Contract No. 99771

Revised Submittal

Notice of Intent – New Bedford

New Bedford Main Line

Prepared for:

Massachusetts Department of Transportation
10 Park Plaza
Boston, Massachusetts

Prepared by:

The VHB/HNTB Team – a Joint Venture
99 High Street, 10th Floor
Boston, Massachusetts

July 11, 2018

Back of cover page

July 11, 2018

Ref: 12815.00

Mr. Craig P. Dixon, Chairman
New Bedford Conservation Commission
133 William Street, Room 304
New Bedford, MA 02740

Re: DEP File No. SE 049-0805
Revised Notice of Intent: South Coast Rail – New Bedford Main Line NOI
New Bedford, Massachusetts

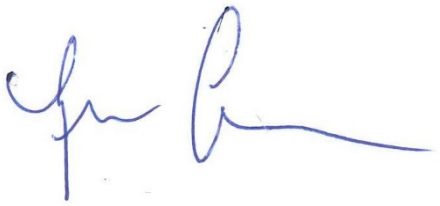
Dear Chairman Dixon,

On behalf of the Massachusetts Department of Transportation, VHB respectfully submits the attached responses to comments received from Nitsch Engineering, Inc. (July 2, 2018) and Conservation Agent Sarah Porter (June 29, 2018) for the proposed South Coast Rail Project (DEP File No. SE 049-0805). Provided are revised track and stormwater reports, as well as a revised mitigation plan, revised drainage plans for the Whale's Tooth station, and a Response to Comments table.

If you have any questions or require additional information, please contact me via email at lcarlson@vhb.com or by phone at (617) 607-6237.

Sincerely,

Vanasse Hangen Brustlin, Inc.



Lars Carlson

Senior Project Manager
lcarlson@vhb.com

CC: James Eng, MassDOT

www.vhb.com

Engineers | Scientists | Planners | Designers

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770
F 617.924.2286

Holly Palmgren, MBTA
MassDEP, Southeast Regional Office, attn: Chris Ross

Enclosures:

Notice of Intent with 11x17 inch plan sets

Notice of Intent Revised Submittal

- Response to Comments Table
- Attachment A: Revised Plan Set
- Attachment B: NBS (3) Appendix A and B Wildlife Habitat Evaluations
- Attachment C: Revised Stormwater Report (Track Corridor) Bound Separately
- Attachment D: Revised Stormwater Report (Whale's Tooth Station) Bound Separately

Response to Comments Table
South Coast Rail Phase 1 Notice of Intent Resubmission
New Bedford, MA
July 11, 2018

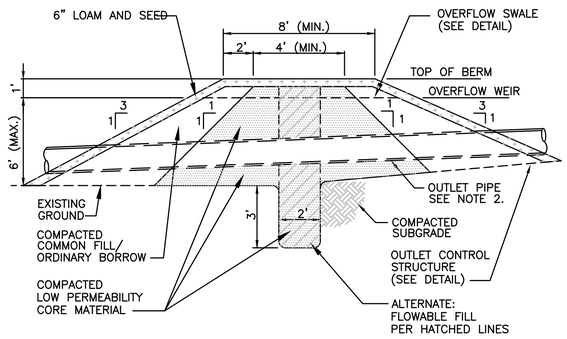
Author	Comment	Response
Sarah Porter: Conservation Agent of New Bedford		
SP	Attachment B- the Wildlife Habitat Evaluation only included an evaluation of the Bank of NBS-23 (which was inadvertently attached twice). We are in need of the Wildlife Habitat Evaluations A & B for Bank - NBS-3 and Land Under Water Ways for NBS-3.	Attached please find the Wildlife Habitat Evaluations A & B for Bank - NBS-3 and Land Under Water Ways for NBS-3.
SP	I consulted with Mary Rapoza on the appropriate mulch to use on the shrub plantings. She suggested that pine bark mulch will not stay in place on side slopes and that leaf mulch works better. Both of which should be 100% organic. The shrub plantings for this mitigation area are not on much of a slope so pine bark mulch is acceptable or leaf mulch.	Thanks for looking into which mulch would be best for this application. We prefer to use the pine bark mulch, as shown in the drawings. It will be specified that the mulch shall be 100% Organic.
SP	The cross section for the wetland mitigation area shows excavation of 12" of wetland soil in the temporarily impacted adjacent wetland and replacement with 12" of manufactured wetland soils. I could not find this discussed in the NOI but I am in favor of it since the wetland soils at this location contain Japanese knotweed (Polygonum cuspidatum) rhizomes. The temporarily impacted wetland should then be planted with a few wetland shrubs and seeded with the wetland seed mix.	Agreed. Additional shrub plantings have been added to Sheet EV-303 provided in Attachment A, Revised Plan Sheets.
SP	Is the fence proposed for the entire length of the track? It appears to be located in front of the wildlife crossings at Stations 2545 (East & West), 2558 (West) and 2559 (West) and a portion of the vernal pool at Station 2558 to 2558 +80 (West). At other wildlife crossings no fence is shown. It should not be located in front of wildlife crossings. I could not find a detail of the fence to determine if it leaves a 6" opening at the bottom for wildlife movement.	Fencing is to be installed 6" above the ground project-wide to allow for wildlife movement.
SP	Similar Special Conditions related to the wetland mitigation shall be placed in this Order of Conditions as were recommended for the Tarkiln Hill Rail Intersection SE49-0797 in the memo dated April 2, 2018 to DPI.	Acknowledged. We do not have a problem with the suggested Special Conditions.
Nitsch Engeneering, Inc. - NMBL Track		
Nitch	The plans submitted for permitting are 30% plans. Therefore, there is detail that is not included on the plans that is customarily submitted. For instance, there is limited grading shown on the plans for the rail improvements. Although swales are depicted graphically and shown on the cross sections, they are not graded in plan views. The narrative also describes the inclusion of water quality best management practices at stormwater discharge points and sediment forebays that are not shown clearly on the plans. Fill of Bordering Land Subject to Flooding is shown graphically but not graded.	We agree to a condition to provide final plans before construction. Final plans for linear construction such as rail design do not include plan views of proposed grading contours. The contractor builds from the profile and cross sections. The limit of erosion control/Limit of Work defines the boundaries of work linearly along the track corridor.
Nitch	The stormwater report describes the project as a redevelopment project since the rail bed has previously been disturbed and there does not appear to be any additional impervious surfaces proposed. We do not have details regarding the increase in rail trips on this line. We expect there will be more activity on the line once the South Coast Rail is active, which could have increased impacts than are typically experienced now.	An increase in rail trips does not change the project's status as a redevelopment project, and does not outweigh the water quality benefit provided by the proposed BMPs. As a redevelopment project, the design meets the requirement to improve existing conditions because of the 25% TSS removal provided by the sedimentation basins upstream of resource areas.

Nitch	The project involves the replacement of three cross culverts under the proposed tracks. The plans have not included any details for the cross culverts. We recommend that culvert details be included on the plans.	The work associated with the replacement of the three referenced cross culverts is exempt pursuant to c. 79 § 24 of the Acts of 2014 Footprint Bridge exemption, as noted on the plans. A detail is provided for CV-NB-4 (@Pig Farm Rd.), which is not exempt and included in the filing.
Nitch	As described above, the plans do not clearly show the water quality measures described in the stormwater report. It is unclear whether the proposed measures, including sediment forebays with check dams, are proposed to treat water generated by all areas of the tracks. Underdrains with filter fabric are not acknowledged by the Stormwater Management Guidelines as a TSS removal best management practice. We recommend that the Applicant clearly show which areas of the proposed rail bed are receiving additional TSS removal and also quantify the removal rates.	The proposed sedimentation basins and check dams do not treat all areas of the tracks because not all track drainage discharges to resource areas. The design proposes sedimentation basins only upstream of resource areas. The sedimentation basins provide 25% TSS removal. A calculation that applies that removal rate to the impervious catchment area draining to each sedimentation basin is not relevant, and therefore not included, because all catchment areas that drain to the sedimentation basins consist of pervious railroad ballast.
Nitch	The Stormwater Report acknowledges the presence of a vernal pool near station 2553 of the proposed rail and identifies this resource as an Outstanding Resource Water. There does not appear to be any special consideration given to this area. No water quality Best Management Practices are proposed to provide additional protection to this critical area. The Notice of Intent (NOI) also identifies Priority Habitat in the vicinity of the rail. The impacts to this Priority Habitat are unclear. It does not appear that there are any measures proposed to protect this Habitat.	Regarding the consideration given to the protection of the vernal pool, as stated on page 5 of the Stormwater Report, no point discharges exist, or are proposed, uphill of the vernal pool. In fact, proposing a BMP near the vernal pool would degrade existing conditions, because that would require additional disturbance and channelizing runoff that otherwise sheet flows across pervious surfaces. Regarding the consideration given to the protection of the Priority Habitat, measures to avoid and minimize impacts to Priority Habitat are addressed in the NHESP CMP, which we expect will be reflected in their comment letter. Several wildlife crossings are proposed as an improvement to existing conditions throughout Priority Habitat areas.
Nitch	The Stormwater Report describes the installation of a water quality treatment structure to treat stormwater in the vicinity of Kings Highway Station site. This water quality unit does not appear on the plans.	The Stormwater Report has been revised to clarify that the water quality treatment structure will be detailed in a future Notice of Intent associated with the Kings Highway Station.
Nitch	The Stormwater Report states that a SWPPP will be prepared prior to construction and then an erosion and sedimentation plan will be included in the NOI Application. The NOI application includes some language regarding erosion controls. This language appears generic in that it describes pavement sweeping and catch basin inlet protection. Neither of these items are part of the rail improvements. To comply with the requirements of the Guidelines, we would expect that an erosion and sedimentation plan would be submitted as part of the Stormwater Report. The NOI also states that a SWPP will be prepared prior to construction.	The Track Plans and Profiles (Sheets TK-3055 to 3089) include Erosion Control lines that serve as the Erosion Control and Sedimentation Plans with details provided on Sheet CV-309. We agree to provide a SWPPP prior to construction.

Nitch	The Stormwater Report describes that a Long Term Stormwater Operations and Maintenance Plan will be included in the NOI application. The NOI states that a Long Term Stormwater Operations and Maintenance Plan will be developed during the final design phase of the project. An Operations and Maintenance Plan has not been submitted.	The Stormwater Report has been revised to clarify that a Long Term Stormwater Operations and Maintenance Plan will be developed during the final design phase of the project.
Nitch	Typically, an Illicit Discharge Statement is included in the Stormwater Report. This statement was not included.	The Stormwater Checklist has been revised with a box checked for "No Illicit Discharge Compliance Statement is attached but will be submitted prior to the discharge of any stormwater to post-construction BMPs."
Nitch	The Stormwater Report includes a table showing dimensions for rip-rap pads at the underdrain discharge points. The dimensions shown in this table should be reflected in the plans, either with labels at each location or a table on the detail sheet. The pads should be drawn to scale on the plans. The rip- rap pads prevent scour and erosion at the discharge points. However, they do not provide TSS removal.	Sheet CV-308, the detail titled Flared End Section with Stone Protection, has been revised to include the Pipe End Protection table from the Stormwater Report and is included in Attachment A: Revised Plan Sheets.
Nitch	The Stormwater Report includes a sketch of the layout for the Kings Highway station. The submitted plans do not include any design information for this station. It is unclear if this station is part of the project or not since this area is not included in the plans. The sketch shows a site layout, no grading information, and a schematic layout of the site drainage system. The drainage system does not have rims, inverts, pipe sizes, etc. The sketch shows 'PROP. STORMWATER QUALITY STRUCTURE," which we presume to be Stormceptor because sizing information for a Stormceptor unit is provided. A Stormceptor detail is not included in the plans.	The Stormwater Report has been revised to clarify that the water quality treatment structure will be detailed in a future Notice of Intent associated with the Kings Highway Station. The plans in the stormwater report were inadvertently included and should be omitted. A separate filing for that station will be made in the near future.
Nitch	The Stormwater Report does not include any pipe sizing information, sediment forebay sizing information, or TSS removal calculations.	For pipe sizing, the Stormwater Report has been revised to include calculations for sizing the perforated HDPE underdrains. For sediment forebay sizing, the sizing calculations are included in the report as Vegetated Swale Discharge End Protection. They are sized for end protection, rather than as a forebay, because all catchment areas that drain to the sedimentation basins consist of pervious railroad ballast. Zero impervious area results in a forebay volume of zero. For TSS removal calculations, as stated in the response to comment No. 4, the sedimentation basins provide 25% TSS removal. A calculation that applies that removal rate to the impervious catchment area draining to each sedimentation basin is not relevant, and therefore not included, because all catchment areas that drain to the sedimentation basins consist of pervious railroad ballast.
Nitch	The detail sheets include an Oil/Water Separator detail. It is unclear where this unit is proposed.	Revised Sheet CV-308 is included with this resubmittal with the detail for the Oil/Water Separator removed, since it is not proposed for this project.

Nitch	The detail sheets include a Stone Diaphragm Pretreatment Filter Strip detail. It is unclear where this is proposed.	Revised Sheet CV-311 is inlcuded with this resubmitted with the detail for the Stone Diaphragm Pretreatment Filter Strip removed, since it is not proposed for this project.
Nitsch Engeneering, Inc. - Whale's Tooth station		
Nitch	The piping from the platform canopy is shown as reinforced concrete pipe. The HydroCadd model shows this piping as PVC. The plans show this pipe's slope at 8% while it is modeled at 4.8%. The plans show 48 feet of pipe and the model shows 83 feet. The plans and model should be consistent.	The HydroCAD model has been updated to match the CAD.
Nitch	We recommend a minimum Time of Concentration of six minutes be used consistent with TR-20.	The HydroCAD models have been updated for a Time of Concentration of 6 minutes.
Nitch	We recommend the weir overflow elevations be depicted on the plans consistent with the HydroCadd calculations.	Weir overflow invert elevations have been added to the plans for clarity.
Nitch	Bioretention basins should show a foot of freeboard for all storms. Both bioretention basin 1 and 2 do not meet this requirement for the 10-year and 100-year storms. The Guidelines require a foot of freeboard in bioretention basins.	The top edge of Bioretention Basin 1 has been raised to 7.5'. This provides 8.5 inches of freeboard in the 100-year storm, which is adequate for 6" of ponding. The top edge of Bioretention Basin 2 has been raised to 10.8, providing over 12 inches of freeboard in the 100-year storm.
Nitch	The HydroCadd calculations show the stone overflow elevation at 9.5. They also show the bottom of the forebay at elevation 9.5, effectively indicating that there is no berm between the sediment forebay and the bioretention basin.	Low Flow Sediment Forebay Berm invert elevation has been raised to 10.0.
Nitch	The detention basin underdrain detail shows the crushed stone surrounding the underdrain to be brought to the bottom of the bioretention basin. The bioretention basin shows the underd rain sitting in a 12-inch stone bed. We agree with the underd rain shown in the bioretention basin detail.	Yes, the underdrain should be installed at the bottom of the stone bed. The detention basin underdrain detail has been removed from the plans.
Nitch	The bioretention basin 1 design shows the bottom of the basin at elevation 2.5. Existing grade in this area is approximately 7.3, It is unclear whether the excavation will intrude upon the cap. It is also unclear what groundwater elevations are in this area.	The Bioretention Basin lies outside the limit of the existing soil cap area on the site. The basin will be lined to prevent groundwater from entering the basin, and to prevent stormwater from infiltrating into the ground. Per test wells WTS-11 and WTS-12 at Bioretention Basin 1, groundwater elevation is at -0.7 and 0.6, respectively. Per test well GTSB-EA-23 at Bioretention Basin 2, groundwater elevation is 5' below the surface. For both basins, the groundwater elevation is below the bottom of the facility.
Nitch	A Stormwater Pollution Prevention Plan (SWPPP) was not provided for review.	The contractor will be required to prepare and implement the SWPPP. The contractor will provide a copy to the commision prior to construction. We recommend a condition stating thus, consistent with special condition # 51 from the Wamsutta order of conditions.

Attachment A - Revised Plan Sheets

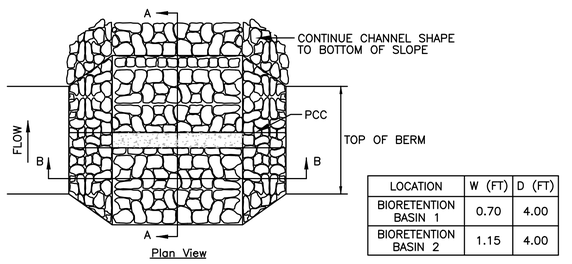


Notes:

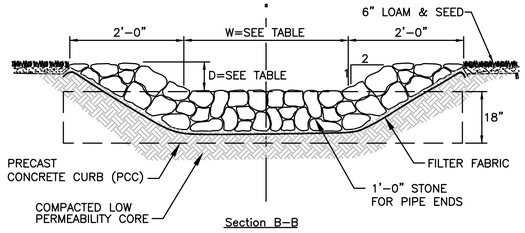
1. LOW PERMEABILITY CORE MATERIAL IS CONTINUOUS FOR THE FULL LENGTH OF THE EMBANKMENT.
2. WHERE PIPES PENETRATE THE LOW PERMEABILITY CORE, PIPE SHALL BE BEDDED IN THE LOW PERMEABILITY CORE MATERIAL.
3. THE BERM SECTION IS SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.

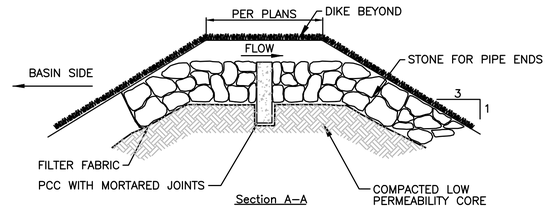
Detention Basin Berm Section

SCALE: N.T.S.



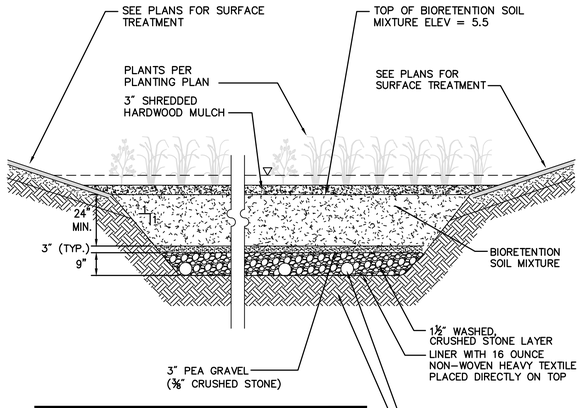
LOCATION	W (FT)	D (FT)
BIORETENTION BASIN 1	0.70	4.00
BIORETENTION BASIN 2	1.15	4.00





Overflow Stone Swale

SCALE: N.T.S.

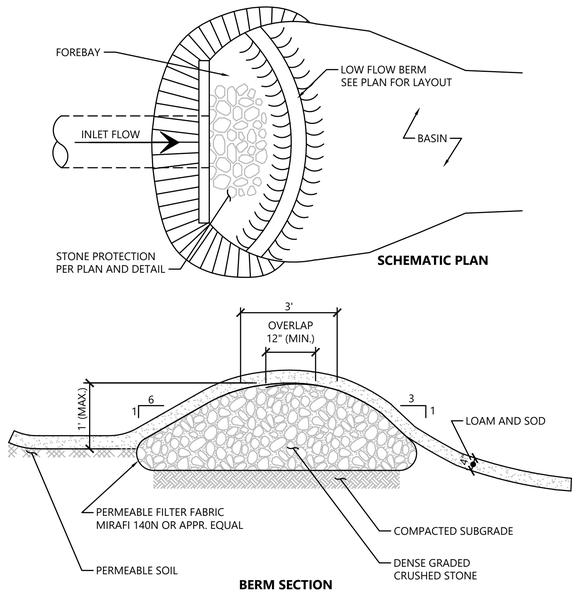


Notes:

1. INSTALL AND CONNECT UNDERDRAINS PER PLANS.
2. SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.
3. LINER SHALL BE 20 MIL FLEXIBLE PVC MEMBRANE OR APPROVED EQUAL.
4. LINER AND HEAVY TEXTILE SHALL BE PREPARED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

Lined Bioretention Basin W/ Underdrain

SCALE: N.T.S.



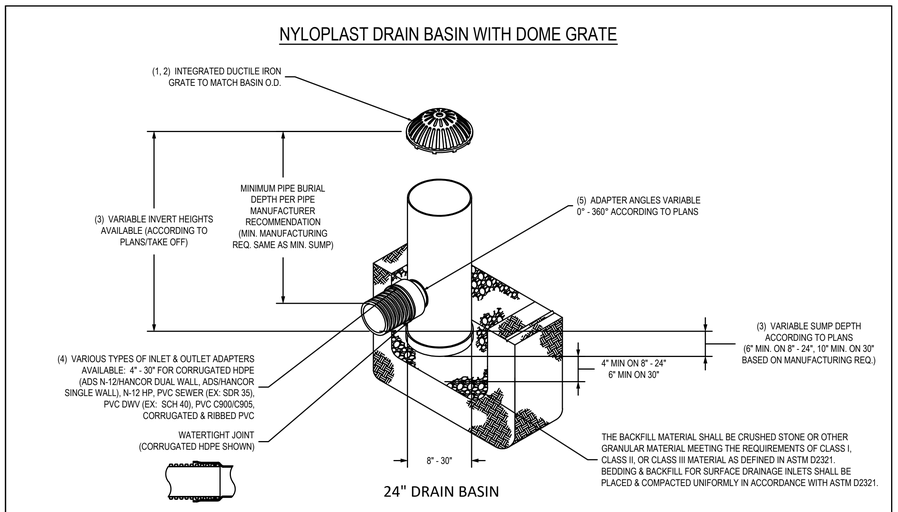
NOTES

1. FOREBAY DESIGNED TO CAPTURE 0.1 INCHES OF RUNOFF FROM IMPERVIOUS SURFACES

Low Flow Sediment Forebay Berm

SCALE: N.T.S.

NYLOPLAST DRAIN BASIN WITH DOME GRATE



1 - 8" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-045.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 8" - 30" DOME GRATES HAVE NO LOAD RATING.

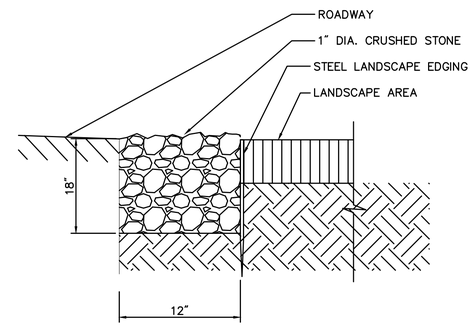
DRAWN BY	EBC
DATE	03-25-10
REVISED BY	NMH
DATE	03-11-16
DWG SIZE	A
MATERIAL	
PROJECT NO./NAME	
SCALE	1:40
SHEET	1 OF 1
DWG NO.	7001-110-397
REV	D

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: DRAIN BASIN WITH DOME GRATE QUICK SPEC INSTALLATION DETAIL

Area Drain (AD)

SCALE: N.T.S.



Stone Diaphragm Pretreatment Filter Strip

SCALE: N.T.S.

ISSUED FOR NOTICE OF INTENT

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL - PHASE I
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
DETAILS 6

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COMM COMMENTS	JHC	RTW	KS

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

PROJECT MANAGER Date

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

PROJECT MANAGER Date

HORIZ: NONE
VERT: NONE
DATE: 06/01/2018

DES. BY: ADZ | DR. BY: RRD | CHK. BY: KJC

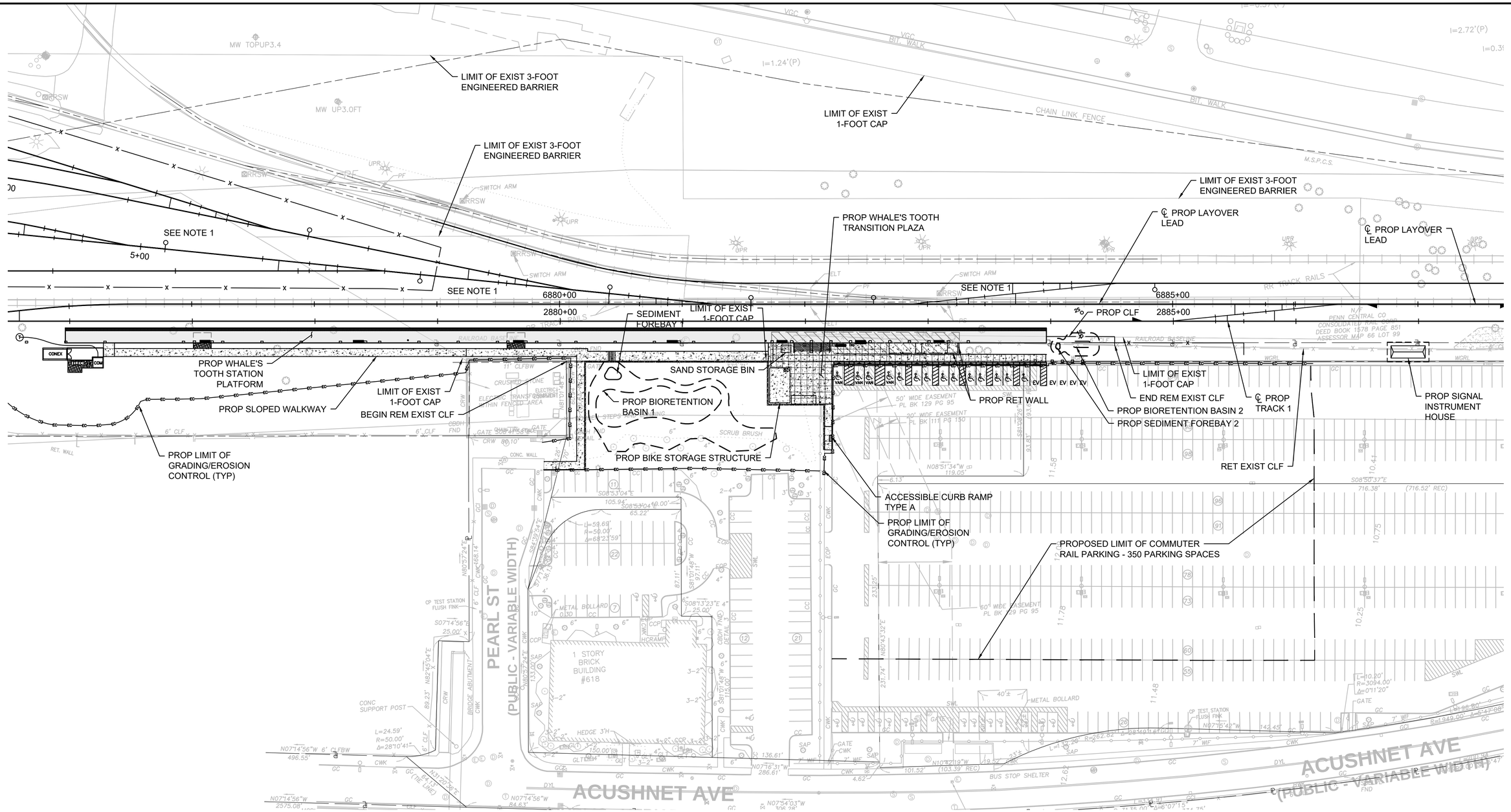
PLAN NO.

SHEET CV-312

ISSUE

FILE NAME: \\VHBPROJBOSTON\12815.00 SCR PM & CM\CAD\SEGMENT3\DWG\EVNOI NEW BEDFORD\SEGMENT3_SD(DET1).DWG

Plotted on July 11, 2018 9:23 AM



NOTE:

1. WORK SHOWN FOR CLARITY. REFER TO 30% TRACK PLANS FOR DETAILS.

N

0 40 100 160

SCALE: 1" = 40'

ISSUED FOR NOTICE OF INTENT

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COMM COMMENTS	JHC	RTW	KS

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL - PHASE I
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
WHALE'S TOOTH STATION
SITE PLAN

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

PROJECT MANAGER Date

PROJECT MANAGER Date

HORIZ: 1" = 40'
VERT: NONE
DATE: 06/01/2018

DES. BY	DR. BY	CHK. BY
JHC	JHC	RTW

PLAN NO.

SHEET LO-300

ISSUE

FILE NAME: \\VHBPROJ\BOSTON\12815.00 SCR PM & CM\CAD\SEGMENT3\DWG\EVNOI NEW BEDFORD\SEGMENT3_EV(LO_WHALESTOOTH).DWG

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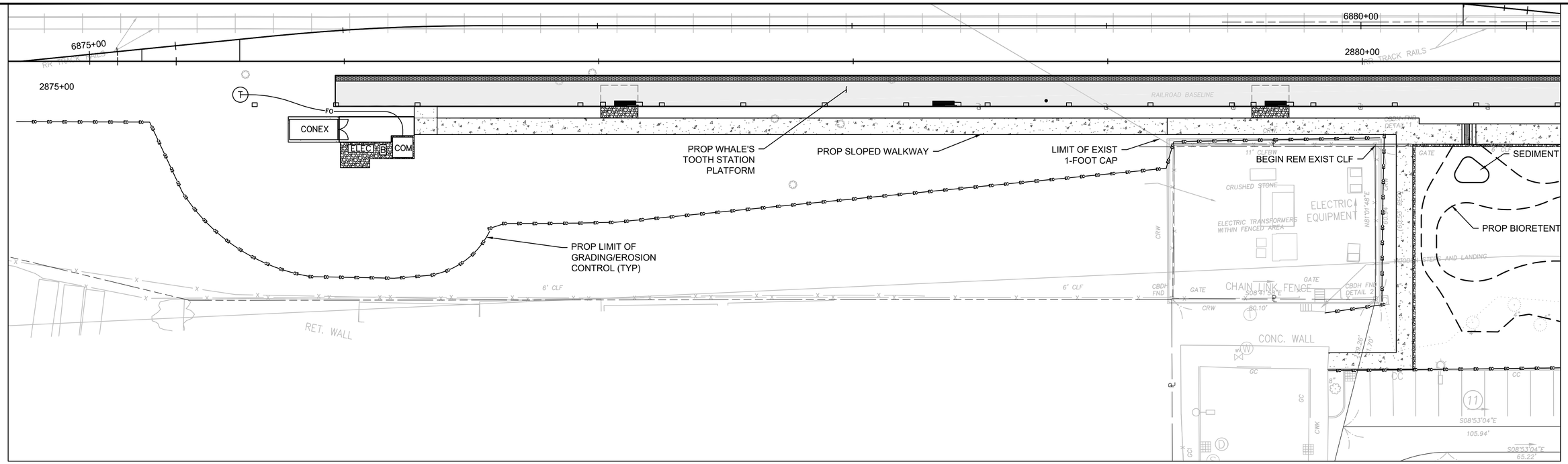
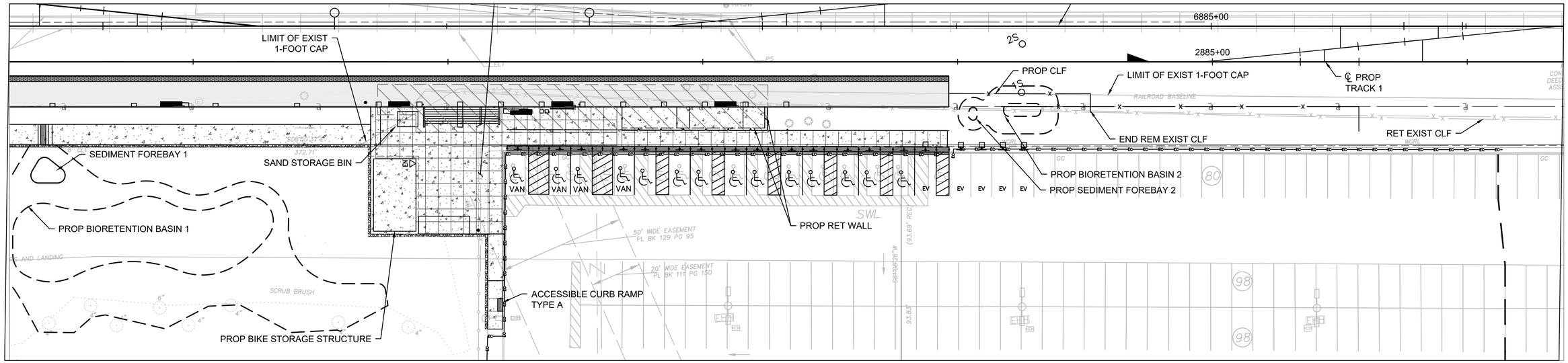




NOTE:

1. WORK SHOWN FOR CLARITY. REFER TO 30% TRACK PLANS FOR DETAILS.

N

0 20 50 100

SCALE: 1" = 20'

ISSUED FOR NOTICE OF INTENT

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL - PHASE I
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
WHALE'S TOOTH STATION
SITE PLAN

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COMM COMMENTS	JHC	RTW	KS

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

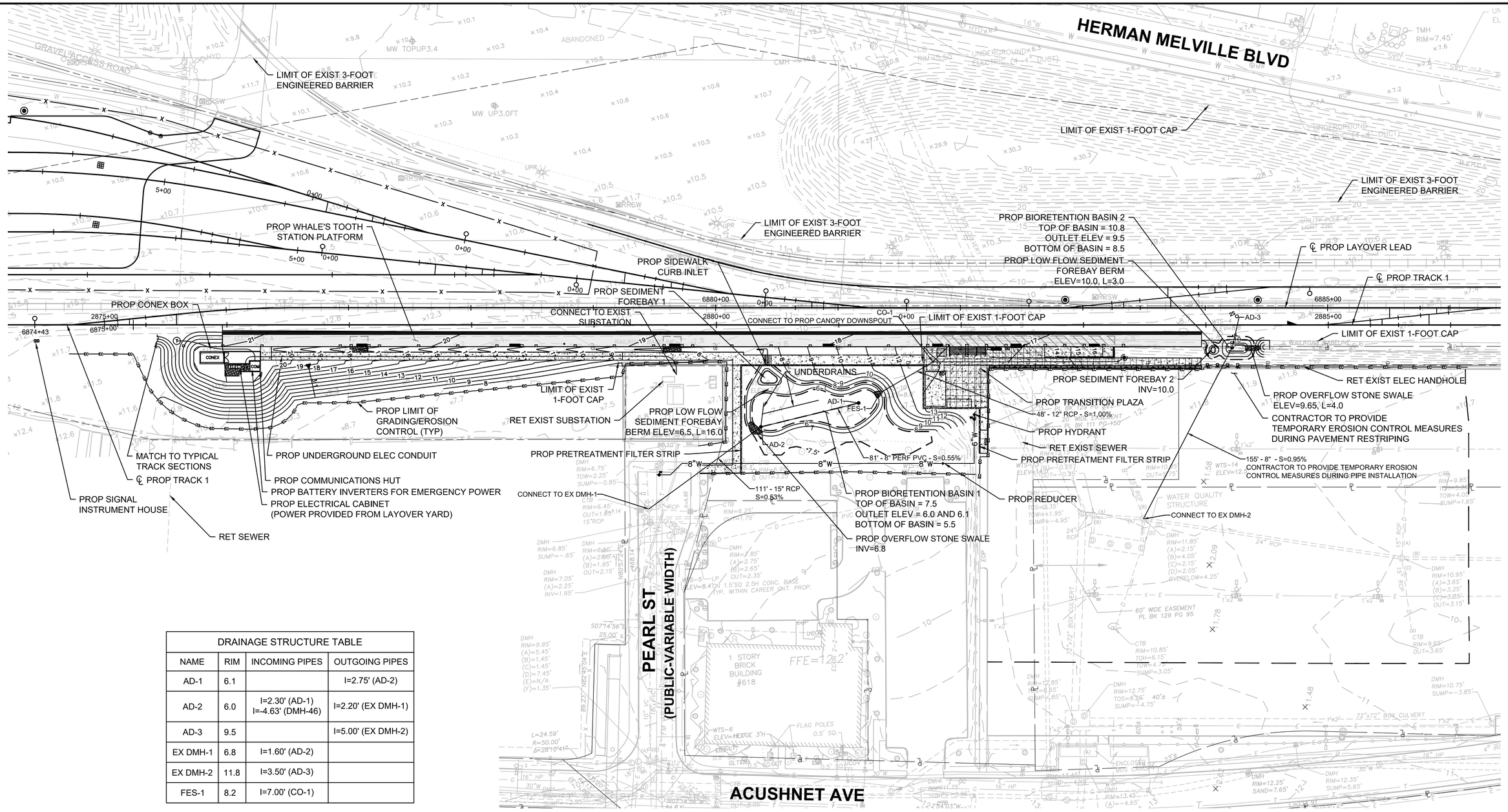
PROJECT MANAGER Date

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

PROJECT MANAGER Date

HORIZ: 1" = 40'	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: NONE	JHC	JHC	RTW		
DATE: 06/01/2018				SHEET LO-301	



DRAINAGE STRUCTURE TABLE			
NAME	RIM	INCOMING PIPES	OUTGOING PIPES
AD-1	6.1		I=2.75' (AD-2)
AD-2	6.0	I=2.30' (AD-1) I=-4.63' (DMH-46)	I=2.20' (EX DMH-1)
AD-3	9.5		I=5.00' (EX DMH-2)
EX DMH-1	6.8	I=1.60' (AD-2)	
EX DMH-2	11.8	I=3.50' (AD-3)	
FES-1	8.2	I=7.00' (CO-1)	

100 YEAR FLOOD ELEVATION - 6.0
500 YEAR FLOOD ELEVATION - 15.2

NOTES:

1. TRACK CENTERLINE SHOWN FOR INFORMATION ONLY.

N

0 40 100 160

SCALE: 1" = 40'

ISSUED FOR NOTICE OF INTENT

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COMM COMMENTS	JHC	RTW	KS

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL - PHASE I
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
WHALE'S TOOTH STATION
GRADING AND UTILITY PLAN

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

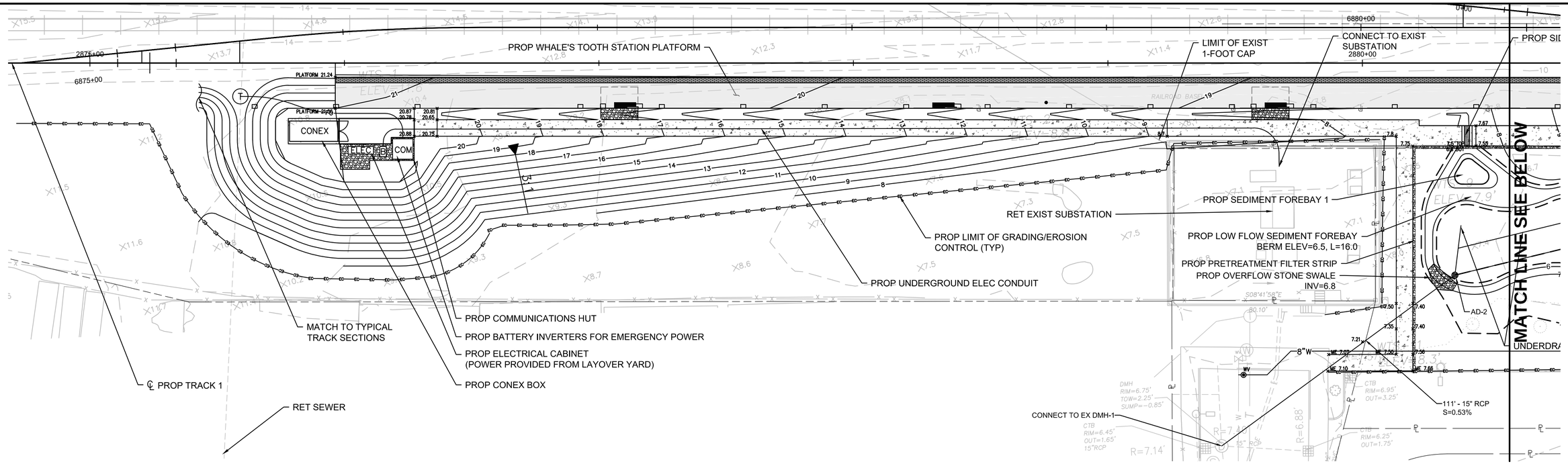
PROJECT MANAGER Date

PROJECT MANAGER Date

HORIZ: 1"=40'	DES. BY	DR. BY	CHK. BY	PLAN NO.	ISSUE
VERT: NONE	JHC	JHC	RTW		
DATE: 06/01/2018				SHEET GD-300	

Plotted on: July 11, 2018 9:26 AM

FILE NAME: \\VHB\PROJ\BOSTON\12815.00 SCR PM & CM\CAD\SEGMENT3\DWG\EV\NO) NEW BEDFORD\SEGMENT3_EV(GD_WHALESTOOTH).DWG



DRAINAGE STRUCTURE TABLE			
NAME	RIM	INCOMING PIPES	OUTGOING PIPES
AD-1	6.1		I=2.75' (AD-2)
AD-2	6.0	I=2.30' (AD-1) I=-4.63' (DMH-46)	I=2.20' (EX DMH-1)
AD-3	9.5		I=5.00' (EX DMH-2)
EX DMH-1	6.8	I=1.60' (AD-2)	
EX DMH-2	11.8	I=3.50' (AD-3)	
FES-1	8.2	I=7.00' (CO-1)	

100 YEAR FLOOD ELEVATION - 6.0
500 YEAR FLOOD ELEVATION - 15.2

NOTES:

1. TOP OF BALLAST ELEV. IN YARD = 14.03 (UNLESS OTHERWISE NOTED)
2. TOP OF RAIL ELEV. IN YARD = 14.70 (UNLESS OTHERWISE NOTED)
3. DITCH SIDE SLOPES ARE 2:1, SEE TYPICAL SECTIONS
4. 2:1 SLOPE GRADING BETWEEN ℄ PROP TRACK 1 TYPICAL SECTION AND YARD
5. TRACK CENTERLINE SHOWN FOR INFORMATION ONLY.

N

0 20 50 100

SCALE: 1" = 20'

ISSUED FOR NOTICE OF INTENT

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COMM COMMENTS	JHC	RTW	KS

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL - PHASE I
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
WHALE'S TOOTH STATION
GRADING AND UTILITY PLAN

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

PROJECT MANAGER Date

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
APPROVED BY:
PROJECT MANAGER Date

HORIZ: 1"=20'
VERT: NONE
DATE: 06/01/2018

DES. BY	DR. BY	CHK. BY
JHC	JHC	RTW

PLAN NO.
SHEET GD-301
ISSUE

Plotted on: July 11, 2018 9:25 AM

FILE NAME: \\VHB\PROJ\BOSTON\12815.00 SCR PM & CMCAD\SEGMENT3\DWG\EV\NOI NEW BEDFORD\SEGMENT3_EV(GD_WHALESTOOTH).DWG

Planting Notes

- Prior to delivery to the site, the supervising wetland scientist will visit the nursery or nurseries providing the planting stock to ensure that the specimens are healthy, free from pests and any invasive plant material, and suitable for use within the wetland establishment site. Unsuitable specimens will be rejected and replaced with suitable specimens. The supervising wetland scientist must approve any planting substitutions. All woody plant stock will be either bare root stock or container grown.
- Planting within the wetland establishment site and adjacent uplands will conform to the plans or will be completed in accordance with directions provided in the field. Only plant materials native and indigenous to the region will be used. Use of cultivars will be prohibited. Species not specified in the final planting plan will not be used without written approval from the permitting agency.
- All plantings will be spaced in similar species clusters in a random distribution, at the direction of the supervising wetland scientist, to simulate natural growth patterns.
- Transplants and plant material collected from the wild is prohibited unless approved in writing by the Wetland Scientist. All plant material used shall be nursery-grown and healthy, sound and free of disease, insect pests, eggs or larvae, discolorations, leaf wilting or curling and weeds.
- Container-grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold its soil after removal from the container. Roots shall visibly extend to the inside face of the growing container but shall not be root-bound or girdling.
- All plants shall be delivered to the site as live, actively growing, or just breaking dormancy, and arrive to the project site ready for planting. The Wetland Scientist may reject plants damaged in handling or transport. Plant material shall be installed as soon as possible after it has been delivered to the site.
- Soil and rootmass shall be watered and moist on delivery to the job site. Plants with dry soil and roots shall not be acceptable. All plant materials temporarily stored at the site prior to planting shall be stored out of direct exposure to sun and wind, shall be maintained by careful watering, and shall be protected from damage due to construction activities and adverse weather.
- Tree and shrub planting to occur between May 1 and September 15.
- Upon completion of planting, the areas around each plant or cluster or plants will be mulched with a 2 inch thick layer of leaf litter or other natural organic material (not fresh wood chips)
- The erosion control barriers will be disassembled and properly disposed of before November 1 of the third full growing season after planting of the wetland establishment site. Sediment collected by the barriers will be removed and disposed of in a manner that prevents erosion and transport to a wetland or waterway. If minor grading is required in the immediate zone around the erosion control barrier to provide surface hydrologic connection between the wetland establishment site and the existing wetland area, it will be done by hand and stabilized by mulch.
- Watering shall be required during the growing season (May 1 - Nov. 1) when natural rainfall is below one inch per week, for the first month. Water shall be applied in sufficient quantity to thoroughly saturate the soil in the root zone of each plant. Following the first month of planting, watering will be limited to periods of declared drought. Water shall be provided by the Contractor.
- All plant materials shall be guaranteed for one year following date of final acceptance.

Seeding Notes

- Seeding within the wetland establishment site and adjacent uplands will conform to the plans or will be completed in accordance with directions provided in the field. Only plant materials native and indigenous to the region will be used. Use of cultivars will be prohibited. Species not specified in the final seeding plan will not be used without written approval from the Wetland Scientist and permitting agency.
- Contractor shall supply a wetland seed mix including a majority of the species listed in the Wetland Seed Mix table. 75% of the seed mix, by weight, shall be indigenous grasses and sedges. Seeds must be from plants grown within 200 miles of the mitigation site. Contractor shall provide a written analysis of the seed mixture to the Wetland Scientist. No seeding is permitted without approval of the Wetland Scientist.
- Contractor shall supply an upland seed mix including a majority of the species listed in the Upland Seed Mix table. 75% of the seed mix, by weight, shall be indigenous grasses and. Seeds must be from plants grown within 200 miles of the mitigation site. Contractor shall provide a written analysis of the seed mixture to the Wetland Scientist. No seeding is permitted without approval of the Wetland Scientist.
- The Upland Seed Mix shall be applied to all disturbed soils within uplands adjacent to the Wetland Mitigation Area.
- The seed mixes shall be applied at a rate of 1 lb per 2,500 square feet. Seeds may be applied with a spreader or hydroseeded. If a hydroseed mulch is not used, the seeded area must be covered with a light layer of clear, seed-free straw.
- Watering shall be required during the growing season (May 1 - Nov. 1) when natural rainfall is below one inch per week, for the first month. Water shall be applied in sufficient quantity to thoroughly saturate the soil in the root zone of each plant. Following the first month of planting, watering will be limited to periods of declared drought. Water shall be provided by the Contractor.

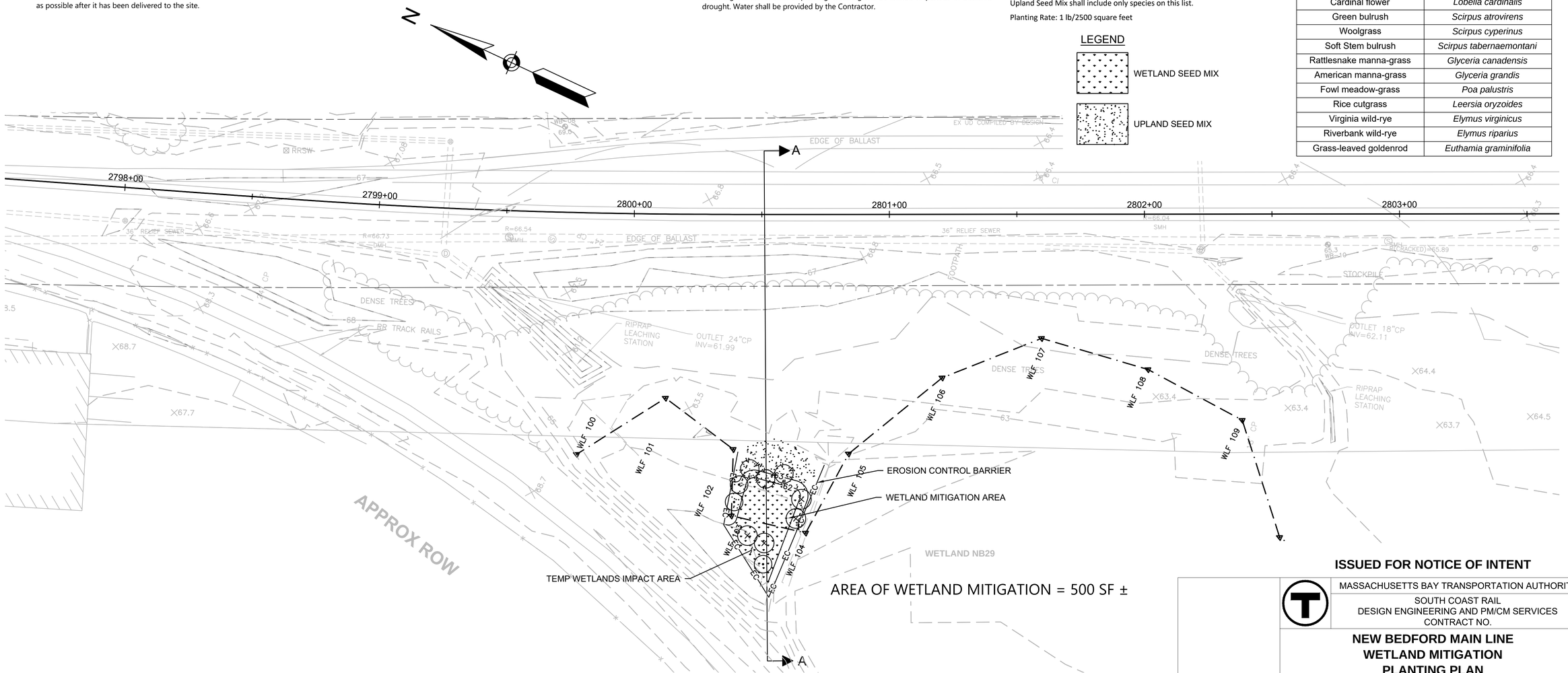
Planting Schedule				
Symbol	Common Name	Latin Name	Quantity	Size
⊛	Winterberry	*Ilex verticillata*	3	2-3 ft ht
⊙	Highbush blueberry	*Vaccinium corymbosum*	3	2-3 ft ht
⊗	Sweet pepperbush	*Clethra alnifolia*	4	2-3 ft ht

Upland Seed Mix	
Common Name	Latin Name
Little bluestem	*Schizachyrium scoparium*
Switchgrass	*Panicum virgatum*
Deertongue	*Dichanthelium scoparium*
Fescue	*Festuca ovina*
Kentucky bluegrass	*Poa pratensis*
Rough bent-grass	*Agrostis scabra*
Rough goldenrod	*Soldago rugosa*
New England Aster	*Aster novae-angliae*

Upland Seed Mix shall include only species on this list.

Planting Rate: 1 lb/2500 square feet

Wetland Seed Mix	
Common Name	Latin Name
Sallow sedge	*Carex lurida*
Broom sedge	*Carex scoparia*
Fringed sedge	*Carex crinita*
Stalk-grained sedge	*Carex stipata*
Bearded sedge	*Carex comosa*
Tussock sedge	*Carex stricta*
Fox sedge	*Carex vulpinoidea*
Boneset	*Eupatorium perfoliatum*
Soft rush	*Juncus effusus*
Cardinal flower	*Lobelia cardinalis*
Green bulrush	*Scirpus atrovirens*
Woolgrass	*Scirpus cyperinus*
Soft Stem bulrush	*Scirpus tabernaemontani*
Rattlesnake manna-grass	*Glyceria canadensis*
American manna-grass	*Glyceria grandis*
Fowl meadow-grass	*Poa palustris*
Rice cutgrass	*Leersia oryzoides*
Virginia wild-rye	*Elymus virginicus*
Riverbank wild-rye	*Elymus riparius*
Grass-leaved goldenrod	*Euthamia graminifolia*



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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SOUTH COAST RAIL
DESIGN ENGINEERING AND PM/CM SERVICES
CONTRACT NO.

NEW BEDFORD MAIN LINE
WETLAND MITIGATION
PLANTING PLAN

ISSUE	DATE	DESCRIPTION	BY	CHKD.	APP.
1	7/11/18	RESPONSE TO CON COM COMMENTS	WH		

vhb HNTB
99 HIGH STREET
BOSTON, MA 02110
(617) 728-7777

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

APPROVED BY:

PROJECT MANAGER Date

PROJECT MANAGER Date

HORIZ: AS NOTED	DES. BY	DR. BY	CHK. BY
VERT: AS NOTED	WHH	WHH	LHC
DATE: 06/01/2018			

PLAN NO.

SHEET EV-303

ISSUE

Attachment B - NBS (3) Wildlife Habitat Assessments

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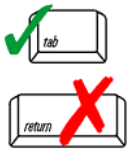
Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Wetlands program

Wildlife Habitat Protection Guidance

Appendix A: Simplified Wildlife Habitat Evaluation

Project Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



BVW NBS (3) - located between Tarklin Hill Road and Nash Road; New Bedford Main Line, New Bedford, MA
Project Location (from NOI)

Jay Quattrocchi — Name of Person Completing Form

02/10/2016 — Date

Important Habitat Features

Direct alterations to the following important habitat features in resource areas may be permitted only if they will have no adverse effect (refer to Section V).

- ☐ Habitat for state-listed animal species (receipt of a positive opinion or permit from MNHESP shall be presumed to be correct. Do not refer to Section V).
- ☐ Sphagnum hummocks and pools suitable to serve as nesting habitat for four-toed salamanders
- ☐ Trees with large cavities (≥18" tree diameter at cavity entrance)
- ☐ Existing beaver, mink or otter dens
- ☐ Areas within 100 feet of existing beaver, mink or otter dens (if significant disturbance)
- ☐ Existing nest trees for birds that traditionally reuse nests (bald eagle, osprey, great blue heron)
- ☐ Land containing freshwater mussel beds
- ☐ Wetlands and waterbodies known to contain open water in winter with the capacity to serve as waterfowl winter habitat
- ☐ Turtle nesting areas
- ☐ Vertical sandy banks (bank swallows, rough-winged swallows or kingfishers)

The following habitat characteristics when not commonly encountered in the surrounding area:

- ☐ Stream bed riffle zones (e.g. in eastern MA)
- ☐ Springs
- ☐ Gravel stream bottoms (trout and salmon nesting substrate)
- ☐ Plunge pools (deep holes) in rivers or streams
- ☐ Medium to large, flat rock substrates in streams

Wildlife Habitat Protection Guidance

Appendix A: Simplified Wildlife Habitat Evaluation

Activities

When any one of the following activities is proposed within resource areas, applicants should complete a Detailed Wildlife Habitat Evaluation (refer to Appendix B).

- ☐ Activities located in mapped "Habitat of Potential Regional or Statewide Importance"
- ☐ Activities affecting certified or documented vernal pool habitat, including habitat within 100' of a certified or documented vernal pool when within a resource area
- ☐ Activities in bank, land under water, bordering land subject to flooding (presumed significant) where alterations are more than twice the size of thresholds
- ☐ Activities affecting vegetated wetlands >5000 sq. ft. occurring in resource areas other than Bordering Vegetated Wetland
- ☐ Activities affecting the sole connector between habitats >50 acres in size
- ☐ Installation of structures that prevent animal movement
- ☐ Activities for the purpose of bank stabilization using hard structure solutions that significantly affect ability of stream channel to shift and meander, or disrupt continuity in cover that would inhibit animal passage
- ☐ Dredging (greater than 5,000 sf)

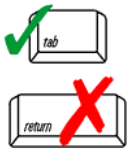
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



South Coast Rail Project (MBTA)
Project Name

NBS (3); South of Tarkiln Hill Road; New Bedford Main Line, New Bedford, MA;
Location

5,359 linear feet
Size of Area Being Impacted

02/10/2016
Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. NBS (3)				5,359 LF
2.				
3.				
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

The impacted resource area is Bank of an intermittent drainage ditch. The resource area runs parallel to the tracks along the western side of the railroad right-of-way. The Banks are approximately 4 feet apart and 3 feet high. The Banks are bounded by track ballast to the east and a small strip of upland forested area to the west with commercial development beyond. The Banks are fully vegetated - dominated by herbaceous and shrubby vegetation. It's likely that the Banks provide minimal wildlife habitat (songbirds and small mammals only); however, no important habitat was observed.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

Signature of Wildlife Specialist (per 310 CMR 10.60 (1) (b))

Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

New Bedford Main Line, Lakeville, MA
Project Location (from NOI page 1)

Bank NBS (3)
Impact Area (number/name)

10/18/2106
Date(s) of Site Visit(s) and Data Collection

Partly cloudy - mid-60s
Weather Conditions During Site Visit (if snow cover, include depth)

Jay Quattrocchi | 11/01/2016
Person completing form per 310 CMR 10.60(1)(b) | Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Signature

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: _____ Subsystem: _____

Class: _____ Subclass: _____

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☐ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:

Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous
	38	20.5		63

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Shrub	Elaeagnus umbellata	Woody vines	Vitis labrusca
Shrub	Cornus stolonifera	Woody vines	Parthenocissus quinquefolia
Herbaceous	Phragmites australis		
Herbaceous	Solidago rugosa		
Herbaceous	Impatiens capensis		
Herbaceous	Eupatorium perfoliatum		

C. Inventory (Soils)

Soil Survey Unit	Drainage Class
Urban Land	N/A
Texture (upper part)	**Depth**
N/A	
Depth to Water Table	
N/A	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☐ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ■ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ■ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ■ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ■ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ■ Absent

Areas of ice-free open water in winter

☐ Present ■ Absent

Mud flats

☐ Present ■ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ■ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ■ Absent

Bank swallow colony

☐ Present ■ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	■ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	■ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	■ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	■ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	■ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	■ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	■ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	■ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	■ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	■ No
	5.0 acres in size?	☐ Yes	■ No
	10.0 acres in size?	☐ Yes	■ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	■ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	■ No
	10.0 acres in size?	☐ Yes	■ No
	25.0 acres in size?	☐ Yes	■ No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	☐ Yes	■ No
	100 acres in size?	☐ Yes	■ No
	250 acres in size?	☐ Yes	■ No
	500 acres in size?	☐ Yes	■ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	■ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	■ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ■ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☐ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☐ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
No important habitat characteristics			

Attachment C - Revised NBML Track Stormwater Report -Bound Separately

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Attachment D - Revised Whales Tooth Station Stormwater Report -Bound Separately

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