

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



WOODSTOCK
OXFORD COUNTY

ROUTE 232

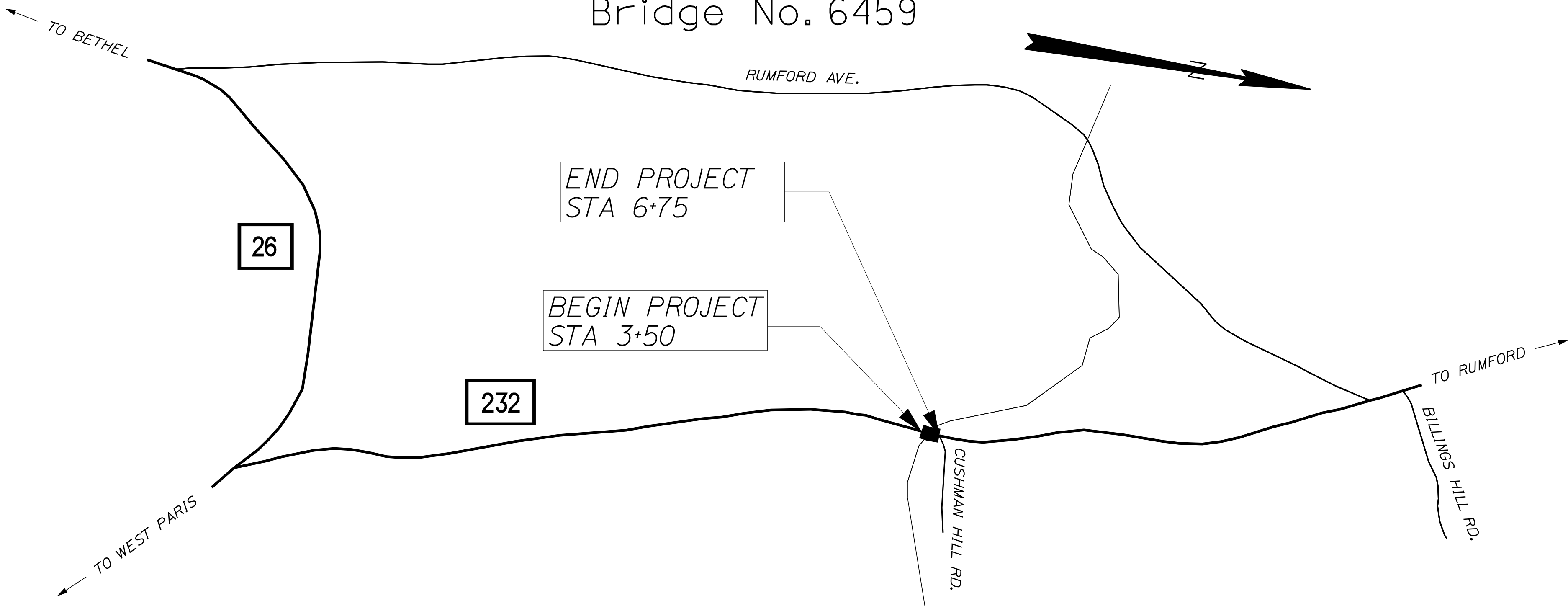
STATE PROJECT NO. 17538.00

PROJECT LENGTH: 0.06 MILES

Bridge No. 6459

PLAN LEGEND	
Town, County, State	Centerline-Existing
Property Lines	Centerline-Proposed
R/W Lines-Existing	Travelway-Existing
R/W Lines-Proposed	Travelway-Proposed
Culvert-Existing	Railroad
Culvert Proposed	Catch Basins Existing
Curbing Existing	Manholes Existing
Type 1	Proposed Underdrain
Type 3	Proposed Ditch
Type 5	Existing Ditch
Outline of Bodies of Water	Utility Poles Existing
Ledge	Fire Hydrants Existing
Buildings	Existing Water Line
Trees	Existing San. Sewer
Tree Line	Existing San. Sewer Manhole
Clearing Limit Line	Guardrail-Existing
	Guardrail-Proposed
	Guardrail-Cable, Other

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TRAFFIC DATA

Current (2012) AADT.....1450
Functional Class:.... Major Collector

PROJECT LOCATION:	0.98 MILES NORTHEAST OF THE INTERSECTION OF ROUTE 232 AND 26 IN WOODSTOCK ON MEADOW BROOK
PROGRAM AREA:	HIGHWAY PROGRAM
SCOPE OF WORK:	STRUT REPLACEMENT ON MEADOW BROOK

WIN 17538.00

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		APPROVED		DATE	
PROJECT INFORMATION		PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR
HIGHWAY		SHAWN SMITH	JEFF WALLACE				
SIGNATURE							
P.E. NUMBER							
DATE							
COMMISSIONER:		CHIEF ENGINEER:					
WOODSTOCK ROUTE 232		TITLE SHEET		SHEET NUMBER			
				1			
				OF 19			

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GENERAL CONSTRUCTION NOTES

1. During construction, the road will be closed to traffic for a time period specified in the Special Provisions.
2. For easements, construction limits and right of way lines, refer to Right of Way Map.
3. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident.
4. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
5. Place Dirty Borrow 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.
6. Where guardrail post installation conflicts with the structural plate arch the post shall be cut as needed and two sections of W-beam will be utilized at that location. A NCHRP 350 Compliant Guardrail End Treatment shall be installed concurrently with the placement of each section of beam guardrail.
7. Extended-use Erosion Control Blanket, seeded gutters and riprap downspouts shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract Items.
8. Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php>.
9. The hydrologic analysis of the bridge site may be accessed at the MaineDOT web address. The hydrologic analysis is 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 analysis will be representative of actual conditions at the time of construction.
10. 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.
11. All joints between existing and proposed hot bituminous pavement shall be butted. All joints should be saw cut and incidental to the common excavation.
12. The Contractor shall place suitable existing material or other material acceptable to MDOT personnel on all pavement edges to allow no dropoff and graded to 3:1 Payment Shall be made under Item 203.242 Dirty Borrow or the appropriate equipment rental items.
13. All waste material not used on the project shall be disposed of in acceptable waste areas reviewed by the Resident. Grading, seeding, and mulching of waste areas shall be considered incidental to 656 items.
14. The following shall be incidental to the 603 Item(s):
- a. All pipe excavation including any cutting and removal of pavement

b. All ditching at pipe ends

c. Furnishing, placing, grading, and compacting of any new gravel and/or fill material. This also includes Granular Borrow used under pipes and for temporary detours to maintain traffic during pipe installation. Excavation of maintenance of traffic material is also incidental.

d. Granular Borrow under the pipe shall meet the requirements for Underwater Backfill

e. Flow lines may be changed by 1.5 ft

f. Any necessary clearing of brush and non-pay trees at culvert ends

15. Any guardrail removed and not reused shall become the property of the Contractor. Removal and disposal shall be considered incidental to the guardrail items.
16. 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.
17. No separate payment for superintendent or foreman will be made for the supervision of equipment being paid for under the equipment rental items.
18. All work shall be done in accordance with the Maine Department of Transportation's Best Management Practices for Erosion & Sedimentation Control, February 2008.
19. No existing drainage shall be abandoned, removed or plugged without prior approval of MDOT personnel.
20. Stations referenced in the construction notes are approximate.
21. The Contractor shall adhere to the Maine DOT Standard Specification: Section 104.4.10 Coordination of Bridge Closure/Bridge Width Restriction Notification.
22. A 3' paved apron shall be placed at all gravel entrances, except woods and field entrances, unless otherwise directed by MDOT personnel.

FOOTING AND PEDESTAL WALL NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches cover in the footings unless otherwise noted.
2. Cover joints where waterstops are not required in accordance with Standard Detail 502 (01).
3. Construct 4 inch diameter weepholes in pedestal wall and wingwalls at 10-foot maximum spacing. The exact location will be determined by the Resident.
4. Construct French Drains behind the pedestal walls and wingwalls in accordance with Standard Specification Section 512, French Drains.
5. Structural Earth Excavation, Abutments and Retaining Walls, required more than 12 inches below the bottom of the structure, will be paid for in accordance with Standard Specifications Section 206, Structural Excavation.
6. Pedestal walls, headwalls, wingwalls, and their footings shall be backfilled with Gravel Borrow meeting the requirements of subsection 703.20 and per the Geotechnical Report. Pay limits will be the structural excavation limits in cut areas and a vertical plane located 10 feet behind the walls in fill areas.
7. The maximum factored applied footing pressure is 2.1 ksf.
8. Bedrock elevations may vary. All loose and weathered rock shall be cleaned from the bearing surface prior to footing construction. Where the slope of the bedrock is steeper than 6H:1V, the bedrock surface shall be stepped or benched. Equipment used to prepare the bedrock surface to receive the proposed foundation shall be conventional construction equipment, as approved by the Resident. No blasting shall be allowed. Bedrock surface preparation as described and shown on the plans shall be incidental to item 206.082, Structural Earth Excavation, Major Structures.

STRUCTURAL PLATE ARCH NOTES

1. One 12' -0" span by 4'-1" rise Structural Plate Pipe Arch required. All plates shall be 0.138 inch thick (10 gage). Foundation design is based on maximum unfactored reactions to the top of pedestal wall (per foot of length) as follows:
- Dead Load: 1.8 kips

Live Load: 3.1 kips

Vertical Reactions: 0.8 kips

Horizontal Reactions: 1.3 kips
- If the reactions to the foundation are modified based on final plate arch selection, the Contractor shall be responsible for submission of design calculations, details, and shop drawings for the proposed structure to the Department for approval.
2. Ends shall be cut vertical normal to the end skew shown on the details.
3. Riprap adjacent to the pipe shall be carefully placed so as not to damage the pipe and so that the finished slope will match the ends of the pipe. Any extra labor, material, or equipment used will be considered incidental to Item 610.08, Plain Riprap. Any damage done to the structure during construction shall be repaired or replaced as determined by the Resident at the Contractor's expense.
4. 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.
5. The structural plate structure shall be constructed in the dry. The approximate weight of the 44-foot long structure is 5,500 pounds.
6. Gravel Borrow shall meet the requirements of Subsection 703.20 and per the Geotechnical Report.

PREFABRICATED CONCRETE MODULAR GRAVITY WALL NOTES

1. The Contractor shall provide Prefabricated Concrete Modular Gravity (PCMG) Wingwalls in accordance with Special Provision Section 635. The PCMG Wingwalls shall be designed and sealed by a professional engineer licensed in the State of Maine and the design shall be submitted to the resident for review. Plan details are shown for estimating purposes only.
2. The nominal bearing resistance for footings on rock shall be 315 kips per square foot, with a resistance factor of 0.45.
3. Leveling slabs or footings for PCMG Wingwalls shall be keyed into bedrock to a minimum depth of 6".
4. All exposed surfaces of wall units to 1'-0" below fill lines shall be treated with an approved water repellent.
5. A one-foot wide strip of drainage geotextile shall be secured to the back face of the wall units at all joints.

GEOTECHNICAL NOTES

GENERAL

1. Bidders should be aware that subsurface conditions consist of a thin soils veneer over shallow bedrock. To better define the bedrock surface profile, Maine-DOT retained Hager-Richter Geoscience, Inc. to complete a geophysical survey. The results of their work include an interpretive bedrock topography plan. Their report is included as an Appendix in the Geotechnical Report, as discussed in Note 2
2. Bidders and Contractors may obtain a copy of the Project Geotechnical Report entitled "GEOTECHNICAL DESIGN REPORT, STRUT REPLACEMENT, MEADOW BROOK RTE 232 CROSSING, WOODSTOCK, MAINE" prepared by Schonewald Engineering Associates, Inc. and dated September 17, 2012 by visiting the WIN 17538.00 Project Details section of the Maine-DOT Contractor Information website The above-referenced geophysical information is included in the Geotechnical Report as an Appendix. Bidders are encouraged to review the geotechnical and geophysical information.
3. Geotechnical and geophysical information furnished or referenced in this plan set is for the Bidders' and Contractor's use. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the time of construction. The Department shall not be responsible for the Bidders' and Contractor's interpretations of, or conclusions drawn from the geotechnical and geophysical information. The boring logs and bedrock topography plan contained in the referenced Reports present interpretive subsurface information collected at discrete location. Data provided may not be representative of the subsurface conditions between widely spaced boring locations or geophysical survey lines.

SLOPES

4. Where new embankment fills are placed on existing slopes steeper than 2H:1V and as shown on the plans, the existing slope shall be continuously benched as per Standard Specification 203.09 and OSHA requirements for excavation.
- SUBGRADE
5. Cobbles and boulders larger than 6 inches encountered at subgrade shall be removed. Holes below subgrade that result from their removal shall be backfilled with native soil and compacted. Payment will be incidental to Item 203.20.
6. Cobbles and Boulders in sideslopes shall not project more than 6 inches beyond the finished slope line. Holes in the sideslopes that result from their removal shall be backfilled with native soil and compacted.
7. The entire embankment, including the areas beyond the 1.5H:1V line extending from the finished shoulder, shall be compacted.

SPECIFICATIONS

DESIGN: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications Fifth Edition 2010.

TRAFFIC DATA

Current (2012) AADT = 1450

DESIGN LOADING

LIVE LOAD: HL-93

MATERIALS

CONCRETE:	Headwalls, Collars, Curbs, End Posts	Class LP
	Precast	Class P
	Fill	Fill
	All Other	Class A

REINFORCING STEEL: ASTM A615, Grade 60

BASIC DESIGN STRESSES

CONCRETE:	Class LP	f'c = 5000 psi
	Class P	f'c = 5500 psi
	Class A	f'c = 4350 psi

REINFORCING STEEL: fy = 60 ksi

WOODSTOCK ROUTE 232 GENERAL NOTES/GEOTECHNICAL NOTES	SHEET NUMBER				3				OF 19			
	PROJ. MANAGER	SHAWN SMITH	BY	DATE	SIGNATURE				17538.00			
	DESIGN-DETAILED	J. WALLACE		APR 2012								
	CHECKED-REVIEWED											
	DESIGN2-DETAILED2	K.BRESKIN	T. WHITE		P.E. NUMBER				WIN 17538.00			
DESIGN3-DETAILED3												
REVISIONS 1												
REVISIONS 2				DATE				BRIDGE NO. 6469				
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REVISIONS 4												
FIELD CHANGES								BRIDGE PLANS				

Date:10/23/2012

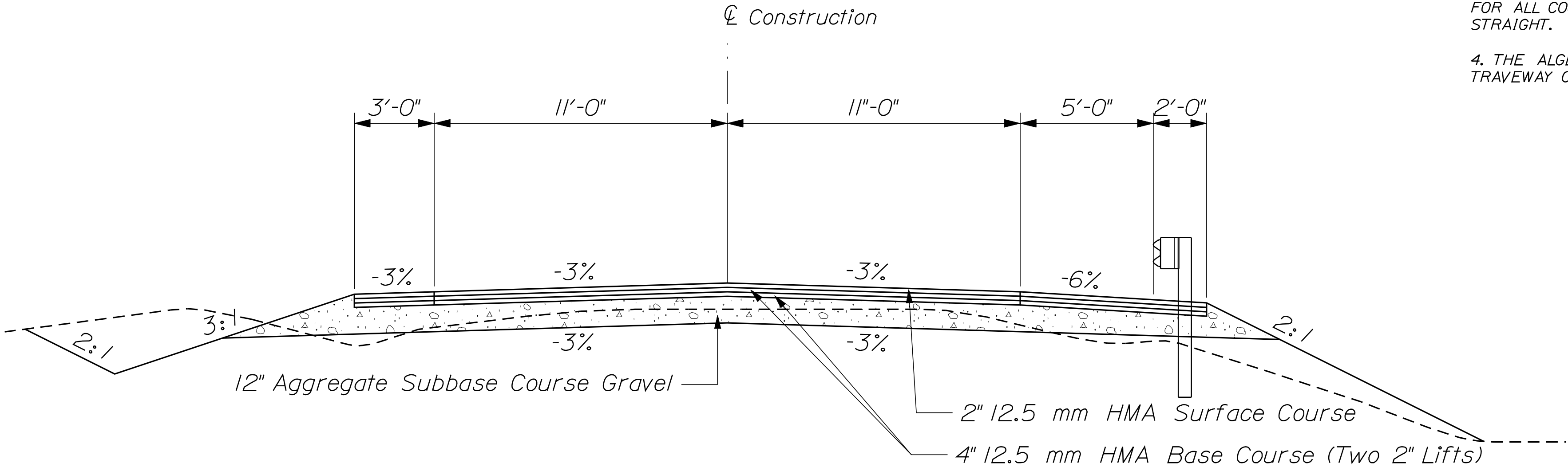
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Division: HIGHWAY

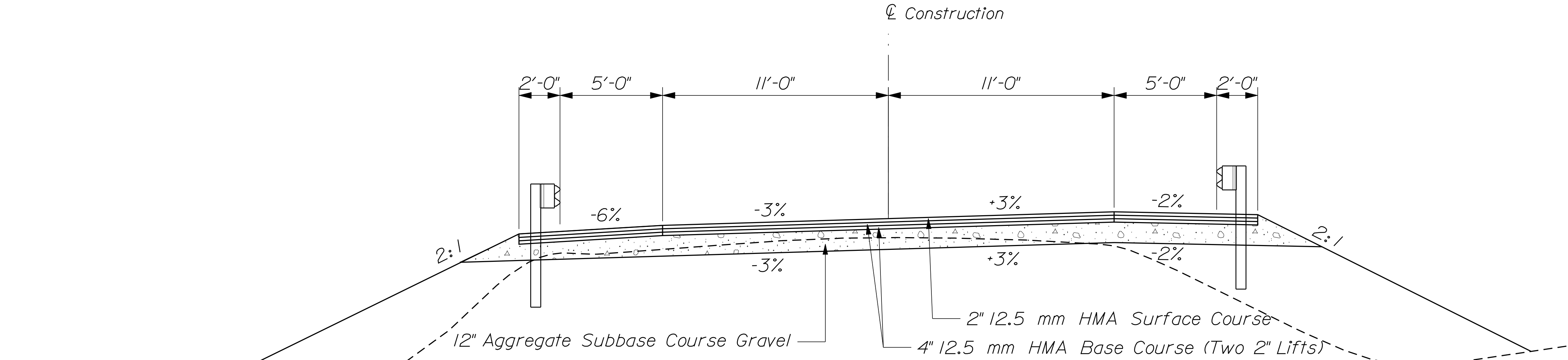
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NOTE:

1. THE PAVEMENT, BASE AND SUBBASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. WHEN SUPERELEVATION EXCEEDS THE SLOPE OF THE LOW SIDE SHOULDER, THE LOW SIDE SHOULDER SHALL HAVE THE SAME SLOPE AS THE TRAVELWAY.
3. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
4. THE ALGEBRAIC DIFFERENCE BETWEEN THE SHOULDER AND TRAVEWAY CROSS SLOPES "ROLLOVER" SHALL NOT EXCEED 8%.



Typical Section: Normal Left/Guardrail Right



Typical Section: Superelevated

STATE OF MAINE	
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BRIDGE NO. 6459	BRIDGE PLANS

PROJ. MANAGER	SHAWN SMITH	BY	DATE
DESIGN-DETAILED	J. WALLACE		APR 2012
CHECKED-REVIEWED	K. BRESLIN	T. WHITE	
DESIGN-DETAILED			
REVISIONS 1			
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REVISIONS 4			
FIELD CHANGES			

WOODSTOCK ROUTE 232	TYPICAL SECTIONS
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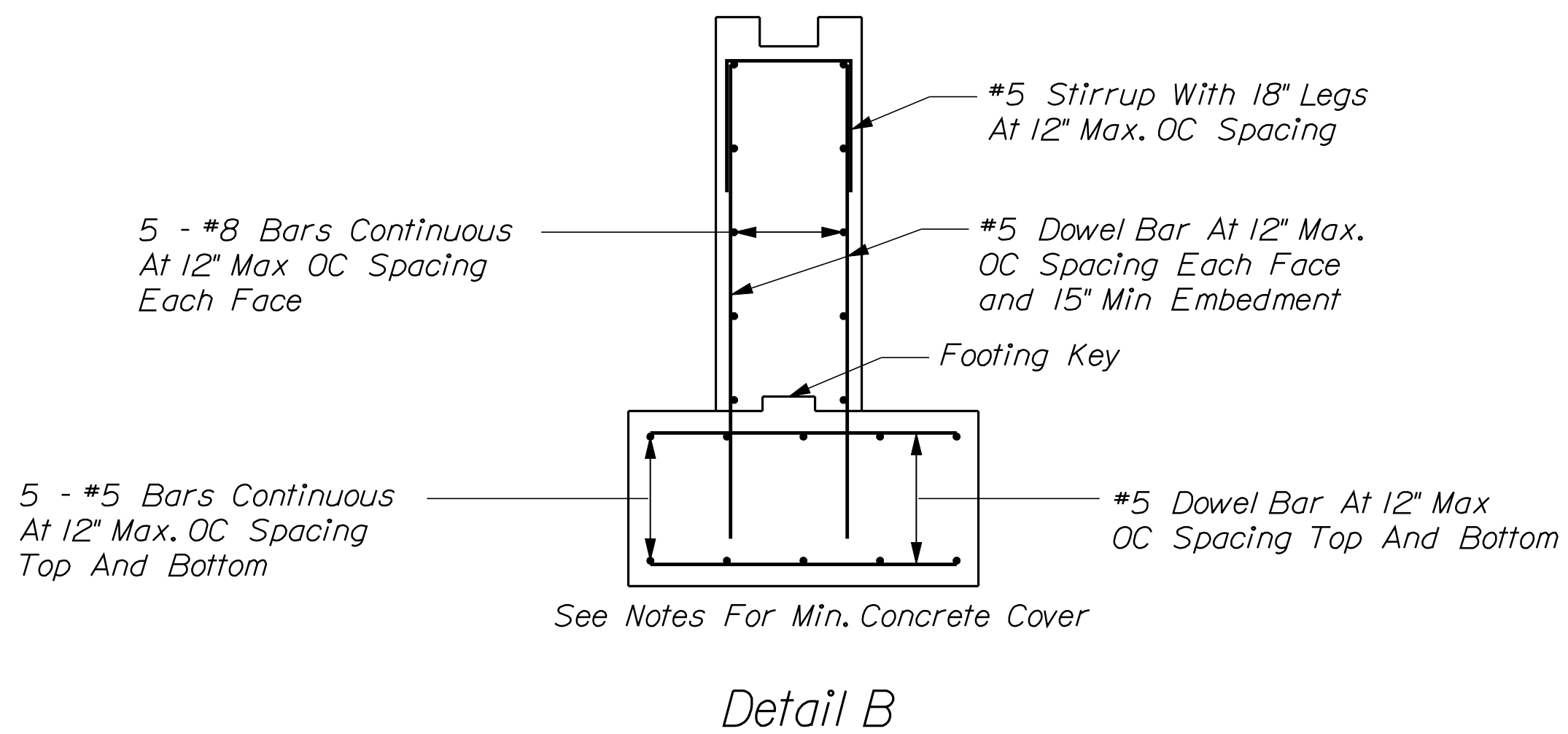
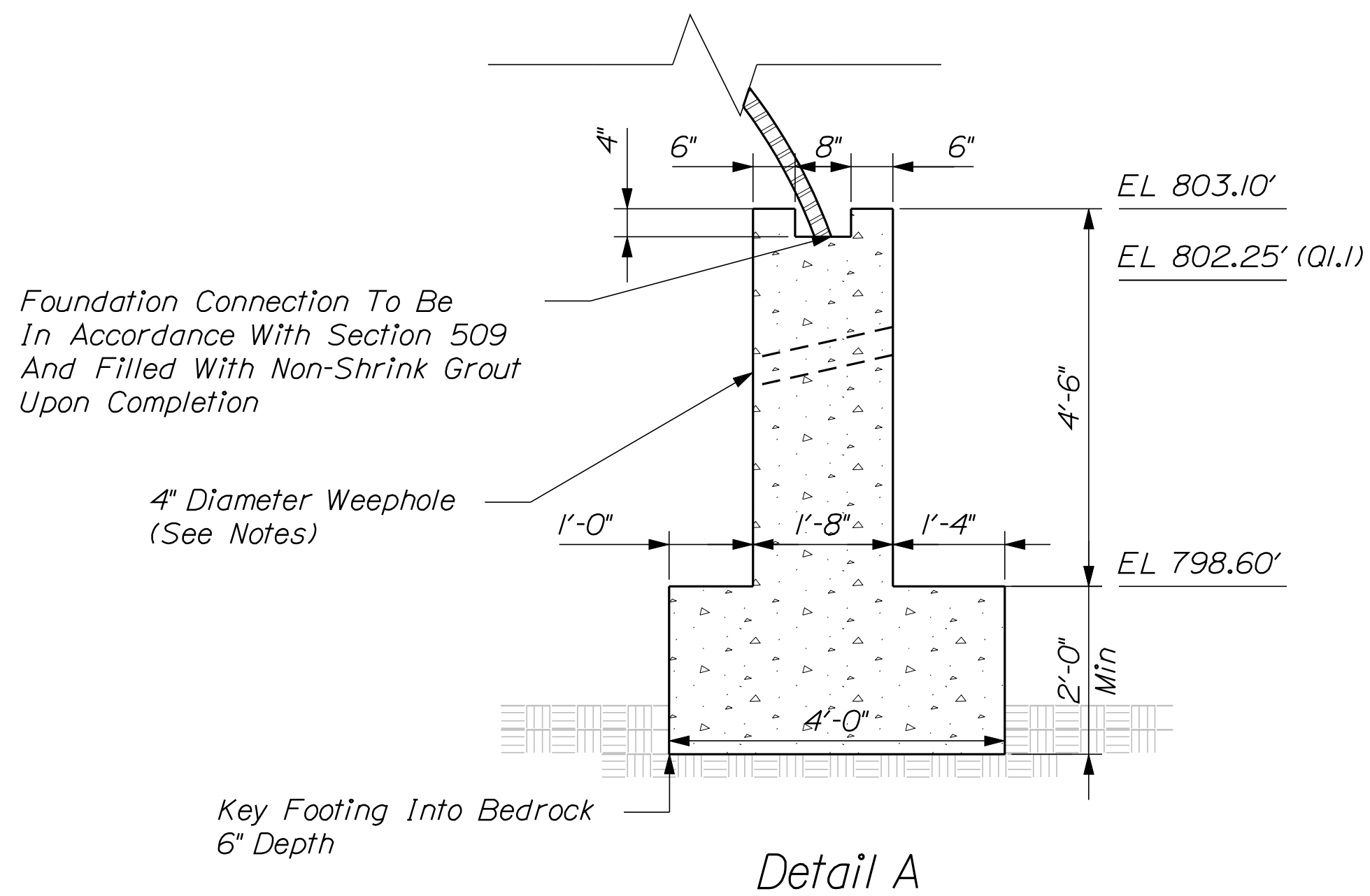
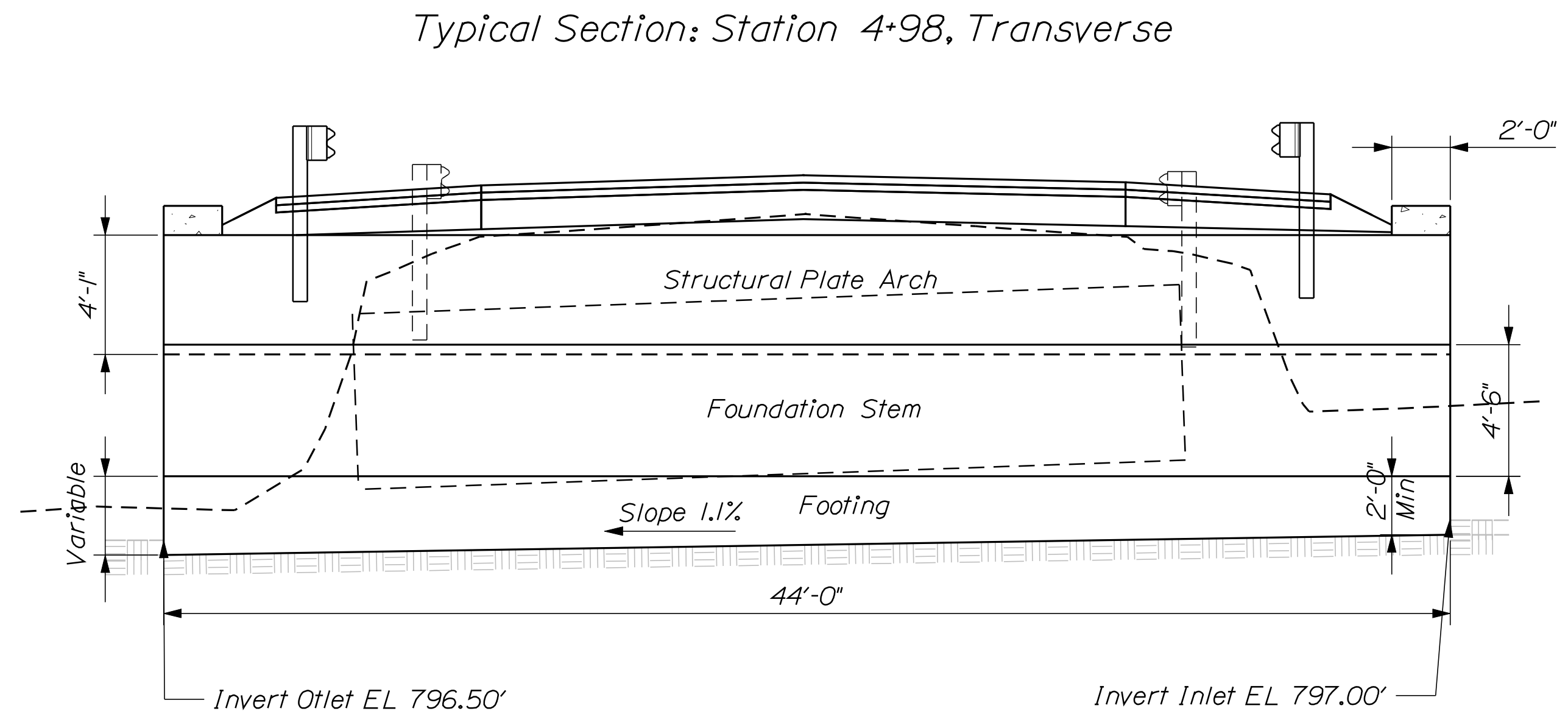
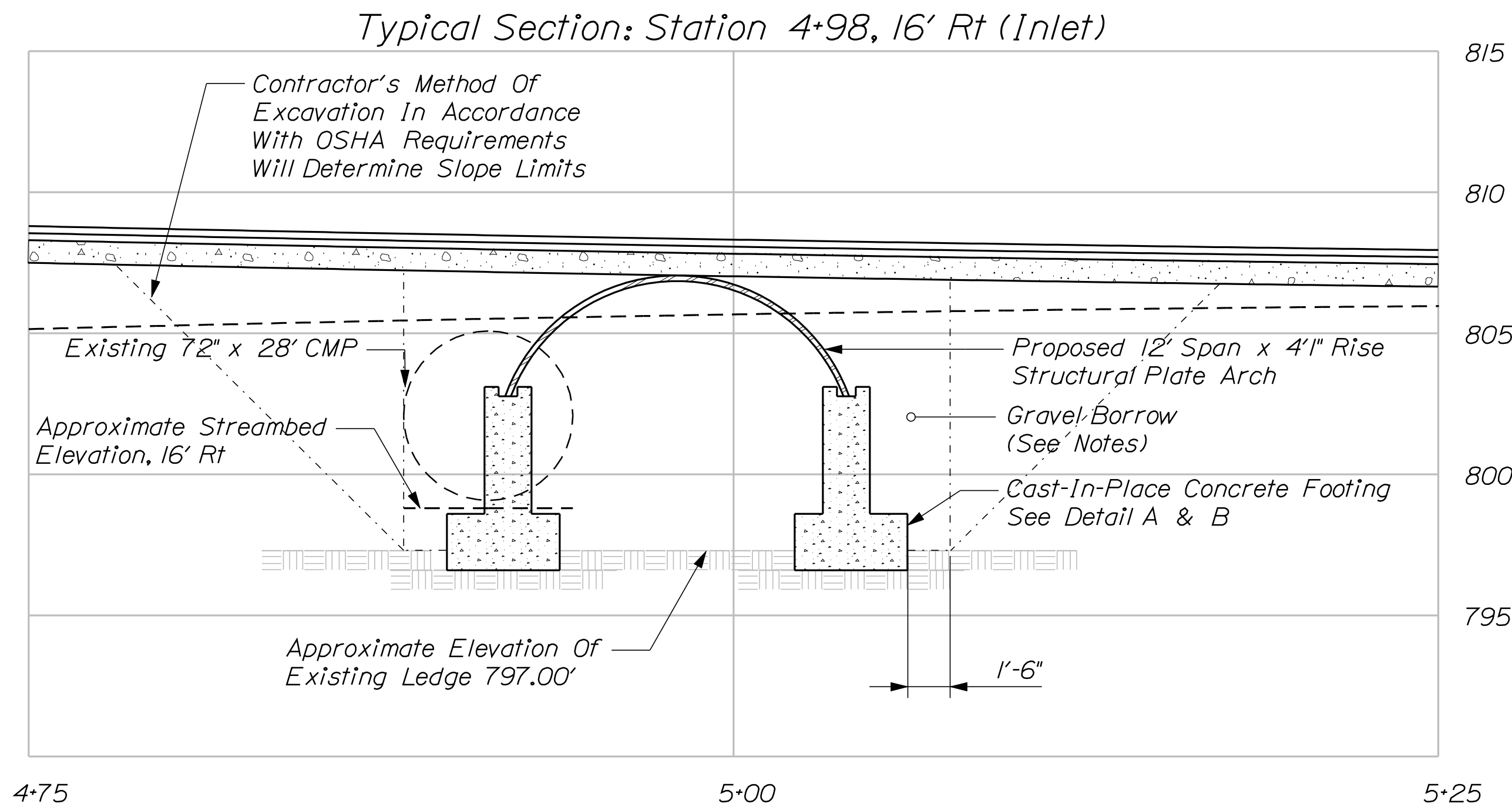
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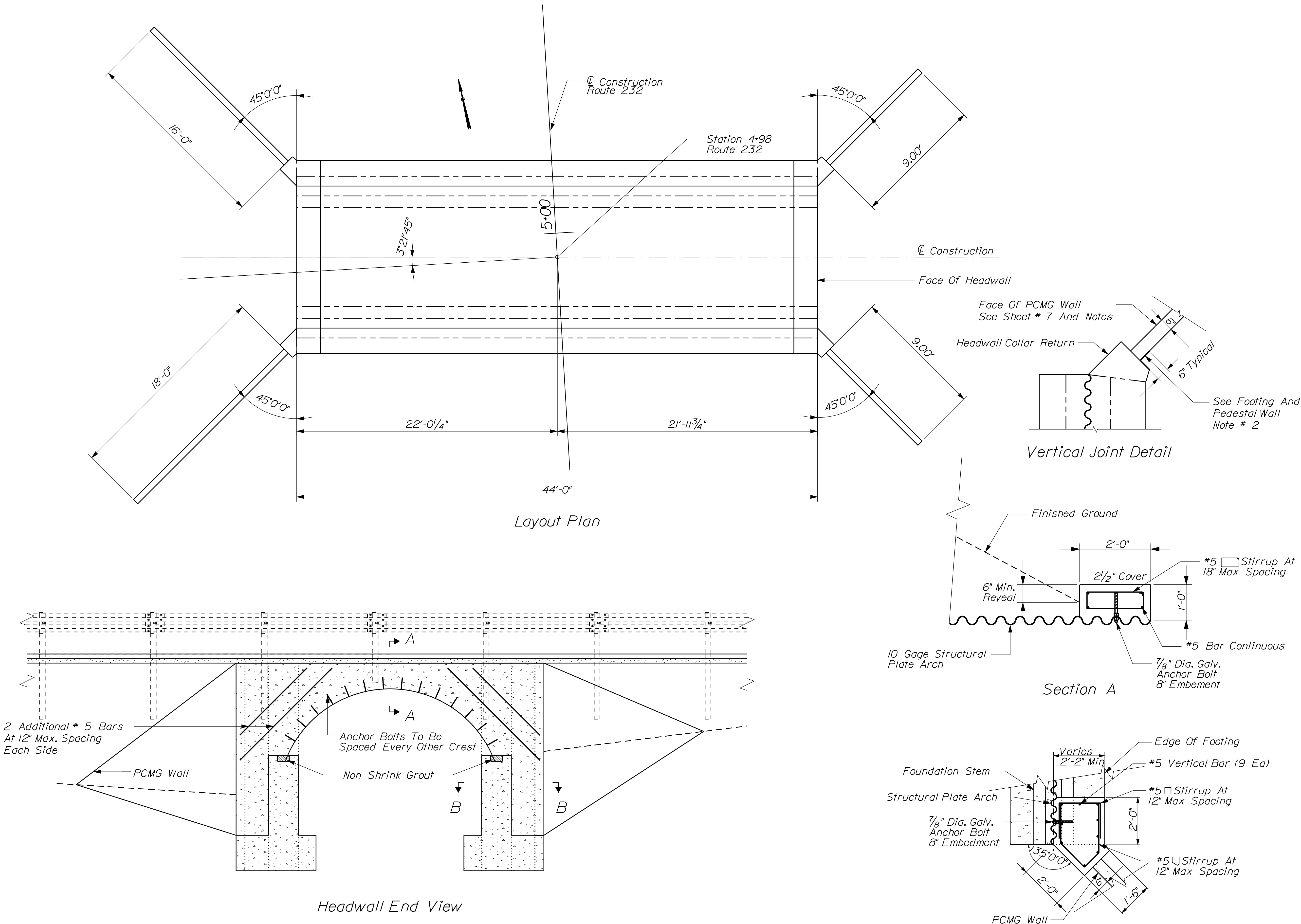
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		DESIGN2-DETAILED2		T. WHITE	
		DESIGN3-DETAILED3			
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				BRIDGE PLANS	
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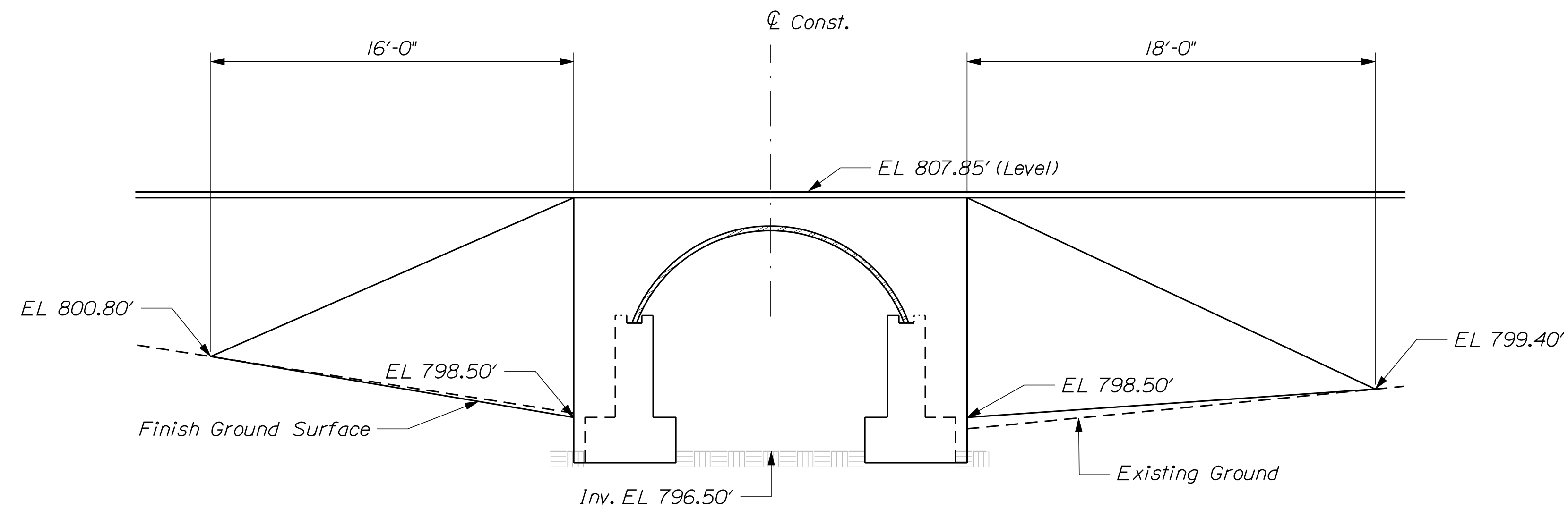
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BRIDGE PLANS	

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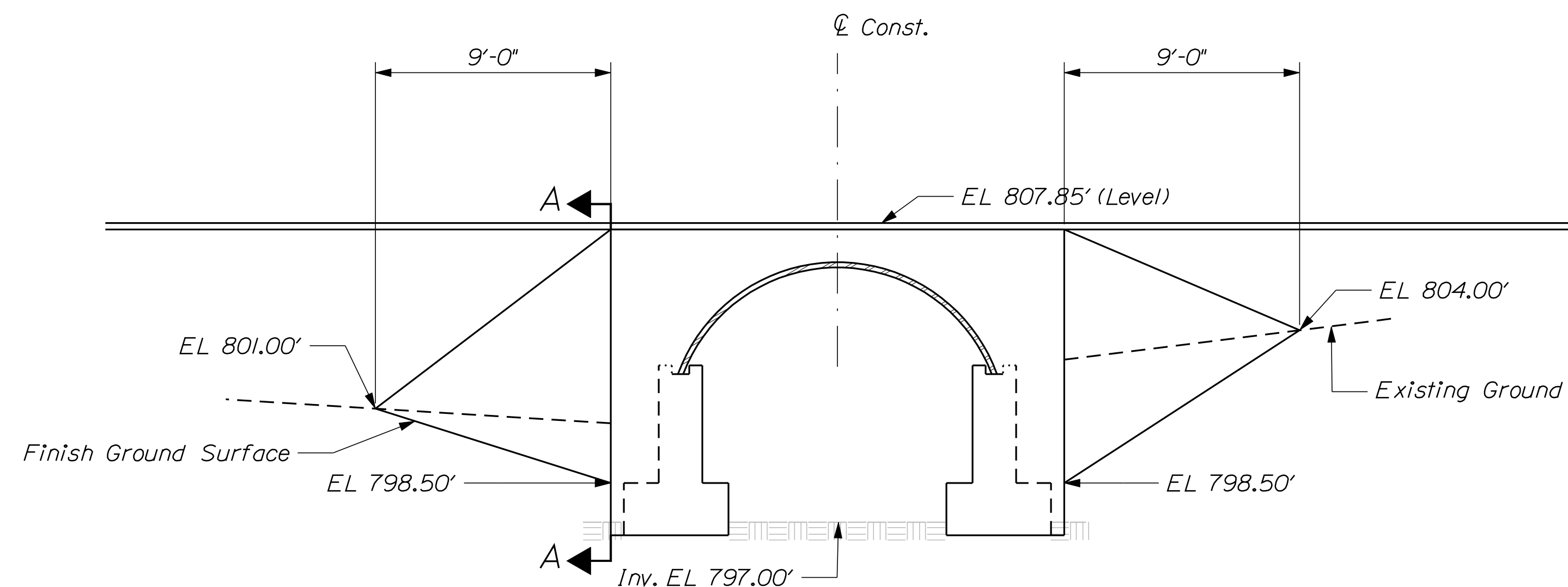
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FOOTING LAYOUT	

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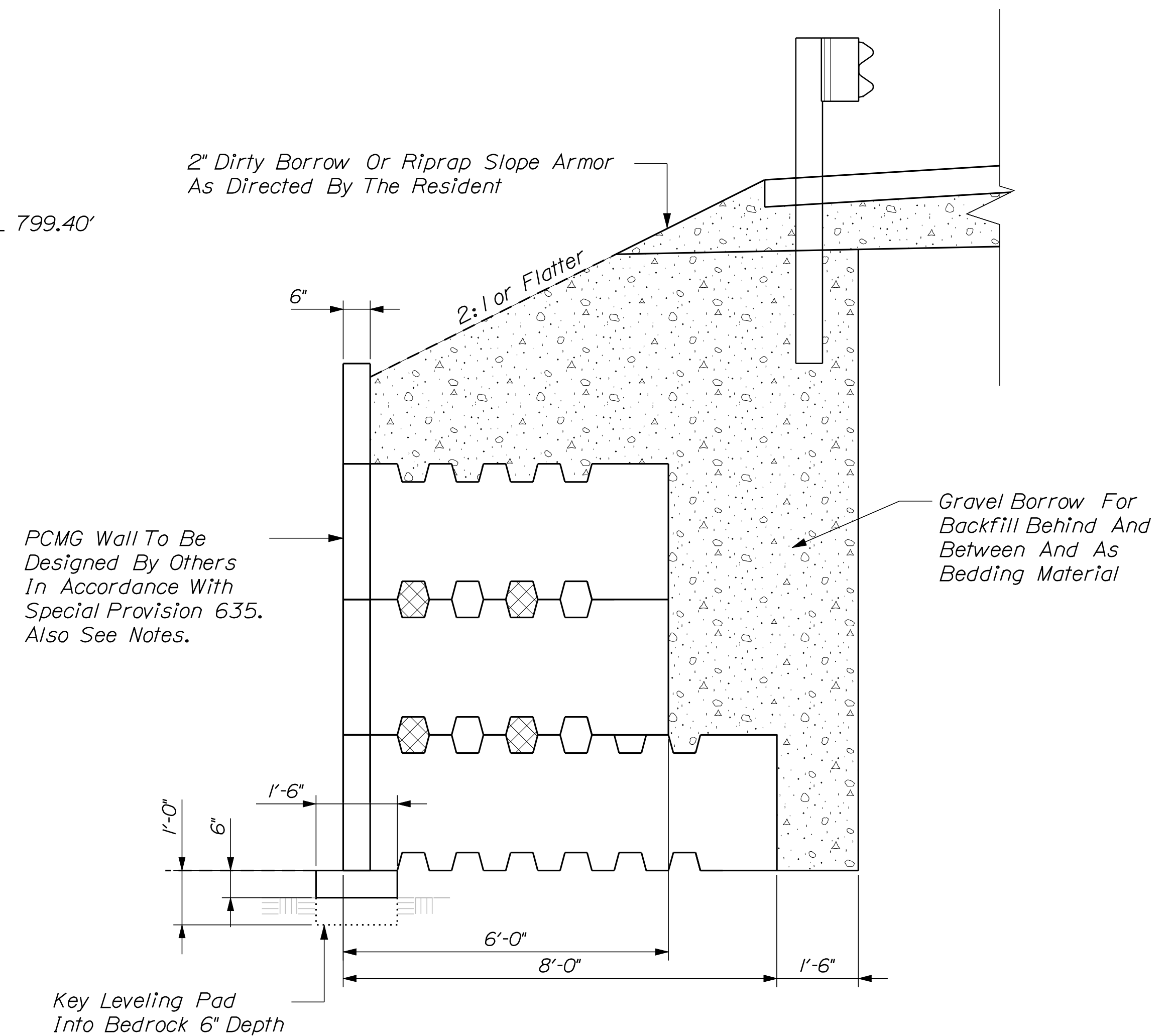
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Downstream Elevation



Upstream Elevation



Section A

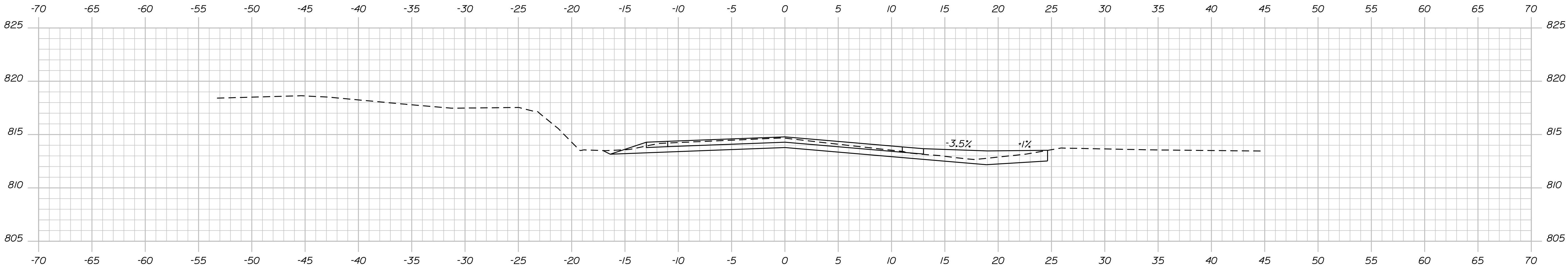
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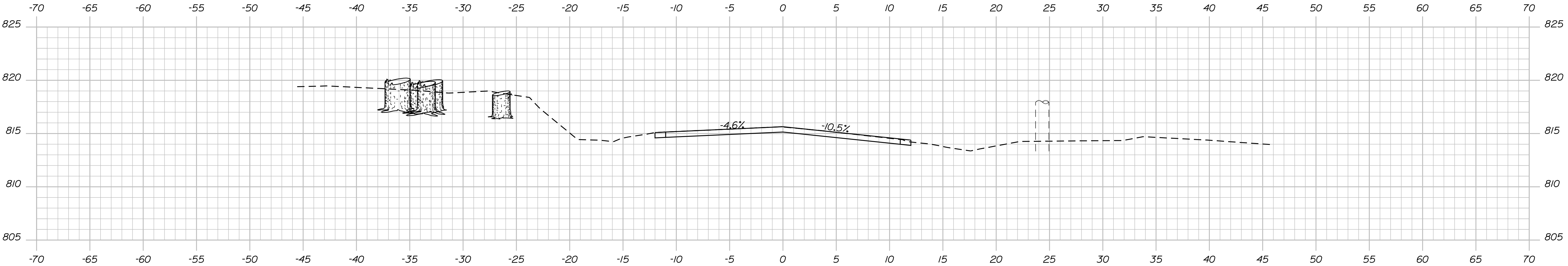
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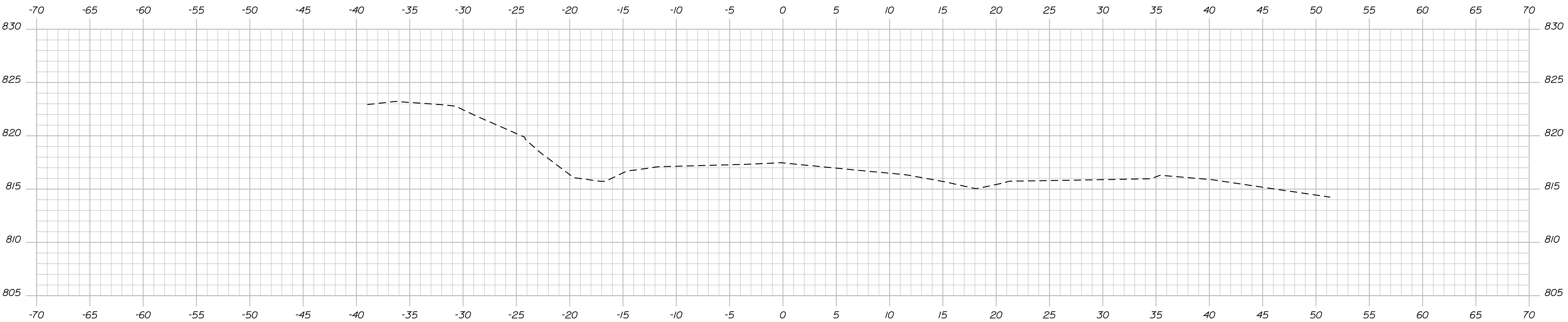
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3+50.00



3+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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WOODSTOCK
ROUTE 232

CROSS SECTIONS

SHEET NUMBER

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OF 19

PROJ. MANAGER	SHAWN SMITH	BY	DATE
DESIGN-DETAILED	JEFF WALLACE	APR 2012	
CHECKED-REVIEWED	K. BRESKIN	T. WHITE	
DESIGN-DETAILED			
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SIGNATURE

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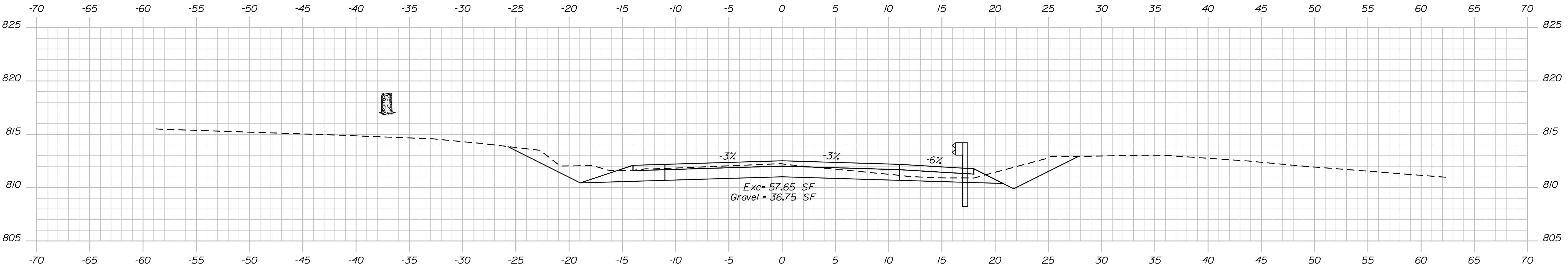
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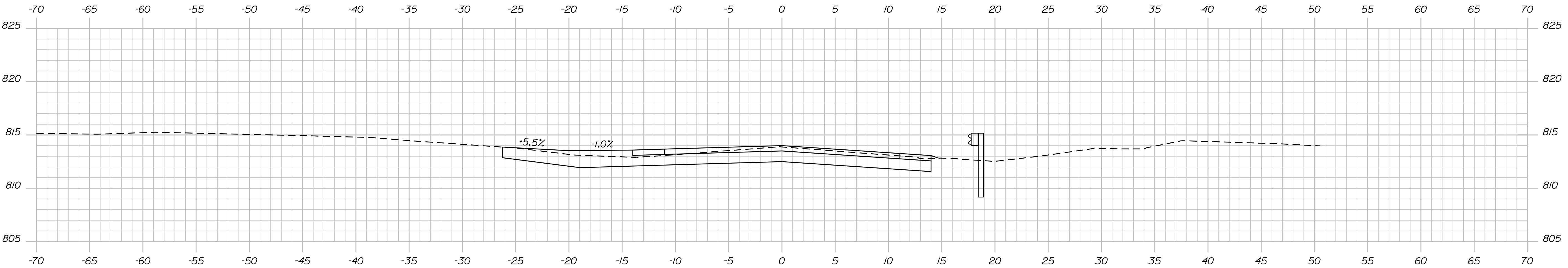
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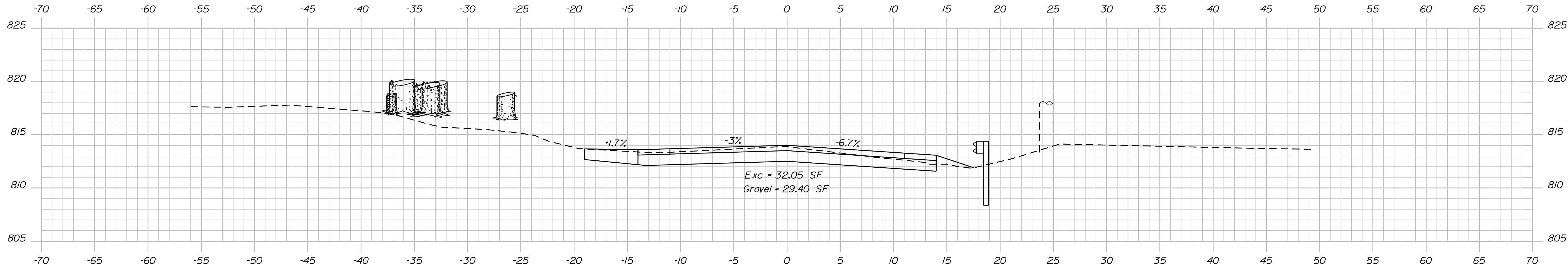
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3+75.00 (Skewed)



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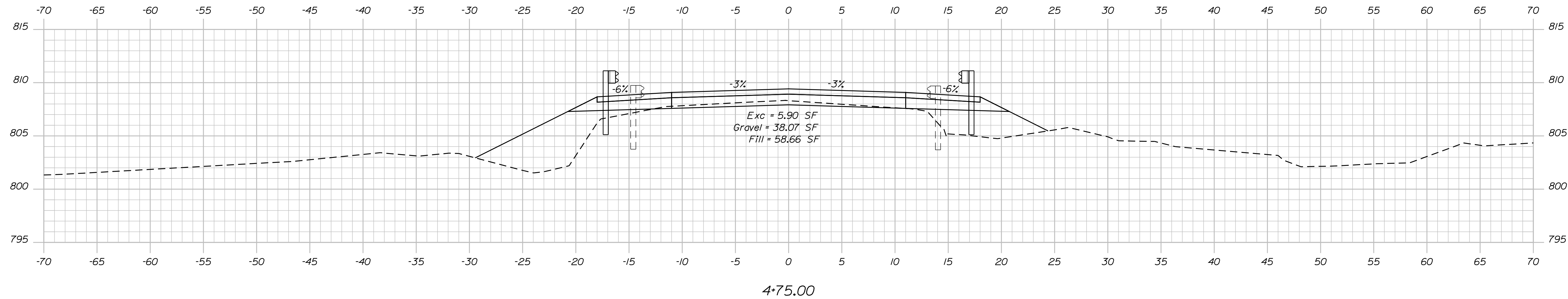
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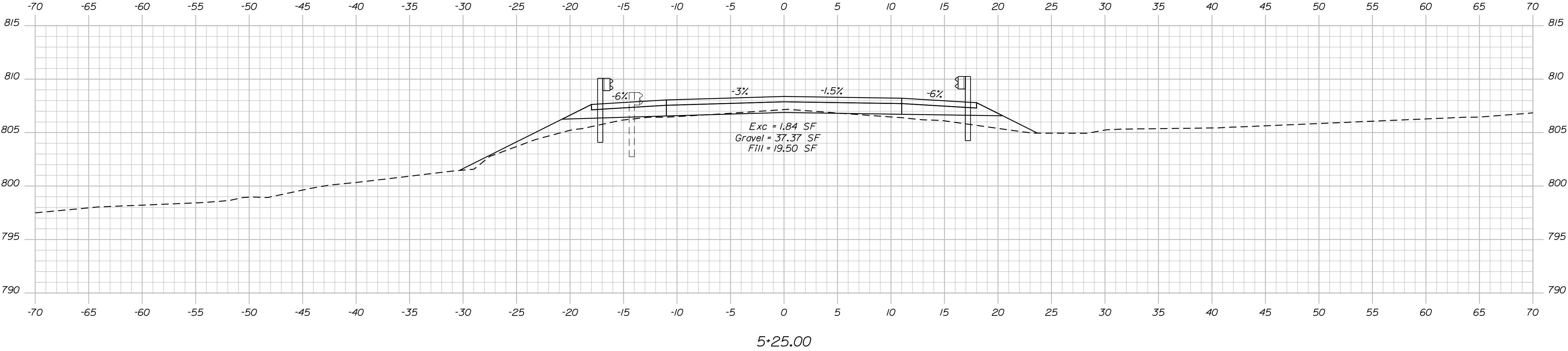
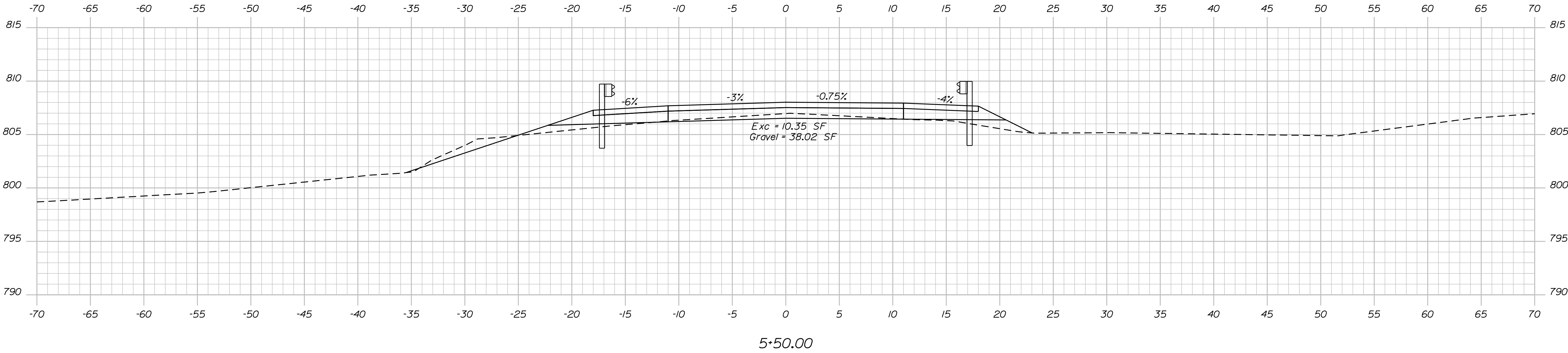
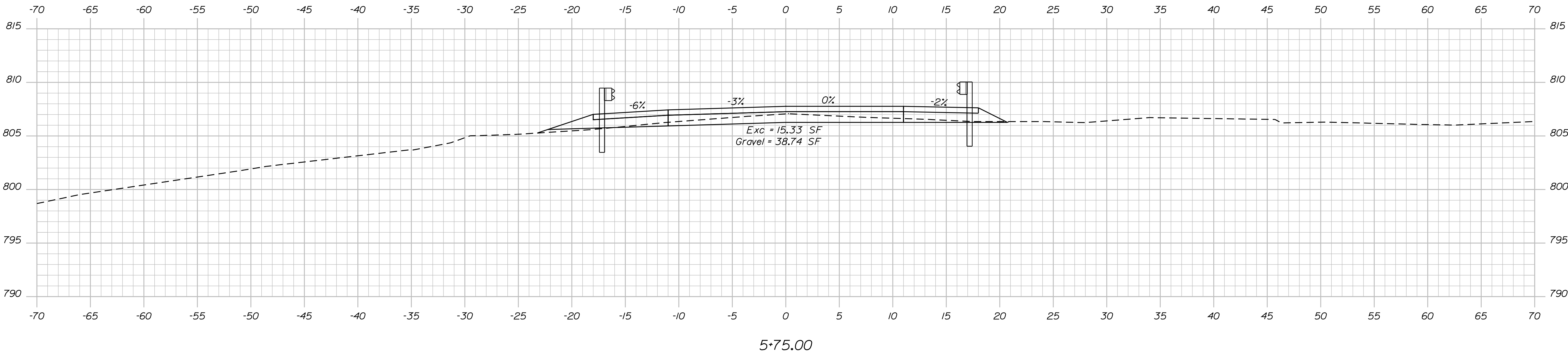
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ROUTE 232	
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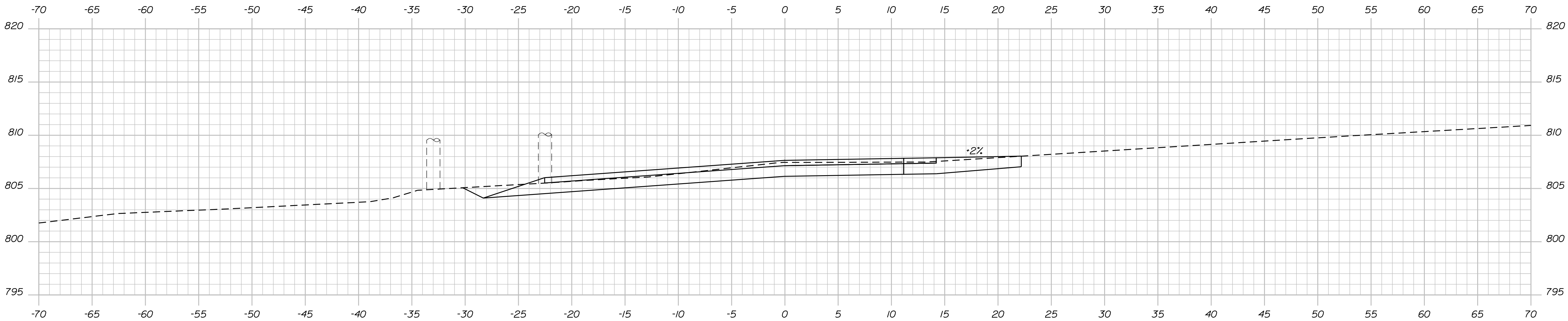
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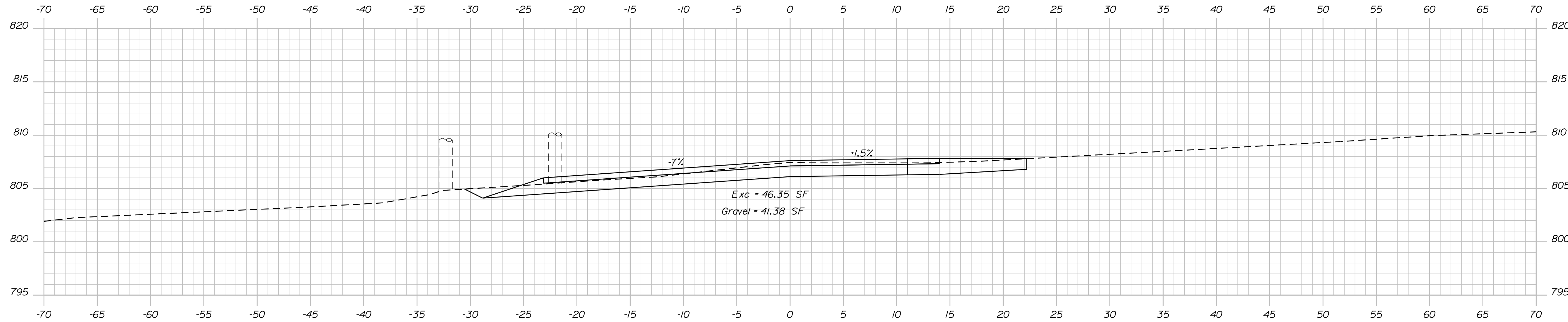
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Division: HIGHWAY

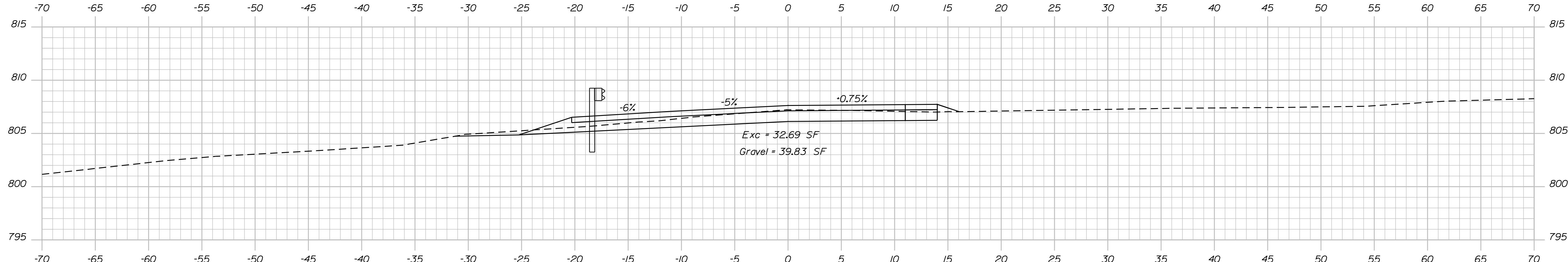
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6*00.00

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PROJ. MANAGER	SHAWN SMITH
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DESIGNED-DETAILED	K. BRESKIN
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WOODSTOCK	
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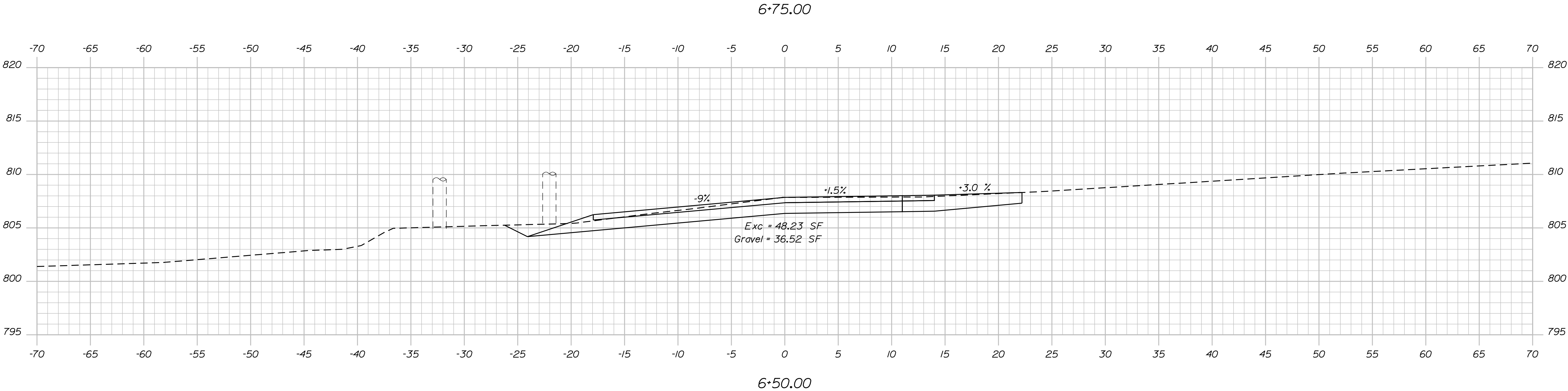
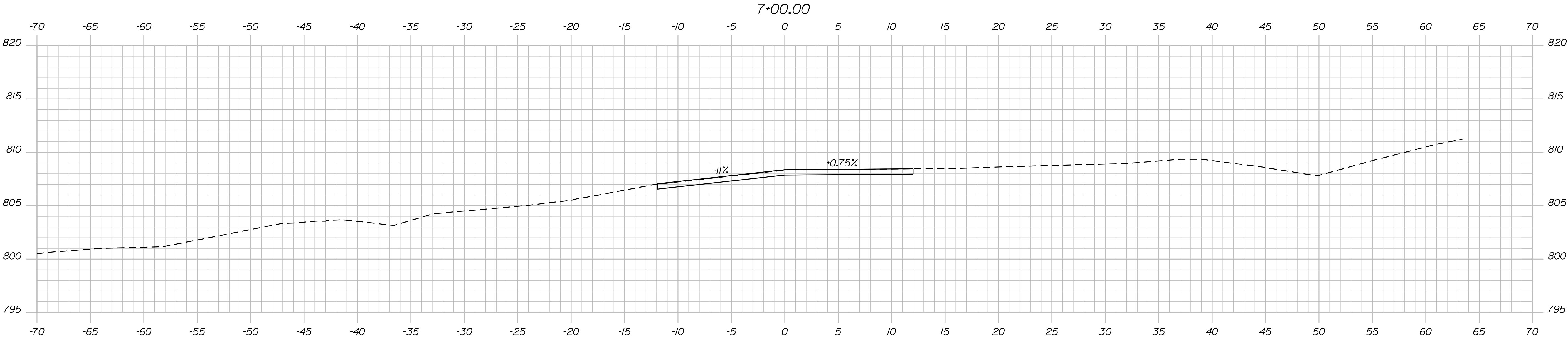
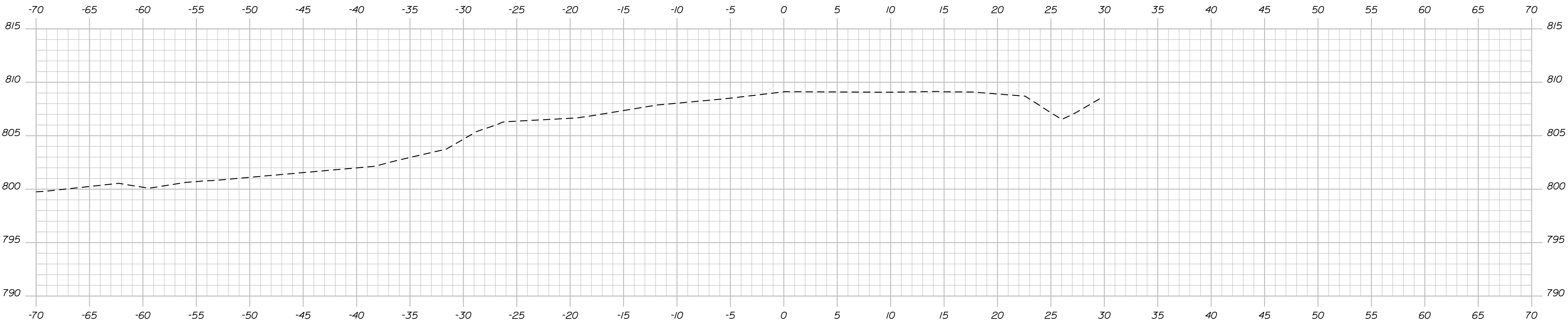
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OF 19	

Date:10/23/2012

Username: jeffrey.wallace

Division: HIGHWAY

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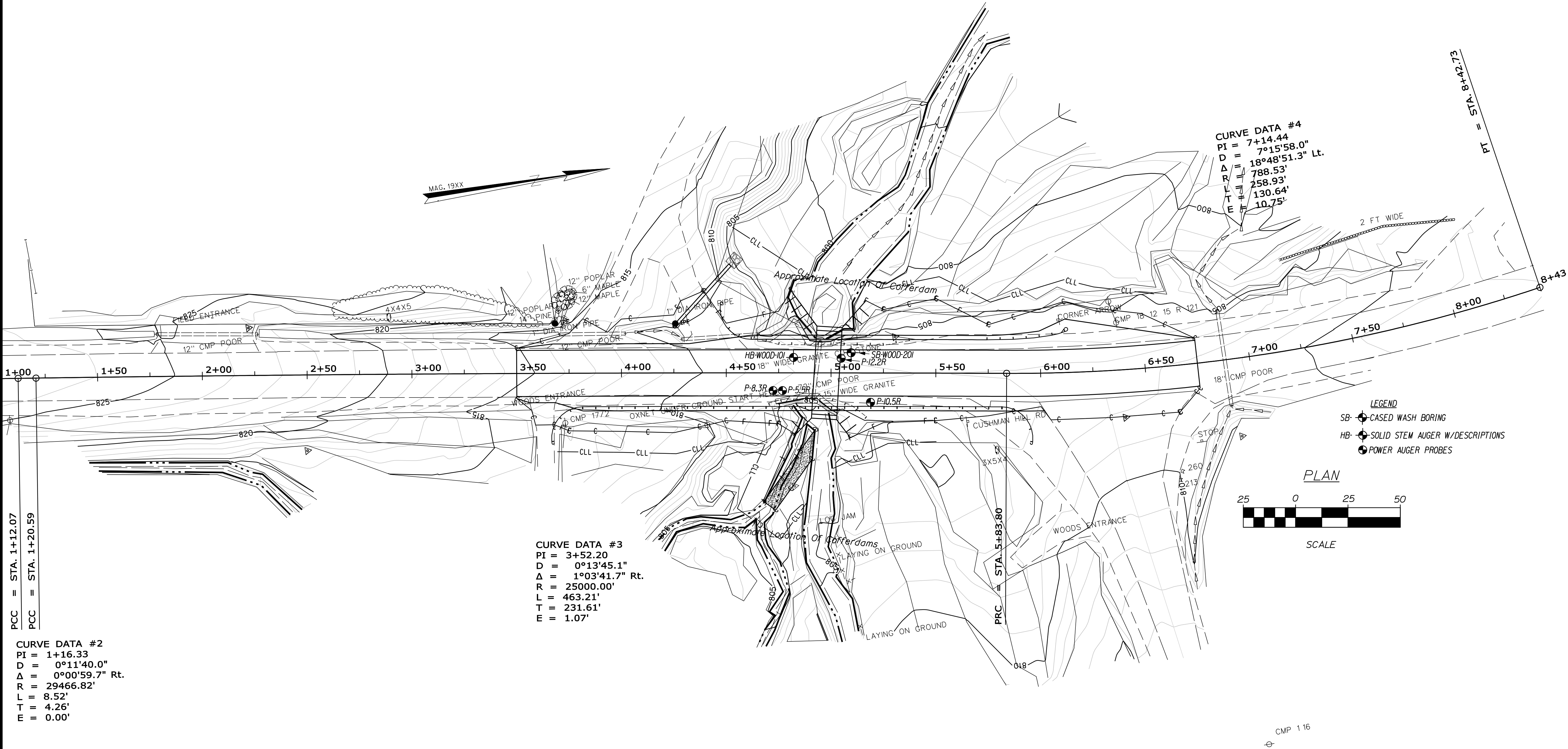


STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
17538.00	
WIN	
17538.00	

SIGNATURE	
P.E. NUMBER	
DATE	
PROJ. MANAGER	SHAWN SMITH
CHECKED-REVIEWED	JEFF WALLACE
DESIGNED-DETAILED	K. BRESKIN
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

WOODSTOCK	
ROUTE 232	
CROSS SECTIONS	

SHEET NUMBER	
15	
OF 19	



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

PIN
17538.00

BRIDGE NO. 6459

BRIDGE PLANS

WOODSTOCK
ROUTE 232

GEOTECHNICAL PLAN

SHEET NUMBER

16

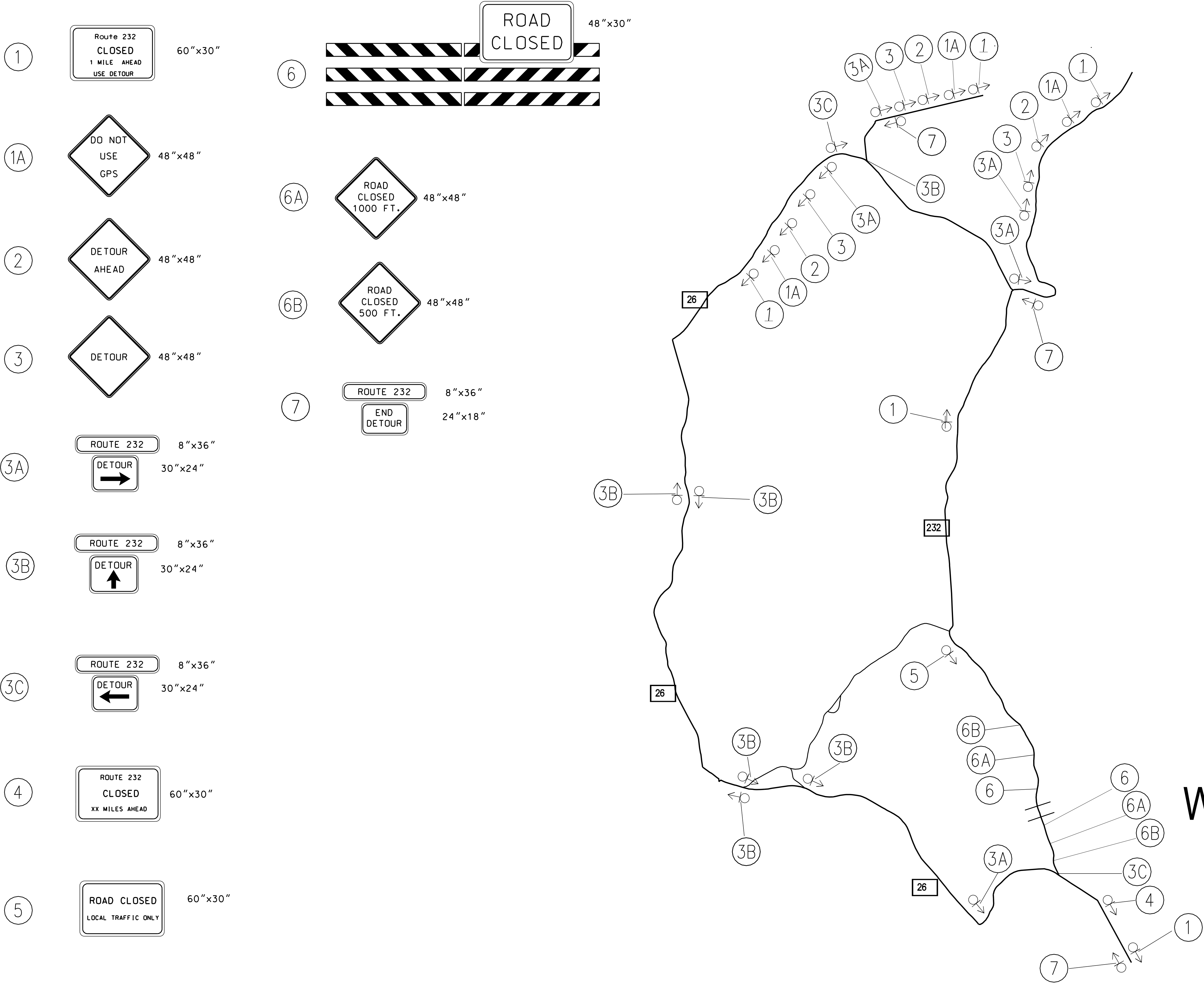
OF 19

PROJ. MANAGER	SHAWN SMITH	BY	DATE
DESIGN-DETAILED	J. WALLACE		APR 2012
CHECKED-REVIEWED	T. WHITE		
DESIGN-DETAILED	K. BRESLIN		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE			
P.E. NUMBER			
DATE			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project:Route 232 Strut Location:Woodstock, Maine		Boring No.: HB-WOOD-101 WIN: 17538.00																																																																																																																																			
Drillert: MaineDOT		Elevation (ft.): 807.6		Auger ID/OD: 5" Dia.																																																																																																																																					
Operator: Giguere/Giles		Datum: NAVD88		Sampler: Standard Split Spoon																																																																																																																																					
Logged By: B. Wilder		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"																																																																																																																																					
Date Start/Finish: 12/8/11-12/8/11		Drilling Method: Solid Stem Auger		Core Barrel: N/A																																																																																																																																					
Boring Location: 4+82, 7.3 ft Lt.		Casing ID/OD: N/A		Water Level*: None Observed																																																																																																																																					
Hammer Efficiency Factor: 0.84		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐																																																																																																																																							
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project:Route 232 Strut Location:Woodstock, Maine		Boring No.: SB-WOOD-201 WIN: 17538.00																																																																																																																																			
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Logged By: B. Wilder		Rig Type: CME 45C		Hammer Wt./Fall: 300#/16"																																																																																																																																					
Date Start/Finish: 5/9/12: 08:00-09:00		Drilling Method: Cased Wash Boring		Core Barrel: NQ-2"																																																																																																																																					
Boring Location: 5+11, 8.0 ft Lt.		Casing ID/OD: NW		Water Level*: None Observed																																																																																																																																					
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Page 1 of 1 Boring No.: SB-WOOD-201																																																																																																																																									

State of Maine - Department of Transportation						
Power Auger Probe Summary Sheet						
Town(s): Woodstock			Work Number: 17538.00			
Station (Feet)	Offset (Feet)	Weathered Rock (Feet)	Refusal (Feet)	No Refusal (Feet)	Water Depth (Ft.)	Comments / Date
4+77.3	8.5 Rt.		*5.5			HB-WOOD-102
4+72.3	8.5 Rt.		8.3			HB-WOOD-102A
5+18.9	14.0 Rt.		10.5			HB-WOOD-103
5+04.8	7.0 Lt.		12.2			HB-WOOD-104
The soils were very similar to HB-WOOD-101 in all probes.						
* Refusal possibly on Boulder; refer to Geophysical Report.						



- 1

Route 232
CLOSED
1 MILE AHEAD
USE DETOUR

60"x30"
- 1A

DO NOT
USE
GPS

48"x48"
- 2

DETOUR
AHEAD

48"x48"
- 3

DETOUR

48"x48"
- 3A

ROUTE 232
DETOUR
→

8"x36"
30"x24"
- 3B

ROUTE 232
DETOUR
↑

8"x36"
30"x24"
- 3C

ROUTE 232
DETOUR
←

8"x36"
30"x24"
- 4

ROUTE 232
CLOSED
XX MILES AHEAD

60"x30"
- 5

ROAD CLOSED
LOCAL TRAFFIC ONLY

60"x30"

- 6

ROAD
CLOSED

48"x30"
- 6A

ROAD
CLOSED
1000 FT.

48"x48"
- 6B

ROAD
CLOSED
500 FT.

48"x48"
- 7

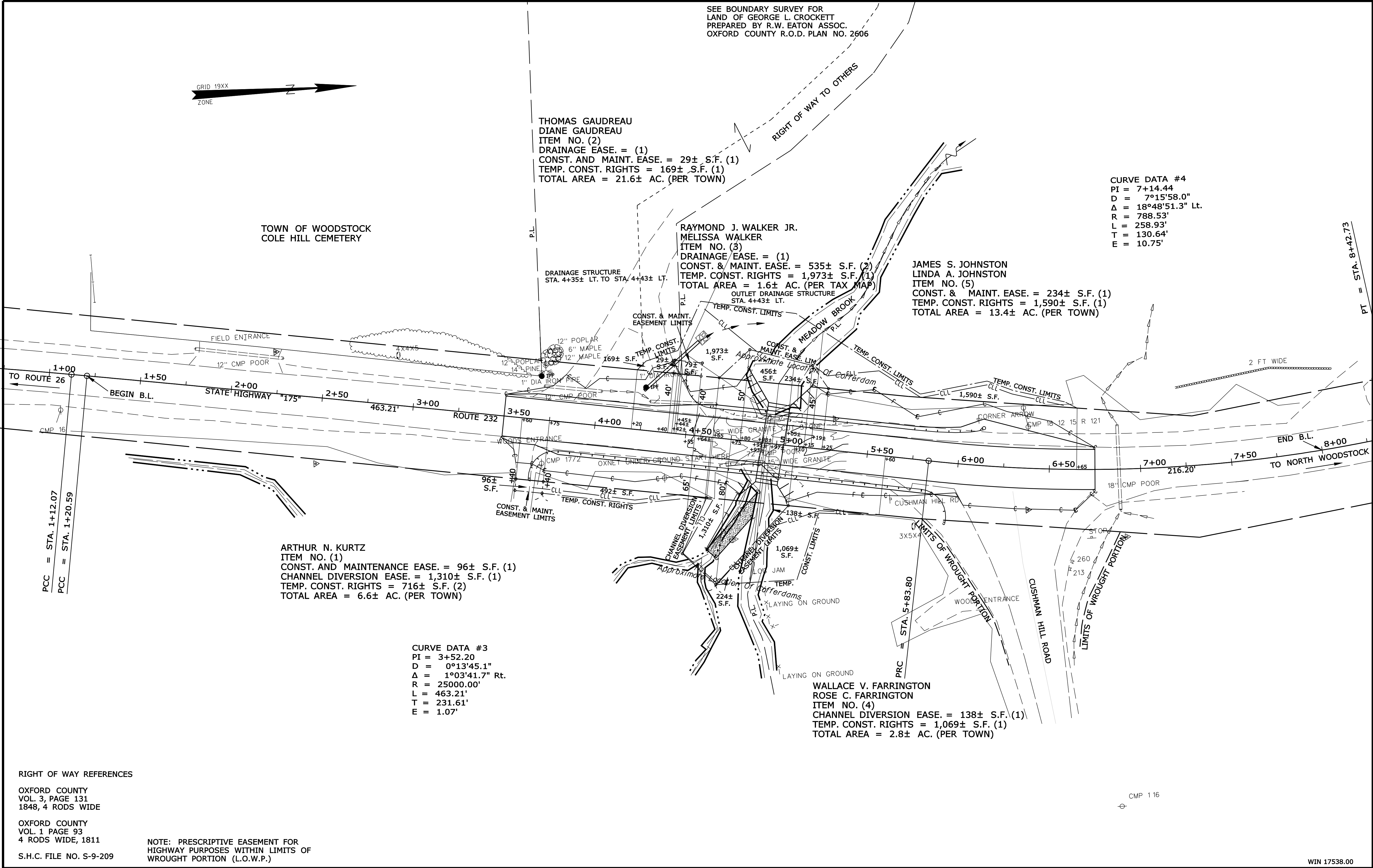
ROUTE 232
END
DETOUR

8"x36"
24"x18"

Woodstock

WOODSTOCK ROUTE 232		PROJ. MANAGER SHAWN SMITH	BY J. WALLACE	DATE AER 2012	STATE OF MAINE DEPARTMENT OF TRANSPORTATION
		DESIGN-DETAILED	CHECKED-REVIEWED	SIGNATURE	
		DESIGN2-DETAILED2	K.BRESKIN	T.WHITE	
		DESIGN3-DETAILED3			
		REVISIONS 1			17538.00
		REVISIONS 2			
		REVISIONS 3			
		REVISIONS 4			
		FIELD CHANGES			PIN 17538.00
					HIGHWAY PLANS

Filename: ...\\00\\highway\\msta\\019_RWP\\plan.dgn Division: HIGHWAY Username: jeffrey.wallace Date: 10/23/2012



STATE OF MAINE DEPARTMENT OF TRANSPORTATION 16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 WOODSTOCK RIGHT OF WAY MAP				SHEET NUMBER	
ITEM	TECH	CHECKED	SYMBOLS		
BASE MAP			● 12" (IRON PIPE) (4" R/W) □ 36" (CONCRETE TANK) □ (ROW MONUMENT) Δ 36" (TRAVERSE POINT)		
EXIST. R/W	PNS		— 14" — WATER LINE — 14" — 10" — GAS LINE — 10" — 12" — ELECTRIC LINE — 12" — 1" — TELEPHONE LINE — 1"		
PROP. LINES	PNS		— NEW RIGHT OF WAY — EXISTING RIGHT OF WAY — NEW RIGHT OF WAY — NEW ROW WITHIN EXIST. ROW		
AREAS			— SEWER LINE — — CONTROL OF ACCESS		