



March 30, 2021

Sudbury Conservation Department
275 Old Lancaster Road
Sudbury, MA 01776
Attn: Lori Capone, Conservation Coordinator

Re: Marlboro Road Culvert Replacement NOI
Response to Comments

Dear Ms. Capone:

Thank you for coordinating the review of the proposed culvert replacement on Marlboro Road in Sudbury. The following letter compiles responses to comments received from you via email on March 18, 2021. The comments received are provided below for your reference, and our response follows each comment in italics:

1. There is no discussion on how the project meets the Wetlands Bylaw. Unaltered Buffer Zone (Adjacent Upland Resource Area) is a resource area under the Bylaw. Impacts thereto should be mitigated or explain how functions provided by AURA are not being impacted.
 - o *The Town of Sudbury Wetlands Administration Bylaw (Article XXII) and its associated Sudbury Wetlands Administration Bylaw Regulations (revised September 25, 2017) establishes jurisdictional Adjacent Upland Resource Areas (AURAs). The Bylaw defines AURAs as land within 100-feet of wetland resource areas, within 200-feet of top of bank, and with varying extent when adjacent to vernal pools, ponds <10,000 square feet in area, or isolated land subject to flooding. The proposed replacements of Marlboro Rd culvert include work within 100-feet of Bordering Vegetated Wetlands, considered an AURA under the Bylaw.*

The project was designed to minimize the amount of disruption and alteration to the AURA within the project limit of work, and the work area is generally within in the portion of the AURA that is already altered. Temporary land disturbances caused by construction will be stabilized and restored to existing conditions. A native New England Conservation/Wildlife seed mix will be applied to the temporarily disturbed areas. The blend of species will provide a permanent cover of grasses, forbs, wildflowers, and legumes to control soil erosion and enhance wildlife habitat. The roadway above the crossing will be replaced in the same footprint as the existing roadway.

The Marlboro Road culvert is undersized and causes a scour hole at the outlet that is undermining the adjacent roadway. This crossing has been prioritized by the Town for replacement. A localized slope failure occurred in August of 2019 that resulted in emergency slope stabilization measures. Further deterioration of the roadway embankment could result in failure of the roadway section and compromising of the utilities within. The proposed alternative provides the least amount of temporary and permanent impact while substantially improving the stability and hydraulic capacity of the crossing. The new crossing will provide better wildlife passage with the natural bottom.

2. Revise delineation and impact calculations for Bordering Land Subject to Flooding based on defined FEMA elevations: 141.4 upstream, 135 downstream.



- *The attached plans have been revised to indicate the revised delineation and impact calculations for Bordering Land Subject to Flooding, using the defined FEMA elevations. See Sheet C-102 for these revisions. This has reduced the area of impact to the BLSF by approximately 414 square feet.*
- 3. Add erosion controls around upstream grading beyond the coffer dam.
 - *Sediment barrier has been added around the upstream grading beyond the coffer dam.*
- 4. Is the riprap behind the upstream headwall needed or can this be vegetated?
 - *Due to the slope of this area, we are recommending the small amount (approximately 146 SF) of riprap.*
- 5. Add a construction detail for the geocell.
 - *A construction detail for the geocell has been added to plan sheet C-201.*
- 6. Note where reinforced matting and erosion control matting is proposed.
 - *We have removed the reference to reinforced matting, which we are not using. A note has been added indicating the area where the erosion control matting is to be applied on the north side of the culvert (where slopes are greater than 3:1).*
- 7. Remove "Contractor Option" from erosion control details. Plan/Order dictates erosion controls needed, which the contractor can request to modify later, but it should not be left to their own discretion.
 - *We have removed "Contractor Option" from the erosion control details.*
- 8. Note native seed mixes that should be used.
 - *A native seed mix specification has been added to the notes and callouts on sheet C-102. Native wildflower see mix shall be New England Environmental Conservation/Wildlife mix, or similar. Native wetland see mix shall be New England Erosion Control/Restoration mix for detention basins and moist sites.*

If you have any questions or require additional information, please do not hesitate to contact me at 207-558-3662 or email me at dstairs@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

A handwritten signature in blue ink, appearing to read "Darrin Stairs".

Darrin Stairs, PE
Project Manager

Enclosures: Revised Drawings

Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

WPA Form 3 - Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 MassDEP File #:
 eDEP Transaction #:1262875
 City/Town:SUDBURY

1. Yes No If yes, describe which limited project applies to this project:
 2. Limited Project 310 CMR 10.53(3)(F). MAINTENANCE AND IMPROVEMENT OF AN EXISTING PUBLIC ROADWAY.

8. Property recorded at the Registry of Deeds for:

a. County:	b. Certificate:	c. Book:	d. Page:
SOUTHERN MIDDLESEX		N/A	N/A

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. Buffer Zone & Resource Area Impacts (temporary & permanent):

This is a Buffer Zone only project - Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.

2. Inland Resource Areas: (See 310 CMR 10.54 - 10.58, if not applicable, go to Section B.3. Coastal Resource Areas)

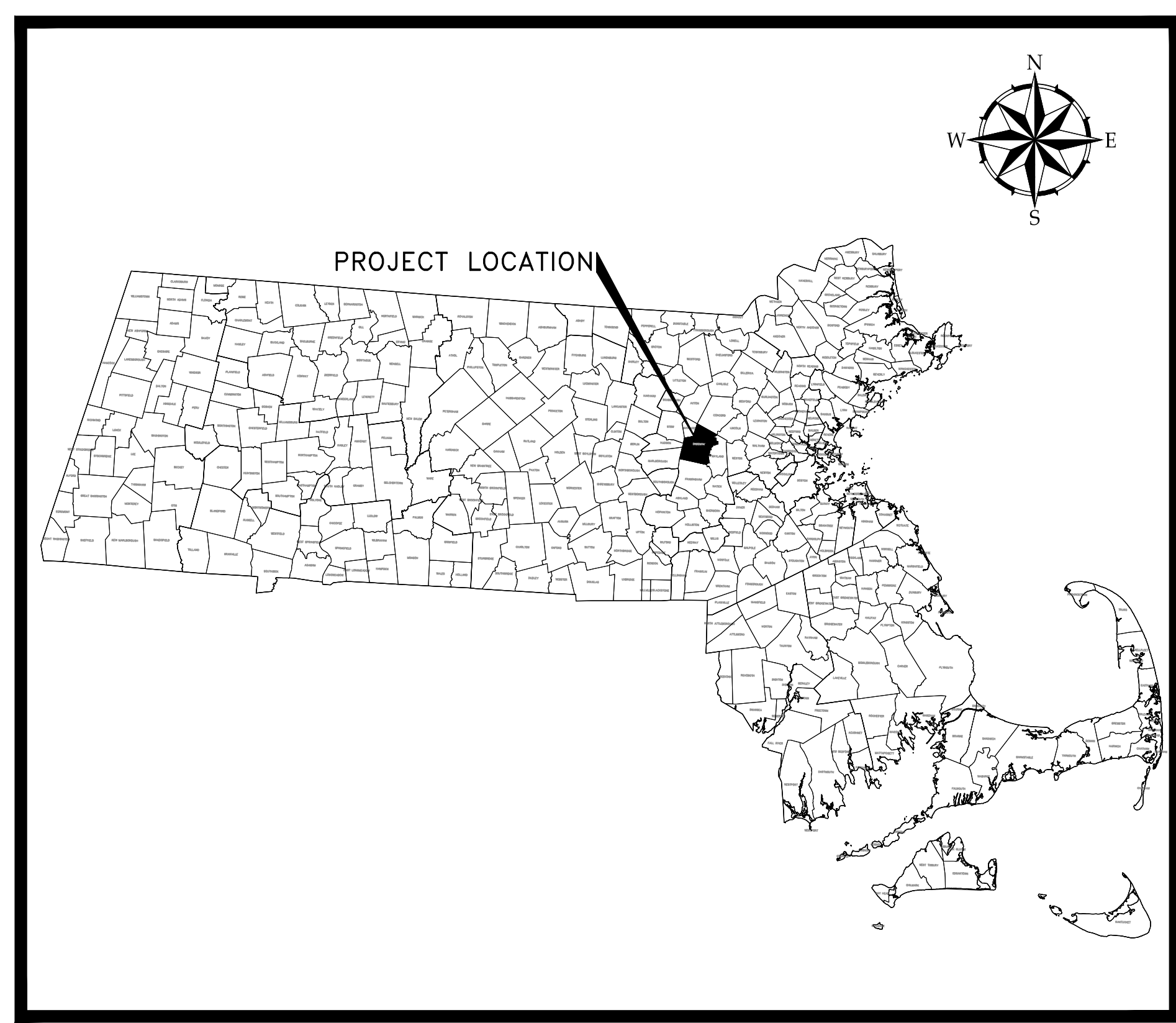
Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input checked="" type="checkbox"/> Bank	128 1. linear feet	128 2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	346 1. square feet	346 2. square feet
c. <input checked="" type="checkbox"/> Land under Waterbodies and Waterways	560 1. Square feet	560 2. square feet
	0 3. cubic yards dredged	
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	1,967 1. square feet 0 3. cubic feet of flood storage lost	1,967 2. square feet 4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input checked="" type="checkbox"/> Riverfront Area	Pantry Brook 1. Name of Waterway (if any)	
2. Width of Riverfront Area (check one)	<input type="checkbox"/> 25 ft. - Designated Densely Developed Areas only <input type="checkbox"/> 100 ft. - New agricultural projects only <input checked="" type="checkbox"/> 200 ft. - All other projects	
3. Total area of Riverfront Area on the site of the proposed project		8000 square feet
4. Proposed Alteration of the Riverfront Area:		
800 a. total square feet	800 b. square feet within 100 ft.	0 c. square feet between 100 ft. and 200 ft.

TOWN OF SUDBURY, MA MARLBORO ROAD CULVERT REPLACEMENT

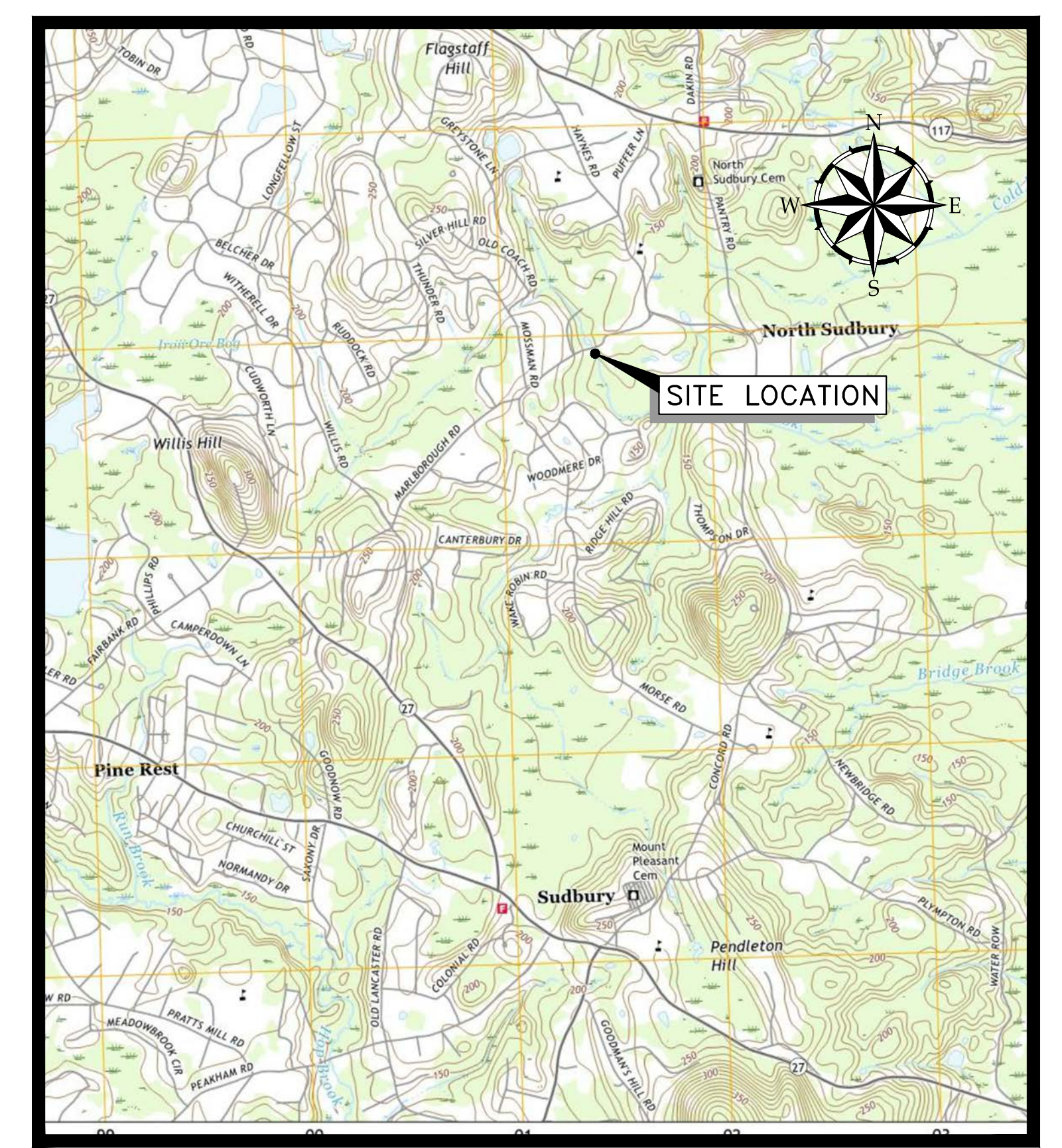
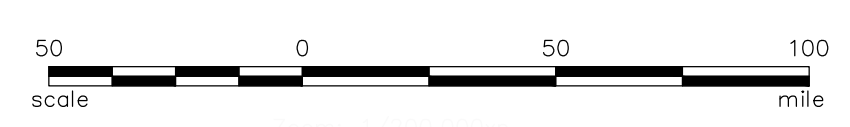
PROJECT NO. 227202.06

MARCH 2021

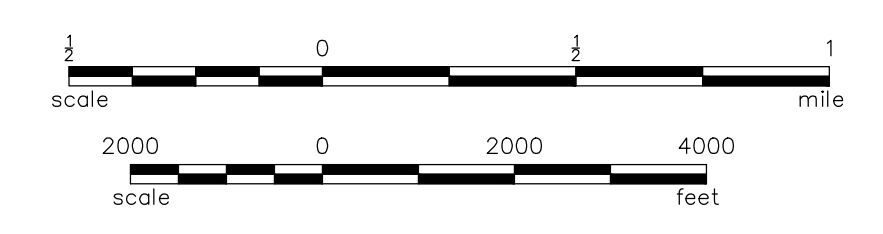
**NOTICE OF INTENT
NOT FOR
CONSTRUCTION**



PROJECT LOCATION MAP



SOURCE: USGS TOPOGRAPHIC MAP
SITE LOCATION MAP



40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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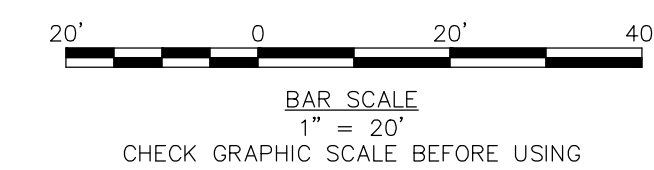
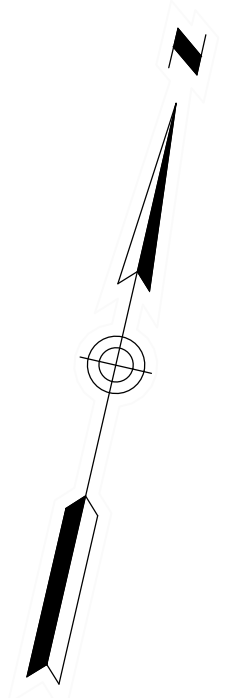
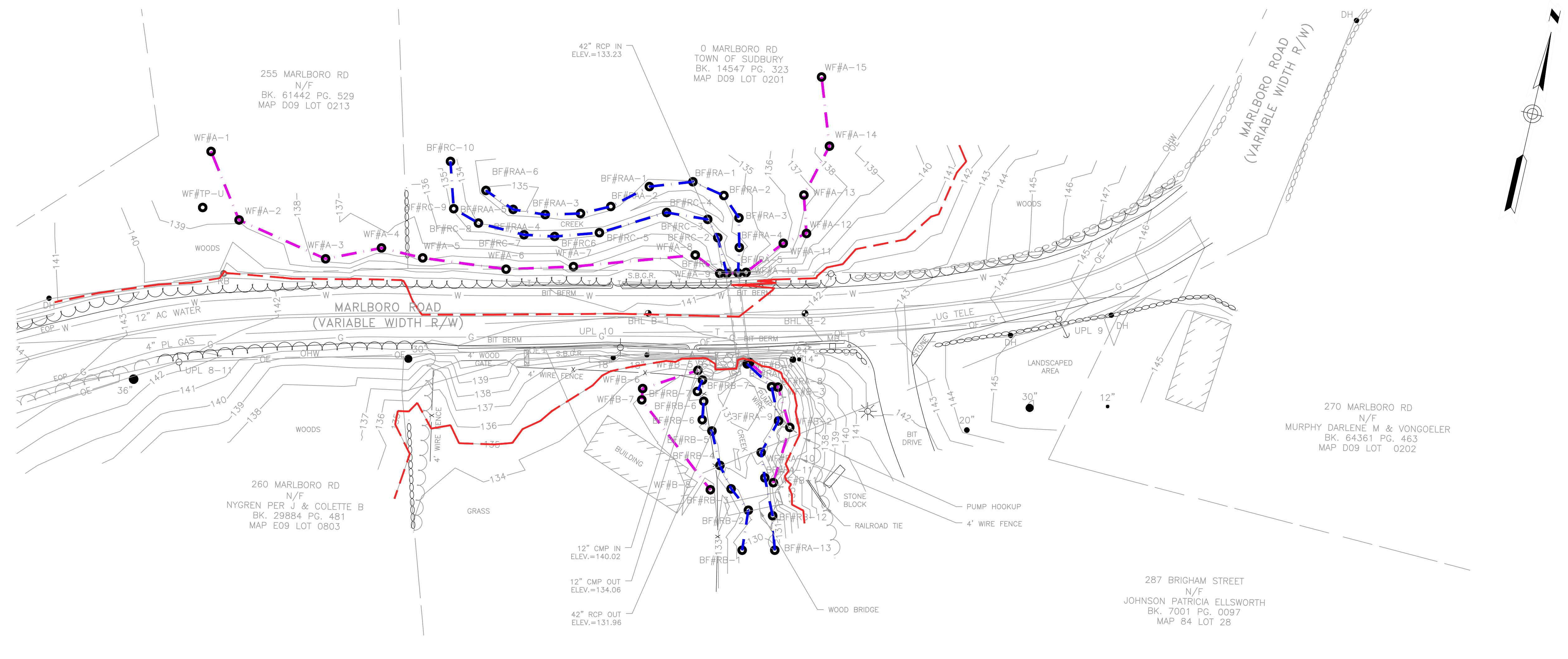
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RESOURCE AREA LEGEND

- BORDERING LAND SUBJECT TO FLOODING
(100 YEAR FLOOD ZONE, DEFINED BY FEMA) ---
 - BORDERING VEGETATED WETLAND ---
 - EDGE OF PERENNIAL STREAM/
TOP OF BANK ---
- NOTE:**
ENTIRE PROJECT AREA WITHIN 100' INNER RIPARIAN ZONE.

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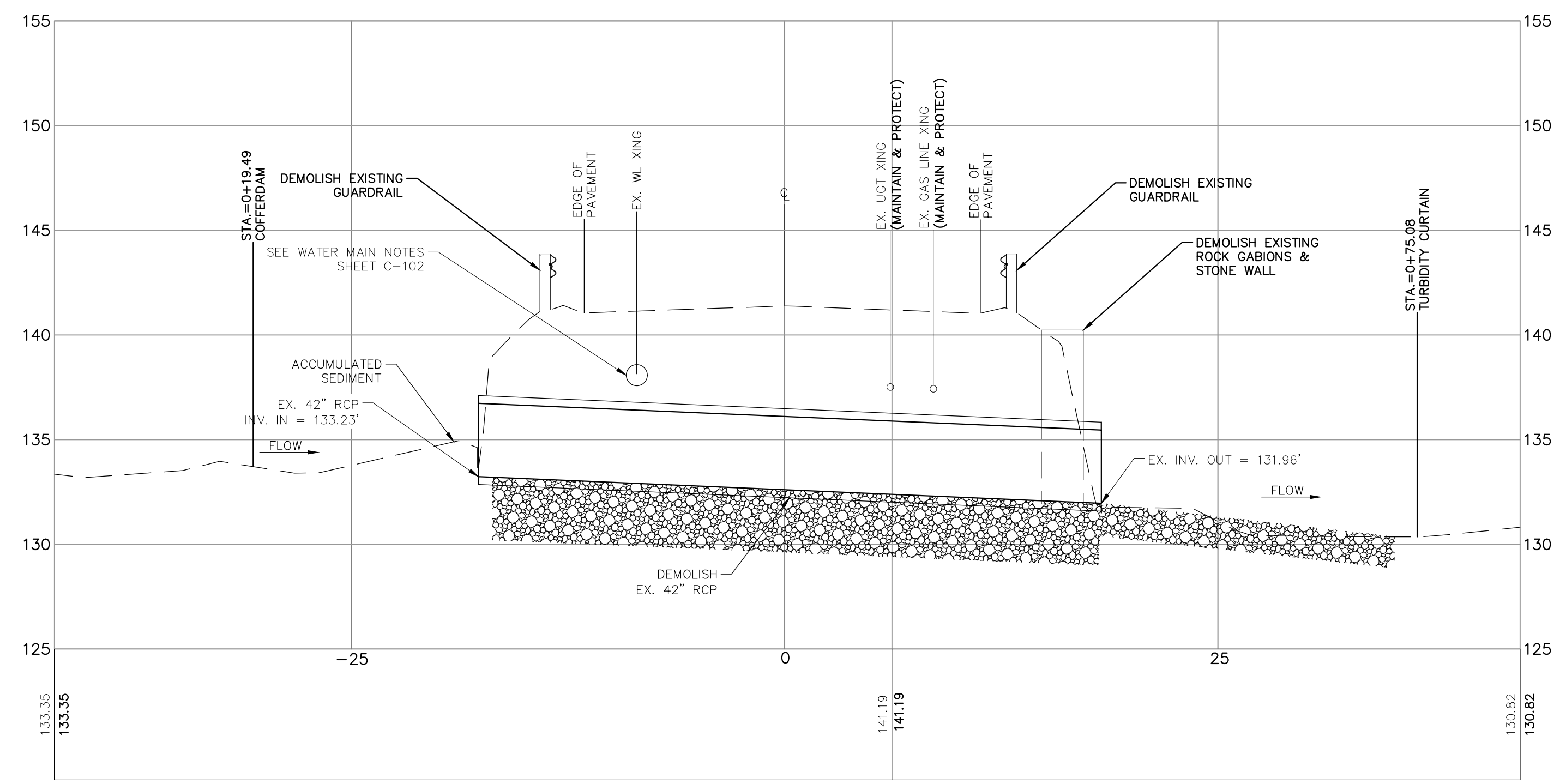
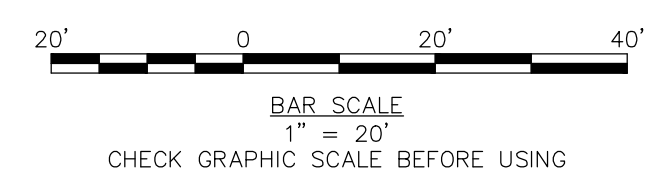
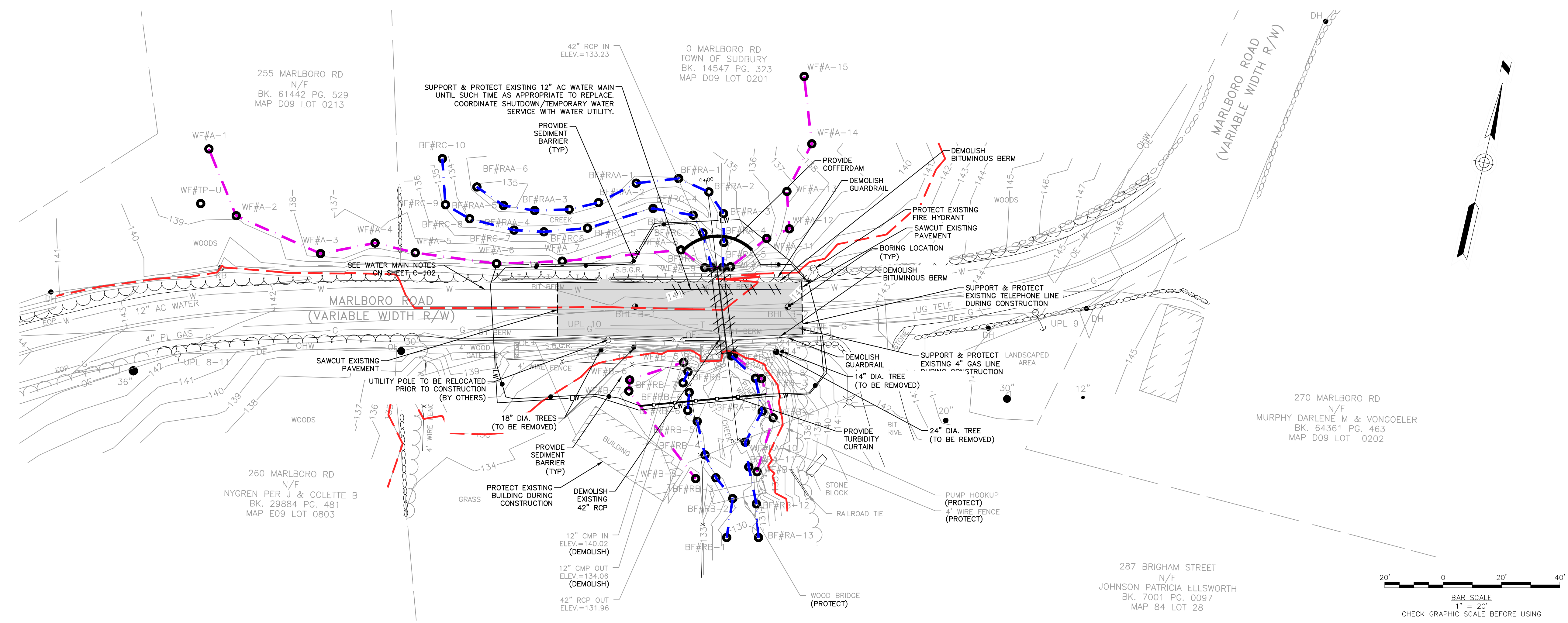
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1	RESPONSE TO CONCERN COMMENTS	MARCH 2021	MDLM	
	DESIGNED BY: WSW		2272020_C-100.dwg	
	DRAWN BY: WSW			

EXISTING CONDITIONS

TOWN OF SUDBURY, MA
 MARLBORO ROAD CULVERT
 REPLACEMENT

JOB NO: 227202.06
 DATE: MAY 2020
 SCALE: 1" = 20'
 SHEET: 3 OF 9

C-100



EXISTING CULVERT SECTION - STA. 1+55
 HORIZONTAL SCALE: 1" = 5'
 VERTICAL SCALE: 1" = 5'

RESOURCE AREA LEGEND

- BORDERING LAND SUBJECT TO FLOODING (100 YEAR FLOOD ZONE, DEFINED BY FEMA) ---
- BORDERING VEGETATED WETLAND ---
- EDGE OF PERENNIAL STREAM/ TOP OF BANK ---
- COFFERDAM ---
- LIMIT OF WORK --- LW ---
- SEDIMENT BARRIER --- ● ---
- TURBIDITY CURTAIN --- □ ---

NOTE:
 ENTIRE PROJECT AREA WITHIN 100' INNER RIPARIAN ZONE.

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REV	DESCRIPTION	DATE	CHECKED BY	DATE
1	RESPONSE TO CONCOM COMMENTS	MARCH 2021	NDLM	
	DESIGNED BY: WSW			
	DRAWN BY: WSW			

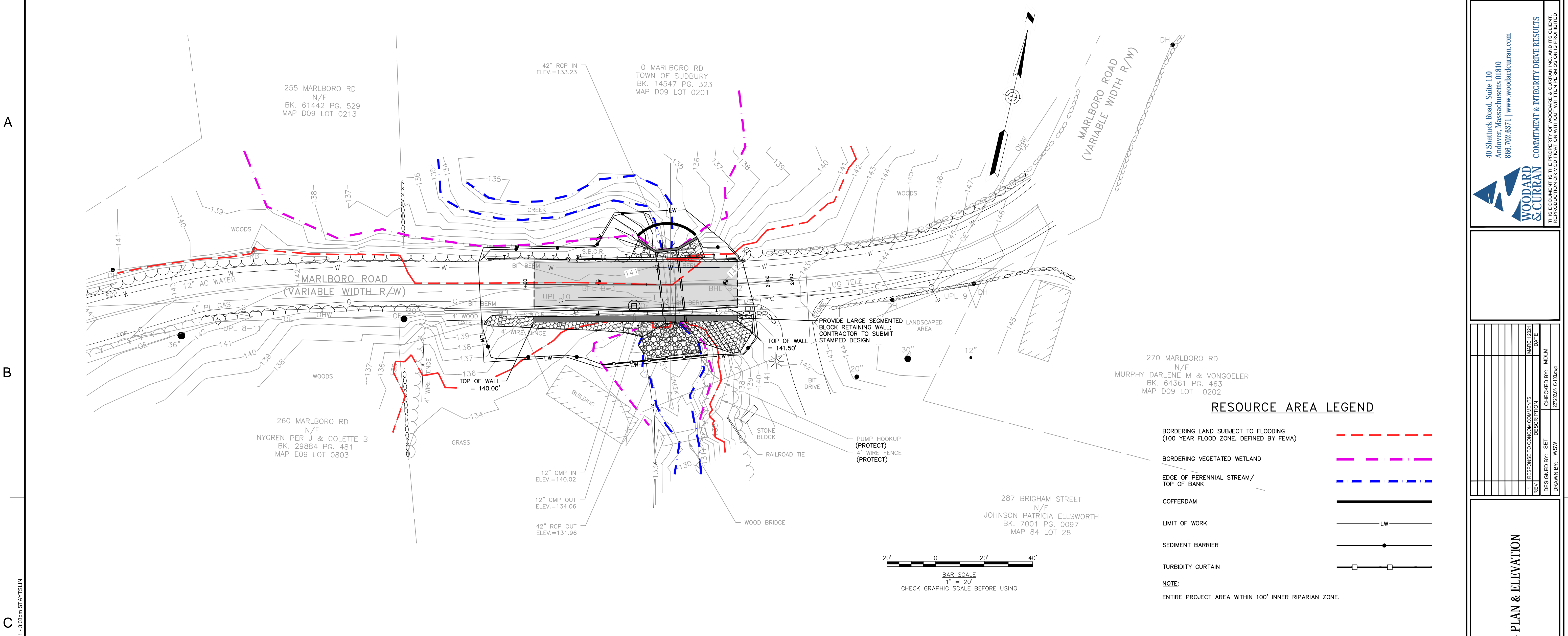
EROSION CONTROL & DEMOLITION PLAN

TOWN OF SUDBURY, MA
 MARLBORO ROAD CULVERT
 REPLACEMENT

JOB NO:	227202.06
DATE:	MAY 2020
SCALE:	1" = 20'
SHEET:	4 OF 9

C-101

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RESOURCE AREA LEGEND

BORDERING LAND SUBJECT TO FLOODING (100 YEAR FLOOD ZONE, DEFINED BY FEMA)	
BORDERING VEGETATED WETLAND	
EDGE OF PERENNIAL STREAM/ TOP OF BANK	
COFFERDAM	
LIMIT OF WORK	LW
SEDIMENT BARRIER	
TURBIDITY CURTAIN	
NOTE:	
ENTIRE PROJECT AREA WITHIN 100' INNER RIPARIAN ZONE.	

RETAINING WALL ELEVATION

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'

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REV	RESPONSE TO CONCERN COMMENTS	DATE	DESIGNED BY	CHECKED BY	ID/LM
1		MARCH 2021	WISW	WISW	227202.06_C-103.dwg

RETAINING WALL - PLAN & ELEVATION					
TOWN OF SUDBURY, MA MARLBORO ROAD CULVERT REPLACEMENT					

JOB NO:	227202.06
DATE:	MAY 2020
SCALE:	1" = 20'
SHEET:	6 OF 9

TOWN OF SUDBURY, MA
MARLBORO ROAD CULVERT
REPLACEMENT

C-103

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EROSION AND SEDIMENT CONTROL NOTES

Temporary Erosion Control

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up-slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and around material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsock, Siltsover Inlet Filter, or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 15	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil prior to rain events apply 100-150 lbs (2.5 bales) per 1,000 sq. ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil prior to precipitation apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. by mechanical blower. Erosion control blanket may be used as a substitute for winter mulch.
	Nov. 1 to April 14	On all areas of exposed soil, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. and anchor with netting at the end of each working day. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and after rainfall of half inch or greater in a 24-hour period, and maintain and repair as necessary.

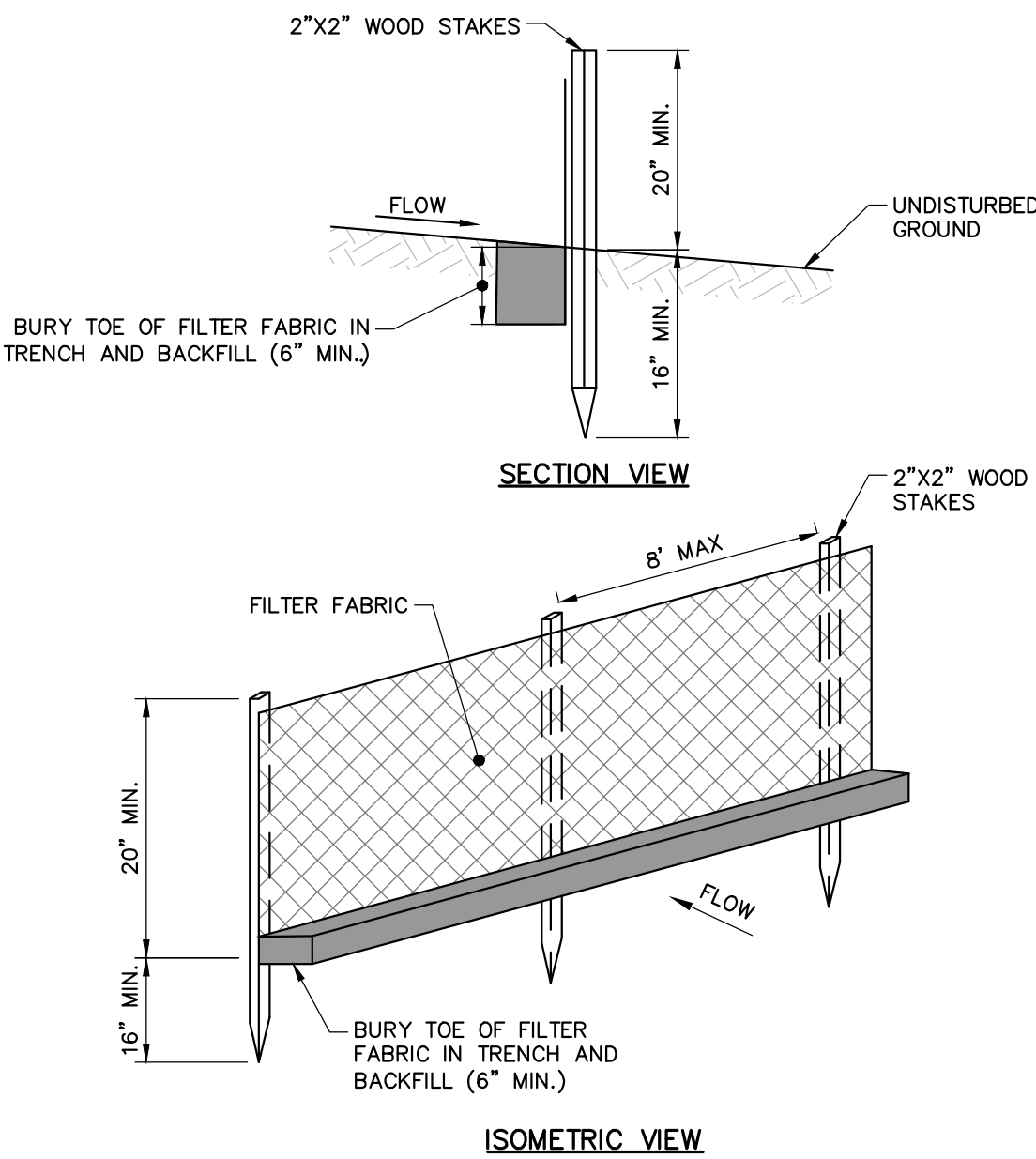
Permanent Erosion Control:

Measure	Dates For Use	Timing, Activity, and Location
Pavement - Base Course - Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil. Apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

Inspections:

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rivulets.
Sediment Barrier	Sediment build-up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build-up and structure blockages. Slow flow/Ponding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build-up.
Construction Entrance	Sedimentation of roadways. Off-site dust complaints.



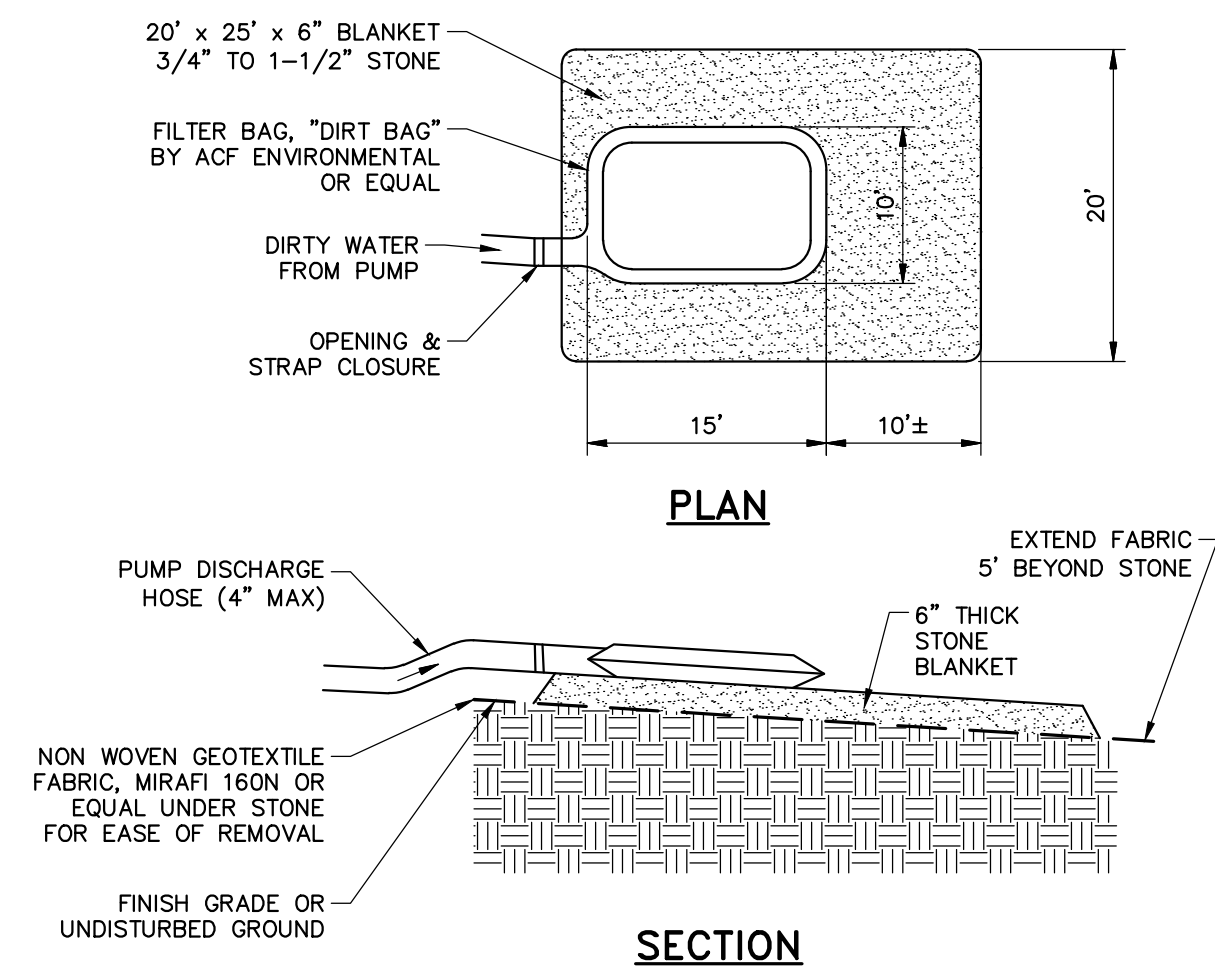
- NOTES:**
- INSTALL FABRIC ON UPHILL SIDE OF WOOD STAKES.
 - SPACING BETWEEN WOOD STAKES PER MANUFACTURER'S RECOMMENDATION.
 - SILT FENCE WILL NOT BE USED IN DRAINAGE WAYS.
 - MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX-INCHES OR MORE.
 - REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

SEDIMENT BARRIER - SILT FENCE

N.T.S.

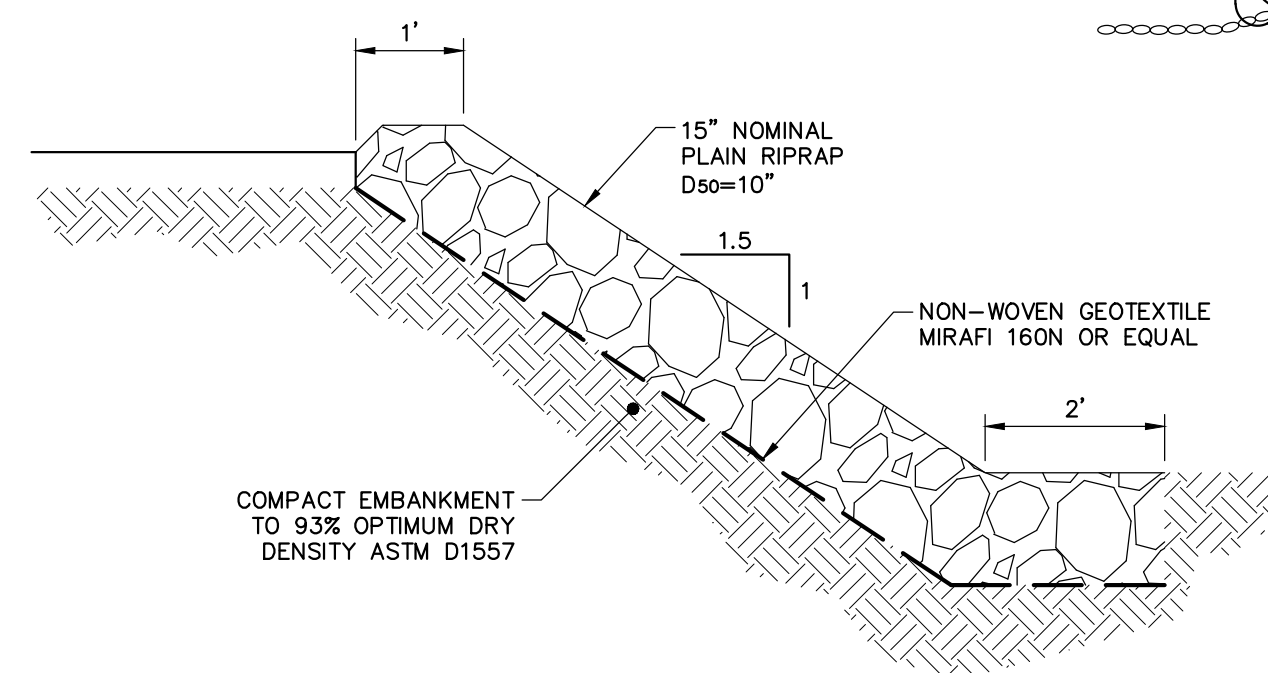
DEWATERING NOTES

- LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
- NEVER DISCHARGE TO AREAS THAT ARE BARE OR NEWLY VEGETATED.
- DIRT BAG MATERIAL BASED ON PARTICLE SIZE IN DIRTY WATER, I.E., FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON-WOVEN MATERIAL.
- DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND CAPACITY.
- CHANNELS DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA NEED TO BE STABLE. IF FLOW VELOCITIES CAUSE EROSION WITHIN THE CHANNEL THEN A DITCH LINING SHOULD BE USED.
- BUCKETED WATER SHOULD BE DISCHARGED IN A STABLE MANNER TO THE SEDIMENT REMOVAL AREA. A SPLASH PAD OF RIPRAP UNDERLAIN WITH GEOTEXTILE MAY BE NECESSARY TO PREVENT SCOURING OF SOIL.
- DEWATERING IN PERIODS OF INTENSE, HEAVY RAIN, WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHOULD BE AVOIDED.
- INSTALL DIVERSION DITCHES OR BERMS TO MINIMIZE THE AMOUNT OF CLEAN STORMWATER RUNOFF ALLOWED INTO THE EXCAVATED AREA.
- DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE DEWATERING FACILITY SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW THAT MAY COMPROMISE THE BUFFER AREA. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
- EROSION CONTROL REQUIRED AROUND DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE.



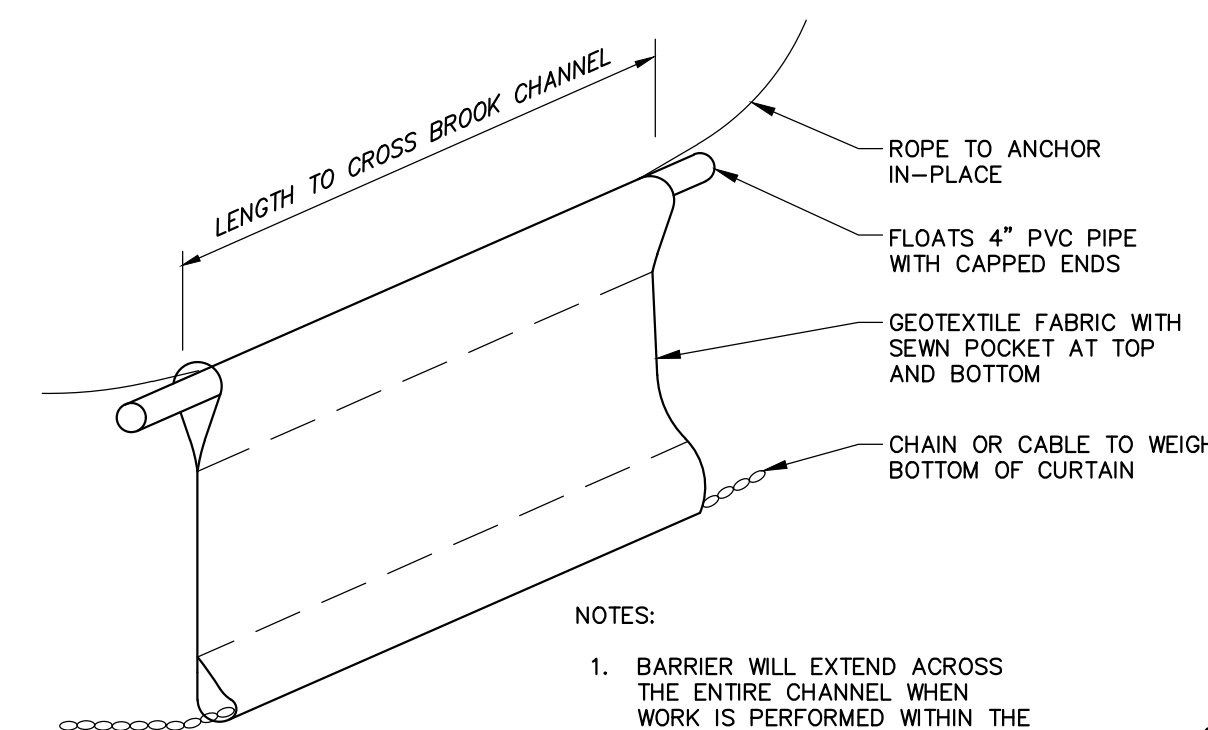
DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE

N.T.S.



RIPRAP SLOPE DETAIL

N.T.S.



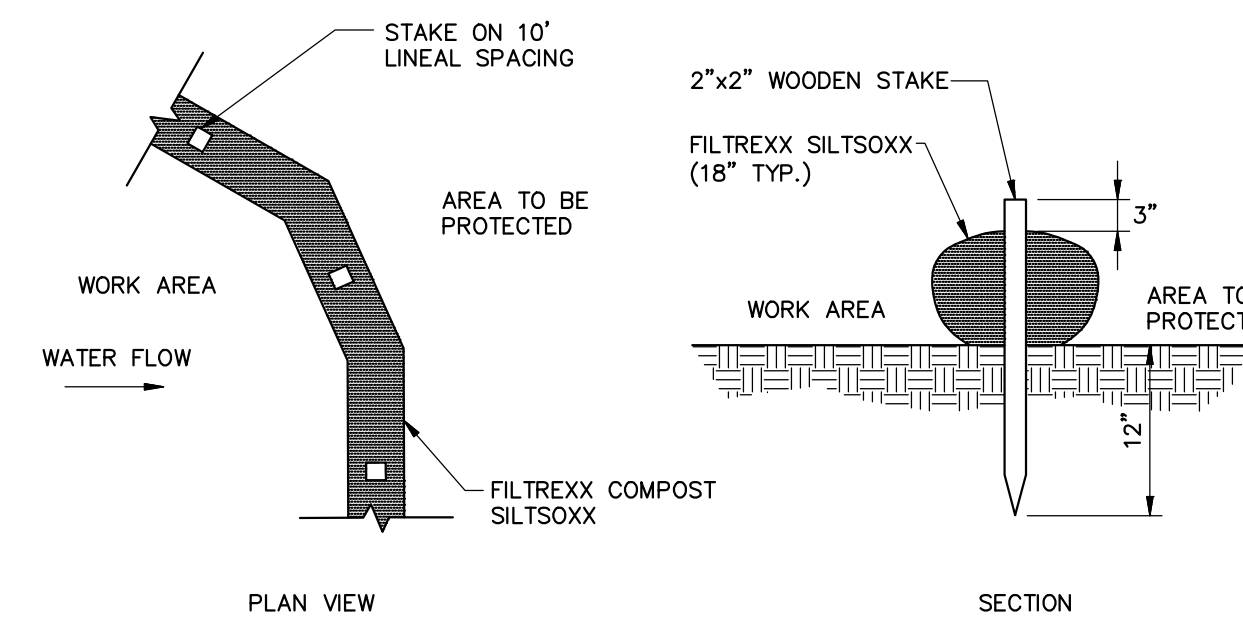
FLOATING TURBIDITY BARRIER

N.T.S.

- NOTES:**
- BARRIER WILL EXTEND ACROSS THE ENTIRE CHANNEL WHEN WORK IS PERFORMED WITHIN THE CHANNEL.
 - ROPE SHALL BE 1/2" NYLON OR MANILA.

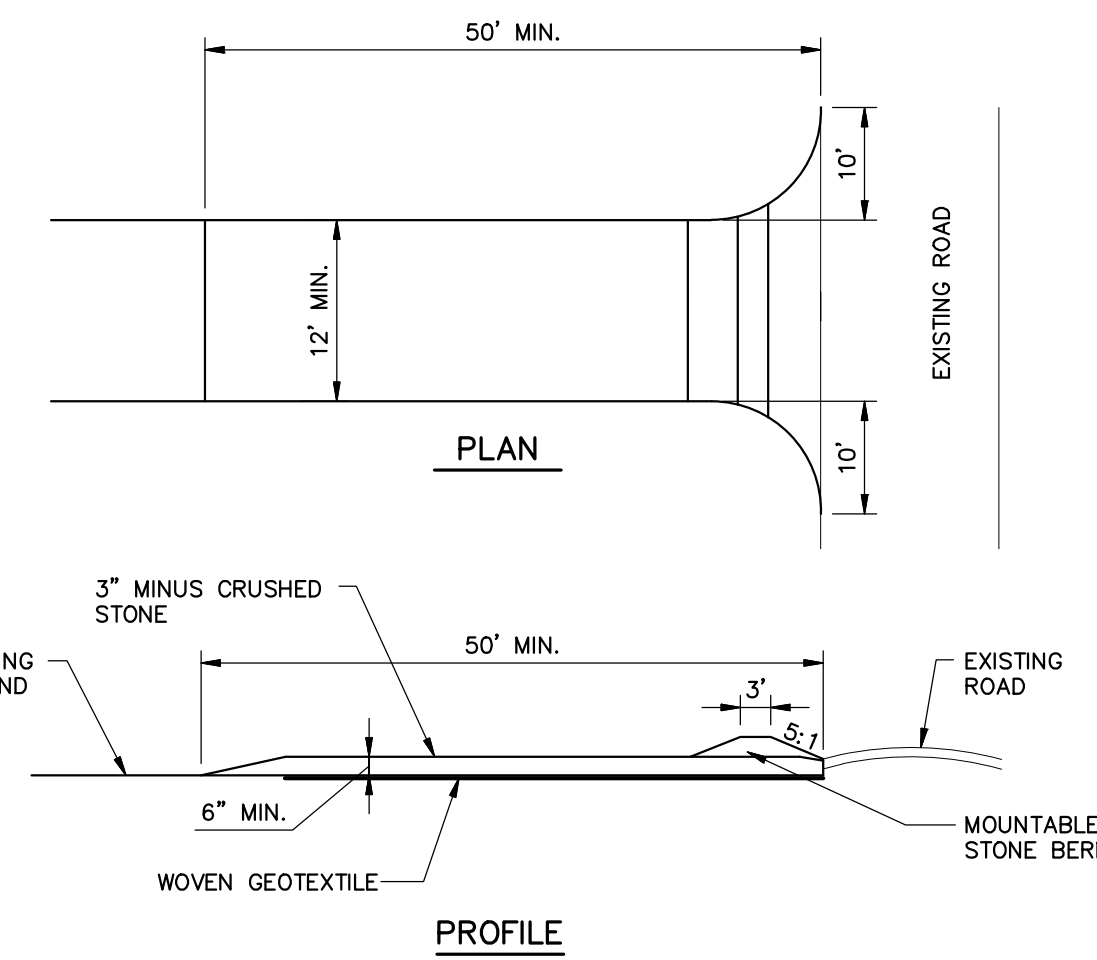
STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

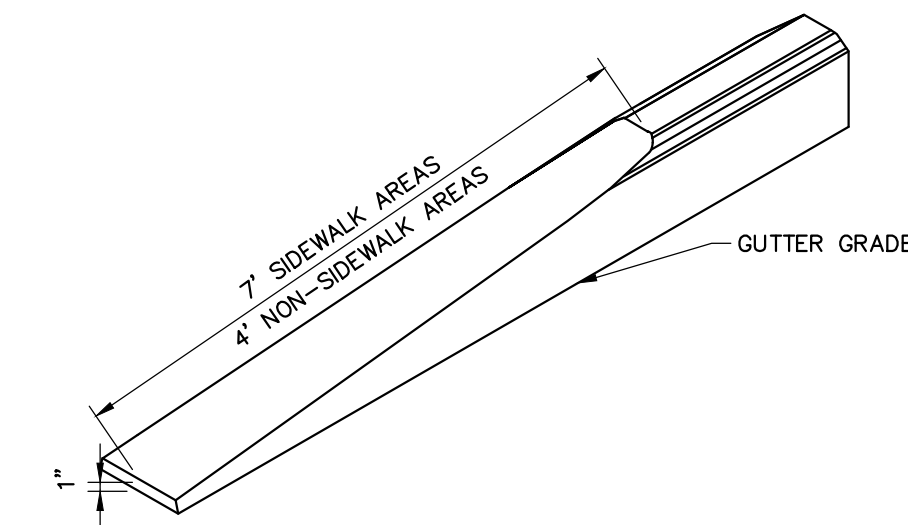


SEDIMENT BARRIER - SILTSOXX

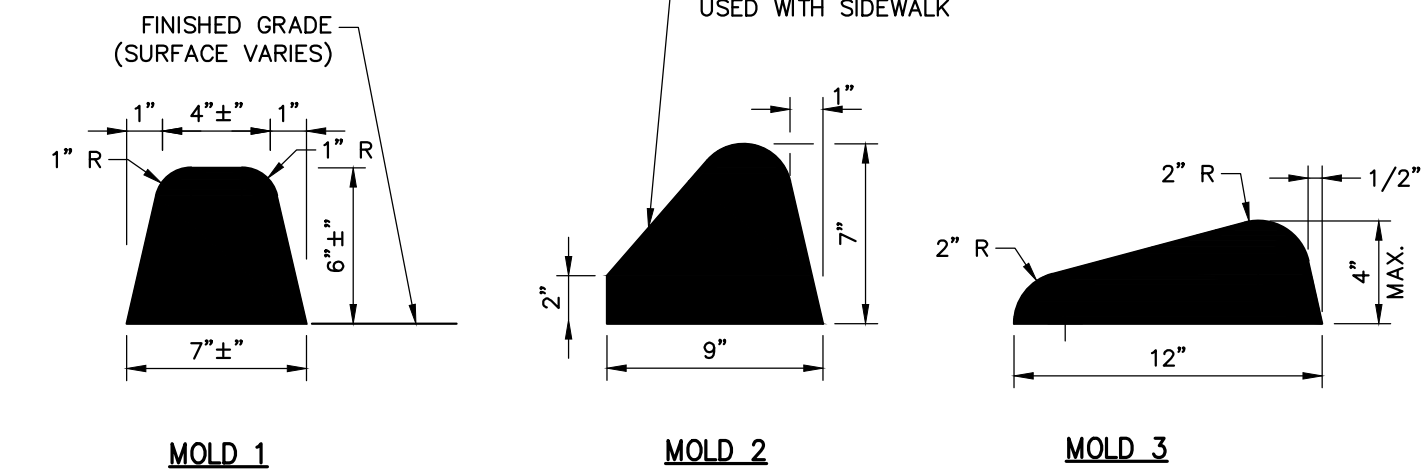
N.T.S.



- NOTES:**
- MAINTENANCE:** INSPECT FOR EFFECTIVE REMOVAL OF SOIL FROM VEHICLES PRIOR TO LEAVING THE SITE. SWEEP ANY SOIL FROM ADJACENT ROADWAYS.
- REMOVAL:** AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

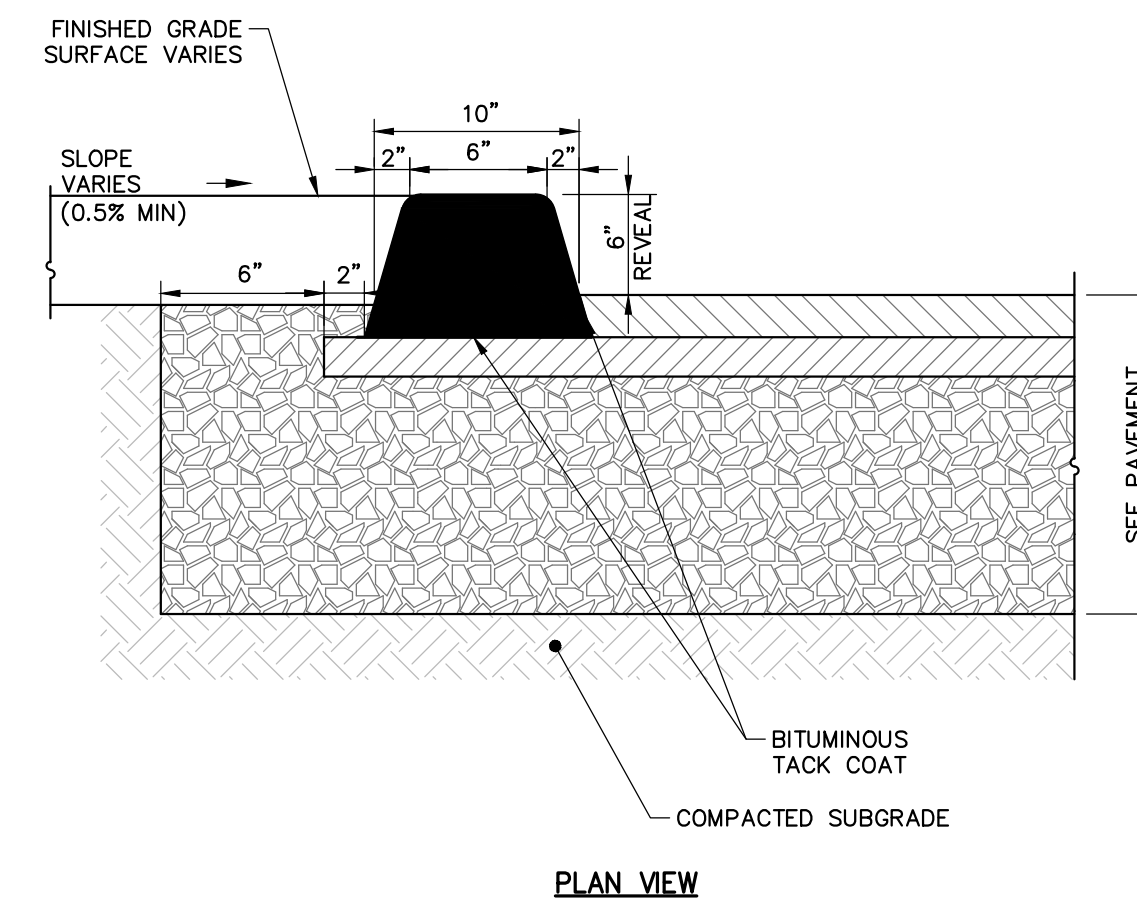


ALTERNATIVE CURB MOLDS



BITUMINOUS CURB

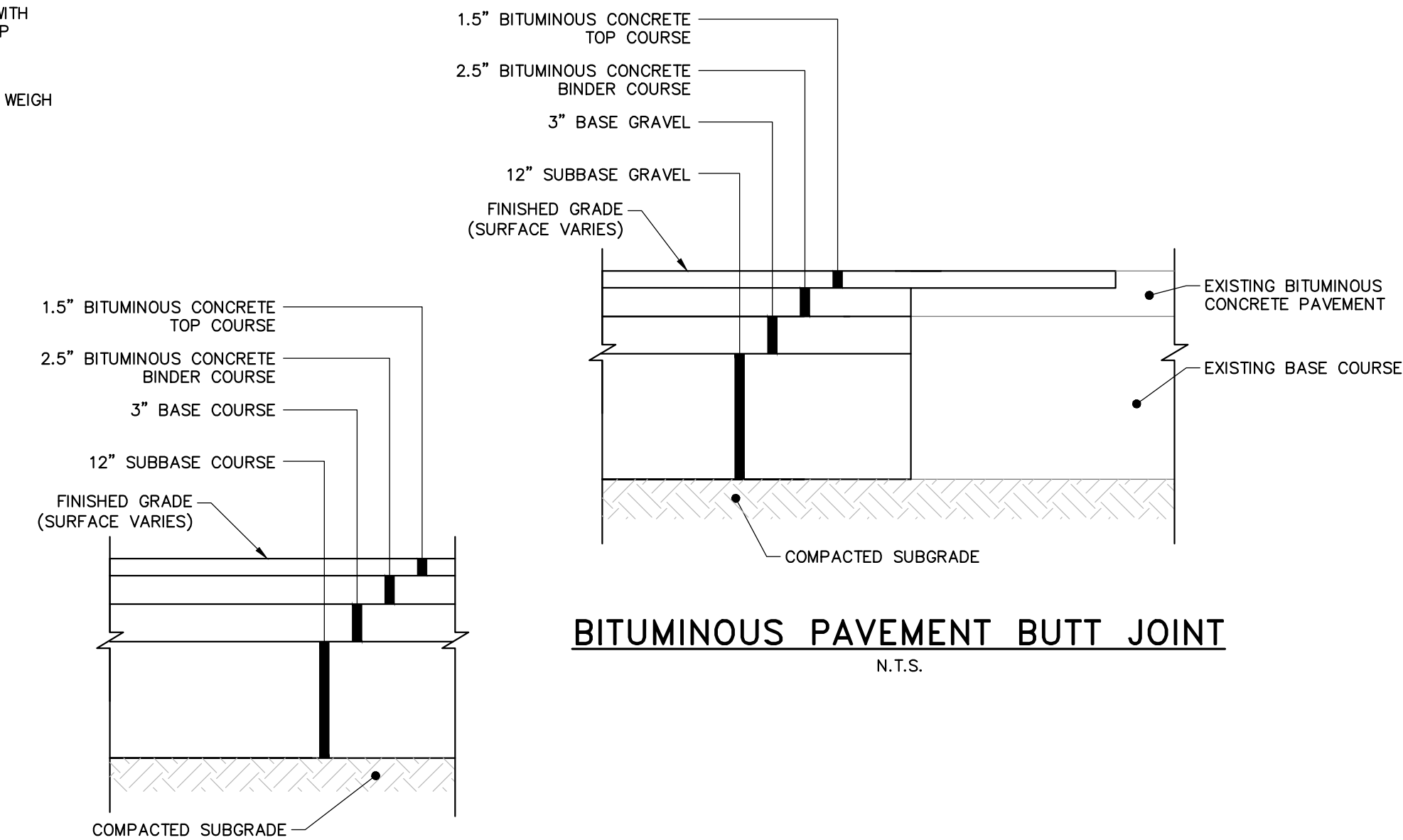
NOT TO SCALE



- NOTES:**
- CURB MOLD 2 WILL BE USED IN ALL SITUATIONS EXCEPT WHERE THE CURB FORMS THE EDGE OF THE SIDEWALK. MOLD 1 SHALL BE USED IN CONJUNCTION WITH SIDEWALKS OR WHERE THERE IS A POTENTIAL FOR SIDEWALKS.

BITUMINOUS PAVEMENT BUTT JOINT

N.T.S.



BITUMINOUS PAVEMENT SECTION

N.T.S.

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REV	DESCRIPTION	DATE	DESIGNED BY	CHECKED BY	DATE
2	RESPONSE TO CONCOM COMMENTS	MARCH 2021	WISW	NDLM	
1	DESCRIPTION				

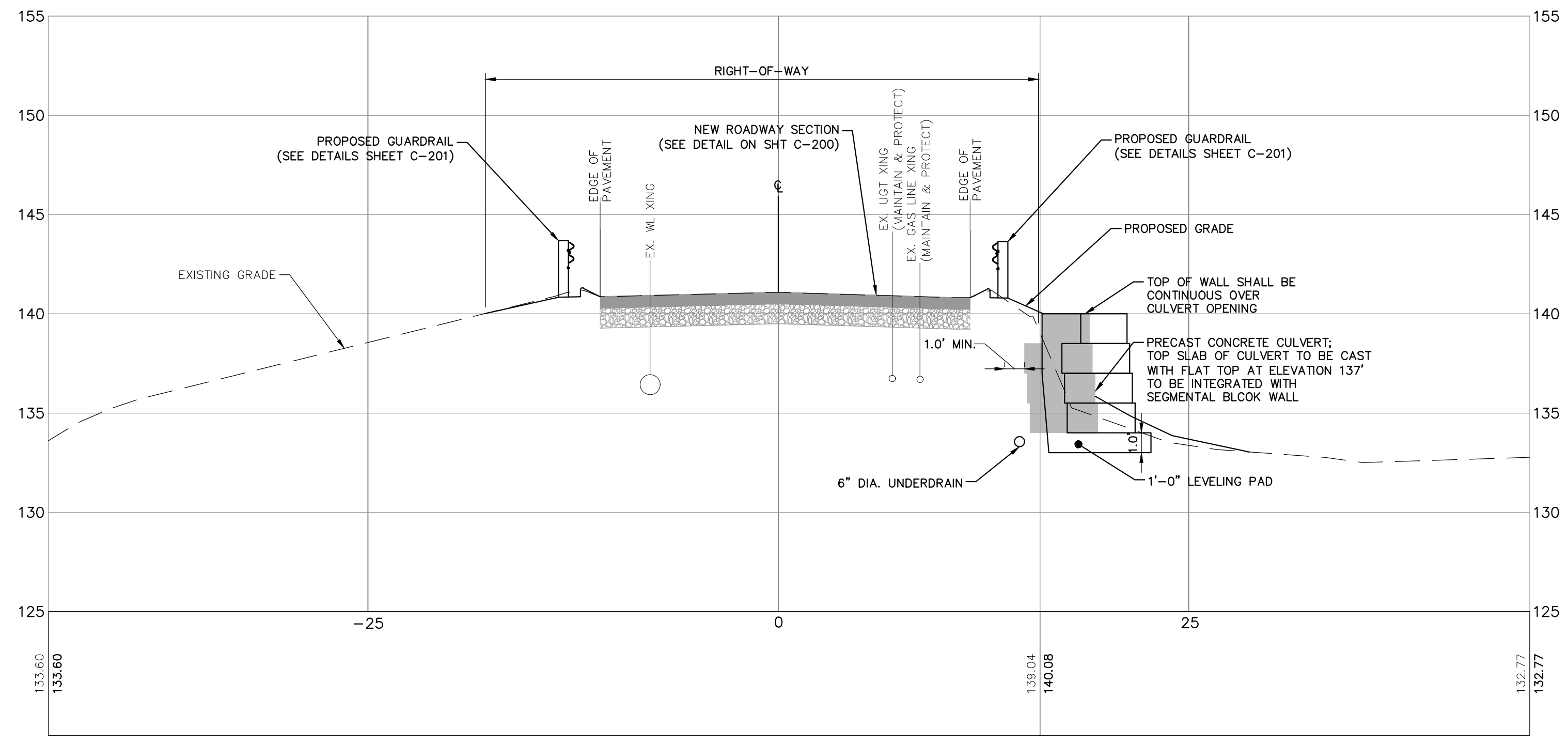
PROJECT DETAILS - 1

TOWN OF SUBURBY, MA
MARLBORO ROAD CULVERT
REPLACEMENT

JOB NO:	227202.06
DATE:	MAY 2020
SCALE:	AS NOTED
SHEET:	7 OF 9

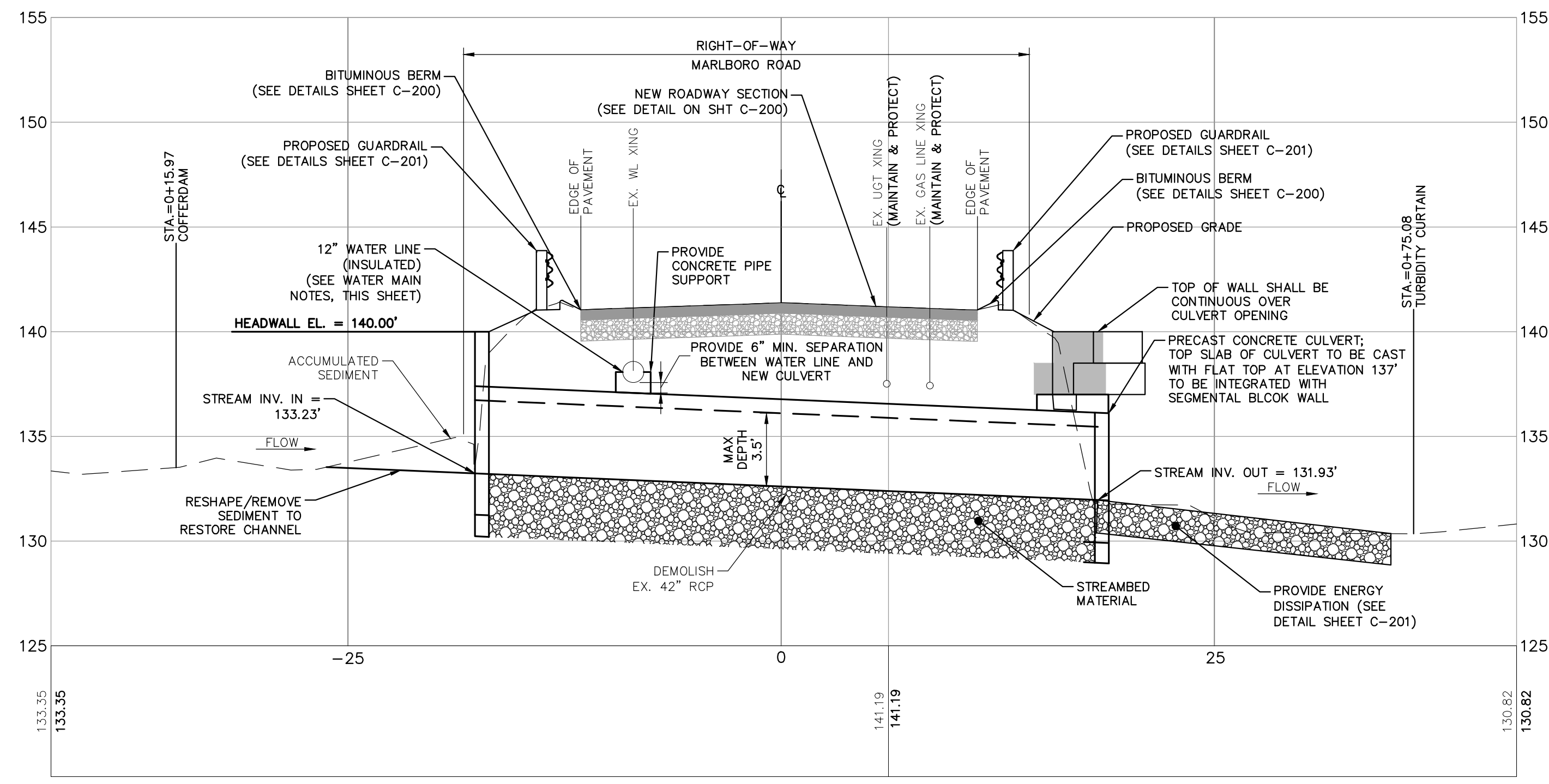
C-200

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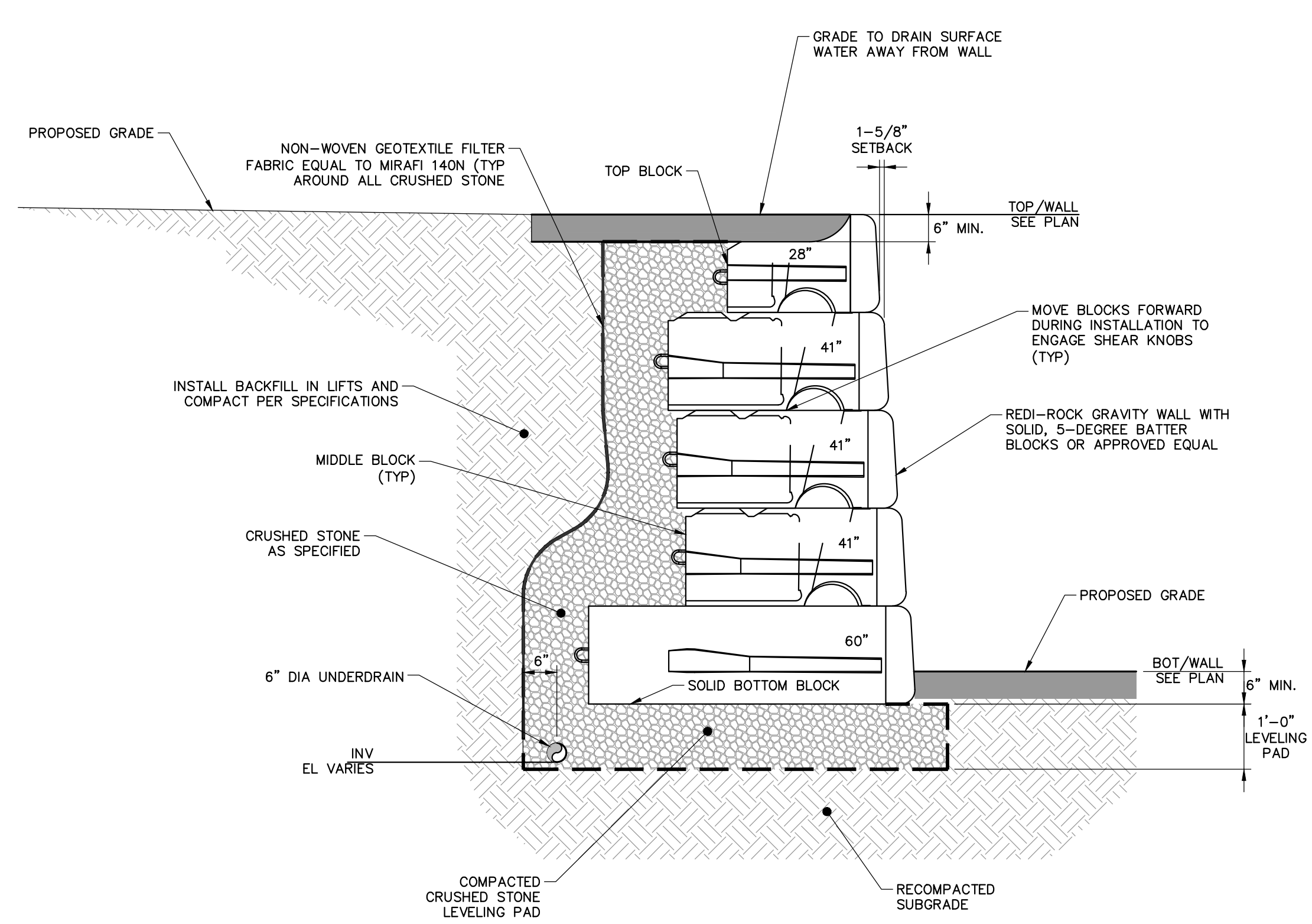


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- NOTES:
1. RETAINING WALL SECTIONS ARE CONCEPTUAL IN NATURE AND FOR REFERENCE PURPOSES TO AID IN THE LAYOUT AND DEVELOPMENT OF WALL DESIGN (BY OTHERS). GRAVITY WALL ENGINEER SHALL PROVIDE FINAL WALL DESIGN AND CALCULATIONS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS SUBJECT TO REVIEW OF THE ENGINEER.
 2. REFER TO SHEET C-102 FOR PLAN VIEW AND LIMITS OF PROPOSED RETAINING WALL.
 3. REFER TO SPECIFICATION SECTION 31 00 00 FOR MATERIAL GRADATIONS AND REQUIREMENTS.
 4. ELEVATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.
 5. REFER TO SECTIONS AND PLANS FOR BACK FILL INFORMATION.

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1		MARCH 2021	WISW	MDLM	

PROJECT DETAILS - 3

TOWN OF SUBURBY, MA
MARLBORO ROAD CULVERT
REPLACEMENT

JOB NO:	227202.06
DATE:	MAY 2020
SCALE:	AS NOTED
SHEET:	9 OF 9

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