

MASSDEVELOPMENT

PLAN AND PROFILE OF
LOVELL ROAD
 (BRIDGE NO. S-13-017)

IN THE TOWN OF
DEVENS (SHIRLEY)
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. --

75% SUBMITTAL

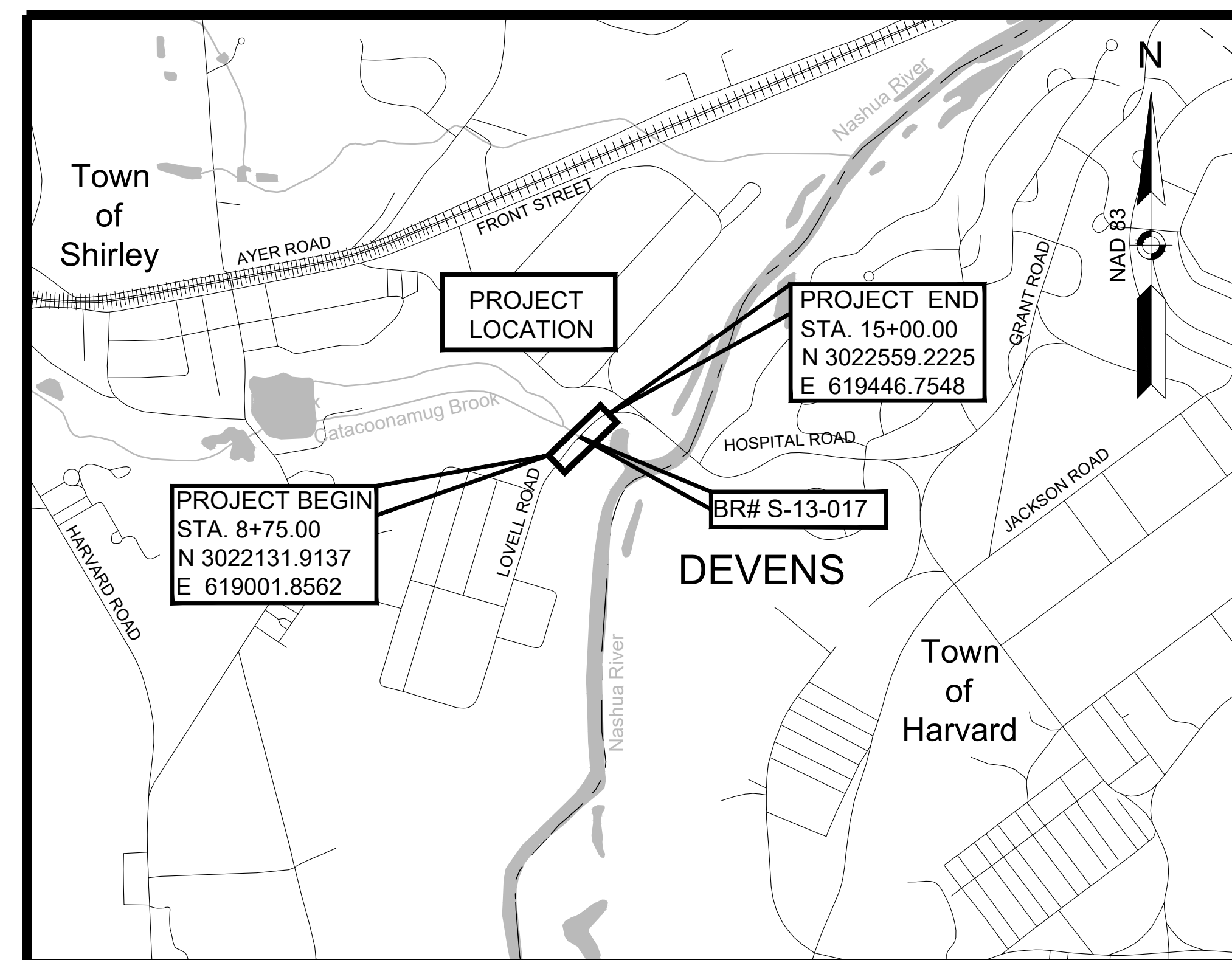
**DEVENS (SHIRLEY)
 LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	1	21
PROJECT FILE NO.		--	

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED 2022, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

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DESIGN DESIGNATION (LOVELL ROAD)	
POSTED SPEED	30 MPH
FUNCTIONAL CLASSIFICATION	LOCAL ROAD



LENGTH OF PROJECT = 625 FEET = 0.12 MILES

DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

BSC GROUP
 803 SUMMER STREET
 BOSTON, MA 02127
 (617) 896 4300
 www.bscgroup.com

DATE	DESCRIPTION	REV #
6/02/22	75% DESIGN	1

MassDevelopment MASSDEVELOPMENT
 33 ANDREWS PKWY
 FORT DEVENS, MA 01434

APPROVED

 CHIEF ENGINEER DATE

GENERAL SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists various symbols for infrastructure like catch basins, poles, manholes, and boundaries.

TRAFFIC SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for traffic signals, detectors, and road markings.

PAVEMENT MARKINGS SYMBOLS

Table with columns: EXISTING, PROPOSED, DESCRIPTION. Lists symbols for pavement markings like arrows, stop lines, and crosswalks.

ABBREVIATIONS

Table with columns: GENERAL, DESCRIPTION. Lists abbreviations for traffic volume, road types, and construction terms.

DEVENS (SHIRLEY) LOVELL ROAD

Table with columns: STATE, FED. AID PROJ. NO., SHEET NO., TOTAL SHEETS. Shows project details for sheet 2 of 21.

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

Table with columns: GENERAL, DESCRIPTION. Continues the list of abbreviations for various engineering and construction terms.

TRAFFIC SIGNAL ABBREVIATIONS

Table with columns: ABBREVIATION, DESCRIPTION. Lists abbreviations for traffic signal equipment and types.

DEVENS ENTERPRISE COMMISSION ENDORSEMENT

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DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	3	21
PROJECT FILE NO.		--	

GENERAL NOTES

GENERAL NOTES:

1. ALL EXISTING UTILITY CASTINGS THAT ARE TO REMAIN WITHIN AREAS TO BE REPAVED SHALL BE ADJUSTED TO LINE AND GRADE BY THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL PRIVATE TELEPHONE, GAS, AND ELECTRICAL CASTINGS SHALL BE ADJUSTED BY OTHERS. THE CONTRACTOR SHALL NOTIFY THE OWNING AGENCIES TO ADJUST AND/OR RELOCATE THESE STRUCTURES TO AVOID IMPACTING THE CONTRACTOR'S SCHEDULE OF OPERATIONS.
2. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.
3. THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE LOCATIONS ARE APPROXIMATE ONLY AND IN SOME CASES MAY BE INCOMPLETE. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES REQUIRED AND VERIFY THE LOCATIONS OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.
4. PROPOSED DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS OF UTILITY CROSSINGS TO VERIFY DEPTHS OF EXISTING PIPES, CONDUITS OR OTHER FACILITIES AS DIRECTED BY THE ENGINEER. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
5. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN THE INSTALLATION OF DRAINAGE LINES AND STRUCTURES ARE IN CLOSE PROXIMITY TO EXISTING UTILITY POLES.
7. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR TEMPORARY SUPPORT WHILE EXCAVATING IN CLOSE PROXIMITY OF UTILITY POLES, IF REQUIRED BY THE UTILITY, AT NO ADDITIONAL COST.
8. CURB SHALL BE FURNISHED AND SET AT LOCATIONS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
9. ALL PROPOSED DRAINAGE CONNECTIONS TO EXISTING STRUCTURES WILL BE INCLUDED IN THE COST OF THE NEW PIPE.
10. THE CONTRACTOR SHALL ENSURE THAT ALL ROADWAY RUNOFF NEAR THE BRIDGE CROSSING SHALL BE DIRECTED TO CATCH BASINS.
11. THE CONTRACTOR SHALL VERIFY ALL OUTLET GRADES OF DRAINAGE STRUCTURES PRIOR TO CONSTRUCTING THE DRAINAGE IMPROVEMENTS.
12. THE CONTRACTOR SHALL SAWCUT TO THE MILL DEPTH AT BOUNDARIES BETWEEN THE MILL AND OVERLAY AND EXISTING PAVEMENT.
13. THIS PLAN IS BASED UPON AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY BSC GROUP IN NOVEMBER 2021.
14. ALL AREAS OUTSIDE OF THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S OWN EXPENSE.
15. ALL EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM DAMAGE CAUSED BY CONTRACTOR OPERATIONS.
16. NORTH IS BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD-83)(2011) EPOCH 2010.00, MASSACHUSETTS STATE PLAND COORDINATE SYSTEM, MAINLAND ZONE. COORDINATES ARE BASED ON CONTROL AS PROVIDED BY MASSDOT SURVEY SECTION FOR STATION 1995 AND STATION 1996.
17. VERTICAL CONTROL IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS PROVIDED BY MASSDOT SURVEY SECTION FOR STATION 1995 AND STATION 1996.
18. THE CONTRACTOR SHALL PROTECT EXISTING SURVEY MONUMENTS AND SHALL RESET ANY MONUMENTATION DISTURBED BY HIS OPERATIONS.
19. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT DIGSAFE TO MARK OUT UTILITIES WITHIN THE PROJECT AREA. 1-888-344-7233; 1-888-DIG-SAFE.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY HIGHWAY BOUND OR PRIVATE PROPERTY PIN THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION AT ITS EXISTING LOCATION AT THE CONTRACTOR'S OWN EXPENSE.
21. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
22. ITEMS LABELED "REM" SHALL BE REMOVED AND DISCARDED BY CONTRACTOR.
23. ALL PAVEMENT DEEMED UNSATISFACTORY BENEATH THE PROPOSED MILLING DEPTH SHALL BE REMOVED AND REPLACED TO PROVIDE A SUITABLE BASE CONDITION FOR THE NEW TOP COURSE PAVEMENT.

EROSION AND SEDIMENT CONTROL NOTES:

1. LOVELL ROAD IS TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION ACTIVITIES. PRIOR TO ANY EARTH WORK ACTIVITIES, EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE PERMIT DOCUMENTS. THE PROPOSED ROADWAY AND DRAINAGE WORK SHALL BE CONSTRUCTED IN PHASES TO ALLOW FOR LOVELL ROAD TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION. DURING PAVEMENT REMOVAL AND GRADING ACTIVITIES, IT IS LIKELY THAT EXCAVATED MATERIALS WILL NEED TO BE STACKED ON SITE PRIOR TO REMOVAL OR REUSE. THESE STOCKPILES SHALL BE LOCATED AS FAR AWAY FROM RESOURCES AREAS AS POSSIBLE AND SHALL BE PROTECTED WITH SILT FENCE, HAYBALES, OR COMPOST FILTER TUBES BARRIERS.
2. THE CONCRETE REPAIRS TO THE BRIDGE DECK ARE PROPOSED TO BE COMPLETED IN TWO STAGES. TRAFFIC CONTROL MEASURES SUCH AS ADVANCE SIGNAGE AND TRAFFIC BARRELS SHALL BE INSTALLED TO DIRECT TRAFFIC ONTO THE PORTION OF THE BRIDGE TO REMAIN OPEN TO TRAFFIC. WITHIN THE PORTION OF THE BRIDGE CLOSED TO TRAFFIC THE CONTRACTOR SHALL REMOVE DETERIORATED CONCRETE, INSTALL ADDITIONAL REBAR IF NEEDED, AND POUR NEW CONCRETE WHERE REQUIRED. THE CONTRACTOR SHALL ALSO INSTALL NEW BRIDGE EXPANSION JOINTS AT THE ENDS OF THE 63-FOOT BRIDGE SPAN. THE EXPANSION JOINTS SHALL BE INSTALLED UP TO THE LIMITS OF THE CLOSED PORTION OF THE BRIDGE. ONCE THE WORK IS COMPLETED WITHIN THE CLOSED PORTION OF THE BRIDGE, THE PROCESS WILL BE SHIFTED TO THE REMAINING PORTION OF BRIDGE. THE CONTRACTOR SHALL ESTABLISH CONCRETE WASHOUT AREAS AS NEEDED DURING CONSTRUCTION. THE CONCRETE WASHOUT AREAS SHALL USE AN IMPERVIOUS POLYLINER AND BE ENCLOSED BY STAKED HAY BALES.
3. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ON THE SITE, THE APPLICANT/ CONTRACTOR SHALL BE RESPONSIBLE FOR PHYSICALLY MARKING THE LIMITS OF CONSTRUCTION ON THE SITE WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE, SO THAT WORKERS UNDERSTAND THE AREAS TO BE PROTECTED. THE PHYSICAL MARKERS SHALL BE INSPECTED DAILY AND REPAIRED AS NECESSARY THROUGHOUT THE DURATION OF THE PROJECT.
4. PERIMETER SEDIMENT CONTROL SYSTEM SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE AND MAINTAINED TO CONTAIN SOILS ON-SITE. AREAS OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST NOT BE DISTURBED, UNLESS THE APPLICANT HAS OBTAINED PRIOR APPROVAL FROM THE DEC.
5. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA AND STREET SWEEPING OF ADJACENT STREETS AND ROADS SHALL BE INCLUDED WHERE NECESSARY.
6. ALL RESOURCE AREAS SHALL BE PROTECTED FROM SEDIMENT.
7. MONITORING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION SHALL BE REQUIRED. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE EROSION CONTROL.
8. DIVERT RUNOFF FROM OFF-SITE AND UNDISTURBED AREAS AWAY FROM CONSTRUCTION TO MINIMIZE SOIL EROSION AND SEDIMENTATION ON AND OFF-SITE. TEMPORARILY STABILIZE ALL HIGHLY ERODIBLE SOILS AND SLOPES IMMEDIATELY.
9. LAND DISTURBANCE ACTIVITIES EXCEEDING ONE ACRE IN SIZE SHALL NOT BE DISTURBED WITHOUT A SEQUENCING PLAN THAT REQUIRES STORMWATER CONTROLS TO BE INSTALLED AND EXPOSED SOILS STABILIZED, AS DISTURBANCE BEYOND THE ONE ACRE CONTINUES. A CONSTRUCTION PHASING PLAN, INCLUDING EROSION AND SEDIMENT CONTROL PLAN FOR EACH PHASE, SHALL BE SUBMITTED TO THE DEC PRIOR TO ANY CONSTRUCTION ON THE SITE. MASS CLEARINGS AND GRADING OF THE ENTIRE SITE SHALL BE AVOIDED.
10. SOIL STOCKPILES MUST BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY. STOCKPILE SIDE SLOPES SHALL NOT BE GREATER THAN 2:1. ALL STOCKPILES SHALL BE SURROUNDED BY SEDIMENT CONTROLS.
11. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED.
12. PERMANENT SEEDING SHALL BE UNDERTAKEN IN THE SPRING FROM MARCH THROUGH MAY, AND IN LATE SUMMER AND EARLY FALL FROM AUGUST TO OCTOBER 15TH. DURING THE PEAK SUMMER MONTHS AND IN THE FALL AFTER OCTOBER 15TH, WHEN SEEDING IS FOUND TO BE IMPRACTICAL, AN APPROPRIATE TEMPORARY MULCH AND/OR NON-ASPHALTIC SOIL TACKIFIER WITH WINTER RYE SHALL BE APPLIED. PERMANENT SEEDING MAY BE UNDERTAKEN DURING THE SUMMER IF PLANS PROVIDE FOR ADEQUATE MULCHING AND WATERING.
13. ANTI-TRACKING PAD(S) SHALL BE CONSTRUCTED AT ALL ENTRANCE/EXIST POINTS OF THE SITE TO REDUCE THE AMOUNT OF SOIL CARRIED ONTO ROADWAYS AND OFF THE SITE. DUST SHALL ALSO BE CONTROLLED AT THE SITE.
14. ALL SLOPES STEEPER THAN 3:1 (H:V, 33.3%), AS WELL AS PERIMETER DIKES, SEDIMENT BASINS OR TRAPS, AND EMBANKMENTS MUST, UPON COMPLETION, BE IMMEDIATELY STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES.
15. TEMPORARY SEDIMENT TRAPPING DEVICES MUST NOT BE REMOVED UNTIL PERMANENT STABILIZATION IS ESTABLISHED IN ALL CONSTRUCTION AREAS ASSOCIATED WITH THE PROJECT. SIMILARLY, STABILIZATION MUST BE ESTABLISHED PRIOR TO CONVERTING TEMPORARY SEDIMENT TRAPS/BASINS INTO PERMANENT (POST-CONSTRUCTION) STORMWATER MANAGEMENT FACILITIES. ALL FACILITIES USED FOR TEMPORARY MEASURES SHALL BE CLEANED AND RESTABILIZED PRIOR TO BEING PUT INTO FINAL OPERATION.
16. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS OF REMOVAL.

DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____

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**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	4	21
PROJECT FILE NO.		--	

TYPICAL SECTIONS

PAVEMENT NOTES

BRIDGE

SURFACE: 1 1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B-9.5) OVER 0.09 GAL/SY TACK COAT OVER
 INTERMEDIATE: SUPERPAVE 1 1/2" BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B-9.5) OVER 0.09 GAL/SY TACK COAT OVER
 MEMBRANE WATERPROOFING

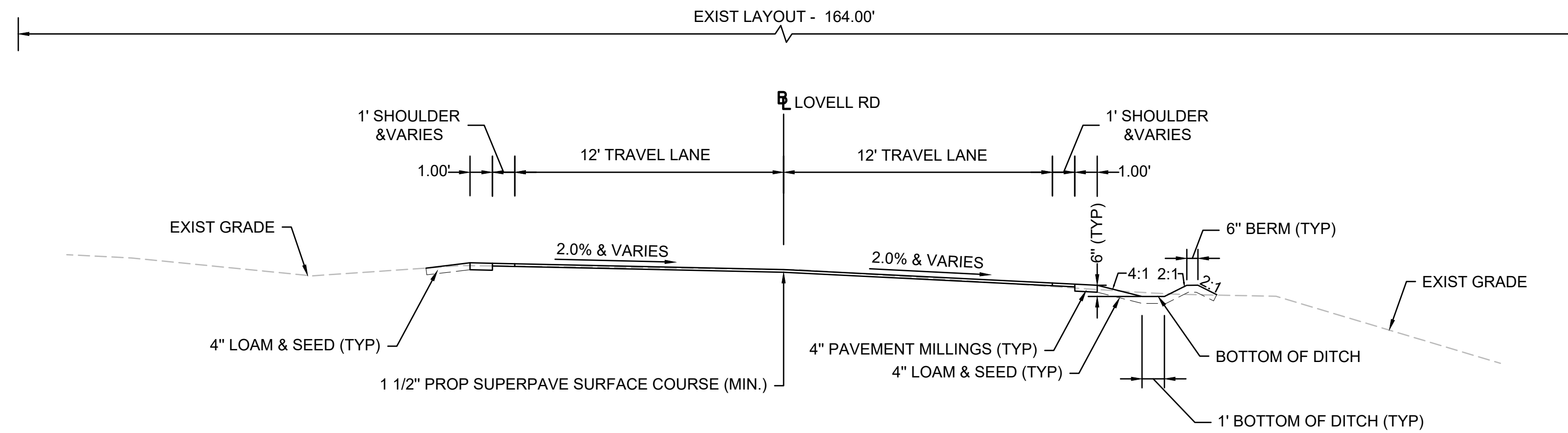
ROADWAY

SURFACE: 1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-B-9.5)* OVER 0.09 GAL/SY TACK COAT OVER
 VARIABLE DEPTH PAVEMENT STANDARD MILLING

* 1 1/2" SUPERPAVE SURFACE COURSE IS THE MINIMUM DEPTH OF PAVEMENT TO BE PLACED. ADDITIONAL PAVEMENT SHOULD BE PLACED TO MEET PROPOSED GRADES AS NEEDED.

NOTES:

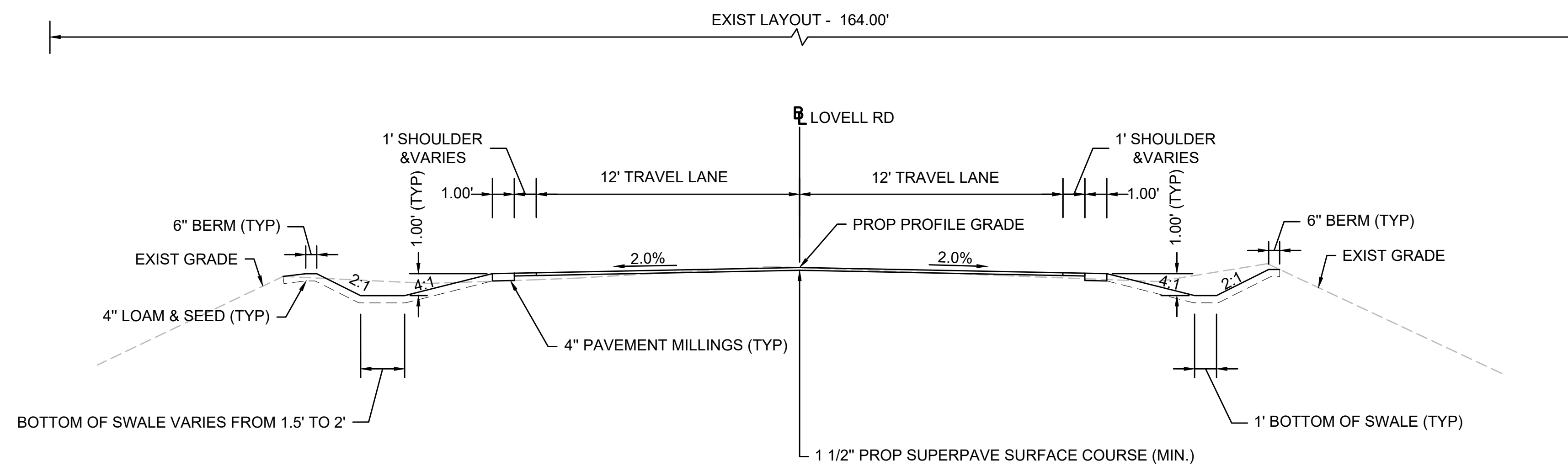
- SEE SHEET 9 FOR SWALE CHECK DAM DETAILS.
- PREPARATION OF UNDERLYING SURFACE, ASPHALT EMULSION FOR TACK COAT, AND HMA JOINT SEALANT SHALL BE IN ACCORDANCE WITH SECTION 450.
- ASPHALT EMULSION FOR TACK COAT SHALL MEET ALL REQUIREMENTS OUTLINED IN THE 2022 CONSTRUCTION SPECIFICATIONS FOR ANIONIC EMULSIFIED ASPHALT (SECTION M3.03.1), AND SPRAYED FOR 95% UNIFORM COVERAGE PRIOR TO PAVING.



LOVELL ROAD
SCALE: 1"=4'

STA 13+00 TO STA 15+00

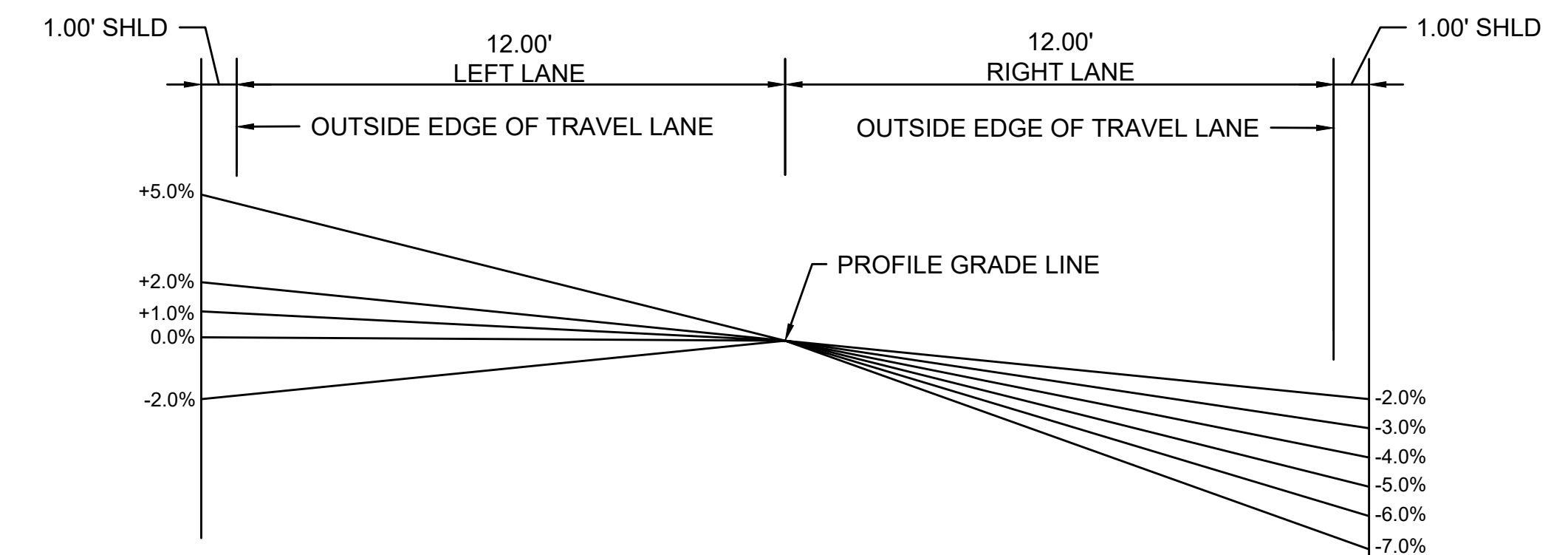
NOTE: CHECK DAMS ARE SPACED PERIODICALLY THROUGHOUT THE SWALES. SEE SHEETS 5 AND 9 FOR MORE DETAIL.



LOVELL ROAD
SCALE: 1"=4'

STA 9+00 TO STA 10+75

NOTE: CHECK DAMS ARE SPACED PERIODICALLY THROUGHOUT THE SWALES. SEE SHEETS 4 AND 9 FOR MORE DETAIL.



SUPERELEVATION - LOVELL ROAD			
STA	LEFT (%)	RIGHT (%)	NOTE
8+75	-2.0%	-4.0%	MATCH EXIST
9+00	-2.0%	-2.0%	
9+50	-2.0%	-2.0%	
10+00	-2.0%	-2.0%	
10+50	-2.0%	-2.0%	
11+00	-2.0%	-2.0%	
11+50	-2.0%	-2.0%	
11+74	-2.0%	-2.0%	BRIDGE JOINT
12+00	-2.0%	-2.0%	BRIDGE
12+40	-2.0%	-2.0%	BRIDGE JOINT
12+50	-2.0%	-2.0%	
13+00	0.0%	-3.0%	
13+50	+1.0%	-4.0%	
14+00	+2.0%	-5.0%	
14+50	+5.0%	-6.0%	
15+00	+5.0%	-7.0%	MATCH EXIST

DEVENS ENTERPRISE COMMISSION ENDORSEMENT

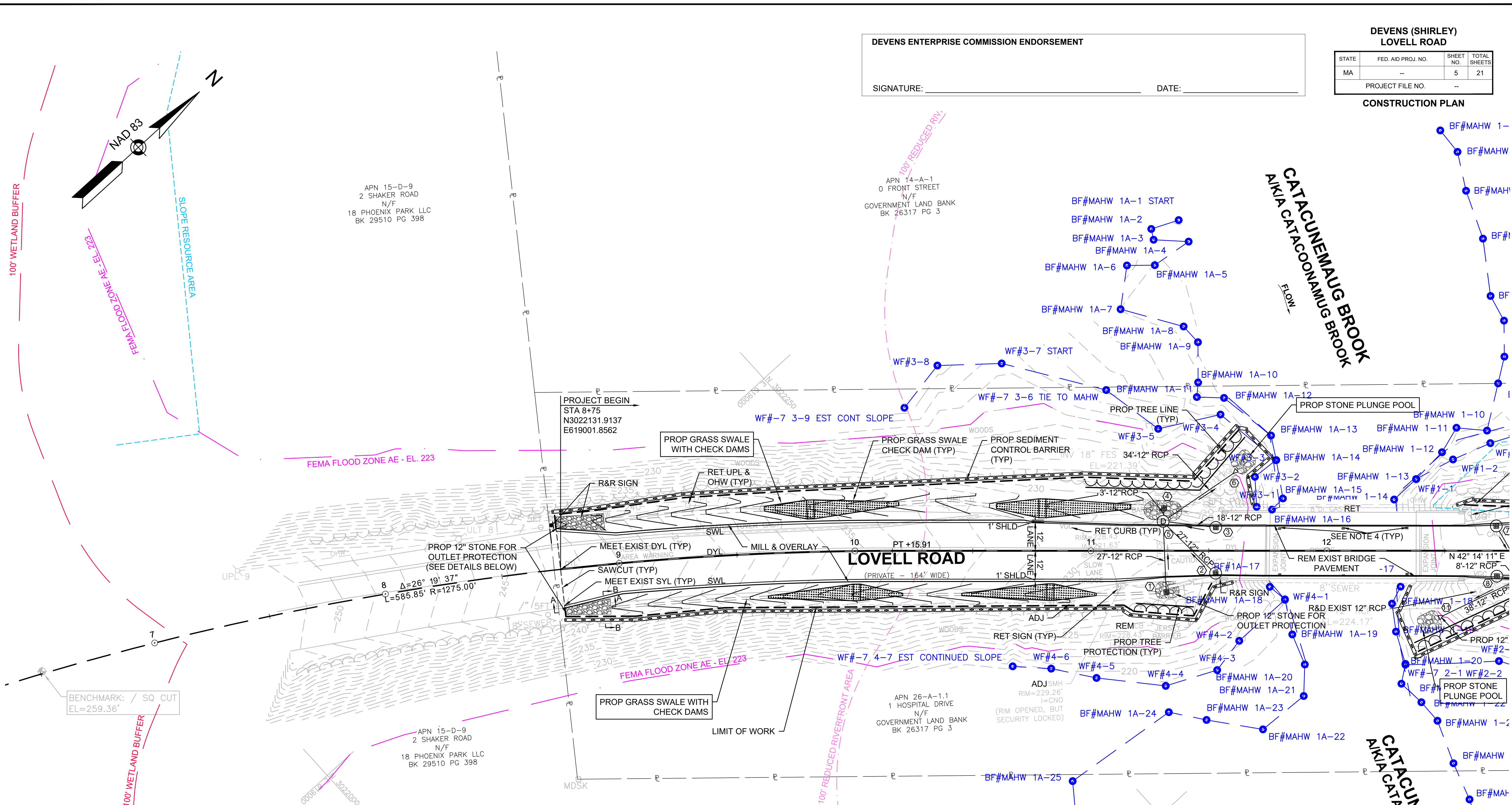
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DEVENS (SHIRLEY)

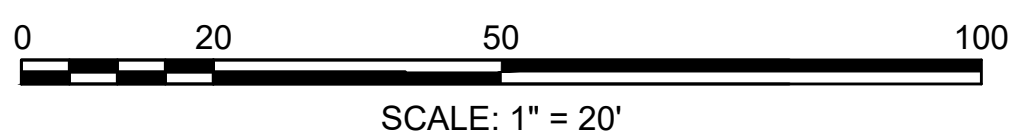
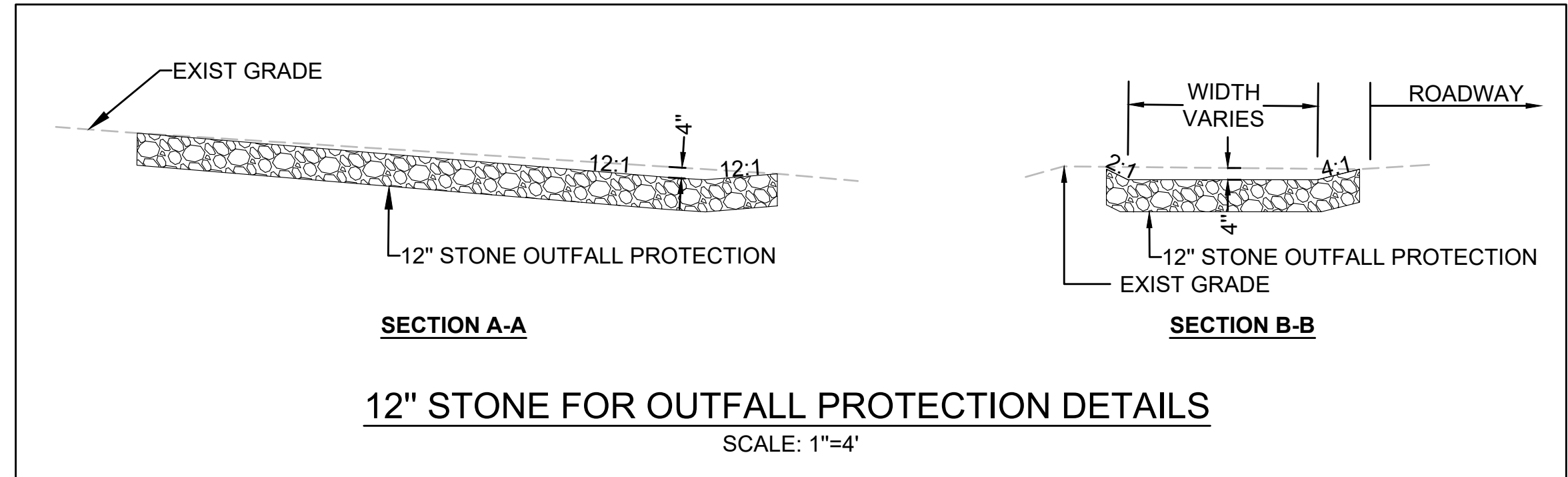
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	5	21
PROJECT FILE NO.		--	

CONSTRUCTION PLAN



- NOTES:
- TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
 - CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
 - PROVIDE SILT SACKS IN ALL CATCH BASINS AND DROP INLETS WITHIN LIMIT OF WORK (NOT SHOWN FOR CLARITY).
 - EXIST SCUPPERS TO BE REMOVED AND RESET AS REQUIRED TO REPAIR CONCRETE, SEE BRIDGE PLANS FOR MORE DETAIL.
 - BASE FLOOD ELEVATION OF FLOOD ZONE AE IS ESTABLISHED AT 223' NAVD88 PER CROSS SECTION DATA PROVIDED BY FEMA NATIONAL FLOOD HAZARD MAP PANEL, 25017C0192E EFFECTIVE JUNE 4, 2010. THIS HAS BEEN APPLIED TO TOPOGRAPHY AND CONTOURS OBTAINED BY GROUND SURVEY. THIS ALSO COINCIDES WITH BORDERING LAND SUBJECT TO FLOODING AS DEFINED BY THE MASSACHUSETTS WETLANDS PROTECTION ACT AND IMPLEMENTING REGULATIONS.
 - THE ARMY 3400 AREA CONTRIBUTES RUNOFF TO THIS AREA BUT IS OUTSIDE OF MASSDEVELOPMENT'S JURISDICTION. TO THE MAXIMUM EXTENT PRACTICABLE, THE DESIGN MITIGATES FOR THE IMPACTS OF THIS RUNOFF.
 - LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE, TO BE VERIFIED BY CONTRACTOR IN FIELD.



DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	DI	11+32.0, 17.5' RT	228.00	-	223.50	PROP DI
2	CB	11+52.9, 9.5' RT	228.91	-	225.41	PROP CB
3	CB	11+53.0, 9.9' LT	228.92	-	225.42	PROP CB
4	DI	11+31.0, 18.1 LT	228.00	-	223.50	PROP DI
5	DMH	11+30.7, 12.5 LT	229.00	221.73 (1) 224.87 (2) 225.00 (3) 223.44 (4)	221.63	CIT TO DMH
6	FES	11+60.5, 32.8' LT	-	221.63 (5)	221.39	FLARED END

CONTINUED ON SHEET NO. 6

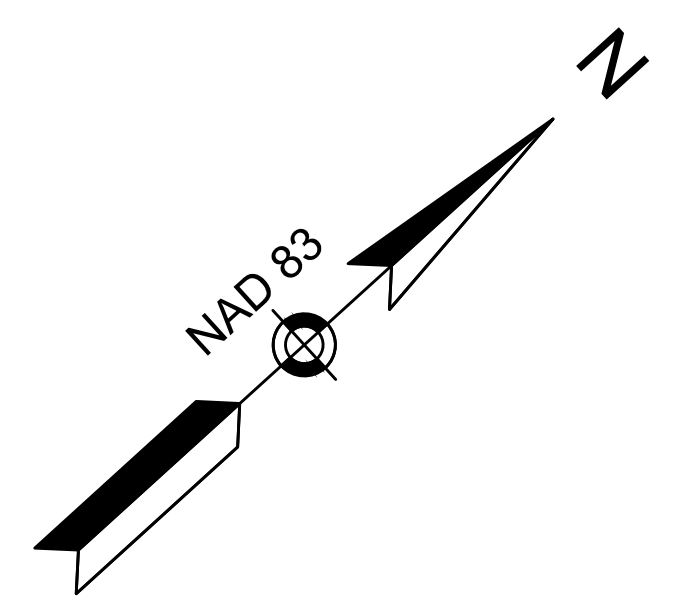
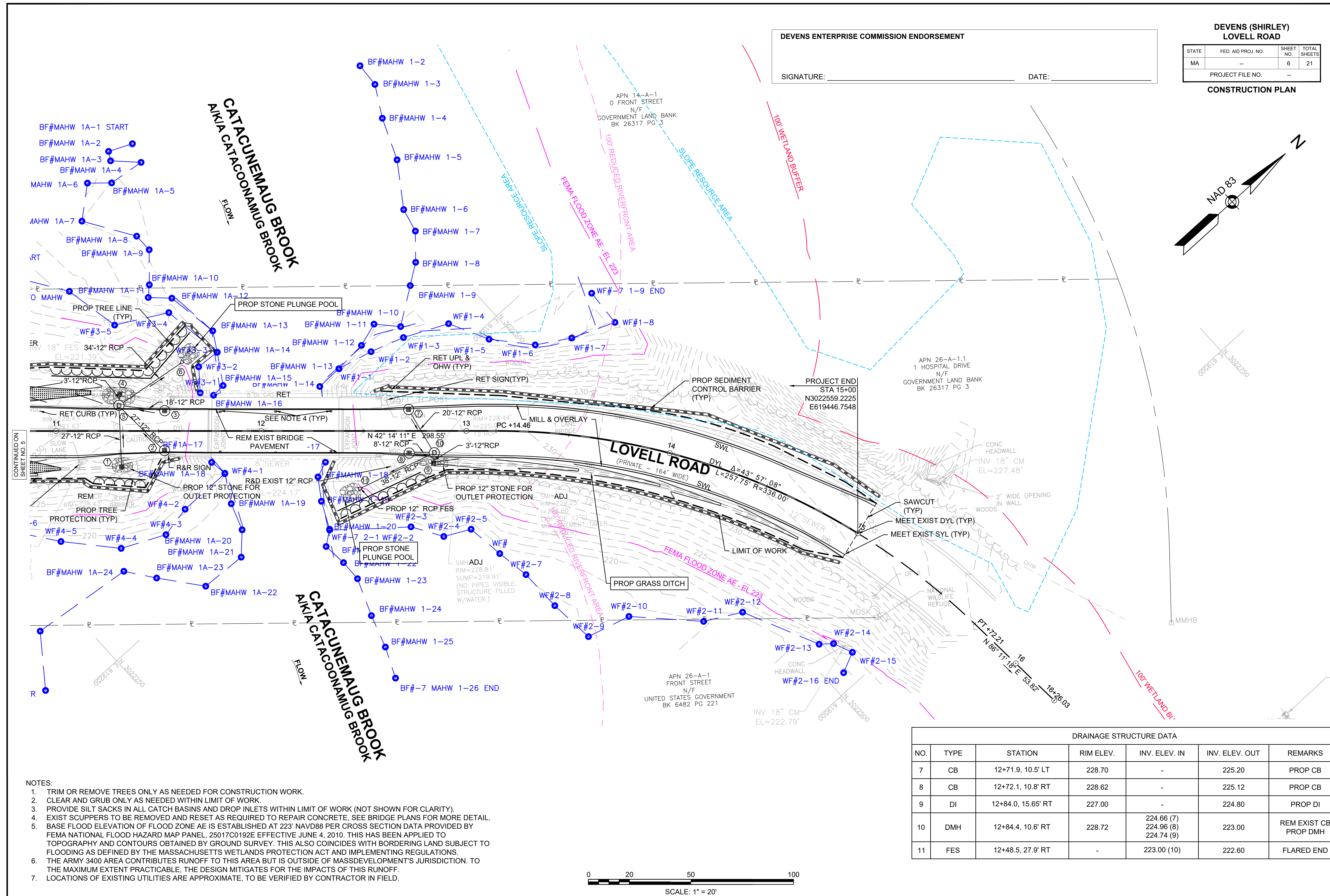
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DEVENS (SHIRLEY)
LOVELL ROAD

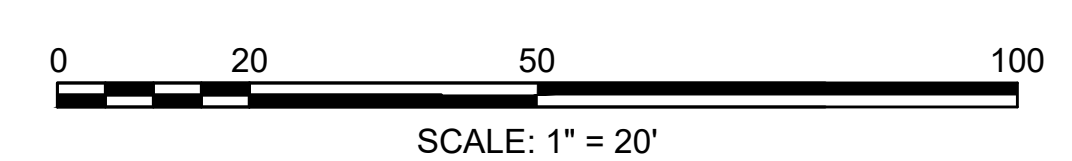
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	6	21
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CONSTRUCTION PLAN



CONTINUED ON SHEET NO. 5

- NOTES:
- TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
 - CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
 - PROVIDE SILT SACKS IN ALL CATCH BASINS AND DROP INLETS WITHIN LIMIT OF WORK (NOT SHOWN FOR CLARITY).
 - EXIST SCUPPERS TO BE REMOVED AND RESET AS REQUIRED TO REPAIR CONCRETE. SEE BRIDGE PLANS FOR MORE DETAIL.
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DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
7	CB	12+71.9, 10.5' LT	228.70	-	225.20	PROP CB
8	CB	12+72.1, 10.8' RT	228.62	-	225.12	PROP CB
9	DI	12+84.0, 15.65' RT	227.00	-	224.80	PROP DI
10	DMH	12+84.4, 10.6' RT	228.72	224.66 (7) 224.96 (8) 224.74 (9)	223.00	REM EXIST CB PROP DMH
11	FES	12+48.5, 27.9' RT	-	223.00 (10)	222.60	FLARED END

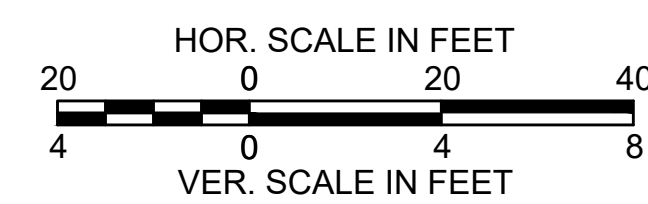
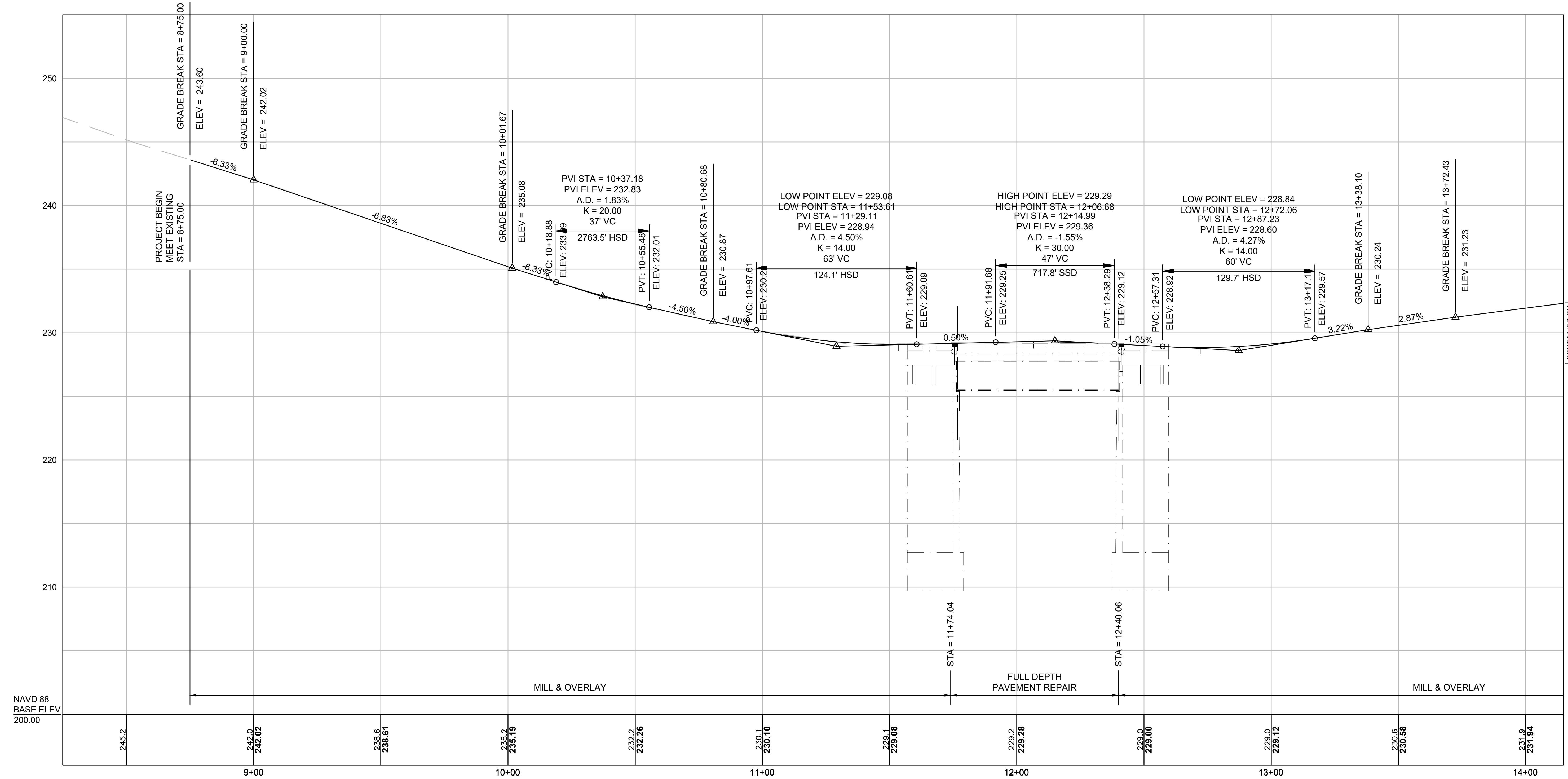
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PROFILE



FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 5-6

CONTINUED ON
SHEET NO. 8

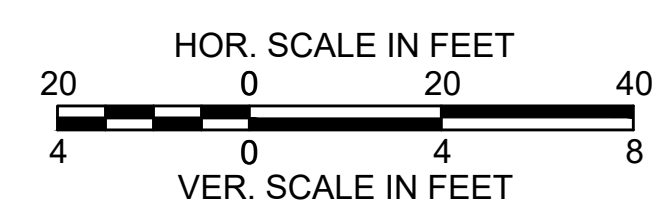
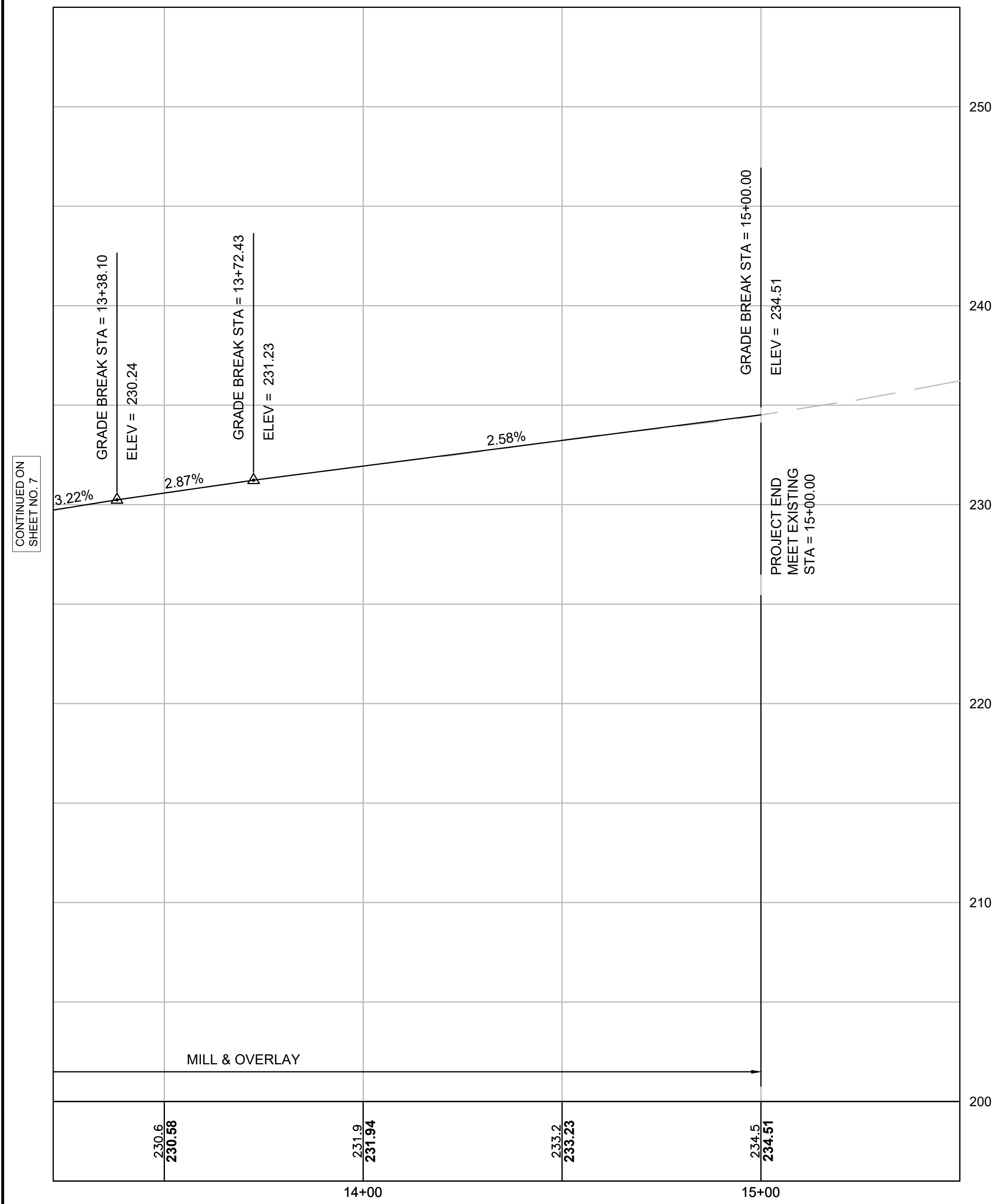
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PROFILE



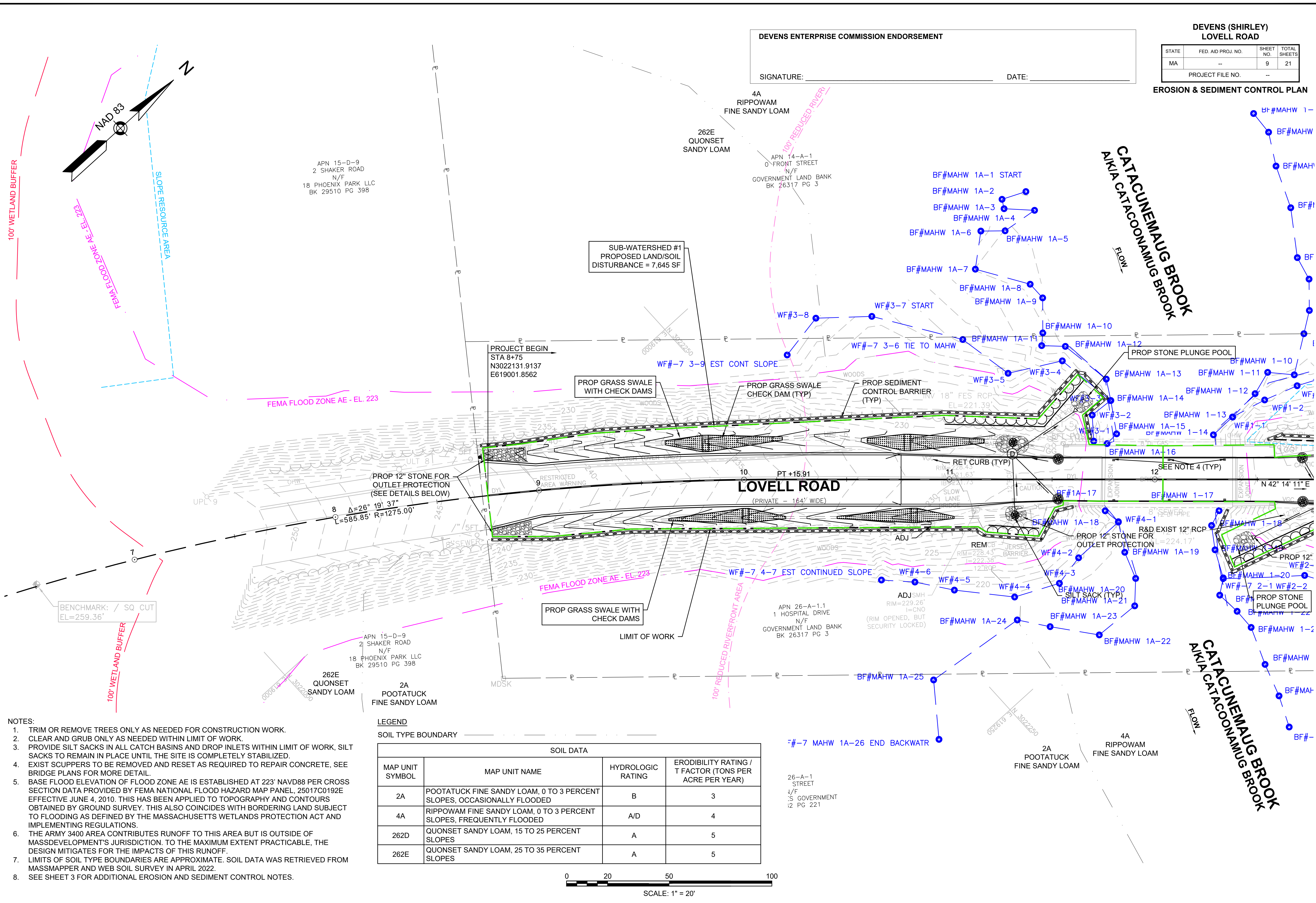
FOR CONSTRUCTION PLANS:
SEE SHEET NOS. 5-6

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DEVENS (SHIRLEY) LOVELL ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	9	21
PROJECT FILE NO. --			

EROSION & SEDIMENT CONTROL PLAN

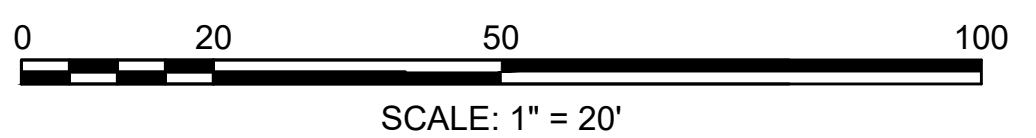


- NOTES:
1. TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
 2. CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
 3. PROVIDE SILT SACKS IN ALL CATCH BASINS AND DROP INLETS WITHIN LIMIT OF WORK, SILT SACKS TO REMAIN IN PLACE UNTIL THE SITE IS COMPLETELY STABILIZED.
 4. EXIST SCUPPERS TO BE REMOVED AND RESET AS REQUIRED TO REPAIR CONCRETE, SEE BRIDGE PLANS FOR MORE DETAIL.
 5. BASE FLOOD ELEVATION OF FLOOD ZONE AE IS ESTABLISHED AT 223' NAVD88 PER CROSS SECTION DATA PROVIDED BY FEMA NATIONAL FLOOD HAZARD MAP PANEL, 25017C0192E EFFECTIVE JUNE 4, 2010. THIS HAS BEEN APPLIED TO TOPOGRAPHY AND CONTOURS OBTAINED BY GROUND SURVEY. THIS ALSO COINCIDES WITH BORDERING LAND SUBJECT TO FLOODING AS DEFINED BY THE MASSACHUSETTS WETLANDS PROTECTION ACT AND IMPLEMENTING REGULATIONS.
 6. THE ARMY 3400 AREA CONTRIBUTES RUNOFF TO THIS AREA BUT IS OUTSIDE OF MASSDEVELOPMENT'S JURISDICTION. TO THE MAXIMUM EXTENT PRACTICABLE, THE DESIGN MITIGATES FOR THE IMPACTS OF THIS RUNOFF.
 7. LIMITS OF SOIL TYPE BOUNDARIES ARE APPROXIMATE. SOIL DATA WAS RETRIEVED FROM MASSMAPPER AND WEB SOIL SURVEY IN APRIL 2022.
 8. SEE SHEET 3 FOR ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES.

LEGEND

SOIL TYPE BOUNDARY

SOIL DATA			
MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	ERODIBILITY RATING / T FACTOR (TONS PER ACRE PER YEAR)
2A	POOTATUCK FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, OCCASIONALLY FLOODED	B	3
4A	RIPPOWAM FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, FREQUENTLY FLOODED	A/D	4
262D	QUONSET SANDY LOAM, 15 TO 25 PERCENT SLOPES	A	5
262E	QUONSET SANDY LOAM, 25 TO 35 PERCENT SLOPES	A	5



CONTINUED ON SHEET NO. 10

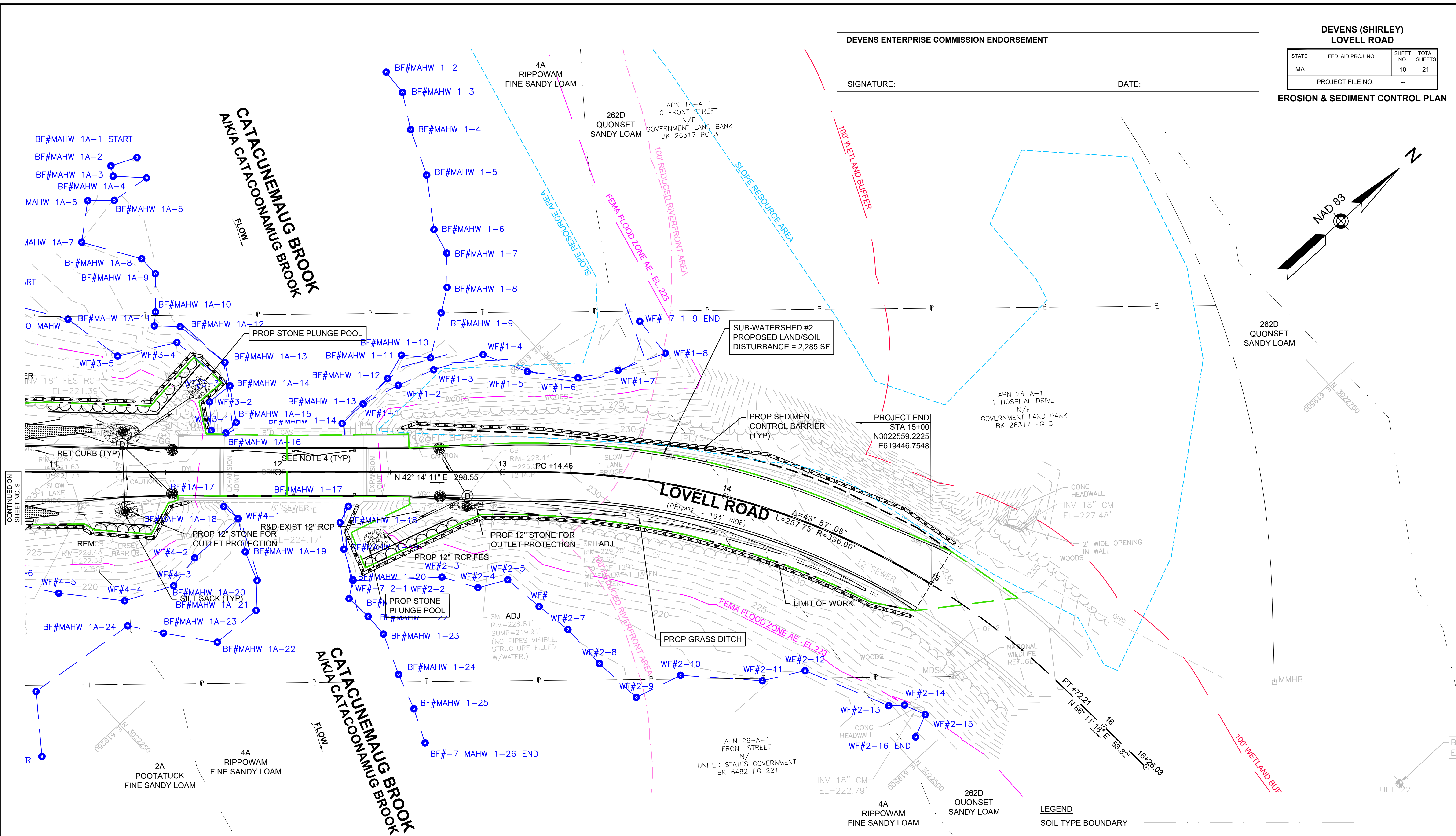
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

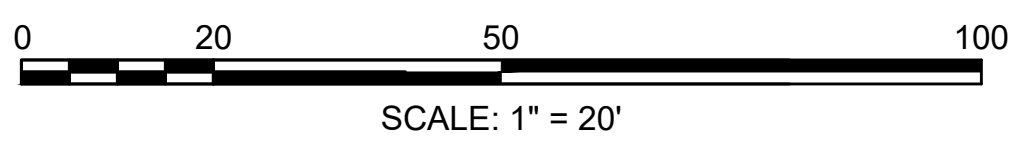
**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	10	21
PROJECT FILE NO. --			

EROSION & SEDIMENT CONTROL PLAN



- NOTES:
- TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
 - CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
 - PROVIDE SILT SACKS IN ALL CATCH BASINS AND DROP INLETS WITHIN LIMIT OF WORK, SILT SACKS TO REMAIN IN PLACE UNTIL THE SITE IS COMPLETELY STABILIZED.
 - EXIST SCUPPERS TO BE REMOVED AND RESET AS REQUIRED TO REPAIR CONCRETE, SEE BRIDGE PLANS FOR MORE DETAIL.
 - BASE FLOOD ELEVATION OF FLOOD ZONE AE IS ESTABLISHED AT 223' NAVD88 PER CROSS SECTION DATA PROVIDED BY FEMA NATIONAL FLOOD HAZARD MAP PANEL, 25017C0192E EFFECTIVE JUNE 4, 2010. THIS HAS BEEN APPLIED TO TOPOGRAPHY AND CONTOURS OBTAINED BY GROUND SURVEY. THIS ALSO COINCIDES WITH BORDERING LAND SUBJECT TO FLOODING AS DEFINED BY THE MASSACHUSETTS WETLANDS PROTECTION ACT AND IMPLEMENTING REGULATIONS.
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 - SEE SHEET 3 FOR ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES.



LEGEND

SOIL TYPE BOUNDARY

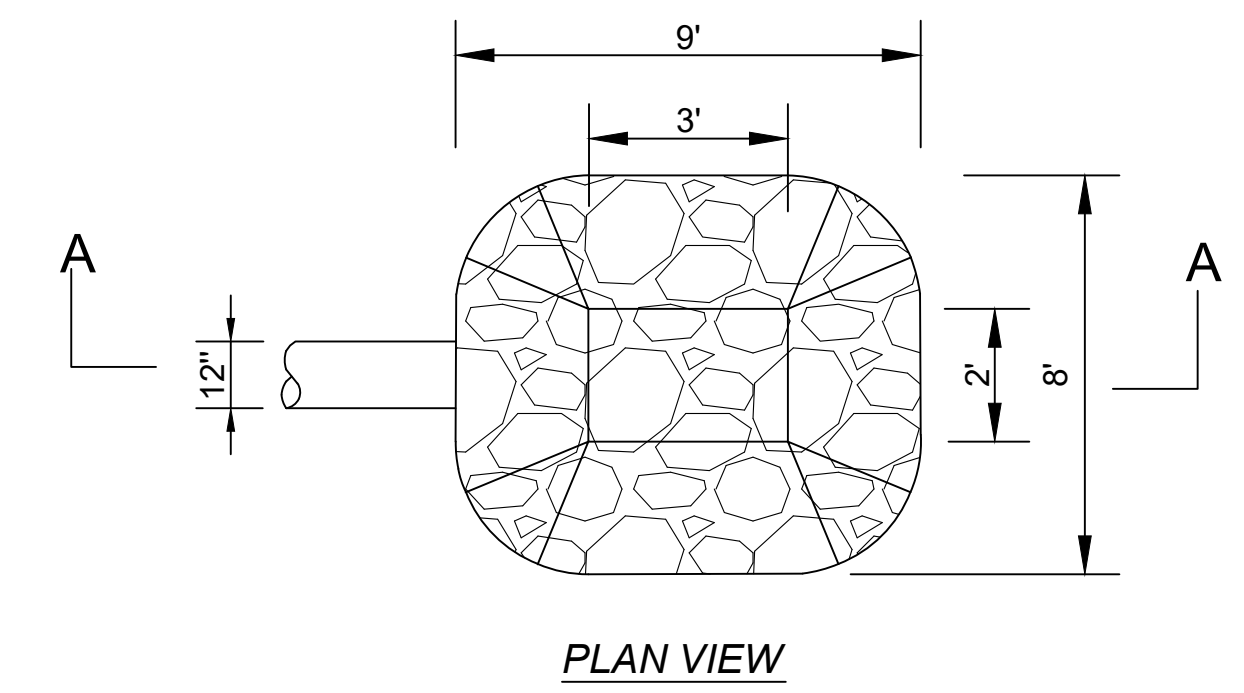
SOIL DATA			
MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC RATING	ERODIBILITY RATING / T FACTOR (TONS PER ACRE PER YEAR)
2A	POOTATUCK FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, OCCASIONALLY FLOODED	B	3
4A	RIPPOWAM FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, FREQUENTLY FLOODED	A/D	4
262D	QUONSET SANDY LOAM, 15 TO 25 PERCENT SLOPES	A	5
262E	QUONSET SANDY LOAM, 25 TO 35 PERCENT SLOPES	A	5

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	11	21
PROJECT FILE NO.		--	

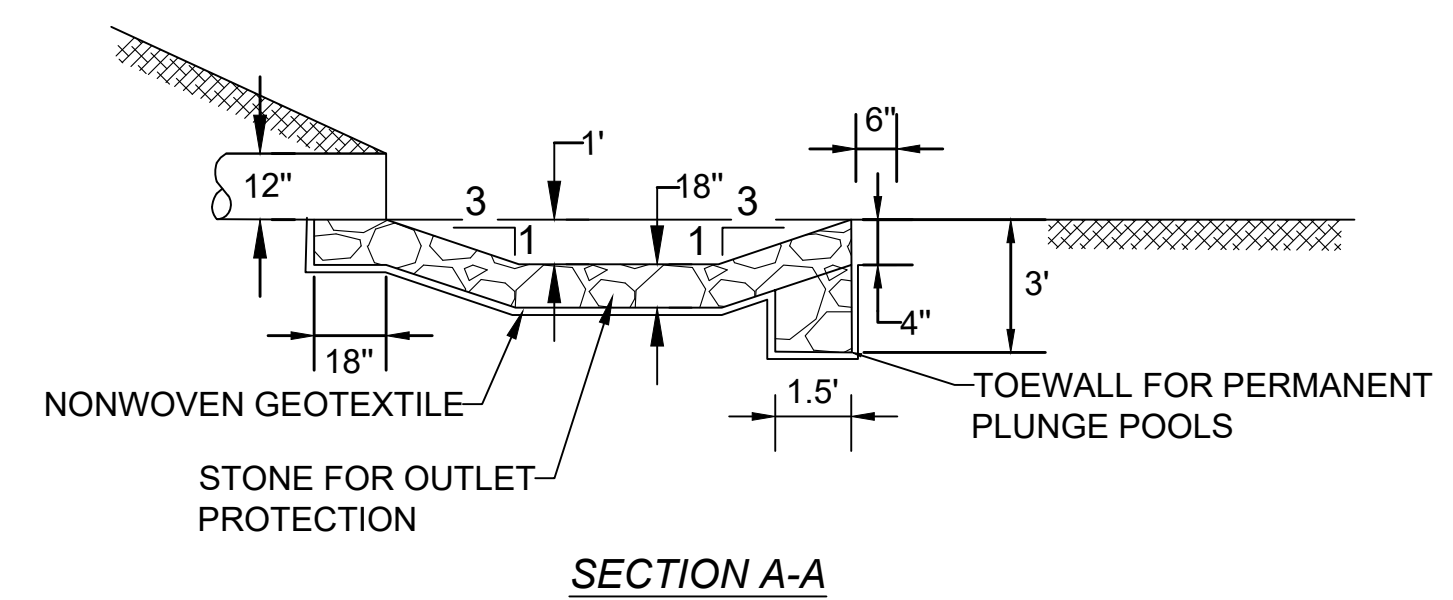
CONSTRUCTION DETAILS

DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____



PLAN VIEW



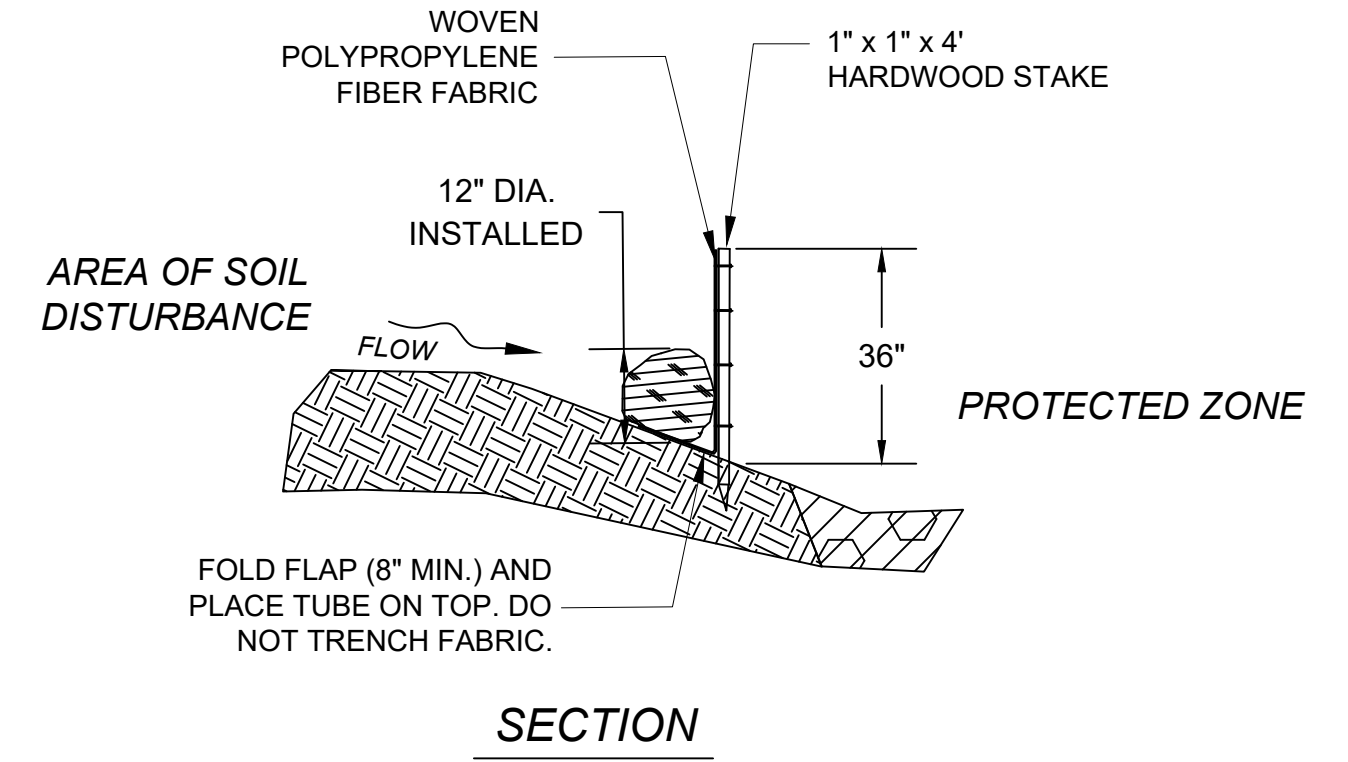
SECTION A-A

NOTES:

1. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
2. EMBED THE GEOTEXTILE A MINIMUM OF 4 INCHES AND EXTEND THE GEOTEXTILE A MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.

PLUNGE POOL DETAIL

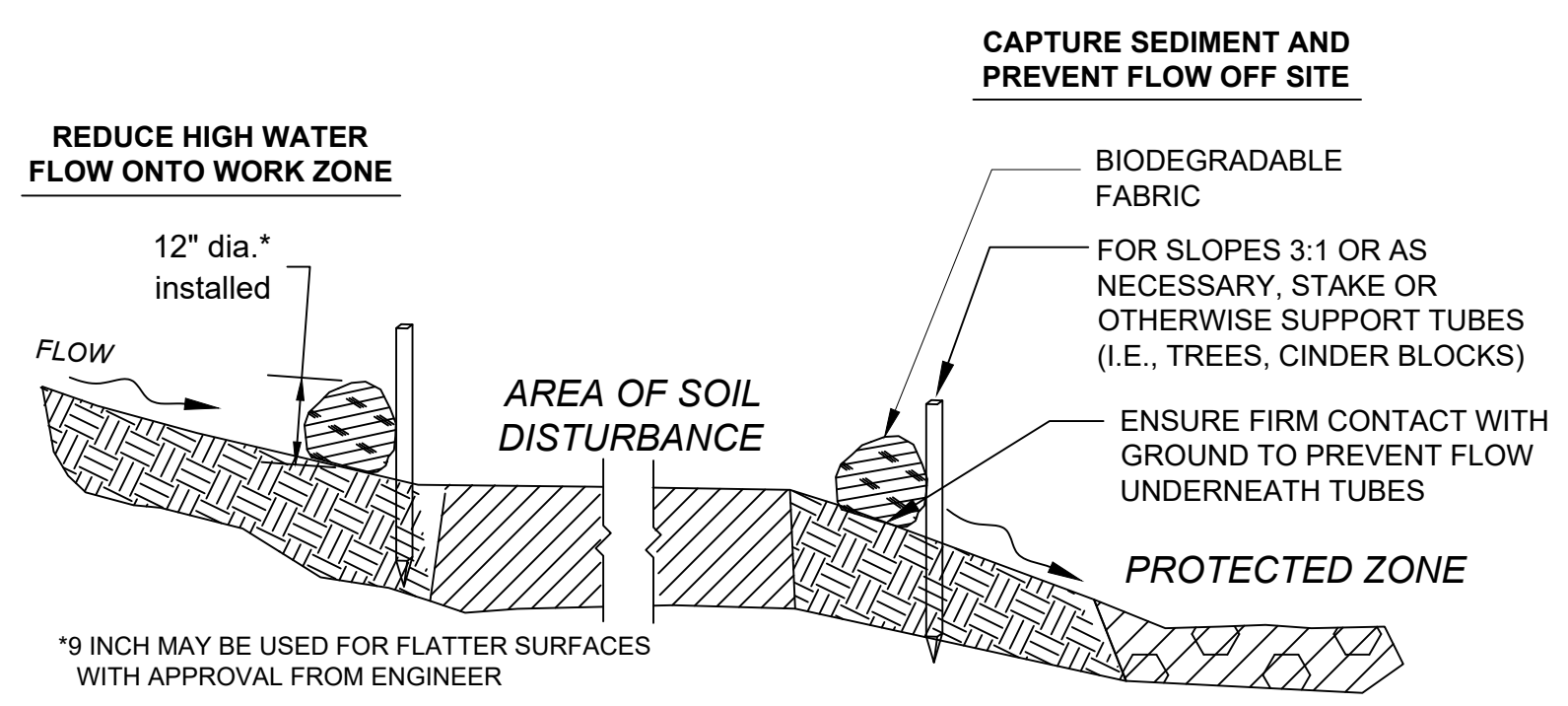
NOT TO SCALE



SECTION

COMPOST FILTER TUBE & SILT FENCE

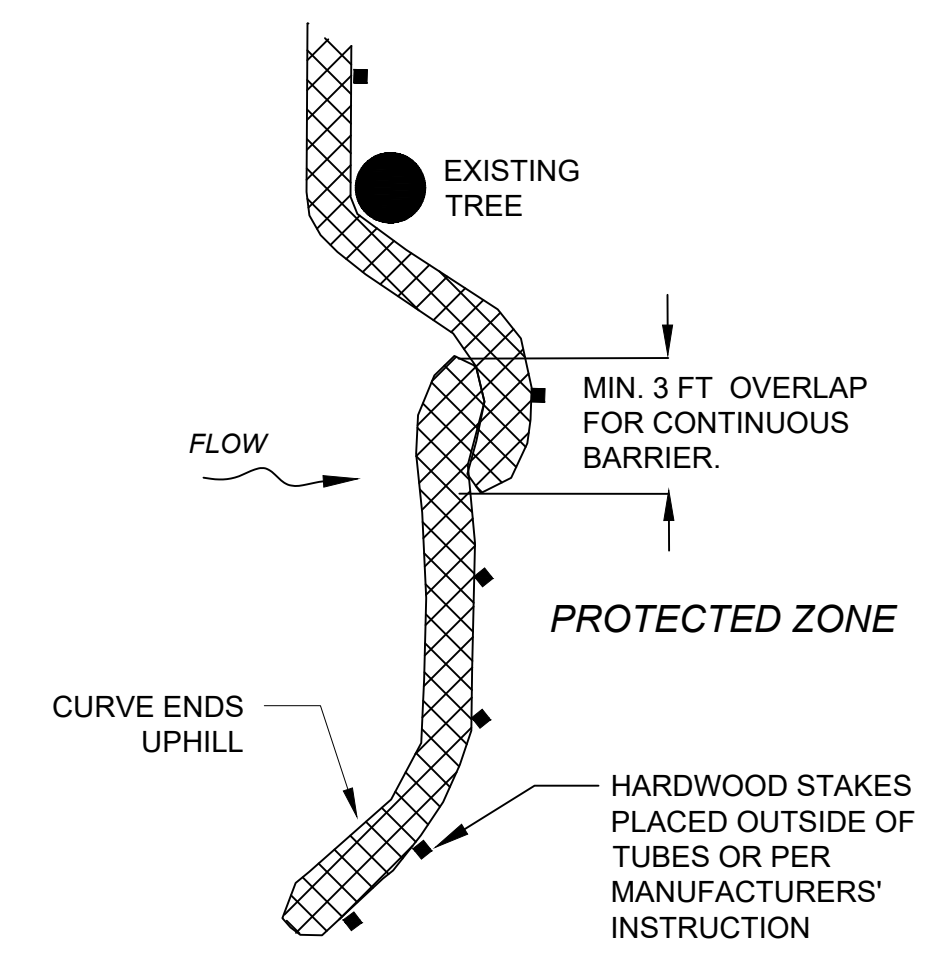
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SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBES

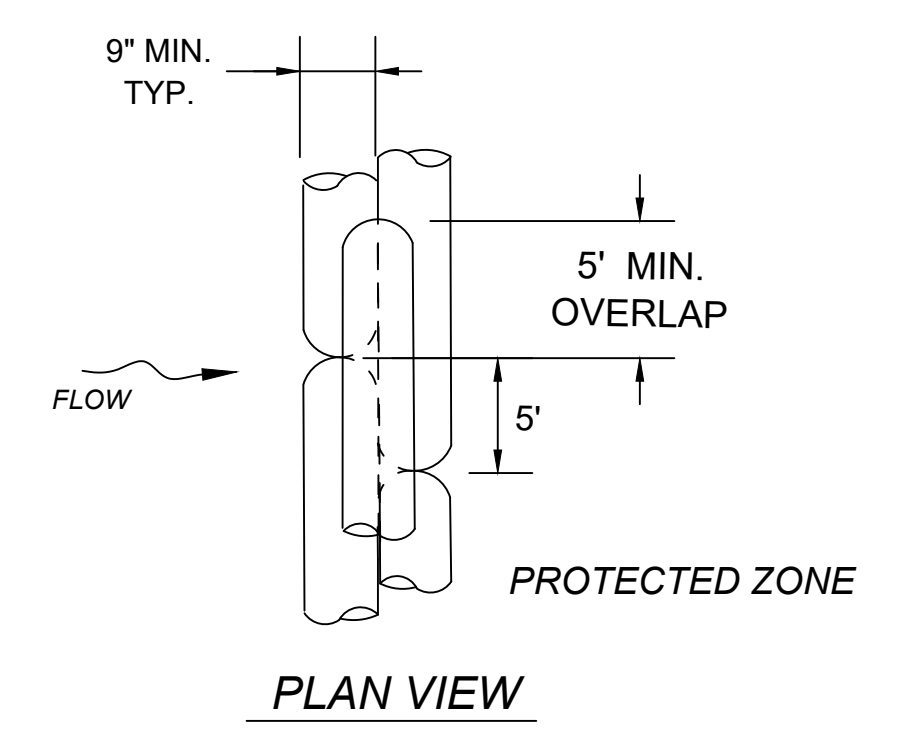
NOT TO SCALE



PLAN VIEW

COMPOST FILTER TUBE

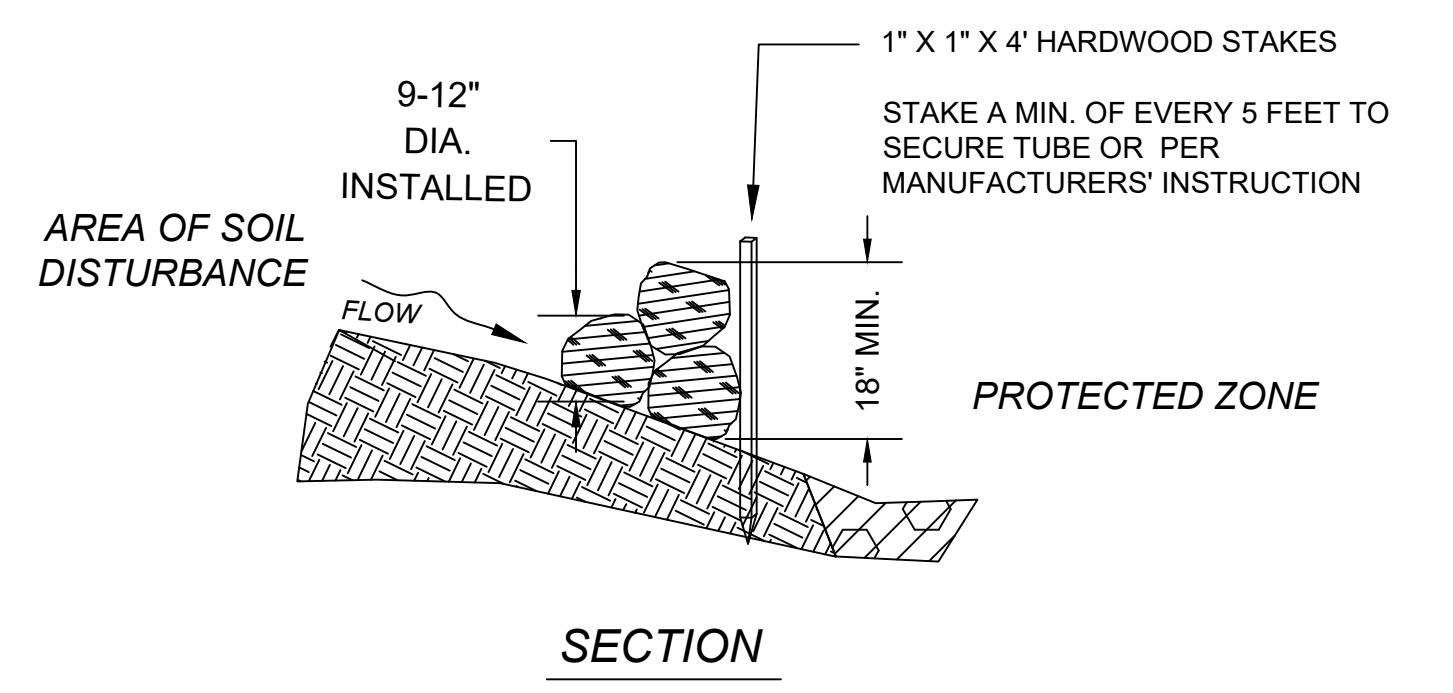
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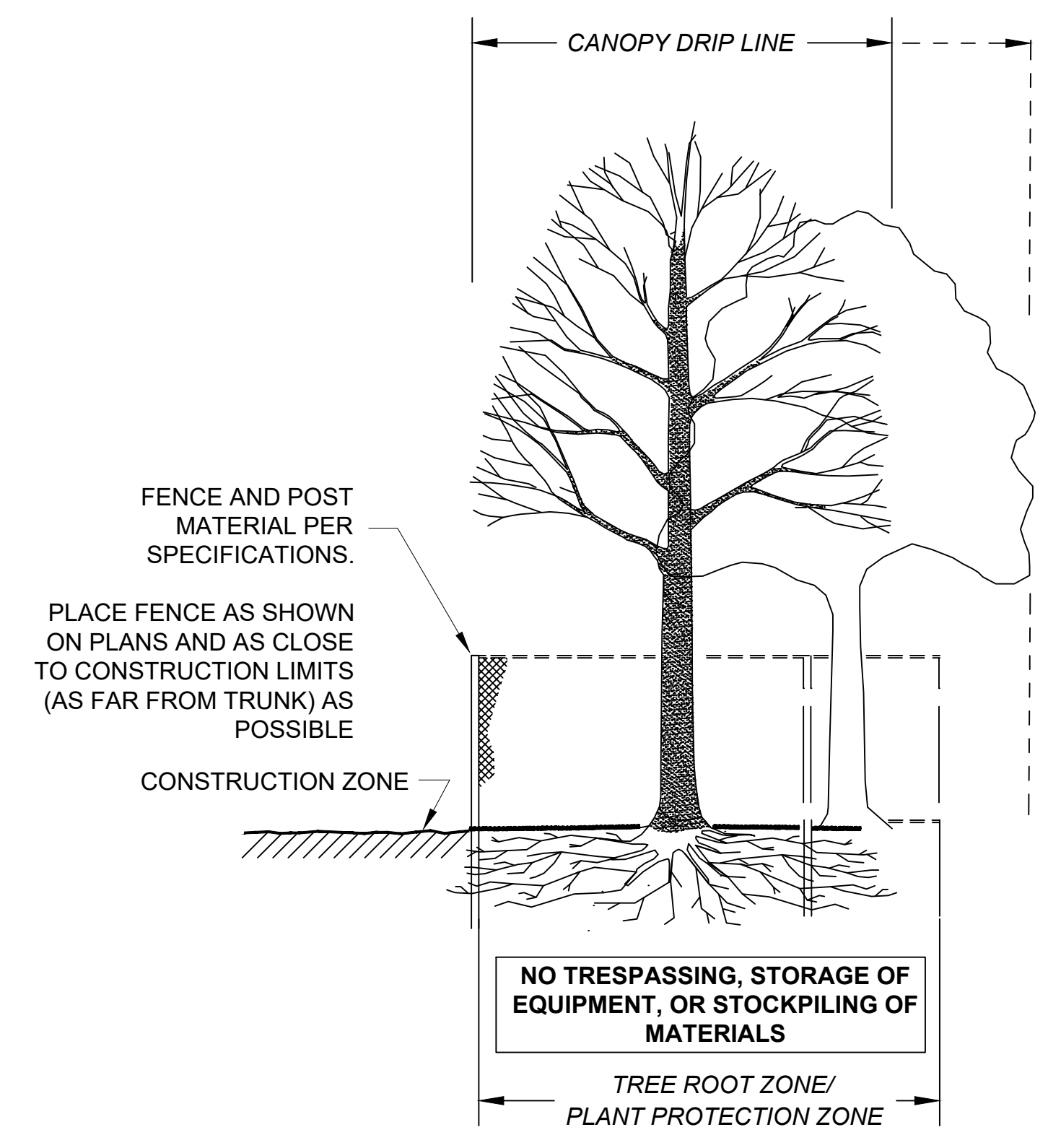
PLAN VIEW

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

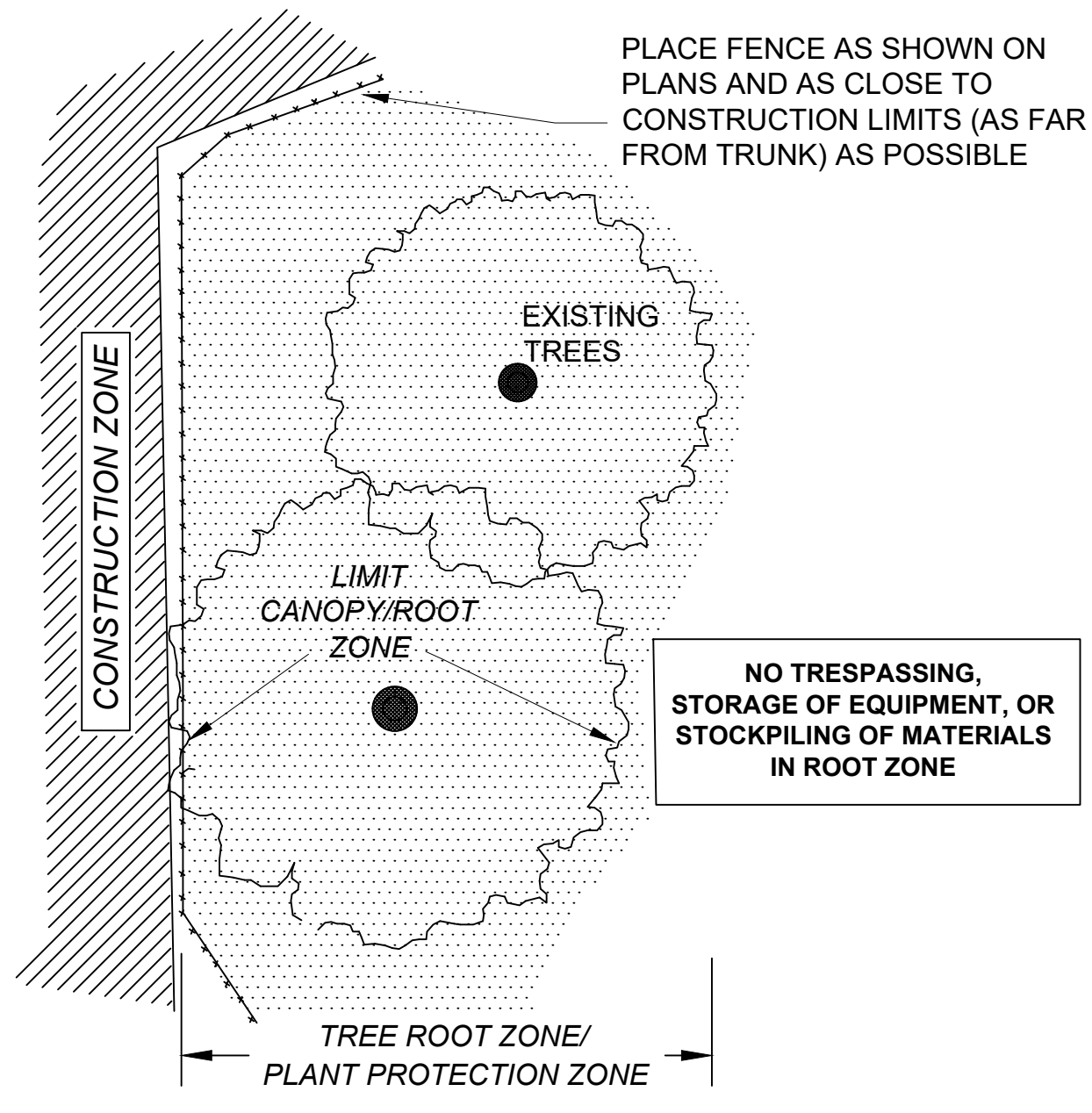
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SECTION



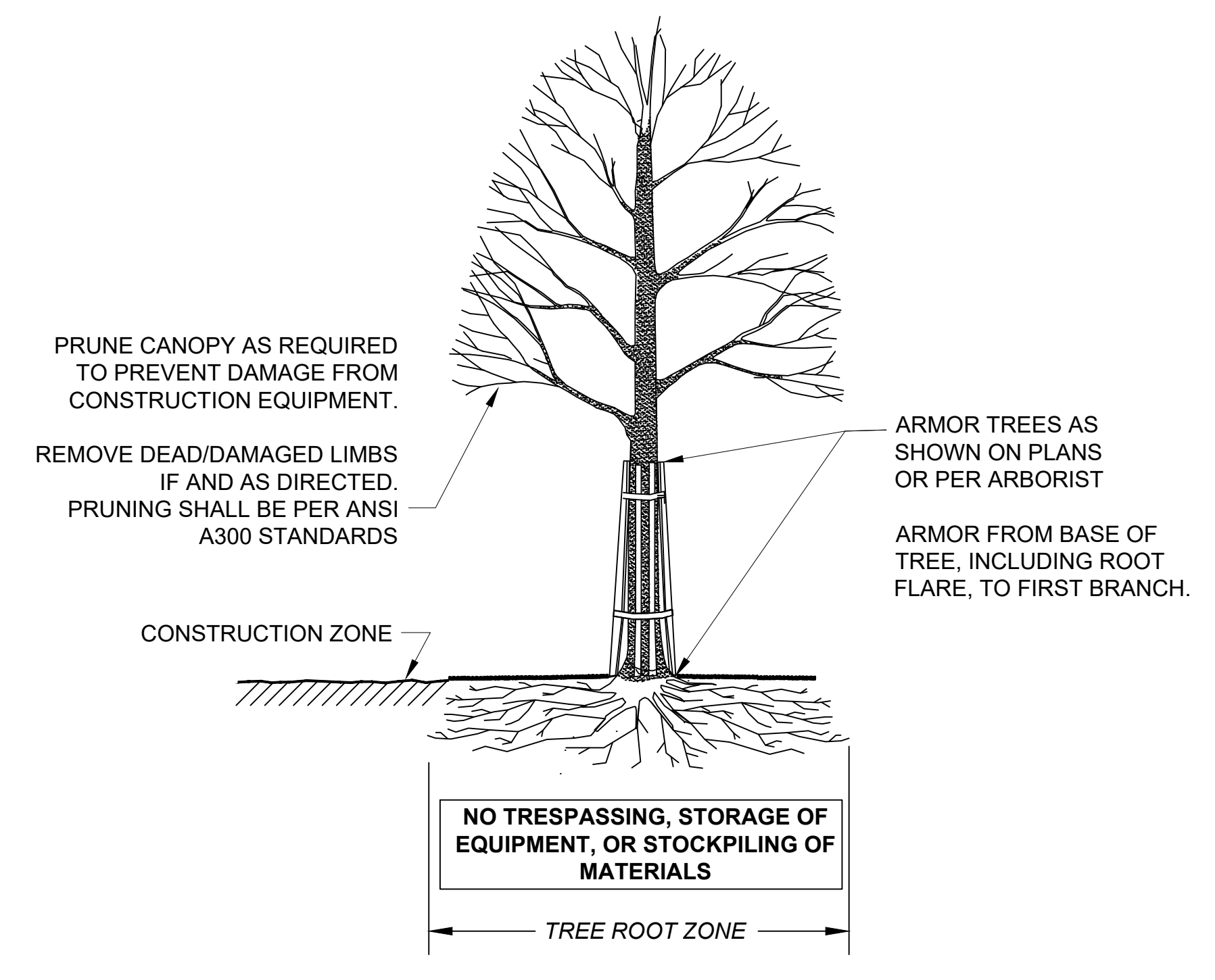
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

NOT TO SCALE



SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

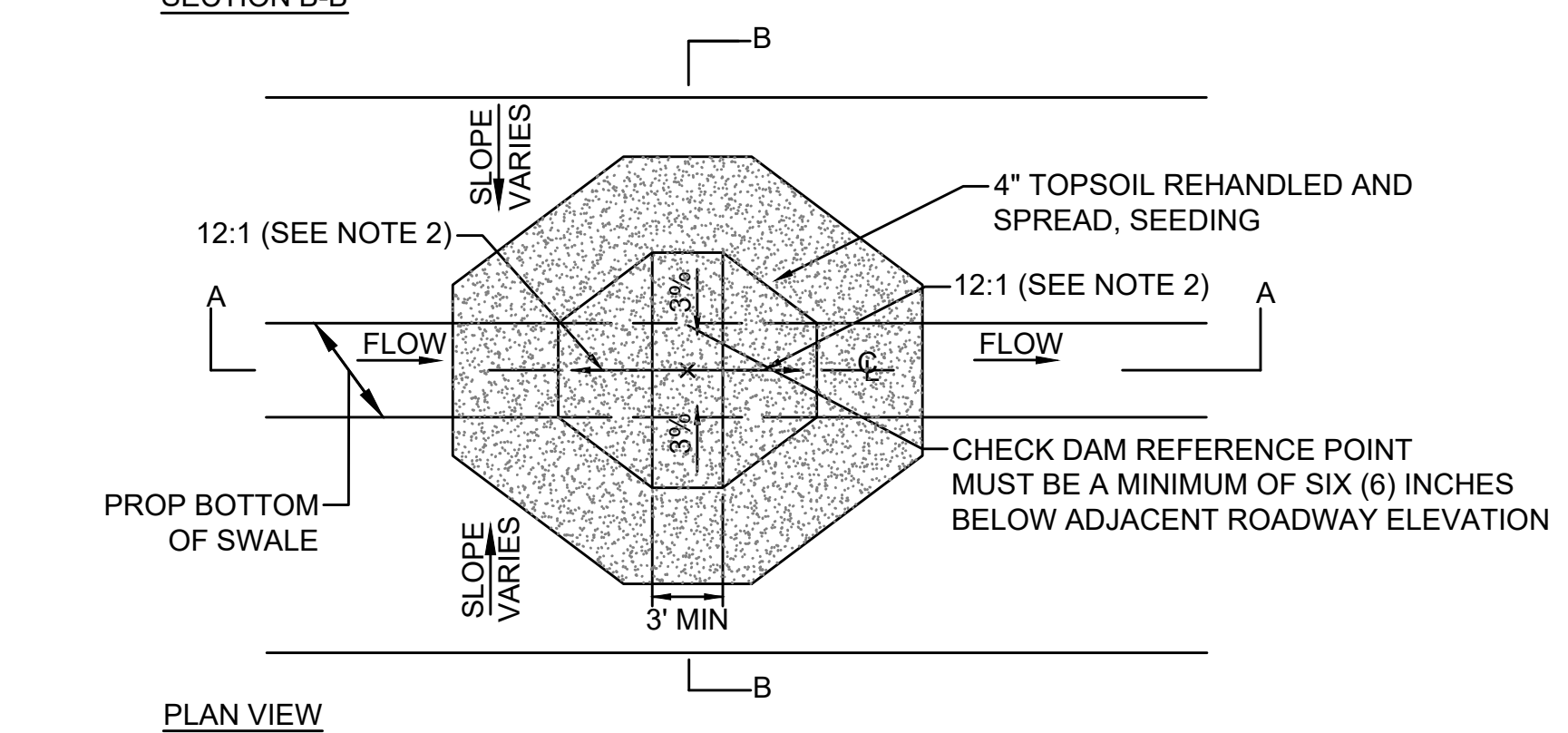
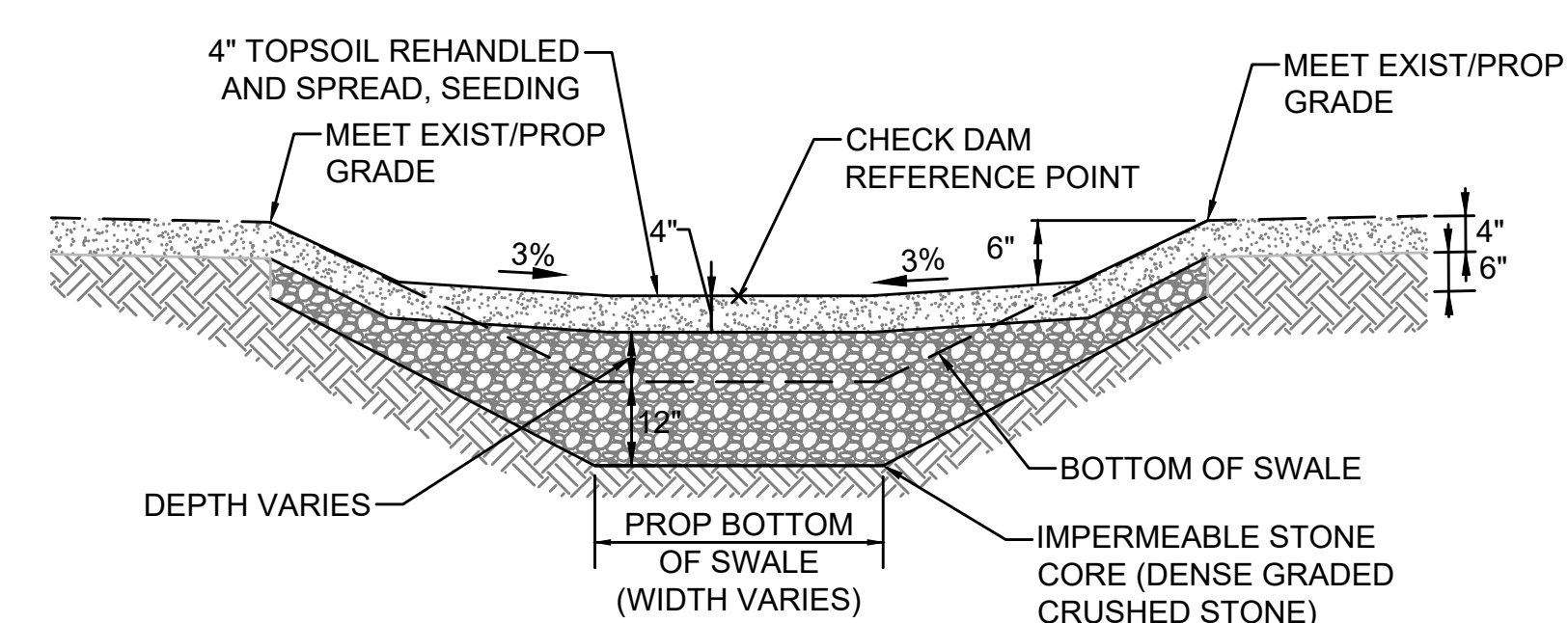
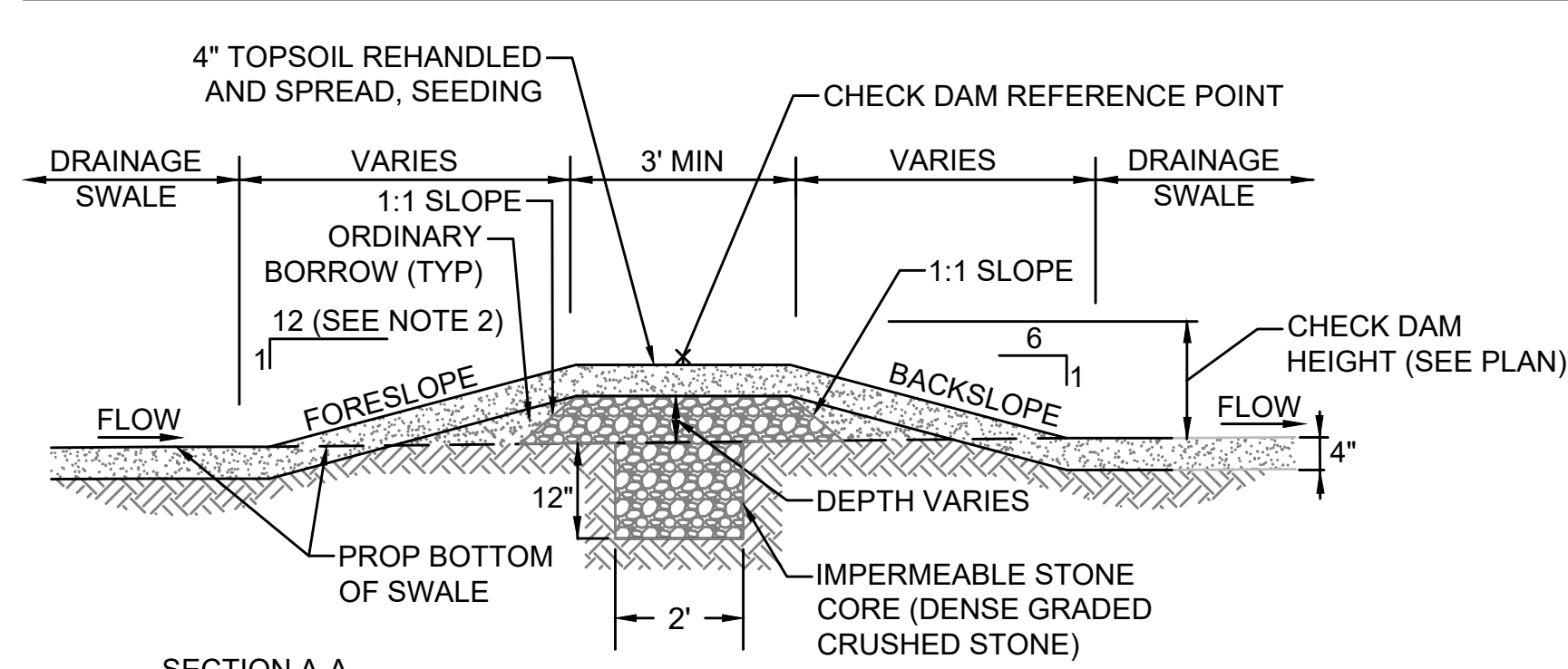
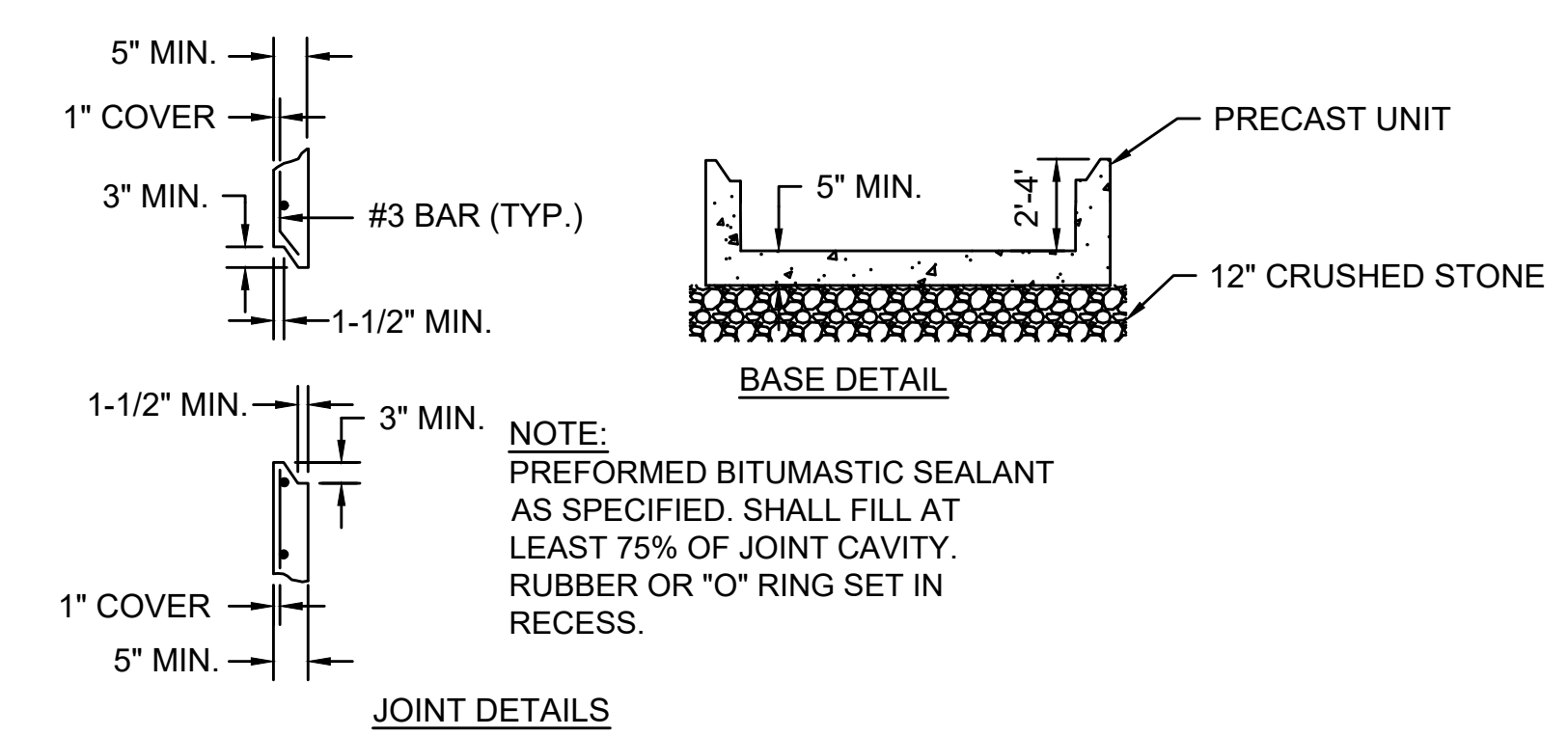
**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	12	21
PROJECT FILE NO.		--	

CONSTRUCTION DETAILS

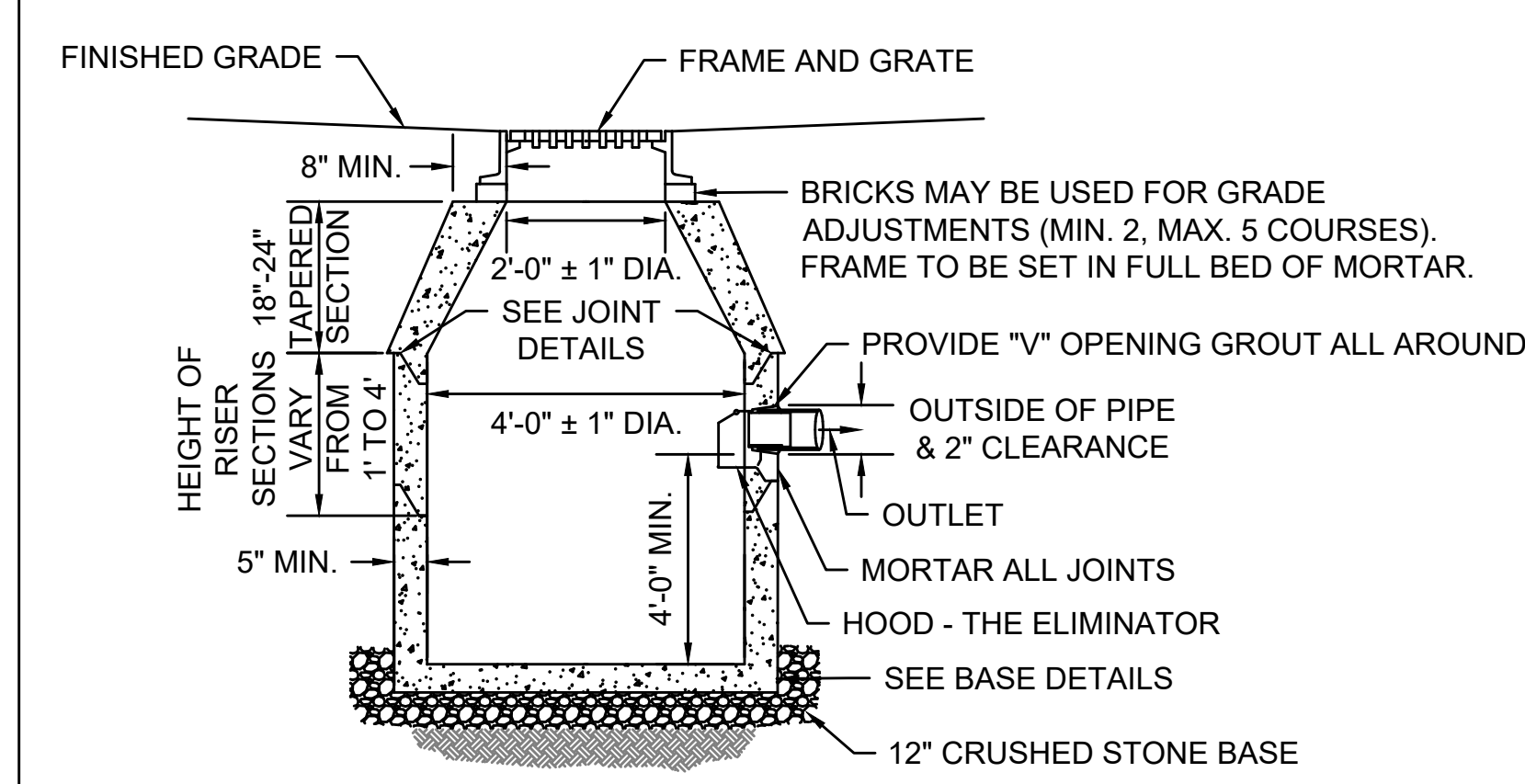
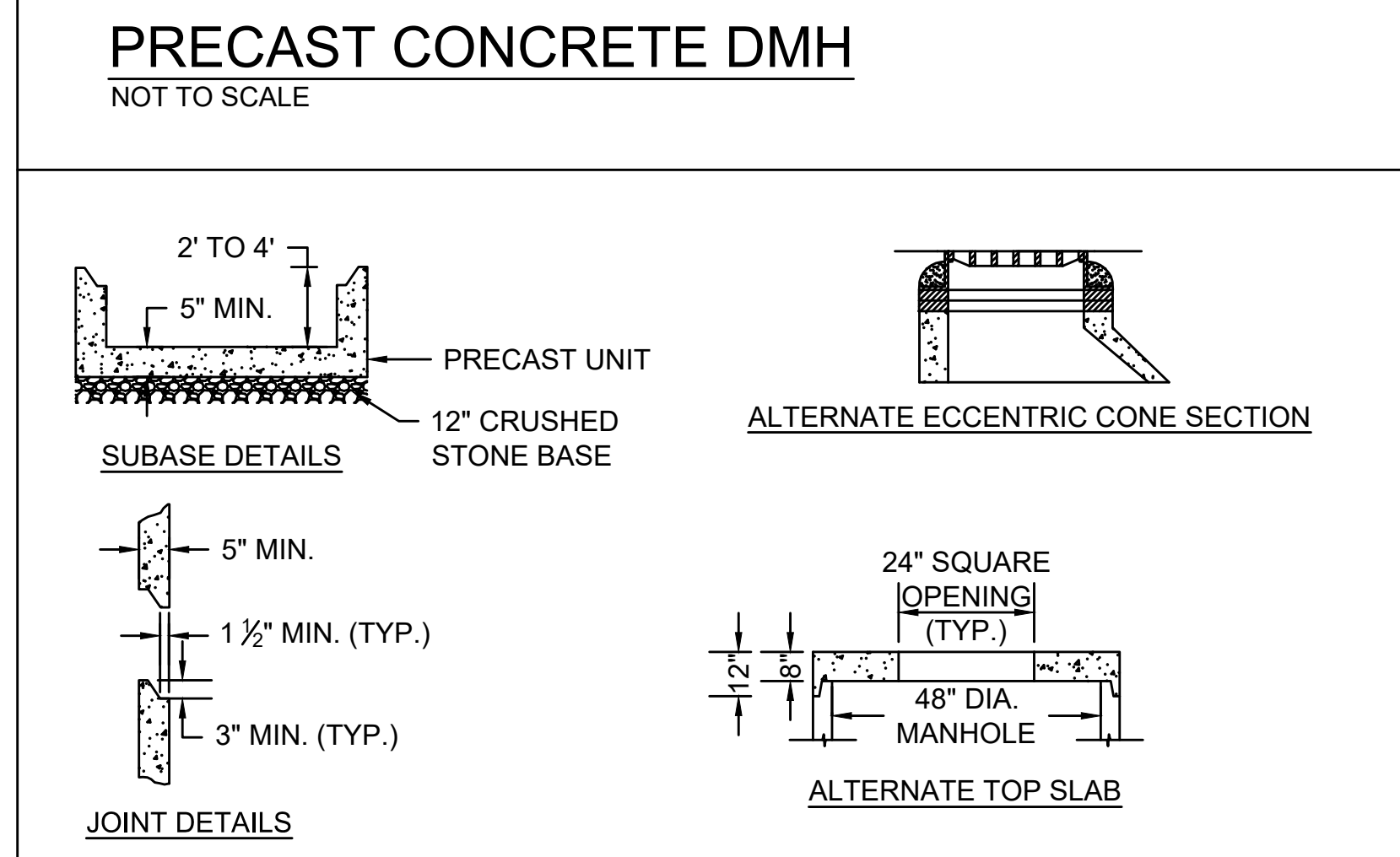
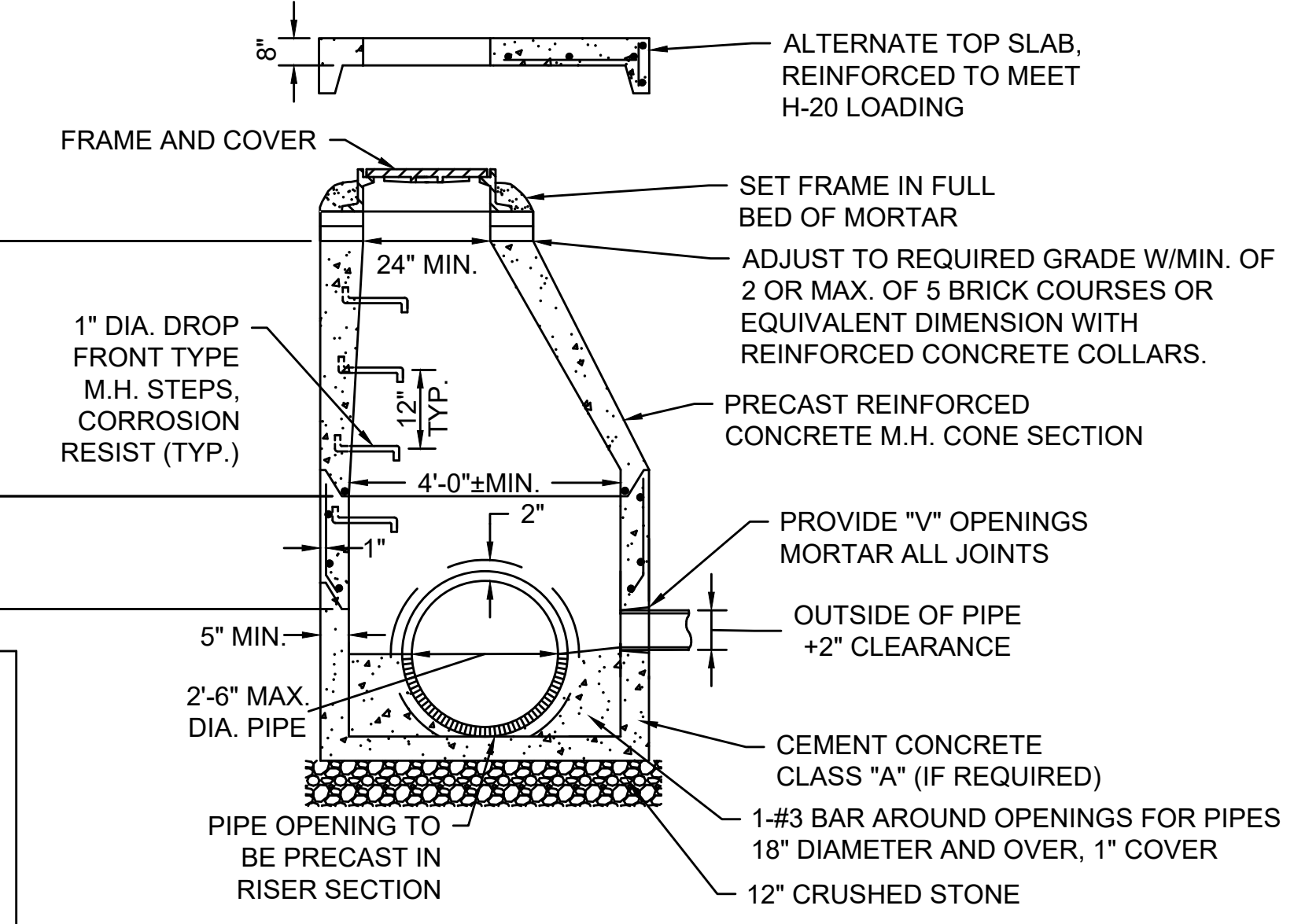
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____



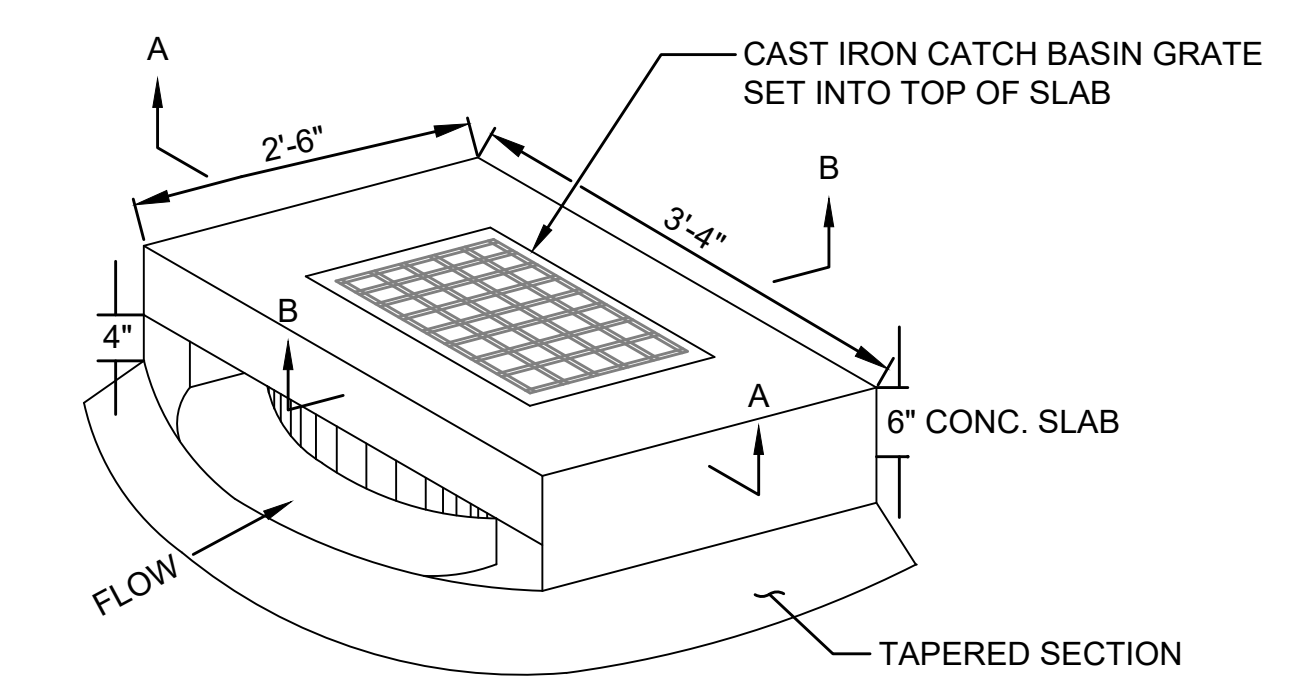
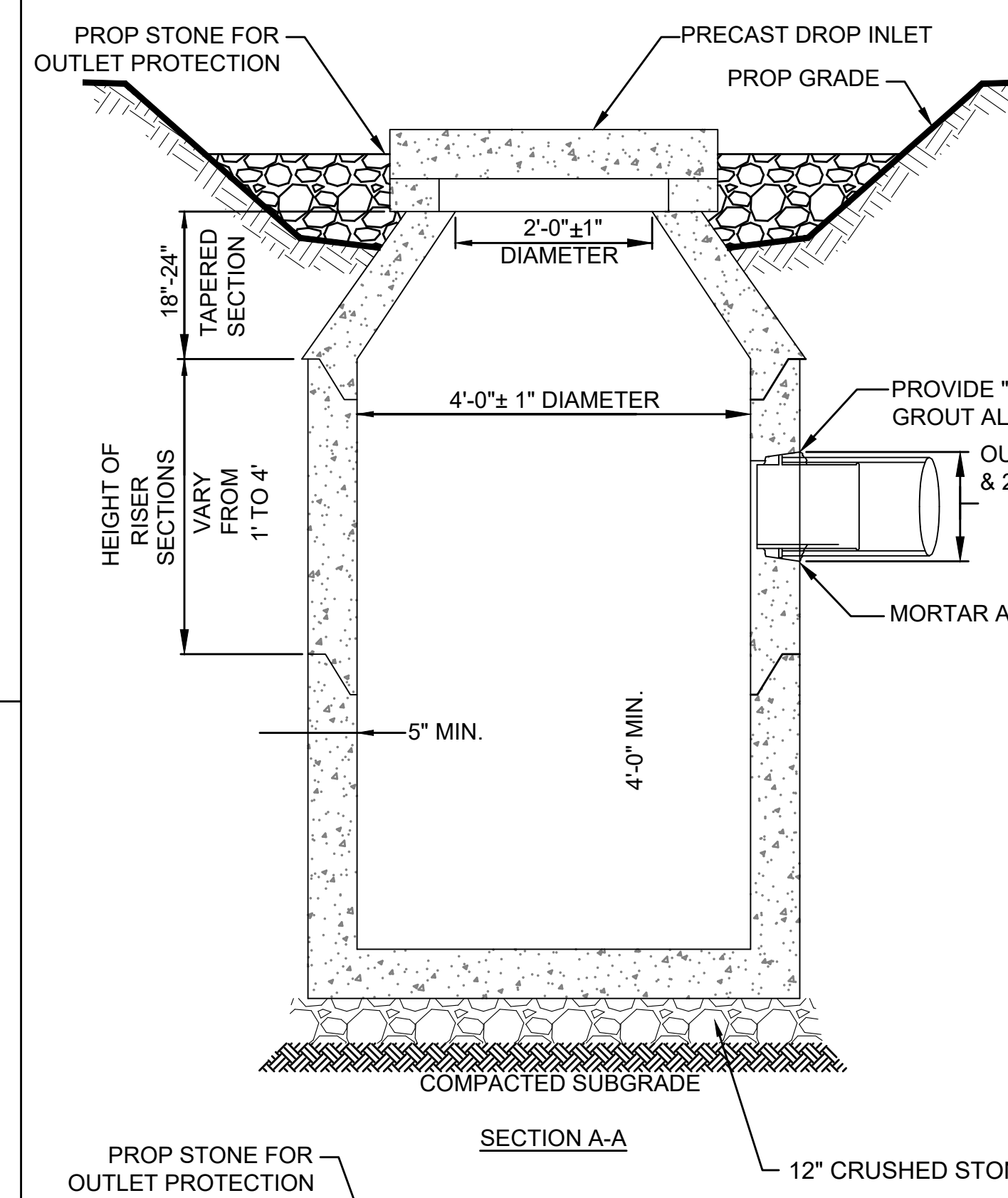
- NOTES:**
- CONTRACTOR SHALL FIELD VERIFY THAT THE DIFFERENCE BETWEEN CHECK DAM REFERENCE POINT ELEVATION AND ADJACENT ROADWAY ELEVATION IS NOT LESS THAN 6-INCHES. IF FIELD CONDITIONS DO NOT RESULT IN 6-INCH ELEVATION DIFFERENCE BETWEEN PROVIDED CHECK DAM REFERENCE POINT AND ADJACENT ROADWAY ELEVATION AT EDGE OF PAVEMENT, CONTRACTOR SHALL NOTIFY ENGINEER.
 - 12:1 SLOPE. STEEPER TRAVERSE FORESLOPES ARE NOT PERMISSIBLE WITHIN THE CLEAR ZONE.

SWALE CHECK DAM DETAIL
NOT TO SCALE

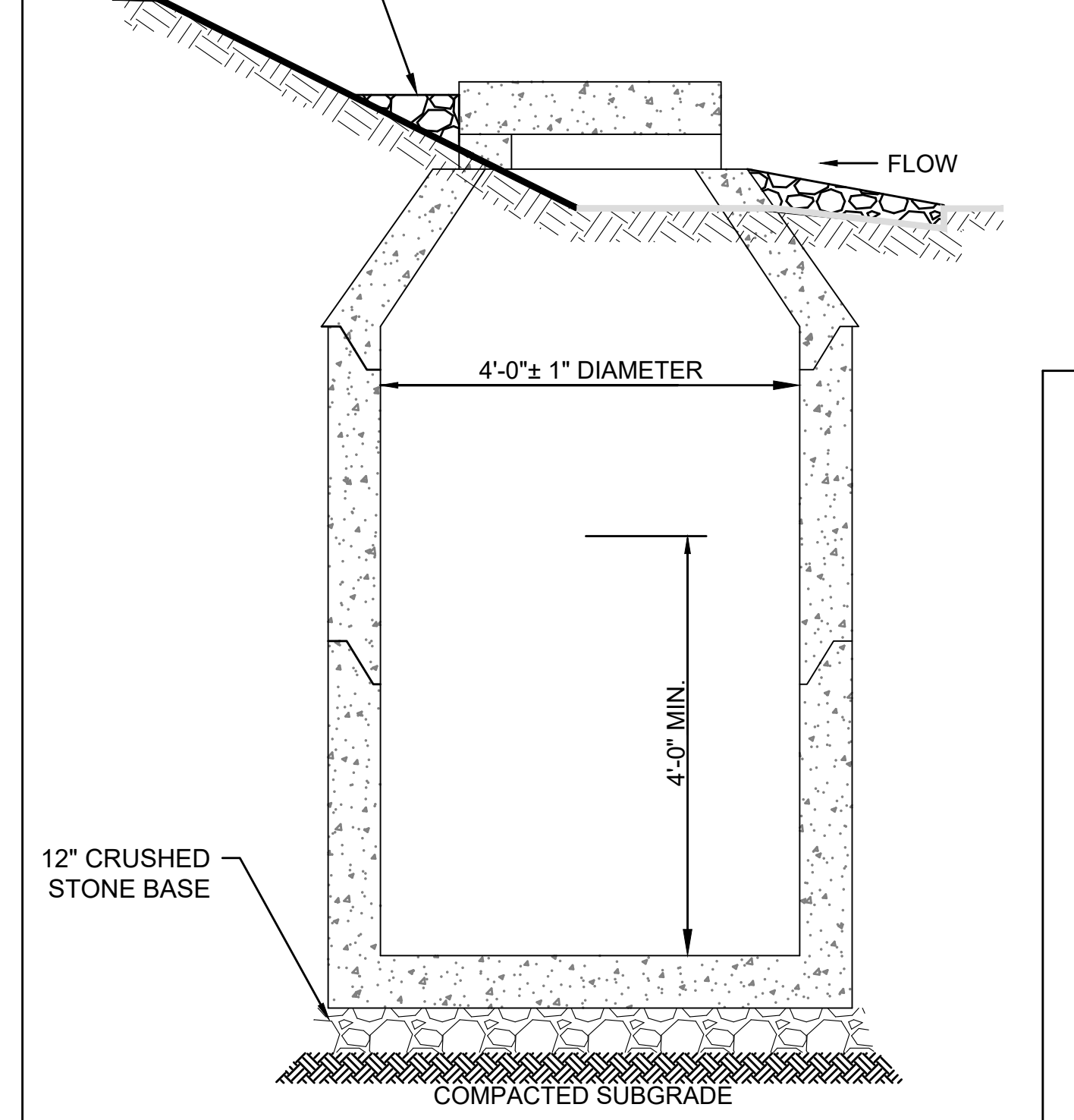


- NOTES:**
- ALL PRECAST JOINTS TO BE SEALED WITH BUTYL RUBBER.
 - DESIGN TO CONFORM TO H-20 LOADING.
 - HOOD SHALL BE "THE ELIMINATOR" OIL & FLOATING DEBRIS TRAP AS MANUFACTURED BY GROUND WATER RESCUE, INC., QUINCY, MA., TEL. 617-773-1128 ON THE WEB @ WWW.KLEANSTREAM.COM or APPROVED EQUAL.
 - CONTRACTOR HAS THE OPTION TO USE ALTERNATE TOP SLAB.
 - CATCH BASINS TO BE PROVIDED WITH HOODS - THE ELIMINATOR, OIL AND FLOATING DEBRIS TRAP OR EQUAL. COST OF HOOD TO BE INCLUDED IN CATCH BASIN COST.

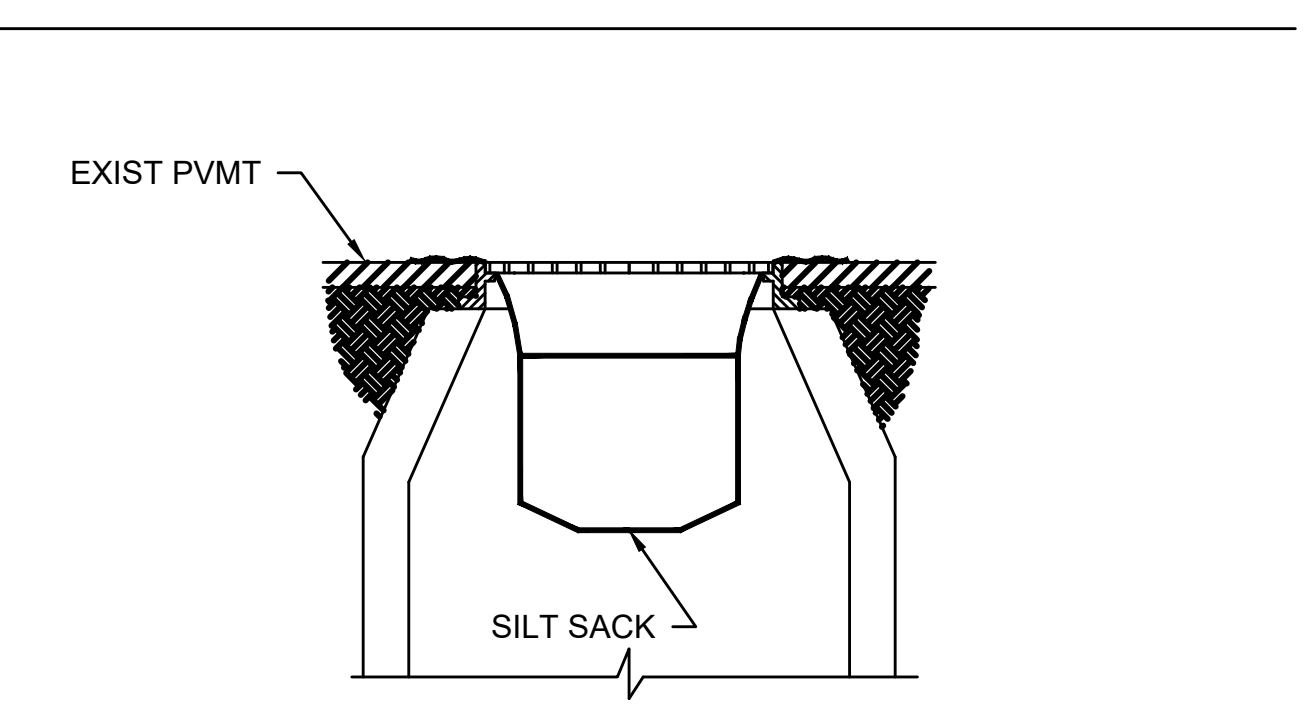
PRECAST CONCRETE CATCH BASIN
NOT TO SCALE



- NOTES:**
- THROAT OPENING ON ONE SIDE. ALIGN OPENING ALONG FLOW DIRECTION OF SWALE.
 - CRUSHED STONE NOT SHOWN FOR CLARITY.



PRECAST DROP INLET DETAIL
NOT TO SCALE



- NOTE:**
- SILT SACKS TO BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS ARE TO BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED AND REPLACED IF NECESSARY.

SILT SACK INLET PROTECTION
NOT TO SCALE

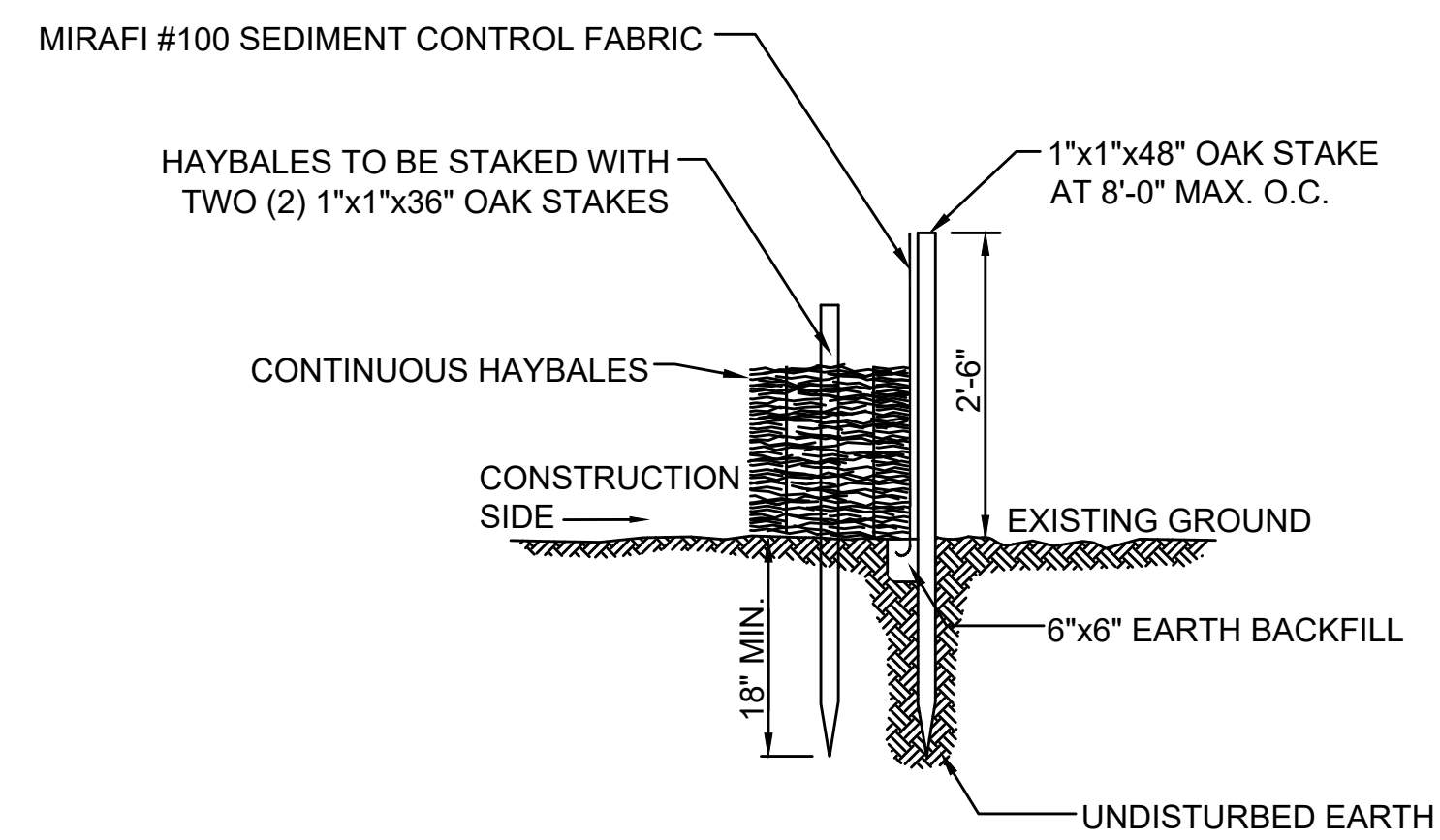
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	13	21
PROJECT FILE NO.		--	

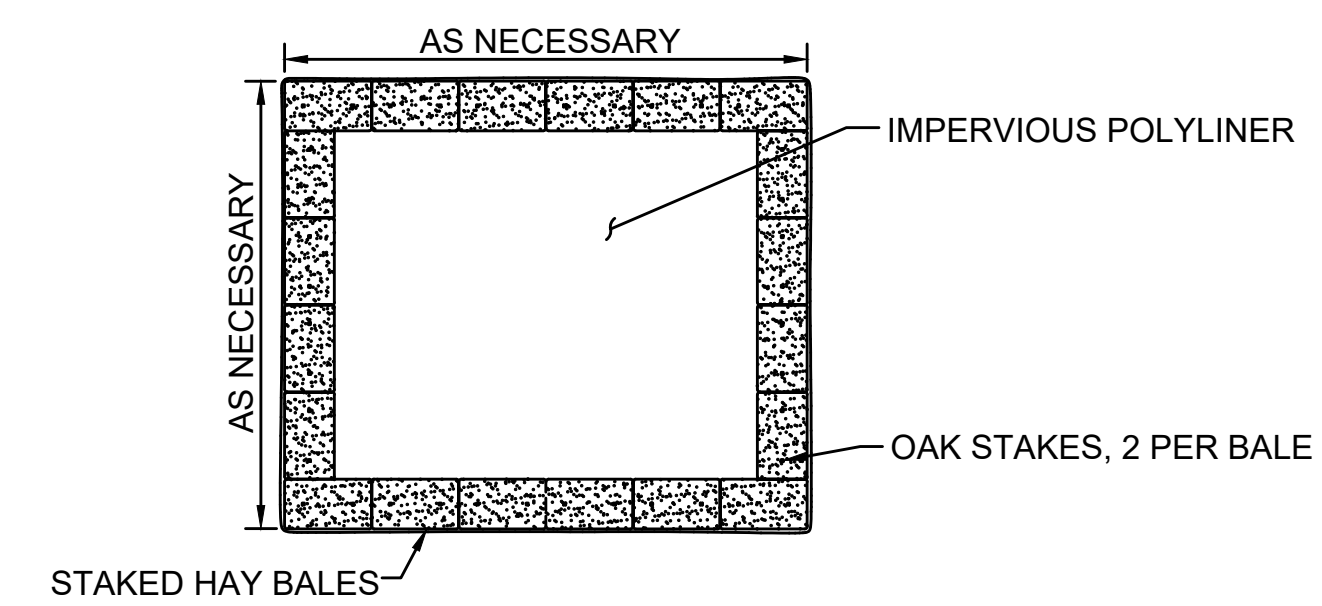
CONSTRUCTION DETAILS



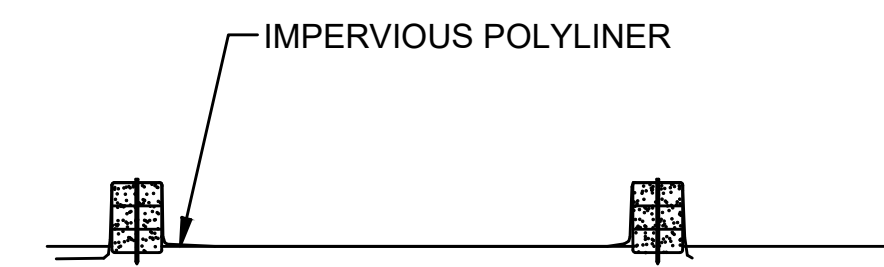
NOTES:

1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY TWO (2) 1"x1"x36" OAK STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. BALES SHALL BE REMOVED AND REPLACED WHEN THEY BECOME FILLED WITH SEDIMENT AND BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. BALES SHALL BE REMOVED WHEN THE EMBANKMENTS STABILIZE.
6. BALES TO BE TWINE BOUND.

SILT FENCE WITH HAYBALES
SCALE: NONE



PLAN VIEW



CROSS-SECTION

NOTE:

1. SUMPS TO BE CLEANED AND WASTE CONCRETE REMOVED AND PROPERLY DISPOSED OF UPON COMPLETION OF WORK AND AS NECESSARY.

CONCRETE WASHOUT AREA
SCALE: NONE

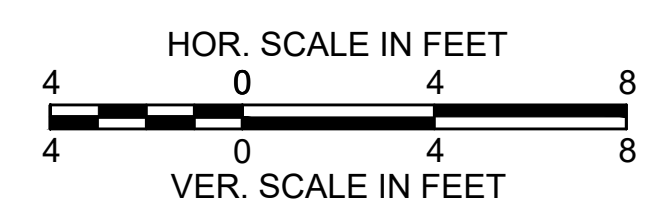
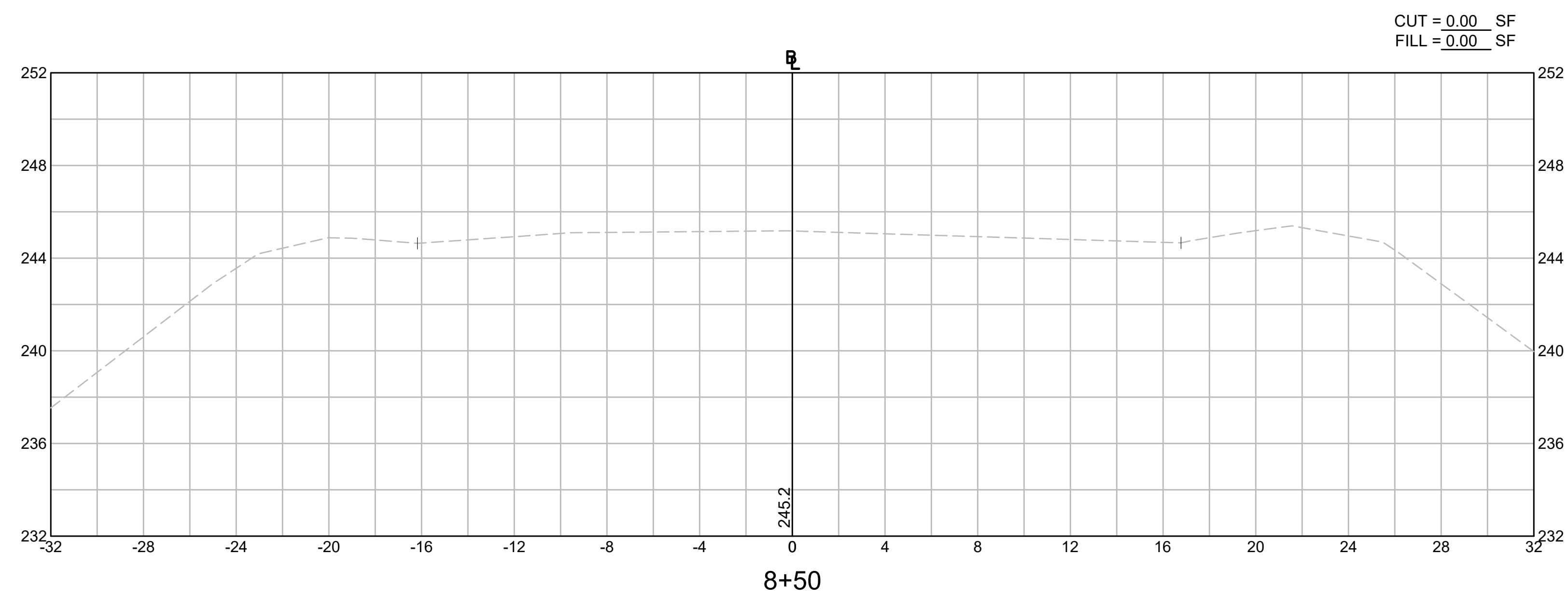
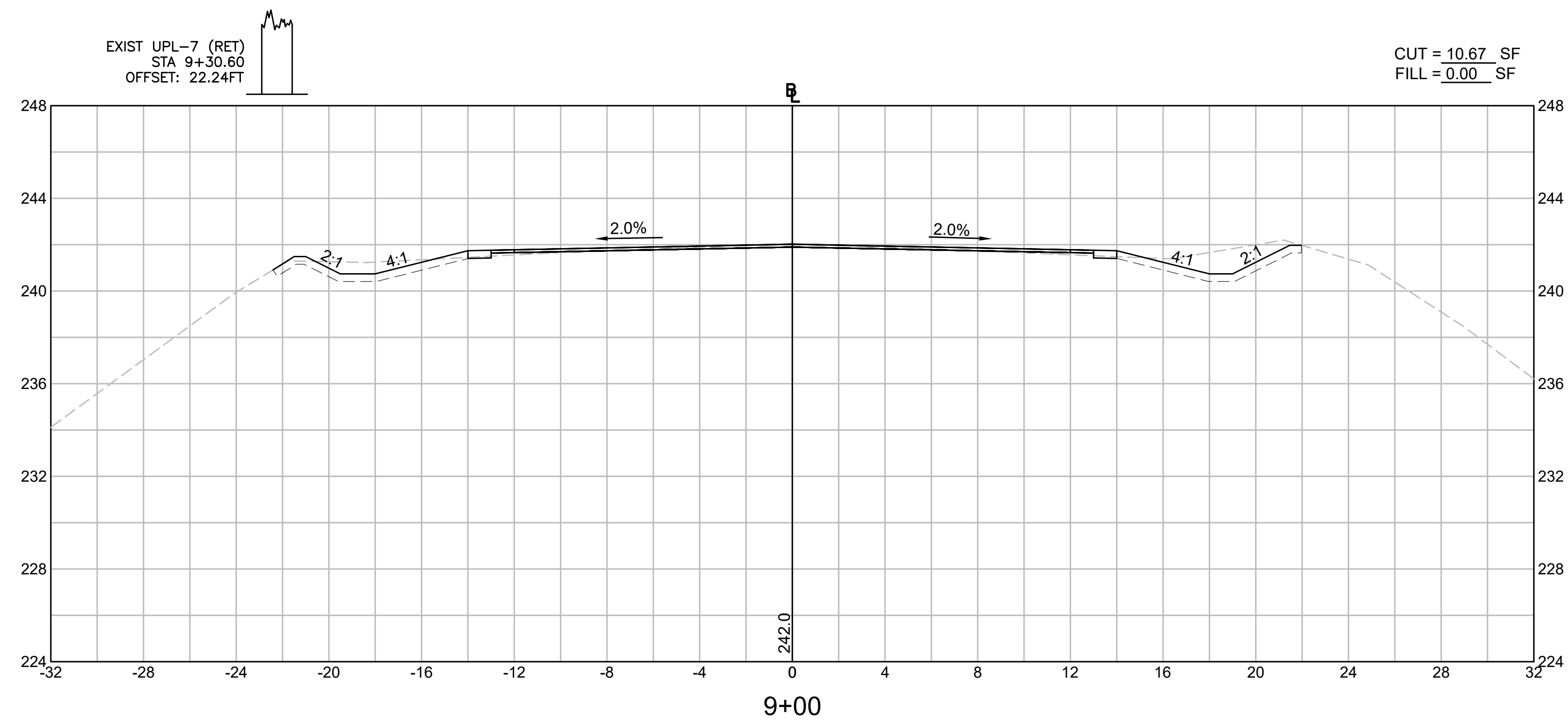
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	14	21
PROJECT FILE NO.		--	

CROSS SECTIONS



DEVENS ENTERPRISE COMMISSION ENDORSEMENT

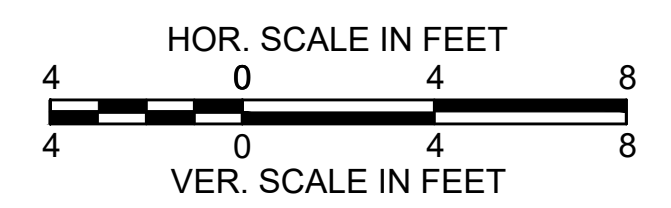
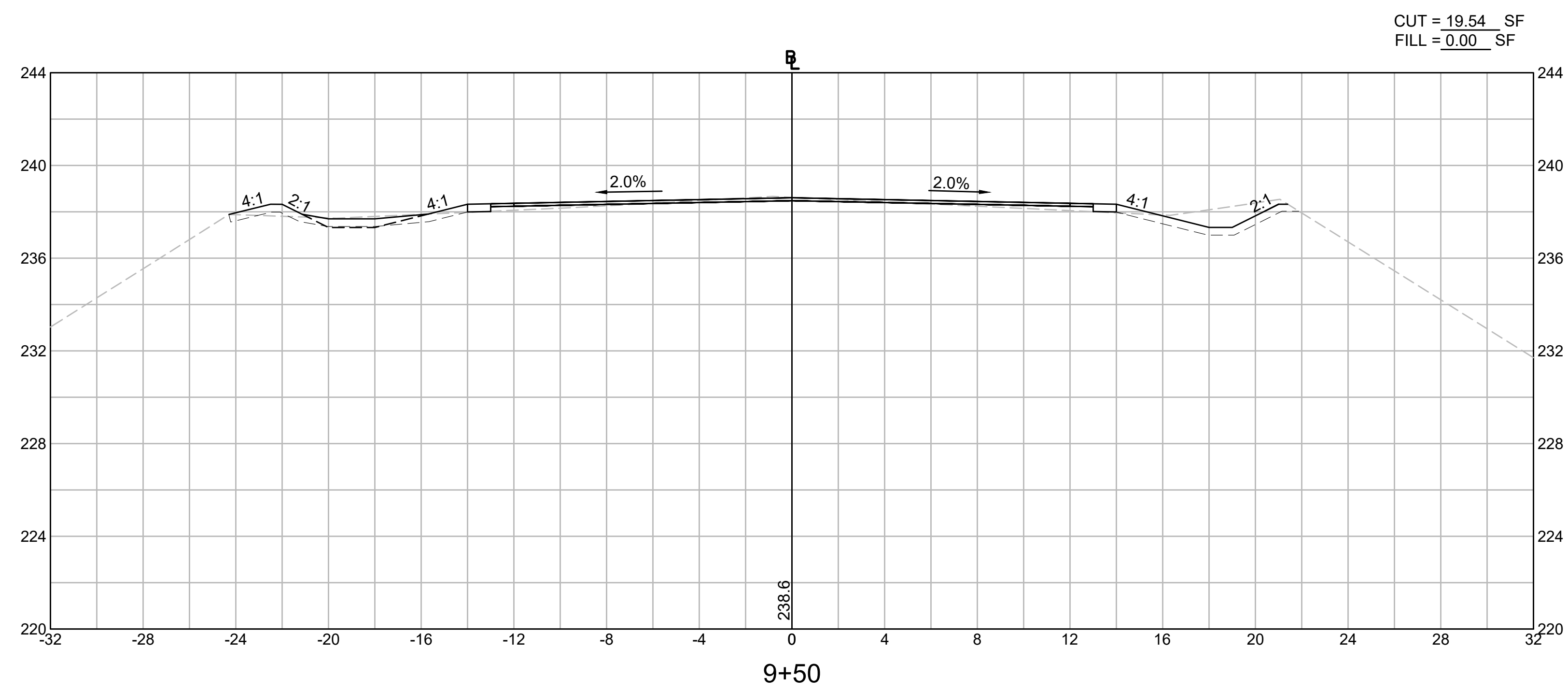
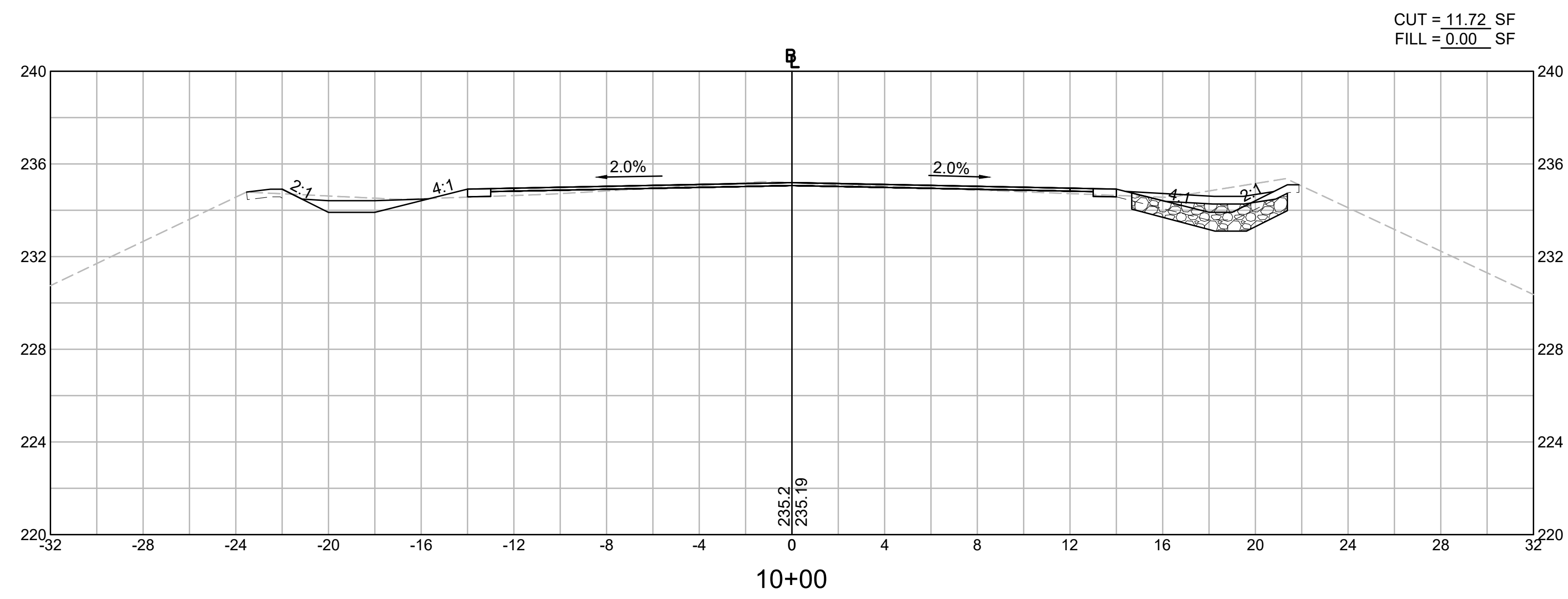
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**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	15	21

PROJECT FILE NO. --

CROSS SECTIONS



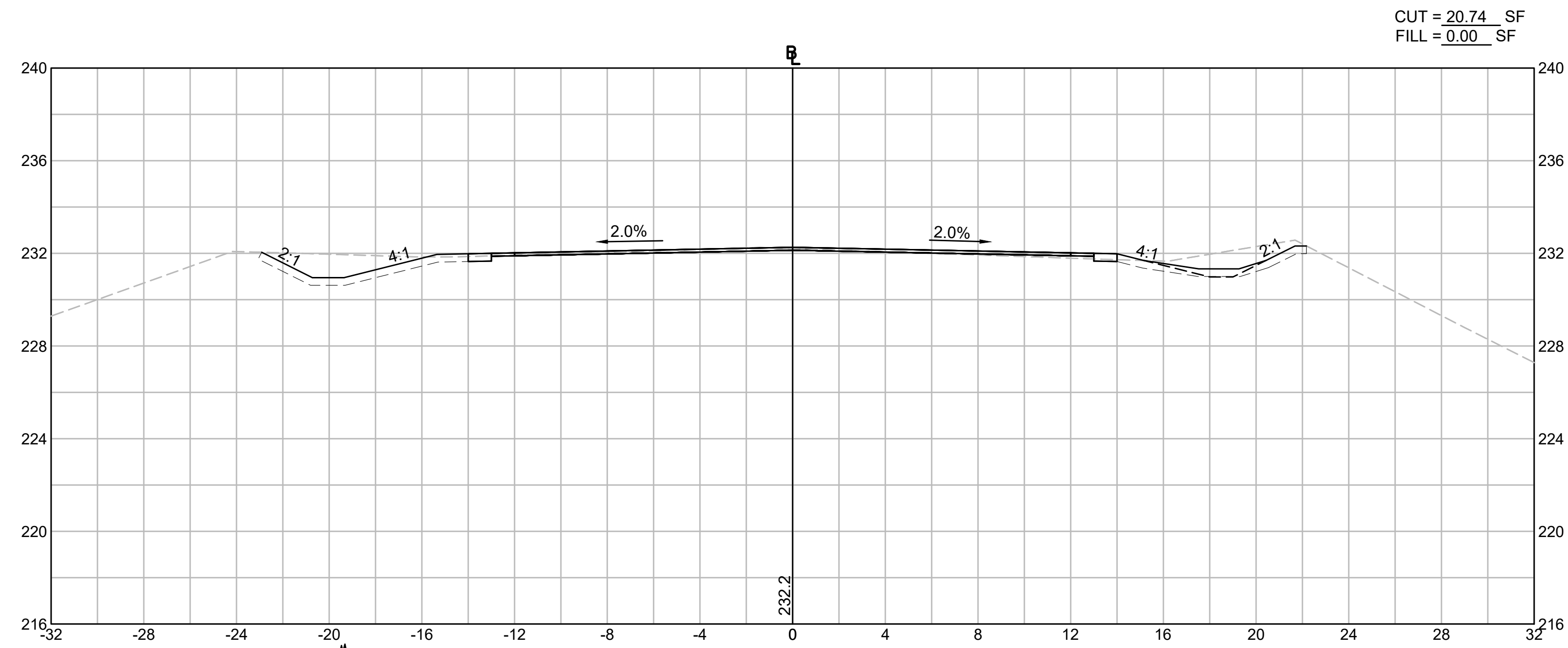
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

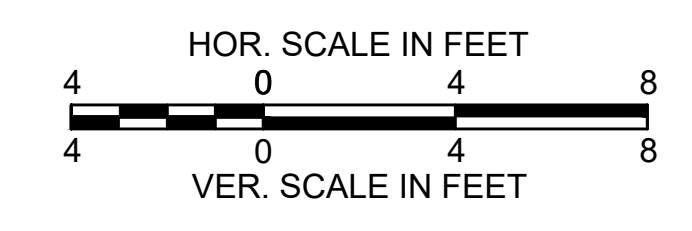
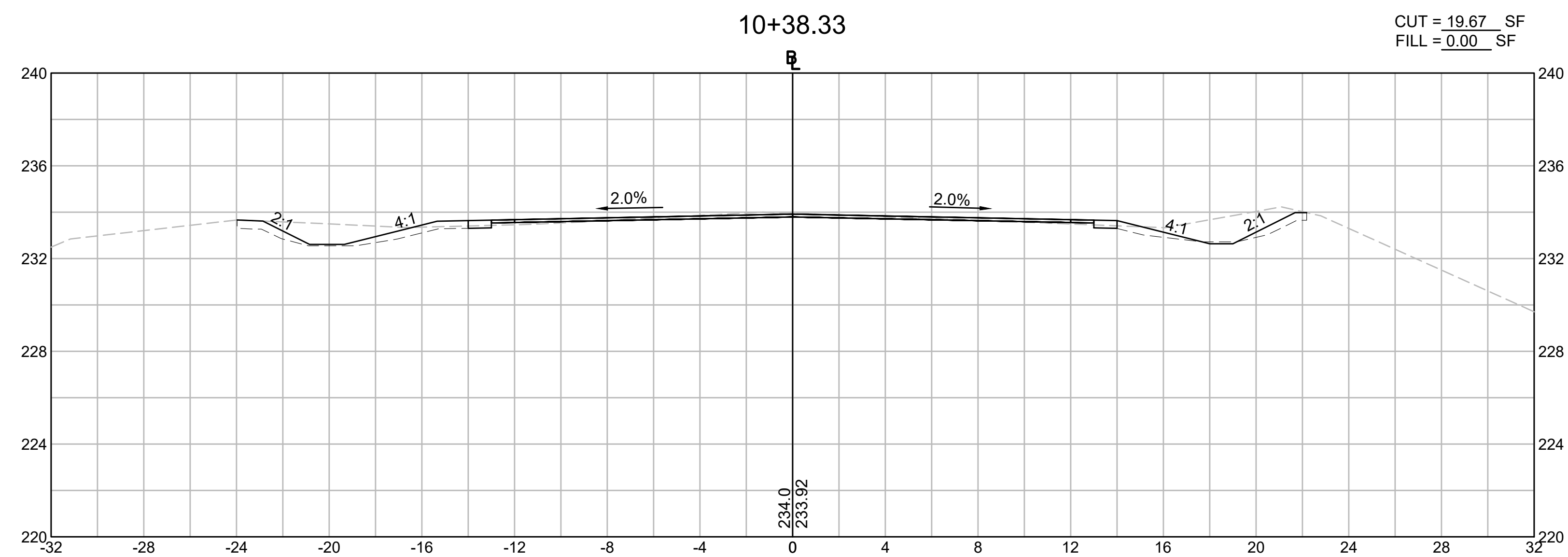
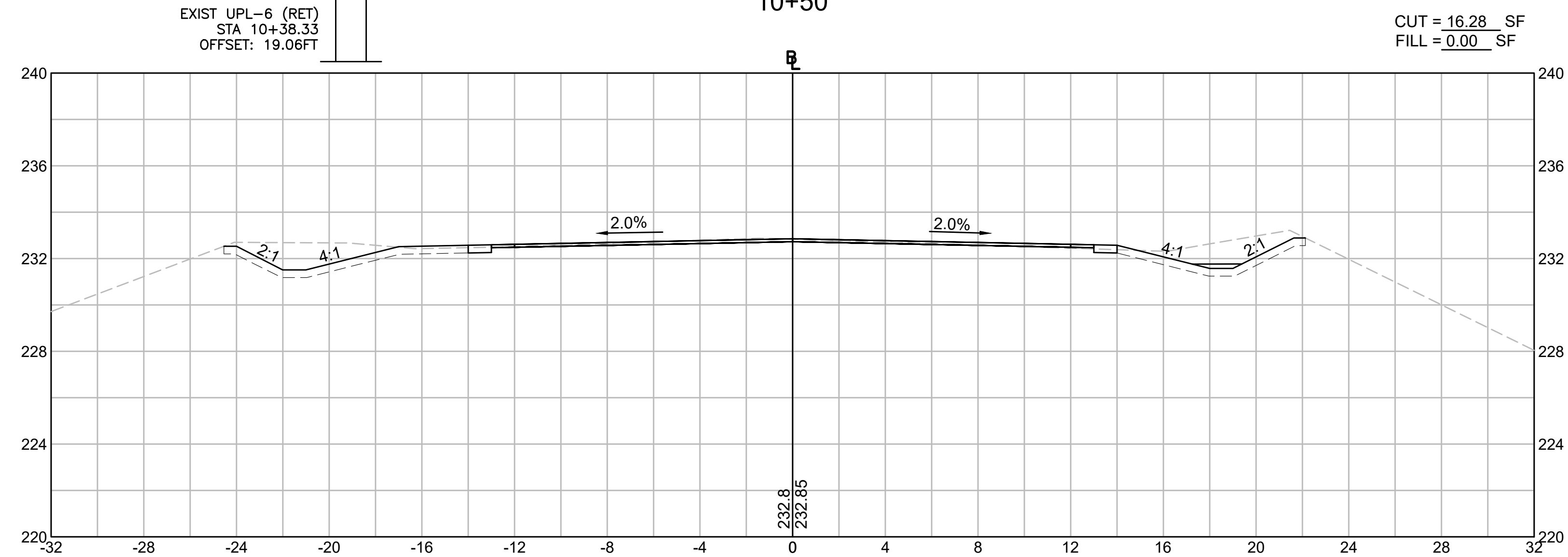
DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	16	21
PROJECT FILE NO.		--	

CROSS SECTIONS



EXIST. UPL-6 (RET)
STA 10+38.33
OFFSET: 19.06FT



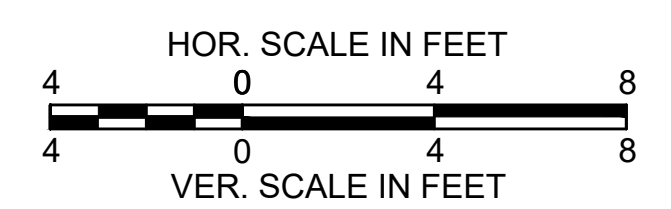
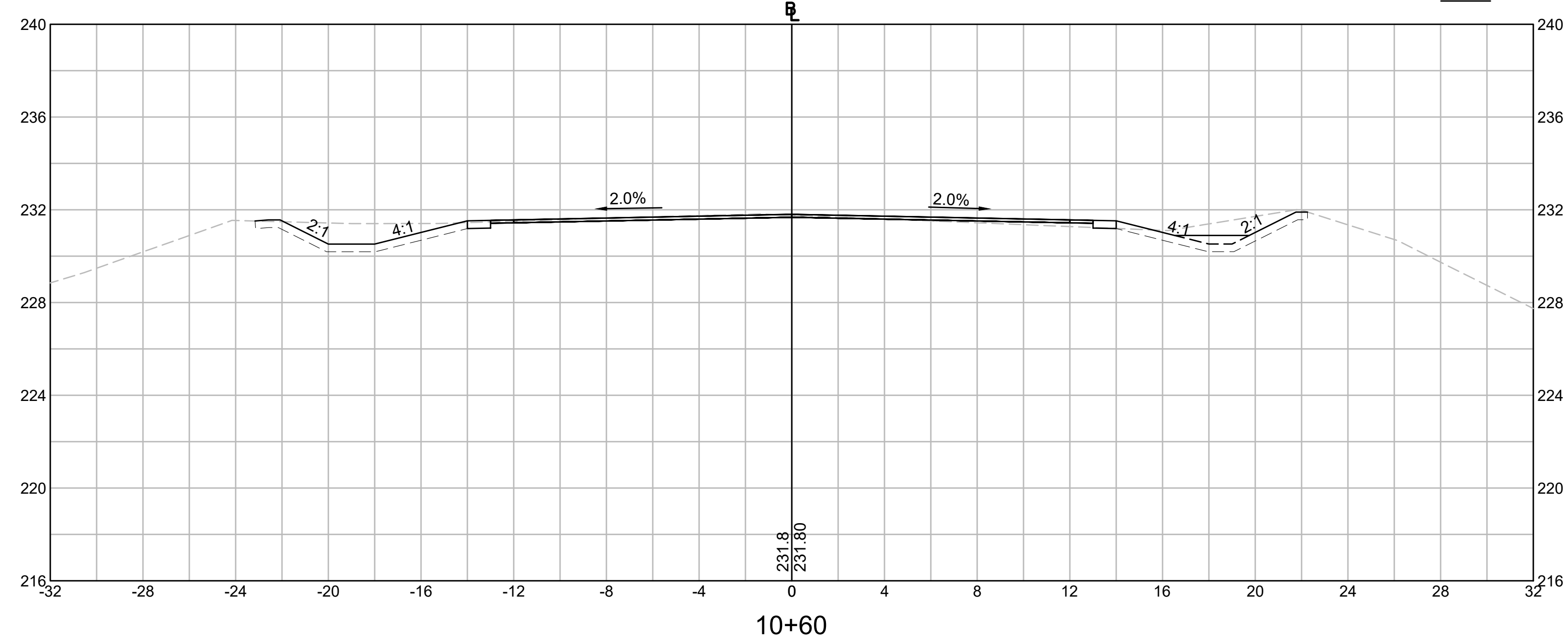
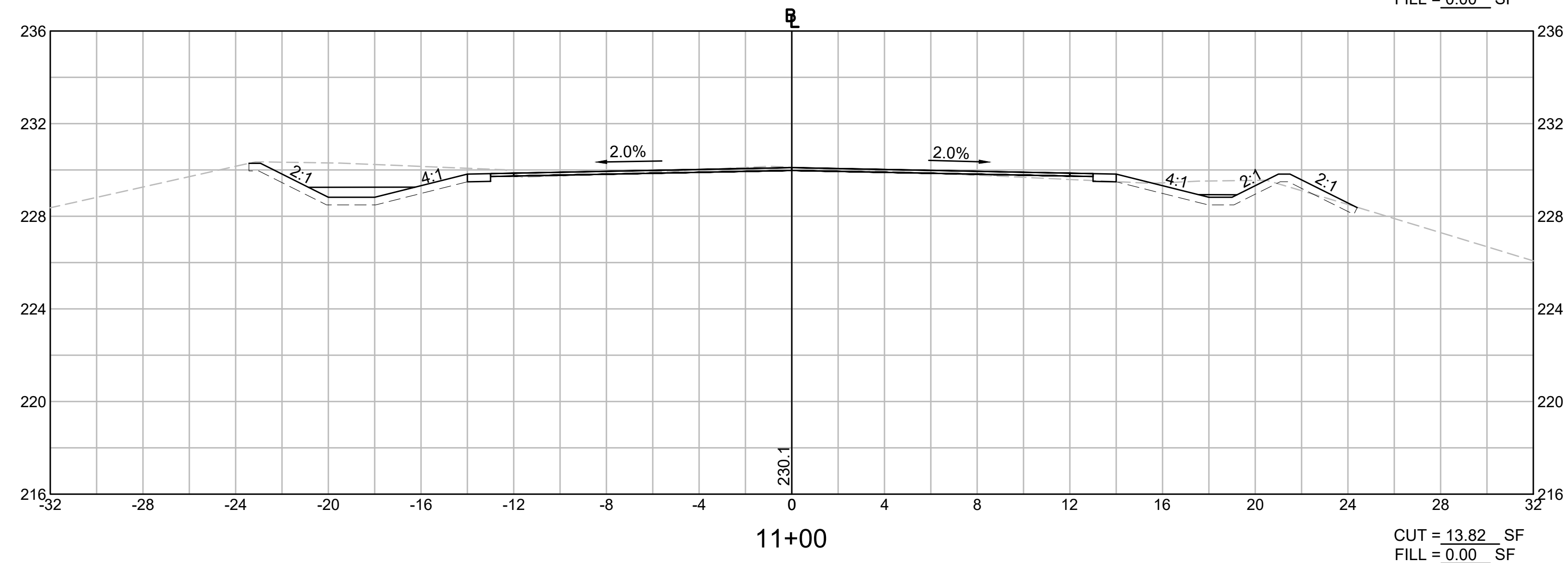
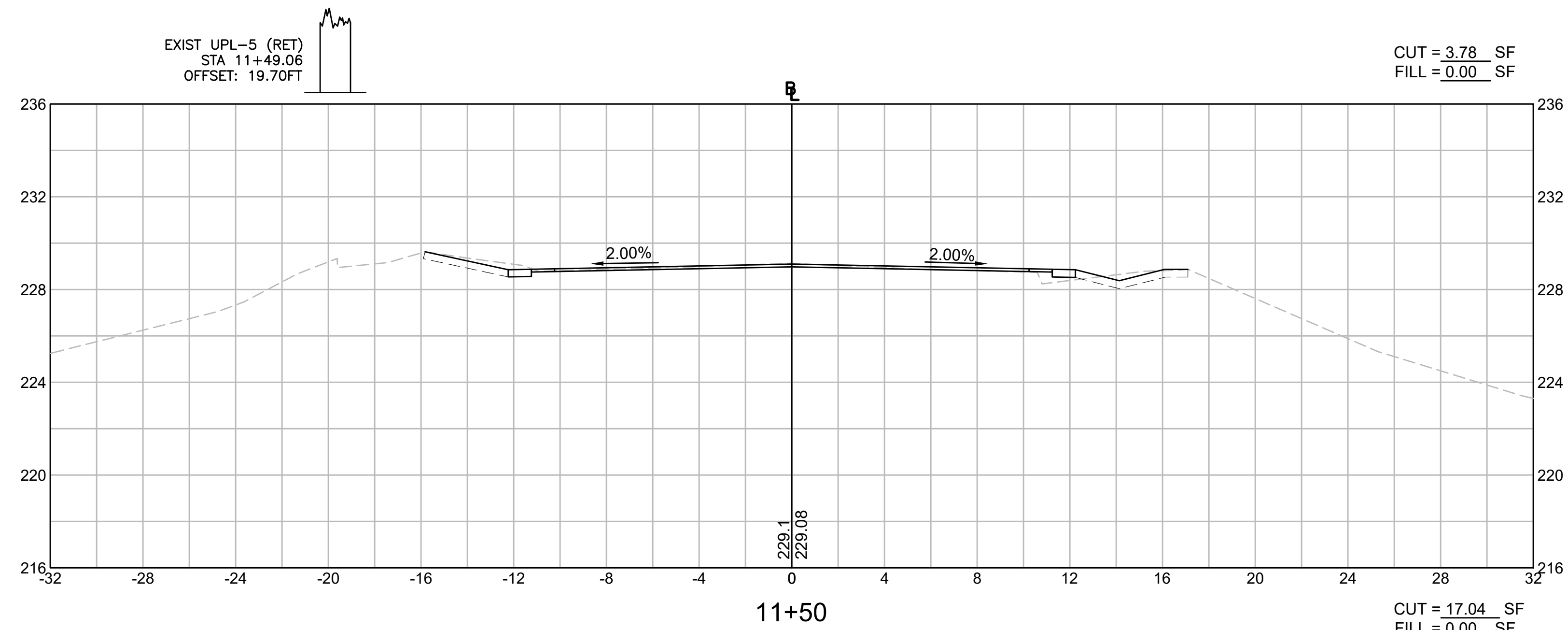
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

**DEVENS (SHIRLEY)
LOVELL ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	17	21
PROJECT FILE NO.		--	

CROSS SECTIONS



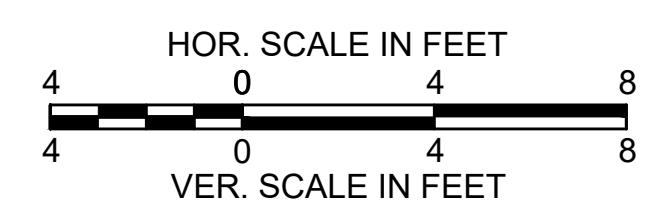
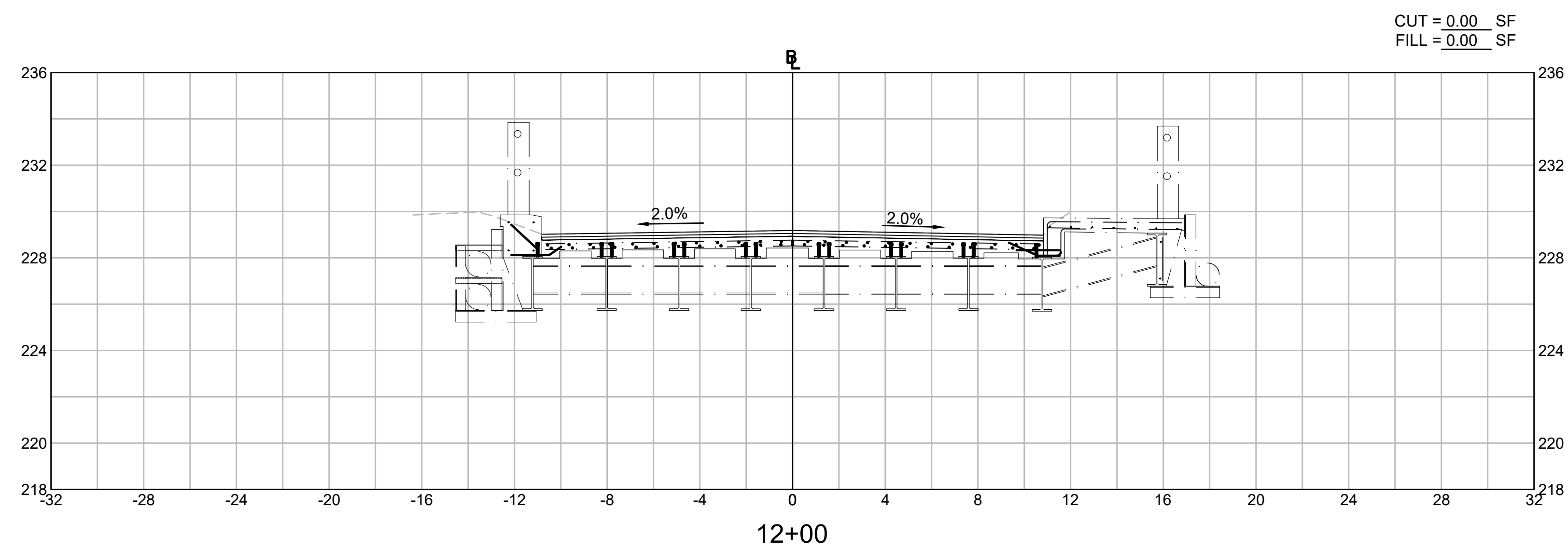
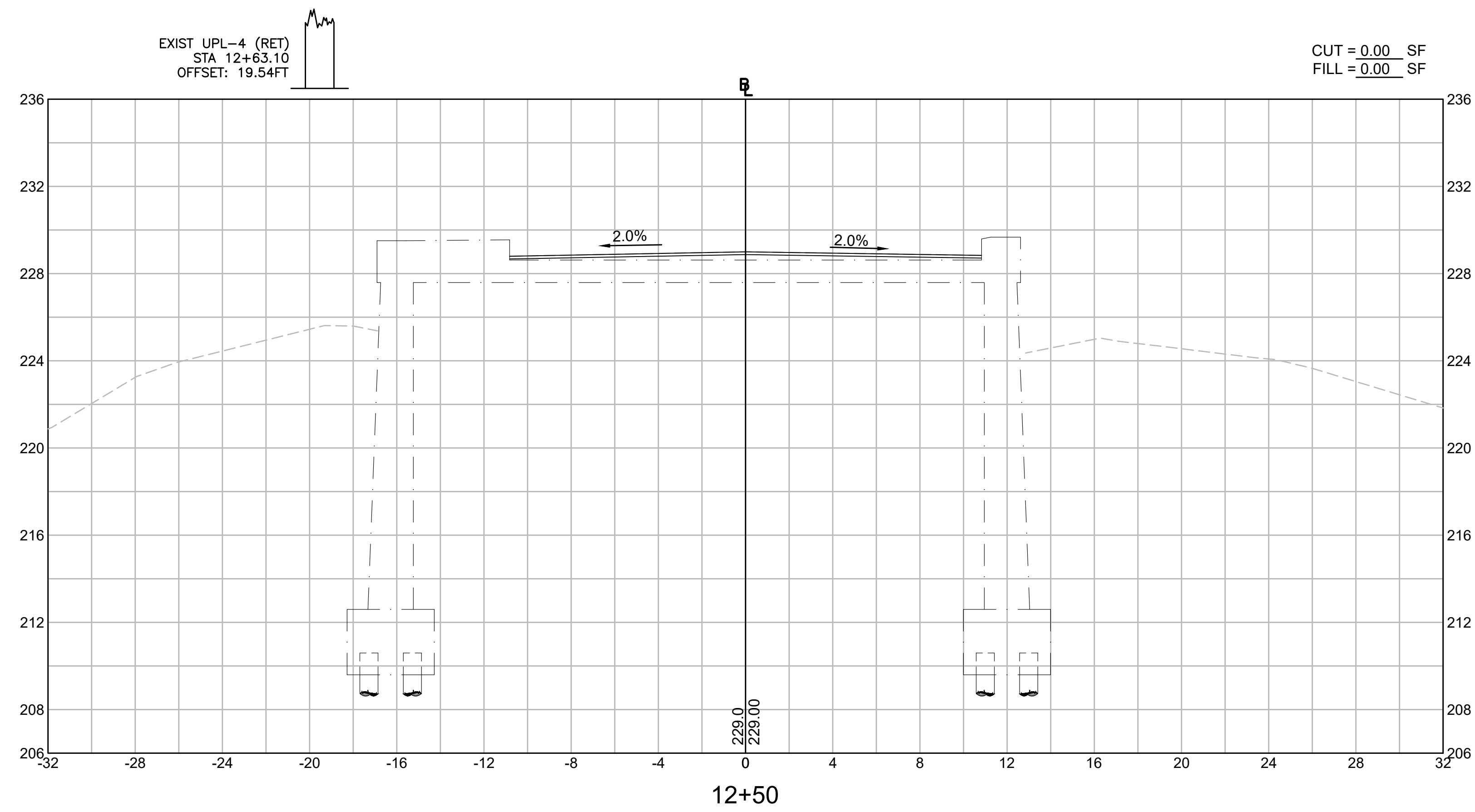
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	18	21
PROJECT FILE NO.		--	

CROSS SECTIONS



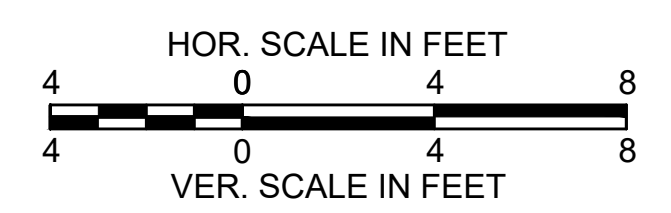
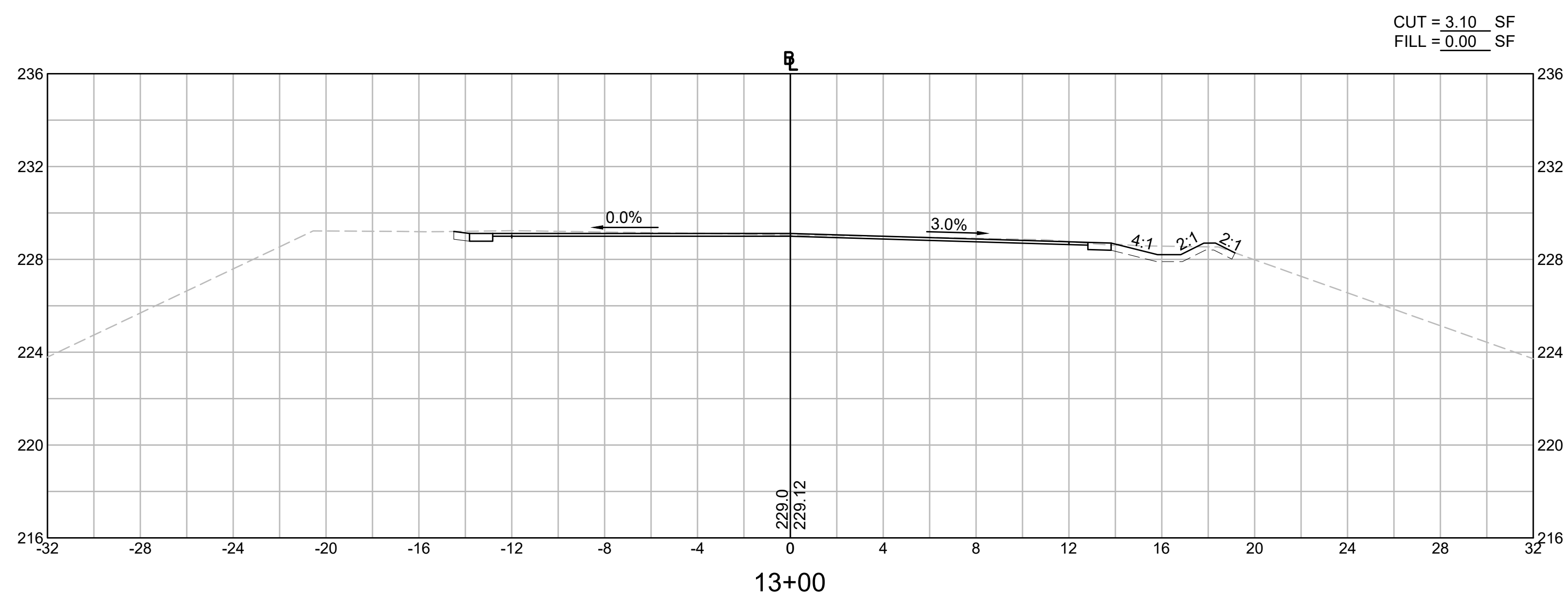
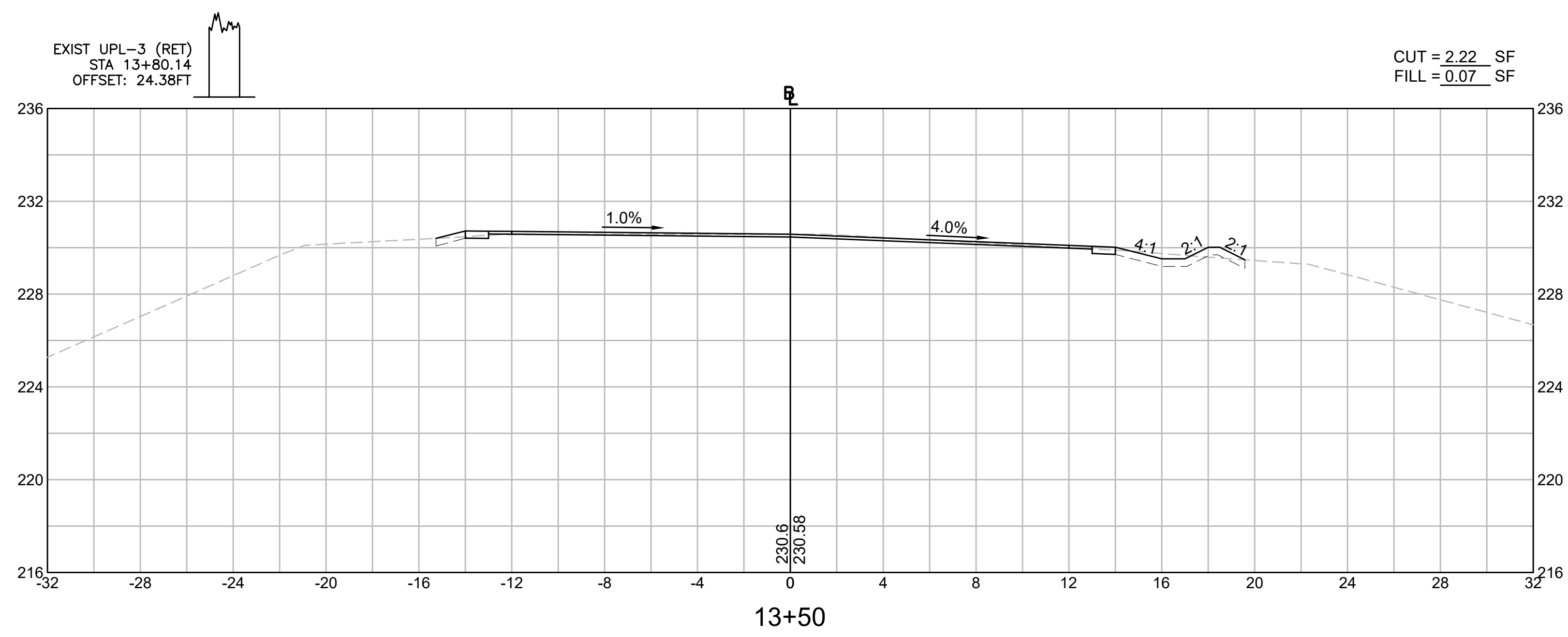
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	19	21
PROJECT FILE NO.		--	

CROSS SECTIONS



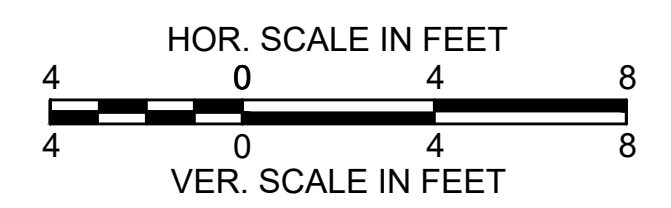
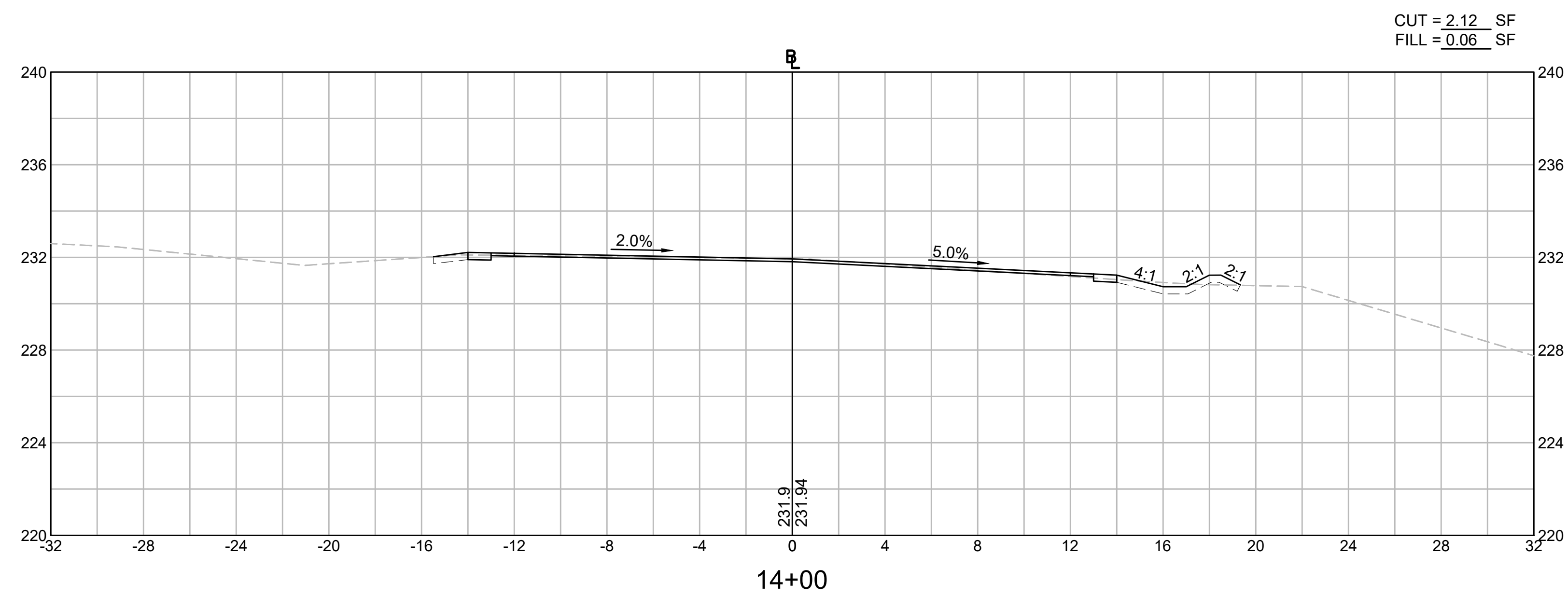
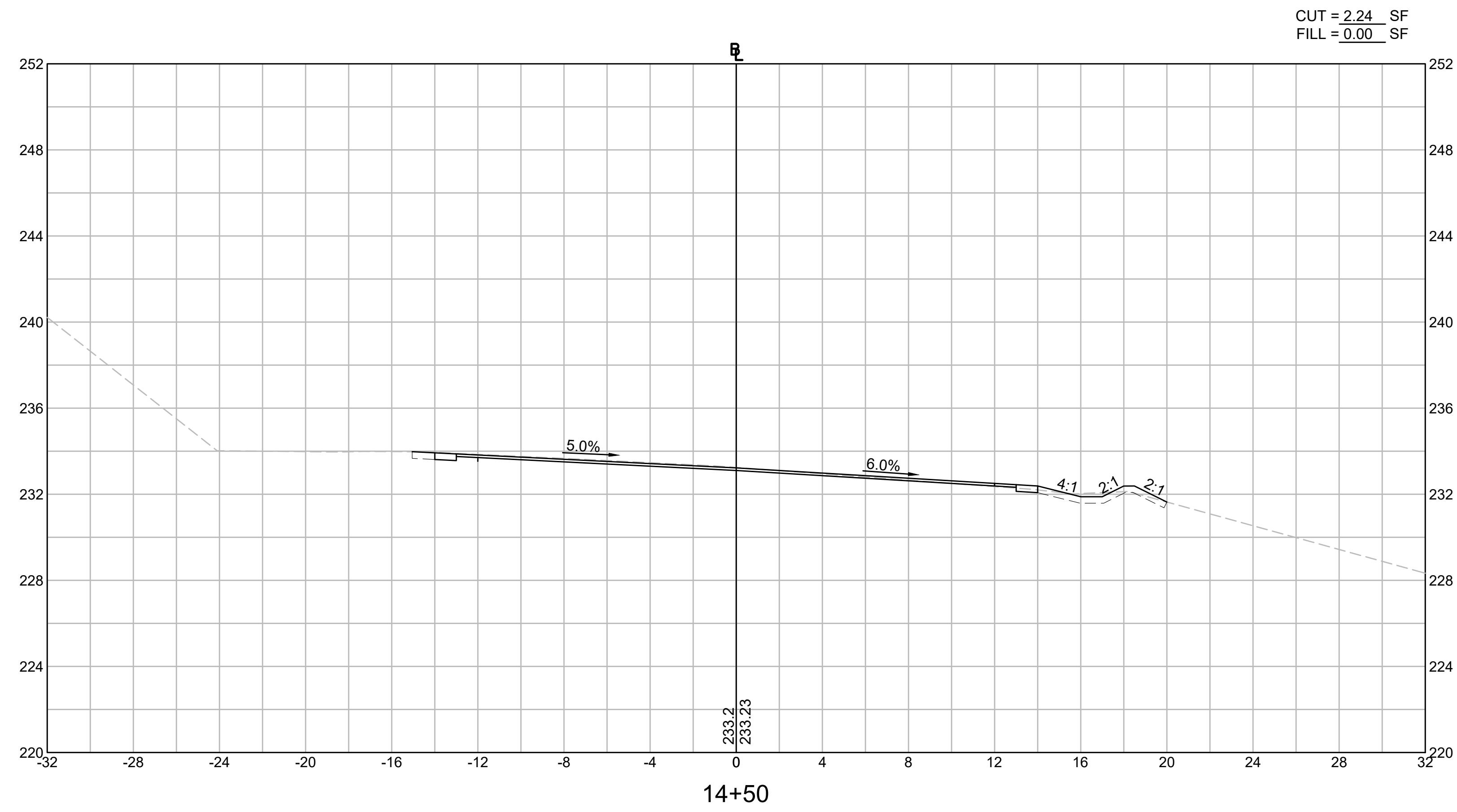
DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	20	21
PROJECT FILE NO.		--	

CROSS SECTIONS



DEVENS ENTERPRISE COMMISSION ENDORSEMENT

SIGNATURE: _____ DATE: _____

DEVENS (SHIRLEY)
LOVELL ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	--	21	21
PROJECT FILE NO.		--	

CROSS SECTIONS

