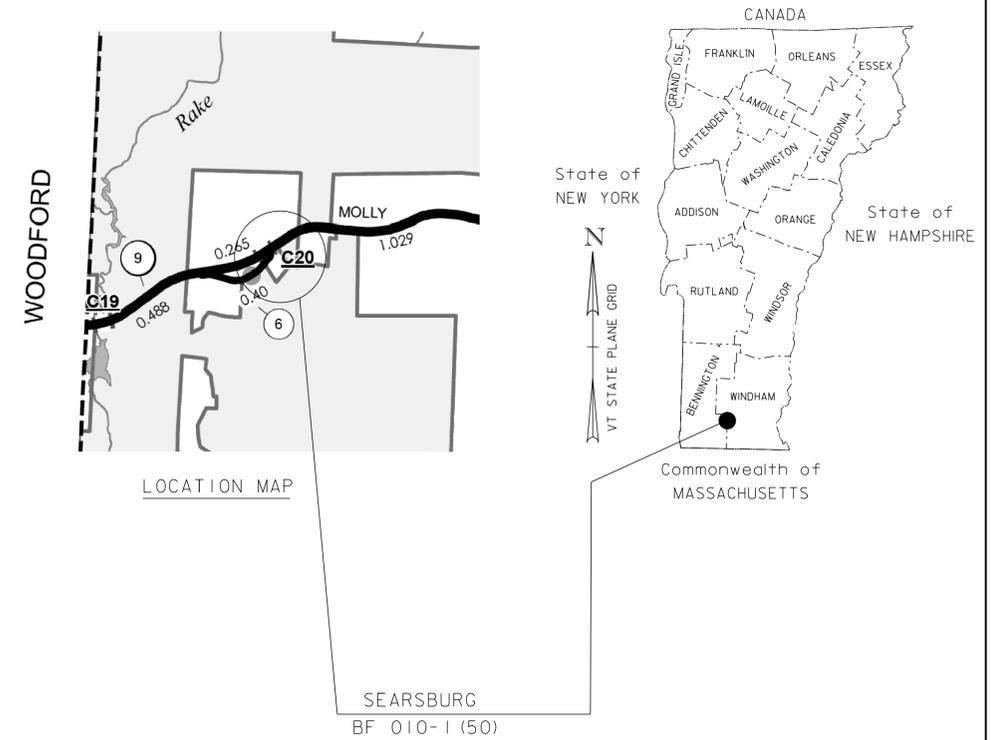


# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF SEARSBURG  
COUNTY OF BENNINGTON

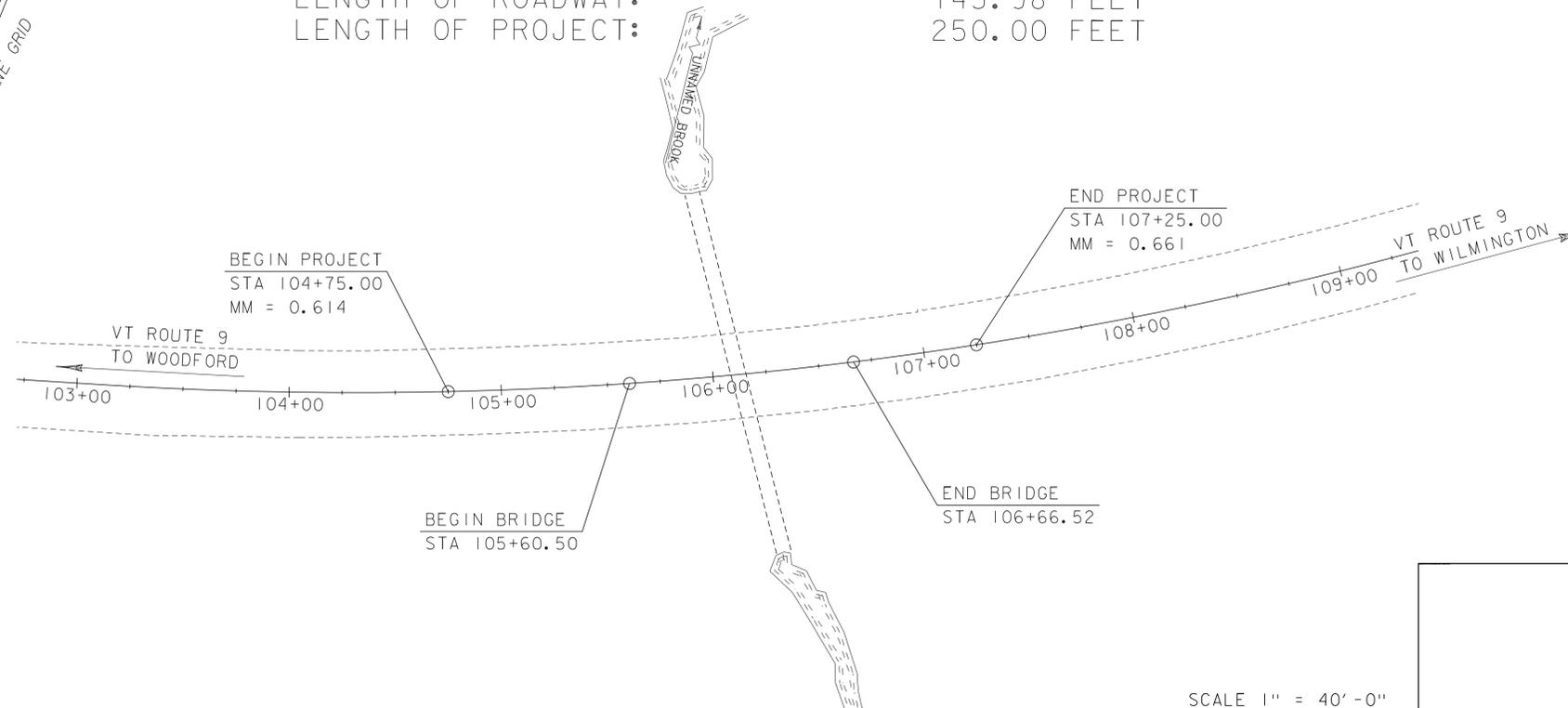
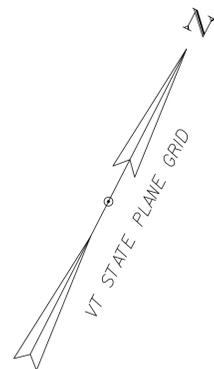


ROUTE NO : VT ROUTE 9 , RURAL PRINCIPAL ARTERIAL , BRIDGE NO : 20

PROJECT LOCATION: APPROXIMATELY 1.208 MILES WEST OF THE INTERSECTION WITH VT ROUTE 8 AND EXTENDING EASTERLY APPROXIMATELY 0.047 MILE.

PROJECT DESCRIPTION: REPLACEMENT OF EXISTING CULVERT WITH A SINGLE SPAN STRUCTURE WITH RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 106.02 FEET  
 LENGTH OF ROADWAY: 143.98 FEET  
 LENGTH OF PROJECT: 250.00 FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

**FINAL PLANS  
17-SEP-2020**

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	VTRANS
SURVEYED DATE :	07/08/2014
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAVD83 (2011)

SCALE 1" = 40' - 0"



GM2 Associates, Inc.  
 197 Loudon Road, Suite 310  
 Concord, NH 03301  
 Tel: 603-856-7854  
 Fax: 603-856-7855

HIGHWAY DIVISION, CHIEF ENGINEER	
APPROVED _____	DATE _____
PROJECT MANAGER : N. WARK	
PROJECT NAME :	SEARSBURG
PROJECT NUMBER :	BF 010-1 (50)
SHEET 1	OF 49 SHEETS

# PRELIMINARY INFORMATION SHEET (BRIDGE)

## INDEX OF SHEETS

## FINAL HYDRAULIC REPORT

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8	PROJECT NOTES
9	TIE SHEET
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13	CHANNEL PROFILE
14	BORING INFORMATION SHEET
15-18	BORING LOGS
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26	DECK REINFORCING SECTION
27	FRAMING PLAN & DETAILS
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36-39	VT ROUTE 9 CROSS SECTIONS
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44	EPSC NARRATIVE
45	EXISTING CONSTRUCTION SITE PLAN 1
46	EXISTING CONSTRUCTION SITE PLAN 2
47	EPSC FINAL SITE PLAN
48-49	EPSC DETAILS

### STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	6/1/1994
E-193	PAVEMENT MARKING DETAILS	8/18/1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	3/10/2017
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11/15/2002
S-361A	BRIDGE RAILING, GALVANIZED NETC 3 RAIL BOX BEAM	TBD
S-361B	BRIDGE RAILING, GALVANIZED NETC 3 RAIL BOX BEAM	TBD
S-361C	GUARDRAIL APPROACH SECTION, GALVANIZED NETC 3 RAIL BOX BEAM	TBD
T-1	TRAFFIC CONTROL GENERAL NOTES	4/25/2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	8/6/2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	8/6/2012
T-28	CONSTRUCTION SIGN DETAILS	8/6/2012
T-29	CONSTRUCTION SIGN DETAILS	8/6/2012
T-30	CONSTRUCTION SIGN DETAILS	8/6/2012
T-31	CONSTRUCTION SIGN DETAILS	8/6/2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	8/6/2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	8/6/2012
T-40	DELINEATORS AND MILEPOSTS	1/2/2013
T-42	BRIDGE NUMBER PLAQUE	4/9/2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	1/2/2013

### STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	8/29/2011
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/2/2011

### HIGHWAY SAFETY AND DESIGN DETAIL

HSD-213.01	MILLED RUMBLE STRIPS (SHOULDER)	2/27/2017
HSD-213.02	MILLED RUMBLE STRIPS (CENTERLINE)	9/28/2017
HSD-400.01	SAFETY EDGE DETAIL	1/5/2018
HSD-621.01	POST AND BLOCKOUT DETAILS FOR STEEL BEAM GUARDRAIL, GALVANIZED	6/9/2015
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAILS	2/27/2017
HSD-621.07A	MIDWEST GUARDRAIL SYSTEM (MDS)	4/17/2019
HSD-621.07B	W-BEAM GUARDRAIL COMPONENTS	4/17/2019
HSD-621.07C	MIDWEST GUARDRAIL SYSTEM (MDS) ANCHOR	4/17/2019
HSD-621.07D	MIDWEST GUARDRAIL SYSTEM (MDS) ANCHOR COMPONENTS	4/17/2019
HSD-621.07E	MIDWEST GUARDRAIL SYSTEM (MDS) ANCHOR COMPONENTS	4/17/2019

### HYDROLOGIC DATA

Date: May, 2019

DRAINAGE AREA : 0.46 sq. mi.  
 CHARACTER OF TERRAIN : Forested with close proximity wetlands  
 STREAM CHARACTERISTICS : Sinuous stream corridor with accessible floodplains  
 NATURE OF STREAMBED : Silt, sand, gravel and cobbles

### PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	36 cfs	2% =	120 cfs
10% =	71 cfs	1% =	150 cfs
4% =	98 cfs	0.2% =	220 cfs

DATE OF FLOOD OF RECORD : Unknown  
 ESTIMATED DISCHARGE : Unknown  
 WATER SURFACE ELEV. : Unknown  
 NATURAL STREAM VELOCITY : @ 2% AEP = 4.7 fps\*  
 ICE CONDITIONS : Low  
 DEBRIS : Moderate - beaver activity upstream  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? : No  
 IS ORDINARY RISE RAPID? : No  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? : Yes  
 IF YES, DESCRIBE : Close proximity storage upstream will produce a shallower, more elongated hydrograph with relatively gradual stage changes.

WATERSHED STORAGE : 3% HEADWATERS :  
 UNIFORM :  
 IMMEDIATELY ABOVE SITE : X

### EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : CGMPP with mitered ends  
 YEAR BUILT : 1965  
 CLEAR SPAN(NORMAL TO STREAM) : 7 ft.  
 VERTICAL CLEARANCE ABOVE STREAMBED : 7 ft.  
 WATERWAY OF FULL OPENING : 38 sq. ft.  
 DISPOSITION OF STRUCTURE : Remove and replace  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : See borings

### WATER SURFACE ELEVATIONS AT:

43% AEP =	2231.4 ft.	VELOCITY =	6.3 fps**
10% AEP =	2232.4 ft.	"	7.7 fps
4% AEP =	2233.0 ft.	"	8.4 fps
2% AEP =	2233.5 ft.	"	8.9 fps
1% AEP =	2234.1 ft.	"	9.5 fps

LONG TERM STREAMBED CHANGES : The wetland complex beginning 0.12 miles upstream of this crossing appears to be gradually decreasing in size since the 1990s.

IS THE ROADWAY OVERTOPPED BELOW 1% AEP : No  
 FREQUENCY :  
 RELIEF ELEVATION : 2257.2 ft.  
 DISCHARGE OVER ROAD @ 1% AEP : -

### UPSTREAM STRUCTURE

TOWN : Searsburg DISTANCE : 0.05 mi.  
 HIGHWAY # : TH-6 STRUCTURE # :  
 CLEAR SPAN : 7 ft. CLEAR HEIGHT : 8 ft.  
 YEAR BUILT : Unknown FULL WATERWAY : 56 sq. ft.  
 STRUCTURE TYPE : Concrete Box

### DOWNSTREAM STRUCTURE

TOWN : Searsburg DISTANCE : 0.75 mi.  
 HIGHWAY # : STRUCTURE # :  
 CLEAR SPAN : CLEAR HEIGHT :  
 YEAR BUILT : FULL WATERWAY :  
 STRUCTURE TYPE : Confluence - Rake Branch

### LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	2.43	1.39					
POSTING							
OPERATING	3.15	1.8	2.23	1.41	2.18	1.93	1.97
COMMENTS:							

### AS BUILT "REBAR" DETAIL

LEVEL I			LEVEL II			LEVEL III		
TYPE:			TYPE:			TYPE:		
GRADE:			GRADE:			GRADE:		

### PROPOSED STRUCTURE

STRUCTURE TYPE : Single Span Structure  
 CLEAR SPAN(NORMAL TO STREAM) : 91.6 ft.  
 VERTICAL CLEARANCE ABOVE STREAMBED : 29.6 ft\*\*\*  
 WATERWAY OF FULL OPENING : 1720 sq. ft.

### WATER SURFACE ELEVATIONS AT:

43% AEP =	2230.1 ft.	VELOCITY =	4.8 fps**
10% AEP =	2230.4 ft.	"	5.8 fps
4% AEP =	2230.7 ft.	"	6.2 fps
2% AEP =	2230.8 ft.	"	6.6 fps
1% AEP =	2231.0 ft.	"	6.8 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP : No  
 FREQUENCY :  
 RELIEF ELEVATION : 2257.9 ft.  
 DISCHARGE OVER ROAD @ 1% AEP : -

BRIDGE LOW CHORD ELEVATION : 2252.9 ft.  
 FREEBOARD : @ 2% AEP = 22.1 ft.

SCOUR : @ 1% AEP = 0.0 ft. of contraction scour

REQUIRED CHANNEL PROTECTION : Stone Fill, Type II, E-stone, Type II

### PERMIT INFORMATION

AVERAGE DAILY FLOW : - DEPTH OR ELEVATION :  
 ORDINARY LOW WATER : -  
 ORDINARY HIGH WATER : -

### TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : -  
 CLEAR SPAN (NORMAL TO STREAM) : -  
 VERTICAL CLEARANCE ABOVE STREAMBED : -  
 WATERWAY AREA OF FULL OPENING : -

### ADDITIONAL INFORMATION

\* - Largest velocity observed near the crossing, in a model with the structure removed.  
 \*\* - Velocities are reported about the respective structure outlet.  
 \*\*\* - Reported value is an average. Actual vertical clearance varies.

### TRAFFIC MAINTENANCE NOTES

- PHASED CONSTRUCTION: MAINTAIN TWO-WAY TRAFFIC ON EXISTING/PROPOSED STRUCTURE
- TRAFFIC SIGNALS ARE NOT NECESSARY.
- SIDEWALKS ARE NOT NECESSARY

### DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d <sub>p</sub> : 2.5 INCH
3. DESIGN SPAN	L: 103.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f <sub>y</sub> : ---
6. PRESTRESSED CONCRETE STRENGTH	f' <sub>c</sub> : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' <sub>cr</sub> : ---
8. CONCRETE, HIGH PERFORMANCE CLASS PCS	f' <sub>c</sub> : 4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS PCD	f' <sub>c</sub> : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' <sub>c</sub> : 3.5 KSI
11. CONCRETE, CLASS C	f' <sub>c</sub> : 3.0 KSI
12. REINFORCING STEEL	f <sub>y</sub> : 60 KSI
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)	f <sub>y</sub> : 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	q <sub>n</sub> : --- KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
16. NOMINAL BEARING RESISTANCE OF ROCK	q <sub>n</sub> : --- KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
18. PILE RESISTANCE FACTOR	φ: 0.65
19. LATERAL PILE DEFLECTION	Δ: 0.25 INCH
20. BASIC WIND SPEED	V <sub>3s</sub> : ---
21. MINIMUM GROUND SNOW LOAD	p <sub>g</sub> : ---
22. SEISMIC DATA	PGA: 0.65 S <sub>s</sub> : --- S <sub>1</sub> : ---
23.	---
24.	---
25.	---
26.	---

PROJECT NAME : SEARSBURG  
 PROJECT NUMBER : BF 010-I(50)

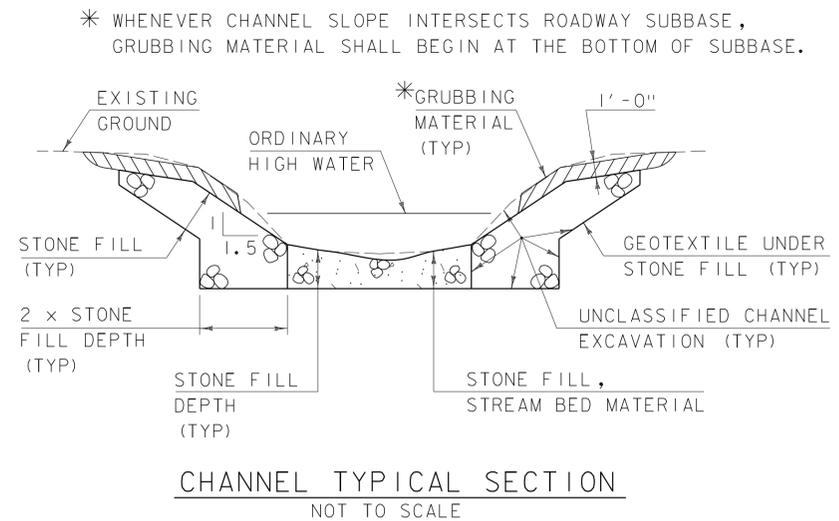
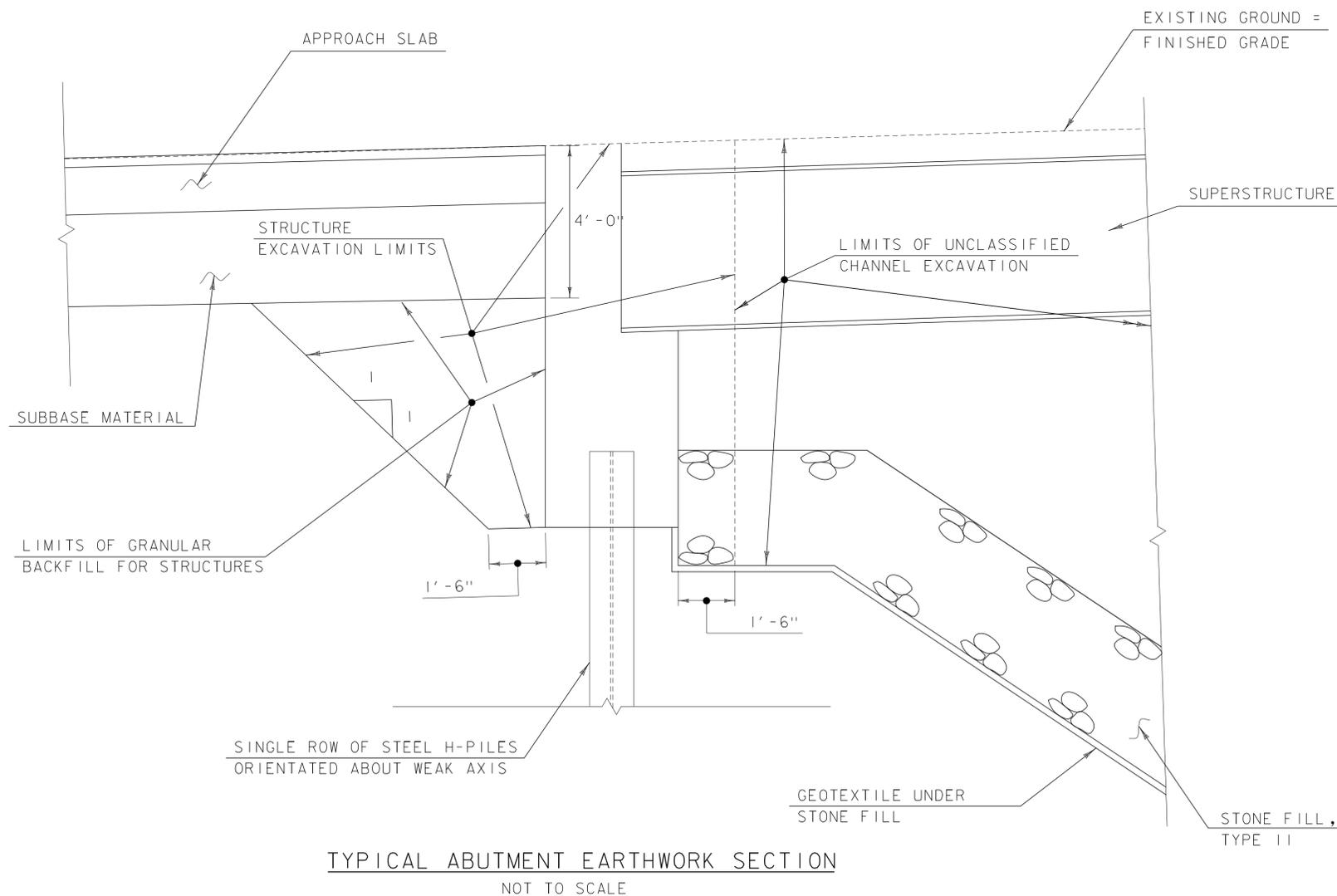
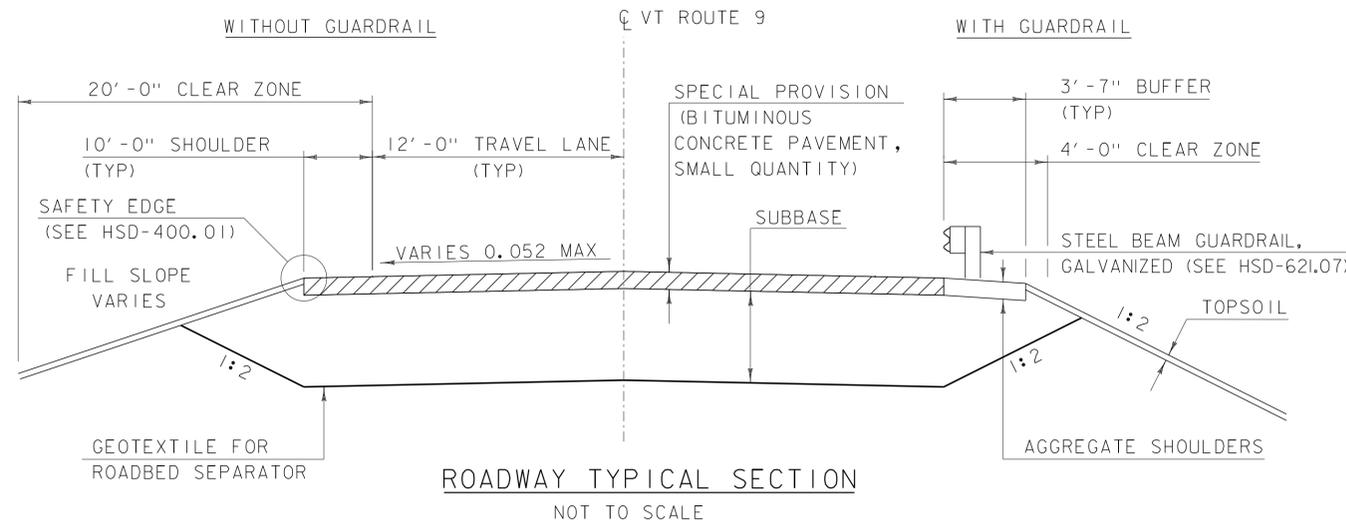
FILE NAME : z13b332p1.dgn PLOT DATE : 9/17/2020  
 PROJECT LEADER : T. LEVINS DRAWN BY : T. MANNING  
 DESIGNED BY : T. MANNING CHECKED BY : T. LEVINS  
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 49



MATERIAL INFORMATION

	THICKNESS	TYPE
WEARING COURSE	1 1/2"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IVS)
BINDER COURSE	1 1/2"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IVS)
BASE COURSE #2	2 1/2"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IIS)
BASE COURSE #1	2 1/2"	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY) (TYPE IIS)
EMULSIFIED ASPHALT	---	STANDARD SPECIFICATIONS 406.12A
AGGREGATE SHOULDERS	6"	
SUBBASE	39"	SUBBASE OF DENSE GRADED CRUSHED STONE
STONE FILL	2'-0"	TYPE II
TOPSOIL	4"	TOPSOIL
STONE FILL, STREAM BED MATERIAL	2'-0"	E-STONE, TYPE II

SEE VT-9 MATERIAL TRANSITION DETAIL ON SHEET 39.

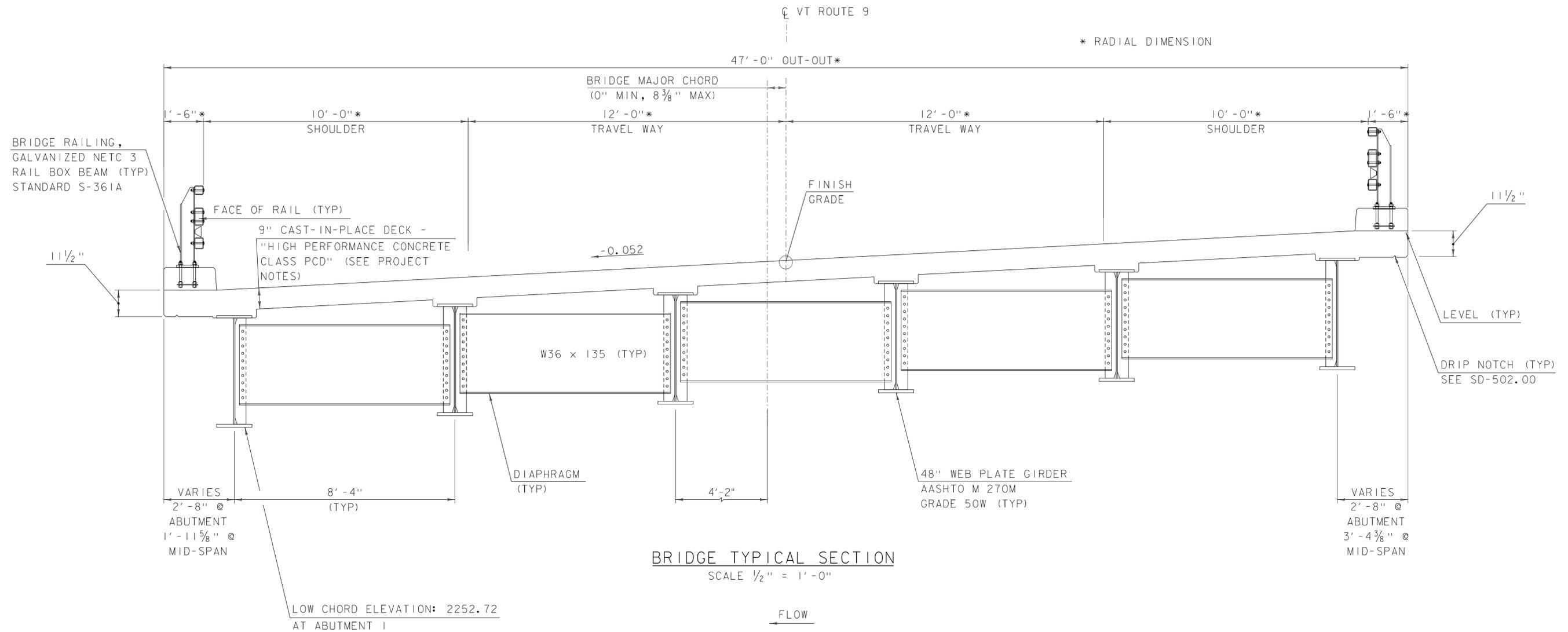


PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)



FILE NAME: z13b332typ.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: J. MERCER/T. MANNING  
TYPICAL SECTIONS I

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 3 OF 49



PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332typ_bridge.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-I(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	T. MANNING
		DESIGNED BY:	T. MANNING	CHECKED BY:	T. LEVINS
		TYPICAL SECTIONS 2		SHEET	4 OF 49



# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
							1370				1370		CY	COMMON EXCAVATION	203.15				
									9600		9600		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
							170				170		CY	EARTH BORROW	203.30				
							10				10		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
									640		640		CY	STRUCTURE EXCAVATION	204.25				
									145		145		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
							4035				4035		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.10				
							2800				2800		LF	MILLED RUMBLE STRIPS	213.10				
							1140				1140		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
							140				140		TON	AGGREGATE SHOULDERS	402.12				
							25				25		CWT	EMULSIFIED ASPHALT	404.65				
							1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
									286		286		CY	HIGH PERFORMANCE CONCRETE, CLASS PCD	501.37				
									143		143		CY	HIGH PERFORMANCE CONCRETE, CLASS PCS	501.38				
									1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10				
									564		564		LF	STEEL PILING, HP 14 X 102	505.19				
									2		2		EACH	DYNAMIC PILE LOADING TEST	505.45				
									171120		171120		LB	STRUCTURAL STEEL, PLATE GIRDER	506.55				
									15110		15110		LB	REINFORCING STEEL, LEVEL I (EPOXY COATED)	507.11				
									23540		23540		LB	REINFORCING STEEL, LEVEL III	507.13				
									1		1		LS	SHEAR CONNECTORS (1716 - 7/8" x 8")	508.15				
									510		510		SY	LONGITUDINAL DECK GROOVING	509.10				
									45		45		GAL	WATER REPELLENT, SILANE	514.10				
									88		88		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									88		88		LF	JOINT SEALER, HOT POURED	524.11				
									216		216		LF	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	525.335				
									1		1		EACH	REMOVAL OF STRUCTURE (84" DIA. X 174' LONG CMP)	529.15				
									310		310		CY	STONE FILL, STREAM BED MATERIAL (E-STONE, TYPE II)	613.06				
									890		890		CY	STONE FILL, TYPE III	613.12				
									130		130		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
							800				800		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20				
							2				2		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
									4		4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	621.725				
							1210				1210		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
							1220				1220		LF	TEMPORARY TRAFFIC BARRIER	621.90				
							600				600		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
							1400				1400		HR	FLAGGERS	630.15				
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				

PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-I(50)  
 FILE NAME: z13b332qs.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: B. WILLIAMS  
 QUANTITY SHEET 1

PLOT DATE: 9/17/2020  
 DRAWN BY: B. WILLIAMS  
 CHECKED BY: T. LEVINS  
 SHEET 5 OF 49



# QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
										1500	1500		DL	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	631.26				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
							1				1		LS	TRAFFIC CONTROL	641.10				
							2				2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
							2150				2150		LF	4 INCH WHITE LINE, WATERBORNE PAINT	646.201				
							2150				2150		LF	4 INCH YELLOW LINE, WATERBORNE PAINT	646.2111				
								952			952		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11				
									1490		1490		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								40			40		LB	SEED	651.15				
								40			40		LB	SEED, WINTER RYE	651.17				
								330			330		LB	FERTILIZER	651.18				
								2			2		TON	AGRICULTURAL LIMESTONE	651.20				
								60			60		CY	TOPSOIL	651.35				
							1810				1810		SY	GRUBBING MATERIAL (12")	651.40				
								1			1		LS	EPSC PLAN	653.01				
								260			260		HR	MONITORING EPSC PLAN	653.02				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	653.03				
								2			2		TON	HAY MULCH	653.10				
								2920			2920		SY	ROLLED EROSION CONTROL PRODUCT, TYPE II	653.21				
								89			89		CY	STABILIZED CONSTRUCTION ENTRANCE	653.35				
								2			2		EACH	FILTER BAG	653.45				
								900			900		LF	SILT FENCE, TYPE I	653.475				
								800			800		LF	BARRIER FENCE	653.50				
							1				1		SF	TRAFFIC SIGN, TYPE A	675.20				
							16				16		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
							1				1		EACH	DELINEATOR WITH STEEL POST	676.10				
							1				1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
									43346		43346		LF	SPECIAL PROVISION (REINFORCING BAR, GFRP)(#6)	900.640				
								1			1		LS	SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)	900.645				
							1				1		LS	SPECIAL PROVISION (TEMPORARY ROADWAY)	900.645				
							1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)	900.650				
							1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
									4560		4560		SF	SPECIAL PROVISION (CONCRETE BRIDGE DECK SURFACE PREPARATION)	900.670				
							870				870		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)



FILE NAME: z13b332qs.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: B. WILLIAMS  
QUANTITY SHEET 2

PLOT DATE: 9/17/2020  
DRAWN BY: B. WILLIAMS  
CHECKED BY: T. LEVINS  
SHEET 6 OF 49



GENERAL

1. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2017, AND ITS LATEST REVISIONS.
2. THE BRIDGE WAS DESIGNED FOR THE HL-93 LIVE LOAD.
3. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL AND VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
4. ANY REQUIRED SAWCUT OF EXISTING PAVEMENT SHALL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

EARTHWORK AND RELATED ITEMS

5. THE "STONE FILL, TYPE 11", "GRUBBING MATERIAL" AND "STONE FILL, STREAM BED MATERIAL (E-STONE, TYPE 11)" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.
6. BOTH ABUTMENTS SHALL BE BACKFILLED SIMULTANEOUSLY. NO MORE THAN TWO (2) FEET OF DIFFERENTIAL BACKFILL HEIGHT SHALL BE PERMITTED. BACKFILLING ABOVE THE CONSTRUCTION JOINT SHALL NOT BEGIN UNTIL THE ABUTMENT AND DECK CONSTRUCTION IS COMPLETE.

H-PILES

7. TO ENSURE THAT THE NOMINAL CAPACITY HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE UNIT, FOR A TOTAL OF 2 TESTS. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. ADDITIONAL TEST REQUIRED BY THE ENGINEER WILL BE PAID FOR AT THE UNIT PRICE BID FOR CONTRACT ITEM 505.45.
8. THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE (RNDR) OF 656 KIPS, AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AND AS INTERPRETED BY THE RESIDENT ENGINEER. HOWEVER, THE PILES SHALL BE DRIVEN TO A MINIMUM DEPTH OF 40 FEET BELOW THE BOTTOM OF THE PILE CAP ON ABUTMENT #1 AND 50 FEET BELOW THE BOTTOM OF THE PILE CAP ON ABUTMENT #2.
9. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED TO BE AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTH MAY VARY.

CONCRETE

10. CONCRETE USED FOR DECK AND END DIAPHRAGMS SHALL BE HIGH PERFORMANCE CONCRETE CLASS PC4 AND WILL BE PAID UNDER CONTRACT ITEM 501.37. CONCRETE USED FOR PILE CAP AND APPROACH SLABS SHALL BE HIGH PERFORMANCE CONCRETE CLASS PC5 AND WILL BE PAID UNDER CONTRACT ITEM 501.38.
11. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
12. ALL REINFORCING IN THE INTERIOR DECK AND LONGITUDINAL REINFORCING IN THE DECK OVERHANGS SHALL BE GFRP. ALL TRANSVERSE REINFORCING STEEL IN THE DECK OVERHANGS AND ALL REINFORCING STEEL IN THE END DIAPHRAGMS SHALL BE LEVEL III - STAINLESS STEEL. REINFORCEMENT IN THE PILE CAP AND APPROACH SLABS SHALL BE LEVEL I. LEVEL I EPOXY COATED REINFORCEMENT IS DESIGNATED BY AN "E" IN THE BAR MARK PREFIX.
13. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING INSTITUTE".
14. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:  

ALONG BACKFACES OF WALLS AGAINST EARTH: 2.0 INCH  
ALONG TOP SURFACE OF DECK SLAB: 2.0 INCH  
ALONG BOTTOM SURFACE OF DECK SLAB: 1.5 INCH  
ELSEWHERE UNLESS OTHERWISE INDICATED: 3.0 INCH
15. THE DECK SHALL BE CAST TO AN INITIAL THICKNESS OF 9.5 INCHES. AFTER THE DECK HAS CURED AND THE BRIDGE RAIL IS INSTALLED, THE ENTIRE BRIDGE DECK SURFACE SHALL BE DIAMOND GROUND A NOMINAL 0.5 INCH FOR A RESULTING DECK THICKNESS OF 9 INCHES. PAYMENT WILL BE MADE UNDER ITEM 900.670, "SPECIAL PROVISION (CONCRETE BRIDGE DECK SURFACE PREPARATION)".



PROJECT NAME: SEARSBURG	PLOT DATE: 9/17/2020
PROJECT NUMBER: BF 010-1(50)	DRAWN BY: T. MANNING
FILE NAME: z13b332notes.dgn	CHECKED BY: T. LEVINS
PROJECT LEADER: T. LEVINS	SHEET 8 OF 49
DESIGNED BY: T. MANNING	
PROJECT NOTES	

GPS CONTROL POINTS

HVCTRL #1  
 B95032  
 NORTH = 142309.5030  
 EAST = 1502198.7350  
 ELEV. = 2226.510

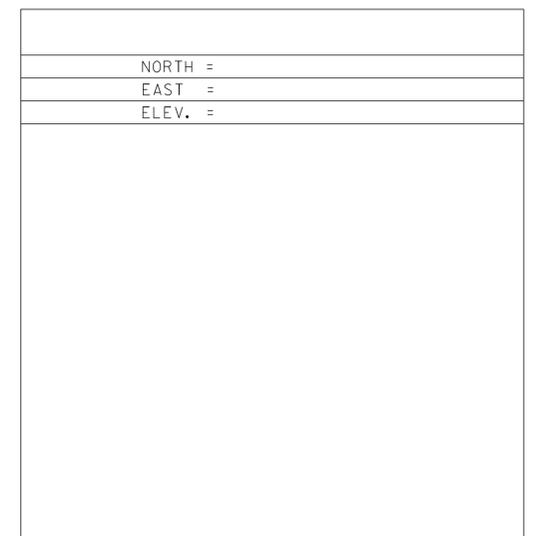
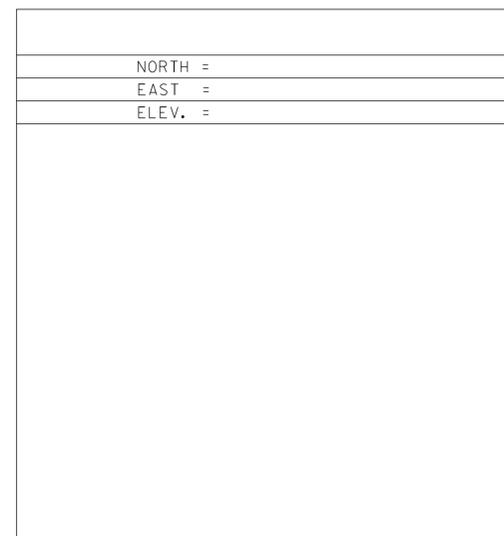
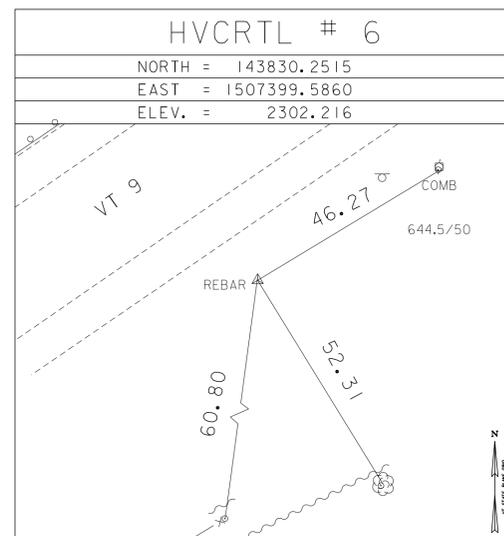
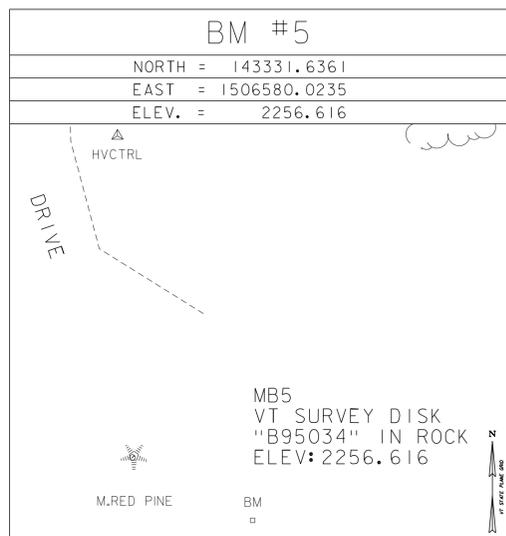
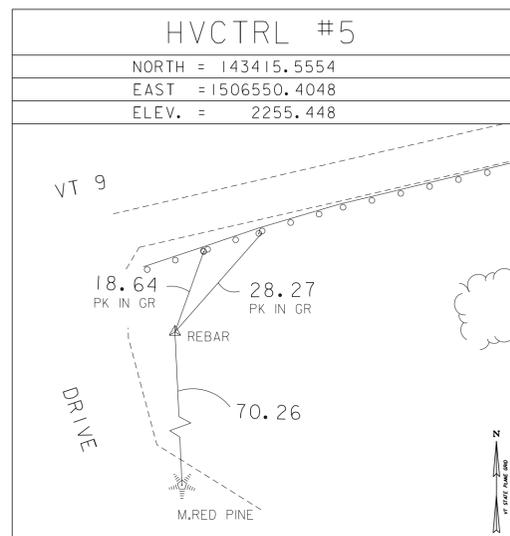
WOODFORD, VT., ABOUT 9.5 MI (15.3 KM) EAST OF BENNINGTON, VT., ABOUT 7.5 MI (12.1 KM) WEST OF WILMINGTON, AND ABOUT 10.5 MI (16.9 KM) NORTH OF THE MASSACHUSETTS/VERMONT STATE LINE. TO REACH FROM THE INTERSECTION OF VT ROUTES 9 AND 8 IN SEARSBURG GO WEST ALONG VT ROUTE 9 FOR 2.1 MI (3.4 KM) TO THE MARK ON THE RIGHT ON THE WEST EDGE OF A GRASSY DRIVE, SOUTHEAST OF A 1.5 STORY WOOD FRAME HOUSE WITH ATTACHED GARAGE. THE MARK IS SET 4 CM (2 INCHES) BELOW GROUND SURFACE IN THE TOP OF A 30 CM (12 INCH) DIAMETER CONCRETE MONUMENT. IT IS 10.7 M (35.1 FT) NORTH OF AND ABOUT 0.5 M (1.6 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 9, 24.7 M (81.0 FT) SOUTHEAST OF POLE NO 354/664, 36.1 M (118.4 FT) WEST OF POLE NO 242/663, 30.9 M (101.4 FT) SOUTH OF THE SOUTHEAST CORNER OF HOUSE NO 9271 AND 7.2 M (23.6 FT) WEST OF THE CENTERLINE OF THE MOST EASTERLY ENTRANCE TO A CIRCULAR GRAVEL DRIVE.

HVCTRL #2  
 B95033  
 NORTH = 142547.4130  
 EAST = 1504504.3000  
 ELEV. = 2162.420

SEARSBURG, VT., ABOUT 10 MI (16.1 KM) EAST OF BENNINGTON, VT., ABOUT 7 MI (11.3 KM) WEST OF WILMINGTON, AND ABOUT 10.5 MI (16.9 KM) NORTH OF THE MASSACHUSETTS/VERMONT STATE LINE. TO REACH FROM THE INTERSECTION OF VT ROUTES 9 AND 8 IN SEARSBURG GO WEST ALONG VT ROUTE 9 FOR 1.6 MI (2.6 KM) TO THE MARK ON THE LEFT AT THE INTERSECTION OF THE EAST END OF AN OLD ROAD GRADE. THE MARK IS SET 2 CM BELOW GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT Poured TO A DEPTH OF 1.5 METERS. IT IS 10.9 M (35.8 FT) SOUTH OF AND ABOUT 1 M (3.3 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 9, 41.4 M (135.8 FT) EAST OF POLE NO. 656, 42.7 M (140.1 FT) WEST OF POLE NO. 354/655, 7.1 M (23.3 FT) WEST OF THE CENTERLINE OF THE OLD ROAD GRADE, AND 0.5 M (1.6 FT) NORTH OF A FIBERGLASS WITNESS POST.

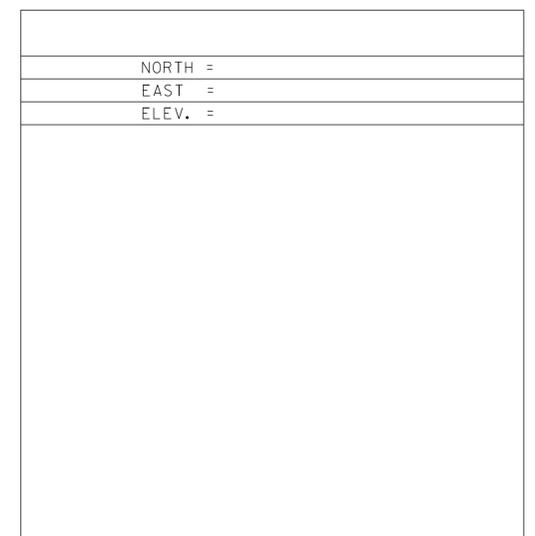
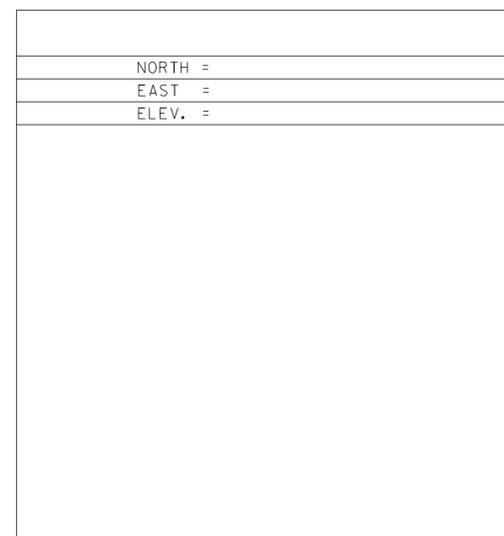
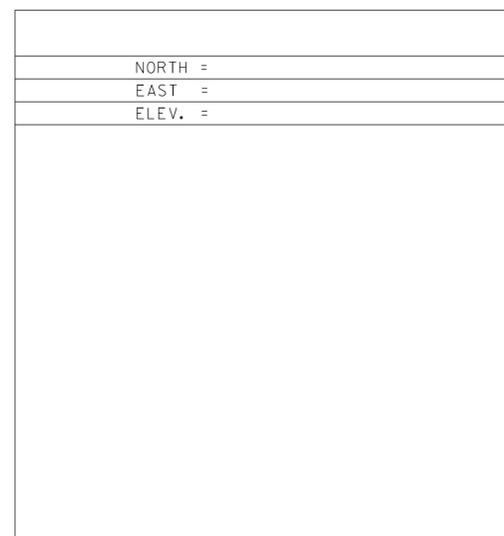
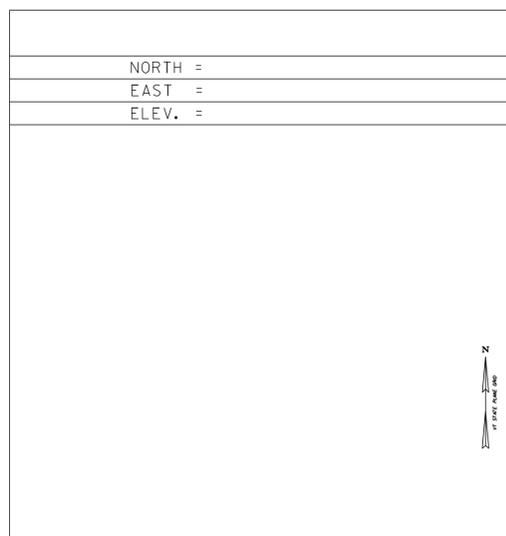
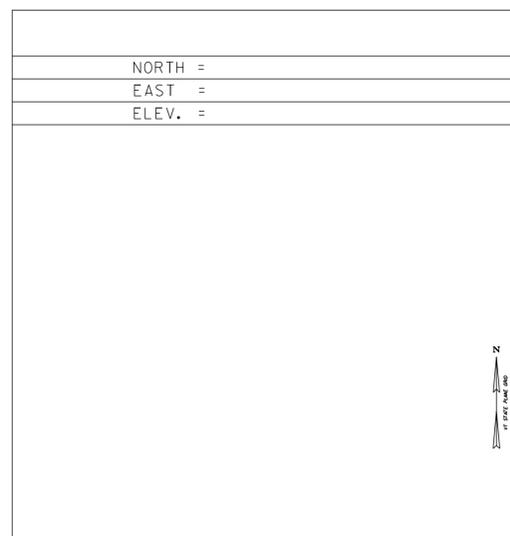
\*GPS CONTROL PROVIDED BY VT GSU 2014

TRAVERSE TIES



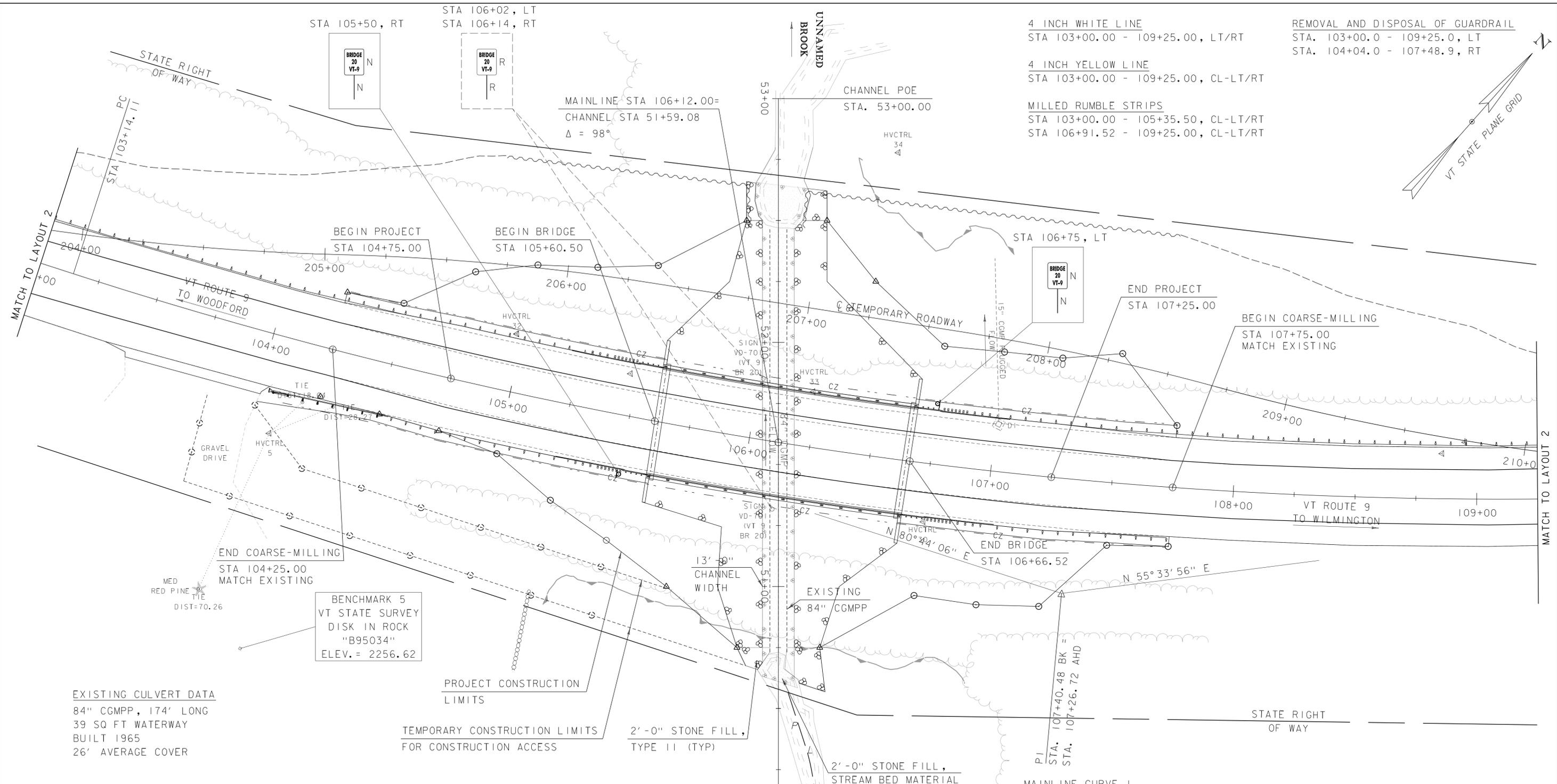
\*TRAVERSE COMPLETED 04/2014 BY L. ORVIS P.C. & H. MCGOWAN - RECOVERED BY GH, CC&TC 2/26/2019

ALIGNMENT TIES



DATUM  
 VERTICAL NAVD 88  
 HORIZONTAL NAD 83 (2011)  
 ADJUSTMENT COMPASS

PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)  
 FILE NAME: X13B3321.DGN PLOT DATE: 9/17/2020  
 PROJECT LEADER: C. WILLIAMS DRAWN BY: G. HITCHCOCK  
 DESIGNED BY: VTRANS CHECKED BY: P. BEYOR  
 TIE SHEET SHEET 9 OF 49



- 4 INCH WHITE LINE  
STA 103+00.00 - 109+25.00, LT/RT
- REMOVAL AND DISPOSAL OF GUARDRAIL  
STA. 103+00.0 - 109+25.0, LT  
STA. 104+04.0 - 107+48.9, RT
- 4 INCH YELLOW LINE  
STA 103+00.00 - 109+25.00, CL-LT/RT
- MILLED RUMBLE STRIPS  
STA 103+00.00 - 105+35.50, CL-LT/RT  
STA 106+91.52 - 109+25.00, CL-LT/RT

EXISTING CULVERT DATA  
84" CGMPP, 174' LONG  
39 SQ FT WATERWAY  
BUILT 1965  
26' AVERAGE COVER

BENCHMARK 5  
VT STATE SURVEY  
DISK IN ROCK  
"B95034"  
ELEV. = 2256.62

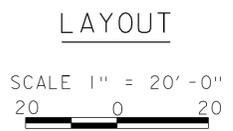
MAINLINE CURVE 1  
PT STA. 111+53.09  
DELTA = 25° 10' 10"  
D = 3° 00' 00"  
R = 1909.86'  
T = 426.37'  
L = 838.98'  
E = 47.01'

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN "A"	EXIST POST RETAIN	NEW SIGN POSTS SQUARE STEEL (in)				REMARKS	SIGN DETAIL				
		WIDTH (in)	HEIGHT (in)			NO. OF POSTS			ANCHOR		S	L	DETAIL IN SHSM	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
						2.0	2.0	2.5							
105+50, RT	BRIDGE 20 VT-9	6	10	0.42		8				X		VD-701		T-42	
106+75, LT	BRIDGE 20 VT-9	6	10	0.42		8				X		VD-701		T-42	
		<b>TOTALS</b>		SF 0.84		16	FT	FT	EA						

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."

SIGN LEGEND  
N = NEW  
R = REMOVE  
S = SALVAGE  
RET = RETAIN

SHSM = STANDARD HIGHWAY SIGNS AND MARKINGS (MUTCD) (APPROVED BY THE FHWA)



PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332bdr1.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: J. MERCER  
LAYOUT SHEET 1

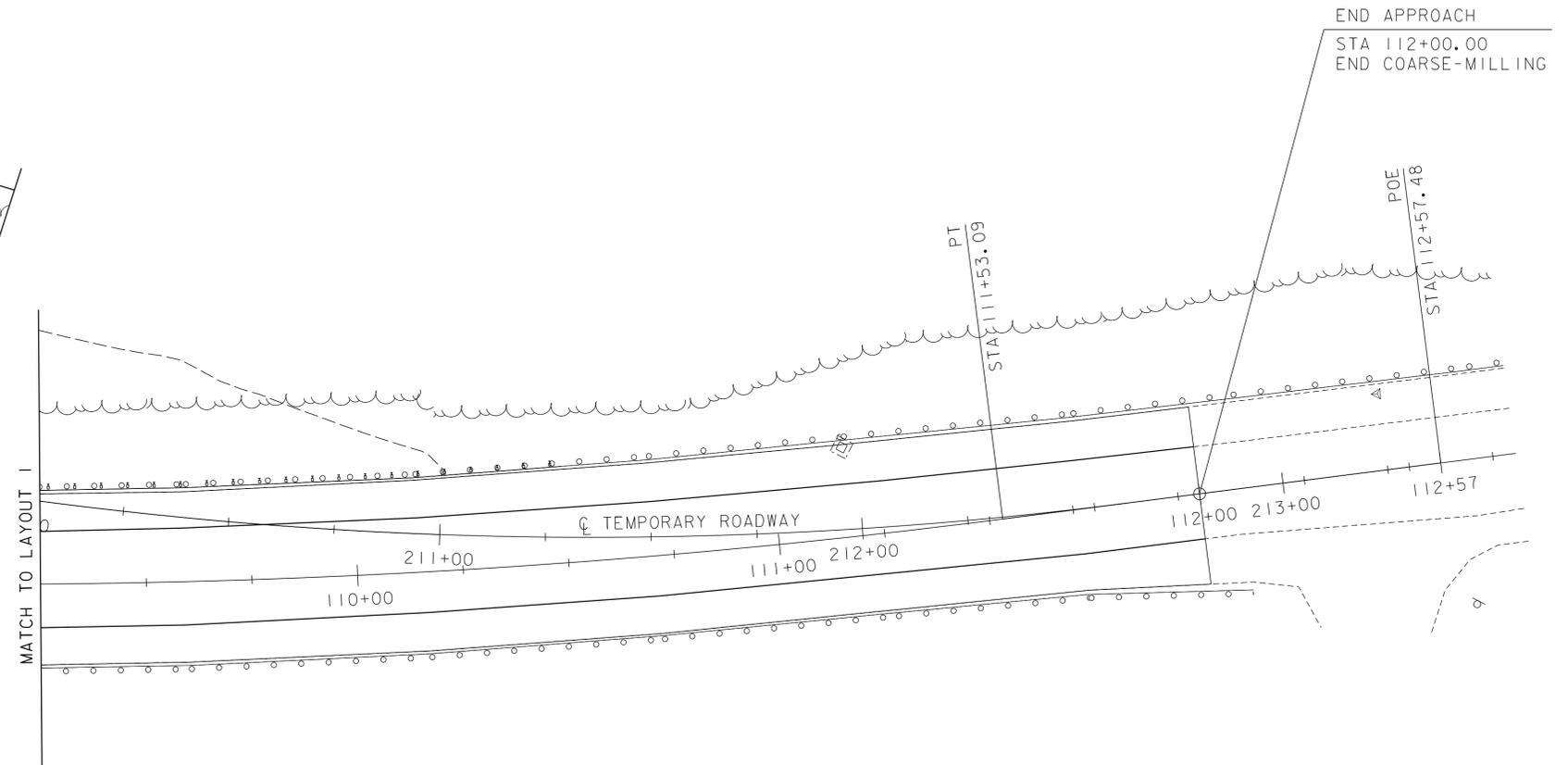
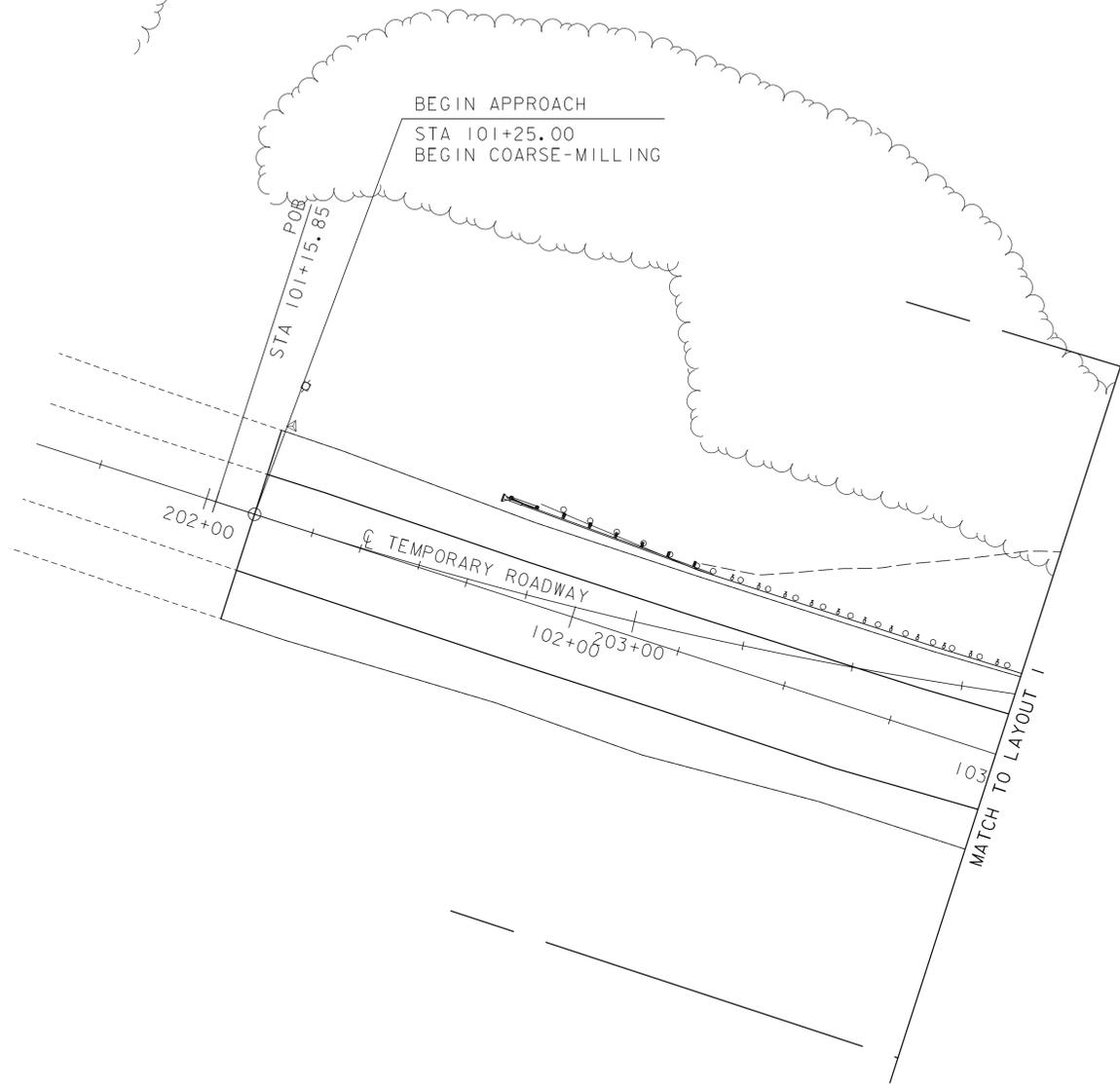
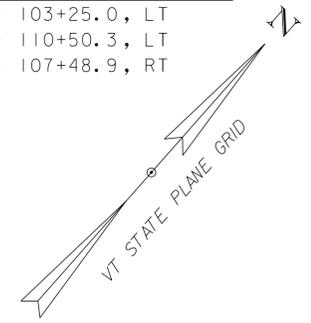
PLOT DATE: 9/17/2020  
DRAWN BY: J. MERCER  
CHECKED BY: T. LEVINS  
SHEET 10 OF 49

4 INCH WHITE LINE  
 STA 101+25.00 - 103+00.00, LT/RT  
 STA 109+25.00 - 112+00.00, LT/RT

REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA. 101+85.6 - 103+25.0, LT  
 STA. 109+25.0 - 110+50.3, LT  
 STA. 104+04.0 - 107+48.9, RT

4 INCH YELLOW LINE  
 STA 101+25.00 - 103+00.00, CL-LT/RT  
 STA 109+25.00 - 112+00.00, CL-LT/RT

MILLED RUMBLE STRIPS  
 STA 101+25.00 - 103+00.00, CL-LT/RT  
 STA 109+25.00 - 112+00.00, CL-LT/RT

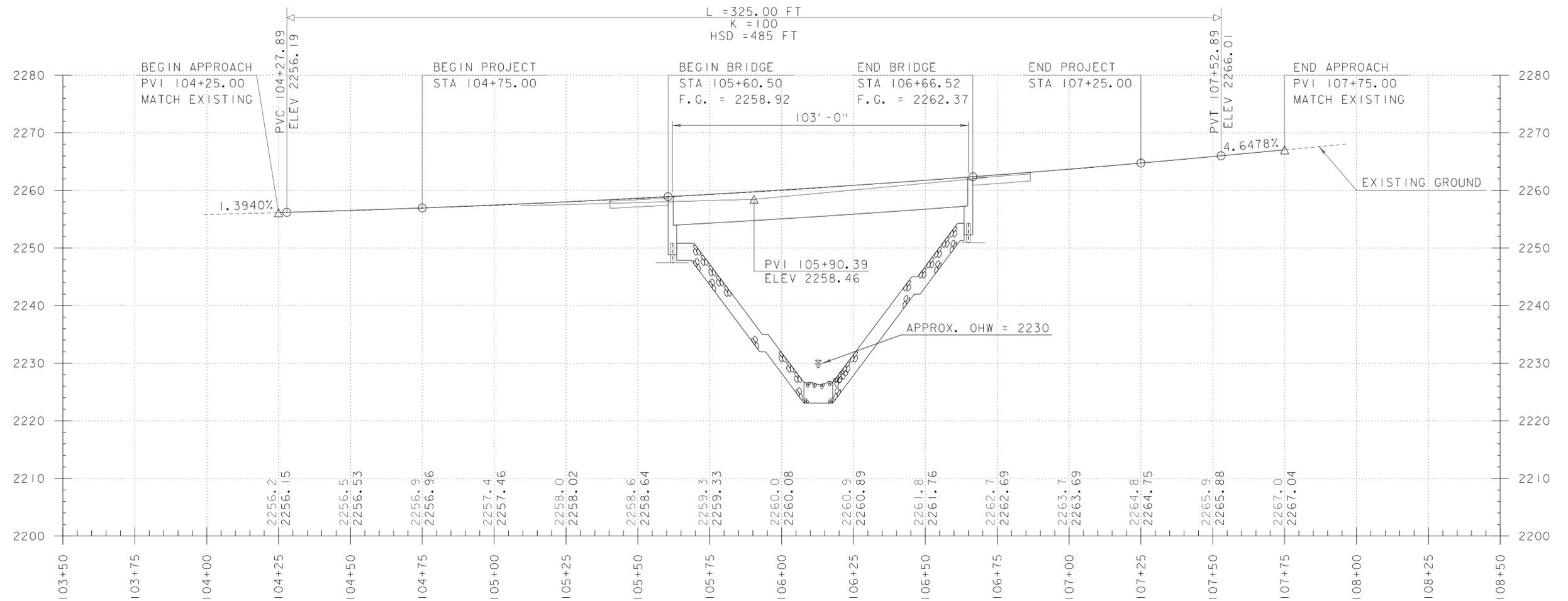


LAYOUT

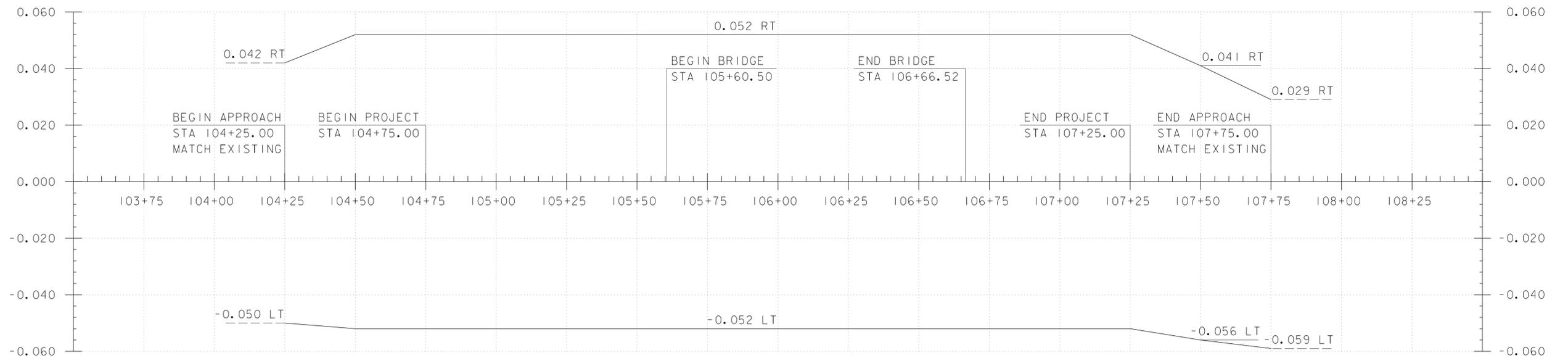
SCALE 1" = 20'-0"  
 20 0 20



PROJECT NAME: SEARSBURG	PLOT DATE: 9/17/2020
PROJECT NUMBER: BF 010-1(50)	DRAWN BY: J. MERCER
FILE NAME: z13b332bdr2.dgn	CHECKED BY: T. LEVINS
PROJECT LEADER: T. LEVINS	SHEET 11 OF 49
DESIGNED BY: J. MERCER	LAYOUT SHEET 2



**VT ROUTE 9 PROFILE**  
 SCALE: HORIZONTAL 1"=20'-0"  
 VERTICAL 1"=10'-0"



**BANKING DIAGRAM**  
 SCALE: HORIZONTAL 1"=20'-0"  
 NO VERTICAL SCALE

NOTE:  
 ELEVATIONS SHOWN TO THE NEAREST TENTH ARE  
 EXISTING GROUND ALONG THE PROPOSED ALIGNMENT.

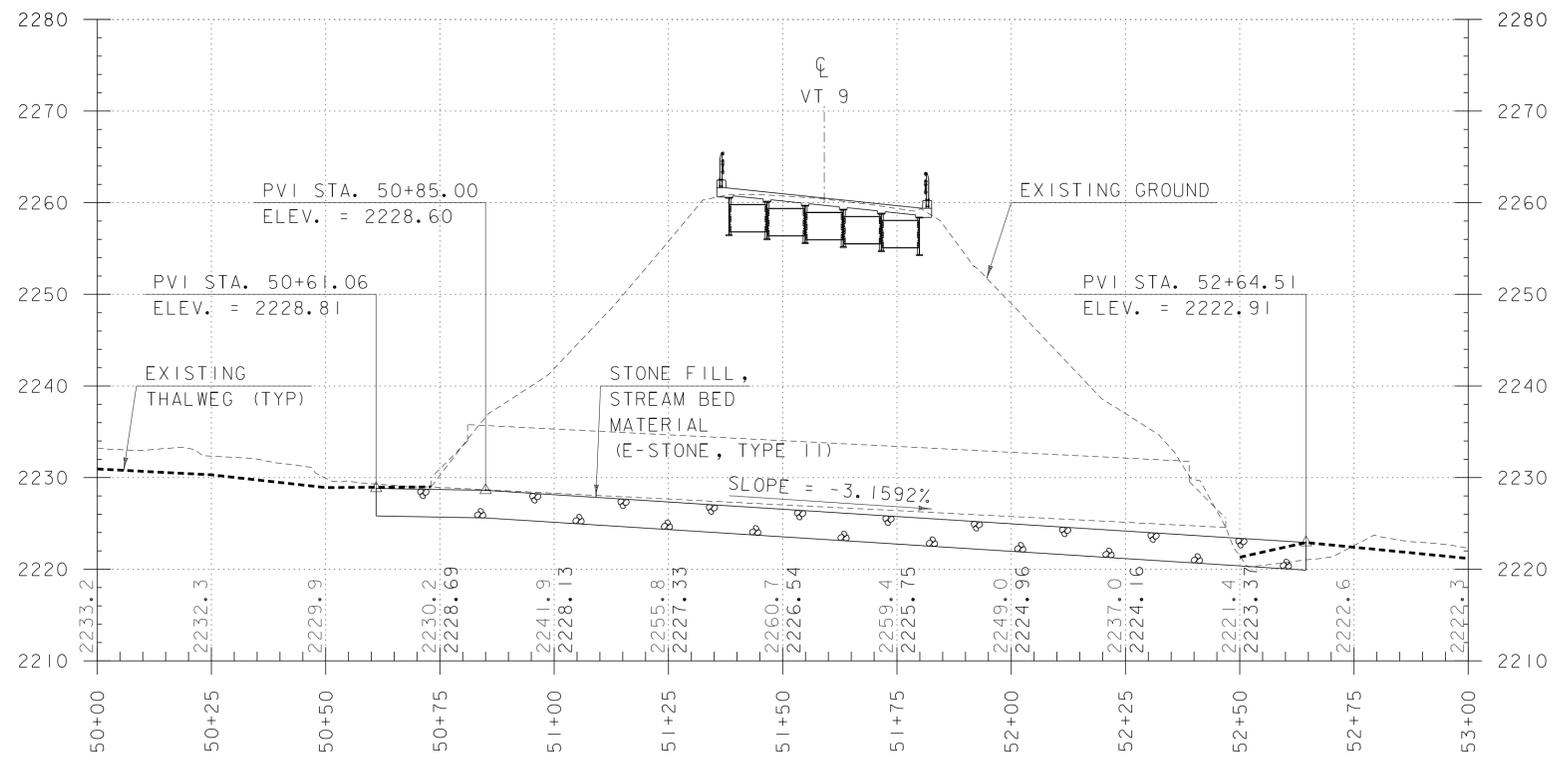
ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE  
 FINISH GRADES ALONG THE PROPOSED ALIGNMENT.



PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332pro.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: J. MERCER  
 VT ROUTE 9 PROFILE & BANKING DIAGRAM

PLOT DATE: 9/17/2020  
 DRAWN BY: T. MANNING  
 CHECKED BY: T. LEVINS  
 SHEET 12 OF 49



CHANNEL PROFILE

SCALE: HORIZONTAL 1"=20'-0"  
 VERTICAL 1"=10'-0"

PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)



FILE NAME: z13b332pro.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: T. MANNING  
 CHANNEL PROFILE

PLOT DATE: 9/17/2020  
 DRAWN BY: T. MANNING  
 CHECKED BY: T. LEVINS  
 SHEET 13 OF 49

**SOIL CLASSIFICATION**

**AASHTO**

- A1 Gravel and Sand
- A3 Fine Sand
- A2 Silty or Clayey Gravel and Sand
- A4 Silty Soil - Low Compressibility
- A5 Silty Soil - Highly Compressible
- A6 Clayey Soil - Low Compressibility
- A7 Clayey Soil - Highly Compressible

**ROCK QUALITY DESIGNATION**

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

**SHEAR STRENGTH**

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

**COMMONLY USED SYMBOLS**

- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊙ Rod Sounding
- S Sample
- N Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
- YS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
- AX Core Size 1 1/8"
- BX Core Size 1 3/8"
- NX Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
- D Dry
- M Moist
- MTW Moist To Wet
- W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- Si Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TLOB Top of Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)
- VTSPG NAD83 - See Note 7

**COLOR**

- blk Black
- bl Blue
- brn Brown
- dk Dark
- gr'y Gray
- gn Green
- lt Light
- or Orange
- pnk Pink
- pu Purple
- rd Red
- tn Tan
- wh White
- yel Yellow
- mltc Multicolored

**DEFINITIONS (AASHTO)**

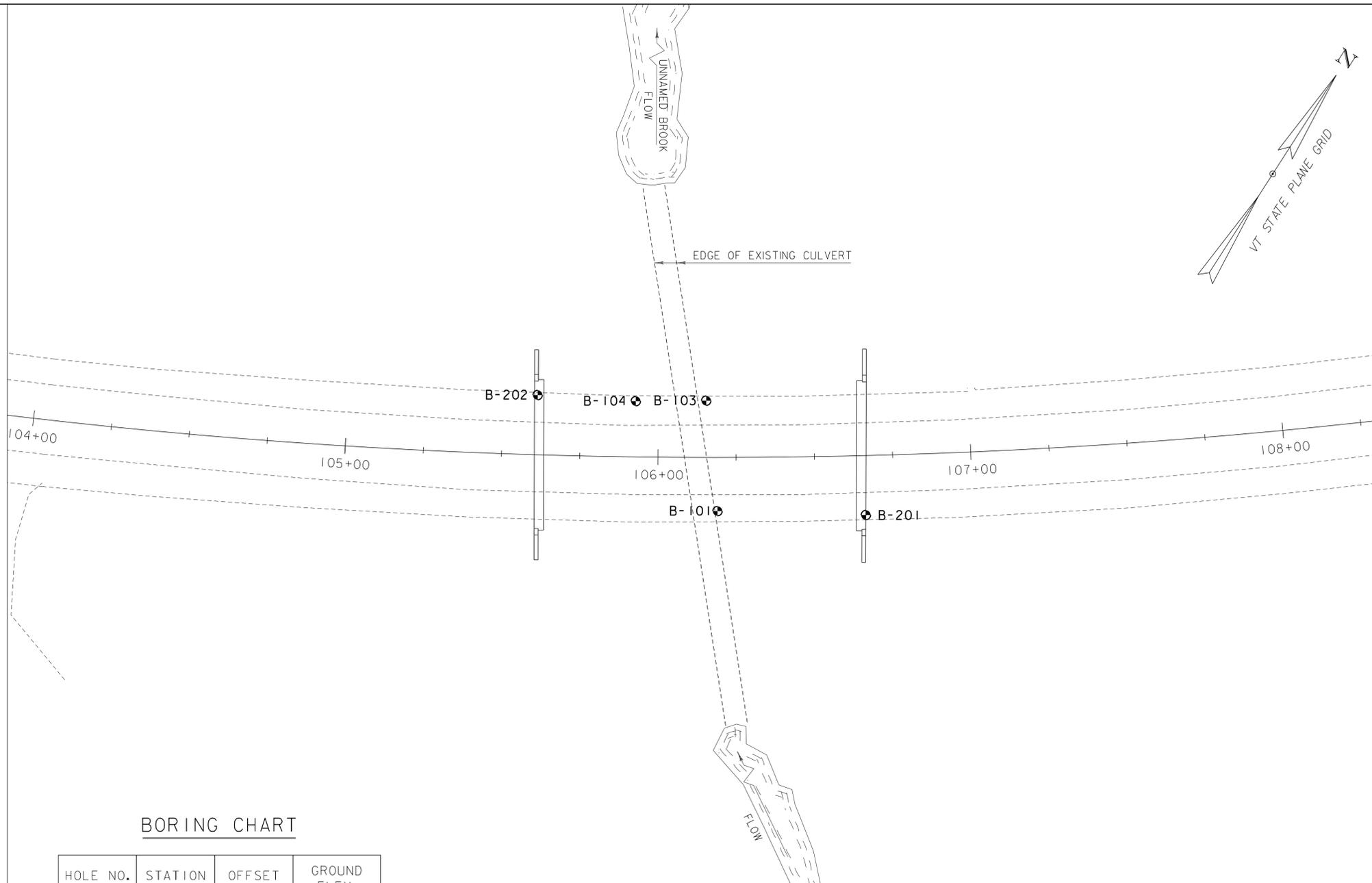
- BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.
- BOULDER - A rock fragment with an average dimension > 12 inches.
- COBBLE - Rock fragments with an average dimension between 3 and 12 inches.
- GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).
- SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).
- SLT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.
- CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.
- VARVED - Alternate layers of silt and clay.
- HARDPAN - Extremely dense soil, cemented layer, not softened when wet.
- MUCK - Soft organic soil (containing > 10% organic material).
- MOISTURE CONTENT - Weight of water divided by dry weight of soil.
- FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
- STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.
- DIP - Inclination of bed with a horizontal plane.

**BORING CHART**

HOLE NO.	STATION	OFFSET	GROUND ELEV.
B-101	106+19	17.2	2260.3
B-103	106+12	-18.0	2259.0
B-104	105+93	-17.8	2258.7
B-201	106+66	19.0	2262.5
B-202	105+61	-19.0	2258.0

**BORING LAYOUT**

SCALE 1" = 20' - 0"



**GENERAL NOTES**

- The subsurface explorations for holes B-101, B-103 & B-104 were made between 09-15-15 and 09-22-15 by the Agency. Holes B-201 & B-202 were made between 08-29-18 and 08-30-18 by Terracon.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.



PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)  
 FILE NAME: z13b332bor\_info.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: B. WILLIAMS  
 BORING INFORMATION SHEET

PLOT DATE: 9/17/2020  
 DRAWN BY: B. WILLIAMS  
 CHECKED BY: T. LEVINS  
 SHEET 14 OF 49

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-101</b>		
VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 1 of 2 Pin No.: 13b332 Checked By: END		
Boring Crew: JUDKINS, HOOK		Type: WB	Casing: SS	Groundwater Observations				
Date Started: 9/15/15 Date Finished: 9/17/15		I.D.: 4 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 143483.83 ft E 1506741.41 ft		Hammer Wt: N.A.	140 lb.	09/17/15	27.3	Before Drilling.		
Station: 106+19 Offset: 17.20		Hammer Fall: N.A.	30 in.	09/17/15	7.9	After Drilling.		
Ground Elevation: 2260.3 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>e</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.6 ft						
		A-1-b, SaGr, Lt/brn, Moist, Rec. = 10.0 ft		12-12-10-13 (22)	5.8	45.5	41.3	13.2
		Field Note: Cleaned out Casing.						
5		A-2-4, GrSiSa, Lt/brn, Moist, Rec. = 1.3 ft		11-14-14-17 (28)	9.9	24.8	40.2	35.0
		Field Note: Cleaned out Casing.						
10		A-4, GrSaSi, brn-gry, Moist, Rec. = 0.4 ft		5-6-10-17 (16)	11.4	29.0	32.7	38.3
		Field Note: Cleaned out Casing.						
15		Field Note: No Recovery.		R@1.5" (R)				
		Field Note: Cleaned out Casing.						
20		A-2-4, SaSiGr, brn-gry, Moist, Rec. = 1.0 ft, Lab Note: Broken Rock was within sample.		21-16-15-11 (31)	10.0	37.4	29.8	32.8
		Field Note: Cleaned out Casing.						
25		Field Note: No Recovery.		15-8-6-5 (14)				
		Field Note: Cleaned out Casing.						
30		A-2-4, GrSaSi, brn-gry, MTW, Rec. = 0.9 ft		3-2-1-1 (3)	17.8	25.9	39.7	34.4
		A-1-b, SaGr, brn-gry, MTW, Rec. = 0.6 ft		1-4-5-4 (9)	12.9	49.4	31.7	18.9
		Field Note: Cleaned out Casing.						
35		A-2-4, Sa with little (12.14%) organic material, blk, Moist, Rec. = 0.7 ft, Lab Note: Organic content determined using AASHTO T-267.		4-5-3-1 (8)	75.7	8.6	73.7	17.7
		A-4, SiSa with trace (<5%) organic material, Rec. = 1.1 ft, Lab Note: Organic content determined visually.		2-13-20-24 (33)	22.0	10.3	52.1	37.6
		A-4, GrSaSi, brn, Moist, Rec. = 0.9 ft, Lab Note: Broken Rock was within sample.		33-22-25-19 (47)	16.4	25.1	27.8	47.1
Notes:		1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C <sub>e</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.						

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-101</b>		
VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 2 of 2 Pin No.: 13b332 Checked By: END		
Boring Crew: JUDKINS, HOOK		Type: WB	Casing: SS	Groundwater Observations				
Date Started: 9/15/15 Date Finished: 9/17/15		I.D.: 4 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 143483.83 ft E 1506741.41 ft		Hammer Wt: N.A.	140 lb.	09/17/15	27.3	Before Drilling.		
Station: 106+19 Offset: 17.20		Hammer Fall: N.A.	30 in.	09/17/15	7.9	After Drilling.		
Ground Elevation: 2260.3 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>e</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-4, SaGrSi, brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.		30-R@2.5" (R)	9.6	35.6	28.5	35.9
		A-4, SiSa, brn, Moist, Rec. = 1.3 ft		28-34-25-R@2.5" (59) (R)	13.6	16.6	42.4	41.0
45		Field Note: No Recovery.		R@0.0" (R)				
		A-2-4, SaGrSi, brn, Moist, Rec. = 1.2 ft		36-18-15-12 (33)	12.9	33.6	32.2	34.2
		A-2-4, GrSiSa, gold-brn, Moist, Rec. = 0.9 ft		9-9-9-49 (17)	15.4	22.7	51.6	25.7
50		Visual Description: SaGr, gold-brn, Moist, Rec. = 0.1 ft, Lab Note: Visual Description only. Insufficient sample size for testing.		R@1.5" (R)	7.5			
		Field Note: Cleaned out Casing.						
55		A-2-4, Sa, Lt/brn, Moist, Rec. = 0.3 ft		R@5.0" (R)	9.0	1.7	79.6	18.7
		Field Note: Cleaned out Casing.						
60		Field Note: No Recovery. Clean out barrel was full of cobbles and boulders. Hole stopped @ 60.0 ft		R@0.0" (R)				
		Remarks: Hole Collapsed at 26.0 feet.						
		1.) Started using CME 45 Track rig at 44.0 feet. 2.) Added bentonite to drilling operation at 44.0 feet. 3.) Very hard drilling from 44.0 feet.						
Notes:		1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C <sub>e</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.						

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-103</b>		
VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 1 of 1 Pin No.: 13b332 Checked By: END		
Boring Crew: GARROW, NIETO		Type: WB	Casing: SS	Groundwater Observations				
Date Started: 9/21/15 Date Finished: 9/21/15		I.D.: 4 in	Sampler: 1.5 in	Date	Depth (ft)	Notes		
VTSPG NAD83: N 143527.70 ft E 1506731.50 ft		Hammer Wt: N.A.	140 lb.	09/21/15		No W.T. to depth		
Station: 106+12 Offset: -18.00		Hammer Fall: N.A.	30 in.					
Ground Elevation: 2259.0 ft		Hammer/Rod Type: Auto/AWJ						
		Rig: CME 45C SKID	C <sub>e</sub> = 1.33					
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.63 ft						
		A-1-b, GrSa, Lt/brn, Moist, Rec. = 1.1 ft		7-8-9-9 (17)	6.0	40.6	47.6	11.8
		Field Note: Cleaned out casing.						
5		A-4, GrSiSa, Lt/brn, Moist, Rec. = 1.6 ft		16-19-21-21 (40)	10.1	20.6	41.0	38.4
		Field Note: Cleaned out casing.						
10		A-4, GrSaSi, Lt/brn, Moist, Rec. = 0.8 ft		12-13-18-16 (31)	11.5	27.4	34.4	38.2
		Field Note: Cleaned out casing.						
15		A-2-4, GrSiSa, Lt/brn, Moist, Rec. = 0.9 ft		8-11-11-13 (22)	11.9	22.7	43.7	33.6
		Field Note: Cleaned out casing.						
20		A-4, SiSa, Lt/brn-gry, Moist, Rec. = 1.5 ft		11-18-11-7 (29)	13.0	18.7	41.5	39.8
		Field Note: Cleaned out casing.						
25		A-2-4, SiSaGr, Lt/brn, Moist, Rec. = 0.3 ft Field Note: Cleaned out casing. Appears to be Cobbles.		8-R@4" (R)	9.9	37.4	36.8	25.8
		Field Note: No Recovery, Appears to be Silt.						
		Cleaned out casing. 31.5 ft - 34.5 ft Field Note: No Recovery		WR-WR-WR-10 (WR) (R)				
35		Hole stopped @ 34.0 ft						
		Remarks: Hole Collapsed at 31.9 feet.						
		1.) Hole stopped due to broken clean out barrel. 2.) Cleanout barrel remains in the ground.						
Notes:		1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C <sub>e</sub> is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.						

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)



FILE NAME: z13b332bor\_info.dgn PLOT DATE: 9/17/2020  
PROJECT LEADER: T. LEVINS DRAWN BY: T. MANNING  
DESIGNED BY: T. MANNING CHECKED BY: T. LEVINS  
BORING LOGS (1 OF 4) SHEET 15 OF 49



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

**BORING LOG**

**SEARSBURG**  
**BF 010-1(50)**  
**VT-9 BR #20**

Boring No.: **B-104**  
Page No.: **1 of 2**  
Pin No.: **13b332**  
Checked By: **END**

Boring Crew: **GARROW, NIETO**  
Date Started: **9/22/15** Date Finished: **9/22/15**  
VTSPG NAD83: **N 143524.11 ft E 1506715.80 ft**  
Station: **105+93** Offset: **-17.80**  
Ground Elevation: **2258.7 ft**

Type: **WB** **SS**  
I.D.: **4 in** **1.5 in**  
Hammer Wt: **N.A.** **140 lb.**  
Hammer Fall: **N.A.** **30 in.**  
Hammer/Rod Type: **Auto/AWJ**  
Rig: **CME 45C SKID** **C<sub>e</sub> = 1.33**

Groundwater Observations  
Date: **09/22/15** Depth: **26.4** Notes: **W.T. after drilling.**

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.65		Asphalt Pavement, 0.0 ft - 0.65 ft					
30		A-1-b, SaGr, gry, Moist, Rec. = 0.5 ft	15-10-9-21 (19)	13.1	47.5	38.5	14.0
		A-1-a, SaGr, gry, Moist, Rec. = 0.8 ft, Lab Note: Broken Rock was within sample.	38-R@2.5" (R)	8.7	69.8	22.5	7.7
		Field Note: Cleaned out casing.					
35		A-2-4, SiSaGr, gry-brn, Moist, Rec. = 0.8 ft, Field Note: Brown appears in thin alternating layers with thick gray layers. Lab Note: Broken Rock was within sample.	48-R@5" (R)	9.9	33.7	33.7	32.6
		A-2-4, SiGrSa, Lt/brn, Moist, Rec. = 1.4 ft, Lab Note: Broken Rock was within sample.	29-33-37-R@0" (70)	11.2	33.3	33.6	33.1
		A-1-a, Gr, Lt/brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.	R@5" (R)	8.6	68.2	18.7	13.1
		Field Note: Cleaned out casing.					

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

**BORING LOG**

**SEARSBURG**  
**BF 010-1(50)**  
**VT-9 BR #20**

Boring No.: **B-104**  
Page No.: **2 of 2**  
Pin No.: **13b332**  
Checked By: **END**

Boring Crew: **GARROW, NIETO**  
Date Started: **9/22/15** Date Finished: **9/22/15**  
VTSPG NAD83: **N 143524.11 ft E 1506715.80 ft**  
Station: **105+93** Offset: **-17.80**  
Ground Elevation: **2258.7 ft**

Type: **WB** **SS**  
I.D.: **4 in** **1.5 in**  
Hammer Wt: **N.A.** **140 lb.**  
Hammer Fall: **N.A.** **30 in.**  
Hammer/Rod Type: **Auto/AWJ**  
Rig: **CME 45C SKID** **C<sub>e</sub> = 1.33**

Groundwater Observations  
Date: **09/22/15** Depth: **26.4** Notes: **W.T. after drilling.**

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, SiSaGr, Lt/brn, Moist, Rec. = 0.9 ft	24-23-14-13 (37)	10.1	50.5	29.4	20.1
		Field Note: Cleaned out casing.					
		A-2-4, SiSaGr, Lt/brn-brn, Moist, Rec. = 0.7 ft, Lab Note: Broken Rock was within sample.	17-17-14-R@2.5" (31)	13.3	34.5	33.6	31.9
45		Field Note: No Recovery	R@0" (R)				
		Field Note: Cleaned out casing.					
		Field Note: No Recovery. Appears to be sand and cobbles.	R@1" (R)				
		Field Note: Cleaned out casing. Appears to be cobbles and Boulders.					
		Field Note: No Recovery. Appears to be sand.	R@0" (R)				
		Field Note: Cleaned out casing. Appears to be cobbles and Boulders.					
50		A-1-b, SaGr, Lt/brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample.	R@5" (R)	13.4	47.5	34.9	17.6
55		A-3, Sa, Lt/brn, Moist, Rec. = 0.2 ft	R@2.5" (R)	29.8	3.6	90.4	6.0
60		Field Note: No Recovery. Appears to be sand.	28-R@1" (R)				
		Hole stopped @ 60.6 ft					
65		Remarks: Hole Collapsed at 60.6 feet. 1.) Changed to mud drilling from 50 feet.					

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 SEARSBURG BF010-1(50).GPJ VERMONT AOT.GDT 11/19/15

BORING LOG 2 SEARSBURG BF010-1(50).GPJ VERMONT AOT.GDT 11/19/15

PROJECT NAME: **SEARSBURG**  
PROJECT NUMBER: **BF 010-1(50)**



FILE NAME: **z13b332bor\_info.dgn** PLOT DATE: **9/17/2020**  
PROJECT LEADER: **T. LEVINS** DRAWN BY: **T. MANNING**  
DESIGNED BY: **T. MANNING** CHECKED BY: **T. LEVINS**  
BORING LOGS (2 OF 4) SHEET **16** OF **49**

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-201</b>				
SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 1 of 3		Pin No.: 13b332				
Checked By: LJD		Date		Notes				
Boring Crew: Terracon/Ron B.		Type: Casing SS		Groundwater Observations				
Date Started: 8/28/18 Date Finished: 8/29/18		I.D.: 4 1.5 in		Date Depth (ft) Notes				
VTSPG NAD83: N 143507.42 ft E 1506795.61 ft		Hammer Wt: 140 lb. 140 lb.		08/28/18 25.0 While drilling				
Station: 106+66 Offset: 19.00		Hammer Fall: 30 in. 30 in.		08/28/18 19.0 End of day				
Ground Elevation: 2262.5 ft		Hammer/Rod Type: Automatic		08/29/18 25.0 End of day				
Rig: CME 550X C <sub>E</sub> = 1.44								
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Drill Rate (min/ft)	Blows/g (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5	XXXX	5-inches of asphalt pavement		17-17-15 (32)				
	XXXX	Sa, brown, Rec. = 0.5 ft, (FILL)		12-12-15-10 (27)				
	XXXX	Sa, brown, Rec. = 1.0 ft, (FILL)		10-9-8-6 (17)				
	XXXX	SiSa, gray-brown, Rec. = 0.75 ft, (FILL)		16-36-27-24 (63)				
	XXXX	No recovery, Rec. = 0.0 ft		8-10-7-12 (17)	9	14.9	41.3	43.7
10	XXXX	A-4, SaSi, gray-brown, Rec. = 1.17 ft, (FILL)		10-6-10-30 (16)				
	XXXX	SiSa, gray-brown, Rec. = 1.0 ft, (FILL)		26-20-16-12 (36)				
	XXXX	SiSa, gray-brown, Rec. = 1.25 ft, (FILL)		3-4-11-19 (15)				
	XXXX	SiSa, gray-brown, Rec. = 1.17 ft, (FILL)		7-21-21-26 (42)				
	XXXX	SiSa, light brown, Rec. = 1.42 ft, (FILL)		14-11-13-21 (24)	8	25.9	37.6	36.5
20	XXXX	A-4, GrSiSa, gray-brown, Rec. = 0.67 ft, (FILL)		6-19-18-15 (37)				
	XXXX	SiSa, gray-brown, Rec. = 0.25 ft, (FILL)		9-8-5-3 (13)				
	XXXX	No recovery, Rec. = 0.0 ft		4-7-5 (12)				
25	XXXX	A-4, SaSi, olive brown, (FILL) Rec. = 0.83 ft		5-8-7-7 (15)	15	9.4	47.4	43.2
	XXXX	A-4, SiSa, olive brown, Rec. = 1.5 ft, (GLACIAL TILL)		55-51-10-8 (61)				
30	XXXX	A-2-4, olive brown, Rec. = 0.67 ft, (GLACIAL TILL)						

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-201</b>				
SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 2 of 3		Pin No.: 13b332				
Checked By: LJD		Date		Notes				
Boring Crew: Terracon/Ron B.		Type: Casing SS		Groundwater Observations				
Date Started: 8/28/18 Date Finished: 8/29/18		I.D.: 4 1.5 in		Date Depth (ft) Notes				
VTSPG NAD83: N 143507.42 ft E 1506795.61 ft		Hammer Wt: 140 lb. 140 lb.		08/28/18 25.0 While drilling				
Station: 106+66 Offset: 19.00		Hammer Fall: 30 in. 30 in.		08/28/18 19.0 End of day				
Ground Elevation: 2262.5 ft		Hammer/Rod Type: Automatic		08/29/18 25.0 End of day				
Rig: CME 550X C <sub>E</sub> = 1.44								
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Drill Rate (min/ft)	Blows/g (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40	XXXX	A-4, SiSa, olive brown, Rec. = 1.17 ft, (GLACIAL TILL)		17-16-15-22 (31)	12	16.6	46.8	36.6
45	XXXX	SiSa, olive brown, Rec. = 0.58 ft, (GLACIAL TILL)		41-65-50/3* (115+)				
50	XXXX	SiSa, olive brown, Rec. = 0.75 ft, (GLACIAL TILL)		22-53/3*				
55	XXXX	SiSa, olive brown, Rec. = 0.17 ft, (GLACIAL TILL)		55/2*				
60	XXXX	GrSiSa, olive brown, Rec. = 0.33 ft, (GLACIAL TILL)		60/4*				
65	XXXX	GrSiSa, olive brown, Rec. = 0.25 ft, (GLACIAL TILL)		50/3*				
		PILE TIP ELEVATION						

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <b>B-201</b>				
SEARSBURG BF 010-1(50) VT-9 BR #20		Page No.: 3 of 3		Pin No.: 13b332				
Checked By: LJD		Date		Notes				
Boring Crew: Terracon/Ron B.		Type: Casing SS		Groundwater Observations				
Date Started: 8/28/18 Date Finished: 8/29/18		I.D.: 4 1.5 in		Date Depth (ft) Notes				
VTSPG NAD83: N 143507.42 ft E 1506795.61 ft		Hammer Wt: 140 lb. 140 lb.		08/28/18 25.0 While drilling				
Station: 106+66 Offset: 19.00		Hammer Fall: 30 in. 30 in.		08/28/18 19.0 End of day				
Ground Elevation: 2262.5 ft		Hammer/Rod Type: Automatic		08/29/18 25.0 End of day				
Rig: CME 550X C <sub>E</sub> = 1.44								
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Drill Rate (min/ft)	Blows/g (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
75	XXXX	GrSiSa, Rec. = 0.17 ft, (GLACIAL TILL)		50/2*				
		Roller bit resistance at 71 feet. Roller bit refusal at 74 feet. Rock core at 74 feet.						
	XXXX	74.0 ft - 79.0 ft, Probable boulder. NX		3.5				
				2.75				
				1.5				
				2				
				5.75				
80		Advanced roller bit from 79 to 100 feet through probable Glacial Till.						
100		Hole stopped @ 100.0 ft						

2010 COPY, J1185111 SEARSBURG BF 010-GPJ, VERMONT AOT, GDT, 11/6/18

2010 COPY, J1185111 SEARSBURG BF 010-GPJ, VERMONT AOT, GDT, 11/6/18

2010 COPY, J1185111 SEARSBURG BF 010-GPJ, VERMONT AOT, GDT, 11/6/18

Notes:  
 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor. C<sub>e</sub> is an estimated value.  
 3. Water level readings have been made at times and under conditions stated.  
 4. Ground surface elevations indicated on the boring logs were estimated based on the grading plan provided by VACT.

Notes:  
 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor. C<sub>e</sub> is an estimated value.  
 3. Water level readings have been made at times and under conditions stated.  
 4. Ground surface elevations indicated on the boring logs were estimated based on the grading plan provided by VACT.

Notes:  
 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor. C<sub>e</sub> is an estimated value.  
 3. Water level readings have been made at times and under conditions stated.  
 4. Ground surface elevations indicated on the boring logs were estimated based on the grading plan provided by VACT.



PROJECT NAME:	SEARSBURG	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	DRAWN BY:	T. MANNING
FILE NAME:	z13b332bor_info.dgn	CHECKED BY:	T. LEVINS
PROJECT LEADER:	T. LEVINS	SHEET	17 OF 49
DESIGNED BY:	T. MANNING		
BORING LOGS (3 OF 4)			



**BORING LOG**

Boring No.: **B-202**

SEARSBURG  
 BF 010-1(50)  
 VT-9 BR #20

Page No.: 1 of 2

Pin No.: 13b332

Checked By: LJD

Boring Crew: Terracon/Ron B.	Type: Casing	Sampler	Groundwater Observations		
Date Started: 8/29/18 Date Finished: 8/30/18	I.D.: 4 1.5 in	SS	Date	Depth (ft)	Notes
VTSPG NAD83: N 143510.63 ft E 1506684.01 ft	Hammer Wt: 140 lb. 140 lb.		08/29/18	21.0	While drilling
Station: 105+61 Offset: 19.00	Hammer Fall: 30 in. 30 in.		08/30/18	21.0	End of day
Ground Elevation: 2258.0 ft	Hammer/Rod Type: Automatic				
	Rig: CME 550X	C <sub>E</sub> = 1.44			

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Core Rec. % (ROD %)	Blows/g (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		8-inches of asphalt pavement						
		Sa, brown, Rec. = 0.67 ft, (FILL)		12-8-6-10 (14)				
		Sa, with cobbles, brown, Rec. = 1.08 ft, (FILL)		9-11-8-33 (19)				
5		GrSiSa, olive brown, Rec. = 1.17 ft, (FILL)		7-8-10-12 (18)				
		GrSiSa, olive brown, Rec. = 0.83 ft, (FILL)		14-8-7-7 (15)				
		GrSiSa, olive brown, Rec. = 1.17 ft, (FILL)		3-4-9-10 (13)				
10		GrSiSa, olive brown, Rec. = 0.5 ft, (FILL)		10-15-9-11 (24)				
		GrSiSa, olive brown, Rec. = 1.25 ft, (FILL)		12-5-4-7 (9)				
		GrSiSa, olive brown, Rec. = 1.08 ft, (FILL)		5-11-11-16 (22)				
		GrSiSa, slight oxidation, olive brown, Rec. = 1.17 ft, (FILL)		11-12-18-10 (30)				
		GrSiSa, olive brown, Rec. = 1.92 ft, (FILL)		4-20-10-5 (30)				
20		A-2-4, GrSiSa, olive brown, Rec. = 1.08 ft, (FILL)		5-10-6-6 (16)	12	24.4	41.0	34.6
		GrSiSa, olive brown, Rec. = 1.67 ft, (FILL)		20-11-7-8 (18)				
		A-4, SiSa, olive brown, Rec. = 1.17 ft, (FILL)		1-1-1-1 (2)	32	13.3	51.2	35.6
25		A-4, dark brown, organic sandy silt						
		A-4, SaSi, black to dark brown, Rec. = 1.0 ft, organic		8-8-2-7 (10)	42	15.1	39.2	45.7
30		A-2-4, SiGrSa, gray-brown, Rec. = 0.67 ft, (GLACIAL TILL)		25-34-46-50 (80)	11	34.9	38.7	26.4

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor. C<sub>e</sub> is an estimated value.  
 3. Water level readings have been made at times and under conditions stated.  
 4. Ground surface elevations indicated on the boring logs were estimated based on the grading plan provided by VACT.



**BORING LOG**

Boring No.: **B-202**

SEARSBURG  
 BF 010-1(50)  
 VT-9 BR #20

Page No.: 2 of 2

Pin No.: 13b332

Checked By: LJD

Boring Crew: Terracon/Ron B.	Type: Casing	Sampler	Groundwater Observations		
Date Started: 8/29/18 Date Finished: 8/30/18	I.D.: 4 1.5 in	SS	Date	Depth (ft)	Notes
VTSPG NAD83: N 143510.63 ft E 1506684.01 ft	Hammer Wt: 140 lb. 140 lb.		08/29/18	21.0	While drilling
Station: 105+61 Offset: 19.00	Hammer Fall: 30 in. 30 in.		08/30/18	21.0	End of day
Ground Elevation: 2258.0 ft	Hammer/Rod Type: Automatic				
	Rig: CME 550X	C <sub>E</sub> = 1.44			

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Core Rec. % (ROD %)	Blows/g (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		SiGrSa, Rec. = 0.67 ft, (GLACIAL TILL)		12-12-11-24 (23)				
40		No recovery, advanced roller bit through cobbles, Rec. = 0.0 ft, (GLACIAL TILL)		50/2'				
45		No recovery, Rec. = 0.0 ft, (GLACIAL TILL)		50/2'				
50		Roller bit refusal at 50 feet. Rock core at 50 feet.						
		50.0 ft - 55.0 ft, Hard, slightly weathered, pale green-white, calc-silicate GNEISS, horizontal to moderately dipping fractures, close spacing, some pyrite inclusions. NX		97(57)				
		PILE TIP ELEVATION						
55		55.0 ft - 60.0 ft, Hard, highly weathered, pale green-white, calc-silicate GNEISS, moderately dipping fractures, very close spacing. NX		98(43)				
60		Hole stopped @ 60.0 ft						

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
 2. N Values have not been corrected for hammer energy. C<sub>e</sub> is the hammer energy correction factor. C<sub>e</sub> is an estimated value.  
 3. Water level readings have been made at times and under conditions stated.  
 4. Ground surface elevations indicated on the boring logs were estimated based on the grading plan provided by VACT.

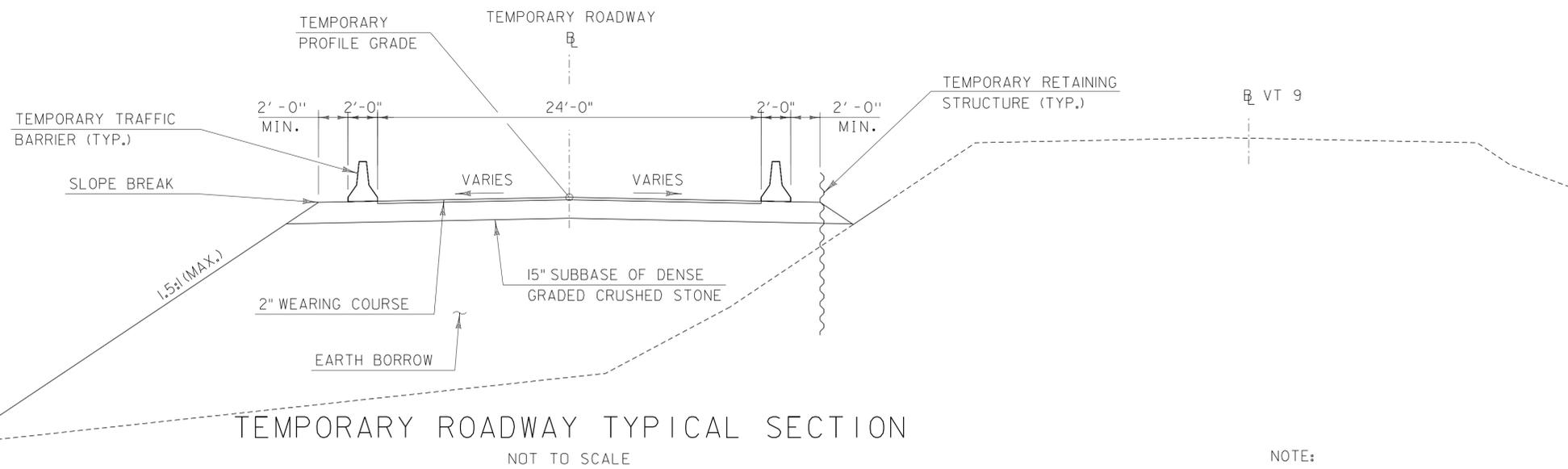
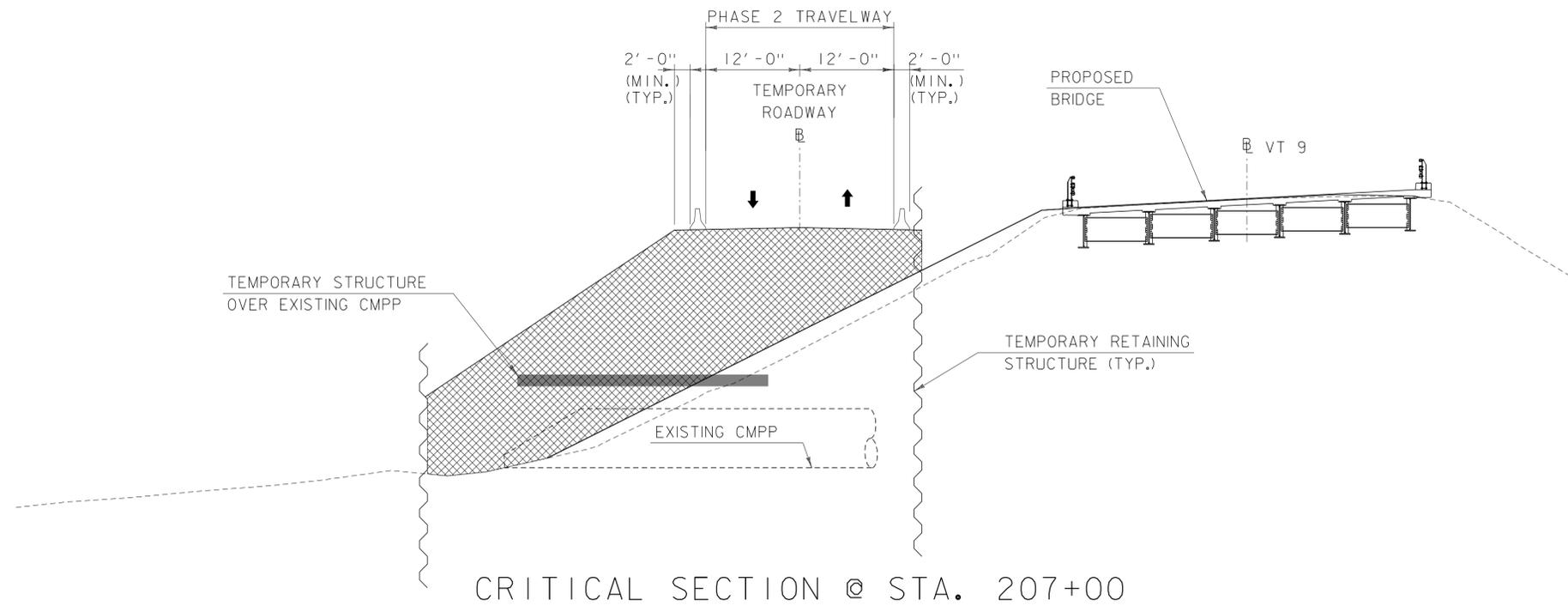


2010 COPY: J1185111 SEARSBURG BF 010-GPJ VERMONT AOT.GDT 11/6/18

2010 COPY: J1185111 SEARSBURG BF 010-GPJ VERMONT AOT.GDT 11/6/18

PROJECT NAME:	SEARSBURG	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	DRAWN BY:	T. MANNING
FILE NAME:	z13b332bor_info.dgn	CHECKED BY:	T. LEVINS
PROJECT LEADER:	T. LEVINS	SHEET	18 OF 49
DESIGNED BY:	T. MANNING		
BORING LOGS (4 OF 4)			





NOTE:  
FOR ADDITIONAL INFORMATION SEE MAINTENANCE OF TRAFFIC  
PLANS AND PROFILE SHEETS.

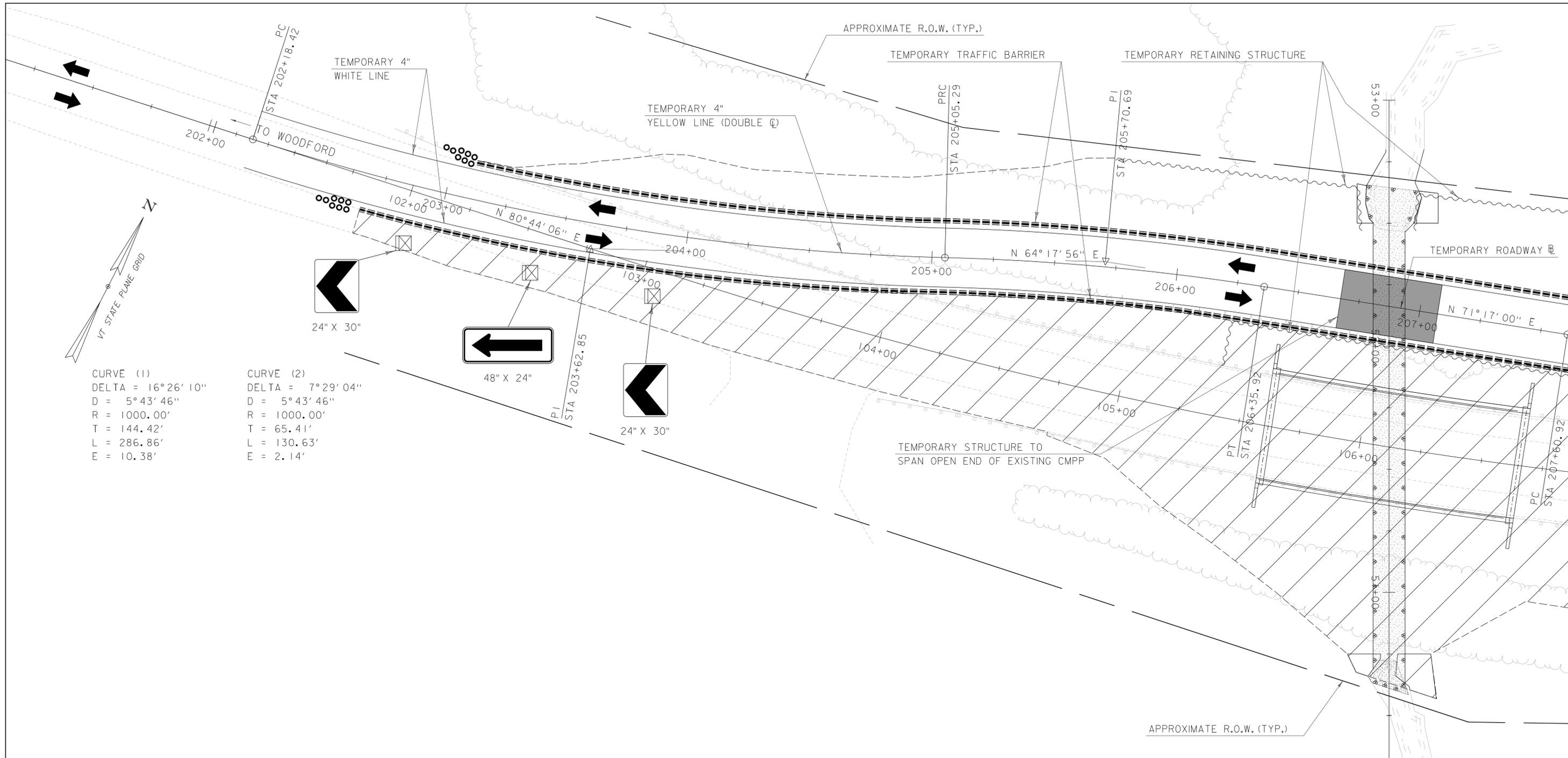
PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332bdr\_mot\_CON.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: J. MERCER  
MAINTENANCE OF TRAFFIC SECTIONS

PLOT DATE: 9/17/2020  
DRAWN BY: J. MERCER  
CHECKED BY: T. LEVINS  
SHEET 19 OF 49

10 0 10  
SCALE IN FEET





**NOTES:**

1. TRAFFIC WILL BE CONTROLLED ON A TWO-WAY TEMPORARY ROADWAY LOCATED DOWNSTREAM OF EXISTING ROADWAY. SEE SPECIAL PROVISION (TEMPORARY ROADWAY).
2. THE TEMPORARY ROADWAY SHALL BE PAVED.
3. ADVISORY SPEED WILL BE 30 MPH FOR THE TEMPORARY ROADWAY.
4. DESIGN OF THE TEMPORARY RETAINING STRUCTURE(S) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS 505 AND 528, RESPECTIVELY. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 900.645, "SPECIAL PROVISION (TEMPORARY ROADWAY)". FOR ADDITIONAL INFORMATION SEE MAINTENANCE OF TRAFFIC SECTIONS AND PROFILE SHEETS.

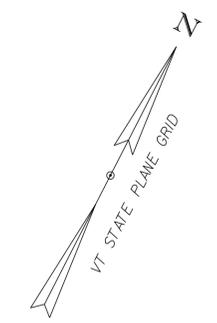
**LEGEND**

- TEMPORARY TRAFFIC BARRIER
- ENERGY ABSORPTION ATTENUATOR
- TYPE III BARRICADE (MOD.)
- REFLECTORIZED PLASTIC DRUM
- WORK ZONE
- TEMPORARY RETAINING STRUCTURE
- DIRECTION OF TRAFFIC

SCALE 1" = 20'-0"  
 20 0 20

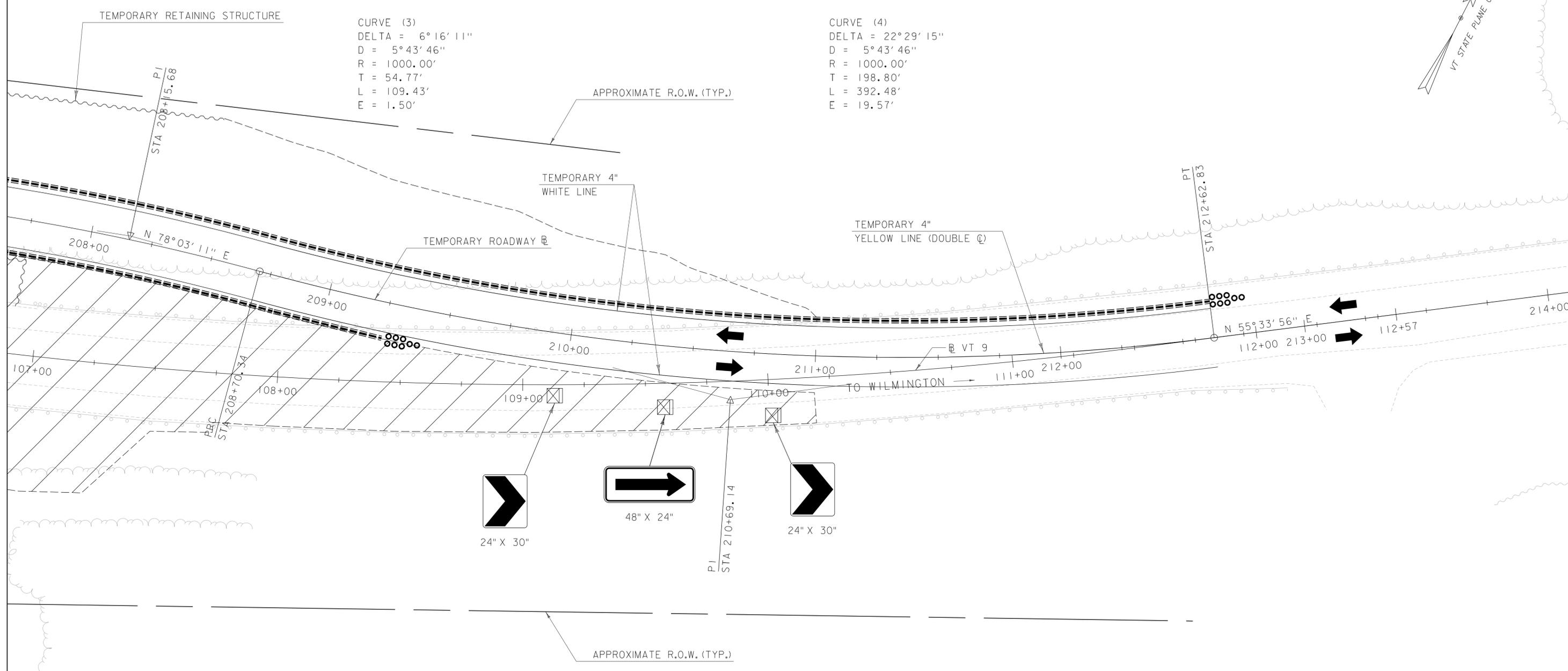


PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332bdr_mot.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	J. MERCER
		DESIGNED BY:	J. MERCER	CHECKED BY:	T. LEVINS
		MAINTENANCE OF TRAFFIC - TEMP. ROADWAY		SHEET	20 OF 49



CURVE (3)  
 DELTA = 6°16'11"  
 D = 5°43'46"  
 R = 1000.00'  
 T = 54.77'  
 L = 109.43'  
 E = 1.50'

CURVE (4)  
 DELTA = 22°29'15"  
 D = 5°43'46"  
 R = 1000.00'  
 T = 198.80'  
 L = 392.48'  
 E = 19.57'



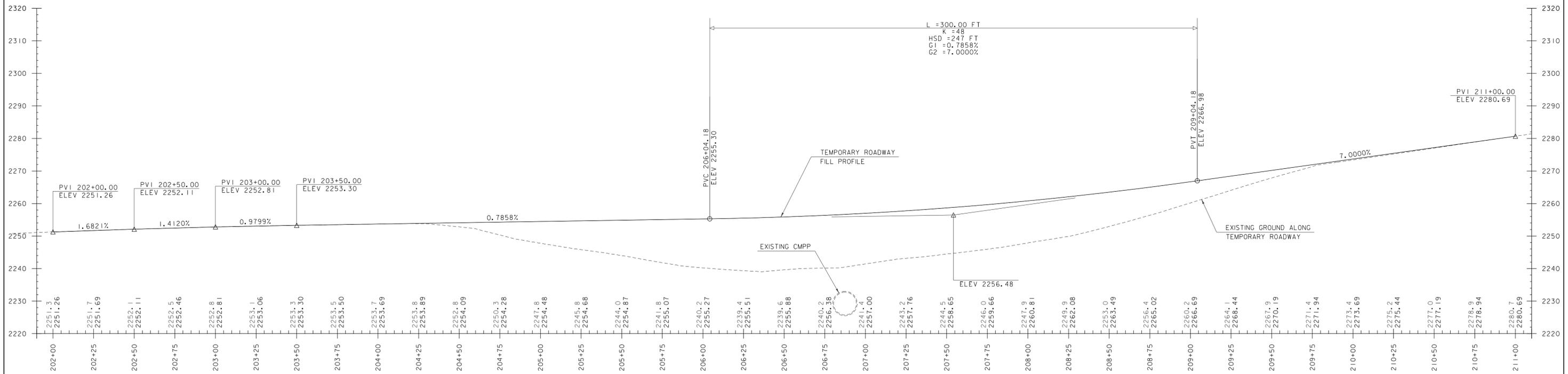
**LEGEND**

- TEMPORARY TRAFFIC BARRIER
- ENERGY ABSORPTION ATTENUATOR
- TYPE III BARRICADE (MOD.)
- REFLECTORIZED PLASTIC DRUM
- WORK ZONE
- TEMPORARY RETAINING STRUCTURE
- DIRECTION OF TRAFFIC

SCALE 1" = 20'-0"  
 20 0 20

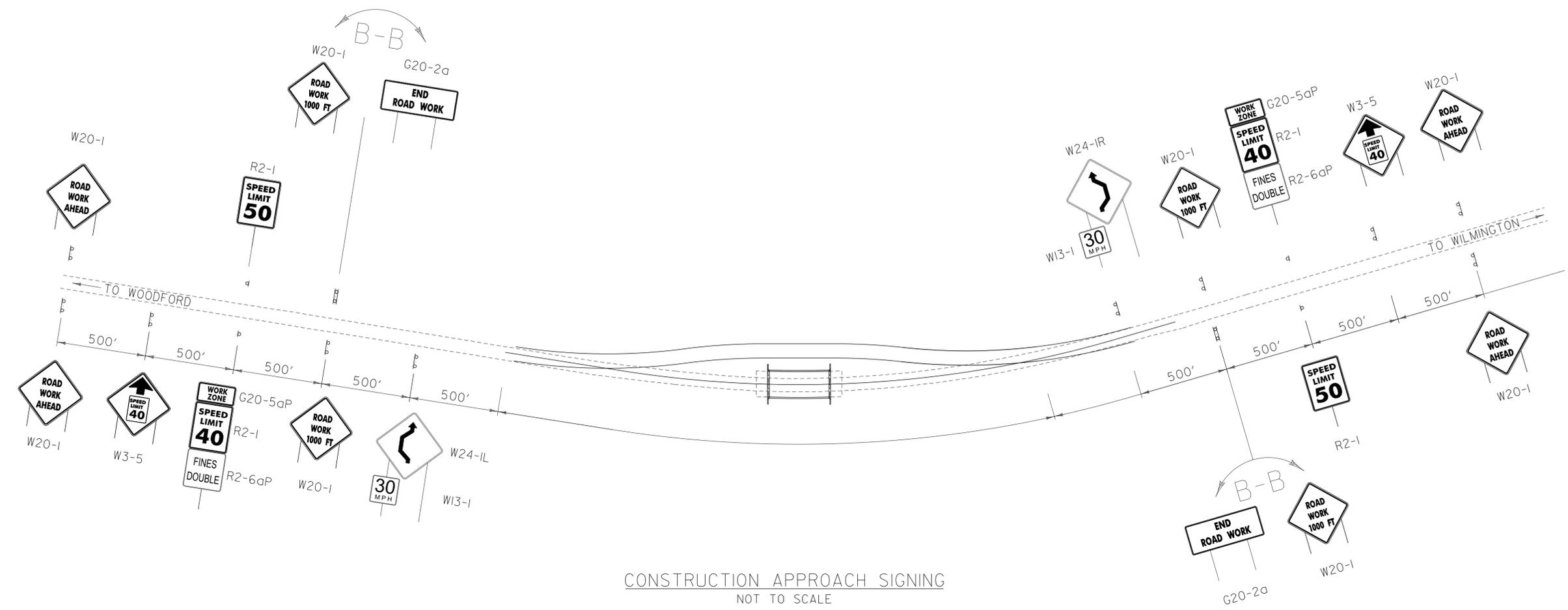
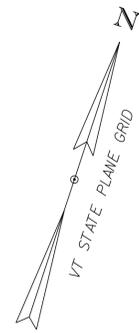


PROJECT NAME: SEARSBURG	
PROJECT NUMBER: BF 010-1(50)	
FILE NAME: z13b332bdr_mot.dgn	PLOT DATE: 9/17/2020
PROJECT LEADER: T. LEVINS	DRAWN BY: J. MERCER
DESIGNED BY: J. MERCER	CHECKED BY: T. LEVINS
MAINTENANCE OF TRAFFIC - TEMP. ROADWAY	SHEET 21 OF 49



PROJECT NAME:	SEARSBURG
PROJECT NUMBER:	BF 010-I(50)
FILE NAME:	z13b332bdr_mot_PRdgn
PROJECT LEADER:	T. LEVINS
DESIGNED BY:	J. MERCER
MAINTENANCE OF TRAFFIC PROFILE	
PLOT DATE:	9/17/2020
DRAWN BY:	B. WILLIAMS
CHECKED BY:	T. LEVINS
SHEET	22 OF 49





**CONSTRUCTION APPROACH SIGNING**  
NOT TO SCALE

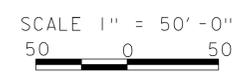
SIGN #	DESCRIPTION	SIZE	QTY	SUPPORT
G20-2a	END ROAD WORK	48x24	2	4 - POSTS (2/SIGN ASSEMBLY)
W20-1	ROAD WORK 1000 FT	48x48	2	
G20-5a (P)	WORK ZONE	24x18	2	2 - POSTS (1/SIGN ASSEMBLY)
R2-1	SPEED LIMIT 40	24x30	2	
R2-6a (P)	FINES DOUBLE	24x24	2	2 - POSTS (1/SIGN)
R2-1	SPEED LIMIT 50	24x30	2	
W3-5	SPEED LIMIT 40 (SPEED REDUCTION)	48x48	2	4 - POSTS (2/SIGN)
W20-1	ROAD WORK AHEAD	48x48	4	8 - POSTS (2/SIGN)
W20-1	ROAD WORK 1000 FT	48x48	2	4 - POSTS (2/SIGN)
W24-1L	DOUBLE REVERSE CURVE (1LANE)	48x48	1	2 - POSTS (2/SIGN ASSEMBLY)
W13-1	30 MPH	24x24	1	
W24-1R	DOUBLE REVERSE CURVE (1LANE)	48x48	1	2 - POSTS (2/SIGN ASSEMBLY)
W13-1	30 MPH	24x24	1	

(P) = PLAQUE

SQUARE SIGN POSTS	28
POST ANCHORS	28

- SIGNING NOTES:**
- INSTALL SIGNS WITH THE FLOW OF TRAFFIC.
  - ADJUST SIGN SPACINGS TO ACCOMMODATE EXISTING SIGNS OR OBSTRUCTIONS - TRIM BRANCHES AS NECESSARY.
  - AFTER SIGNS ARE INSTALLED, VERIFY THAT:
    - DRIVER CAN SEE ALL DEVICES CLEARLY;
    - DRIVER KNOWS WHAT TO DO AND WHERE TO GO;
    - DRIVER HAS TIME/DISTANCE TO SLOW DOWN.
  - COVER CONTRADICTORY EXISTING SIGNING.

- LEGEND**
- ▲ SIGN WITH 1 POST
  - ▬ SIGN WITH 2 POSTS
- CONSTRUCTION NOTE:**
- PAYMENT FOR CONSTRUCTION SIGNING, AND ITS MAINTENANCE AND REMOVAL, WILL BE INCLUDED FOR PAYMENT UNDER CONTRACT ITEM 641.10 TRAFFIC CONTROL.

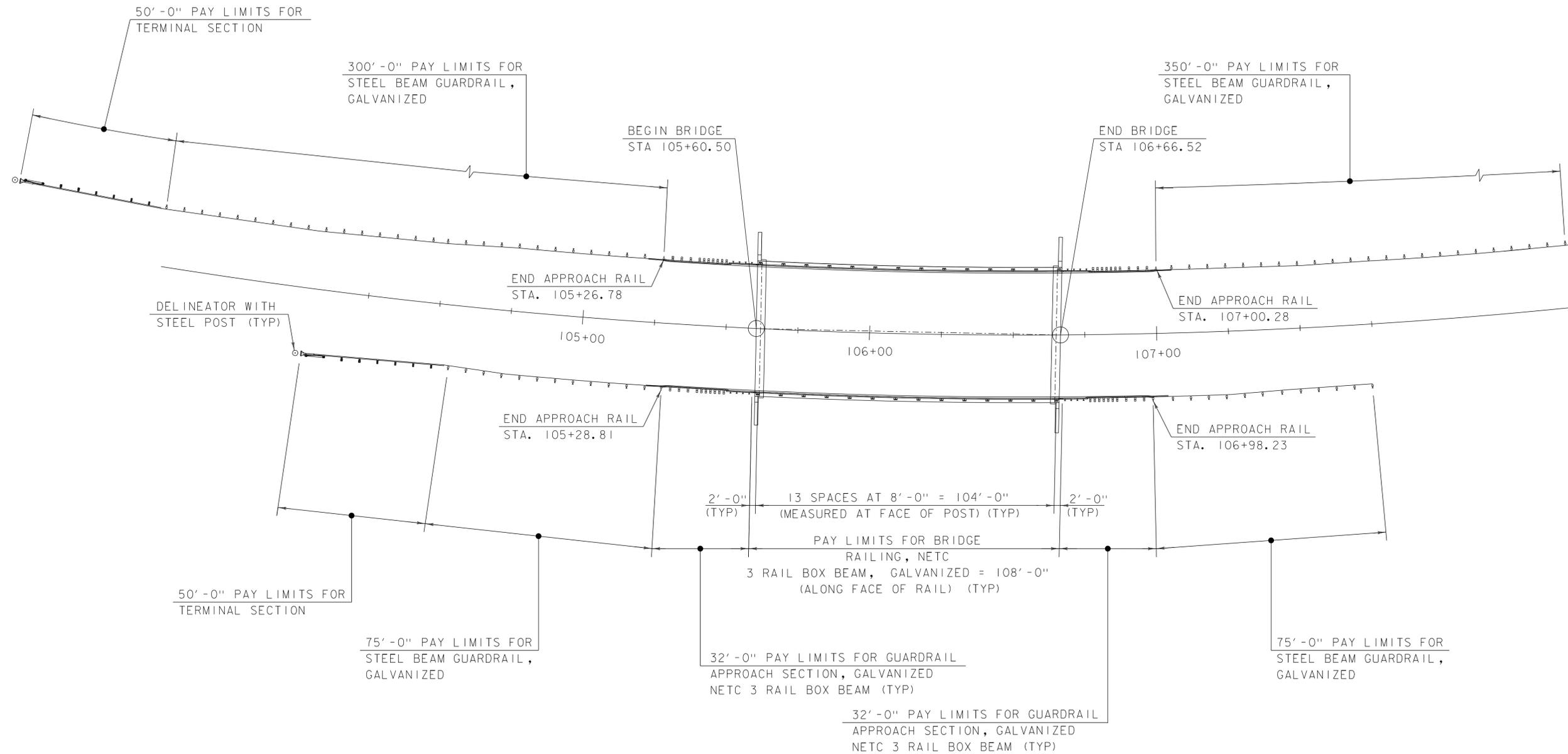
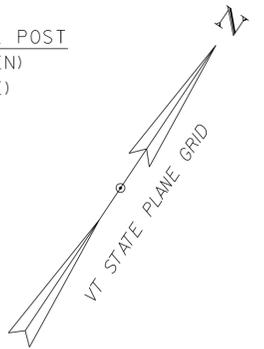


PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332bdr_mot_sgn.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	B. WILLIAMS
		DESIGNED BY:	J. MERCER	CHECKED BY:	T. LEVINS
		CONSTRUCTION APPROACH SIGNING		SHEET	23 OF 49

STEEL BEAM GUARDRAIL, GALVANIZED  
 STA. 102+26.8 - 105+26.8, LT  
 STA. 104+53.8 - 105+28.8, RT  
 STA. 106+98.2 - 107+73.2, RT  
 STA. 107+00.3 - 110+50.3, LT

MANUFACTURED TERMINAL SECTION, TANGENT  
 STA. 101+76.8, LT  
 STA. 104+03.8, RT

DELINEATOR WITH STEEL POST  
 STA. 101+75, LT (GREEN)  
 STA. 104+02, RT (BLUE)



NOTE:

SEE STANDARDS G-1 AND G-19 FOR ADDITIONAL INFORMATION.

RAIL LAYOUT

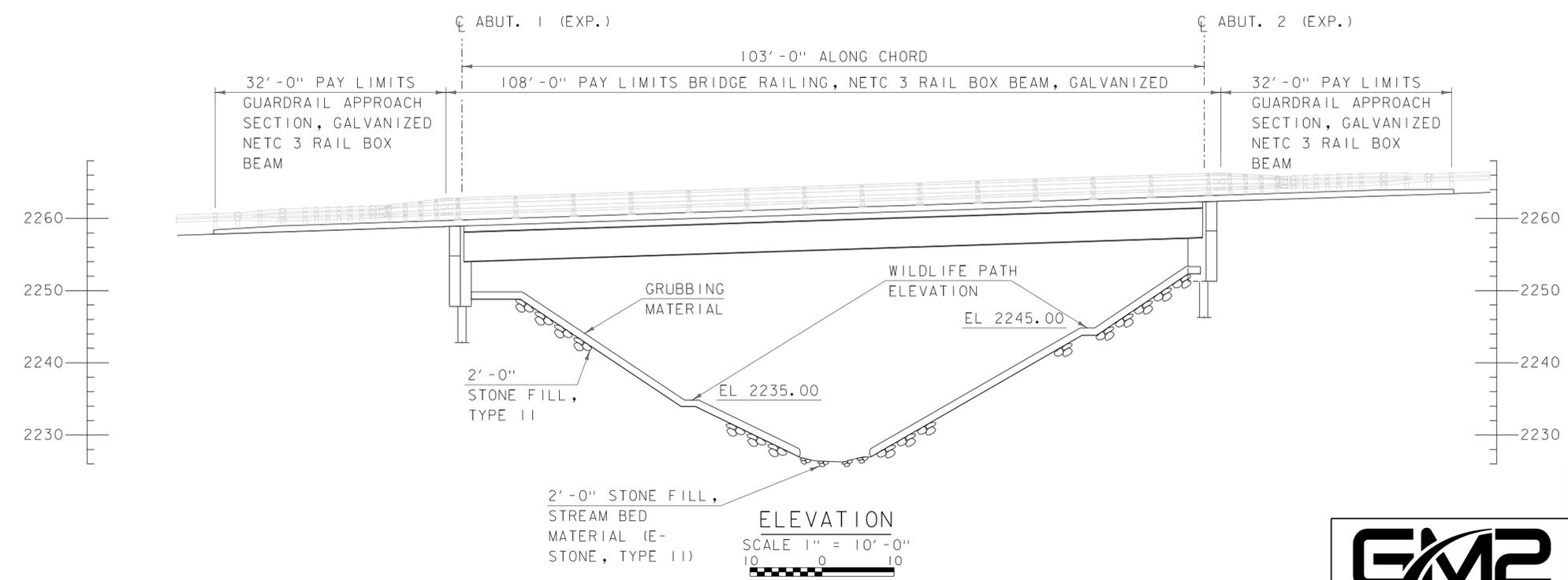
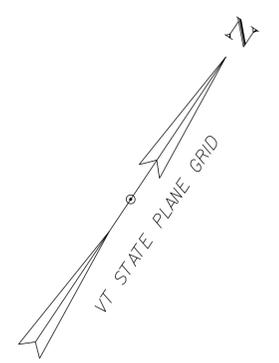
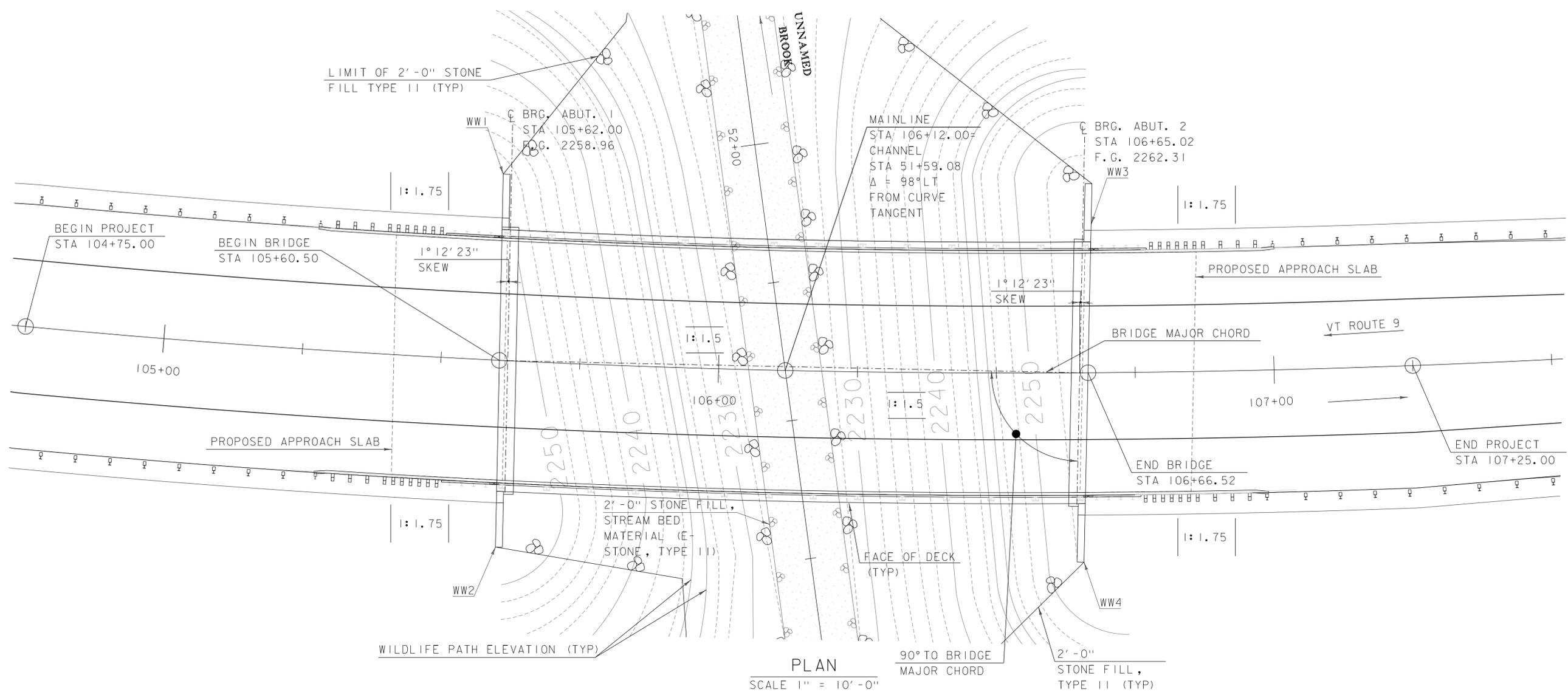
SCALE 1" = 20'-0"  
 20 0 20



PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)

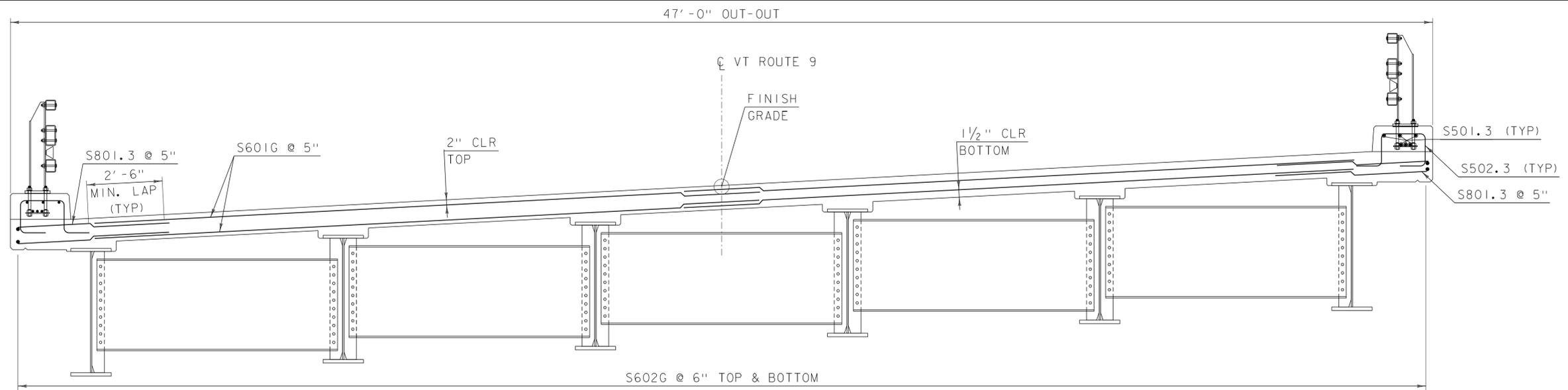
FILE NAME: z13b332rail.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: T. MANNING/J. MERCER  
 RAIL LAYOUT SHEET

PLOT DATE: 9/17/2020  
 DRAWN BY: T. MANNING  
 CHECKED BY: T. LEVINS  
 SHEET 24 OF 49



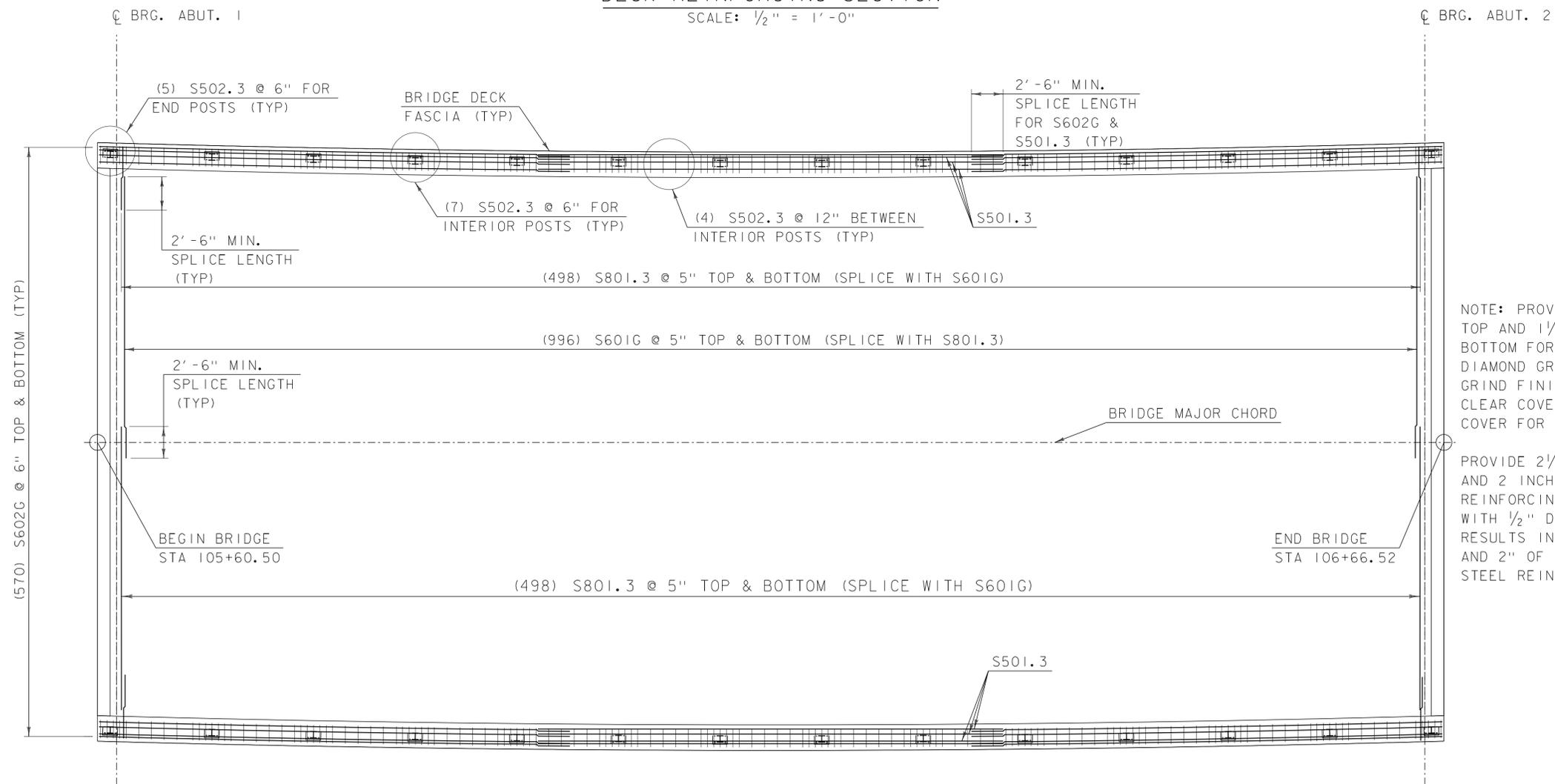
PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332pe.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	T. MANNING
		DESIGNED BY:	T. MANNING	CHECKED BY:	T. LEVINS
		PLAN & ELEVATION			SHEET 25 OF 49





**DECK REINFORCING SECTION**

SCALE: 1/2" = 1'-0"



**DECK REINFORCING PLAN**

SCALE: 3/16" = 1'-0"

NOTE: PROVIDE 2 INCHES OF CLEAR COVER ON TOP AND 1 1/2 INCHES OF CLEAR COVER ON BOTTOM FOR GFRP REINFORCING (PRIOR TO DIAMOND GRINDING). WITH 1/2" DIAMOND GRIND FINISH, THIS RESULTS IN 1 1/2" OF CLEAR COVER FOR TOP AND 1 1/2" OF CLEAR COVER FOR BOTTOM GFRP REINFORCING.

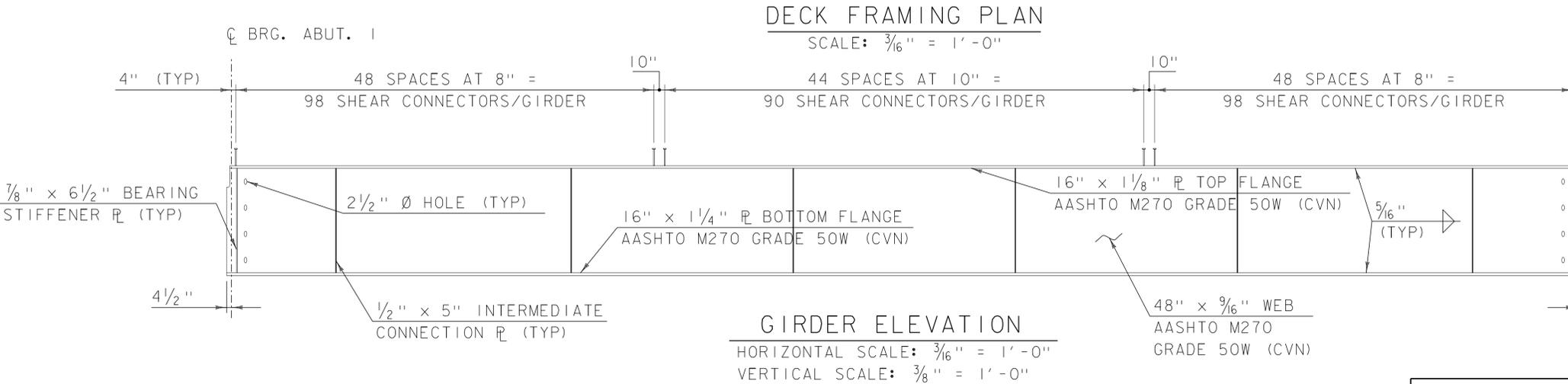
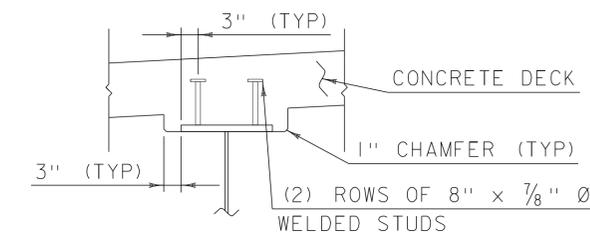
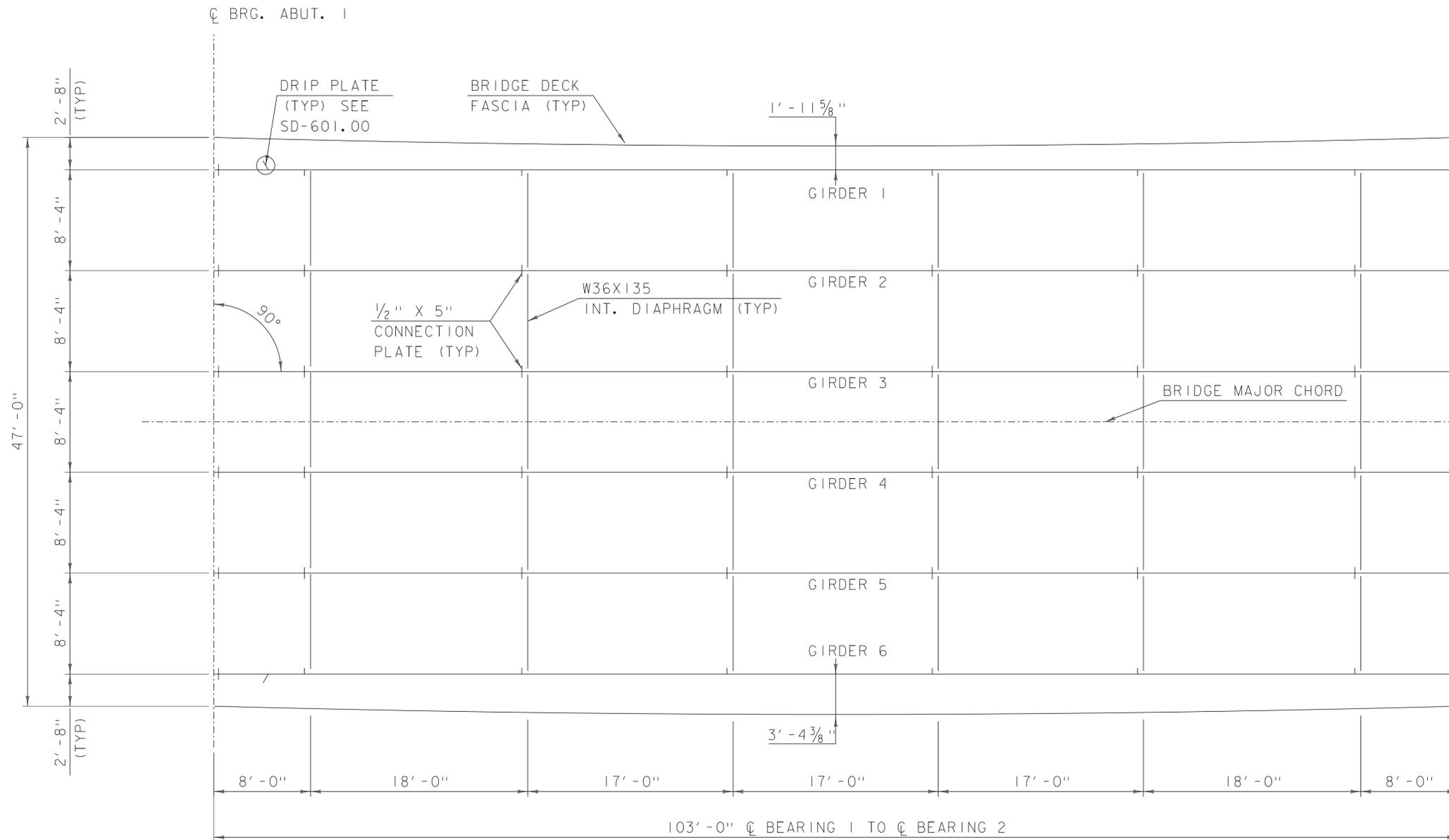
PROVIDE 2 1/2 INCHES OF CLEAR COVER FOR TOP AND 2 INCHES FOR BOTTOM STAINLESS STEEL REINFORCING (PRIOR TO DIAMOND GRINDING). WITH 1/2" DIAMOND GRIND FINISH, THIS RESULTS IN 2" OF CLEAR COVER FOR TOP AND 2" OF CLEAR COVER FOR BOTTOM STAINLESS STEEL REINFORCING.

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-I(50)

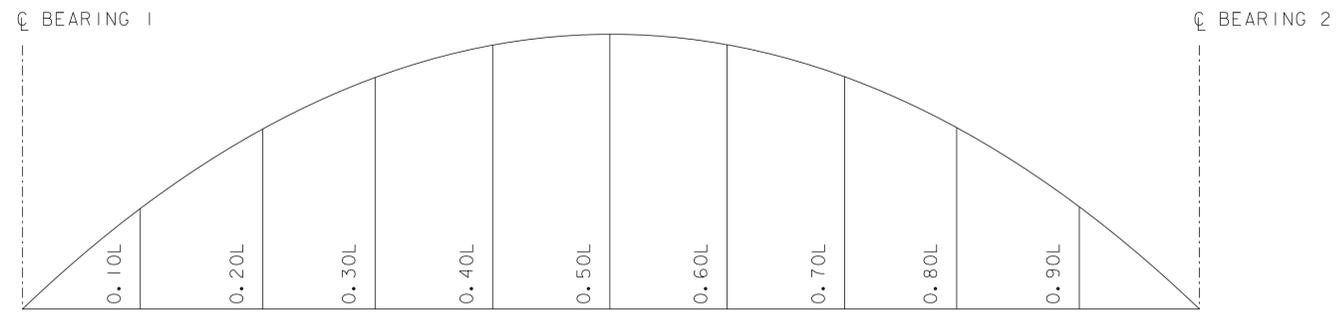
FILE NAME: z13b332sup.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
DECK REINFORCING SECTION

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 26 OF 49

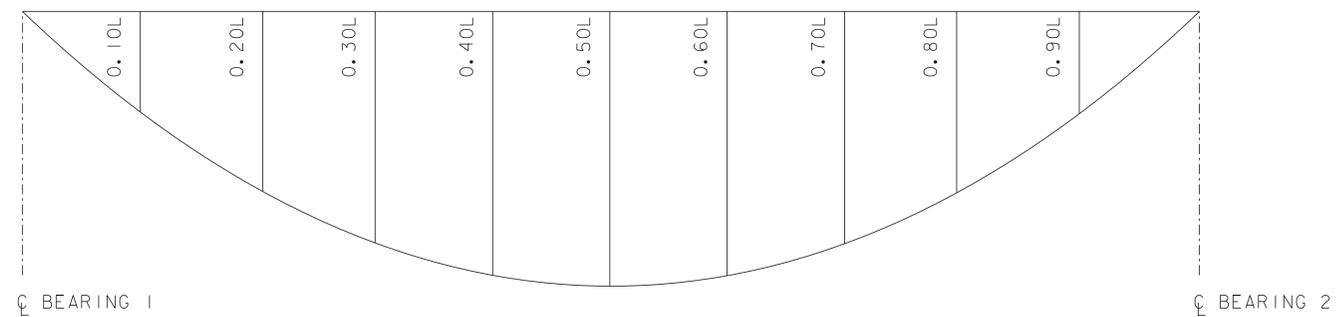




PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332sup.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-I(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	T. MANNING
		DESIGNED BY:	T. MANNING	CHECKED BY:	T. LEVINS
		FRAMING PLAN & DETAILS		SHEET	27 OF 49



**CAMBER DIAGRAM**  
SEE TABLES BELOW



**DEAD LOAD DEFLECTION DIAGRAM**  
SEE TABLES BELOW

INTERIOR GIRDER (G2- G5) CAMBER TABLE AT 0.10L POINTS (INCHES)											
POINT ON GIRDER	0.00L	0.10L	0.20L	0.30L	0.40L	0.50L	0.60L	0.70L	0.80L	0.90L	1.00L
STEEL DL	0.000	0.287	0.542	0.742	0.869	0.913	0.869	0.742	0.542	0.287	0.000
CONCRETE SLAB DL	0.000	0.962	1.819	2.491	2.917	3.063	2.917	2.491	1.819	0.962	0.000
SUPERIMPOSED DL	0.000	0.055	0.105	0.143	0.168	0.176	0.168	0.143	0.105	0.055	0.000
TOTAL CAMBER	0.000	1.304	2.466	3.376	3.954	4.152	3.954	3.376	2.466	1.304	0.000

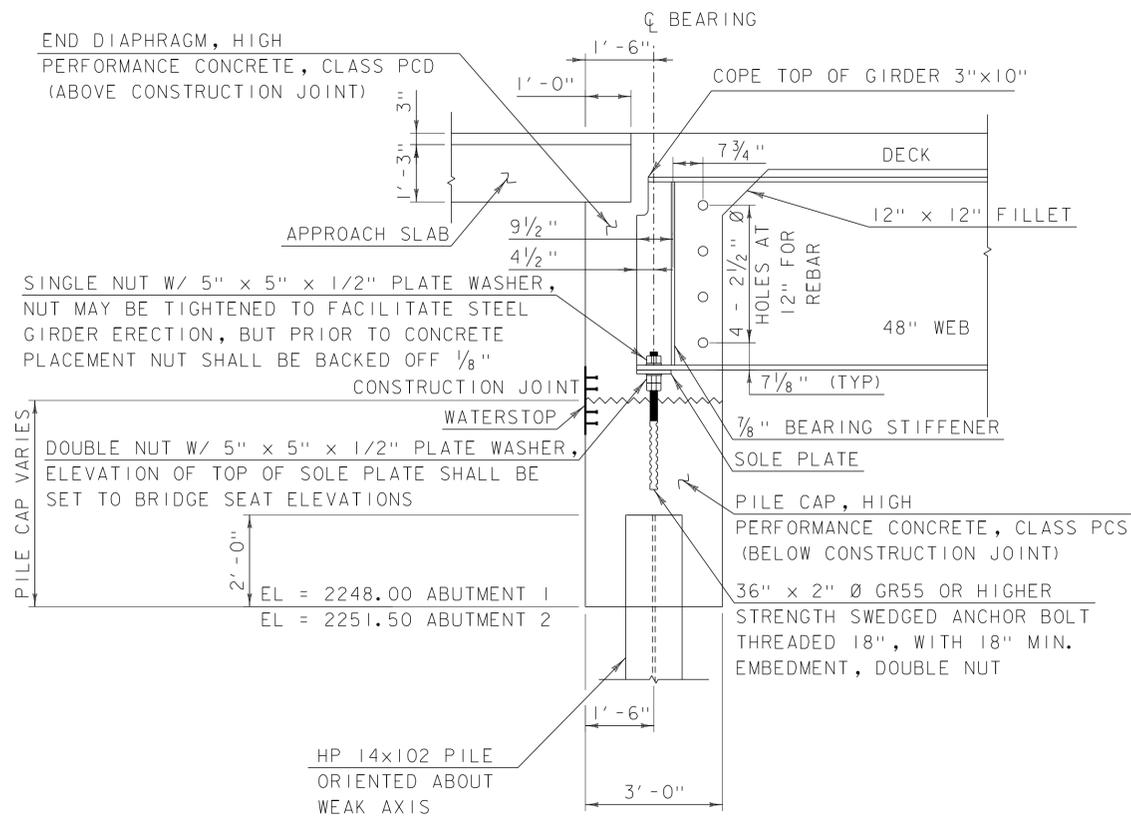
EXTERIOR GIRDER (G1 & G6) CAMBER TABLE AT 0.10L POINTS (INCHES)											
POINT ON GIRDER	0.00L	0.10L	0.20L	0.30L	0.40L	0.50L	0.60L	0.70L	0.80L	0.90L	1.00L
STEEL DL	0.000	0.250	0.473	0.647	0.758	0.796	0.758	0.647	0.473	0.250	0.000
CONCRETE SLAB DL	0.000	0.864	1.635	2.238	2.622	2.753	2.622	2.238	1.635	0.864	0.000
SUPERIMPOSED DL	0.000	0.057	0.107	0.147	0.172	0.180	0.172	0.147	0.107	0.057	0.000
TOTAL CAMBER	0.000	1.171	2.215	3.032	3.551	3.729	3.551	3.032	2.215	1.171	0.000

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332sup.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
CAMBER AND DEFLECTION DETAILS

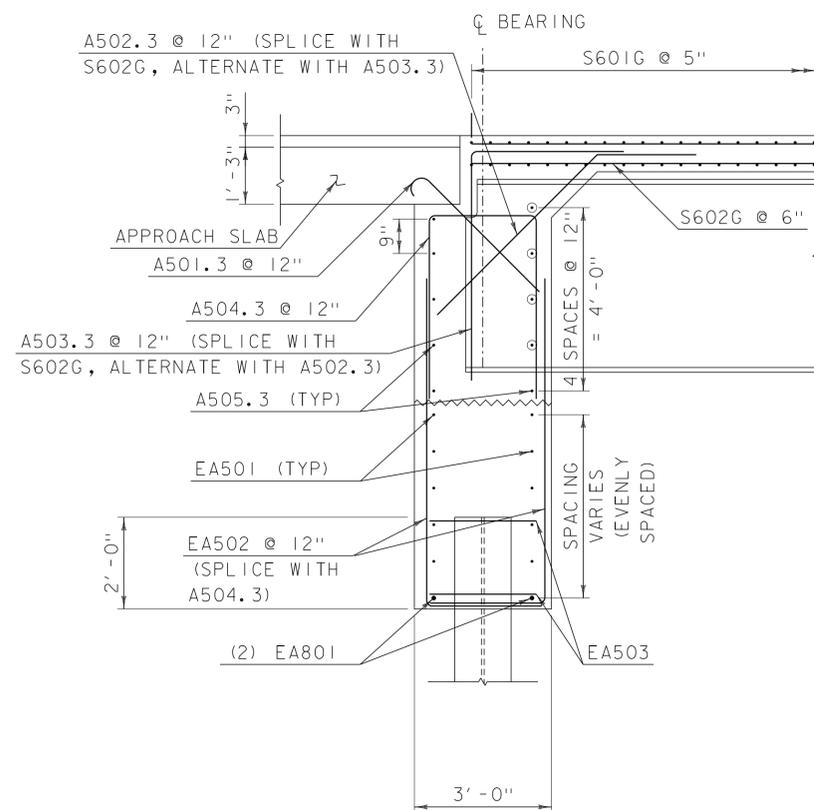
PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 28 OF 49





**ABUTMENT END BRIDGE DETAIL**

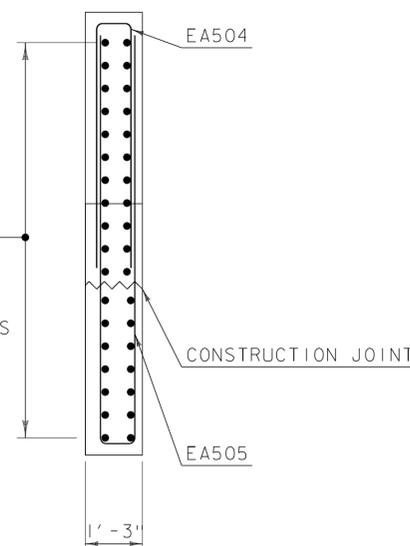
SCALE: 1/2" = 1'-0"



**ABUTMENT END BRIDGE REINFORCING DETAIL**

SCALE: 1/2" = 1'-0"

SEE ABUTMENT 1 & 2 REINFORCEMENT PLAN & ELEVATION FOR ADDITIONAL WINGWALL REINFORCEMENT DETAILS

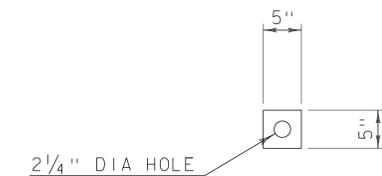
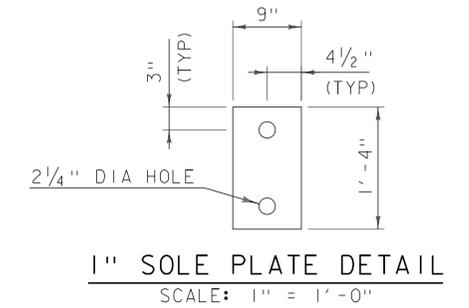


**WINGWALL REINFORCING DETAIL**

SCALE: 1/2" = 1'-0"

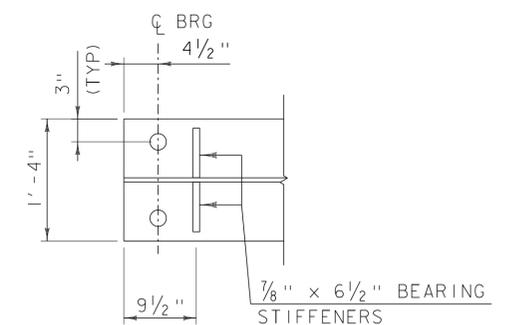
**NOTES:**

1. PAYMENT FOR THE SOLE PLATES, ANCHOR BOLTS, WASHERS, AND NUTS SHALL BE INCIDENTAL TO ITEM 506.55, STRUCTURAL STEEL, PLATE GIRDER.
2. SUBSTITUTIONS FOR BEARING DEVICE ASSEMBLY COMPONENT, MATERIALS AND SIZES SHALL BE DETAILED ON FABRICATION DRAWINGS. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO FABRICATION AS PER SUBSECTION 506.04.



**1/2" PLATE WASHER DETAIL**

SCALE: 1" = 1'-0"



**END BEAM BEARING DETAIL**

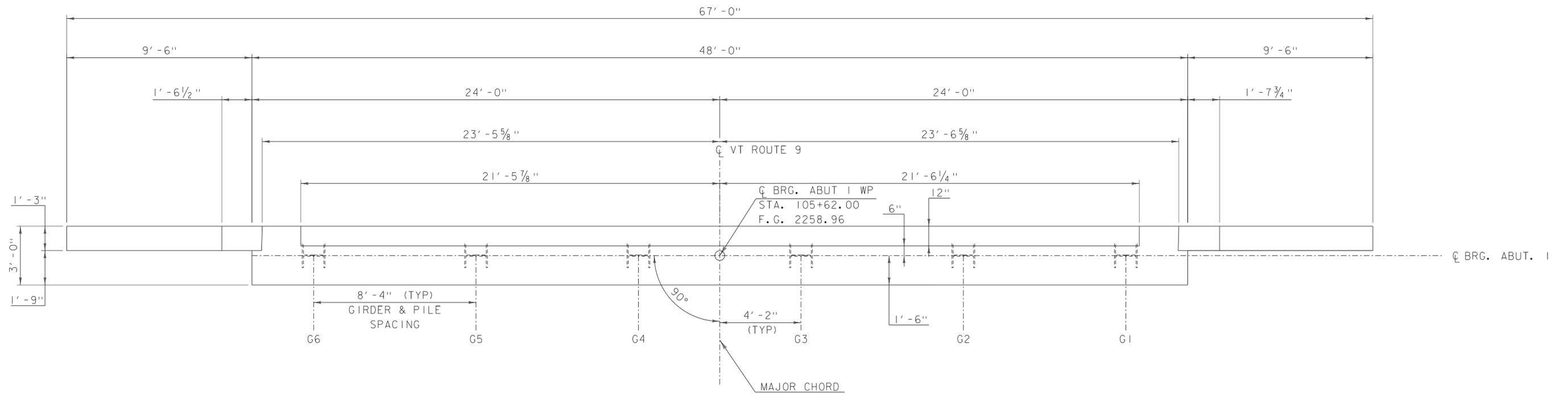
SCALE: 1" = 1'-0"

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-I(50)

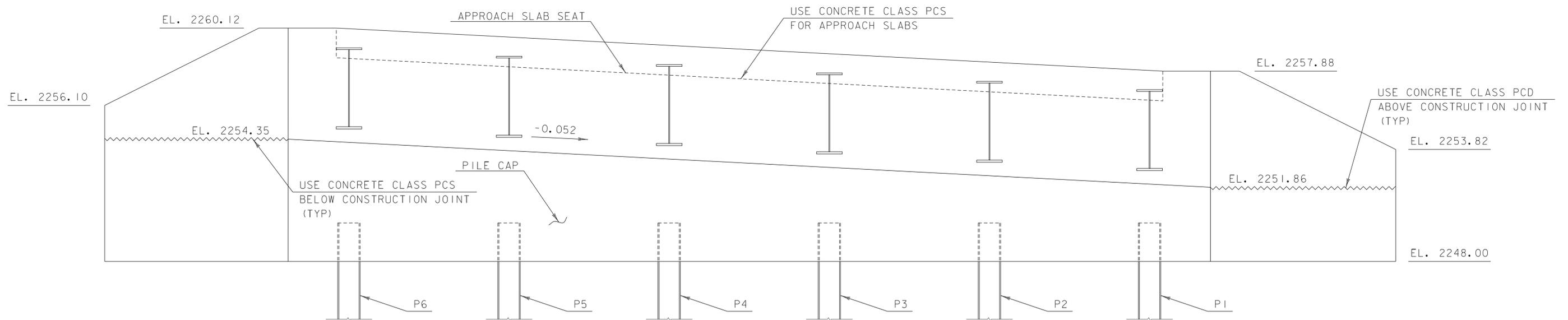
FILE NAME: z13b332sub.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
BEARING DETAILS

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 29 OF 49





ABUTMENT I PLAN  
SCALE: 3/8" = 1'-0"



ABUTMENT I ELEVATION  
SCALE: 3/8" = 1'-0"

TOP OF SOLE PLATE ELEVATION

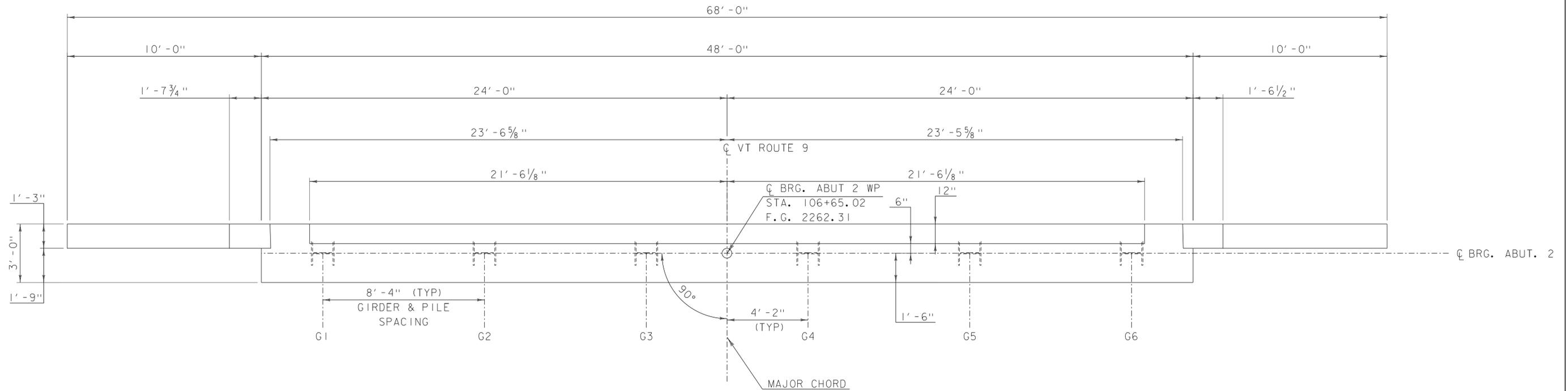
	ABUTMENT I
GIRDER 1	2252.72
GIRDER 2	2253.16
GIRDER 3	2253.59
GIRDER 4	2254.02
GIRDER 5	2254.46
GIRDER 6	2254.89

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-I(50)

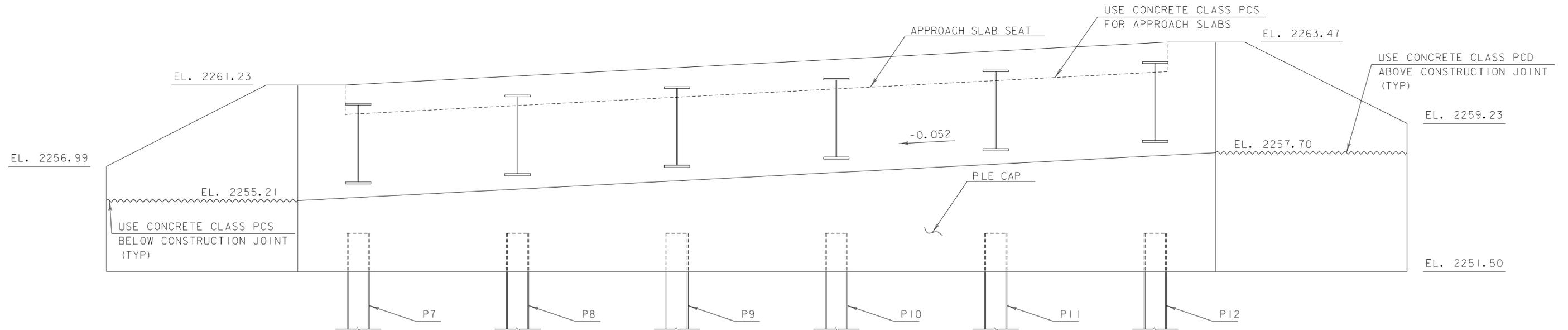


FILE NAME: z13b332sub.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
ABUTMENT I PILE CAP PLAN & ELEVATION

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 30 OF 49



**ABUTMENT 2 PLAN**  
SCALE:  $\frac{3}{8}$ " = 1'-0"



**ABUTMENT 2 ELEVATION**  
SCALE:  $\frac{3}{8}$ " = 1'-0"

TOP OF SOLE PLATE ELEVATION

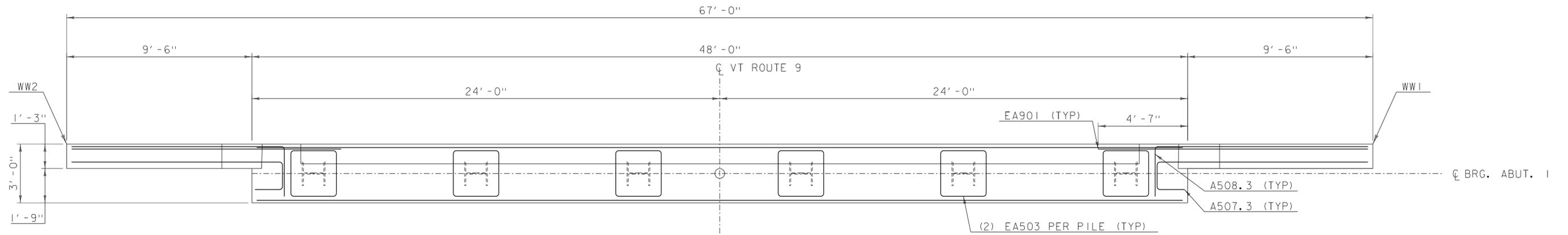
	ABUTMENT 2
GIRDER 1	2256.07
GIRDER 2	2256.51
GIRDER 3	2256.94
GIRDER 4	2257.37
GIRDER 5	2257.81
GIRDER 6	2258.24

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

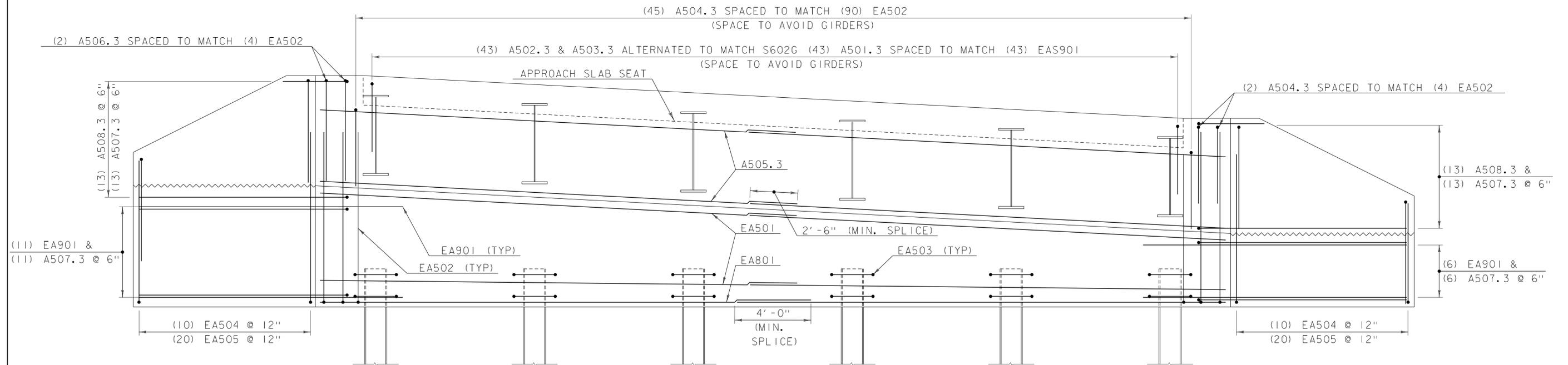
FILE NAME: z13b332sub.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
ABUTMENT 2 PILE CAP PLAN & ELEVATION

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 31 OF 49





ABUTMENT I PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



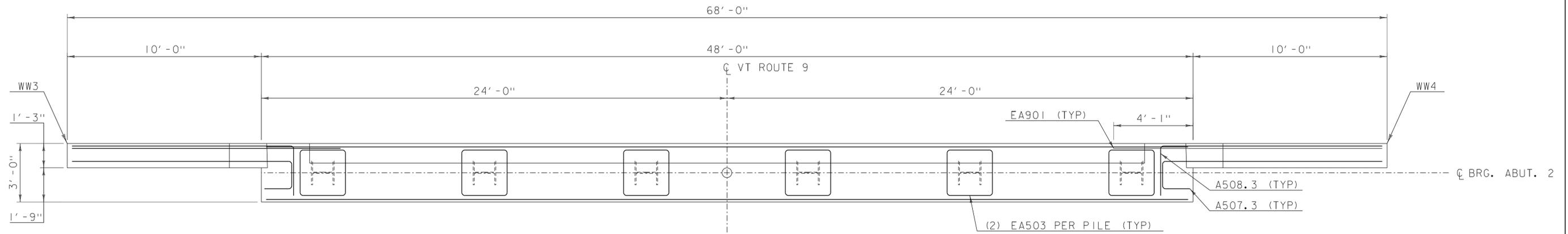
ABUTMENT I ELEVATION  
SCALE:  $\frac{3}{8}$ " = 1'-0"

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-I(50)

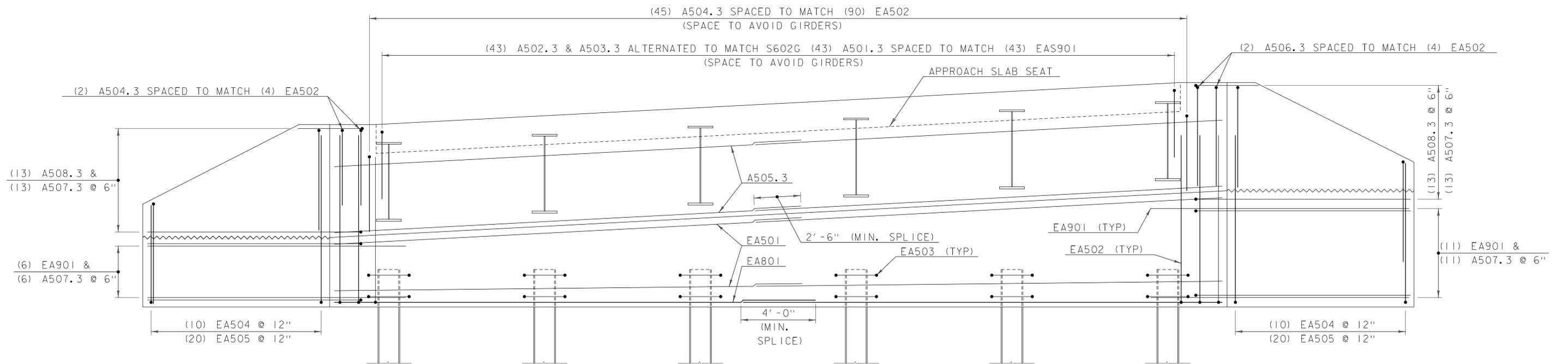


FILE NAME: z13b332sub.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
ABUTMENT I REINFORCEMENT

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 32 OF 49



ABUTMENT 2 PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



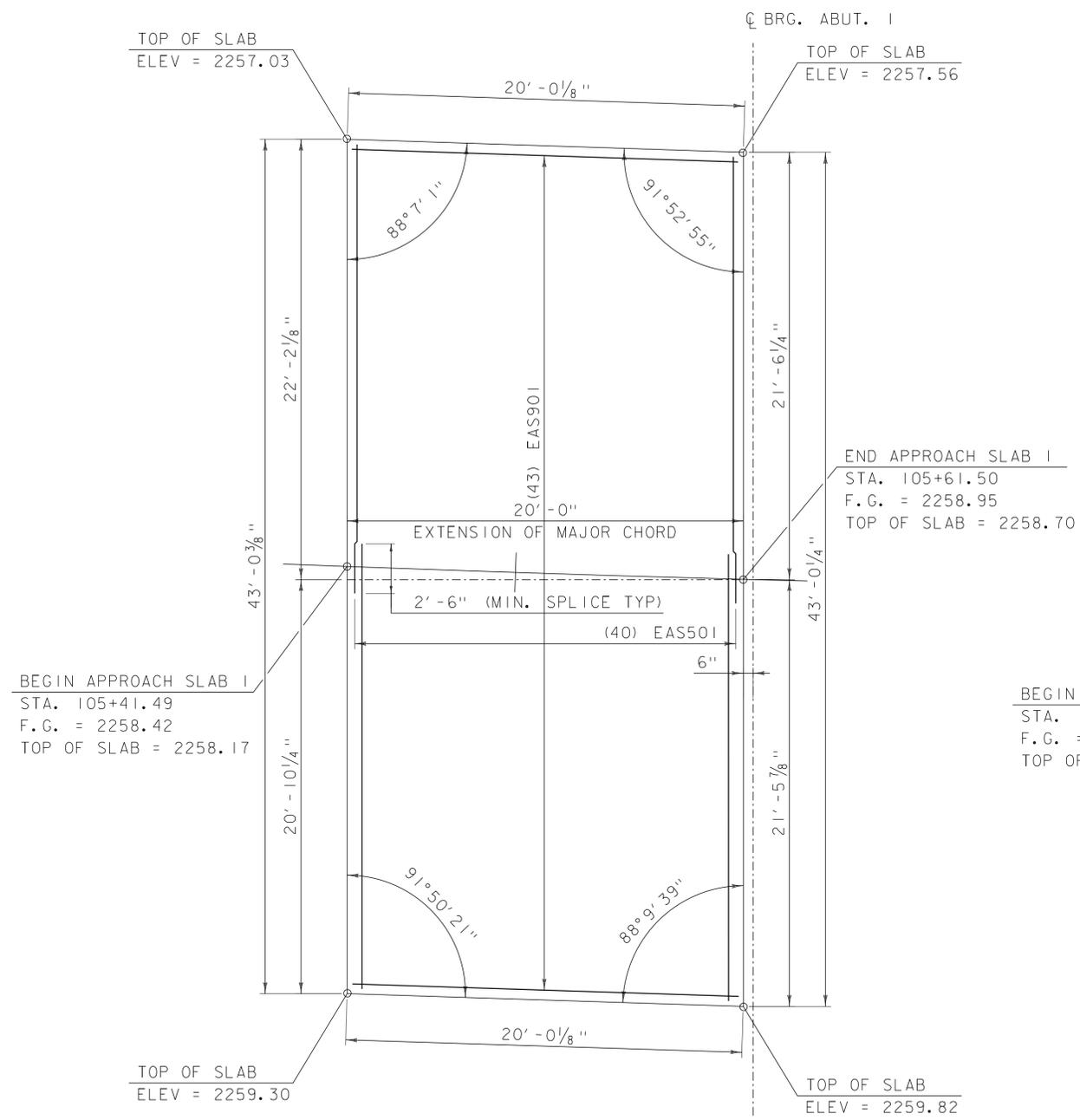
ABUTMENT 2 ELEVATION  
SCALE:  $\frac{3}{8}$ " = 1'-0"

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-I(50)

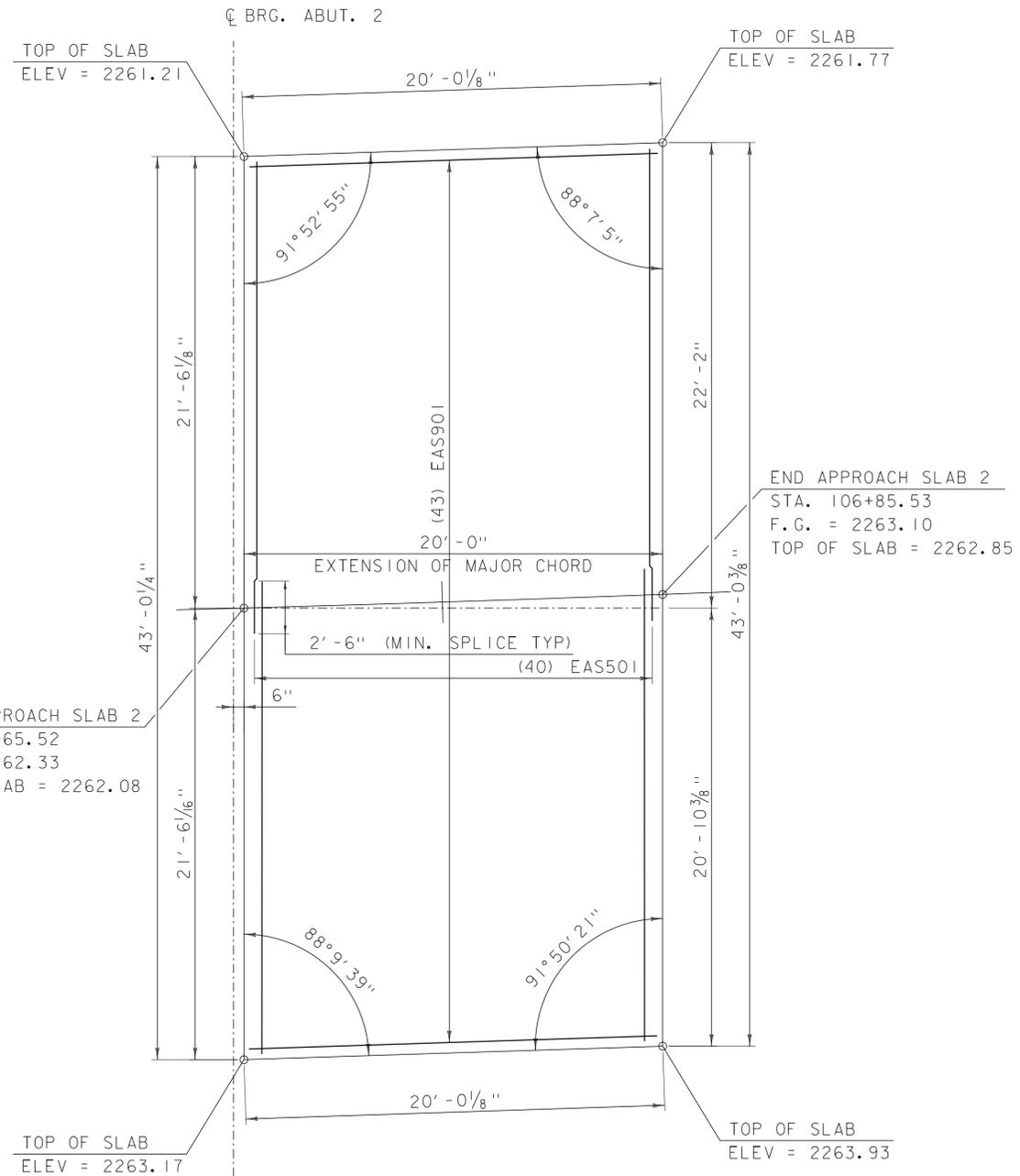


FILE NAME: z13b332sub.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
ABUTMENT 2 REINFORCEMENT

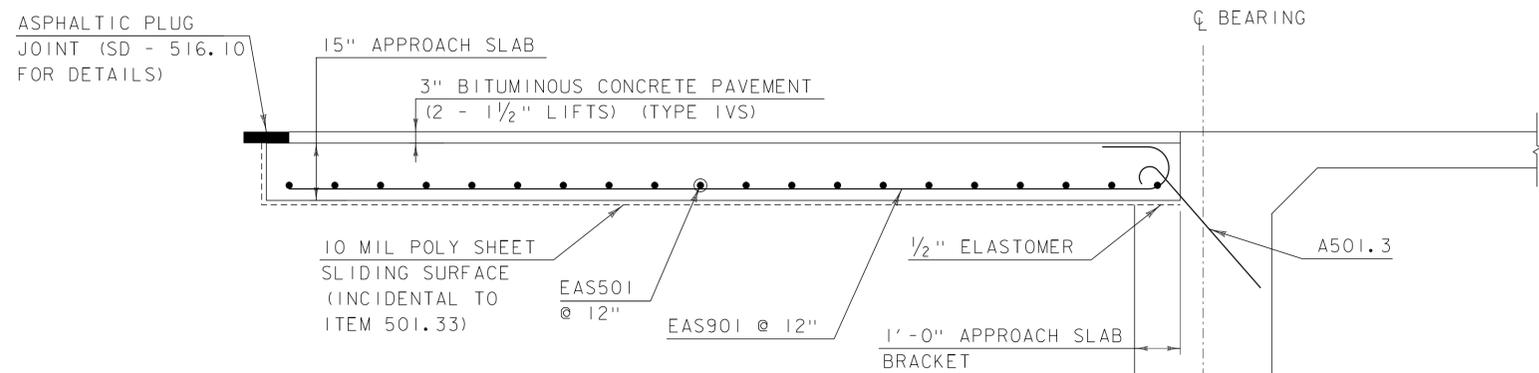
PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 33 OF 49



APPROACH SLAB 1 PLAN  
 SCALE: 1/4" = 1'-0"



APPROACH SLAB 2 PLAN  
 SCALE: 1/4" = 1'-0"



TYPICAL APPROACH SLAB  
 SCALE: 1/2" = 1'-0"



PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-I(50)

FILE NAME: z13b332sub.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: T. MANNING  
 APPROACH SLAB DETAILS

PLOT DATE: 9/17/2020  
 DRAWN BY: T. MANNING  
 CHECKED BY: T. LEVINS  
 SHEET 34 OF 49

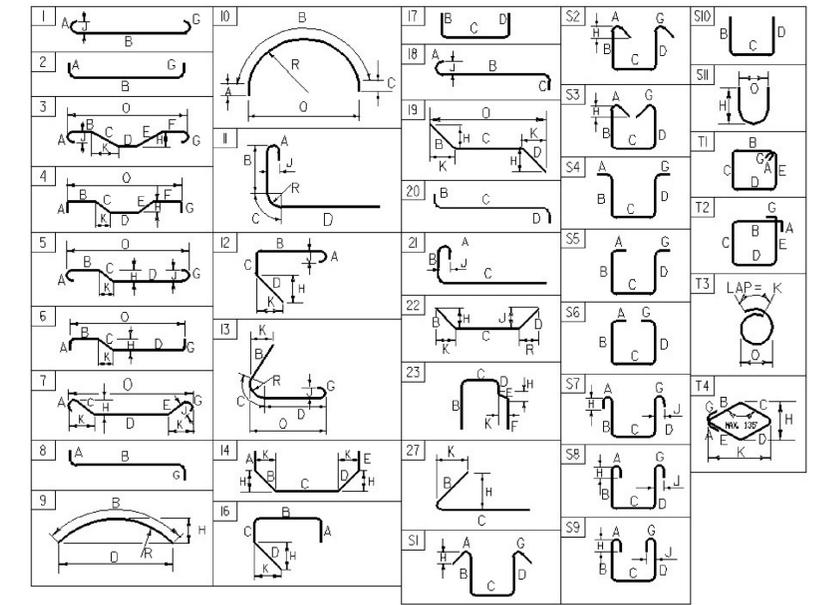
STATE OF VERMONT  
AGENCY OF TRANSPORTATION

# REINFORCING SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O		
<b>DECK</b>																																					
996	8	5'	6"	S801.3	STR																																
996	6	22'	3"	S601G	STR																																
570	6	37'	2"	S602G	STR																																
36	5	37'	2"	S501.3	STR																																
292	5	5'	3"	S502.3	S5	0'-10"	1'-1"	1'-5"	1'-1"			1'-5"																									
<b>APPROACH SLAB 1</b>																																					
40	5	22'	7"	EAS501	STR																																
43	9	21'	1"	EAS901	1		19'-6"					1'-7"		0'-10"																							
<b>APPROACH SLAB 2</b>																																					
40	5	22'	7"	EAS501	STR																																
43	9	21'	1"	EAS901	1		19'-6"					1'-7"		0'-10"																							
<b>ABUTMENT 1</b>																																					
43	5	4'-2"	A501.3	1	0'-9"	3'-5"																															
43	5	7'-1"	A502.3	22		4'-11"	2'-2"																														
43	5	8'-4"	A503.3	17		3'-4"	5'-0"																														
47	5	10'-6"	A504.3	17		4'-0"	2'-6"	4'-0"																													
20	5	25'-0"	A505.3	STR																																	
2	5	13'-0"	A506.3	17		5'-3"	2'-6"	5'-3"																													
▲	43	5	14'-4"	A507.3	16	1'-6"	1'-6"	11'-4"																													
▲	26	5	13'-10"	A508.3	16		2'-6"	11'-4"																													
20	5	25'-0"	EA501	STR																																	
▲	98	5	11'-5"	EA502	17		8'-11"	2'-6"																													
12	5	10'-0"	EA503	T2	0'-4"	2'-4"	2'-4"	2'-4"	2'-4"			0'-4"																									
20	5	11'-5"	EA504	17		5'-4"	0'-9"	5'-4"																													
▲	40	5	9'-8"	EA505	17		8'-11"	0'-9"																													
4	8	25'-9"	EA801	STR																																	
17	9	13'-10"	EA901	STR																																	
<b>ABUTMENT 2</b>																																					
43	5	4'-2"	A501.3	1	0'-9"	3'-5"																															
43	5	7'-1"	A502.3	22		4'-11"	2'-2"																														
43	5	8'-4"	A503.3	17		3'-4"	5'-0"																														
47	5	10'-6"	A504.3	17		4'-0"	2'-6"	4'-0"																													
20	5	25'-0"	A505.3	STR																																	
2	5	13'-0"	A506.3	17		5'-3"	2'-6"	5'-3"																													
▲	43	5	14'-4"	A507.3	16	1'-6"	1'-6"	11'-4"																													
▲	26	5	13'-10"	A508.3	16		2'-6"	11'-4"																													
20	5	25'-0"	EA501	STR																																	
▲	98	5	11'-5"	EA502	17		8'-11"	2'-6"																													
12	5	10'-0"	EA503	T2	0'-4"	2'-4"	2'-4"	2'-4"	2'-4"			0'-4"																									
20	5	11'-5"	EA504	17		5'-4"	0'-9"	5'-4"																													
▲	40	5	9'-8"	EA505	17		8'-11"	0'-9"																													
4	8	25'-9"	EA801	STR																																	
17	9	13'-10"	EA901	STR																																	

~ NOTES ~

- UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
- FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE". REINFORCEMENT", AASHTO M31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
- ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
- "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
- "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
- WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
- ▲ DENOTES BARS TO BE CUT IN FIELD.
- \* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
- △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
- E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



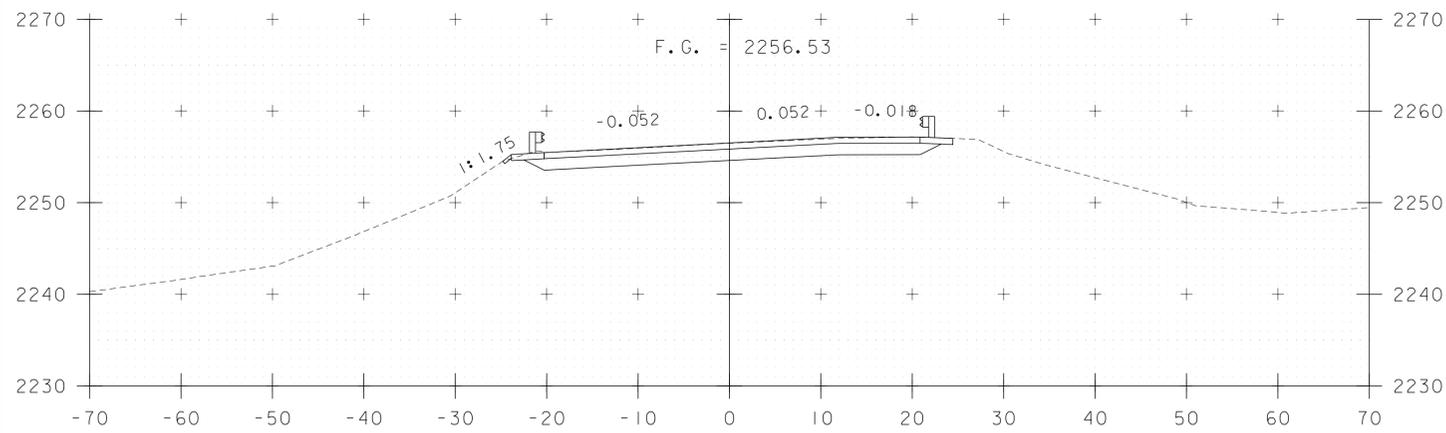
ASTM STANDARD REINFORCING BARS				
BAR SIZE	WEIGHT PER FOOT	CROSS SECTION AREA (SQ IN)	AREA PER FOOT (SQ IN)	PERIMETER (IN)
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.04	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.14
#9	3.400	1.13	1.00	3.54
#10	4.3	1.270	1.27	3.990
#11	5.31	1.410	1.56	4.430
#14	7.65	1.69	2.25	5.32
#18	13.60	2.26	4.00	7.09

~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~

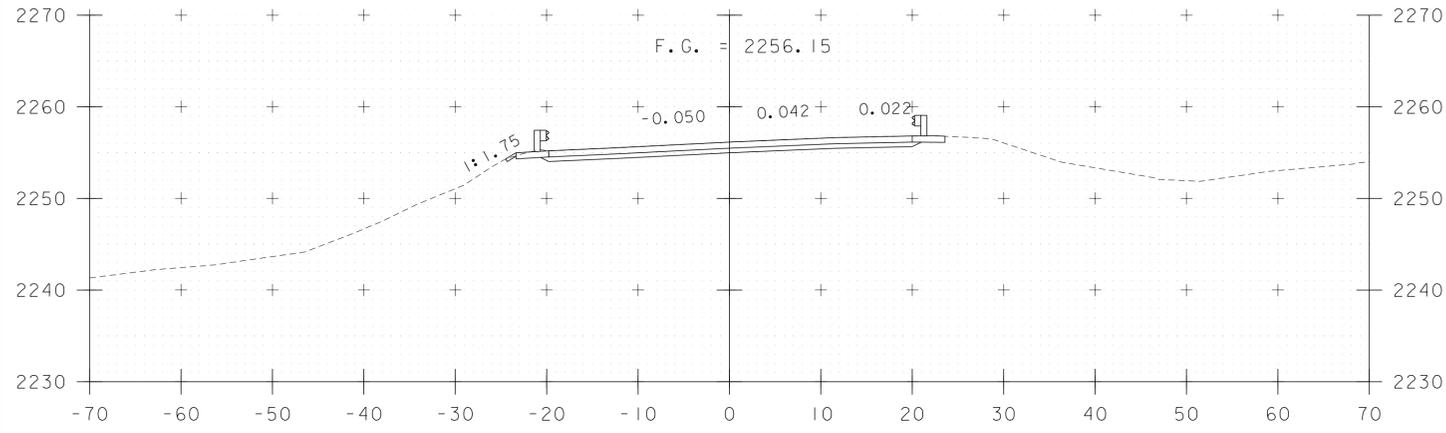
THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO SUFFIX OR .3 FOR LEVEL THREE SUFFIX. .1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET P1 SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.



PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)  
FILE NAME: z13b332sup.dgn PLOT DATE: 9/17/2020  
PROJECT LEADER: T. LEVINS DRAWN BY: T. MANNING  
DESIGNED BY: T. MANNING CHECKED BY: T. LEVINS  
REINFORCING SCHEDULE SHEET 35 OF 49

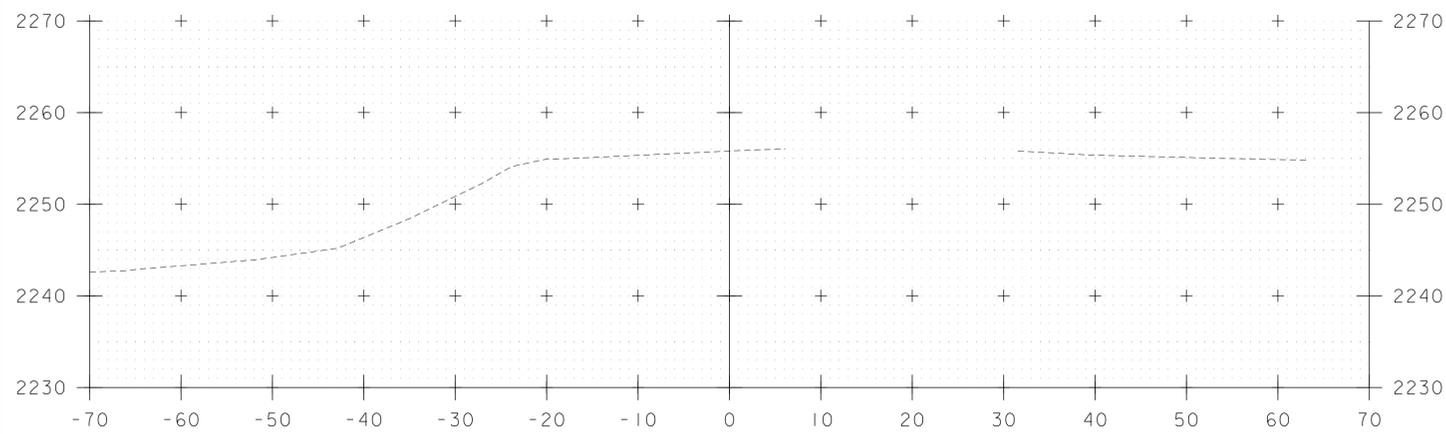


104+50

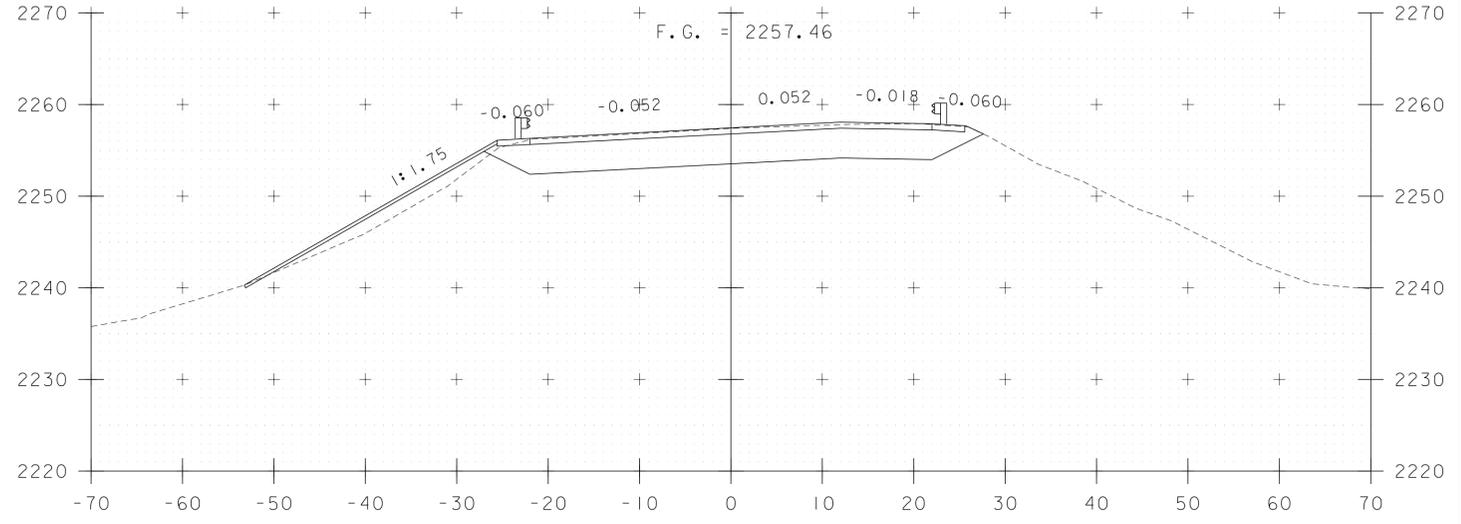


104+25

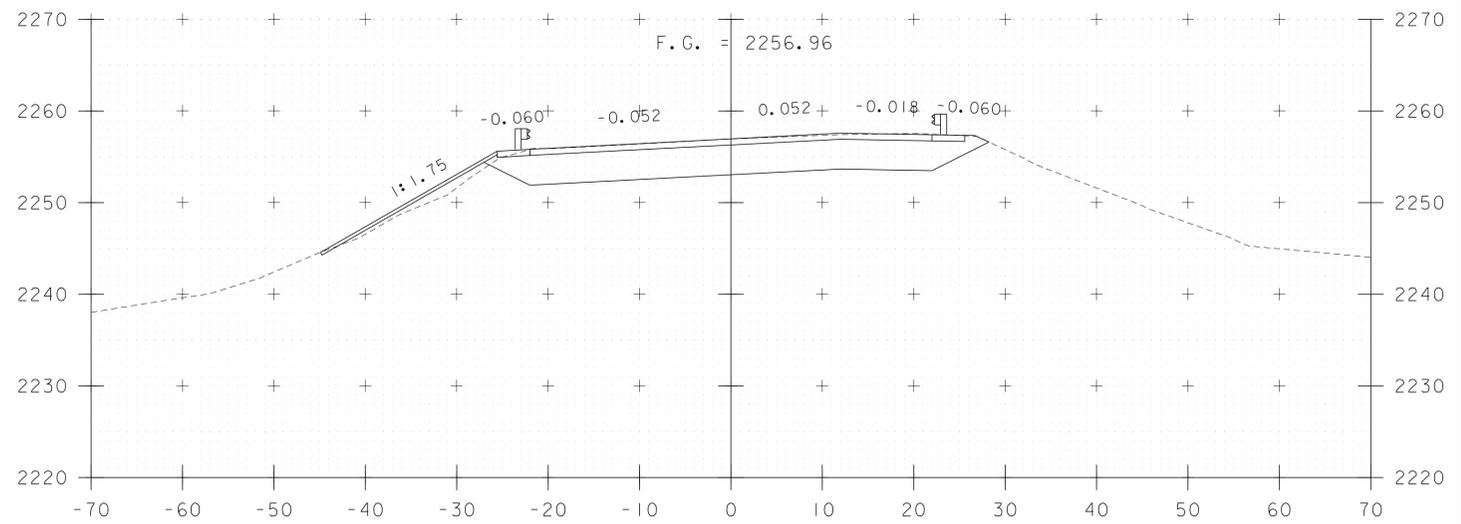
END COARSE-MILLING (MATCH EXISTING)



104+00



105+00



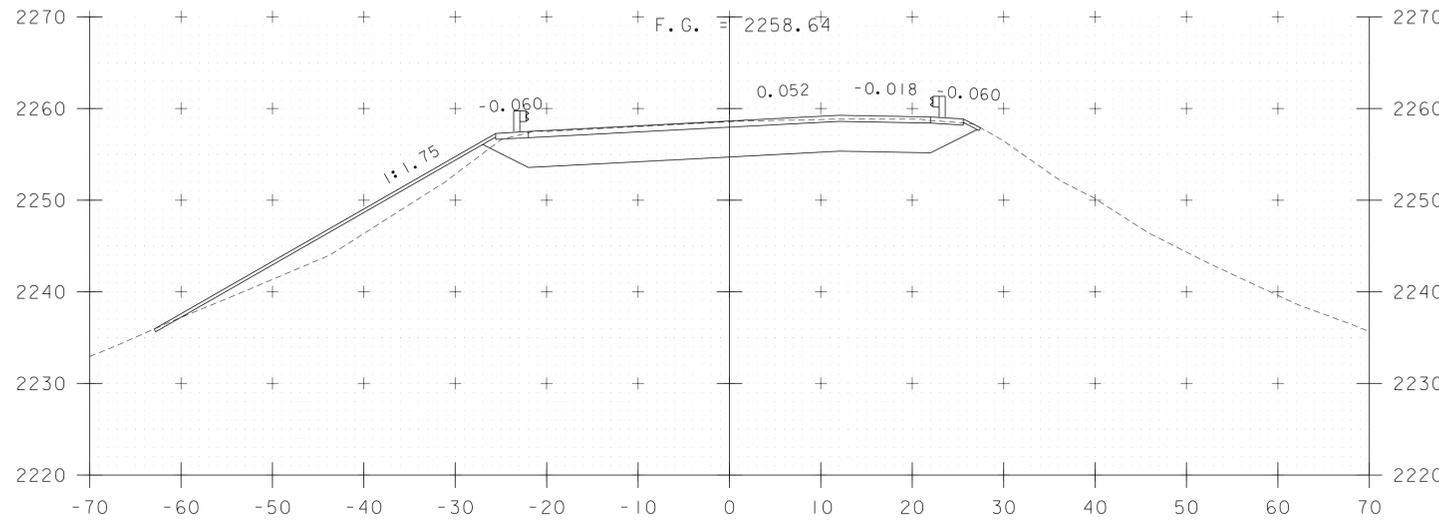
104+75  
BEGIN PROJECT

BEGIN APPROACH  
STA. 101+25  
BEGIN COARSE-MILLING

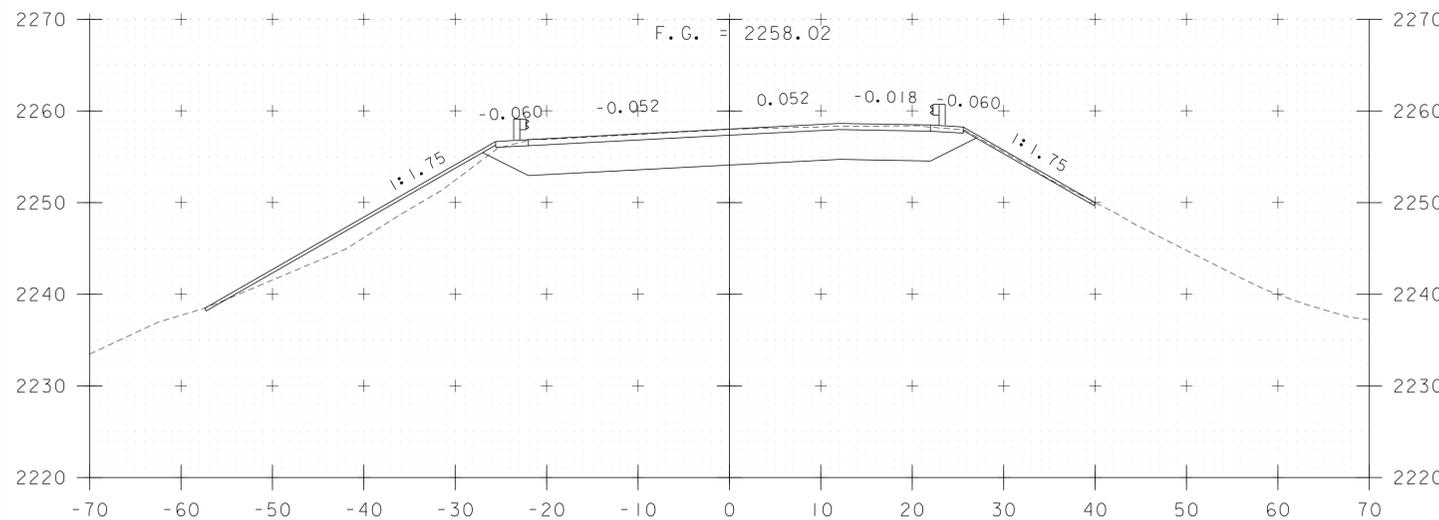
STA. 104+00 TO STA. 105+00



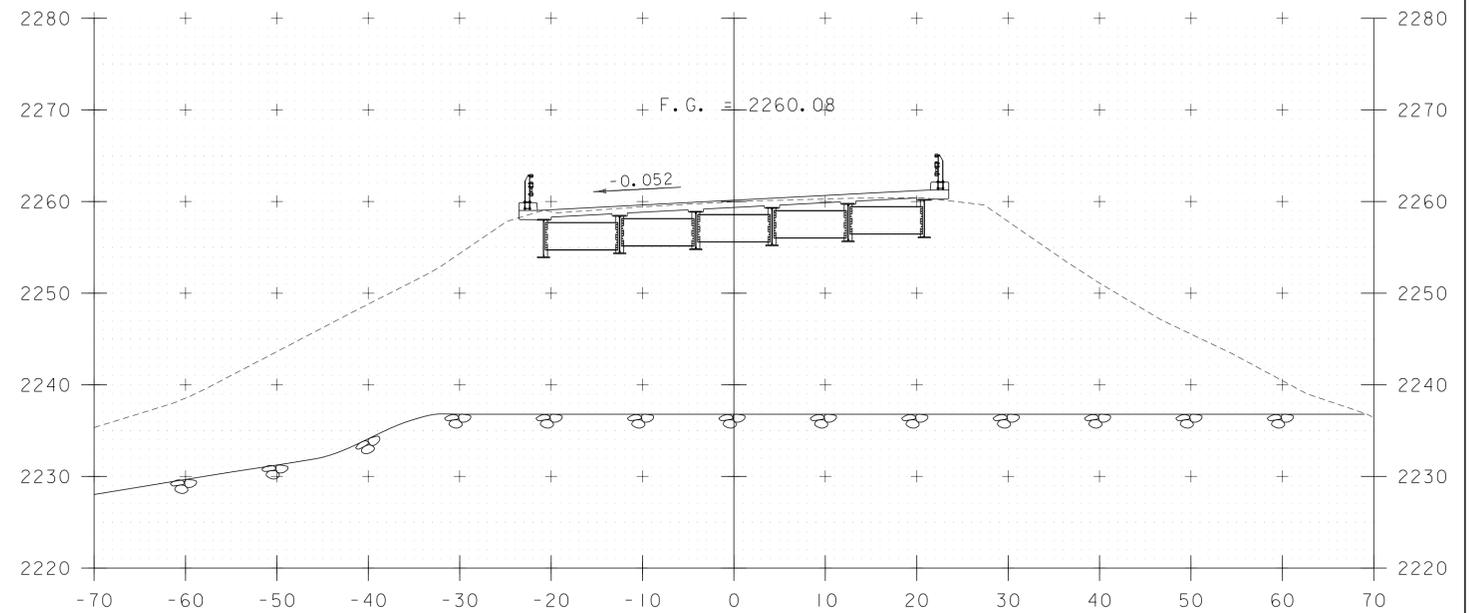
PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332xs.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	J. MERCER
		DESIGNED BY:	J. MERCER	CHECKED BY:	T. LEVINS
		VT ROUTE 9 CROSS SECTIONS I		SHEET	36 OF 49



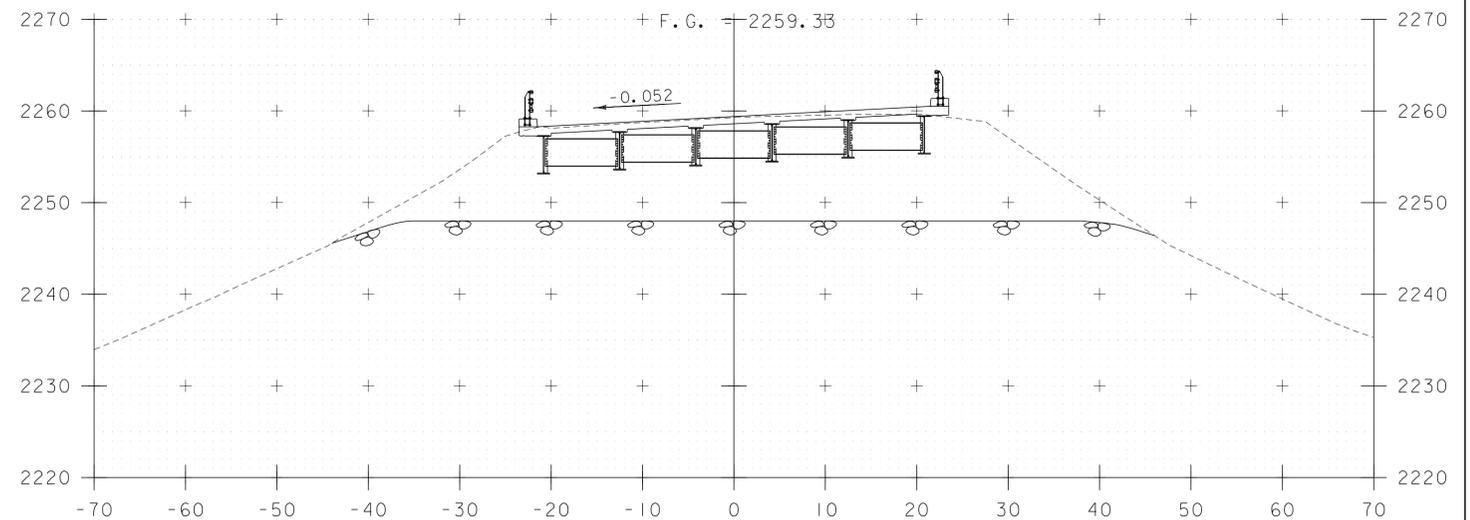
105+50



105+25



106+00



105+75  
BEGIN BRIDGE @ 105+60.50

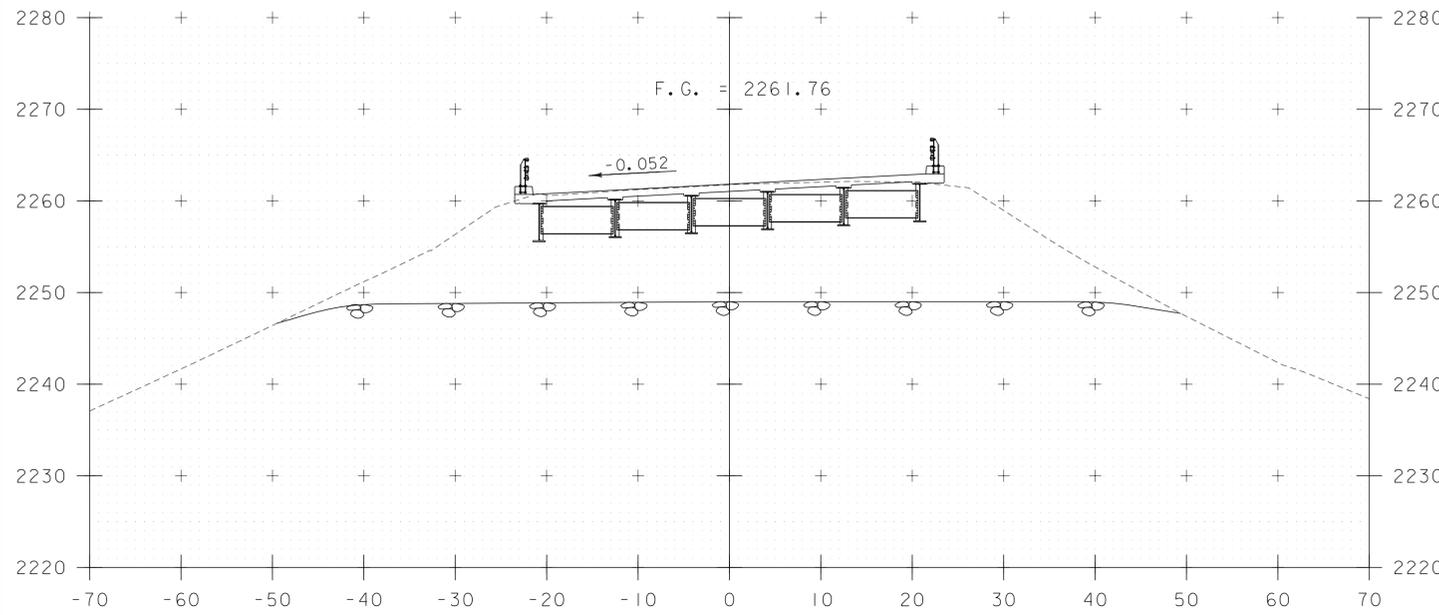
STA. 105+25 TO STA. 106+00



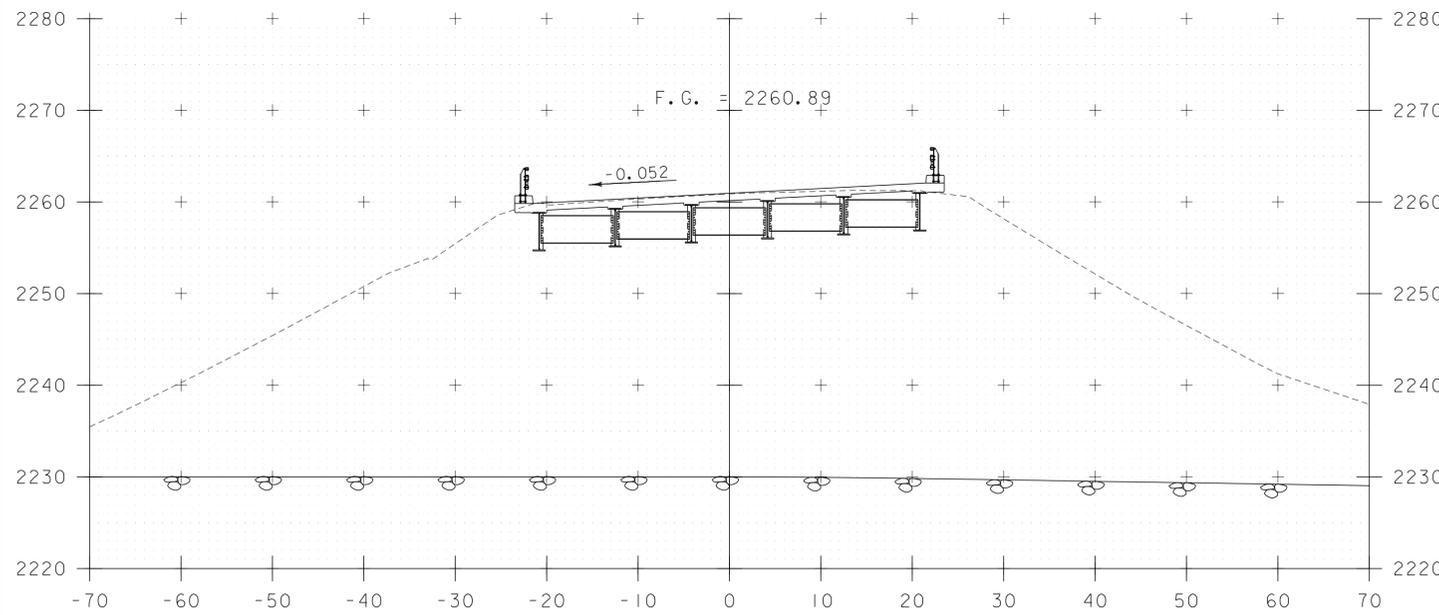
PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332xs.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: J. MERCER  
VT ROUTE 9 CROSS SECTIONS 2

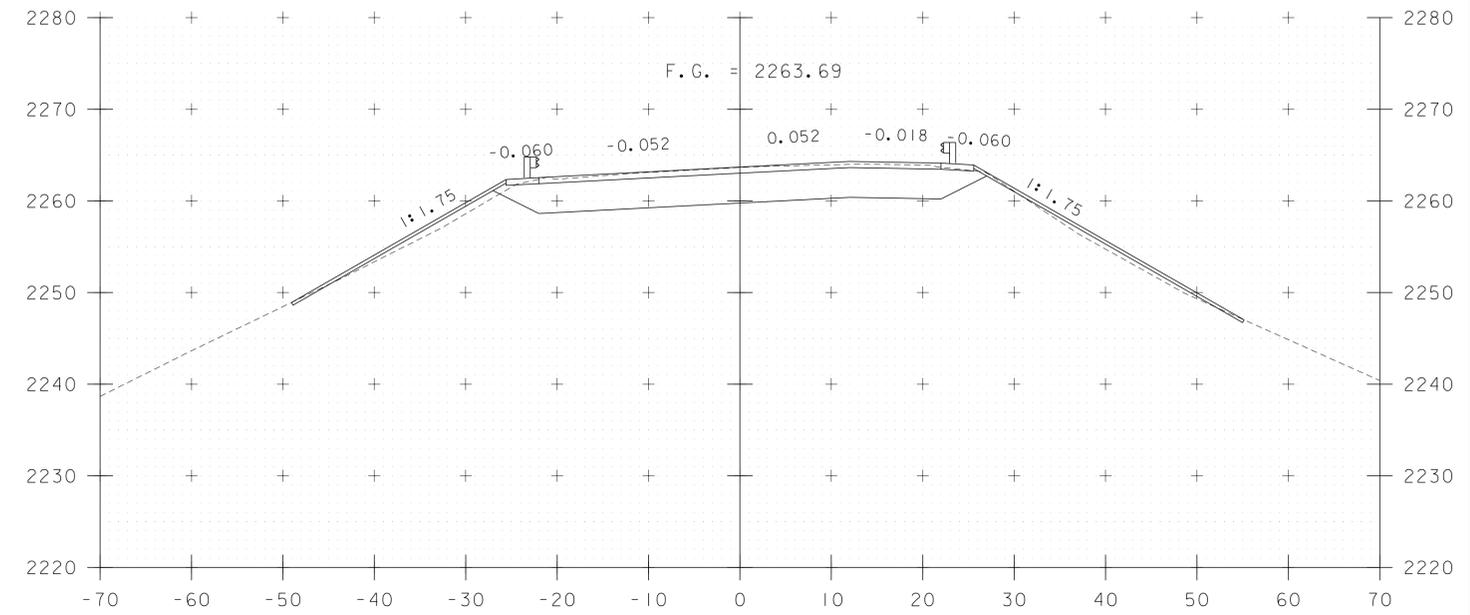
PLOT DATE: 9/17/2020  
DRAWN BY: J. MERCER  
CHECKED BY: T. LEVINS  
SHEET 37 OF 49



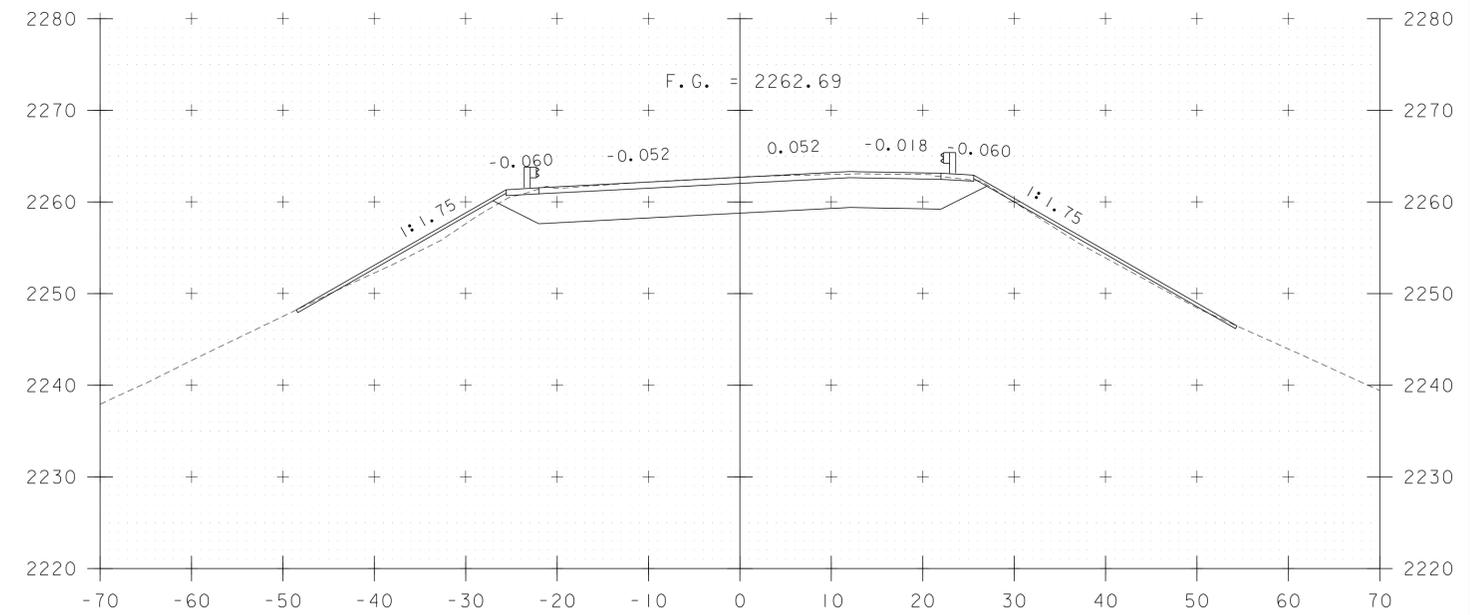
106+50



106+25



107+00



106+75  
END BRIDGE @ 106+66.52

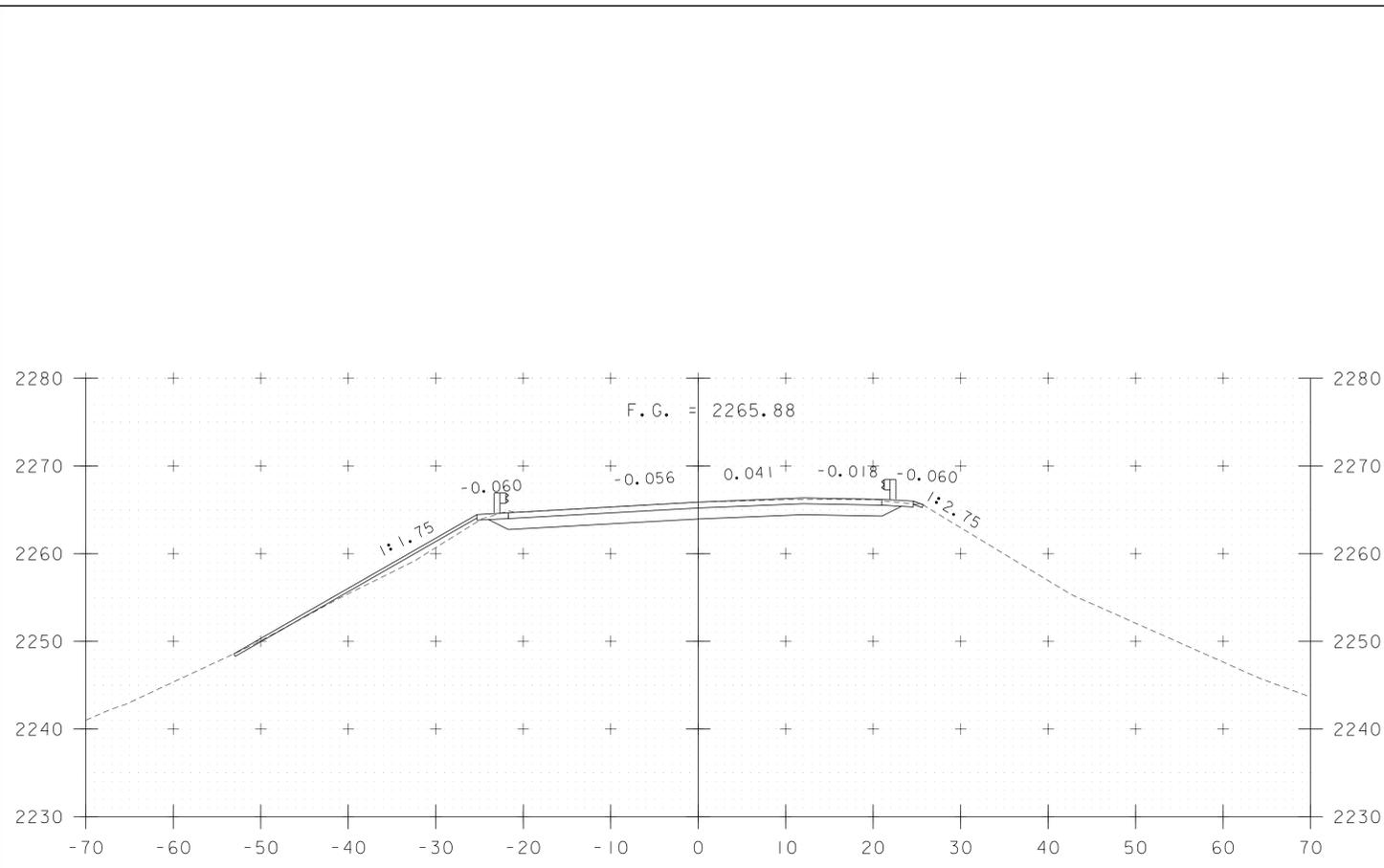
STA. 106+25 TO STA. 107+00



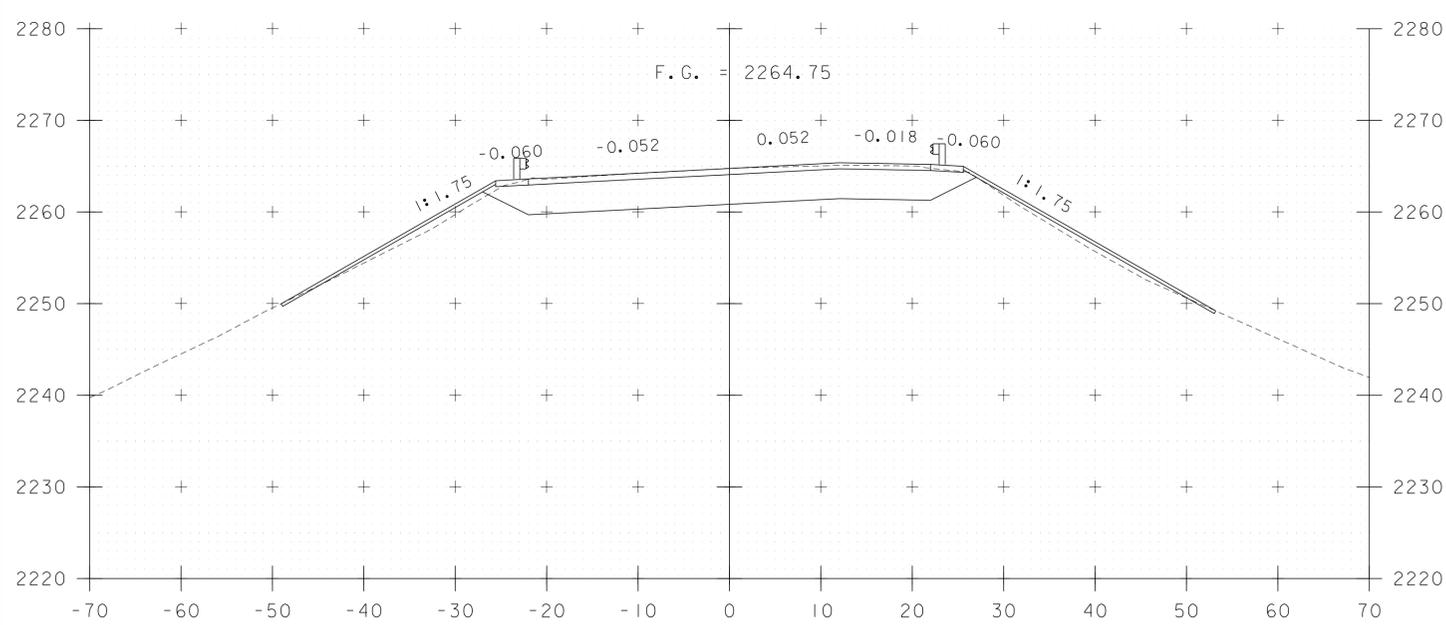
PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332xs.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: J. MERCER  
VT ROUTE 9 CROSS SECTIONS 3

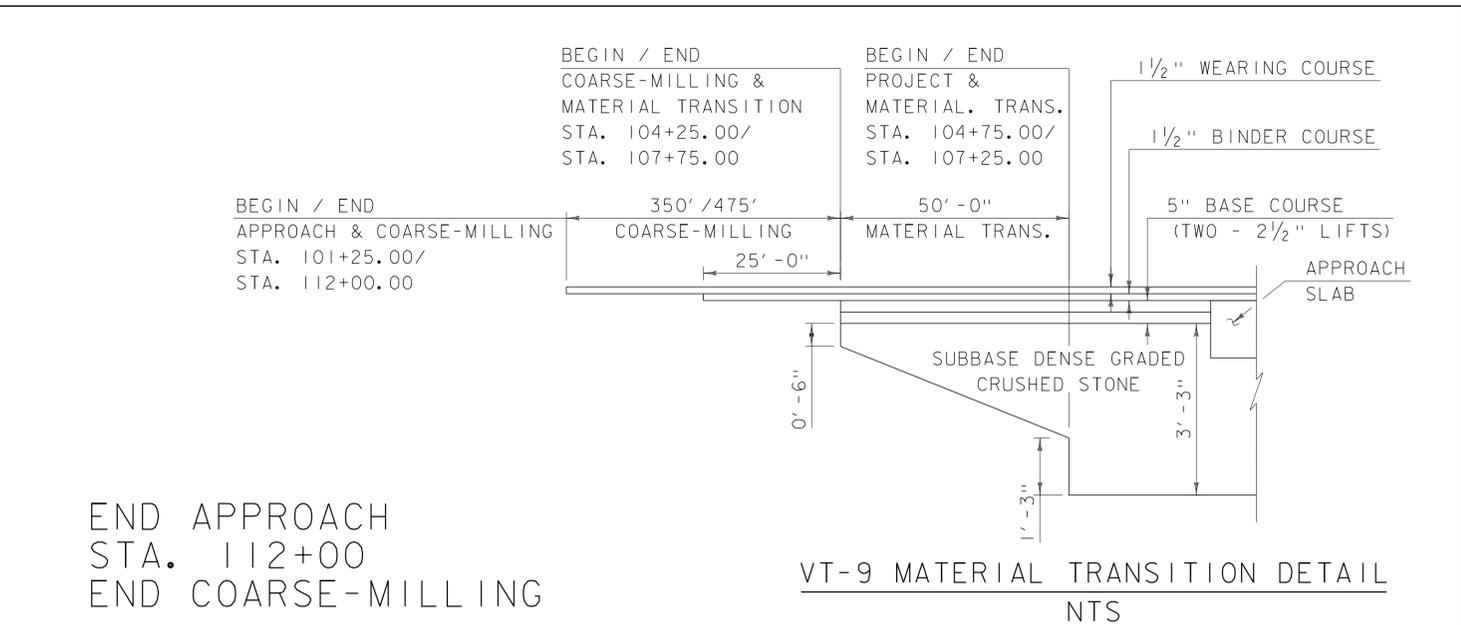
PLOT DATE: 9/17/2020  
DRAWN BY: J. MERCER  
CHECKED BY: T. LEVINS  
SHEET 38 OF 49



107+50

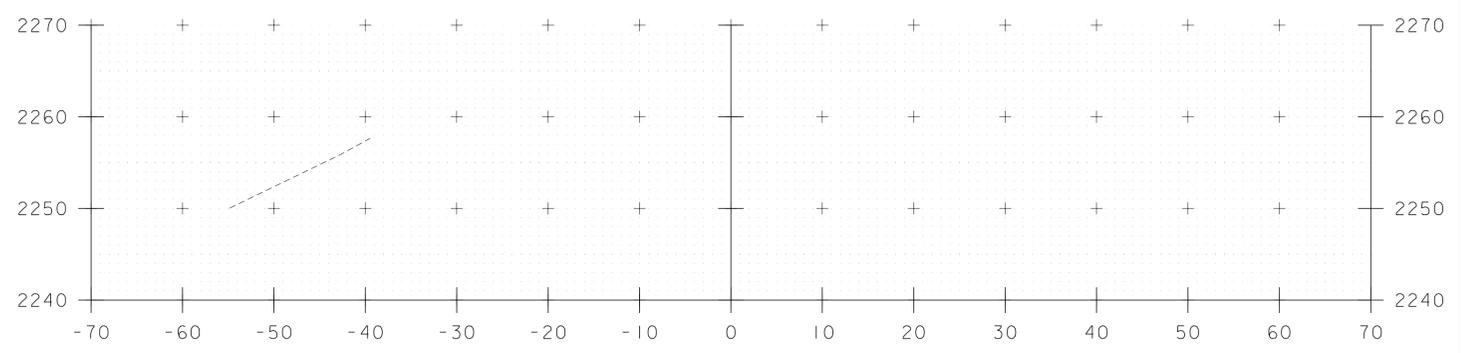


107+25  
END PROJECT

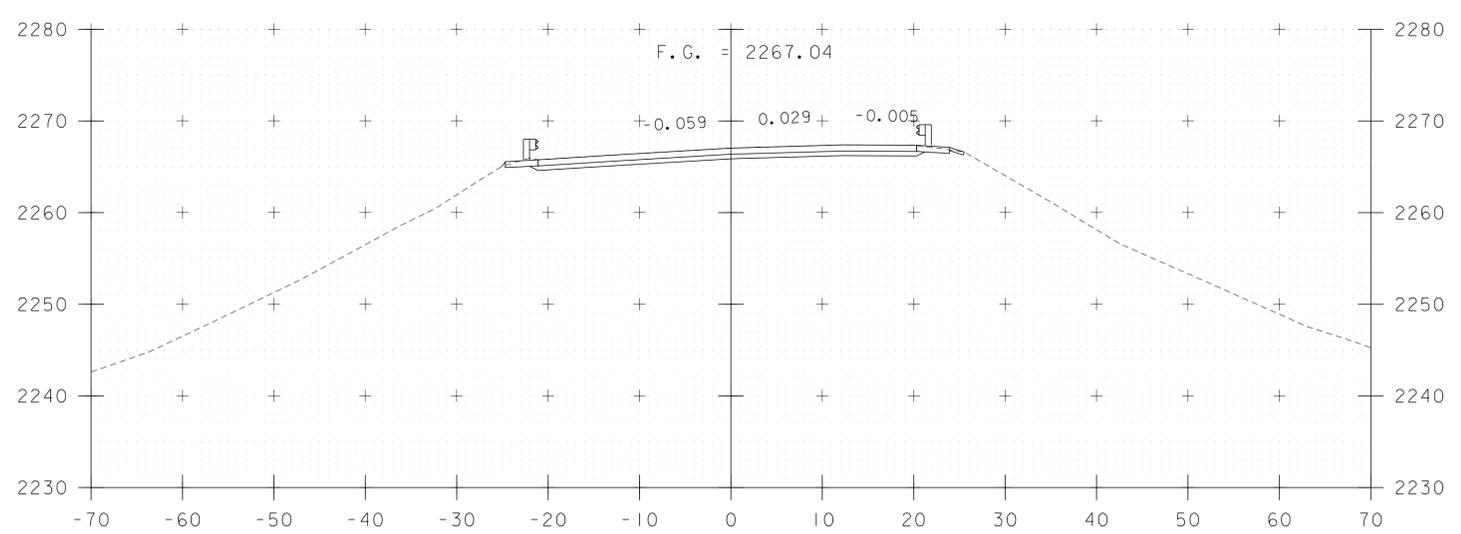


END APPROACH  
STA. 112+00  
END COARSE-MILLING

VT-9 MATERIAL TRANSITION DETAIL  
NTS



108+00



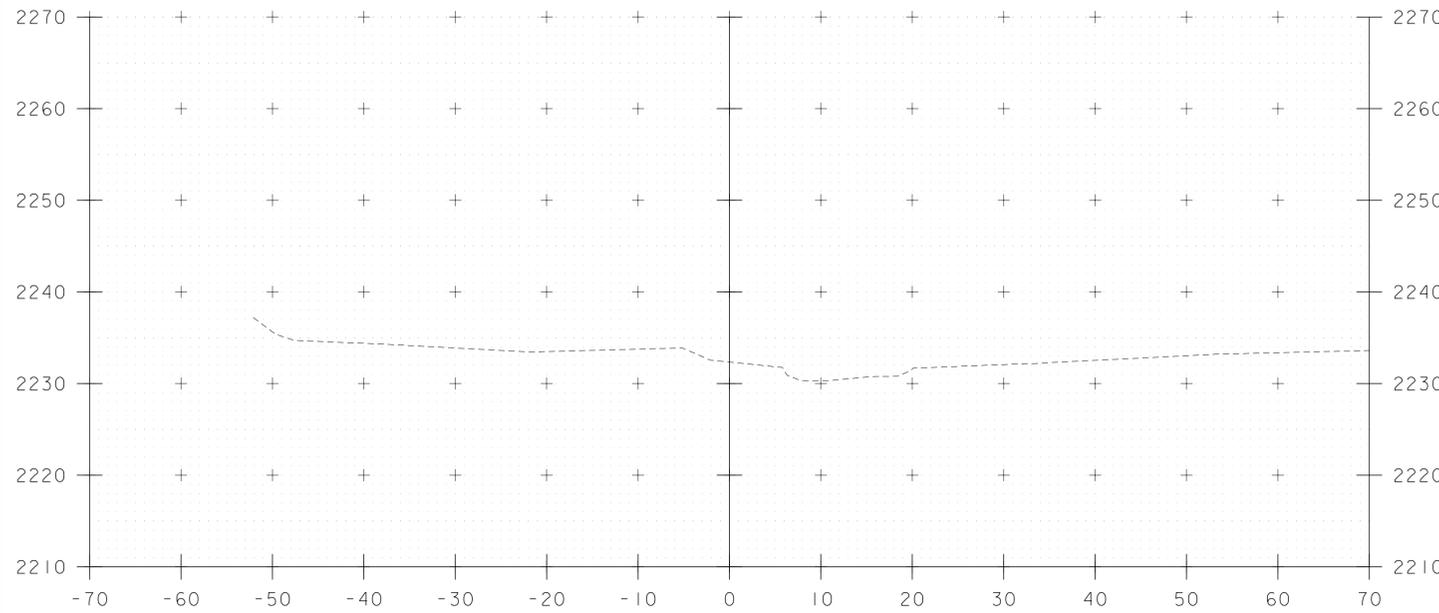
107+75  
BEGIN COARSE-MILLING (MATCH EXISTING)

STA. 107+25 TO STA. 108+00

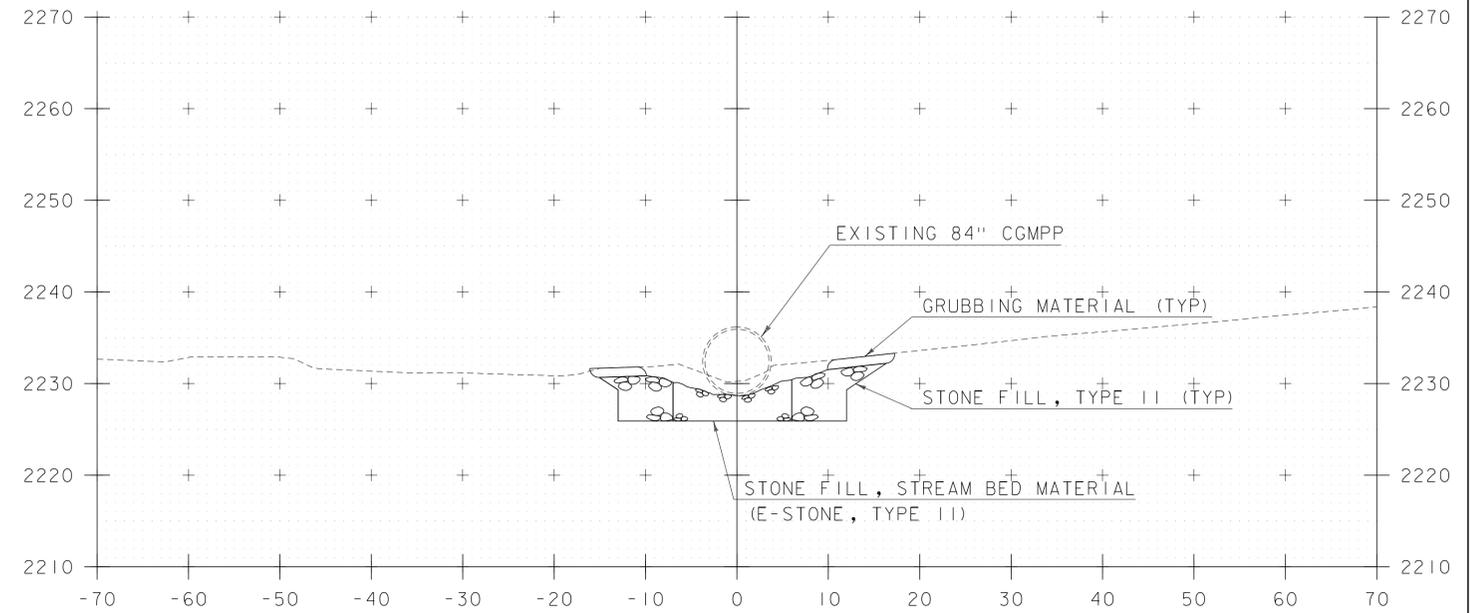


PROJECT NAME:	SEARSBURG	FILE NAME:	z13b332xs.dgn	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-I(50)	PROJECT LEADER:	T. LEVINS	DRAWN BY:	J. MERCER
		DESIGNED BY:	J. MERCER	CHECKED BY:	T. LEVINS
		VT ROUTE 9 CROSS SECTIONS 4		SHEET	39 OF 49

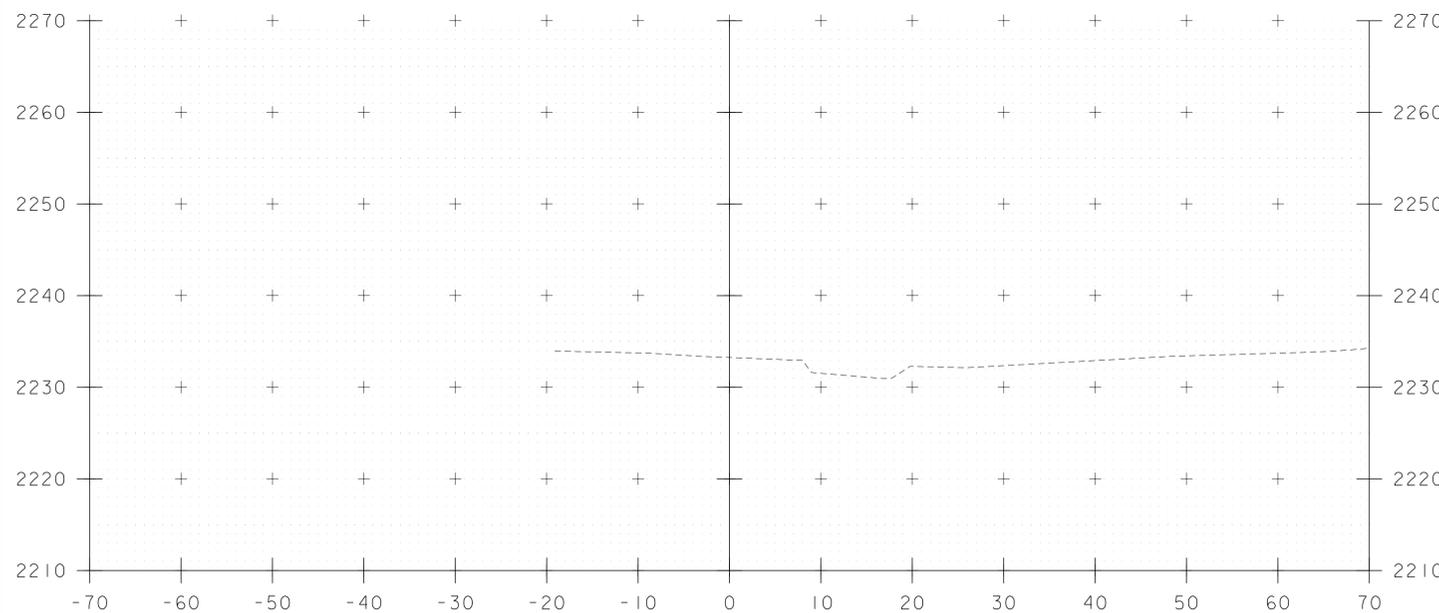
STA 50+61.06 BACK STATION  
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
 BEGIN GEOTEXTILE UNDER STONE FILL  
 BEGIN STONE FILL TYPE II  
 BEGIN STONE FILL, STREAM BED MATERIAL (E-STONE, TYPE II)  
 BEGIN GRUBBING MATERIAL



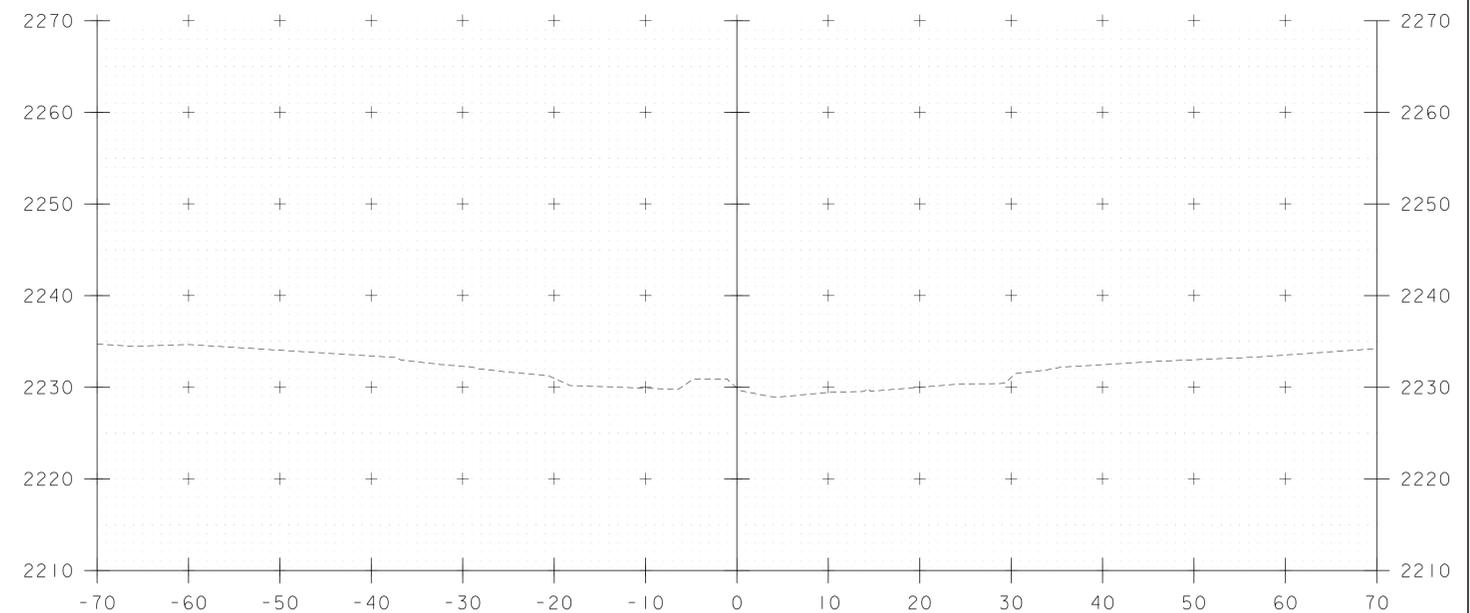
50+25



50+75



50+00



50+50

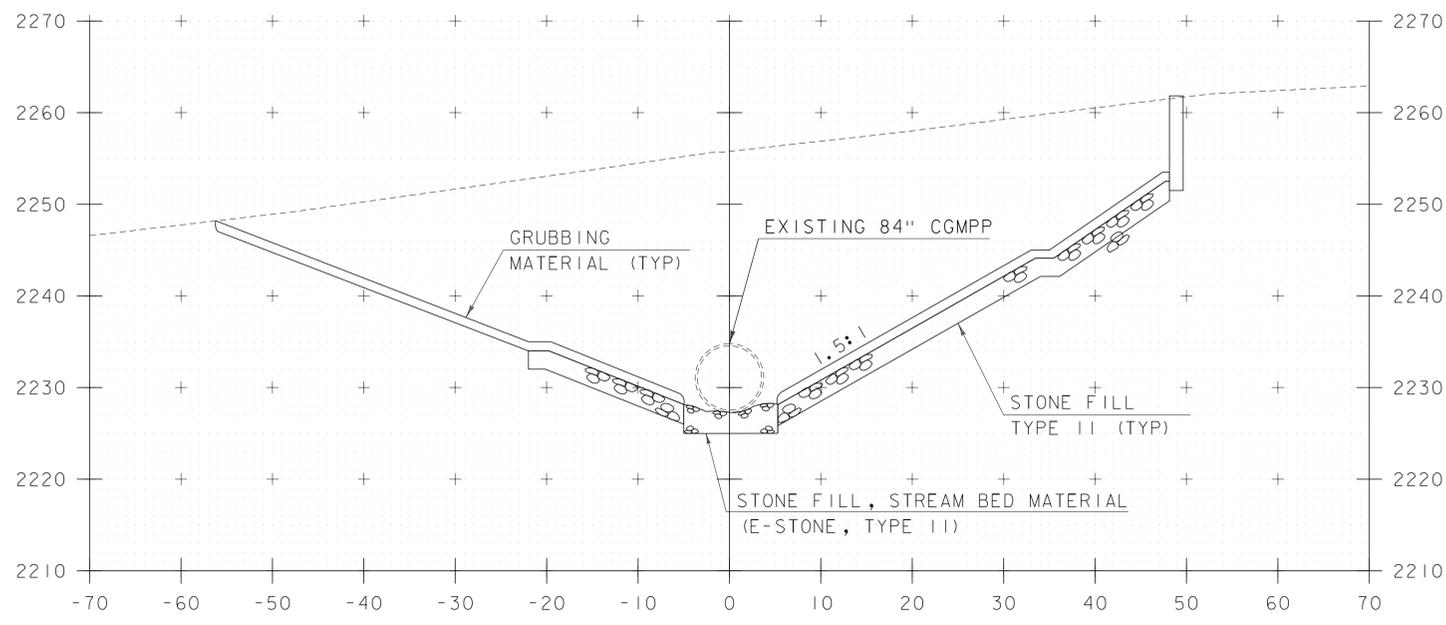
STA. 50+00 TO STA. 50+75



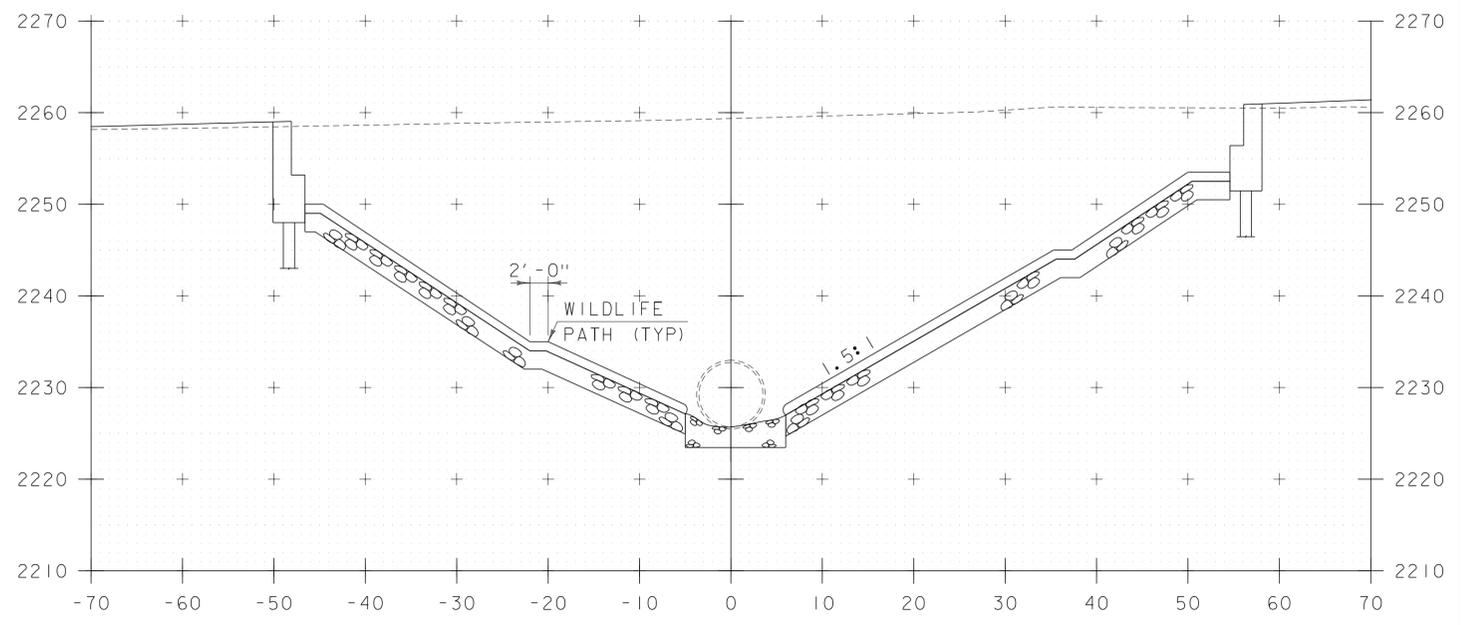
PROJECT NAME: SEARSBURG  
 PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332xs.dgn  
 PROJECT LEADER: T. LEVINS  
 DESIGNED BY: T. MANNING  
 CHANNEL CROSS SECTIONS I

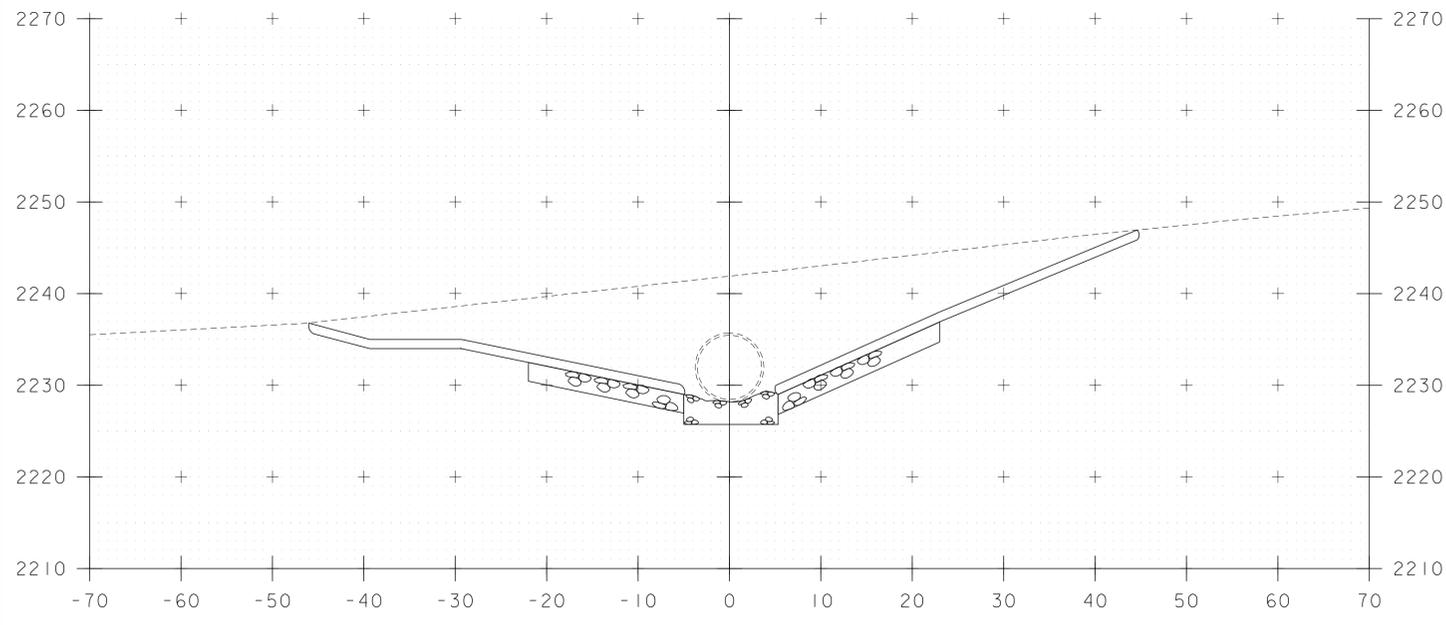
PLOT DATE: 9/17/2020  
 DRAWN BY: T. MANNING  
 CHECKED BY: T. LEVINS  
 SHEET 40 OF 49



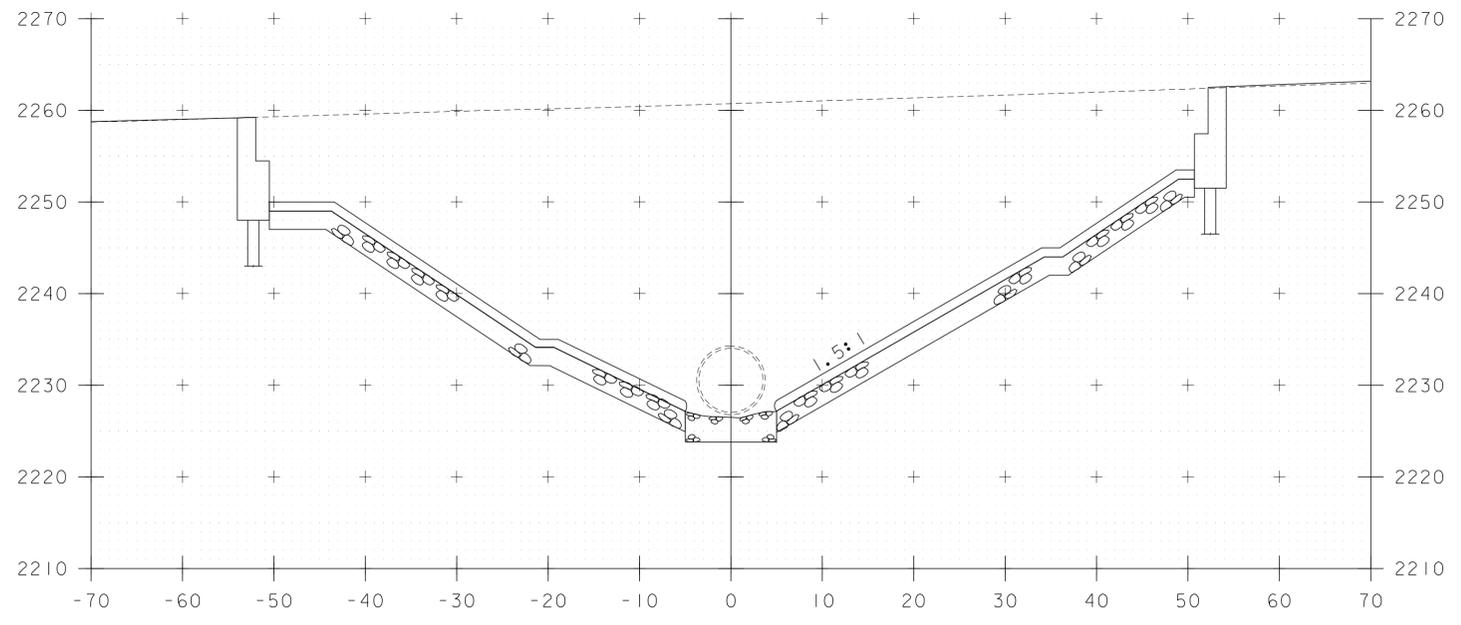
51+25



51+75



51+00

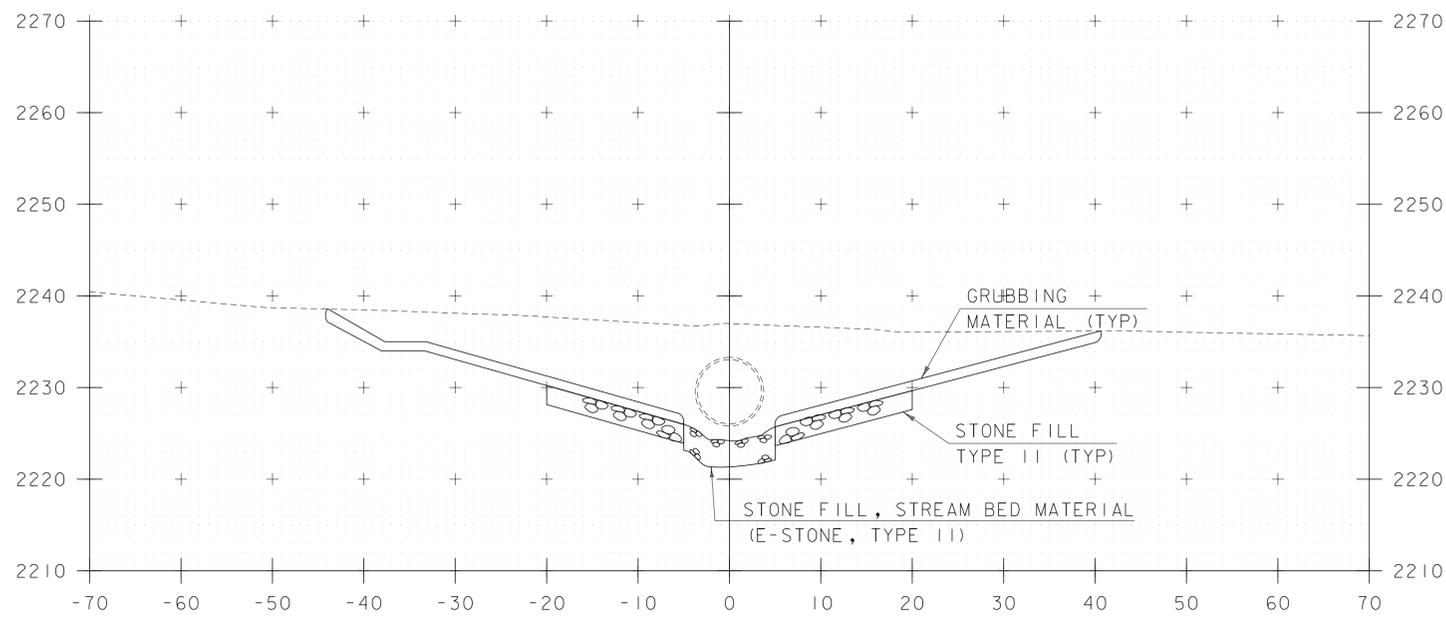


51+50

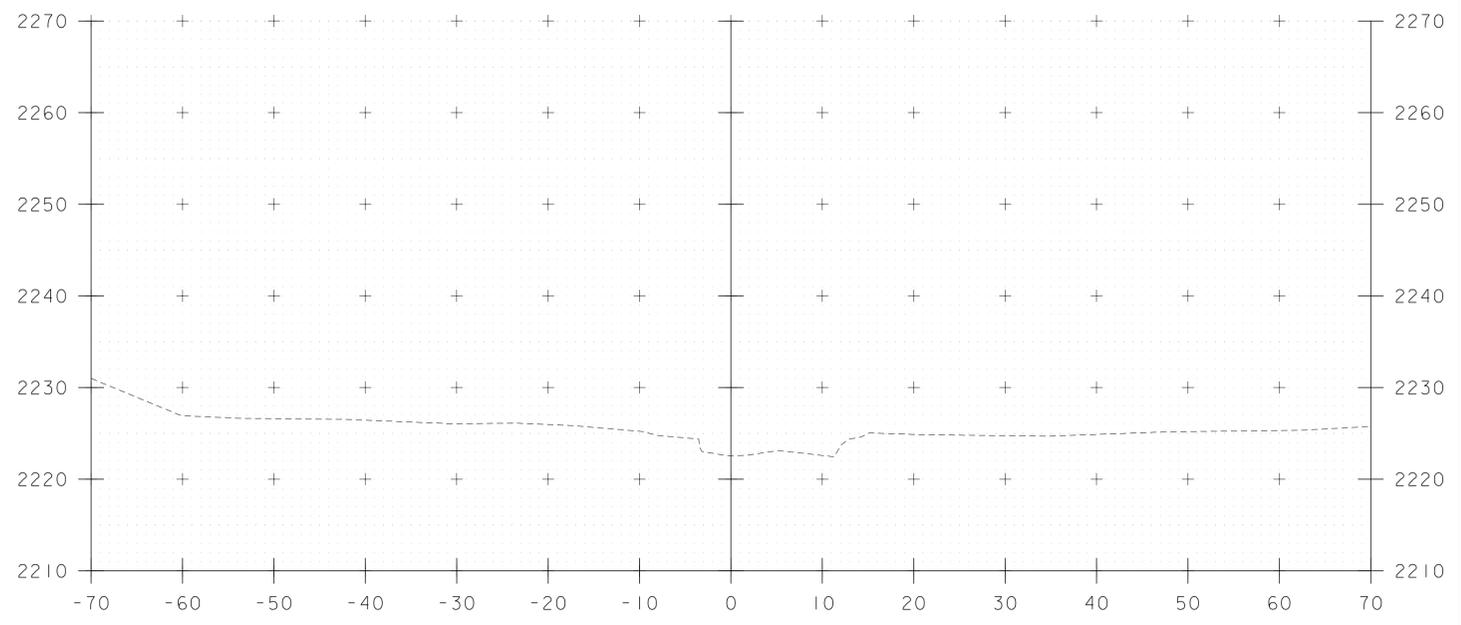
STA. 51+00 TO STA. 51+75



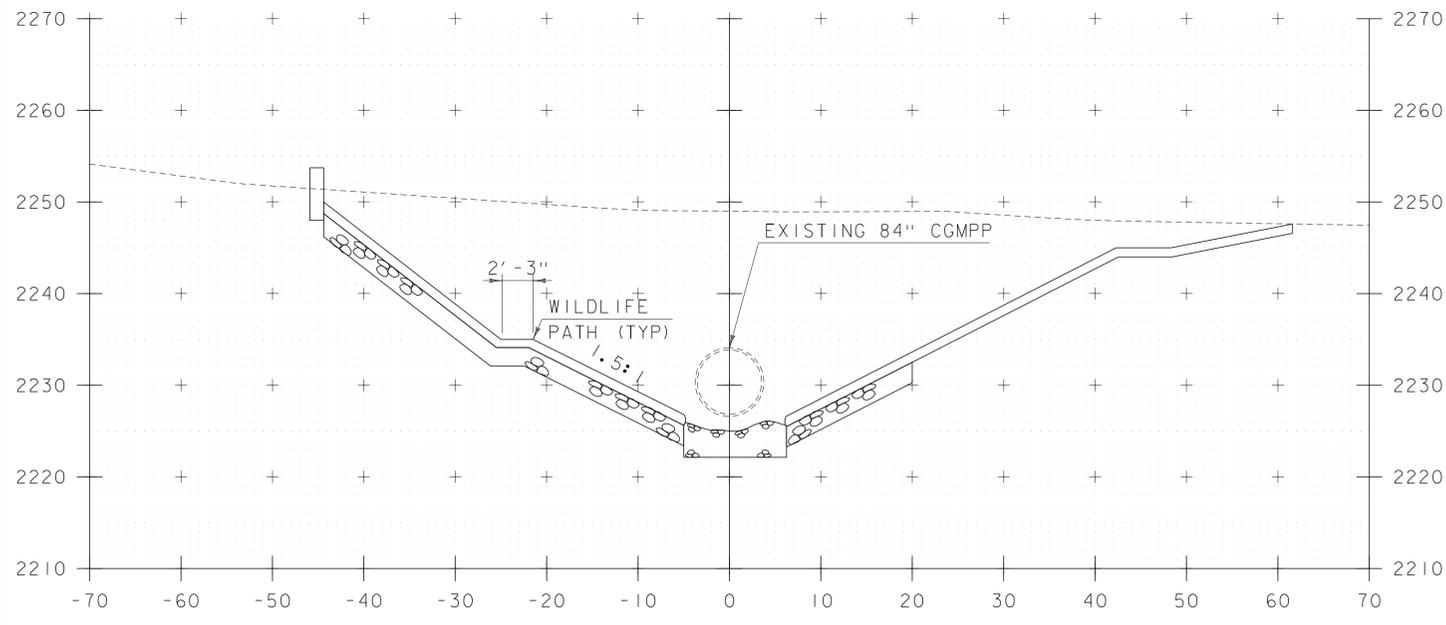
PROJECT NAME:	SEARSBURG	PLOT DATE:	9/17/2020
PROJECT NUMBER:	BF 010-1(50)	DRAWN BY:	T. MANNING
FILE NAME:	z13b332xs.dgn	CHECKED BY:	T. LEVINS
PROJECT LEADER:	T. LEVINS	SHEET	41 OF 49
DESIGNED BY:	T. MANNING		
CHANNEL CROSS SECTIONS	2		



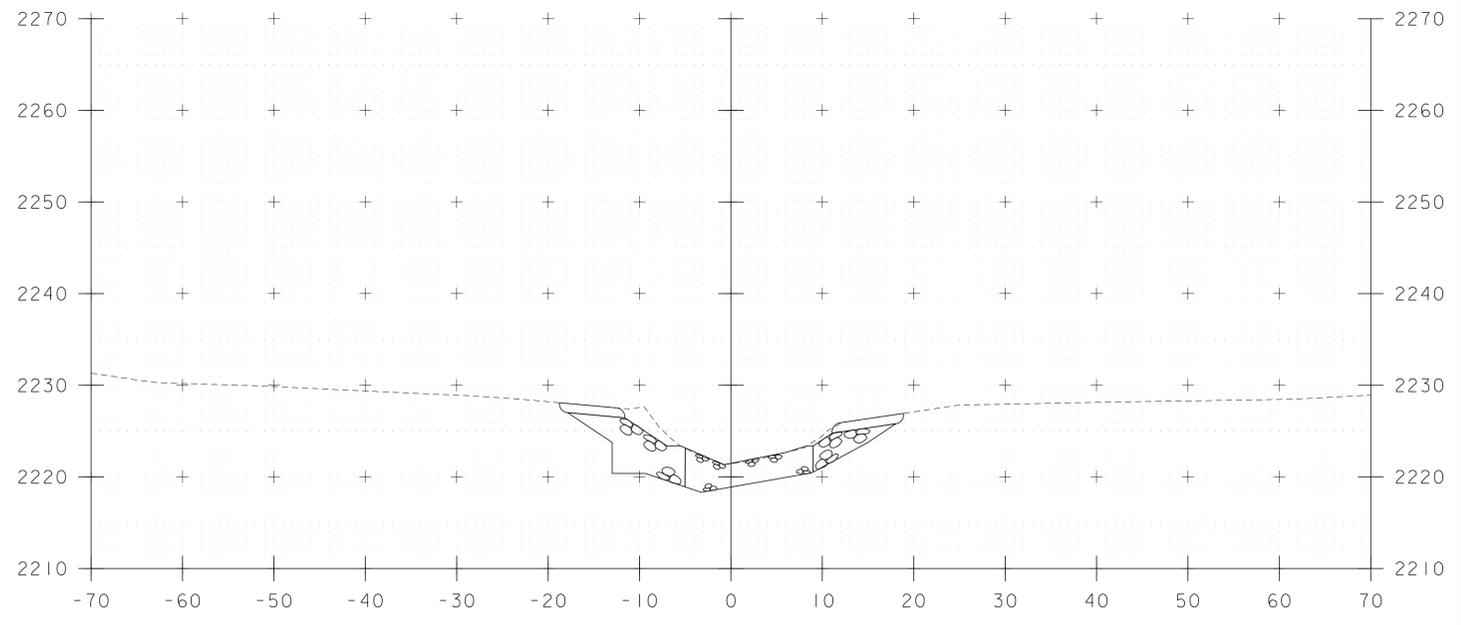
52+25



52+75



52+00

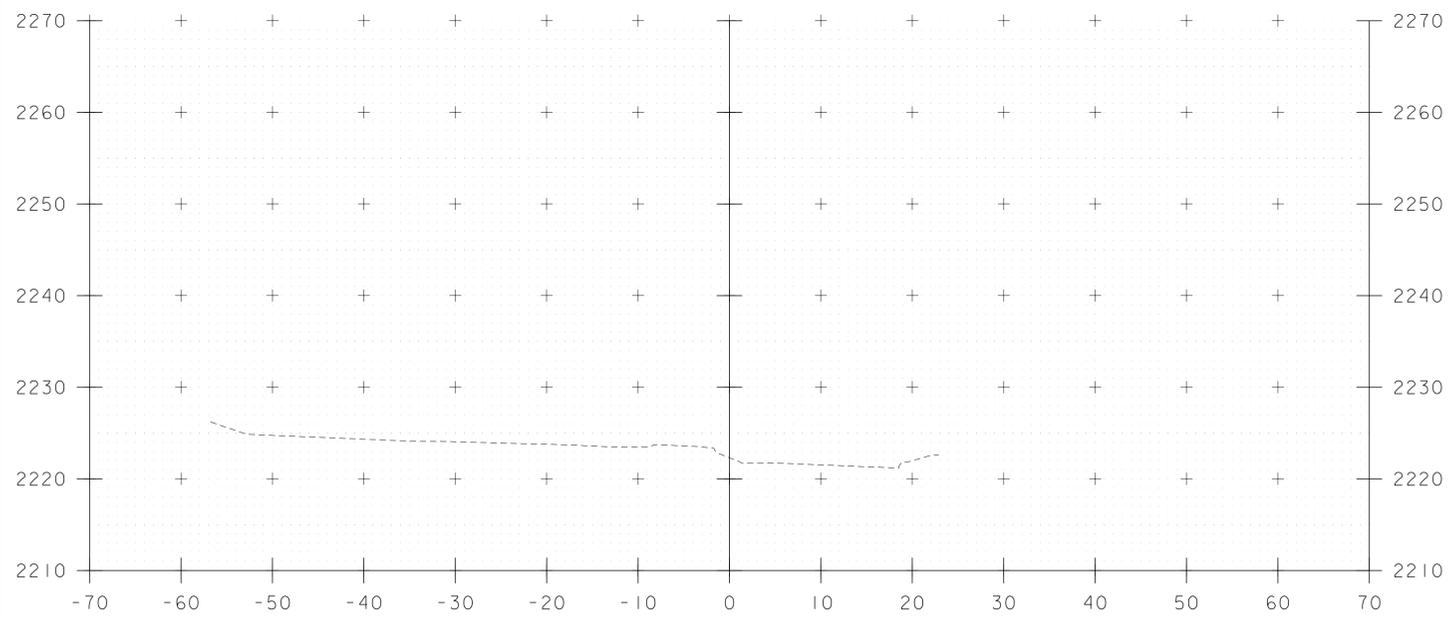


52+50

STA. 52+00 TO STA. 52+75



PROJECT NAME:	SEARSBURG	PLOT DATE:	9/17/2020	
PROJECT NUMBER:	BF 010-1(50)	DRAWN BY:	T. MANNING	
FILE NAME:	z13b332xs.dgn	DESIGNED BY:	T. MANNING	
PROJECT LEADER:	T. LEVINS	CHANNEL CROSS SECTIONS 3	CHECKED BY:	T. LEVINS
			SHEET	42 OF 49



53+00

STA. 53+00 TO STA. 53+00



PROJECT NAME: SEARSBURG	PLOT DATE: 9/17/2020
PROJECT NUMBER: BF 010-1(50)	DRAWN BY: T. MANNING
FILE NAME: z13b332xs.dgn	CHECKED BY: T. LEVINS
PROJECT LEADER: T. LEVINS	SHEET 43 OF 49
DESIGNED BY: T. MANNING	
CHANNEL CROSS SECTIONS 4	

## EPSC PLAN NARRATIVE

### 1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF THE EXISTING BRIDGE 20. BRIDGE 20 WILL BE REPLACED WITH A SINGLE SPAN STEEL GIRDER STRUCTURE, SPANNING 103 FEET OVER UNNAMED BROOK. IT IS LOCATED IN THE TOWN OF SEARSBURG, ON VT ROUTE 9 IN A RURAL AREA, APPROXIMATELY 1.1 MILES WEST OF THE INTERSECTION OF VT ROUTE 8.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.98 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST SEVEN TO EIGHT MONTHS.

### 1.2 SITE INVENTORY

#### 1.2.1 TOPOGRAPHY

THE AREA SURROUNDING THE PROJECT IS GRASS AND WOODS IN A RURAL SETTING.

#### 1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE UNNAMED BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS MODERATELY SLOPED, SINUOUS, NARROW, WITH A CONFINED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 0.46 SQ. MI. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

#### 1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES, TALL GRASS AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING CULVERT. UPON PROJECT COMPLETION, THE CHANNEL BANKS WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

#### 1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF BENNINGTON, VERMONT. SOILS ON THE PROJECT SITE ARE WILMINGTON-MUNDAL ASSOCIATION, UNDULATING, VERY STONY, 3% TO 8% SLOPES, "K" VALUE = 0.06 TO 0.60. THE SOIL IS CONSIDERED TO HAVE MODERATELY LOW TO MODERATELY HIGH EROSION POTENTIAL.

NOTE: "K" VALUES GENERALLY INDICATE THE FOLLOWING:  
0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

#### 1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: EXTREMELY HIGH WILDLIFE HABITAT CONNECTIVITY RATINGS  
HISTORICAL OR ARCHEOLOGICAL AREAS: NONE  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT, POTENTIAL FOR PLANT SPECIES OF SPECIAL CONCERN IN WETLANDS.  
WATER RESOURCE: UNNAMED BROOK  
WETLANDS: A LARGE CLASS II WETLAND COMPLEX ON SOUTH SIDE OF VT9. WETLANDS ALSO PRESENT DOWNSTREAM OF EXISTING STRUCTURE.

### 1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

### 1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORMWATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

#### 1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS THAT CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

BARRIER FENCE (BF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

#### 1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

#### 1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

#### 1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

GEOTEXTILE FOR SILT FENCE SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

#### 1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE, IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

#### 1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSION POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

NONE ANTICIPATED.

#### 1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

NONE ANTICIPATED.

#### 1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

#### 1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

#### 1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

#### 1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

FILTER BAG(S) SHALL BE USED FOR DEWATERING. LOCATION OF FILTER BAG(S) SHALL BE DETERMINED BY THE CONTRACTOR AND THE VTRANS PROJECT ENGINEER ON SITE.

#### 1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

### 1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

#### 1.5.1 CONSTRUCTION SEQUENCE

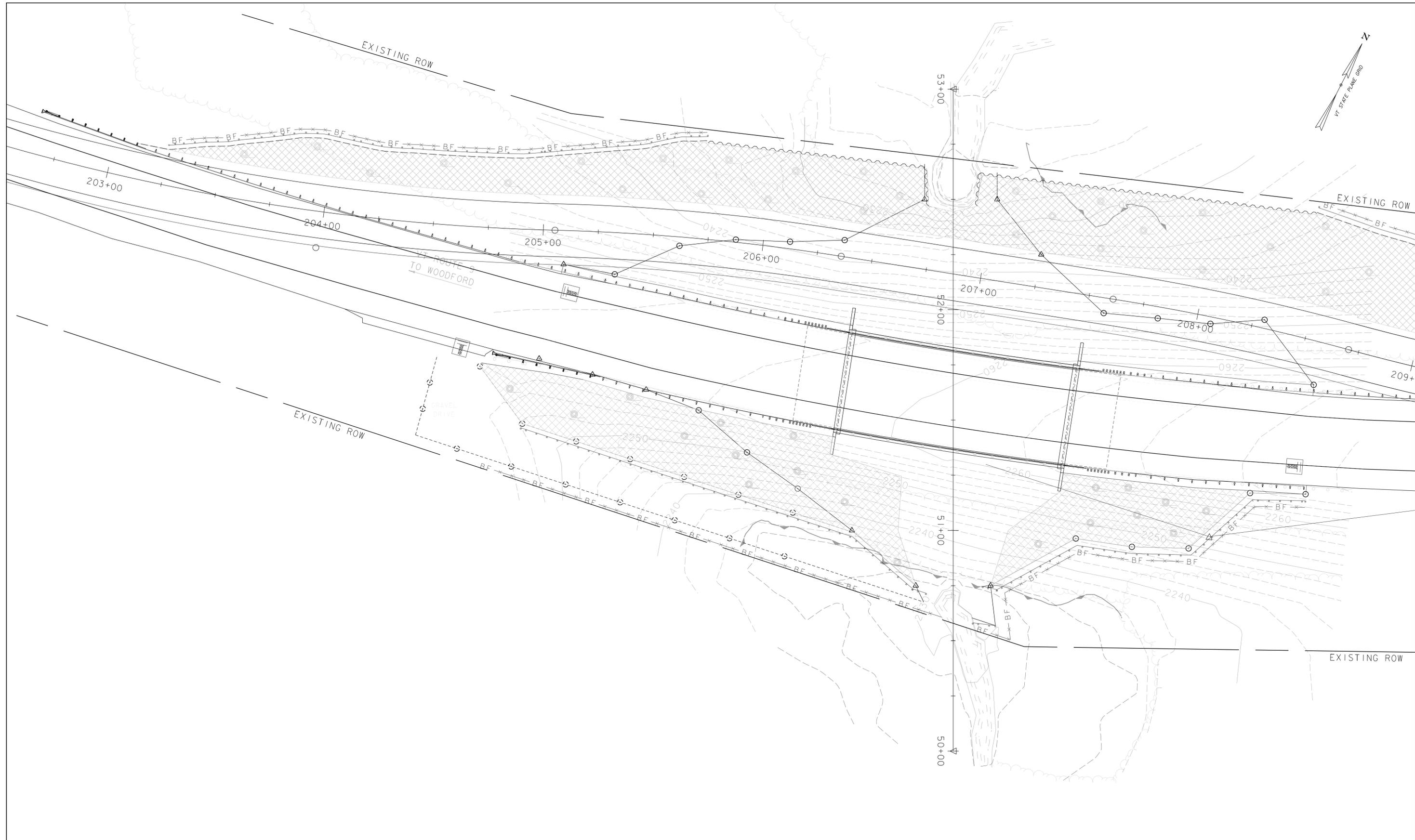
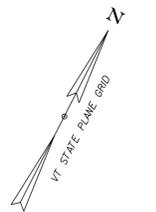
#### 1.5.2 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)



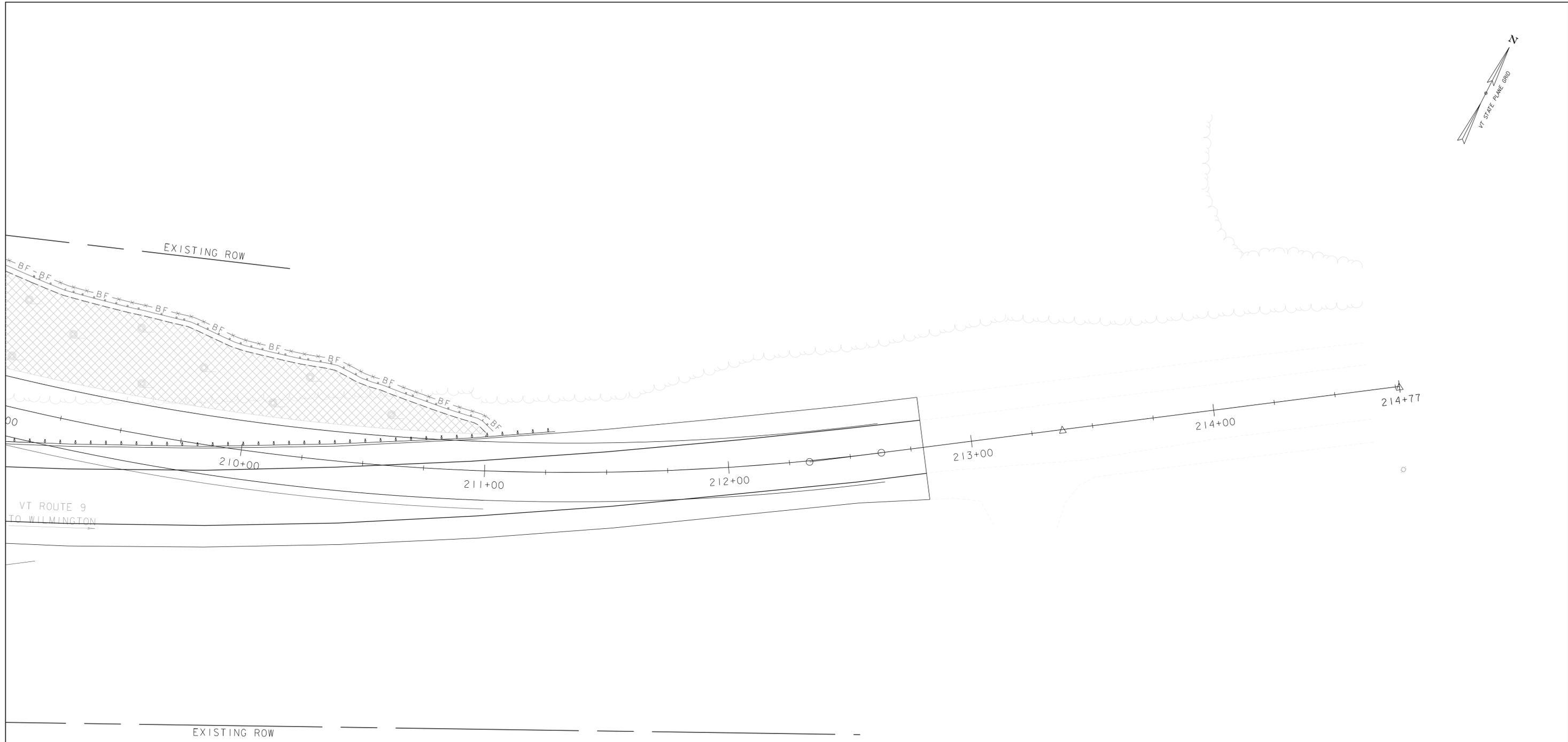
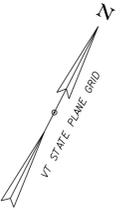
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PROJECT LEADER: T. LEVINS DRAWN BY: T. MANNING  
DESIGNED BY: T. MANNING CHECKED BY: T. LEVINS  
EPSC NARRATIVE SHEET 44 OF 49



SCALE 1" = 20'-0"  
20 0 20



PROJECT NAME: SEARSBURG	PLOT DATE: 9/17/2020
PROJECT NUMBER: BF 010-I(50)	DRAWN BY: B. WILLIAMS
FILE NAME: z13b332epsc.cl.dgn	CHECKED BY: T. LEVINS
PROJECT LEADER: T. LEVINS	SHEET 45 OF 49
DESIGNED BY: B. WILLIAMS	
EPSC CONSTRUCTION SITE PLAN I	



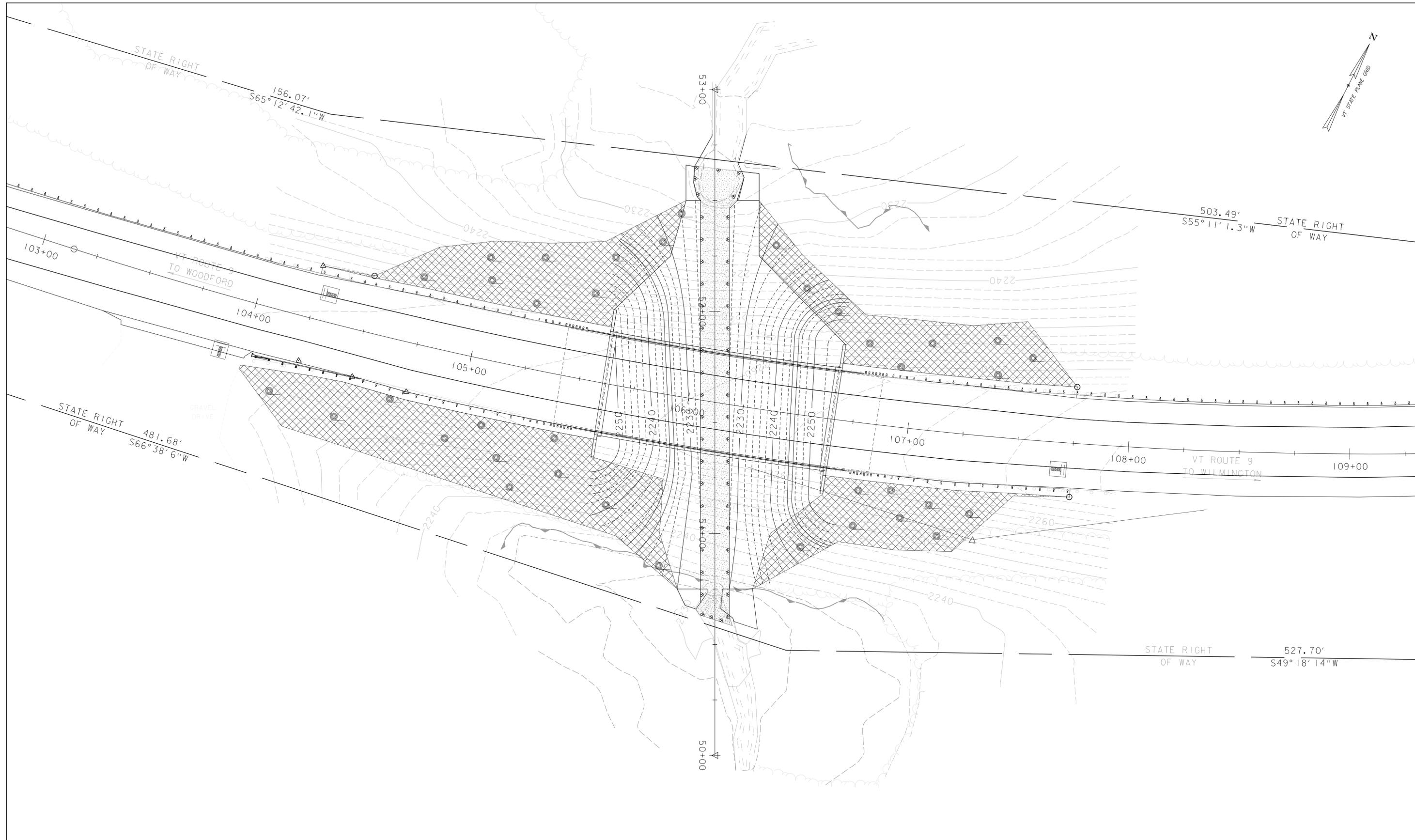
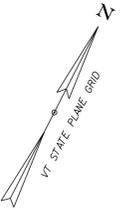
SCALE 1" = 20'-0"  
20 0 20



PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)

FILE NAME: z13b332epsc.c2.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: B. WILLIAMS  
EPSC CONSTRUCTION SITE PLAN 2

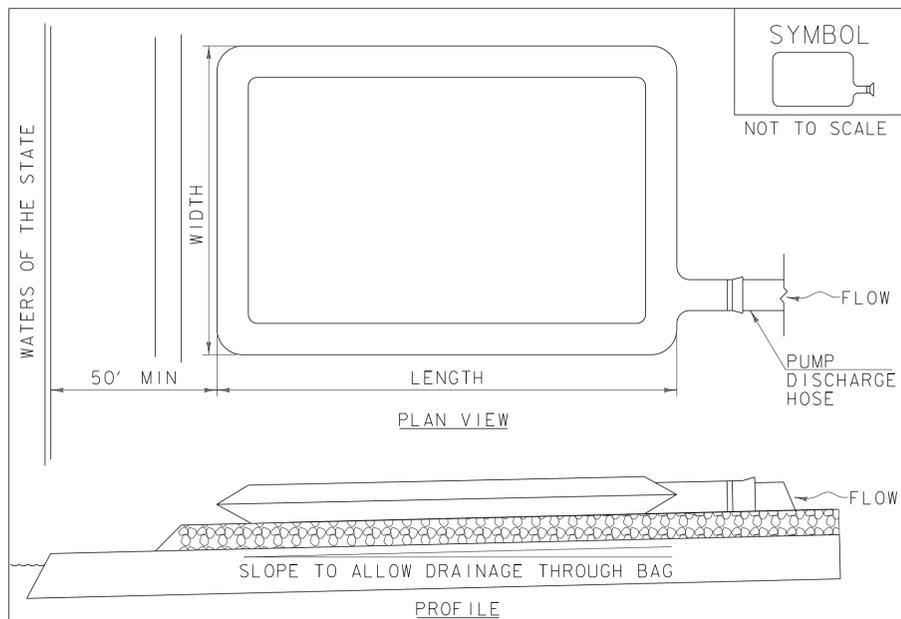
PLOT DATE: 9/17/2020  
DRAWN BY: B. WILLIAMS  
CHECKED BY: T. LEVINS  
SHEET 46 OF 49



SCALE 1" = 20'-0"  
20 0 20



PROJECT NAME: SEARSBURG	PLOT DATE: 9/17/2020
PROJECT NUMBER: BF 010-I(50)	DRAWN BY: B. WILLIAMS
FILE NAME: z13b332epsc_final.dgn	CHECKED BY: T. LEVINS
PROJECT LEADER: T. LEVINS	SHEET 47 OF 49
DESIGNED BY: B. WILLIAMS	
EPSC FINAL SITE PLAN	



**CONSTRUCTION SPECIFICATIONS**

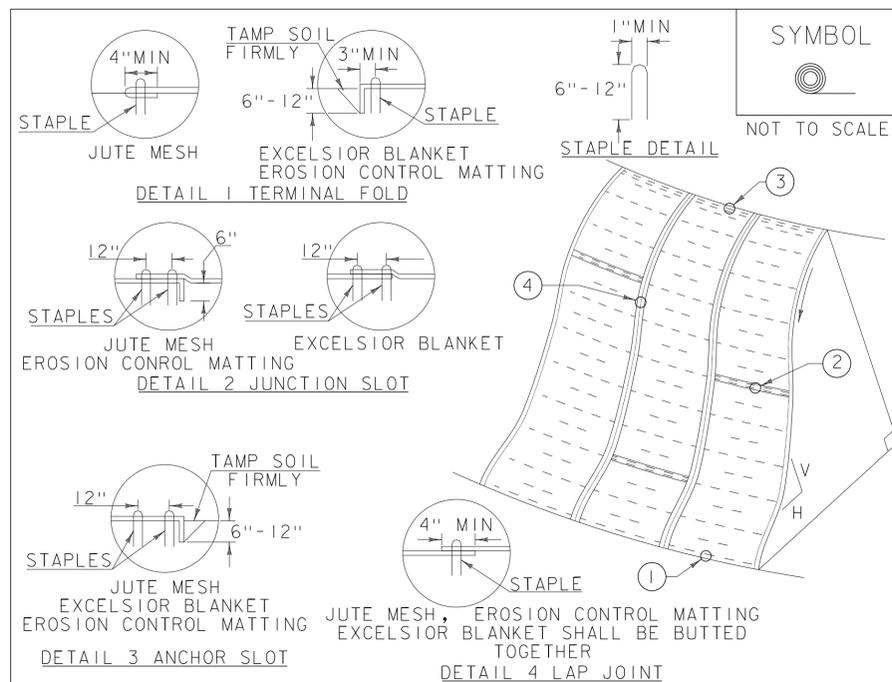
1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



**CONSTRUCTION SPECIFICATIONS**

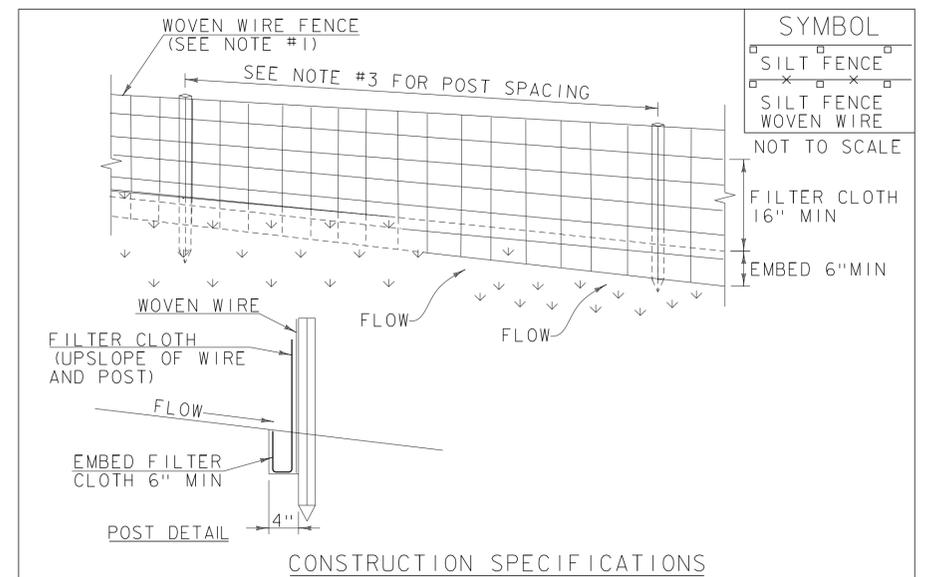
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.  
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



**CONSTRUCTION SPECIFICATIONS**

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51), OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(50)



FILE NAME: z13b332epsc\_det1.dgn  
PROJECT LEADER: T. LEVINS  
DESIGNED BY: T. MANNING  
EPSC DETAILS I

PLOT DATE: 9/17/2020  
DRAWN BY: T. MANNING  
CHECKED BY: T. LEVINS  
SHEET 48 OF 49

VAOT LOW GROW/FINE FESCUE MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
38%	57	95	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

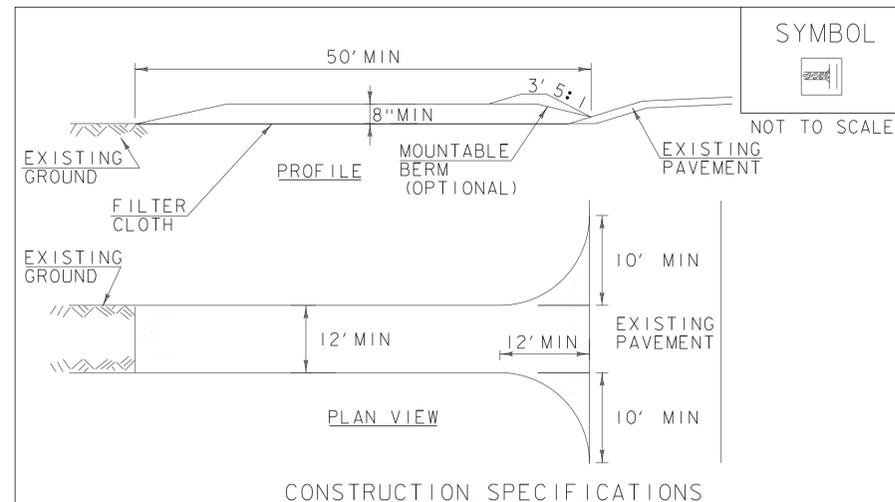
VAOT RURAL AREA MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

**CONSTRUCTION GUIDANCE**

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	<b>TURF ESTABLISHMENT</b>				
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td>JANUARY 12, 2015</td> <td>WHF</td> </tr> </tbody> </table>	REVISIONS		JANUARY 12, 2015	WHF
REVISIONS					
JANUARY 12, 2015	WHF				



**CONSTRUCTION SPECIFICATIONS**

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

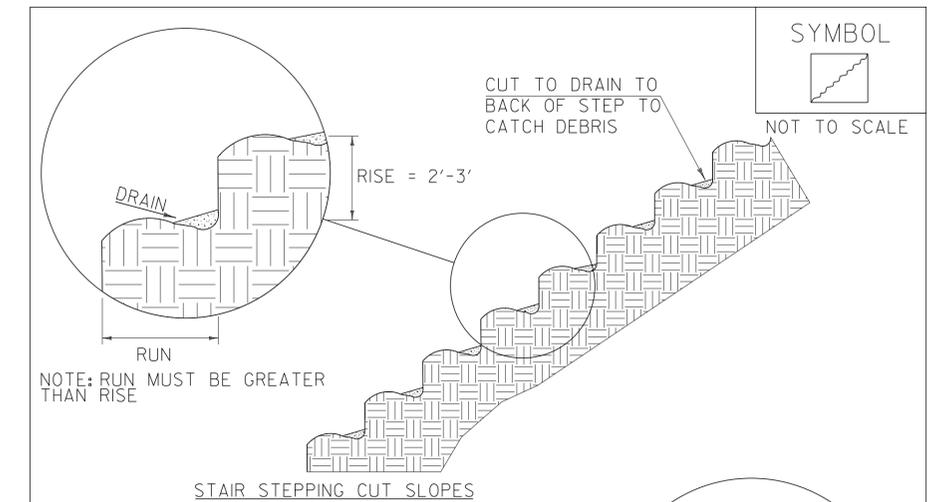
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STABILIZED CONSTRUCTION ENTRANCE**

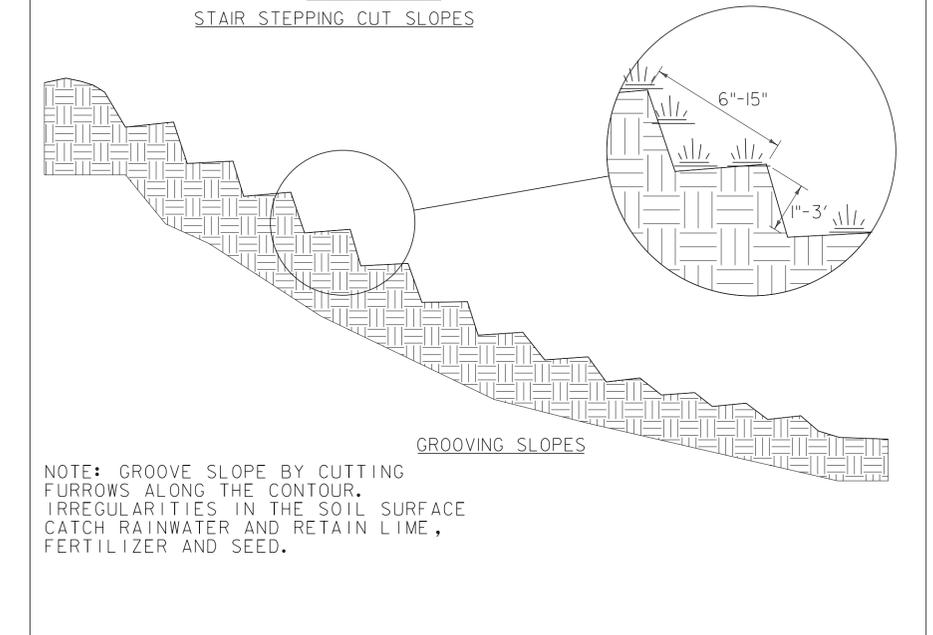
NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



**STAIR STEPPING CUT SLOPES**



NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**SURFACE ROUGHENING**

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006-" FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: SEARSBURG  
PROJECT NUMBER: BF 010-1(K50)



FILE NAME: z13b332epsc\_de+2.dgn PLOT DATE: 9/17/2020  
PROJECT LEADER: T. LEVINS DRAWN BY: T. MANNING  
DESIGNED BY: T. MANNING CHECKED BY: T. LEVINS  
EPSC DETAILS 2 SHEET 49 OF 49