

# HAGGETTS POND RAIL TRAIL

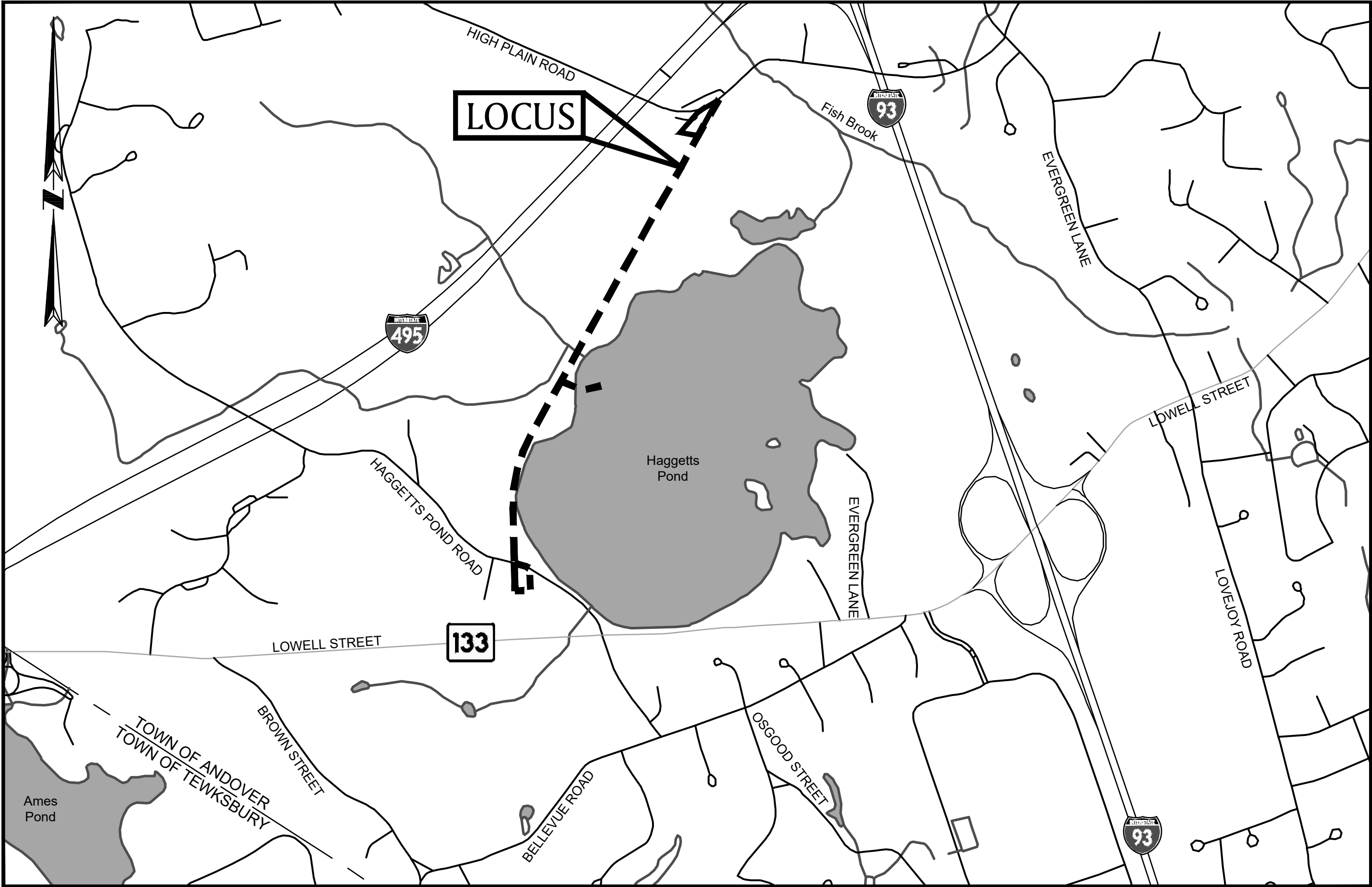
ANDOVER, MA

NOVEMBER 7, 2023

LATEST REVISION: AUGUST 29, 2024



PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA  
01810



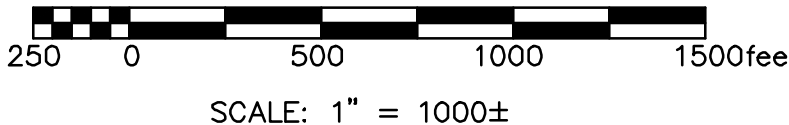
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PREPARED BY:

**BSC GROUP**  
300 Brickstone Square, Suite 203  
Andover, Massachusetts  
01810  
617 896 4300

### LOCUS MAP



ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION

**LEGEND**

EXISTING	DESC.	PROPOSED
AC.	ACRES	
BK	BOOK	
BIT CONC	BITUMINOUS CONCRETE	BIT CONC
■	CABLE MANHOLE	■
■	CATCH BASIN	■
CONC	CONCRETE	
⊙	DRAIN MANHOLE	⊙
⊖	ELECTRIC HANDHOLE	
⊖	ELECTRIC MANHOLE	⊖
GC	GAS GATE	GC
□	GRANITE CURB	
□	HANDHOLE	
□	HYDRANT	□
□	LIGHT POLE	□
□	MANHOLE	
N/F	NOW OR FORMERLY	
PG	PAGE	
■	PEDESTRIAN SIGNAL	
R=	RIM ELEVATION	
⊖	SEWER MANHOLE	⊖
SBC	SLOPED BITUMINOUS CURB	
SGC	SLOPED GRANITE CURB	
□	SIGN	□
□	SQUARE FEET	
⊙	TELEPHONE MANHOLE	⊙
⊙	TOP OF BELL	
⊖	TRAFFIC CONTROL BOX	
⊖	TRAFFIC SIGNAL	
⊖	WATER GATE	⊖
---	WATER LINE	---
---	TELEPHONE LINE	---
---	DRAIN LINE	---
---	SEWER LINE	---
---	SEWER FORCE MAIN	---
---	GAS LINE	---
---	ELECTRIC LINE	---
---	OVERHEAD WIRE	---
---	CABLE TELEVISION CONDUIT	---
---	CHAIN LINK FENCE	---
---	ELEC/TEL/CABLE	---
---	VERTICAL GRANITE CURB	---
---	BUILDING OVERHANG	---
---	ACCESSIBLE PARKING	---
---	MINOR CONTOUR	---
---	MAJOR CONTOUR	---
---	NUMBER OF PARKING SPACES	---
---	WETLAND DELINEATION	---
---	GUARD RAIL	---
---	STONE WALL	---
---	GRADE TO DRAIN	---

**UTILITY NOTES:**

- LOCATIONS OF UTILITIES AS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L., CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS; CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO SUCH EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT 1(888)344-7233 NO LESS THAN 72 HOURS (EXCLUSIVE OF SATURDAYS, SUNDAYS AND HOLIDAYS) TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
- EXISTING UTILITIES ARE A COMPILATION OF ON THE GROUND SURVEY AND DIGITIZED INFORMATION FROM PREVIOUSLY APPROVED DESIGN PLANS BASED ON FIELD OBSERVATIONS. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO FIELD LOCATE EXISTING UTILITIES. CONTRACTOR SHALL CONDUCT TEST PITS, AS NEEDED, TO LOCATE EXISTING UTILITIES. ALL LOCATION WORK SHALL BE CONDUCTED PRIOR TO CONSTRUCTION AND COORDINATED WITH THE ENGINEER.
- ALL UNDERGROUND STRUCTURES AND UTILITIES SHALL BE CAPABLE OF WITHSTANDING HS-20 WHEEL LOADS.
- RIM ELEVATIONS OF PROPOSED MANHOLES AND ASSOCIATED STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS SHALL BE SET FLUSH AND CONSISTENT WITH THE PROPOSED FINISHED GRADES.
- ALL DRAINAGE STRUCTURES SHALL BE CLEANED AT COMPLETION OF THE PROJECT.

**EARTHWORK/GRADING NOTES:**

- CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO EARTHWORK OPERATION AND MAINTAIN ALL EROSION CONTROL MEASURES AND SEEDED EMBANKMENTS DURING CONSTRUCTION. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH EPA'S NPDES PERMITTING FOR CONSTRUCTION ACTIVITIES, AS WELL AS ANY EROSION AND SEDIMENTATION CONTROL PERMIT ISSUED FOR THIS PROJECT.
- THE CONTRACTOR SHALL GIVE FOURTY-EIGHT (48) HOUR NOTICE, OR AS REQUIRED BY PROJECT PERMITS, TO PERTINENT TOWN DEPARTMENTS BEFORE COMMENCING WORK IN THE FIELD.

**GENERAL EROSION CONTROL NOTES:**

- THE PROPOSED PROJECT REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES) FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) UNDER THE 2022 CONSTRUCTION GENERAL PERMIT (CGP) FOR MASSACHUSETTS.
- SEDIMENT BASINS SHALL BE APPROPRIATELY SIZED AND LOCATED/RELOCATED BY THE CONTRACTOR DURING EARTHWORK OPERATIONS.
- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SUITABLE EROSION AND SEDIMENTATION CONTROL DEVICES ON SITE DURING CONSTRUCTION AS REQUIRED TO PREVENT SILT FROM LEAVING THE SITE INCLUDING CONSTRUCTION ENTRANCES AND PERIMETER SEDIMENT CONTROLS. SILT SHALL NOT BE ALLOWED BEYOND CONSTRUCTION LIMITS.
- EROSION CONTROL SHALL, AT MINIMUM, BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ADDITIONAL EROSION CONTROLS AS NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY BUILDUP OF SEDIMENT WHICH ESCAPES FROM THE SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING SILT AND DEBRIS OUT OF ALL STORM DRAINAGE STRUCTURES UPON THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TEMPORARY EROSION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FINES LEVIED AGAINST THE SITE FOR VIOLATIONS OF EROSION CONTROL REGULATIONS.
- CONTRACTOR SHALL STABILIZE ALL AREAS WITH EXPOSED SOIL WHICH WILL NOT BE DISTURBED BY GRADING OPERATIONS FOR A PERIOD OF 14 DAYS OR MORE IN ACCORDANCE WITH THE SWPPP. IF WORK ON THIS PROJECT IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL FACILITIES IN GOOD CONDITION DURING THE SUSPENSION OF WORK.
- SPRINKLE OR APPLY DUST SUPPRESSERS TO KEEP DUST WITHIN TOLERABLE LIMITS AT THE CONSTRUCTION SITE.
- SILT SACS SHALL BE INSTALLED IN ALL CATCH BASINS, WITH PERIODIC CLEANING AND/OR REPLACING OF THE FILTER FABRIC, WHEN NECESSARY, THROUGHOUT THE DURATION OF THE CONSTRUCTION.
- ALL STOCKPILE LOCATIONS SHALL BE LOCATED OUTSIDE THE 100-FT BUFFER ZONES SHOWN ON THE PLANS.

**DURING CONSTRUCTION:**

- THE CONTRACTOR SHALL INSPECT THE SITE IN ACCORDANCE WITH THE SWPPP, AND AT A MINIMUM OF ONCE A WEEK TO INSURE THAT EROSION OF SLOPES, STOCKPILES, ETC. ARE NOT OCCURRING. IN INSTANCES WHERE EROSION IS OBSERVED, SILT FENCE/HAYBALES SHALL BE INSTALLED DOWN GRADIENT OF ERODING AREAS. APPROPRIATE REPAIRS TO THE SEDIMENT CONTROLS SHALL BE MADE AS NECESSARY.
- INSTALL SILT SACS UNDER ALL CATCH BASIN RIMS. SILT SACS SHALL BE INSPECTED ONCE A WEEK AND WITHIN 24 HOURS OF A 1/4 INCH OR GREATER RAIN STORM EVENT TO INSURE THAT DAMAGE TO THE SILT SACS HAS NOT OCCURRED. APPROPRIATE REPAIRS TO THE FILTER FABRIC SHALL BE MADE AS NECESSARY.
- CONSTRUCTION ENTRANCES SHALL BE INSPECTED WEEKLY AND AFTER HEAVY RAINS OR HEAVY USE. THE CONSTRUCTION ENTRANCE SHALL BE TOP DRESSED WITH NEW STONE ONCE THE ENTRANCE BECOMES COMPLETELY CLOGGED WITH MUD AND SOIL PARTICLES.
- SEDIMENT BEHIND PERIMETER SEDIMENT CONTROLS SHALL BE REMOVED ONCE SEDIMENT REACHES A LEVEL OF DEPOSITION EQUAL TO HALF THE HEIGHT OF THE BARRIER OR LOWER IF RECOMMENDED BY THE MANUFACTURER.
- ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE INFORMED THAT EQUIPMENT, MACHINERY, AND VEHICLE STORAGE, AND REFUELING OPERATIONS SHALL BE SITUATED IN UPLAND AREAS AT A DISTANCE GREATER THAN 100- FEET FROM WETLAND RESOURCES (PROPOSED HAGGETTS POND PARKING AREAS) UNLESS OTHERWISE APPROVED BY THE ANDOVER CONSERVATION COMMISSION. ALL MACHINERY SHALL BE CHECKED DAILY FOR LEAKING FLUIDS.
- DURING WORK ON THIS PROJECT, THERE SHALL BE NO DISCHARGE OR SPILLAGE OF FUEL, OIL, OR OTHER POLLUTANTS, INCLUDING SEDIMENTS, INTO ANY PART OF THE SITE. THE APPLICANT SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT THE RELEASE OF POLLUTANTS BY IGNORANCE, ACCIDENT, OR VANDALISM.
- ALL CONTRACTORS SHALL BE INFORMED THAT NO CLEANING AND/OR POWER WASHING OF EQUIPMENT IS ALLOWED ON SITE.
- VEHICLES EXITING THE CONSTRUCTION SITE SHALL NOT BE ALLOWED TO TRACK-OUT SEDIMENT, MUD, OR OTHER MATERIALS ONTO PUBLIC OR PRIVATE ROADS. WHERE TRACK-OUT OF SUCH MATERIALS HAS OCCURRED ONTO A ROADWAY, IT SHALL BE SWEEP OFF THE ROAD BY THE END OF THE SAME WORKDAY.

**SITE PREPARATION AND DEMOLITION:**

- AREAS OUTSIDE THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER. ALL AREAS DISTURBED DURING CONSTRUCTION NOT COVERED WITH BUILDINGS, STRUCTURES, OR PAVEMENTS SHALL RECEIVE FOUR INCHES OF LOAM AND SEED, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. ALL CONSTRUCTION ACTIVITY SHALL BE IN ACCORDANCE WITH OSHA REGULATIONS AND LOCAL & STATE REQUIREMENTS.
- ALL MATERIALS SHALL BE DISPOSED OF PER APPLICABLE LAWS AND REGULATIONS.
- WHERE EXISTING PAVEMENT TO BE REMOVED MEETS EXISTING PAVEMENTS TO REMAIN, CONTRACTOR SHALL SAWCUT A STRAIGHT LINE UNLESS INDICATED OTHERWISE. ADDITIONALLY, EXISTING PAVEMENT SHALL BE SAWCUT, AS NECESSARY, FOR ALL PROPOSED UTILITY CONNECTIONS WITHIN THE RIGHT-OF-WAY. ALL WORK SHALL CONFORM TO STANDARD SPECIFICATIONS & DETAILS OF THE TOWN OF ANDOVER AND, "CONSTRUCTION STANDARDS" OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASS DOT) HIGHWAY DIVISION, LATEST EDITION, AND THESE CONTRACT DOCUMENTS.
- ALL EXISTING REMAINING UTILITIES SHALL BE PROTECTED, UNLESS NOTED OTHERWISE.

**GENERAL CONSTRUCTION NOTES:**

- THIS PLAN IS BASED UPON AN ON-THE-GROUND SURVEY PERFORMED BY BSC GROUP, INC. IN JUNE- NOVEMBER 2023.
- HORIZONTAL DATUM IS BASED UPON NAD '83 AS DERIVED VIA GPS OBSERVATIONS PERFORMED BY BSC GROUP, INC. ON JUNE 19, 2023.
- VERTICAL DATUM IS BASED UPON NAVD '88 AS DERIVED VIA GPS OBSERVATIONS PERFORMED BY BSC GROUP, INC. ON JUNE 19, 2023. TBM SET: MAG NAIL ELEV.:132.18' TBM SET: MAG NAIL ELEV.: 127.67'
- LOCUS IS LOCATED WITHIN ZONES X & X SHADED AS GRAPHICALLY DEPICTED ON FLOOD INSURANCE RATE MAP NUMBER 25009C0214F & 25009C0212F, EFFECTIVE DATE JULY 3, 2012.
- WETLAND RESOURCE AREAS SHOWN HEREON WERE DELINEATED BY BSC GROUP, INC. BETWEEN JUNE - NOVEMBER 2023.
- ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO STANDARD SPECIFICATIONS & DETAILS OF THE TOWN OF ANDOVER AND, "CONSTRUCTION STANDARDS" OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASS DOT) HIGHWAY DIVISION, LATEST EDITION, AND THESE CONTRACT DOCUMENTS.
- FILL MATERIALS PLACED UNDER PROPOSED TRAILWAYS AND PARKING AREAS SHALL MEET THE FILL MATERIAL GRADATION AND COMPACTION REQUIREMENTS OF THE PROJECT PLANS AND SPECIFICATIONS.
- UNLESS OTHERWISE INDICATED, CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS.
- ALL ACCESSIBLE PARKING SPACES AND WALKWAYS SHALL BE IN COMPLIANCE WITH THE COMMONWEALTH OF MASSACHUSETTS 521 AAB AND DEPARTMENT OF JUSTICE ADA STANDARDS FOR ACCESSIBLE DESIGN, LATEST EDITION. FOR ANY DISCREPANCIES OR CLARIFICATION THE CONTRACTOR SHALL CONTACT THE ENGINEER.
- CONTRACTOR SHALL CONSTRUCT ALL PEDESTRIAN WAYS IN ACCORDANCE WITH ADA/AAB STANDARDS.
- ALL EXISTING PAVEMENT IN THE VICINITY OF THE PROPOSED WORK SHALL BE RESTORED, IF DAMAGED, AT NO ADDITIONAL COST TO THE OWNER. ALL PAVEMENT WORK SHALL BLENDE WITH EXISTING PAVEMENT WITH SAWCUTS AND EMULSION APPLIED TO ALL CUT SURFACES.
- CONTRACTOR SHALL PROVIDE FULL AS-BUILT OF UTILITY WORK PRIOR TO FINAL PAYMENT. AS-BUILT PLANS SHALL BE SUBMITTED ON MYLAR AND ELECTRONICALLY UPON COMPLETION OF PROJECT.
- THIS PROJECT IS SUBJECT TO MASSDEP'S ORDER OF CONDITIONS (OOC) AND HAS A MASSDEP FILE NUMBER: 090-1428. THE CONTRACTOR IS TO FOLLOW ANY AND ALL CONDITIONS NECESSARY IN ACCORDANCE WITH THE PERFORMANCE STANDARDS SET FORTH IN THE WETLAND REGULATIONS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NOTICE OF INTENT, THE GENERAL CONDITIONS, AND OTHER SPECIAL CONDITIONS RELATED TO THE OOC. TO THE EXTENT THAT THE FOLLOWING CONDITIONS MODIFY OR DIFFER FROM THE PLANS, SPECIFICATIONS, OR OTHER PROPOSALS SUBMITTED WITH THE NOTICE OF INTENT, THESE CONDITIONS SHALL CONTROL.

**SUGGESTED CONSTRUCTION SEQUENCE:**

- PROTECT AND MAINTAIN EXISTING WILDLIFE HABITAT.
- PREVENT EXISTING WILDLIFE FROM ENTERING WORK AREAS.
- PROTECT AND MAINTAIN EXISTING VEGETATION WHEREVER POSSIBLE.
- MINIMIZE THE AREA OF DISTURBANCE.
- TO THE EXTENT POSSIBLE, ROUTE UNPOLLUTED STORMWATER FLOWS AROUND DISTURBED AREAS.
- INSTALL MITIGATION DEVICES AS EARLY AS POSSIBLE.
- MINIMIZE THE TIME DISTURBED AREAS ARE LEFT UNSTABILIZED.
- MAINTAIN SILTATION CONTROL DEVICES IN PROPER CONDITION.
- THE CONTRACTOR SHOULD USE THE SUGGESTED SEQUENCE AND TECHNIQUES AS A GENERAL GUIDE AND MODIFY THE SUGGESTED METHODS AND PROCEDURES AS REQUIRED TO BEST SUIT SEASONAL, ATMOSPHERIC, AND SITE-SPECIFIC PHYSICAL CONSTRAINTS FOR THE PURPOSE OF MINIMIZING THE ENVIRONMENTAL IMPACT OF CONSTRUCTION.

**CONSTRUCTION PHASING:**

- BEGINNING OF EACH WORK DAY, AN APPROVED PERSON, SHALL WALK THE LIMITS OF WORK AND REMOVE ANY TURTLES THAT MAY HAVE ENTERED THE WORK ZONE.
- INSTALL TEC DEVICES FOR THE HAGGETTS POND PARKING AREA AND THE HAGGETTS POND ROAD OUTLETS.
- CONSTRUCT THE HAGGETTS POND ROAD RAIN GARDEN.
- CONSTRUCT THE HAGGETTS POND PARKING LOT TO BINDER. THIS PARKING AREA WILL BE USED AS THE TRAIL AND HIGH PLAIN ROAD PARKING AREA STAGING AREA.
- CLEAN EXISTING CULVERTS ENSURE THAT THEY ARE WORKING PROPERLY AND INSTALL ALL TEC DEVICES.
- CONSTRUCT THE HIGH PLAIN PARKING AREA.
- CONSTRUCT THE BOARDWALK.
- CONSTRUCT THE HAGGETTS POND RAIL TRAIL.
- INSTALL TOP PAVING AT THE HAGGETTS POND PARKING AREA.
- REMOVE TEC MEASURES ONCE ALL DISTURBED AREAS ARE STABILIZED.

**DEMOLITION, GRUBBING AND STRIPPING OF LIMITS OF CONSTRUCTION PHASE:**

- INSTALL TEC DEVICES AS REQUIRED TO PREVENT SEDIMENT TRANSPORT INTO RESOURCE AREAS.
- CLEAN EXISTING CULVERTS ENSURE THAT THEY ARE WORKING PROPERLY.
- PLACE A RING OF SILT SOCKS AND/OR HAY BALES AROUND STOCKPILES.
- STABILIZE ALL EXPOSED SURFACES THAT WILL NOT BE UNDER IMMEDIATE CONSTRUCTION.
- STORE AND/OR DISPOSE ALL PAVEMENT AND DEMOLITION DEBRIS AS INDICATED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

**PARKING/TRAIL AREAS SUB-BASE CONSTRUCTION:**

- ANY ADDITIONAL TEC DEVICES AS REQUIRED BY INDIVIDUAL CONSTRUCTION AREA CONSTRAINTS TO DIRECT POTENTIAL RUNOFF TOWARD DETENTION AREAS DESIGNATED FOR THE CURRENT CONSTRUCTION PHASE.
- COMPACT GRAVEL AS WORK PROGRESSES TO CONTROL EROSION POTENTIAL.
- APPLY WATER TO CONTROL AIR SUSPENSION OF DUST.
- AVOID CREATING AN EROSION CONDITION DUE TO OVER-WATERING.
- INSTALL PIPED UTILITY SYSTEMS AS REQUIRED AS WORK PROGRESSES, KEEPING ALL INLETS SEALED UNTIL ALL DOWNSTREAM DRAINAGE SYSTEM COMPONENTS ARE FUNCTIONAL.

**BINDER CONSTRUCTION:**

- FINE GRADE GRAVEL BASE AND INSTALL PROCESSED GRAVEL TO THE DESIGN GRADES.
- COMPACT PAVEMENT BASE AS WORK PROGRESSES.
- INSTALL PAVEMENT BINDER COAT STARTING FROM THE DOWNHILL END OF THE SITE AND WORK TOWARD THE TOP.

**FINISH PAVING:**

- REPAIR AND STABILIZE DAMAGED SLOPE SIZES.
- CLEAN INVERTS OF DRAINAGE STRUCTURES.
- INSTALL FINAL TOP COAT OF PAVEMENT.

**FINAL CLEAN-UP:**

- CLEAN INVERTS OF CULVERTS AND CATCH BASINS.
- REMOVE SEDIMENT AND DEBRIS FORM RIP-RAP OUTLET AREAS.
- REMOVE TEC DEVICES ONLY AFTER PERMANENT VEGETATION AND EROSION CONTROL HAS BEEN FULLY ESTABLISHED.

**SUGGESTED CONSTRUCTION SEQUENCE: (CONT)**

**SITE STABILIZATION:**

- GRUBBING STRIPPING AND GRADING
- EROSION CONTROL DEVICES SHALL BE IN PLACE AS SHOWN ON THE DESIGN PLANS BEFORE GRADING COMMENCES.
- STRIPPING SHALL BE DONE IN A MANNER, WHICH WILL NOT CONCENTRATE RUNOFF. IF PRECIPITATION IS EXPECTED, EARTHEN BERMS SHALL BE CONSTRUCTED AROUND THE AREA BEING STRIPPED, WITH A SILT SOCK, SILT FENCE OR HAY BALE DIKE SITUATED IN AN ARC AT THE LOW POINT OF THE BERM.
- IF INTENSE PRECIPITATION IS ANTICIPATED, SILT SOCKS, HAY BALES, DIKES AND /OR SILT FENCES SHALL BE USED AS REQUIRED TO PREVENT EROSION AND SEDIMENT TRANSPORT. THE MATERIALS REQUIRED SHALL BE STORED ON SITE AT ALL TIME.
- IF WATER IS REQUIRED FOR SOIL COMPACTION, IT SHALL BE ADDED IN A UNIFORM MANNER THAT DOES NOT ALLOW EXCESS WATER TO FLOW OFF THE AREA BEING COMPACTED.
- DUST SHALL BE HELD AT A MINIMUM BY SPRINKLING EXPOSED SOIL WITH AN APPROPRIATE AMOUNT OF WATER.

**MAINTENANCE OF DISTURBED SURFACES:**

- RUNOFF SHALL BE DIVERTED FROM DISTURBED SIDE SLOPES IN BOTH CUT AND FILL.
- MULCHING MAY BE USED FOR TEMPORARY STABILIZATION.
- WATTLES SHALL BE SET WHERE REQUIRED TO TRAP PRODUCTS OF EROSION AND SHALL BE MAINTAINED ON A CONTINUING BASIS DURING THE CONSTRUCTION PROCESS.
- LOAMING AND SEEDING
- LOAM SHALL NOT BE PLACED UNLESS IT IS TO BE SEEDED DIRECTLY THEREAFTER.
- ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM PLACED BEFORE SEEDING AND MULCHED.
- CONSIDERATION SHALL BE GIVEN TO HYDRO-MULCHING, ESPECIALLY ON SLOPES IN EXCESS OF 3 TO 1.
- LOAMED AND SEEDED SLOPES SHALL BE PROTECTED FROM WASHOUT BY OTHER ACCEPTABLE SLOPE PROTECTION UNTIL VEGETATION BEGINS TO GROW.

**STORM WATER COLLECTION SYSTEM INSTALLATION:**

- THE STORM WATER DRAINAGE SYSTEM SHALL BE INSTALLED FROM THE DOWNSTREAM END UP AND IN A MANNER WHICH WILL NOT ALLOW RUNOFF FROM DISTURBED AREAS TO ENTER PIPES.
- EXCAVATION FOR THE DRAINAGE SYSTEM SHALL NOT BE LEFT OPEN WHEN RAINFALL IS EXPECTED OVERNIGHT. IF LEFT OPEN UNDER OTHER CIRCUMSTANCES, PIPE ENDS SHALL BE CLOSED BY A STAKED BOARD OR BY AN EQUIVALENT METHOD.
- ALL CATCH BASIN OPENINGS SHALL BE COVERED BY A SILT BAG BETWEEN THE GRATE AND THE FRAME OR PROTECTED FROM SEDIMENT BY SILT FENCE SURROUNDING THE CATCH BASIN GRATE.

**COMPLETION OF PAVED AREAS:**

- DURING THE PLACEMENT OF SUB-BASE AND PAVEMENT, THE ENTRANCE TO THE STORM WATER DRAINAGE SYSTEMS SHALL BE SEALED WHEN RAIN IS EXPECTED. WHEN THESE ENTRANCES ARE CLOSED, CONSIDERATION MUST BE GIVEN TO THE DIRECTION OF RUN-OFF AND MEASURES SHALL BE UNDERTAKEN TO MINIMIZE EROSION AND TO PROVIDE FOR THE COLLECTION OF SEDIMENT.
- IN SOME SITUATIONS IT MAY BE NECESSARY TO KEEP CATCH BASINS OPEN.
- APPROPRIATE ARRANGEMENTS SHALL BE MADE DOWNSTREAM TO REMOVE ALL SEDIMENT DEPOSITION.

**STABILIZATION OF SURFACES:**

- STABILIZATION OF SURFACES INCLUDES THE PLACEMENT OF PAVEMENT, RIP-RAP, WOOD BARK MULCH AND THE ESTABLISHMENT OF VEGETATED SURFACES.
- UPON COMPLETION OF CONSTRUCTION, ALL SURFACES SHALL BE STABILIZED EVEN THOUGH IT IS APPARENT THAT FUTURE CONSTRUCTION EFFORTS WILL CAUSE THEIR DISTURBANCE.
- VEGETATED COVER SHALL BE ESTABLISHED DURING THE PROPER GROWING SEASON AND SHALL BE ENHANCED BY SOIL ADJUSTMENT FOR PROPER PH, NUTRIENTS AND MOISTURE CONTENT.
- SURFACES THAT ARE DISTURBED BY EROSION PROCESSES OR VANDALISM SHALL BE STABILIZED AS SOON AS POSSIBLE.
- AREAS WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED SHALL BE STABILIZED WITHIN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY, EXCEPT WHEN CONSTRUCTION ACTIVITY WILL RESUME WITHIN 21 DAYS (E.G., THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS).
- HYDRO-MULCHING OF GRASS SURFACES IS RECOMMENDED, ESPECIALLY IF SEEDING OF THE SURFACES IS REQUIRED OUTSIDE THE NORMAL GROWING SEASON.
- HAY MULCH IS AN EFFECTIVE METHOD OF TEMPORARILY STABILIZING SURFACES, BUT ONLY IF IT IS PROPERLY SECURED BY BRANCHES, WEIGHTED SNOW FENCES OR WEIGHTED CHICKEN WIRE.

**TURTLE PROTECTION MEASURES DURING CONSTRUCTION:**

THE FOLLOWING MEASURES ARE PROPOSED FOR CONSTRUCTION ACTIVITIES IN STATE LISTED TURTLE HABITAT DURING THE ACTIVE SEASON. THE ACTIVE SEASON IS TYPICALLY CONSIDERED APRIL 1 TO NOVEMBER 1 OF ANY YEAR. THESE MEASURES ARE NOT CONSIDERED NECESSARY FOR ACTIVITIES OCCURRING WITHIN THE INACTIVE SEASON:

**DEFINITIONS:**

- QUALIFIED BIOLOGIST: A BIOLOGIST WITH A STRONG KNOWLEDGE OF LOCAL HABITAT AND TURTLE SPECIES WHOSE CREDENTIALS HAVE BEEN APPROVED BY NHESP.
- ENVIRONMENTAL MONITOR: A DEDICATED MONITOR WHO HAS RECEIVED SPECIFIC TRAINING FROM A QUALIFIED BIOLOGIST ON GENERAL TURTLE BIOLOGY AN IDENTIFICATION AND IS ABLE TO PERFORM THE FOLLOWING DAILY ACTIVITIES AT THE SITE:

- TO LOOK FOR AND GENERALLY IDENTIFY TURTLES.
- TO SWEEP WORK ZONE FOR TURTLES AHEAD OF EQUIPMENT BEING MOVED AS NEEDED.
- TO STOP WORK IF A TURTLE IS ENCOUNTERED WITHIN OR NEAR THE WORK ZONE.

**CONTRACTOR EDUCATION AND AWARENESS PROGRAM:**

CONSTRUCTION CREWS THAT WILL BE WORKING IN THE SUBJECT HABITAT AREAS WILL COMPLETE A TAILBOARD TRAINING ON GENERAL TURTLE BIOLOGY, IDENTIFICATION, AND ECOLOGY, CONDUCTED BY A QUALIFIED BIOLOGIST.

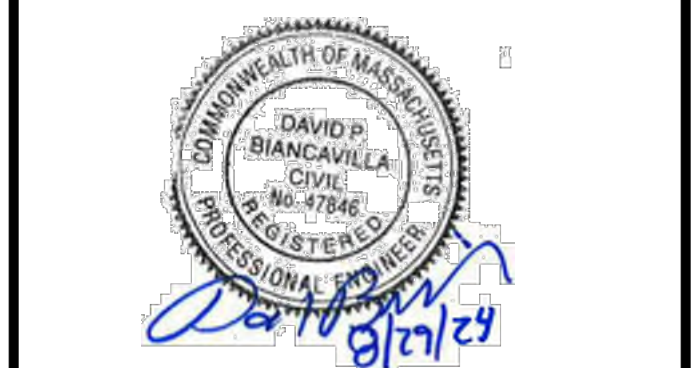
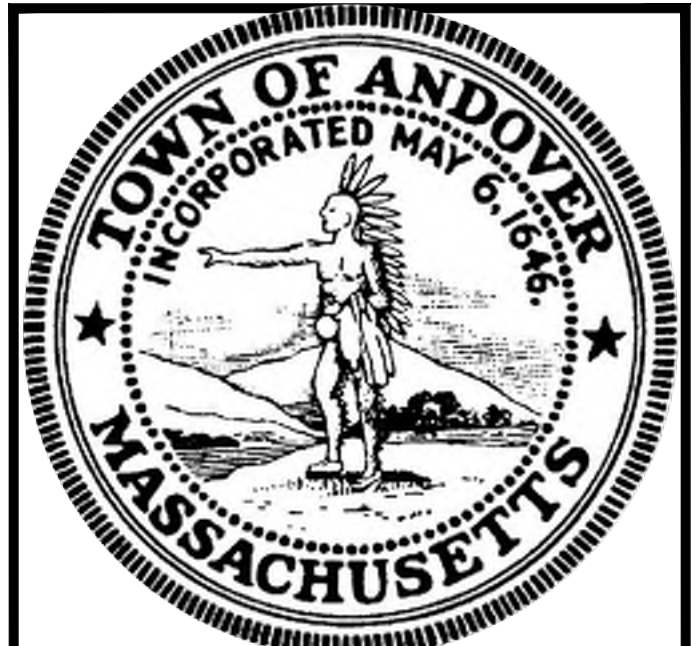
- IF A TURTLE IS ENCOUNTERED DURING WORK, CREWS WILL BE INSTRUCTED TO NOTIFY THE APPROVED ENVIRONMENTAL MONITOR.

- INCREASED HUMAN ACTIVITY IN THE VICINITY OF TURTLE HABITAT CAN POTENTIALLY ATTRACT NEST PREDATOR SPECIES, SUCH AS RACCOONS AND SKUNKS. TO AVOID ATTRACTING PREDATORY SPECIES TO THE WORK SITE, CREWS WILL BE REQUIRED TO PRACTICE GOOD HOUSEKEEPING, AND SECURELY DISPOSE OF ALL FOOD WRAPPERS AND RUBBISH.

**ACTIVE SEASON RESTRICTIONS, BEST MANAGEMENT PRACTICES, AND MONITORING:**

IF POSSIBLE, CONSTRUCTION ACTIVITIES WILL BE CONDUCTED BETWEEN NOVEMBER 1 AND APRIL 1, OUTSIDE OF THE TURTLE ACTIVE SEASON. IN COORDINATION WITH THE NHESP AND ANDOVER CONSERVATION COMMISSION, IT HAS BEEN AGREED THAT EXCLUSION FENCING FOR THE ENTIRE WORK ZONE IS NOT A PREFERRED APPROACH TO TURTLE PROTECTION ON THE SITE. IF WORK IS SCHEDULED TO BE PERFORMED DURING THE TURTLE ACTIVE SEASON (APRIL 1 - NOVEMBER 1), THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs), WILL BE IMPLEMENTED:

- DURING THE ACTIVE SEASON (APRIL 1ST TO NOVEMBER 1ST), AN APPROVED AND QUALIFIED ENVIRONMENTAL MONITOR WILL REMAIN ON SITE EACH DAY TO VISUALLY SWEEP ALL IMPACT AREAS PRIOR TO EQUIPMENT ACCESS AND EARTHWORK.
- EXCAVATIONS THAT CANNOT BE COMPLETED WITHIN ONE (1) WORKDAY WILL BE COVERED OR ENCLOSED WITHIN ENTRENCHED PROTECTIVE SILT FENCING AT LEAST 2-1/2 FEET TALL, TO PREVENT TURTLE ENTRAPMENT.
- STOCKPILES OF ANY MATERIALS THAT WILL BE IN PLACE FOR MORE THAN ONE DAY SHALL BE PROTECTED WITHIN ENTRENCHED PROTECTIVE SILT FENCING AT LEAST 2-1/2 FEET TALL TO PREVENT TURTLE NESTING.
- PRIOR TO MOVEMENT OF HEAVY EQUIPMENT ALONG THE TRAIL, THE ENVIRONMENTAL MONITOR WILL WALK AHEAD, SWEEPING THE WORK ZONE FOR TURTLES. SMALLER EQUIPMENT SUCH AS UTVS AND PICK-UP TRUCKS MUST TRAVEL WITH AN APPROPRIATELY TRAINED CREW PERSONNEL SWEEPING AHEAD.
- IF A STATE-LISTED TURTLE IS ENCOUNTERED, THE ENVIRONMENTAL MONITOR WILL:
  - NOTIFY THE QUALIFIED BIOLOGIST VIA TEXT AND PROVIDE PHOTOGRAPHS OF THE TURTLE.
  - PHOTO-DOCUMENT THE TURTLE AND NOTE ITS EXACT LOCATION.
  - RECORD OBSERVATIONS ON "RARE ANIMAL OBSERVATION FORM," INCLUDING ALL STANDARD MORPHOLOGICAL MEASUREMENTS AND CHARACTERISTICS, AS WELL AS DESCRIPTION OF THE SURROUNDING MICROHABITAT.
- PRIOR TO OR AFTER NESTING SEASON: RELOCATE THE TURTLE IN THE DIRECTION THEY ARE TRAVELING (AND NOT ACROSS/IN THE VICINITY OF PAVED ROADS).
- DURING NESTING SEASON (MAY-JUNE): AVOID DISTURBANCE OF ANY NEST DIGGING AND IDENTIFY NEST LOCATION WITH FLAGGING. CONTACT NHESP IF THE NEST CANNOT BE AVOIDED.
- WITHIN 10 DAYS OF OBSERVATION, SUBMIT THE RARE ANIMAL OBSERVATION FORM TO NHESP.



PROFESSIONAL ENGINEER DATE

**HAGGETTS POND RAIL TRAIL**

IN ANDOVER, MASSACHUSETTS

**LEGEND & NOTES**

NOVEMBER 7, 2023

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810



300 Brickstone Square, Suite 203  
Andover, Massachusetts  
01810  
617 896 4300

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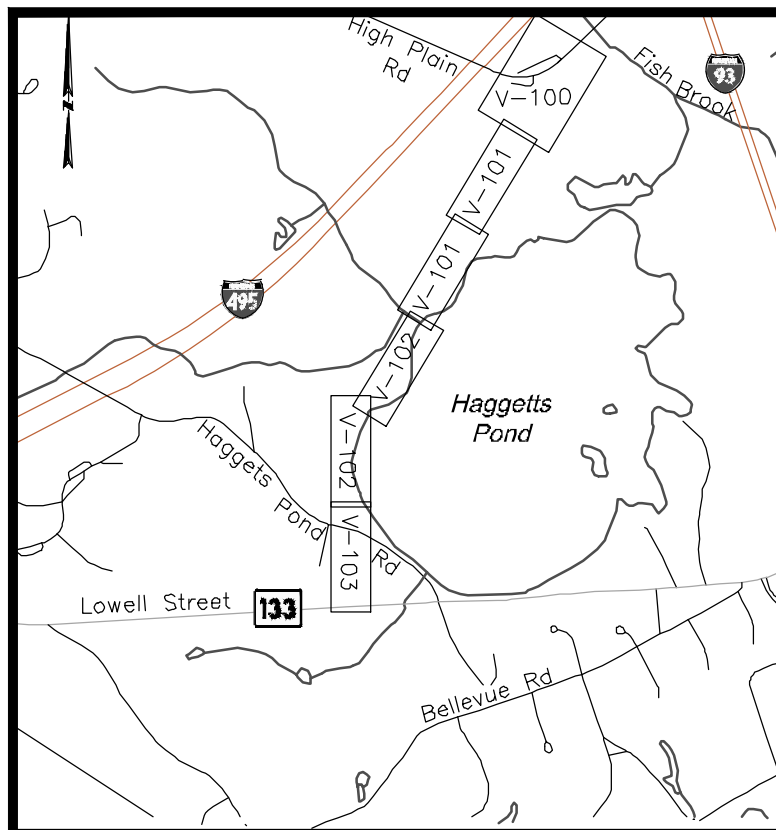
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DWG: SHEET G-200

JOB. NO: 8-9985.01

**ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION**



Locus Map  
(NOT TO SCALE)

**PRIORITY HABITAT**  
PH-1926

TREE TABLE		
#	CALIPER	SPECIES
1	20"	SH
2	24"	WA
3	12"	SH
4	18"	RM
5	15"	SH
6	18"	SH
7	11"	SH
8	18"	SH
9	11"	SH
10	10.5"	NM
11	23"	BO
12	10"	SM

TREE TABLE		
#	CALIPER	SPECIES
13	18"	SH
14	14.5"	SH
15	10"	SM
16	28"	BO
17	14.5"	SH
18	11"	NM
19	10"	BO
20	16.5"	WP
21	10"	BO
22	10.5"	WP
23	18"	WP
24	15"	RO
25	10"	NM
26	15"	RO
27	15"	RO
28	10.5"	RO
29	16.5"	WP
30	10.5"	RO
31	10"	RO

TREE TABLE		
#	CALIPER	SPECIES
32	16.5"	BO
33	11"	BO
34	13"	RO
35	21.5"	RO
36	15"	QA
37	13.5"	BO
38	21.5"	RO
39	20.5"	RO
40	15"	AE
41	10"	WO
42	21"	BO
43	11"	WP
44	12"	BO
45	12.5"	WP
46	12"	BO
47	19.5"	AE

**TREE SPECIES LEGEND**

- QA - QUAKING ASPEN
- SH - SHAGBARK HICKORY
- SM - SUGAR MAPLE
- NM - NORWAY MAPLE
- RM - RED MAPLE
- AE - AMERICAN ELM
- BO - BLACK OAK
- RO - RED OAK
- WO - WHITE OAK
- RP - RED PINE
- SP - SCOTCH PINE
- WP - WHITE PINE
- PP - PITCH PINE
- BB - BLACK BIRCH
- WA - WHITE ASH
- PS - POPLAR SPECIES

**LEGEND**

- STONE BOUND
- IRON ROD
- CATCH BASIN
- TEMPORARY BENCHMARK
- INVERT
- TEST PIT
- HYDRANT
- VENT PIPE
- SIGN
- METAL POST
- WETLANDS FLAG
- WETLANDS BANK FLAG
- DECIDUOUS TREE
- INV. INVERT
- RCP REINFORCED CONCRETE PIPE
- STEEL/CABLE GUARDRAIL
- TREELINE
- DRAIN LINE

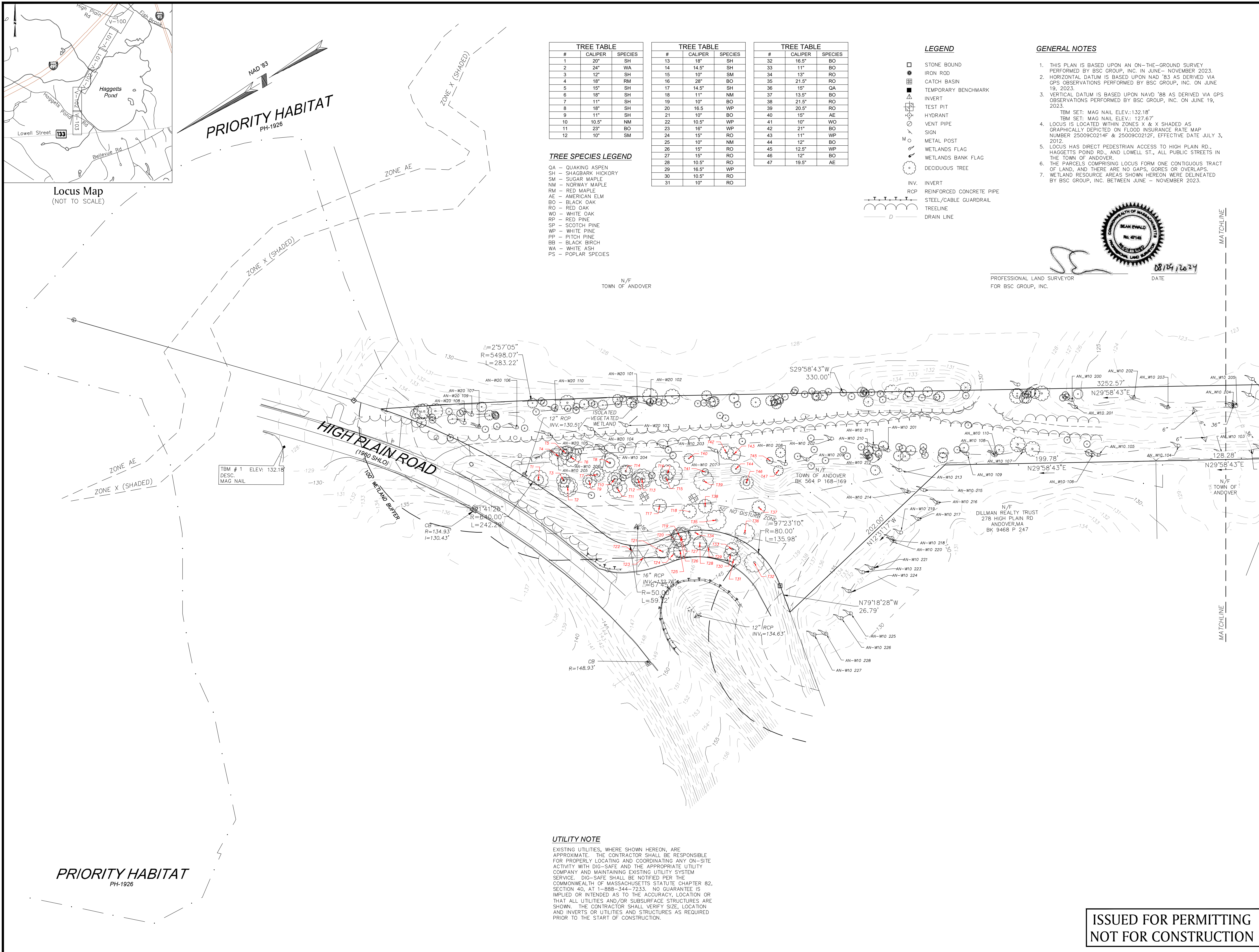
**GENERAL NOTES**

- THIS PLAN IS BASED UPON AN ON-THE-GROUND SURVEY PERFORMED BY BSC GROUP, INC. IN JUNE - NOVEMBER 2023.
- HORIZONTAL DATUM IS BASED UPON NAD '83 AS DERIVED VIA GPS OBSERVATIONS PERFORMED BY BSC GROUP, INC. ON JUNE 19, 2023.
- VERTICAL DATUM IS BASED UPON NAVD '88 AS DERIVED VIA GPS OBSERVATIONS PERFORMED BY BSC GROUP, INC. ON JUNE 19, 2023.
- LOCUS IS LOCATED WITHIN ZONES X & X SHADED AS GRAPHICALLY DEPICTED ON FLOOD INSURANCE RATE MAP NUMBER 25009C0212F & 25009C0212F, EFFECTIVE DATE JULY 3, 2012.
- LOCUS HAS DIRECT PEDESTRIAN ACCESS TO HIGH PLAIN RD., HAGGETTS POND RD., AND LOWELL ST., ALL PUBLIC STREETS IN THE TOWN OF ANDOVER.
- THE PARCELS COMPRISING LOCUS FORM ONE CONTIGUOUS TRACT OF LAND, AND THERE ARE NO GAPS, GORES OR OVERLAPS.
- WETLAND RESOURCE AREAS SHOWN HEREON WERE DELINEATED BY BSC GROUP, INC. BETWEEN JUNE - NOVEMBER 2023.



PROFESSIONAL LAND SURVEYOR  
FOR BSC GROUP, INC.

DATE: 08/24/2024



**HAGGETTS POND  
RAIL TRAIL**  
IN  
ANDOVER,  
MASSACHUSETTS

**EXISTING  
CONDITIONS PLAN**  
(SHEET 1 OF 4)

NOVEMBER 7, 2023

REVISIONS:

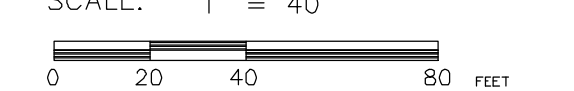
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3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

**BSC GROUP**  
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Andover, Massachusetts  
01810  
617 896 4300

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SCALE: 1" = 40'



FILE: P:\8998501\S\D\_EC

DWG.: V-100

JOB. NO: 8-9985.01

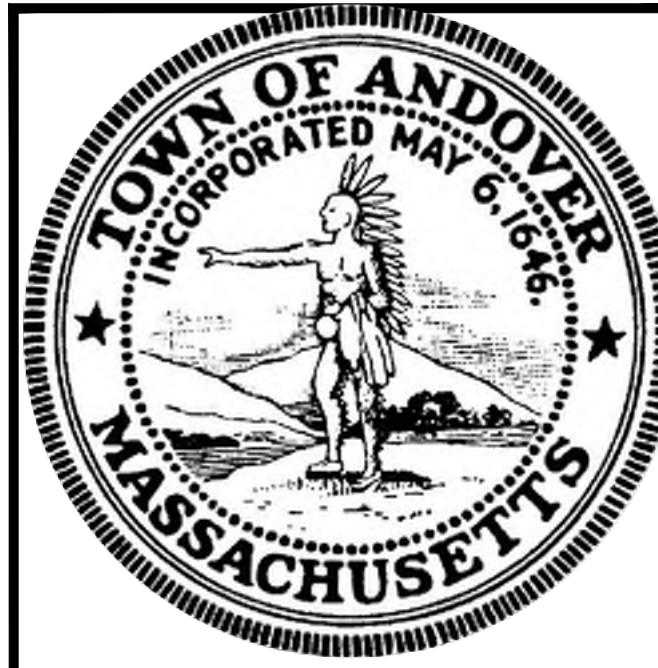
SHEET V-100

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NOT FOR CONSTRUCTION**

**PRIORITY HABITAT**  
PH-1926

**UTILITY NOTE**

EXISTING UTILITIES, WHERE SHOWN HEREON, ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY LOCATING AND COORDINATING ANY ON-SITE ACTIVITY WITH DIG-SAFE AND THE APPROPRIATE UTILITY COMPANY AND MAINTAINING EXISTING UTILITY SYSTEM SERVICE. DIG-SAFE SHALL BE NOTIFIED PER THE COMMONWEALTH OF MASSACHUSETTS STATUTE CHAPTER 82, SECTION 40, AT 1-888-344-7233. NO GUARANTEE IS IMPLIED OR INTENDED AS TO THE ACCURACY, LOCATION OR THAT ALL UTILITIES AND/OR SUBSURFACE STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL VERIFY SIZE, LOCATION AND INVERTS OR UTILITIES AND STRUCTURES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.



HAGGETTS POND  
RAIL TRAIL  
IN  
ANDOVER,  
MASSACHUSETTS

EXISTING  
CONDITIONS PLAN  
(SHEET 2 OF 4)  
NOVEMBER 7, 2023

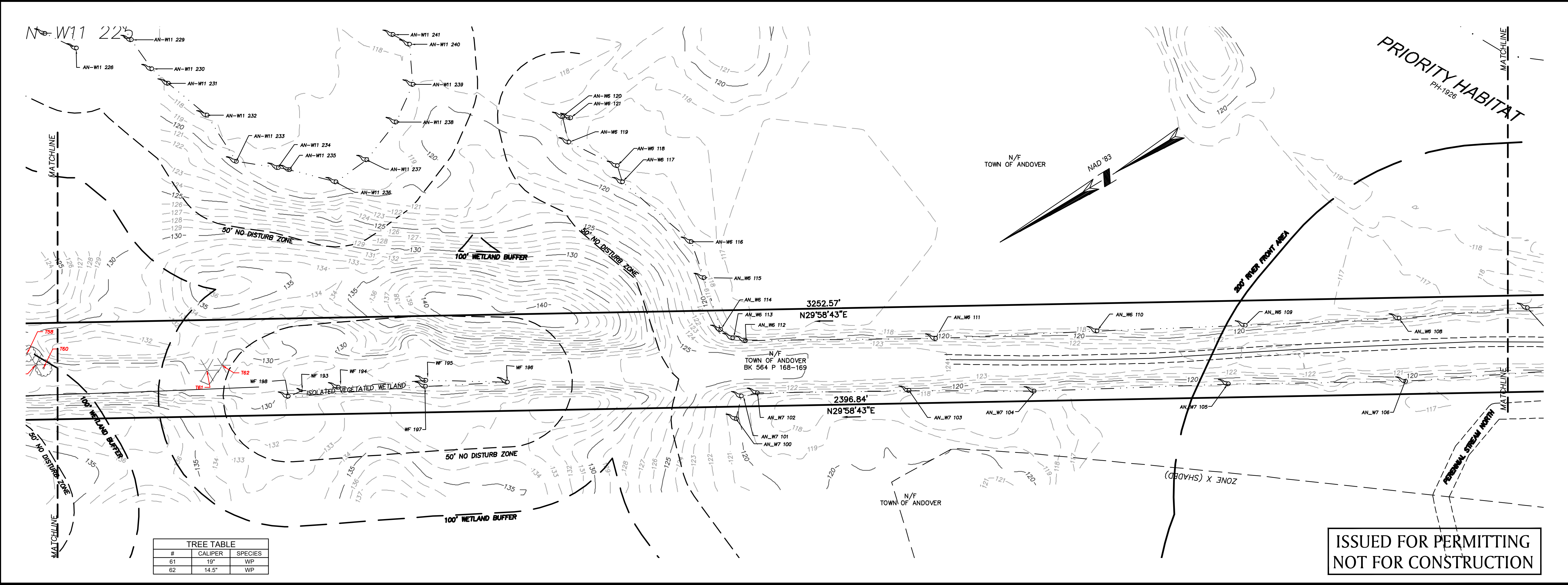
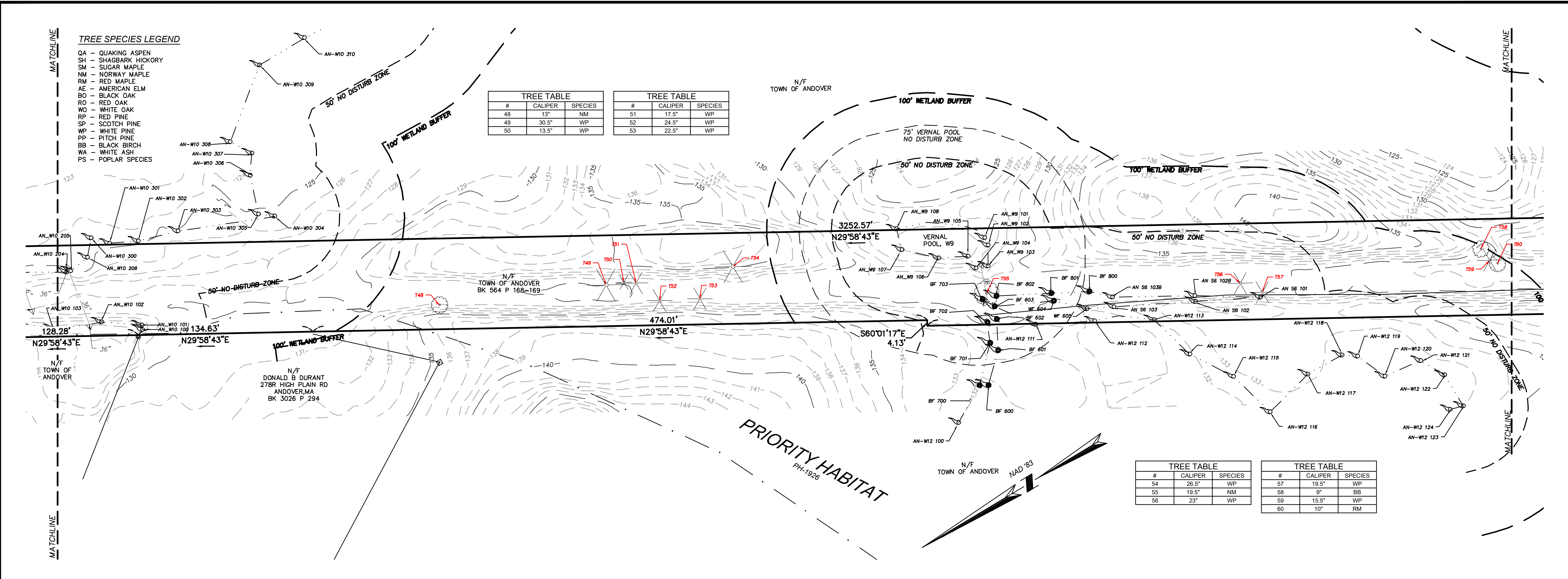
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4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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01810  
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SCALE: 1" = 40'  
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DWG: V-101 SHEET V-101  
JOB: NO: 8-9985.01







HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

EXISTING  
CONDITIONS PLAN  
(SHEET 4 OF 4)

NOVEMBER 7, 2023

REVISIONS:

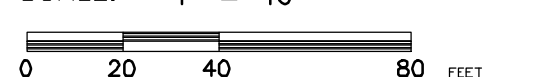
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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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SCALE: 1" = 40'

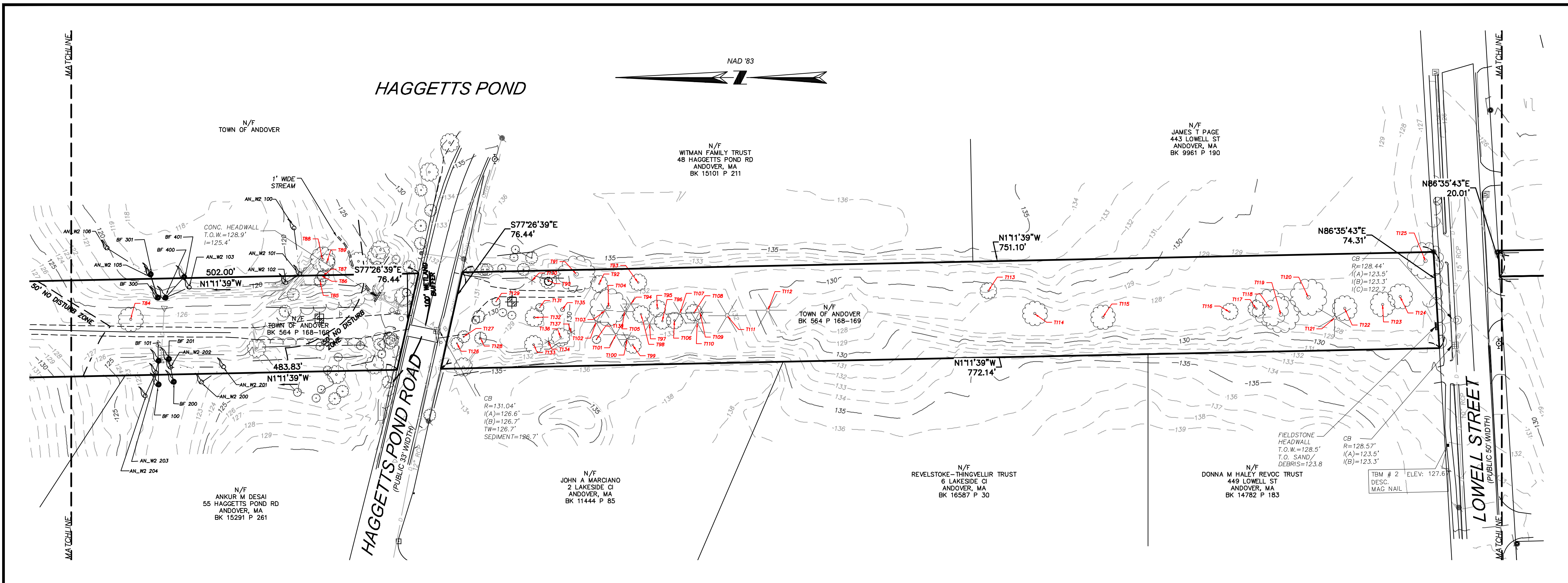


FILE: P:\8998501\SD\EC

DWG: V-103

JOB: NO: 8-9985.01

SHEET V-103



#	CALIPER	SPECIES
84	23.5"	RO
85	18"	PS
86	12.5"	DEAD
87	18.5"	WO
88	21"	RO
89	10.5"	RM
90	15.5"	RO
91	25.5"	RO
92	14"	MN
93	9.5"	MN
94	9"	WP
95	9"	RO
96	11"	RO
97	10"	WP

#	CALIPER	SPECIES
98	16"	RO
99	14"	RO
100	11"	WP
101	20.5"	SP
102	20"	WP
103	8.5"	WP
104	24"	RO
105	14"	PP
106	11"	RO
107	23.5"	WP
108	10"	DEAD
109	18.5"	WP
110	19"	WP
111	28"	WP
112	28"	WP

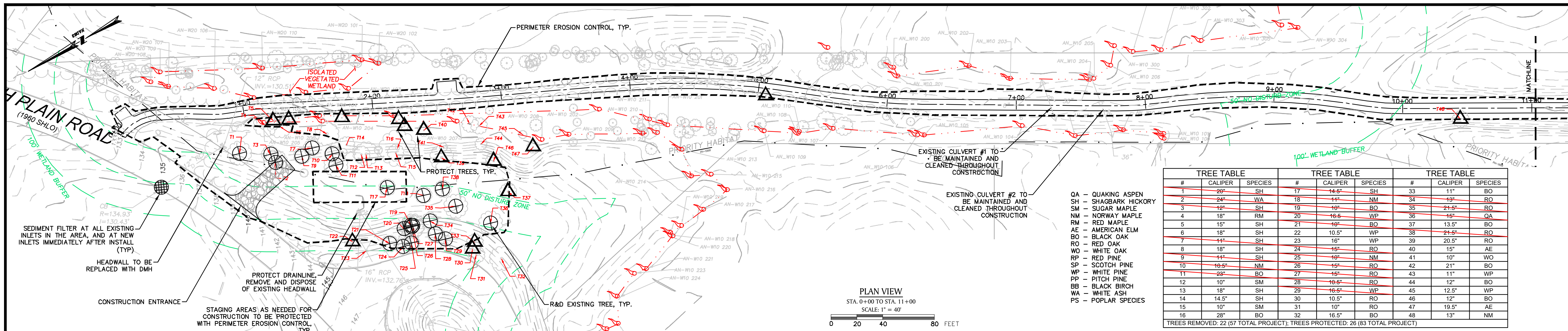
#	CALIPER	SPECIES
113	9.5"	NM
114	23"	RO
115	14.5"	RO
116	9.5"	NM
117	8.5"	SM
118	28"	RO
119	29.5"	RO
120	30"	SM
121	32"	WP
122	20"	SM
123	23.5"	SM
124	21"	SM
125	37.5"	NM

#	CALIPER	SPECIES
126	18.7"	WP
127	17.7"	RO
128	15.3"	RO
129	8.4"	WASH
130	14.8"	PP
131	10.4"	WP
132	19.2"	RO
133	24"	RO
134	10"	WP
135	17.2"	RO
136	22"	RO
137	10.7"	WP
138	14.8"	WP

TREE SPECIES LEGEND

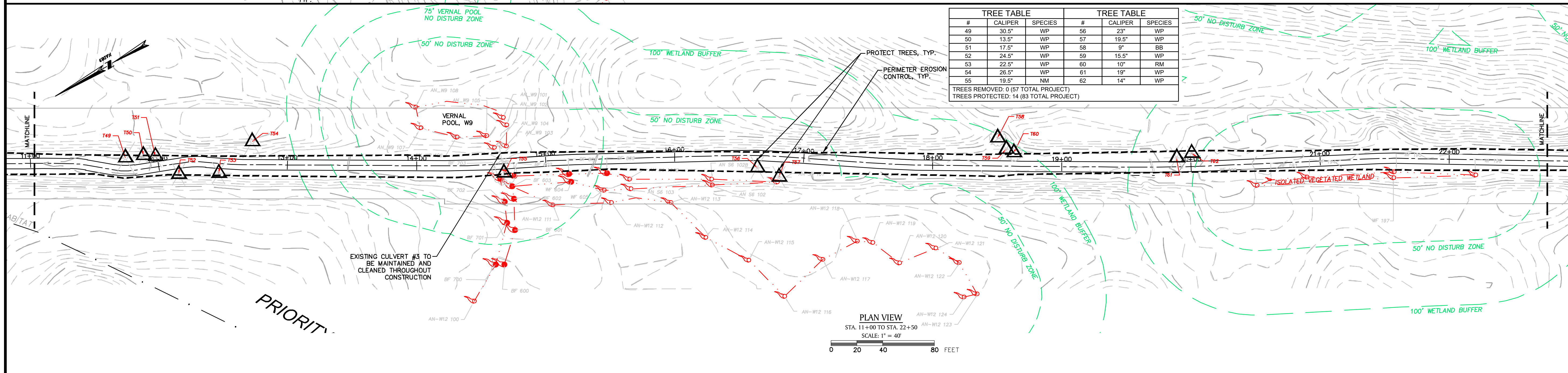
- QA - QUAKING ASPEN
- SH - SHAGBARK HICKORY
- SM - SUGAR MAPLE
- NM - NORWAY MAPLE
- RM - RED MAPLE
- AE - AMERICAN ELM
- BO - BLACK OAK
- RO - RED OAK
- WO - WHITE OAK
- RP - RED PINE
- SP - SCOTCH PINE
- WP - WHITE PINE
- PP - PITCH PINE
- BB - BLACK BIRCH
- WA - WHITE ASH
- PS - POPLAR SPECIES

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NOT FOR CONSTRUCTION



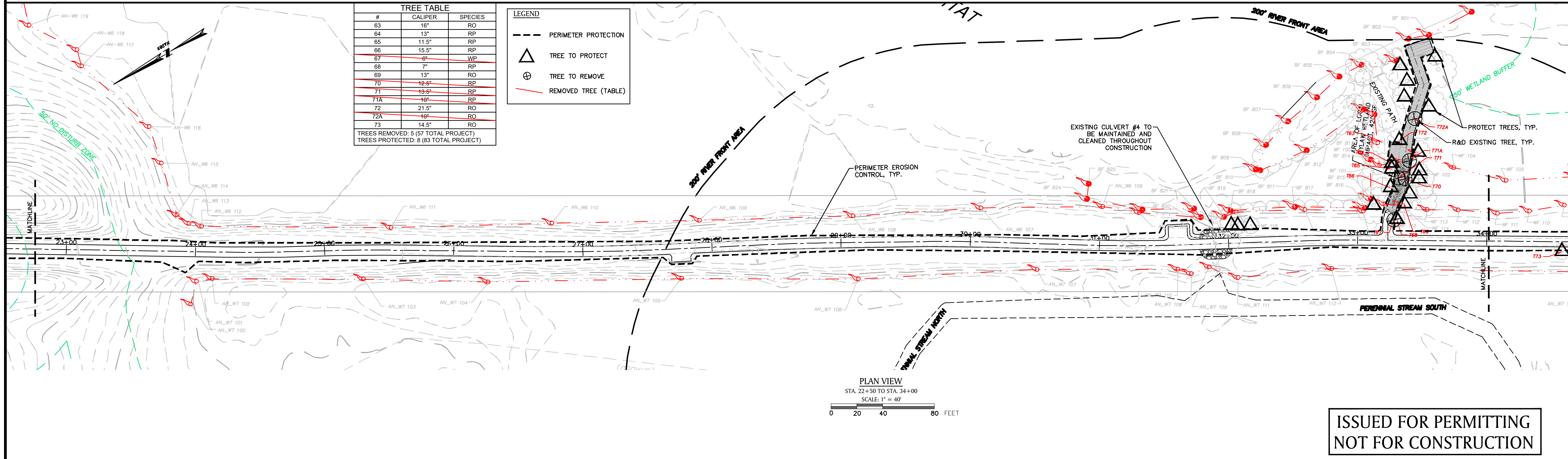
TREE TABLE			TREE TABLE			TREE TABLE		
#	CALIPER	SPECIES	#	CALIPER	SPECIES	#	CALIPER	SPECIES
1	20"	SH	17	14.5"	SH	33	11"	BO
2	24"	WA	18	14"	NM	34	19"	RO
3	12"	SH	19	10"	BO	35	21.5"	BO
4	18"	RM	20	16.5"	WP	36	16"	QA
5	15"	SH	21	10"	BO	37	13.5"	BO
6	18"	SH	22	10.5"	WP	38	24.5"	BO
7	14"	SH	23	16"	WP	39	20.5"	RO
8	18"	SH	24	16"	RO	40	15"	AE
9	14"	SH	25	10"	NM	41	10"	WO
10	10.5"	NM	26	16"	BO	42	21"	BO
11	23"	BO	27	15"	RO	43	11"	WP
12	10"	SM	28	10.5"	RO	44	12"	BO
13	18"	SH	29	16.5"	WP	45	12.5"	WP
14	14.5"	SH	30	10.5"	RO	46	12"	BO
15	10"	SM	31	10"	RO	47	19.5"	AE
16	28"	BO	32	16.5"	BO	48	13"	NM

TREES REMOVED: 22 (57 TOTAL PROJECT); TREES PROTECTED: 26 (83 TOTAL PROJECT)



TREE TABLE			TREE TABLE		
#	CALIPER	SPECIES	#	CALIPER	SPECIES
49	30.5"	WP	56	23"	WP
50	13.5"	WP	57	19.5"	WP
51	17.5"	WP	58	9"	BB
52	24.5"	WP	59	15.5"	WP
53	22.5"	WP	60	10"	RM
54	26.5"	WP	61	19"	WP
55	19.5"	NM	62	14"	WP

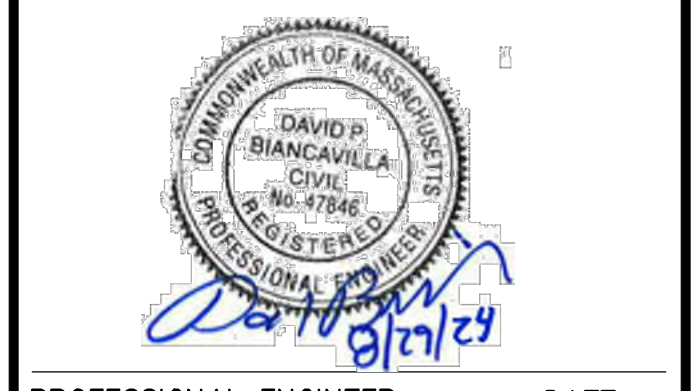
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TREE TABLE		
#	CALIPER	SPECIES
63	16"	RO
64	13"	RP
65	11.5"	RP
66	15.5"	RP
67	6"	WP
68	7"	RP
69	13"	RO
70	12.5"	RP
71	10.5"	RP
71A	16"	RP
72	21.5"	RO
72A	10"	RO
73	14.5"	RO

TREES REMOVED: 5 (57 TOTAL PROJECT); TREES PROTECTED: 8 (83 TOTAL PROJECT)

LEGEND	
---	PERIMETER PROTECTION
△	TREE TO PROTECT
⊕	TREE TO REMOVE
—	REMOVED TREE (TABLE)



PROFESSIONAL ENGINEER DATE

# HAGGETTS POND RAIL TRAIL

IN ANDOVER, MASSACHUSETTS

## EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 7, 2023

REVISIONS:		
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

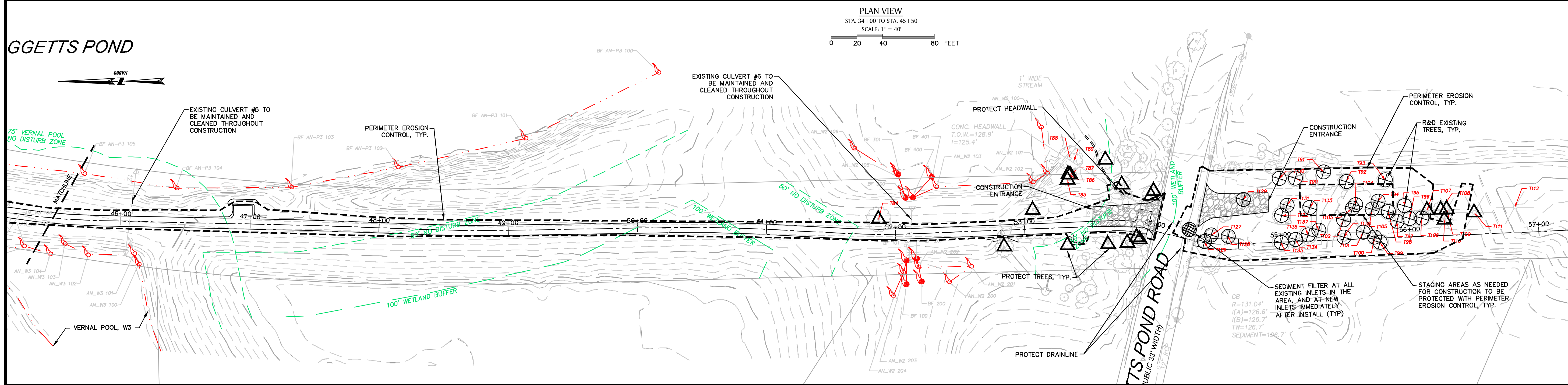
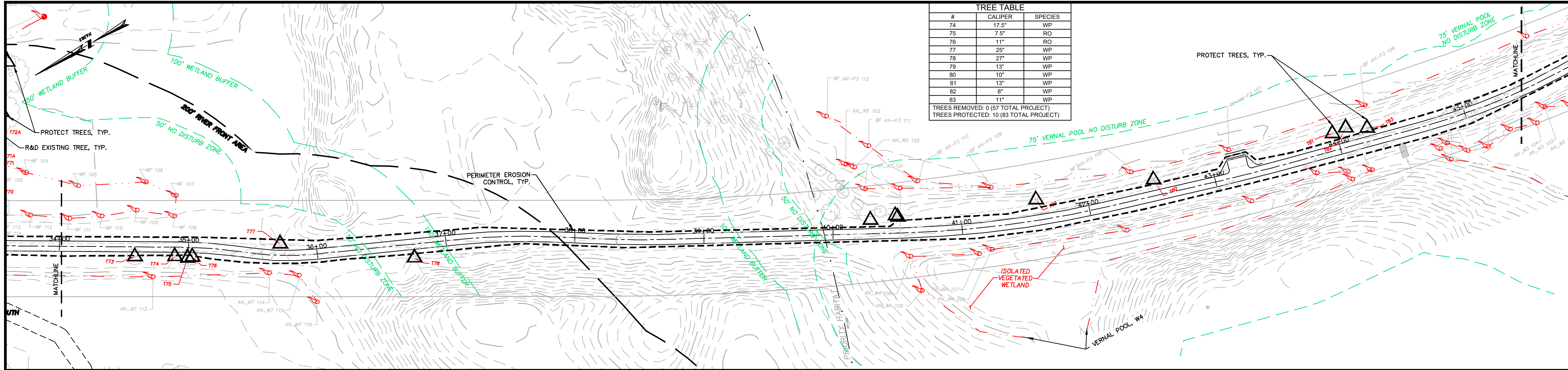
PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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SCALE: 1" = 40'  
0 10 20 40 FEET

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DWG: ESC-100 SHEET ESC-100  
JOB. NO: 8-9985.01

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#	CALIPER	SPECIES	#	CALIPER	SPECIES	#	CALIPER	SPECIES	#	CALIPER	SPECIES
84	23.5"	RO	98	16"	RO	112	28"	WP	126	16.7"	WP
85	18"	PS	99	14"	RO	113	9.5"	NM	127	17.7"	RO
86	12.5"	DEAD	100	14"	WP	114	23"	RO	128	15.3"	RO
87	18.5"	WO	101	20.5"	SP	115	14.5"	RO	129	0.4"	WASH
88	21"	RO	102	20"	WP	116	9.5"	NM	130	14.8"	PP
89	10.5"	RM	103	0.5"	WP	117	8.5"	SM	131	10.4"	WP
90	15.5"	RO	104	24"	RO	118	28"	RO	132	19.2"	RO
91	25.5"	RO	105	14"	PP	119	29.5"	RO	133	24"	RO
92	14"	MN	106	14"	RO	120	30"	SM	134	16"	WP
93	9.5"	MN	107	23.5"	WP	121	32"	WP	135	17.2"	RO
94	9"	WP	108	10"	DEAD	122	20"	SM	136	22"	RO
95	9"	RO	109	18.5"	WP	123	23.5"	SM	137	10.7"	WP
96	11"	RO	110	19"	WP	124	21"	SM	138	14.8"	WP
97	16"	WP	111	28"	WP	125	37.5"	NM			

TREES REMOVED: 30 (57 TOTAL PROJECT), TREES PROTECTED: 25 (83 TOTAL PROJECT)

**TREE SPECIES LEGEND**

- QA - QUAKING ASPEN
- SH - SHAGBARK HICKORY
- SM - SUGAR MAPLE
- NM - NORWAY MAPLE
- RM - RED MAPLE
- AE - AMERICAN ELM
- BO - BLACK OAK
- RO - RED OAK
- WO - WHITE OAK
- RP - RED PINE
- SP - SCOTCH PINE
- WP - WHITE PINE
- PP - PITCH PINE
- BB - BLACK BIRCH
- WA - WHITE ASH
- PS - POPLAR SPECIES



PROFESSIONAL ENGINEER DATE

DAVID P. BIANCIVILLA  
CIVIL ENGINEER  
No. 47846  
REGISTERED PROFESSIONAL ENGINEER

# HAGGETTS POND RAIL TRAIL

IN ANDOVER, MASSACHUSETTS

## EROSION & SEDIMENTATION CONTROL PLAN

NOVEMBER 7, 2023

REVISIONS:

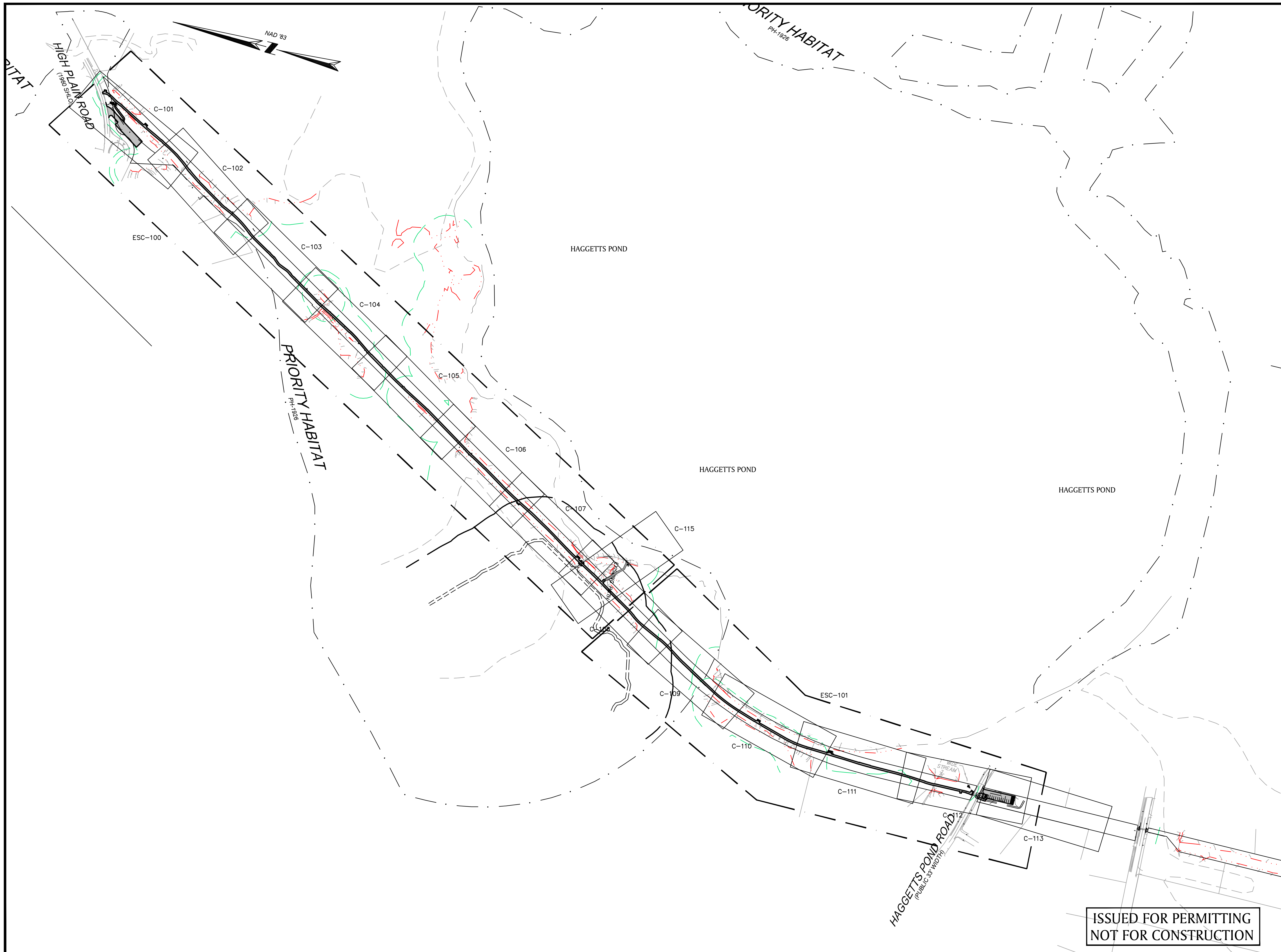
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4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

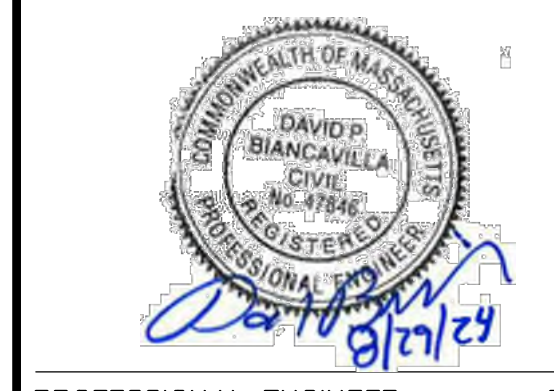
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DWG: ESC-101 SHEET ESC-101  
JOB: NO: 8-9985.01

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**ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION**



PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
RAIL TRAIL**  
  
IN  
ANDOVER,  
MASSACHUSETTS

**SITE KEY PLAN**  
  
NOVEMBER 7, 2023

REVISIONS:

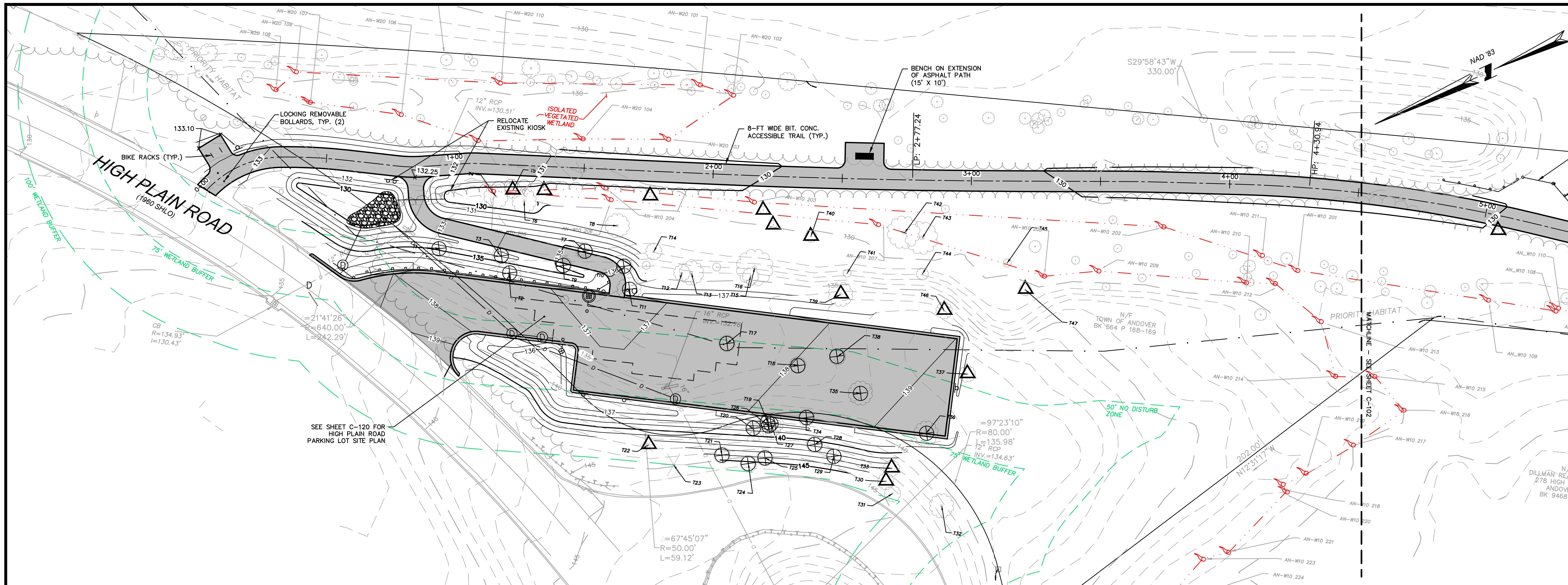
NO.	DATE	DESCRIPTION
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PREPARED FOR:  
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36 BARTLET STREET  
ANDOVER, MA, 01810

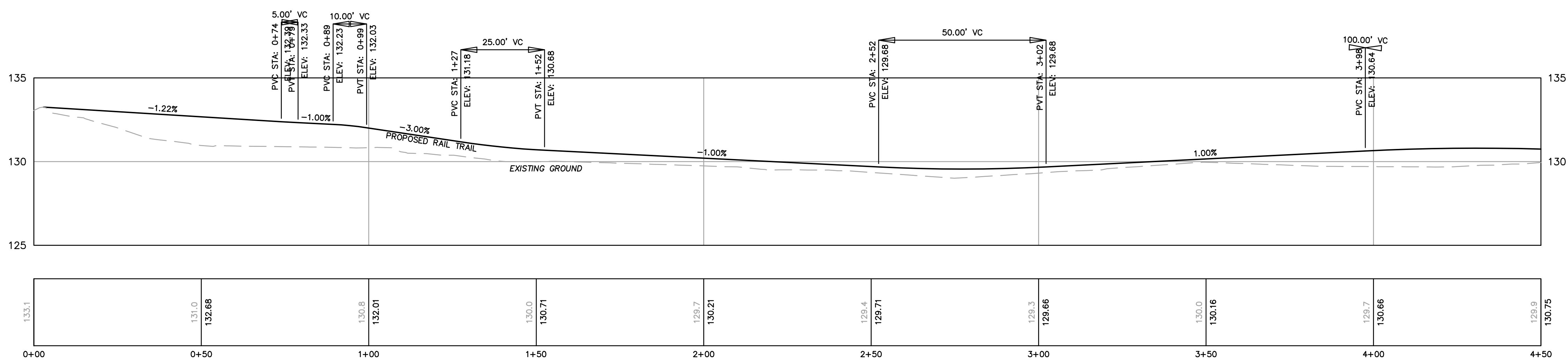
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Andover, Massachusetts  
01810  
617 896 4300

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SCALE: 1"=200'  
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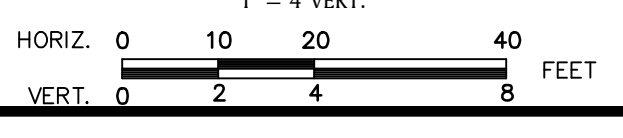
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DWG.:  
JOB. NO: 8-9985.01 SHEET C-100



PLAN VIEW  
 STA. 0+00 TO STA. 4+50  
 SCALE: 1" = 20'



PROFILE VIEW  
 STA. 0+00 TO STA. 4+50  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.



DAVID B. BIANCIVILLA  
 CIVIL ENGINEER  
 REG. NO. 47846  
 PROFESSIONAL ENGINEER  
 DATE

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 0+00 TO STA. 4+50  
 NOVEMBER 7, 2023

REVISIONS:

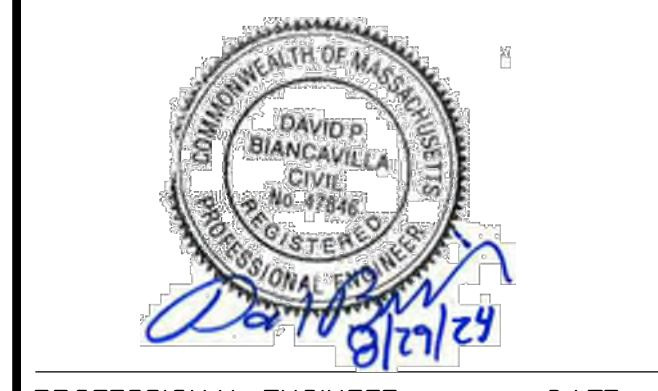
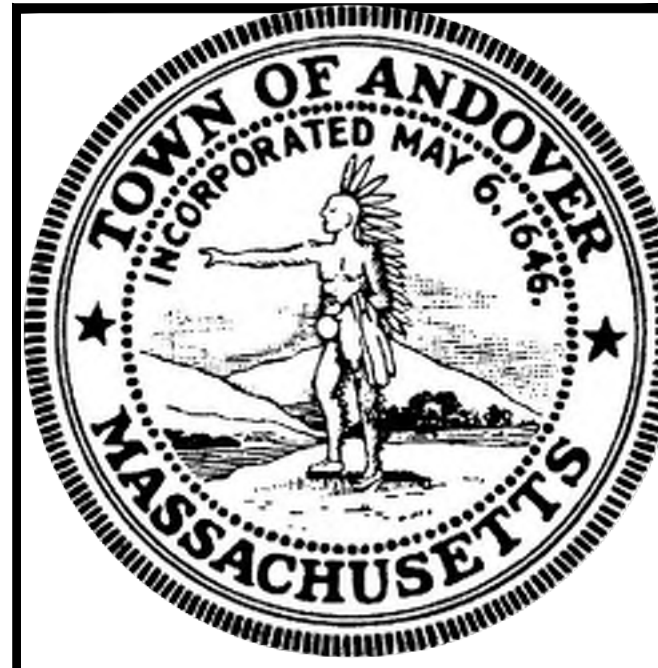
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

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 01810  
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 SCALE: 1" = 20'  
 0 10 20 40 FEET

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PROFESSIONAL ENGINEER DATE

**HAGGETTS POND RAIL TRAIL**  
IN  
ANDOVER,  
MASSACHUSETTS

TRAIL PLAN AND PROFILE  
STA. 4+50 TO STA. 9+00  
NOVEMBER 7, 2023

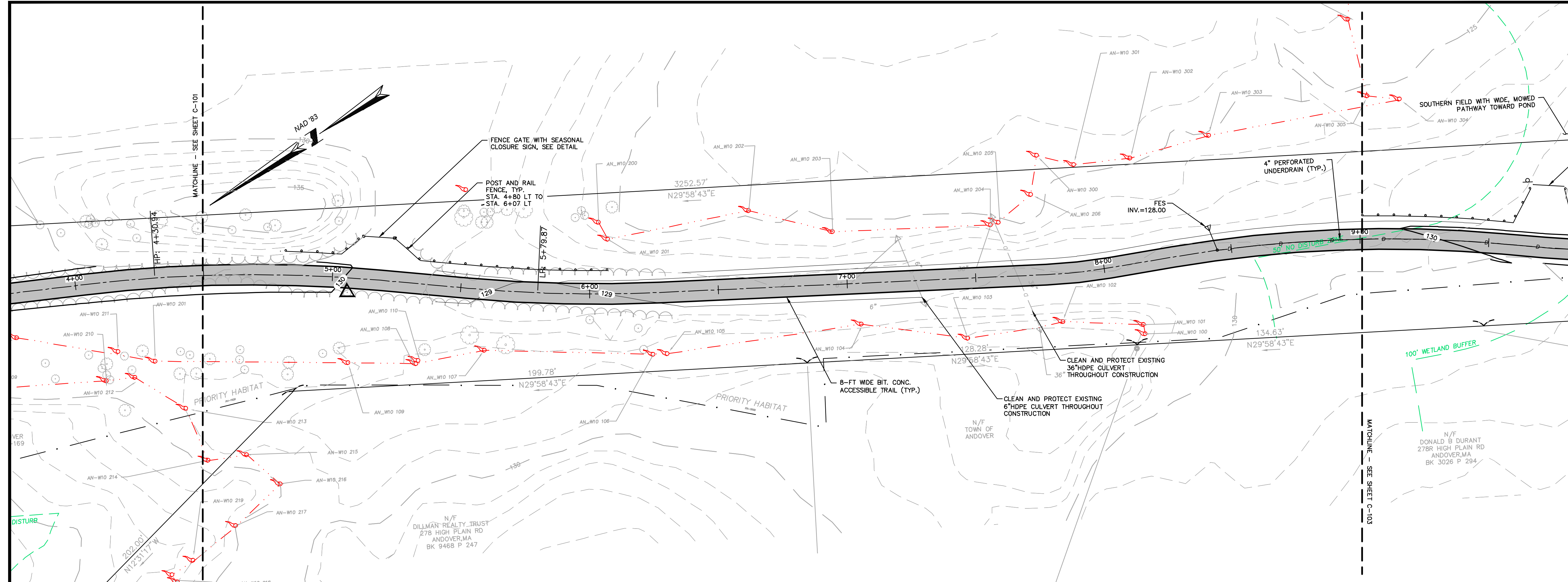
REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

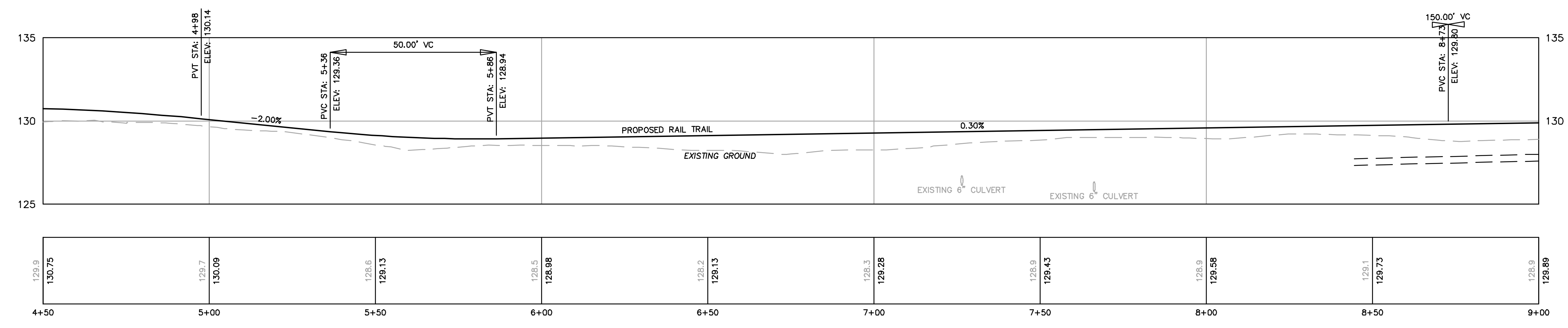
PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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SCALE: 1" = 20'  
0 10 20 40 FEET  
FILE: P:\8998501\C\\_D  
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JOB. NO: 8-9985.01 SHEET C-102

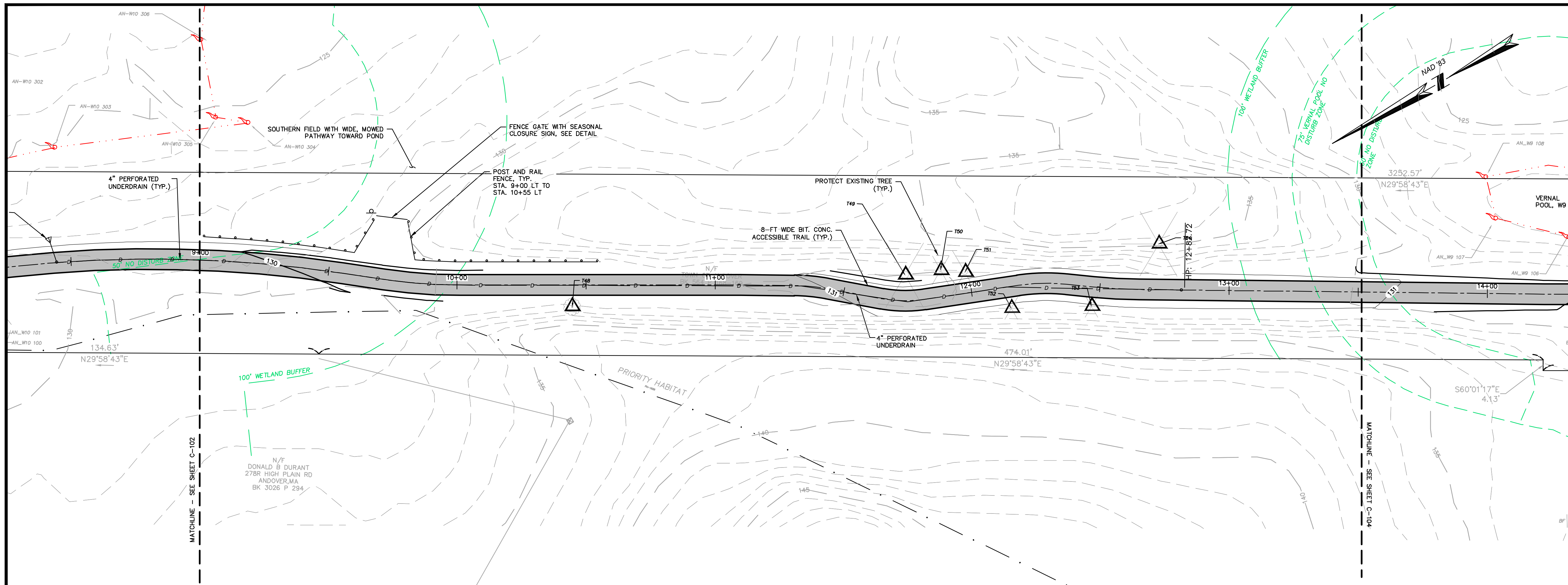


PLAN VIEW  
STA. 4+50 TO STA. 9+00  
SCALE: 1" = 20'  
0 10 20 40 FEET

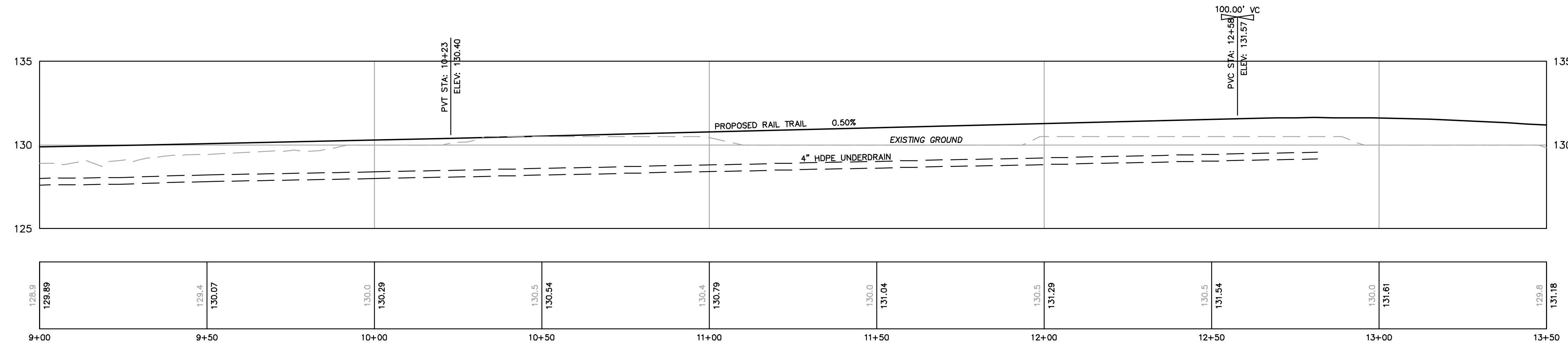


PROFILE VIEW  
STA. 4+50 TO STA. 9+00  
SCALE: 1" = 20' HORIZ.  
1" = 4' VERT.  
HORIZ. 0 10 20 40 FEET  
VERT. 0 2 4 8 FEET

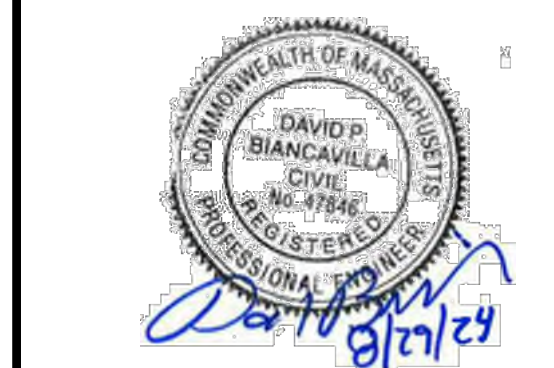
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PLAN VIEW  
 STA. 9+00 TO STA. 13+50  
 SCALE: 1" = 20'



PROFILE VIEW  
 STA. 9+00 TO STA. 13+50  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.



PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 9+00 TO STA. 13+50  
 NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

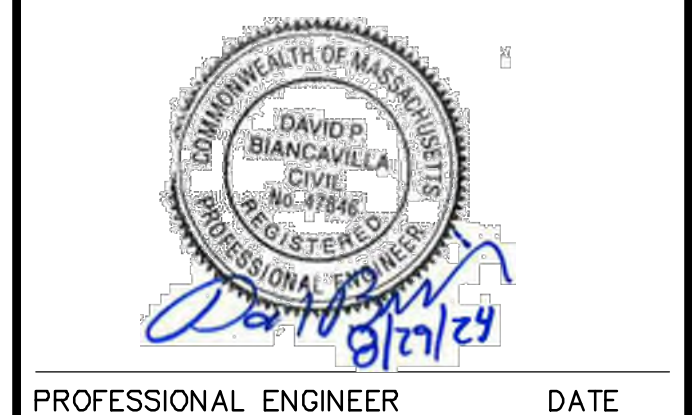
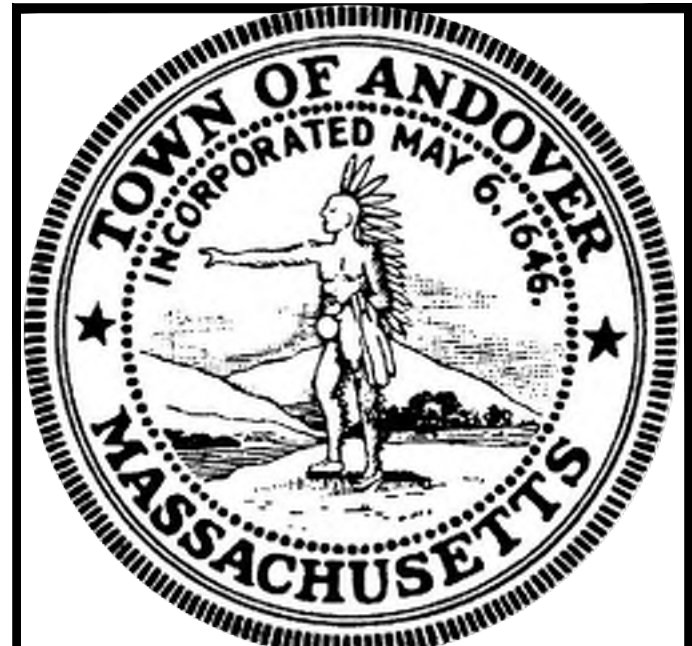
PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

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 01810  
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 SCALE: 1" = 20'  
 0 10 20 40 FEET

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 DWG.:  
 JOB. NO: 8-9985.01 SHEET C-103



**HAGGETTS POND RAIL TRAIL**  
IN  
ANDOVER,  
MASSACHUSETTS

TRAIL PLAN AND PROFILE  
STA. 13+50 TO STA. 18+00  
NOVEMBER 7, 2023

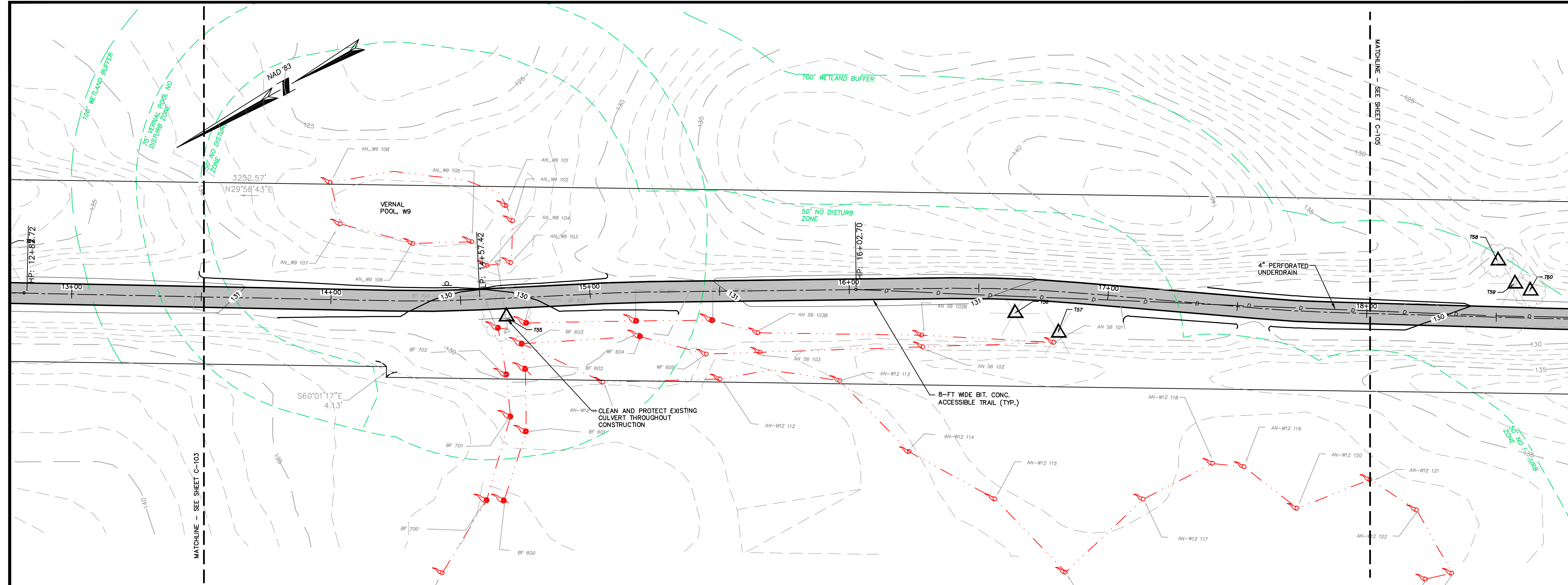
REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

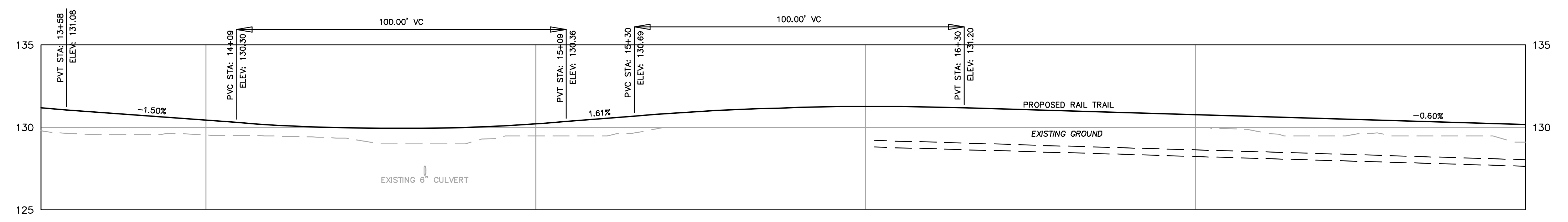
PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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SCALE: 1" = 20'  
0 10 20 40 FEET  
FILE: P:\8998501\C\\_\_D  
JOB. NO: 8-9985.01 SHEET C-104



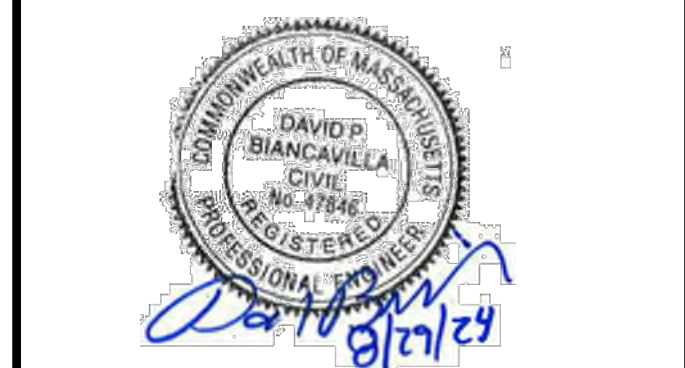
PLAN VIEW  
STA. 13+50 TO STA. 18+00  
SCALE: 1" = 20'  
0 10 20 40 FEET



Station	Elevation
13+50	129.8
13+58	131.18
14+00	129.5
14+09	130.44
14+50	129.1
14+58	129.85
15+00	129.5
15+09	130.22
15+50	130.0
15+58	130.97
16+00	130.0
16+09	131.28
16+50	130.0
16+58	131.08
17+00	130.0
17+09	130.78
17+50	129.6
17+58	130.48
18+00	129.1
18+08	130.18

PROFILE VIEW  
STA. 13+50 TO STA. 18+00  
SCALE: 1" = 20' HORIZ.  
1" = 4' VERT.  
HORIZ. 0 10 20 40 FEET  
VERT. 0 2 4 8 FEET

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NOT FOR CONSTRUCTION**



PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
RAIL TRAIL**  
  
IN  
ANDOVER,  
MASSACHUSETTS

**TRAIL PLAN AND PROFILE**  
STA. 18+00 TO STA. 22+50  
NOVEMBER 7, 2023

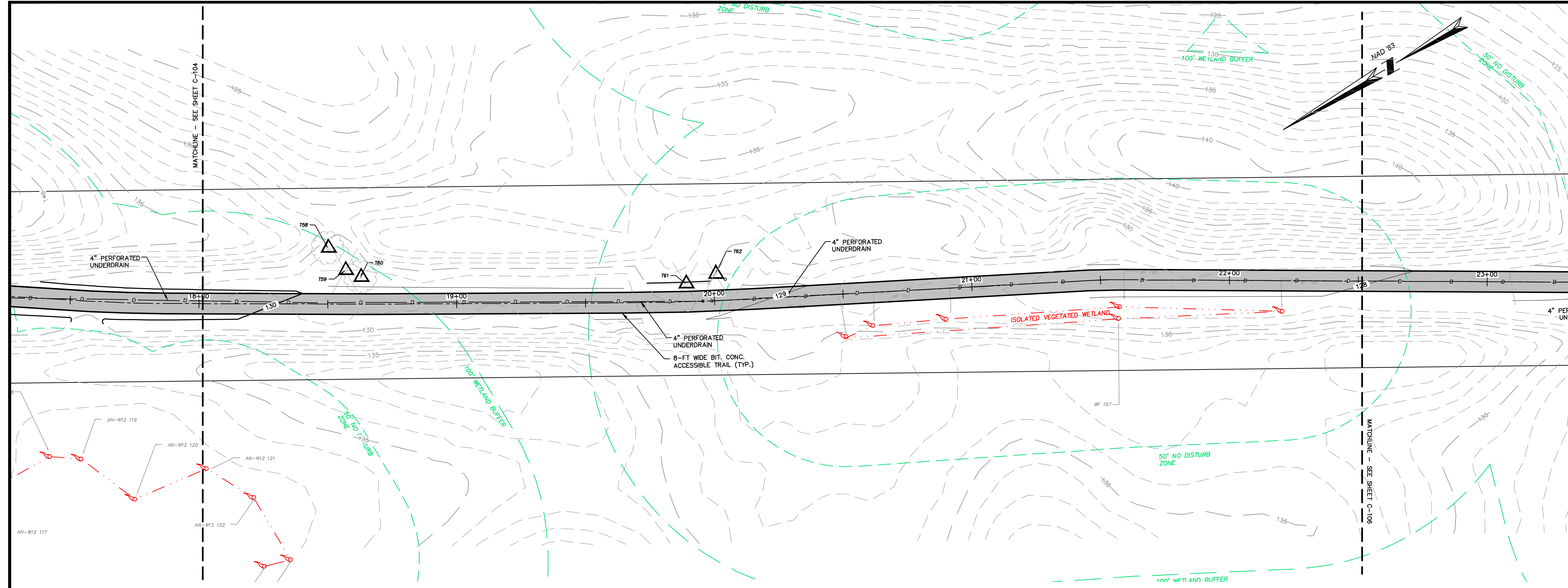
REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

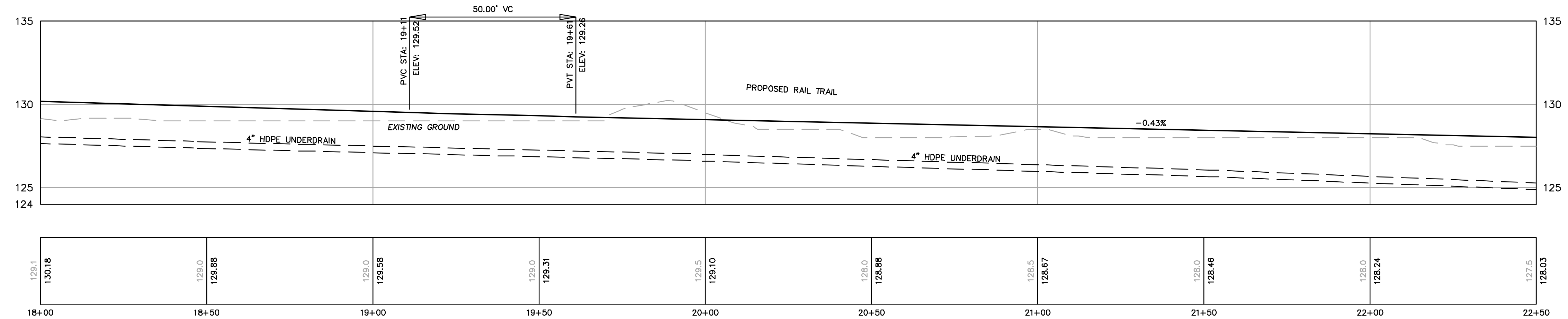
PREPARED FOR:  
TOWN OF ANDOVER  
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FILE: P:\8998501\C\...  
DWG.:  
JOB. NO: 8-9985.01 SHEET C-105

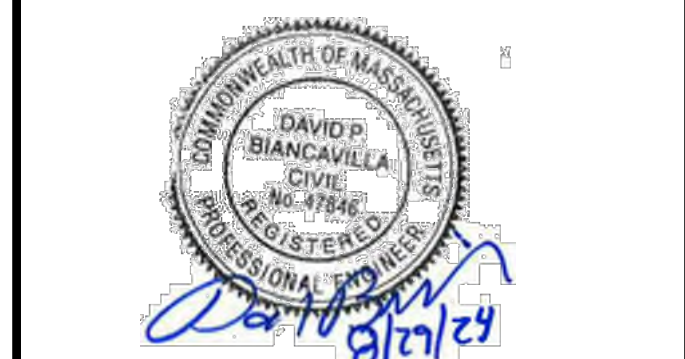


**PLAN VIEW**  
STA. 18+00 TO STA. 22+50  
SCALE: 1" = 20'  
0 10 20 40 FEET



**PROFILE VIEW**  
STA. 18+00 TO STA. 22+50  
SCALE: 1" = 20' HORIZ.  
1" = 4' VERT.  
HORIZ. 0 10 20 40 FEET  
VERT. 0 2 4 8 FEET

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PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
RAIL TRAIL**  
  
IN  
ANDOVER,  
MASSACHUSETTS

**TRAIL PLAN AND PROFILE**  
STA. 22+50 TO STA. 27+00  
NOVEMBER 7, 2023

REVISIONS:

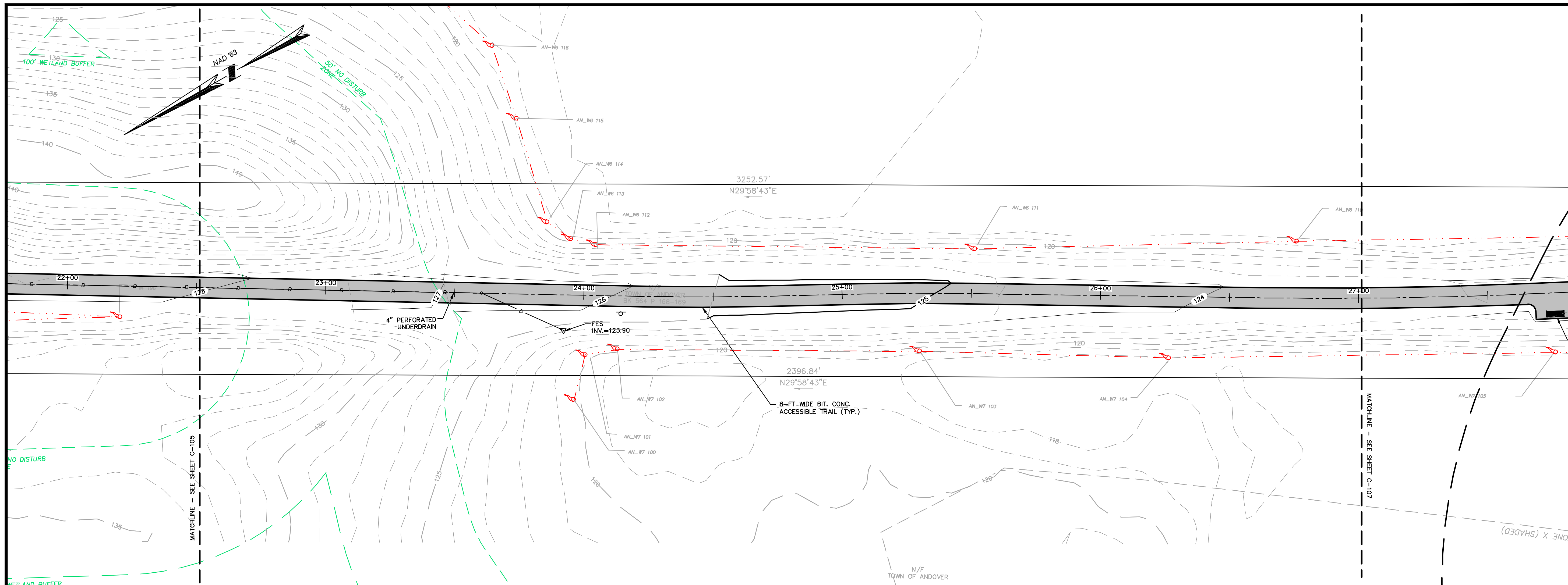
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

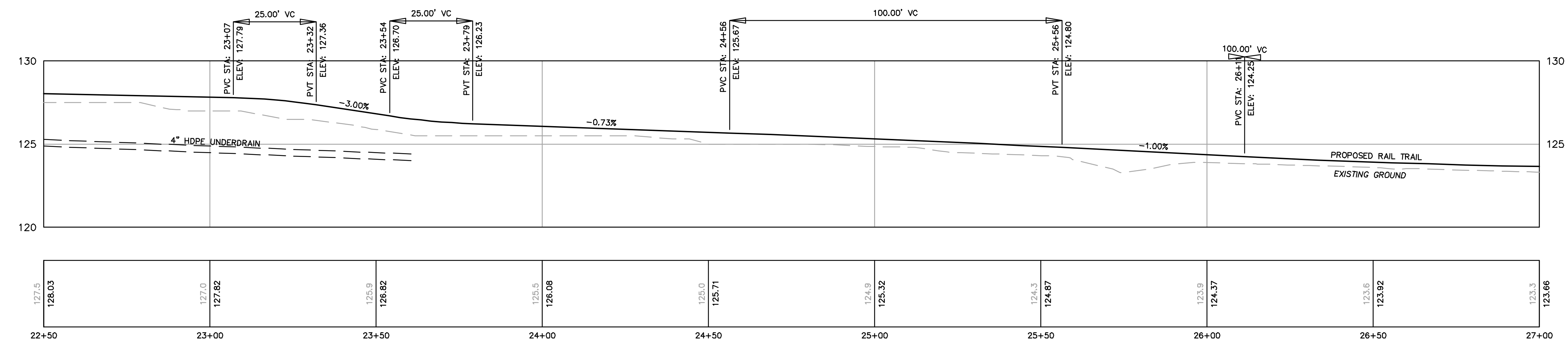
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SCALE: 1" = 20'  
0 10 20 40 FEET

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JOB. NO: 8-9985.01 SHEET C-106

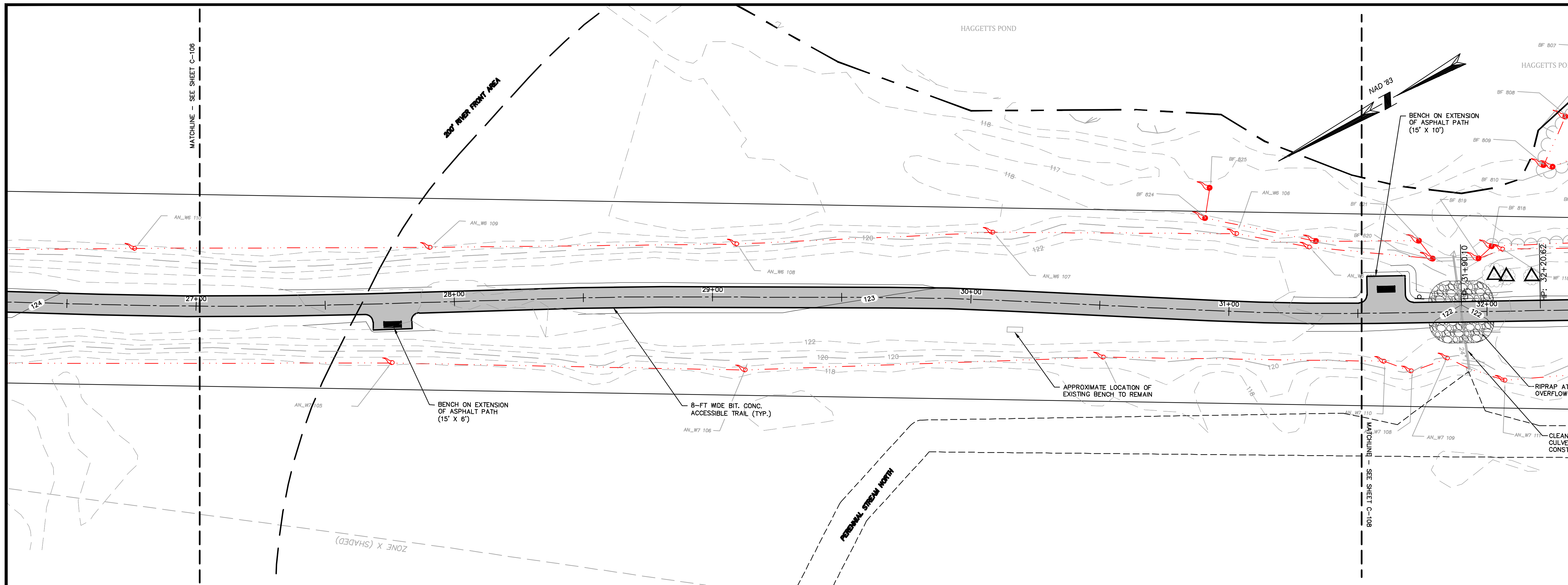


**PLAN VIEW**  
STA. 22+50 TO STA. 27+00  
SCALE: 1" = 20'  
0 10 20 40 FEET

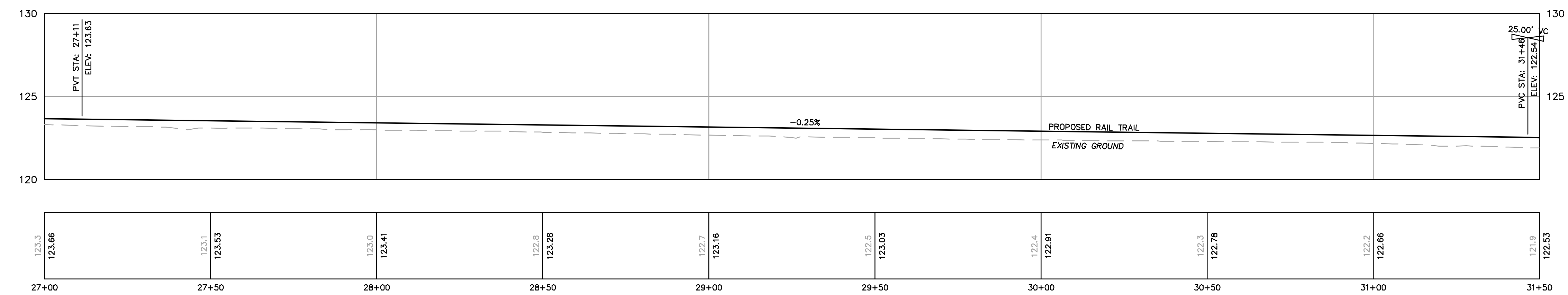


**PROFILE VIEW**  
STA. 22+50 TO STA. 27+00  
SCALE: 1" = 20' HORIZ.  
1" = 4' VERT.  
HORIZ. 0 10 20 40 FEET  
VERT. 0 2 4 8 FEET

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PLAN VIEW  
 STA. 27+00 TO STA. 31+50  
 SCALE: 1" = 20'



PROFILE VIEW  
 STA. 27+00 TO STA. 31+50  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.



COMMONWEALTH OF MASSACHUSETTS  
 DAVID P. BIANCIVILLA  
 CIVIL ENGINEER  
 REG. NO. 17848  
 PROFESSIONAL SEAL  
 PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 27+00 TO STA. 31+50  
 NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

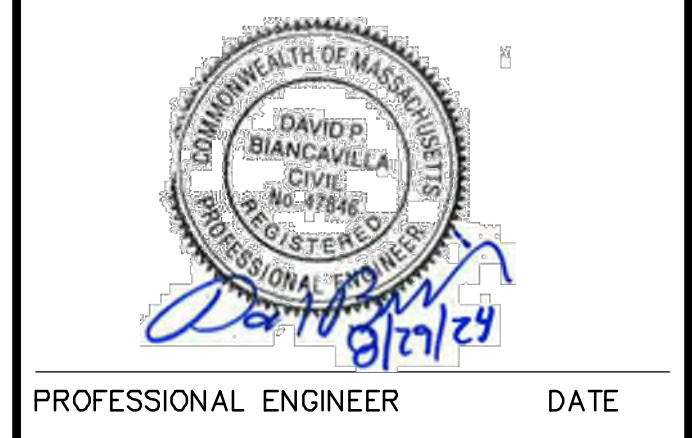
PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

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 SCALE: 1" = 20'  
 0 10 20 40 FEET

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 DWG:  
 JOB. NO: 8-9985.01 SHEET C-107



**HAGGETTS POND  
RAIL TRAIL**

IN  
ANDOVER,  
MASSACHUSETTS

**TRAIL PLAN AND PROFILE**  
STA. 0+00 TO STA. 4+60  
NOVEMBER 7, 2023

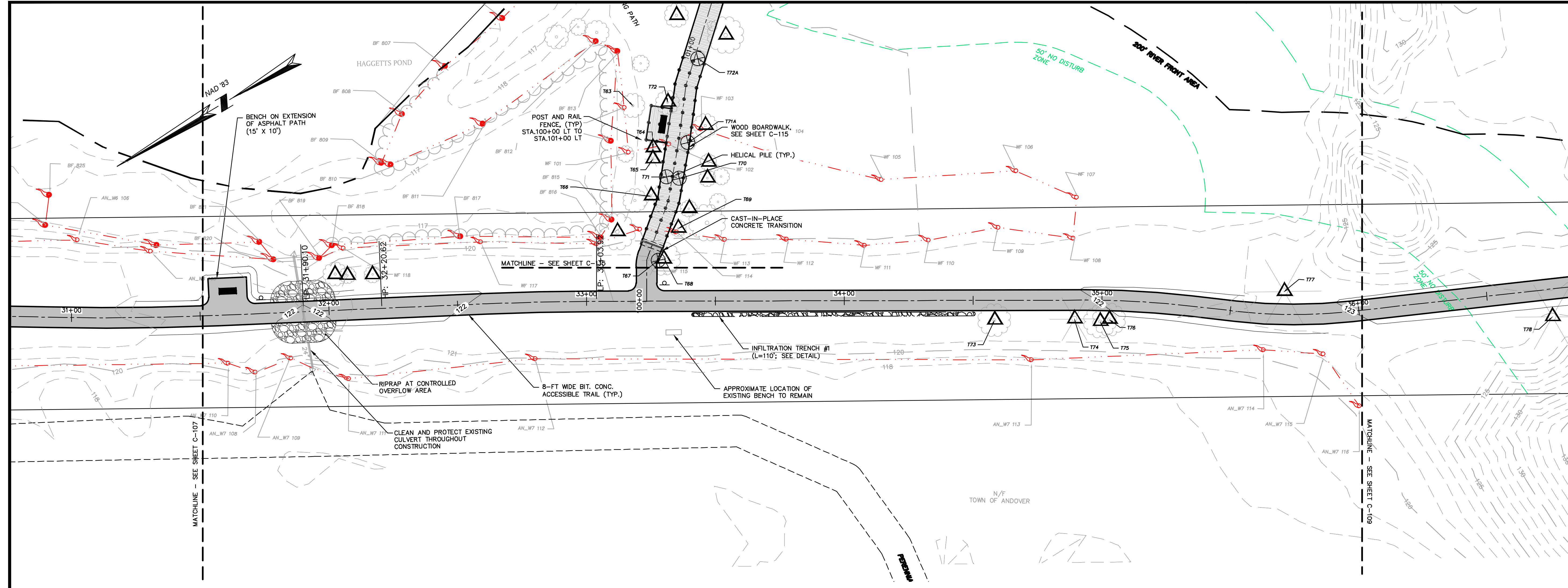
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2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

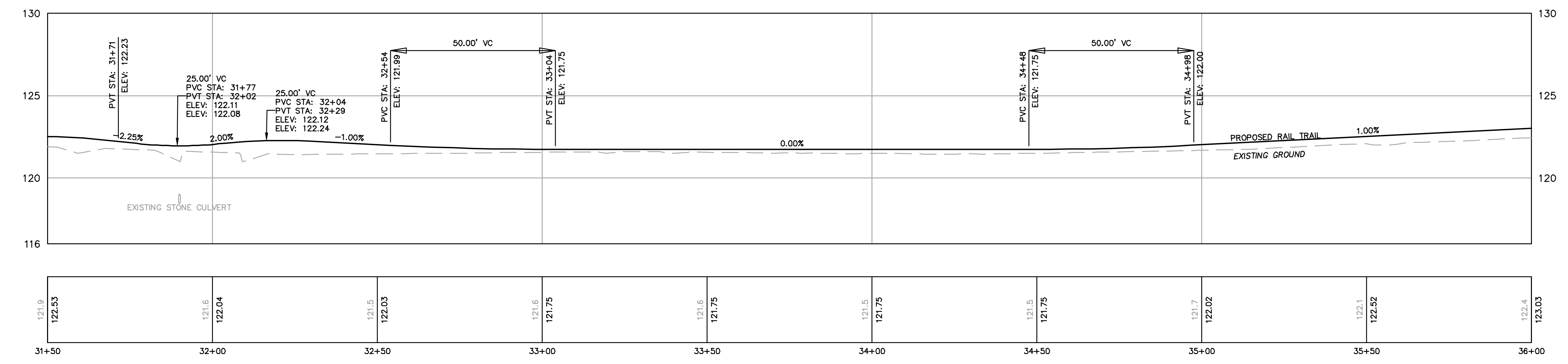
PREPARED FOR:  
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SCALE: 1" = 20'  
0 10 20 40 FEET  
FILE: P:\8998501\C\\_D  
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JOB. NO: 8-9985.01 SHEET C-108

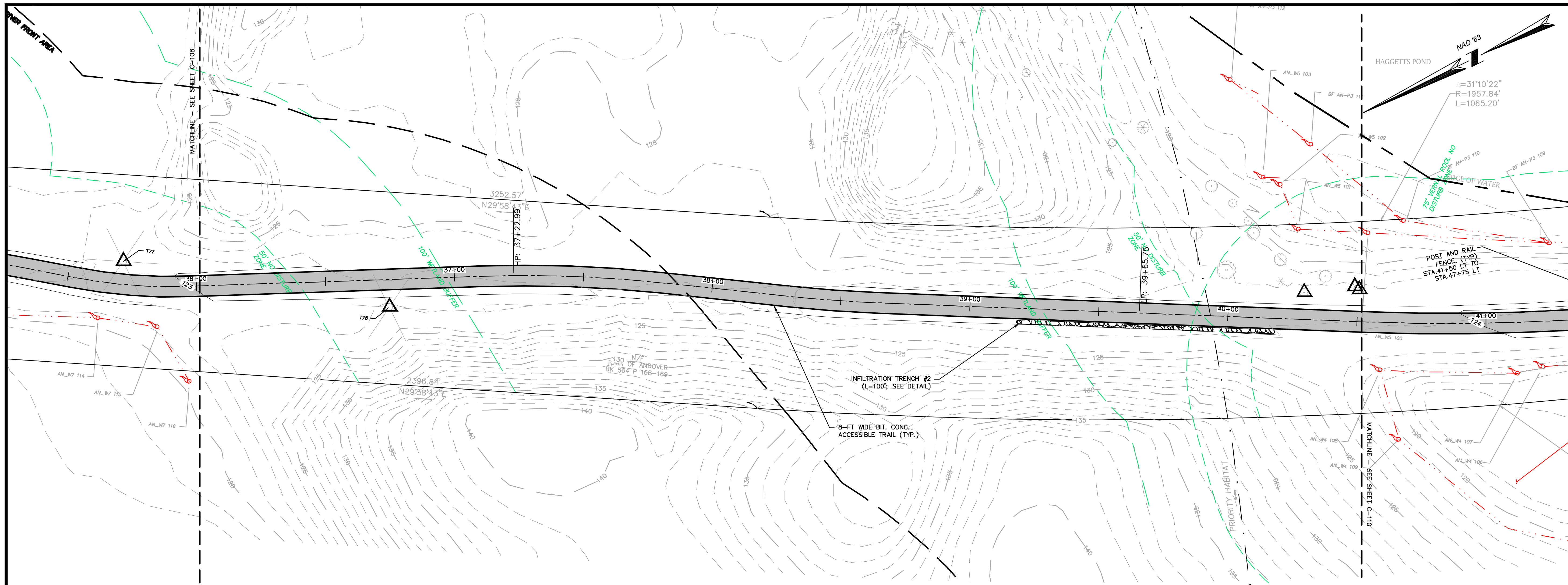


**PLAN VIEW**  
STA. 31+50 TO STA. 36+00  
SCALE: 1" = 20'  
0 10 20 40 FEET

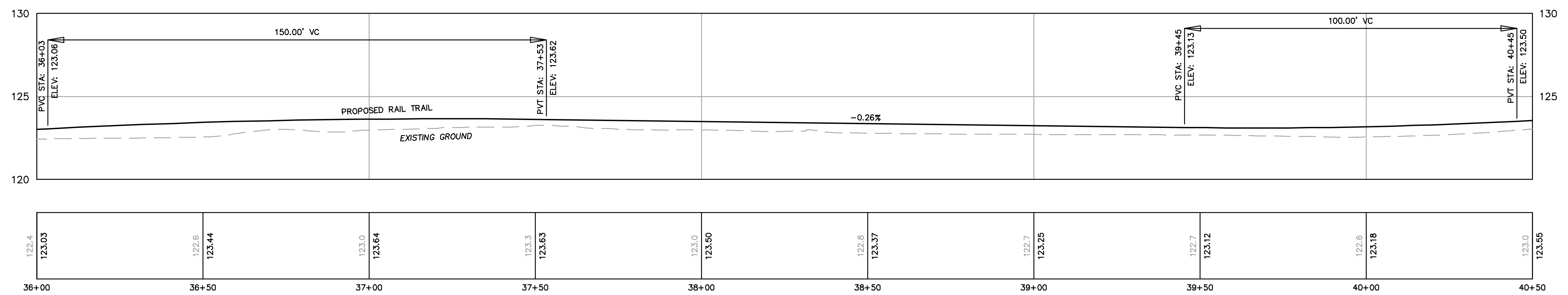


**PROFILE VIEW**  
STA. 31+50 TO STA. 36+00  
SCALE: 1" = 20' HORIZ.  
1" = 4' VERT.  
0 10 20 40 FEET  
0 2 4 8 FEET

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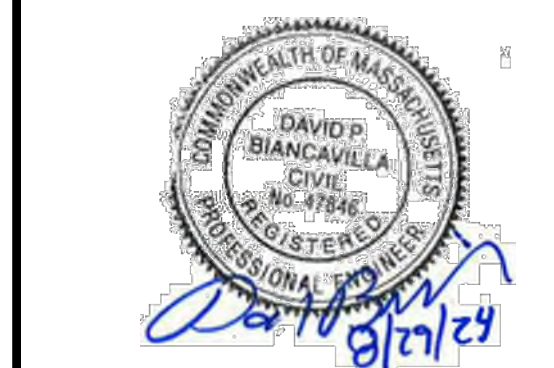


**PLAN VIEW**  
 STA. 36+00 TO STA. 40+50  
 SCALE: 1" = 20'



**PROFILE VIEW**  
 STA. 36+00 TO STA. 40+50  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.

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PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
 RAIL TRAIL**  
 IN  
 ANDOVER,  
 MASSACHUSETTS

**TRAIL PLAN AND PROFILE**  
 STA. 36+00 TO STA. 40+50  
 NOVEMBER 7, 2023

REVISIONS:

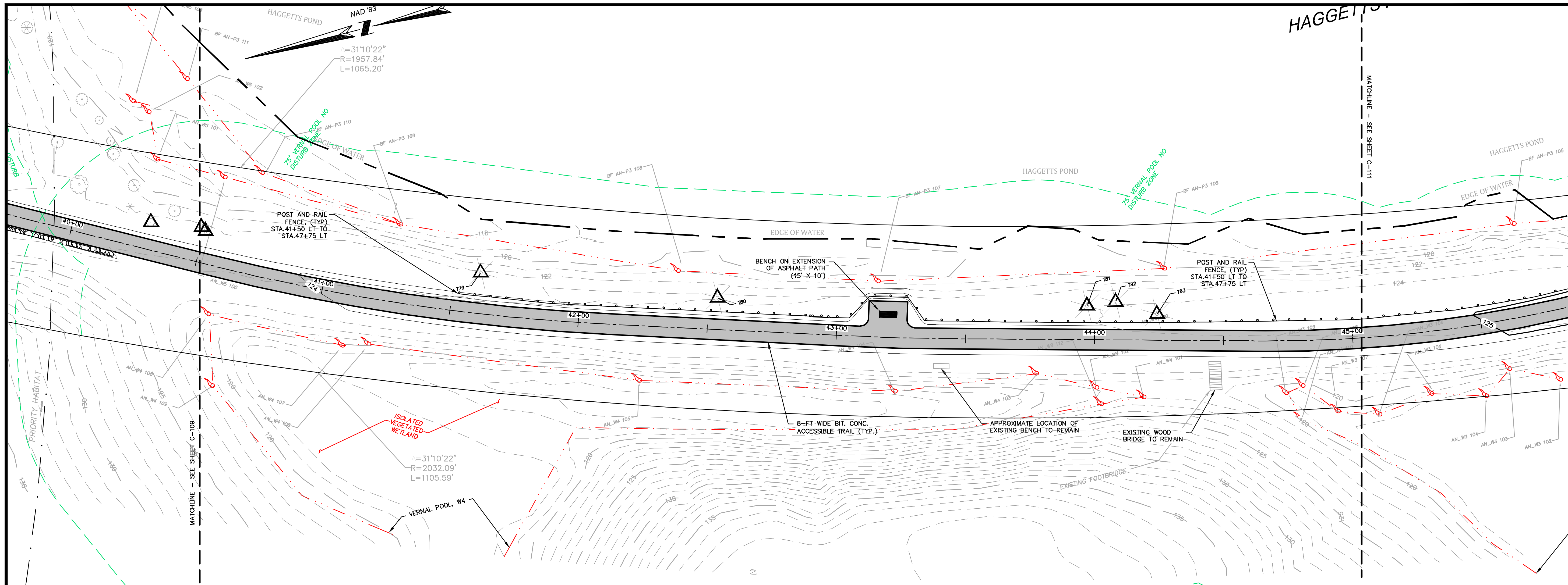
NO.	DATE	DESCRIPTION
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2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

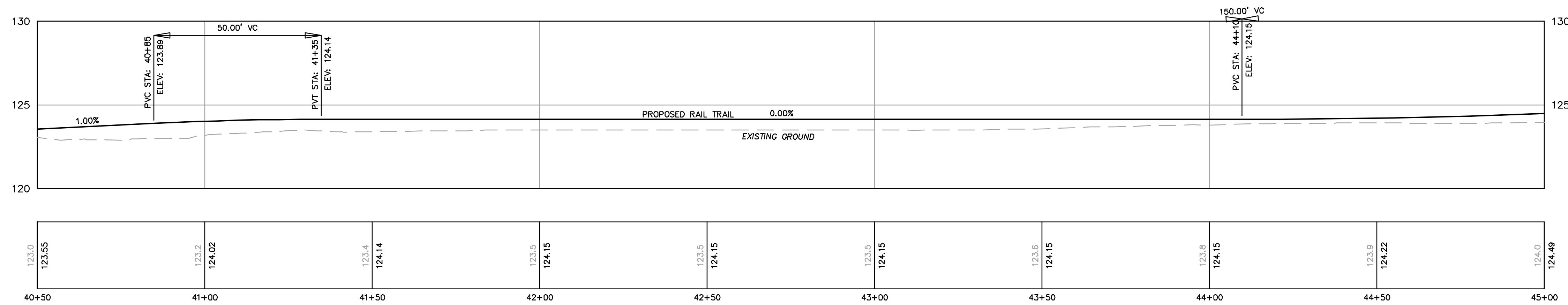
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 Andover, Massachusetts  
 01810  
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 SCALE: 1" = 20'  
 0 10 20 40 FEET

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 DWG: SHEET C-109  
 JOB. NO: 8-9985.01

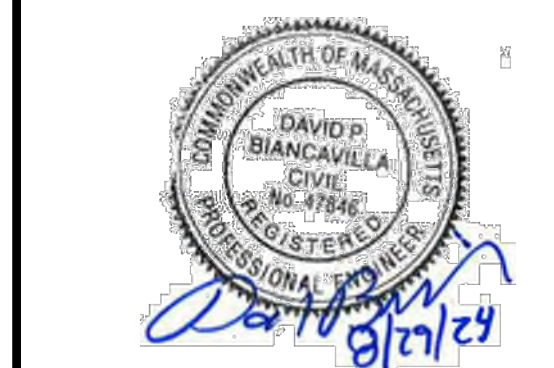


PLAN VIEW  
 STA. 40+50 TO STA. 45+00  
 SCALE: 1" = 20'



PROFILE VIEW  
 STA. 40+50 TO STA. 45+00  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 40+50 TO STA. 45+00  
 NOVEMBER 7, 2023

REVISIONS:

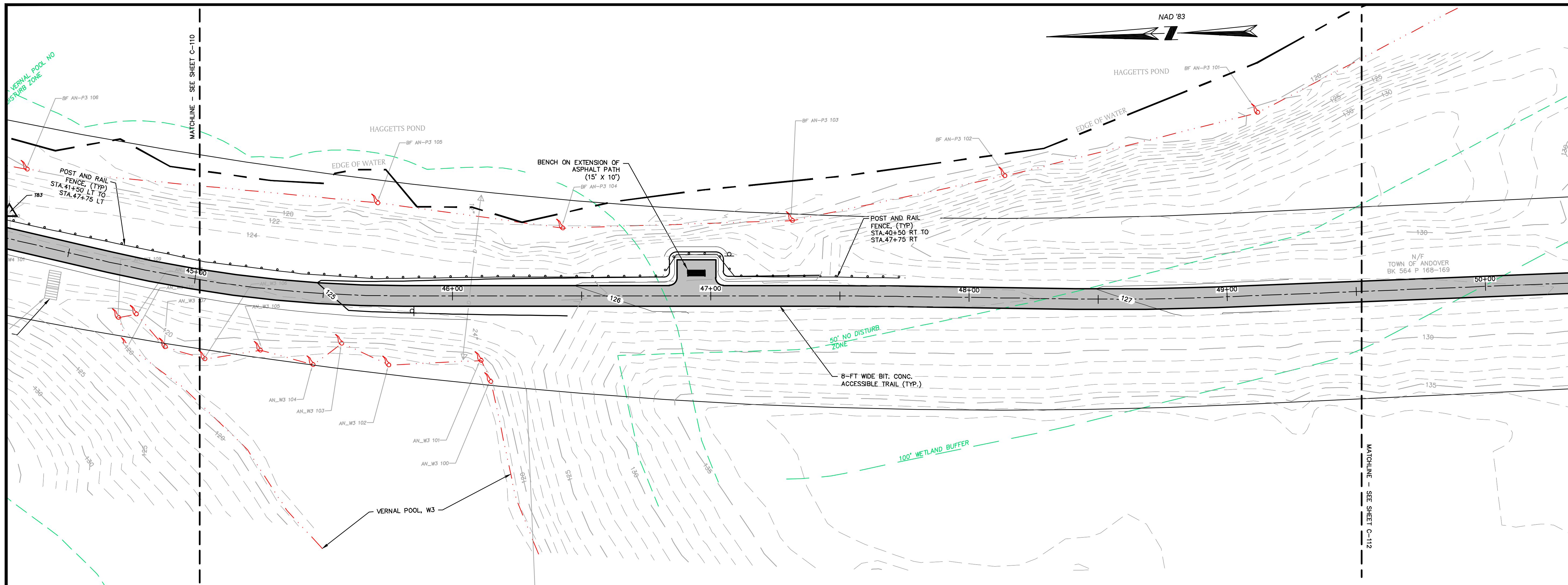
NO.	DATE	DESCRIPTION
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2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

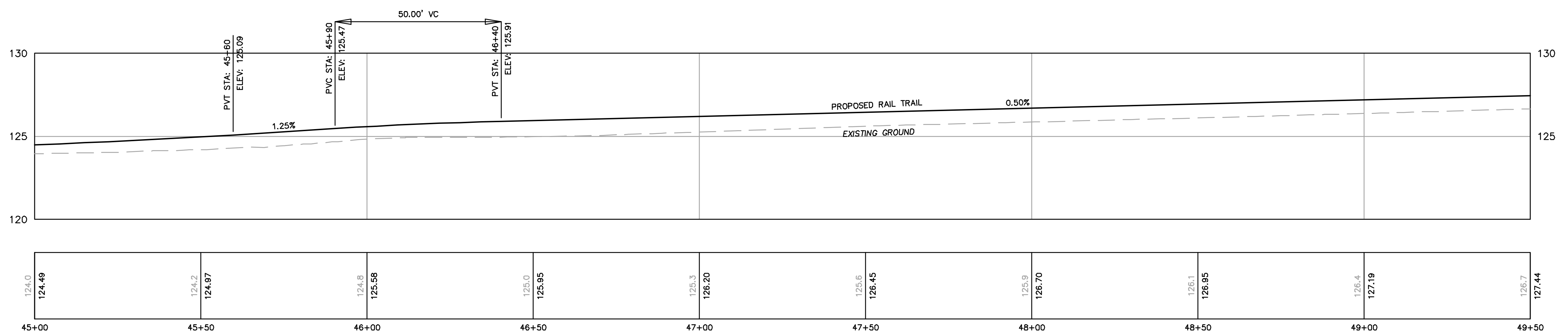
**BSC GROUP**  
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 Andover, Massachusetts  
 01810  
 617 896 4300

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 SCALE: 1" = 20'

FILE: P:\8998501\C\ \_D  
 DWG.:  
 JOB. NO: 8-9985.01 SHEET C-110



PLAN VIEW  
 STA. 45+00 TO STA. 49+50  
 SCALE: 1" = 20'



PROFILE VIEW  
 STA. 45+00 TO STA. 49+50  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.



PROFESSIONAL ENGINEER DATE

DAVID P. BIANCIVILLA  
 CIVIL ENGINEER  
 REG. NO. 17848

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 45+00 TO STA. 49+50  
 NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

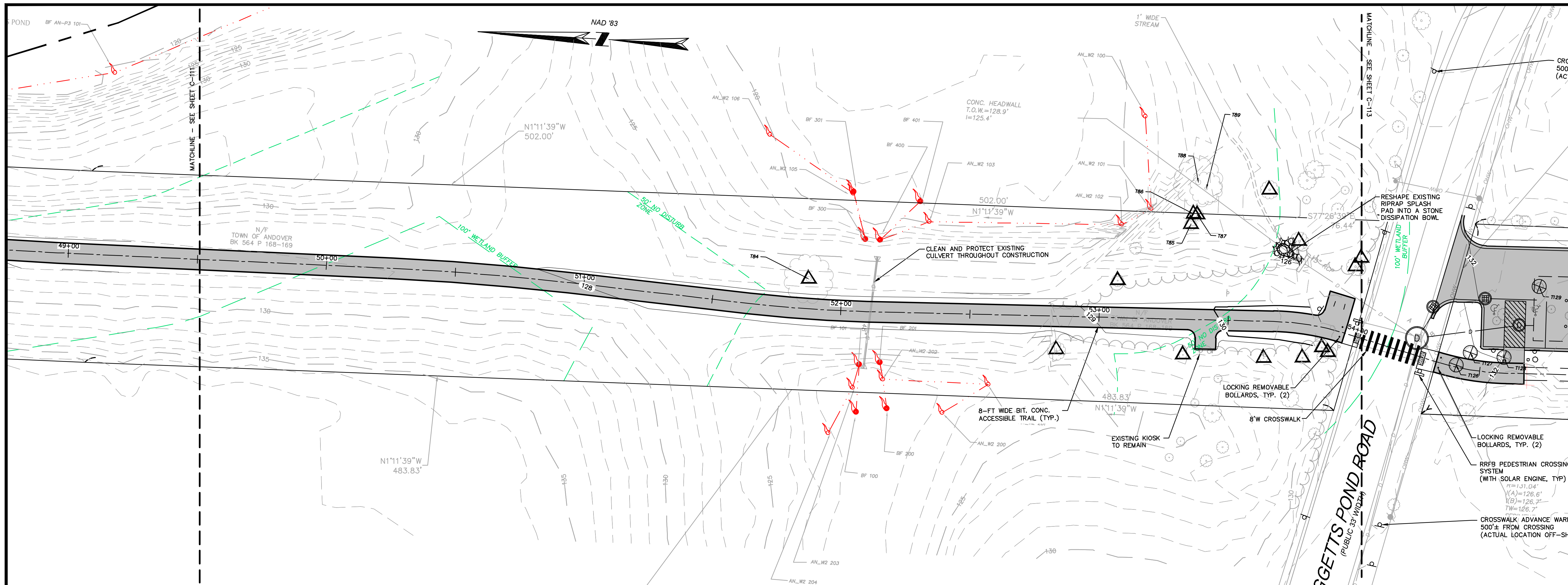
PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

**BSC GROUP**  
 300 Brickstone Square, Suite 203  
 Andover, Massachusetts  
 01810  
 617 896 4300

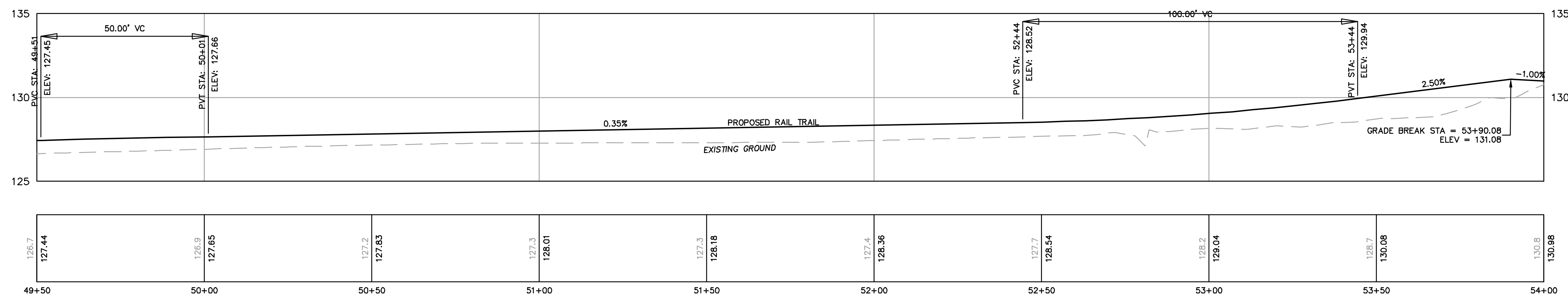
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 SCALE: 1" = 20'  
 0 10 20 40 FEET

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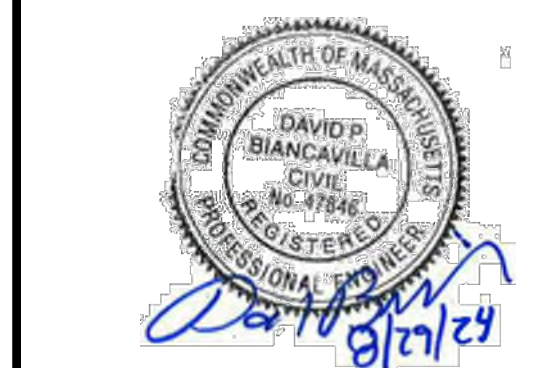


**PLAN VIEW**  
 STA. 49+50 TO STA. 54+00  
 SCALE: 1" = 20'



**PROFILE VIEW**  
 STA. 49+50 TO STA. 54+00  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.

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 NOT FOR CONSTRUCTION**



PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
 RAIL TRAIL**  
 IN  
 ANDOVER,  
 MASSACHUSETTS

**TRAIL PLAN AND PROFILE**  
 STA. 49+50 TO STA. 54+00  
 NOVEMBER 7, 2023

REVISIONS:

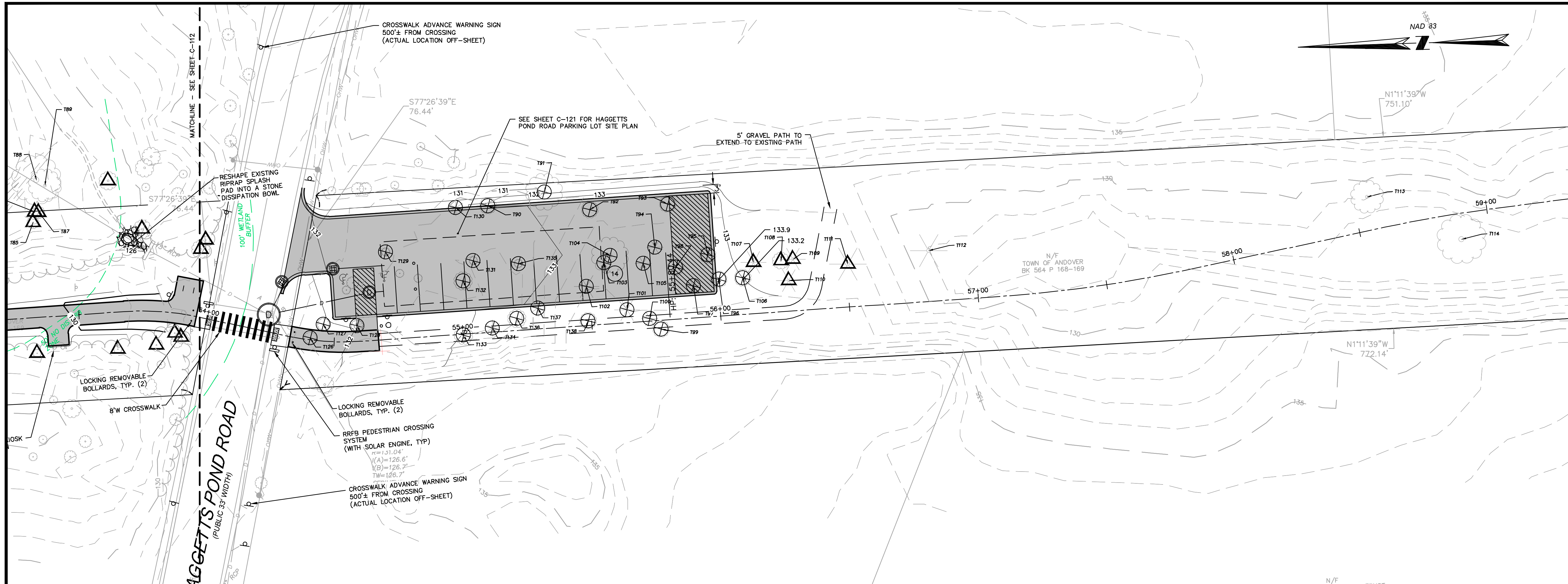
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

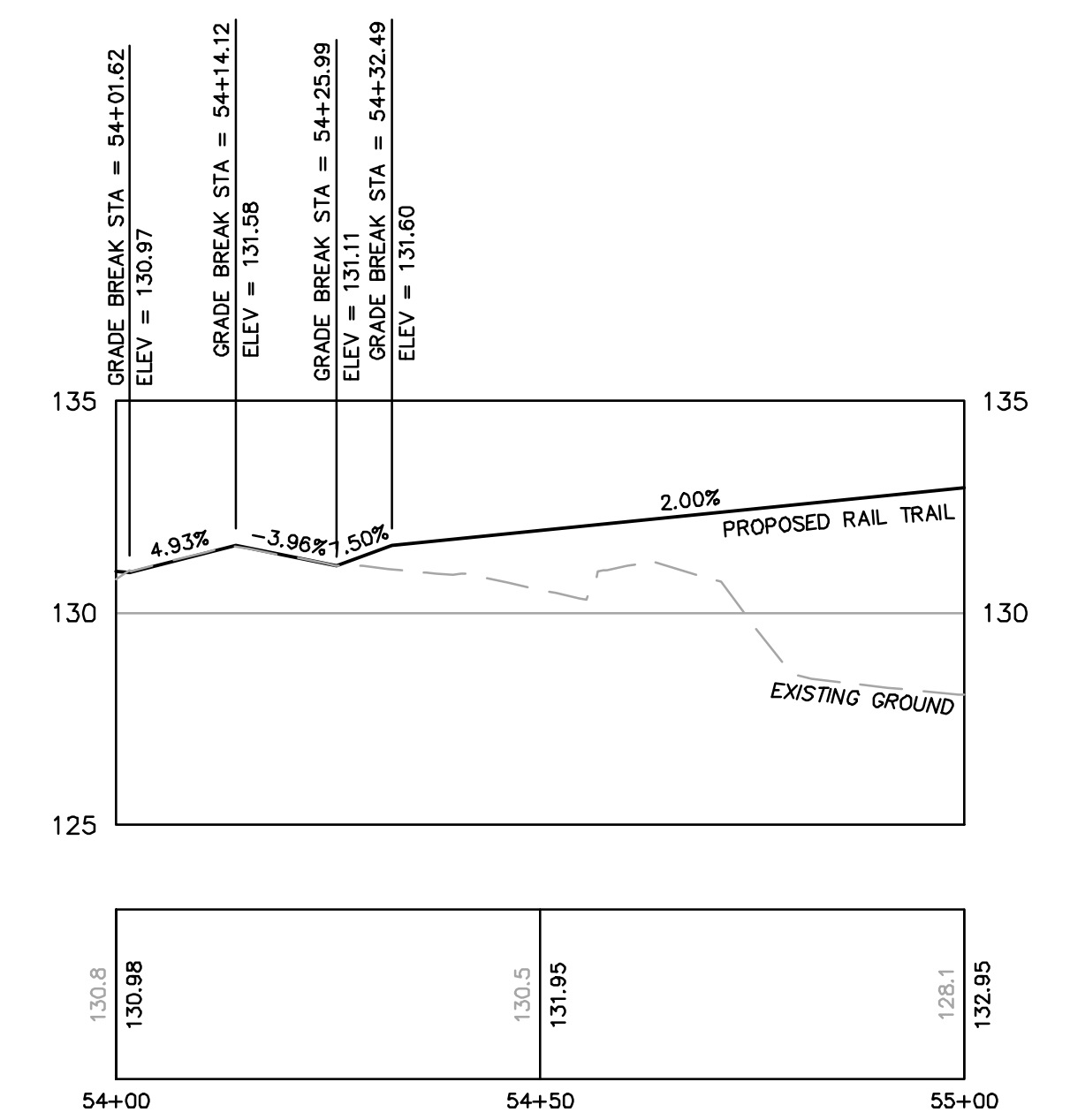
**BSC GROUP**  
 300 Brickstone Square, Suite 203  
 Andover, Massachusetts  
 01810  
 617 896 4300

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 SCALE: 1" = 20'  
 0 10 20 40 FEET

FILE: P:\8998501\C\...  
 DWG.:  
 JOB. NO: 8-9985.01 SHEET C-112



PLAN VIEW  
 STA. 54+00 TO STA. 58+50  
 SCALE: 1" = 20'  
 0 10 20 40 FEET



PROFILE VIEW  
 STA. 54+00 TO STA. 55+00  
 SCALE: 1" = 20' HORIZ.  
 1" = 4' VERT.  
 HORIZ. 0 10 20 40 FEET  
 VERT. 0 2 4 8 FEET



DAVID P. BIANCIVILLA  
 CIVIL ENGINEER  
 PROFESSIONAL ENGINEER  
 PROFESSIONAL SEAL

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

TRAIL PLAN AND PROFILE  
 STA. 54+00 TO STA. 55+00  
 NOVEMBER 7, 2023

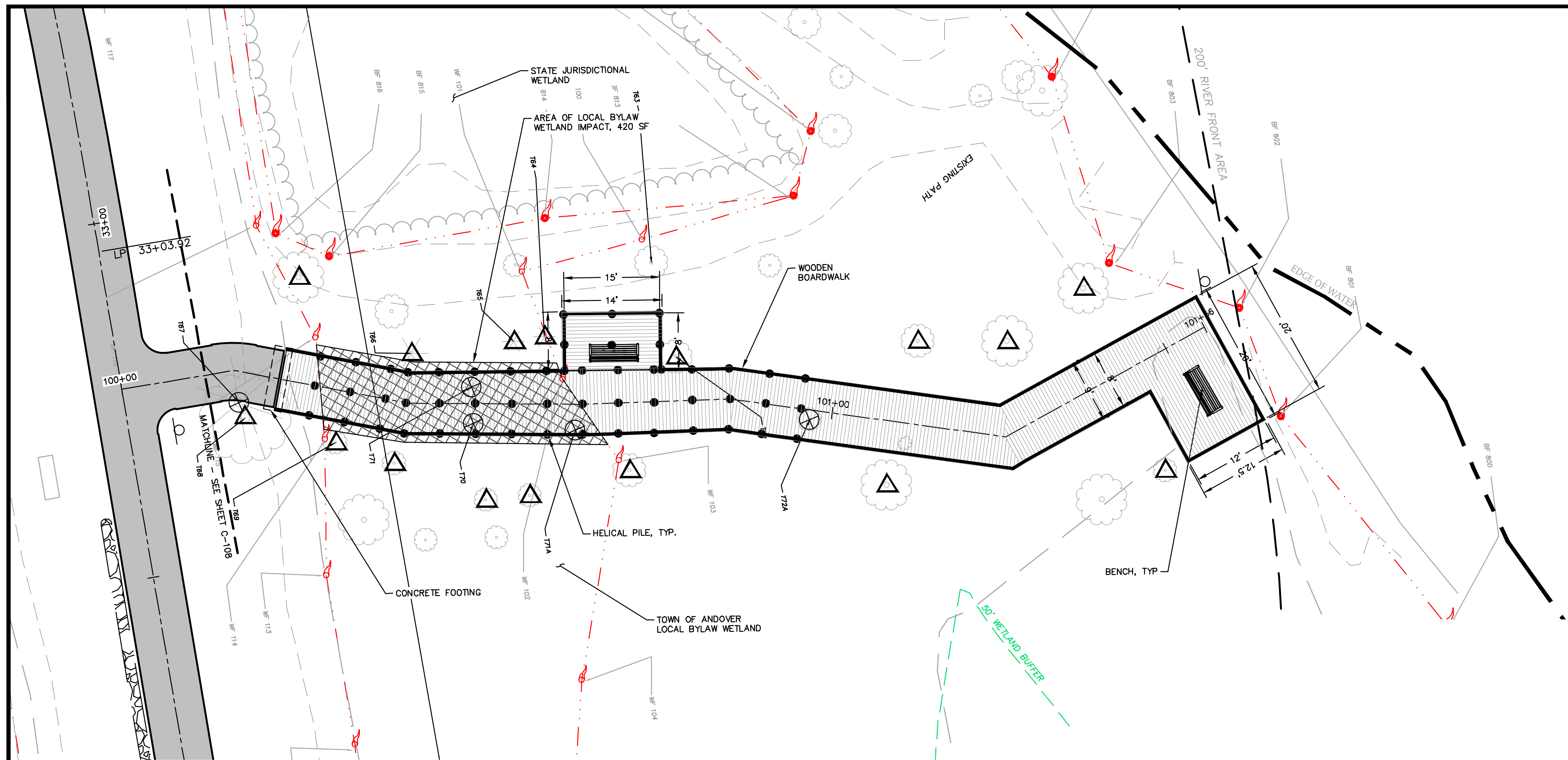
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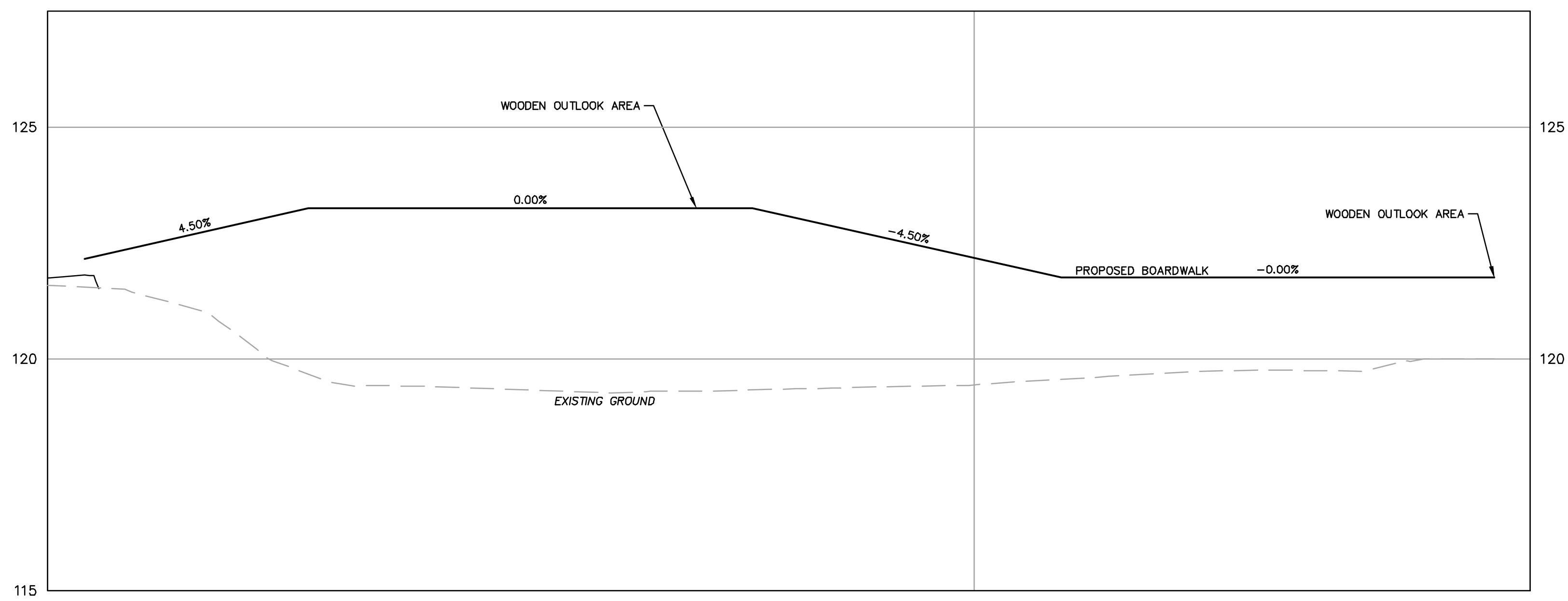
PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

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 01810  
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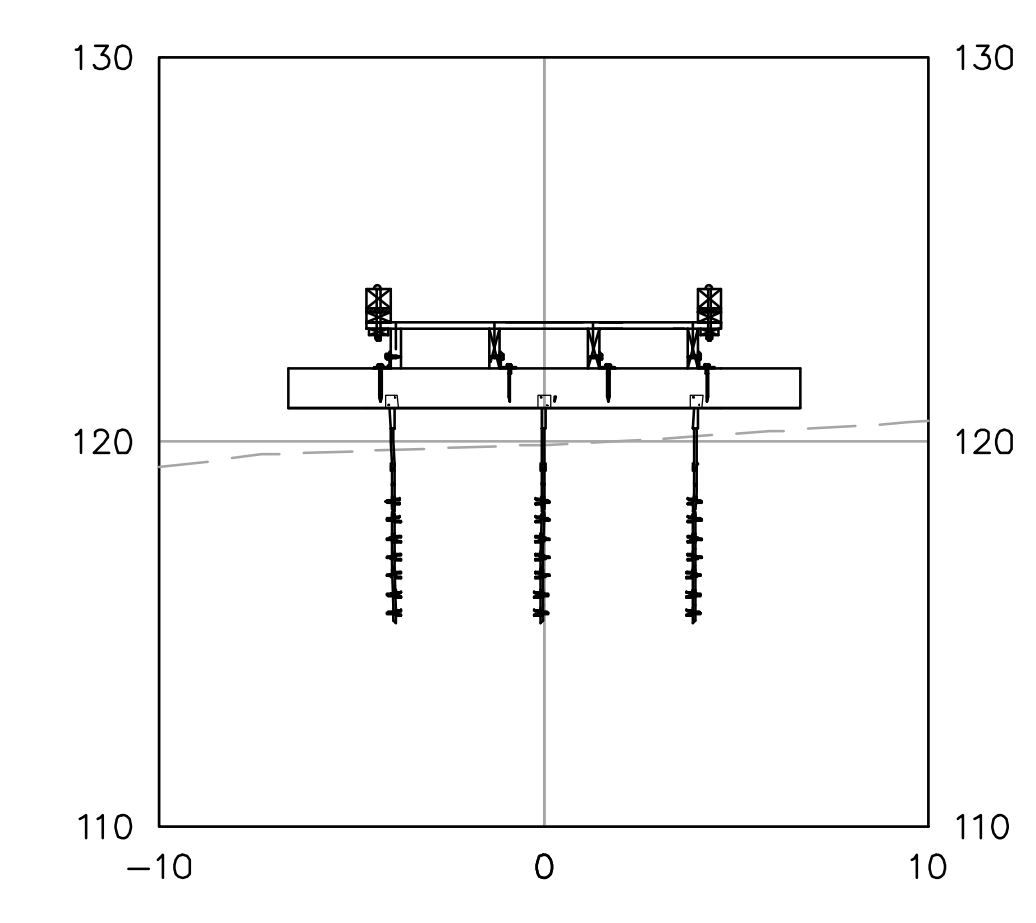
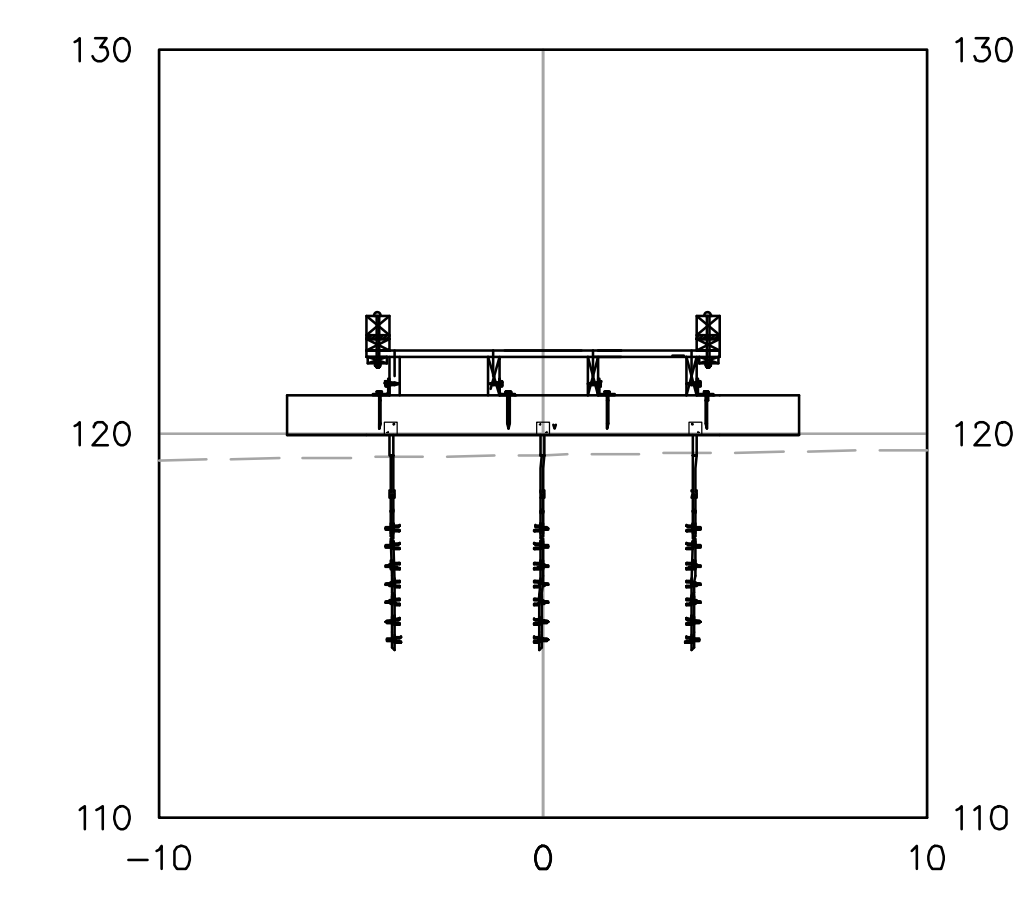
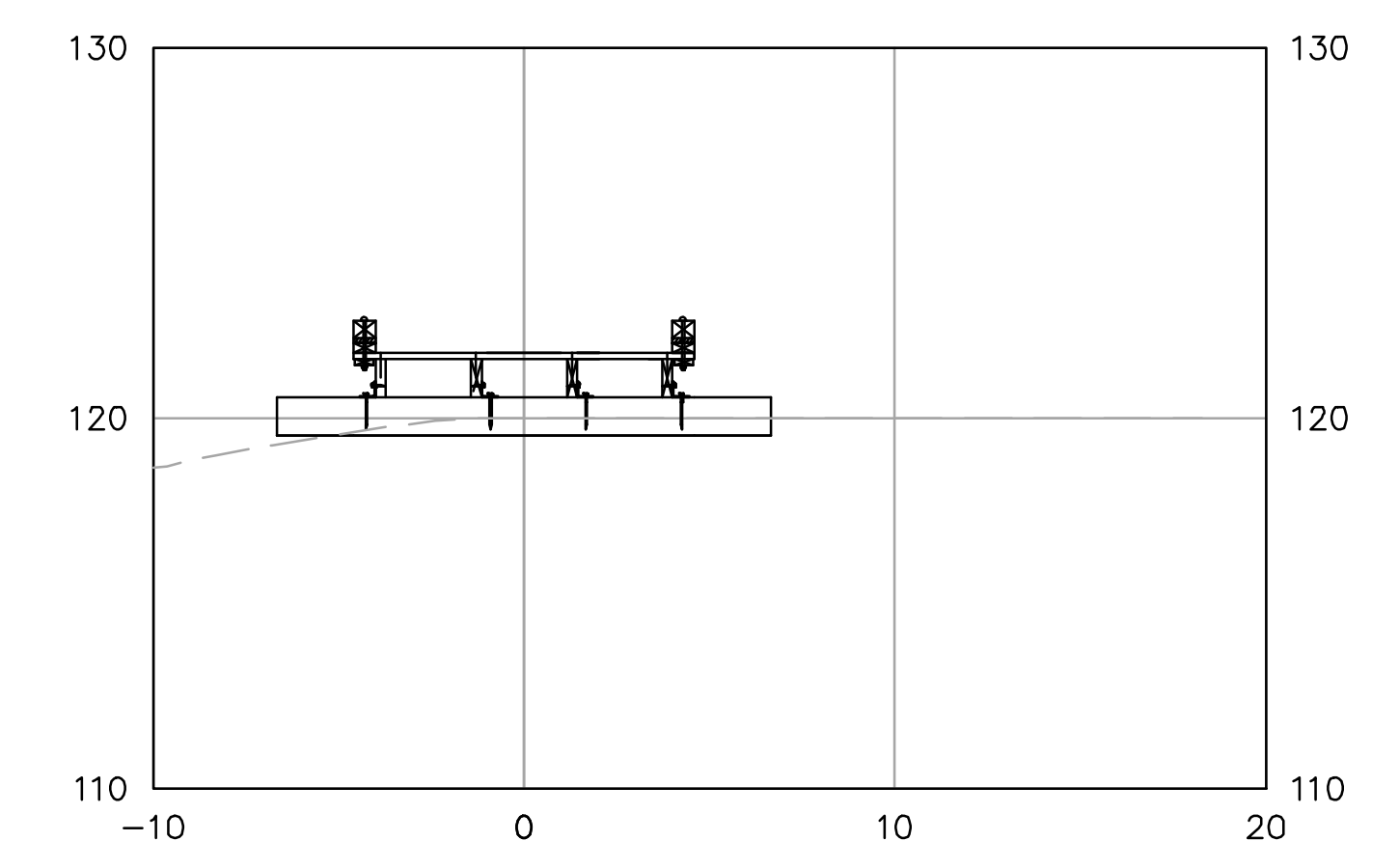
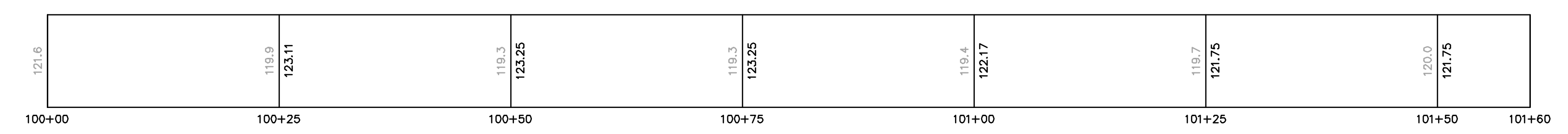
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 NOT FOR CONSTRUCTION



PLAN VIEW  
 STA. 100+00 TO STA. 101+56  
 SCALE: 1" = 10'

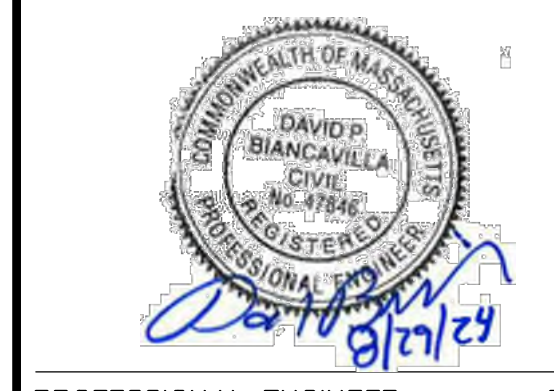


PROFILE VIEW  
 STA. 100+00 TO STA. 101+56  
 SCALE: 1" = 10' HORIZ.  
 1" = 2' VERT.



SECTION VIEW  
 SCALE: 1" = 5'

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
 RAIL TRAIL  
 IN  
 ANDOVER,  
 MASSACHUSETTS

BOARDWALK SPUR PLAN  
 AND PROFILE  
 NOVEMBER 7, 2023

REVISIONS:

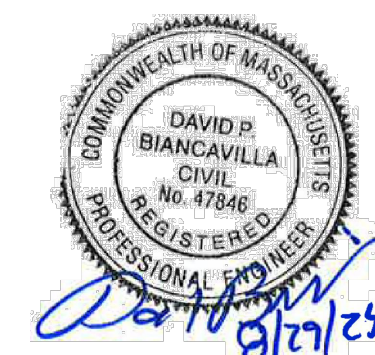
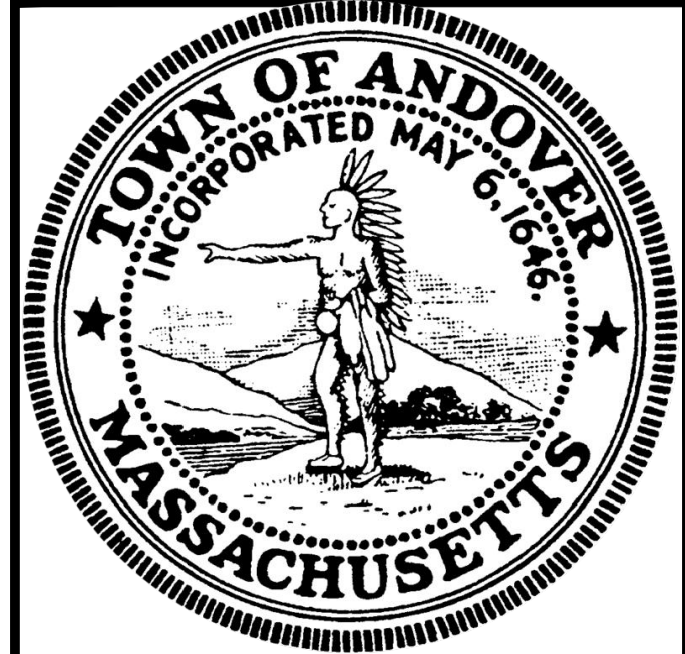
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 SCALE: 1" = 10'  
 0 5 10 20 FEET

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 JOB. NO: 8-9985.01 SHEET C-114



PROFESSIONAL ENGINEER DATE

# HAGGETTS POND RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS  
HIGH PLAIN ROAD  
PARKING LOT

SITE PLAN  
NOVEMBER 7, 2023

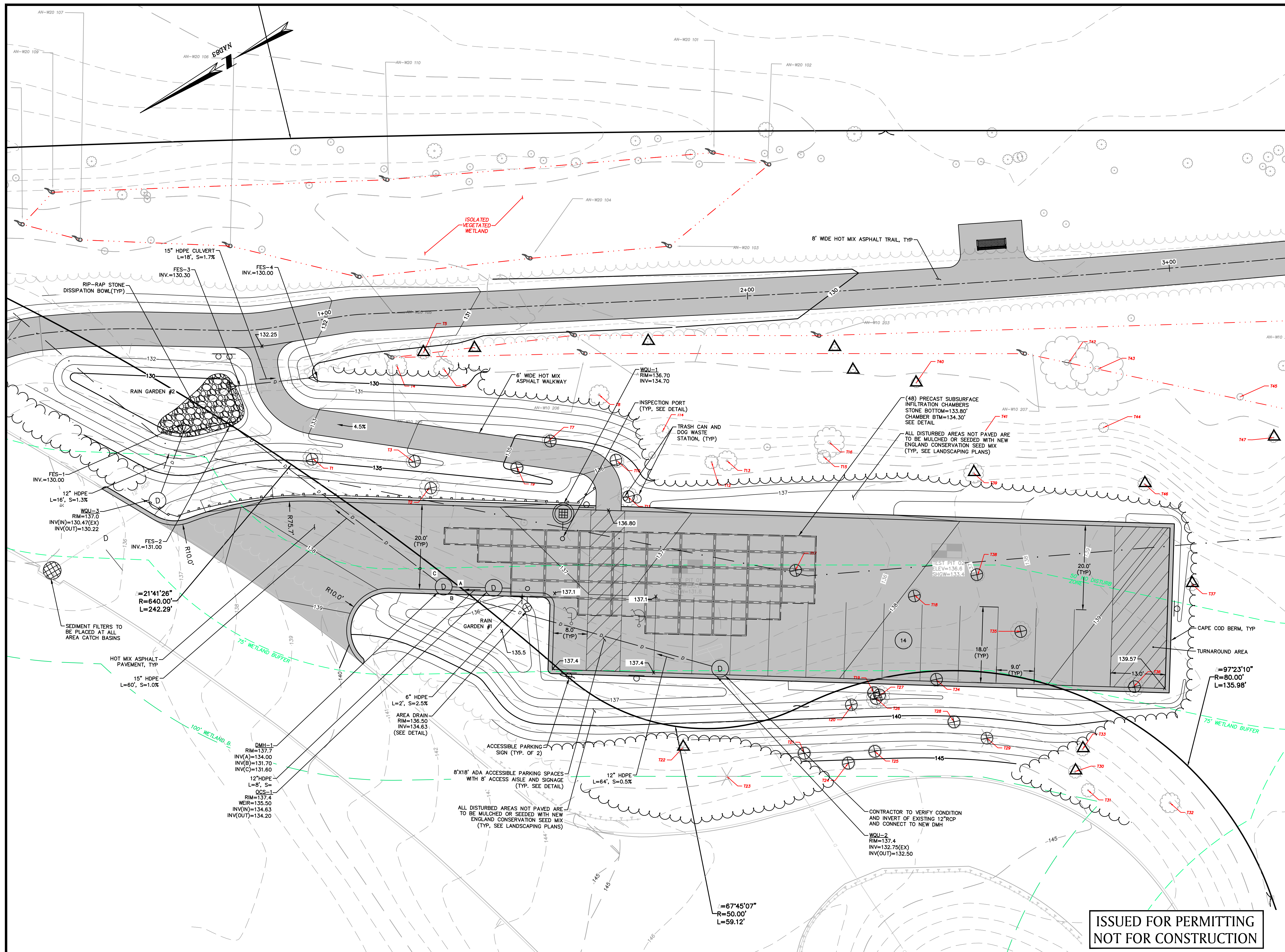
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4	8/29/24	PEER REVIEW COMMENTS

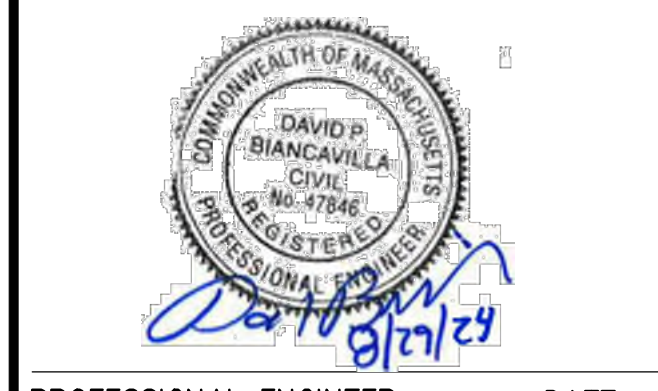
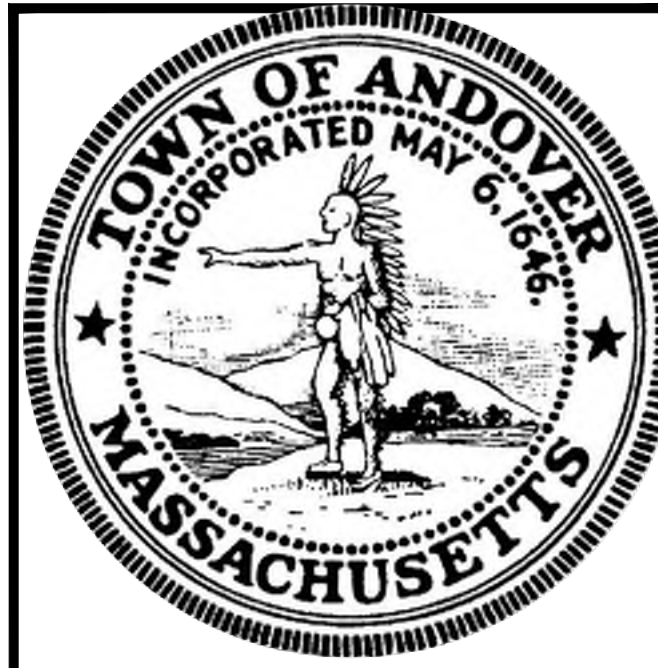
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SCALE: 1" = 10'  
0 5 10 20 FEET  
FILE: P:\8998501\C\D\PRKG HIGH PLAIN  
DWG.: C-115 SHEET C-115  
JOB. NO: 8-9985.01



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PROFESSIONAL ENGINEER DATE

HAGGETTS POND RAIL TRAIL  
IN  
ANDOVER,  
MASSACHUSETTS

HAGGETT'S POND ROAD PARKING SITE PLAN  
NOVEMBER 7, 2023

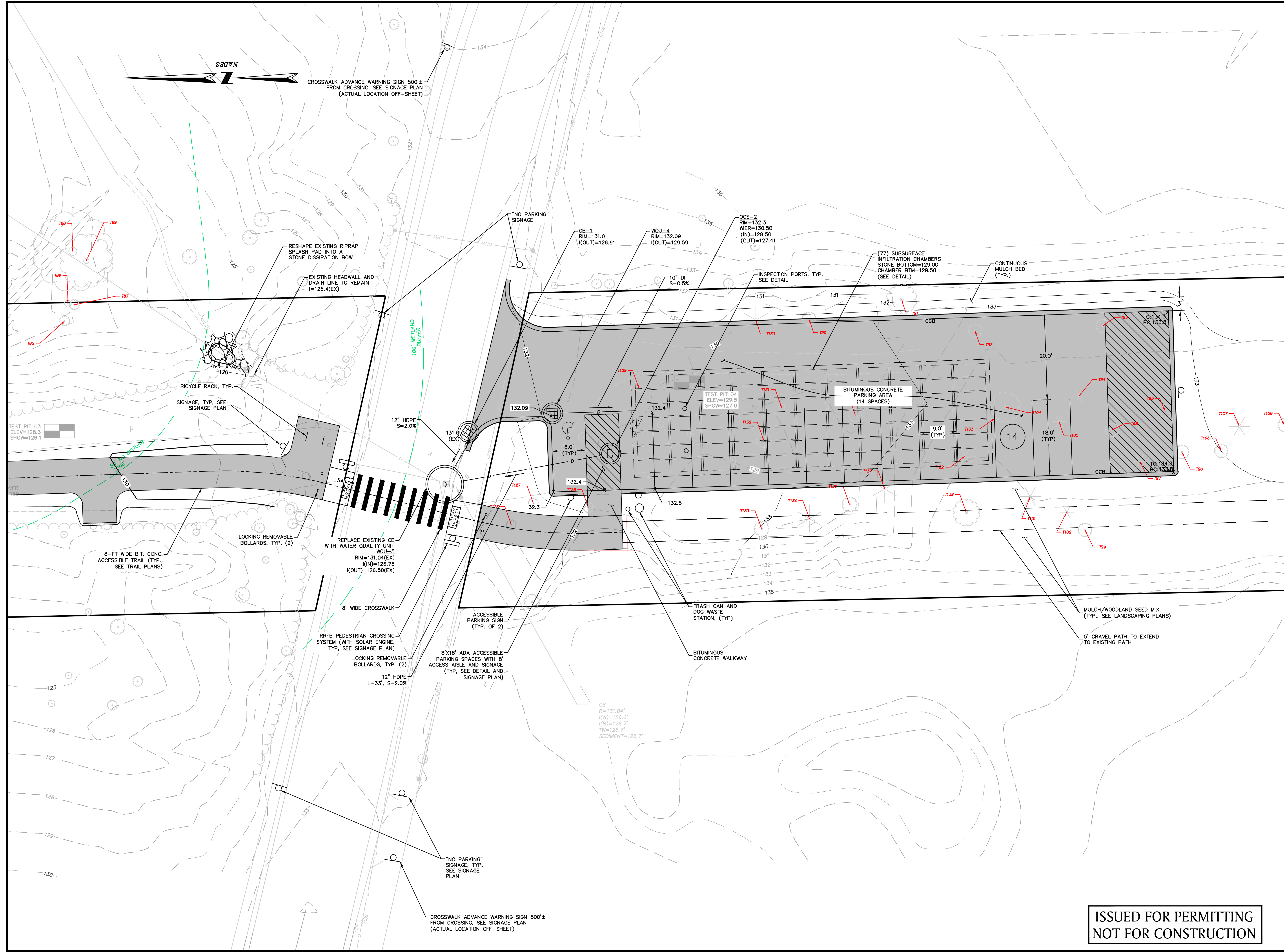
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NO.	DATE	DESCRIPTION
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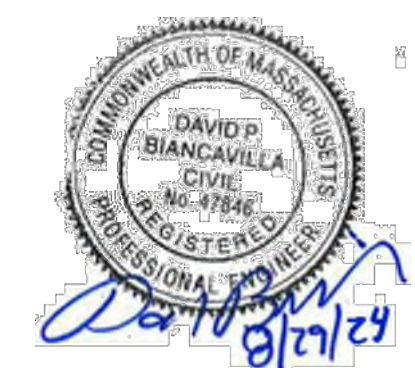
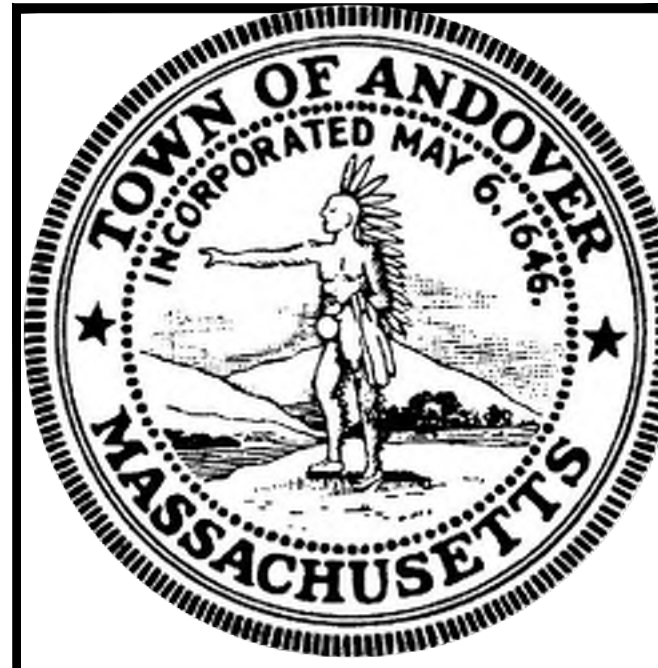
PREPARED FOR:  
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SCALE: 1" = 10'  
0 5' 10' 20' FEET  
FILE: P:\8998501\C\D\PRKG HAGGETTS  
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JOB: NO: 8-9985.01



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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL  
  
IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

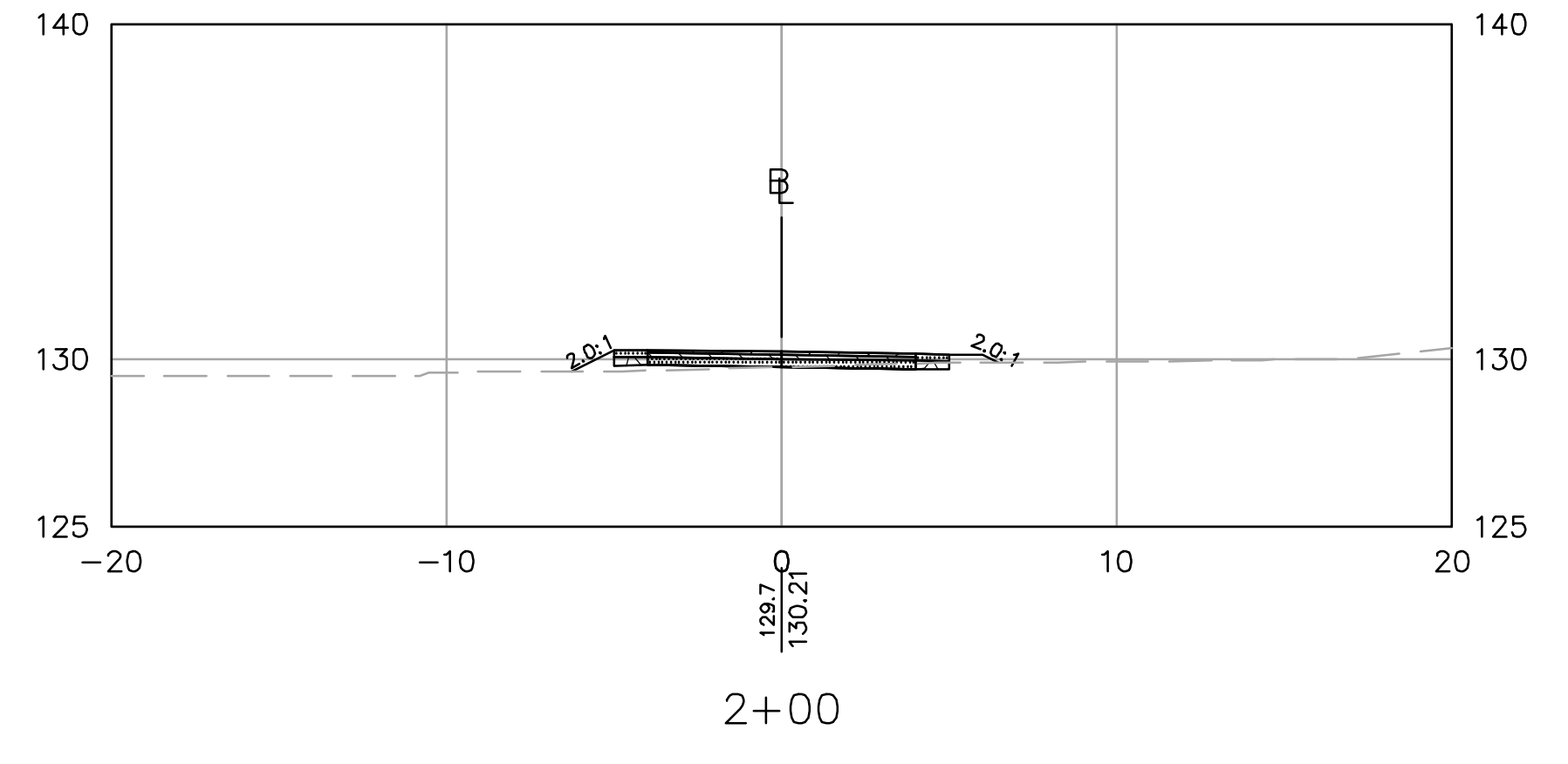
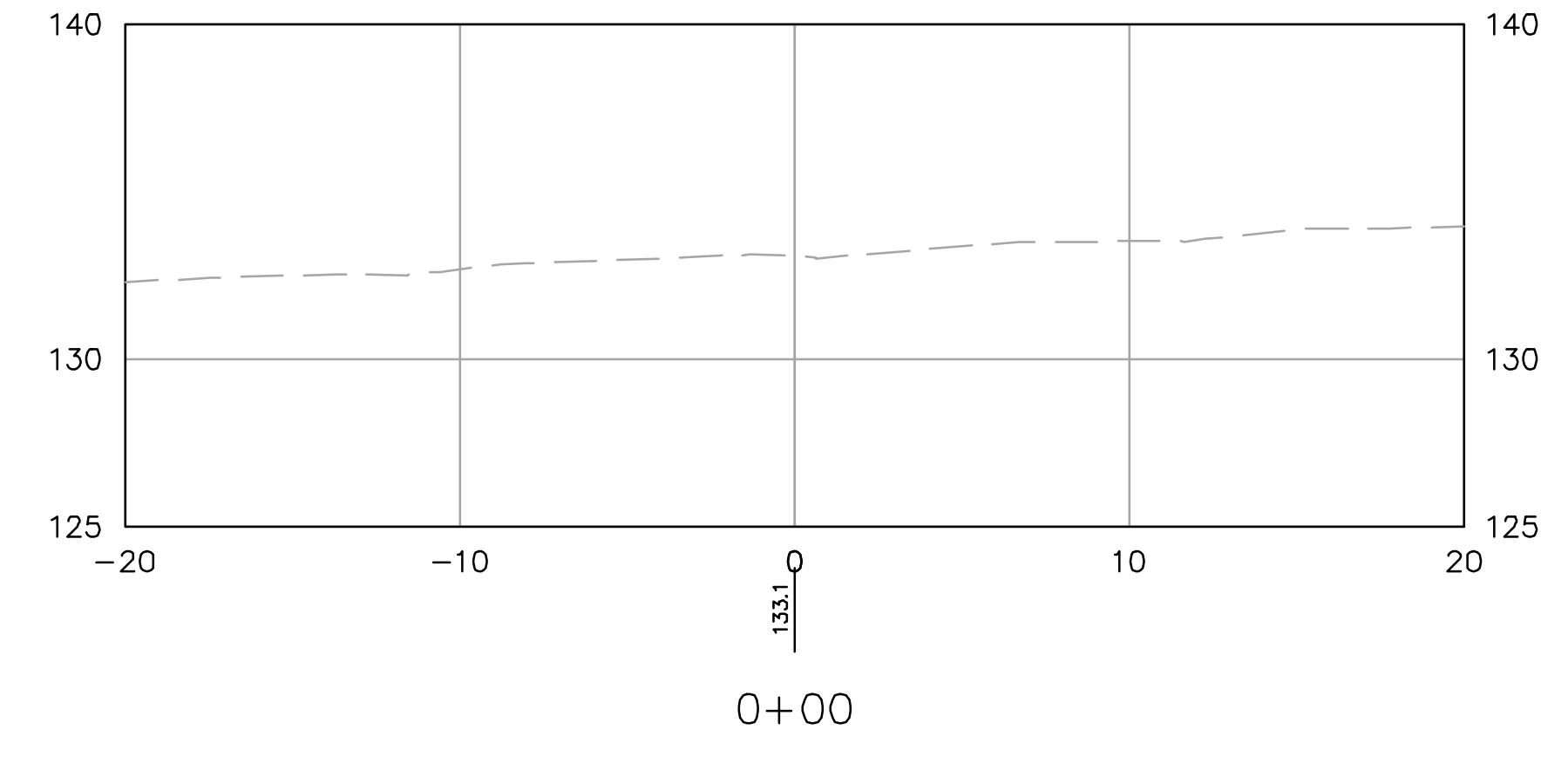
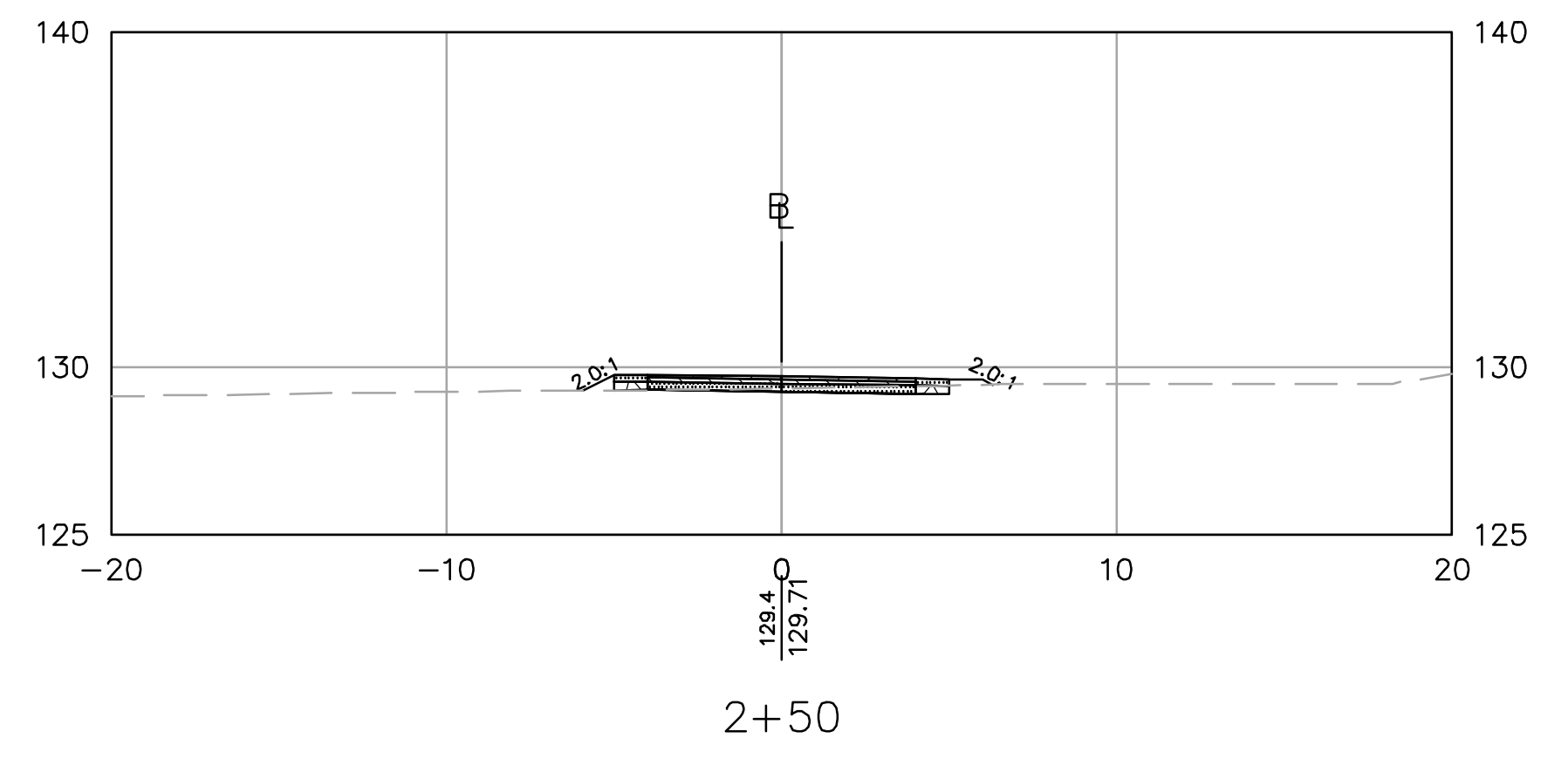
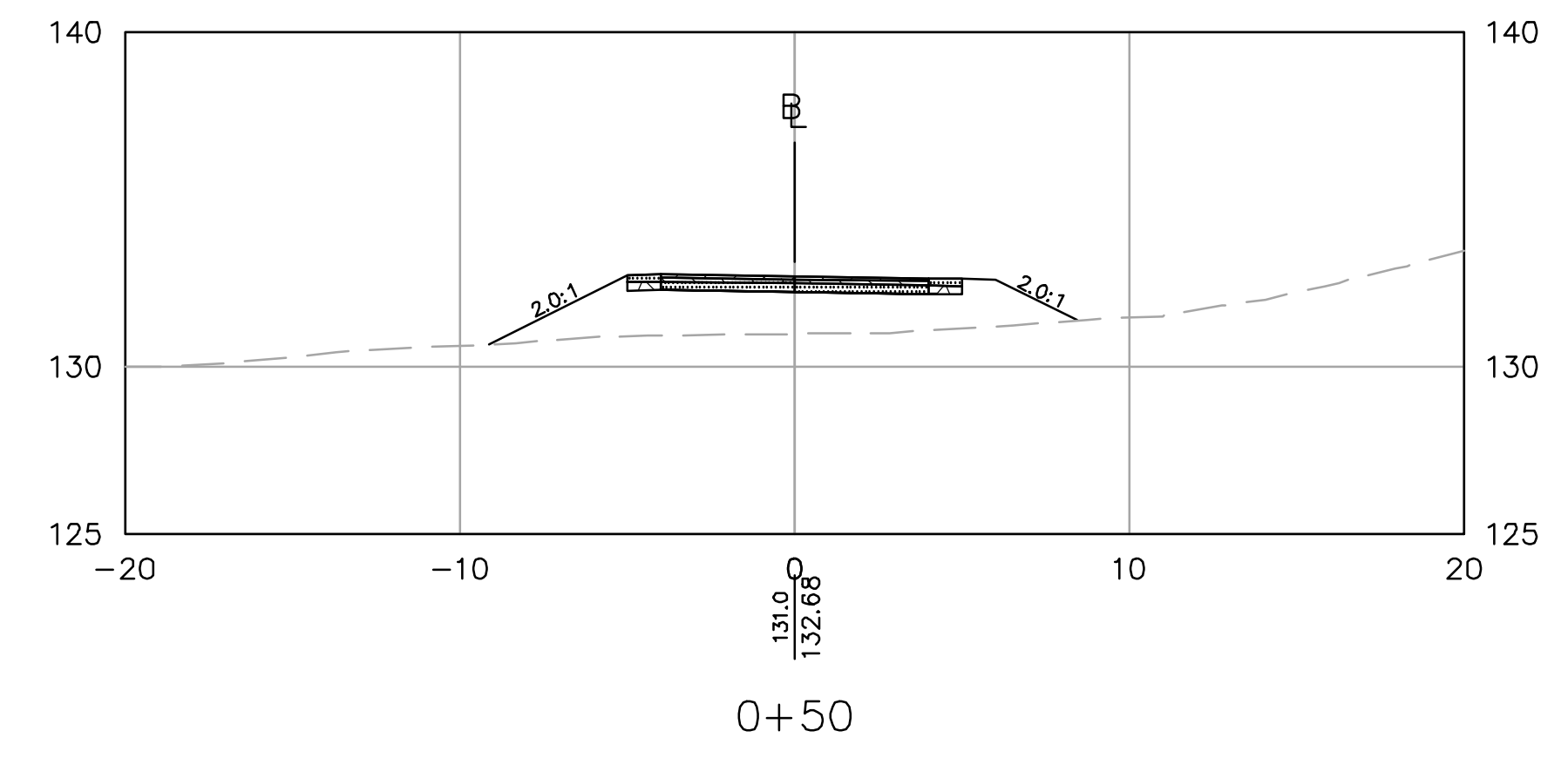
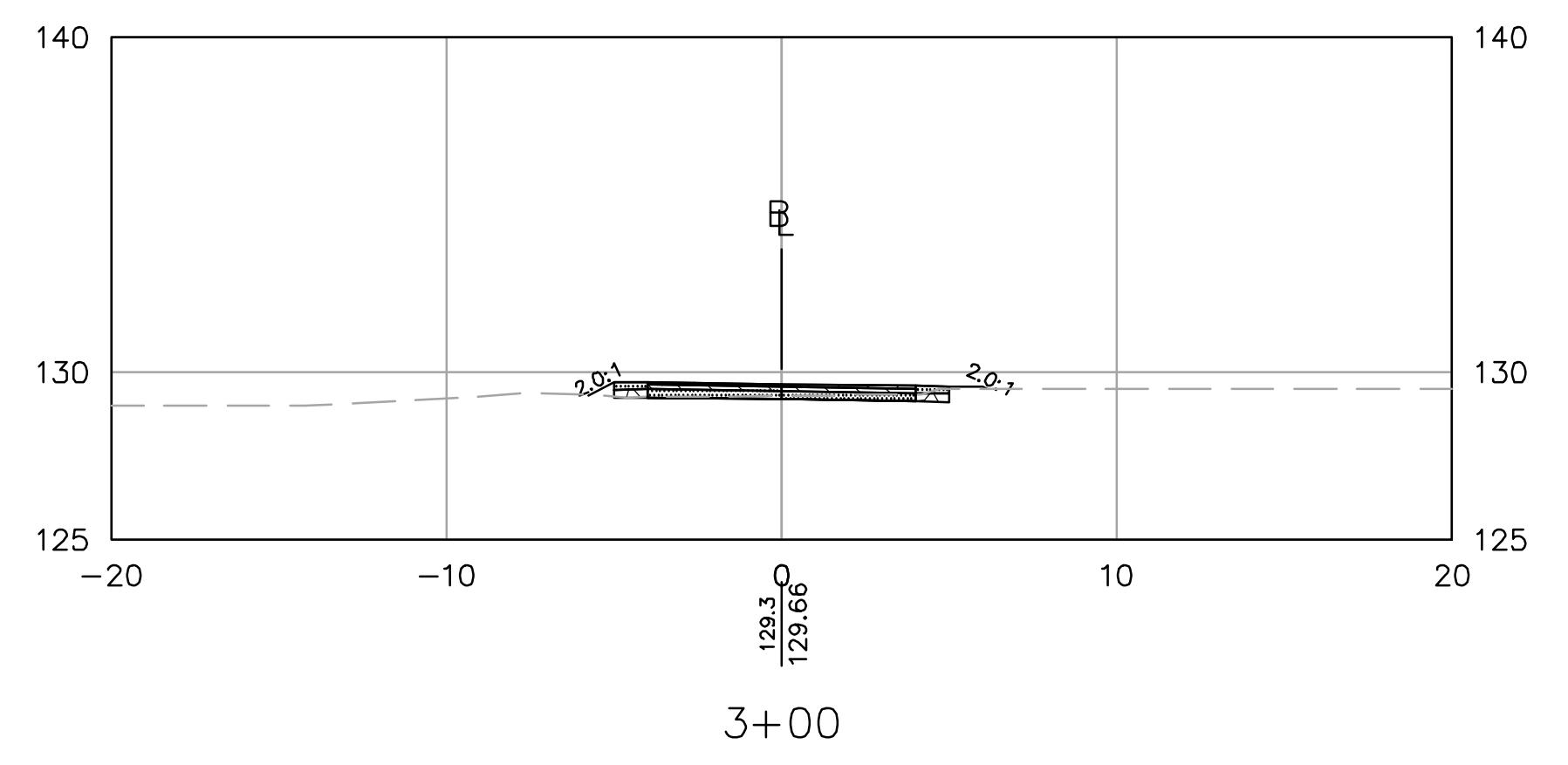
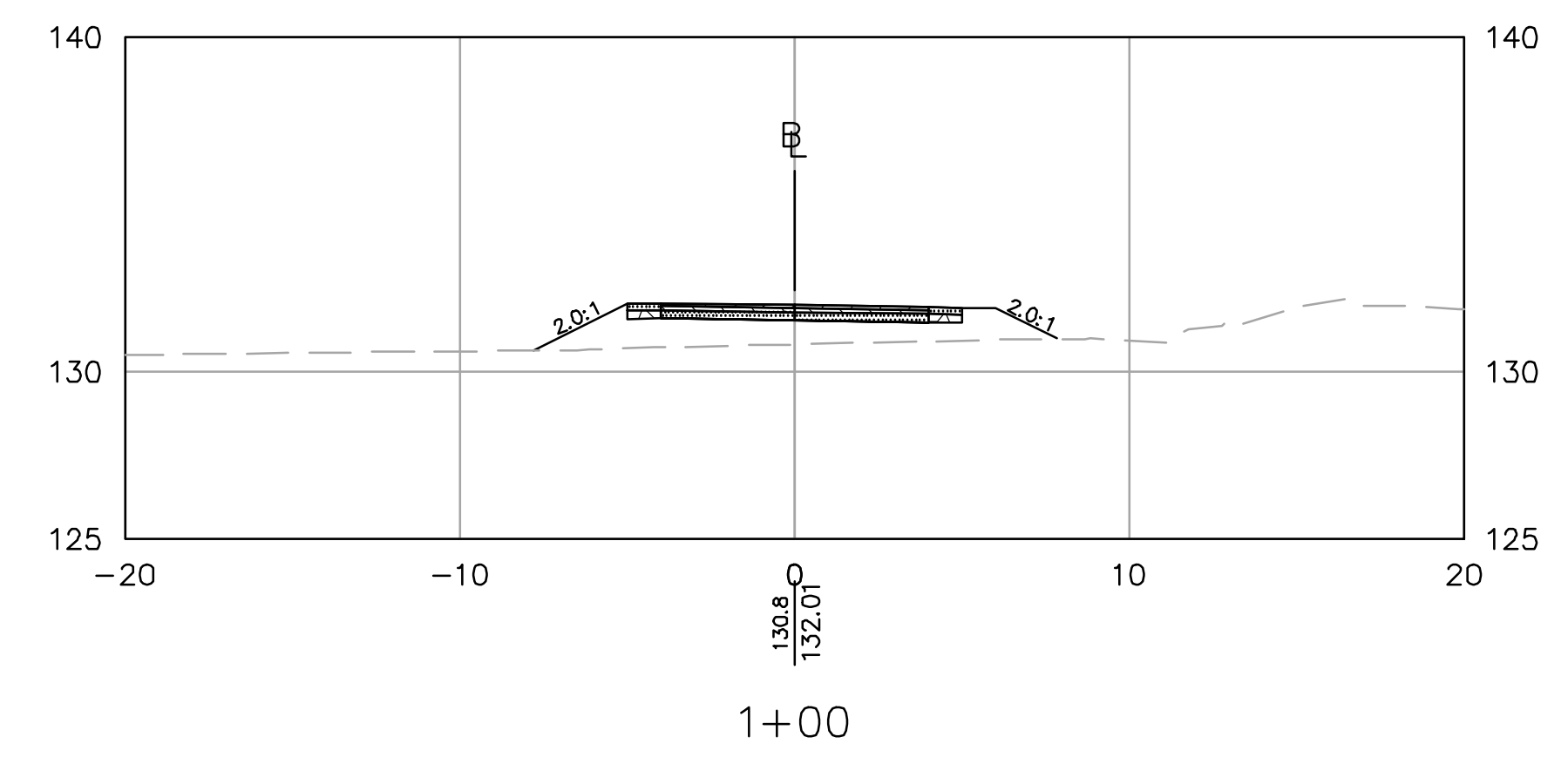
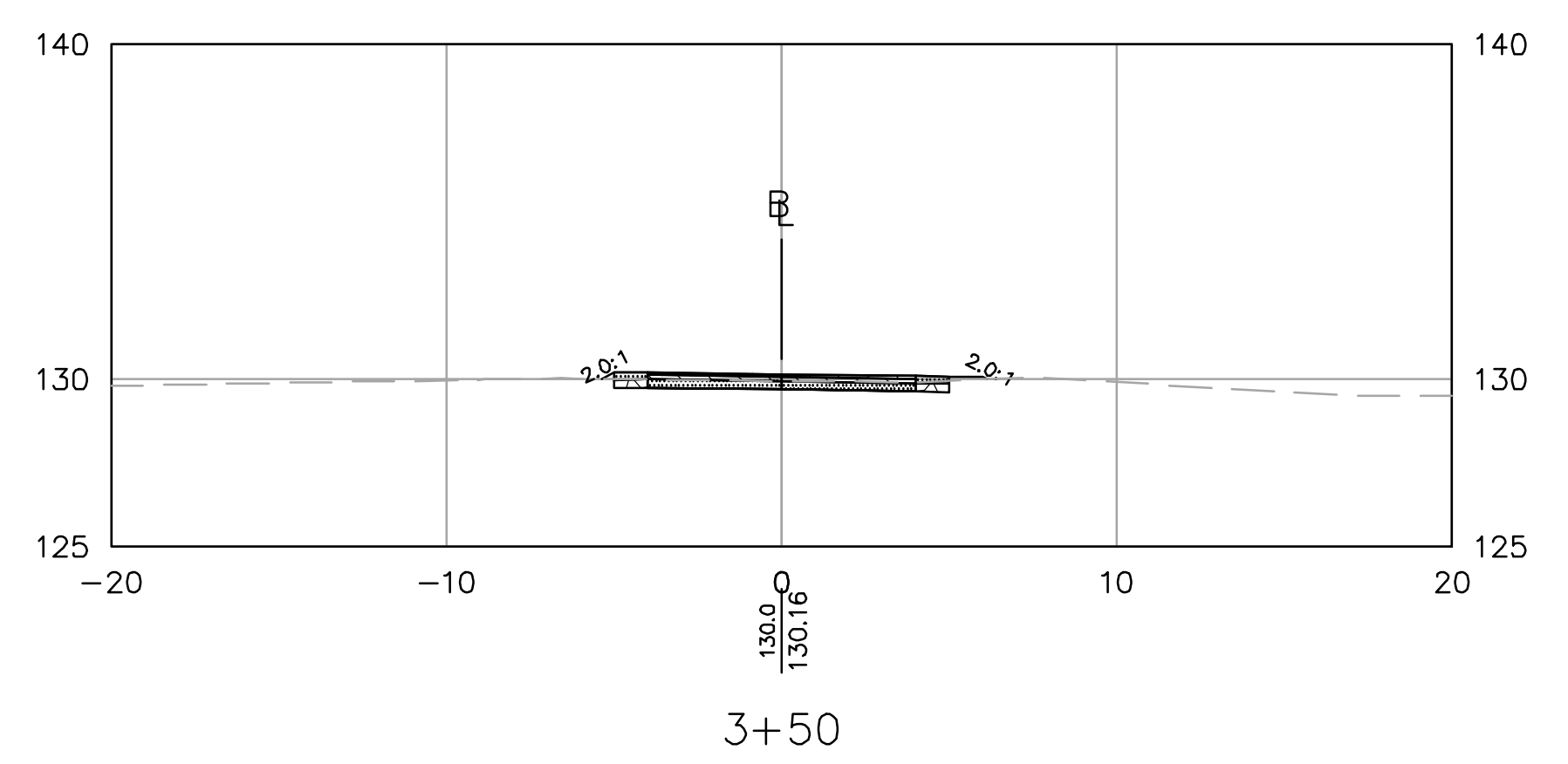
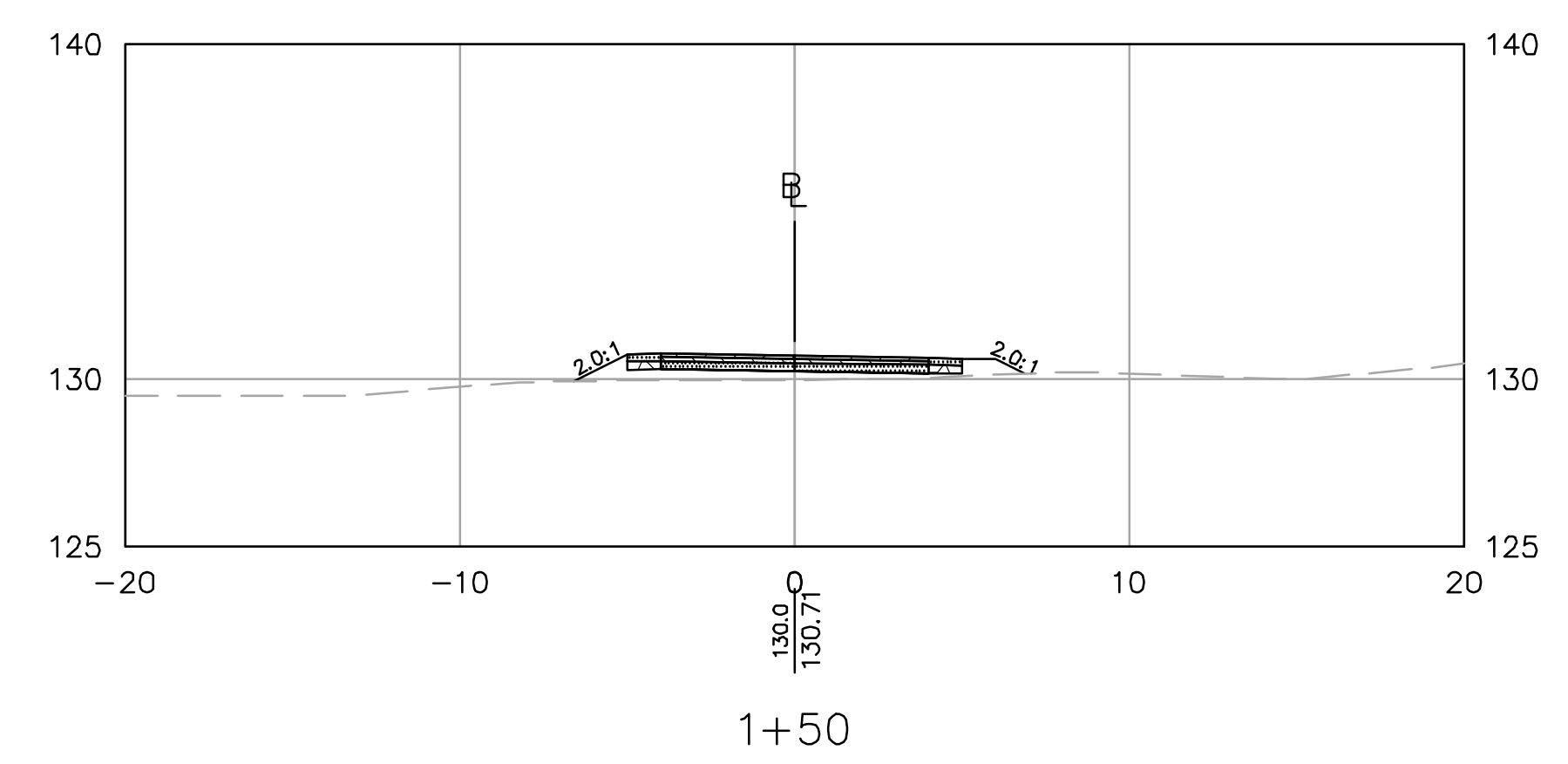
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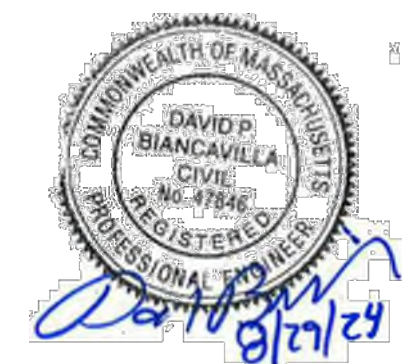
PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
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0 3 6 12 FEET  
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DWG.: XS-1 SHEET C-200  
JOB. NO: 8-9985.01



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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

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TOWN OF ANDOVER  
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ANDOVER, MA, 01810

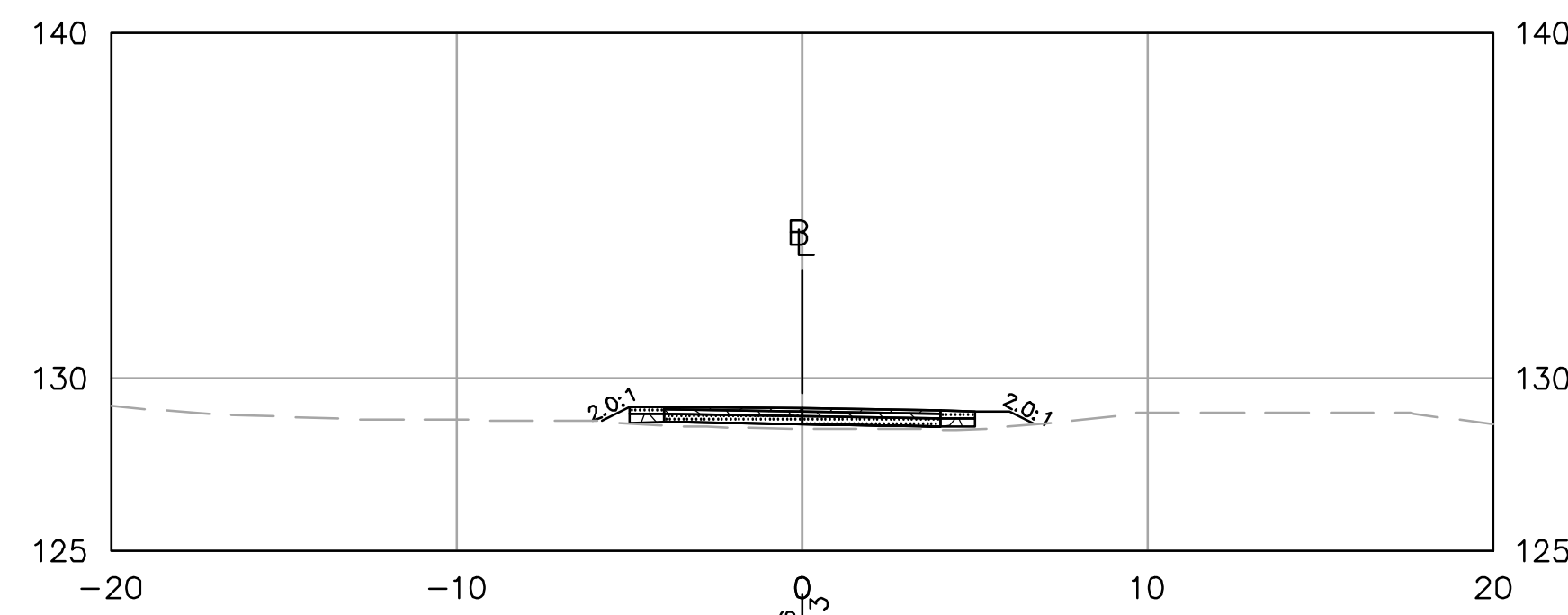
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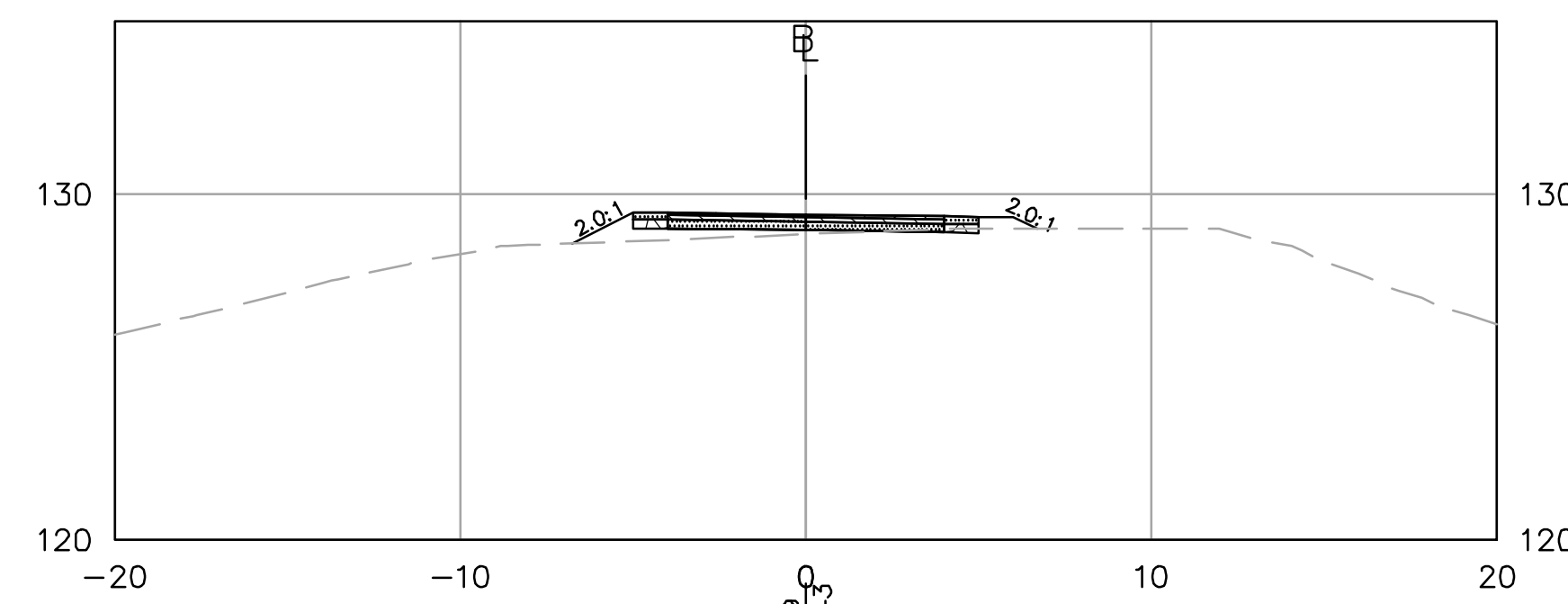
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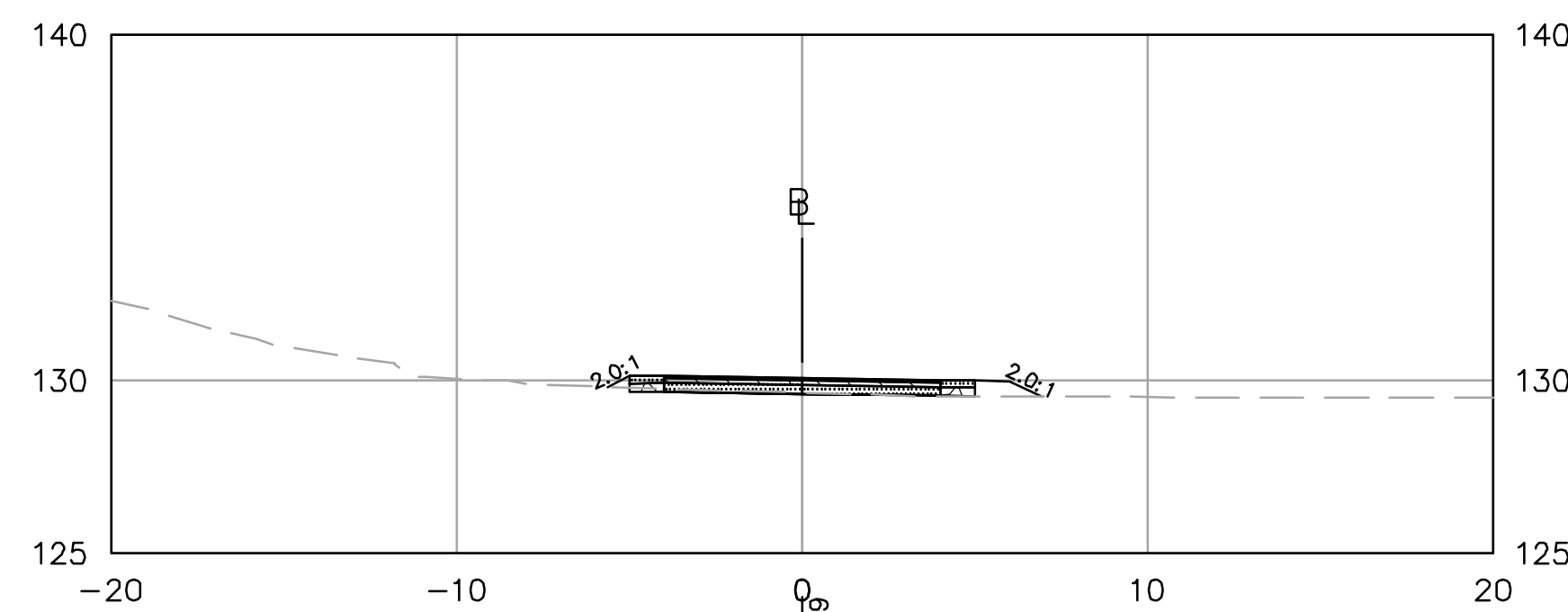
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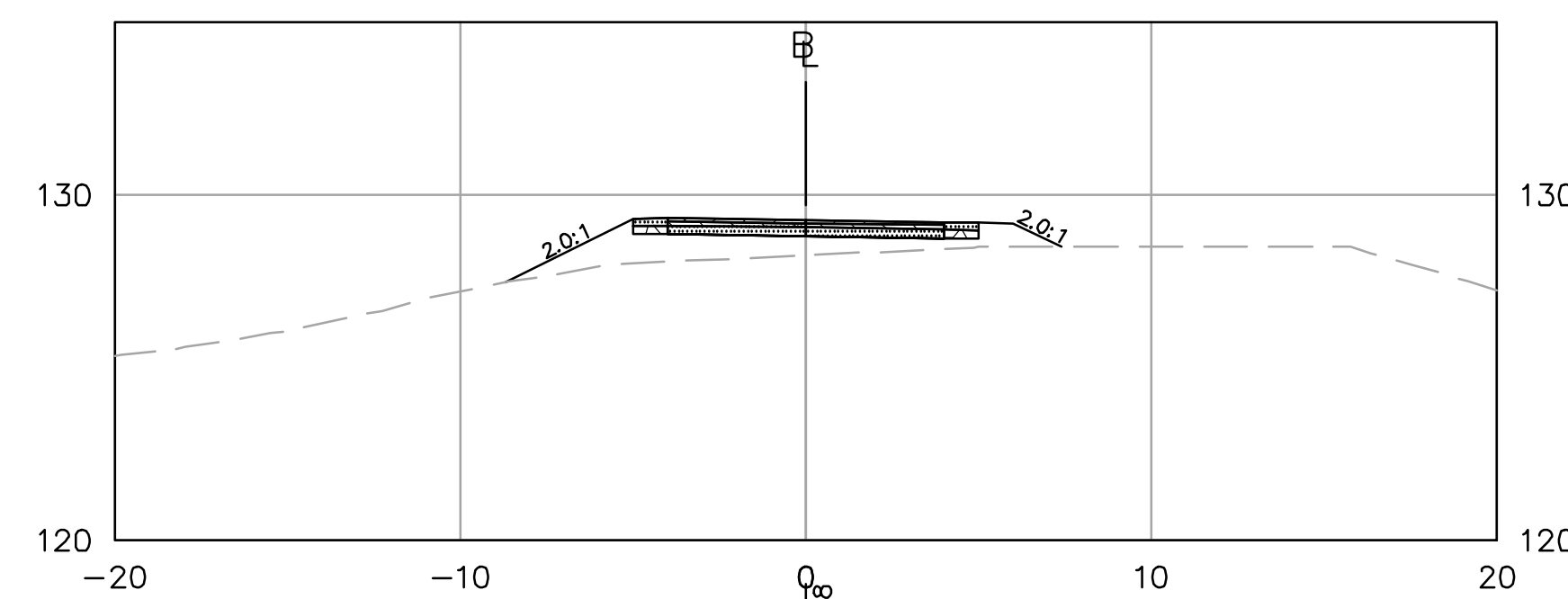
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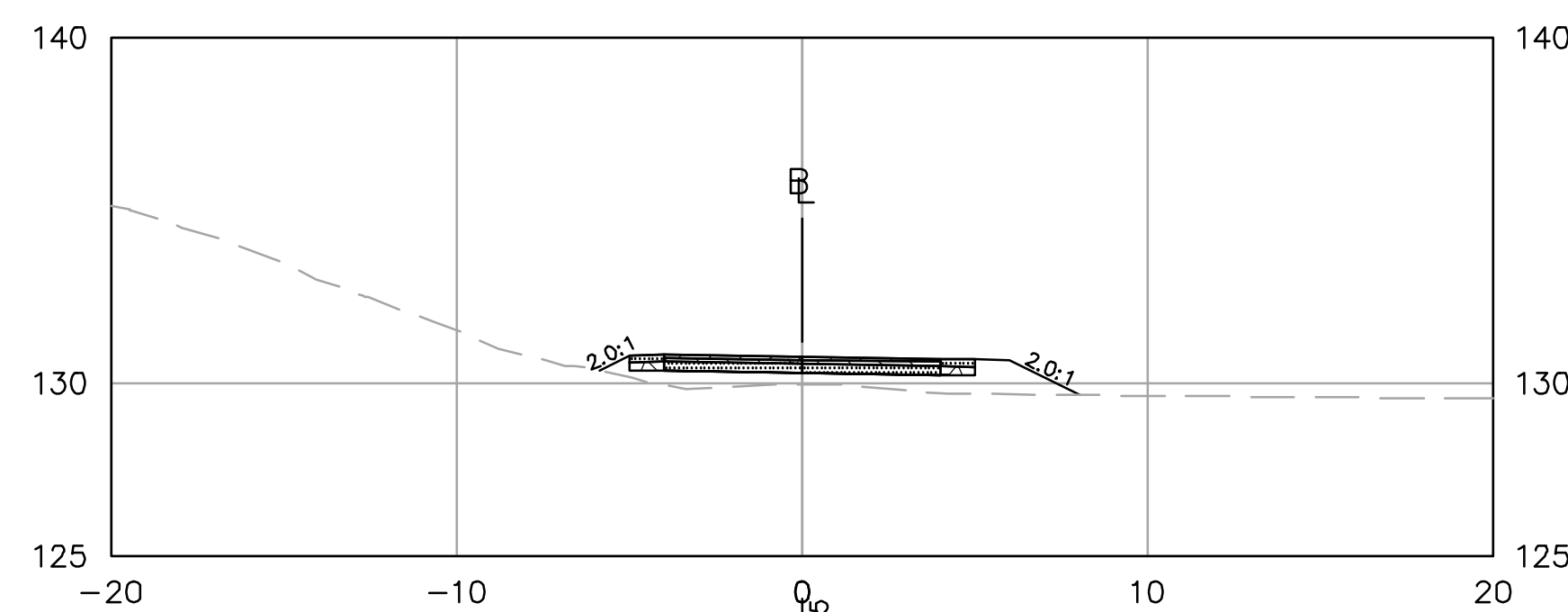
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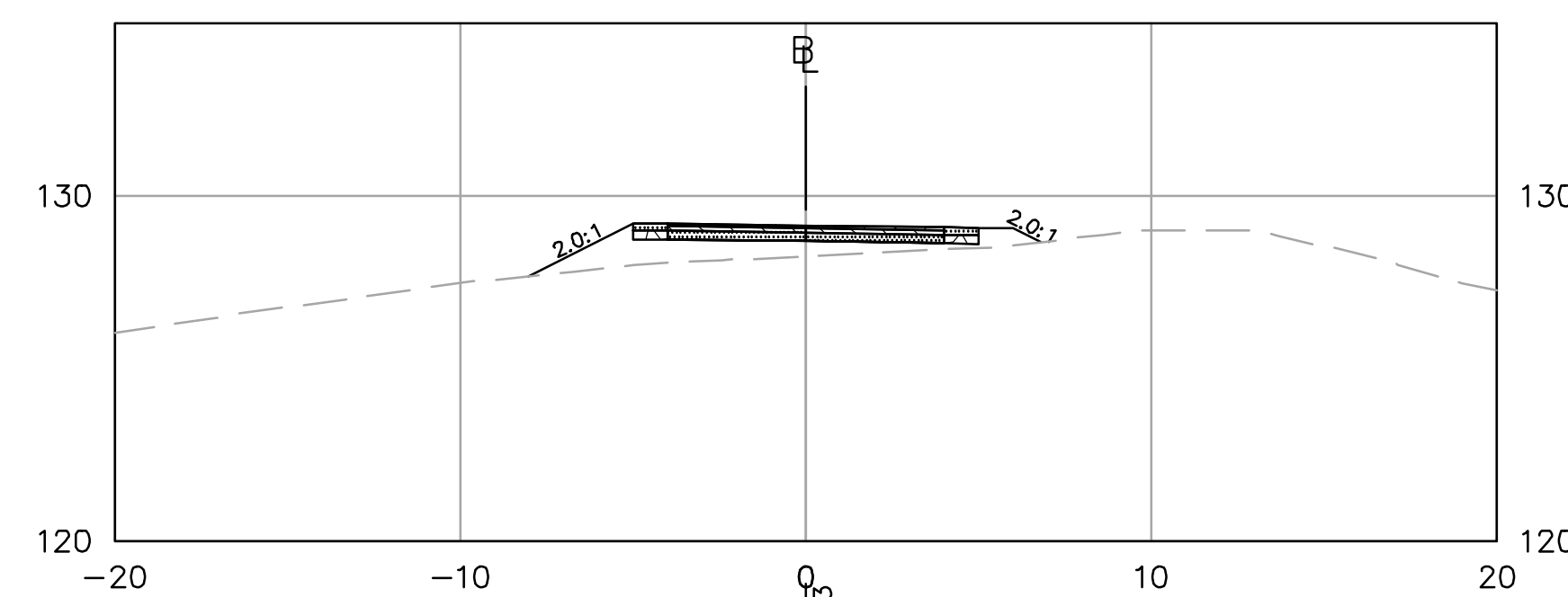
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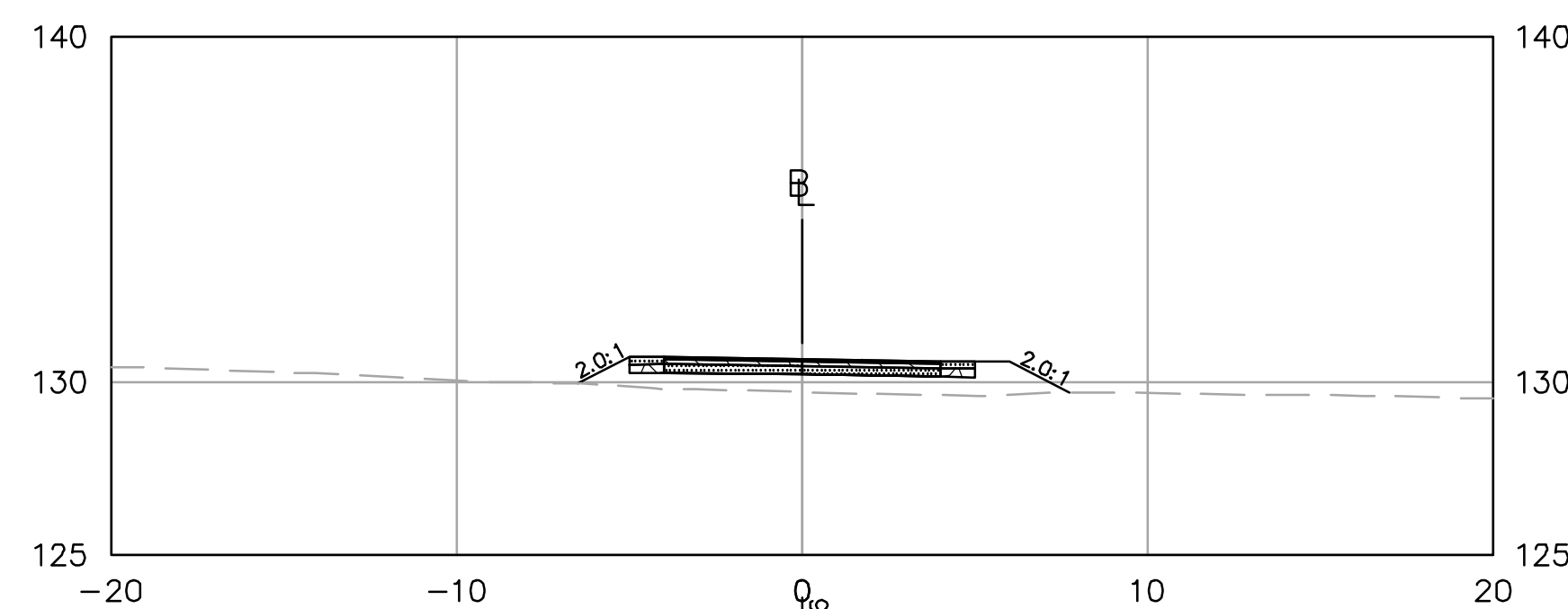
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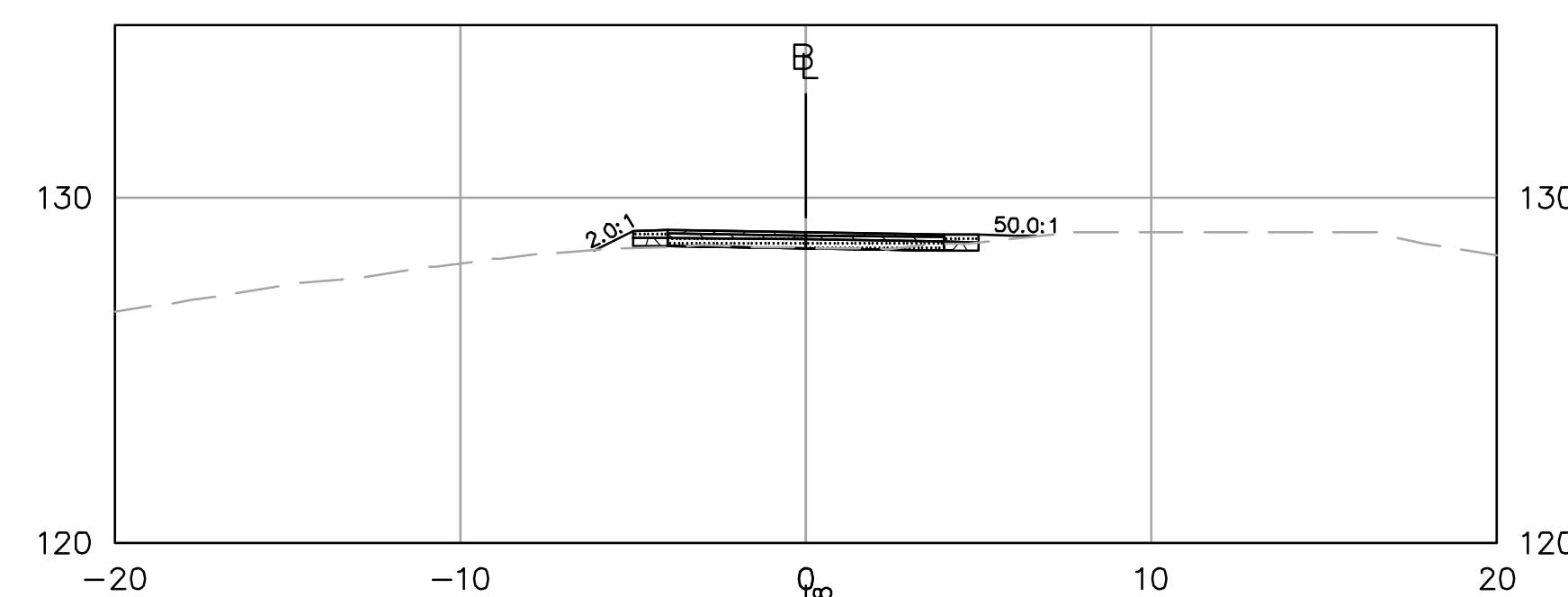
4+50



6+50



4+00



6+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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01810  
617 896 4300

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SCALE: 1" = 5'

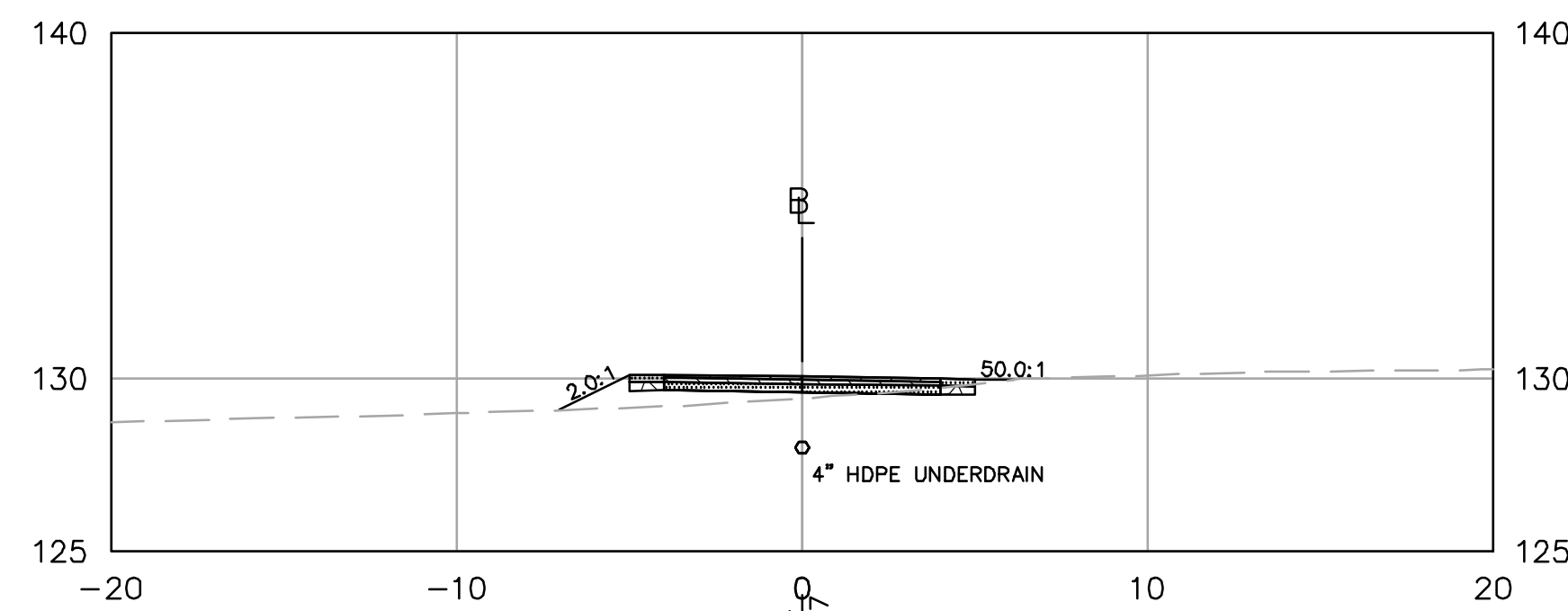


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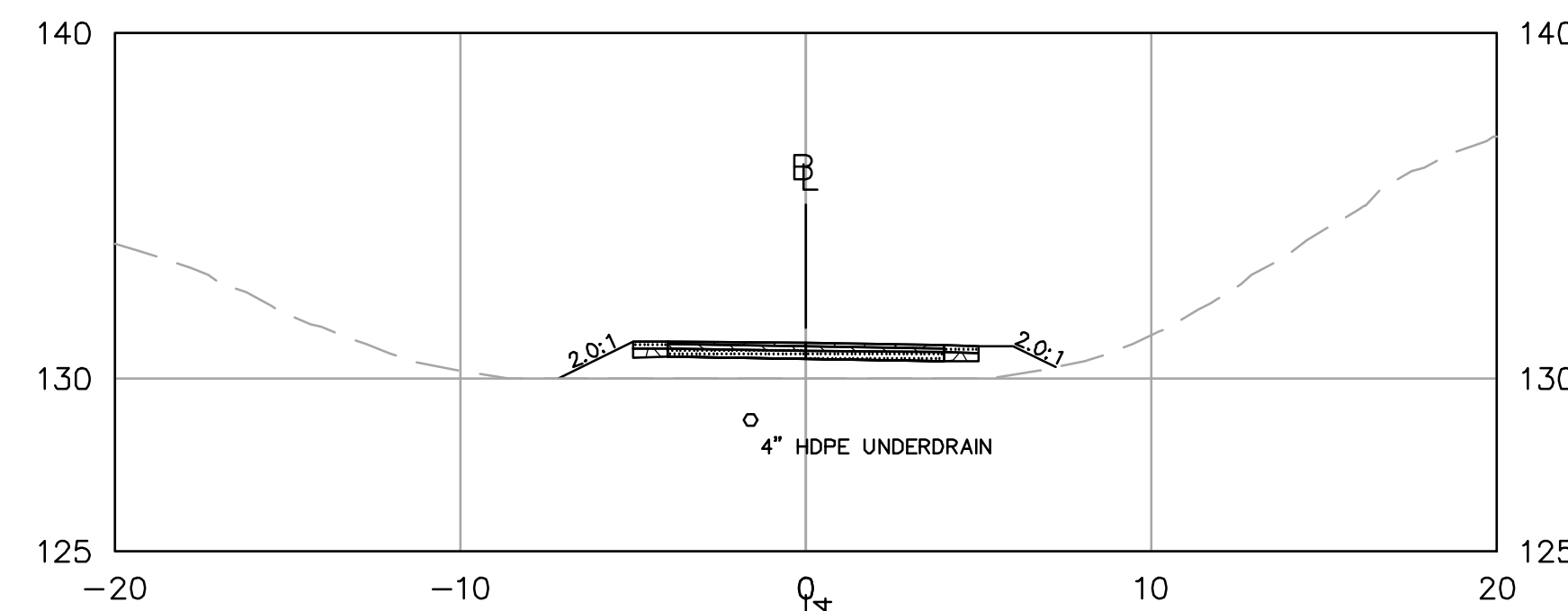
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JOB. NO: 8-9985.01

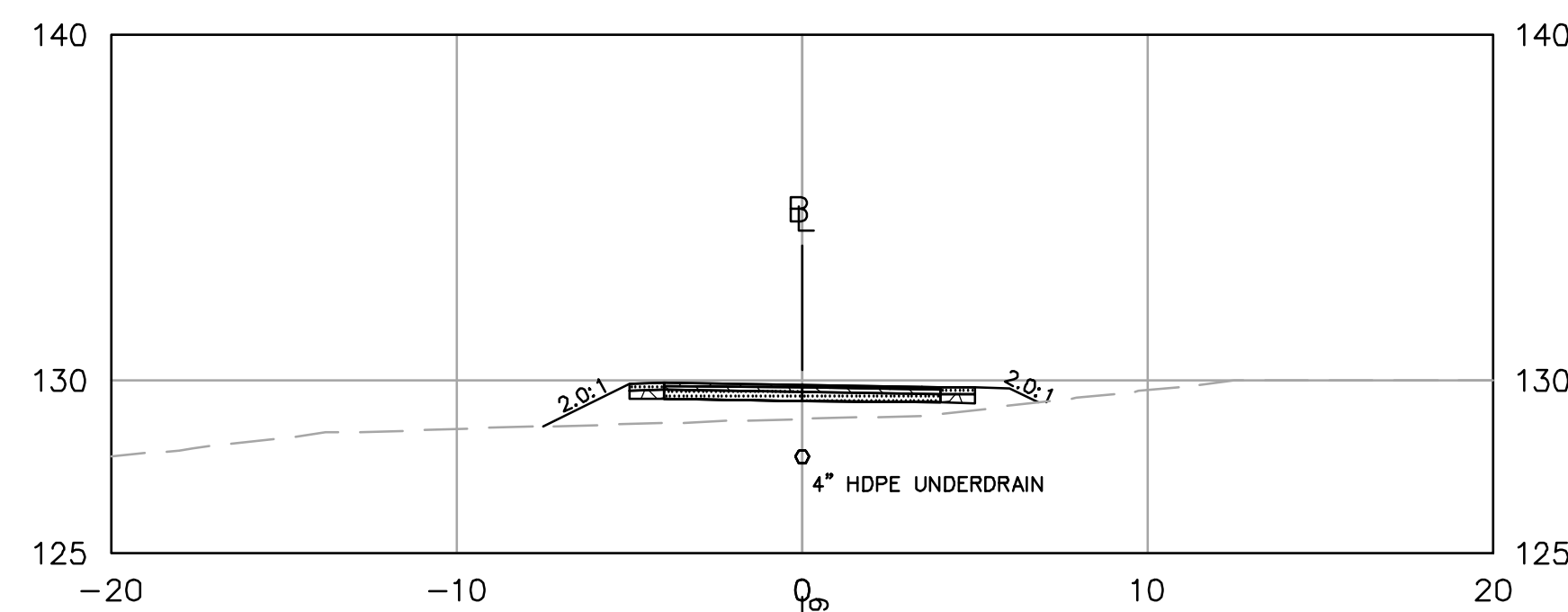
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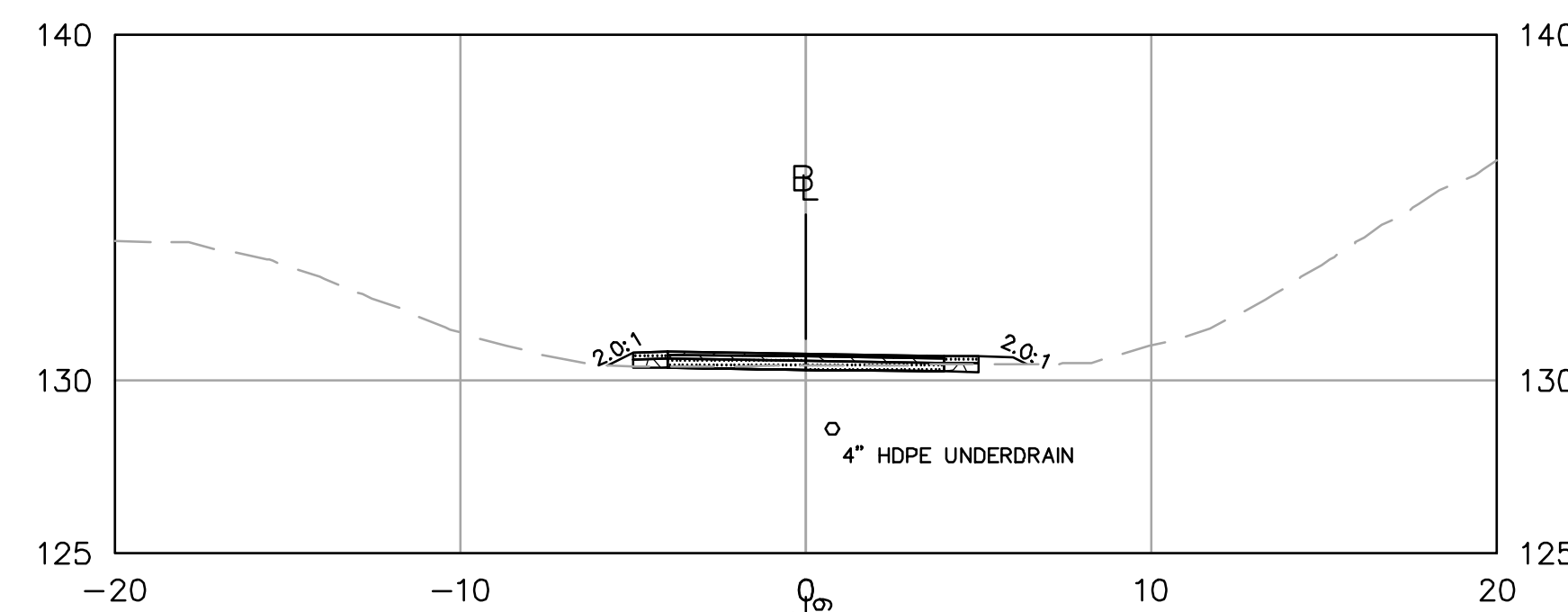
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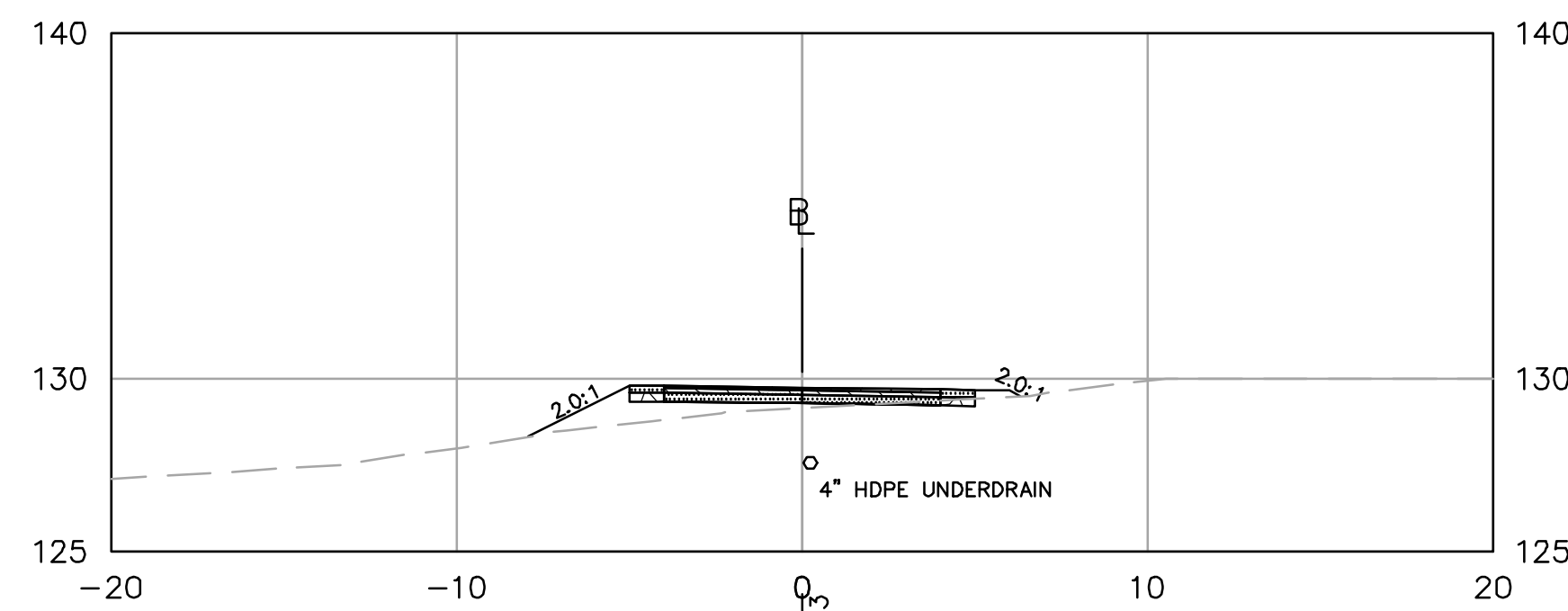
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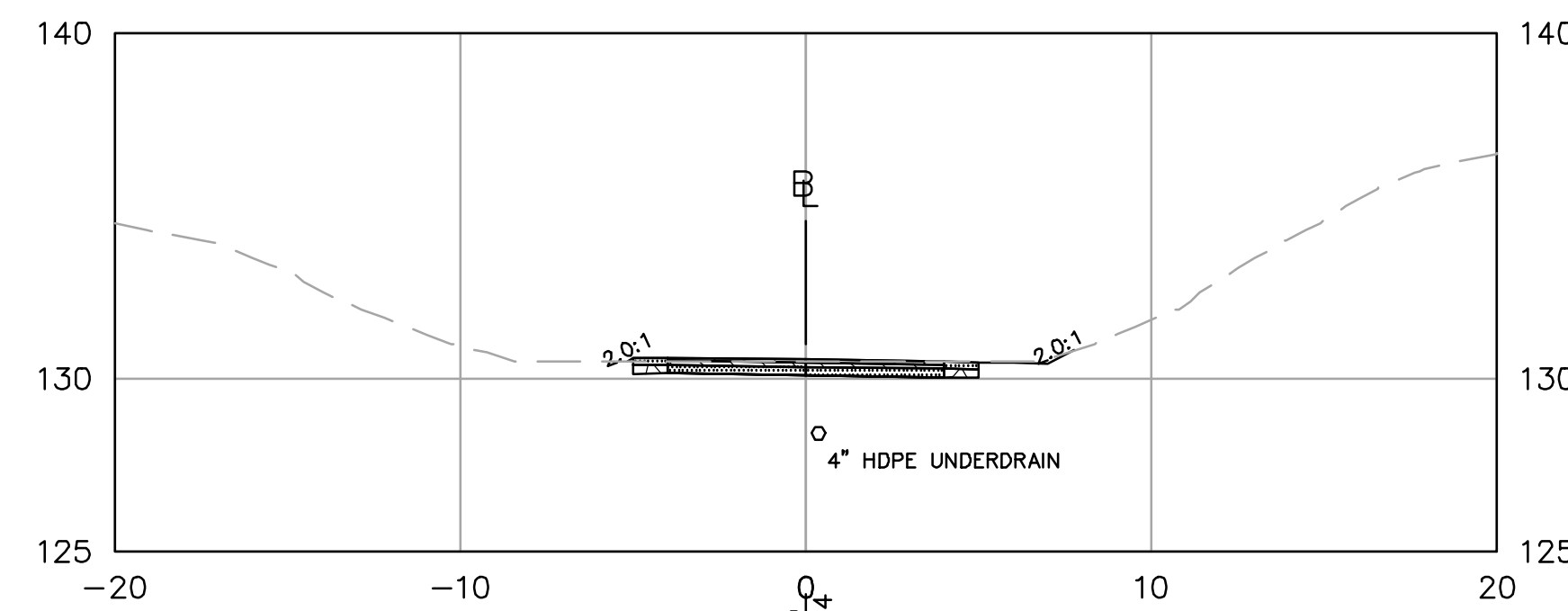
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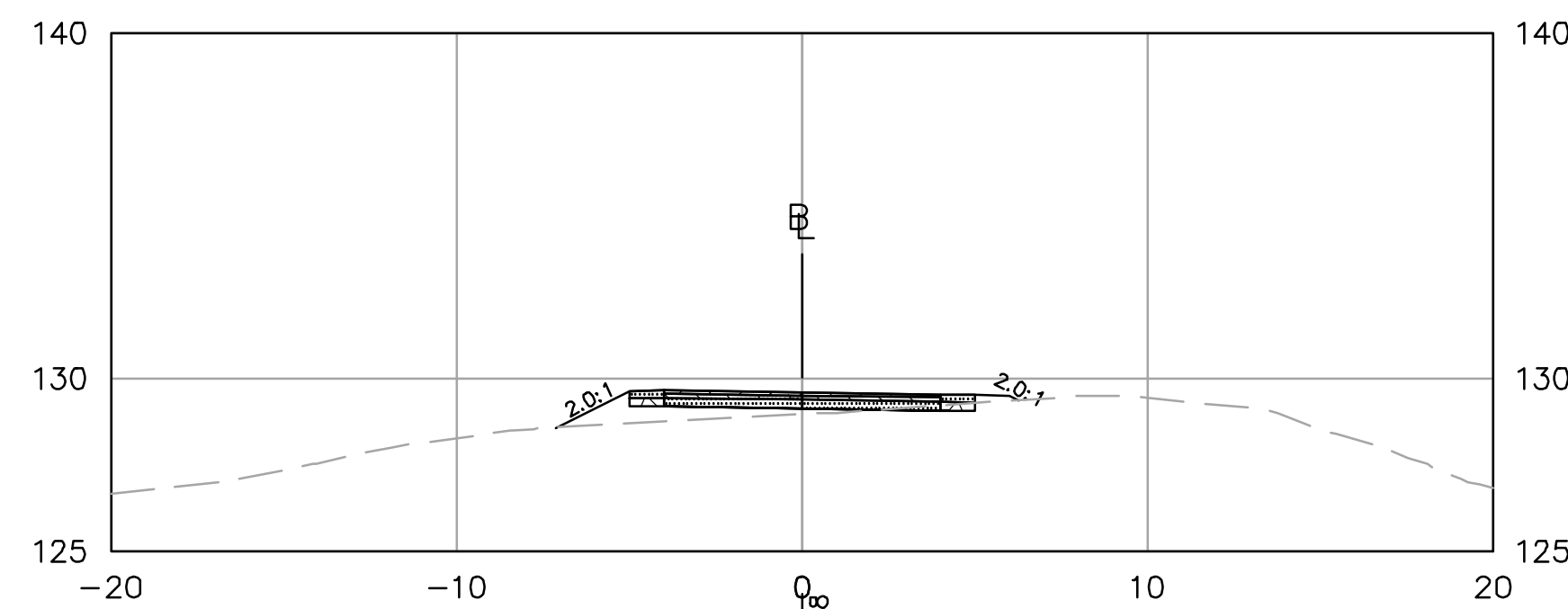
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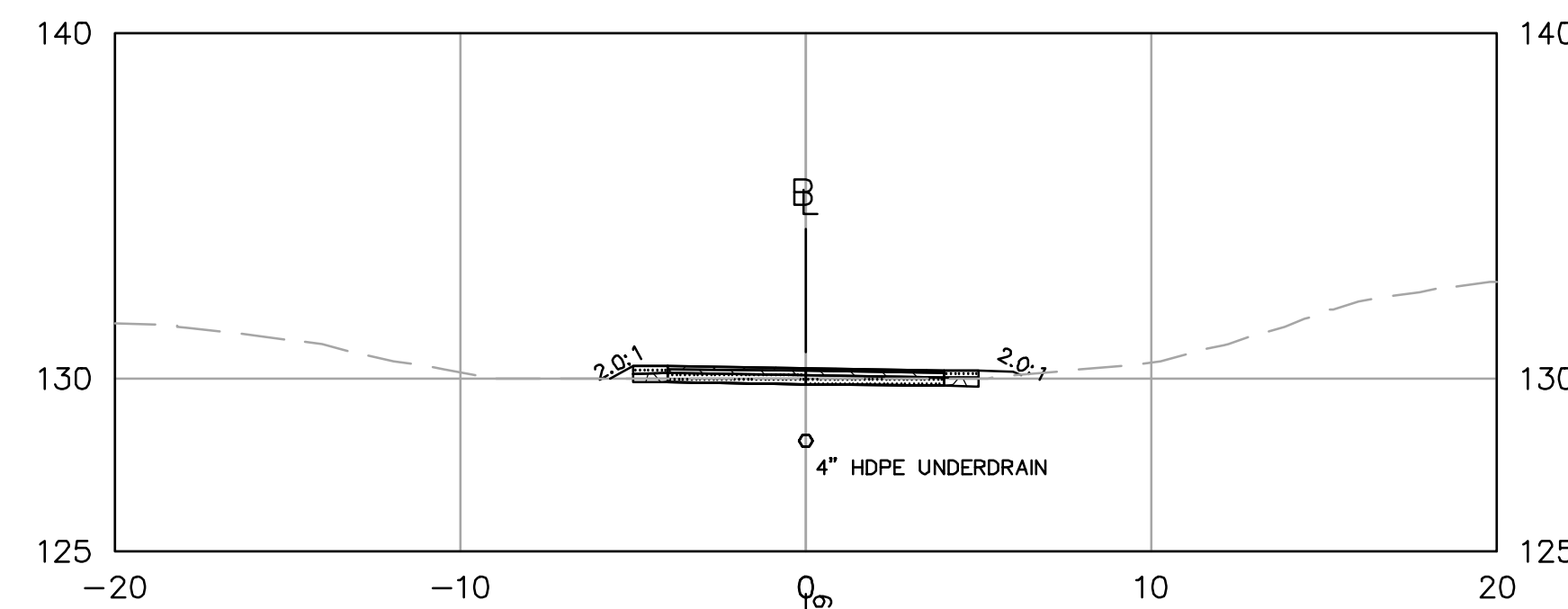
8+50



10+50



8+00



10+00

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PROFESSIONAL ENGINEER DATE

### HAGGETTS POND RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

### TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

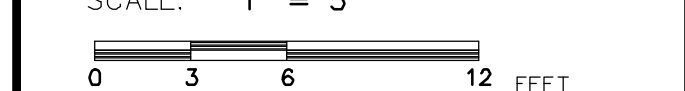
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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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Andover, Massachusetts  
01810  
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SCALE: 1" = 5'

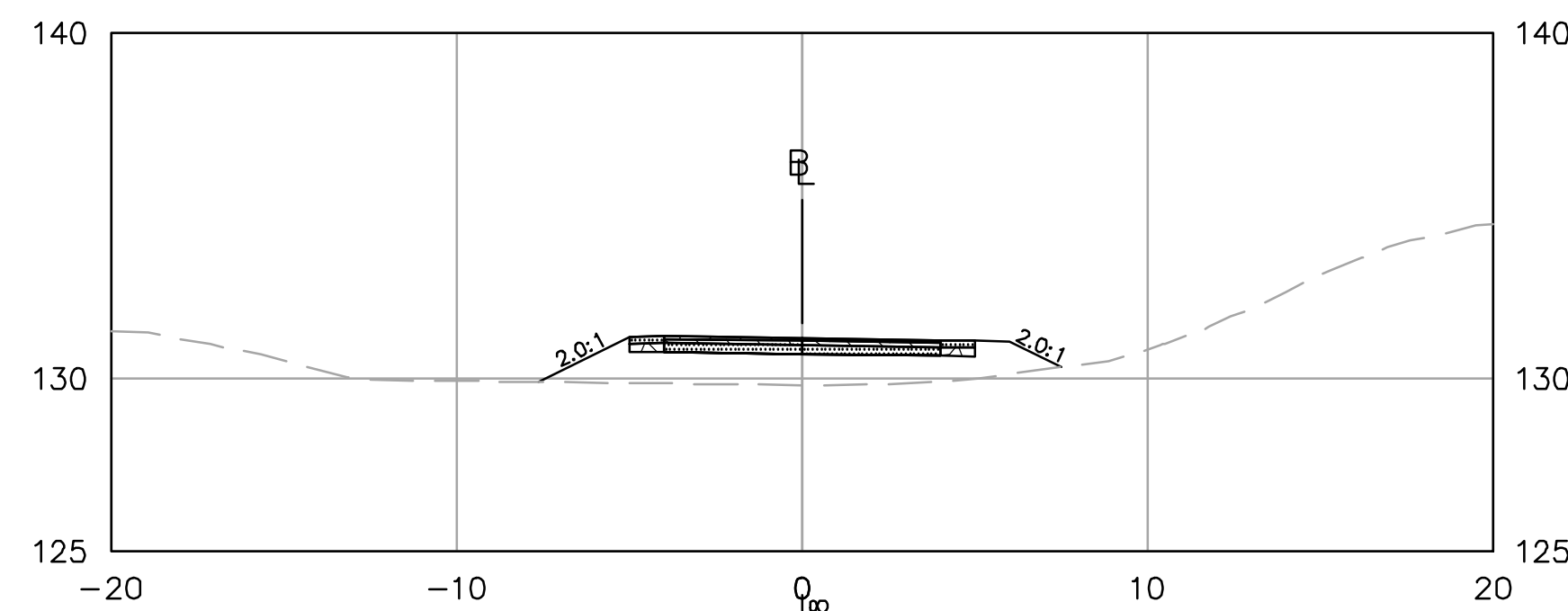


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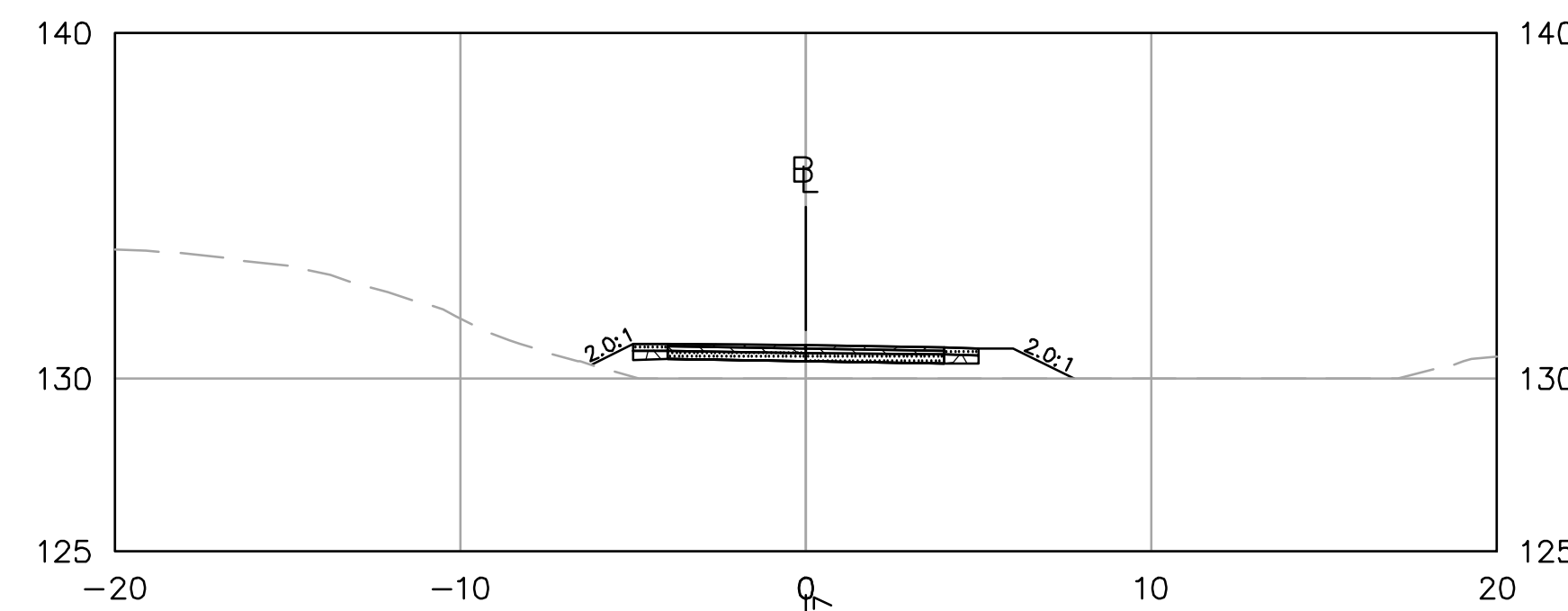
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JOB. NO: 8-9985.01

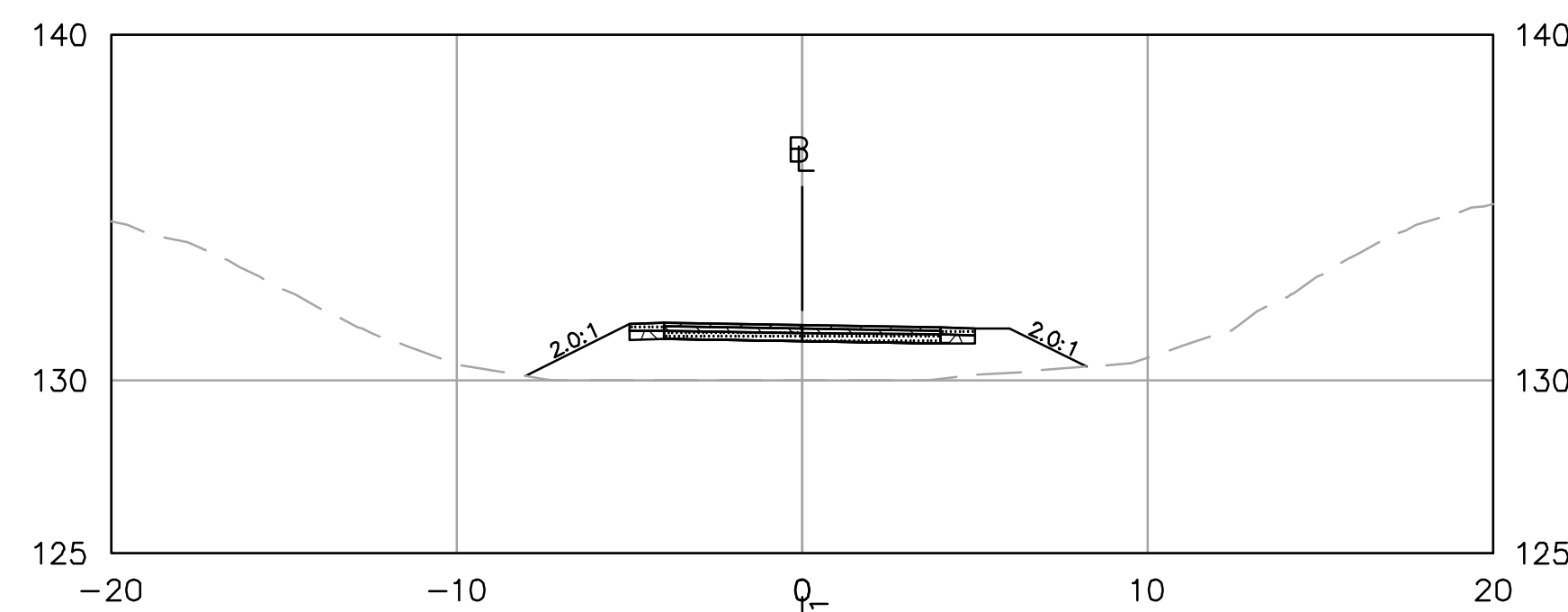
SHEET C-203



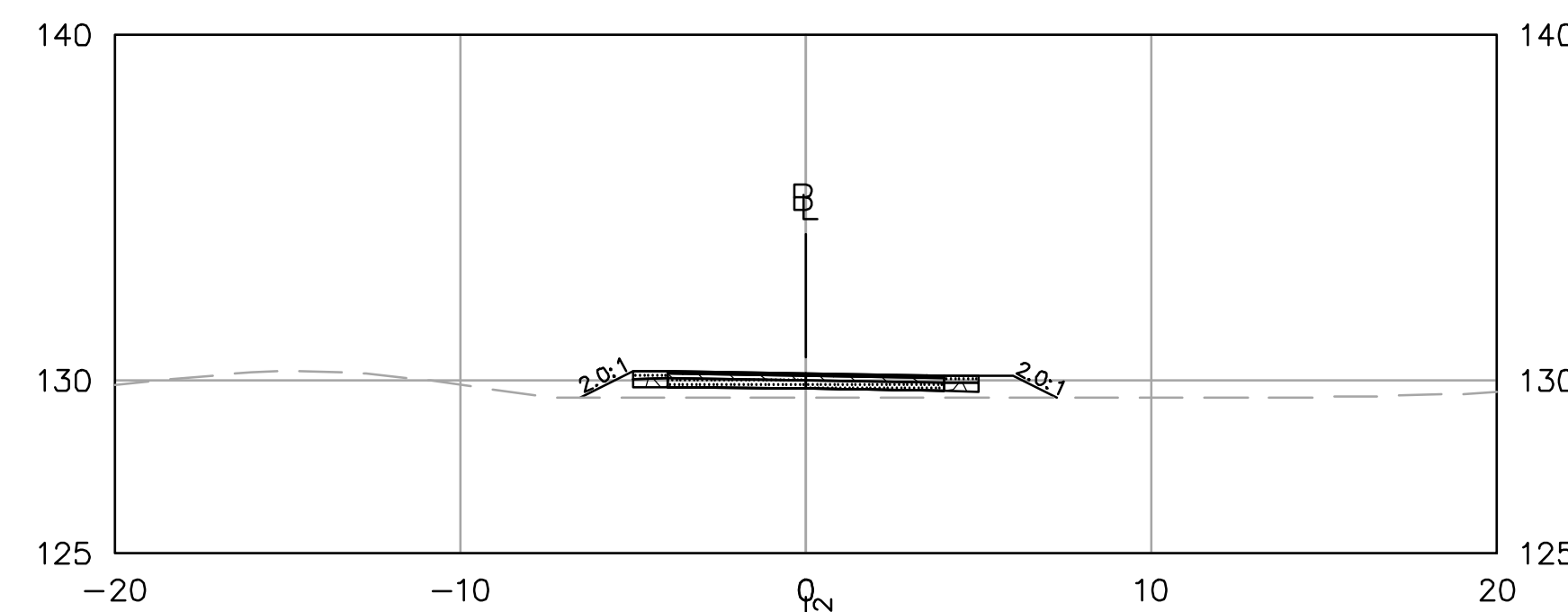
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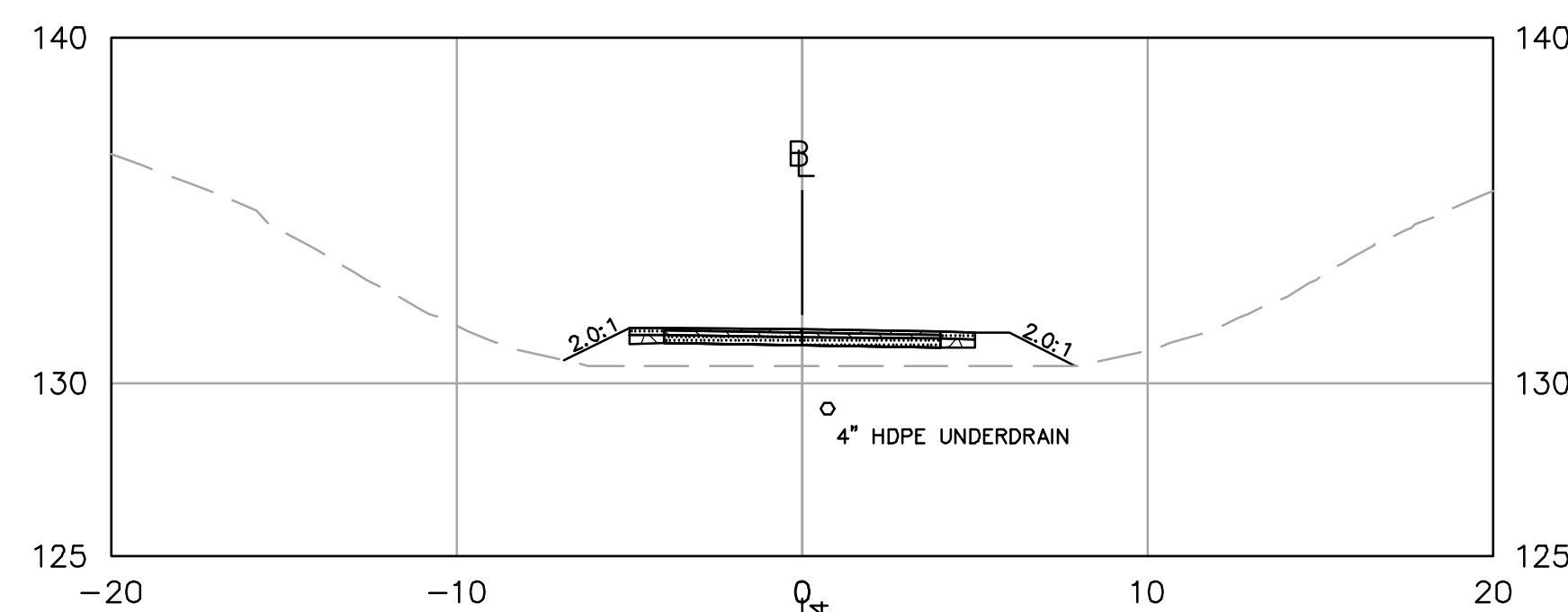
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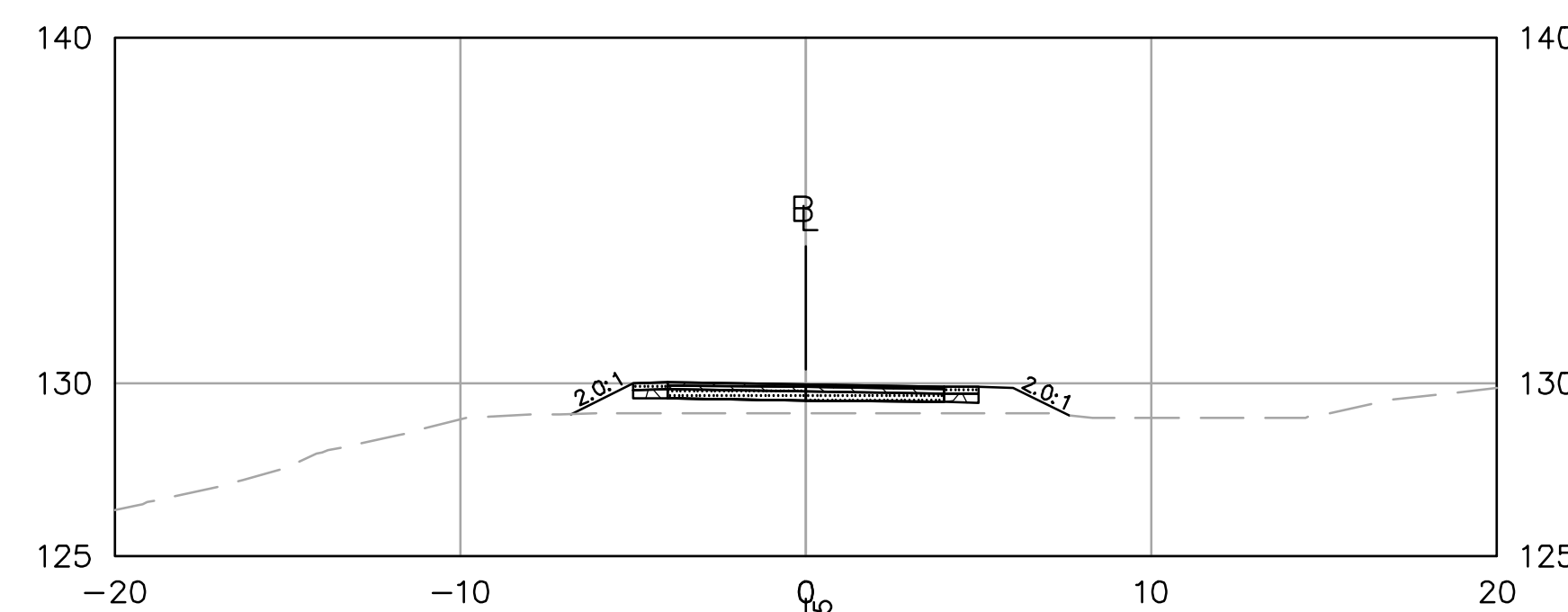
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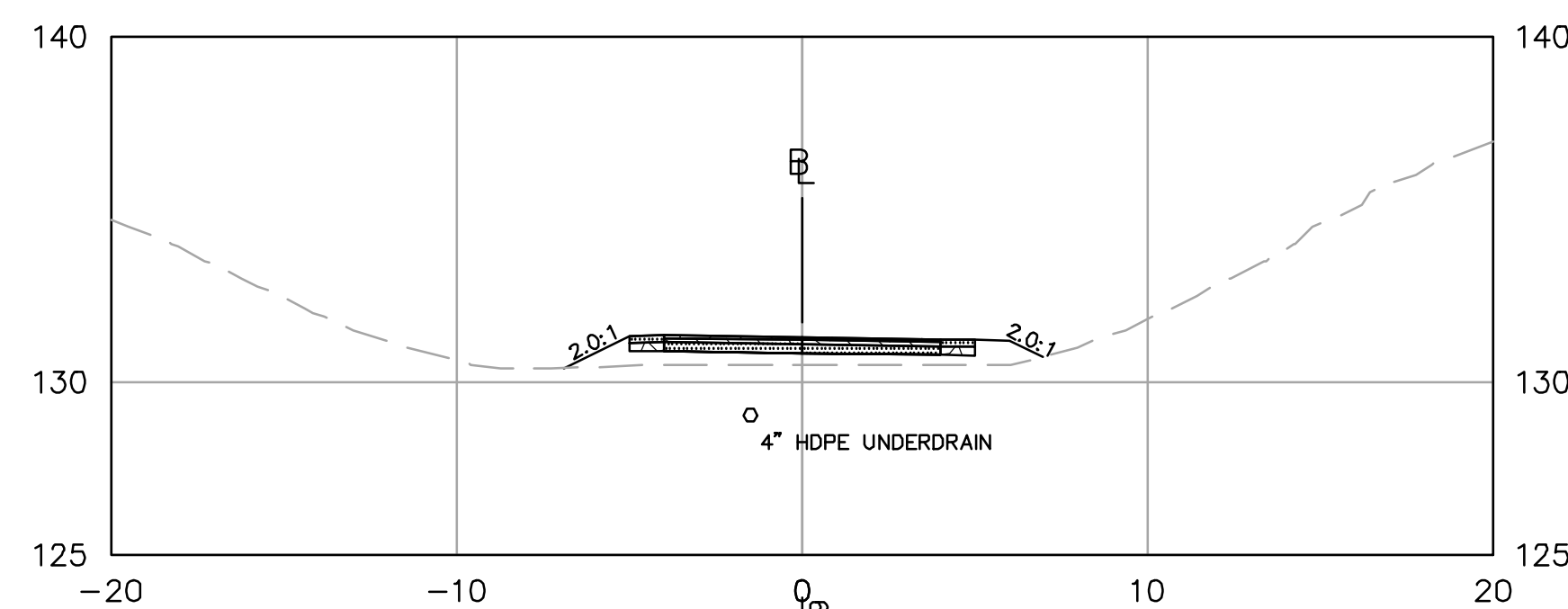
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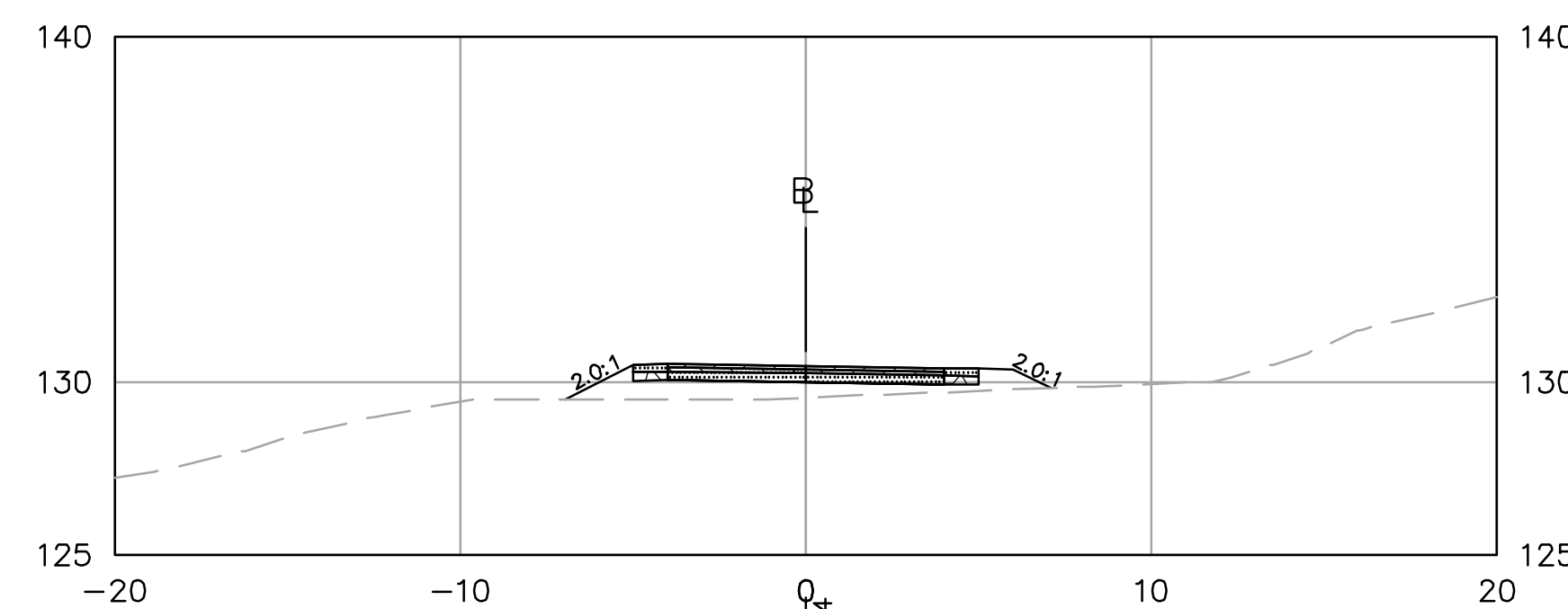
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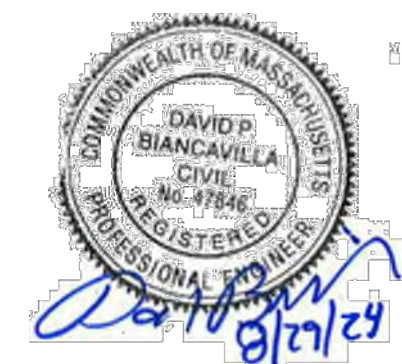


12+00



14+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

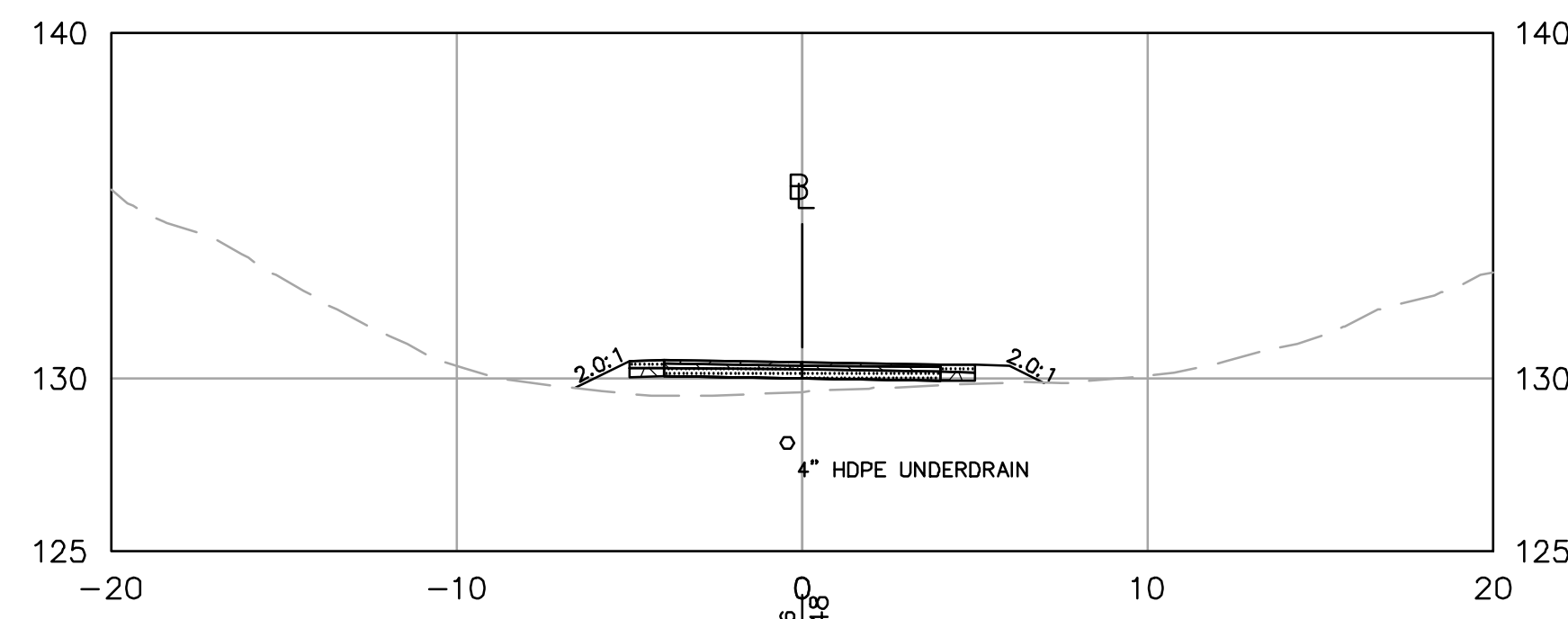
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TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

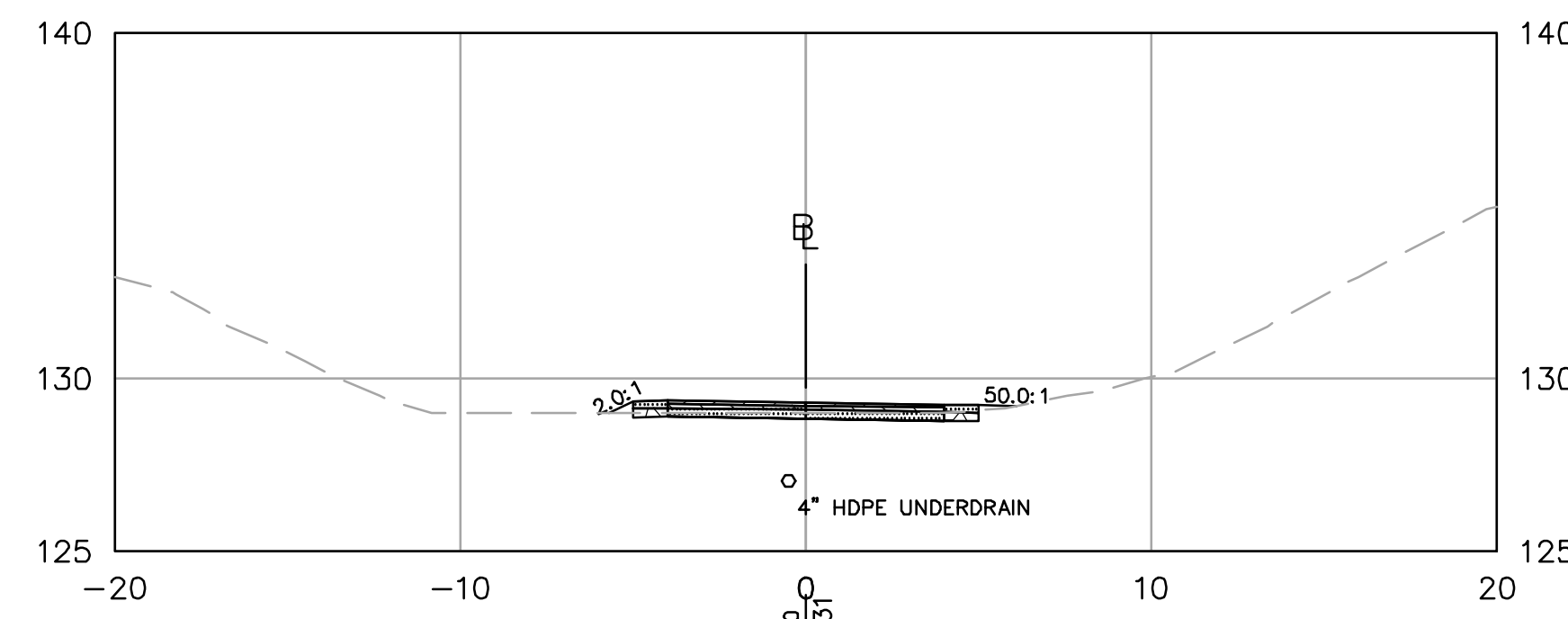
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Andover, Massachusetts  
01810  
617 896 4300

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SCALE: 1" = 5'  
0 3 6 12 FEET

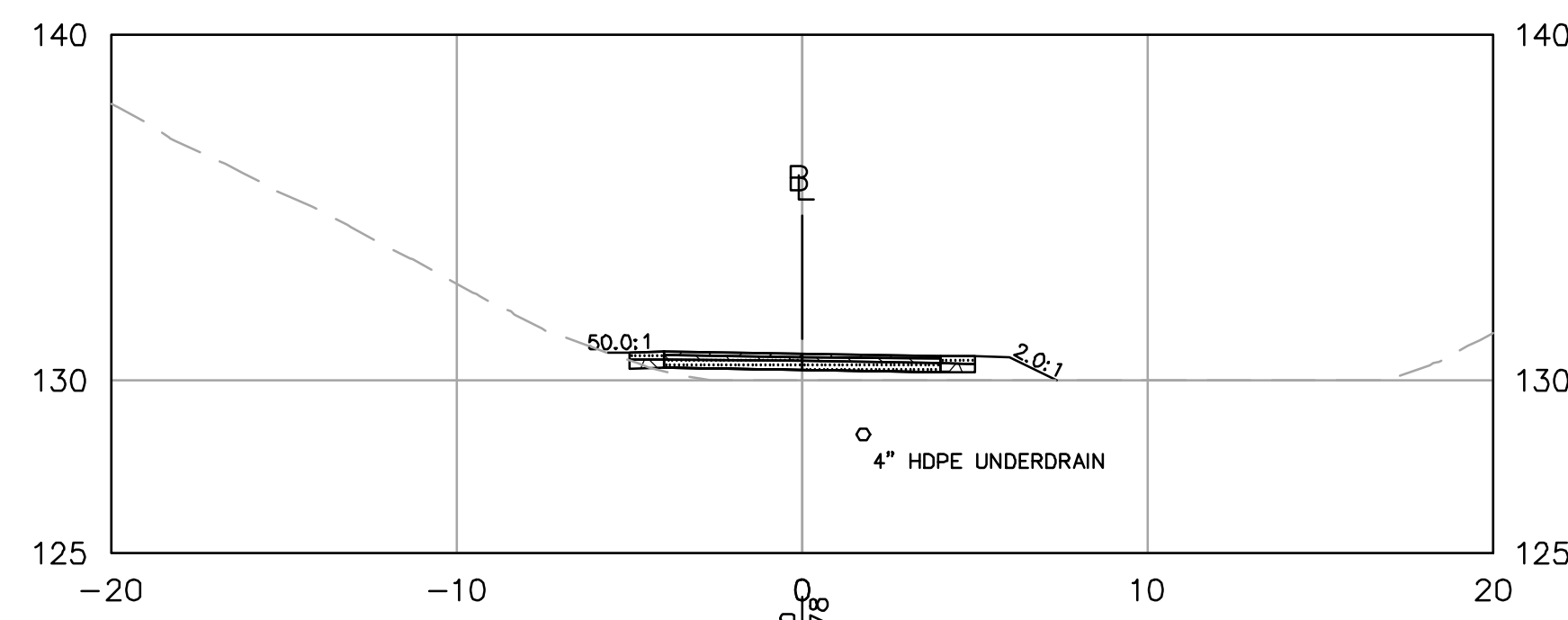
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JOB. NO: 8-9985.01 SHEET C-204



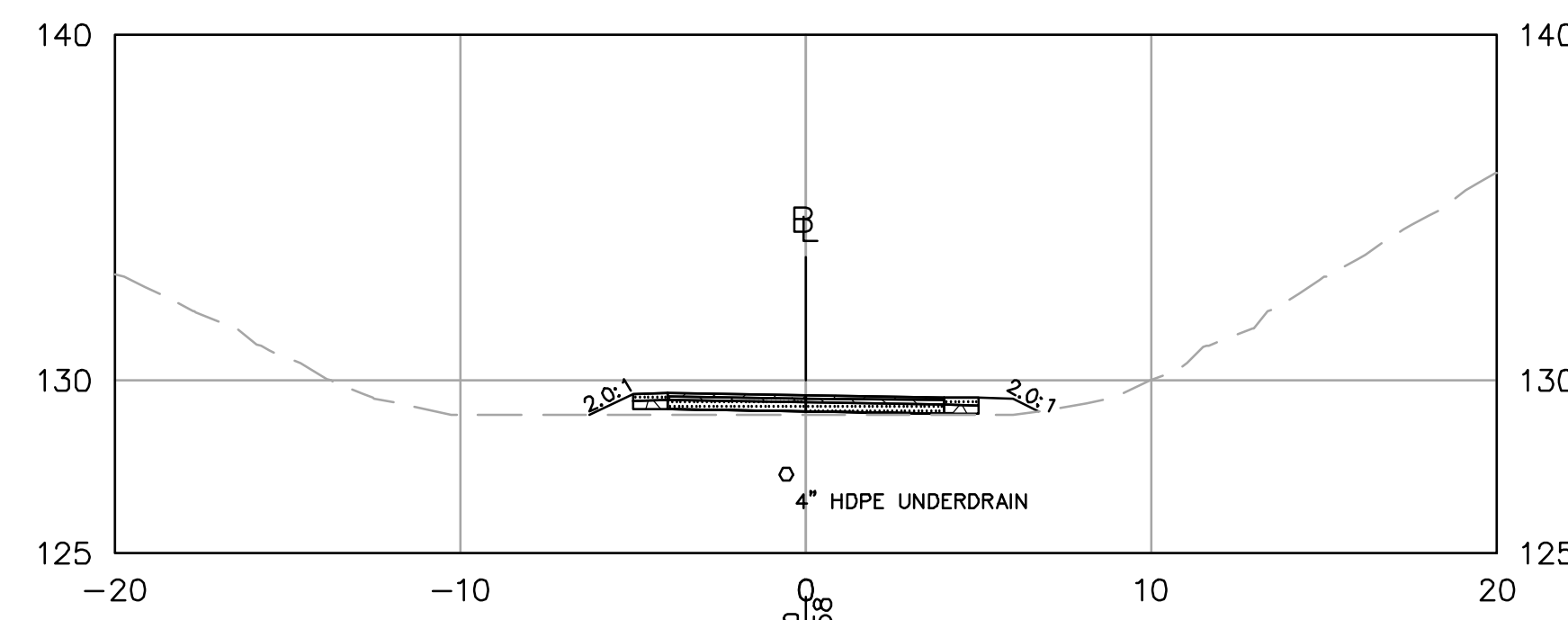
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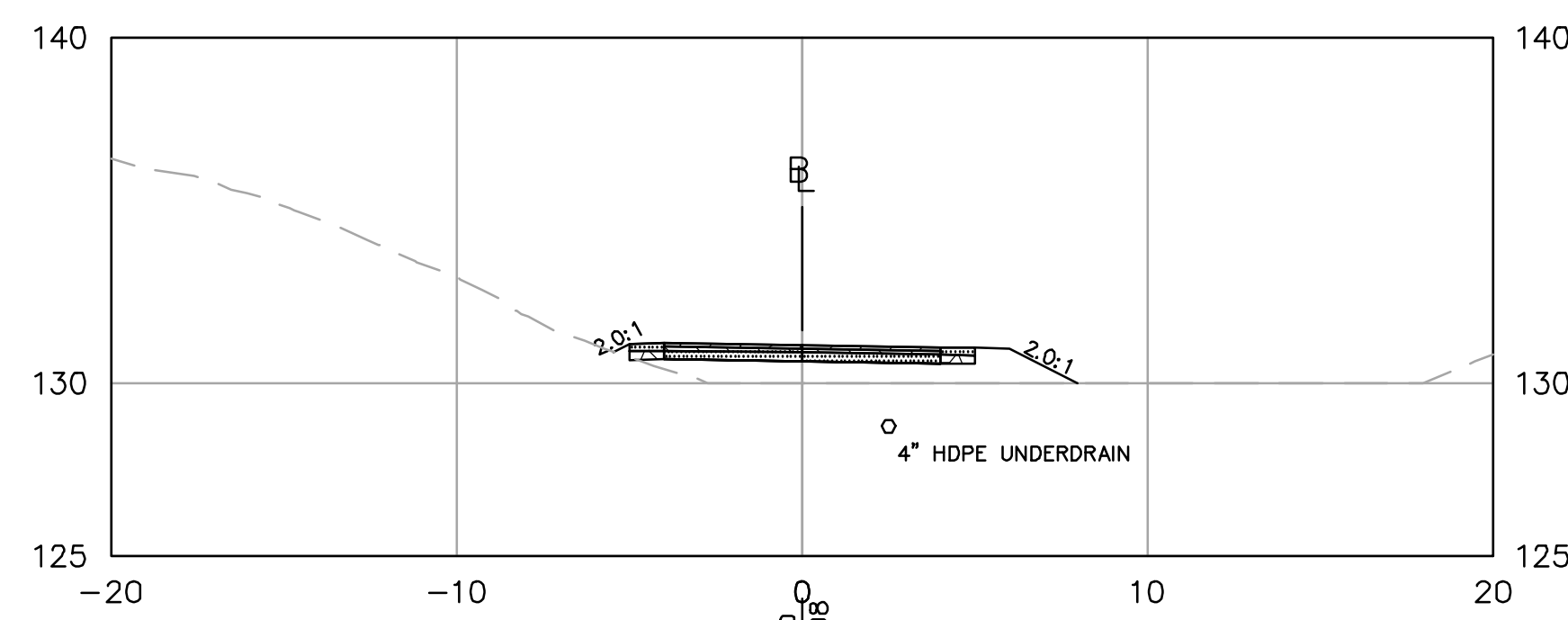
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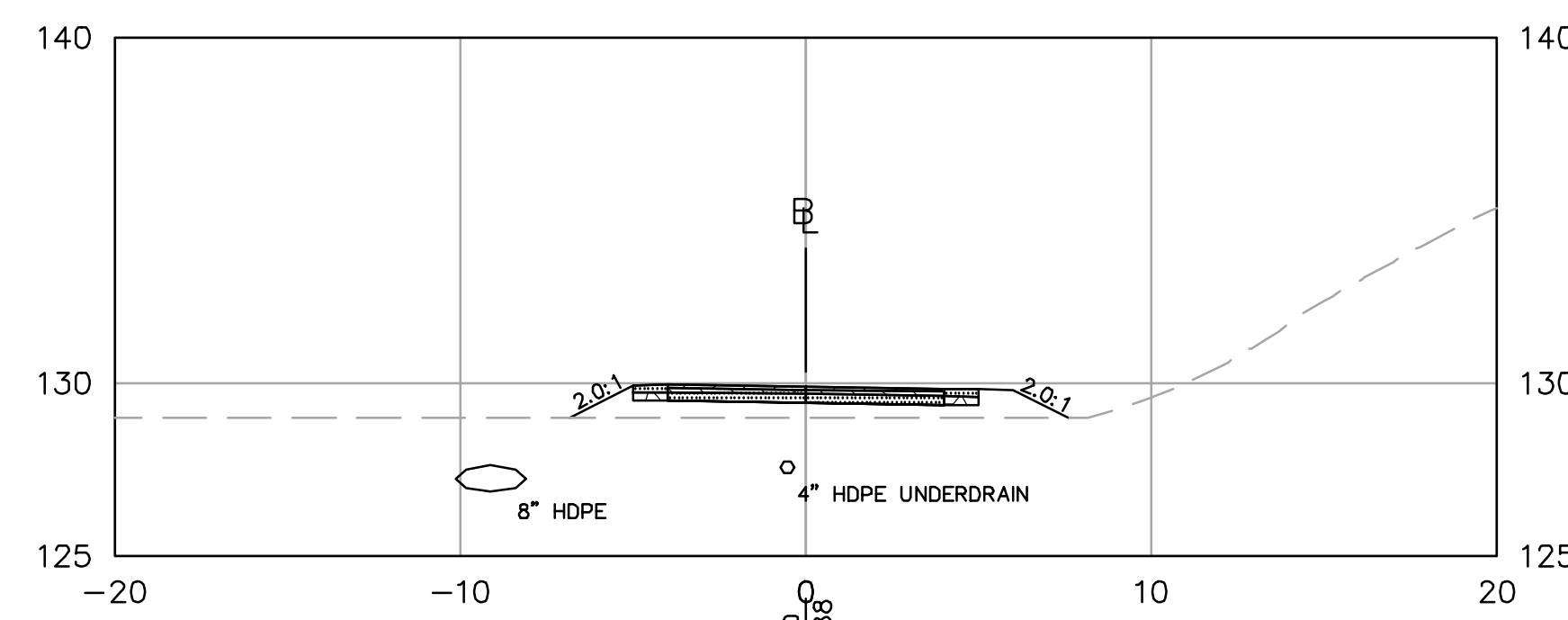
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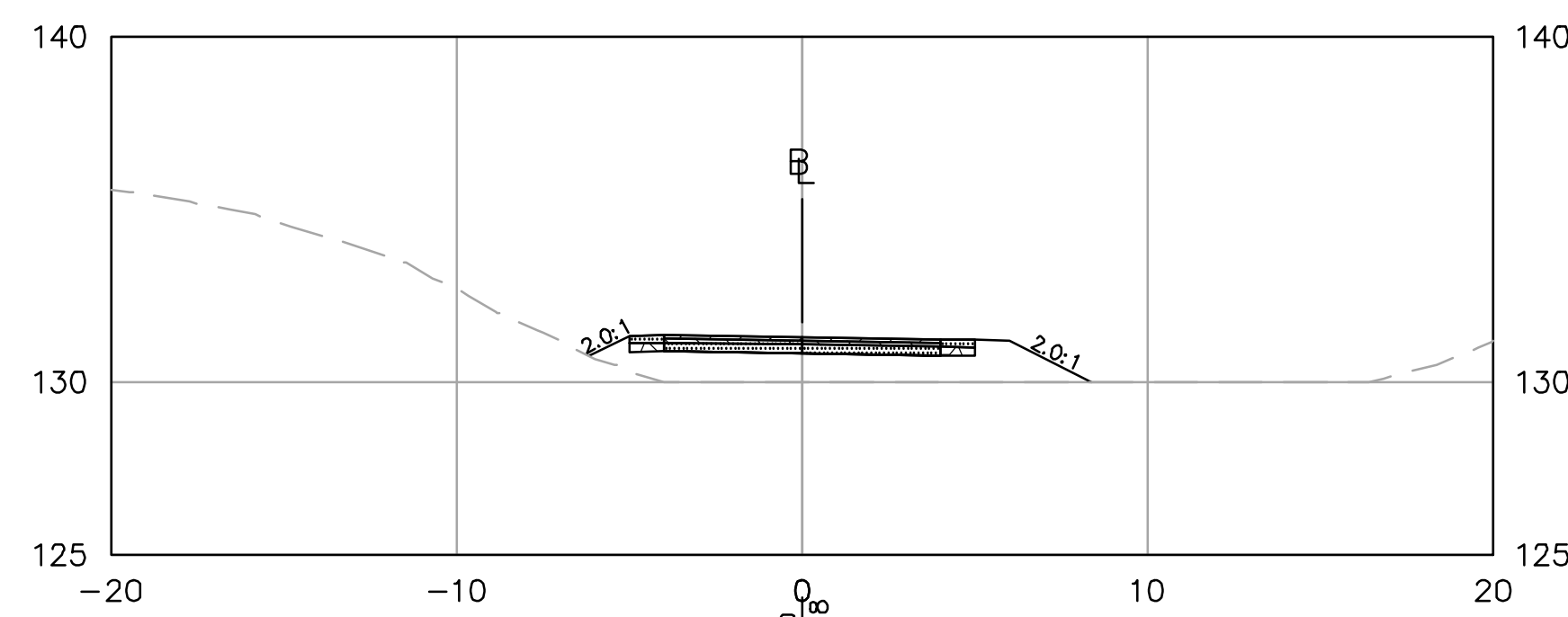
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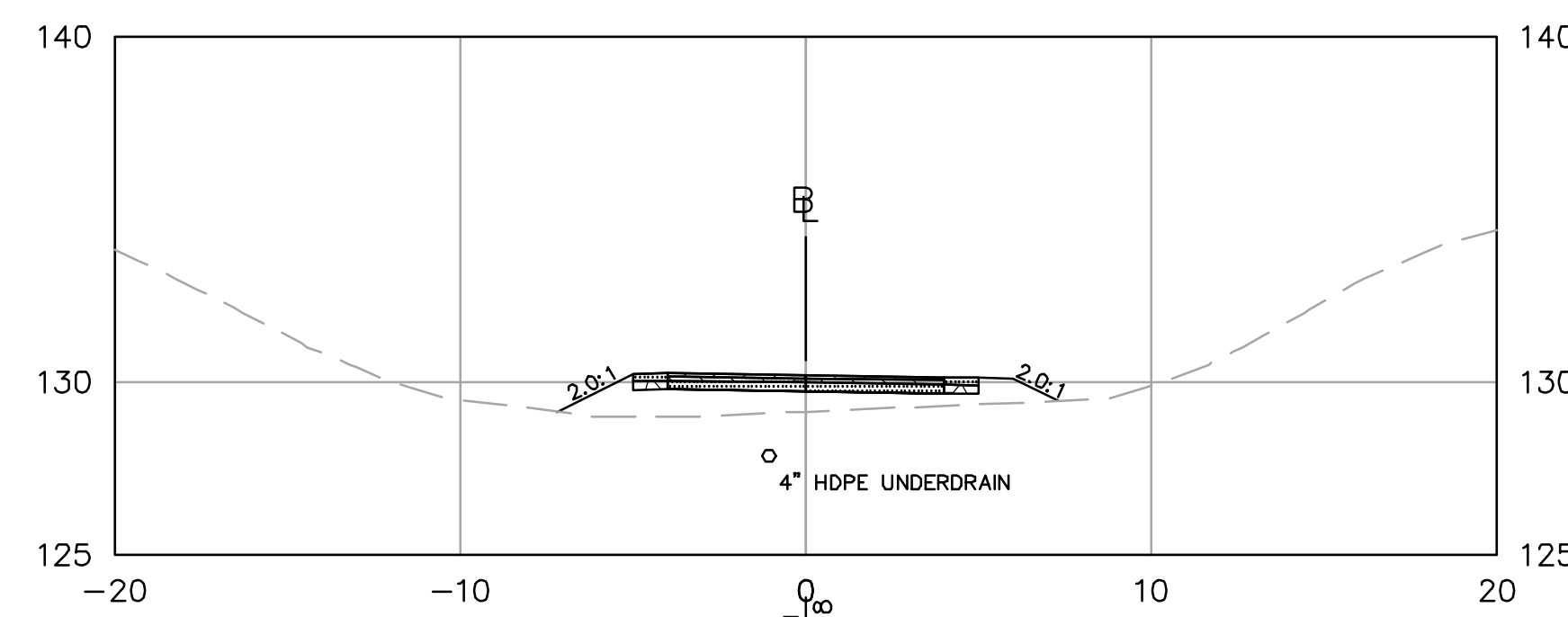
16+50



18+50



16+00



18+00

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION



PROFESSIONAL ENGINEER DATE

### HAGGETTS POND RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

### TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

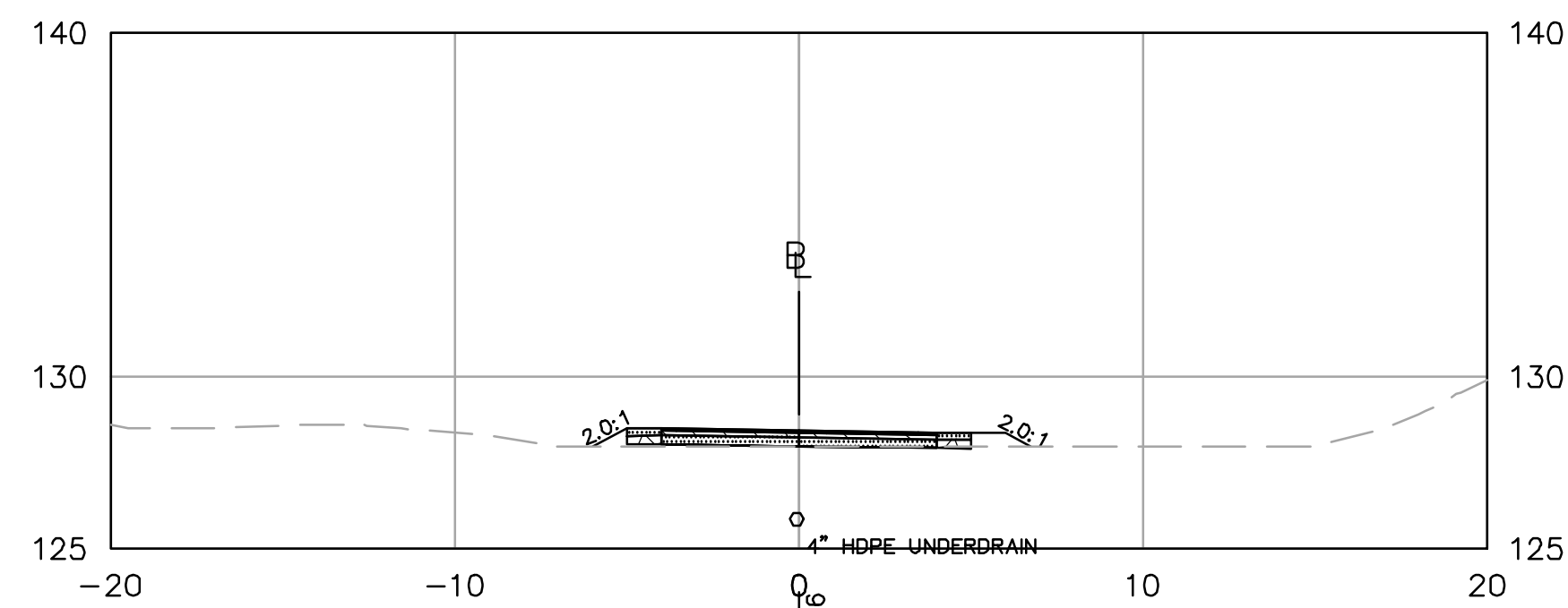
REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

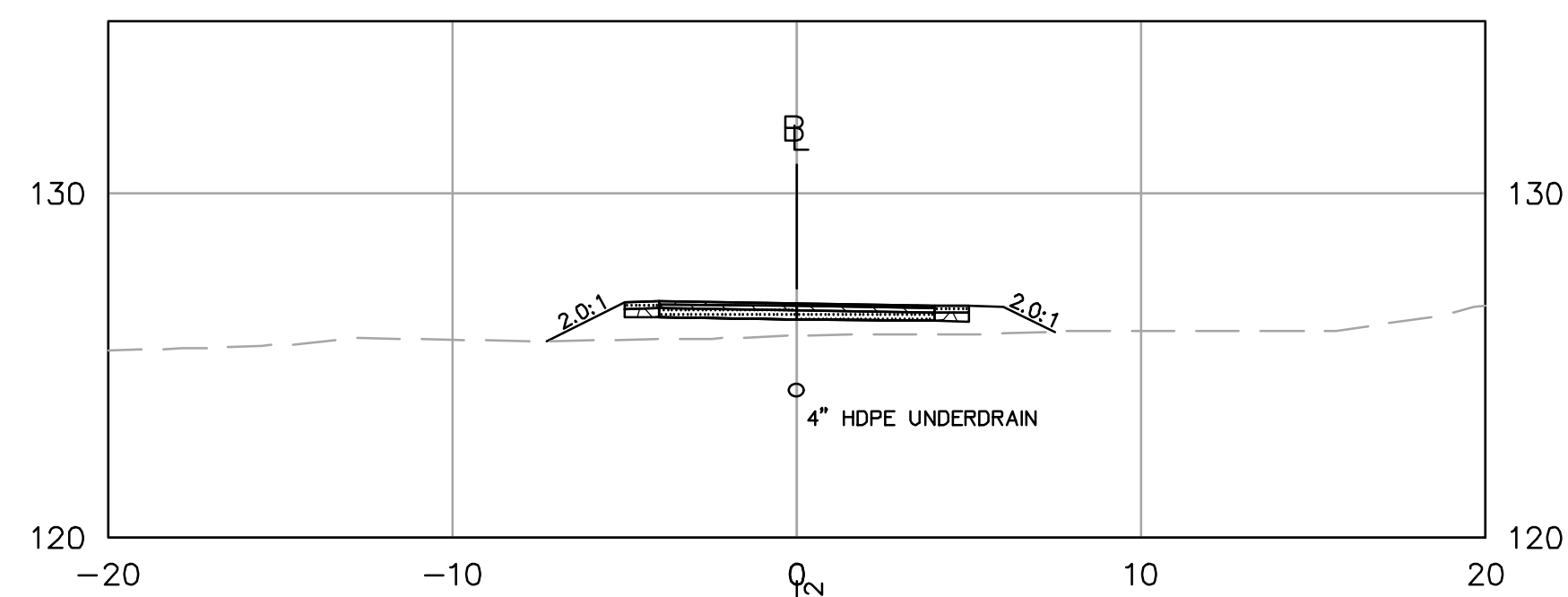
PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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300 Brickstone Square, Suite 203  
Andover, Massachusetts  
01810  
617 896 4300

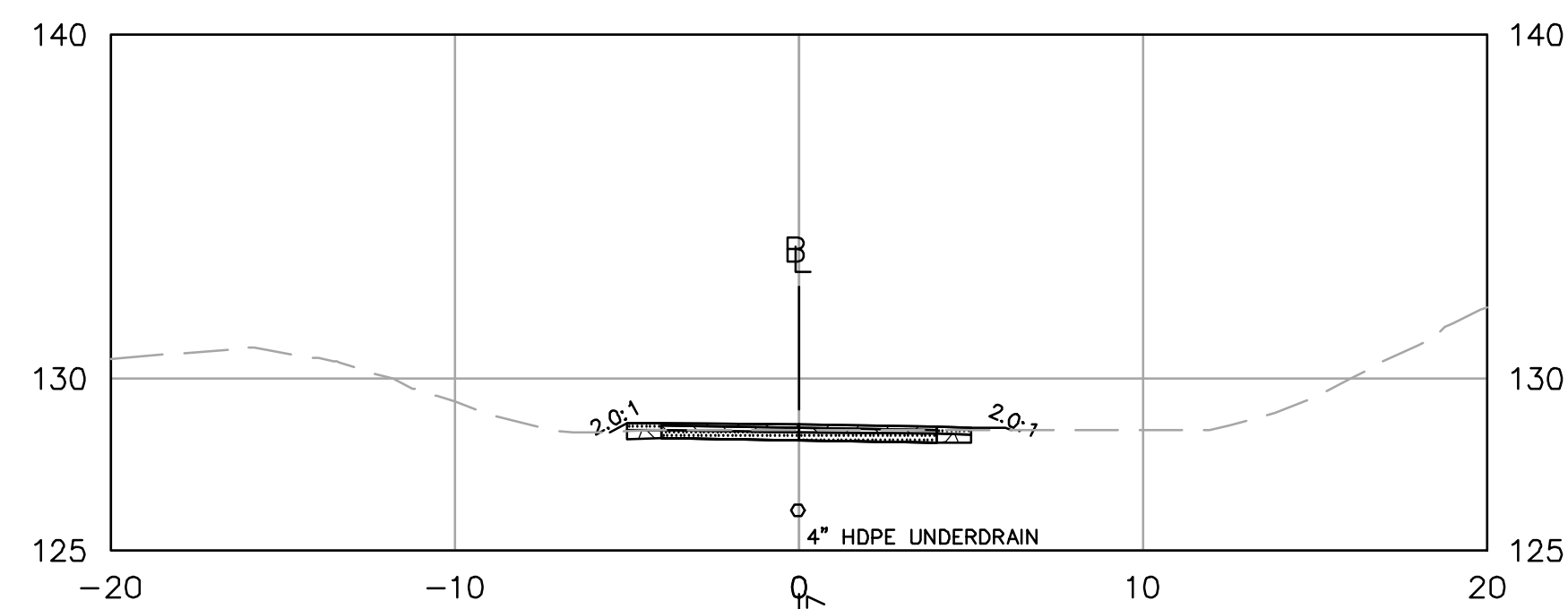
© 2024 BSC GROUP, INC.  
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DWG.: XS-6 SHEET C-205  
JOB. NO: 8-9985.01



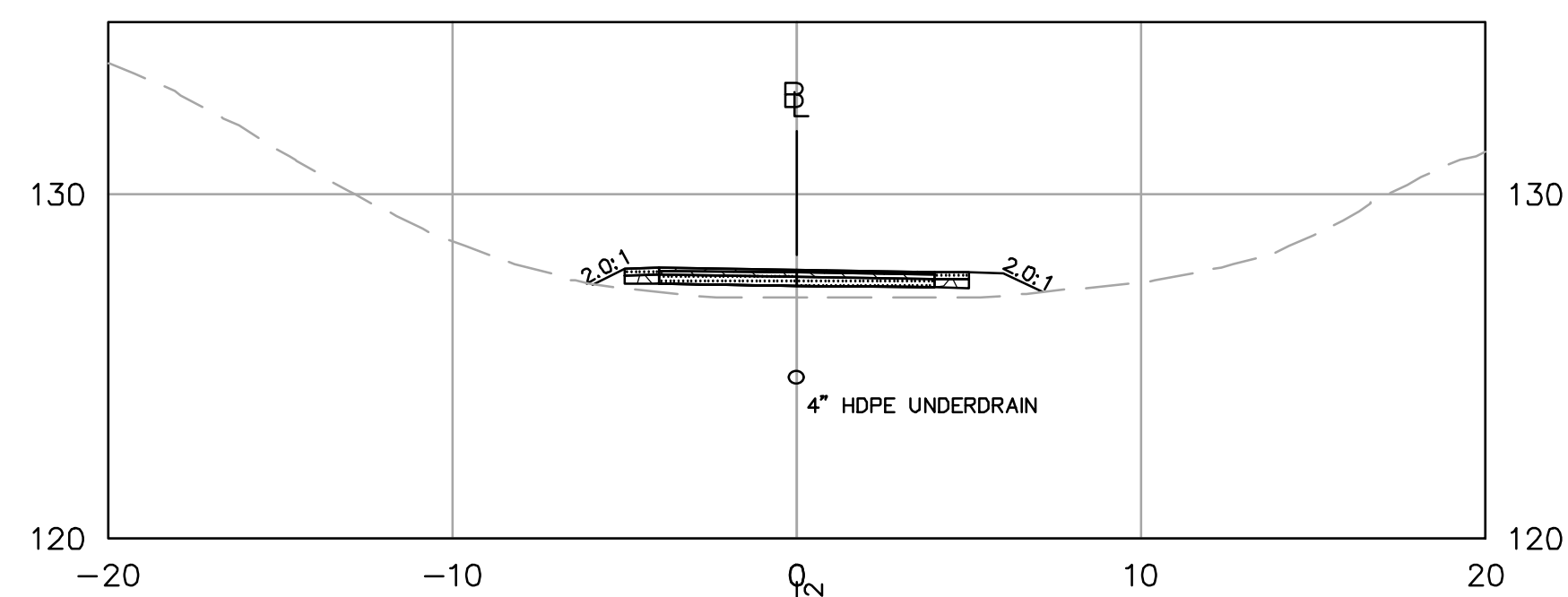
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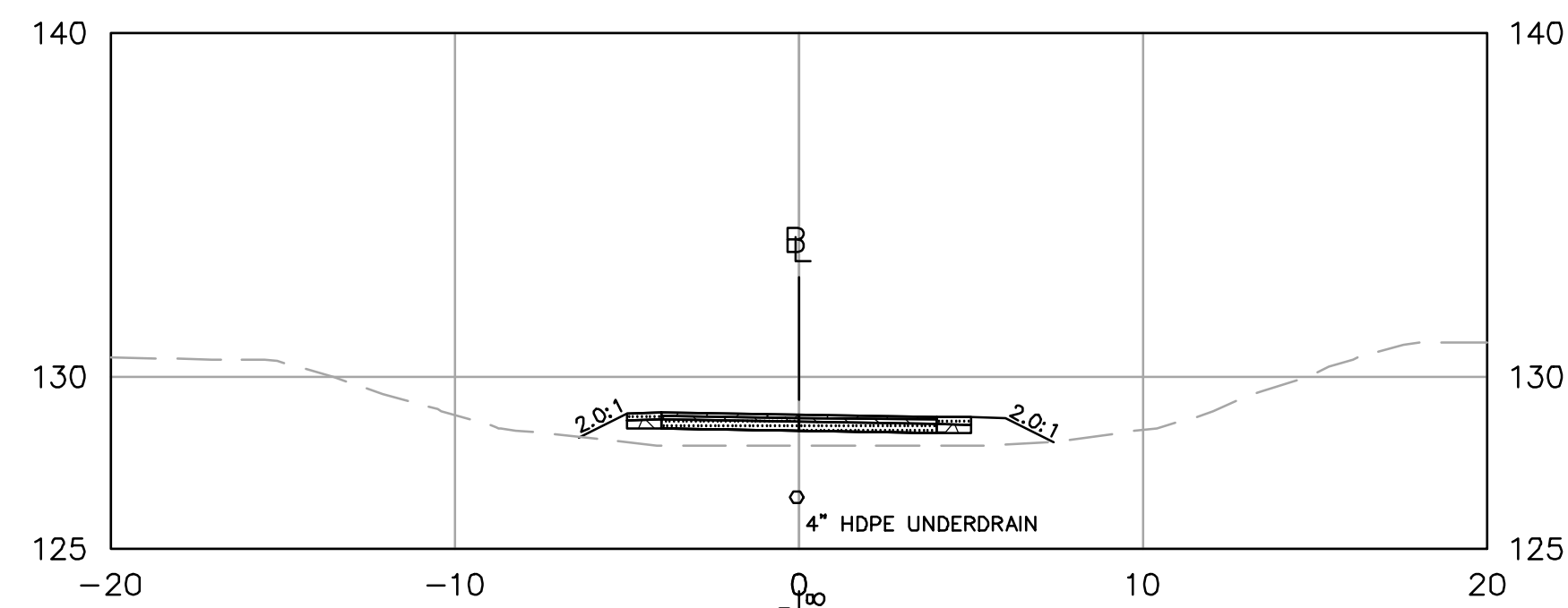
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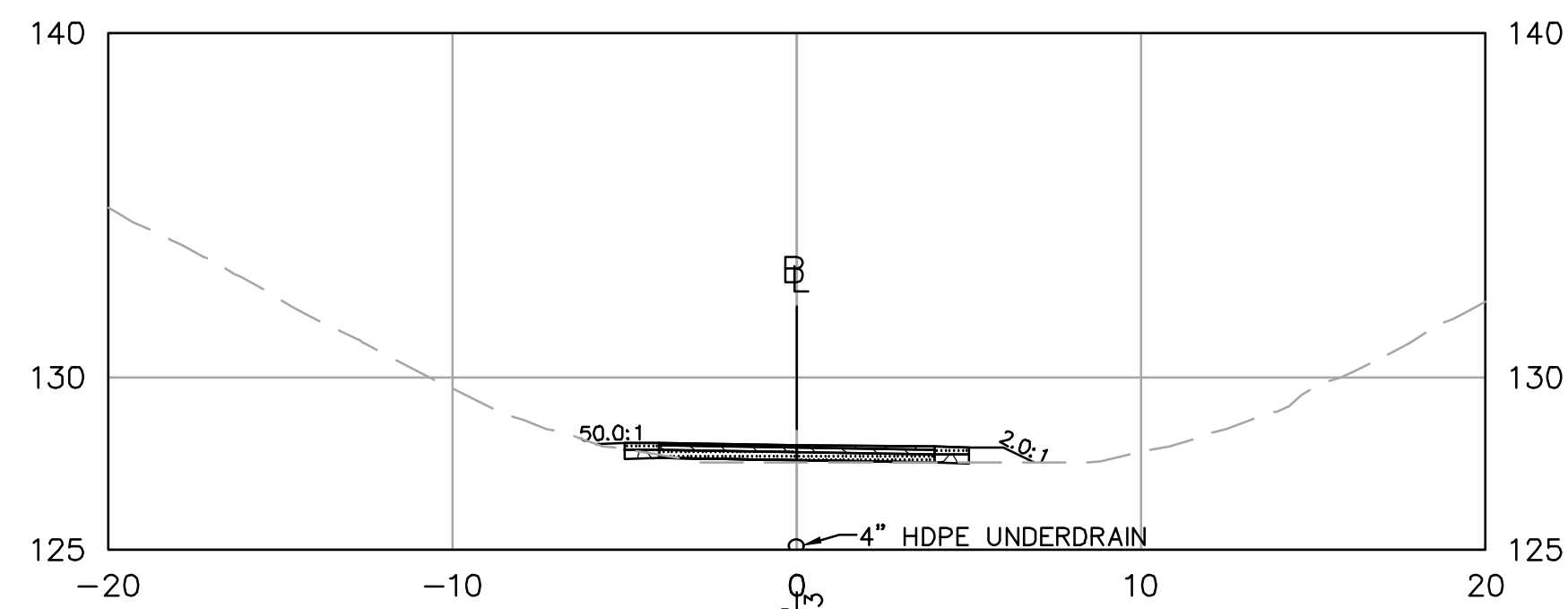
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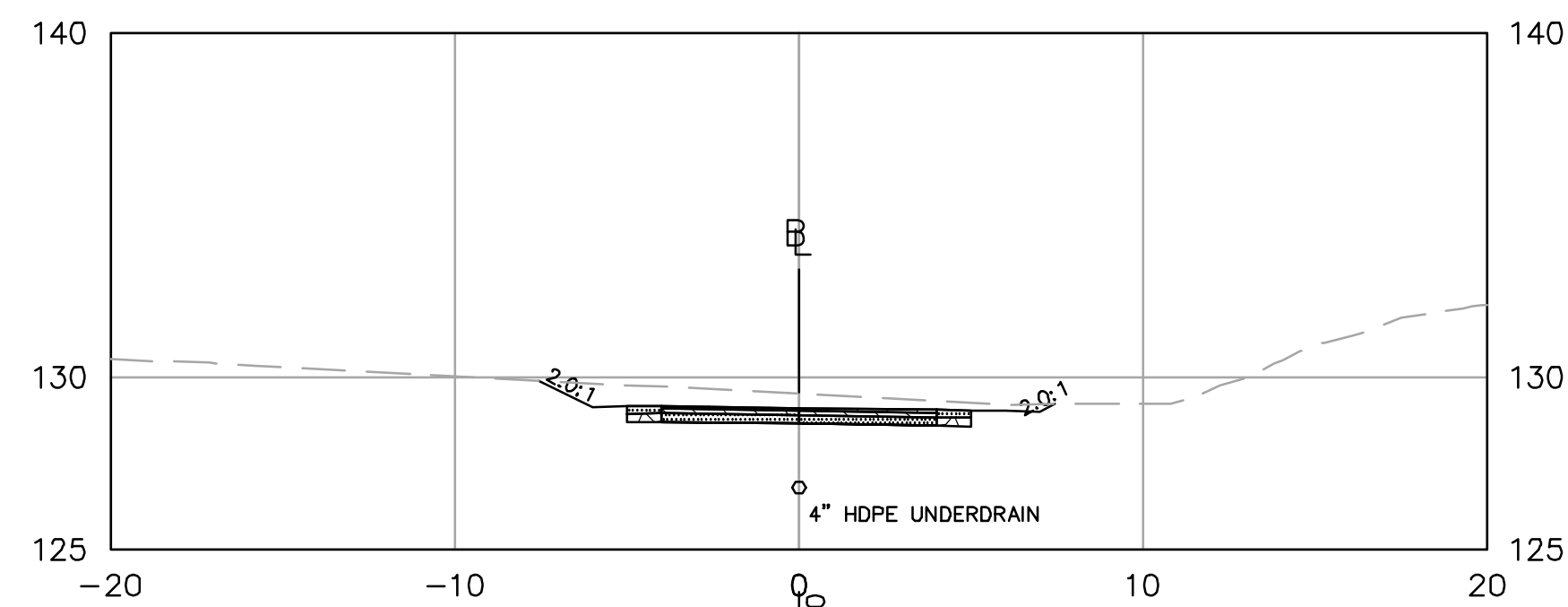
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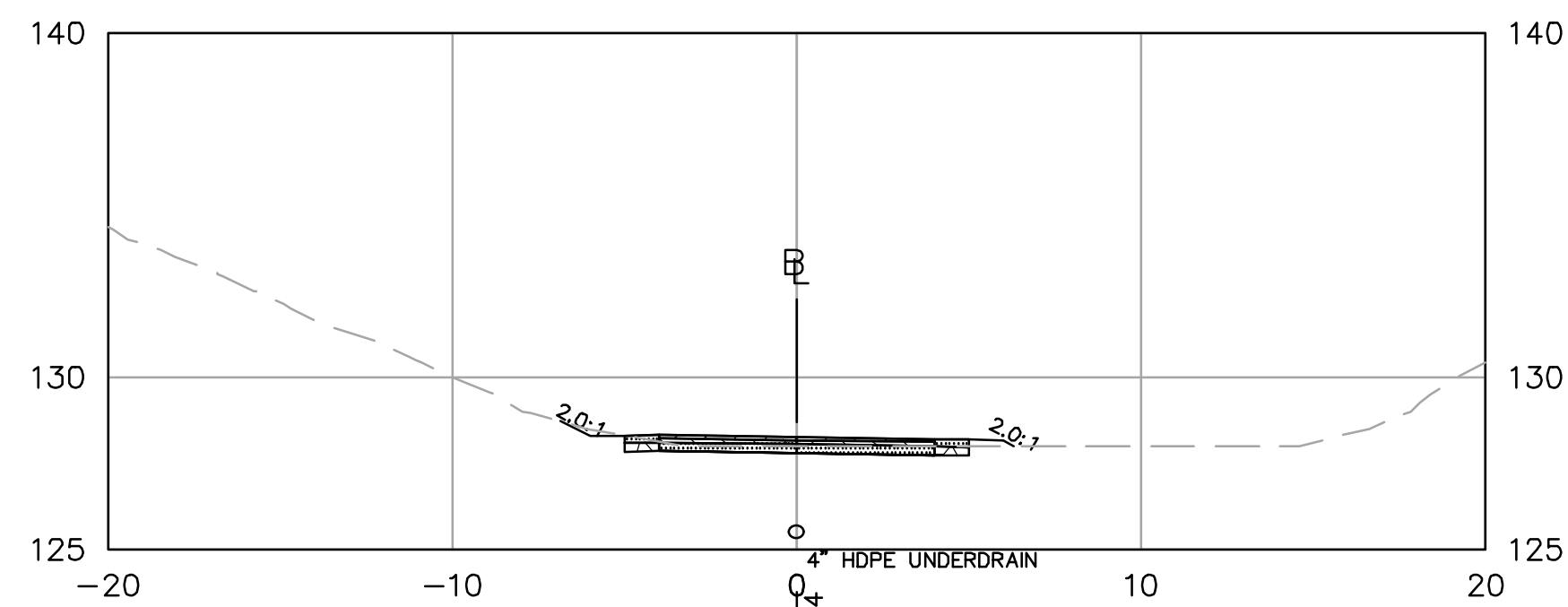
20+50



22+50



20+00



22+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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01810  
617 896 4300

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SCALE: 1" = 5'

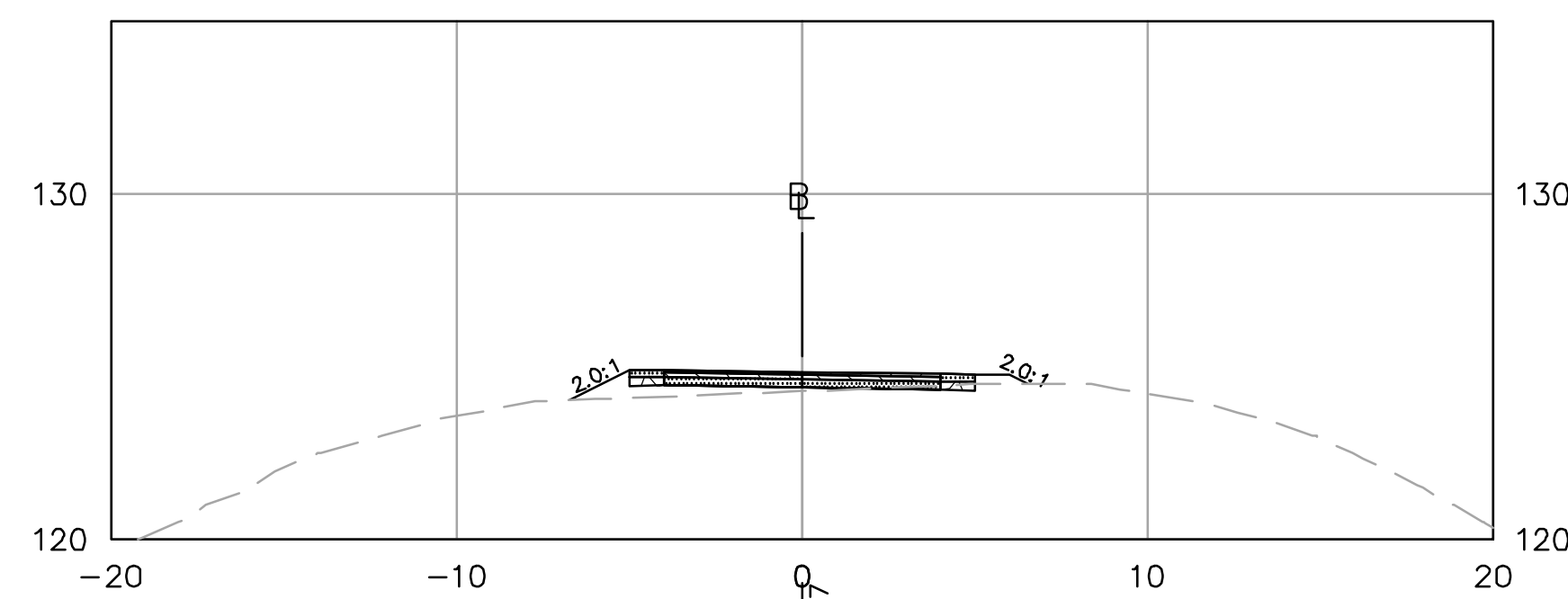


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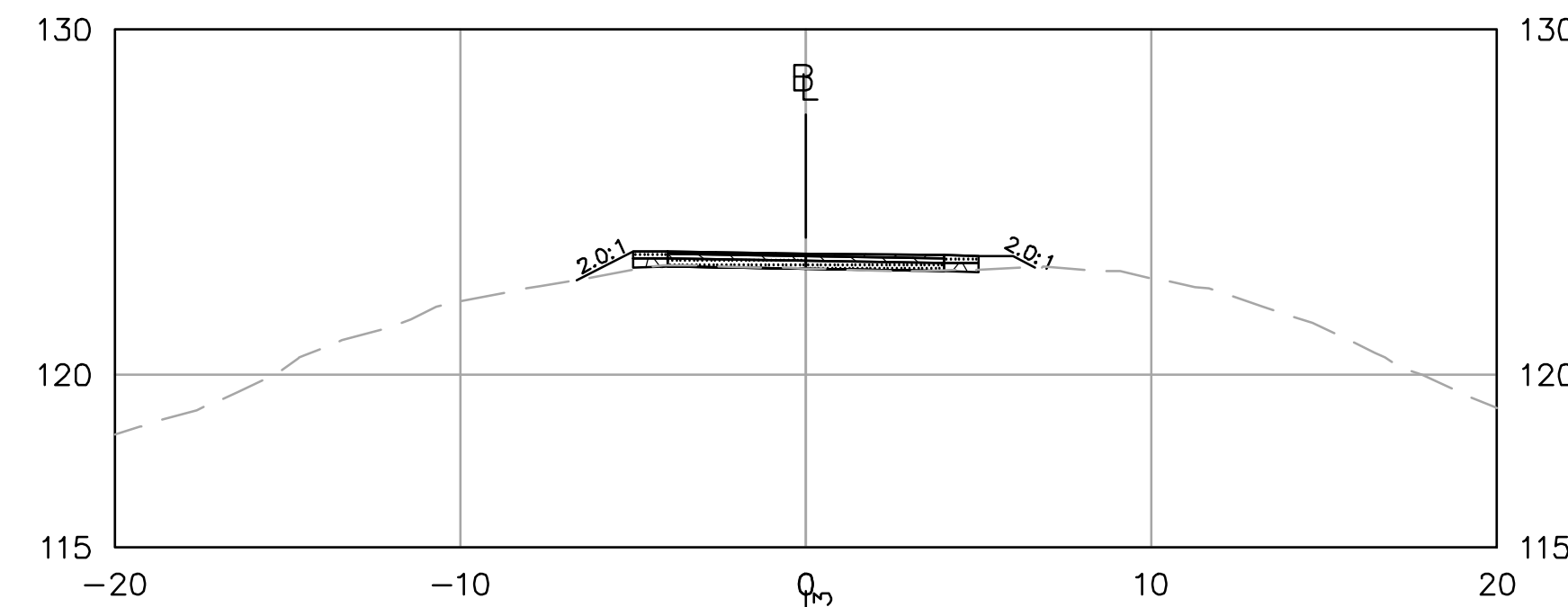
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JOB. NO: 8-9985.01

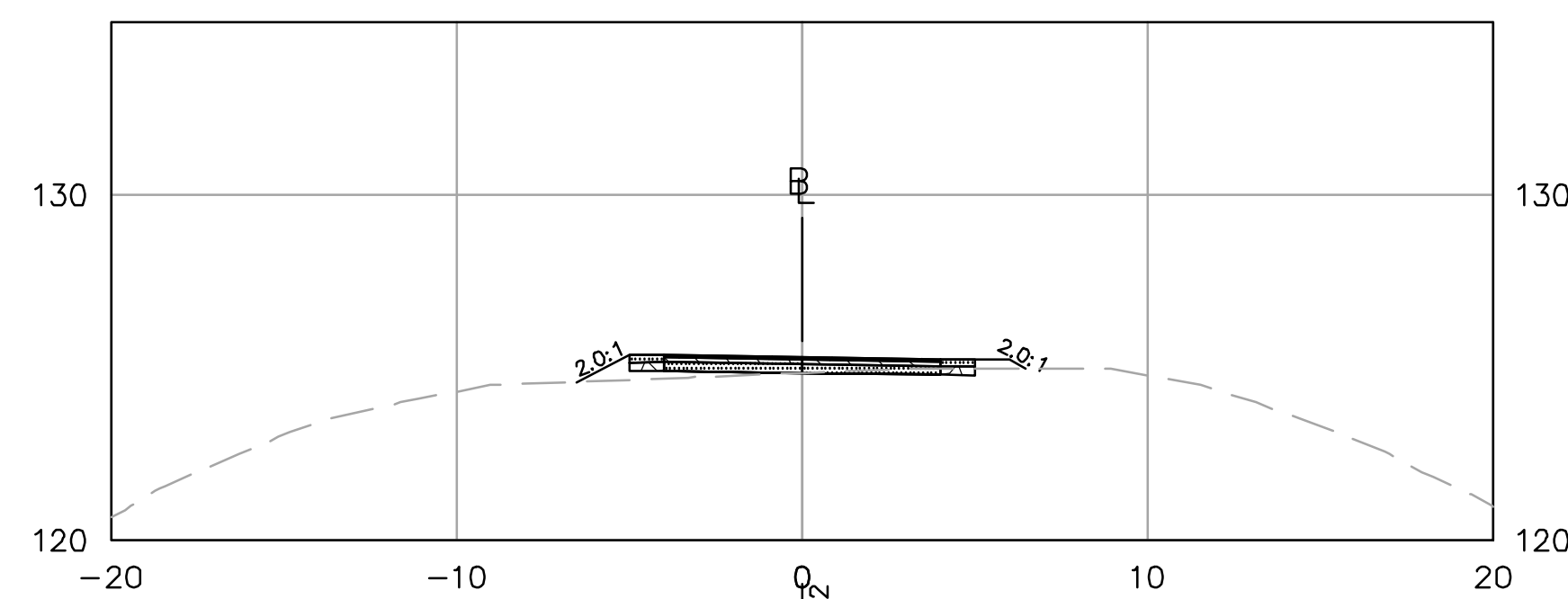
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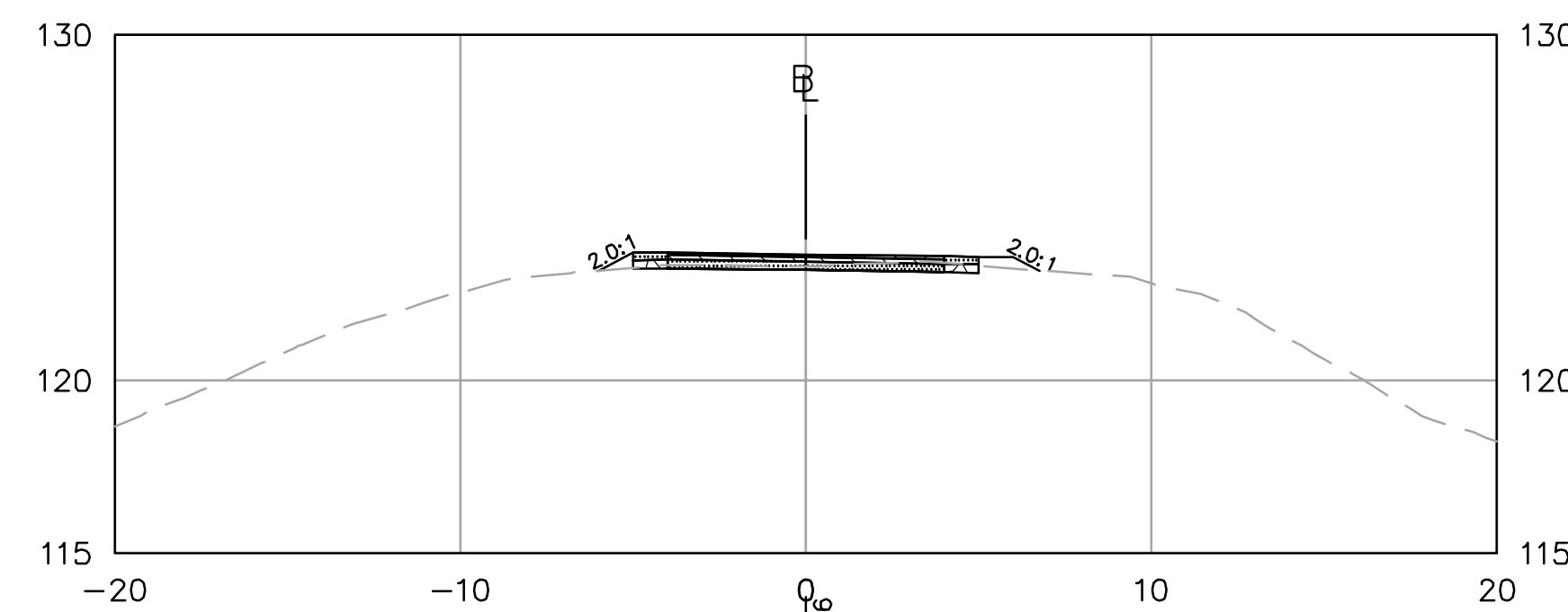
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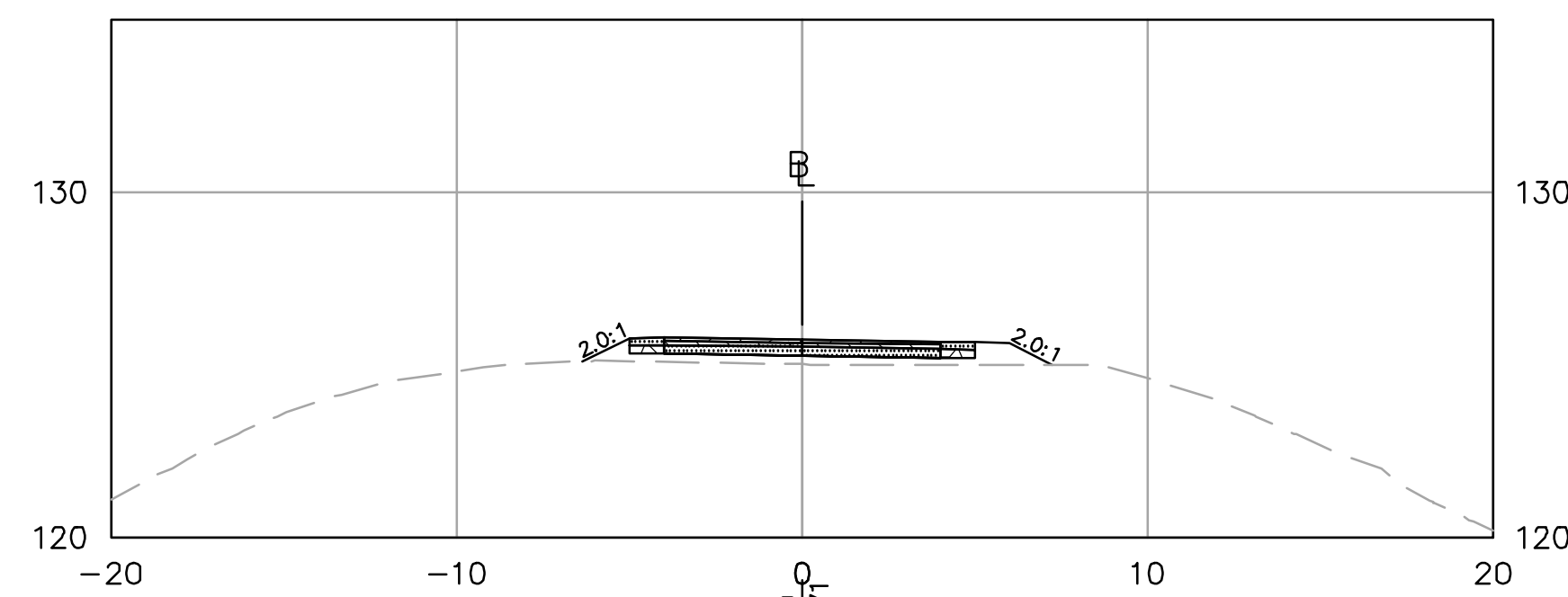
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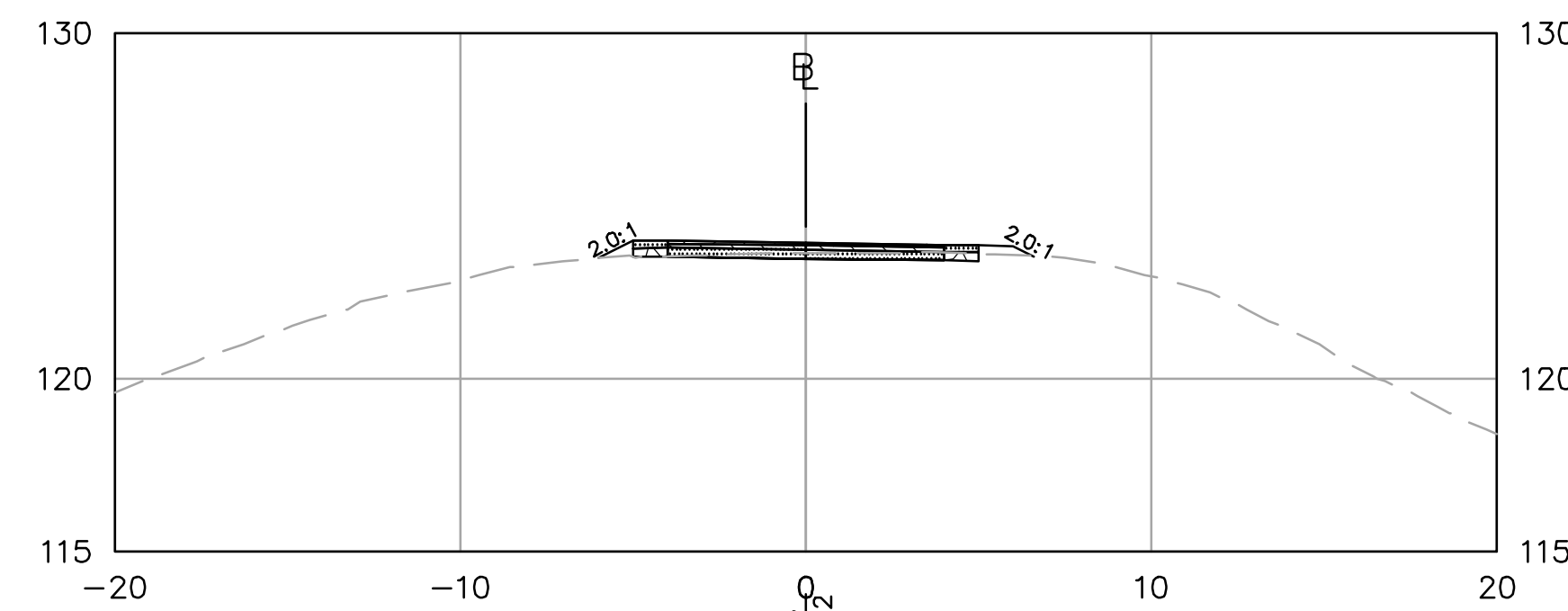
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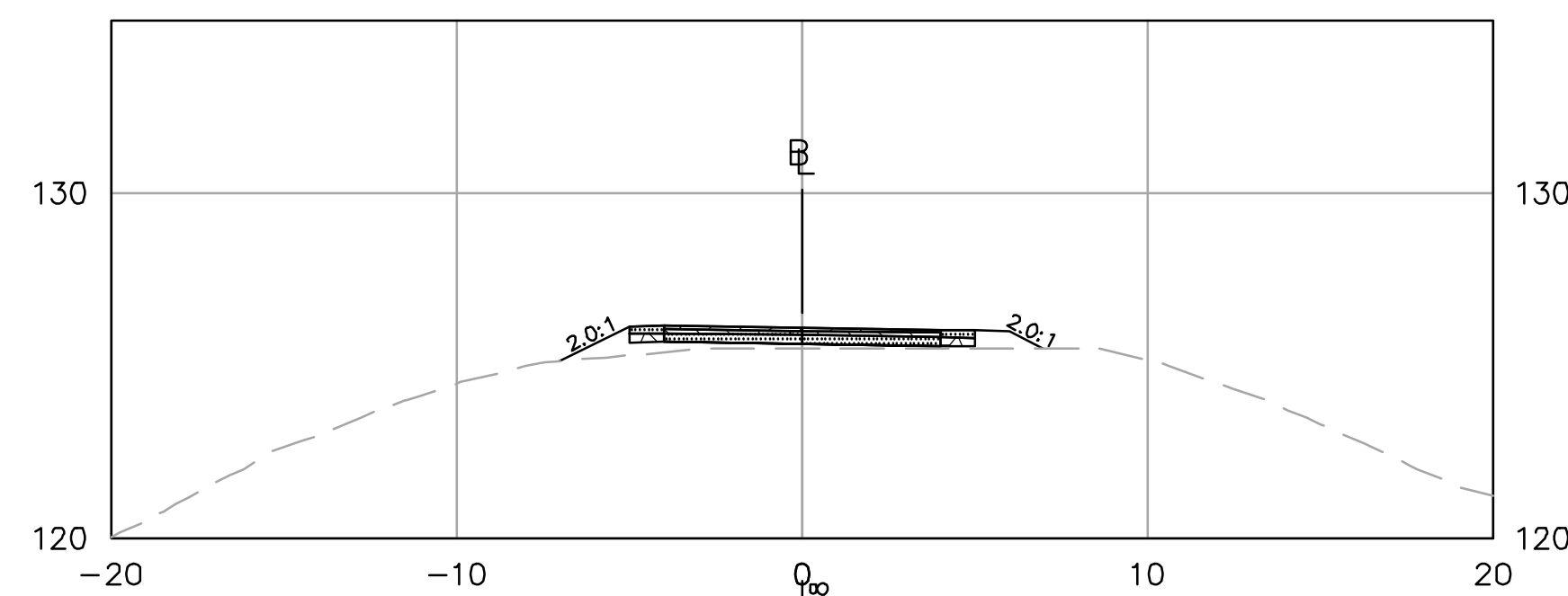
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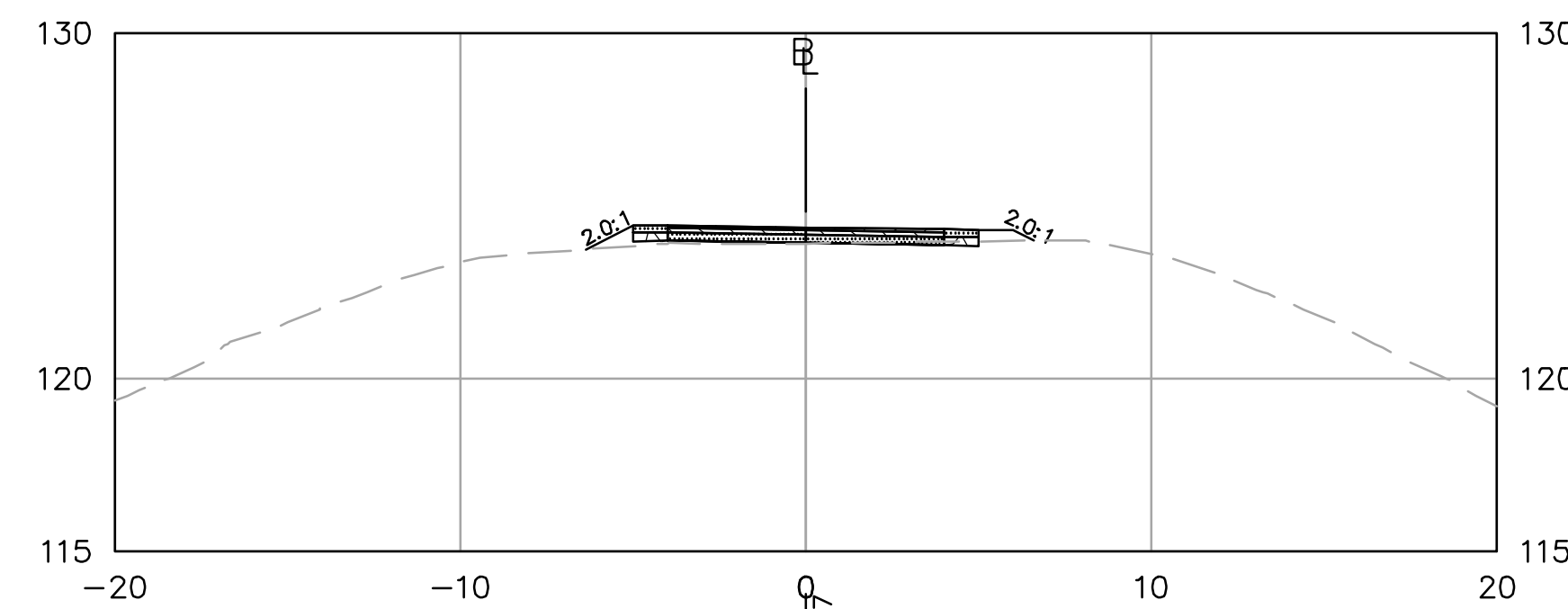
24+50



26+50



24+00



26+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

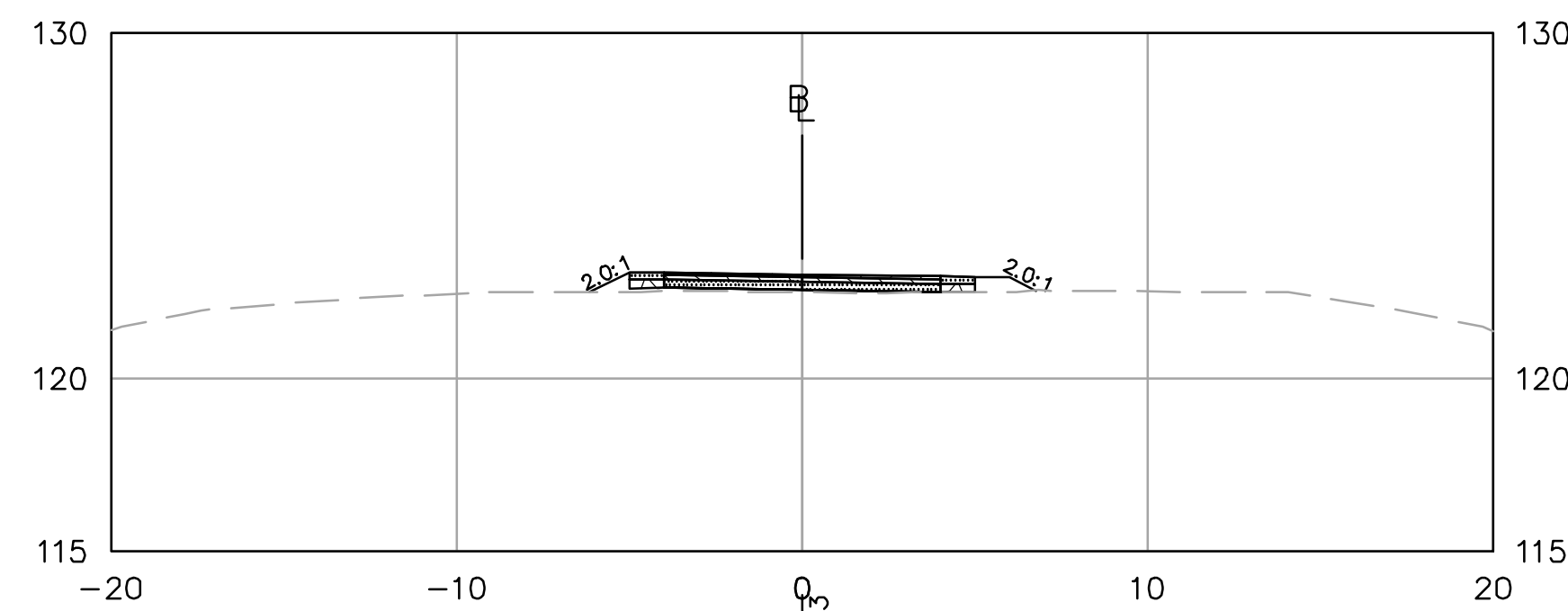
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Andover, Massachusetts  
01810  
617 896 4300

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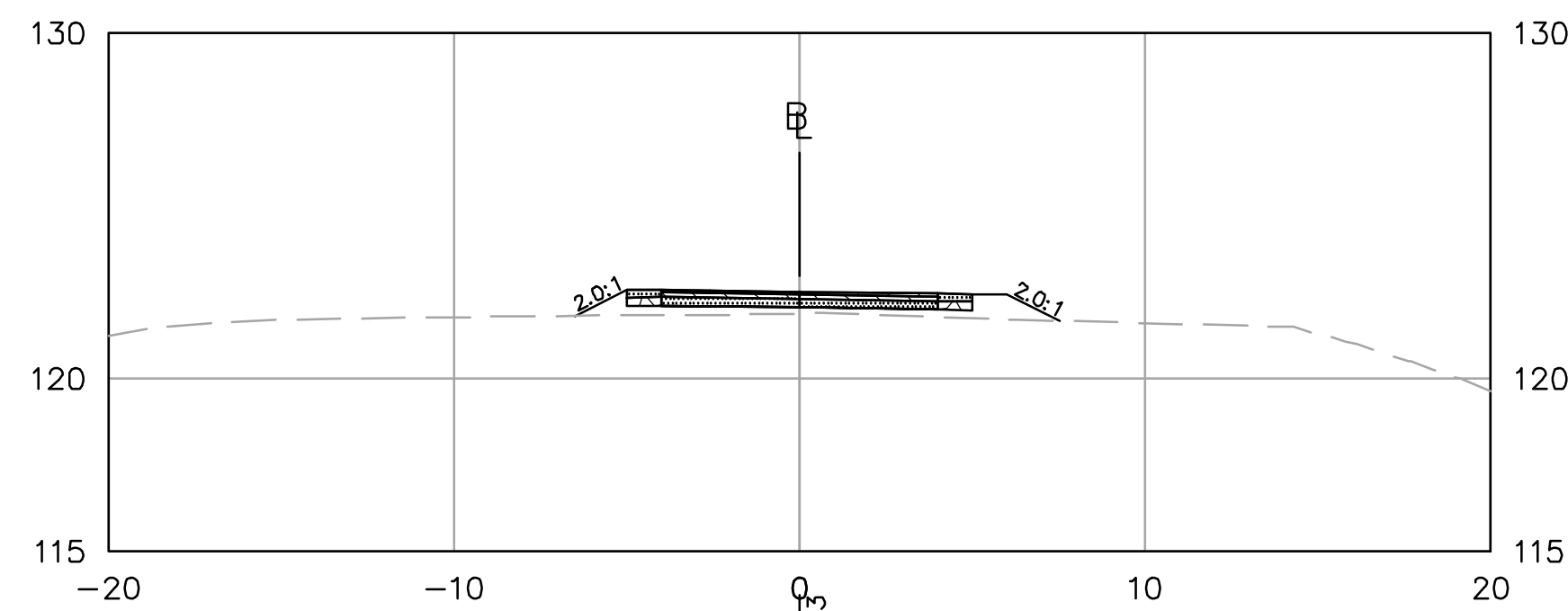
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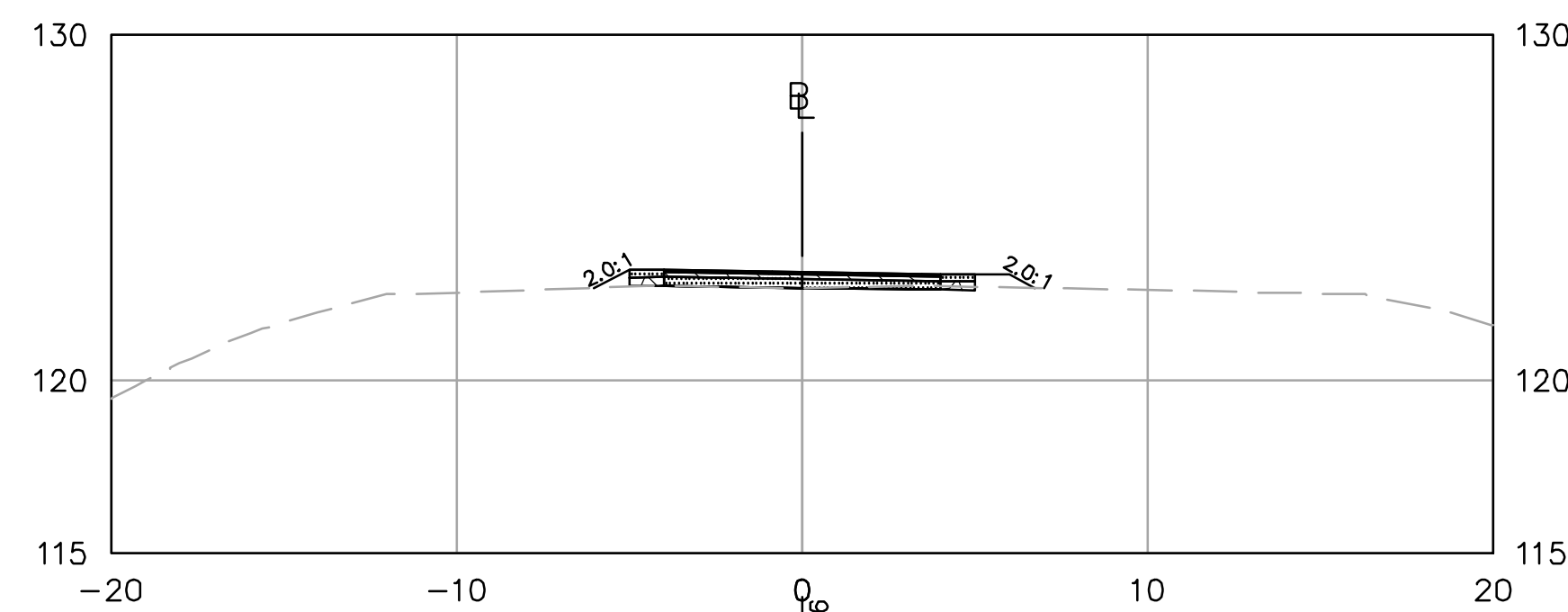
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JOB. NO: 8-9985.01



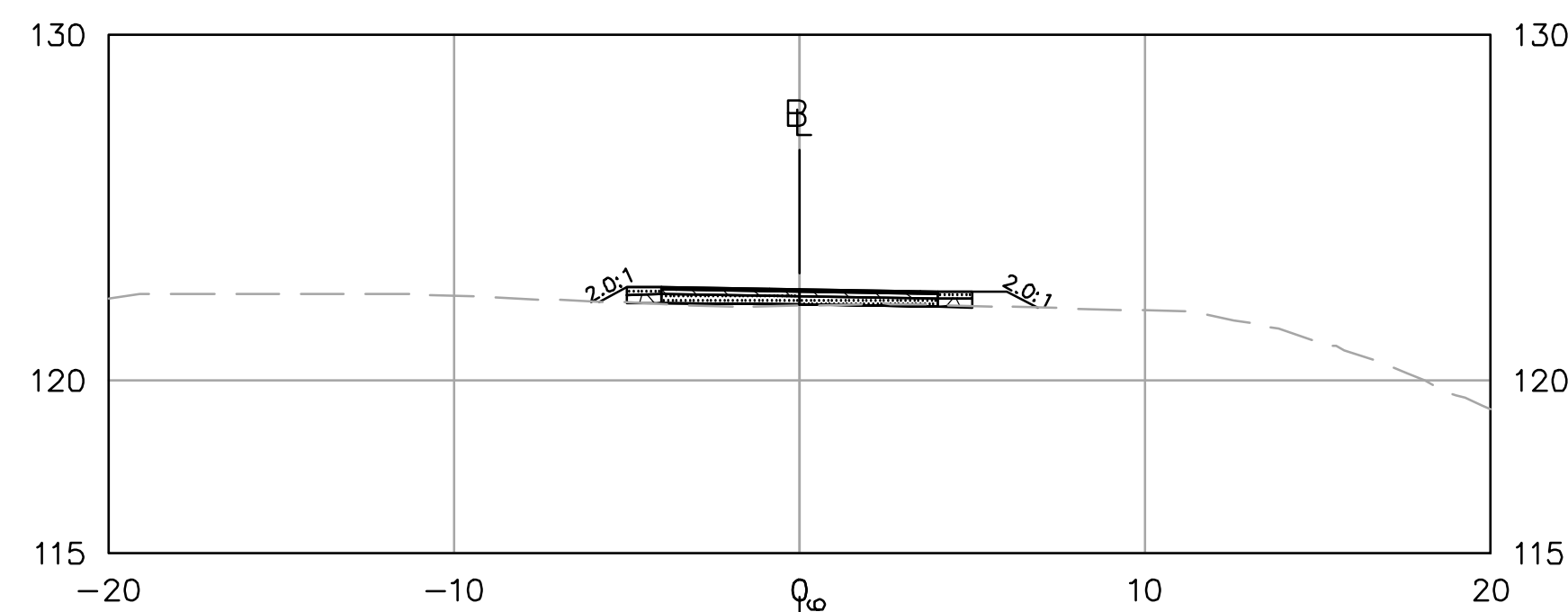
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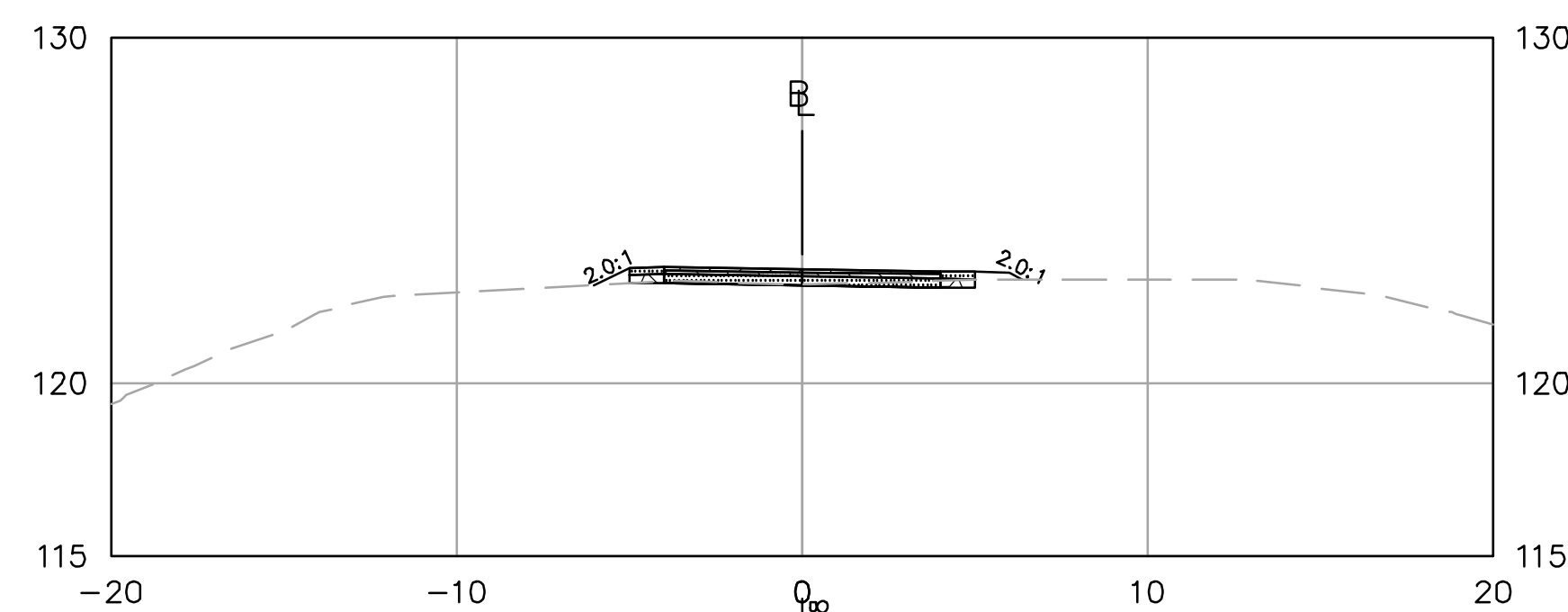
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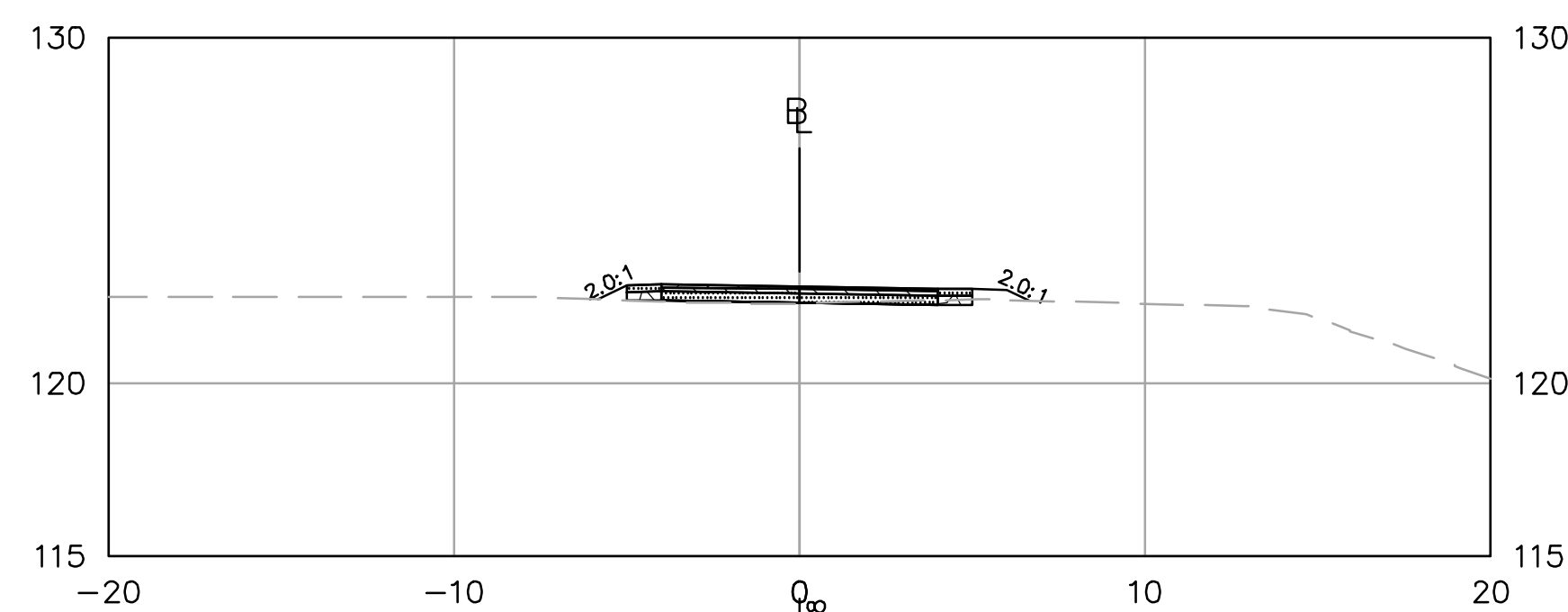
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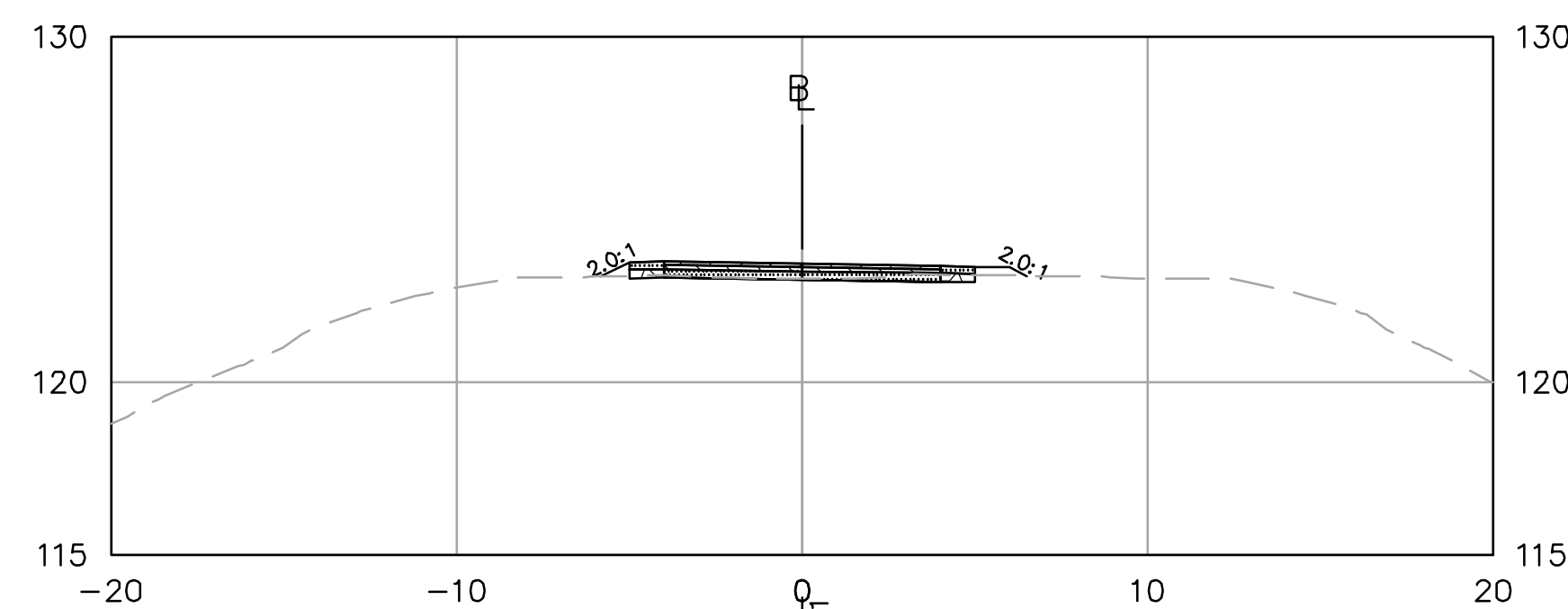
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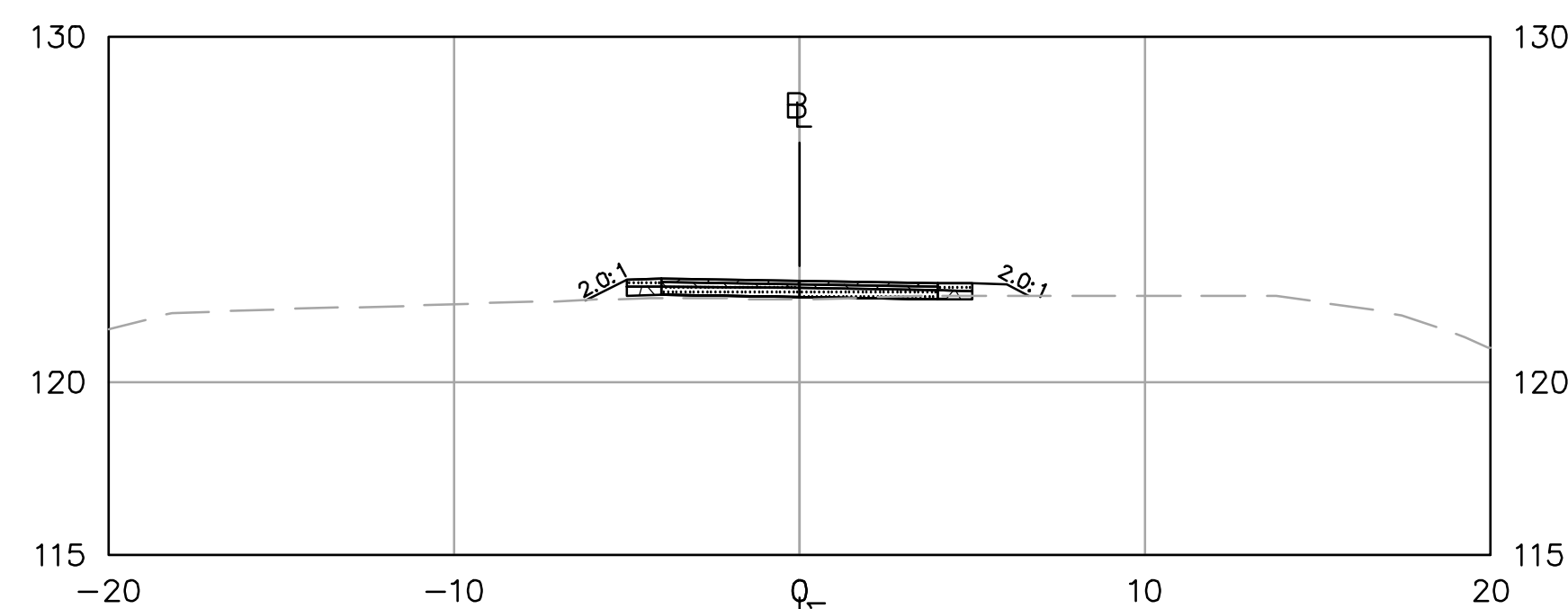
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30+50

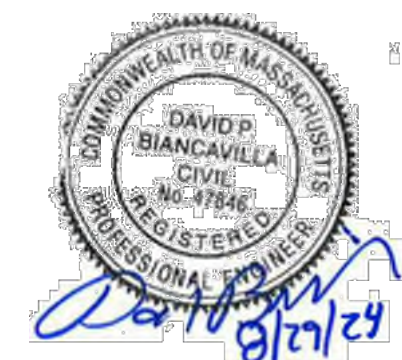


28+00



30+00

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PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
RAIL TRAIL**

IN  
ANDOVER,  
MASSACHUSETTS

**TRAIL CROSS SECTIONS**

NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

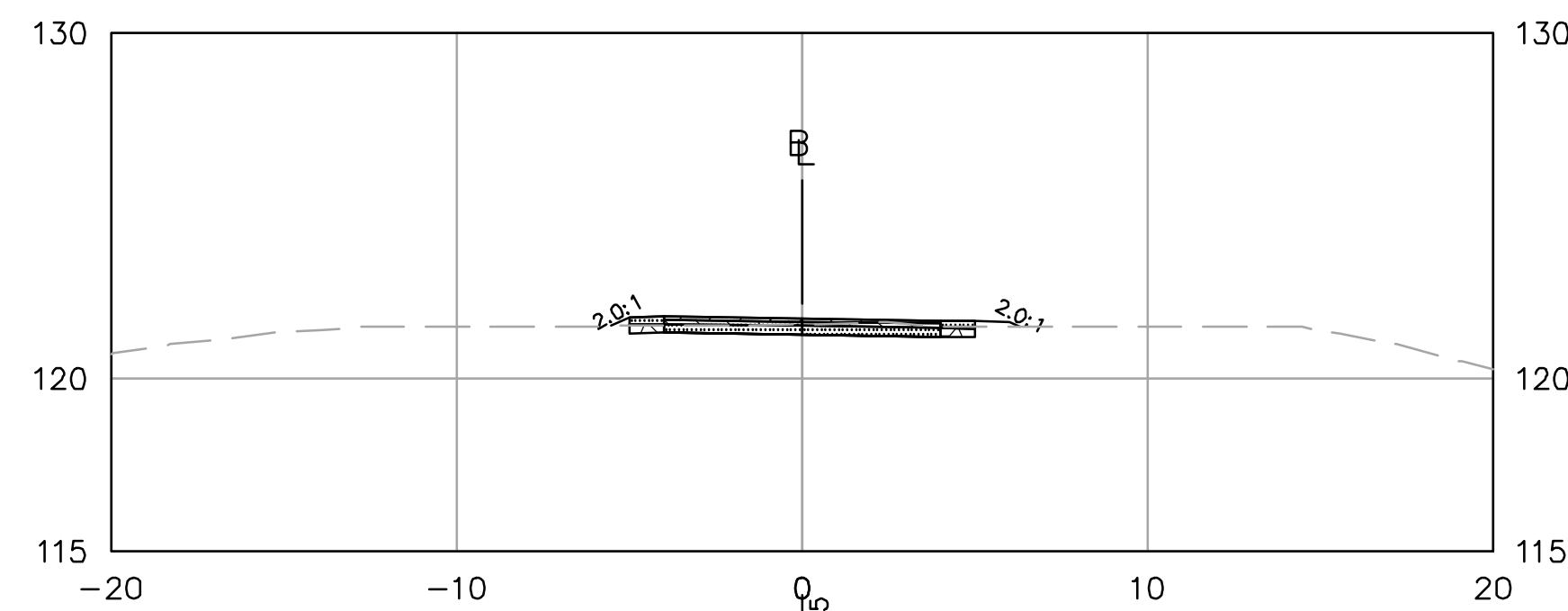
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01810  
617 896 4300

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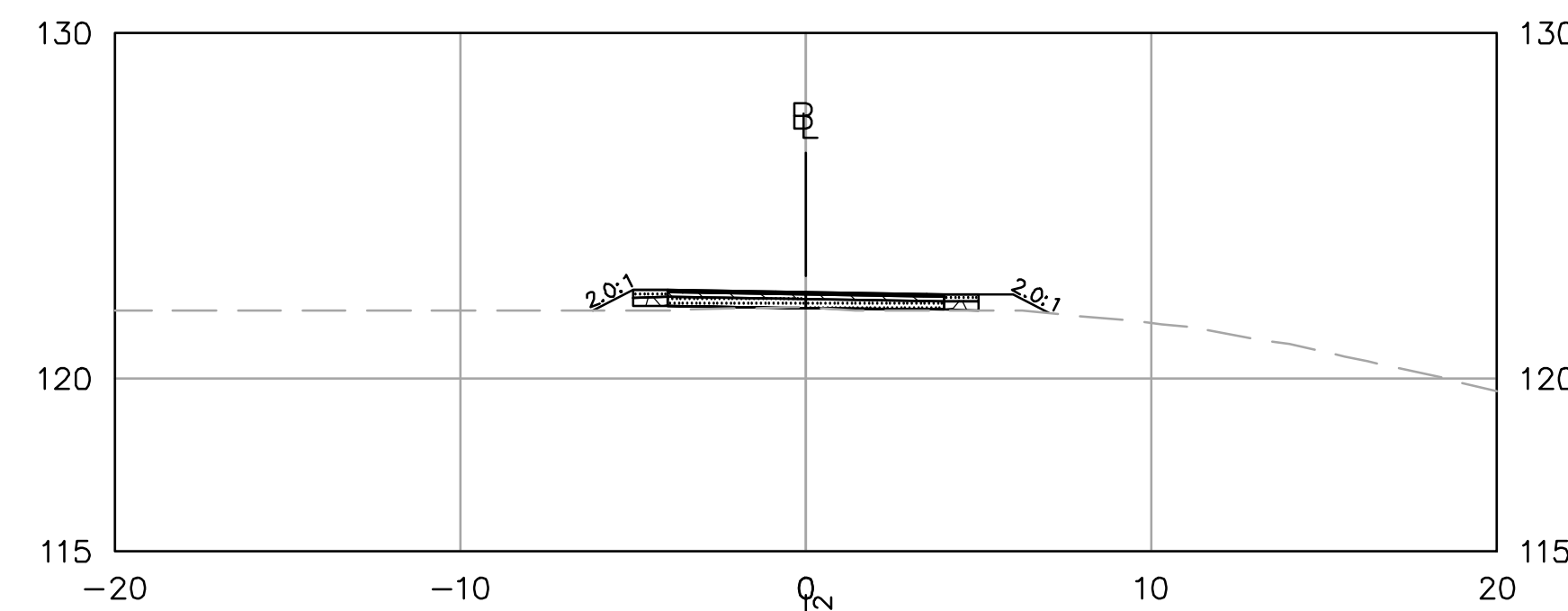
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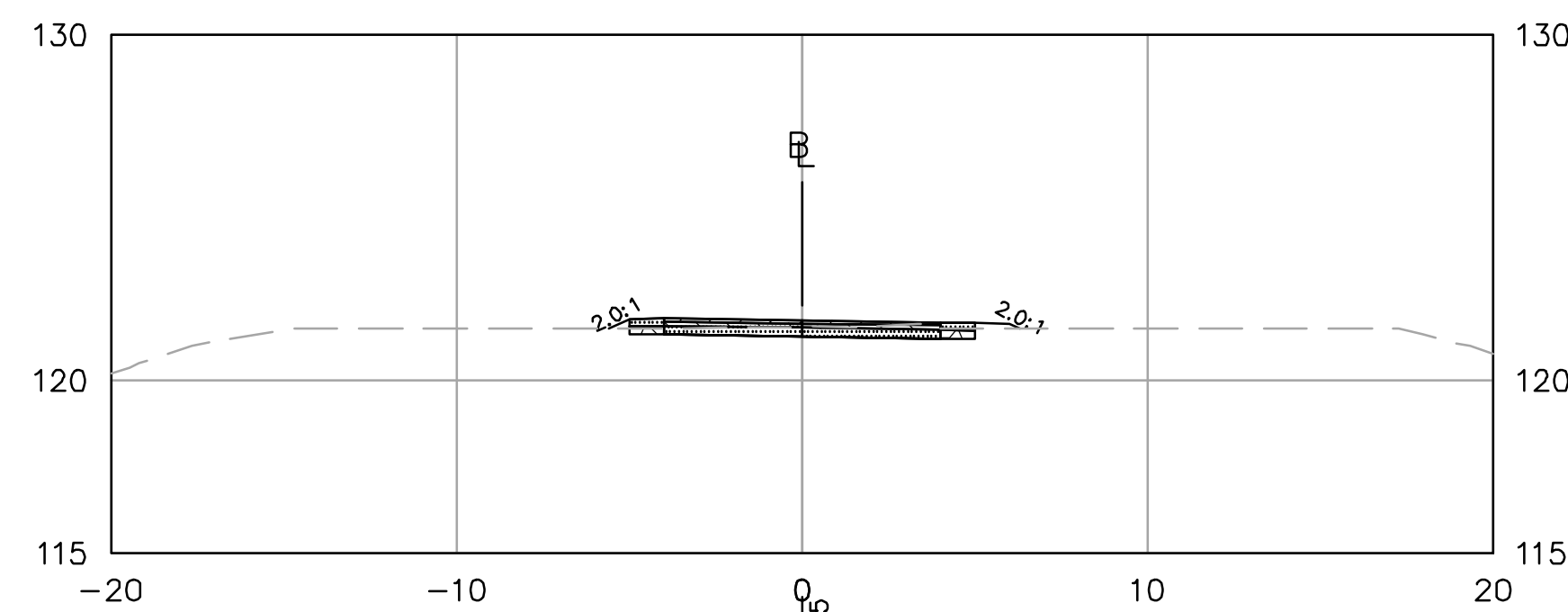
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JOB. NO: 8-9985.01



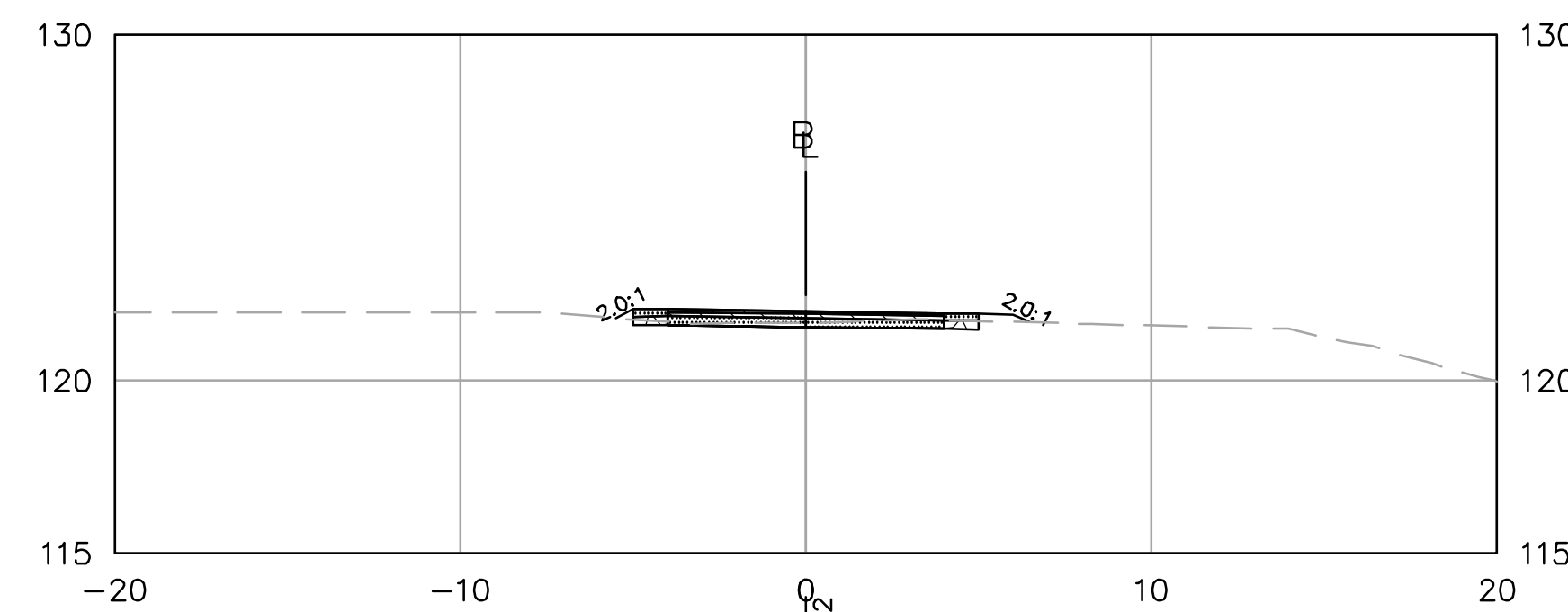
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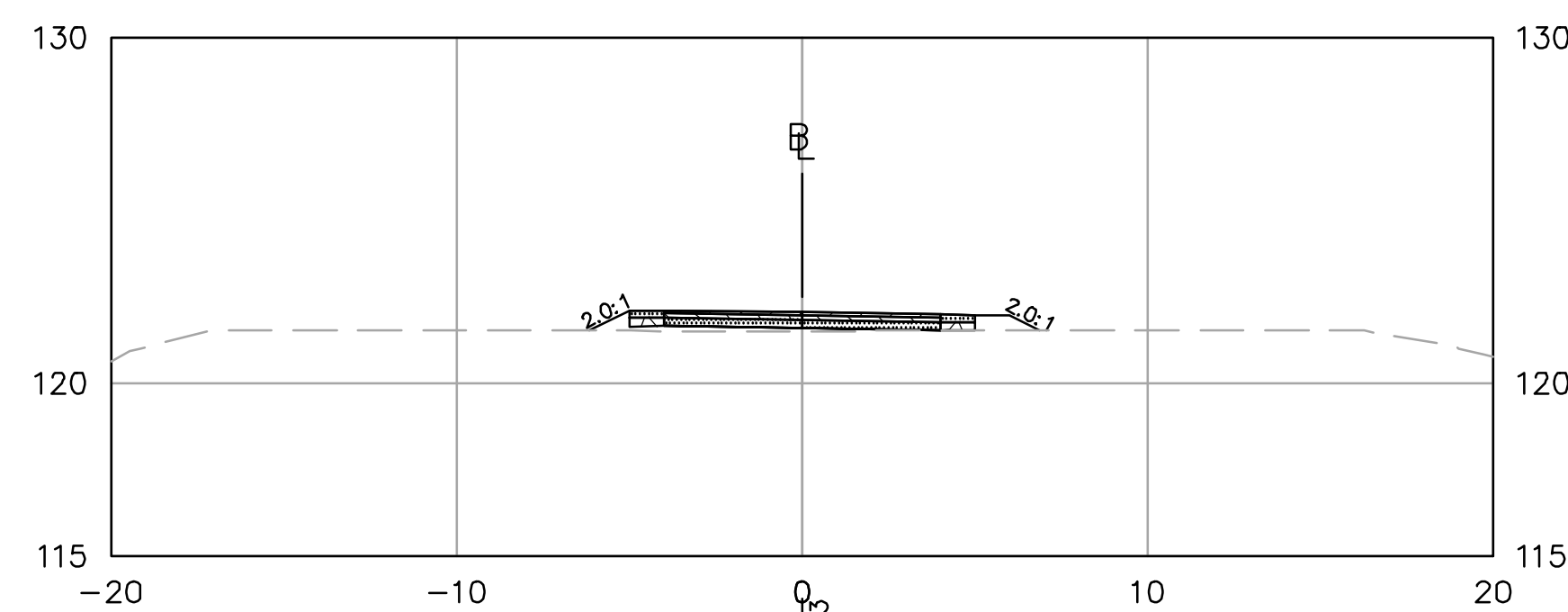
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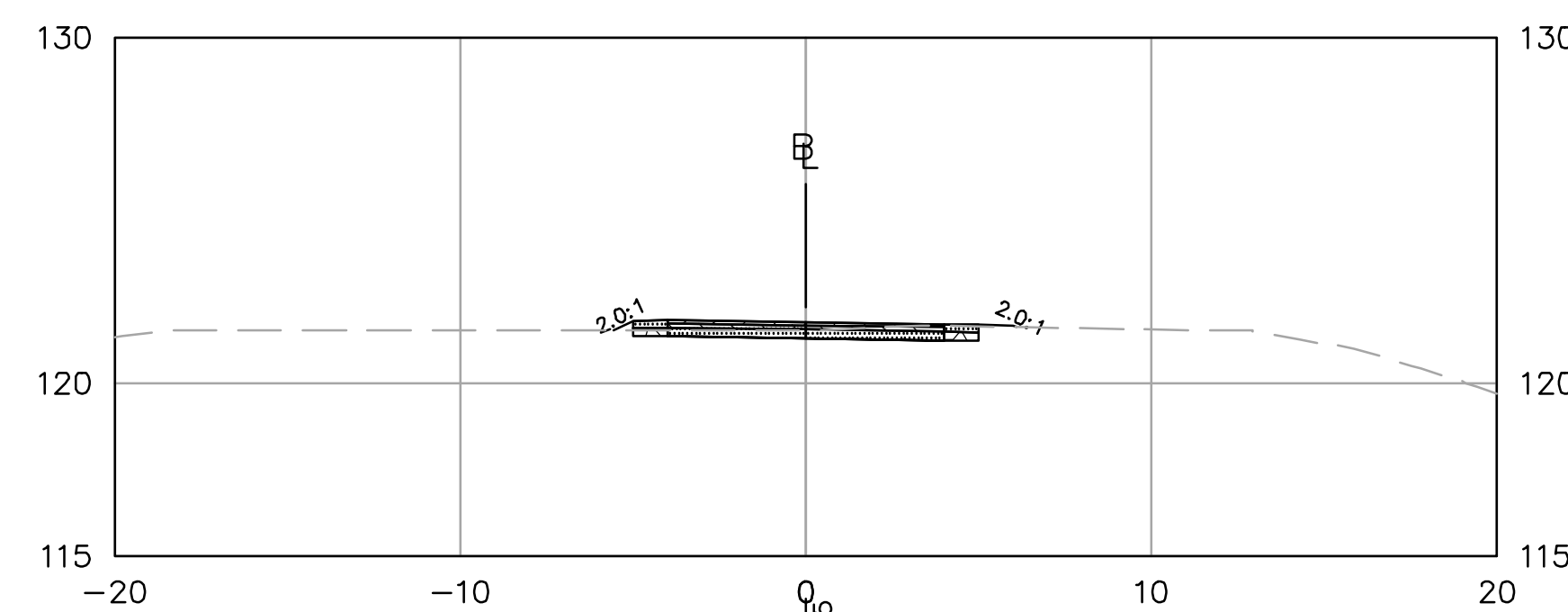
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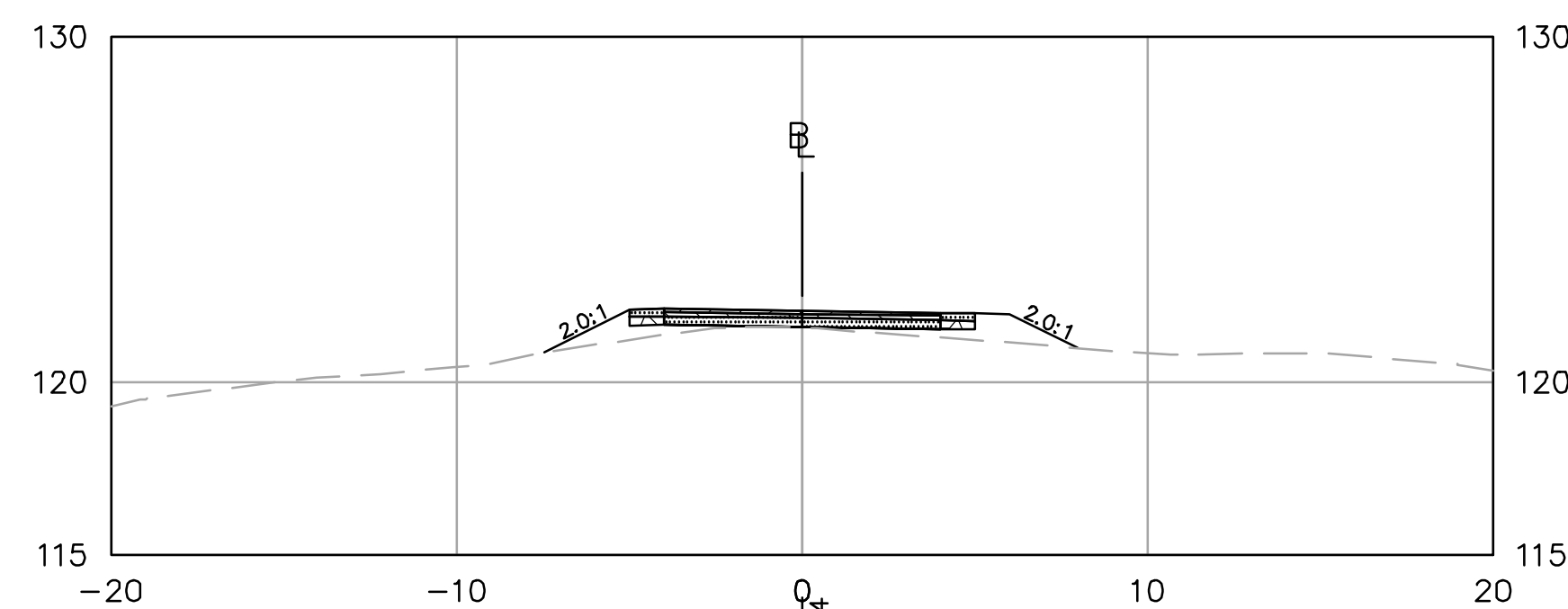
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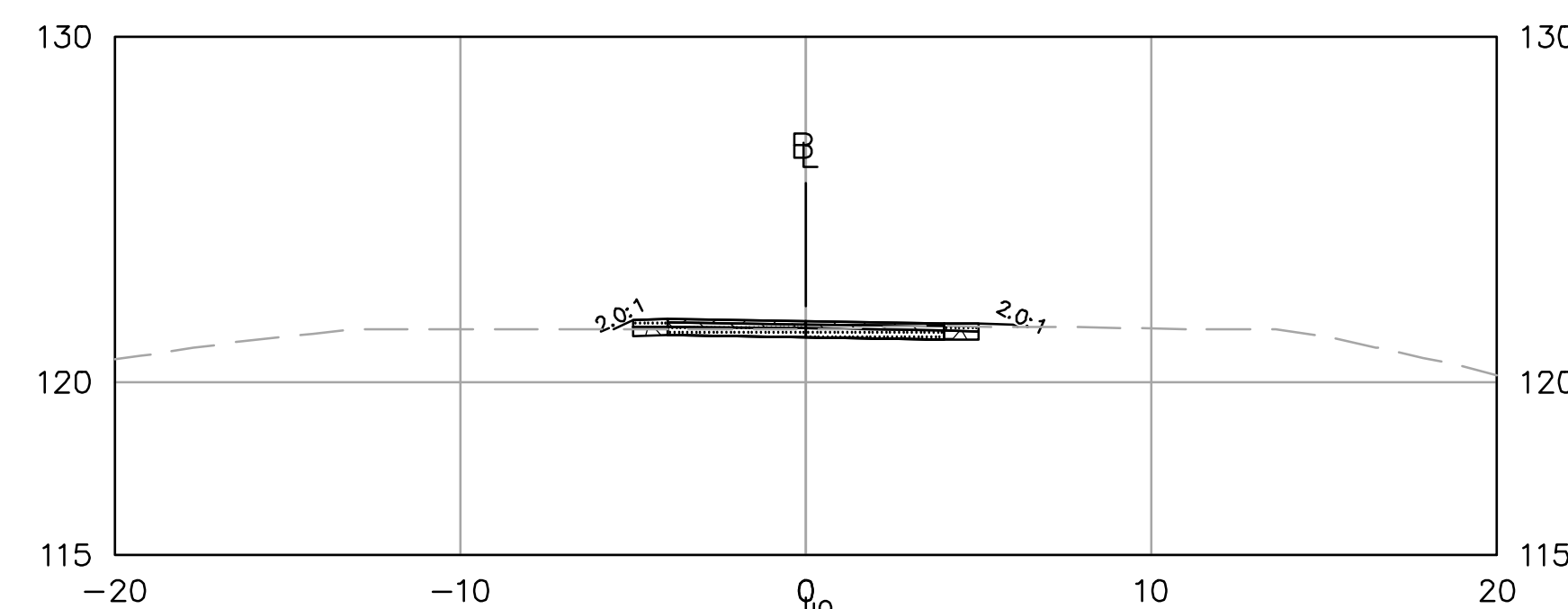
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34+50

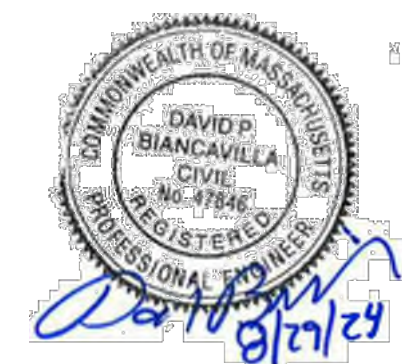


32+00



34+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
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4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

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Andover, Massachusetts  
01810  
617 896 4300

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SCALE: 1" = 5'

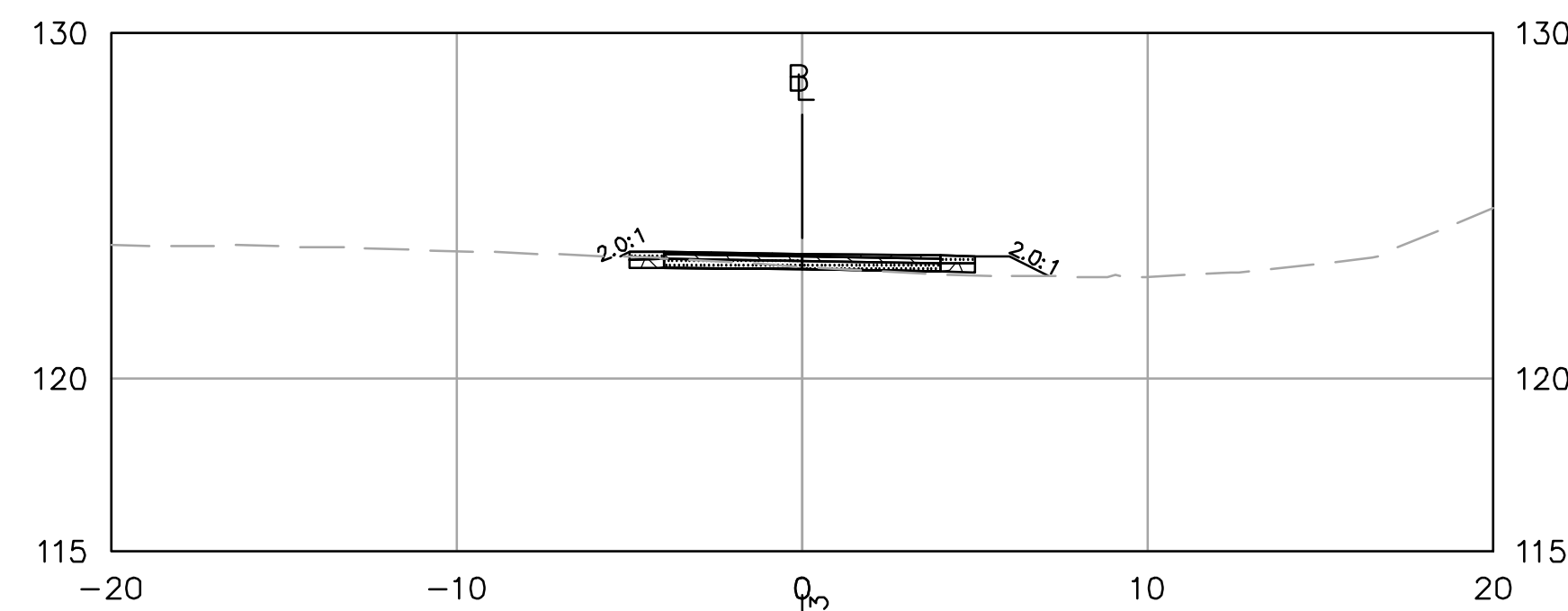


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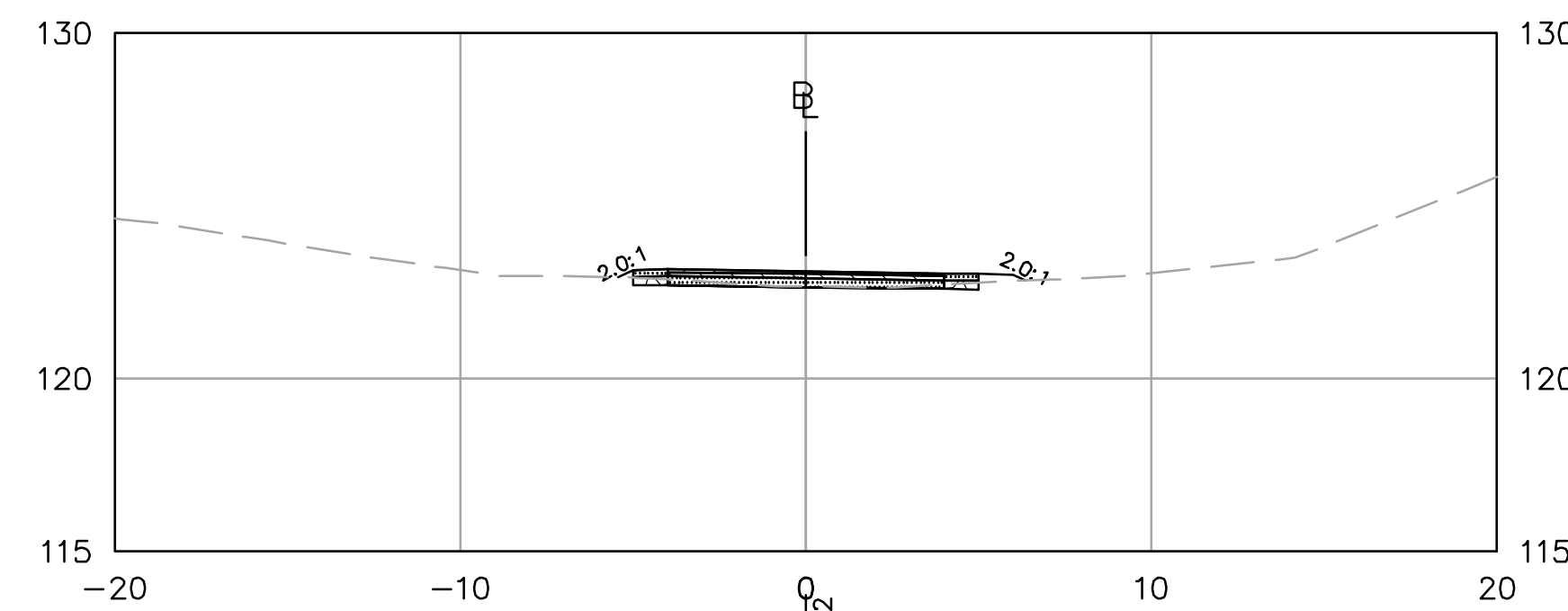
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JOB. NO: 8-9985.01

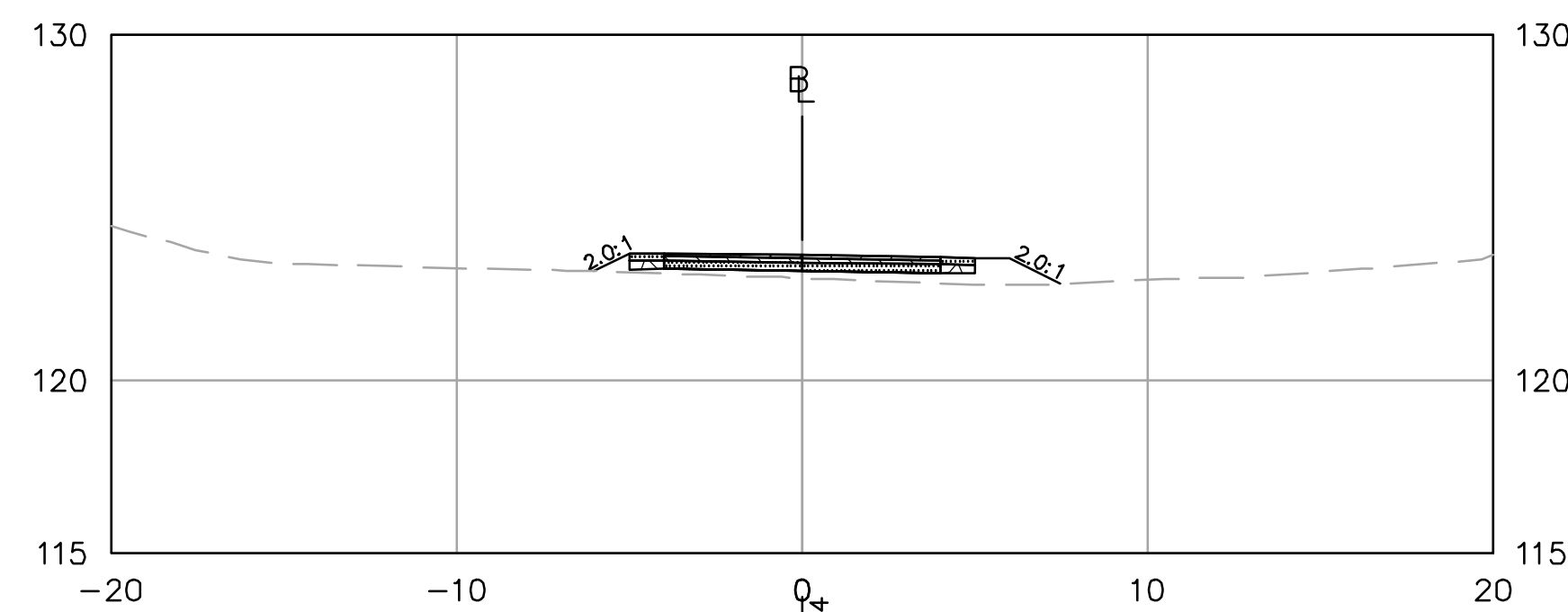
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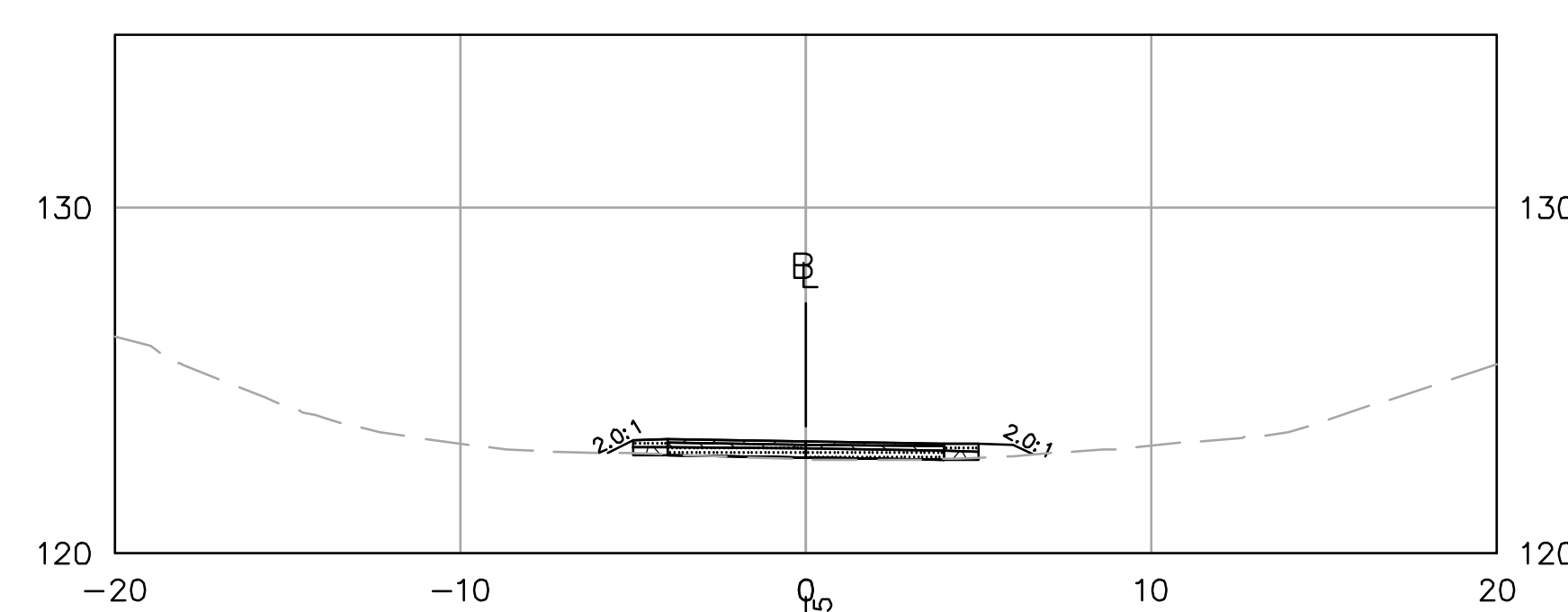
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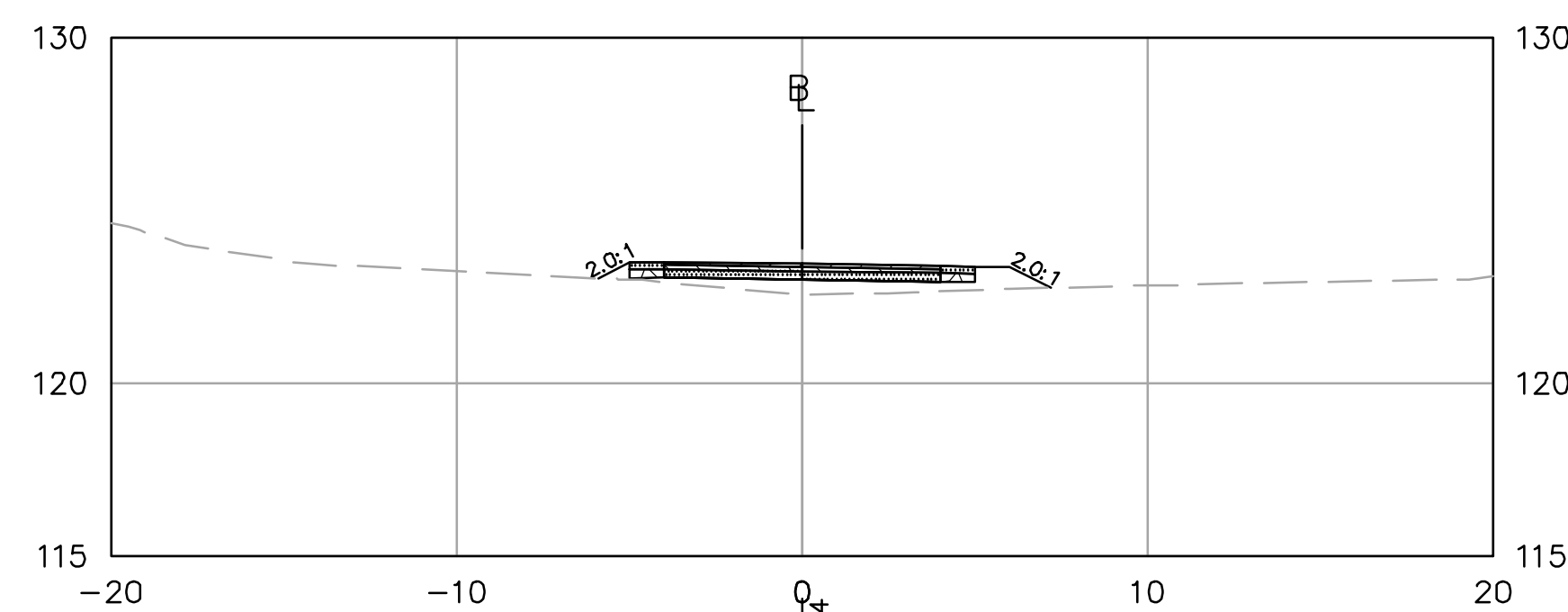
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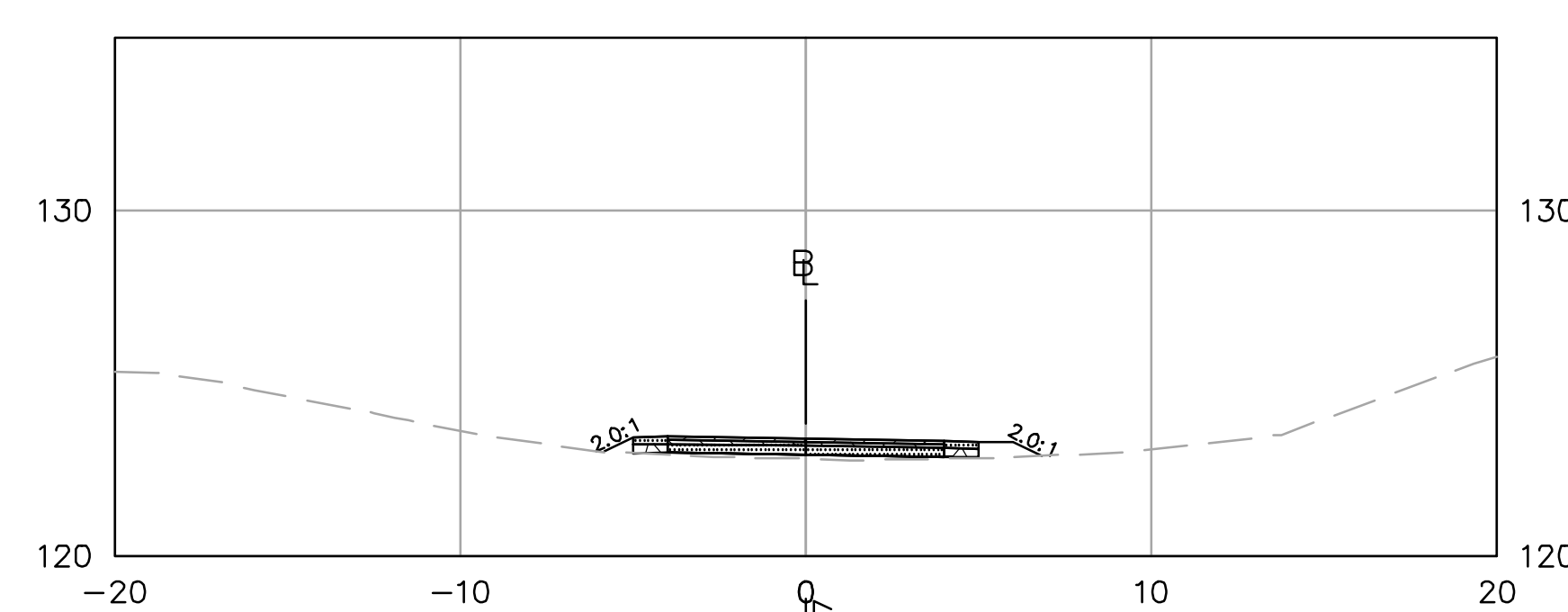
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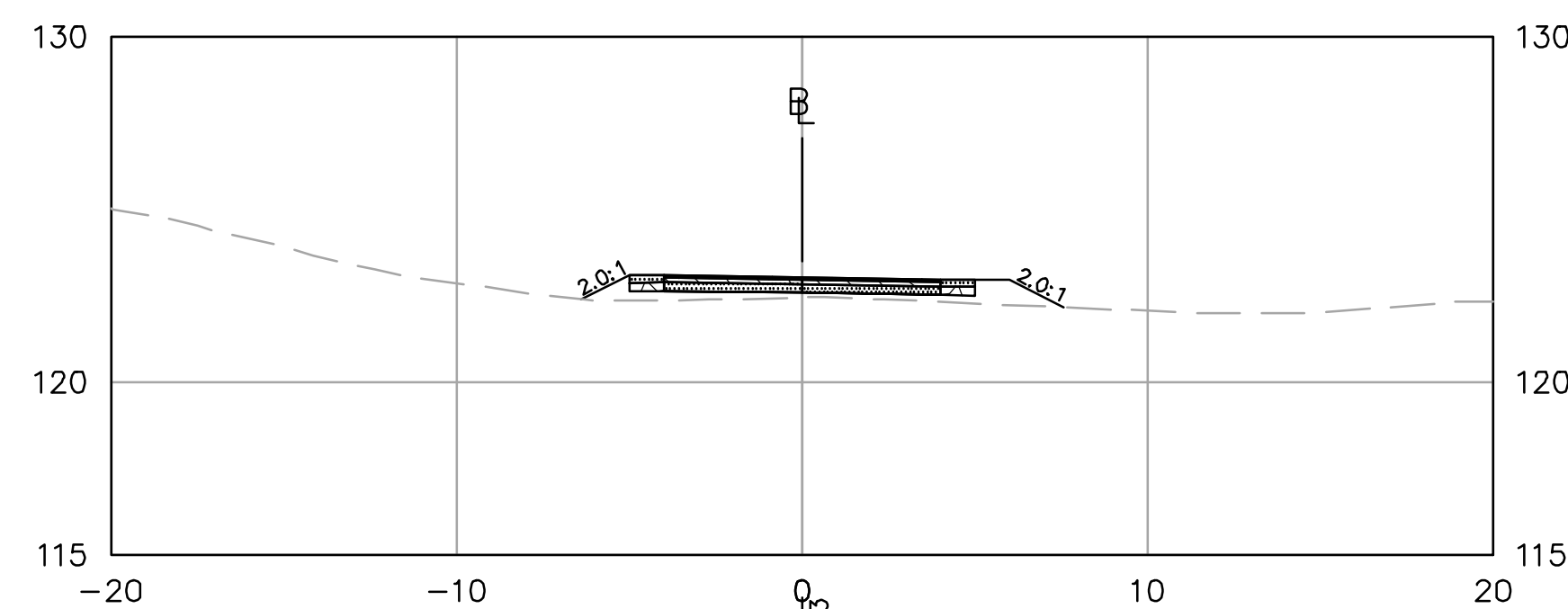
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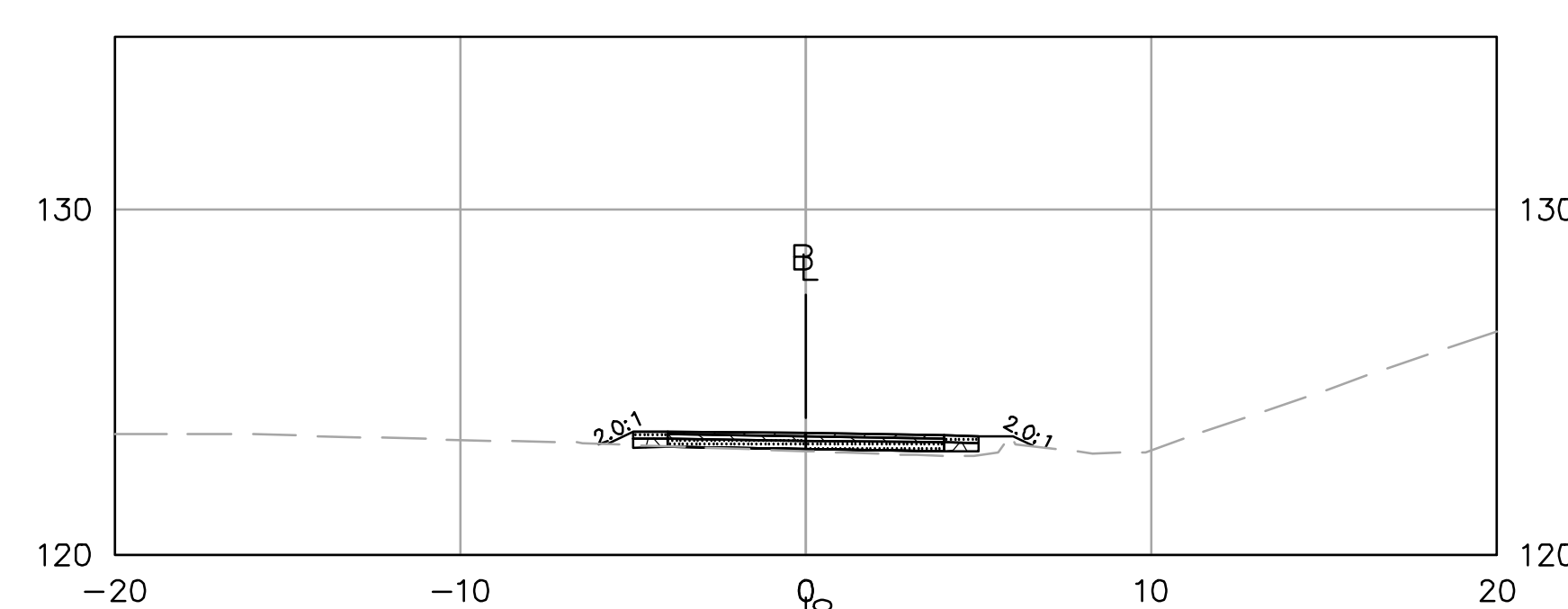
36+50



38+50



36+00



38+00

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PROFESSIONAL ENGINEER DATE

### HAGGETTS POND RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

### TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

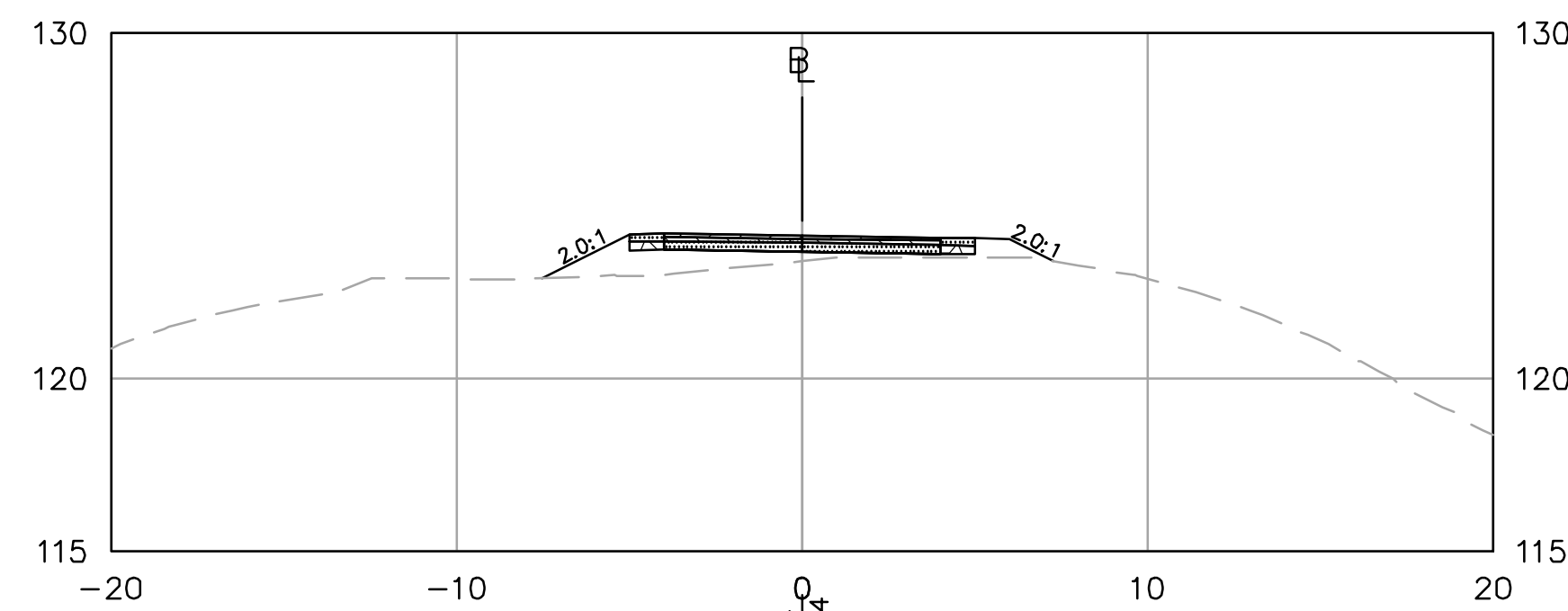
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

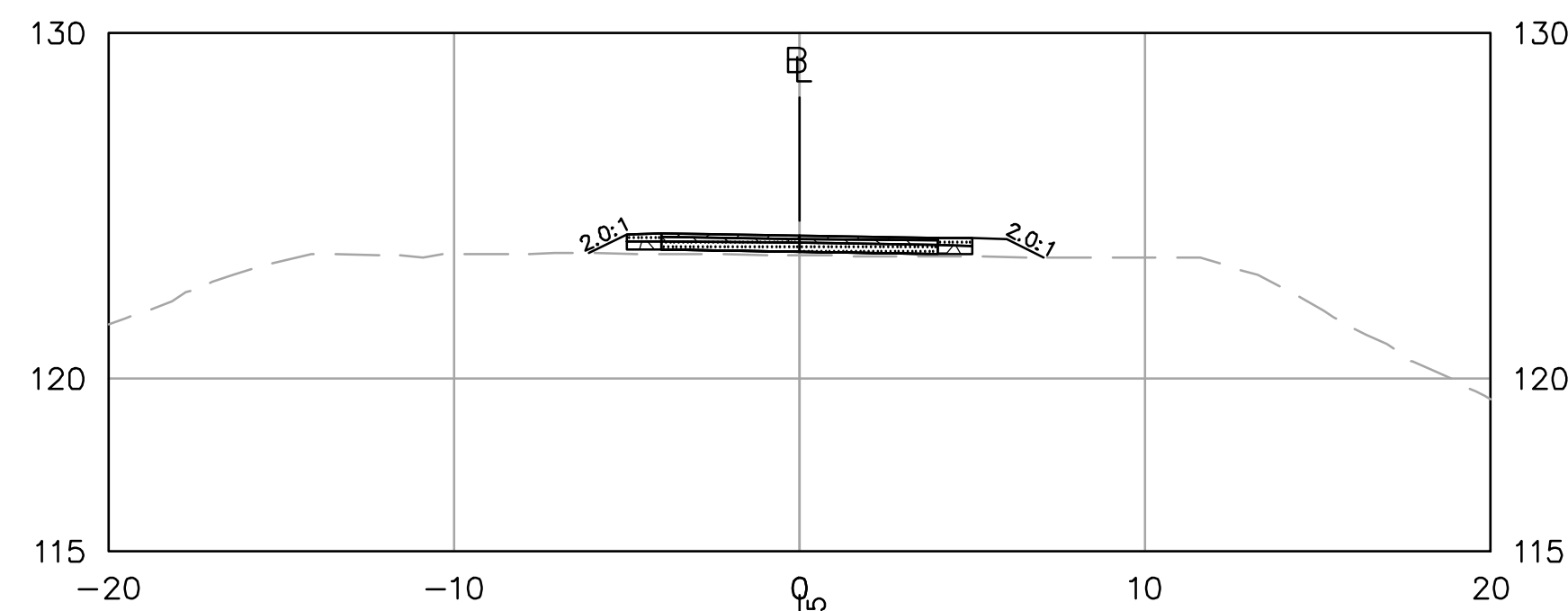
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01810  
617 896 4300

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SCALE: 1" = 5'  
0 3 6 12 FEET

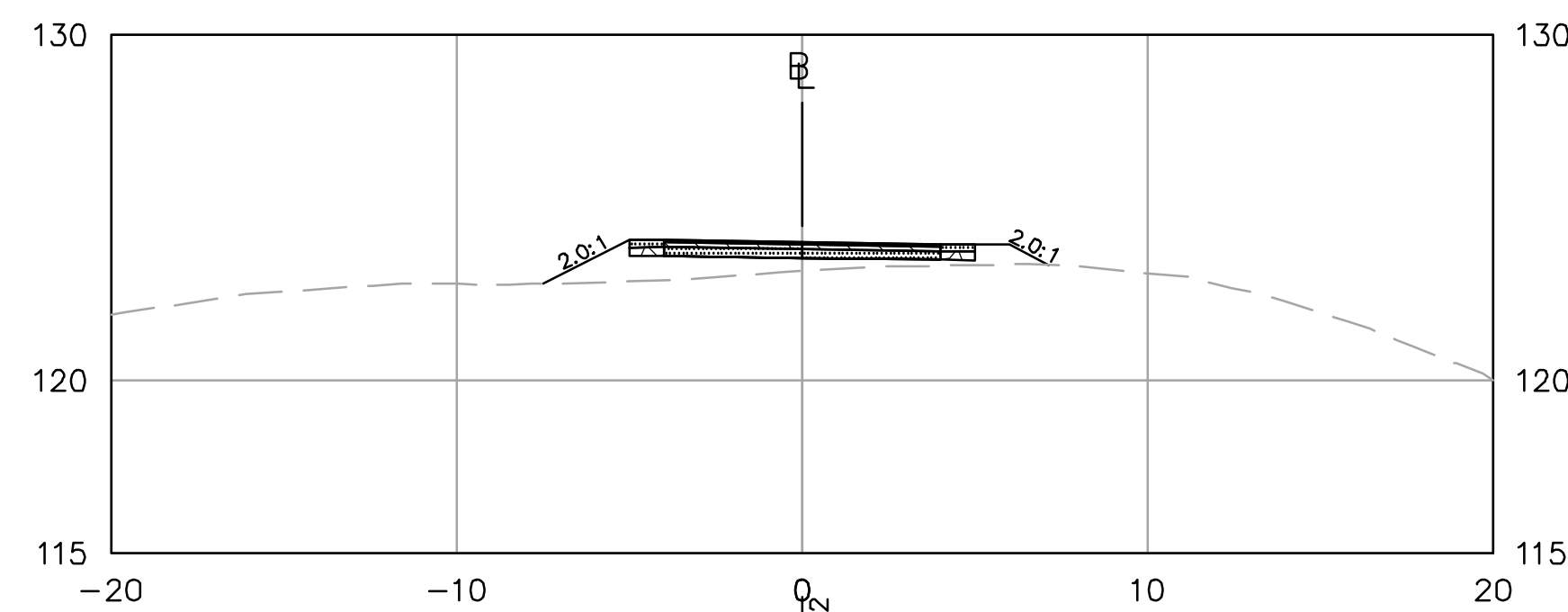
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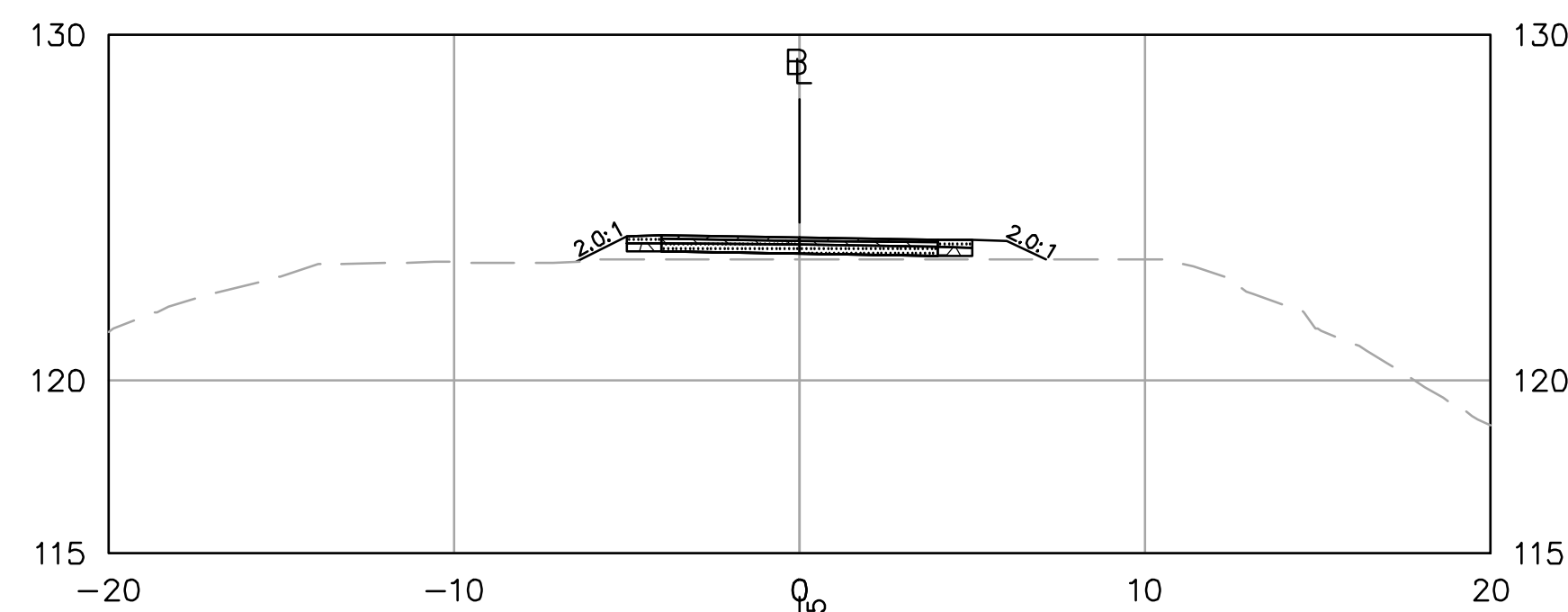
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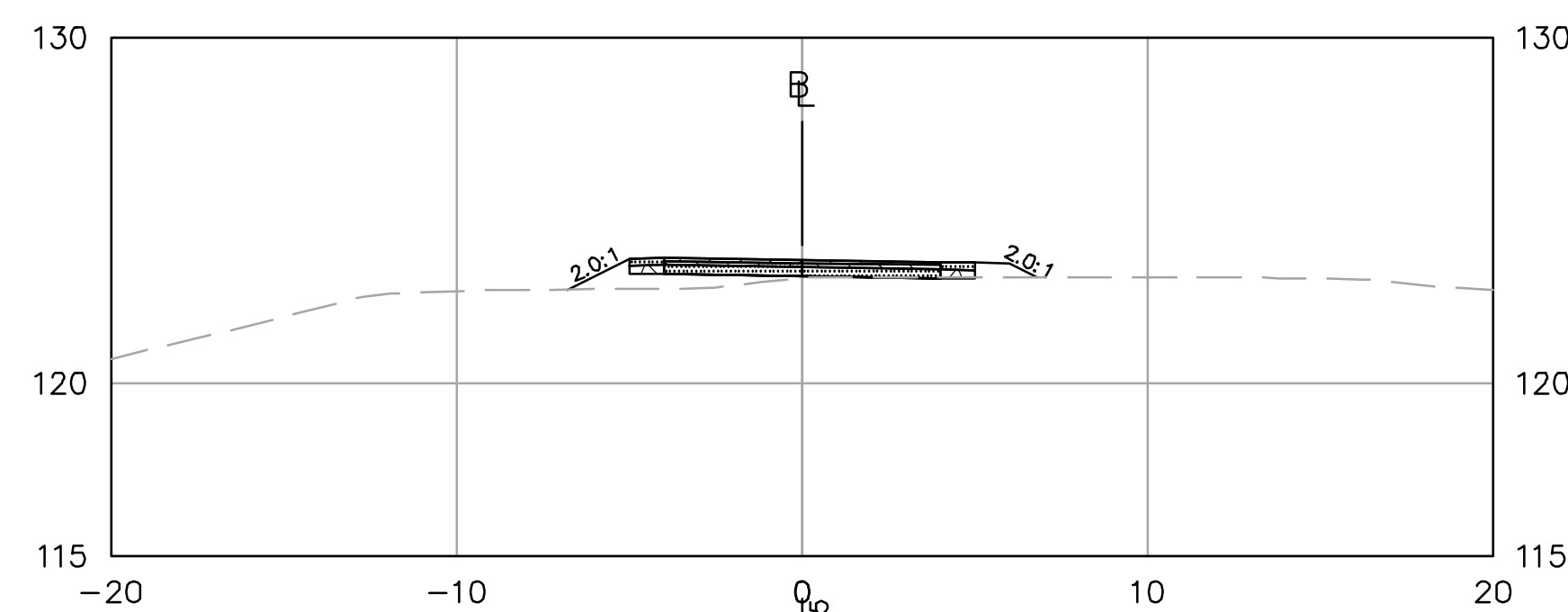
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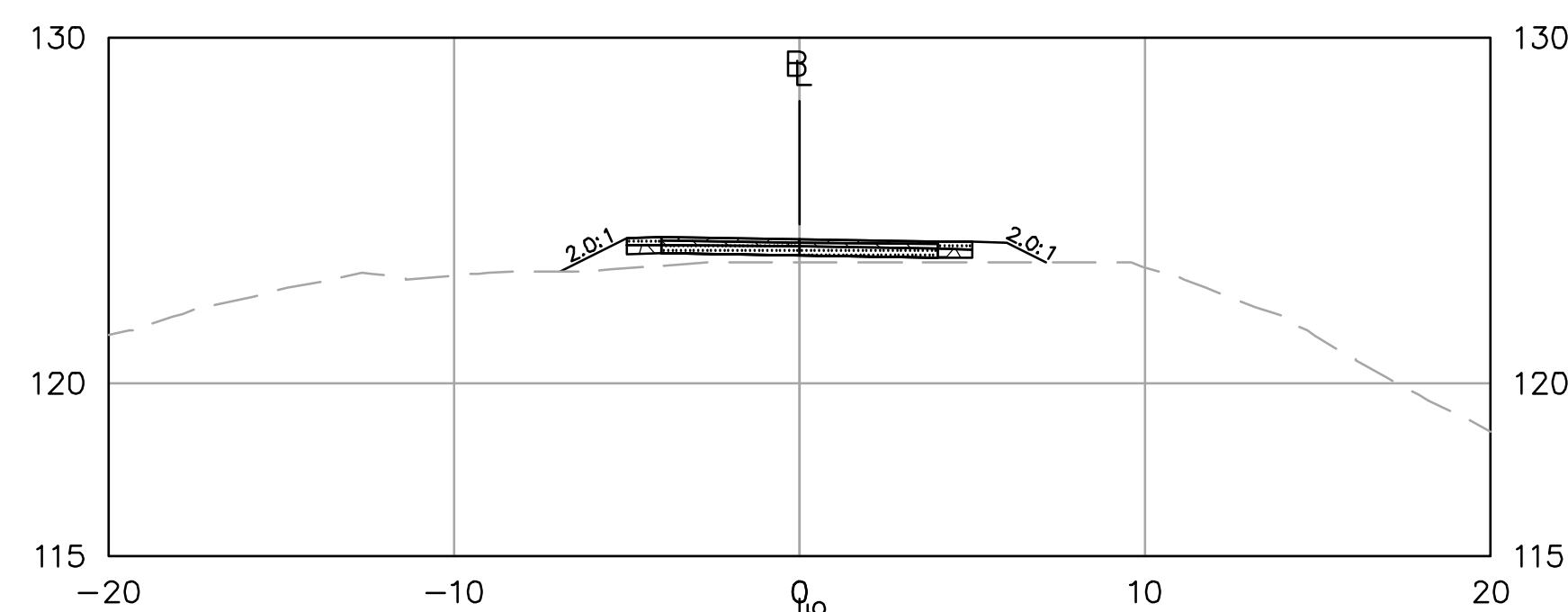
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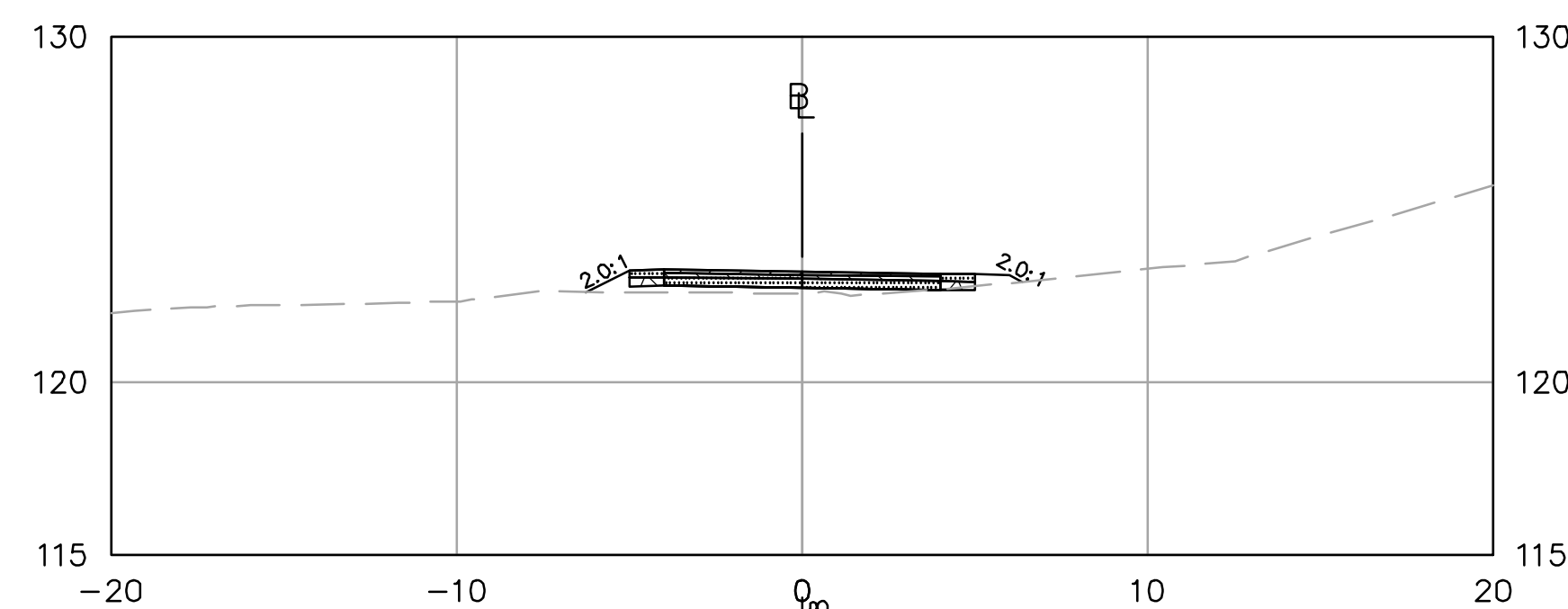
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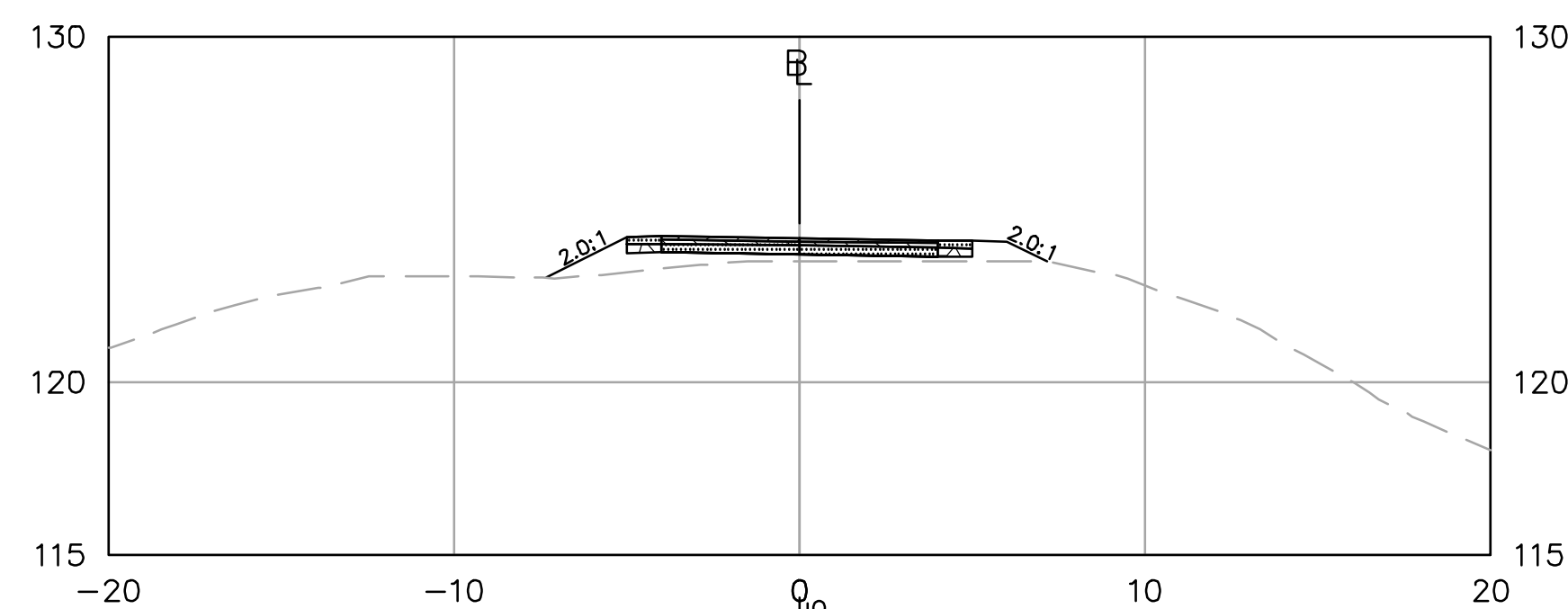
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42+50

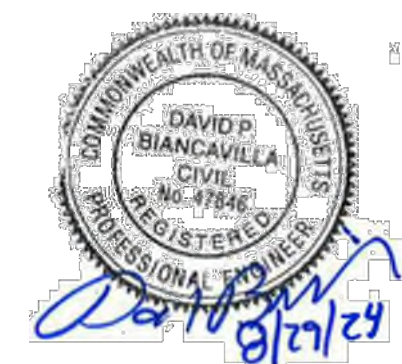


40+00



42+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

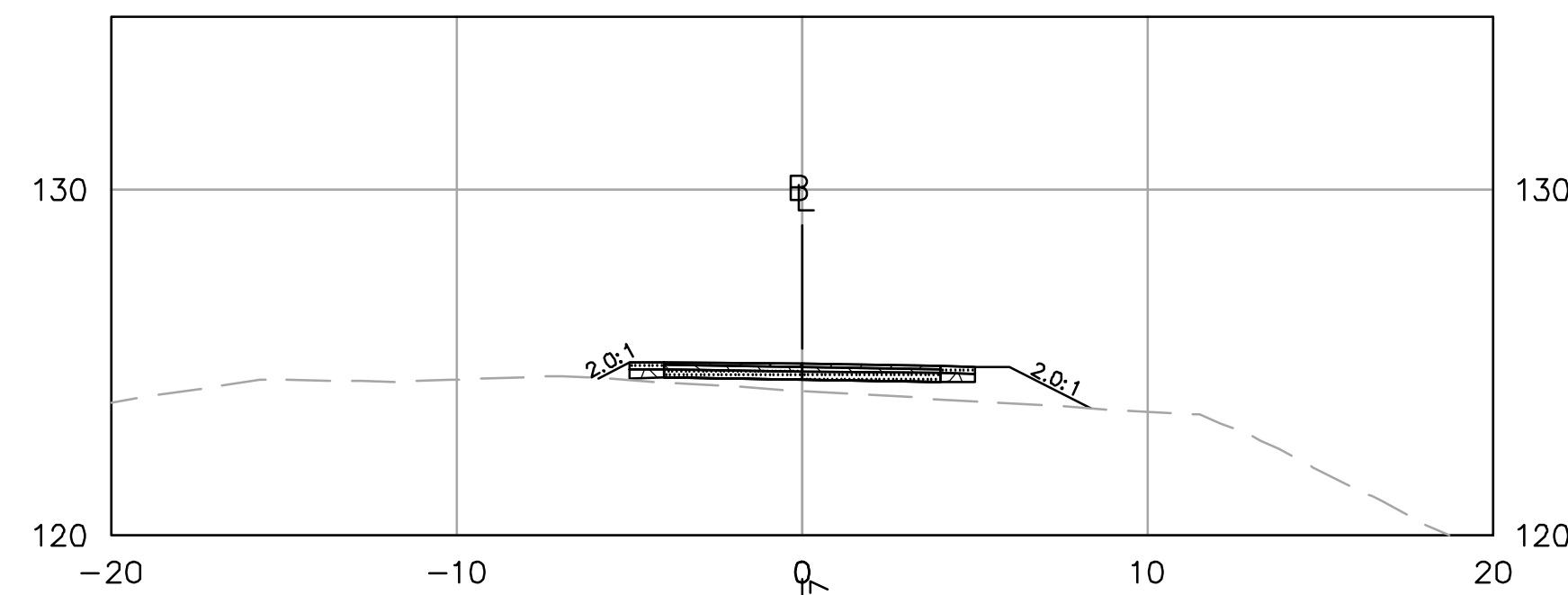
NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

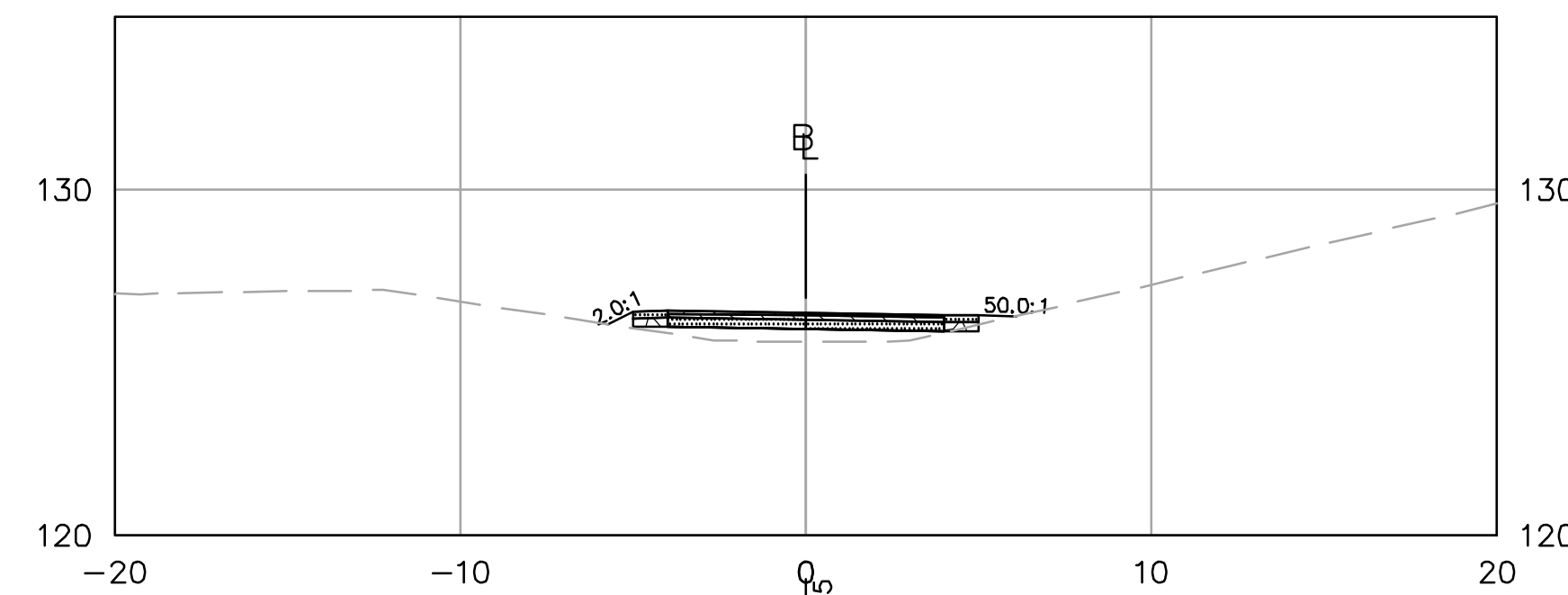
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01810  
617 896 4300

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SCALE: 1" = 5'  
0 3 6 12 FEET

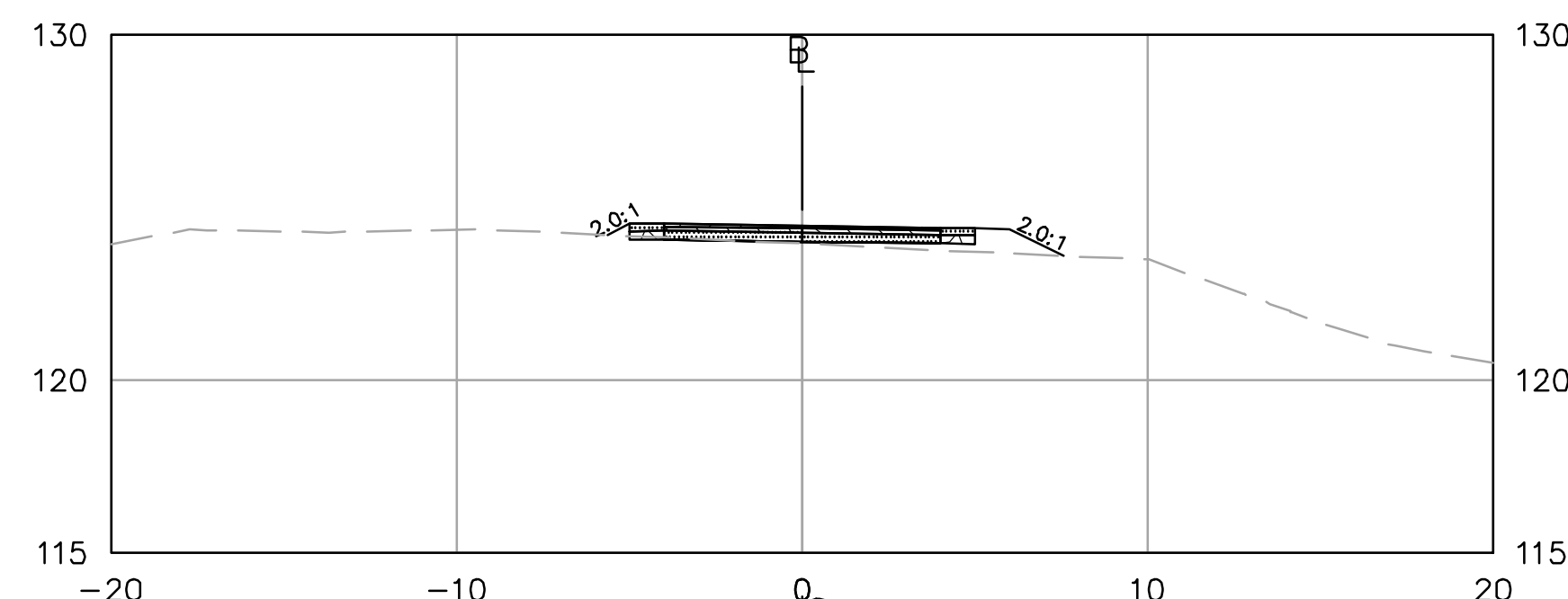
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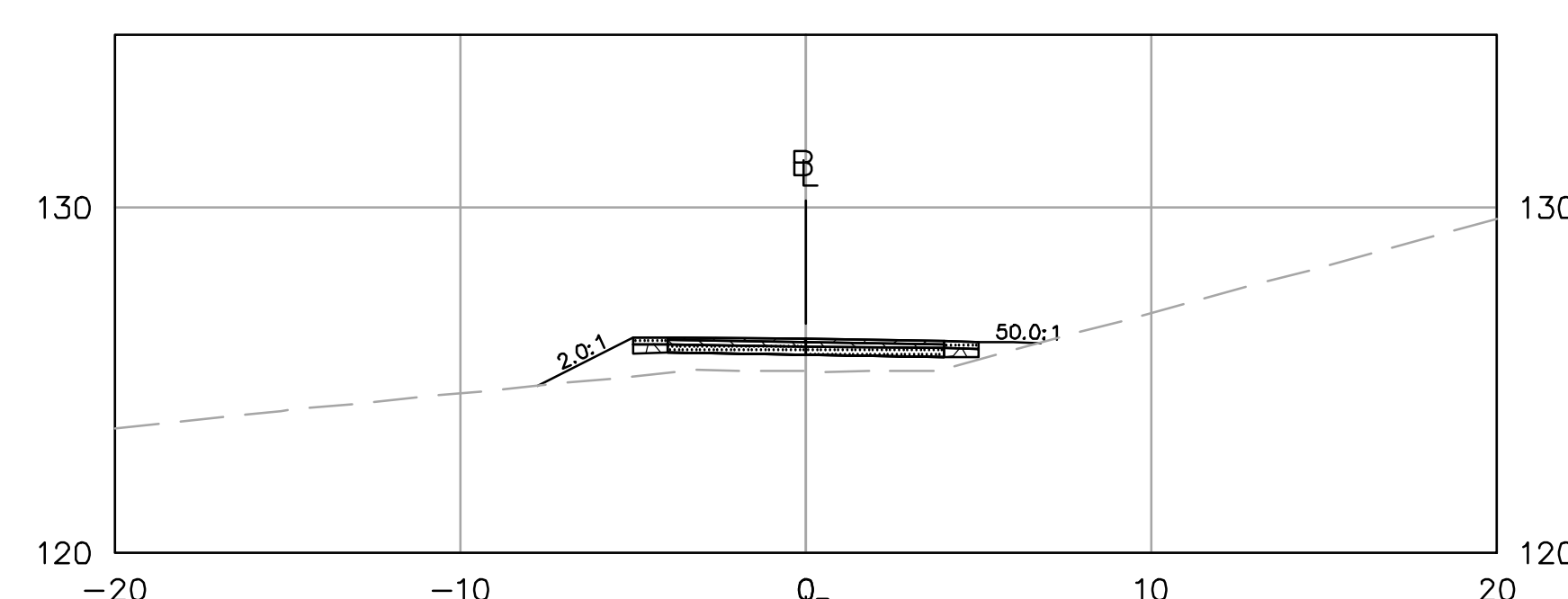
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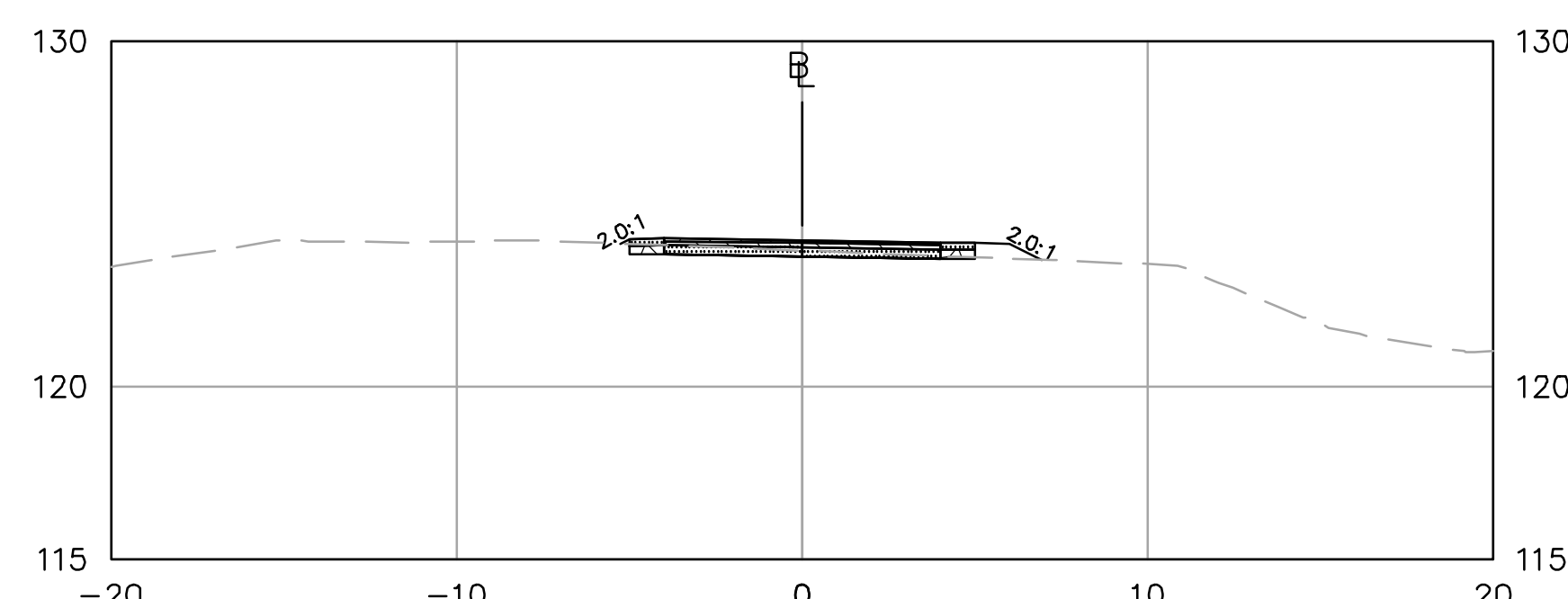
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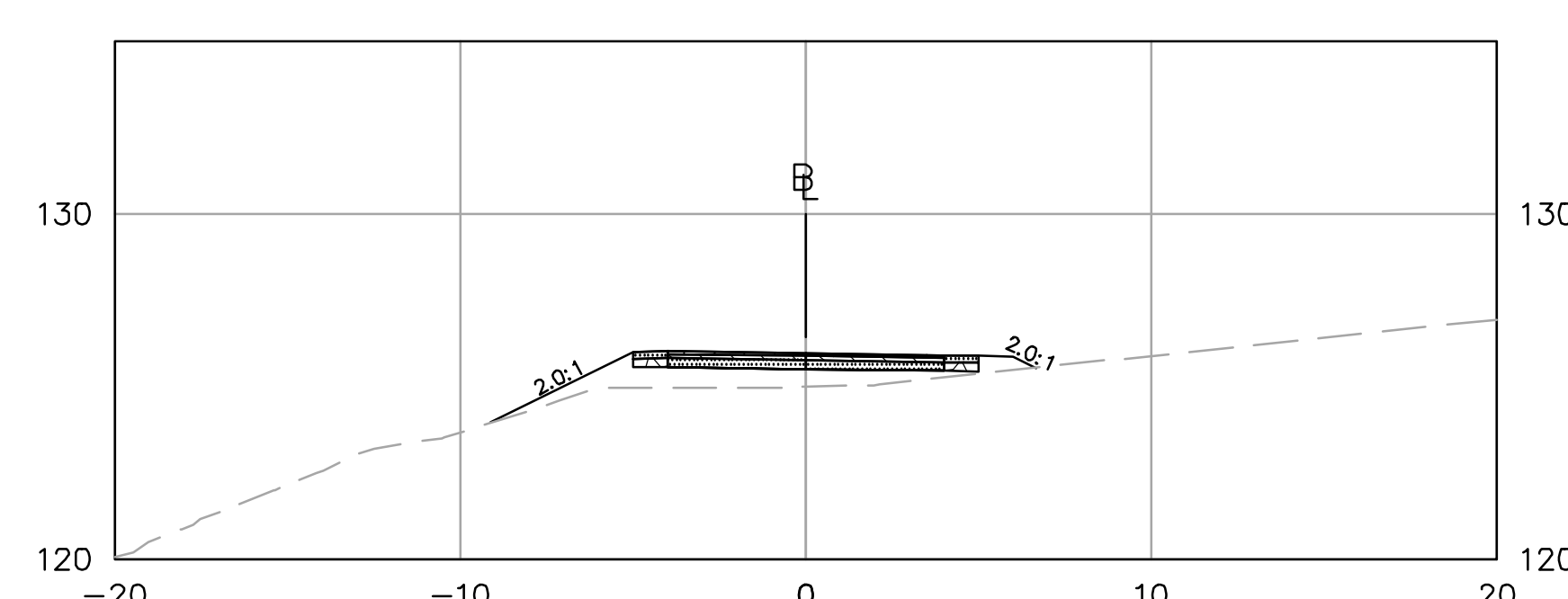
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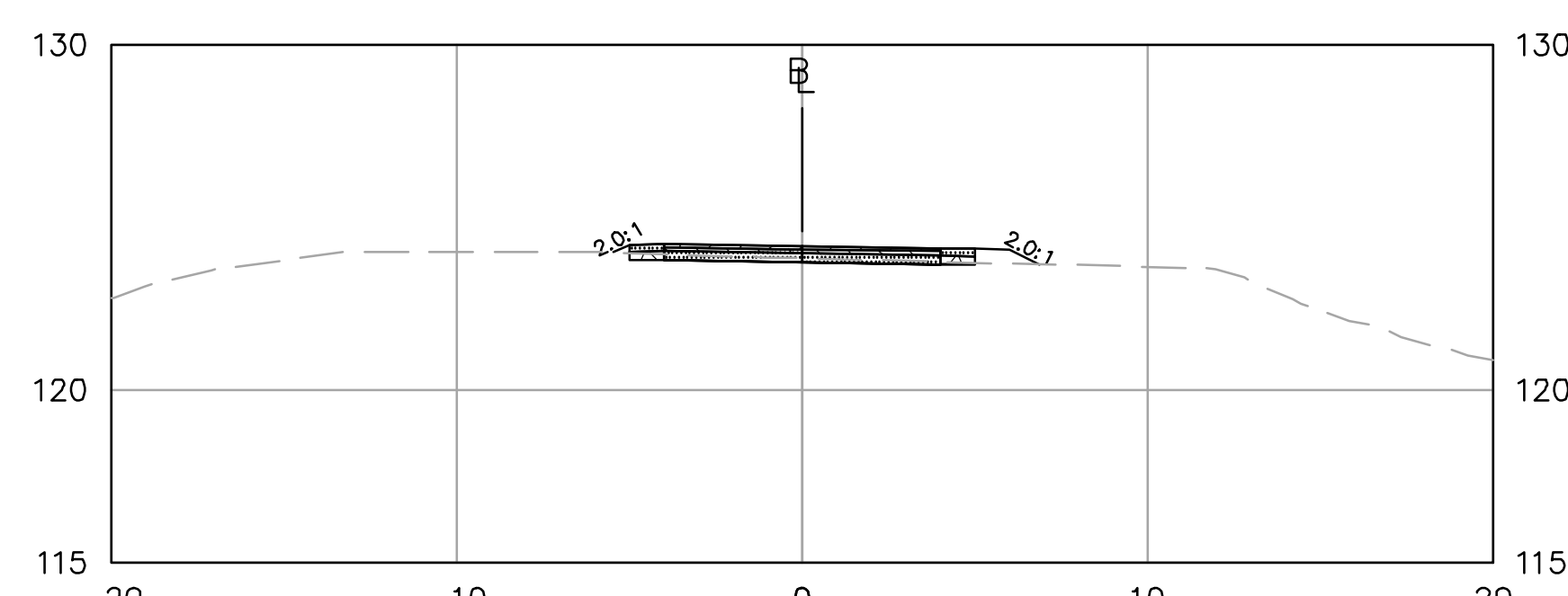
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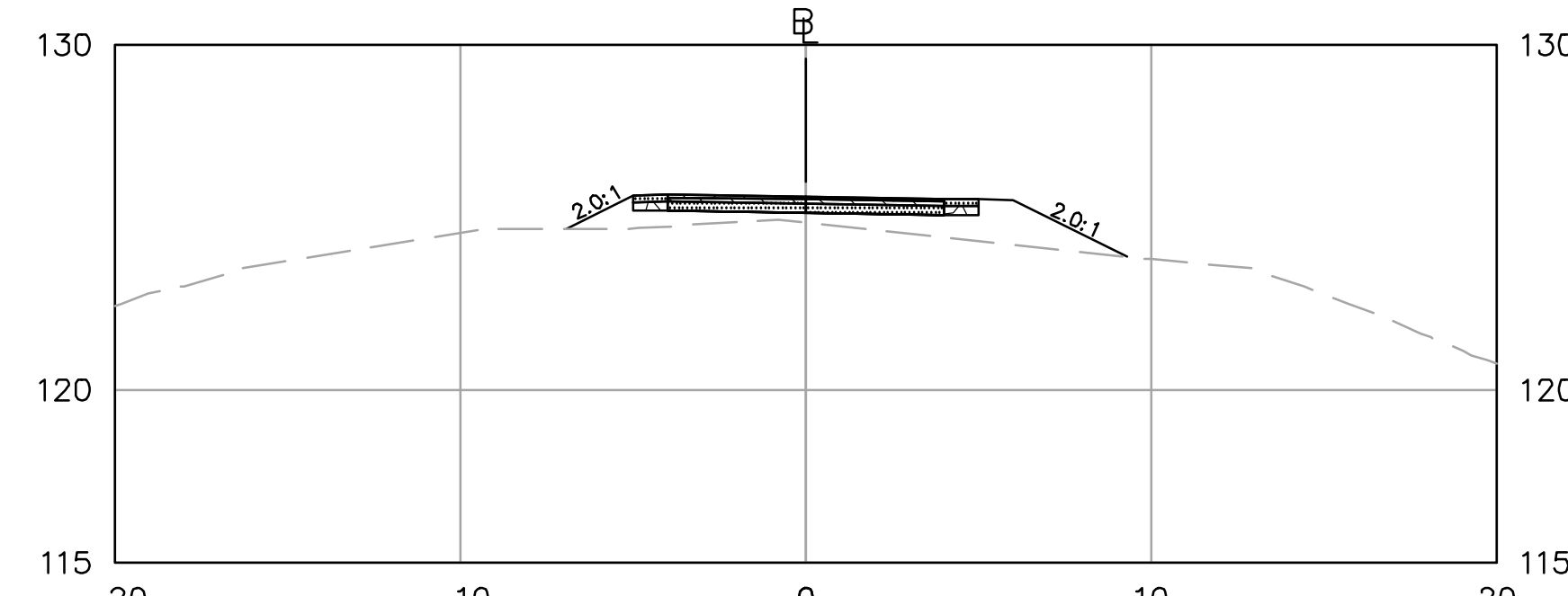
44+50



46+50



44+00



46+00

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PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

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PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

**BSC GROUP**  
300 Brickstone Square, Suite 203  
Andover, Massachusetts  
01810  
617 896 4300

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SCALE: 1" = 5'

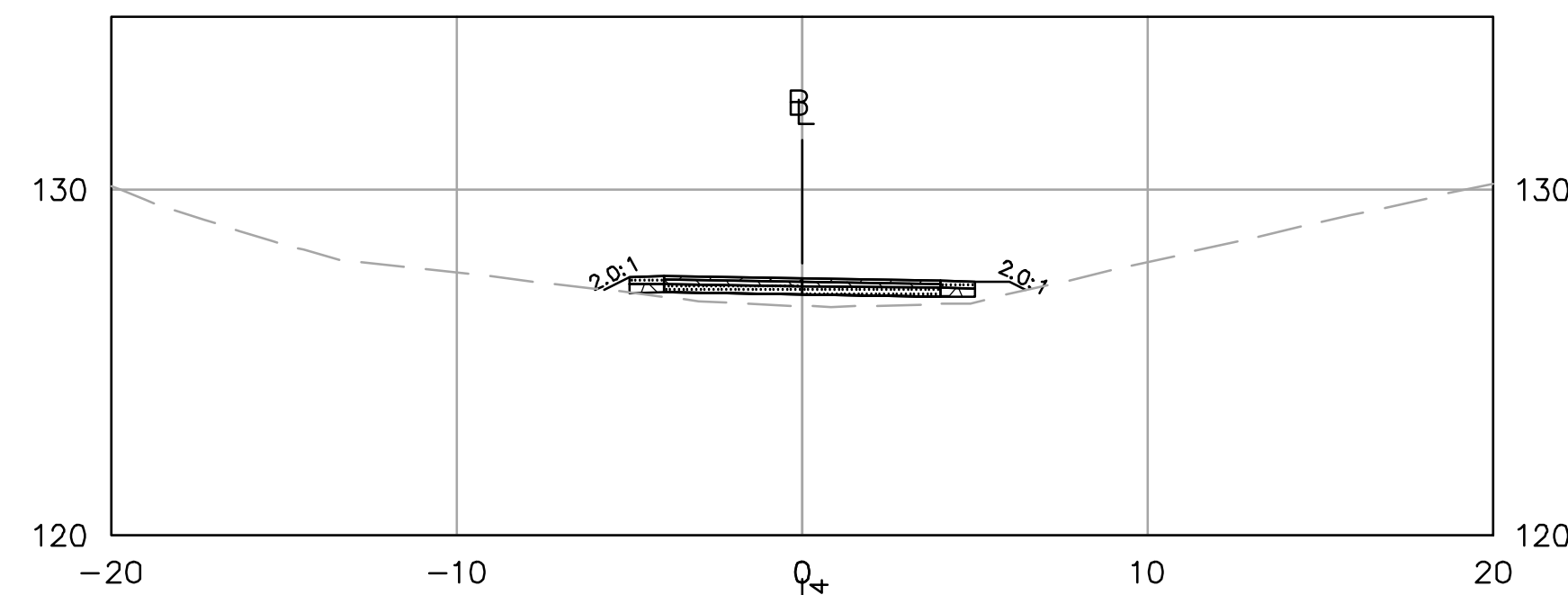


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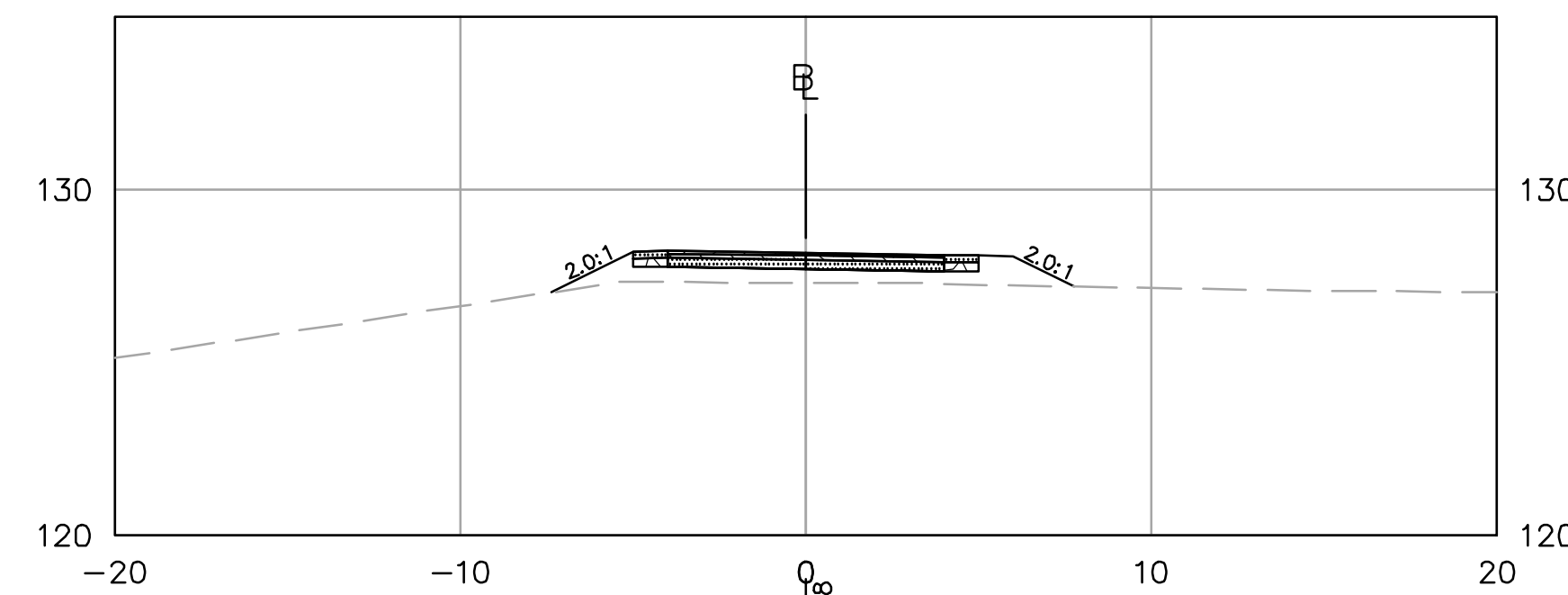
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JOB. NO: 8-9985.01

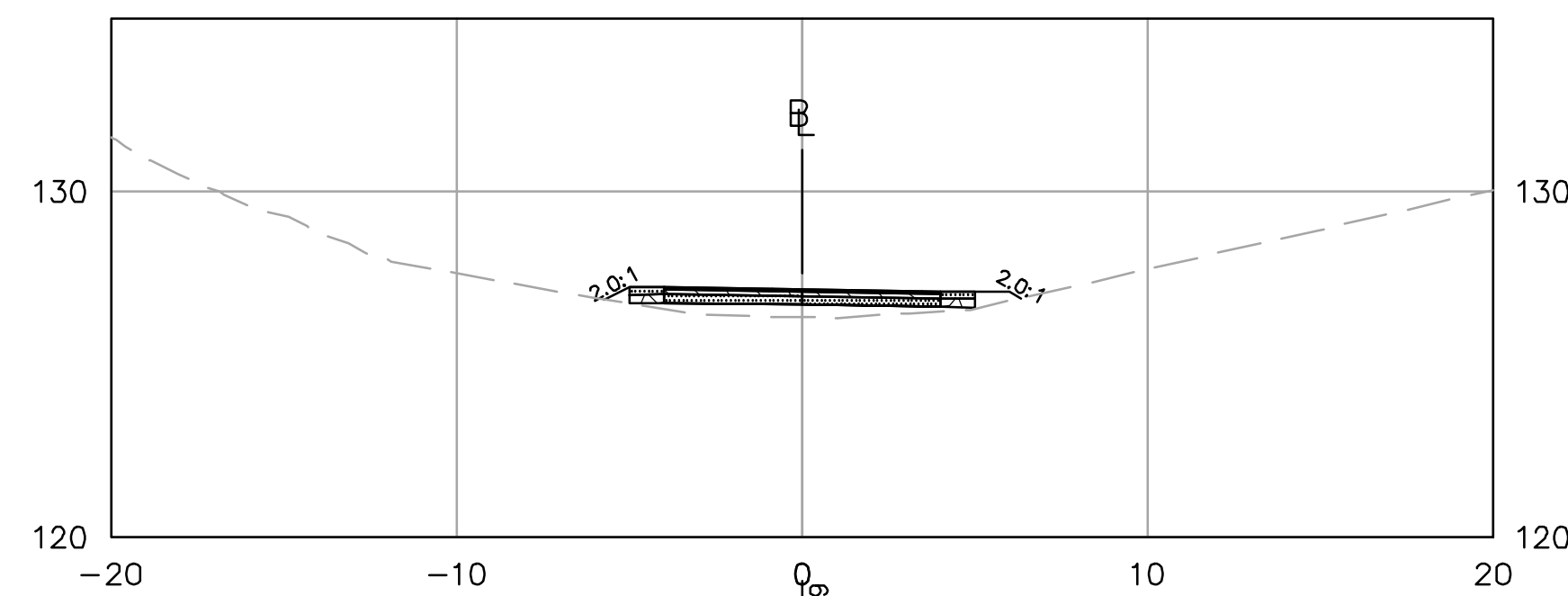
SHEET C-212



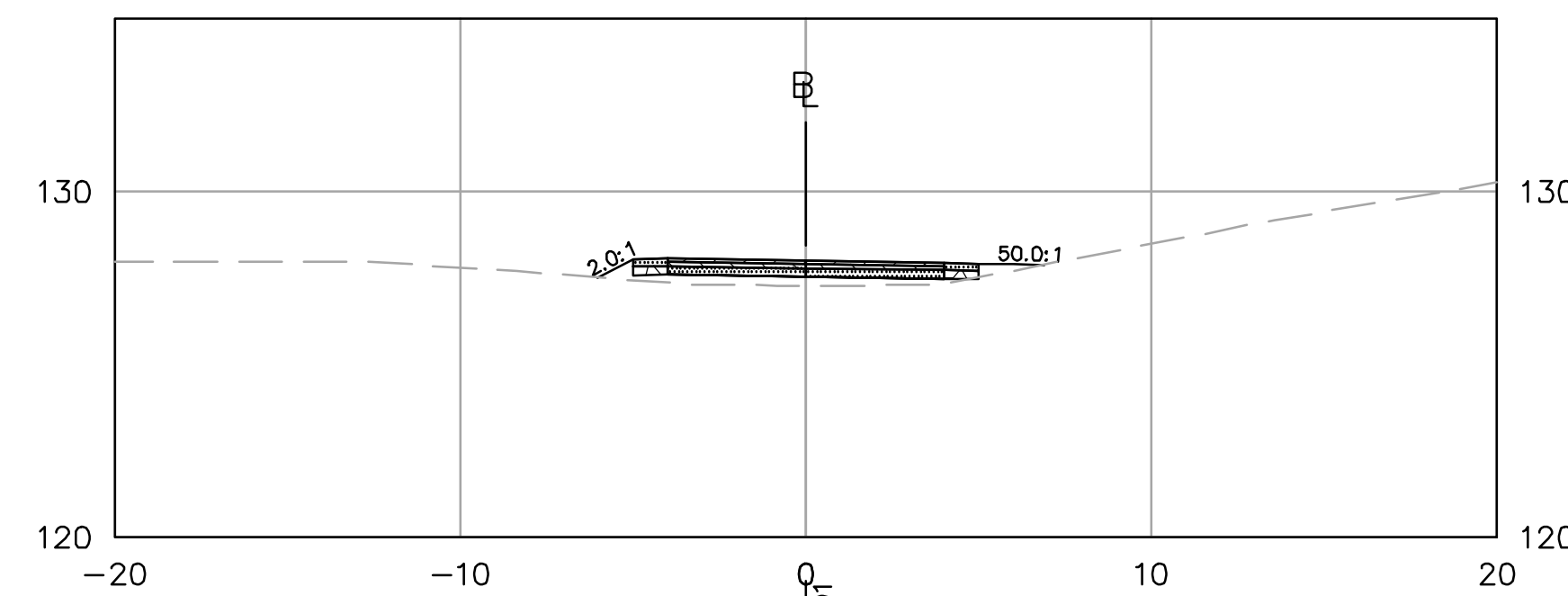
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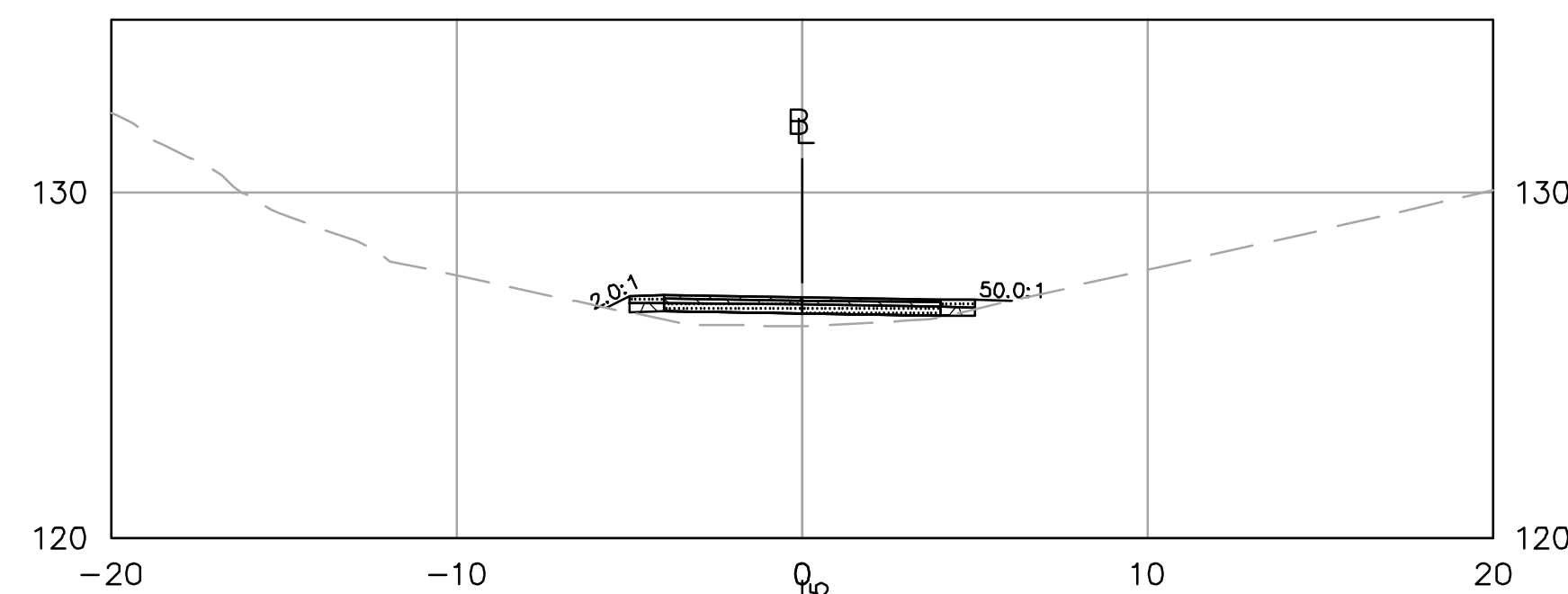
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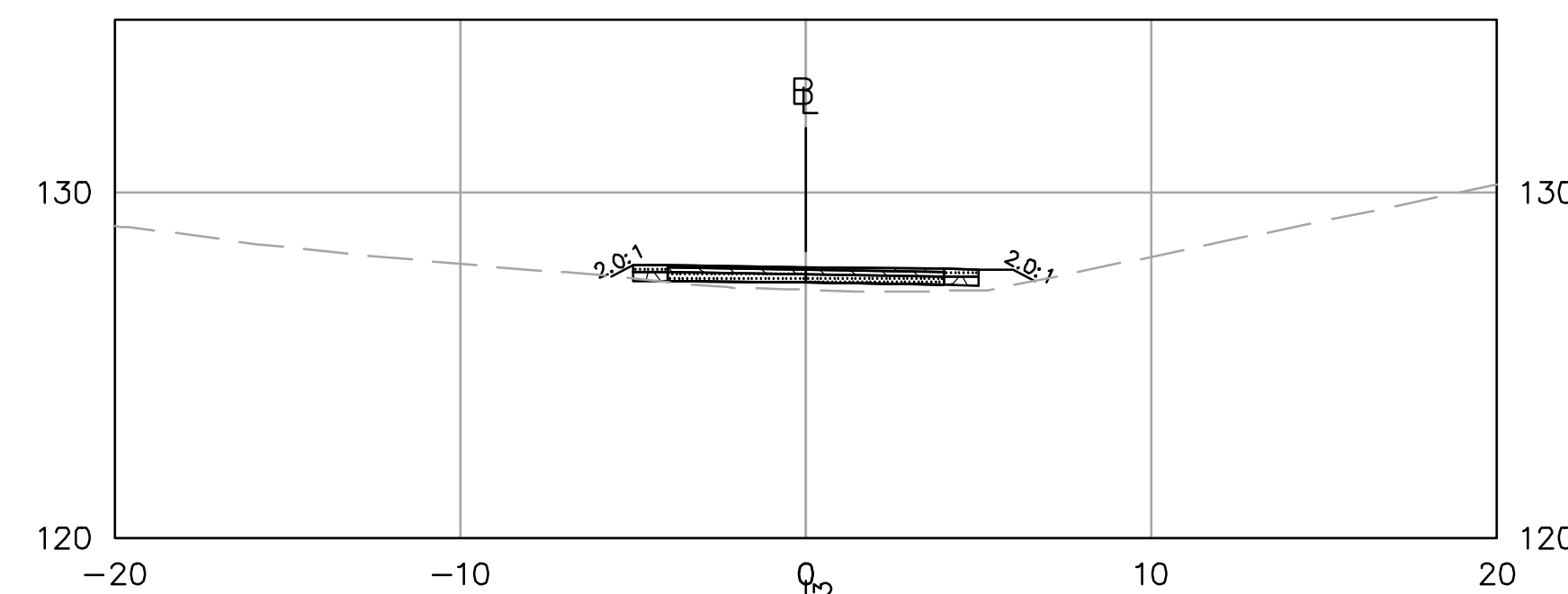
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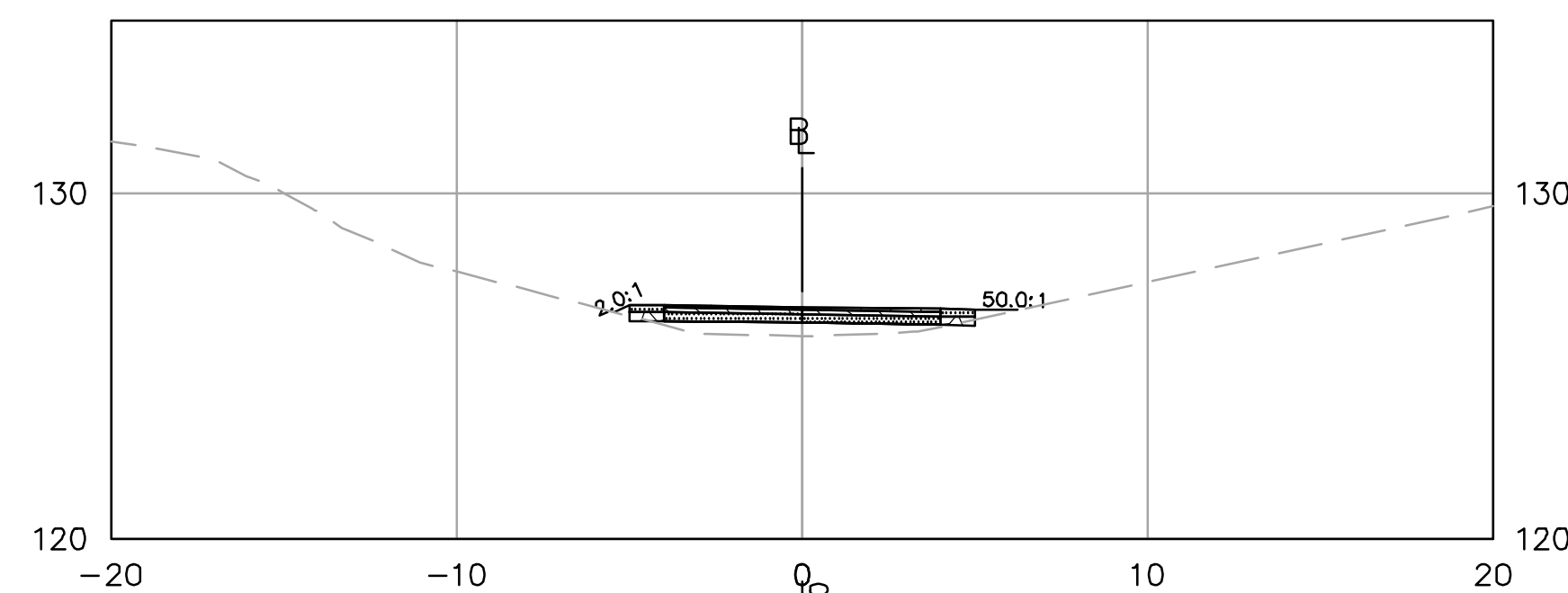
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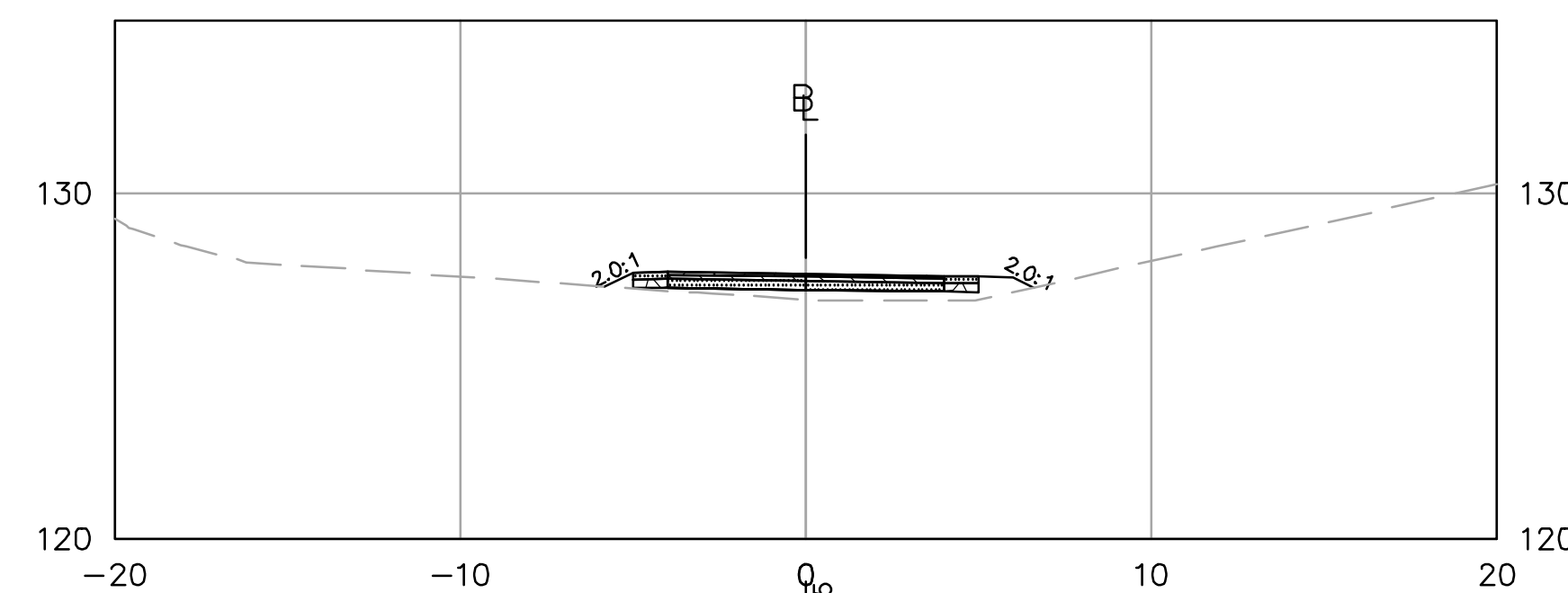
48+50



50+50



48+00



50+00

ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION



PROFESSIONAL ENGINEER DATE

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

TRAIL CROSS SECTIONS

NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

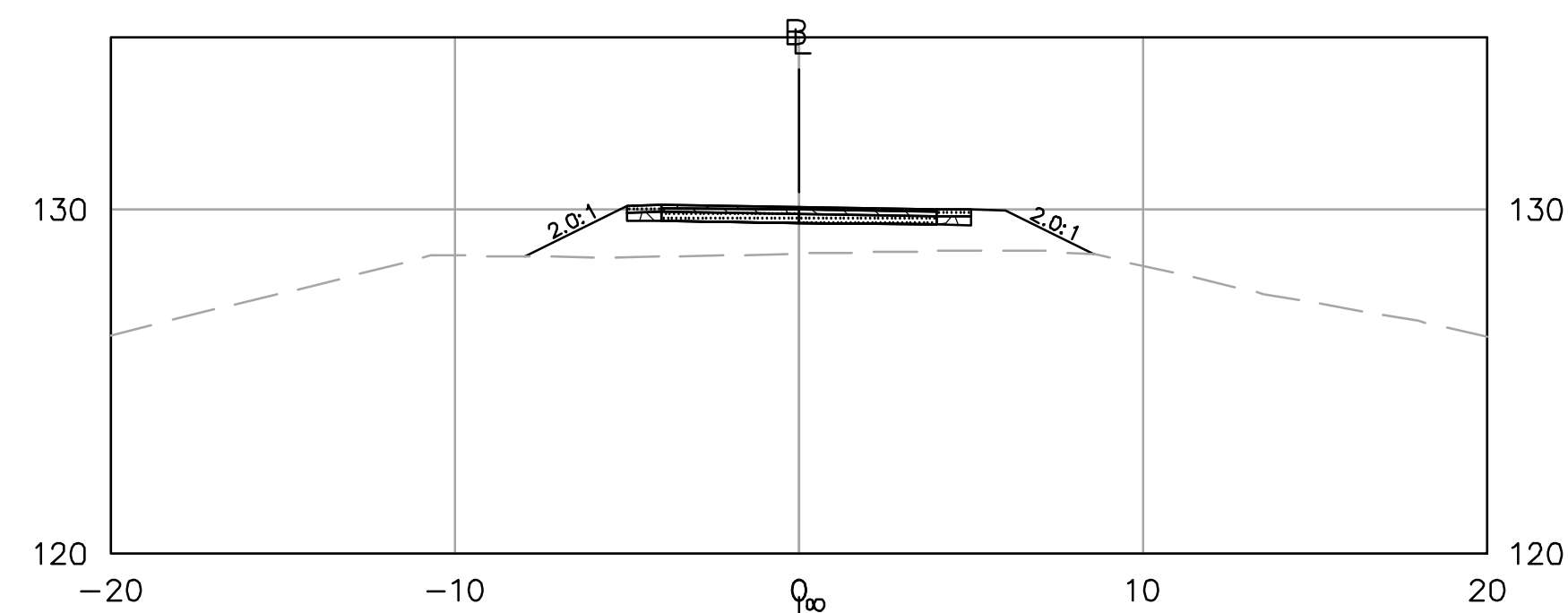
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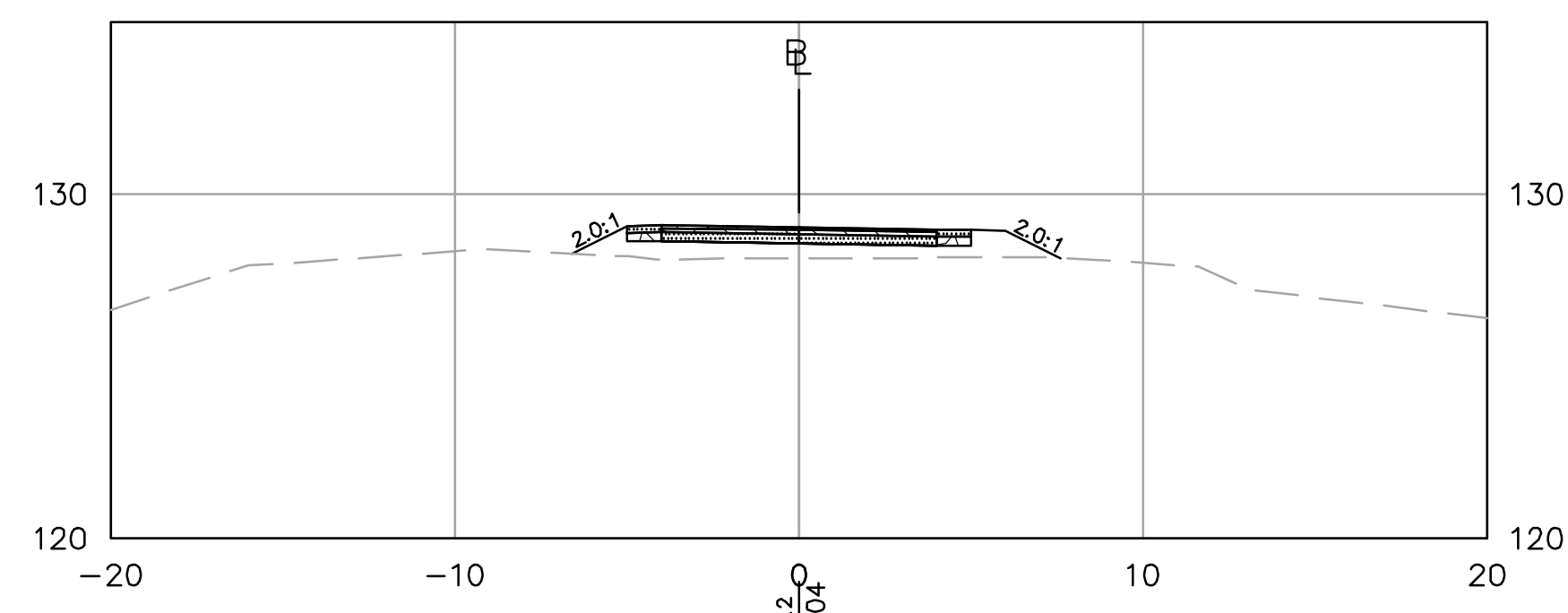
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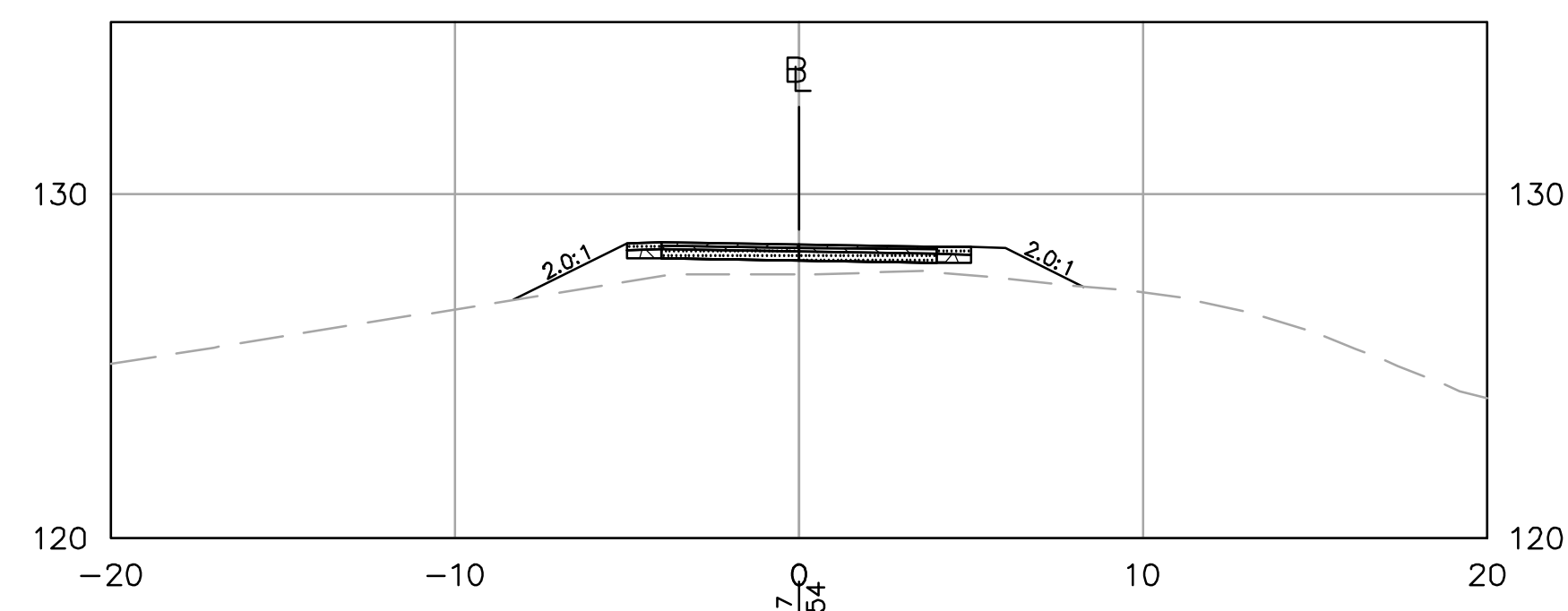
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JOB. NO: 8-9985.01 SHEET C-213



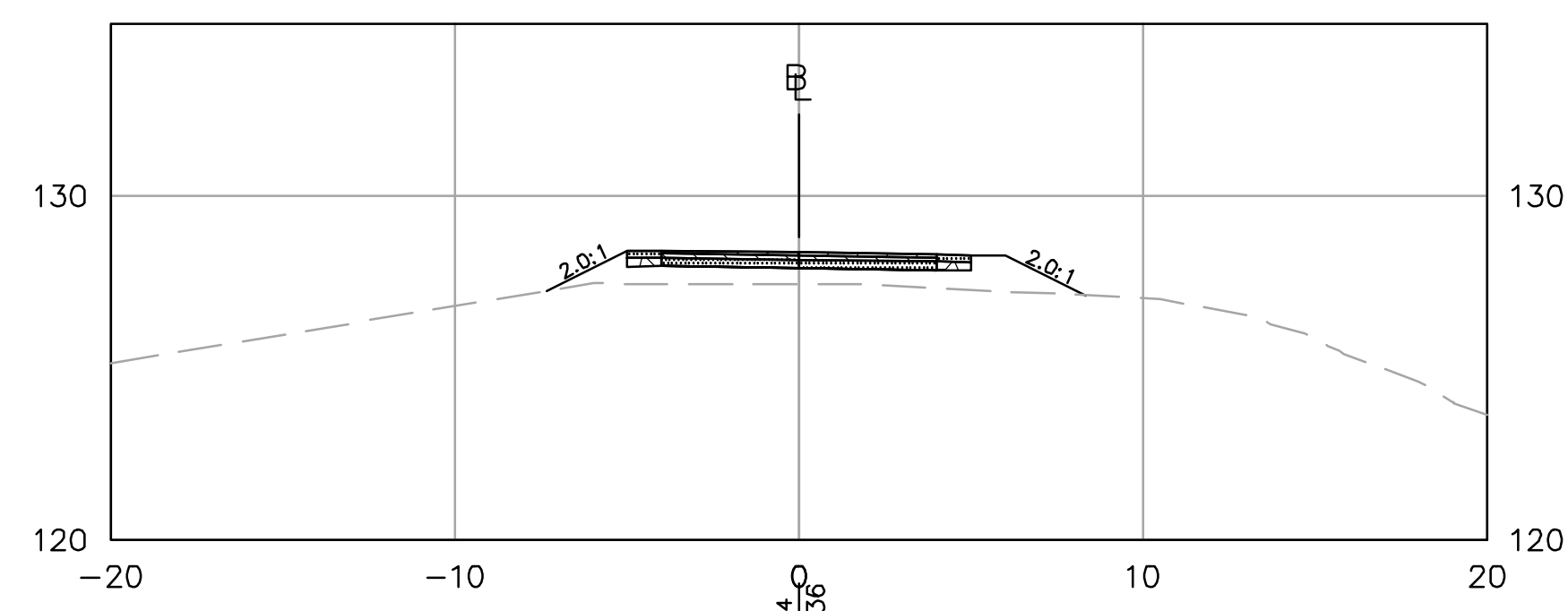
53+50



53+00



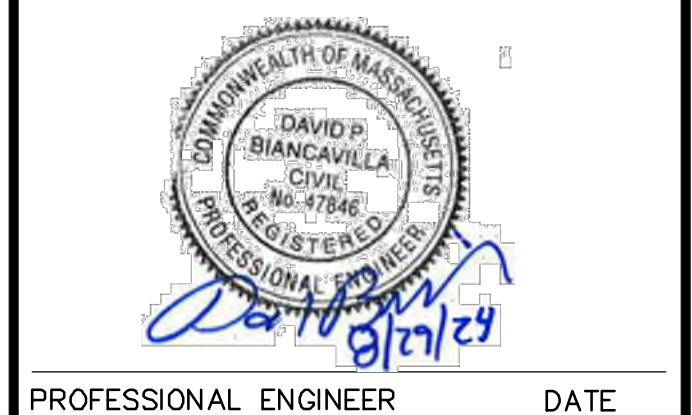
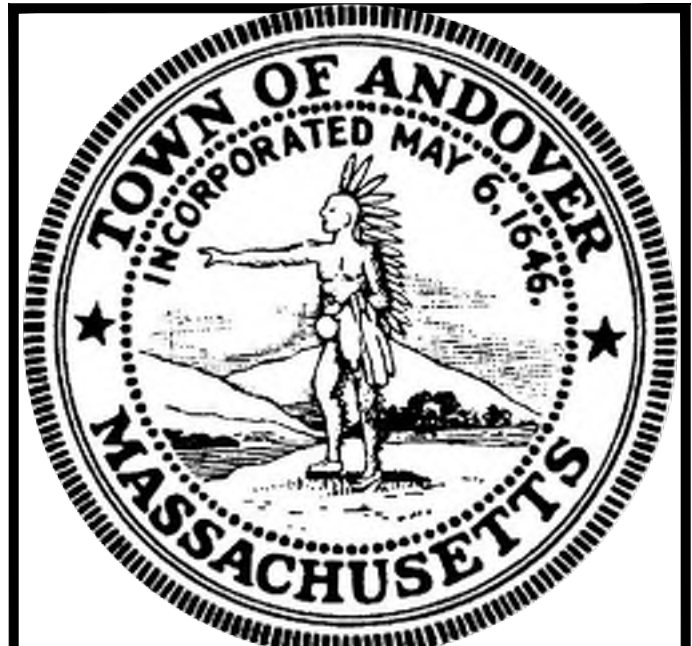
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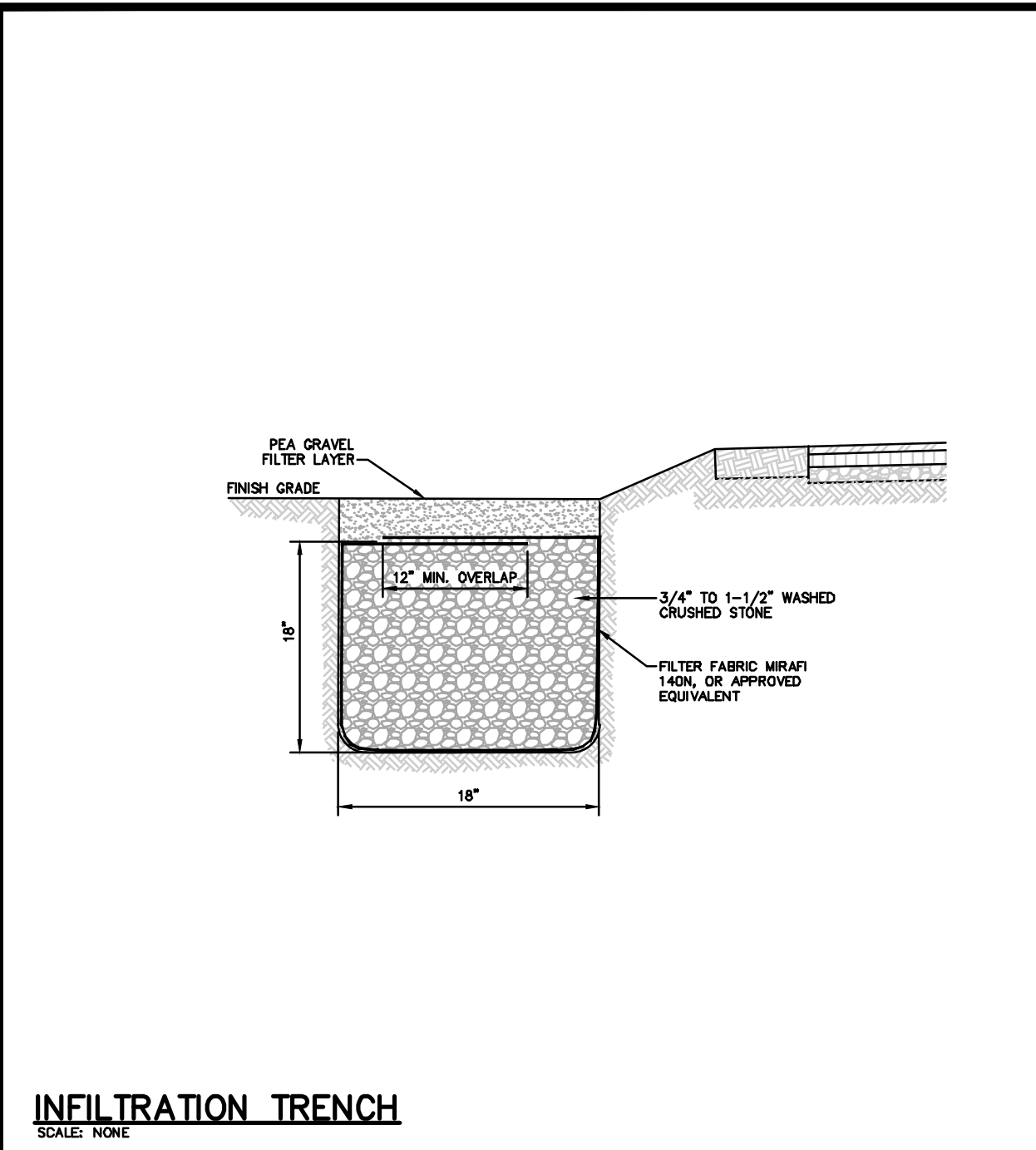
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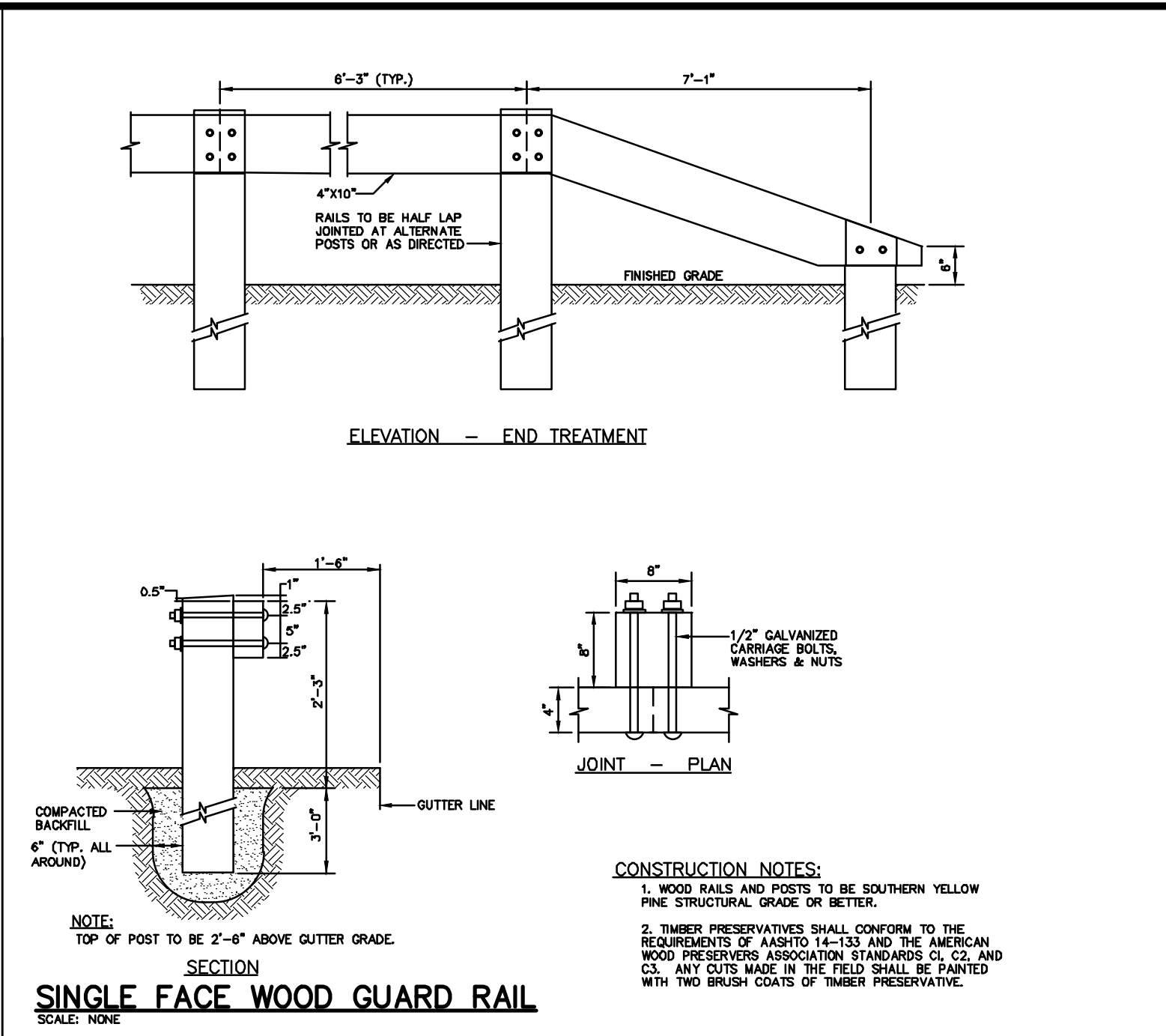




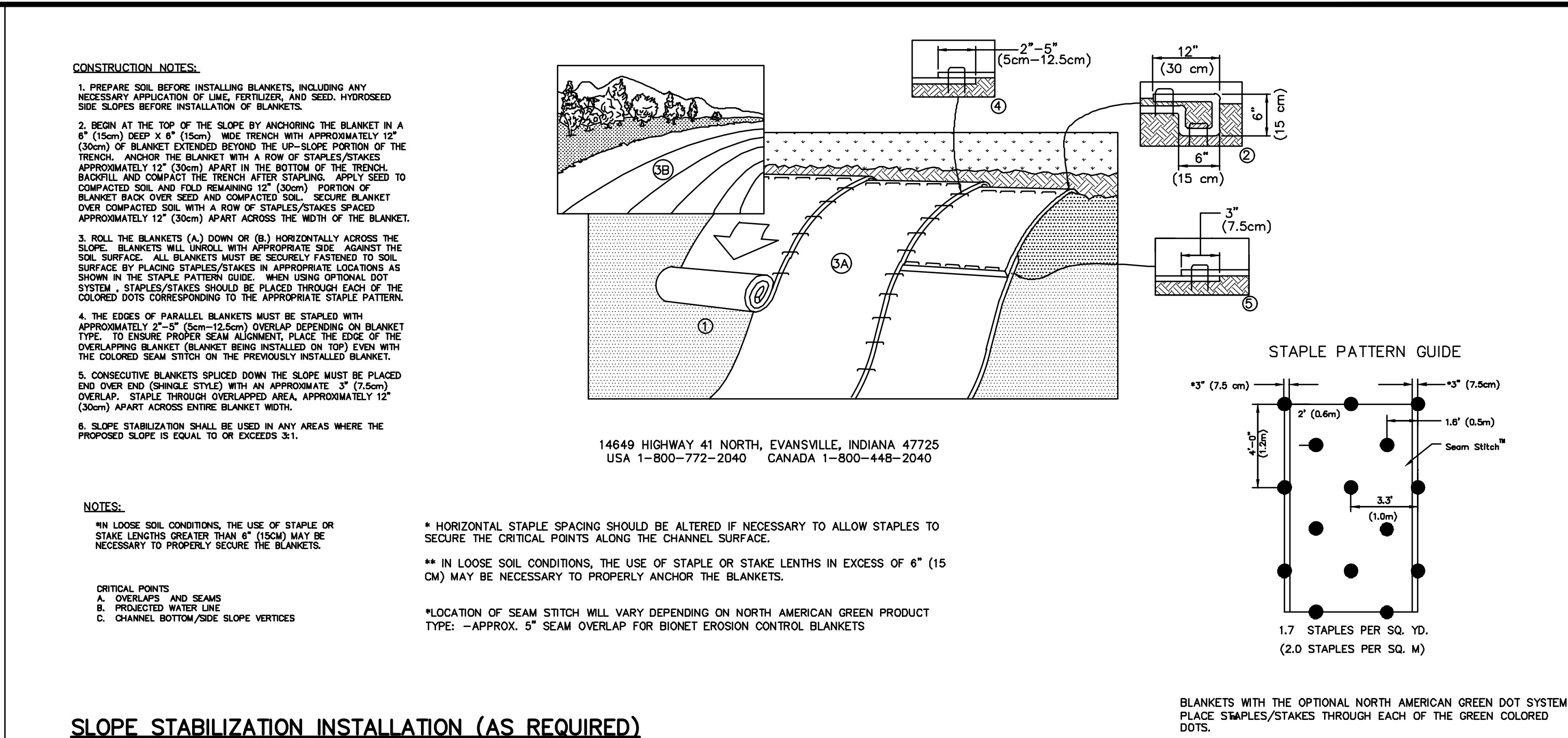
PROFESSIONAL ENGINEER DATE



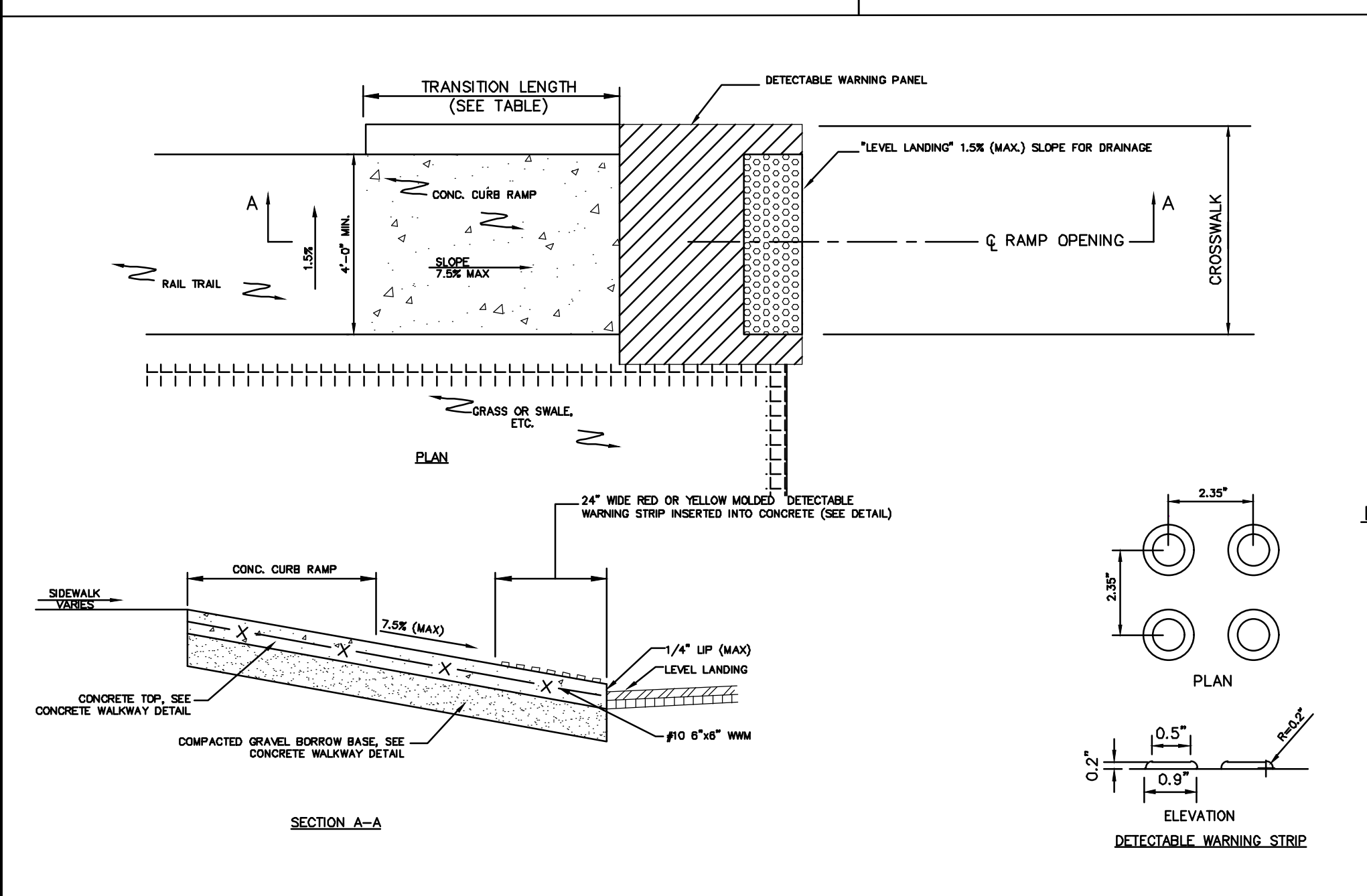
**INFILTRATION TRENCH**  
SCALE: NONE



**SECTION SINGLE FACE WOOD GUARD RAIL**  
SCALE: NONE



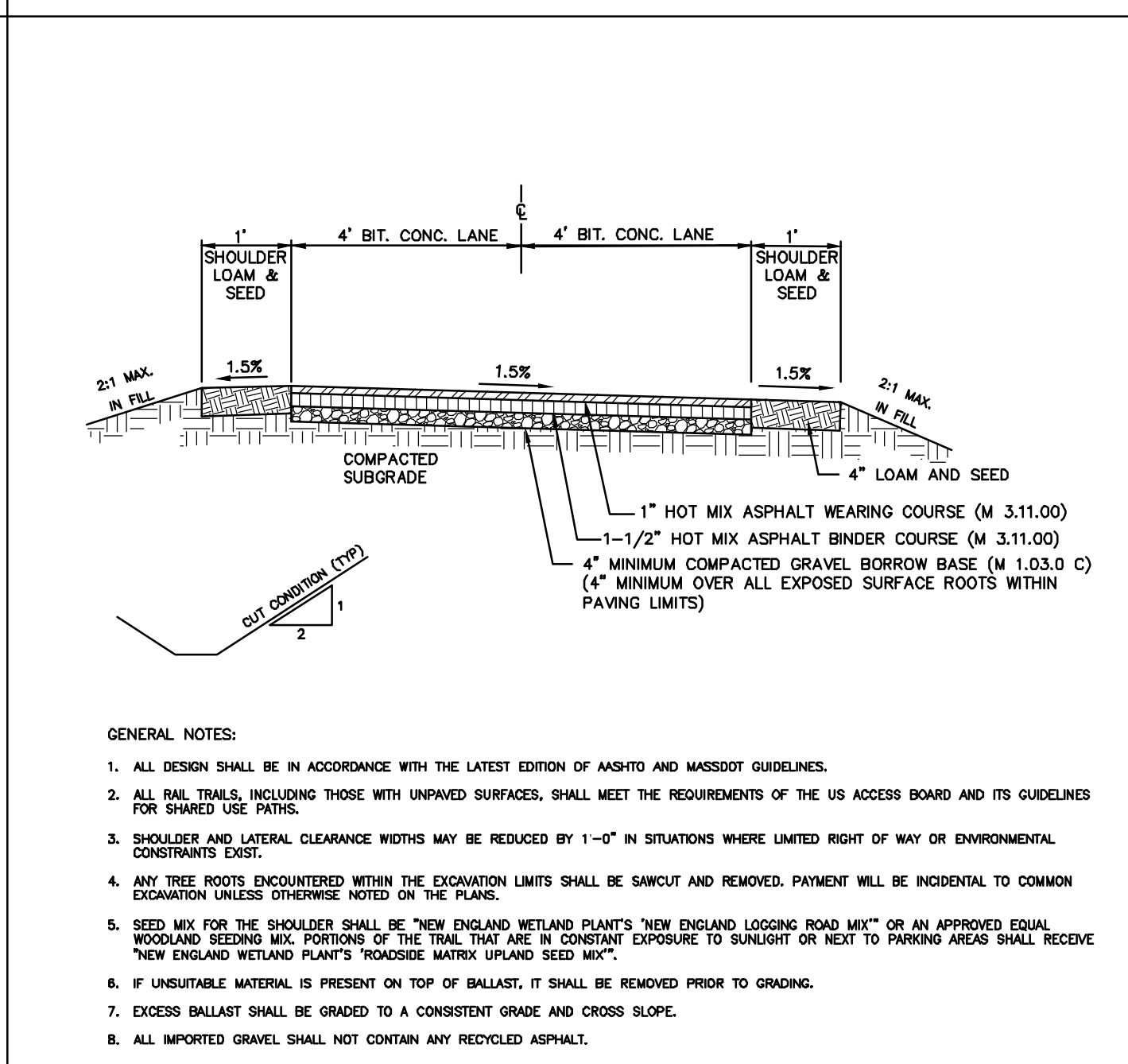
**SLOPE STABILIZATION INSTALLATION (AS REQUIRED)**  
SCALE: NONE



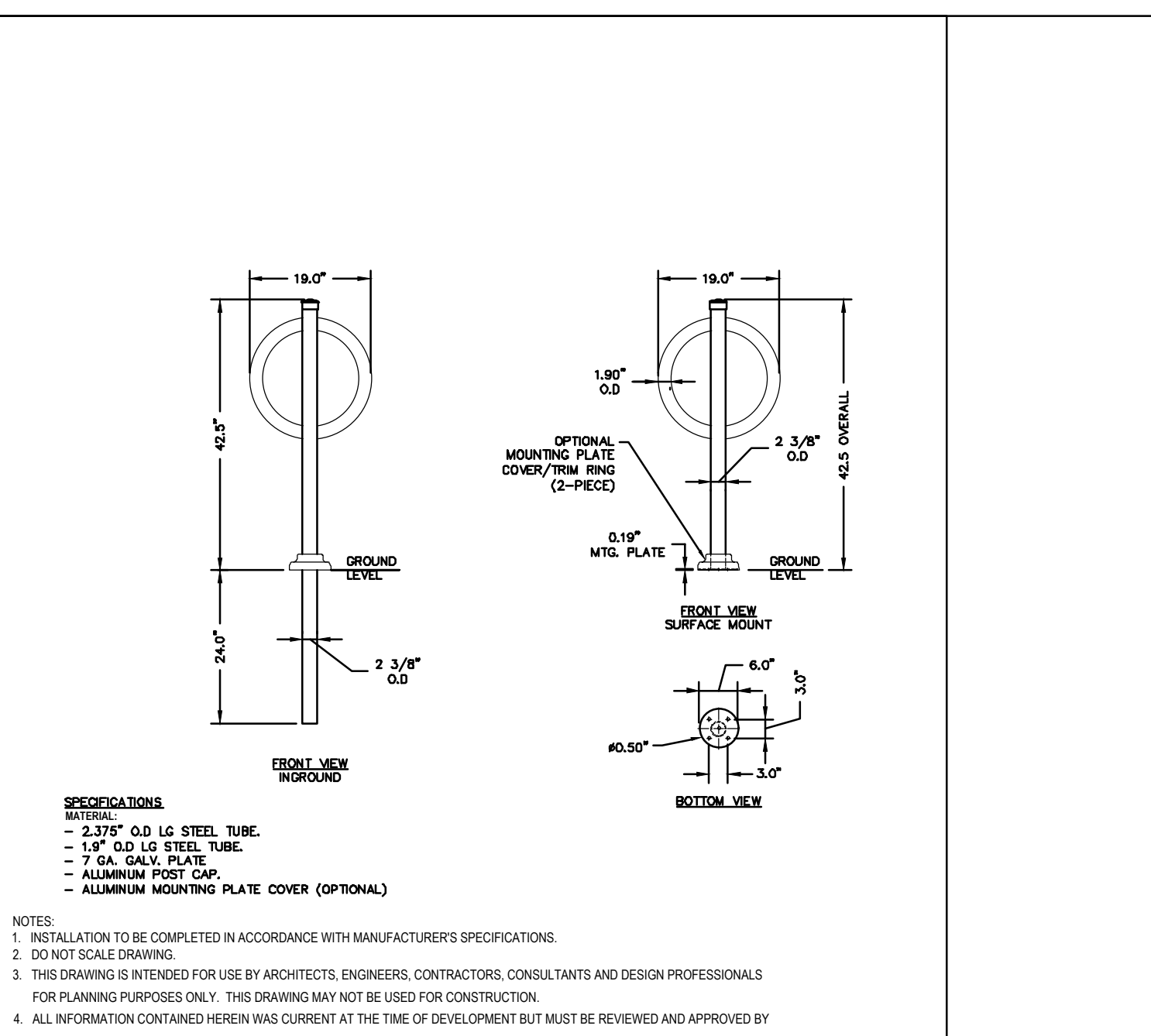
**ACCESSIBLE CURB RAMP TYPE 'B' - SINGLE DIRECTION WITH LEVEL ENTRANCE**  
SCALE: NONE

CURB TRANSITION LENGTH FOR WHEELCHAIR RAMPS	
ROADWAY PROFILE GRADE (%)	TRANSITION LENGTH ROUNDED TO THE NEAREST 4"
0 OR LOW SIDE	6'-6"
>0 - 1	7'-8"
>1 - 2	9'-0"
>2 - 3	11'-0"
>3 - 4	14'-0"
>4	15'-0" (MAX)

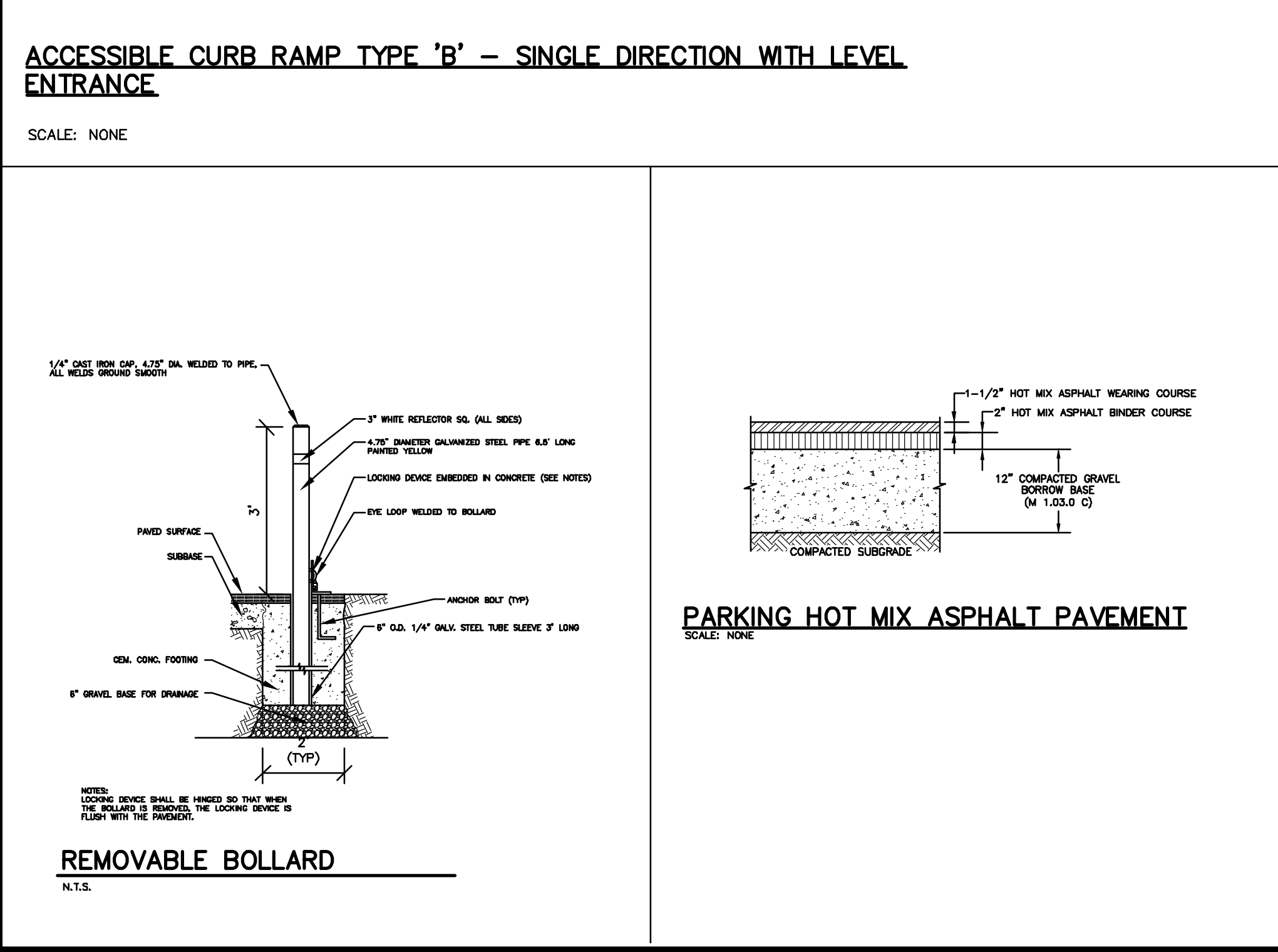
- NOTES:**
- SLOPE TOLERANCE FOR RAMP AND SIDEWALK CONSTRUCTION = ± 0.50%
  - THE MAX. ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAX. ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.



**HOT MIX ASPHALT RAIL TRAIL SECTION**  
SCALE: NONE

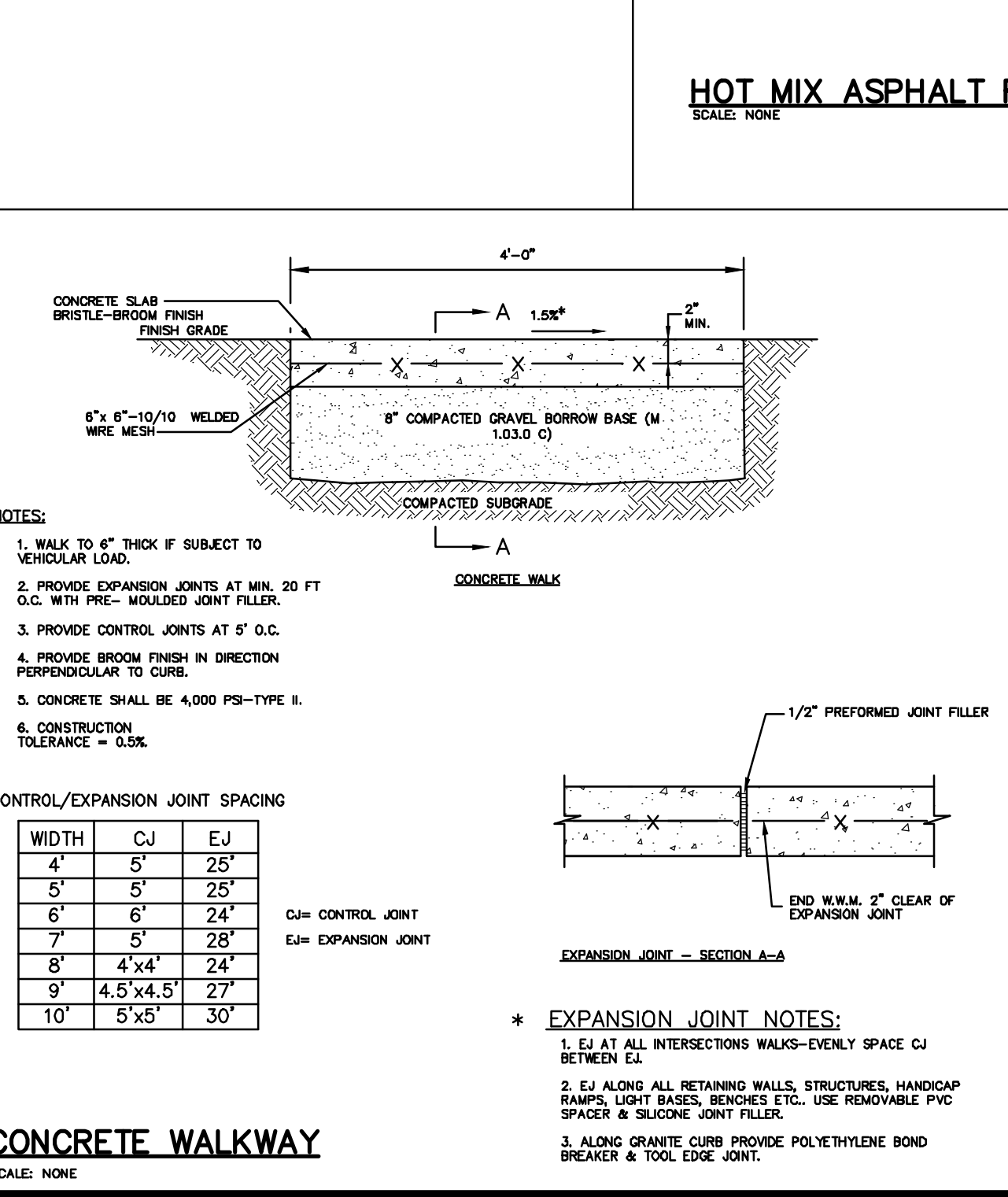


**BIKE RACKS**  
SCALE: NONE

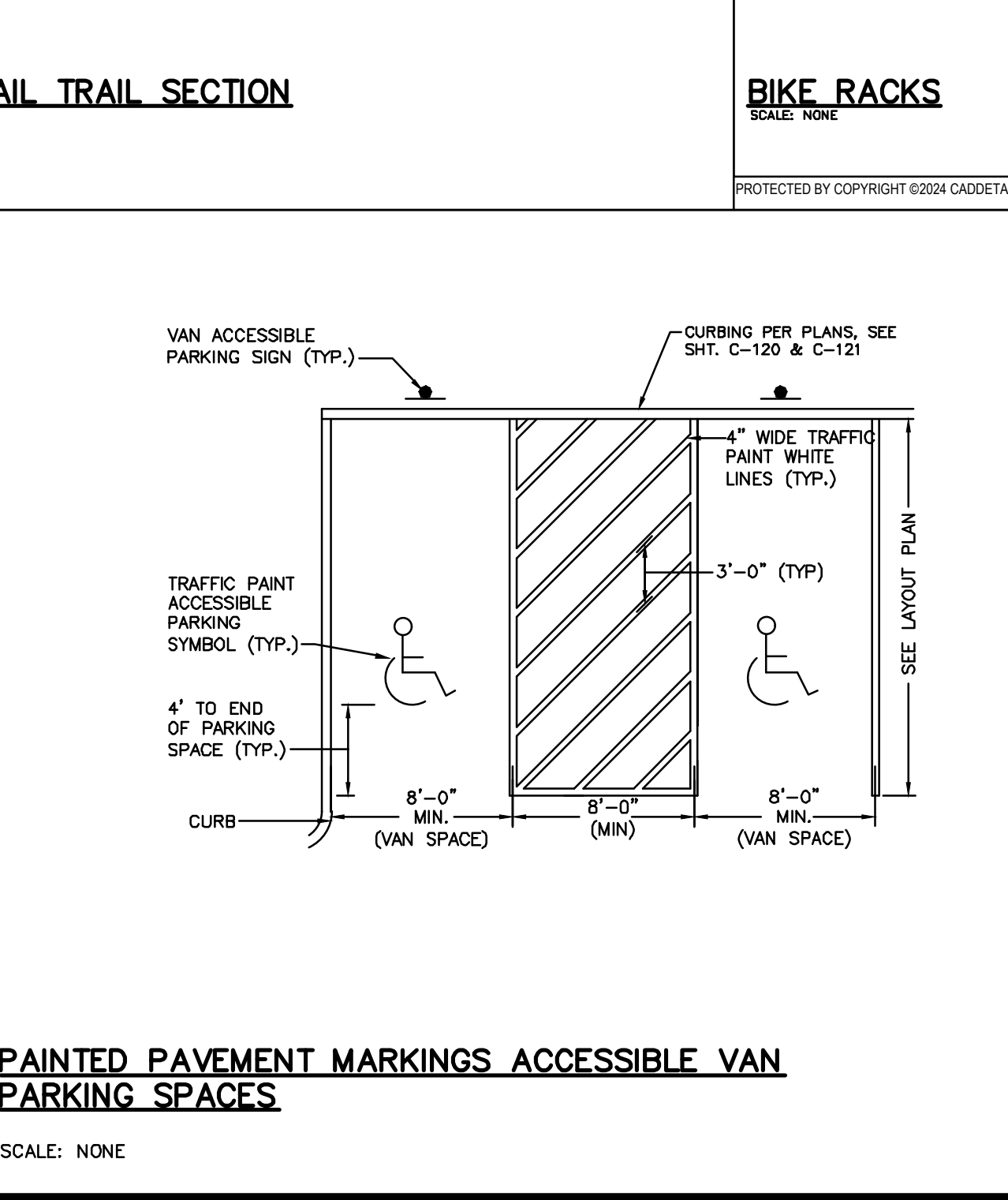


**REMOVABLE BOLLARD**  
N.T.S.

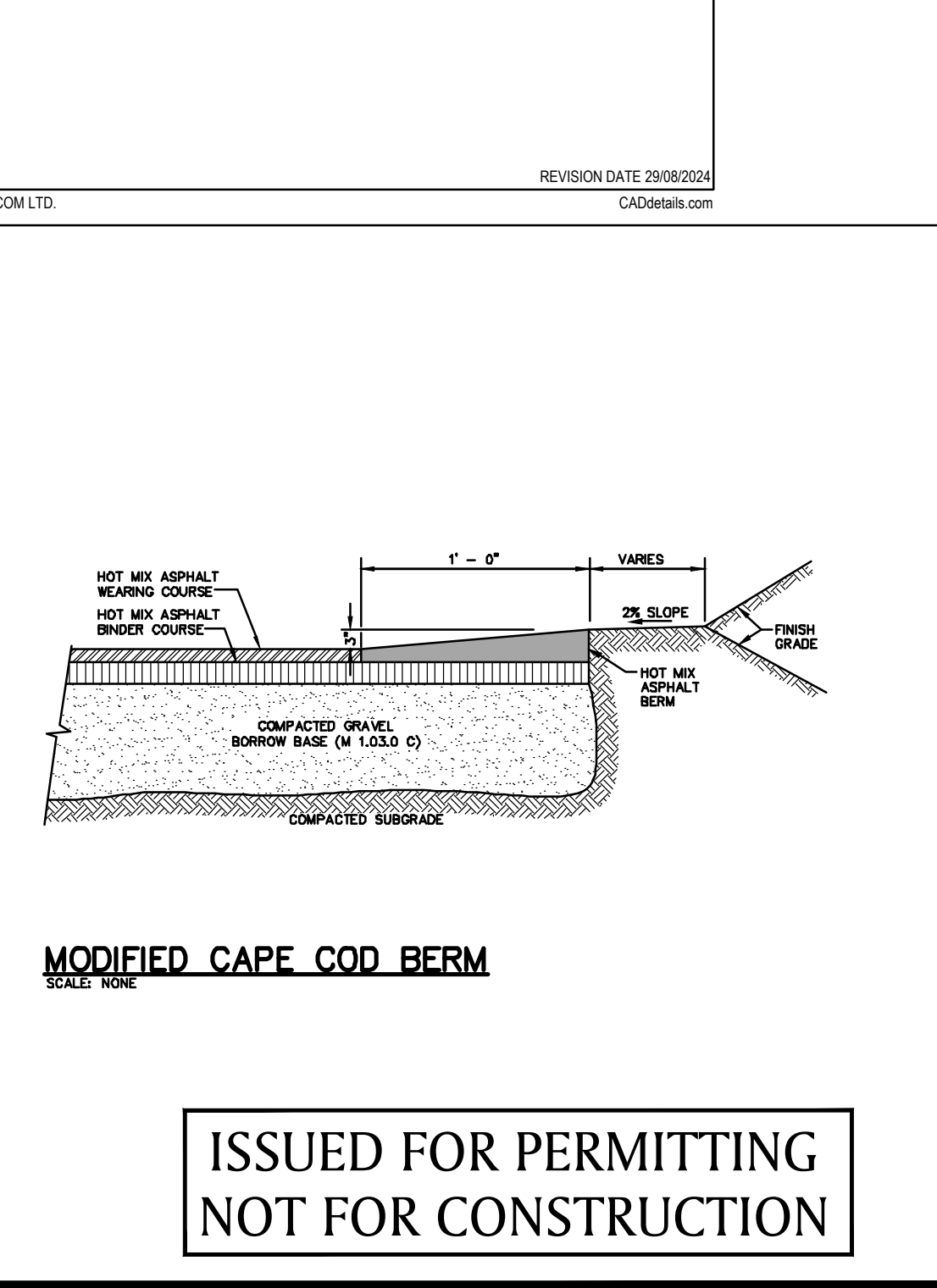
**PARKING HOT MIX ASPHALT PAVEMENT**  
SCALE: NONE



**CONCRETE WALKWAY**  
SCALE: NONE



**PAINTED PAVEMENT MARKINGS ACCESSIBLE VAN PARKING SPACES**  
SCALE: NONE



**MODIFIED CAPE COD BERM**  
SCALE: NONE

HAGGETTS POND RAIL TRAIL  
IN ANDOVER, MASSACHUSETTS  
DETAIL SHEET  
NOVEMBER 7, 2023

REVISIONS:

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

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ANDOVER, MA, 01810

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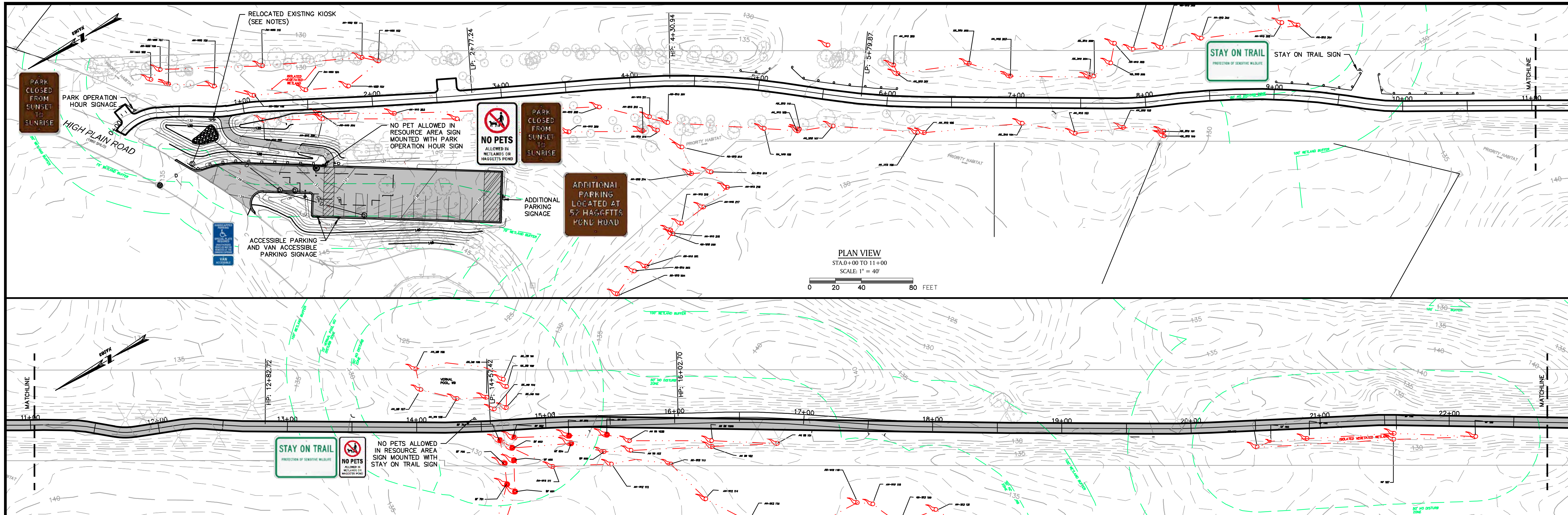
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JOB: NO: 8-9985.01  
SHEET C-301

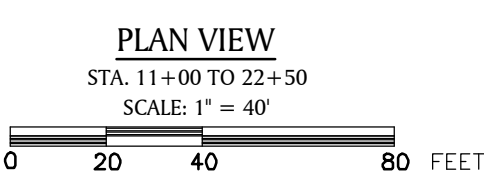
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SIGN NAME	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN.)			NUMBER OF SIGNS REQ.	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F.)
	WIDTH (IN.)	HEIGHT (IN.)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
NO SWIMMING SIGN	12	18		SEE 2009 M.U.T.C.D.			2	WHITE	BLACK/ RED	BLACK	P-5 (2)	1.50	3.00
RESIDENT PARKING ONLY SIGN	12	18		SEE 2009 M.U.T.C.D.			2	WHITE	GREEN	GREEN	P-5 (2)	1.50	3.00
NO PARKING SIGN	12	18		SEE 2009 M.U.T.C.D.			8	WHITE	RED	RED	P-5 (8)	1.50	12.00
NO PETS ALLOWED IN RESOURCE AREAS SIGN	12	18		SEE 2009 M.U.T.C.D.			6	WHITE	BLACK/ RED	BLACK	P-5 (6)	1.50	9.00
STAY ON TRAIL SIGN	18	12		SEE 2009 M.U.T.C.D.			2	WHITE	GREEN	GREEN	P-5 (2)	1.50	3.00
PEDESTRIAN CROSSING WARNING SIGN (W11-2 IN MUTCD)	30	30		SEE 2009 M.U.T.C.D.			8	FLUORESCENT YELLOW GREEN	BLACK	BLACK	(8) MNTD ON RRFB	6.25	50.00
DOWNWARD DIAGONAL ARROW SIGN (R) (W16-7R IN MUTCD)	24	12		SEE 2009 M.U.T.C.D.			4	FLUORESCENT YELLOW GREEN	BLACK	BLACK	(4) MNTD W/ PEDESTRIAN CROSSING SIGN	2.00	8.00
DOWNWARD DIAGONAL ARROW SIGN (L) (W16-7L IN MUTCD)	24	12		SEE 2009 M.U.T.C.D.			4	FLUORESCENT YELLOW GREEN	BLACK	BLACK	(4) MNTD W/ PEDESTRIAN CROSSING SIGN	2.00	8.00
ADA ACCESSIBLE, SPECIAL PLATE REQUIRED SIGN	12	18		SEE 2009 M.U.T.C.D.			4	BLUE	WHITE	WHITE	P-5 (4)	1.50	6.00
ADA ACCESSIBLE, VAN ACCESSIBLE SIGN	6	12		SEE 2009 M.U.T.C.D.			4	BLUE	WHITE	WHITE	MNTD W/ HANDICAP ACCESSIBLE PARKING SIGN	0.50	2.00



SIGN NAME	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN.)			NUMBER OF SIGNS REQ.	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F.)
	WIDTH (IN.)	HEIGHT (IN.)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
PARK OPERATION HOUR SIGN	12	18		SEE 2009 M.U.T.C.D.			3	BROWN	WHITE	NONE	P-5 (3)	1.50	4.50
ADDITIONAL PARKING SIGN (52 HAGGETTS POND ROAD)	24	24		SEE 2009 M.U.T.C.D.			1	BROWN	WHITE	NONE	P-5 (1)	4.00	4.00
ADDITIONAL PARKING SIGN (260 HIGH PLAIN ROAD)	24	24		SEE 2009 M.U.T.C.D.			1	BROWN	WHITE	NONE	P-5 (1)	4.00	4.00

- EXISTING KIOSK NOTES**  
 AT A MINIMUM THE FOLLOWING RULES ARE TO BE ADDED TO EXISTING KIOSKS:
1. NO RECREATIONAL BOATING ALLOWED
  2. FISHING IS LIMITED TO THE SHORELINE (NO WADING) AND ROWBOATS (NO MOTORS OF ANY KIND)
  3. NO MOTORIZED EQUIPMENT ALLOWED EXCEPT FOR MEDICALLY NECESSARY EQUIPMENT
  4. NON-MOTORIZED BIKING ONLY ON PATHWAY. NO OFF-ROAD BIKING IS ALLOWED
  5. NO SWIMMING OF ANY KIND, INCLUDING PETS
  6. PETS MUST BE KEPT ON A LEASH AT ALL TIMES



DAVID P. BIANCAVILLA  
 CIVIL ENGINEER  
 PROFESSIONAL ENGINEER  
 PROFESSIONAL SEAL

HAGGETTS POND RAIL TRAIL  
 IN ANDOVER, MASSACHUSETTS  
 SIGNAGE PLAN  
 (1 OF 3)

NOVEMBER 7, 2023

REVISIONS:

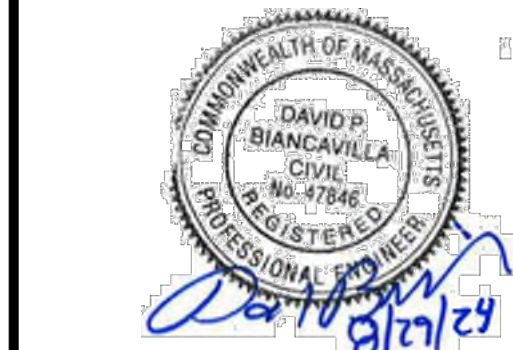
NO.	DATE	DESCRIPTION
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4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
 TOWN OF ANDOVER  
 36 BARTLET STREET  
 ANDOVER, MA, 01810

**BSC GROUP**  
 300 Brickstone Square, Suite 203  
 Andover, Massachusetts  
 01810  
 617 896 4300

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 SCALE: 1" = 40'  
 0 10 20 40 FEET

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 NOT FOR CONSTRUCTION



PROFESSIONAL ENGINEER DATE

# HAGGETTS POND RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

## SIGNAGE PLAN (2 OF 3)

NOVEMBER 7, 2023

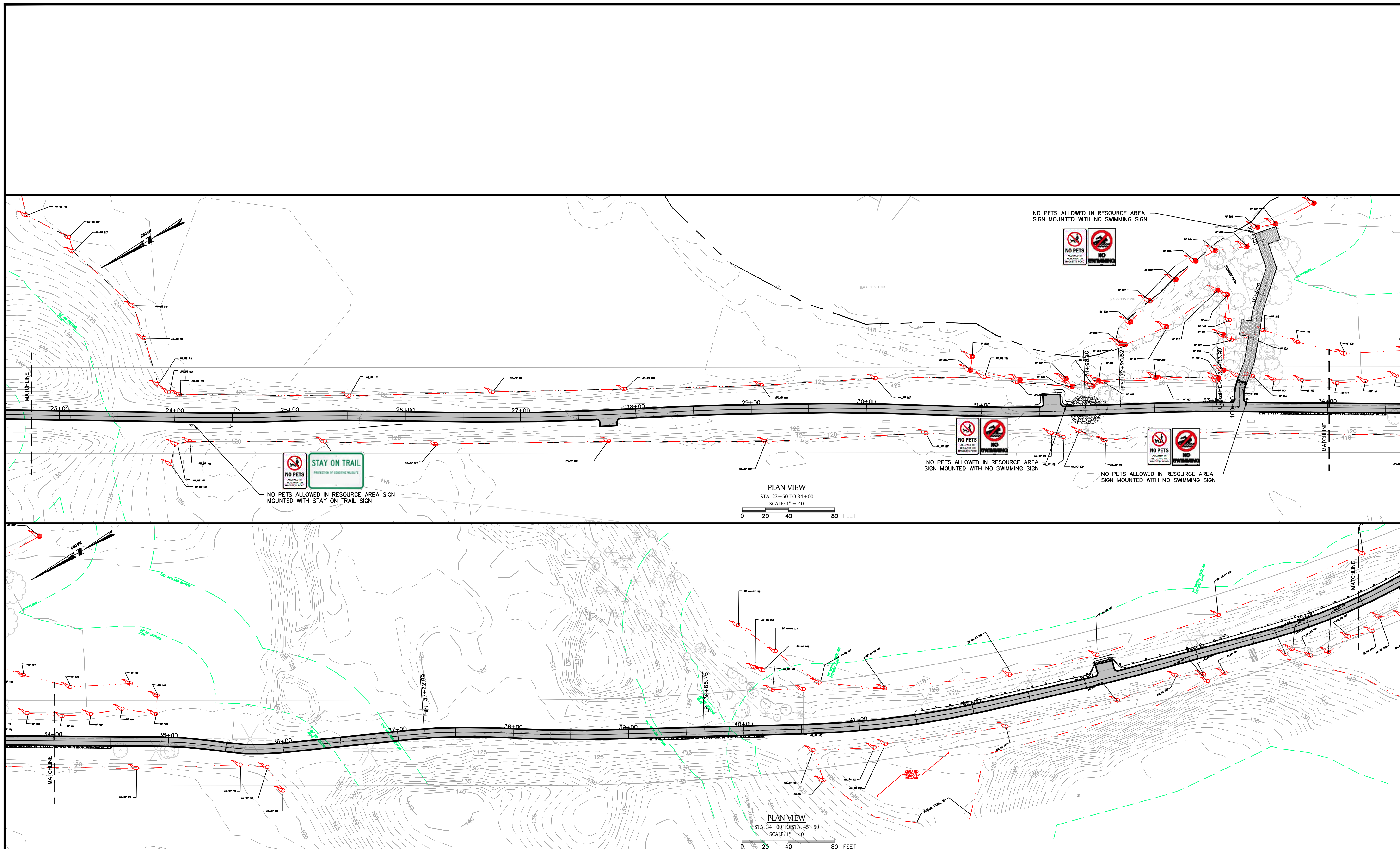
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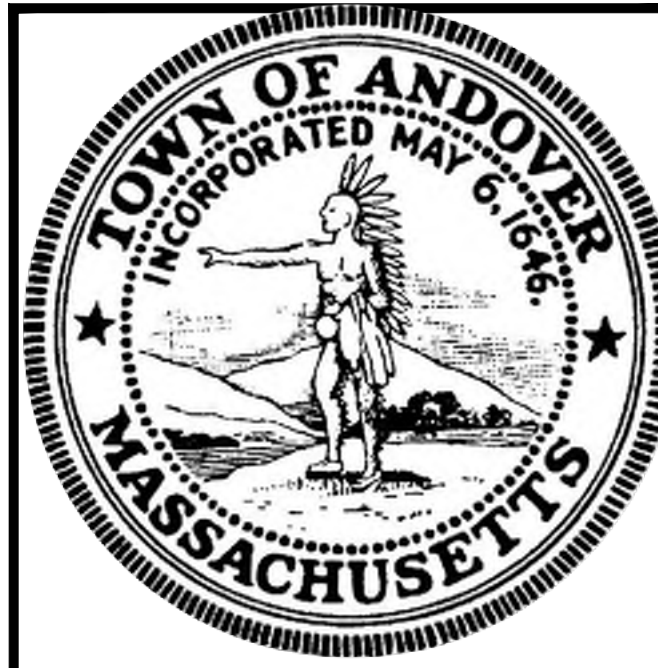
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01810  
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SCALE: 1" = 40'  
0 20 40 80 FEET  
FILE: P:\8998501\C\D\Signage  
DWG: C-401 SHEET C-401  
JOB: NO: 8-9985.01



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**HAGGETTS POND RAIL TRAIL**  
 IN  
 ANDOVER,  
 MASSACHUSETTS  
**SIGNAGE PLAN**  
 (3 OF 3)

NOVEMBER 7, 2023

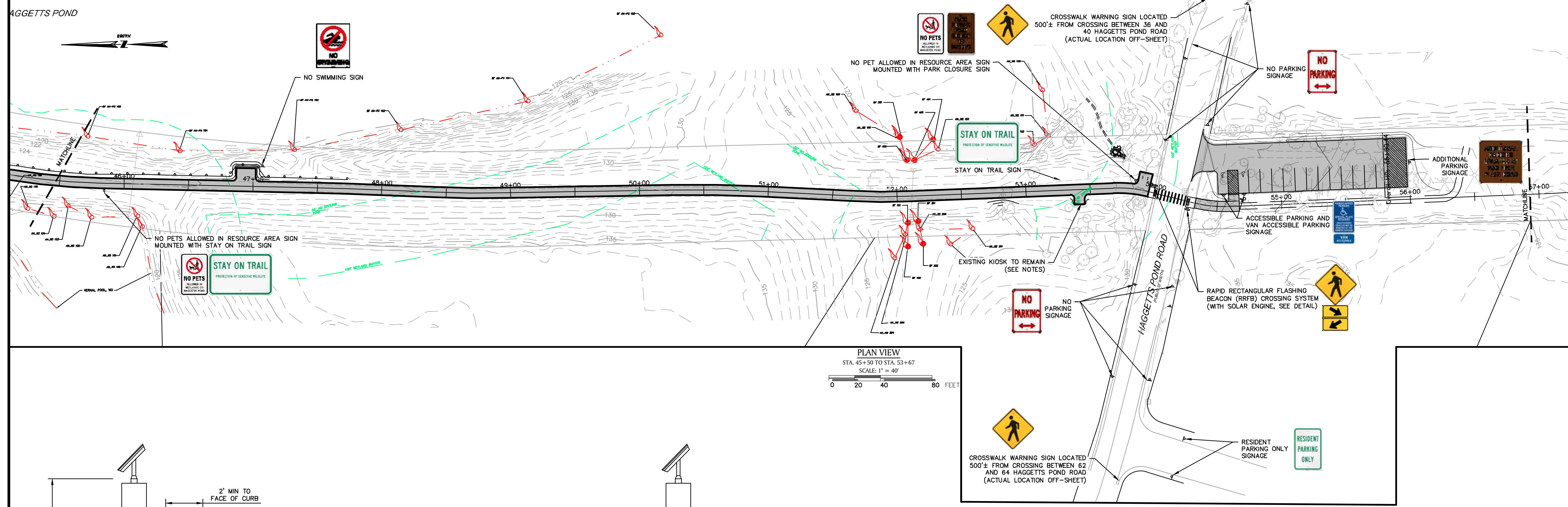
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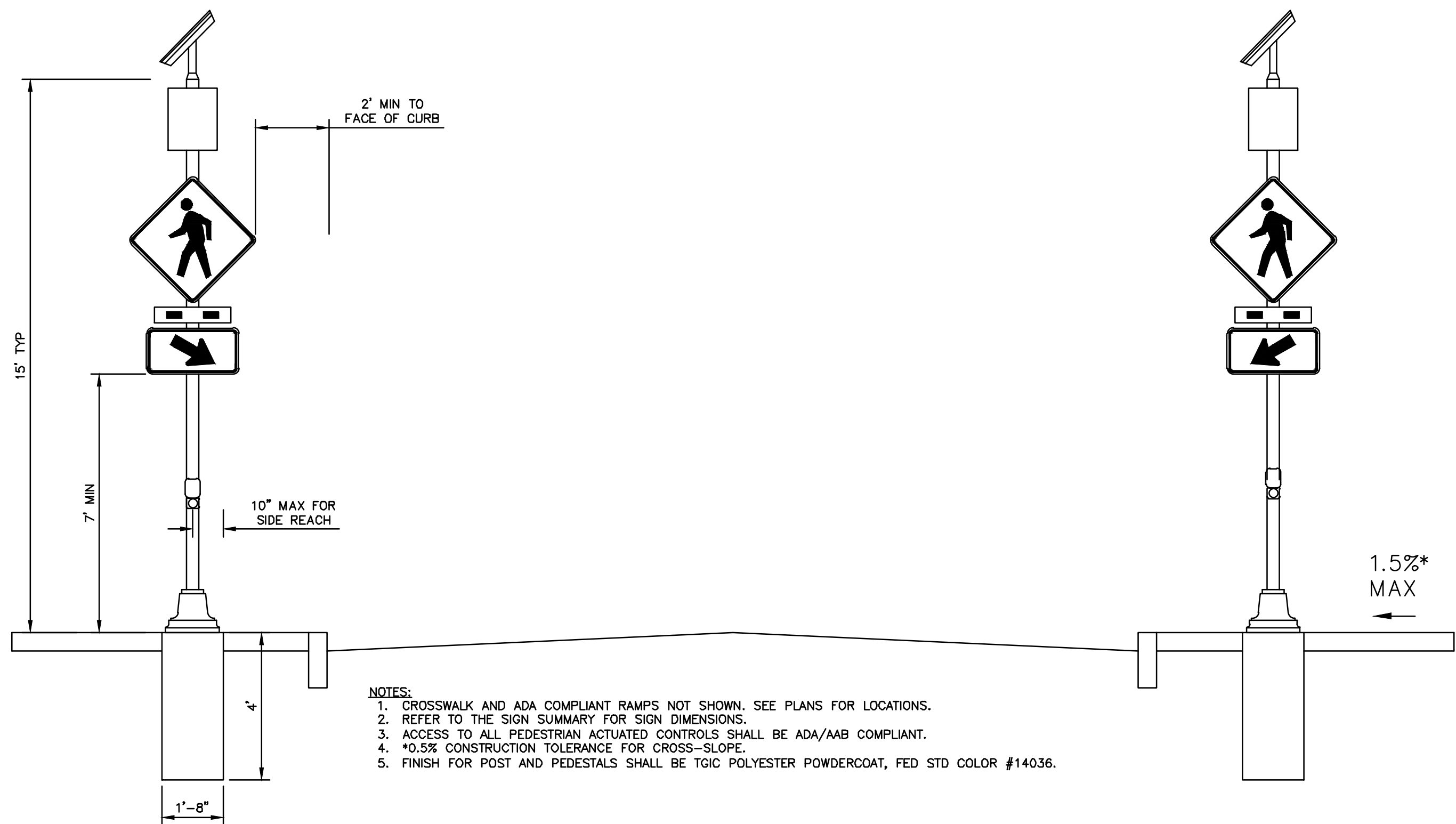
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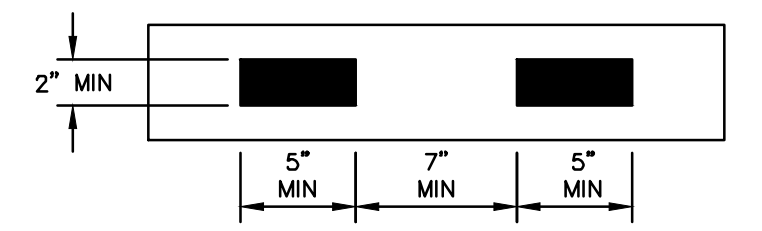
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 JOB: NO: 8-9985.01



PLAN VIEW  
 STA. 45+50 TO STA. 53+67  
 SCALE: 1" = 40'  
 0 20 40 80 FEET



- NOTES:
- CROSSWALK AND ADA COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
  - REFER TO THE SIGN SUMMARY FOR SIGN DIMENSIONS.
  - ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
  - \*0.5% CONSTRUCTION TOLERANCE FOR CROSS-SLOPE.
  - FINISH FOR POST AND PEDESTALS SHALL BE TOIC POLYESTER POWDERCOAT, FED STD COLOR #14036.



DETAIL A: DUAL YELLOW BEACON

- EXISTING KIOSK NOTES  
 AT A MINIMUM THE FOLLOWING RULES ARE TO BE ADDED TO EXISTING KIOSKS:
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  - NO MOTORIZED EQUIPMENT ALLOWED EXCEPT FOR MEDICALLY NECESSARY EQUIPMENT
  - NON-MOTORIZED BIKING ONLY ON PATHWAY. NO OFF-ROAD BIKING IS ALLOWED
  - NO SWIMMING OF ANY KIND, INCLUDING PETS
  - PETS MUST BE KEPT ON A LEASH AT ALL TIMES

**RECTANGULAR RAPID FLASH BEACON**

SCALE: NONE

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**RAINGARDEN SOIL NOTES**

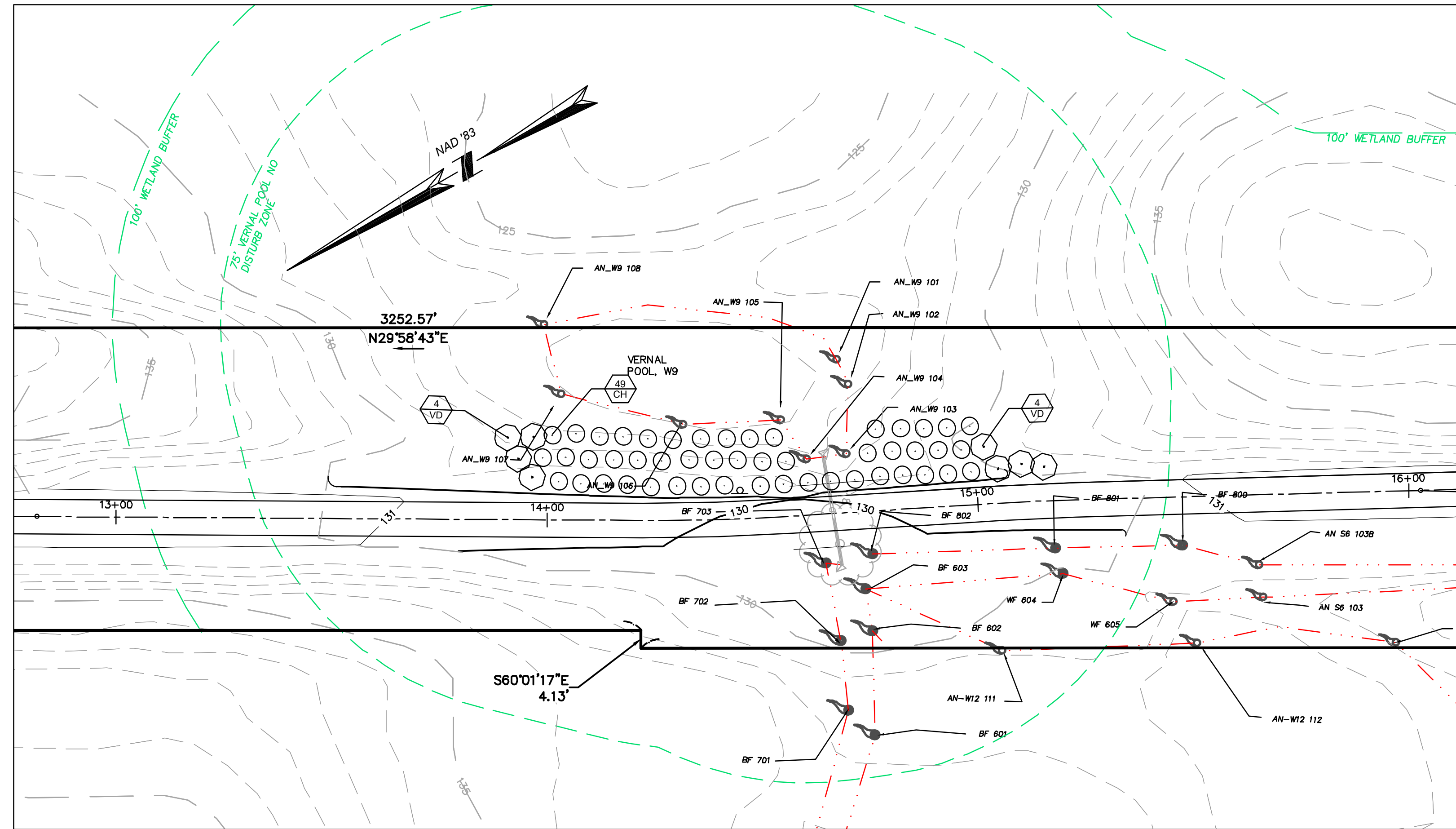
- A HORIZON/TOPSOIL:**
1. REMOVE AND DISPOSE SOLID WASTE FROM THE SOIL SURFACE AND DISPOSE IN ACCORDANCE WITH REGULATIONS.
  2. ADDITIONAL TOPSOIL MATERIAL MAY BE NEEDED TO ACHIEVE A PROPOSED HORIZON/TOPSOIL DEPTH.
  3. ADDITIONAL TOPSOIL SHALL BE NATURAL, FERTILE, PRODUCTIVE, AND CLOSELY MATCH THE ORGANIC CONTENT AND USDA TEXTURAL CLASSIFICATION OF THE ON-SITE WETLAND TOP SOIL.
  4. OFFSITE SUPPLEMENTAL TOPSOIL SHALL BE HAND MIXED WITH ONSITE TOPSOIL. CONTRACTOR SHALL PROVIDE A DESCRIPTION OF THE SOURCE, PREPARATION, STOCKPILING AND PLACEMENT OF TOPSOIL BROUGHT FROM OFFSITE.
  5. WETLAND TOPSOIL SHALL BE MANAGED TO MAINTAIN A LOOSE TO FRIABLE CONSISTENCY, AND TO AVOID BOTH OVER-COMPACTION AND UNDER-COMPACTION.
  6. EXISTING A HORIZON/TOPSOIL AND OFFSITE SUPPLEMENTAL TOPSOIL SHALL BE TESTED TO DETERMINE ORGANIC CONTENT, USDA TEXTURAL CLASSIFICATION, SIEVE ANALYSIS, pH, AND NUTRIENT AND MICRO-NUTRIENT ANALYSIS.
  7. IF COMPOSITION OF EXISTING A HORIZON/TOPSOIL DOES NOT INCLUDE A MINIMUM OF 10% ORGANIC CONTENT BY WEIGHT ON COMBUSTION IT SHALL BE AMENDED WITH ADDITIONAL ORGANIC COMPOST AS DIRECTED BY THE WETLAND SCIENTIST.
  8. THE LANDSCAPE CONTRACTOR SHALL FURNISH LOAM BORROW TOPSOIL AND/OR COMPOST. THESE SHALL BE FERTILE, FRIABLE, NATURAL AND PRODUCTIVE TOPSOIL WITHOUT ADMIXTURE OF SUBSOIL AND SHALL BE REASONABLY FREE OF STONES, LUMPS, ROOTS, STICKS INVASIVE SEED OR STOCK AND OTHER FOREIGN MATTER. PROVIDE SOIL TEST REPORTS FOR ONSITE TOP SOIL TO BE REUSED AND FOR LOAM BORROW TO BE IMPORTED. SOIL TEST REPORT SHALL INCLUDE USDA TEXTURAL CLASSIFICATION TEXTURAL SIEVE ANALYSIS, AS WELL AS NUTRIENT ANALYSIS, AND MICRO-NUTRIENTS.
  9. FERTILIZER SHALL NOT BE APPLIED PER THE PROVISIONS OF 330 CMR 31.00-31.11.
  10. PROVIDE SOIL AMENDMENTS AS DIRECTED BY THE A/E BASED UPON THE FINDINGS OF SOIL TESTS PROVIDED FOR EXISTING TOP SOIL TO BE REUSED AND OR IMPORTED MATERIAL.

**RAIN GARDEN SEED MIX:**

1. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES FROM NEW ENGLAND WETLAND PLANTS INC. OR APPROVED EQUIVALENT.
2. FOR DETENTION BASINS THAT EXPERIENCE REGULAR INUNDATION BUT DO NOT HOLD STANDING WATER.
3. TO BE APPLIED BY HAND AND ROLLED WITH PUNCHED STRAW AND COMPOST MULCH TO INSURE GOOD SEED TO SOIL CONTACT.
4. LATE FALL AND WINTER DORMANT SEEDING REQUIRES A 25% INCREASE IN THE APPLICATION RATE.
5. APPLICATION RATE: 35 LBS/ACRE | 1250 SQ FT/LB
6. SPECIES TO INCLUDE: Virginia Wild Rye, (Elymus virginicus), Creeping Red Fescue, (Festuca rubra), Little Bluestem, (Schizachyrium scoparium), Big Bluestem, (Andropogon gerardii), Fox Sedge, (Carex vulpinoidea), Switch Grass, (Panicum virgatum), Rough Bentgrass, (Agrostis scabra), New England Aster, (Aster novae-angliae), Boneset, (Eupatorium perfoliatum), Grass Leaved Goldenrod, (Euthamia graminifolia), Green Bulrush, (Scirpus atrovirens), Blue Vervain, (Verbena hastata), Soft Rush, (Juncus effusus), Wool Grass, (Scirpus cyperinus)

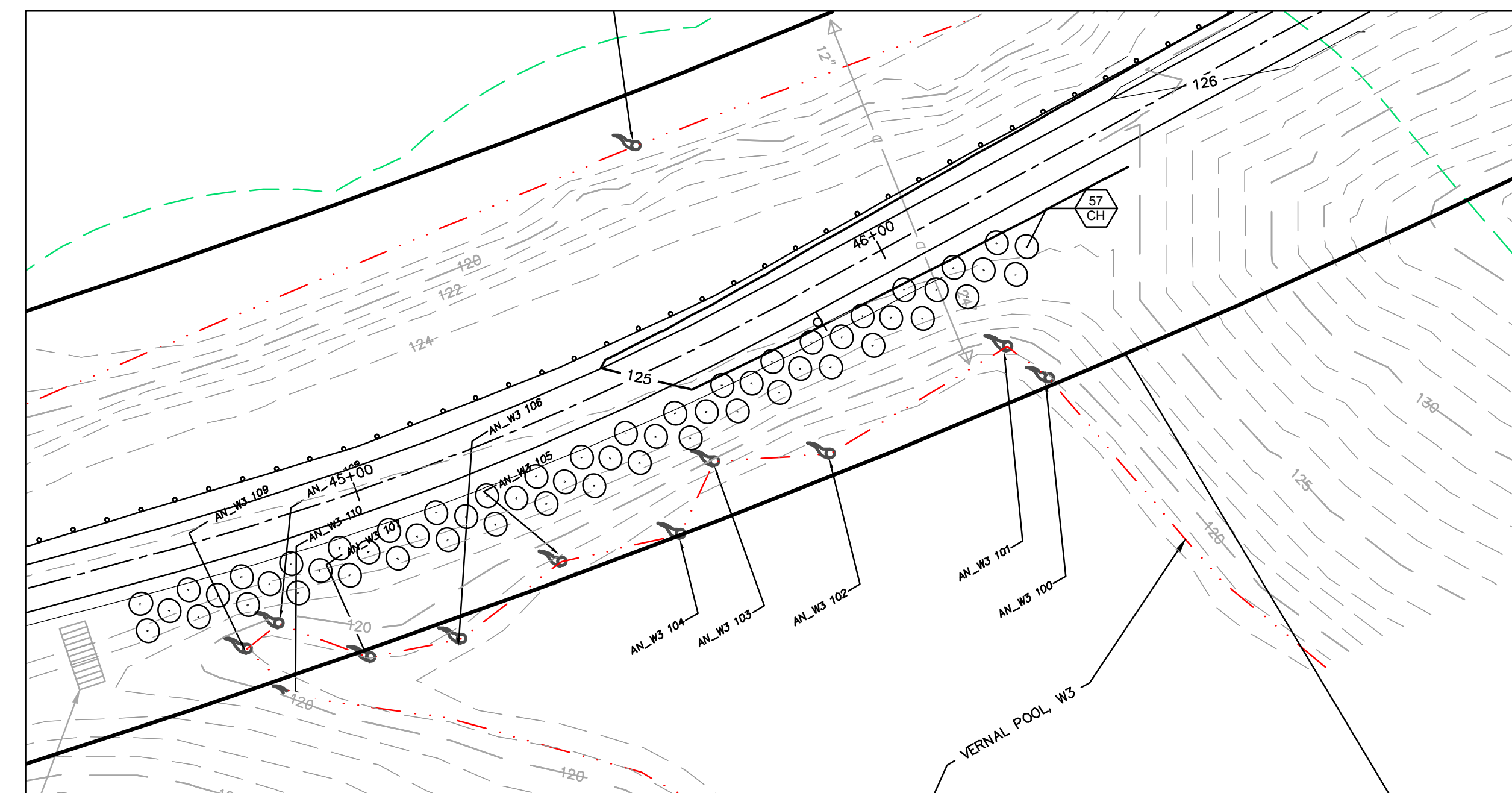
**PLANT SCHEDULE PROJECT MITIGATION AREAS**

CODE	QTY	BOTANICAL / COMMON NAME	CONT	HT.
<b>SHRUBS</b>				
CH	108	CLETHRA ALNIFOLIA SUMMERSWEET	3 GAL	18"-24"
VD	8	VIBURNUM DENTATUM ARROWWOOD VIBURNUM	3 GAL	18"-24"



**PROJECT MITIGATION AREA-1 @ STA 14+00± RT**

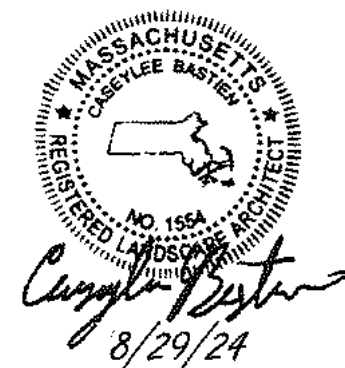
SCALE: 1"=20'



**PROJECT MITIGATION AREA-3 @ STA 45+00± RT**

SCALE: 1"=10'

**ISSUED FOR PERMITTING  
NOT FOR CONSTRUCTION**



LANDSCAPE ARCHITECT

**HAGGETTS POND  
RAIL TRAIL**

IN  
ANDOVER,  
MASSACHUSETTS

**LANDSCAPE PLAN**

NOVEMBER 7, 2023

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	12/21/23	REDUCED ENV. IMPACTS
2	4/16/24	PEER REVIEW COMMENTS
3	7/17/24	PEER REVIEW COMMENTS
4	8/29/24	PEER REVIEW COMMENTS

PREPARED FOR:  
TOWN OF ANDOVER  
36 BARTLET STREET  
ANDOVER, MA, 01810

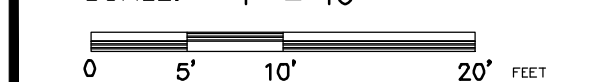


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01810

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SCALE: 1" = 10'

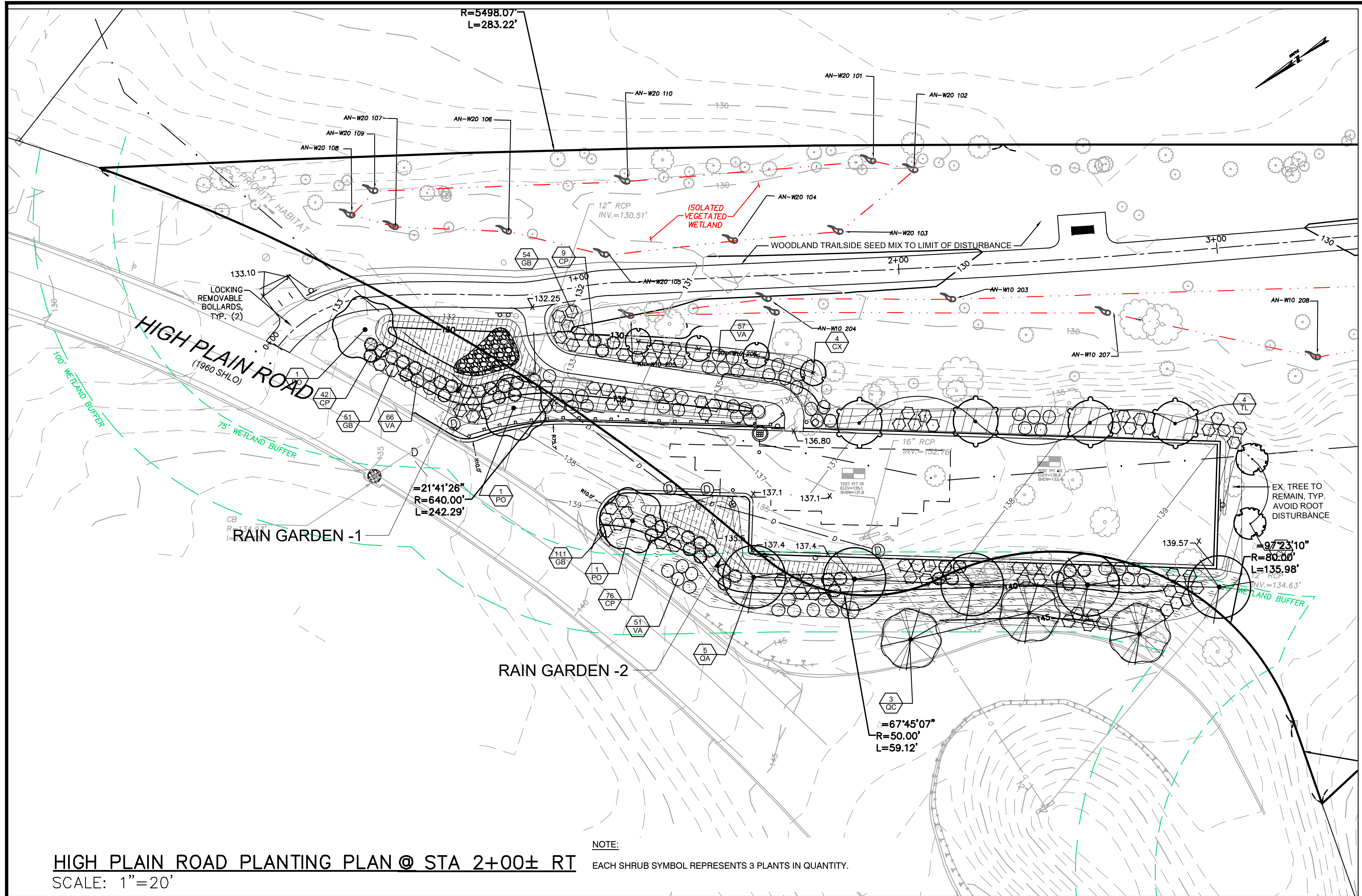


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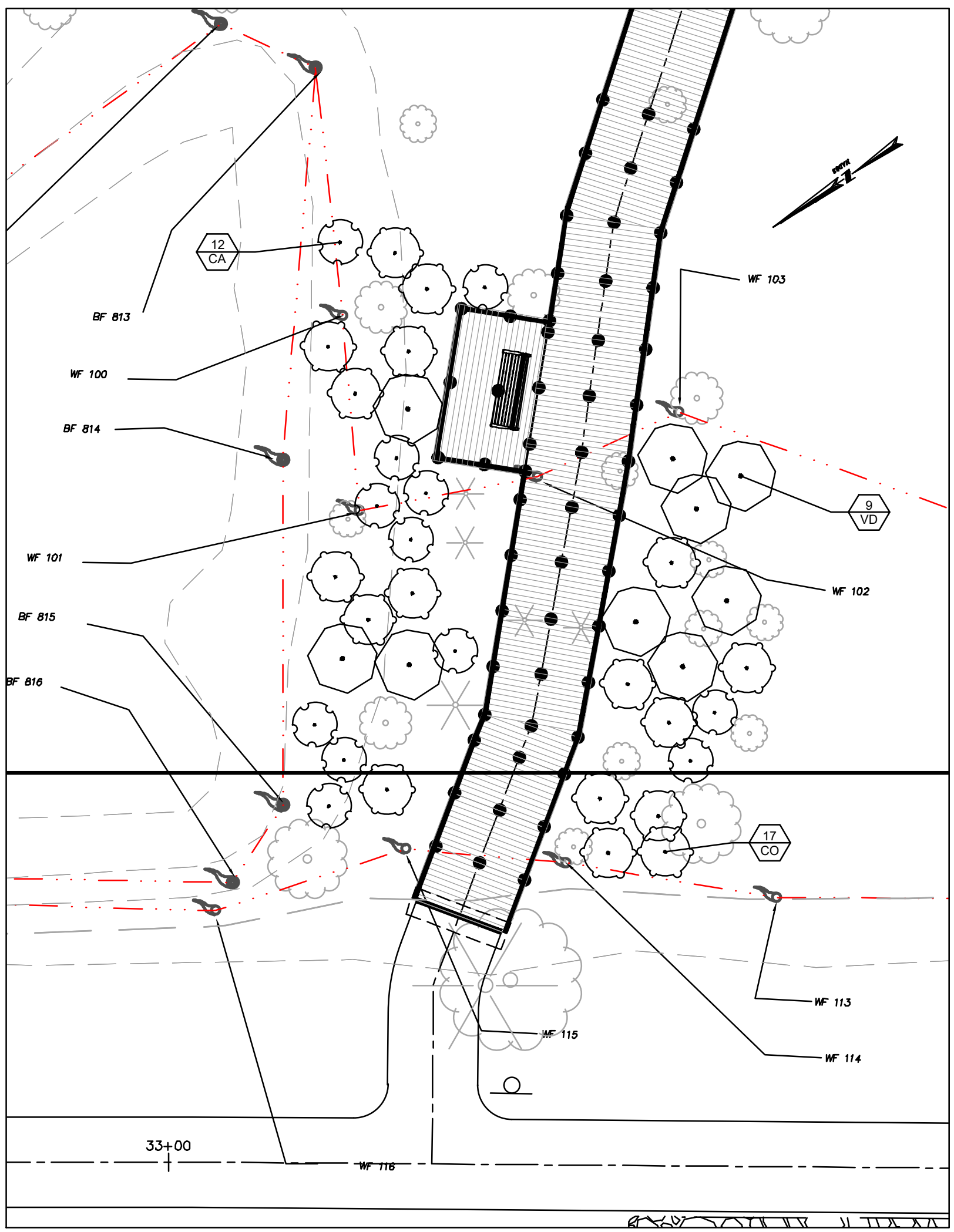
DWG.: L-100

JOB. NO: 8-9985.01

SHEET L-100



**HIGH PLAIN ROAD PLANTING PLAN @ STA 2+00± RT**  
SCALE: 1"=20'



**WETLAND MITIGATION AT BOARDWALK @ STA 33+00± RT**  
SCALE: 1"=10'

**SEED MIX LEGEND**

- RAIN GARDEN SEED MIX
- NATIVE WOODLAND TRILSIDE SEED MIX
- UPLAND SUN NATIVE WILDFLOWER SEED MIX

**RAIN GARDEN SEED MIX**

New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites by NEWP.COM or approved equivalent

Botanical Name	Common Name	Indicator
<i>Elymus riparius</i>	Riverbank Wild Rye	FACW
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Agrostis perennans</i>	Upland Bentgrass	FACU
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL
<i>Eupatorium perfoliatum</i>	Boneset	FACW
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Scirpus cyperinus</i>	Wool Grass	FACW
<i>Juncus effusus</i>	Soft Rush	FACW+

**NATIVE WOODLAND TRILSIDE SEED MIX**

New England Logging Road Mix by NEWP.COM or approved equivalent

Botanical Name	Common Name	Indicator
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Agrostis perennans</i>	Upland Bentgrass	FACU
<i>Juncus tenuis</i>	Path Rush	FAC
<i>Juncus effusus</i>	Soft Rush	FACW+

**UPLAND SUN NATIVE WILD FLOWER SEED MIX**

New England Wildflower Mix by NEWP.COM or approved equivalent

Botanical Name	Common Name	Indicator
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Elymus canadensis</i>	Canada Wild Rye	FACU+
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Oenothera biennis</i>	Evening Primrose	FACU-
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Solidago juncea</i>	Early Goldenrod	FACU-
<i>Eupatorium fistulosum (Eutrochium fistulosum)</i>	Hollow-Stem Joe Pye Weed	FACW
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW

**PLANT SCHEDULE RAIN GARDEN AREAS**

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
<b>TREES</b>				
CX	4	CORNUS ALATUS	15 GAL	1.5°CAL
CV	2	PAGODA DOGWOOD	B & B	2-2.5° CAL
PO	3	CRATAEGUS VIRIDIS	5 GAL	2.5°CAL
QA	5	GREEN HAWTHORN	B & B	3.5°CAL
QC	3	PLATANUS OCCIDENTALIS	B & B	2.5°CAL
TL	4	AMERICAN SYCAMORE	B & B	2-2.5° CAL
<b>SHRUBS</b> EACH SHRUB SYMBOL REPRESENTS 3 PLANTS IN QUANTITY.				
CP	192	COMPTONIA PEREGRINA	1 GAL	
GB	171	SWEET FERN	1 GAL	
VA	174	GAYLUSSACIA BACCATA	1 GAL	
		BLACK HUCKLEBERRY		
		VACCINIUM ANGUSTIFOLIUM		
		LOWBUSH BLUEBERRY		

**PLANT SCHEDULE WETLAND MINIGATION AREA**

CODE	QTY	BOTANICAL / COMMON NAME	CONT	HT.
<b>SHRUBS</b>				
CO	17	CEPHALANTHUS OCCIDENTALIS	2 GAL	
CA	12	BUTTONBUSH	5 GAL	
VD	9	CORNUS AMOMUM	3 GAL	
		SILKY DOGWOOD		
		VIBURNUM DENTATUM		
		ARROWWOOD VIBURNUM		

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NOT FOR CONSTRUCTION



MASSACHUSETTS LANDSCAPE ARCHITECT  
No. 1554  
Cynthia D'Amico  
8/29/24

LANDSCAPE ARCHITECT

**HAGGETTS POND RAIL TRAIL**  
IN  
ANDOVER,  
MASSACHUSETTS  
**LANDSCAPE PLAN**

NOVEMBER 7, 2023

REVISIONS:

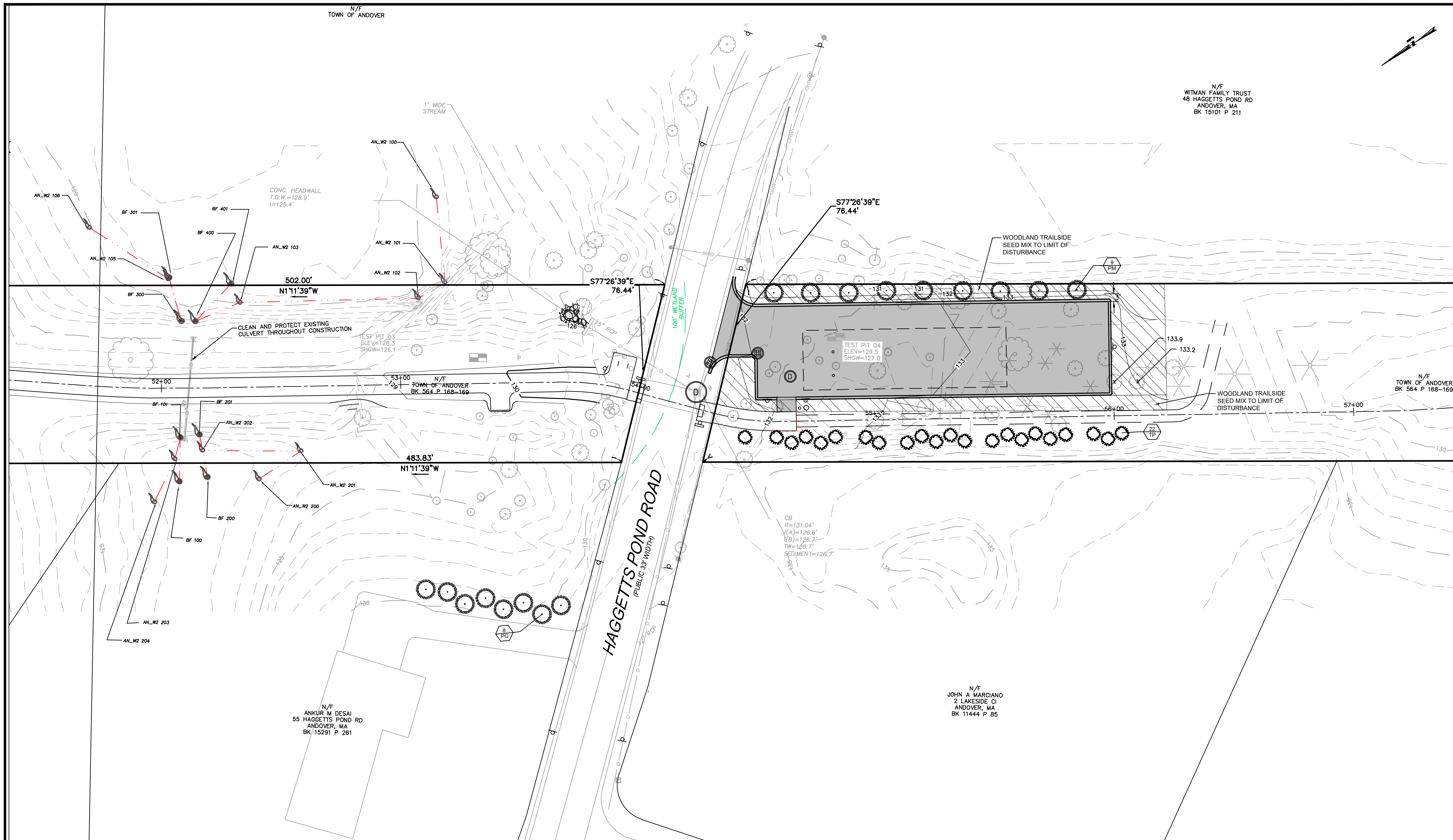
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PREPARED FOR:  
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ANDOVER, MA, 01810

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SCALE: 1" = 10'  
0 5' 10' 20' FEET

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DWG: L-101  
JOB: NO: 8-9985.01 SHEET L-101



LANDSCAPE ARCHITECT

*Cynthia D'Amico*  
8/29/24

HAGGETTS POND  
RAIL TRAIL

IN  
ANDOVER,  
MASSACHUSETTS

LANDSCAPE PLAN

NOVEMBER 7, 2023

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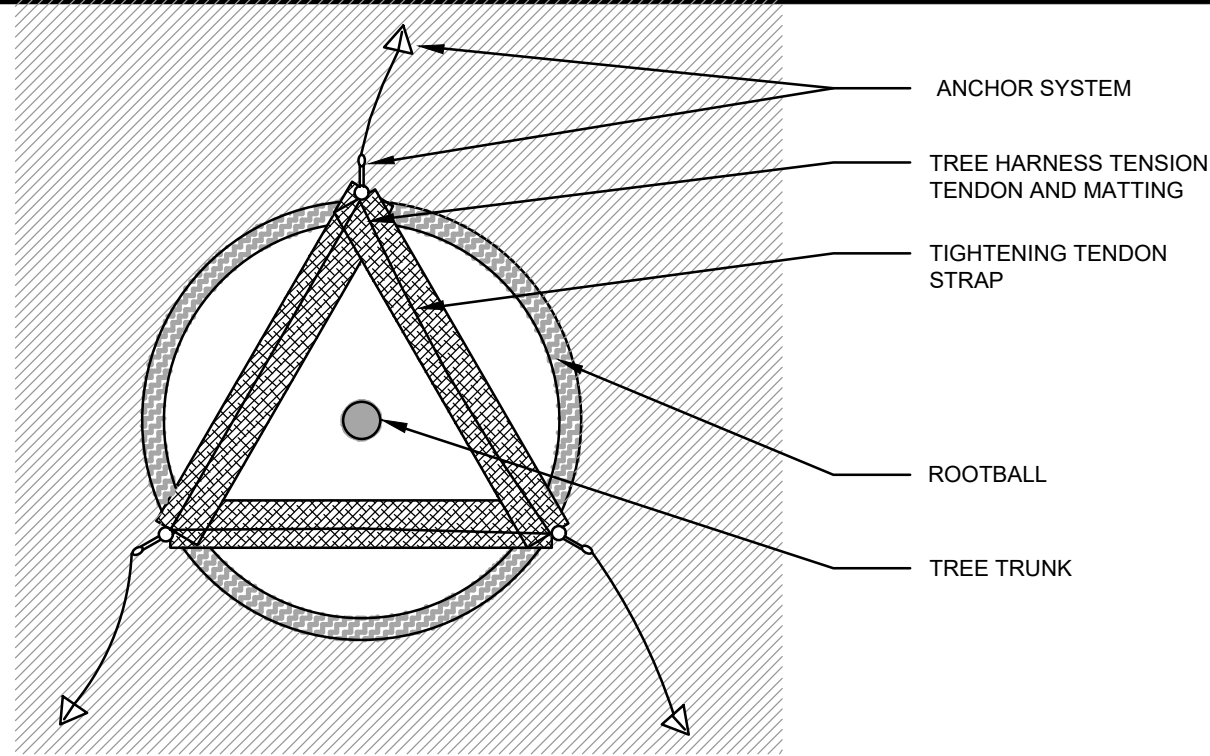
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SCALE: 1" = 10'  
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JOB. NO: 8-9985.01

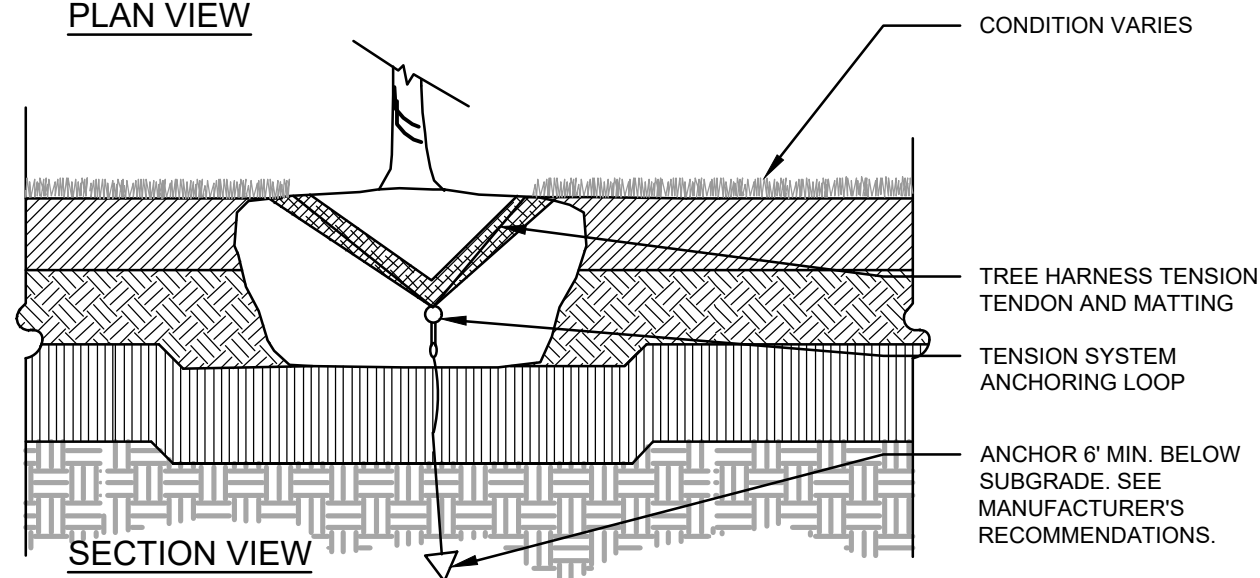
PLANT\_SCHEDULE\_PARKING\_&\_NEIGHBOR\_DRIVeway\_AREAS

CODE	QTY	BOTANICAL / COMMON NAME	CONT	SIZE
<b>TREES</b>				
PG	8	PICEA GLAUCO WHITE SPRUCE	B & B	6'-7' HT.
PM	9	PICEA MARIANA BLACK SPRUCE	B & B	4'-6' HT.
TP	22	THUJA PLICATA WESTERN WHITE CEDAR 'GREEN GIANT'	B & B	4'-6' HT.

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PLAN VIEW



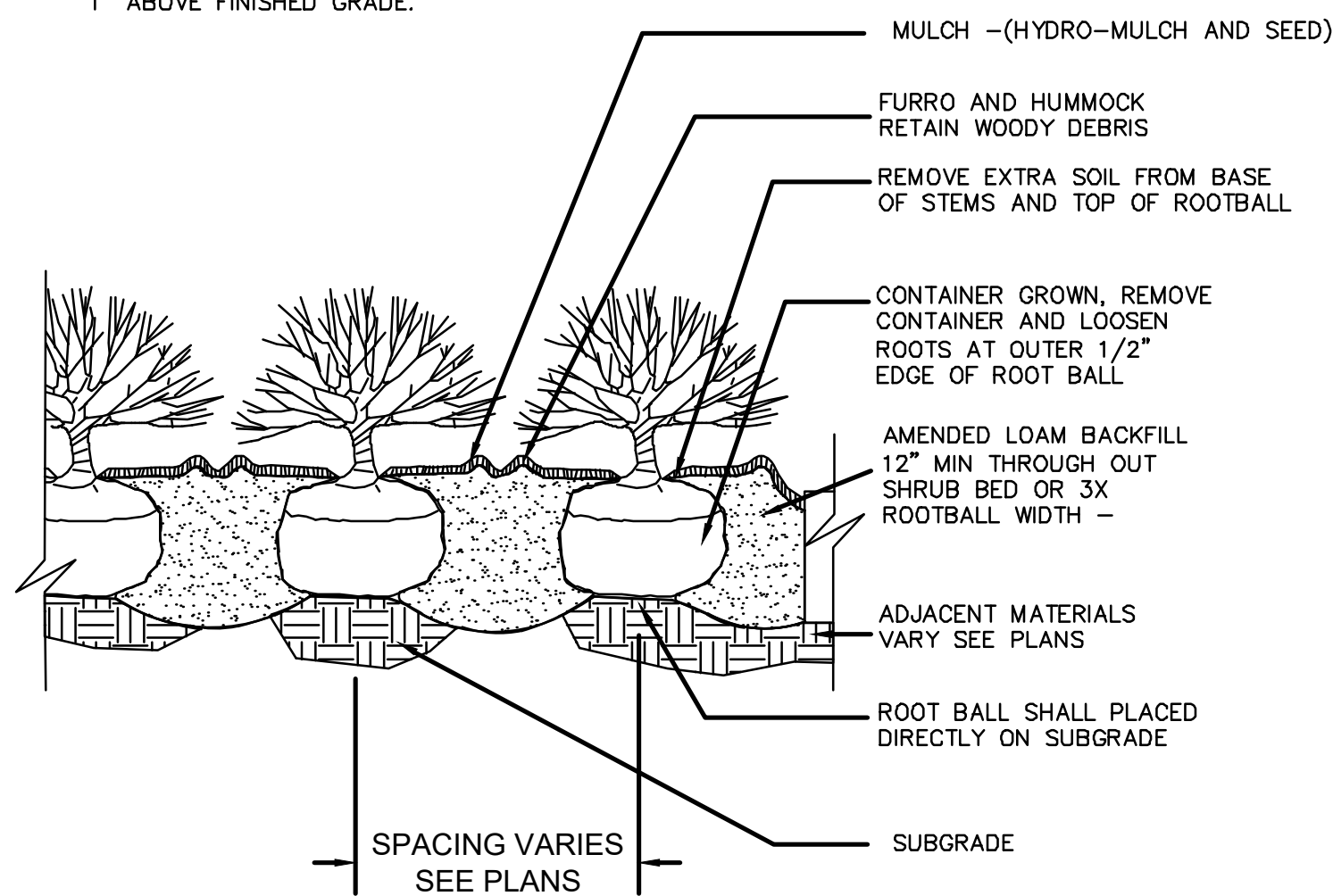
SECTION VIEW

**TREE HARNESS SYSTEM**

SCALE: NONE

**NOTES:**

1. NO PRUNING OR CUTTING UNLESS DIRECTED BY THE ENVIRONMENTAL SCIENTIST.
2. WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 48 HOURS AFTER PLANTING.
3. SHRUBS SHALL BE SET PLUMB AND PLANTED SO THAT THE TOP OF THE ROOTBALL IS 1" ABOVE FINISHED GRADE.

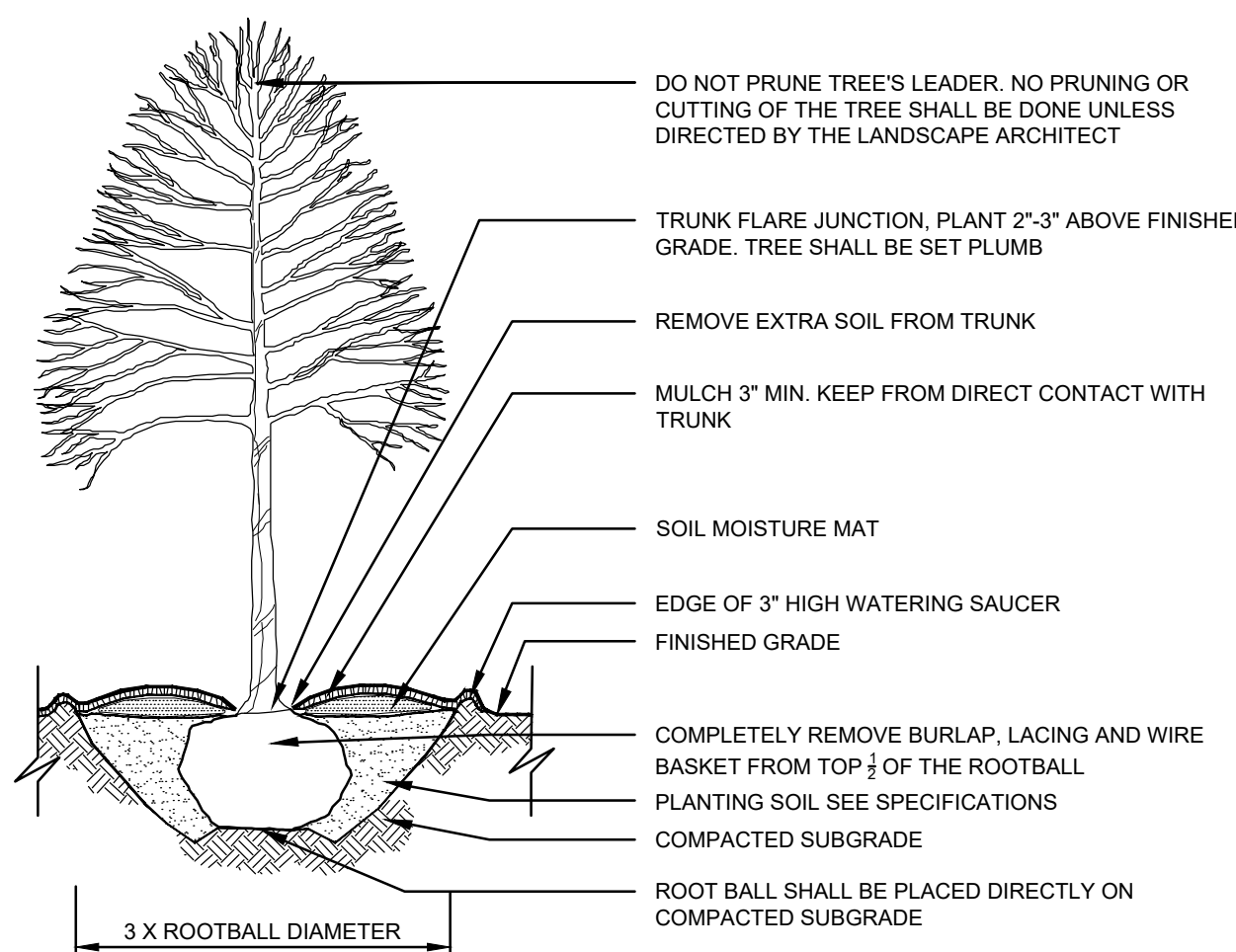


**TREE/ SHRUB PLANTING - (WETLAND)**

SCALE: NONE

**NOTES:**

1. CONTRACTOR RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB CONDITION USING BELOW GRADE ANCHORS. SEE DETAIL BELOW.
2. SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
3. PROVIDE SOIL MOISTURE MAT FOR ALL NEW TREES.

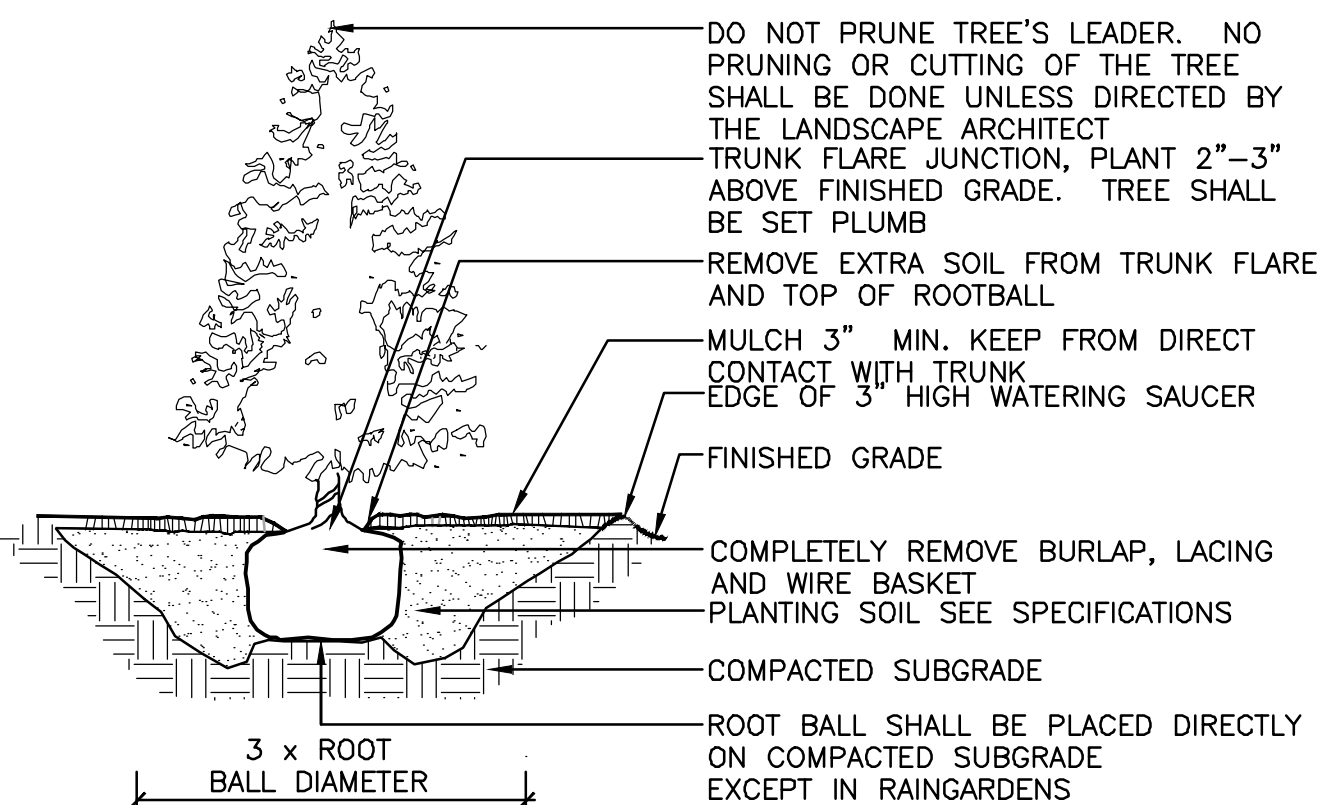


**DECIDUOUS TREE PLANTING DETAIL**

SCALE: NONE

**NOTES:**

1. WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING.
2. PROVIDE AND INSTALL 36" TREE DIAPER (IF NOT INSTALLING IRRIGATION).
3. CONTRACTOR RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB CONDITION.
4. PROVIDE BELOW GRADE TREE STABILIZATION AT ROOTBALL USING DEADMAN SYSTEM, ARBOR GUY, TREE STAPLE, OR APPROVED EQUAL. APPROVABLE TREE STABILIZATION SHALL NOT RESTRICT TREE OR ROOTBALL GROWTH.

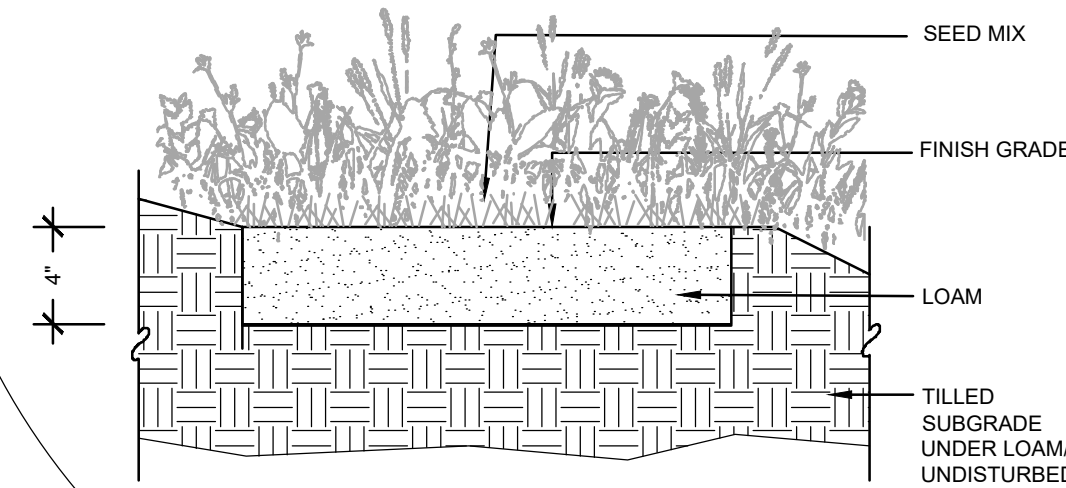


**EVERGREEN TREE PLANTING**

SCALE: NONE

**NOTES:**

1. SEE SPECIFICATION FOR SEED MIX APPLICATION AND PLANTING MEDIUM PREPARATION.
2. WHERE HYDRO-SEEDING IS NOT EMPLOYED, LOAMED AREAS SHALL BE RAKED TO LOOSEN SOILS, SEED SHALL BE SPREAD, AND THE ENTIRE SURFACE SHALL BE ROLLED TO BOND SEED TO SOIL SURFACE.

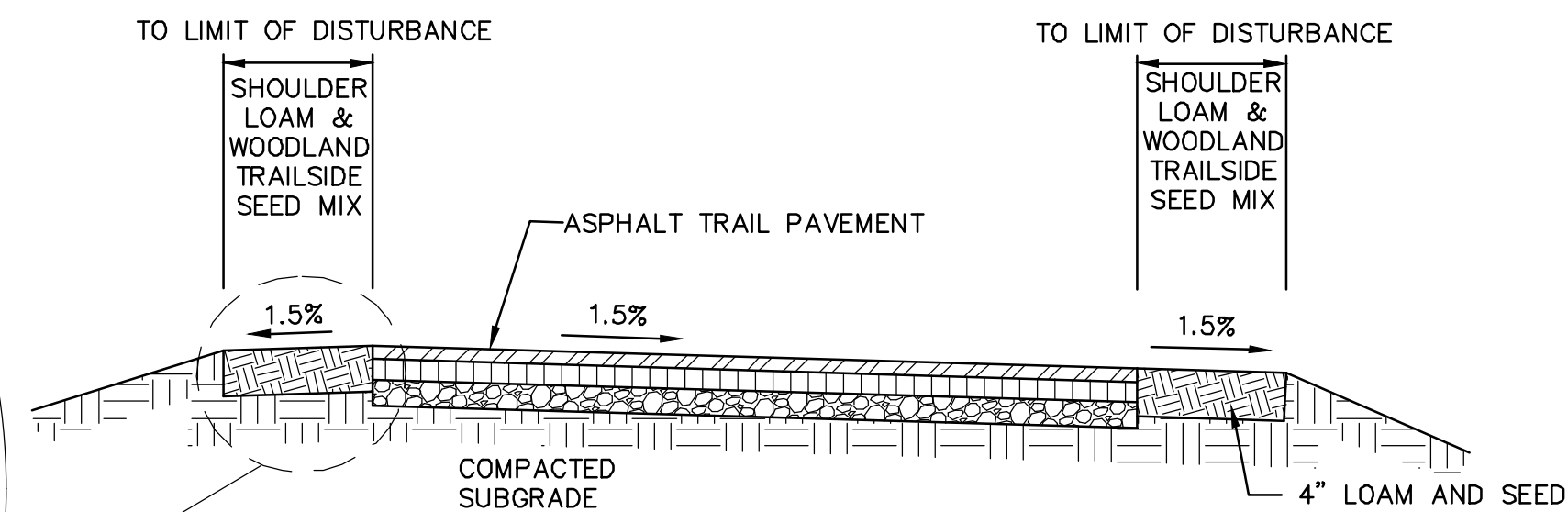


**NATURALIZED SEEDS SLOPE AT EDGE OF TRAIL**

SCALE: NONE

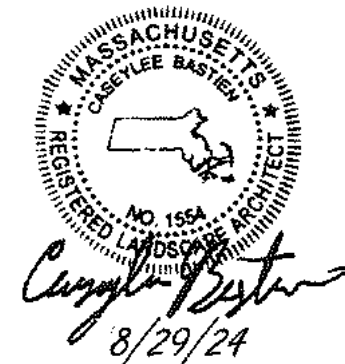
**GENERAL NOTES:**

1. SEED MIX FOR THE SHOULDER SHALL BE "NEW ENGLAND WETLAND PLANT'S 'NEW ENGLAND LOGGING ROAD MIX'" OR AN APPROVED EQUAL WOODLAND SEEDING MIX. PORTIONS OF THE TRAIL THAT ARE IN CONSTANT EXPOSURE TO SUNLIGHT OR NEXT TO PARKING AREAS SHALL RECEIVE "NEW ENGLAND WETLAND PLANT'S 'ROADSIDE MATRIX UPLAND SEED MIX'".
2. IF UNSUITABLE MATERIAL IS PRESENT ON TOP OF BALLAST, IT SHALL BE REMOVED PRIOR TO GRADING.
3. EXCESS BALLAST SHALL BE GRADED TO A CONSISTENT GRADE AND CROSS SLOPE.
4. ALL IMPORTED GRAVEL SHALL NOT CONTAIN ANY RECYCLED ASPHALT.



**RAIN GARDEN SECTION**

SCALE: NONE



LANDSCAPE ARCHITECT

**HAGGETTS POND RAIL TRAIL**

IN ANDOVER, MASSACHUSETTS

**LANDSCAPE DETAILS**

NOVEMBER 7, 2023

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SCALE: NOT TO SCALE

FEET

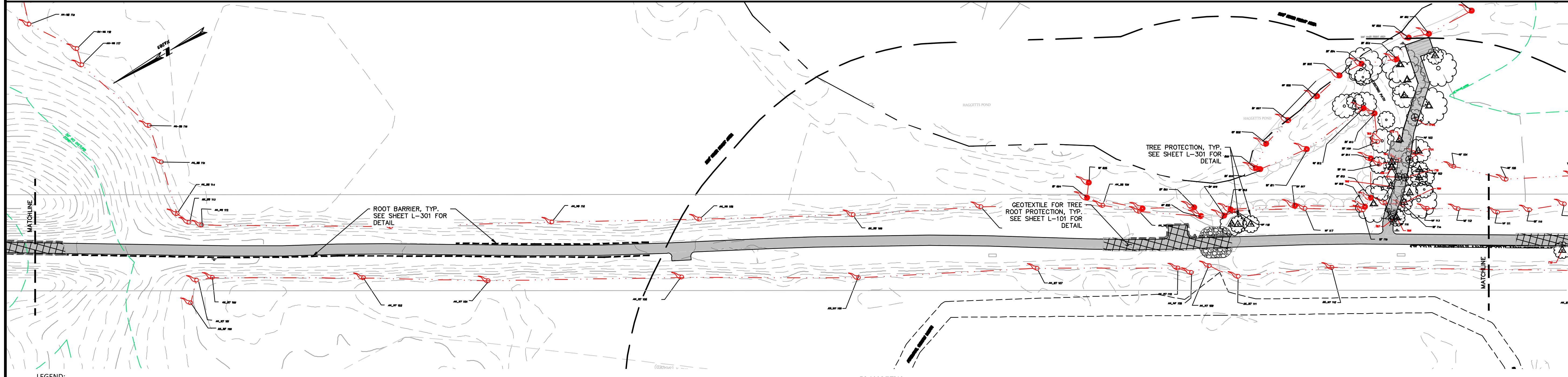
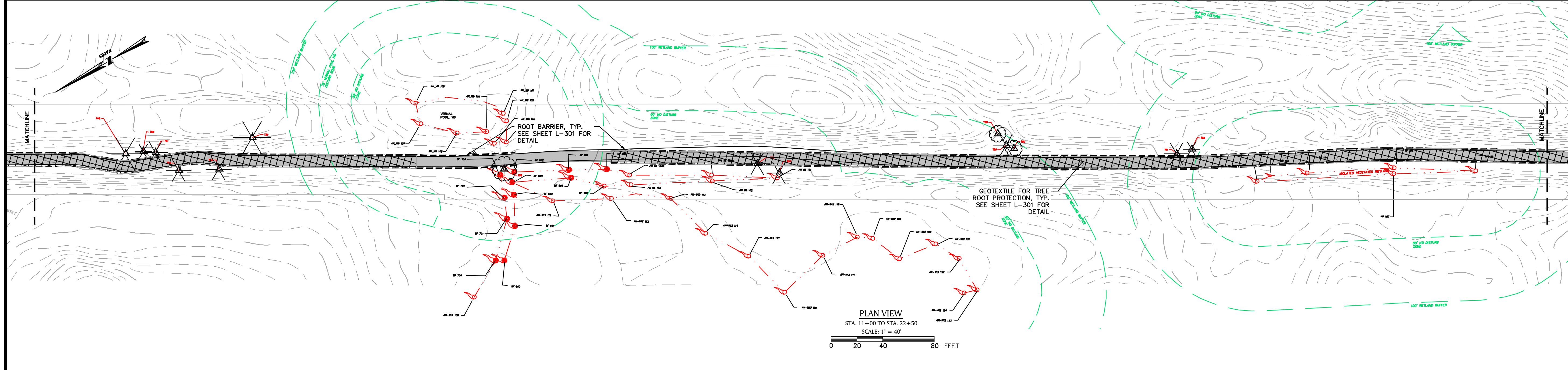
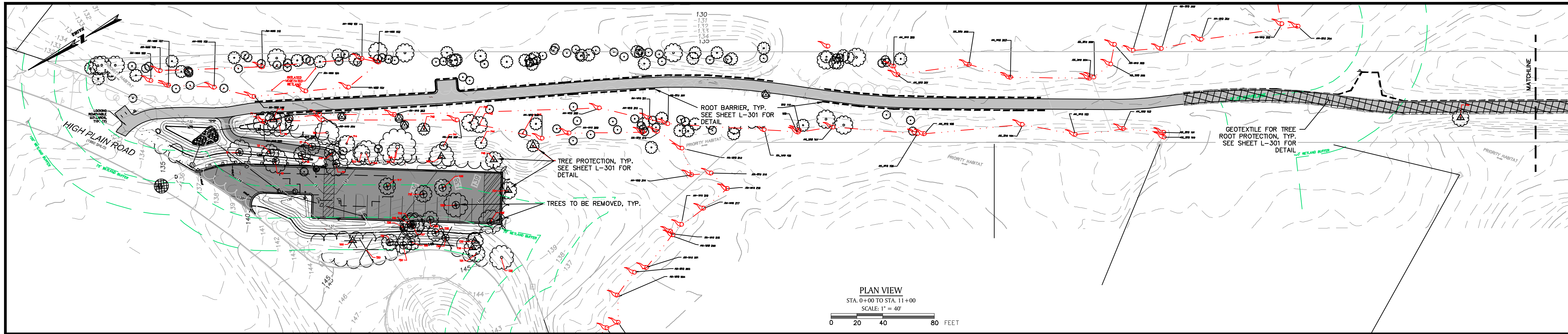
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DWG.: L-200

JOB. NO: 8-9985.01

SHEET L-200

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- LEGEND:**
- EDGE ROOT BARRIER EPDM
  - UNDERLAY 8oz. GEOTEXTILE 10' WIDE
  - TREE PROTECTION
  - TREES TO BE REMOVED

PLAN VIEW  
STA. 22+50 TO STA. 34+00  
SCALE: 1" = 40'  
0 20 40 80 FEET

**ISSUED FOR PERMITTING  
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COMMONWEALTH OF MASSACHUSETTS  
DAVID P. BIANCIVILLA  
CIVIL ENGINEER  
REGISTERED PROFESSIONAL ENGINEER  
*David P. Biancivilla*  
PROFESSIONAL ENGINEER DATE

**HAGGETTS POND  
RAIL TRAIL**  
  
IN  
ANDOVER,  
MASSACHUSETTS  
  
**TREE AND ROOT  
ZONE PROTECTION  
PLAN**  
  
NOVEMBER 7, 2023

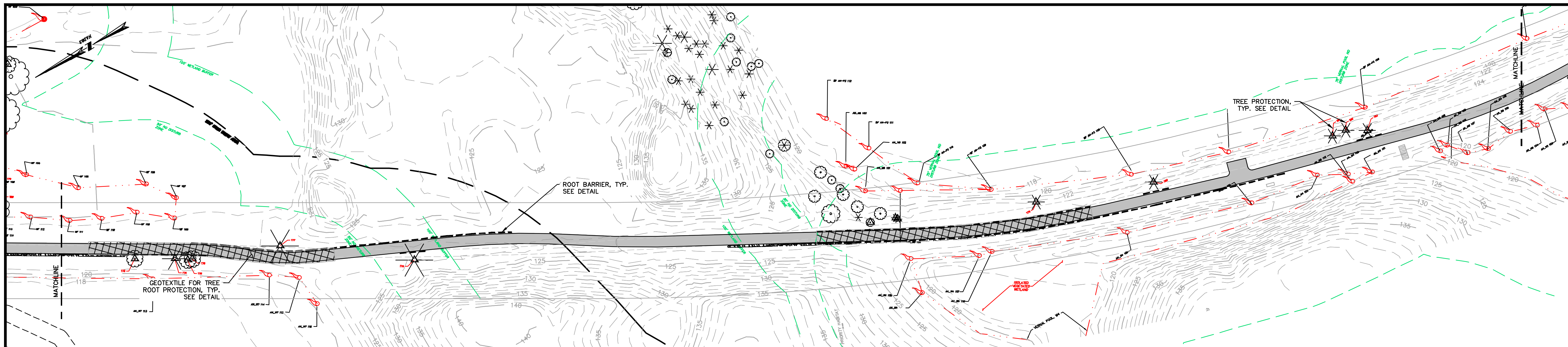
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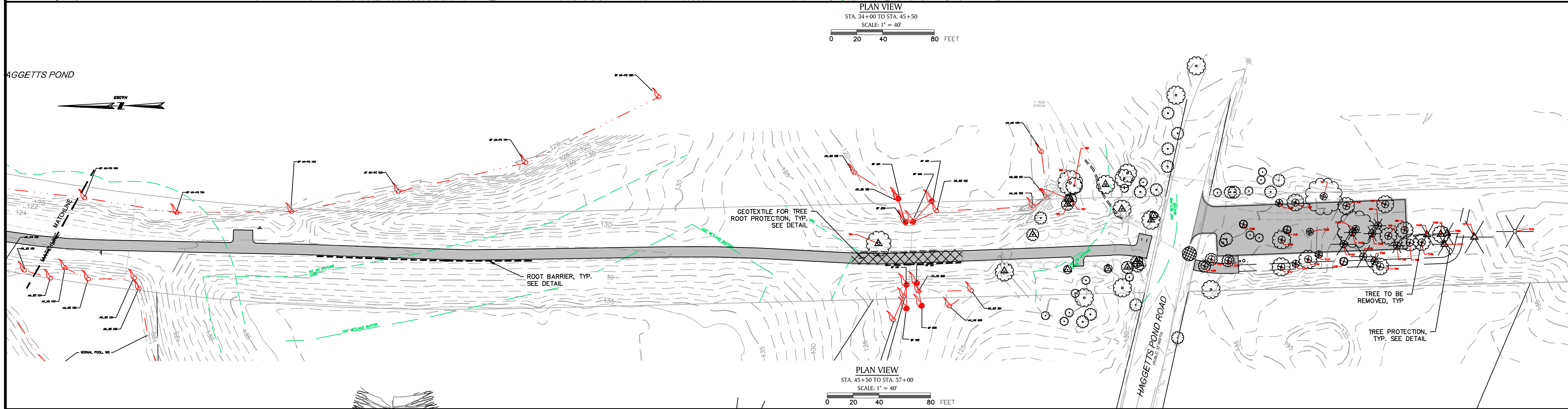
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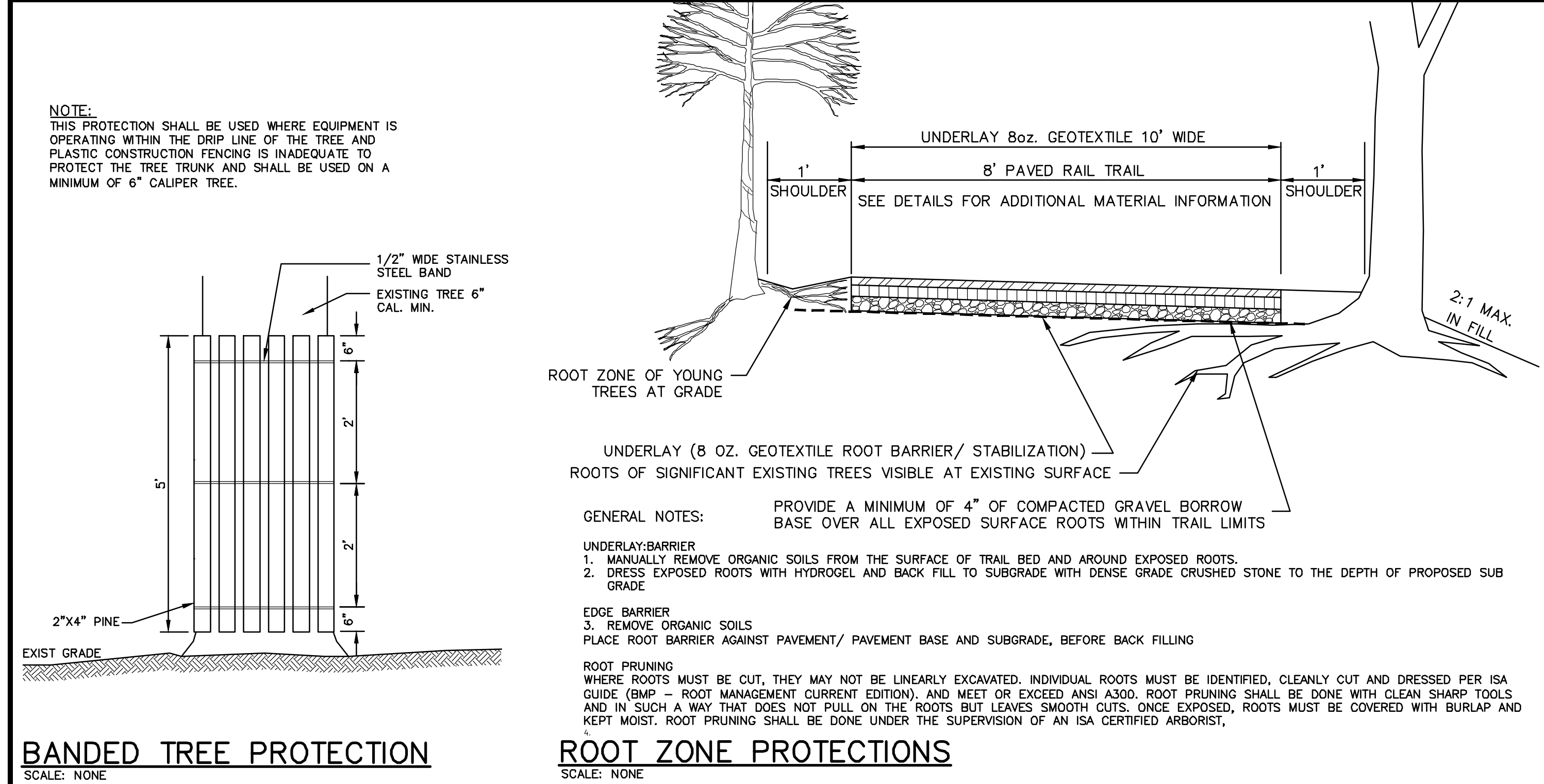
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DWG: L-300 SHEET L-300  
JOB. NO: 8-9985.01



PLAN VIEW  
STA. 34+00 TO STA. 45+50  
SCALE: 1" = 40'  
0 20 40 80 FEET

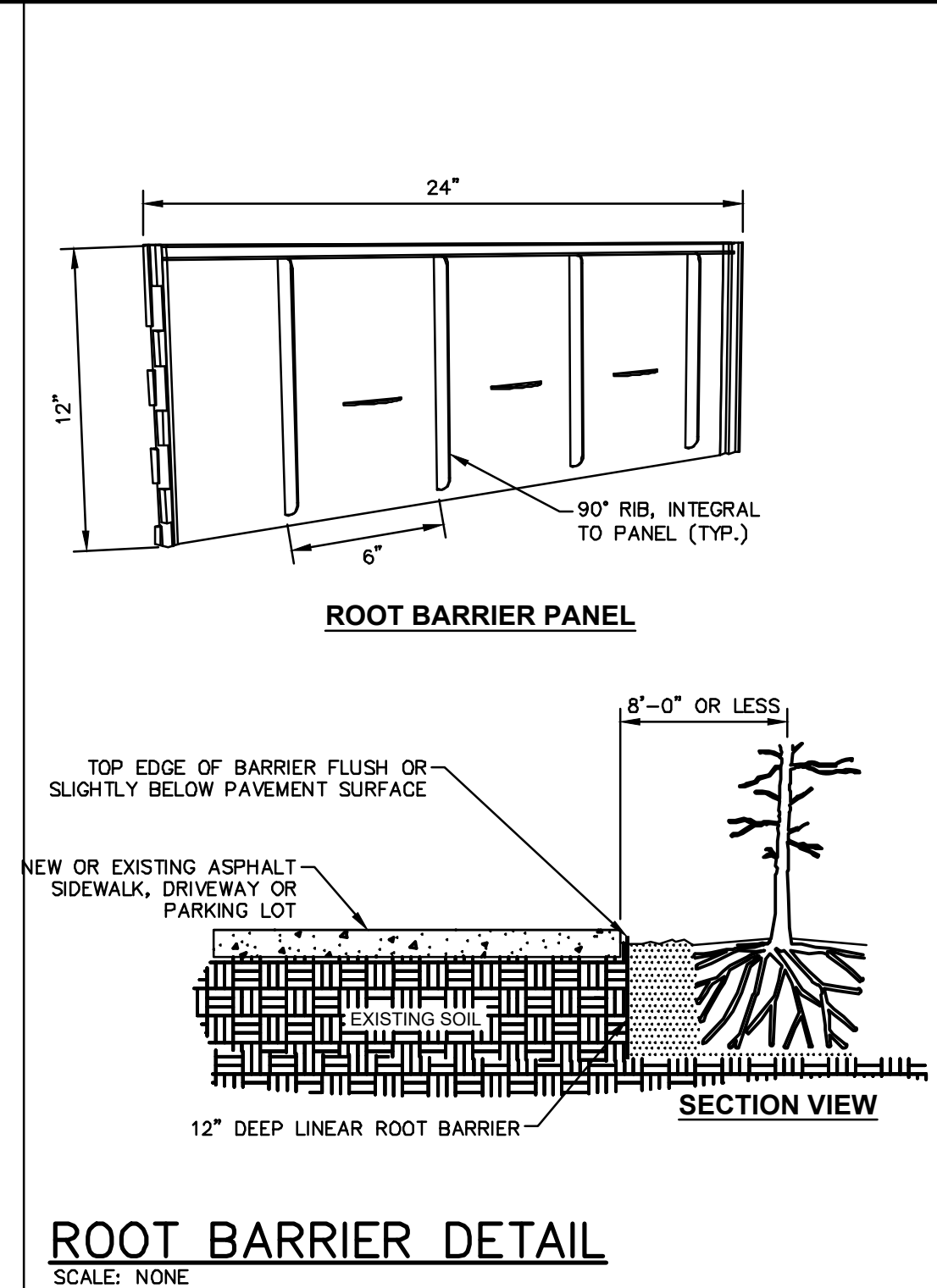


PLAN VIEW  
STA. 45+50 TO STA. 57+00  
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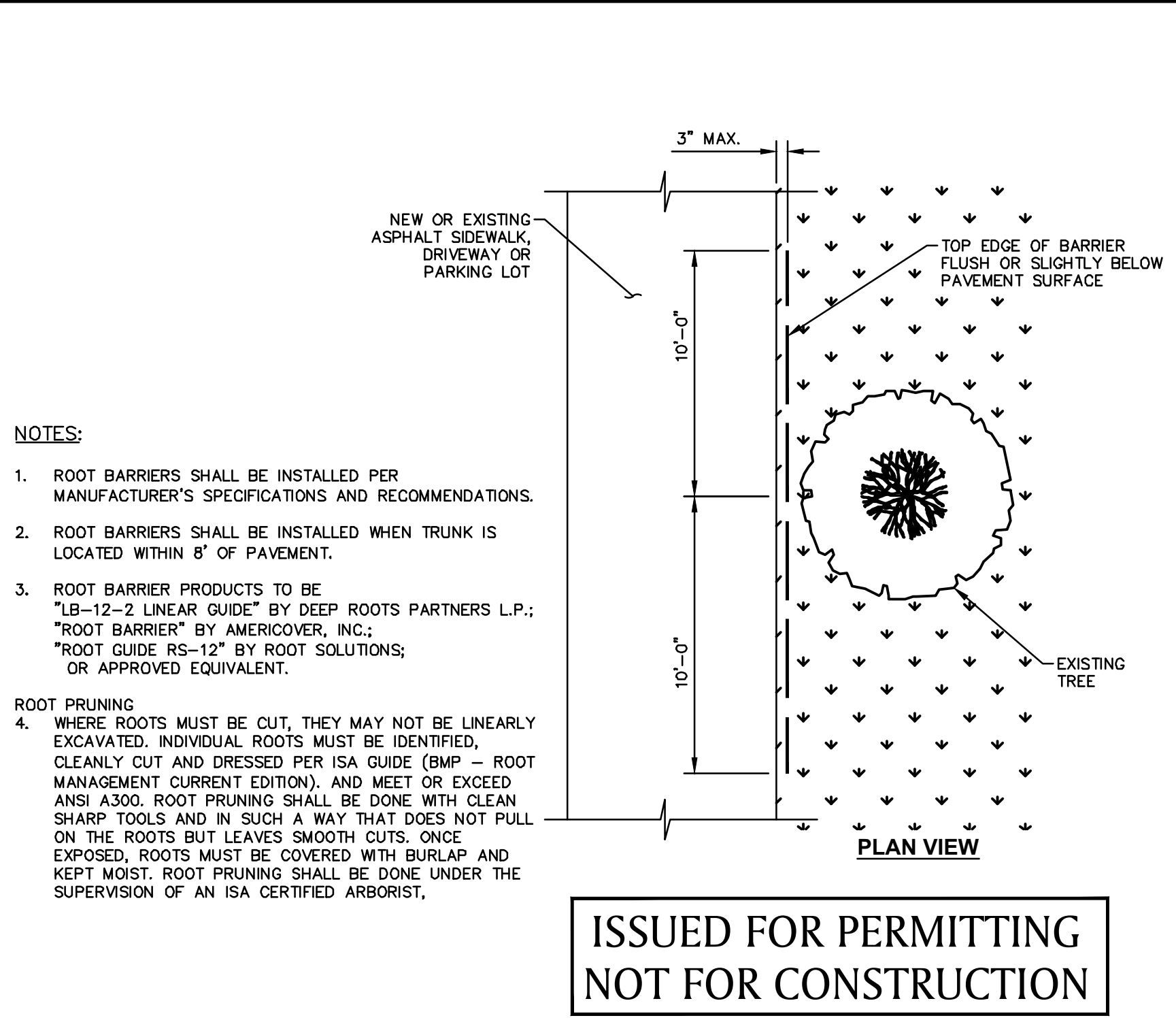


**BANDED TREE PROTECTION**  
SCALE: NONE

**ROOT ZONE PROTECTIONS**  
SCALE: NONE



**ROOT BARRIER DETAIL**  
SCALE: NONE



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COMMONWEALTH OF MASSACHUSETTS  
DAVID P. BIANCIVILLA  
CIVIL ENGINEER  
REGISTERED PROFESSIONAL ENGINEER  
DATE

**HAGGETTS POND RAIL TRAIL**  
IN  
ANDOVER, MASSACHUSETTS  
**TREE AND ROOT ZONE PROTECTION PLAN**  
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0 20 40 80 FEET  
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