

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF
BRUCE FREEMAN RAIL TRAIL
PHASE 3
IN THE TOWN OF
SUDBURY & FRAMINGHAM
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. -

PRE-25% SUBMITTAL

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	1	TBD
PROJECT FILE NO.		613319	

TITLE SHEET & INDEX

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

SHARED-USE PATH DESIGN DESIGNATION

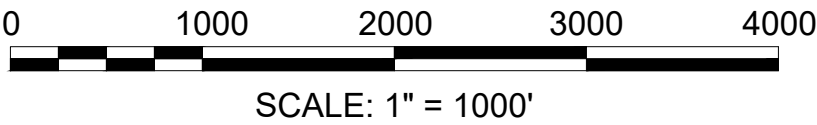
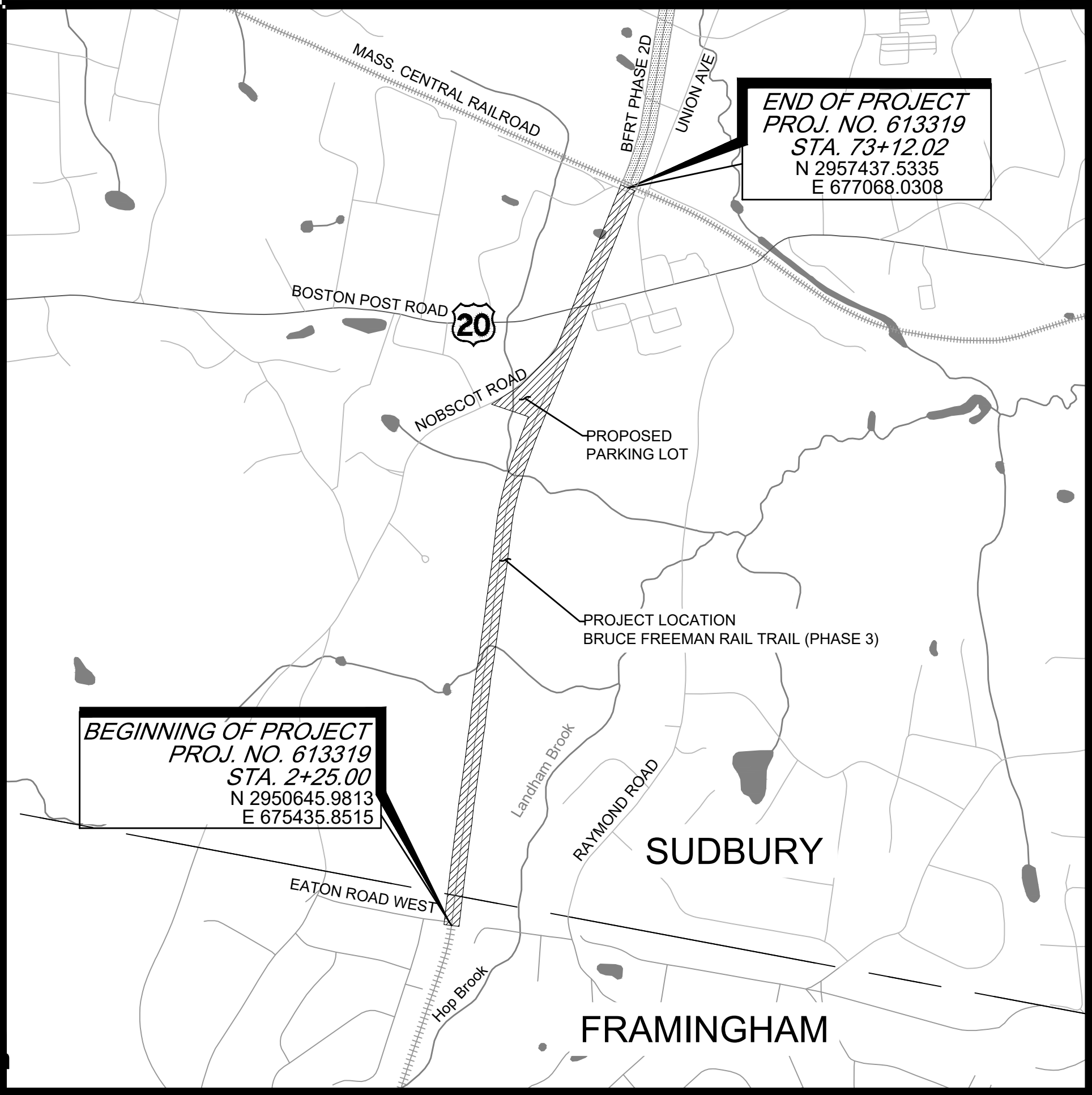
BRUCE FREEMAN RAIL TRAIL

DESIGN SPEED	18 MPH
FUNCTIONAL CLASSIFICATION	OFF ROAD PEDESTRIAN/BICYCLE FACILITY
* 18 MPH FOR GRADES LESS THAN 2%, 20 MPH FOR GRADES BETWEEN 2% & 4%	

DESIGN DESIGNATION (BOSTON POST ROAD)

DESIGN SPEED	30 MPH
ADT (2022)	21,748
ADT (2042)	21,967
T (PEAK HOUR)	4.7%
T (AVERAGE DAY)	3.4%
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL

SHEET NO.	DESCRIPTION
X	TITLE SHEET & INDEX
X	GENERAL NOTES
X	LEGEND & ABBREVIATIONS
X	KEY PLAN
X	TYPICAL SECTIONS
X	CONSTRUCTION PLANS
X	ROLL PLAN
X	PROFILE
X	CURB & BASELINE TIE PLANS*
X	GRADING PLANS*
X	PAVEMENT MARKING & SIGNING PLANS*
X	TRAFFIC SIGN SUMMARY SHEET*
X	TRAFFIC SIGNAL PLANS*
X	TEMPORARY TRAFFIC CONTROL PLANS*
X	DRAINAGE & UTILITY PLANS
X	CONSTRUCTION DETAILS
X	PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS*
X	CRITICAL CROSS SECTIONS
* NOT INCLUDED WITH PRE-25% DESIGN SUBMISSION	



LENGTH OF PROJECT = 7087.02 FEET = 1.342 MILES



APPROVED

CHIEF ENGINEER

DATE

GENERAL ABBREVIATIONS

ABAN	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS / CONTINUED
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DIA	DIAMETER
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EXIST (or EX)	EXISTING
EXC	EXCAVATION
FDN.	FOUNDATION
FDP	FULL DEPTH PAVEMENT
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HWY	HIGHWAY
JCT	JUNCTION
LOAM	LOAM BORROW
LSA	LANDSCAPED AREA
LT	LEFT
MAHWL	MEAN AVERAGE HIGH WATER LINE
MAX	MAXIMUM
MB	MAILBOX
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
MOD	MODIFIED
MSE	MECHANICALLY STABILIZED EARTH
NERR	NEW ENGLAND RAILROAD
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
P.G.L.	PROFILE GRADE LINE
PREV	PREVIOUS/PREVIOUSLY
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PVMT	PAVEMENT
R&D	REMOVE AND DISCARD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RD	ROAD
RDWY	ROADWAY
REB	REBUILD
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SHLO/S.H.L.O.	STATE HIGHWAY LAYOUT LINE

GENERAL ABBREVIATIONS (CONT)

ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TRANS	TRANSITION
TRM	TURF REINFORCING MAT
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
WCR	WHEEL CHAIR RAMP
WP	WORKING POINT
X-SECT	CROSS SECTION

UTILITY ABBREVIATIONS

CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDW	HEADWALL
HYD	HYDRANT
INV	INVERT
LB	LEACH BASIN
LP	LIGHT POLE
MH	MANHOLE
MW	MONITORING WELL
OHW	OVERHEAD WIRE
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
SMH	SEWER MANHOLE
TSV&B	TAPPING SLEEVE VALVE & BOX
UP	UTILITY POLE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN

ALIGNMENT & GRADING ABBREVIATIONS

CC	CENTER OF CURVE
HP	HIGH POINT
I.T.	INTERSECTION OF TANGENT
LP	LOW POINT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PNT	POINT
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
∠PT	ANGLE POINT
R	RADIUS OF CURVATURE
T	TANGENT DISTANCE OF CURVE
TAN	TANGENT
25.45	SPOT ELEVATION

PROFILE ABBREVIATIONS

AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
L	LENGTH OF CURVE
PVC	POINT OF VERTICAL CURVATURE
PVCC	POINT OF VERTICAL COMPOUND CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVRC	POINT OF VERTICAL REVERSE CURVATURE
PVT	POINT OF VERTICAL TANGENCY
SSD	STOPPING SIGHT DISTANCE
VC	VERTICAL CURVE

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
←FR→	FLASHING RED LEFT ARROW
→FR→	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
←FY→	FLASHING YELLOW LEFT ARROW
→FY→	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
←G→	STEADY GREEN LEFT ARROW
→G→	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
↑ ⬇	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
←R→	STEADY RED LEFT ARROW
→R→	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR YELLOW
←Y→	STEADY YELLOW LEFT ARROW
→Y→	STEADY YELLOW RIGHT ARROW

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	2	TBD
PROJECT FILE NO.		613319	

GENERAL NOTES

GENERAL NOTES:

EXISTING CONDITIONS AND TOPOGRAPHICAL INFORMATION FROM AN ACTUAL FIELD SURVEY CONDUCTED BY GCG ASSOCIATES, INC. IN SEPTEMBER 2022 THROUGH APRIL 2023.

- THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. NO GUARANTEE TO THE ACCURACY OF THE EXISTING UTILITIES FACILITIES SHOWN IN THIS PROJECT IS EXPRESSED OR IMPLIED UNLESS OTHERWISE NOTED. CONTRACTOR SHALL CONTACT "Mass DIG-SAFE", 1-888-344-7233. CONTRACTOR SHALL MAINTAIN MARKINGS WHERE NEEDED DURING PROJECT. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES AND SERVICE LATERALS PRIOR TO CONSTRUCTION. ANY CONFLICTS WITH LOCATIONS OF LIGHT POLES, TREES, ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO CONSTRUCTION.
- DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
- THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED CONDUIT AND SIGNAL EQUIPMENT. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS IF REQUIRED.
- PRIOR TO ONSET OF TREE REMOVAL ACTIVITIES, THE CONTRACTOR, RESIDENT ENGINEER AND MASSDOT LANDSCAPE ARCHITECT AND TOWN REPRESENTATIVE SHALL WALK SITE TO IDENTIFY TREES TO BE REMOVED.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
- AFTER MILLING OPERATIONS AND PRIOR TO PAVING THE SUPERPAVE INTERMEDIATE OR SURFACES COURSES THE ENGINEER SHALL EVALUATE THE MILLED SURFACE AND SHALL APPLY THE APPROPRIATE REPAIR METHOD IF REQUIRED.
- EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- IF SUITABLE, ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
- ALL PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 3.
- ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
- ALL PROPOSED BOUNDS SHALL BE PLACED BY A LICENSED PROFESSIONAL SURVEYOR. THE CONTRACTOR SHALL EXERCISE DUE CARE WHEN WORKING AROUND ALL PROPERTY BOUNDS WHICH ARE TO REMAIN. SHOULD ANY DAMAGE TO A BOUND RESULT FROM THE ACTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE THE BOUND REPLACED AND/OR REALIGNED BY A LICENSED PROFESSIONAL SURVEYOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
- DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER.
- LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		EROSION CONTROL
		DRAINAGE SWALE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

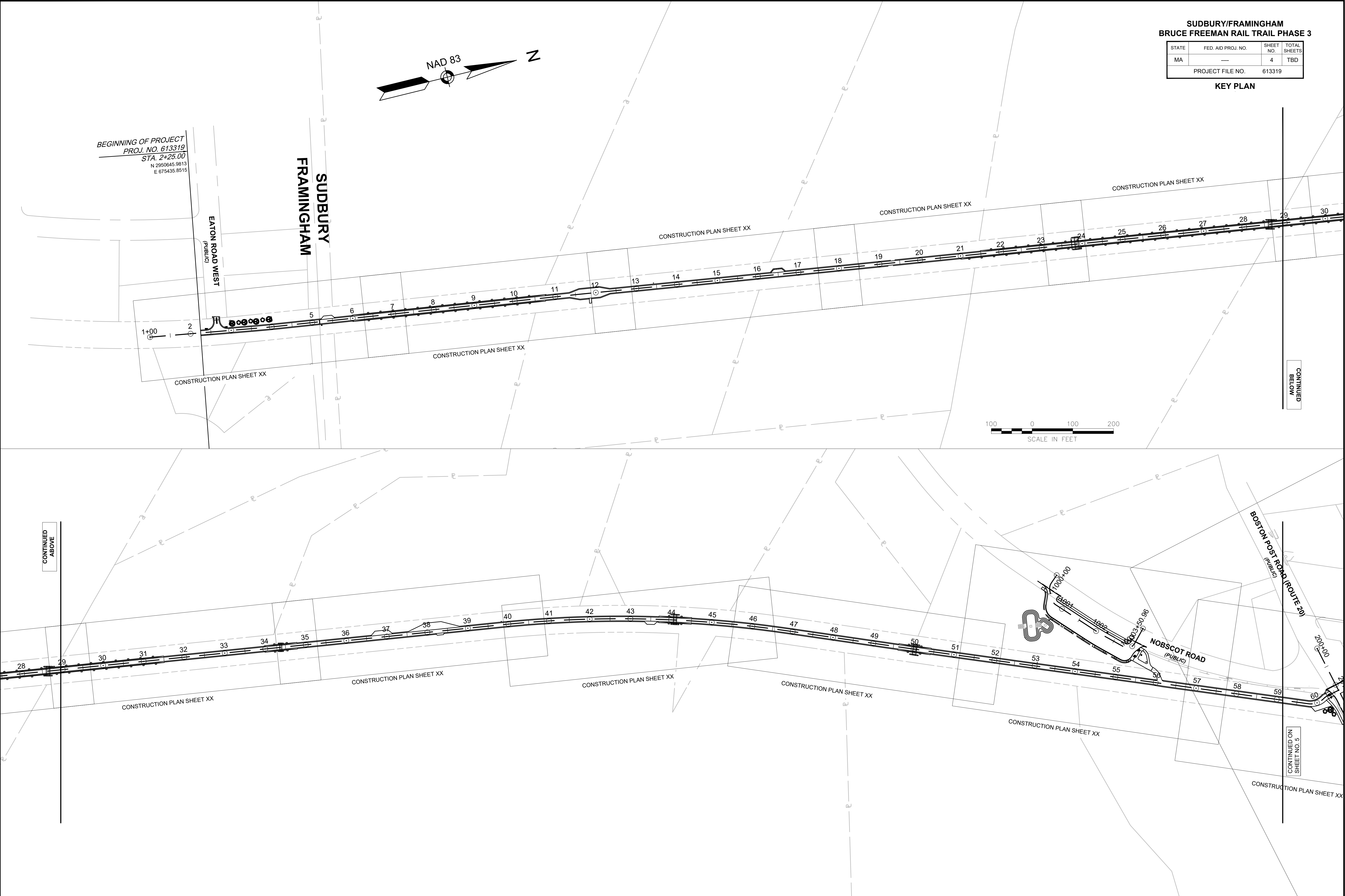
PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE
		LONG DASHED YELLOW LINE

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	4	TBD
PROJECT FILE NO.		613319	

KEY PLAN



SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	5	TBD
PROJECT FILE NO.		613319	

KEY PLAN



SUDBURY/FRAMINGHAM BRUCE FREEMAN RAIL TRAIL PHASE 3			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	6	TBD
PROJECT FILE NO.		613319	

TYPICAL SECTIONS

PAVEMENT NOTES:

PROPOSED SHARED-USE PATH

SURFACE: 1-1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)
INTERMEDIATE: 2-1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0)
SUBBASE: 4" to 8" GRAVEL BORROW, TYPE b (FOR LEVELING)
OVER RESHAPED EXISTING RAILROAD BALLAST

PROPOSED PARKING LOT FULL DEPTH PAVEMENT

SURFACE: 1-1/2" SUPERPAVE SURFACE COURSE - POLYMER (SSC - 12.5 - P) - OVER
BASE: 2-1/2" SUPERPAVE INTERMEDIATE COURSE (SIC - 19.0) - OVER
FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE WALK, REST AREA & PEDESTRIAN CURB RAMP

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610
SUBBASE: 8" GRAVEL BORROW, TYPE b

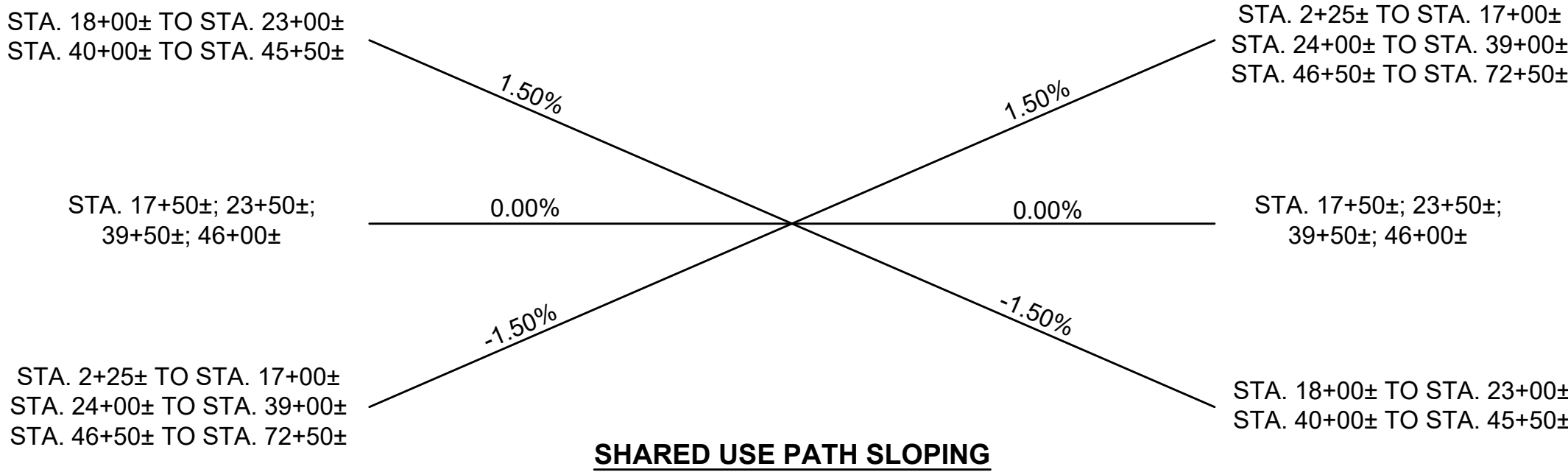
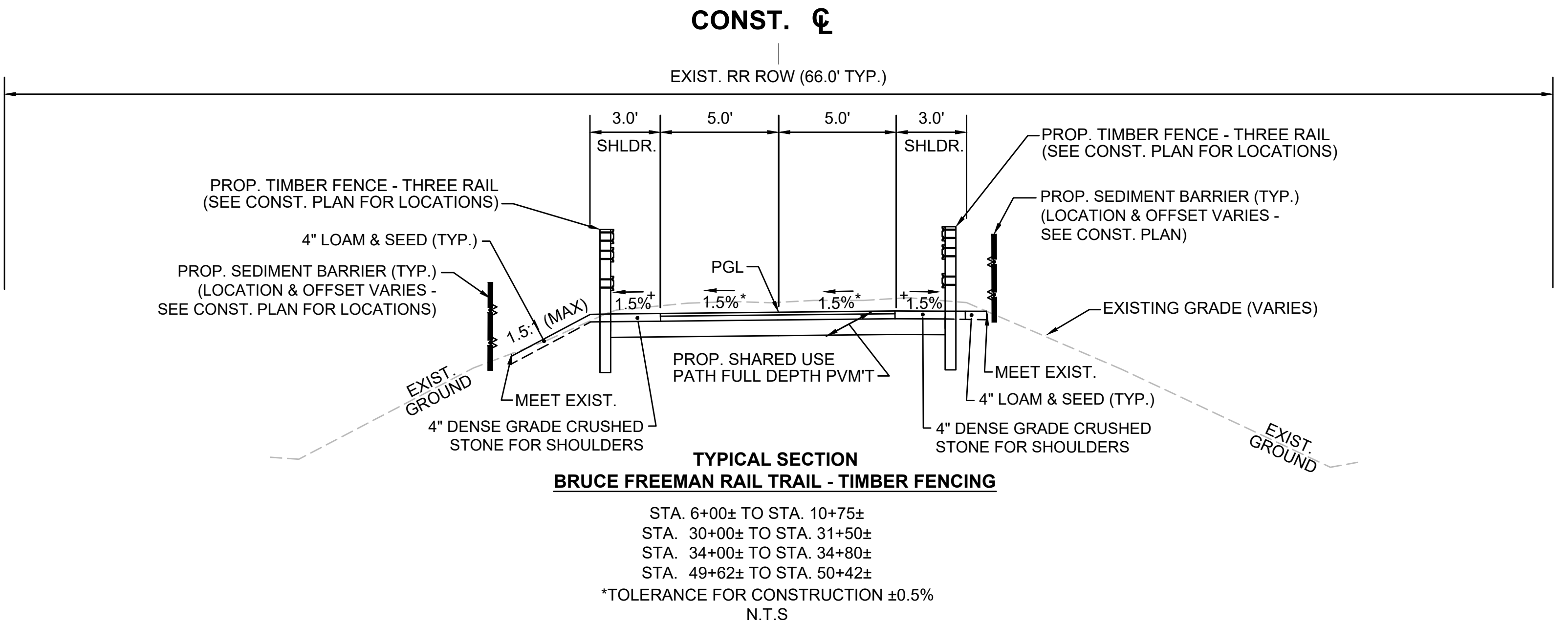
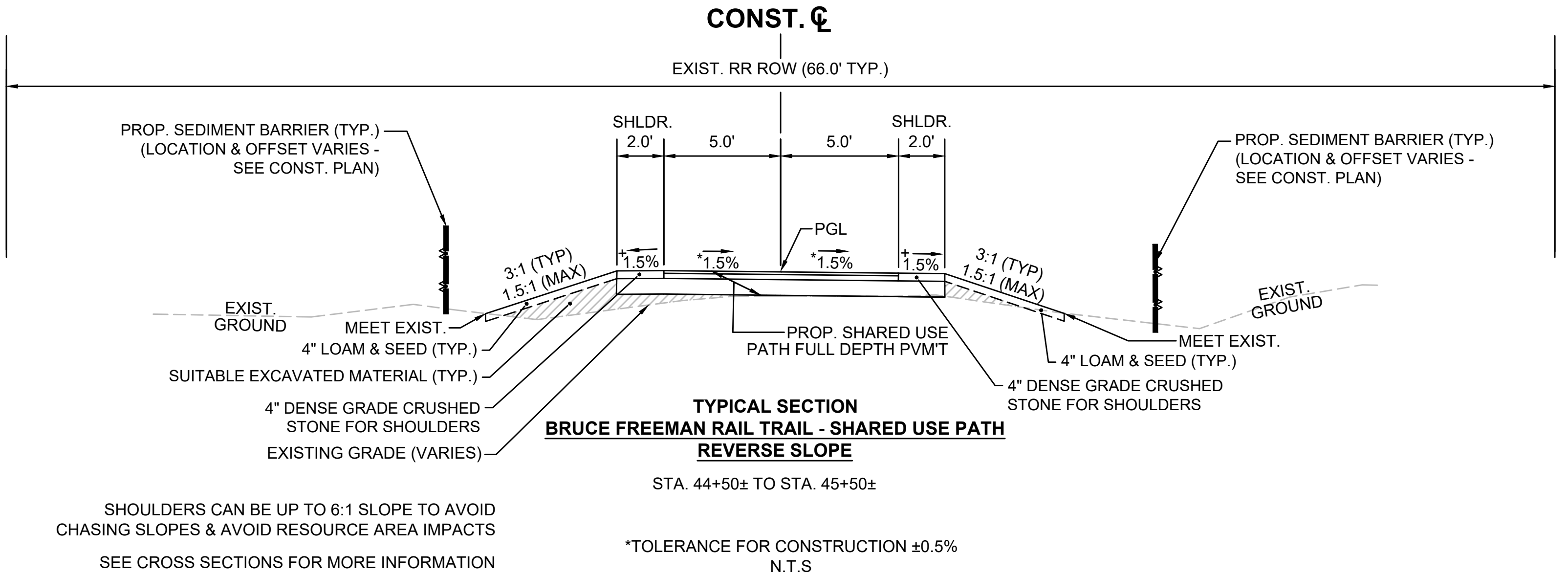
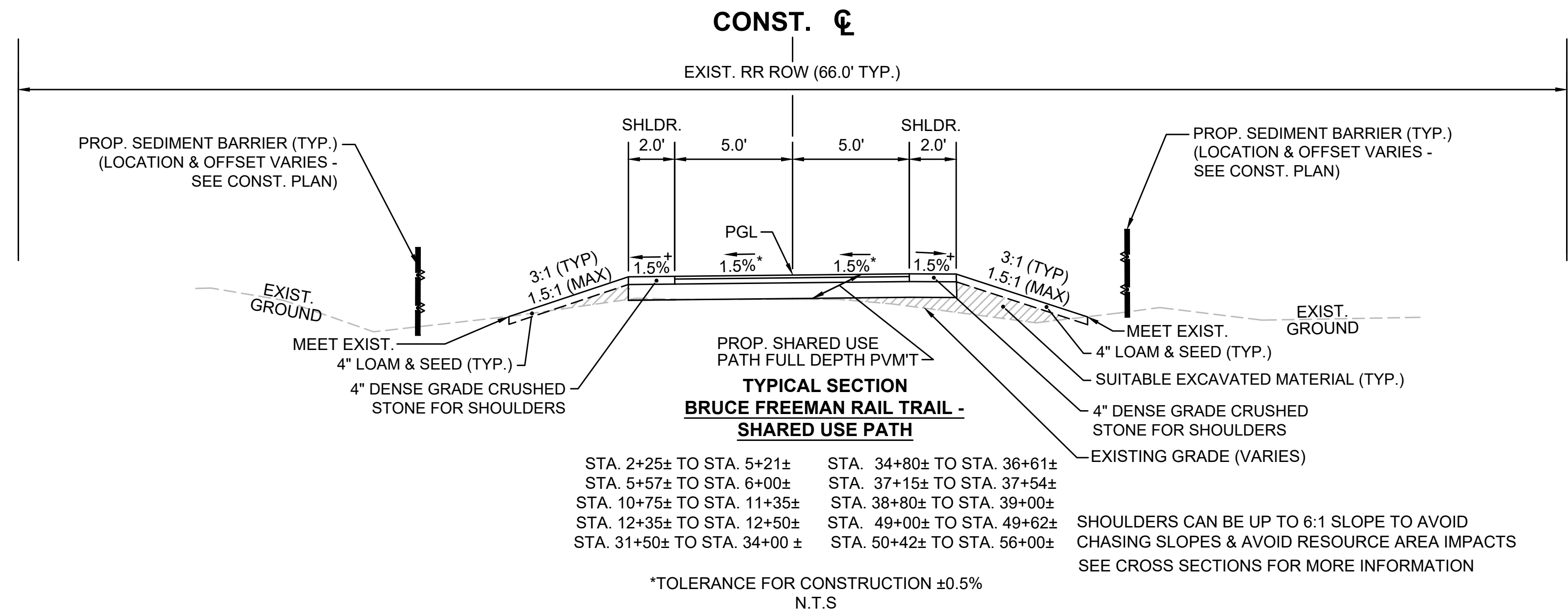
NOTES: EXIST. GRAVEL/BALLAST SUBGROUND MATERIAL DETERMINED BY THE ENGINEER TO BE SUITABLE SHALL REMAIN. THE DEPTH OF THE GRAVEL BORROW WILL BE AS REQUIRED BASED ON THE PROPOSED SUB-BASE ELEVATIONS.

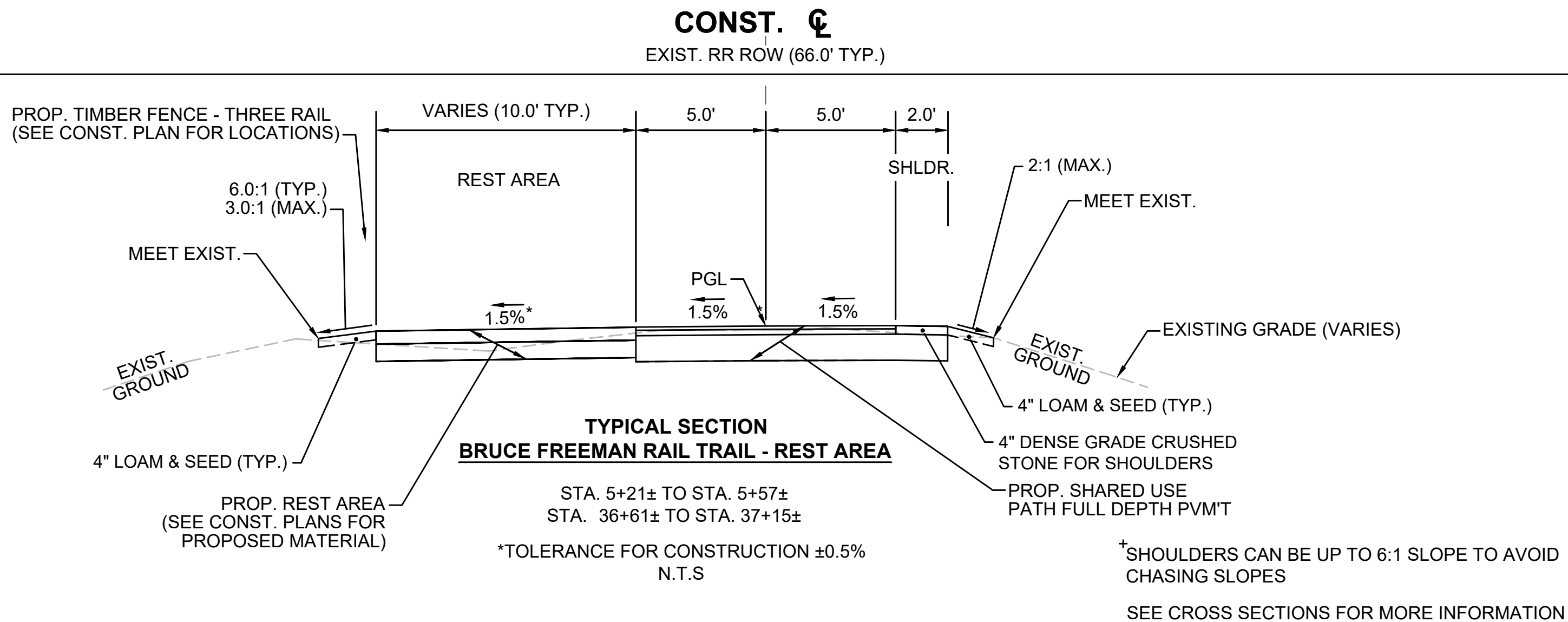
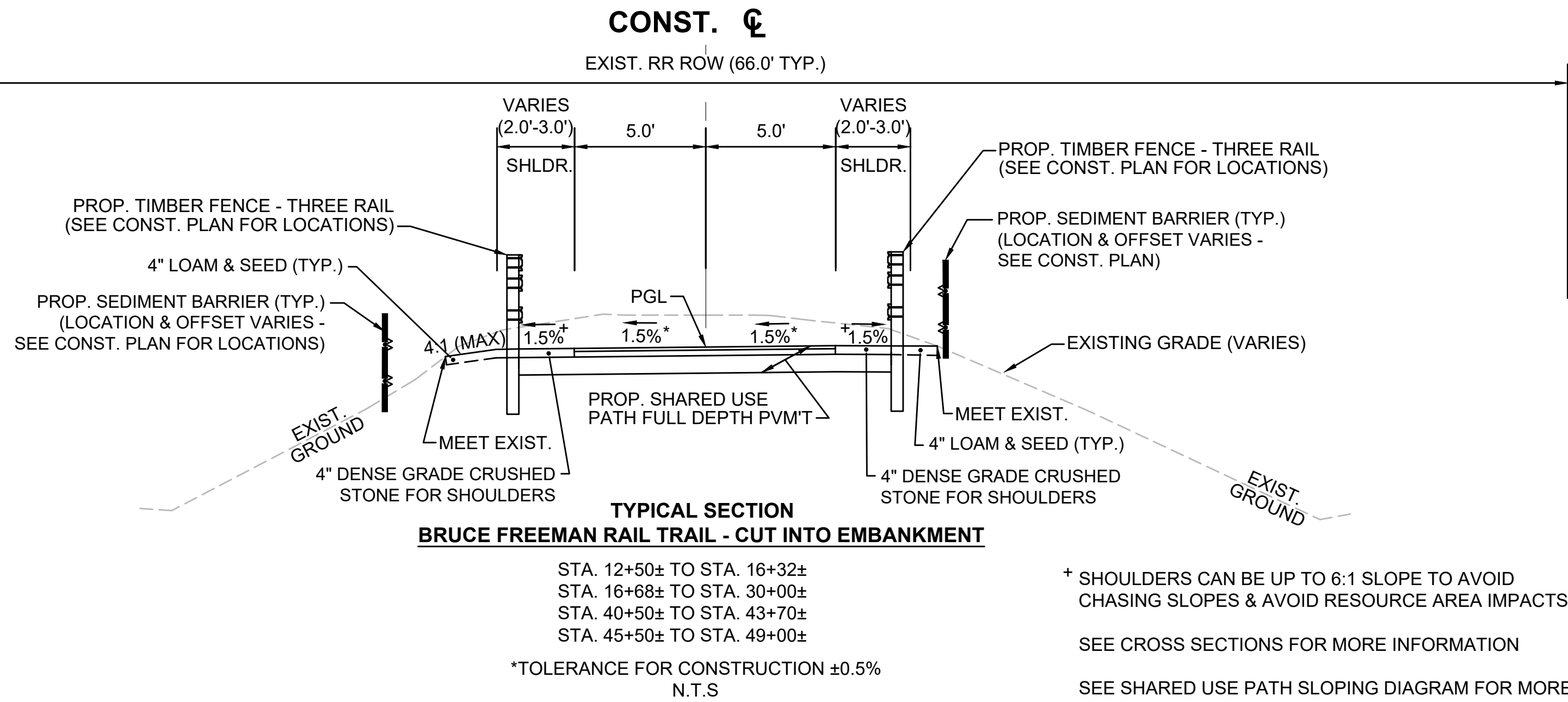
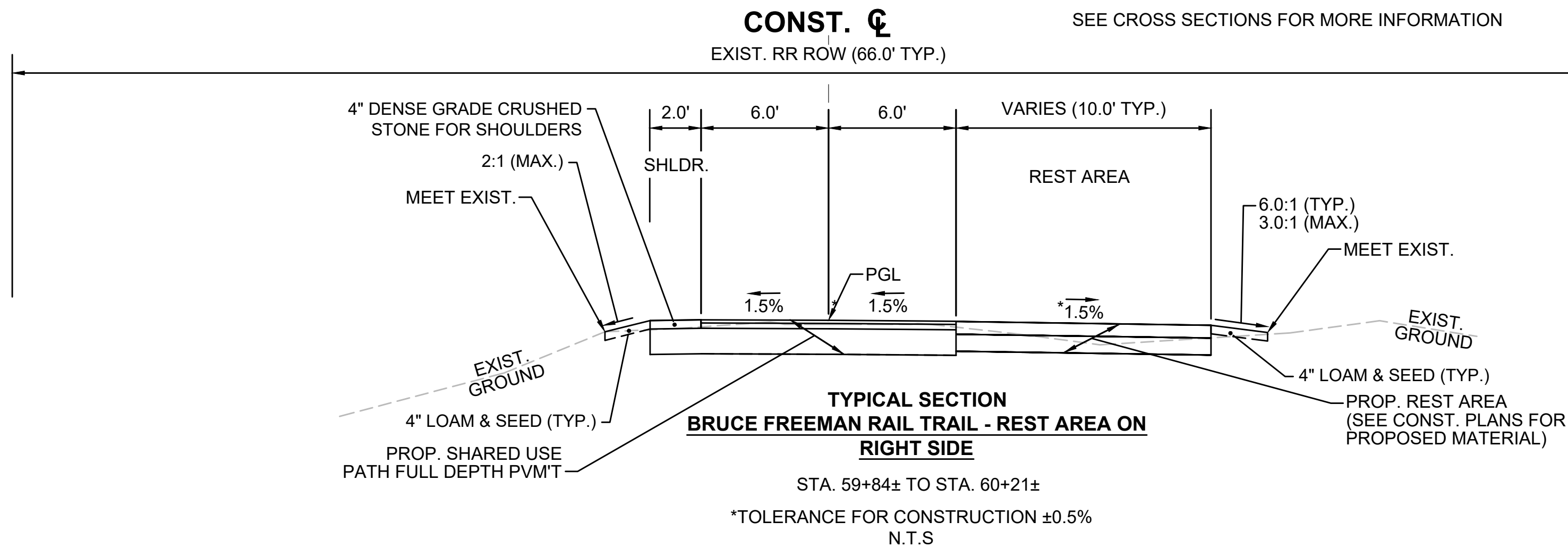
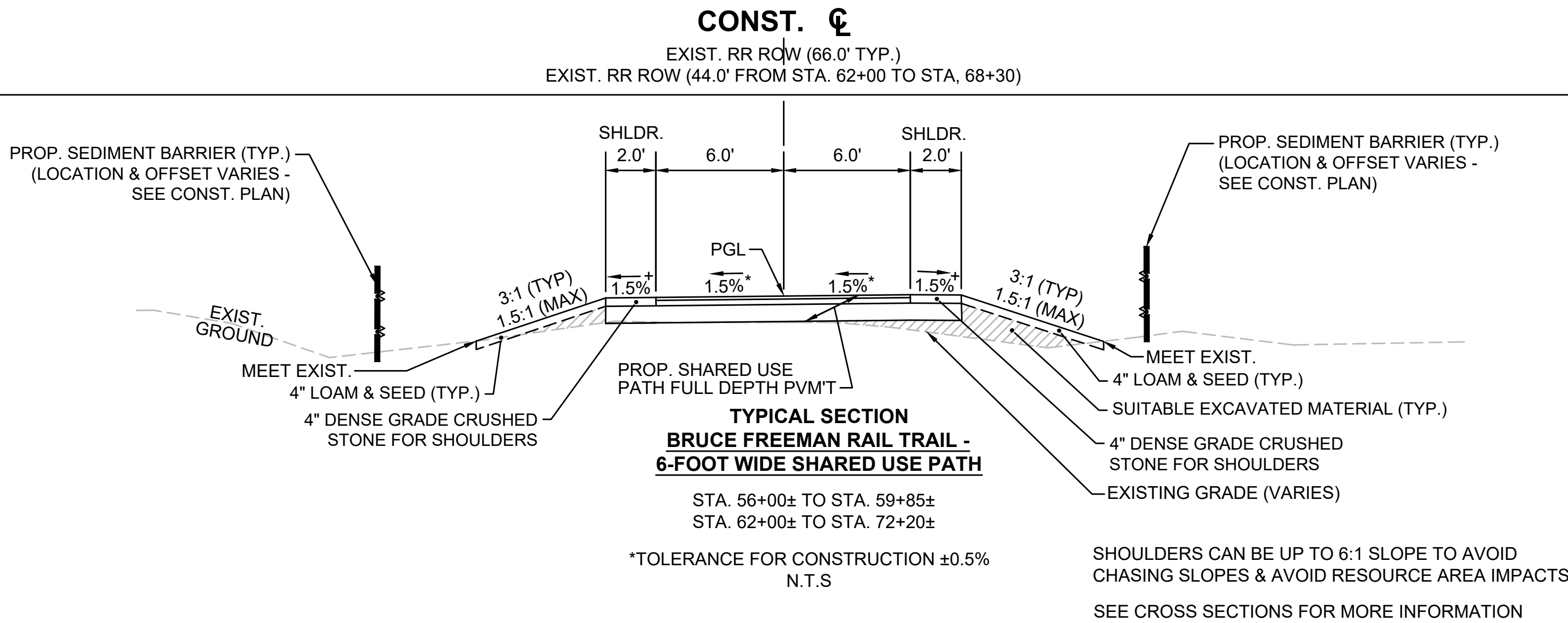
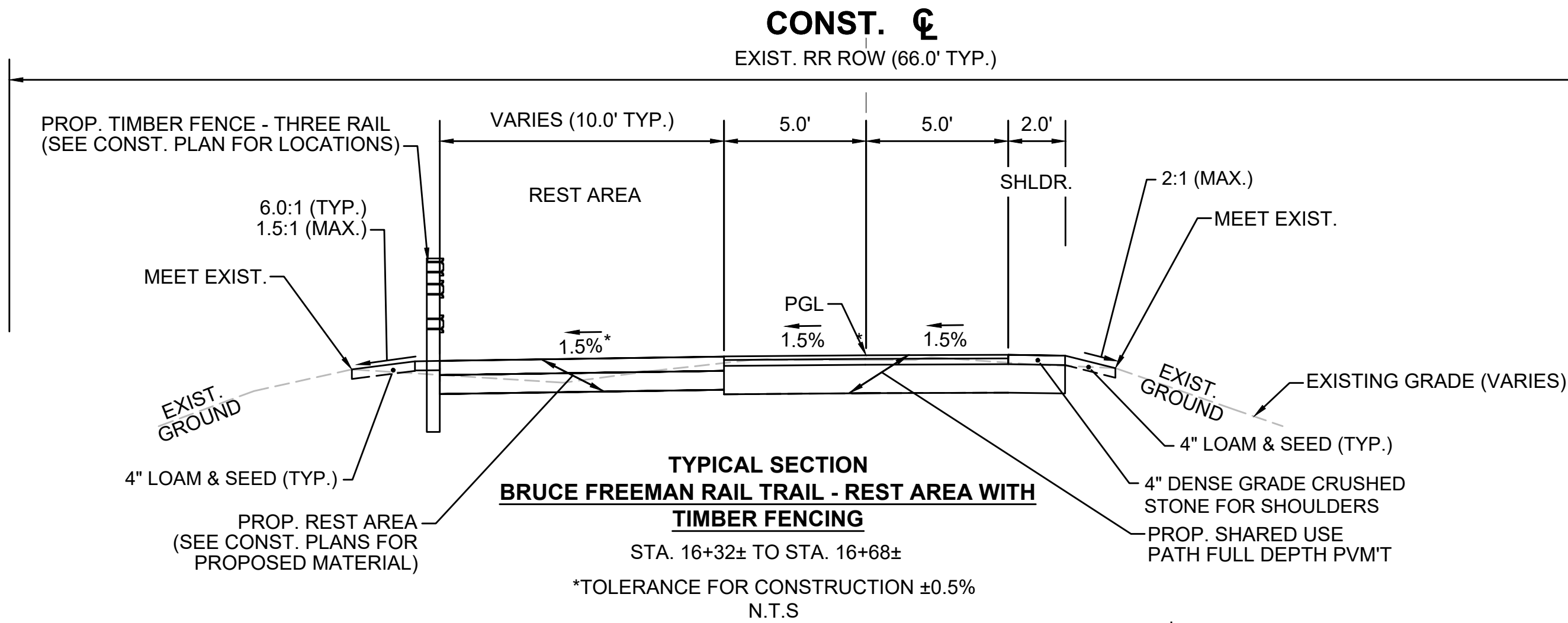
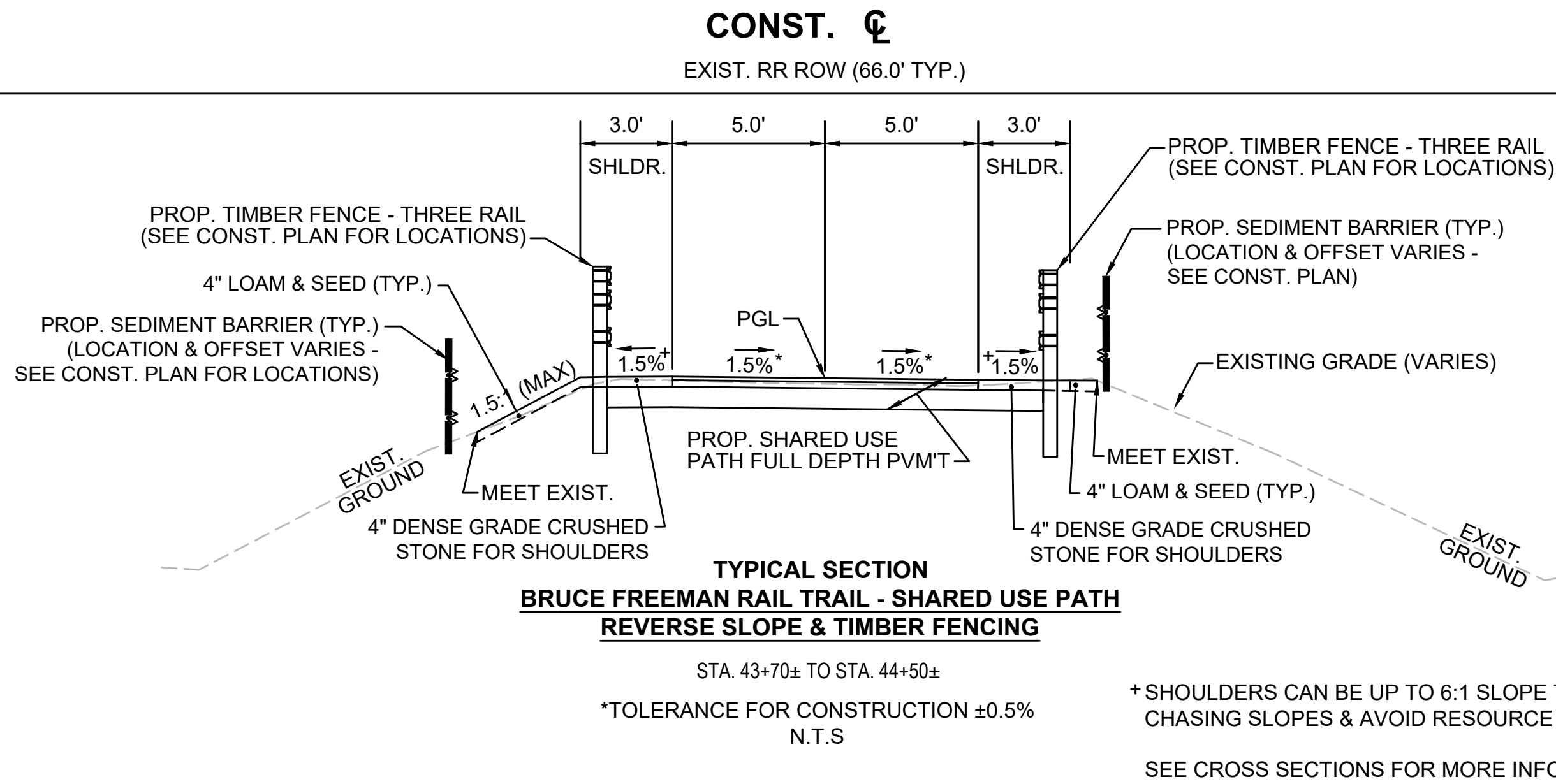
AFTER REMOVAL OF STEEL RAILS AND WOOD TIMBER, ROUGH GRADE AND COMPACT SUBGROUND AREA. THEN PLACE AND COMPACT GRAVEL BORROW SUB-BASE MATERIAL IN MULTIPLE LIFTS.

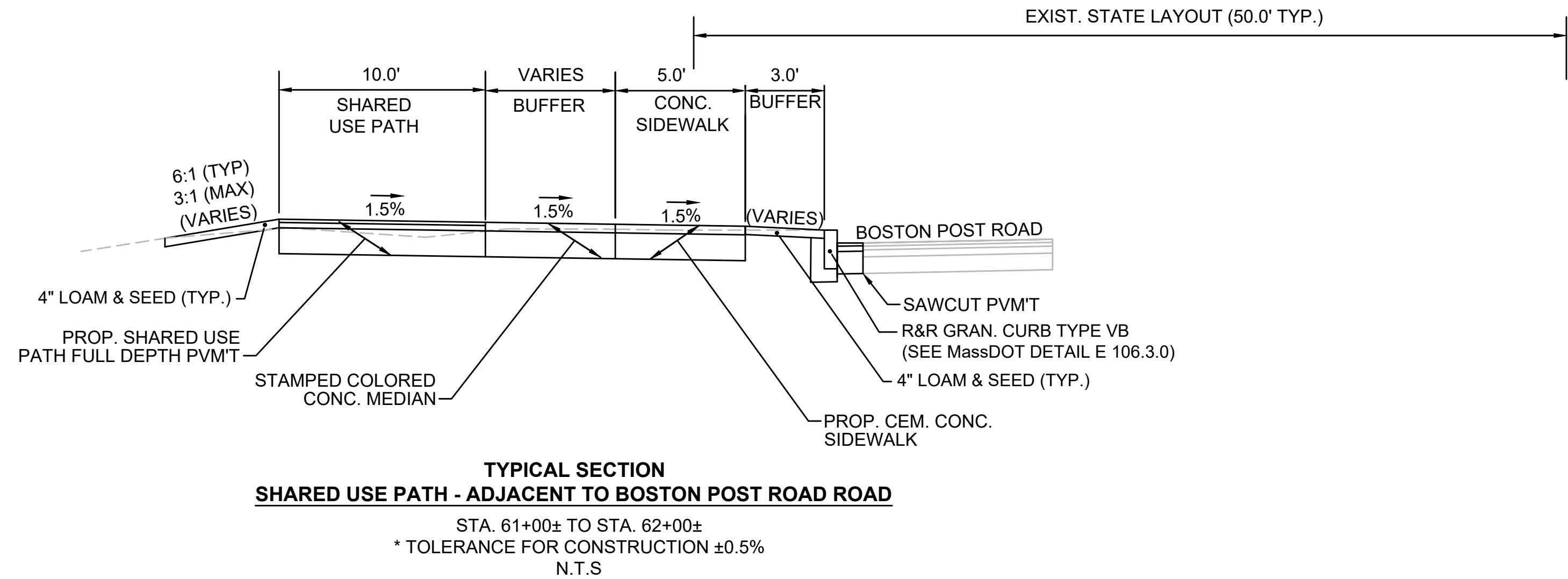
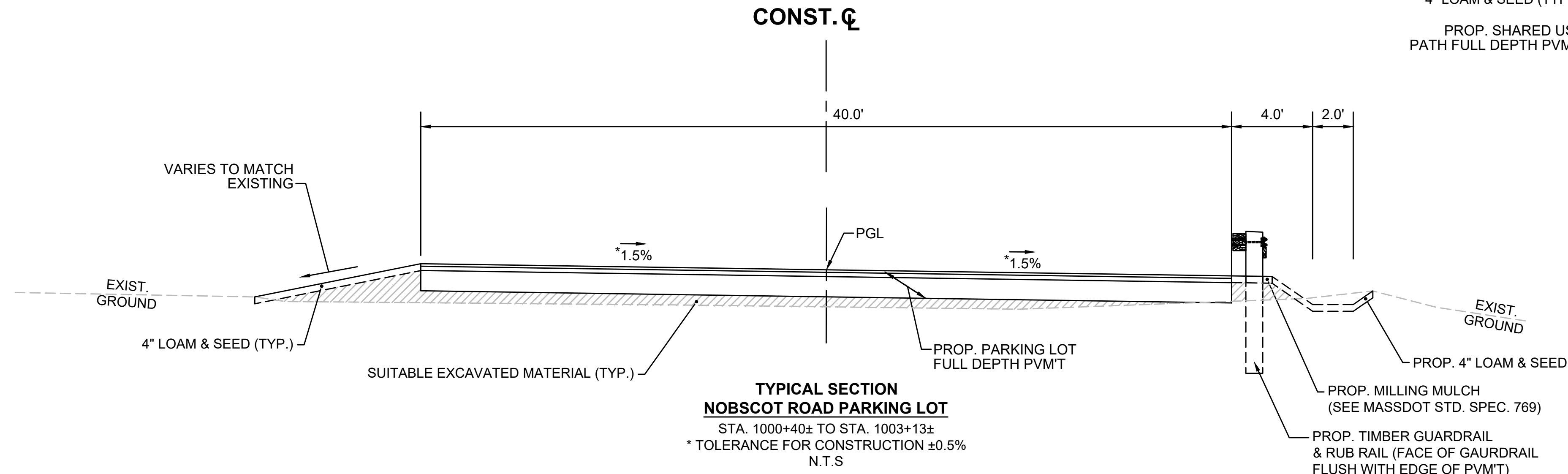
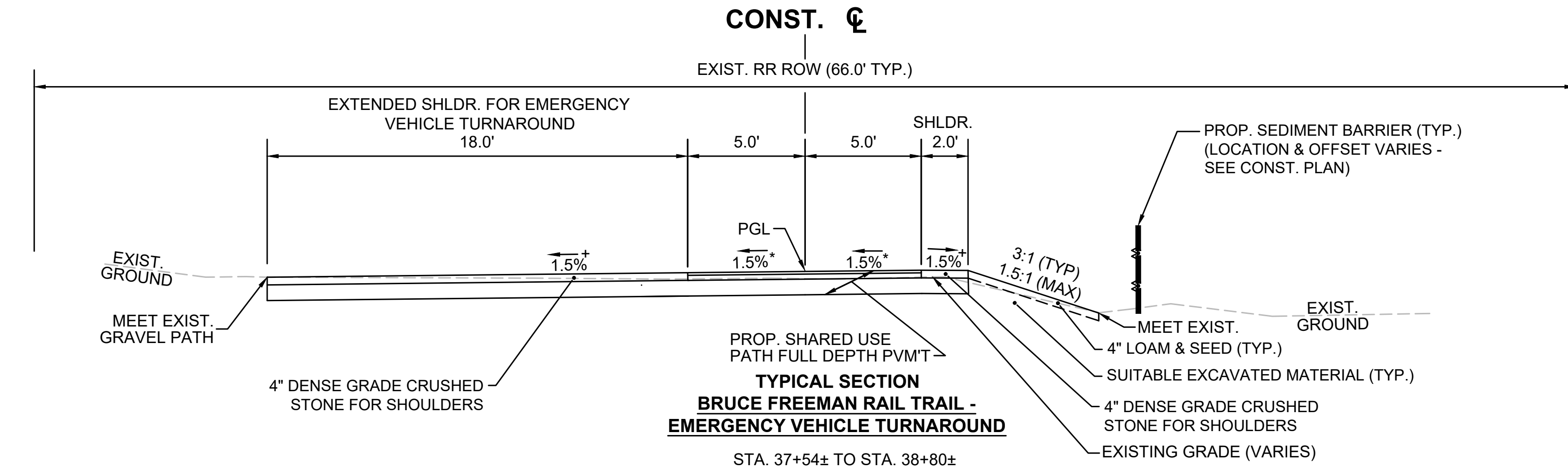
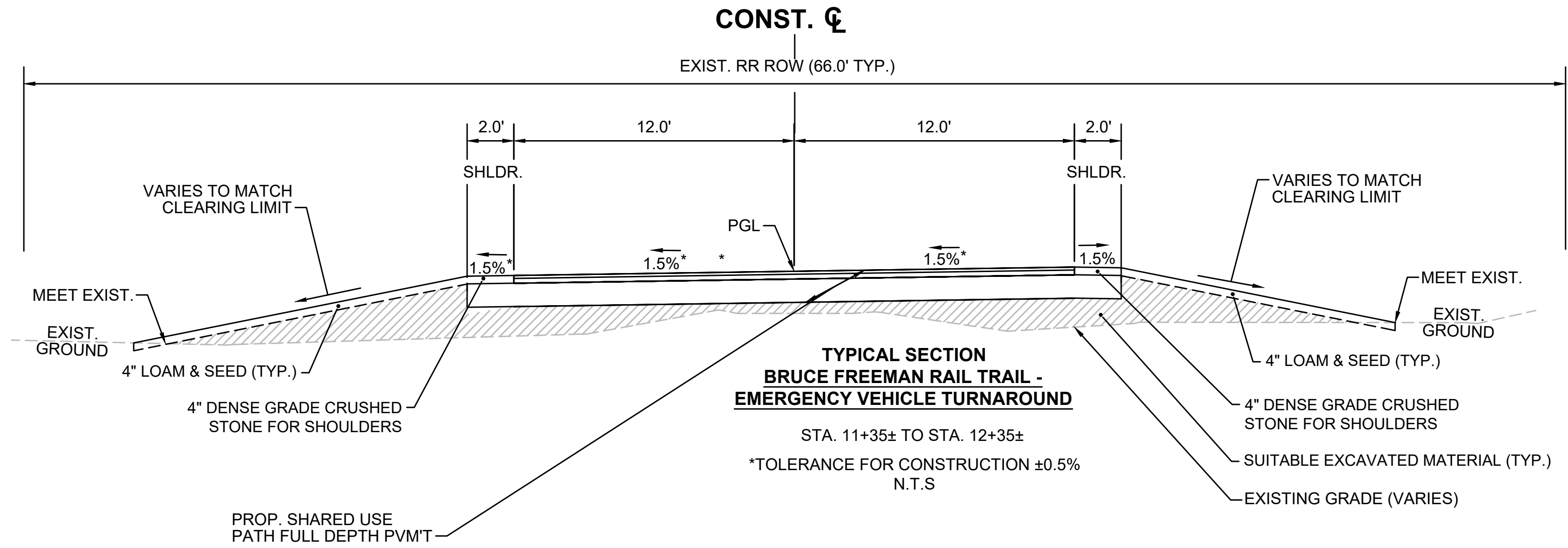
ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE APPLIED PER SECTION 450 QA OF THE SPECIAL PROVISIONS.

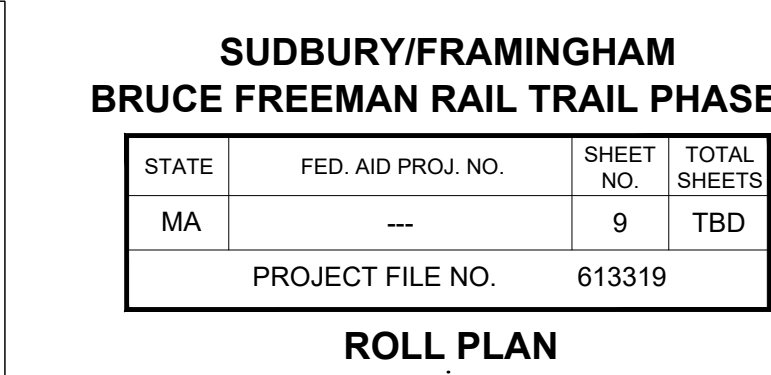
HMA FOR PATCHING SHALL BE USED FOR ALL PERMANENT, PARTIAL, AND FULL DEPTH PAVEMENT REPAIRS OF UNSOUND PAVEMENT PER SECTION 450 IN AREAS OUTSIDE OF PROPOSED FULL DEPTH RECLAMATION OR RECONSTRUCTION ROADWAY AREAS.

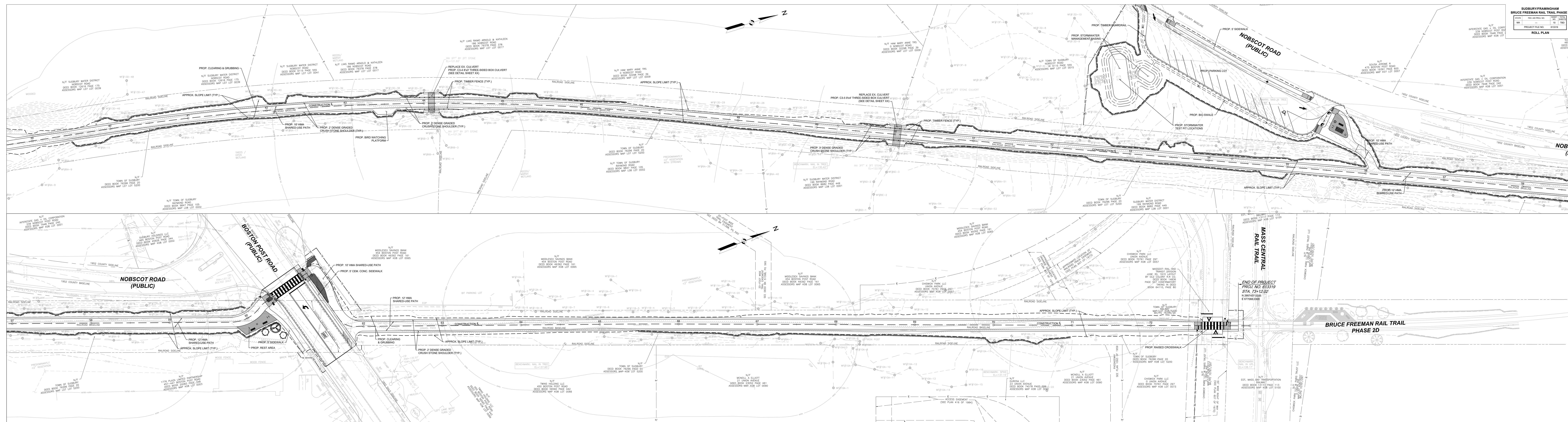
HMA FOR MISCELLANEOUS WORK SHALL BE USED FOR ALL TEMPORARY CONSTRUCTION, TAPER RAMPS, CURB CUT RAMPS, TEMPORARY TRENCH REPAIR, ETC.











FENCING DETAILS

TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX
TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE

LEGEND:

PROPOSED WHEELCHAIR
RAMP DETAIL #

PLANT QUANTITY AND SPECIES

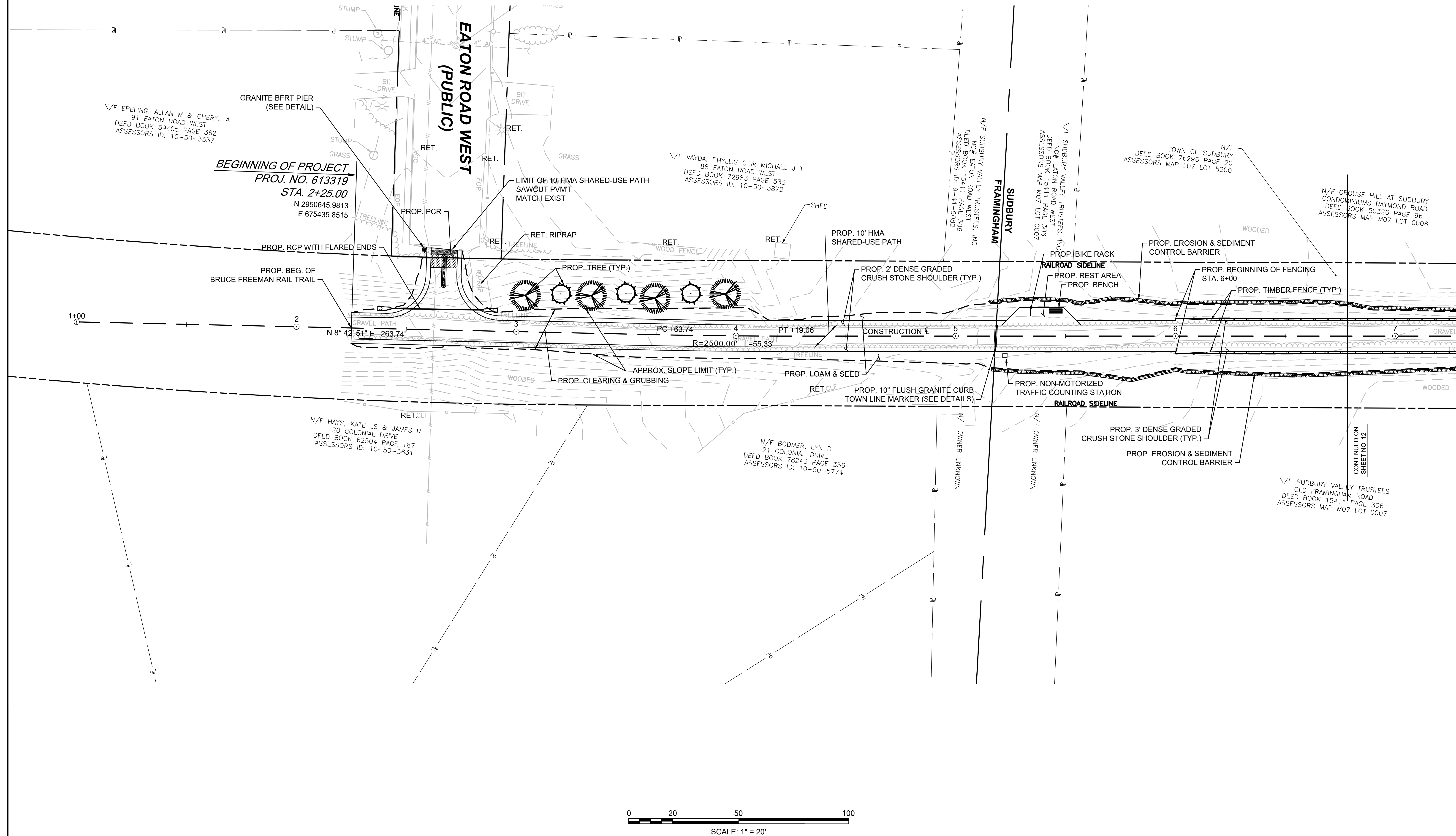
X#

X
XX

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	11	TBD
PROJECT FILE NO.		613319	

CONSTRUCTION PLANS



TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX
TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX

NONE

TRAFFIC SIGNAL CONDUIT

NONE

NONE

DRAINAGE DETAILS

NONE

LEGEND:

PROPOSED WHEELCHAIR
RAMP DETAIL #

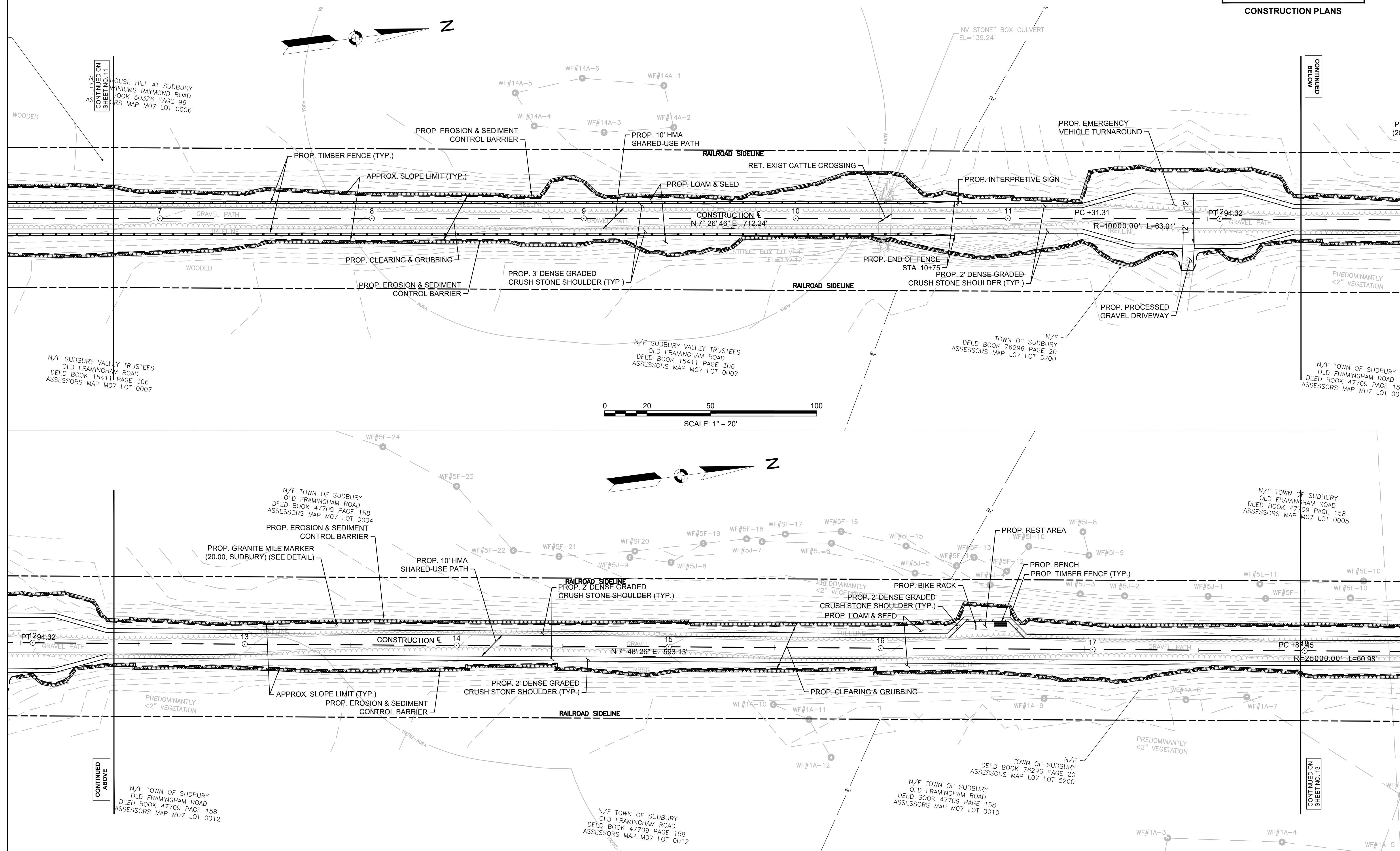
PLANT QUANTITY AND SPECIES

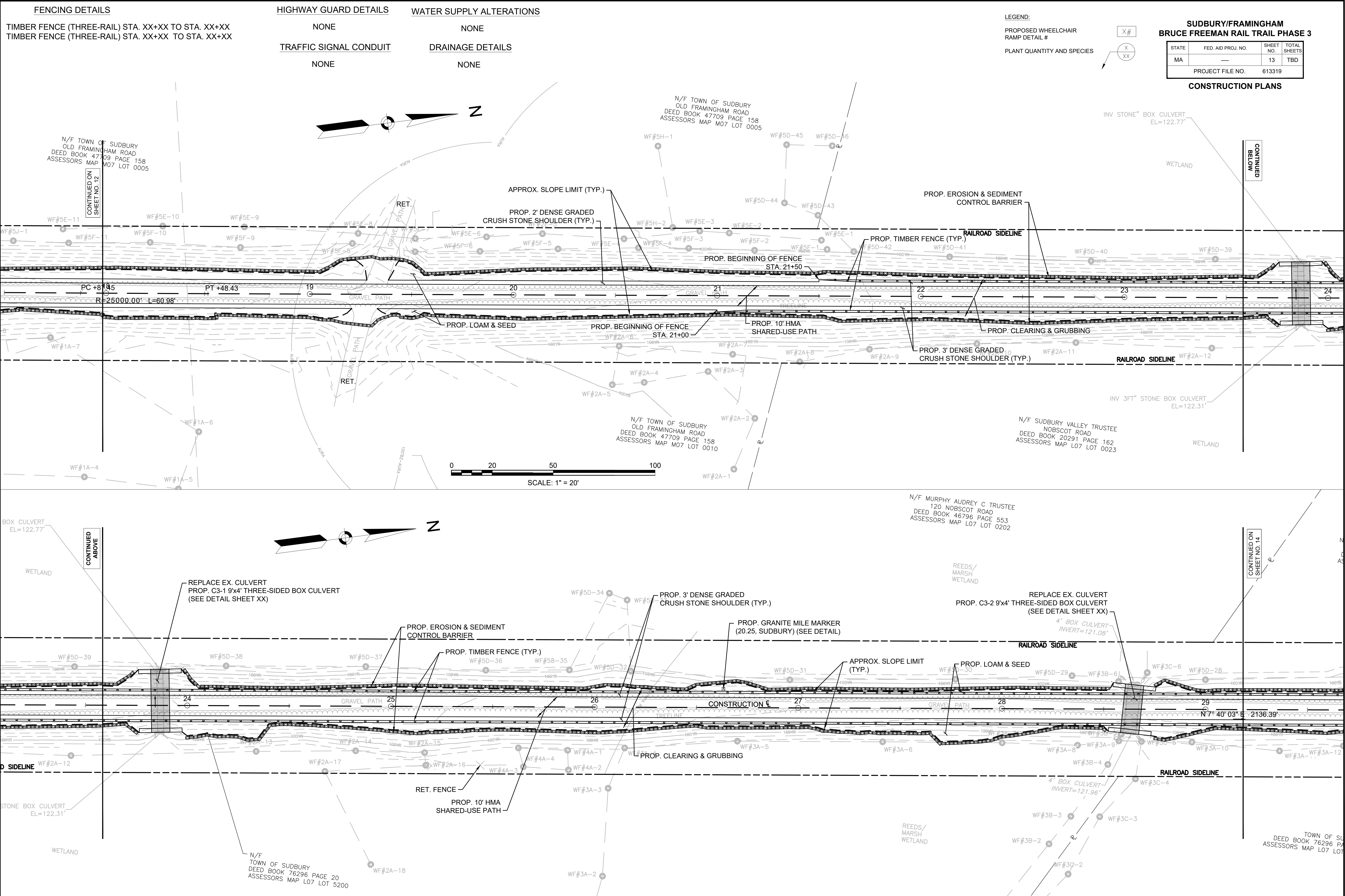


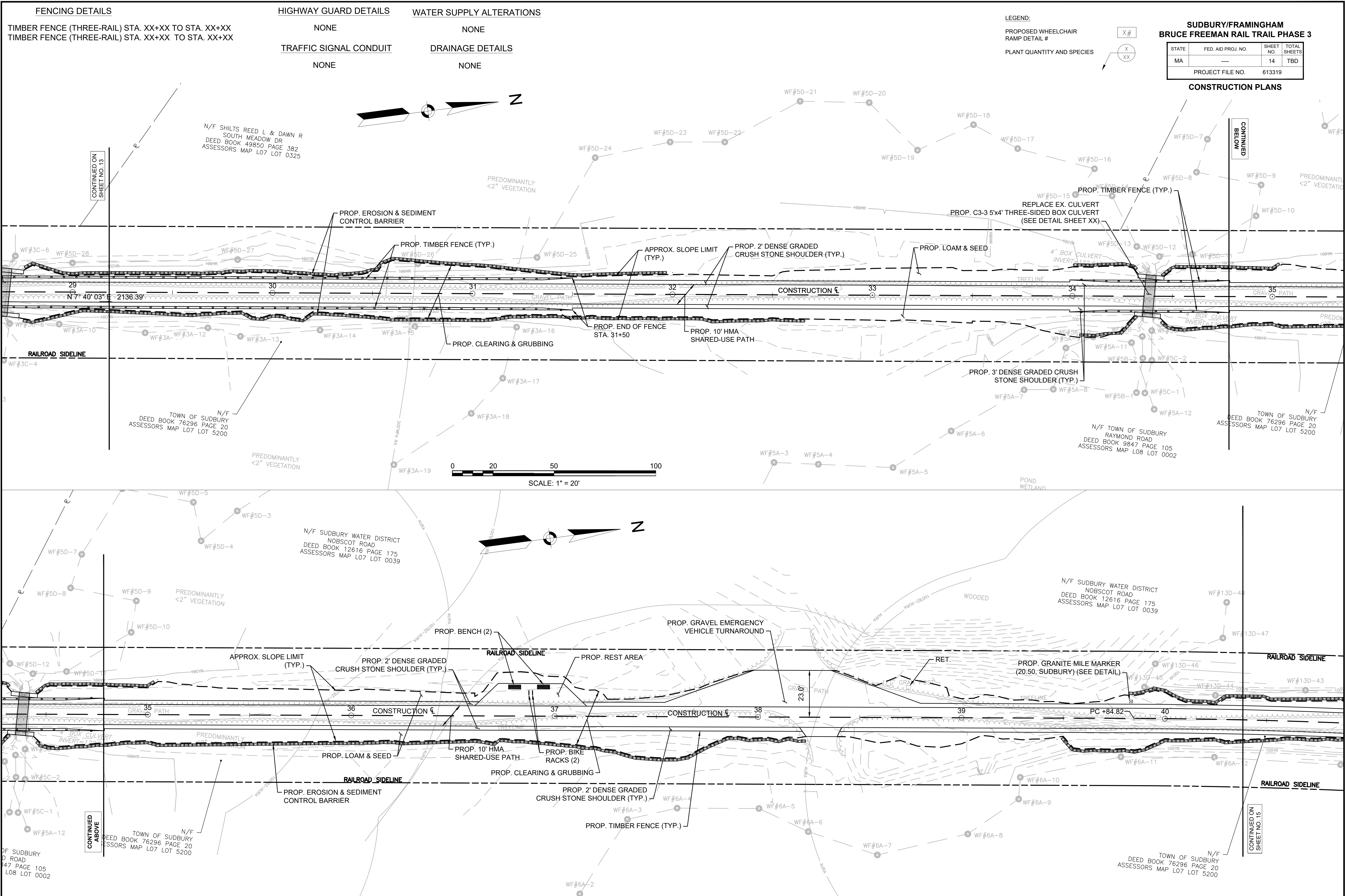
**SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	12	TB
PROJECT FILE NO.		613319	

CONSTRUCTION PLANS







FENCING DETAILS

TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX
TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE

LEGEND:

PROPOSED WHEELCHAIR
RAMP DETAIL #

PLANT QUANTITY AND SPECIES

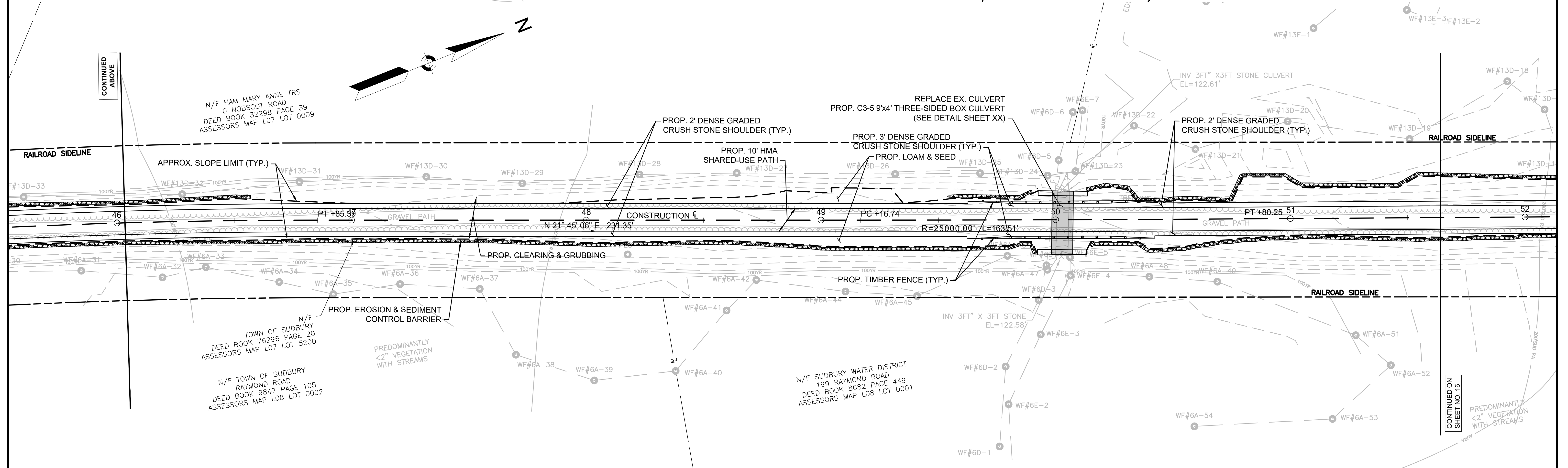
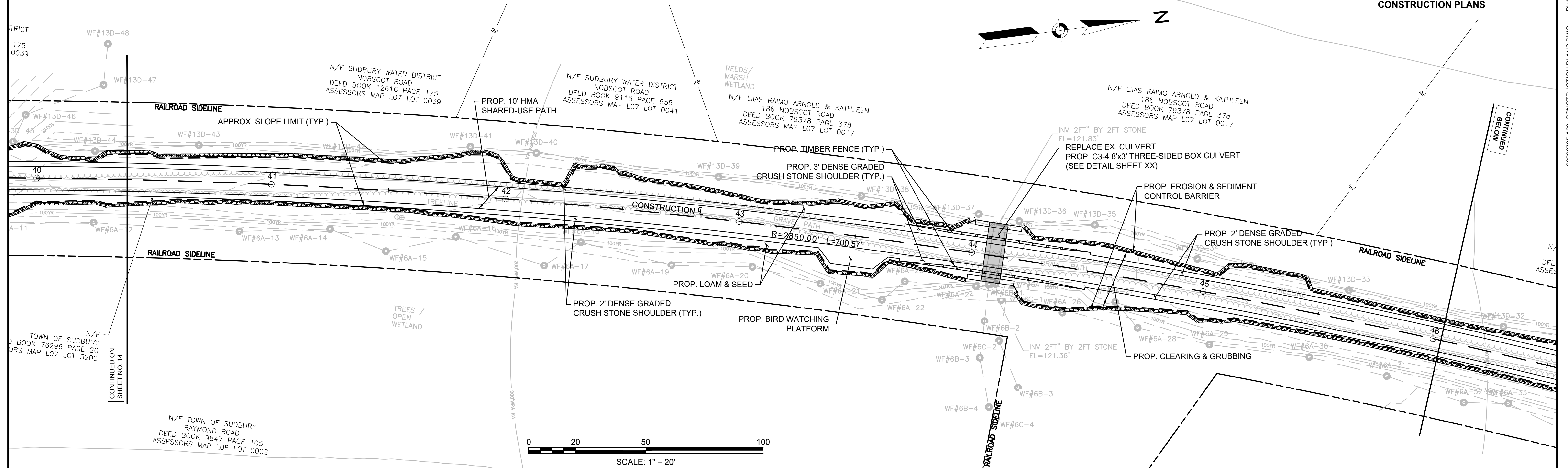
X#

X
XX

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	15	TBD
PROJECT FILE NO.		613319	

CONSTRUCTION PLANS



TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX
TIMBER FENCE (THREE-RAIL) STA. XX+XX TO STA. XX+XX

NONE

TRAFFIC SIGNAL CONDUIT

NONE

NONE

DRAINAGE DETAILS

NONE

NOTE: STORMWATER TEST PITS AND CALCULATIONS WILL BE PROVIDED WITH 25% DESIGN

LEGEND:

PROPOSED WHEELCHAIR
RAMP DETAIL #

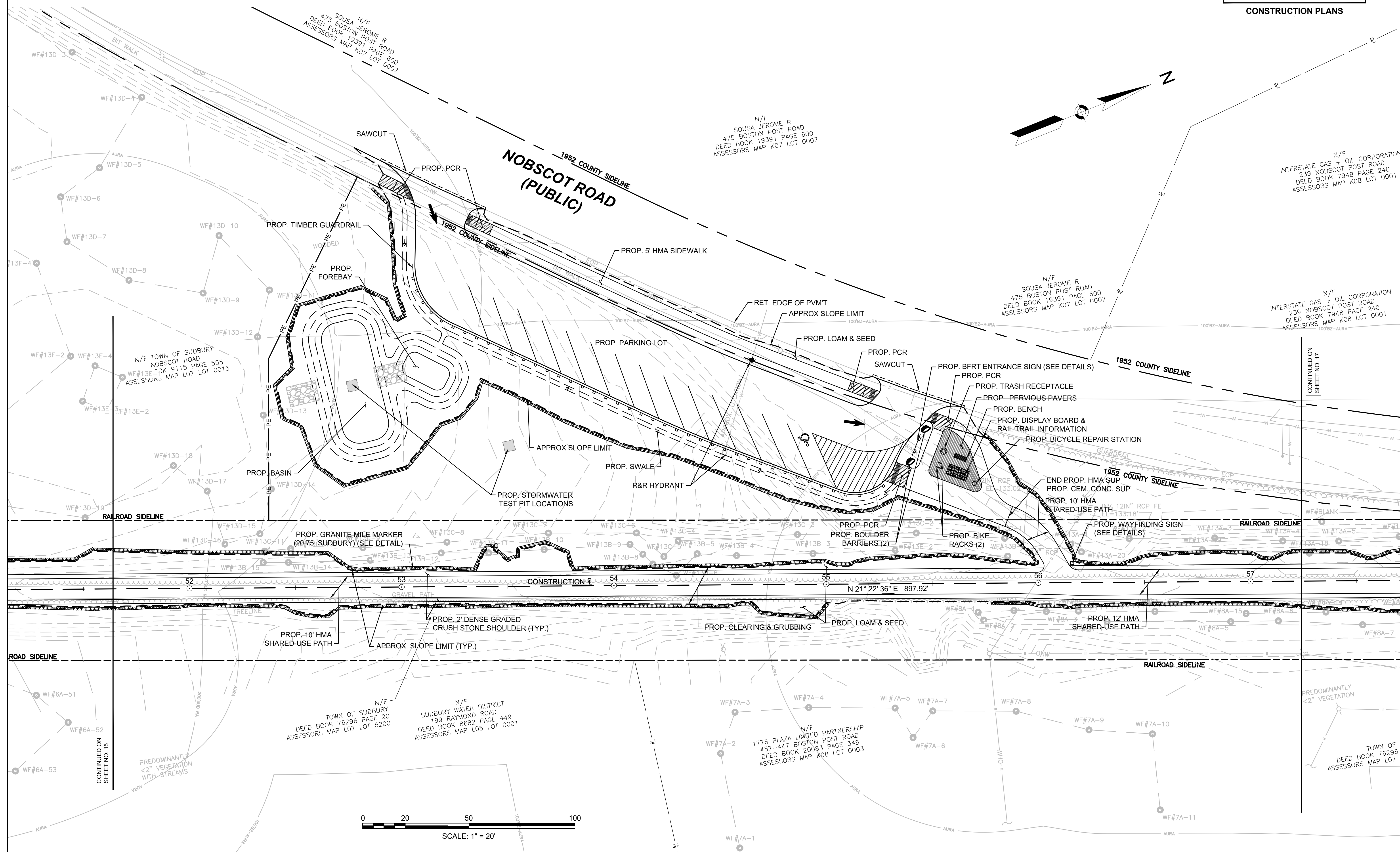
PLANT QUANTITY AND SPECIES



**SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3**

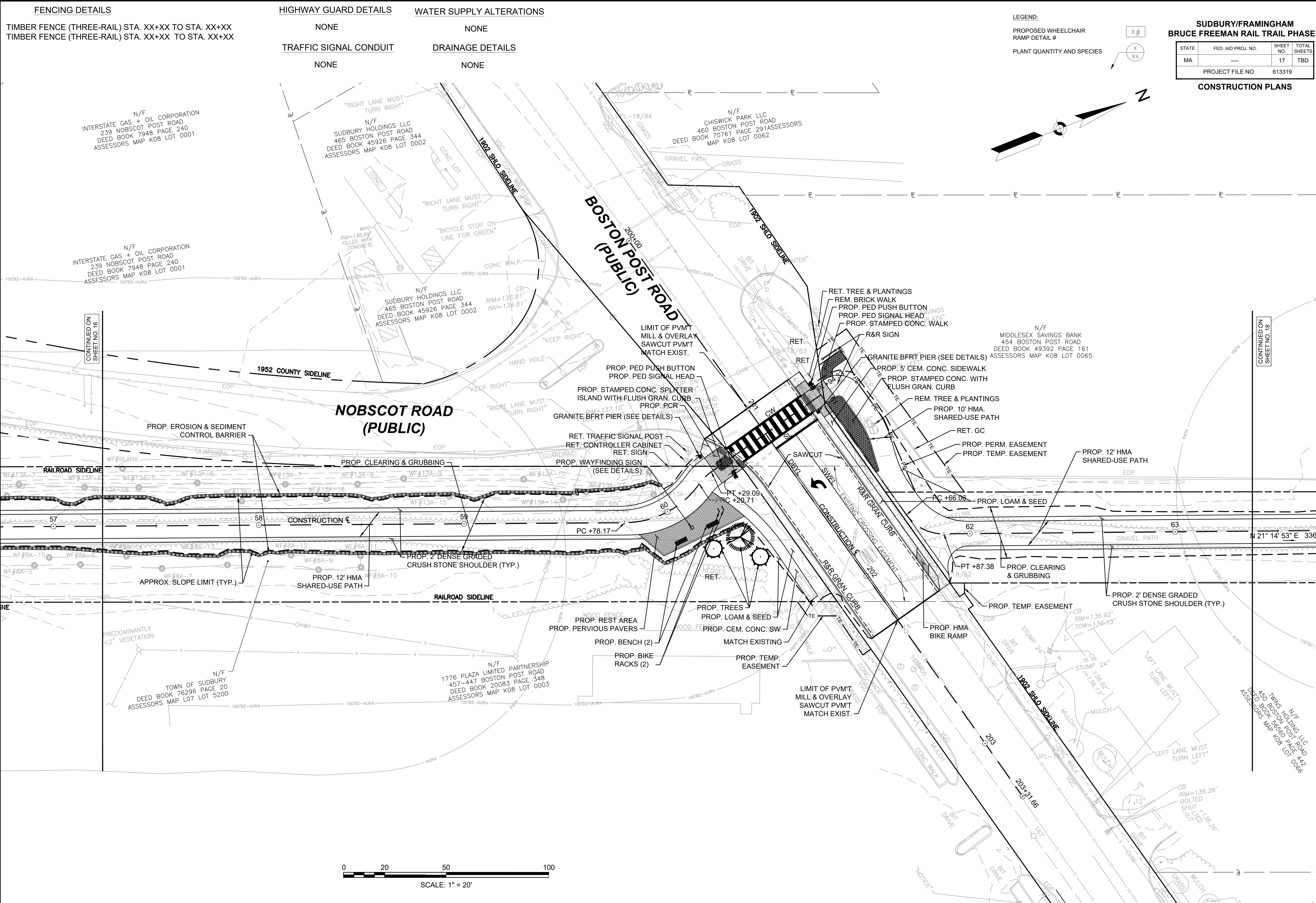
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	16	TB
PROJECT FILE NO.		613319	

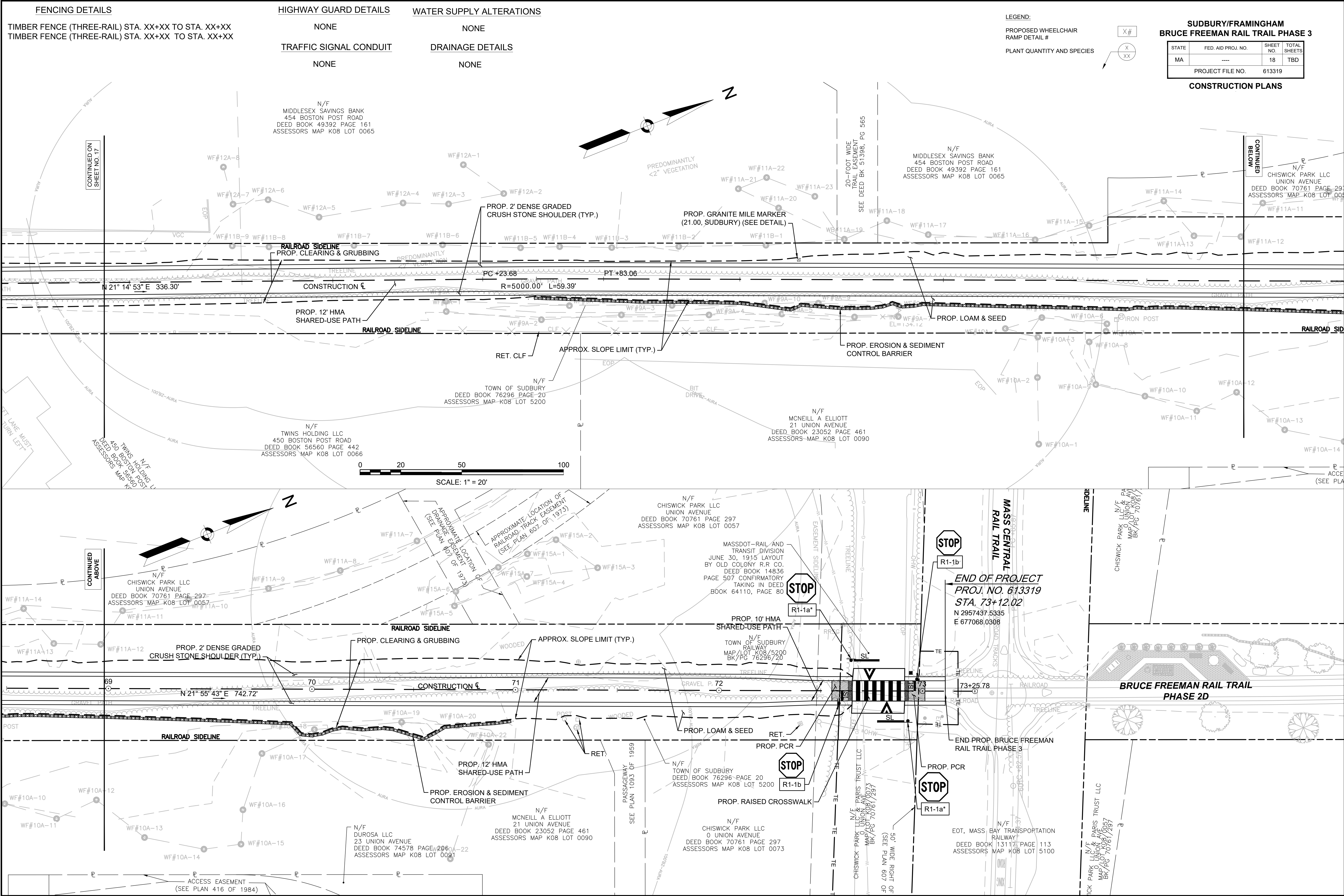
CONSTRUCTION PLANS



20200785 A30 CONSTRUCTION PLANS DWG Plotted on 5-Feb-2024 1:54 PM

20200785 A30 CONSTRUCTION PLANS DWG

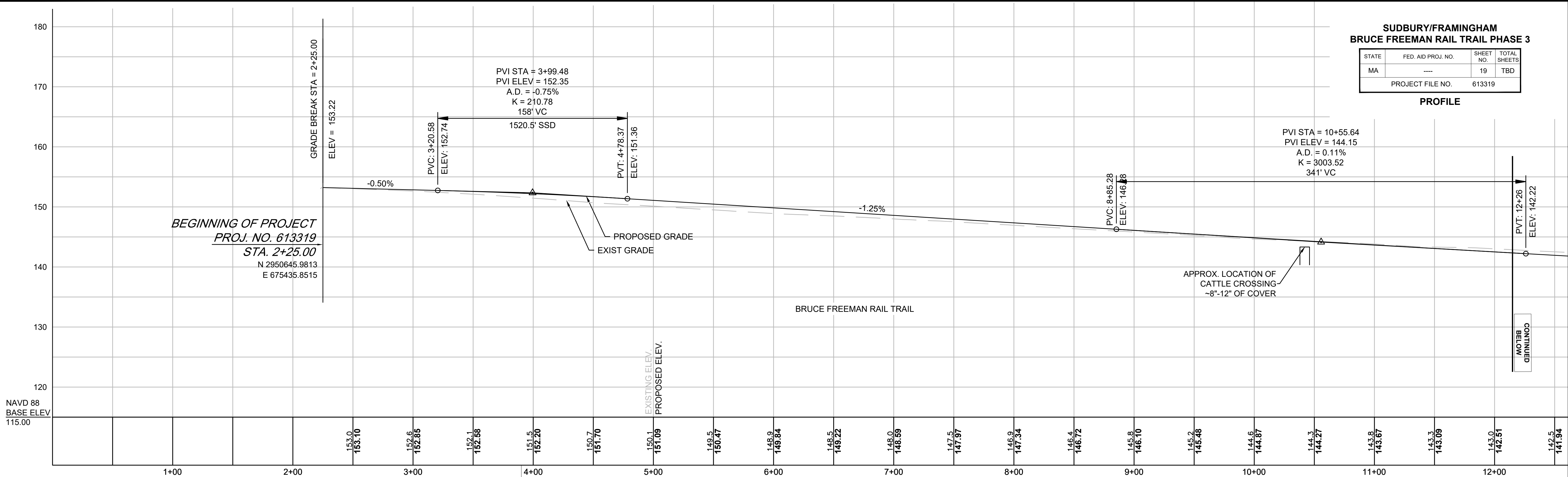




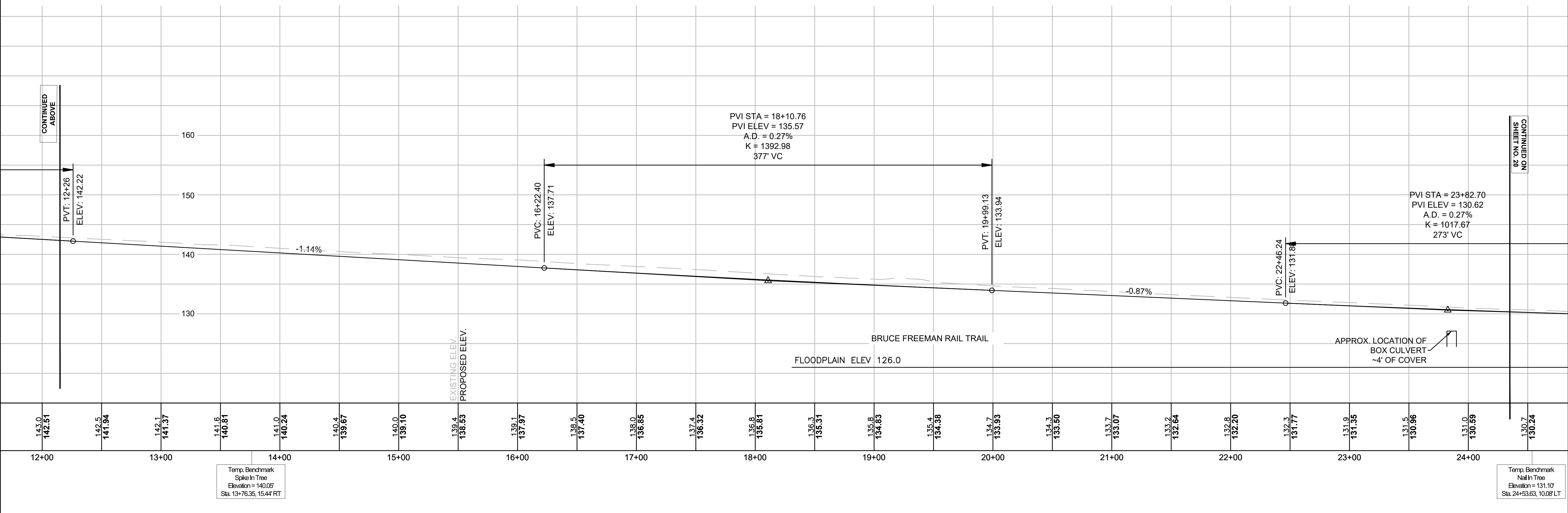
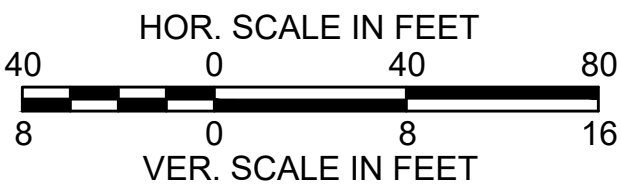
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	19	TBD
PROJECT FILE NO.		613319	

PROFILE



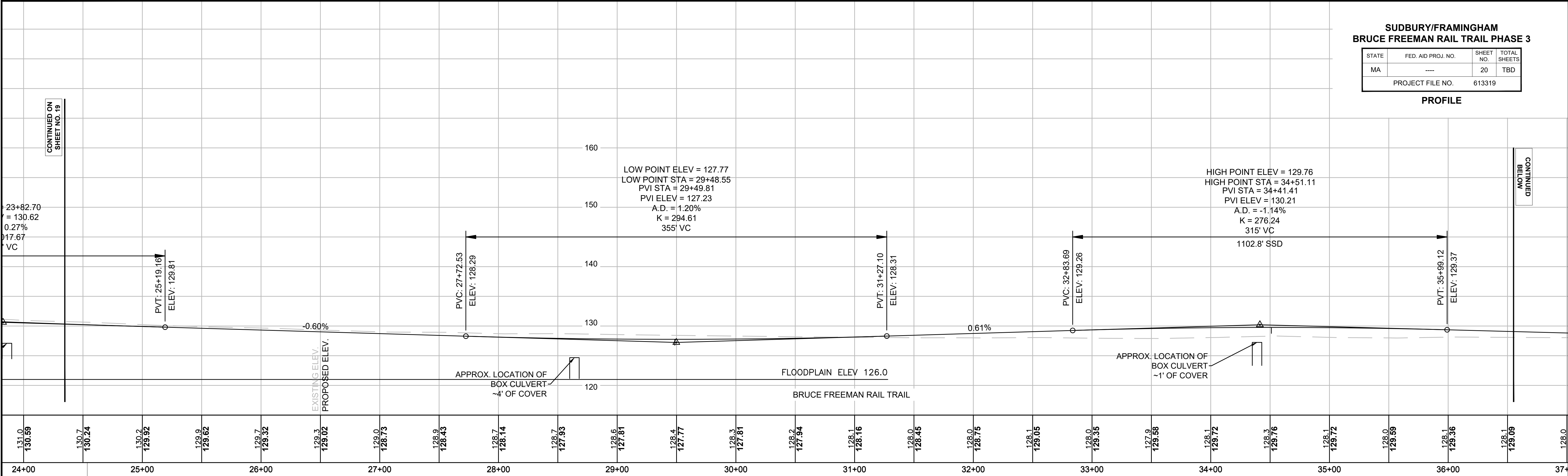
FOR CONSTRUCTION PLANS SEE SHEET NO. XX, XX & XX



SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

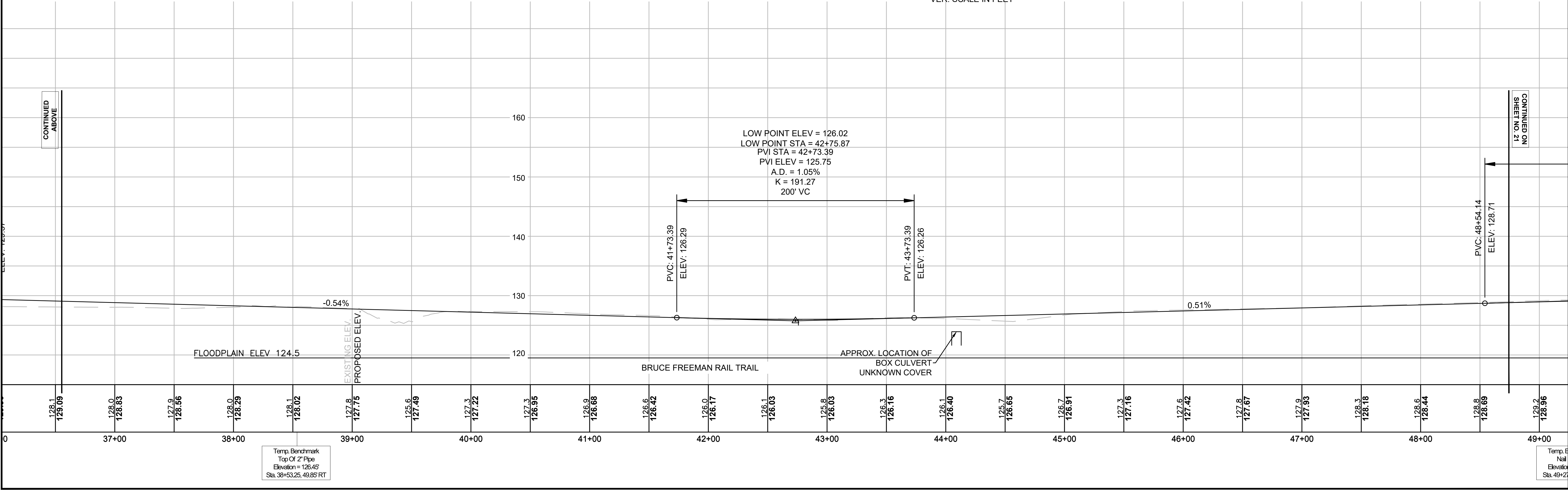
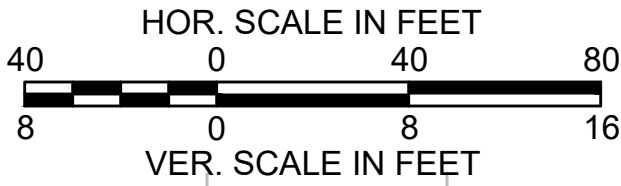
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	20	TBD
PROJECT FILE NO.		613319	

PROFILE



Temp. Benchmark
Nail In Tree
Elevation = 131.10'
Sta. 24+53.63, 10.08' LT

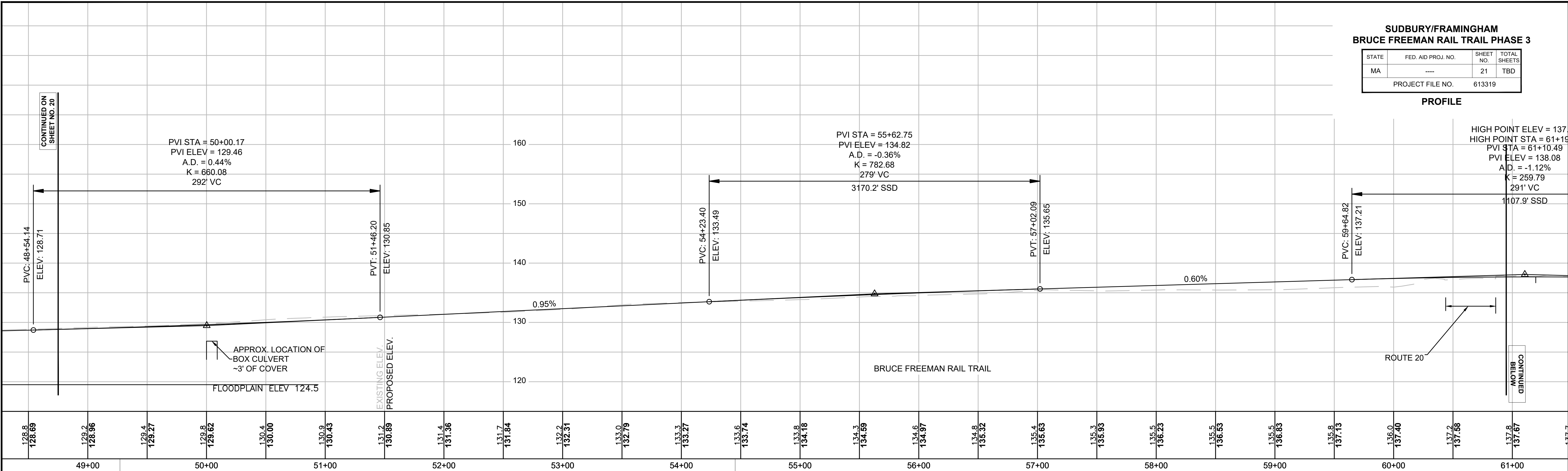
FOR CONSTRUCTION PLANS SEE SHEET NO. XX, XX & XX



SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

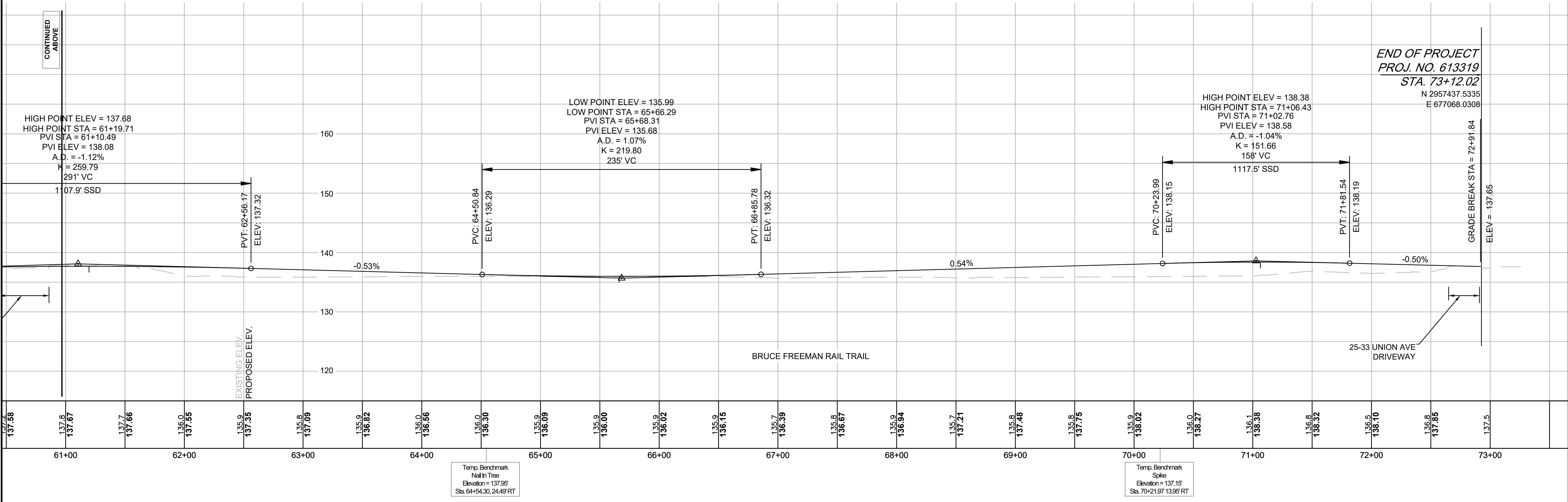
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	21	TBD
PROJECT FILE NO.		613319	

PROFILE



Temp. Benchmark
Nail In Tree
Elevation = 130.42
Sta. 49+27.08, 4.28' LT

Temp. Benchmark
Nail In Tree
Elevation = 133.69
Sta. 54+45.31, 16.18' LT

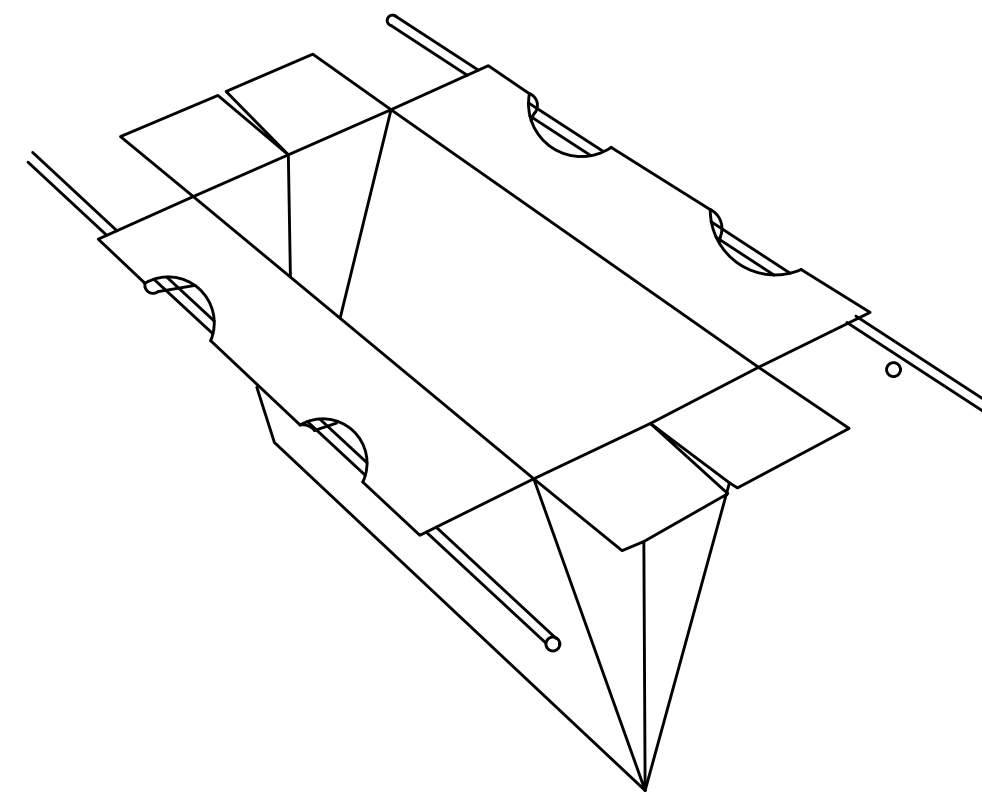


Temp. Benchmark
Nail In Tree
Elevation = 137.95
Sta. 64+54.30, 24.49' RT

Temp. Benchmark
Spike
Elevation = 137.15
Sta. 70+21.97 13.95' RT

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	22	TBD
PROJECT FILE NO.		613319	

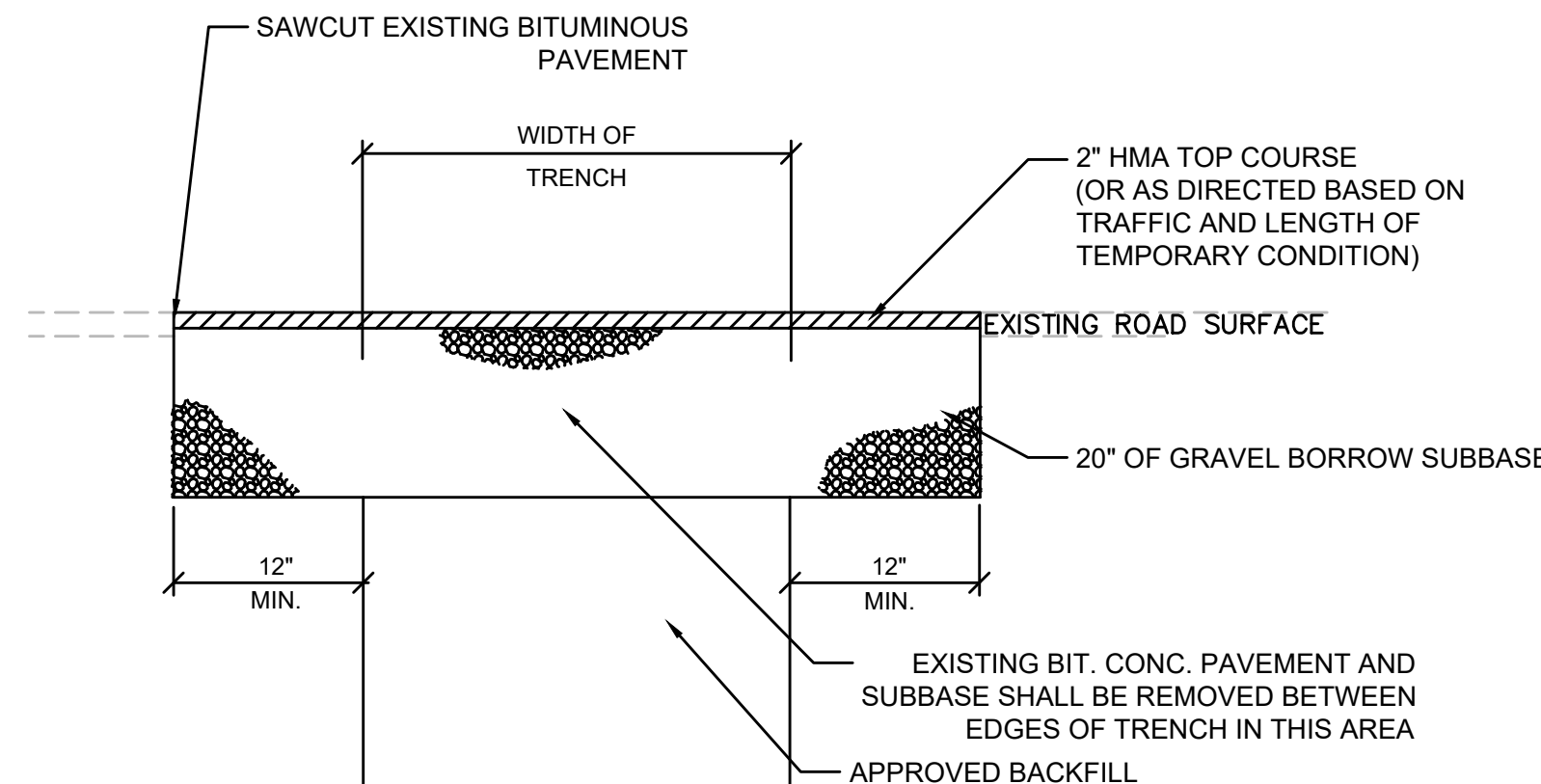
CONSTRUCTION DETAILS



NOTES:

1. SIZED TO FIT ANY SIZE OR SHAPE CATCH BASIN.
2. ALL SEAMS DOUBLE STITCHED.
3. PERMEABILITY - REGULAR FLOW SILTSACK - 40 gal./min./sq. ft.
HI - FLOW SILTSACK - 200 gal./min./sq. ft.

1 CATCH BASIN SILT SACK
SCALE: N.T.S.

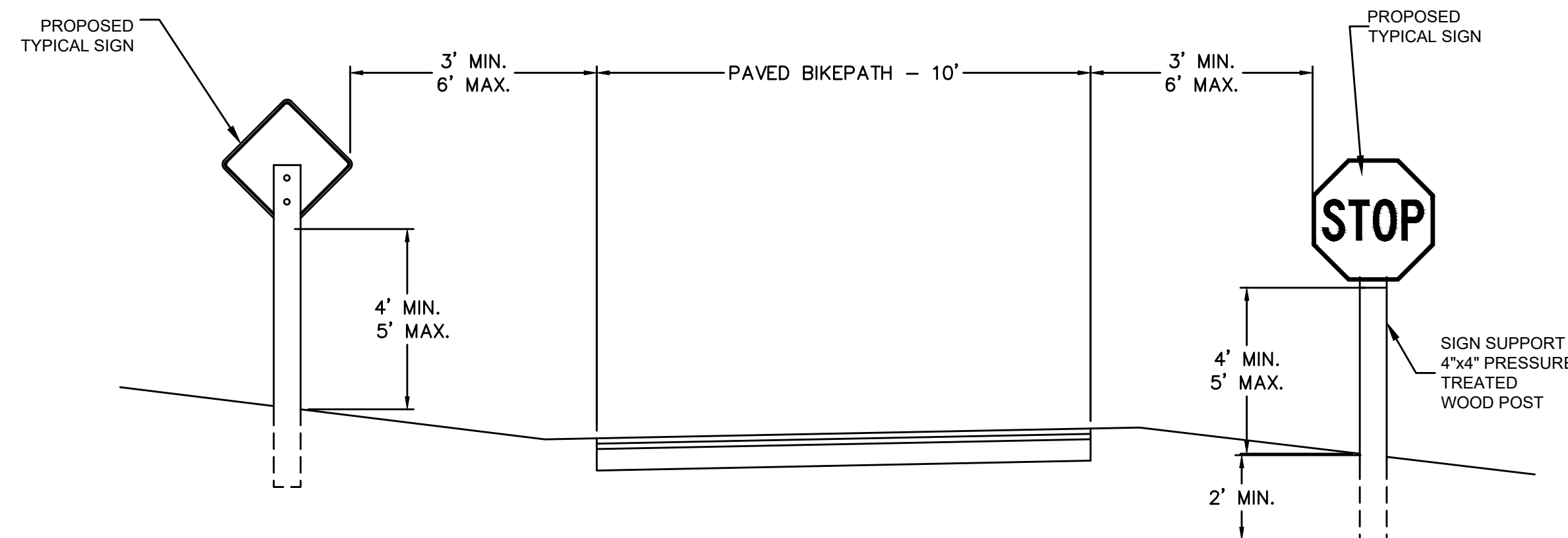


NOTES:

THE TEMPORARY PAVEMENT TRENCH REPAIR SHALL BE USED DURING THE TIME BETWEEN COMPLETION OF THE UTILITY CONSTRUCTION AND CONSTRUCTION OF THE PROPOSED ROADWAY PAVEMENT STRUCTURE OR PERMANENT PAVEMENT TRENCH REPAIR.

TEMPORARY ASPHALT SHALL BE PAID FOR UNDER ITEM #472

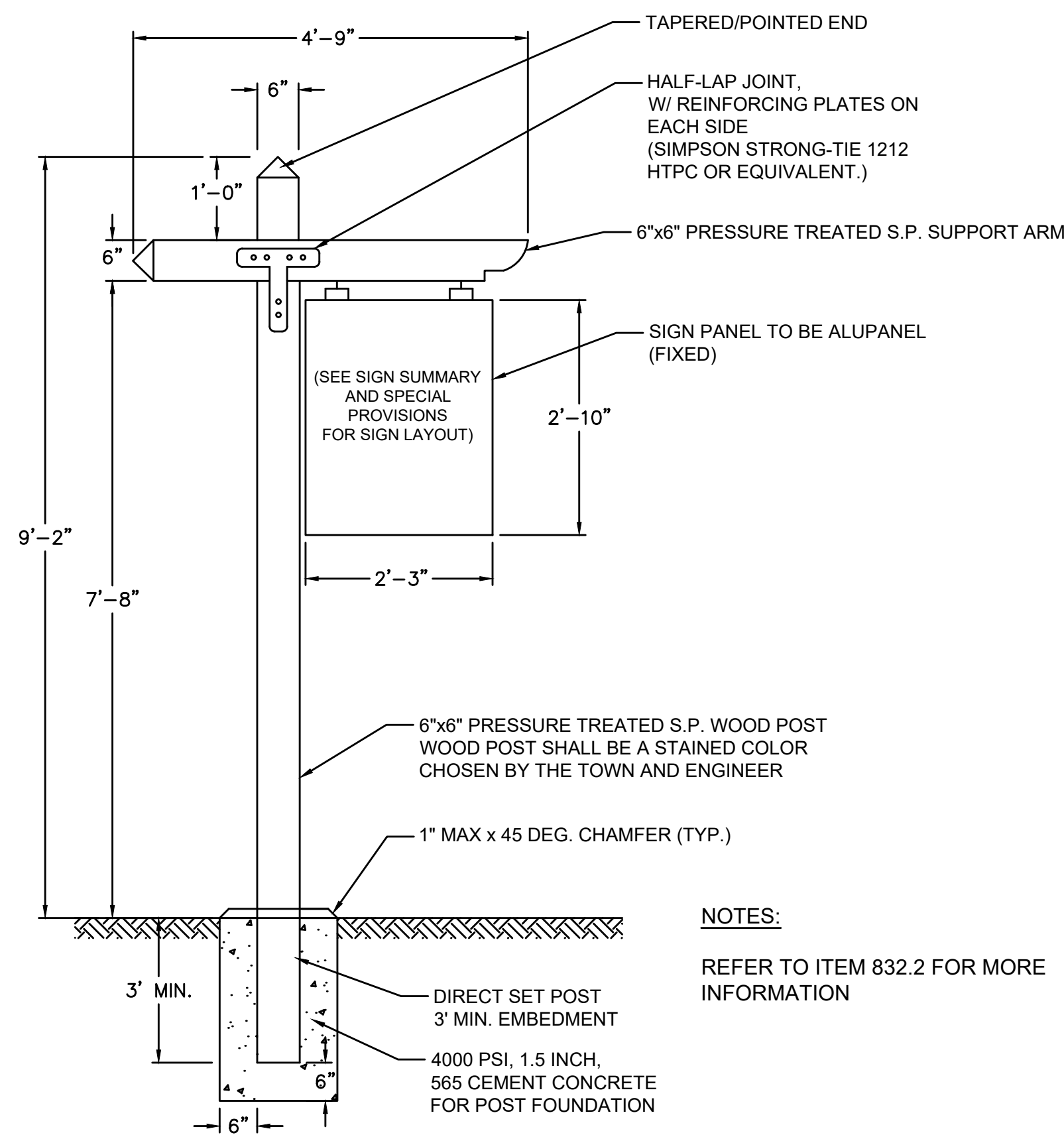
2 TEMPORARY PAVEMENT TRENCH REPAIR
SCALE: N.T.S.



3 SHARED-USE PATH TYPICAL SIGN PLACEMENT
SCALE: N.T.S.

NOTES:

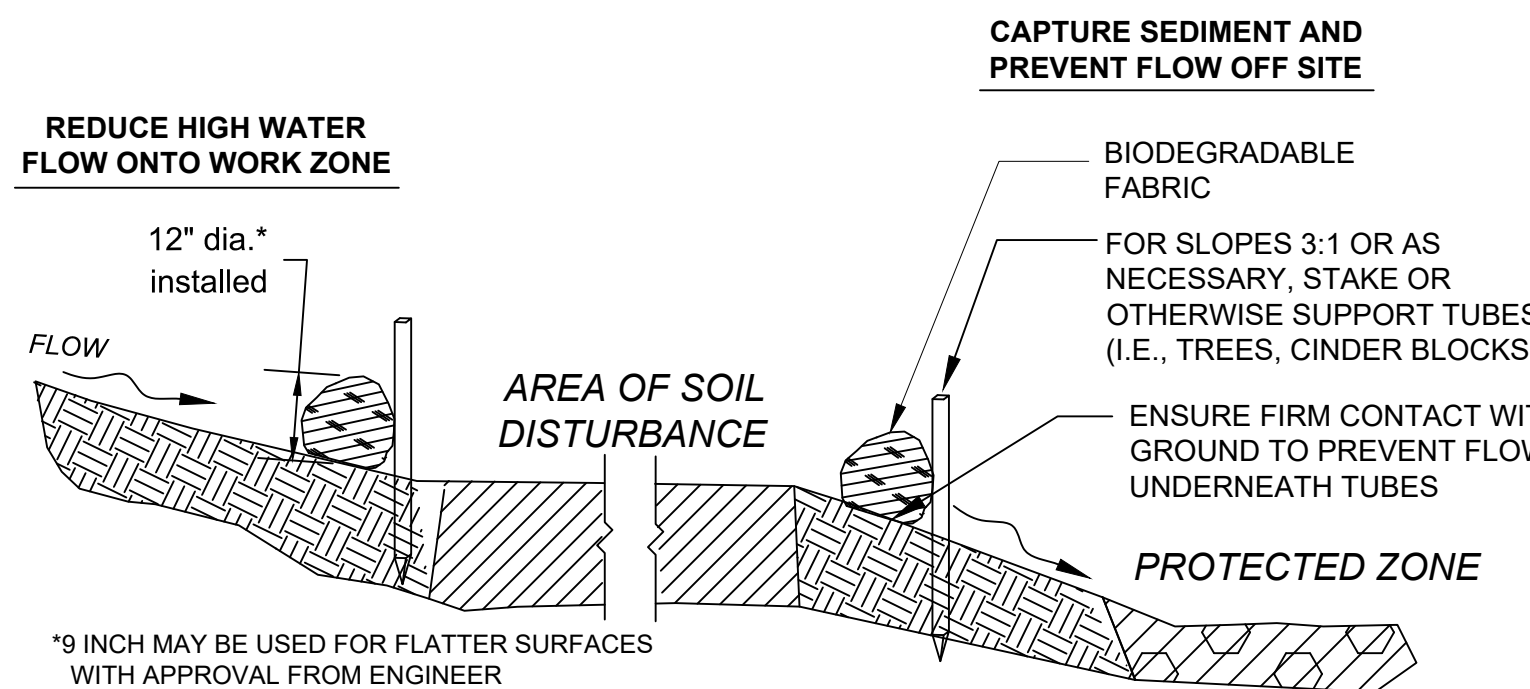
1. ALL HARDWARE SHALL BE GALVANIZED.
2. WOOD POSTS SHALL BE PAID FOR UNDER ITEM 847.11".



NOTES:

REFER TO ITEM 832.2 FOR MORE INFORMATION

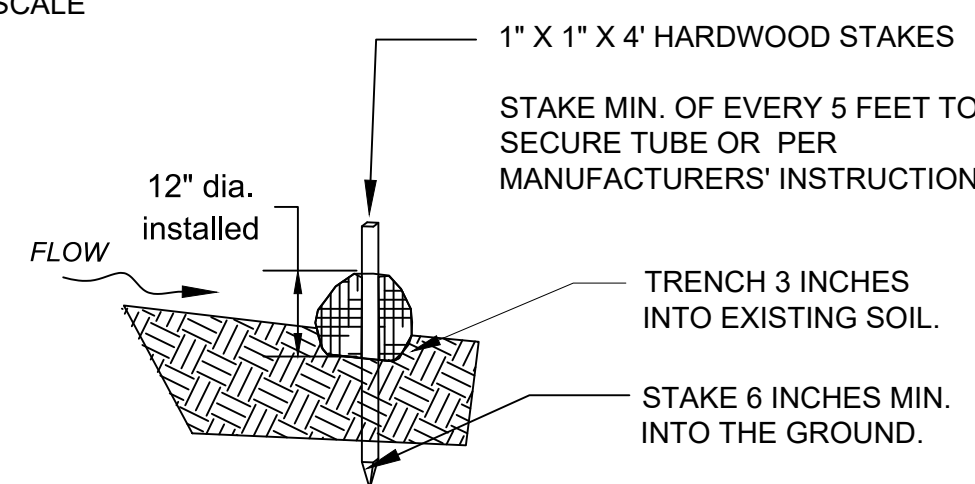
4 WAYFINDING SIGNS TYPE DS
SCALE: N.T.S.



SECTION

SEDIMENT BARRIER - COMPOST FILTER TUBES

NOT TO SCALE

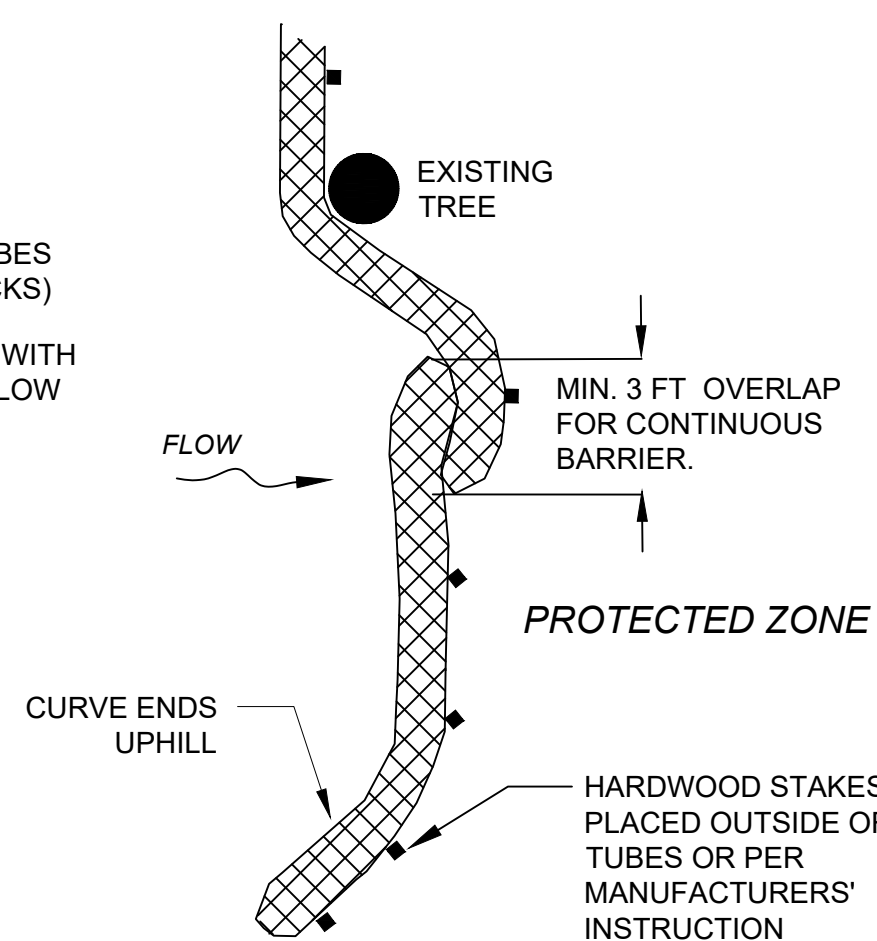


SECTION

12 INCH STRAW WATTLE

NOT TO SCALE

5 SEDIMENT BARRIERS - COMPOST FILTER TUBES
SCALE: N.T.S.

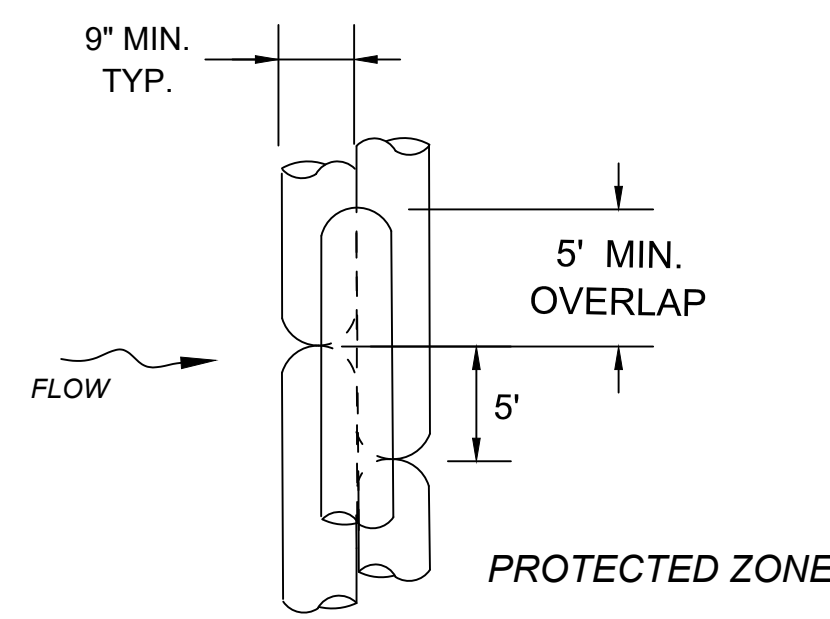


PROTECTED ZONE

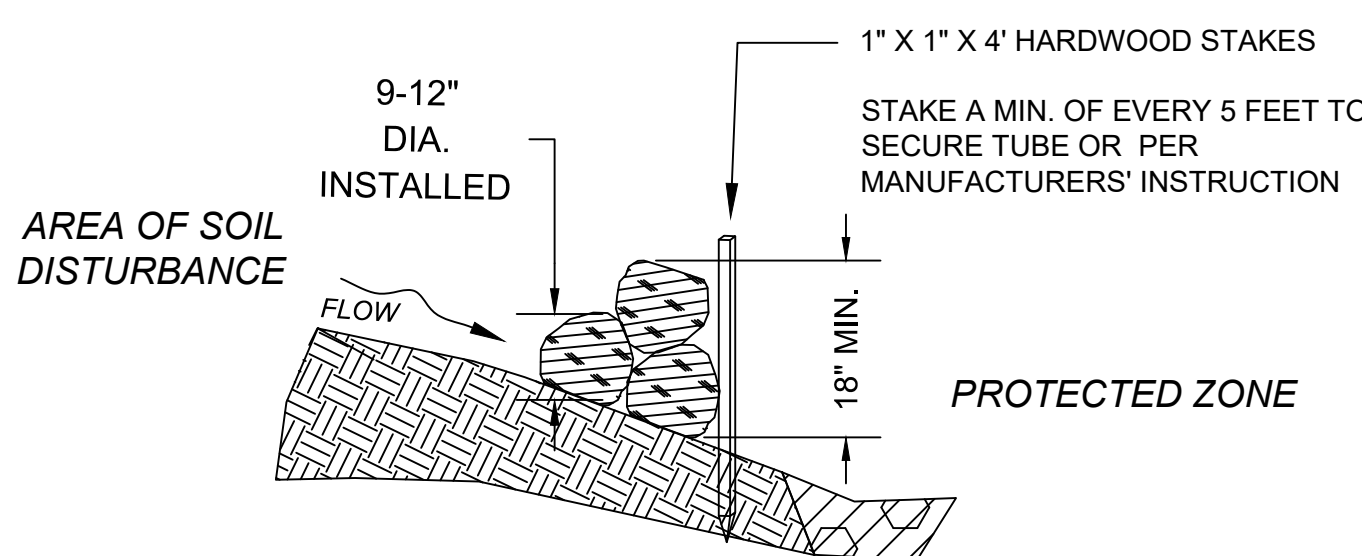
PLAN VIEW

COMPOST FILTER TUBE

NOT TO SCALE



PLAN VIEW



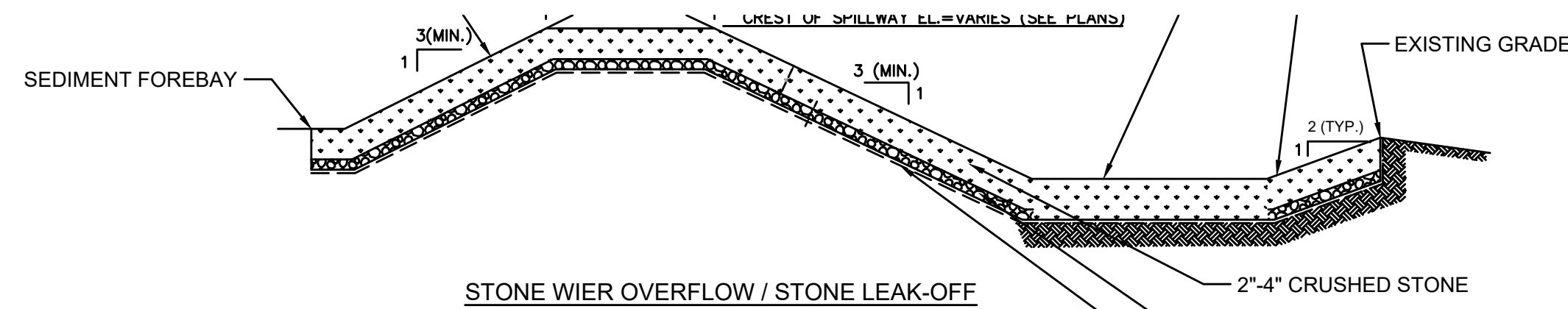
SECTION

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

NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	23	TBD
PROJECT FILE NO.		613319	

CONSTRUCTION DETAILS

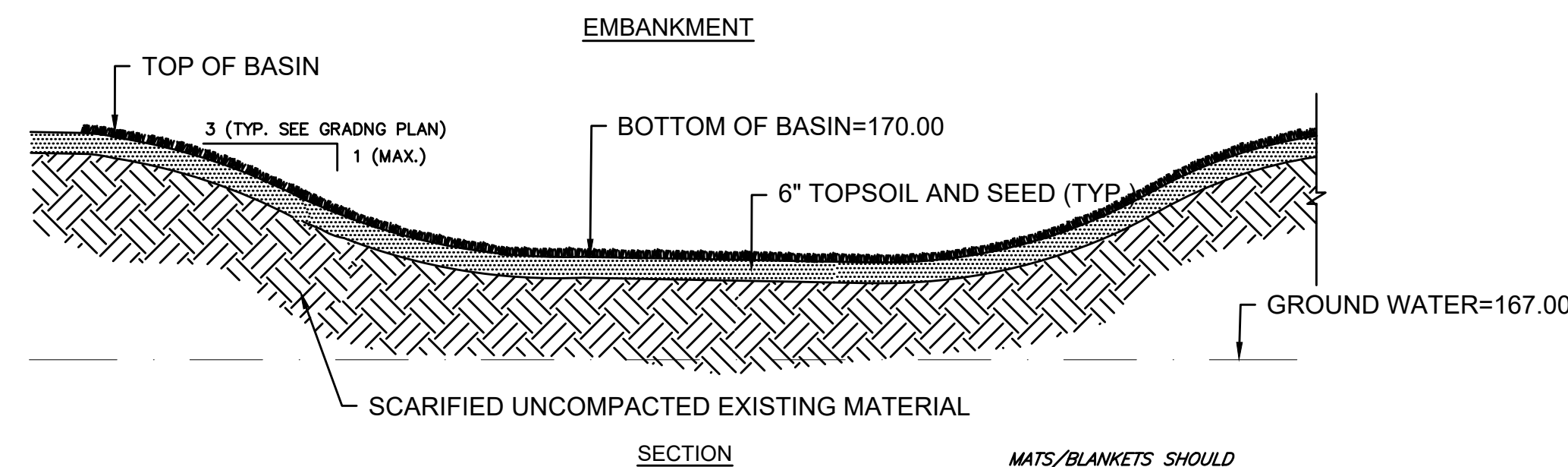


NOTES:

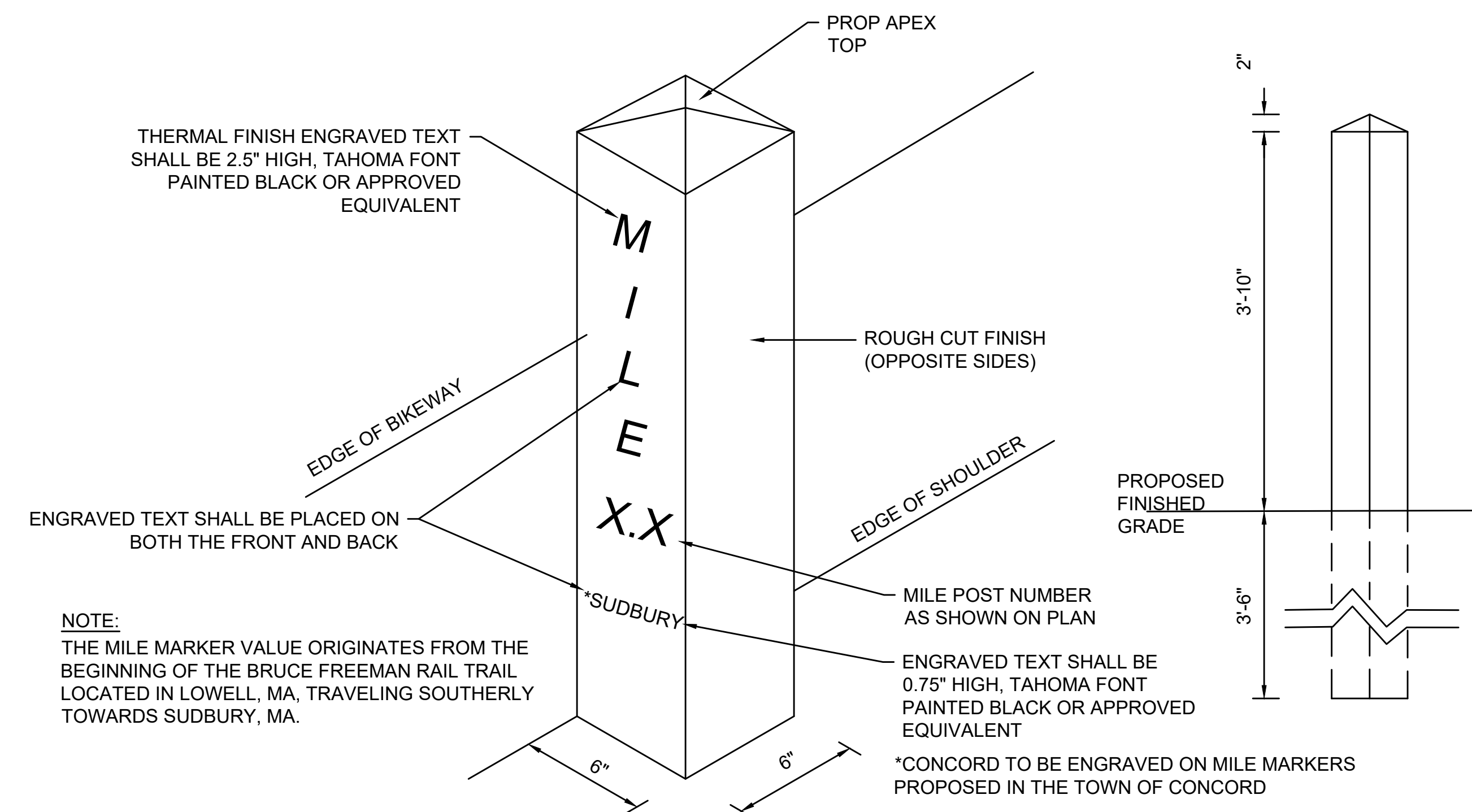
1. IMPERVIOUS MATERIAL FOR USE IN BASIN EMBANKMENT AREAS AND WHERE SHOWN ON THE PLANS SHALL BE COMPOSED OF CLAYS, SILTY CLAYS, OR CLAYEY SILTS. THE SOIL SHALL BE FREE OF RUBBISH, ICE, VEGETATIVE MATTER, LOAM, OR OTHER DEBRIS AND HAVE THE FOLLOWING GRADATION AS DEFINED BY A STANDARD SIEVE TEST (ASTM D422):

MIN. PERCENT PASSING (BY WT.)	SEIVE SIZE
100	3.5"
80-100	3/4"
40-90	No. 4
30-85	No. 40
25-75	No. 200

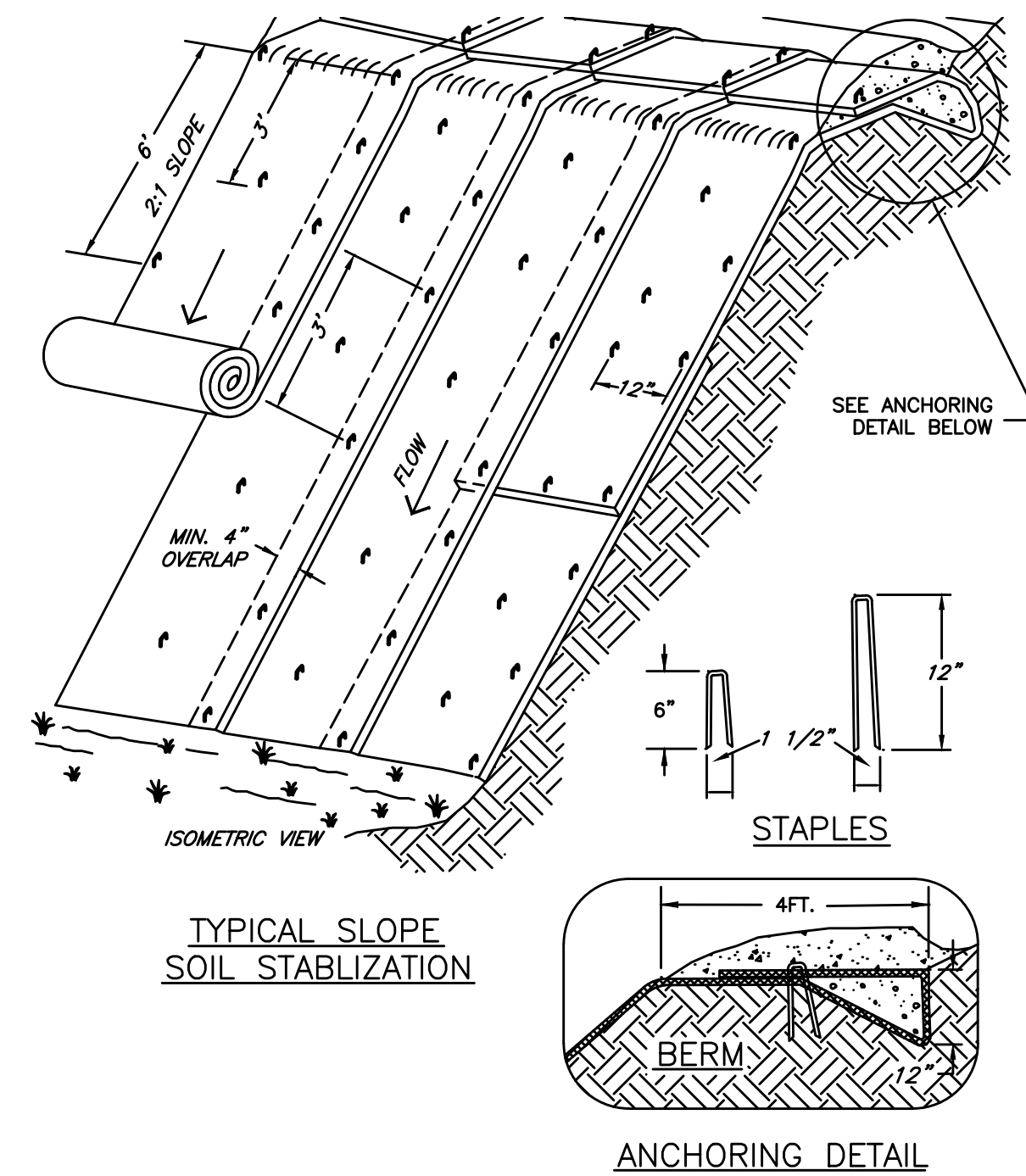
2. PERVIOUS BACKFILL MATERIAL FOR USE IN FILL AREAS ASSOCIATED WITH BASIN EMBANKMENTS SHALL BE COMPOSED OF ORDINARY BORROW MATERIAL (ITEM 150.) OR EXCAVATED MATERIAL FROM THE SITE DEEMED RE-USEABLE BY THE ENGINEER. SATISFACTORY ON-SITE MATERIAL SHALL HAVE SOIL CLASSIFICATION GROUPS OF GW, GP, GM, SW, SP, AND SM ACCORDING TO ASTM D 2487, OR A COMBINATION OF THESE GROUPS AND SHALL BE FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES (75 MM) IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.



6 INFILTRATION BASIN
SCALE: N.T.S.



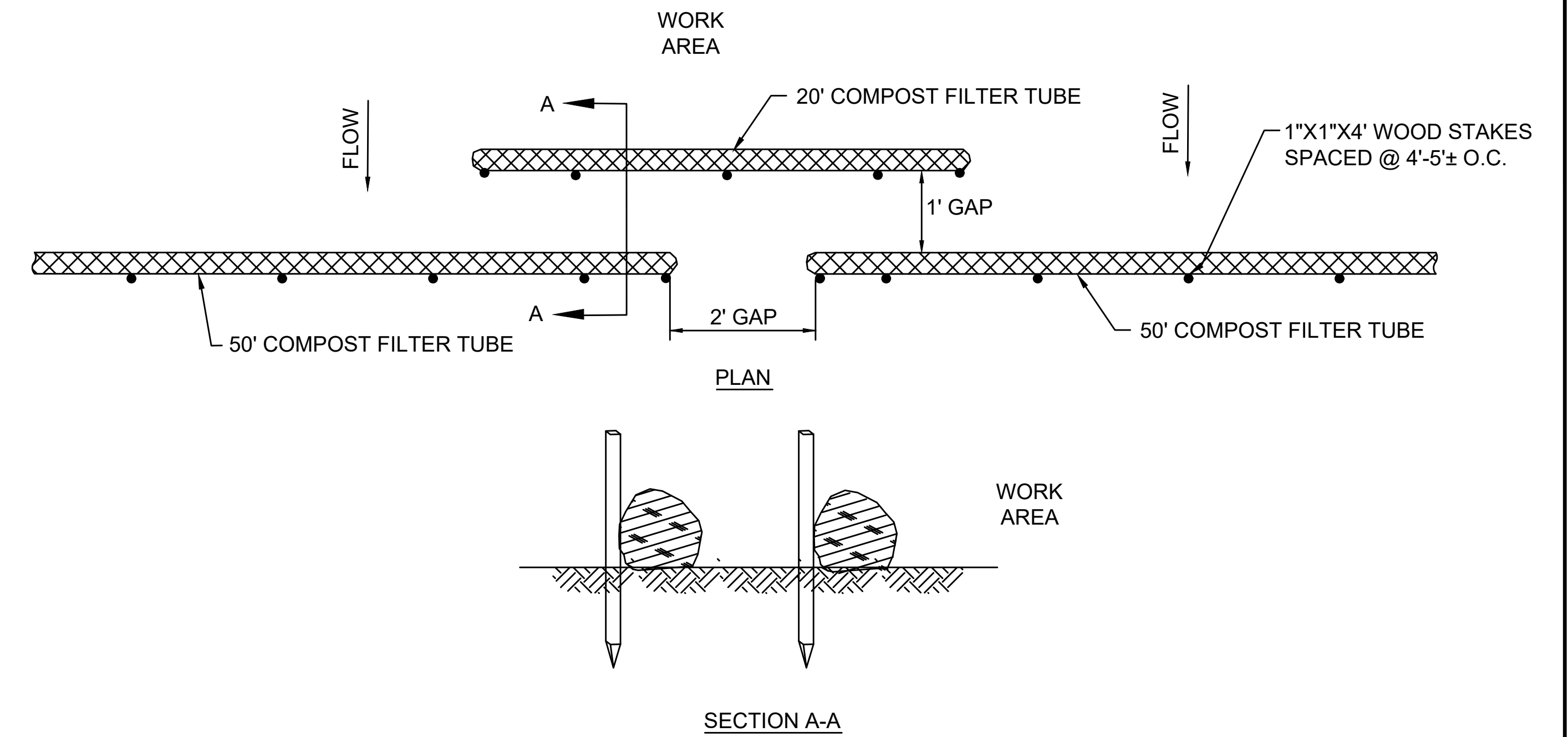
9 GRANITE MILE MARKER
SCALE: N.T.S.



NOTES:

- MATting FOR EROSION CONTROL MUST BE MADE FROM 100% BIODEGRADEABLE MATERIAL.
- STAPLES OR STAKES MAY BE USED TO SECURE THE MATting. THE STAPLES OR STAKES MUST BE MADE FROM A 100% BIODEGRADEABLE MATERIAL.

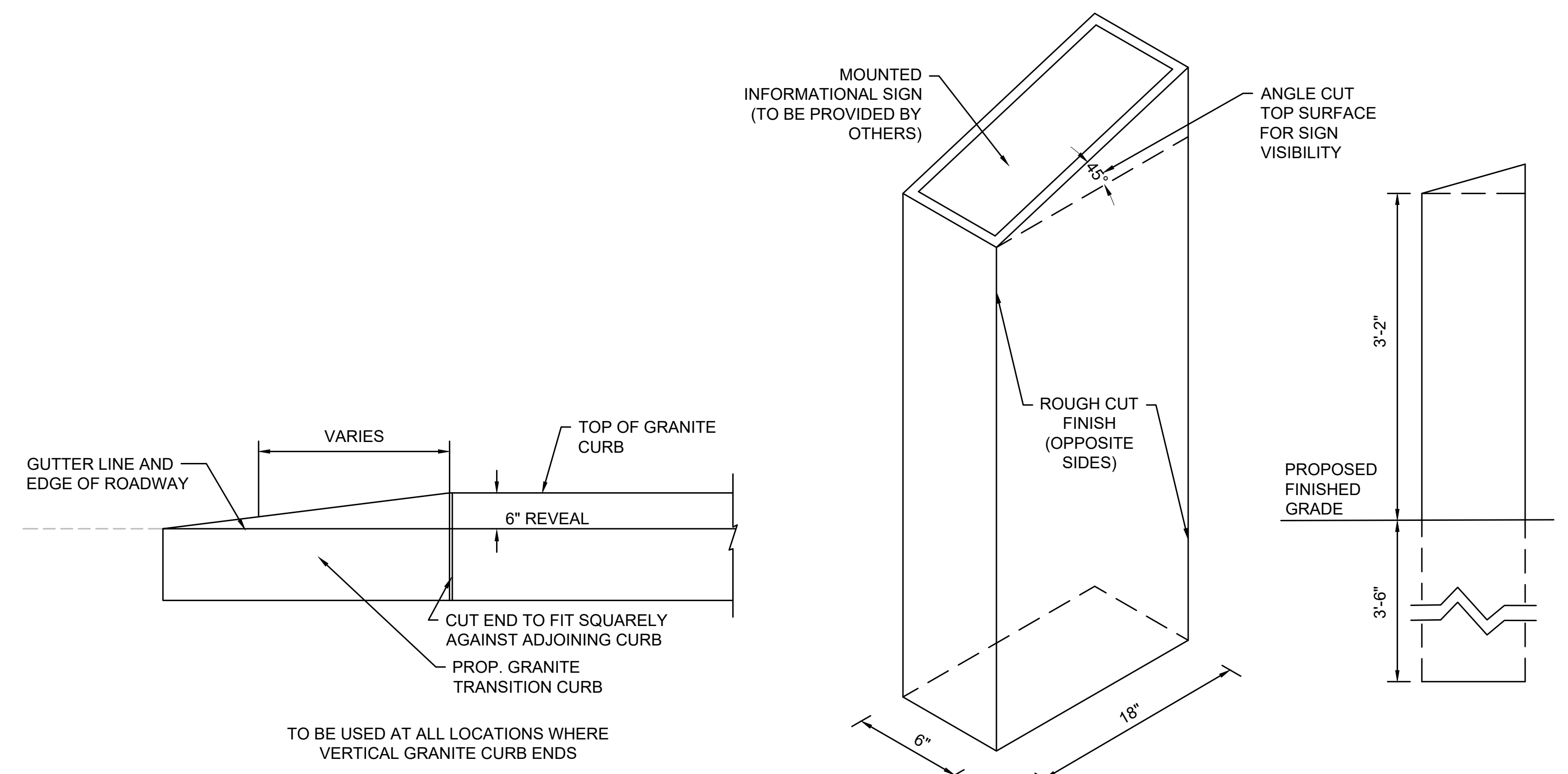
7 MATting FOR EROSION CONTROL
SCALE: N.T.S.



NOTES:

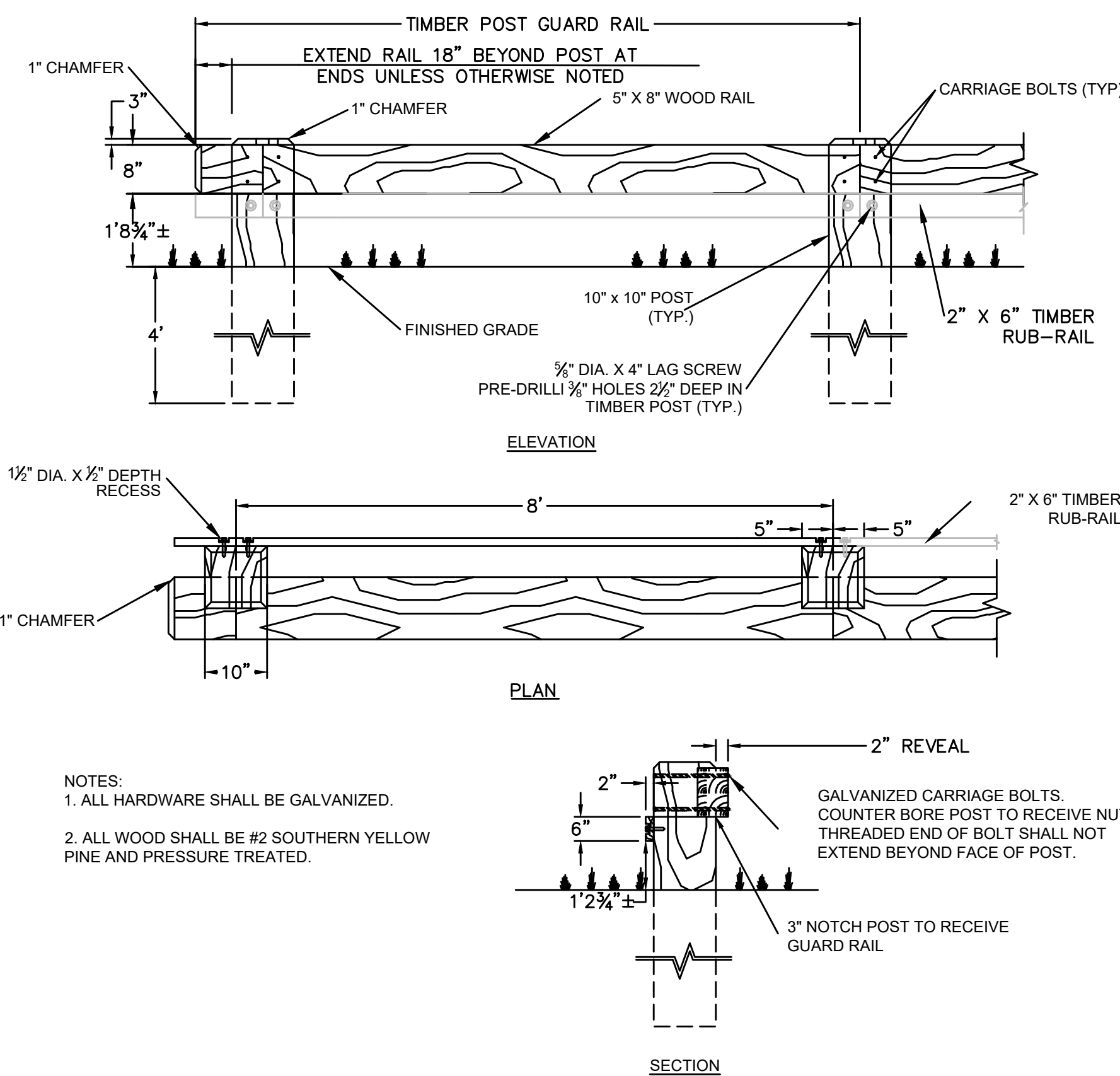
- SYNCOPATED COMPOST FILTER TUBES SHALL BE USED WHEN BORDERING VERNAL POOLS AS SHOWN ON THE PLANS.

8 SYNCOPATED SEDIMENT CONTROL BARRIER
SCALE: N.T.S.

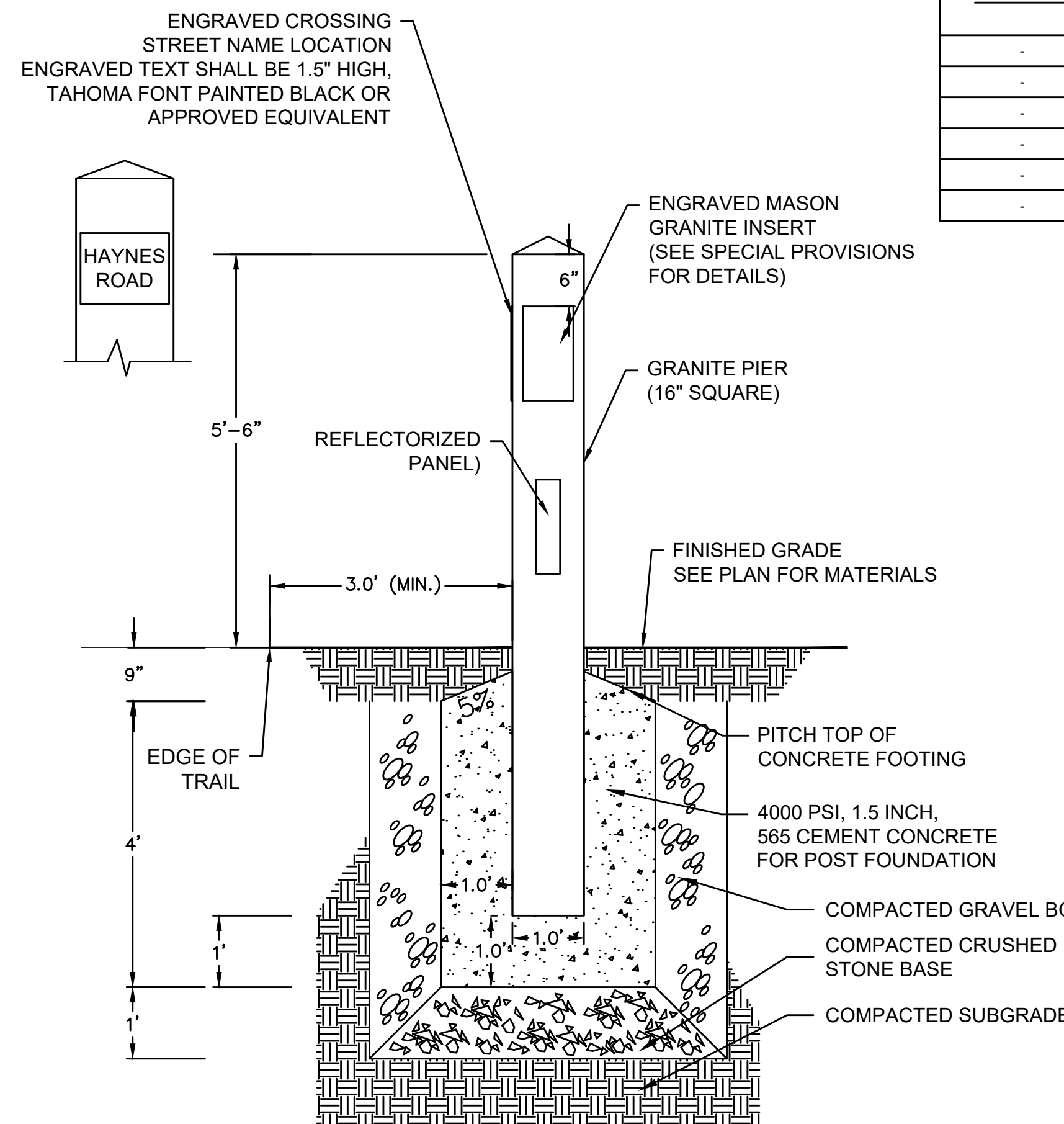


10 TRANSITION CURB DETAIL
SCALE: N.T.S.

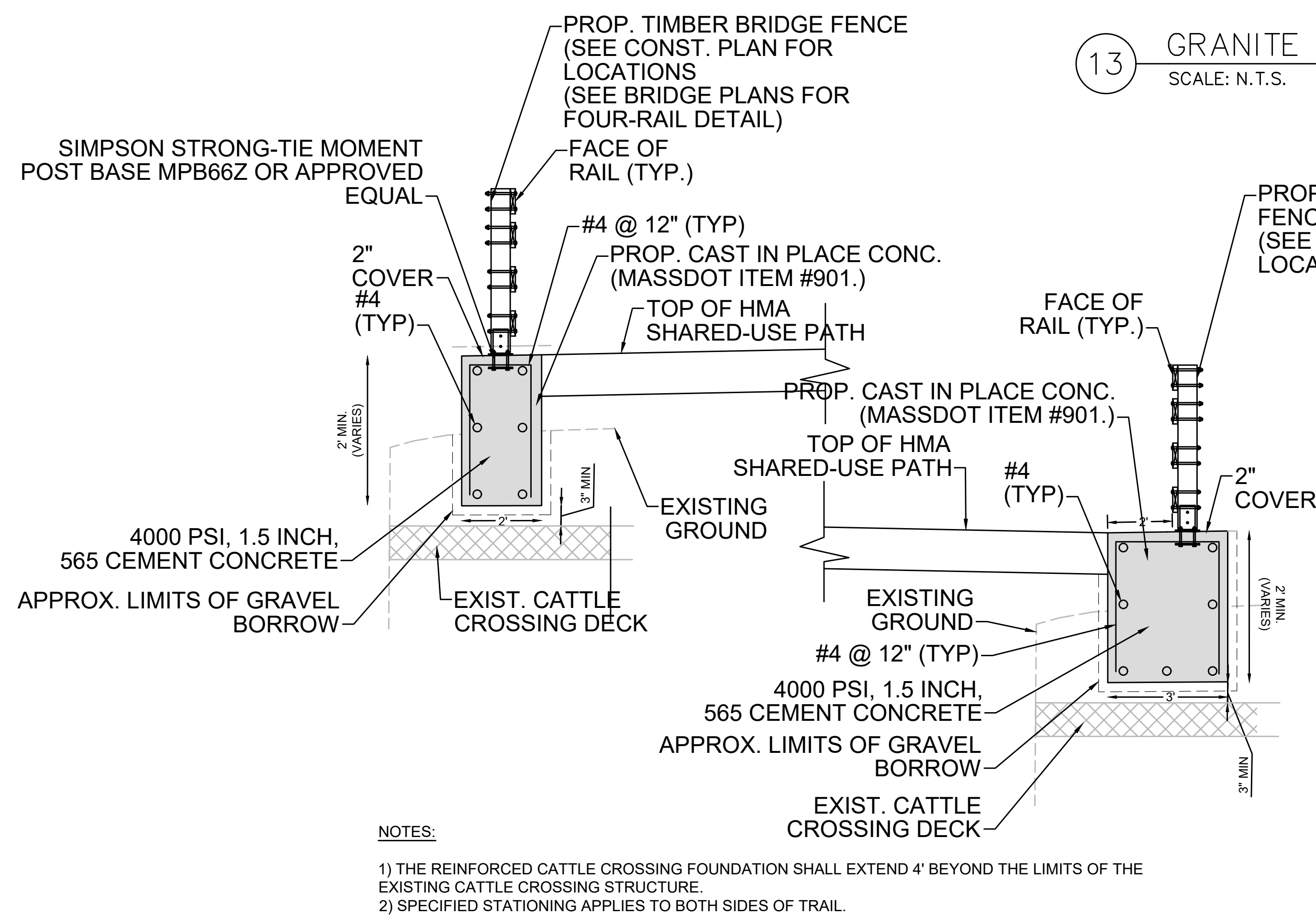
11 GRANITE POST INTERPRETIVE SIGN
SCALE: N.T.S.



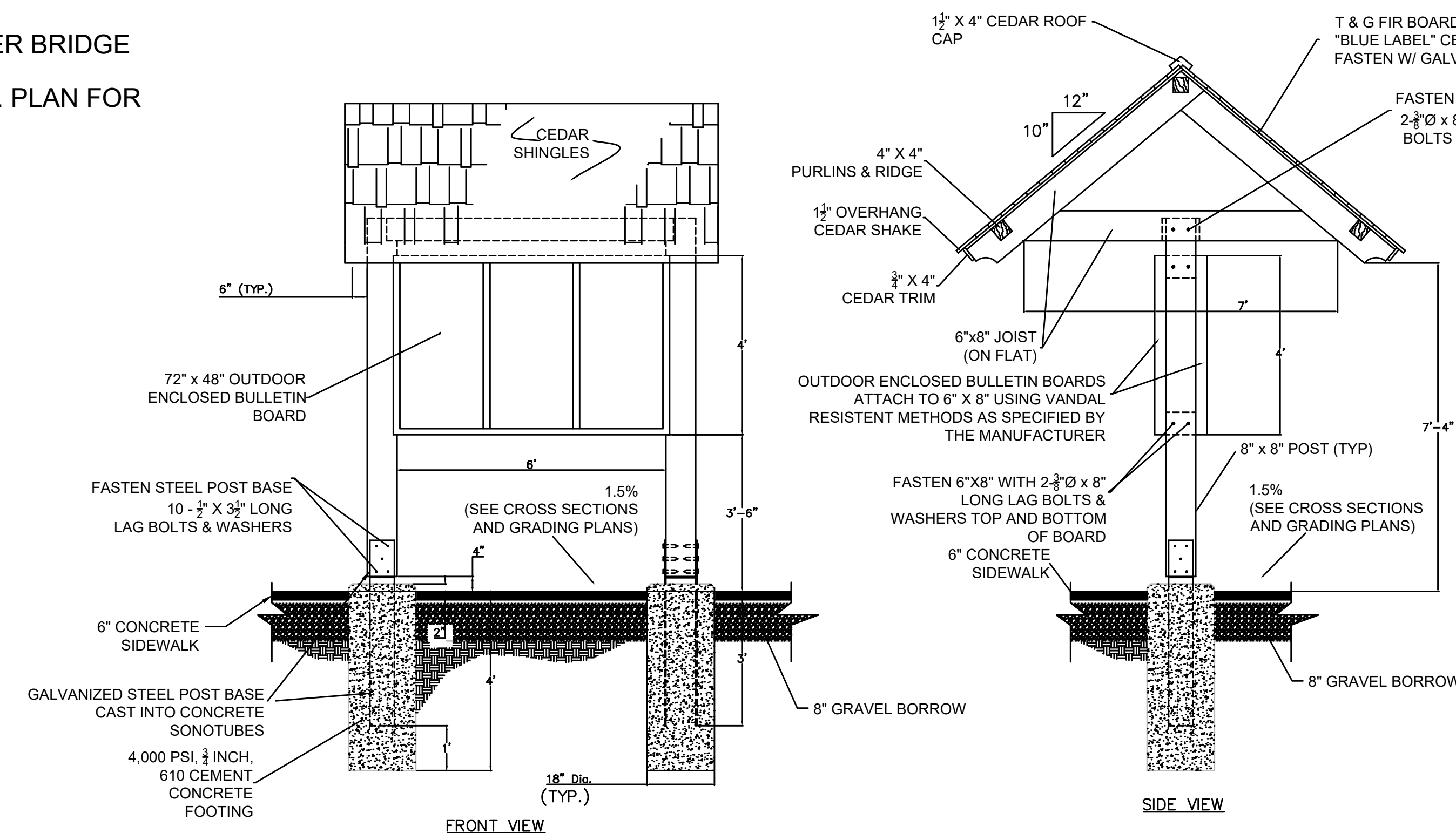
12 TIMBER POST GUARDRAIL
SCALE: N.T.S.



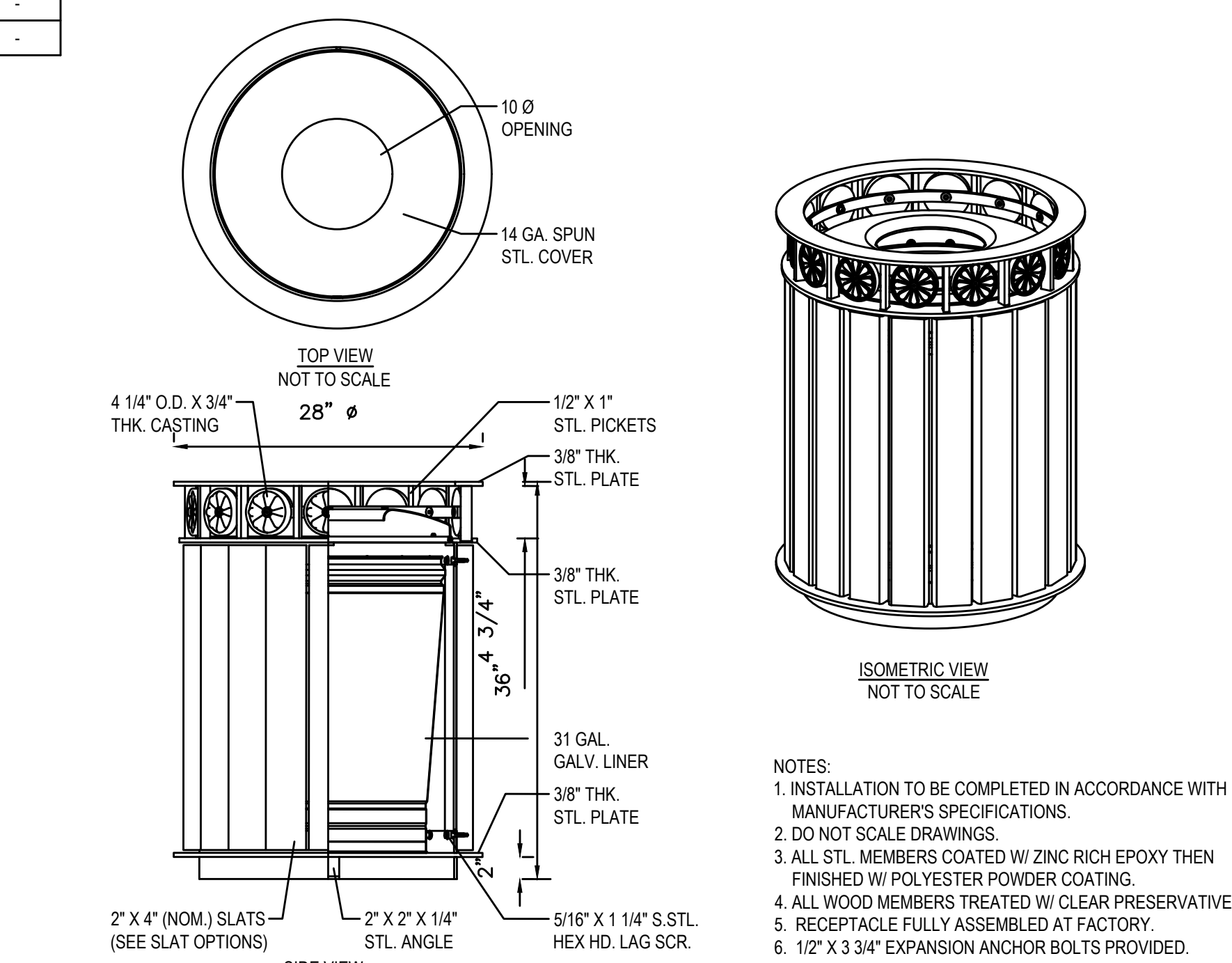
13 GRANITE BRUCE FREEMAN RAIL TRAIL PIER
SCALE: N.T.S.



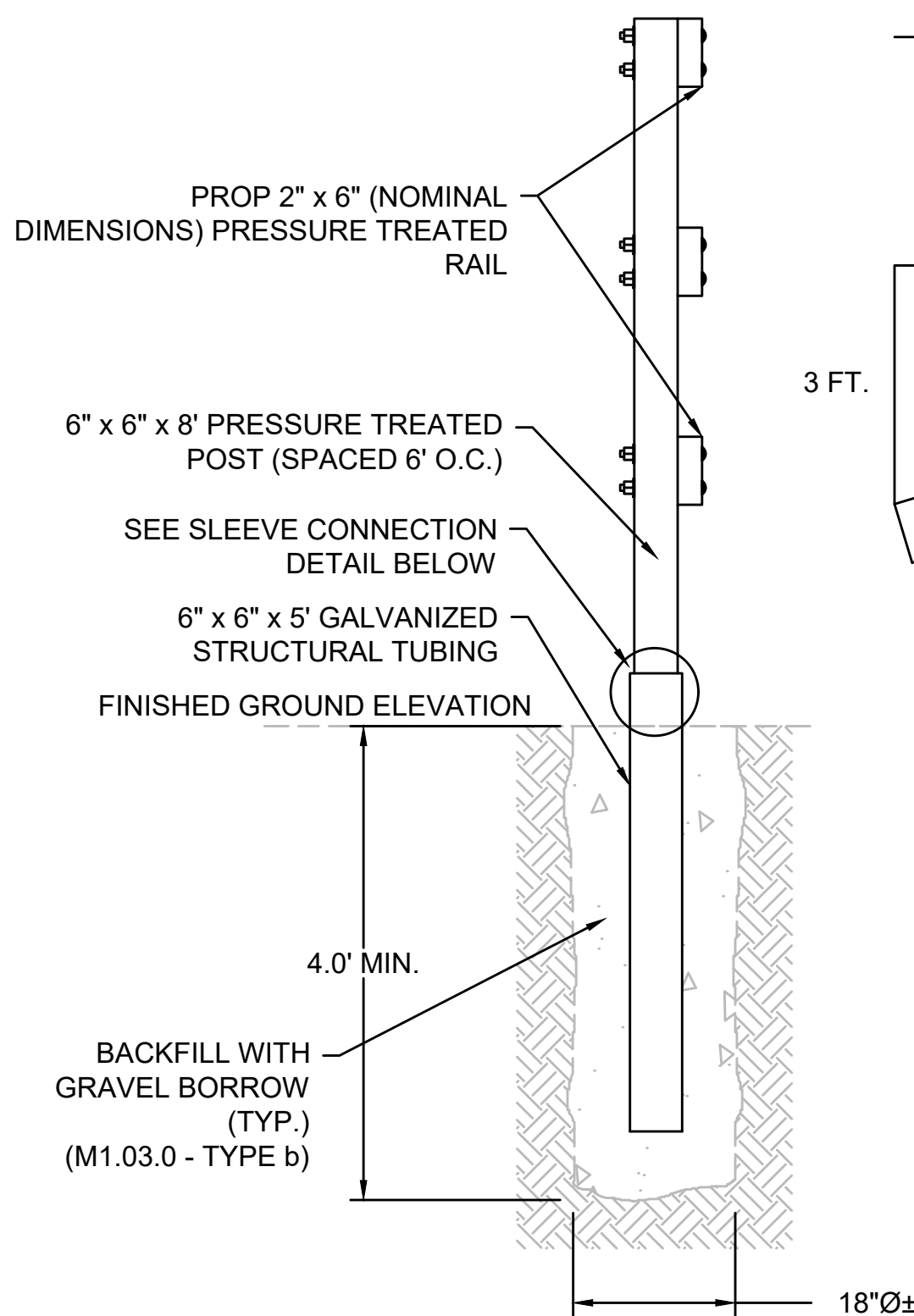
15 REINFORCED TIMBER CONNECTION AT CATTLE CROSSING
SCALE: N.T.S.



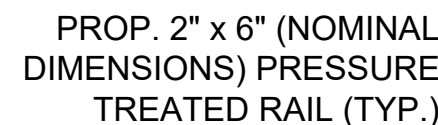
16 DISPLAY BOARD
SCALE: N.T.S.



14 TRASH RECEPTACLE
SCALE: N.T.S.



TYPICAL FENCE TRANSITION
AT FENCE APPROACHES
N.T.S.



6" x 6" x 8.0' PRESSURE TREATED CONNECTION POST (TYP.)

6.0'

INTERMEDIATE CONNECTION (SEE DETAIL)

6" x 6" x 8.0' PRESSURE TREATED INTERMEDIATE POST

1/2"Ø x 6" LONG GALVANIZED CARRIAGE BOLT, NUT AND WASHER (TYP.)

10"

10"

4.0'

12"±

FINISHED GROUND ELEVATION

PROP. 2" x 6" (NOMINAL DIMENSIONS) PRESSURE TREATED RAIL

4.0' MIN.

BACKFILL WITH GRAVEL BORROW (TYP.) (M1.03.0 - TYPE b)

18"Ø±

BUTT JOINT CONNECTION (SEE DETAIL)

A

A

NOTES:
1. FOR RADII LESS THAN 165', USE CONNECTION POSTS SET AT 6.0' O.C. AND SHORTEN RAILS ACCORDINGLY.

- SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3**

CONSTRUCTION DETAILS

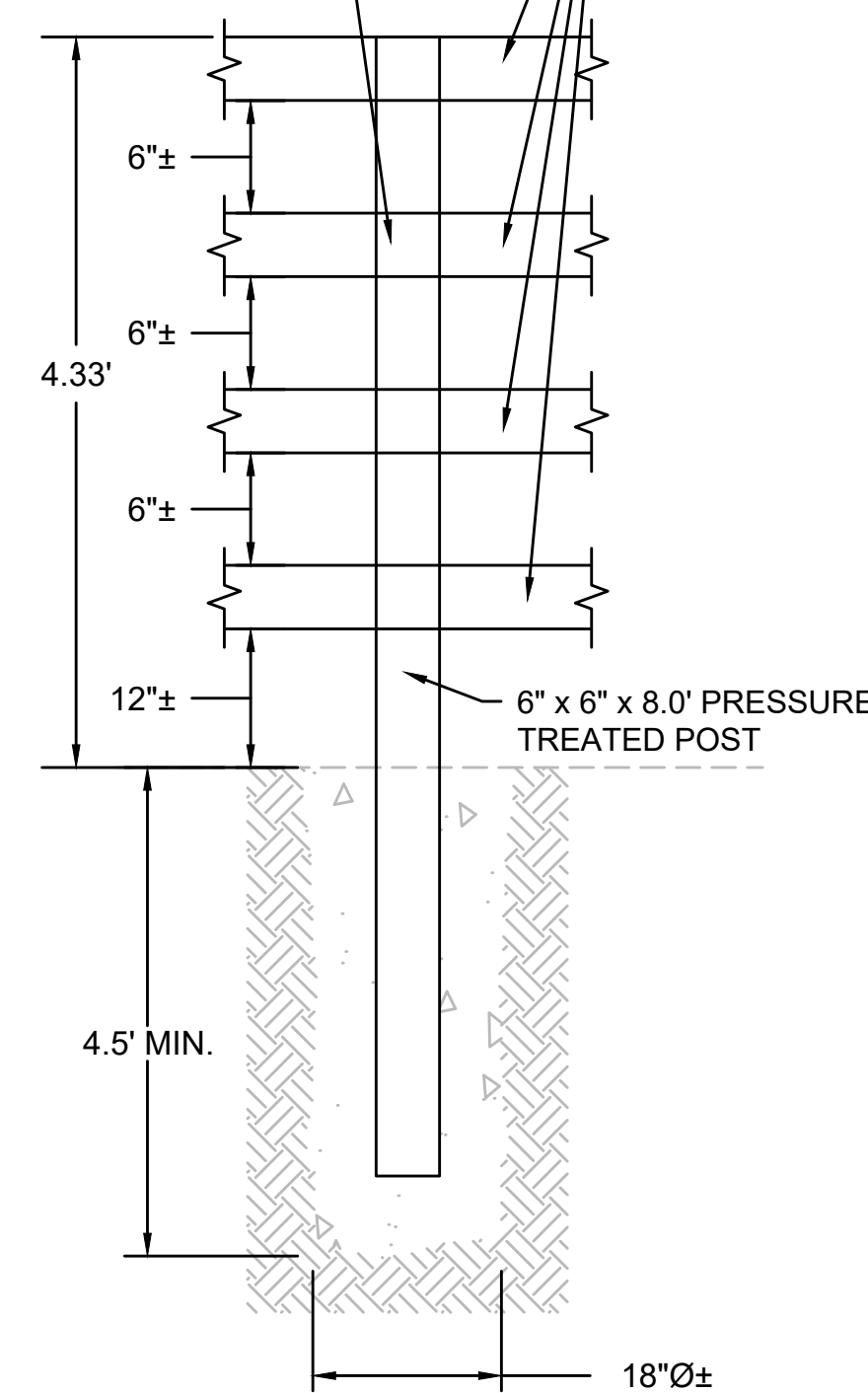
The technical drawings illustrate the rail assembly in two views:

- ELEVATION:** This view shows the rail assembly from the side. It features a central rail with a "BUTT JOINT" indicated by a break symbol. The rail is supported by a "POST" (indicated by a centerline symbol). The rail has a width of 1.5" and a height of 1.5". The post is 1.5" wide. The rail is secured to the post with four bolts, arranged in two rows of two. The distance between the bolts in each row is 1.5".
- SECTION:** This view shows the rail assembly from the end. It shows the rail (1.5" wide) and the post (1.5" wide) with four bolts. The bolts are labeled as "1/2\"Ø x 8\" LONG GALVANIZED CARRIAGE BOLT, NUT AND WASHER (TYP.) COUNTER SINK CARRIAGE BOLTS."

The technical drawings illustrate the rail post connection. The **ELEVATION** view on the left shows a vertical post (labeled "POST") intersecting a horizontal rail (labeled "RAIL"). The rail has a width of 1.5 inches. The post is secured with two bolts, represented by black dots. The **SECTION** view on the right shows a cross-section of the post and rail. It details the use of "1/2\"Ø x 8\" LONG GALVANIZED CARRIAGE BOLT, NUT AND WASHER (TYP.)" and "COUNTER SINK CARRIAGE BOLTS." to secure the assembly.

CONNECTIONS AND BOLTS
TO MATCH STANDARD
TIMBER RAIL FENCE

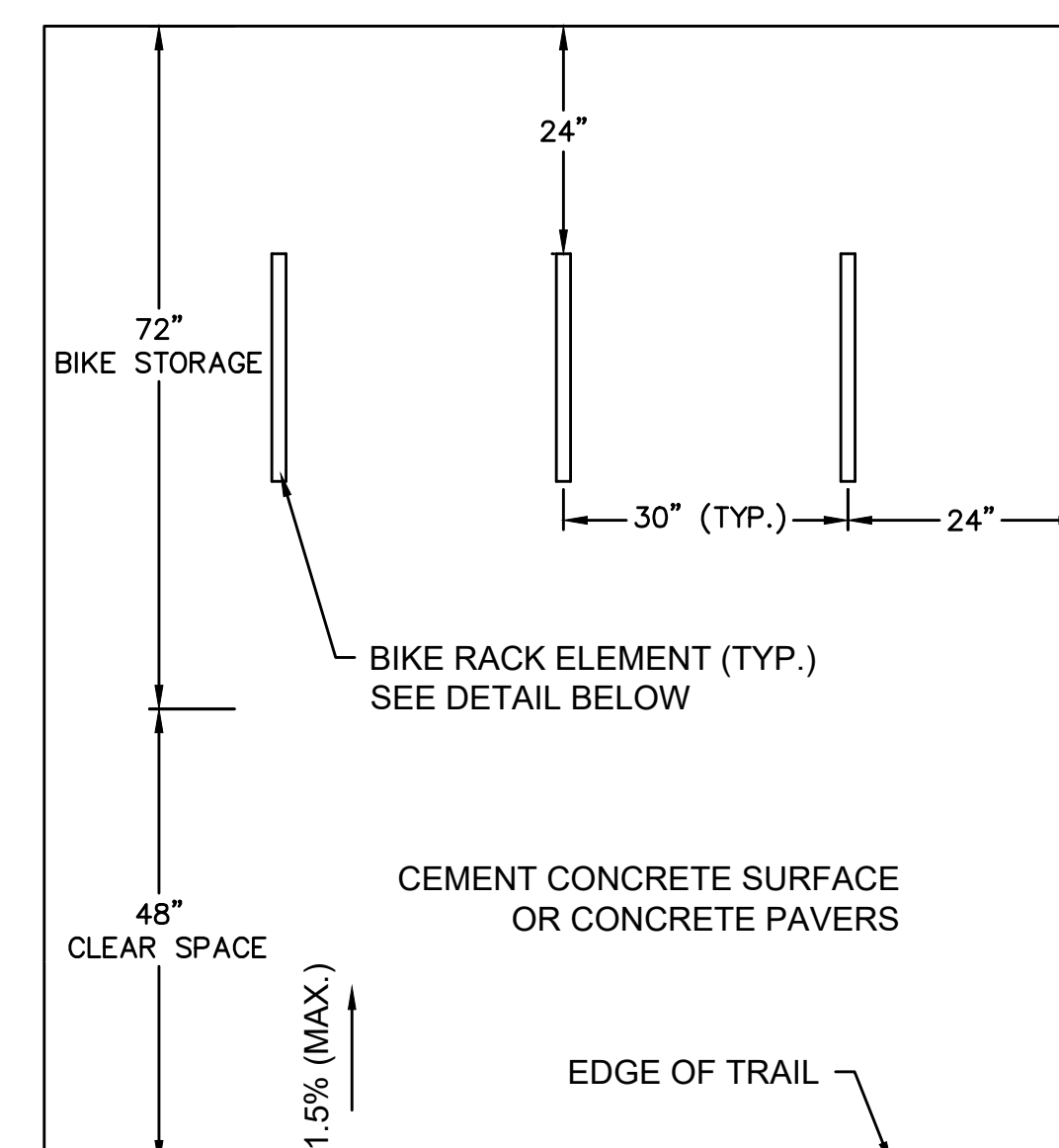
PROP. 2" x 6"
(NOMINAL
DIMENSIONS)
PRESSURE
TREATED RAIL



17 — **TIMBER FENCE**
SCALE: N.T.S.
SEE PLANS FOR LOCATIONS

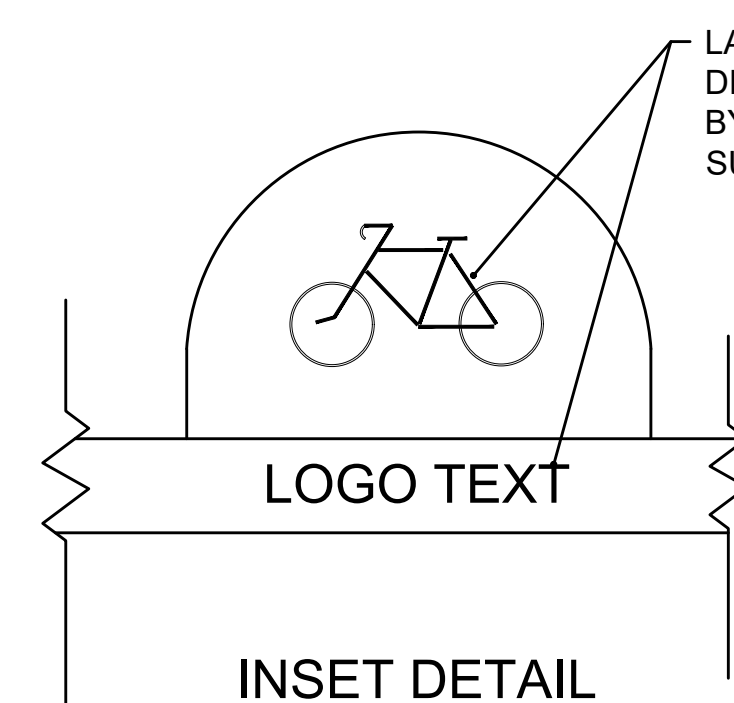
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	26	TBD
PROJECT FILE NO.		613319	

CONSTRUCTION DETAILS



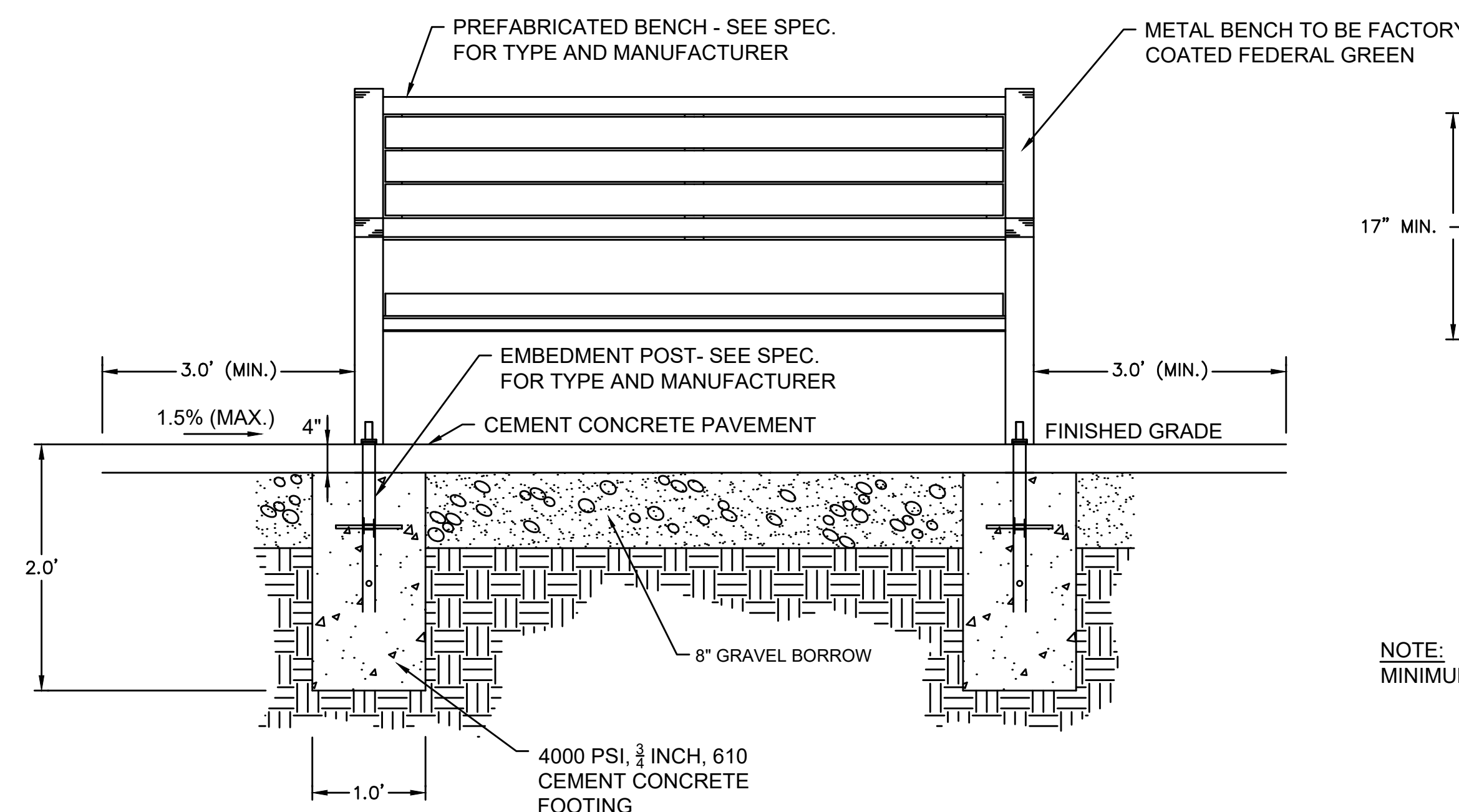
- NOTES:
- SEE PLANS FOR QUANTITY OF BIKE RACK ELEMENTS

BICYCLE RACK PLACEMENT

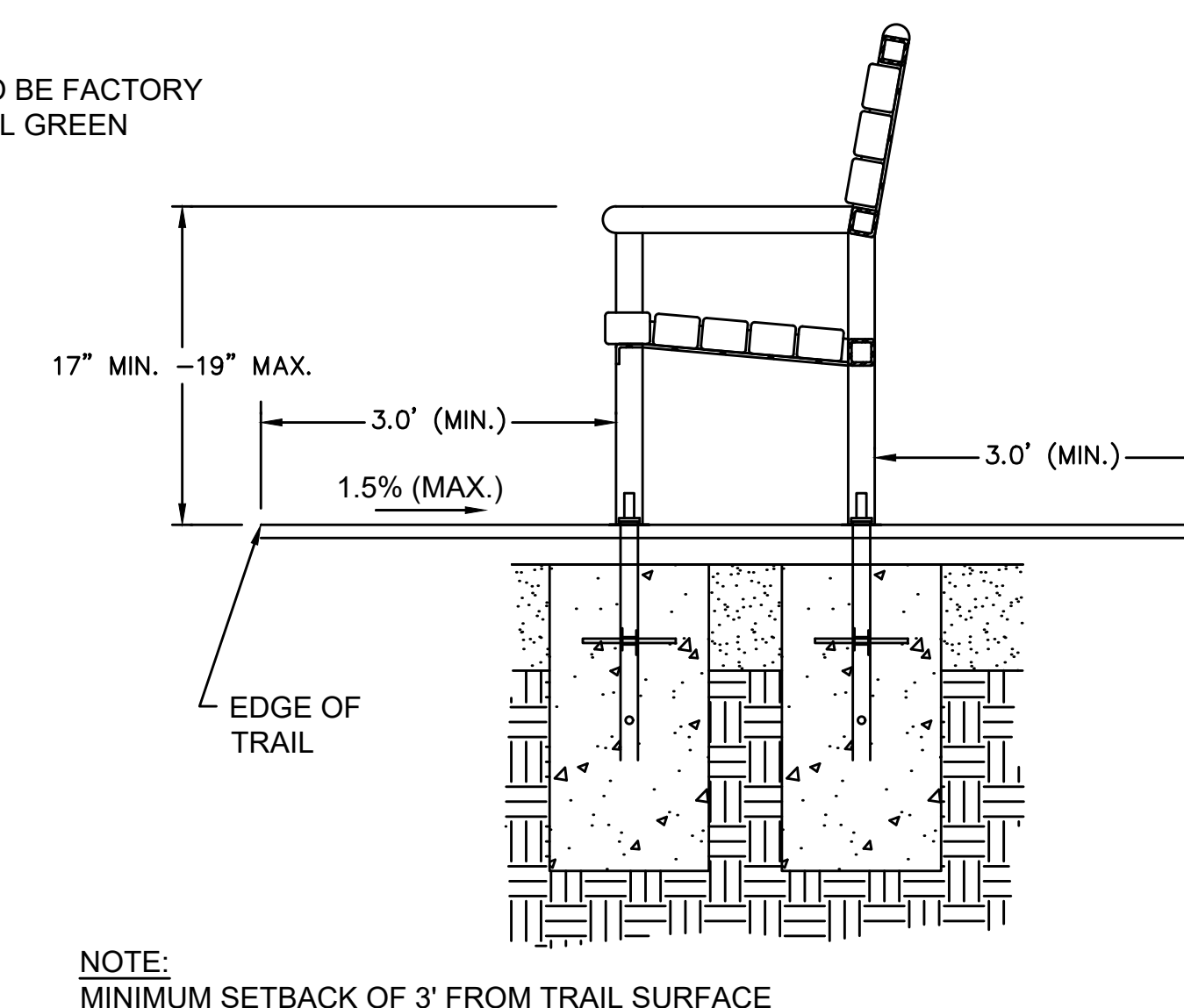


- NOTES:
- EACH BIKE RACK SHALL INCLUDE A LASER-CUT LOGO. LOGO DETAIL TO BE PROVIDED BY THE TOWN OF SUDBURY.
 - DIMENSIONS ARE APPROXIMATE AND WILL BE DETERMINED IN COORDINATION WITH THE MANUFACTURER. BIKE RACK ELEMENTS TO BE OF THE INVERTED "U".
 - EACH BIKE RACK SHALL ACCOMMODATE TWO BICYCLES.
 - ALL POSTS AND HARDWARE SHALL BE FACTORY COATED FEDERAL GREEN (SEE SPECIAL PROVISIONS)

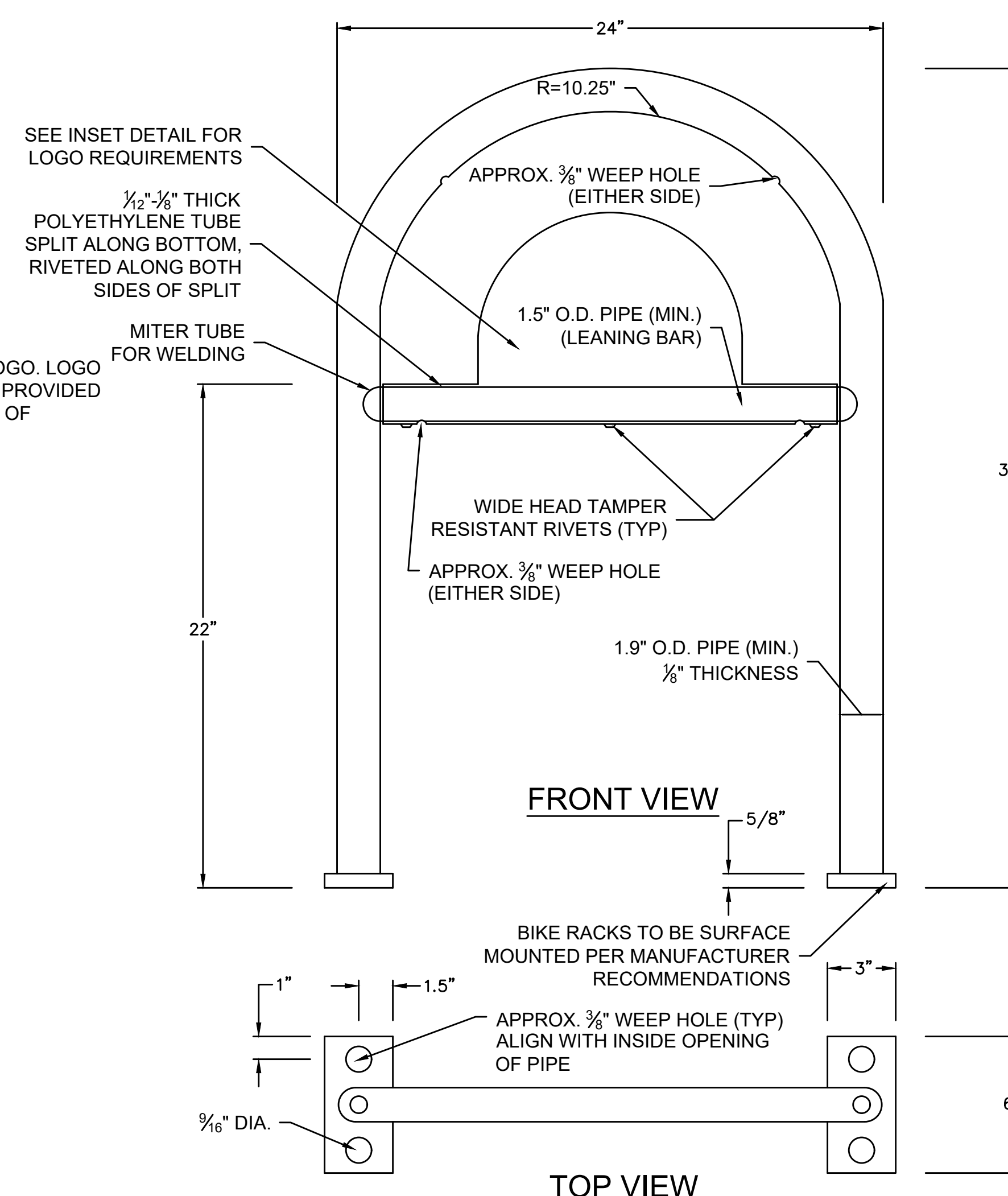
18 BICYCLE RACK
SCALE: N.T.S.



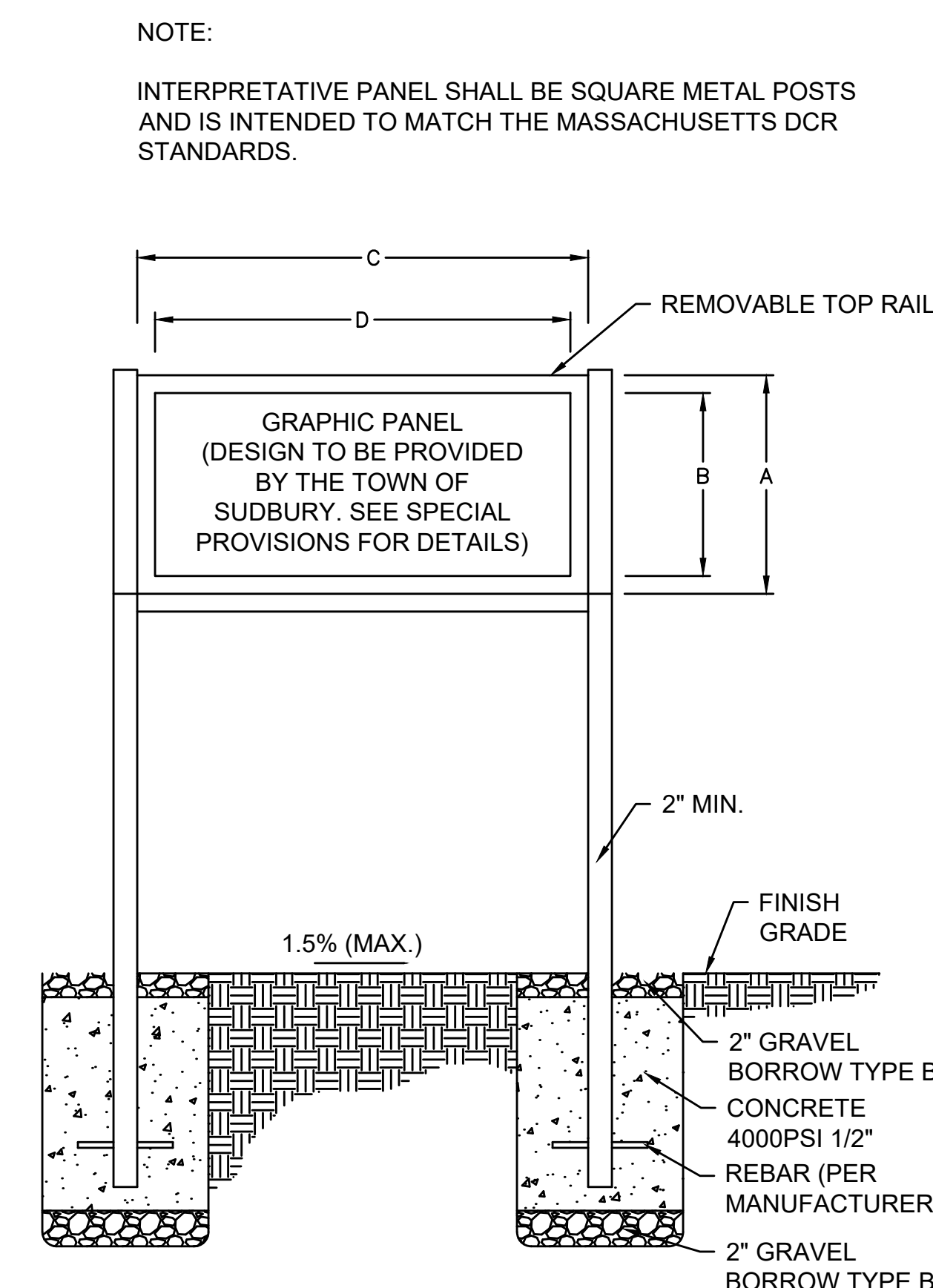
17 BENCH
SCALE: N.T.S.



NOTE:
MINIMUM SETBACK OF 3' FROM TRAIL SURFACE



TOP VIEW

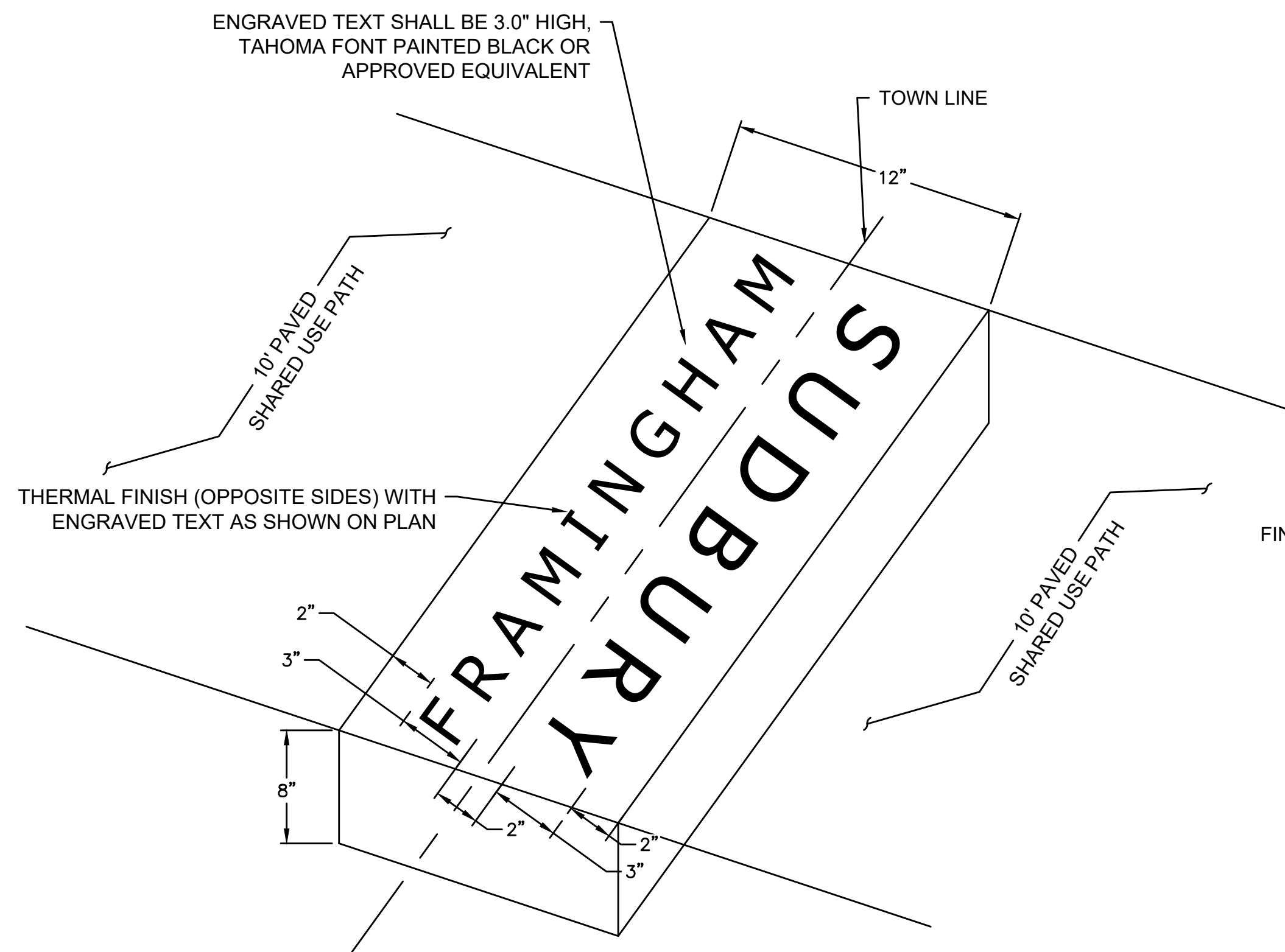


DIMENSION TABLE					
SIGN TYPE	HEIGHT		WIDTH		DEPTH
	A	B	C	D	E
26" x 38"	26"	23"	38"	35"	26.5"

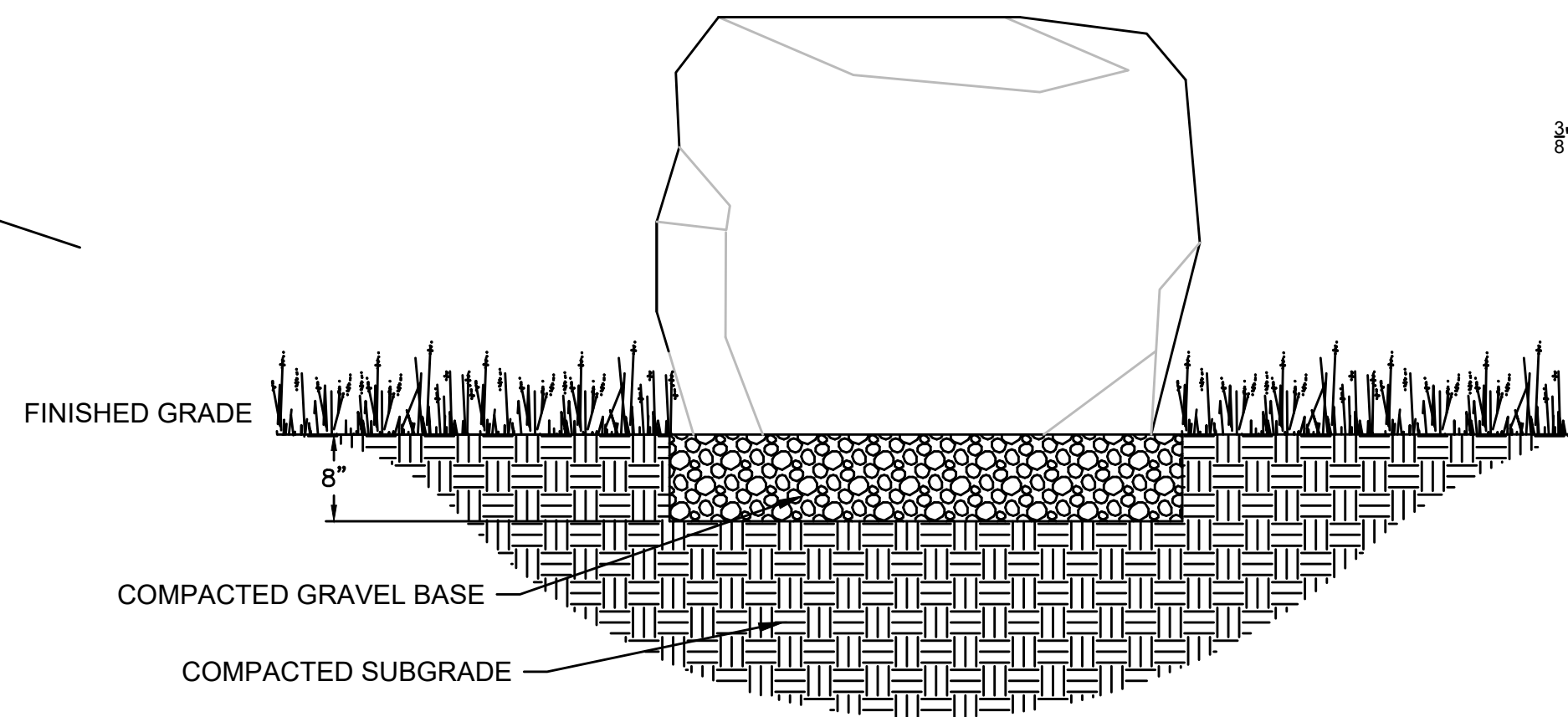
19 INTERPRETIVE SIGN
SCALE: N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	27	TBD
PROJECT FILE NO.		613319	

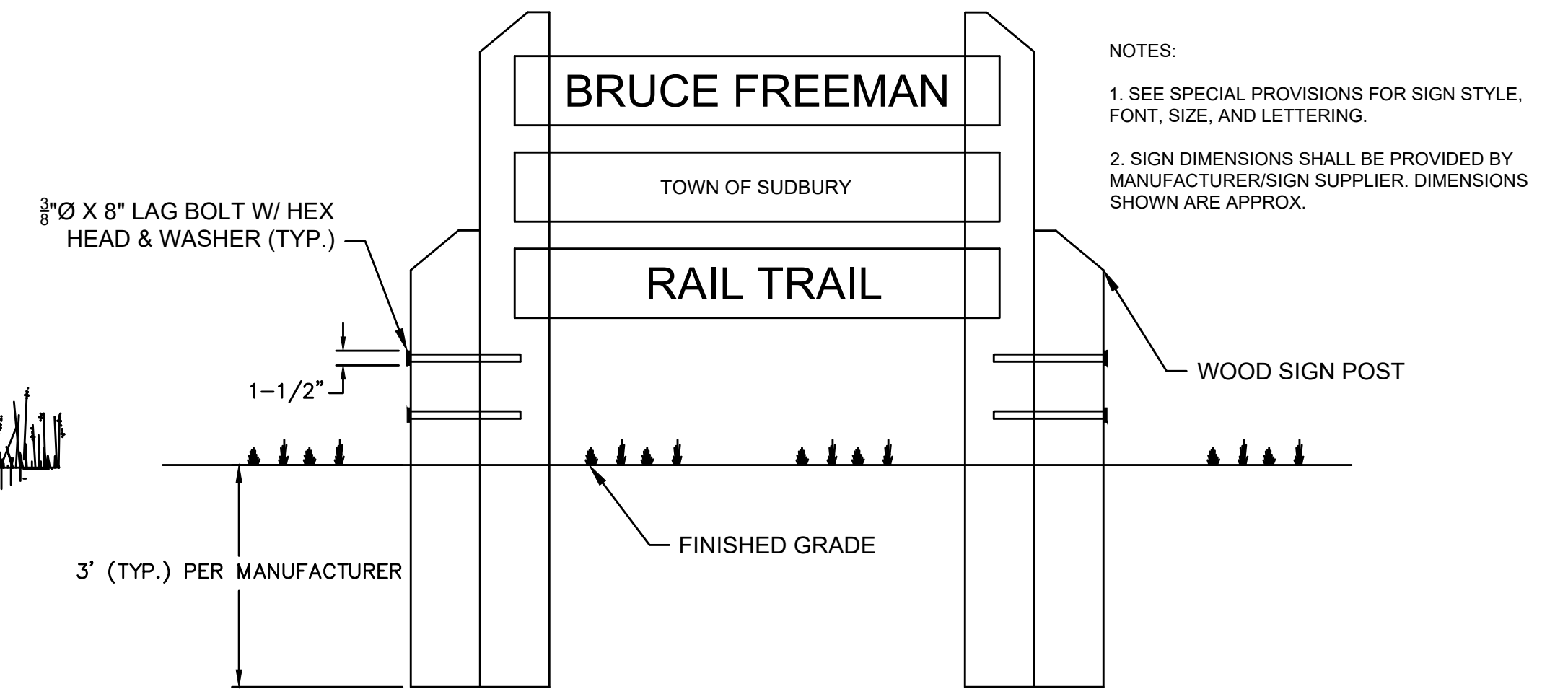
CONSTRUCTION DETAILS



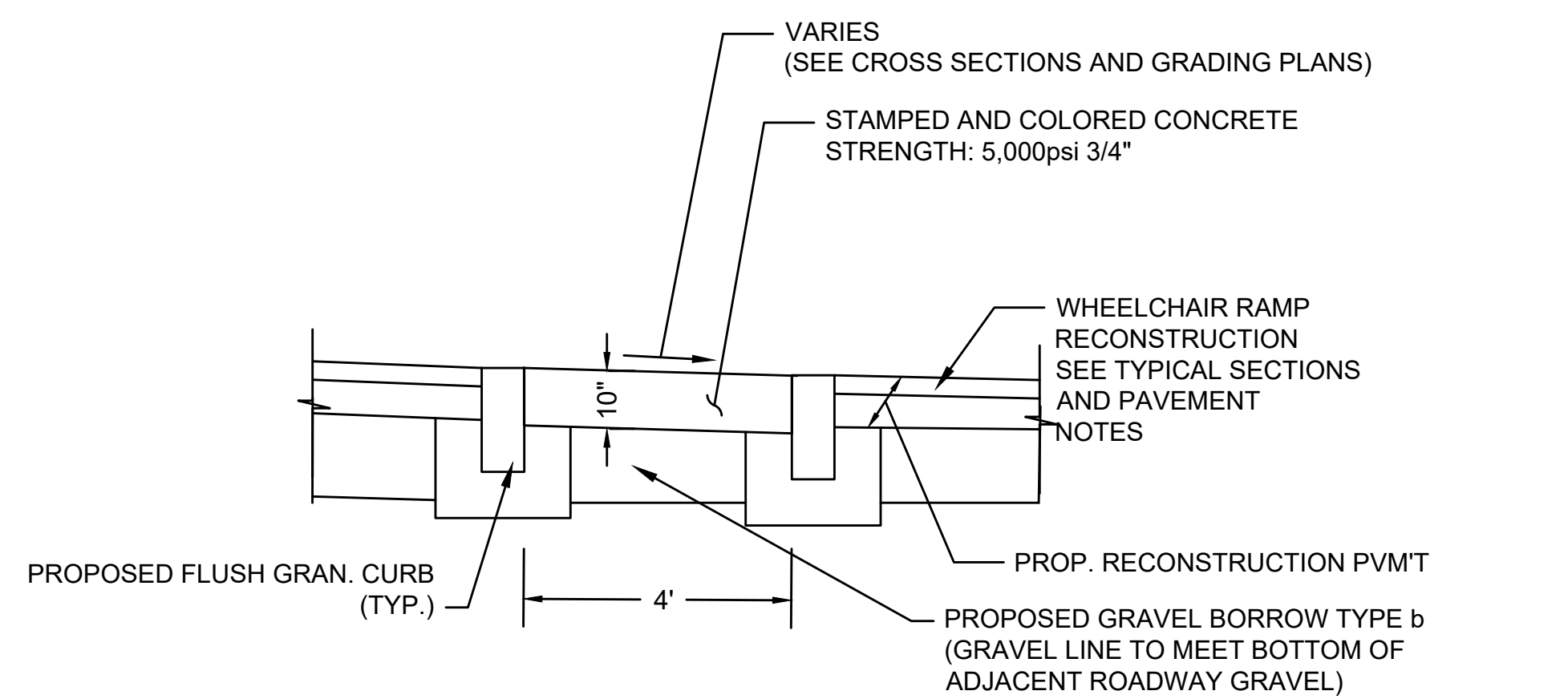
20 GRANITE TOWN LINE MARKER
SCALE: N.T.S.



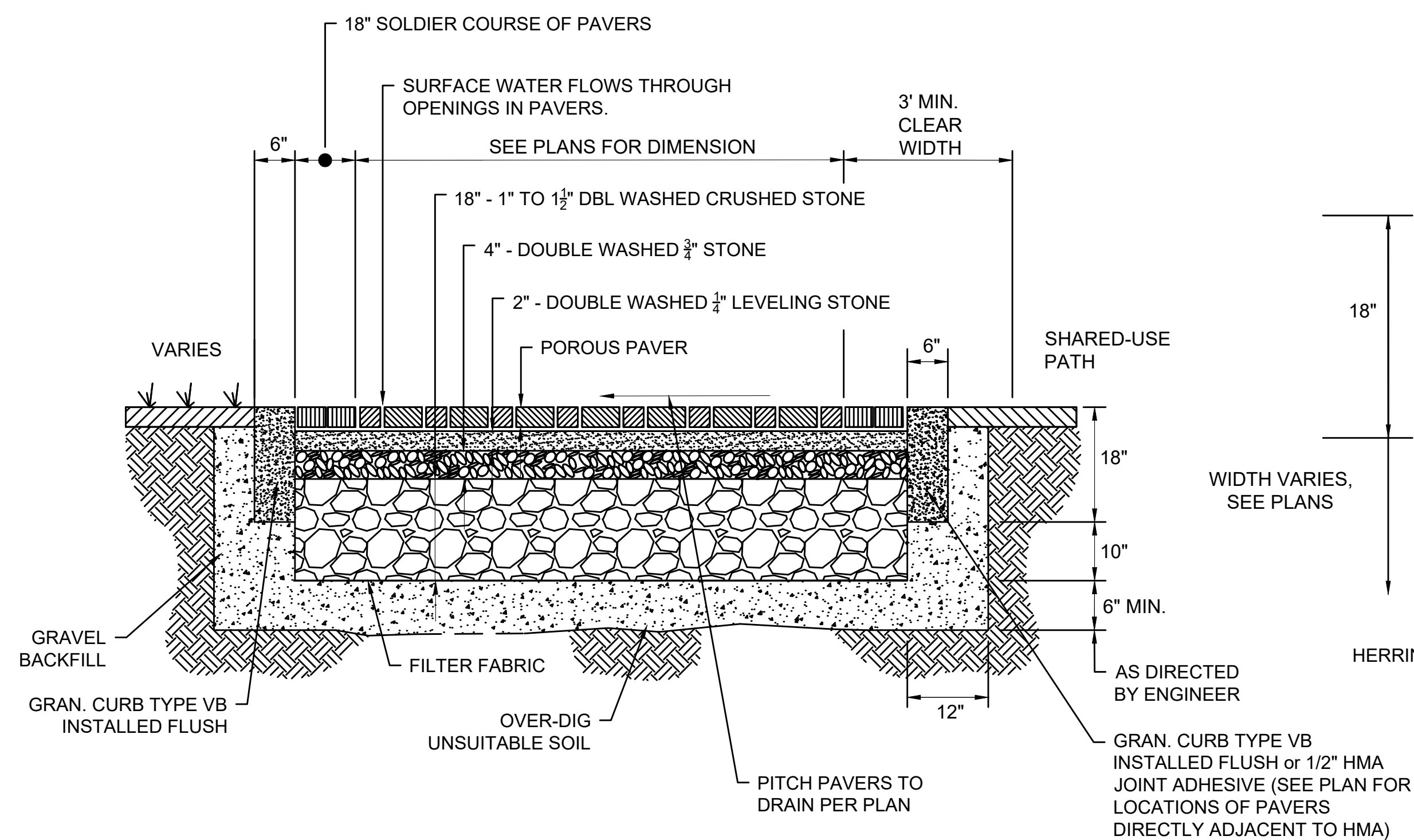
21 BOULDER BARRIERS
SCALE: N.T.S.



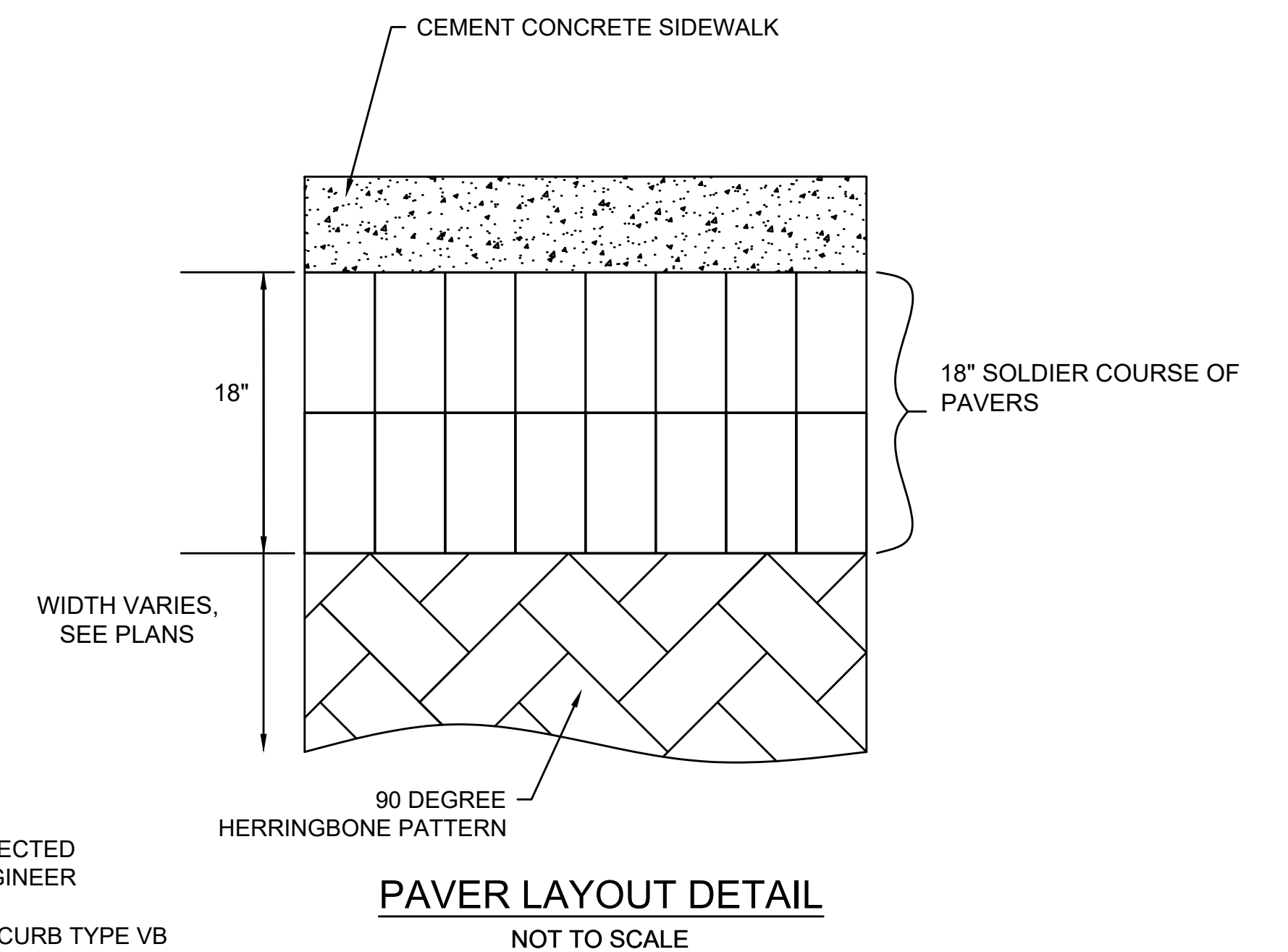
22 BRUCE FREEMAN RAIL TRAIL ENTRANCE SIGN
SCALE: N.T.S.

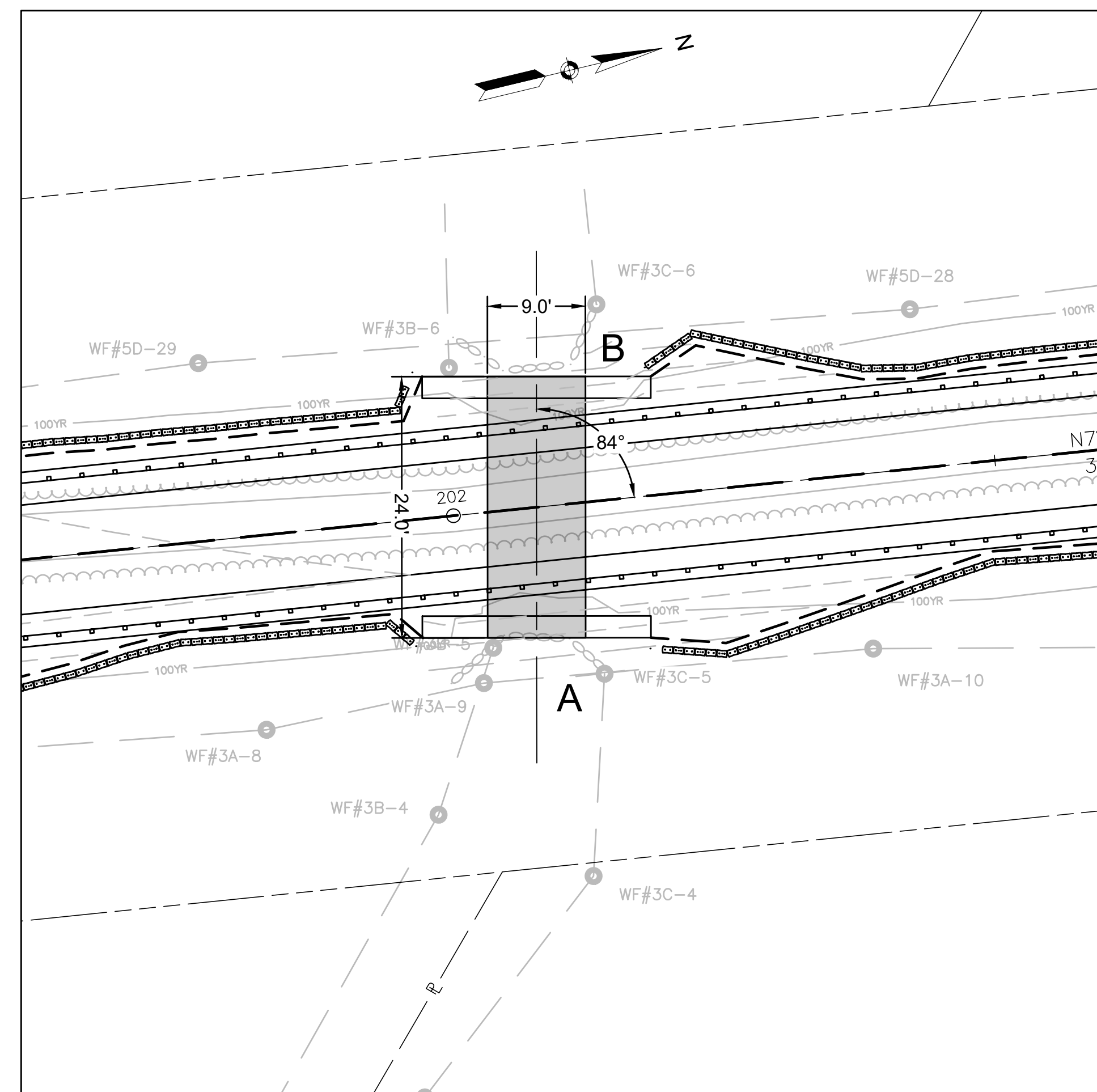
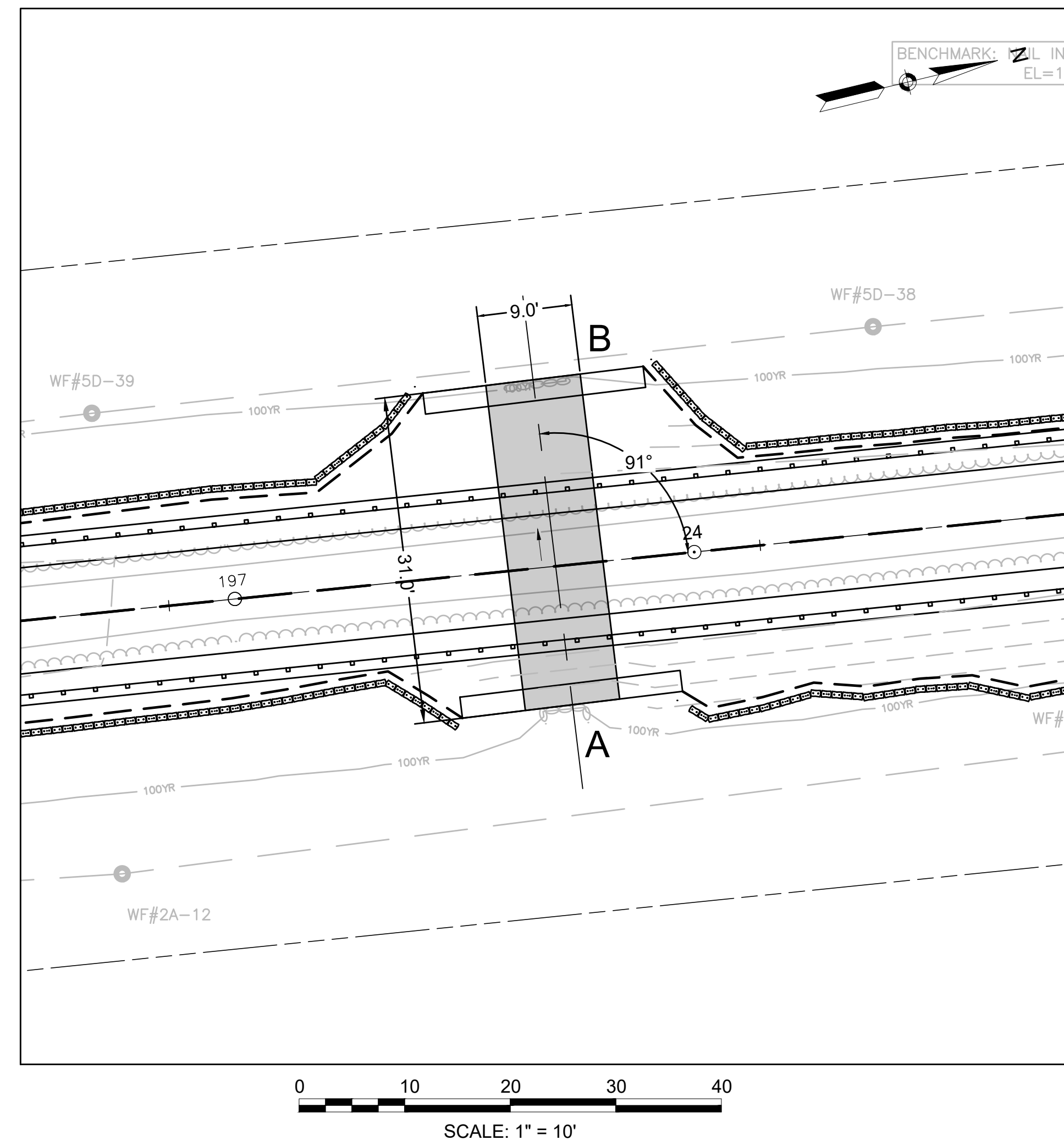


23 STAMPED & COLORED CONCRETE MEDIAN
— COLONIAL RED (SPLITTER ISLAND)
SCALE: N.T.S.



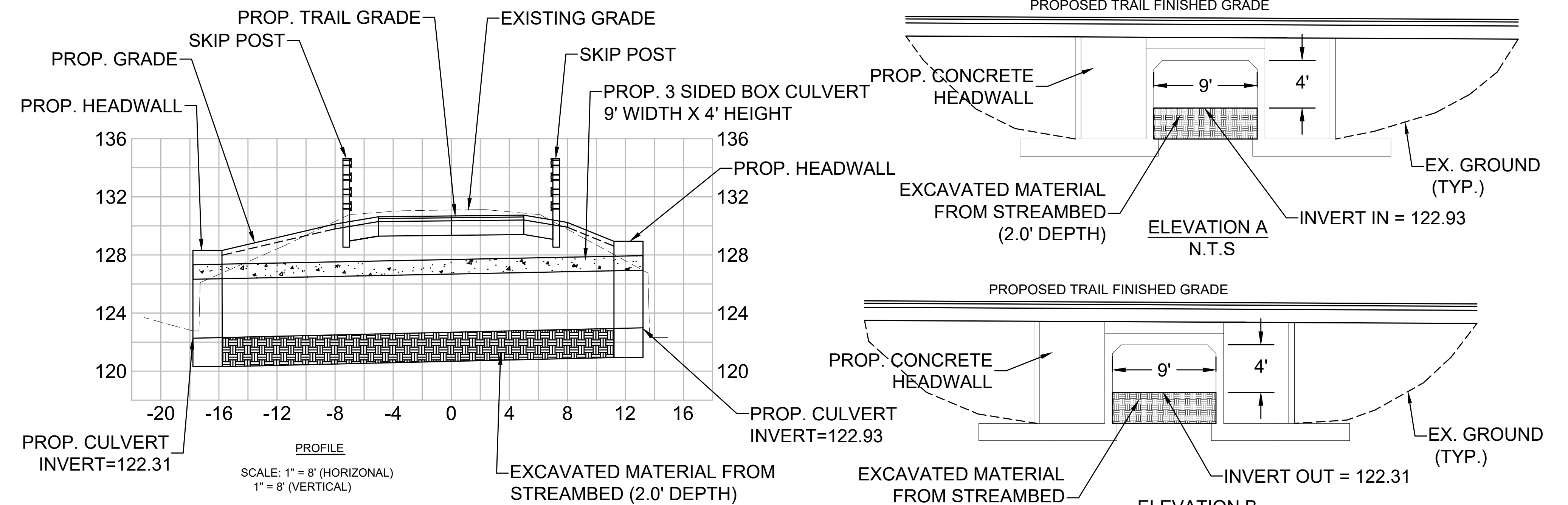
24 PERVIOUS PAVER TYPICAL SECTION
SCALE: N.T.S.



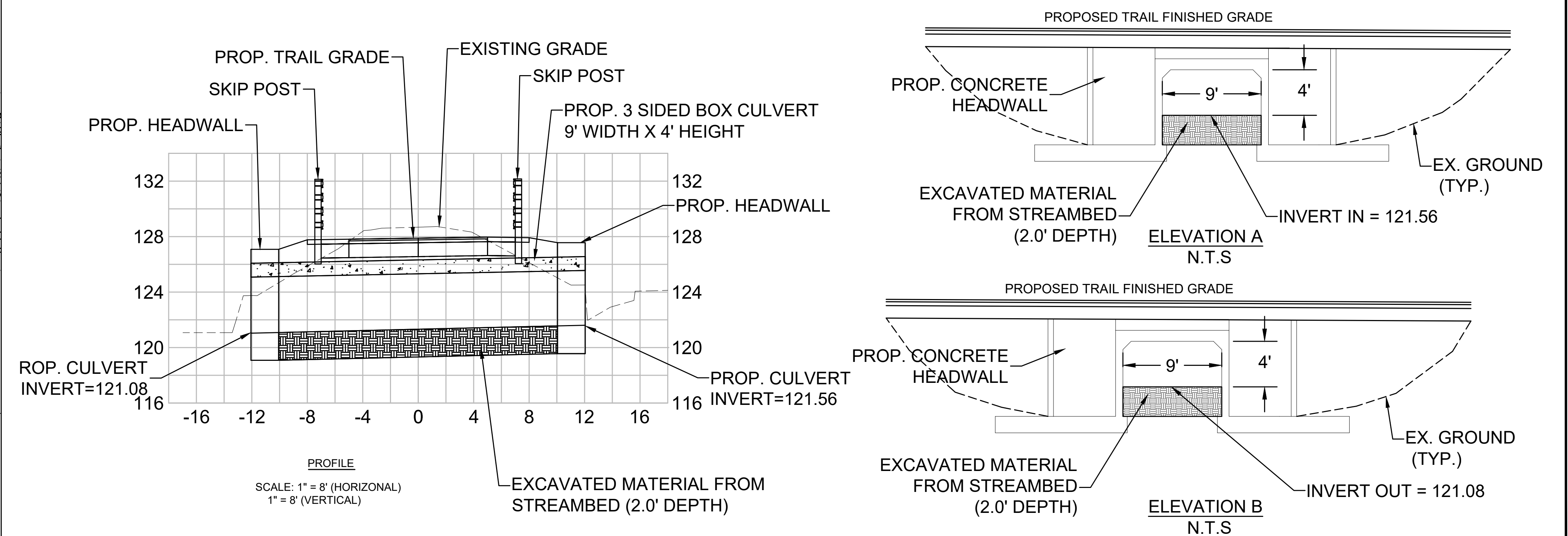


NOTE:

CULVERT DETAILS ARE CONCEPT ONLY. MORE LAYOUT DETAIL,
INFORMATION, AND REFINEMENT WILL BE INCLUDED AT 25% SUBMISSION.



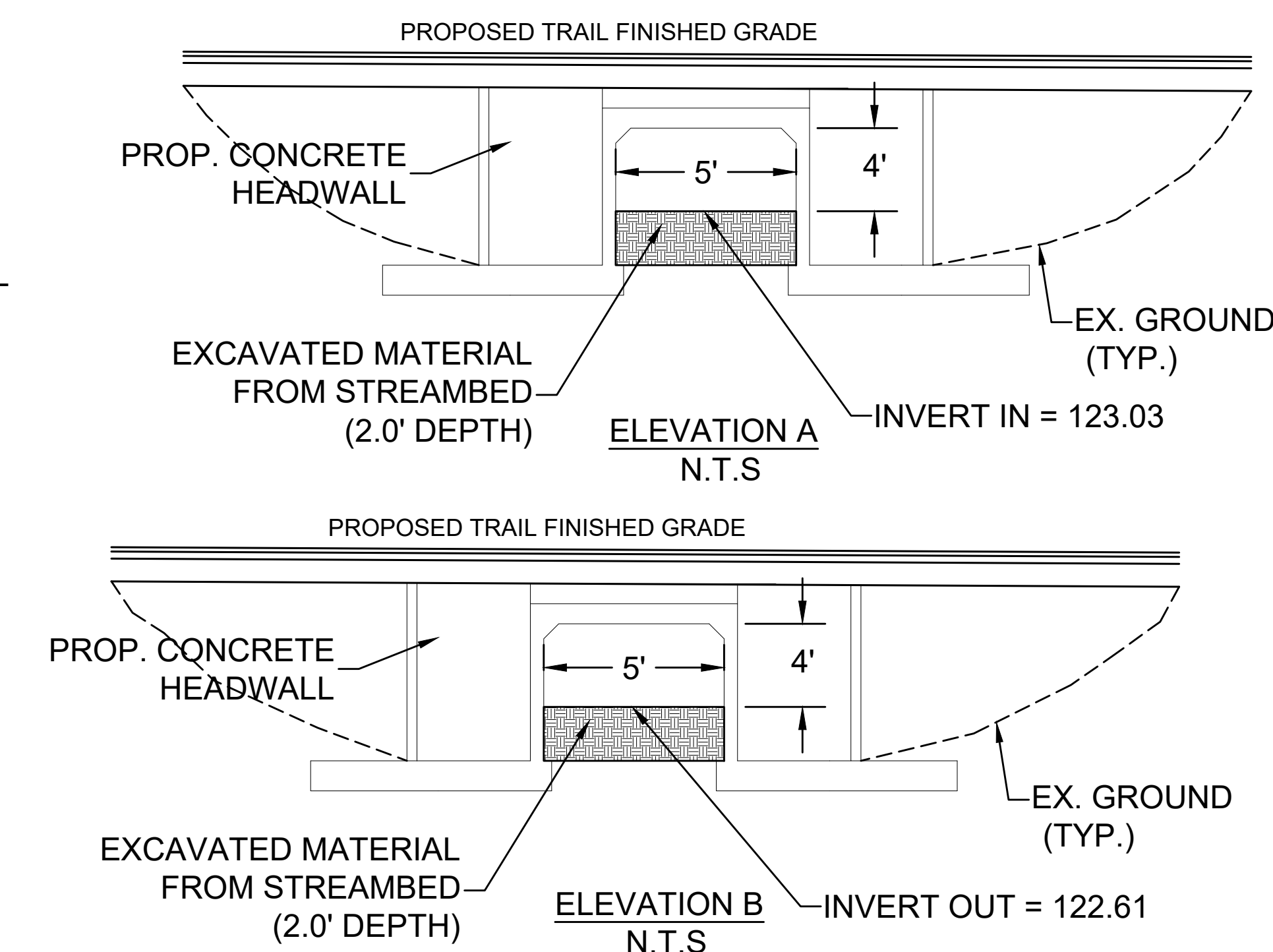
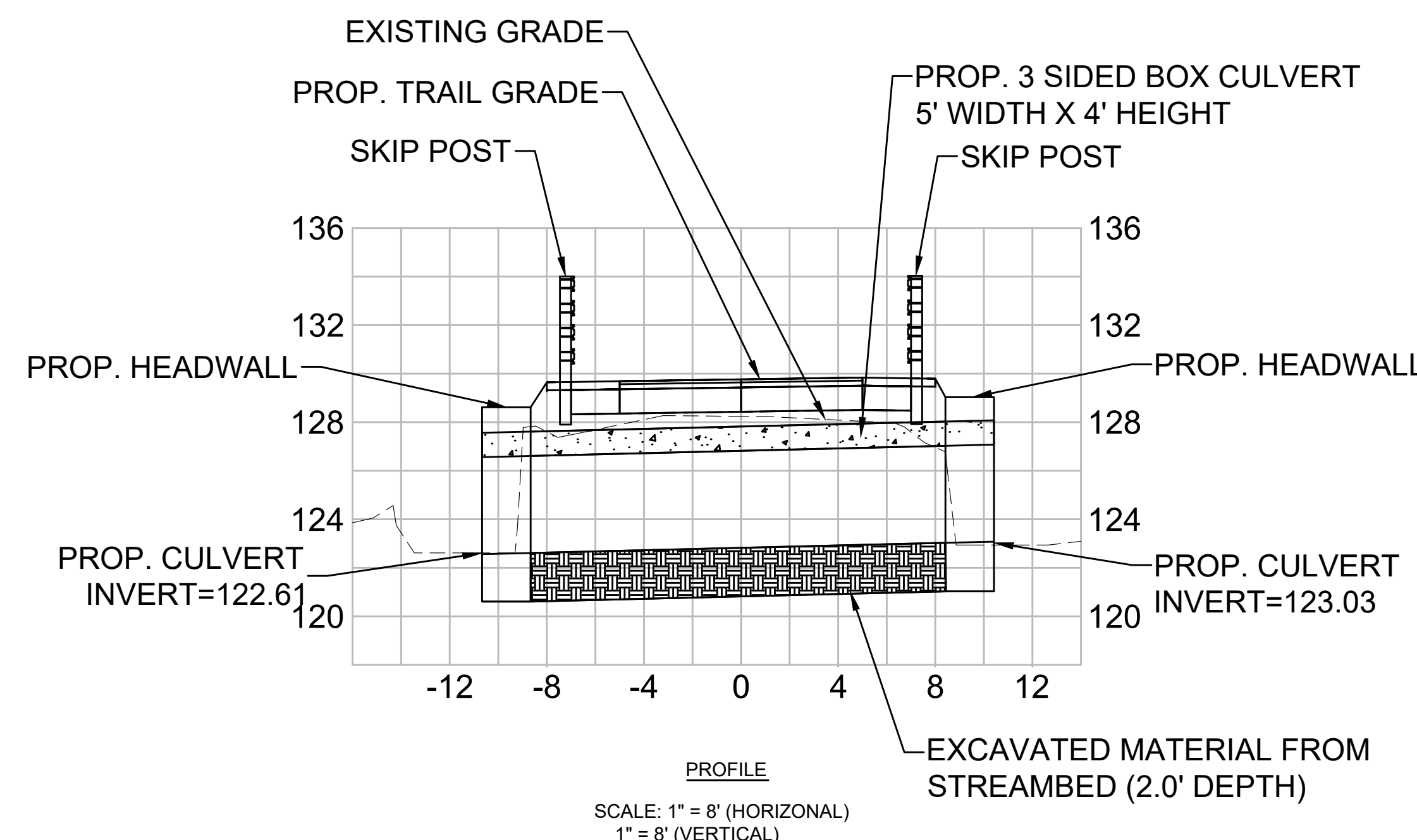
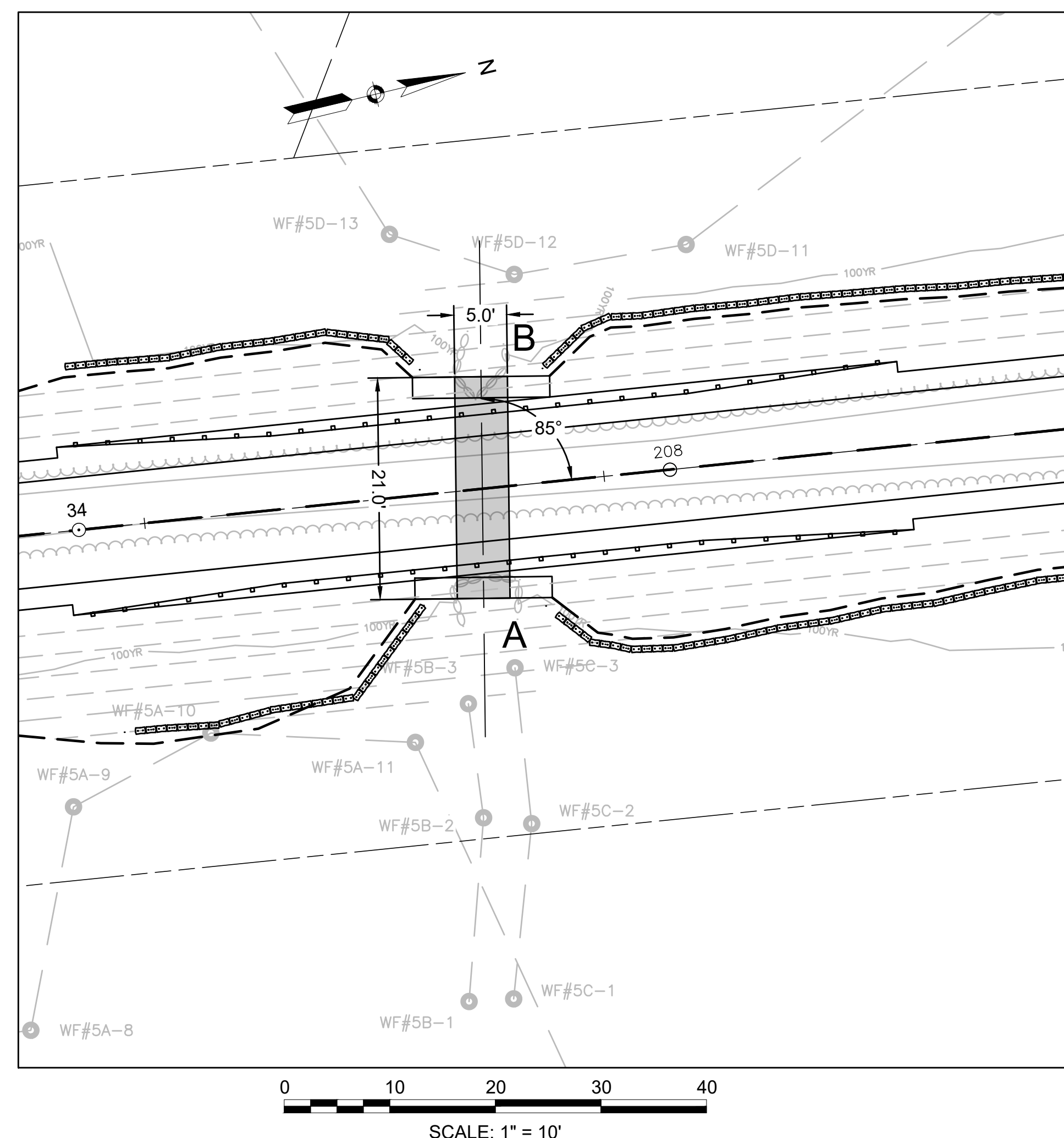
27 CULVERT REPLACEMENT - C3-1
SCALE: AS NOTED



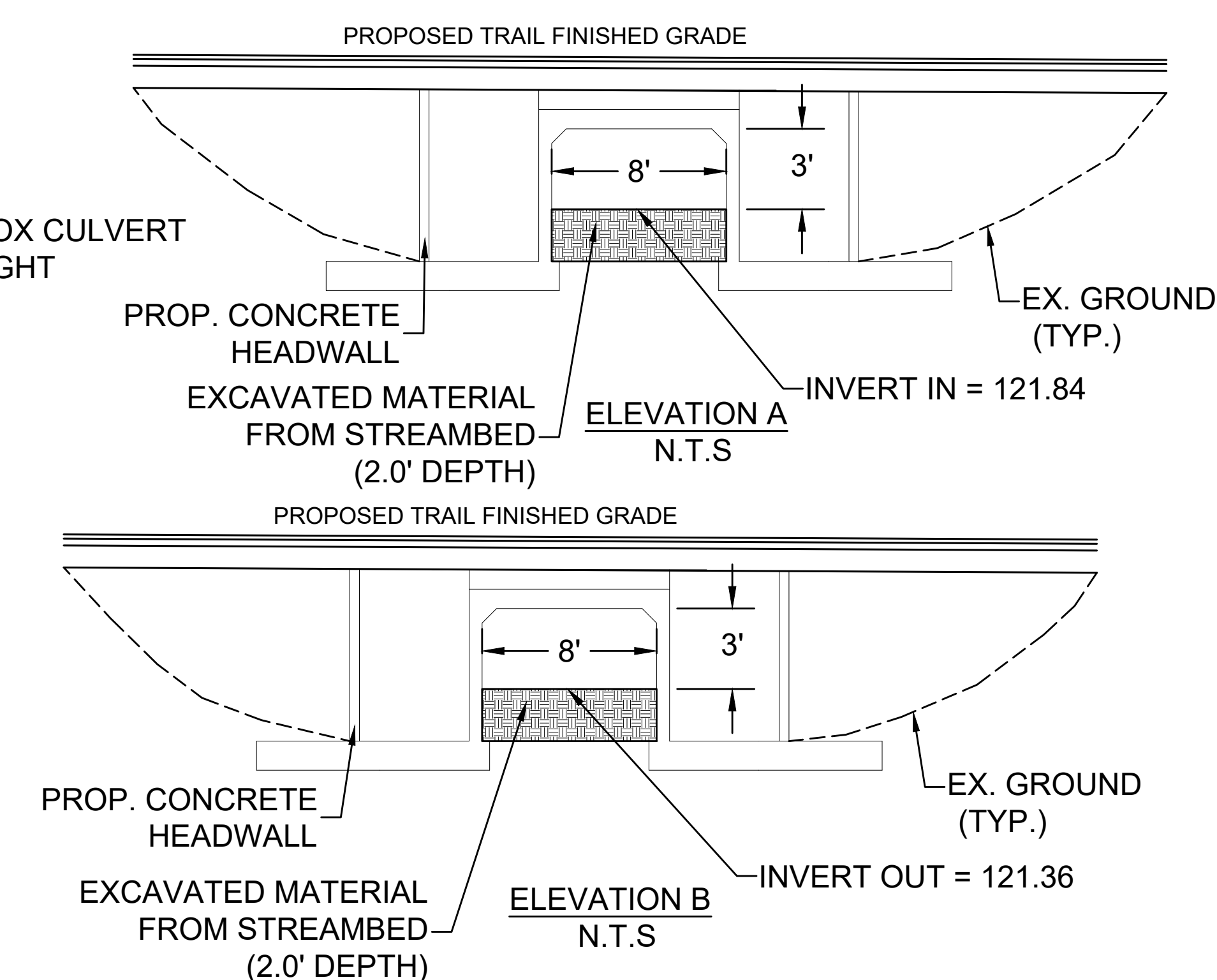
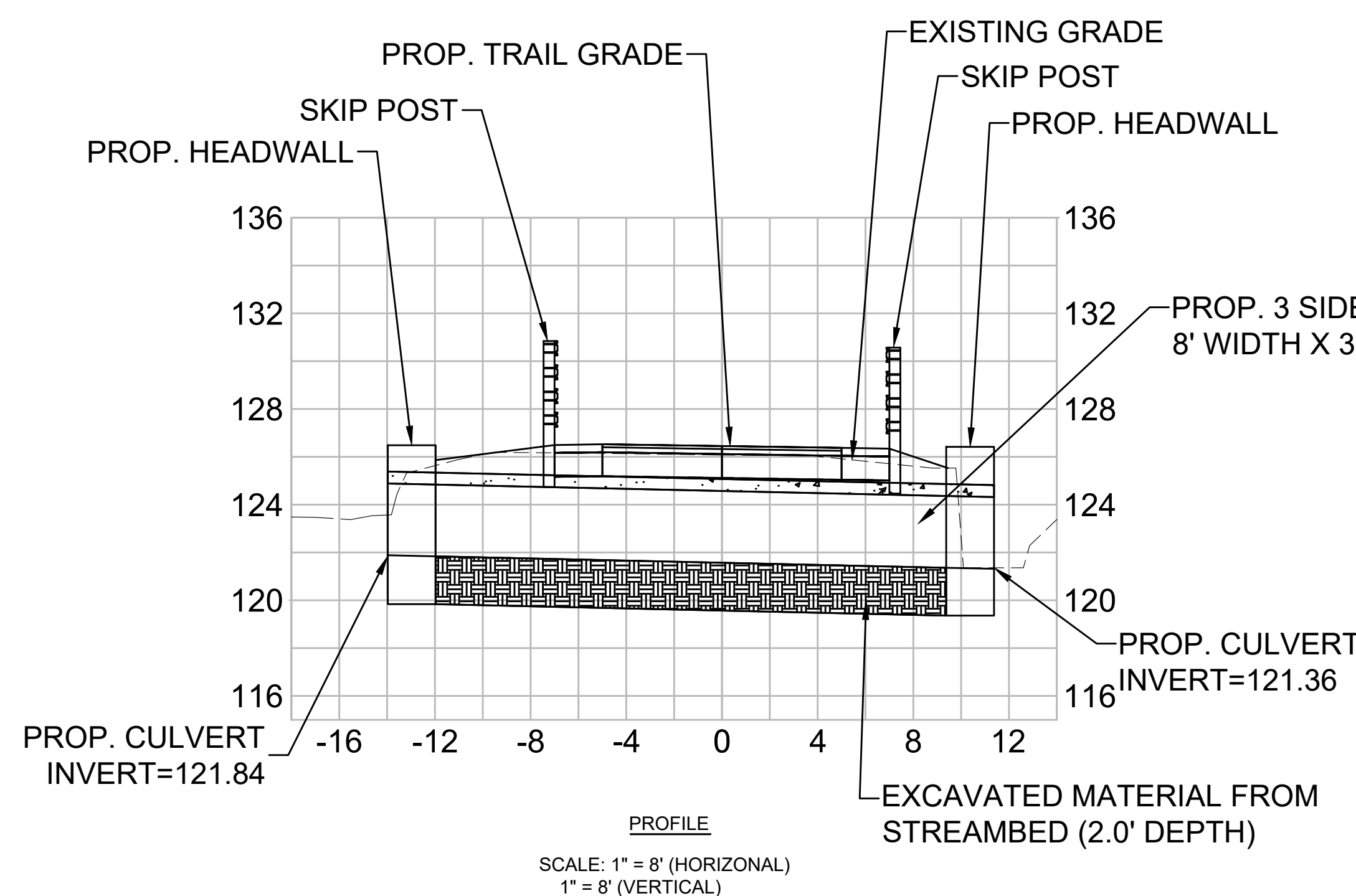
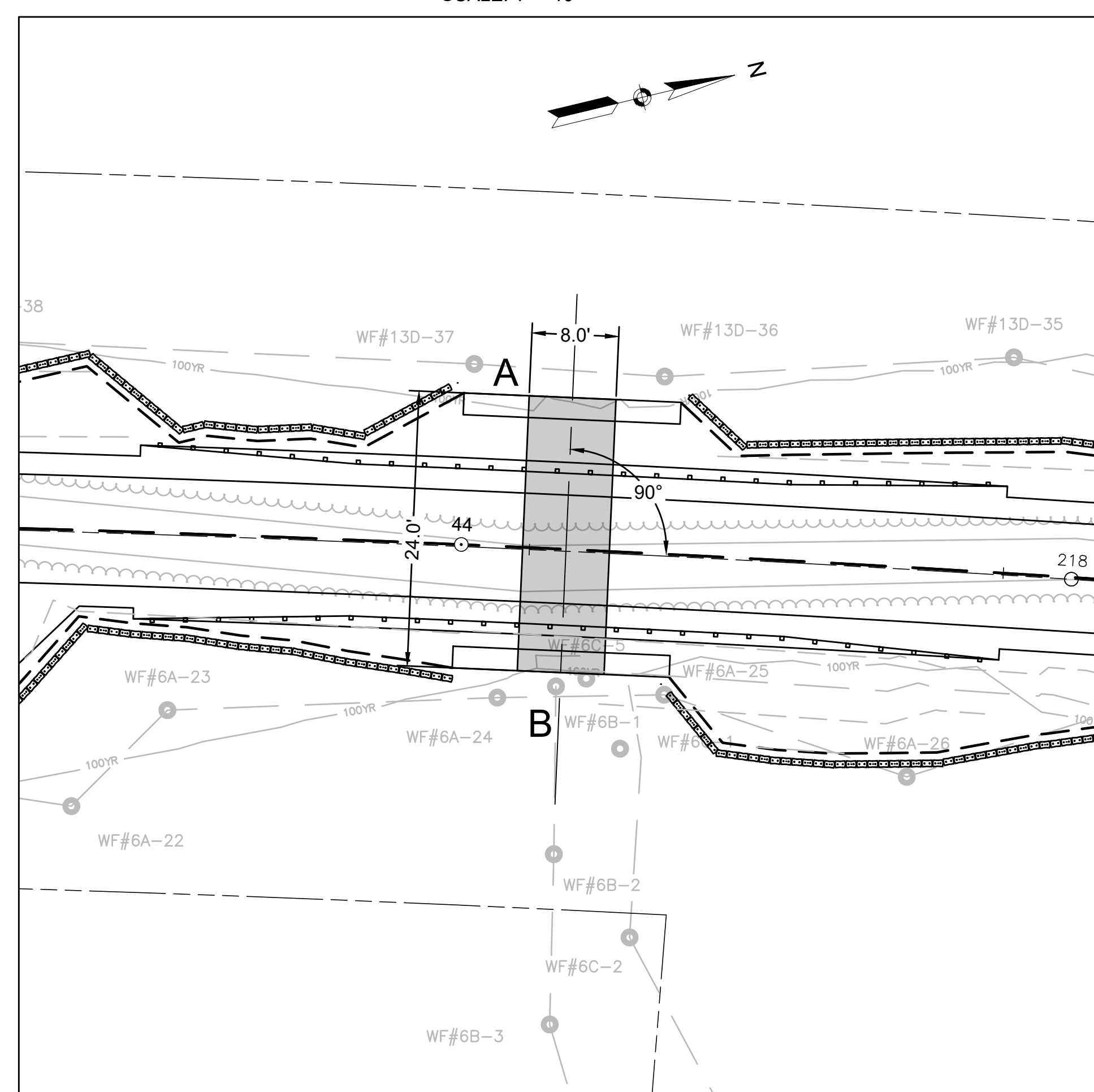
28 CULVERT REPLACEMENT – C3-2
SCALE: AS NOTED

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	30	TBD
PROJECT FILE NO.		613319	

CONSTRUCTION DETAILS



29 CULVERT REPLACEMENT - C3-3
SCALE: AS NOTED

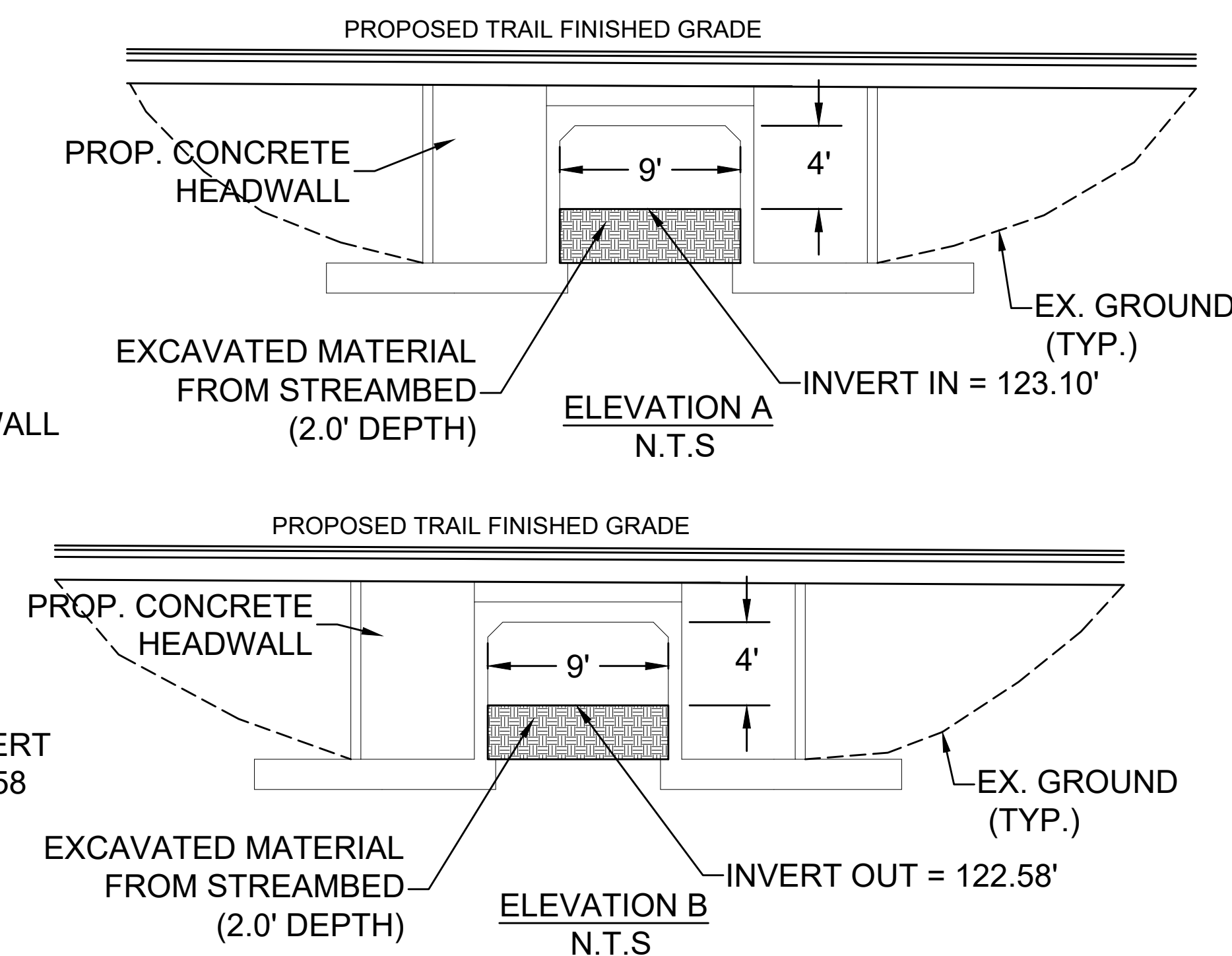
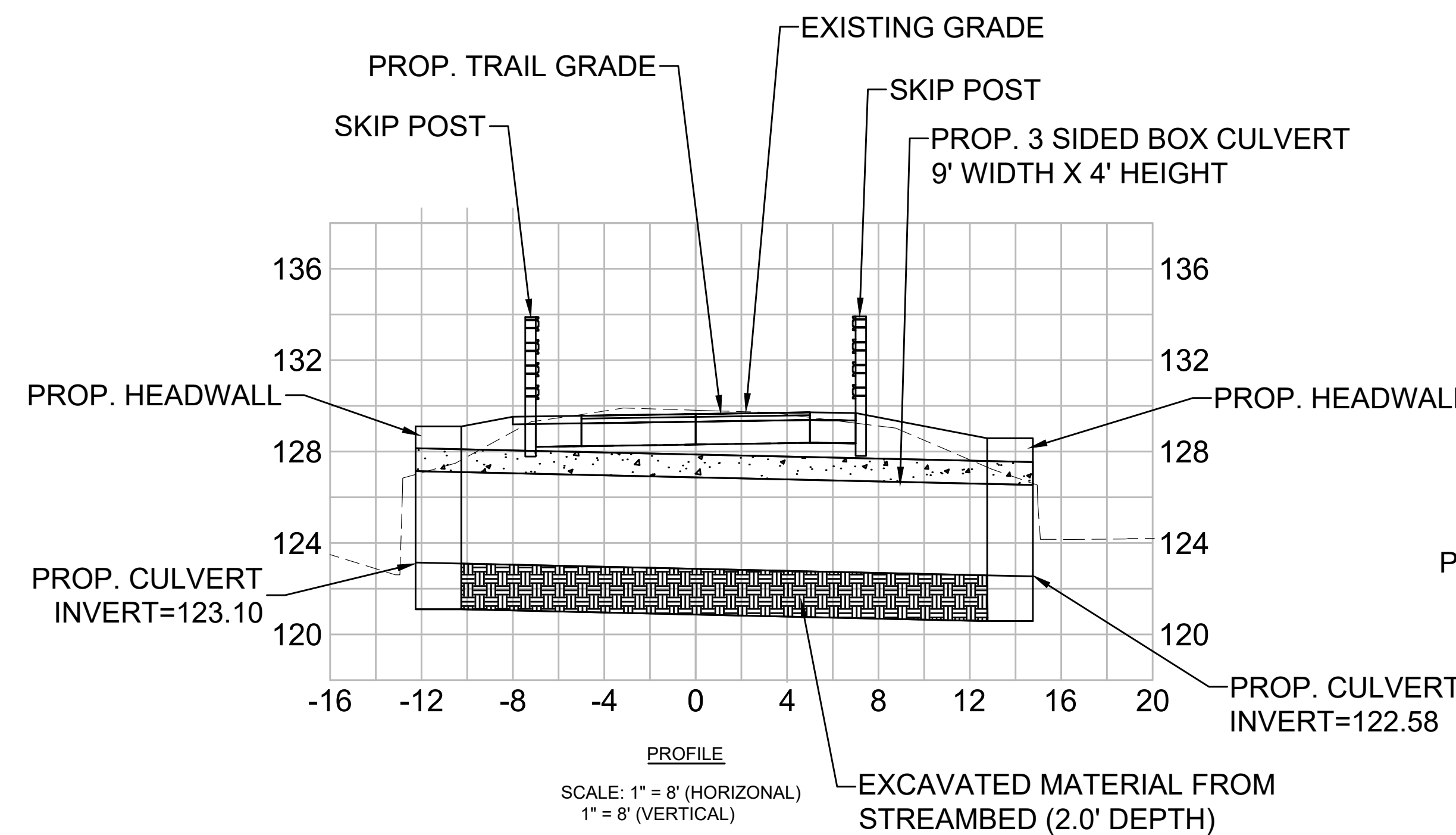
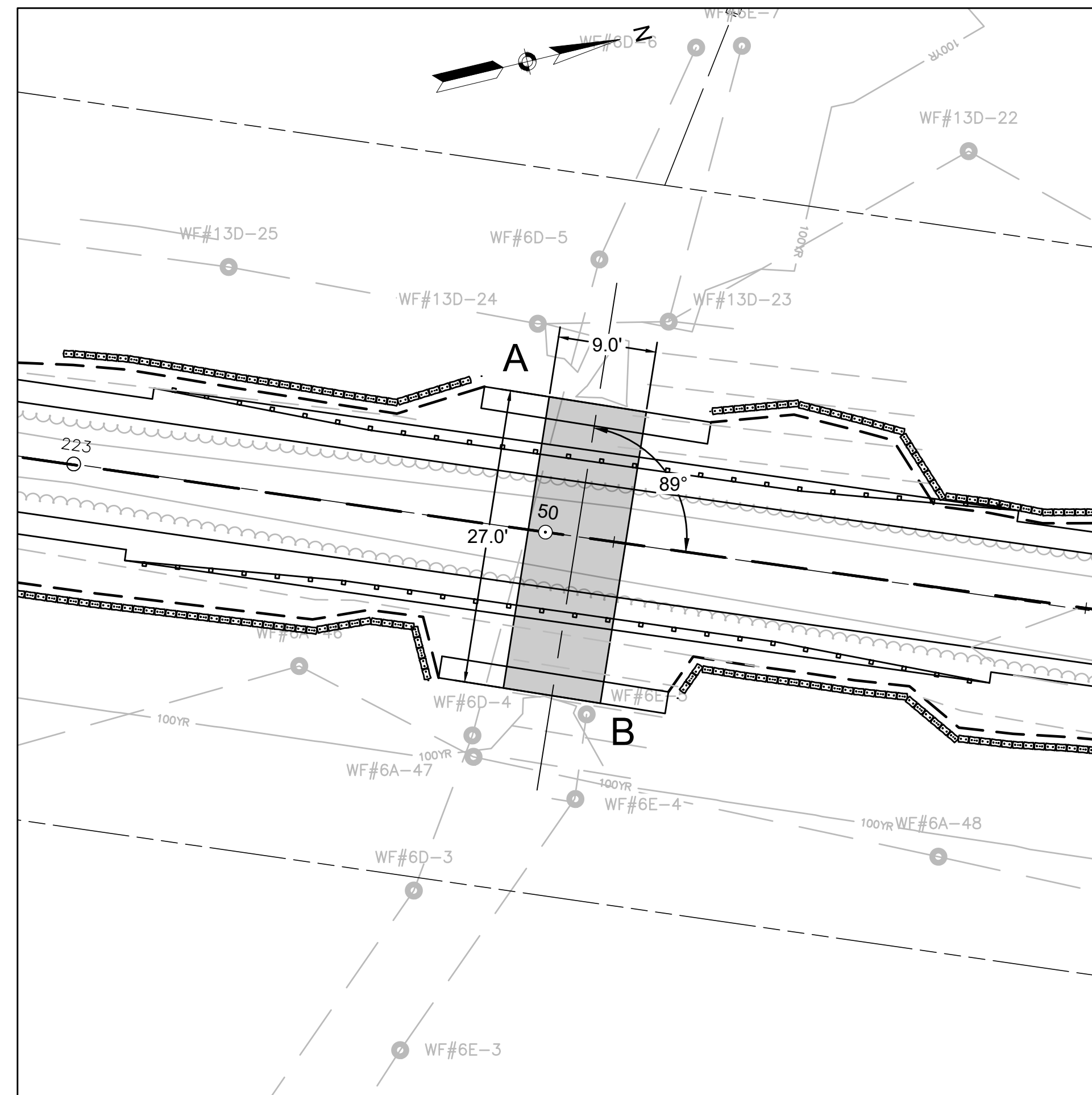


30 CULVERT REPLACEMENT - C3-4
SCALE: AS NOTED

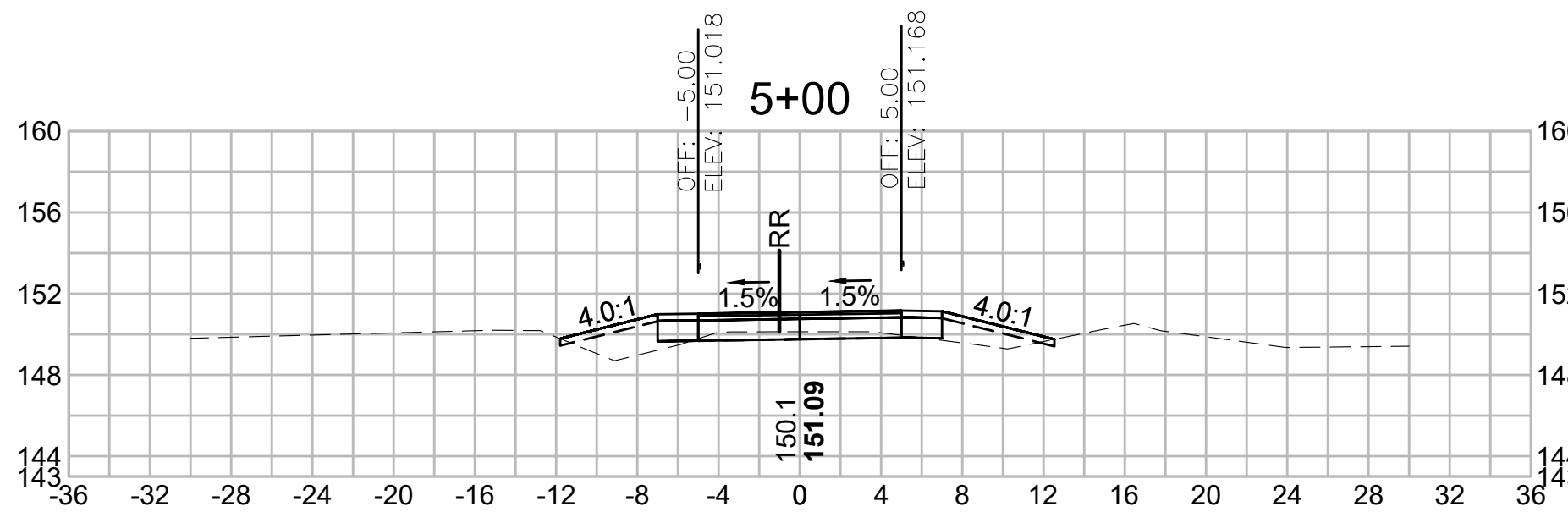
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	31	TBD
PROJECT FILE NO.		613319	

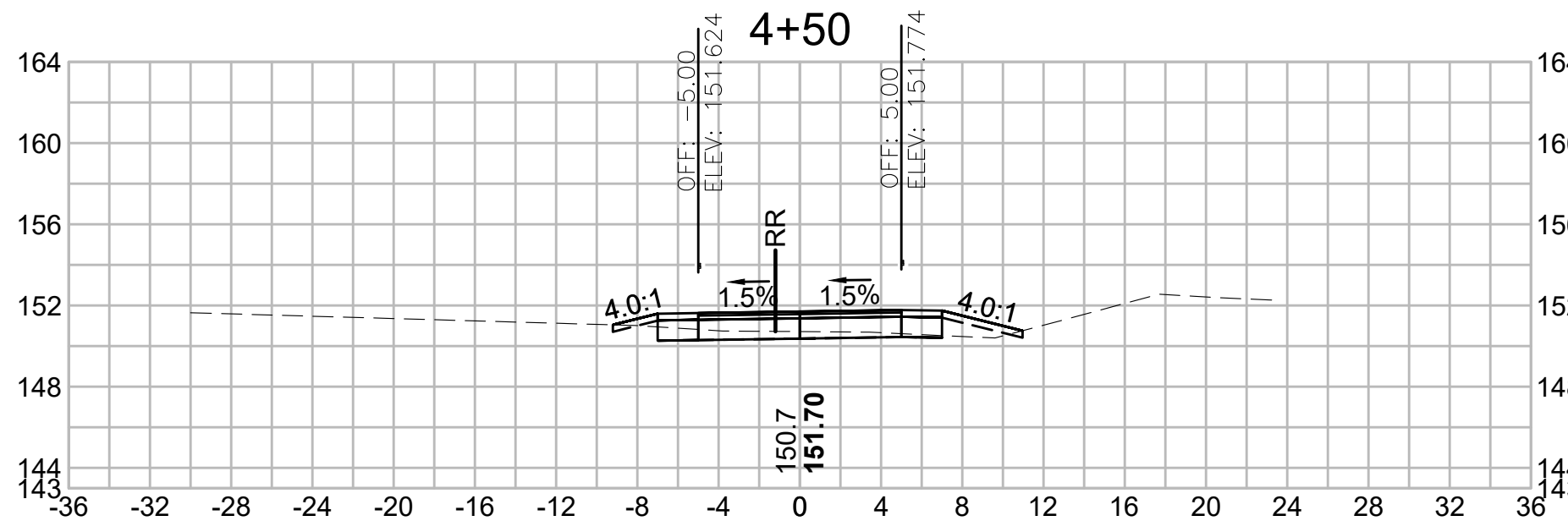
CONSTRUCTION DETAILS



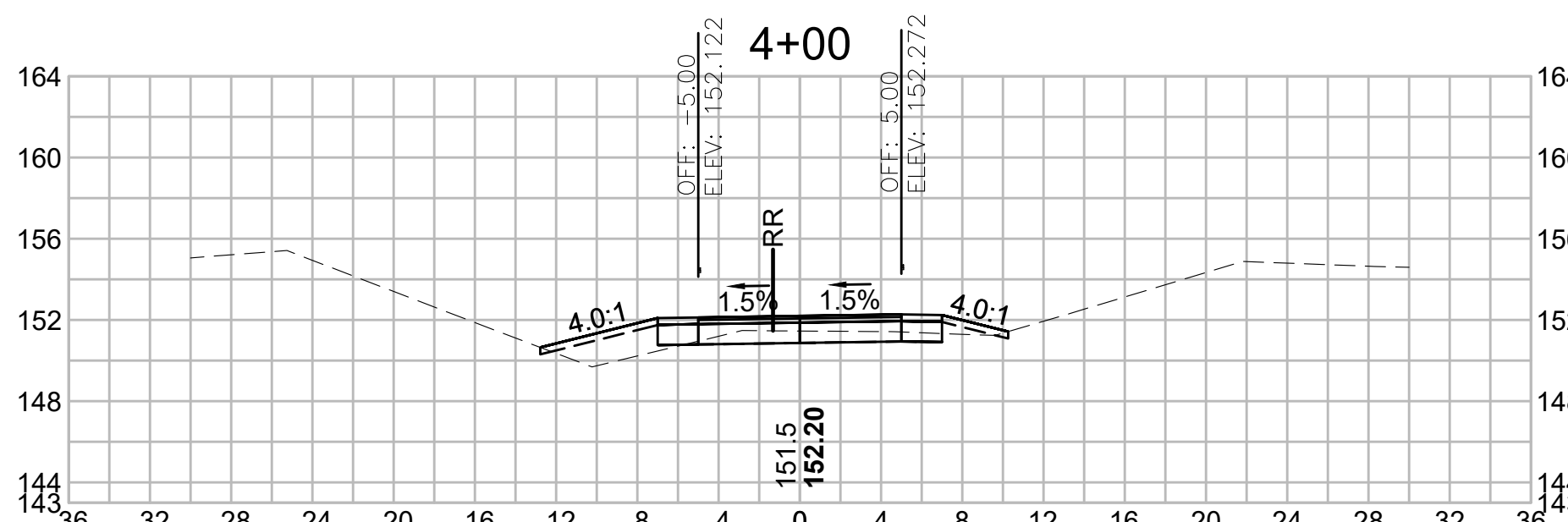
31 CULVERT REPLACEMENT - C3-5
SCALE: AS NOTED



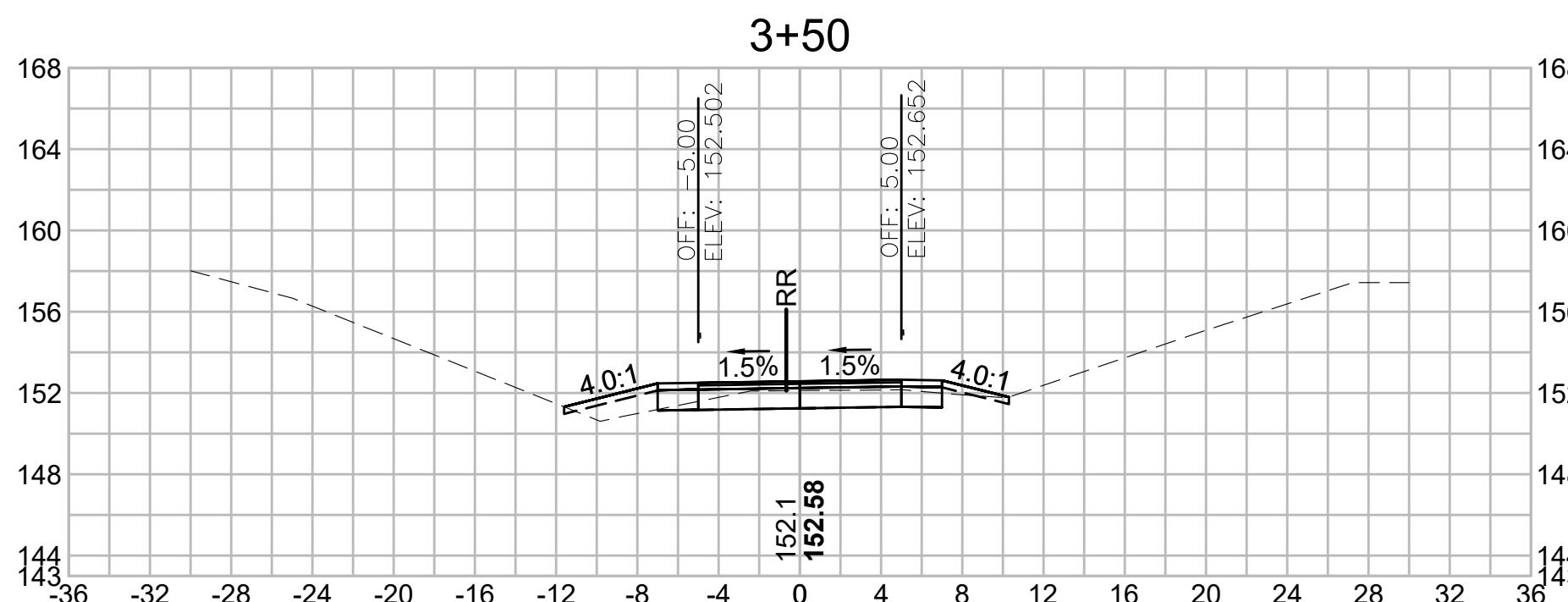
Total Volume at Station 5+00.00	
Cut Area	3.658
Fill Area	8.399
Cut Vol	8.223
Fill Vol	9.5
Cum Cut Vol	59.001
Cum Fill Vol	28.9
Net Vol	30.1



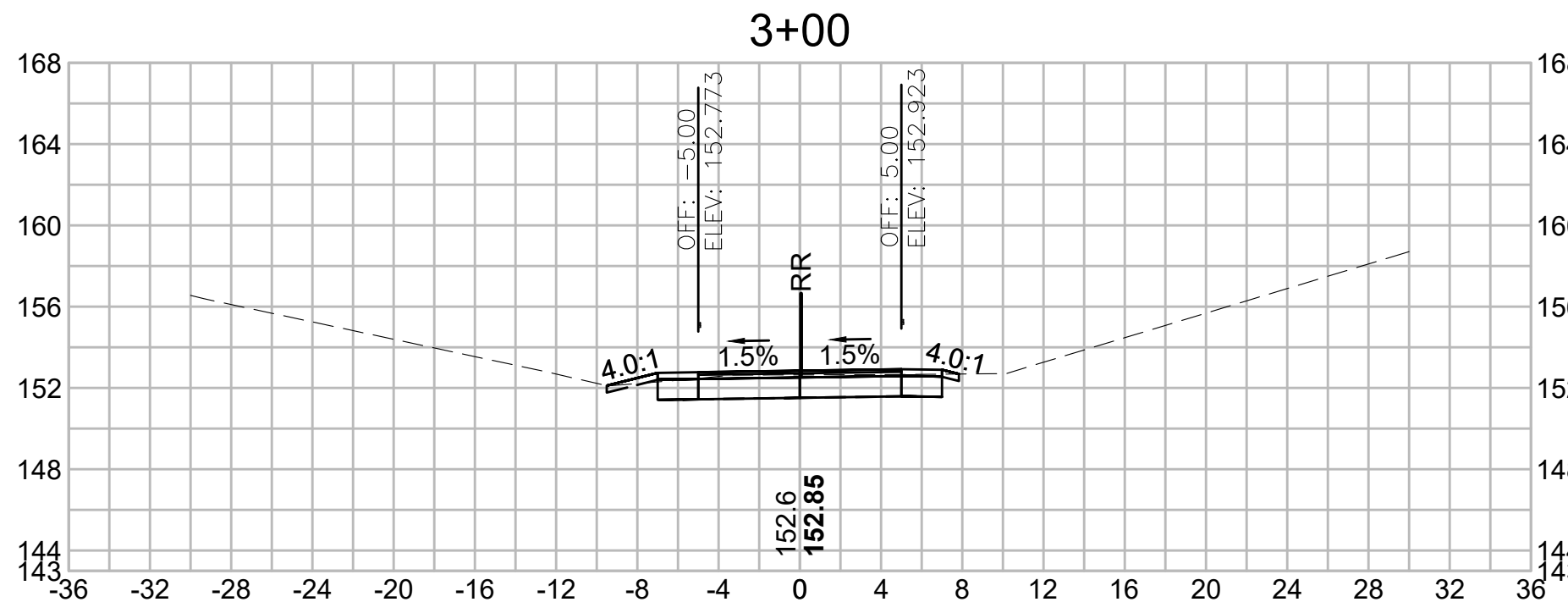
Total Volume at Station 4+50.00	
Cut Area	5.223
Fill Area	1.887
Cut Vol	10.824
Fill Vol	7.6
Cum Cut Vol	50.778
Cum Fill Vol	19.4
Net Vol	31.4



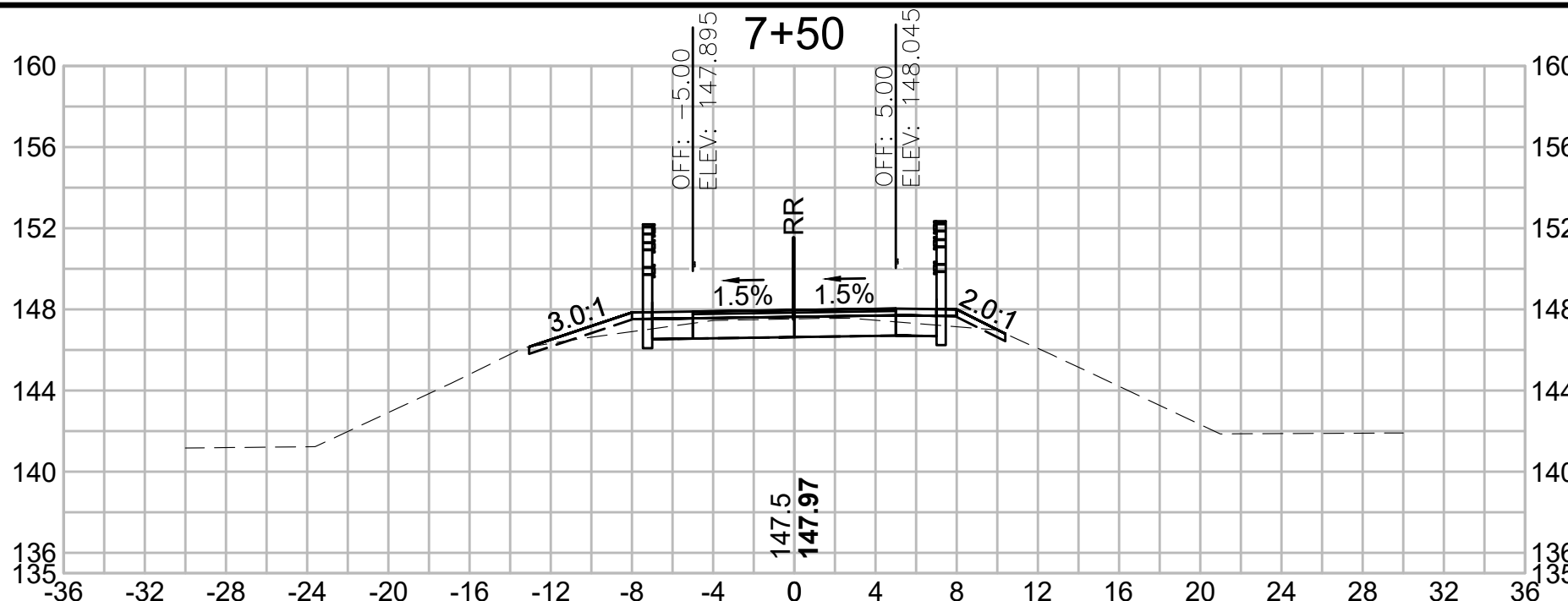
Total Volume at Station 4+00.00	
Cut Area	6.467
Fill Area	6.300
Cut Vol	15.680
Fill Vol	8.8
Cum Cut Vol	39.955
Cum Fill Vol	11.8
Net Vol	28.1



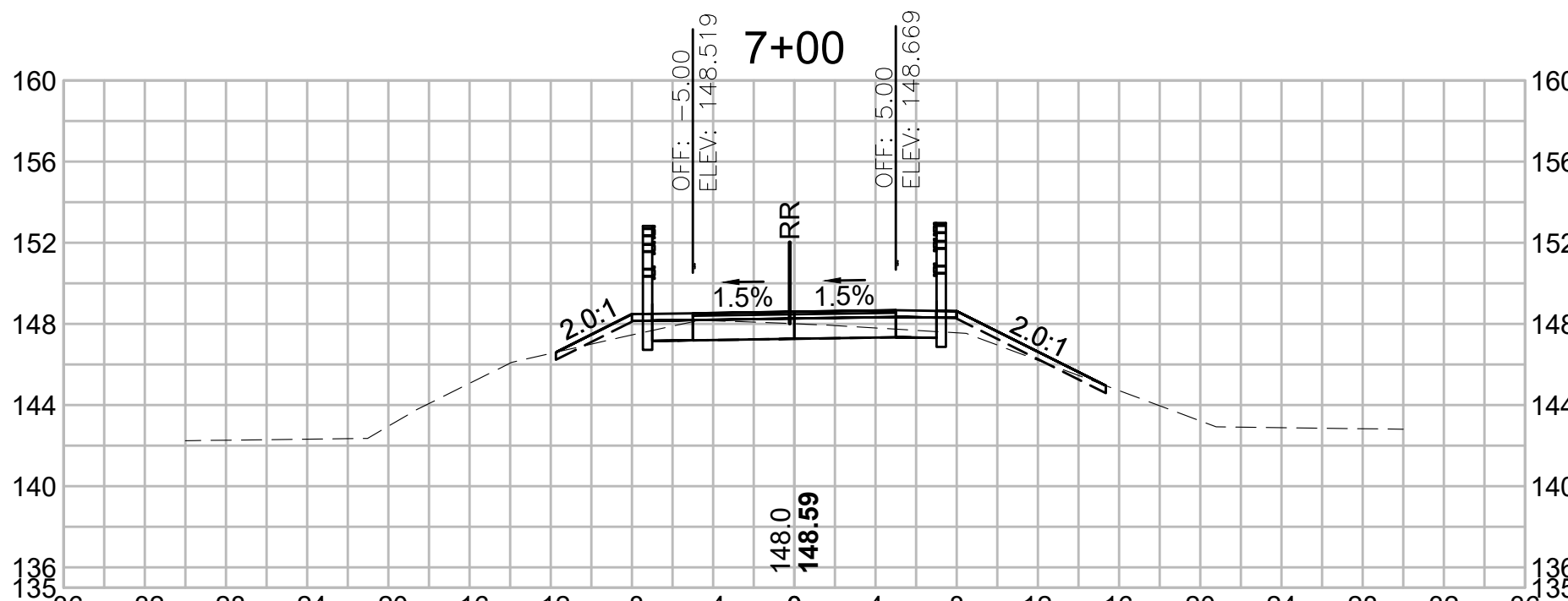
Total Volume at Station 3+50.00	
Cut Area	10.468
Fill Area	3.213
Cut Vol	24.275
Fill Vol	3.0
Cum Cut Vol	24.275
Cum Fill Vol	3.0
Net Vol	21.3



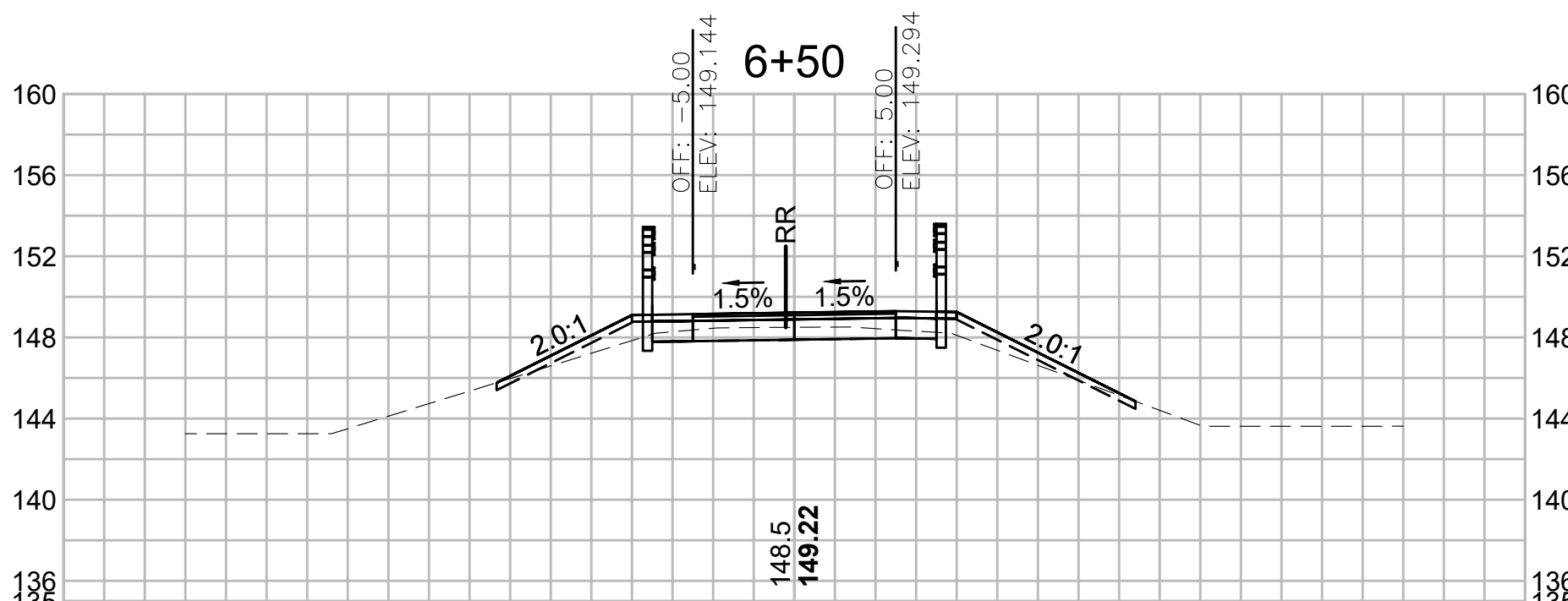
Total Volume at Station 3+00.00	
Cut Area	15.749
Fill Area	0.029
Cut Vol	0.000
Fill Vol	0.0
Cum Cut Vol	0.000
Cum Fill Vol	0.0
Net Vol	0.0



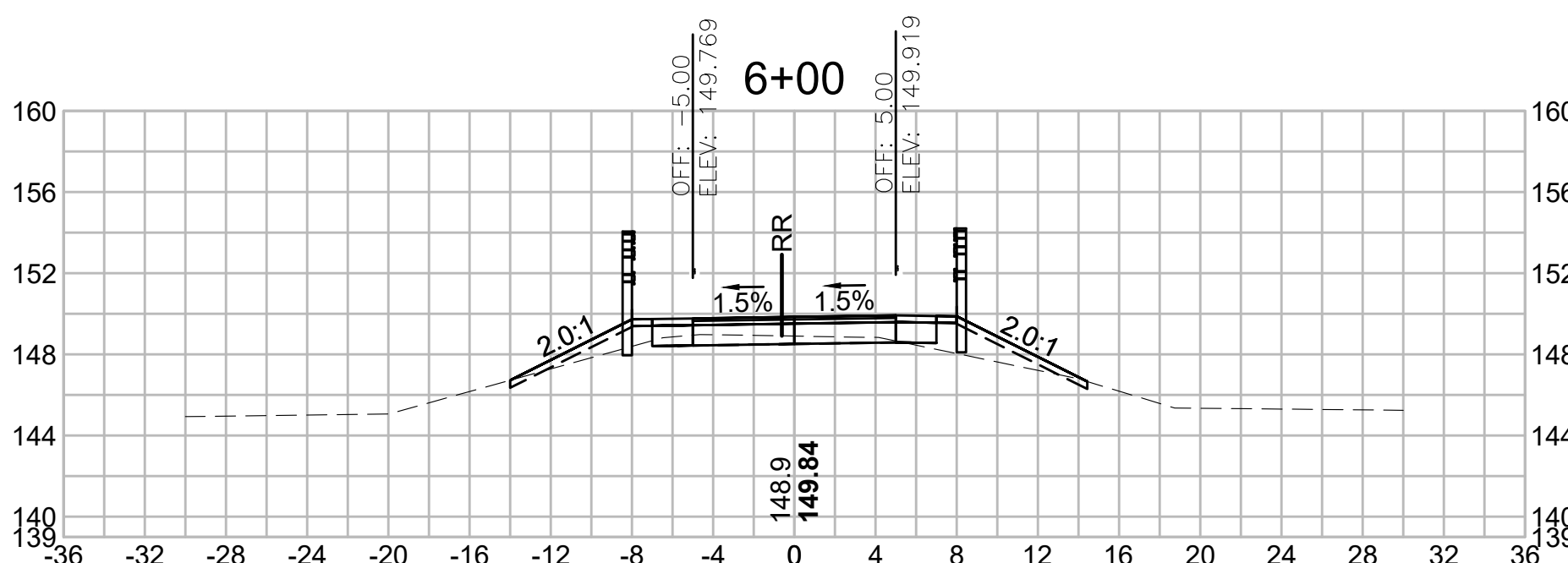
Total Volume at Station 7+50.00	
Cut Area	11.716
Fill Area	2.234
Cut Vol	20.293
Fill Vol	5.2
Cum Cut Vol	126.495
Cum Fill Vol	96.2
Net Vol	30.3



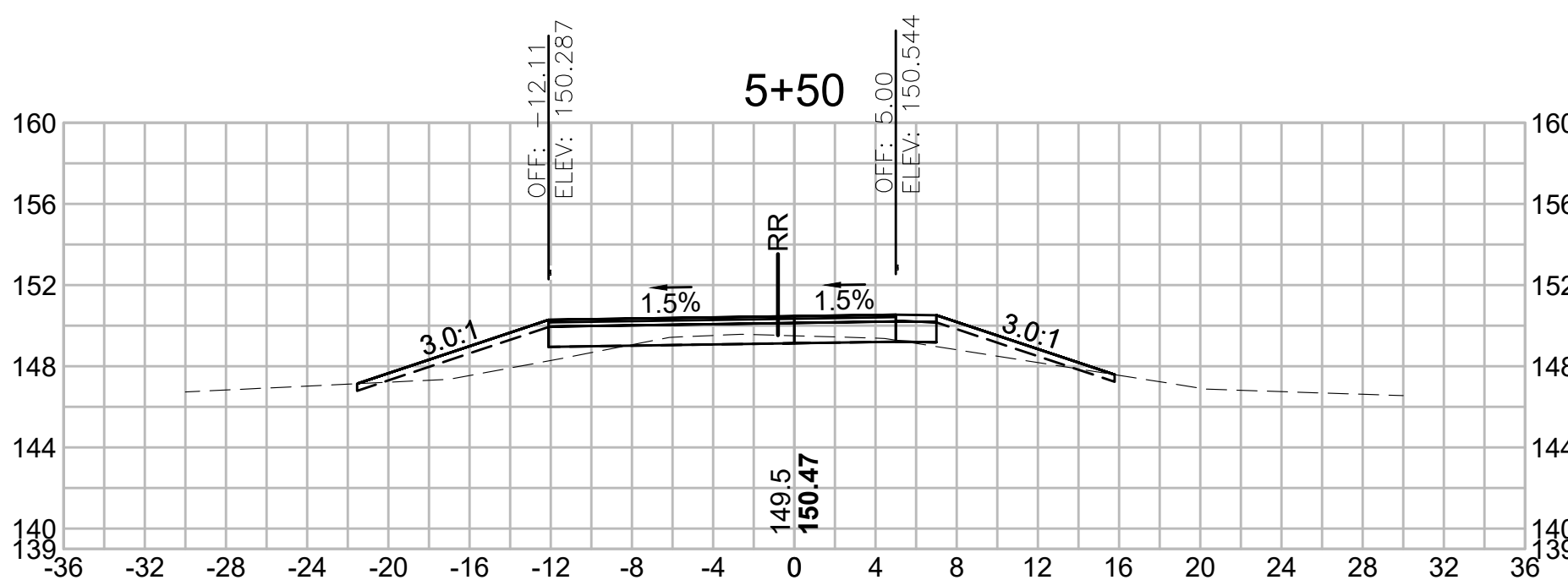
Total Volume at Station 7+00.00	
Cut Area	10.199
Fill Area	3.341
Cut Vol	17.216
Fill Vol	8.6
Cum Cut Vol	106.203
Cum Fill Vol	91.1
Net Vol	15.1



Total Volume at Station 6+50.00	
Cut Area	8.393
Fill Area	5.910
Cut Vol	12.654
Fill Vol	13.2
Cum Cut Vol	88.988
Cum Fill Vol	82.5
Net Vol	6.5



Total Volume at Station 6+00.00	
Cut Area	5.273
Fill Area	8.292
Cut Vol	9.415
Fill Vol	20.2
Cum Cut Vol	76.334
Cum Fill Vol	69.4
Net Vol	7.0



Total Volume at Station 5+50.00	
Cut Area	4.895
Fill Area	13.491
Cut Vol	7.919
Fill Vol	20.3
Cum Cut Vol	66.920
Cum Fill Vol	49.2
Net Vol	17.7

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	TBD

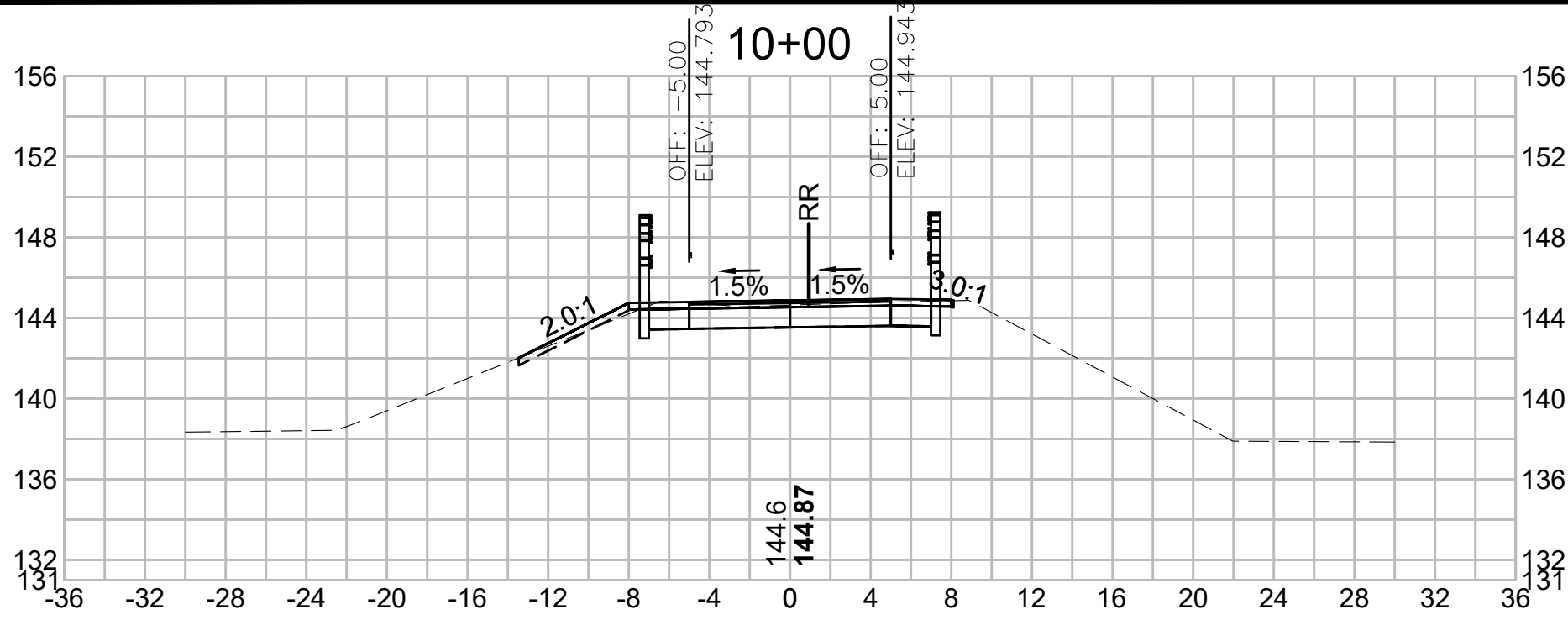
PROJECT FILE NO. 613319

CROSS SECTIONS

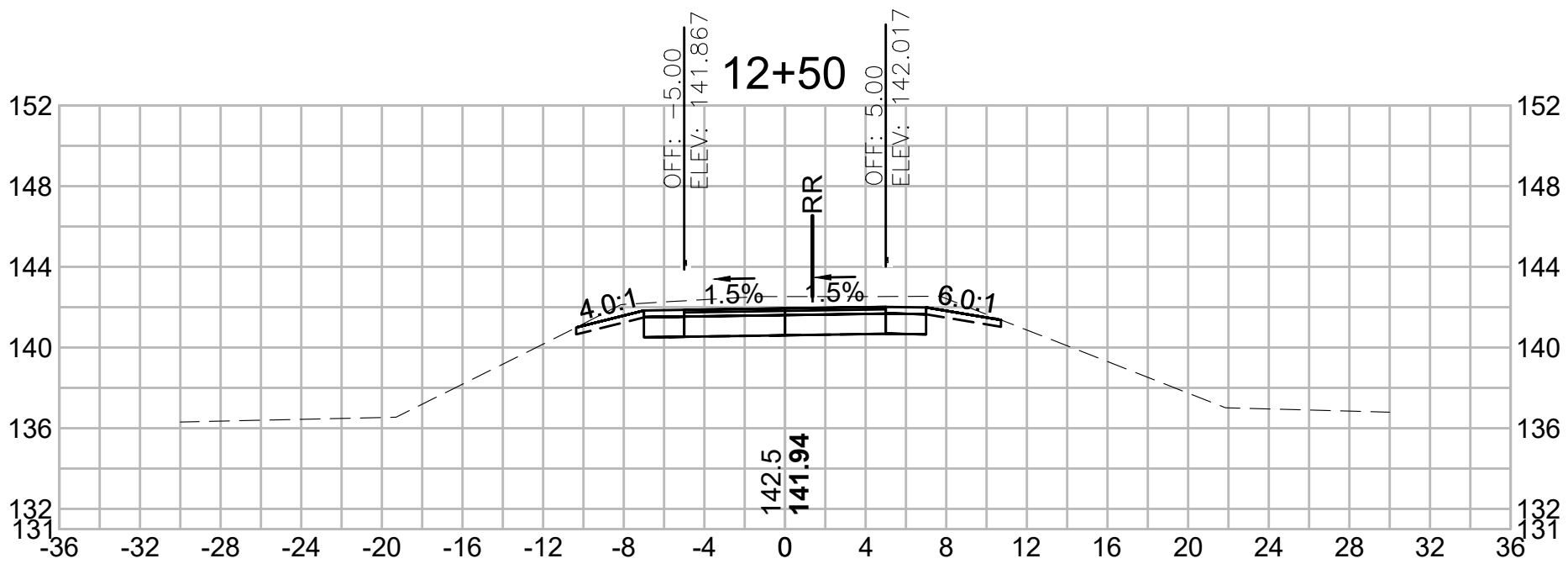
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	TBD
PROJECT FILE NO.		613319	

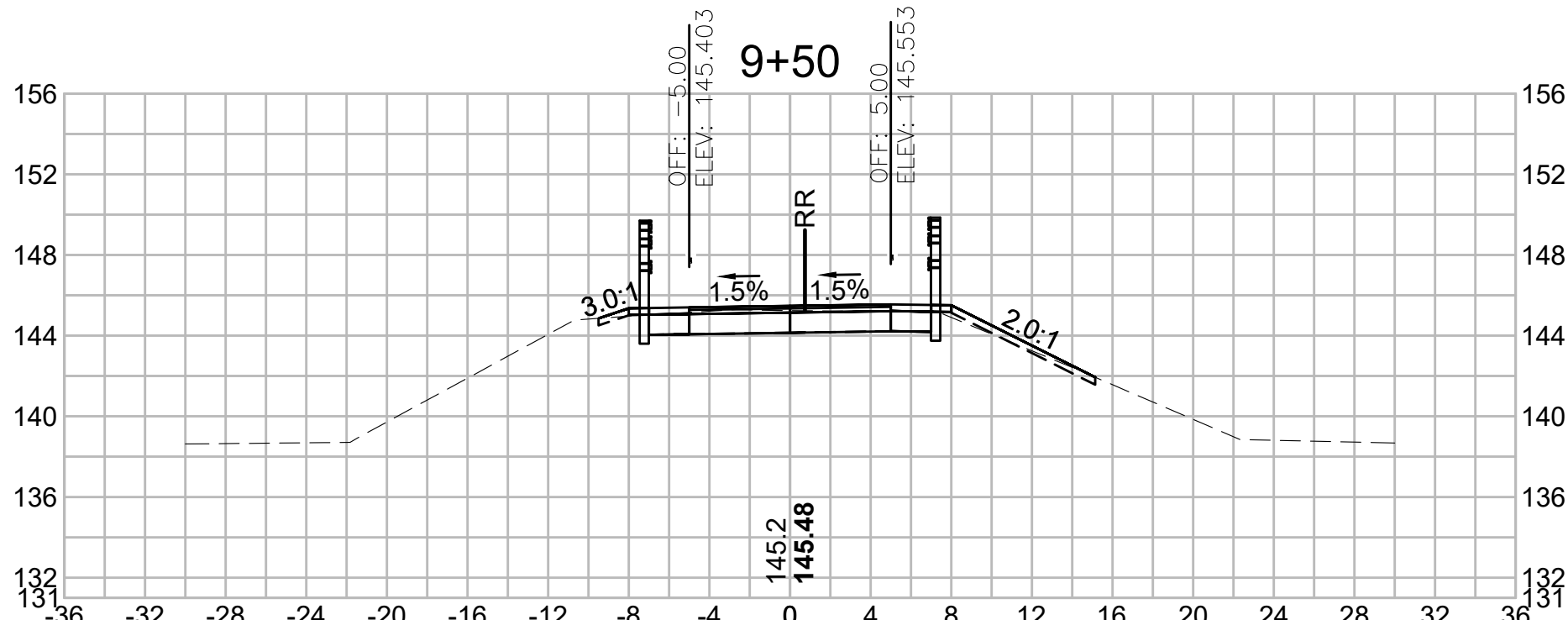
CROSS SECTIONS



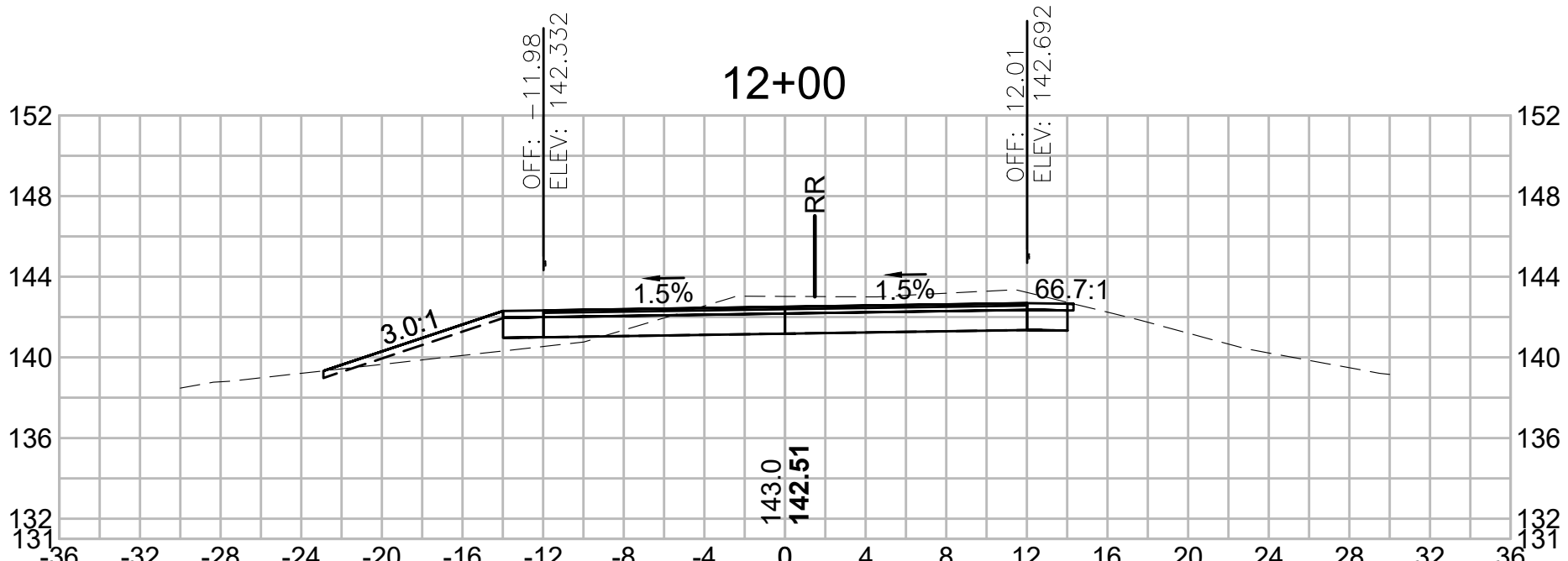
Total Volume at Station 10+00.00	
Cut Area	17.477
Fill Area	0.211
Cut Vol	31.151
Fill Vol	0.6
Cum Cut Vol	258.338
Cum Fill Vol	106.2
Net Vol	152.1



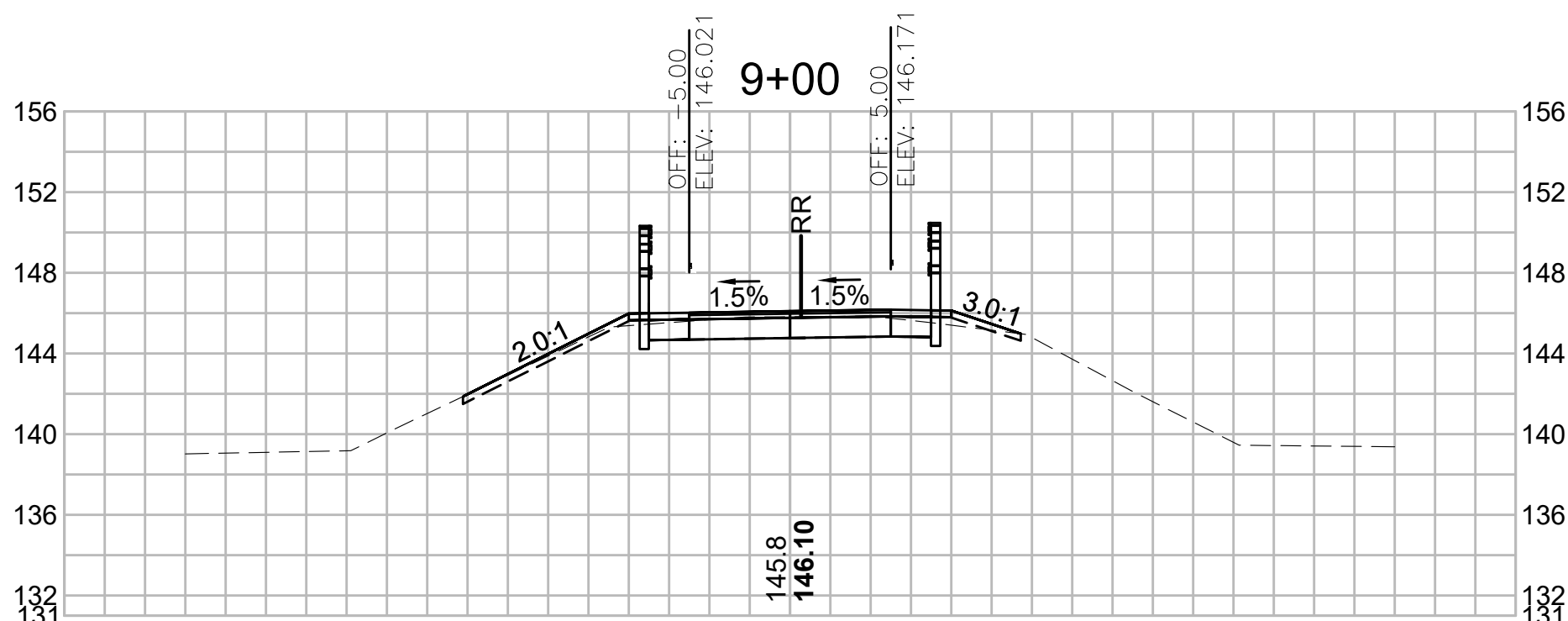
Total Volume at Station 12+50.00	
Cut Area	31.020
Fill Area	0.000
Cut Vol	62.706
Fill Vol	7.3
Cum Cut Vol	575.205
Cum Fill Vol	154.6
Net Vol	420.6



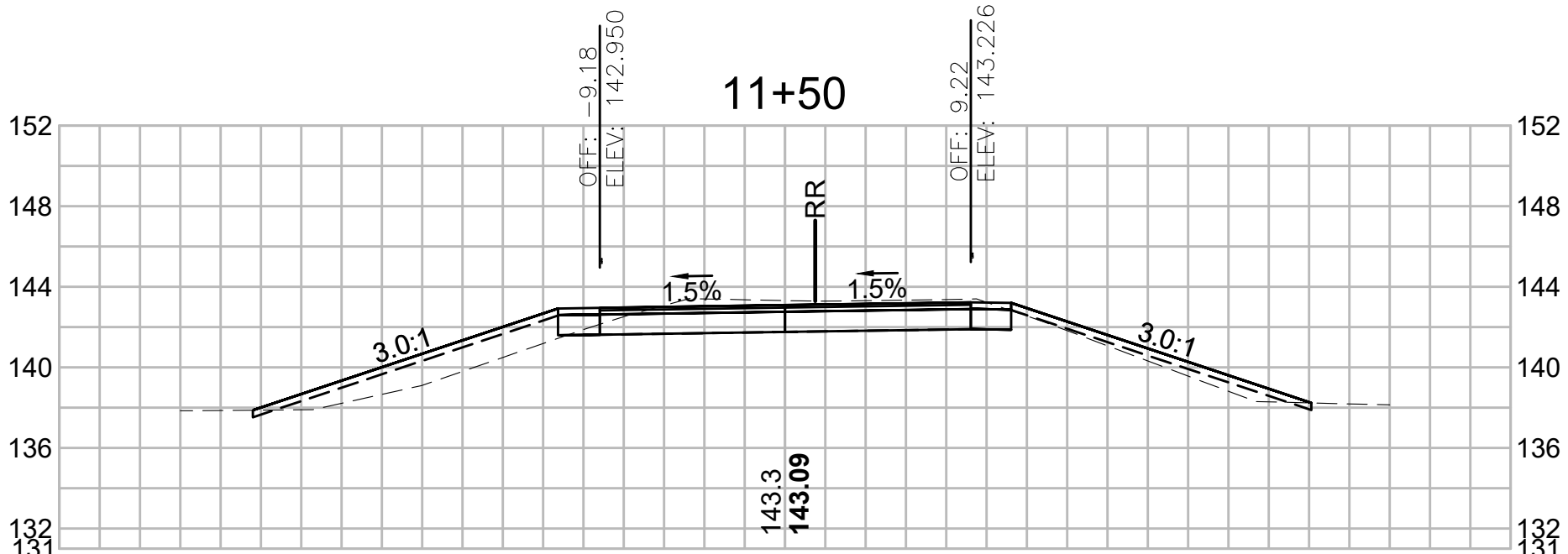
Total Volume at Station 9+50.00	
Cut Area	16.165
Fill Area	0.438
Cut Vol	29.738
Fill Vol	1.3
Cum Cut Vol	227.188
Cum Fill Vol	105.6
Net Vol	121.5



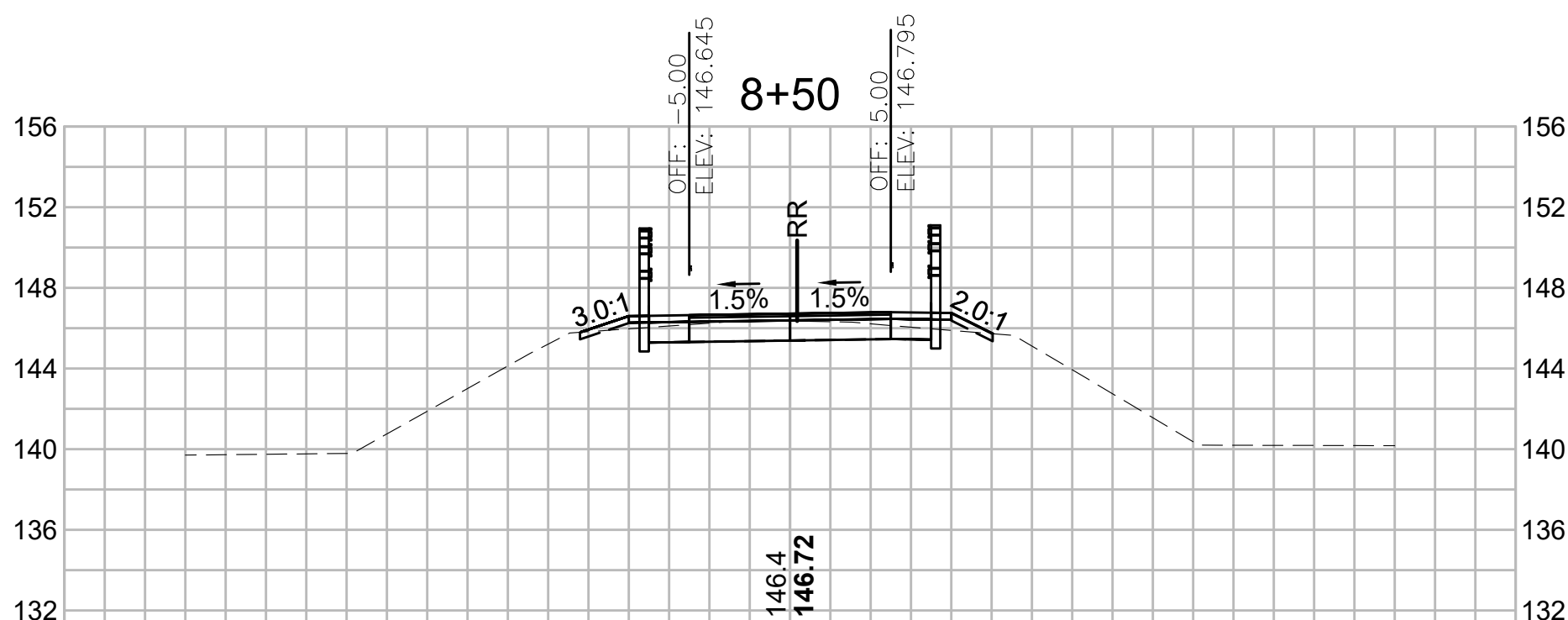
Total Volume at Station 12+00.00	
Cut Area	36.702
Fill Area	7.934
Cut Vol	61.780
Fill Vol	22.9
Cum Cut Vol	512.499
Cum Fill Vol	147.3
Net Vol	365.2



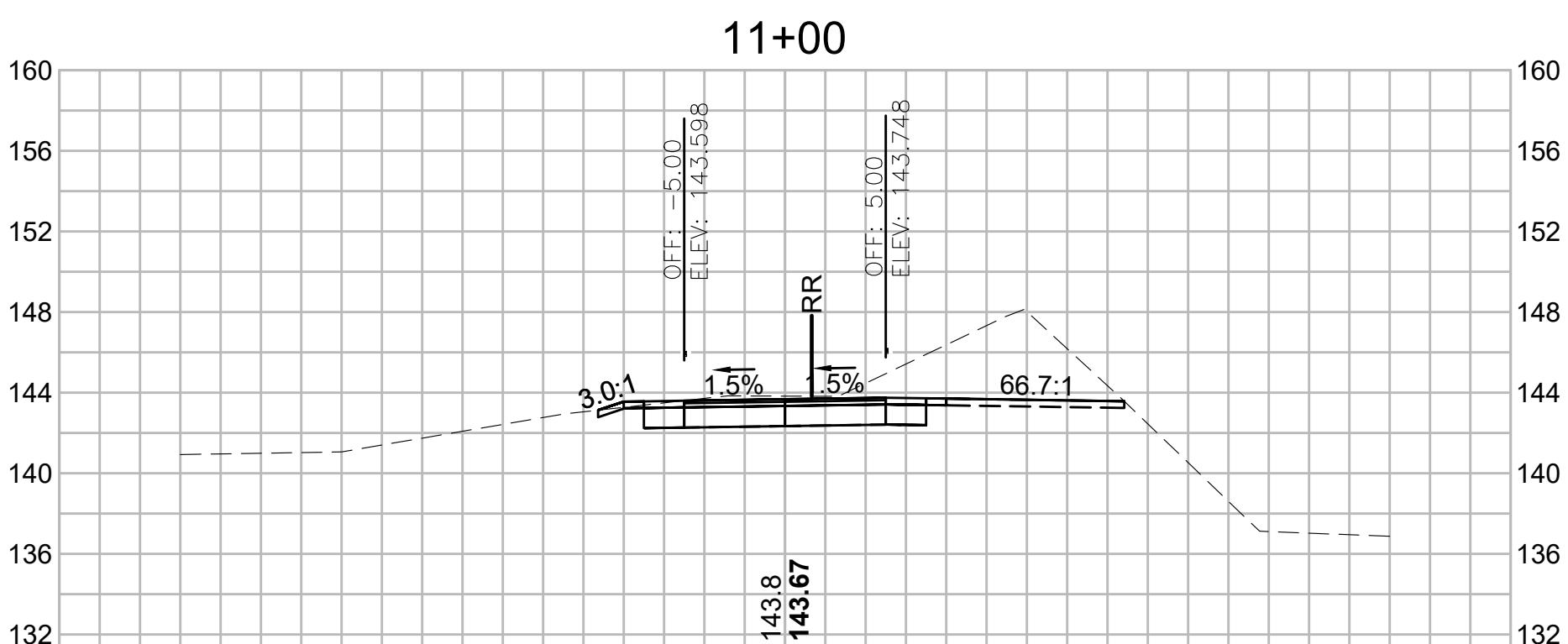
Total Volume at Station 9+00.00	
Cut Area	15.951
Fill Area	0.973
Cut Vol	26.226
Fill Vol	2.0
Cum Cut Vol	197.451
Cum Fill Vol	104.3
Net Vol	93.1



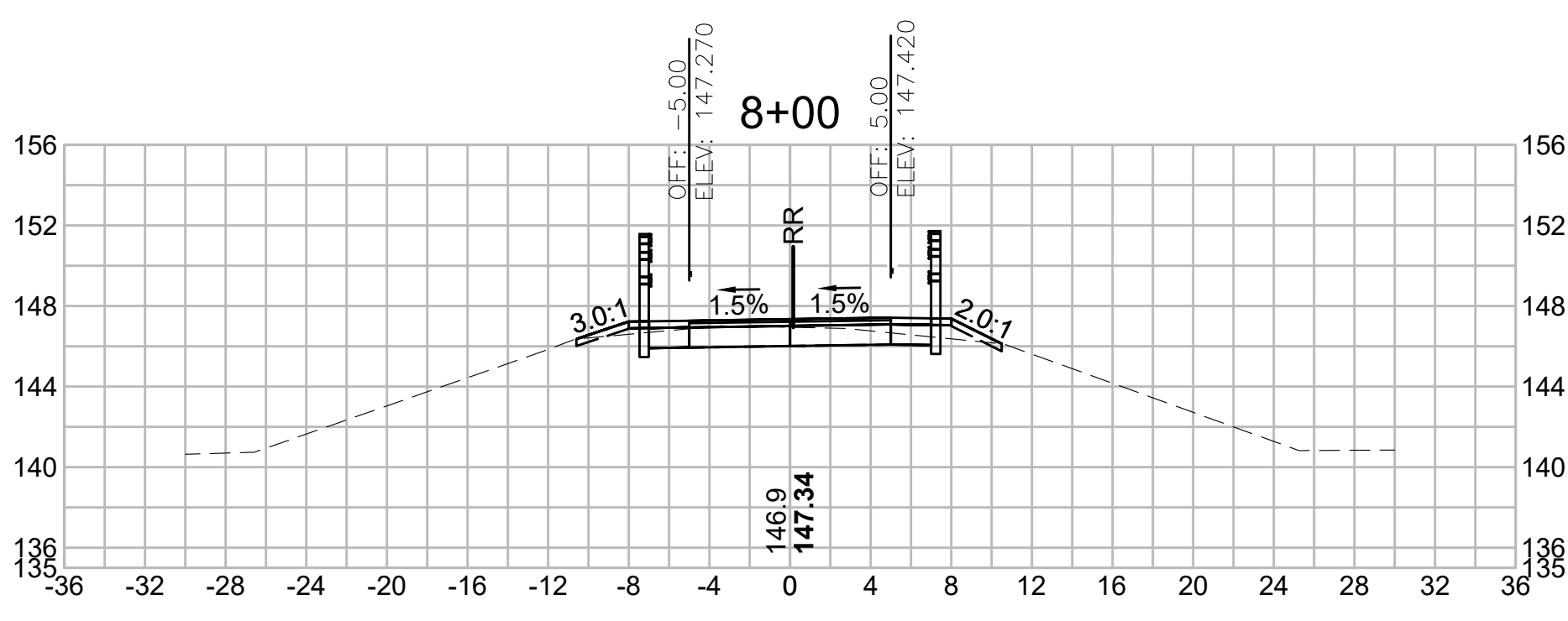
Total Volume at Station 11+50.00	
Cut Area	30.020
Fill Area	16.846
Cut Vol	79.309
Fill Vol	15.6
Cum Cut Vol	450.720
Cum Fill Vol	124.3
Net Vol	326.4



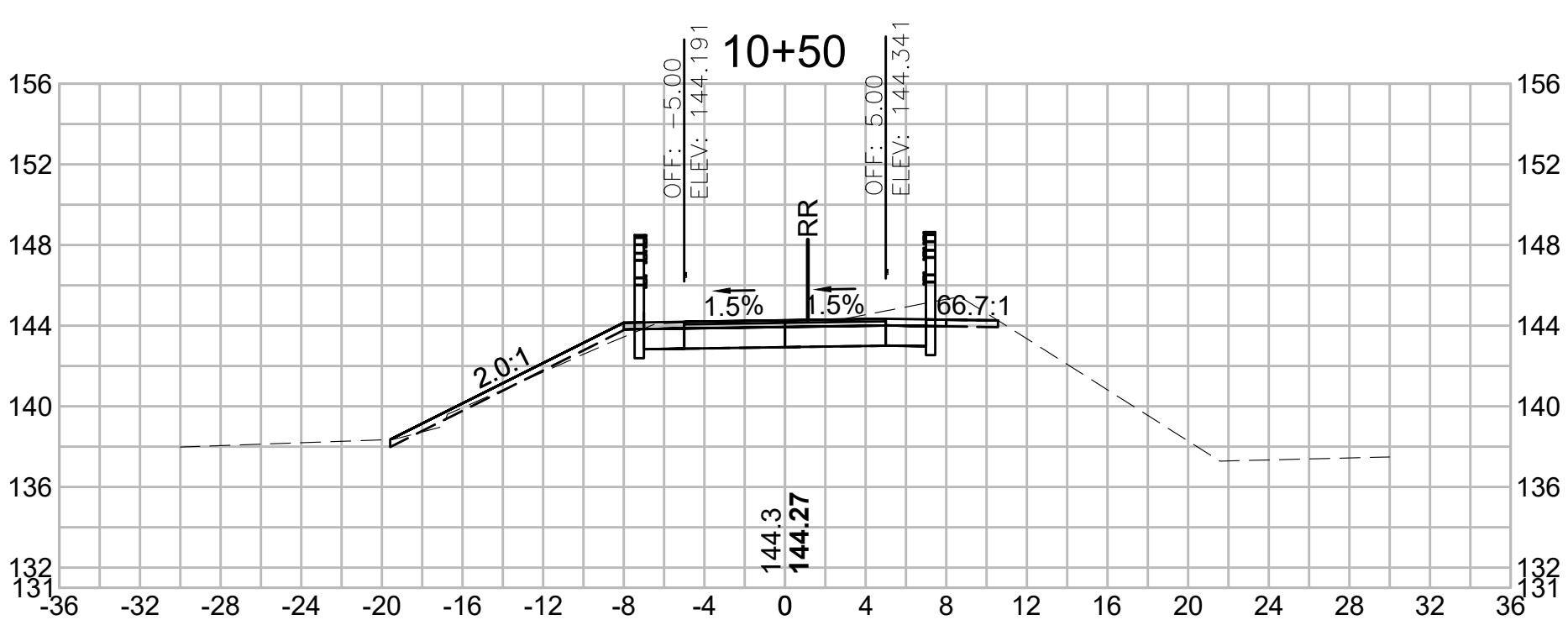
Total Volume at Station 8+50.00	
Cut Area	12.373
Fill Area	1.221
Cut Vol	22.669
Fill Vol	2.6
Cum Cut Vol	171.225
Cum Fill Vol	102.3
Net Vol	68.9



Total Volume at Station 11+00.00	
Cut Area	55.634
Fill Area	0.000
Cut Vol	74.202
Fill Vol	1.1
Cum Cut Vol	371.411
Cum Fill Vol	108.7
Net Vol	262.7



Total Volume at Station 8+00.00	
Cut Area	12.110
Fill Area	1.554
Cut Vol	22.062
Fill Vol	3.5
Cum Cut Vol	148.556
Cum Fill Vol	99.7
Net Vol	48.8

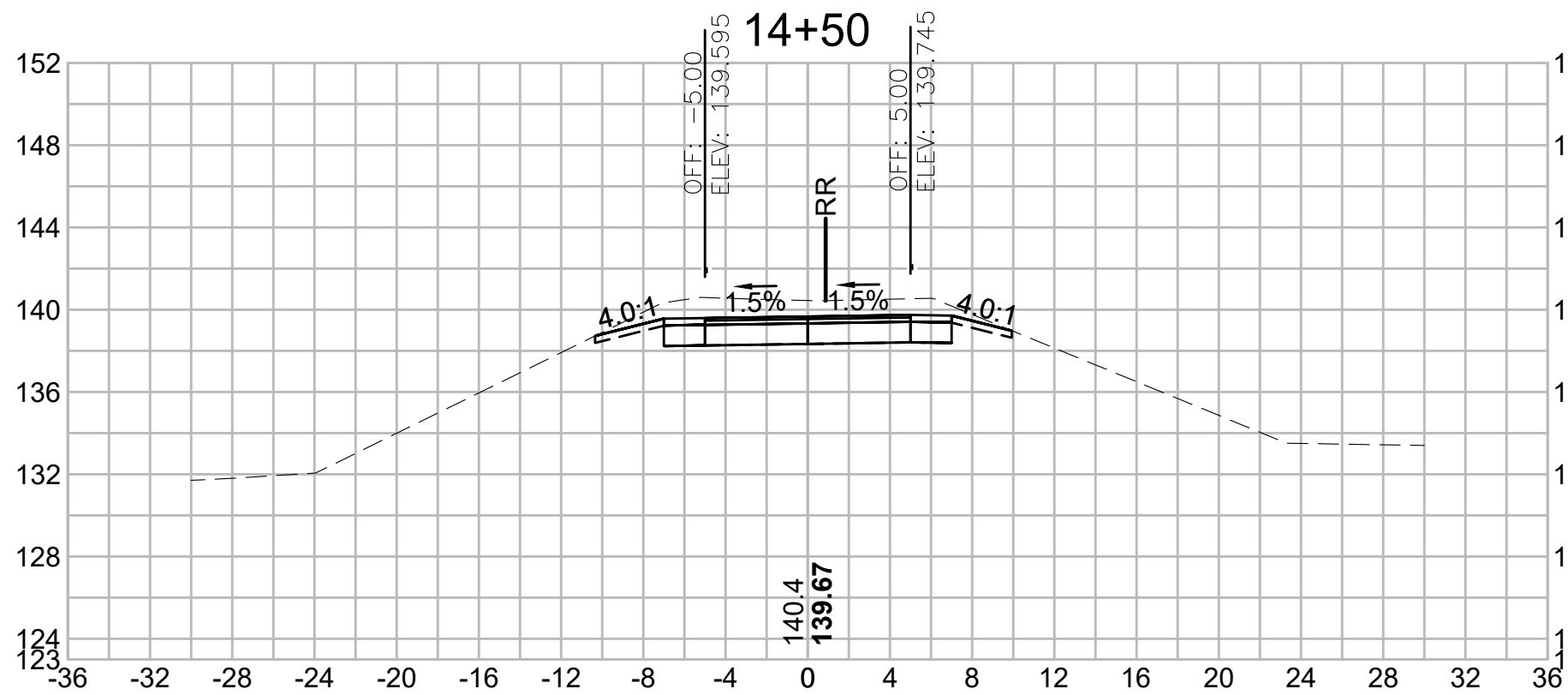


Total Volume at Station 10+50.00	
Cut Area	24.504
Fill Area	1.229
Cut Vol	38.872
Fill Vol	1.3
Cum Cut Vol	297.210
Cum Fill Vol	107.6
Net Vol	189.6

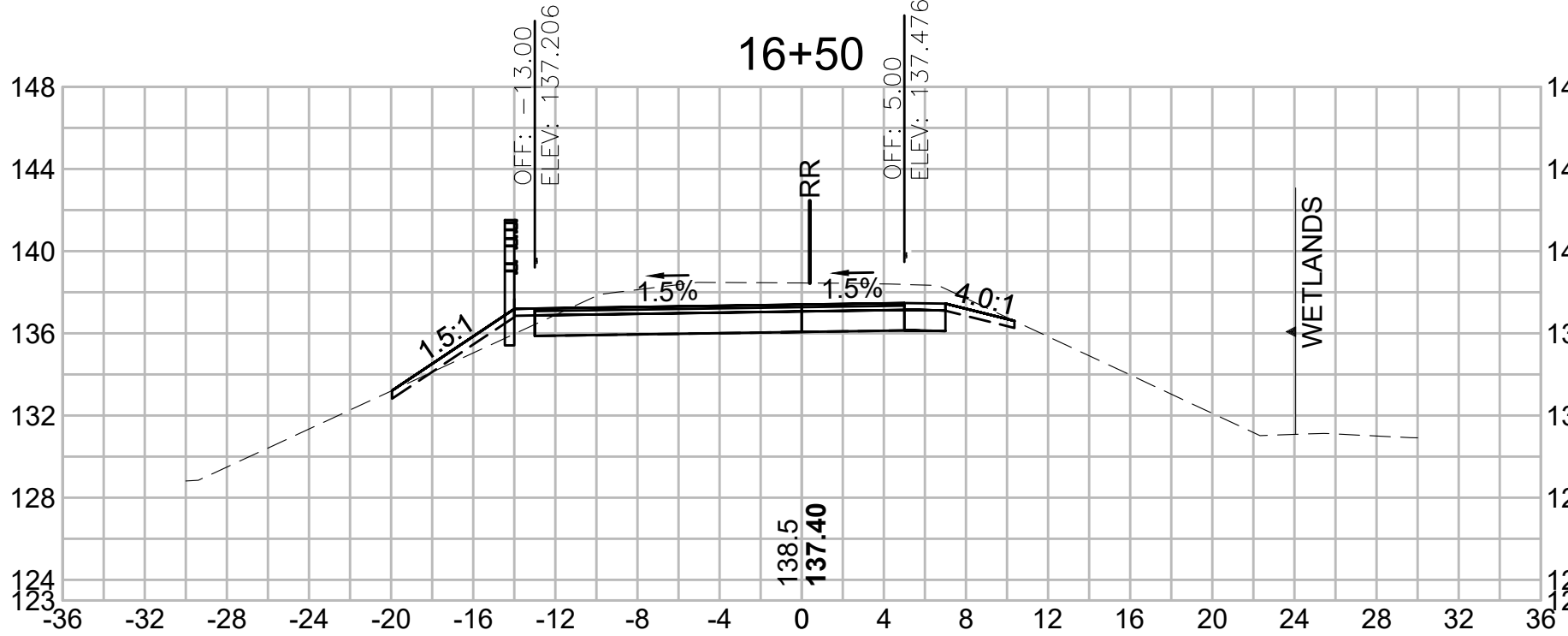
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	TBD
PROJECT FILE NO.		613319	

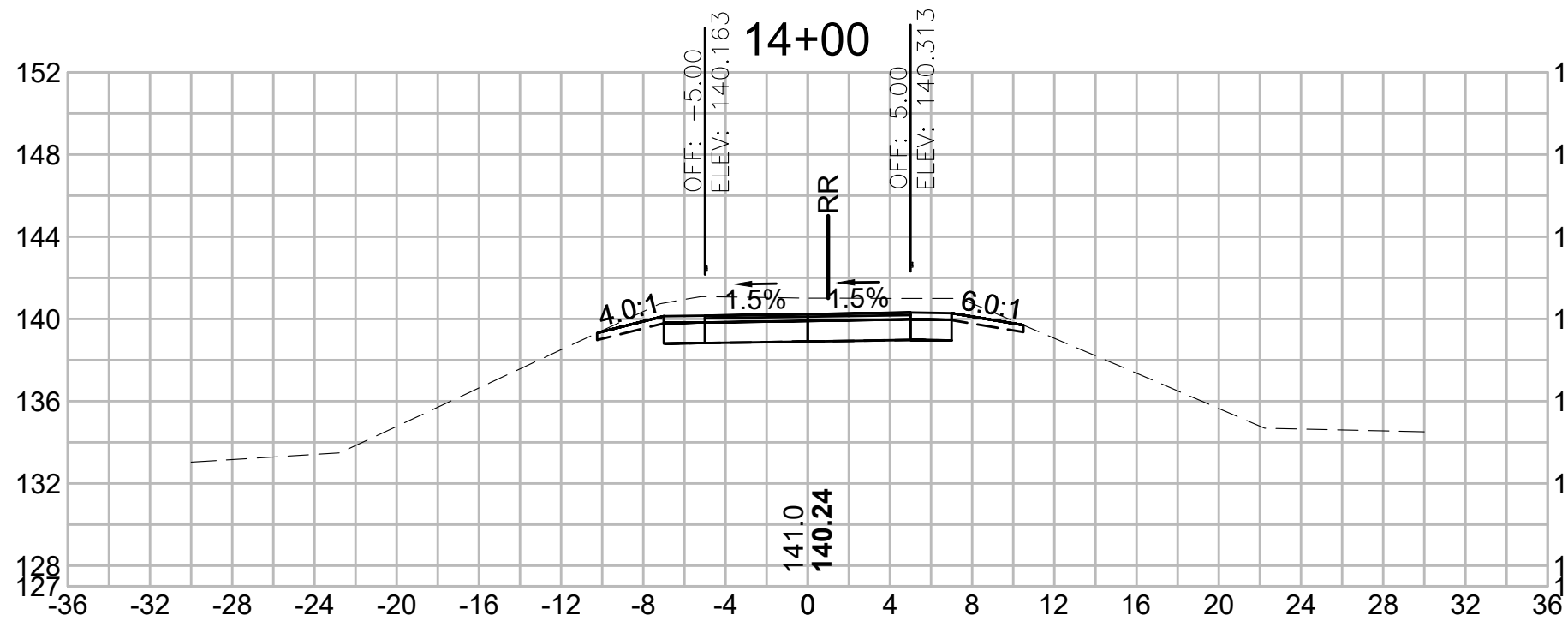
CROSS SECTIONS



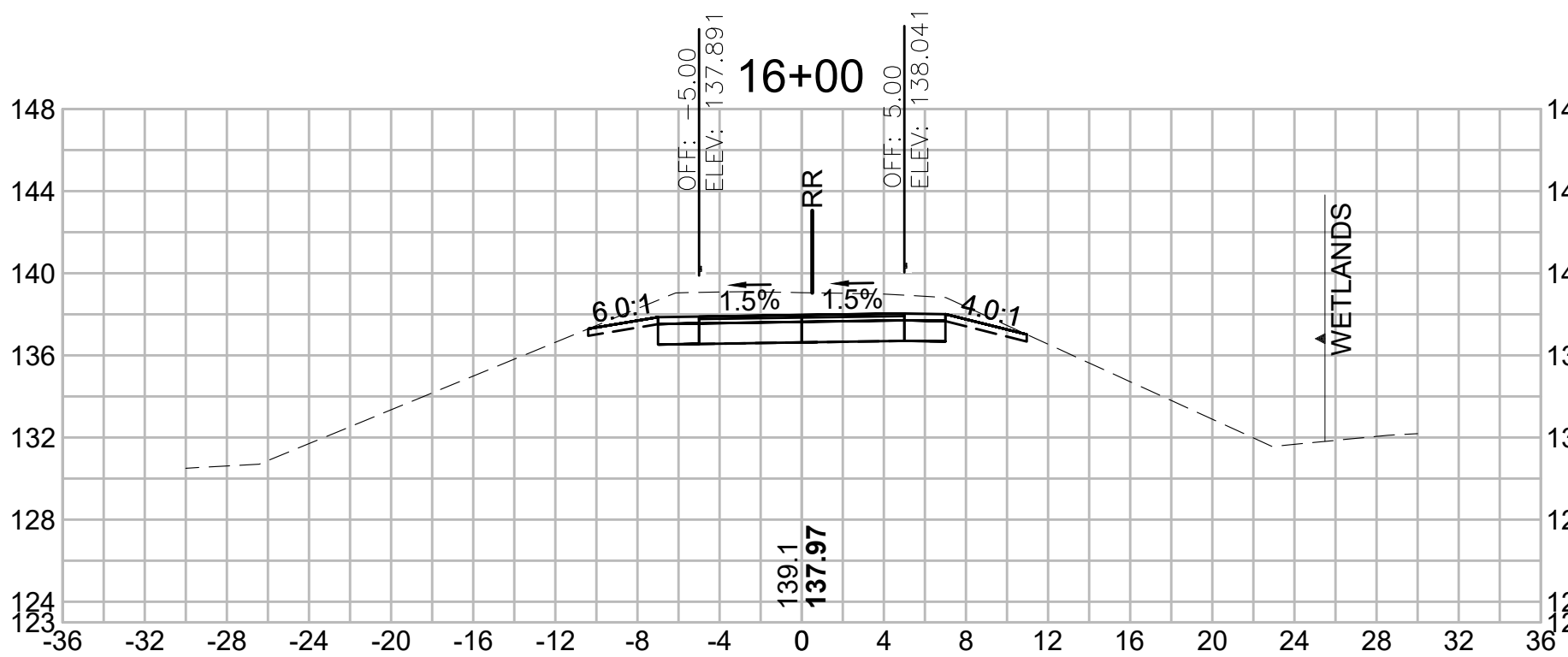
Total Volume at Station 14+50.00	
Cut Area	34.390
Fill Area	0.000
Cut Vol	63.853
Fill Vol	0.0
Cum Cut Vol	823.906
Cum Fill Vol	154.6
Net Vol	669.3



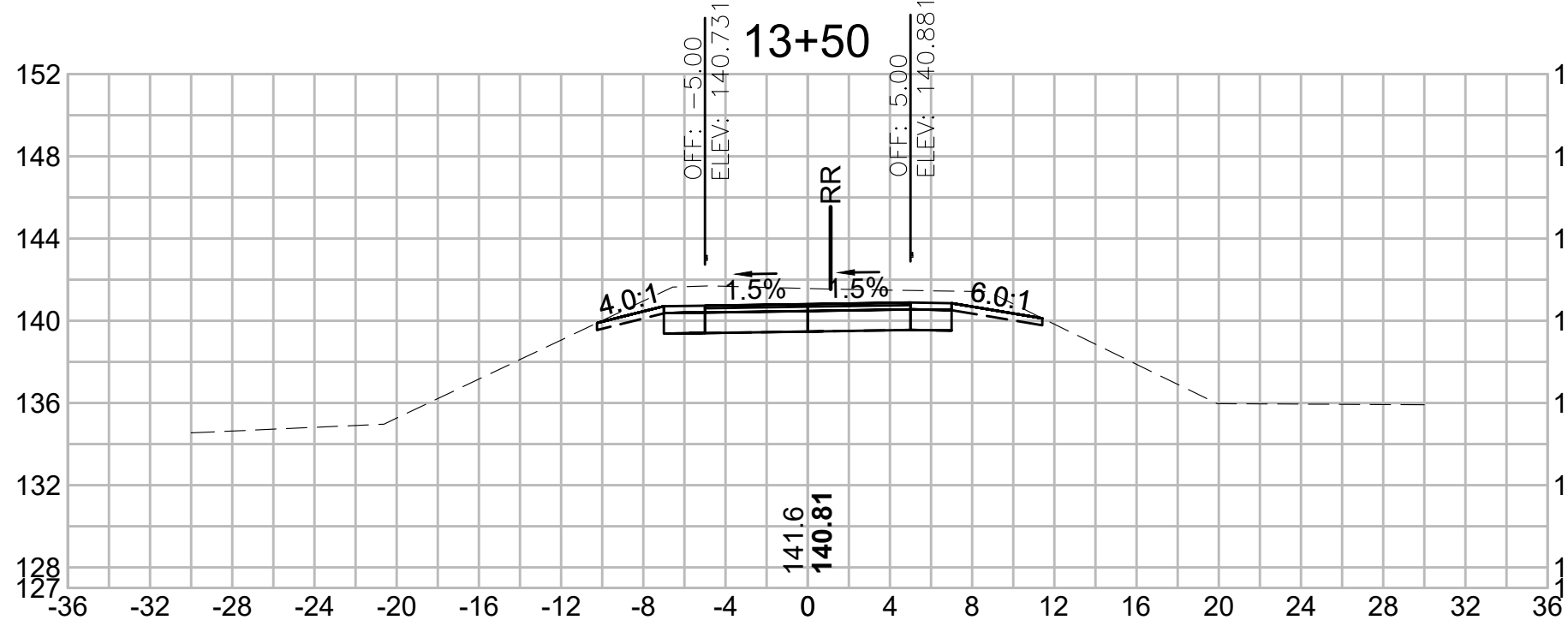
Total Volume at Station 16+50.00	
Cut Area	45.811
Fill Area	2.300
Cut Vol	78.457
Fill Vol	2.1
Cum Cut Vol	1112.480
Cum Fill Vol	156.7
Net Vol	955.7



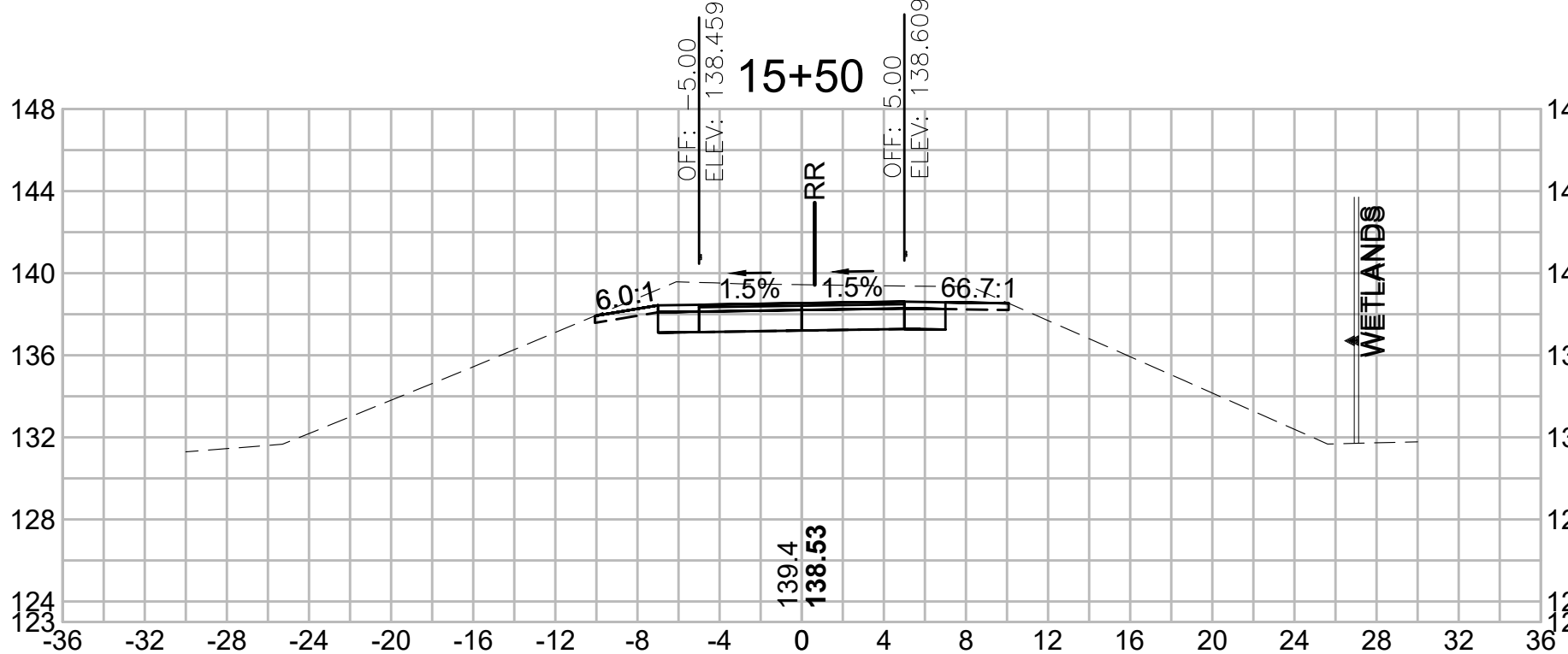
Total Volume at Station 14+00.00	
Cut Area	34.571
Fill Area	0.000
Cut Vol	64.937
Fill Vol	0.0
Cum Cut Vol	760.053
Cum Fill Vol	154.6
Net Vol	605.4



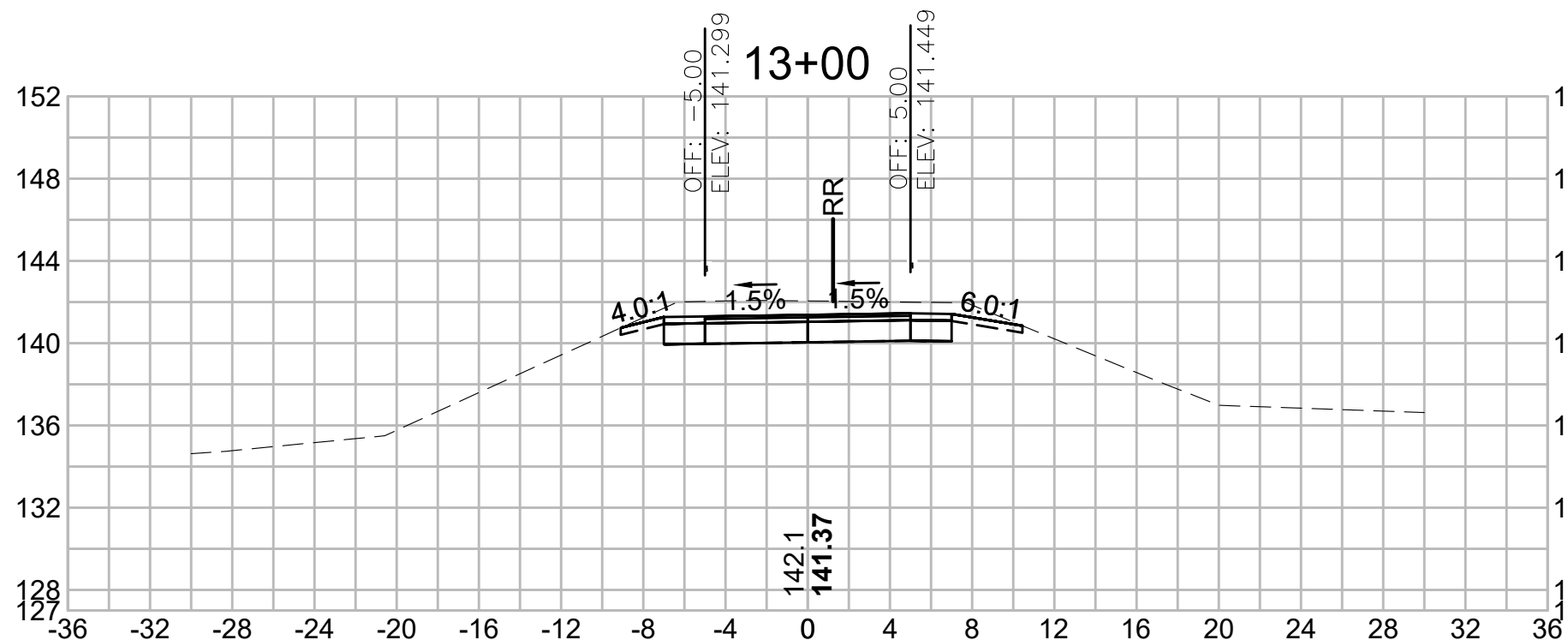
Total Volume at Station 16+00.00	
Cut Area	38.922
Fill Area	0.000
Cut Vol	69.642
Fill Vol	0.0
Cum Cut Vol	1034.023
Cum Fill Vol	154.6
Net Vol	879.4



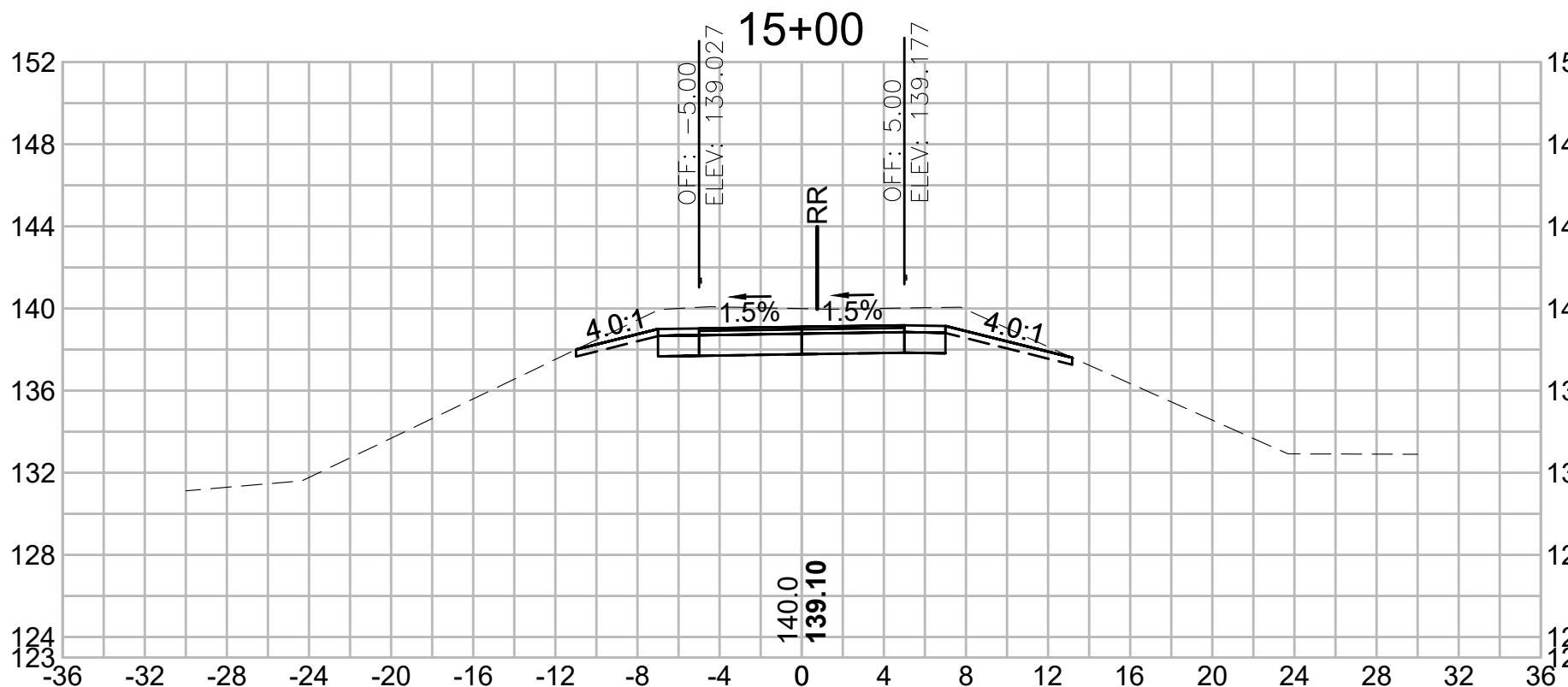
Total Volume at Station 13+50.00	
Cut Area	35.560
Fill Area	0.000
Cut Vol	62.058
Fill Vol	0.0
Cum Cut Vol	695.117
Cum Fill Vol	154.6
Net Vol	540.5



Total Volume at Station 15+50.00	
Cut Area	36.291
Fill Area	0.000
Cut Vol	71.119
Fill Vol	0.0
Cum Cut Vol	964.382
Cum Fill Vol	154.6
Net Vol	809.8



Total Volume at Station 13+00.00	
Cut Area	31.462
Fill Area	0.000
Cut Vol	57.854
Fill Vol	0.0
Cum Cut Vol	633.059
Cum Fill Vol	154.6
Net Vol	478.5

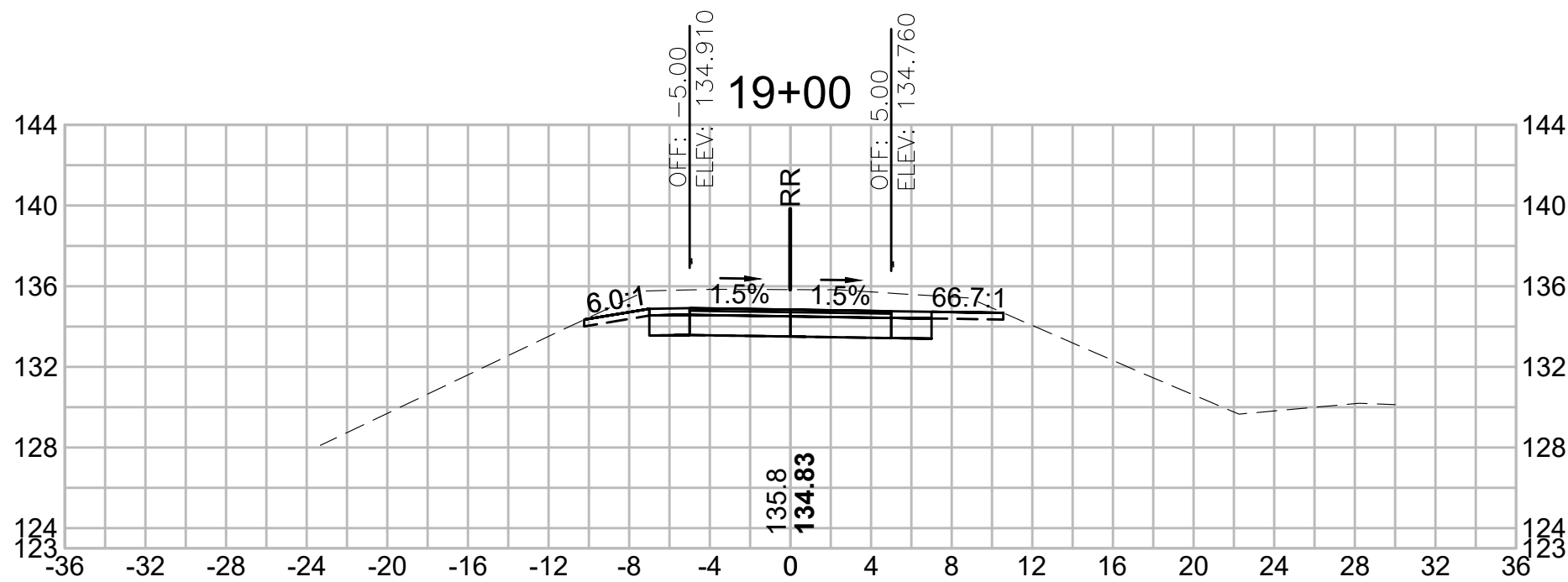


Total Volume at Station 15+00.00	
Cut Area	40.517
Fill Area	0.000
Cut Vol	69.358
Fill Vol	0.0
Cum Cut Vol	893.264
Cum Fill Vol	154.6
Net Vol	738.7

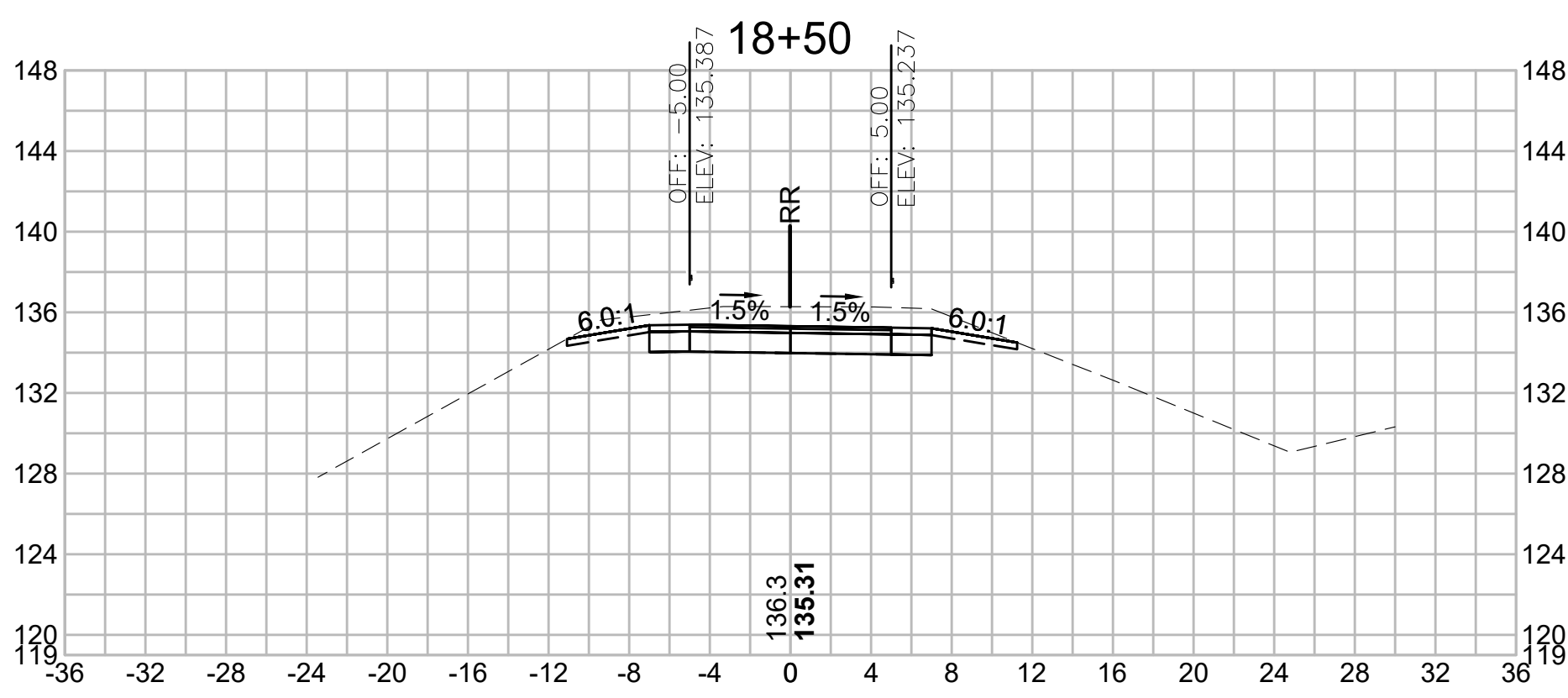
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	TBD
PROJECT FILE NO.		613319	

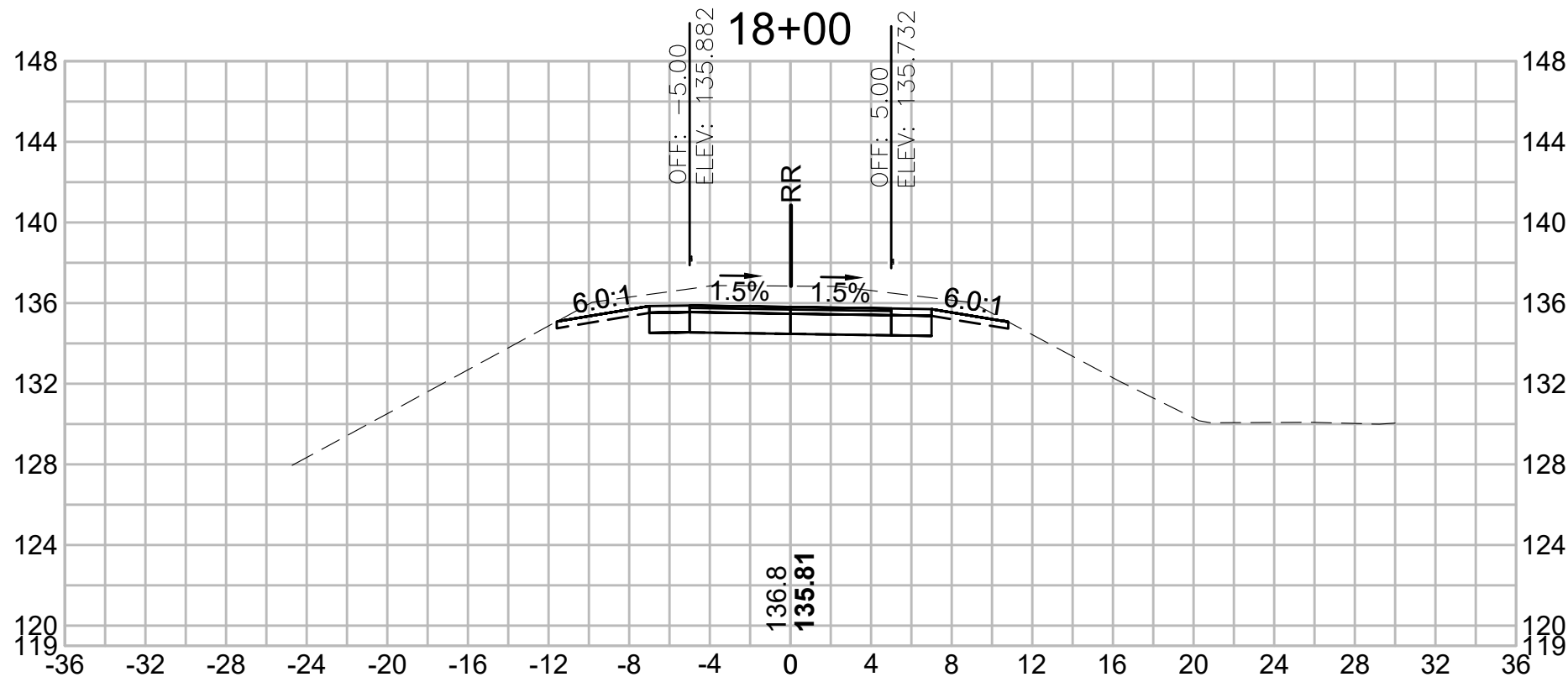
CROSS SECTIONS



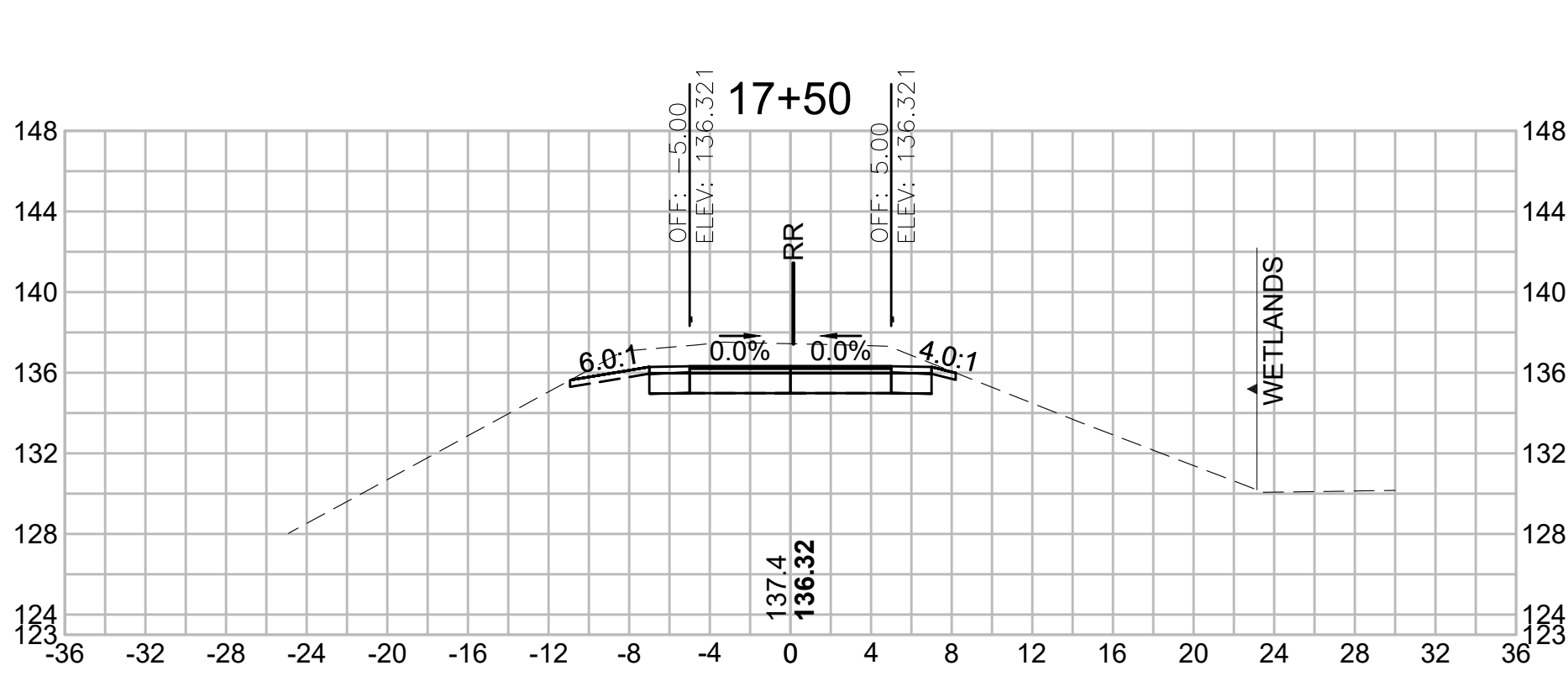
Total Volume at Station 19+00.00	
Cut Area	37.690
Fill Area	0.000
Cut Vol	70.253
Fill Vol	0.0
Cum Cut Vol	1480.680
Cum Fill Vol	158.9
Net Vol	1321.8



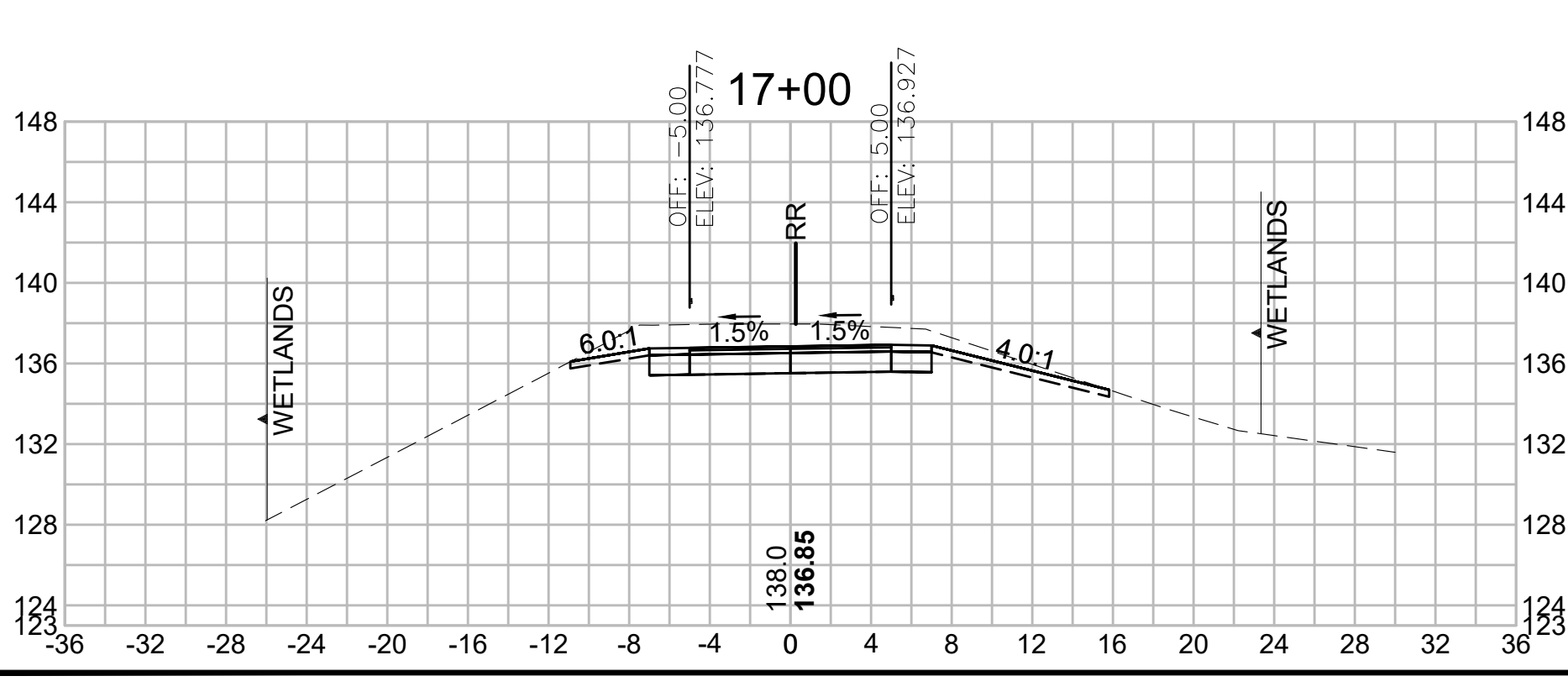
Total Volume at Station 18+50.00	
Cut Area	38.182
Fill Area	0.000
Cut Vol	70.755
Fill Vol	0.0
Cum Cut Vol	1410.427
Cum Fill Vol	158.9
Net Vol	1251.6



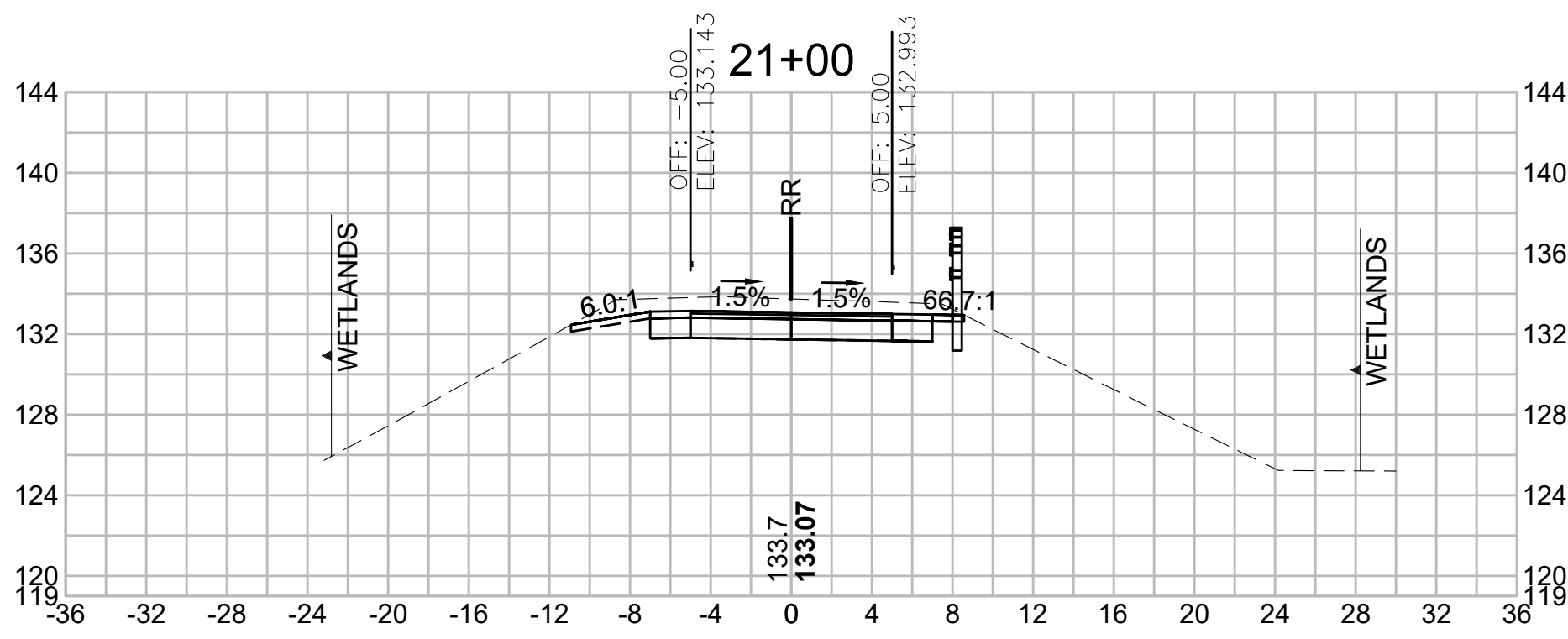
Total Volume at Station 18+00.00	
Cut Area	38.233
Fill Area	0.000
Cut Vol	69.717
Fill Vol	0.0
Cum Cut Vol	1339.672
Cum Fill Vol	158.9
Net Vol	1180.8



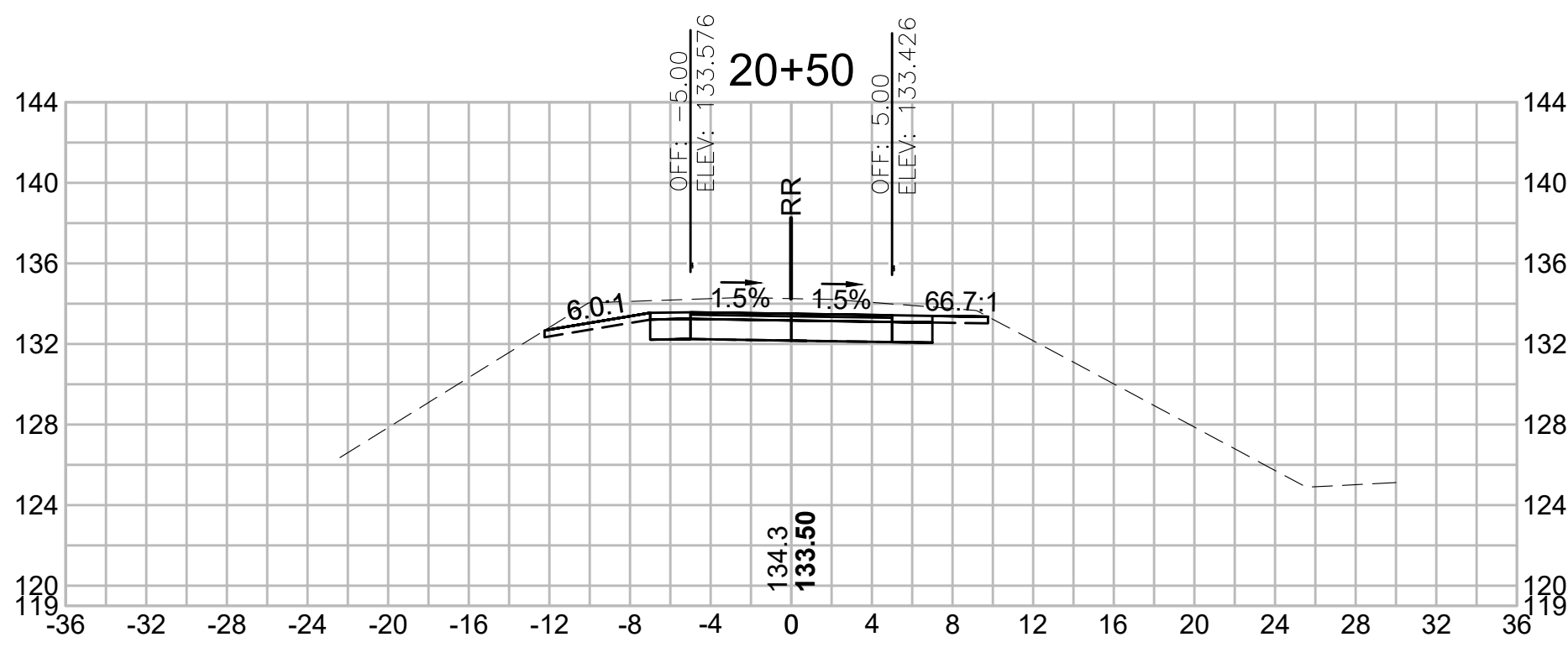
Total Volume at Station 17+50.00	
Cut Area	37.061
Fill Area	0.000
Cut Vol	74.687
Fill Vol	0.0
Cum Cut Vol	1269.956
Cum Fill Vol	158.9
Net Vol	1111.1



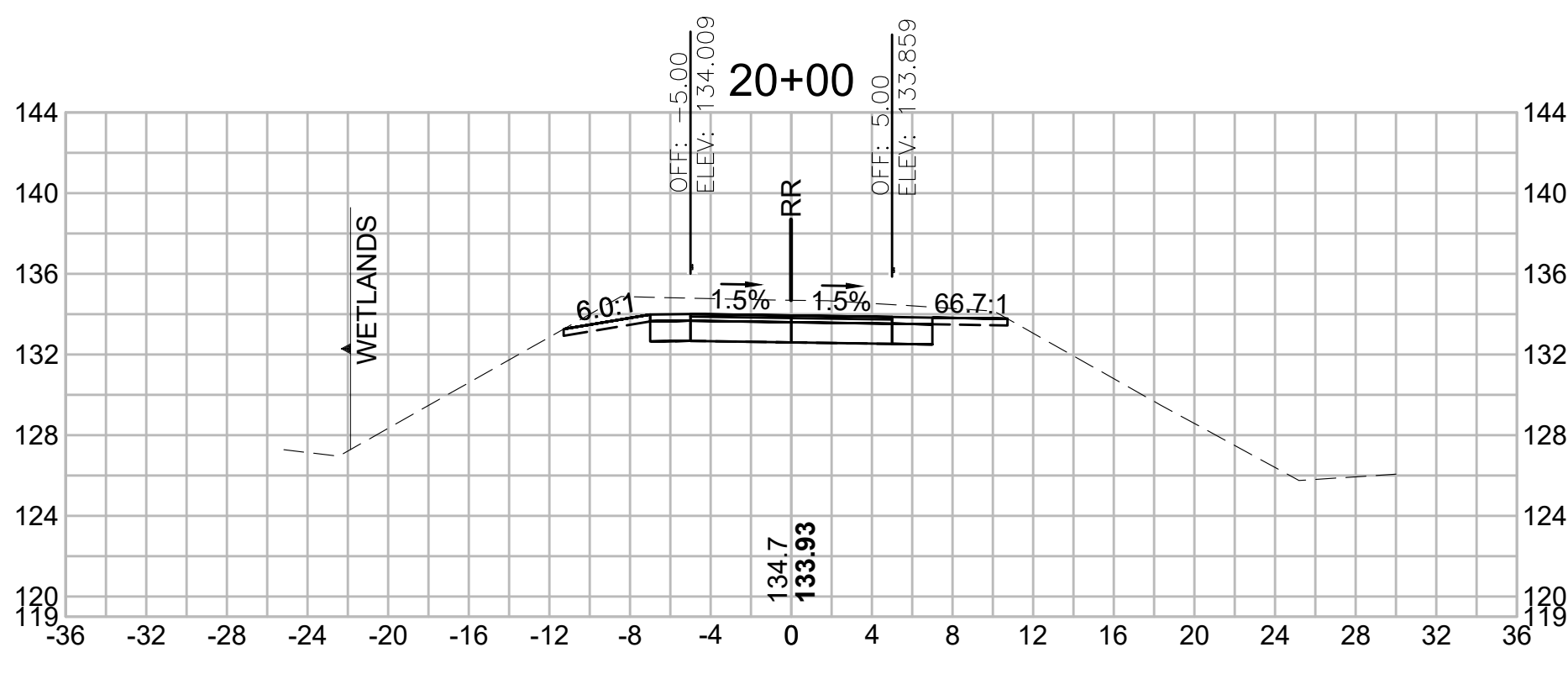
Total Volume at Station 17+00.00	
Cut Area	43.601
Fill Area	0.000
Cut Vol	82.790
Fill Vol	2.1
Cum Cut Vol	1195.269
Cum Fill Vol	158.9
Net Vol	1036.4



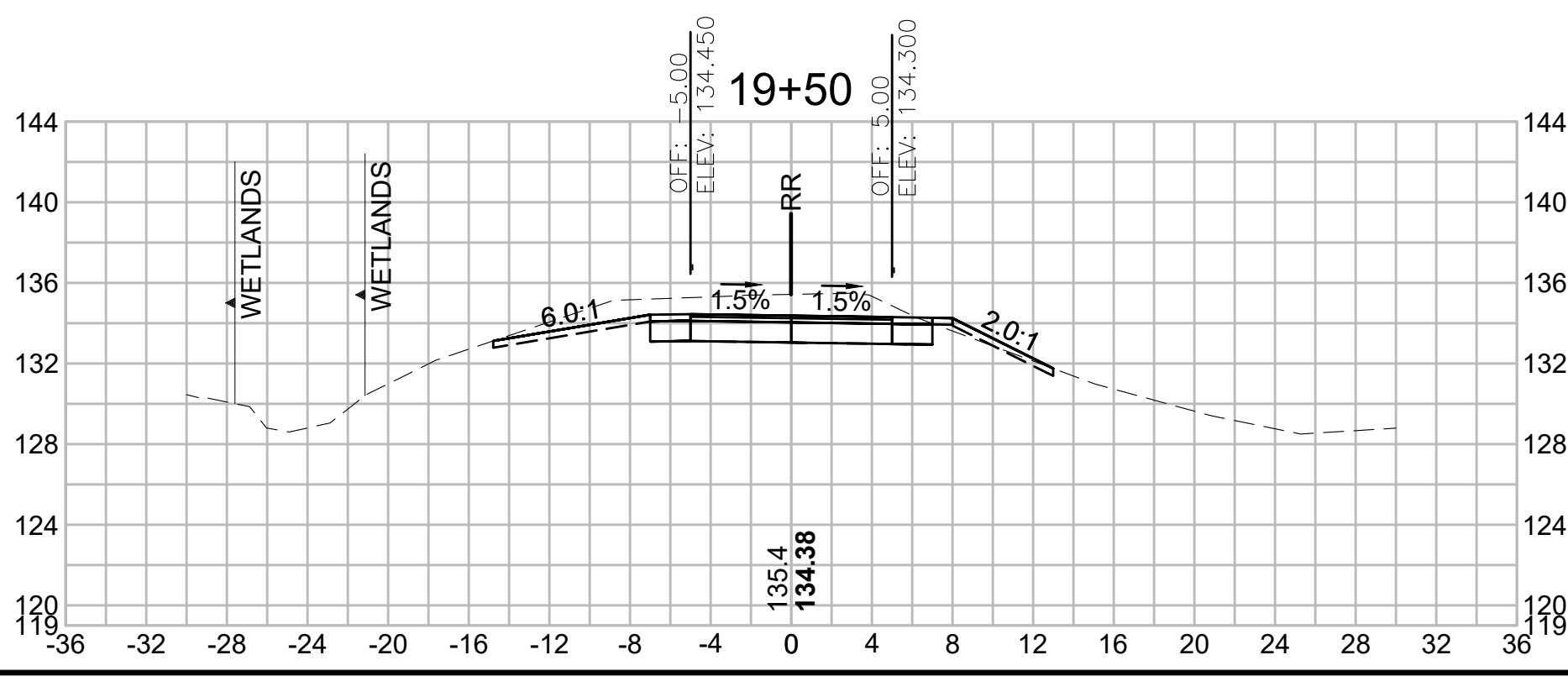
Total Volume at Station 21+00.00	
Cut Area	32.400
Fill Area	0.000
Cut Vol	62.517
Fill Vol	0.0
Cum Cut Vol	1748.252
Cum Fill Vol	159.6
Net Vol	1588.6



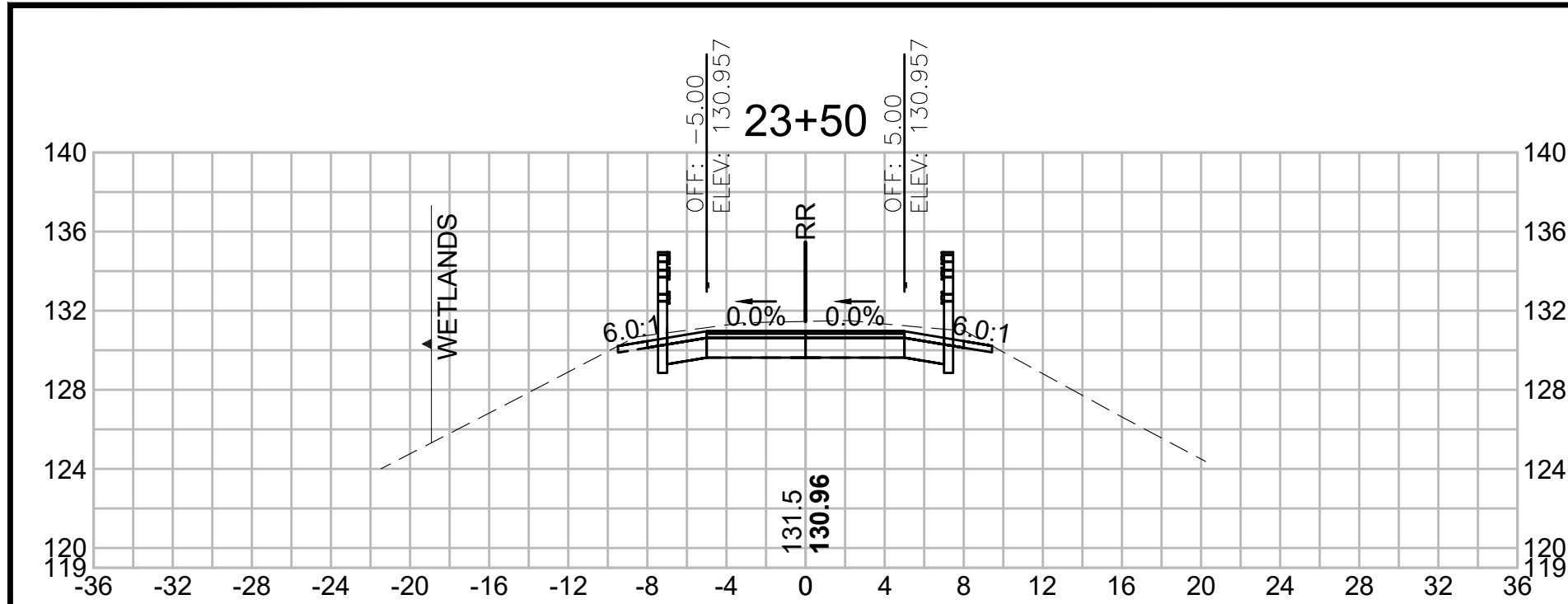
Total Volume at Station 20+50.00	
Cut Area	35.118
Fill Area	0.000
Cut Vol	65.901
Fill Vol	0.0
Cum Cut Vol	1685.736
Cum Fill Vol	159.6
Net Vol	1526.1



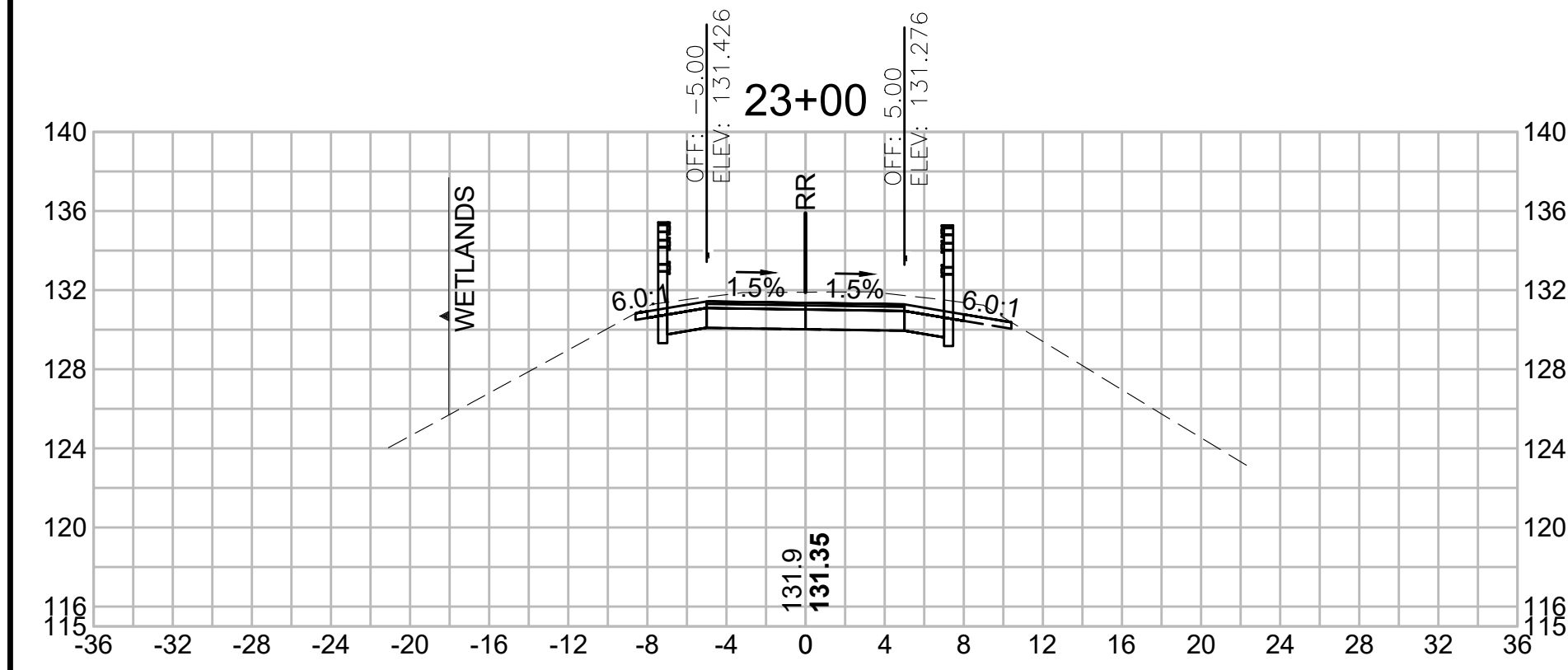
Total Volume at Station 20+00.00	
Cut Area	36.055
Fill Area	0.000
Cut Vol	68.821
Fill Vol	0.4
Cum Cut Vol	1619.836
Cum Fill Vol	159.6
Net Vol	1460.2



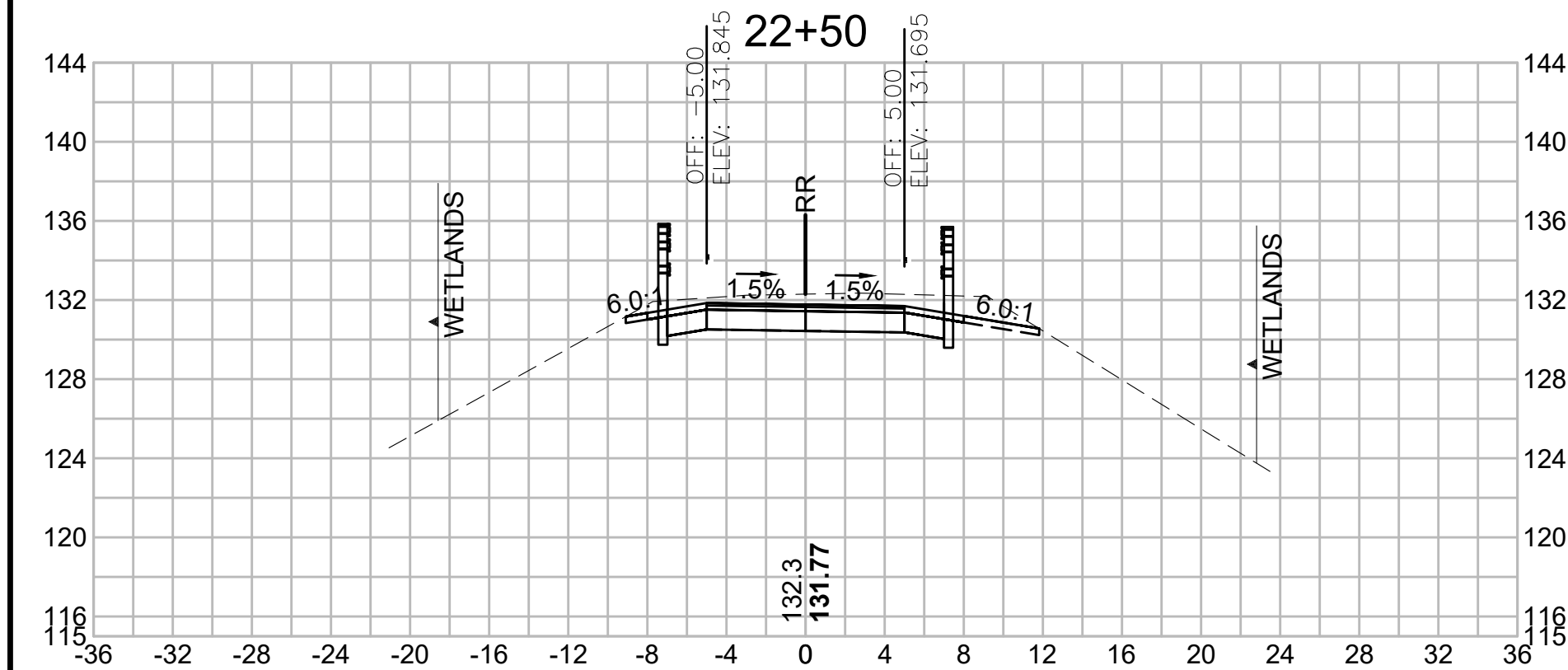
Total Volume at Station 19+50.00	
Cut Area	38.272
Fill Area	0.417
Cut Vol	70.336
Fill Vol	0.4
Cum Cut Vol	1551.015
Cum Fill Vol	159.3
Net Vol	1391.8



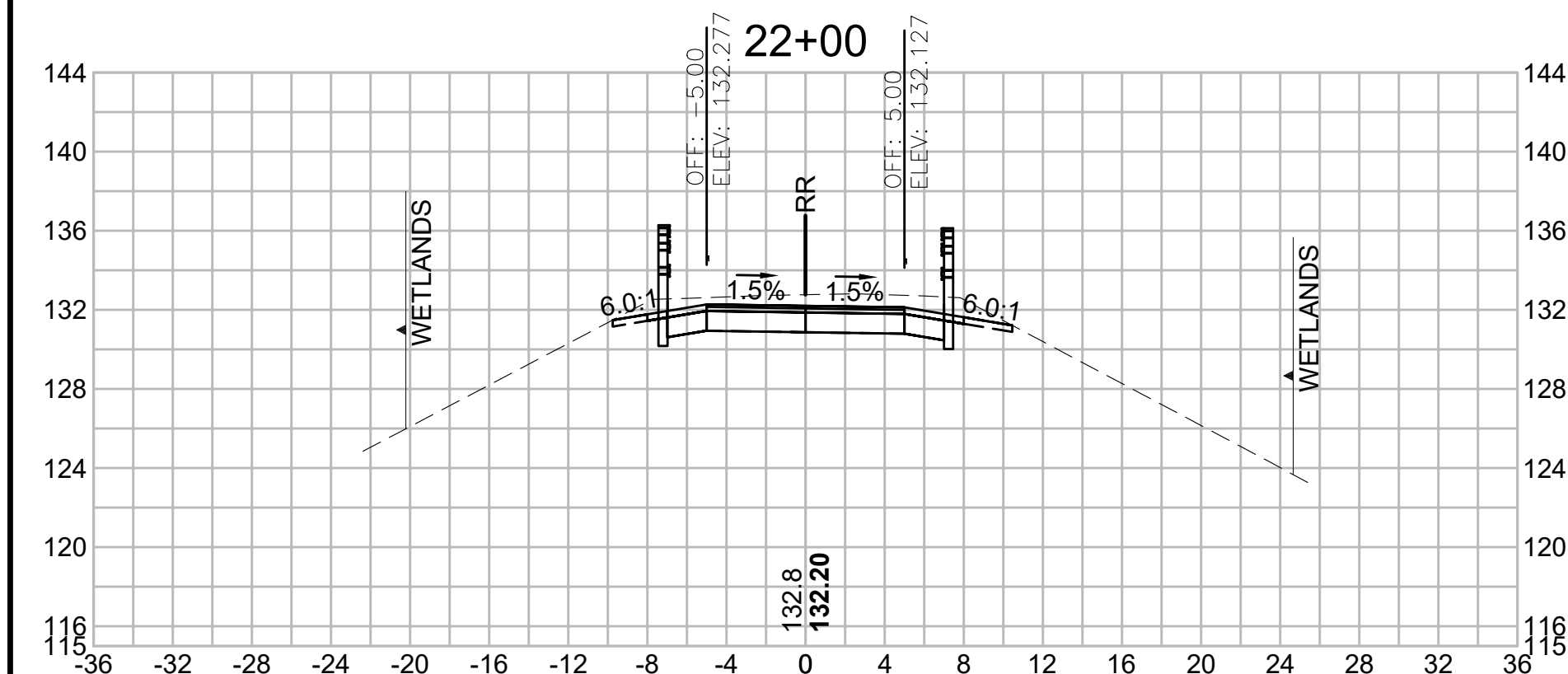
Total Volume at Station 23+50.00	
Cut Area	27.223
Fill Area	0.000
Cut Vol	51.972
Fill Vol	0.0
Cum Cut Vol	2034.116
Cum Fill Vol	159.6
Net Vol	1874.5



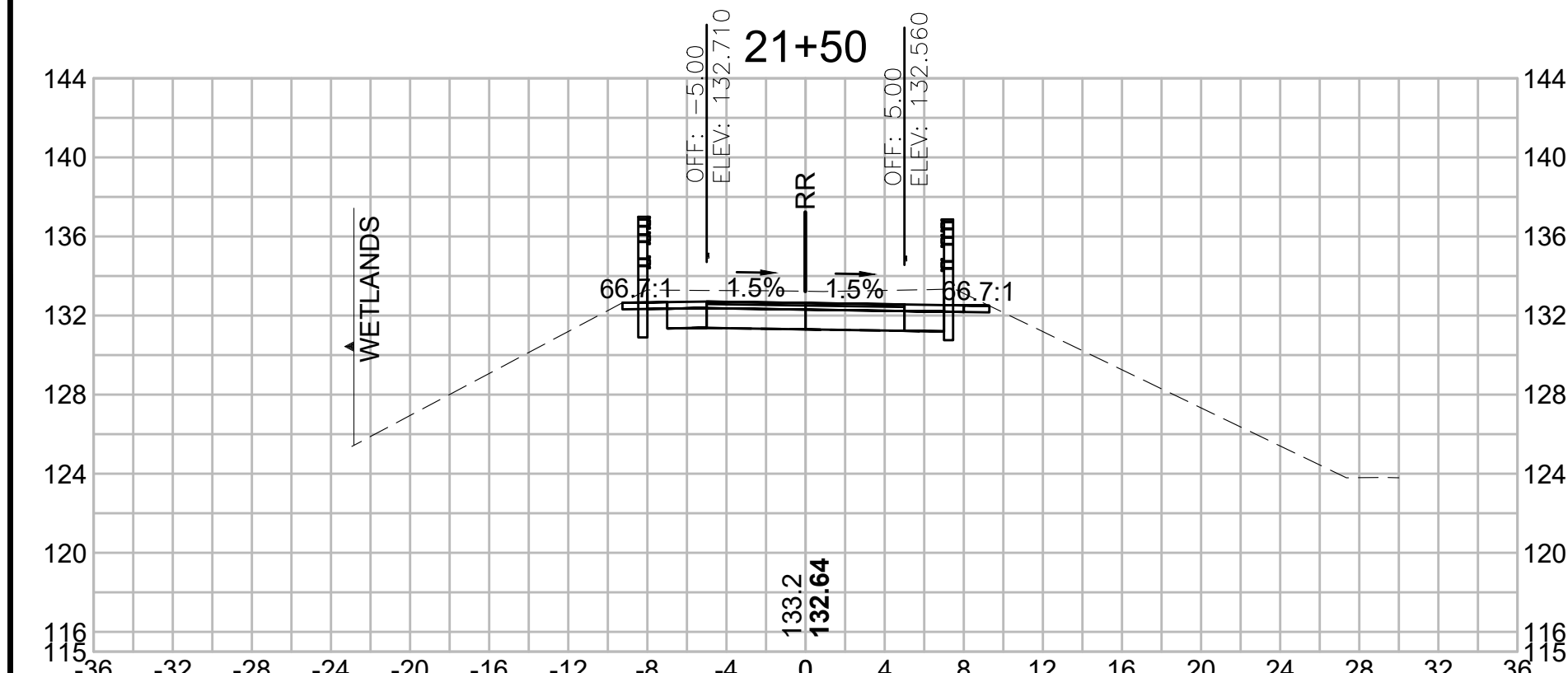
Total Volume at Station 23+00.00	
Cut Area	28.906
Fill Area	0.000
Cut Vol	57.040
Fill Vol	0.0
Cum Cut Vol	1982.144
Cum Fill Vol	159.6
Net Vol	1822.5



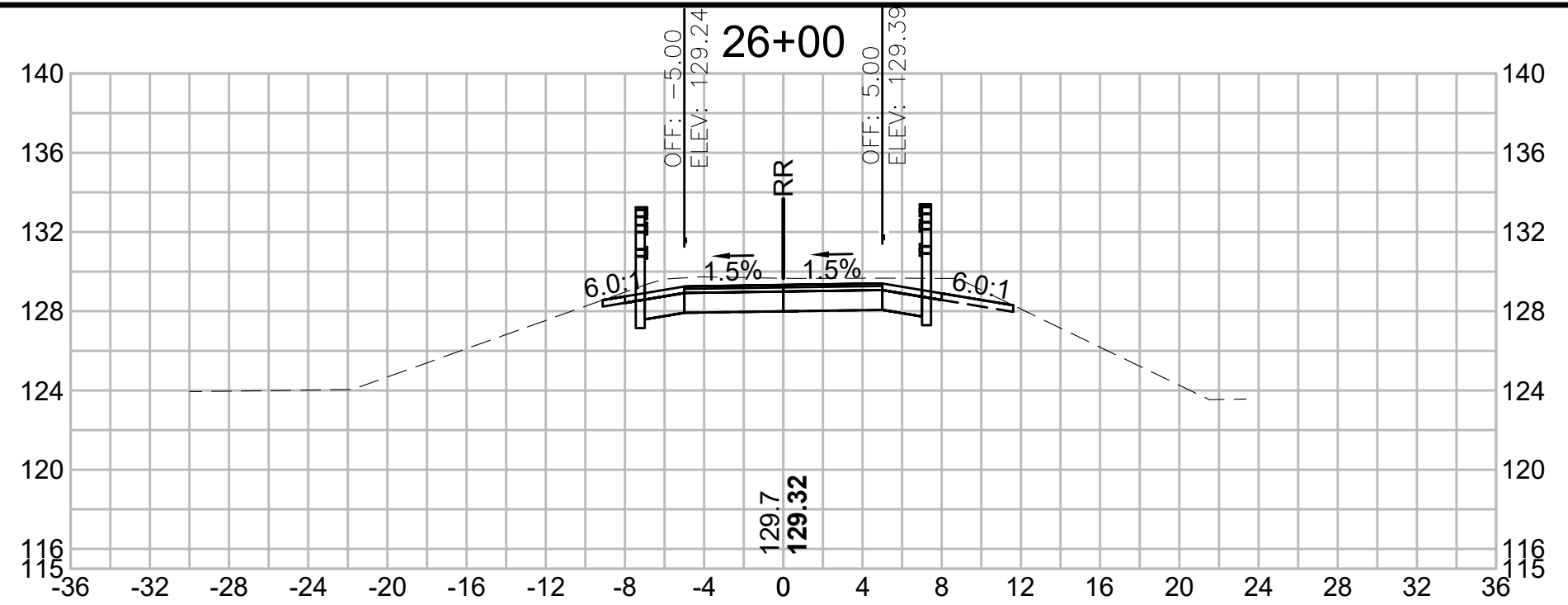
Total Volume at Station 22+50.00	
Cut Area	32.697
Fill Area	0.000
Cut Vol	59.676
Fill Vol	0.0
Cum Cut Vol	1925.105
Cum Fill Vol	159.6
Net Vol	1765.5



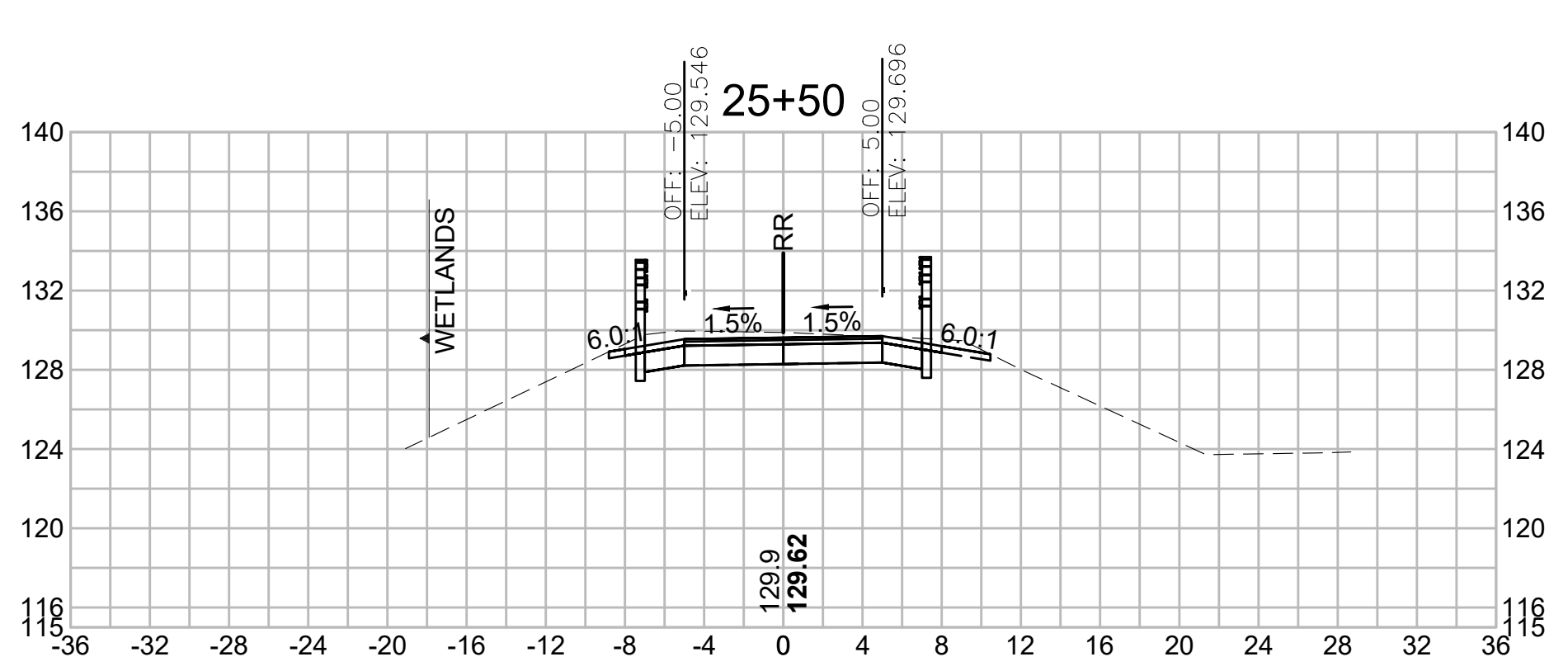
Total Volume at Station 22+00.00	
Cut Area	31.753
Fill Area	0.000
Cut Vol	58.289
Fill Vol	0.0
Cum Cut Vol	1865.429
Cum Fill Vol	159.6
Net Vol	1705.8



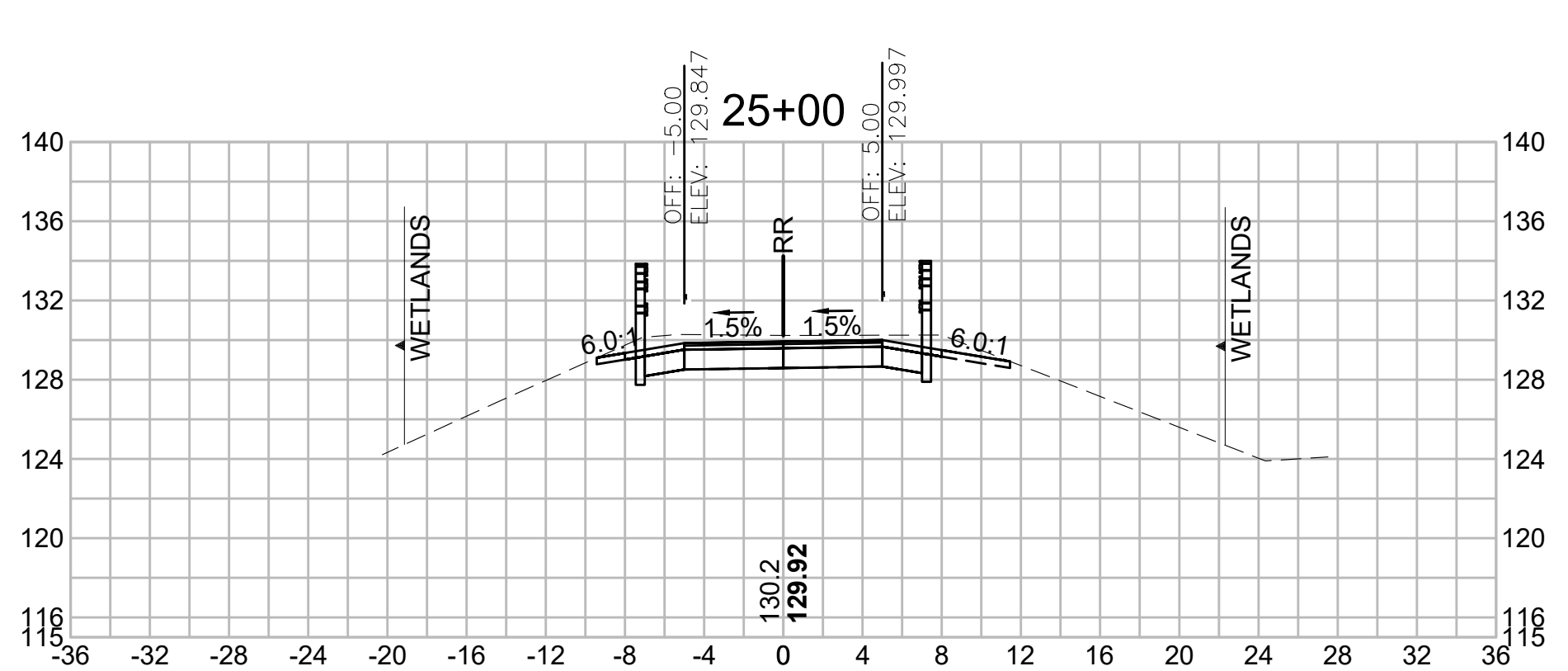
Total Volume at Station 21+50.00	
Cut Area	31.199
Fill Area	0.000
Cut Vol	58.888
Fill Vol	0.0
Cum Cut Vol	1807.140
Cum Fill Vol	159.6
Net Vol	1647.5



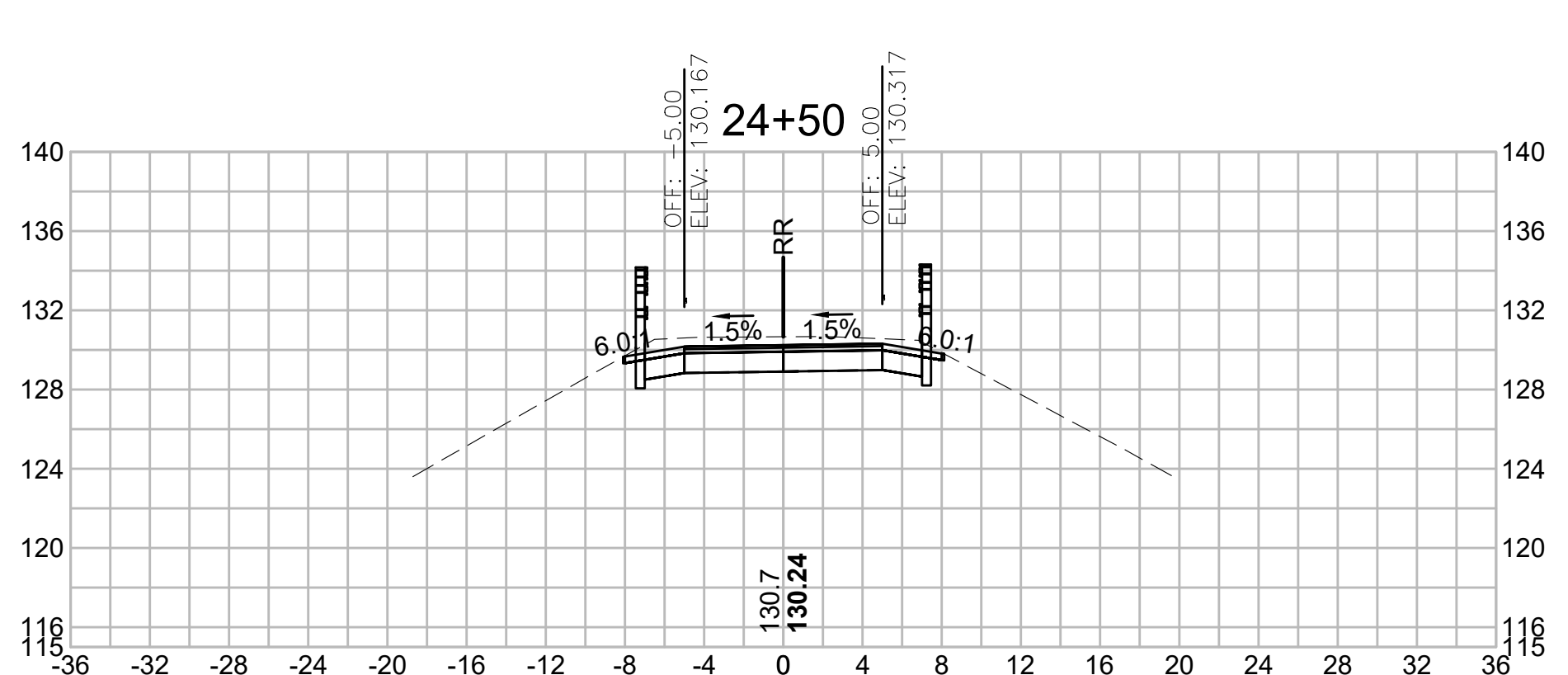
Total Volume at Station 26+00.00	
Cut Area	29.263
Fill Area	0.000
Cut Vol	50.629
Fill Vol	0.0
Cum Cut Vol	2282.444
Cum Fill Vol	160.3
Net Vol	2122.1



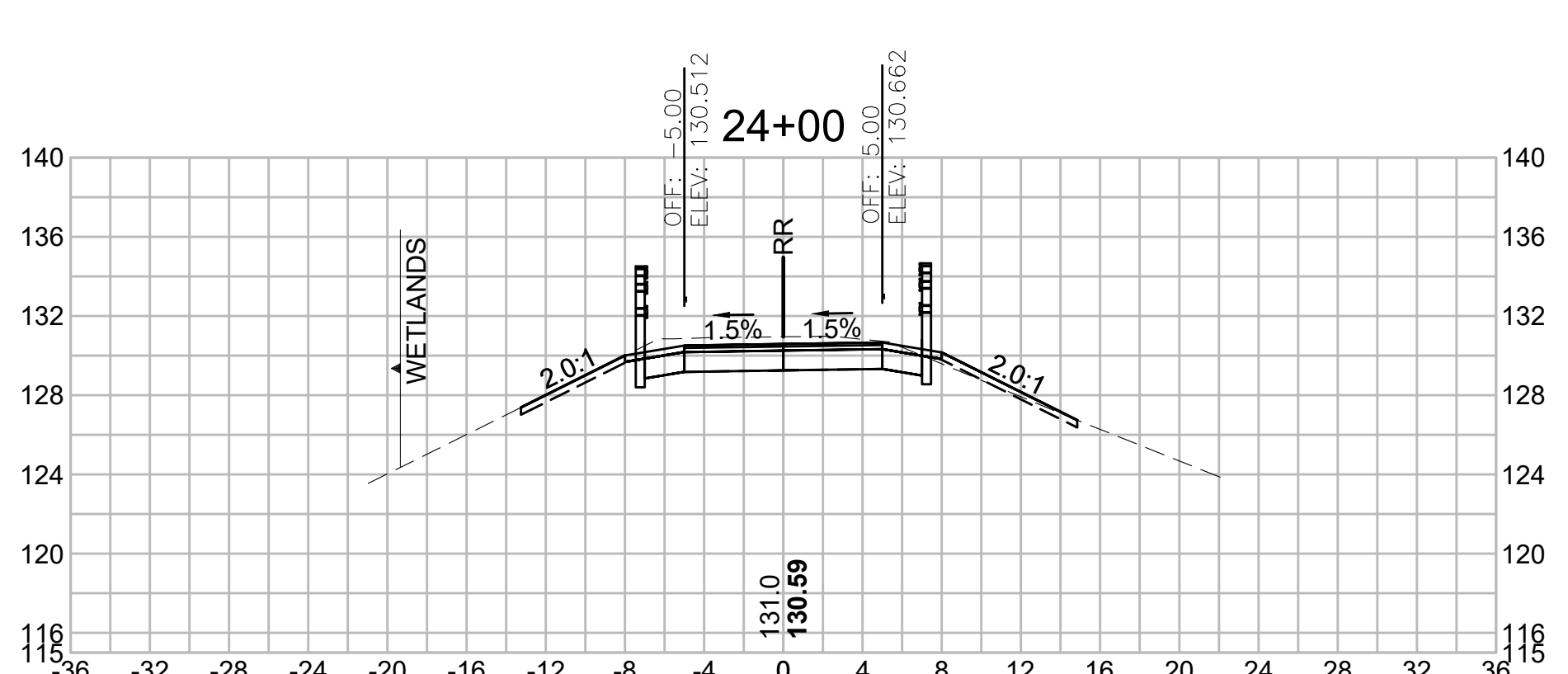
Total Volume at Station 25+50.00	
Cut Area	25.416
Fill Area	0.000
Cut Vol	50.309
Fill Vol	0.0
Cum Cut Vol	2231.816
Cum Fill Vol	160.3
Net Vol	2071.5



Total Volume at Station 25+00.00	
Cut Area	28.917
Fill Area	0.000
Cut Vol	50.534
Fill Vol	0.0
Cum Cut Vol	2181.508
Cum Fill Vol	160.3
Net Vol	2021.2



Total Volume at Station 24+50.00	
Cut Area	25.659
Fill Area	0.000
Cut Vol	47.706
Fill Vol	0.3
Cum Cut Vol	2130.975
Cum Fill Vol	160.3
Net Vol	1970.7



Total Volume at Station 24+00.00	
Cut Area	25.863
Fill Area	0.368
Cut Vol	49.154
Fill Vol	0.3
Cum Cut Vol	2083.270
Cum Fill Vol	160.0
Net Vol	1923.3

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	TBD

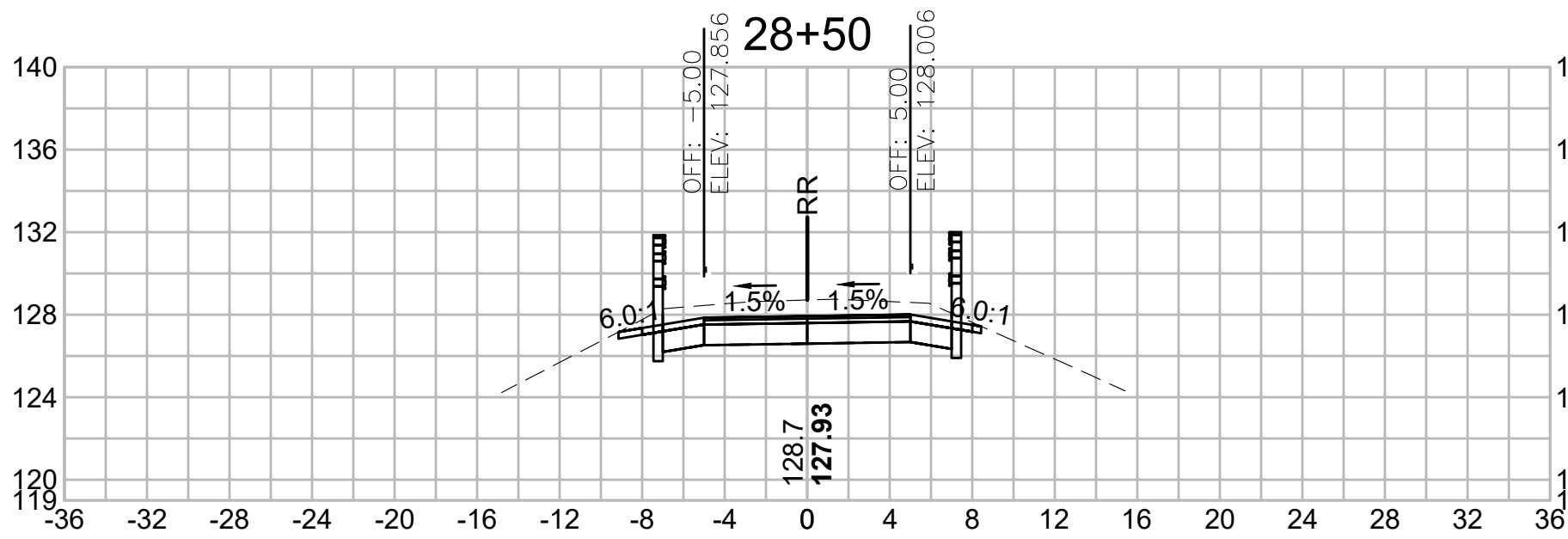
PROJECT FILE NO. 613319

CROSS SECTIONS

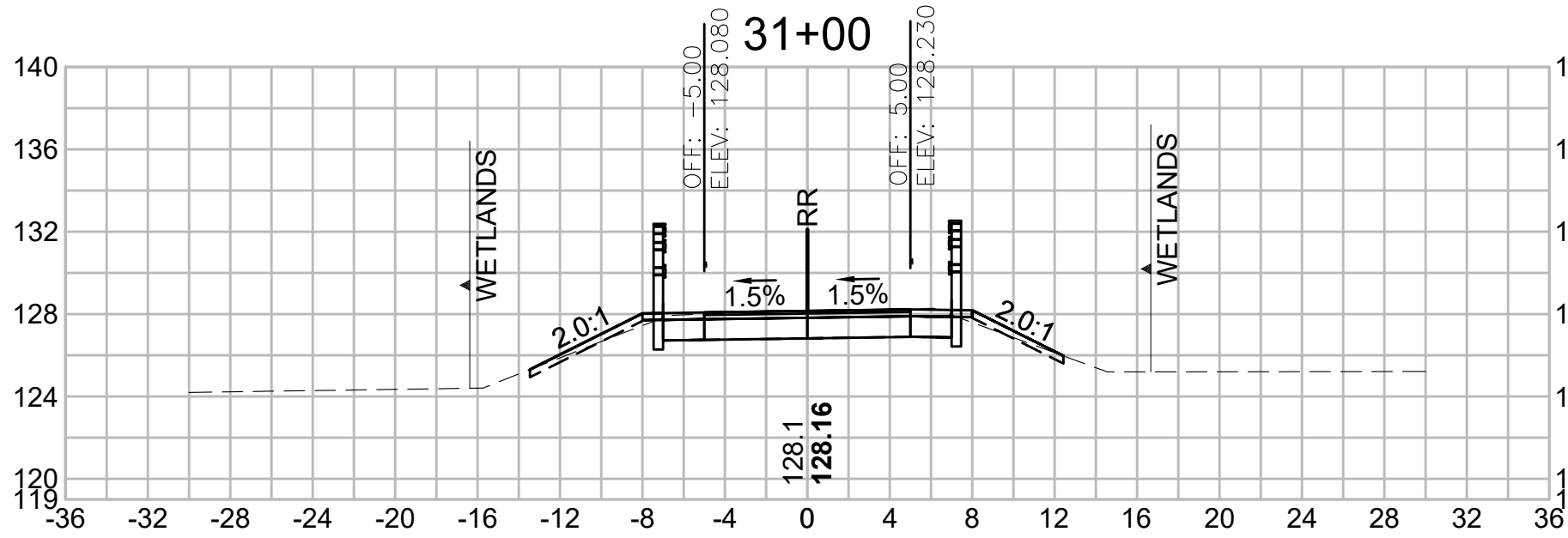
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	TBD
PROJECT FILE NO.		613319	

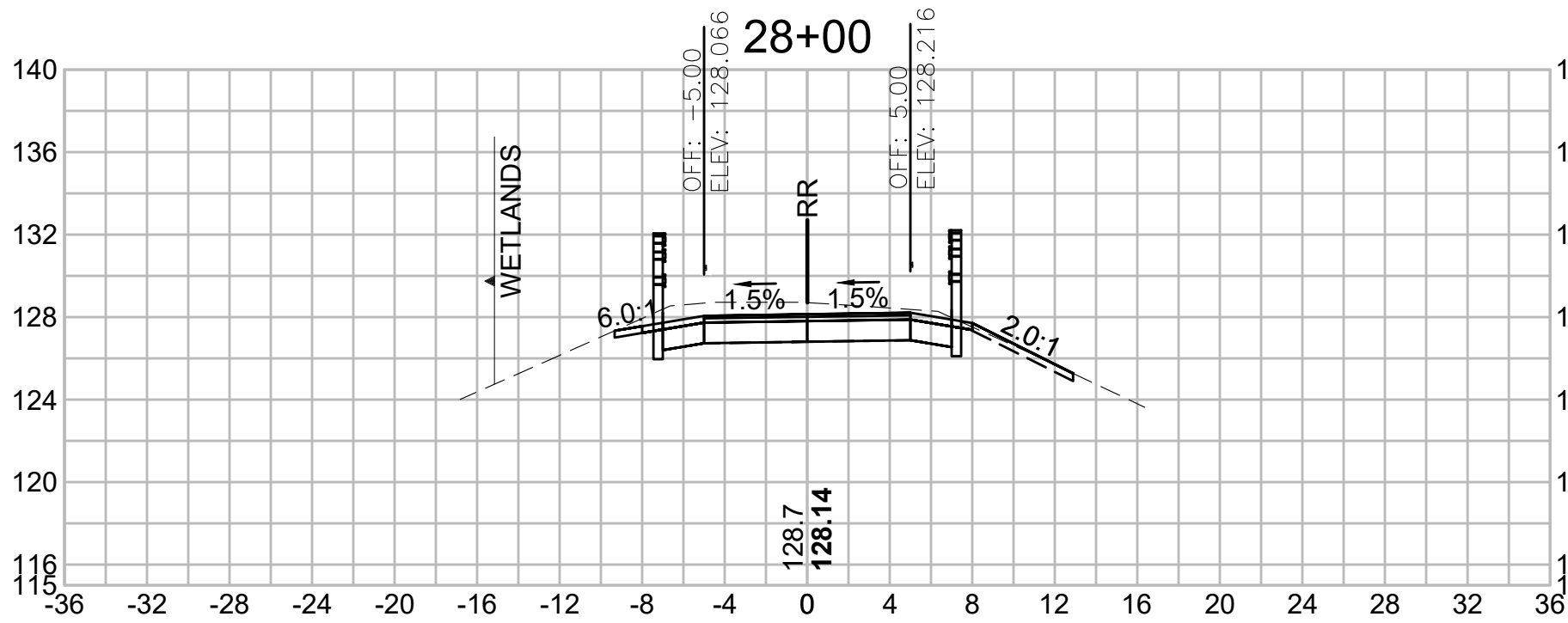
CROSS SECTIONS



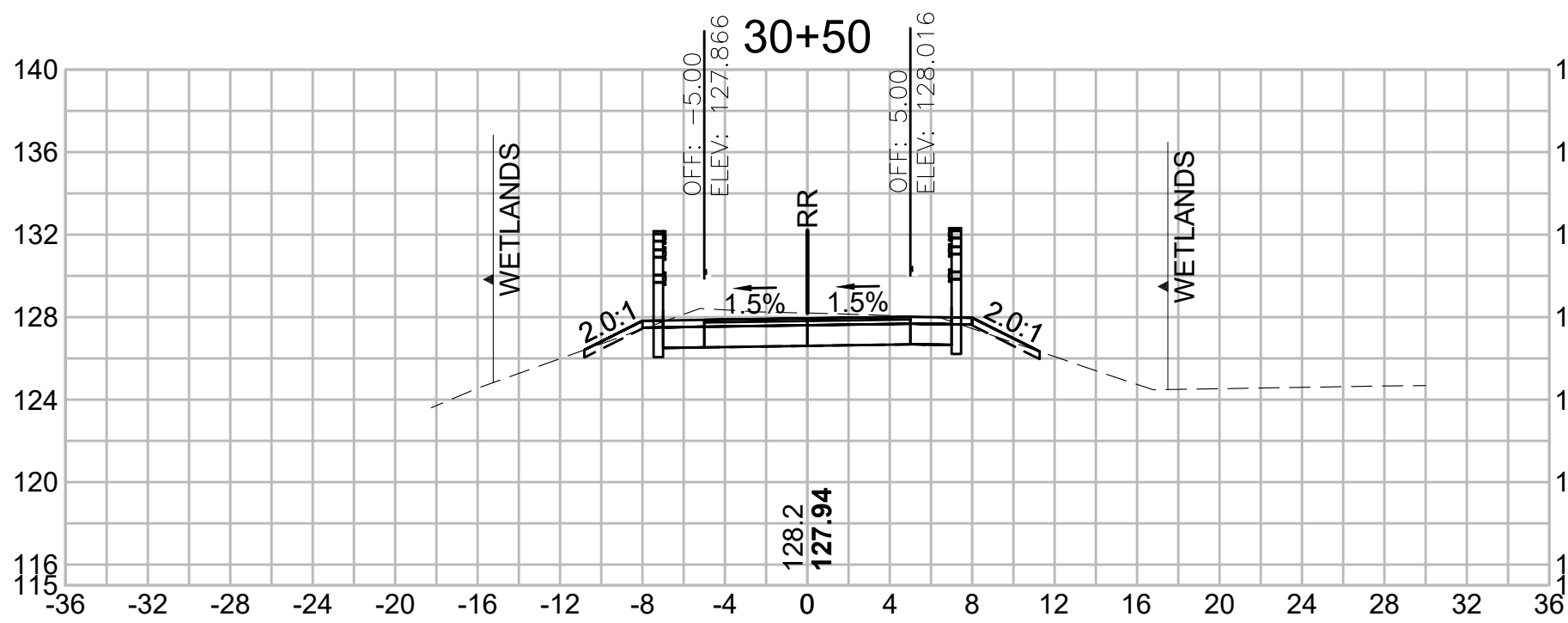
Total Volume at Station 28+50.00	
Cut Area	30.660
Fill Area	0.000
Cut Vol	54.859
Fill Vol	0.0
Cum Cut Vol	2522.979
Cum Fill Vol	161.8
Net Vol	2361.2



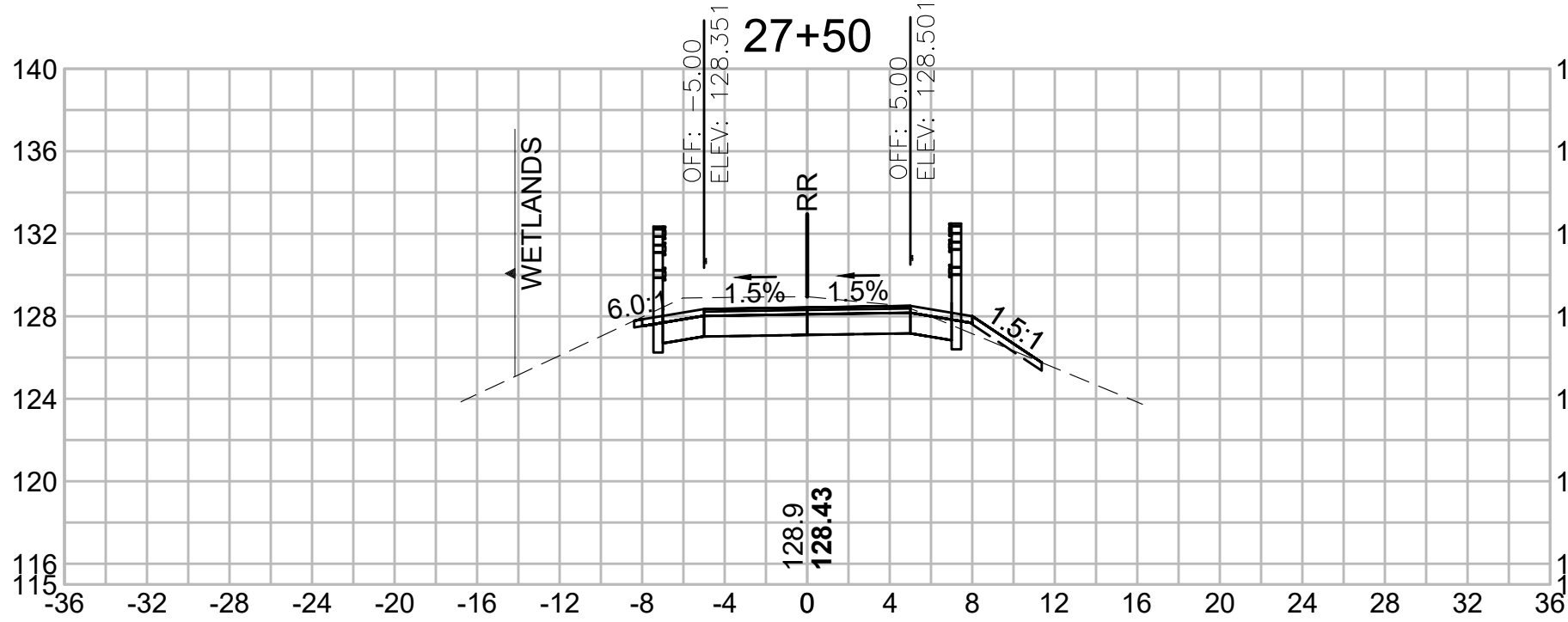
Total Volume at Station 31+00.00	
Cut Area	19.182
Fill Area	0.597
Cut Vol	38.937
Fill Vol	0.7
Cum Cut Vol	2773.022
Cum Fill Vol	162.6
Net Vol	2610.4



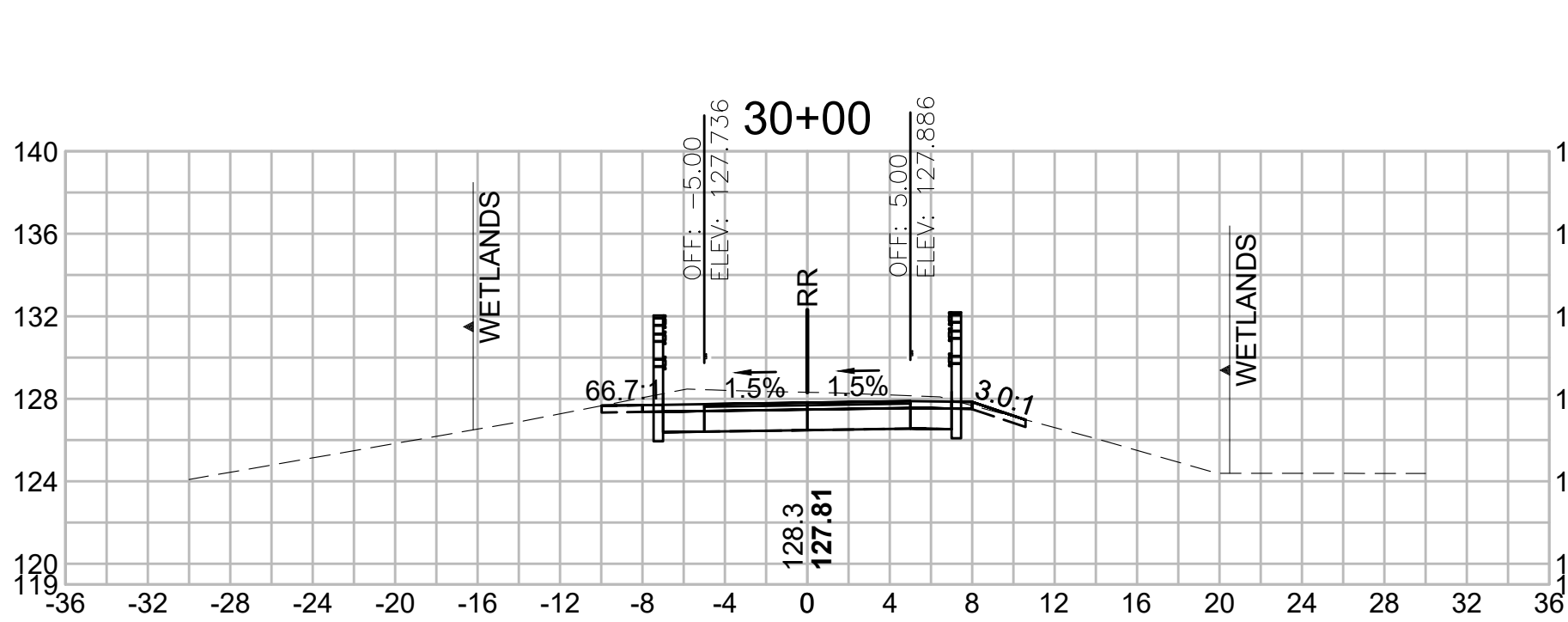
Total Volume at Station 28+00.00	
Cut Area	28.587
Fill Area	0.000
Cut Vol	48.776
Fill Vol	0.7
Cum Cut Vol	2468.120
Cum Fill Vol	161.8
Net Vol	2306.3



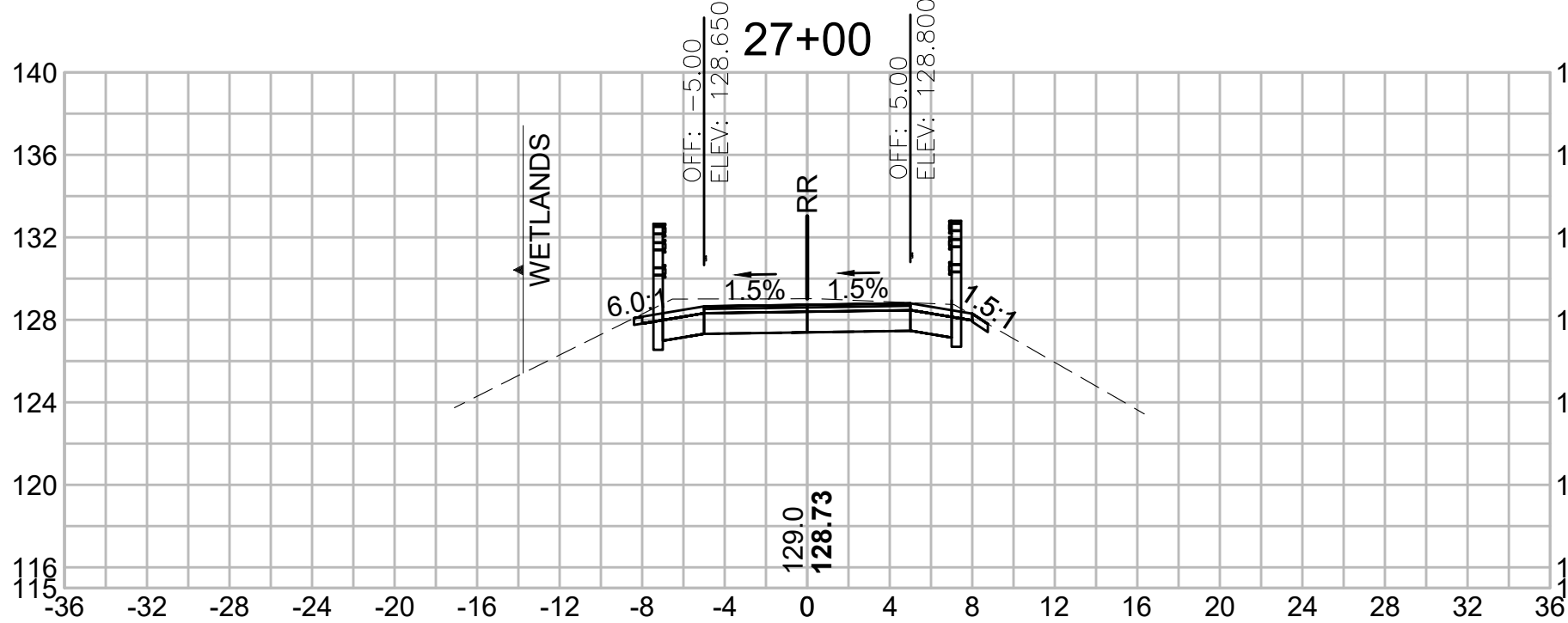
Total Volume at Station 30+50.00	
Cut Area	22.869
Fill Area	0.143
Cut Vol	47.205
Fill Vol	0.1
Cum Cut Vol	2734.086
Cum Fill Vol	161.9
Net Vol	2572.2



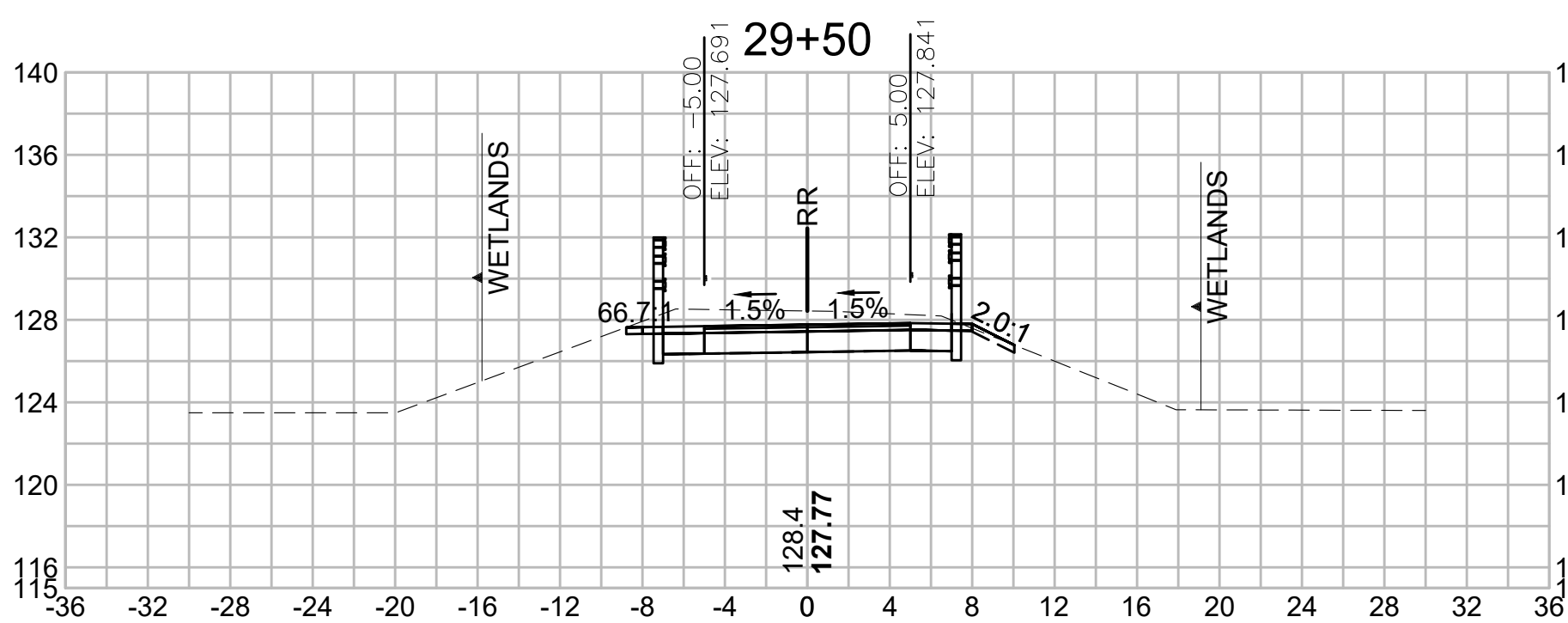
Total Volume at Station 27+50.00	
Cut Area	24.091
Fill Area	0.799
Cut Vol	44.484
Fill Vol	0.7
Cum Cut Vol	2419.345
Cum Fill Vol	161.1
Net Vol	2258.3



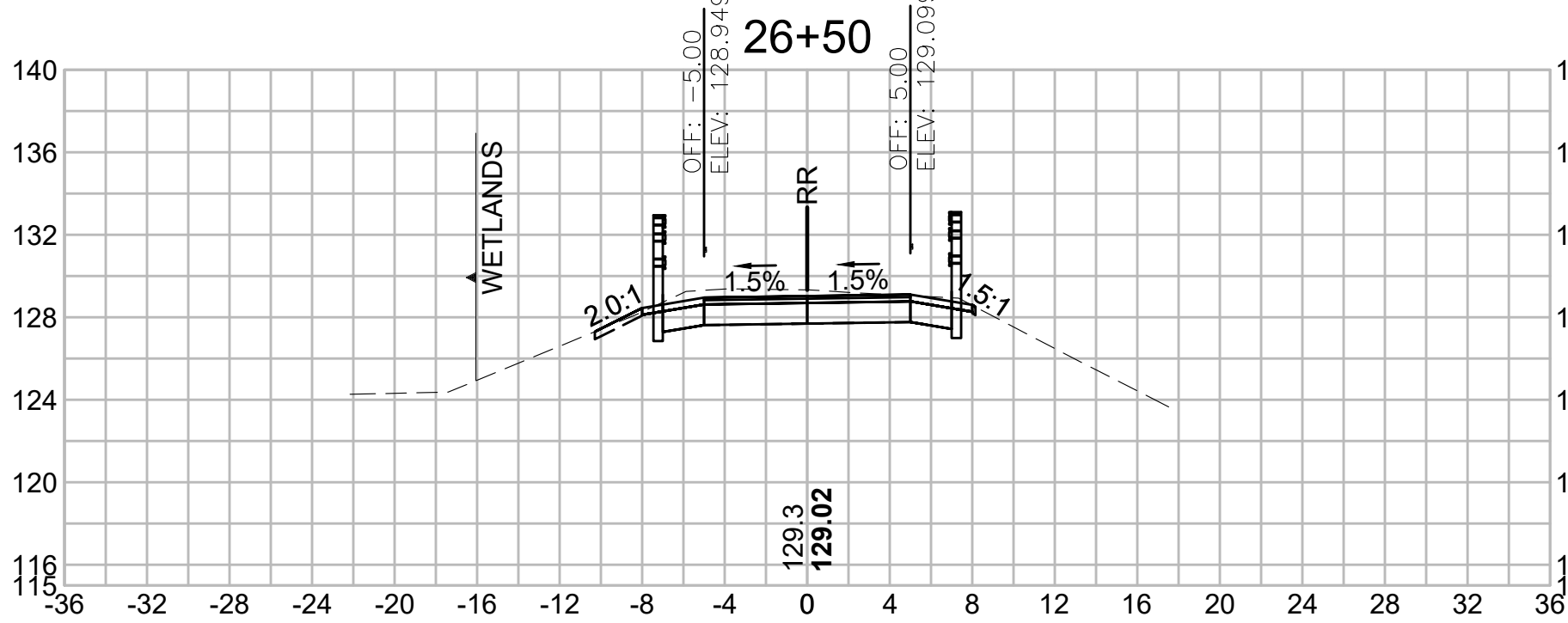
Total Volume at Station 30+00.00	
Cut Area	28.111
Fill Area	0.000
Cut Vol	53.263
Fill Vol	0.0
Cum Cut Vol	2686.881
Cum Fill Vol	161.8
Net Vol	2525.1



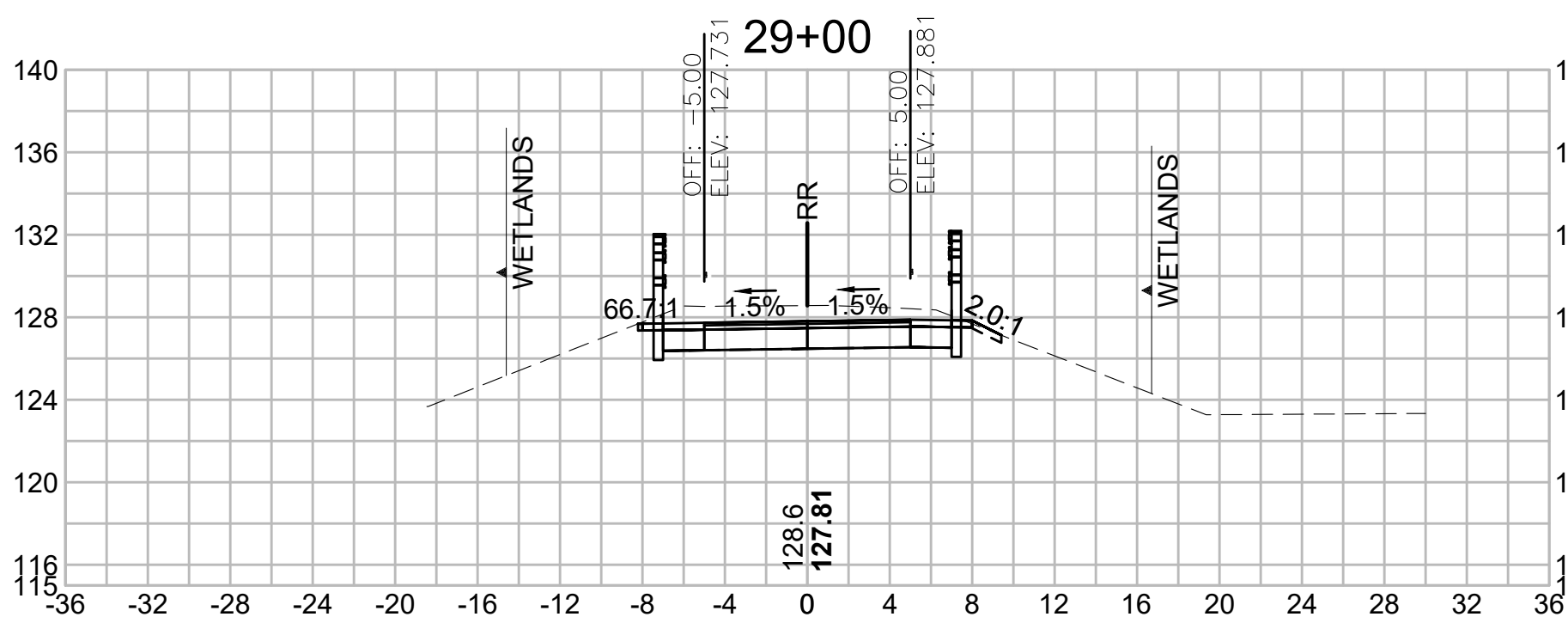
Total Volume at Station 27+00.00	
Cut Area	23.952
Fill Area	0.000
Cut Vol	43.750
Fill Vol	0.0
Cum Cut Vol	2374.861
Cum Fill Vol	160.3
Net Vol	2214.5



Total Volume at Station 29+50.00	
Cut Area	29.412
Fill Area	0.000
Cut Vol	54.743
Fill Vol	0.0
Cum Cut Vol	2633.619
Cum Fill Vol	161.8
Net Vol	2471.8



Total Volume at Station 26+50.00	
Cut Area	23.298
Fill Area	0.000
Cut Vol	48.667
Fill Vol	0.0
Cum Cut Vol	2331.111
Cum Fill Vol	160.3
Net Vol	2170.8

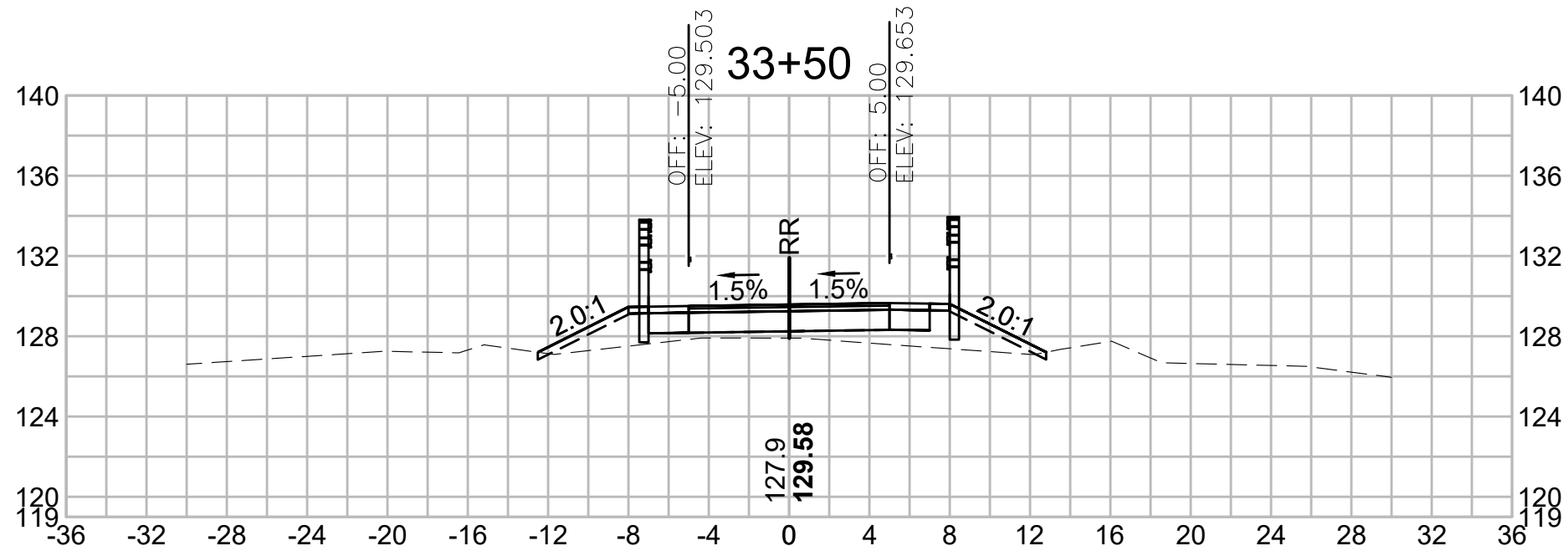


Total Volume at Station 29+00.00	
Cut Area	29.709
Fill Area	0.000
Cut Vol	55.898
Fill Vol	0.0
Cum Cut Vol	2578.876
Cum Fill Vol	161.8
Net Vol	2417.1

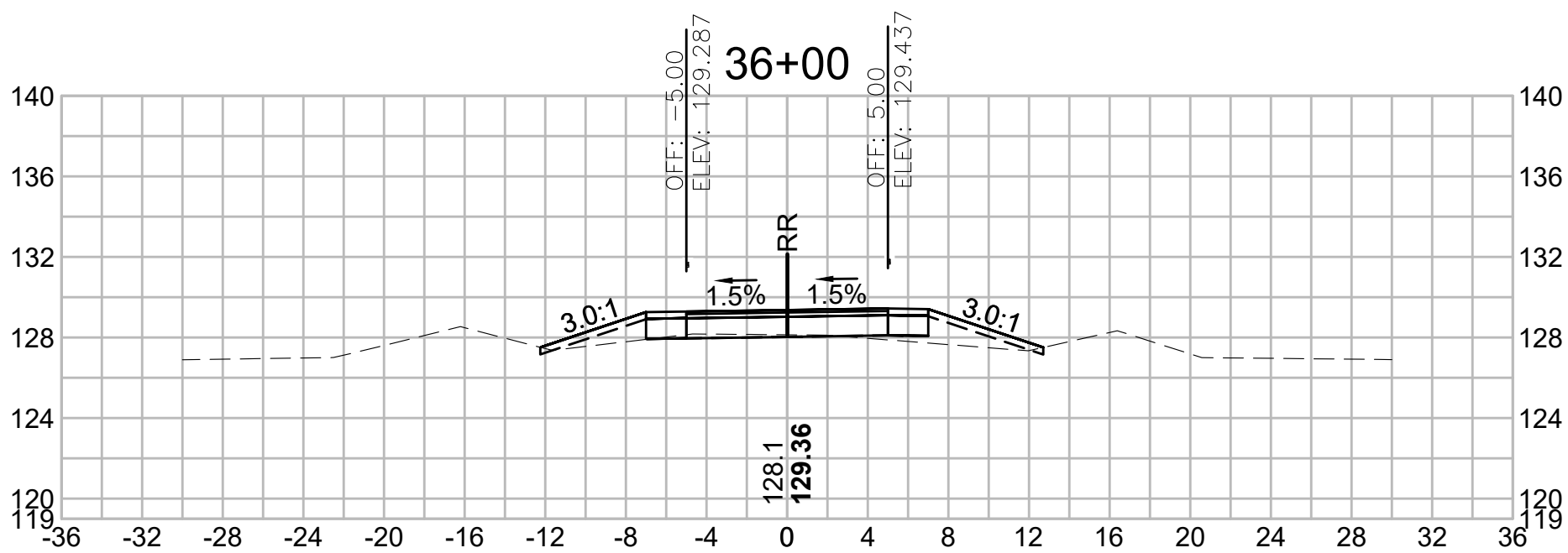
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	TBD
PROJECT FILE NO.		613319	

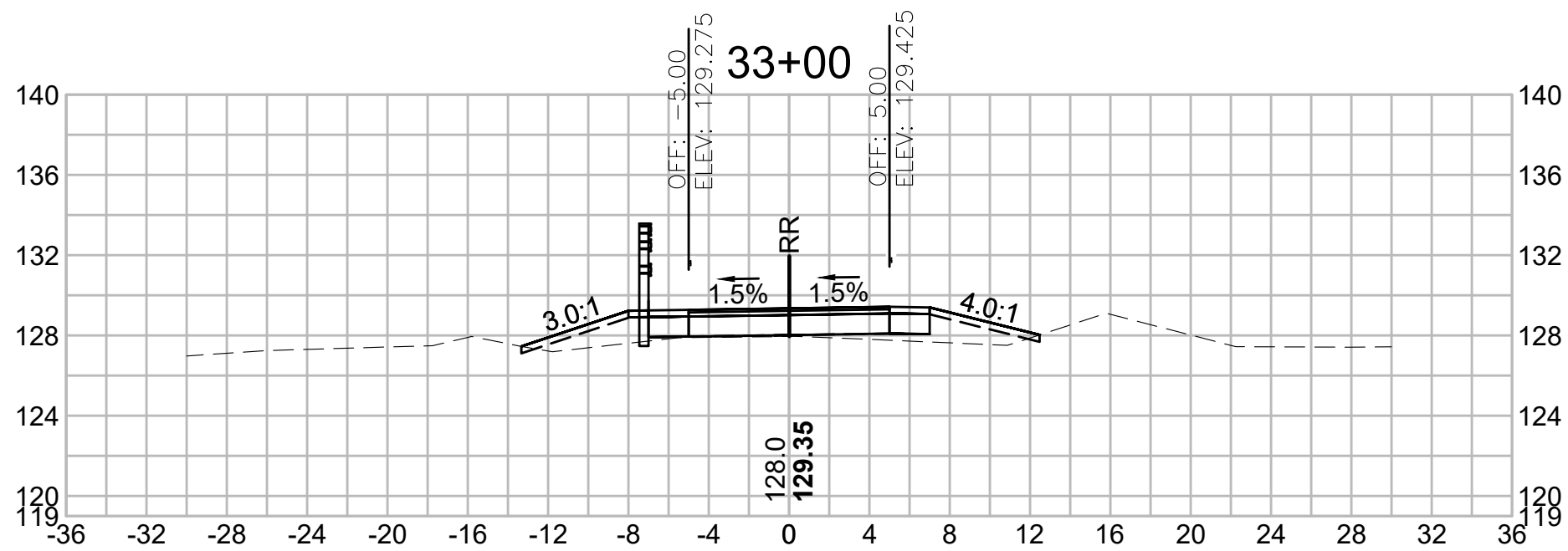
CROSS SECTIONS



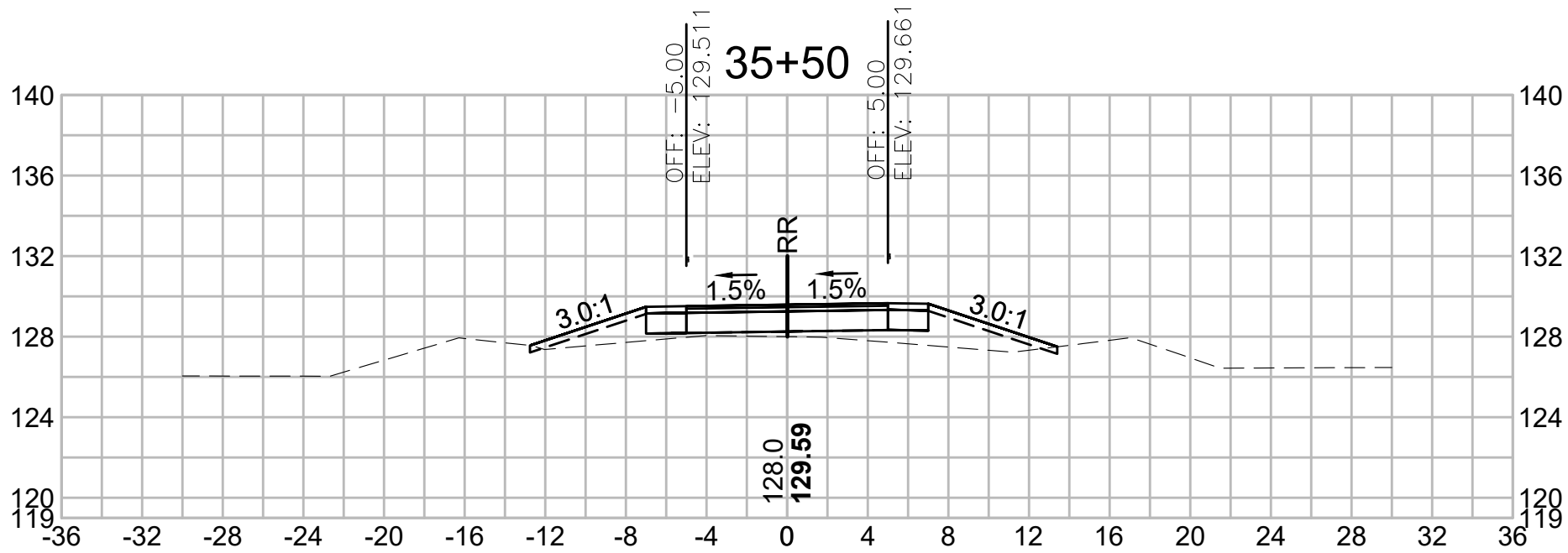
Total Volume at Station 33+50.00	
Cut Area	0.206
Fill Area	17.233
Cut Vol	0.397
Fill Vol	26.1
Cum Cut Vol	2841.218
Cum Fill Vol	209.1
Net Vol	2632.2



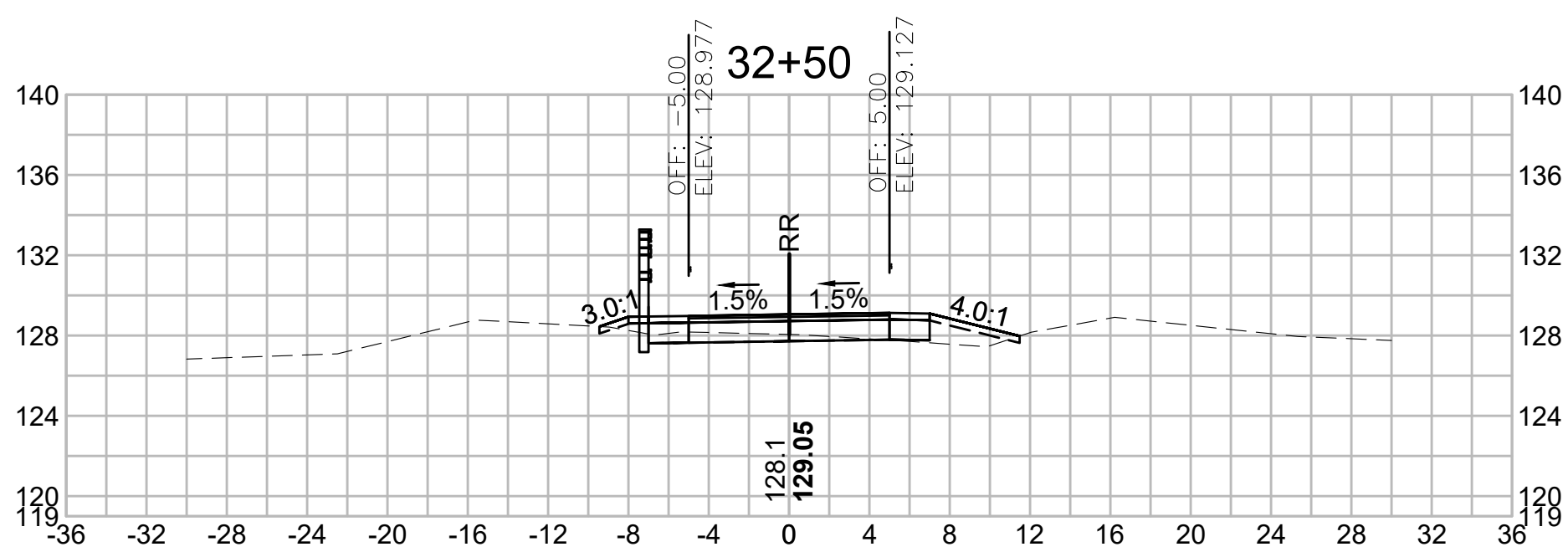
Total Volume at Station 36+00.00	
Cut Area	1.357
Fill Area	6.641
Cut Vol	1.481
Fill Vol	19.0
Cum Cut Vol	2845.494
Cum Fill Vol	364.9
Net Vol	2480.6



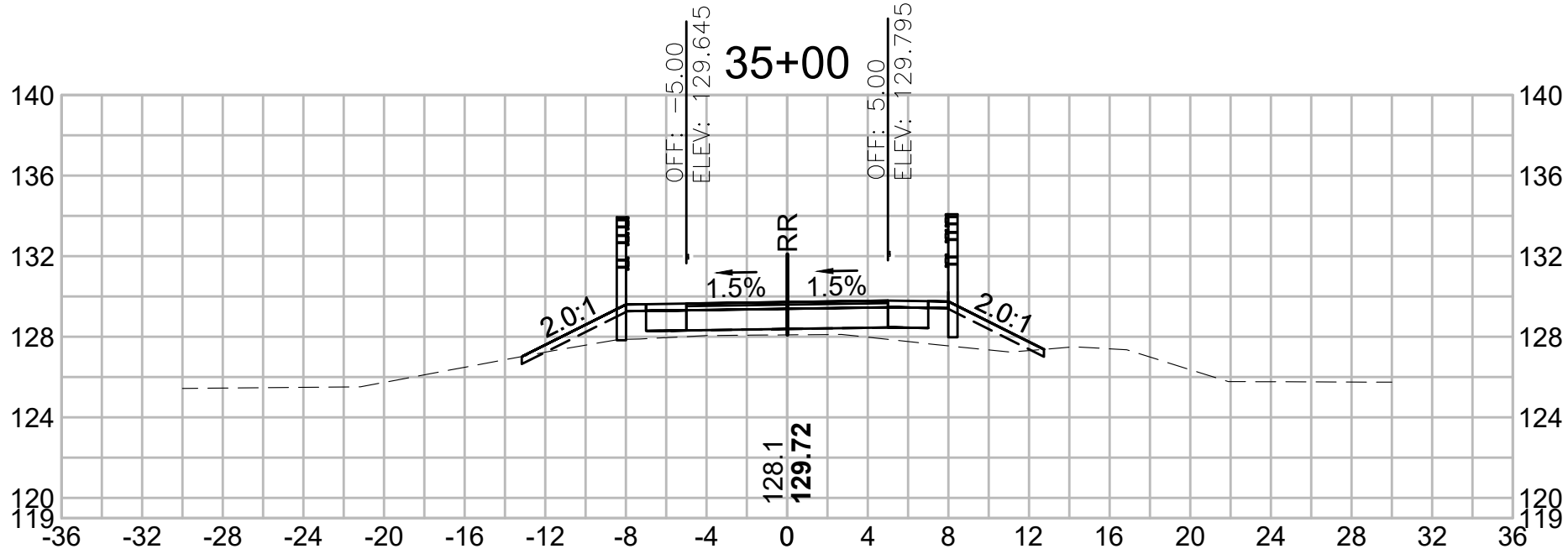
Total Volume at Station 33+00.00	
Cut Area	0.222
Fill Area	10.910
Cut Vol	4.112
Fill Vol	13.3
Cum Cut Vol	2840.822
Cum Fill Vol	183.0
Net Vol	2657.8



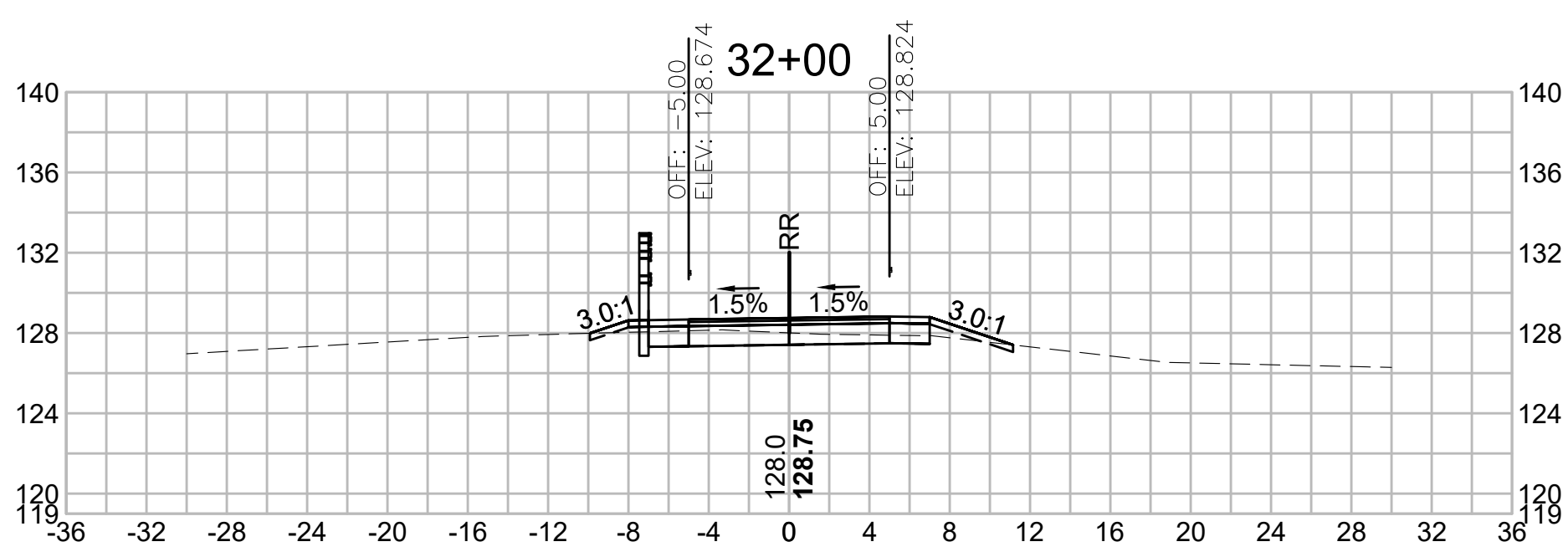
Total Volume at Station 35+50.00	
Cut Area	0.242
Fill Area	13.858
Cut Vol	0.535
Fill Vol	26.9
Cum Cut Vol	2844.013
Cum Fill Vol	345.9
Net Vol	2498.1



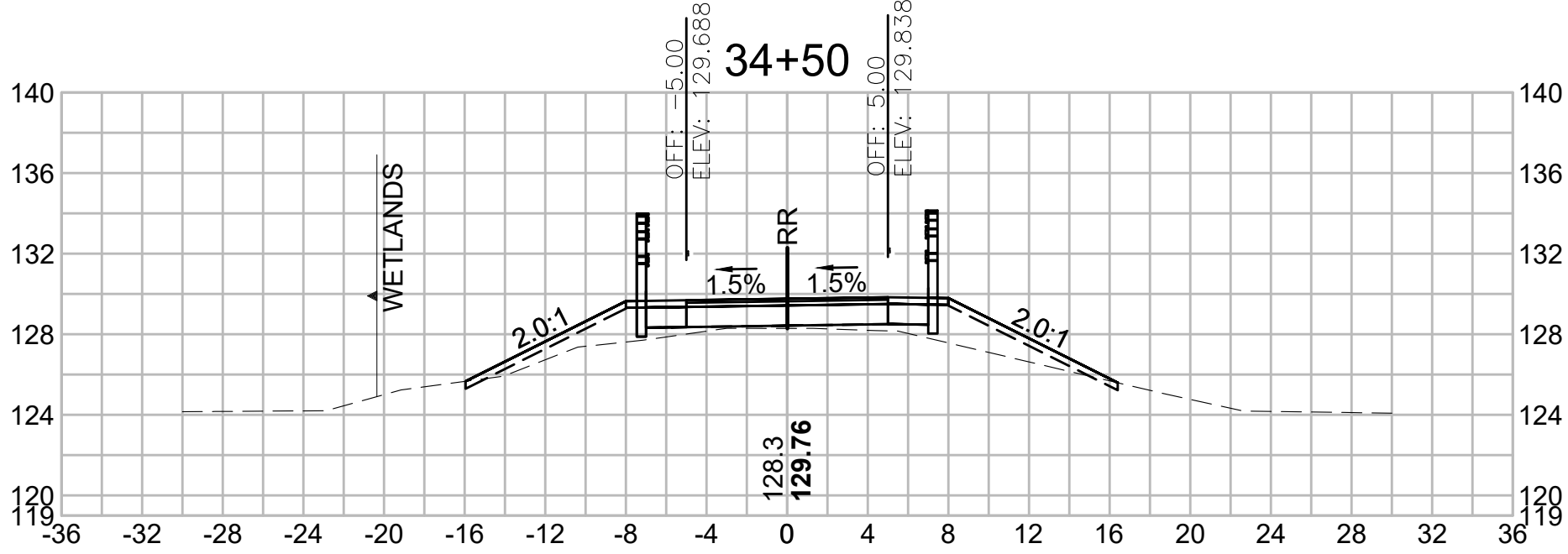
Total Volume at Station 32+50.00	
Cut Area	4.219
Fill Area	3.460
Cut Vol	12.098
Fill Vol	4.2
Cum Cut Vol	2836.710
Cum Fill Vol	169.7
Net Vol	2667.0



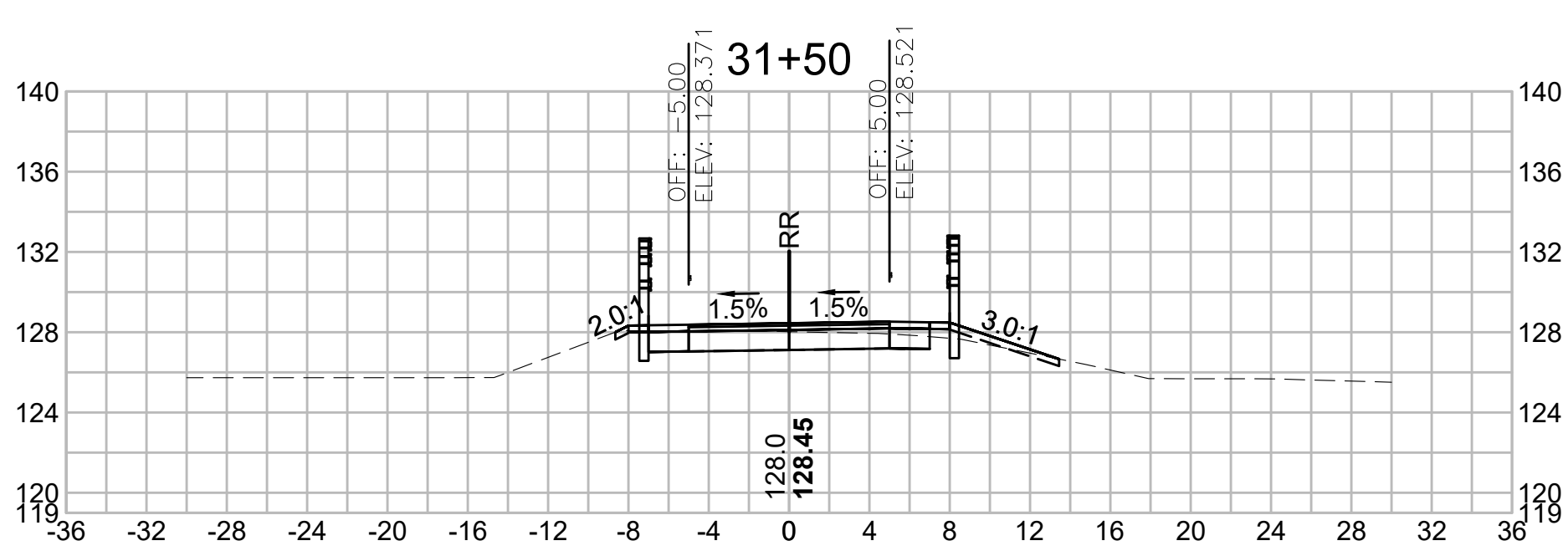
Total Volume at Station 35+00.00	
Cut Area	0.335
Fill Area	15.202
Cut Vol	0.721
Fill Vol	31.3
Cum Cut Vol	2843.479
Cum Fill Vol	319.0
Net Vol	2524.5



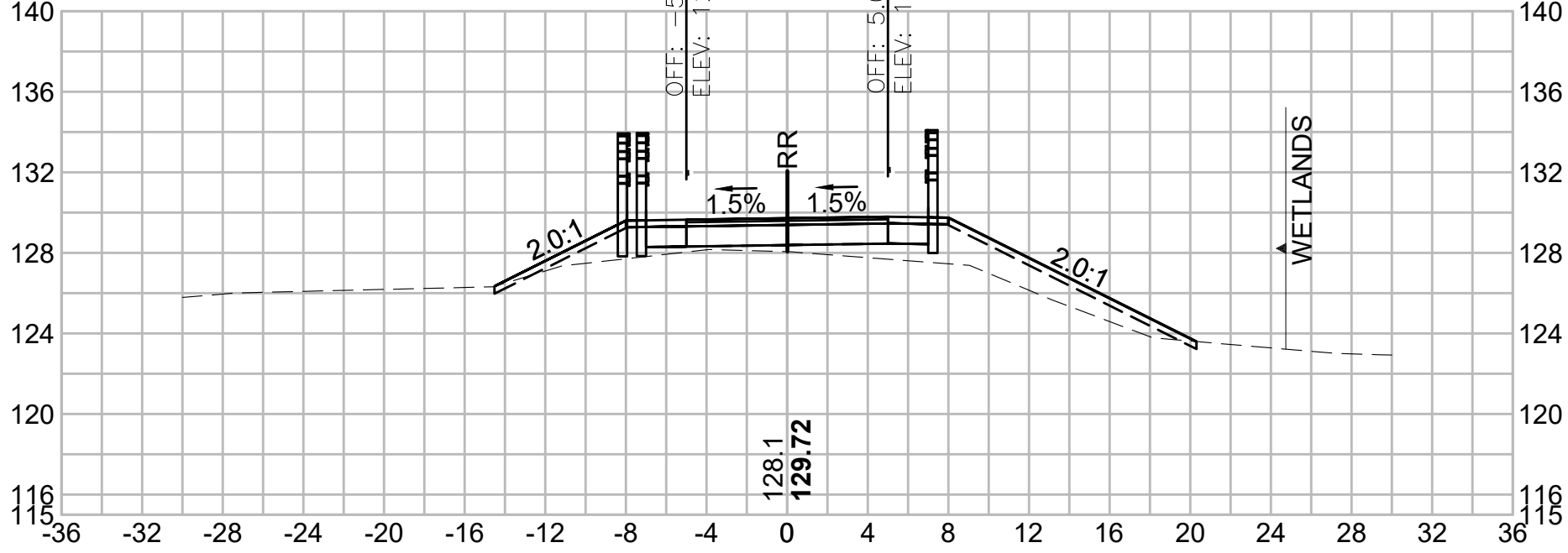
Total Volume at Station 32+00.00	
Cut Area	8.846
Fill Area	1.070
Cut Vol	21.011
Fill Vol	1.7
Cum Cut Vol	2824.613
Cum Fill Vol	165.5
Net Vol	2659.1



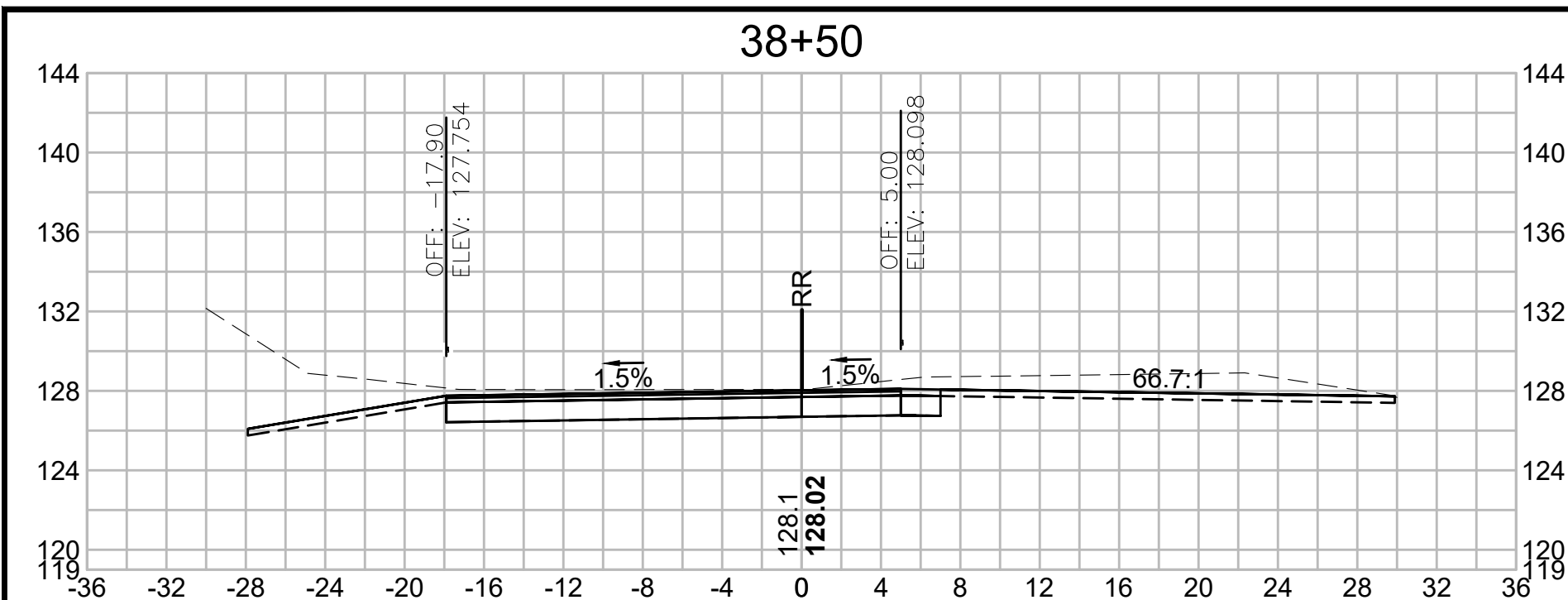
Total Volume at Station 34+50.00	
Cut Area	0.443
Fill Area	18.589
Cut Vol	0.880
Fill Vol	40.0
Cum Cut Vol	2842.758
Cum Fill Vol	287.7
Net Vol	2555.1



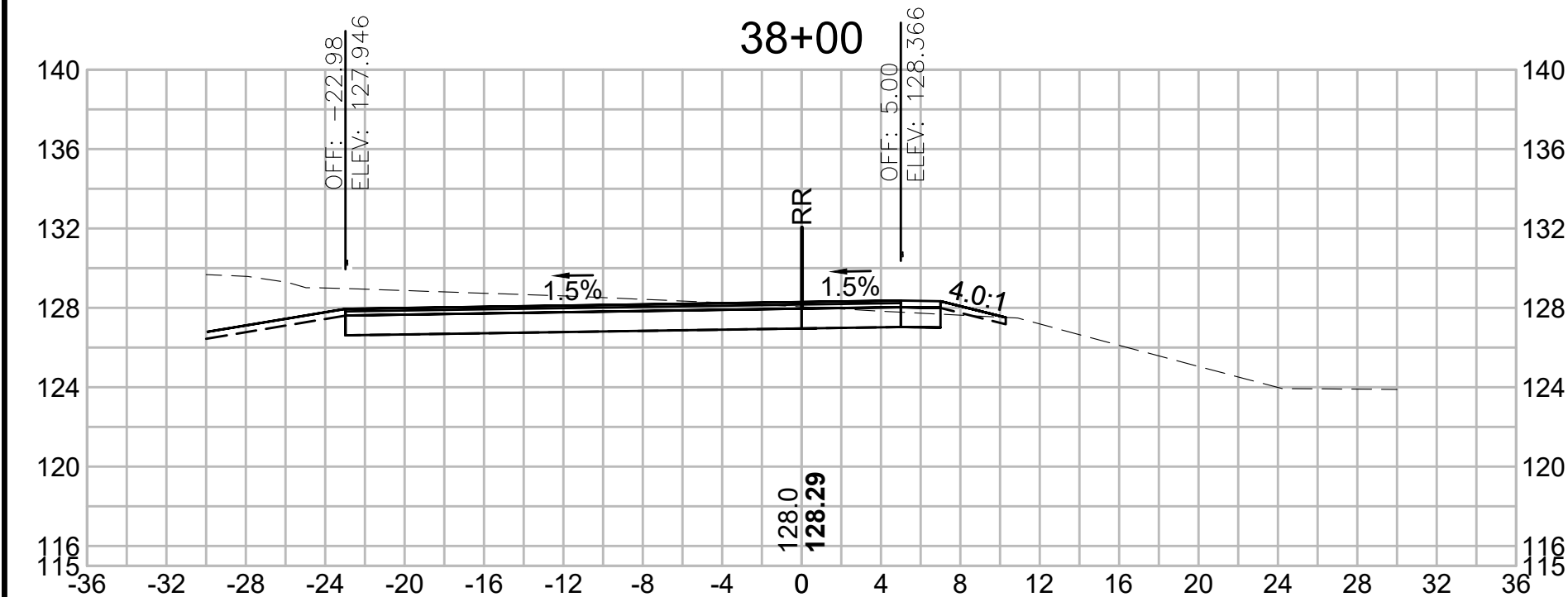
Total Volume at Station 31+50.00	
Cut Area	13.845
Fill Area	0.718
Cut Vol	30.581
Fill Vol	1.2
Cum Cut Vol	2803.602
Cum Fill Vol	163.8
Net Vol	2639.8



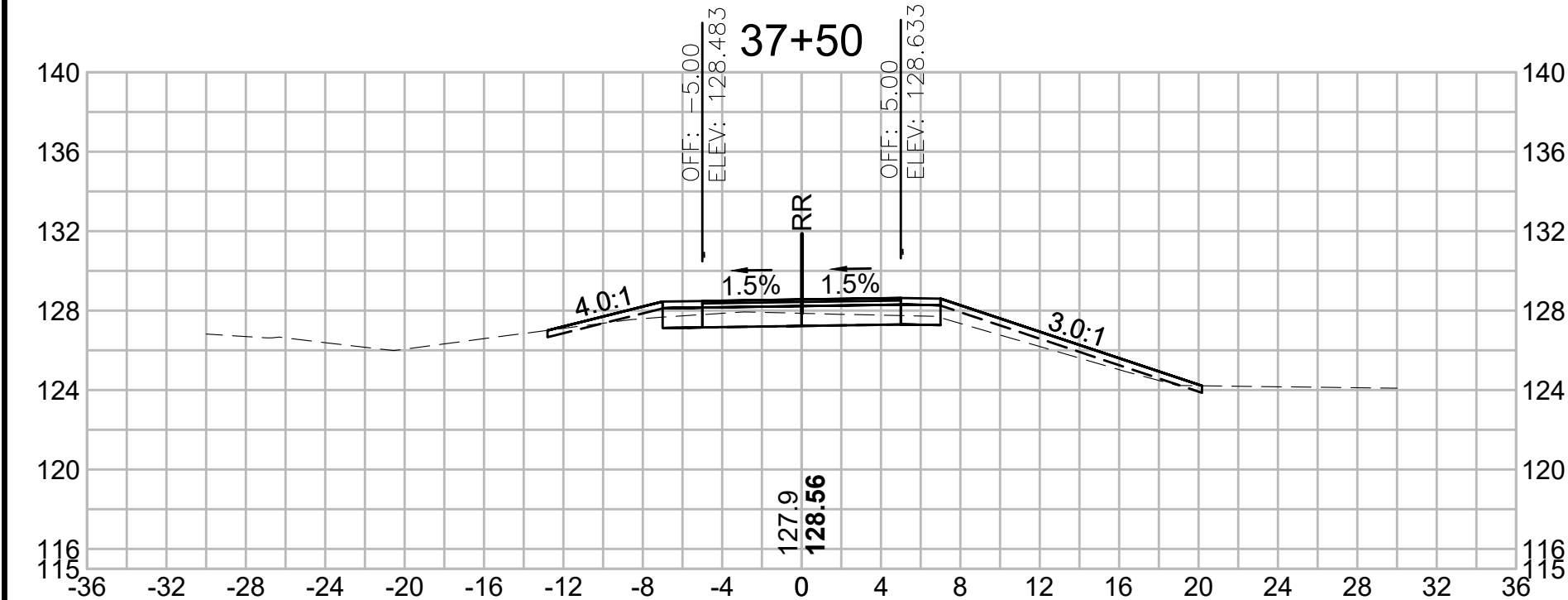
Total Volume at Station 34+00.00	
Cut Area	0.507
Fill Area	24.562
Cut Vol	0.661
Fill Vol	38.7
Cum Cut Vol	2841.878
Cum Fill Vol	247.7
Net Vol	2594.1



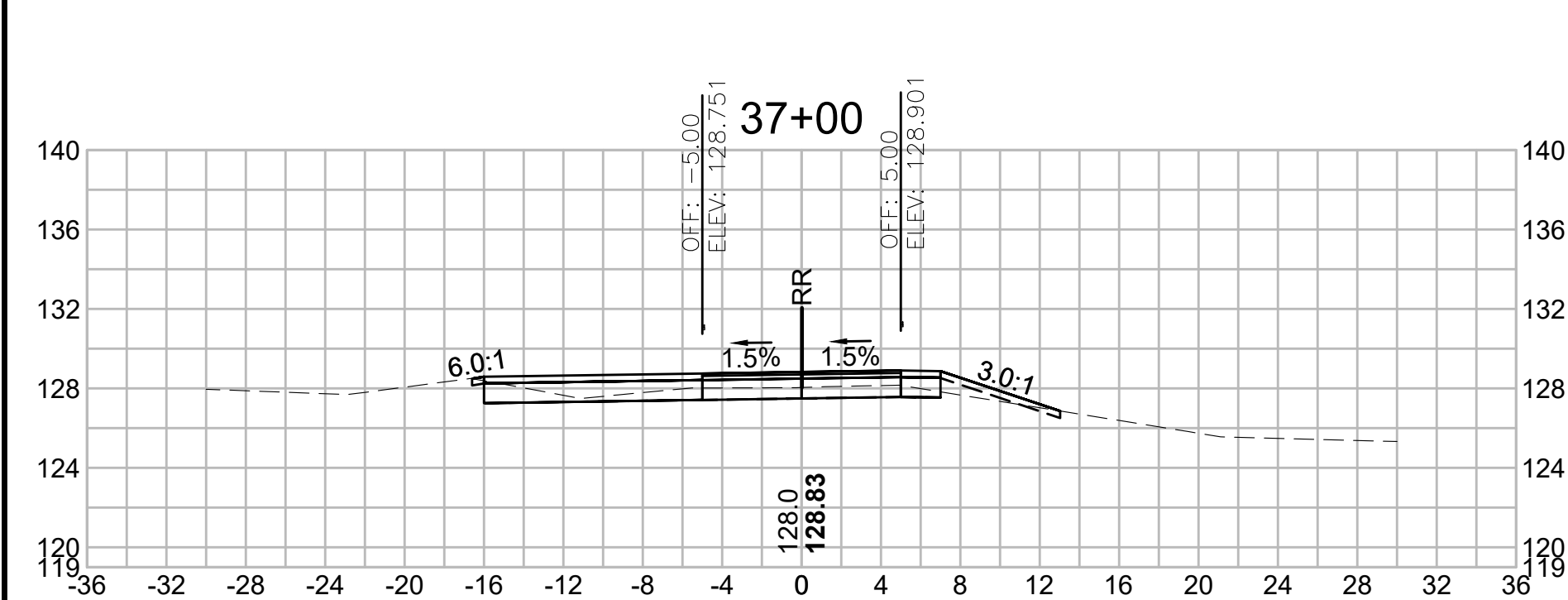
Total Volume at Station 38+50.00	
Cut Area	90.270
Fill Area	0.000
Cut Vol	142.005
Fill Vol	0.2
Cum Cut Vol	3095.565
Cum Fill Vol	388.9
Net Vol	2706.7



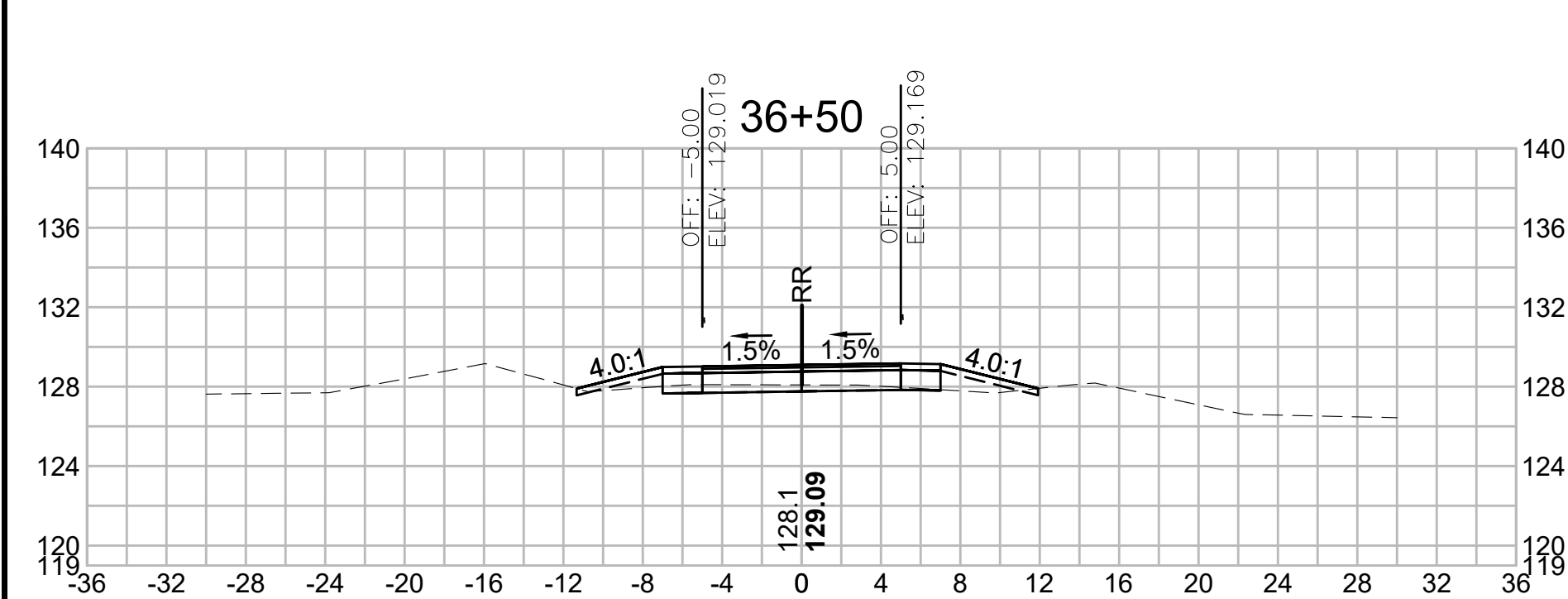
Total Volume at Station 38+00.00	
Cut Area	63.094
Fill Area	0.244
Cut Vol	66.698
Fill Vol	4.6
Cum Cut Vol	2953.561
Cum Fill Vol	388.7
Net Vol	2564.9



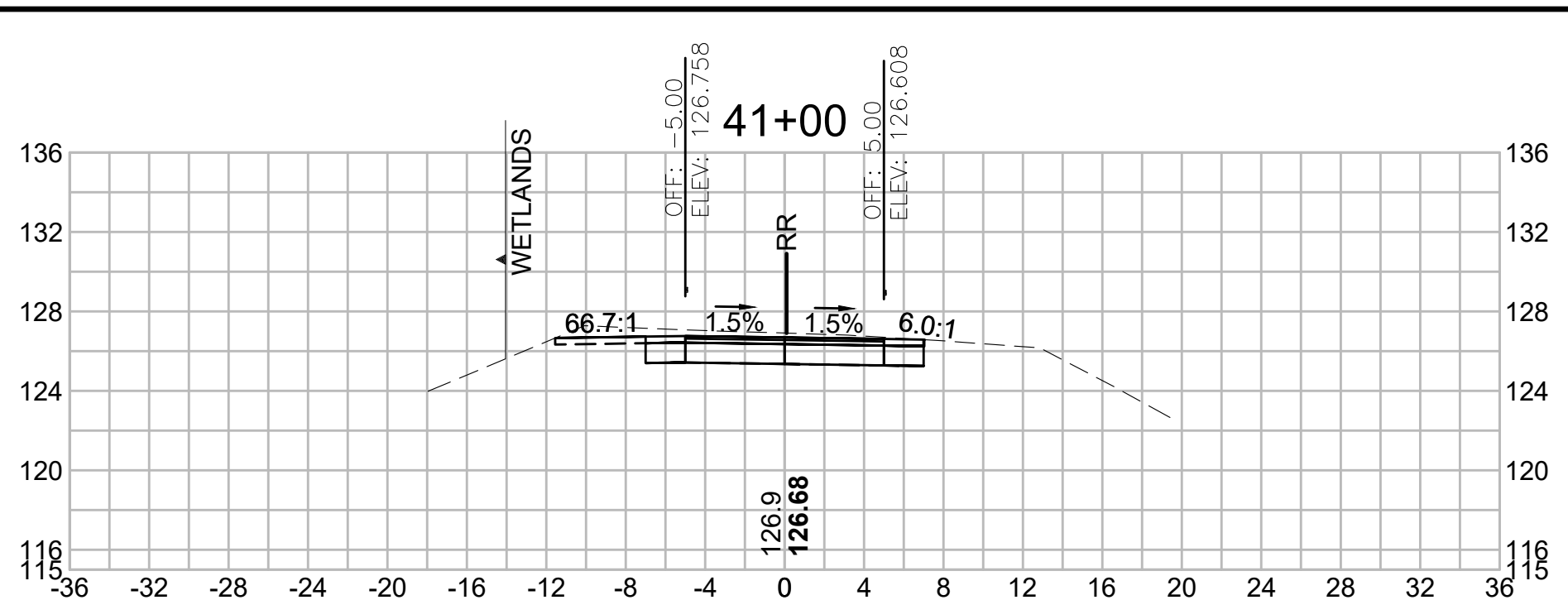
Total Volume at Station 37+50.00	
Cut Area	8.940
Fill Area	4.762
Cut Vol	20.118
Fill Vol	5.7
Cum Cut Vol	2886.863
Cum Fill Vol	384.0
Net Vol	2502.8



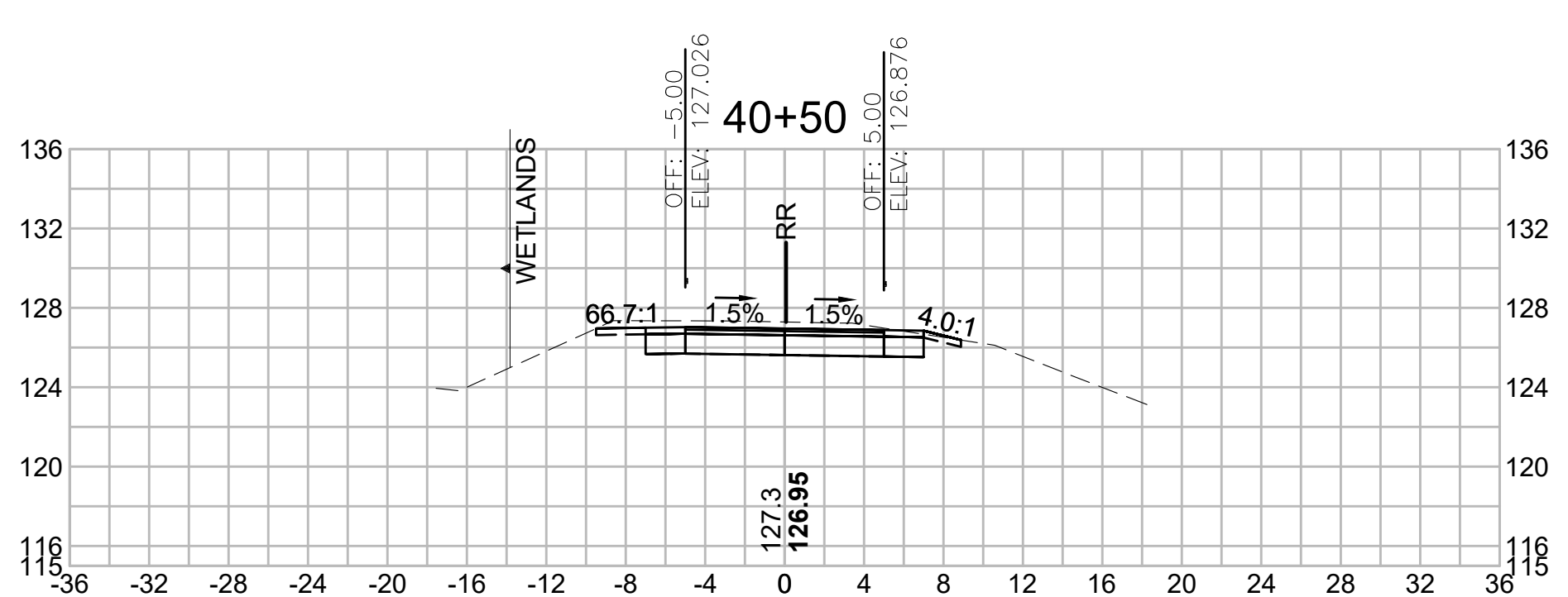
Total Volume at Station 37+00.00	
Cut Area	12.787
Fill Area	1.384
Cut Vol	15.918
Fill Vol	4.3
Cum Cut Vol	2866.746
Cum Fill Vol	378.3
Net Vol	2488.4



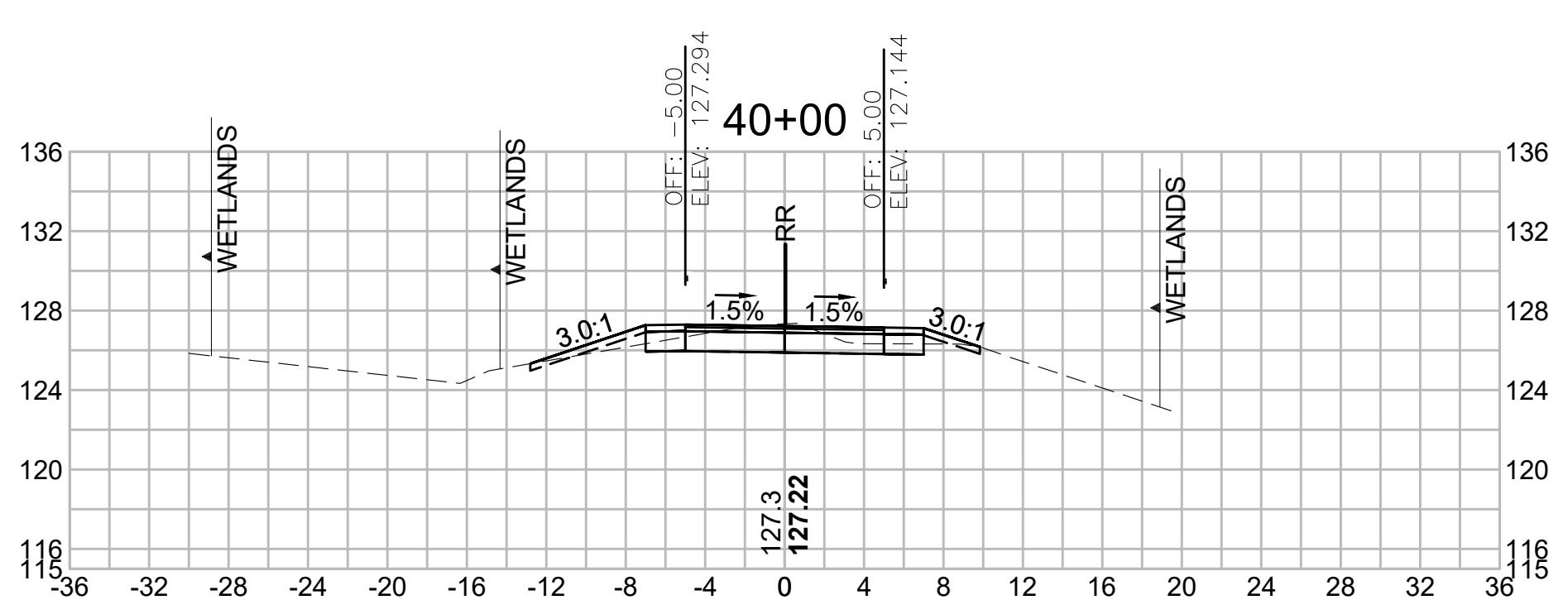
Total Volume at Station 36+50.00	
Cut Area	4.404
Fill Area	3.249
Cut Vol	5.335
Fill Vol	9.2
Cum Cut Vol	2850.828
Cum Fill Vol	374.0
Net Vol	2476.8



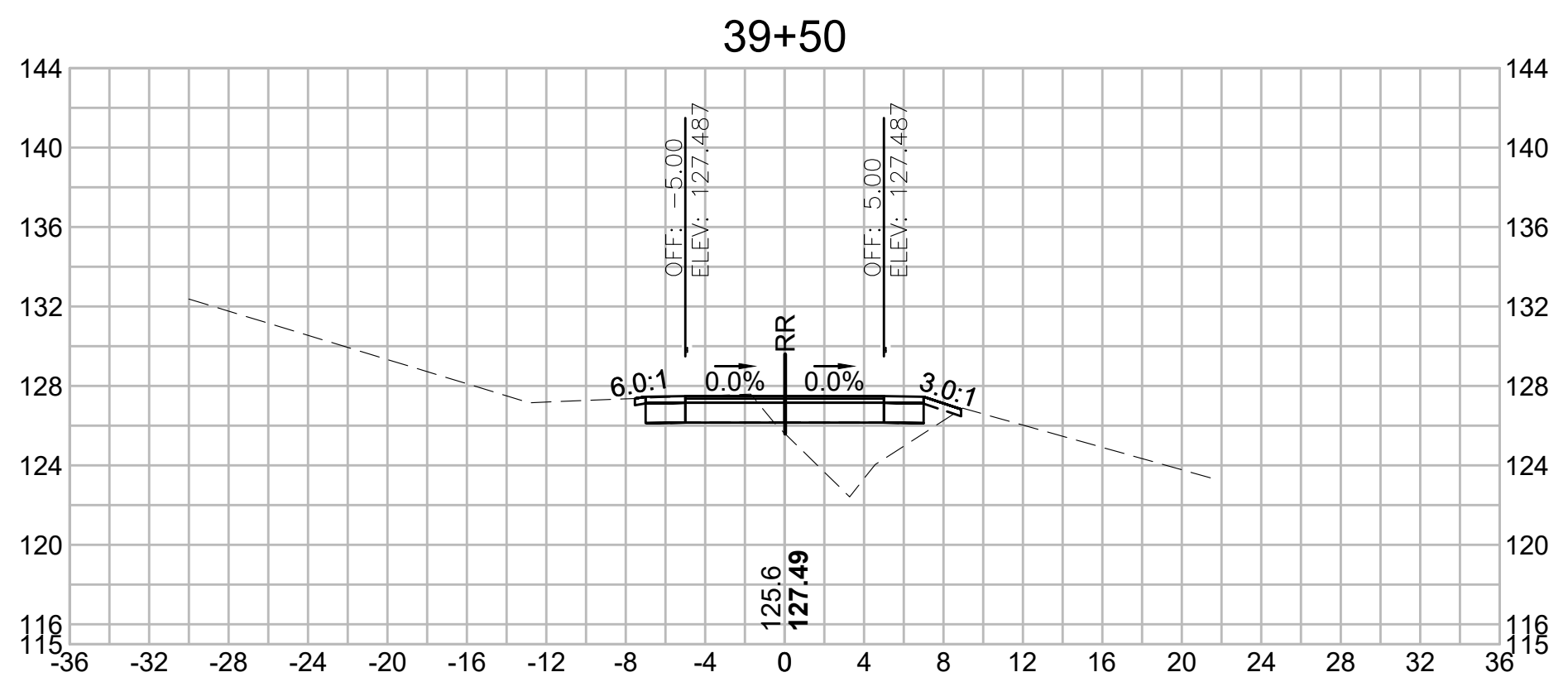
Total Volume at Station 41+00.00	
Cut Area	25.164
Fill Area	0.000
Cut Vol	45.945
Fill Vol	0.0
Cum Cut Vol	3348.728
Cum Fill Vol	419.6
Net Vol	2929.1



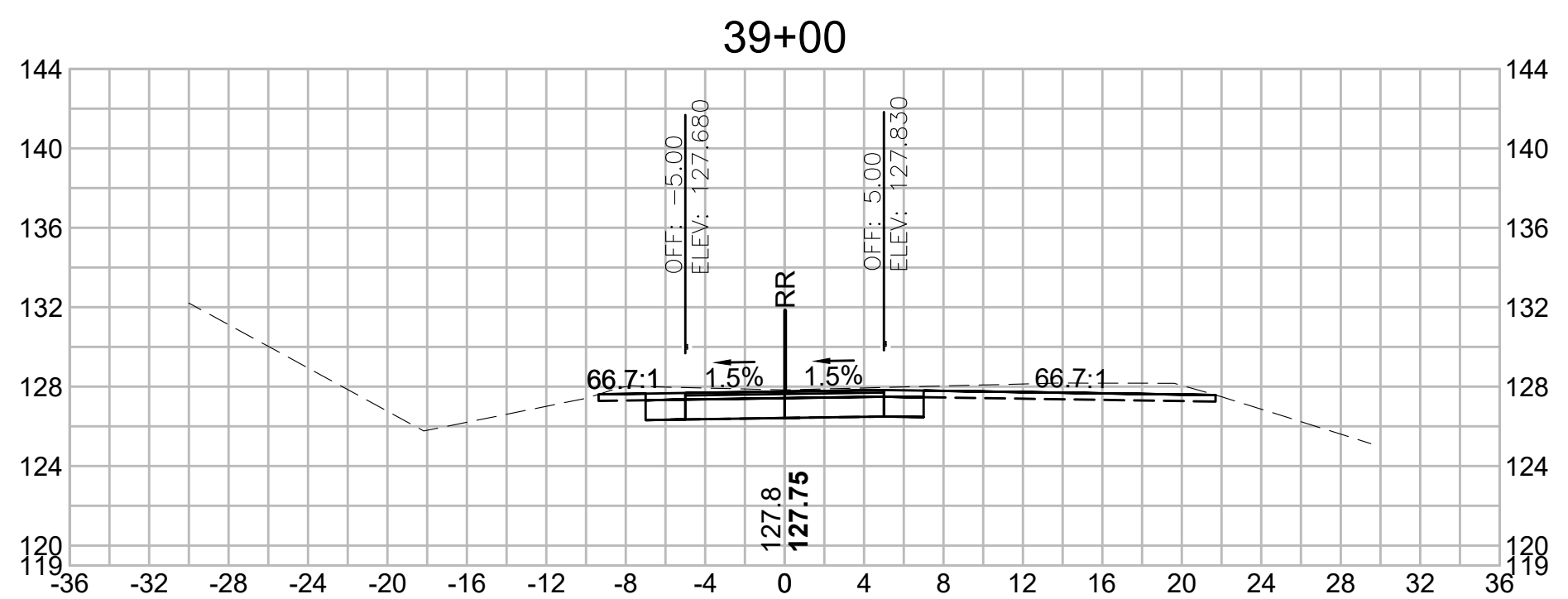
Total Volume at Station 40+50.00	
Cut Area	24.456
Fill Area	0.000
Cut Vol	34.723
Fill Vol	1.2
Cum Cut Vol	3302.783
Cum Fill Vol	419.6
Net Vol	2883.2



Total Volume at Station 40+00.00	
Cut Area	13.044
Fill Area	1.343
Cut Vol	19.624
Fill Vol	15.4
Cum Cut Vol	3268.061
Cum Fill Vol	418.4
Net Vol	2849.7



Total Volume at Station 39+50.00	
Cut Area	8.150
Fill Area	15.248
Cut Vol	38.418
Fill Vol	14.1
Cum Cut Vol	3248.437
Cum Fill Vol	403.0
Net Vol	2845.4



Total Volume at Station 39+00.00	
Cut Area	33.341
Fill Area	0.000
Cut Vol	114.455
Fill Vol	0.0
Cum Cut Vol	3210.020
Cum Fill Vol	388.9
Net Vol	2821.1

SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

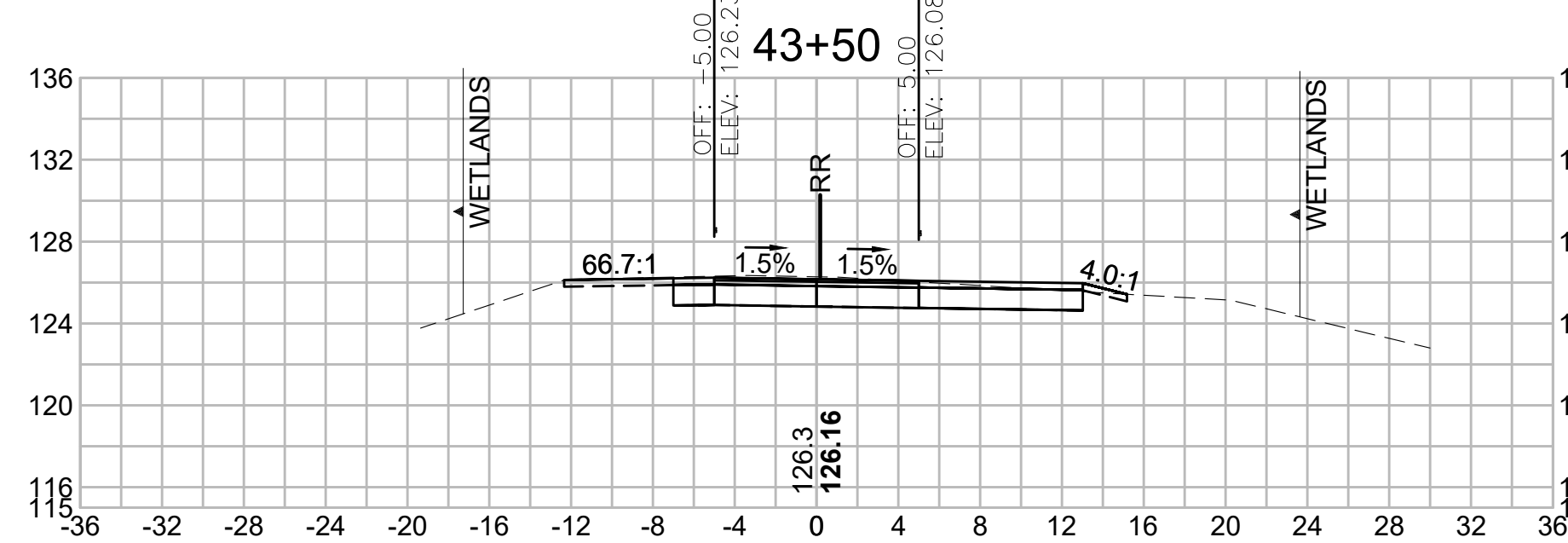
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	TBD

PROJECT FILE NO. 613319

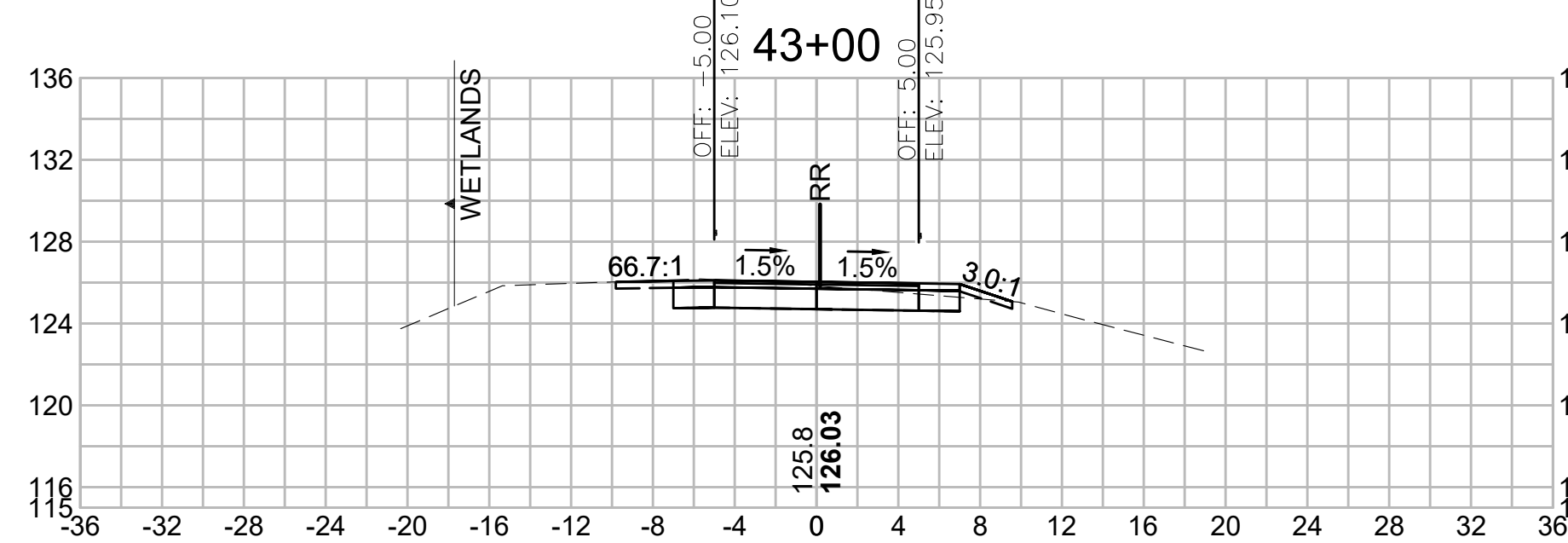
CROSS SECTIONS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	TBD
PROJECT FILE NO.		613319	

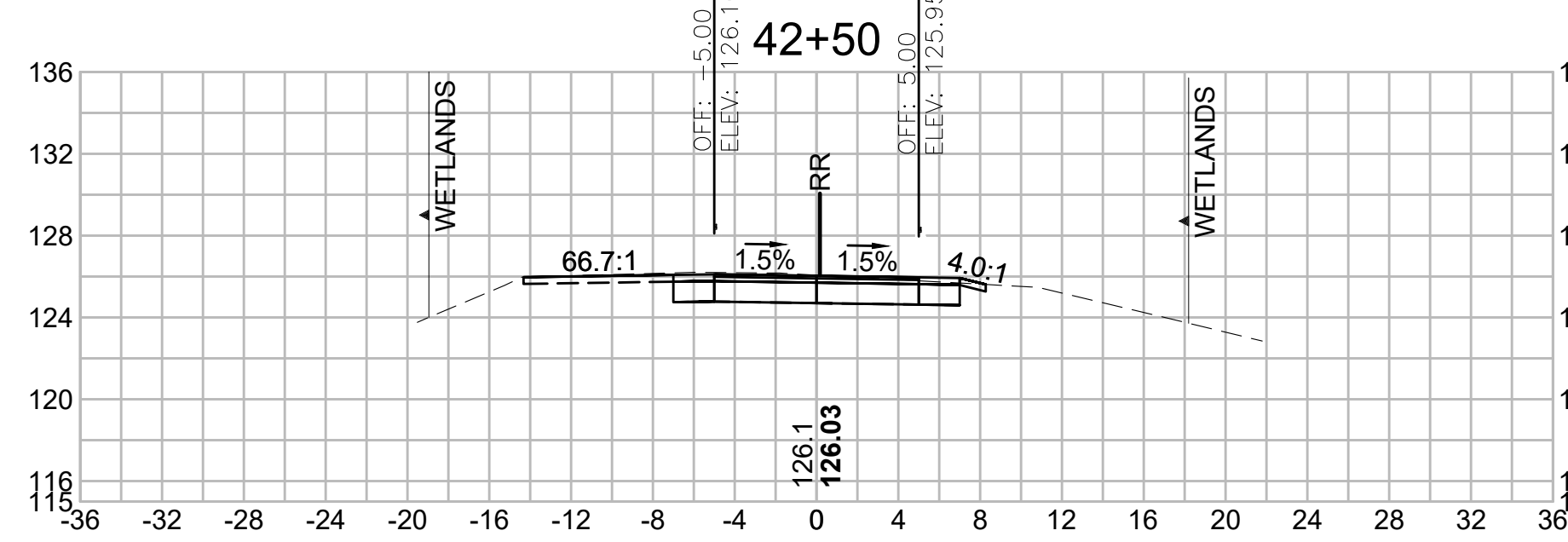
Total Volume at Station 44+00.00	
Cut Area	15.088
Fill Area	0.405
Cut Vol	39.942
Fill Vol	0.4
Cum Cut Vol	3585.525
Cum Fill Vol	420.3
Net Vol	3165.2



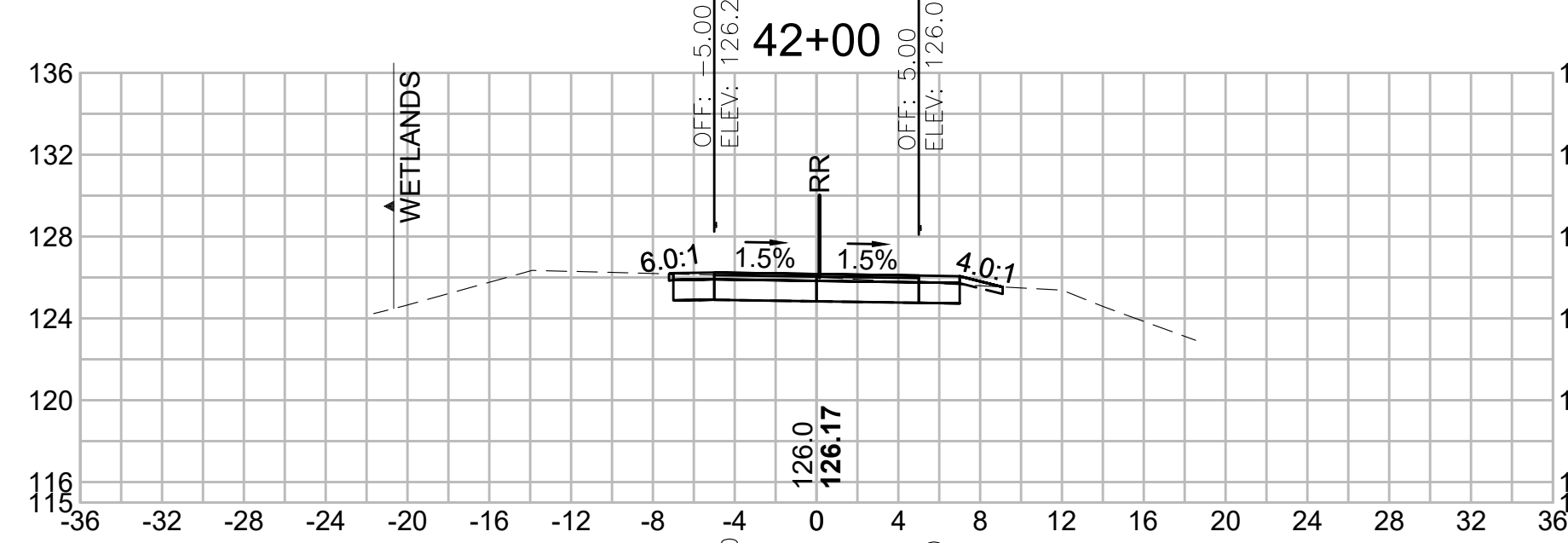
Total Volume at Station 43+50.00	
Cut Area	28.050
Fill Area	0.012
Cut Vol	41.510
Fill Vol	0.2
Cum Cut Vol	3545.583
Cum Fill Vol	420.0
Net Vol	3125.6



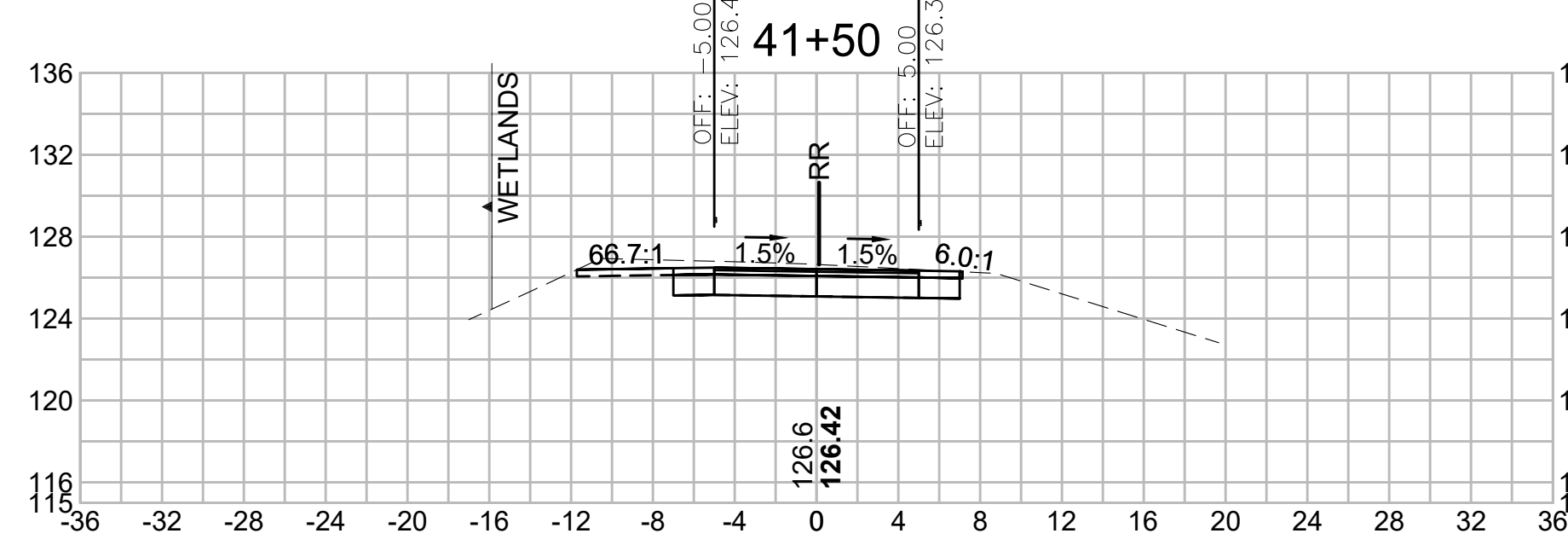
Total Volume at Station 43+00.00	
Cut Area	16.781
Fill Area	0.175
Cut Vol	35.598
Fill Vol	0.2
Cum Cut Vol	3504.073
Cum Fill Vol	419.8
Net Vol	3084.3



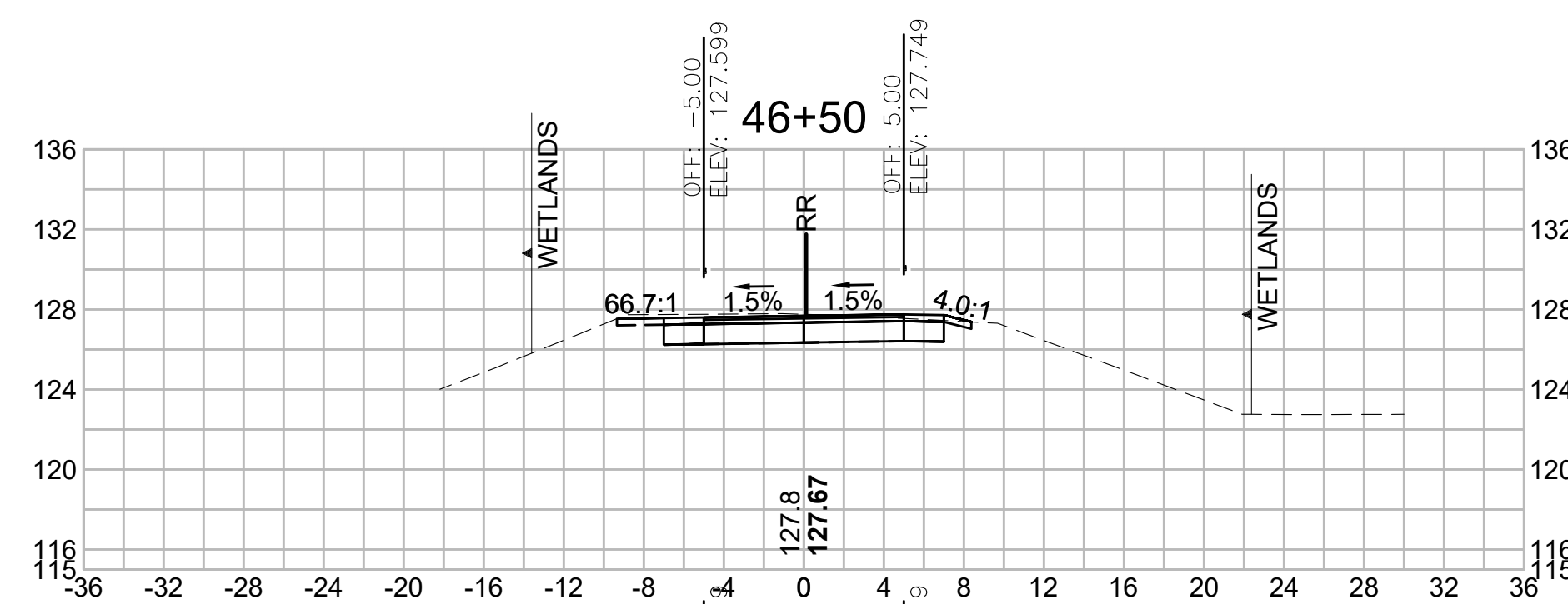
Total Volume at Station 42+50.00	
Cut Area	21.664
Fill Area	0.000
Cut Vol	35.095
Fill Vol	0.0
Cum Cut Vol	3468.476
Cum Fill Vol	419.6
Net Vol	3048.9



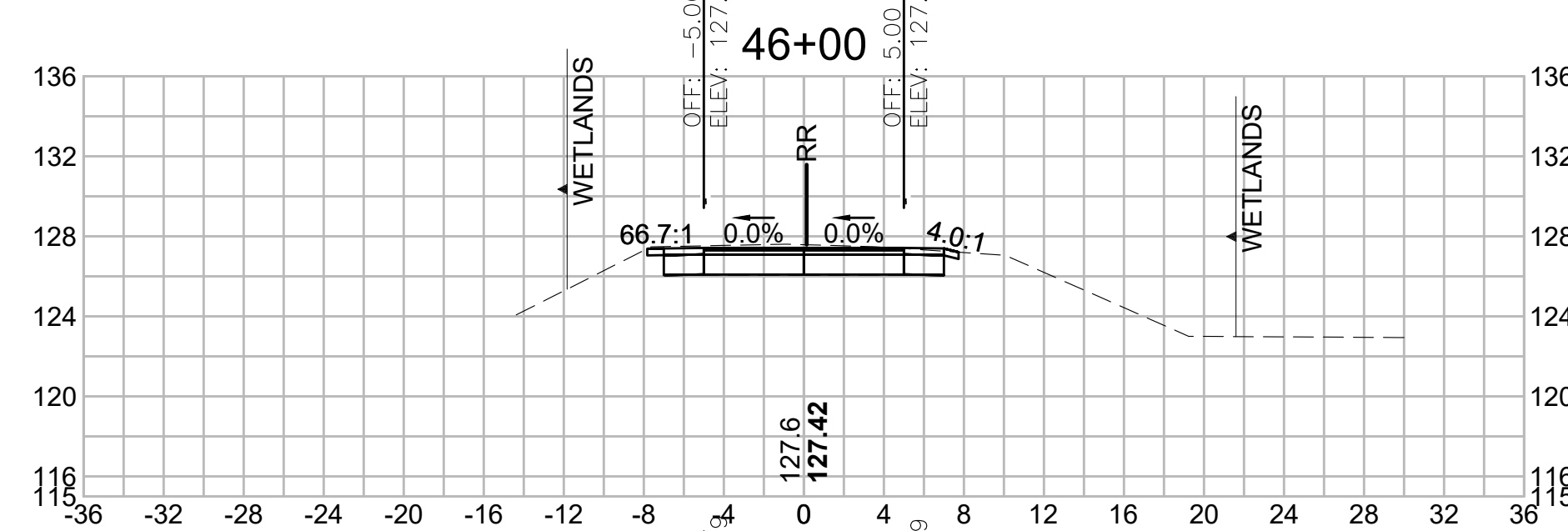
Total Volume at Station 42+00.00	
Cut Area	16.238
Fill Area	0.012
Cut Vol	38.195
Fill Vol	0.0
Cum Cut Vol	3433.381
Cum Fill Vol	419.6
Net Vol	3013.8



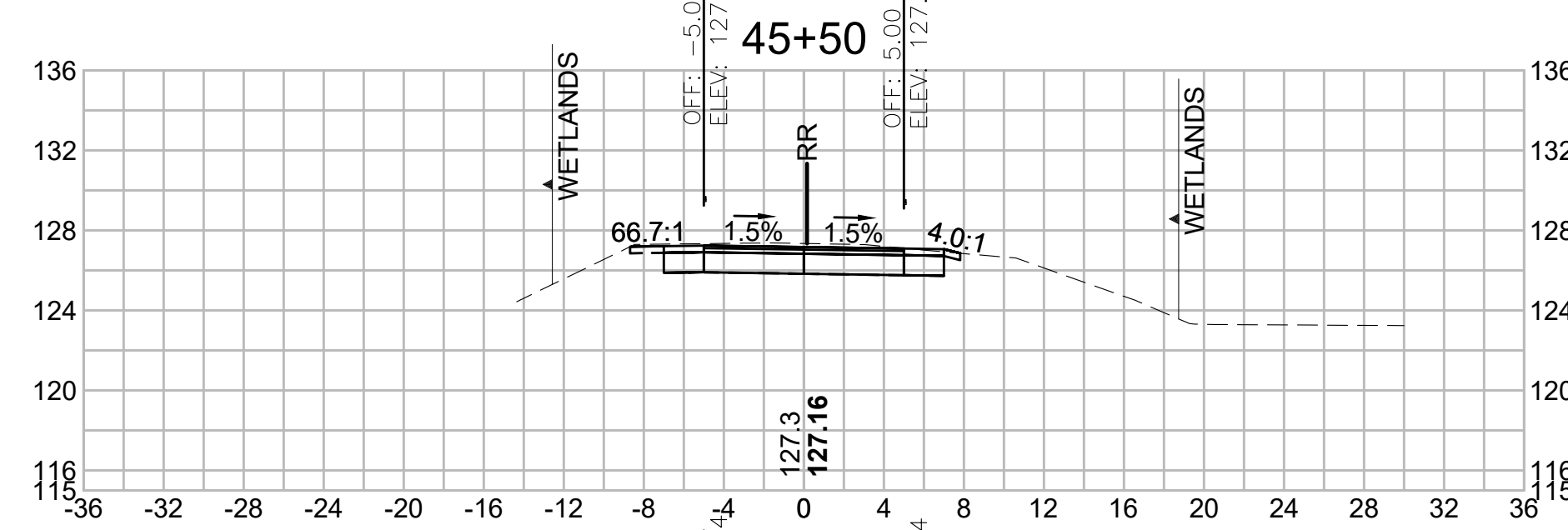
Total Volume at Station 41+50.00	
Cut Area	25.012
Fill Area	0.000
Cut Vol	46.459
Fill Vol	0.0
Cum Cut Vol	3395.187
Cum Fill Vol	419.6
Net Vol	2975.6



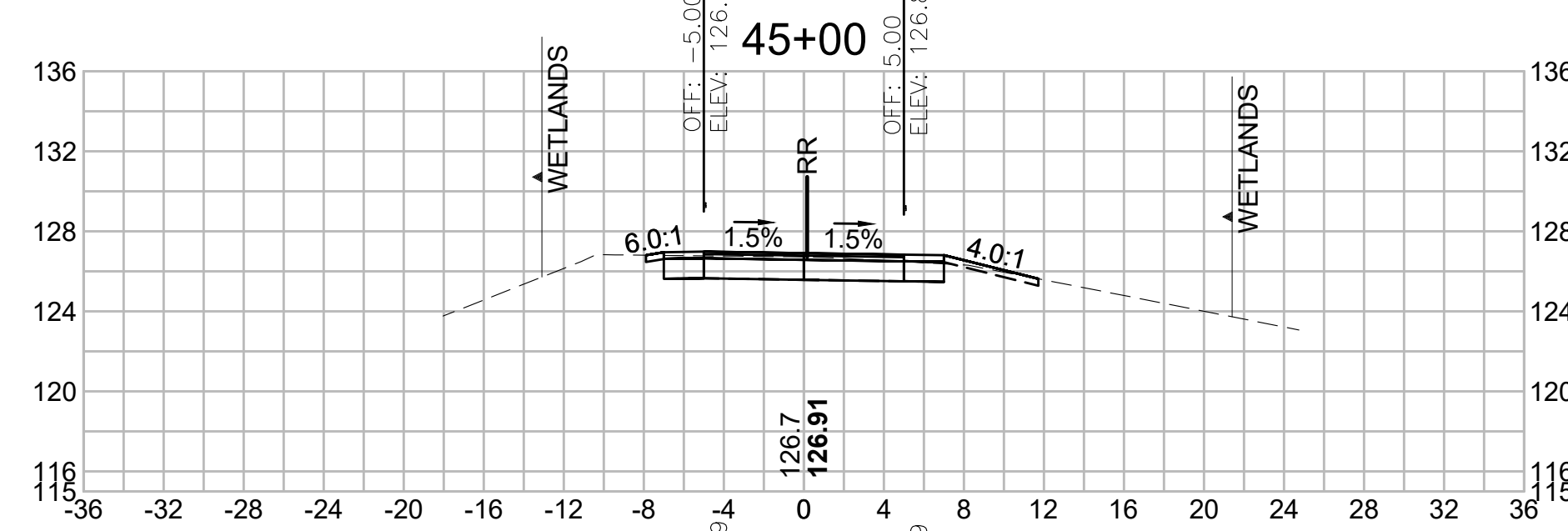
Total Volume at Station 46+50.00	
Cut Area	20.433
Fill Area	0.000
Cut Vol	37.805
Fill Vol	0.0
Cum Cut Vol	3733.238
Cum Fill Vol	430.5
Net Vol	3302.8



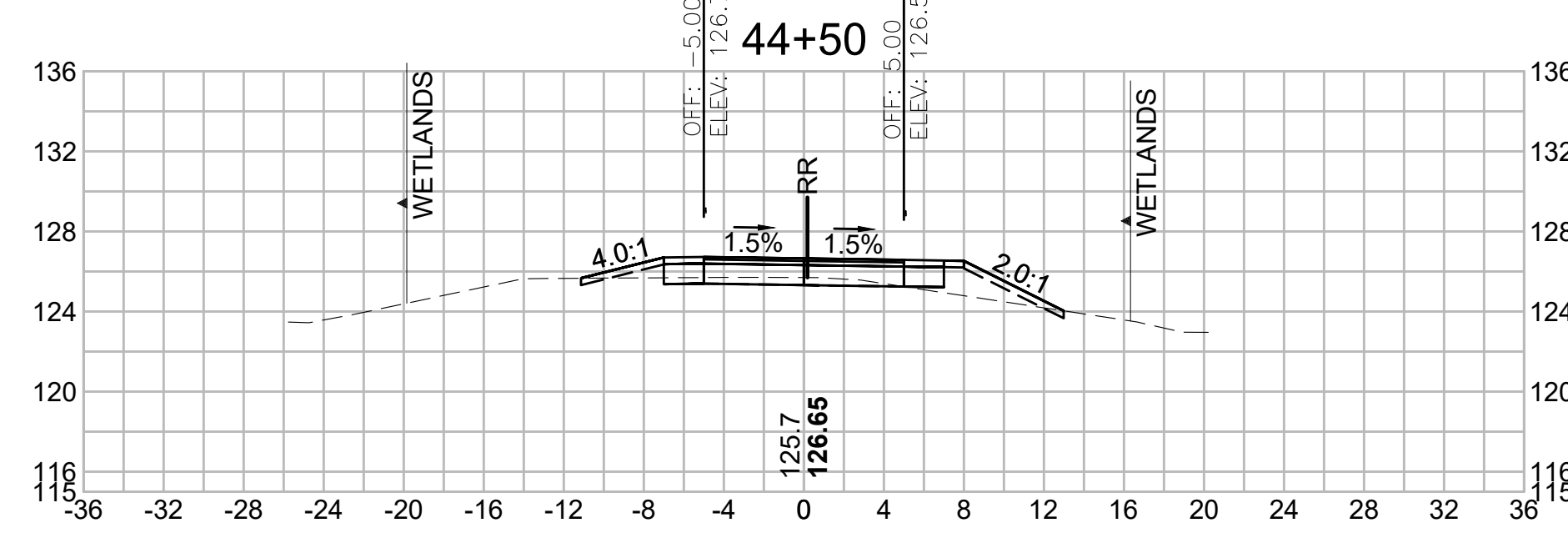
Total Volume at Station 46+00.00	
Cut Area	20.396
Fill Area	0.000
Cut Vol	38.479
Fill Vol	0.0
Cum Cut Vol	3695.433
Cum Fill Vol	430.5
Net Vol	3265.0



Total Volume at Station 45+50.00	
Cut Area	21.161
Fill Area	0.000
Cut Vol	34.747
Fill Vol	0.0
Cum Cut Vol	3656.955
Cum Fill Vol	430.5
Net Vol	3226.5

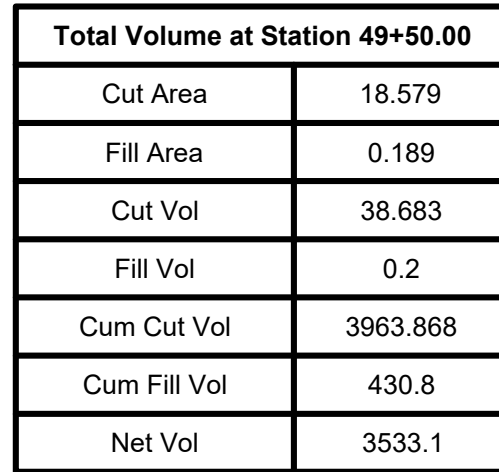
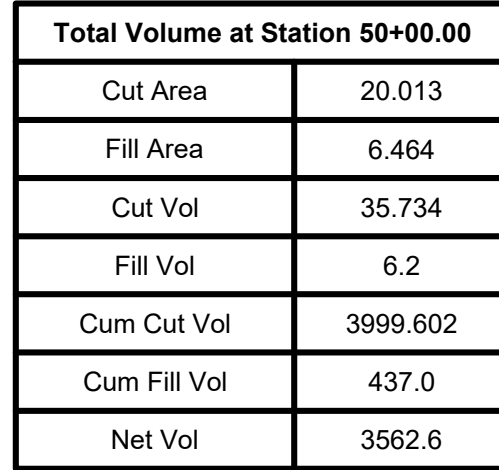
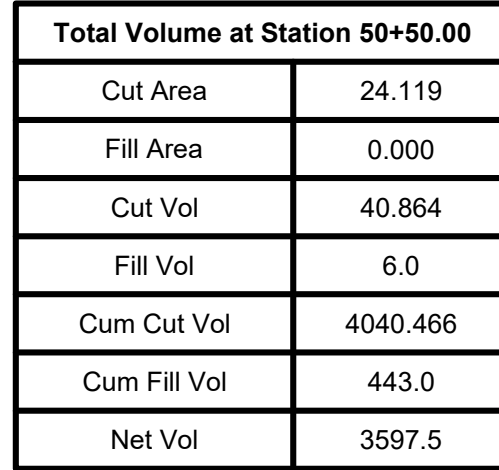
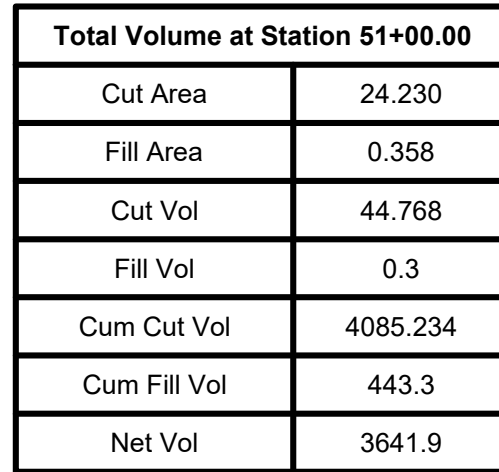
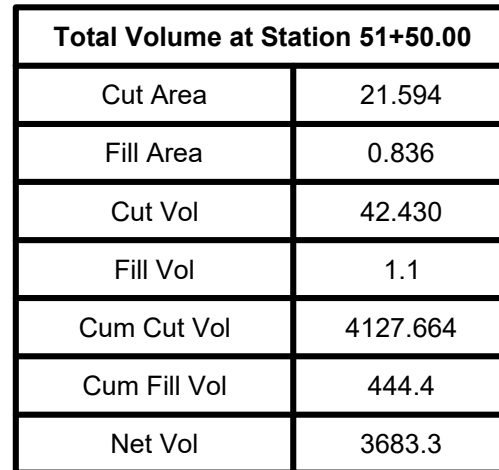
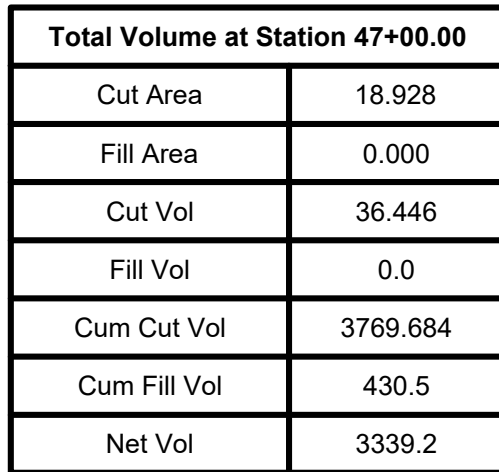
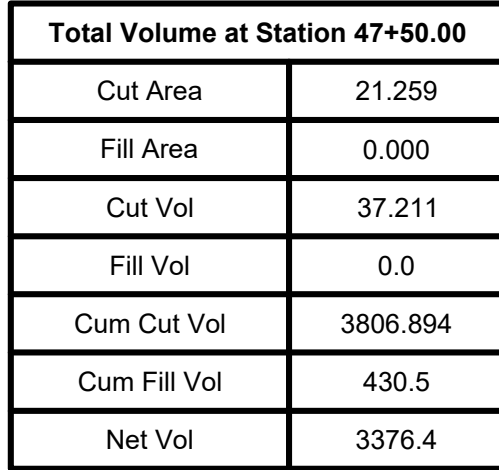
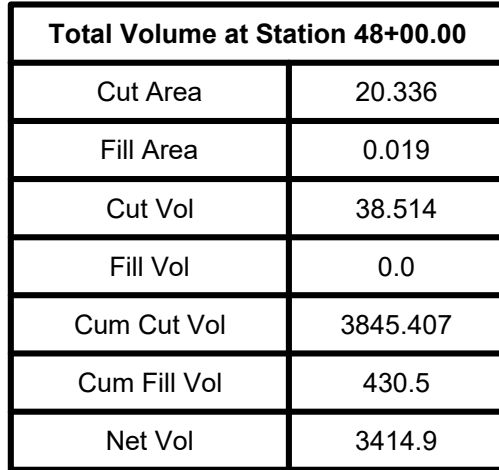
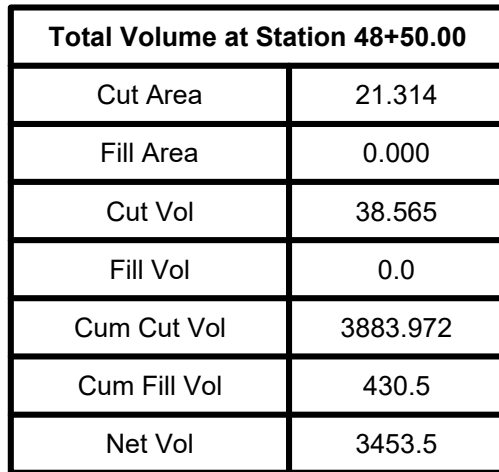
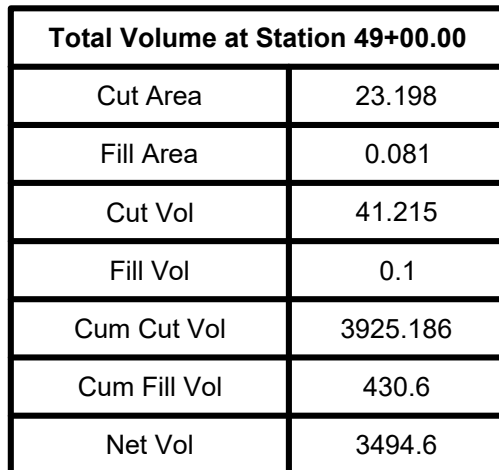


Total Volume at Station 45+00.00	
Cut Area	16.366
Fill Area	0.020
Cut Vol	18.934
Fill Vol	4.9
Cum Cut Vol	3622.208
Cum Fill Vol	430.4
Net Vol	3191.8



Total Volume at Station 44+50.00	
Cut Area	4.082
Fill Area	5.234
Cut Vol	17.750
Fill Vol	5.2
Cum Cut Vol	3603.275
Cum Fill Vol	425.6
Net Vol	3177.7

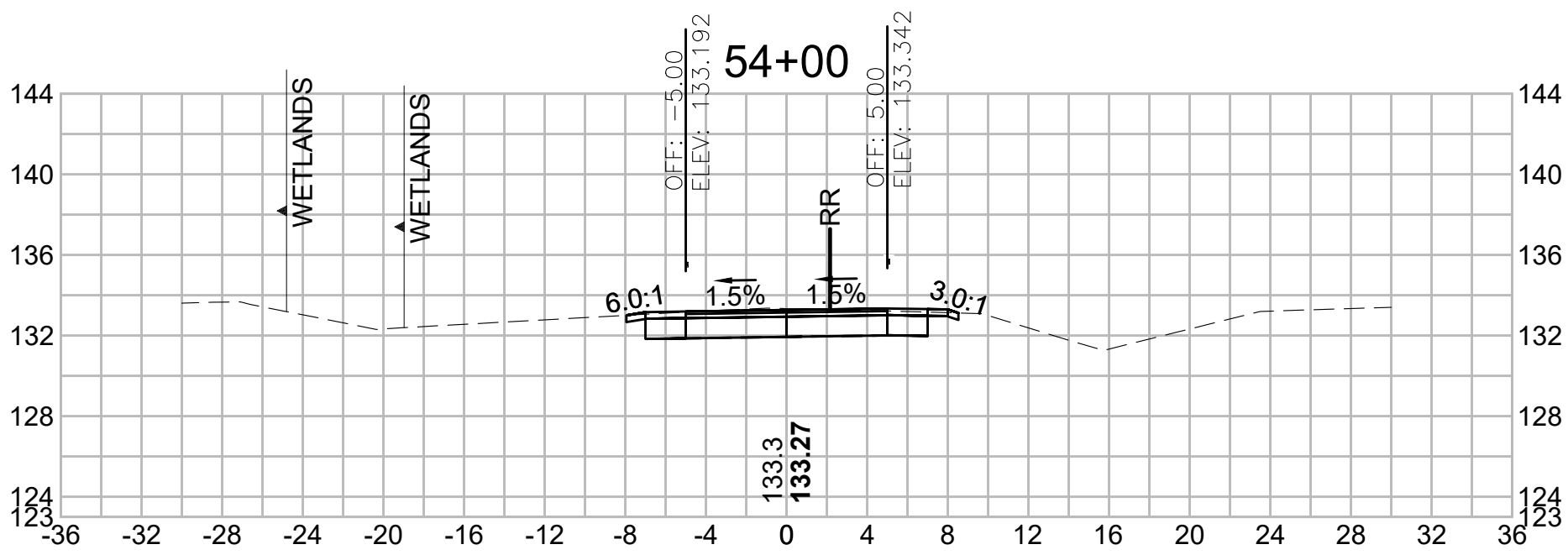
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	TBD
PROJECT FILE NO.		613319	



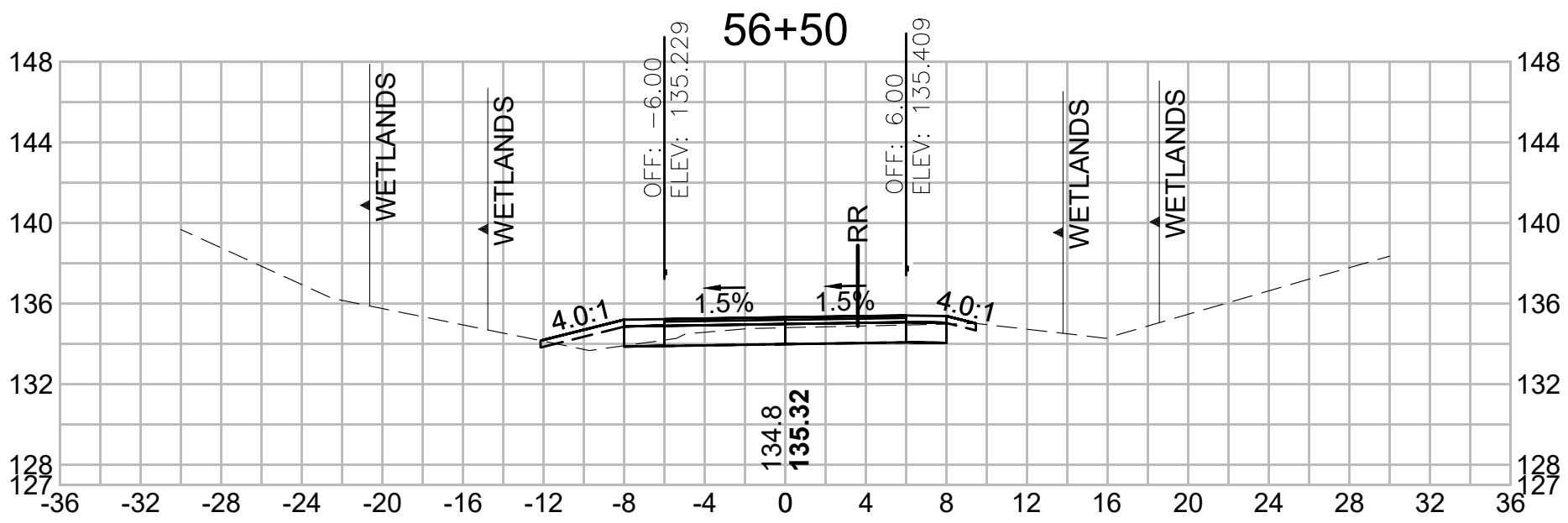
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	TBD
PROJECT FILE NO.		613319	

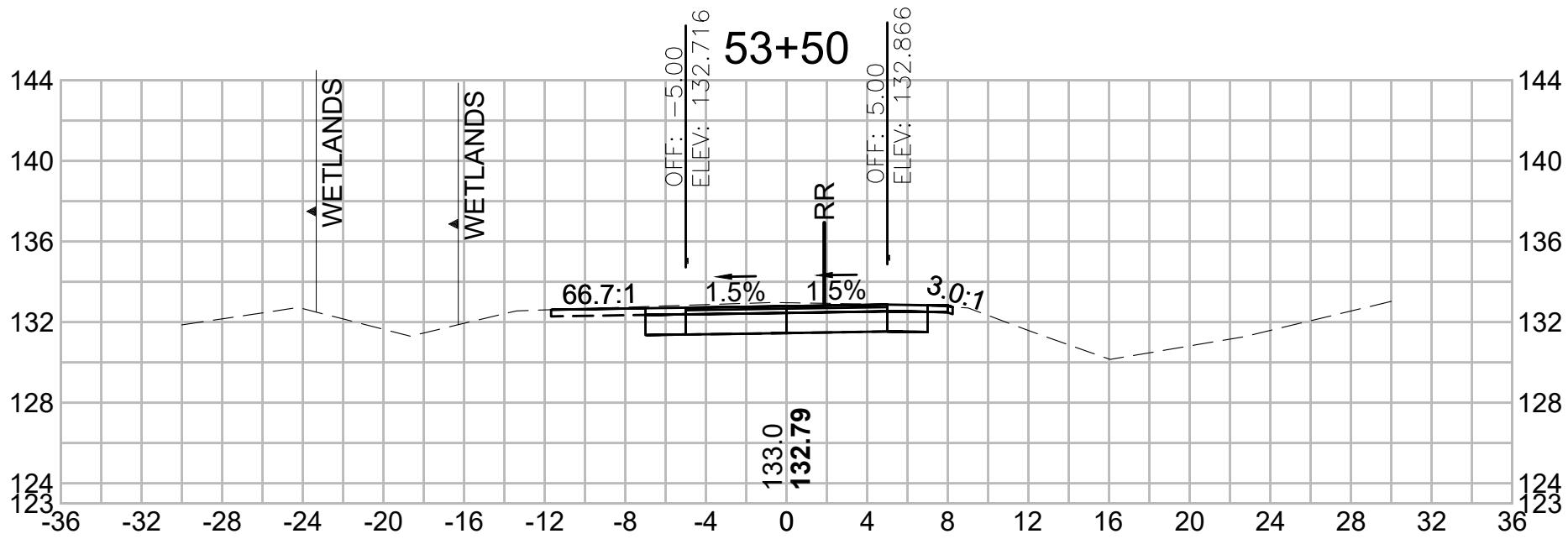
CROSS SECTIONS



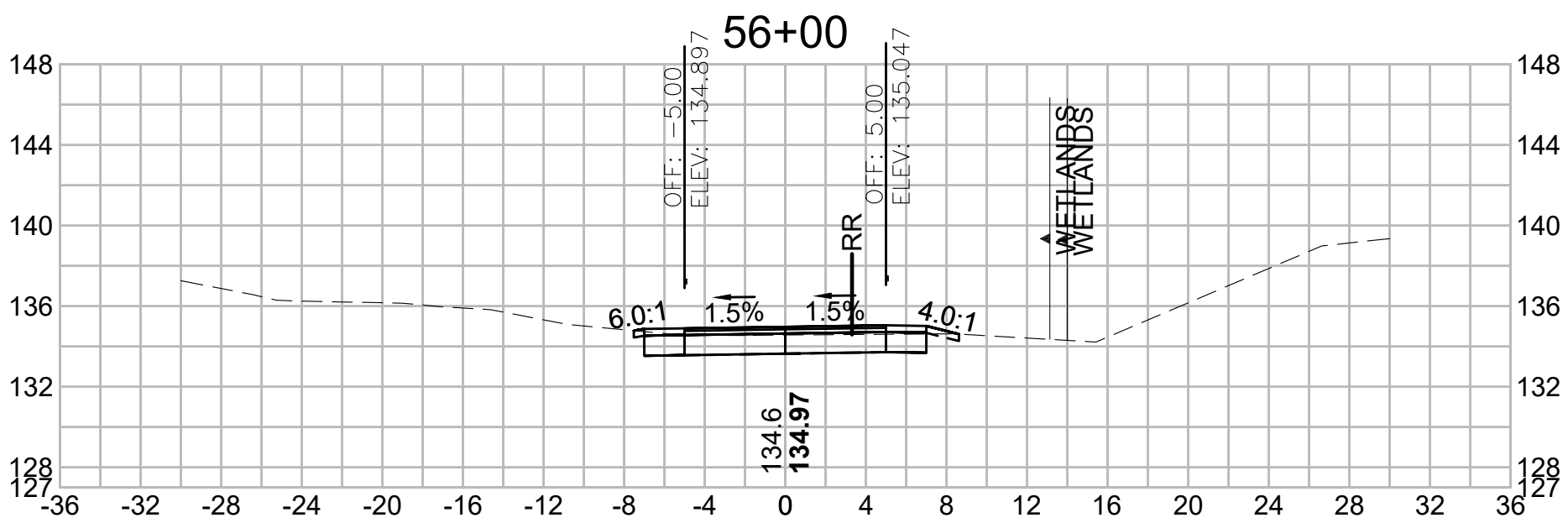
Total Volume at Station 54+00.00	
Cut Area	18.983
Fill Area	0.000
Cut Vol	38.149
Fill Vol	0.0
Cum Cut Vol	4305.600
Cum Fill Vol	446.3
Net Vol	3859.3



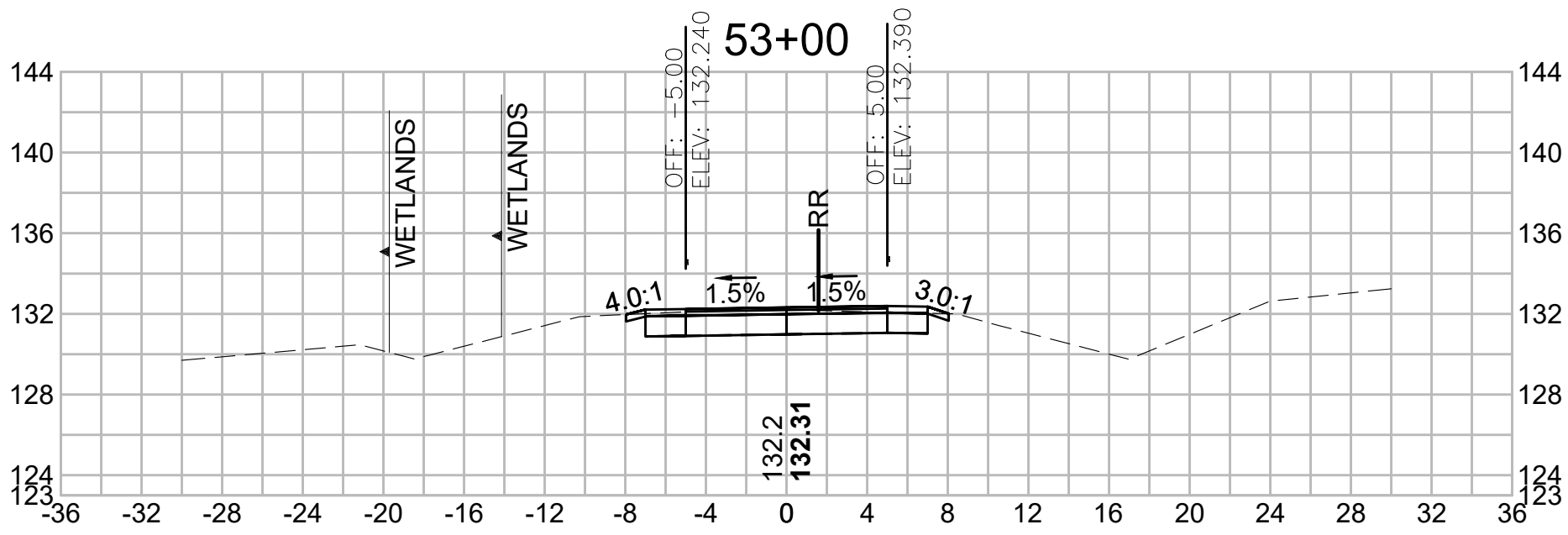
Total Volume at Station 56+50.00	
Cut Area	11.547
Fill Area	2.100
Cut Vol	23.372
Fill Vol	1.9
Cum Cut Vol	4440.403
Cum Fill Vol	449.5
Net Vol	3990.9



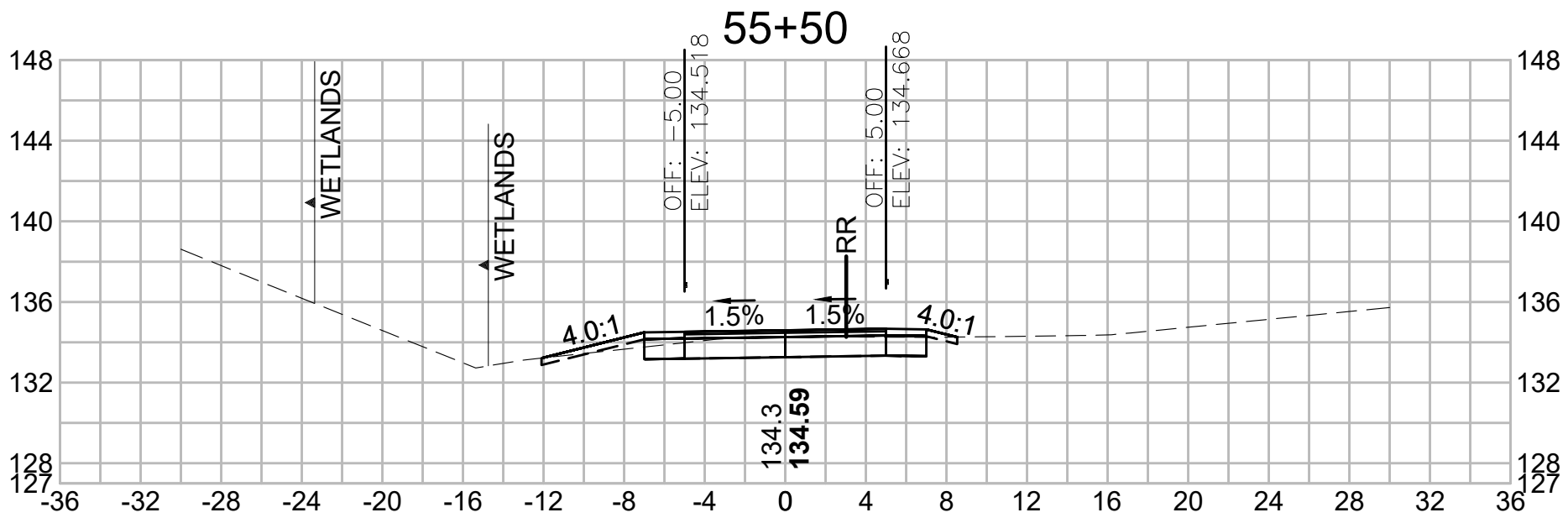
Total Volume at Station 53+50.00	
Cut Area	22.217
Fill Area	0.000
Cut Vol	35.912
Fill Vol	0.0
Cum Cut Vol	4267.451
Cum Fill Vol	446.3
Net Vol	3821.1



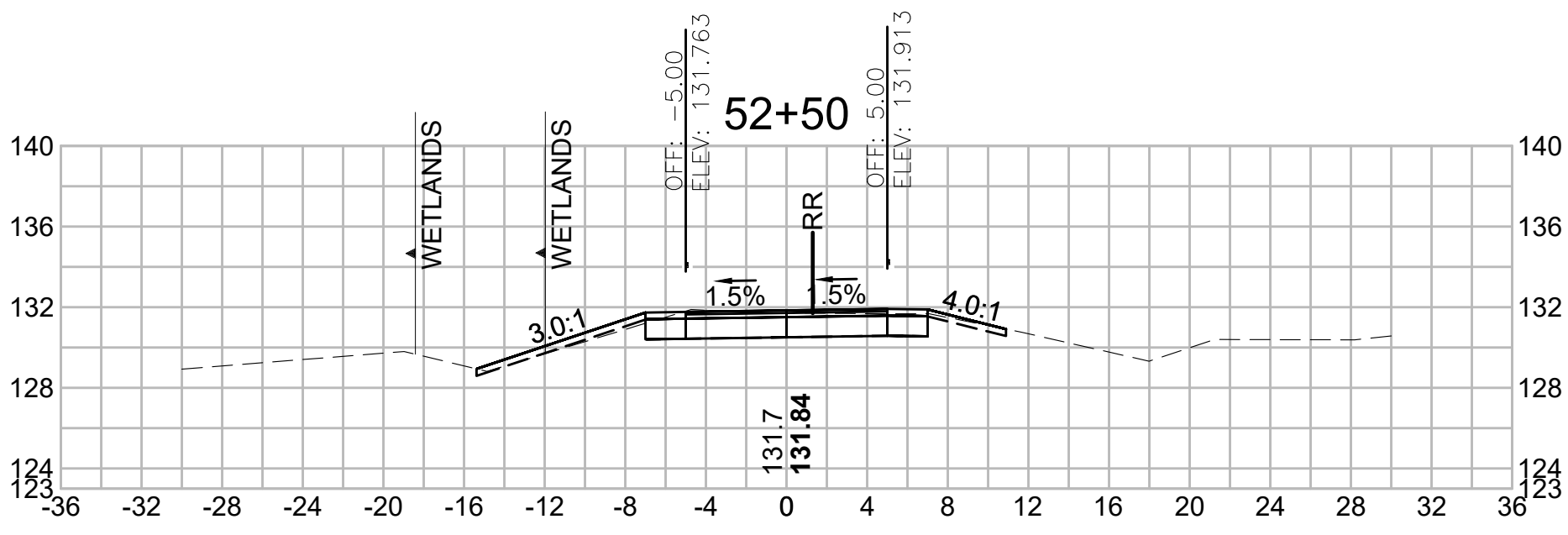
Total Volume at Station 56+00.00	
Cut Area	13.694
Fill Area	0.006
Cut Vol	25.248
Fill Vol	0.5
Cum Cut Vol	4417.032
Cum Fill Vol	447.6
Net Vol	3969.5



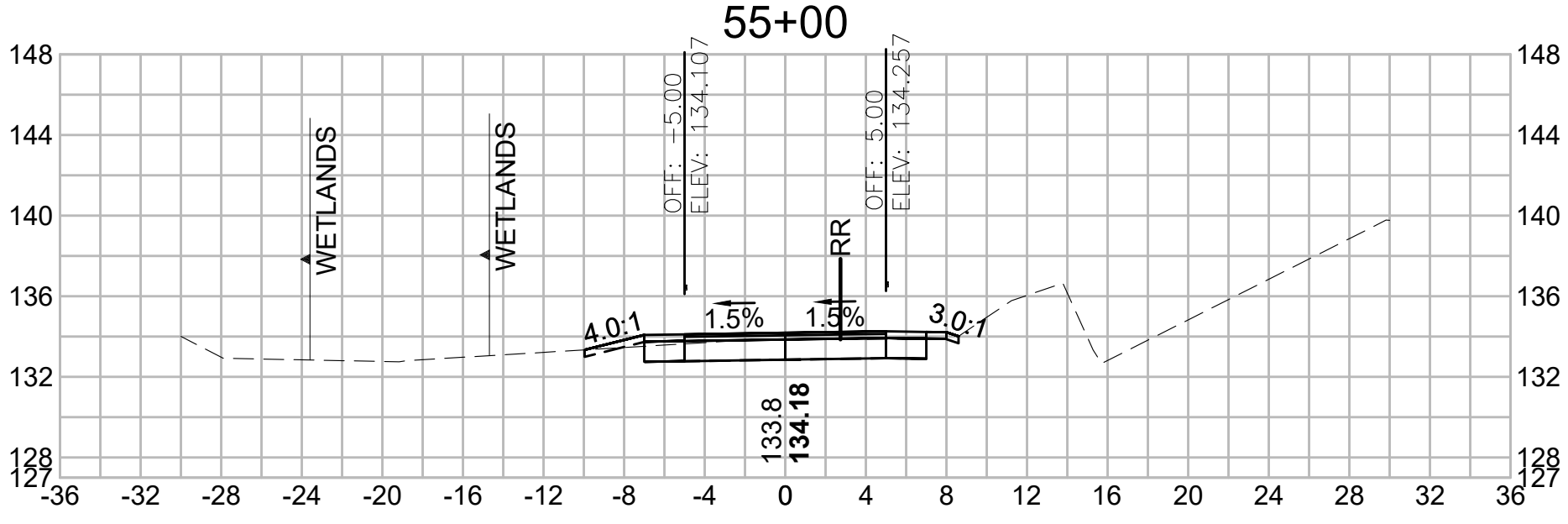
Total Volume at Station 53+00.00	
Cut Area	16.568
Fill Area	0.000
Cut Vol	31.821
Fill Vol	0.5
Cum Cut Vol	4231.540
Cum Fill Vol	446.3
Net Vol	3785.2



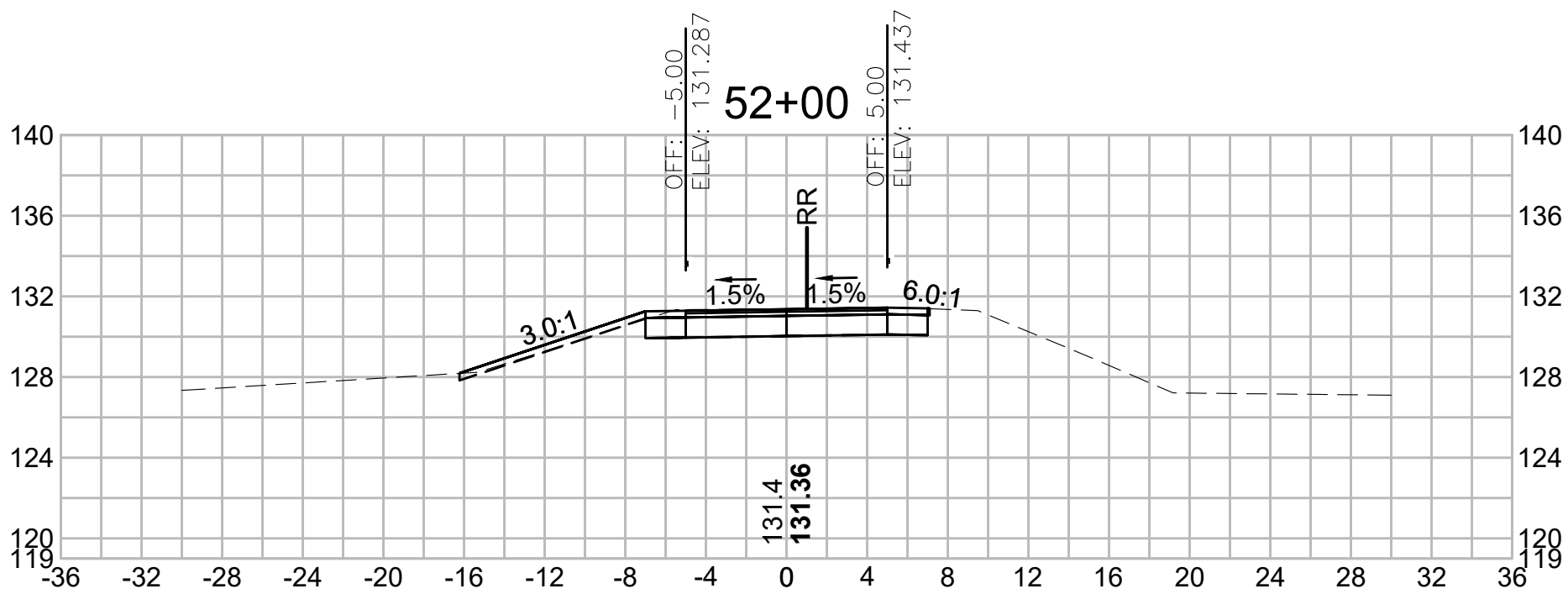
Total Volume at Station 55+50.00	
Cut Area	13.573
Fill Area	0.518
Cut Vol	25.092
Fill Vol	0.6
Cum Cut Vol	4391.784
Cum Fill Vol	447.1
Net Vol	3944.7



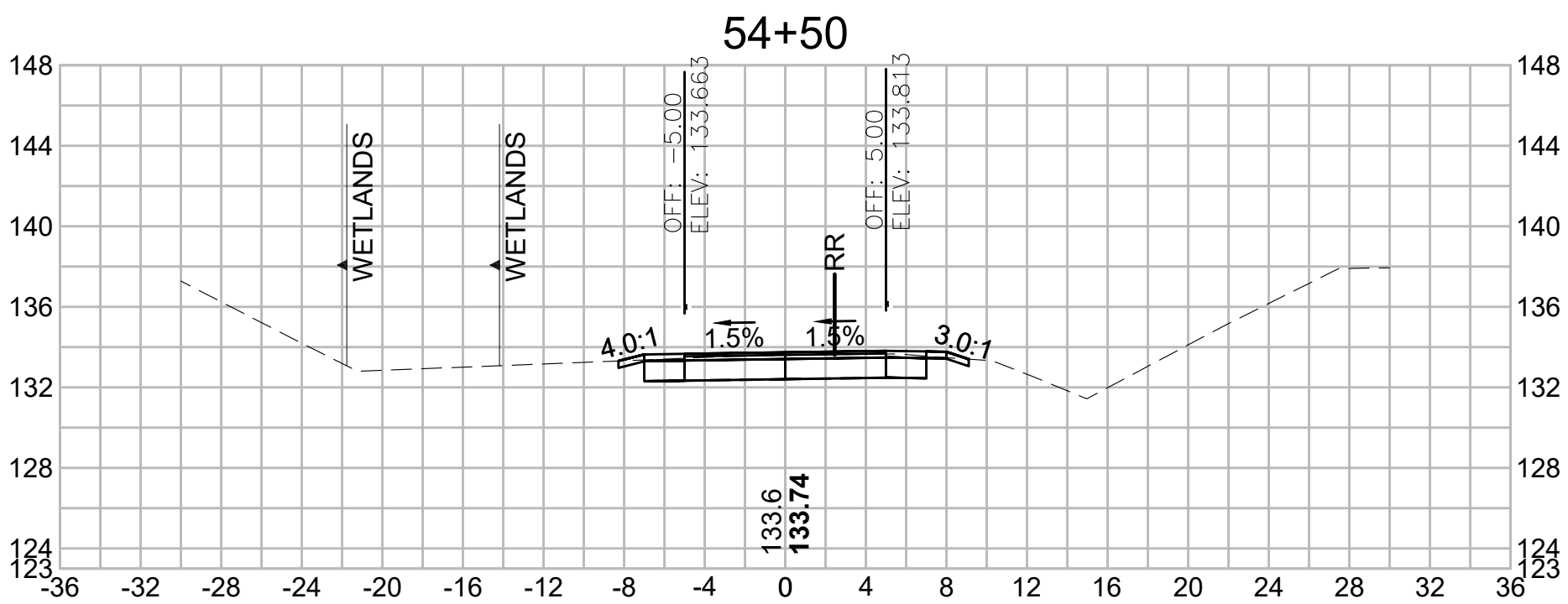
Total Volume at Station 52+50.00	
Cut Area	17.798
Fill Area	0.564
Cut Vol	34.271
Fill Vol	0.6
Cum Cut Vol	4199.719
Cum Fill Vol	445.8
Net Vol	3753.9



Total Volume at Station 55+00.00	
Cut Area	13.526
Fill Area	0.161
Cut Vol	28.020
Fill Vol	0.1
Cum Cut Vol	4366.692
Cum Fill Vol	446.5
Net Vol	3920.2



Total Volume at Station 52+00.00	
Cut Area	19.214
Fill Area	0.049
Cut Vol	37.786
Fill Vol	0.8
Cum Cut Vol	4165.449
Cum Fill Vol	445.2
Net Vol	3720.2



Total Volume at Station 54+50.00	
Cut Area	16.736
Fill Area	0.000
Cut Vol	33.073
Fill Vol	0.0
Cum Cut Vol	4338.672
Cum Fill Vol	446.3
Net Vol	3892.4

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	TBD
PROJECT FILE NO.		613319	

Figure 10 is a cross-section diagram of a proposed road and wetlands. The diagram shows a road with a 15% grade, a 4:1 slope, and a 2:1 slope. The road is flanked by wetlands. The elevation of the road surface is 136.23, and the elevation of the wetlands is 135.5. The road is labeled "58+00" and "RR". The wetlands are labeled "WETLANDS".

Profile view of the proposed road section. The vertical axis shows elevation in feet (128 to 148) and meters (12 to 14). The horizontal axis shows stationing from -36 to 36. The profile includes a 4:0.1 grade on the left, a 1.5% grade in the center, and a 4:0.1 grade on the right. Key elevations and offsets are marked: 137.259 (ELLV), 137.439 (ELLV), 135.9 (vertical curve start), and 137.35 (vertical curve end). The centerline is labeled 'PR'.

Diagram illustrating the cross-section of a road at station 62+00. The road width is 13.0m, and the centerline elevation is 137.55m. The road is flanked by 15% slopes. The left shoulder width is 4.0m, and the right shoulder width is 4.0m. The road is flanked by 15% slopes. The centerline is at station 62+00. The diagram shows the road cross-section with dimensions and elevations.

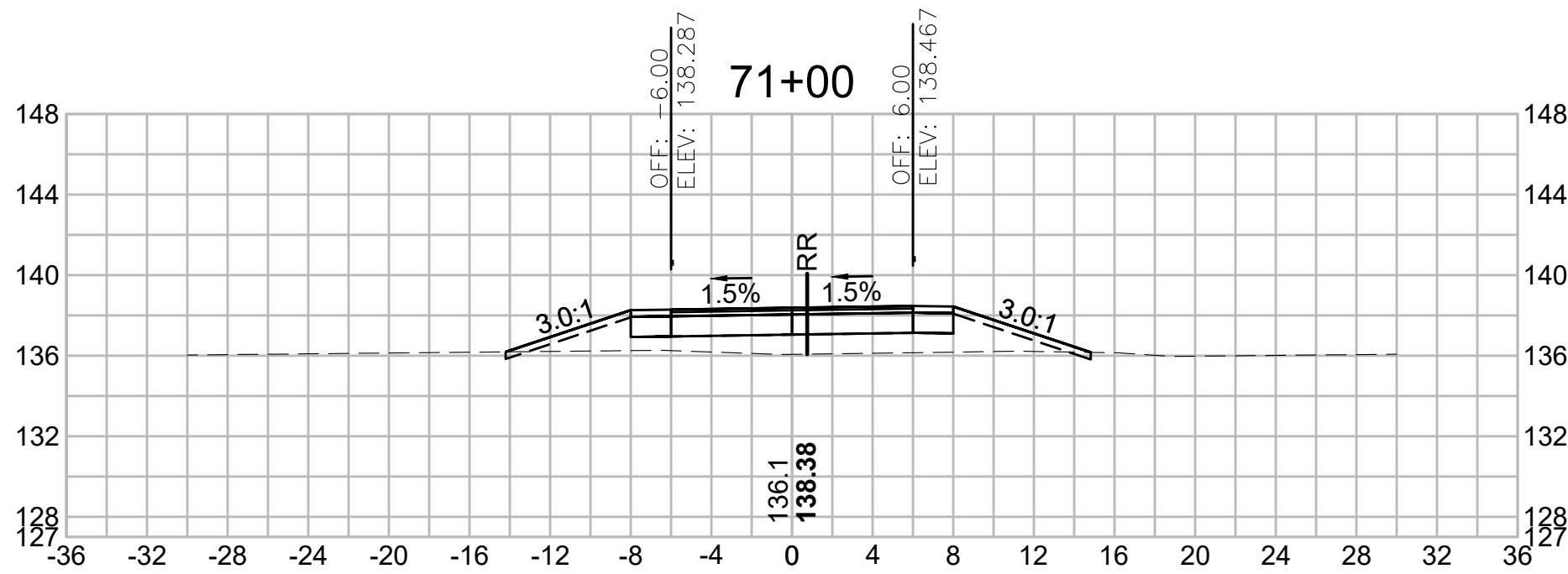
[illegible]

Total Volume at Station 59+50.00	
Cut Area	0.365
Fill Area	15.348
Cut Vol	0.790
Fill Vol	18.6
Cum Cut Vol	4520.974
Cum Fill Vol	493.2
Net Vol	4027.8

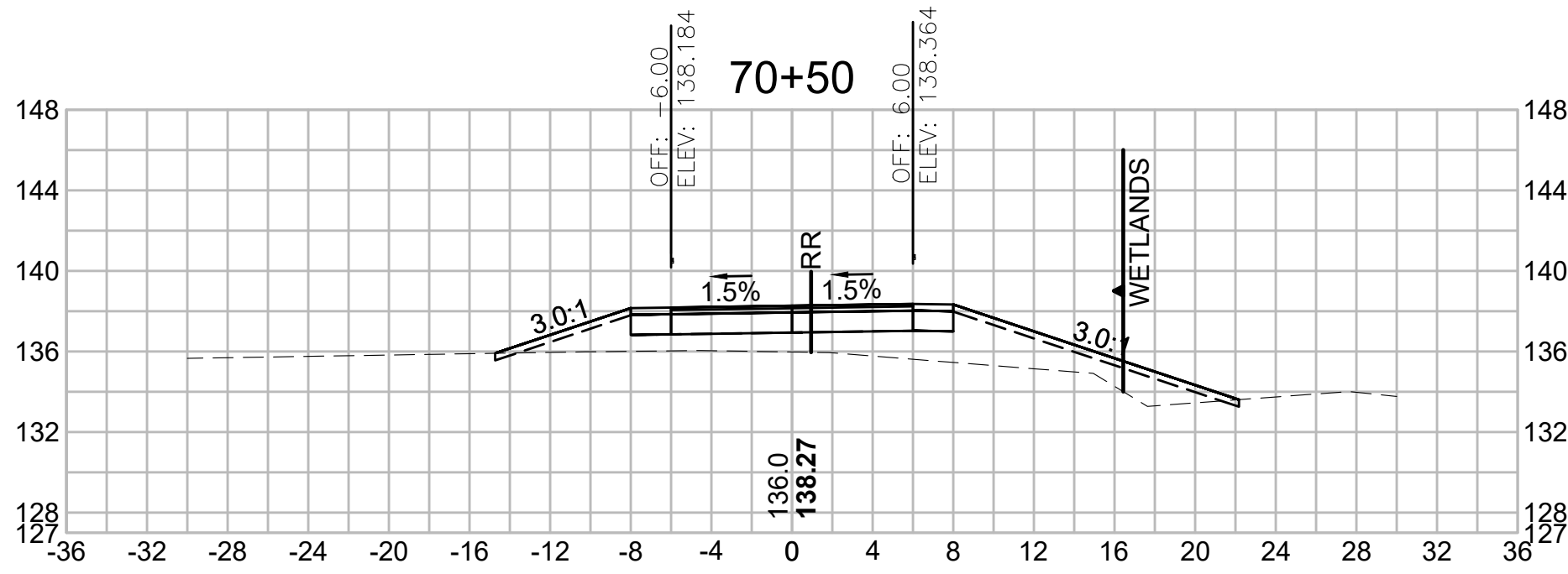
SUDBURY/FRAMINGHAM
BRUCE FREEMAN RAIL TRAIL PHASE 3

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	TBD
PROJECT FILE NO.		613319	

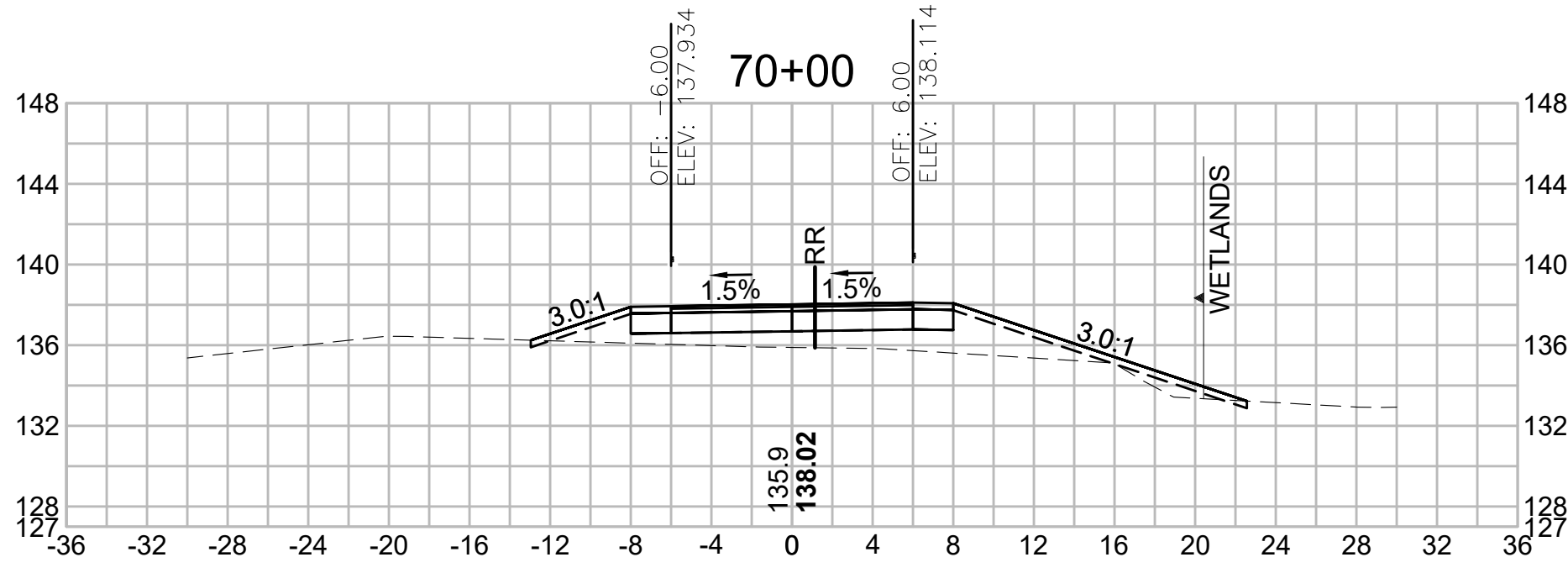
CROSS SECTIONS



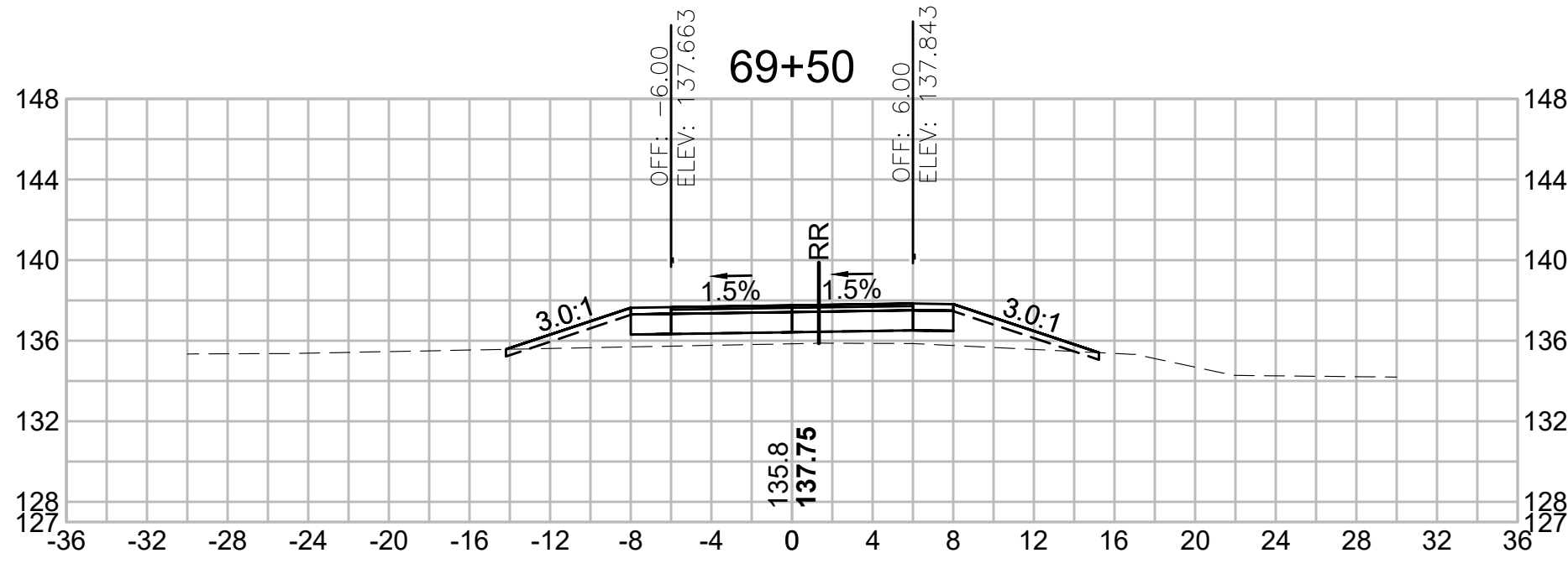
Total Volume at Station 71+00.00	
Cut Area	0.386
Fill Area	23.862
Cut Vol	0.679
Fill Vol	58.1
Cum Cut Vol	4877.480
Cum Fill Vol	775.5
Net Vol	4102.0



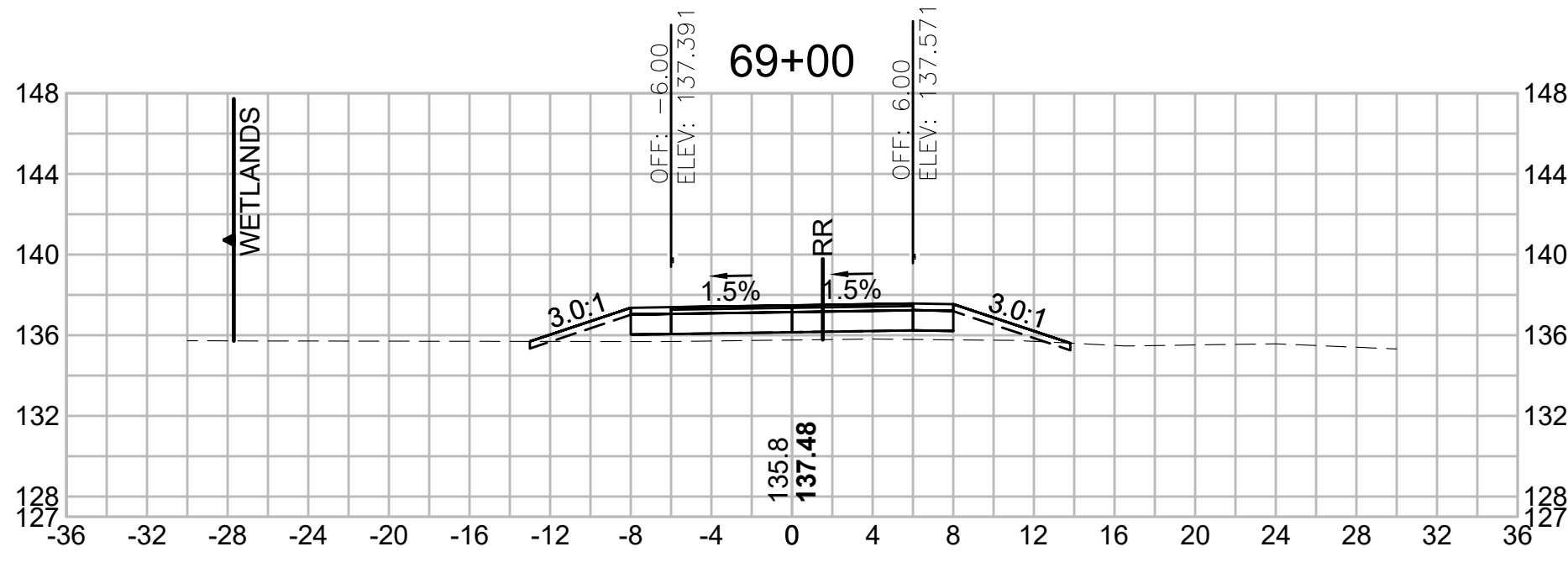
Total Volume at Station 70+50.00	
Cut Area	0.346
Fill Area	38.923
Cut Vol	0.687
Fill Vol	59.9
Cum Cut Vol	4876.801
Cum Fill Vol	717.4
Net Vol	4159.4



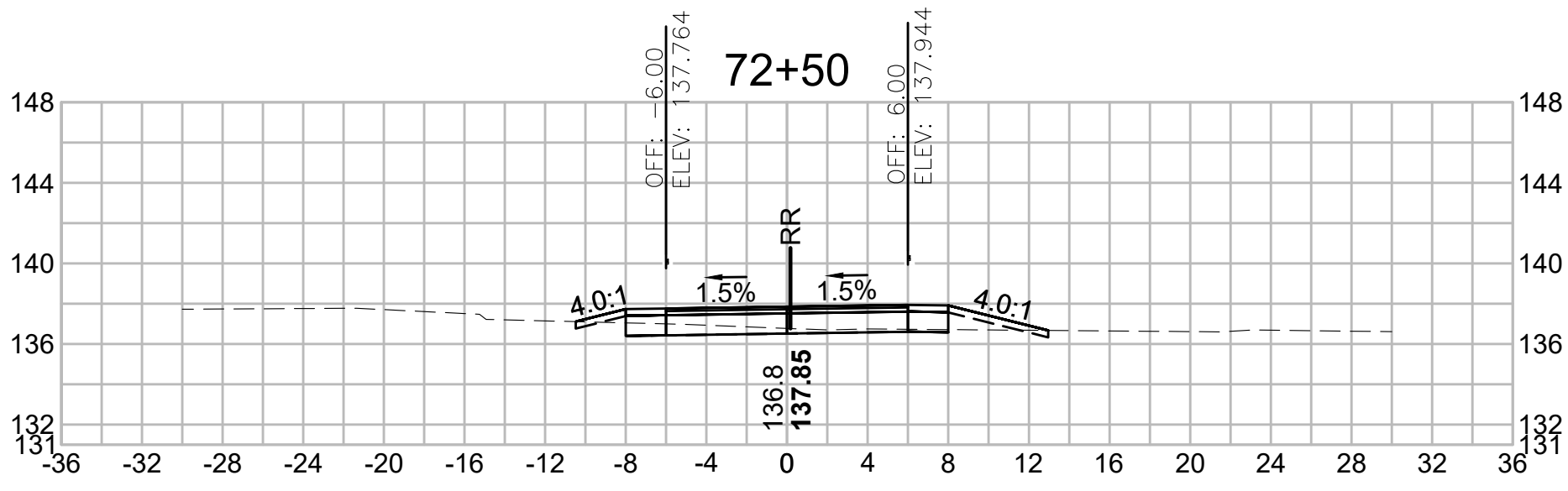
Total Volume at Station 70+00.00	
Cut Area	0.395
Fill Area	25.733
Cut Vol	0.750
Fill Vol	41.3
Cum Cut Vol	4876.115
Cum Fill Vol	657.5
Net Vol	4218.6



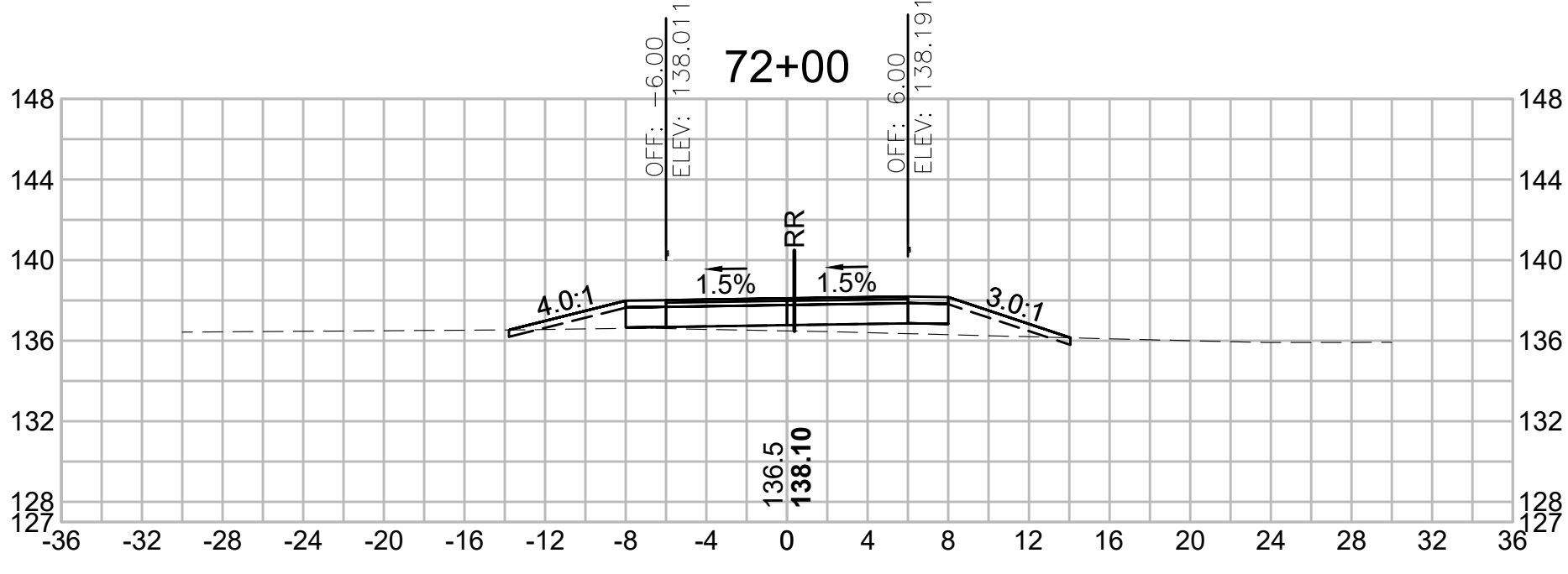
Total Volume at Station 69+50.00	
Cut Area	0.414
Fill Area	18.873
Cut Vol	0.756
Fill Vol	28.7
Cum Cut Vol	4875.366
Cum Fill Vol	616.2
Net Vol	4259.2



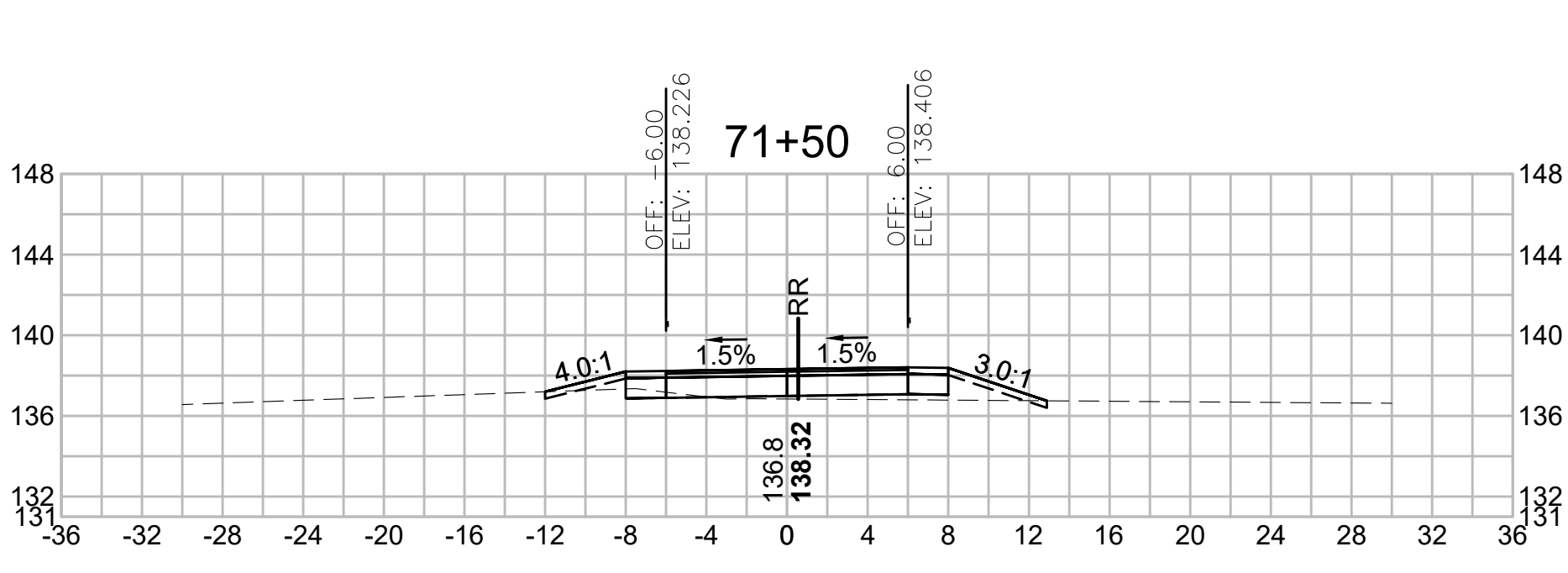
Total Volume at Station 69+00.00	
Cut Area	0.403
Fill Area	12.090
Cut Vol	0.806
Fill Vol	17.5
Cum Cut Vol	4874.610
Cum Fill Vol	587.5
Net Vol	4287.1



Total Volume at Station 72+50.00	
Cut Area	5.445
Fill Area	1.717
Cut Vol	5.455
Fill Vol	11.4
Cum Cut Vol	4886.591
Cum Fill Vol	828.4
Net Vol	4058.2



Total Volume at Station 72+00.00	
Cut Area	0.446
Fill Area	10.560
Cut Vol	1.857
Fill Vol	14.6
Cum Cut Vol	4881.137
Cum Fill Vol	817.0
Net Vol	4064.1



Total Volume at Station 71+50.00	
Cut Area	1.559
Fill Area	5.210
Cut Vol	1.801
Fill Vol	26.9
Cum Cut Vol	4879.281
Cum Fill Vol	802.4
Net Vol	4076.9