

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



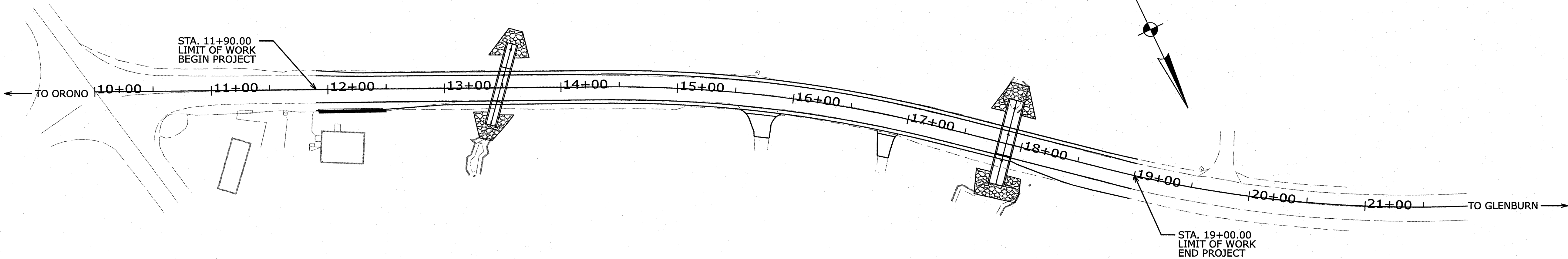
ORONO
PENOBSCOT COUNTY
FOREST AVENUE
STATE PROJECT NO. 27194.00 & 27196.00
PROJECT LENGTH: 0.17 MILES

PLAN LEGEND

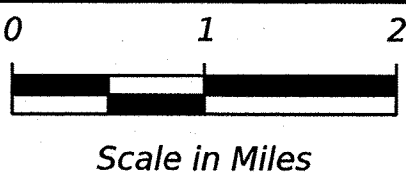
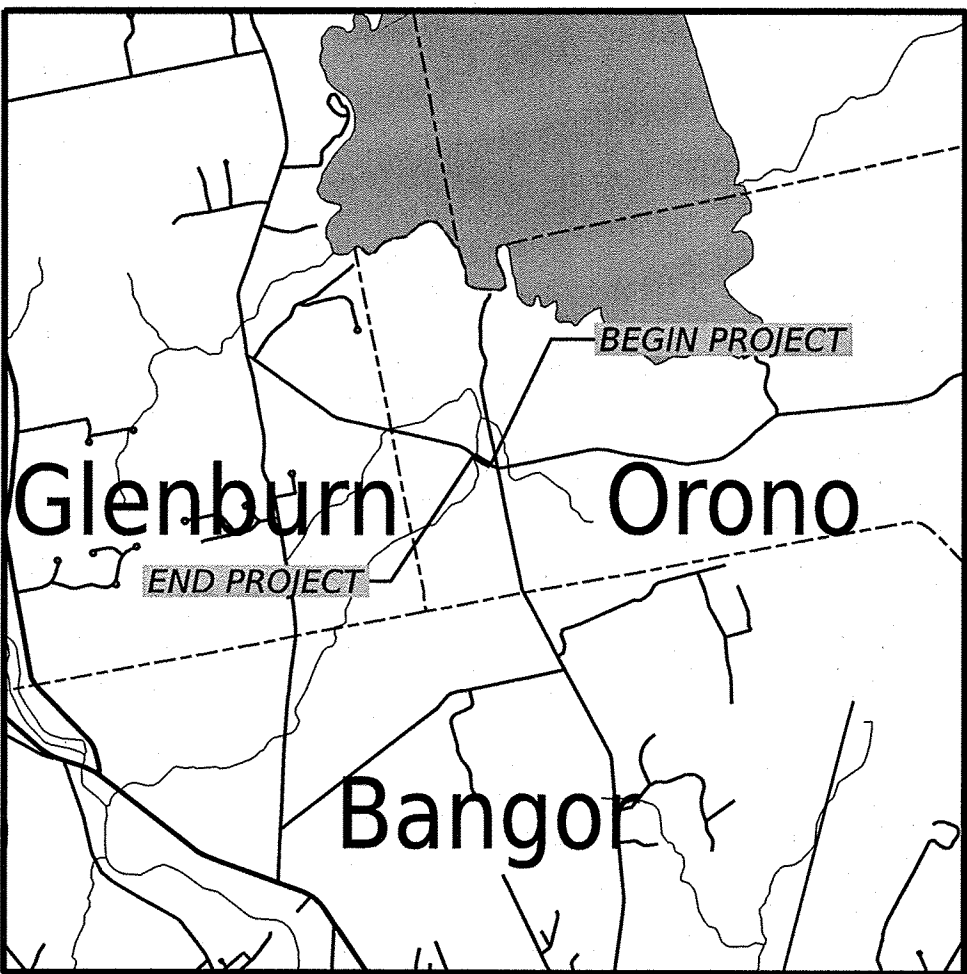
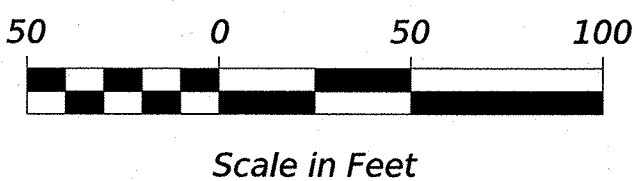
Town, County, State	_____	Catch Basins	Existing	Proposed
Property Lines	_____	Manholes	Existing	Proposed
R/W Lines-Existing	_____	Proposed Underdrain	_____	_____
R/W Lines-Proposed	_____	Proposed Ditch	_____	_____
Culvert-Existing	_____	Existing Ditch	_____	_____
Culvert Proposed	_____	Utility Poles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

INDEX OF SHEETS

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LAYOUT SCALE



LOCATION MAP

TRAFFIC DATA

Current (2027) AADT	2290
Future (2047) AADT	2630
DHV - % of AADT	12%
Design Hour Volume	316
% Heavy Trucks (AADT)	5%
% Heavy Trucks (DHV)	3%
Directional Distribution (DHV)	63%
18-kip Equivalent P 2.0	18
18-kip Equivalent P 2.5	17
Design Speed (mph)	45
Corridor Priority	4

PROJECT LOCATION:

Large culverts (#1013530) located 0.05 of a mile west of Essex Street,
and (#914698) located 0.12 of a mile west of Essex Street

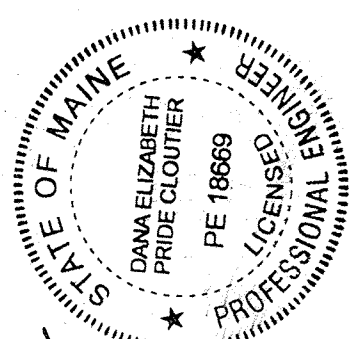
PROGRAM AREA:

Highway Program

SCOPE OF WORK:

LARGE CULVERT REPLACEMENT

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
	COMMISSIONER	6-29-2026
	CHIEF ENGINEER	



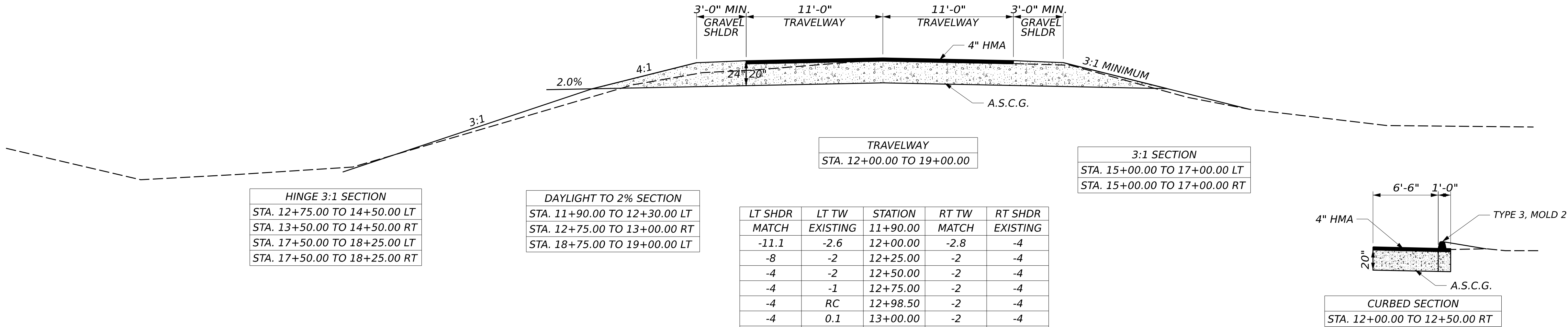
SIGNATURE	P.E. NUMBER	DATE
	18689	02-10-2026

PROJECT INFORMATION	PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
	HIGHWAY	LAURE ROWE	DANA CLOUTIER				

ORONO FOREST AVENUE TITLE SHEET

SHEET NUMBER
1
OF 25

WIN 27194.00-27196.00



LT SHDR	LT TW	STATION	RT TW	RT SHDR
MATCH	EXISTING	11+90.00	MATCH	EXISTING
-11.1	-2.6	12+00.00	-2.8	-4
-8	-2	12+25.00	-2	-4
-4	-2	12+50.00	-2	-4
-4	-1	12+75.00	-2	-4
-4	RC	12+98.50	-2	-4
-4	0.1	13+00.00	-2	-4
-4	1.1	13+25.00	-2	-4
-4	2	13+47.23	-2	-4
-4	2.1	13+50.00	-2.1	-4
-4	3.1	13+75.00	-3.1	-4
-2	4	13+95.83	-4	-4
-2	4.2	14+00.00	-4.2	-4
-2	5.2	14+25.00	-5.2	-5.2
		TO		
-2	5.2	16+75.00	-5.2	-5.2
-4	4	16+95.15	-4	-4
-4	3.7	17+00.00	-3.7	-4
-4	2.2	17+25.00	-2.2	-4
-4	0.7	17+50.00	-0.7	-4
-4	RC	17+62.38	RC	-4
-4	-0.8	17+75.00	0.8	-4
-4	-2	17+95.89	2	-4
-4.4	-2.2	18+00.00	2	-4.2
-7	-3.7	18+25.00	2	-5.4
-9.6	-5.2	18+50.00	2	-6.6
-12.2	-6.7	18+75.00	2	-7.8
MATCH	EXISTING	19+00.00	MATCH	EXISTING

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

27194.00-27196.00
WIN
27194.00-27196.00 HIGHWAY PLANS

ORONO
FOREST AVENUE
TYPICAL SECTIONS

SHEET NUMBER
2
OF 25

PROJ. MANAGER L. ROWE
DESIGN-DETAILED D. CLOUTIER
CHECKED-REVIEWED
DESIGN-DETAILED D3
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE
MAY 2026

SIGNATURE
P.E. NUMBER
DATE

ESTIMATED QUANTITIES					
ITEM NO.	DESCRIPTION	UNIT	WIN 27194.00	WIN 27196.00	TOTAL QUANTITY
203.20	COMMON EXCAVATION	CY	300	115	415
203.25	GRANULAR BORROW	CY	230	545	775
203.33	SPECIAL FILL	CY	26	54	80
203.55	CULVERT BEDDING STONE	CY	60		60
206.061	STRUCT EARTH EXC-DRAIN & MINOR STRUCT-BELOW GRADE	CY	50	50	100
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	CY	800	800	1,600
403.2081	HOT MIX ASPHALT 12.5mm (POLYMER MODIFIED)	TON	102	103	205
403.2131	HOT MIX ASPHALT, 12.5mm BASE	TON	102	103	205
409.15	BITUMINOUS TACK COAT - APPLIED	GAL	55	55	110
508.13	SHEET WATERPROOF MEMBRANE	SY	115	150	265
511.07	COFFERDAM (27194 UPSTREAM)	LS	1		1
511.07	COFFERDAM (27194 DOWNSTREAM)	LS	1		1
511.07	COFFERDAM (27196 UPSTREAM)	LS		1	1
511.07	COFFERDAM (27196 DOWNSTREAM)	LS		1	1
534.7101	STATE SUPPLIED PRECAST CONCRETE BOX CULVERT - 27194 (128 CY)	LS	1		1
534.7101	STATE SUPPLIED PRECAST CONCRETE BOX CULVERT - 27196 (197 CY)	LS		1	1
606.356	UNDERDRAIN DELINEATOR POST	EACH	2		2
606.52	MAILBOX REMOVE & RESET	EACH		1	1
609.21	CONCRETE SLIPFORM CURB	LF	50		50
610.08	PLAIN RIPRAP	CY	107	153	260
610.212	STREAMBED ROCK FEATURES	CY	5	5	10
610.213	VOID FILLED RIPRAP	CY	20	25	45
615.07	LOAM	CY	160	160	320
618.13	SEEDING METHOD NUMBER 1	UNIT	13	13	26
619.12	MULCH	UNIT	13	13	26
620.54	STABILIZATION/REINFORCEMENT GEOTEXTILE	SY	80	120	200
620.58	EROSION CONTROL GEOTEXTILE	SY	208	312	520
620.65	REINFORCEMENT GEOGRID	SY	65		65
627.733	4" WHITE OR YELLOW PAINT PVTM MARKING LINE	LF	750	750	1,500
627.78	TEMP. 4" PAINTED PVTM. MARK LINE, WHITE OR YELLOW	LF	1,500	1,500	3,000
629.05	HAND LABOR	HR	10	10	20
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	HR	5	5	10
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	HR	5	5	10
639.19	FIELD OFFICE TYPE B	EACH	0.5	0.5	1
643.66	RESIDENTIAL DRIVEWAY TEMPORARY SIGNALS (RDTs)	EACH	2		2
643.72	TEMPORARY TRAFFIC SIGNAL	LS	0.5	0.5	1
652.33	DRUM	EACH	17	18	35
652.34	CONE	EACH	17	18	35
652.35	CONSTRUCTION SIGNS	SF	200	200	400
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	CD	30	30	60
652.38	FLAGGER	HR	360	360	720
652.61	STAGED CONSTRUCTION AND TRAFFIC CONTROL (27194)	LS	1		1
652.61	STAGED CONSTRUCTION AND TRAFFIC CONTROLL (27196)	LS		1	1
656.75	TEMP. SOIL EROSION AND WATER POLLUTION CONTROL PLAN	LS	0.5	0.5	1
659.10	MOBILIZATION	LS	0.5	0.5	1

ITEM 609.21 CONCRETE SLIPFORM CURB

LOCATIONLENGTH

STA. 12+00.00, 17.8' RT TO STA. 12+50.00, 17.4' RT50

ITEM 626.356 UNDERDRAIN DELINEATOR POST

LOCATIONQUANTITY

STA. 12+00.00 RT1

STA. 12+50.00 RT1

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

27194.00-27196.00

WIN
27194.00-27196.00 HIGHWAY PLANS

ORONO
FOREST AVENUE

ESTIMATED QUANTITIES

SHEET NUMBER

3

OF 25

PROJ. MANAGER
DESIGN-DETAILED

L. ROWE
D. CLOUTIER

BY

DATE
MAY 2026

CHECKED-REVIEWED

DESIGN-DETAILED02

DESIGN-DETAILED03

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

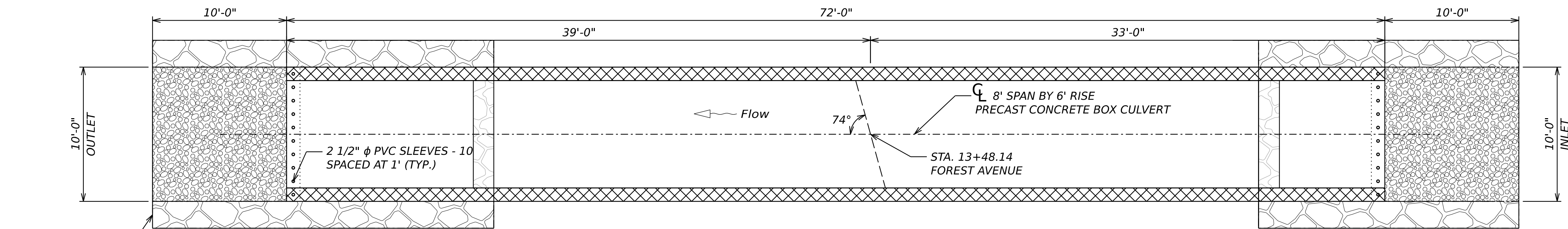
FIELD CHANGES

SIGNATURE

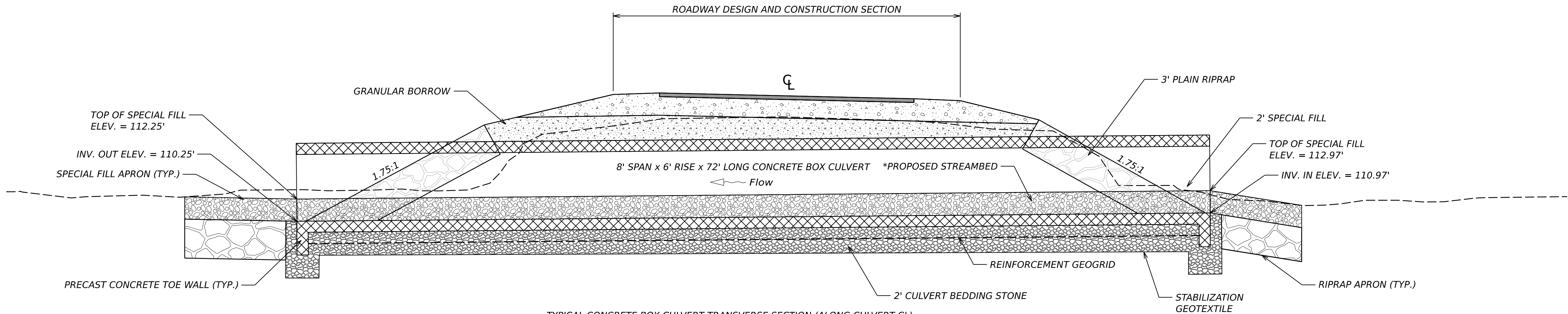
P.E. NUMBER

DATE

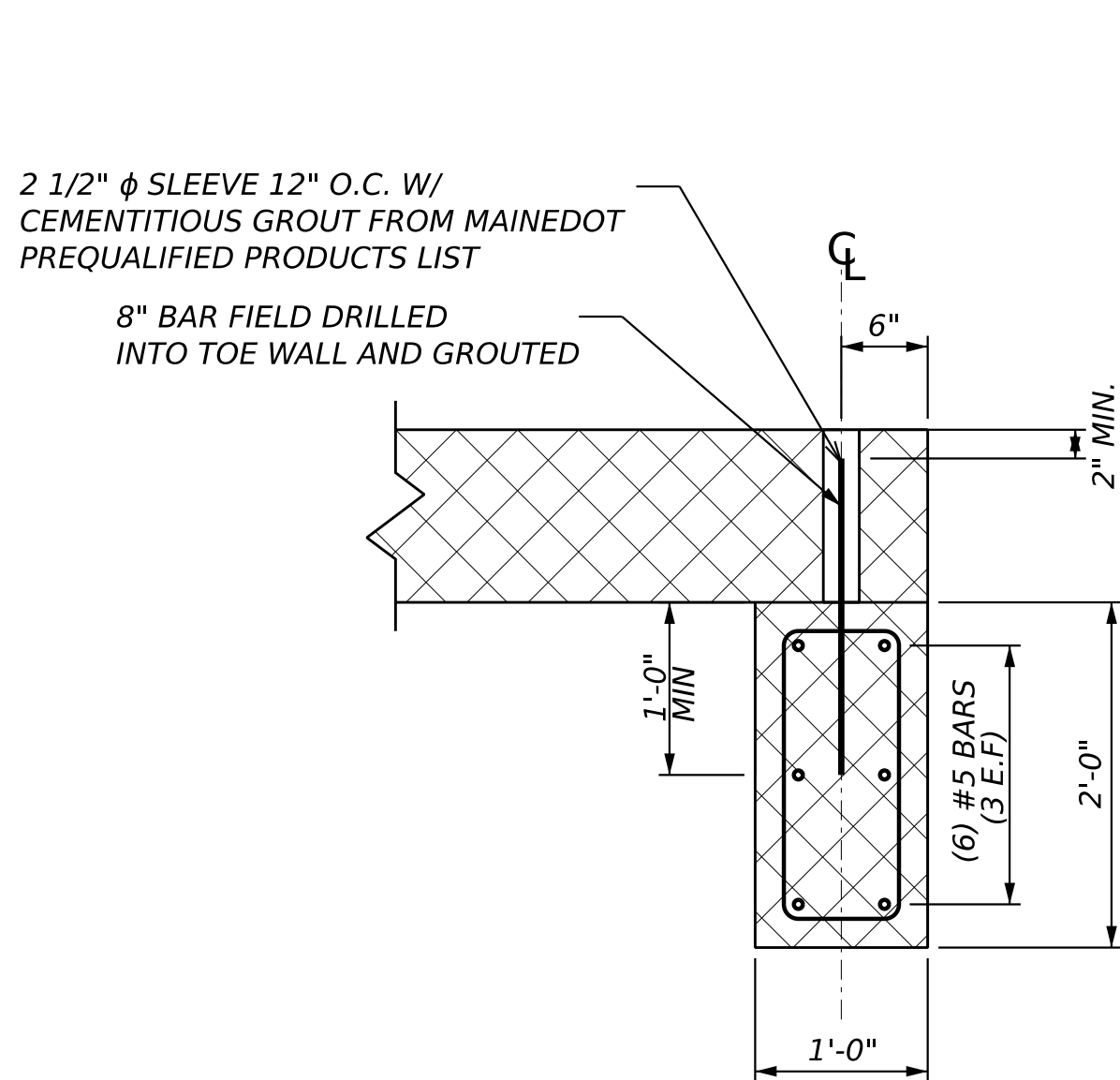
GENERAL NOTES 1. PAVEMENT THICKNESSES SHOWN ON THE TYPICAL SECTIONS ARE INTENDED TO BE NOMINAL. 2. CLEARING LIMITS SHALL BE 10 FEET BEYOND AND PARALLEL TO THE CONSTRUCTION SLOPE LINES OR AS SHOWN ON THE PLANS UNLESS OTHERWISE AUTHORIZED BY THE RESIDENT. 3. ALL CLEARING SHALL BE CONSIDERED INCIDENTAL 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. 4. THE CLEARING AND SELECTIVE CLEARING AND THINNING LINES SHOWN ON THE PLANS ARE FOR ESTIMATING PURPOSES ONLY. THE ACTUAL LINES FOR CLEARING AND THINNING SHALL BE ESTABLISHED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE RESIDENT. 5. GRUBBING IN FILL AREAS HAS BEEN SHOWN ON THE CROSS SECTIONS AND THE QUANTITIES NOTED. THESE LIMITS ARE APPROXIMATE AND HAVE BEEN USED FOR ESTIMATING PURPOSES ONLY. ACTUAL GRUBBING LIMITS MAY VARY BASED ON FIELD CONDITIONS AS DIRECTED BY THE RESIDENT. 6. ALL INSLOPE AND DITCHES IN CUT AREAS SHALL BE GRADED AS SHOWN ON THE TYPICALS OR FLATTER, OR AS DIRECTED BY THE RESIDENT. 7. 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. 8. DRIVEWAY FILL SIDE SLOPES SHALL BE THE SAME AS THE FILL SIDE SLOPES WITHOUT GUARDRAIL UNLESS OTHERWISE NOTED ON THE PLANS. 9. ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OF OFF THE PROJECT IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING AND MULCHING OF WASTE AREAS SHALL BE CONSIDERED INCIDENTAL. 10. GRANULAR BORROW USED TO BACKFILL 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 BACKFILL AS SPECIFIED IN STANDARD SPECIFICATIONS ITEM 703.19, GRANULAR BORROW. 11. 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. 12. GRAVEL ENTRANCES SHALL BE CONSTRUCTED WITH 14 INCHES OF AGGREGATE SUBBASE COURSE GRAVEL OR 11 INCHES OF AGGREGATE SUBBASE COURSE GRAVEL AND 3 INCHES OF UNTREATED AGGREGATE SURFACE COURSE UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE RESIDENT. 13. GRASS ENTRANCES SHALL BE CONSTRUCTED WITH 12 INCHES OF AGGREGATE SUBBASE COURSE GRAVEL AND 2 INCHES OF LOAM, SEEDED & MULCHED UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE RESIDENT. 14. A 3-FOOT PAVED LIP SHALL BE PLACED AT ALL UNPAVED ENTRANCES UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE RESIDENT. 15. ANY NECESSARY CLEANING OF EXISTING PAVEMENT PRIOR TO PAVING (OR MILLING) SHALL BE INCIDENTAL TO THE RELATED PAVING (OR MILLING) ITEMS. THIS INCLUDES KILLING AND REMOVAL OF ALL VEGETATIVE MATTER. 16. WHEN SUPERELEVATION EXCEEDS THE SLOPE OF THE LOW-SIDE SHOULDER, THE LOW-SIDE SHOULDER WILL HAVE SAME SLOPE AS THE TRAVELWAY. 17. CROSS SLOPES FOR NORMAL AND SUPERELEVATED SECTIONS WILL BE STRAIGHT UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. 18. THE ALGEBRAIC DIFFERENCE BETWEEN TRAVELWAY AND SHOULDER CROSS SLOPE SHALL NOT EXCEED 8 PERCENT. 19. NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED OR PLUGGED WITHOUT PRIOR APPROVAL OF THE RESIDENT. 20. INLETS AND OUTLETS OF ALL CULVERTS SHALL BE RIPRAPPED UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE RESIDENT. 21. AS DIRECTED BY THE RESIDENT, ALL EXISTING UNDERDRAIN OUTLETS SHALL BE LOCATED, CLEANED OUT AND DITCHED AS REQUIRED OR REPLACED AS NECESSARY. PAYMENT WILL BE MADE UNDER APPROPRIATE CONTRACT ITEMS. 22. EXISTING ABANDONED WATER MAINS BROKEN BY THE CONTRACTOR DURING CONSTRUCTION SHALL HAVE THE ENDS PLUGGED WITH BRICK AND MORTAR. COST FOR ALL LABOR AND MATERIAL WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO DIRECT PAYMENT WILL BE MADE. 23. A DELINEATOR POST (STANDARD SPECIFICATIONS ITEM 606.356, UNDERDRAIN DELINEATOR POST) WILL BE INSTALLED AT EACH END OF EACH RUN OF BITUMINOUS CURB. 24. BACKING UP BITUMINOUS OR CONCRETE SLIPFORM CURB IS INCIDENTAL TO THE CURB ITEMS. IN AREAS WHERE NEW BITUMINOUS OR CONCRETE SLIPFORM CURB IS DESIGNATED TO REPLACE EXISTING, THE REMOVAL OF THE OLD BITUMINOUS OR CONCRETE SLIPFORM CURB SHALL BE INCIDENTAL TO THE NEW CURB. IF CALLED FOR ON THE PLANS OR DIRECTED BY THE RESIDENT, LOAM OR DIRTY BORROW WILL BE PAID FOR SEPARATELY. 25. LOAM HAS BEEN ESTIMATED FOR DISTURBED LAWN AREAS. ACTUAL PLACEMENT OF THE LOAM SHALL BE AS NOTED ON THE PLANS OR DESIGNATED BY THE RESIDENT. 26. 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. 27. 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. 28. ANY BASE PAVEMENT NOT SURFACED BEFORE WINTER WILL REQUIRE TEMPORARY PAVEMENT MARKINGS OF PAINT, BOTH YELLOW CENTERLINE AND WHITE EDGE LINES AND WILL BE CONSIDERED PART OF STANDARD SPECIFICATIONS ITEM 627.78, TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW. 29. 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. 30. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING OPERATIONAL BUSINESS DIRECTIONAL SIGNS (OBDS) TO ENSURE THAT THEY ARE VISIBLE TO THE TRAVELING PUBLIC. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT. 31. 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. 32. (27194.00) THE PROJECT GEOTECHNICAL REPORT TITLED "GEOTECHNICAL DESIGN REPORT FOR THE REPLACEMENT OF LARGE CULVERT #1013530", SOILS REPORT 2026-42, JUNE 24, 2026 CAN BE ACCESSED AT THE MAINEDOT WEBSITE HTTPS://WWW.MAINE.GOV/DOT/DOING-BUSINESS/BID-OPPORTUNITIES/. 33. (27196.00) THE PROJECT GEOTECHNICAL REPORT TITLED "GEOTECHNICAL DESIGN REPORT FOR THE CONSTRUCTION OF GREAT BROOK BRIDGE", SOILS REPORT 2026-43, JUNE 24, 2026 CAN BE ACCESSED AT THE MAINEDOT WEBSITE HTTPS://WWW.MAINE.GOV/DOT/DOING-BUSINESS/BID-OPPORTUNITIES/. 34. 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. MAINEDOT 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. 35. AREAS ON THE PROJECT REQUIRING FILL WILL COME FROM SUITABLE SITES SUCH AS EXCAVATION, DITCH AND INSLOPE OR EQUIPMENT RENTAL AREAS. 36. 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. 37. 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. 38. "UNDETERMINED LOCATIONS" SHALL BE DETERMINED BY THE RESIDENT. 39. 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. 40. THE CONTRACTOR WILL PLACE APPROPRIATELY-MARKED STAKES AT THE FOLLOWING LOCATIONS ON THE PROJECT: STRIPING PATTERN CHANGES, CROSS-SLOPE CHANGES, AND EVERY 500 FEET FOR STATIONING. THE CONTRACTOR WILL PAINT EVERY FULL STATION (100 FEET) ON THE EXISTING ROADWAY AND WILL TRANSFER THE PAINTED STATIONING THROUGH ALL INTERMEDIATE LIFTS (NOT SURFACE). APPROPRIATELY-SIZED STRIPING PATTERN CHANGES WILL BE PAINTED ON SURFACE. STATIONING CONTROL MUST BE PLACED BEFORE WORK CAN COMMENCE. CROSS-SLOPE AND STRIPING CHANGE CONTROLS MUST BE PLACED BEFORE PAVING CAN COMMENCE. 41. ONLY ONE SIGNAL SYSTEM MAY BE OPERATIONS AT A TIME. THE RESIDENTIAL DRIVEWAY TEMPORARY SIGNALS SHALL BE PROGRAMMED IN CONJUNCTION WITH THE SIGNAL CONTROLLER PHASE AND TIME.		STATE OF MAINE DEPARTMENT OF TRANSPORTATION		27194.00-27196.00		WIN 27194.00-27196.00 HIGHWAY PLANS	
ORONO FOREST AVENUE GENERAL NOTES		SIGNATURE		DATE			
		P.E. NUMBER		DATE			
SHEET NUMBER		4		OF 25			



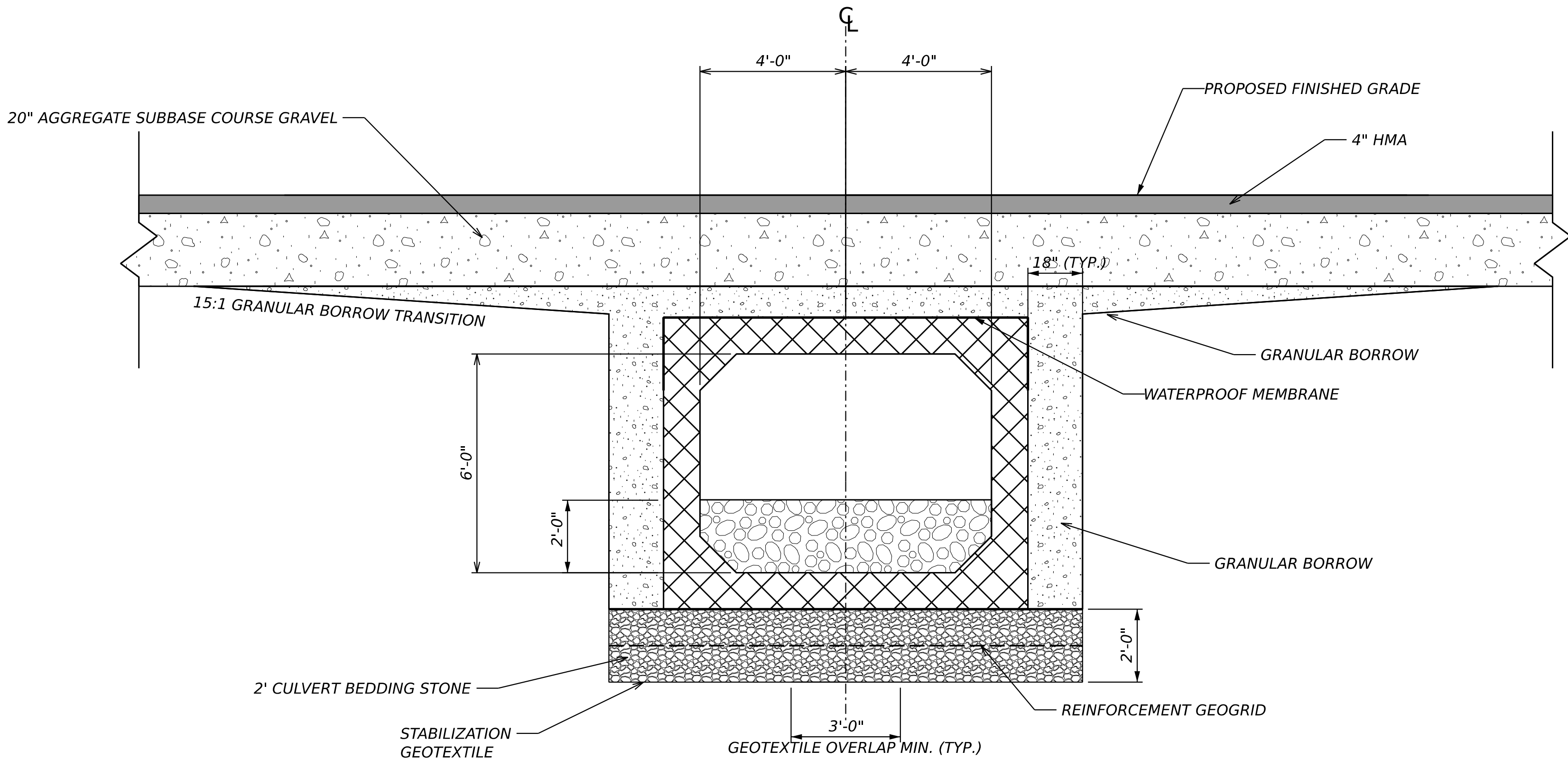
TYPICAL CONCRETE BOX CULVERT PLAN VIEW



TYPICAL CONCRETE BOX CULVERT TRANSVERSE SECTION (ALONG CULVERT CL)



PRECAST CONCRETE TOE WALL DETAIL



TYPICAL CONCRETE BOX CULVERT CROSS SECTION

PRECAST CONCRETE BOX CULVERT NOTES

1. THE PRECAST CONCRETE BOX CULVERT SUPPLIED BY THE STATE HAS BEEN DESIGNED TO CARRY CONSTRUCTION LOADINGS WITH A MINIMUM FILL COVER OF 18 INCHES
2. INSTALL STANDARD MEMBRANE WATERPROOFING OVER THE TOP AND TO 12 INCHES DOWN THE EXTERIOR SIDES OF THE PRECAST CONCRETE BOX CULVERT
3. THE PRECAST CONCRETE BOX CULVERT SHALL BE BEDDED ON A 2' LAYER OF COMPACTED CULVERT BEDDING STONE
4. COFFERDAMS ARE TO BE PLACED AT BOTH THE DOWNSTREAM AND UPSTREAM END OF THE PRECAST CONCRETE BOX CULVERT TO ALLOW WATER TO BE PUMPED AND REMOVED DURING CONSTRUCTION
5. VOIDS IN RIPRAP APRONS SHALL BE INFILLED WITH GRANULAR BORROW OR OTHER MATERIALS APPROVED BY THE RESIDENT, WATERED IN, AND TAMPED

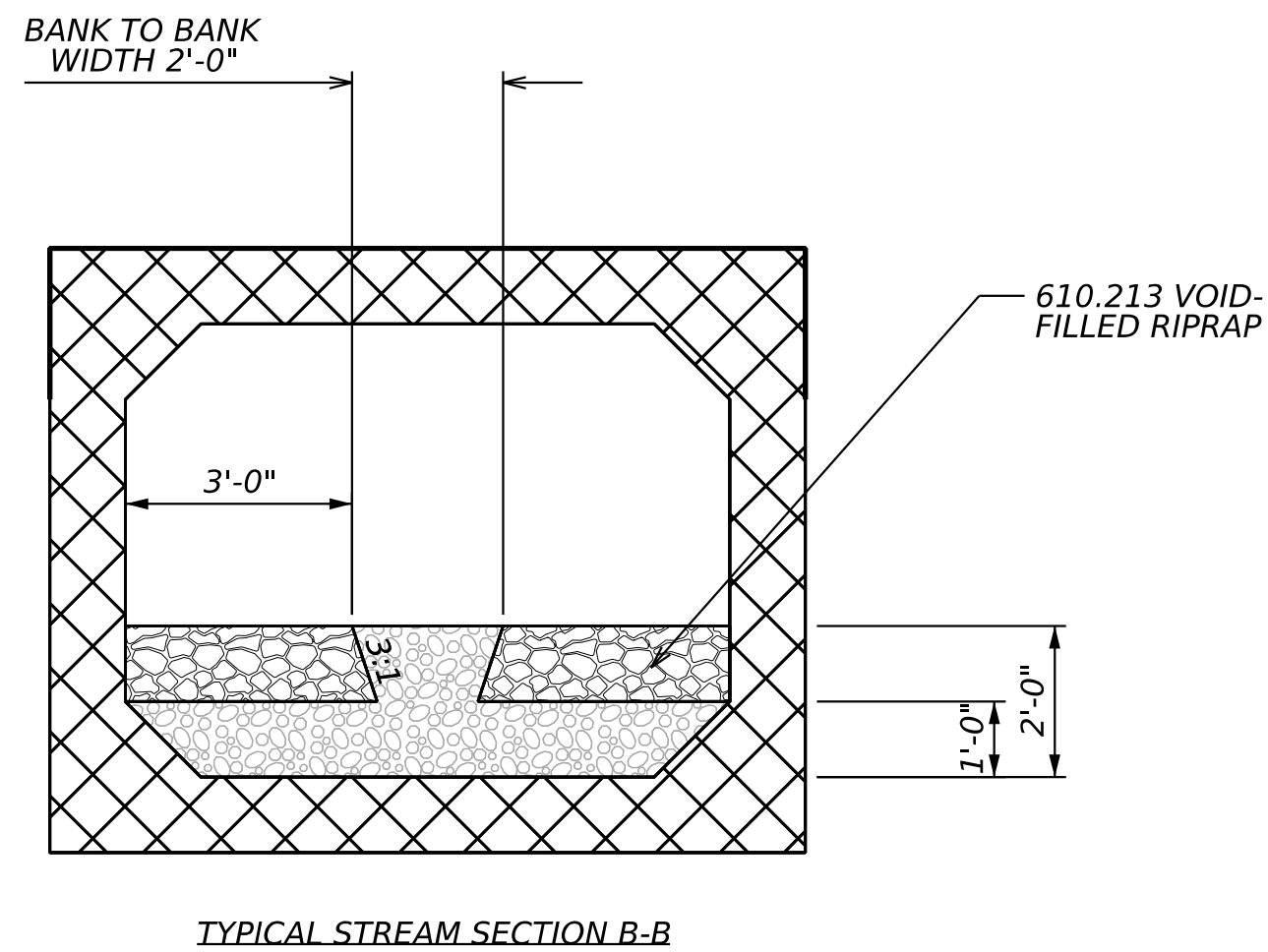
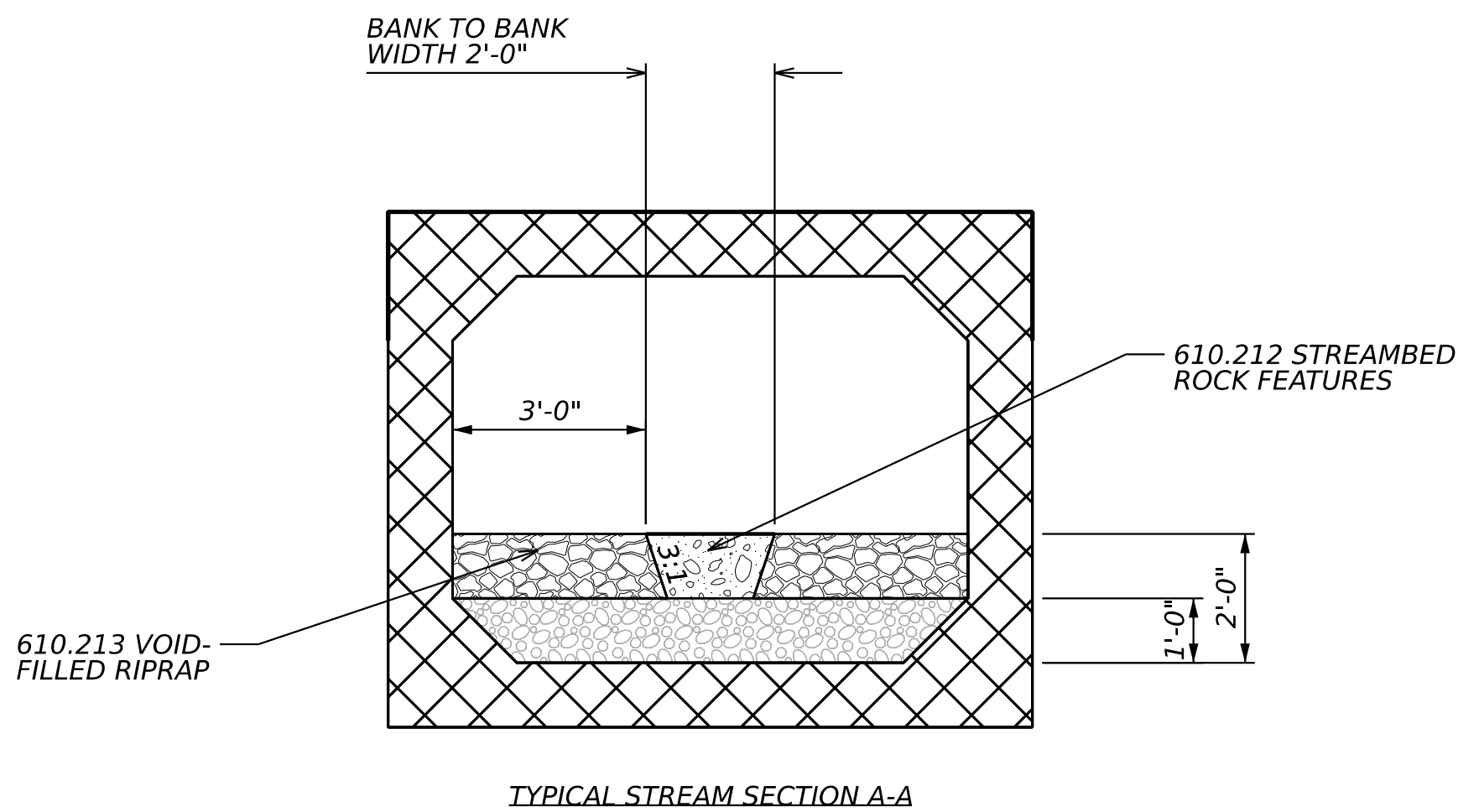
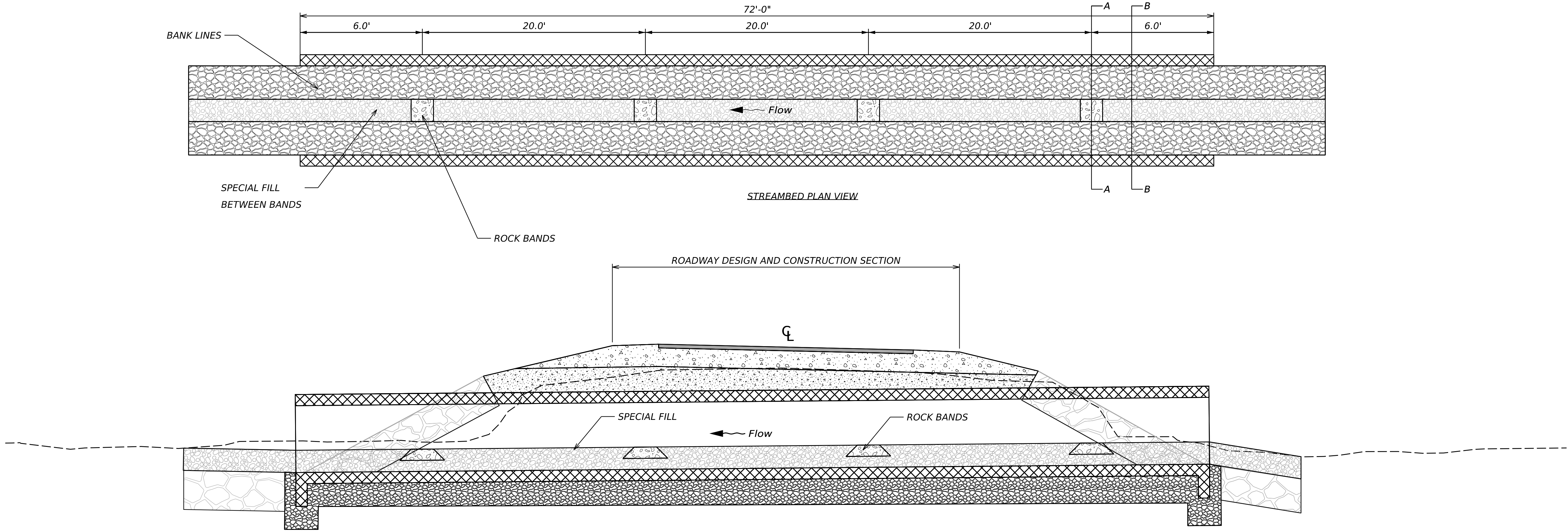
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
27194.00-27196.00
WIN
27194.00-27196.00

PROJ. MANAGER	DESIGN-REVIEWED	CHECKED-REVIEWED	DATE	SIGNATURE
L. ROWE	D. CLOUTIER		MAY 2026	
DESIGN-REVIEWED	DESIGN-REVIEWED			P.E. NUMBER
DESIGN-REVIEWED	DESIGN-REVIEWED			DATE
REVISIONS 1	REVISIONS 2			
REVISIONS 3	REVISIONS 4			
FIELD CHANGES				

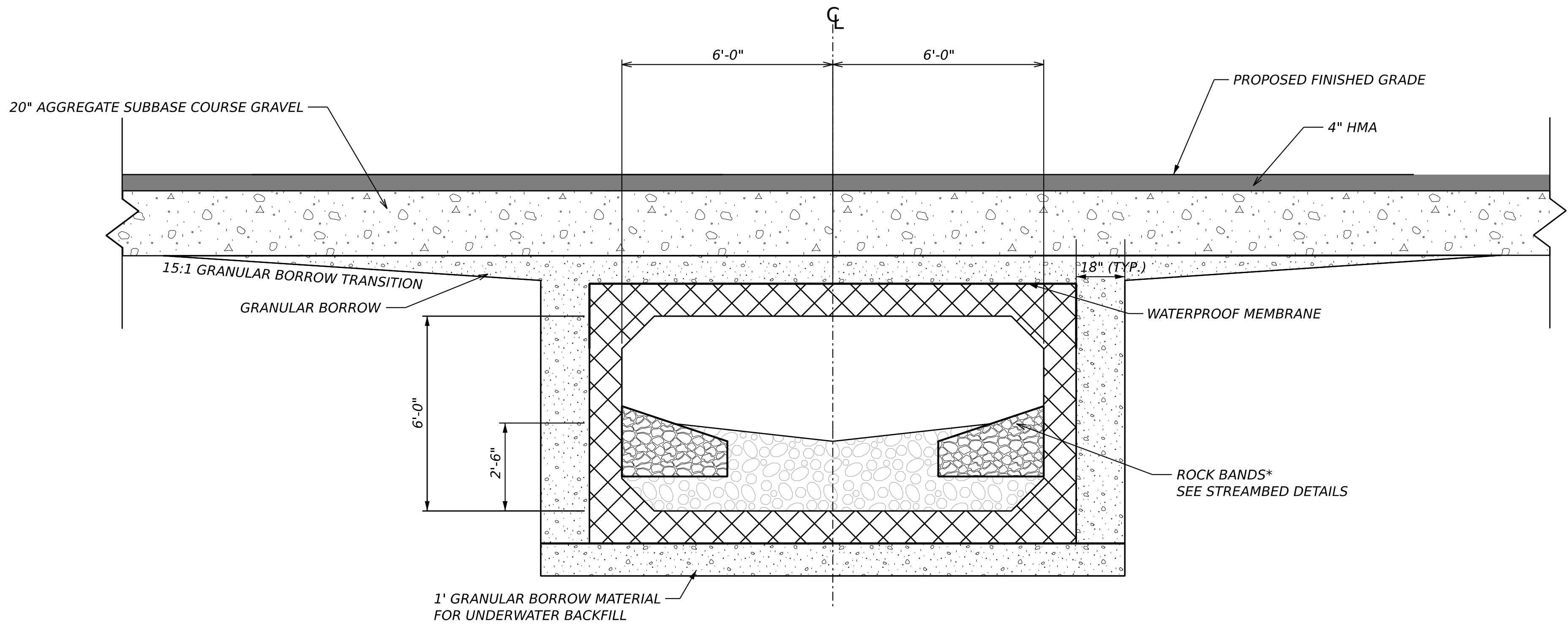
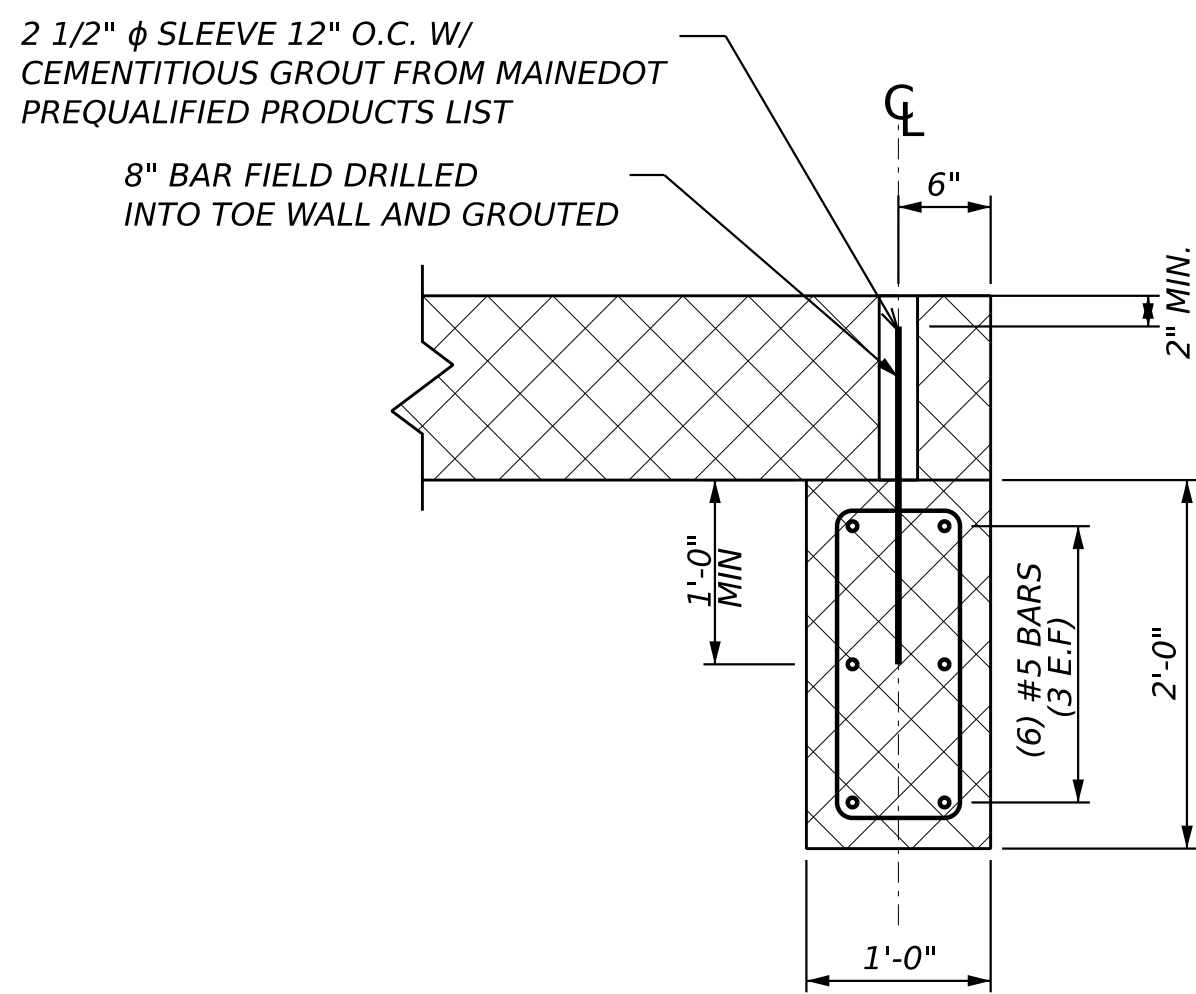
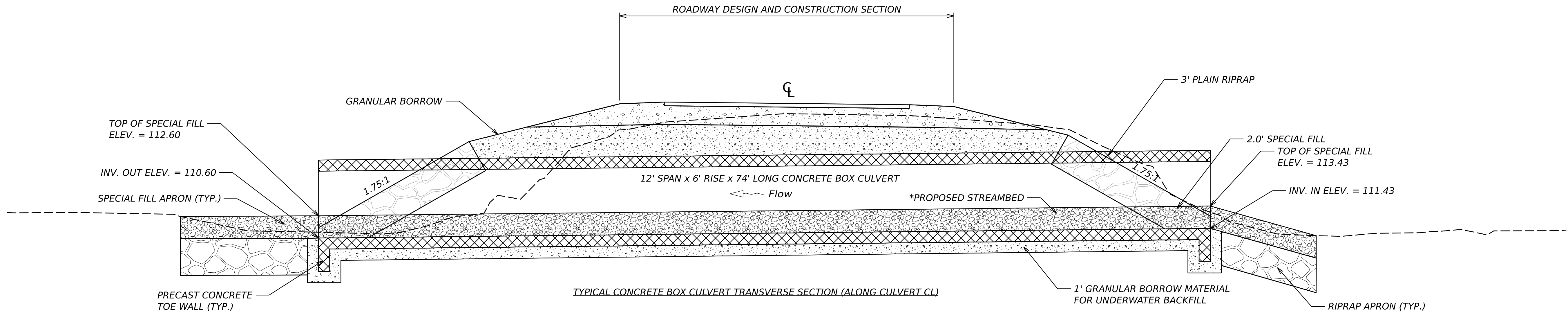
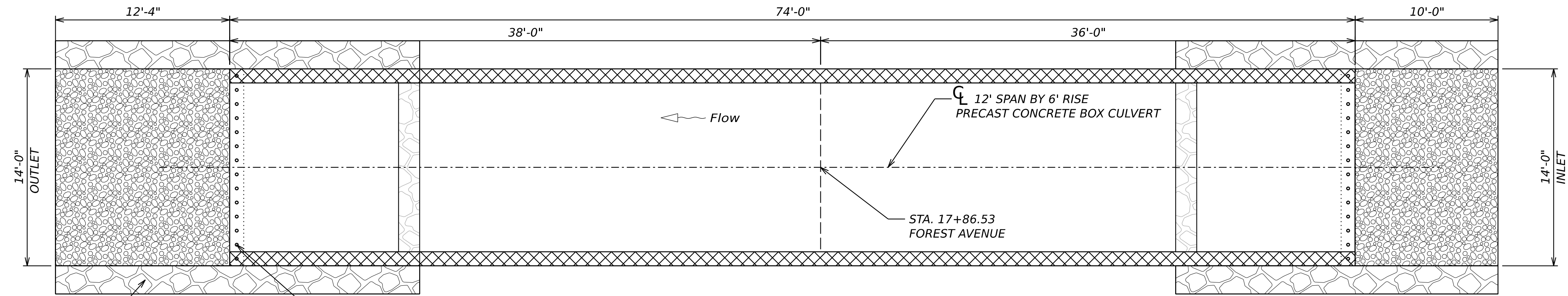
ORONO
FOREST AVENUE
27194 CULVERT DETAILS

SHEET NUMBER
5
OF 25

N.T.S.



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		27194.00-27196.00		WIN		27194.00-27196.00 HIGHWAY PLANS	
ORONO		FOREST AVENUE		27194 CULVERT DETAILS		SHEET NUMBER		6	
PROJ. MANAGER		L. ROWE		BY		DATE		SIGNATURE	
DESIGN-DETAILED		D. CLOUTIER				MAY 2026			
CHECKED-REVIEWED									
DESIGN-DETAILED2									
DESIGN-DETAILED3									
REVISIONS 1									
REVISIONS 2									
REVISIONS 3									
REVISIONS 4									
FIELD CHANGES									



PRECAST CONCRETE BOX CULVERT NOTES

1. THE PRECAST CONCRETE BOX CULVERT SUPPLIED BY THE STATE HAS BEEN DESIGNED TO CARRY CONSTRUCTION LOADINGS WITH A MINIMUM FILL COVER OF 18 INCHES
2. INSTALL STANDARD MEMBRANE WATERPROOFING OVER THE TOP AND TO 12 INCHES DOWN THE EXTERIOR SIDES OF THE PRECAST CONCRETE BOX CULVERT
3. THE PRECAST CONCRETE BOX CULVERT SHALL BE BEDDED ON A 1' LAYER OF COMPACTED GRANULAR BORROW MATERIAL FOR UNDERWATER BACKFILL
4. COFFERDAMS ARE TO BE PLACED AT BOTH THE DOWNSTREAM AND UPSTREAM END OF THE PRECAST CONCRETE BOX CULVERT TO ALLOW WATER TO BE PUMPED AND REMOVED DURING CONSTRUCTION
5. VOIDS IN RIPRAP APRONS SHALL BE INFILLED WITH GRANULAR BORROW OR OTHER MATERIALS APPROVED BY THE RESIDENT, WATERED IN, AND TAMPED

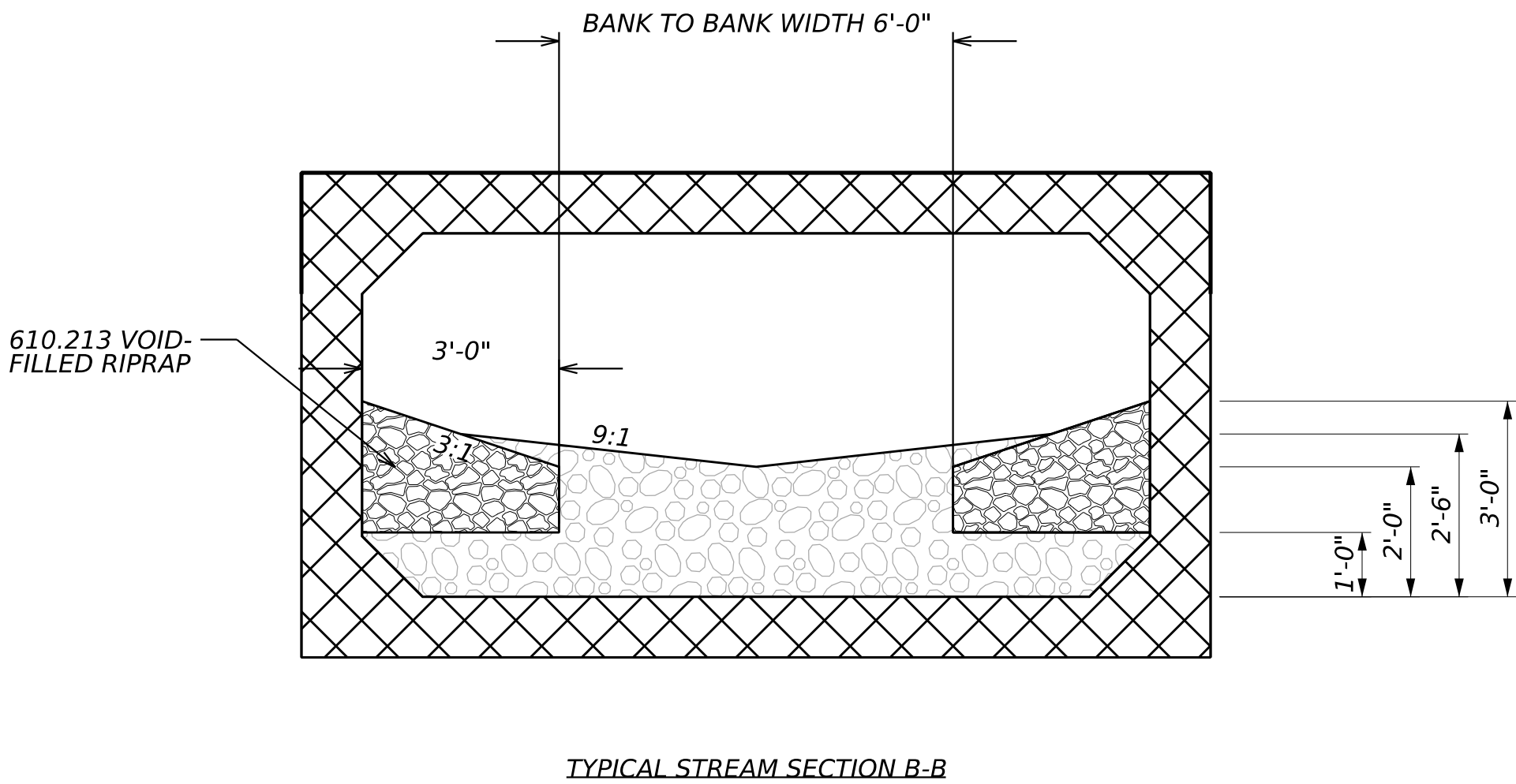
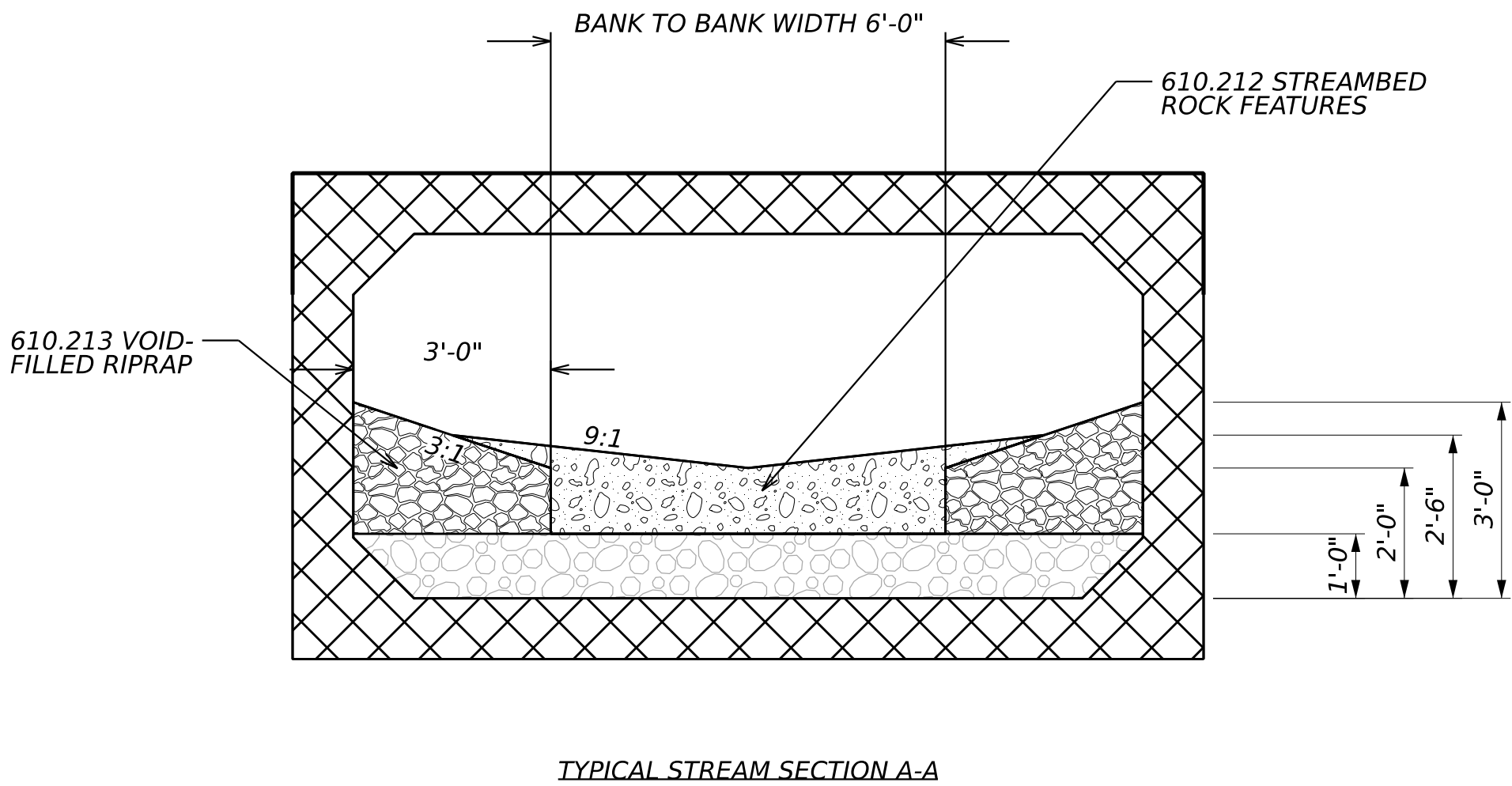
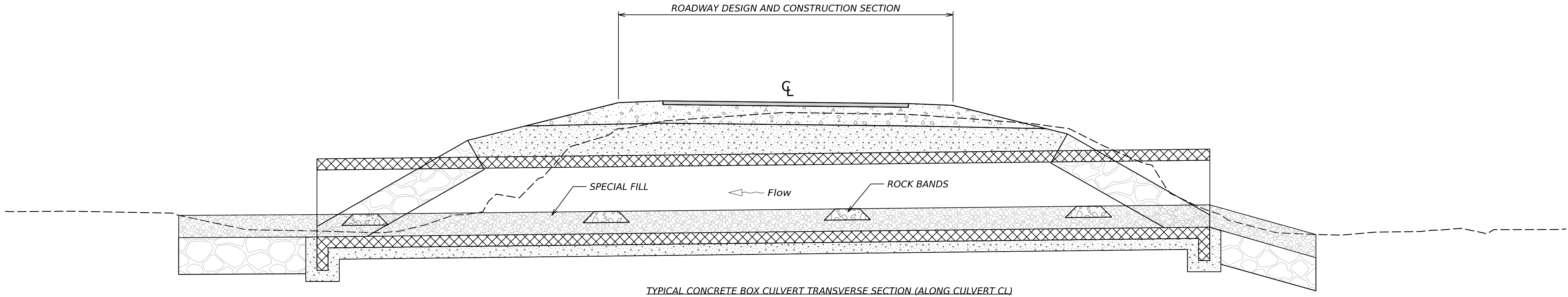
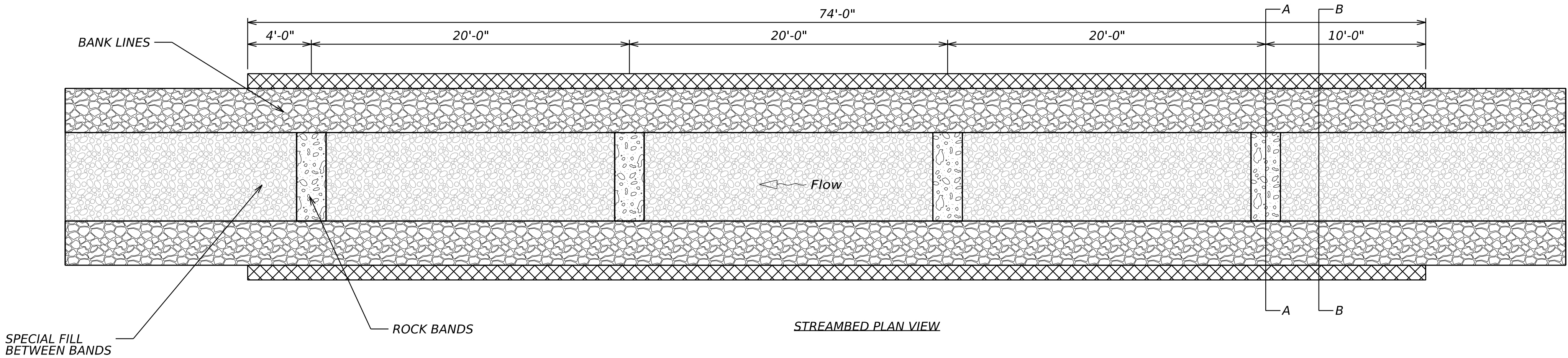
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
27194.00-27196.00
WIN
27194.00-27196.00

PROJ. MANAGER	CHECKED-REVIEWED	DESIGNED-DETAILED	L. ROWE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
			D. CLOUTIER		MAY 2026			

ORONO
FOREST AVENUE
27196 CULVERT DETAILS

SHEET NUMBER
7
OF 25

N.T.S.



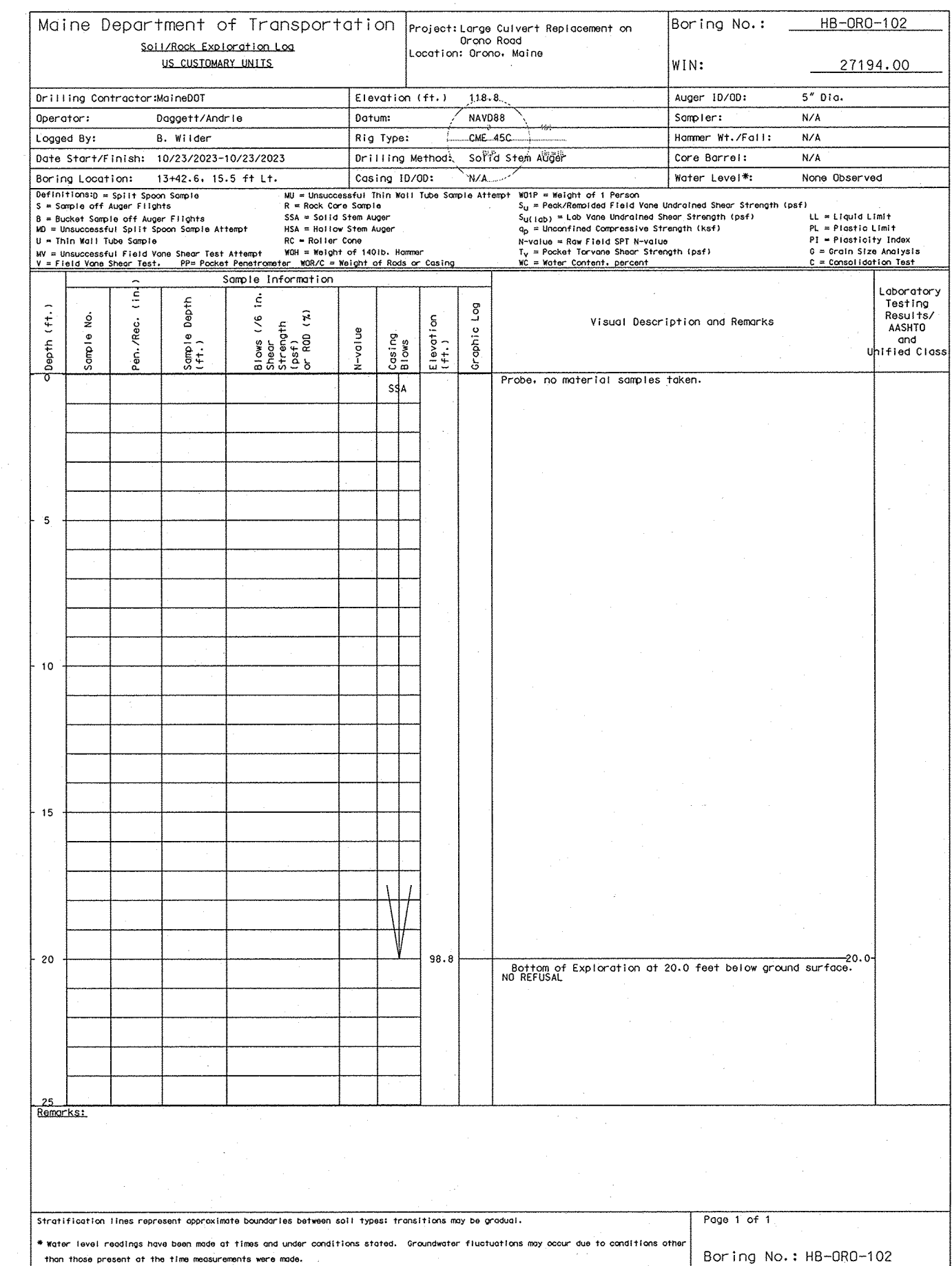
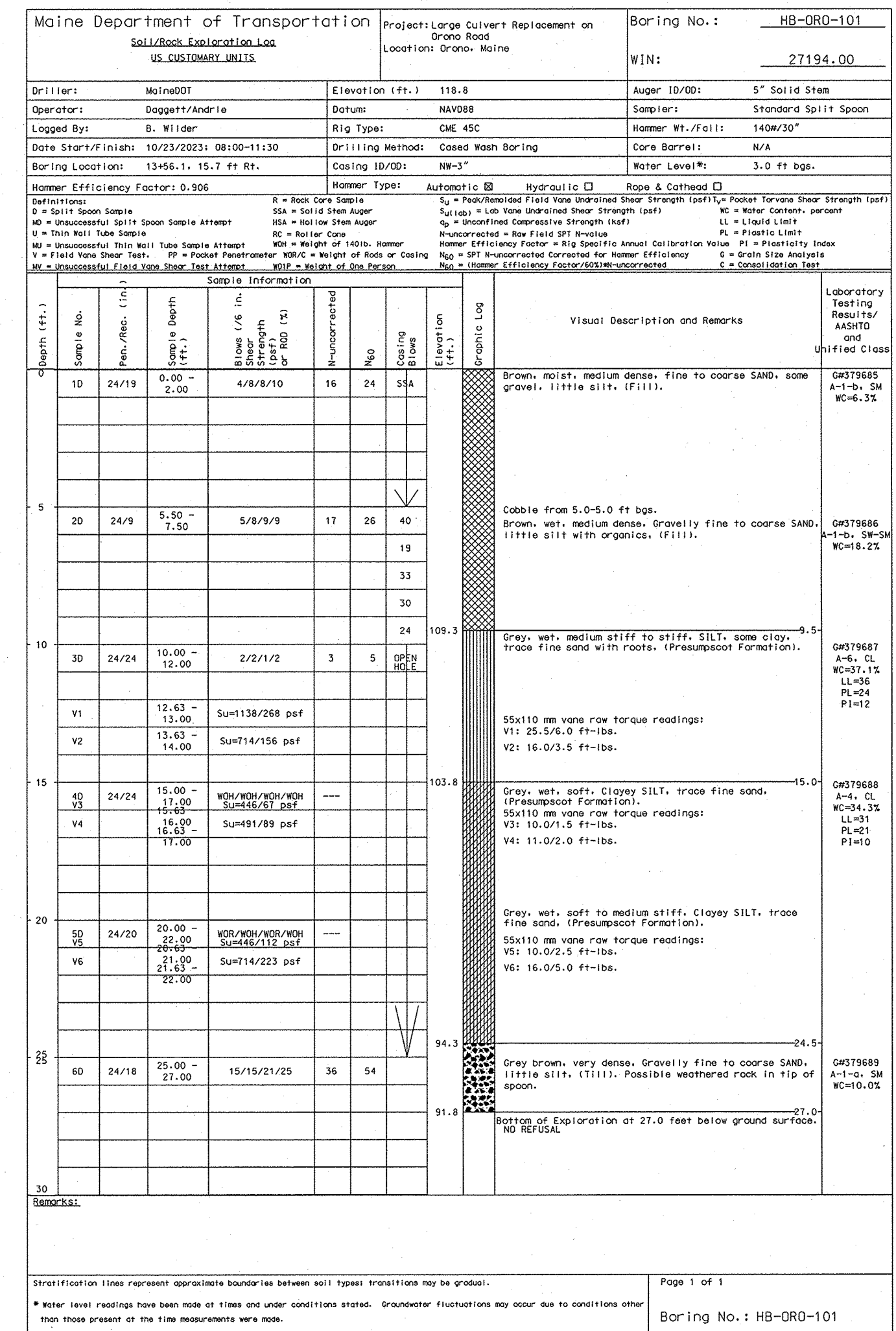
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
27194.00-27196.00
WIN
27194.00-27196.00

PROJ. MANAGER	BY	DATE	SIGNATURE
DESIGN-DETAILED	L. ROWE	MAY 2026	
CHECKED-REVIEWED	D. CLOUTIER		
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REVISIONS 1			
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REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

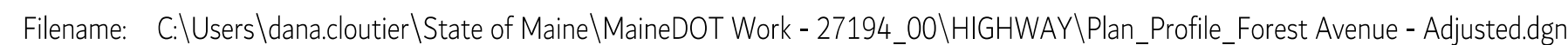
ORONO
FOREST AVENUE
27196 CULVERT DETAILS

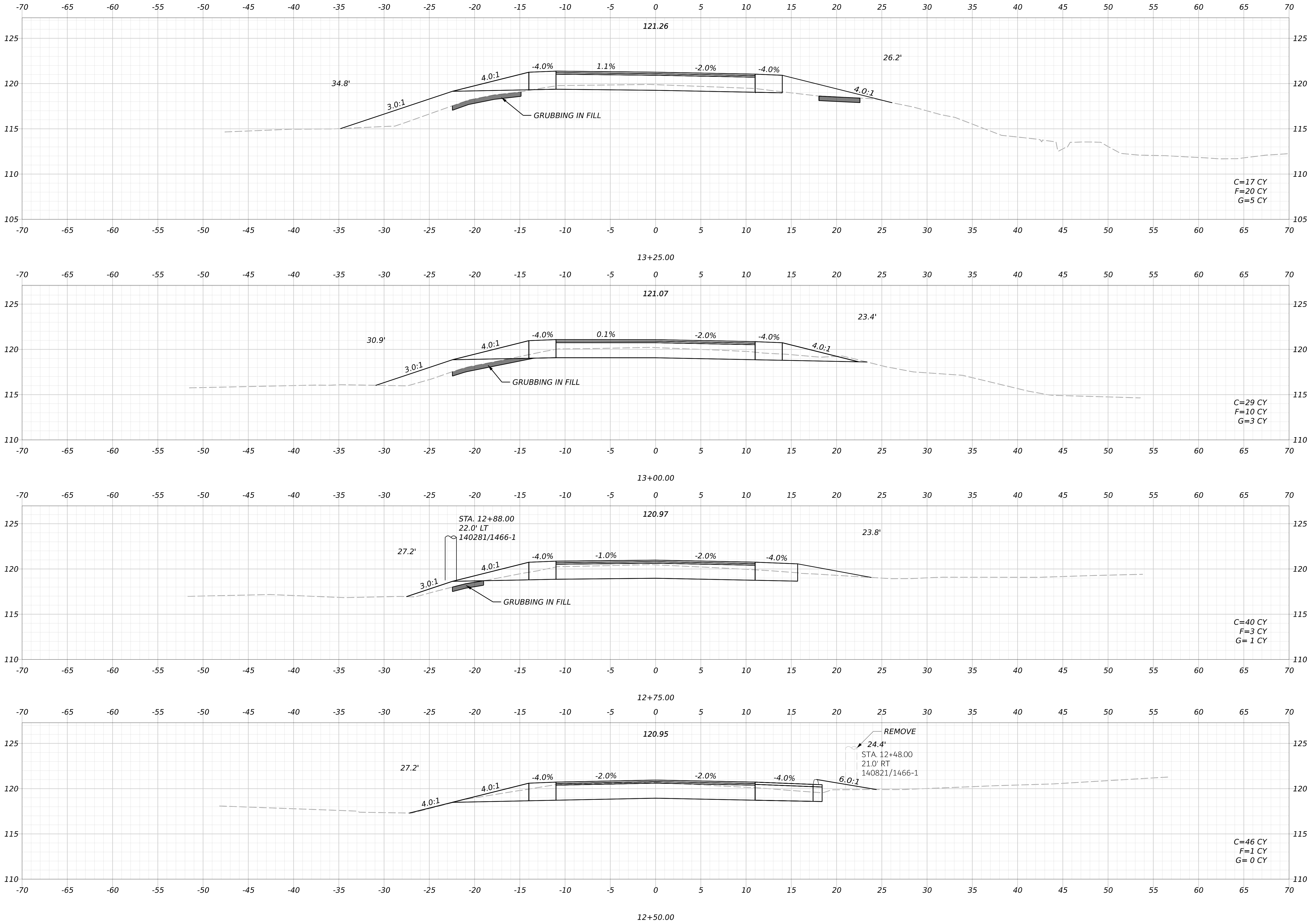
SHEET NUMBER
8
OF 25

N.T.S.

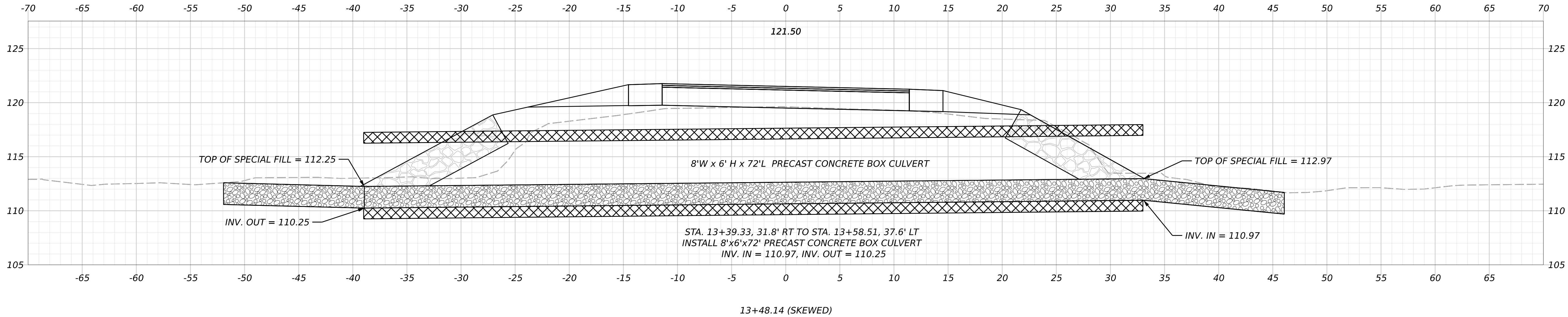
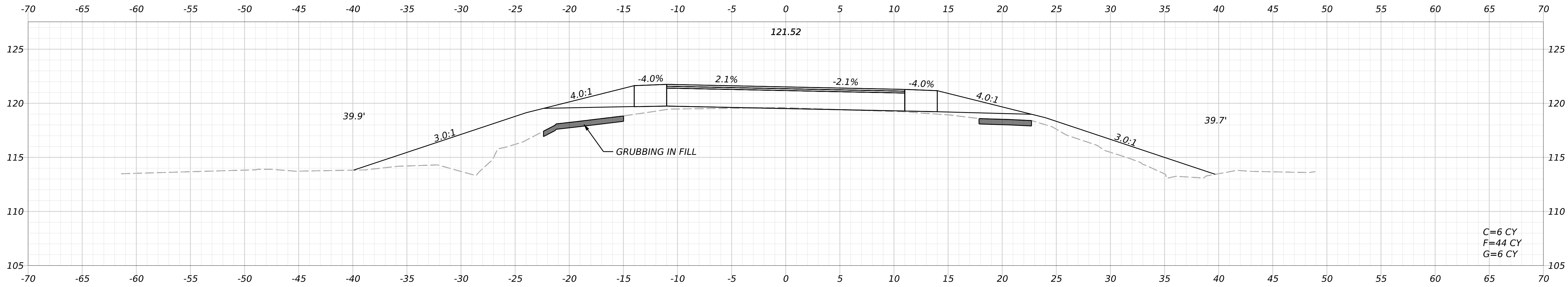
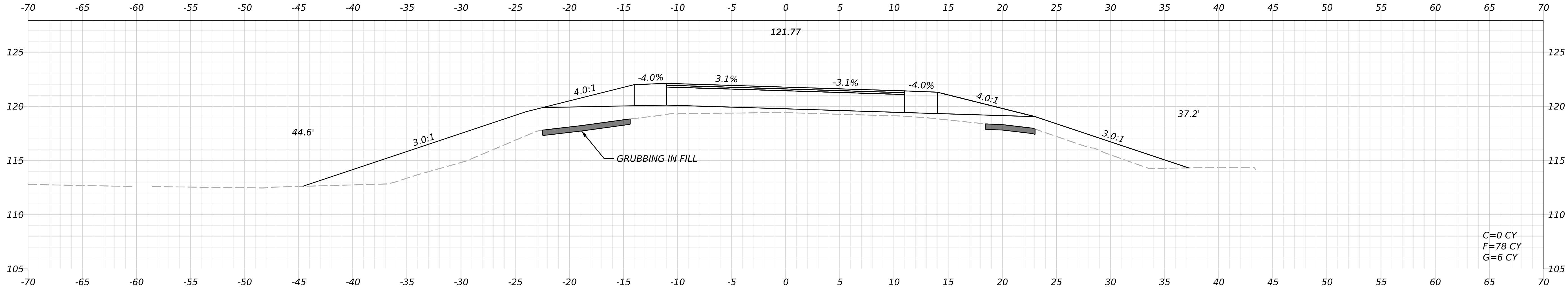


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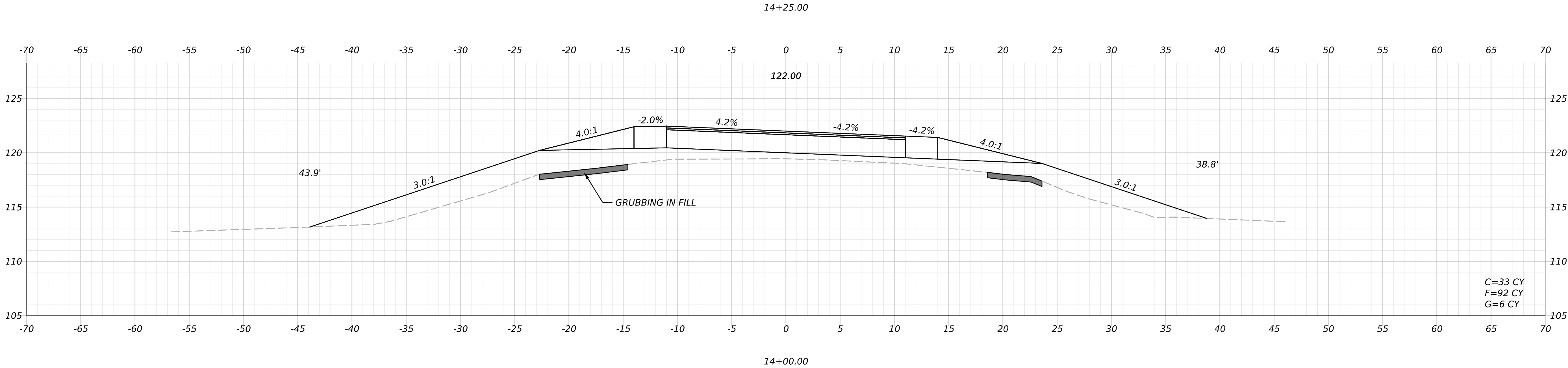
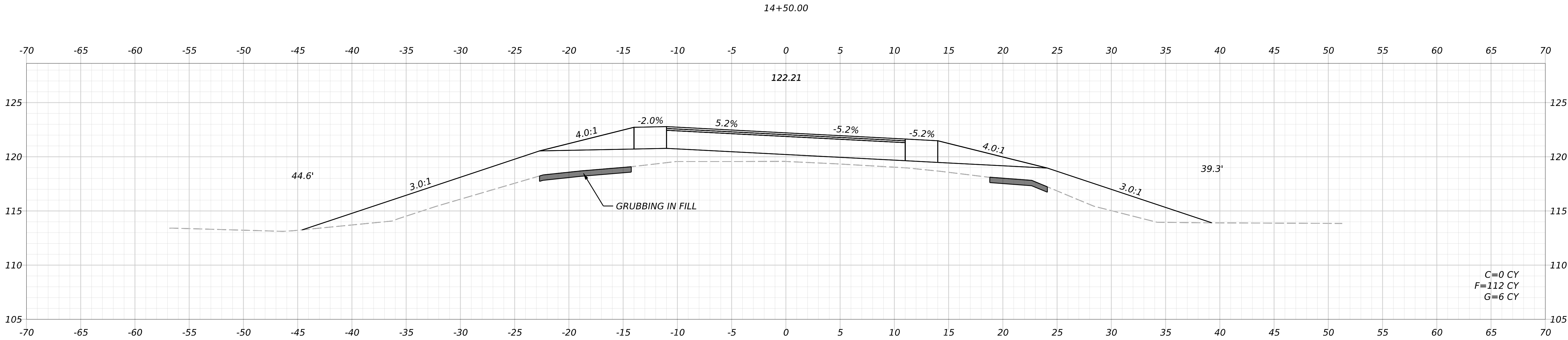
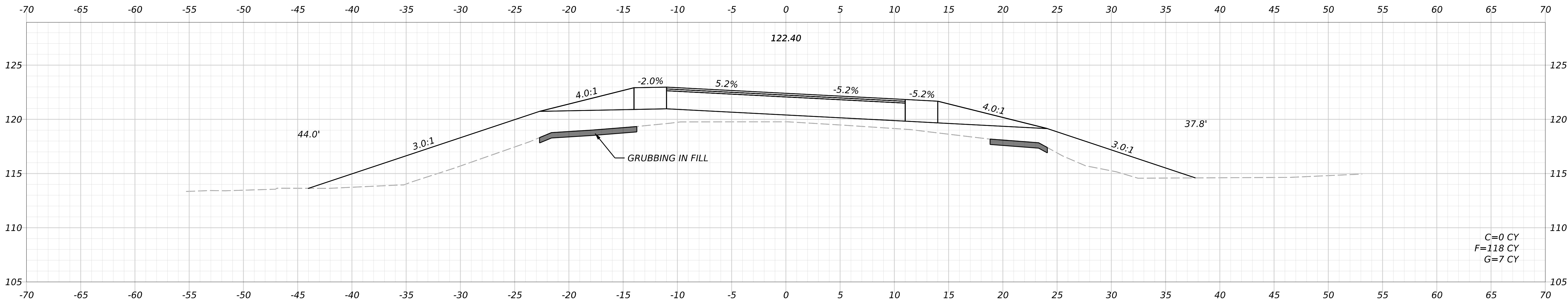




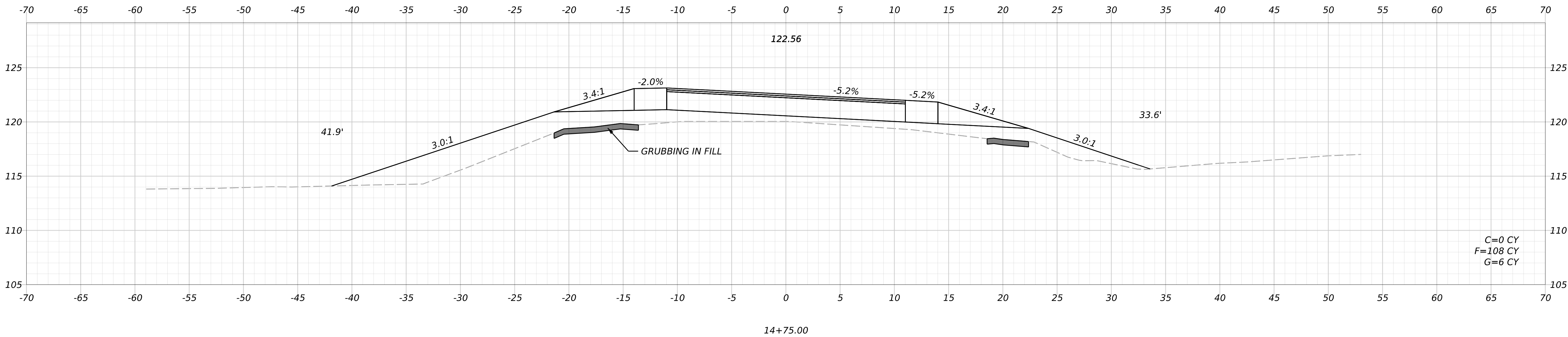
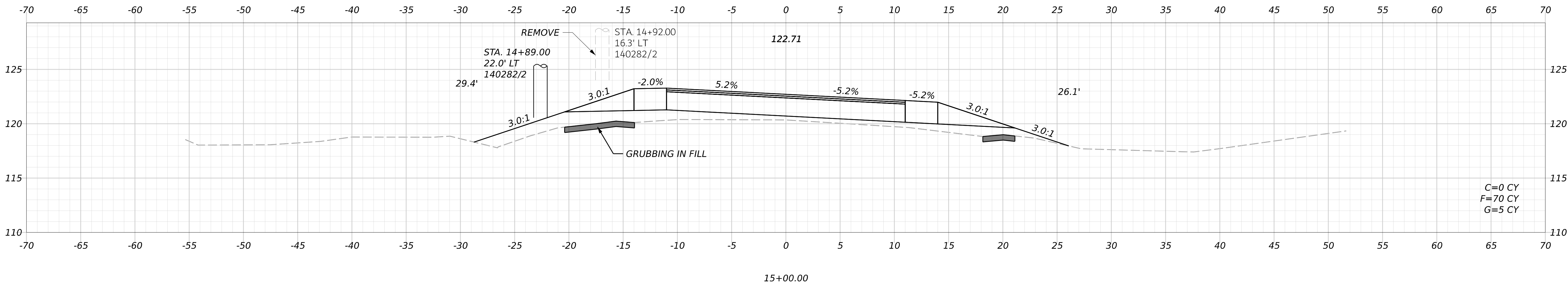
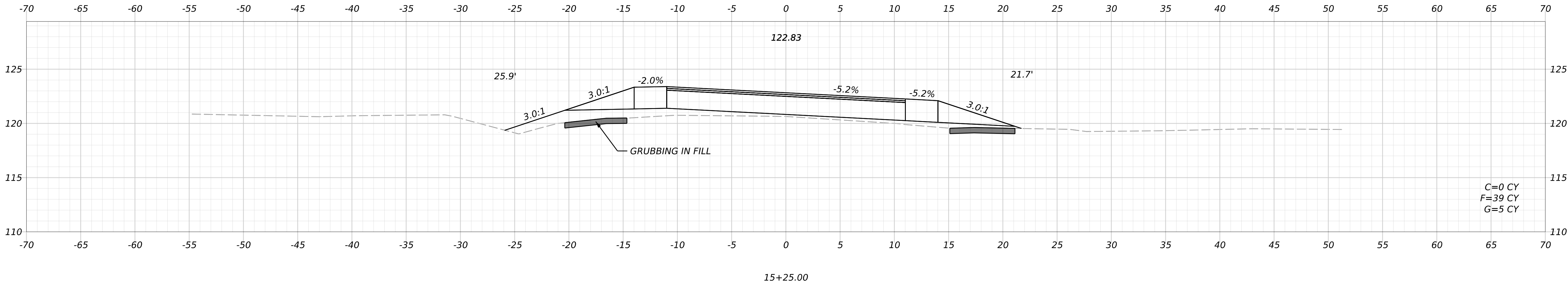
ORONO FOREST AVENUE		PROJ. MANAGER D. CLOUTIER	BY	DATE JUNE 2026	STATE OF MAINE DEPARTMENT OF TRANSPORTATION
CROSS SECTIONS		DESIGNED-DETAILED		SIGNATURE	
		CHECKED-REVIEWED			
		DESIGNED-DETAILED		P.E. NUMBER	
		CHECKED-REVIEWED			
		DESIGNED-DETAILED		DATE	WIN 27194.00-27196.00 HIGHWAY PLANS
SHEET NUMBER 14					
OF 25					



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		27194.00-27196.00		WIN		27194.00-27196.00 HIGHWAY PLANS	
ORONO		FOREST AVENUE		CROSS SECTIONS		SHEET NUMBER		15	
						OF		25	
PROJ. MANAGER	CHECKED-REVIEWED	L. ROWE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE		
D. CLOUTIER				JUNE 2026					
DESIGNED-DETAILED	DESIGNED-DETAILED								
DESIGNED-DETAILED	DESIGNED-DETAILED								
DESIGNED-DETAILED	DESIGNED-DETAILED								
REVISIONS 1	REVISIONS 2								
REVISIONS 3	REVISIONS 4								
FIELD CHANGES									



ORONO FOREST AVENUE		STATE OF MAINE				DEPARTMENT OF TRANSPORTATION			
		27194.00-27196.00				WIN			
CROSS SECTIONS		27194.00-27196.00 HIGHWAY PLANS							
SHEET NUMBER		16		OF 25					

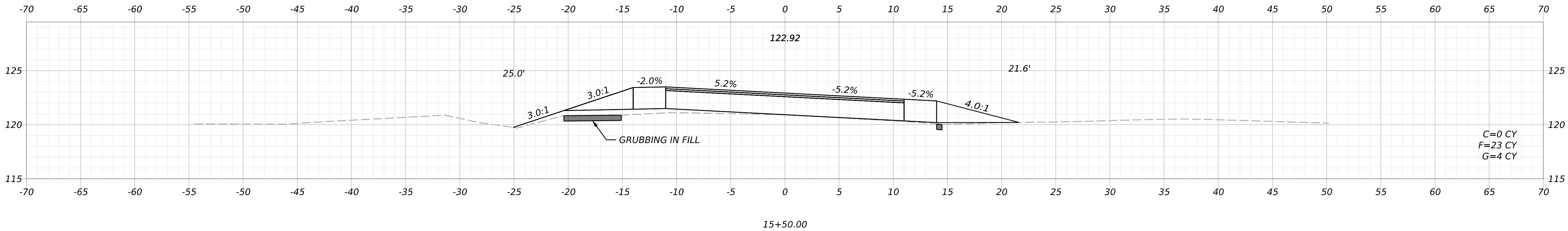
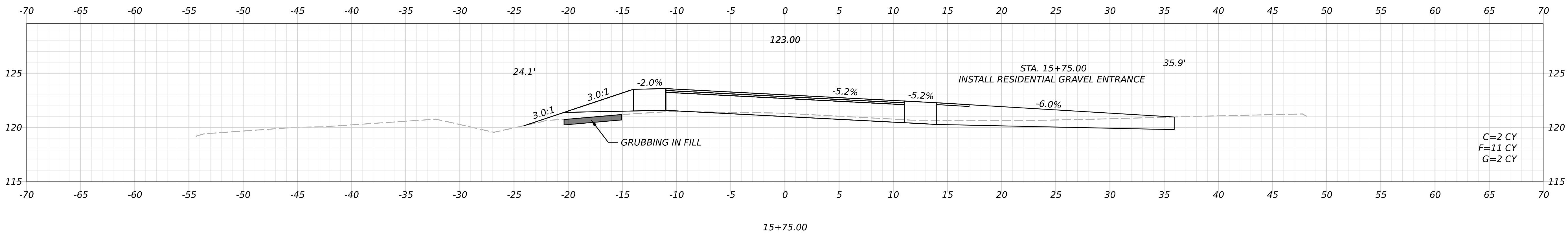
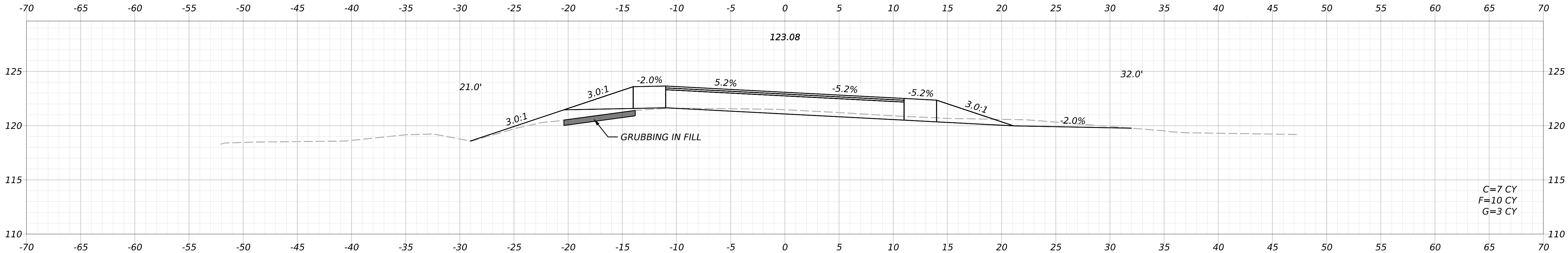


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	27194.00-27196.00	
	WIN	
	27194.00-27196.00 HIGHWAY PLANS	

PROJ. MANAGER	L. ROWE	BY	DATE
CHECKED-DETAILED	D. CLOUTIER		MAY 2026
DESIGNED-DETAILED			
DESIGNED-DETAILED			
DESIGNED-DETAILED			
REVISIONS 1			
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REVISIONS 4			
FIELD CHANGES			

ORONO FOREST AVENUE	CROSS SECTIONS

SHEET NUMBER	
17	
OF 25	

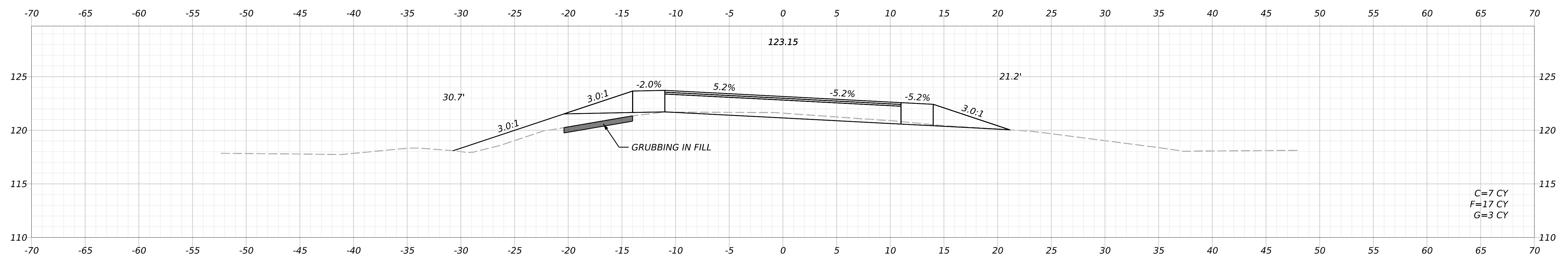
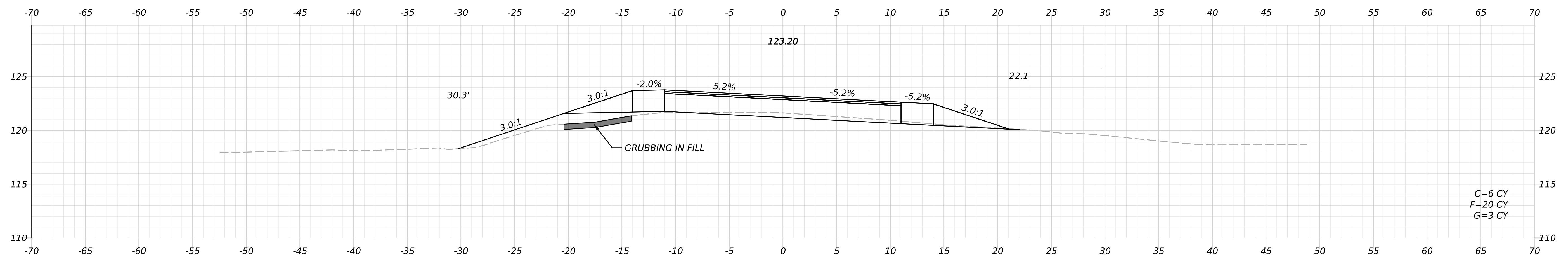
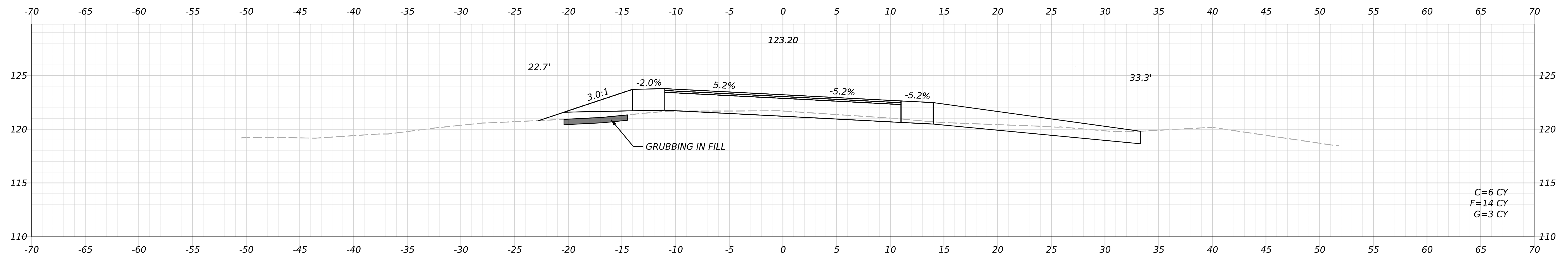


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
27194.00-27196.00	
WIN	
27194.00-27196.00	HIGHWAY PLANS

PROJ. MANAGER	L. ROWE	BY	DATE
CHECKED-DETAILED	D. CLOUTIER		MAY 2026
DESIGNED-DETAILED			
DESIGNED-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

ORONO FOREST AVENUE CROSS SECTIONS	

SHEET NUMBER
18
OF 25

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

27194.00-27196.00

WIN
27194.00-27196.00 HIGHWAY PLANS

SIGNATURE

P.E. NUMBER

DATE _____

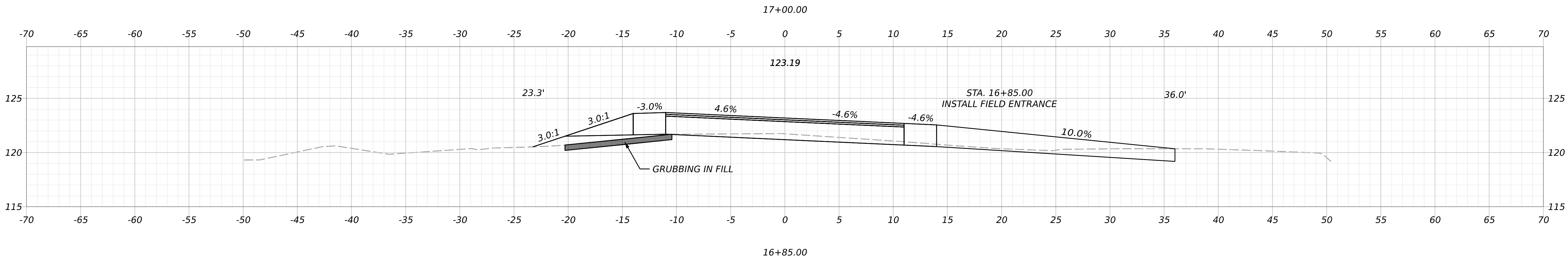
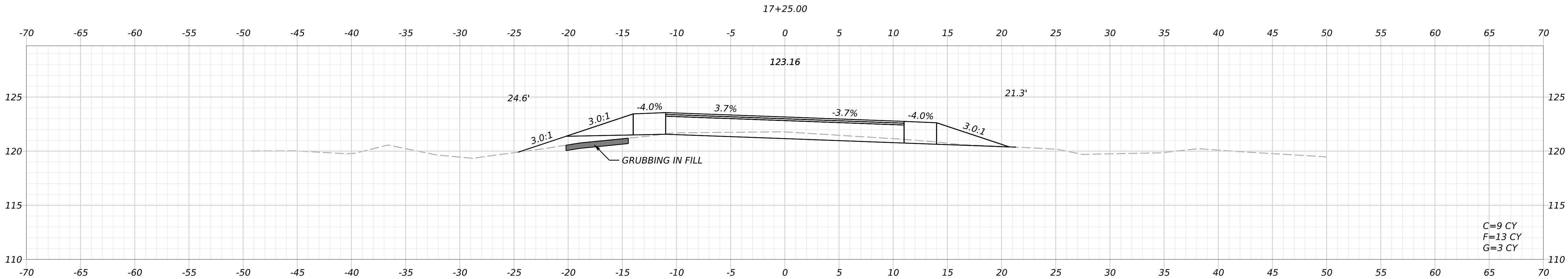
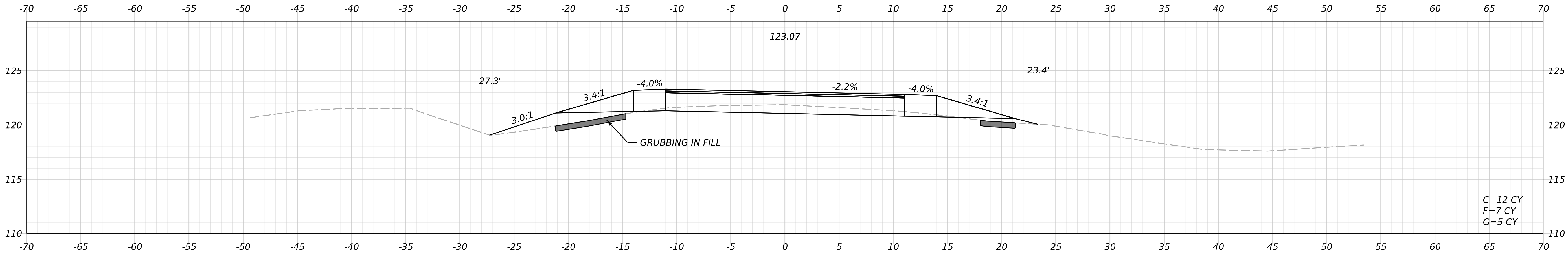
ORONO
FOREST AVENUE

CROSS SECTIONS

SHEET NUMBER

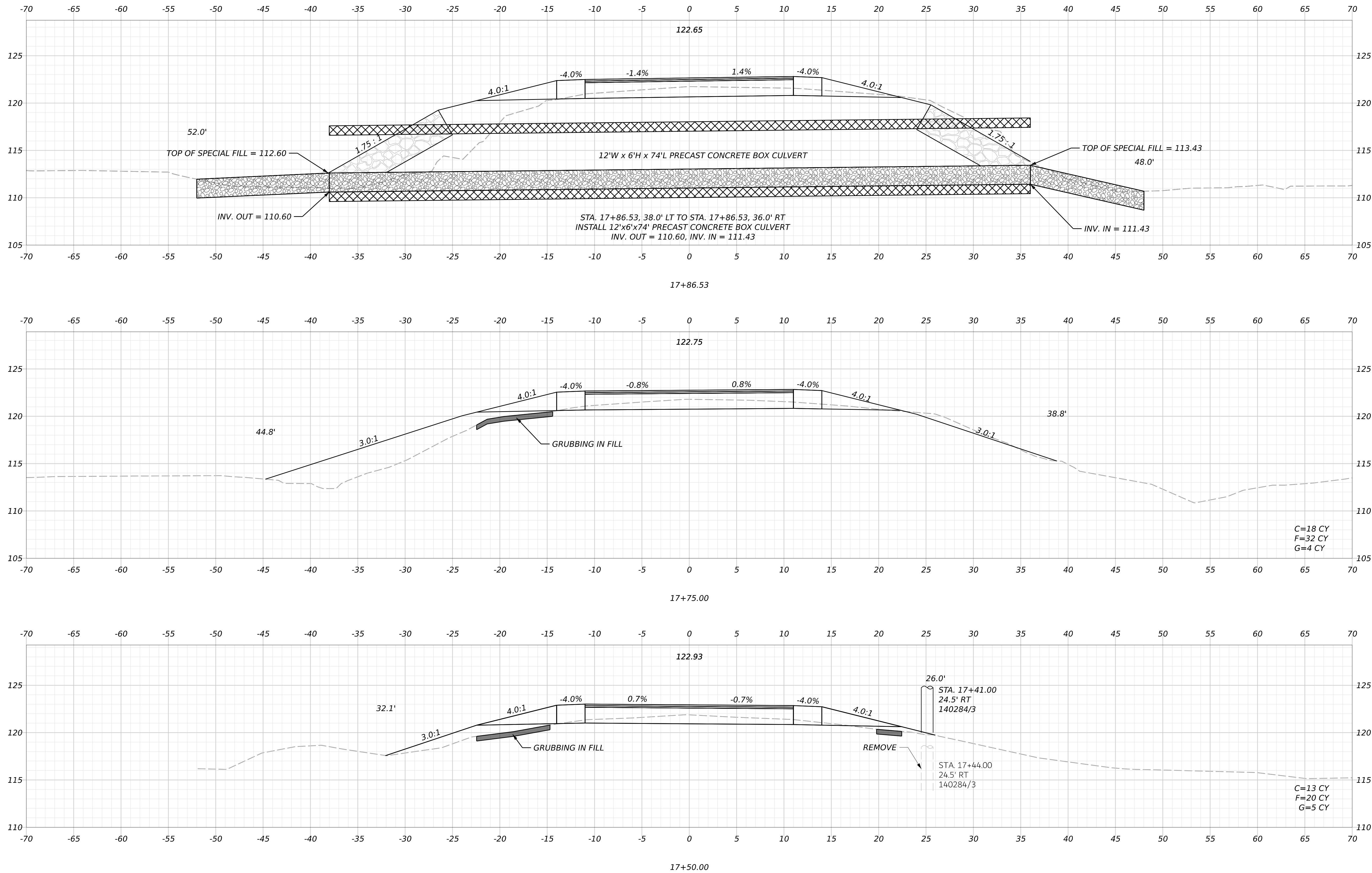
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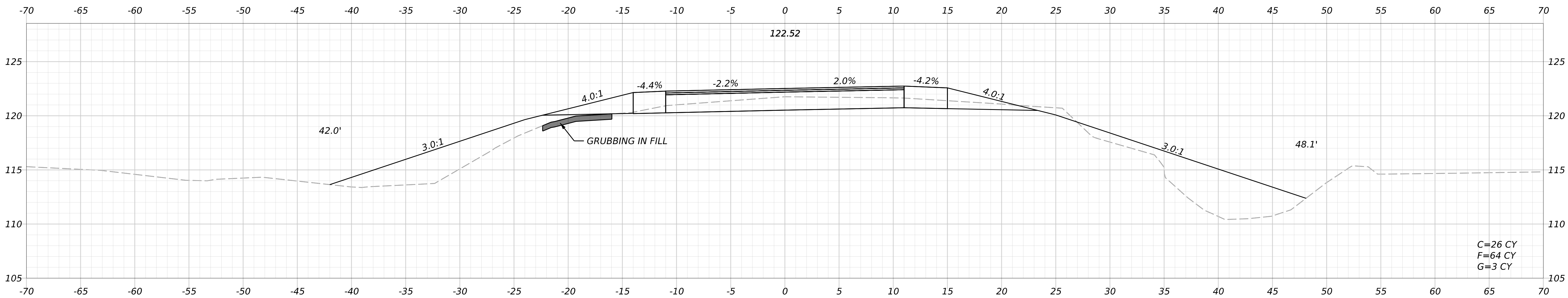
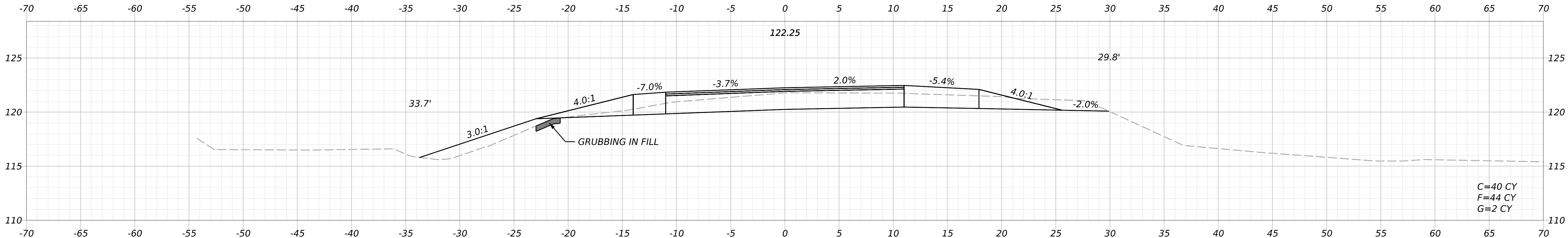
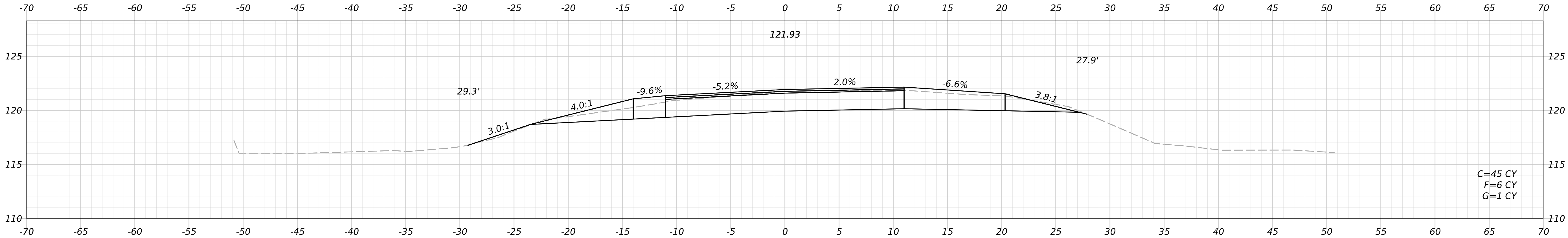


PROJ. MANAGER	CHECKED-REVIEWED	L. ROWE	BY	DATE
D. CLOUTIER				MAY 2026
DESIGNED-DETAILED				
DESIGNED-DETAILED				
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REVISIONS 1				
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REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

ORONO
FOREST AVENUE
CROSS SECTIONS



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		27194.00-27196.00		WIN		27194.00-27196.00 HIGHWAY PLANS	
ORONO		FOREST AVENUE		CROSS SECTIONS		SHEET NUMBER		21	
OF		25		21		21		21	
DATE		SIGNATURE		P.E. NUMBER		DATE		DATE	
MAY 2026									
BY									
L. ROWE									
D. CLOUTIER									
PROJ. MANAGER		DESIGNED-Detailed		DESIGNED-Detailed		DESIGNED-Detailed		DESIGNED-Detailed	
CHECKED-Detailed		CHECKED-Detailed		CHECKED-Detailed		CHECKED-Detailed		CHECKED-Detailed	
DESIGNED-Detailed		DESIGNED-Detailed		DESIGNED-Detailed		DESIGNED-Detailed		DESIGNED-Detailed	
REVISIONS 1		REVISIONS 1		REVISIONS 1		REVISIONS 1		REVISIONS 1	
REVISIONS 2		REVISIONS 2		REVISIONS 2		REVISIONS 2		REVISIONS 2	
REVISIONS 3		REVISIONS 3		REVISIONS 3		REVISIONS 3		REVISIONS 3	
REVISIONS 4		REVISIONS 4		REVISIONS 4		REVISIONS 4		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

27194.00-27196.00

WIN
27194.00-27196.00 HIGHWAY PLANS

PROJ. MANAGER	CHECKED-DETAILED	L. ROWE	BY	DATE
	D. CLOUTIER			MAY 2026
DESIGN-DETAILED01				
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FIELD CHANGES				

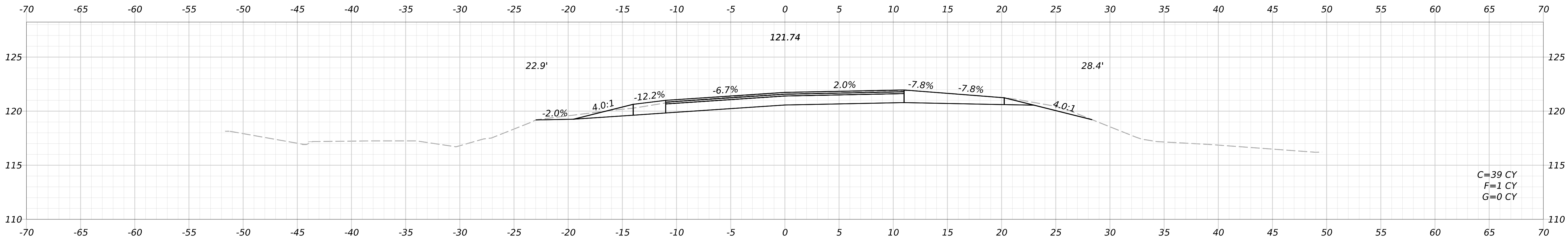
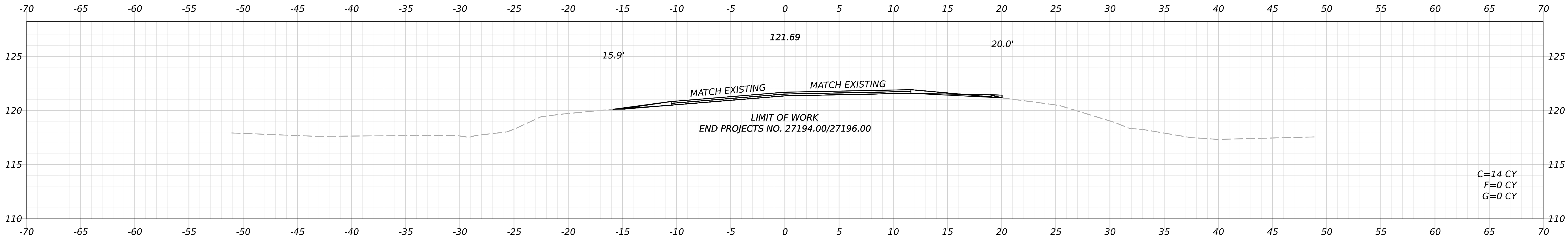
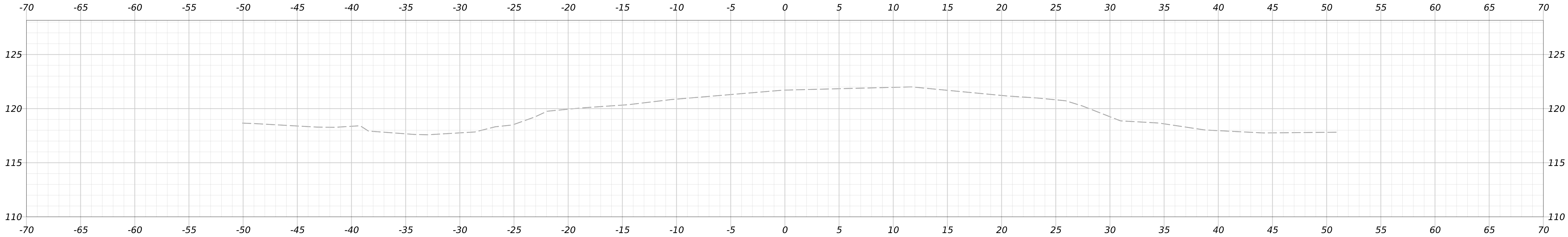
ORONO
FOREST AVENUE

CROSS SECTIONS

SHEET NUMBER

22

OF 25



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	27194.00-27196.00	
	WIN	27194.00-27196.00 HIGHWAY PLANS

PROJ. MANAGER	L. ROWE	BY	DATE	SIGNATURE
DESIGN-DETAILED	D. CLOUTIER			P.E. NUMBER
DESIGN-DETAILED2				DATE
DESIGN-DETAILED3				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

ORONO FOREST AVENUE	CROSS SECTIONS

SHEET NUMBER	
23	
OF 25	

