DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

September 24, 2019

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Regulatory Division
File No. NAE-2017-01406

Ms. Bettina Washington
Tribal Historic Preservation Officer
Wampanoag Tribe of Gay Head (Aquinnah)
20 Black Brook Road
Aquinnah, MA 02535

Subject: Section 106 Consultation for Eversource Energy Sudbury-Hudson Transmission Line Reliability Project, Sudbury, Marlborough, Stow and Hudson, MA.

Dear Ms. Washington:

Eversource Energy (Eversource) is proposing to discharge fill within waters of the United States along paved public roadways and within an existing, inactive railroad right-of-way (ROW) within the towns of Sudbury, Marlborough, Stow and Hudson, for the installation a new 115kV underground electric transmission line. This project requires a permit from the Army Corps of Engineers (Corps) and is subject to review and consultation under Section 106 of the National Historic Preservation Act (NHPA).

As part of our pre-application Section 106 consultations under the NHPA, the Corps has defined the "Permit Areas" for your review as shown on the attached plan set entitled "Sudbury-Hudson-Transmission Reliability Project Figure 1 USACE Permit Area Plans" on thirty-one (31) sheets. We are providing this Permit Area plan set for your review in accordance with 36 CFR Part 800 and 33 CFR 325, Appendix C. These plans identify the Corps Permit Areas overlain with known historic resources. Phase 1A and Phase 1B reports are available to you upon request.

At this stage of the Section 106 consultation process, we are requesting that you review the attached Permit Area plans and inform the Corps if you:

(a) there are any known historic properties or cultural resources within the Corps Permit Areas;
(b) would like copies of the Phase 1A and/or Phase 1B reports;
(c) would like to monitor any further archaeological work on the project by the Commonwealth Heritage Group; or
(d) would like to schedule a site walk of the Permit Areas.

Please respond within 30 days of the date of this letter with any comments or requests outlined in (a)-(c) above. If the Corps does not receive a response to this request within 30 days, the Corps will conclude that you have elected not to consult at this stage of the Section 106 consultation and do not have any comments on the Phase 1A/1B reports, are declining to monitor any further archaeological work on the project and are declining the opportunity to schedule a site walk of or otherwise investigate the Permit Areas. In accordance with 36 CFR 800.3(c)(4), the Corps will continue the consultation without being required to reconsider or revisit this stage of consultation. However, you will be given an opportunity to consult at each of the future stages of the Section 106 process, including the determination of eligibility for listing in the National Register and any effects determinations.

If you have any questions or require additional information, please contact Mike Wierbonics at (978)318-8723 or michael.s.wierbonics@usace.army.mil.

Sincerely,

Barbara Newman
Chief, Permits & Enforcement, Branch A
Regulatory Division

Enclosure

cc:
David Weeden, Tribal Historic Preservation Officer, Mashpee Wampanoag Tribe, david.weeden@mwtribe-nsn.gov
Bettina Washington, Tribal Historic Preservation Officer, Wampanoag Tribe of Gay Head (Aquinnah), bettina@wampanoagtribe.net
Brona Simon (Attn.: Jonathan Patton), Massachusetts Historical Commission, via fax at 617-727-5128
David Robinson, Massachusetts Board of Underwater Archaeological Resources, david.s.robinson@state.ma.us
Vivian Kimball, VHB, vkimball@vhb.com
Denise Bartone, Eversource Energy, denise.bartone@eversource.com
Marc Bergeron, Epsilon Associates, mbergeron@epsilonassociates.com

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Regulatory Division
File No. NAE-2017-01406

Mr. David Weeden
Tribal Historic Preservation Officer
Mashpee Wampanoag Tribe
483 Great Neck Road South
Mashpee, Massachusetts 02649

Subject: Section 106 Consultation for Eversource Energy Sudbury-Hudson Transmission Line Reliability Project, Sudbury, Marlborough, Stow and Hudson, MA.

Dear Mr. Weeden:

Eversource Energy (Eversource) is proposing to discharge fill within waters of the United States along paved public roadways and within an existing, inactive railroad right-of-way (ROW) within the towns of Sudbury, Marlborough, Stow and Hudson, for the installation a new 115kV underground electric transmission line. This project requires a permit from the Army Corps of Engineers (Corps) and is subject to review and consultation under Section 106 of the National Historic Preservation Act (NHPA).

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If you have any questions or require additional information, please contact Mike Wierbonics at (978)318-8723 or michael.s.wierbonics@usace.army.mil.

Sincerely,

Barbara Newman
Chief, Permits & Enforcement, Branch A
Regulatory Division

Enclosure

cc:
David Weeden, Tribal Historic Preservation Officer, Mashpee Wampanoag Tribe, david.weeden@mwtribe-nsn.gov and 106review@mwtribe-nsn.gov
Bettina Washington, Tribal Historic Preservation Officer, Wampanoag Tribe of Gay Head (Aquinnah), bettina@wampanoagtribe.net
Brona Simon (Attn.: Jonathan Patton), Massachusetts Historical Commission, via fax at 617-727-5128
David Robinson, Massachusetts Board of Underwater Archaeological Resources, david.s.robinson@state.ma.us
Vivian Kimball, VHB, vkimball@vhb.com
Denise Bartone, Eversource Energy, denise.bartone@eversource.com
Marc Bergeron, Epsilon Associates, mbergeron@epsilonassociates.com

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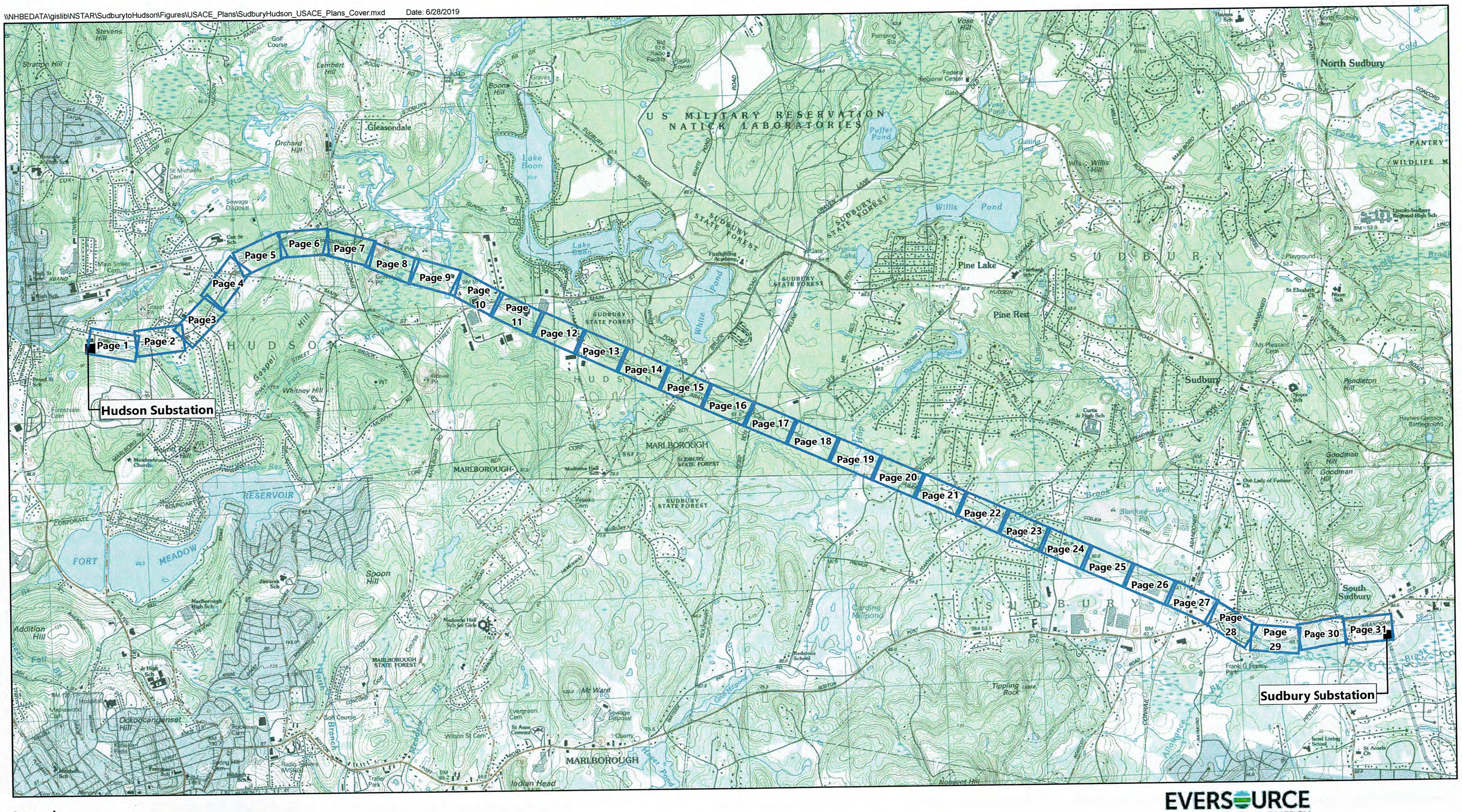

Legend

- ■ Substation Location
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EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 1
USACE Permit Area Plans
Page Index

vhb

November 14, 2019

Ref: 12970.00

Michael S. Wierbonics
US Army Corps of Engineers New England District
Regulatory Division
696 Virginia Road
Concord, MA 01742

Re: Section 106 Consultation Update: Sudbury-Hudson Transmission Reliability Project
NAE-2017-01406

Dear Mr. Wierbonics,

On behalf of NSTAR, d/b/a Eversource Energy ("Eversource"), VHB is providing the following update and additional information to assist in your coordination of the Section 106 (National Historic Preservation Act) consultations for the Sudbury-Hudson Transmission Reliability Project (USACE File #NAE-2017-01406). This update provides a response to the Massachusetts Historical Commission's ("MHC") letter dated April 3, 2019, including comments regarding:

- Consistency of the proposed bridge design with the Secretary of the Interior's Standards and Guidelines for Rehabilitation (36 CFR 67)
- Consultation with the Sudbury and Hudson Historical Commissions to consider further alternatives to avoid, minimize, or mitigate the adverse effects to railroad-related features and historic bridges
- Avoidance, minimization, or mitigation of impacts to the George Pitt Tavern Historic District (SUD.P) and the Boston and Maine Railroad Section Tool House (SUD.282)
- Recommendations for avoidance of identified Native American and historical period archaeological sites

This update also provides information on design changes since receiving the April 3rd letter, as you requested in an email on September 24, 2019.

Consistency with the Secretary of the Interior's Standards and Guidelines for Rehabilitation (36 CFR 67)

MHC's letter noted that the "proposed modification and/or demolition of the bridges do not appear to be developed in accordance with the Secretary of the Interior's Standards and Guidelines for Rehabilitation

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(36 CFR 67), as previously requested in the MHC's June 30, 2017, comments on the ENF." The following discussion, developed in consultation with Commonwealth Heritage Group, summarizes the information on the proposed bridge designs with respect to the Secretary's Standards.

Bridge 127 (Hop Brook)

Bridge 127 spans the Hop Brook near Milepost 19.47 in the town of Sudbury. The bridge is listed as an inventoried property (SUD. 901) in the Massachusetts Cultural Resource Information ("MACRIS") system as a plate girder bridge constructed in 1881 by Massachusetts Central Railroad. The bridge has been recommended as individually eligible for the National Register of Historic Places on the updated 2018 inventory form. The bridge measures 47'-7" long by 12'-0" wide. In 1908, the bridge was modified with the addition of two wood-pile bents beneath the plate girders.

The current plan proposes removing the existing plate girder bridge and constructing a new truss bridge on the same footprint. The bottom of the existing plate girders are partially submerged in water, causing deterioration to the bridge. The timber pile bents and ties are also deteriorated and need to be replaced to safely support the proposed bike path and transmission line. The timbers piers will be cut at the mudline, and the existing stone endwalls will have the first two courses of stone removed to maintain the profile and provide the standard 3-foot freeboard below the new bridge for inspection access. The remaining endwalls will be reused as part of the new bridge design. The stone block abutments will also be retained.

An in-depth evaluation of eight alternatives was completed which considered several metrics including historic, environmental, structural, maintenance, bike/pedestrian use, constructability, and cost considerations. The evaluation concluded that a new single-span bridge was the best alternative.

- The existing beams are not structurally adequate in place, largely due to the fact that the piers cannot be counted due to severe deterioration and the steel sections are reduced due to moderate deterioration of the submerged bottom flange.
- The stream flow and ice pressures pose significant structural stability and utility risks if any components are left below flood water surface elevations.
- Raising the existing bridge to pull the girders out of the water would require a significant trail profile increase (3ft +/-) which would also require additional retaining walls. Raising the existing bridge would also require in-stream bridge seat modifications and steel strengthening (likely steel plates and painting) which could result in additional wetland/waterway impacts.

The new bridge will also support H20 construction vehicle loading, which will facilitate construction access through this area, reduce tree clearing and other disturbance that would otherwise be required to create a turning area at each end of the bridge, and reduce construction duration and cost. The new bridge will feature steel trusses and steel floor beams making it clearly distinguishable as a new structure in both material, design, and bridge type. The deck will measure 12'-0" wide which matches the width of the

current plate girder bridge. The overall length of the bridge will increase, the current bridge measures 47'-7", the proposed truss bridge will measure 72'-0" long. A timber railing will be added for pedestrian safety. Utility hangers carrying conduits will be mounted to the south truss. An FPR roof will be placed over the top of the conduit assembly, making it less visible to pedestrian users of the bridge. The proposed abutments will be installed behind (landward of) the existing abutments and will be minimally visible as they will be small stub abutments located behind retaining walls. The new truss bridge design is generally consistent with the Secretary of the Interior's Standards for Rehabilitation (Secretary Standard) No 9 which states that "new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment."

Bridge 128

Bridge 128 spans the Hop Brook marsh near Dutton Road in the town of Sudbury. The bridge is listed as an inventoried property (SUD. 900) in the MACRIS system as a plate girder bridge. The bridge was constructed as part of the Massachusetts Central Railroad in 1881. In 1908, the bridge was modified with the addition of two wood-pile bents beneath the plate girders. The bridge has been recommended as individually eligible for the National Register of Historic Places on the updated 2018 inventory form. The bridge measures 47'-7" long by 10'-1" wide. Bridge 128 currently serves as a pedestrian bridge as part of the trail system in the Hop Brook Conservation area.

As part of the current bridge rehabilitation design, the existing steel girders, granite block abutments, timber piers, and cross-frames will be retained and reused. The steel girders represent a character-defining feature of plate girder bridges, and therefore supports the Secretary Standard No. 2 which states, "the historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property should be avoided." The retention of the plate girders and other historic bridge fabric also supports Secretary Standard 5 which states, "Distinctive features, finishes, and construction techniques or examples of craftmanship that characterize a property shall be preserved."

The existing timber ties, steel rails, timber deck, and timber handrail are to be removed and replaced. The existing timber deck and handrails do not date to the bridge's original construction and were likely added when it was converted to pedestrian use. The existing 10'-1" long timber floor beams will be replaced with new 13'-2" long timber beans, which will slightly increase the overall width of the bridge deck. Since the original steel girders are to remain, the structural width of the bridge will remain unchanged. The new handrail will be made of timber and will be clearly identifiable as a new bridge element, but will also be compatible with the existing historic fabric. These changes are generally consistent with Secretary Standard 9 which states "New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale and architectural features to protect the historic integrity and its environment."

The current plan proposes placing utility hangers to support conduits on the underside of the bridge deck, which would be minimally visible to pedestrians passing over the bridge. The utility hangers and conduits would be clearly identifiable as new features, and not part of the historic fabric of the bridge.

Bridge 130

Bridge 130 spans the Fort Meadow Brook near milepost 25.37 in the town of Hudson. The bridge is listed as an inventoried property (HUD.908) in the MACRIS system as a timber pile trestle bridge. The bridge was constructed as part of the Massachusetts Central Railroad in 1939. The bridge has been recommended as Not Eligible for the National Register of Historic Places on the 1987 inventory form. The timber pile trestle is a modern example of a common form widely used throughout the region.

The current plan proposes removing the existing timber pile trestle bridge and constructing a new truss bridge on the same footprint. The existing timber ties, timber beams, and pile caps are decayed beyond practicable reuse for safely supporting the proposed bike path and transmission line. The western abutment has washed away, presumably due to debris build-up that constrained flows to the western span. The existing timber piles are generally in poor condition and would likely require repairs if they were reused. Pile repairs could involve removing decayed portions of pile and posting with new sections attached by steel straps and wrapped with fabric, which would include underwater work and could result in additional wetland/waterway impacts.

The advantages of a new single-span bridge include reduced stream impacts, an improved hydraulic opening (resulting in reduced debris potential), and a longer lifespan with reduced maintenance. In addition, as with Bridge 127, this new bridge will support H20 construction vehicle loading which will facilitate construction access through this area and reduced tree clearing and other disturbance that would otherwise be required to create a turning area at each end of the bridge, and reduce construction duration and cost.

The new bridge will feature steel trusses and steel floor beams making it clearly distinguishable as a new structure in both material, design, and bridge type. The deck will measure 12’ wide which matches the width of the current timber pile trestle. The overall length of the bridge will increase; the current bridge measures 48’-7” and the proposed truss bridge will measure 72’-0” long. A timber railing will be added for pedestrian safety. Utility hangers carrying conduits will be mounted to the south truss. An FPR roof will be placed over the top of the conduit assembly, making it less visible to pedestrian users of the bridge. The new truss bridge design is generally consistent with the Secretary Standard No 9 which states that “new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.”

Summary

The proposed rehabilitation plan for Bridge 128 is generally consistent with the Secretary of the Interior’s Standards for Rehabilitation, in that the design retains character defining features and integrity of the

original 1881 bridge including the original steel girders and stone abutments, and replacement features such as the timber floor beams will be consistent in material, type, and scale to the original bridge fabric. New features such as the pedestrian railing and utility hangers will be clearly identifiable as non-historic elements. The removal of Bridges 127 and 130 will constitute the loss of historic fabric and integrity of these bridges, and the new bridge designs will be clearly identifiable as modern structures.

Design Changes Since MHC's Letter

MHC's letter notes that the Project includes excavation for a potential wetland mitigation area within the George Pitt Tavern Historic District in proximity to the Boston and Maine Railroad Section Tool House. This area is no longer being considered for wetland mitigation. The design has been modified to avoid the Tool House, and an avoidance and protection plan will be developed and implemented to protect this area during construction.

As indicated in MHC's letter, the archaeological sites identified are avoidable through development and implementation of an archaeological site avoidance and protection plan during construction. Specifically:

- **Ordway Locus 2**: Outside limit of grading ("LOG"). Avoidance and protection plan will be developed and implemented.
- **Ordway Locus 3**: Outside LOG. Avoidance and protection plan will be developed and implemented.
- **Hop Brook Site**: Outside LOG. Avoidance and protection plan will be developed and implemented.
- **Gleasondale Station Site (HUD.HA.8)**: Design modified to avoid excavation of site. Geotextile fabric and fill will be placed over portion of site within LOG. Outside of LOG, avoidance and protection plan will be developed and implemented.
- **Ordway Station Site (HUD.HA.9)**: Design modified to avoid site. Outside of LOG, avoidance and protection plan will be developed and implemented.
- **Memorial Forest Cellar Hole Site (SUD.HA.36)**: Outside LOG. Avoidance and protection plan will be developed and implemented.
- **Walker Garrison House (SUD.HA.30)**: Outside LOG. Avoidance and protection plan will be developed and implemented.
- **Wayside Inn Station Site (SUD.HA.38)**: Design modified to avoid the site. Outside of LOG, avoidance and protection plan will be developed and implemented.
- **South Sudbury Station (SUD.HA.26)**: No impact proposed. Site protected by existing pavement; avoidance and protection plan will be developed and implemented to protect existing granite marker and depot building.
- **Boston & Maine Railroad Section Tool House (SUD.HA.37/SUD.282)**: Design modified to avoid the site. Outside of LOG, avoidance and protection plan will be developed and implemented.

- **East Sudbury Station (SUD.HA.39)**: Design modified to avoid excavation of site. Geotextile fabric and fill will be placed over portion of site within LOG. Outside of LOG, avoidance and protection plan will be developed and implemented.

Eversource will work with CHG to develop the draft written archaeological site avoidance and protection plan, including stipulations for fencing, signage, and contractor briefings during construction, for submission to MHC for review and comment.

Consultation with Local Historical Commissions

As directed in MHC's letter, Eversource reached out to the Hudson and Sudbury Historical Commissions as well as the Sudbury Historic District Commission for consultation regarding avoidance, minimization, and mitigation for potential adverse effects to railroad-related features and historic bridges. Eversource met with the Hudson and Sudbury Historical Commissions but did not receive any response from the Sudbury Historic Districts Commission.

Hudson Historical Commission

Eversource met with the Hudson Historical Commission ("HHC") on August 15, 2019, and presented an update of the project status, reviewed a plan set identifying the historic and archaeological feature locations along the project and discussing the proposed avoidance and mitigation measures for each location, and presented a visual simulation of the proposed Fort Meadow Brook (Bridge 130) crossing. The HHC subsequently submitted a letter to you on September 4, 2019, identifying that they concur with Eversource's recommendations for avoidance, minimization, and mitigation, and making two additional suggestions for the Site Avoidance and Protection Plan for the Project:

- The Proponent should consider developing "rest stops" at the two former railroad station sites in Hudson; Gleasondale Station Site (MHC #HUD.HA.8) and the Ordway Station Site (MHC #HUD.HA.9). At these two locations benches and interpretative signage should be developed such that users of the Project will be able to gain insight into the historical context associated with these two locations.
- The Proponent should consider using composite decking on the Fort Meadow Brook Bridge or provide details related to how pressure treated wood on the bridge would be maintained to ensure that the bridge appearance does not rapidly deteriorate due to exposure to the elements.

DCR proposes to install granite markers in the vicinity of the Gleasondale and Ordway Station Sites to identify their historical significance. These markers will be 8 inches by 8 inches in cross-section, and 6 feet tall. The markers will be etched with the name of the Station Site and will be installed near to but outside of the limits of the actual site to avoid adverse effects to any archaeological deposits.

Regarding maintenance of the bridge, the Project team is proposing to use ipe wood which is the DCR standard for rail trail bridge decks and railings. It is a top-of-the-line wood species that is very strong, durable, and low-maintenance, and is used on most trail networks all across Massachusetts.

Sudbury Historical Commission

In late August 2019, CHG received a request for reports from Adam Duchesneau, the Town of Sudbury Director of Planning & Community Development. Eversource provided the *Sudbury-Hudson Transmission Reliability Project Reconnaissance-Level Historic Properties Survey* report in its entirety and provided a redacted copy of the *Archaeological Intensive (Locational) Survey* report to Mr. Duchesneau and the Sudbury Historical Commission.

Eversource met with the Sudbury Historical Commission ("SHC") on September 17, 2019, and presented an update on the Project status, an overview of the proposed avoidance and protection measures, and summary of the historic and archaeological investigations completed to date. The SHC requested some additional information, which Eversource provided on October 24, 2019. The additional information included the following:

- Notes from the presentation made at the 9/17 meeting
- A table summarizing railroad features identified in Sudbury, whether they would be impacted by the Project, and protection/mitigation measures proposed
- Plan set from the Final Environmental Impact Report, which included the railroad features
- Images showing existing bridges with notes identifying components to remain or be replaced, and renderings of the proposed bridges with notes identifying new components and materials to be used
- The proposed design at the Boston & Maine Tool House, with notes identifying proposed components and the distance to the existing building
- A memorandum summarizing the minor design changes that have occurred since submission of the Final Environmental Impact Report
- "Before and after" images of the bridges that were installed on the Blackstone River Greenway

These items are also attached to this letter. The SHC did not provide any specific suggestions regarding additional avoidance, minimization, or mitigation measures during the 9/17 meeting. Eversource anticipates that the SHC may provide a consultation letter to MHC.

Proposed Mitigation Measures

In summary, Eversource and DCR have made substantial efforts to avoid and minimize impacts to historic and archaeological resources along the Project corridor. The Project overall, by re-opening up the rail corridor and adding a rail trail, will restore the experience of the historic railroad route and landscape. The Project team proposes the following mitigation measures for the Project:

- Avoidance and protection plan (including stipulations for fencing, signage, and contractor briefings during construction) for the Boston & Maine Railroad Section Tool House
- Avoidance and protection plans (including stipulations for fencing, signage, and contractor briefings during construction) for all potentially significant archaeological sites
- Installation of granite markers at all former railroad station sites in both Hudson and Sudbury to identify their historical significance
- Photographic documentation of Bridges 127, 128, and 130 prior to any construction activity
- Preservation of other railroad artifacts on the corridor, including the following:
    - Avoidance of several granite mile markers, rail rests, and auto highway flashers
    - Where avoidance was not possible, the Project will remove and reset whistle posts, auto highway flashers, rail rests, block signals, crossing signs, signals, granite mile markers, and signal towers

We look forward to continued coordination with the US Army Corps of Engineers. If additional information is required, please contact me by phone at 508-513-2713 or by email at vkimball@vhb.com. You may also contact Denise Bartone at denise.bartone@eversource.com or 781-441-8174.

Sincerely,

Vivian Kimball

Project Manager
vkimball@vhb.com

CC: Brona Simon, Massachusetts Historical Commission
Hudson Historical Commission
Sudbury Historical Commission
Sudbury Historic Districts Commission
Denise Bartone, Eversource Energy
Marc Bergeron, Epsilon Associates
Paul Jahnige, MA Department of Conservation and Recreation

Sudbury Historical Commission Meeting Notes (September 17, 2019)

Project Overview

The Project includes completion of a portion of the regional Massachusetts Central Rail Trail ("MCRT") and construction of a new 115-kilovolt ("kV") underground electric transmission line ("the underground transmission line"). This Project is the direct result of a collaborative project-planning process between DCR, Eversource, and the MBTA. This coordinated effort combines two compatible uses within a single existing and under-utilized transportation corridor with a proposed phased construction sequence to minimize cost, minimize overall construction schedule, and to minimize the Project footprint. The Project is located within the inactive MBTA railroad right-of-way as well as paved public roadways in Hudson.

The underground electric transmission line portion includes the construction of a new 115-kV underground electric transmission line between the Eversource substation in Sudbury and the Hudson Light & Power Substation on Forest Ave in Hudson (approximately 9.0 miles with 4.3 miles in Sudbury).

MCRT portion of the Project would extend 7.6 miles along the MBTA railroad right-of-way (overlap with footprint for underground electric transmission line) from the existing Eversource substation in Sudbury to the existing Assabet River Rail Trail parking area on Wilkins Street in Hudson, MA (4.3 miles located within Sudbury).

Purpose of Attending Meeting

As required for authorization under Section 404 of the Federal Clean Water Act, specifically to comply with the Programmatic General Permit in Massachusetts, Eversource has started the Section 106 (National Historic Preservation Act) consultation with the US Army Corps of Engineers (lead agency) and with the Massachusetts Historical Commission and the appropriate Tribal Historic Preservation Officers for the Project.

As requested by MHC, in their letter dated April 3, 2019, Eversource is consulting with the local historical commissions regarding the proposed avoidance and mitigation plan for the railroad related features, bridges, and historic district (Sudbury).

Overview of the Development of Avoidance and Protection Plans

For archaeological pre-contact and railroad sites- Project design has been modified to avoid excavation of these areas and, where appropriate, place a layer of geotextile fabric and fill over the site. An avoidance and protection plan will be developed to protect those areas located outside the limit of work (fencing, signage, contractor briefings). Tribal, MHC and local historic commission input to be considered.

For Bridges- Working with MHC with regard to compliance with the Secretary of the Interior's Standards and Guidelines for Rehabilitation of Historic Properties and local commission input to be considered (see visual rendering and plan details)

For Historic District – MHC and local commission input to be considered

Summary of Investigations/Consultations Completed to Date (along width of entire MBTA ROW for Arch and within 0.25 miles for above ground historic):

Began studying both above-ground and archaeological resources within the alignment in 2017 (Commonwealth Heritage Group are the Cultural Resource Consultant on Project)

- Reconnaissance-level historic properties survey report (Above-ground resources only)
- Phase IA archaeological reconnaissance survey report
- Phase IB archaeological intensive (locational) survey report (941 test pits completed – 548 in Sudbury)
    - Mashpee Wampanoag Tribal representative on site during intensive investigations coordinating closely with ES Cultural Resource Consultant. Based upon the results of this survey, the Mashpee Wampanoag Tribe and Wampanoag Tribe of Gay Head (Aquinnah) did not see anything to warrant further consultation.

Two Types of Cultural Resources Along Project Alignment Were Identified:

1) Above-ground Historic Properties – buildings, structures, districts, and objects

2) Archaeological Resources - pre-contact (Native American) find spots, pre-contact (Native American) sites, post-contact domestic sites; and post-contact railroad related sites.

Summary of Overall Results

- Above-ground Historic Properties and Districts: 2017 Reconnaissance-Level Historic Survey report addressed 188 properties in all, including 123 that were previously identified and 65 newly identified by Commonwealth Heritage Group. Out of this total, it was determined that two properties could be adversely affected by the project: the proposed Central Massachusetts Railroad (new district area including four contributing resources), and the George Pitts Tavern Historic District (a state-listed and locally designated district). MHC agreed with this assessment in the April 3, 2019, letter.

  For Sudbury: 108 previously identified and 28 newly identified above ground resources addressed. Two (2) Bridges within the proposed Central Massachusetts Railroad District (Bridges 127 and 128) and George Pitts Tavern Historic District may be adversely affected.

- Archaeological Resources: 941 test pits completed (548 of these in Sudbury) during the Phase 1B Intensive survey; 16 archaeological resources were identified (none in Marlborough or Stow). Of the 16 resources:
    - (6) Pre-contact Sites
    - (2) Pre-contact Find Spots
    - (6) Archaeological Sites Associated with Railroad
    - (2) Archaeological Sites Associated with Colonial Settlement

  Note: Of the 16 resources identified in the MBTA ROW, only 3 are within limits of work associated with the Project (all are associated with the Railroad; one in Sudbury)

For Sudbury: Total of seven archaeological resources were identified: one Pre-Contact site (outside of limits of work), two archaeological sites associated with colonial settlement (outside of limits of work), and four archaeological sites associated with the railroad (one within limits of work). None of these archaeological resources are expected to be adversely affected as avoidance and/or protective measures will be used for each resource.

Historical and Archaeological Resources in Sudbury identified by MHC as potential for adverse effect and for which they recommend consultation with local historic commissions and historic district commissions

Sheet 17 of 31

1- Granite post marking the boundaries between Sudbury, Hudson, and Marlborough. The granite marker is not considered potentially eligible for the National Register of Historic Places but is protected under M.G.L. c. 42 sec. 1-12 (law related to boundaries of cities and towns in the Commonwealth). Project designed to avoid and protect this marker.

2- Archaeological Site 3 (Colonial Settlement) – Memorial Forest Cellar Hole Site (SUD.HA.36): Site is considered to be potentially significant, but, site is outside of the Limit of Work for the project and avoidance and protection plan to be developed for this area.

Sheet 19 of 31

1- Bridge #128 (MHC #SUD.900): bridge to be Rehabilitated. Working with MHC with regard to compliance with the Secretary of the Interior's Standards and Guidelines for Rehabilitation of Historic Properties (see visual rendering and plan details). As part of the current bridge rehabilitation design, the existing steel girders, granite block abutments, timber piers, and cross-frames will be retained and reused. The existing timber ties, steel rails, timber deck, and timber handrail are to be removed and replaced. The DCR assessment noted the existing timber ties are in poor condition and need to be replaced to facilitate the widening of the bridge deck. The existing timber deck and handrails do not date to the bridge's original construction and were likely added when it was converted to pedestrian use. The existing 10'-1" long timber floor beams will be replaced with new 13'-2" long timber beams, which will slightly increase the overall width of the bridge deck. Since the original steel girders are to remain, the structural width of the bridge will remain unchanged. The new handrail will be made of timber and will be clearly identifiable as a new bridge element in compliance with Standard 9 but will also be compatible with the existing historic fabric. The current plan will locate utility hangers to support conduits on the underside of the bridge deck.

2- Archaeological Site 4 (Colonial Settlement) – Walker Garrison House (SUD.HA.30): Site is considered to be potentially significant, but, site is outside of the Limit of Work for the project and avoidance and protection plan to be developed for this area.

Sheet 20 of 31

1- Archaeological Site 5 (Railroad)- Wayside Inn Station Site (SUD.HA.38): Integrity of the site has been affected by previous disturbance not associated with Project. The project design has been

modified to avoid the site area entirely. Avoidance and protection plan to be developed for this area.

Sheet 27 of 31

1- Archaeological Site 6 (Railroad) – South Sudbury Station Site (SUD.HA.26): This site is potentially significant. No impact to the site itself is proposed, and the site will be protected by existing pavement. There are associated features within and just outside the Limit of Work; avoidance and protection of these features, as well as the site itself, is recommended.

Sheet 28 of 31

1- Archaeological Site 7 (Railroad) – Boston and Maine Railroad Section Tool House (SUD.HA.37 and SUD.282): the limit of work has been moved to avoid the site entirely. The site is potentially significant and avoidance and protection plan to be developed for this area.

2- George Pitt Tavern Historic District (MHC #SUD.P)

Sheet 29 of 31

1- Bridge #127 (MHC #SUD.901): bridge to be Reconstructed - will be removed and replaced due to the current condition and safety requirement necessary for pedestrian use. The existing stone abutment will remain in place, with the top two courses of the backwall to be removed. The removal of the bridge will constitute the loss of historic fabric and integrity of the bridges, and the new bridge designs will be clearly identifiable as modern structures in compliance with Standard 9. The new bridges will be of a similar size and scale to the originals, minimizing the impact to the surrounding setting which is consistent with Rehabilitation Standard 10. The current plan will locate utility hangers to support conduits on the outside of the truss, with a grey fiber-reinforced plastic conduit cover. Mitigation will consist of photographic documentation, of which the Historic Commission will receive a copy. Continuing to work with MHC with regard to compliance with the Secretary of the Interior's Standards and Guidelines for Rehabilitation of Historic Properties (see visual rendering and plan details)

2- Pre-Contact Site 6 – Hop Brook Pre-Contact Site: Due to a low density and diversity of artifacts and the lack of diagnostic artifacts, the site is not considered to be potentially significant. The site is outside of the Limit of Work for the Project. No further archaeological investigation is recommended.

Sheet 31 of 31

1- Archaeological Site 8 (Railroad) – East Sudbury Station Site (SUD.HA.39): The integrity of the site has been affected by previous disturbance not associated with the Project. The project design has been modified to avoid excavation of the site area and to place a layer of geotextile fabric and fill over the site within the Limit of Work. Outside the Limit of Work avoidance and protection is recommended.

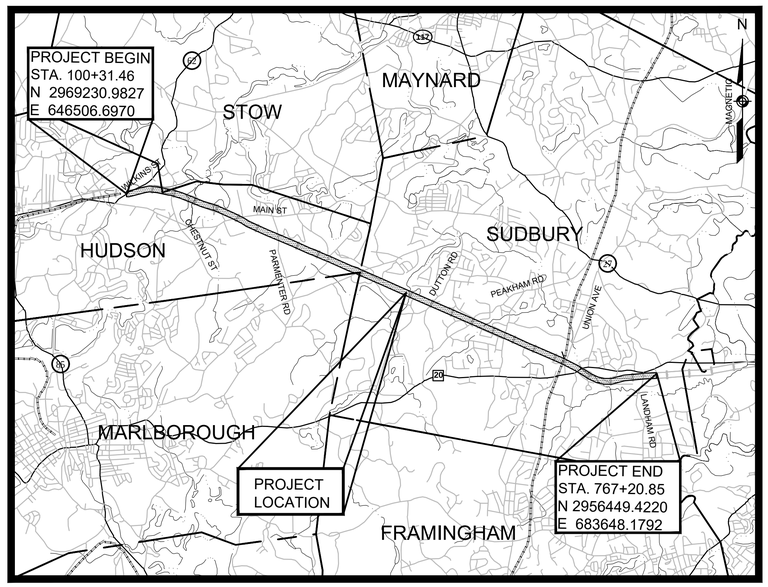
Railroad Features in Sudbury

Segment	Station	Railroad Feature	Treatment
Hudson Town Line to Dutton Road	374+55	Whistle post	Remove and reset
Hudson Town Line to Dutton Road	400+25	Massachusetts Central Railway Bridge 128 (SUD.900)	Rehabilitate to support Mass Central Rail Trail
Hudson Town Line to Dutton Road	403+65	Whistle post	Remove and reset
Hudson Town Line to Dutton Road	413+05	Granite mile marker	Outside limit of work, no impact
Hudson Town Line to Dutton Road	414+00 to 414+25	Rail rest	Outside limit of work, no impact
Hudson Town Line to Dutton Road	*Sensitive Site*	Wayside Inn Station	Revised design to avoid. Signage and fencing will be installed to protect during construction.
Dutton Road to Peakham Road	513+15	Whistle post	Remove and reset
Dutton Road to Peakham Road	517+50	Whistle post	Remove and reset
Dutton Road to Peakham Road	530+45	Auto highway flashers	Outside limit of work, no impact
Peakham Road to Horse Pond Road	530+75	Auto highway flashers	Remove and reset
Peakham Road to Horse Pond Road	542+55	Whistle post	Remove and reset
Peakham Road to Horse Pond Road	548+80	Granite mile marker	Outside limit of work, no impact
Peakham Road to Horse Pond Road	548+90 to 579+20	Rail rest	Remove and reset
Peakham Road to Horse Pond Road	551+40	Block signal #M208	Remove and reset
Peakham Road to Horse Pond Road	555+65	Crossing sign	Remove and reset
Horse Pond Road to Union Avenue	569+15	Whistle post	Remove and reset
Horse Pond Road to Union Avenue	570+60	Rail rest	Remove and reset
Horse Pond Road to Union Avenue	589+00	Whistle post	Remove and reset
Horse Pond Road to Union Avenue	594+65 to 594+90	Rail rest	Remove and reset
Horse Pond Road to Union Avenue	596+90	Rail rest	Remove and reset
Horse Pond Road to Union Avenue	598+55	Signal E-2	Remove and reset
Horse Pond Road to Union Avenue	601+30	Granite mile marker	Remove and reset
Horse Pond Road to Union Avenue	*Sensitive Site*	South Sudbury Station	No impact. Signage and fencing will be installed to protect during construction.
Route 20 to Landham Road	712+20	Boston and Maine Railroad Section Tool House (SUD.282)	Revised design to avoid. Signage and fencing will be installed to protect during construction.
Route 20 to Landham Road	712+65	Whistle post	Remove and reset
Route 20 to Landham Road	725+50	Massachusetts Central Railway Bridge 127 (SUD.901)	Replace to support Mass Central Rail Trail. Photographic documentation of existing bridge will be provided to Massachusetts Historical Commission.
Route 20 to Landham Road	736+50	Signal tower	Remove and reset
Route 20 to Landham Road	743+60 to 744+10	Rail rest	Remove and reset
Route 20 to Landham Road	751+50	Granite mile marker	Outside limit of work, no impact
Landham Road to Sudbury Substation	*Sensitive Site*	East Sudbury Station	Revised design to avoid excavation. Geotextile fabric and fill will be placed over portion of site within limit of grading. Signage and fencing will be installed to protect during construction.

EVERSOURCE

SUDBURY-HUDSON
TRANSMISSION LINE RELIABILITY PROJECT
75% DESIGN SUBMITTAL

INDEX



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VANASSE HANGEN BRUSTLIN, INC.
WATERTOWN, MASSACHUSETTS

0 5000 10000 15000 20000
SCALE: 1" = 5000'

REFERENCE MANUALS
THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
TITLE SHEET & INDEX
PLAN 1 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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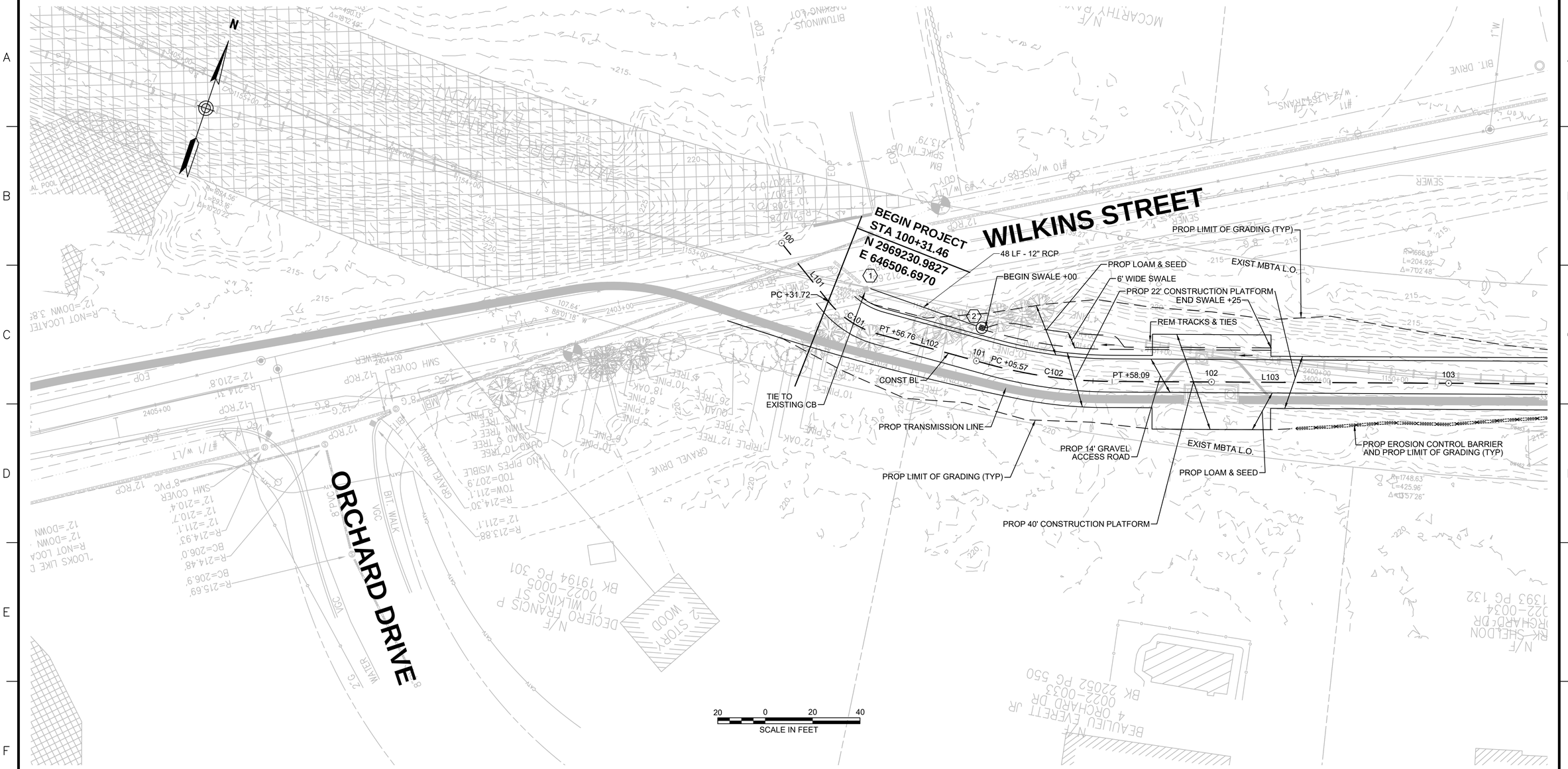

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
1	EX CB	STA 100+39, 15.5' LT	212.68 (EX)	209.00' (2)	208.9' (EX)	
2	SHALLOW CB	STA 100+99, 14.1' LT	212.55		209.60'	SEE CONSTRUCTION DETAIL ON SHEET 112

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

PLAN 23 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

CONT. ON SHEET 23

CONT. BELOW

LIMIT OF 100' BUFFER ZONE

LIMIT OF 200' RIVERFRONT AREA

BORDERING LAND SUBJECT TO FLOODING (BLSF) FEMA ZONE AE

DELINEATED TOP OF BANK

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

UNNAMED PERENNIAL STREAM

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP 14' GRAVEL ACCESS ROAD

PROP 22' CONSTRUCTION PLATFORM

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

REM TRACKS & TIES

CONST BL

RET 30" CLAY CULVERT #132A

PROP TRANSMISSION LINE

27 SF PERMANENT WETLAND FILL

POTENTIAL WETLAND MITIGATION AREA, 571 SF

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

SCALE IN FEET

NO IMPACT TO BLSF - ABOVE FLOODPLAIN ELEVATION SEE STA 107+50 TO STA 109+50 IN CROSS-SECTIONS FOR MORE INFORMATION

CONT. ABOVE

CONT. ON SHEET 25

PROP 18' CONSTRUCTION PLATFORM

PC +21.25

BEGIN SWALE +00

PROP CHECK DAM

APX 200'RA

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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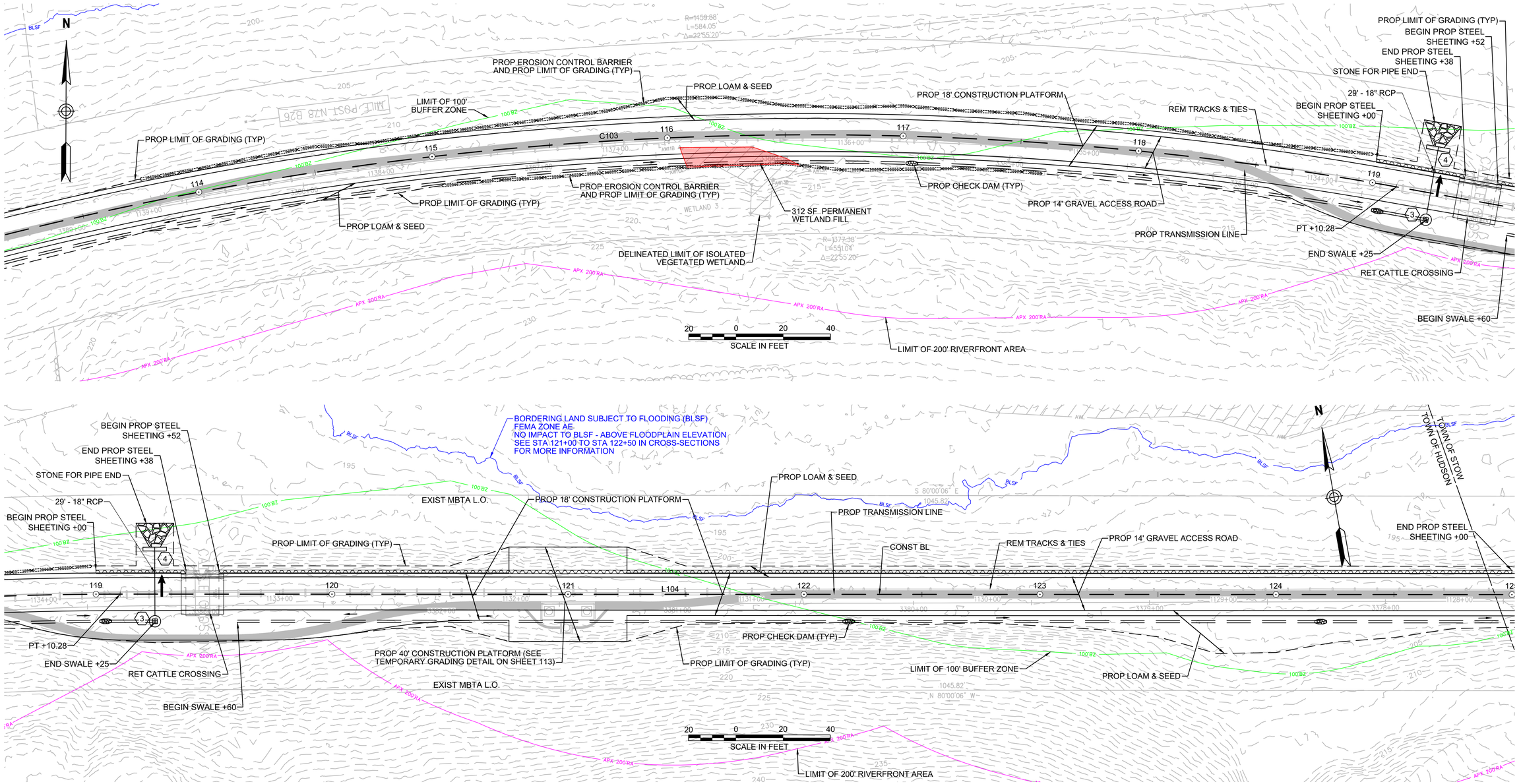

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
3	CB	STA 119+25, 11.5' RT	207.24		199.17'	
4	Concrete Headwall	STA 119+25, 19.1' LT			197.91'	12" REVEAL

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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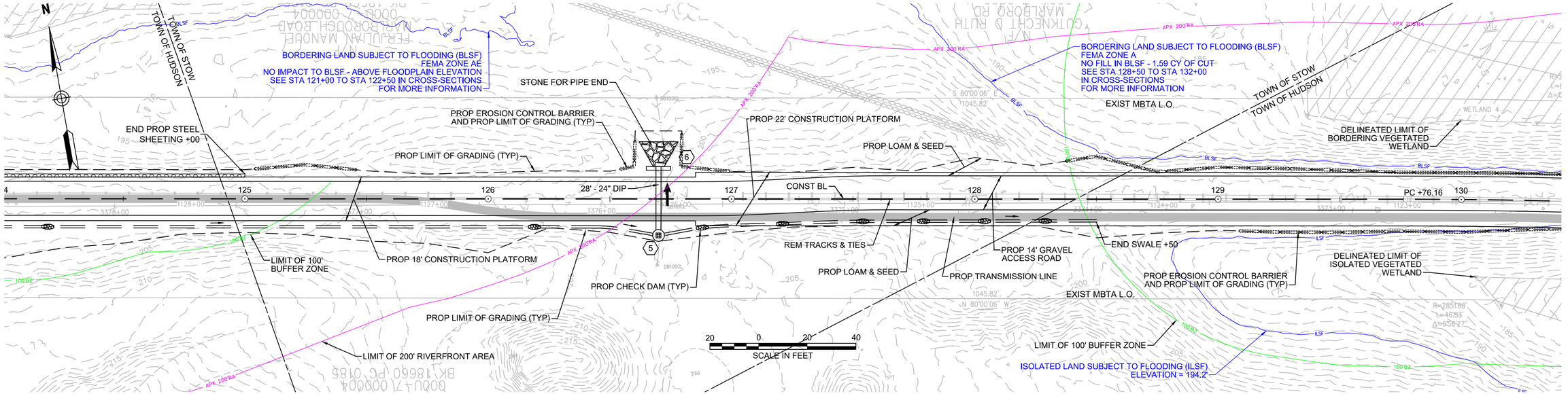

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
5	SHALLOW CB	STA 126+70, 15.0' RT	201.58		198.10'	SEE CONSTRUCTION DETAIL ON SHEET 112
6	Concrete Headwall	STA 126+70, 13.3' LT			197.61'	12" REVEAL

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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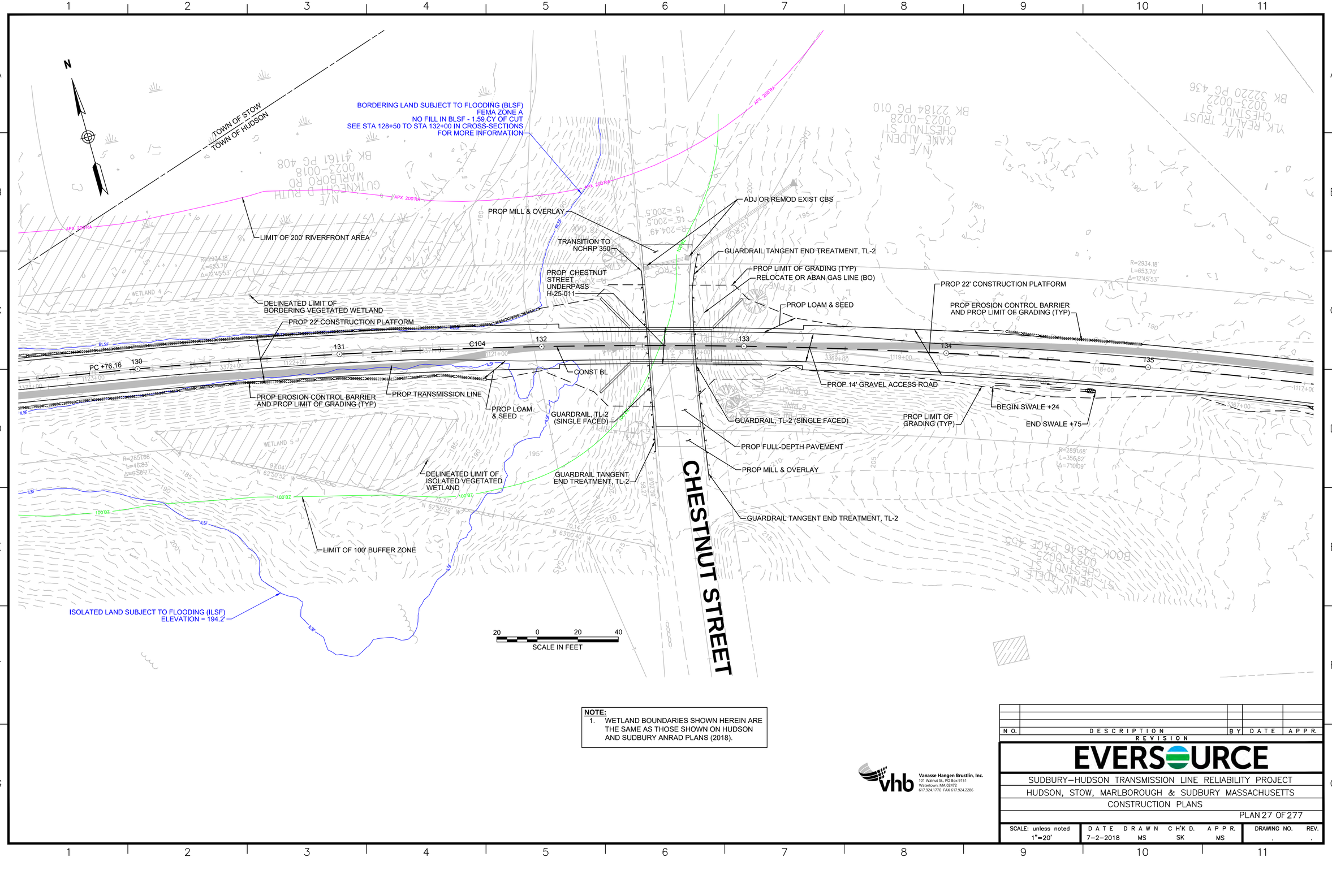

CONT. ON SHEET 26

CONT. ON SHEET 28

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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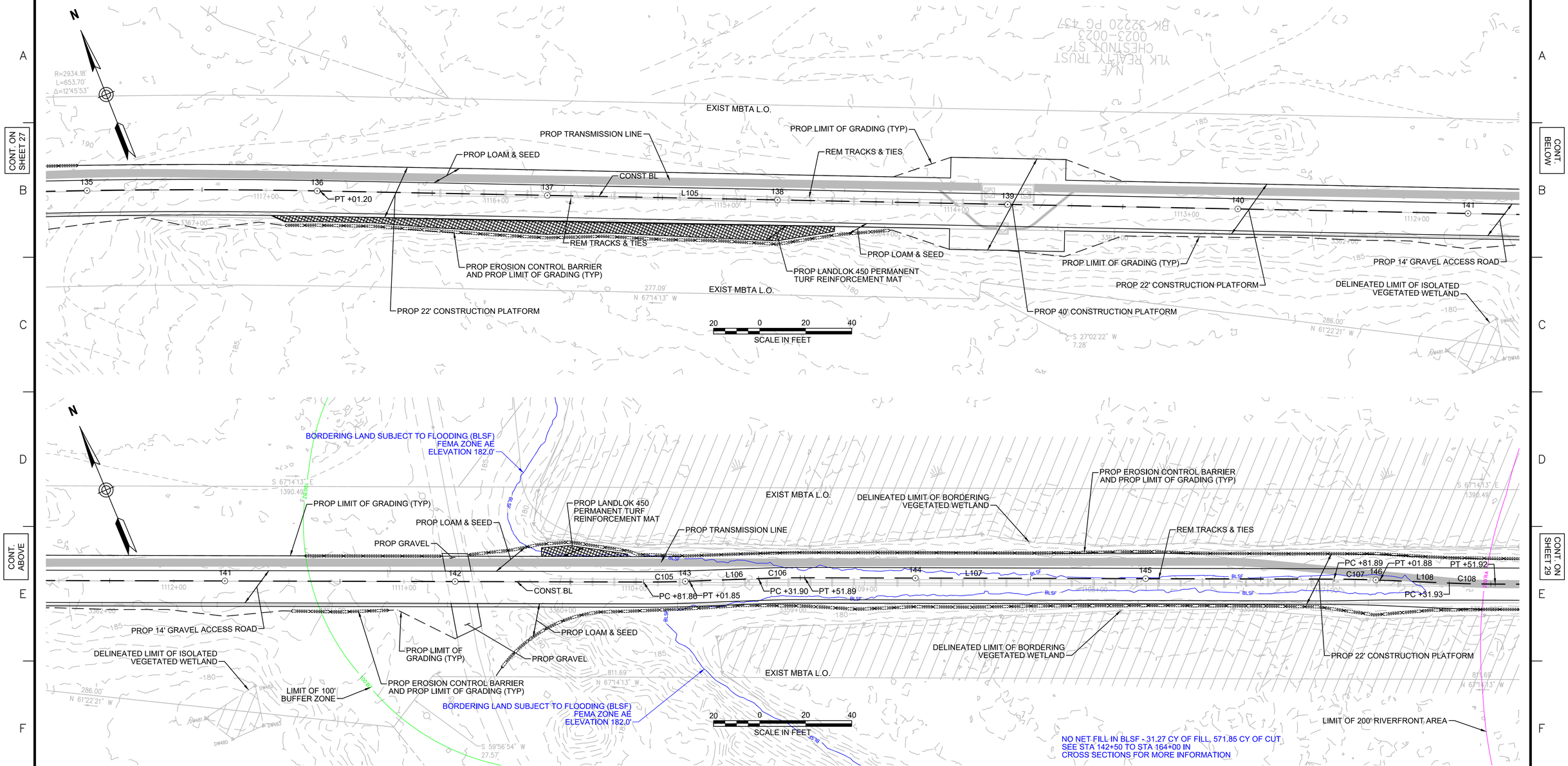

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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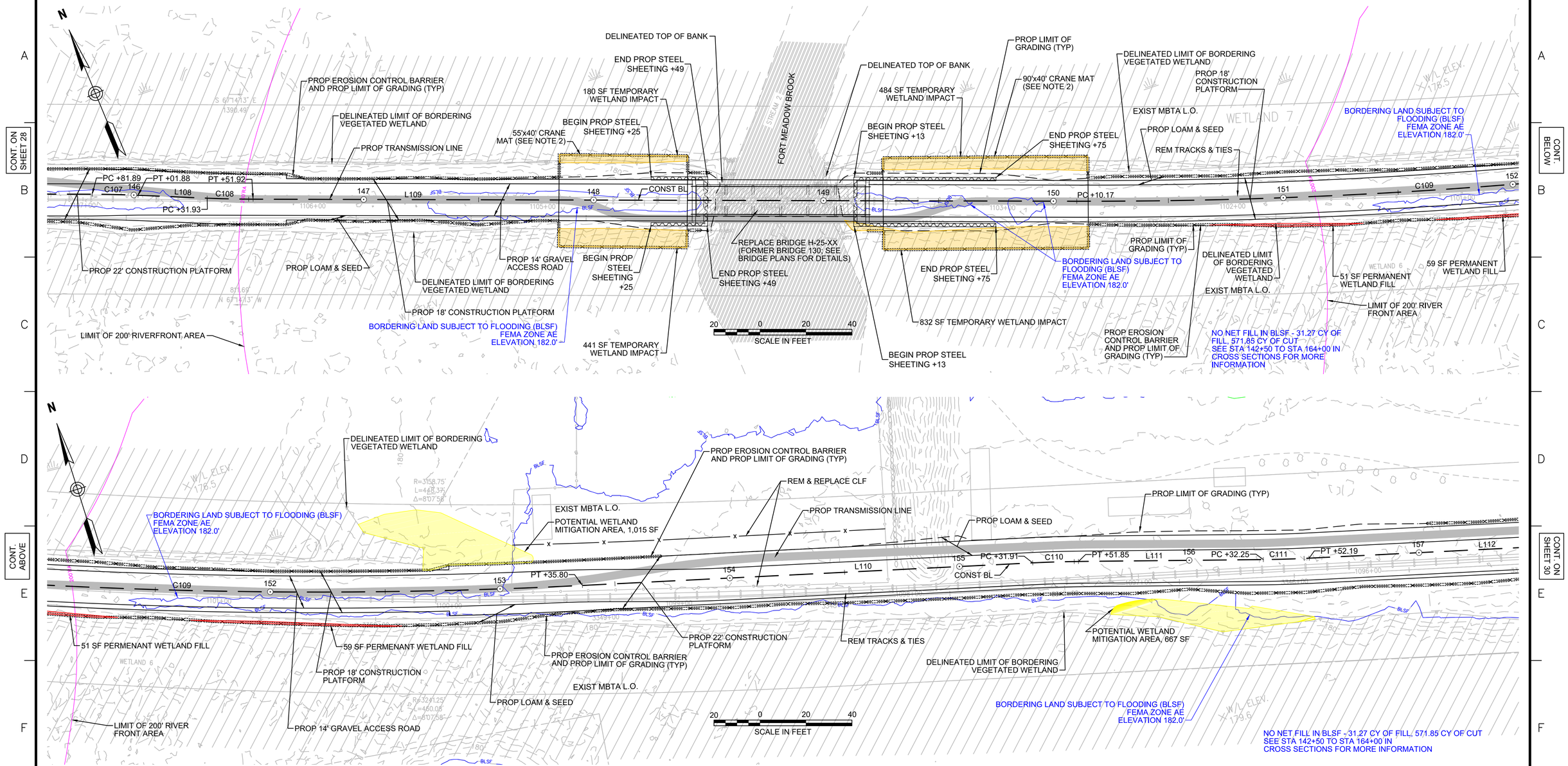

NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.

NO.	DESCRIPTION	BY	DATE	APPR.

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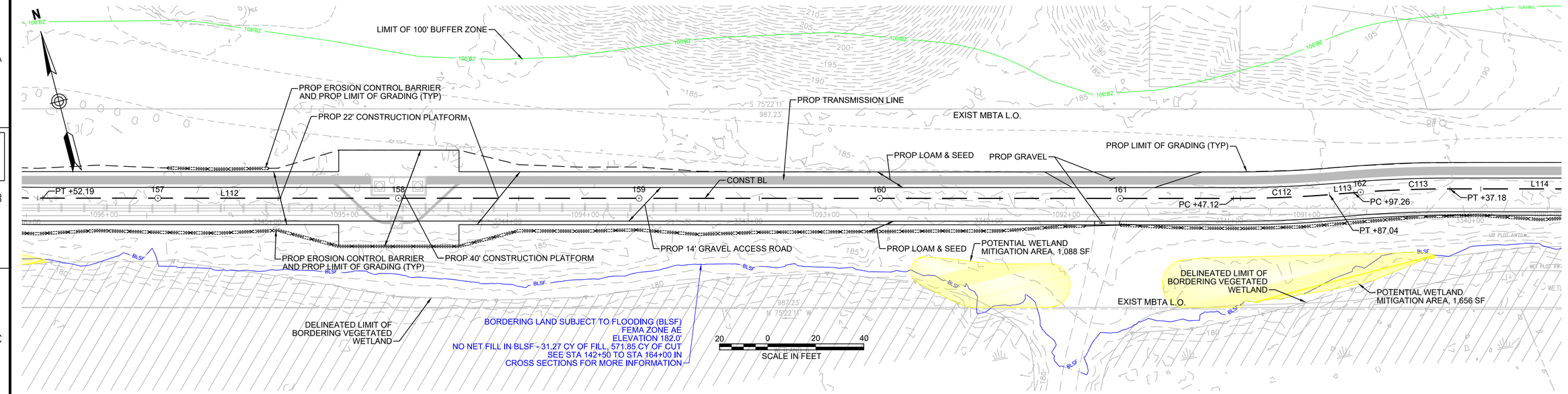

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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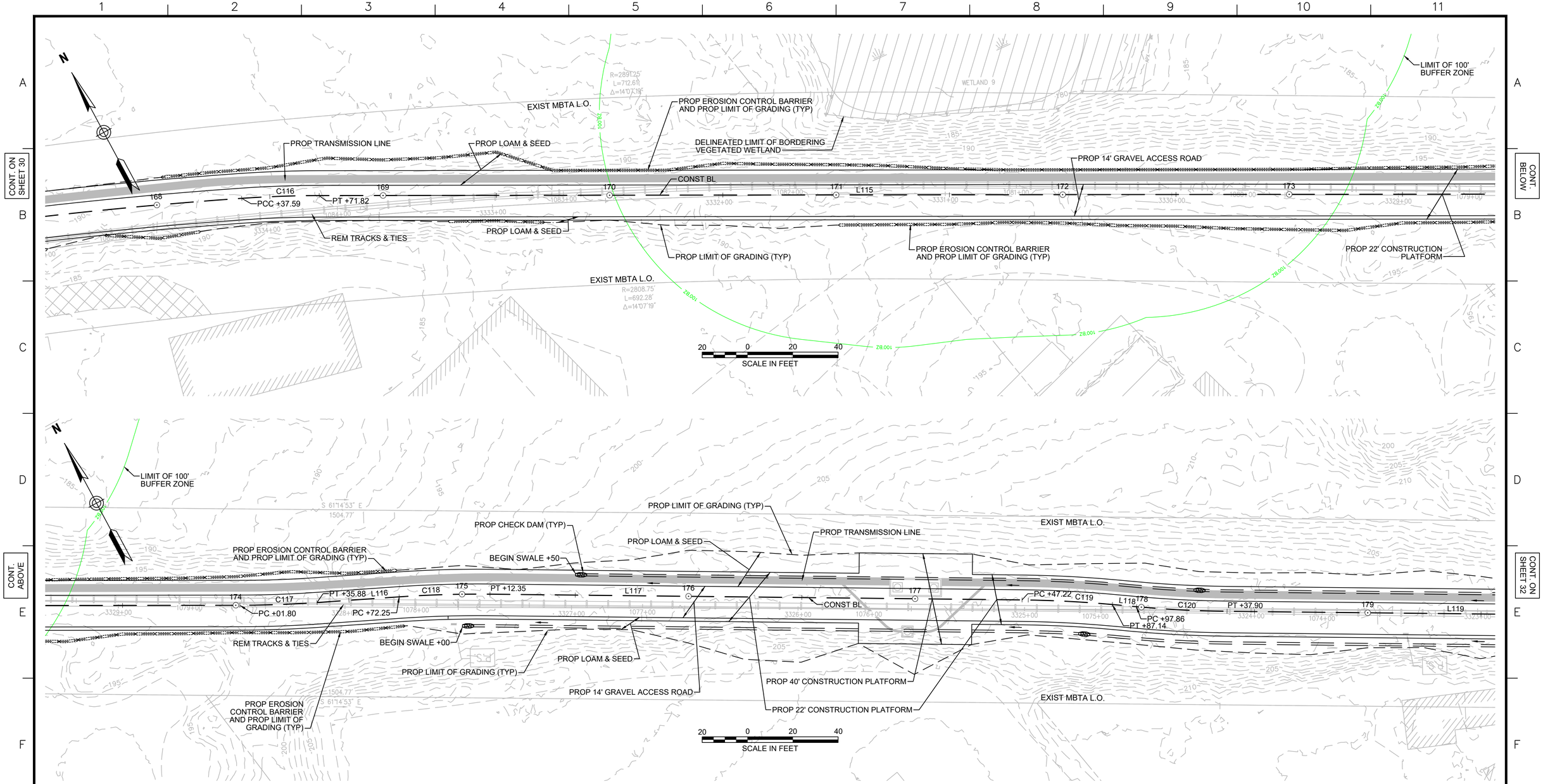

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APP'R.	DRAWING NO.	REV.
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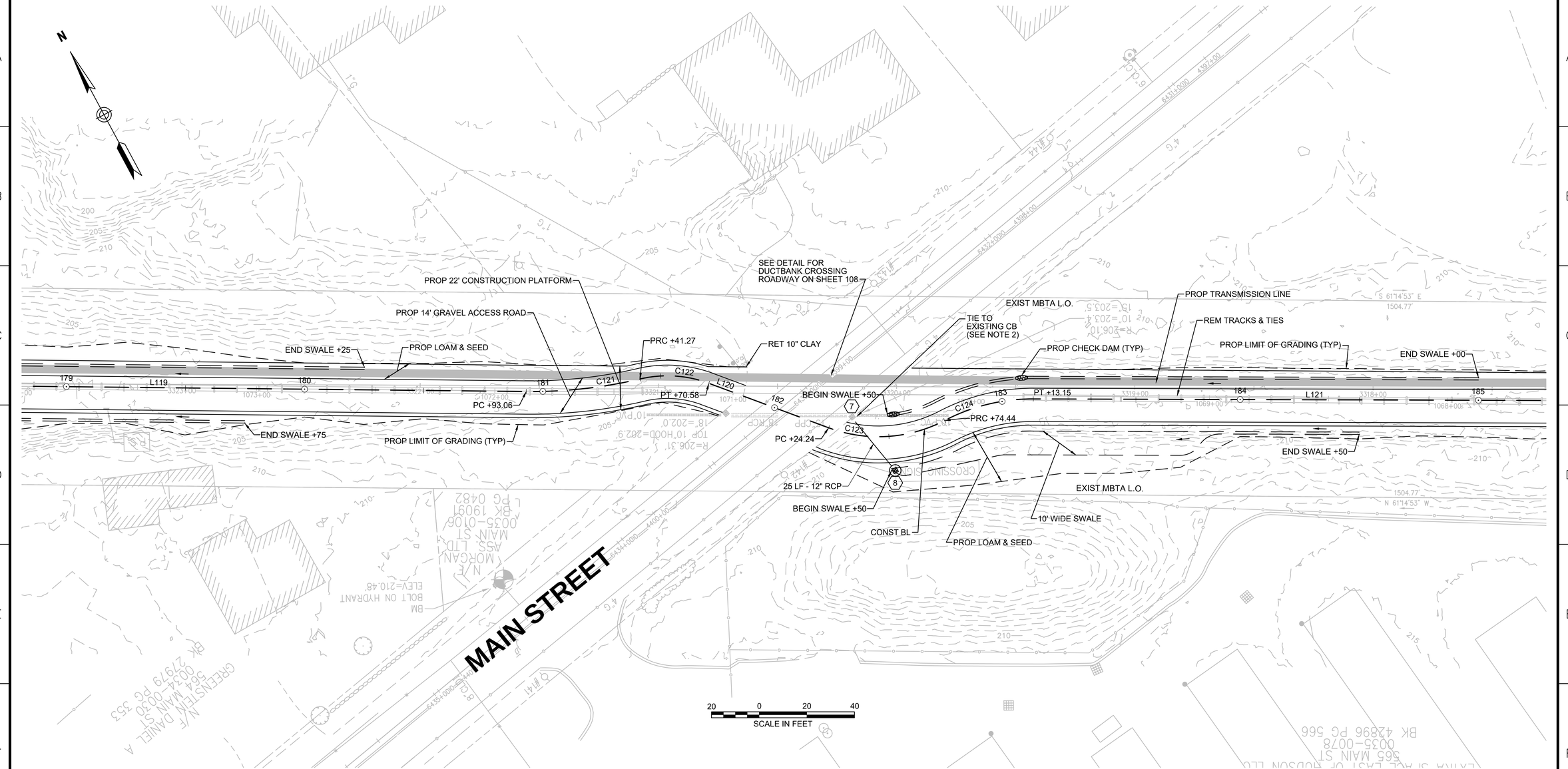

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
7	EX CB	STA 182+32, 6.9' RT	206.10 (EX)	203.90' (8)	203.5 (EX)	
8	SHALLOW CB	STA 182+55, 15.3' RT	205.44		203.50'	SEE CONSTRUCTION DETAIL ON SHEET 112

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO VERIFY EXISTING DRAINAGE DISCHARGE PRIOR TO CONSTRUCTION.

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NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 32 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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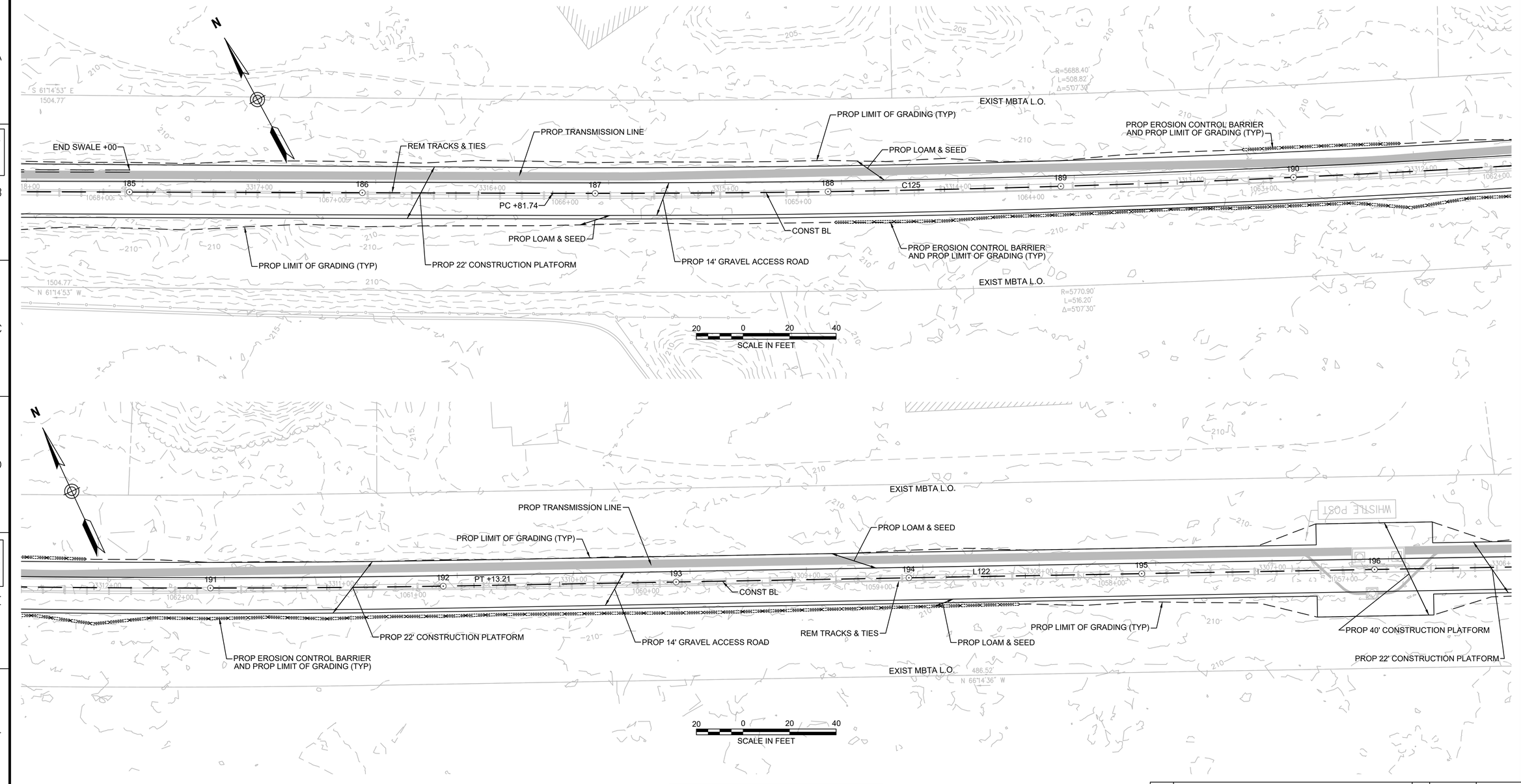

NOTE:

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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PLAN 33 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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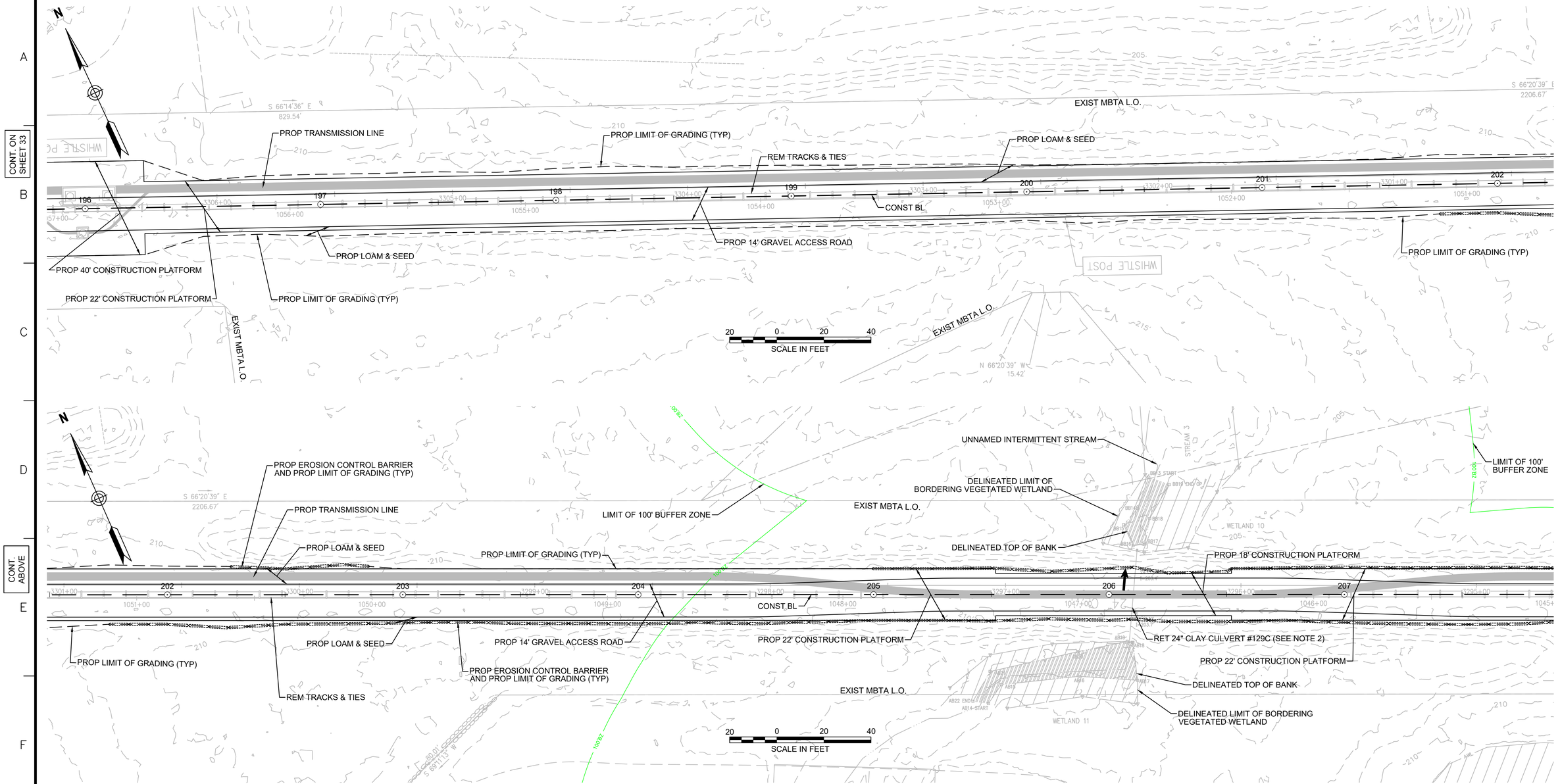

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO CUT TREE ON NORTHEAST CORNER OF PIPE. NO GRUBBING TO BE PERFORMED OUTSIDE OF LIMITS OF GRADING.

NO.	DESCRIPTION	BY	DATE	APPR.
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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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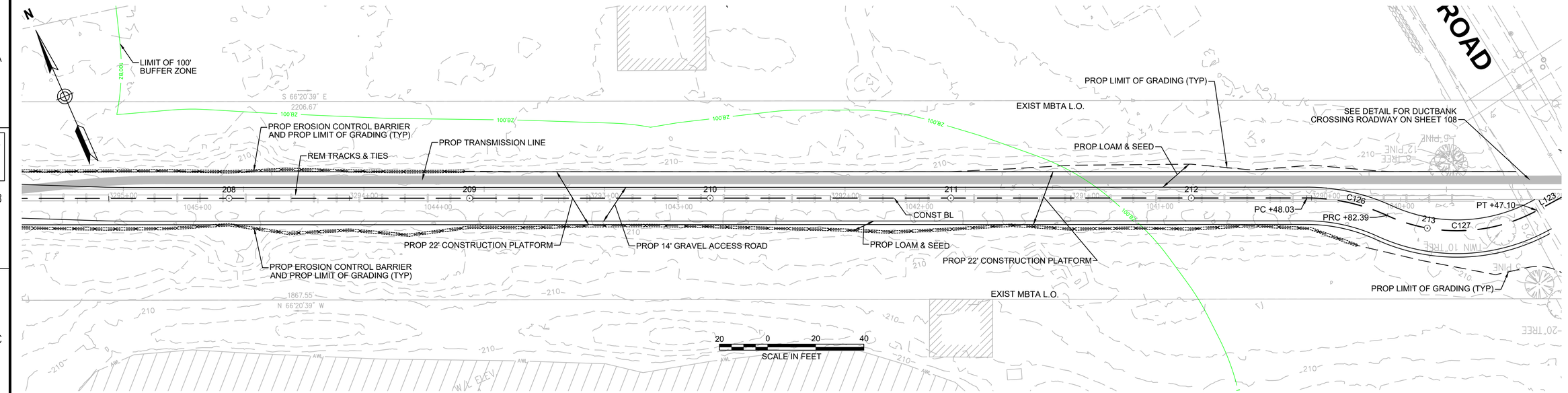

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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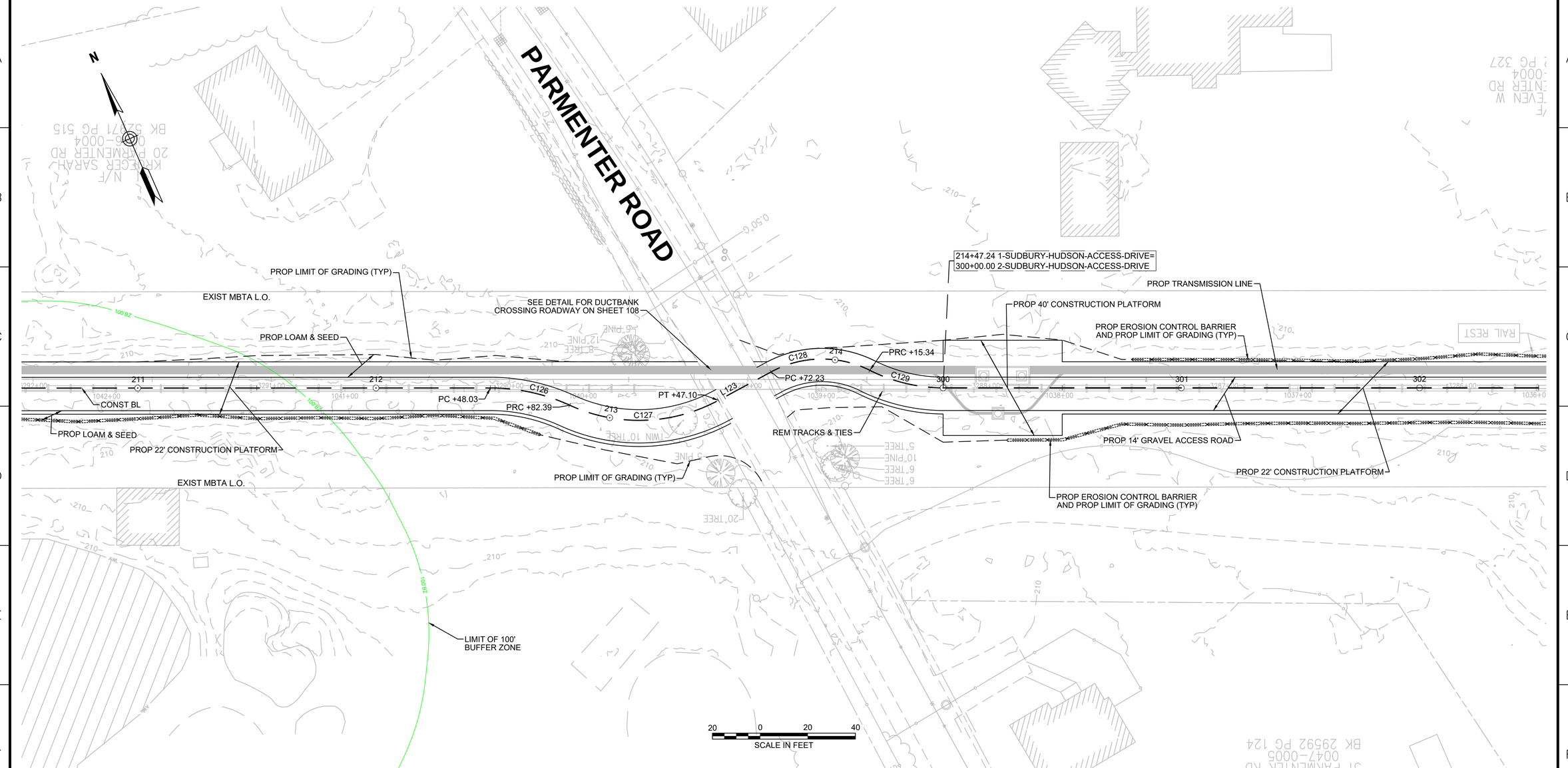

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

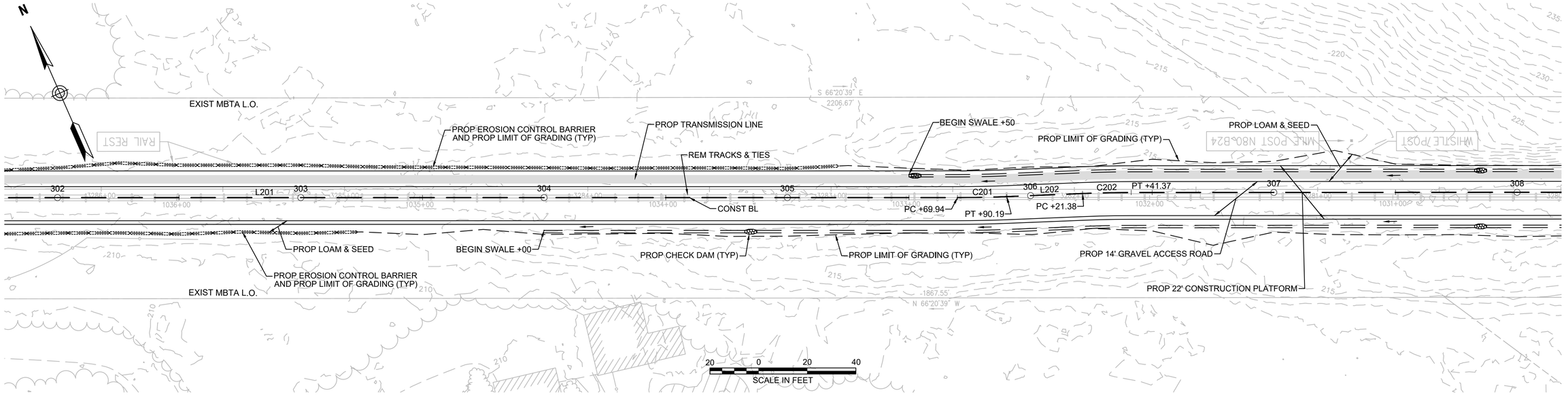
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

PLAN 36 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

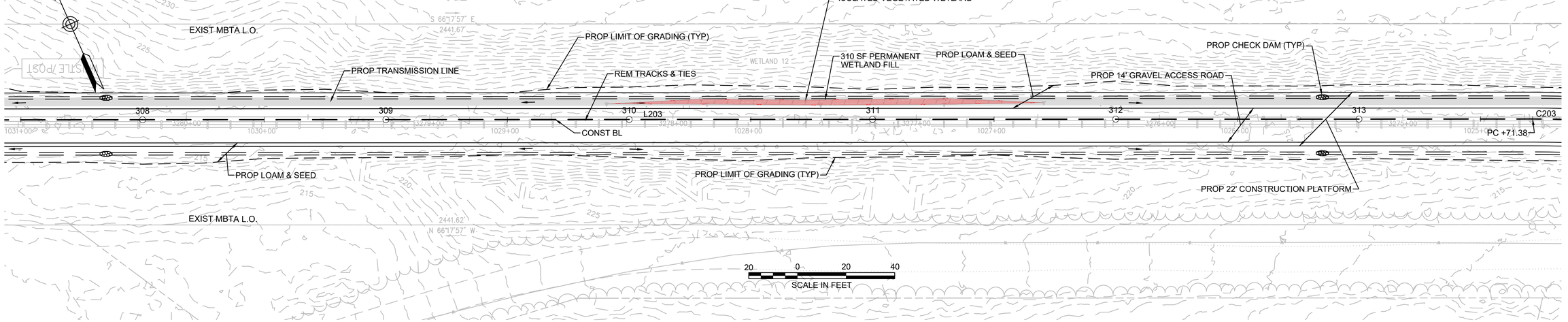
CONT. ON SHEET 36

CONT. BELOW



CONT. ABOVE

CONT. ON SHEET 38



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 37 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

CONT. ON SHEET 37

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP TRANSMISSION LINE

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

END SWALE +25

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

C203 PC +71.38

314

L204 PT +91.37

C204 PC +21.05

PT +40.99

315

316

317

318

319

CONST BL

REM TRACKS & TIES

END SWALE +75

PROP CHECK DAM (TYP)

PROP 40' CONSTRUCTION PLATFORM

PROP LOAM & SEED

PROP 14' GRAVEL ACCESS ROAD

PROP LIMIT OF GRADING (TYP)

EXIST MBTA L.O.

20 0 20 40

SCALE IN FEET

CONT. ABOVE

EXIST MBTA L.O.

PROP TRANSMISSION LINE

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

REM TRACKS & TIES

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

319

320

321

322

323

324

325

CONST BL

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP 14' GRAVEL ACCESS ROAD

LIMIT OF 100' BUFFER ZONE

100'BZ

BORDERING LAND SUBJECT TO FLOODING (BLSF) FEMA ZONE A

EXIST MBTA L.O.

S 66°17'57" E 2441.67'

N 66°17'57" W 2441.62'

BM ELEV=202.07' STONE BOUND

20 0 20 40

SCALE IN FEET

CONT. ON SHEET 39

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 38 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

NO IMPACTS TO BLSF - NO FILL IN FLOODPLAIN
SEE STA 326+00 TO STA 331+50 IN CROSS- SECTIONS FOR MORE INFORMATION

BORDERING LAND SUBJECT TO FLOODING (BLSF) FEMA ZONE A

EXIST MBTA L.O.

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

PROP 22' CONSTRUCTION PLATFORM

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP TRANSMISSION LINE

PROP LOAM & SEED

CONST BL

REM TRACKS & TIES

PROP 14' GRAVEL ACCESS ROAD

L205

WETLAND 14

WETLAND 13

BLSF

S 66°17'57" E 2441.67'

N 66°17'57" W 2441.82'

CONT. ON SHEET 38

CONT. BELOW

CONT. ABOVE

CONT. ON SHEET 40

SCALE IN FEET

20 0 20 40

NO IMPACTS TO BLSF - NO FILL IN FLOODPLAIN
SEE STA 326+00 TO STA 331+50 IN CROSS- SECTIONS FOR MORE INFORMATION

LIMIT OF 100' BUFFER ZONE

PROP LIMIT OF GRADING (TYP)

PROP 40' CONSTRUCTION PLATFORM

S 66°16'51" E 2172.27'

N 66°16'51" W 2172.26'

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 39 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

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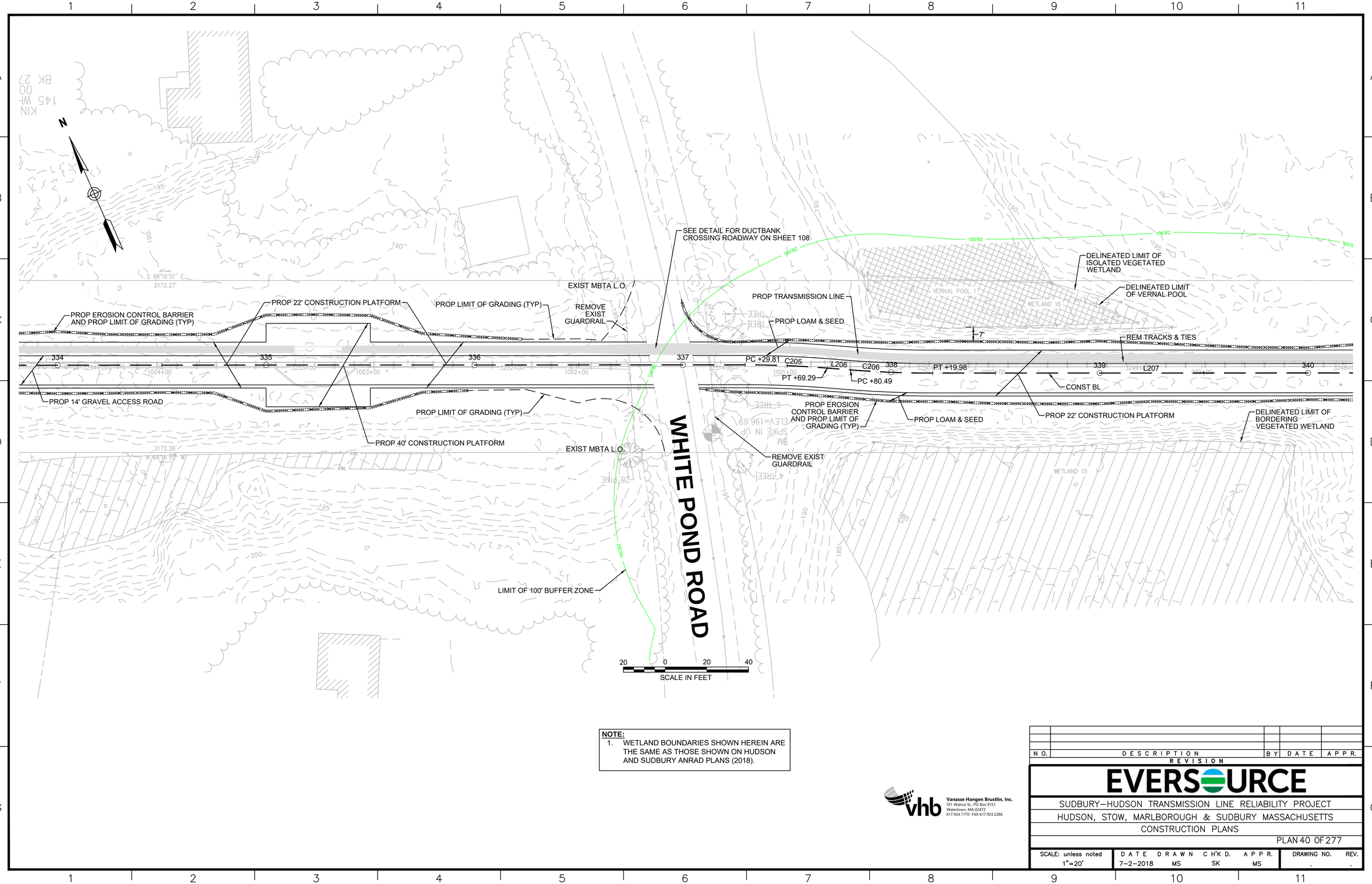

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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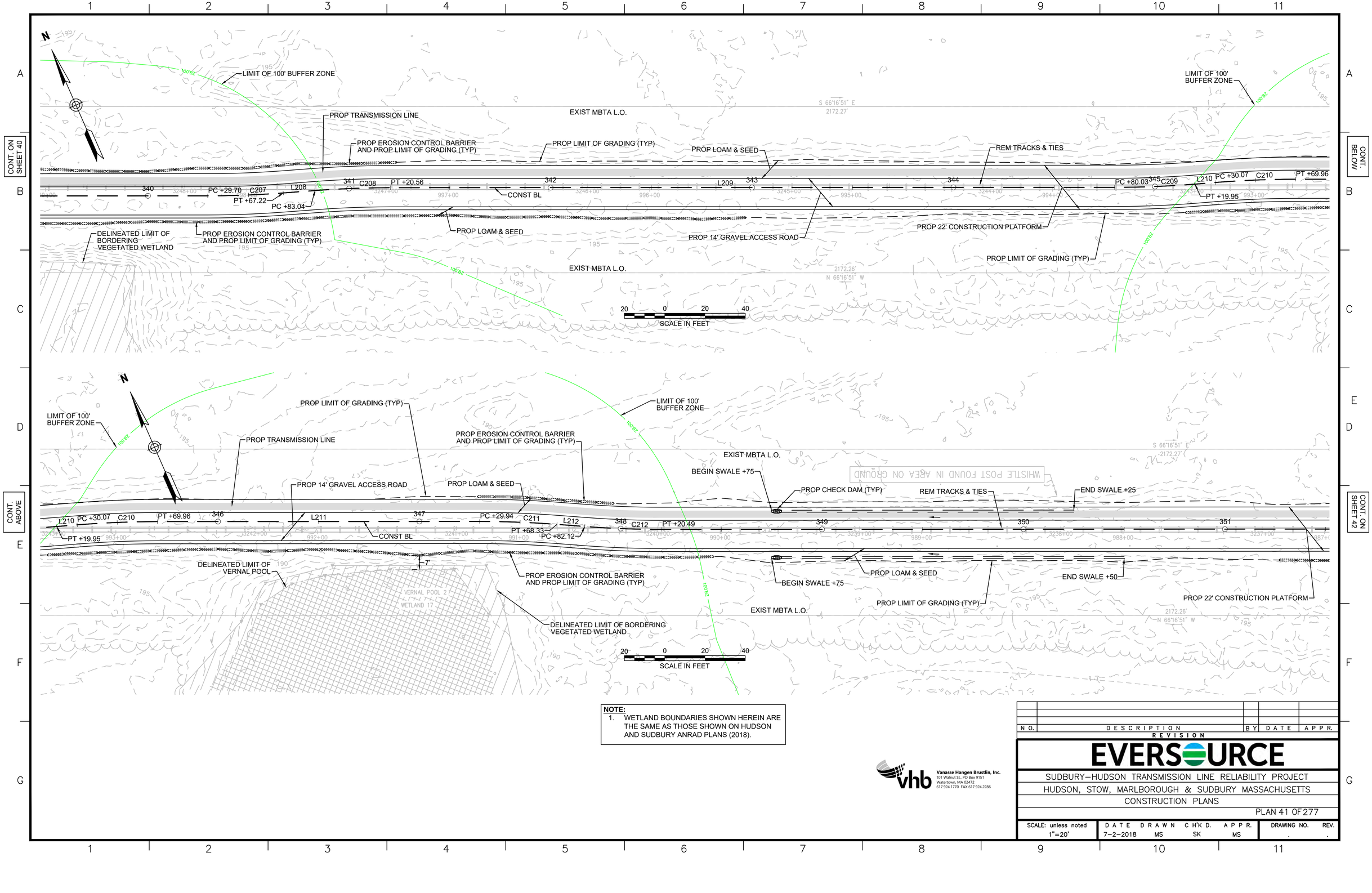
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 40 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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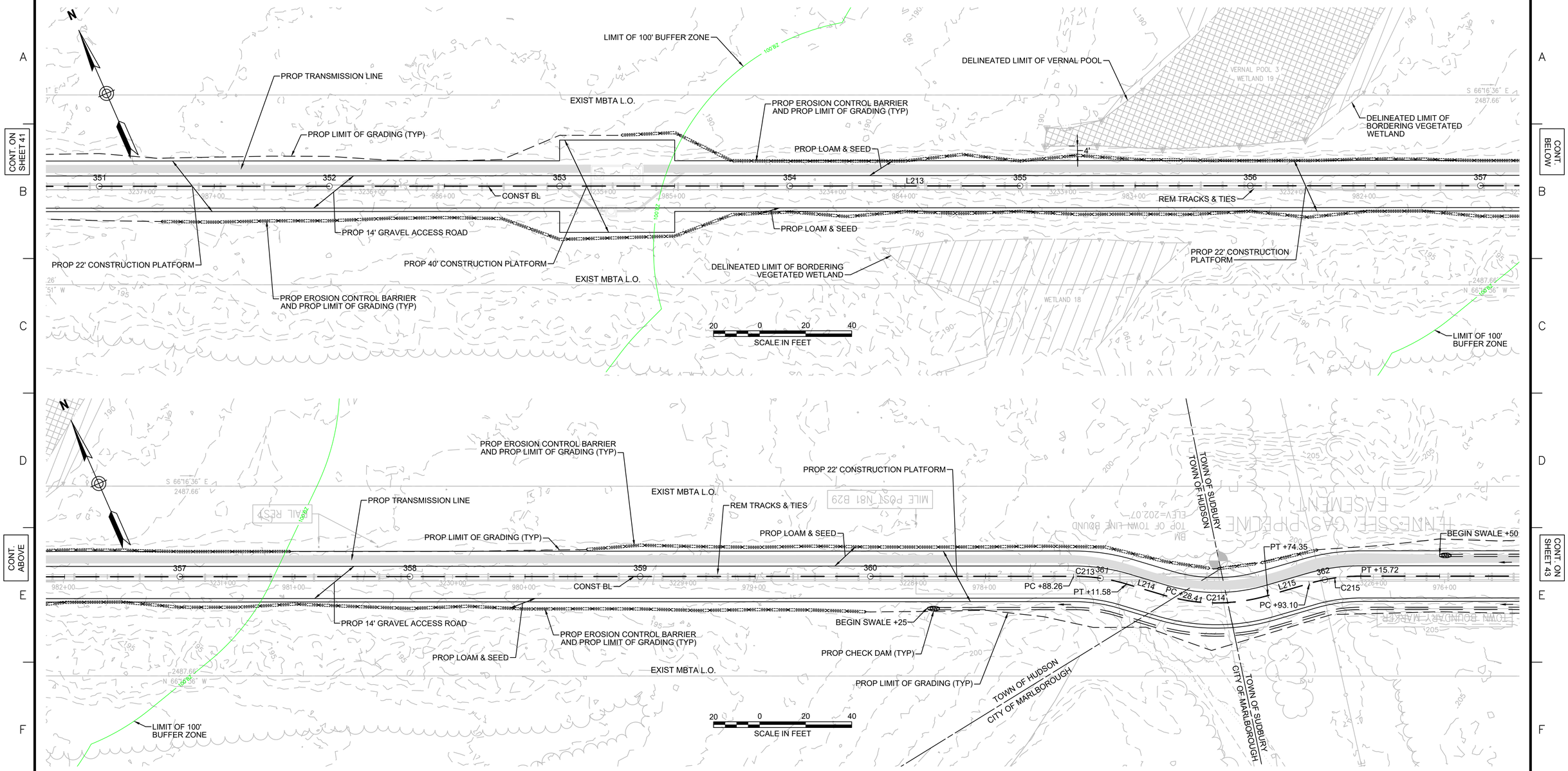
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 41 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

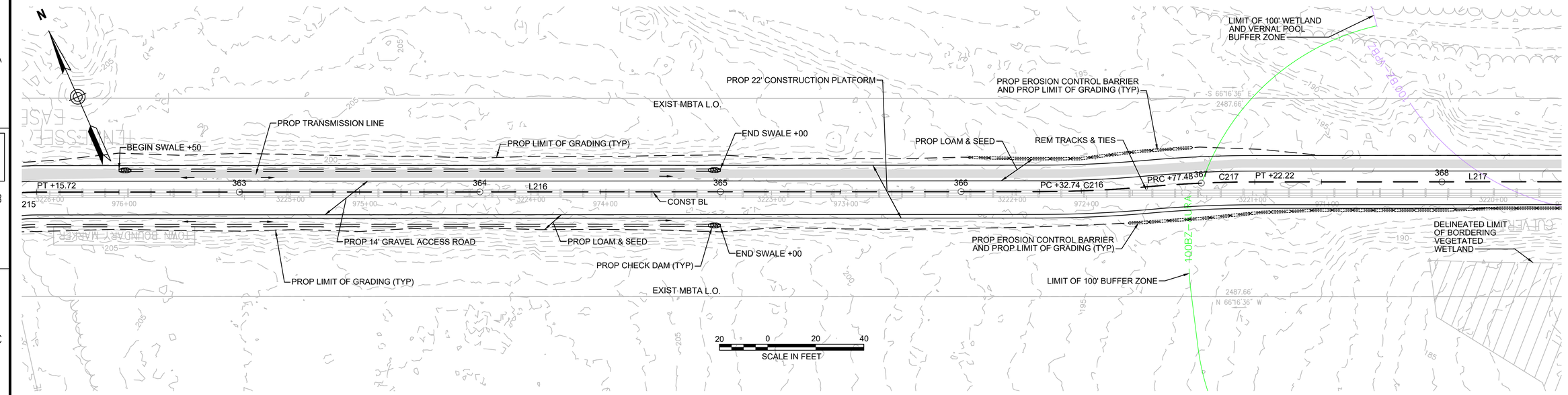
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

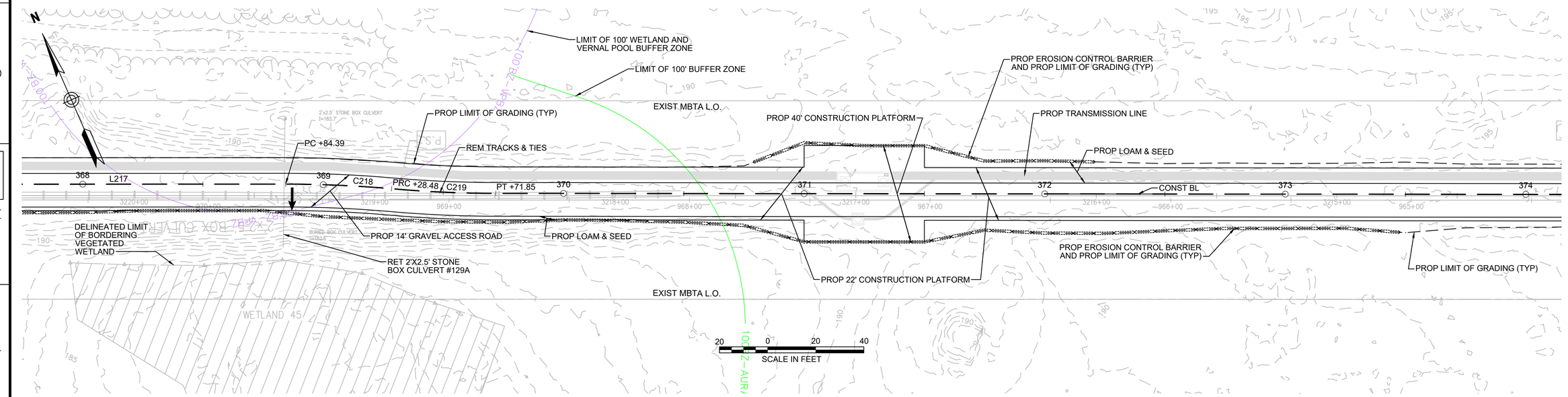
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 42 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.





NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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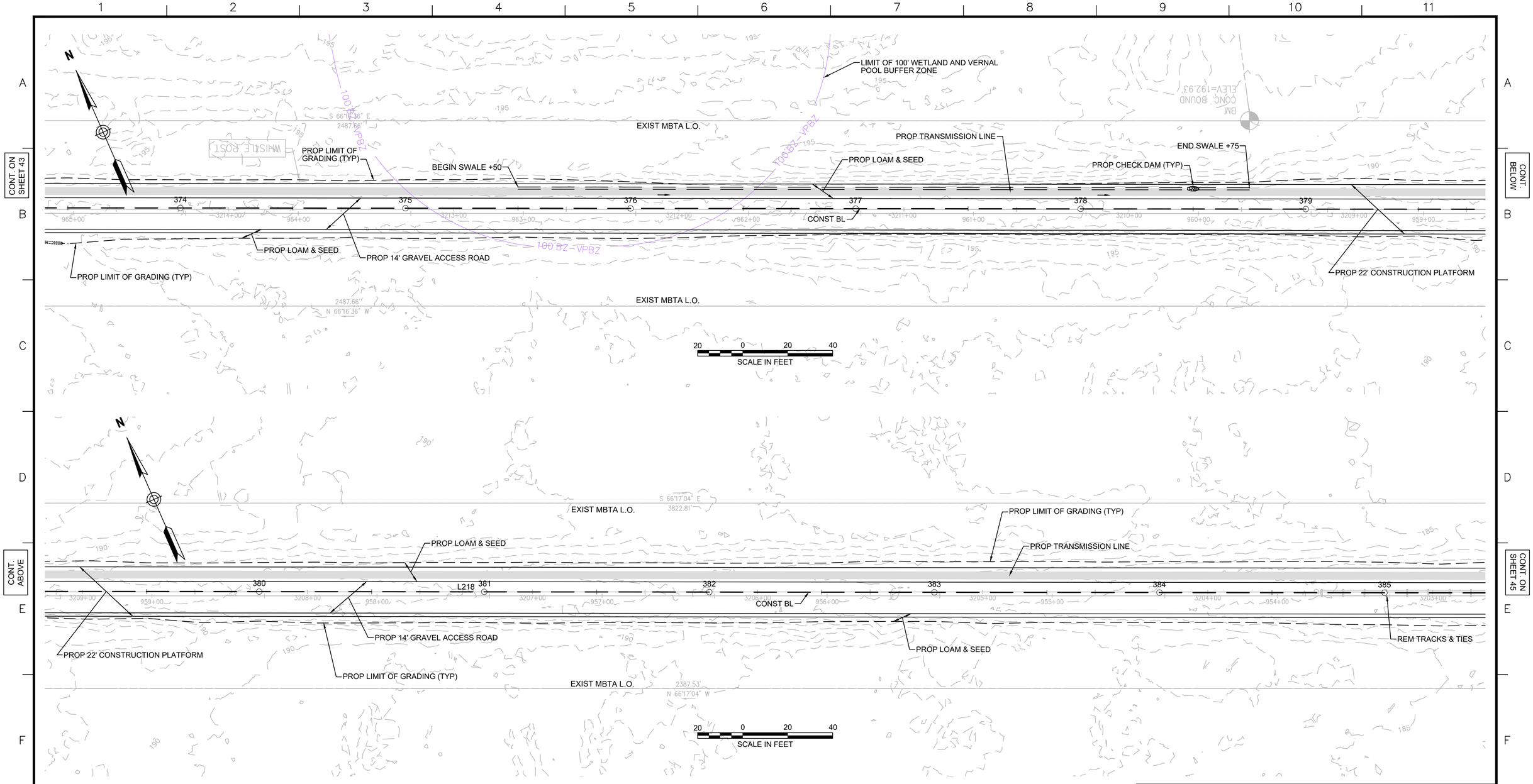
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 43 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 44 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

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CONT. ON SHEET 44

CONT. BELOW

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP TRANSMISSION LINE

385 386 387 388 389 390 391

CONST BL

REM TRACKS & TIES

PROP 14' GRAVEL ACCESS ROAD

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP 22' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

PROP 40' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

EXIST MBTA L.O.

20 0 20 40

SCALE IN FEET

LIMIT OF 200' RIVERFRONT AREA

100ft

EXIST MBTA L.O.

PROP TRANSMISSION LINE

PROP LIMIT OF GRADING (TYP)

REM TRACKS & TIES

BEGIN SWALE +00

PROP LOAM & SEED

PROP CHECK DAM (TYP)

391 392 PI +27.00 393 394 395 396

CONST BL

PROP 14' GRAVEL ACCESS ROAD

BEGIN SWALE +00

PROP LIMIT OF GRADING (TYP)

END SWALE +25

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

200 RA

LIMIT OF 100' BUFFER ZONE

EXIST MBTA L.O.

20 0 20 40

SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 46

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

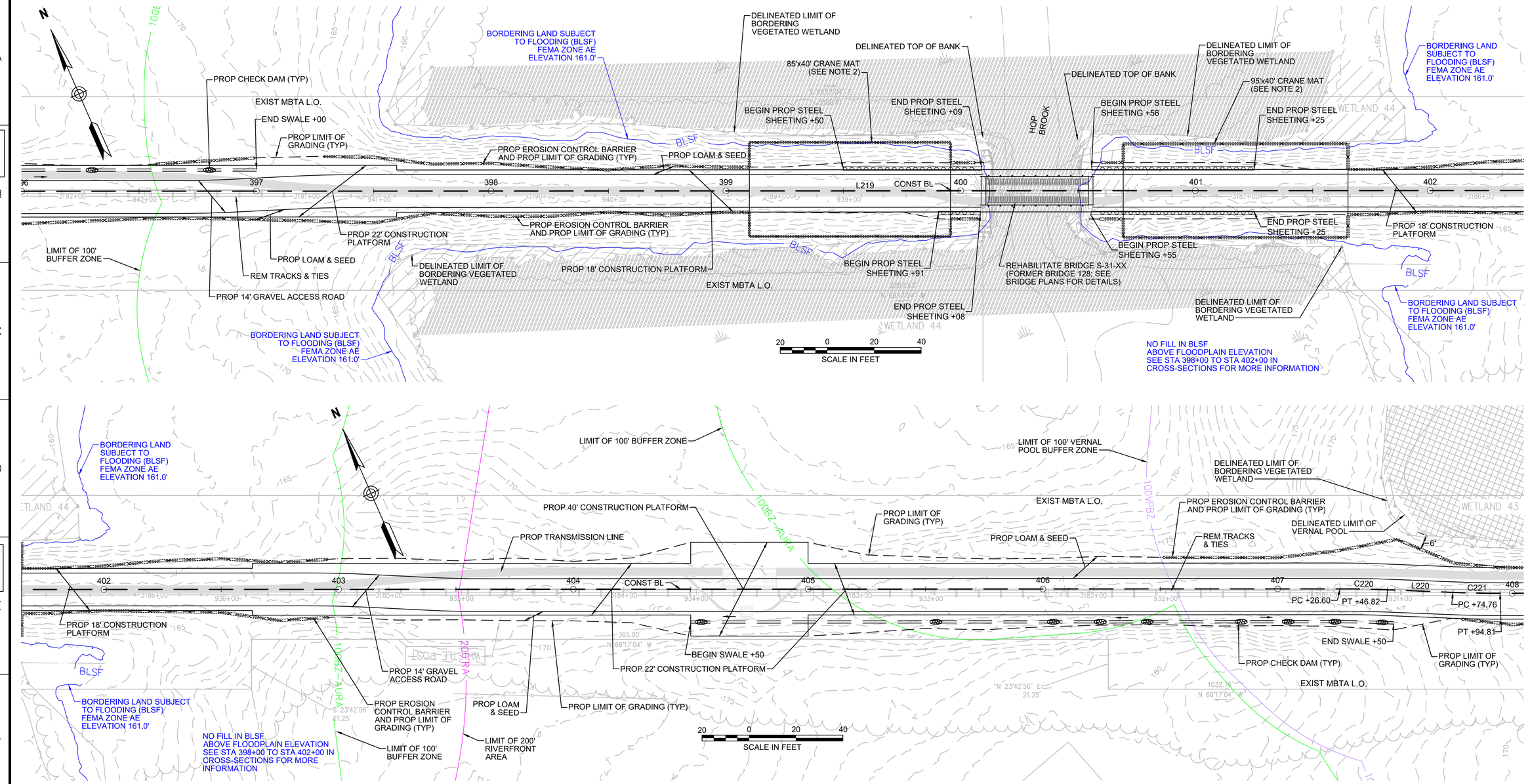
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 45 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.

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NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

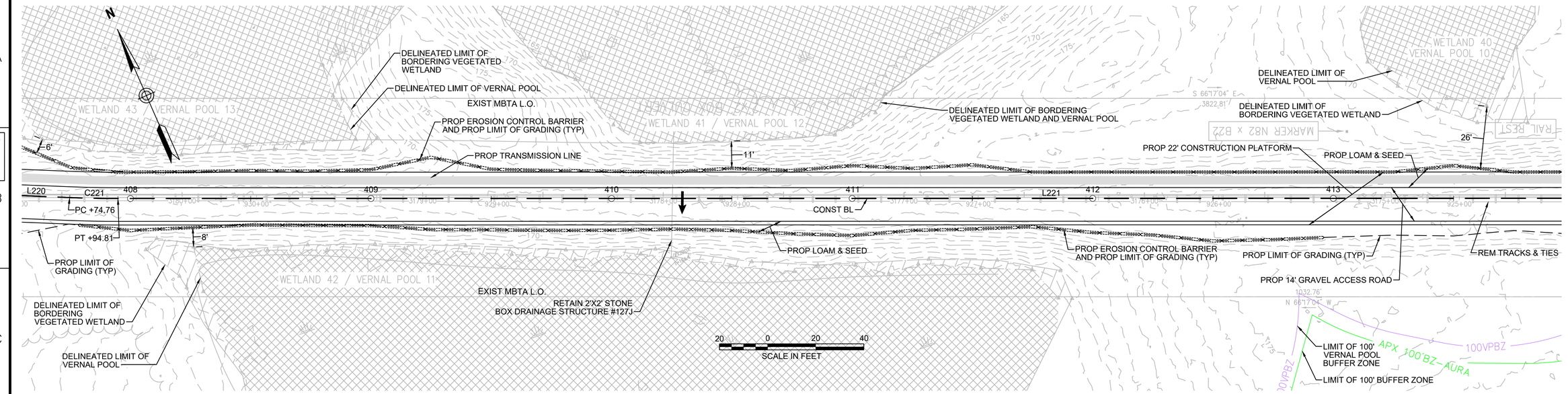
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 46 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.

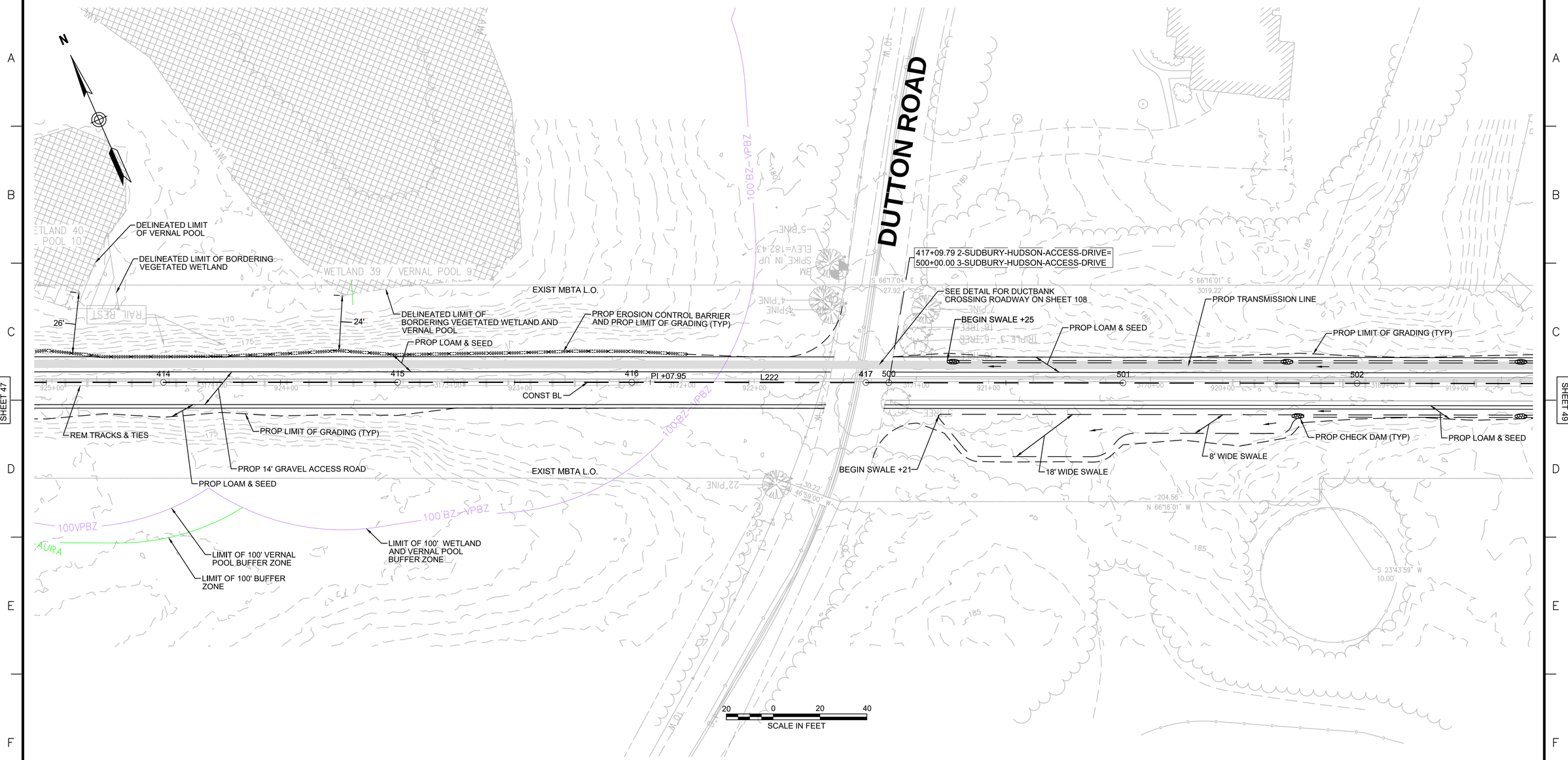
REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

PLAN 47 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

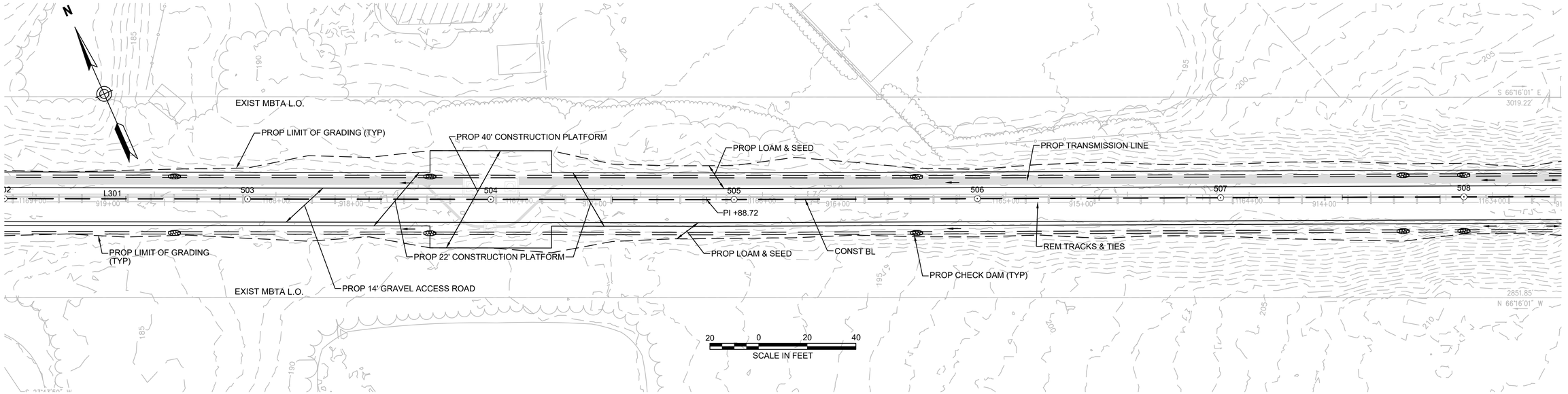
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 48 OF 277

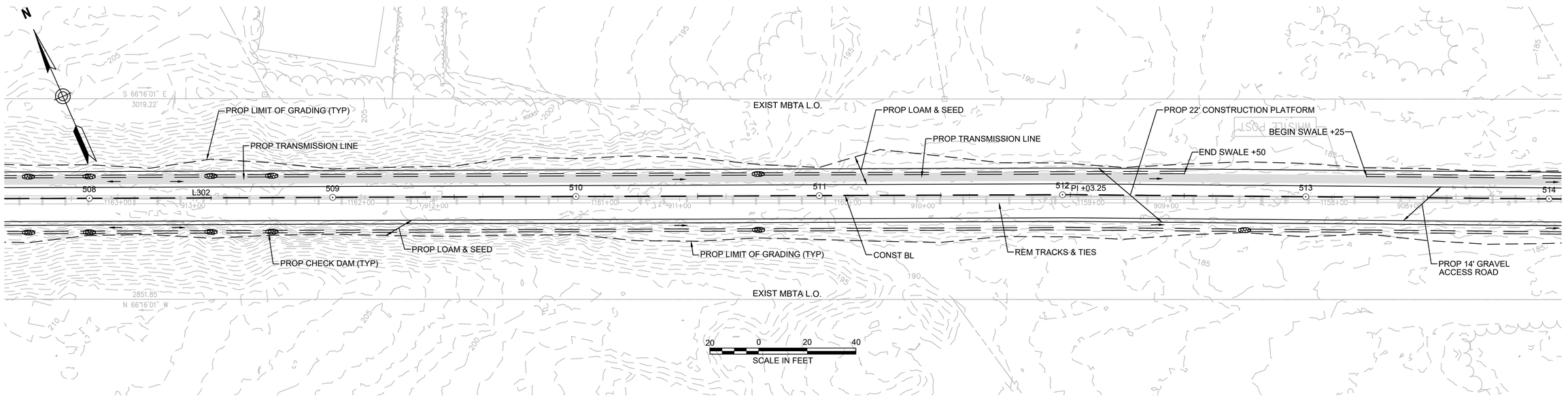
SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

CONT. ON SHEET 48



CONT. BELOW

CONT. ABOVE



CONT. ON SHEET 50

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.

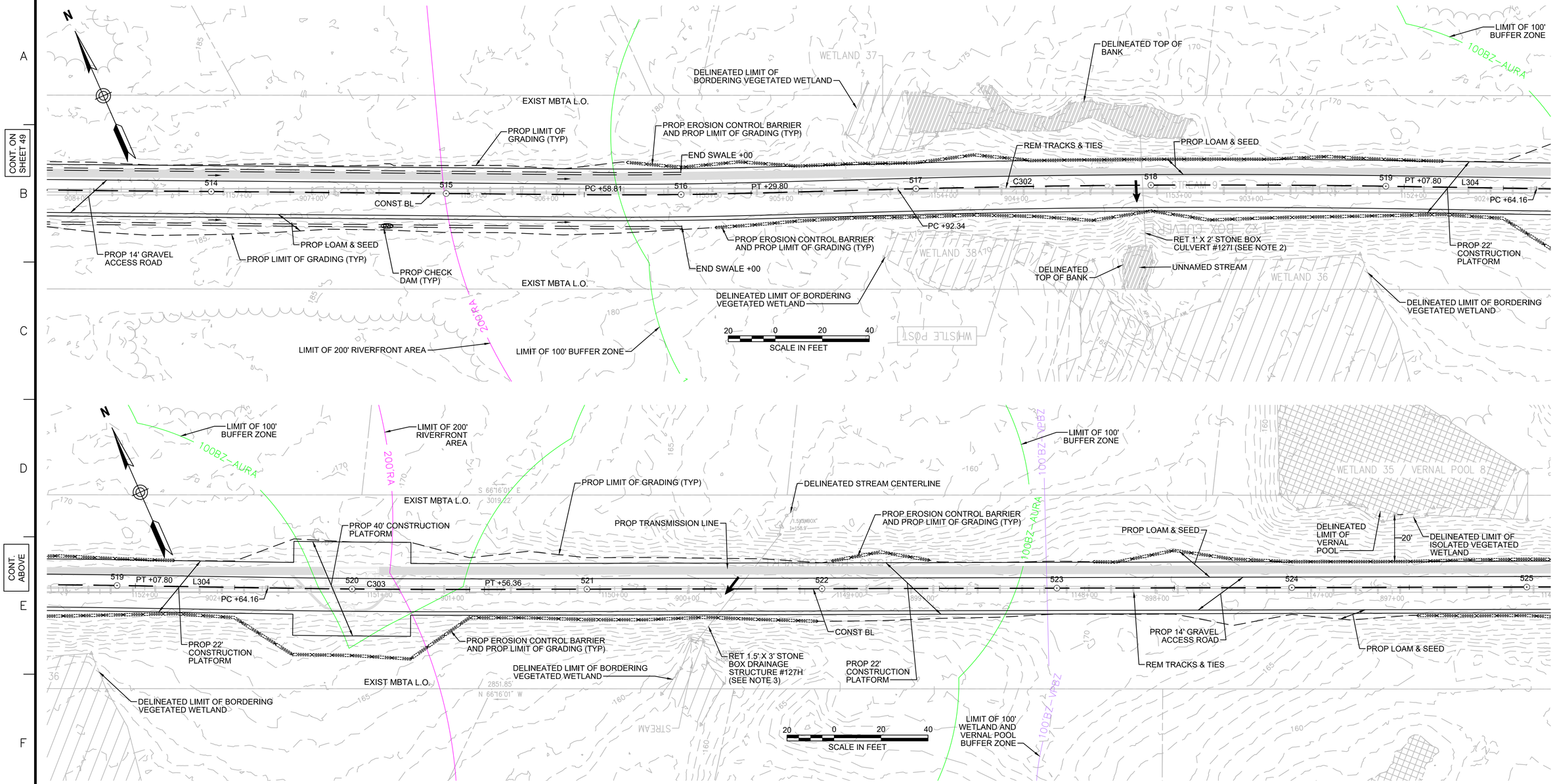
REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

PLAN 49 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO CLEAR OUT DEBRIS IN NORTH END OF STONE BOX CULVERT BY HAND.
3. CONTRACTOR TO CUT TWO 12" TREES ON SOUTHWEST WINGWALL OF STONE BOX DRAINAGE STRUCTURE. NO GRUBBING TO BE PERFORMED OUTSIDE OF LIMITS OF GRADING.

NO.	DESCRIPTION	BY	DATE	APPR.

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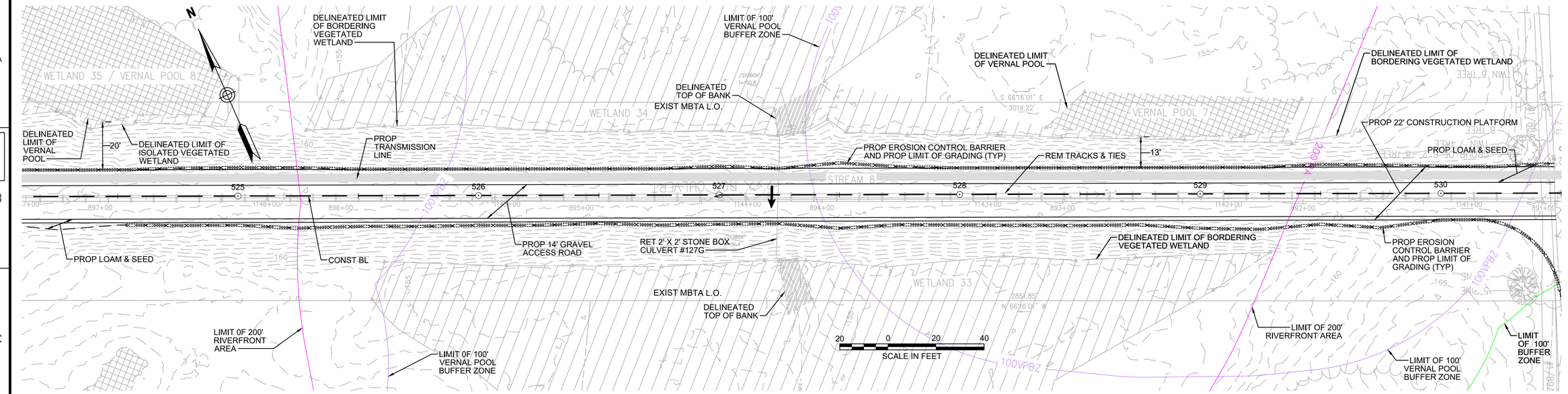
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 50 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.



CONT. ON SHEET 50

CONT. ON SHEET 52

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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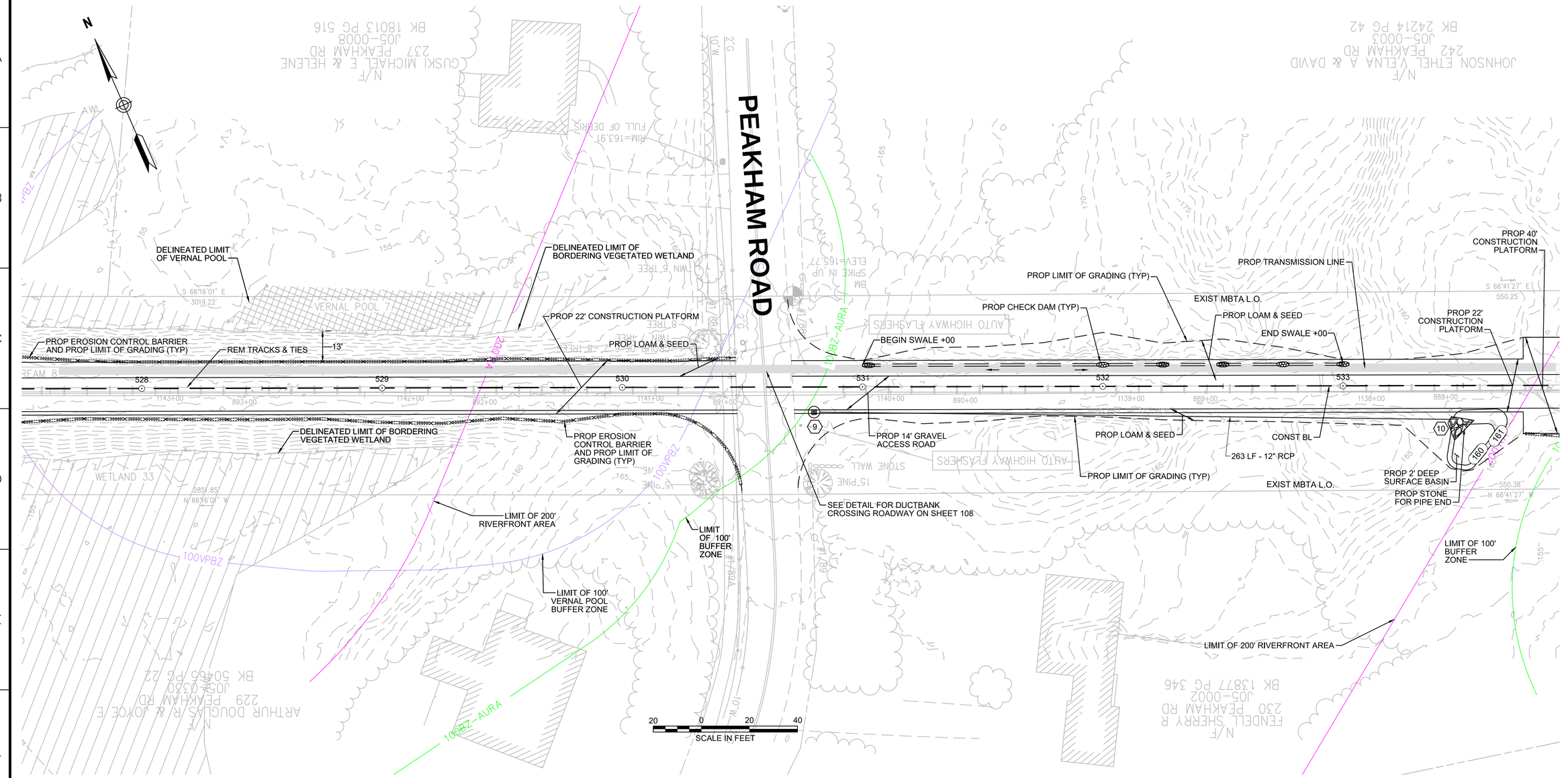
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 51 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.



DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
9	SHALLOW CB	STA 530+80, 10.4' RT	164.85		162.00'	SEE CONSTRUCTION DETAIL ON SHEET 112
10	FES	STA 533+46, 14.9' RT		160.50' (9)		

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.
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HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS
PLAN 52 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

CONT. ON SHEET 52

CONT. BELOW

N

LIMIT OF 200' RIVERFRONT AREA

LIMIT OF 100' BUFFER ZONE

PROP 40' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

WETLAND 32

WETLAND 31

CONST BL

PROP LOAM & SEED

PROP TRANSMISSION LINE

REM TRACKS & TIES

EXIST MBTA L.O.

BORDERING LAND SUBJECT TO FLOODING (BLSF) FEMA ZONE AE ELEVATION 148.6'

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

DELINEATED TOP OF BANK

RET 36" CORRUGATED METAL CULVERTS #127F

DUDLEY BROOK

BLSF

PROP 14' GRAVEL ACCESS ROAD

PROP 2' DEEP SURFACE BASIN

PROP STONE FOR PIPE END

100BZ-AURA

BORDERING LAND SUBJECT TO FLOODING (BLSF) FEMA ZONE AE ELEVATION 152.2' NO IMPACT TO BLSF - ABOVE FLOODPLAIN ELEVATION SEE STA 535+50 TO STA 542+50 IN CROSS-SECTIONS FOR MORE INFORMATION

NO IMPACT TO BLSF - ABOVE FLOODPLAIN ELEVATION SEE STA 535+50 TO STA 542+50 IN CROSS-SECTIONS FOR MORE INFORMATION

20 0 20 40
SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 54

200RA

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

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EVERSOURCE

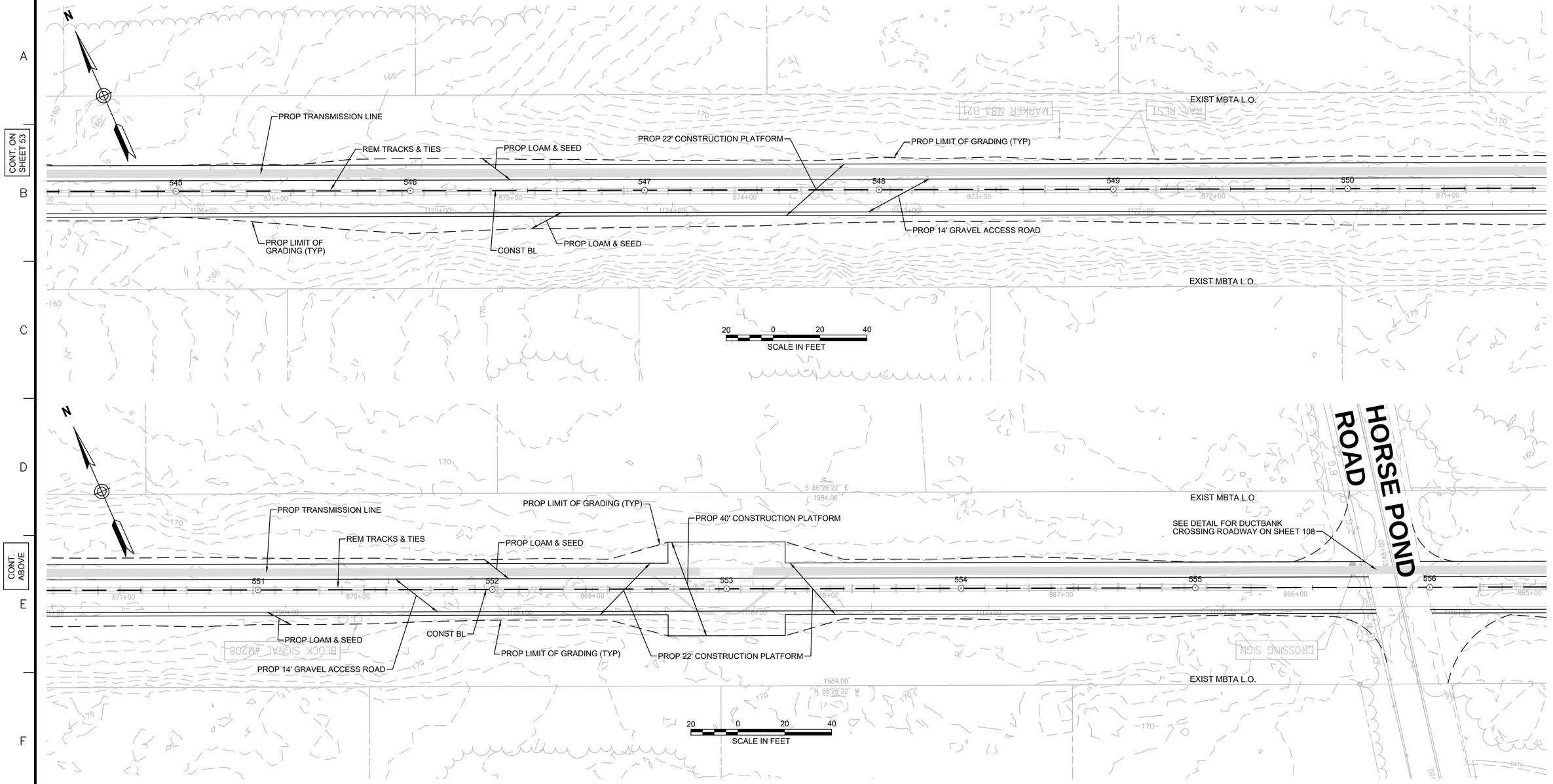
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 53 OF 277

SCALE: unless noted	DATE DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018 MS	SK	MS	.	.



NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 54 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

HORSE POND ROAD

LIMIT OF 200' RIVERFRONT AREA

200RA

100BZ – AURA

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

100VPBZ

WETLAND 29

EXIST MBTA L.O.

SEE DETAIL FOR DUCTBANK CROSSING ROADWAY ON SHEET 108

PROP 22' CONSTRUCTION PLATFORM

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP TRANSMISSION LINE

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

554 555 556 557 558 559 L306

PI +60.90

PI +75.49

CONST BL

REM TRACKS & TIES

PROP 14' GRAVEL ACCESS ROAD

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

LIMIT OF 100' BUFFER ZONE

200RA

100BZ – AURA

LIMIT OF 100' VERNAL POOL BUFFER ZONE

CONT. ON SHEET 54

CONT. ON SHEET 56

20 0 20 40
SCALE IN FEET

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 55 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

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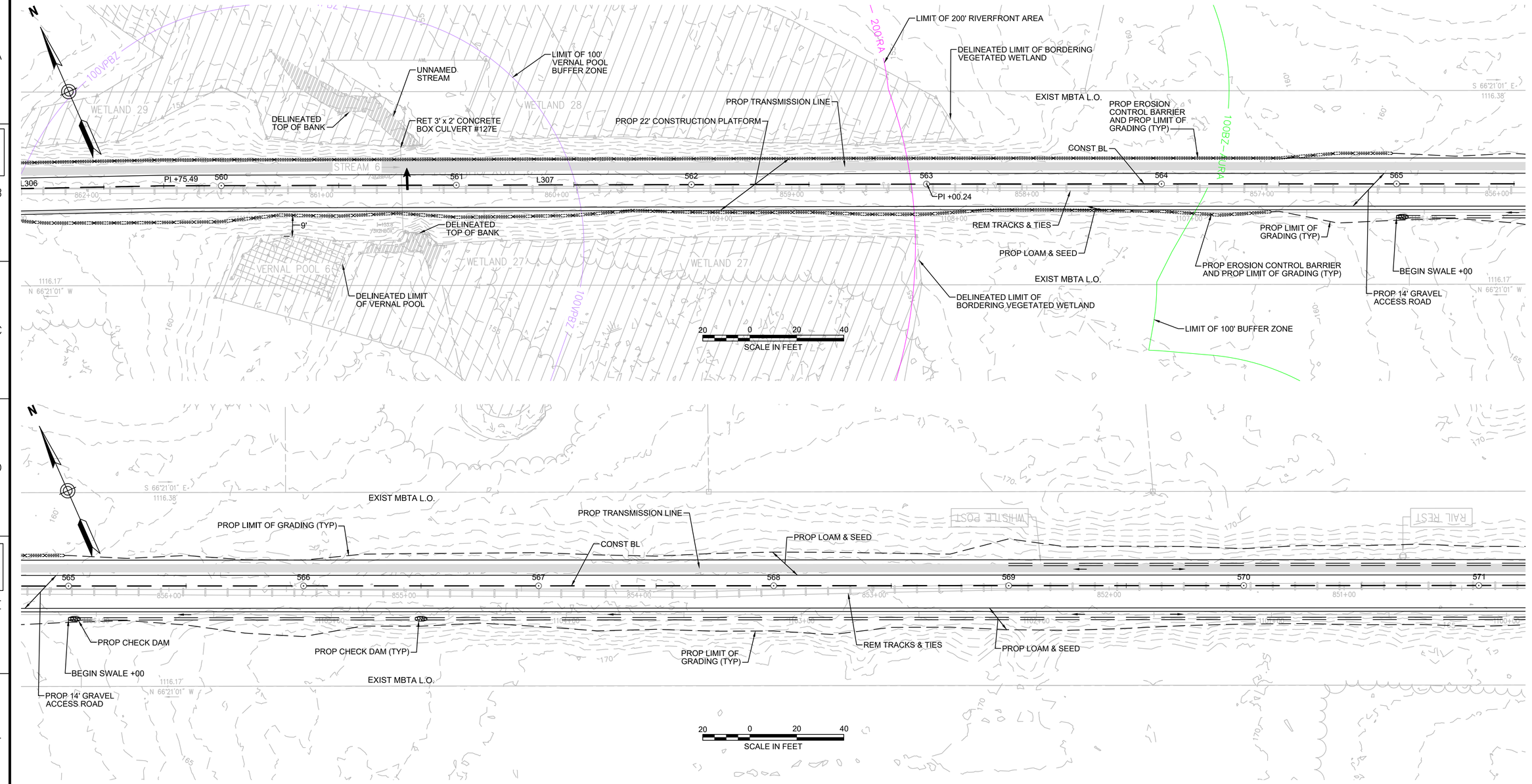

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 56 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

CONT. ON SHEET 56

PROP 40' CONSTRUCTION PLATFORM

EXIST MBTA L.O.

PROP TRANSMISSION LINE

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

END SWALE +75

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

REM TRACKS & TIES

CONST BL

PROP CHECK DAM (TYP)

PROP 14' GRAVEL ACCESS ROAD

END SWALE +50

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

EXIST MBTA L.O.

LIMIT OF 100' BUFFER ZONE

100BZ-AURA

SCALE IN FEET

CONT. BELOW

CONT. ABOVE

WETLAND 25

EXIST MBTA L.O.

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

END SWALE +75

RET 1' X 2' STONE BOX CULVERT #127D

PROP LOAM & SEED

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP LIMIT OF GRADING (TYP)

PROP 22' CONSTRUCTION PLATFORM

PROP TRANSMISSION LINE

END SWALE +50

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

BEGIN SWALE +00

PROP CHECK DAM (TYP)

PROP LIMIT OF GRADING (TYP)

REM TRACKS & TIES

CONST BL

PROP 14' GRAVEL ACCESS ROAD

WETLAND 26

EXIST MBTA L.O.

3 SF PERMANENT WETLAND FILL

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

LIMIT OF 100' BUFFER ZONE

100BZ-AURA

APX 100'BZ-AURA

SCALE IN FEET

CONT. ON SHEET 58

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 57 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
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CONT. ON SHEET 57

CONT. BELOW

LIMIT OF 200' RIVERFRONT AREA

LIMIT OF 100' BUFFER ZONE

EXIST MBTA L.O.

REM TRACKS & TIES

PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

CONST BL

PROP 22' CONSTRUCTION PLATFORM

582 583 584 585 586 587 588

839+00 838+00 837+00 836+00 835+00 834+00

1089+00 1088+00 1087+00 1086+00 1085+00 1084+00

PROP CHECK DAM (TYP)

PROP LOAM & SEED

PROP LIMIT OF GRADING (TYP)

PROP 40' CONSTRUCTION PLATFORM

PROP 14' GRAVEL ACCESS ROAD

EXIST MBTA L.O.

DELINEATED TOP OF BANK

100BZ–AURA

200RA

20 0 20 40

SCALE IN FEET

LIMIT OF 100' BUFFER ZONE

100BZ–AURA

EXIST MBTA L.O.

S 66°18'46" E
3693.82'

DELINEATED TOP OF BANK

PROP 22' CONSTRUCTION PLATFORM

PROP TRANSMISSION LINE

PROP LOAM & SEED

REM TRACKS & TIES

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

588 589 590 591 592 593

834+00 833+00 832+00 831+00 830+00 829+00 828+00

1082+00 1081+00 1080+00 1079+00 1078+00

PROP 14' GRAVEL ACCESS ROAD

PROP LIMIT OF GRADING (TYP)

DELINEATED TOP OF BANK

PROP LOAM & SEED

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

CONST BL

PROP. 22' CONSTRUCTION PLATFORM

PROP 14' GRAVEL ACCESS ROAD

PROP 18' CONSTRUCTION PLATFORM

RET EXIST 2'X2' STONE BOX CULVERT #127C

UNNAMED STREAM

PROP CHECK DAM (TYP)

EXIST MBTA L.O.

20 0 20 40

SCALE IN FEET

CONT. ABOVE

CONT. ON SHEET 59

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 58 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

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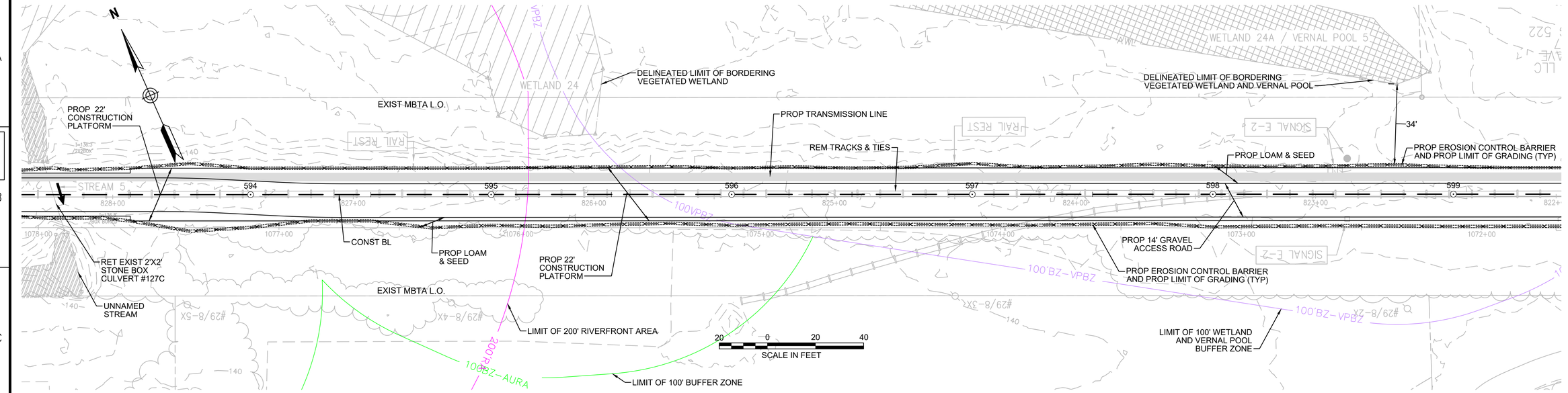

NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

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NO.	DESCRIPTION	BY	DATE	APPR.
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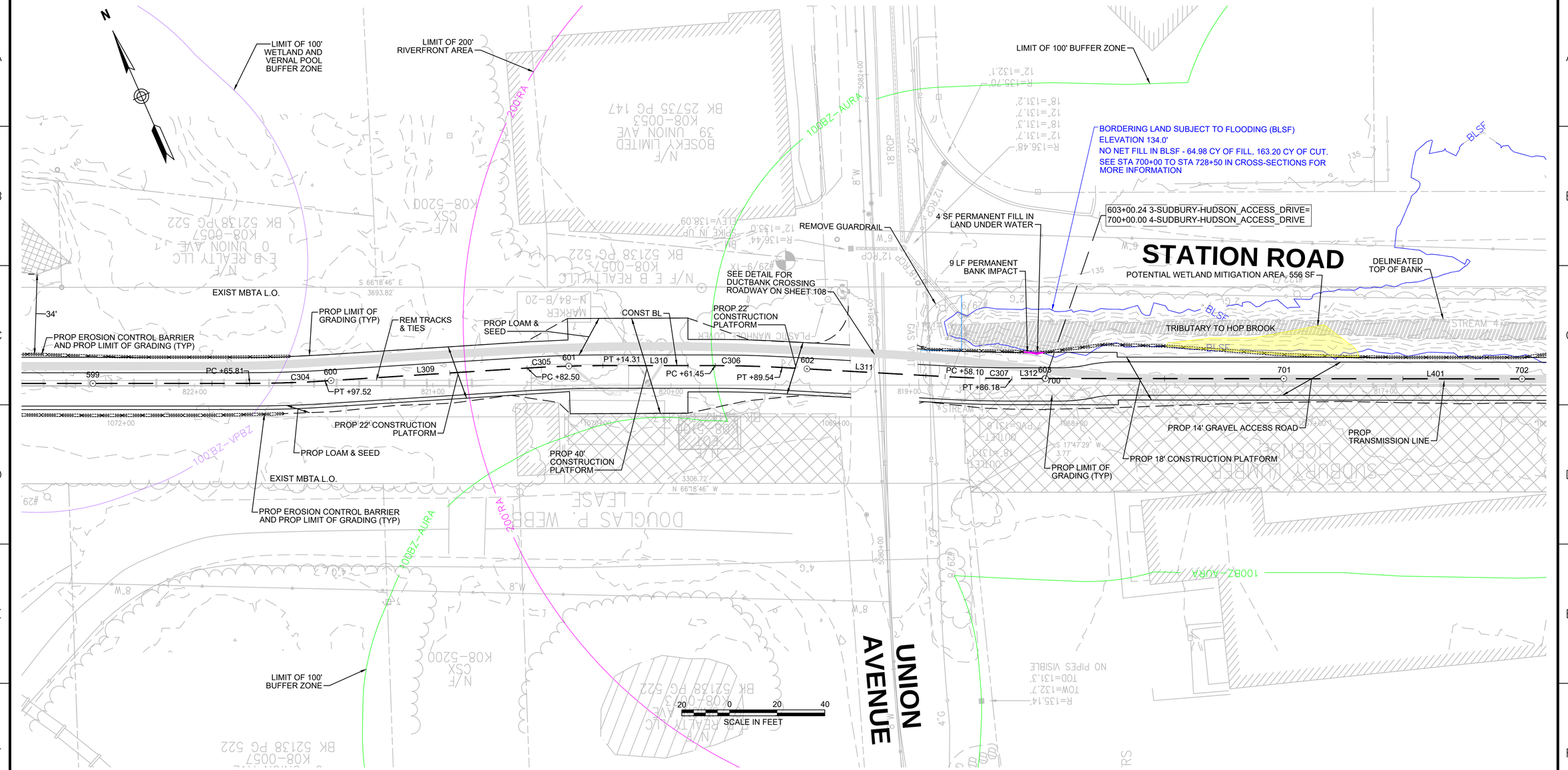
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 59 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.

REVISION

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 60 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

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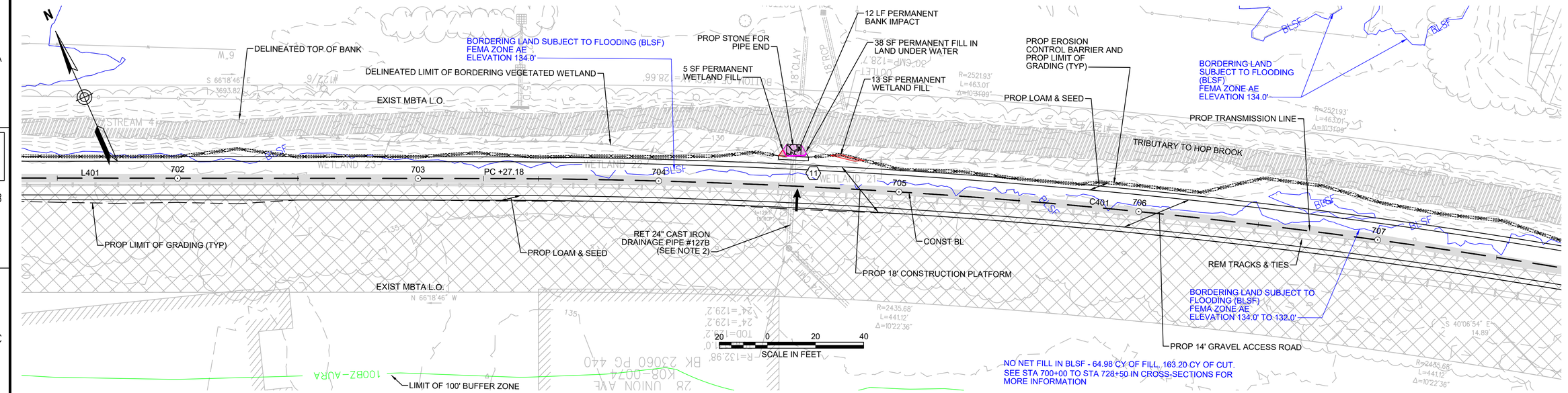

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
11	Concrete Headwall	704+56, 10.8' LT			129.1'	24" REVEAL

NOTES:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE.

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NO.	DESCRIPTION	BY	DATE	APPR.

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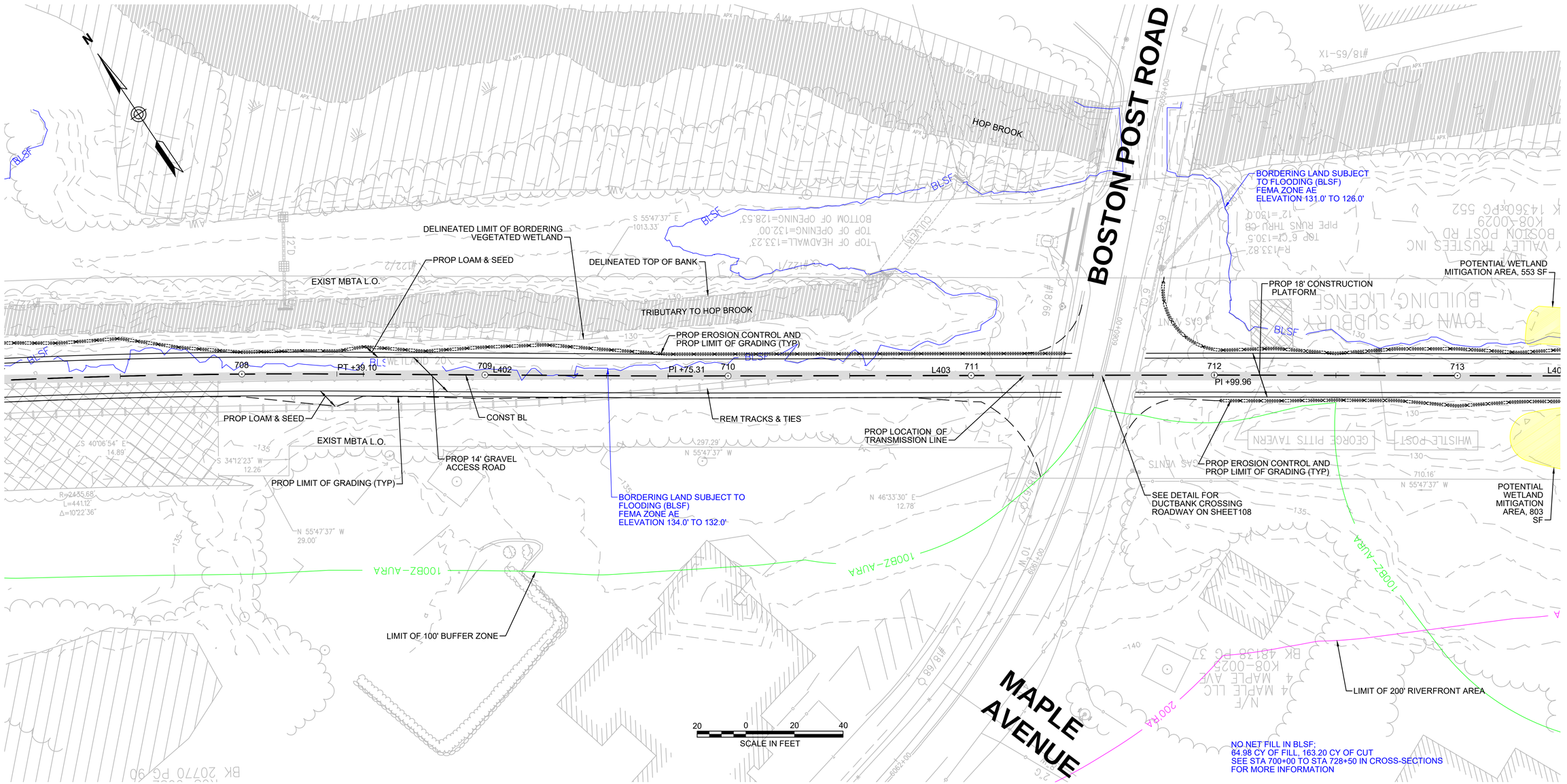
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS

PLAN 61 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NO NET FILL IN BLSF:
64.98 CY OF FILL, 163.20 CY OF CUT
SEE STA 700+00 TO STA 728+50 IN CROSS-SECTIONS FOR MORE INFORMATION

NOTE:
1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT
HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS
CONSTRUCTION PLANS
PLAN 62 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

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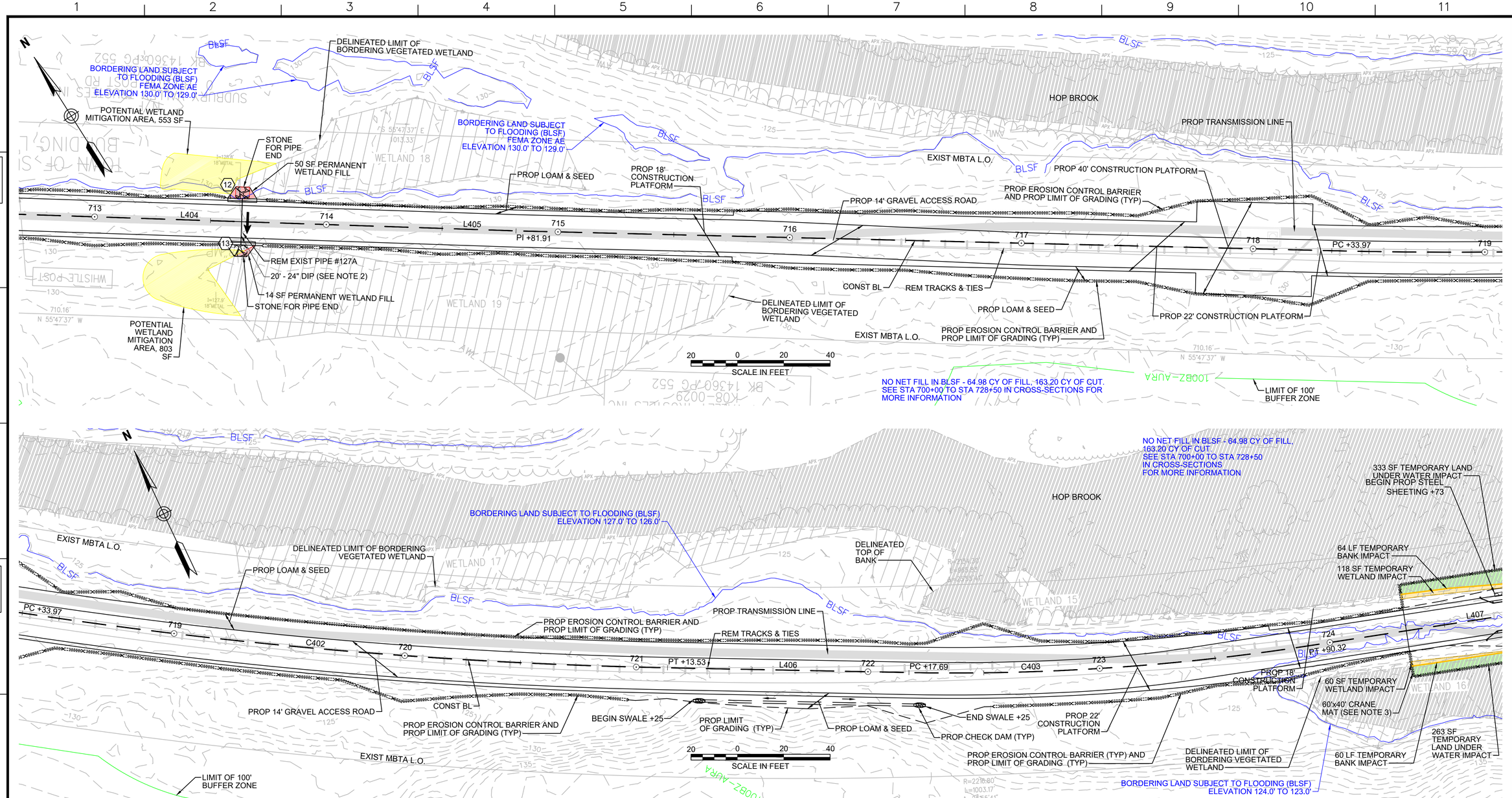

DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
12	Concrete Headwall	713+63, 10.0' LT		128.81'		18" REVEAL
13	Concrete Headwall	713+63, 10.0' RT			128.55'	18" REVEAL

NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. TRANSMISSION LINE TO RUN UNDERNEATH DRAINAGE PIPE.
3. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.

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NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

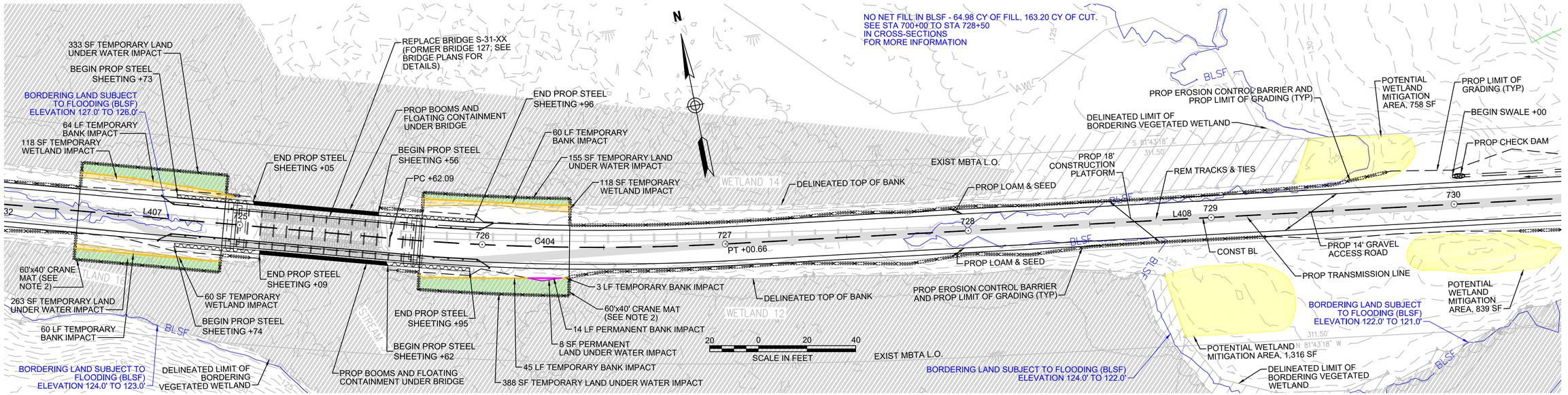
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 63 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. MAXIMUM CRANE PAD DIMENSIONS OF 40'X40' ARE ALLOWED AT ANY GIVEN TIME. A LONGER CRANE MAT FOOTPRINT IS SHOWN HERE TO ALLOW THE CRANE MAT LOCATION TO BE SHIFTED DURING CONSTRUCTION OF THE STEEL SHEETING AND BRIDGE.

NO.	DESCRIPTION	BY	DATE	APPR.
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SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 64 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.

ALL AREAS SHOWN ON THIS SHEET ARE WITHIN APX 200' RFA

LIMIT OF 100' BUFFER ZONE

100BZ – AURA

EXIST MBTA L.O.

PROP LIMIT OF GRADING (TYP)

END SWALE +25

CONST BL

ABAN 6" VC DRAINAGE PIPE #126D

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

REM TRACKS & TIES

PROP LOAM & SEED

PROP TRANSMISSION LINE

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

PROP 40' CONSTRUCTION PLATFORM

PROP 22' CONSTRUCTION PLATFORM

PROP 14' GRAVEL ACCESS ROAD

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

PROP LOAM & SEED

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

BORDERING LAND SUBJECT TO FLOODING (BLSF)
ELEVATION = 121.0'
NO IMPACT TO BLSF -
ABOVE FLOODPLAIN ELEVATION
SEE STA 733+00 TO STA 741+00 IN CROSS-SECTIONS FOR MORE INFORMATION

BLSF

DELINEATED TOP OF BANK

WETLAND 8

736 737 738 739 740 741

PT +66.48

L409

PC +65.2

SCALE IN FEET 20 0 20 40

ALL AREAS SHOWN ON THIS SHEET ARE WITHIN APX 200' RFA

LIMIT OF 100' BUFFER ZONE

100VPBZ

DELINEATED LIMIT OF VERNAL POOL

EXIST MBTA L.O.

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

DELINEATED LIMIT OF BORDERING VEGETATED WETLAND

DELINEATED LIMIT OF VERNAL POOL

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

PROP 22' CONSTRUCTION PLATFORM

PROP LOAM & SEED

CONST BL

PROP TRANSMISSION LINE

DELINEATED LIMIT OF ISOLATED VEGETATED WETLAND

PROP 18' CONSTRUCTION PLATFORM

PROP LANDLOK 450 PERMANENT TURF REINFORCEMENT MAT

PROP 14' GRAVEL ACCESS ROAD

RET 2.5' X 2' STONE BOX CULVERT #126B (SEE NOTE 2)

DELINEATED TOP OF BANK

UNNAMED STREAM

EXIST MBTA L.O.

REM TRACKS & TIES

PROP EROSION CONTROL BARRIER AND PROP LIMIT OF GRADING (TYP)

BORDERING LAND SUBJECT TO FLOODING (BLSF)
ELEVATION = 121.0'

LIMIT OF 100' VERNAL POOL BUFFER ZONE

WETLAND 10 WETLAND 9 VERNAL POOL 3 WETLAND 5 / VERNAL POOL 2 VERNAL POOL 4 WETLAND 7 WETLAND 8

742 743 744 745 746 747

PC +65.20 C406 PT +70.05 L410

SCALE IN FEET 20 0 20 40

NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO CUT VEGETATION ON NORTHEAST WINGWALL OF STONE BOX CULVERT. NO GRUBBING SHALL BE PERFORMED OUTSIDE LIMITS OF GRADING.

NO.	DESCRIPTION	BY	DATE	APPR.

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EVERSOURCE

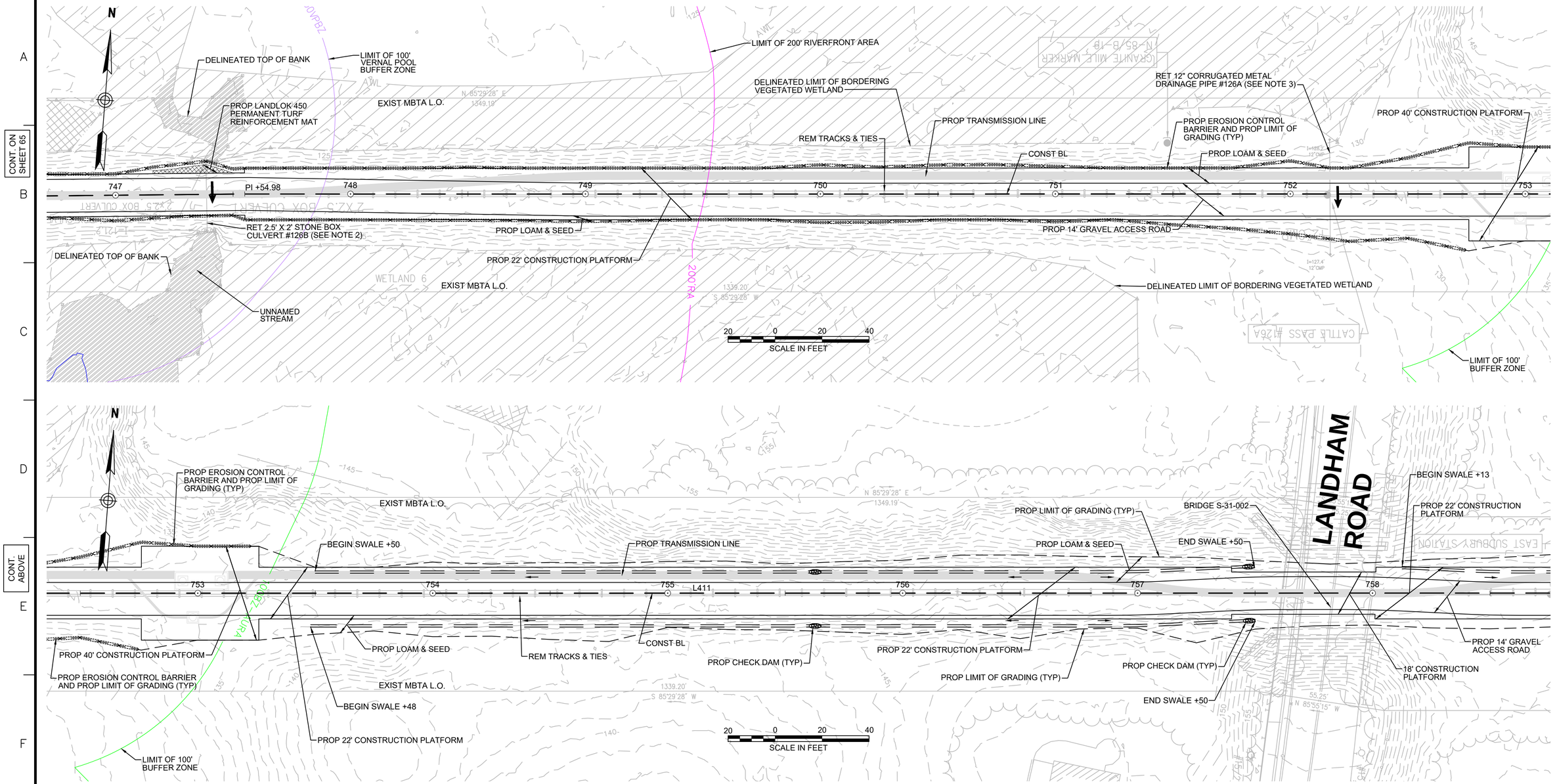
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 65 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7–2–2018	MS	SK	MS	.	.



NOTES:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).
2. CONTRACTOR TO CUT VEGETATION ON NORTHEAST WINGWALL OF STONE BOX CULVERT. NO GRUBBING SHALL BE PERFORMED OUTSIDE LIMITS OF GRADING.
3. CONTRACTOR TO CLEAR SEDIMENT IN DRAINAGE PIPE BY HAND.

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 66 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.

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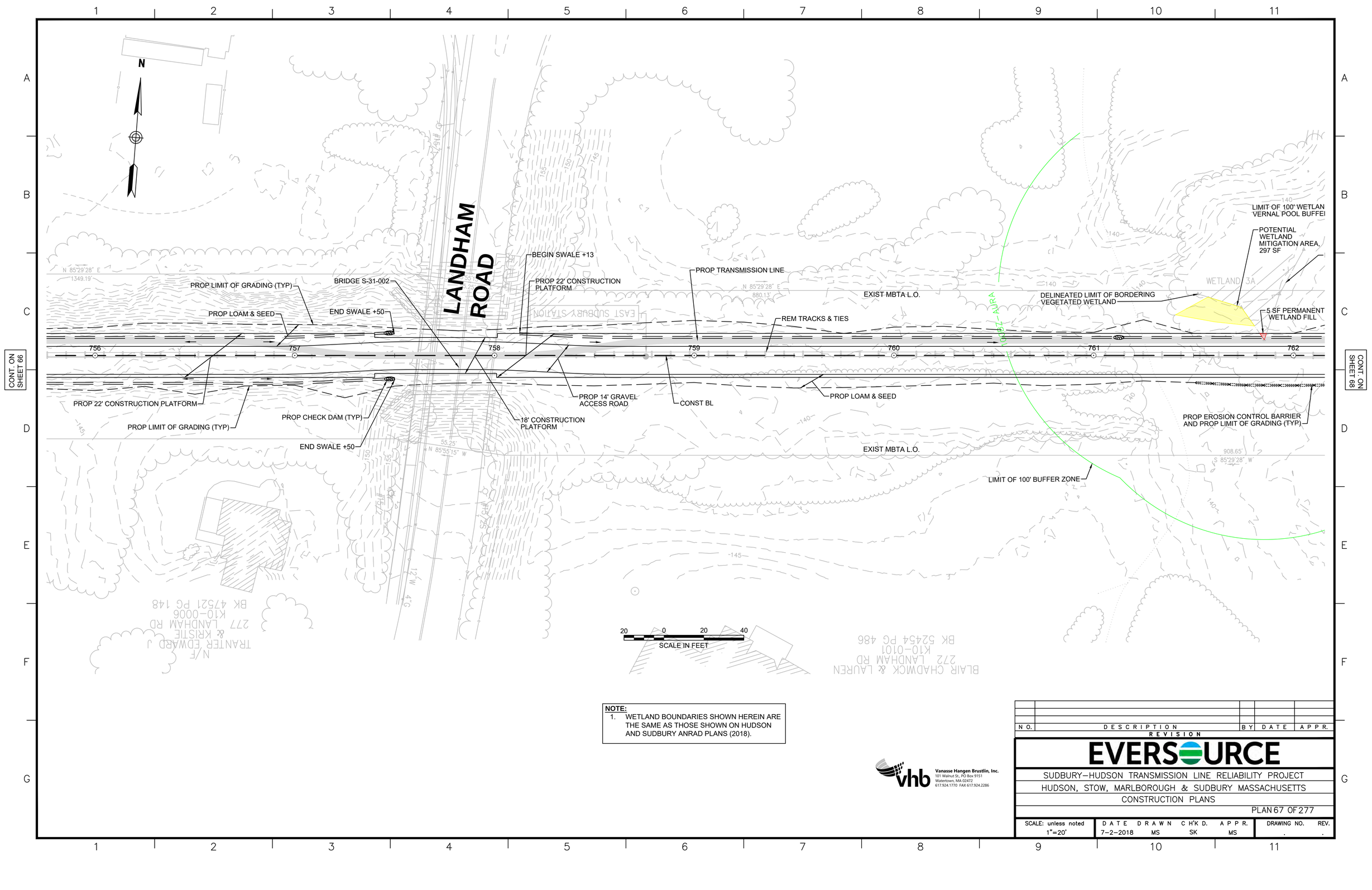

NOTE:

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NO.	DESCRIPTION	BY	DATE	APPR.

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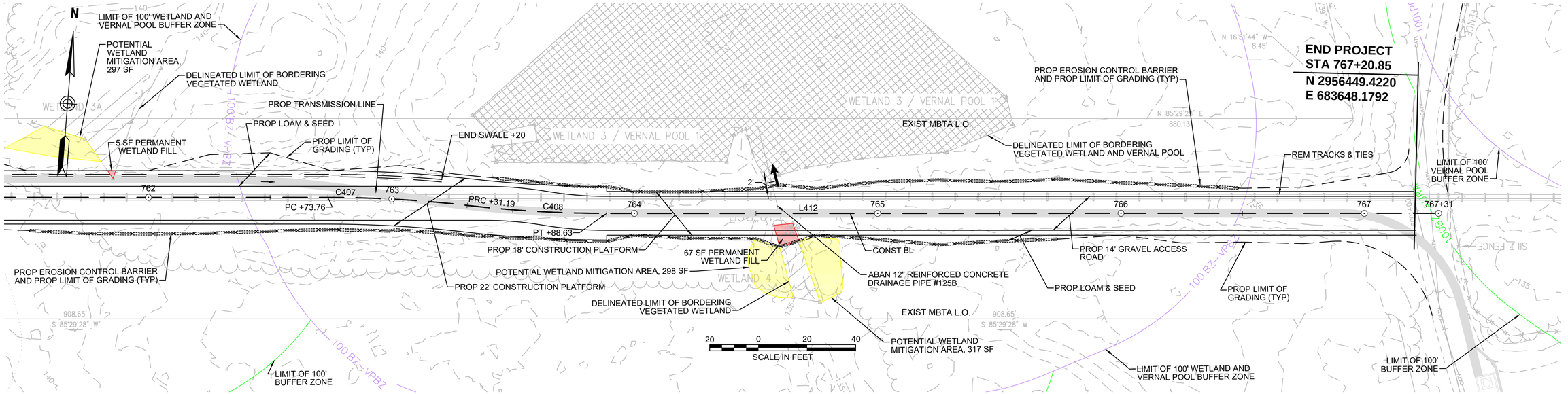
SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 67 OF 277

SCALE: unless noted	DATE	DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018	MS	SK	MS	.	.



NOTE:

1. WETLAND BOUNDARIES SHOWN HEREIN ARE THE SAME AS THOSE SHOWN ON HUDSON AND SUDBURY ANRAD PLANS (2018).

NO.	DESCRIPTION	BY	DATE	APPR.
	REVISION			

EVERSOURCE

SUDBURY–HUDSON TRANSMISSION LINE RELIABILITY PROJECT

HUDSON, STOW, MARLBOROUGH & SUDBURY MASSACHUSETTS

CONSTRUCTION PLANS

PLAN 68 OF 277

SCALE: unless noted	DATE DRAWN	CH'K D.	APPR.	DRAWING NO.	REV.
1"=20'	7-2-2018 MS	SK	MS	.	.

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BRIDGE 127 (existing)

Existing timber piers (underwater) to be cut at mudline and removed

Existing timber ties & steel rails to be removed

Existing steel web plate, angles, cover plates, stiffeners, and bracing to be removed

Existing stone abutment to remain

Existing stone block backwall to be removed (top 2 courses)

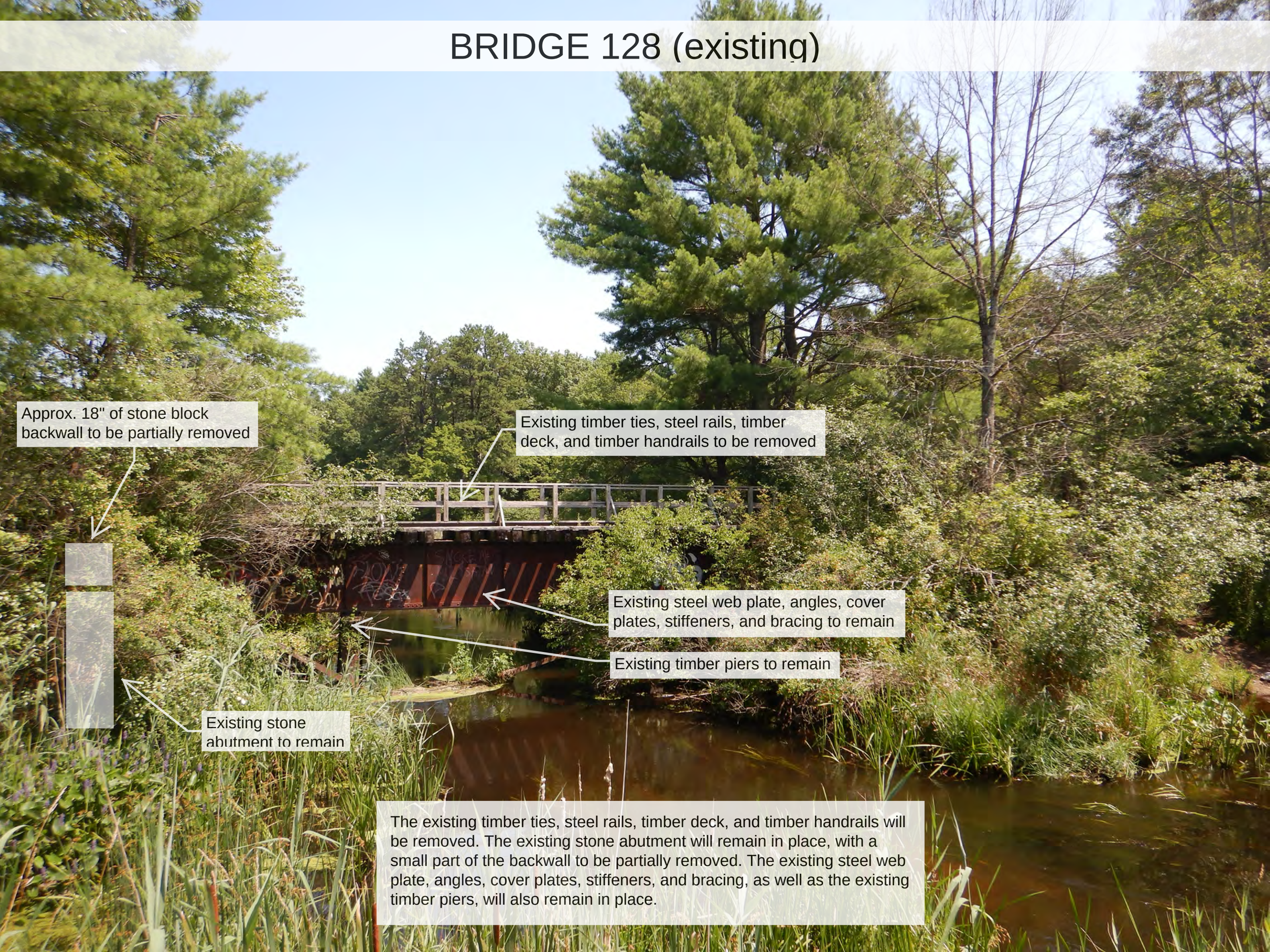
The existing timber ties, steel rails, steel web plate, angles, cover plates, stiffeners, and bracing will be removed. The existing timber piers will be cut at the mudline and removed. The existing stone abutment will remain in place, with the top two courses of the backwall to be removed.

BRIDGE 127 (proposed)

A new galvanized steel truss painted dark brown will be installed with ipe wood decking and rub rails, and brown galvanized steel floor beams. Steel sheeting and a new concrete abutment will be installed behind the existing stone abutment. Black fiberglass-encased electric transmission conduits will be installed on the outside of the truss, with a sloped grey fiber-reinforced plastic conduit cover.

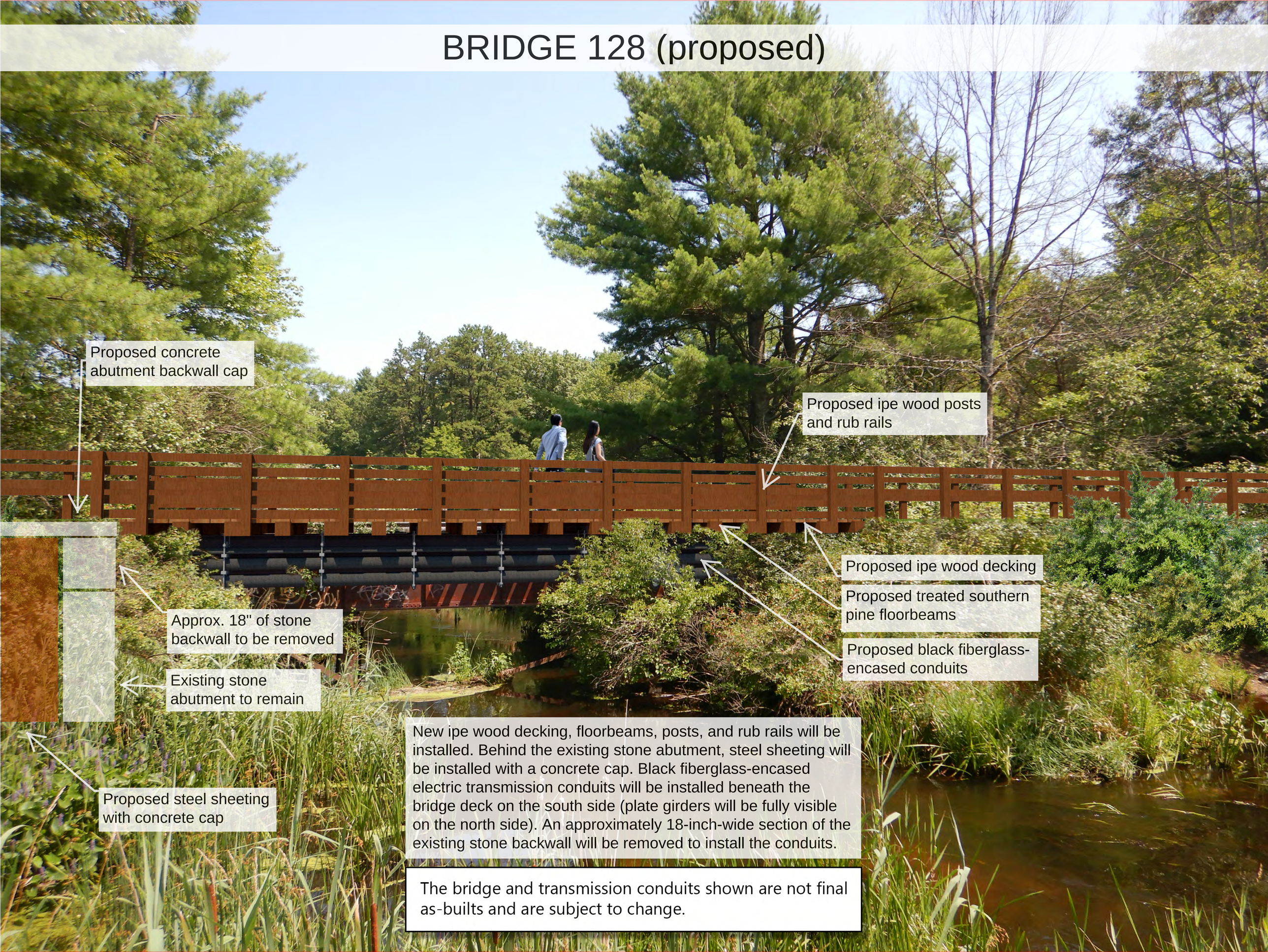
The bridge and transmission conduits shown are not final as-builts and are subject to change.

BRIDGE 128 (existing)



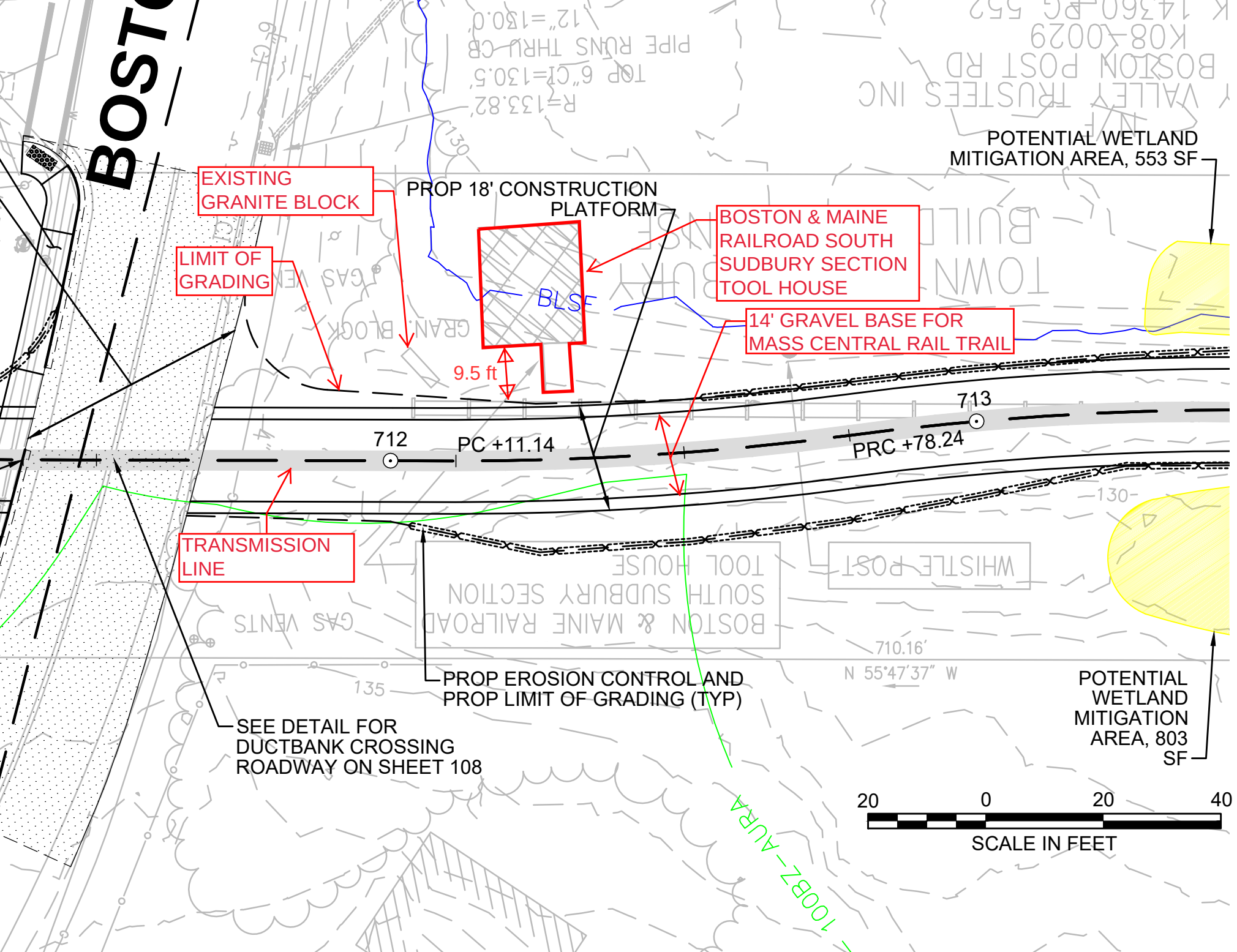
The existing timber ties, steel rails, timber deck, and timber handrails will be removed. The existing stone abutment will remain in place, with a small part of the backwall to be partially removed. The existing steel web plate, angles, cover plates, stiffeners, and bracing, as well as the existing timber piers, will also remain in place.

BRIDGE 128 (proposed)



New ipe wood decking, floorbeams, posts, and rub rails will be installed. Behind the existing stone abutment, steel sheeting will be installed with a concrete cap. Black fiberglass-encased electric transmission conduits will be installed beneath the bridge deck on the south side (plate girders will be fully visible on the north side). An approximately 18-inch-wide section of the existing stone backwall will be removed to install the conduits.

The bridge and transmission conduits shown are not final as-builts and are subject to change.


EXISTING GRANITE BLOCK
PROP 18' CONSTRUCTION PLATFORM
BOSTON & MAINE RAILROAD SOUTH SUDBURY SECTION TOOL HOUSE
POTENTIAL WETLAND MITIGATION AREA, 553 SF
LIMIT OF GRADING
BLSF
14' GRAVEL BASE FOR MASS CENTRAL RAIL TRAIL
9.5 ft
712
PC +11.14
713
PRC +78.24
TRANSMISSION LINE
PROP EROSION CONTROL AND PROP LIMIT OF GRADING (TYP)
SEE DETAIL FOR DUCTBANK CROSSING ROADWAY ON SHEET 108
710.16'
N 55°47'37" W
POTENTIAL WETLAND MITIGATION AREA, 803 SF
20 0 20 40
SCALE IN FEET

Memorandum

To: Sudbury Historic Commission

Date: October 23, 2019

Project #: 12970.00

From: VHB

Re: Sudbury-Hudson Transmission Reliability Project:
Design Changes Since FEIR Submission

This memorandum provides a summary of changes in the Project design since the submission of the Final Environmental Impact Report. In general, there have been minor design changes to reduce wetland impacts, protect cultural resources, and accommodate safe road crossings for the Mass Central Rail Trail.

- General: Added geotextile fabric in compliance with Rail Trail BMP
- Between Hudson/Sudbury municipal border and Dutton Road:
  - STA 370+00 – 373+00: Construction fencing added to avoid archaeological site
  - Bridge 128: No changes
  - STA 402+00 – 405+00: Construction fencing added to avoid archaeological site
  - STA 415+00 – 501+00: Design shifted northward to avoid archaeological site
- Between Dutton Road and Peakham Road
  - STA 529+75 – 530+50: Design widened on west side of Peakham Road for bike path road crossing gateway; hot mix asphalt sidewalk added to restore existing pedestrian pathway
- Between Peakham Road and Horse Pond Road
  - STA 555+50 – 555+75: Design widened on west side of Horse Pond Rd for bike path road crossing gateway; hot mix asphalt sidewalk added to restore existing pedestrian pathway
- Between Horse Pond Road and Union Avenue
  - STA 600+00 – 603+00: Manhole shifted north to avoid archaeological site
- Between Union Avenue and Boston Post Road
  - STA 704+50: No longer proposing concrete headwall
  - STA 706+50 – 708+00: Design narrowed on north side due to survey refinements in existing contours
  - STA 710+50 – 711+25: Design widened on west side of Boston Post Road for bike path road crossing gateway and due to survey refinements in existing contours; cement concrete walk added to restore existing pedestrian pathway
- Between Boston Post Road and Landham Road
  - STA 712+00 – 713+50: Design shifted southward to avoid Boston & Maine Railroad Section Tool House
  - STA 713+63: No longer proposing stone at pipe end
  - STA 716+00: Design widened on north side due to survey refinements in existing contours

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770

- Bridge 217
  - Increased crushed stone depth for bridge foundations based on results of geotechnical investigations
  - Added fiber-reinforced plastic cover over conduits
  - Added temporary sheeting between existing and proposed abutments
- STA 728+00 – 731+00: Construction fencing added to avoid archaeological site
- STA 729+75: Design narrowed on north side due to survey refinements in existing contours
- STA 747+00: Design widened on south side to provide consistent shoulder slope in the area

- Between Landham Road and Sudbury Substation
  - STA 757+00 – 760+00: Geotextile fabric added to protect archaeological site
  - STA 761+00 – 761+50: Design shifted southward to avoid wetland impacts
  - STA 762+25 – 763+75: Design shifted southward to avoid wetland impacts
  - STA 764+60: Added wetland mitigation area adjacent to existing wetland south of the railbed

Blackstone River Greenway
Bridges

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge B-13-007 St. Paul Street. Determined Not NR Eligible


12/03/2013 08:27

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge B-13-030 (over Blackstone River) Determined Not NR Eligible


01/13/2014 13:16


01/17/2014 07:28

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge B-13-017 Kane Court. NR Eligible.

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge B-13-015 Rte 122/Main Street.

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Church St Underpass. Replaced.

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge B-13-029 Factory Pond. NR Eligible.

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge M-24-004 Triad. NR Eligible

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Bridge M-24-004 Triad