



September 30, 2021

Ref: 14424

Ms. Lauren Glorioso
Massachusetts Natural Heritage and Endangered Species Program
1 Rabbit Hill Road
Westborough, MA 01581

Re: Phase 2 of Sudbury–Hudson Transmission Reliability – Mass Central Rail Trail,
NHESP File No.: 15-34327

Dear Ms. Glorioso:

The Department's determination that the Phase 2 portion of the Sudbury-Hudson Transmission Reliability Project, which consists of the MassCentral Rail Trail (MCRT) to be constructed by the Department of Conservation and Recreation (DCR), will not result in a Take of a state-listed species, provided there are no design changes and Conditions 1 through 7 are implemented. On behalf of the DCR, the attached documents have been prepared to address Conditions 1 through 6 (attached) for your review to demonstrate compliance with the Conditions. It is DCR's intent to implement these construction measures and design requirements during construction of the MCRT and the long-term maintenance measures during operation of the public rail trail facility. Once you determine these documents adequately address the requirements of the Conditions, they will be provided to the Sudbury and Hudson Conservation Commissions. Condition 7 will be addressed at the completion of the Project construction.

If you have any questions or comments regarding the attached materials, please contact me at your convenience at 617-607-2961 or by email at tlenhardt@vhb.com.

Sincerely,

VHB

A handwritten signature in blue ink that reads "Tracie Lenhardt".

Tracie Lenhardt, P. E.
Senior Project Manager

cc: Paul Jahnige – DCR
Denise Bartone – Eversource
Gene Crouch - VHB

Attachments

Engineers | Scientists | Planners | Designers

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

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Attachment A

Corridor Management Plan for Massachusetts Central Rail Trail-Wayside Section and Sudbury-Hudson Transmission Reliability Project

Corridor Management Plan for Massachusetts Central Rail Trail-Wayside Section and Sudbury-Hudson Transmission Reliability Project

This Corridor Management Plan (CMP) is consistent with DCR's standard operations and maintenance plan for shared use pathway / rail trails. This plan has been developed specifically for those portions of the existing MBTA corridor where DCR's proposed Massachusetts Central Rail Trail Project will be located along Eversource's proposed Sudbury-Hudson Transmission Reliability Project in the towns of Sudbury, Marlborough, Stow, and Hudson. This CMP will be shared with DCR and Eversource staff engaged in management activities.

The construction of the MCRT is anticipated to begin within one year of the completion of the Sudbury to Hudson Transmission Reliability Project and as such, DCR plans to take responsibility for the following along this corridor following construction of both the Sudbury to Hudson Transmission Reliability Project and the MCRT:

Every two weeks, or as needed, between Memorial Day and Columbus Day DCR will:

- Pick up trash along the multi-use path.
- Mow the 2-foot wide shoulders on each side of the paved multi-use trail.
- Blow plant debris (leaves, branches, etc.) from paved shared use path (avoid blowing directly into vernal pools).
- Inspect for and remove fallen or immediate hazard trees and limbs that impede safe use of the multi-use trail.
- Remove graffiti and illegal dumping, if it has occurred.

Once a year (typically following Columbus Day weekend) DCR will:

- Mow the areas over the Eversource duct bank and stormwater swales (if mowing occurs between April 1 and November 1, then areas within mapped habitat for state-listed turtles will require "turtle sweeps" by trained individuals ahead of the mower and mower deck heights shall be set higher than 10 inches above the ground).
- Follow its best management practices for managing terrestrial invasive plants.

Annually DCR will:

- Inspect culverts, swales and other drainage structures and clean as needed (see O&M/LTPPP below).
- Inspect existing paved surfaces of the multi-use trail to identify areas where root damage to pavement is beginning to occur. As appropriate pick / dig / remove roots causing the damage.
- Trim/remove potential hazard trees and those that appear to be causing root damage to the existing pavement of the multi-use trail.
- Inspect trail signs and replace as needed, avoid "sign clutter" and remove excess /old signage.

***Every 10-15 years, depending on resources, DCR plans to:**

- Saw-cut, excavate and repave targeted areas of root damage or cracks.
- Consider mill and overlay to extend pathway life (no expansion or widening of multi-use trail; these activities require agency consultations and potential permitting).

- Repair deteriorated decking on bridges as needed.
- Re-loam and re-seed shoulders to address edge issues.

**If heavy equipment is used for any of these activities between April 1 and November 1 then “turtle sweeps” by trained individuals are required immediately ahead of any equipment. Conservation Commission will be contacted for activities that may be jurisdictional.*

Every 25-35 years, depending on resources, DCR plans to:

- Design and implement full pathway reconstruction (if required). This requires agency consultations and permitting and would require the development of turtle protection measures specific to the proposed reconstruction activities.

In the absence of Phase 2 Initiation:

If DCR’s MCRT is not constructed, then every four years from completion of Eversource’s transmission line project, Eversource plans to:

- Manage the herbaceous community over the duct bank only. All other previously disturbed areas, outside of the 14-foot-wide gravel access road associated with the Project will be allowed to revegetate with woody species.
 - Vegetation management will be conducted as part of the Company’s Vegetation Management Plan that is approved by the Massachusetts Department of Agricultural Resources in compliance with 333 CMR 11.00. In accordance with the EFSB’s Final Decision issued December 18, 2019, Eversource will utilize mechanical vegetation management within this corridor.
 - The Company is required to present annual Vegetation Management Plans (VMP) to the NHESP for review and approval as per 321 CMR 10.14 (16). MNHESP sends a formal written response and attaches management guidelines that the Company must follow when performing routine vegetation management activities. Routine vegetation management will be completed by mechanical means only. As per past management guidelines related to state-listed turtle species imposed by NHESP along other utility corridors, the Company will avoid mowing between April 1 and November 1, conduct turtle sweeps prior to mowing, and set mower blades 10 inches above the ground.

Attachment: MassCentral Rail Trail – Wayside Section, Operations and Management Plan and Long Term Pollution Prevention Plan

**MassCentral Rail Trail (MCRT) – Wayside Section
Stormwater Management System
Operation and Maintenance Plan (O&M)
and
Long Term Pollution Prevention Plan (LTPPP)**

**June 2020
(Revised April 2021)**

This Stormwater Management System Operation and Maintenance Plan provides for the inspection and maintenance of structural Best Management Practices (BMPs) and for measures to prevent pollution associated with the Stormwater Management System on the MassCentral Rail Trail Wayside Section (in Hudson, Stow and Sudbury).

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.05(6)(k)).

Figure of stormwater management features is attached.

Responsible Party

Department of Conservation and Recreation (DCR) office will be responsible for the maintenance of the shared-use facility and associated stormwater management features, in accordance with DCR standards. The facility will be maintained by DCR maintenance staff from:

DCR's Maintenance Facility
Hopkinton Complex
164 Cedar St,
Hopkinton MA 01748
Jeff Cate
Field Operation Team Leader
(508) 435-4303

Maintenance Measures

The stormwater management system covered by this Operation and Maintenance Plan consists of the following components:

- Swales – Dry with check dams
- Areas of increased infiltration
- Drainage structures
 - Hudson
 - Sta. 119+25 LT – Catch basin (Str 3)
 - Sta. 119+25 RT – Headwall (Str 4)
 - Sta. 119+25 – 18" RCP - New crossing drainage pipe

- Sta. 119+45 - 6' by 6' Conc. Box - Cattle Crossing
- Sta. 126+70 RT – Catch basin (Str 5)
- Sta. 126+70 LT – Headwall (Str 6)
- Sta. 126+70 – 24" DIP – New crossing drainage pipe
- Sta. 182+55 RT – Catch basin (Str 8)

Sudbury

- Sta. 368+84 - 2' by 2.5' Stone Box (Drainage Structure 129A)
- Sta. 410+25 - 2' by 2' Stone Box (Drainage Structure 127J)
- Sta. 517+96 - 1' by 2' Stone Box (Drainage Structure 127I)
- Sta. 521+64 - 1.5' by 3' Stone Box (Drainage Structure 127H)
- Sta. 527+30 - 2' by 2' Stone Box (Drainage Structure 127G)
- Sta. 530+80 RT – Catch basin (Str 9)
- Sta. 533+46 RT – Flared End Section (Str 10)
- Sta. 713+63 LT – Headwall (Str 12)
- Sta. 713+63 RT – Headwall (Str 13)
- Sta. 577+31 - 1' by 2' Stone Box (Drainage Structure 127D)
- Sta. 704+56 - 24" Cast Iron (Drainage Pipe 127B)
- Sta. 713+63 - 24" Cast Iron (Drainage Pipe 127A)
- Sta. 738+77 - 18" Cast Iron (Drainage Pipe 126D)
- Sta. 752+17 - 12" Corrugated Metal (Drainage Pipe 126A)

DCR Operations to maintain swales and the drainage pipes.

DCR Engineering to maintain listed catch basins, flared end section, headwalls, drainage pipes. Engineering can assist with blocked culverts if major blockage or structural concern.

Maintenance of these components will be conducted biannually at a minimum in accordance with DCR standard maintenance practices, as noted in the attached Operation and Maintenance table summarizing the pertinent inspection and maintenance activities.

DCR Operations will also inspect and clear culverts conveying streams as needed. Inspection will identify any deterioration of headwalls, culverts, bridge structures, abutments and erosion. Any identified issues will be immediately brought to the attention of DCR Engineering.

- Stream culverts/bridges

Hudson

- Sta. 107+92 – 2' by 3' stone box (Culvert 132A)
- Sta. 148+81 – Fort Meadow Brook Bridge (Bridge 132)
- Sta. 206+10 – 24" Clay Culvert (Culvert 129C)

Sudbury

- Sta. 400+31 – Hop Brook Bridge (Bridge 132)
- Sta. 539+40 – Twin 36" Corrugated Metal – Dudley Brook (Culverts 127F)
- Sta. 560+82 - 3'x2' Concrete Box (Culvert 127E)
- Sta. 593+18 - 2'x2' Stone Box (Culvert 127C)
- Sta. 747+39 - 2.5'x2' Stone Box (Culvert 126B)

- Sta. 764+60 - 12" Reinforced Concrete (Culvert 125B)
- Sta. 725+31 – Hop Brook Bridge (Bridge 130)

If inspection indicates the need for major repairs of structural components, the inspector should contact the DCR maintenance supervisor to initiate procedures to effect repairs in accordance with DCR standard construction practices.

Practices for Long Term Pollution Prevention

In general, long term pollution prevention and related maintenance activities will be conducted consistent with DCR's NPDES Stormwater MS4 Permit(s), and the measures outlined in the Stormwater Management Plans (SWMP). Information about the DCR permit and the SWMP are available at the following website:

<http://www.mass.gov/eea/agencies/dcr/conservation/stormwater-mgmt/>

For the facilities covered by this Operation and Maintenance Plan, long term pollution prevention includes the following measures:

Litter Pick-up

DCR will conduct litter pick-up from the stormwater management facilities in conjunction with routine maintenance activities.

Routine Inspection and Maintenance of Stormwater BMPs

DCR will conduct inspection and maintenance of the stormwater management practices in accordance with the guidelines discussed above.

Spill Prevention and Response

DCR will implement its standard response procedures in the unlikely event of releases of significant materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater.

- Reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law. The applicable DCR office should also be notified.
- Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.
- Reportable quantities of chemical, fuels, or oils are established under the Massachusetts Contingency Plan (MCP) and enforced through MassDEP.

Maintenance of Landscaped Areas

DCR will mow and/or weed whack the shoulders adjacent to the rail trail bi-weekly or as needed between Memorial Day and Columbus Day. Outside of the 2-foot shoulders, DCR will mow the 5-foot herbaceous area over the duct bank no more than once annually. Outside of the 19-foot

maintained area (paved rail trail, 2-foot shoulders on either side and 5-foot area over the duct bank) woody vegetation will be allowed to naturally revegetate and DCR will not implement vegetation management unless it poses a risk to MCRT users. The vegetated shoulders/slopes outside the maintained area will help to disperse and infiltrate disconnected drainage although no stormwater management benefit is identified. The swales and areas of increased infiltration outside of the 19-foot area will be inspected and mowed as needed or biannually at a minimum to maintain proper water quality treatment function. If maintenance activities anywhere disturb the ground and removes the vegetated surface, the disturbed area will be restored with loam and seed to reestablish a vegetated surface.

Per the Sudbury Order of Conditions, Condition VI j, in Sudbury grass cuttings, leaves or twigs and sticks will not be blown off the paved path within 25 feet of a vernal pool. Pavement markers have been installed to indicate the 25-foot offset from a vernal pool.

Eversource inspection vehicles will use the paved MCRT to access the transmission line facility approximately once every three years, or as needed for maintenance of the transmission line.

Within the Priority Habitat areas, the vegetation will not be trimmed lower than 10 inches along the shoulders or over the duct bank.

Fertilizers will not be used.

If DCR finds it necessary to use chemical treatment for invasive species vegetation control, this work will be done in compliance with MDAR regulations at 333 CMR 11.00, which will limit impacts to sensitive areas such as groundwater and drinking water wells. If needed in the future, the DCR will develop a Yearly Operational Plan regarding vegetation maintenance along their bike path and recreational corridors, which will include the MCRT.

Erosion Control

Portions of the MCRT are on elevated former railroad embankment with steep side slopes. Review the MCRT alignment for any evidence of erosion on slopes, within swales, at check dams or at inlets and outlets of drainage pipes or stream culverts during the biannual inspection of the corridor and the stormwater BMPs. If erosion is observed, note on the inspection form. Include the location and extent of erosion (width and length), which side of the path or pipe/culvert, if the erosion is toward or away from the path, and if any resource areas are at risk of impact. Include photographs if possible. Note location on the attached figure as accurately as possible. Notify the Field Operations Team Leader.

Any observed erosion will be repaired, and reseeded or otherwise stabilized as needed to prevent continued erosion. Notify the local conservation commission if erosion impacts a resource area or requires reconstruction within a resource area or within 100 feet of a resource area. A regulatory filing may be required.

Snow and Ice Management

There are no plans for snow and ice removal, nor de-icing (i.e., sanding, salting) of the bike path surface during winter months.

Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

firefighting	foundation drains
water line flushing	footing drains
landscape irrigation	individual resident car washing
untamminated groundwater	flows from riparian habitats and wetlands
potable water sources	dechlorinated water from swimming pools
water used to clean residential buildings	water used for street washing
without detergents	air conditioning condensation

There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the DCR shall be notified for assistance in determining the nature and source of the discharge, and for resolution through DCR's IDDE program.

Public Access

The MCRT Wayside Section is a public access facility. The facility is typically open dawn to dusk every day. Members of the Sudbury Planning Board or Conservation Commission are free to access the rail trail at any time the facility is open. Periodically the facility may be closed for maintenance construction (repairs, resurfacing, etc.) and for the safety of the public, access to the rail trail will be restricted.

Lease/Easements

The DCR holds a lease for construction and operation of the MCRT over the Massachusetts Department of Transportation – MBTA rail corridor. Within the rail corridor there are the following existing easements or license agreements by others:

- NSTAR Electric Company d/b/a Eversource Energy ("Eversource") to construct and operate the transmission powerline.
- Sudbury Lumber for access and storage of materials (off Union Avenue).
- Tennessee Gas Transmission Company to install and operate an underground natural gas transmission pipeline (east of Marlborough/Hudson town line).
- Town of Sudbury (east of Route 20 – building license).
- Douglas P. Webb lease for South Sudbury Station (off Union Avenue).

Record Keeping

The DCR shall maintain an operation and maintenance log for the inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location). The maintenance Inspection checklists shall be maintained and be made available for review by the MassDEP or Conservation Commissions or staff on request

Appendix: MCRT Maintenance and Best Management Practices: Operation & Maintenance Measures Schedule

Maintenance Practice or Best Management Practice¹	Sweep	Mow	Inspect	Clean	Repair
Shoulder Maintenance (2-foot area either side of pavement)	As needed	Biweekly or as needed during growing season	Biweekly	As needed	As needed
Over duct bank ¹ (5-foot area outside shoulders)	N/A	Once yearly in fall	Yearly	As needed	As needed
Pavement Surface	As needed ²	N/A	Biweekly	As needed ^{2,3}	As needed
Swales ¹	N/A	Mow swales as needed or biannually (minimum)	Biannually at a minimum	As needed	As needed
Check Dams ¹	N/A	String trim as needed (Not to be mowed) or biannually (minimum)	After every significant rainfall event	As needed	As needed
Areas of increased infiltration ¹	N/A	Mow or string trim as needed or biannually (minimum)	Biannually at a minimum	As needed	As needed
Drainage structures	N/A	NA	Biannually at a minimum	As needed	As needed

¹If mowing occurs between April 1 and November 1, then areas within mapped priority habitat for state-listed turtles will require "turtle sweeps" by trained individuals ahead of the mower and mower deck heights shall be set lower than 10 inches above the ground or string trimmers can be used.

²No blowing of grass clippings, leaves or twigs and sticks within 25 feet of a vernal pool. Pavement markers indicate 25 feet from a vernal pool.

³Snow removal will not be conducted.

MCRT Best Management Practices – Inspection and Maintenance/ Evaluation Checklist

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed	Date of Cleaning/Repair	Performed by
Swales	Biannually at a minimum			<ul style="list-style-type: none"> Accumulated sand and sediment Accumulated debris Erosion of swale Mow biannually (minimum) 	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no		
Check Dams	After significant rain fall events			<ul style="list-style-type: none"> Accumulated sand and sediment Accumulated debris Erosion of surface Cut grass biannually (minimum) (string trimmer) 	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no		
Areas of increased infiltration	Biannually at a minimum			<ul style="list-style-type: none"> Accumulated sand and sediment Mow as needed or biannually (minimum) 	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no		
Drainage structures, drainage pipes and stream culverts	Biannually at a minimum			<ul style="list-style-type: none"> Accumulated sand and sediment Floatable/Trash Inlets free of debris Damage to headwalls or wingwalls 	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no		
Erosion (Provide location and detailed description in notes below. Include photographs)	Biannually at a minimum			<ul style="list-style-type: none"> Slope erosion observed Erosion within a swale or at check dam Erosion/Siltation onto the path surface Erosion/Siltation away from the path surface Erosion at a drainage pipe or stream culvert 	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no		

Notes on Stormwater / Drainage / Erosion Issues:

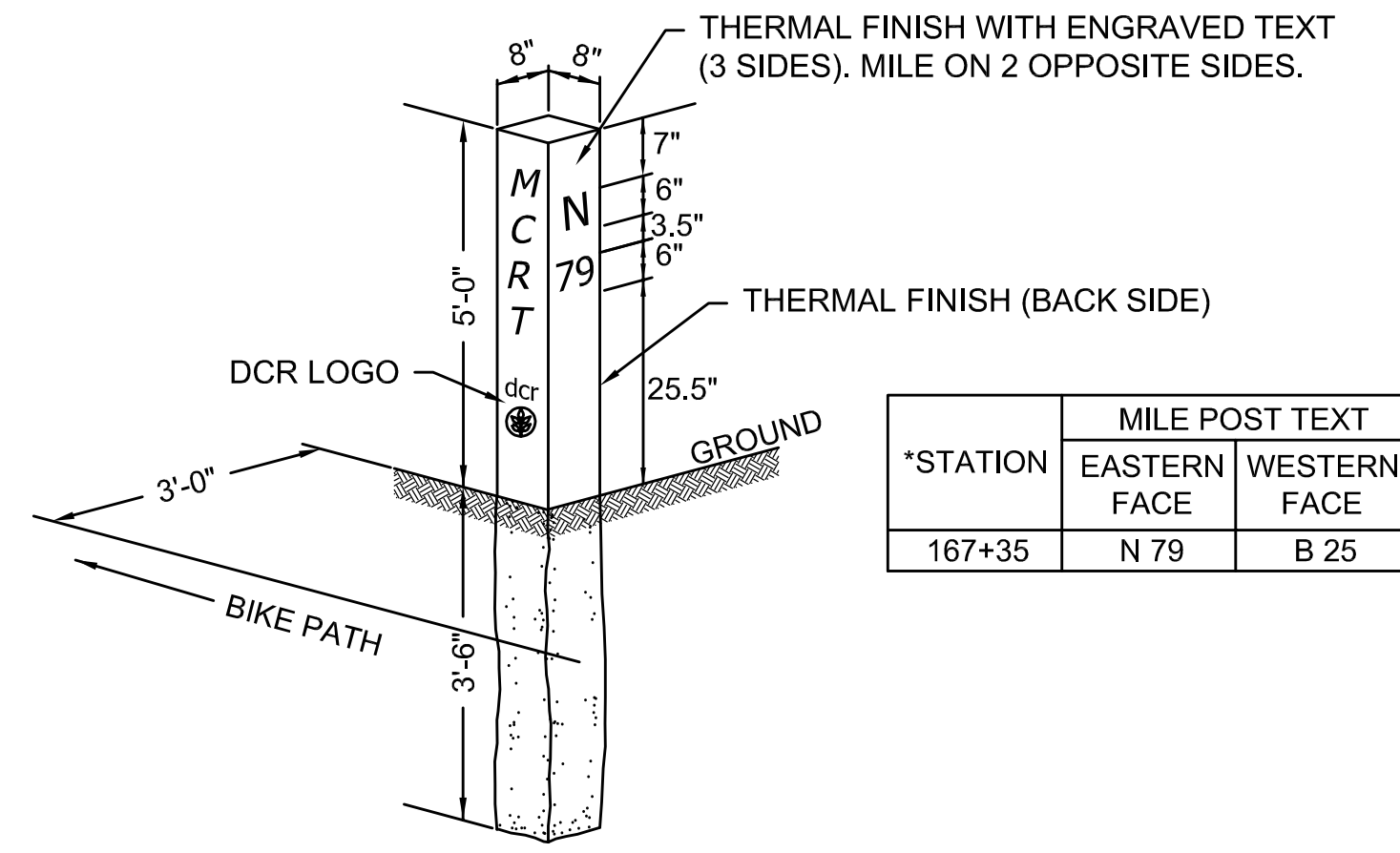
Stormwater Control Manager _____

Figure of Stormwater BMPs Attached

Attachment B

Mowing Height Signage

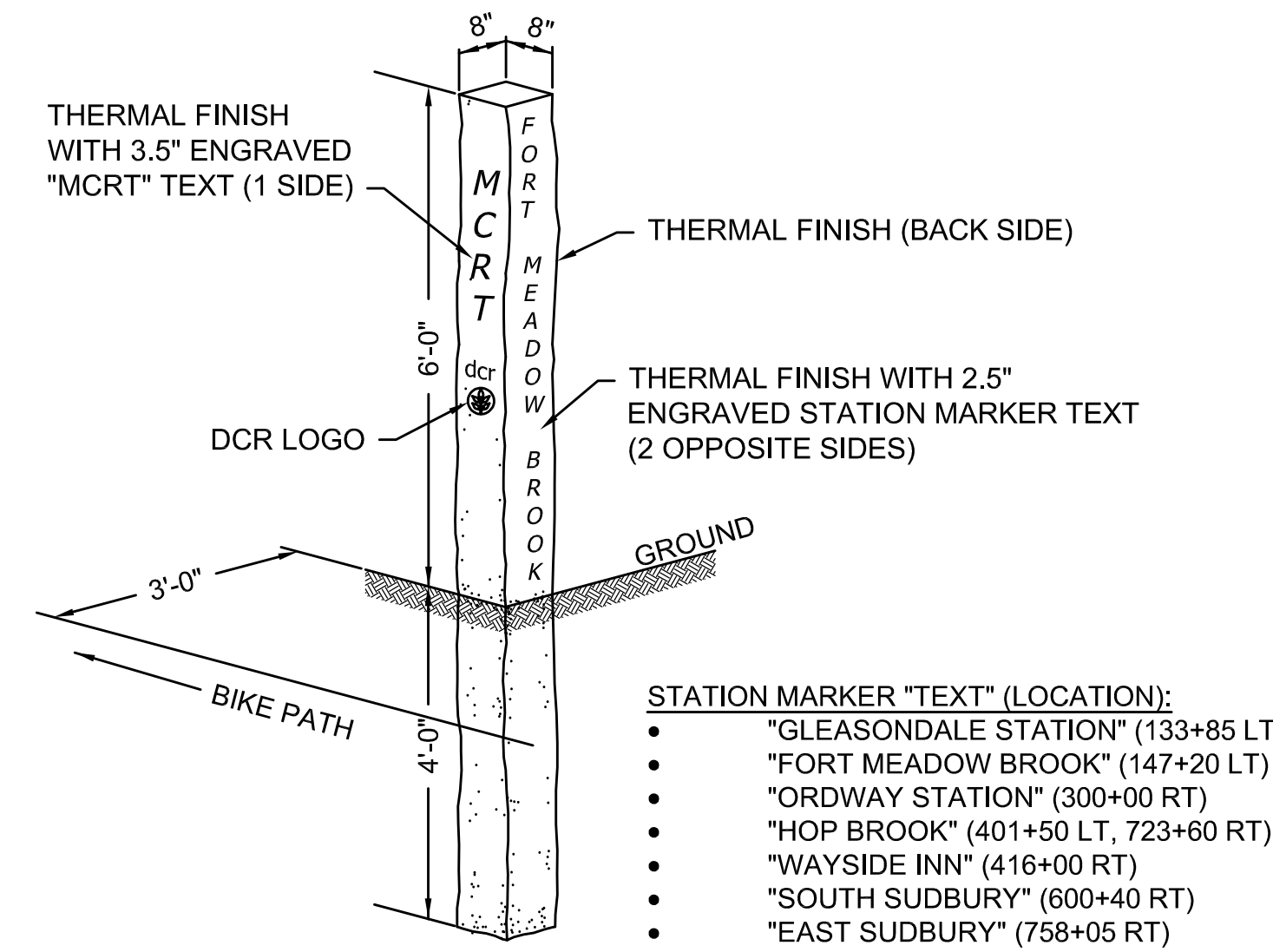
NOTE:
 ALL LETTERING TO BE 1/2" "V"
 SUNK LETTER IN TACOMA TEXT



*STATIONING IS APPROXIMATE.
 CONTRACTOR SHALL VERIFY
 LOCATIONS PRIOR TO INSTALLATION

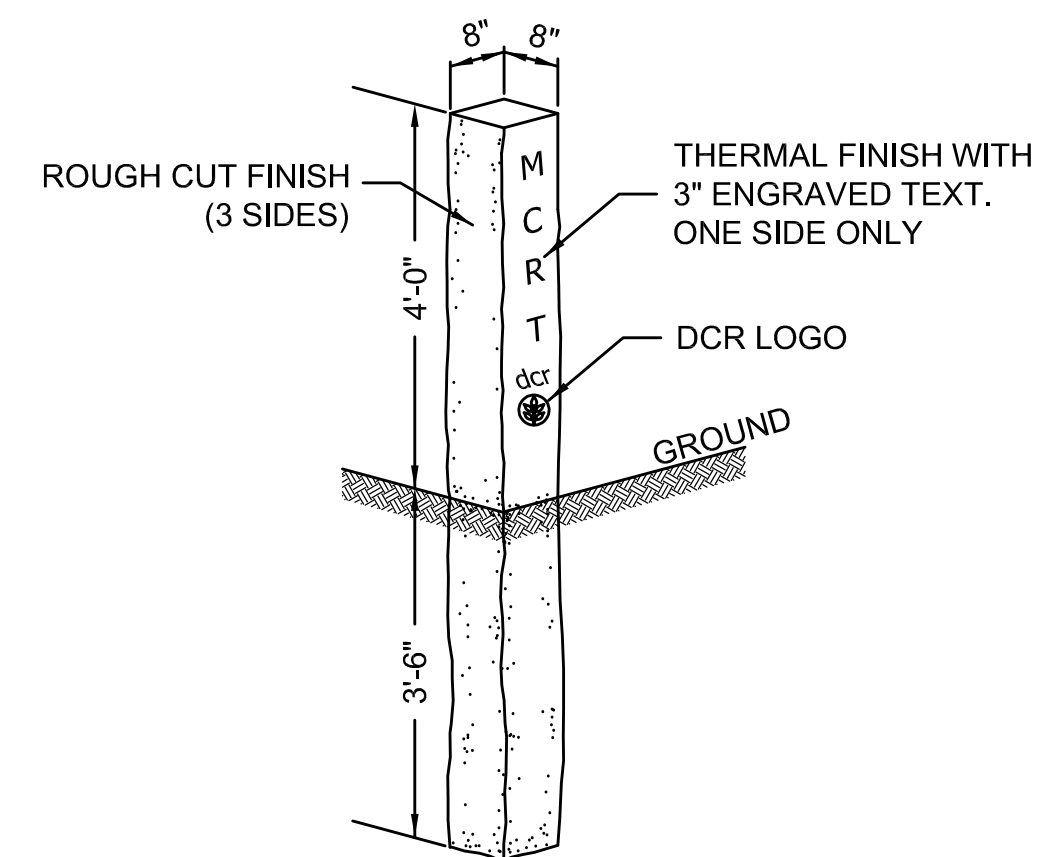
GRANITE MILE POST

SCALE: N.T.S.



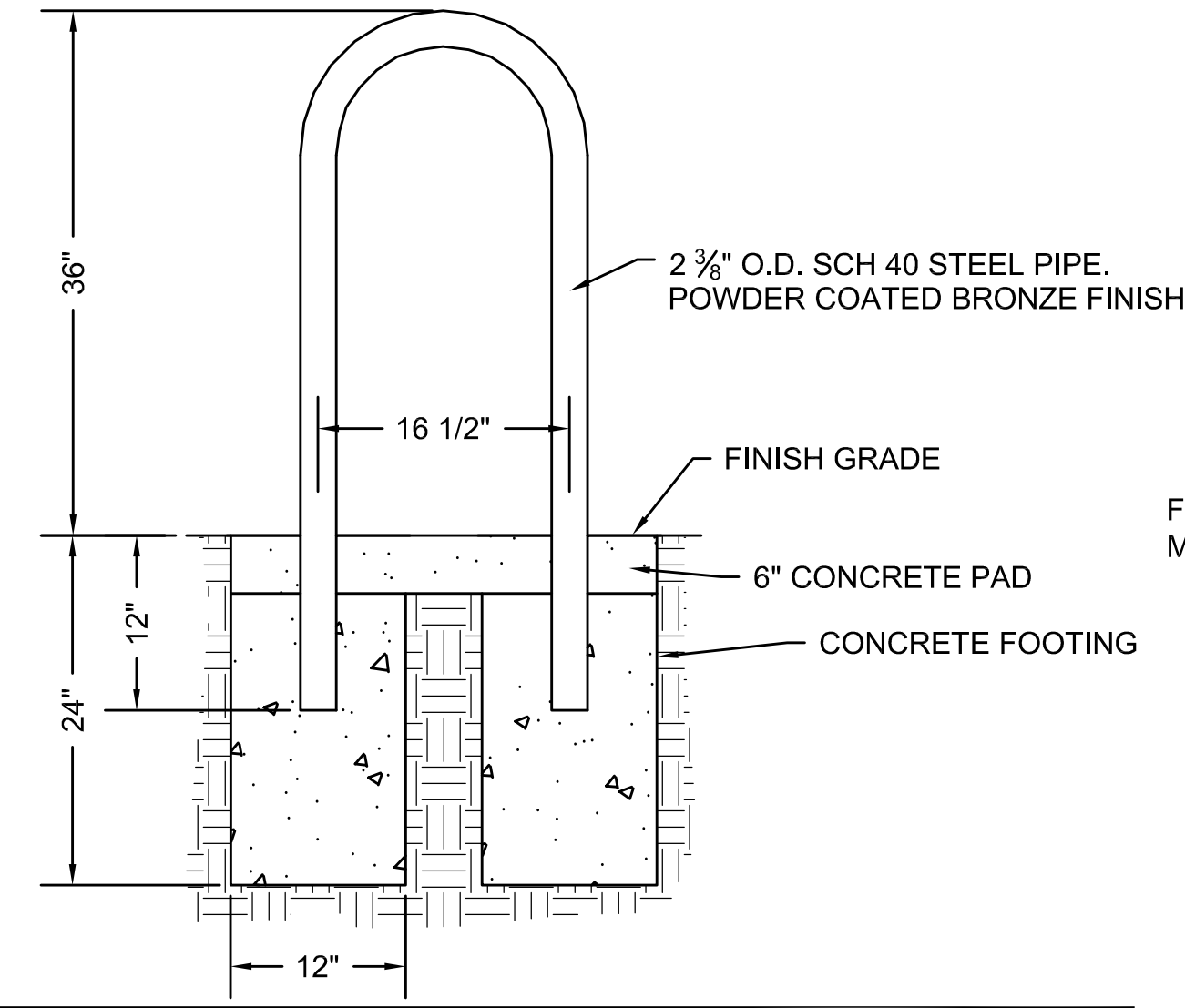
GRANITE STATION PILLAR

SCALE: N.T.S.



GRANITE LETTERED POST

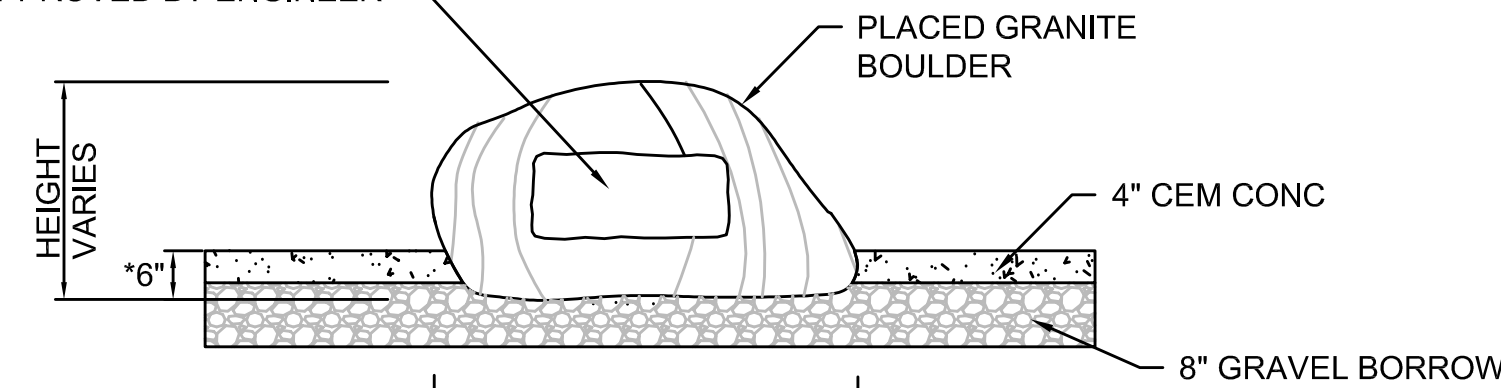
SCALE: N.T.S.



BICYCLE RACK

SCALE: N.T.S.

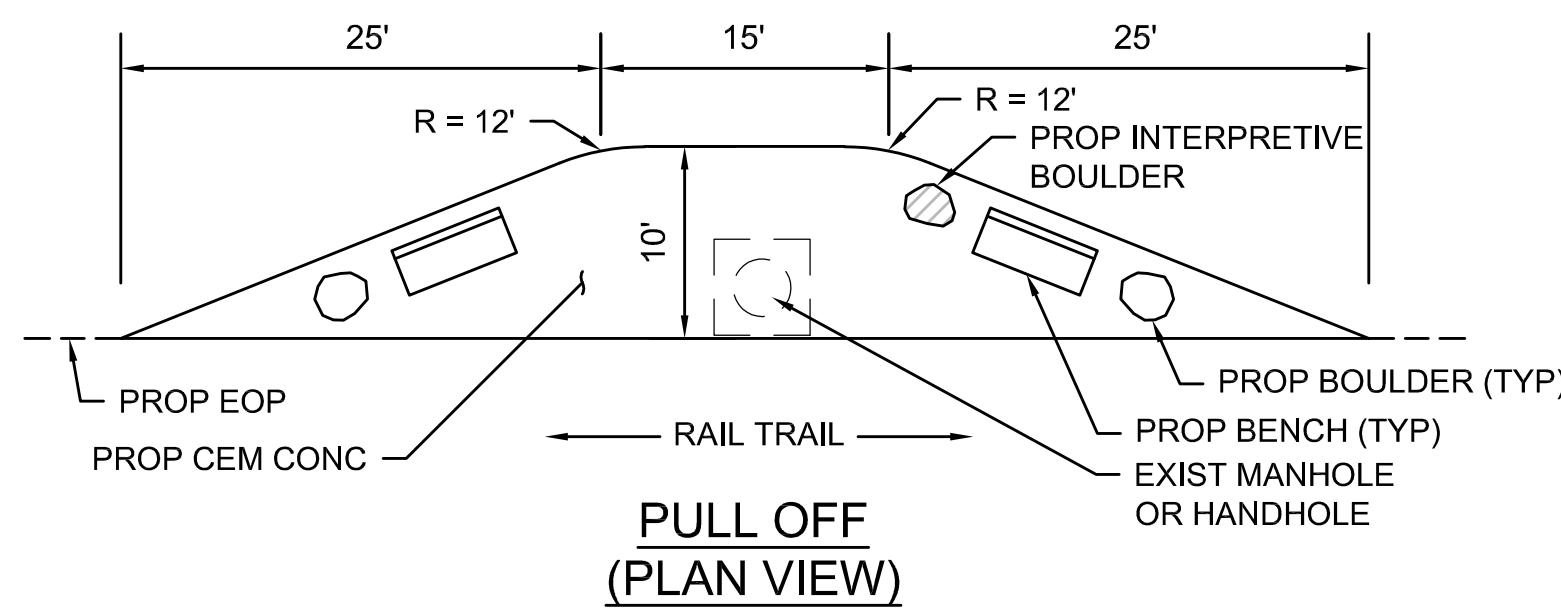
ENGRAVED GRAPHICS ON
 FACE OF BOULDER AS
 APPROVED BY ENGINEER



NOTE:
 1. LOCATION AND FACING TO BE
 APPROVED BY ENGINEER IN THE
 FIELD.
 2. STANDARD BOULDERS TO BE
 INSTALLED IN SAME MANOR.

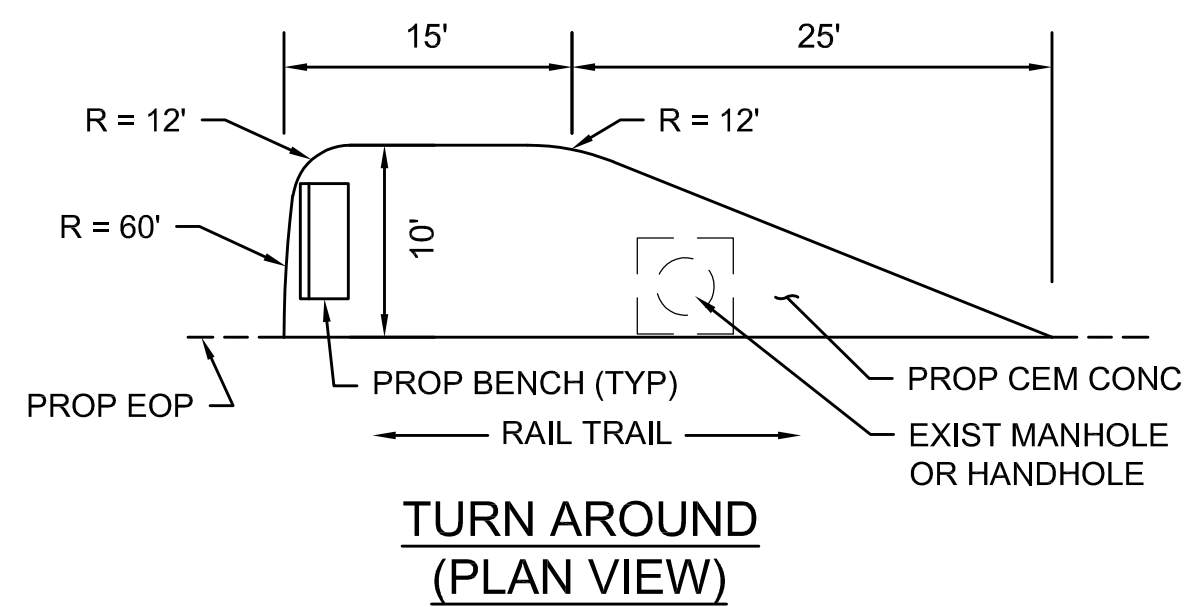
ENGRAVED BOULDER

SCALE: N.T.S.



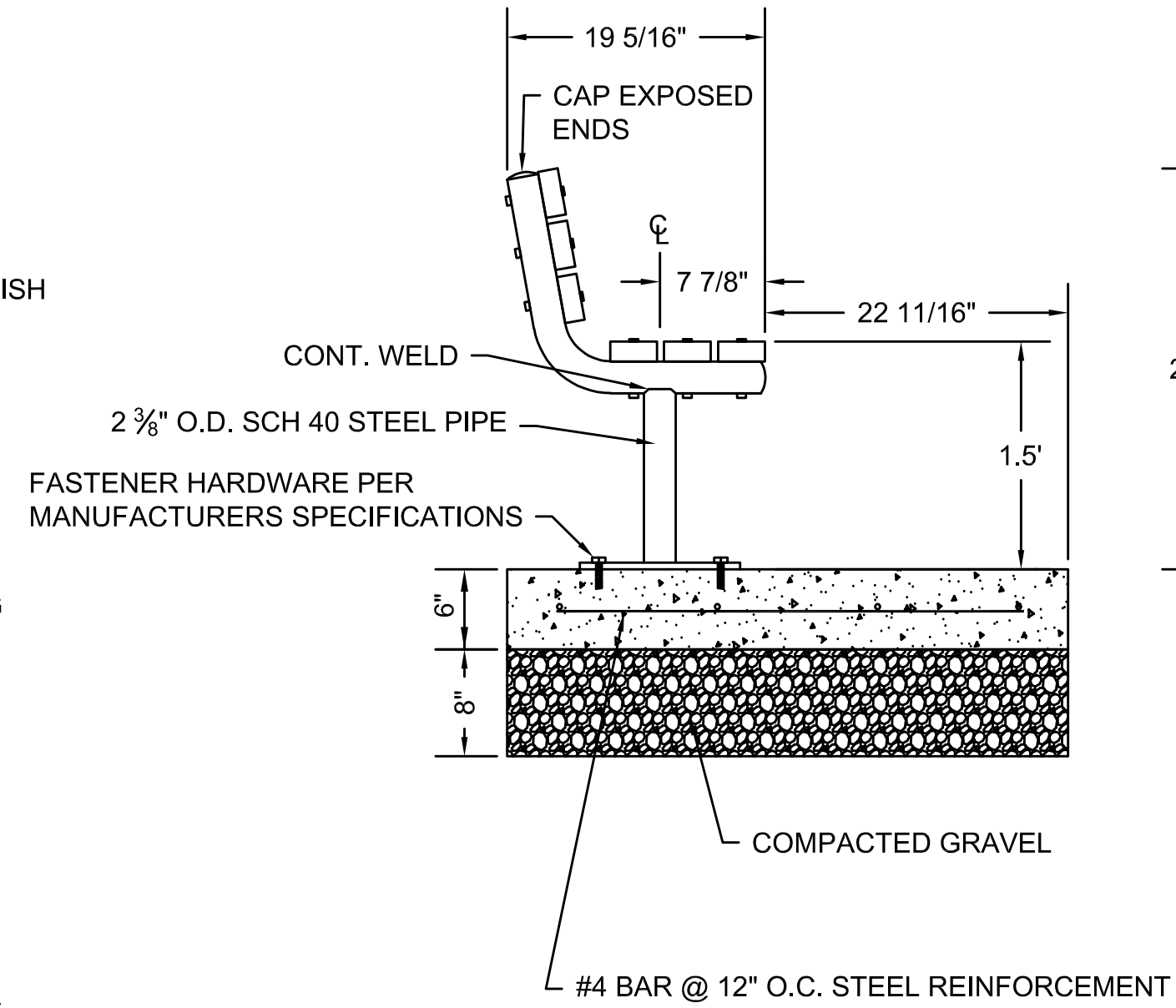
CEMENT CONCRETE PULL OFF

SCALE: N.T.S.



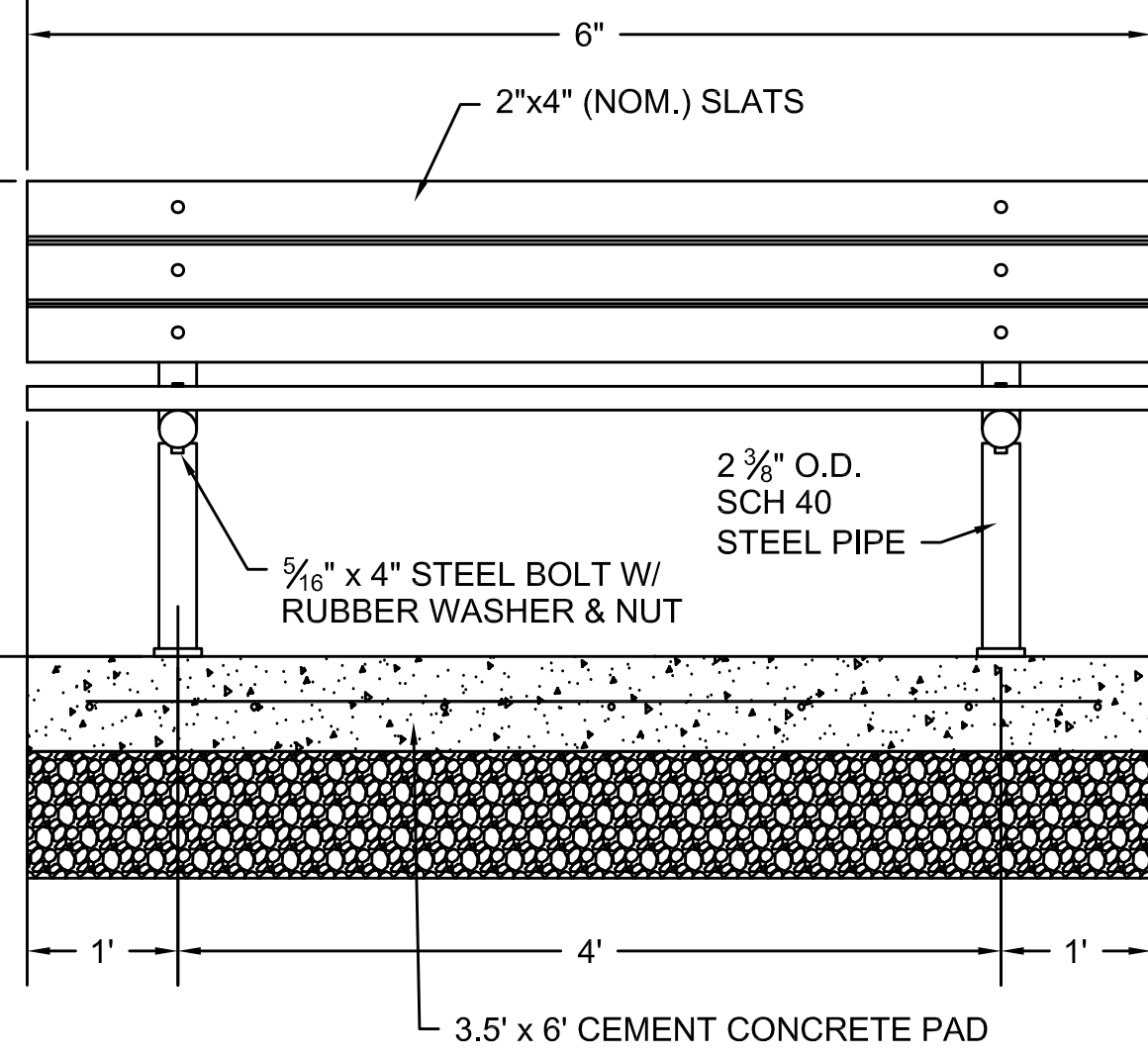
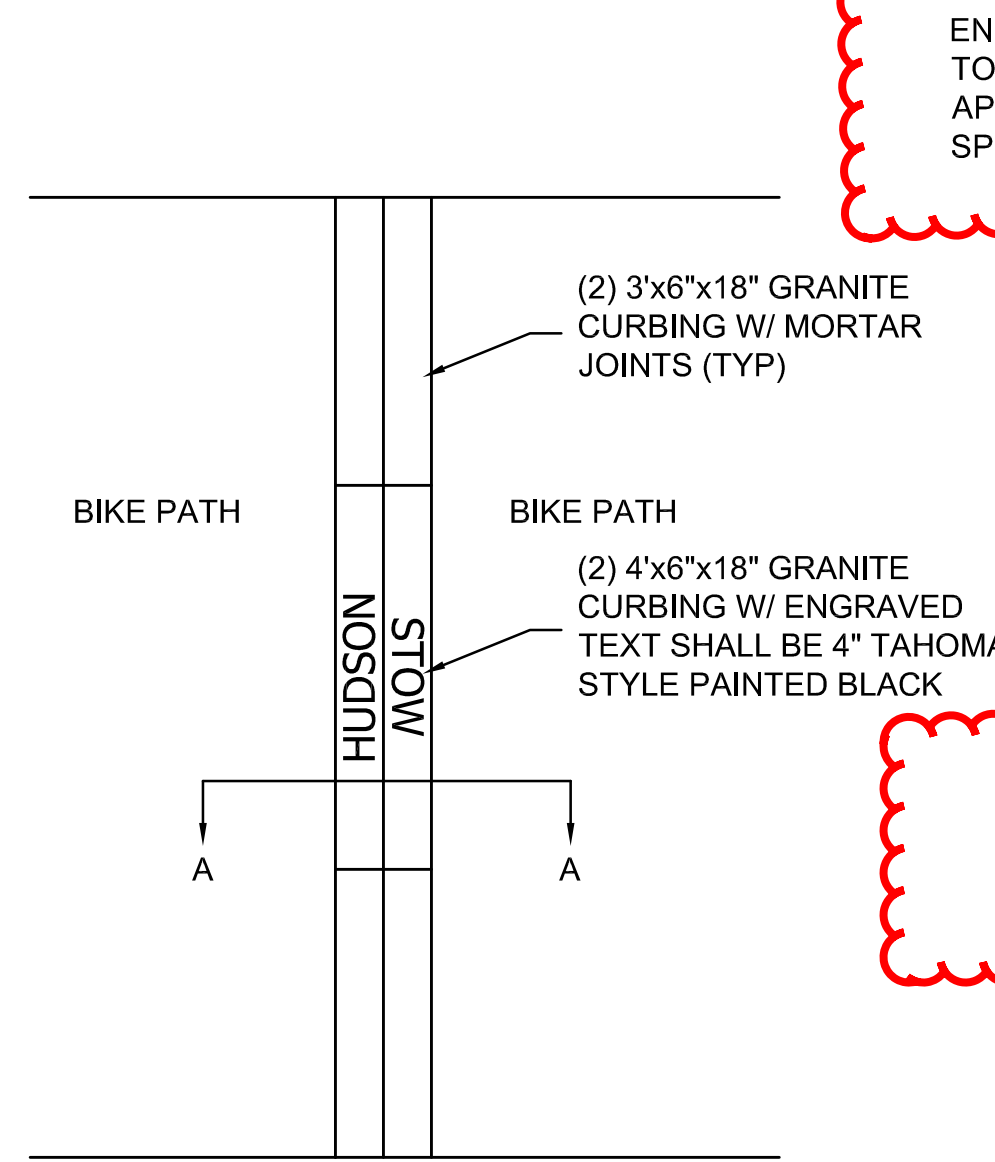
CEMENT CONCRETE TURN AROUND

SCALE: N.T.S.



BENCH

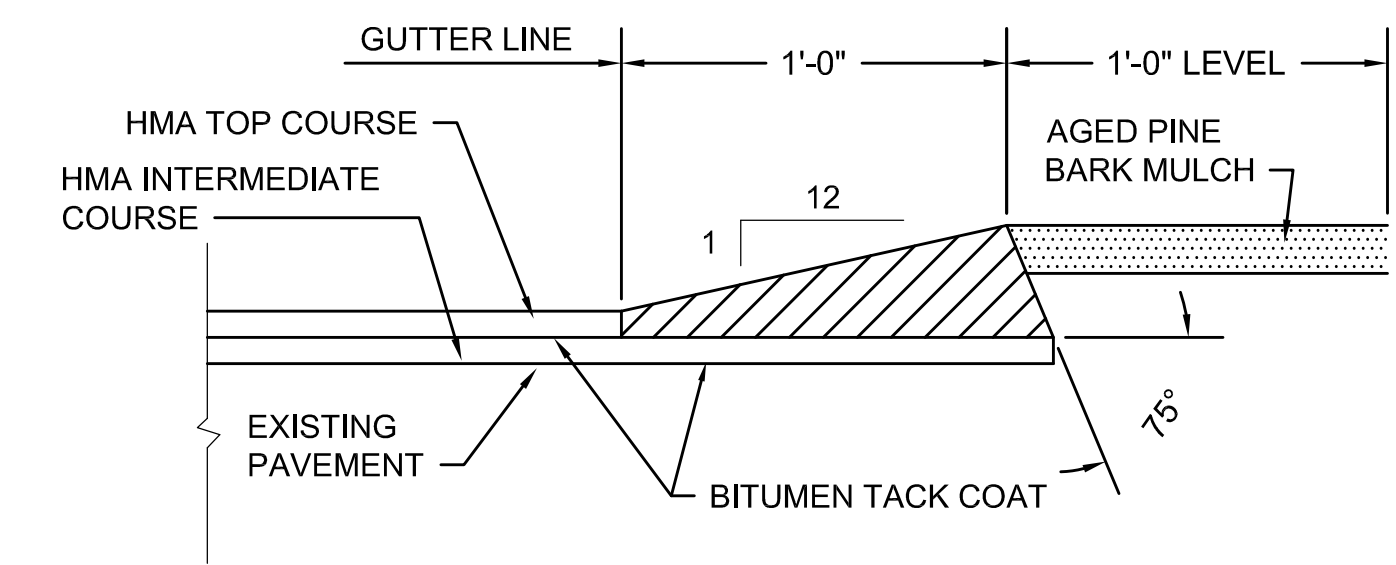
SCALE: N.T.S.



BENCH NOTES:
 1. STEEL PIPING SHALL BE POWDER COATED
 BRONZE FINISH
 2. SLATS SHALL BE 2x4 (NOM.). MATERIAL AND FINISH
 TO BE PER SPECIAL PROVISIONS.
 3. ALL HARDWARE SHALL BE STAINLESS STEEL
 UNLESS OTHERWISE NOTED.

ENGRAVED BOULDER - HABITAT MANAGEMENT

SCALE: N.T.S.

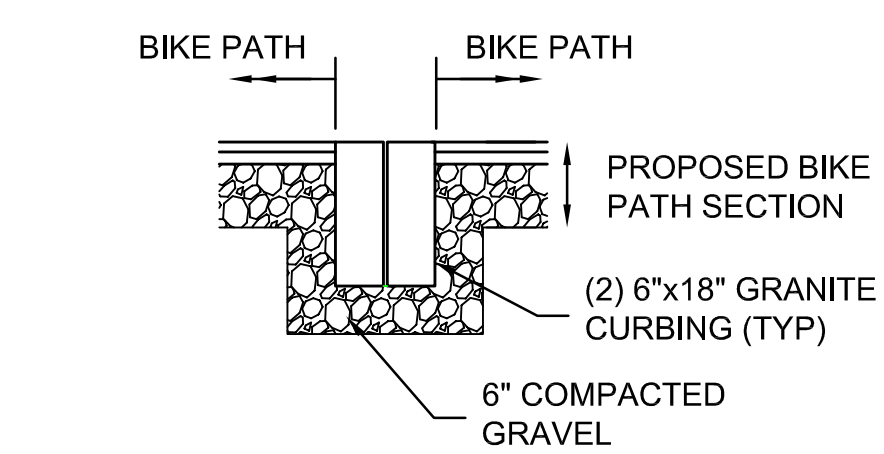


HMA BERM TYPE A-MODIFIED

SCALE: N.T.S.

INLAID GRANITE TOWN LINE MARKER

SCALE: N.T.S.



REV.	DATE	DESCRIPTION	BY



COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF CONSERVATION AND RECREATION
 DIVISION OF PLANNING AND ENGINEERING

MASS CENTRAL RAIL TRAIL - WAYSIDE
 MASS CENTRAL RAIL TRAIL
 HUDSON, STOW, MARLBOROUGH & SUDBURY, MA

CONSTRUCTION DETAILS

DESIGNER: JCR
 CHECKED: SHK
 DRAWN: JCR
 CHECKED: TAL

CONT. P19-3295-D1A
 ACC. XXXXXXXX

SCALE: 1" = 20'-0"
 DATE: FEB 2021

SHEET NO. D-03
 3 OF 8

Attachment C

Turtle Protection Plan for Massachusetts Central Rail Trail- Wayside Section and Sudbury- Hudson Transmission Reliability Project - Phase 2

Turtle Protection Plan
MassCentral Rail Trail – Wayside Section

NHESP File No. 15-34327

August 30, 2021

Project Overview/Background

The Massachusetts Department of Conservation and Recreation (“DCR”) and NSTAR Electric Company d/b/a Eversource Energy (“Eversource”) will be constructing a portion of the Massachusetts Central Rail Trail (“MCRT”) and installing an underground electric transmission line within an inactive Massachusetts Bay Transportation Authority (“MBTA”) railroad right-of-way (“ROW”) within the limits of the towns of Sudbury, Marlborough, Stow, and Hudson, Massachusetts. As proposed, the MCRT and the underground electric transmission line, referred to as “the Sudbury-Hudson Transmission Reliability Project” is a joint project (the “Project”) to be constructed in a two-phased approach.

Phase 1 of the Project will be under the control and responsibility of Eversource and will include vegetation removal, all major earthwork, bridge reconstruction, installing the underground electric transmission line, upgrading the existing Sudbury substation, installing stormwater management features, creating a 14-foot-wide gravel access road, and revegetate disturbed areas. The 14-foot-wide gravel access road will be created by Eversource as the base for the MCRT Rail Trail to be constructed in Phase 2 by DCR. Phase 2 of the Project will be under the control of DCR and will include grading of the 14-foot-wide gravel access road, as needed, paving a 10-foot-wide bike path surface within the gravel access road, placing loam and seeding the 2-foot shoulders on either side of the trail, installing benches and bike racks, crossing facilities at road crossings, planting shrubs, installing bike railings adding pavement markings and signage and final restoration.

Both phases of this Project are associated with NHESP File No. 15-34327, however, each phase of the Project was issued a separate No Take Determination letter from the Natural Heritage & Endangered Species Program (“NHESP”) of the Massachusetts Division of Fisheries & Wildlife (the “Division”). Eversource received a No Take Determination letter for the Sudbury-Hudson Transmission Reliability Project on October 19, 2018. DCR received a No Take Determination letter for the MCRT on May 17, 2019.

Condition 1 of the No Take Determination letter for the Sudbury-Hudson Transmission Reliability Project identified that the Eastern Box Turtle Protection Plan (“TPP”), dated 5/31/2018 must be implemented as proposed. The 2018 TPP was developed to protect both Eastern Box Turtle (EBT: *Terrapene Carolina*) and Wood Turtle (WT: *Glyptemys insculpta*) and was based upon field data collected through 2018. This updated Plan addresses Condition 3 of the No Take Determination Letter requiring submission of a final version of the Eastern Box Turtle Protection Plan for review and approval.

Since the approval of the 2018 TPP, Eversource has continued to collect field data related to the presence and movement of EBT and WT. Eversource and DCR have developed specific contractor training and responsibilities throughout the permitting of the Project. DCR is submitting this updated TPP to NHESP for their review and approval for the Phase 2 portion of the Project. This updated TPP contains all the same

elements approved in the 2018 TPP, but, is updated based on the most current field data and expectations for Contractor Training and environmental monitor oversight during the construction of Phase 2 of the Project.

EBT and WT are listed and protected by the NHESP as “Species of Special Concern”. Both EBT and WT are known to occur in Priority Habitat 1040 / Estimated Habitat 1440 (PH 1040 / EH 1440) in Hudson, Marlborough, and Sudbury generally located between Dutton Road in Sudbury and White Pond Road in Hudson. Since 2017 and up to the present, an ongoing field survey by Eversource for EBT and WT has been completed on the MBTA corridor in Sudbury, Marlborough and Hudson and lands adjacent to it within the mapped Priority Habitat. As part of this survey, a number of EBT and one WT have been captured and fitted with radio transmitters by Eversource. Using radio telemetry techniques, the movements of these animals have been closely followed during their active periods. Based on the observations made during this survey, it is now known that there are turtle movements beyond the mapped Priority Habitat. **Based on survey efforts, the TPP applies to areas along and within the construction corridor between Dutton Road in Sudbury, west to Parmenter Road in Hudson.**

The TPP consists of rigorous measures that will be taken to protect turtles from unintentional injury or death during the construction of DCR’s portion of the Project (Phase 2). The TPP also describes measures that are intended to protect their nests and overwintering locations.

Following construction, rare turtle protective measures will be implemented by Eversource as part of their yearly Operation and Maintenance Plan (OMP) for maintenance and operational work on electric transmission line rights-of-way (ROW). Similarly, DCR will follow their trail Guidelines and Best Management Practices Manual.

The TPP consists of several important components that will work effectively to protect EBT, WT, and other turtle species that may be encountered during construction both within Priority Habitat and elsewhere on the project corridor.

It is the intent that this TPP not be a static document. As construction and on-going turtle survey efforts proceed beyond the construction corridor, changes may be made to the TPP. These changes will be made should new information regarding turtle movements and / or behavior indicate necessary changes to protect turtles during construction activities.

Protective measures that DCR will follow during construction are as follows:

Pre-Construction

Contractor Education and Awareness Program

Prior to construction, Project construction plans have been developed clearly identifying the locations of sensitive rare turtle habitats. These plans will clearly and concisely identify rare turtle work restrictions and requirements that will be implemented while working within rare turtle habitat.

Prior to construction, all workers who will be working on the Project will be required to attend a rare turtle training session. The session will be conducted by a qualified biologist knowledgeable with EBT and WT biology and behavior. The session will include discussions on rare turtle identification, biology, habitat preferences, natural history, and mandatory work requirements and practices within designated rare turtle habitats. The session will make use of a PowerPoint presentation and handout materials that workers can refer to while working on the Project Site. All attendees of the training session will be required

to sign an attendance sheet. **Workers not trained will not be allowed on the Project ROW in areas identified as turtle habitat in this TPP (i.e., from Dutton Road to Parmenter Road).** Additional training sessions will be given as new contractors or crews are added to the workforce. Refresher training sessions will be given on as need basis should non-compliance activities occur on the Project site.

Environmental Inspectors

Qualified Environmental Inspectors (EI) will be assigned to the section of the construction corridor where the TPP applies, should be familiar with the biology and behavior of rare turtles and the measures that are necessary to protect them during construction. The EI(s) shall also be required to either obtain a Scientific Collection or be listed as a sub-permittees on such a permit obtained for the Project by a qualified individual.

During Construction

Construction Inspections and Treatment of Animals

Prior to daily work activities within rare turtle habitat between April 1 and October 31, a qualified EI or trained staff will visibly search (sweep) access roads, work areas in the construction corridor and occasionally in areas adjacent to the construction corridor on the MBTA corridor for rare turtles.

Turtles observed within Limits of Work will be photographed, and the location, direction of travel and any designating numbers or notches on the carapace will be recorded. The individual will then be relocated greater than 500 horizontal feet from their capture points. Attempts will be made to relocate turtles in their perceived direction of travel, avoiding areas of private/no-access properties. In some circumstances it may be necessary to temporarily detain captured turtles and relocate them at the end of the workday. **Should any rare turtle be located within the construction corridor or the MBTA ROW, proper handling, care, and relocation must follow the “Rare Turtle Capture and Handling Protocol” provided in Attachment A.**

While work is occurring, the area surrounding the work area will also be inspected periodically to ensure that any turtle(s) that may wander into the area will be located and properly moved from harm. If a contractor employee locates a rare turtle in the absence of an EI, he or she will be required to notify the EI as soon as possible for directions on how to proceed.

Rare turtle sweeps and construction oversight for rare turtles will not be required during the dormant season, between November 1 and March 31, when turtles are presumed to be hibernating in locations away from the work area (see circumstances described below in “Protection of Turtle Hibernacula” for exceptions to this). However, other wildlife time of year restrictions may apply.

Protection of Turtle Hibernacula

Based on the current data for known hibernacula conducted by Eversource, since 2017 no tracked rare turtle has hibernated within 100 feet of the Project Site. If, based on ongoing Phase 1 studies, a hibernaculum is identified within 50 feet of the Project Limit of Work for any Project related activities NHESP will be contacted to schedule a site visit. During the site visit, potential risks to the hibernaculum and turtle will be determined and if necessary protective measures to be followed during construction will be established. If a hibernaculum is located between 30 and 50 feet of the Limits of Work and Project activities are allowed to continue following NHESP site walk. Special attention needs to be paid to hibernacula relatively close to the construction Limit of Work during the month of March. If a

hibernaculum is located closer than 30 feet from the Construction Limit of Work during the overwintering period, construction activity may be limited to only of driving equipment along the construction corridor. If this situation occurs, special attention must be paid to monitoring possible turtle movements from their hibernaculum. If a turtle is found overwintering within 30 feet of the Construction Limits of Work, under limited and rare circumstances, it may be relocated from its hibernaculum but only with direct input from NHESP.

Protection of Turtle Nests

Rare turtles typically nest within well-drained, open areas during evening hours typically between May 25 and July 5. Turtle nests incubate through the summer and hatchlings typically emerge and migrate away from the nest by early October. Based on Eversource's rare turtle survey efforts completed to date, there have been no turtle nesting areas identified within the project construction corridor. If, based on the rare turtle survey conducted during Phase 1, work will occur within potential nesting habitat in June through early July, the following protection measures will be implemented.

If there appears to be a rare turtle nesting conflict during construction, the EI will be notified. Searches will be completed within the identified potential nesting habitat areas between May 25 and July 5 to locate females in search of suitable nest locations. Observed state-listed female turtles will be watched from a distance to identify nest locations. After females have completed nesting, the nest locations will be flagged for avoidance to prevent destruction of incubating eggs. Efforts will be made to pinpoint the precise nest location.

If nest avoidance is not possible during construction, nests may be excavated by the survey biologists and relocated to a suitable incubation area beyond the limits of work. The biologist will confer with NHESP prior to relocating state-listed turtle nests. Any nest enclosures left from Phase 1 construction will be removed during early September to allow hatchlings unhindered egress unless directed otherwise by NHESP.

Other Protective Measures

Erosion control barriers and soil erosion blankets containing plastic or wire mesh can ensnare turtles and other animals resulting in mortality. Therefore, erosion control and stabilization measures containing such mesh (straw wattles, mesh-backed silt fence, and open mesh blankets) is prohibited within mapped rare turtle habitat. As such, syncopated erosion control barriers and other erosion control devices that will be used within Priority Habitat areas as shown on Project plans and designed to allow for the passage certain wildlife species across the corridor, will not contain plastic or wire mesh as part of their installation. Any area containing erosion control protective measures or syncopated barriers should be inspected regularly for any turtle that may have entered the construction corridor and detained within it. Any turtle found in any such area should be relocated or handled as prescribed in the "Rare Turtle Capture and Handling Protocol" provided in Attachment A. Materials used for erosion barriers or soil erosion blankets within turtle habitat areas must be approved by the EI. Any such measure that is employed within mapped rare turtle habitat will be removed as soon as site stabilization has occurred.

EIs will coordinate with contractors in the field to effectively prevent turtles from falling into open excavated areas such as post holes or plant holes. The EI will be responsible for approving and inspecting protective measures designed to prevent turtles from falling into open excavations during non-work hours. During the rare turtle active season (April 1 through October 31), excavations will be filled in at the end of each workday. The EI will ensure no excavations are left open at the end of the workday.

Within the area covered by this TPP, signs shall be placed in strategic locations notifying contractors that the area they are entering and/or working in is subject to special requirements designed to protect wildlife. Any such sign shall meet the requirements of the NHESP.

Post Construction

Post-construction maintenance of the MCRT will primarily consist vegetation removal that interferes with the use of the trail including removal of hazard trees or branches, removal of downed trees or branches, shrub and branch trimming, litter pick up, and periodic mowing grass along the bike path shoulders and yearly mowing of grass over the Eversource duct bank. Within the Priority Habitat 1040 / Estimated Habitat 1440 (PH 1040 / EH 1440) in Hudson, Marlborough, and Sudbury periodic mowing will be conducted in accordance with the Long-Term Pollution Prevention Plan and Operations and Maintenance Plan (LTPPP-OMP) and the DCR Trails Guidelines and Best Practices Manual. During the active turtle season (between April 1 and October 31), the shoulders of the bike path or the Eversource duct bank will be swept by qualified staff to locate any EBT or WT prior to any mowing. In addition, the mower for any areas beyond the 2-foot wide bike path shoulders (Eversource duct bank) will be set at least 10 inches above the ground. A boulder marked by etching with a note and the appropriate mowing height is located at either end of the priority habitat polygon.

Alteration of Turtle Protection Plan Elements

The TPP detailed above is designed to avoid direct mortality to any turtles that are known to use the work area or by chance are found during construction activities. Because work plans may change or weather conditions may necessitate changes in schedules, the TPP offers a certain amount of flexibility to accommodate any such schedule or program change. It is the intention of the TPP to respond to any such change to assure that resident turtles in the planned work area will not be directly harmed by construction equipment or activities. If it is necessary to modify the protective approaches detailed herein, NHESP Staff will be consulted in the development of a modified protective approach.

Data Recording and Reporting

All rare turtle observations will be reported online using the NHESP's Heritage Hub reporting portal. That report will include a summary of turtle observation made by the EI for completeness of annual rare turtle observations as part of the overall survey.

Attachment A
Rare Turtle Handling Procedures

Rare turtle Capture and Handling Protocol

Purpose

Eastern Box Turtle (EBT) (*Terrapene carolina*) and the Wood Turtle (WT) (*Glyptemys insculpta*) are state listed in Massachusetts as Species Special Concern. As such, they are protected against direct harm to the individual and protected against destruction or disturbance of their habitats. The purpose of this document is to provide construction personnel with important information that will help reduce the potential for direct harm to individual turtles should they be encountered during construction activities. This document includes information about general habitat use, proper turtle handling procedures, relocation information, contact information of qualified Environmental Inspectors (EI) / Biologists, and representative photographs of both species to assist in proper identification.

General Overview of Eastern Box Turtle Habitat Use

EBTs in the northeast use a variety of habitats over the course of the year based on seasonal availability of food items, life cycle requirements (e.g., nesting and hibernating) and body temperature regulation. A generalized breakdown of this seasonal habitat use is provided below to give contractors an idea of where chance encounters are most likely given the time of year.

- *April through June.* EBTs are typically observed in open fields, early successional scrub-shrub/sapling areas and forest-field edges but may be observed in forested habitats as well. In June, female box turtle may be in open sandy areas with sparse vegetation for nesting.
- *July through September.* EBTs are typically observed in forested uplands and forested wetlands but will sometimes use forest-field edges or dense shrubby areas.
- *October through March.* EBTs use forested habitats almost exclusively but are difficult or impossible to find because they are buried under root/duff layer of the forest floor.

General Overview of Wood Turtle Habitat Use

WT preferred habitat is riparian areas that include slow moving mid-sized streams with sandy bottoms and densely vegetated banks. When not located in riparian habitats they can be found in forests, early successional fields and/or hayfields sometimes great distances from streams.

- *April through June.* WT are found either within slow moving stream or within several hundred meters of them in dense vegetation. They are sometimes found basking in sunlight on stream banks or in areas nearby. In June, female WT may be in open sandy areas with sparse vegetation for nesting.
- *June through early to mid-September.* WT move from riparian habitats into forests, early successional fields and/or hayfields to feed.
- *Mid-September to March.* WT move back into streams or stream banks where they will overwinter.

Methods

Below is a step-by-step process that shall be followed in the event of a rare turtle observation.

- 1) If an EBT or WT is observed, first determine if the individual is within harm's way. If the individual is observed outside of the exclusion zones (i.e., outside of the work area), then it should not be

handled to minimize disturbance and prevent altering their behavior. Report the observation to the EI as soon as possible. If the EI is not immediately available report the observation to a Biologist.

- 2) When an EBT or WT is determined to be within harm’s way, it should be captured and temporarily detained until the designated EI, or Biologist has been notified and can arrive onsite to perform standard data collection and turtle relocation. Contact the EI or as soon as possible. If the EI is not immediately available report the observation to a Biologist.
- 3) To properly detain a turtle, place the turtle into a plastic tub. Turtles can easily die from overheating. Therefore, this tub **MUST** be placed in a cool shaded area out of direct sunlight, indoors or out. Outdoor shaded areas must be persistent, that is, make sure that the tub is not in an area that will **BECOME** sunny later in the day. In addition, fresh vegetation (e.g., leaves, tall grass cuttings) and water **SHALL** be placed into the tub for cover and hydration.
- 4) When handling an EBT or WT grasp it firmly by the sides of the carapace (top shell). These turtles are typically very shy and will usually retract their head and legs into the shell. If the turtle does not retreat into its shell, be cautious of the turtle’s head, mouth, and feet. Although these turtles typically do not bite, they are certainly capable of doing so. In addition, they have very sharp claws and powerful legs for digging, which can scratch the skin.
- 5) As soon as possible and no greater than one (1) hour of either observing or capturing an EBT or WT, contact the EI for direction. If the EI is not present, contact one of the qualified biologists listed below. Turtles shall not be detained for more than four hours at any time.
- 6) If an injured EBT or WT is seen or captured, contact the EI or a Biologist as soon as possible. If it is possible to detain the injured turtle, detain it as described in item 3 above.

Contact Information for Environmental Inspectors

Name:	TBI	Name:	TBI
Cell No:	TBI	Cell No:	TBI
Email:	TBI	Email:	TBI

Contact Information for Qualified Biologists

Name:	TBI	Name:	TBI
Cell No:	TBI	Cell No:	TBI
Email:	TBI	Email:	TBI

Eastern Box Turtle Photographs



Plastron of female



Plastron of male



Variation in turtle carapace patterns



Turtle under old hay bale



Partially buried turtle in forested area



2-year old juvenile

Wood Turtle Photographs



Wood Turtle Plastron (bottom shell)



Wood Turtle Carapace (top shell)



Wood Turtle Front View (note bright orange limbs)

Attachment D

Seeding Specification

Seeding Specification

Part 1 – General

1.01 General

- A. The work under this item shall conform to the relevant provisions of Section 765 of the Standard Specifications and the following:
- 1) The work shall consist of seeding areas designated for loam and seeding, as shown on the plans. The work shall also include seeding previously cleared and grubbed areas as directed by the Engineer.
 - 2) Seeding shall be done within 7 days of placement of loam and final grading.
 - 3) Seeding seasons shall be April 1 through May 15 and October 1 through December 1 for dormant seeding.

Part 2 – Products

2.01 Materials

Seed Samples and Submittals

- A. Certificate of Materials. 90 days prior to ordering, the Contractor shall submit to the Engineer the manufacturer or supplier's notarized Certificate of Materials. This document shall not be used as proof of purchase, proof of material delivered, or proof of material seeded, but simply to verify supplier availability of seed listed on the date certified. The species listed shall match those specified on the plans or herein, however, cultivars may vary due to availability. Substantial substitutions or changes in the mix from that specified on the plans or herein shall be approved by the Engineer.
- B. Seed Tag Certification. All seed lots have a seed analysis tag as required by State and Federal law. The contractor shall submit seed tags for each bag of seed used on the project site or ensure that each tag is photo documented by the Engineer. Number of tags shall match number of bags sent by the supplier to meet rate of Pure Live Seed specified on the plans. Tag must include: kind and variety of seed; lot number; origin of seed; net weight; % purity; germination; dormant seed; germination test date; inert matter; weed, noxious and other crop seed; and name and address of company responsible for the analysis. Seeding may be considered unacceptable for payment if no tags are submitted.
- C. Certificate of Compliance. Contractor shall submit a bill of lading or a signed, dated and notarized Certificate of Compliance from the Supplier that serves as proof of purchase. This document shall include kind and variety of seed, lot number, net weight shipped, date of sale, invoice number under which seed was purchased, and name and address of Supplier or Manufacturer. All information must be included on the notarized form, including lot number and net weight shipped for specified job. This information shall match Seed Tag Certification

and quantity of seed applied on the job. Seeding may be considered unacceptable for payment if information is incomplete.

D. Seed Sample. Contractor may be asked, prior to seeding, to submit a seed sample for testing.

1. Quantities specified are Pure Live Seed (PLS). Greater quantities of ordered seed may be required to achieve actual specified seeding rates. Pure Live Seed is defined as the fraction of pure seed species within the mix that, by standard seed testing practices, will germinate. This is determined by multiplying the percent of seed purity by the percent of seed germination.
2. Seed mix shall be a custom blend as shown on the plans or shall be as specified below. Seed cultivars shall be those that are as regional to New England or the local ecotype as possible.
3. Any species substitutions shall be with a species having similar characteristics and native to New England. Substantial changes in the mix shall be approved by the Engineer.
4. The following herbaceous and shrub seed mixes shall be mixed together and used in all areas designated for loam and seeding for which an alternative seed mix is not specified.

HERBACEOUS SEED MIX		
BOTANICAL NAME	COMMON NAME	PERCENTAGE
<i>Elymus virginicus</i>	Virginia Wild Rye	25%
<i>Elymus canadensis</i>	Canada Wild Rye	25%
<i>Schizachyrium scoparium</i>	Little Bluestem	25%
<i>Dichanthelium clandestinum</i>	Deer-Tongue Grass	8%
<i>Agrostis perennans</i>	Upland Bentgrass	8%
<i>Carex vulpinoidea</i>	Fox Sedge	2%
<i>Juncus tenuis</i>	Path Rush	2%
<i>Juncus effusus</i>	Soft Rush	0.1%
<i>Penstemon digitalis</i>	Beard-Tongue	2%
<i>Symphotrichum novae-angliae</i>	New England Aster	1%
<i>Solidago caesia</i>	Woodland Goldenrod	0.5%
<i>Symphotrichum cordifolium</i>	Blue Wood Aster	0.5%
<i>Eutrochium maculatum</i>	Joe-Pye Weed	0.3%
<i>Geum canadense</i>	White Avens	0.3%
<i>Oligoneuron rigidum</i>	Rigid Goldenrod	0.3%
	Total:	100%

Herbaceous seeding shall be applied at a rate recommended by the supplier.

SHRUB SEED MIX		
BOTANICAL NAME	COMMON NAME	PERCENTAGE
<i>Cornus alternifolia</i>	Alternate-Leaved Dogwood	33%
<i>Viburnum dentatum</i>	Arrowwood	33%
<i>Viburnum Lentago</i>	Nannyberry	33%
	Total:	100%

The above shrub seeding rate is 2 lbs per acre, per species. Total seed mix application rate therefore is 6 lbs per acre and shall be added to the appropriate per acre quantity of herbaceous seed mix before applying.

BOTANICAL NAME	COMMON NAME	PERCENTAGE
<i>Corylus Americana</i>	Hazelnut	100%

Hazelnut seed is too large to apply with the same equipment with other seed mixes. This seed must be applied separately at a rate of 2 lbs. per acre in all areas designated for loam and seeding for which an alternative seed mix is not specified.

Part 3 – Execution

3.01 Methods of Construction

- A. Surface Preparation. Soil preparation and seeding shall occur only when the bed is in a friable condition, not muddy or hard. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. All ruts and any depressions caused by settlement, erosion or rolling shall be filled with additional loam or compost and the soil shall be re-graded to a smooth and even finish corresponding to the required grades.
- B. Unless seeding over newly placed planting soil, prior to seeding and prior to compost topdressing, soil will be prepared by raking or tracking to a depth of 2 inches.
- C. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. No seeding shall be done if soils are muddy or dry and compacted.
- D. Do not use wet seed or seed that is moldy or otherwise damaged.

- E. The herbaceous and shrub seed mixes shall be applied at application rates recommended by the suppliers.
- F. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- G. Lightly rake or roll to ensure proper soil-seed contact. Best results are obtained with a Spring or late Summer seeding. Late Spring through Mid-Summer seeding will benefit from a light mulching of weed-free straw to conserve moisture. Take particular care to cover or bury the hazelnut seed to prevent being eaten by squirrels and deer. If conditions are drier than usual, additional watering will be required.
- H. Lightly water all areas during the first 2 (two) weeks of establishment. Do not disturb the soil or wash out seeding. Any such disturbances shall be repaired by the Contractor at no additional cost.
- I. Fertilizer shall not be used. Preparation of a clean weed free seed bed is necessary for optimal results.
- J. Protect seeded areas with slopes exceeding a 3:1 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.
- K. Protect seeded areas with slopes not exceeding 5:1 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas.
- L. Spread mulch by hand, blower, or other suitable equipment.
- M. Bond straw mulch by spraying with a guar tackifier or other approved plant-based tackifier, at a rate of 10 to 12 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
- N. Over-seeding. If there are numerous areas of bare ground greater than 10-12 inches, these areas shall be over-seeded with the specified mix. Areas that are invaded by weeds shall be mowed as low as possible and over-seeded as directed. Soil that is compacted shall be raked or roughened prior to seeding. Following over-seeding, soil shall be lightly tamped to ensure seed to soil contact.
- O. Over-seeding application rates and methods shall be the same as those listed above. After seeding, areas shall be mulched with straw mulch or ¼ - ½ inch

compost topsoil and watered with a fine mist to moisten soil to a depth of at least 2 inches.

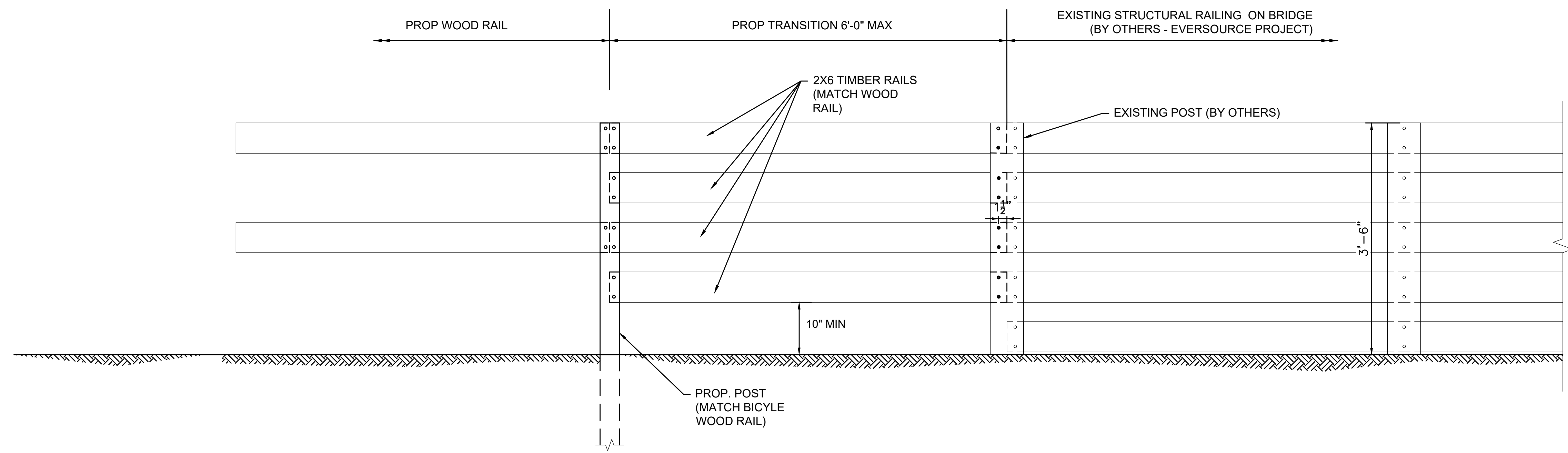
- P. Over-seeding and mulch for over-seeding shall be incidental to this item.

3.02 Care during Grass Establishment

- A. Following germination of seeded species, the contractor shall maintain the stand of grasses to ensure healthy growth. Work shall include mowing or weed-whacking for weed control, irrigation if necessary, and monitoring for invasive plants. Mowing if needed shall only be within 2 feet of the gravel pad or the 5 feet over the duct bank. All other seeded areas shall be allowed to grow without maintenance. Watering shall provide uniform coverage without eroding soil or grassed surfaces. Treatment of invasive plants shall be per the requirements of the Engineer.
- B. The Contractor shall provide all labor, equipment, materials, and water required for establishment. Contractor shall water all seeded areas as necessary to a depth of 2 inches or greater.

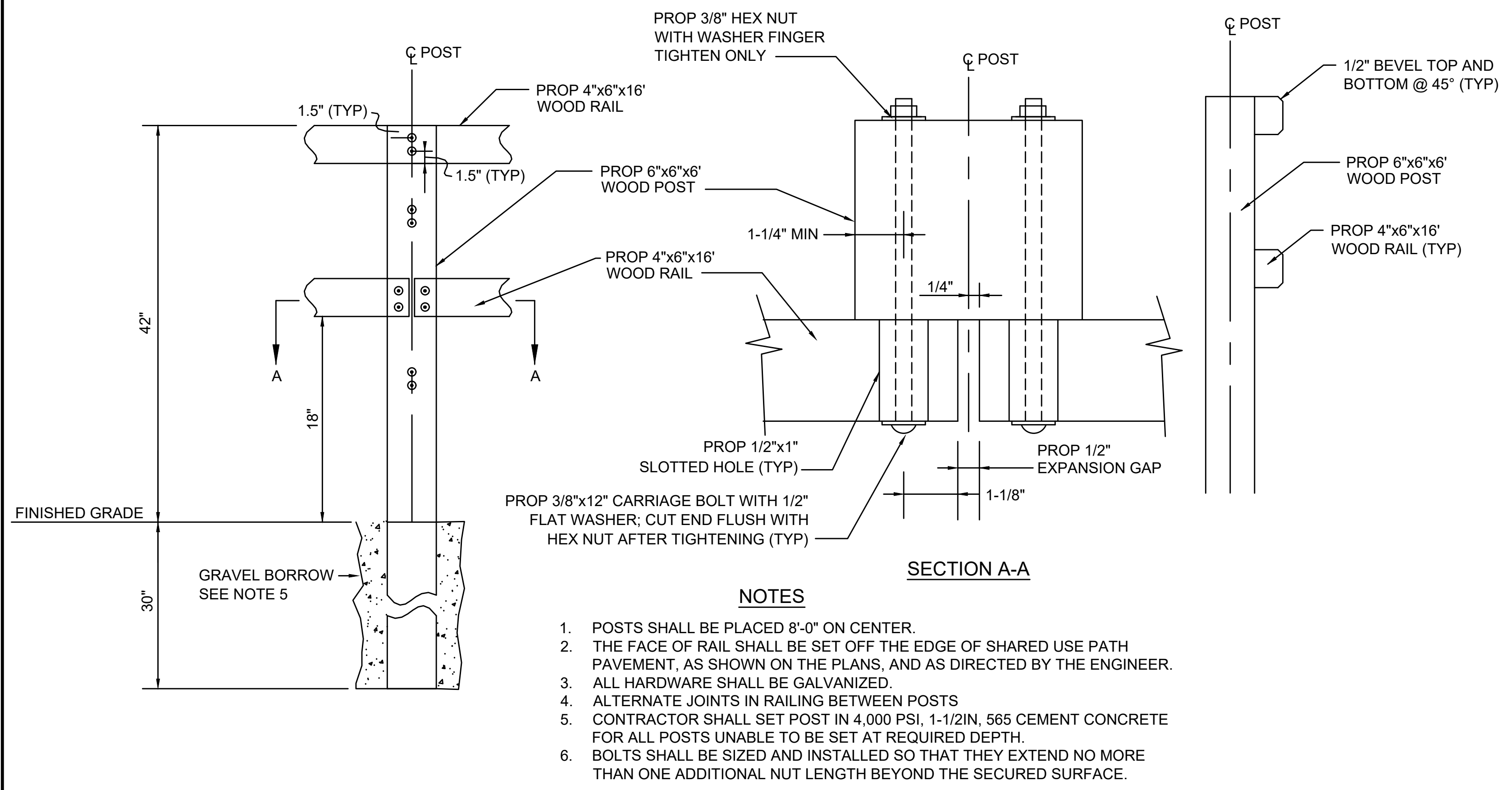
Attachment E

Railing Detail



WOOD RAIL TRANSITION DETAIL AT EXISTING STRUCTURAL RAILING

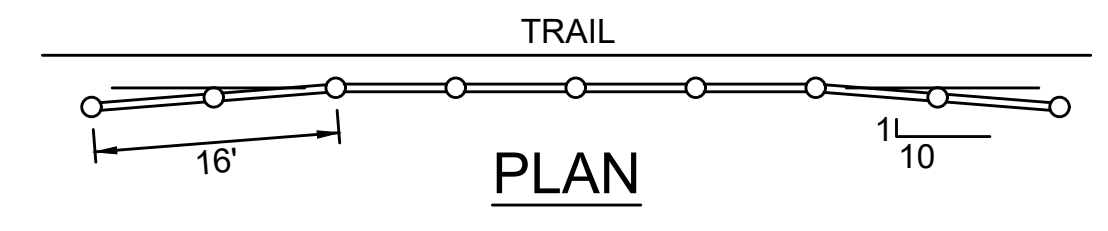
SCALE: NTS



- NOTES**
1. POSTS SHALL BE PLACED 8'-0" ON CENTER.
 2. THE FACE OF RAIL SHALL BE SET OFF THE EDGE OF SHARED USE PATH PAVEMENT, AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.
 3. ALL HARDWARE SHALL BE GALVANIZED.
 4. ALTERNATE JOINTS IN RAILING BETWEEN POSTS
 5. CONTRACTOR SHALL SET POST IN 4,000 PSI, 1-1/2IN, 565 CEMENT CONCRETE FOR ALL POSTS UNABLE TO BE SET AT REQUIRED DEPTH.
 6. BOLTS SHALL BE SIZED AND INSTALLED SO THAT THEY EXTEND NO MORE THAN ONE ADDITIONAL NUT LENGTH BEYOND THE SECURED SURFACE.

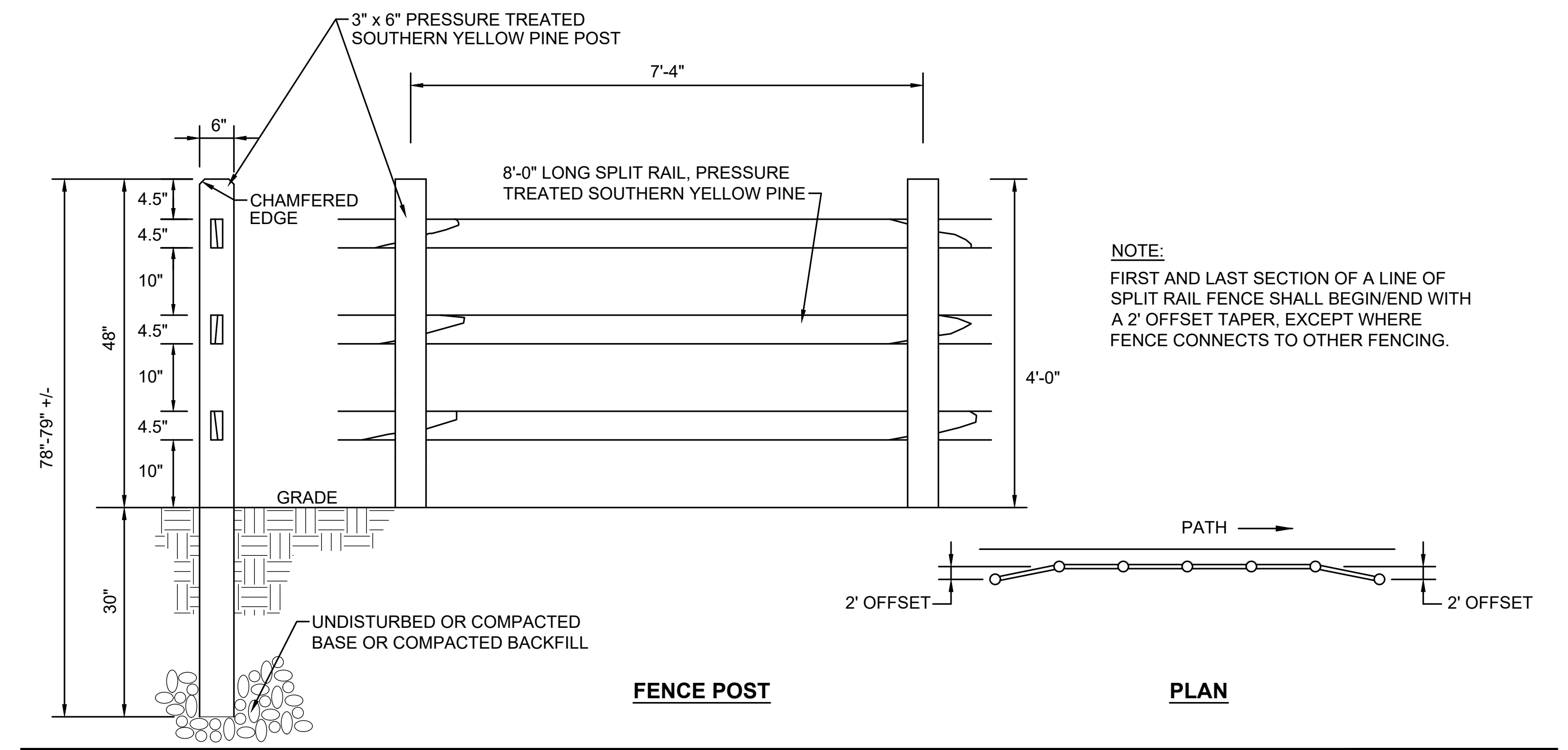
WOOD RAIL - ELEVATION AND SECTION VIEWS

SCALE: NTS



WOOD RAIL TERMINAL END - PLAN VIEW

SCALE: NTS



NOTE:
FIRST AND LAST SECTION OF A LINE OF SPLIT RAIL FENCE SHALL BEGIN/END WITH A 2' OFFSET TAPER, EXCEPT WHERE FENCE CONNECTS TO OTHER FENCING.

SPLIT RAIL WOOD FENCE

SCALE: NTS

REV.	DATE	DESCRIPTION	BY



**COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF PLANNING AND ENGINEERING**

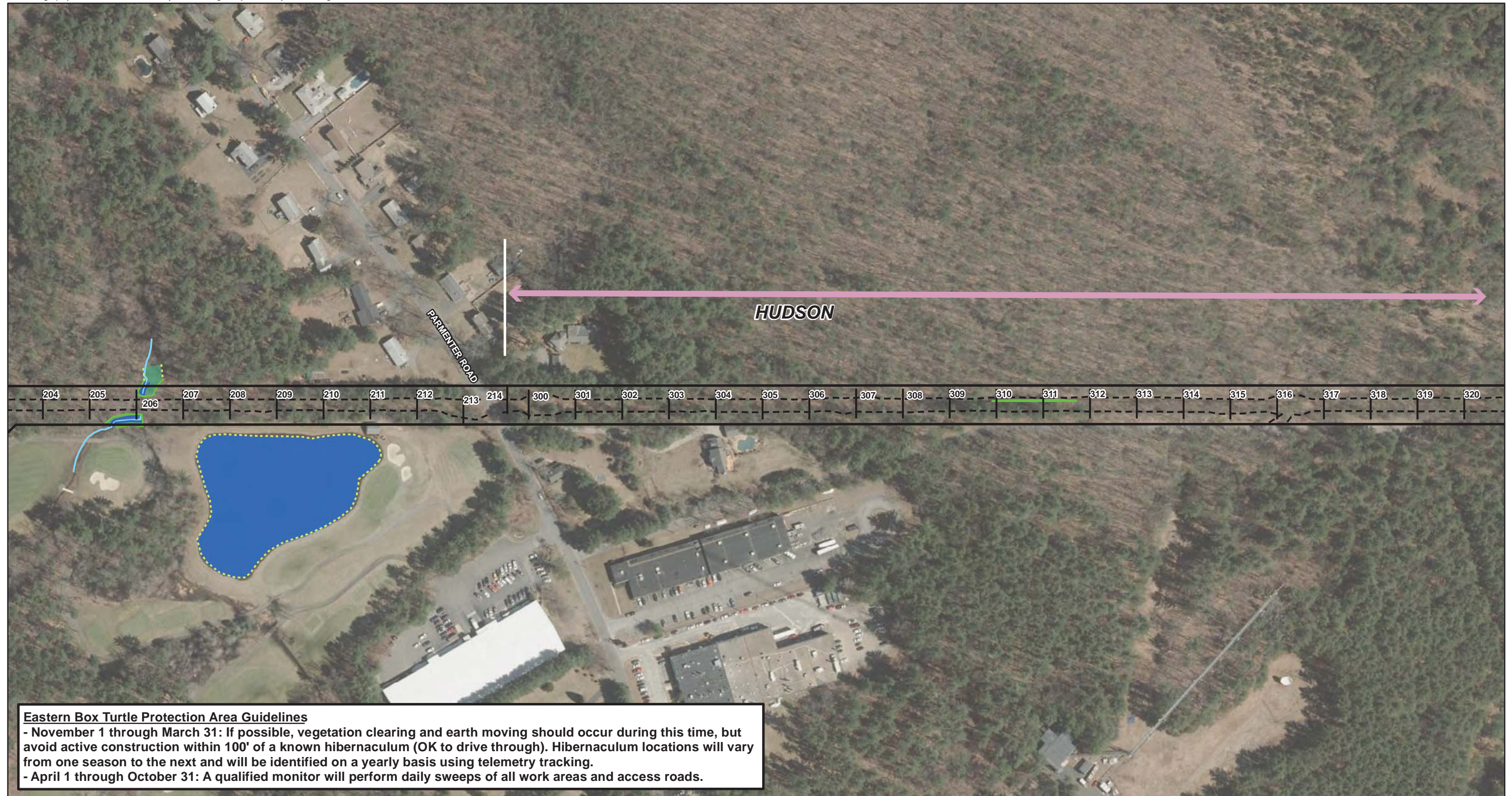
**MASS CENTRAL RAIL TRAIL - WAYSIDE
MASS CENTRAL RAIL TRAIL
HUDSON, STOW, MARLBOROUGH & SUDBURY, MA**

DESIGNER: JCR	CONSTRUCTION DETAILS	SHEET NO. D-04
CHECKED: SHK		
DRAWN: JCR	CONT: P19-3295-D1A	SCALE: 1" = 20'-0"
CHECKED: TAL	ACC: XXXXXXXX	DATE: FEB 2021

4 OF 8

Attachment F

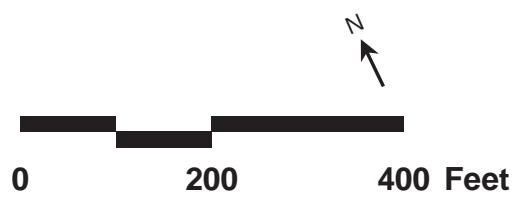
Construction Time of Year Restrictions



Eastern Box Turtle Protection Area Guidelines
 - November 1 through March 31: If possible, vegetation clearing and earth moving should occur during this time, but avoid active construction within 100' of a known hibernaculum (OK to drive through). Hibernaculum locations will vary from one season to the next and will be identified on a yearly basis using telemetry tracking.
 - April 1 through October 31: A qualified monitor will perform daily sweeps of all work areas and access roads.

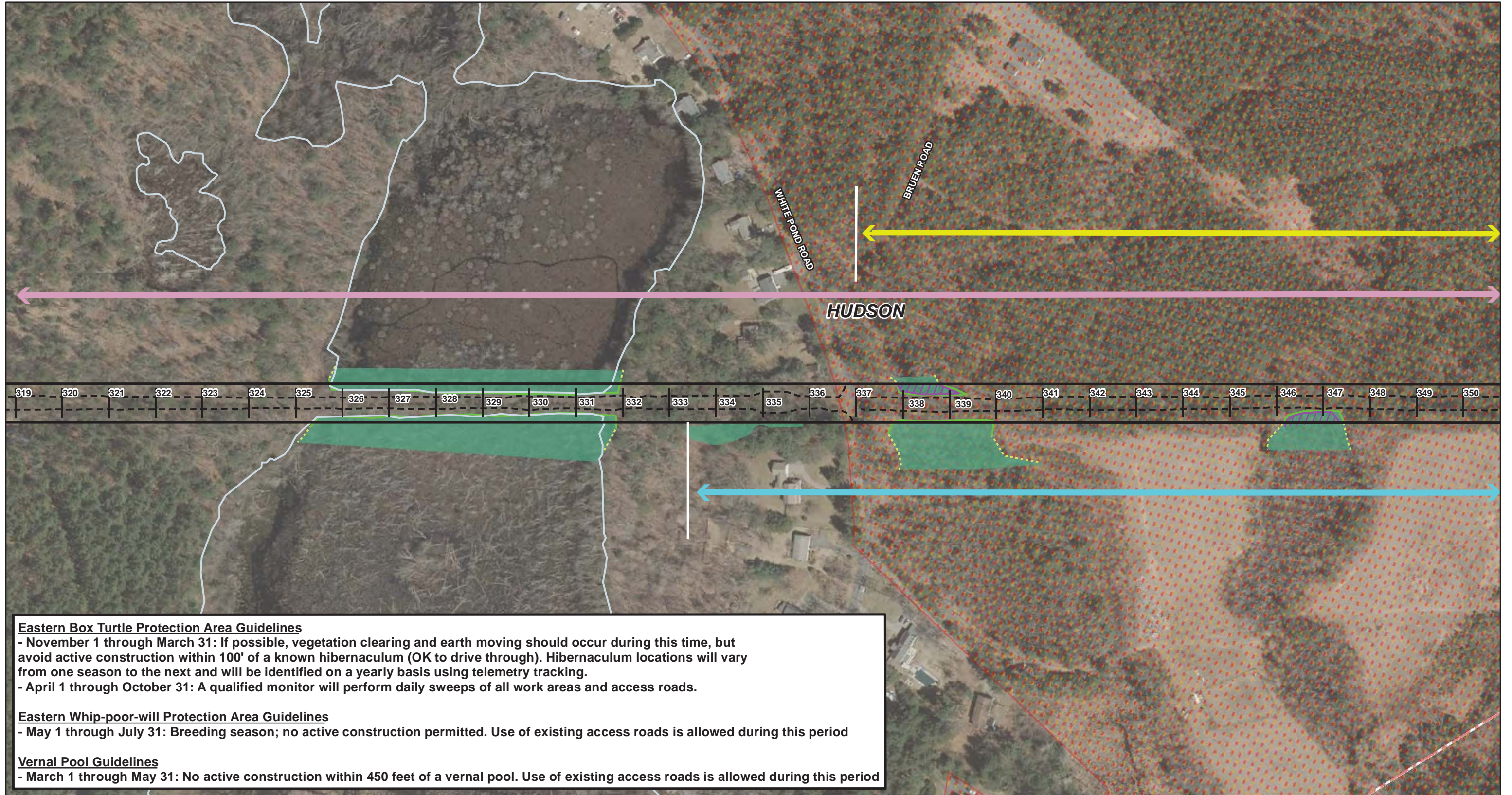
Stationing Locations	Approximate Wetland Edge	10-year Floodplain	Time-of-Year (TOY) Restrictions
Limit of Grading	Delineated Wetland Edge	Bordering Land Subject to Flooding	Black Racer
MBTA ROW Boundary	Delineated Vernal Pool Edge	Wetland Area	Eastern Box Turtle
Town Boundaries	Delineated Top of Bank	Vernal Pool Area	Eastern Whip-Poor-Will
	Land Under Water	Land Under Water	Vernal Pool
		NHESP Priority Habitat	
		NHESP Estimated Habitat	

Source: MassGIS, VHB
3/25/2021



EVERSOURCE ENERGY
 Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project
 Time-of-Year (TOY) Restrictions and Guidelines

Sheet 1 of 11



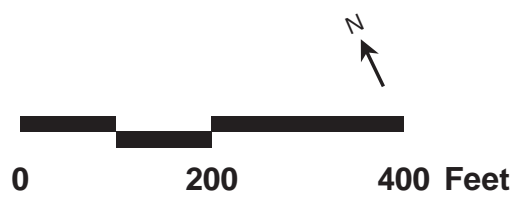
Eastern Box Turtle Protection Area Guidelines
 - November 1 through March 31: If possible, vegetation clearing and earth moving should occur during this time, but avoid active construction within 100' of a known hibernaculum (OK to drive through). Hibernaculum locations will vary from one season to the next and will be identified on a yearly basis using telemetry tracking.
 - April 1 through October 31: A qualified monitor will perform daily sweeps of all work areas and access roads.

Eastern Whip-poor-will Protection Area Guidelines
 - May 1 through July 31: Breeding season; no active construction permitted. Use of existing access roads is allowed during this period

Vernal Pool Guidelines
 - March 1 through May 31: No active construction within 450 feet of a vernal pool. Use of existing access roads is allowed during this period

Stationing Locations	Approximate Wetland Edge	10-year Floodplain	Time-of-Year (TOY) Restrictions
Limit of Grading	Delineated Wetland Edge	Bordering Land Subject to Flooding	Black Racer
MBTA ROW Boundary	Delineated Vernal Pool Edge	Wetland Area	Eastern Box Turtle
Town Boundaries	Delineated Top of Bank	Vernal Pool Area	Eastern Whip-Poor-Will
	Land Under Water	Land Under Water	Vernal Pool
		NHESP Priority Habitat	
		NHESP Estimated Habitat	

Source:
MassGIS, VHB
3/25/2021

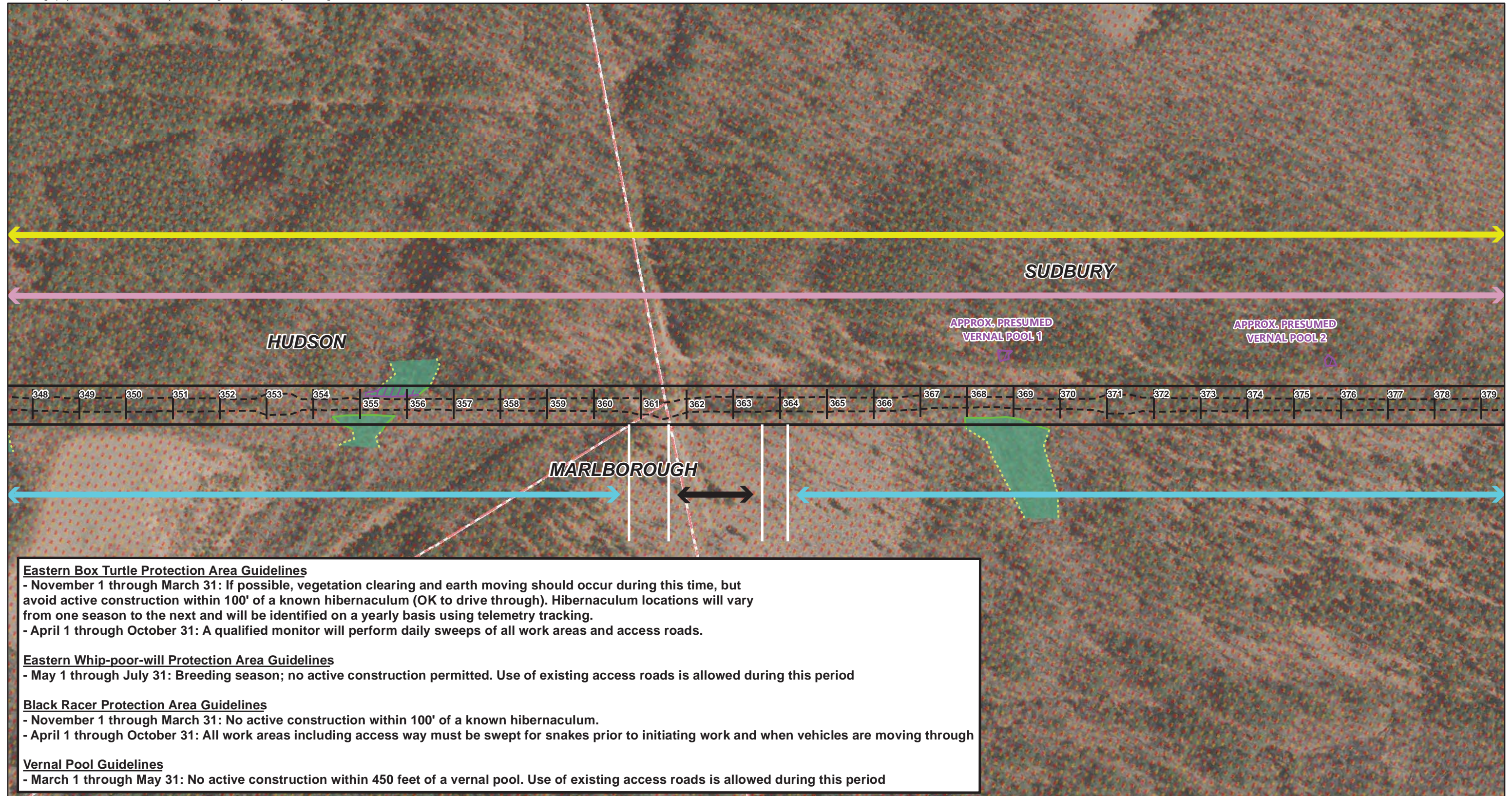


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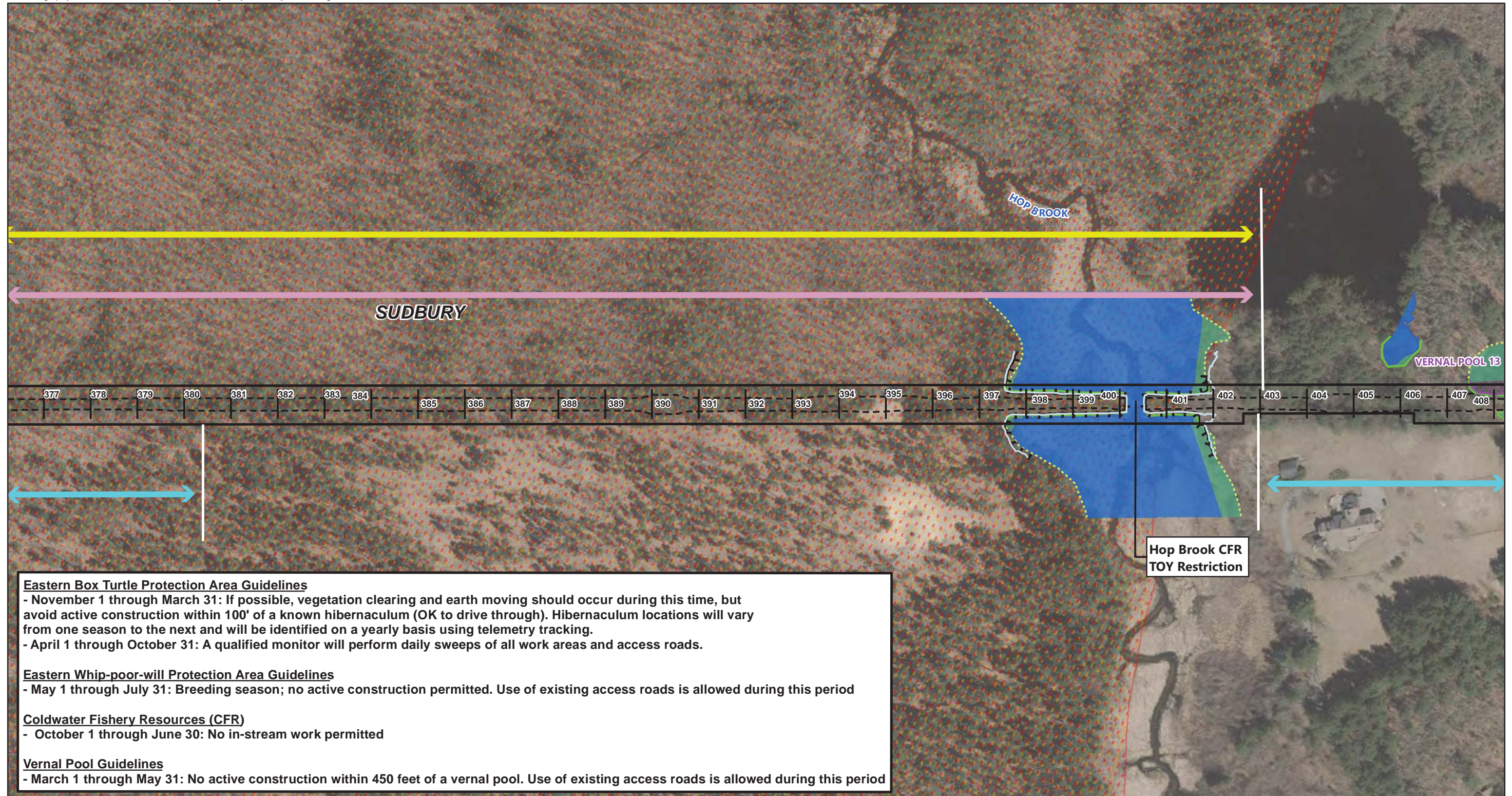
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<p>Stationing Locations</p> <p>--- Limit of Grading</p> <p>— MBTA ROW Boundary</p> <p>[- -] Town Boundaries</p>	<p>--- Approximate Wetland Edge</p> <p>— Delineated Wetland Edge</p> <p>— Delineated Vernal Pool Edge</p> <p>— Delineated Top of Bank</p> <p>— Land Under Water</p>	<p>— 10-year Floodplain</p> <p>— Bordering Land Subject to Flooding</p> <p>— Wetland Area</p> <p>— Vernal Pool Area</p> <p>— Land Under Water</p> <p>— NHESP Priority Habitat</p> <p>— NHESP Estimated Habitat</p>	<p>Time-of-Year (TOY) Restrictions</p> <p>↔ Black Racer</p> <p>↔ Eastern Box Turtle</p> <p>↔ Eastern Whip-Poor-Will</p> <p>↔ Vernal Pool</p>
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Source:
MassGIS, VHB
3/25/2021





Stationing Locations	Approximate Wetland Edge	10-year Floodplain	Time-of-Year (TOY) Restrictions
Limit of Grading	Delineated Wetland Edge	Bordering Land Subject to Flooding	Black Racer
MBTA ROW Boundary	Delineated Vernal Pool Edge	Wetland Area	Eastern Box Turtle
Town Boundaries	Delineated Top of Bank	Vernal Pool Area	Eastern Whip-Poor-Will
	Land Under Water	Land Under Water	Vernal Pool
		NHESP Priority Habitat	
		NHESP Estimated Habitat	

Source:
MassGIS, VHB
3/25/2021



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Vernal Pool Guidelines
 - March 1 through May 31: No active construction within 450 feet of a vernal pool. Use of existing access roads is allowed during this period

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| <ul style="list-style-type: none"> Stationing Locations Limit of Grading MBTA ROW Boundary Town Boundaries | <ul style="list-style-type: none"> Approximate Wetland Edge Delineated Wetland Edge Delineated Vernal Pool Edge Delineated Top of Bank Land Under Water | <ul style="list-style-type: none"> 10-year Floodplain Bordering Land Subject to Flooding Wetland Area Vernal Pool Area Land Under Water NHESP Priority Habitat NHESP Estimated Habitat | <p>Time-of-Year (TOY) Restrictions</p> <ul style="list-style-type: none"> Black Racer Eastern Box Turtle Eastern Whip-Poor-Will Vernal Pool |
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Source:
 MassGIS, VHB
 3/25/2021



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 Time-of-Year (TOY) Restrictions and Guidelines

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Vernal Pool Guidelines
 - March 1 through May 31: No active construction within 450 feet of a vernal pool. Use of existing access roads is allowed during this period

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Source:
 MassGIS, VHB
 3/25/2021





Vernal Pool Guidelines
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|----------------------|-----------------------------|------------------------------------|---------------------------------|
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| Limit of Grading | Delineated Wetland Edge | Bordering Land Subject to Flooding | Black Racer |
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| Town Boundaries | Delineated Top of Bank | Vernal Pool Area | Eastern Whip-Poor-Will |
| | Land Under Water | Land Under Water | Vernal Pool |
| | | NHESP Priority Habitat | |
| | | NHESP Estimated Habitat | |

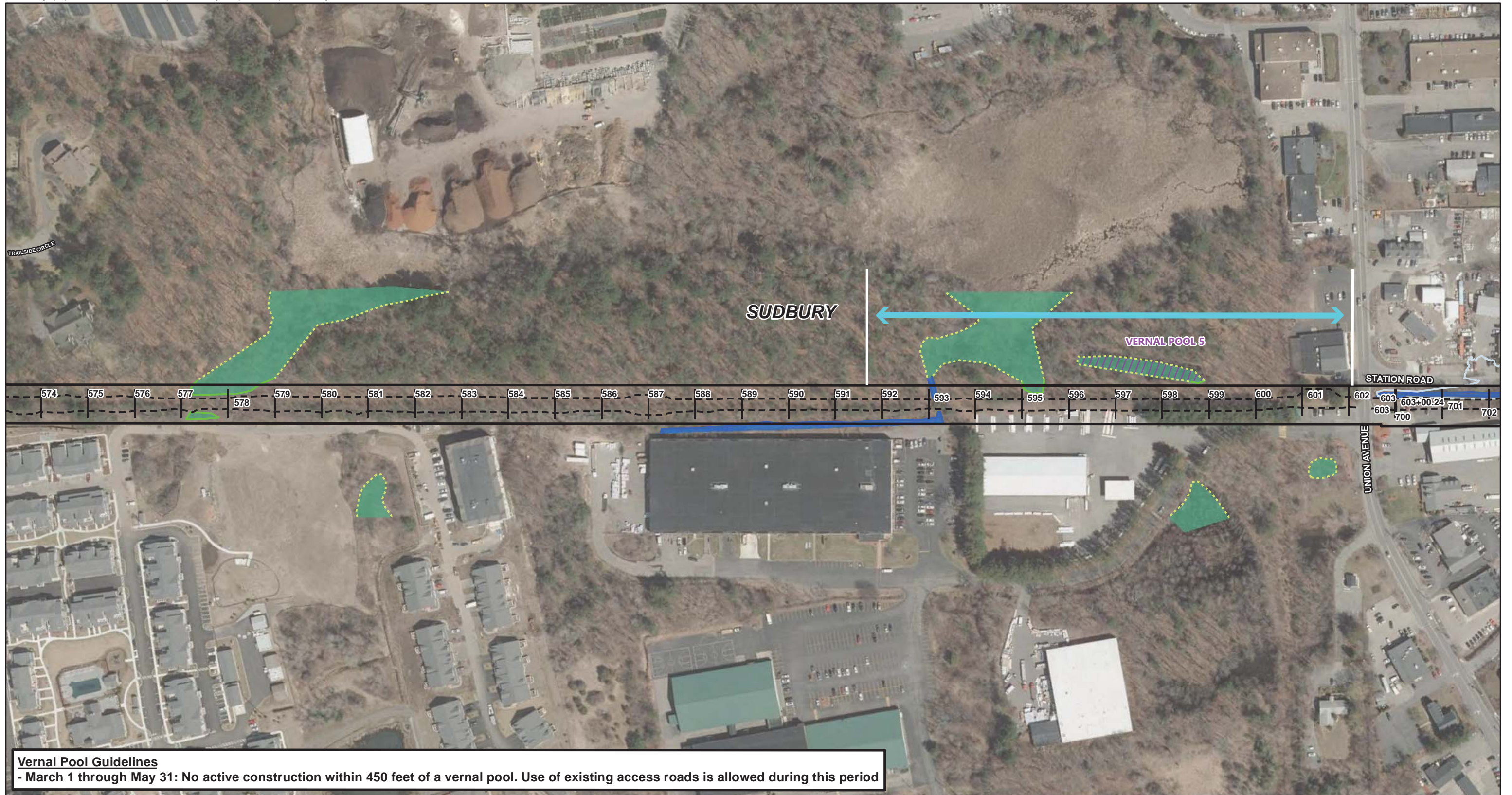
Source:
 MassGIS, VHB
 3/25/2021



Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Time-of-Year (TOY) Restrictions and Guidelines





Vernal Pool Guidelines
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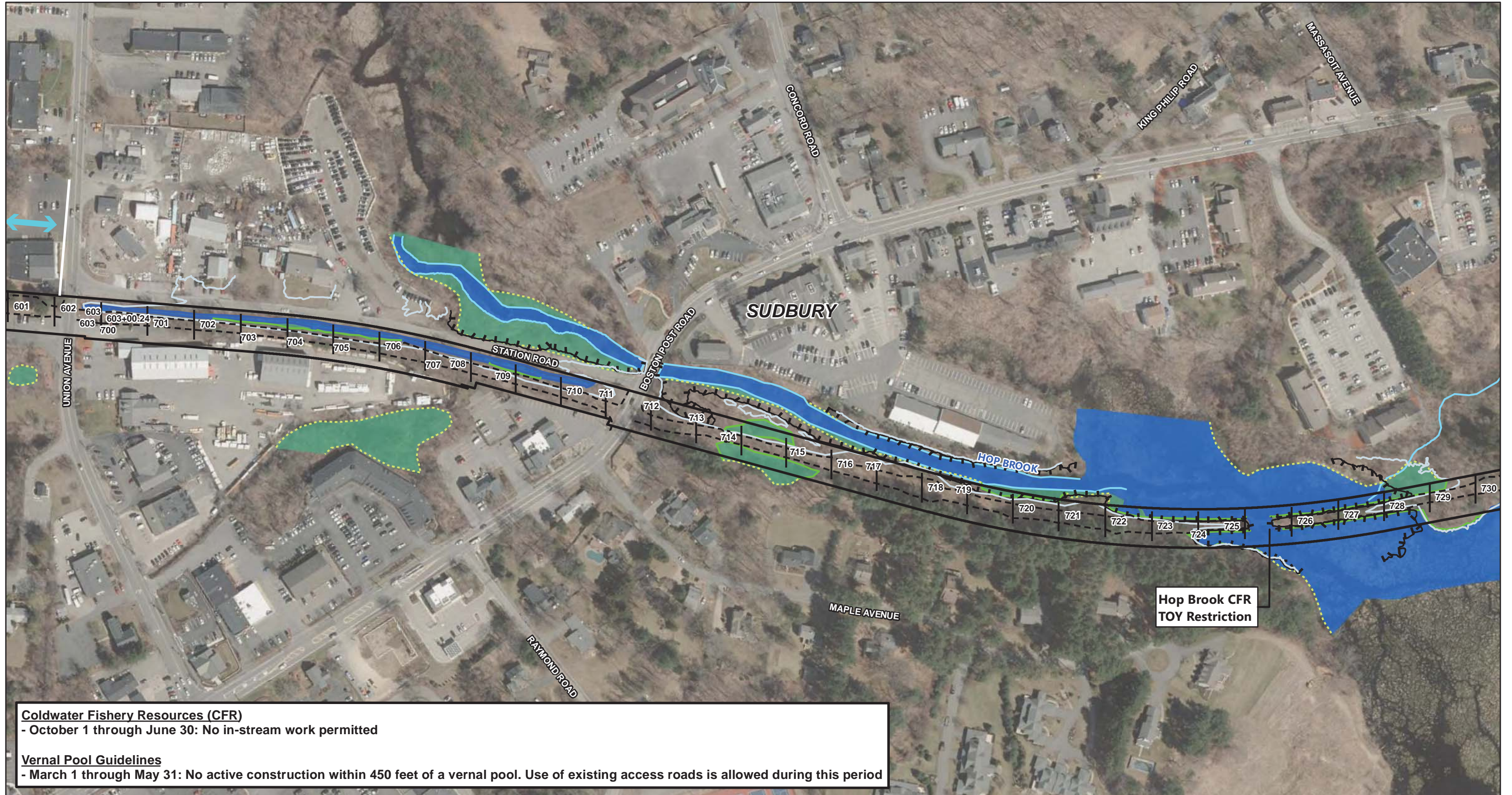
Source:
 MassGIS, VHB
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Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Time-of-Year (TOY) Restrictions and Guidelines





Coldwater Fishery Resources (CFR)
 - October 1 through June 30: No in-stream work permitted

Vernal Pool Guidelines
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|----------------------|-----------------------------|------------------------------------|---------------------------------|
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Source:
 MassGIS, VHB
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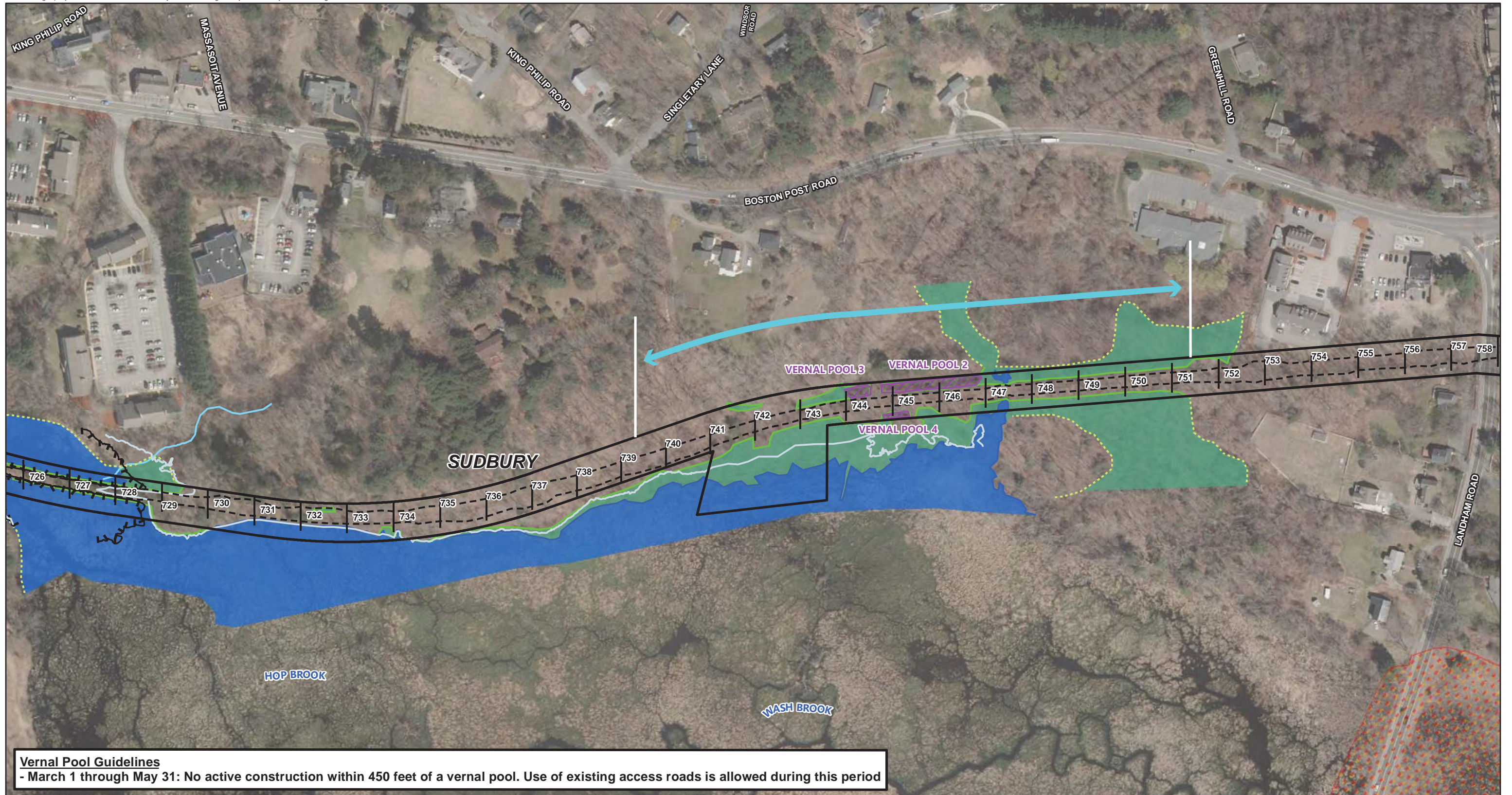


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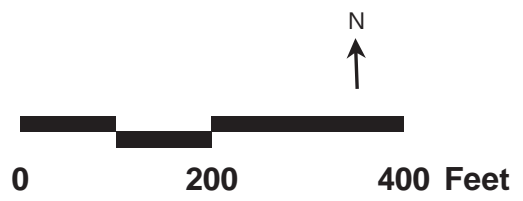
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Vernal Pool Guidelines
 - March 1 through May 31: No active construction within 450 feet of a vernal pool. Use of existing access roads is allowed during this period

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Time-of-Year (TOY) Restrictions and Guidelines

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Vernal Pool Guidelines
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