

# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## BREMEN LINCOLN COUNTY

ROUTE 32  
**FEDERAL PROJECT NO. 2428300**  
PROJECT LENGTH: 0.03 MILES

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PLAN LEGEND	
Town, County, State	-----
Property Lines	-----
R/W Lines-Existing	-----
R/W Lines-Proposed	-----
Culvert-Existing	-----
Culvert Proposed	-----
Curbing	Existing Proposed
Type 1	-----
Type 3	-----
Type 5	-----
Outline of Bodies of Water	-----
Approximate Bedrock (Projected)	-----
Exposed Bedrock	-----
Buildings	-----
Trees	Conifer Deciduous
Tree Line	-----
Clearing Limit Line	CLL
Catch Basins	Existing Proposed
Manholes	Existing Proposed
Proposed Underdrain	-----
Proposed Ditch	-----
Existing Ditch	-----
Utility Poles	Existing Proposed
Fire Hydrants	Existing Proposed
Existing Water Line	-----
Existing San. Sewer	-----
Existing San. Sewer Manhole	-----
Guardrail-Existing	-----
Guardrail-Proposed	-----
Guardrail-Cable, Other	-----
Centerline-Existing	-----
Centerline-Proposed	-----
Travelway-Existing	-----
Travelway-Proposed	-----
Railroad	-----
Boring	HB-XXX-###
Pavement Core	PC-#
Test Pit	TP-XXX-###
Probe	⊙
	#.# = Depth
	X = W (Weathered Rock)
	R (Refusal)
	NR (No Refusal)

### SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020

### DESIGN LOADING

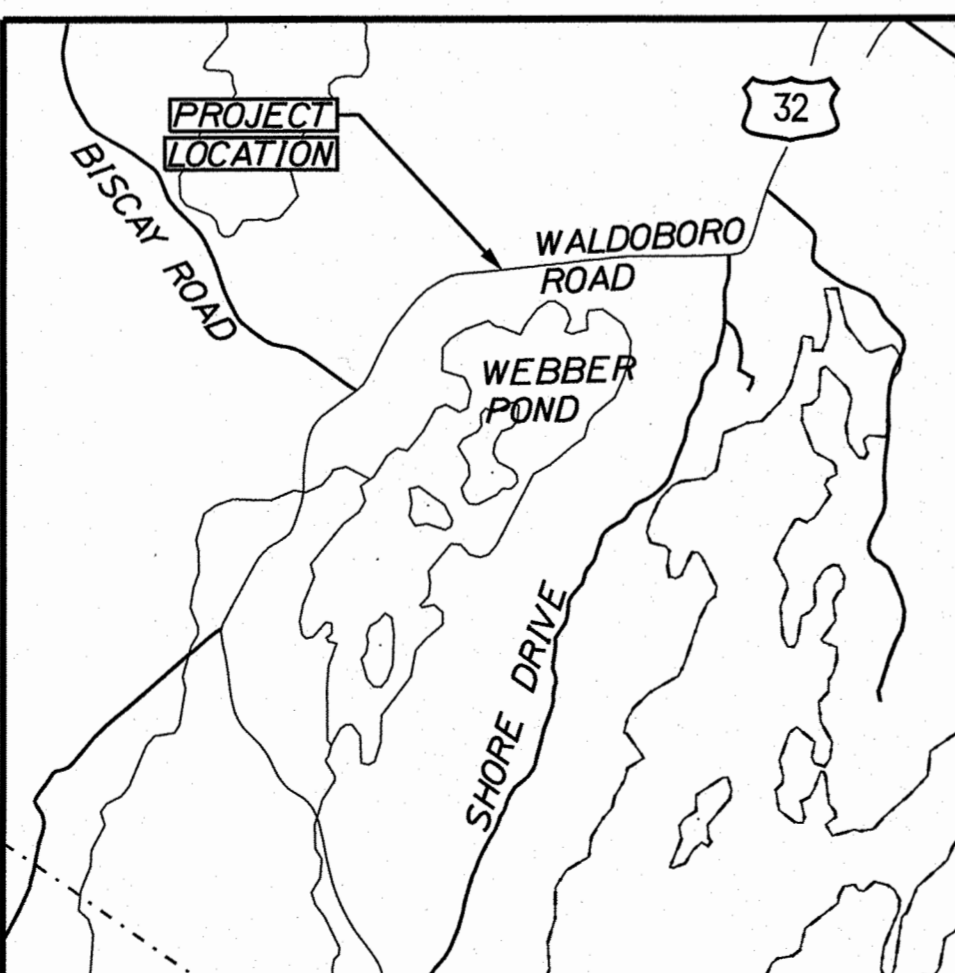
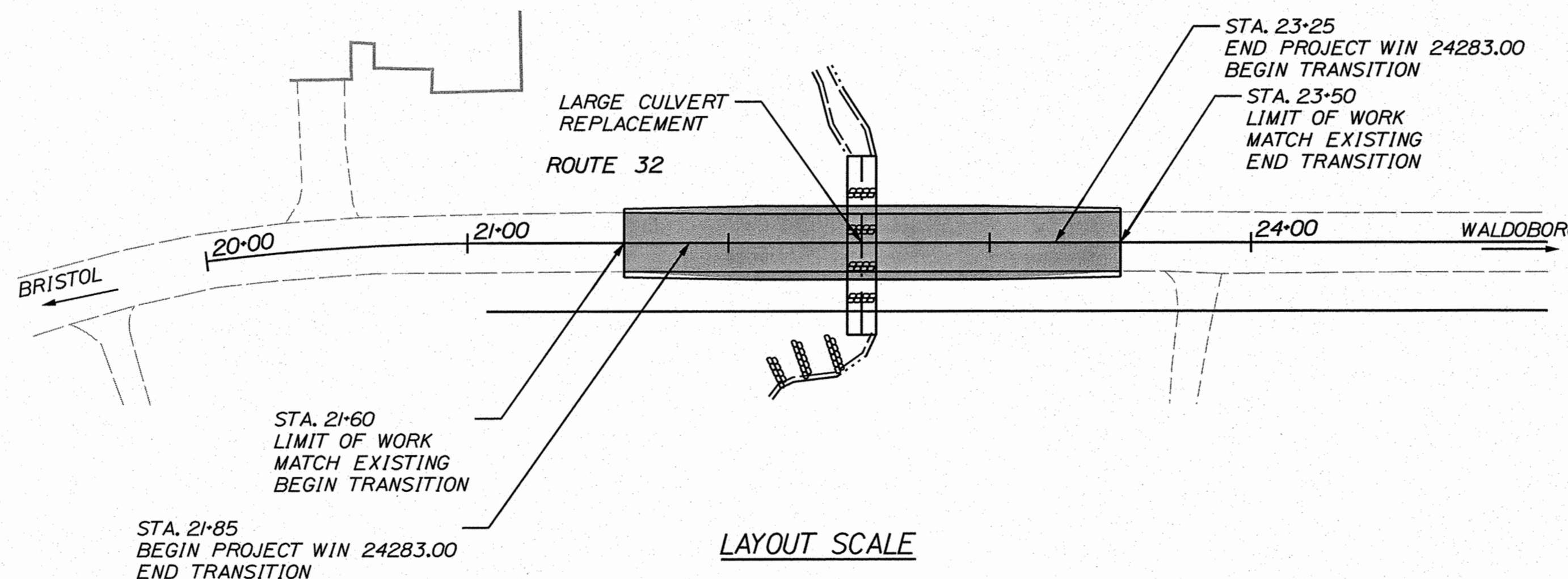
Live Load ..... HL-93 Modified for Strength I

### MATERIALS

Concrete ..... Class "A"  
Reinforcing Steel ..... ASTM A 615/A 615M, Grade 60

### BASIC DESIGN STRESSES

Concrete .....  $f'c = 4,000$  psi  
Reinforcing Steel .....  $f_y = 60,000$  psi



TRAFFIC DATA	
Route 32 (Waldoboro Rd)	
Current (2022) AADT	1150
Future (2034) AADT	1220
DHV - % of AADT	13%
Design Hour Volume	159
% Heavy Trucks (AADT)	5%
% Heavy Trucks (DHV)	4%
Directional Distribution (DHV)	52%
18 kip Equivalent P 2.0	13
18 kip Equivalent P 2.5	12
Design Speed (mph)	45
Functional Class - MAJOR/RURAL COLLECTOR	
Highway Corridor Priority	4

<b>PROJECT LOCATION:</b>	ROUTE 32 (WALDOBORO RD) LOCATED 0.44 MILES NORTH OF BISCAY ROAD IN TOWN OF BREMEN
<b>PROGRAM AREA:</b>	HIGHWAY PROGRAM
<b>SCOPE OF WORK:</b>	LARGE CULVERT ( #46827) REPLACEMENT

PLANS PREPARED BY:  
**wsp**

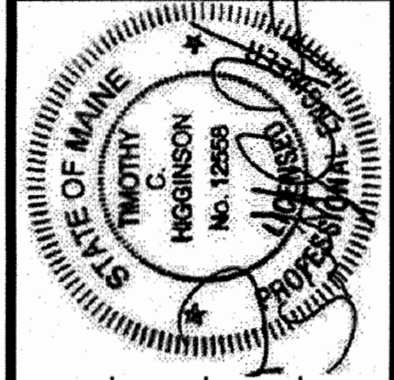
WIN 24283.00 FEDERAL PROJECT NO. 2428300

BREMEN  
ROUTE 32  
TITLE SHEET

SHEET NUMBER  
**1**

OF 13

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>	[Signature]	4-22-22
CHIEF ENGINEER: <i>[Signature]</i>	[Signature]	4-22-22



PROJECT INFORMATION
PROGRAM: HIGHWAY
PROJECT MANAGER: D. COOMBS
DESIGNER: T. HEGGISON
CONSULTANT: WSP USA, INC.
PROJECT RESIDENT: [Blank]
CONTRACTOR: [Blank]
PROJECT COMPLETION DATE: [Blank]

Date: 03/23/22  
Username: WSP USA, Inc.  
Division: Highway  
Filename: BREMEN

**GENERAL NOTES:**

- PAVEMENT THICKNESSES SHOWN ON THE TYPICAL SECTIONS ARE INTENDED TO BE NOMINAL.
- ALL CLEARING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO SEPARATE PAYMENT WILL BE MADE. THE ACTUAL LINES FOR CLEARING SHALL BE ESTABLISHED IN THE FIELD BY THE CONTRACTOR AS INDICATED ON THE PLANS AND APPROVED BY THE RESIDENT.
- THE CONTRACTOR SHALL PLAN AND CONDUCT WORK SO THAT UPON COMPLETION OF THE PROJECT THERE IS NO DROP-OFF FROM THE EDGE OF THE SHOULDER PAVEMENT.
- ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OFF THE PROJECT IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING, AND MULCHING OF WASTE AREAS SHALL BE CONSIDERED INCIDENTAL.
- GRANULAR BORROW USED TO BACK FILL MUCK EXCAVATION OR IN LOW WET AREAS TO 1 FOOT ABOVE WATER LEVEL OR OLD GROUND SHALL MEET REQUIREMENTS FOR GRANULAR BORROW MATERIAL FOR UNDERWATER BACK FILL AS SPECIFIED IN STANDARD SPECIFICATION 703.19.
- EXISTING INSLOPES IN PROPOSED FILL AREAS SHALL BE BENCHED BY EXCAVATING STEPS OF SUFFICIENT WIDTH TO PERMIT PLACING AND COMPACTING THE FILL MATERIAL ALONG WITH THE MATERIAL REMOVED.
- UNLESS OTHERWISE NOTED SEEDING METHOD NO. 1 SHALL BE UTILIZED ON ALL LAWNS AND DEVELOPED AREAS; SEEDING METHOD NO. 2 SHALL BE UTILIZED ON ALL OTHER AREAS.
- LOAM SHALL BE PLACED TO A NOMINAL DEPTH OF 4 INCHES IN LAWN AREAS AND 2 INCHES IN ALL OTHER AREAS UNLESS OTHERWISE NOTED OR DIRECTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING MAILBOXES TO ENSURE THAT THE MAIL WILL BE DELIVERABLE. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

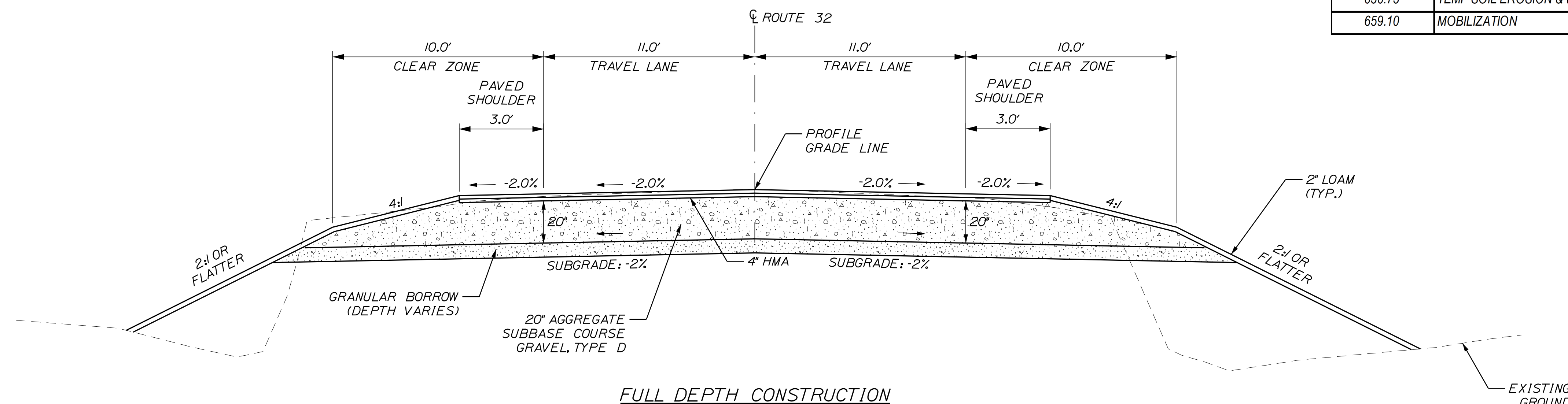
**CONSTRUCTION NOTES:**

- IF STRIPING IS NOT COMPLETE WITHIN THE PROJECT CLOSURE DURATION, TEMPORARY PAVEMENT MARKINGS, OR TEMPORARY OVERLAY MARKERS (TOMS), SHALL BE INCIDENTAL TO PAVING.
- PRESERVE AS MUCH OF THE EXISTING STREAM CHANNEL WITHIN REALIGNMENT AS POSSIBLE, HOLD EXISTING STREAM BED ELEVATIONS AND MAINTAIN EXISTING STREAM FEATURES.
- BEDROCK EXCAVATION FOR THE APPROACH/DEPARTURE CHANNEL REALIGNMENT AT THE CULVERT ENDS SHALL BE FIELD VERIFIED AND ADJUSTED IN COORDINATION WITH MAINE DOT ENVIRONMENT TO MINIMIZE OVER EXCAVATION. WHERE ENCOUNTERED, THE BEDROCK SURFACE SHALL REMAIN IF FEASIBLE AND NOT BE OVER EXCAVATED TO PLACE RIPRAP.
- ROCK EXCAVATION MAY BE NECESSARY TO ACHIEVE PLANNED GRADES FOR THE PROJECT. EXCAVATED FRACTURE ROCK SHALL BE INCIDENTAL TO ITEM 509.13 STEEL STRUCTURAL PLATE ARCH AND SOUND ROCK REQUIRING BLASTING WILL BE PAID AS STRUCTURAL ROCK EXCAVATION (PAY ITEM 206.07).

- ANY DAMAGE TO THE SLOPES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL, OR OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT. ALL WORK, EQUIPMENT, AND MATERIALS REQUIRED TO MAKE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE PROJECT GEOTECHNICAL REPORT TITLED GEOTECHNICAL DESIGN REPORT FOR THE REPLACEMENT OF LARGE CULVERT #46827, SOILS REPORT 2022-08, DATED MARCH 30, 2022 CAN BE ACCESSED AT THE MAINE DOT WEBSITE [HTTP://WWW.MAINE.GOV/MDOT/CONTRACTORS/](http://www.maine.gov/mdot/contractors/)
- GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE BID DOCUMENTS IS FOR THE USE OF THE BIDDERS. NO ASSURANCE IS GIVEN THAT THE INFORMATION OR INTERPRETATIONS WILL BE REPRESENTATIVE OF THE ACTUAL SUBSURFACE CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. MAINE DOT WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN FROM THE GEOTECHNICAL INFORMATION. THE BORING LOGS PROVIDED IN THE BID DOCUMENTS (IF ANY) PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT DISCRETE LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS.
- AREAS ON THE PROJECT REQUIRING FILL WILL COME FROM SUITABLE SITES SUCH AS EXCAVATION, DITCH AND INSLOPE OR EQUIPMENT RENTAL AREAS.
- ESTIMATED QUANTITIES FOR REQUIRED STRUCTURAL EARTH EXCAVATION, DRAINAGE AND MINOR STRUCTURES ARE INFORMATIONAL ONLY AND REPRESENT THE APPROXIMATE MINIMUM QUANTITY REQUIRED TO INSTALL DRAINAGE STRUCTURES. ADDITIONAL EXCAVATION FOR THE CONTRACTOR'S CONVENIENCE OR TO COMPLY WITH BACKSLOPING REQUIREMENTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE RELATED DRAINAGE ITEMS.
- FINAL STRIPING FOR THE PROJECT SHALL BE DONE BY THE CONTRACTOR PER THE STRIPING LAYOUT IN THE CONTRACT DOCUMENTS OR AS PROVIDED BY THE DEPARTMENT. PAYMENT SHALL BE MADE UNDER APPROPRIATE CONTRACT ITEMS.
- NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT AND LAYOUT OF WORK BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.

- BLASTING MAY BE REQUIRED TO ACHIEVE THE PLANNED GRADES FOR THE PROJECT. IF BLASTING IS REQUIRED, THE CONTRACTOR SHALL CONDUCT WORK IN ACCORDANCE WITH STANDARD SPECIFICATION SECTIONS 105.2.7 - USE OF EXPLOSIVES AND 203.042 - ROCK EXCAVATION AND BLASTING.
- ANY EXCAVATED DREDGE MATERIAL THAT CAN BE REUSED ON SITE, AS DIRECTED BY THE RESIDENT, SHALL BE REUSED TO FILL WITHIN EMBANKMENT AND INTO VOIDS OF RIPRAP. THIS WORK WILL BE CONSIDERED INCIDENTAL TO RELATED CONTRACT ITEMS.
- CONSTRUCTION ACTIVITIES SHOULD NOT BE PERMITTED TO CREATE ANY OPEN FISSURES IN THE BEDROCK SURFACE. ANY IRREGULARITIES IN THE EXPOSED BEDROCK SURFACE OR IRREGULARITIES CREATED DURING THE EXCAVATION PROCESS SHALL BE FILLED USING CONCRETE FILL (PAY ITEM 502.565) PRIOR TO PEDESTAL FOOTING CONSTRUCTION.

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.20	COMMON EXCAVATION	505	CY
203.25	GRANULAR BORROW	430	CY
203.33	SPECIAL FILL - STREAMBED MATERIAL	45	CY
206.07	STRUCTURAL ROCK EXCAV - DRAINAGE & MINOR STRUCTURES	110	CY
304.10	AGGR SUBB COURSE - GRAVEL	410	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	47	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	78	T
409.15	BITUMINOUS TACK COAT, APPLIED	17	G
502.21	STR CONC ABUT & RET WALL	75	CY
502.565	CONCRETE FILL	8	CY
503.12	REINFORCING STEEL, FABRICATED/DELIVERED	7690	LB
503.13	REINFORCING STEEL, PLACING	7690	LB
509.13	STEEL STRUCTURAL PLATE ARCH (9,200 LB)	1	LS
511.07	COFFERDAM DOWNSTREAM	1	LS
511.07	COFFERDAM UPSTREAM	1	LS
512.081	FRENCH DRAINS (APPROXIMATELY 42 LF)	1	LS
515.20	PROT COAT FOR CONC SURFACES	125	SY
610.08	PLAIN RIPRAP	105	CY
610.210	STREAM CHANNEL ROCK	45	CY
610.212	STREAMBED ROCK FEATURES	19	CY
613.319	EROSION CONTROL BLANKET	45	SY
615.07	LOAM	30	CY
618.14	SEEDING METHOD NUMBER 2	6	UN
619.12	MULCH	6	UN
619.14	EROSION CONTROL MIX	20	CY
620.58	EROSION CONTROL GEOTEXTILE	370	SY
627.733	4" WHITE OR YELLOW PAINTED PAVE MRK LINE	570	LF
629.05	HAND LABOR, STRAIGHT TIME	20	HR
631.12	ALL-PURPOSE EXC (INC OPERATOR)	20	HR
631.133	SKID STEER (INCLUDING OPERATOR)	20	HR
631.172	TRUCK-LARGE (INC OPERATOR)	20	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADE	6	EA
652.33	DRUM	30	EA
652.34	CONE	90	EA
652.35	CONSTRUCTION SIGNS	784	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	45	CD
652.38	FLAGGER	300	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	2	EA
656.75	TEMP SOIL EROSION & WATER POLLUTION CTRL	1	LS
659.10	MOBILIZATION	1	LS



**FULL DEPTH CONSTRUCTION**

NOT TO SCALE  
21-85 TO 23-25

**STATE OF MAINE**  
**DEPARTMENT OF TRANSPORTATION**

**2428300**  
**WIN**  
**24283.00**  
HIGHWAY PLANS

**BREMEN**  
**ROUTE 32**

**TYPICAL SECTION, GENERAL**  
**NOTES & ESTIMATED QUANTITIES**

PROJ. MANAGER	D. COOMBS	BY	M. GRIFFIN	DATE	03/23/22
DESIGN-DETAILED	T. HIGGINSON	CHECKED-REVIEWED	M. GRIFFIN	DATE	03/23/22
DESIGNS DET ALOD3		DESIGNS DET ALOD3		SIGNATURE	
REVISIONS 1		REVISIONS 1		P.E. NUMBER	
REVISIONS 2		REVISIONS 2		DATE	
REVISIONS 3		REVISIONS 3			
REVISIONS 4		REVISIONS 4			
FIELD CHANGES					

SHEET NUMBER  
**2**  
OF 13

Date: 03/23/22

Username: WSP USA, Inc.

Division: Highway

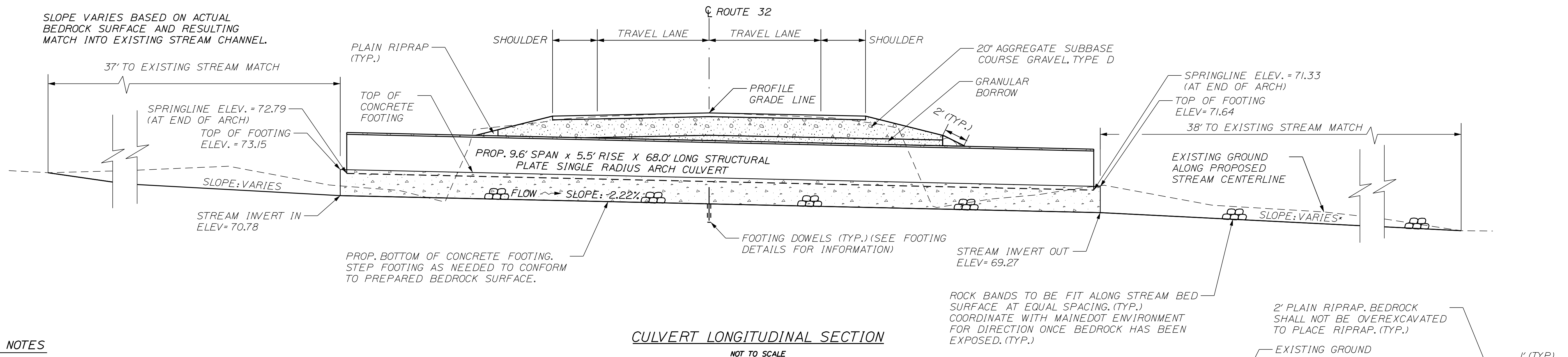
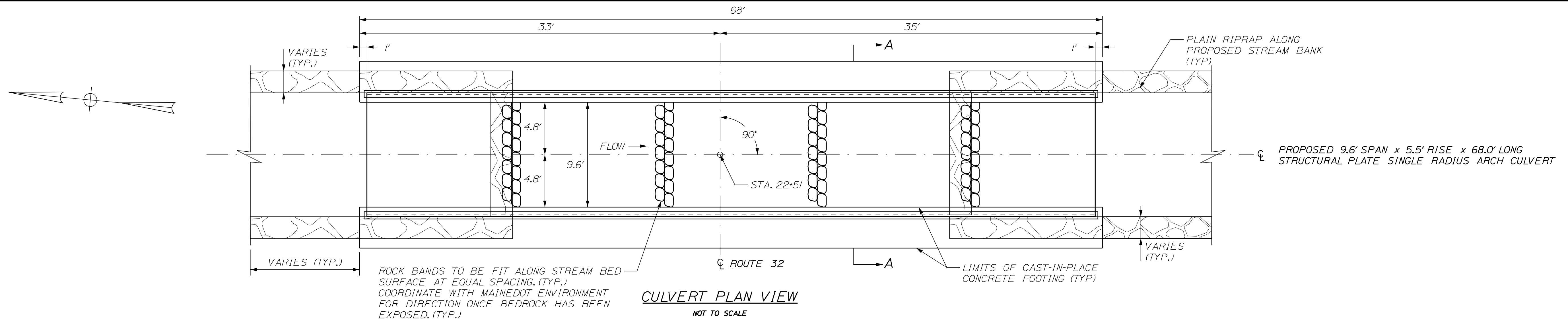
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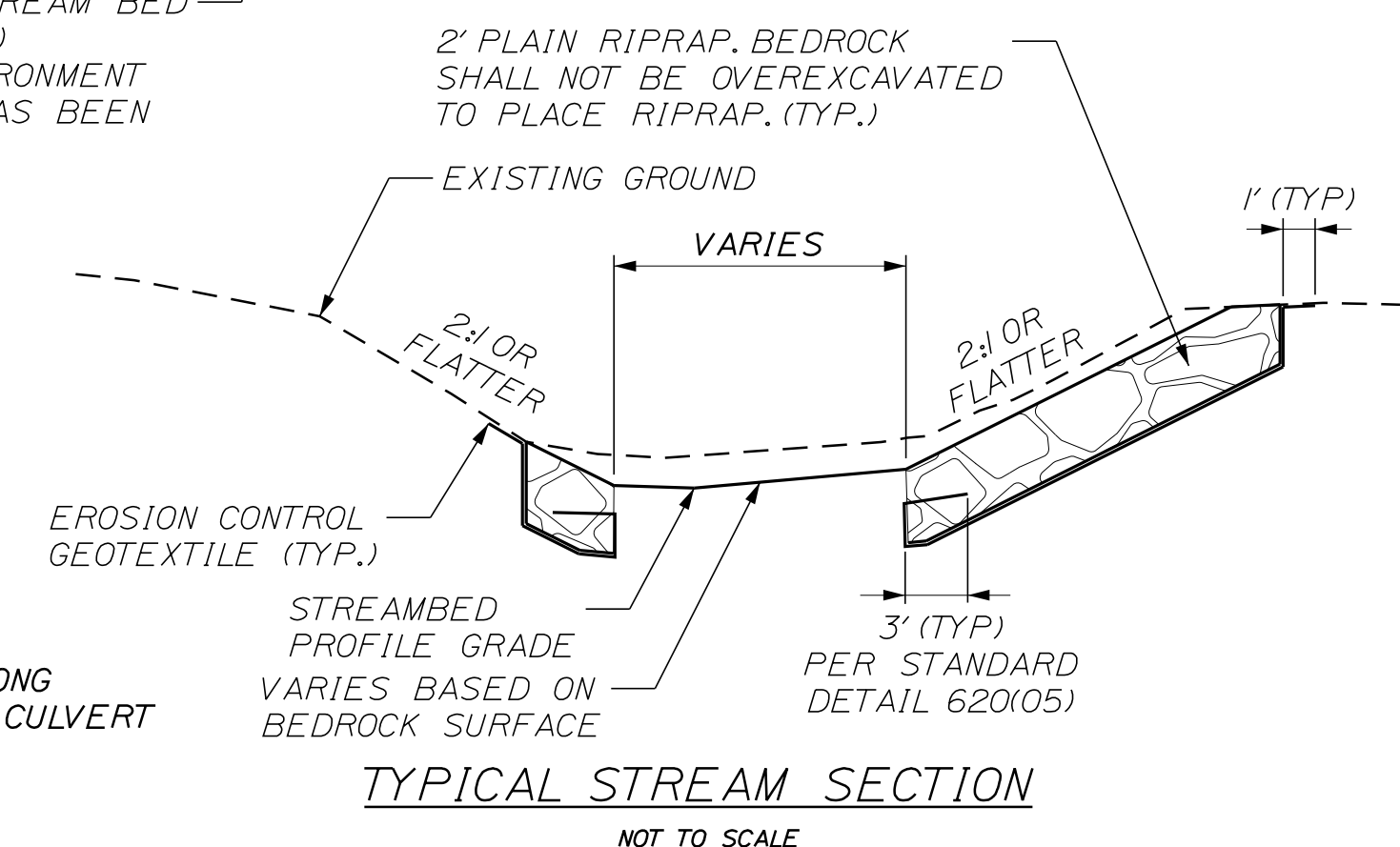
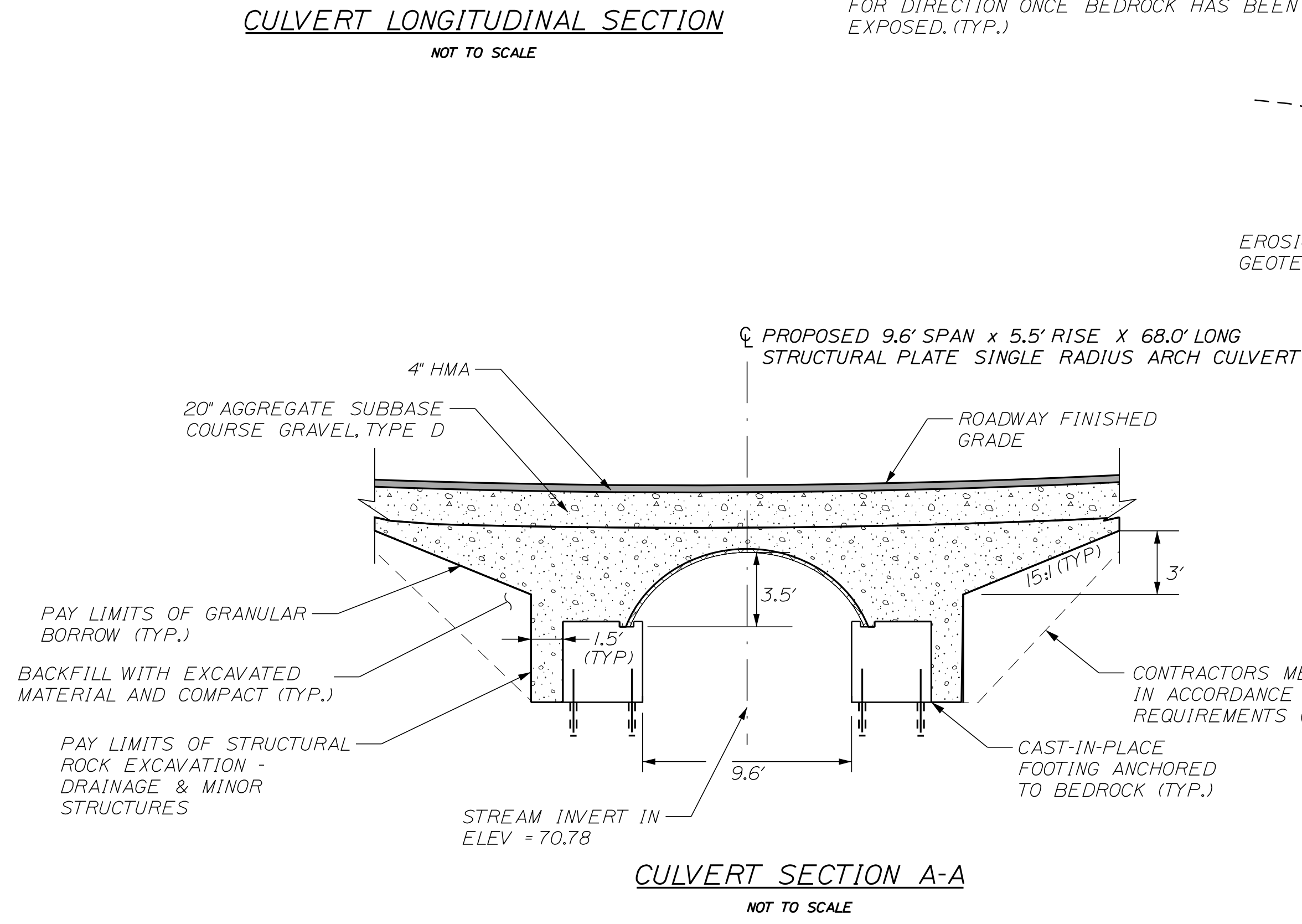
Division: Highway

Filename: BREMEN



**CULVERT NOTES**

- COFFERDAMS ARE TO BE PLACED AT BOTH THE DOWNSTREAM AND UPSTREAM ENDS OF THE CULVERT TO ALLOW WATER TO BE PUMPED AND REMOVED DURING CONSTRUCTION OF THE CULVERT. IF ADDITIONAL COFFERDAM(S) ARE REQUIRED TO CONSTRUCT THE FOOTINGS IN THE DRY, ALL COSTS FOR FOOTING COFFERDAM(S), INCLUDING PUMPING, MAINTENANCE, RELATED TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROLS, AND REMOVAL, WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED INCIDENTAL TO RELATED CONTRACT ITEMS.
- PLAIN RIPRAP WILL BE USED TO INSLOPE AROUND THE CULVERT ENDS AT BOTH THE INLET AND OUTLET. SEE PLAN AND PROFILE FOR LOCATIONS. RIPRAP ADJACENT TO THE CULVERT AND ITS FOOTINGS SHALL BE CAREFULLY PLACED SO AS NOT TO DAMAGE THE STRUCTURE AND SO THAT THE FINISHED SLOPE WILL MATCH THE ENDS OF THE CULVERT. ANY EXTRA LABOR, MATERIAL OR EQUIPMENT USED WILL BE CONSIDERED INCIDENTAL TO ITEM 610.08 PLAIN RIPRAP. ANY DAMAGE TO THE STRUCTURE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AS DETERMINED BY THE RESIDENT AT THE CONTRACTOR'S EXPENSE.
- CONSTRUCTION, HANDLING, AND ASSEMBLY OF THE STRUCTURAL PLATE ARCH CULVERT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 509 AND THE MANUFACTURER'S SPECIFICATIONS AS APPLICABLE.
- LAYOUT AND CONFIGURATION OF RIPRAP IN THE STREAM BED AND ON THE SLOPES SHALL BE APPROVED BY THE RESIDENT AND/OR MAINEDOT ENVIRONMENTAL STAFF.
- STRUCTURAL PLATE ARCH DETAILS:  
ONE 11.0' SPAN X 3.5' RISE WITH 6'-1" RADIUS 66'-0" NOMINAL LENGTH AT CL. (66'-0" NOMINAL LENGTH = 66'-4" ACTUAL LENGTH PER STANDARD MANUFACTURER'S PRACTICES).  
8 GA. (0.170" THICK) STRUCTURAL PLATE SINGLE RADIUS ARCH IS REQUIRED.
- ENDS OF STRUCTURAL PLATE ARCH SHALL BE VERTICAL AS SHOWN IN THE PLANS.
- THE STRUCTURAL PLATE ARCH SHALL BE CONSTRUCTED IN THE DRY. THE APPROXIMATE WEIGHT OF THE NOMINAL 66'-0" LONG STRUCTURAL PLATE ARCH IS 9,200 POUNDS.
- GRANULAR BORROW SHALL MEET THE REQUIREMENTS OF SUBSECTION 703.19 MATERIAL FOR UNDERWATER BACKFILL. EXCAVATION FOR GRANULAR BORROW SHALL BE INCIDENTAL TO ITEM 509.13 STEEL STRUCTURAL PLATE ARCH.
- PLACE A 24 INCH WIDE STRIP OF TEMPORARY EROSION CONTROL BLANKET ALONG THE TOP OF THE RIPRAP AND OVER THE STRUCTURE, TYPICAL AT BOTH ENDS.



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2428300		WIN		24283.00		HIGHWAY PLANS	
BREMEN		ROUTE 32		SPECIAL DETAILS		SHEET NUMBER		3		OF 13	
PROJ. MANAGER	D. COOMBS	BY	M. GRAY	DATE	03/23/22	SIGNATURE	P.E. NUMBER	DATE			
DESIGN DETAILED	T. HIGGINS	CHECKED	M. GRAY	DESIGNED		DESIGNED		REVISIONS 1		REVISIONS 2	
DESIGN DETAILED		DESIGNED		REVISIONS 3		REVISIONS 4		FIELD CHANGES			

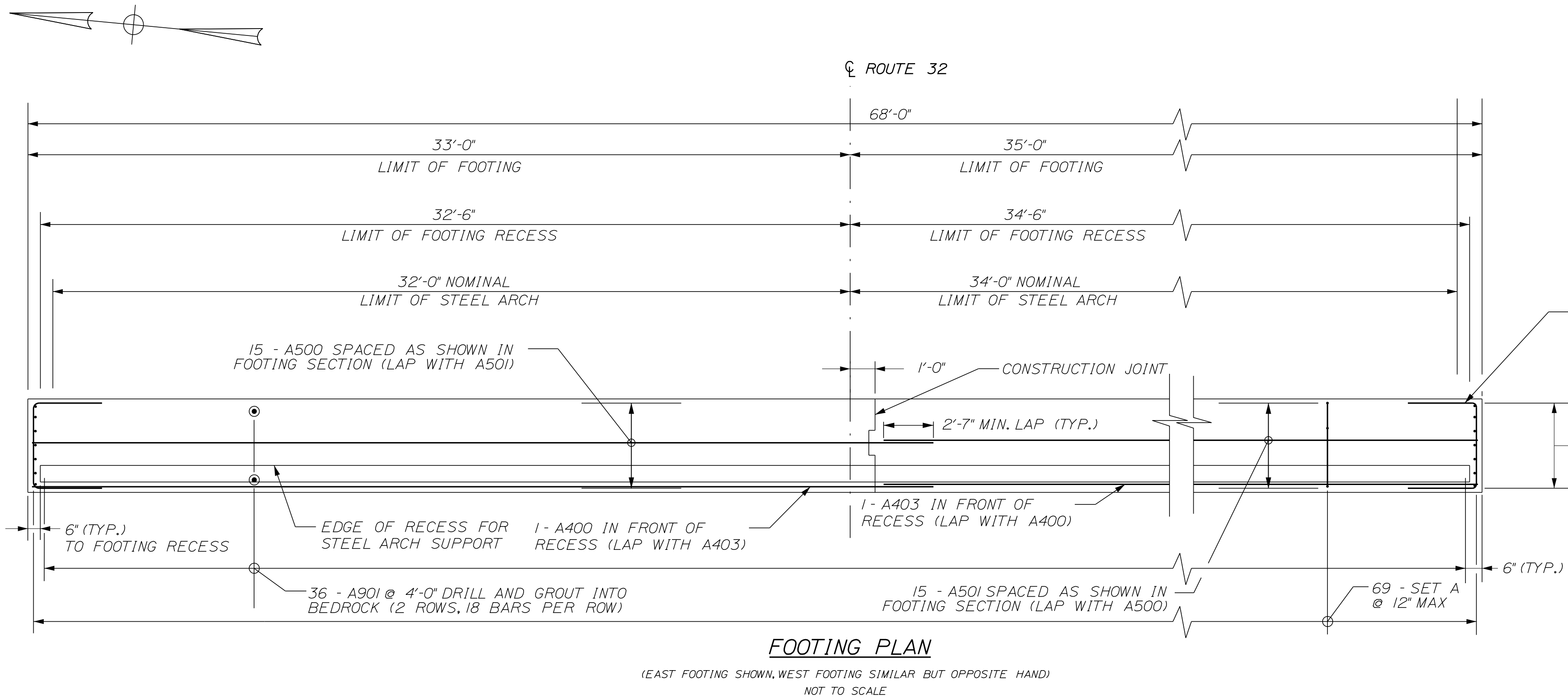
70.78 IS THE HIGHEST ELEVATION FOR HYDRAULIC CONSIDERATIONS OF THE STREAM INVERT IN. IF FIELD BEDROCK ELEVATION IS FOUND TO BE LOWER, FOOTING SHALL BE CAST AGAINST BEDROCK AND STREAM INVERT IN WILL MATCH EXISTING BEDROCK ELEVATION.

Date: 03/23/22

Username: WSP USA, Inc.

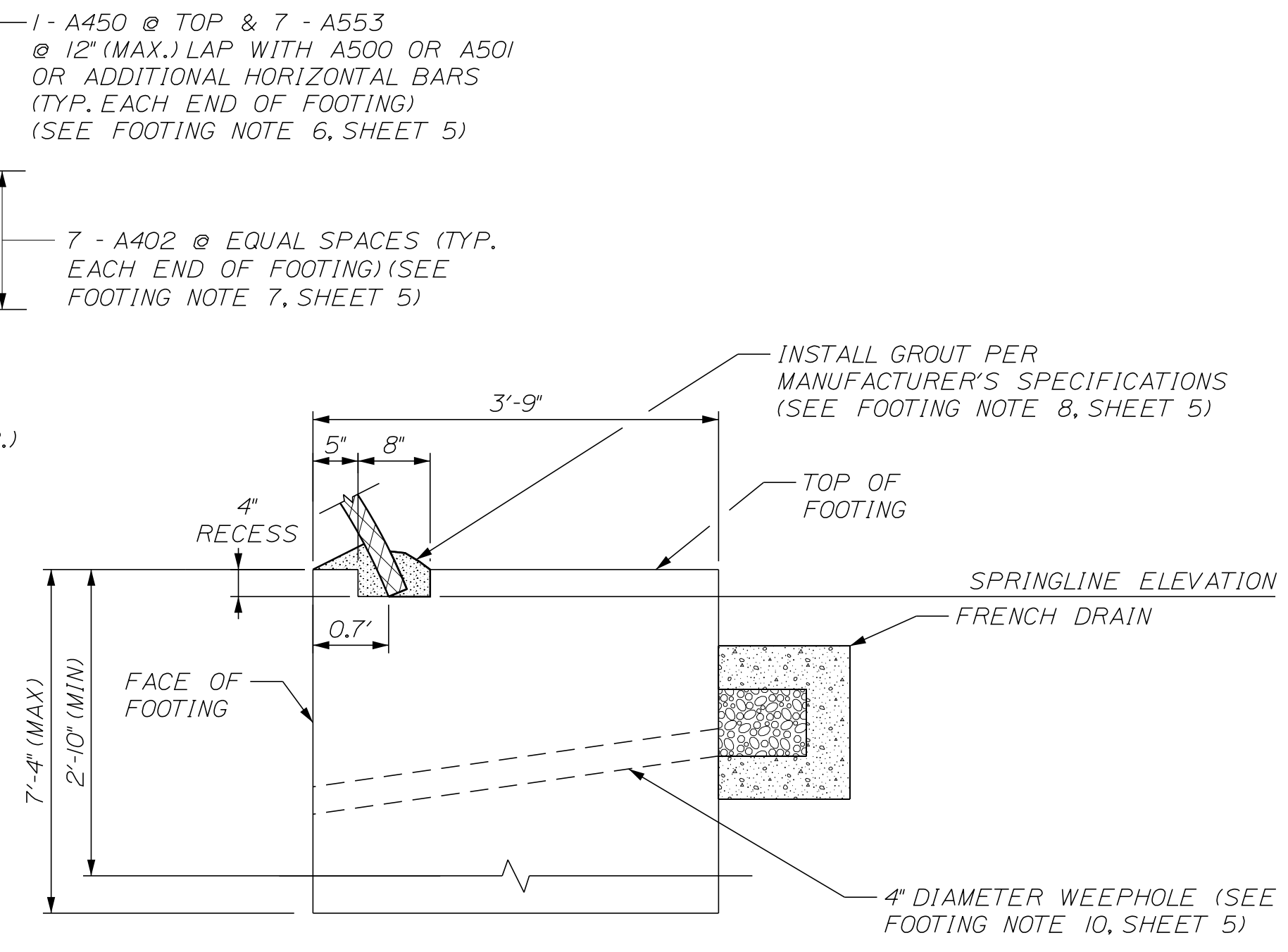
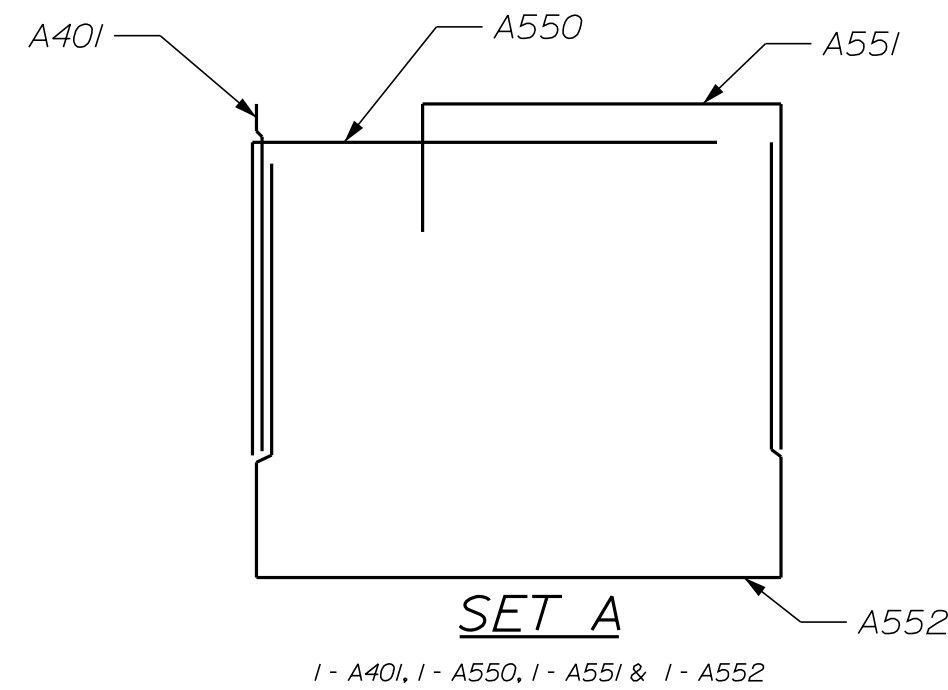
Division: Highway

Filename: BREMEN



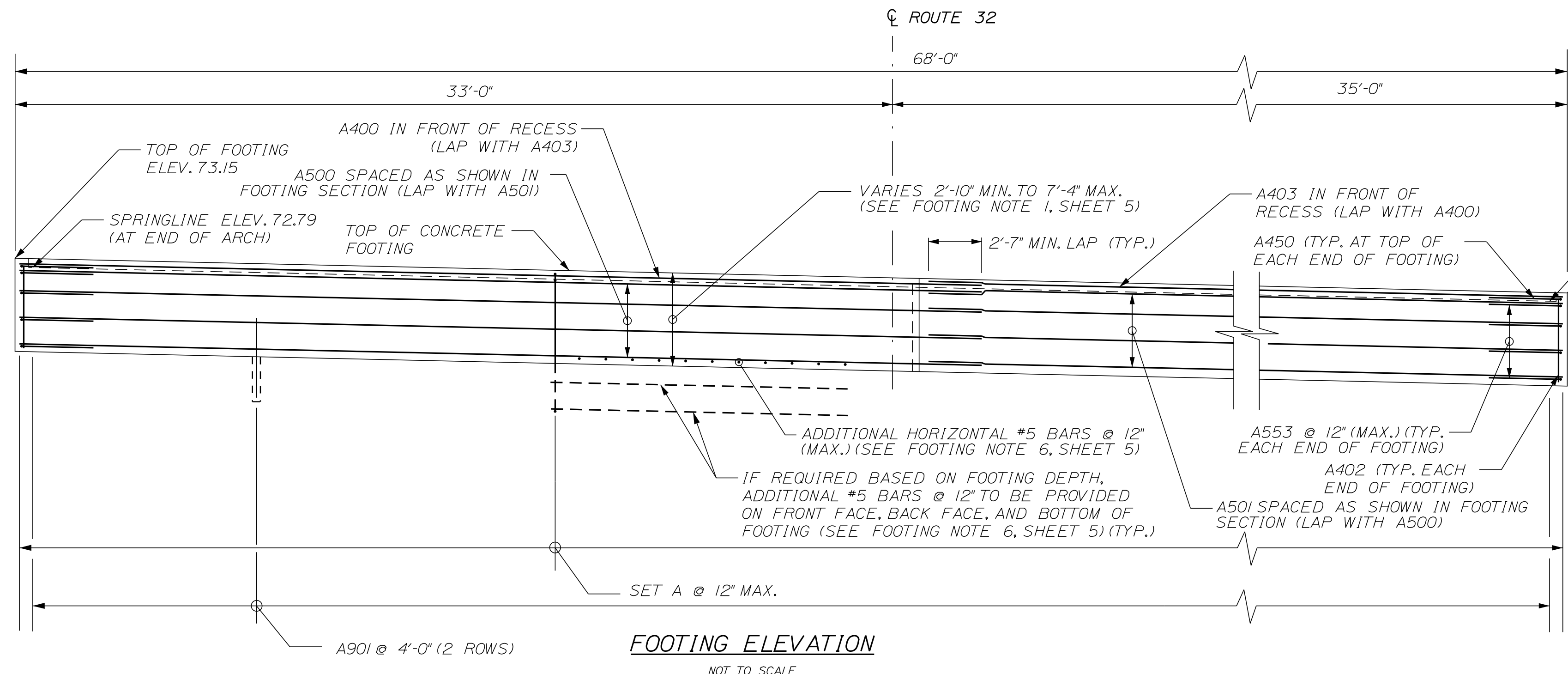
**FOOTING PLAN**

(EAST FOOTING SHOWN, WEST FOOTING SIMILAR BUT OPPOSITE HAND)  
NOT TO SCALE



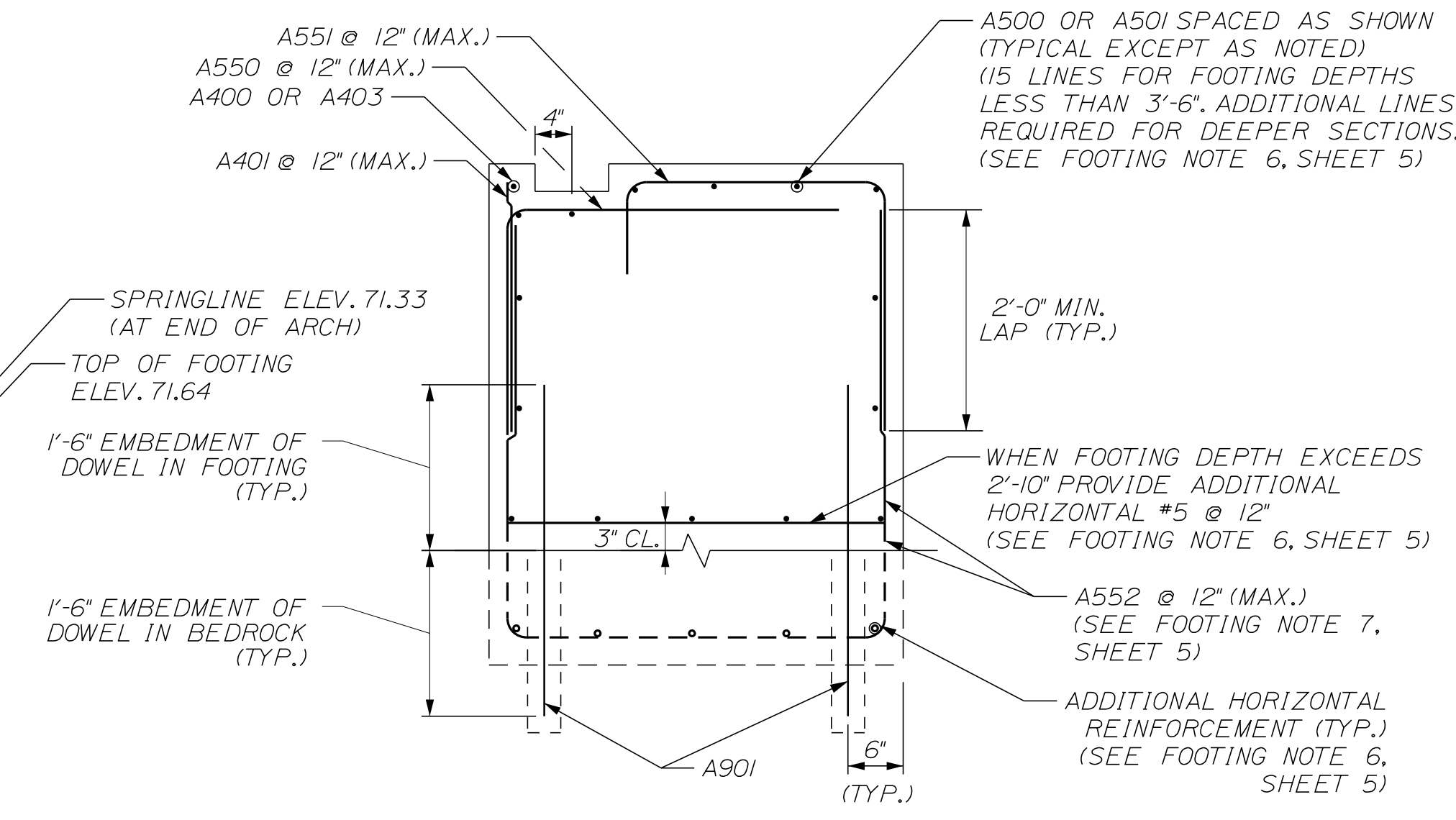
**FOOTING SECTION**

NOT TO SCALE



**FOOTING ELEVATION**

NOT TO SCALE



**FOOTING SECTION - REINFORCEMENT**

NOT TO SCALE

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2428300  
WIN  
24283.00  
HIGHWAY PLANS

PROJ. MANAGER	D. COOMBS	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	I. Higginson	M. Grilo	03/23/22			
CHECKED-REVIEWED						
DESIGN-DETAILED						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

BREMEN  
ROUTE 32  
FOOTING DETAILS

SHEET NUMBER  
**4**  
OF 13

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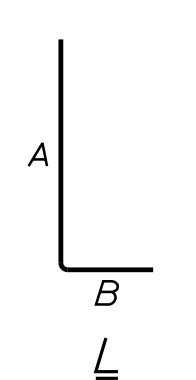
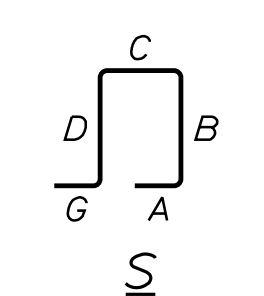
**FOOTING NOTES:**

1. IF MAXIMUM FOOTING DEPTH EXCEEDS 7'-4", CONTACT THE ENGINEER OF RECORD TO DETERMINE IF ANY CHANGES ARE REQUIRED DUE TO THE UNFORESEEN BEDROCK CONDITIONS.
2. MINIMUM COVER FOR REINFORCEMENT SHALL BE 2" CLEAR INCLUDING THE INTERIOR FACES OF THE FOOTING RECESS, EXCEPT 3" CLEAR SHALL BE PROVIDED AS SHOWN AT THE BOTTOM OF THE FOOTING.
3. MINIMUM LAP LENGTH SHALL BE 2'-7" FOR HORIZONTAL #4 AND #5 BARS UNLESS NOTED OTHERWISE. MINIMUM LAP LENGTH SHALL BE 2'-0" FOR VERTICAL #4 AND #5 BARS.
4. MAXIMUM SPACING OF BARS IS 12" UNLESS NOTED OTHERWISE.
5. #9 FOOTING DOWELS SHALL EXTEND 1'-6" INTO THE BEDROCK. THE RESIDENT OR GEOTECHNICAL ENGINEER SHALL APPROVE THE INTEGRITY OF THE BEDROCK SUBGRADE PRIOR TO PLACEMENT OF FOOTING DOWELS. PAYMENT FOR DRILLING AND GROUTING DOWELS INTO BEDROCK SHALL BE INCIDENTAL TO THE RELATED CONTRACT ITEMS.
6. WHEN THE FOOTING DEPTH IS 3'-6" OR GREATER, CONTRACTOR SHALL PROVIDE ADDITIONAL HORIZONTAL BARS FOR THE FRONT FACE, BACK FACE AND BOTTOM OF FOOTING AS SHOWN IN THE FOOTING ELEVATION AND SECTION. THESE ADDITIONAL HORIZONTAL BARS ARE NOT INCLUDED IN THE BAR SCHEDULE AND PAYMENT SHALL BE INCIDENTAL TO ITEM 502.21 STR CONC ABUT & RET WALL. WHEN THE FOOTING DEPTH IS GREATER THAN 2'-10", CONTRACTOR SHALL PROVIDE ADDITIONAL #5@12" HORIZONTAL BARS AS SHOWN IN THE FOOTING ELEVATION AND SECTION. THESE ADDITIONAL #5@12" HORIZONTAL BARS ARE NOT INCLUDED IN THE BAR SCHEDULE AND PAYMENT SHALL BE INCIDENTAL TO ITEM 502.21 STR CONC ABUT & RET WALL.
7. BARS A402 AND A552 ARE DETAILED FOR THE MAXIMUM FOOTING HEIGHT OF 7'-4" SO THAT CONTRACTOR CAN CUT THESE BARS TO FIT BEDROCK CONDITIONS WITH THE APPROVAL OF THE RESIDENT. PAYMENT FOR ALL ADJUSTMENTS WILL BE CONSIDERED INCIDENTAL TO THE RELATED CONTRACT ITEMS AND NO SEPARATE PAYMENT WILL BE MADE.
8. AFTER ARCH IS INSTALLED INTO FOOTING RECESS, COMPLETELY FILL THE RECESS WITH NONMETALLIC NONSHRINK GROUT PER MANUFACTURER RECOMMENDATIONS. TOP SURFACE OF GROUT SHALL BE SLOPED TO PREVENT RETENTION OF WATER ON THE GROUT SURFACE AND AGAINST THE STEEL ARCH.
9. VERTICAL WATERSTOP SHALL BE USED AT VERTICAL CONSTRUCTION JOINT IN ACCORDANCE WITH STANDARD DETAIL 502(01).
10. CONSTRUCT 4 INCH DIAMETER WEEPHOLES IN FOOTINGS AT 10-FOOT MAXIMUM SPACING. EXACT LOCATIONS SHALL BE DETERMINED BY THE RESIDENT.
11. CONSTRUCT FRENCH DRAINS BEHIND THE FOOTINGS IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 512, FRENCH DRAINS AS DIRECTED BY THE RESIDENT.
12. MAXIMUM FACTORED APPLIED FOOTING PRESSURE IS 55.8 KSF AT THE STRENGTH I LIMIT STATE. FACTORED BEARING RESISTANCE OF BEDROCK IS 160 KSF.
13. FOOTING DESIGN IS BASED ON MAXIMUM UNFACTORED REACTIONS AS FOLLOWS:  

	VERTICAL REACTIONS	HORIZONTAL REACTIONS
DEAD LOAD	2.5 KIPS/FT	1.2 KIPS/FT
LIVE LOAD	5.4 KIPS/FT	2.5 KIPS/FT
- IF A PLATE ARCH OTHER THAN THAT SPECIFIED IN THE CONTRACT DOCUMENTS IS PROPOSED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DESIGN CALCULATIONS, DETAILS AND SHOP DRAWINGS FOR THE PROPOSED STRUCTURE AND SHALL SUBMIT THESE TO THE DEPARTMENT FOR ACCEPTANCE.
14. BEDROCK ELEVATIONS VARY. ALL LOOSE AND WEATHERED ROCK SHALL BE CLEANED FROM THE BEARING SURFACE PRIOR TO FOOTING CONSTRUCTION PER STANDARD SPECIFICATION 206. WHERE THE SLOPE OF THE BEDROCK IS STEEPER THAN 4H:1V, THE BEDROCK SURFACE SHALL BE STEPPED AND BENCHED. EQUIPMENT USED TO PREPARE THE BEDROCK SURFACE FOR THE NEW FOOTINGS SHALL BE CONVENTIONAL CONSTRUCTION EQUIPMENT AS APPROVED BY THE RESIDENT. BEDROCK SURFACE PREPARATION AS DESCRIBED AND SHOWN IN THE PLANS SHALL BE INCIDENTAL TO ITEM 509.13 STEEL STRUCTURAL PLATE ARCH. THE RESIDENT OR GEOTECHNICAL ENGINEER SHALL APPROVE THE BEDROCK SUBGRADE PRIOR TO PLACEMENT OF THE FOOTING CONCRETE.
15. CONSTRUCTION ACTIVITIES SHOULD NOT BE PERMITTED TO CREATE ANY OPEN FISSURES IN THE BEDROCK SURFACE. ANY IRREGULARITIES IN THE EXPOSED BEDROCK SURFACE OR IRREGULARITIES CREATED DURING THE EXCAVATION PROCESS SHALL BE FILLED USING CONCRETE FILL (PAY ITEM 502.565) PRIOR TO PEDESTAL FOOTING CONSTRUCTION.
16. WHERE BEDROCK PROTRUDES ABOVE THE BOTTOM OF FOOTING FOR THE 2'-10" MINIMUM FOOTING DEPTH, BEDROCK SHALL BE REMOVED. PAYMENT FOR BEDROCK REMOVAL SHALL BE MADE UNDER ITEM 206.07 STRUCTURAL ROCK EXCAVATION - DRAINAGE & MINOR STRUCTURES.
17. CONCRETE FOOTINGS SHALL BE PLACED IN THE DRY. PRIOR TO PLACING FOOTING CONCRETE, THE BEDROCK SUBGRADE SHALL BE WASHED WITH HIGH-PRESSURE WATER AND AIR.
18. CLASS A CONCRETE SHALL BE USED FOR FOOTINGS. METHOD OF ACCEPTANCE SHALL BE METHOD A.

STRAIGHT BARS				BENT BARS														
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
A400	2	36'-6"	FOOTING	A450	4	8'-9 1/2"	S	0'-0"	2'-9"	3'-3 1/2"	2'-9"							FOOTING
A401	138	2'-4"	FOOTING															
A402	28	6'-11"	FOOTING	A550	138	5'-1"	L	3'-0"	2'-1"									FOOTING
A403	2	33'-9"	FOOTING	A551	138	5'-5"	S	0'-0"	0'-10"	2'-4"	2'-3"			0'-0"				FOOTING
				A552	138	17'-3"	S	0'-0"	6'-11"	3'-5"	6'-11"			0'-0"				FOOTING
A500	30	36'-6"	FOOTING	A553	28	8'-9 1/2"	S	0'-0"	2'-9"	3'-3 1/2"	2'-9"			0'-0"				FOOTING
A501	30	33'-9"	FOOTING															
A901	72	3'-0"	FOOTING DOWELS															

**TYPE - BENDING DIAGRAMS**

All dimensions are out-to-out of bar.

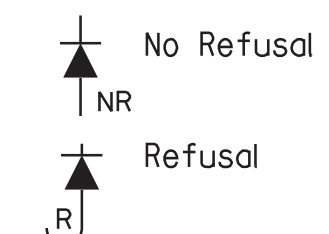
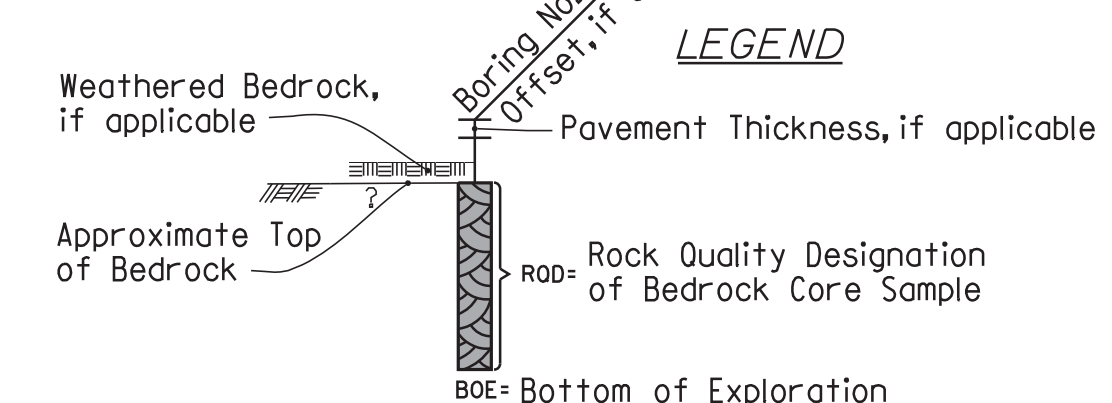
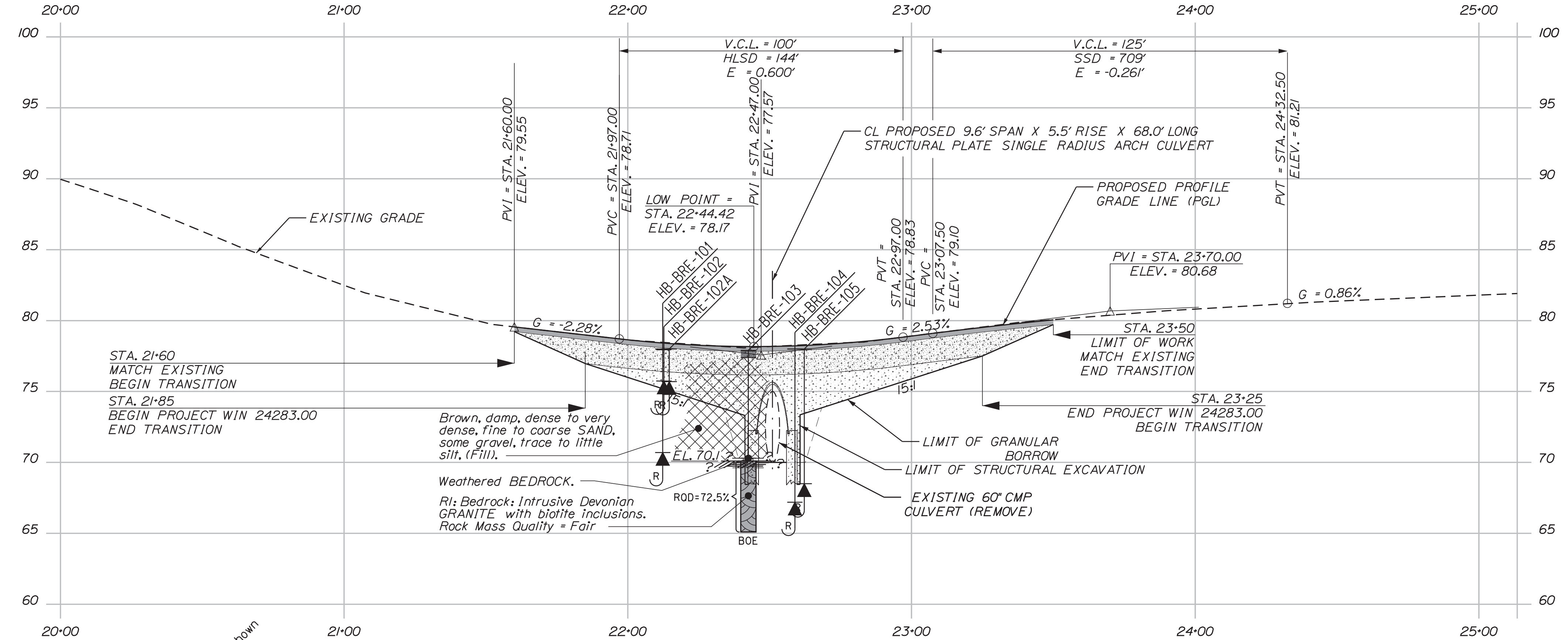
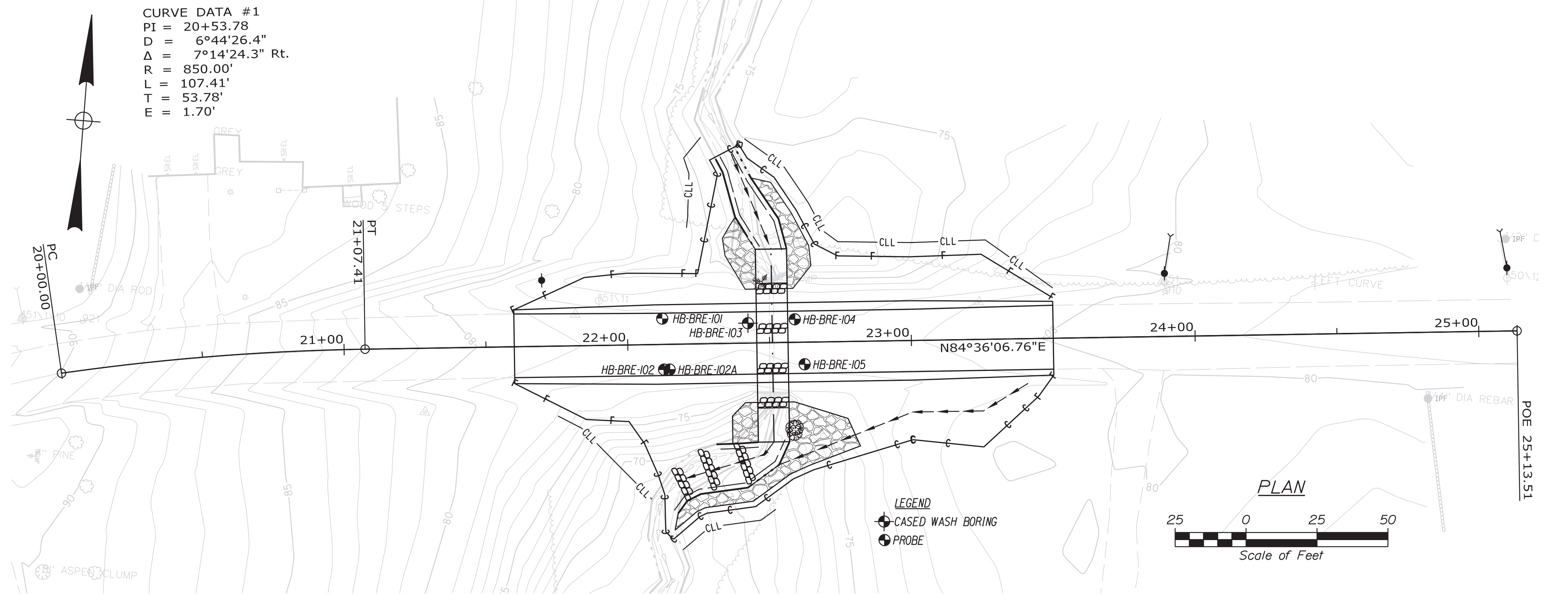
Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.

Reinforcing Bar: ASTM A 615/A 615M, Grade 60

**GENERAL NOTES**

1. The first two digits following the letter(s) of the mark indicate the size of the bar:  
 Mark "A502" = bar size #5  
 Mark "P805" = bar size #8  
 Mark "S650" = bar size #6
2. Each crank bar, Type B, may be replaced by two (2) straight bars (one top and one bottom) of the same bar size as the crank bar. Payment in either case will be based on crank bars as scheduled on the plans.

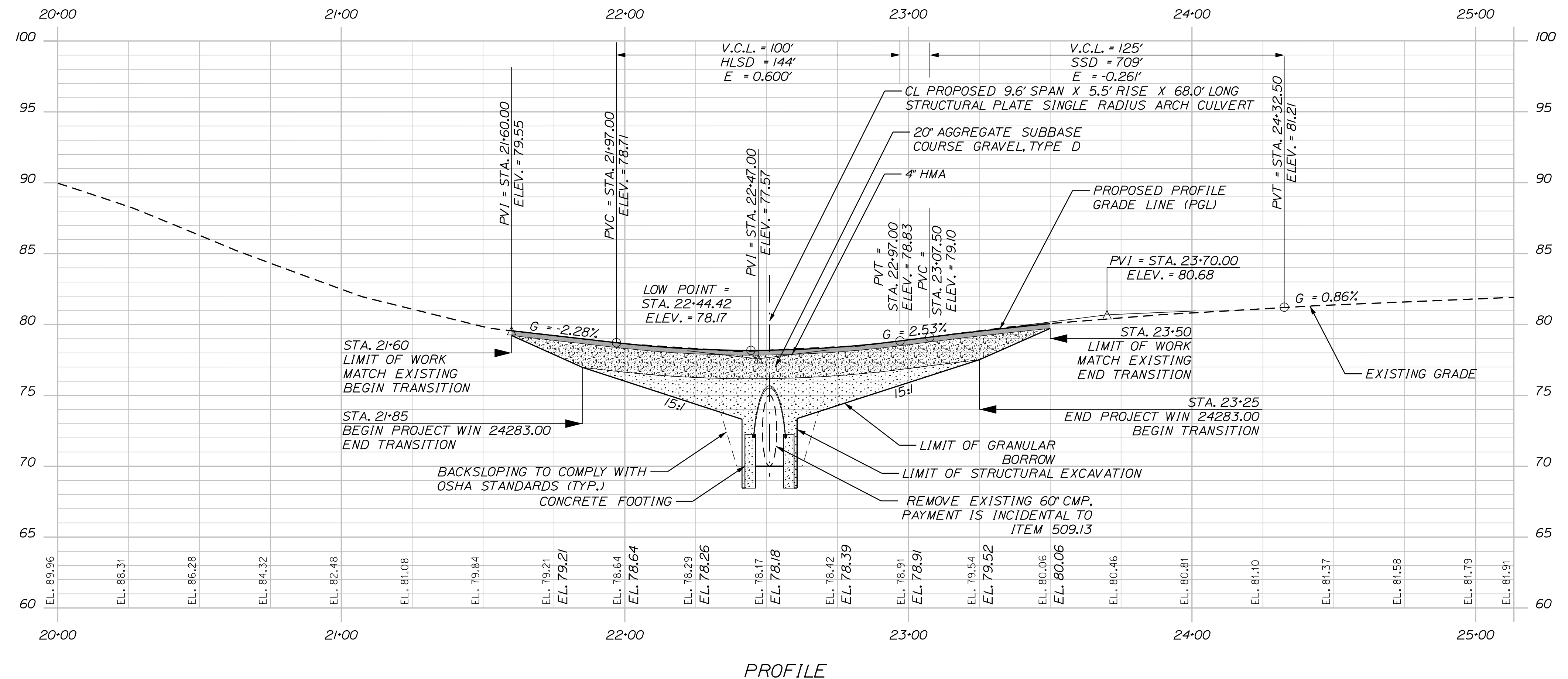
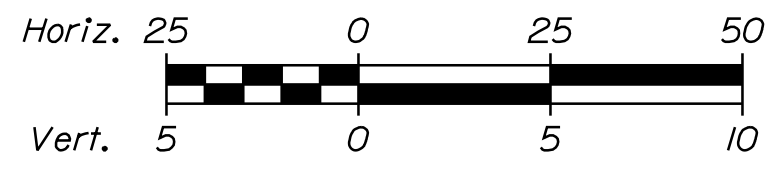
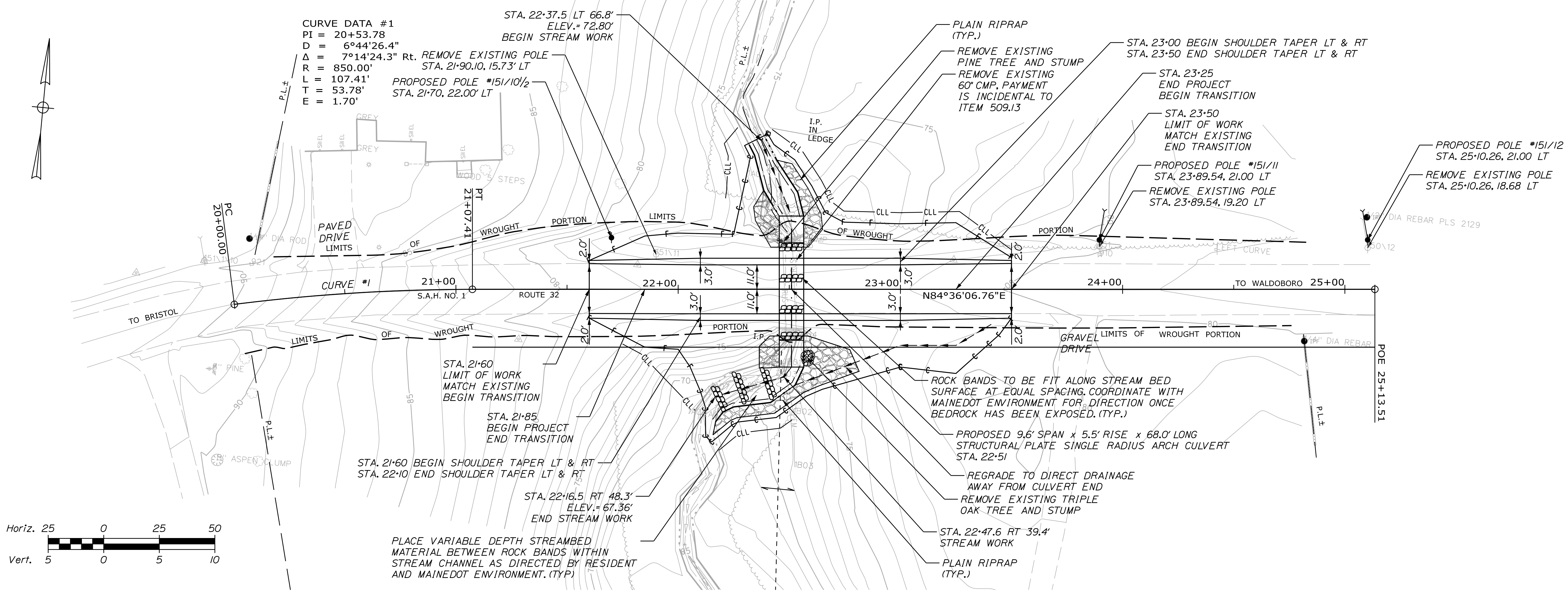
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2428300	WIN 24283.00	HIGHWAY PLANS
BREMEN ROUTE 32	FOOTING NOTES & REBAR SCHEDULE	SHEET NUMBER <b>5</b> OF 13	



Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2428300	
WIN 24283.00		HIGHWAY PLANS	
PROJ. MANAGER	DATE	SIGNATURE	DATE
CHECKED/REVIEWED	MAR 2022	T. WHITE	4/13/2022
DESIGN DETAILER	C. RUSSELL		
DESIGN DETAILER			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
<b>BREMEN ROUTE 32</b> <b>BORING LOCATION PLAN &amp; INTERPRETIVE SUBSURFACE PROFILE</b>			
SHEET NUMBER			
6			
OF 13			



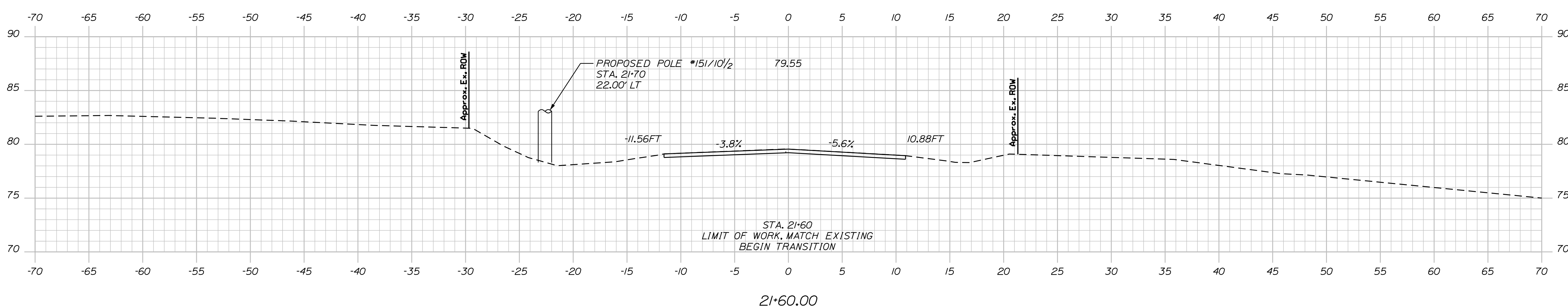
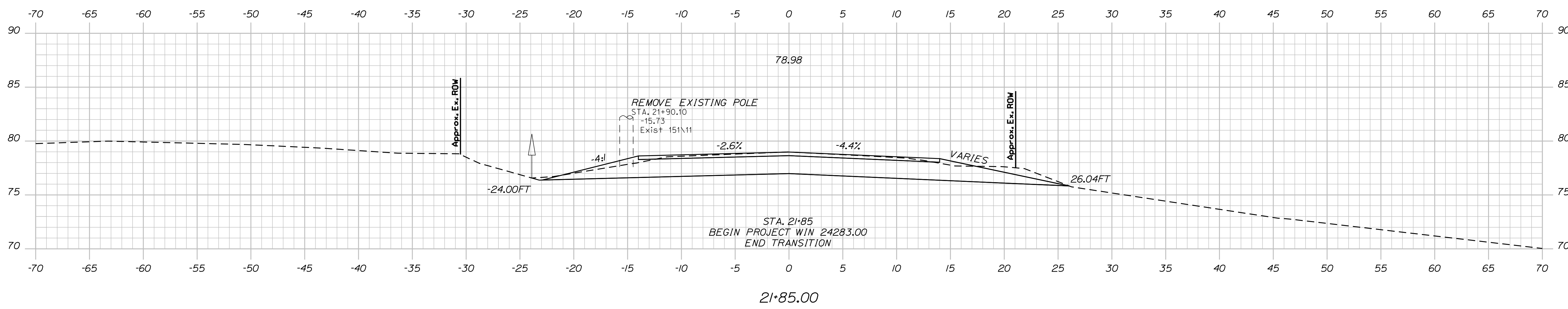
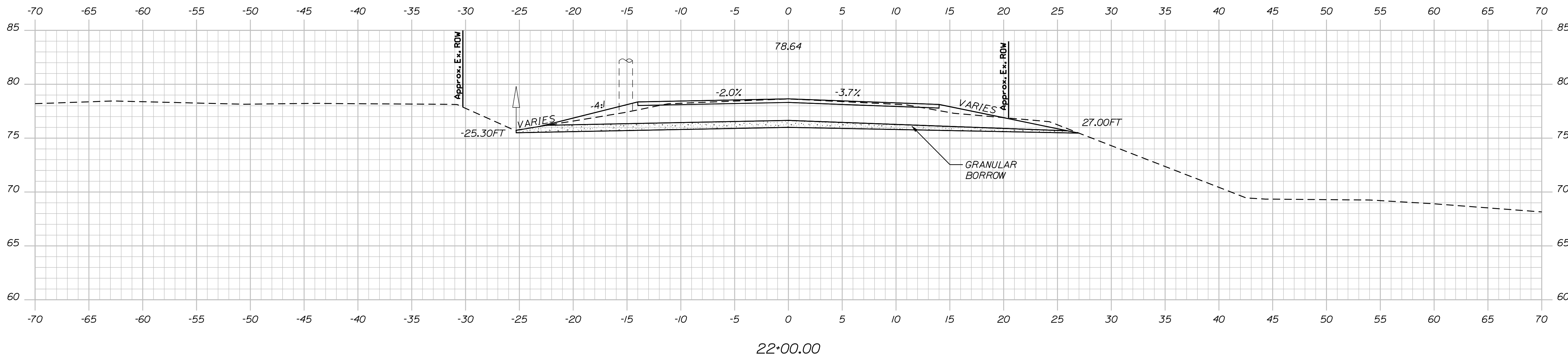


Date: 03/23/22

Username: WSP USA, Inc.

Division: Highway

Filename: BREMEN



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2428300  
WIN  
24283.00  
HIGHWAY PLANS

SIGNATURE  
P.E. NUMBER  
DATE

PROJ. MANAGER	D. COOMBS	BY	DATE
DESIGN DETAILED	I. Higginson	M. Gracie	03/23/22
CHECKED-REVIEWED	--	--	--
DESIGNS DETAILED	--	--	--
REVISIONS 1	--	--	--
REVISIONS 2	--	--	--
REVISIONS 3	--	--	--
REVISIONS 4	--	--	--
FIELD CHANGES	--	--	--

BREMEN  
ROUTE 32  
CROSS SECTIONS

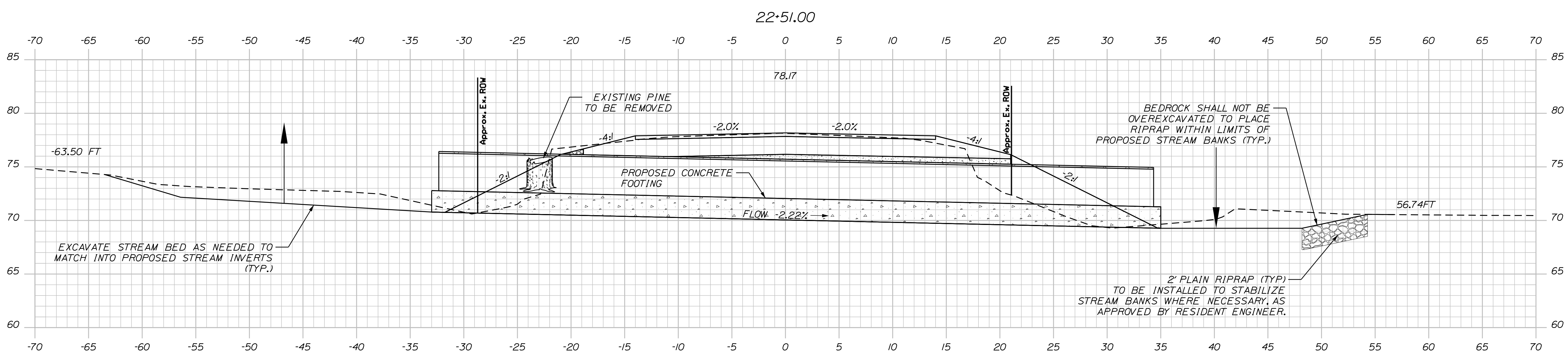
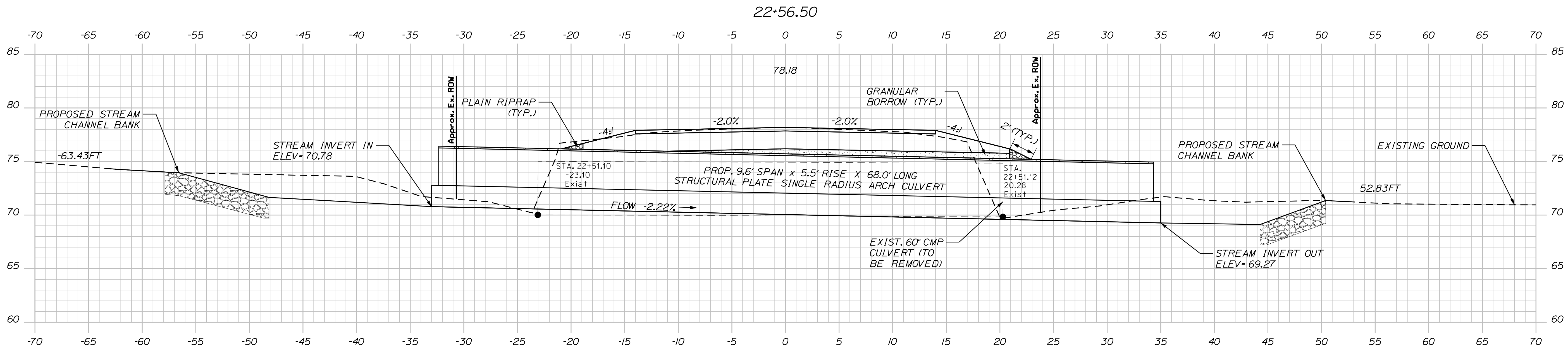
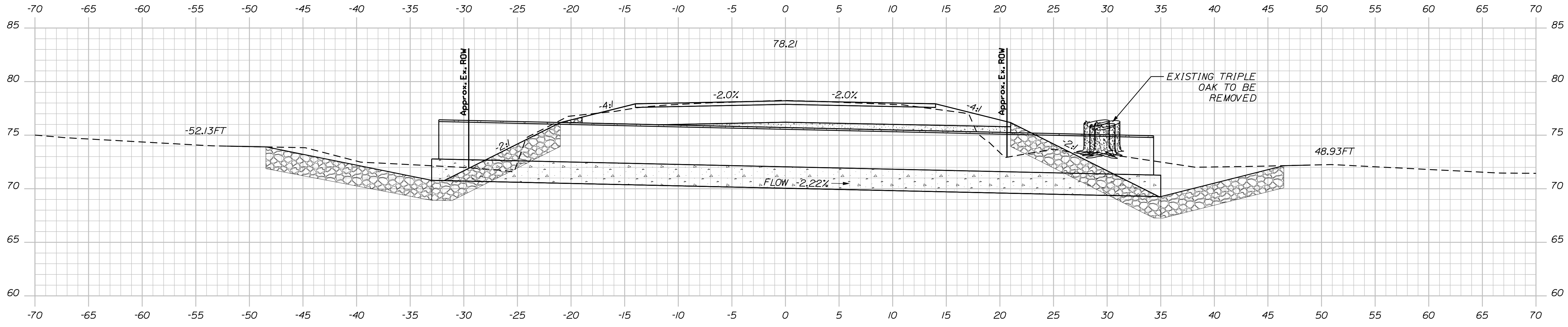
SHEET NUMBER  
9  
OF 13

Date: 03/23/22

Username: WSP USA, Inc.

Division: Highway

Filename: BREMEN



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2428300  
WIN  
24283.00  
HIGHWAY PLANS

DESIGN DETAILED	CHECKED/REVIEWED	DESIGNS DETAILED	DESIGNS DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES

PROJ. MANAGER	D. COOMBS	BY	M. GRAY	DATE	03/23/22	SIGNATURE	P.E. NUMBER	DATE

BREMEN  
ROUTE 32  
CROSS SECTIONS

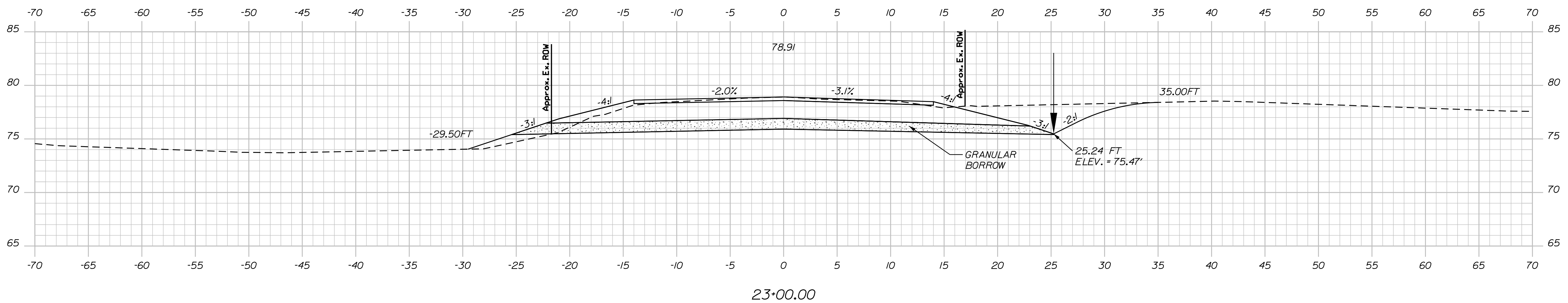
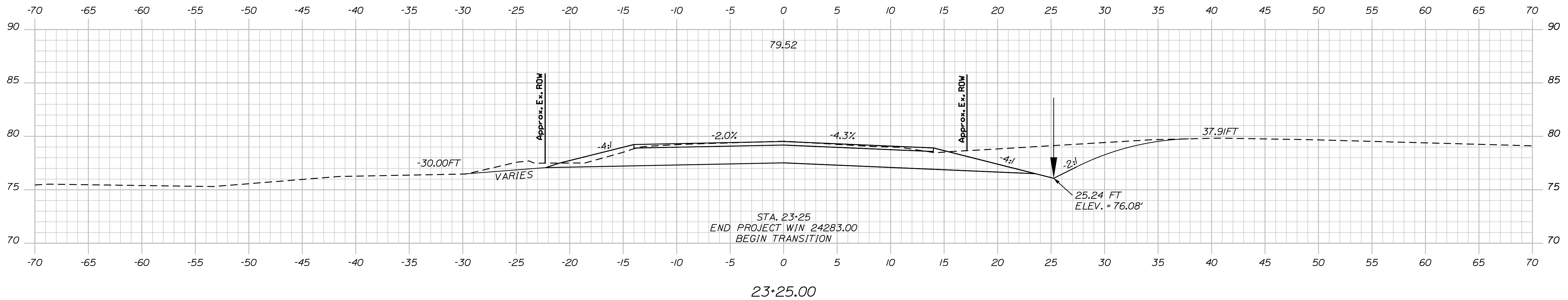
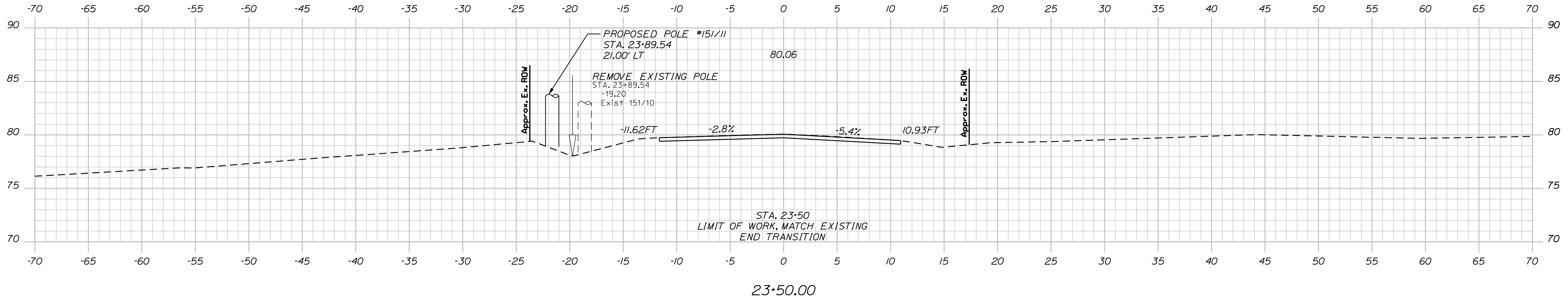
SHEET NUMBER  
**10**  
OF 13

Date: 03/23/22

Username: WSP USA, Inc.

Division: Highway

Filename: BREMEN



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2428300  
WIN  
24283.00  
HIGHWAY PLANS

SIGNATURE  
P.E. NUMBER  
DATE

PROJ. MANAGER	D. COOMBS	BY	DATE
CHECKED-REVIEWED	I. Higginson	M. Grate	03/23/22
DESIGNS DETAILED			
DESIGNS DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BREMEN  
ROUTE 32  
CROSS SECTIONS

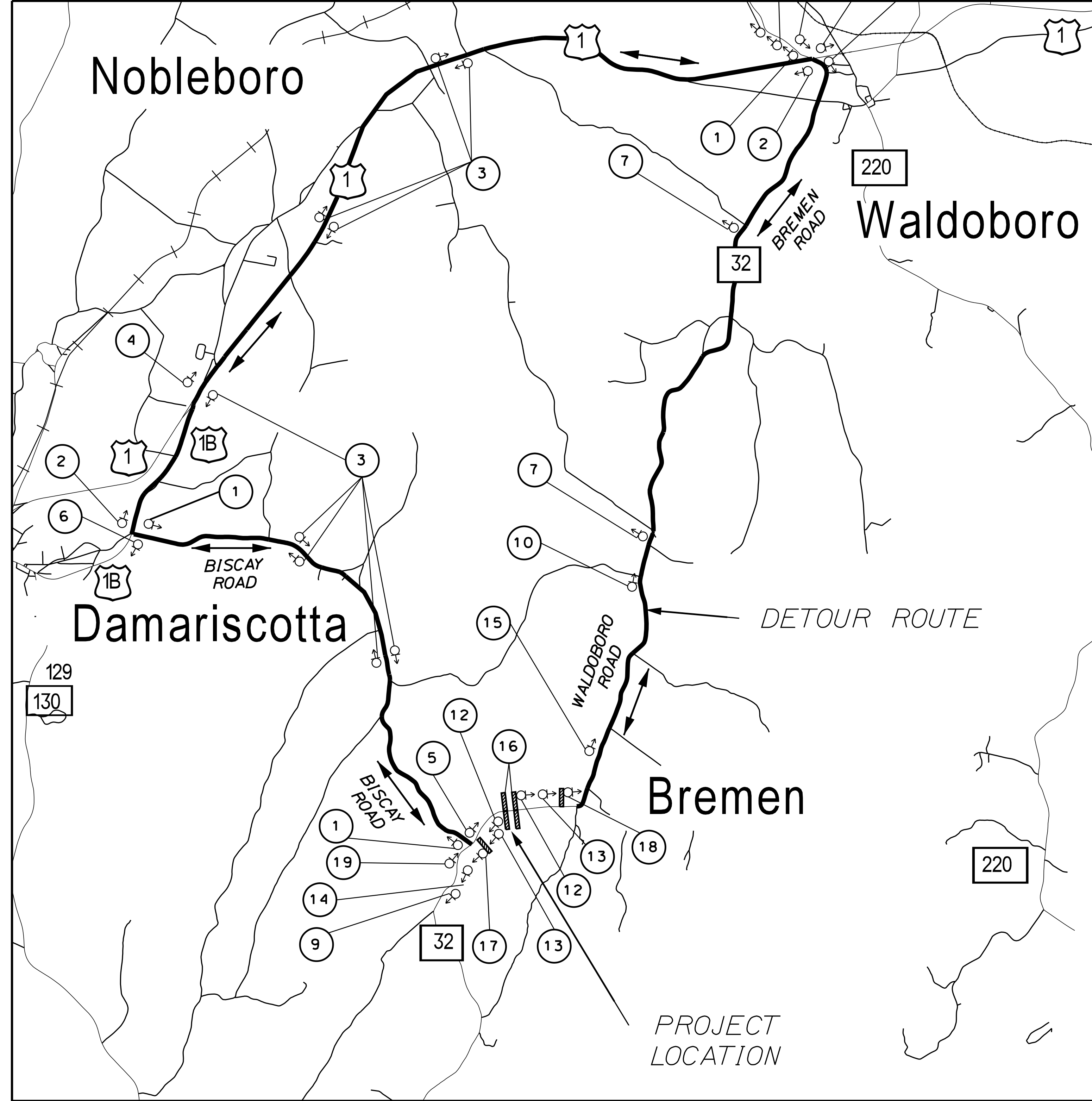
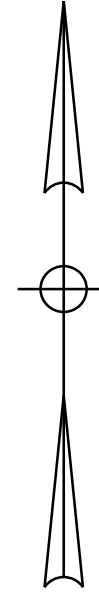
SHEET NUMBER

11

OF 13

- 1 ROUTE 32  
DETOUR  
→
- 2 ROUTE 32  
DETOUR  
←
- 3 ROUTE 32  
DETOUR  
↑
- 4 ROUTE 32  
DETOUR  
↙
- 5 ROUTE 32 NORTH  
DETOUR  
→
- 6 ROUTE 32 NORTH  
DETOUR  
↑
- 7 ROUTE 32 SOUTH  
DETOUR  
←
- 8 ROUTE 32 SOUTH  
DETOUR  
↑
- 9 ROUTE 32 CLOSED  
1 MILE NORTH
- 10 ROUTE 32 CLOSED  
3 MILES SOUTH
- 11 ROUTE 32 CLOSED  
8.5 MILES SOUTH

- 12 ROAD CLOSED  
500 FT
- 13 ROAD CLOSED  
1000 FT
- 14 DETOUR AHEAD
- 15 ROAD CLOSED  
1 MILE AHEAD
- 16 ROAD CLOSED
- 17 ROAD CLOSED  
0.4 MILES AHEAD  
LOCAL TRAFFIC ONLY  
DETOUR  
←  
*(ON TYPE III BARRICADE)*
- 18 ROAD CLOSED  
0.7 MILES AHEAD  
LOCAL TRAFFIC ONLY  
*(ON TYPE III BARRICADE)*
- 19 END  
DETOUR  
ROUTE 32



NOT TO SCALE

**DETOUR NOTES:**  
 1. ROUTE 32, SOUTH OF THE PROJECT SITE, TO BISCAKY ROAD TO MAIN STREET/ROUTE 1B TO ROUTE 32, NORTH OF THE PROJECT SITE.  
 2. SPACING OF TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE IN ACCORDANCE WITH MUTCD.  
 3. COVER AND REMOVE ALL CONFLICTING ROUTE SIGNS.  
 4. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE INSTALLED ALONG ROUTE 32, ON APPROACH TO THE SITE TRAVELING NORTHBOUND AND SOUTHBOUND, TO NOTIFY DRIVERS OF PROJECT AND DETOUR. COORDINATE LOCATIONS WITH RESIDENT.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2428300	WIN 24283.00	HIGHWAY PLANS
BREMEN ROUTE 32	DETOUR PLAN			
SHEET NUMBER	12			
	OF 13			

Town, County, State \_\_\_\_\_  
 Approx. Property Lines \_\_\_\_\_ P.L.  
 Existing Right of Way \_\_\_\_\_  
 Limits of Wrought Portion \_\_\_\_\_ L.O.W.P.  
 Control Of Access \_\_\_\_\_ C.O.A.  
 New Right of Way \_\_\_\_\_  
 New Easement \_\_\_\_\_  
 New Temporary Rights \_\_\_\_\_  
 New R/W Within Existing R/W \_\_\_\_\_

New R/W Along Existing R/W  
 Building \_\_\_\_\_  
 Trees Conifer \_\_\_\_\_ Deciduous \_\_\_\_\_  
 Tree Line \_\_\_\_\_  
 Water Edge \_\_\_\_\_  
 Ledge \_\_\_\_\_  
 Fence CHAIN LINK \_\_\_\_\_ BARB WIRE \_\_\_\_\_ STOCKADE \_\_\_\_\_  
 Sign \_\_\_\_\_ Well \_\_\_\_\_ Mailbox \_\_\_\_\_  
 Clearing Limit Line \_\_\_\_\_  
 Bush Line \_\_\_\_\_  
 Rock/Boulder \_\_\_\_\_  
 Flag Pole \_\_\_\_\_

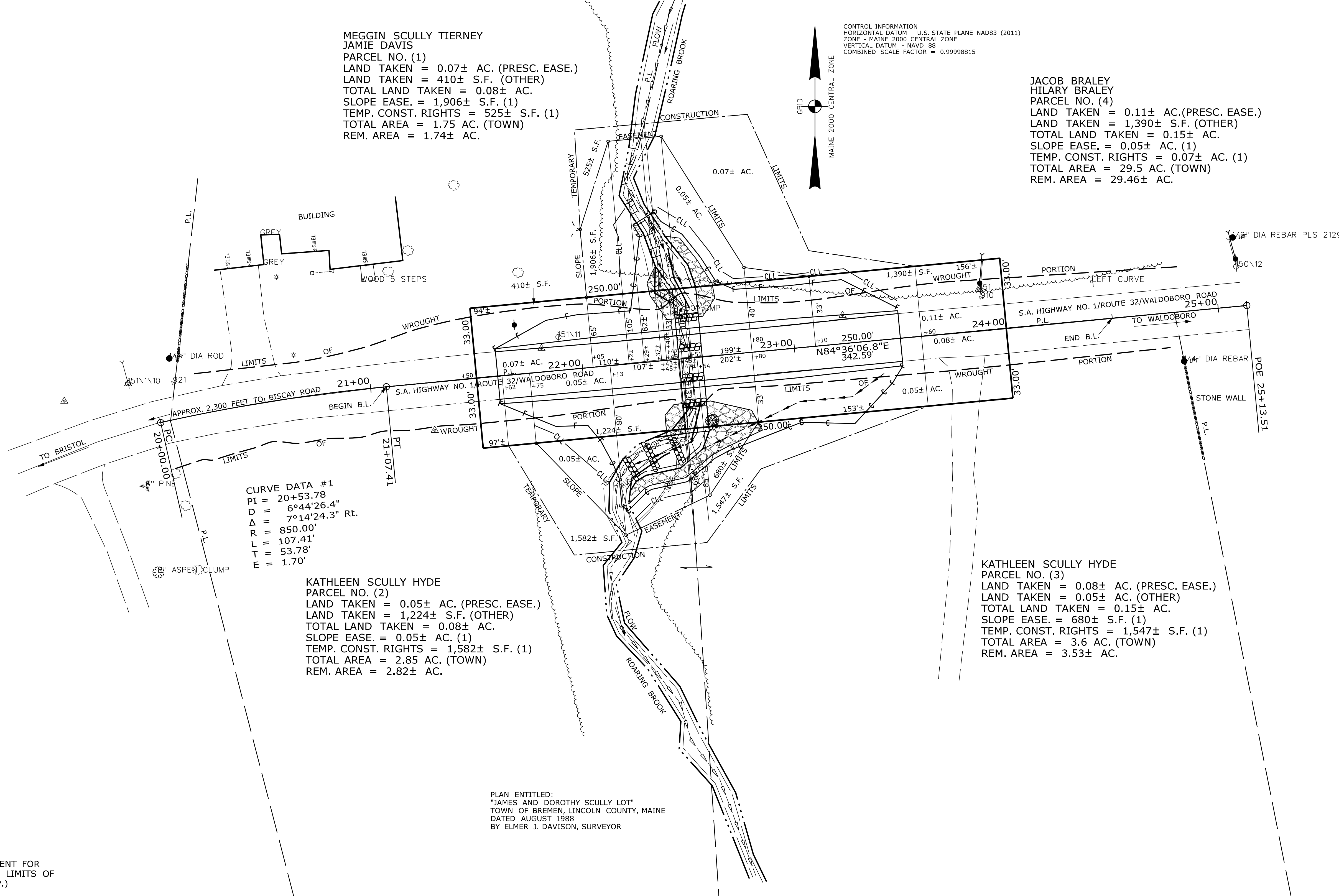
PLAN LEGEND  
 Existing Proposed  
 Sanitary Sewer \_\_\_\_\_  
 Telephone Line \_\_\_\_\_  
 Electric Line \_\_\_\_\_  
 Water Line \_\_\_\_\_  
 Underdrain Line \_\_\_\_\_  
 Gas Line \_\_\_\_\_  
 Guardrail \_\_\_\_\_  
 Culvert \_\_\_\_\_  
 Traveled Way \_\_\_\_\_  
 Ditch \_\_\_\_\_  
 Catch Basin \_\_\_\_\_  
 Manhole \_\_\_\_\_  
 Sewer Manhole \_\_\_\_\_  
 Utility Pole \_\_\_\_\_  
 Fire Hydrant \_\_\_\_\_  
 Curbing \_\_\_\_\_

Existing Proposed  
 Cut Line \_\_\_\_\_  
 Stonewall \_\_\_\_\_  
 Baseline \_\_\_\_\_  
 Monument \_\_\_\_\_  
 Iron Rod Found \_\_\_\_\_ IRF  
 Replacement Pin Set \_\_\_\_\_  
 Fill Line \_\_\_\_\_  
 Retaining Wall \_\_\_\_\_  
 Traverse Point \_\_\_\_\_  
 Pipe Found \_\_\_\_\_ IPF

Scale of Feet  
 25 0 25 50 75 100

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

STATE OF MAINE  
 REGISTRY OF DEEDS  
 COUNTY \_\_\_\_\_  
 RECEIVED \_\_\_\_\_  
 at \_\_\_\_\_ h \_\_\_\_\_ m \_\_\_\_\_ M and  
 recorded in Plan Bk \_\_\_\_\_, Pg. \_\_\_\_\_  
 Attest: \_\_\_\_\_ REGISTER



MEGGIN SCULLY TIERNEY  
 JAMIE DAVIS  
 PARCEL NO. (1)  
 LAND TAKEN = 0.07± AC. (PRESC. EASE.)  
 LAND TAKEN = 410± S.F. (OTHER)  
 TOTAL LAND TAKEN = 0.08± AC.  
 SLOPE EASE. = 1,906± S.F. (1)  
 TEMP. CONST. RIGHTS = 525± S.F. (1)  
 TOTAL AREA = 1.75 AC. (TOWN)  
 REM. AREA = 1.74± AC.

JACOB BRALEY  
 HILARY BRALEY  
 PARCEL NO. (4)  
 LAND TAKEN = 0.11± AC. (PRESC. EASE.)  
 LAND TAKEN = 1,390± S.F. (OTHER)  
 TOTAL LAND TAKEN = 0.15± AC.  
 SLOPE EASE. = 0.05± AC. (1)  
 TEMP. CONST. RIGHTS = 0.07± AC. (1)  
 TOTAL AREA = 29.5 AC. (TOWN)  
 REM. AREA = 29.46± AC.

CURVE DATA #1  
 PI = 20+53.78  
 D = 6°44'26.4"  
 Δ = 7°14'24.3" Rt.  
 R = 850.00'  
 L = 107.41'  
 T = 53.78'  
 E = 1.70'

KATHLEEN SCULLY HYDE  
 PARCEL NO. (2)  
 LAND TAKEN = 0.05± AC. (PRESC. EASE.)  
 LAND TAKEN = 1,224± S.F. (OTHER)  
 TOTAL LAND TAKEN = 0.08± AC.  
 SLOPE EASE. = 0.05± AC. (1)  
 TEMP. CONST. RIGHTS = 1,582± S.F. (1)  
 TOTAL AREA = 2.85 AC. (TOWN)  
 REM. AREA = 2.82± AC.

KATHLEEN SCULLY HYDE  
 PARCEL NO. (3)  
 LAND TAKEN = 0.08± AC. (PRESC. EASE.)  
 LAND TAKEN = 0.05± AC. (OTHER)  
 TOTAL LAND TAKEN = 0.15± AC.  
 SLOPE EASE. = 680± S.F. (1)  
 TEMP. CONST. RIGHTS = 1,547± S.F. (1)  
 TOTAL AREA = 3.6 AC. (TOWN)  
 REM. AREA = 3.53± AC.

PLAN ENTITLED:  
 "JAMES AND DOROTHY SCULLY LOT"  
 TOWN OF BREMEN, LINCOLN COUNTY, MAINE  
 DATED AUGUST 1988  
 BY ELMER J. DAVISON, SURVEYOR

NOTE: PRESCRIPTIVE EASEMENT FOR HIGHWAY PURPOSES WITHIN LIMITS OF WROUGHT PORTION (L.O.W.P.)

Date: \$date\$  
 Username: \$user\$  
 Division: \$wkgroup\$  
 Filename: \$files\$

ITEM	TECH	CHECKED
EXISTING CONDITION PLAN	J.D.F.	G.L.L.
FINAL RIGHT OF WAY	J.D.F.	P.N.S.
AREAS	J.D.F.	P.N.S.

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460  
 BREMEN  
 RIGHT OF WAY MAP

REVISIONS			PLAN FILED IN PLAN BOOK				PAGE COUNTY RECORD						
NO.	DATE	DESCRIPTION	BY	NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	NO.	DATE	BOOK	PAGE

BRUCE A. VAN NOTE  
 COMMISSIONER  
 JOYCE NOEL TAYLOR  
 CHIEF ENGINEER  
 DATE \_\_\_\_\_

STATE AID HIGHWAY NO. 1  
 ROUTE 32 / WALDOBORO ROAD  
 BREMEN LINCOLN COUNTY  
 FEDERAL AID PROJECT NO. 2428300  
 SEPTEMBER 2021 RIGHT-OF-WAY MAP  
 SCALE 1" = 25' SHEET 1 OF 1  
 D.O.T. FILE NO. 8-203

SHEET NUMBER  
**13**  
 OF 13

WIN 024283.00