

Minuteman Bikeway Extension, From Loomis Street to Concord Road

MassDOT Project # 607738

NOTICE OF INTENT HEARING

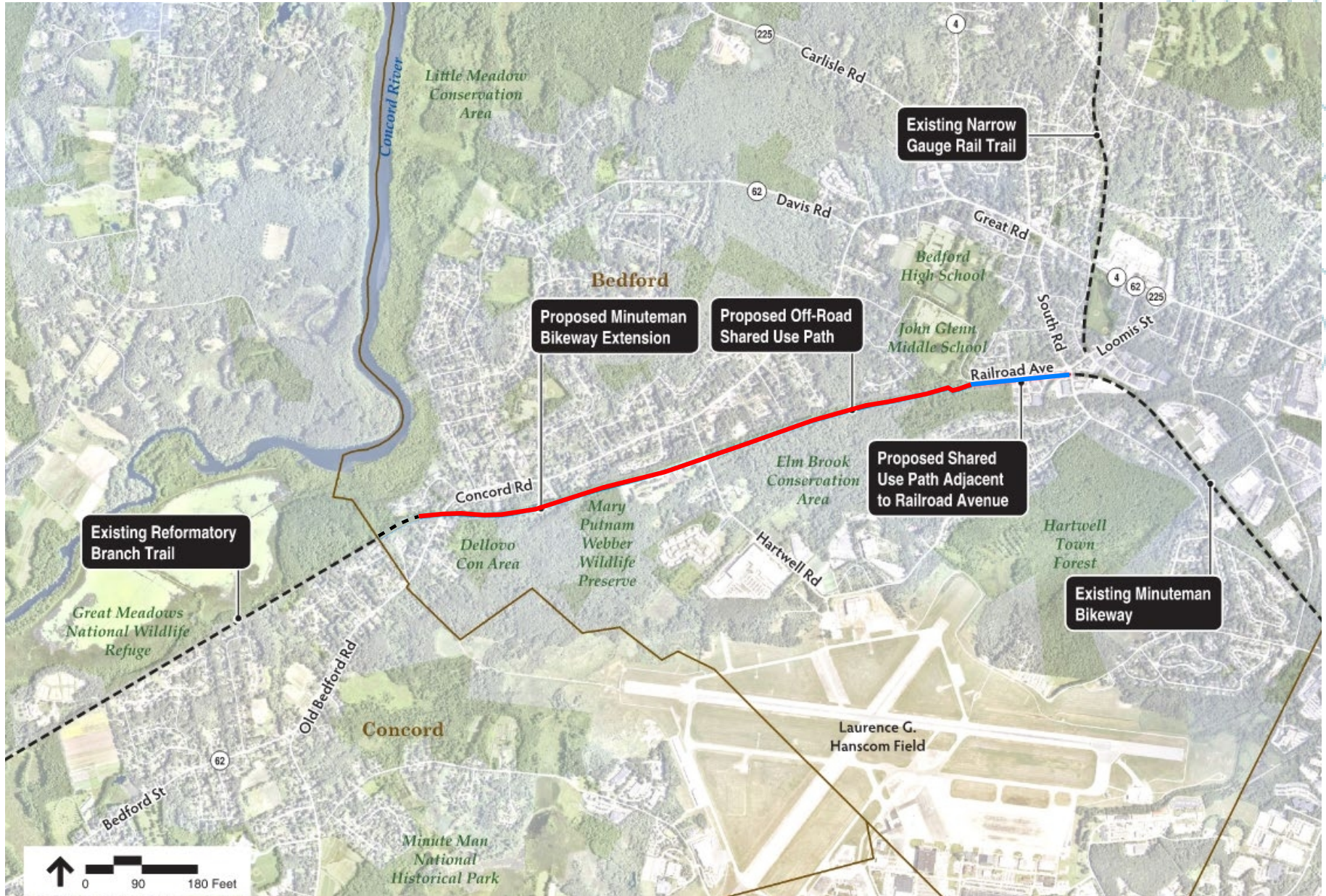
BEDFORD, MA

Prepared for:
Town of Bedford Department of Public Works

February 9, 2022



Minuteman Bikeway – Project Area



Minuteman Bikeway – Project Details

- ±10,465 ft of new paved extension of the Minuteman Bikeway (1,665 ft on Railroad Ave & 8,800 ft off-road on Reformatory Branch Trail)
- Project supported with Federal Funding through the 2022 MassDOT Transportation Improvement Program (TIP)
- Total Participating Federal Funds: \$10.2 million
- MassDOT to facilitate and oversee Construction
- Scheduled to be Advertised for Bid in August 2022
- Construction anticipated 2023-2025

Minuteman Bikeway – Project History

- 2005 - 2009:** Initial project feasibility studies completed & presented to Select Board
- 2010 - 2011:** Town Meeting voted to advance the design of a paved trail
- 2010 - 2014:** Meetings held with the Bedford DPW, Transportation & Bicycle Advisory committees, the Select Board, and project abutters to review project alternative designs
- 2014:** Project accepted by MassDOT and programmed for construction funding on state TIP program
- 2014 - 2017:** Additional meetings held with MassDOT, the Bedford DPW, Transportation & Bicycle Advisory committees, the Board of Selectman, and project abutters to select the proposed cross section for Railroad Avenue & Concord Rd crossing
- 2017 - 2022:** Design development and 25%-100% Design Plans submitted to MassDOT, Public Hearing held on 2/6/2020, Right of Way and permitting process

Existing Conditions



Existing Conditions

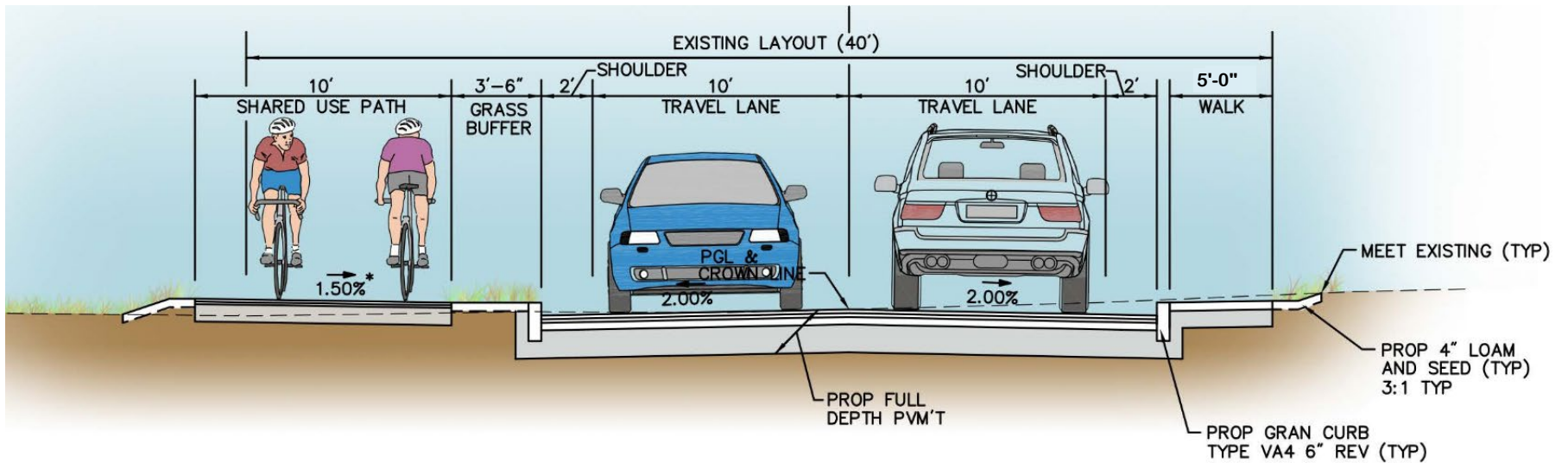


Existing Conditions



Minuteman Bikeway Cross sections –

Railroad Ave



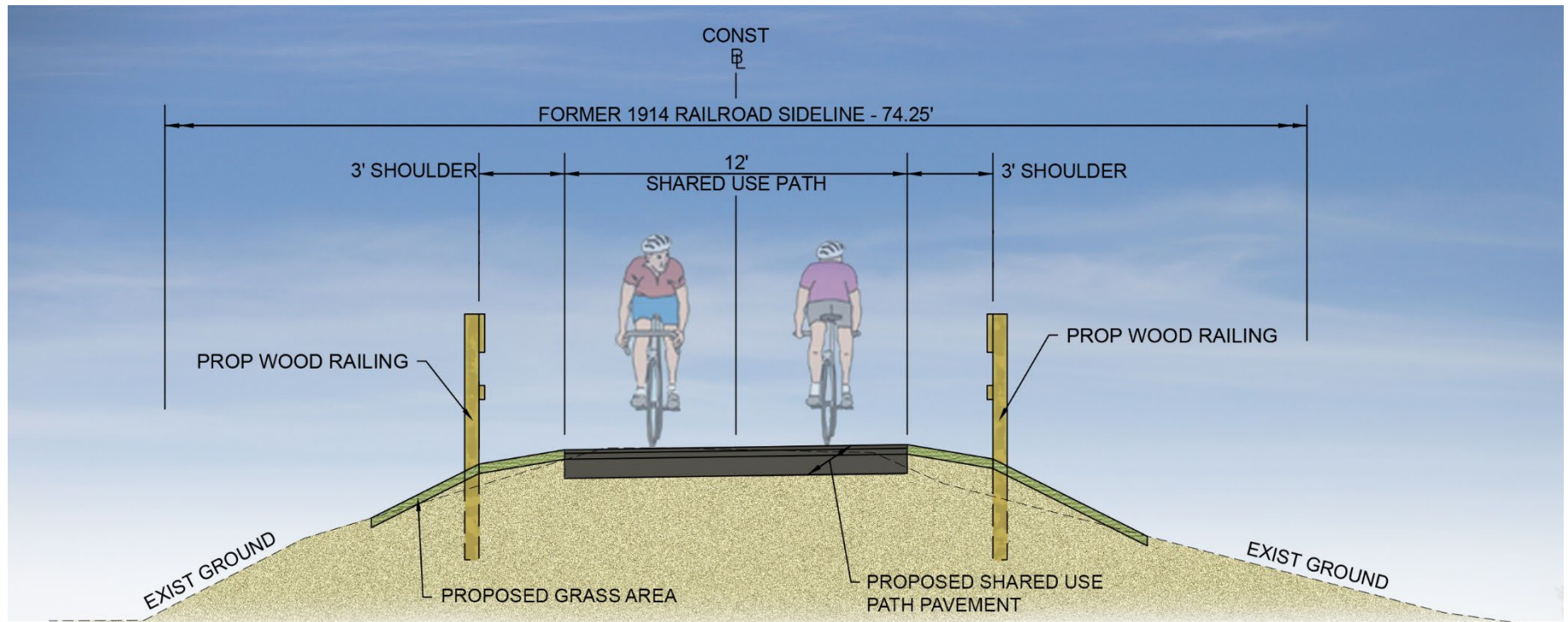
TYPICAL SECTION – B-B

NTS

*0.5% CONSTRUCTION TOLERANCE

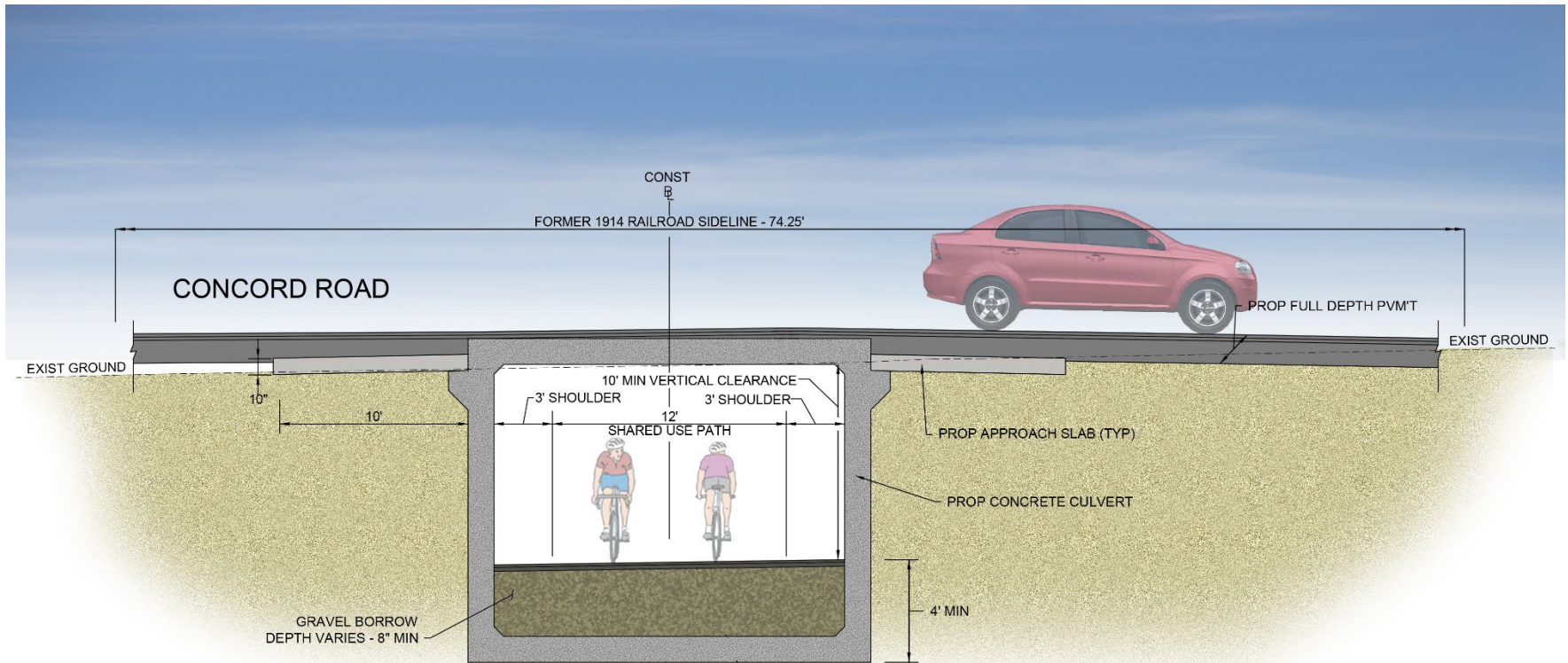
Minuteman Bikeway Cross Sections

Off-Road Bikeway



Minuteman Bikeway Cross Sections

Off-Road Bikeway – Concord Rd Culvert



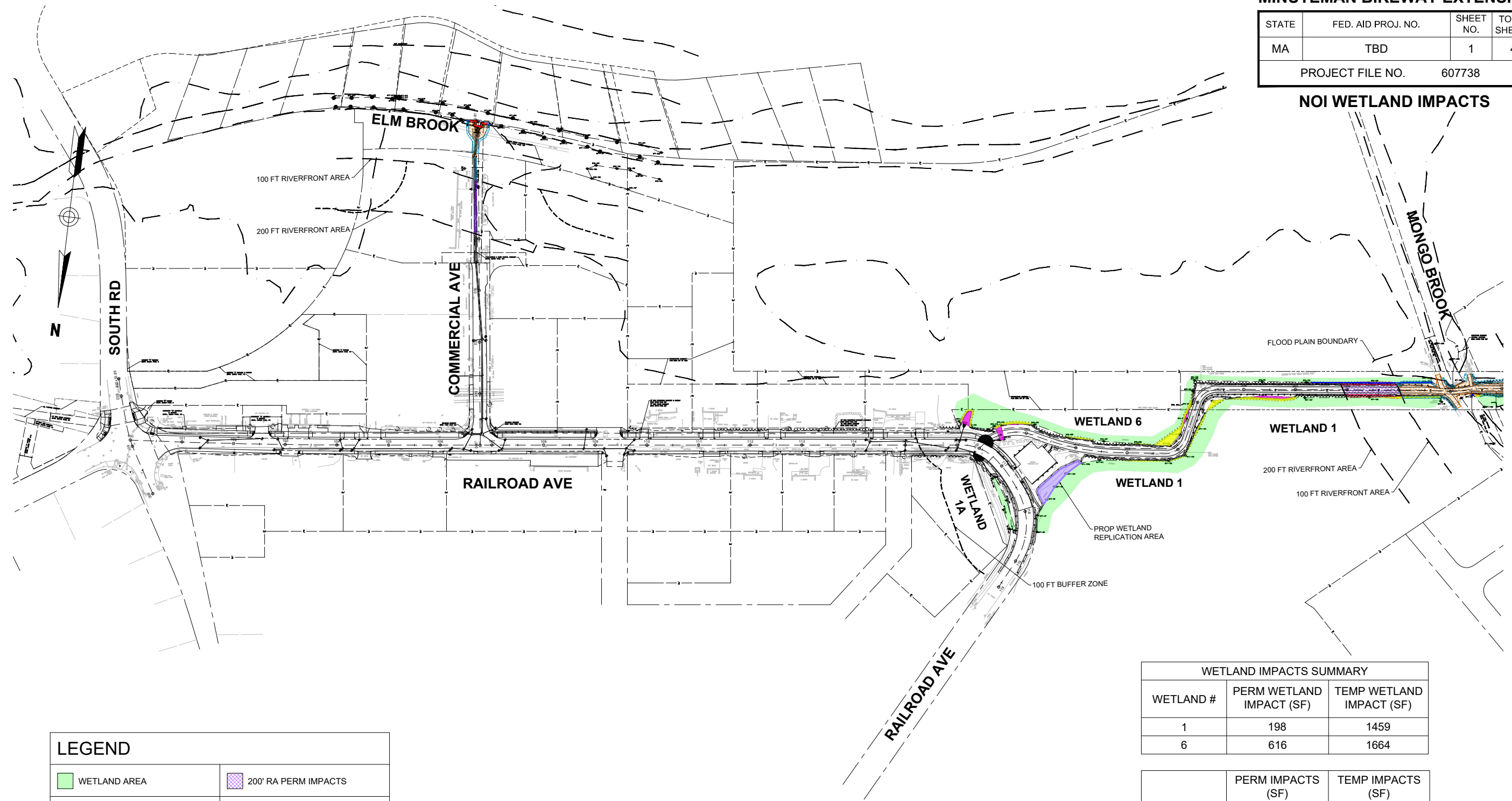
Wetland Resource Area Impact Summary

Resource Area	Area of Work within Resource	Permanent Alteration	Temporary Alteration
Bank	300 linear feet	52 linear feet	248 linear feet
Bordering Vegetated Wetland	4,834 sq. ft	850 sq. ft	3,984 sq. ft
Riverfront Area	18,779 sq. ft	13,318 sq. ft	5,461 sq. ft

**BEDFORD
MINUTEMAN BIKEWAY EXTENSION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	1	4
PROJECT FILE NO.		607738	

NOI WETLAND IMPACTS



LEGEND	
WETLAND AREA	200' RA PERM IMPACTS
PERM WETLAND IMPACTS	200' RA TEMP IMPACTS
TEMP WETLAND IMPACTS	FLOOD PLAIN IMPACTS
100' RA PERM IMPACTS	PERM BANK IMPACTS
100' RA TEMP IMPACTS	TEMP BANK IMPACTS



WETLAND IMPACTS SUMMARY		
WETLAND #	PERM WETLAND IMPACT (SF)	TEMP WETLAND IMPACT (SF)
1	198	1459
6	616	1664

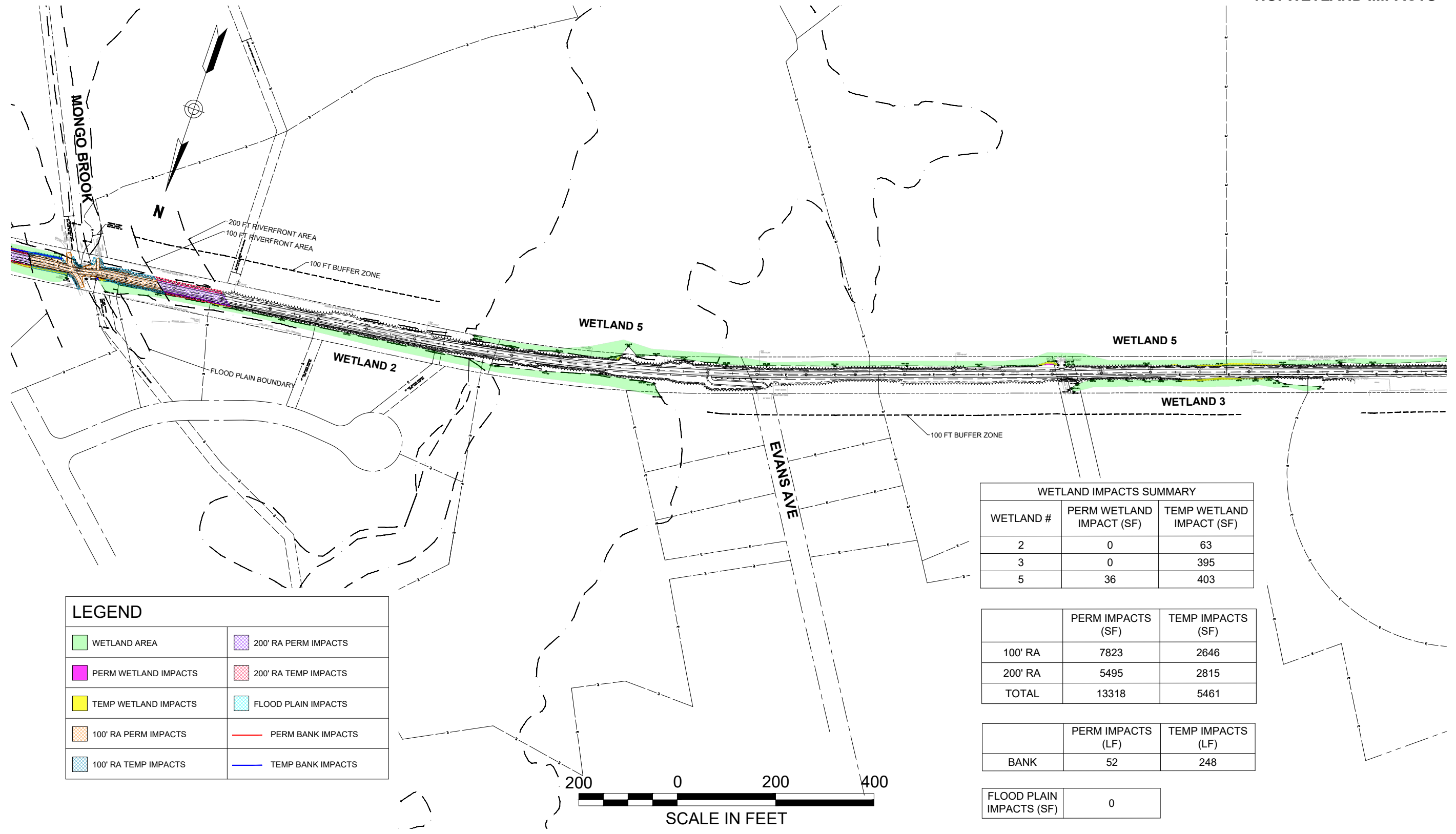
	PERM IMPACTS (SF)	TEMP IMPACTS (SF)
100' RA	7823	2646
200' RA	5495	2815
TOTAL	13318	5461

	PERM IMPACTS (LF)	TEMP IMPACTS (LF)
BANK	52	248

**BEDFORD
MINUTEMAN BIKEWAY EXTENSION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	2	4
PROJECT FILE NO.		607738	

NOI WETLAND IMPACTS



LEGEND	
WETLAND AREA	200' RA PERM IMPACTS
PERM WETLAND IMPACTS	200' RA TEMP IMPACTS
TEMP WETLAND IMPACTS	FLOOD PLAIN IMPACTS
100' RA PERM IMPACTS	PERM BANK IMPACTS
100' RA TEMP IMPACTS	TEMP BANK IMPACTS

WETLAND IMPACTS SUMMARY		
WETLAND #	PERM WETLAND IMPACT (SF)	TEMP WETLAND IMPACT (SF)
2	0	63
3	0	395
5	36	403

	PERM IMPACTS (SF)	TEMP IMPACTS (SF)
100' RA	7823	2646
200' RA	5495	2815
TOTAL	13318	5461

	PERM IMPACTS (LF)	TEMP IMPACTS (LF)
BANK	52	248

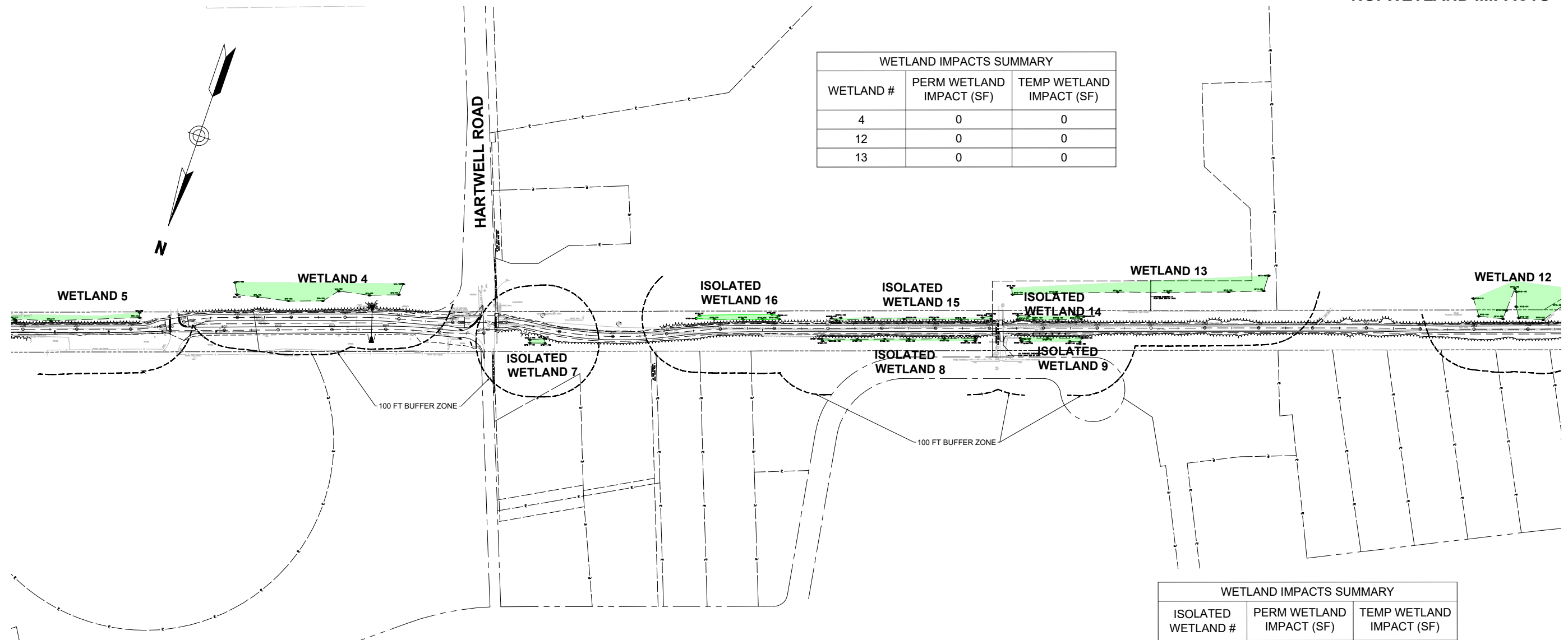
FLOOD PLAIN IMPACTS (SF)	0
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**BEDFORD
MINUTEMAN BIKEWAY EXTENSION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	3	4
PROJECT FILE NO.		607738	

NOI WETLAND IMPACTS

WETLAND IMPACTS SUMMARY		
WETLAND #	PERM WETLAND IMPACT (SF)	TEMP WETLAND IMPACT (SF)
4	0	0
12	0	0
13	0	0



WETLAND IMPACTS SUMMARY		
ISOLATED WETLAND #	PERM WETLAND IMPACT (SF)	TEMP WETLAND IMPACT (SF)
7	0	0
8	0	0
9	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0

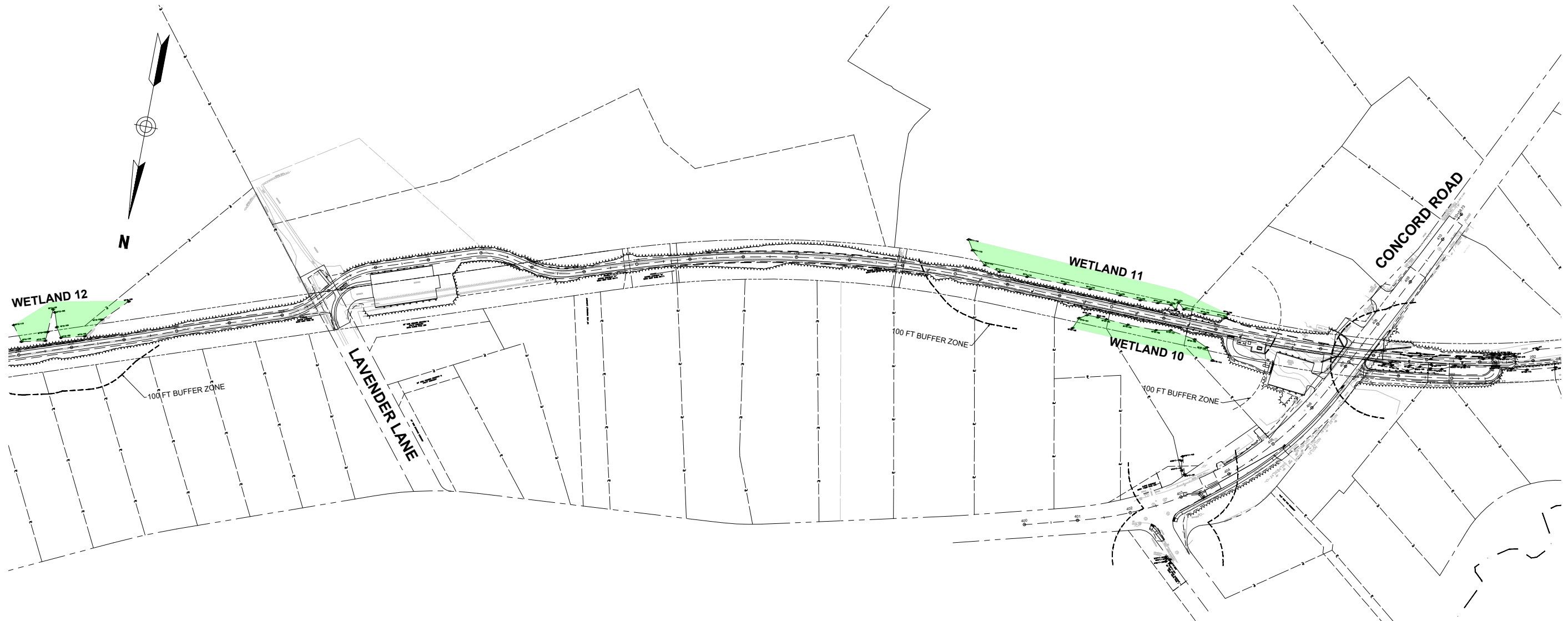
LEGEND	
WETLAND AREA	200' RA PERM IMPACTS
PERM WETLAND IMPACTS	200' RA TEMP IMPACTS
TEMP WETLAND IMPACTS	FLOOD PLAIN IMPACTS
100' RA PERM IMPACTS	PERM BANK IMPACTS
100' RA TEMP IMPACTS	TEMP BANK IMPACTS



**BEDFORD
MINUTEMAN BIKEWAY EXTENSION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	4	4
PROJECT FILE NO.		607738	

NOI WETLAND IMPACTS



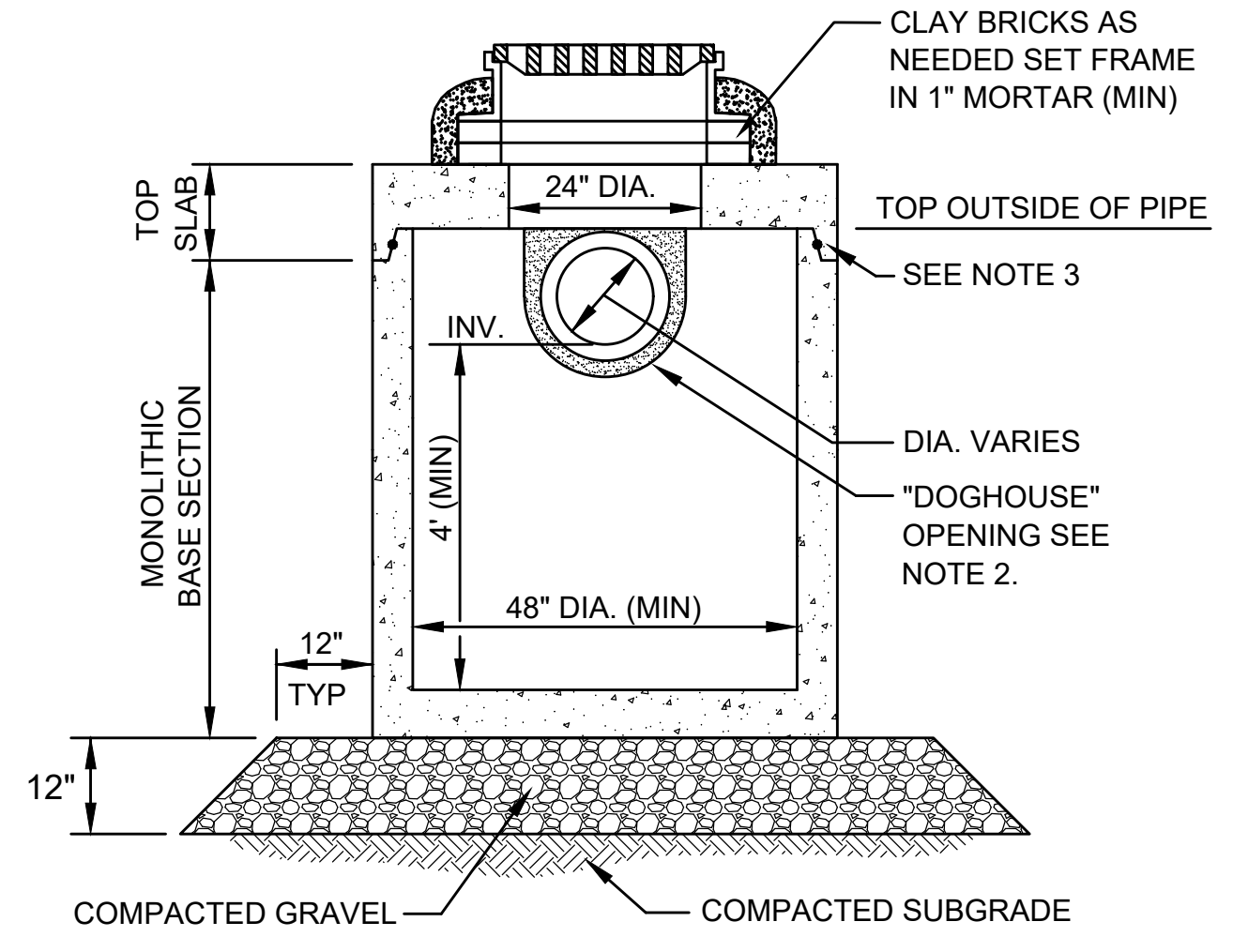
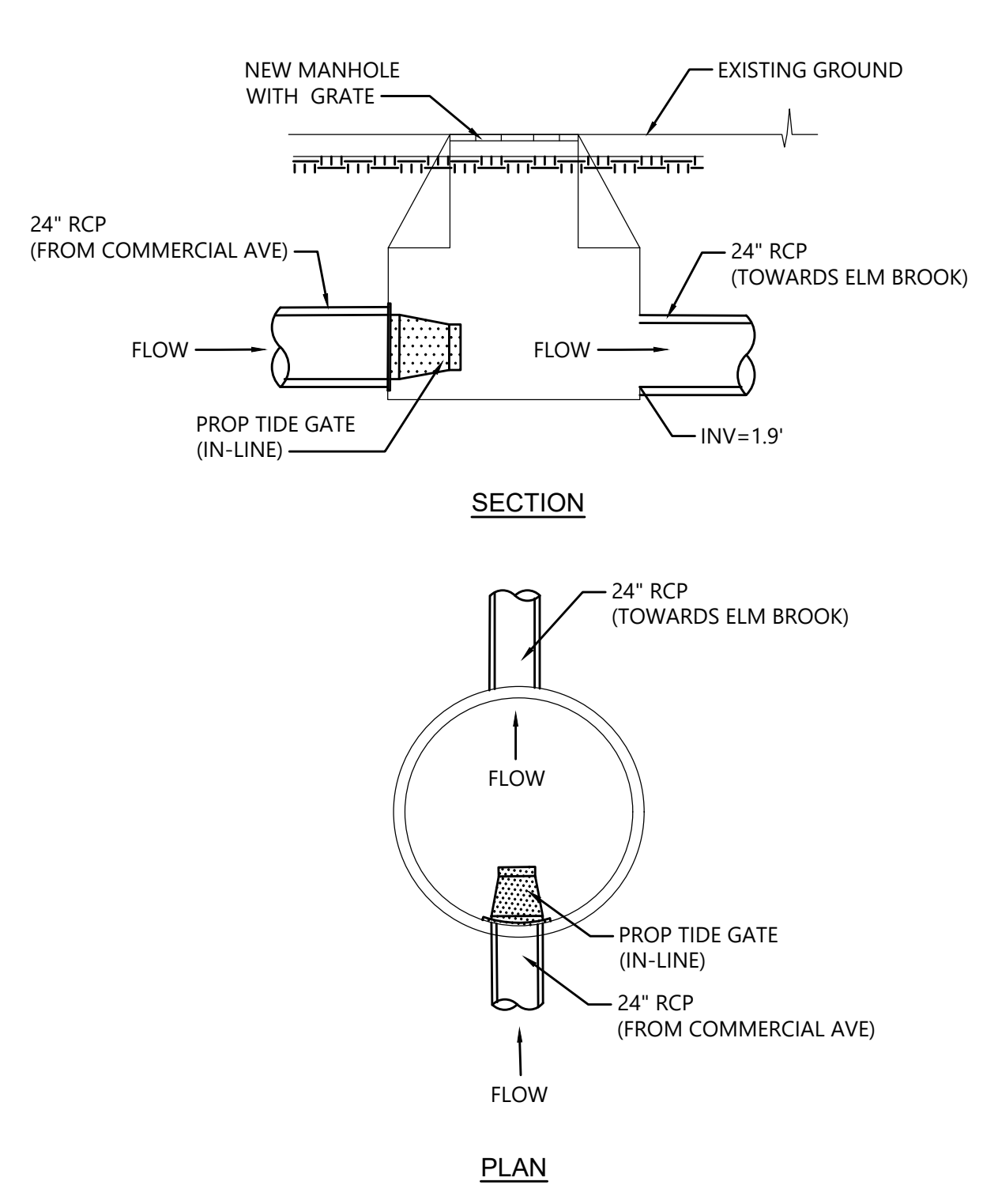
LEGEND	
WETLAND AREA	200' RA PERM IMPACTS
PERM WETLAND IMPACTS	200' RA TEMP IMPACTS
TEMP WETLAND IMPACTS	FLOOD PLAIN IMPACTS
100' RA PERM IMPACTS	PERM BANK IMPACTS
100' RA TEMP IMPACTS	TEMP BANK IMPACTS

WETLAND IMPACTS SUMMARY		
WETLAND #	PERM WETLAND IMPACT (SF)	TEMP WETLAND IMPACT (SF)
10	0	0
11	0	0

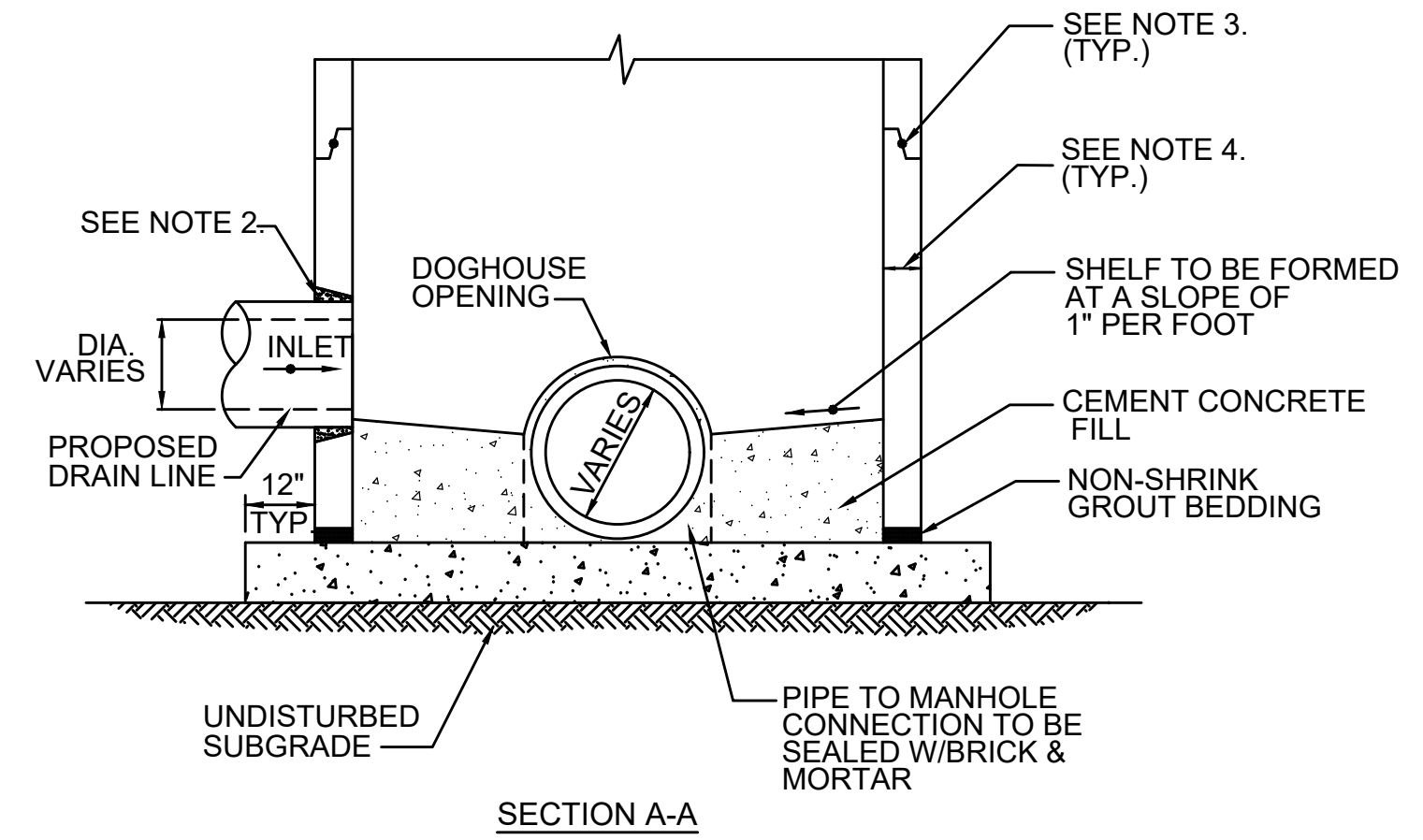
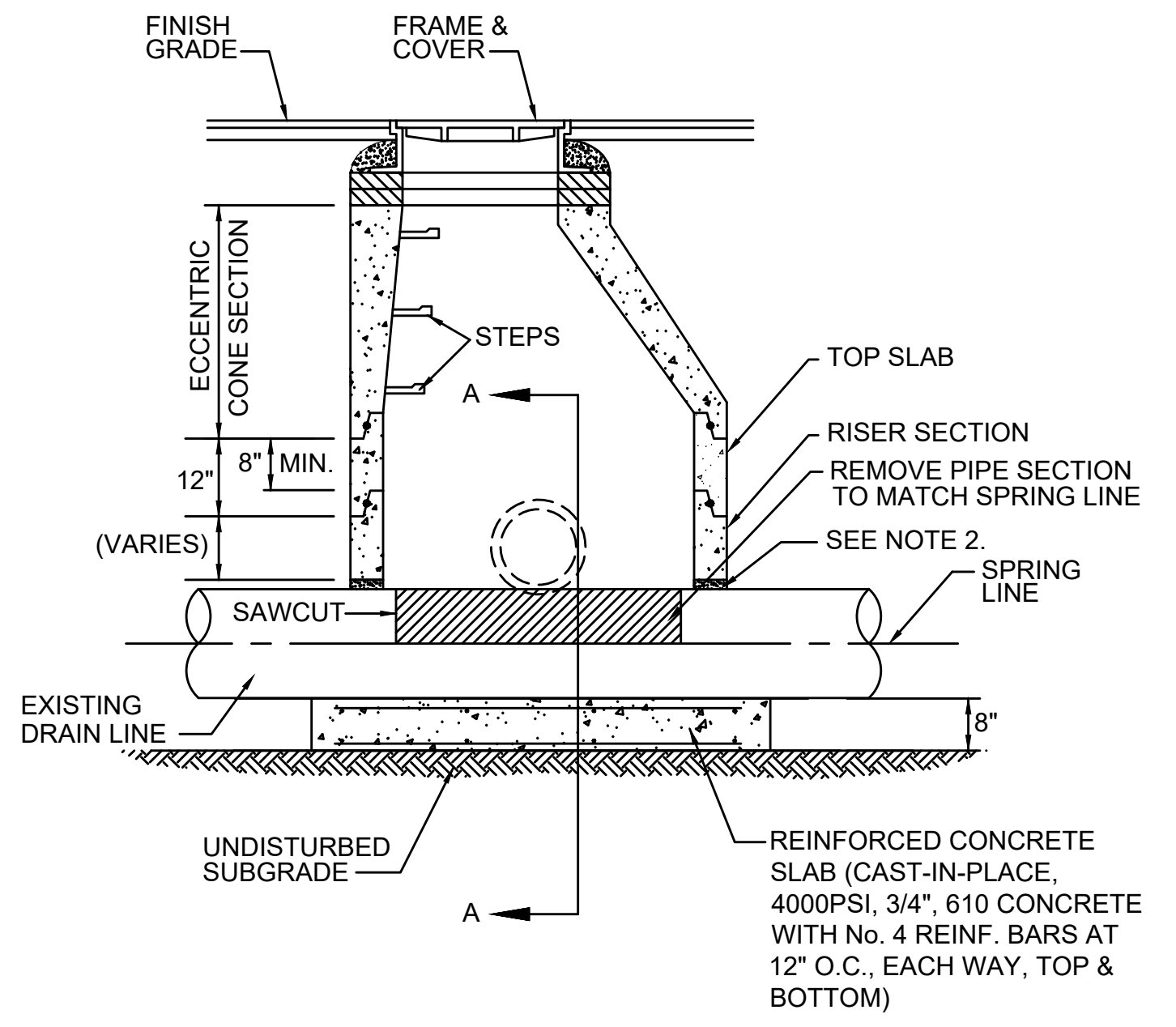


Mitigation Measures





- NOTES:**
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
 2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
 3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
 4. CATCH BASIN FRAME AND GRATE (4" DEPTH) SHALL BE SET IN FULL MORTAR BED.
 5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.



- NOTES:**
1. STRUCTURE SHALL BE DESIGNED FOR HS-20 LOADING.
 2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
 3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
 4. FOR MANHOLES OVER 9' IN DEPTH, WALL THICKNESS SHALL BE 6" MIN. FOR MANHOLES 9' OR LESS IN DEPTH, WALL THICKNESS SHALL BE 5" MIN.

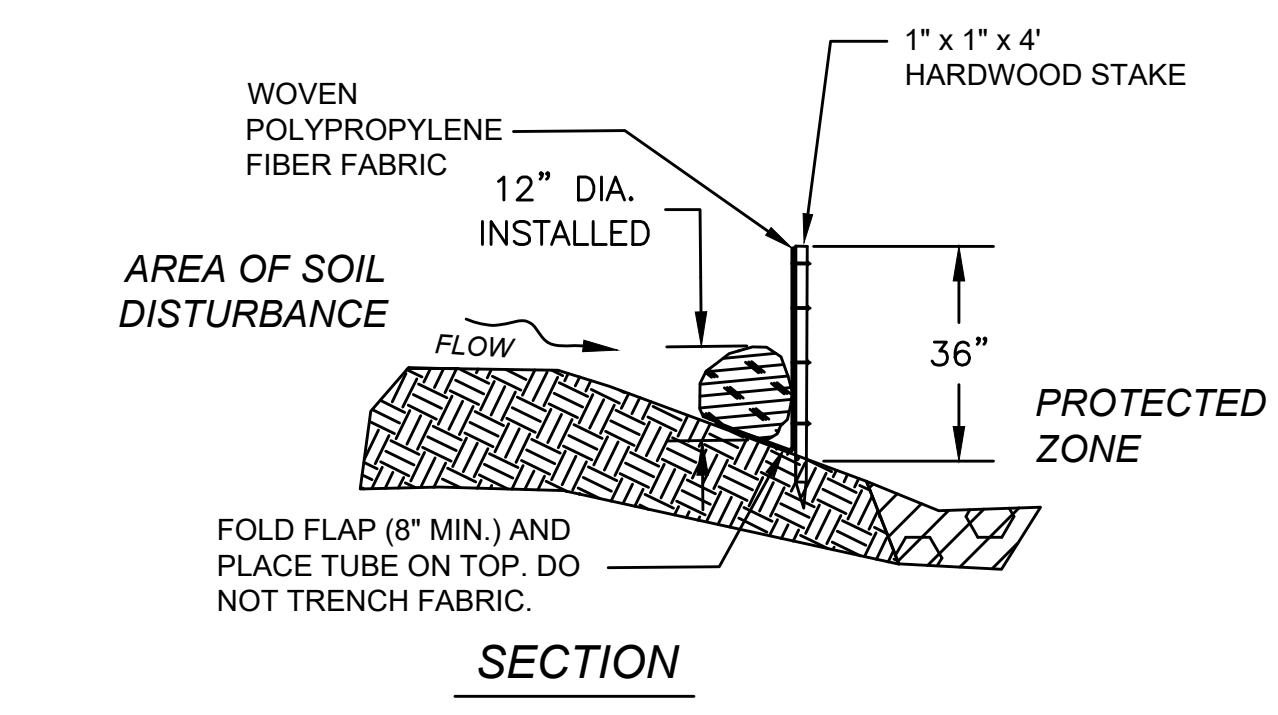
TIDE GATE IN-LINE CHECK VALVE

SCALE: N.T.S.

CATCH BASIN SHALLOW COVER (CBCS)

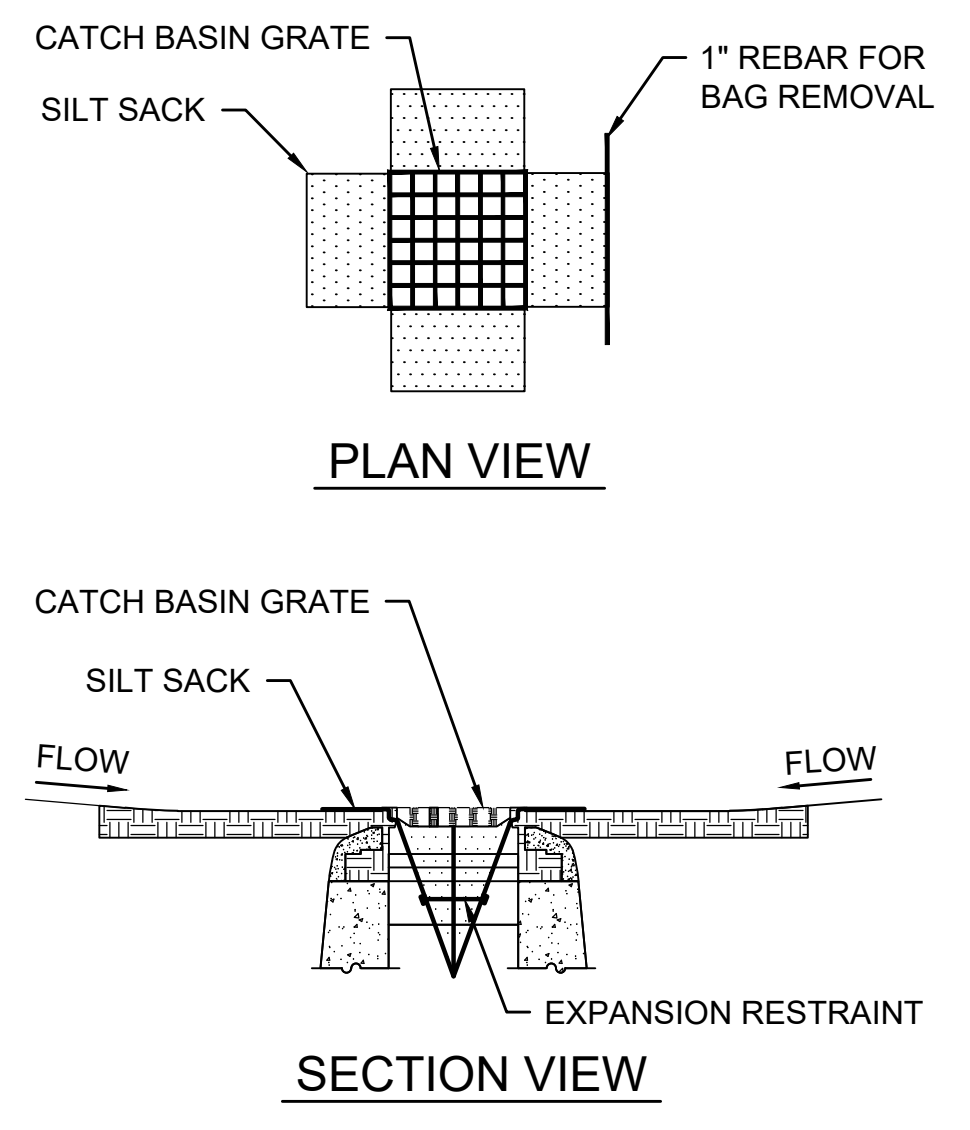
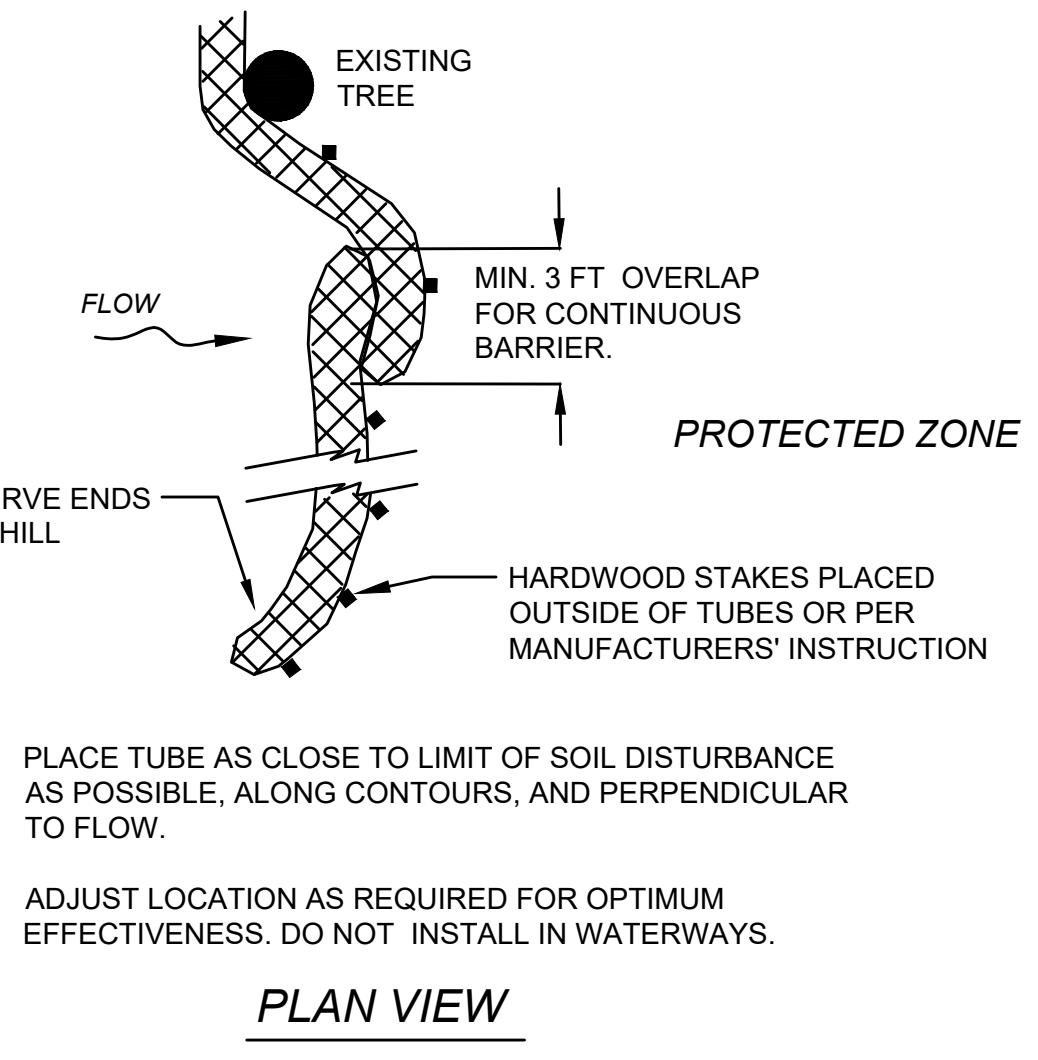
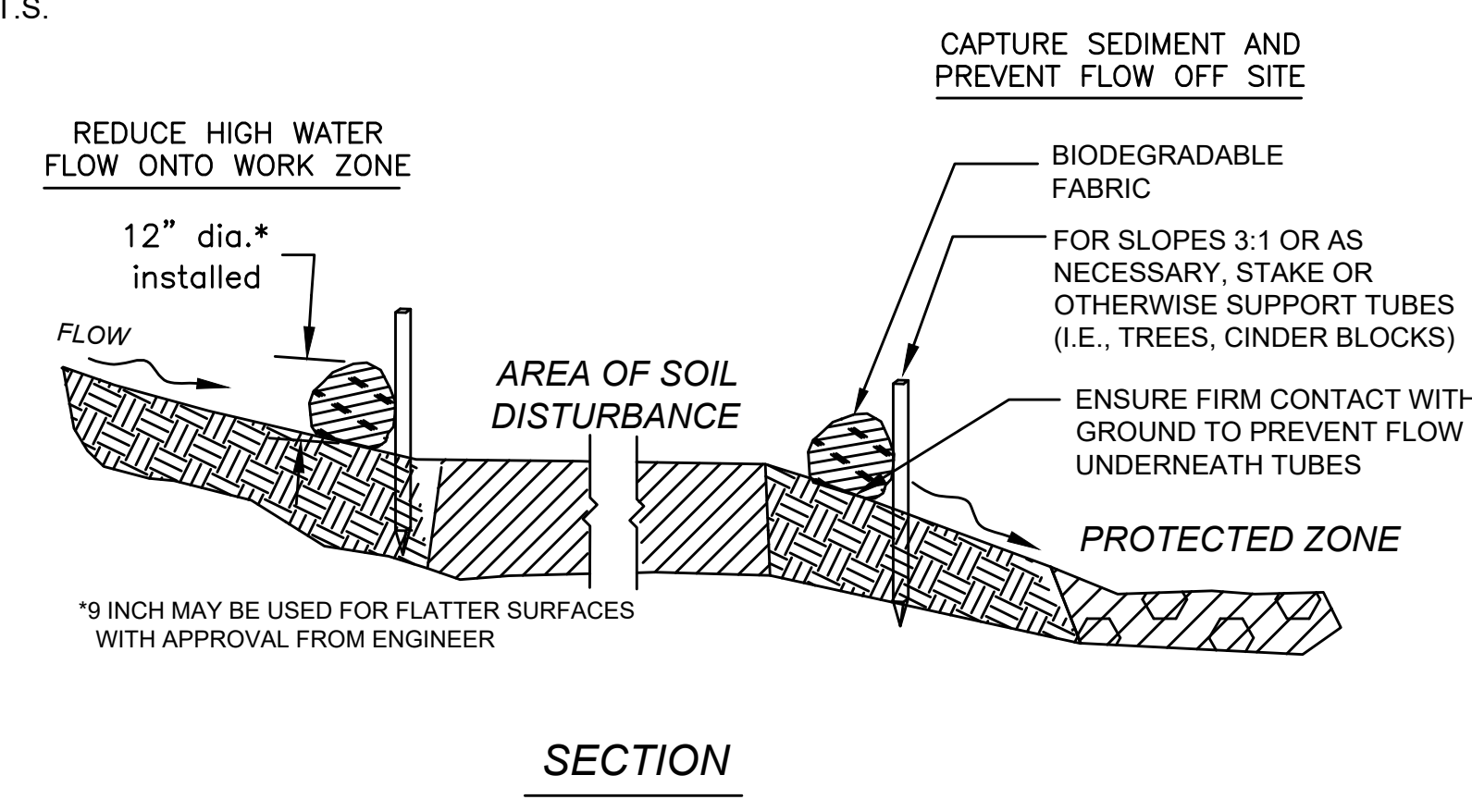
DRAIN MANHOLE OVER EXISTING PIPE

SCALE: N.T.S.

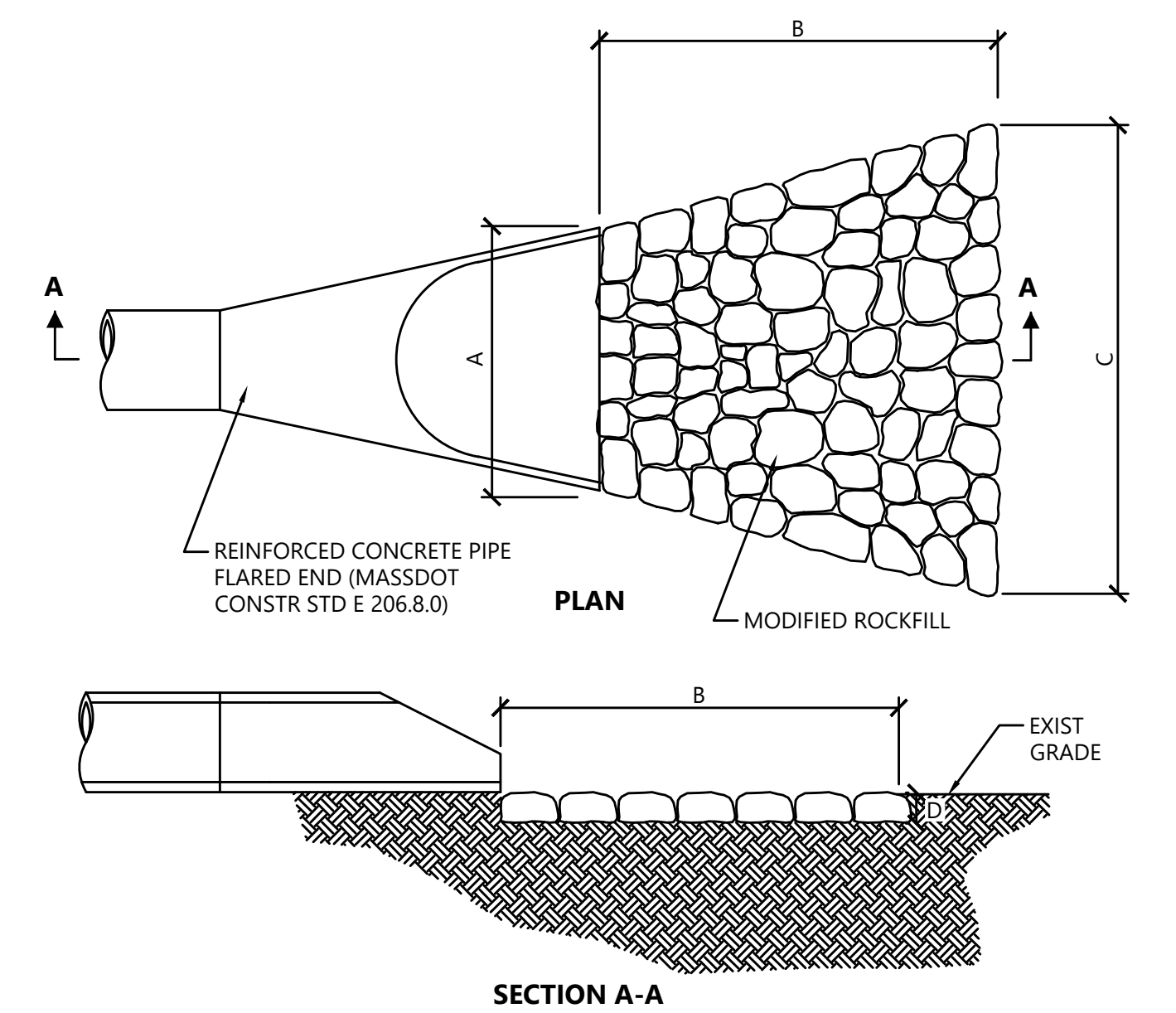


COMPOST FILTER TUBE & SILT FENCE

SCALE: N.T.S.



- NOTES:**
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
 2. GRATE TO BE PLACED OVER SILT SACK.
 3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED



SECTION A-A

STRUCTURE NO.	STATION	A	B	C	D
73	506+05.9, 2.1' LT	6'-0"	12'-0"	8'-0"	2'-0"
135	242+50, 14.4' LT	3'-10"	6'-0"	8'-6"	2'-0"
139	116+12.2, 36.7' LT	3'-10"	4'-0"	5'-8"	2'-0"
143	242+50, 38.4 RT	3'-10"	6'-0"	8'-6"	2'-0"

NOTE:
1. SEE MASSDOT CONSTR STD E 206.7.0

SEDIMENT BARRIER - COMPOST FILTER TUBE

SCALE: N.T.S.

INLET PROTECTION - SILT SACK IN CATCH BASIN

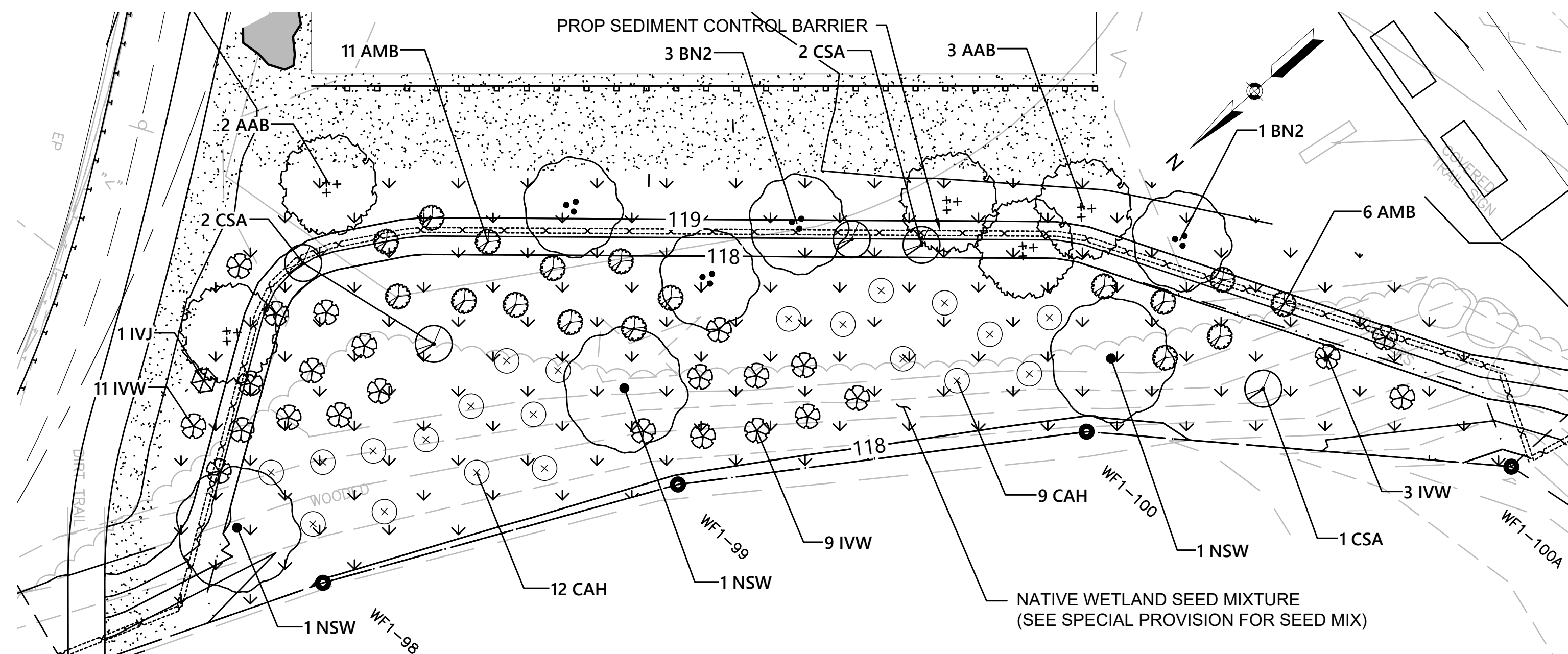
SCALE: N.T.S.

STONE FOR EROSION CONTROL AT PIPE OUTLETS

SCALE: N.T.S.

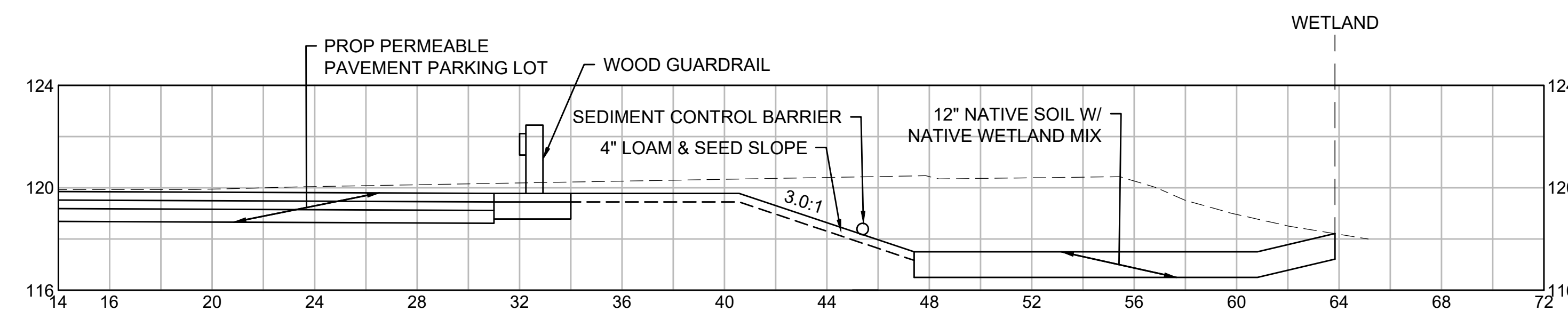
PLANT SCHEDULE WETLAND REPLICATION

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE
AAB	5	Amelanchier arborea	Shad Tree - Allegheny Clump	4 - 5' HT. CLUMP
BN2	4	Betula nigra - Clump	River Birch	5 - 6' HT./Multi-Stem
NSW	3	Nyssa sylvatica	Black Tupelo	4 - 6' HT.
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
AMB	17	Aronia melanocarpa	Chokeberry - Black	2 - 2 1/2' HT.
CAH	21	Clethra alnifolia	Summersweet Shrub	2 - 2 1/2' HT.
CSA	5	Cornus sericea	Dogwood - Redosier	2 - 3' HT.
IVW	24	Ilex verticillata	Winterberry - Female	2 - 2 1/2' HT.
IVJ	1	Ilex verticillata 'Jim Dandy'	Winterberry - Male	2 - 2 1/2' HT.



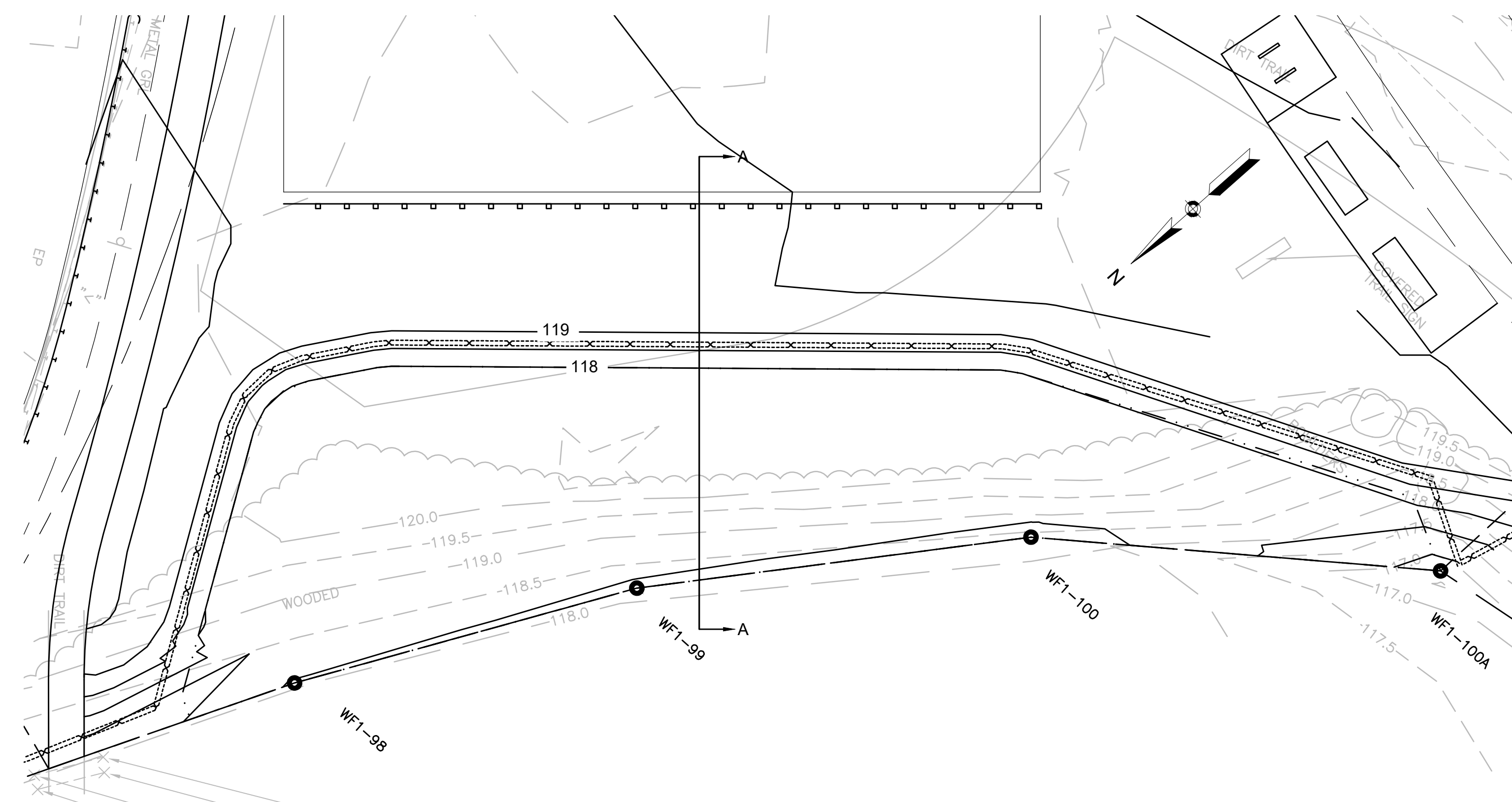
WETLAND REPLICATION PLANTING PLAN

SCALE: 1"=8'



WETLAND REPLICATION CROSS SECTION A-A

HORIZONTAL SCALE: 1"=4'
VERTICAL SCALE: 1"=4'



WETLAND REPLICATION GRADING PLAN

SCALE: 1"=8'

NOTES:

- SEE SPECIAL PROVISIONS UNDER ITEM 755.3 NON-TIDAL WETLAND MITIGATION AREA.
- THE REPLACEMENT AREA SHALL BE EXCAVATED TO THE FINISHED GRADE SHOWN ON THE PLAN. A BARRIER OF COMPOST FILTER TUBES AS SHOWN ON THE DRAWINGS SHALL SEPARATE ANY WETLAND RESOURCE AREA ADJACENT TO THE REPLACEMENT AREA FROM THE REPLACEMENT AREA.
- ALL SOIL WITHIN THE TOP 12 INCHES OF THE PROPOSED REPLACEMENT AREA SURFACE SHALL BE INSPECTED FOR RUBBLE; IF RUBBLE IS FOUND, IT SHALL BE REMOVED FROM THE TOPSOIL. IF THE SOIL IS BEYOND USABLE QUALITY AS DETERMINED BY THE WETLAND SCIENTIST, IT SHALL BE DISPOSED OF.
- ORGANIC COMPOST SOIL SHALL BE INCORPORATED INTO THE TOP 12 INCHES OF EXISTING SUBSOIL AT A RATE OF 1 PART COMPOST TO 3 PARTS EXISTING SOIL. THE REPLACEMENT AREA SHALL BE GRADED TO BE AT A GRADE COMPATIBLE WITH THE ADJACENT WETLAND. ANY EXCAVATED HYDRIC SOILS FROM THE WETLAND REPLACEMENT AREA SHALL BE ASSUMED TO CONTAIN SEED OR RHIZOMES OF INVASIVE PLANT SPECIES AND WILL BE REMOVED FROM THE SITE AND NOT USED IN THE WETLAND REPLACEMENT AREA.
- THE GRADING AND OPERATION REQUIRED TO INCORPORATE THE COMPOST SOIL TO CREATE A WETLAND SOIL MIXTURE SHALL BE PERFORMED IN A MANNER TO MINIMIZE TRAVEL AND SUBSEQUENT COMPACTION OF THE PREPARED SOIL.
- ALL PLANTING WILL BE PERFORMED IN THE SPRING (4-15 TO 6-15) OR FALL (9-1 TO 10-15).
- ALL PLANT MATERIAL SHALL BE HEALTHY, FREE OF DISEASE AND PESTS AND CONTAIN A WELL DEVELOPED ROOT SYSTEM.
- ONCE ALL TREES AND SHRUBS HAVE BEEN PLANTED, THE WETLAND AREA WILL BE SEEDED WITH A HERBACEOUS NATIVE NEW ENGLAND WETLAND SEED MIX. SEE SPECIFICATIONS FOR SEED RATES. HYDROSEEDING MAY BE USED.
- A HERBACEOUS EROSION CONTROL / RESTORATION SEED MIXTURE FOR WET SITES SHALL BE APPLIED TO THE SIDE SLOPES AS SPECIFIED IN THE SPECIAL PROVISIONS. PROPER APPLICATION WILL PERMIT THE GROUND COVER TO GERMINATE AND GROW IN AND BENEATH THE LAYER. EROSION AND SEDIMENTATION CONTROLS SHALL REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED.
- UPON COMPLETION OF THE REPLACEMENT AREA, A COMPOST FILTER TUBE BARRIER SHALL BE PLACED AROUND THE ENTIRE PERIMETER TO PROTECT IT DURING THE REST OF THE CONSTRUCTION.
- THE FINAL GRADING OF THE WETLAND SOILS SHALL RESULT IN NO BREAKS IN ELEVATION UPON REMOVAL OF SEDIMENTATION BARRIERS.
- THE SEDIMENTATION BARRIERS SHALL BE REMOVED AT THE COMPLETION OF ALL CONSTRUCTION FOR THE PROJECT. THE GROUND UNDER THE SEDIMENTATION BARRIERS SHALL BE RESEEDING WHEN THE BARRIERS ARE REMOVED.

Existing Outfall to Elm Brook



HIGHWAY GUARD DETAILS

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

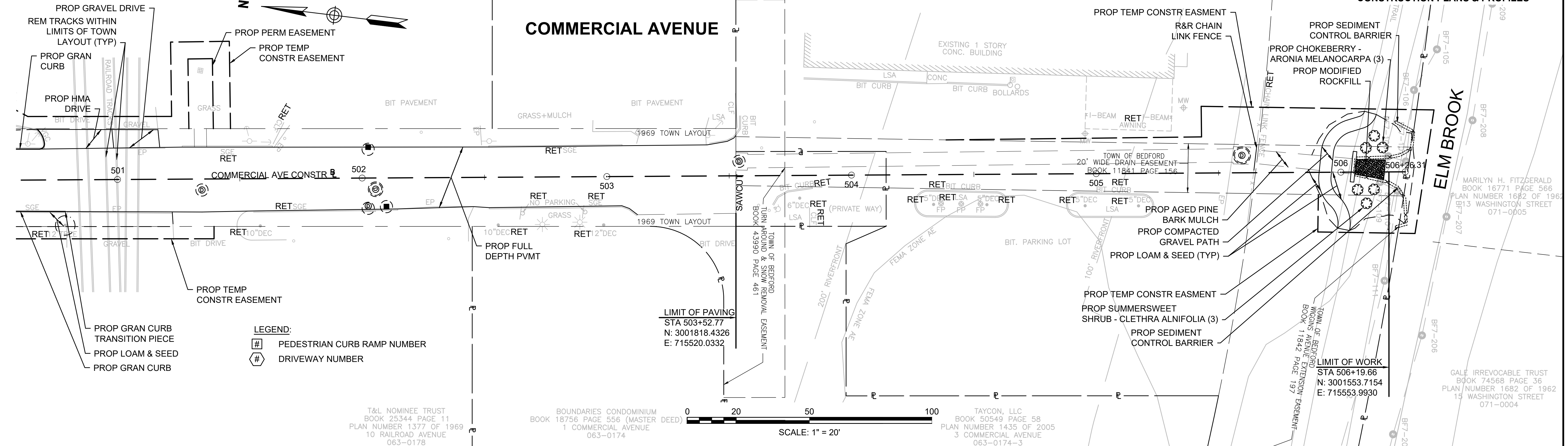
SEE SHEET 104

BEDFORD
MINUTEMAN BIKEWAY EXTENSION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	15	182

PROJECT FILE NO. 607738

CONSTRUCTION PLANS & PROFILES



CONTINUED ON SHEET NO. 14

