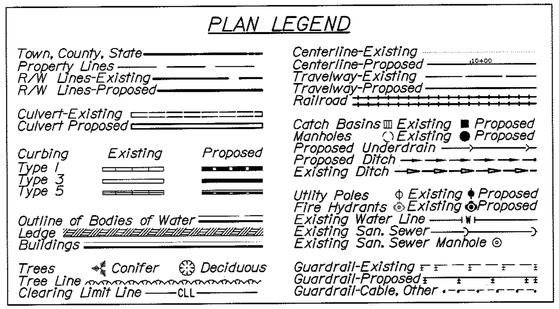
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



WOODSTOCK

OXFORD COUNTY

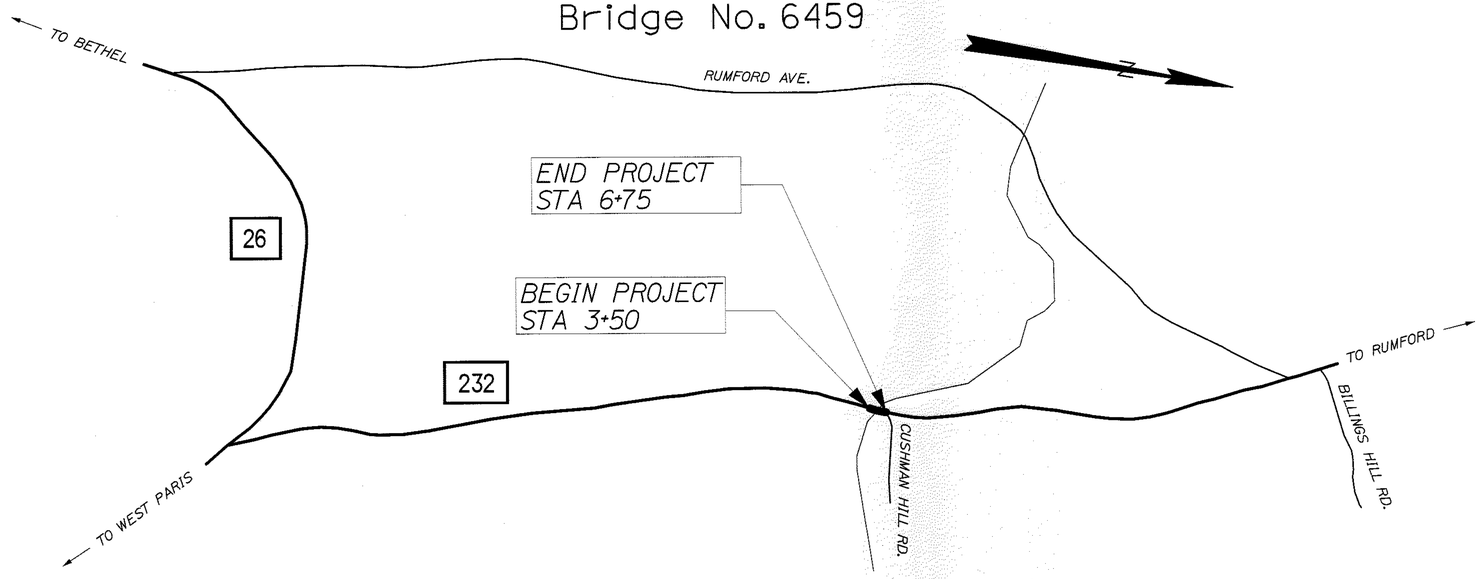
ROUTE 232

STATE PROJECT NO. 17538.00

PROJECT LENGTH: 0.06 MILES

Bridge No. 6459

INDEX OF SHEETS



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 10/26/12

COMMISSIONER: [signature]

CHIEF ENGINEER: [signature]

STATE OF MAINE MARK HUME No. 7957 LICENSED PROFESSIONAL ENGINEER

P.E. NUMBER 7957 DATE 10-22-12

PROJECT INFORMATION

PROGRAM	HIGHWAY
PROJECT MANAGER	SHAWN SMITH
DESIGNER	JEFF WALLACE
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

WOODSTOCK
ROUTE 232

TITLE SHEET

SHEET NUMBER 1 OF 19

Filename: ...\00\HIGHWAY\MSTA\001_Title.dgn Division: HIGHWAY Username: jeffrey.wallace Date:10/22/2012

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
201.11	CLEARING	0.12	AC
203.20	COMMON EXCAVATION	404	CY
203.242	DIRTY BORROW	25	CY
203.26	GRAVEL BORROW	150	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	475	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	150	T
403.209	HOT MIX ASPHALT 9.5 MM HMA (SIDEWALKS, DRIVES, INCIDENTALS)	10	T
403.213	HOT MIX ASPHALT 12.5 MM HMA BASE	300	T
409.15	BITUMINOUS TACK COAT - APPLIED	650	G
411.10	UNTREATED AGGREGATE SURFACE COURSE (TRUCK MEASURE)	10	CY
511.07	COFFERDAM: DOWNSTREAM	1	LS
511.07	COFFERDAM: UPSTREAM	1	LS
603.16	15 INCH CULVERT PIPE OPTION 1	40	LF
606.23	GUARDRAIL TYPE 3C - SINGLE RAIL	312.5	LF
606.231	GUARDRAIL TYPE 3C - 15 FOOT RADIUS AND LESS	37.5	LF
606.232	GUARDRAIL TYPE 3C - OVER 15 FOOT RADIUS	37.5	LF
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	3	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	5	EA
606.79	GUARDRAIL 350 FLARED TERMINAL	1	EA
610.08	PLAIN RIPRAP	10	CY
610.210	STREAM CHANNEL ROCK	20	CY
610.211	STREAM CHANNEL GRAVEL	10	CY
613.319	EROSION CONTROL BLANKET	50	SY
618.1401	SEEDING METHOD NUMBER 2 - PLAN QUANTITY	4	UN
619.1201	MULCH - PLAN QUANTITY	4	UN
620.6012	HDPE GEOMEMBRANE	50	SY
627.733	4 INCH WHITE OR YELLOW PAINTED PAVEMENT MARK LINE	975	LF
627.76	TEMPORARY PAVEMENT MARK LINE, WHITE OR YELLOW	1	LS
629.05	HAND LABOR, STRAIGHT TIME	10	HR
631.12	ALL PURPOSE EXCAVATOR (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	15	EA
652.34	CONE	30	EA
652.35	CONSTRUCTION SIGNS	750	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	127	CD
652.38	FLAGGER	1260	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	3	EA
656.75	TEMP SOIL EROSION AND WATER POLL. CONTROL	1	LS
659.10	MOBILIZATION	1	LS
	ALTERNATIVE NO. 1 - PLATE ARCH ON CIP FOOTINGS W/ PCMG WALLS		
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	255	CY
206.092	STRUCTURAL ROCK EXCAVATION-MAJOR STRUCTURES	15	CY
503.12	REINFORCING STEEL - FABRICATED AND DELIVERED	9100	LB
503.13	REINFORCING STEEL, PLACING	9100	LB
509.13	STEEL STRUCTURAL PLATE ARCH (5500 Lbs)	1	LS
512.081	FRENCH DRAINS	88	LF
635.14	PREFABRICATED CONCRETE MODULAR GRAVITY WALL	400	SF
	ALTERNATIVE NO. 2 - COMPOSITE ARCH BRIDGE SYSTEM		
509.742	COMPOSITE ARCH BRIDGE SYSTEM	1	LS

STATE OF MAINE
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17538.00

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FIELD CHANGES	-----	-----	------

ESTIMATED QUANTITIES

SHEET NUMBER

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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 buried structure 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 seperate 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 (Alternative No. 1)

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 (Alternative No. 1)

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:

	Vertical Reactions:	Horizontal Reactions:
Dead Load:	1.8 kips	0.8 kips
Live Load:	3.1 kips	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
(Alternative No. 1 & No. 2)

1. The Contractor shall provide Prefabricated Concrete Modular Gravity (PCMG) Wingwalls in accordance with Special Provisoon Section 635. The PCMG Wingwalls shall 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 continiously 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 Maine modified

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

STATE OF MAINE
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	BY	DATE
PROJ. MANAGER	SHAWN SMITH	APR 2012
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SIGNATURE

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GENERAL NOTES/GEOTECHNICAL NOTES

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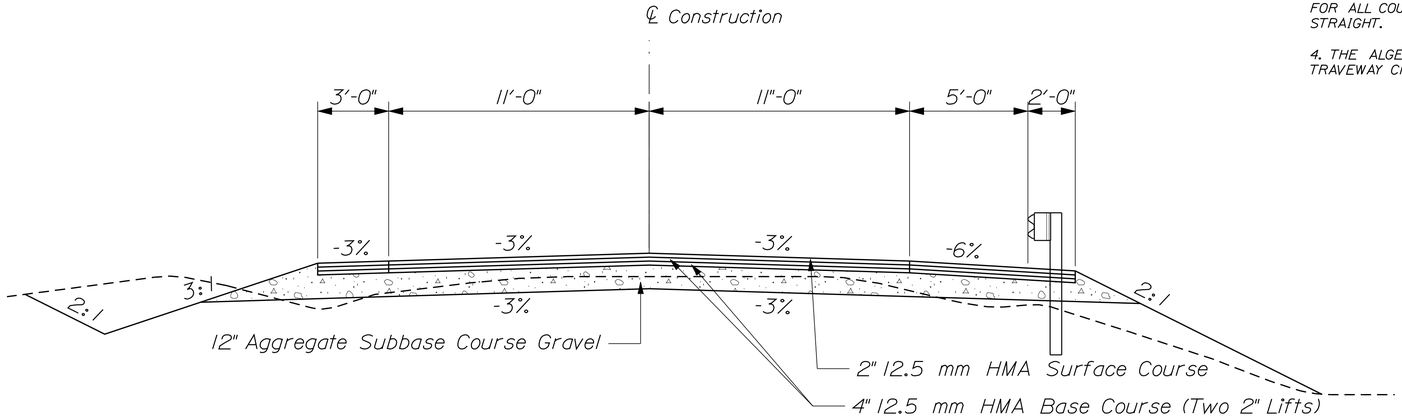
NOTE:

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%.



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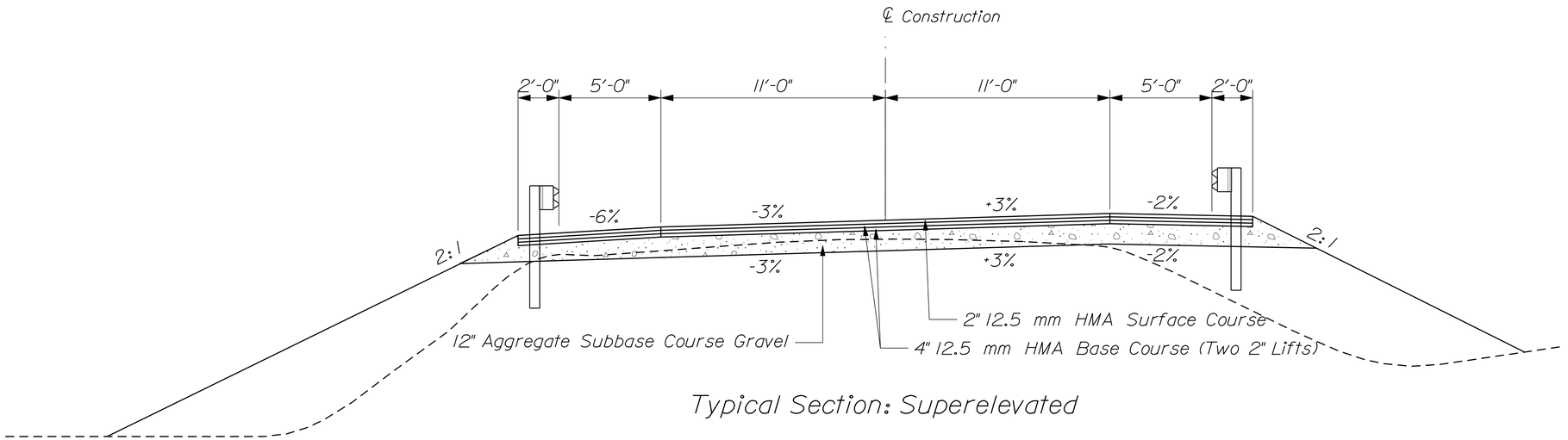

Typical Section: Superelevated

NOT TO SCALE

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TYPICAL SECTIONS

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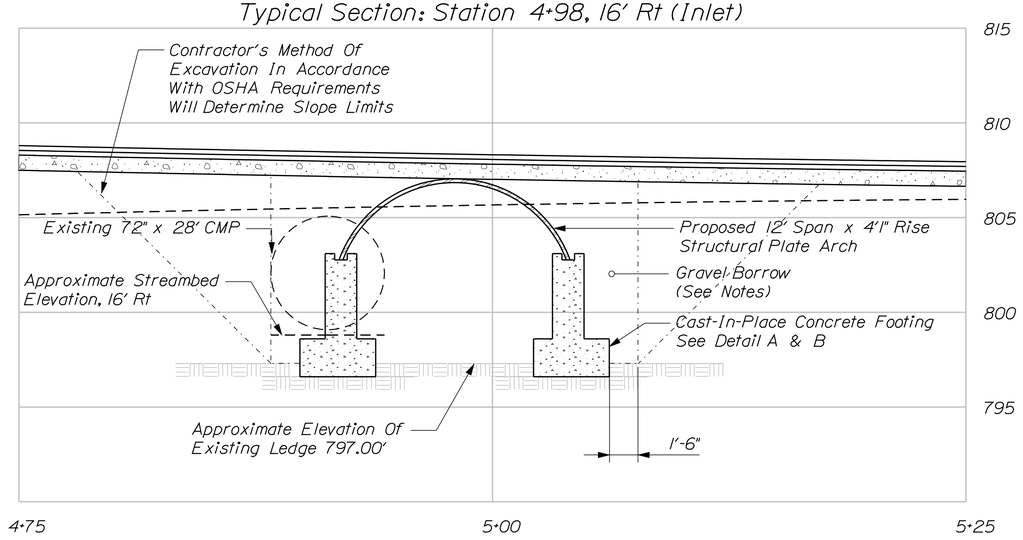
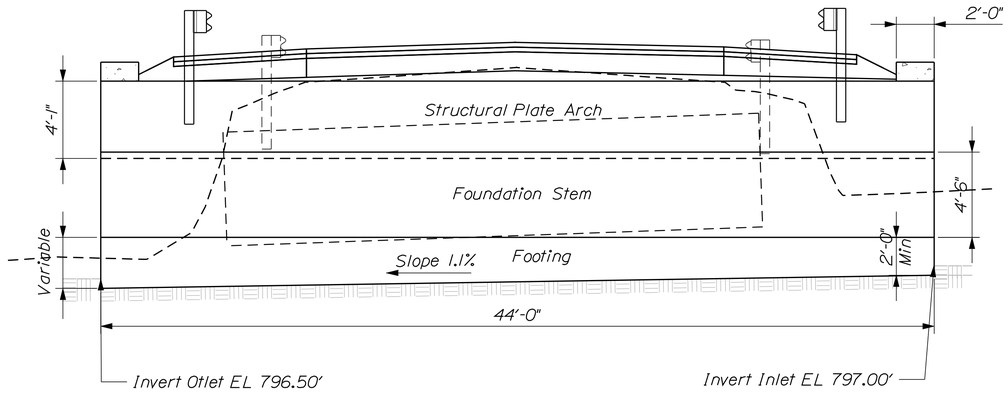
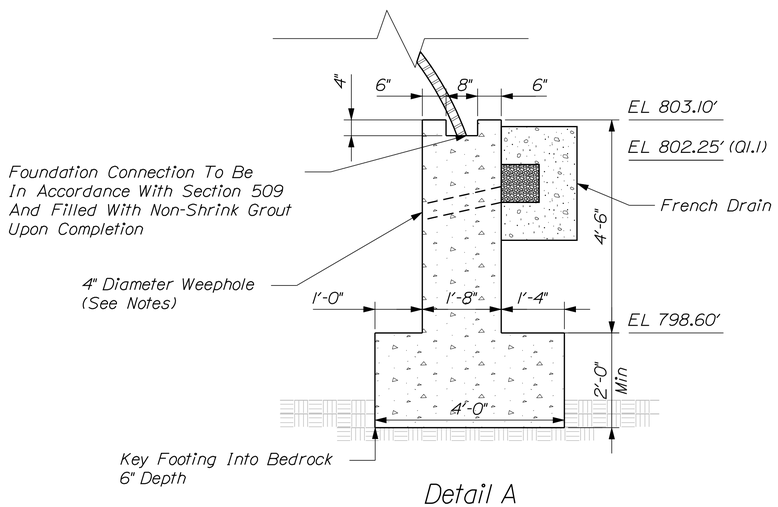
Typical Section: Station 4+98, 16' Rt (Inlet)



Typical Section: Station 4+98, Transverse





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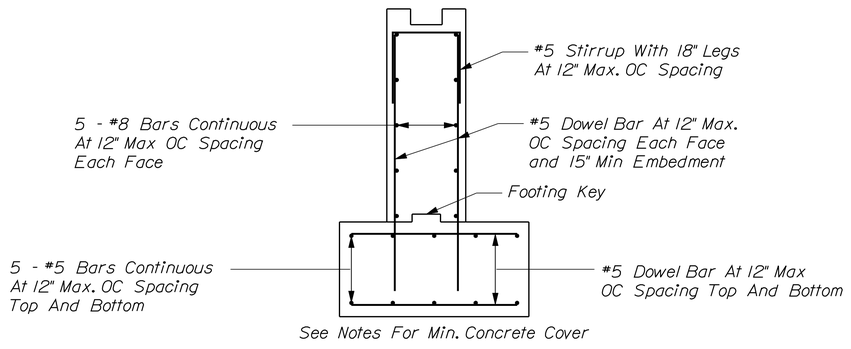

Detail B

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GENERAL DETAILS

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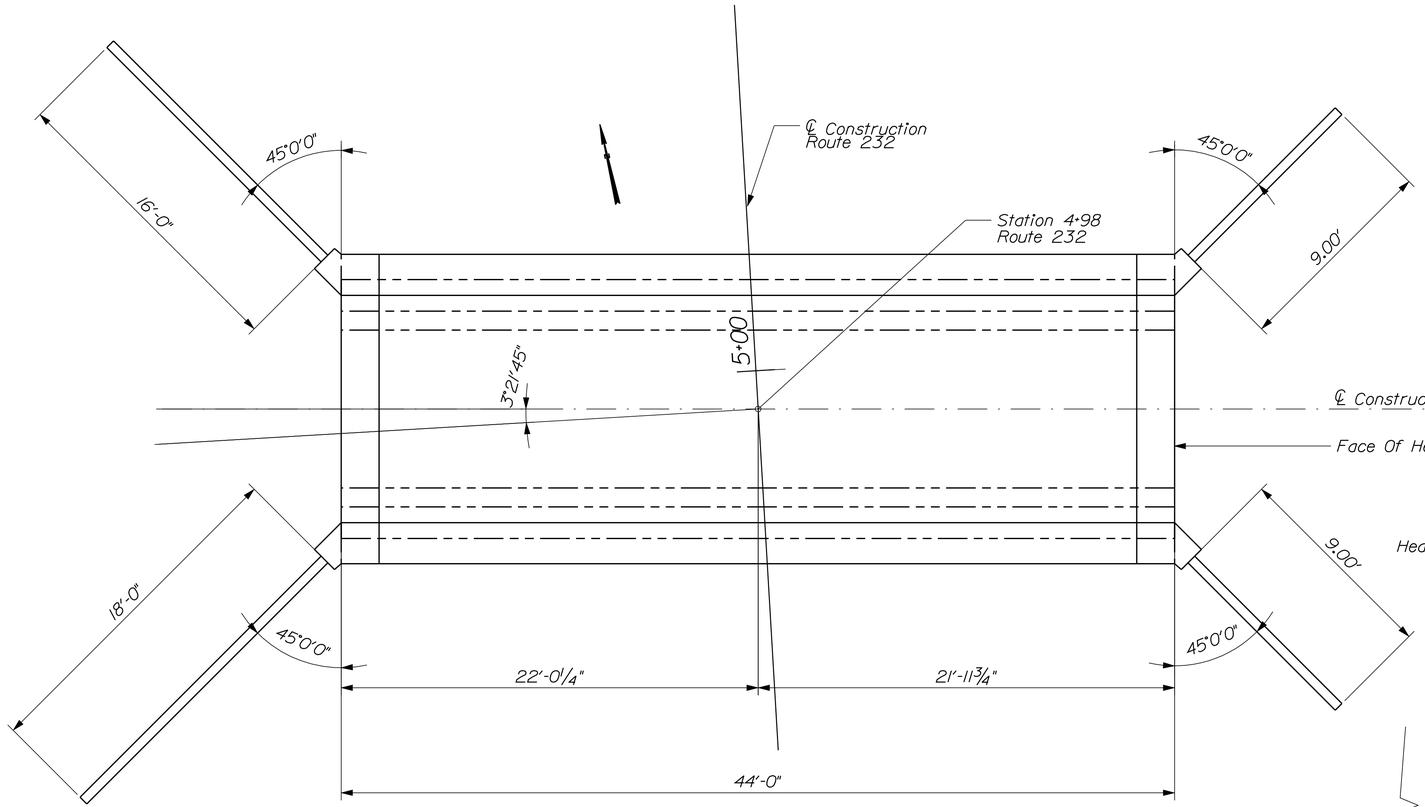
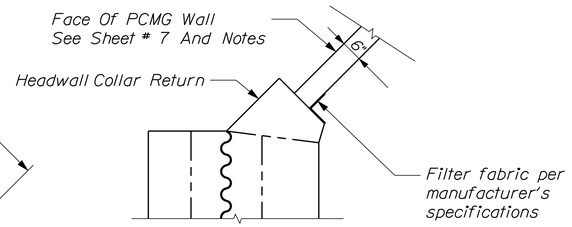
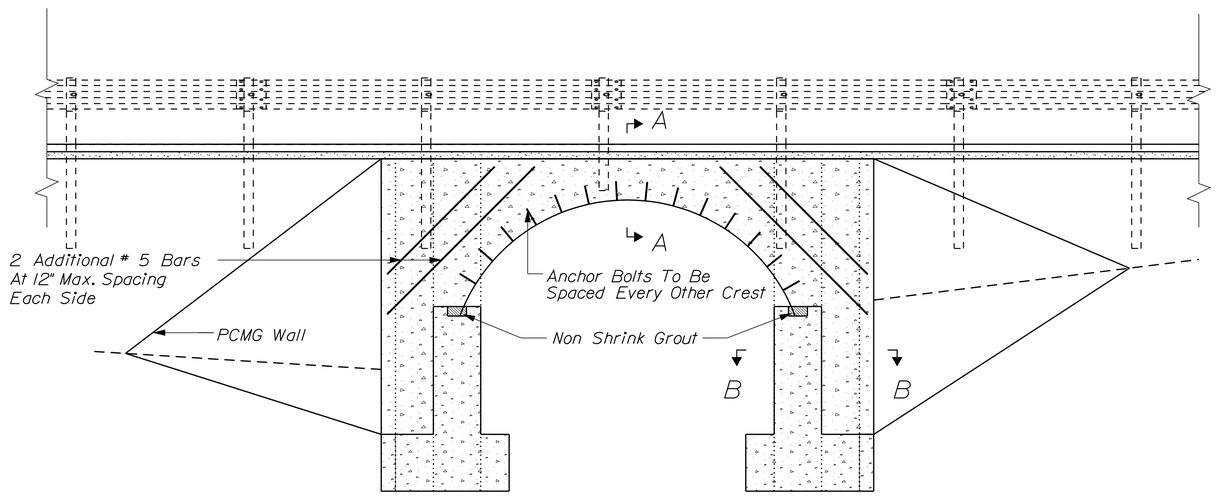


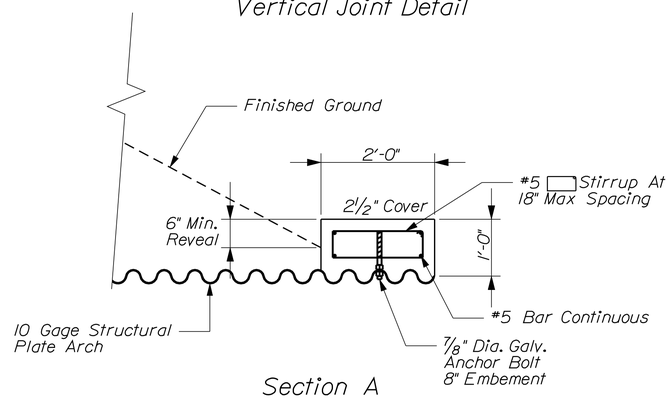
Layout Plan



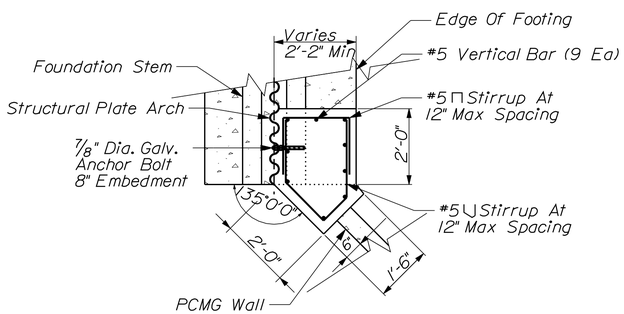
Vertical Joint Detail



Headwall End View



Section A



Section B

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SIGNATURE

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WOODSTOCK
ROUTE 232

FOOTING LAYOUT

SHEET NUMBER

6

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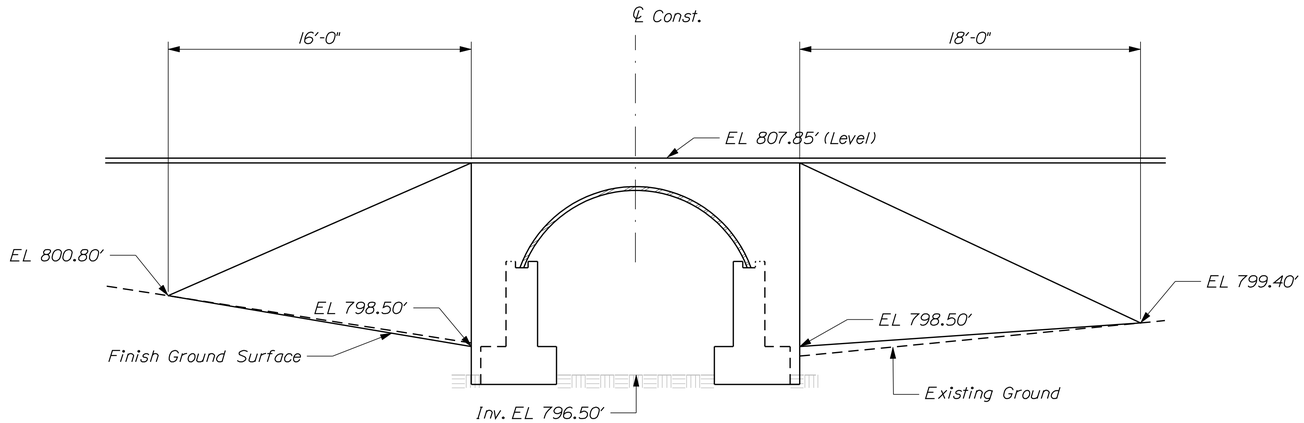
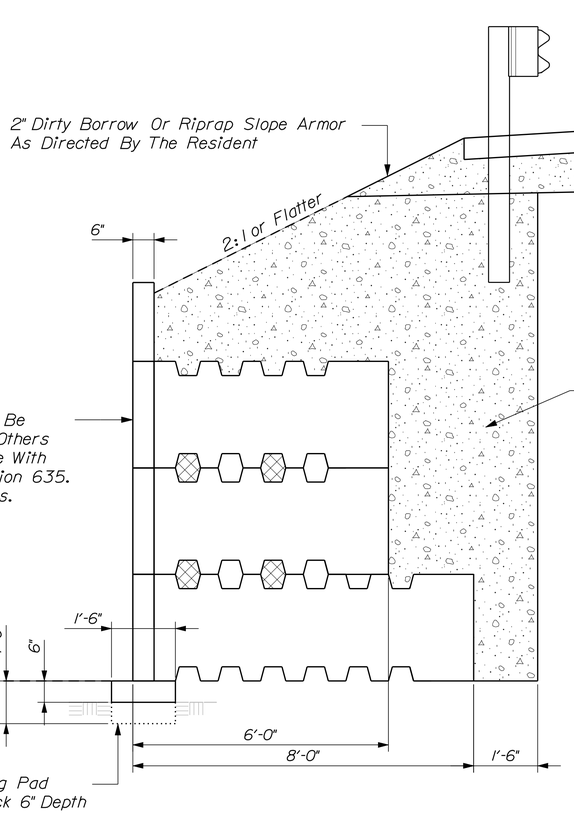
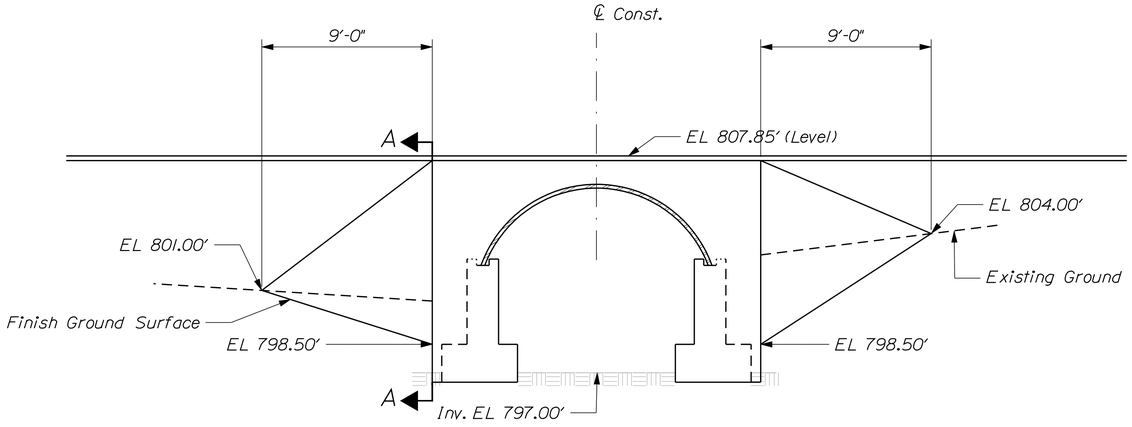
Filename: ...\mstot\006_Footing Layout.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



Downstream Elevation



Section A



Upstream Elevation

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DATE

WOODSTOCK
ROUTE 232

ELEVATIONS

SHEET NUMBER

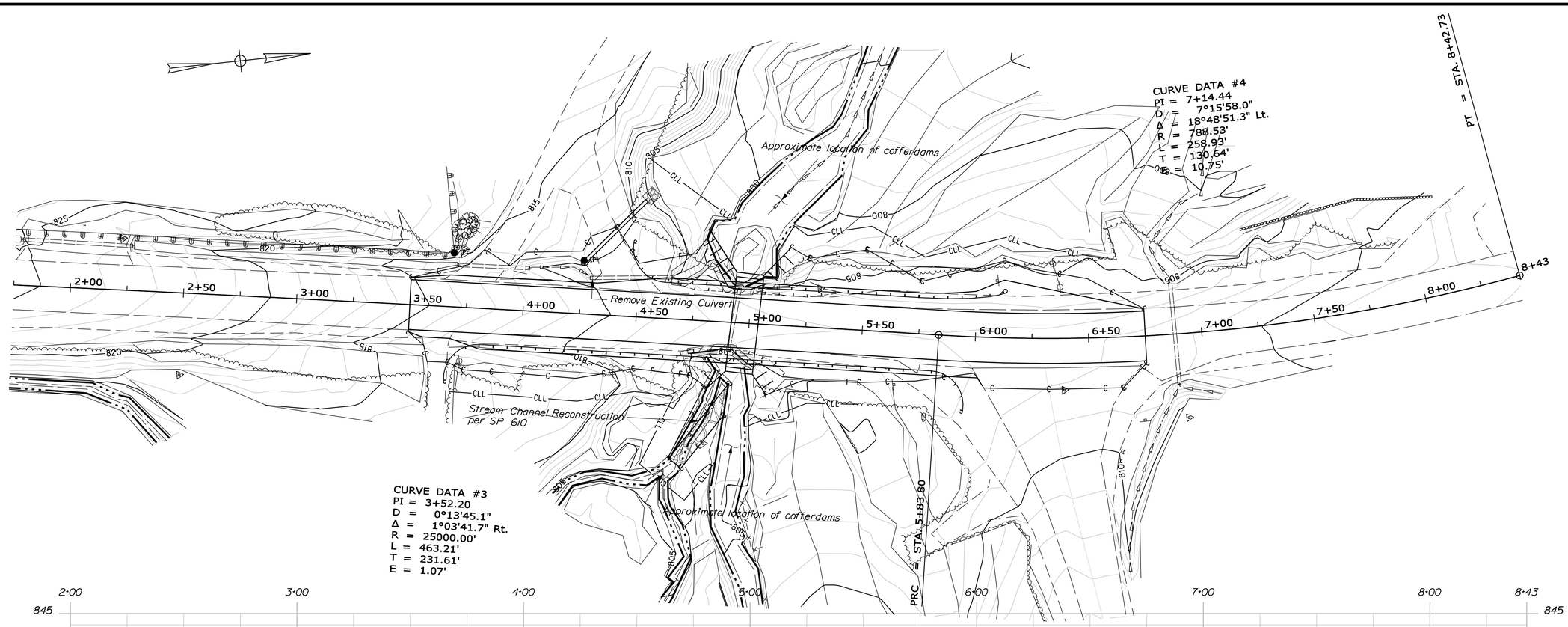
7

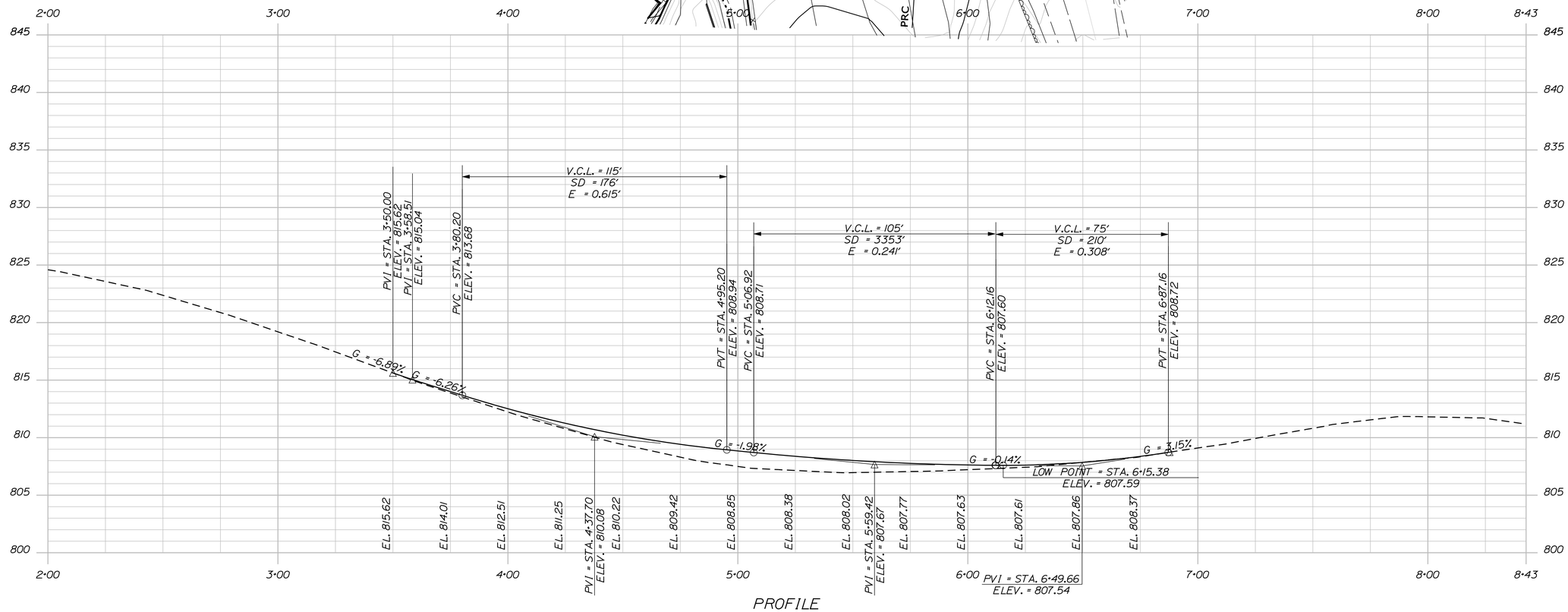
OF 19

Username: Alan.Nadeau Date:11/9/2012

Division: BRIDGE

Filename: ...\bridge\msta\007_Elevations.dgn





STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

		BY	DATE
PROJ. MANAGER	SHAWN SMITH		
DESIGN-DETAILED	J. WALLACE	-----	APR 2012
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	-----	-----	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

PLAN/PROFILE

SHEET NUMBER

8

OF 19

STA. 200.00 TO STA. 842.73

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

		BY	DATE
PROJ. MANAGER	SHAWN SMITH		
DESIGN-DETAILED	J. WALLACE	-----	APR 2012
CHECKED-REVIEWED		-----	-----
DESIGN2-DETAILED2		-----	-----
DESIGN3-DETAILED3		-----	-----
REVISIONS 1		-----	-----
REVISIONS 2		-----	-----
REVISIONS 3		-----	-----
REVISIONS 4		-----	-----
FIELD CHANGES		-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

CROSS SECTIONS

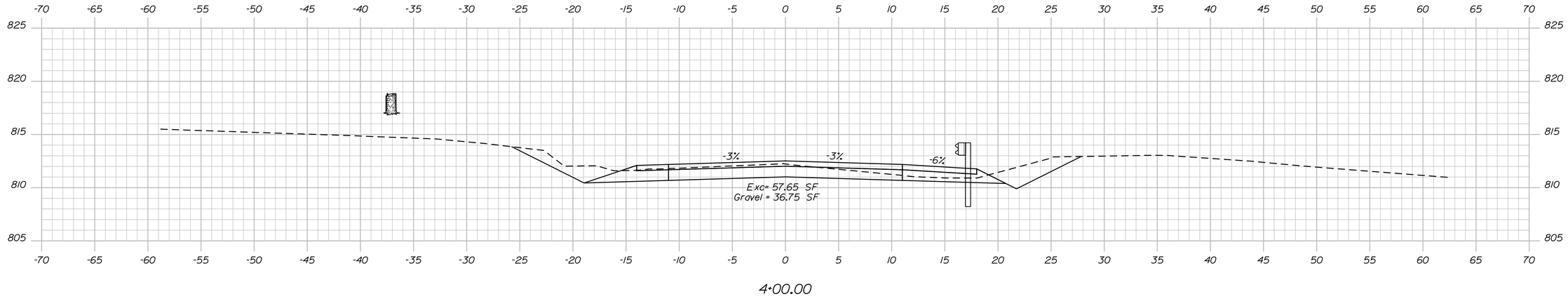
SHEET NUMBER

9

OF 19

Sta. 3+25.00 to Sta. 3+63.00

Filename: ...\00\bridge\msta\009_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



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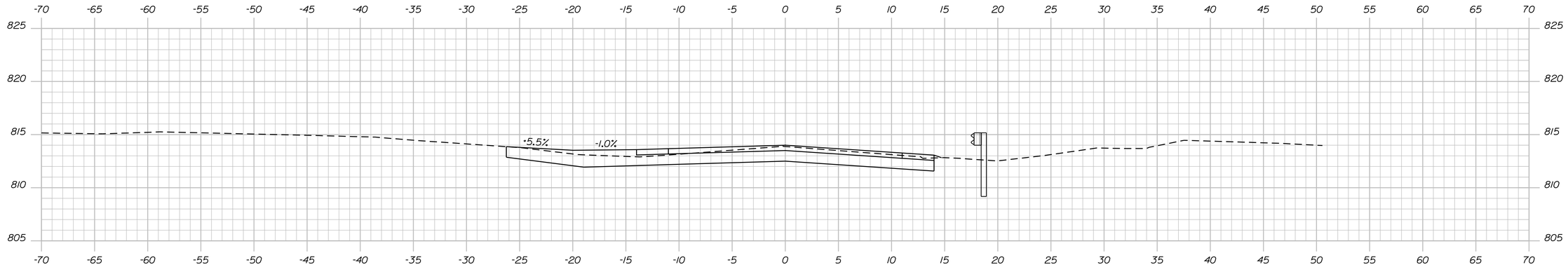

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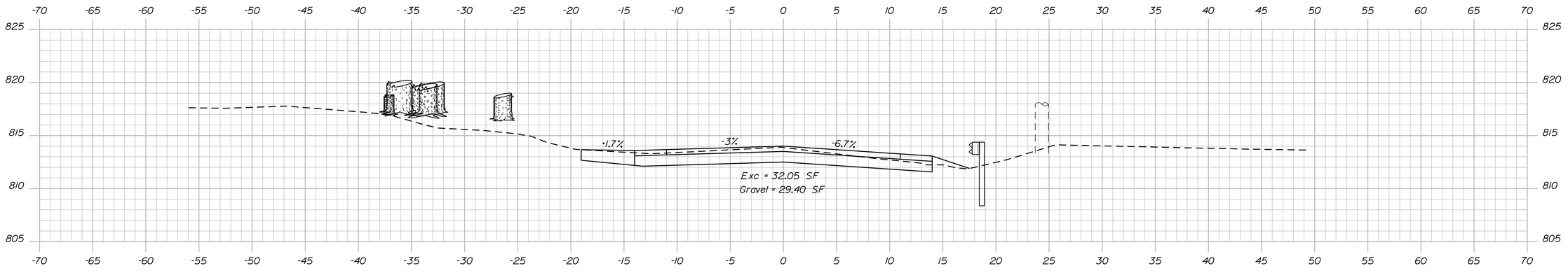


3+75.00

Sta. 3+75.00 to Sta. 4+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	
DESIGN-DETAILED	J. WALLACE	APR 2012
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

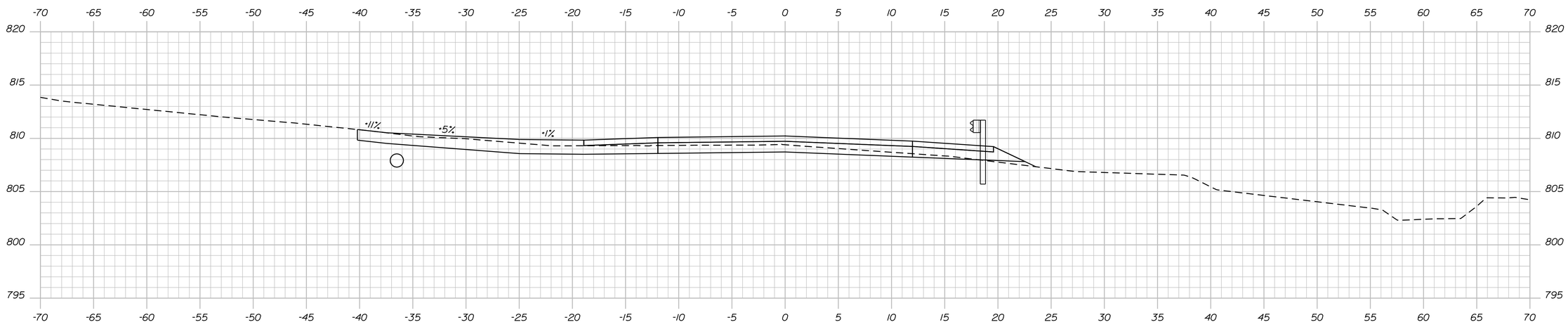
CROSS SECTIONS

SHEET NUMBER

10

OF 19

Filename: ...\00\bridge\vmsto\010_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



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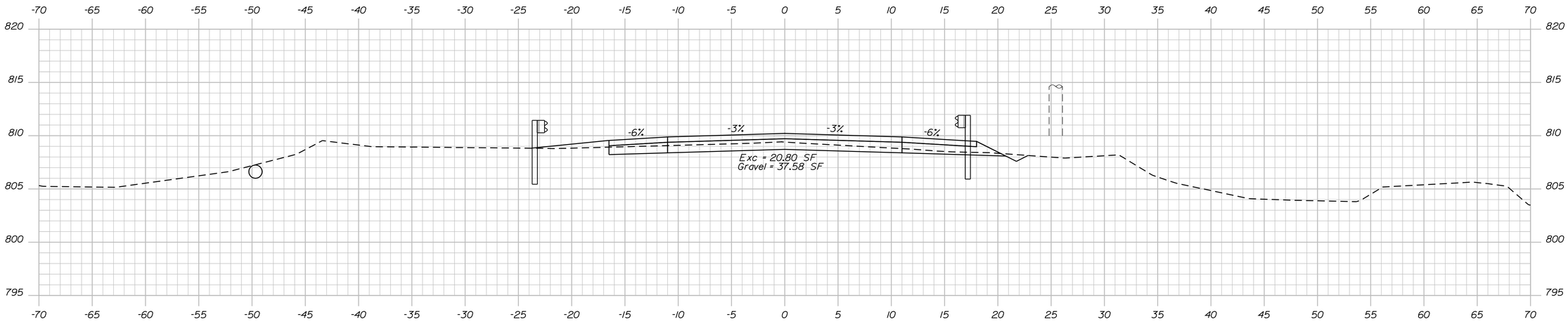

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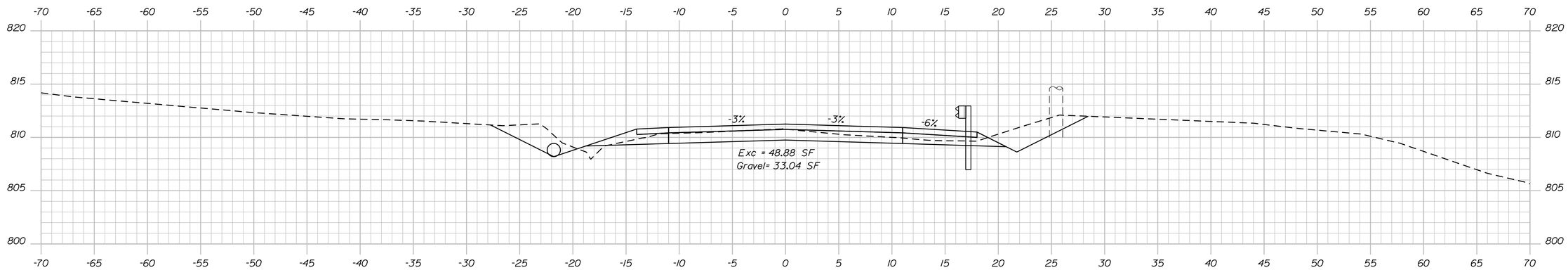


4+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	
DESIGN-DETAILED	J. WALLACE	APR 2012
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

CROSS SECTIONS

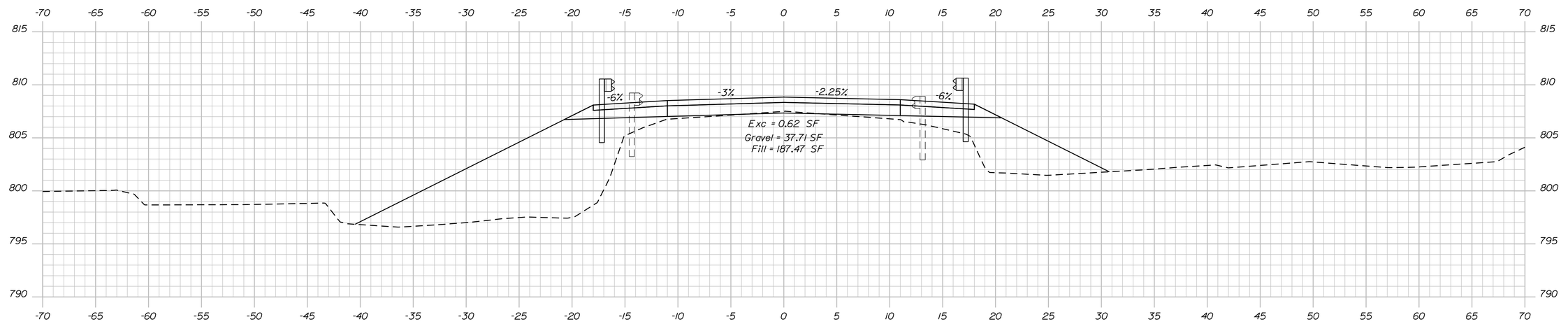
SHEET NUMBER

11

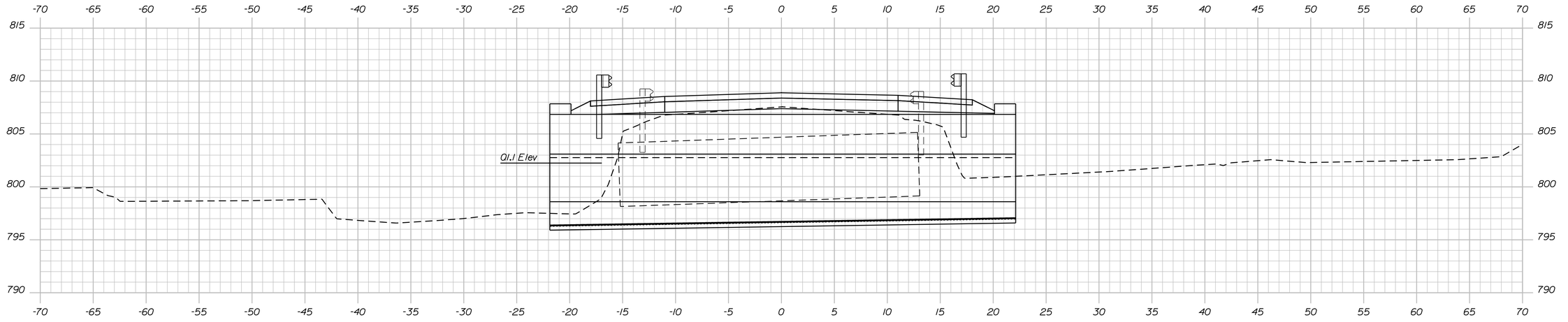
OF 19

Sta. 4+25.00 to Sta. 4+50.00

Filename: ...\00\bridge\rmsto\011_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



5+00.00



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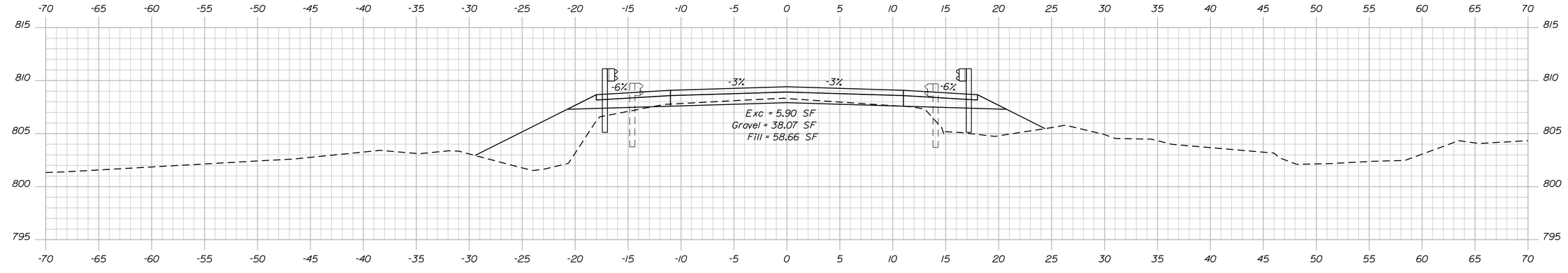


4+75.00

Sta. 4+75.00 to Sta. 5+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	
DESIGN-DETAILED	J. WALLACE	APR 2012
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

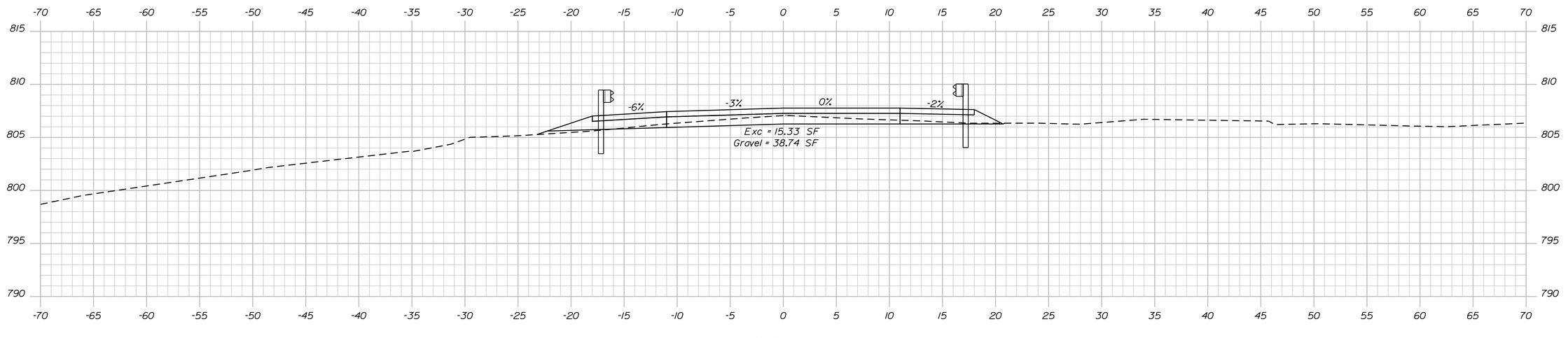
CROSS SECTIONS

SHEET NUMBER

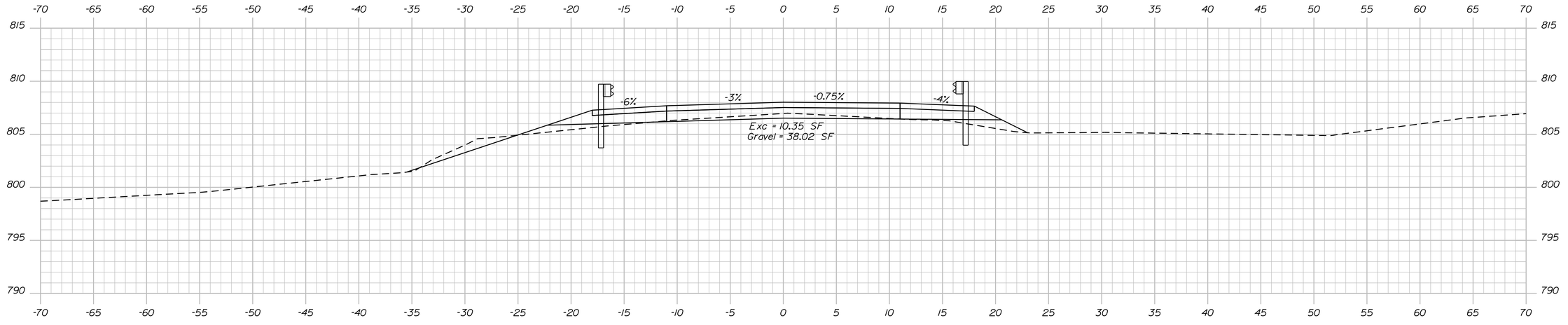
12

OF 19

Filename: ...\00\bridge\mslo\012_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



5+75.00



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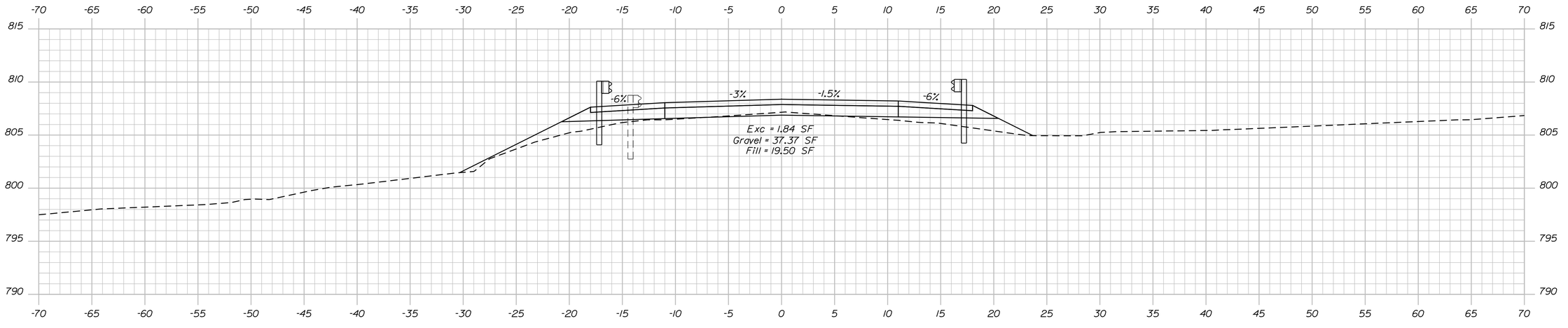


5+25.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	
DESIGN-DETAILED	J. WALLACE	APR 2012
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

CROSS SECTIONS

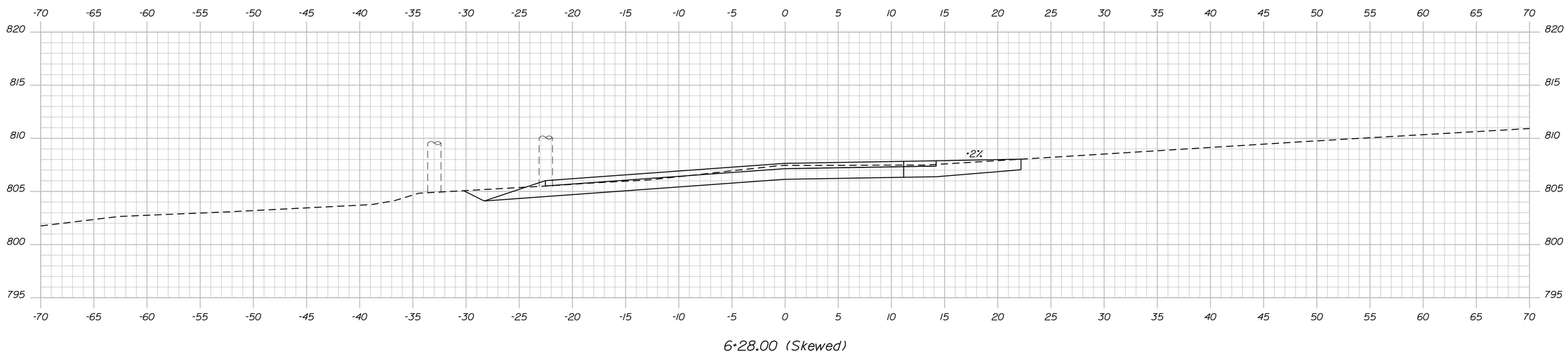
SHEET NUMBER

13

OF 19

Sta. 5+25.00 to Sta. 5+75.00

Filename: ...\00\bridge\msta\013_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



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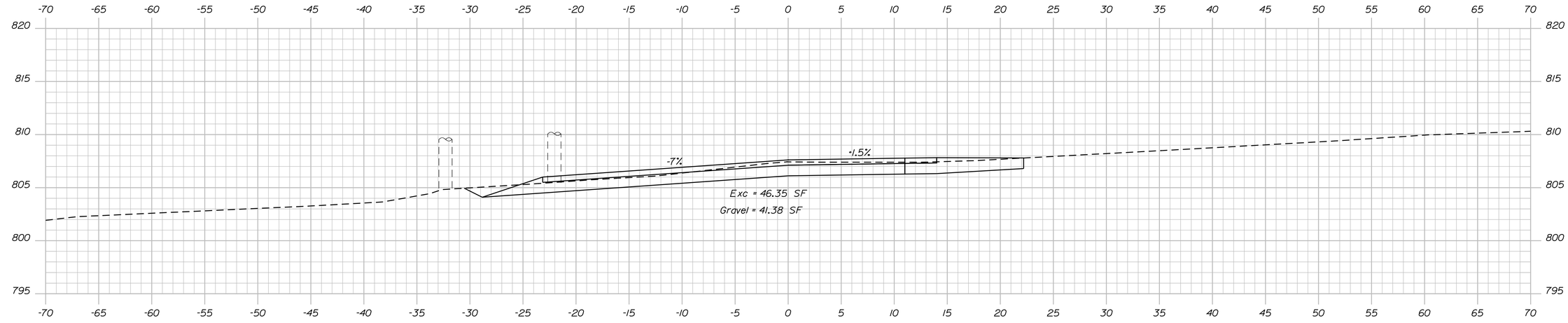

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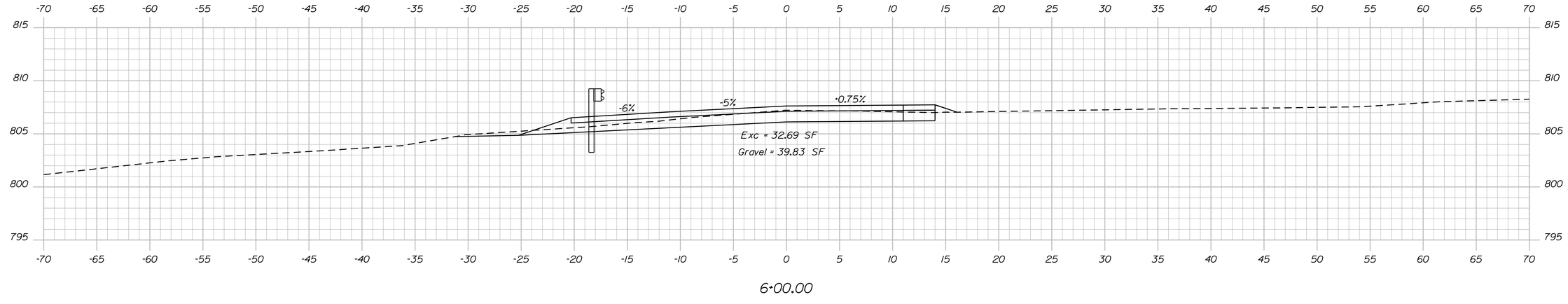


6+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	
DESIGN-DETAILED	J. WALLACE	APR 2012
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

CROSS SECTIONS

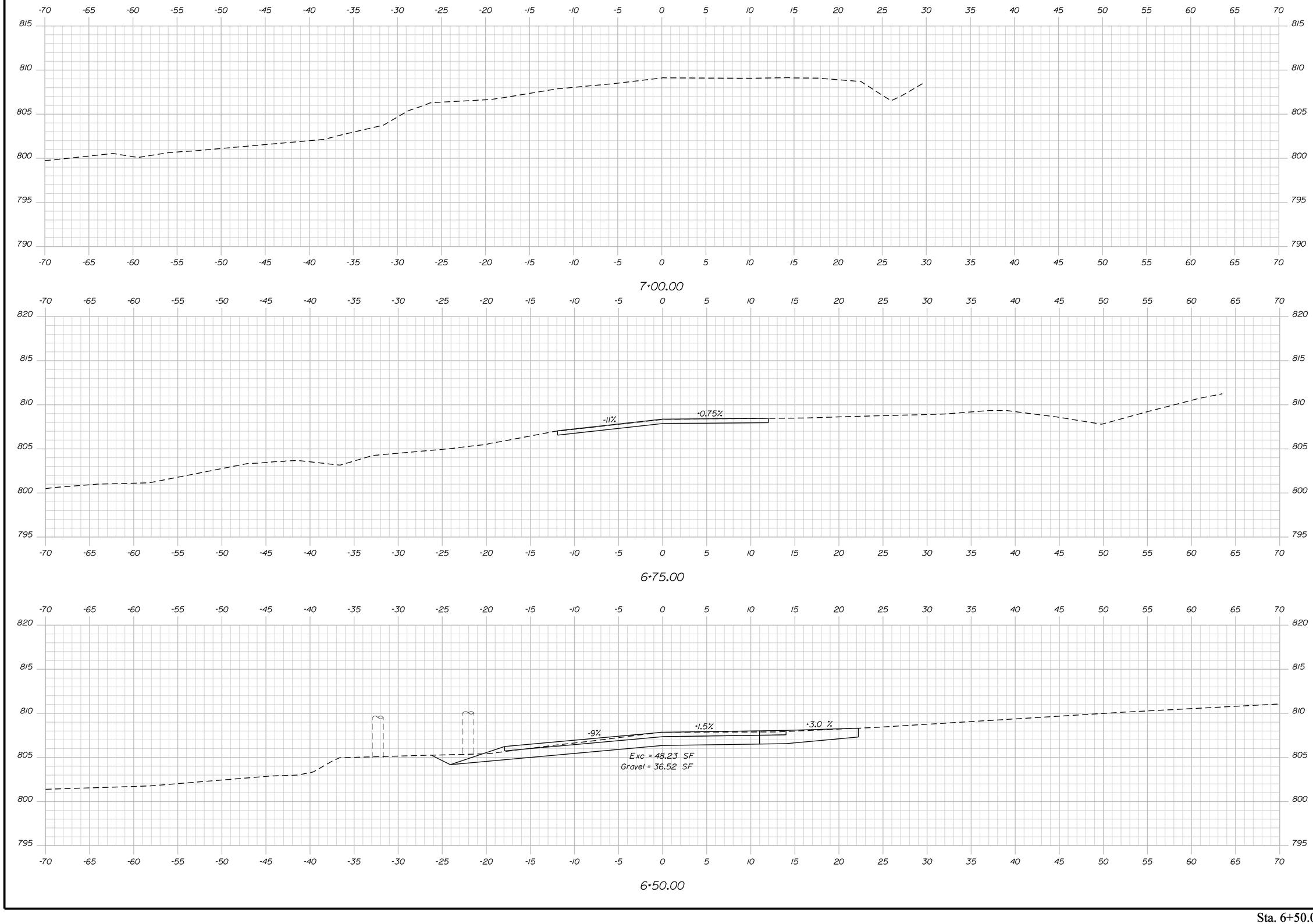
SHEET NUMBER

14

OF 19

Sta. 6+00.00 to Sta. 6+28.00

Filename: ...\00\bridge\vmsto\014_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

		BY	DATE
PROJ. MANAGER	SHAWN SMITH		
DESIGN-DETAILED	J. WALLACE	-----	APR 2012
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	-----	-----	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

WOODSTOCK
ROUTE 232

CROSS SECTIONS

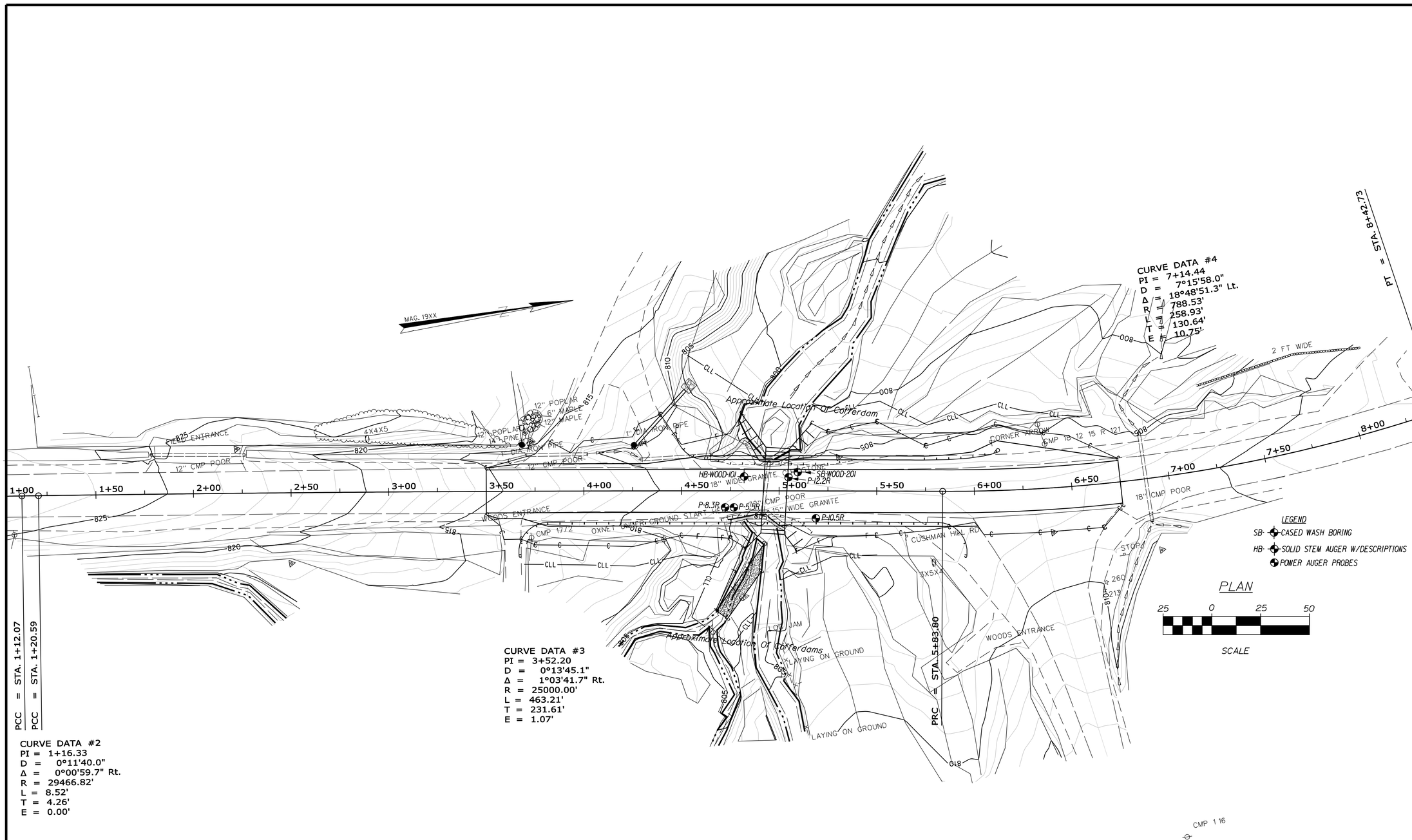
SHEET NUMBER

15

OF 19

Sta. 6+50.00 to Sta. 7+00.00

Filename: ...\00\bridge\rmsto\015_Xsect.dgn Division: BRIDGE Username: Alan.Nadeau Date:11/9/2012



PCC = STA. 1+12.07

PCC = STA. 1+20.59

CURVE DATA #2
PI = 1+16.33
D = 0°11'40.0"
Δ = 0°00'59.7" Rt.
R = 29466.82'
L = 8.52'
T = 4.26'
E = 0.00'

CURVE DATA #3
PI = 3+52.20
D = 0°13'45.1"
Δ = 1°03'41.7" Rt.
R = 25000.00'
L = 463.21'
T = 231.61'
E = 1.07'

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

	BY	DATE
PROJ. MANAGER	SHAWN SMITH	APR 2012
DESIGN-DETAILED	J. WALLACE	-----
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	K. BRESKIN	T. WHITE
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

SHEET NUMBER

16

OF 19

Filename: ...\00\bridge\mst\a\016_GeoPlan.dgn Username: Alan.Nadeau Date:11/9/2012 Division: BRIDGE

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

Driller:	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 ☐

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test. PP = Pocket Penetrometer
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR/C = weight of rods or casing
WOP = weight of one person
S_U = Insitu Field Vane Shear Strength (psf)
T_V = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{U(LAB)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	807.02		7" PAVEMENT. 0.58	
										Cobble from 1.0-1.3 ft bgs.	
	1D	24/16	2.00 - 4.00	3/8/6/12	14	20				Brown, moist, medium dense, silty, fine to medium SAND, little gravel.	GM176418 A-2-4, SM WC=9.2%
								803.10		4.50	
5	2D	24/15	5.00 - 7.00	6/26/14/13	40	56				Brown, moist, dense, fine to coarse SAND, some gravel, little silt, occasional cobble.	GM176419 A-1-b, SM WC=8.3%
										Solid drilling from 8.2-9.3 ft bgs.	
								798.30		9.30	
10										Bottom of Exploration at 9.30 feet below ground surface. REFUSAL	
15											
20											
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Boring No.: HB-WOOD-101

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

Driller:	MaineDOT	Elevation (ft.) 806.5	Auger ID/OD: 5" Dia.
Operator:	Giguere/Giles/Daggett	Datum: NAVD88	Sampler: N/A
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
Hammer Efficiency Factor: 0.84		Hammer Type: Automatic ☒ Hydraulic ☐	Rope & Cathead ☐

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test. PP = Pocket Penetrometer
MV = Unsuccessful Insitu Vane Shear Test attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = weight of 140lb. hammer
WOR/C = weight of rods or casing
WOP = weight of one person
S_U = Insitu Field Vane Shear Strength (psf)
T_V = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{U(LAB)}$ = Lab Vane Shear Strength (psf)
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	805.96		6.5" PAVEMENT. 0.54	
										No descriptions given.	
							30				
5							36			Set in NW Casing at 5.0 ft bgs. then drove to 10.3 ft bgs.	
							57				
							68				
							77				
10	R1	60/60	10.30 - 15.30	RQD = 73%			Q50 NQ-2	796.20		Q50 blows for 0.3 ft. 10.30 Top of Bedrock at Elev. 796.2 ft. R1:Bedrock: Hard, fresh, white to grey medium grained, Quartz Biotite GNEISS. Close, low angle joints predominately parallel to foliation, with a few of the joints showing slight weathering (biotite discoloration). Rock Mass Quality = Fair R1:Core Times (min:sec) 10.3-11.3 ft (2:50) 11.3-12.3 ft (1:50) 12.3-13.3 ft (1:10) 13.3-14.3 ft (1:20) 14.3-15.3 ft (1:45) 100% Recovery	
15								791.20		15.30	
										Bottom of Exploration at 15.30 feet below ground surface.	
20											
25											

Remarks:

Stratification lines represent approximate boundaries between soil typest transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

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 12/8/2011
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.						

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN
17538.00

PROJ. MANAGER	SHAWN SMITH	BY	DATE
DESIGN-DETAILED	J. WALLACE	-----	APR 2012
CHECKED-REVIEWED	-----	-----	-----
DESIGN2-DETAILED2	K. BRESKIN	T. WHITE	-----
DESIGN3-DETAILED3	-----	-----	-----
REVISIONS 1	-----	-----	-----
REVISIONS 2	-----	-----	-----
REVISIONS 3	-----	-----	-----
REVISIONS 4	-----	-----	-----
FIELD CHANGES	-----	-----	-----

SIGNATURE

P.E. NUMBER

DATE

SHEET NUMBER

17

OF 19

Filename: ...\mslo\017_BORING LOGS1.dgn Division: BRIDGE Usersname: Alan.Nodeau Date:11/9/2012

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"

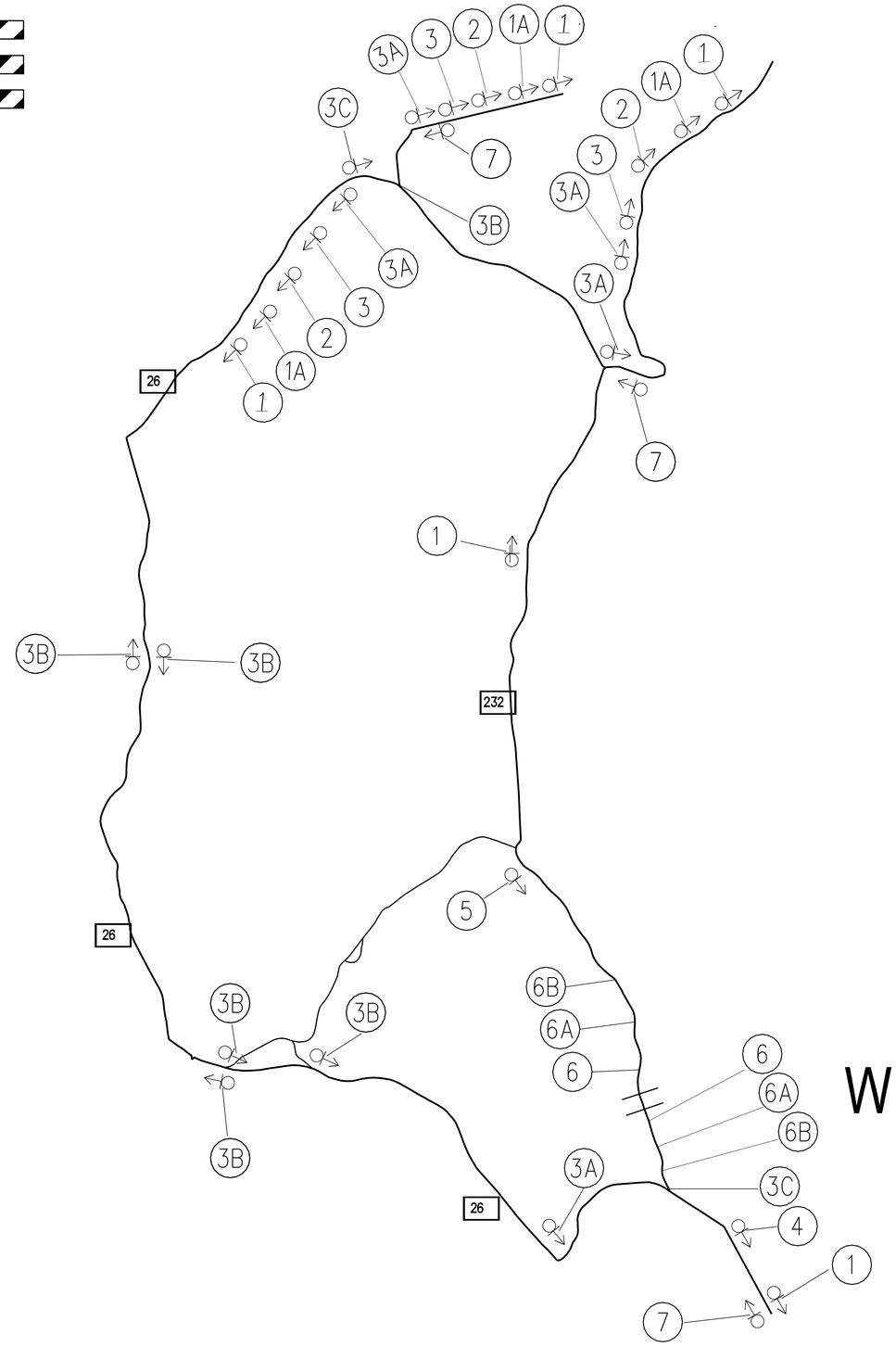
5 — ROAD CLOSED / LOCAL TRAFFIC ONLY — 60"x30"

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"



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

17538.00

WIN 17538.00

		BY	DATE
PROJ. MANAGER	SHAWN SMITH		
DESIGN-DETAILED	J. WALLACE	-----	APR 2012
CHECKED-REVIEWED		-----	-----
DESIGN2-DETAILED2		-----	-----
DESIGN3-DETAILED3		-----	-----
REVISIONS 1		-----	-----
REVISIONS 2		-----	-----
REVISIONS 3		-----	-----
REVISIONS 4		-----	-----
FIELD CHANGES		-----	-----

SIGNATURE

P.E. NUMBER

DATE

DETOUR PLAN

SHEET NUMBER

18

OF 19

SEE BOUNDARY SURVEY FOR
LAND OF GEORGE L. CROCKETT
PREPARED BY R.W. EATON ASSOC.
OXFORD COUNTY R.O.D. PLAN NO. 2606

GRID 19XX ZONE

THOMAS GAUDREAU
DIANE GAUDREAU
ITEM NO. (2)
DRAINAGE EASE. = (1)
CONST. AND MAINT. EASE. = 29± S.F. (1)
TEMP. CONST. RIGHTS = 169± S.F. (1)
TOTAL AREA = 21.6± AC. (PER TOWN)

RIGHT OF WAY TO OTHERS

TOWN OF WOODSTOCK
COLE HILL CEMETERY

RAYMOND J. WALKER JR.
MELISSA WALKER
ITEM NO. (3)
DRAINAGE EASE. = (1)
CONST. & MAINT. EASE. = 535± S.F. (2)
TEMP. CONST. RIGHTS = 1,973± S.F. (1)
TOTAL AREA = 1.6± AC. (PER TAX MAP)

JAMES S. JOHNSTON
LINDA A. JOHNSTON
ITEM NO. (5)
CONST. & MAINT. EASE. = 234± S.F. (1)
TEMP. CONST. RIGHTS = 1,590± S.F. (1)
TOTAL AREA = 13.4± AC. (PER TOWN)

CURVE DATA #4
PI = 7+14.44
D = 7°15'58.0"
Δ = 18°48'51.3" Lt.
R = 788.53'
L = 258.93'
T = 130.64'
E = 10.75'

DRAINAGE STRUCTURE
STA. 4+35± LT. TO STA. 4+43± LT.

OUTLET DRAINAGE STRUCTURE
STA. 4+43± LT.

CONST. & MAINT. EASEMENT LIMITS

TEMP. CONST. LIMITS

MEADOW BROOK

Approximate location of Cofferdam

FIELD ENTRANCE

12" CMP POOR

4X4X5

12" POPLAR
6" MAPLE
12" MAPLE
14" PINE

1" DIA IRON PIPE

169± S.F.

TEMP. CONST. LIMITS 29± S.F.

79± S.F.

1,973± S.F.

456± S.F.

234± S.F.

1,590± S.F.

CORNER ARROW
CMP 18 12 15 R 121

2 FT WIDE

PT = STA. 8+42.73

TO ROUTE 26

BEGIN B.L.

STATE HIGHWAY "175"

463.21'

ROUTE 232

CMP 16

WOODS ENTRANCE

CMP 17 72

OXNET UNDERGROUND START HERE

45' WIDE GRANITE

18" CMP POOR

END B.L.

TO NORTH WOODSTOCK

216.20'

96± S.F.

492± S.F.

CONST. & MAINT. EASEMENT LIMITS

TEMP. CONST. RIGHTS

CHANNEL DIVERSION EASEMENT LIMITS

1,310± S.F.

138± S.F.

1,069± S.F.

CONST. LIMITS

CHANNEL DIVERSION EASEMENT LIMITS

LOG JAM

TEMP.

Approximate location of Cofferdams

224± S.F.

LAYING ON GROUND

LAYING ON GROUND

P CUSHMAN HILL RD

3X5X4

LIMITS OF WROUGHT PORTION

STOP

WOODS ENTRANCE

CUSHMAN HILL ROAD

LIMITS OF WROUGHT PORTION

PRC = STA. 5+83.80

R 260
R 213

PCC = STA. 1+12.07
PCC = STA. 1+20.59

ARTHUR N. KURTZ
ITEM NO. (1)
CONST. AND MAINTENANCE EASE. = 96± S.F. (1)
CHANNEL DIVERSION EASE. = 1,310± S.F. (1)
TEMP. CONST. RIGHTS = 716± S.F. (2)
TOTAL AREA = 6.6± AC. (PER TOWN)

CURVE DATA #3
PI = 3+52.20
D = 0°13'45.1"
Δ = 1°03'41.7" Rt.
R = 25000.00'
L = 463.21'
T = 231.61'
E = 1.07'

WALLACE V. FARRINGTON
ROSE C. FARRINGTON
ITEM NO. (4)
CHANNEL DIVERSION EASE. = 138± S.F. (1)
TEMP. CONST. RIGHTS = 1,069± S.F. (1)
TOTAL AREA = 2.8± AC. (PER TOWN)

CMP 1 16

RIGHT OF WAY REFERENCES

OXFORD COUNTY
VOL. 3, PAGE 131
1848, 4 RODS WIDE

OXFORD COUNTY
VOL. 1 PAGE 93
4 RODS WIDE, 1811

S.H.C. FILE NO. S-9-209

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

SYMBOLS

- (WELL) WELL
- GRADING LIMIT LINE
- CONSTRUCTION LIMIT LINE
- PROPERTY LINE P.L.
- LIMITS OF WROUGHT PORTION (L.O.W.P.)
- EXISTING RIGHT OF WAY
- NEW RIGHT OF WAY
- NEW ROW WITHIN EXIST. ROW
- CONTROL OF ACCESS
- IPF (IRON PIPE or PIN)
- S.T. (SEPTIC TANK)
- ⊕DM (TRAVERSE POINT)
- W WATER LINE
- G GAS LINE
- E ELECTRIC LINE
- T TELEPHONE LINE
- SEWER LINE

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W		
PROP. LINES		
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016

RIGHT OF WAY MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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

DAVID BERNHARDT
COMMISSIONER
KENNETH L. SWEENEY
CHIEF ENGINEER
DATE

D.O.T. FILE NO. 9-247

SHEET NUMBER
19
OF 19