

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



LEVANT
PENOBSCOT COUNTY
PERKINS AND LAKE BRIDGES
OVER
BLACK STREAM
LAKE ROAD
FEDERAL AID PROJECT NUMBER 2709800
PROJECT LENGTH 0.137 mi.
BRIDGE NOS. 6133 & 3359

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

DESIGN LOADING

Live Load HL - 93 Modified for Strength I

MATERIALS

Concrete:
Curbs Class "LP"
All Other Class "A"

Reinforcing:
Plain Reinforcing Steel ASTM A615, Grade 60
Glass Fiber Reinforcing Polymer (GFRP) ASTM D7957
Low-Carbon Chromium Steel: ASTM A1035, Type CS, Grade 100

Structural Steel:
All Material (except as noted) ASTM A709, Grade 50
High Strength Bolts ASTM F 3125, Grade A 325, Type 1

BASIC DESIGN STRESSES

Concrete:
Class "A" f 'c = 4,000 psi
Class "LP" f 'c = 5,000 psi

Reinforcing:
Plain Reinforcing Steel f y = 60,000 psi
Glass Fiber Reinforced Polymer
Minimum Tensile Strength f fu = 100,000 psi
Minimum Elastic Modulus E f = 8,700,000 psi
Minimum Nominal Design Tensile Strain e fu = 1.1%
Low-Carbon Chromium Steel: f y = 100,000 psi

Structural Steel:
ASTM A709, Grade 50 F y = 50,000 psi
ASTM F3125, Grade A325 F μ = 120,000 psi

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UTILITIES

Central Maine Power Company
Charter Communications, Inc.
Gonetspeed (North)

TRAFFIC DATA

Current (2023) AADT	470
Future (2043) AADT	520
DHV - % of AADT	15
Design Hour Volume	78
Heavy Trucks (% of AADT)	6
Heavy Trucks (% of DHV)	2
Directional Distribution (% of DHV)	68
18 kip Equivalent P 2.0	7
18 kip Equivalent P 2.5	7
Design Speed (mph)	45

MAINTENANCE OF TRAFFIC

Road closure with off-site detour.

PROJECT LOCATION	Lake Bridge (#3359) over Black Stream. Located 0.04 of a mile west of Pecal Lane. Perkins Bridge (#6133) over Black Stream. Located 0.10 of a mile west of Pecal Lane. Lat./Long. 44°51'28.5" N -68°57'16.5" W (Perkins Bridge) Lat./Long. 44°51'28.1" N -68°57'14.2" W (Lake Bridge)
PROGRAM AREA	Highway-Bridges
OUTLINE OF WORK	Bridge Replacement with associated approach work. Replace Perkins Bridge with a single span bridge and replace Lake Bridge with a circular pipe culvert.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
	COMMISSIONER: <i>[Signature]</i> CHIEF ENGINEER: <i>[Signature]</i>	4-2-24

STATE OF MAINE DEPARTMENT OF TRANSPORTATION PROFESSIONAL ENGINEER Benjamin J. Bartlett 16323	SIGNATURE	P.E. NUMBER	DATE
	<i>[Signature]</i> 16323	03/15/2024	

PROJECT INFORMATION	
PROGRAM	BRIDGE
PROJECT MANAGER	J. STETSON
DESIGNER	B. BARTLETT
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

LEVANT PERKINS AND LAKE BRIDGES	TITLE SHEET
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SHEET NUMBER
1
OF 30

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
201.23	REMOVING SINGLE TREE TOP ONLY	4	EA
201.24	REMOVING STUMP	4	EA
202.202	REMOVING PAVEMENT SURFACE	120	SY
203.20	COMMON EXCAVATION	3,200	CY
203.25	GRANULAR BORROW	550	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	650	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	1,300	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	183	T
403.209	HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, ISLANDS, & INCIDENTALS)	4	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	290	T
409.15	BITUMINOUS TACK COAT - APPLIED	69	G
501.231	DYNAMIC LOADING TEST	2	EA
501.251	PILE CASING	5	EA
501.50	STEEL H-BEAM PILES 89 LBS/FT. DELIVERED	565	LF
501.501	STEEL H-BEAM PILES 89 LBS/FT. IN PLACE	505	LF
501.90	PILE TIPS	10	EA
501.91	PILE SPLICES	10	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	LS
502.219	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS (100 CY)	1	LS
502.26	STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES (110 CY)	1	LS
502.291	SAW CUT GROOVING (2,350 SF)	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLABS (20 CY)	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (8 CY)	1	LS
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	16,500	LB
503.13	REINFORCING STEEL, PLACING	16,500	LB
503.19	LOW-CARBON, CHROMIUM REINFORCEMENT - FABRICATED & DELIVERED	18,600	LB
503.20	LOW-CARBON, CHROMIUM REINFORCEMENT - PLACING	18,600	LB
504.71	STRUCTURAL STEEL ERECTION - STATE SUPPLIED (73,000 LBS)	1	LS
505.08	SHEAR CONNECTORS (712 EA)	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR (174 LF)	1	LS
507.0822	STEEL APPROACH RAILING, 3-BAR	4	EA
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (400 SY)	1	LS
526.301	PORTABLE CONCRETE BARRIER TYPE I (60 LF)	1	LS
530.30	GFRP, REINFORCEMENT BARS, FAB & DEL	18,510	LF
530.31	GFRP, REINFORCEMENT BARS, PLACING	18,510	LF
603.17	18 INCH CULVERT PIPE OPTION I	78	LF
603.289	84 INCH CULVERT PIPE OPTION III	72	LF
606.1301	31" W-BM GR, MID-WAY SPLICE-SGL FACED	719	LF
606.1303	31" W-BM GR, MID-WAY SPLICE-15' RAD AND LESS	50	LF
606.1305	31" W-BM GR, MID-WAY SPLICE FLARED TERMINAL	2	EA
606.1721	BRIDGE TRANSITION - TYPE I	4	EA
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	2	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	8	EA
610.08	PLAIN RIPRAP	500	CY
610.18	STONE DITCH PROTECTION	30	CY
610.213	VOID FILLED RIPRAP	350	CY
613.319	EROSION CONTROL BLANKET	230	SY
615.07	LOAM	97	CY
618.14	SEEDING METHOD NUMBER 2	16	UN
619.12	MULCH	16	UN
619.14	EROSION CONTROL MIX	195	CY
620.58	EROSION CONTROL GEOTEXTILE	1,250	SY
620.66	DRAINAGE GEOCOMPOSITE	84	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	2,175	LF
629.05	HAND LABOR, STRAIGHT TIME	100	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10	HR
631.14	GRADER (INCLUDING OPERATOR)	10	HR
631.15	ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	10	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	10	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	25	EA
652.34	CONE	50	EA
652.35	CONSTRUCTION SIGNS	500	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLAGGER	100	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS
834.322	DRY HYDRANT - INSTALL ONLY	1	LS

GENERAL CONSTRUCTION NOTES

2. The clearing limits as shown on the plans are approximate. The exact clearing limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

4. Existing signs within the Project limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment shall be made.

5. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

6. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and laying new subbase 6 inches or less thick will be made under appropriate equipment rental items.

7. All embankment material, except as otherwise shown, placed below EL. shall be Granular Borrow meeting the requirements of Standard Specification Subsection 703.19, Granular Borrow, for Material for Underwater Backfill. The additional requirement that the maximum particle size shall be limited to 4 inches.

8. Construct the riprap shelf at each abutment at EL. 123.0.

9. Stones which cannot be rolled or compacted into the surface of the shall be removed by hand raking. Payment for hand raking will be considered incidental to Pay Item 304.10, Aggregate Subbase Course - Gravel.

10. Place loam 2 inches deep on all new or reconstructed sideslopes directed by the Resident.

11. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under 619.14, Erosion Control Mix.

12. Place a 24 inch wide strip of Erosion Control Blanket on the sides along the top of the riprap and behind the wingwalls.

13. A MASH compliant guardrail end treatment shall be installed concurrent with the placement of each section of beam guardrail.

14. Where it is apparent that runoff will cause continual erosion, Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters like Stone Ditch Protection shall be constructed after paving and shoulder is completed. Payment will be made under the appropriate Contract Items.

15. *Protective Coating for Concrete Surfaces shall be applied to the following areas:*

*All exposed surfaces of concrete curbs,
Fascias down to the drip notch,
Concrete wearing surfaces,
Top of abutment backwalls and wingwalls, and
To one foot below the ground on vertical walls against earth.*

16. Project information referred to below may be accessed at the following
MaineDOT web address: <http://www.maine.gov/dot/contractors/>

17. The existing bridge plans may be accessed at the MaineDOT web address. The
plans are reproductions of the original drawings as prepared for the
construction of the bridge. It is very unlikely that the plans will show any
construction field changes or any alterations which may have been made to the
bridge during its life span.

18. Reports on hydrology and/or hydraulics applicable to the bridge site may be accessed at the MaineDOT web address. The reports are based on MaineDOT's interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

19. The project geotechnical report titled: Geotechnical Design Report for the Replacement of Perkins Bridge and Lake Bridge, Levant, Maine, Soils Report 2024-04, dated February 6, 2024, may be accessed at the MaineDOT web address.

20. Geotechnical information furnished or referred to in this plan set is for the use of the Bidders and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidders' or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between the boring locations.

21. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.

22. Any peat or organics encountered at the subgrade of the toes of reconstructed side slopes or abutment foreslopes shall be excavated to a nominal depth of 1 foot and replaced with granular borrow. Payment will be made under the appropriate Contract Items.

23. Lake Road is currently closed and blocked off at the project site with Portable Concrete Barrier owned by the Department. Upon mobilization to the site, the Contractor shall install their own Portable Concrete Barrier and coordinate with the Department for removal of Department owned barrier.

24. Prior to any approved work stoppage or shutdown, the Contractor shall install a positive barrier at each end of the project limits to prevent traffic from entering the project site.

25. Actual site conditions may vary from what is shown in the Plans. The roadway material above the existing pipes at Perkins Bridge is eroded and the roadway is not passable.

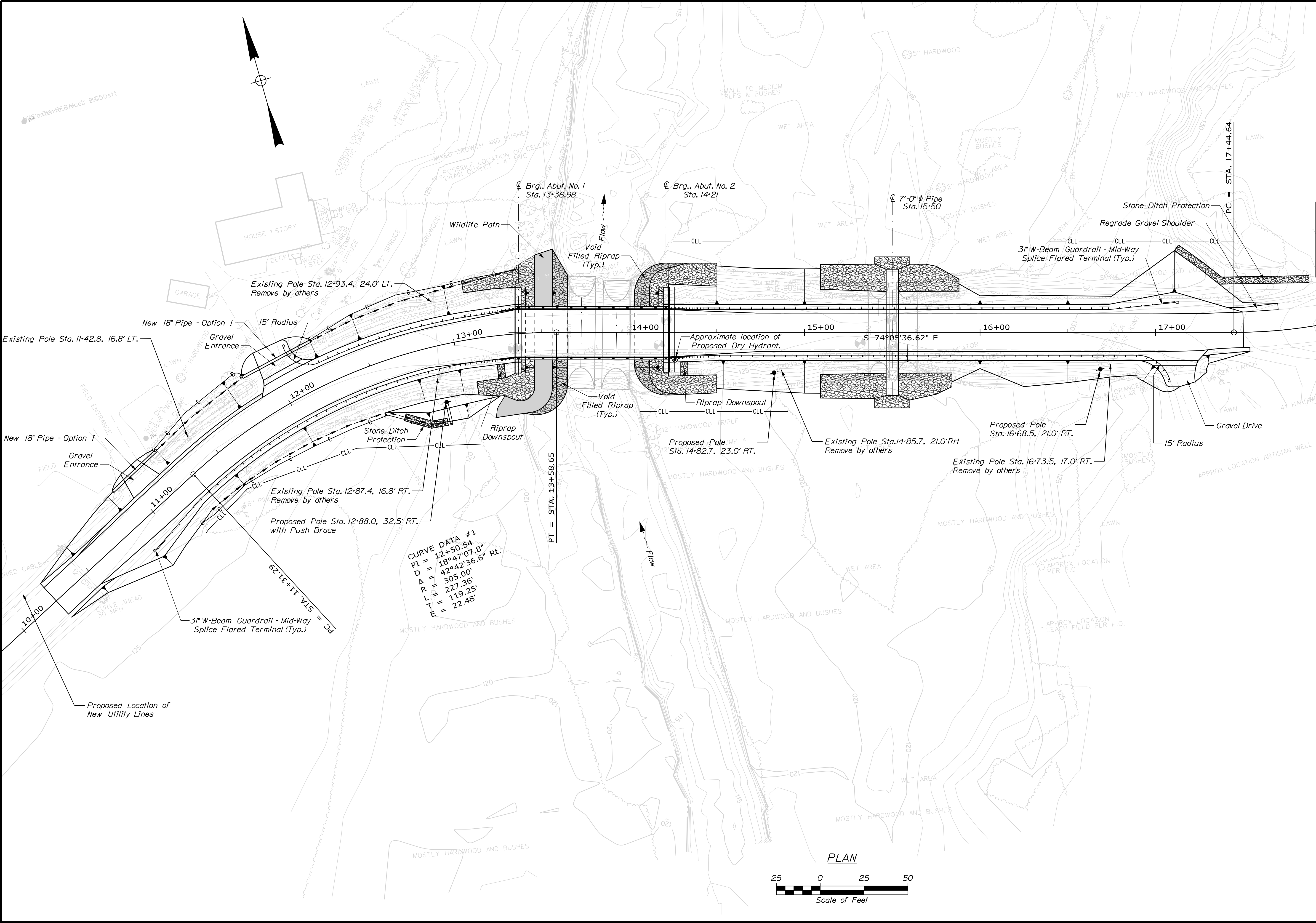
26. Removal of the existing pipes and any excavation required outside of the Limits of Structural Earth Excavation and Granular Borrow shall be paid for under Common Excavation.

Date: 3/20/2024

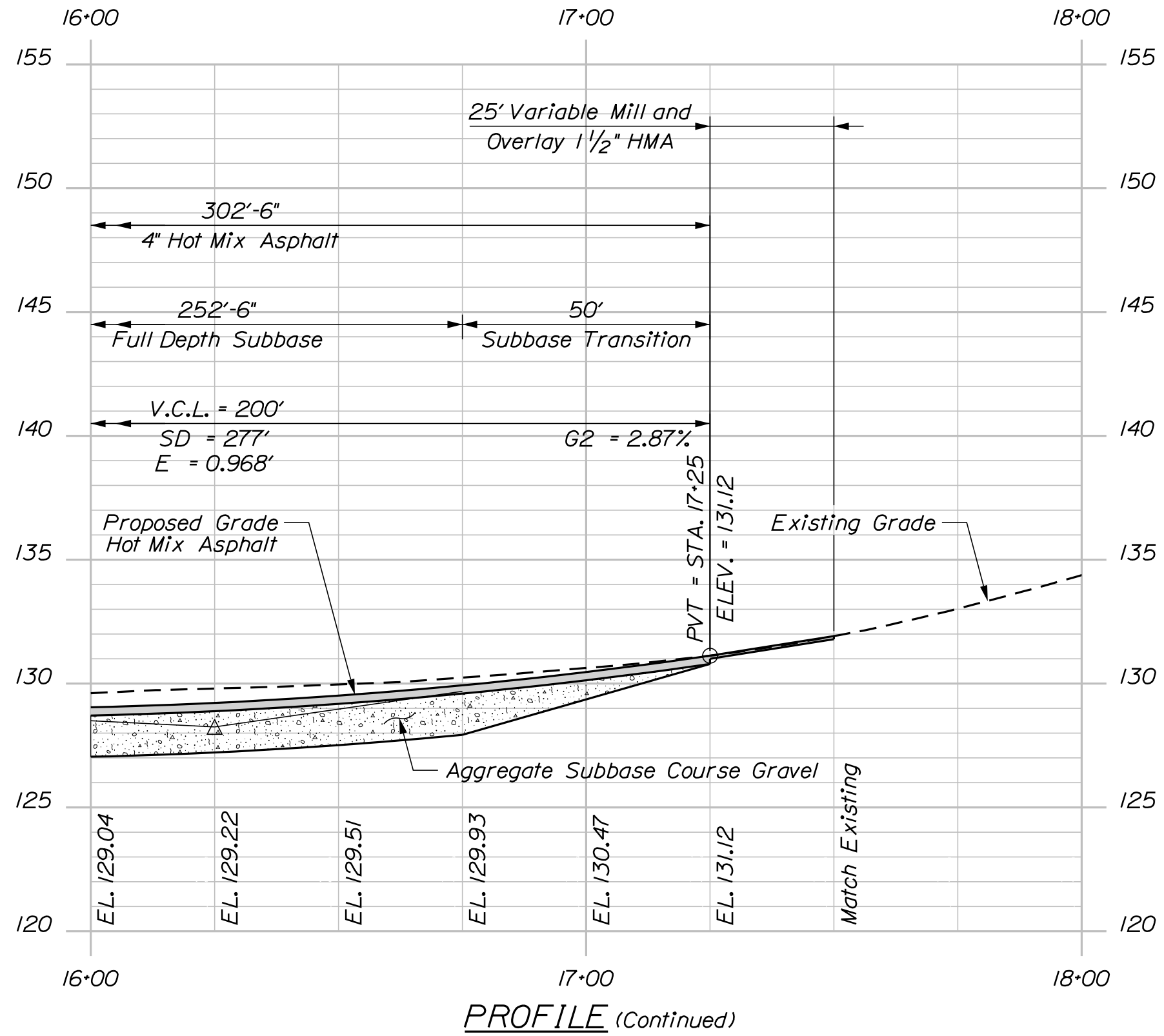
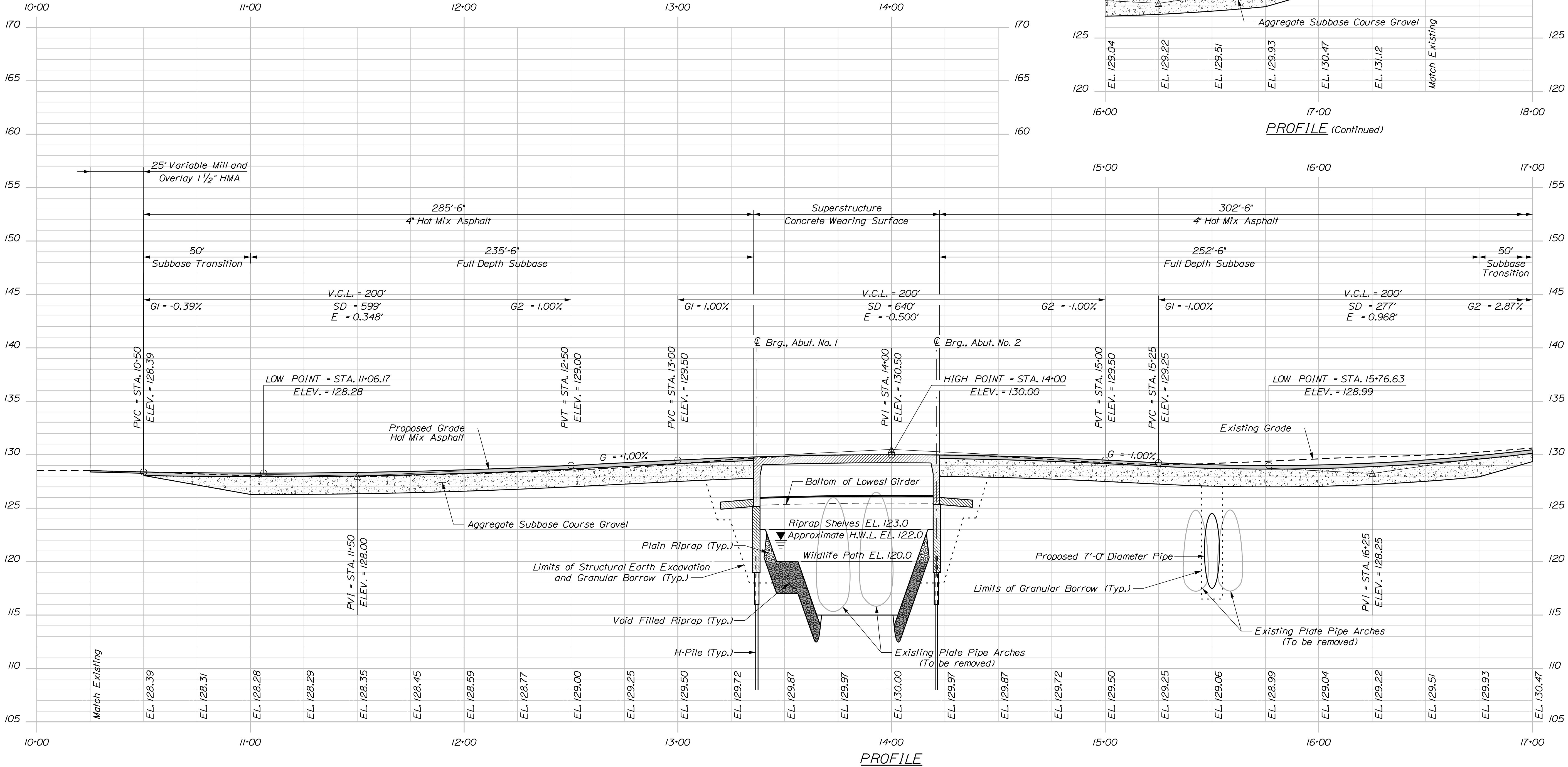
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STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2709800		WIN		BRIDGE NOS. 6133 & 3359 027098.00		BRIDGE PLANS	
PERKINS AND LAKE BRIDGES		BLACK STREAM		PENOBSCOT COUNTY		GENERAL PLAN		SHEET NUMBER		3	
LEVANT		J. STETSON		BY		DATE		SIGNATURE		P.E. NUMBER	
DESIGNED-DETAILED		B. BARTLETT		D. SHAW		FEB 2024		DATE		DATE	
CHECKED-REVIEWED		N. PIKAY		T. WHITE		FEB 2024		P.E. NUMBER		DATE	
DESIGNED-DETAILED		REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		FIELD CHANGES	
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		FIELD CHANGES		FIELD CHANGES	
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STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

2709800

WIN

BRIDGE NOS. 6133 & 3359 027098.00

PERKINS AND LAKE BRIDGES

BLACK STREAM

PENOBSCOT COUNTY

LEVANT

SHEET NUMBER

4

OF 30

PROJ. MANAGER

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

DESIGN-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

DATE

BY

J. STETSON

B. BARTLETT

N. PIKAY

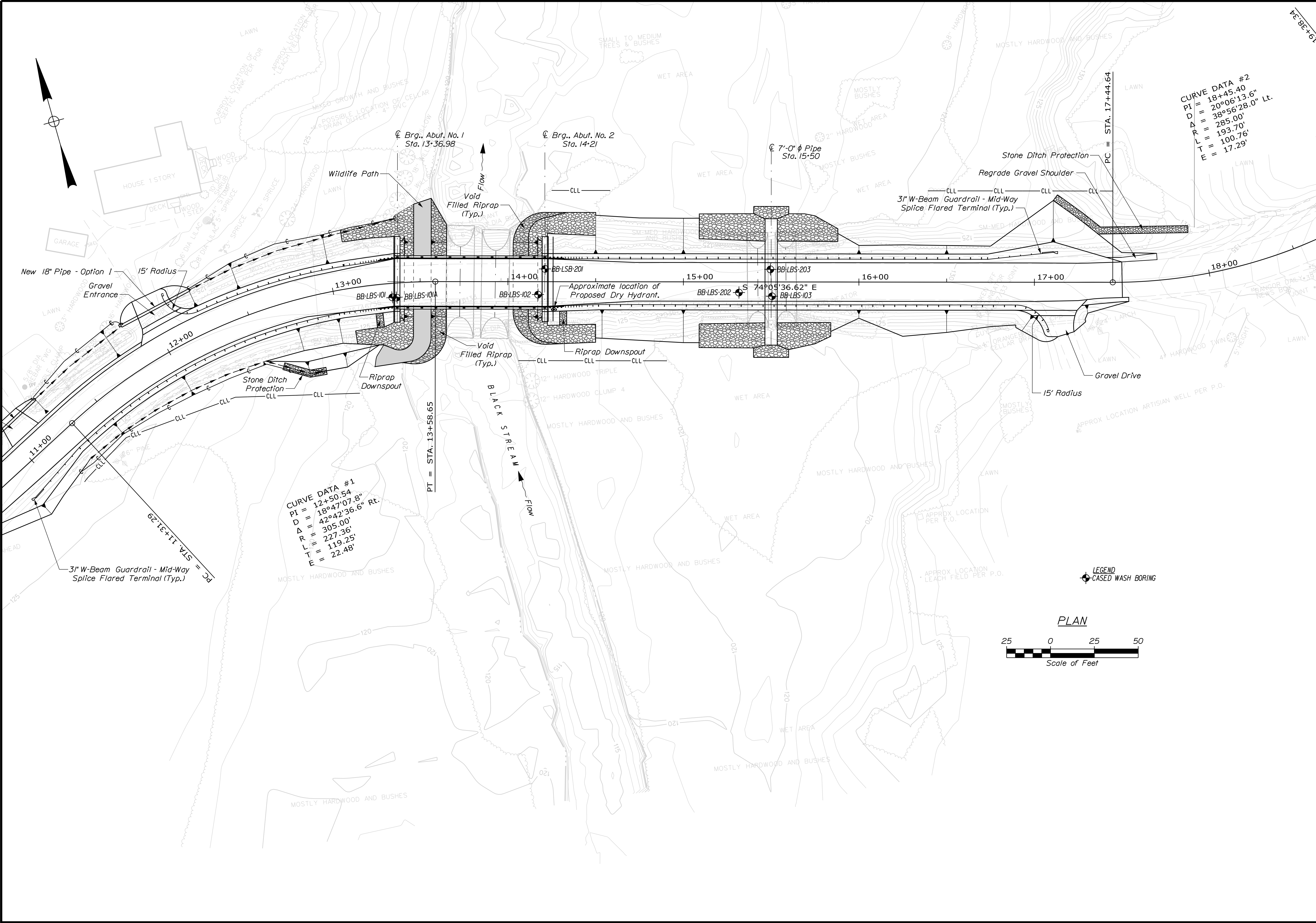
I. WHITE

SIGNATURE

P.E. NUMBER

DATE

BRIDGE PLANS



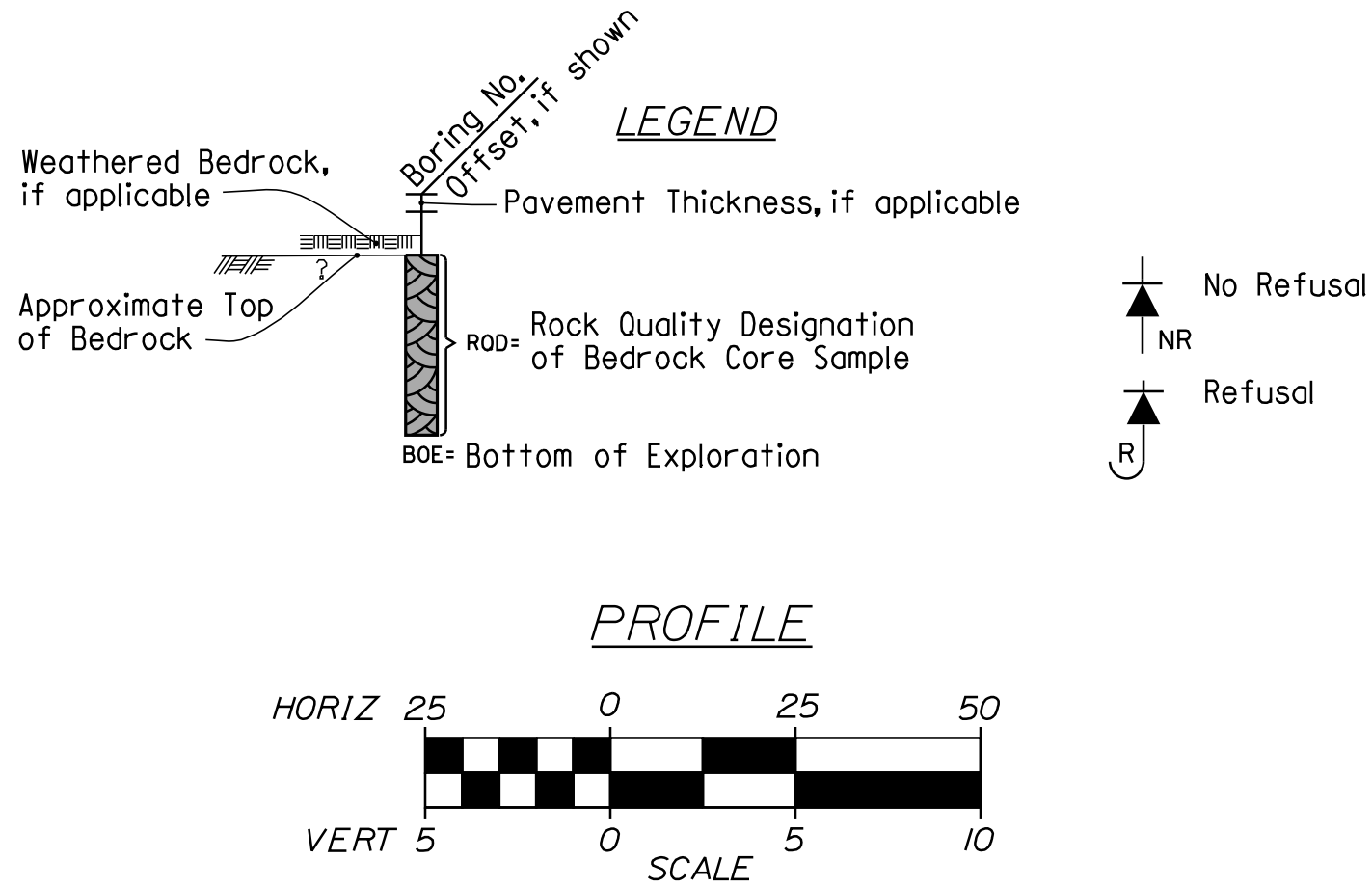
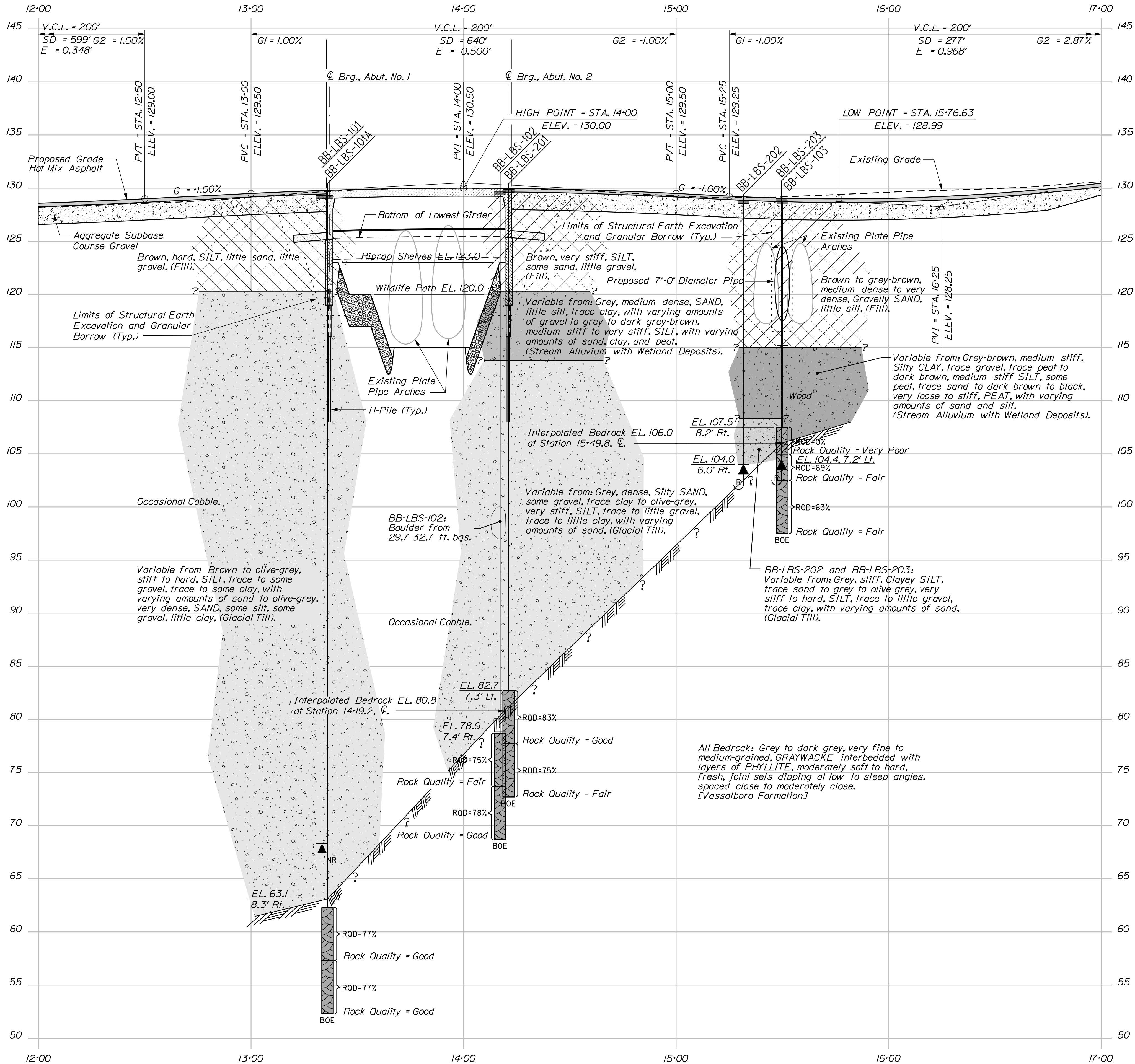
PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT		PROJ. MANAGER		J. STETSON	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
		DESIGN-DETAILED		B. BARTLETT	D. SHAW				
BORING LOCATION PLAN		CHECKED-REVIEWED					2709800		
		DESIGN2-DETAILED2		N.PIJAY	T. WHITE	JUN 2023			
		DESIGN3-DETAILED3							
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		REVISIONS 4							
		FIELD CHANGES							
SHEET NUMBER							BRIDGE NOS. 6133 & 3359		
OF 29		5						BRIDGE PLANS	

Date: 3/20/2024

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Division: BRIDGE

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Notes: 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.

"Varying Amounts" term = Portion is 0 to 50 percent of Total.

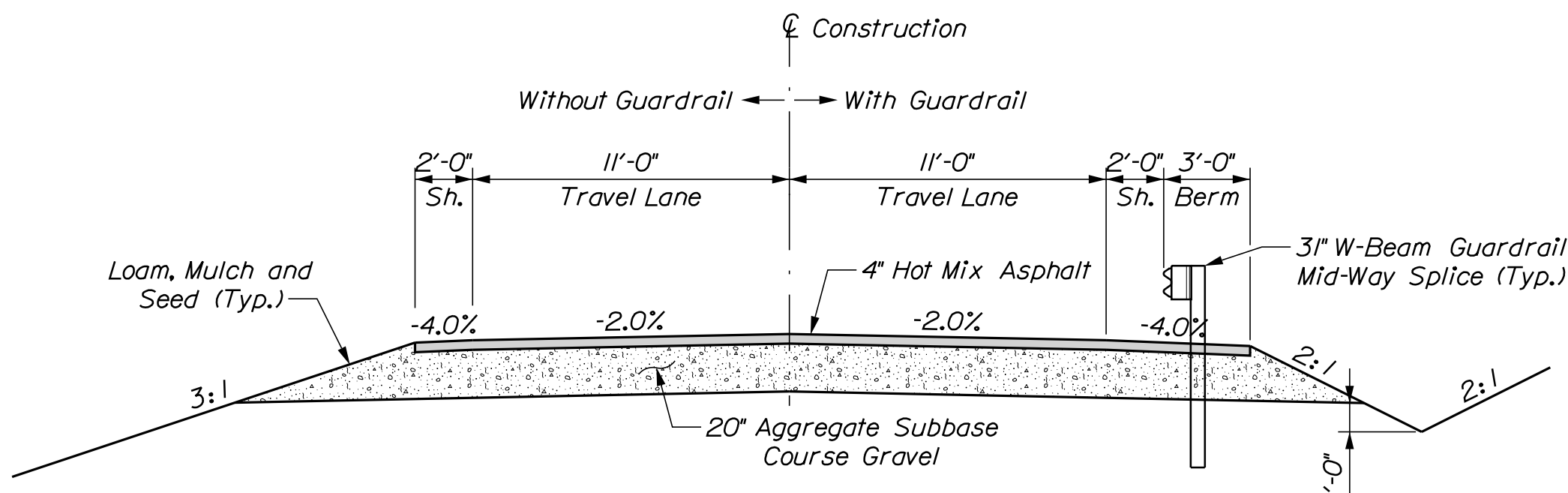
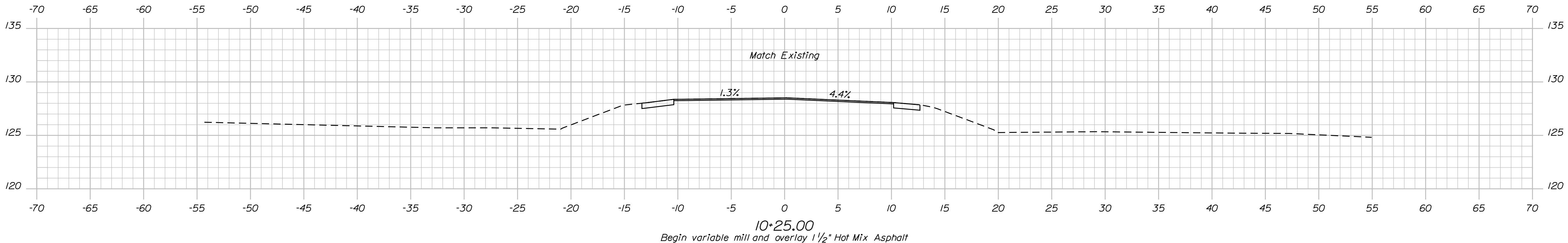
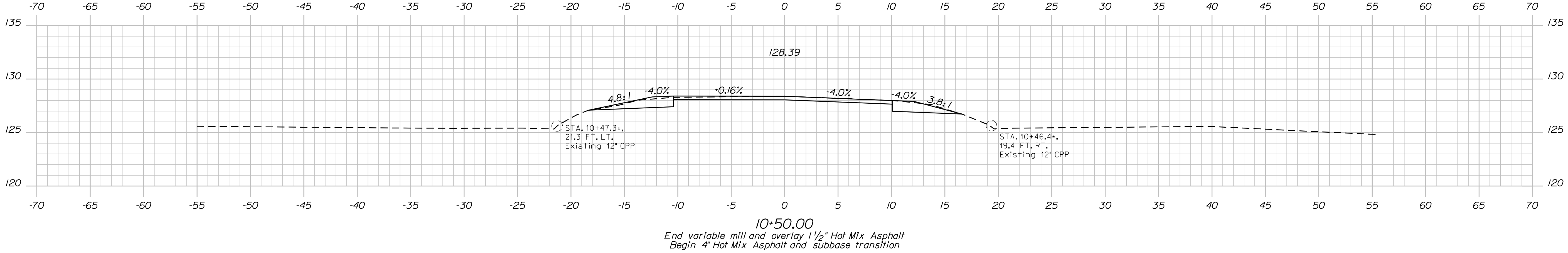
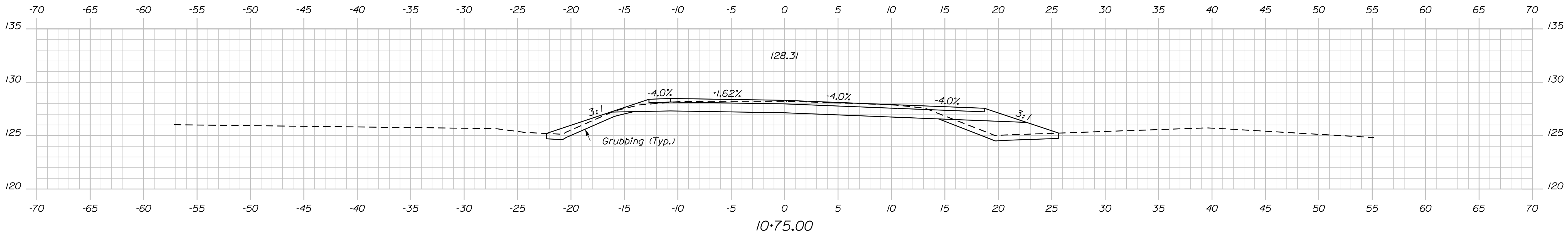
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PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT PENOBSCOT COUNTY	DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED	
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INTERPRETIVE SUBSURFACE PROFILE	SHEET NUMBER		6		FIELD CHANGES	
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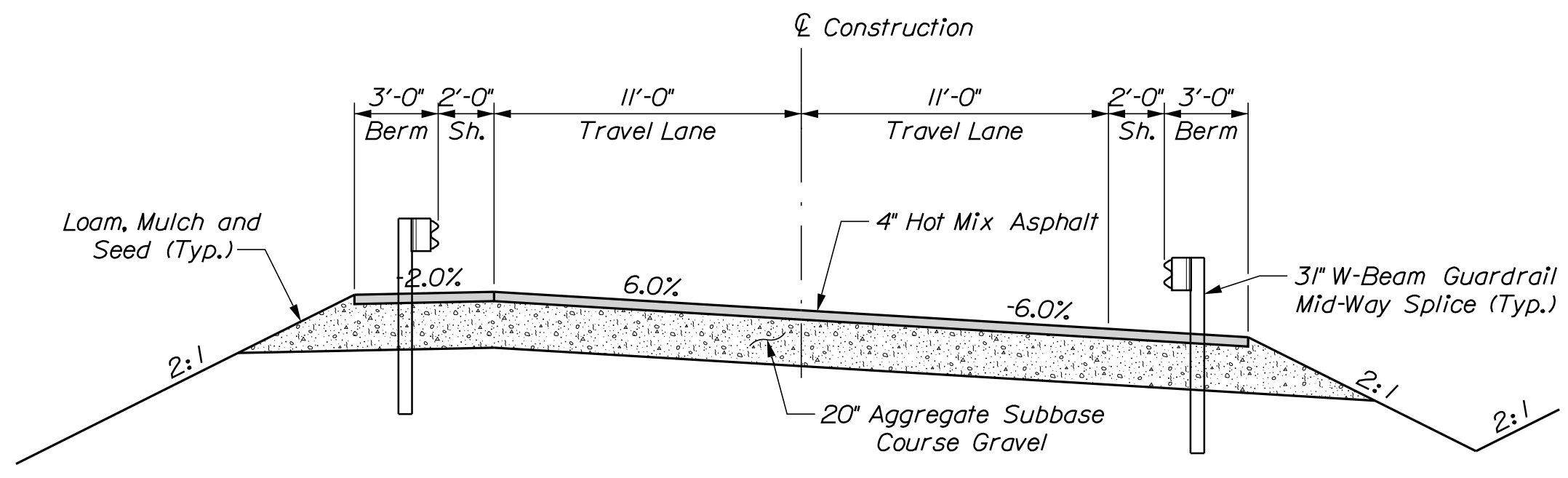
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TYPICAL APPROACH SECTION



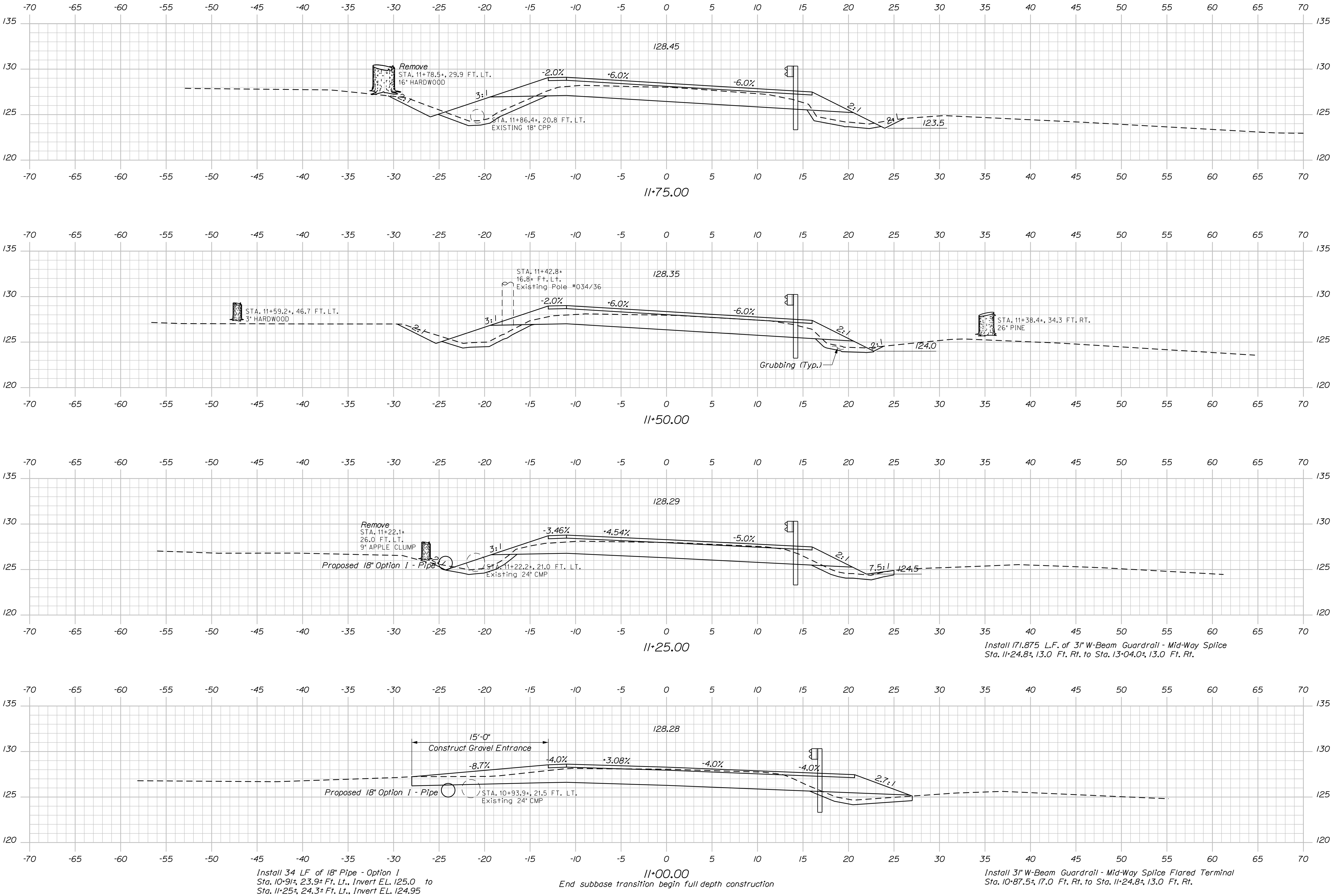
TYPICAL SUPERELEVATED APPROACH SECTION

STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
2709800	
WIN	
BRIDGE NOS. 6133 & 3359 027098.00	

DATE		SIGNATURE		P.E. NUMBER		DATE	
FEB 2024		T. WHITE					
DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED	
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FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	

PERKINS AND LAKE BRIDGES	
BLACK STREAM	
PENOBSCOT COUNTY	
LEVANT	
CROSS SECTIONS	

SHEET NUMBER	
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STATE OF MAINE
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BRIDGE NOS. 6133 & 3359 027098.00

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PERKINS AND LAKE BRIDGES
BLACK STREAM
LEVANT

PENOBSCOT COUNTY

CROSS SECTIONS

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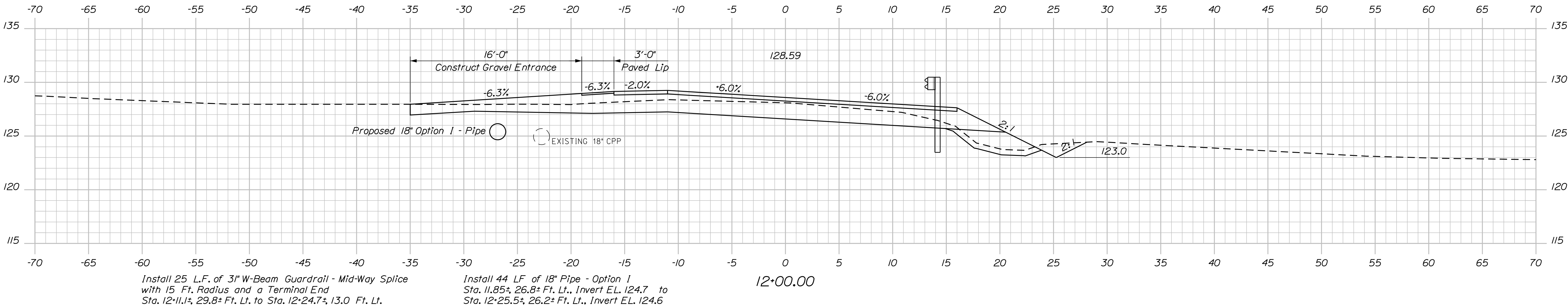
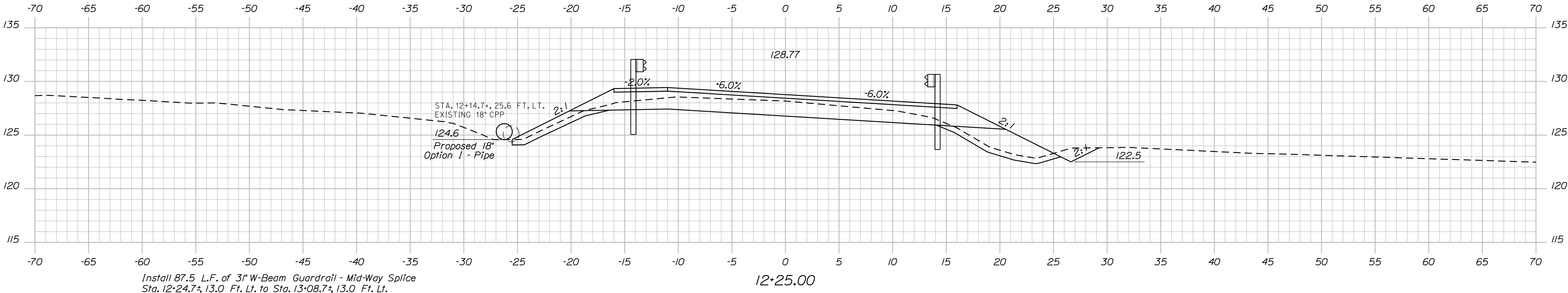
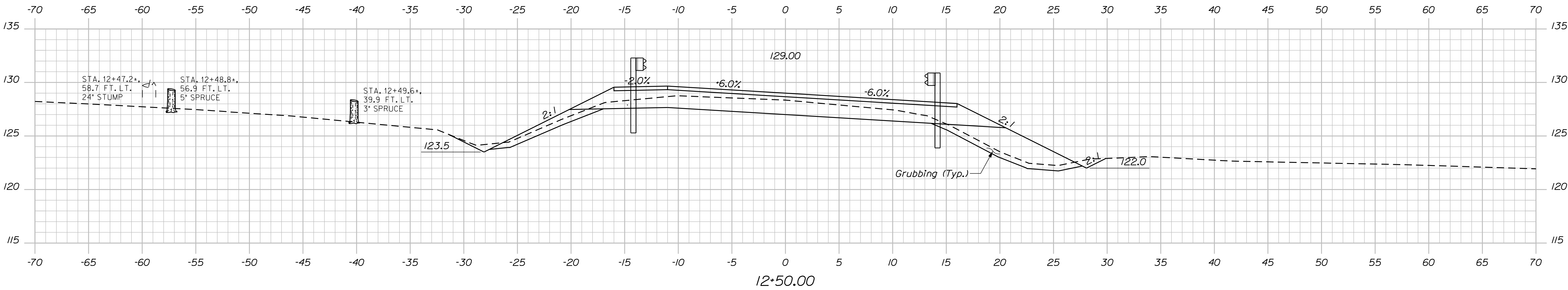
PROJ. MANAGER	J. STETSON	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
CHECKED-DETAILED	B. BARTLETT	D. SHAW	FEB 2024			
DESIGN-DETAILED	N. PIKAY	I. WHITE				
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Date:3/20/2024

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Division: BRIDGE

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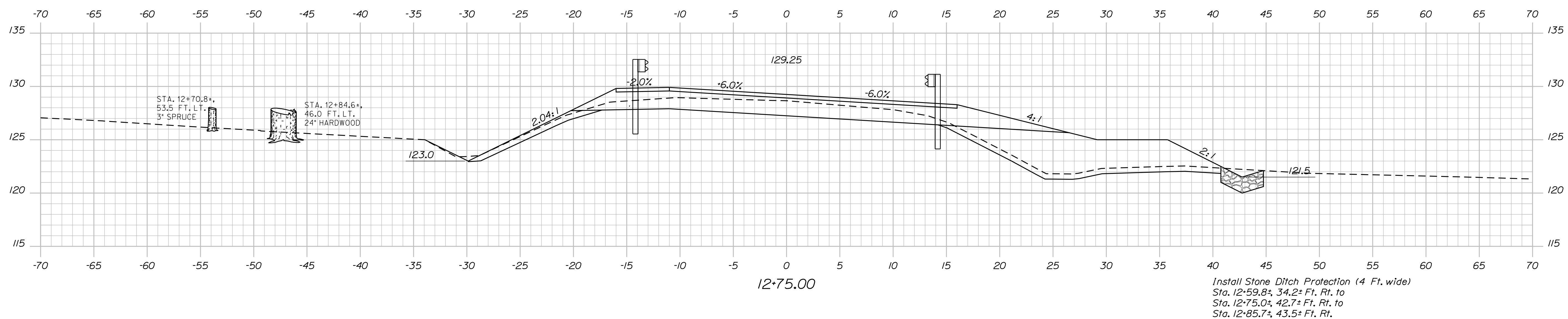
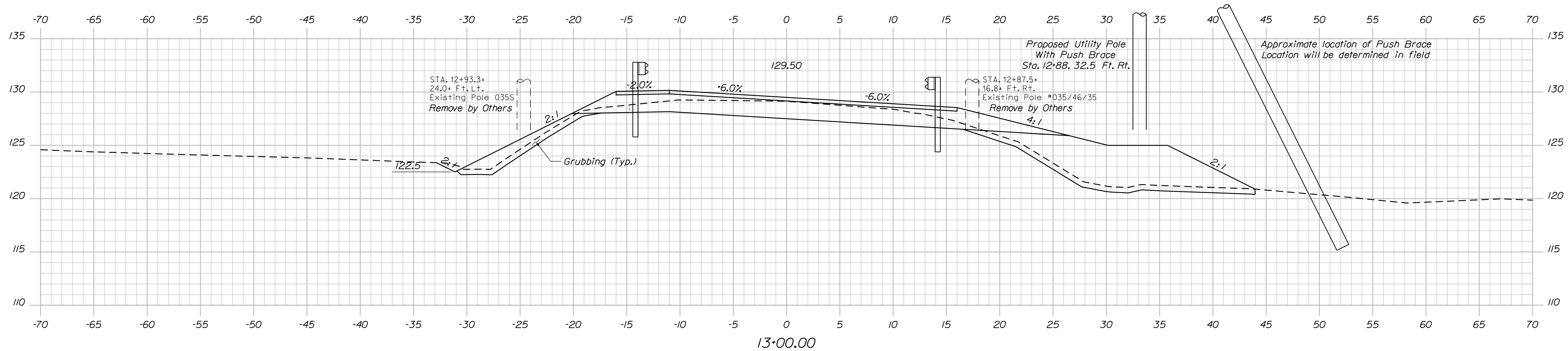
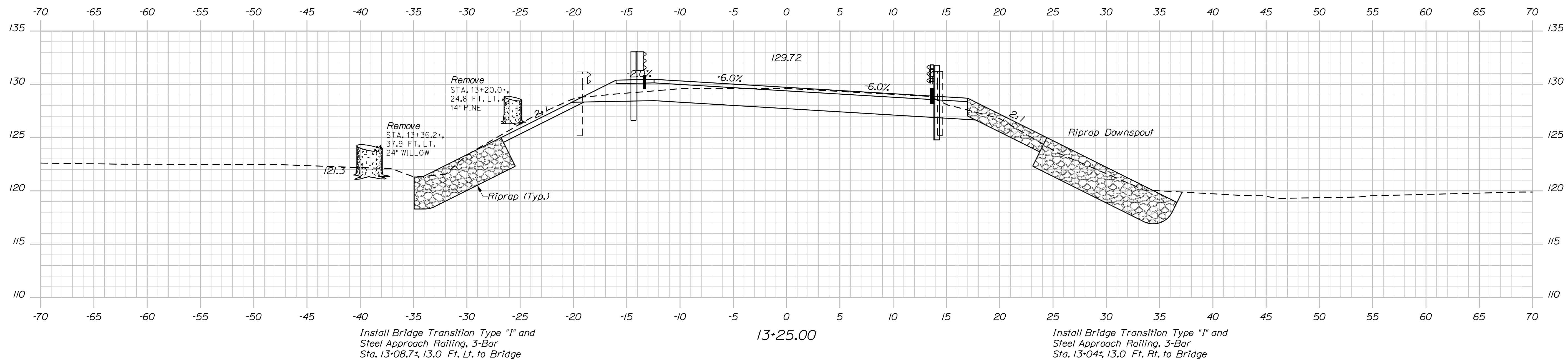
BRIDGE PLANS

SIGNATURE	FEB 2024	P.E. NUMBER	DATE

PROJ. MANAGER	J. STETSON	BY	D. SHAW	DATE	
CHECKED-REVIEWED	B. BARTLETT	DESIGNED	N. PIKAY		
DESIGNS-DETAILED		DESIGNS-DETAILED			
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REVISIONS 3		REVISIONS 4			
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PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT	PENOBSCOT COUNTY	CROSS SECTIONS

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OF 30

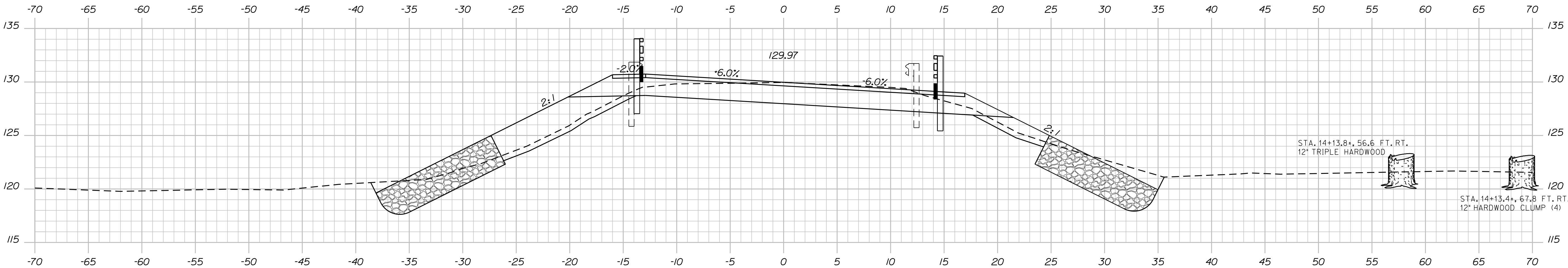
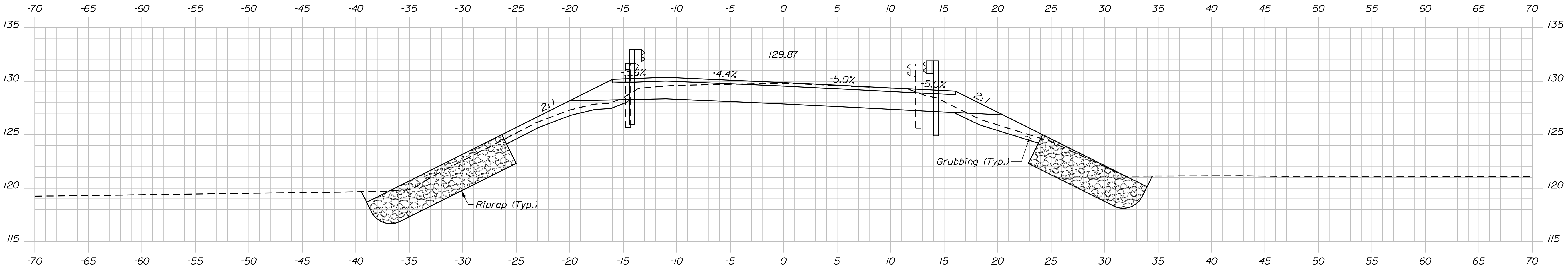
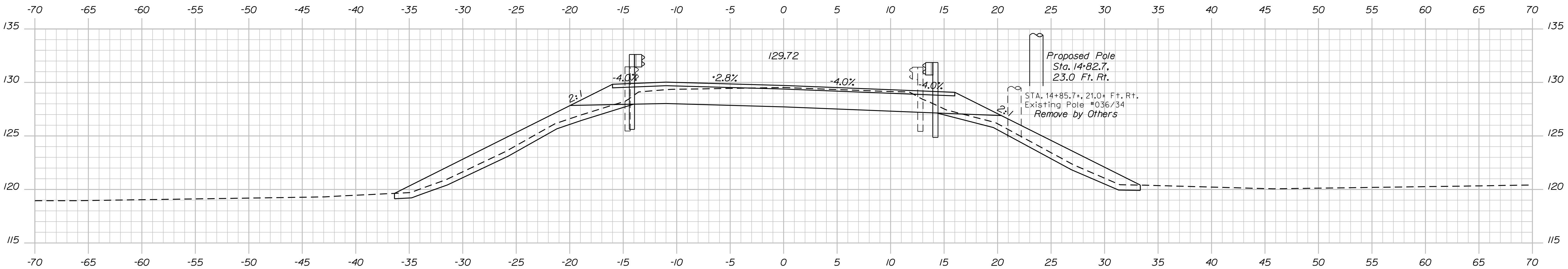


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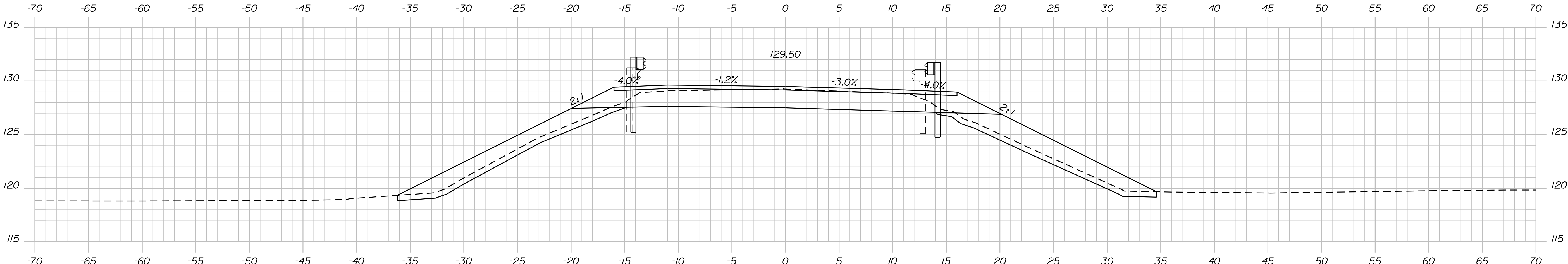
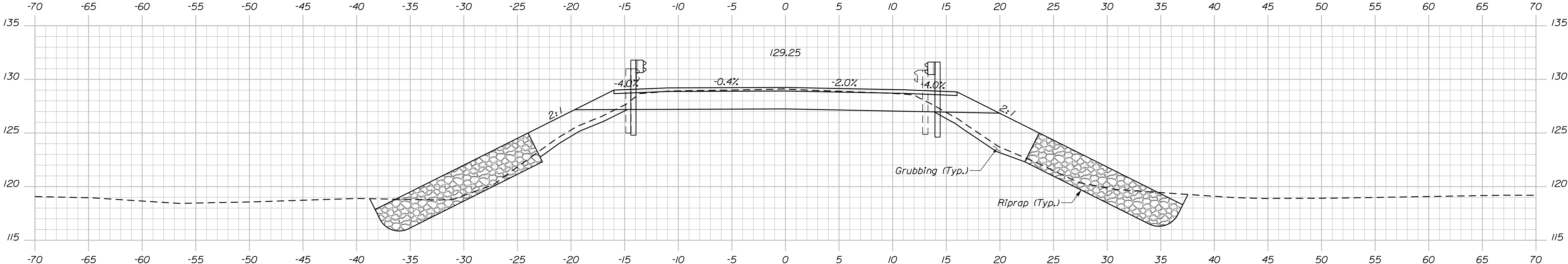
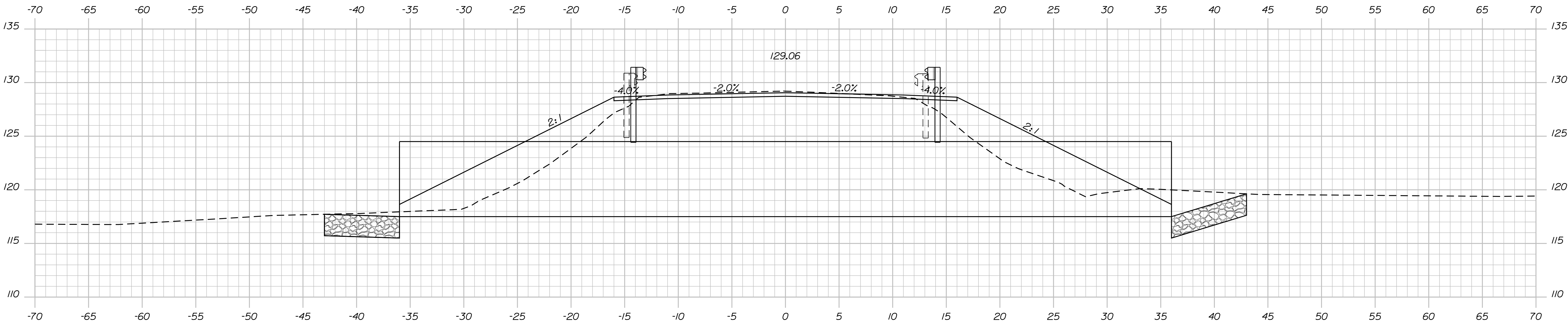


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2709800	
	WIN	027098.00
	BRIDGE NOS. 6133 & 3359	

PROJ. MANAGER J. STETSON	BY D. SHAW	DATE FEB 2024	SIGNATURE
			P.E. NUMBER
CHECKED-DETAILED B. BARTLETT	DESIGNED N. PIKAY	DATE FEB 2024	P.E. NUMBER
DESIGNED-DETAILED N. PIKAY			DATE
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT PENOBSCOT COUNTY	CROSS SECTIONS
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SHEET NUMBER
13
OF 30

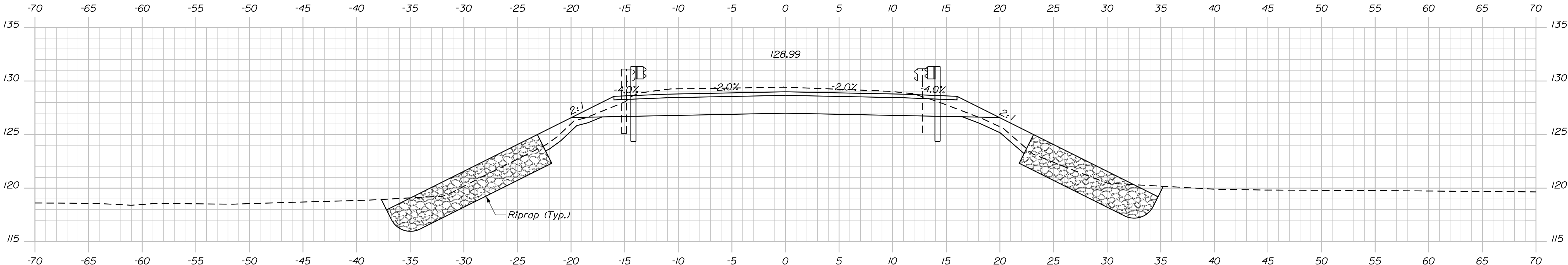
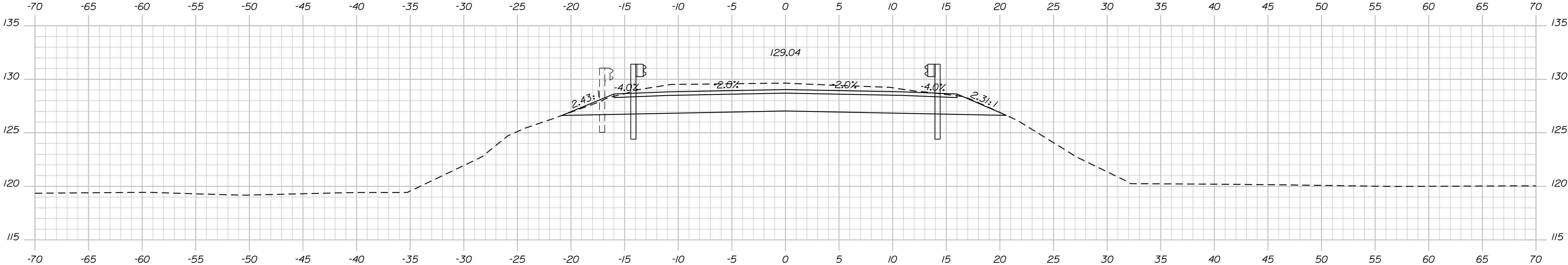
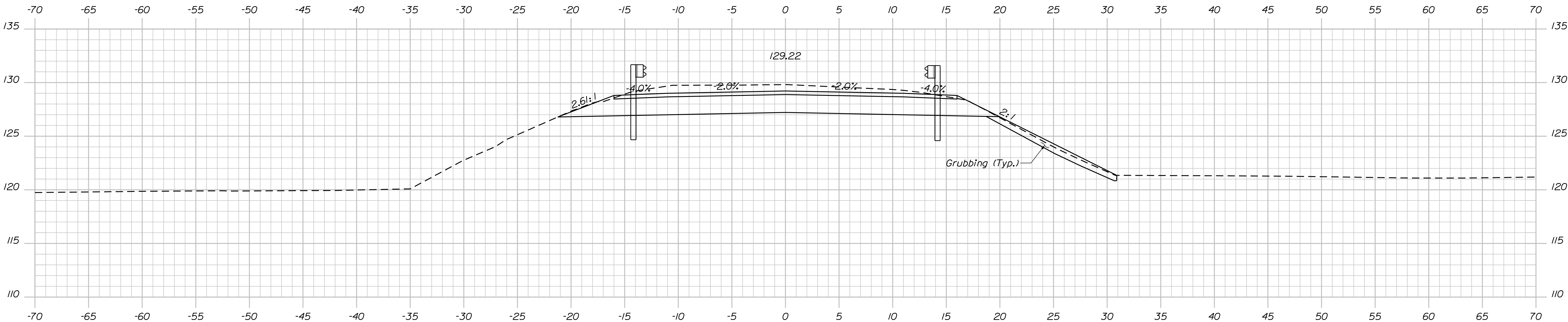


STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
2709800	
WIN	
BRIDGE NOS. 6133 & 3359 027098.00	

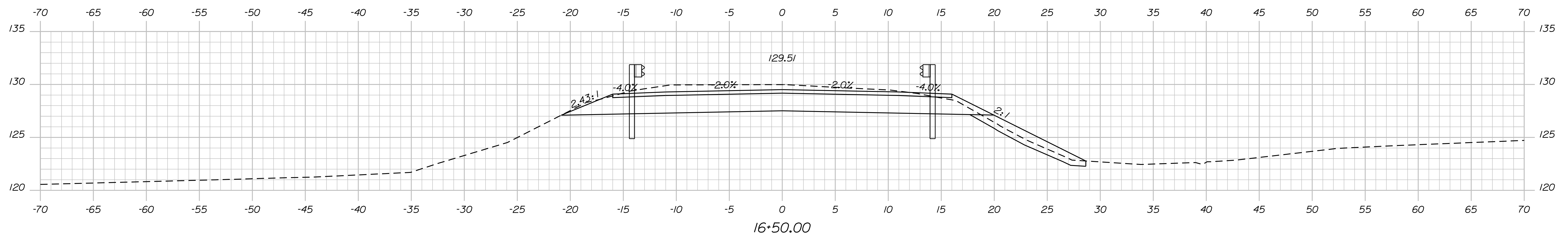
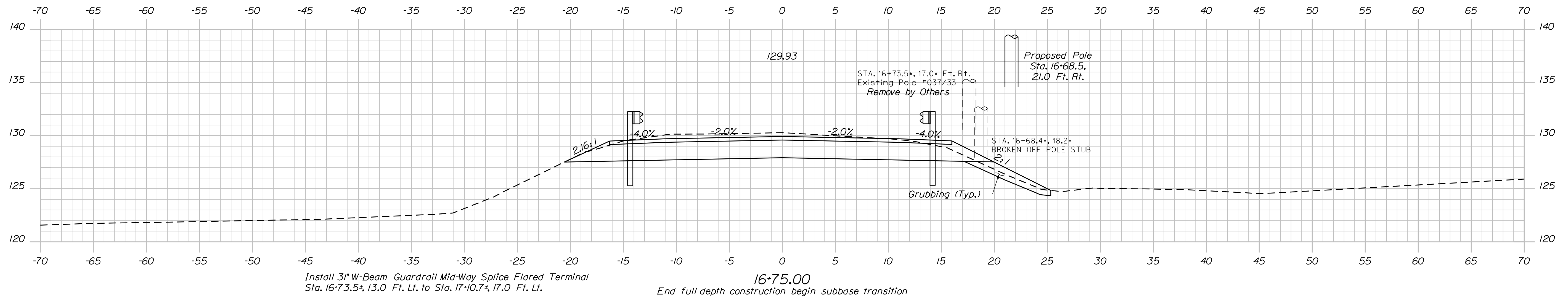
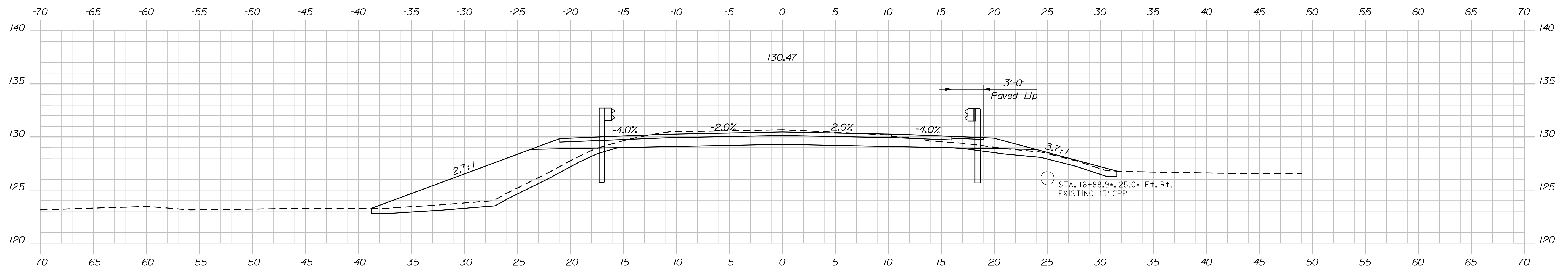
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DESIGN-DETAILED		B. BARTLETT	D. SHAW
CHECKED-REVIEWED		N. PIKAY	I. WHITE
DESIGN-DETAILED			FEB 2024
SIGNATURE			
P.E. NUMBER			
DATE			

PERKINS AND LAKE BRIDGES	
BLACK STREAM	
PENOBSCOT COUNTY	
LEVANT	
CROSS SECTIONS	

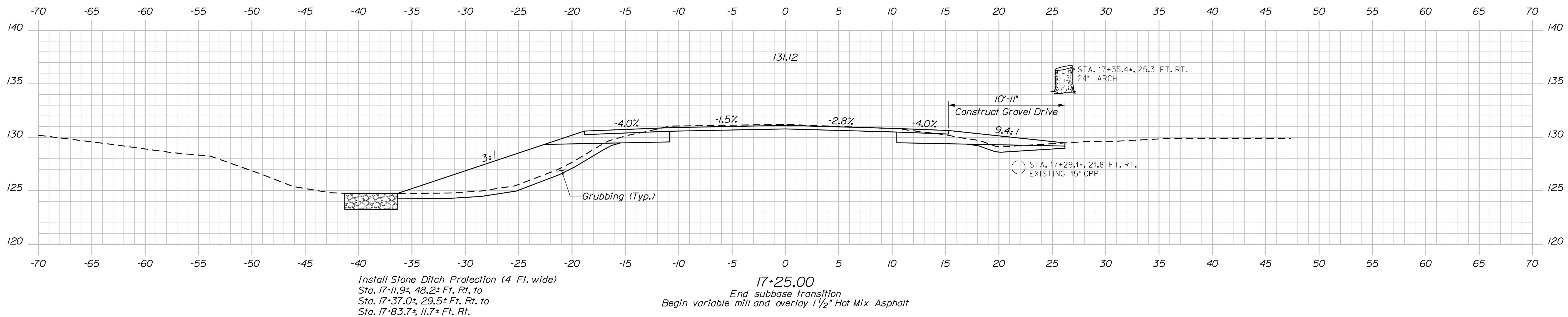
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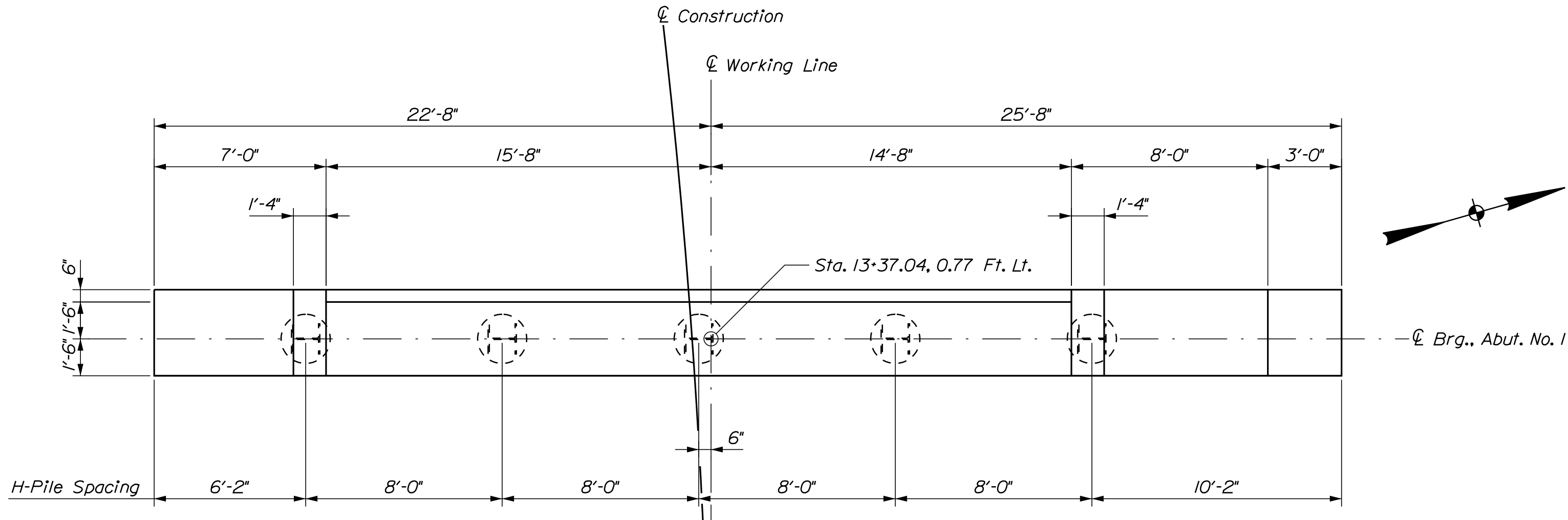
PROJ. MANAGER	J. STETSON	BY	DATE
CHECKED-REVIEWED	B. BARTLETT	D. SHAW	SIGNATURE
DESIGNED-DETAILED	N. PIKAY	I. WHITE	FEB 2024
REVISIONS 1			P.E. NUMBER
REVISIONS 2			DATE
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



DESIGN-DETAILED	B. BARTLETT	D. SHAW
CHECKED-REVIEWED		
DESIGN-DETAILED2	N.PIKAY	T.WHITTE
DESIGN-DETAILED3		
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SIGNATURE		
P.E. NUMBER		
DATE		

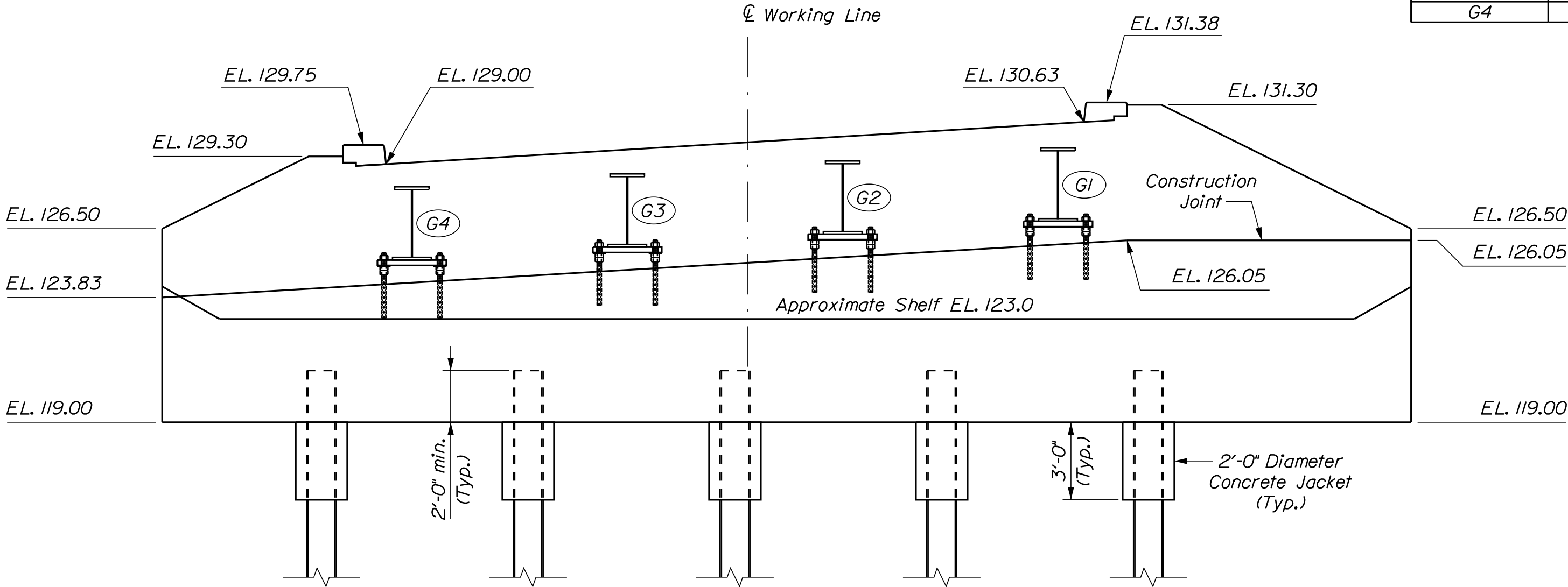


PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT	PROJ. MANAGER J. STETSON		BY D. SHAW	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2709800 WIN BRIDGE NOS. 6133 & 3359 027098.00 BRIDGE PLANS
	DESIGNED-DETAILED B. BARTLETT				
	CHECKED-REVIEWED			SIGNATURE	
	DESIGN2 DETAIL D2 N. PIKAY		FEB 2024		
	DESIGN3 DETAIL D3			P.E. NUMBER	
CROSS SECTIONS	REVISIONS 1				
	REVISIONS 2				
	REVISIONS 3				
	REVISIONS 4			DATE	
	FIELD CHANGES				



ABUTMENT NO. 1 PLAN

ABUTMENT NO. 1 BOTTOM OF GIRDER ELEVATIONS	
Girder	Elevation
G1	126.79
G2	126.29
G3	125.79
G4	125.29



ABUTMENT NO. 1 ELEVATION

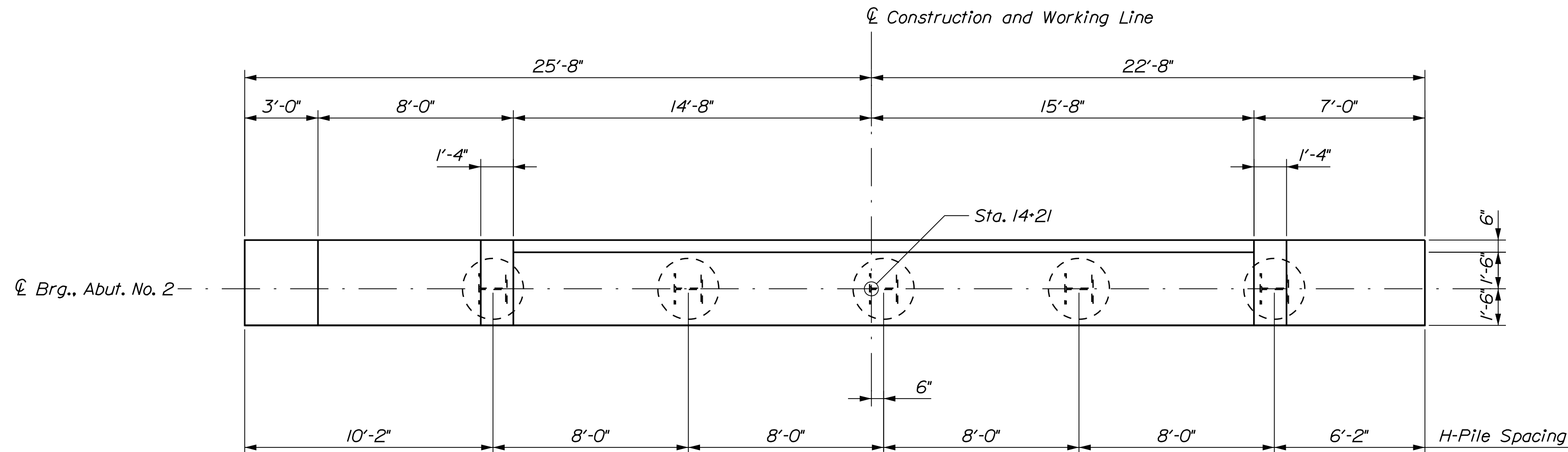
ABUTMENT NOTES

1. Abutments, wingwalls, and their footings shall be backfilled with Granular Borrow, meeting the requirements of Material for Underwater Backfill. Pay limits will be the structural excavation limits in cut areas and a vertical plane located 10 feet behind the walls in fill areas.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Place drains with a 4-inch diameter in the breastwall and wingwalls at 10 feet maximum spacing. The exact location will be determined by the Resident.
4. Cover joints where waterstops are not required in accordance with Standard Details Section 502.
5. Payment for the concrete jackets around the tops of the H-piles will not be paid for directly but will be considered incidental to Pay Item 502.219 Structural Concrete Abutments and Retaining Walls. Fill Concrete may be used for the concrete jackets.
6. Install Drainage Geocomposite behind the abutments and wingwalls up to the approach slab seat elevation in accordance with Special Provision Section 620, Drainage Geocomposite.
7. Payment for installation of the girder support assemblies at the abutments will be considered incidental to related Contract Items.

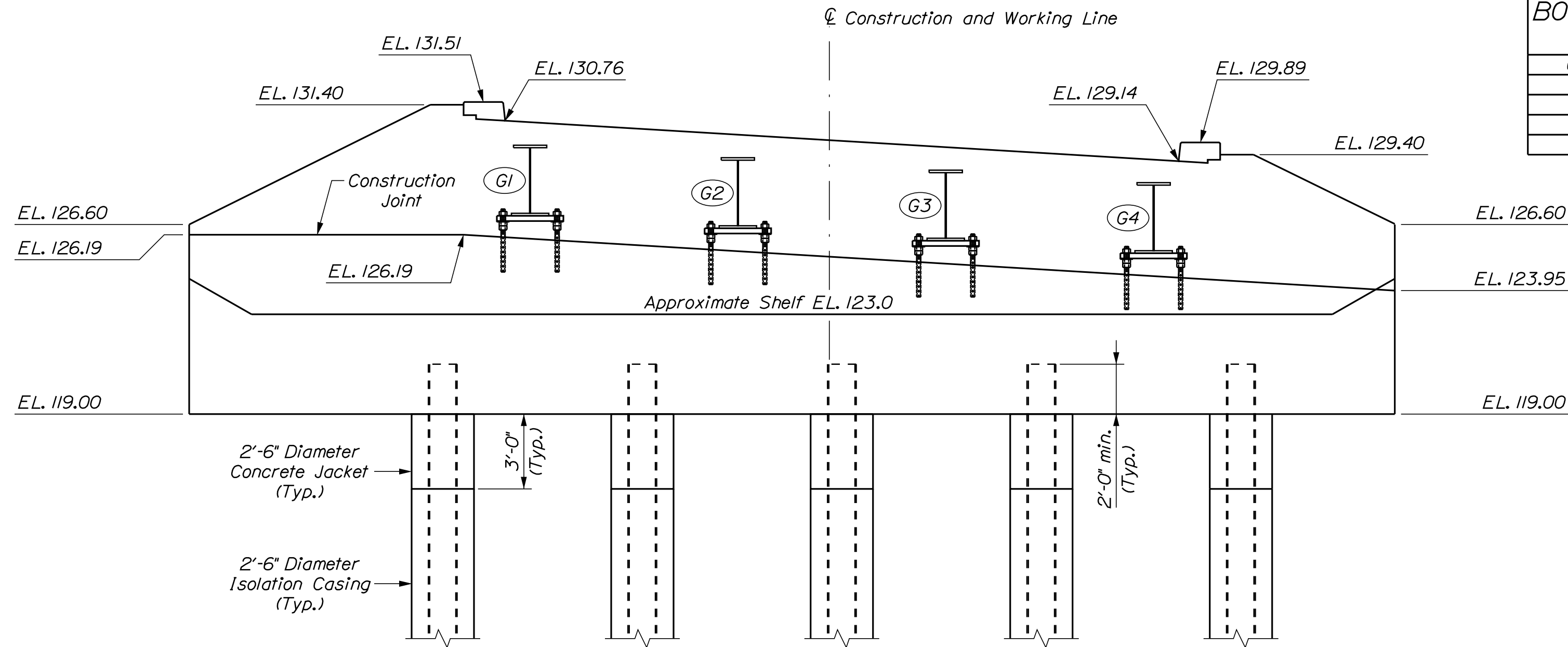
PILE NOTES

1. The maximum factored pile load is 263 kips at the Strength Limit State.
2. Piles shall be driven to the required nominal resistance on or within bedrock in accordance with Standard Specification Section 501.
3. Estimate of piles required:
 Abutment No. 1: 5 ~ HP 14x89 @ 58 feet
 Abutment No. 2: 5 ~ HP 14x89 @ 43 feet
4. H-pile material shall be ASTM A572, Grade 50.
5. All piles shall be equipped with a pile tip in accordance with Standard Specifications Subsections 501.048, Prefabricated Pile Tips and 711.10 H-Beam Piles, Spliced and Tips.
6. Piles shall not be out of position shown by more than 2 inches in any direction.
7. The Contractor shall perform and submit a wave equation analysis for review and acceptance by the Resident. The maximum allowable driving stress is 0.90 times F_y. The submittal analyses shall include the proposed stopping criteria based on the wave equation analysis and the proposed driving system.
8. The Contractor shall perform 2 dynamic load test(s) with 24-hour (minimum) restrike tests to confirm the nominal resistance of the piles. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.65 per LRFD Specifications. The dynamic test shall be performed on the first production pile driven at each abutment.
9. Piles at Abutment No. 2 shall be driven within an isolation casing. Isolation casings shall be in accordance with Special Provision Section 501, Foundation Piles (Pile Casings).
10. The annular space within the isolation casing shall be filled with cushion sand following final pile driving. Payment shall be incidental to the related Contract Items.
11. The isolation casing shall be placed immediately following the completion of preaugering at each pile location.
12. Pile driving shall not be performed within 25 feet of a preaugered hole without an isolation casing installed.

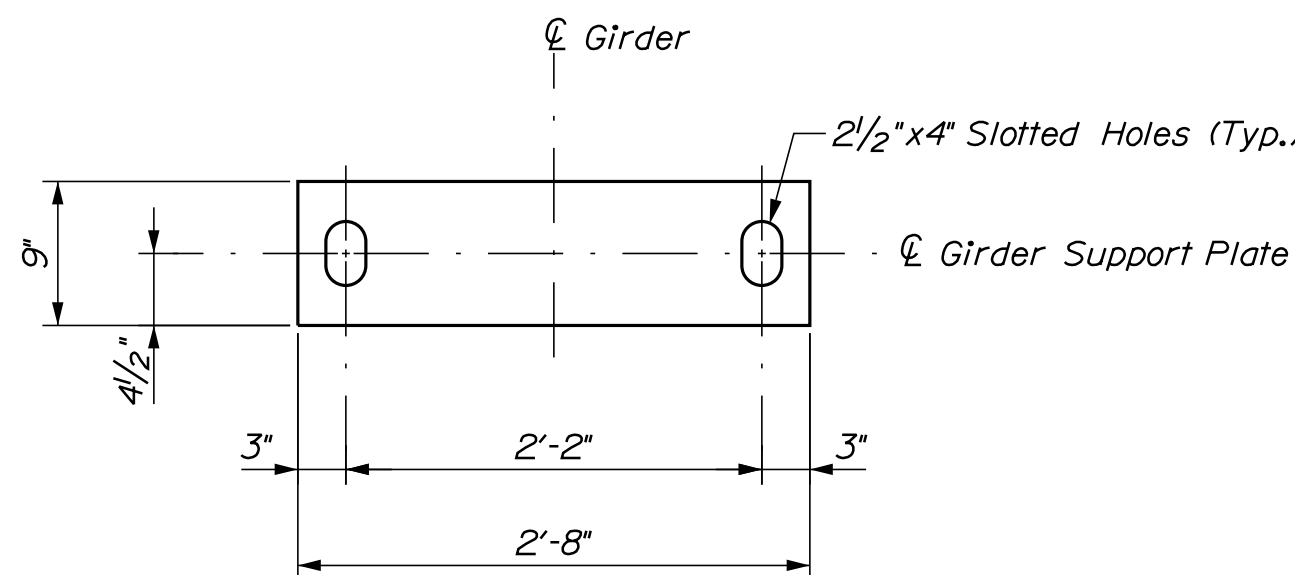
PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2709800		WIN 027098.00		BRIDGE NOS. 6133 & 3359 027098.00		BRIDGE PLANS	
	PROJECT MANAGER J. STETSON		BY D. SHAW		DATE FEB. 2024		SIGNATURE T. WHITE		P.E. NUMBER DATE	
	CHECKED-REVIEWED B. BARTLETT		DESIGNED-DETAILED N. PIKAY		REVISIONS 1 2 3 4		FIELD CHANGES		SHEET NUMBER 18	



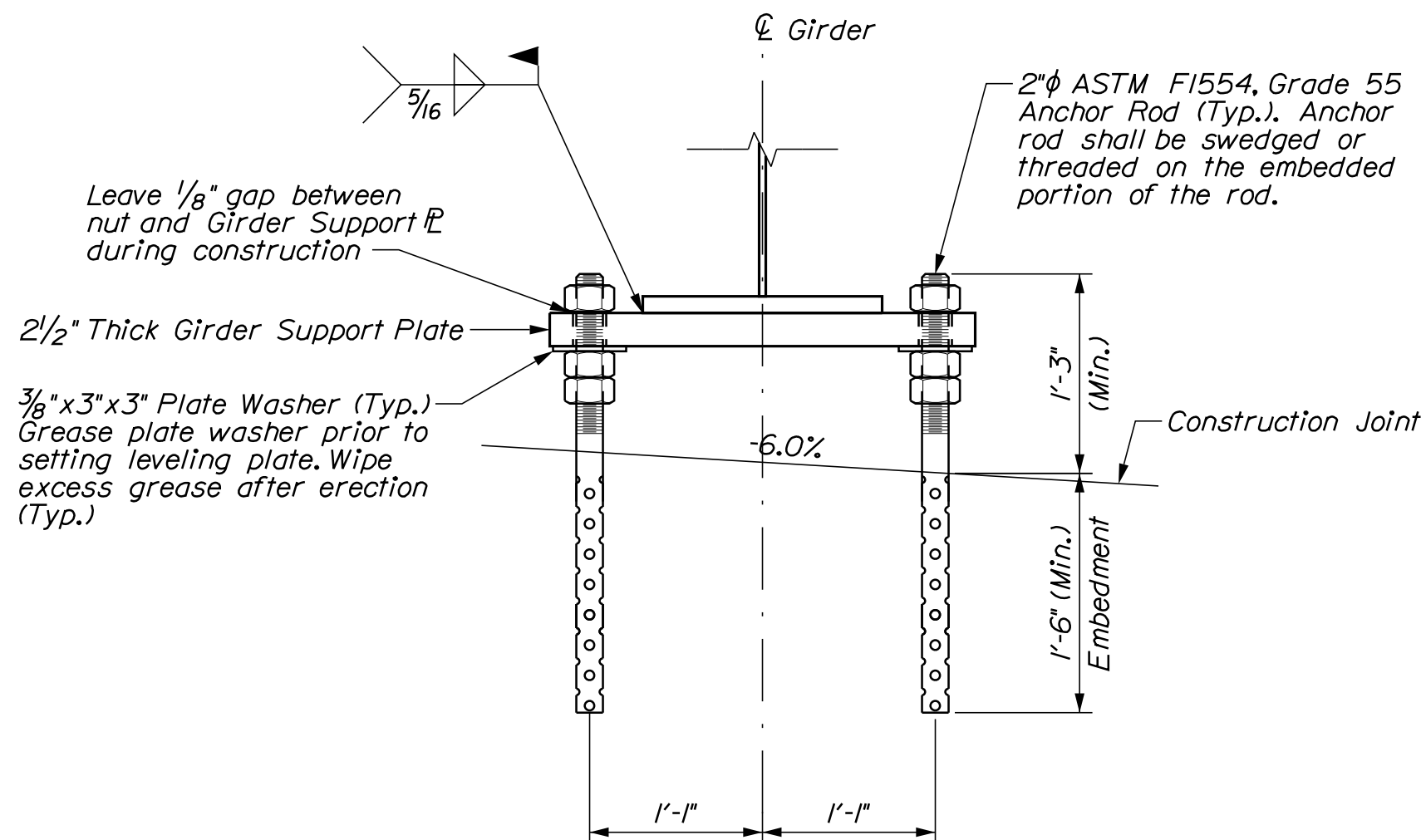
ABUTMENT NO. 2 PLAN



ABUTMENT NO. 2 ELEVATION



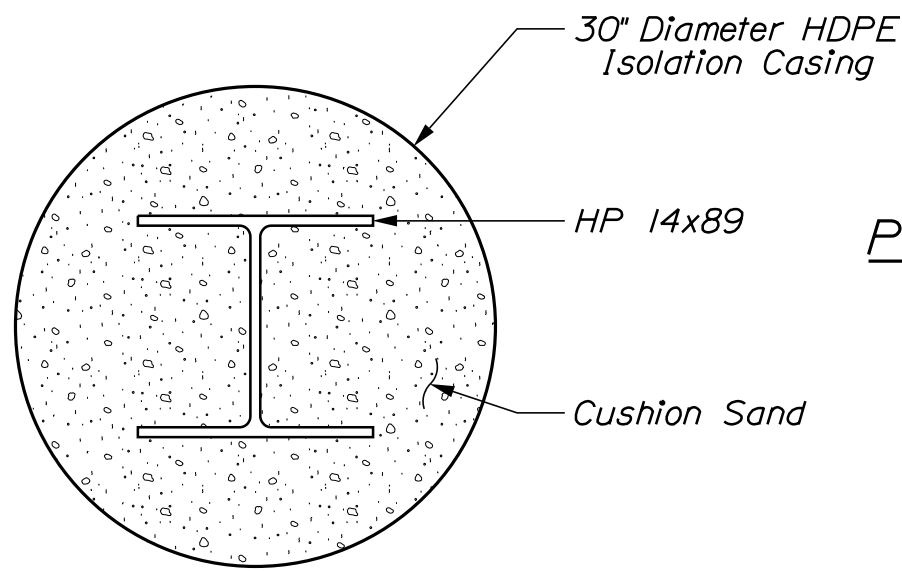
GIRDER SUPPORT PLATE



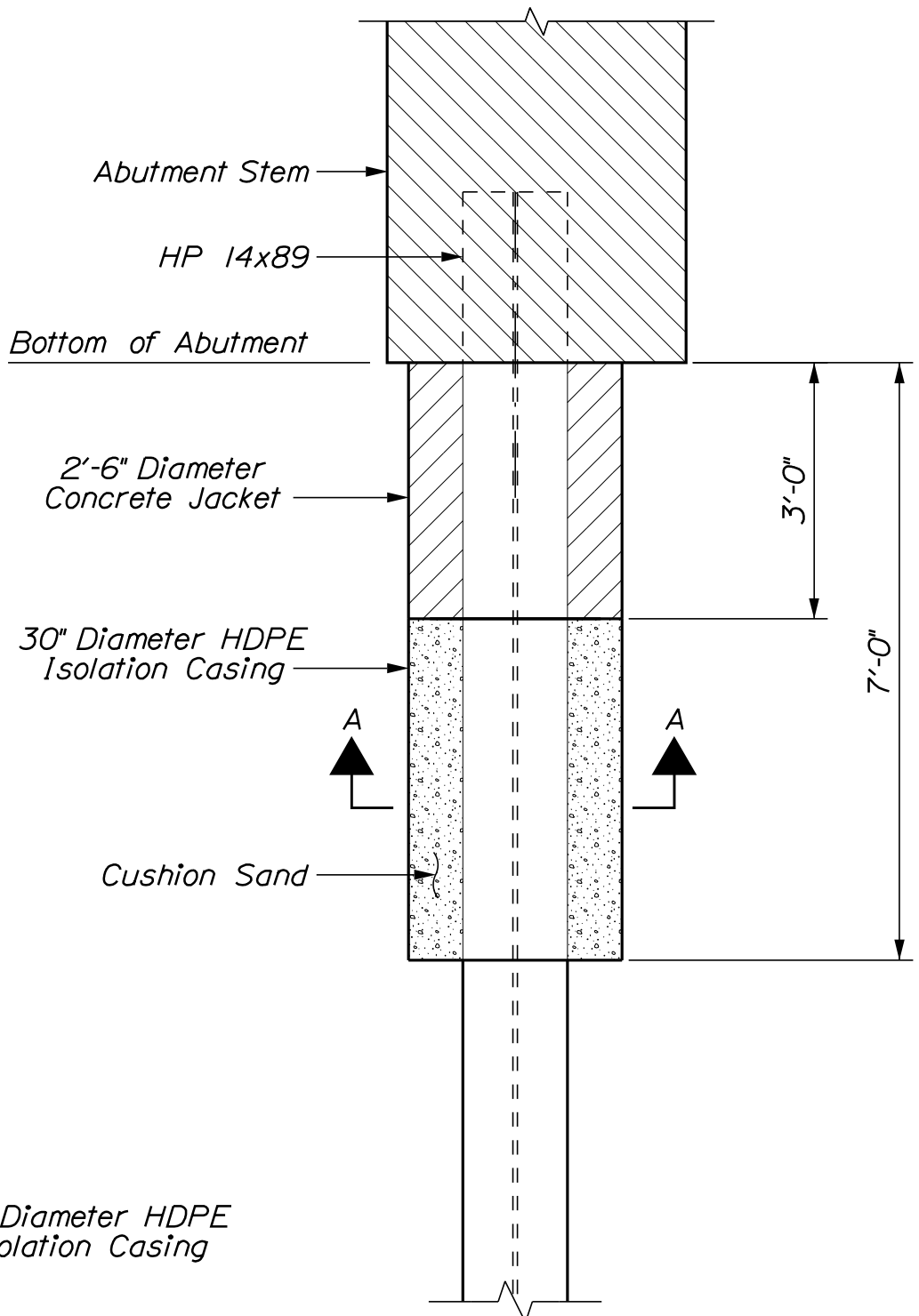
GIRDER SUPPORT DETAIL

Girder Supports to be provided by Department

ABUTMENT NO. 2 BOTTOM OF GIRDER ELEVATIONS	
Girder	Elevation
G1	126.95
G2	126.45
G3	125.95
G4	125.45



SECTION A-A



PILE AND CASING DETAIL

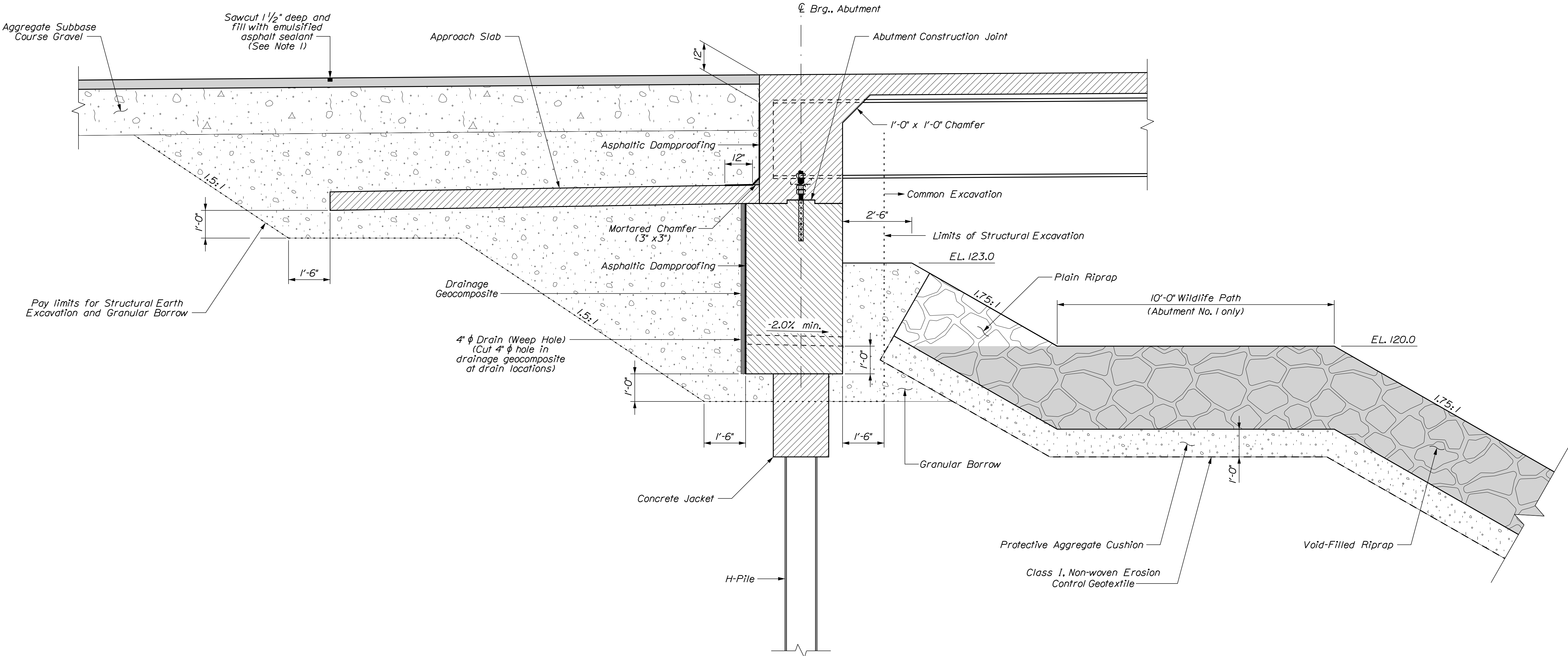
PILE INSTALLATION SEQUENCE:

1. Preauger to minimum isolation casing elevation. Contractor may submit alternative method for approval by the Department.
2. Place isolation casing.
3. Set pile in casing. At the Contractor's option pile may be lightly driven prior to final pile driving.
4. Conduct final pile driving to achieve design capacity.
5. Backfill isolation casing with cushion sand.

CUSHION SAND NOTES:

1. Cushion sand shall consist of clean, hard, durable, uncoated particles, free from lumps of clay and all deleterious substances.

PROJ. MANAGER	DESIGNED	CHECKED	REVIEWED	DATE
J. STETSON	B. BARTLETT	D. SHAW	T. WHITE	FEB 2024
DESIGNED	CHECKED	REVIEWED	DATE	SIGNATURE
J. STETSON	B. BARTLETT	D. SHAW	T. WHITE	FEB 2024
DESIGNED	CHECKED	REVIEWED	DATE	P.E. NUMBER
J. STETSON	B. BARTLETT	D. SHAW	T. WHITE	FEB 2024
DESIGNED	CHECKED	REVIEWED	DATE	DATE
J. STETSON	B. BARTLETT	D. SHAW	T. WHITE	FEB 2024

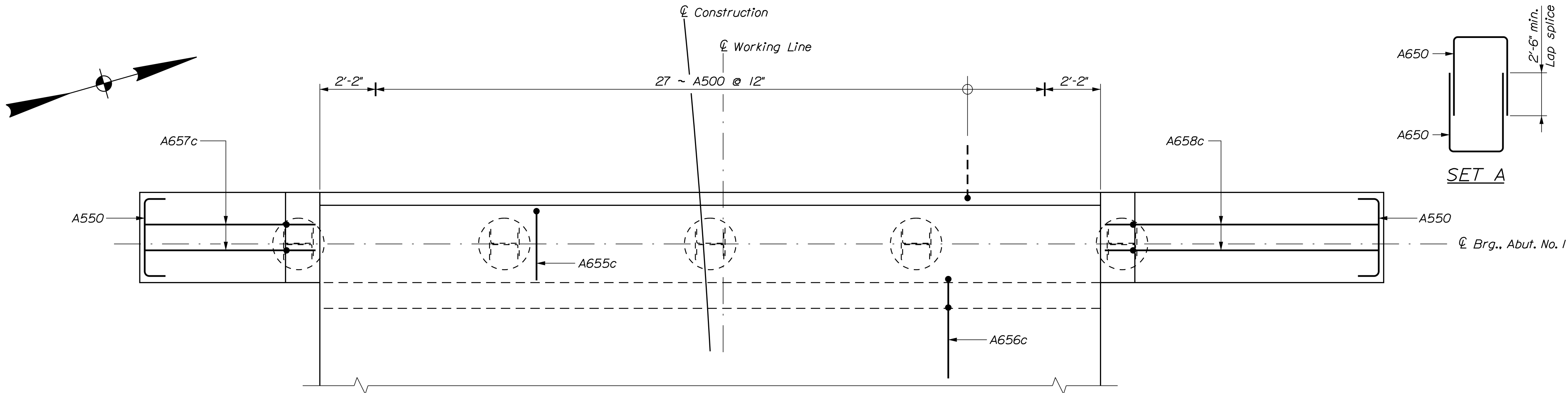


ABUTMENT BACKFILL DETAIL

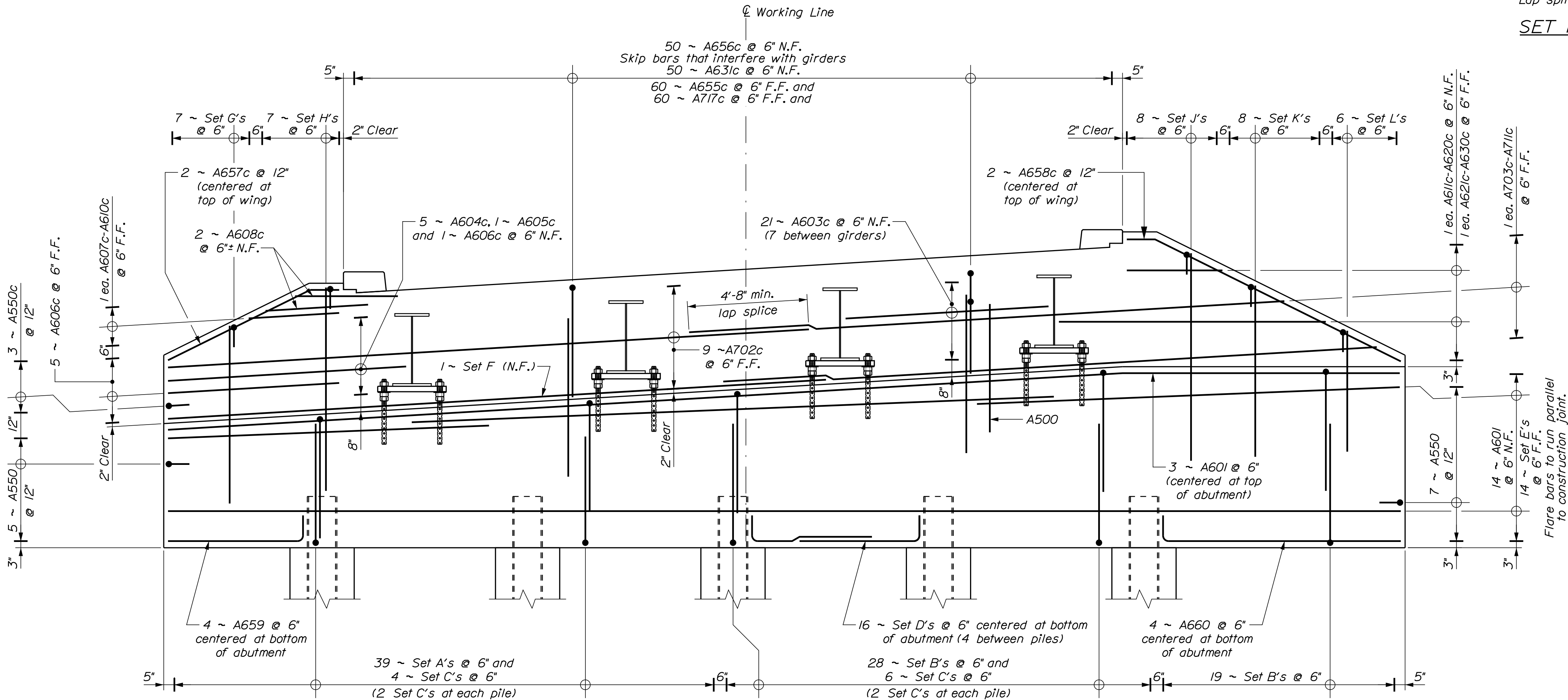
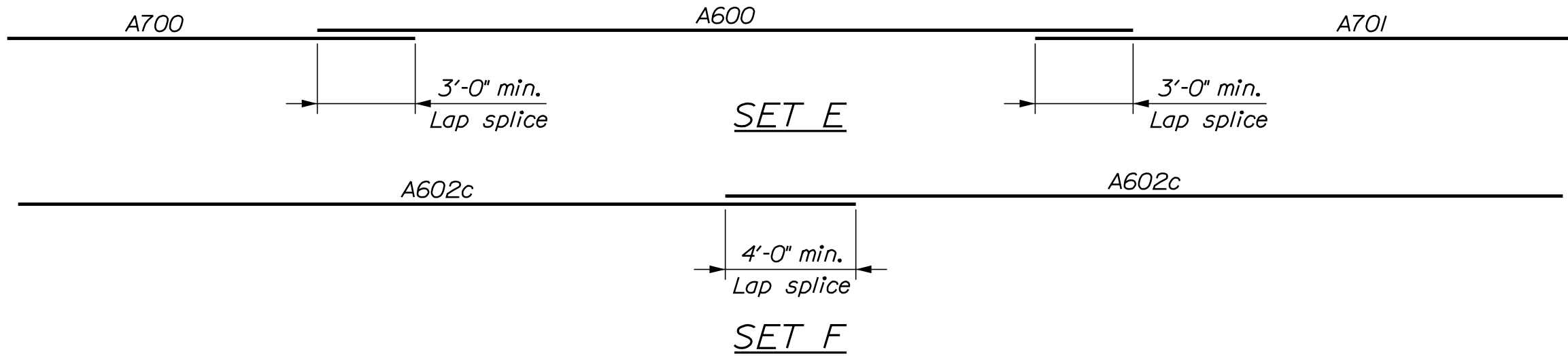
NOTES:

1. Transverse sawcuts in the pavement at the ends of approach slabs shall be sealed with emulsified asphalt sealing compound conforming to Specification 702.12. The sawcut and emulsified asphalt sealing shall not be paid for directly, but considered incidental to related Contract Items.
2. Payment for mortared chamfer at approach slabs shall not be paid for directly, but shall be considered incidental to related Contract Items.
3. Asphalt Dampproofing shall meet the requirements of either ASTM D449 Type II, ASTM D1227 Type II-Class 1, or ASTM D1227 Type III-Class 1. The product shall be applied in accordance with the manufacturer's recommendations.
4. Asphalt Dampproofing shall be applied to the backside of the wingwalls up to 1 foot below grade.
5. Payment for Asphalt Dampproofing will not be made directly, but will be considered incidental to related Contract Items.

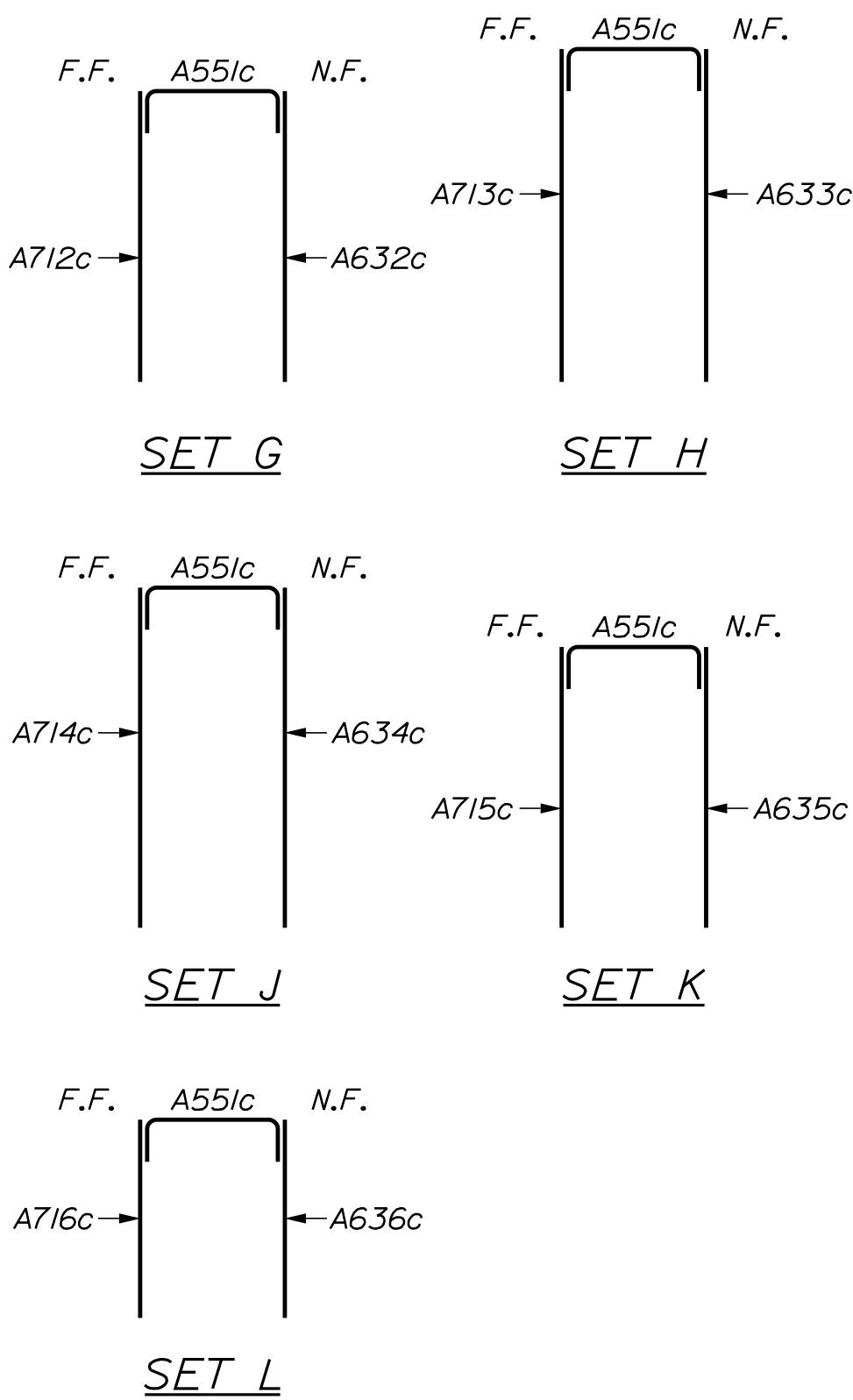
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
PERKINS AND LAKE BRIDGES		2709800	
BLACK STREAM		WIN	
LEVANT		BRIDGE NOS. 6133 & 3359 027098.00	
PENOBSCOT COUNTY		BRIDGE PLANS	
ABUTMENT DETAILS		SHEET NUMBER	
		20	
		OF 30	



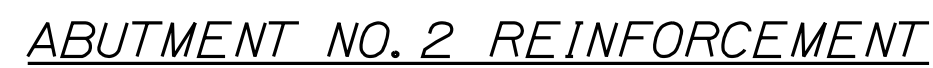
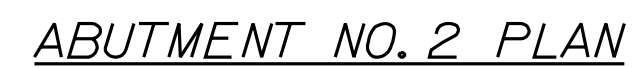
ABUTMENT NO. 1 PLAN



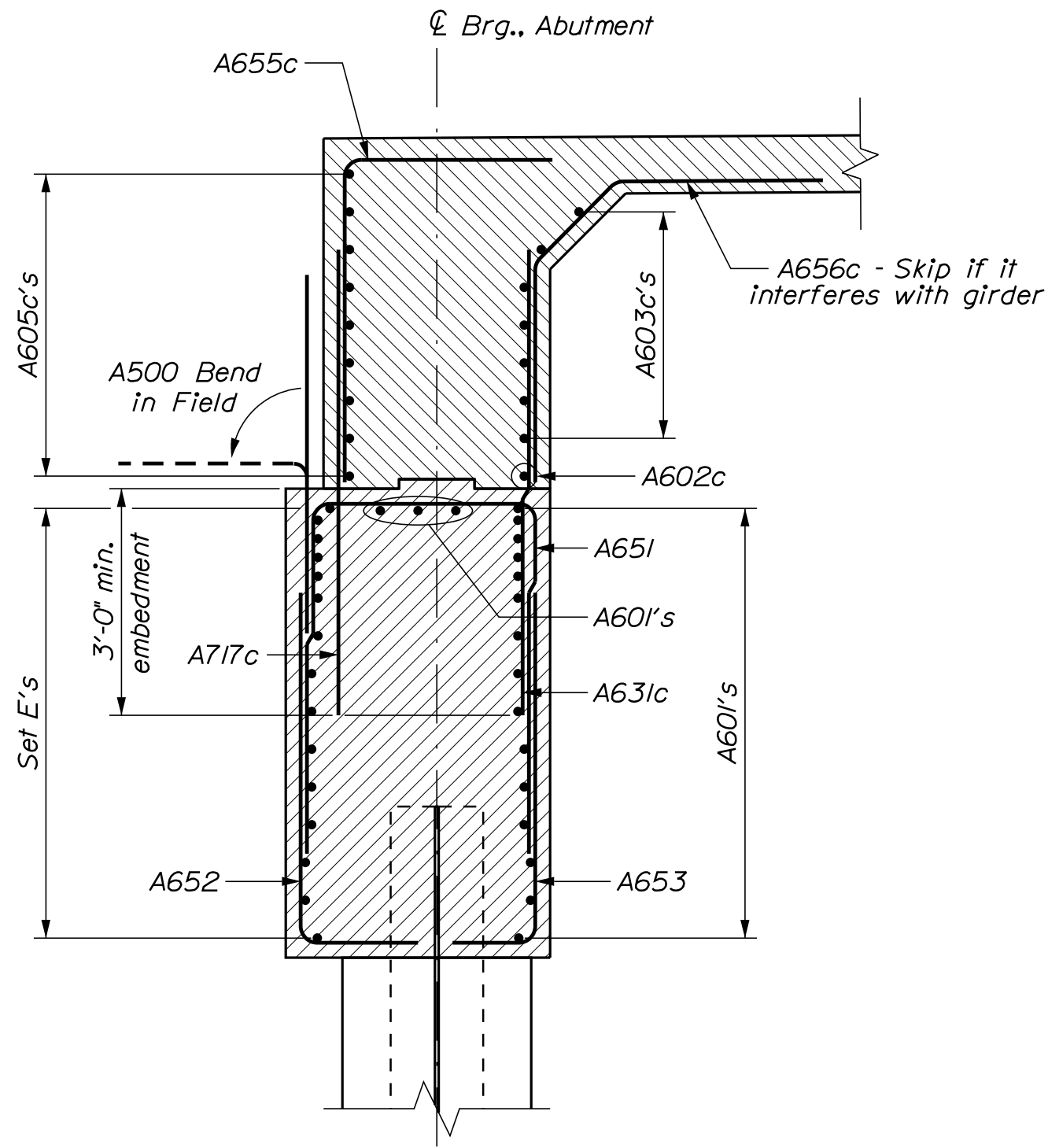
ABUTMENT NO. 1 REINFORCEMENT



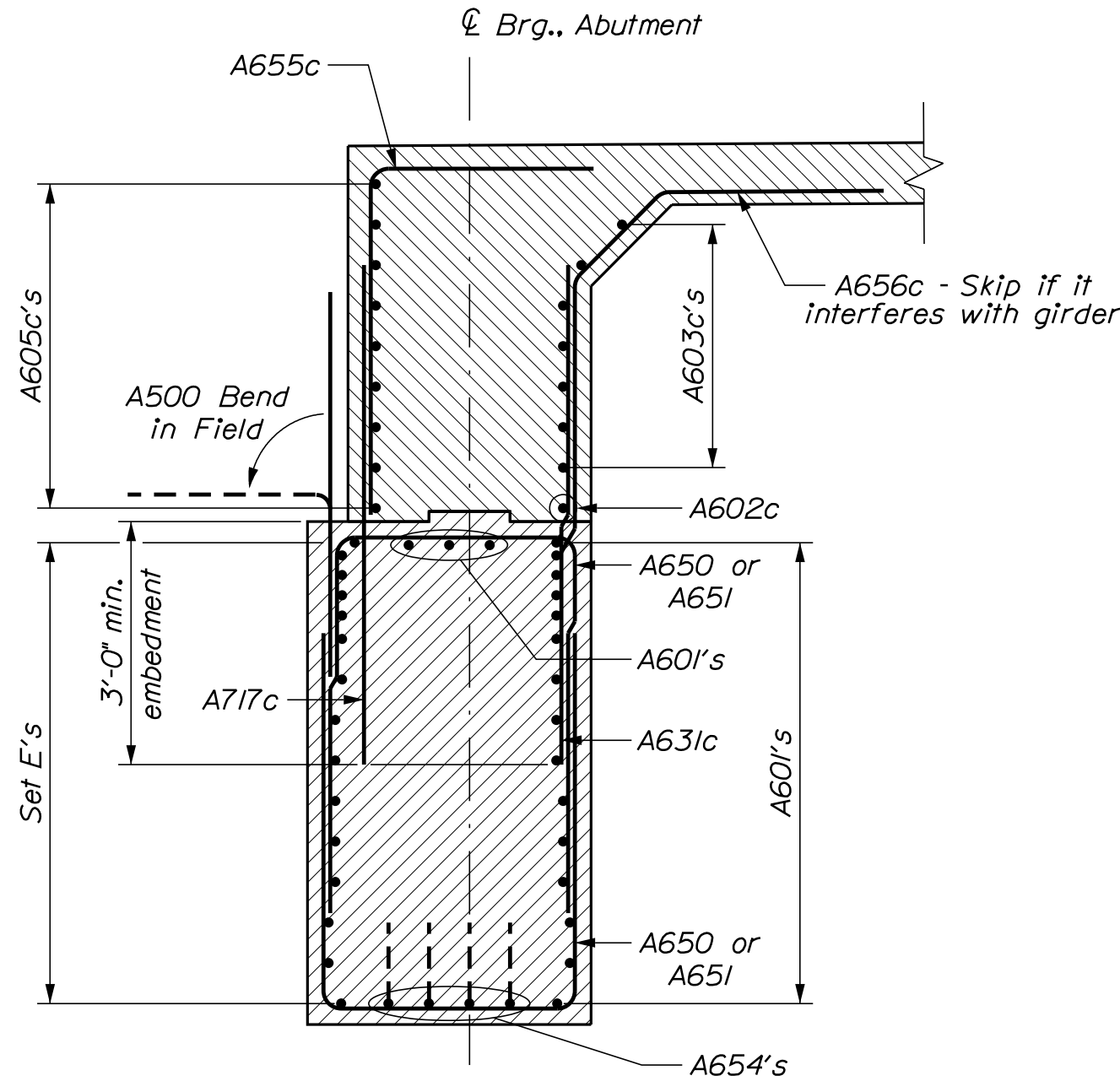
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2709800		BRIDGE NOS. 6133 & 3359 027098.00	
	WIN		027098.00	
	BRIDGE PLANS			
PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT PENOBSCOT COUNTY ABUTMENT NO. 1 REINFORCEMENT	PROJ. MANAGER	J. STETSON	BY	D. SHAW
	CHECKED-REVIEWED	L.B. BARTLETT	DATE	FEB 2024
	DESIGNED-DETAILED	N. PIKAY	SIGNATURE	
	REVISIONS 1		P.E. NUMBER	
	REVISIONS 2		DATE	
SHEET NUMBER		21		
		OF 30		



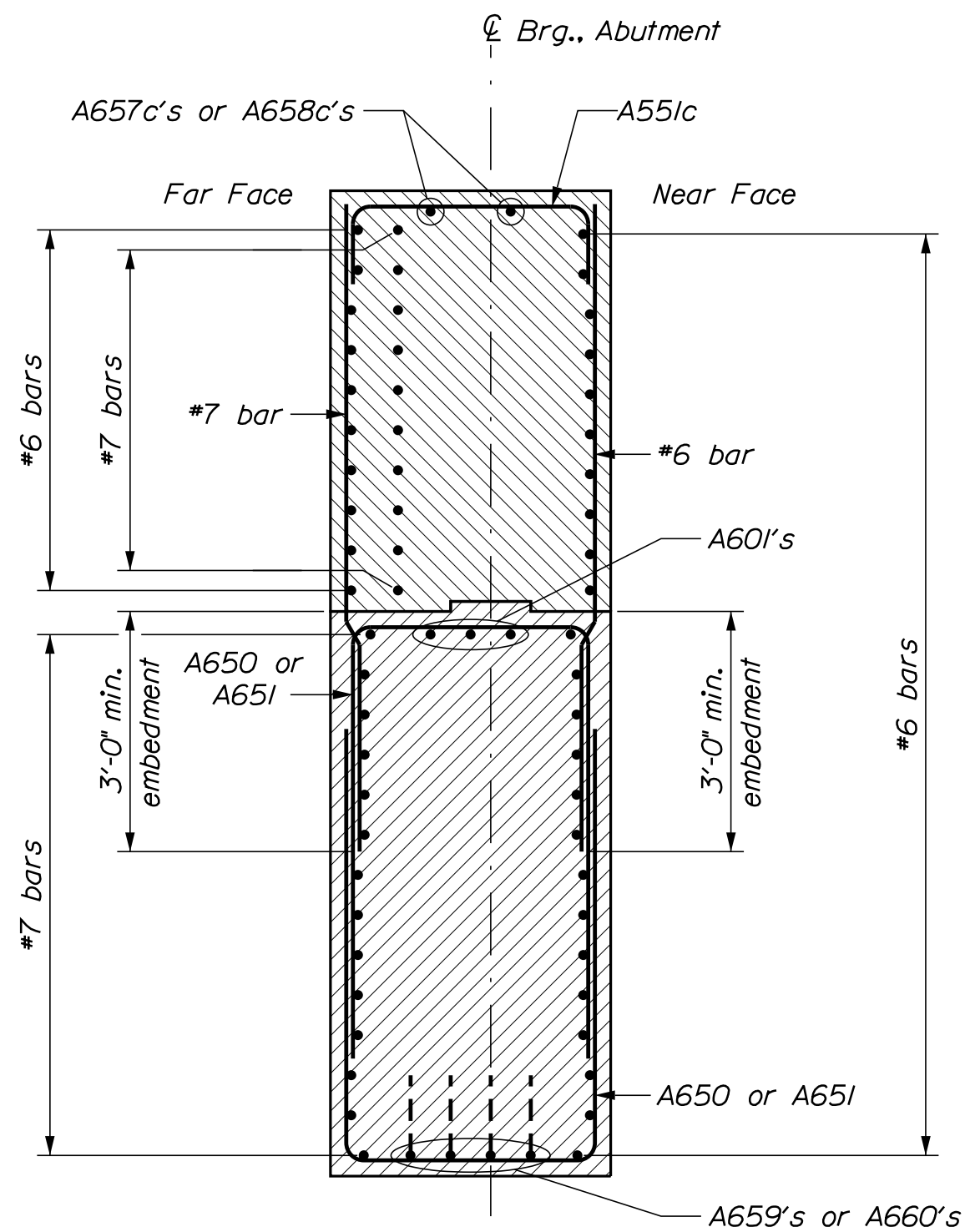
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22 OF 30			CHECKED-REVIEWED DESIGN2-Detailed02 DESIGN3-Detailed03	T. WHITE	P.E. NUMBER	2709800
		ABUTMENT NO. 2 REINFORCEMENT	REVISED 1 REVISED 2 REVISED 3 REVISED 4 FIELD CHANGES		DATE	WIN BRIDGE NOS. 6133 & 3359 027098.00 BRIDGE PLANS



ABUTMENT SECTION AT PILE
 Abutment No. 1 Rebar shown,
 Abutment No. 2 rebar similar

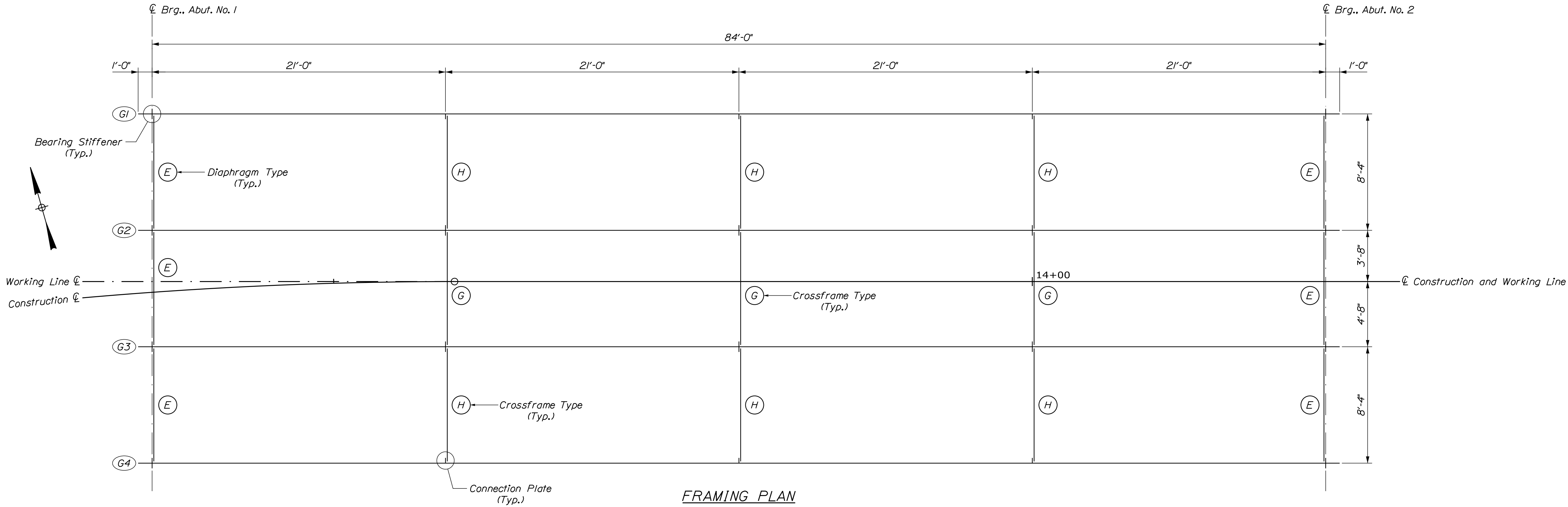


ABUTMENT SECTION BETWEEN PILES
 Deck reinforcement not shown for clarity
 Abutment No. 1 Rebar shown,
 Abutment No. 2 rebar similar

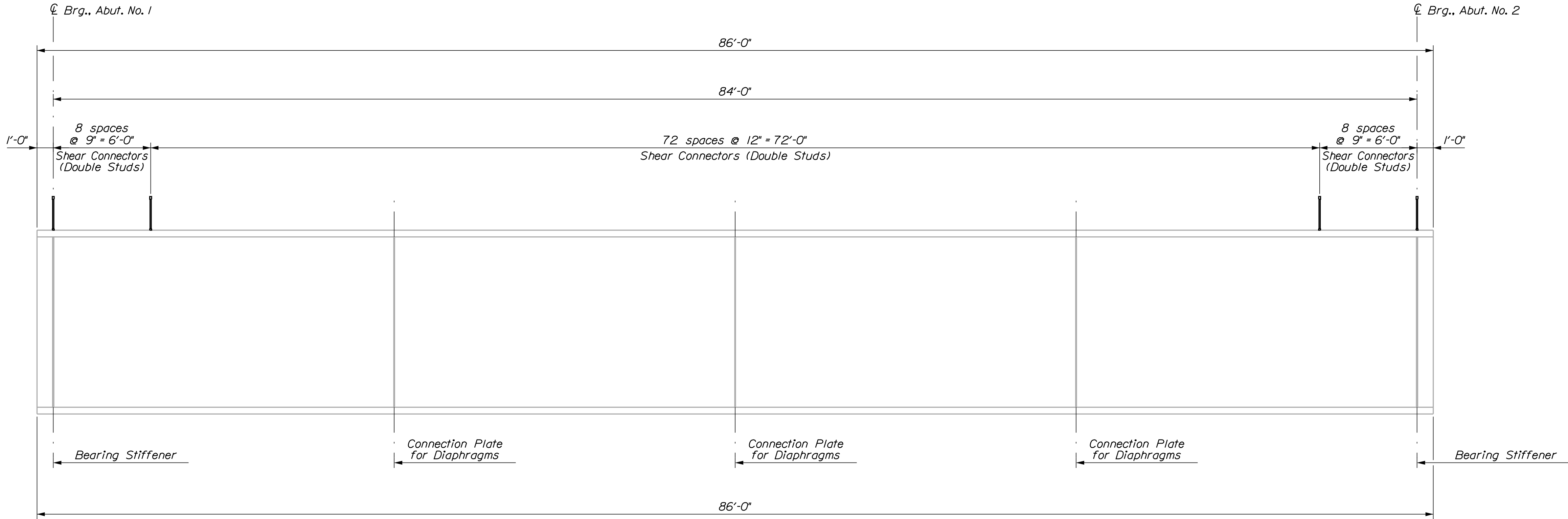


WINGWALL SECTION
 Abutment No. 1 Rebar shown,
 Abutment No. 2 rebar similar

PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT		STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
		2709800	
		WIN BRIDGE NOS. 6133 & 3359 027098.00	
PENOBSCOT COUNTY ABUTMENT SECTIONS		SIGNATURE	
		P.E. NUMBER	
		DATE	
		REVISIONS 1	
		REVISIONS 2	
SHEET NUMBER 23 OF 30		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	
		BRIDGE PLANS	



FRAMING PLAN



BOTTOM OF SLAB ELEVATIONS

Girder	CL Abut. No. 1	10 ft	20 ft	30 ft	40 ft	50 ft	60 ft	70 ft	80 ft	CL Abut. No. 2
1	129.82	129.92	130.01	130.10	130.13	130.15	130.12	130.07	129.99	129.95
2	129.32	129.43	129.54	129.63	129.67	129.68	129.65	129.59	129.50	129.45
3	128.82	128.93	129.04	129.13	129.17	129.18	129.15	129.09	129.00	128.95
4	128.32	128.42	128.51	128.60	128.63	128.65	128.62	128.57	128.49	128.45

GIRDER ELEVATION

(178 Studs Per Girder)
See Framing Plan for Connection Plate Layout
Steel girders to be supplied by Department

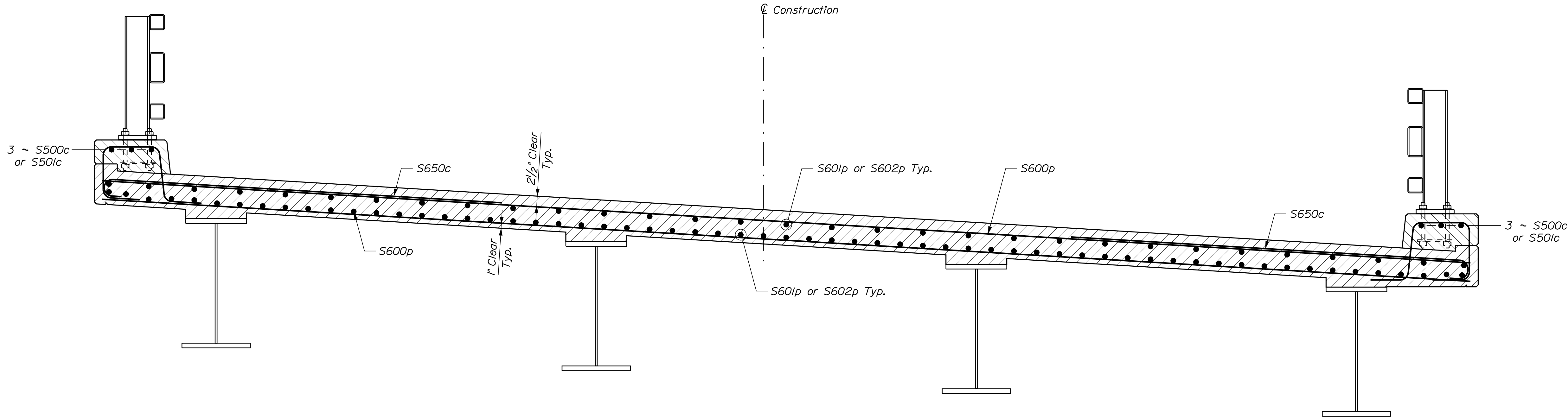
DEFLECTIONS (Inches)

	Load	CL Abut. 1	8.4 Ft.	16.8 Ft.	25.2 Ft.	33.6 Ft.	42 Ft.	50.4 Ft.	58.8 Ft.	67.2 Ft.	75.6 Ft.	CL Abut. 2
G1 & G4	Steel Dead Load	0.00	0.20	0.38	0.52	0.61	0.64	0.61	0.52	0.38	0.20	0.00
	Fluid Dead Load	0.00	0.81	1.52	2.09	2.45	2.56	2.45	2.09	1.52	0.81	0.00
	Superimposed Dead Load	0.00	0.06	0.12	0.16	0.19	0.20	0.19	0.16	0.12	0.06	0.00
G2 & G3	Steel Dead Load	0.00	0.21	0.40	0.55	0.64	0.67	0.64	0.55	0.40	0.21	0.00
	Fluid Dead Load	0.00	0.81	1.77	2.43	2.85	2.98	2.85	2.43	1.77	0.81	0.00
	Superimposed Dead Load	0.00	0.06	0.12	0.16	0.19	0.20	0.19	0.16	0.12	0.06	0.00



1. *The theoretical blocking used for design of the structure is 3.25 inches at the centerline of bearing of the abutments. Refer to Standard Detail 502(03) for blocking details.*
2. *Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.*
3. *Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.*
4. *Anchor rods for the steel bridge rail posts shall be shortened by 1 inch to provide additional clearance between the top of the deck and bottom of the anchor rod.*
5. *The Saw Cut Grooving shall be in the longitudinal direction.*
6. *The superstructure slab concrete shall be placed continuously and shall be kept plastic until the entire placement has been made.*
7. *Precast Concrete Deck Panels are not allowed on this project.*
8. *Contractor shall stagger splice locations of longitudinal deck reinforcing.*

PERKINS AND LAKE BRIDGES BLACK STREAM LEVANT			PROJ. MANAGER J. STETSON		BY D. SHAW	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
PENOBSCOT COUNTY SUPERSTRUCTURE PLAN			DESIGN-DETAILED	B. BARTLETT			2709800	
			CHECKED-REVIEWED			SIGNATURE		
			DESIGN2-DETAILED2	N.PIJAK	T. WHITE	FEB 2024		
			DESIGN3-DETAILED3			P.E. NUMBER		
			REVISIONS 1					
			REVISIONS 2				WIN 027098.00	
			REVISIONS 3					
			REVISIONS 4			DATE		
			FIELD CHANGES					
			BRIDGE NOS. 6133 & 3359				BRIDGE PLANS	



TRANSVERSE BRIDGE SECTION

PERKINS AND LAKE BRIDGES
BLACK STREAM
LEVANT
PENOBSCOT COUNTY
SUPERSTRUCTURE SECTION

SHEET NUMBER
26
OF 30

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2709800
WIN
BRIDGE NOS. 6133 & 3359 027098.00
BRIDGE PLANS

PROJ. MANAGER	J. STETSON	BY	DATE
DESIGN-DETAILED	B. BARTLETT	D. SHAW	
CHECKED-REVIEWED	N. PIKAY	T. WHITE	FEB 2024
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
		SIGNATURE	
		P.E. NUMBER	
		DATE	

