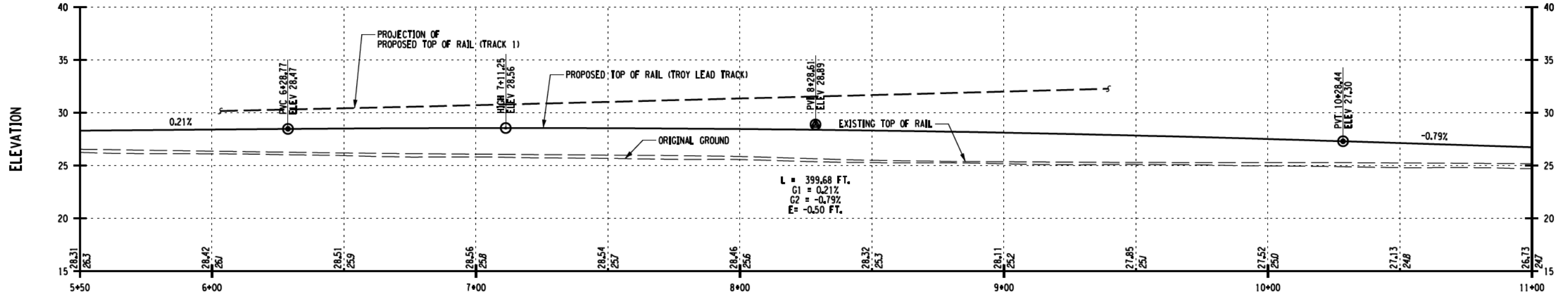
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

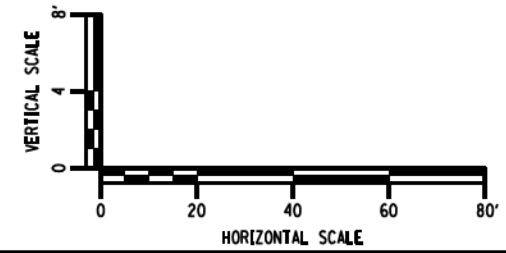


TROY LEAD TRACK PROFILE



TROY LEAD TRACK PROFILE

— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON ₁	ALTERED BY: ON ₂

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED
TRACK PROFILE NORTH ALTERNATIVE	

CONTRACT NUMBER	DRAWING NO. TPR-15
	SHEET NO.

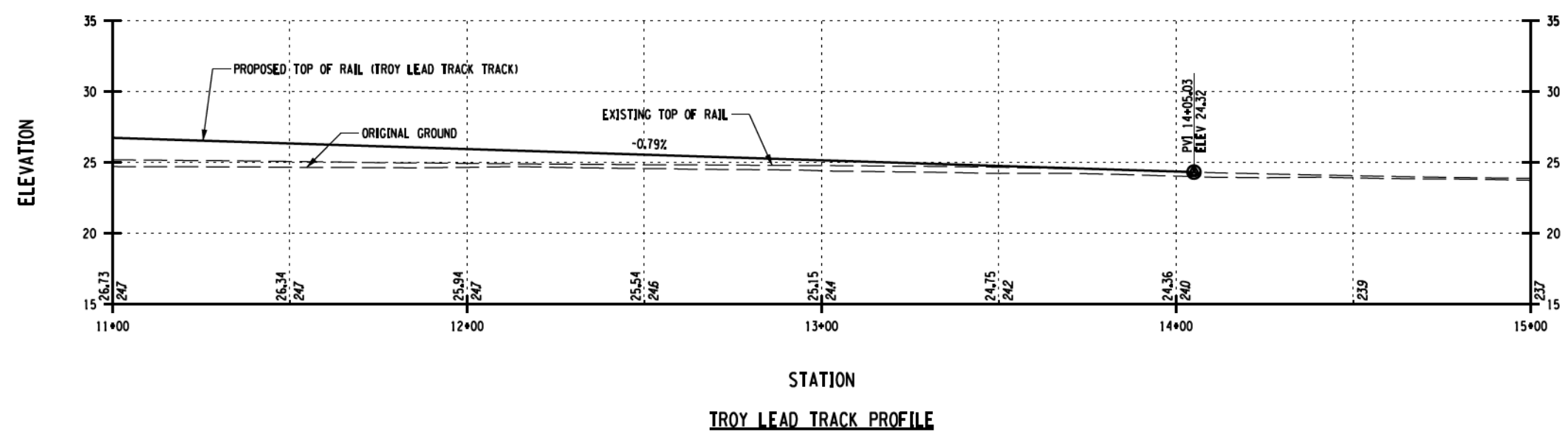
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

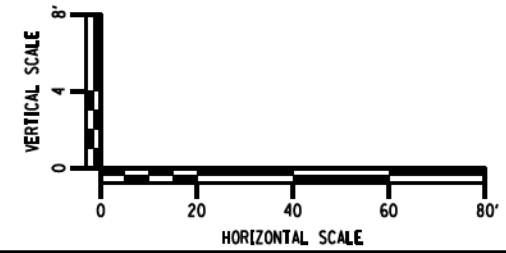
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 USER = ONClescert

DESIGN SUPERVISOR
 JOB MANAGER
 DESIGN
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 DRAFTING
 CHECK
 PROJECT MANAGER



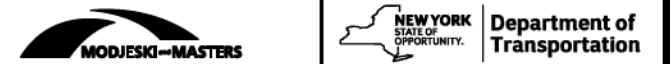
— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON



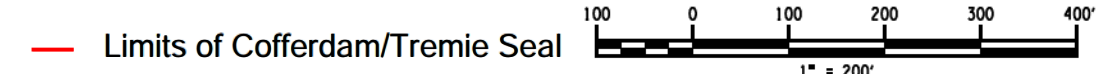
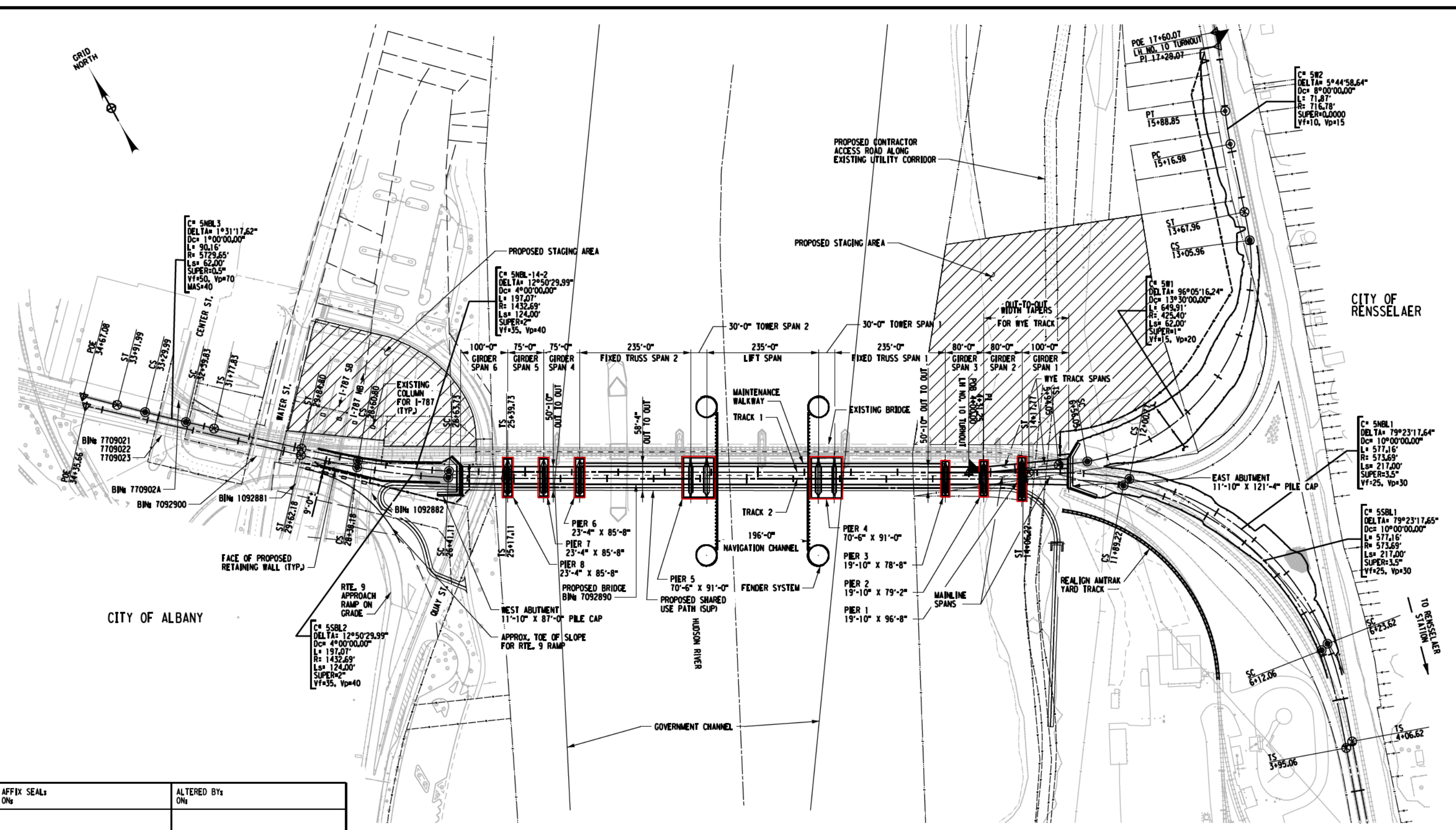
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		MARCH 2021				TRACK PROFILE NORTH ALTERNATIVE
		COUNTY: ALBANY	REGION: 1			

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.





PROJECT MANAGER
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 JOB MANAGER
 DESIGN SUPERVISOR



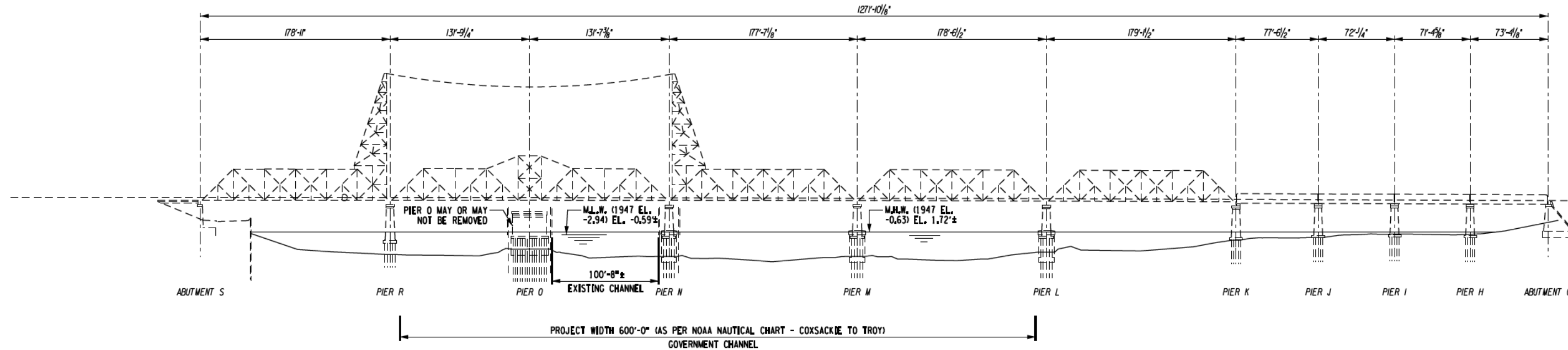
— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON:	ALTERED BY: ON:
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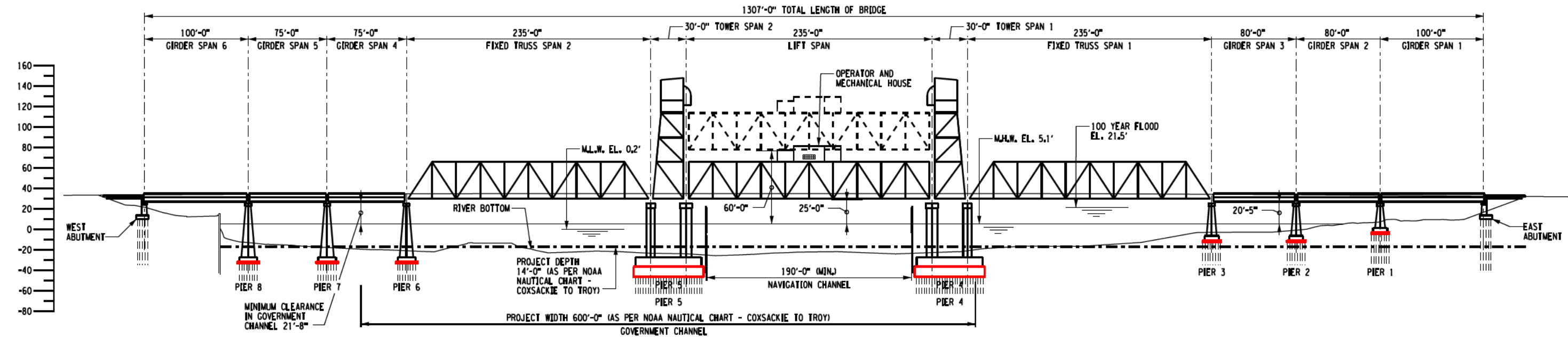
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	MARCH 2021			REPLACEMENT ON ADJACENT ALIGNMENT TO THE SOUTH	DRAWING NO. SA-1 SHEET NO.
COUNTY: ALBANY	REGION: 1				
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = DNL/escart

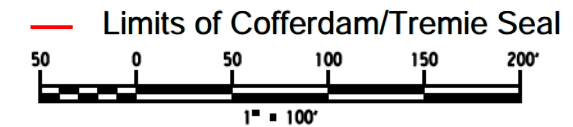
PROJECT MANAGER
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 DRAFTING
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 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR



EXISTING ELEVATION
LOOKING NORTH



BRIDGE ELEVATION
LOOKING NORTH

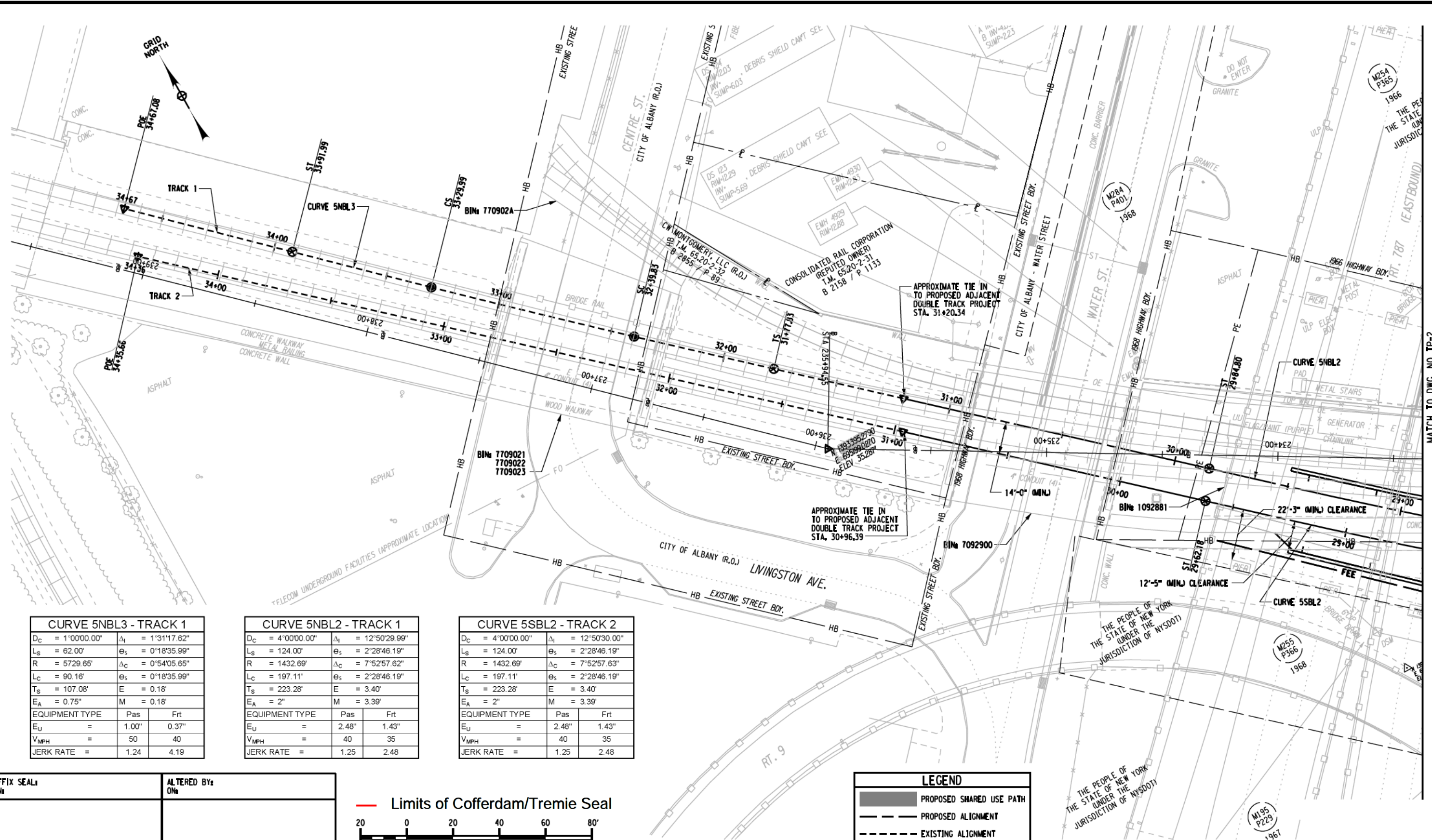


AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS: _____ _____ _____ COUNTY: ALBANY REGION: 1	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			REPLACEMENT ON ADJACENT ALIGNMENT TO THE SOUTH	DRAWING NO. SA-2 SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				 Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = DNL/escart

PROJECT MANAGER
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 DRAFTING
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 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR



CURVE 5NBL3 - TRACK 1

$D_c = 1^{\circ}00'00.00"$	$\Delta_1 = 1^{\circ}31'17.62"$
$L_s = 62.00'$	$\theta_s = 0^{\circ}18'35.99"$
$R = 5729.65'$	$\Delta_c = 0^{\circ}54'05.65"$
$L_c = 90.16'$	$\theta_s = 0^{\circ}18'35.99"$
$T_s = 107.08'$	$E = 0.18'$
$E_A = 0.75"$	$M = 0.18'$
EQUIPMENT TYPE	
Pas	Frt
$E_U = 1.00"$	$0.37"$
$V_{MPH} = 50$	40
JERK RATE = 1.24	4.19

CURVE 5NBL2 - TRACK 1

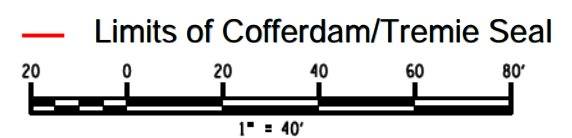
$D_c = 4^{\circ}00'00.00"$	$\Delta_1 = 12^{\circ}50'29.99"$
$L_s = 124.00'$	$\theta_s = 2^{\circ}28'46.19"$
$R = 1432.69'$	$\Delta_c = 7^{\circ}52'57.62"$
$L_c = 197.11'$	$\theta_s = 2^{\circ}28'46.19"$
$T_s = 223.28'$	$E = 3.40'$
$E_A = 2"$	$M = 3.39'$
EQUIPMENT TYPE	
Pas	Frt
$E_U = 2.48"$	$1.43"$
$V_{MPH} = 40$	35
JERK RATE = 1.25	2.48

CURVE 5SBL2 - TRACK 2

$D_c = 4^{\circ}00'00.00"$	$\Delta_1 = 12^{\circ}50'30.00"$
$L_s = 124.00'$	$\theta_s = 2^{\circ}28'46.19"$
$R = 1432.69'$	$\Delta_c = 7^{\circ}52'57.63"$
$L_c = 197.11'$	$\theta_s = 2^{\circ}28'46.19"$
$T_s = 223.28'$	$E = 3.40'$
$E_A = 2"$	$M = 3.39'$
EQUIPMENT TYPE	
Pas	Frt
$E_U = 2.48"$	$1.43"$
$V_{MPH} = 40$	35
JERK RATE = 1.25	2.48

LEGEND

- PROPOSED SHARED USE PATH
- PROPOSED ALIGNMENT
- EXISTING ALIGNMENT



AFFIX SEAL: ON:	ALTERED BY: ON:
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY REGION: 1	

PIN 1935.49 MARCH 2021	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
TRACK PLAN SOUTH ALTERNATIVE			DRAWING NO. TP-1 SHEET NO.	
			Department of Transportation	

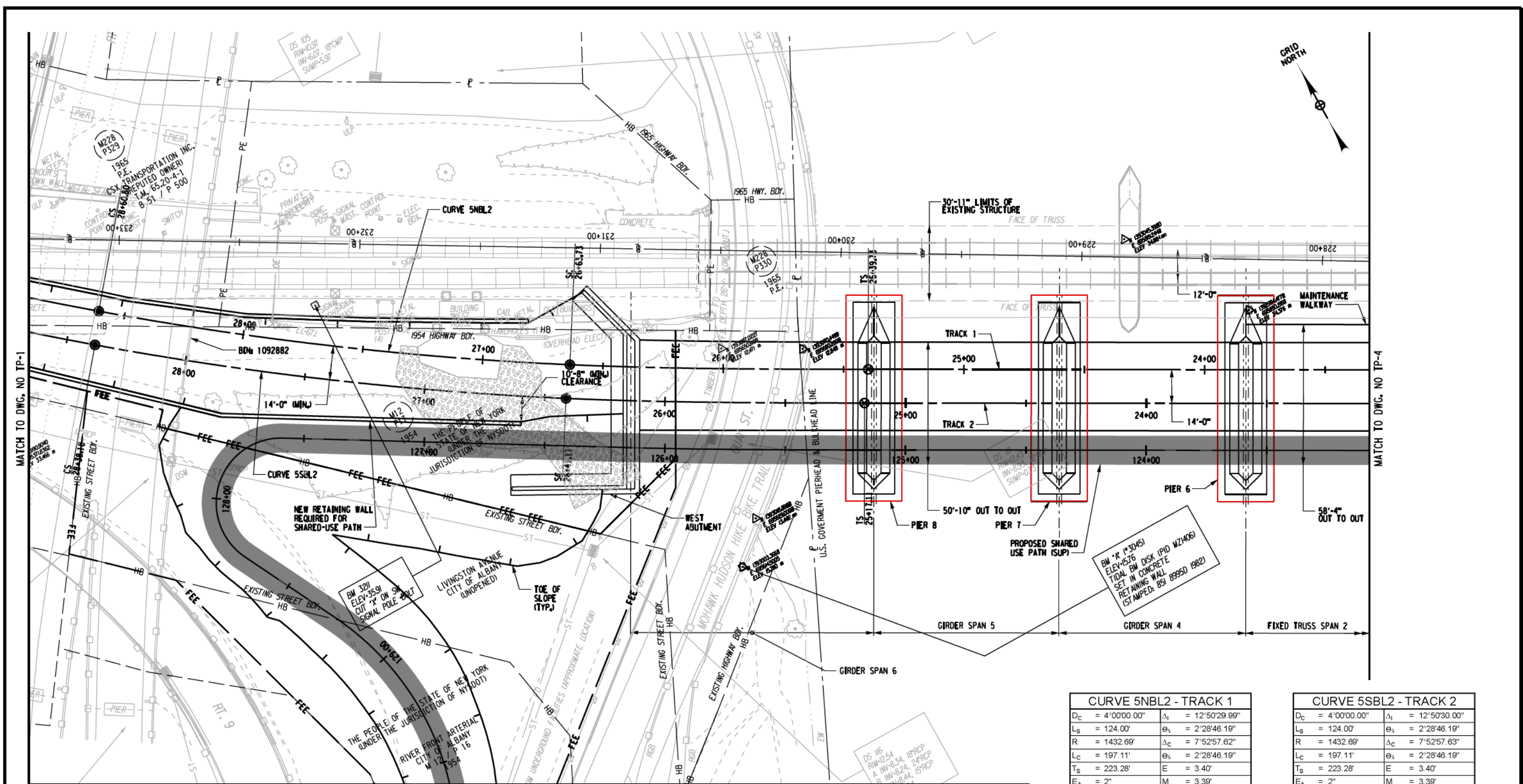
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 DATE/TIME = 3/18/2021
 USER = ONC1escert

MATCH TO DWG. NO TP-2

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

PROJECT MANAGER
CHECK
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DESIGN
JOB MANAGER
DESIGN SUPERVISOR

FILE NAME =
DATE/TIME = 3/18/2021
USER = ONC1escr1

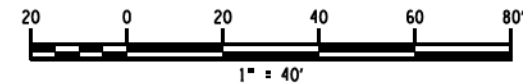


CURVE 5NBL2 - TRACK 1		
D _C = 4'00"00.00'	Δ _i = 12'50'29.99"	
L _s = 124.00'	Θ _s = 2'28'46.19"	
R = 1432.69'	Δ _c = 7'52'57.62"	
L _c = 197.11'	Θ _s = 2'28'46.19"	
T _s = 223.28'	E = 3.40'	
E _A = 2"	M = 3.39'	
EQUIPMENT TYPE	Pas	Frt
E _U	= 2.48"	1.43"
V _{MPH}	= 40	35
JERK RATE	= 1.25	2.48

CURVE 5SBL2 - TRACK 2		
D _C = 4'00"00.00'	Δ _i = 12'50'30.00"	
L _s = 124.00'	Θ _s = 2'28'46.19"	
R = 1432.69'	Δ _c = 7'52'57.63"	
L _c = 197.11'	Θ _s = 2'28'46.19"	
T _s = 223.28'	E = 3.40'	
E _A = 2"	M = 3.39'	
EQUIPMENT TYPE	Pas	Frt
E _U	= 2.48"	1.43"
V _{MPH}	= 40	35
JERK RATE	= 1.25	2.48

LEGEND

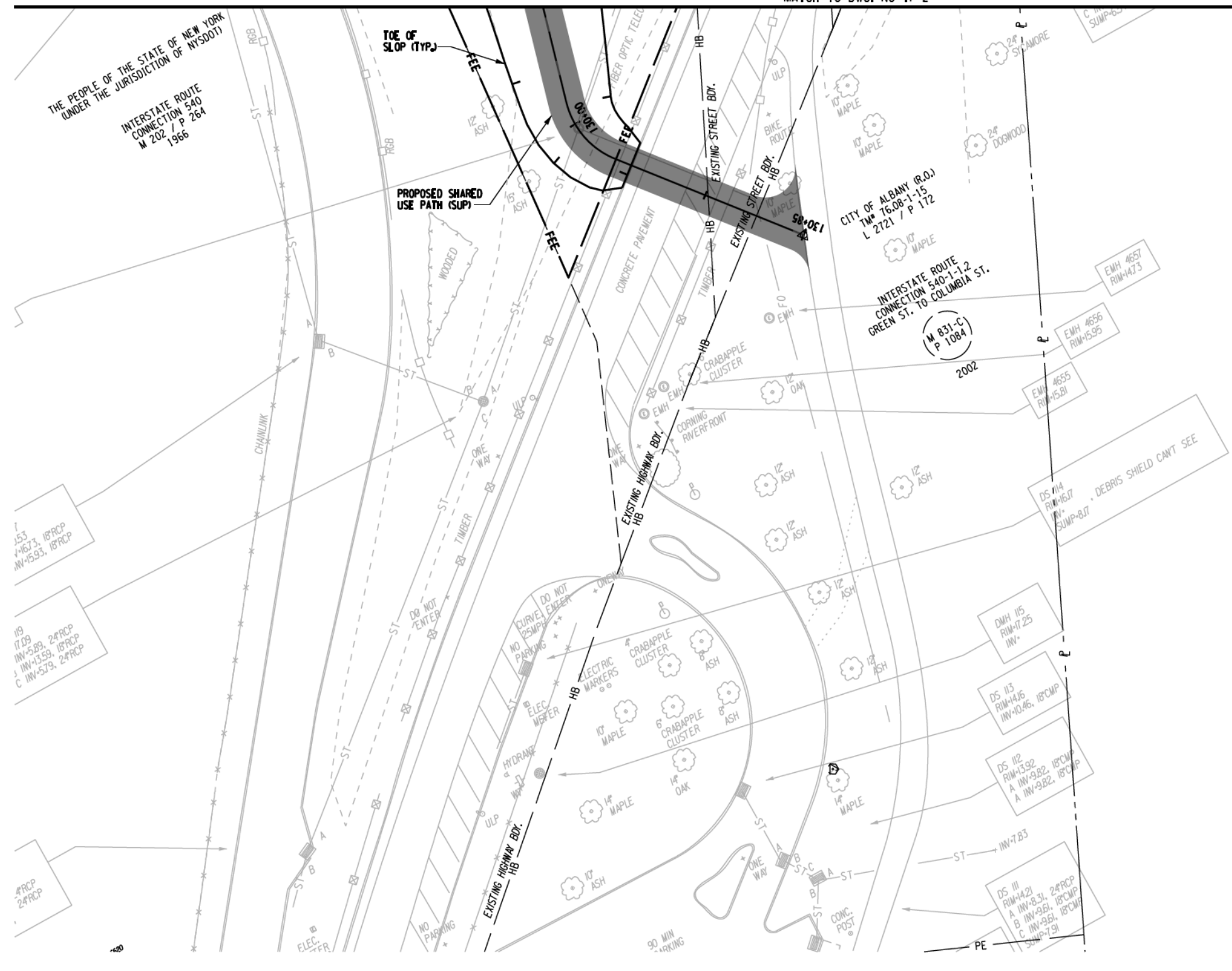
- PROPOSED SHARED USE PATH (thick grey line)
- PROPOSED ALIGNMENT (dashed line)
- EXISTING ALIGNMENT (solid line)
- Limits of Cofferdam/Tremie Seal (red dashed line)



AFFIX SEAL: ON ₁	ALTERED BY: ON ₂
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTRY: ALBANY REGION: 1	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-2 SHEET NO.
			Department of Transportation	

MATCH TO DWG. NO TP-2

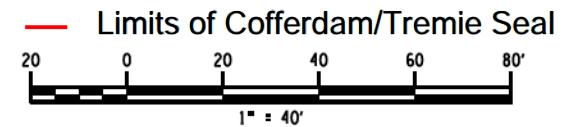


PROJECT MANAGER
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 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

AFFIX SEAL: ON
 ALTERED BY: ON

LEGEND

- PROPOSED SHARED USE PATH
- PROPOSED ALIGNMENT
- EXISTING ALIGNMENT



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		PIN 1935.49 MARCH 2021	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
TRACK PLAN SOUTH ALTERNATIVE					DRAWING NO. TP-3 SHEET NO.	
COUNTY: ALBANY REGION: 1						

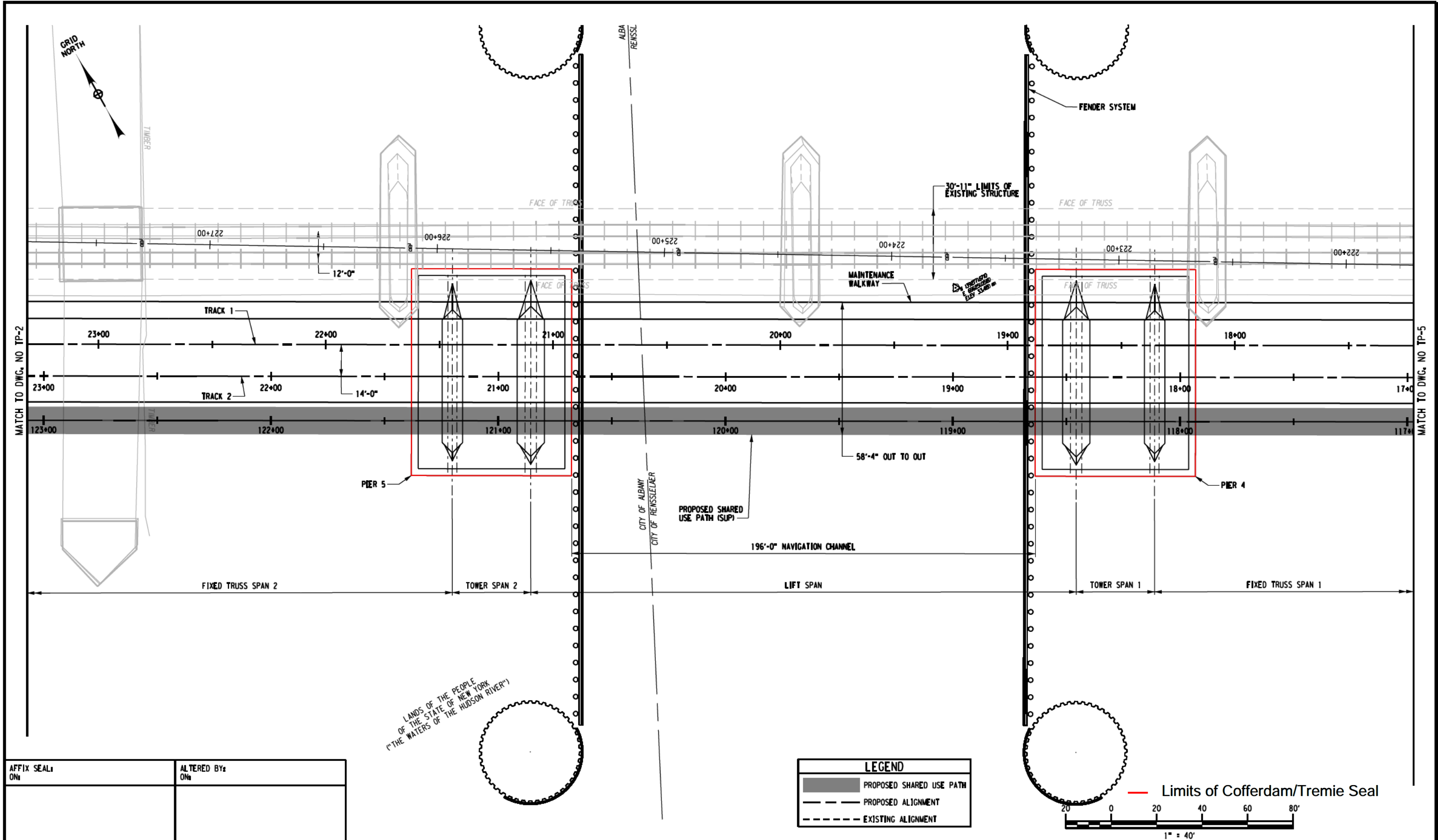
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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 USER = ONClescert

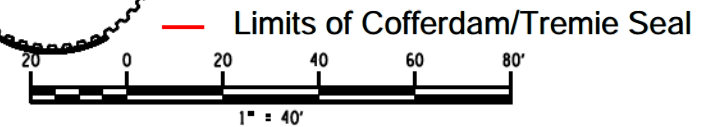
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DATE/TIME = 3/18/2021
USER = ONClescert

PROJECT MANAGER
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CHECK
DESIGN
JOB MANAGER
DESIGN SUPERVISOR



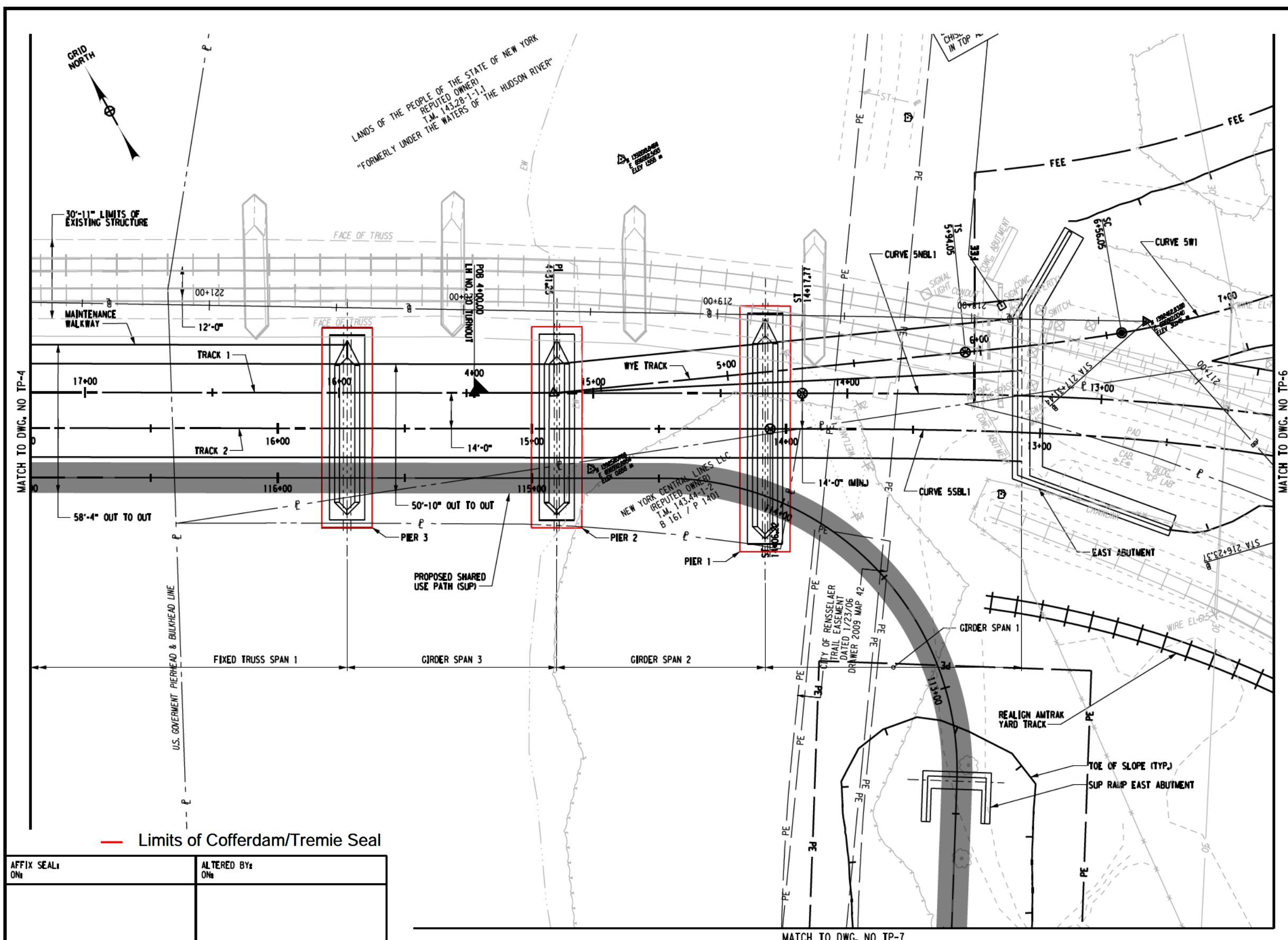
AFFIX SEAL: ON ₁	ALTERED BY: ON ₁
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LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-4 SHEET NO.
	COUNTY: ALBANY	REGION: 1			
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					

PROJECT MANAGER
 CHECK
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 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR
 FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONCLSCERT



CURVE 5W1 - WYE TRACK

D _c = 13'30'00.00"	Δ _i = 96°05'16.24"	
L _s = 62.00'	Θ _s = 4°10'31.17"	
R = 425.40'	Δ _c = 87°44'13.89"	
L _c = 651.41'	Θ _s = 4°10'31.17"	
T _s = 504.59'	E = 164.67'	
E _A = 0.75"	M = 118.71'	
EQUIPMENT TYPE	Pas	Fit
E _u	= 1.38"	0.20"
V _{MPH}	= 15	10
JERK RATE	= 2.99	31

CURVE 5NBL1 - TRACK 1

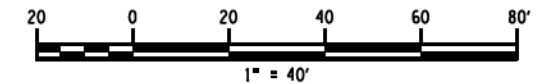
D _c = 10'00'00.00"	Δ _i = 79°23'17.64"	
L _s = 217.00'	Θ _s = 10°50'10.44"	
R = 573.69'	Δ _c = 57°42'56.75"	
L _c = 577.89'	Θ _s = 10°50'10.44"	
T _s = 587.39'	E = 81.34'	
E _A = 3.5"	M = 71.24'	
EQUIPMENT TYPE	Pas	Fit
E _u	= 2.8"	0.875"
V _{MPH}	= 30	25
JERK RATE	= 2.58	9.92

CURVE 5SBL1 - TRACK 2

D _c = 10'00'00.00"	Δ _i = 79°23'17.65"	
L _s = 217.00'	Θ _s = 10°50'10.44"	
R = 573.69'	Δ _c = 57°42'56.76"	
L _c = 577.89'	Θ _s = 10°50'10.44"	
T _s = 587.39'	E = 81.34'	
E _A = 3.5"	M = 71.24'	
EQUIPMENT TYPE	Pas	Fit
E _u	= 2.8"	0.875"
V _{MPH}	= 30	25
JERK RATE	= 2.58	9.92

LEGEND

	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT

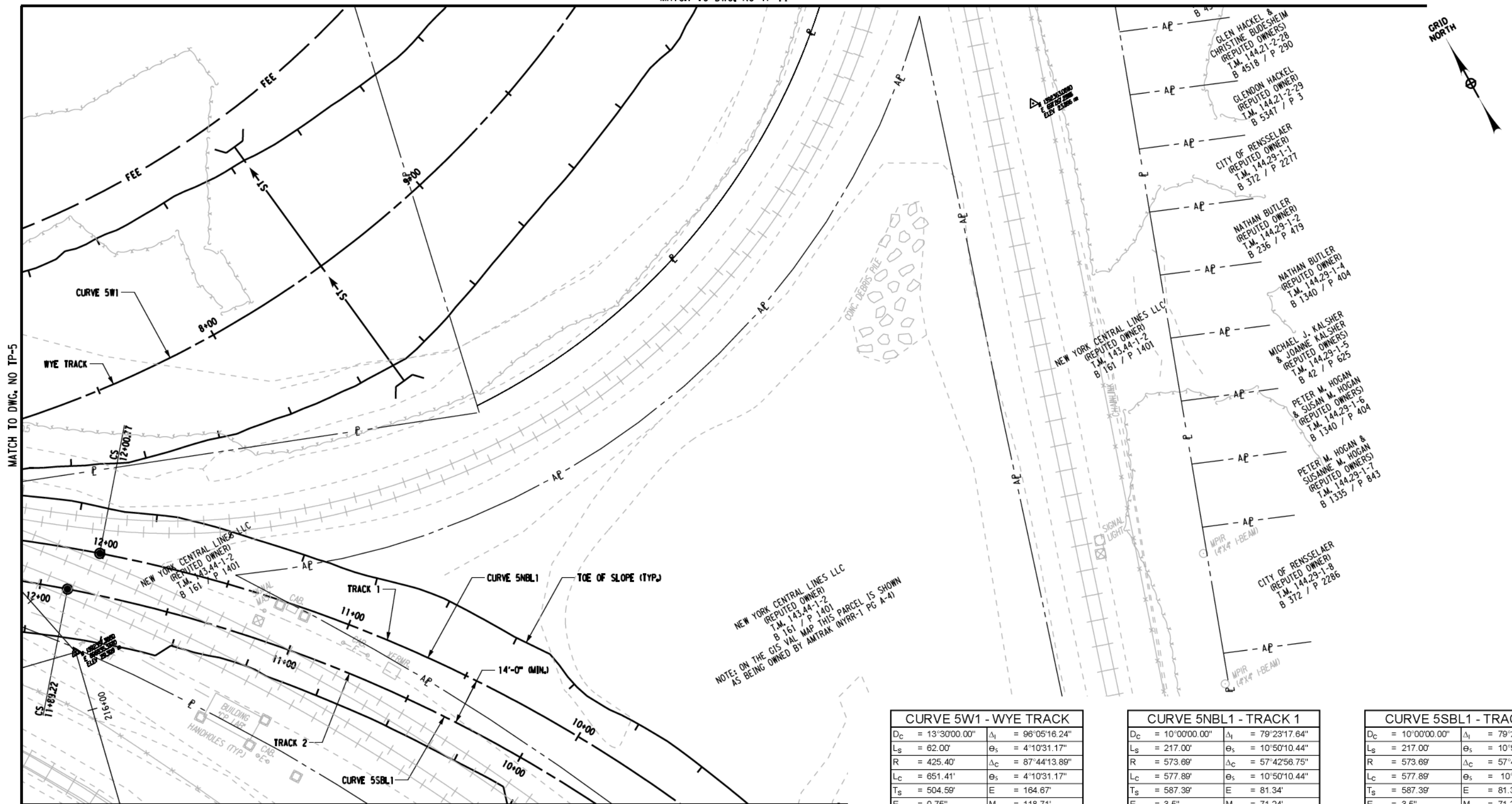


AFFIX SEAL: ON_i ALTERED BY: ON_a

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-5
		COUNTY: ALBANY	REGION: 1			SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						
					Department of Transportation	

MATCH TO DWG. NO TP-11

GRID NORTH



MATCH TO DWG. NO TP-5

MATCH TO DWG. NO TP-8

LEGEND

- PROPOSED SHARED USE PATH
- PROPOSED ALIGNMENT
- EXISTING ALIGNMENT

CURVE 5W1 - WYE TRACK

$D_c = 13'3000.00"$	$\Delta_i = 96'05'16.24"$
$L_s = 62.00'$	$\theta_s = 4'10'31.17"$
$R = 425.40'$	$\Delta_c = 87'44'13.89"$
$L_c = 651.41'$	$\theta_s = 4'10'31.17"$
$T_s = 504.59'$	$E = 164.67'$
$E_A = 0.75"$	$M = 118.71'$
EQUIPMENT TYPE	Pas Frt
$E_U =$	1.38" 0.20"
$V_{MPH} =$	15 10
JERK RATE =	2.99 31

CURVE 5NBL1 - TRACK 1

$D_c = 10'00'00.00"$	$\Delta_i = 79'23'17.64"$
$L_s = 217.00'$	$\theta_s = 10'50'10.44"$
$R = 573.69'$	$\Delta_c = 57'42'56.75"$
$L_c = 577.89'$	$\theta_s = 10'50'10.44"$
$T_s = 587.39'$	$E = 81.34'$
$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas Frt
$E_U =$	2.8" 0.875"
$V_{MPH} =$	30 25
JERK RATE =	2.58 9.92

CURVE 5SBL1 - TRACK 2

$D_c = 10'00'00.00"$	$\Delta_i = 79'23'17.65"$
$L_s = 217.00'$	$\theta_s = 10'50'10.44"$
$R = 573.69'$	$\Delta_c = 57'42'56.76"$
$L_c = 577.89'$	$\theta_s = 10'50'10.44"$
$T_s = 587.39'$	$E = 81.34'$
$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas Frt
$E_U =$	2.8" 0.875"
$V_{MPH} =$	30 25
JERK RATE =	2.58 9.92



AFFIX SEAL: ON: _____	ALTERED BY: ON: _____
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-6
				SHEET NO.
<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>				 Department of Transportation

FILE NAME =
DATE/TIME = 3/18/2021
USER = ONClescer1

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

FILE NAME =
DATE/TIME = 3/18/2021
USER = ONClescert

DESIGN SUPERVISOR
JOB MANAGER
DESIGN
CHECK
DRAFTING
CHECK
PROJECT MANAGER

MATCH TO DWG. NO TP-5

SMH 3085
RIM-16.22
NOTE: SECONDARY CONCRETE
LID UNABLE TO OPEN

PROPOSED
USE PATH
SHARED
(SUP)

TOE OF SLOPE (TYP.)

EDGE OF CUT (TYP.)

MATCH TO DWG. NO TP-8



AFFIX SEAL: ON ₁	ALTERED BY: ON ₁




AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

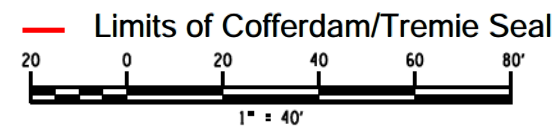
CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER

**TRACK PLAN
SOUTH ALTERNATIVE**

DRAWING NO. TP-7
SHEET NO.

LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

PROJECT MANAGER

CHECK

DRAFTING

CHECK

DESIGN

JOB MANAGER

DESIGN SUPERVISOR

MATCH TO DWG. NO TP-7

AFFIX SEAL
ON:

ALTERED BY:
ON:

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

PIN 1935.49
BRIDGES 7092890
CULVERTS
ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED
CONTRACT NUMBER
DRAWING NO. TP-8
SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



FILE NAME =
DATE/TIME = 3/18/2021
USER = ONCLSCERT

LEGEND

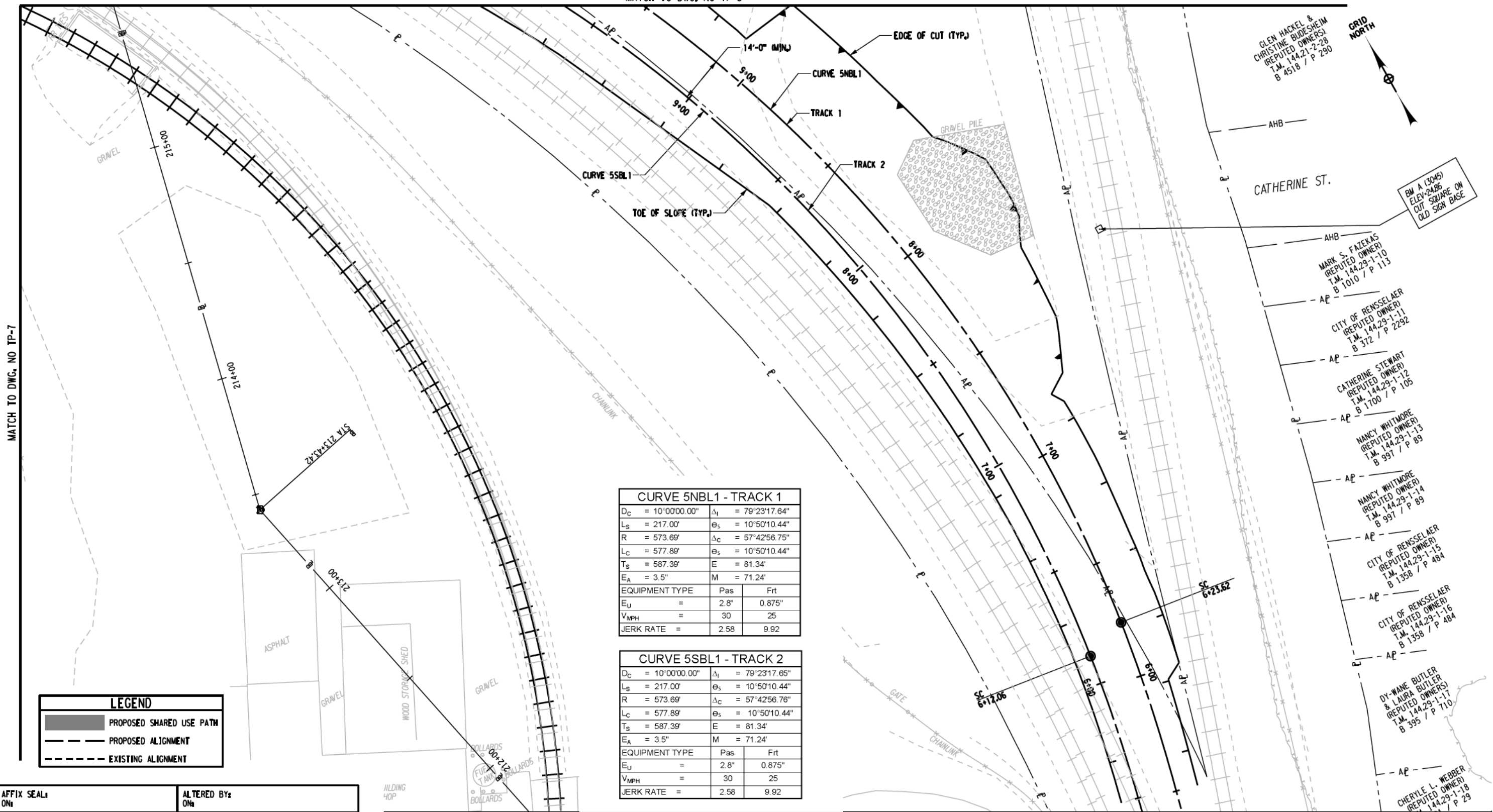
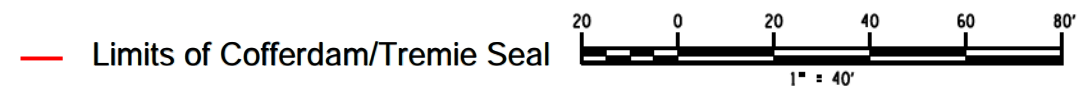
- PROPOSED SHARED USE PATH
- PROPOSED ALIGNMENT
- EXISTING ALIGNMENT

CURVE 5NBL1 - TRACK 1

$D_c = 10^{\circ}00'00.00"$	$\Delta_1 = 79^{\circ}23'17.64"$
$L_s = 217.00'$	$\theta_s = 10^{\circ}50'10.44"$
$R = 573.69'$	$\Delta_c = 57^{\circ}42'56.75"$
$L_c = 577.89'$	$\theta_s = 10^{\circ}50'10.44"$
$T_s = 587.39'$	$E = 81.34'$
$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas Fft
$E_U =$	2.8" 0.875"
$V_{MPH} =$	30 25
JERK RATE =	2.58 9.92

CURVE 5SBL1 - TRACK 2

$D_c = 10^{\circ}00'00.00"$	$\Delta_1 = 79^{\circ}23'17.65"$
$L_s = 217.00'$	$\theta_s = 10^{\circ}50'10.44"$
$R = 573.69'$	$\Delta_c = 57^{\circ}42'56.76"$
$L_c = 577.89'$	$\theta_s = 10^{\circ}50'10.44"$
$T_s = 587.39'$	$E = 81.34'$
$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas Fft
$E_U =$	2.8" 0.875"
$V_{MPH} =$	30 25
JERK RATE =	2.58 9.92

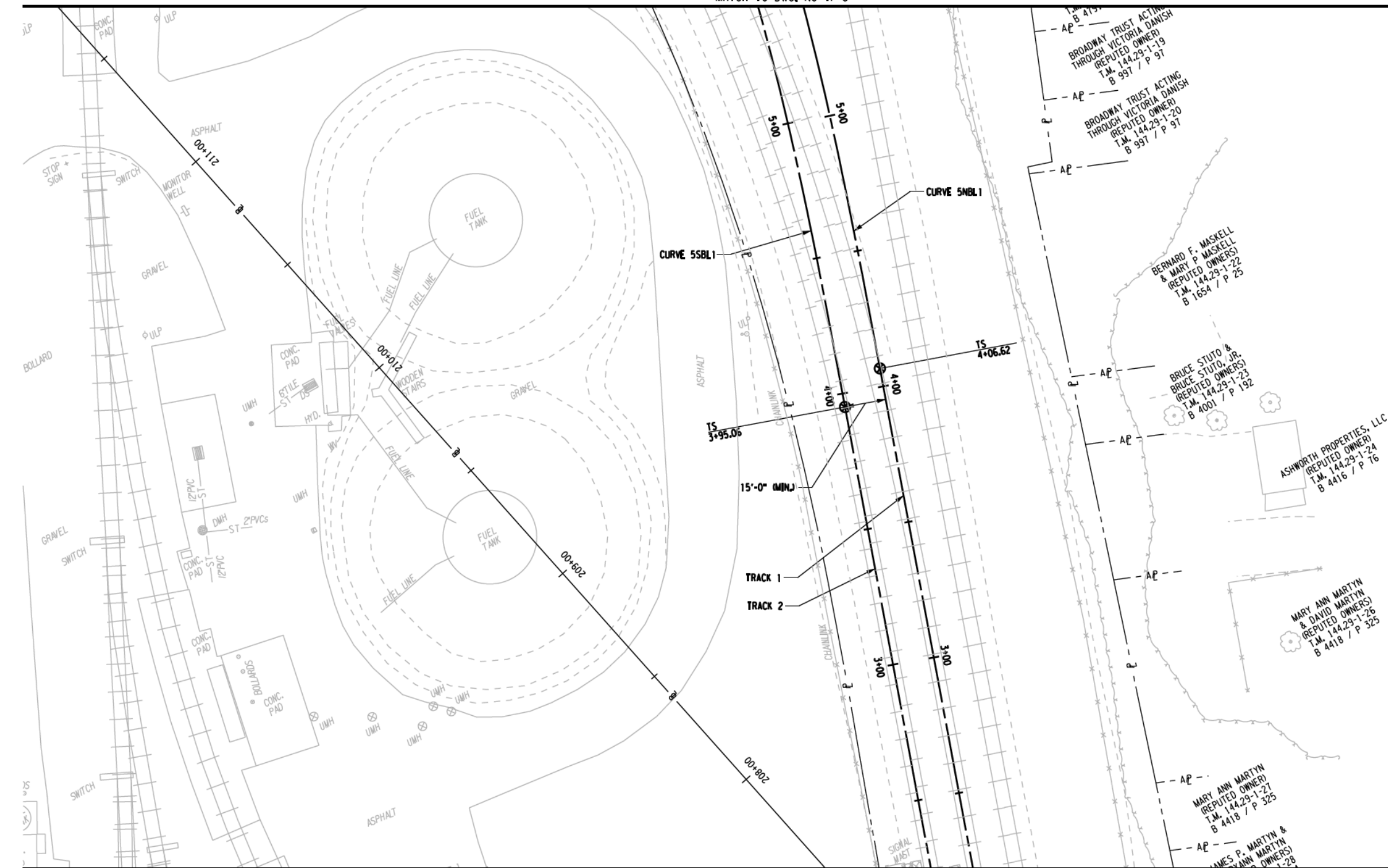


- GLEN HACKEL & CHRISTINE BUDSHEIM (REPUTED OWNERS) T.M. 144.21-2-28 B 451.8 / P 290
- MARK S. FAZEKAS (REPUTED OWNER) T.M. 144.29-1-10 B 1010 / P 113
- CITY OF RENNELAER (REPUTED OWNER) T.M. 144.29-1-11 B 372 / P 2292
- CATHERINE STEWART (REPUTED OWNER) T.M. 144.29-1-12 B 1700 / P 105
- NANCY WHITMORE (REPUTED OWNER) T.M. 144.29-1-13 B 997 / P 89
- NANCY WHITMORE (REPUTED OWNER) T.M. 144.29-1-14 B 997 / P 89
- CITY OF RENNELAER (REPUTED OWNER) T.M. 144.29-1-15 B 1358 / P 484
- CITY OF RENNELAER (REPUTED OWNER) T.M. 144.29-1-16 B 1358 / P 484
- DY-WANE BUTLER & LAURA BUTLER (REPUTED OWNERS) T.M. 144.29-1-17 B 395 / P 710
- CHERYLE L. WEBBER (REPUTED OWNER) T.M. 144.29-1-18 B 117 / P 29

MATCH TO DWG. NO TP-8



MATCH TO DWG. NO TP-10



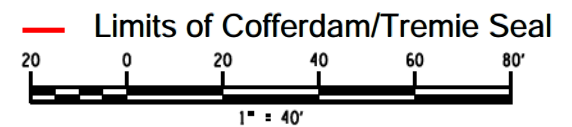
CURVE 5NBL1 - TRACK 1			
$D_c = 10'00'00.00"$	$\Delta_1 = 79'23'17.64"$	$L_s = 217.00'$	$\theta_s = 10'50'10.44"$
$R = 573.69'$	$\Delta_c = 57'42'56.75"$	$L_c = 577.89'$	$\theta_s = 10'50'10.44"$
$T_s = 587.39'$	$E = 81.34'$	$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas	Fit	
$E_U =$	2.8"	0.875"	
$V_{MPH} =$	30	25	
$JERK RATE =$	2.58	9.92	

CURVE 5SBL1 - TRACK 2			
$D_c = 10'00'00.00"$	$\Delta_1 = 79'23'17.65"$	$L_s = 217.00'$	$\theta_s = 10'50'10.44"$
$R = 573.69'$	$\Delta_c = 57'42'56.76"$	$L_c = 577.89'$	$\theta_s = 10'50'10.44"$
$T_s = 587.39'$	$E = 81.34'$	$E_A = 3.5"$	$M = 71.24'$
EQUIPMENT TYPE	Pas	Fit	
$E_U =$	2.8"	0.875"	
$V_{MPH} =$	30	25	
$JERK RATE =$	2.58	9.92	

PROJECT MANAGER
CHECK
DRAFTING
CHECK
DESIGN
JOB MANAGER
DESIGN SUPERVISOR

AFFIX SEAL ON	ALTERED BY ON
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.	

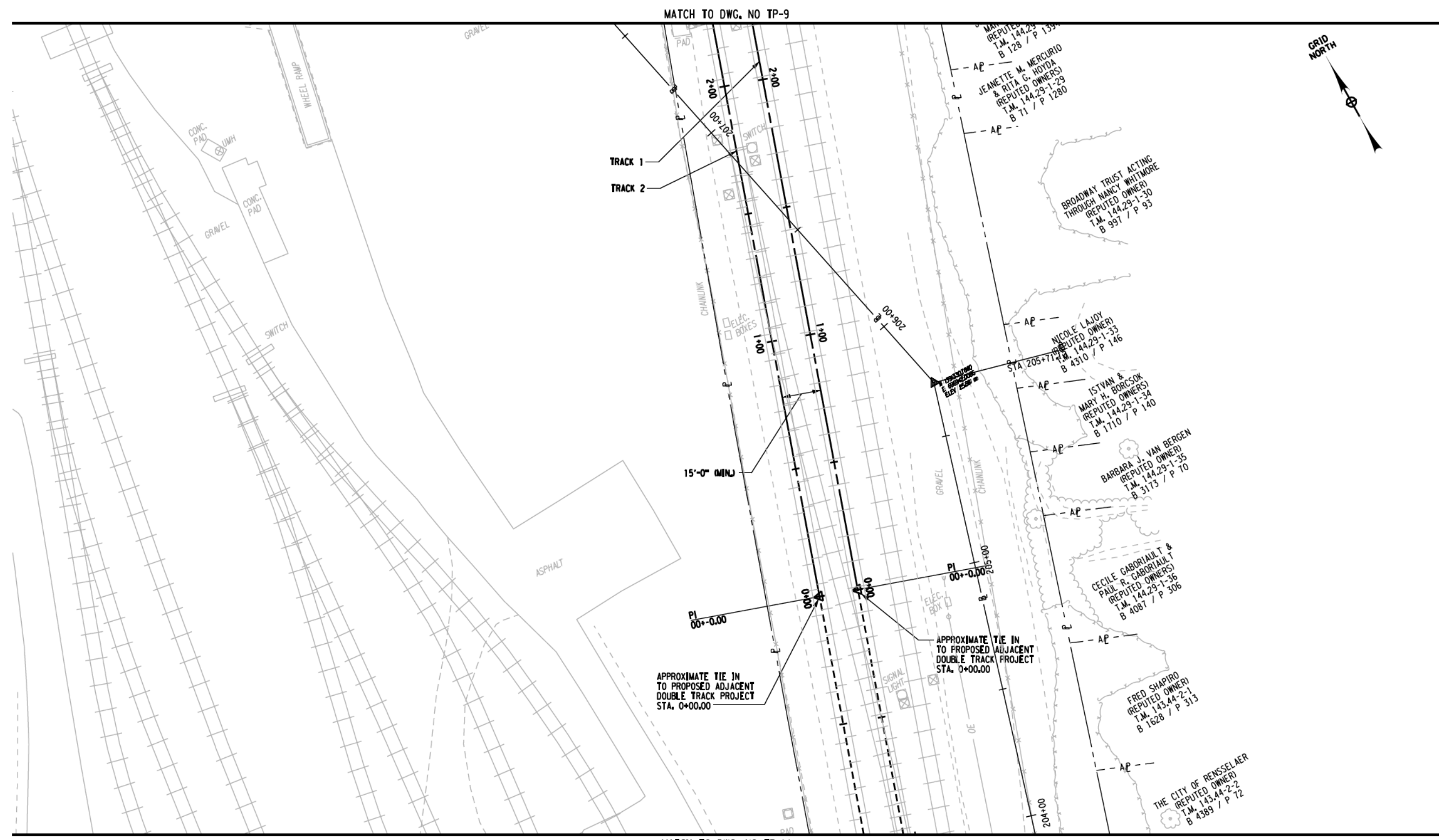
LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-9
COUNTY: ALBANY	REGION: 1			SHEET NO.

FILE NAME =
DATE/TIME = 3/18/2021
USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR



MATCH TO DWG. NO TP-9

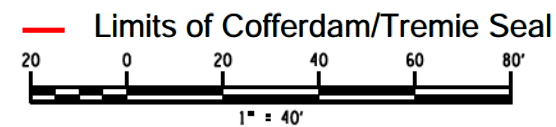
MATCH TO DWG. NO TP-11

AFFIX SEAL: ON	ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021				
		COUNTY: ALBANY	REGION: 1			DRAWING NO. TP-10 SHEET NO.
	IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					

LEGEND

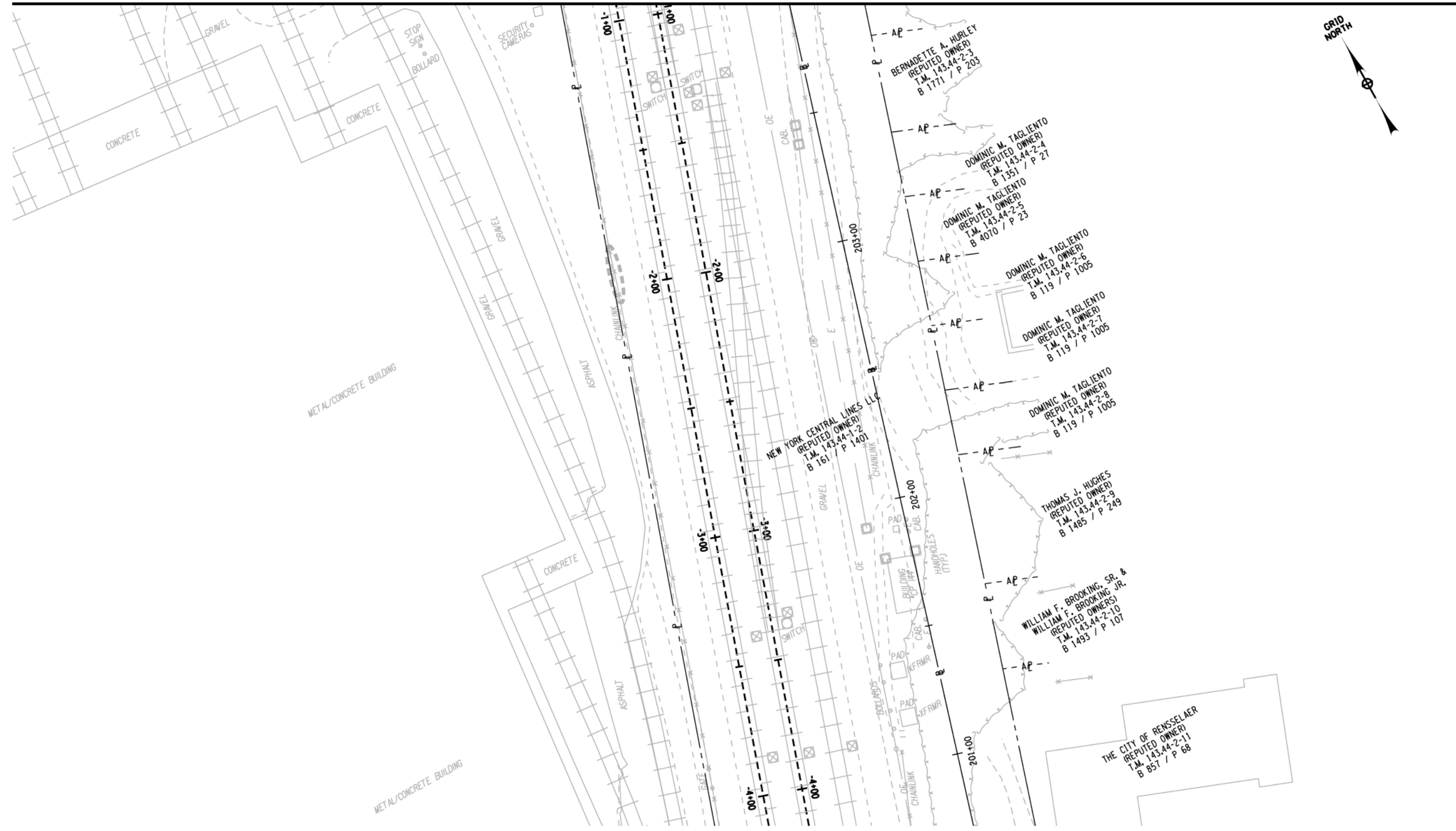
- PROPOSED SHARED USE PATH
- PROPOSED ALIGNMENT
- EXISTING ALIGNMENT



FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert



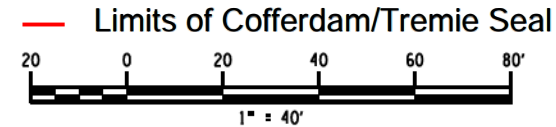
MATCH TO DWG, NO TP-10



PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

AFFIX SEAL: ON	ALTERED BY: ON
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY REGION: 1	

LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



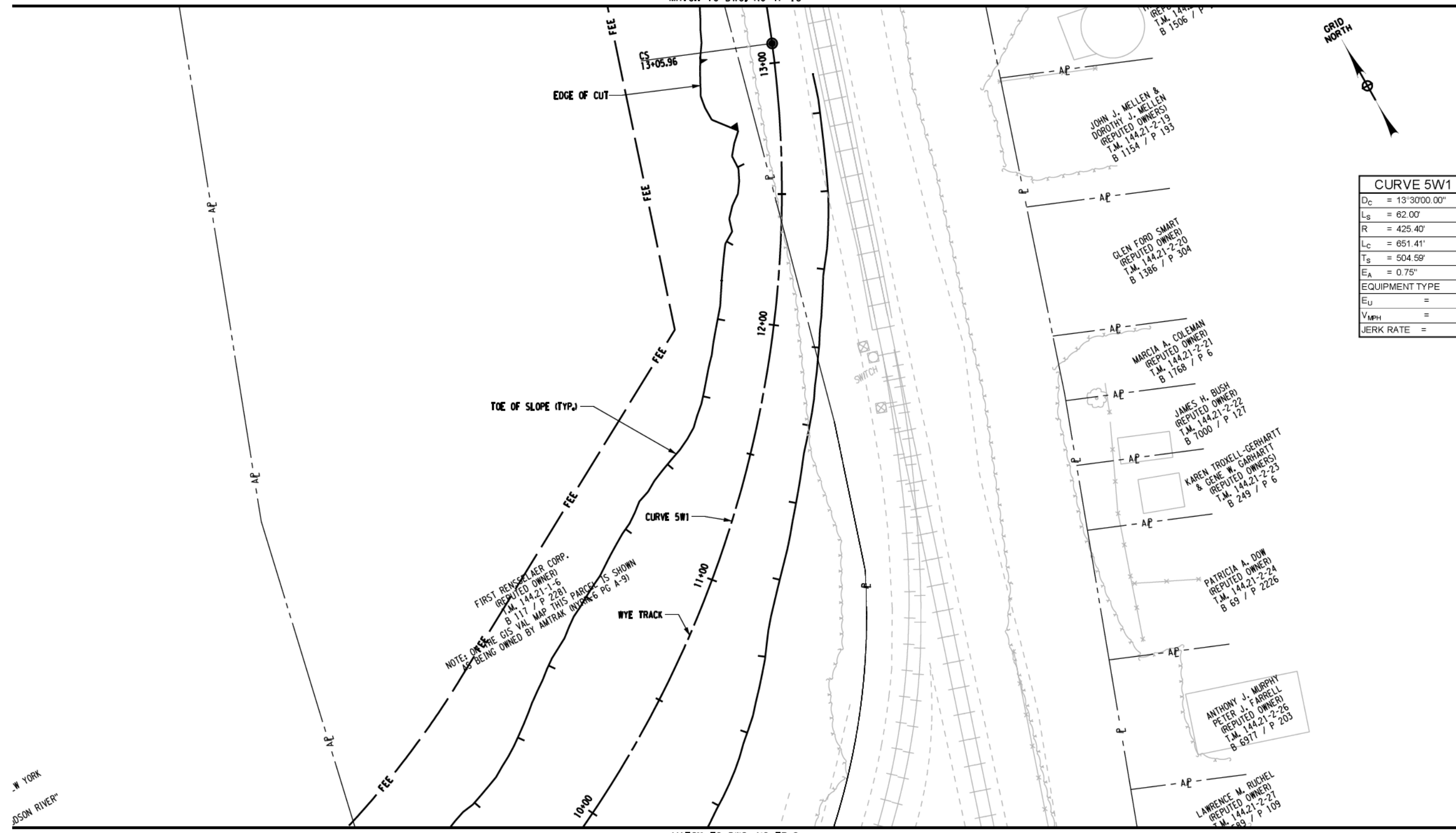
PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-11
				SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

MATCH TO DWG. NO TP-13

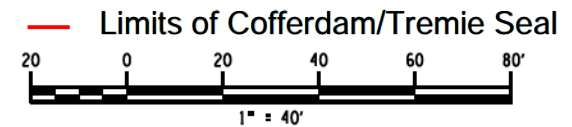
MATCH TO DWG. NO TP-6



CURVE 5W1 - WYE TRACK		
$D_c = 13^{\circ}30'00.00''$	$\Delta_1 = 96^{\circ}05'16.24''$	
$L_s = 62.00'$	$\theta_s = 4^{\circ}10'31.17''$	
$R = 425.40'$	$\Delta_c = 87^{\circ}44'13.89''$	
$L_c = 651.41'$	$\theta_s = 4^{\circ}10'31.17''$	
$T_s = 504.59'$	$E = 164.67'$	
$E_A = 0.75''$	$M = 118.71'$	
EQUIPMENT TYPE	Pas	Ft
E_U	= 1.38"	0.20"
V_{MPH}	= 15	10
JERK RATE	= 2.99	31

W YORK
ADSON RIVER

LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



AFFIX SEAL ON:	ALTERED BY: ON:
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY REGION: 1	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-12 SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

MATCH TO DWG. NO TP-14



CURVE 5W2 - WYE TRACK

Δ = 5°44'58.64"	L_c = 71.93'
D_c = 8°00'00.00"	T = 35.99'
R = 716.78'	E = 0.90'
E_u = 2.24"/1.26"	v = 15/10 MPH

CURVE 5W1 - WYE TRACK

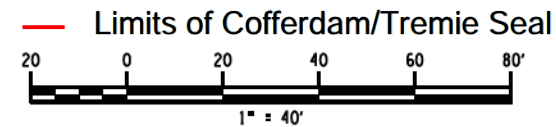
D_c = 13°30'00.00"	Δ_1 = 96°05'16.24"
L_s = 62.00'	θ_s = 4°10'31.17"
R = 425.40'	Δ_c = 87°44'13.89"
L_c = 651.41'	θ_s = 4°10'31.17"
T_s = 504.59'	E = 164.67'
E_A = 0.75"	M = 118.71'
EQUIPMENT TYPE	Pas Ft
E_u	= 1.38" 0.20"
V_{MPH}	= 15 10
JERK RATE	= 2.99 31

NIAGARA MOHAWK POWER CORPORATION
 75' WIDE EASEMENT
 B 998 / P 436,
 B 1000 / P 211,
 B 1000 / P 496,
 B 1001 / P 503,
 B 1001 / P 229

MATCH TO DWG. NO TP-12

LEGEND

	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT

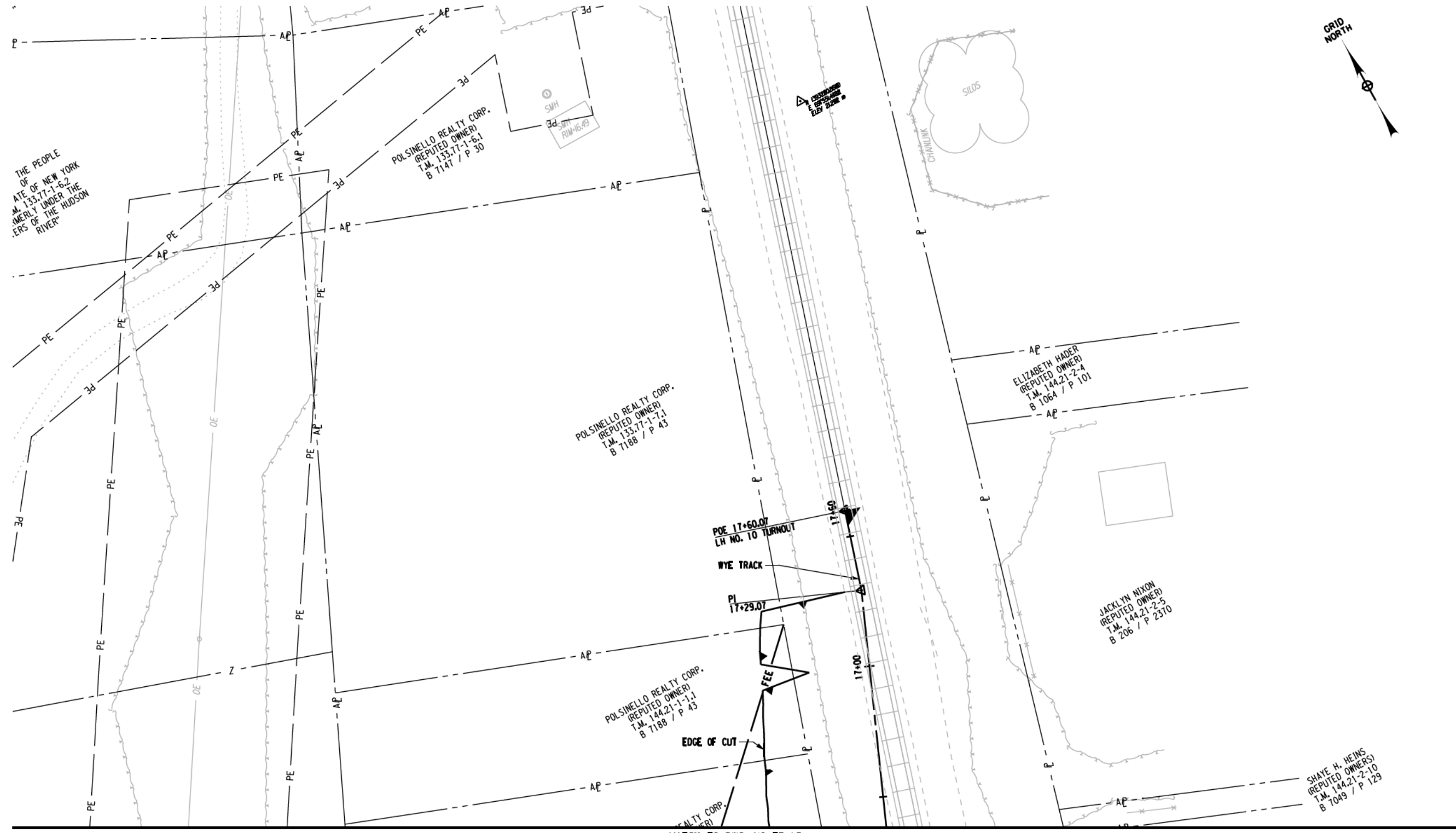


AFFIX SEAL: ON	ALTERED BY: ON
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTRY: ALBANY REGION: 1	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-13
				SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				 Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR

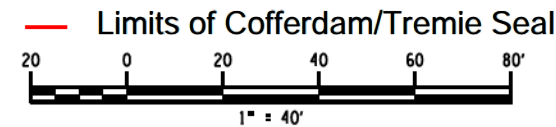


MATCH TO DWG. NO TP-13

AFFIX SEAL ON ₁	ALTERED BY ON ₂

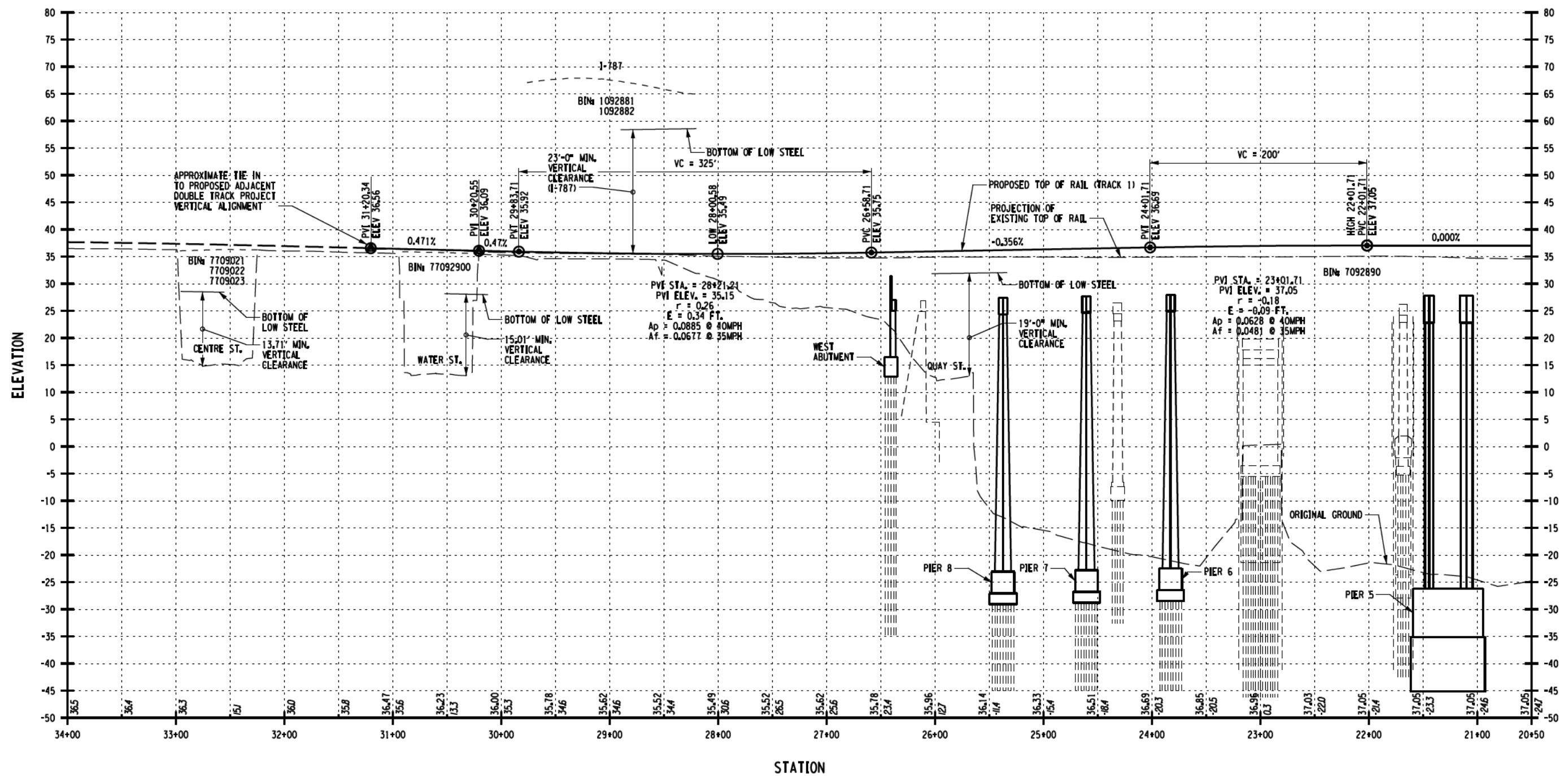
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS ₃		PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021				
	COUNTY: ALBANY	REGION: 1			TRACK PLAN SOUTH ALTERNATIVE	DRAWING NO. TP-14 SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						

LEGEND	
	PROPOSED SHARED USE PATH
	PROPOSED ALIGNMENT
	EXISTING ALIGNMENT



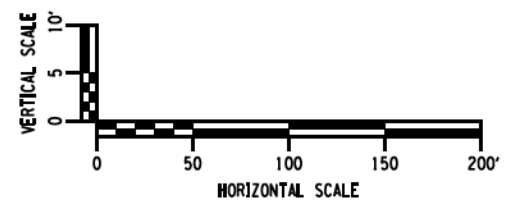
FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR



TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

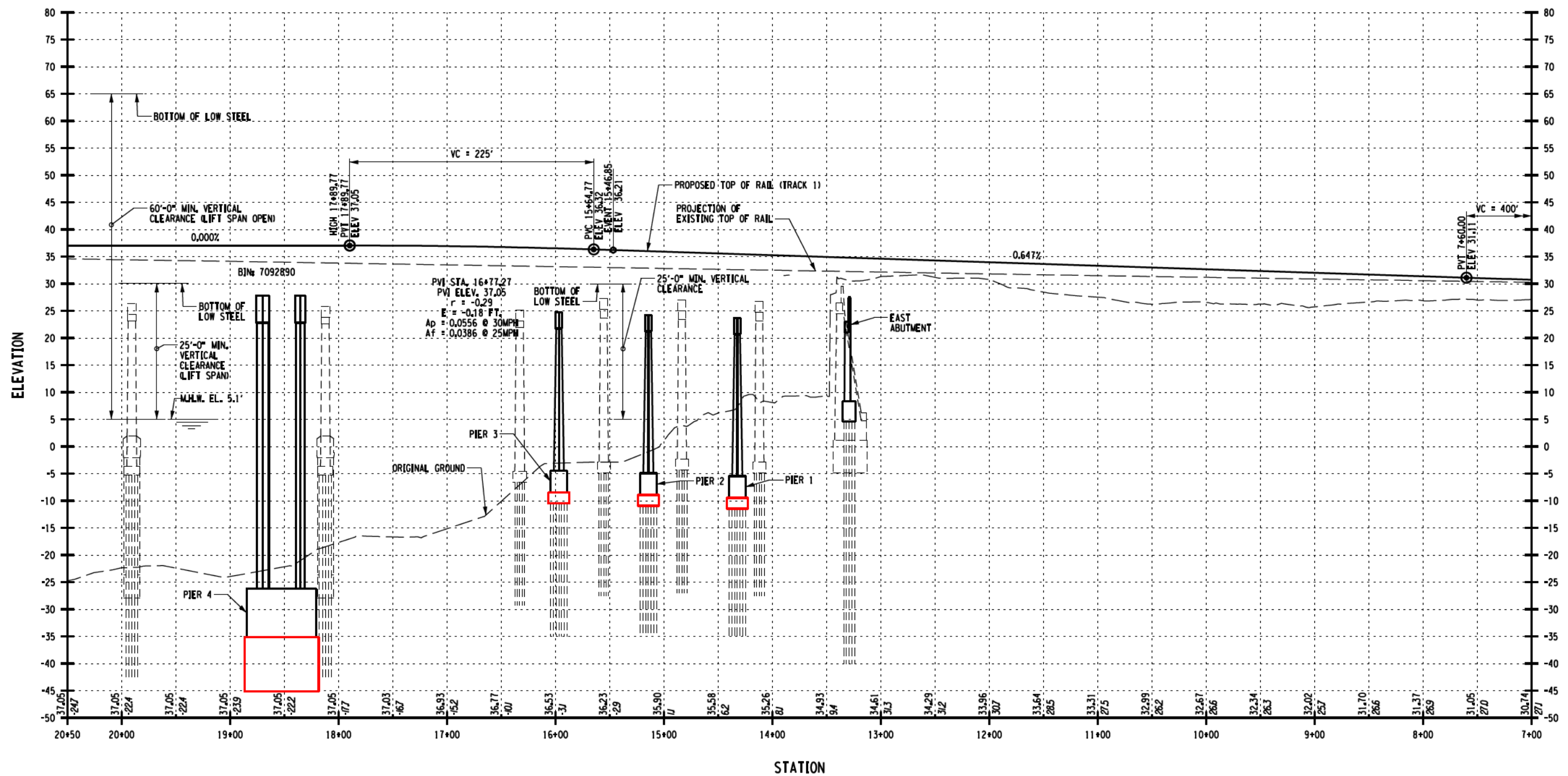


AFFIX SEAL: ON	ALTERED BY: ON
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

COUNTY: ALBANY	REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-1
						SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						 Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = ONClescert

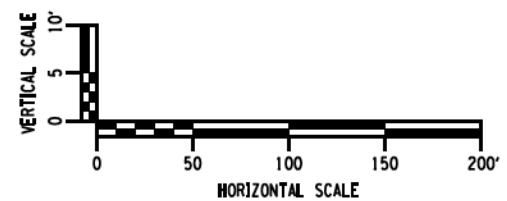
PROJECT MANAGER
 CHECK
 DRAFTING
 CHECK
 DESIGN
 JOB MANAGER
 DESIGN SUPERVISOR



TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON

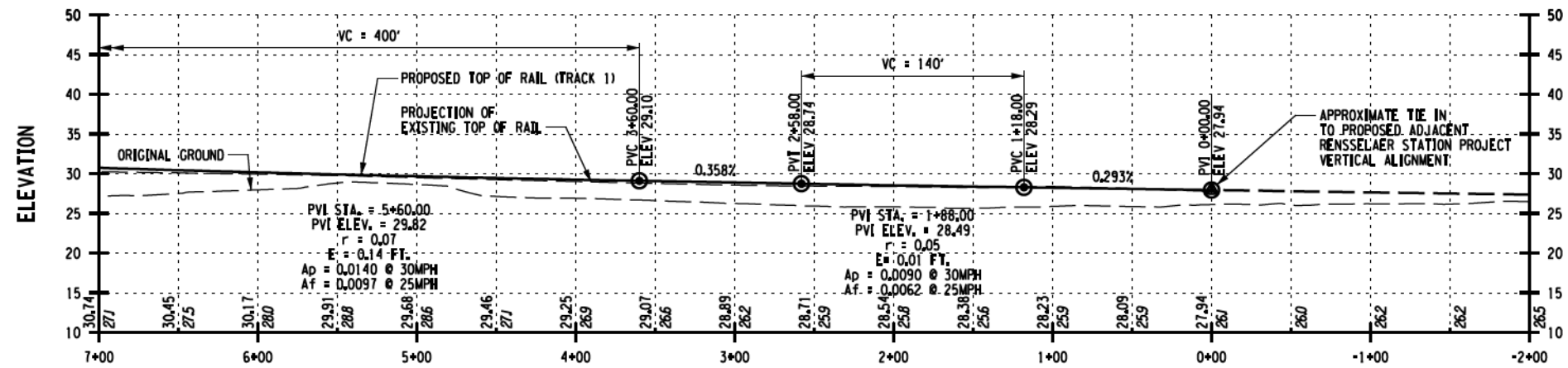


AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-2
	COUNTY: ALBANY	REGION: 1			SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.					 Department of Transportation

FILE NAME =
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 USER = ONClescert

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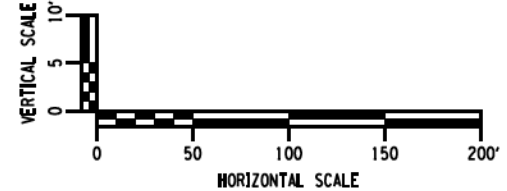
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 DESIGN SUPERVISOR



TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

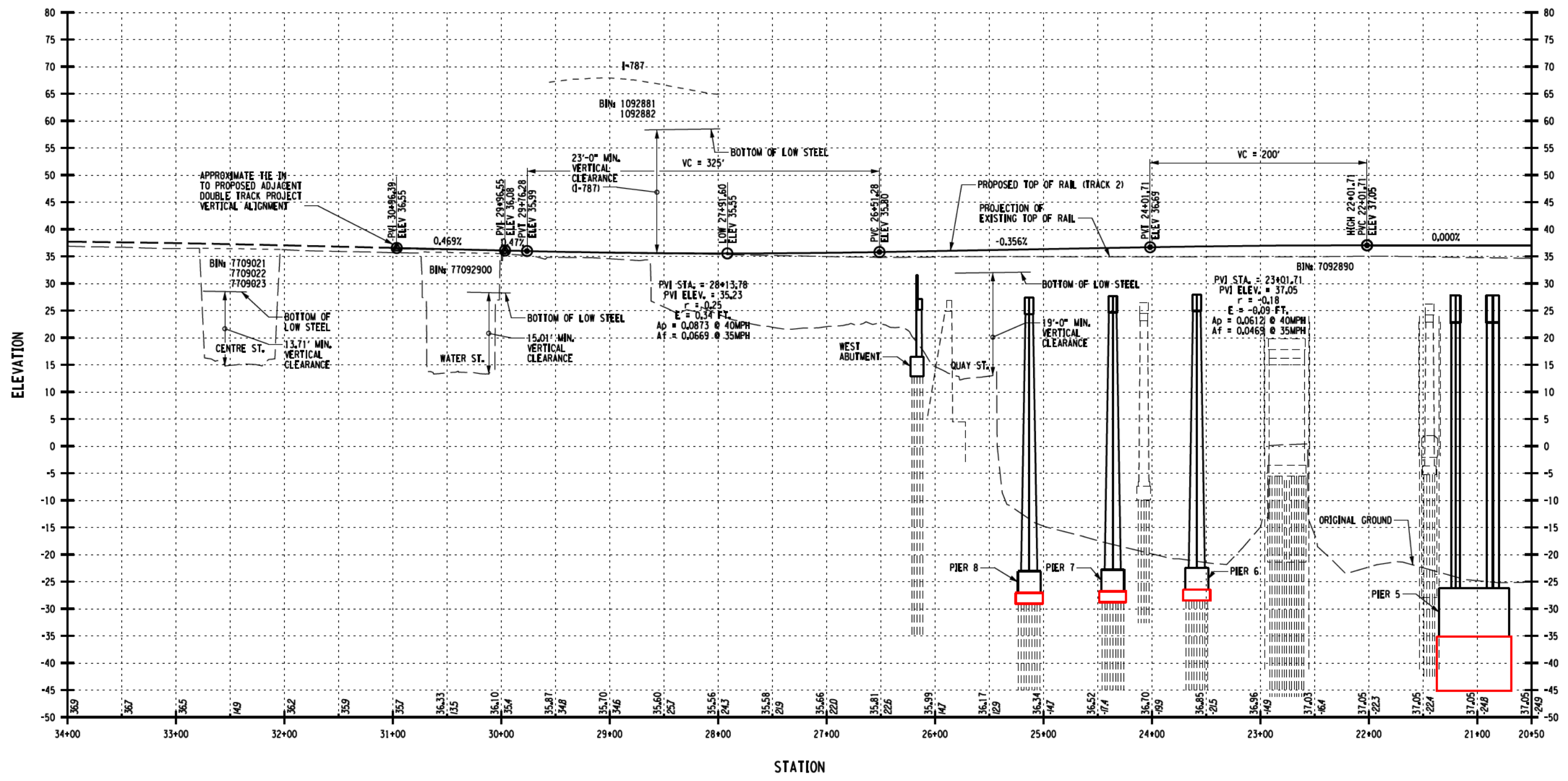
PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
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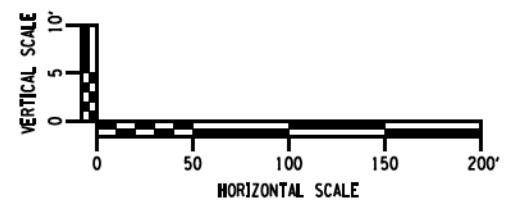
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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— Limits of Cofferdam/Tremie Seal

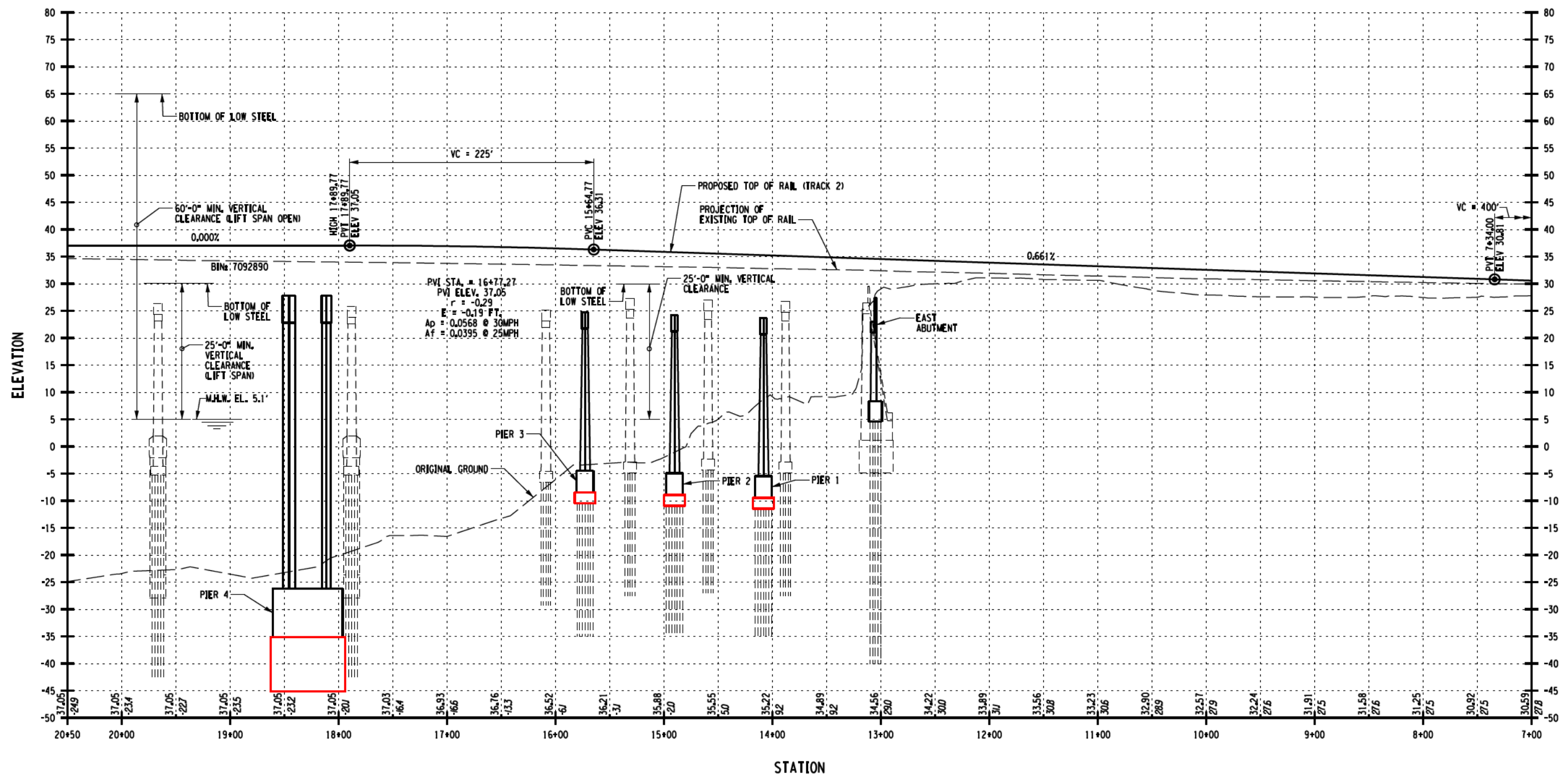


AFFIX SEAL: ON	ALTERED BY: ON
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PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-4
COUNTY: ALBANY	REGION: 1			SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				 Department of Transportation

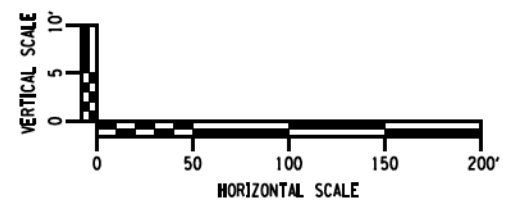
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TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON	ALTERED BY: ON

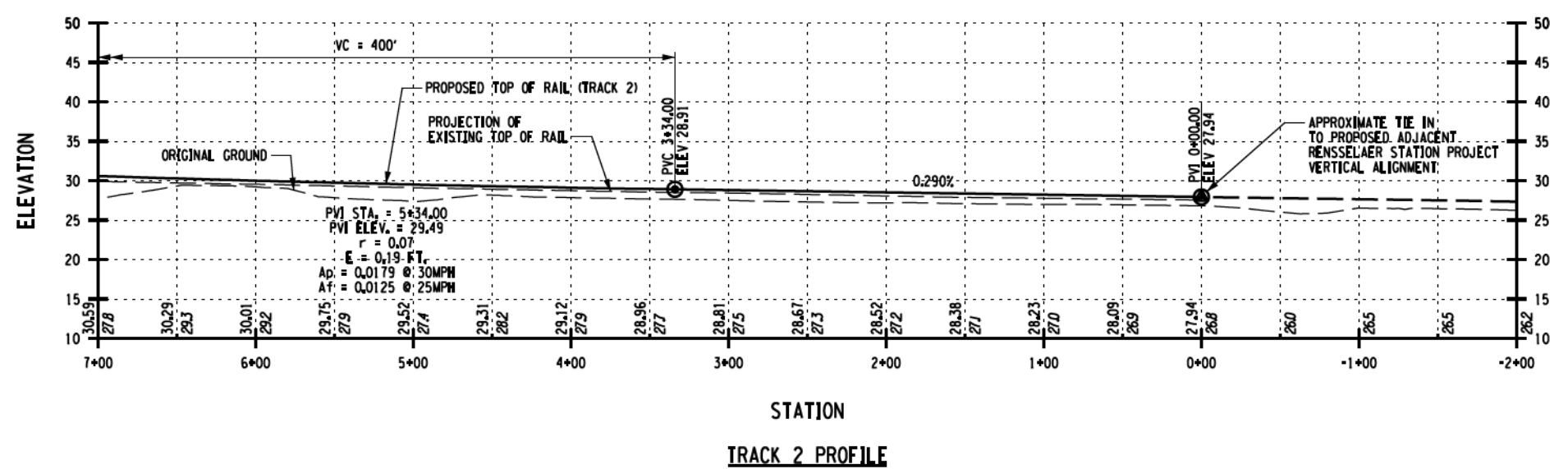
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COUNTY: ALBANY	REGION: 1

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MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-5 SHEET NO.
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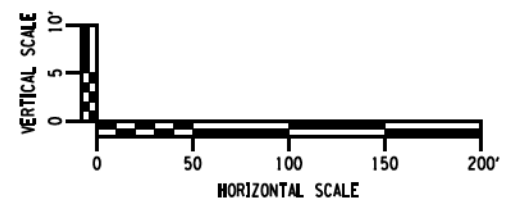
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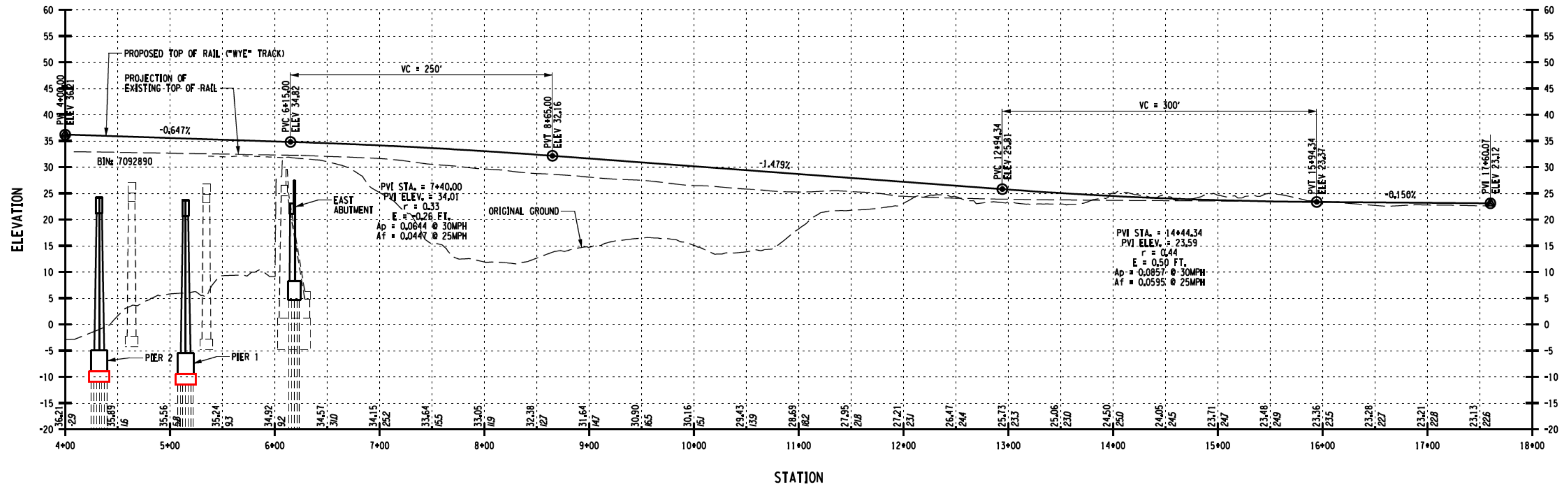
— Limits of Cofferdam/Tremie Seal



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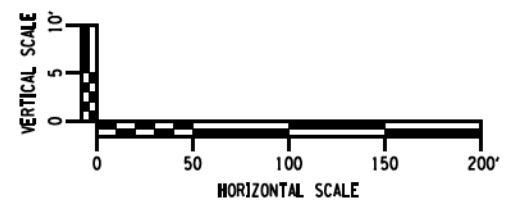
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.		COUNTY: ALBANY	REGION: 1			

PROJECT MANAGER
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 DESIGN SUPERVISOR



"WYE" TRACK PROFILE

— Limits of Cofferdam/Tremie Seal

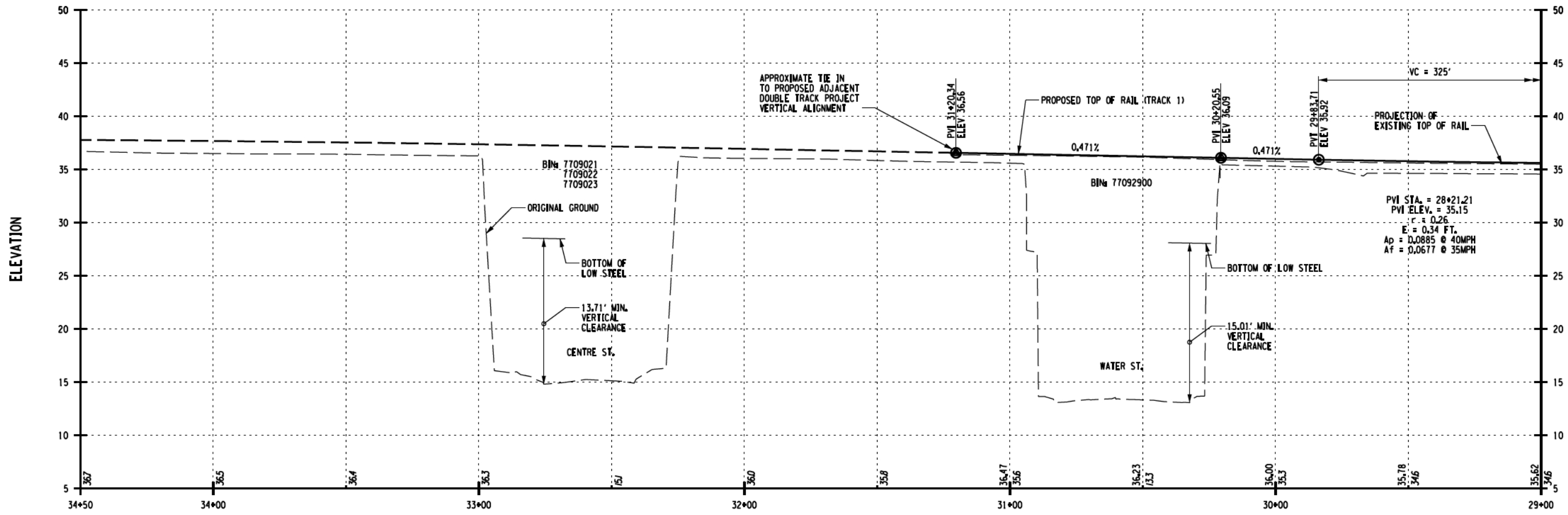


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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

COUNTY: ALBANY	REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-7
						SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						 Department of Transportation

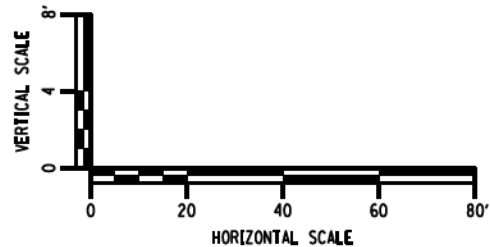
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— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
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COUNTY: ALBANY	REGION: 1			Department of Transportation	

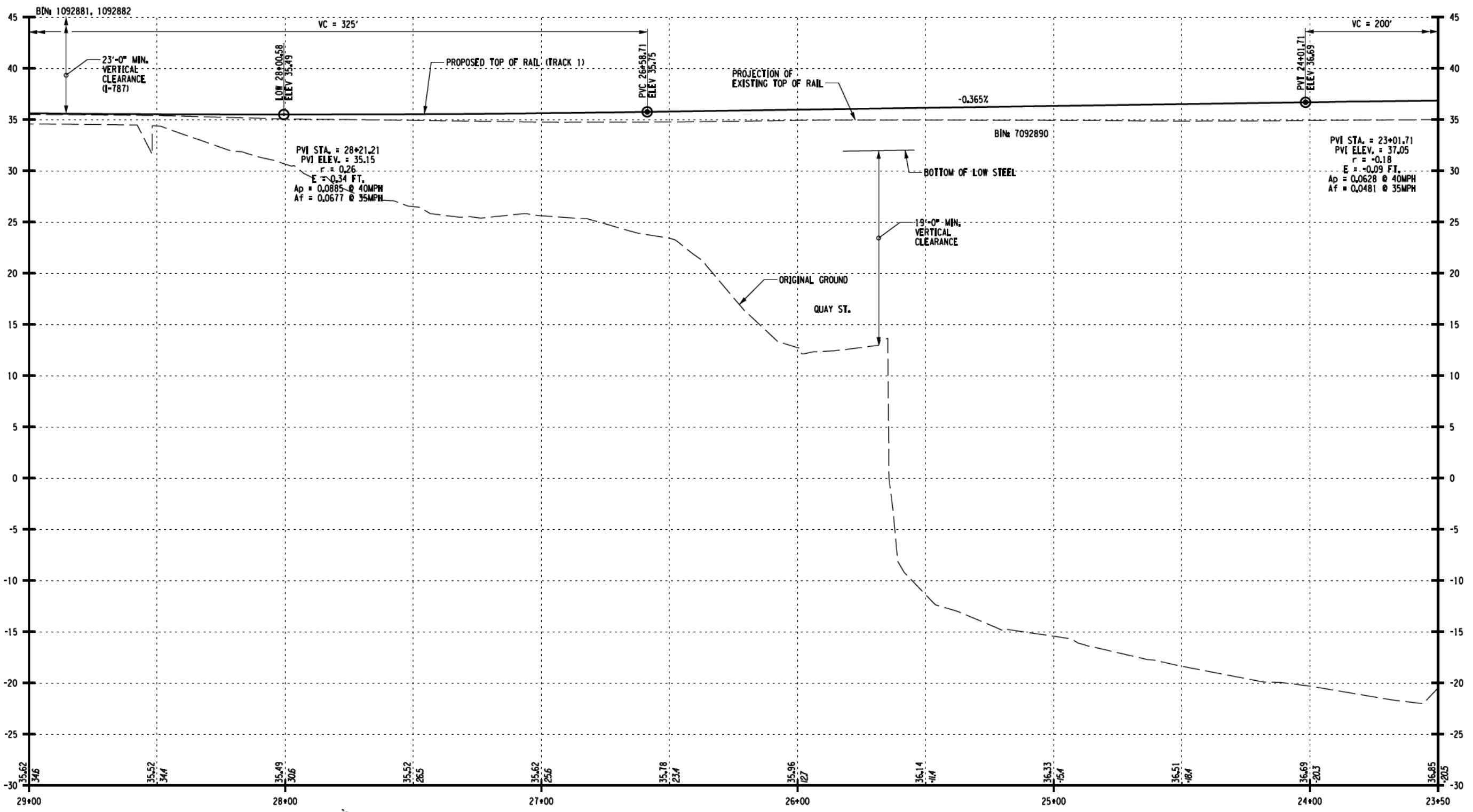
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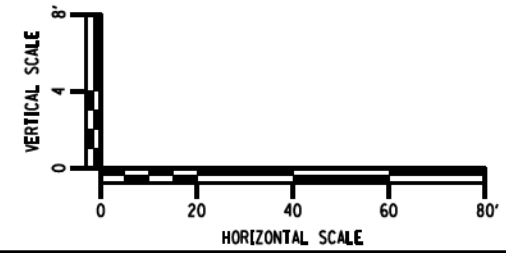
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JOB MANAGER
DESIGN SUPERVISOR

ELEVATION



— Limits of Cofferdam/Tremie Seal



STATION
TRACK 1 PROFILE

AFFIX SEAL: ON	ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED

CONTRACT NUMBER
DRAWING NO. TPR-2
SHEET NO.

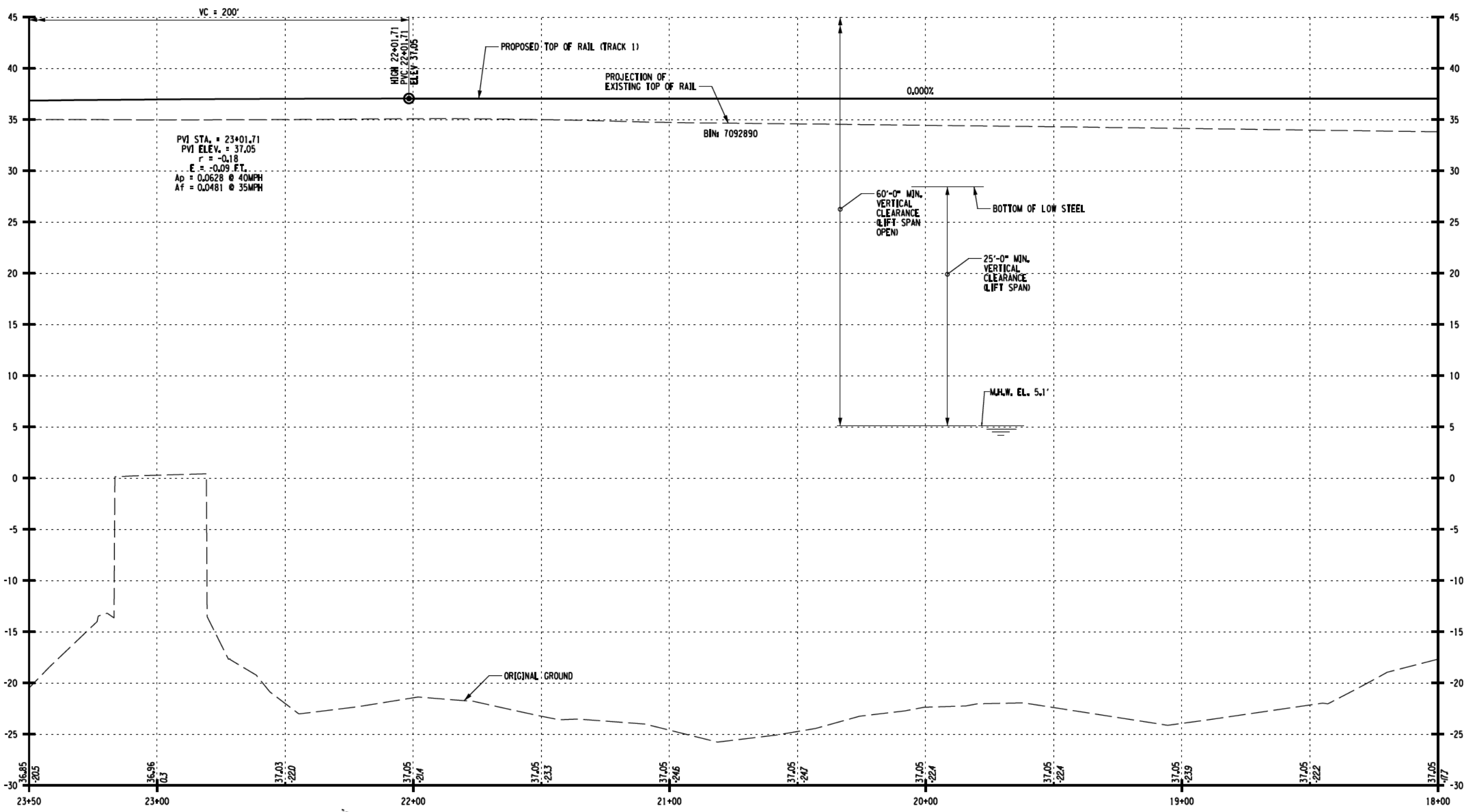
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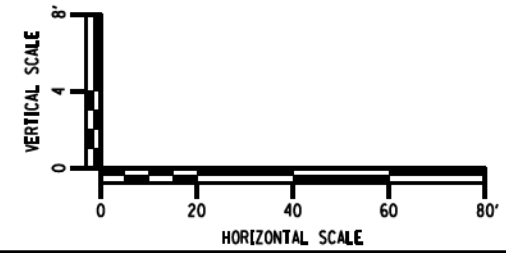
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ELEVATION



— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	



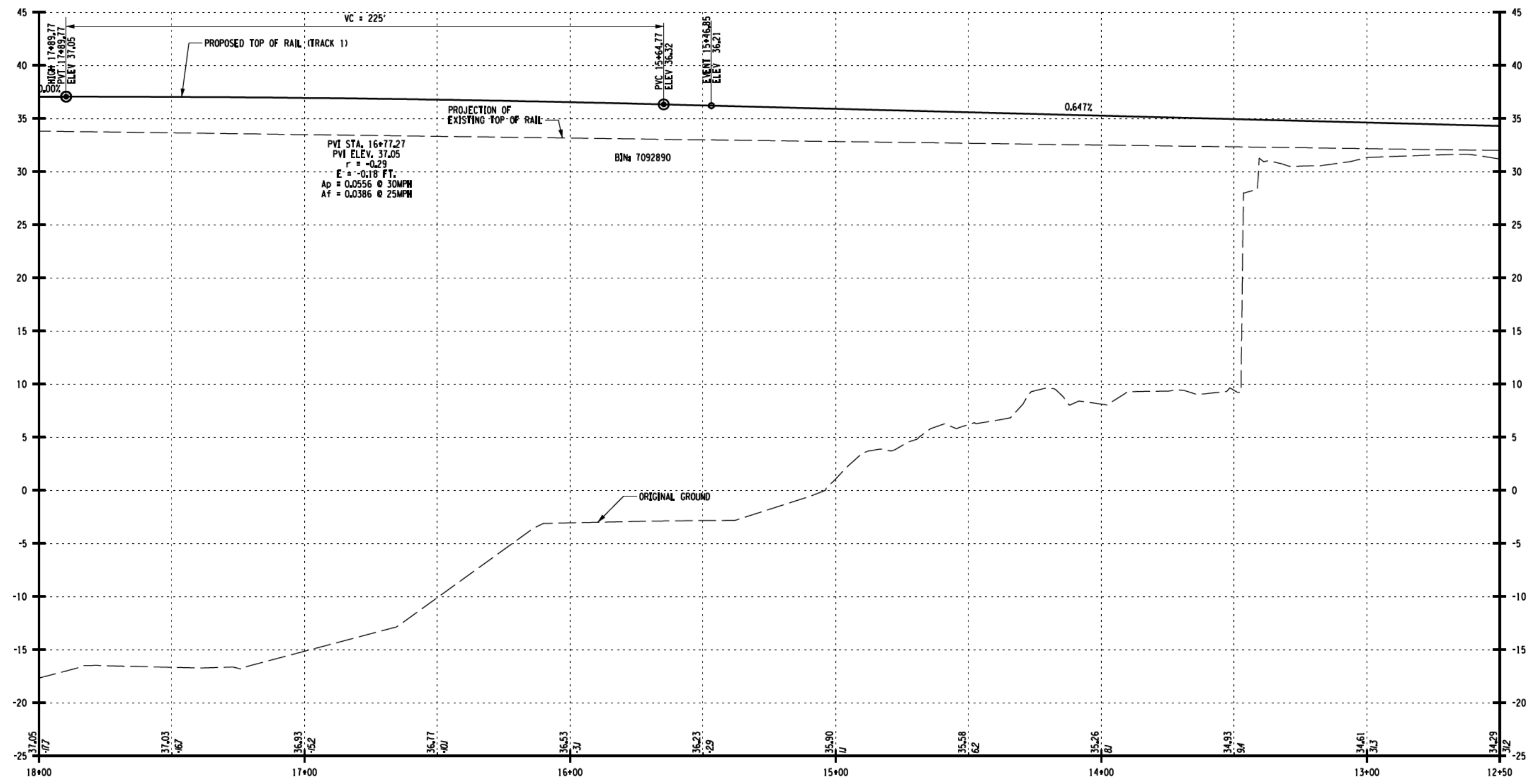
STATION
TRACK 1 PROFILE

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-3 SHEET NO.
COUNTY: ALBANY	REGION: 1	Department of Transportation			
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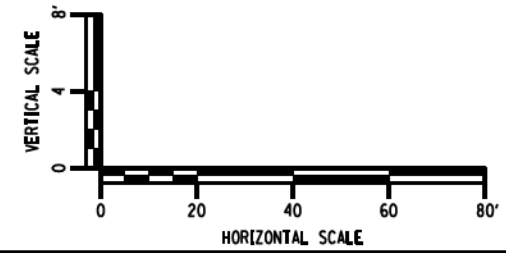
ELEVATION



STATION
 TRACK 1 PROFILE

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON	ALTERED BY: ON



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

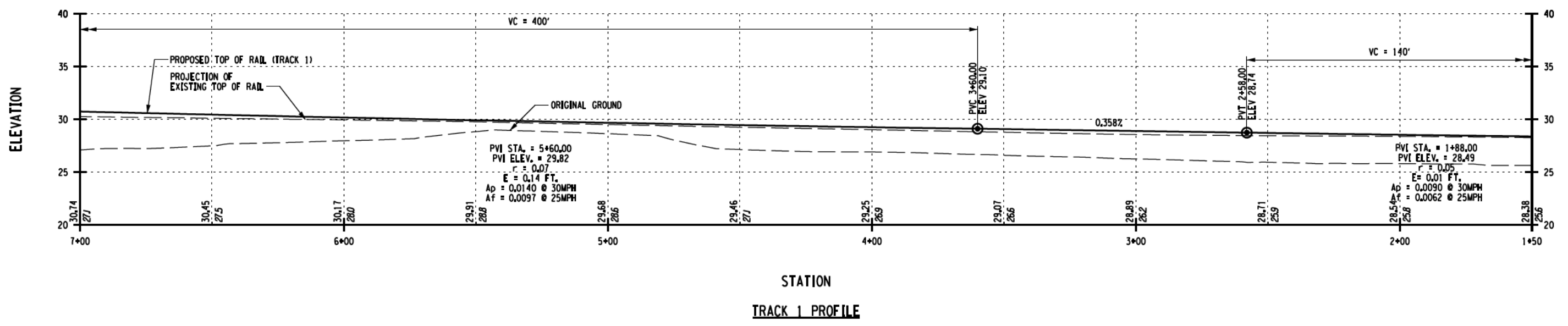
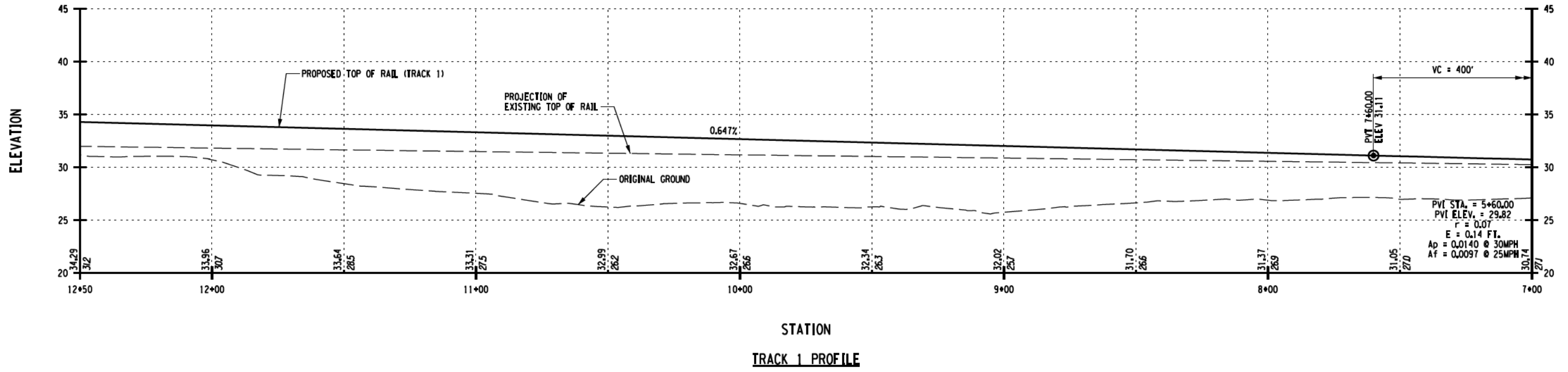
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	SHEET NO.

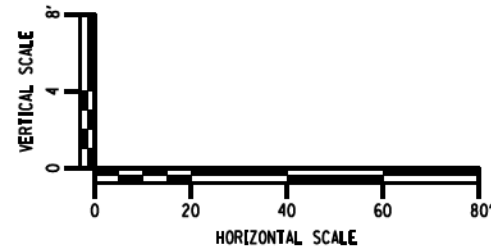
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PROJECT MANAGER
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— Limits of Cofferdam/Tremie Seal





AFFIX SEAL: ON _i	ALTERED BY: ON _i

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

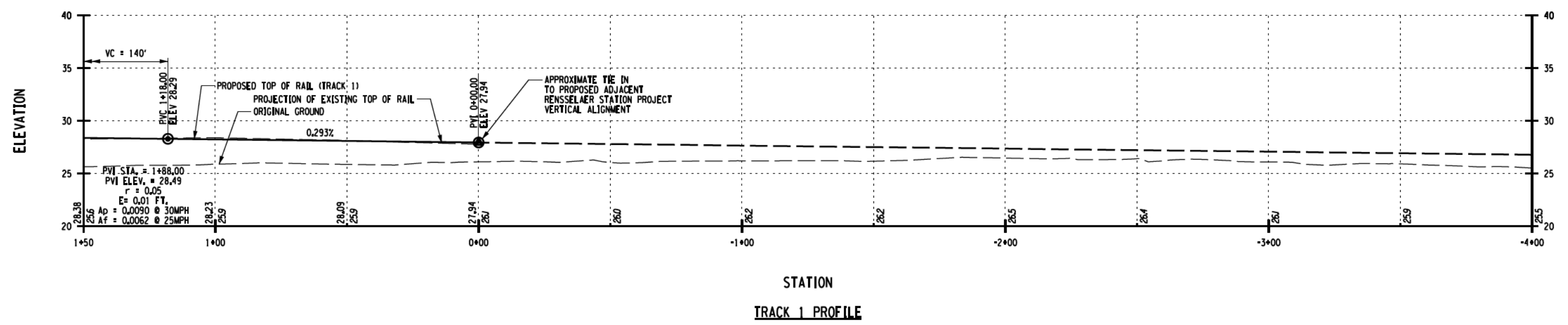
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Department of Transportation

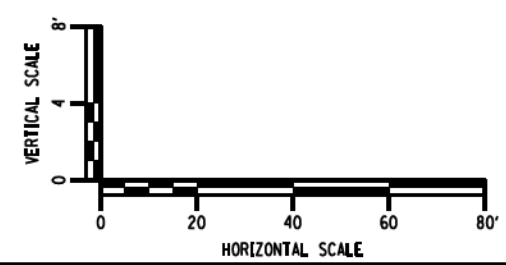
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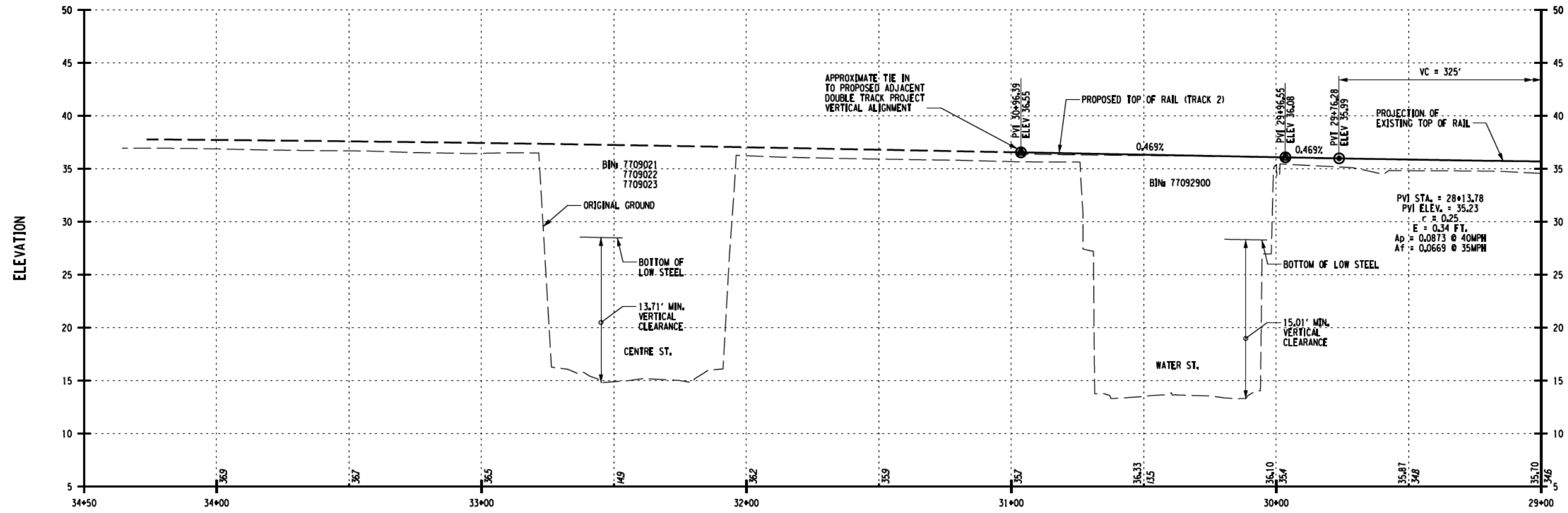
— Limits of Cofferdam/Tremie Seal



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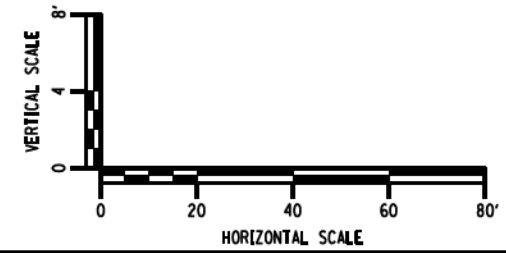
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PROJECT MANAGER
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STATION
TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON ₁	ALTERED BY: ON ₁

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

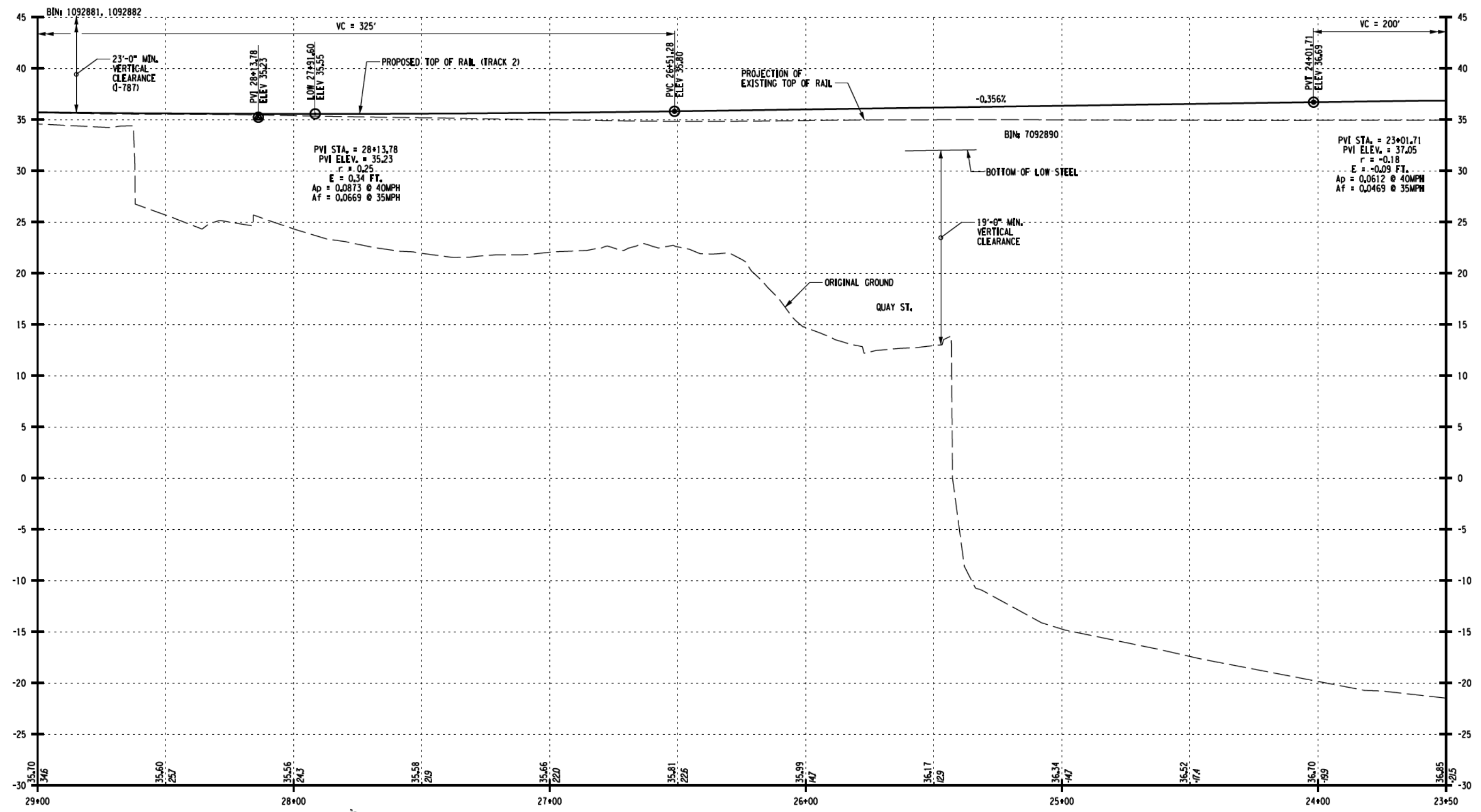
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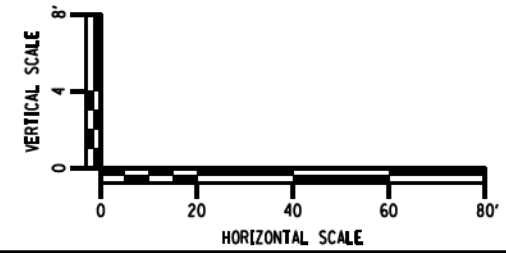
ELEVATION



— Limits of Cofferdam/Tremie Seal

STATION
TRACK 2 PROFILE

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁



AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

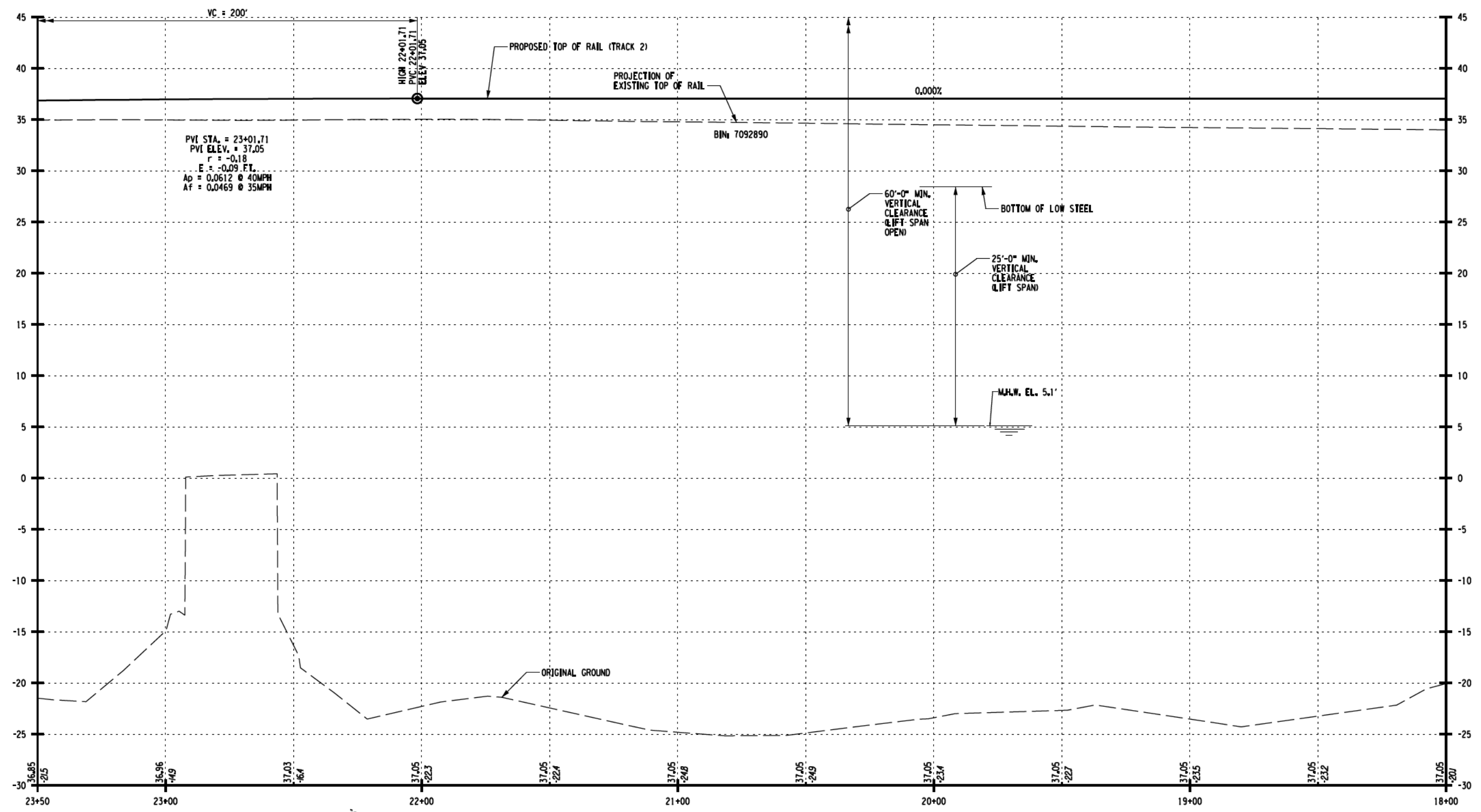
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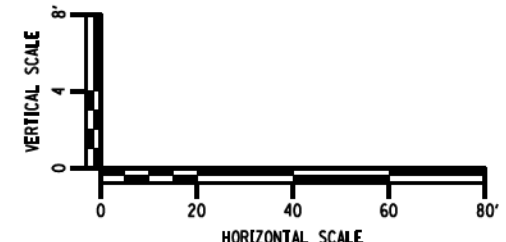
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 DESIGN SUPERVISOR

ELEVATION



— Limits of Cofferdam/Tremie Seal

STATION
 TRACK 2 PROFILE



AFFIX SEAL: ON
 ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
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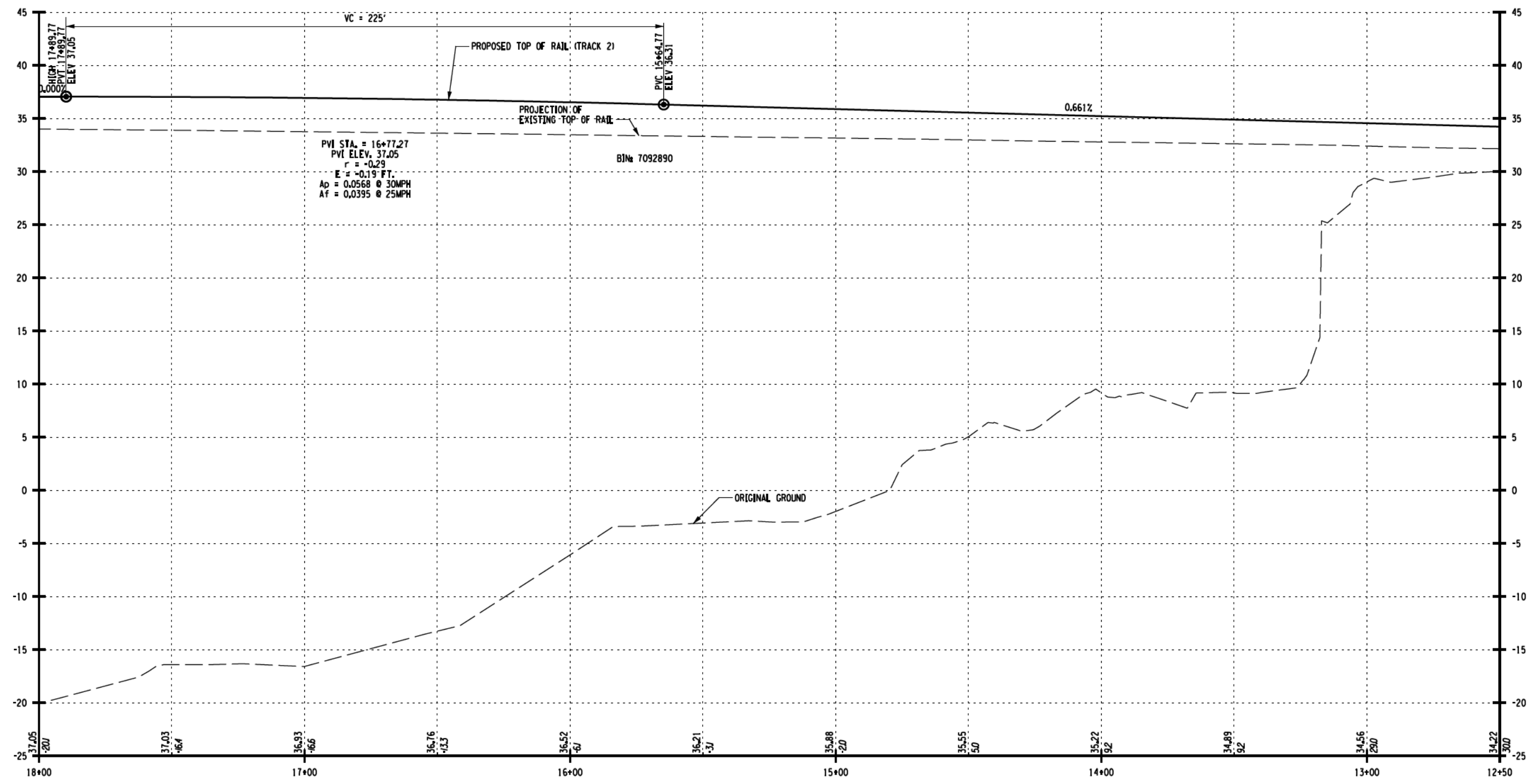
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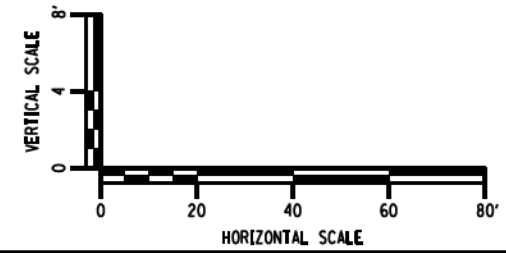
ELEVATION



STATION
TRACK 2 PROFILE

— Limits of Cofferdam/Tremie Seal

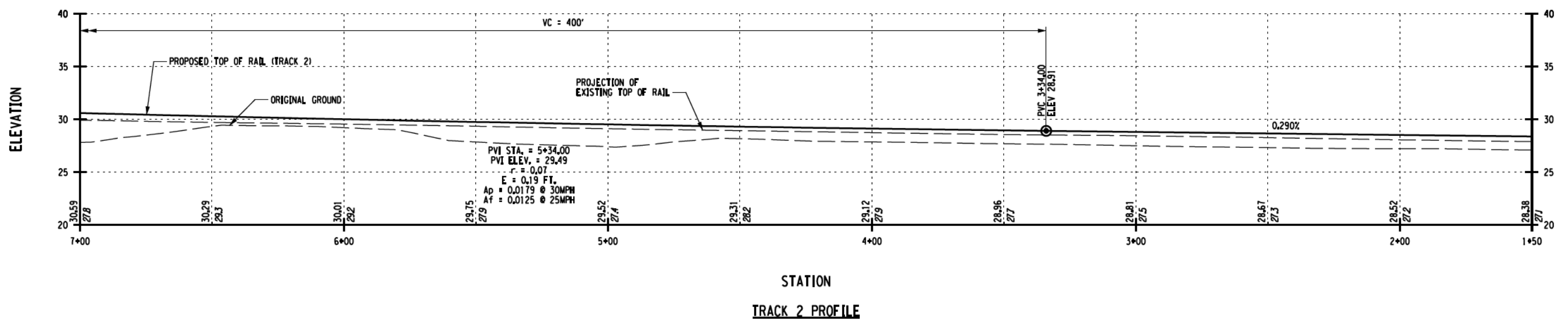
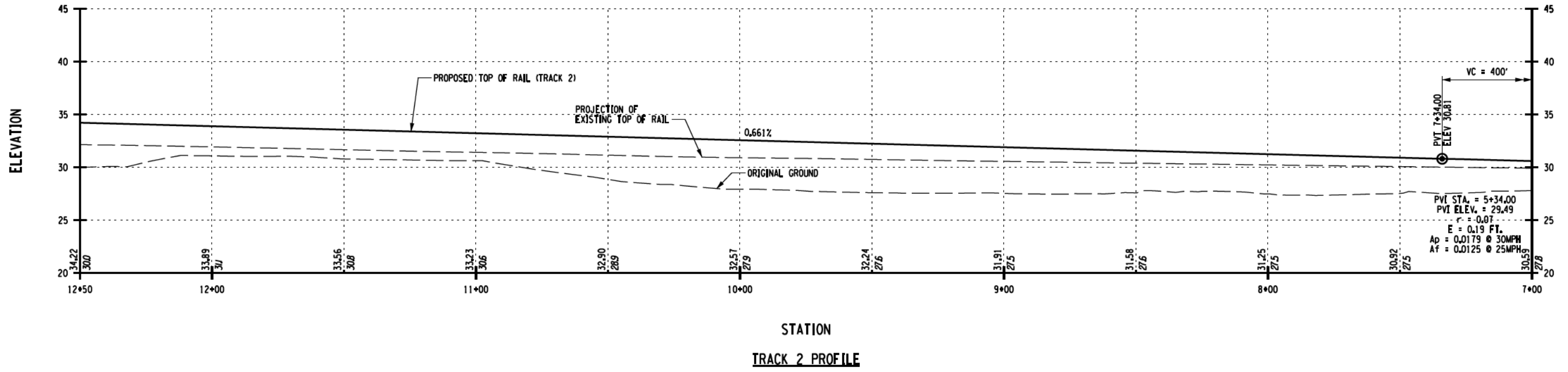
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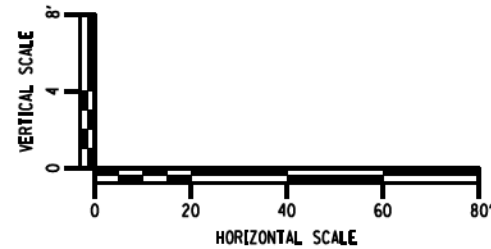
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	MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-10
					SHEET NO.
COUNTY: ALBANY		REGION: 1		Department of Transportation	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

PROJECT MANAGER
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— Limits of Cofferdam/Tremie Seal



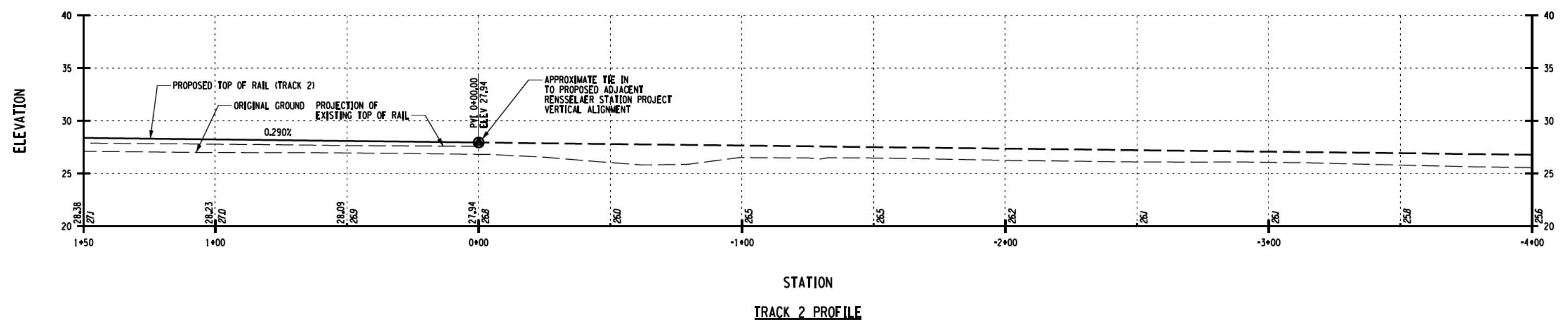
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	MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-11
	COUNTY: ALBANY	REGION: 1			SHEET NO.
<small>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</small>				Department of Transportation	

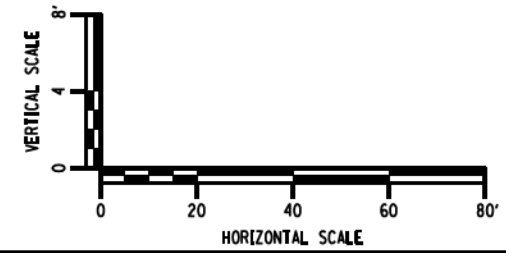
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— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON	ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890
MARCH 2021	

CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

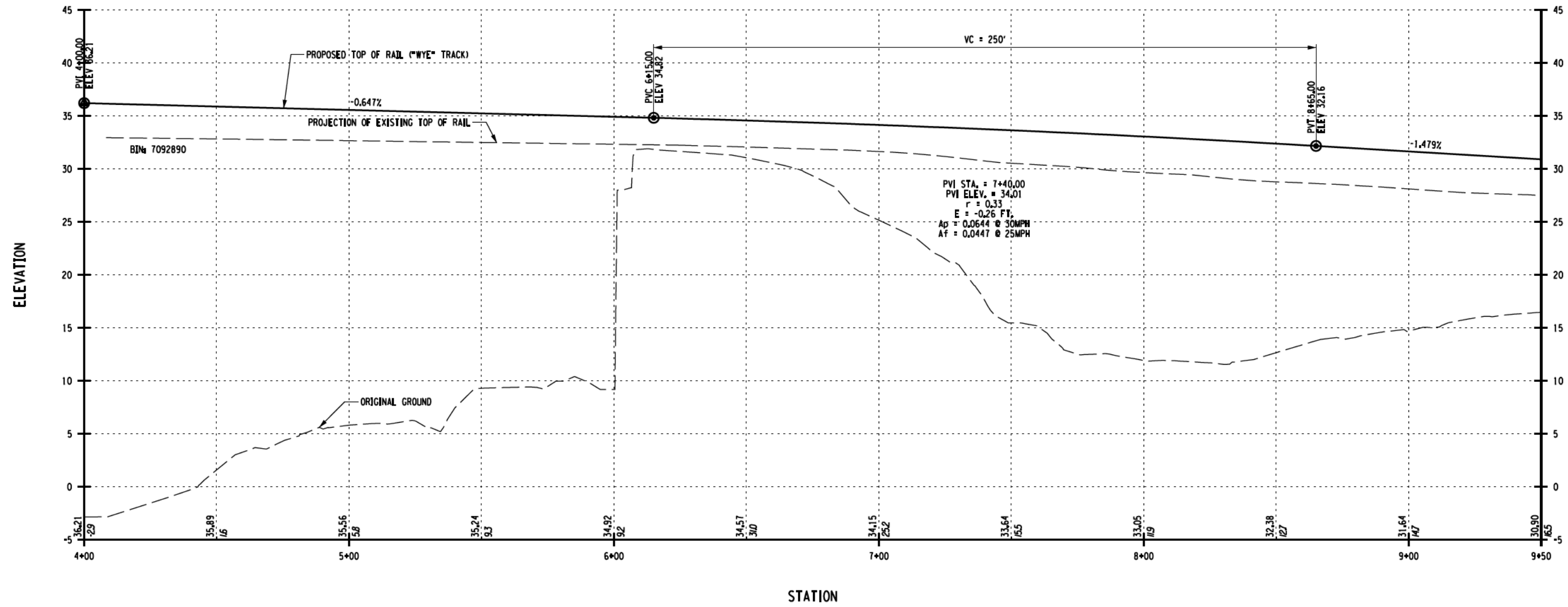
CONTRACT NUMBER
DRAWING NO. TPR-12 SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

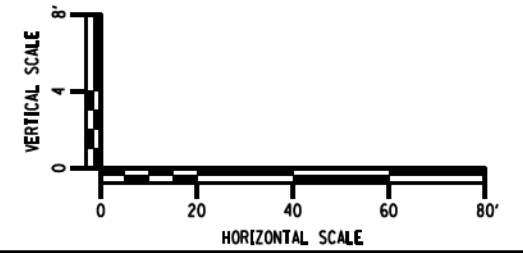


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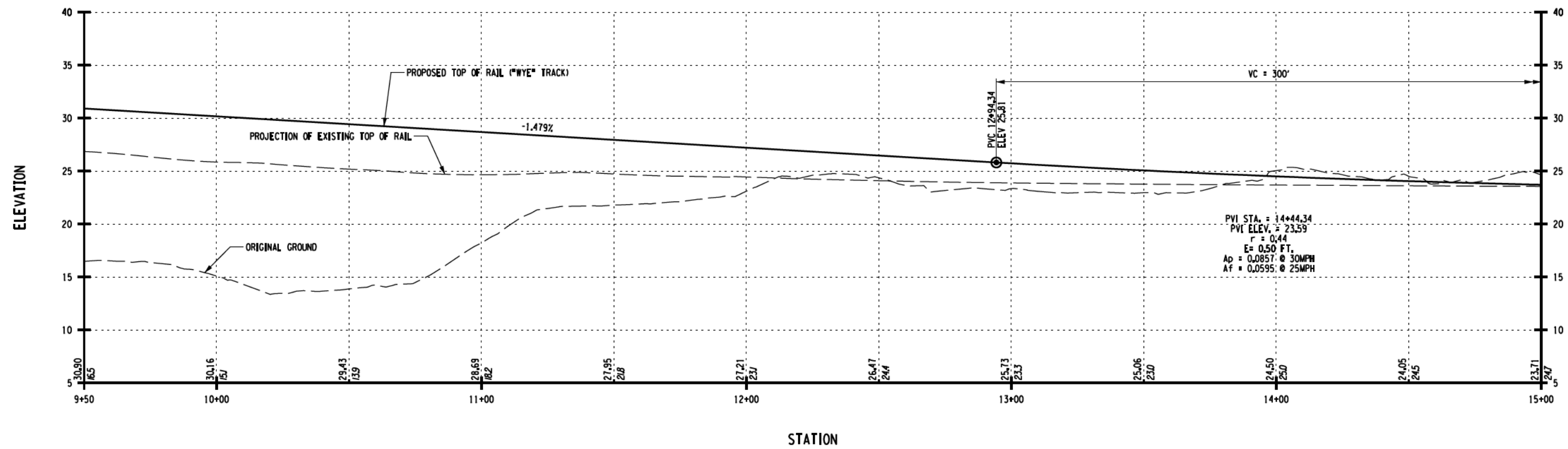
— Limits of Cofferdam/Tremie Seal



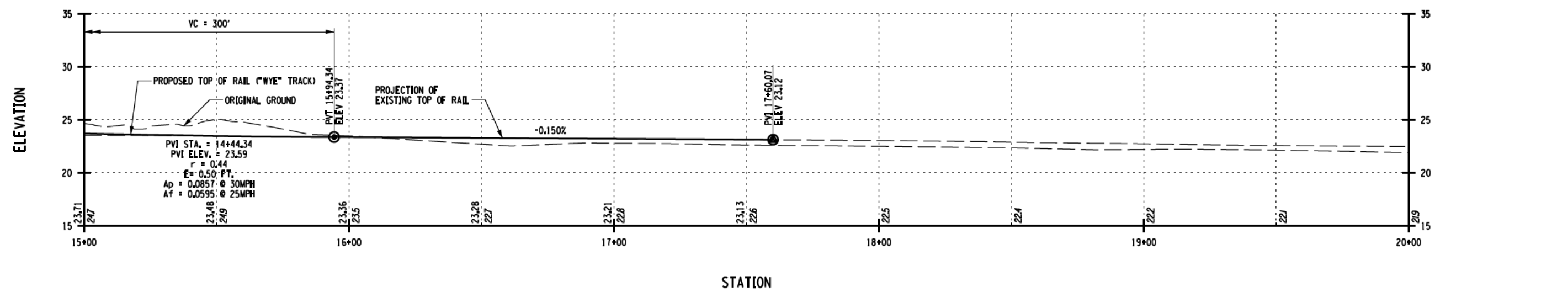
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COUNTY: ALBANY	REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021				TRACK PROFILE SOUTH ALTERNATIVE
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						 Department of Transportation

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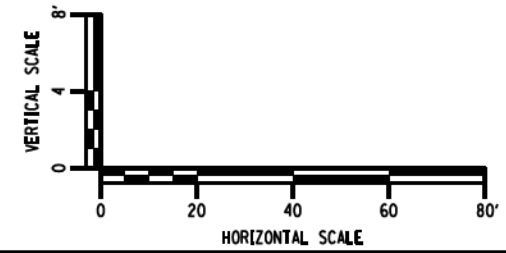


"WYE" TRACK PROFILE



"WYE" TRACK PROFILE

— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON	ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TRACK PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-14
					SHEET NO.

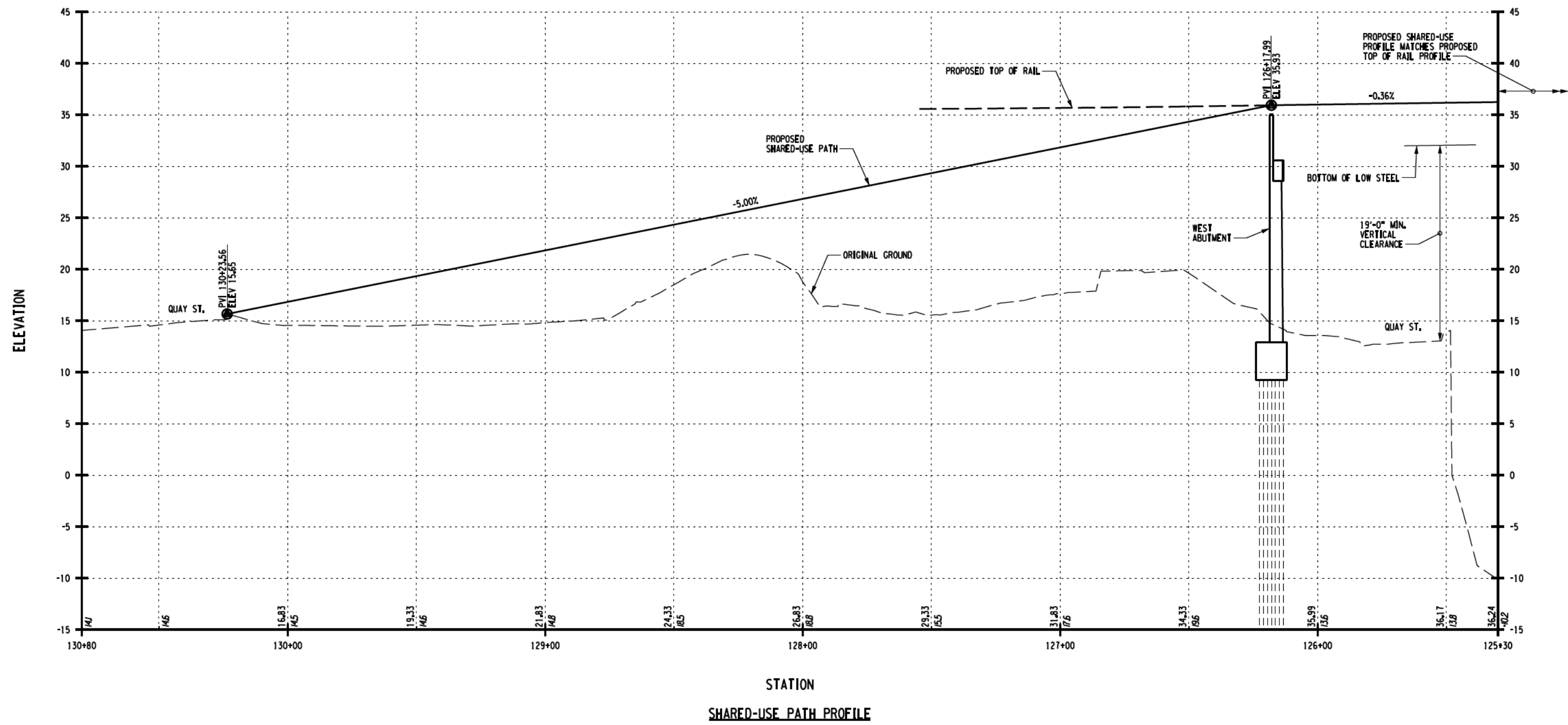
COUNTY: ALBANY	REGION: 1
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



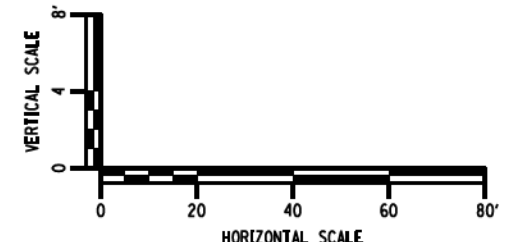
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PROJECT MANAGER
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— Limits of Cofferdam/Tremie Seal

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AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS: COUNTY: ALBANY REGION: 1	

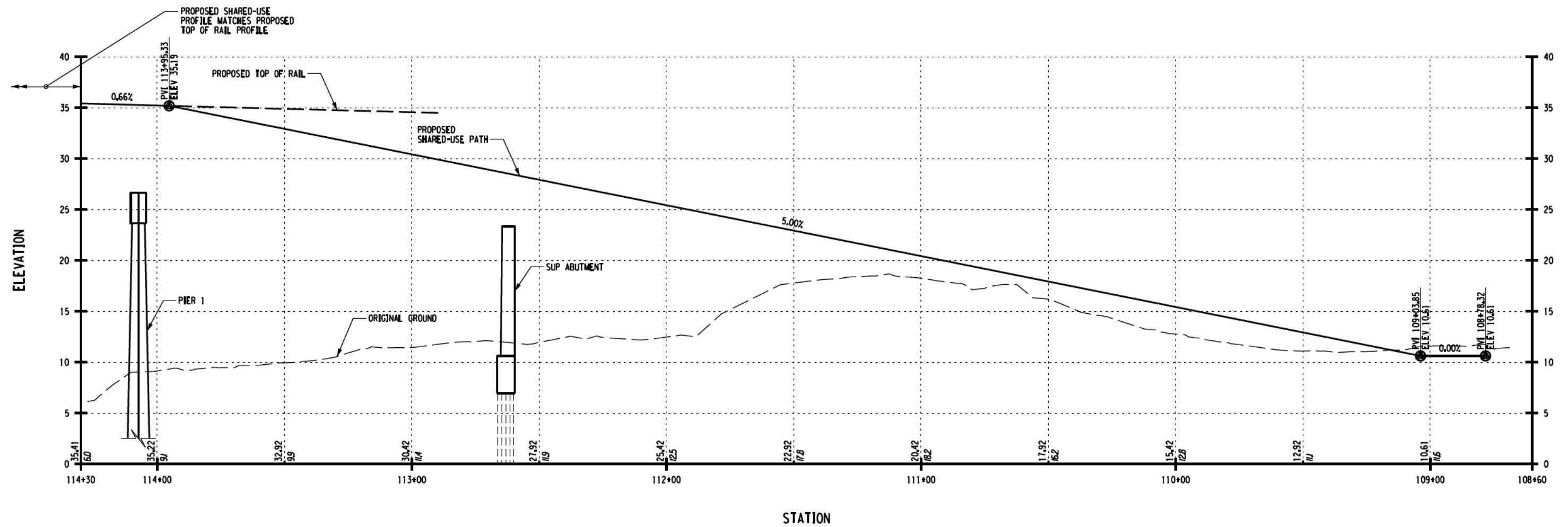


PIN 1935.49 MARCH 2021		BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
SHARED-USE PATH PROFILE SOUTH ALTERNATIVE				DRAWING NO. TPR-15 SHEET NO.	
MODJESKI-MASTERS			NEW YORK STATE OF OPPORTUNITY Department of Transportation		

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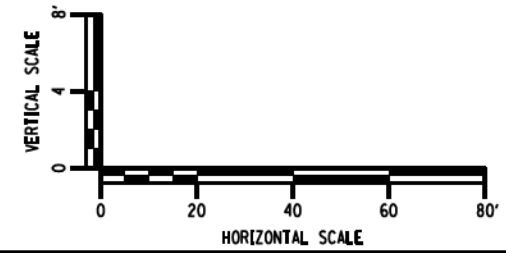
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PROJECT MANAGER
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SHARED-USE PATH PROFILE

— Limits of Cofferdam/Tremie Seal



AFFIX SEAL: ON	ALTERED BY: ON

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTY: ALBANY	REGION: 1

PIN 1935.49	BRIDGES 7092890	CULVERTS
MARCH 2021		

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
SHARED-USE PATH PROFILE SOUTH ALTERNATIVE	DRAWING NO. TPR-16 SHEET NO.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.



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PROJECT MANAGER

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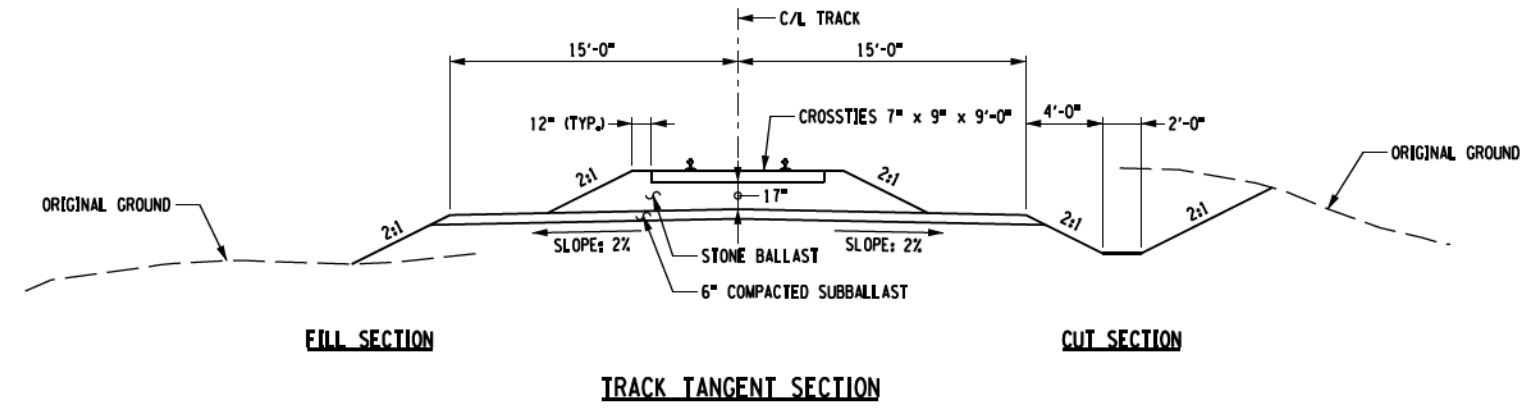
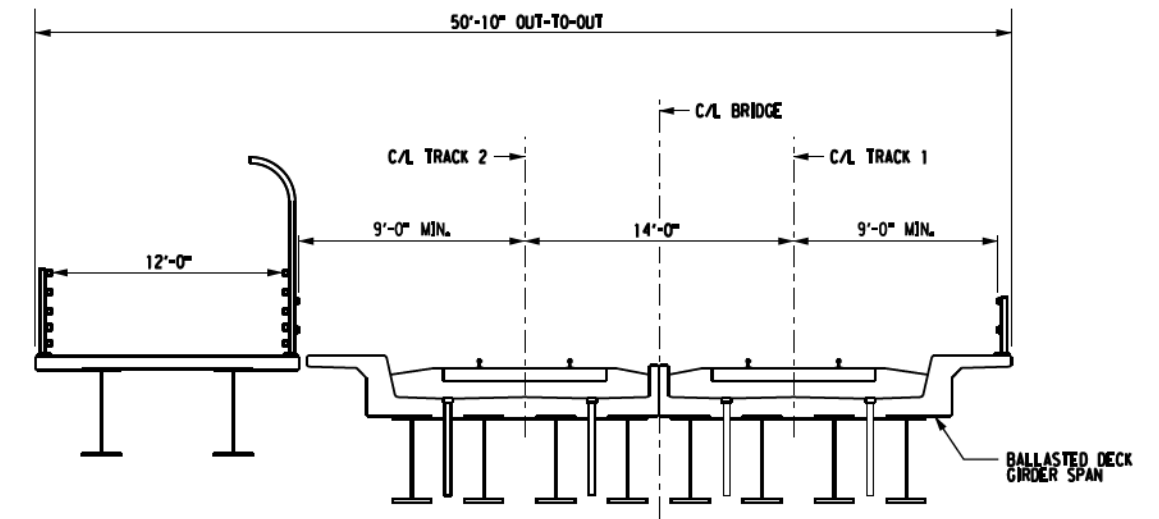
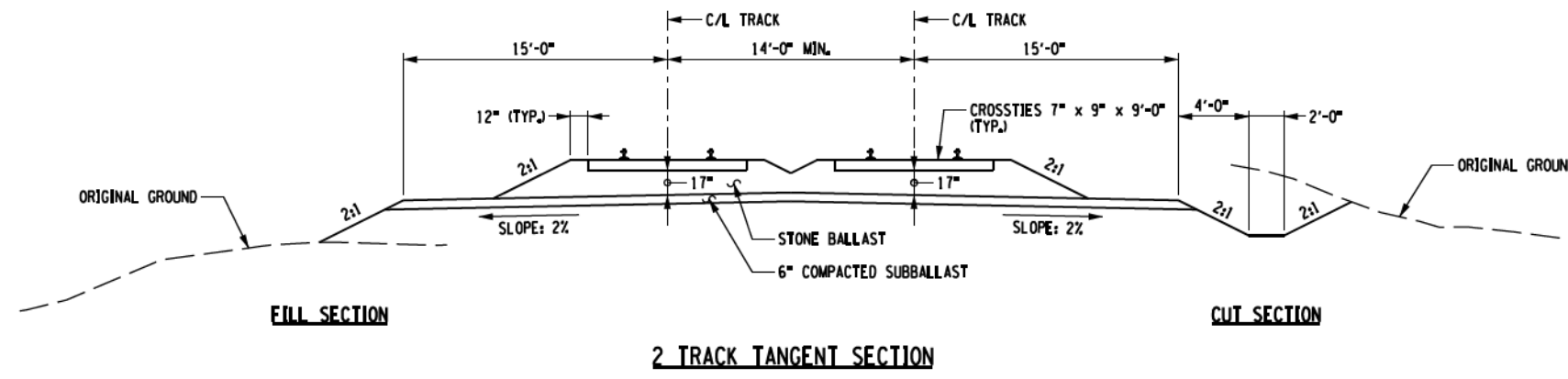
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— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₂
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	
COUNTRY: ALBANY REGION: 1	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-1 SHEET NO.
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FILE NAME =
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USER = ONClescert

PROJECT MANAGER

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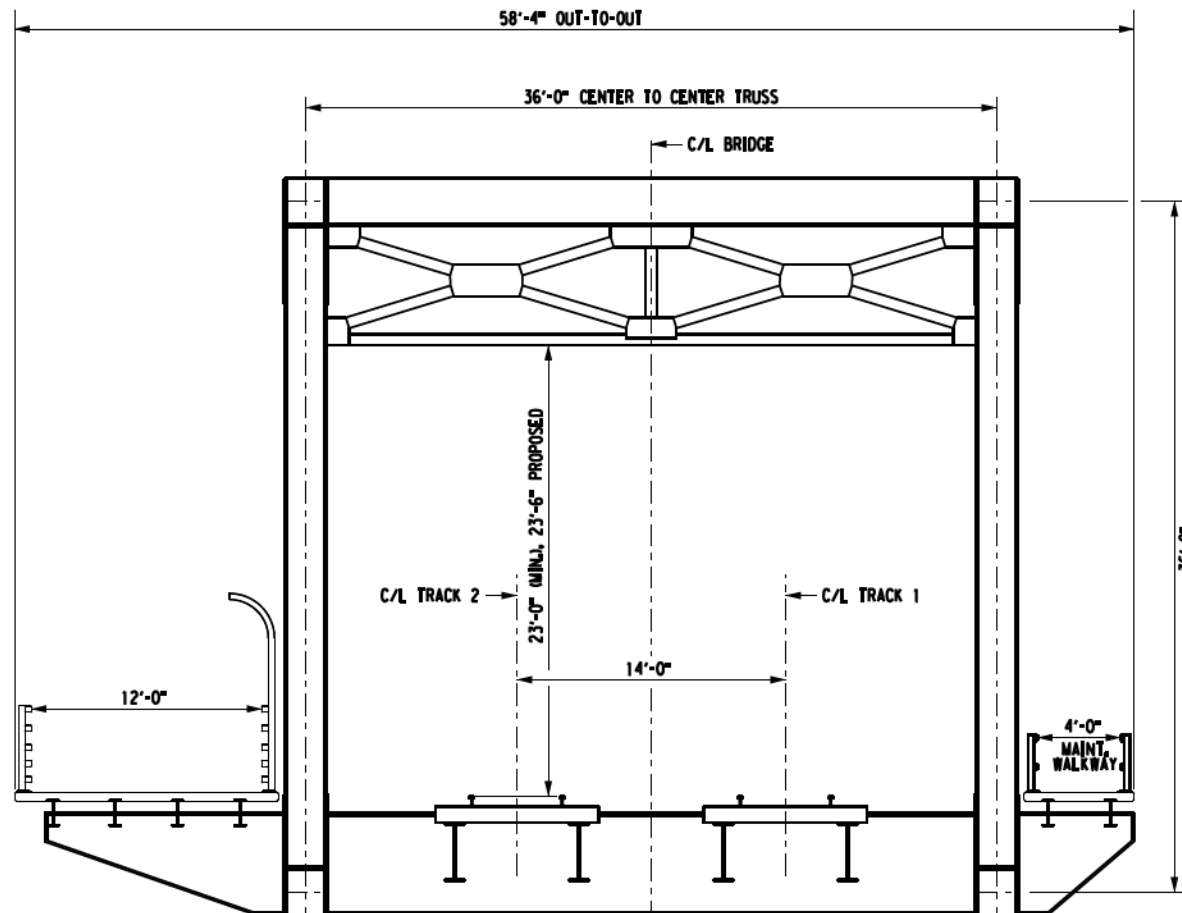
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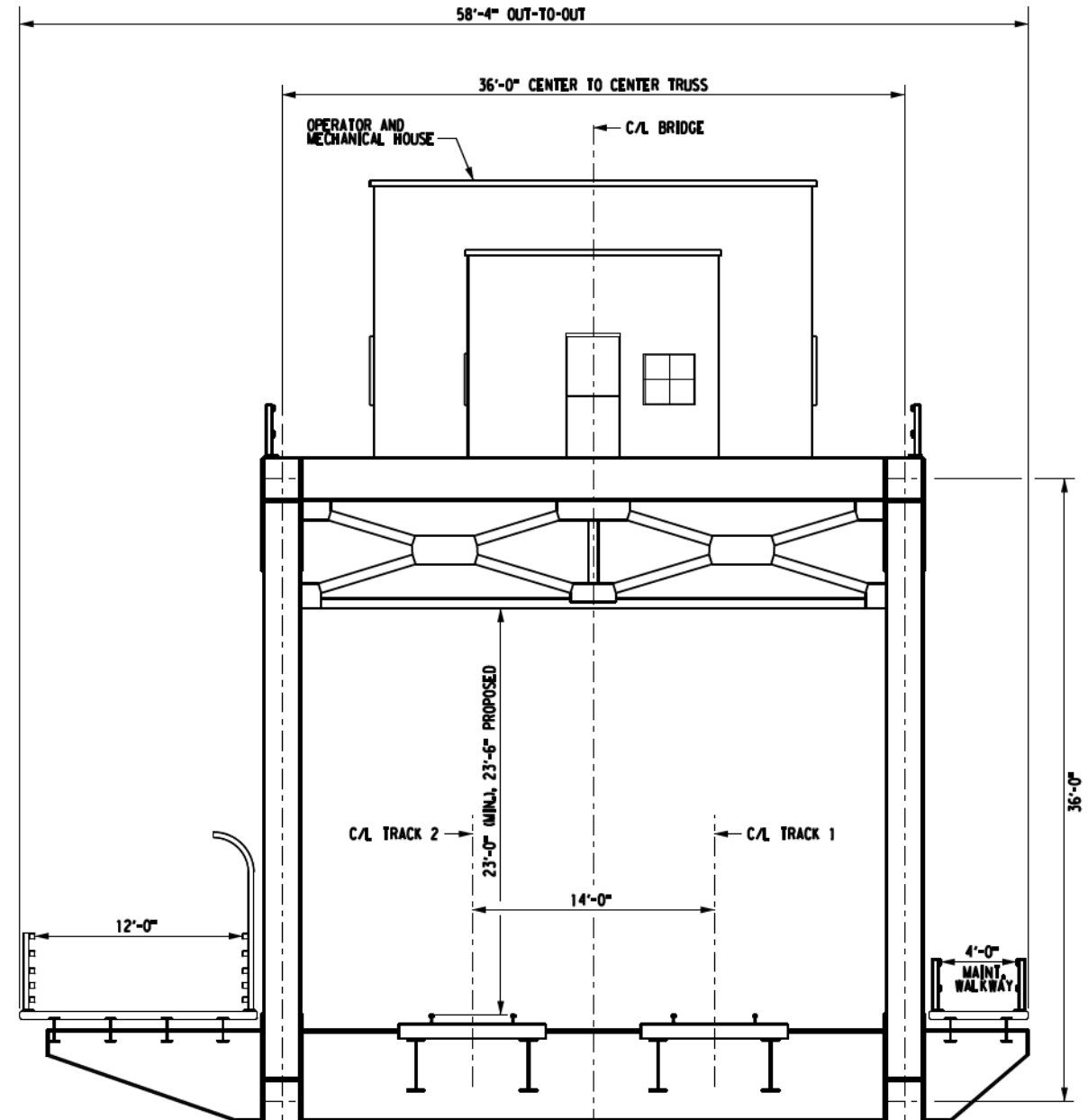
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FIXED TRUSS SECTION
LOOKING WEST



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LOOKING WEST

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

COUNTY: ALBANY	REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER	
		MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-2 SHEET NO.	
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.							

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USER = DNLescart

PROJECT MANAGER

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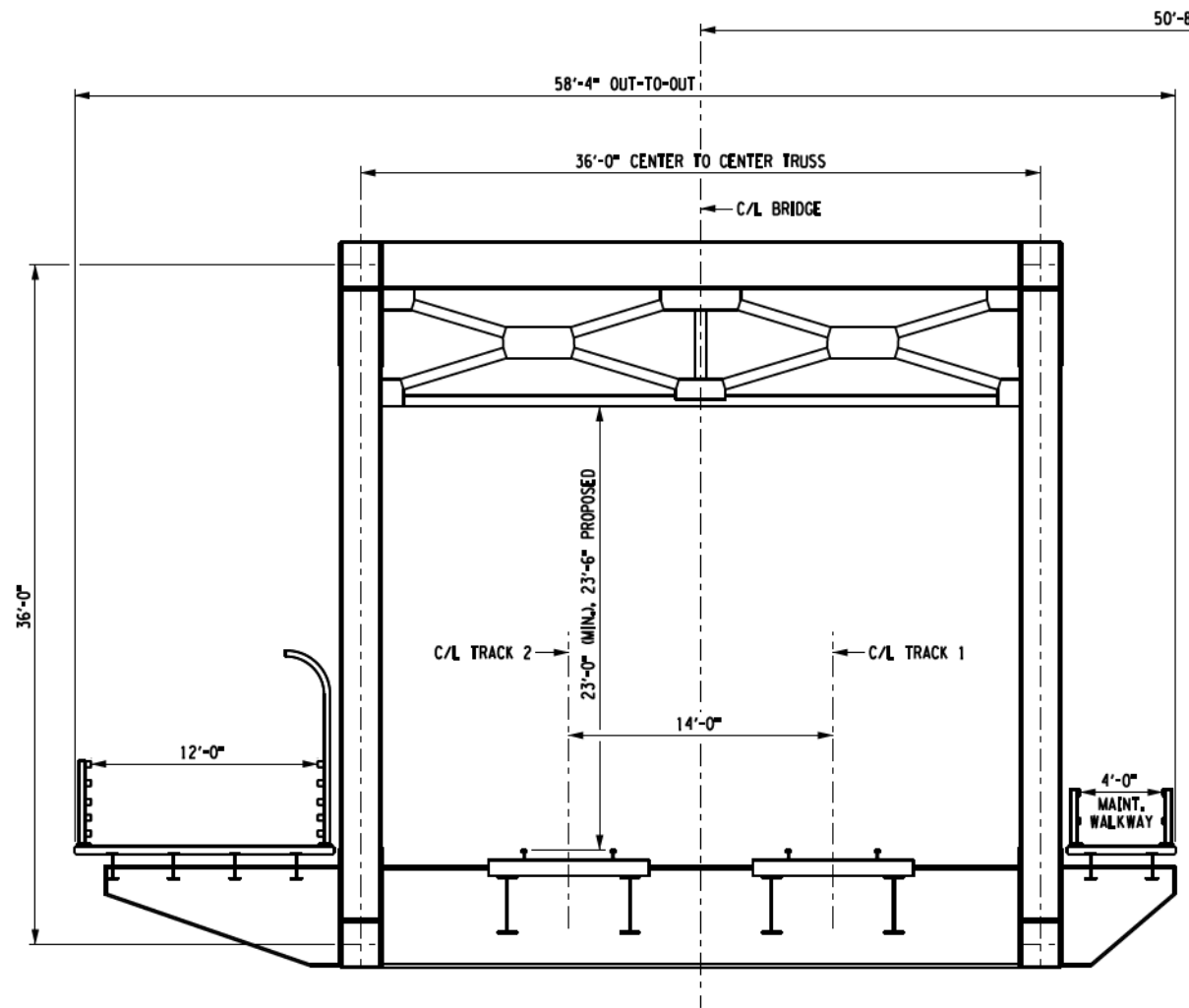
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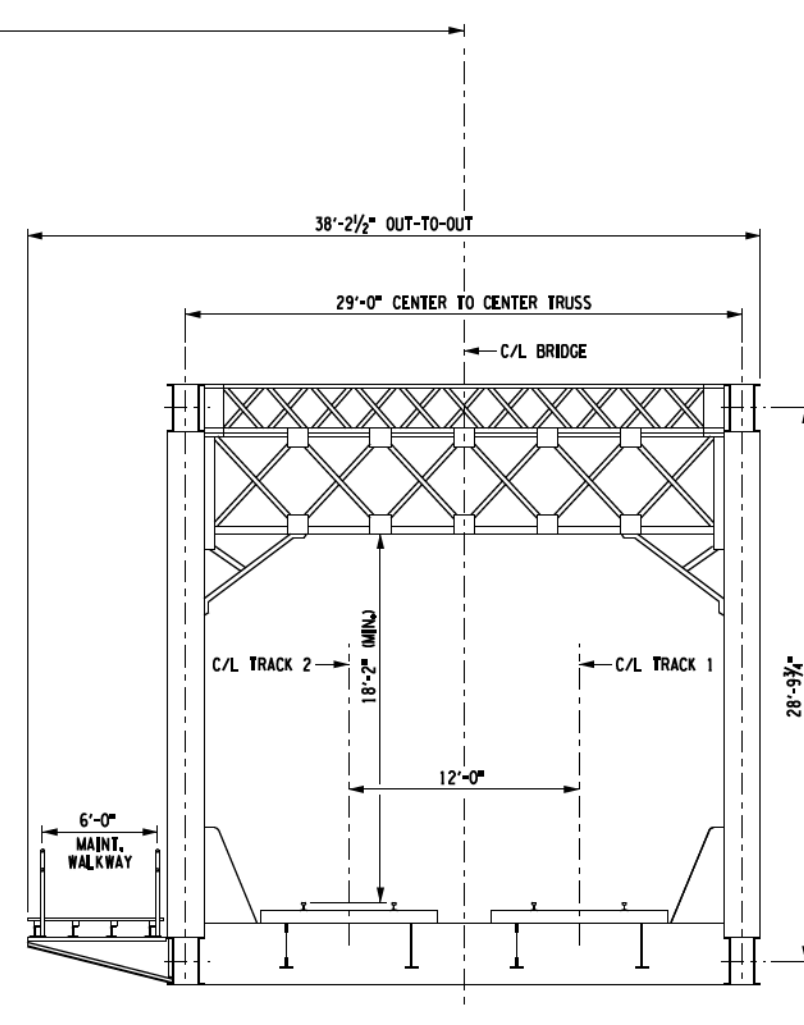
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JOB MANAGER

DESIGN SUPERVISOR



PROPOSED SECTION
LOOKING WEST



EXISTING SECTION
LOOKING WEST

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

		PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
		MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-3
COUNTY: ALBANY	REGION: 1					SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.						 Department of Transportation

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DATE/TIME = 3/18/2021
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PROJECT MANAGER

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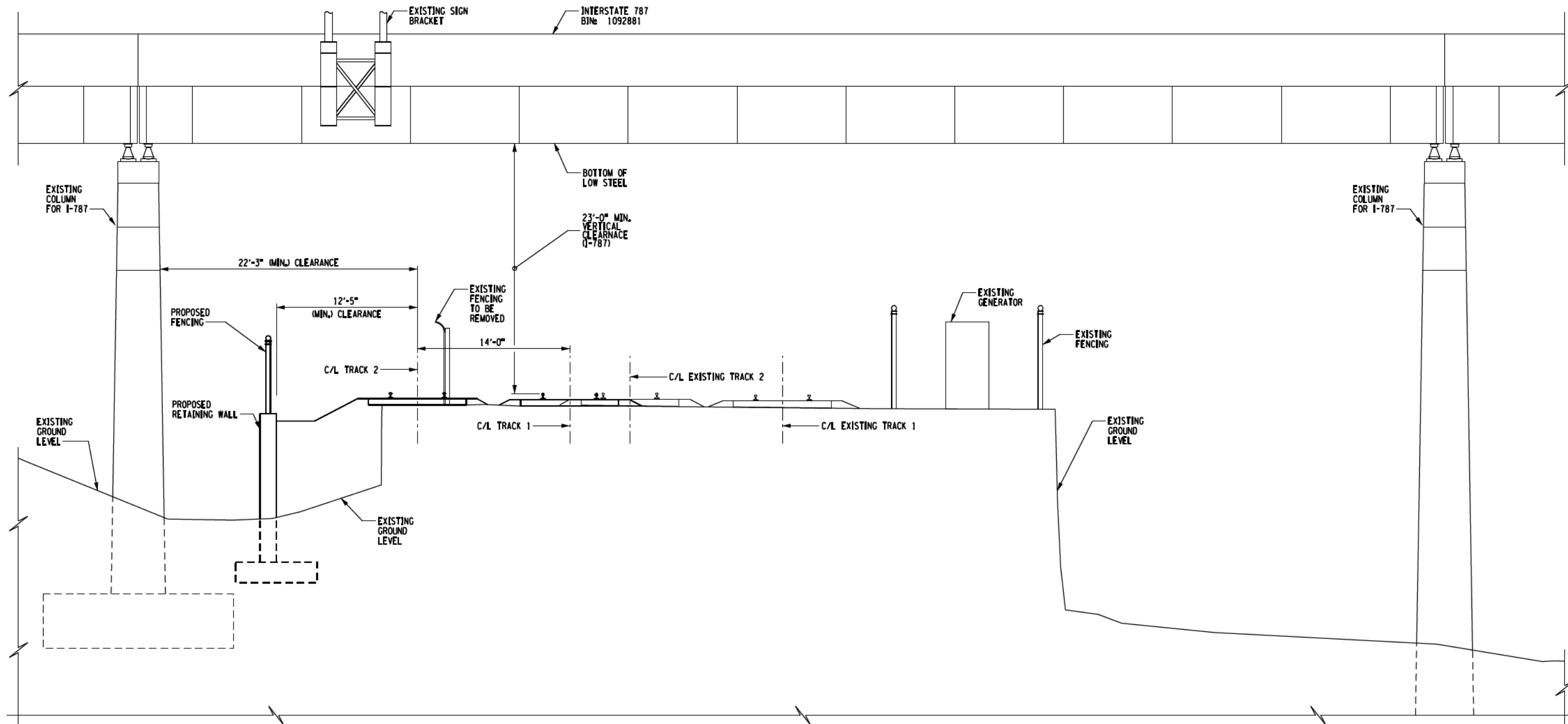
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JOB MANAGER

DESIGN SUPERVISOR



PROPOSED TRACK SECTION UNDER STA. 29+00
 LOOKING WEST
 (SOUTH ALTERNATIVE SHOWN)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER	
		MARCH 2021				TYPICAL SECTIONS	DRAWING NO. TS-4
		COUNTY: ALBANY	REGION: 1				SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.							Department of Transportation

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 DATE/TIME = 3/18/2021
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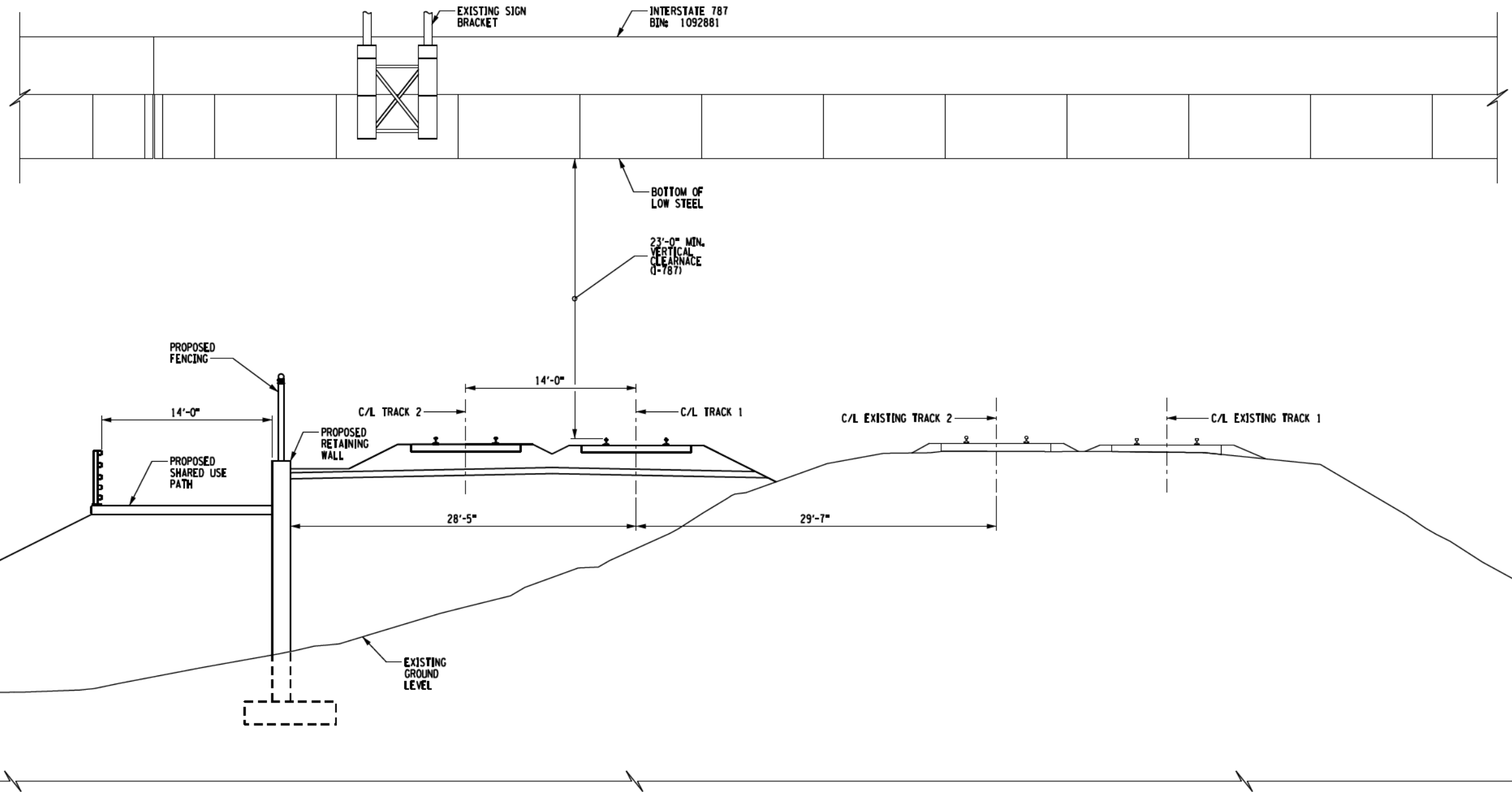
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JOB MANAGER

DESIGN SUPERVISOR



PROPOSED TRACK SECTION STA. 27+50
 LOOKING WEST
 (SOUTH ALTERNATIVE SHOWN)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-5 SHEET NO.
COUNTY: ALBANY	REGION: 1			
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.				 Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = DNLjescart

PROJECT MANAGER

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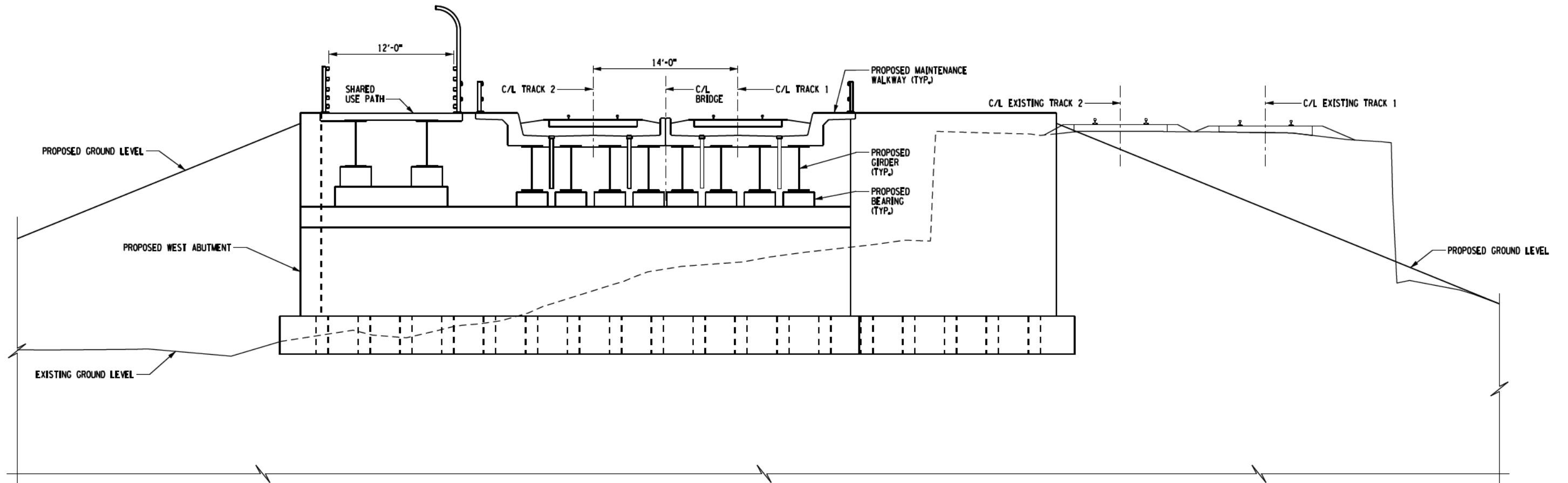
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JOB MANAGER

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PROPOSED TRACK SECTION WEST ABUTMENT
 LOOKING WEST
 (SOUTH ALTERNATIVE SHOWN)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	

COUNTY: ALBANY		REGION: 1	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
			MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-6
							SHEET NO.
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.							 Department of Transportation

FILE NAME =
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 USER = DNLjescart

PROJECT MANAGER

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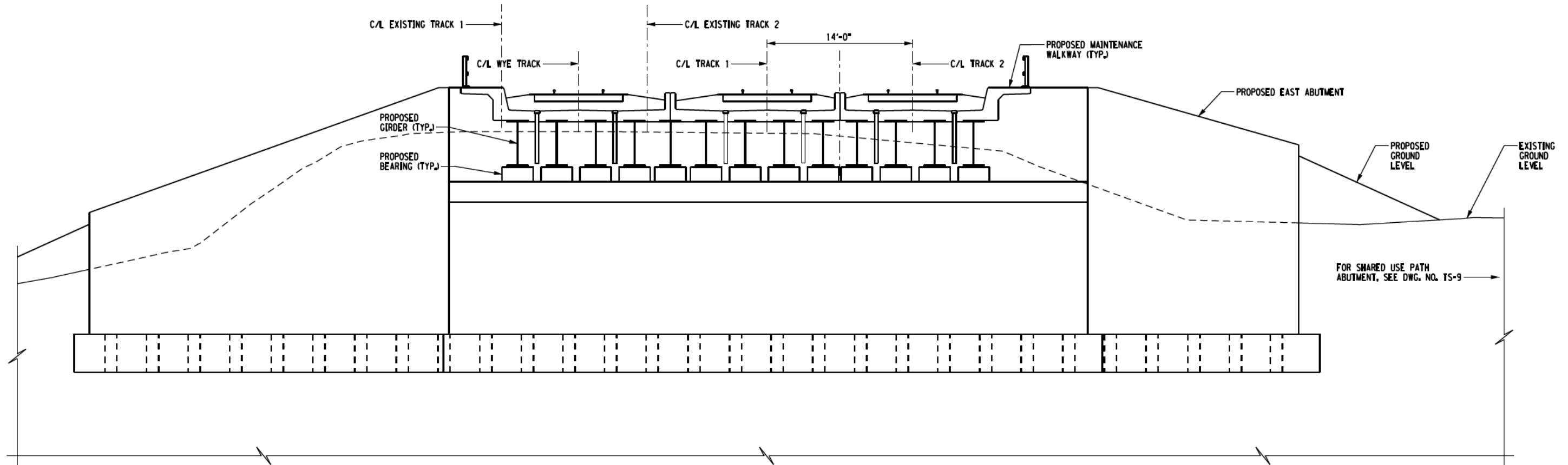
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DESIGN SUPERVISOR



PROPOSED TRACK SECTION EAST ABUTMENT
 LOOKING EAST
 (SOUTH ALTERNATIVE SHOWN, EXISTING STRUCTURES NOT SHOWN FOR CLARITY)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:	PIN 1935.49	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED	CONTRACT NUMBER
	MARCH 2021			TYPICAL SECTIONS	DRAWING NO. TS-7
	COUNTY: ALBANY	REGION: 1			SHEET NO.
<p>IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.</p>					 Department of Transportation

FILE NAME =
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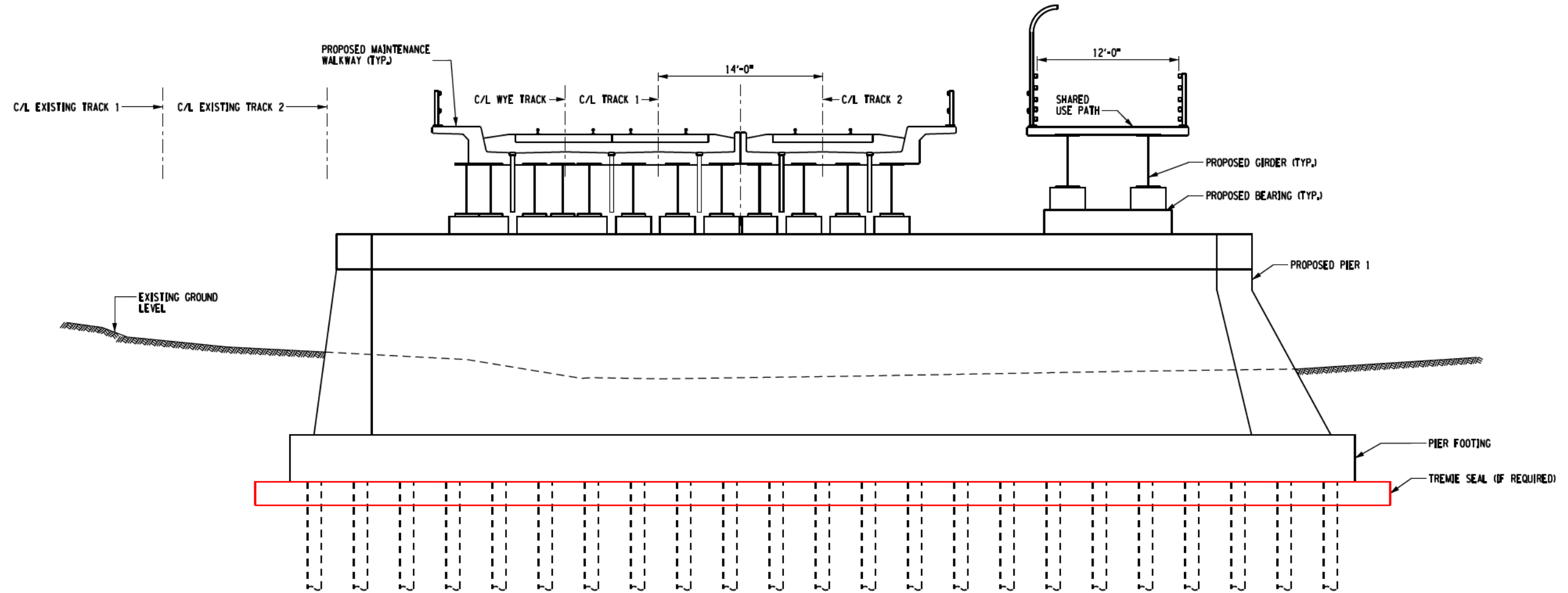
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PROPOSED TRACK SECTION PIER 1
 LOOKING EAST
 (SOUTH ALTERNATIVE SHOWN, EXISTING STRUCTURES NOT SHOWN FOR CLARITY)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁

AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS:		PIN 1935.49 MARCH 2021	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER
					TYPICAL SECTIONS	DRAWING NO. TS-8
						SHEET NO.
COUNTY: ALBANY REGION: 1					Department of Transportation	

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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 DATE/TIME = 3/18/2021
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PROJECT MANAGER

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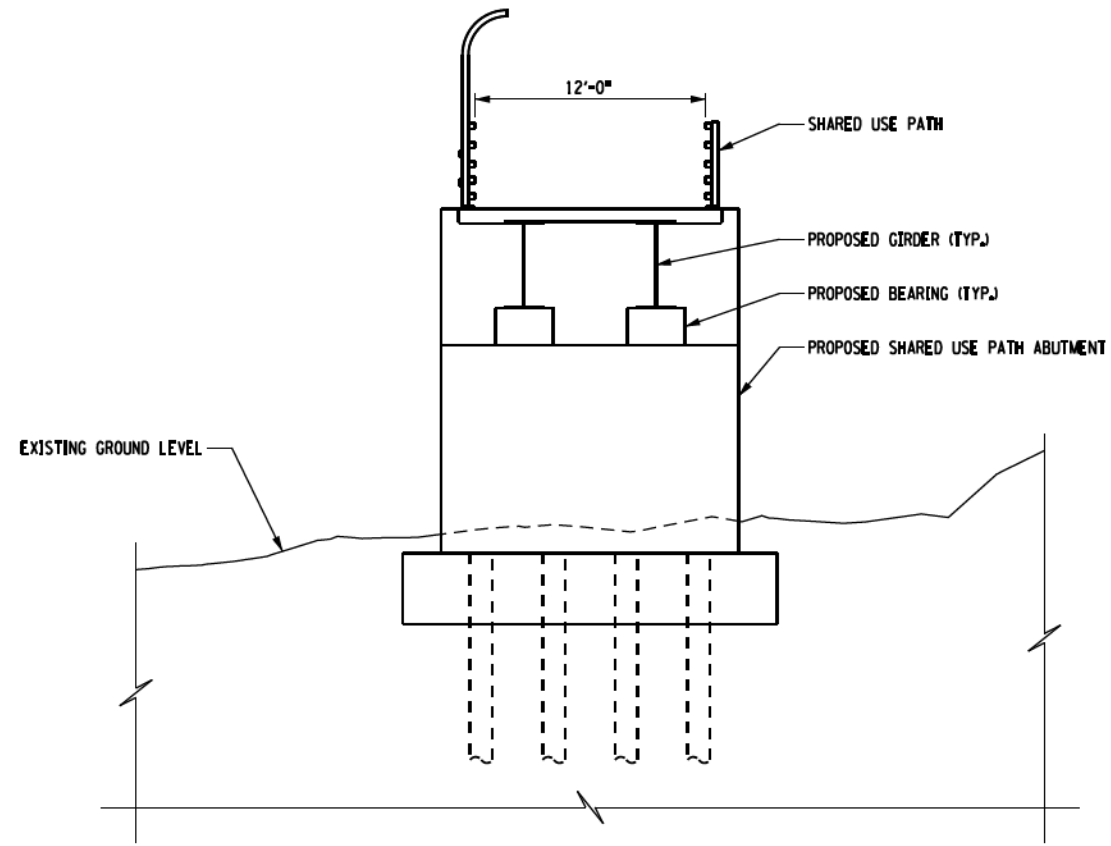
DRAFTING

CHECK

DESIGN

JOB MANAGER

DESIGN SUPERVISOR



PROPOSED SECTION SUP ABUTMENT
 LOOKING SOUTH
 (SOUTH ALTERNATIVE SHOWN)

— Limits of Cofferdam/Tremie Seal

AFFIX SEAL: ON ₁	ALTERED BY: ON ₁

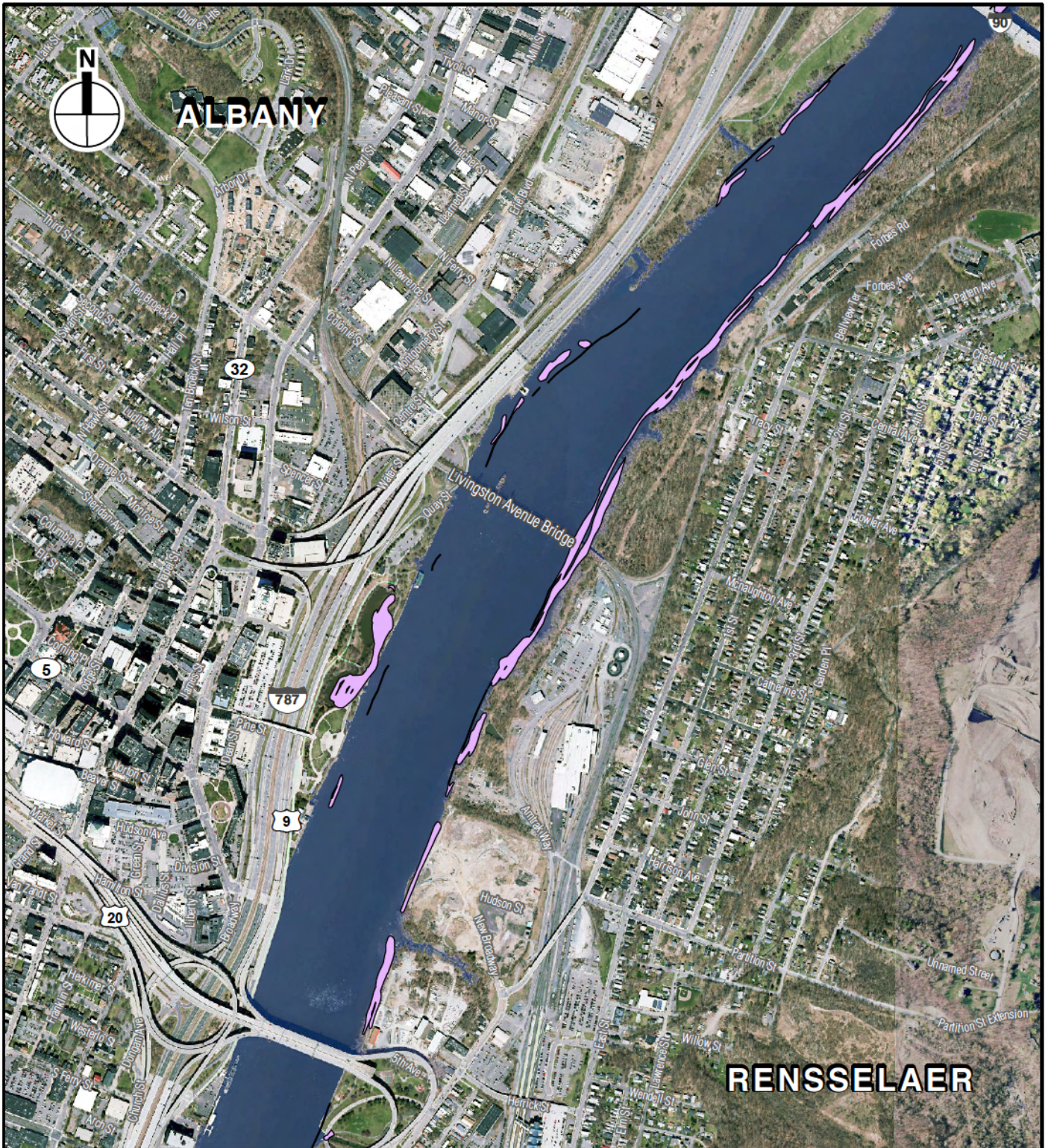
AS-BUILT REVISIONS DESCRIPTION OF ALTERATIONS ₂		PIN 1935.49 MARCH 2021	BRIDGES 7092890	CULVERTS	ALL DIMENSIONS IN FT UNLESS OTHERWISE NOTED	CONTRACT NUMBER	
						TYPICAL SECTIONS	
						DRAWING NO. TS-9 SHEET NO.	
COUNTY: ALBANY REGION: 1							
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.							 Department of Transportation

FILE NAME =
 DATE/TIME = 3/18/2021
 USER = DNLescart



-  Existing Livingston Avenue Bridge
-  Gravelly Sand
-  Muddy Sand
-  Sand
-  Sandy Gravel

Source: Hudson River Estuary Submerged Aquatic Vegetation 2002, Hudson River Estuary Submerged Aquatic Vegetation 2007, Hudson River Estuary Submerged Aquatic Vegetation 2016, Hudson River Estuary Submerged Aquatic Vegetation 2018



 Documented SAV Habitat 2018

0 1,000 FEET


NOTE: Data are a combination of layers from the 1997, 2002, 2007, 2014, 2016, and 2018 SAV data sets, representing a culmination of all areas where SAV habitat has been documented



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

September 28, 2021

Marlys Osterhues
U.S. Department of Transportation
Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Re: NYSDOT Livingston Avenue Bridge Replacement Project, Hudson River, New York

Dear Ms. Osterhues:

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your email received on September 22, 2021, regarding the above-referenced proposed project. We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and your materials, we concur with your conclusion that the proposed action is not likely to adversely affect any National Marine Fisheries Service ESA-listed species or designated critical habitat. Therefore, no further consultation pursuant to section 7 of the ESA is required.

We would like to offer the following clarifications to complement your incoming request for consultation. You state that the action area includes the area surrounded by a turbidity curtain during each sediment disturbing activity. You also mention that there will be sheet pile cells installed, so the action area also includes the in-water areas within the sheet pile cells. In the Effects on Critical Habitat section, you mention that the area to be affected is small within the channel and there is similar or more suitable habitat within the vicinity of the project area. To clarify, the habitat to be affected is small compared to the available habitat within the action area. Therefore, the effects to critical habitat continue to be too small to be meaningfully measured or detected and are insignificant.

Reinitiation of consultation is required and shall be requested by the lead federal agency or by us, where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; or, (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required. Should you have any questions about this correspondence please contact Edith Carson-Supino at (978) 282-8490 or by email (Edith.Carson-Supino@noaa.gov). For questions related to Essential Fish Habitat, please contact Jessie Murray with our Habitat and Ecosystems Services Division at (978)-675-2175 or Jessie.Murray@noaa.gov.

Sincerely,

For:

Jennifer Anderson
Assistant Regional Administrator
for Protected Resources

ec: Murray, NMFS/HESD; Collins, AKRF
ECO: GARFO-2021-02372

File Code: H:\Section 7 Team\Section 7\Non-Fisheries\Federal Railroad\FRA Livingston Avenue Bridge Project Hudson





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385

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

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

In Reply Refer To:

November 03, 2021

Consultation code: 05E1NY00-2021-TA-2302

Event Code: 05E1NY00-2022-E-01346

Project Name: Livingston Avenue Bridge Replacement Project

Subject: Verification letter for the 'Livingston Avenue Bridge Replacement Project' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Melissa Grese:

The U.S. Fish and Wildlife Service (Service) received on November 03, 2021 your effects determination for the 'Livingston Avenue Bridge Replacement Project' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

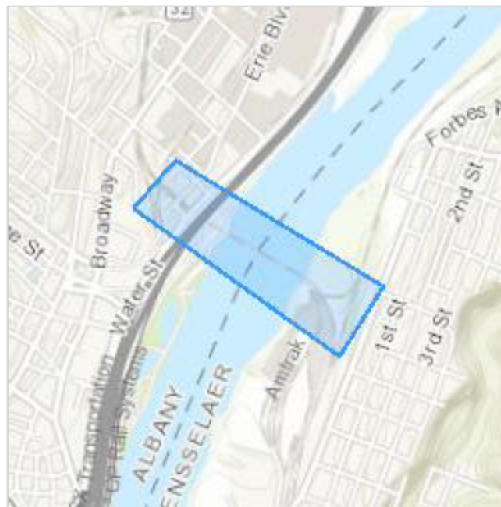
Livingston Avenue Bridge Replacement Project

2. Description

The following description was provided for the project 'Livingston Avenue Bridge Replacement Project':

Replacement of Livingston Avenue rail bridge

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.65409875,-73.7411696858805,14z>



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may

affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
 7. Will the action involve Tree Removal?
Yes
-

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

3

2. If known, estimated acres of forest conversion from April 1 to October 31

3

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



U.S. Department
of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

**Federal Railroad
Administration**

November 5, 2021

U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, NY 13045

Re: Request for Concurrence
Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act
Northern Long-Eared Bat
Livingston Avenue Railroad Bridge Replacement Project
Albany and Rensselaer, New York

Dear USFWS New York Field Office:

The U.S. Department of Transportation's Federal Railroad Administration (FRA) and the New York State Department of Transportation (NYSDOT) are preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) and related federal environmental review requirements as well as the New York State Environmental Quality Review Act (SEQRA) for the Livingston Avenue Railroad Bridge Replacement Project (the Project) (**Enclosure 1**). Enclosure 1 presents the plans, profiles, and typical sections for the two build alternatives described herein. FRA is the lead Federal agency under NEPA and NYSDOT is the lead state agency under SEQRA.

The Livingston Avenue Bridge provides a critical rail link on New York State's Empire Corridor rail route. The bridge, which CSX Transportation Inc. (CSX) owns and the National Railroad Passenger Corporation (Amtrak) maintains and operates, is nearing the end of its serviceable life. Amtrak uses the bridge for intercity passenger trains traveling on the Empire Corridor route and CSX and Canadian Pacific (CP) use the bridge for freight rail service. The bridge's existing superstructure and substructure are in fair to poor condition, and the mechanical portions of the movable swing span are significantly deteriorated. The swing span frequently malfunctions, resulting in delays to passenger trains, freight trains, and boat traffic, and the bridge does not meet current design standards or modern seismic codes. The existing bridge contributes to delays in the movement of freight and passengers throughout New York State, and its replacement is essential to implementing future rail plans and improving state-wide transportation.

Included with this request is the Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form that was previously submitted to the U.S. Fish and Wildlife Service (USFWS) on February 16, 2021 (**Attachment 1**). Using this form, FRA has determined the Project may affect the northern long-eared bat, but that any resulting incidental take of the bat is not prohibited by the final 4(d) rule.

FRA has also determined the Project may affect, but is not likely to adversely affect any species protected under the Migratory Bird Treaty Act, or bald eagles protected under the Bald and Golden Eagle Protection Act. More information about the Project and supporting analysis for this determination is provided below.

PROPOSED PROJECT

The existing movable swing-span bridge was constructed in 1901-1903 on a substructure dating to the 1860s and is nearing the end of its serviceable life. Recent inspections indicated the bridge has significant

deterioration. In addition, the bridge does not meet current design standards related to load, speed, and vertical clearance, and therefore passenger and freight trains operating over the bridge must comply with restrictions related to weight and speed. Amtrak uses the bridge for intercity passenger trains traveling on the Empire Corridor route and CSX and Canadian Pacific (CP) use the bridge for freight rail service. The existing Livingston Avenue Bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State. The purpose of the Project is to improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor; achieve (at a minimum) a long-term state-of-good-repair for the bridge; eliminate existing bridge and track deficiencies; and maintain or improve navigation near the bridge. This will ensure that the Livingston Avenue Bridge meets modern passenger and freight rail capacity and load/weight standards, maintains acceptable levels of safety, and supports the long-term utility and vitality of the Empire Corridor.

As part of the development and evaluation of alternatives for the EA, NYSDOT and FRA determined that discontinuation of a rail crossing between Albany and Rensselaer, repair and rehabilitation of the existing bridge, and replacement of the bridge within the existing bridge footprint would not be reasonable alternatives. FRA and NYSDOT concluded that two Build Alternatives that replace the existing bridge with a new lift bridge either just south or just north of the existing alignment would be feasible, reasonable, and would meet the Project's purpose and need as defined in the EA.

- Build Alternative 1 (**Figure 1**) involves the complete replacement of the existing two-track Livingston Avenue Bridge with a new two-track movable bridge on a skewed alignment north of the existing bridge.
- Build Alternative 2 (**Figure 2**) involves the complete replacement of the existing two-track Livingston Avenue Bridge with a new two-track movable bridge located parallel to and approximately 50 feet south of the existing bridge.

Under both Build Alternatives, the new bridge would have a lift span instead of a swing span like the existing bridge. This would increase the width of the navigation channel from the current width of 100 feet to approximately 190 feet wide. The vertical clearance of the lift span when open would be 60 feet above Mean High Water, which is the same clearance as the nearest bridges upstream and downstream of the Livingston Avenue Bridge. When the bridge is closed, the vertical clearance above the water would be the same as with the existing bridge, which is 25 feet above Mean High Water.

Both Build Alternatives also include modifications to the approach tracks on both sides of the river. In Rensselaer, the approach tracks would be reconfigured to improve operations and train speeds. In Albany, the western abutment of the bridge would be shifted slightly westward and rail bridges over two local streets, Water and Centre Streets, would be rehabilitated and reconfigured to accommodate the shift in the track alignment. Both Build Alternatives would provide a shared use path for bicyclists and pedestrians. No change in the number of daily trains is planned as a result of the Project. With the new bridge, train operating speed on the bridge would be increased from the current speed of 15 mph to 40 mph for passenger trains and 35 mph for freight trains. The new bridge would have two tracks and to accommodate two trains operating across the bridge at the same time.

DESCRIPTION OF CONSTRUCTION ACTIVITIES

Staging locations (**Figure 3**) would likely include a property adjacent to the Livingston Avenue Bridge in Rensselaer where the City is proposing a new residential development, Kiliaen's Landing, if available for the duration of construction. An access road would be constructed from Tracy Street to the staging area using a utility easement/corridor. This staging location would provide water access from the eastern shoreline for material and equipment deliveries via barge. A temporary pier extending to the navigation channel would also be constructed north of the existing bridge for either Build Alternative since the water depths are too shallow for the barges. The pier would facilitate the delivery of concrete and other material, and a temporary haul road would be constructed between the pier and the Amtrak yard. An offsite staging area would be used to construct the float-in spans and lift tower sections of the replacement bridge, which

would be transported to the project site and installed by barge. For Build Alternative 2, a smaller construction staging area would also be required just south of the existing bridge along the eastern shoreline, located within the Amtrak property near the maintenance facility. Staging on the western shoreline of the river in Albany would likely be on state-owned property to the north and south of the bridge between Quay Street and I-787. Tree clearing would be required for either Build Alternative (3 acres for Build Alternative 1, and 2 acres for Build Alternative 2) on the east shoreline to accommodate construction access and tie-in to the existing tracks.

Construction of the temporary pier, the new bridge piers, the dolphin and fender system, installation of the new bridge superstructure, and demolition of the existing bridge would all be conducted using barge-based equipment. Pile installation for the temporary pier and dolphin and fender system would be by a combination of pre-drilling, vibratory hammer, and a cushioned impact hammer if necessary. Noise resulting from pile installation would be intermittent over the course of a workday. The new bridge piers would comprise steel H-piles installed via vibratory hammer within a dewatered and excavated steel sheet pile cell. The superstructure for the new bridge would be floated to the project site on barges and installed using a crane. Demolition of the existing bridge would also be completed using barge-based equipment, with nets, tarps, and/or pans to capture any falling debris. The superstructure would be removed span-by-span and then transported to and disassembled in a staging yard. None of the in-water activities would be expected to result in noise levels that could alter species assemblages or permanently displace any birds in the area.

The bridge abutments would be supported by steel H-piles installed using land-based equipment. A small amount of excavation dewatering could be required, depending on the elevation of groundwater near the shoreline. Following construction of the new bridge and prior to decommissioning and removal of the existing bridge, the tracks would be tied into the existing approach tracks east and west of the bridge. Either Build Alternative would require a shift in the location of the wye track alignment and/or raising the elevation of the track. Both Build Alternatives would also require changes to two rail bridges in Albany over Water Street and Centre Street.

EXISTING HABITAT CONDITIONS

The area surrounding the Livingston Avenue Bridge is developed with a mix of residential, transportation infrastructure, industrial, and commercial uses. The availability of natural habitat is limited. The western shoreline in Albany is occupied by Corning Riverfront Park, a recreational park that contains manicured lawn with shade trees, asphalt paths, and two human-made, ornamental ponds. The vegetation on the eastern shoreline in Rensselaer is a mix of riparian zone tree and shrub species that are common to the region, including cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), honeysuckle (*Lonicera sp.*), and dogwoods (*Cornus spp.*). An approximately 7-acre woodlot that primarily consists of successional deciduous forest and a small (0.06 acre) red maple wetland are north of the existing bridge on the eastern bank of the river. This fragment represents the most sizable natural habitat near the bridge, but is of marginal quality due to its small total size, large amount of edge relative to total area, and isolation within heavily developed surroundings. Build Alternatives 1 and 2 would require the clearing of 3 or 2 acres of trees, respectively, within this 7-acre woodland fragment on the north side of the eastern abutment. On either side of the bridge, relatively high levels of anthropogenic noise occur from rail operations, traffic along I-787, and other sources associated with the developed land uses in the surrounding area.

COMPLIANCE

Migratory Bird Treaty Act According to the U.S. Fish and Wildlife Service (USFWS) IPaC Resource List (**Attachment 2**), there are five migratory birds of concern that could potentially be affected by the Project: bobolink (*Dolichonyx oryzivorus*), Canada warbler (*Cardellina canadensis*), prairie warbler (*Dendroica discolor*), red-headed woodpecker (*Melanerpes erythrocephalus*), and wood thrush (*Hylocichla mustelina*). These species are identified as having breeding, wintering, migrating, or year-round habitat in the study area. Ospreys have been reported to nest on the eastern swing span tower of the Livingston Avenue Bridge, and a pair of peregrine falcons nest approximately 0.75 miles away on the Dunn Memorial Bridge.

To minimize impacts to ospreys, the osprey nest on the Bridge will be removed during the winter when the nest is inactive, in coordination with USFWS and the New York State Department of Environmental Conservation (NYSDEC). Upon their return to the area in the spring, these ospreys should easily establish a new nesting site on one of the many other tall, artificial structures along this section of the Hudson River and remain a part of the area's breeding population. Activities under both Build Alternatives would not have the potential to disturb or disrupt the breeding activity of the nesting pair of peregrine falcons, as this species is highly tolerant of and habituated to human disturbance and the construction activities will not extend to the Dunn Memorial Bridge where the pair currently nests. Following completion of the Project, the replacement bridge will represent a potential nesting site for these or other ospreys or falcons in the area.

To minimize impacts on the other species of migratory birds with the potential to breed in the vicinity of the Project, vegetation clearing will only occur from October 31 to March 31, which is outside the primary breeding period of May through August, for the birds identified as having the potential to breed within the project area. Vegetation clearing, therefore, would occur prior to or after this breeding period to prevent birds from attempting to breed where additional construction activity would later occur. Noise generated during construction of the Project will be temporary and intermittent, and as such, will not likely have long-term or adverse effects to migratory birds potentially occurring in the area. Construction activities have the potential to temporarily displace individuals of some species from the immediate vicinity of the activity, however, construction activities are not expected to increase disturbance levels to the extent that these species would abandon the area altogether.

Given that the woodland area on the east bank of the river is of marginal value to birds and other wildlife due to its small size and large amount of edge habitat, the permanent loss of 2 or 3 acres of this habitat may affect, but will not adversely affect, migratory bird species in the area, especially considering the availability of similar habitat in the region. The study area has been developed with the present land uses for many years and the existing bridge has been in operation for more than a century, and thus, the species present at the project site are primarily generalists and disturbance-tolerant. The permanent loss of woodland with either alternative will reduce the capacity of the area in terms of the number of individuals, but it will not change the assemblage of bird populations in the area, and the same species will be able to inhabit the remaining portions of the woodlot. Operation of the replacement bridge under either Build Alternative will not increase disturbance levels above what is currently attributable to the existing bridge, and any migratory bird species currently inhabiting the area is expected to continue in the future.

Bald and Golden Eagle Protection Act The bald eagle (*Haliaeetus leucocephalus*) was identified in the USFWS IPaC Resource List as having the potential to be affected by the Project. Based on correspondence with the New York Natural Heritage Program on February 19, 2019, no bald eagle nesting sites have been identified as occurring in the project vicinity. Any temporary loss of foraging habitat during construction of the Project will not adversely affect bald eagles, as any individuals that may be present in the area would be expected to move to other similar available foraging habitat in the vicinity of the project site. Therefore, FRA has determined that the Project may affect, but is not likely to adversely affect bald eagles or their habitat.

If you have any questions or require additional information regarding this request or the Project, please contact Brandon Bratcher, FRA Environmental Protection Specialist (brandon.bratcher@dot.gov) with a copy to Mark Jakubiak, Project/Environmental Manager at NYSDOT (mark.jakubiak@dot.ny.gov).

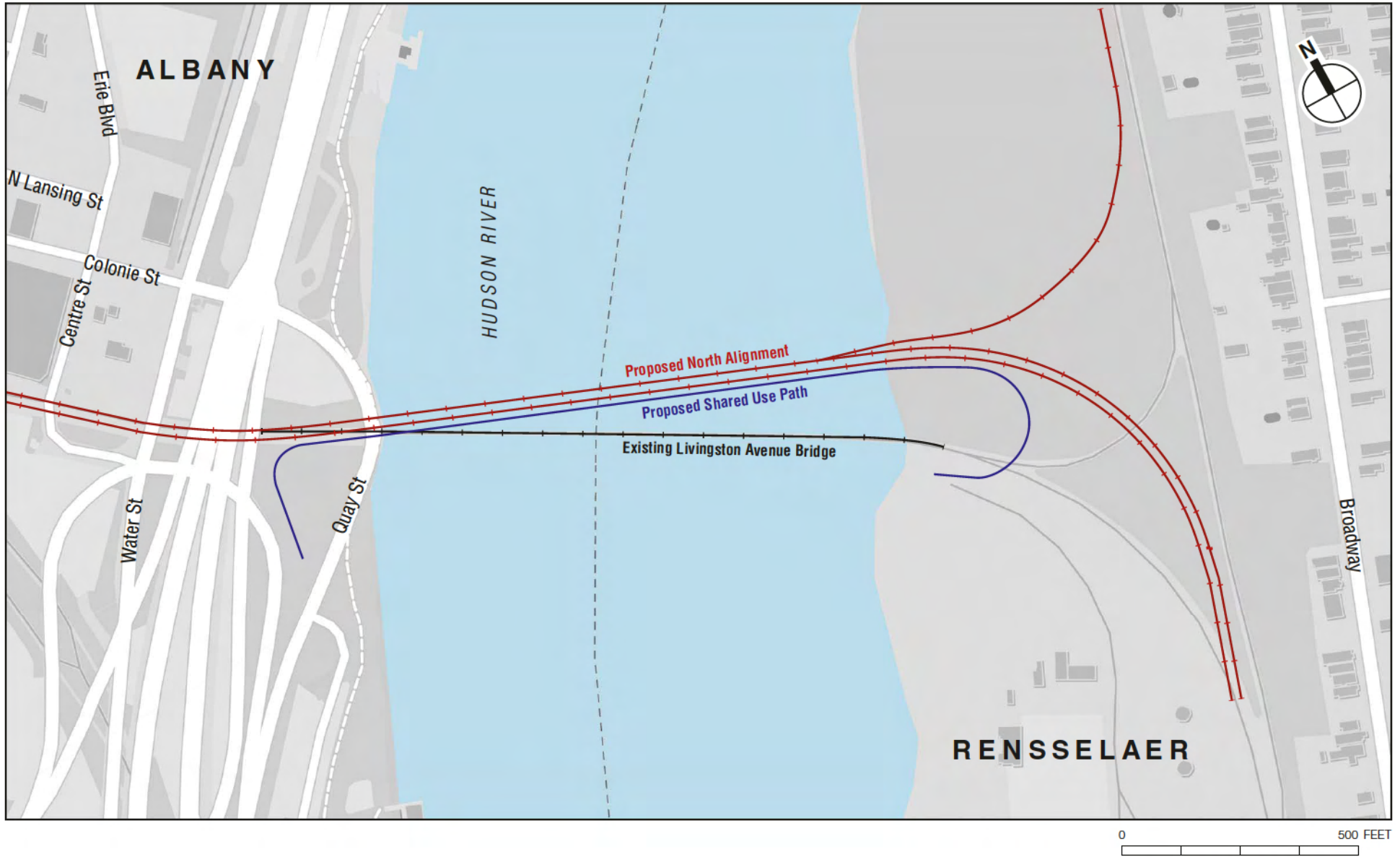
Thank you for working with FRA and NYSDOT to advance this important rail infrastructure project.

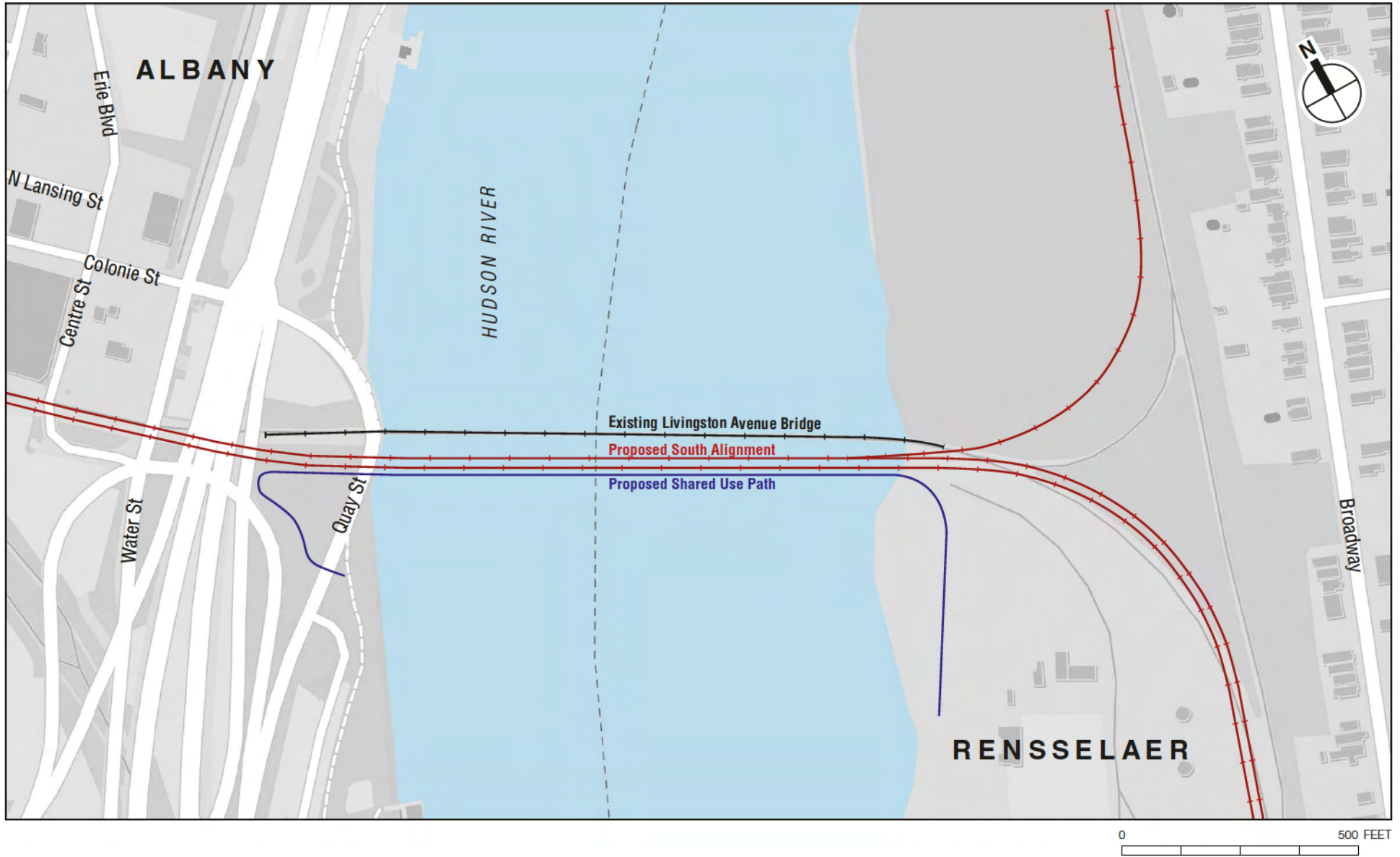
Sincerely,

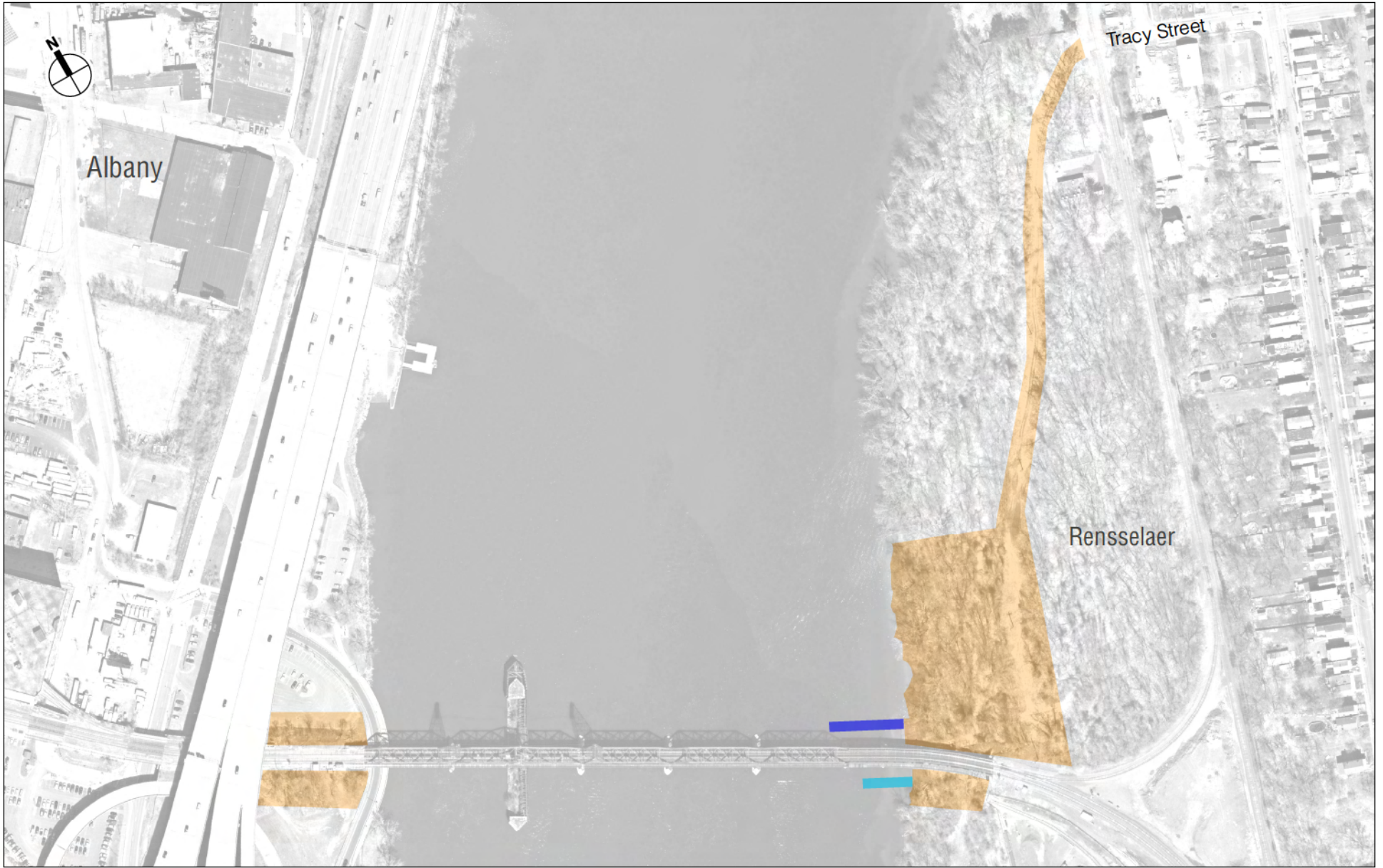



Laura Shick
Supervisory Environmental Protection Specialist
Environmental & Corridor Planning Division
Office of Railroad Policy & Development

cc: Brandon Bratcher, FRA
Mary Catherine Murray, FRA
Mark Jakubiak, NYSDOT








 Construction Staging Area and Access Route (Alternatives 1 & 2)

 In-Water Temporary Pier (Alternative 1)

 In-Water Temporary Pier (Alternative 2)

0 250 FEET


Construction Staging Areas
Figure 3

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service’s (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:

	YES	NO
1. Does the project occur wholly outside of the WNS Zone ¹ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Have you contacted the appropriate agency ² to determine if your project is near known hibernacula or maternity roost trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Could the project alter the entrance or interior environment of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant³ (Name, Email, Phone No.): New York State Department of Transportation

Project Name: Livingston Avenue Bridge

Project Location (include coordinates if known): Albany and Rensselaer, NY (42.643244, -73.747956)

¹ <http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf>

² <http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html>

³ If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

Basic Project Description (provide narrative below or attach additional information):

The New York State Department of Transportation (NYSDOT) is proposing to replace the Livingston Avenue Bridge (the Project), a railroad bridge that spans the Hudson River between the cities of Albany and Rensselaer, providing a critical rail link on New York State's Empire Corridor. The movable swing-span bridge, which CSX Transportation Inc. (CSX) owns and the National Railroad Passenger Corporation (Amtrak) maintains and operates, is nearing the end of its serviceable life. Amtrak uses the bridge for intercity passenger trains traveling on the Empire Corridor route and CSX and Canadian Pacific (CP) use the bridge for freight rail service.

The purpose of the Project is to improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor; achieve (at a minimum) a long-term state-of-good-repair for the bridge; eliminate existing bridge and track deficiencies; and maintain or improve navigation near the bridge. This will ensure that the Livingston Avenue Bridge meets modern passenger and freight rail capacity and load (weight) standards, maintains acceptable levels of safety, and supports the long-term utility and vitality of the Empire Corridor. The superstructure of the existing bridge was erected in 1901-1903 on a substructure that dates to the 1860s. Recent inspections have confirmed that the bridge has significant deterioration. In addition, the bridge does not meet current design standards related to load, speed, and vertical clearance, and therefore passenger and freight trains operating over the bridge must comply with restrictions related to weight and speed. The bridge also has non-standard vertical and horizontal clearances, which limit the types of carriages and freight that can traverse the span. Its current deteriorated state further limits train weight and speed on the crossing. As a result, the two-track bridge can be used only by one train at a time and the maximum authorized speed is 15 miles per hour (mph). The existing Livingston Avenue Bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State. The Project is essential to implementing future rail plans and improving state-wide transport.

The U.S. Department of Transportation's Federal Railroad Administration (FRA) is providing grant funding to NYSDOT for preliminary engineering and environmental review for the Project. FRA and NYSDOT are preparing an Environmental Assessment (EA) to comply with the National Environmental Policy Act (NEPA) as well as the New York State Environmental Quality Review Act (SEQRA). The EA documents compliance with other applicable Federal, New York State, and local environmental laws and regulations. FRA is the lead Federal agency for review under NEPA and NYSDOT is the lead state agency for review under SEQRA.

As part of the development and evaluation of alternatives for the EA, NYSDOT and FRA determined that discontinuation of a rail crossing between Albany and Rensselaer, repair and rehabilitation of the existing bridge, and replacement of the bridge within the existing bridge footprint would not be reasonable alternatives. FRA and NYSDOT concluded that two Build Alternatives that replace the existing bridge with a new lift bridge either just south or just north of the existing alignment would meet the purpose and need for the Project and be feasible and reasonable:

- Build Alternative 1 involves the complete replacement of the existing two-track Livingston Avenue Bridge with a new two-track movable bridge on a skewed alignment north of the existing bridge.

- Build Alternative 2 involves the complete replacement of the existing two-track Livingston Avenue Bridge with a new two-track movable bridge located parallel to, and approximately 50 feet south of, the existing bridge.

With both Build Alternatives, the new bridge would have a lift span instead of a swing span like the existing bridge. This would increase the width of the navigation channel from the current width of 100 feet to approximately 190 feet wide. The vertical clearance of the lift span when open would be 60 feet above Mean High Water, which is the same clearance as the nearest bridges upstream and downstream of the Livingston Avenue Bridge. When the bridge is closed, the vertical clearance above the water would be the same as with the existing bridge, 25 feet above Mean High Water.

The Project under both Build Alternatives also includes modifications to the approach tracks on both sides of the river. In Rensselaer, the approach tracks would be reconfigured to improve operations and train speeds. In Albany, the western abutment of the bridge would be shifted slightly westward and rail bridges over two local streets, Water and Centre Streets, would be rehabilitated and reconfigured to accommodate the shift in the track alignment. Both Build Alternatives would provide a shared use path for bicyclists and pedestrians.

No change in the number of daily trains is planned as a result of the Project. With the new bridge, train operating speed on the bridge would be increased from 15 mph today to 40 mph for passenger trains and 35 mph for freight trains. The new bridge would have two tracks and could accommodate two trains operating across the bridge at the same time.

The area surrounding the Livingston Area Bridge is developed with a mix of residential, transportation infrastructure, industrial, and commercial uses. Natural habitat availability is limited. The western shoreline in Albany is occupied by Corning Riverfront Park, a recreational park that contains manicured lawn with shade trees, asphalt paths, and two human-made, ornamental ponds. The vegetation on the eastern shoreline in Rensselaer is a mix of riparian zone tree and shrub species that are common to the region, including cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), honeysuckle (*Lonicera species*), and dogwoods (*Cornus spp.*). An approximately 7-acre woodlot that primarily consists of successional deciduous forest and a small (0.06 acre) red maple wetland are north of the existing bridge on the eastern bank of the river. This fragment represents the most sizable natural habitat near the bridge, but is of marginal quality due to its small total size, large amount of edge relative to total area, and isolation within heavily developed surroundings. Build Alternatives 1 and 2 would require the clearing of 3 and 2 acres of trees, respectively, within this 7-acre woodland fragment on the north side of the eastern abutment.

According to the USFWS IPaC database, one federally listed terrestrial species may be present in the Project area: northern long-eared bat (*Myotis septentrionalis*; threatened). However, the New York Natural Heritage Program has no records of any northern long-eared bat hibernacula within 0.25 miles of the Project site or known roost trees within 150 feet of the Project site. Northern long-eared bats generally inhabit mature, closed-canopy, intact forest within heavily forested landscapes and require tracts of unbroken forest for both foraging and breeding. They are considered sensitive to urbanization and forest fragmentation. As described above, the majority of the area around the Project site is developed with an urbanized mix of residential, transportation infrastructure, industrial, and commercial uses, and wildlife habitat is limited to a small woodlot and recreational park consisting mostly of manicured lawn. No large, unbroken forest is present in the area. Given

the lack of preferred habitat in the area, the potential occurrence of the northern long-eared bat near the Project site is extremely remote.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project occur within 150 feet of a known maternity roost tree?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project include forest conversion ⁴ ? (if yes, report acreage below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Estimated total acres of forest conversion	2-3	
If known, estimated acres ⁵ of forest conversion from April 1 to October 31	2-3	
If known, estimated acres of forest conversion from June 1 to July 31 ⁶	0	
Does the project include timber harvest? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency 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.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: 

Date Submitted: 02/16/2021

⁴ Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).

⁵ If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.

⁶ If the activity includes tree clearing in June and July, also include those acreage in April to October.

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.

Project information

NAME

Livingston Avenue Bridge Replacement Project

LOCATION

Albany and Rensselaer counties, New York



DESCRIPTION

Some(Replacement of Livingston Avenue rail bridge)

Local office

New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

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

NOT FOR CONSULTATION

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. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

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. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS
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Northern Long-eared Bat *Myotis septentrionalis*

Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

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 exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). 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, including how to properly interpret and use your migratory bird report, 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 *Haliaeetus leucocephalus*

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 Dec 1 to Aug 31

Bobolink *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

Canada Warbler *Cardellina canadensis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Aug 10

Prairie Warbler *Dendroica discolor*

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 *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

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. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps 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 10km grid cell(s) your project area overlaps. 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.

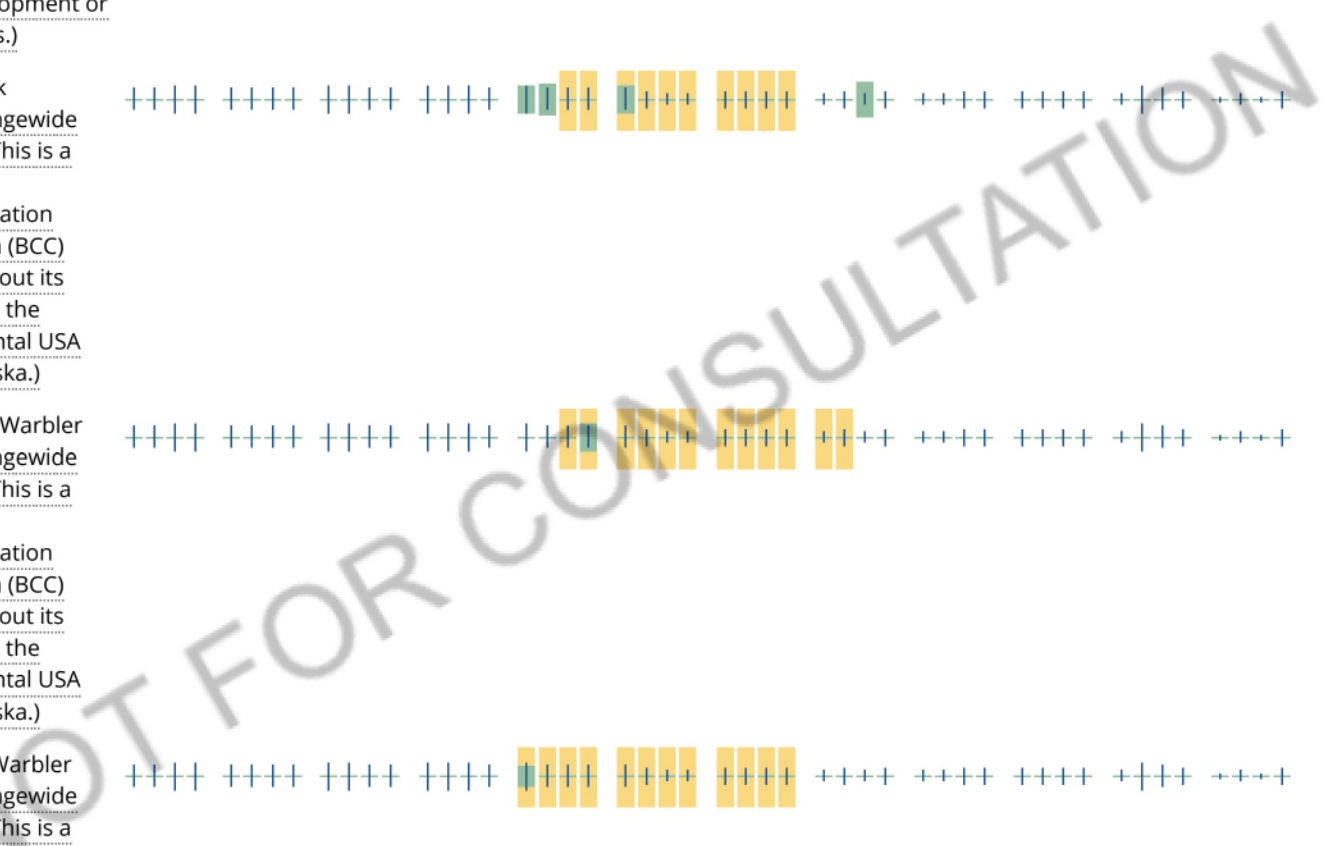
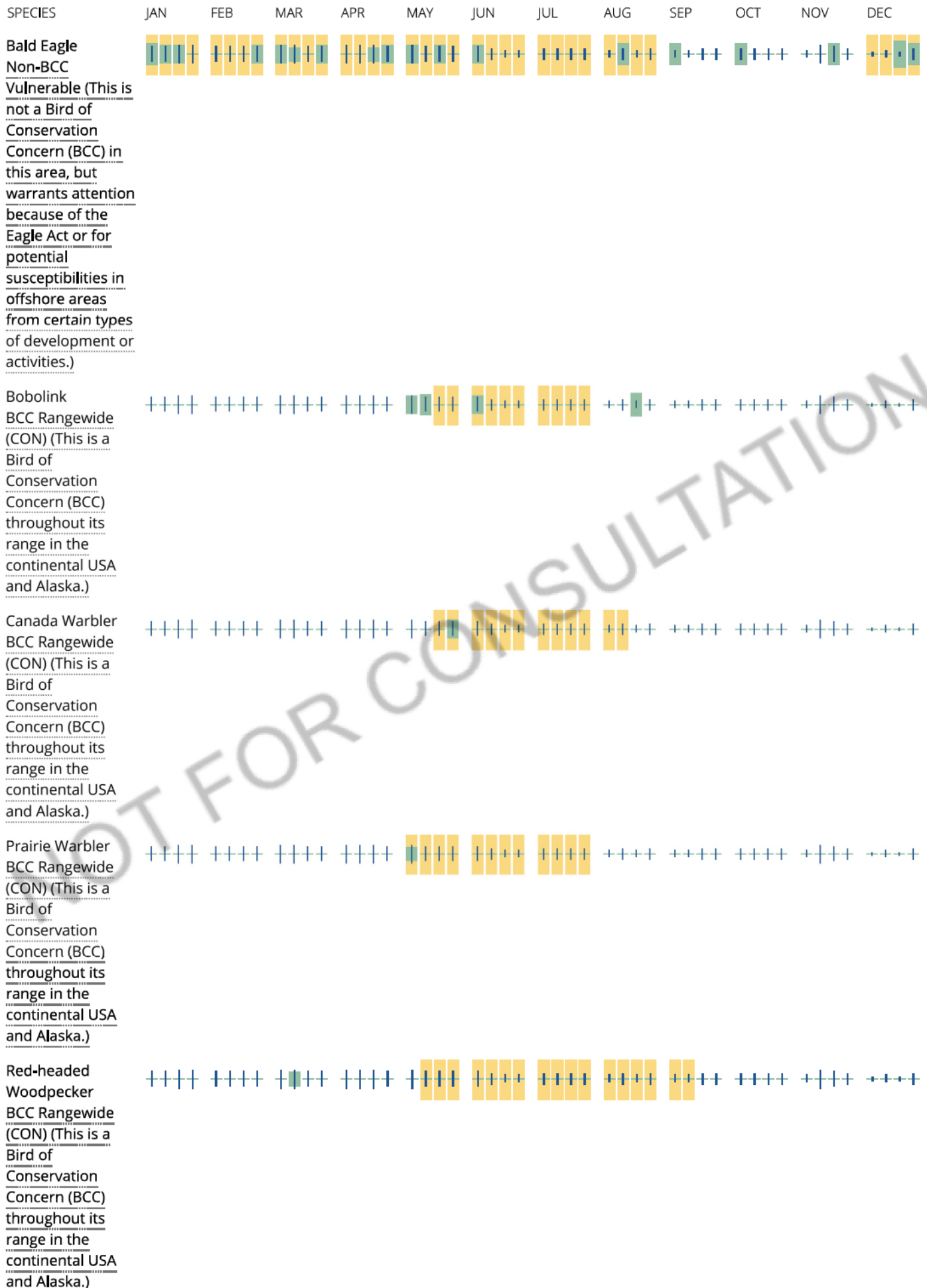
No Data (-)

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. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort - no data



Wood Thrush
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



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](#) 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 10km grid cell(s) 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 [AKN Phenology 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 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 on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present 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 Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

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](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R1UBV](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

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.

Livingston Avenue Bridge Replacement Project

Biological Assessment

Prepared using IPaC

Generated by Melissa Grese (mgrese@akrf.com)

November 15, 2021

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project and determine whether the project may affect any Federally threatened, endangered, proposed or candidate species. This BA is prepared in accordance with legal requirements set forth under [Section 7 of the Endangered Species Act \(16 U.S.C. 1536 \(c\)\)](#).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of April 16, 2021.

Prepared using IPaC version 5.66.1

Livingston Avenue Bridge Replacement Project Biological Assessment

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1 Description Of The Action

1.1 Project Name

Livingston Avenue Bridge Replacement Project

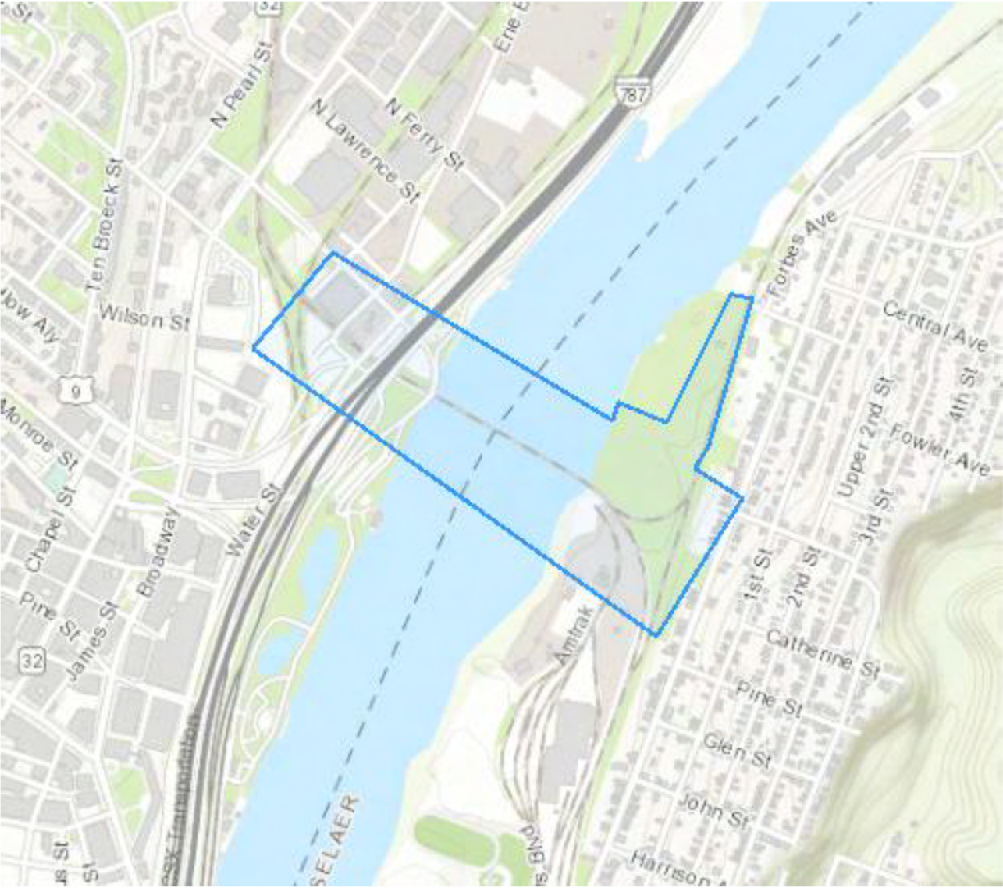
1.2 Executive Summary

The Project would result in the permanent loss of 2 or 3 acres of woodland which includes edge habitat that could support the growth of milkweed, though milkweed was not observed during site reconnaissance efforts for the Project. Clearing vegetation between October 31 and March 31 would limit the potential effects to monarch butterfly from construction, given that monarchs migrate south in the fall and remain in Mexico through the winter months before returning to the Northeast in the spring. Similar edge habitat that could support milkweed is available in the vicinity of the Project Site, which includes industrial, commercial, and residential developments. Therefore, the loss of potential habitat in the wooded area that would be cleared may affect but would not adversely affect the monarch butterfly.

[Effect determination summary](#)

1.3 Project Description

1.3.1 Location



LOCATION

Albany and Rensselaer counties, New York

1.3.2 Description of project habitat

The area surrounding the Livingston Avenue Bridge is developed with a mix of residential, transportation, infrastructure, industrial, and commercial uses. Natural habitat availability is limited. The western shoreline in Albany is occupied by Corning Riverfront Park, a recreational park that contains lawn with shade trees, asphalt paths, and two manmade ornamental ponds. The vegetation on the eastern shoreline in Rensselaer is a mix of riparian zone tree and shrub species that are common to the region, including cottonwood, sycamore, honeysuckle, and dogwoods. An approximately 7-acre woodlot that primarily consists of successional deciduous forest and a small (0.06 acre) red maple wetland are north of the existing bridge on the eastern bank of the river. This fragment represents the most sizable natural habitat near the bridge, but is of marginal quality due to its small total size, large amount of edge relative to total area, and isolation within heavily developed surroundings. Build Alternatives 1 and 2 would require the clearing of 3 and 2 acres of trees, respectively, within this 7-acre woodland fragment on the north side of the eastern abutment. No large, unbroken forest is present in the area, and the New York Natural Heritage Program has no records of any northern long-eared bat hibernacula within 0.25 miles of the Project site or known roose trees within 150 feet of the Project site.

The in-water portion of the site is within a portion of the Hudson River that is about 950 feet wide with a 600-foot wide federal Navigation Channel down the center of the river. The substrate is characterized by gravelly sand in the deeper channel waters and sand or muddy sand closer to shore. Areas of sandy gravel occur upstream and downstream of the existing bridge, close to the center of the channel.

1.3.3 Project proponent information

Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.

Requesting Agency

New York State Department of Transportation (NYSDOT)

FULL NAME

Mark Jakubiak

STREET ADDRESS

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Pod 2-4

CITY

Albany

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Lead agency

DEPT OF TRANSPORTATION (DOT)

Federal Railroad Administration

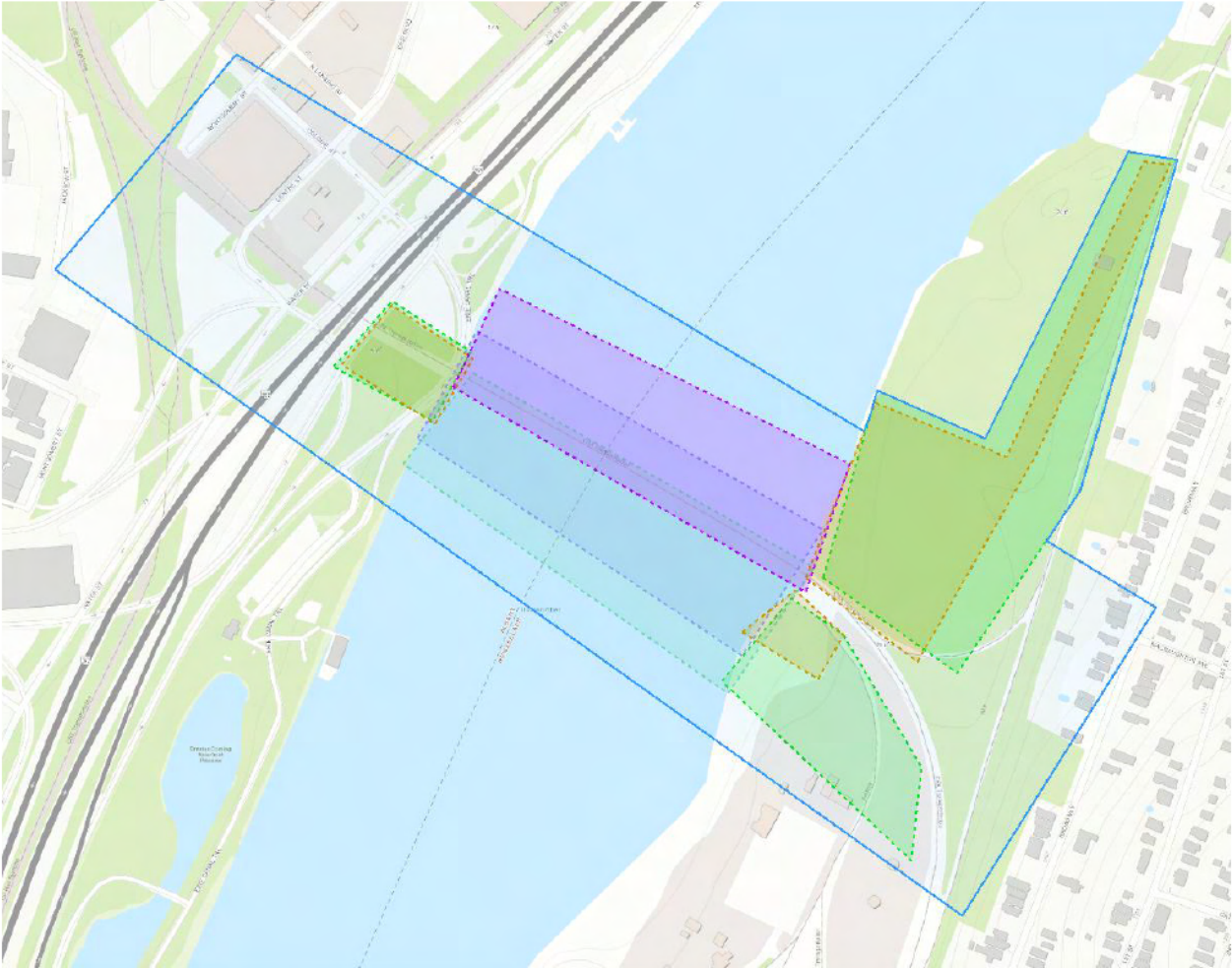
1.3.4 Project purpose

The purpose of the Project is to improve reliability and reduce passenger and freight train delays along this segment of the Empire Corridor; achieve (at a minimum) a long-term state-of-good-repair for the bridge; eliminate existing bridge and track deficiencies; and maintain or improve navigation near the bridge. This will ensure that the Livingston Avenue Bridge meets modern passenger and freight rail capacity and load (weight) standards, maintains acceptable levels of safety, and supports the long-term utility and vitality of the Empire Corridor. The superstructure of the existing bridge was erected in 1901-1903 on a substructure that dates to the 1860s. Recent inspections have confirmed that the bridge has significant deterioration. In addition, the bridge does not meet current design standards related to load, speed, and vertical clearance, and therefore passenger and freight trains operating over the bridge must comply with restrictions related to weight and speed. The bridge also has non-standard vertical and horizontal clearances, which limit the types of carriages and freight that can traverse the span. Its current deteriorated state further limits train weight and speed on the crossing. As a result, the two-track bridge can be used only by one train at a time and the maximum authorized speed is 15 miles per hour (mph). The existing Livingston Avenue Bridge has been identified as a contributing factor to delays in the movement of freight and passengers throughout New York State. The Project is essential to implementing future rail plans and improving state-wide transport.

1.3.5 Project type and deconstruction

This project is a bridge construction project.

1.3.5.1 Project map



LEGEND



Project footprint



Barge Staging: Barge staging



Bridge Structure Activities - Alt 1: Bridge lighting, construct bridge deck, construct cofferdam, construct piles, finish bridge surface, geotechnical investigation, guard rail installation, install bridge railings, bridge structure (structure)



Bridge Structure Activities - Alt 2: Bridge lighting, construct bridge deck, construct cofferdam, construct piles, finish bridge surface, geotechnical investigation, guard rail installation, install bridge railings, bridge structure (structure)



Landside Construction Areas: Finish grading, landscaping/restoration, topographic surveys



Terrestrial Staging Areas: Prepare the project site (terrestrial), staging area construction

1.3.5.2 bridge structure

Structure completion date

December 30, 2025

Removal/decommission date (if applicable)

Not applicable

Stressors

HUMAN FEATURES

- [Increase in man-made roost](#)

Description

Under Build Alternative 1, a new bridge would be constructed on a skewed alignment north of the existing bridge; the alignment would be approximately 200 feet north of the existing bridge on the east side of the river and would abut the existing bridge on the west side. Under Build Alternative 2, which is the Preferred Alternative, a new bridge would be constructed parallel to and approximately 50 feet south of the existing bridge. The Project under both Build Alternatives includes modifications to the approach tracks on both sides of the river. In Rensselaer, the approach tracks would be reconfigured to improve operations and train speeds. In Albany, the western abutment of the bridge would be shifted slightly westward and rail bridges over two local streets (Water and Centre Streets) would be rehabilitated and reconfigured to accommodate the shift in the track alignment. No change in the number of daily trains is planned as a result of the Project. With the new bridge, train operating speed on the bridge would be increased from 15 mph today to 40 mph for passenger trains and 35 mph for freight trains. The new bridge would have two tracks and could accommodate two trains operating across the bridge at the same time. Navigational lighting would illuminate the navigation channel beneath the bridge, as required by the U.S. Coast Guard. The existing bridge would be demolished and removed once the replacement bridge is complete and operational.

1.3.5.3 barge staging

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

SOIL AND SEDIMENT

- [Change in sediment](#)

Description

The use of spud barges during construction of the in-water features and demolition of the existing bridge would result in temporary loss of up to about 11 square feet of bottom habitat in the river. Installation and removal of the spud piles would result in temporary sediment resuspension and increased turbidity localized to the pile. Sediments resuspended during these activities would dissipate quickly with the tidal currents and settle out over similar substrates.

1.3.5.4 bridge lighting

Activity start date

December 30, 2025

Activity end date

Unspecified

Stressors

This activity is not expected to have any impact on the environment.

Description

The navigation channel beneath the bridge will be illuminated as required by the U.S. Coast Guard, and as currently included along the existing bridge. The pathway on the bridge itself will include lighting for pedestrian safety. Neither lighting element would result in adverse impacts to fish or wildlife.

1.3.5.5 construct bridge deck

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

HUMAN ACTIVITIES

- [Increase in noise](#)

Description

The bridge deck will be constructed once the bridge piers are complete, using barge-based equipment stationed on spud barges moored in the river.

1.3.5.6 construct cofferdam

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

AQUATIC FEATURES

- [Change in open water](#)

ENVIRONMENTAL QUALITY FEATURES

- [Increase in water turbidity](#)

HUMAN ACTIVITIES

- [Increase in ground vibrations](#)
- [Increase in noise](#)

Description

Permanent sheet pile cells, or cofferdams, would be constructed in order to install the support system for the new bridge. The sheet pile cells will be dewatered, sediment will be excavated from within the cells, and H-piles will be driven within the dewatered and excavated cells in order to form the new bridge piers.

1.3.5.7 construct piles

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

HUMAN ACTIVITIES

- [Increase in ground vibrations](#)
- [Increase in noise](#)

Description

The Project would include a temporary pier installed just north of the existing bridge in order to support equipment and materials for the replacement activities. The temporary pier would include a number of 14-inch diameter piles, driven using a vibratory hammer or a cushioned impact hammer for the last few feet. The temporary piles would remain in place for the duration of construction, including construction of the new bridge and demolition of the existing bridge. When the demolition is complete, the temporary pier would be deconstructed, and the piles would be removed using a vibratory hammer. The dolphin and fender system for the new bridge would be constructed through the installation of piles using a vibratory hammer, and would be done within a turbidity curtain.

1.3.5.8 finish bridge surface

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

HUMAN ACTIVITIES

- [Increase in noise](#)

Description

For either Build Alternative, the new bridge superstructure truss spans would be constructed on barges at the offsite staging area and floated into place. The shorter girder spans would be placed using barge or track-mounted cranes to lift the individual spans into place.

1.3.5.9 finish grading

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

LANDFORM (TOPOGRAPHIC) FEATURES

- [Change in topography](#)

SOIL AND SEDIMENT

- [Increase in soil compaction](#)

HUMAN ACTIVITIES

- [Increase in ground vibrations](#)
- [Increase in noise](#)

Description

Construction of the bridge abutments and integration of the new bridge with the existing tracks on either side may require some grading, which would be limited to the right-of-way for the tracks.

1.3.5.10 geotechnical investigation

Activity start date

September 30, 2021

Activity end date

November 29, 2021

Stressors

ENVIRONMENTAL QUALITY FEATURES

- [Increase in water turbidity](#)

HUMAN ACTIVITIES

- [Increase in noise](#)

Description

Ten in-water geotechnical borings and six landside geotechnical borings are required to help advance the design of the replacement bridge piers. The borings would be conducted using a split-barrel sampling method and would be completed over about 5 weeks. The in-water borings would be completed using two spud barges equipped with geotechnical boring equipment working concurrently on two locations at a time. Spud piles will be placed hydraulically, and a 4-inch diameter casing pipe installed in the substrate would facilitate the sampling. No permanent changes to bottom habitat or water quality would result from the borings.

1.3.5.11 guard rail installation

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

This activity is not expected to have any impact on the environment.

Description

The replacement bridge structure would likely include guardrails, that would be installed during offsite construction of the bridge deck.

1.3.5.12 install bridge railings

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

This activity is not expected to have any impact on the environment.

Description

The replacement bridge would likely include railings, which would be installed during construction of the bridge superstructure at an offsite location.

1.3.5.13 landscaping/restoration

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

This activity is not expected to have any impact on the environment.

Description

Areas on land that are disturbed by construction of the bridge approaches would be restored with vegetation and landscaping to the extent possible.

1.3.5.14 prepare the project site (terrestrial)

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

PLANT FEATURES

- [Decrease in vegetation](#)

HUMAN ACTIVITIES

- [Increase in noise](#)

Description

Woodland area would be cleared under both Build Alternatives (3 acres or 2 acres) on the east bank of the river. This area is part of a small deciduous woodlot that is of marginal quality as habitat for native wildlife due to its small size, fragmentation, and heavily developed surroundings. The loss of acreage in this woodlot would reduce the number of individuals able to inhabit it, but would not change the assemblage of wildlife species present. The same wildlife species would continue to inhabit the remaining portions of the woodlot. The reduced number of individuals of some species would not impact the size or viability of their local populations.

1.3.5.15 staging area construction

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

PLANT FEATURES

- [Decrease in vegetation](#)

LANDFORM (TOPOGRAPHIC) FEATURES

- [Increase in impervious surfaces](#)

SOIL AND SEDIMENT

- [Increase in soil compaction](#)

HUMAN ACTIVITIES

- [Increase in noise](#)
- [Increase in vehicle traffic](#)

Description

A likely location for a primary construction staging area would be on the property adjacent to the Livingston Avenue Bridge in Rensselaer where the City of Rensselaer is proposing a new residential development, Kiliaen's Landing. If the portion of the development site would be available for the duration of Project construction, this would be a convenient construction staging site. An access road would be constructed from Tracy Street to the staging area using a utility easement/corridor. This staging location would provide water access for material and equipment deliveries via barge. The water in this area is too shallow for barges to reach the shoreline, so a temporary pier that extends to the navigation channel could be erected. The pier would likely consist of a temporary pile bent structure constructed span by span with the pile driver/crane walking out on each span to construct the next span.

The pier needed for Build Alternative 1 would likely be 20 feet wide and 150 feet long from the edge of the river's eastern shoreline, and would be to the north of the existing bridge. The pier needed for Build Alternative 2 would likely be 20 feet wide and 100 feet long and located south of the existing bridge. The contractor would design the pile bent structure, but it is likely to consist of a platform supported on 14-inch-diameter steel piles, with four to five piles per bent. The piles would be installed using pre-drilling and vibratory hammering if necessary after pre-drilling, to the greatest extent practicable. If necessary, the piles would be driven the last few feet to their final depth using an impact hammer in conjunction with a soft start and cushion block. The in-water construction zone would be surrounded by a turbidity curtain during pile installation and pile removal to limit adverse impacts to water quality away from the zone.

The temporary pier would be installed prior to work on the new bridge's eastern approach piers. The pile installation equipment, excavators, and cranes would use the temporary pier during cofferdam and bridge construction. For either Build Alternative, the pile bent structure would be needed for the entire construction period and would be removed when the construction of the replacement bridge is complete, including full removal of all piles. This temporary pier would facilitate the delivery of concrete and other material. A temporary haul road to construction access would be constructed between the pier and Amtrak yard.

An off-site staging area would be used for the erection of the float-in spans and lift tower sections. The primary mode of transport between the off-site staging area and the on-site staging area would likely be barges. During construction, the barges would be moored using four 14-inch square spud piles pushed 5 to 10 feet into the river bottom. Additional means to drive the spud piles to the desired depth would only be used as necessary and would likely comprise use of equipment available on the barge to push or hammer them to the desired depth. If hammering is required, a cushion block would be used. The barges would move throughout the site for the duration of construction. For Build Alternative 2, a smaller construction staging area would also be required just to the south of the existing bridge along the eastern shoreline (part of the Amtrak property just north of the maintenance facility).

In addition to the primary staging area and the off-site staging area, temporary construction staging space would also be needed on the west side of the Hudson River in Albany. A likely location for this staging site is in the area between Quay Street and I-787 (state-owned property to the north and south of the existing bridge). Partial closure of NYSOGS Lot 11 under the I-787 overpass would be required and approximately 20 parking spaces in the parking lot just north of the existing bridge would be displaced during the construction period.

1.3.5.16 topographic surveys

Activity start date

September 30, 2022

Activity end date

December 30, 2025

Stressors

This activity is not expected to have any impact on the environment.

Description

Topographic surveys would likely be required in order to finalize the design of the bridge approaches on either side of the river.

1.3.6 Anticipated environmental stressors

Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.

1.3.6.1 Animal Features

Individuals from the Animalia kingdom, such as raptors, mollusks, and fish. This feature also includes byproducts and remains of animals (e.g., carrion, feathers, scat, etc.), and animal-related structures (e.g., dens, nests, hibernacula, etc.).

1.3.6.2 Plant Features

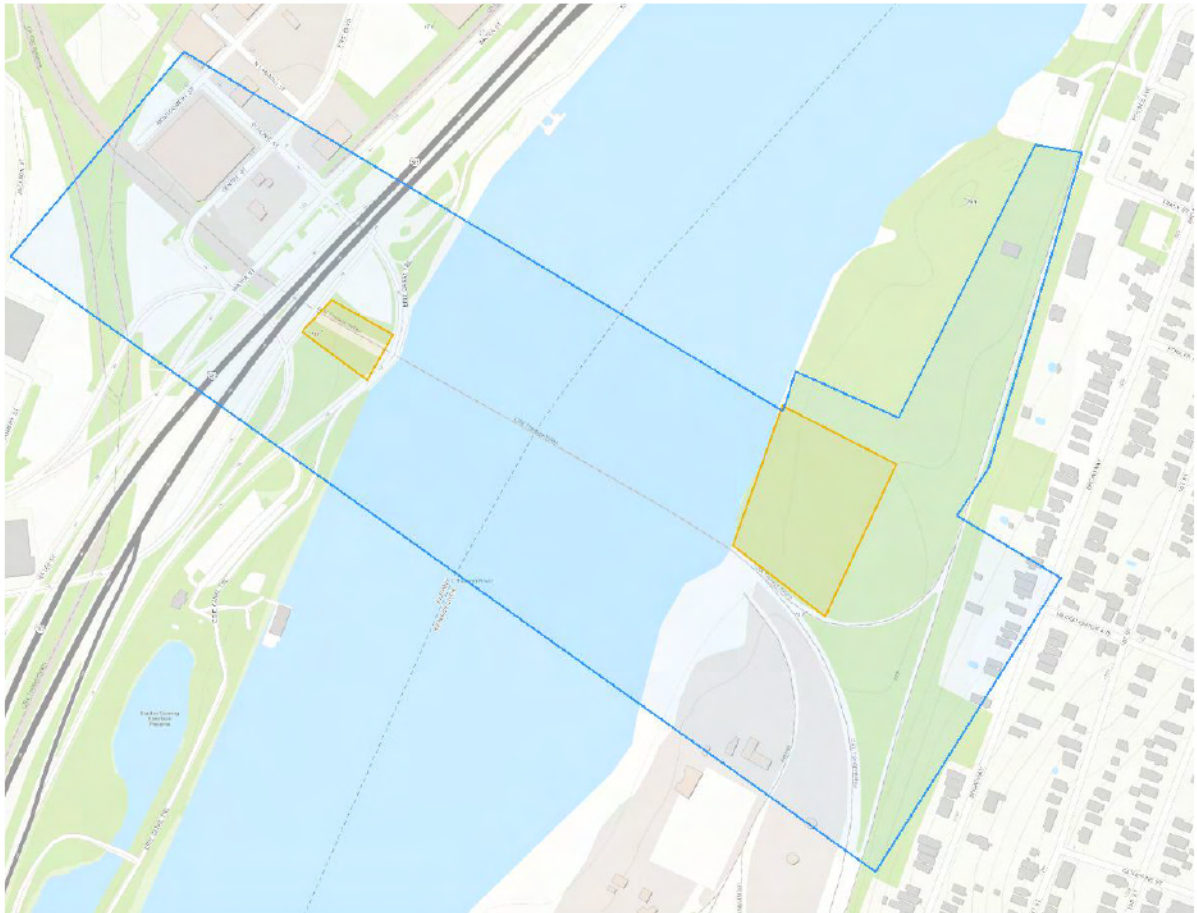
Individuals from the Plantae kingdom, such as trees, shrubs, herbs, grasses, ferns, and mosses. This feature also includes products of plants (e.g., nectar, flowers, seeds, etc.).

1.3.6.2.1 Decrease in vegetation


ANTICIPATED MAGNITUDE


The Project would result in the permanent loss of 2 or 3 acres of woodland which includes edge habitat that could support the growth of milkweed. This area is part of a small deciduous woodlot that is fragmented and surrounded by heavily developed areas. Clearing of vegetation would only occur between October 31 and March 31 to limit potential impacts to breeding migratory birds. This would also limit potential impacts to monarch butterflies, as monarchs migrate south in the fall and spend the winter months in Mexico before returning to habitats in the Northeast in the spring.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor


STRUCTURES AND ACTIVITIES


- [Staging area construction](#)
- [Prepare the project site \(terrestrial\)](#)

1.3.6.3 Aquatic Features

Bodies of water on the landscape, such as streams, rivers, ponds, wetlands, etc., and their physical characteristics (e.g., depth, current, etc.). This feature includes the groundwater and its characteristics. Water quality attributes (e.g., turbidity, pH, temperature, DO, nutrients, etc.) should be placed in the Environmental Quality Features.

LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- [Construct cofferdam](#)

1.3.6.4 Environmental Quality Features

Abiotic attributes of the landscape (e.g., temperature, moisture, slope, aspect, etc.).

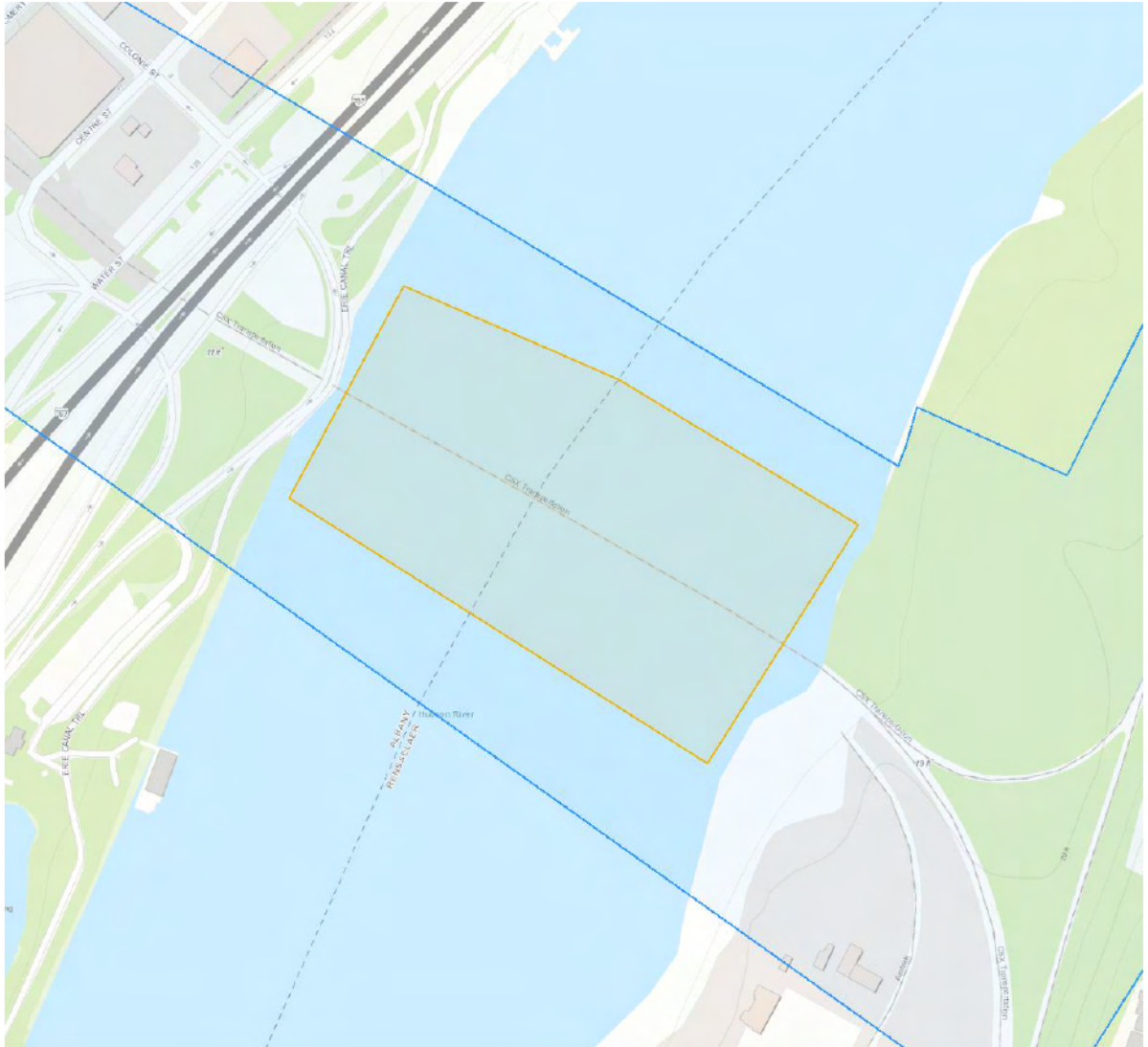
1.3.6.4.1 Increase in water turbidity

ANTICIPATED MAGNITUDE


Sediment disturbing activities associated with the Project would include pile installation, dredging and sediment removal, bridge demolition, and removal of temporary piles associated with the temporary pier. Based on NMFS resources, the sediment plume could extend up to 300 feet upstream or downstream from the activity depending on the direction of tidal flow. Best management practices would be implemented to minimize the potential effects of increased sediment resuspension and turbidity, including:


- Use of a turbidity curtain during installation of temporary pier piles, fender and dolphin system, and during removal of temporary pier piles and existing bridge piers;
- Dredging and sediment removal of the new bridge piers would take place entirely within the dewatered sheet pile cells;
- Dredged sediments would be placed in a scow, dewatered, and transported offsite for disposal, and water would be treated prior to being discharged back to the river;
- Use of nets, tarps, and pans during demolition of the bridge superstructure, and removal of any debris that falls into the water;
- Removal of temporary piles using a vibratory hammer, and slowly to reduce sediment sloughing off in the water column;
- Striking or vibrating the pile to break the bond between the sediment and pile; and
- Placement of removed piles on a barge equipped with a basin to contain attached sediment and runoff water.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor


STRUCTURES AND ACTIVITIES


- [Geotechnical investigation](#)
- [Construct cofferdam](#)

1.3.6.5 Human Features

Man-made Structures on the landscape (e.g., roads, trails, buildings, bridges, farm fields, etc.).

LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- [Bridge structure](#)

1.3.6.6 Landform (topographic) Features

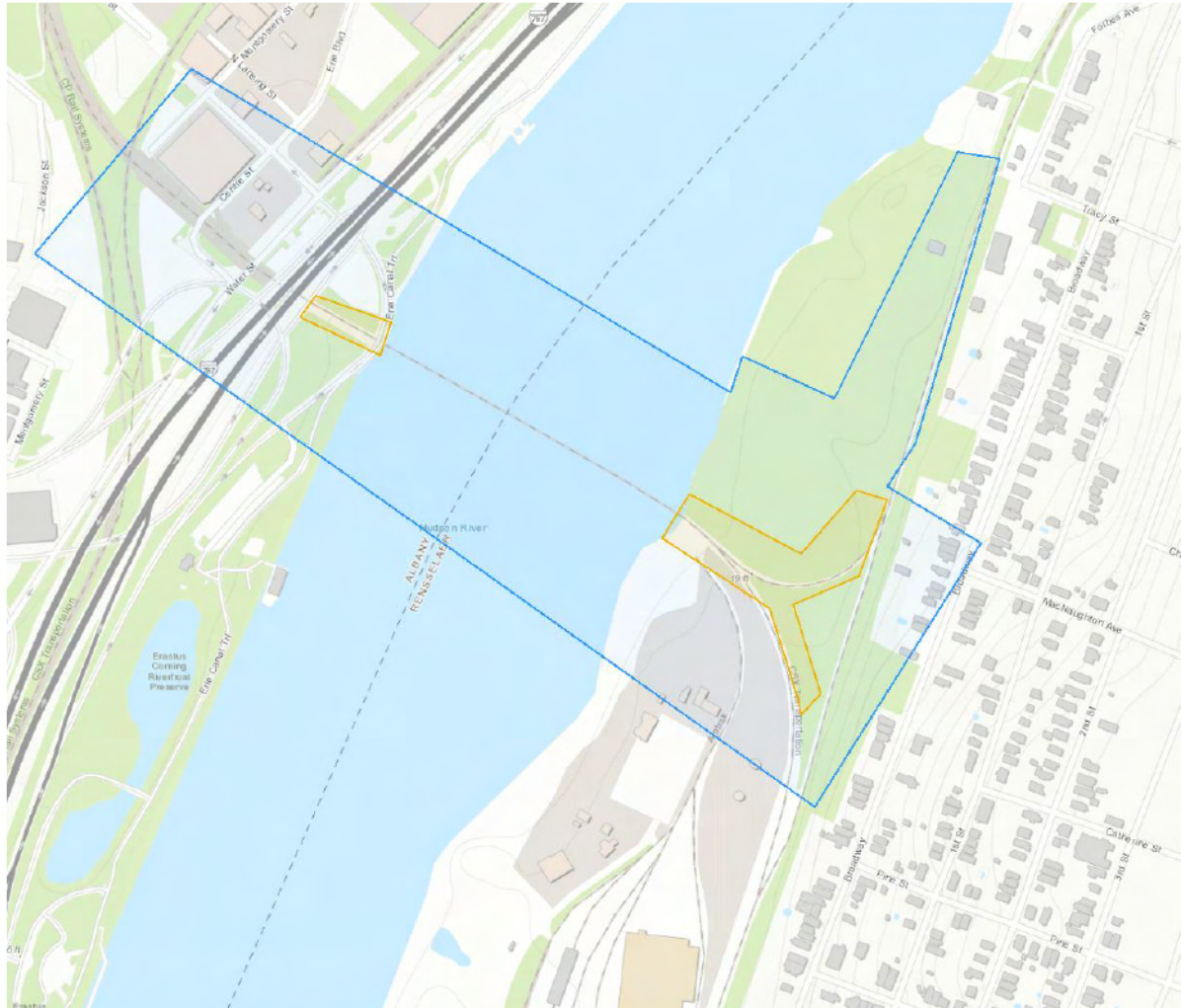
Topographic (landform) features that typically occur naturally on the landscape (e.g., cliffs, terraces, ridges, etc.). This feature does not include aquatic landscape features or man-made structures.

1.3.6.6.1 Change in topography


ANTICIPATED MAGNITUDE


Grading would be needed to create or alter the rail approaches connecting the replacement bridge to the existing tracks on either side of the river. Changes in topography to accomplish these connections would be minor, as the replacement bridge would be aligned close to the existing bridge where approach tracks are already present.

STRESSOR LOCATION





LEGEND

 Project footprint

 Stressor location

LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- [Staging area construction](#)

1.3.6.7 Soil and Sediment

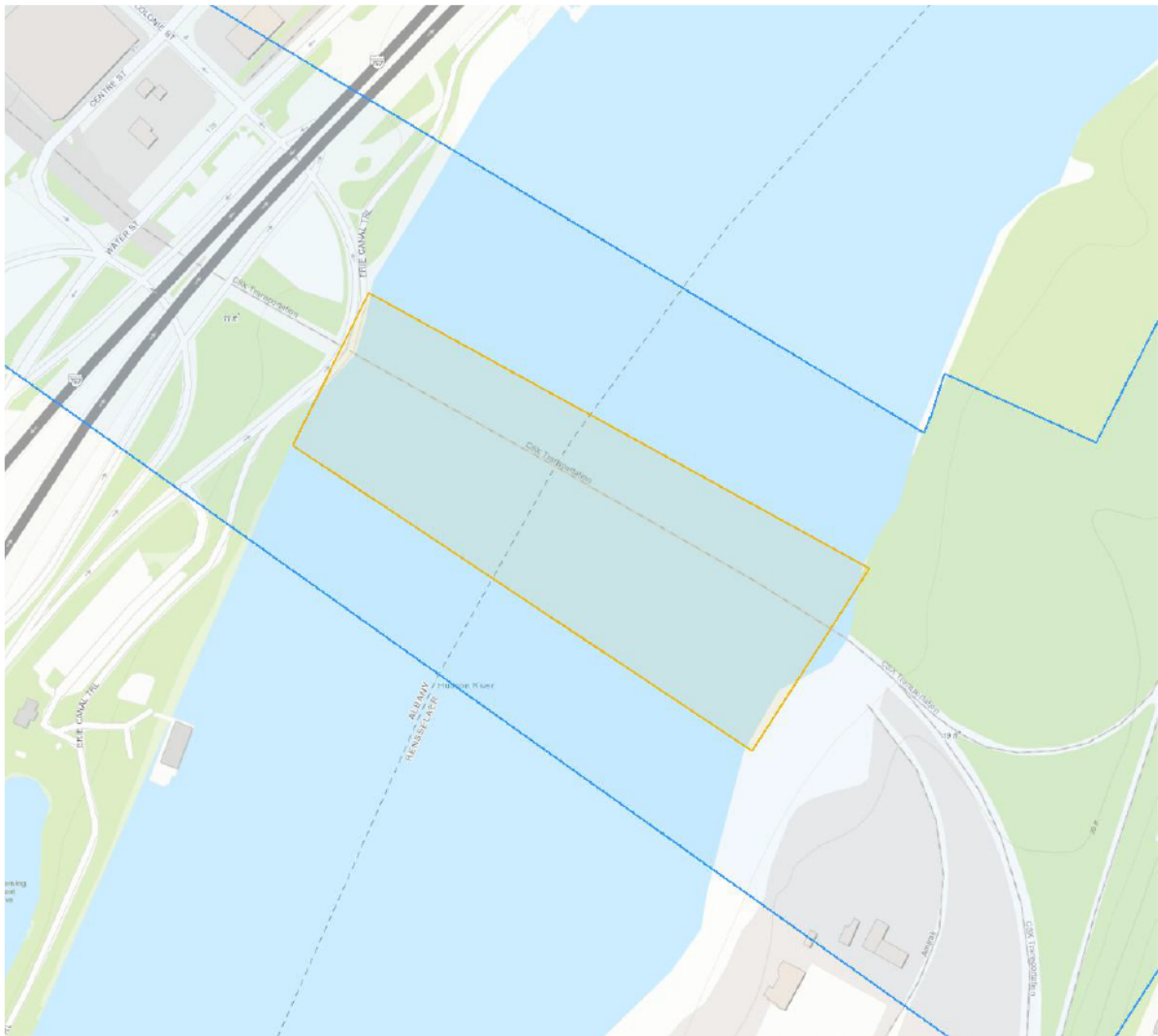
The topmost layer of earth on the landscape and its components (e.g., rock, sand, gravel, silt, etc.). This feature includes the physical characteristics of soil, such as depth, compaction, etc. Soil quality attributes (e.g, temperature, pH, etc.) should be placed in the Environmental Quality Features.

1.3.6.7.1 Change in sediment


ANTICIPATED MAGNITUDE


The Project would not change the composition of the sediment in the project area but would change the areas of the river bottom that are currently occupied by structure. Construction of the replacement bridge would result in the placement of bridge footings over approximately 0.5 acres of river bottom (Preferred Alternative) or 0.74 acres (Build Alternative 1). Removal of the existing bridge footings would result in restoration of benthic habitat, for a net loss of only 0.08 acres (Preferred Alternative) or 0.32 acres (Build Alternative 1). When the existing bridge footings are removed, they would be filled with clean substrate similar to the surrounding habitat, rather than leaving these areas to undergo sediment deposition over time. The new bridge piers would not alter the natural sediment accretion rates or patterns within the Hudson River compared to conditions with the existing bridge.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

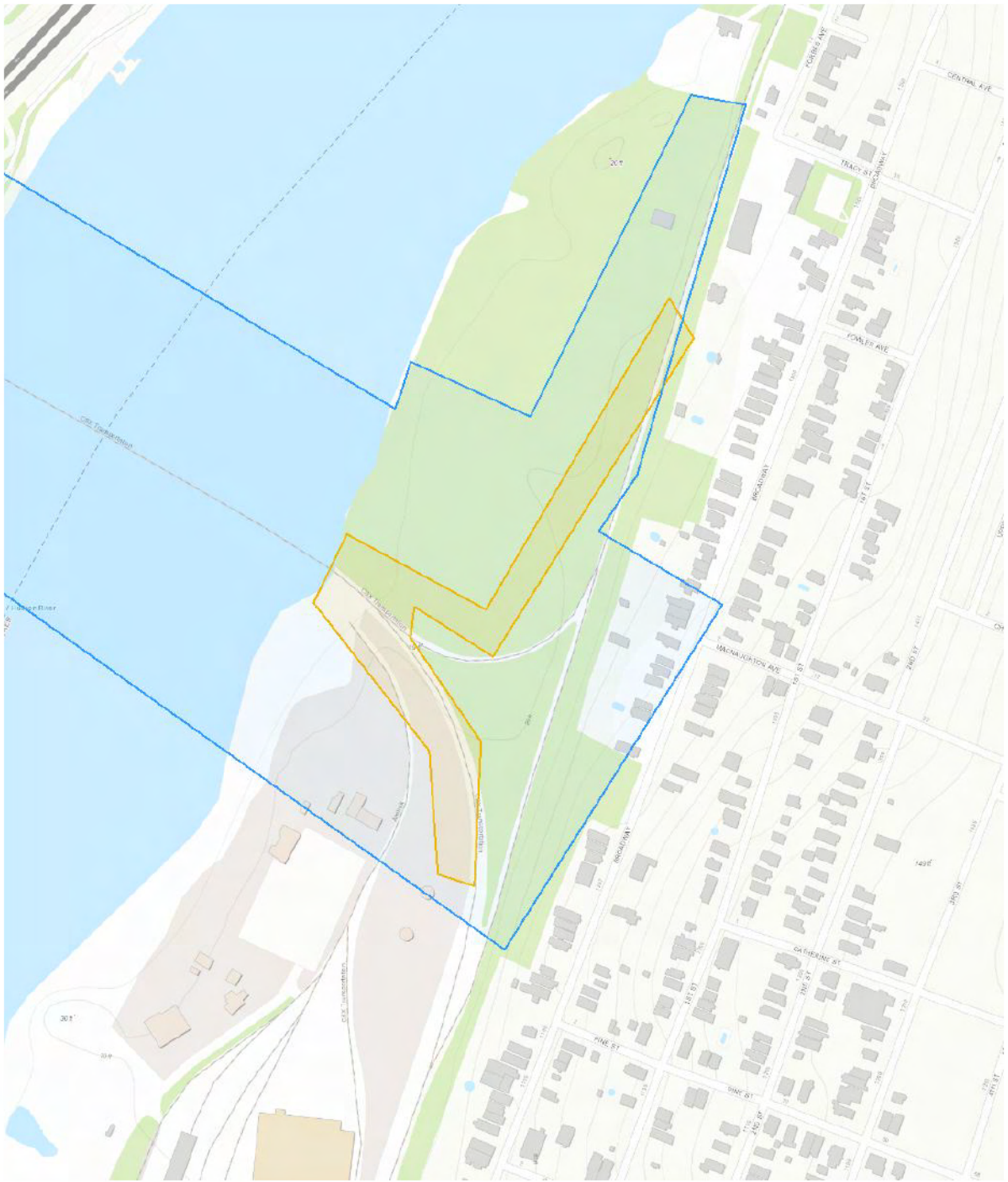
- [Barge staging](#)

1.3.6.7.2 Increase in soil compaction


ANTICIPATED MAGNITUDE


Soil compaction would occur along the new sections of tracks needed to connect the replacement bridge to the existing railroad on either side of the bridge. These connections would require minimal grading and would not result in increased impervious surface. The soil compaction would be unavoidable because the replacement bridge would need to connect to the existing tracks.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor


STRUCTURES AND ACTIVITIES


- [Staging area construction](#)
- [Finish grading](#)

1.3.6.8 Human Activities

Human actions in the environment (e.g., fishing, hunting, farming, walking, etc.).

LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

- [Construct piles](#)
- [Construct cofferdam](#)
- [Finish grading](#)

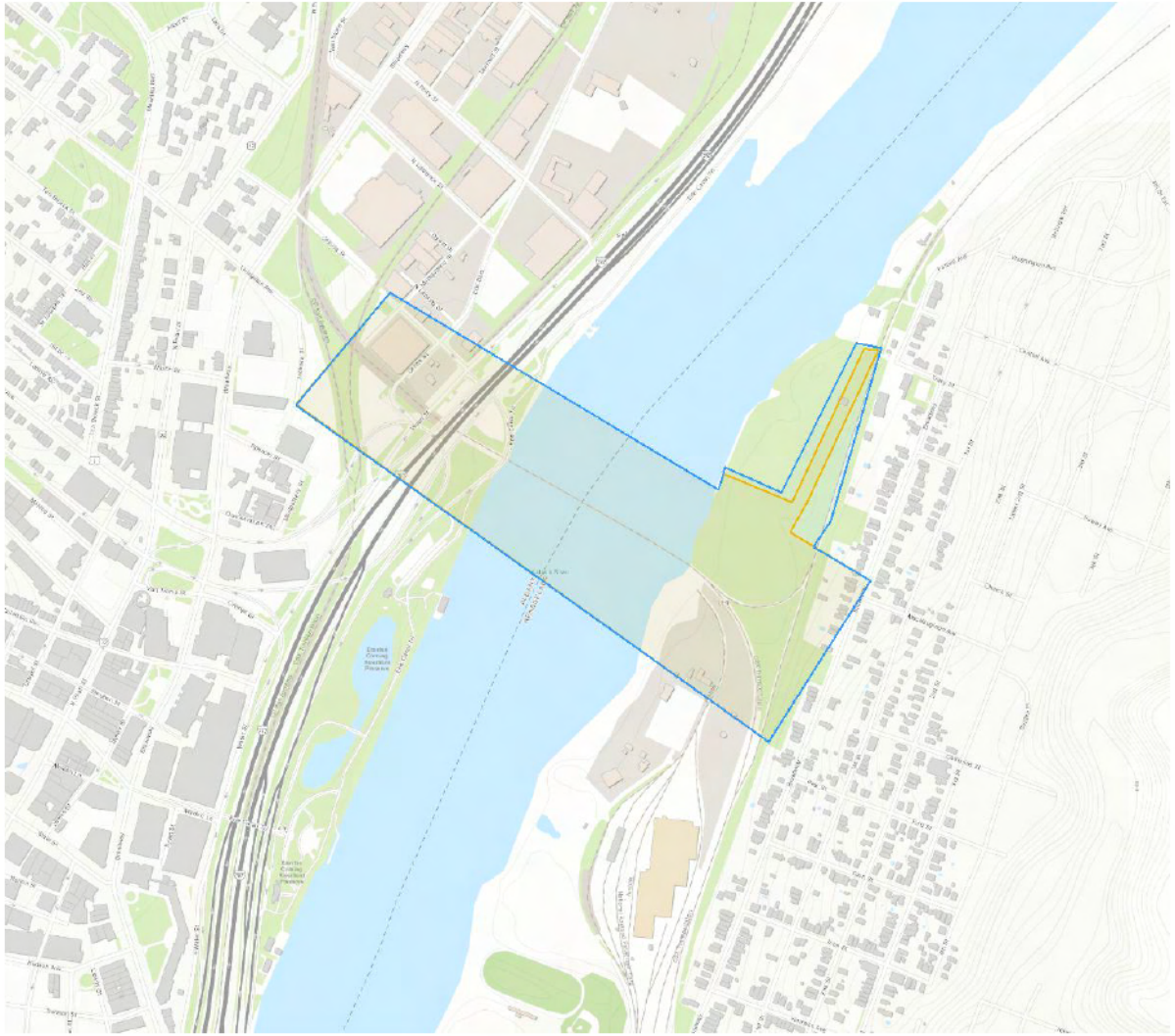
1.3.6.8.2 Increase in noise

ANTICIPATED MAGNITUDE


Following best management practices for pile installation, the effects of increased underwater noise would be minimized by using a vibratory hammer to the greatest extent possible or by tapping the pile to deter fish from the area before impact hammering. If piles are drilled rather than hammered, noise levels would not result in acoustic impacts to fish. The spud piles supporting the barges would be allowed to sink into the sediment under their own weight, and if required, equipment available on the barge would be used to push or hammer them to the desired depth, using a cushion block if hammering is needed.


Noise generated on land during the construction or operation of either Build Alternative would not adversely affect wildlife in the study area because the study area already has existing levels of anthropogenic noise from rail operations on the existing bridge, traffic along I-787, and other sources associated with the commercial, residential, and industrial land uses in the surrounding area. Construction and operation of the Project would not increase noise levels above existing conditions to the extent that it would alter species assemblages or otherwise negatively change wildlife in the surrounding area from its present state.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

STRUCTURES AND ACTIVITIES

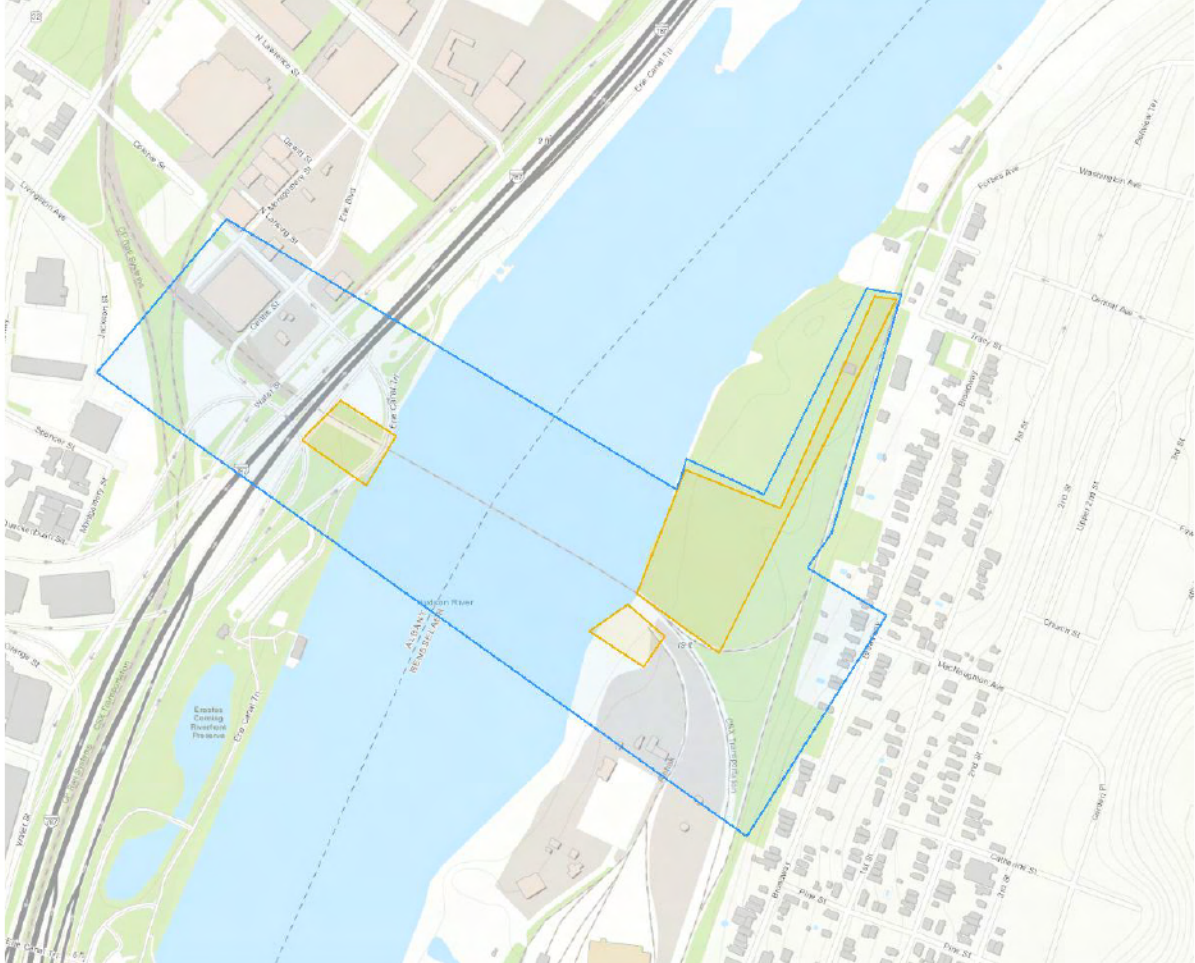
- [Construct piles](#)
- [Staging area construction](#)
- [Finish bridge surface](#)
- [Geotechnical investigation](#)
- [Construct cofferdam](#)
- [Finish grading](#)
- [Construct bridge deck](#)
- [Prepare the project site \(terrestrial\)](#)

1.3.6.8.3 Increase in vehicle traffic


ANTICIPATED MAGNITUDE


The Project would only result in increased vehicle traffic temporarily during construction. Construction-related vehicles would access the Albany construction area from Colonie Street or Water Street and the Rensselaer construction area from Tracy Street. Workers would park in the staging area.

STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

CONSERVATION MEASURES

No conservation measures for this stressor

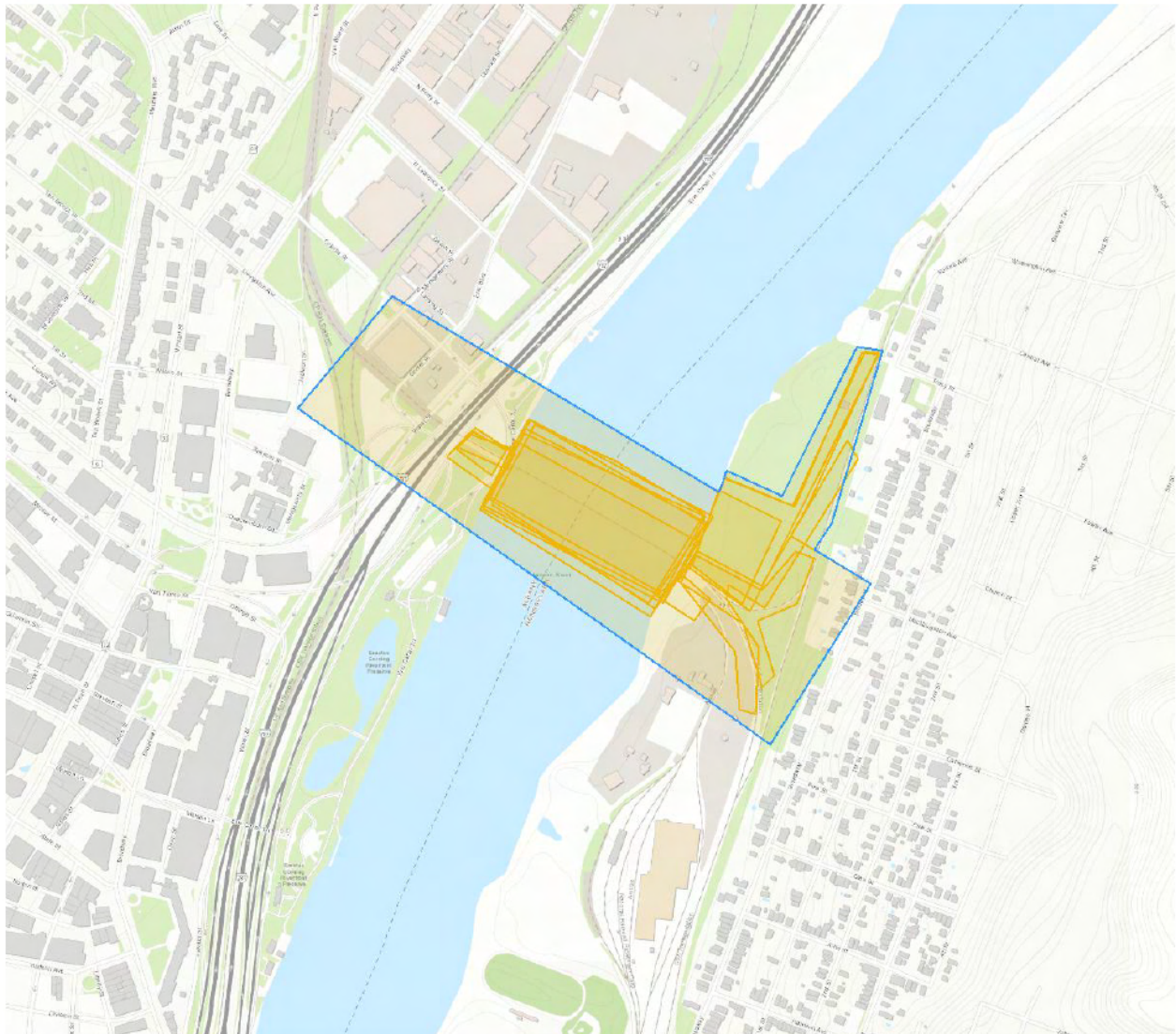
STRUCTURES AND ACTIVITIES

- [Staging area construction](#)

1.3.6.9 Miscellaneous

Miscellaneous should only be used if the created feature does not fit into one of the other categories or if the creator is not sure in which category it should be placed.

1.4 Action Area



1.5 Conservation Measures

Describe any proposed measures being implemented as part of the project that are designed to reduce the impacts to the environment and their resulting effects to listed species. To avoid extra verbiage, don't list measures that have no relevance to the species being analyzed.

No conservation measures have been selected for this project.

1.6 Prior Consultation History

USFWS IPaC results generated on October 26, 2018 and January 31, 2019 (identified northern long-eared bat)

Consultation with USFWS regarding northern long-eared bat on February 16, 2021 (Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form)

1.7 Other Agency Partners And Interested Parties

New York State Department of Transportation - Lead agency (state) for environmental review and implementation of the Livingston Avenue Bridge Replacement Project

Federal Railroad Administration - Lead agency (federal) for environmental review, and providing funding for the bridge replacement

National Railroad Passenger Corporation (Amtrak) - Owner of the existing Livingston Avenue Bridge

1.8 Other Reports And Helpful Information

n/a

2 Species Effects Analysis

This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).

These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.

2.1 Monarch Butterfly

2.1.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.1.1.1 Legal status

The Monarch Butterfly is federally listed as 'Candidate' and additional information regarding its legal status can be found on the [ECOS species profile](#).

2.1.1.2 Recovery plans

Available recovery plans for the Monarch Butterfly can be found on the [ECOS species profile](#).

2.1.1.3 Life history information

Note - the monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (see our Section 7 Questions and Answers on the monarch here - <https://www.fws.gov/savethemonarch/FAQ-Section7.html>), but we encourage all agencies to take advantage of any opportunity they may have to conserve the species.

For information on monarch conservation, visit <https://www.fws.gov/savethemonarch/>, http://www.mafwa.org/?page_id=2347, and, for the West, <https://wafwa.org/committees-working-groups/monarch-working-group/>.

Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots, present on the upper side of the wings. Adult monarchs are sexually dimorphic, with males having narrower wing venation and scent patches. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic.

During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* spp.), and larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months.

In many regions where monarchs are present, monarchs breed year-round. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again.

Identified resource needs

Native vegetation

Milkweed

2.1.1.4 Conservation needs

Protection, restoration, enhancement and creation of habitat, highlighting the importance of restoring and enhancing milkweed and nectar resources. See Species Status Assessment Report, version 2.1, September 2020 (<https://ecos.fws.gov/ServCat/DownloadFile/191345>).

2.1.2 Environmental baseline

*The environmental baseline describes the species' health **within the action area only** at the time of the consultation, and does not include the effects of the action under review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.*

2.1.2.1 Species presence and use

All life stages of monarch could be present near the project site in the spring through fall months, in vegetated areas that support the growth of milkweed for monarch reproduction and other nectar resources for feeding. While milkweed was not observed during site visits, there is the potential for it to grow in the vicinity of the bridge approach tracks on the east side of the Hudson River. Monarchs breed in the summer in New York, migrate south starting in the fall to overwinter in Mexico, and return north in the spring, so they could be found near the project site from spring through fall.

2.1.2.2 Species conservation needs within the action area

Conservation needs for survival and recovery:

- Milkweed for reproduction and feeding
- Blooming nectar resources for adult feeding
- Milkweed embedded within diverse nectaring habitat
- Favorable environmental conditions (e.g., temperature and precipitation)

Milkweed was not observed in the action area during site reconnaissance, but there is the potential that certain vegetated areas on the edges of the affected woodland or adjacent to the existing tracks could support milkweed and other flowering plants. It is unlikely that the action area provides high quality habitat for monarchs, as it is bordered by heavily developed transportation and industrial uses and is disconnected from larger undeveloped areas. The Project site is a rail corridor, along which herbicides are used on track ballast and embankment side slopes, so the rail alignment itself is unlikely to support monarch habitat.

The monarch butterfly does not currently have a recovery plan.

2.1.2.3 Habitat condition (general)

Existing conditions include fragmented woodland with edge habitat where milkweed could potentially grow but has not been observed. The rail corridor itself is regularly treated with herbicides to keep the tracks clear.

2.1.2.4 Influences

Past influences include habitat loss and fragmentation

Present influences include limited habitat availability due to fragmentation. Habitat is not available along the rail corridor due to the required use of herbicides to keep the rails clear.

2.1.2.5 Additional baseline information

No additional information

2.1.3 Effects of the action

This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.1.3.1 Indirect interactions

RESOURCE NEED	STRESSORS	CONSERVATION MEASURES	AMOUNT OF RESOURCE IMPACTED	INDIVIDUALS AFFECTED
Native vegetation (milkweed)			<i>This resource is not present in the action area</i> Milkweed was not observed during site reconnaissance for the Project. There is the potential for milkweed to grow in vegetated portions of the approach tracks, but none has been observed.	<i>There will be no impacts to this resource, so no individuals will be affected.</i>

2.1.3.2 Direct interactions

No direct interactions leading to effects on species are expected to occur from the proposed project.

2.1.4 Cumulative effects

No known future activities that are reasonable certain to occur within the action area

2.1.5 Discussion and conclusion

Determination: NLAA

3 Critical Habitat Effects Analysis

No critical habitats intersect with the project action area.

4 Summary Discussion, Conclusion, And Effect Determinations

4.1 Effect Determination Summary

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
Monarch Butterfly	Danaus plexippus	Candidate	Yes	NLAA
Northern Long-eared Bat [†] . This species or critical habitat is covered by a DKey.	Myotis septentrionalis	Threatened	Yes	MA

[†] This species or critical habitat is covered by a DKey.

4.2 Summary Discussion

The Project would result in the permanent loss of 2 or 3 acres of woodland which includes edge habitat that could support the growth of milkweed, though milkweed was not observed during site reconnaissance efforts for the Project. Clearing of vegetation would only occur between October 31 and March 31 to limit potential impacts to breeding migratory birds, and would in effect also limit potential impacts to monarch butterflies which migrate south in the fall and spend the winter months in Mexico before returning to habitats in the Northeast in the spring. The loss of potential habitat would not result in significant adverse impacts to monarch butterfly as similar edge habitat that could support milkweed is available in the vicinity, which includes industrial, commercial, and residential developments. In-water components of the Project would not have any effect on monarchs as they would be outside the limits of potential habitat for the butterflies.

4.3 Conclusion

The Project may affect but is not likely to adversely affect the monarch butterfly which is a Candidate species.