STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Fourth Edition 2007 and Interim Specifications through 2009.

DESIGN LOADING

Live Load ..... HL - 93 Modified

TRAFFIC DATA

Current (2010) AADT	630
Future (2030) AADT	760
DHV - % of AADT	11
Design Hour Volume	84
Heavy Trucks (% of AADT)	20
Heavy Trucks (% of DHV)	11
Directional Distribution (% of DHV)	67
18 kip Equivalent P 2.0	121
18 kip Equivalent P 2.5	115
Design Speed (mph)	45

HYDROLOGIC DATA

Drainage Area	10.7 sq mi
Design Discharge (Q50)	220.3 cfs
Check Discharge (Q100)	275.6 cfs
Headwater Elevation (Q50)	610.09 ft
Headwater Elevation (Q100)	610.45 ft
Discharge Velocity (Q50)	8.64 fps
Discharge Velocity (Q100)	9.11 fps
Headwater Elevation (Q1.1)	608.27 ft
Discharge Velocity (Q1.1)	3.82 fps

MATERIALS

Concrete:
Precast ..... Class "P"

Reinforcing Steel ..... ASTM A 615/A 615M, Grade 60

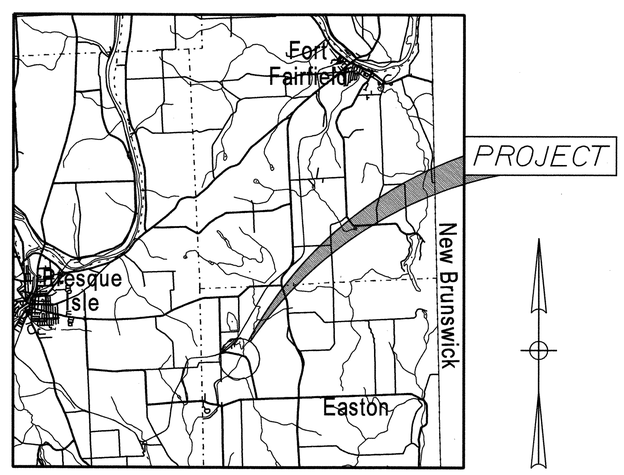
BASIC DESIGN STRESSES

Concrete	f 'c = 4,350 psi
Precast Concrete	f 'c = 5,000 psi
Reinforcing Steel	f y = 60,000 psi

MAINTENANCE OF TRAFFIC

Richardson Road shall be closed for a period of time specified within the Special Provisions. Traffic will be detoured over adjacent roads.

EASTON
AROOSTOOK COUNTY
PRESTILE BROOK BRIDGE
OVER
PRESTILE STREAM
RICHARDSON ROAD
PROJECT NO. BH-1669(800)X
PROJECT LENGTH 0.003 mi.
BRIDGE CULVERT REPLACEMENT
BRIDGE NO. 0125



LOCATION MAP

2 0 2 4
Scale of Miles

LIST OF DRAWINGS

Title Sheet	1
Quantities & Notes	2
General Plan & Profile	3
Highway Approach Cross - Sections	4-6
Box Culvert Details	7
Detour Plan	8
Right of Way Map	9

SCOPE OF WORK

Replace existing pipes with a single 14'-0" Span x 6'-0" Rise Precast Concrete Box Culvert with toewalls and headwalls. Construct 135' of approaches. Construct plain riprap aprons upstream and downstream of pipes.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED — DATE
COMMISSIONER: — 3/1/12
CHIEF ENGINEER — 3/1/2010

STATE OF MAINE ★ Michael Harry Wight ★ 8089 ★ LICENSED PROFESSIONAL ENGINEER

SIGNATURE 8089
P.E. NUMBER
DATE 2/26/2010

PROJECT INFORMATION

PROGRAM	BRIDGE
PROJECT MANAGER	STEVE BODGE
DESIGNER	BRIAN NICHOLS
CONSULTANT	
PROJECT RESIDENT	TROY DEVOE
CONTRACTOR	
PROJECT COMPLETION DATE	DATE

PIN 16698.00

BH-1669(800)X

EASTON
PRESTILE BROOK BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 9

Filename:\00\BRIDGE\MSTA\001_Title.dgn Division: BRIDGE Username: brian.j.nichols Date:2/26/2010

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.20	COMMON EXCAVATION	450	CY
203.24	COMMON BORROW	10	CY
203.25	GRANULAR BORROW	115	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	420	CY
403.207	HOT MIX ASPHALT 19.0 MM HMA	90	T
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	60	T
409.15	BITUMINOUS TACK COAT - APPLIED	15	G
508.13	MEMBRANE WATERPROOFING (90 SY)	1	LS
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE 1 (60 LF)	1	LS
534.71	PRECAST CONCRETE BOX CULVERT (100 CY)	1	LS
606.23	GUARDRAIL TYPE 3C - SINGLE RAIL	200	LF
606.231	GUARDRAIL TYPE 3C - 15 FOOT RADIUS AND LESS	25	LF
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	1	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	2	EA
606.365	GUARDRAIL REMOVE, MODIFY, AND RESET TYPR 3B TO 3C	50	LF
610.08	PLAIN RIPRAP	140	CY
610.18	STONE DITCH PROTECTION	5	CY
613.319	EROSION CONTROL BLANKET	65	SY
615.07	LOAM	15	CY
618.1301	SEEDING METHOD NUMBER 1 - PLAN QUANTITY	3	UN
619.1201	MULCH - PLAN QUANTITY	3	UN
619.1401	EROSION CONTROL MIX	30	CY
620.58	EROSION CONTROL GEOTEXTILE	230	SY
627.733	4 INCH WHITE OR YELLOW PAINTED PAVE MRK LINE	410	LF
629.05	HAND LABOR, STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20	HR
631.15	ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	20	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	20	HR
652.312	TYPE III BARRICADE	8	EA
652.33	DRUM	10	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	500	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (40 CD)	1	LS
652.38	FLAGGER	40	HR
656.75	TEMP SOIL EROSION AND WATER POLL. CONTROL	1	LS
659.10	MOBILIZATION	1	LS

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. Payment for clearing will be considered incidental to Contract items.

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

5. 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 layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

6. All embankment material, except as otherwise shown, placed below EL. 608.27 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

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

8. 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 Item No. 619.1401, Erosion Control Mix.

9. Place a 24-in. wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

10. Guardrail posts as shown in the Standard Details shall be modified from the indicated length of 6 feet to a length of 7 feet with an embedment of 4.5 feet. Payment will be considered incidental to the guardrail pay items.

11. Extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection 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.

12. 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.

13. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report 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 report will be representative of actual conditions at the time of construction.

14. 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.

15. Contractor shall remove existing guardrail so as to not damage any existing guardrail specified "to remain." Should the Contractor damage any existing guardrail specified "to remain", the contractor shall, at the Residents discretion, repair or replace damaged rail at the Contractors expense. No payment shall be made.

16. If the Resident determines any existing rail that is to be removed to be satisfactory for re-use, the Resident may direct the Contractor to re-use those portions. Payment for reusing Guardrail shall be made under Pay Item 606.365 - Guardrail - Remove & Reset. Quantities of reset guardrail shall be used to offset Pay Item 606.23 - Guardrail Type 3c.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	BY	DATE
DESIGN-DETAILED	B.N	B.N	
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

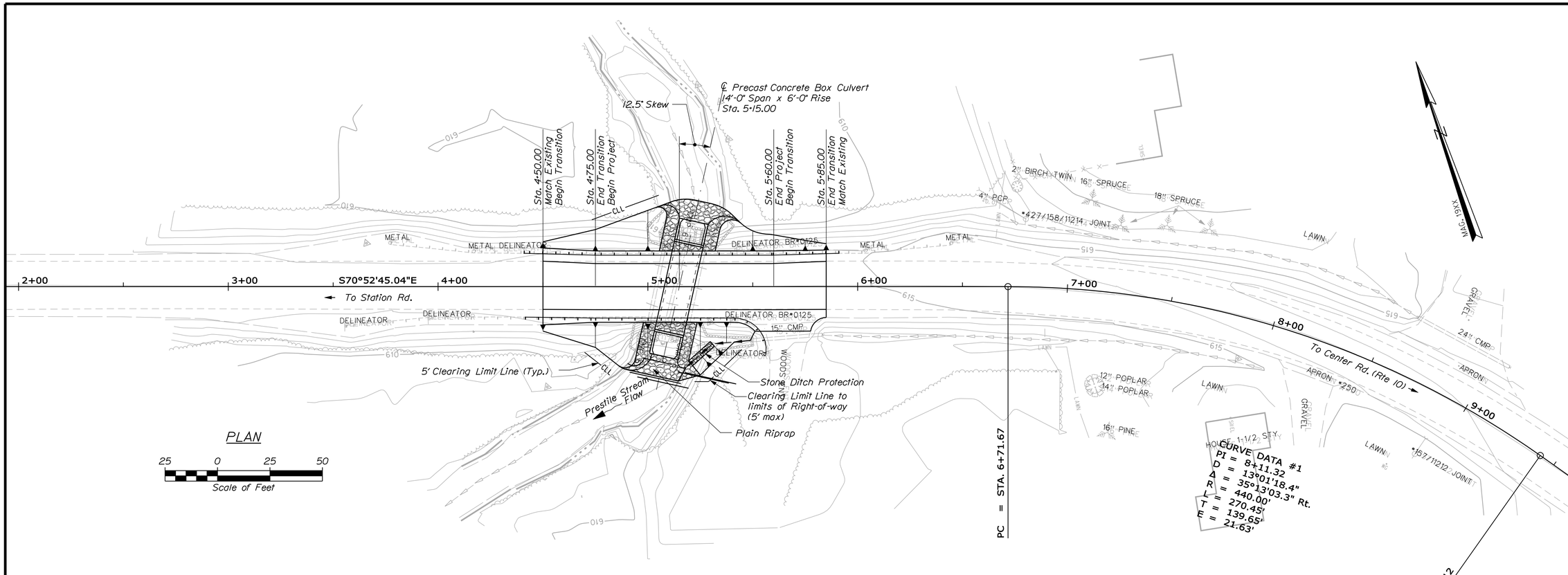
DATE

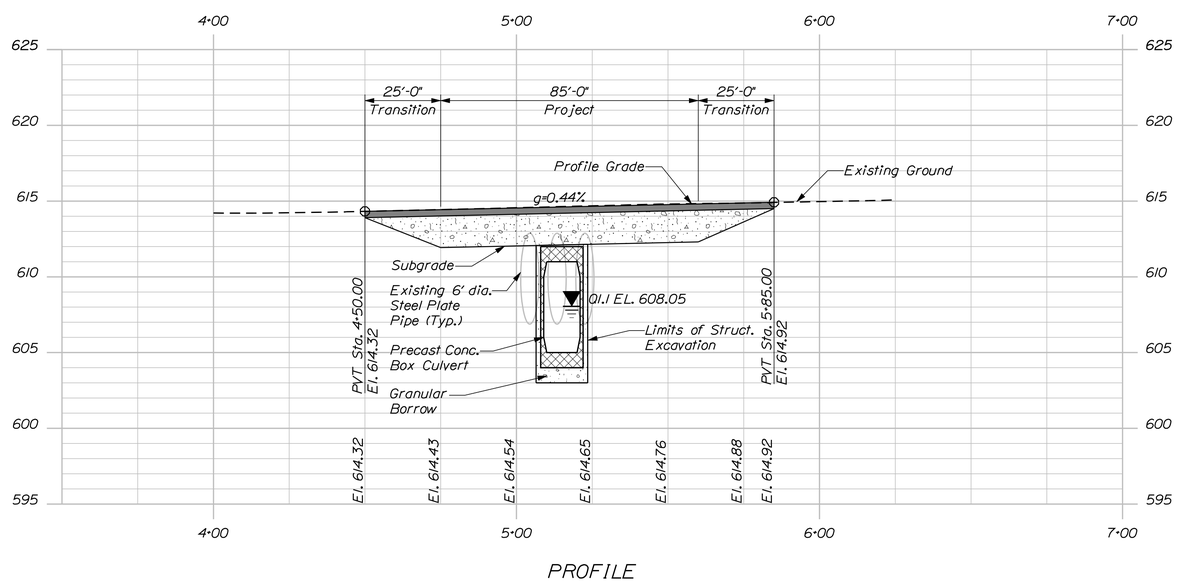
PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER
2
OF 9

Filename: ...\bridge\msta\002_Estimate.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010





PROFILE

PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	SB		
DESIGN-DETAILED	BJN	BJN	
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

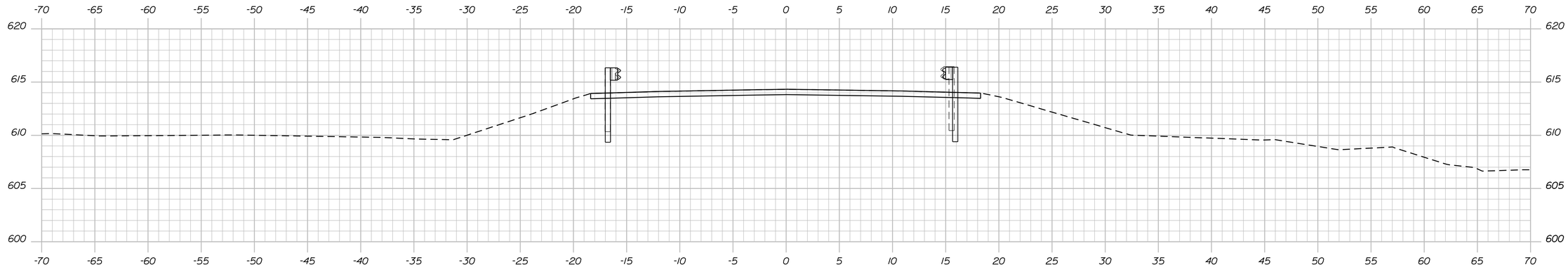
PRELIMINARY PLAN & PROFILE

SHEET NUMBER

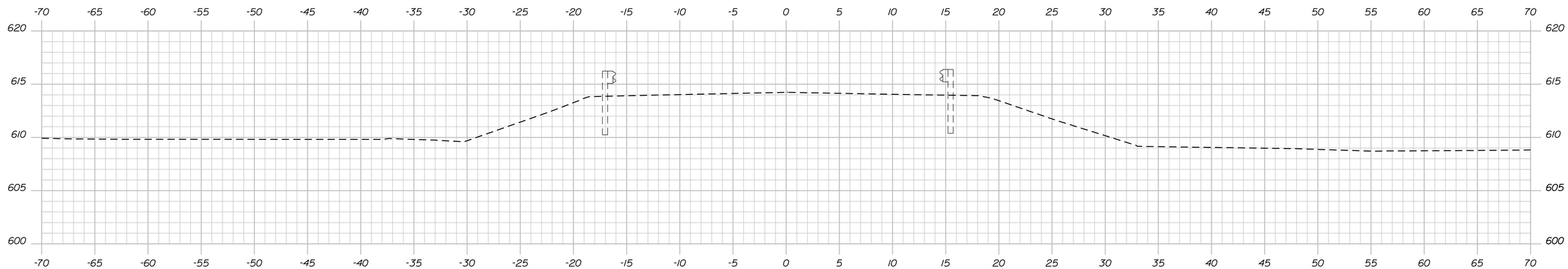
3

OF 9

Filename: ...\00\bridge\msta\003_BDPlan1.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010



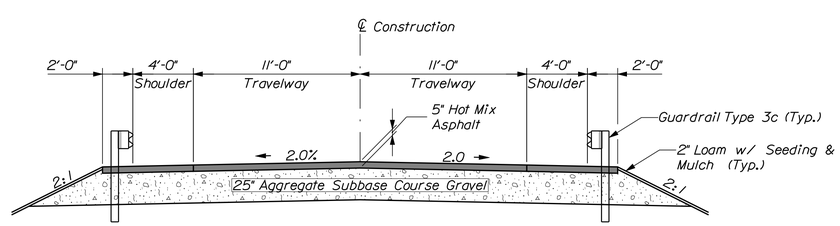
4+50.00
MATCH EXISTING
BEGIN TRANSITION



Sta. 4+41 ± to Sta 5+91.19
Install 150' Guardrail Type 3c
Match into existing guardrail
(Typ. ea. end)

4+25.00

Sta. 4+41 ± to Sta 5+41.39
Install 100' Guardrail Type 3c
Match into existing guardrail
(West end only)



APPROACH DESIGN SECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	BY	DATE
DESIGN-DETAILED	B.JN	B.JN	
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

CROSS SECTIONS

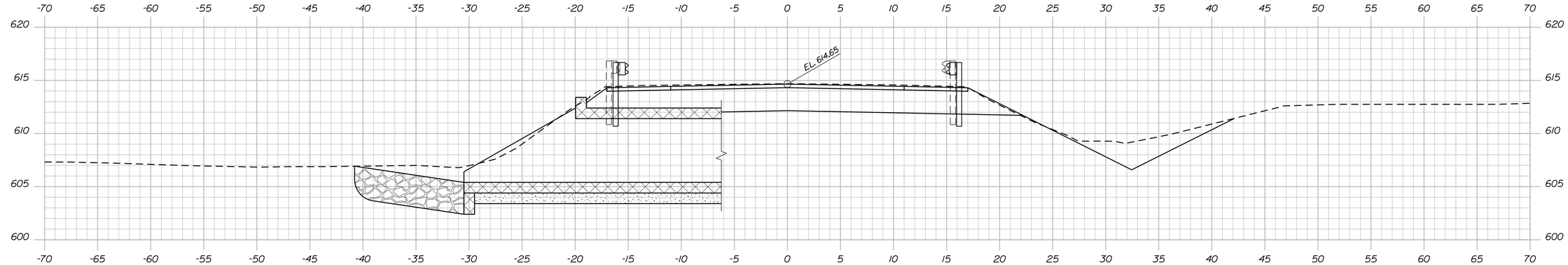
SHEET NUMBER

4

OF 9

Filename: ...\msla\004_XSECT_4+25_001.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010

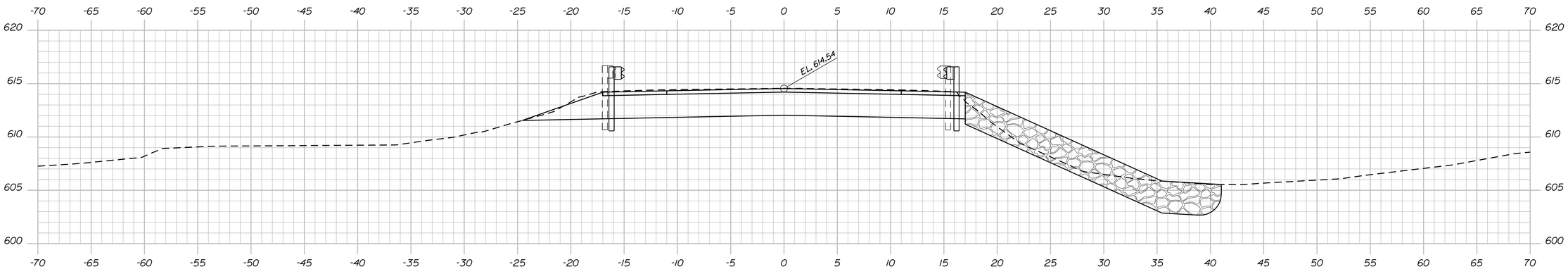
Sta. 4+25.00 to Sta. 4+50.00



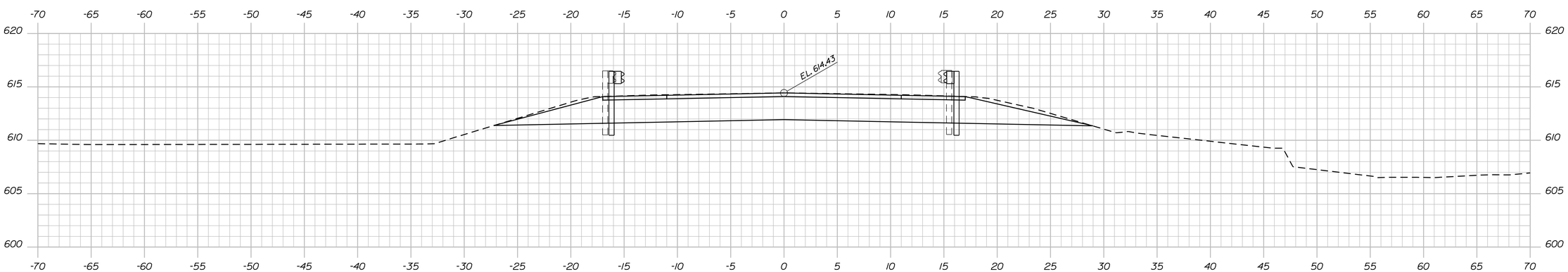
5+25.00

Sta. 5+41.39 to Sta. 5+56.33
Install 25' Guardrail Type 3c - 15' Radius
Install Reflectorized Flexible Guardrail Markers (2)

Sta. 5+56.33
Install Terminal End



5+00.00



4+75.00
END TRANSITION
BEGIN PROJECT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	BY	DATE
DESIGN-DETAILED	BJN	BJN	------
CHECKED-REVIEWED	------		------
DESIGN2-DETAILED2	------		------
DESIGN3-DETAILED3	------		------
REVISIONS 1	------		------
REVISIONS 2	------		------
REVISIONS 3	------		------
REVISIONS 4	------		------
FIELD CHANGES	------		------

SIGNATURE

P.E. NUMBER

DATE

PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

CROSS SECTIONS

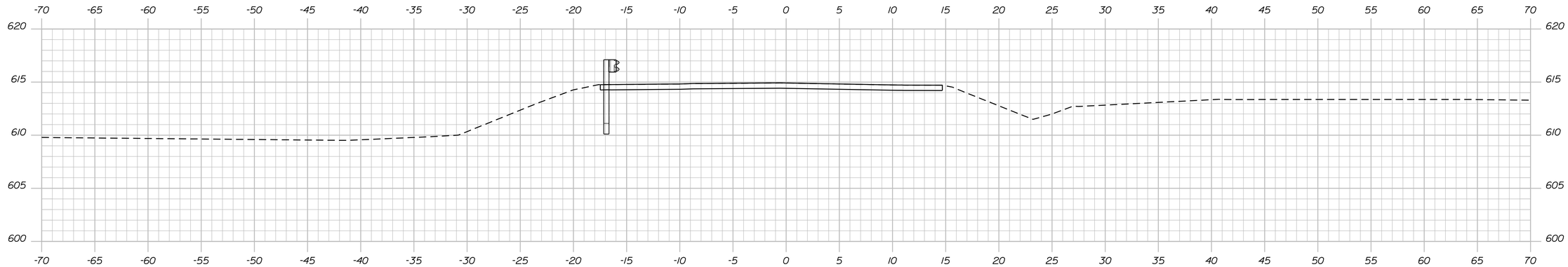
SHEET NUMBER

5

OF 9

Filename: ...\msta\005_XSECT_4+75_002.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010

Sta. 4+75.00 to Sta. 5+25.00



5+85.00
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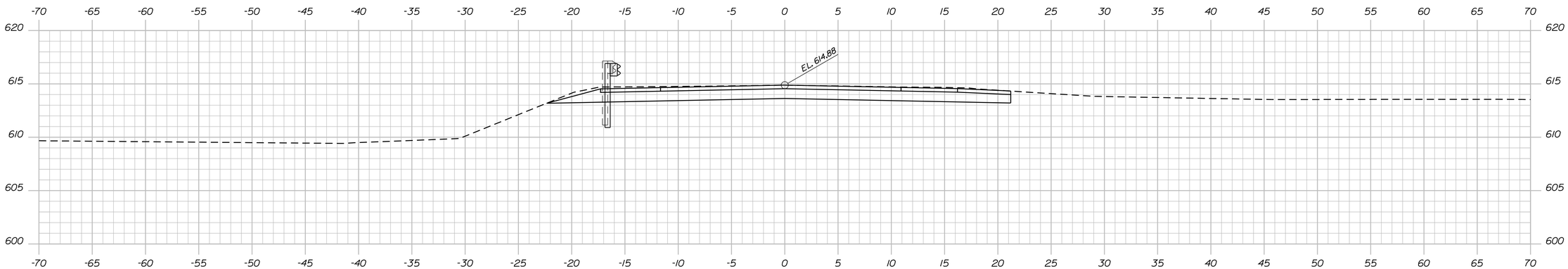
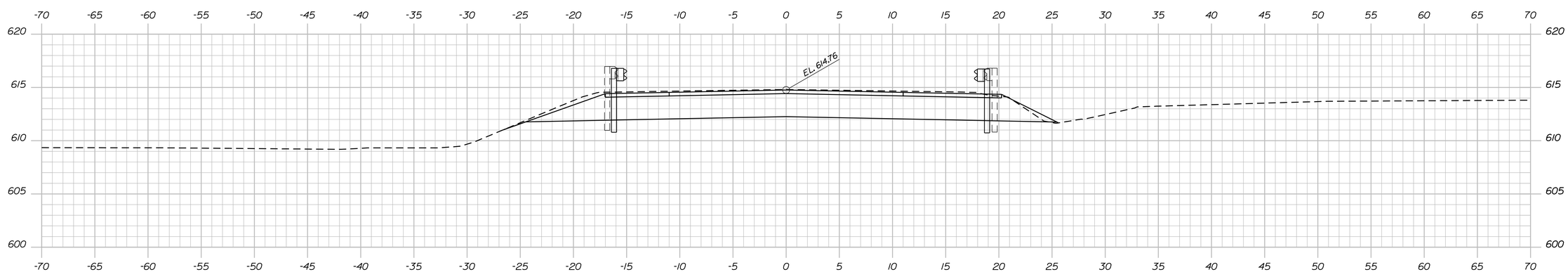
MATCH EXISTING



5+75.00

5+60.00
END PROJECT
BEGIN TRANSITION



5+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	DATE
DESIGN-DETAILED	BJN	BJN	
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

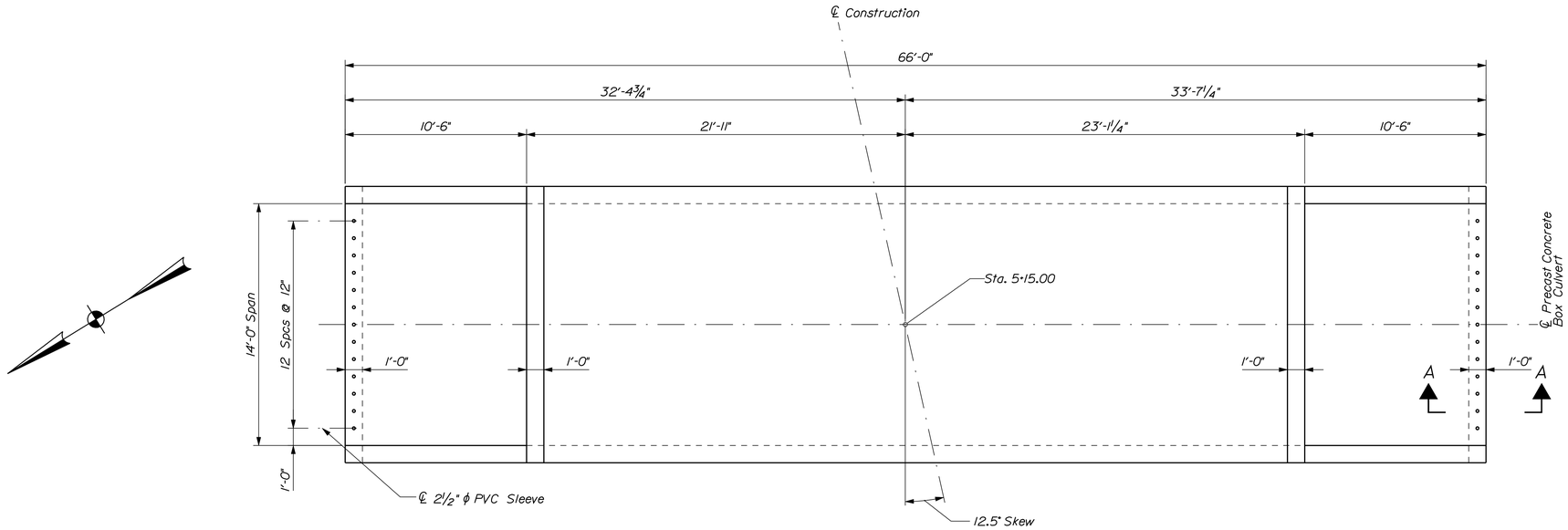
PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

CROSS SECTIONS

SHEET NUMBER
6
OF 9

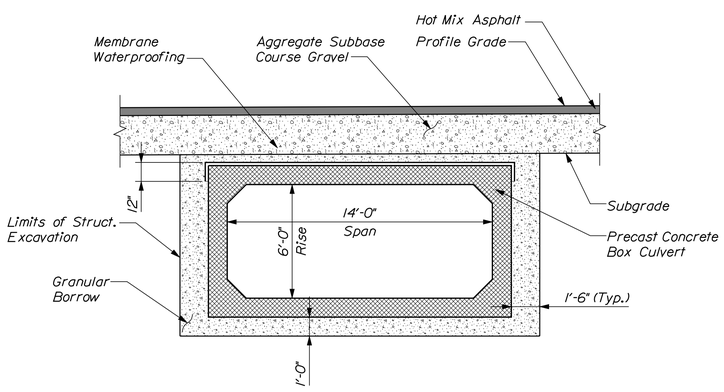
Sta. 5+50.00 to Sta. 5+85.00

Filename: ...\msta\006_XSECT_5+50_003.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010

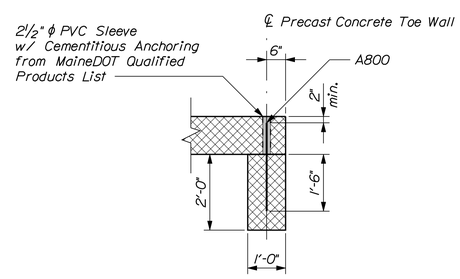


PRECAST CONCRETE BOX CULVERT PLAN

Flow →



BOX CULVERT SECTION



PRECAST CONCRETE TOE WALL DETAIL

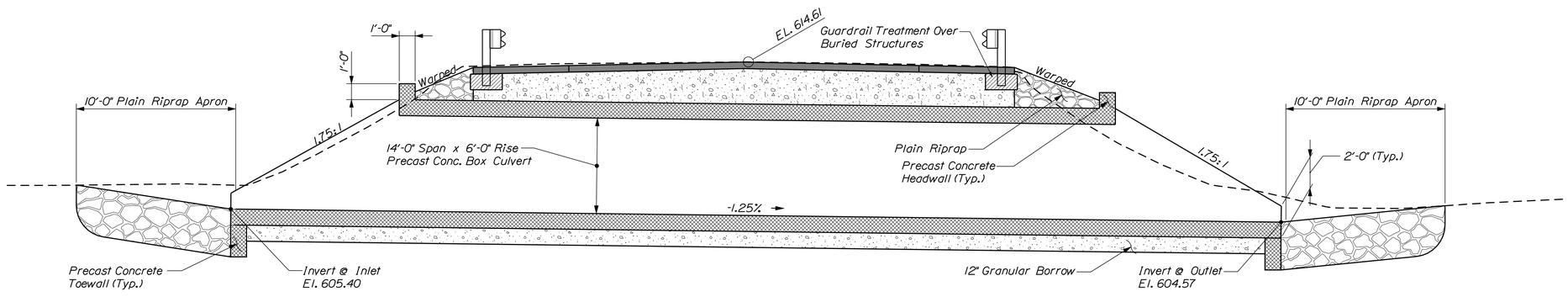
Section "A-A"

PRECAST CONCRETE ARCHES OR BOXES NOTES

1. The precast units shall be designed to carry construction loadings with a minimum fill cover of 18 inches over the top of the units.

2. The construction, handling, and assembly of the precast units shall be in accordance with Special Provisions Section 534, Precast Structural Concrete, and with the manufacturer's specifications as applicable.

3. Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.



LONGITUDINAL BOX CULVERT SECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	BY	DATE
DESIGN-DETAILED	BJN	BJN	------
CHECKED-REVIEWED	------	------	------
DESIGN2-DETAILED2	------	------	------
DESIGN3-DETAILED3	------	------	------
REVISIONS 1	------	------	------
REVISIONS 2	------	------	------
REVISIONS 3	------	------	------
REVISIONS 4	------	------	------
FIELD CHANGES	------	------	------

SIGNATURE

P.E. NUMBER

DATE

PRESTILE BROOK BRIDGE
PRESTILE STREAM
EASTON AROOSTOOK COUNTY

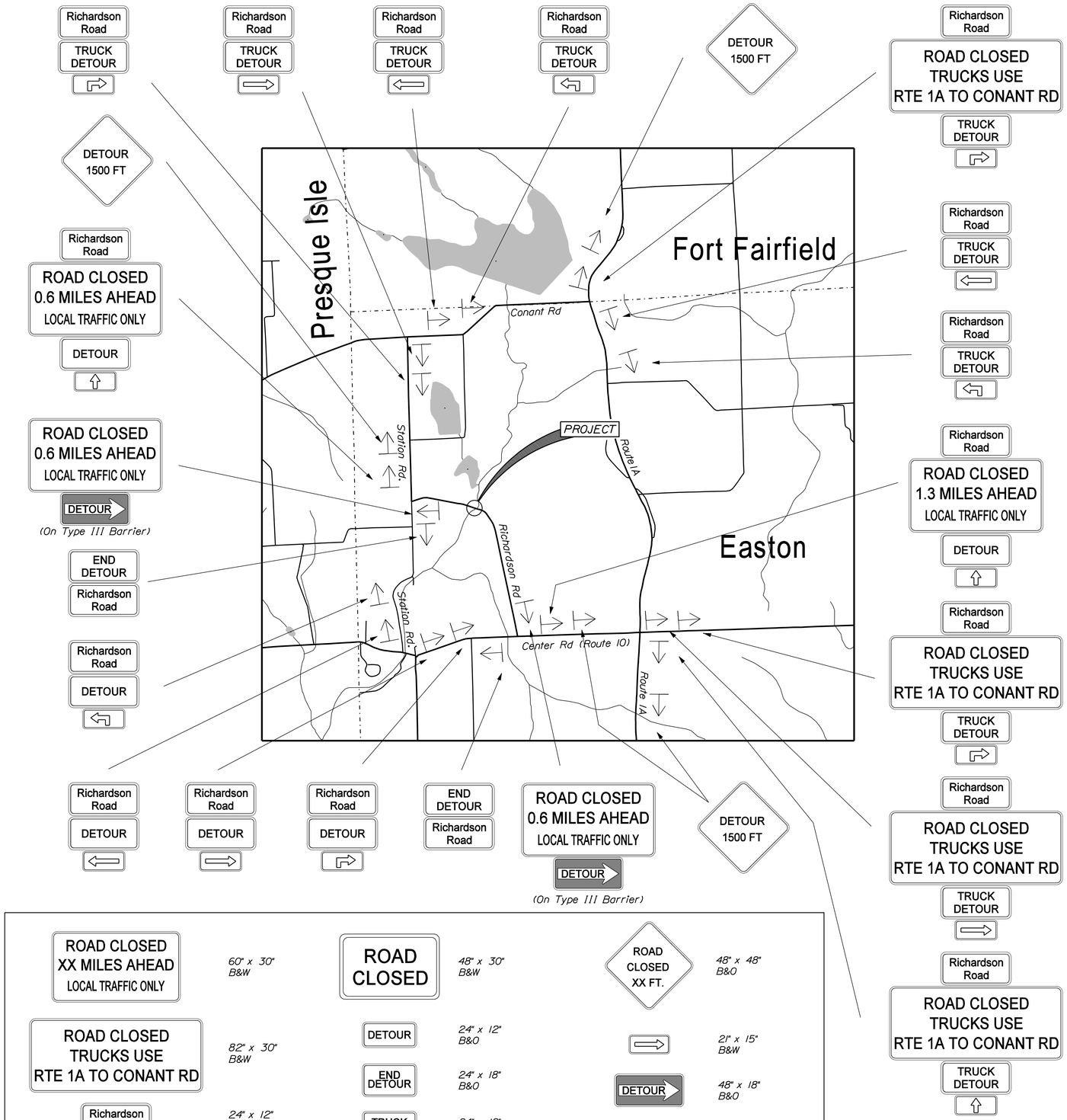
BOX CULVERT DETAILS

SHEET NUMBER

7

OF 9

Filename: ...\msto\007_Box Details1.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010



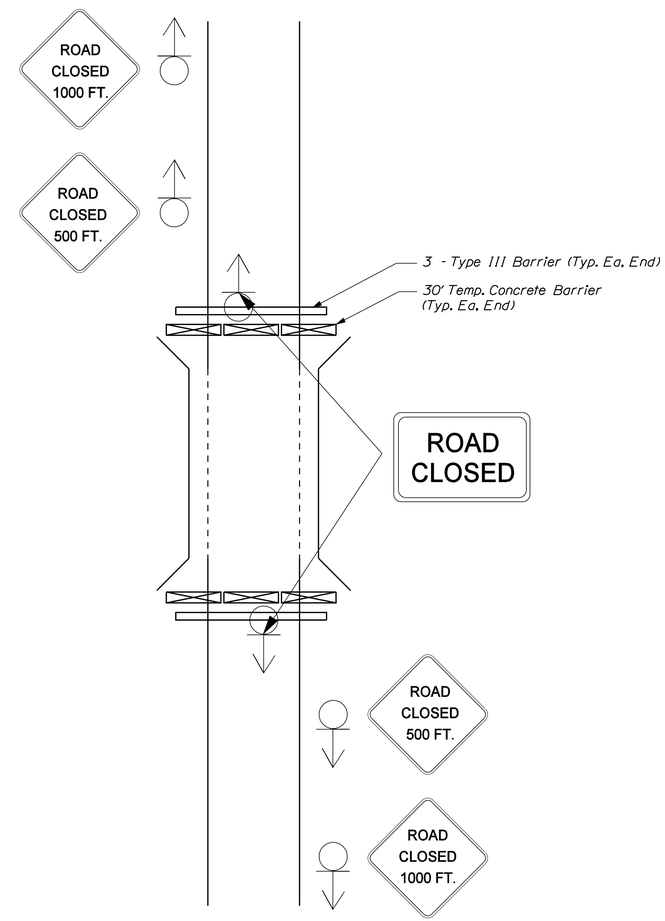
DETOUR NOTES

1. Spacing to be determined by the Resident in accoradnce with MUTCD

2. Install 30' Temporary Concrete Barrier at each end of of project (60' feet total) Payment shall be made under Item No. 526.301-Temporary Concrete Barrier

3. Install 3 Type III Barricades at each end of project and one at each end of detour (8 total) Payment shall be made under Item No. 652.312-Type III Barricade.

4. Cover or remove all conflicting route signs.



SIGNAGE AT PROJECT LOCATION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1669(800)X

PIN 16698.00

BRIDGE NO. 0125

BRIDGE PLANS

PROJ. MANAGER	SB	BY	DATE
DESIGN-DETAILED	BJN	BJN	
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PRESTILE BROOK BRIDGE
PRESTILE STREAM
AROOSTOOK COUNTY
EASTON

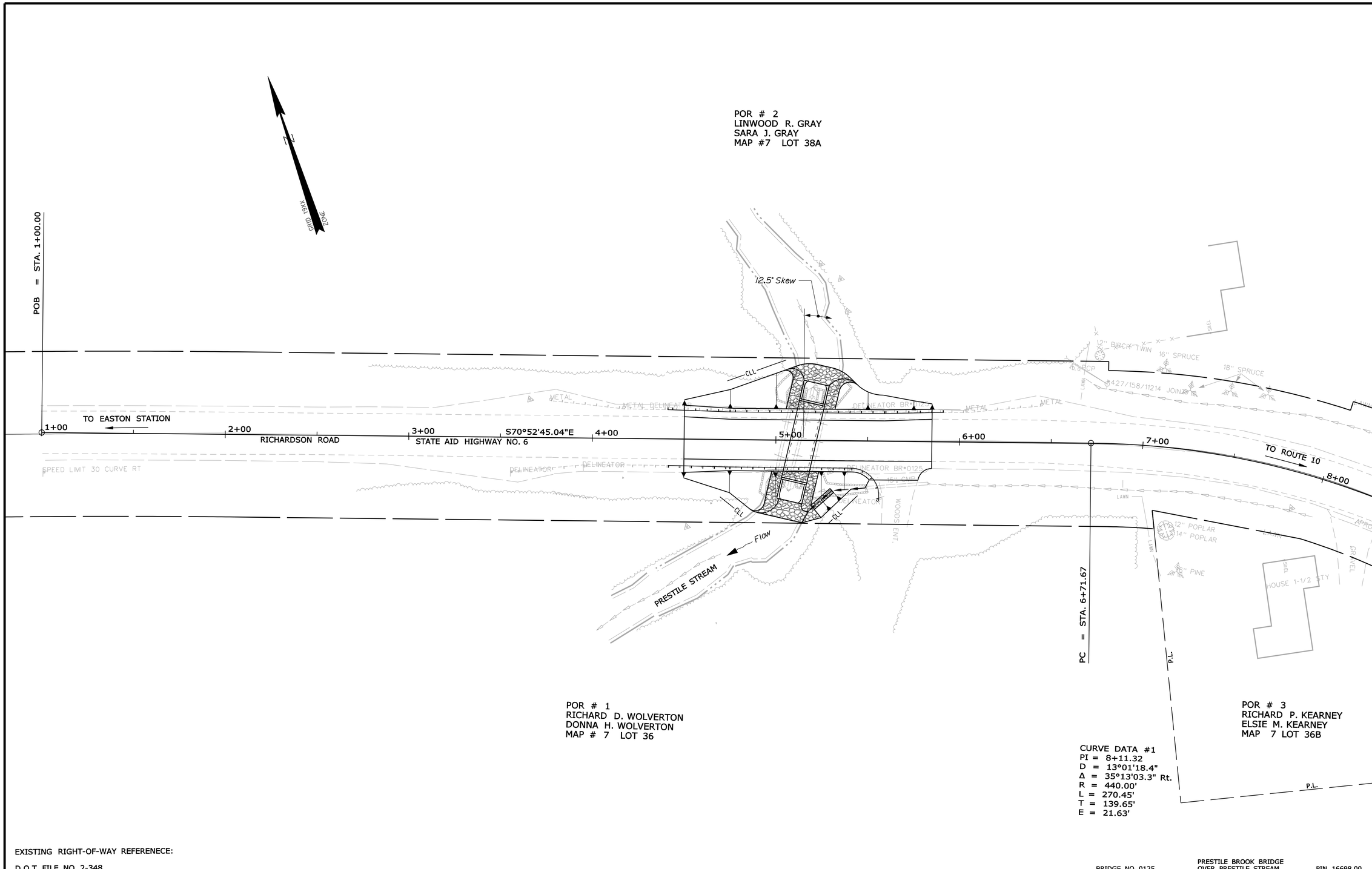
DETOUR PLAN

SHEET NUMBER

8

OF 9

Filename: ...\bridge\msto\008_DetourPlan.dgn Division: BRIDGE Username: brian.j.nichols Date:3/1/2010



EXISTING RIGHT-OF-WAY REFERENECE:

D.O.T. FILE NO. 2-348

BRIDGE NO. 0125 — PRESTILE BROOK BRIDGE OVER PRESTILE STREAM — PIN 16698.00

SYMBOLS

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

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
EASTON
RIGHT OF WAY MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK PAGE COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

DAVID A. COLE
COMMISSIONER
KENNETH L. SWEENEY (ACTING)
CHIEF ENGINEER
DATE

STATE AID HIGHWAY NO. 6
RICHARDSON ROAD
EASTON AROOSTOOK COUNTY
FEDERAL AID PROJECT NO. BH-1669(800)X

NOVEMBER 2009 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 2-XXX
SCALE 1" = 25' | SHEET 1 OF 1

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