STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Superstructure Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Fourth Edition 2007, supplemented by research from University of Maine.

Substructure 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	960
Future (2030) AADT	1150
DHV - % of AADT	11%
Design Hour Volume	127
Heavy Trucks (% of AADT)	8%
Heavy Trucks (% of DHV)	6%
Directional Distribution (% of DHV)	55%
18 kip Equivalent P 2.0	53
18 kip Equivalent P 2.5	50
Design Speed (mph)	25

HYDROLOGIC DATA

Drainage Area	12.8 sq mi
Design Discharge (Q50)	1630 cfs
Check Discharge (Q100)	1903 cfs
Headwater Elevation (Q50)	44.1 ft
Headwater Elevation (Q100)	44.7 ft
Discharge Velocity (Q50)	3.7 fps
Discharge Velocity (Q100)	4.1 fps
Headwater Elevation (Q1.1)	39.8 ft
Discharge Velocity (Q1.1)	1.1 fps
Headwater Elevation (Q25)	43.6 ft

MATERIALS

Concrete:	
Seals	Class "S"
Arch Tube Concrete	See Special Provision
All Other	Class "A"
Reinforcing Steel	ASTM A 615/A 615M, Grade 60

BASIC DESIGN STRESSES

Concrete Class "A"	f 'c = 4,350 psi
Concrete Class "S"	f 'c = 2,900 psi
Arch Tube Concrete	f 'c = 6,000 psi
Reinforcing Steel	f y = 60,000 psi

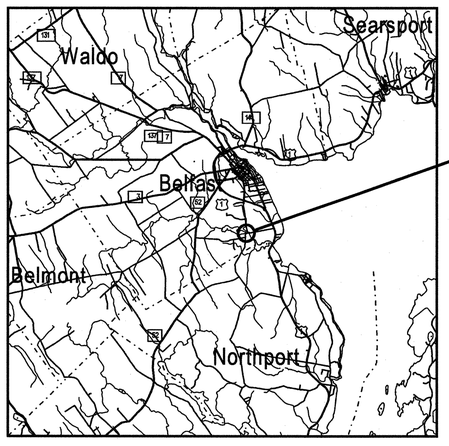
UTILITIES

Central Maine Power Company
Fairpoint Communications
Belfast Water District

MAINTENANCE OF TRAFFIC

Road closure with detour.

BELFAST
WALDO COUNTY
PERKINS BRIDGE
OVER
LITTLE RIVER
HERRICK ROAD
BH-1668(500)X
PROJECT LENGTH 0.047 mi.
BRIDGE REPLACEMENT
BRIDGE NO. 5143



LOCATION MAP

2 0 2 4
Scale of Miles

LIST OF DRAWINGS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

	DATE
APPROVED	
COMMISSIONER:	4/29/10
CHIEF ENGINEER:	4/29/10

STATE OF MAINE PAMELA J. MELVILLE No. 8268 REGISTERED PROFESSIONAL ENGINEER

PROJECT INFORMATION		SIGNATURE	P.E. NUMBER	DATE
PROGRAM	BRIDGE			
PROJECT MANAGER	N. BENOIT			
DESIGNER	K. WOOD			
CONSULTANT	S E A CONSULTANTS, INC.			
PROJECT RESIDENT				
CONTRACTOR				
PROJECT COMPLETION DATE				

PIN 16685.00

BH-1668(500)X

BELFAST
PERKINS BRIDGE

TITLE SHEET

Engineering Seal applies to details within these plans related to the composite concrete arch superstructure

STATE OF MAINE ZEYN BURHAN UZMAN 10095 LICENSED PROFESSIONAL ENGINEER

S E A
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
1
OF 20

Username: kris.constanzer Date:4/27/2010
Division: BRIDGE
Filename:\\00\BRIDGE\MSTA\001_Title.dgn

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.19	REMOVING EXISTING BRIDGE (480 CY)	1	LS
203.20	COMMON EXCAVATION	1300	CY
203.24	COMMON BORROW	10	CY
203.25	GRANULAR BORROW	840	CY
206.061	STRUCTURAL EXCAVATION - DRAINAGE AND MINOR STRUCTURES BELOW GRADE	10	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES, PLAN QUANTITY	870	CY
206.092	STRUCTURAL ROCK EXCAVATION - MAJOR STRUCTURES	140	CY
304.10	AGGREGATE SUBBASE COURSE GRAVEL	1250	CY
403.210	HOT MIX ASPHALT, 9.5 MM NOMINAL MAXIMUM SIZE	114	T
403.213	HOT MIX ASPHALT, 12.5 MM NOMINAL MAXIMUM SIZE, BASE	112	T
409.15	BITUMINOUS TACK COAT APPLIED	67	GAL
502.21	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	275	CY
502.22	STRUCTURAL CONCRETE, ABUTMENTS AND RET WALLS (PLACED UNDERWATER)	200	CY
502.41	STRUCTURAL CONCRETE SUPERSTRUCTURE SLAB	51	CY
502.56	CONCRETE FILL	25	CY
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	30100	LB
503.13	REINFORCING STEEL, PLACING	30100	LB
503.16	WELDED STEEL WIRE FABRIC, COMPLETE IN PLACE	2700	LB
508.13	MEMBRANE WATERPROOFING (230 SY)	1	LS
509.60	FIBERGLASS REINFORCED PLASTIC SHEATHING (282 SY)	1	LS
509.74	COMPOSITE ARCH SUPERSTRUCTURE ERECTION, INSTALLATION ONLY	1	LS
511.07	COFFERDAM - ABUTMENT NO. 1	1	LS
511.07	COFFERDAM - ABUTMENT NO. 2	1	LS
512.081	FRENCH DRAINS (94 LF)	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (30 SY)	1	LS
526.30	TEMPORARY CONCRETE BARRIER, TYPE 1	60	LF
603.15	12 IN CULVERT PIPE OPTION 1	60	LF
603.16	15 IN CULVER PIPE OPTION 1	38	LF
603.17	18 IN CULVERT PIPE OPTION 1	38	LF
604.262	CATCH BASIN TYPE B5-C	1	EA
605.09	6 IN UNDERDRAIN TYPE B	192	LF
606.178	GUARDRAIL BEAM	13	LF
606.23	GUARDRAIL TYPE 3c - SINGLE RAIL	413	LF
606.231	GUARDRAIL TYPE 3c - 15 FT RADIUS AND LESS	50	LF
606.232	GUARDRAIL TYPE 3c - OVER 15 FT RADIUS	13	LF
606.265	TERMINAL END - SINGLE RAIL GALVANIZED	8	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	2	EA
606.79	GUARDRAIL 350 FLARED TERMINAL	1	EA
606.80	BURIED-IN-SLOPE GUARDRAIL END	1	EA
609.31	CURB TYPE 3	480	LF
610.08	PLAIN RIPRAP	50	CY
610.16	HEAVY RIPRAP	335	CY
610.18	STONE DITCH PROTECTION	30	CY
613.319	TEMPORARY EROSION CONTROL BLANKET	91	SY
615.07	LOAM	60	CY
618.1401	SEEDING METHOD NUMBER 2, PLAN QUANTITY	10	UN
619.1201	MULCH, PLAN QUANTITY	10	UN
619.1401	EROSION CONTROL MIX	120	CY
620.58	EROSION CONTROL GEOTEXTILE	440	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1500	LF
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	6	SF
629.05	HAND LABOR STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20	HR
631.14	GRADER (INCLUDING OPERATOR)	20	HR
631.15	ROLLER, EARTH AND BASE (INCLUDING OPERATOR)	20	HR
631.172	TRUCK-LARGE (INCLUDING OPERATOR)	20	HR
635.14	PREFABRICATED CONCRETE MODULAR GRAVITY WALL	2375	SF
639.18	FIELD OFFICE, TYPE A	1	EA
652.31	TYPE I BARRICADES	10	EA
652.312	TYPE III BARRICADES	8	EA
652.33	DRUM	20	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	250	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (160 CD)	1	LS
652.38	FLAGGERS	80	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION	1	LS
659.10	MOBILIZATION	1	LS
803.01	TEST PITS	4	EA
841.481	REMOVEABLE BOLLARD	2	EA

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

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

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

7. All embankment material, except as otherwise shown, placed below EL. 44.1 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

8. Place 4' deep Heavy Riprap on sideslopes up to EL. 44.1 and 1' deep Plain Riprap to top of slope as shown.

9. Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking. Payment for hand raking will be considered incidental to Item No. 304.10, Aggregate Subbase Course - Gravel.

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

11. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.1401, Erosion Control Mix.

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

13. 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.

14. An NCHRP350 compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

15. 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.

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

    Top of headwall and 24 inches below the top of the headwall on the fascia side.

17. 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.

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

19. 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.

20. The project geotechnical report titled: "Geotechnical Design Report for the Replacement of Perkins Bridge Belfast Maine, January 28, 2010" may be accessed at the MaineDOT web address.

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

22. 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.

23. Two reflectorized flexible G.R. markers (Item 606.353) will be installed at each guardrail end.

24. The three boulders at Station 6+20± to Station 6+28± LT. shall be relocated to an area adjacent to their current location as directed by the Resident. Payment for work will be incidental to Item 203.20, Common Excavation.

25. For Item 606.80 Buried-In-Slope Guardrail End, assume Type A.

26. Construct the riprap shelf at each abutment at EL. 38.0.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	N. Benoit		
DESIGN-DETAILED	K. Wood	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	P. Hetherly	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

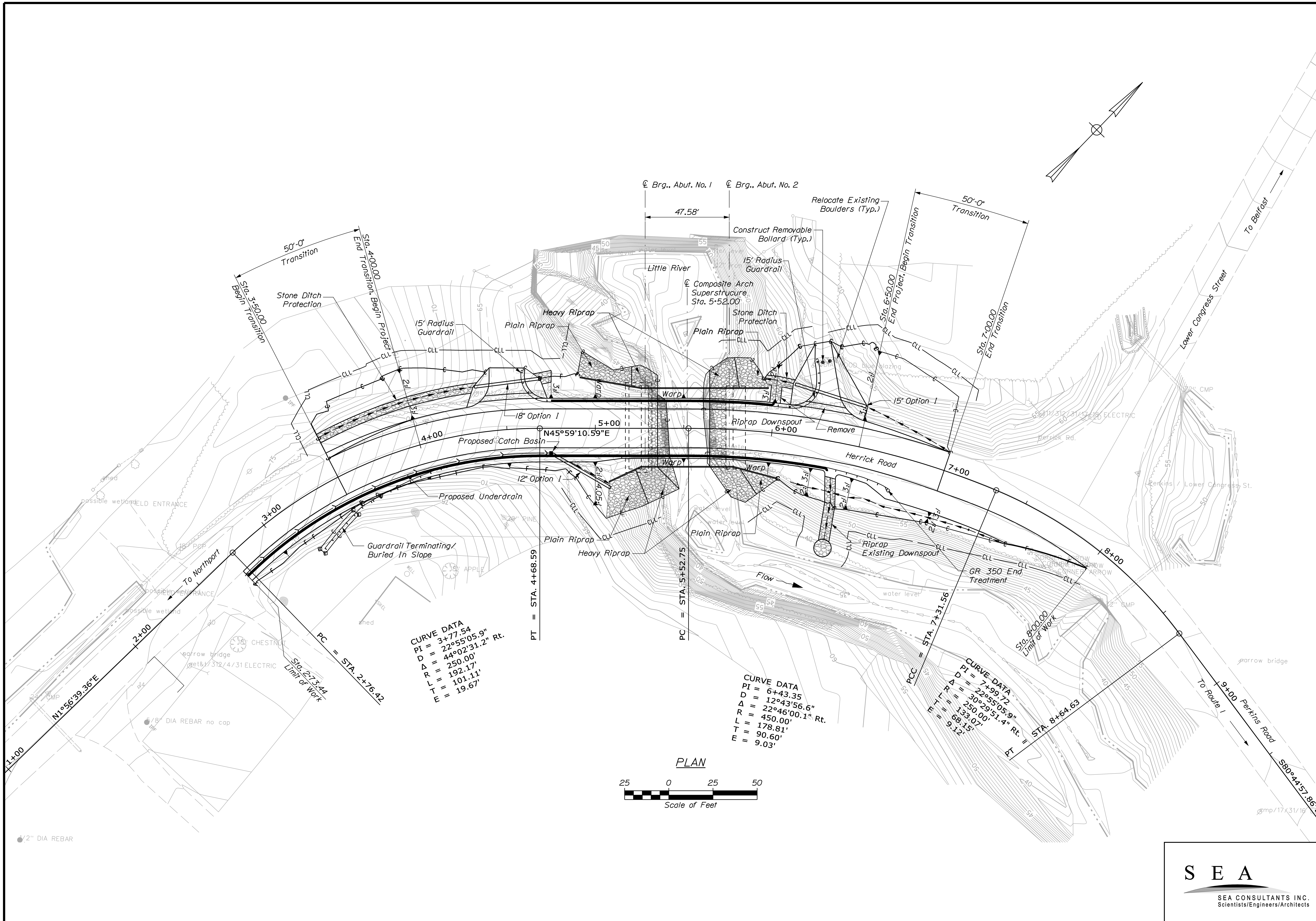
PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

ESTIMATED QUANTITIES & NOTES

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
2
OF 20

Filename: ...\00\BRIDGE\MSTA\003_Plan.dgn   Division: BRIDGE   Username: keith.wood   Date:5/11/2010



℄ Brg., Abut. No. 1
℄ Brg., Abut. No. 2
47.58'
Relocate Existing Boulders (Typ.)
Construct Removable Bollard (Typ.)
50'-0" Transition
Sta. 6+50.00 End Project, Begin Transition
Sta. 7+00.00 End Transition
Sta. 4+00.00 End Transition, Begin Project
Sta. 3+50.00 Begin Transition
Stone Ditch Protection
15' Radius Guardrail
Little River
℄ Composite Arch Superstrucure Sta. 5+52.00
Heavy Riprap
Plain Riprap
Warp
18" Option I
15" Option I
12" Option I
Riprap Downspout
Remove
Proposed Catch Basin
N45°59'10.59"E
Herrick Road
Proposed Underdrain
Guardrail Terminating/ Buried In Slope
Riprap Existing Downspout
GR 350 End Treatment
Flow
Lower Congress Street
To Belfast
To Northport
To Route 1
Perkins Road
N1°56'39.36"E
S80°44'57.86"E
PT = STA. 4+68.59
PC = STA. 5+52.75
PC = STA. 2+76.42
PCC = STA. 7+31.56
PT = STA. 8+64.63
Sta. 2+73.44 Limit of Work
Sta. 8+00.00 Limit of Work
CURVE DATA
PI = 3+77.54
D = 22°55'05.9"
Δ = 44°02'31.2" Rt.
R = 250.00'
L = 192.17'
T = 101.11'
E = 19.67'
CURVE DATA
PI = 6+43.35
D = 12°43'56.6"
Δ = 22°46'00.1" Rt.
R = 450.00'
L = 178.81'
T = 90.60'
E = 9.03'
CURVE DATA
PI = 7+99.72
D = 22°55'05.9"
Δ = 30°29'51.4" Rt.
R = 250.00'
L = 133.07'
T = 68.15'
E = 9.12'
PLAN
25 0 25 50
Scale of Feet

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

BRIDGE NO. 5143

PIN 16685.00

BRIDGE PLANS

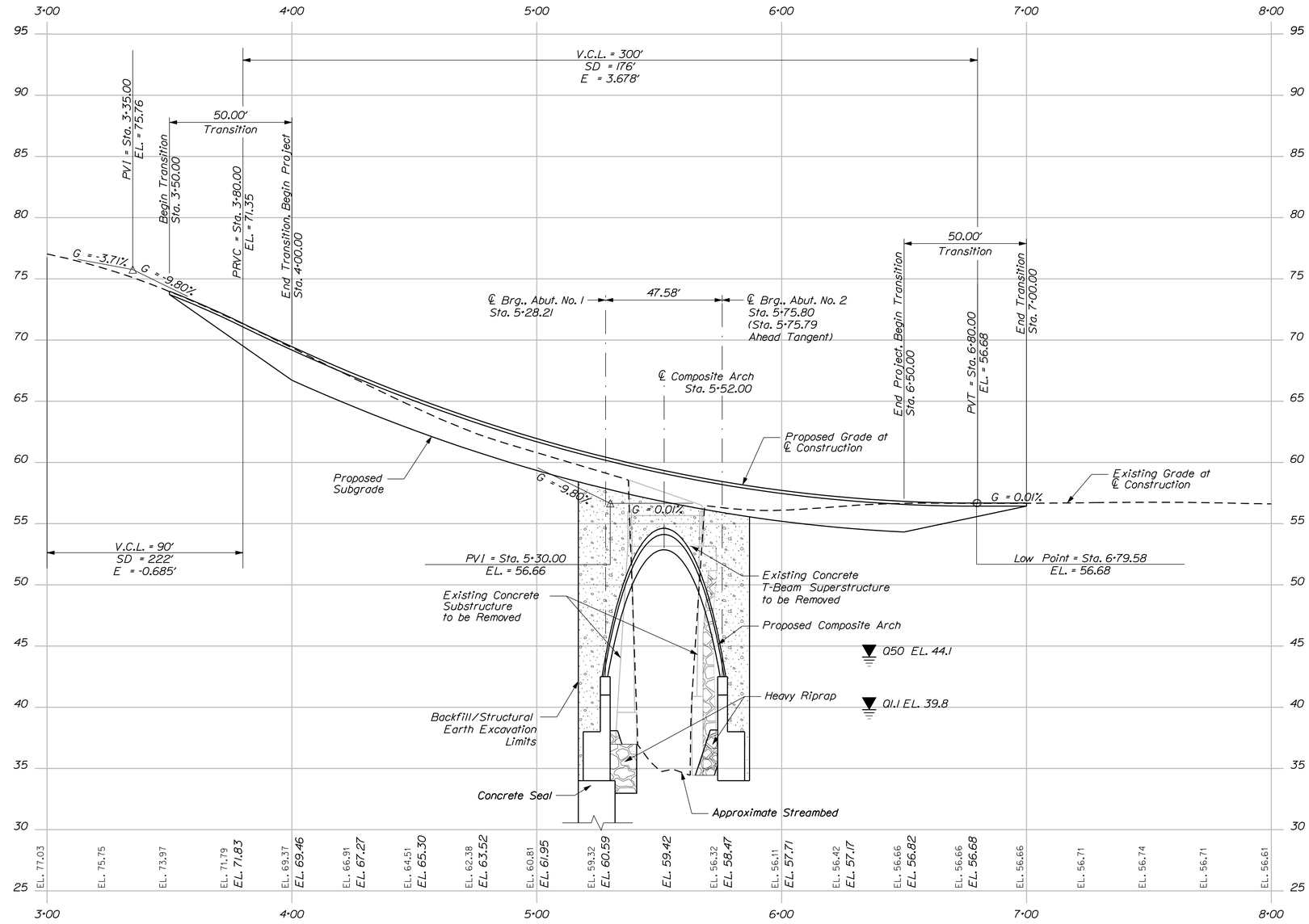
	BY	DATE	
PROJ. MANAGER	N. Benoit		SIGNATURE
DESIGN-DETAILED	K. Wood	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	P. Hetherly	P.E. NUMBER
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			DATE
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PERKINS BRIDGE
LITTLE RIVER

BELFAST   WALDO COUNTY

PLAN

SHEET NUMBER
3
OF 20



PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

PROJ. MANAGER	N. Benoit	BY	DATE
DESIGN-DETAILED	K. Wood	K. Constanzer	
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

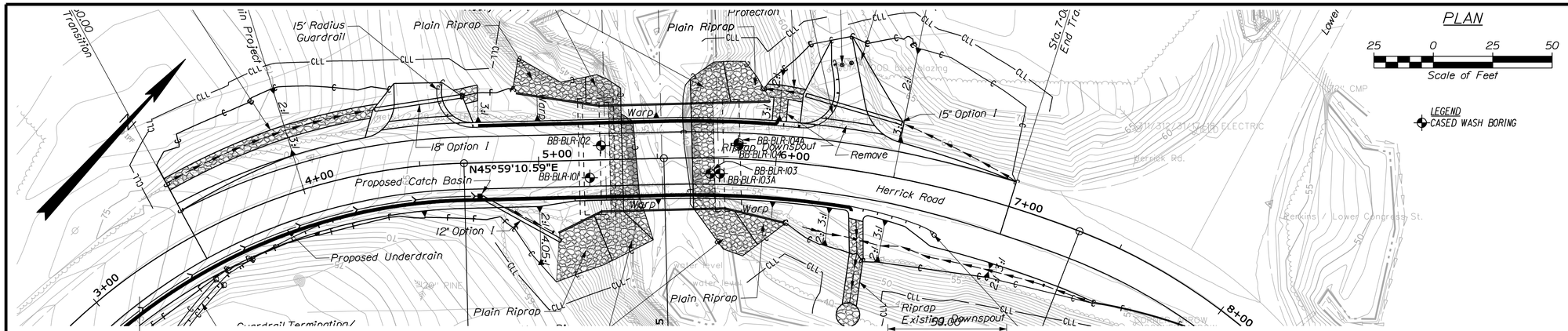
PROFILE

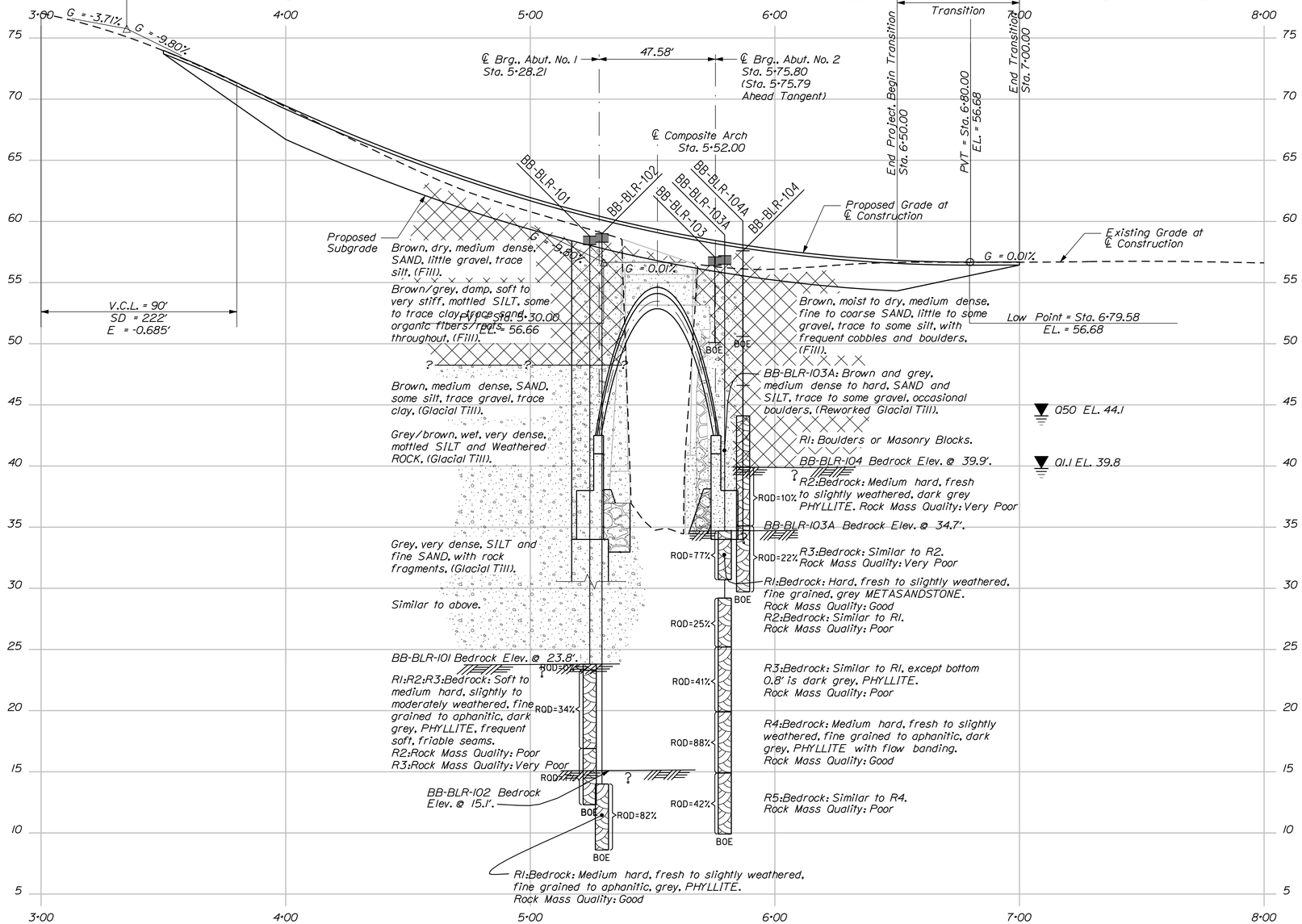
S E A
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

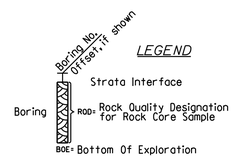
SHEET NUMBER

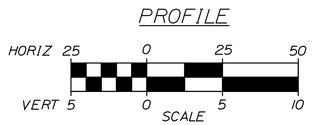
4

OF 20









Notes: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

Soil statigraphy of BB-BLR-102 not shown for clarity. Refer to Boring Log Sheets.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00 — BRIDGE PLANS

BRIDGE NO. 5143

	BY	DATE
PROJ. MANAGER	-----	-----
DESIGN-DETAILED	L.KRUSINSKI	JAN 2010
CHECKED-REVIEWED	T. WHITE	-----
DESIGN2-DETAILED2	-----	-----
DESIGN3-DETAILED3	-----	-----
REVISIONS 1	-----	-----
REVISIONS 2	-----	-----
REVISIONS 3	-----	-----
REVISIONS 4	-----	-----
FIELD CHANGES	-----	-----

SIGNATURE

P.E. NUMBER

DATE

PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER

5

OF 20

Filename: ...\MSTA\006_BORING LOGS1.dgn   Division: GEOTECH   Username: laura.krusinski   Date:4/21/2010

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-101
PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	58.8	Auger ID/OD:	5" Solid Stem
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/14/09-12/15/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	5+24.3, 9.3 Rt.	Casing ID/OD:	HW/NW	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	58.10		Asphalt Pavement. 0.70	
	1D	24/10	1.00 - 3.00	26/16/11/7	27				Brown, dry, medium dense, fine to coarse SAND, some gravel, some silt. (Fill)	G#210036 A-1-b, SM WC=7.0%
5	2D	24/17	5.00 - 7.00	2/2/2/3	4				Brown/grey, damp, soft, mottled SILT, some clay, trace fine sand, trace gravel, blocky. Organic fibers/roots throughout sample. (Fill).	G#210037 A-4, ML WC=29.3% LL=27 PL=23 PI=4
10	3D	24/16	10.00 - 12.00	5/10/11/14	21	9	48.30		Top 6": Brown/grey, damp, very stiff, mottled SILT, trace fine sand. Organic fibers/roots throughout sample. (Fill). 10.50 Bottom 10": Brown, medium dense, fine to coarse SAND, some silt, some gravel, trace clay. Rock fragments in bottom 2" of sample. (Glacial Till)	G#210038 A-4, SC-SM WC=11.1%
						29				
						93				
						a50 bRC			a50 blows for 0.1'. bRC Roller Coned Ahead ro 15.0 feet.	
15	4D	2/2	15.00 - 15.17	100(2")	---				Grey/brown, wet, mottled SILT and weathered rock with iron oxide staining. Roller cone through weathered rock to 17.0 feet. At approximately 16.0 feet, wash water changed from rust colored to grey.	
20	5D	2/0	20.00 - 20.17	100(2")	---				Small rock fragments in tip of spoon. Roller cone through till or weathered rock to 25.0 feet.	
25	6D	2/0	25.00 - 25.17	130(2")	---				Small amount of grey SILT and fine SAND with rock fragments in tip of spoon. (Glacial Till)	
30	7D	2/0	30.00 - 30.17	100(2")	---				Small amount of grey SILT and fine SAND with rock fragments in tip of spoon.	
35	R1 R2	6/2 76.8/60	35.00 - 35.50 35.50 - 41.90	RQD = 0% RQD = 34%		NQ-2	23.80		35.00 Top of Bedrock at Elev. 23.8'. R1: Recovered 2" of medium hard, slightly weathered, fine grained to aphanitic, grey PHYLLITE. Vertical bedding observed in recovered rock. R1: Core Times (min) 35.0-35.5 (1) Behavior of core barrel indicated numerous soft/friable seams from 35.0 to 37.5 in Run R1. R2: Soft to medium hard, slightly to moderately weathered, fine grained to aphanitic, dark grey PHYLLITE. Joints are very close to close, high angle, planar to undulating, rough, fresh to discolored, tight to moderately open. Several areas of core are composed of 2-3 inch or smaller friable fragments that can be easily broken along bedding (very soft to soft). Frequent pyrite on joints and foliation throughout rock core. Rock Mass Quality: Poor. R2: Core Times (min) 35.5-36.5 (1) 36.5-37.5 (1) 37.5-38.5 (2) 38.5-39.5 (2) 39.5-40.5 (1) 40.5-41.9 (2)	
40	R3	55.2/ 55.2	41.90 - 46.50	RQD = 7%					R3: Medium hard, slightly to moderately weathered, fine grained to aphanitic, dark grey PHYLLITE. Joints are very close to close, high angle, planar to undulating, rough, fresh to discolored, tight to moderately open. Frequent pyrite particles throughout rock core. Rock Mass Quality: Very Poor. R3: Core Times (min) 41.9-42.9 (1) 42.9-43.9 (1) 43.9-44.9 (1) 44.9-45.9 (1) 45.9-46.5 (1)	
45							12.30		46.50 Bottom of Exploration at 46.50 feet below ground surface.	
50										

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1
Boring No.: BB-BLR-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-102
PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	59.0	Auger ID/OD:	5" Solid Stem
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/17/09-12/18-09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	5+29.3, 4.1 Lt.	Casing ID/OD:	HW/NW	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	58.30		Asphalt Pavement. 0.70	
	1D	24/14	1.00 - 3.00	24/20/13/13	33				Brown, dry, dense, fine to coarse SAND, little gravel, little silt, (Fill).	G#210039 A-1-b, SM WC=4.8%
5	2D	24/14	5.00 - 7.00	3/4/5/6	9	27	54.00		5.00 Brown/grey, moist, stiff, mottled SILT, some clay, trace sand, trace gravel, blocky. (Reworked Glacial Till).	G#210040 A-6, CL WC=19.1% LL=29 PL=19 PI=10
						41				
						RC			Encountered boulder at 8.0 feet; roller cone through to 10.0 feet; took sample 3D then advanced casing to 15.0 feet by spinning.	
10	3D	13/4	10.00 - 11.08	8/32/100(1")	---	SPUN			Brown/grey, moist to wet, hard, mottled, SILT, little gravel. (Glacial Till) Telescoped 3" casing at 10 feet; advanced 3" casing to 43.9 feet by spinning. Observed wash water below 11.1 feet as gray SILT, little to trace fine Sand with little Rock fragments. Consistent wash water observed to 43.9' bgs.	
15	4D	2/0	15.00 - 15.17	100(2")	---				No Recovery.	
20	5D	2/0	20.00 - 20.17	100(2")	---				No Recovery.	
25	6D	2/0	25.00 - 25.17	100(2")	---				No Recovery. (Glacial Till)	
30	7D	2/0	30.00 - 30.17	100(2")	---				No Recovery.	
35	8D	2/0	35.00 - 35.17	100(2")	---				No Recovery.	
40	9D	2/0	40.00 - 40.17	100(2")	---				No Recovery.	
						RC	15.10		43.90 Top of Probable Bedrock at Elev. 15.1'. Probable bedrock encountered at 43.9 feet; advanced roller cone to 45.0 feet.	
45	R1	64.8/ 64.8	45.00 - 50.40	RQD = 82%		NQ-2	14.00		45.00 R1: Bedrock: Medium hard, fresh to slightly weathered, fine grained to aphanitic, grey PHYLLITE. Joints are close to moderately spaced, low angle to moderately dipping, planar to undulating, rough to smooth, fresh and tight to partially open. Rock Mass Quality: Good. R1: Core Times (min) 45.0-46.0 (1) 46.0-47.0 (2) 47.0-48.0 (1) 48.0-49.0 (2) 49.0-50.4 (1)	
50							8.60		50.40 Bottom of Exploration at 50.40 feet below ground surface.	
55										
60										
65										
70										
75										

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1
Boring No.: BB-BLR-102

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1668(500)X
PIN 16685.00
BRIDGE PLANS
BRIDGE NO. 5143

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	L.KRUSINSKI	JAN 2010
CHECKED-REVIEWED	T.WHITE	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
P.E. NUMBER
DATE

PERKINS BRIDGE
LITTLE RIVER
BELFAST   WALDO COUNTY

BORING LOGS

SHEET NUMBER
6
OF 20

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-103   PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	57.1	Auger ID/OD:	5" Solid Stem
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/15/09-12/15/09	Drilling Method:	Cased Wash Boring	Core Barrel:	N/A
Boring Location:	5+75.4, 8.3 Rt.	Casing ID/OD:	HW & NW	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	56.40	Asphalt Pavement. (0.70)	
	1D	24/10	1.00 - 3.00	2/9/8/5	17			Brown, moist, medium dense, fine to coarse SAND, some gravel, some silt, (Fill).	G#210041 A-2-4, SM WC=8.7%
5	2D	24/2	5.00 - 7.00	3/6/4/4	10			Auger encountered boulder and advanced at angle at 4.5' bgs. Brown, dry, medium dense, fine to coarse SAND, little gravel, trace silt, (Fill).	
							50.10	(7.00) Bottom of Exploration at 7.00 feet below ground surface. Relocated and continued as BB-BLR-103A.	

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1   Boring No.: BB-BLR-103

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-103A   PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	57.2	Auger ID/OD:	5" Solid Stem
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/16,21/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	5+79.5, 8.2 Rt.	Casing ID/OD:	HW	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SPUN	56.50	Asphalt Pavement. (0.70)	
10	3D	24/2	10.50 - 12.50	5/8/9/10	17	RC		Brown, medium dense, fine to coarse SAND and GRAVEL, trace silt. Roller cone through numerous boulders/cobbles from 10.5 feet to 20.0 feet bgs, (Fill).	
15	4D	24/2	15.00 - 17.00	8/9/19/12	28		42.20	(15.00) Brown, medium dense, fine to coarse SAND and SILT, some gravel. (Reworked Glacial Till)	
20	5D	15/7	20.00 - 21.25	75/23/100(3")	---	RC		Grey, hard, SILT, some sand, little gravel. Wood fragments in sample near tip. Roller cone from 20.3 feet to 22.5 feet through boulder/ possible bedrock. Completed borehole at 26.5 feet on 12/16/ 2009, then on 12/21/09 roller coned ahead to 28.0 feet bgs to clean coring surface, stated R2.	G#210042 A-4, ML WC=28.1%
	R1	48/48	22.50 - 26.50	RQD = 77%		NQ-2	34.70	(22.50) Top of Bedrock at Elev. 34.7'. R1: Bedrock: Hard, fresh to slightly weathered, fine grained, grey METASANDSTONE. Joints are close, moderately dipping, planar, smooth, discolored (iron oxide staining), tight to open. Occasional quartz veins throughout core. Rock Mass Quality: Good. R1: Core Times (min) 22.5-23.5 (2) 23.5-24.5 (3) 24.5-25.5 (2) 25.5-26.5 (3)	
	R2	48/37	28.00 - 32.00	RQD = 25%		NQ-2		R2: Hard, fresh to slightly weathered, fine grained grey METASANDSTONE. Joints are very close to close, low angle to moderately dipping, planar, smooth, fresh to discolored, tight to open. Occasional quartz between joints (up to 3/4" thick). Rock Mass Quality: Poor. R2: Core Times (min) 28.0-29.0 (1) 29.0-30.0 (2) 30.0-31.0 (2) 31.0-32.0 (1)	
	R3	63.6/ 63.6	32.00 - 37.30	RQD = 41%			20.70	R3: Upper 4.5': Hard, fresh to slightly weathered, fine grained, grey METASANDSTONE. Joints are very close to close, low angle to moderately dipping, planar, smooth to rough, fresh to discolored, tight to open. Occasional quartz between joints (up to 3/4" thick). Flow banding evident at 36.5 feet-contact between metasandstone and phyllite. Bottom 0.8': Medium hard, fresh to slightly weathered, fine grained to aphantic, dark grey, PHYLLITE with flow banding. Rock Mass Quality: Poor. R3: Core Times (min) 32.0-33.0 (1) 33.0-34.0 (1) 34.0-35.0 (2) 35.0-36.0 (2) 36.0-37.3 (2) (36.50)	
	R4	60/60	37.30 - 42.30	RQD = 88%				R4: Medium hard, fresh to slightly weathered, fine grained to aphanitic, dark grey, PHYLLITE with flow banding. Joints are close to moderately spaced, moderate to high angle, undulating, rough to smooth, fresh , tight to partially open. Occasional quartz veins. Rock Mass Quality: Good. R4: Core Times (min) 37.3-38.3 (1) 38.3-39.3 (2) 39.3-40.3 (2) 40.3-41.3 (2) 41.3-42.3 (1)	
	R5	60/60	42.30 - 47.30	RQD = 42%			9.90	R5: Medium hard, fresh to slightly weathered, fine grained to aphanitic, dark grey, PHYLLITE with flow banding. Joints are close, low angle to moderately dipping, planar to undulating, rough, fresh, tight to moderately wide. Quartz veins throughout core (up to 1/4" thick). Rock Mass Quality: Poor. R5: Core Times (min) 42.3-43.3 (1) 43.3-44.3 (1) 44.3-45.3 (2) 45.3-46.3 (2) 46.3-47.3 (2)	
								(47.30) Bottom of Exploration at 47.30 feet below ground surface.	

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1   Boring No.: BB-BLR-103A

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-104A   PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	57.6	Auger ID/OD:	5" Solid Stem
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	N/A
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/18/09-12/18/09	Drilling Method:	Cased Wash Boring	Core Barrel:	N/A
Boring Location:	5+86.9, 5.0 Lt.	Casing ID/OD:	HW	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA		No sampling, auger not plumb. Attempted to advance borehole with HW Casing.	
							50.60	(7.00) Bottom of Exploration at 7.00 feet below ground surface. Abandoned hole, relocated to BB-BLR-104.	

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1   Boring No.: BB-BLR-104A

Maine Department of Transportation — Soil/Rock Exploration Log — US CUSTOMARY UNITS

Project: Perkins Bridge #5143 carrying Herrick Road over Little River
Location: Belfast, Maine

Boring No.: BB-BLR-104   PIN: 16685.00

Driller:	Maine Test Borings	Elevation (ft.)	57.6	Auger ID/OD:	N/A
Operator:	Richard Leonard	Datum:	NAD 1983	Sampler:	Standard Split Spoon
Logged By:	Jennifer Tooley	Rig Type:	Truck	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	12/18/09-12/18/09	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	5+87, 4.0 Lt.	Casing ID/OD:	4"/4.5"	Water Level*:	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SPUN		No sampling in overburden. Unable to observe wash water (no return water) likely due to presence of boulders and cobbles. (Fill).	
						RC	46.60	(11.00) Advanced roller cone into rock from 11.0 feet to 13.5 feet (boulder or block). (Fill).	
	R1	50.4/34	13.50 - 17.70			NQ-2	44.10	(13.50) R1: Upper 1.7': Hard, slightly weathered, fine grained, grey, METASANDSTONE (boulder or block). (Fill). R1: Core Times (min) 13.5-14.5 (1) 14.5-15.5 (2) 15.5-16.5 (2) 16.5-17.7 (2)	
15							42.40	(15.20) Lower 2.2': Hard, fresh to slightly weathered, medium grained, GRANITE (boulder or block). (Fill).	
	R2	57.6/24	17.70 - 22.50	RQD = 10%			39.90	(17.70) Top of Bedrock at Elev. 39.9'. R2: Bedrock: Medium hard, fresh to slightly weathered, dark grey, PHYLLITE. Joints are very close to close, low angle to moderately dipping, planar to undulating, smooth to rough, fresh, tight to partially open. Occasional quartz veins. Rock Mass Quality: Very poor. R2: Core Times (min) 17.7-18.7 (1) 18.7-19.7 (2) 19.7-20.7 (1) 20.7-21.7 (1) 21.7-22.5 (1)	
	R3	64.8/34	22.50 - 27.90	RQD = 22%			29.70	R3: Medium hard, fresh to slightly weathered, dark grey, PHYLLITE. Joints are very close to close, low angle to moderately dipping, planar to undulating, smooth to rough, fresh, tight to partially open. Occasional quartz veins. Rock Mass Quality: Very poor. R3: Core Times (min) 22.5-23.5 (1) 23.5-24.5 (1) 24.5-25.5 (2) 25.5-26.5 (1) 26.5-27.9 (2)	
								(27.90) Bottom of Exploration at 27.90 feet below ground surface.	

Remarks:

Stratification lines represent approximate boundaries between soil types; 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.

Page 1 of 1   Boring No.: BB-BLR-104

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

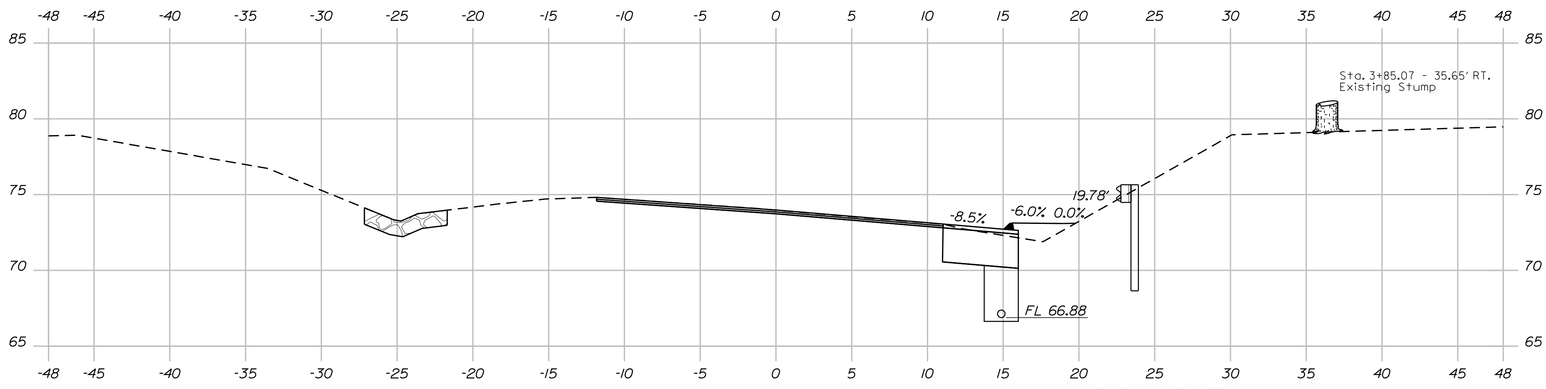
BH-1668(500)X
PIN 16685.00
BRIDGE NO. 5143
BRIDGE PLANS

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	L.KRUSINSKI	JAN 2010
CHECKED-REVIEWED	T.WHITE	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
P.E. NUMBER
DATE

PERKINS BRIDGE
LITTLE RIVER
BELFAST   WALDO COUNTY

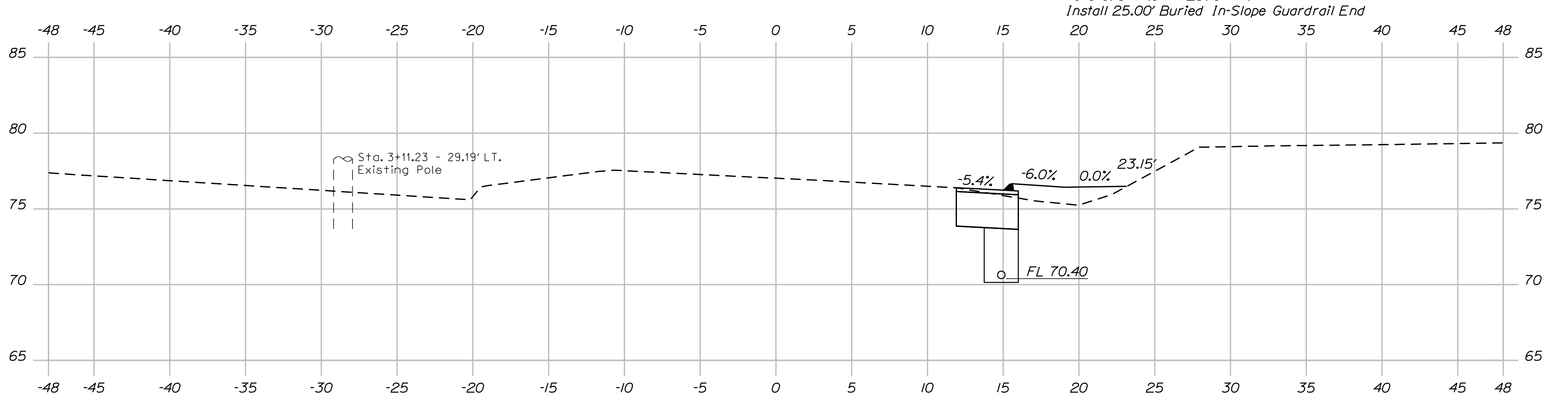
BORING LOGS



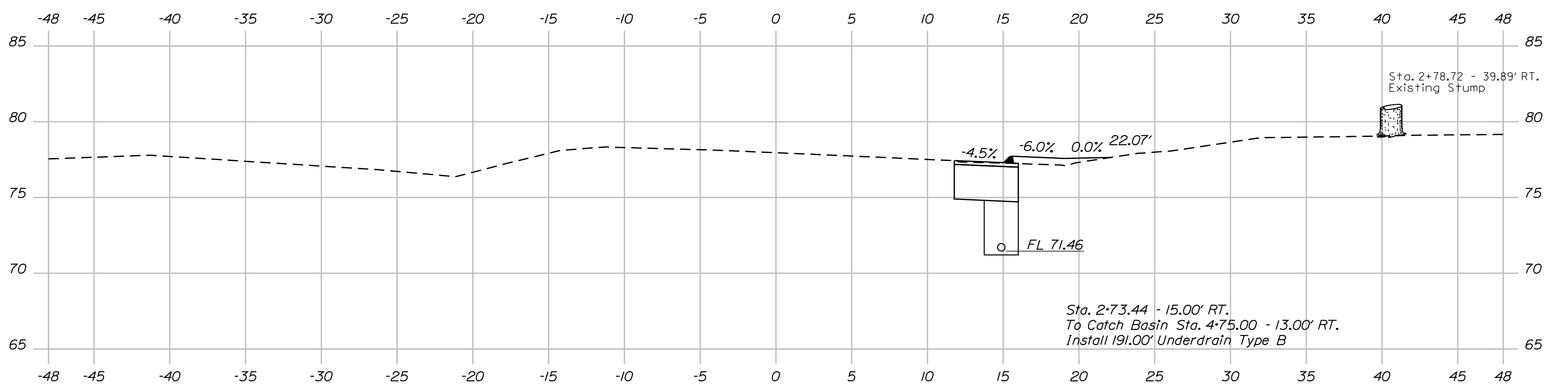
3+50.00
Begin Transition - Match Existing 3+50.00

Sta. 3+47.94 - 23.10' RT.
To Sta. 3+55.14 - 21.01' RT.
To Sta. 4+14.71 - 15.00' RT.
To Sta. 6+33.13 - 15.00' RT.
Install 275.00' Guardrail Type 3c

Sta. 3+21.37 - 31.10' RT.
To Sta. 3+47.94 - 23.10' RT.
Install 25.00' Buried In-Slope Guardrail End

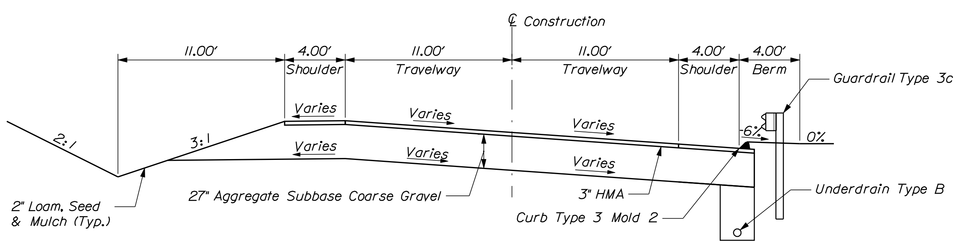


3+00.00

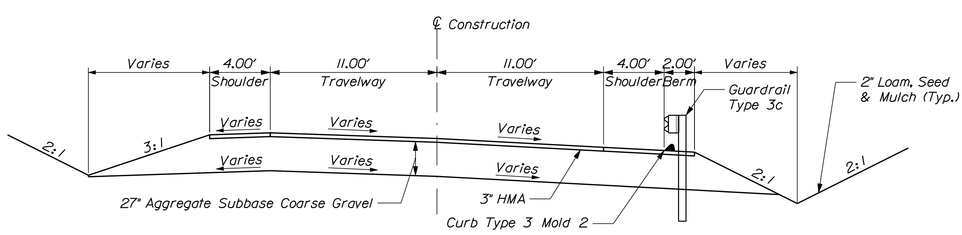


2+73.44
Limit of Work - Match Existing Sta. 2+73.44

Sta. 2+73.44 - 15.00' RT.
To Sta. 6+33.13 - 15.00' RT.
Install 345.48' Curb Type 3 Mold 2



TYPICAL SECTION
(Sta. 3+50 to Sta. 5+15)



Non-Guardrail Section Guardrail Section

TYPICAL SECTION
(Sta. 5+15 to Sta. 7+50)

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Sta. 2+73.44 to Sta. 3+50.00

SHEET NUMBER 8 OF 20

PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

CROSS SECTIONS

PROJ. MANAGER	N. Benoit	BY	DATE
DESIGN-DETAILED	K. Wood	K. Constanzer	
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

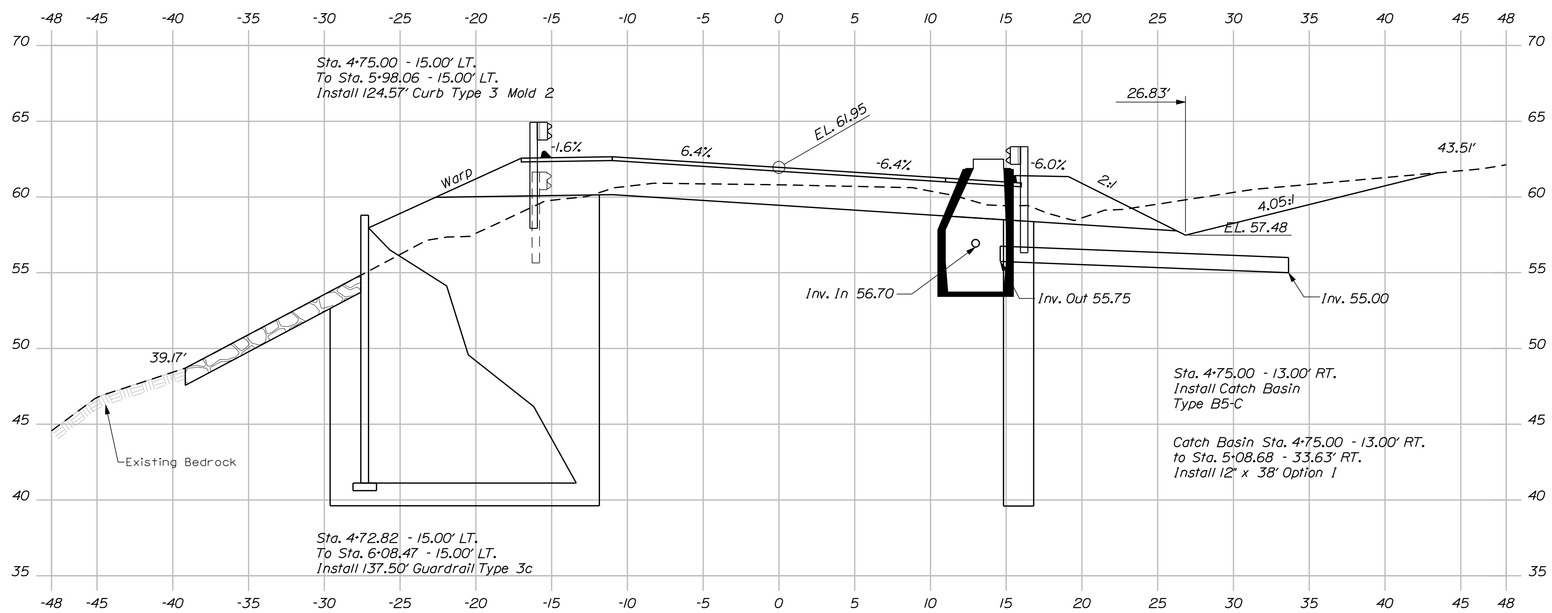
P.E. NUMBER

DATE

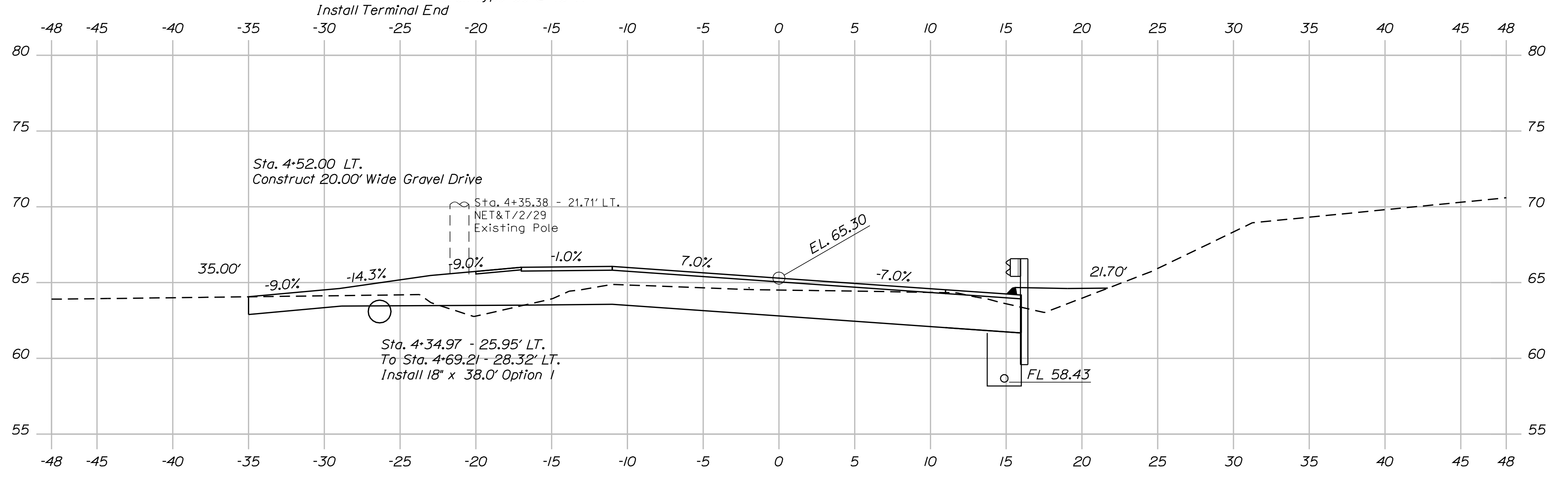
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

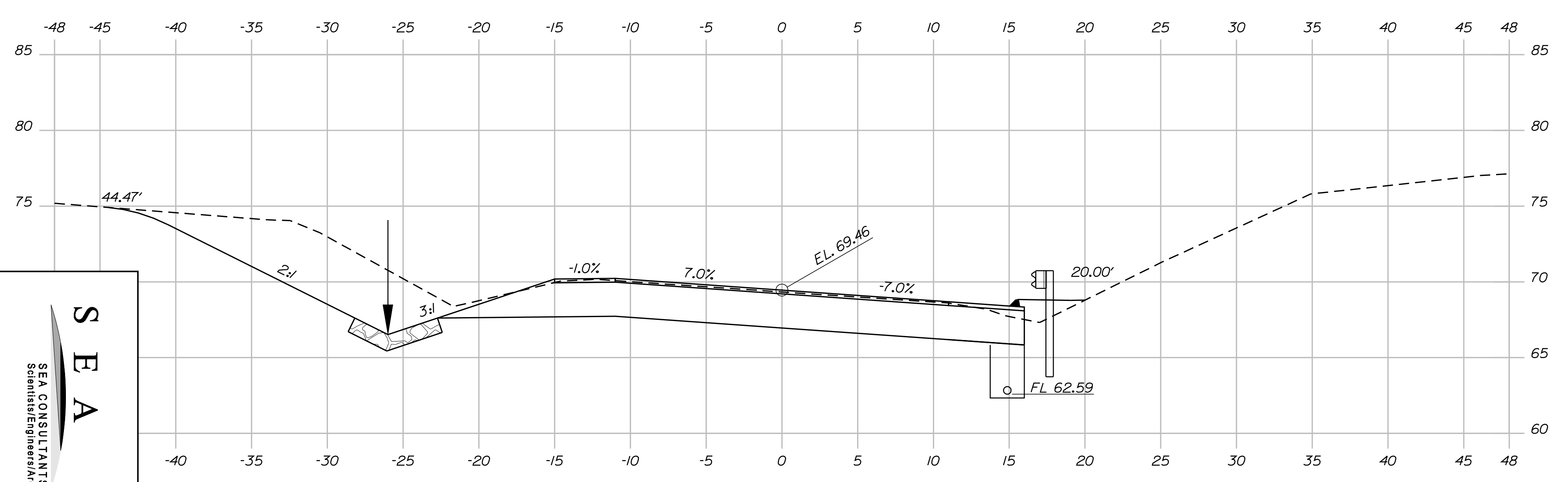
BRIDGE NO. 5143 PIN 16685.00 BRIDGE PLANS



5+00.00



4+50.00



4+00.00

Sta. 4+00.00 to Sta. 5+00.00

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER 9 OF 20

PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

CROSS SECTIONS

PROJ. MANAGER	N. Benoit	BY	DATE
DESIGN-DETAILED	K. Wood	K. Constanzer	
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

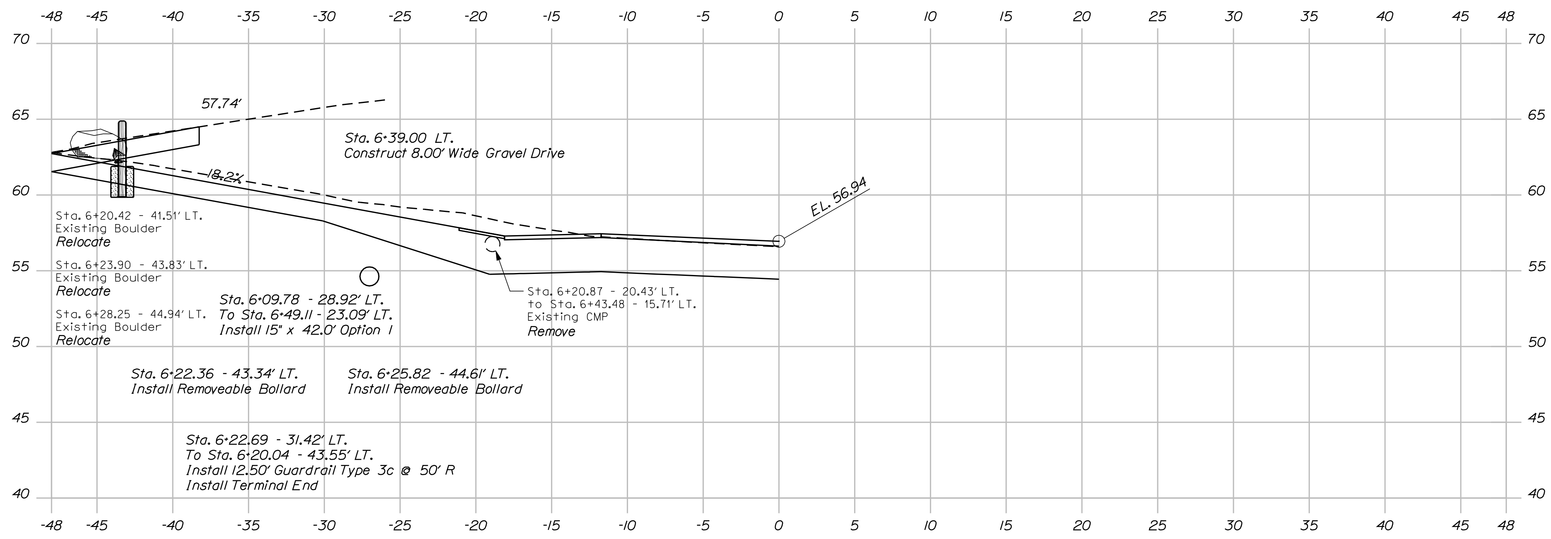
DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

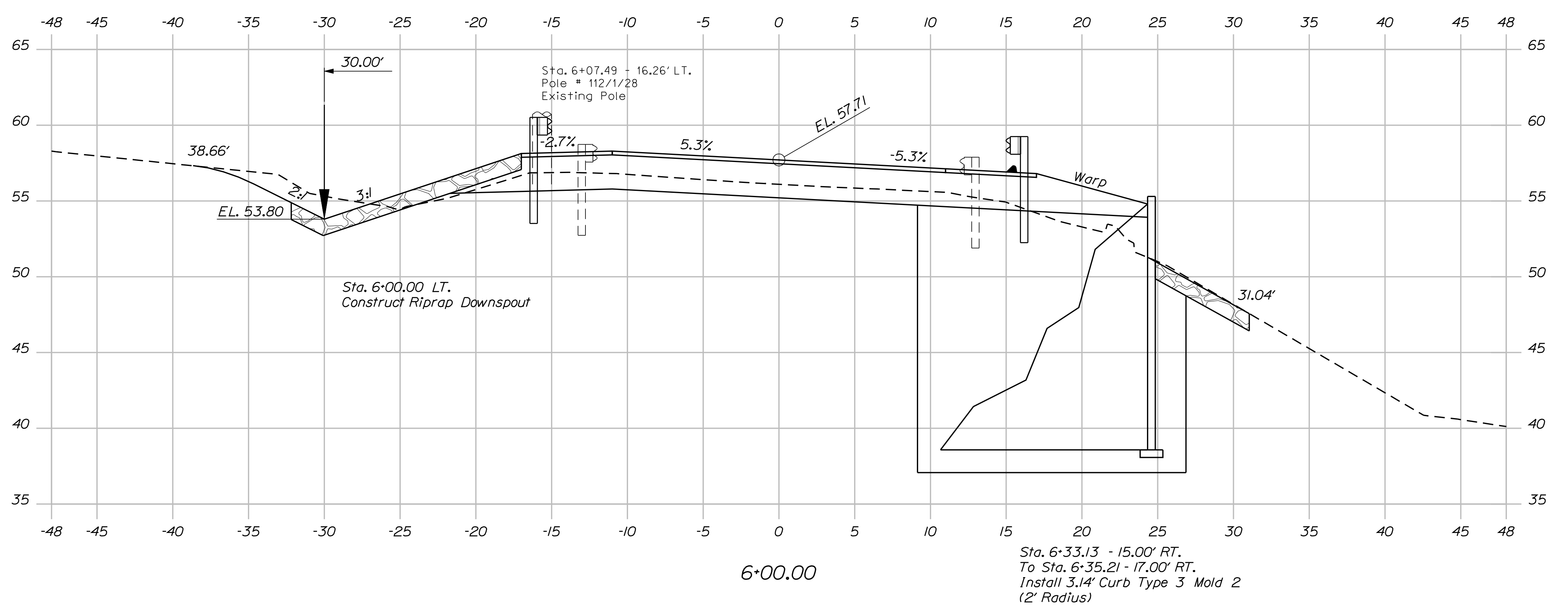
BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143 BRIDGE PLANS

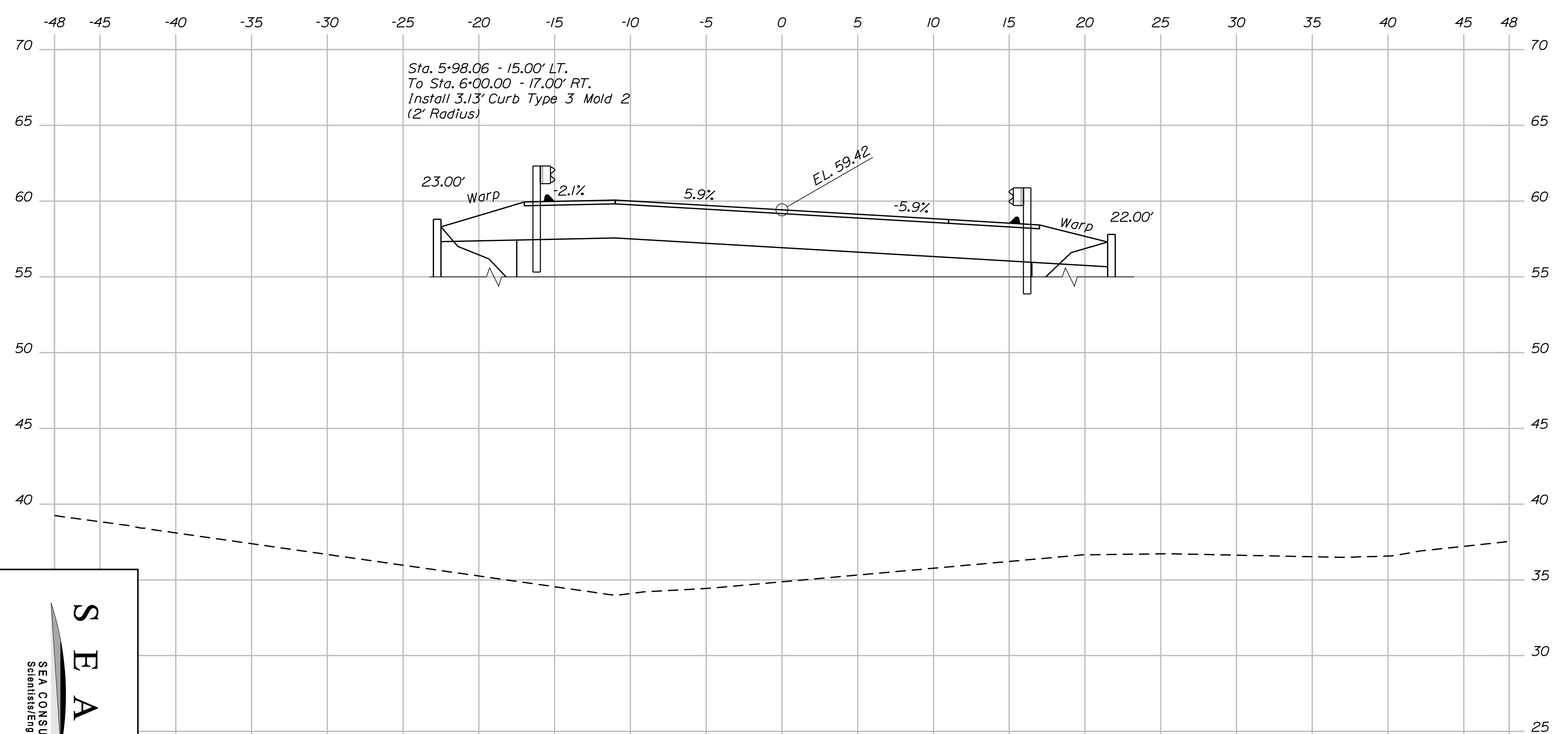


6+39.35 Skewed 20°32'38" Back on Left



6+00.00

Sta. 6+33.13 - 15.00' RT.
To Sta. 6+35.21 - 17.00' RT.
Install 3.14' Curb Type 3 Mold 2
(2' Radius)



5+50.00

Sta. 5+50.00 to Sta. 6+39.35

S E A
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER 10 OF 20

PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

CROSS SECTIONS

PROJ. MANAGER	N. Benoit	BY	DATE
DESIGN-DETAILED	K. Wood	K. Constanzer	
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

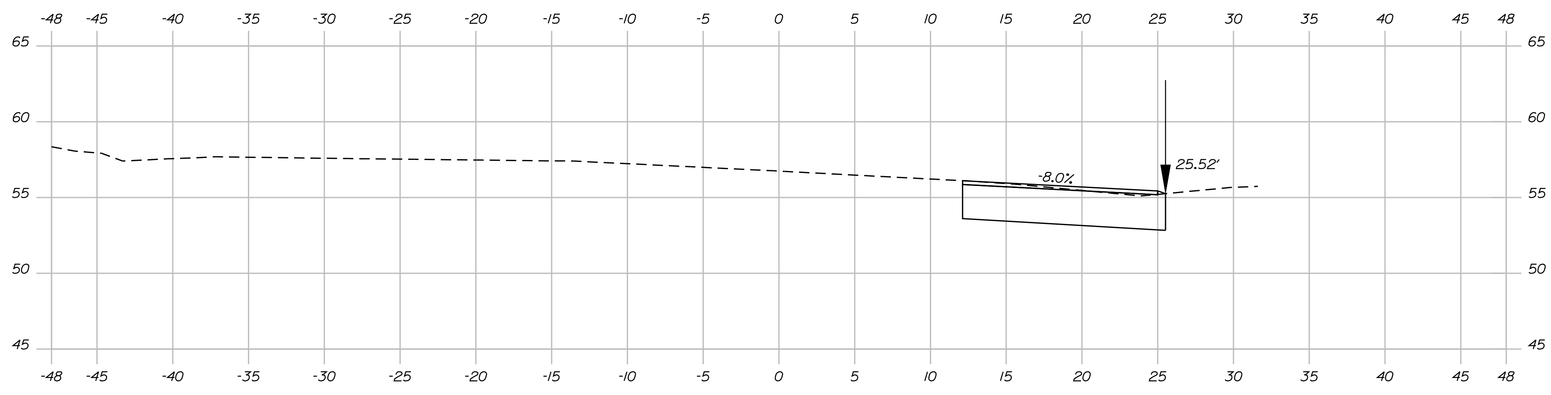
P.E. NUMBER

DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

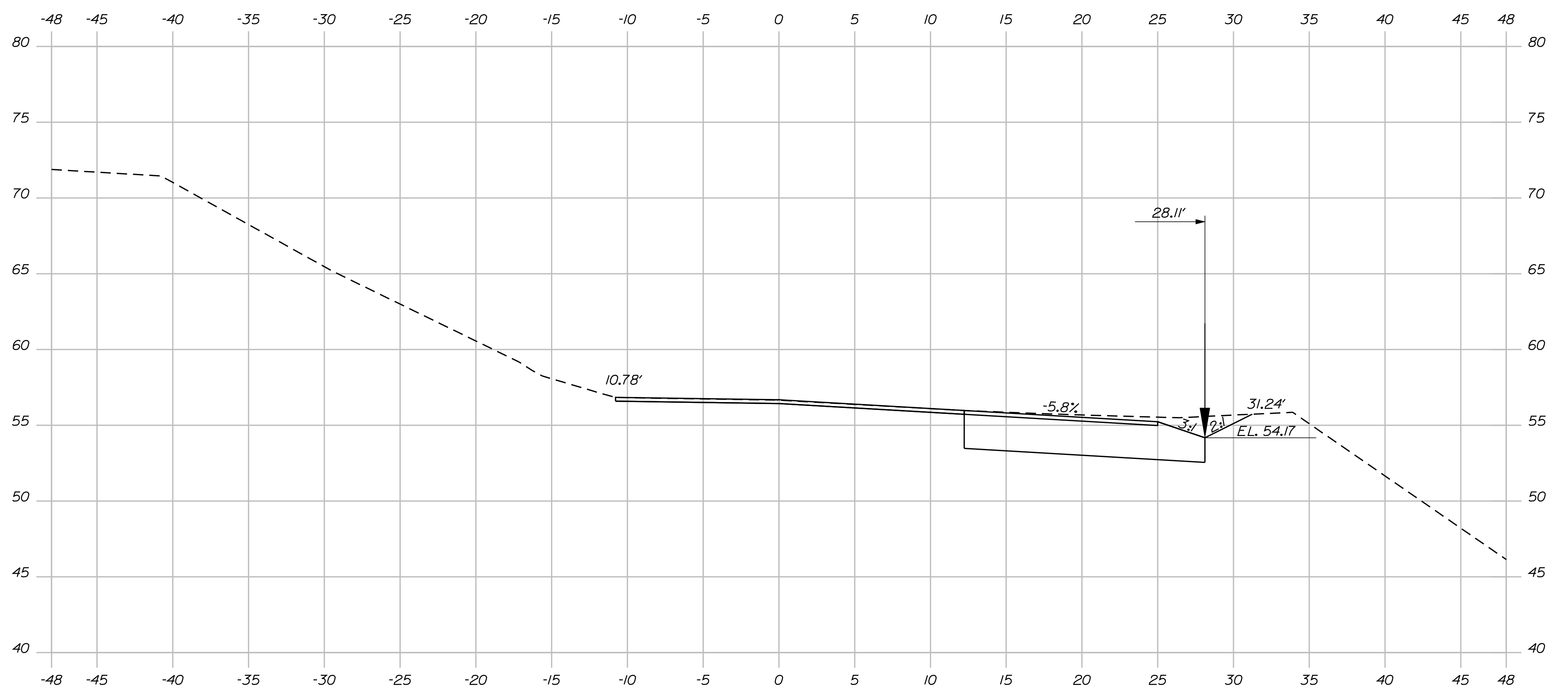
BH-1668(500)X

BRIDGE NO. 5143 PIN 16685.00 BRIDGE PLANS



7+50.00

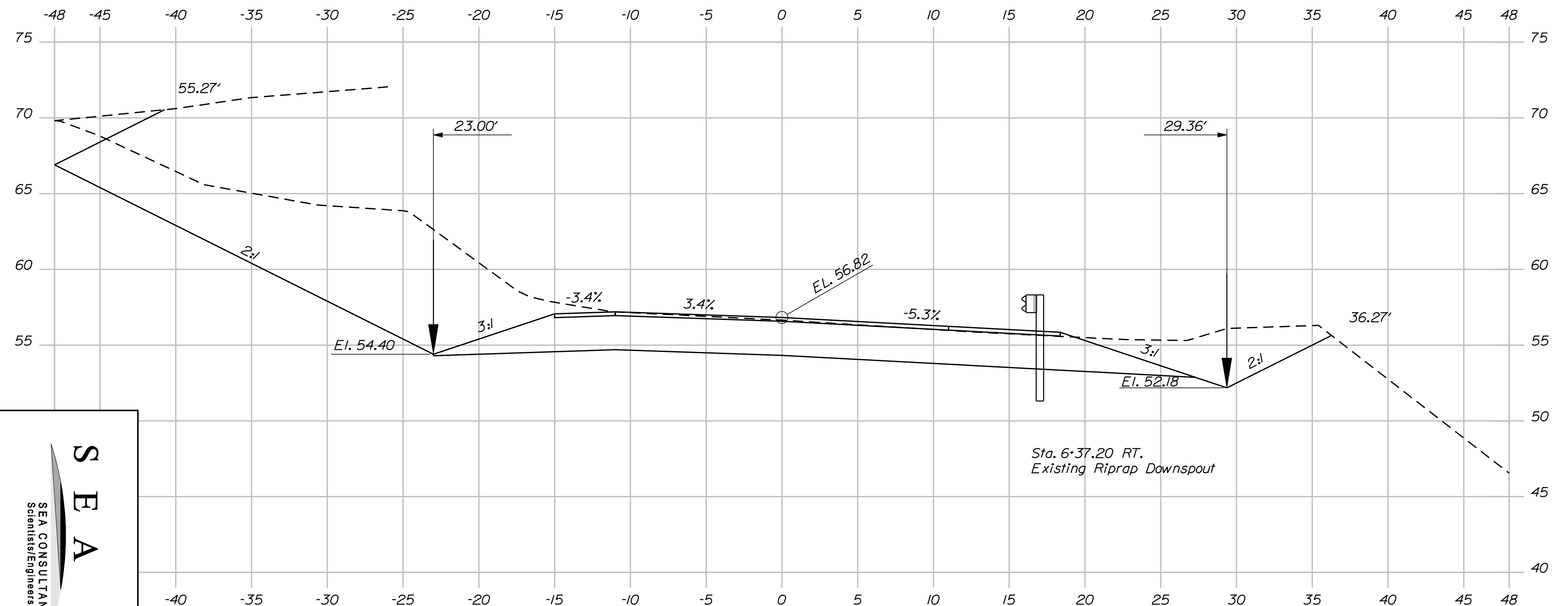
Sta. 6+71.88 - 25.00' RT.
To Sta. 7+50.00 - 25.00' RT.
Construct Paved Parking Area



7+00.00

End Transition - Match Existing 7+00.00

Sta. 6+33.13 - 15.00' RT.
To Sta. 6+71.72 - 18.99' RT.
Guardrail 350 Flared Terminal



Sta. 6+37.20 RT.
Existing Riprap Downspout

6+50.00

End Project - Begin Transition Sta. 6+50.00

Sta. 6+50.00 to Sta. 7+50.00

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER 11 OF 20

PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

CROSS SECTIONS

PROJ. MANAGER	N. Benoit	BY	DATE
DESIGN-DETAILED	K. Wood	K. Constanzer	
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

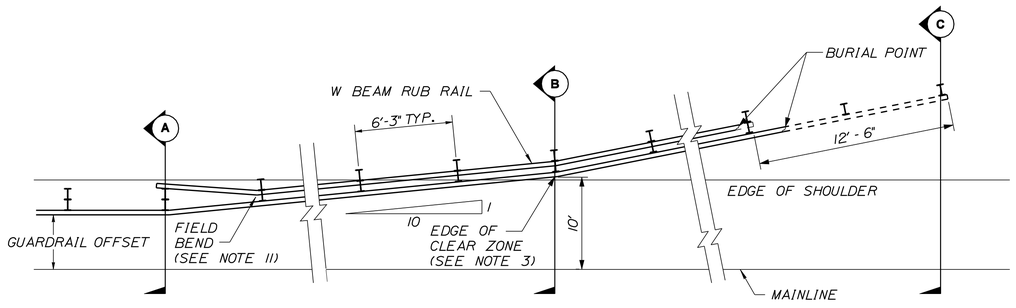
P.E. NUMBER

DATE

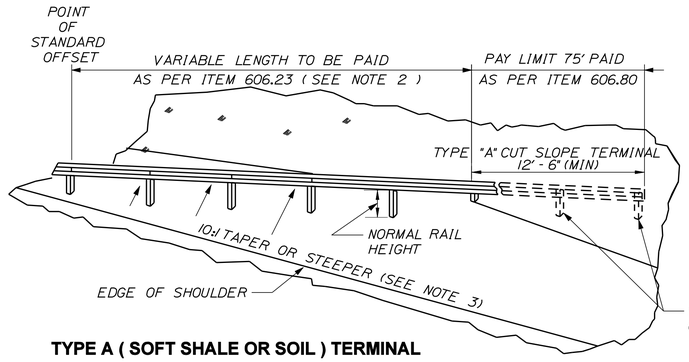
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

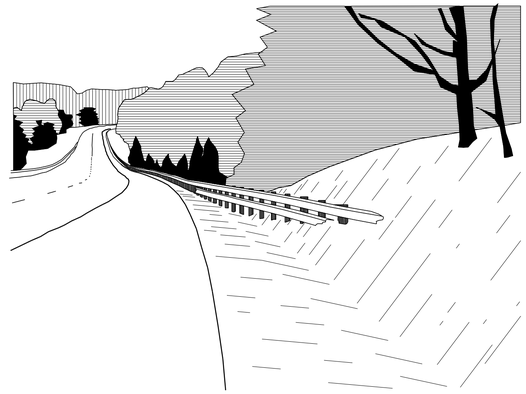
BRIDGE NO. 5143 PIN 16685.00 BRIDGE PLANS



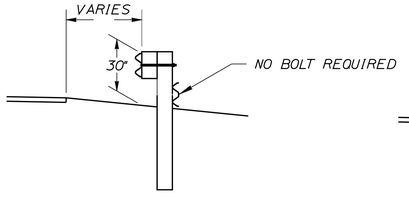
PLAN



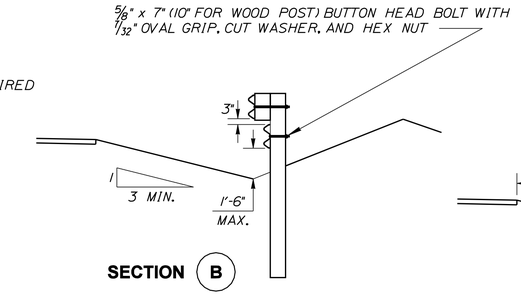
TYPE A (SOFT SHALE OR SOIL) TERMINAL



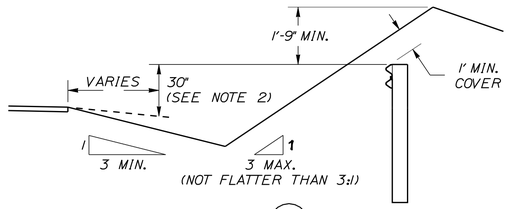
PERSPECTIVE



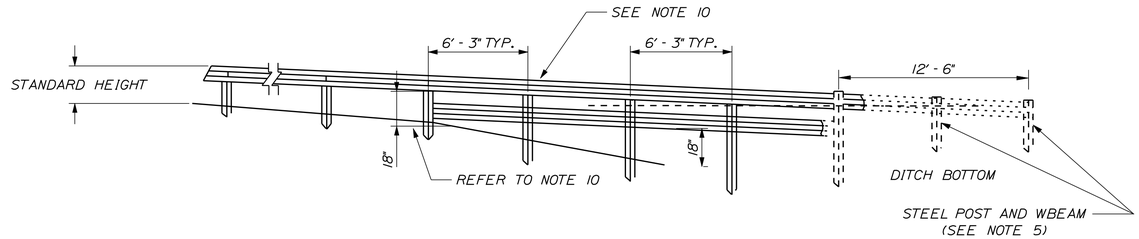
SECTION (A)



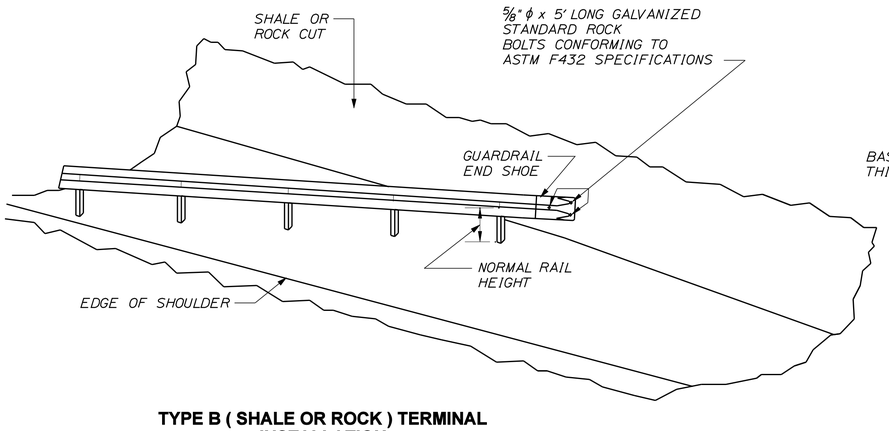
SECTION (B)



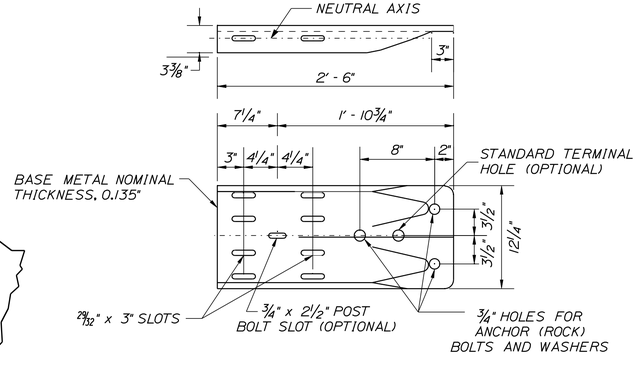
SECTION (C)



ELEVATION



TYPE B (SHALE OR ROCK) TERMINAL INSTALLATION



GUARDRAIL END SHOE DETAIL

NOTES

1. PRIOR TO PLACING GUARDRAIL, A FINAL CHECK OF EXISTING CONDITIONS WILL BE MADE BY THE PROJECT RESIDENT AND ANY ADJUSTMENT NECESSARY TO ENSURE THE PROPER FUNCTIONING OF THE GUARDRAIL FOR THE PURPOSE FOR WHICH IT IS INTENDED WILL BE MADE ACCORDINGLY.

2. EXTRA LENGTH POSTS AND W BEAM RUB RAIL REQUIRED WITHIN THE PAY LIMIT OF ITEM # 606.80 SHALL BE CONSIDERED INCIDENTAL. EXTRA W BEAM RUB RAIL REQUIRED OUTSIDE OF THE PAY LIMIT OF ITEM # 606.80 WILL BE PAID WITH GUARDRAIL ITEM (606.178 GUARDRAIL BEAM) EXTRA LENGTH POSTS, IF NEEDED, OUTSIDE THE PAY LIMIT OF ITEM 606.80 SHALL BE INCIDENTAL TO ITEM 606.23.

3. THE FLARE TAPER RATE OF THE GUARDRAIL MAY BE STEEPENED AFTER CROSSING THE CLEAR ZONE POINT (10 FEET FROM THE EDGE OF THE TRAVELWAY) TO SHORTEN THE LENGTH OF THE TERMINAL.

4. TYPE A (SOIL) CUT SLOPES TERMINAL GUARDRAIL SHALL BE THAT GUARDRAIL WHICH (1) IS TO EXTEND A MINIMUM OF TWO 6'-3" SPANS INTO THE CUT SLOPE, FROM THE FIRST POST BEYOND THE TOE OF THE CUT SLOPE, AS DETAILED HEREIN, AND (2) IS TO TERMINATE A MINIMUM OF 1'-0" BELOW THE GROUND ELEVATION OF THE BACK SLOPE, AS DETAILED HEREIN.

5. IN THE BURIED PORTION OF THE TERMINAL. POST AND OFFSET BRACKETS SHALL BE GALVANIZED STEEL. WOOD OR GALVANIZED STEEL POSTS AND WOOD OR COMPOSITE OFFSET BLOCKS MAY BE USED FOR THE REMAINDER OF THE TERMINAL.

6. THE CONTRACTOR SHALL SO ARRANGE HIS WORK SEQUENCE TO PROVIDE THAT EACH TYPE A AND TYPE B TERMINAL END SHALL BE INSTALLED CONCURRENTLY WITH THE PLACEMENT OF EACH SECTION OF BEAM RAIL INCLUDING BACKFILLING AND SHAPING OF THE DISTURBED SLOPE.

7. TYPE B (SHALE OR ROCK)TERMINAL INSTALLATION SHALL CONSIST OF ANCHORING THE GUARDRAIL AGAINST THE FACE OF THE EXPOSED ROCK USING GUARDRAIL END SHOES AS DETAILED HEREIN.

8. THE FINAL DECISION AS TO THE TYPE OF CUT SLOPE TERMINAL INSTALLATION (TYPE A OR TYPE B) AT EACH LOCATION WILL BE BASED ON THE ACTUAL MATERIALS ENCOUNTERED DURING CONSTRUCTION.

9. BURIED END TERMINALS.BOTH TYPE A AND TYPE B.WILL BE PAID AS ITEM #606.80 COMPLETE IN PLACE. ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY FOR THE TERMINAL END INSTALLATION INCLUDING BUT NOT LIMITED TO EXCAVATION, BACKFILLING, AND SLOPE SHAPING WILL BE CONSIDERED INCIDENTAL TO ITEM # 606.80.

10. HOLD THE TOP GUARDRAIL ELEMENT CONSTANT WITH THE TYPICAL BARRIER INSTALLATION. WHEN THE BOTTOM OF THE TOP OF GUARDRAIL ELEMENT EXCEEDES 18", AT ANY POINT OF THE SLOPE GO UP STREAM 1 POST AND ADD A BOTTOM RAIL ELEMENT UNDER THE STANDARD GUARDRAIL ELEMENT. IF THE TOP OF THE INSTALLATION EXCEEDS 45" FROM THE GROUND, AT ANY POINT IN THE INSTALLATION, THEN BOTH ELEMENTS WILL BE SLOPED DOWN TO MAINTAIN A MAXIMUM HEIGHT OF 45" IN FRONT OF THE TOE OF SLOPE.

11. BEND THE DOWNSTREAM END OF THE BOTTOM RAIL TO THE BACKSIDE OF THE POST AND BOLT TO POSTS. USE 96" LONG POSTS, WOOD (SEE NOTE 5) OR STEEL. WIDTH DIMENSIONS AS PER STANDARD DETAILS AT LOCATION REQUIRING BOTTOM RAIL ELEMENT. IF BOLT HOLES HOLES ARE FIELD DRILLED, ZINC RICH PAINT (COLD GALVANIZATION) SHALL BE APPLIED TO ALL DISTURBED SURFACES PRIOR TO BOLT INSTALLATION.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE PLANS

BRIDGE NO. 5143

PROJ. MANAGER	N. Benoit			
DESIGN-DETAILED	K. Wood	BY	K. Constanzer	DATE 4\27\10
CHECKED-REVIEWED	K. Wood		P. Hetherly	
DESIGN2-DETAILED2		ED2		
DESIGN3-DETAILED3		ED3		
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

SIGNATURE

P.E. NUMBER

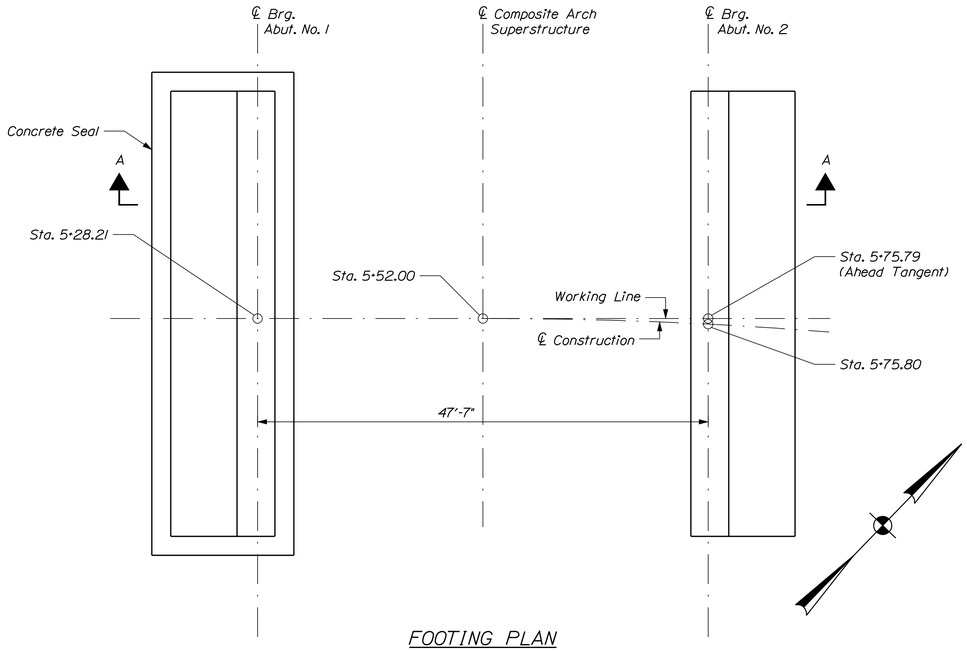
DATE

PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

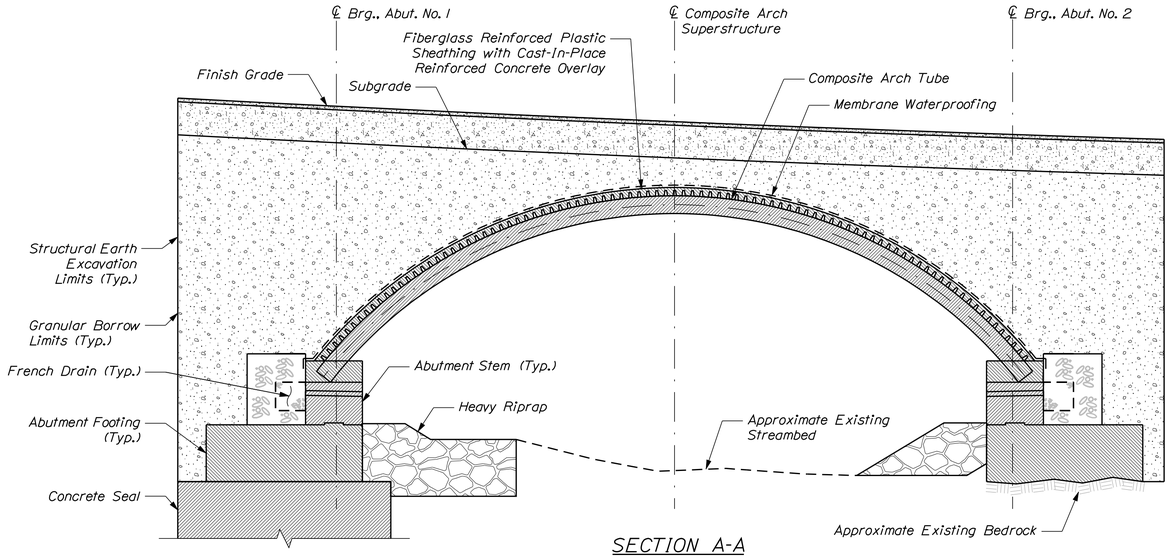
BURIED IN SLOPE
GUARDRAIL DETAILS

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

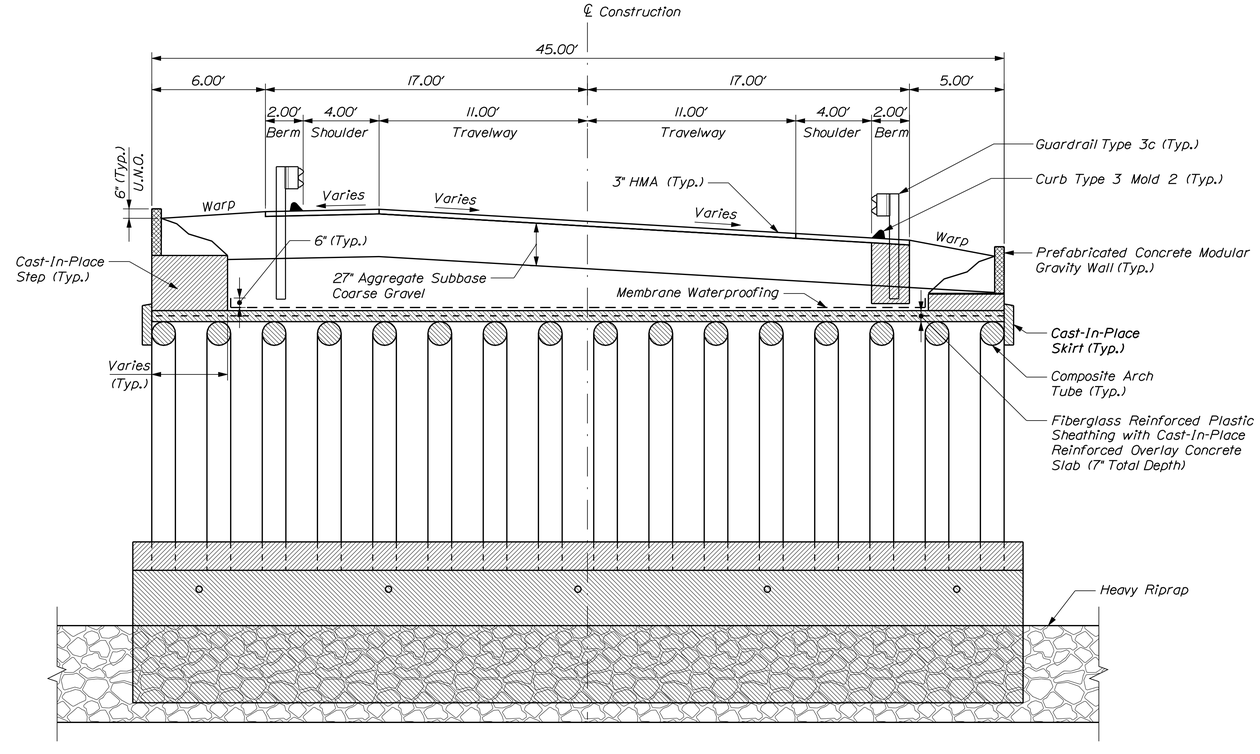
SHEET NUMBER
12
OF 20



FOOTING PLAN



SECTION A-A



TRANSVERSE SECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

PROJ. MANAGER	N. Benoit		
DESIGN-DETAILED	K. Wood	BY	K. Constanzer
CHECKED-REVIEWED	K. Wood	BY	P. Hetherly
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES		DATE	4\27\10

SIGNATURE

P.E. NUMBER

DATE

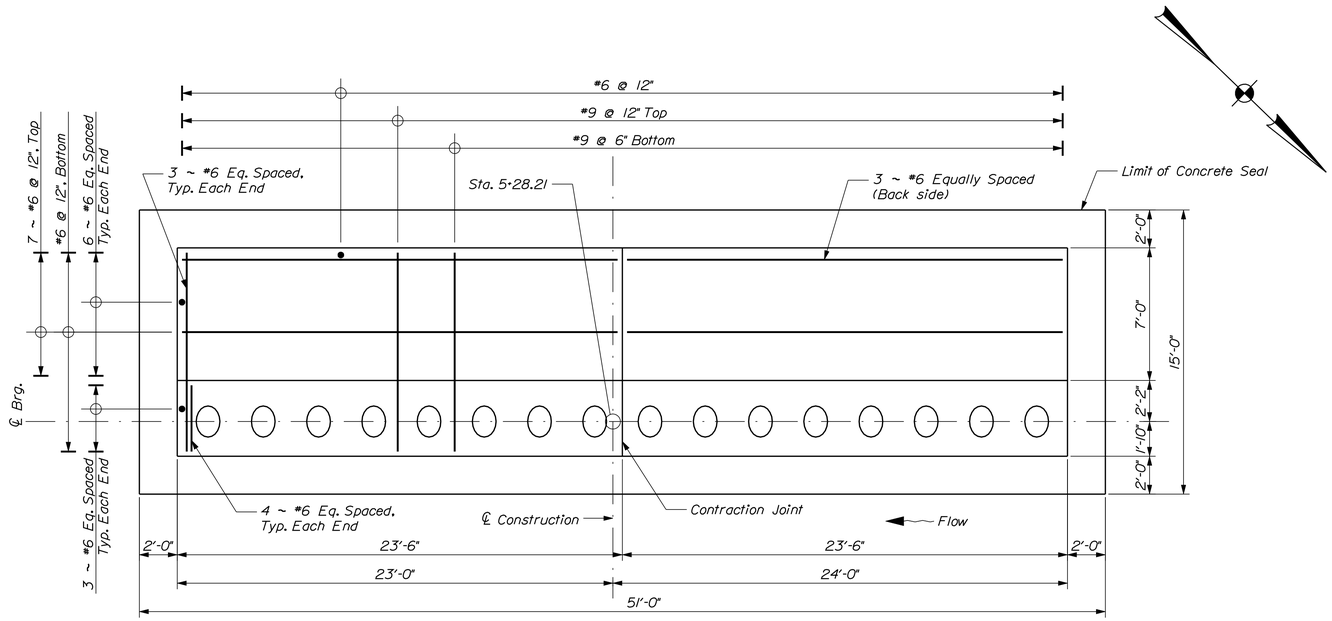
PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

COMPOSITE ARCH
PLAN AND SECTIONS

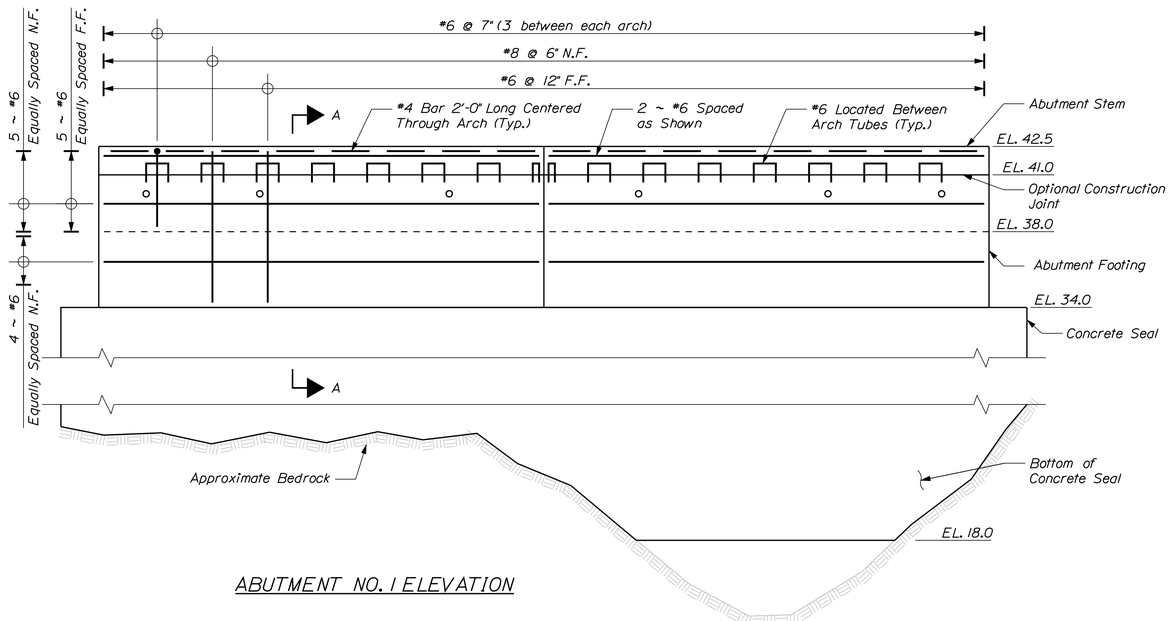
SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
13
OF 20

Filename: ...\013_Composite Arch Plan.dgn Division: BRIDGE Username: kris.constanzer Date:4/27/2010



ABUTMENT NO. 1 PLAN



ABUTMENT NO. 1 ELEVATION

SEAL COFFERDAM NOTES

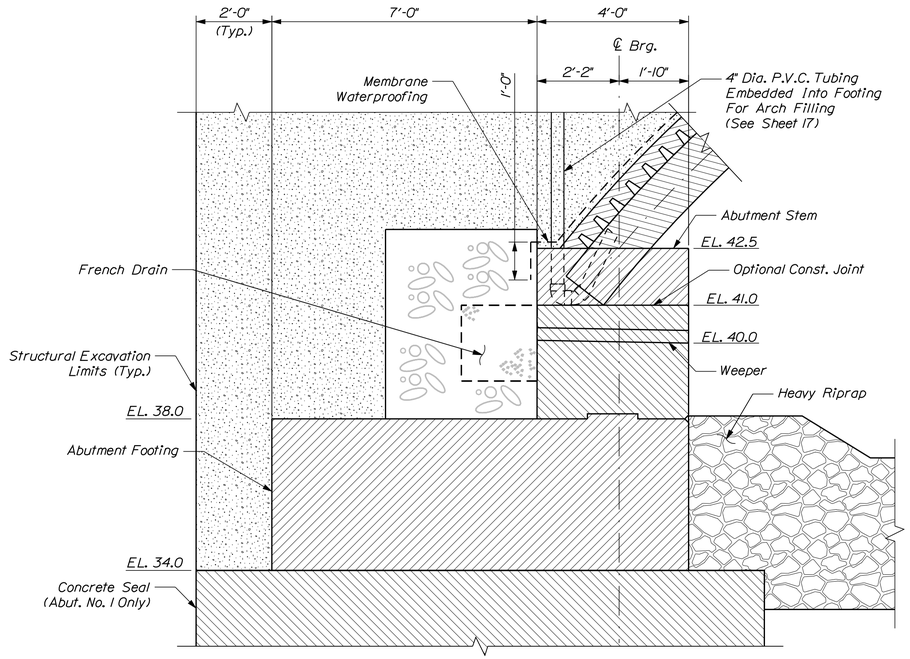
1. When sheet piling is used for seal cofferdams, appropriate rolled corners shall be used, and the inside face of the sheet piling shall be at or outside of the seal concrete dimensions shown.

2. The seal concrete placement dimensions shown represent the minimum seal size necessary to meet design requirements and are not based on the use of any particular sheet pile section.

3. The horizontal pay limit for seal concrete will be to the dimensions shown on the plans. No additional payment will be made for concrete placed outside these limits.

4. The maximum vertical pay limit for seal concrete will be from EL. 34.0 to EL. 18.0 or to top of bedrock, whichever is higher. The Contractor has the option to place the entire seal to bedrock, without additional payment.

5. The seal dimensions are set for a soil elevation of at least 34.0 in front of the seal. If the soil elevation at the time of construction is lower, the dimensions of the seal shall be adjusted.



ABUTMENT SECTION SECTION A-A

Note:
See Sheet 15 for reinforcing steel detail.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	N. Benoit	
DESIGN-DETAILED	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	
DESIGN2-DETAILED2	K. Wood	
DESIGN3-DETAILED3	P. Hetherly	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

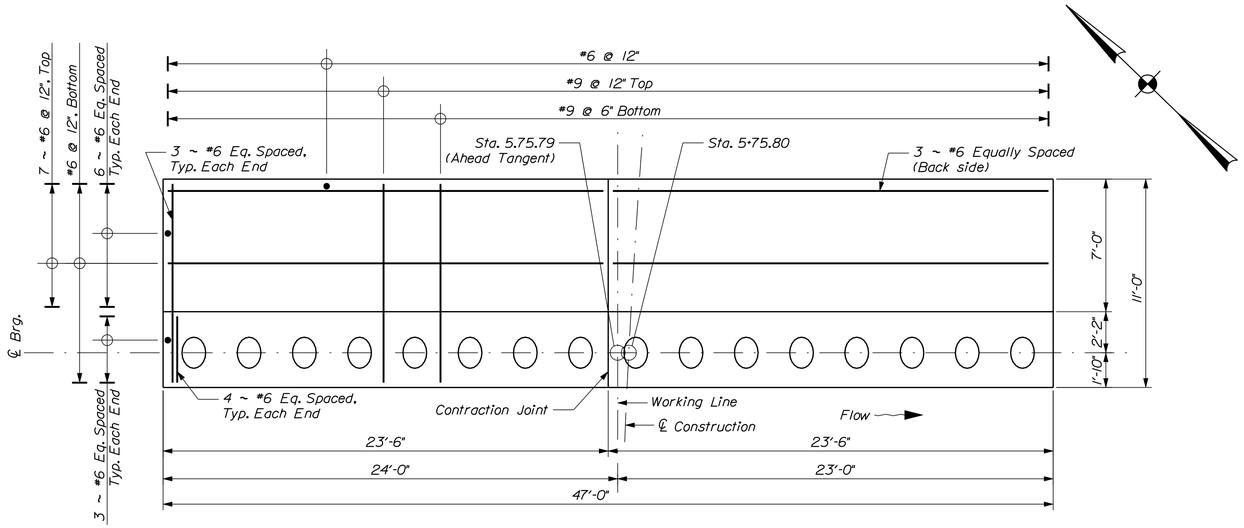
DATE

PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

ABUTMENT NO. 1 DETAILS

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
14
OF 20



ABUTMENT NO. 2 PLAN

ABUTMENT NOTES

1. The maximum factored applied footing pressure is 14.4 ksf.

2. 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.

3. Reinforcing steel shall have a minimum concrete cover of 3 inches in the walls and in the footings unless otherwise noted.

4. Place 4-in. diameter drains in the Abutment Stems at 10-ft maximum spacing. The exact location will be determined by the Resident.

5. Cover joints where waterstops are not required in accordance with Standard Details Section 502.

6. Construct French Drains behind the Abutment Stems in accordance with Standard Specifications Section 512, French Drains.

7. Concrete Abutments shall be backfilled with Granular Borrow. Pay limits will be the Structural Excavation limits.

8. Reinforcing steel is designed with standard hook lengths, and typical 3 inch clear to all faces and tubes.

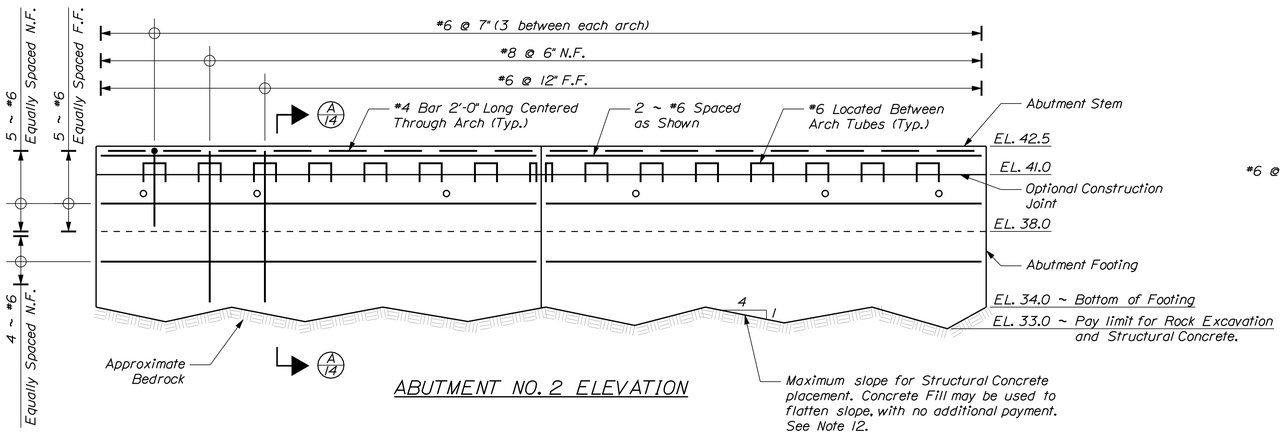
9. Abutments shall be founded on bedrock or Fill/Seal Concrete.

10. Abutment configuration is based on assumed bedrock elevation, and may vary from that shown. The Abutment configuration may be modified with approval of the Resident. The Footing may be stepped up by reducing Stem height, with top of Footing elevation not higher than elevation 41.0. The Abutment shall have a minimum thickness of 4'-0".

11. Where the limits of Structural Excavation and Granular Borrow Backfill for the Abutments overlap with limits for the PCMG Walls, the Pay limits for Structural Excavation and Granular Borrow Backfill for the Abutments will supercede the PCMG Wall limits.

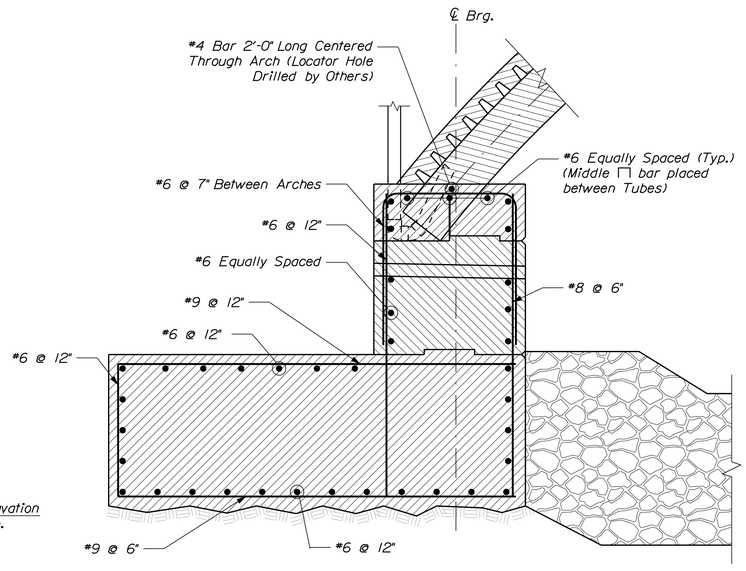
12. Abutment Footing Concrete not placed on the Concrete Seal shall be placed on bedrock cleared of all loose rock or soil. Prior to placing the footing, the bearing surface shall be washed with high - pressure water and air, and smooth bedrock shall be roughened. Where the bedrock surface slope exceeds 4H:1V the bedrock surface shall be benched in level slopes or made completely level by placing Fill Concrete or Excavating Rock as directed by the Resident.

13. Concrete Fill shall be Class S.



ABUTMENT NO. 2 ELEVATION

Maximum slope for Structural Concrete placement. Concrete Fill may be used to flatten slope, with no additional payment. See Note 12.



ABUTMENT REINFORCING SECTION
(Typical Both Abutments)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	N. Benoit	
DESIGN-DETAILED	K. Wood	4\27\10
CHECKED-REVIEWED	K. Wood	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

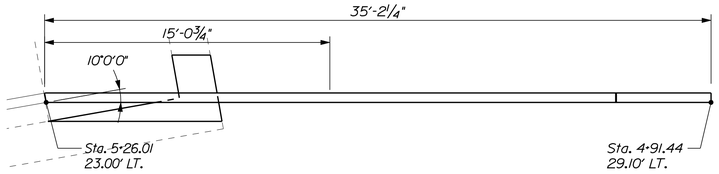
PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

ABUTMENT NO. 2 DETAILS

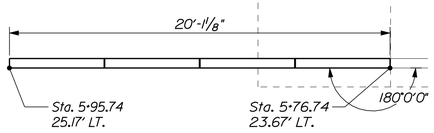
SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
15
OF 20

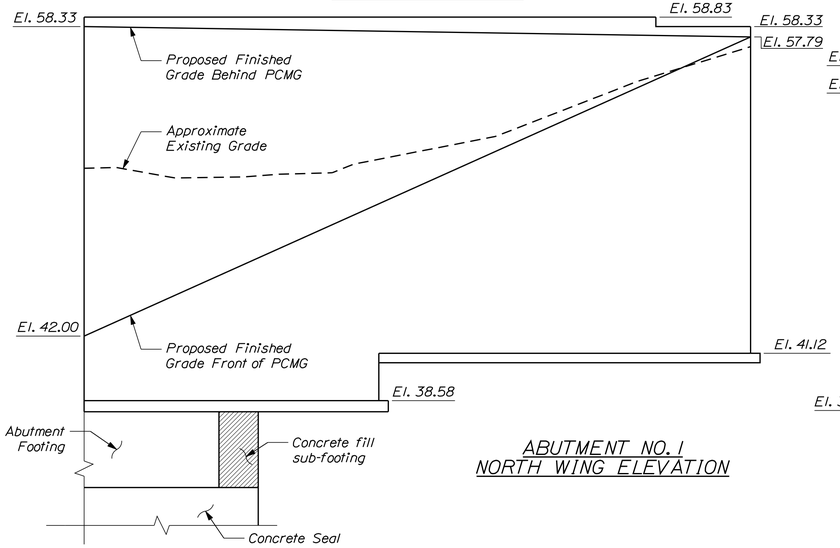
Filename: ...\MSTA\015_Abutment2_Details.dgn Username: kris.constanzer Division: BRIDGE Date:5/11/2010



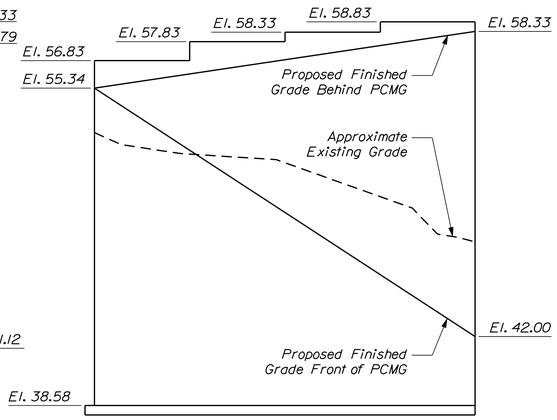
ABUTMENT NO. 1
NORTH WING PLAN



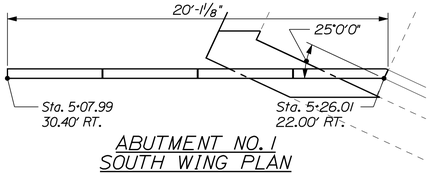
ABUTMENT NO. 2
NORTH WING PLAN



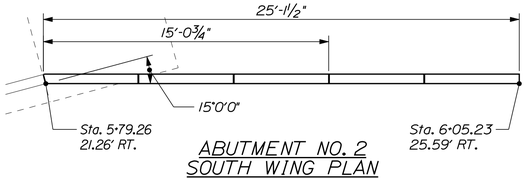
ABUTMENT NO. 1
NORTH WING ELEVATION



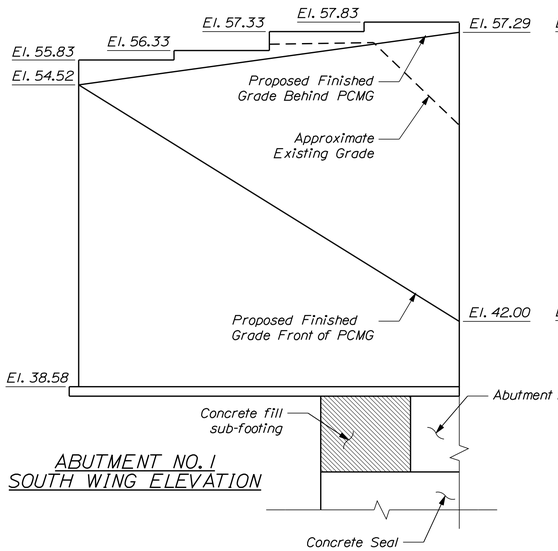
ABUTMENT NO. 2
NORTH WING ELEVATION



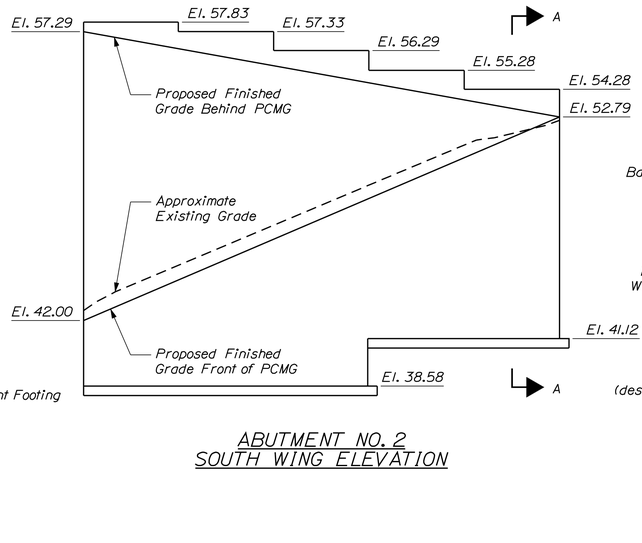
ABUTMENT NO. 1
SOUTH WING PLAN



ABUTMENT NO. 2
SOUTH WING PLAN



ABUTMENT NO. 1
SOUTH WING ELEVATION



ABUTMENT NO. 2
SOUTH WING ELEVATION

PREFABRICATED CONCRETE MODULAR GRAVITY WALL NOTES

1. The Contractor shall provide a Prefabricated Concrete Modular Gravity (PCMG) Wall in accordance with Special Provision Section 635. The PCMG Wall shall be designed and stamped by a Licensed Professional Engineer and the design shall be submitted to the Resident for review. Plan details are shown for estimating purposes only.

2. The precast units shall be one of the following, or equal:

   "T-Wall" as manufactured by a licensed manufacturer of Neel Company

   "DoubleWal" as manufactured by a licensed manufacturer of DoubleWal Corp., Plainville, Connecticut.

3. The factored bearing pressure for PCMG Walls founded directly on bedrock or concrete fill shall not exceed the factored bearing resistance of 16 ksf for the strength limit state. The factored bearing pressure for the service limit state shall not exceed the factored bearing resistance of 20 ksf.

4. For the strength limit state, the factored bearing pressure for PCMG Walls founded on compacted granular bedding material shall not exceed the factored bearing resistance of 5 ksf for wall system bases less than 8 feet wide and 6.5 ksf for bases 10 to 14 feet wide. The factored bearing pressure for the service limit state shall not exceed the factored bearing resistance of 6.0 ksf.

5. Cofferdams for the PCMG Wall installation will be included with the corresponding Pay Item No. 511.07, Cofferdam - Abutment No. 1 or No. 2.

6. The PCMG Wall shall consist of concrete with a maximum permeability of 2000 coulombs shall contain a minimum of 5.5 gallons per cubic yard of calcium nitrite solution or equivalent corrosion inhibitor approved by the Resident. Corrosion resistance reinforcing steel shall be used.

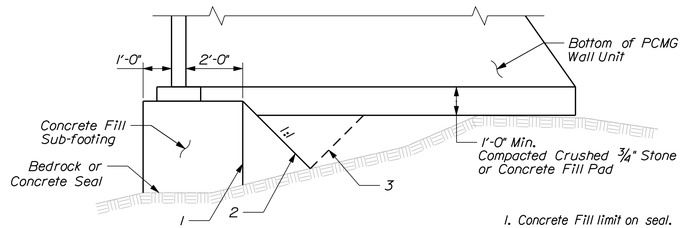
7. A 1'-0" wide drainage geotextile shall be secured to the back face of the wall units at all joints up to elevation 44.1. A 1.5 foot thick layer of crushed stone (MaineDOT 703.31) shall be placed vertically along the inside face of the wall units. The layer of crushed stone shall extend vertically from the bottom course of the wall units to the top course of the wall units. The crushed stone shall be separated from the surrounding backfill with erosion control geotextile (MaineDOT 722.03). A minimum of 1.5 feet of overlap is required between adjacent lengths of geotextile. Payment for crushed stone, erosion control and drainage geotextile shall be considered incidental to Pay Item 635.14.

8. See Sheet 18 for guardrail notes.

9. Wall lengths shown are based on using 5'-0" unit widths with ⅜" vertical gap widths between units.

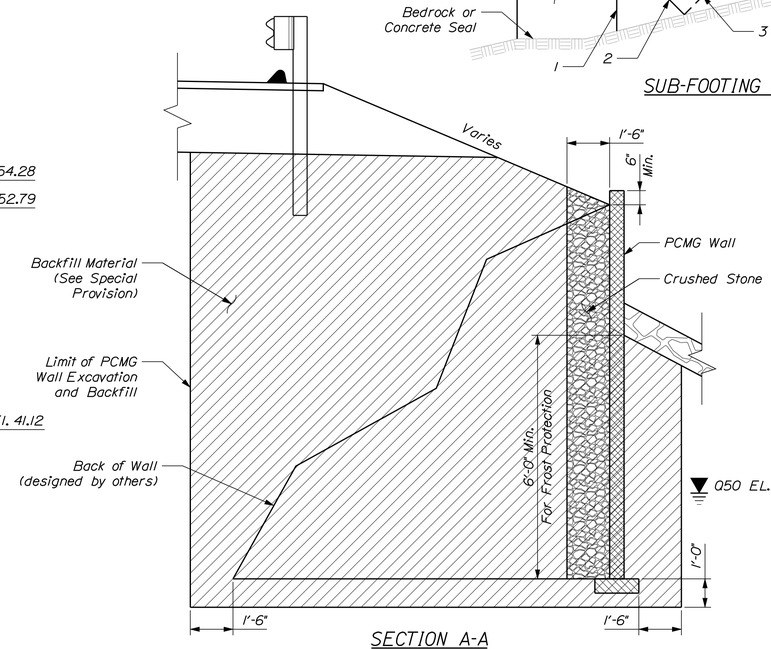
10. Place Fill Concrete on top of Abutment No. 1 seal to top of footing in accordance with sub-footing detail. Payment will be made under Item 502.56.

11. Wingwall configuration is based on assumed bedrock elevation, which may vary from that shown. The Contractor shall perform Test Pits for each wingwall to confirm elevations prior to submitting shop drawings. Payment for Test Pits will be made under Item 803.01. Concrete Fill may be used to raise bottom of wall elevation per the sub-footing detail to avoid conflict between bedrock and PCMG Units. Payment for Concrete Fill will be made under Item 502.56.

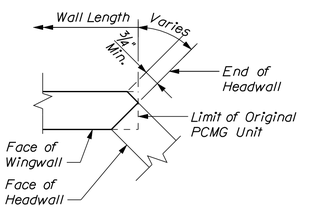


SUB-FOOTING DETAIL

1. Concrete Fill limit on seal.
2. Concrete Fill limit on Bedrock.
3. Excavation Limit (Concrete Fill may be placed to this limit if desired).



SECTION A-A



TYPICAL WING BEVEL DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

PROJ. MANAGER	N. Benoit		
DESIGN-DETAILED	K. Wood	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	P. Hetherly	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

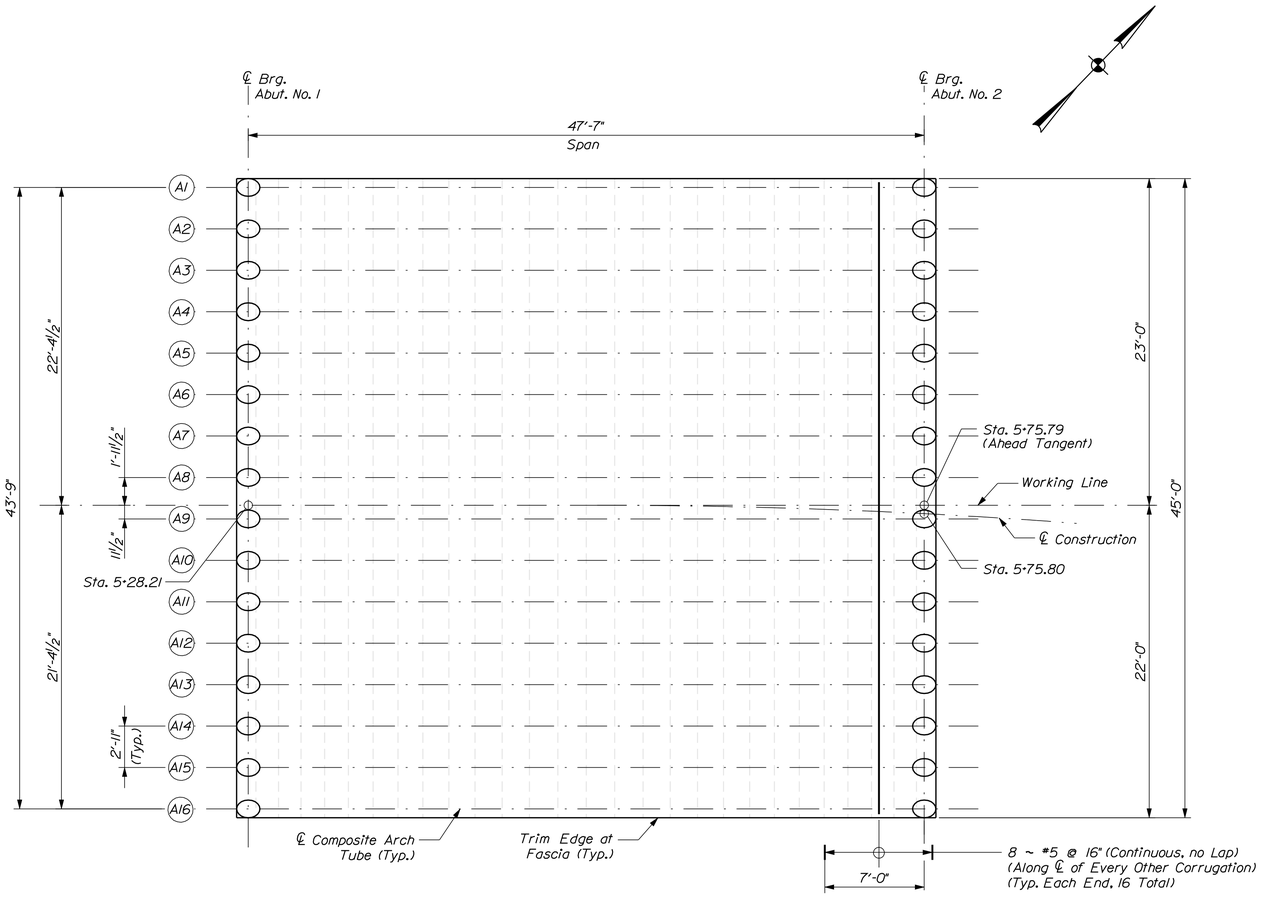
PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

WINGWALL DETAILS

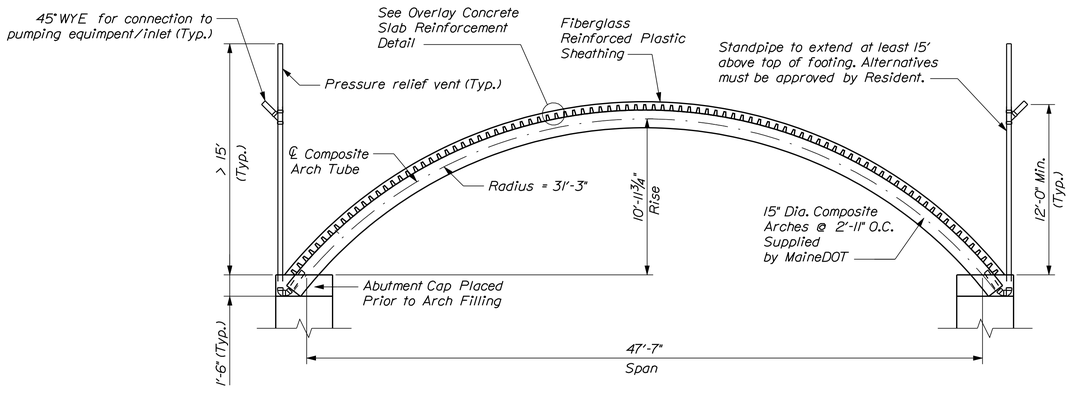
SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
16
OF 20

Filename: ...\BRIDGE\MST\A\016_Wingwalls.dgn Division: BRIDGE Username: kris.constanzer Date:4/27/2010



ARCH/SHEATHING PLAN



ARCH ELEVATION

COMPOSITE ARCH TUBE NOTES

1. The composite arch superstructure erection, handling, and assembly of arch units shall be in accordance with Special Provision 509.74 Composite Arch Superstructure Erection.

2. Riprap adjacent to the arch shall be carefully placed so as not to damage the arch or headwall.

ARCH CONCRETE PLACEMENT NOTES

1. Standpipe configuration to be approved by Resident prior to pile cap placement.

2. Arches shall be filled under the supervision of the Resident.

3. Standpipe shall not be removed until arch concrete has set a minimum of 8 hours.

FIBERGLASS REINFORCED PLASTIC SHEATHING NOTES

1. Fiberglass reinforced plastic sheathing shall be installed parallel to the centerline of bearings.

2. Fiberglass reinforced plastic sheathing shall be attached with fasteners at 8" (at ℄ of each corrugation bottom) along each arch.

3. See Special Provision 509 for additional Fiberglass Reinforced Plastic Sheathing and fastener requirements.

4. The discharge hose from the concrete pump truck shall be rigidly connected to the 45° WYE. The use of a hopper system on top of the WYE will not be allowed.

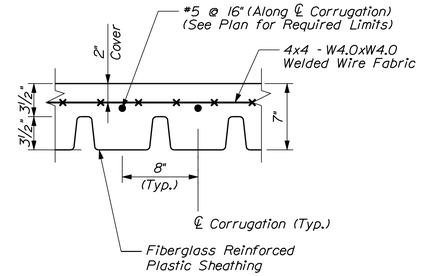
5. The standpipe shall be constructed with 4" Schedule 40 PVC pipe and components.

OVERLAY CONCRETE SLAB NOTES

1. Welded wire fabric and transverse reinforcement shall be oriented parallel to the centerline of bearings.

2. Welded wire fabric shall be installed full length and width of overlay concrete slab. Trim edge of mesh to achieve 2" of cover.

3. Concrete overlay shall be paid for under item 502.41 Structural Concrete Superstructure Slab.



OVERLAY CONCRETE SLAB DETAIL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

PROJ. MANAGER	N. Benoit		
DESIGN-DETAILED	K. Wood	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	P. Hetherly	4\27\10
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

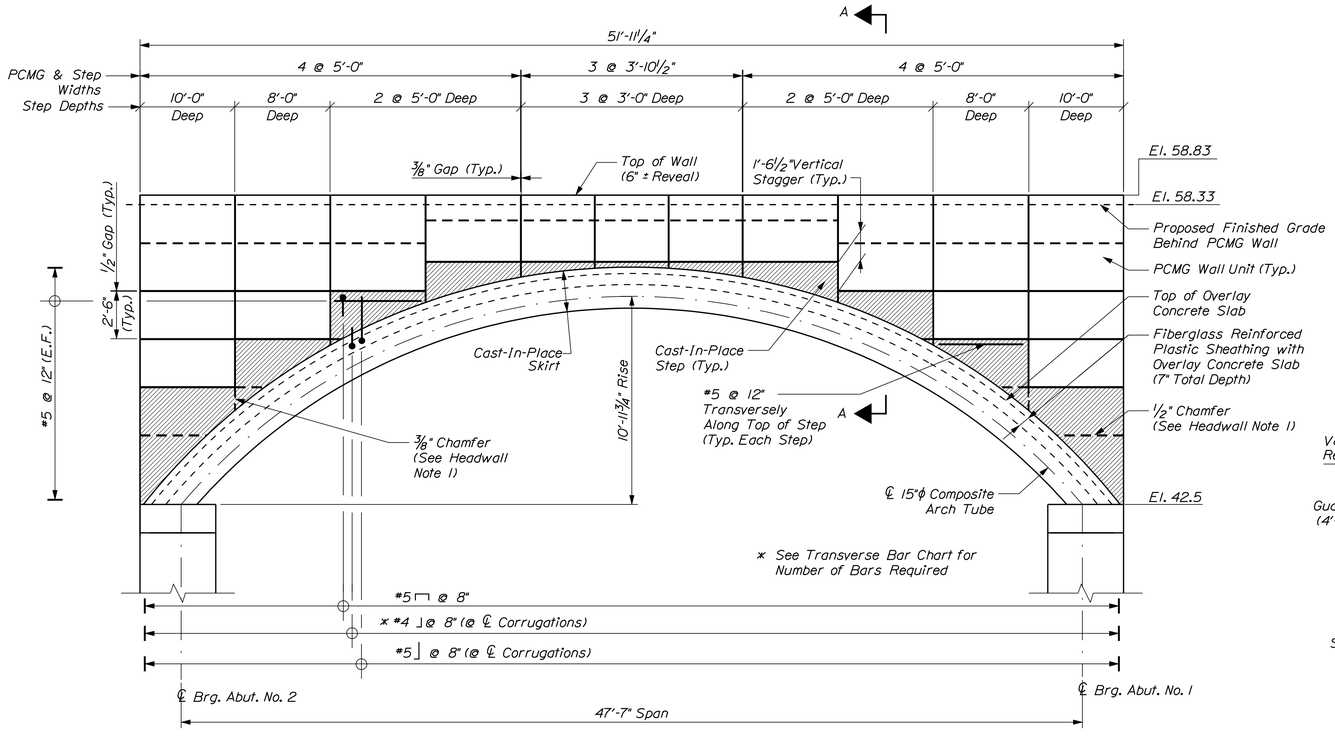
DATE

PERKINS BRIDGE
LITTLE RIVER
BELFAST WALDO COUNTY

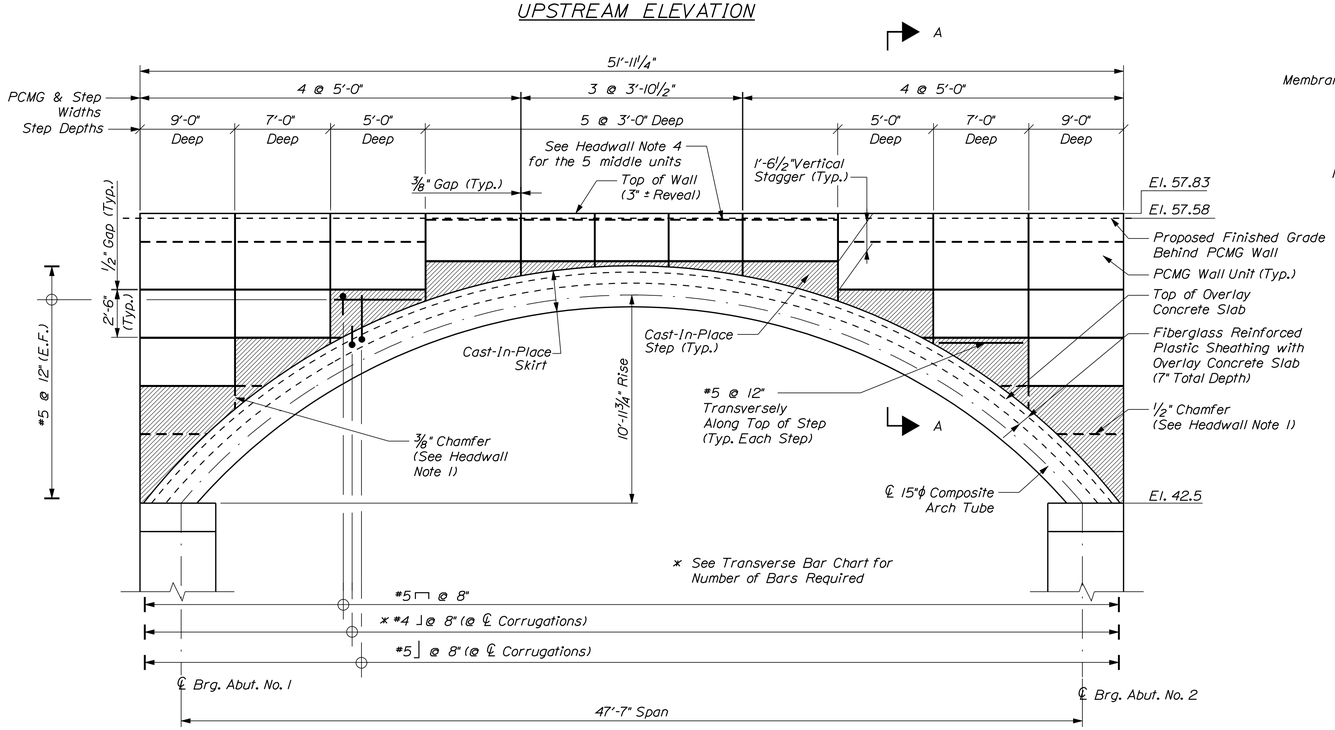
COMPOSITE ARCH DETAILS

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
17
OF 20



UPSTREAM ELEVATION



DOWNSTREAM ELEVATION

GUARDRAIL NOTES

1. Guardrail post spacing shall be adjusted within the headwall limits to avoid the PCMG wall units. Adjusted guardrail post spacing shall not exceed the standard spacing of the specified guardrail type. Guardrail to be used within the limits of the headwalls shall be pre-punched with holes spaced at one half the standard spacing of the specified guardrail type. All adjustments, including additional posts that are required, shall be incidental to item 606.23, guardrail Type 3c.

HEADWALL NOTES

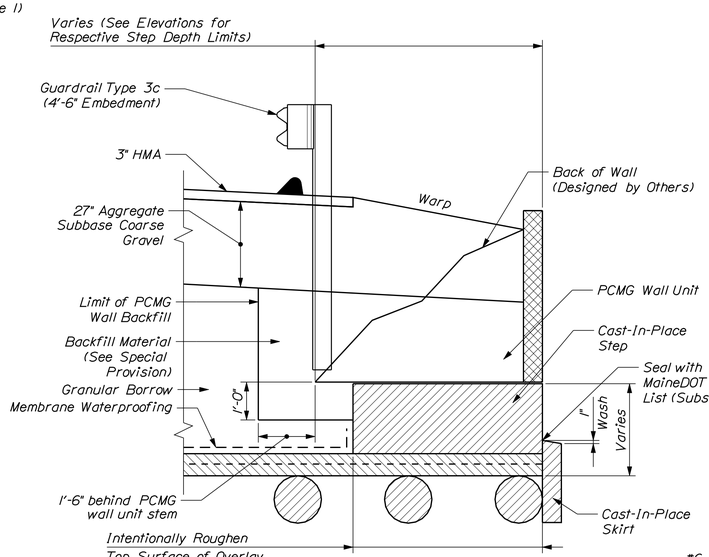
1. Contractor to install 1/2" and 3/8" chamfer strips in cast in place steps to align with adjacent horizontal and vertical PCMG wall joints respectively.

2. Top elevation of the C.I.P. steps shall be included in the PCMG shop drawing submittal.

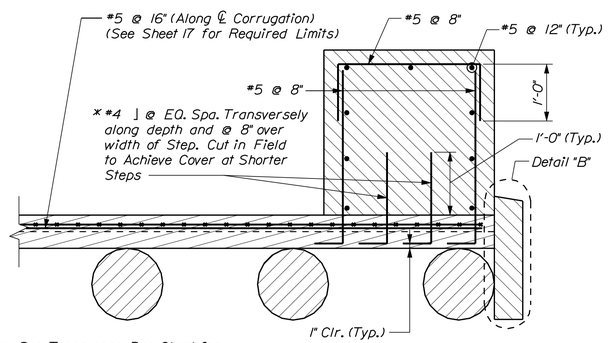
3. Refer to sheet 16 notes 1, 2 and 4 for additional PCMG requirements.

4. Top of PCMG wall stems shall have a minimum of 6" of cover except where noted on downstream elevation.

5. C.I.P. Steps and Skirts will be paid for under Item 502.21.

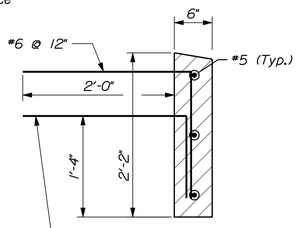


SECTION A-A



* See Transverse Bar Chart for Number of Bars Required

TYPICAL CAST-IN-PLACE STEP REINFORCING



DETAIL B

* Transverse Bar Chart

Step Depth (ft.)	No. of Bars
3	1
5	2
7	4
8	5
9	6
10	6

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

		BY	DATE
PROJ. MANAGER	N. Benoit		
DESIGN-DETAILED	K. Wood	K. Constanzer	4\27\10
CHECKED-REVIEWED	K. Wood	P. Hetherly	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

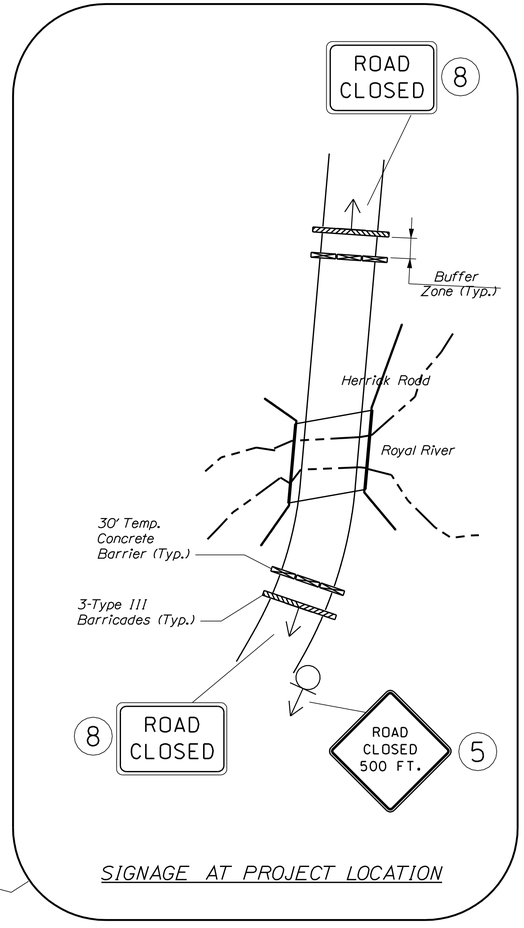
PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

HEADWALL DETAILS

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

SHEET NUMBER
18
OF 20

1. END DETOUR — 24" x 18"
2. HERRICK ROAD / DETOUR ← — 48" x 12" / 30" x 24"
3. HERRICK ROAD / DETOUR → — 48" x 12" / 30" x 24"
4. ROAD CLOSED AHEAD — 48" x 48"
5. ROAD CLOSED 500 FT. — 48" x 48"
6. DETOUR AHEAD — 48" x 48"
7. ON RIGHT — 24" x 18"
8. ROAD CLOSED — 48" x 30"
9. ROAD CLOSED TO THRU TRAFFIC / DETOUR — 60" x 30" / 48" x 18"
10. ROAD CLOSED TO THRU TRAFFIC / DETOUR — 60" x 30" / 48" x 18"



SIGNAGE AT PROJECT LOCATION

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1668(500)X

PIN 16685.00

BRIDGE NO. 5143

BRIDGE PLANS

PROJ. MANAGER	N. Benoit	
DESIGN-DETAILED	D. Hanks	BY
CHECKED-REVIEWED	D. Hanks	BY
DESIGN2-DETAILED2		DATE
DESIGN3-DETAILED3		DATE
REVISIONS 1		DATE
REVISIONS 2		DATE
REVISIONS 3		DATE
REVISIONS 4		DATE
FIELD CHANGES	4/27/10	DATE

SIGNATURE

P.E. NUMBER

DATE

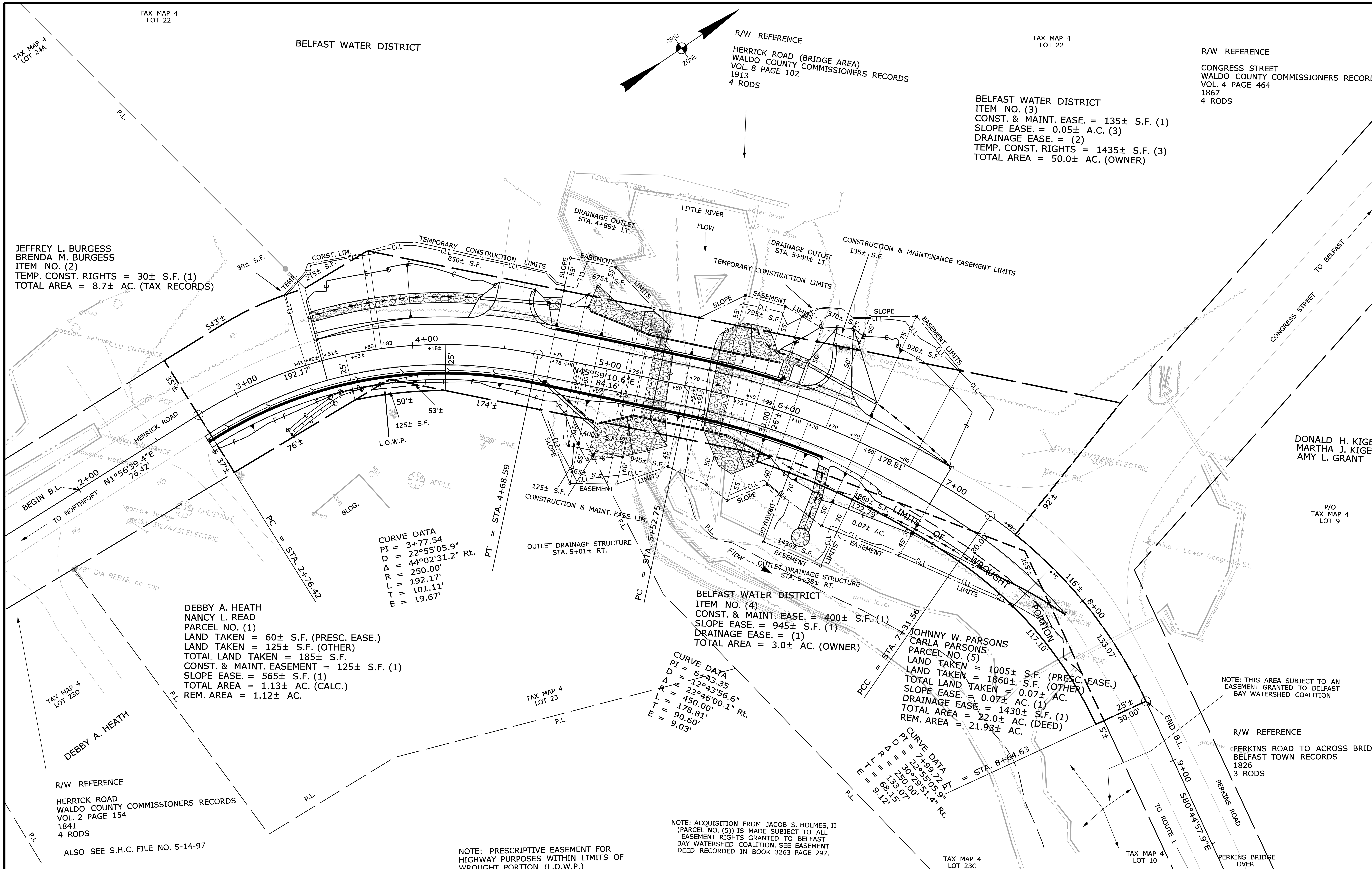
PERKINS BRIDGE
LITTLE RIVER
WALDO COUNTY
BELFAST

DETOUR PLAN

SHEET NUMBER

19

OF 20



Filename: ...\00\ROW\MSTA\001_RWPLAN1.dgn Division: ROW Username: dan.burns Date:4/27/2010

SYMBOLS

ITEM	TECH	CHECKED
BASE MAP	D.W.B.	
EXIST. R/W	D.W.B.	
PROP. LINES	D.W.B.	P.N.S.
AREAS		

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

NO.	DATE	REVISIONS DESCRIPTION	BY

PLAN FILED IN PLAN BOOK ___ PAGE ___ COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE
		COND.	3/30/10	3426	204

DAVID A. COLE
COMMISSIONER
KENNETH L. SWEENEY
CHIEF ENGINEER
DATE

STATE OF MAINE — PETER A. BELANGER 1341 — PROFESSIONAL LAND SURVEYOR

HERRICK ROAD
BELFAST WALDO COUNTY
FEDERAL AID PROJECT NO. BH-1668(500)X
FEBRUARY 2010 | SCALE 1" = 25' | RIGHT-OF-WAY MAP SHEET 1 OF 1 | D.O.T. FILE NO. 14-191

SHEET NUMBER
20
OF 20