STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

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

DESIGN LOADING

Substructure rehabilitation designed for Maine Legal Loads. Configuration 6, a 4-axle 75.9 kip truck, is the controlling vehicle for the substructure. The superstructure was rated for Maine Legal Loads for one truck at a time.

TRAFFIC DATA

Current (2010) AADT	320
Future (2030) AADT	450
DHV - % of AADT	15
Design Hour Volume	68
Heavy Trucks (% of AADT)	5
Heavy Trucks (% of DHV)	2
Directional Distribution (% of DHV)	71
18 kip Equivalent P 2.0	7
18 kip Equivalent P 2.5	7

MATERIALS

Structural Steel:
- All Material (except as noted) ..... ASTM A 992, Grade 50
- High Strength Bolts ..... ASTM A 325, Type 3

Timber ..... Number 2 Southern Yellow Pine

BASIC DESIGN STRESSES

Structural Steel:
- ASTM A 992, Grade 50 ..... F_y = 50,000 psi
- ASTM A 325 ..... F_μ = 120,000 psi

UTILITIES

Central Maine Power Company
Fairpoint Communications
Comcast

TOPSHAM
SAGADAHOC COUNTY
MUDDY RIVER BRIDGE
OVER
MUDDY RIVER
FORESIDE ROAD
FEDERAL AID PROJECT NO. BH-1675(600)X
BRIDGE NO. 3825

LIST OF DRAWINGS

PROJECT LOCATION:	On Foreside Road 0.2 miles south of the intersection with Route 24. 43°57'55.53"N 69°53'49.68"W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Substructure Rehabilitation

PIN 16756.00

BH-1675(600)X

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED
COMMISSIONER: [signature] DATE 6/9/11
CHIEF ENGINEER: [signature] DATE 6/8/11

STATE OF MAINE · Nathaniel D. Benoit · 10651 · Licensed PROFESSIONAL ENGINEER

SIGNATURE [signature]
P.E. NUMBER 10651
DATE 6/6/11

PROJECT INFORMATION

PROGRAM	BRIDGE
PROJECT MANAGER	M. PARLIN
DESIGNER	C. GUSTAFSON
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

TOPSHAM
MUDDY RIVER BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 11

Filename: \00\BRIDGE\MSTA\001_Title.dgn Division: BRIDGE Username: mark.parlin Date:6/6/2011

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.1292	REMOVE EXISTING STRUCTURAL TIMBER (900 BF)	1	LS
501.50	STEEL H-BEAM PILES 89 LBS/FT, DELIVERED	60	LF
501.501	STEEL H-BEAM PILES 89 LBS/FT, IN PLACE	60	LF
501.903	PILE TIPS-ROCK INJECTOR POINT	2	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	LS
504.70	STRUCTURAL STEEL FABRICATED AND DELIVERED (8000 LB)	1	LS
504.71	STRUCTURAL STEEL ERECTION (8000 LB)	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE 1	1	LS
528.01	STRUCTURAL TIMBER, FABRICATED AND DELIVERED (60 BF)	1	LS
528.02	STRUCT TIMBER, ERECTION (120 BF)	1	LS
629.05	HAND LABOR, STRAIGHT TIME	40	HR
652.312	TYPE III BARRICADE (60 LF)	6	EA
652.33	DRUM	10	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	185	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (30 CD)	1	LS
652.38	FLAGGER	100	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION	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. All construction activities shall be done within the existing right of way.

3. The Contractor shall verify field conditions prior to bid.

4. Proposed bolt holes less than six (6) inches from an existing hole shall be relocated to the existing hole location.

5. The Contractor shall use steel spacer plates as necessary to facilitate fit-up.

6. The existing severed upstream battered piles shall be cut off at the mudline.

7. All hardware shall be galvanized in accordance with ASTM A 153.

8. All structural steel and H-Piles shall be galvanized in accordance with ASTM A 123.

9. The Contractor shall field verify all measurements prior to ordering materials.

10. All bolts shall be tighten to a snug fit as directed by the Resident.

11. Each bolted connection shall be double nutted and the threads shall be upset.

12. The Contractor shall use a minimum 3x3x1/4" plate washer for any connection not backed by another structural steel member. Plain washers may be used in all other cases.

13. All bolts shall be 7/8" diameter and all bolt holes shall be 1" diameter.

14. Phases 2-4 represent work to be done on one half of the pier bracing. The bracing on at least one side of the pier shall be fully intact at all times. Upon completion of phase 4, repeat phases 2-4 on the opposite side of the pier.

15. The North Elevation is the opposite hand of the South Elevation.

16. The existing bridge plans may be accessed at the MaineDOT web address below. 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.
MaineDOT web address: http://www.maine.gov/mdot/contractors/

17. The project geotechnical report titled: Geotechnical Design Report for the Rehabilitation of Muddy River Bridge Pier, Foreside Road over Muddy River, Topsham, Maine; MaineDOT Soils Report No. 2011-06, March 25, 2011, may be accessed at the MaineDOT web address.

18. 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.

19. 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.

20. 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.

21. The existing pier elements to be removed shall become the property of the Contractor. The existing pier is constructed of timber treated with creosote, pentachlorophenol and/or CCA. The steel portions of the existing pier may be coated with a lead based paint system. The Contractor is responsible for the containment, proper management and disposal of all treated timber and lead-contaminated hazardous waste. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards. The Contractor is solely responsible for the care, custody and control of the components of the existing pier and any hazardous waste generated as a result of the storage, recycling or disposal of the pier components, including treated timber. The Contractor shall dispose of all components in accordance with all applicable local, state, and federal regulations. Payment for all labor, materials, equipment and other costs required to remove and dispose of the existing pier will be considered incidental to the timber removal pay item.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825 BRIDGE PLANS

PROJ. MANAGER	M. Parlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED		M. Parlin	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

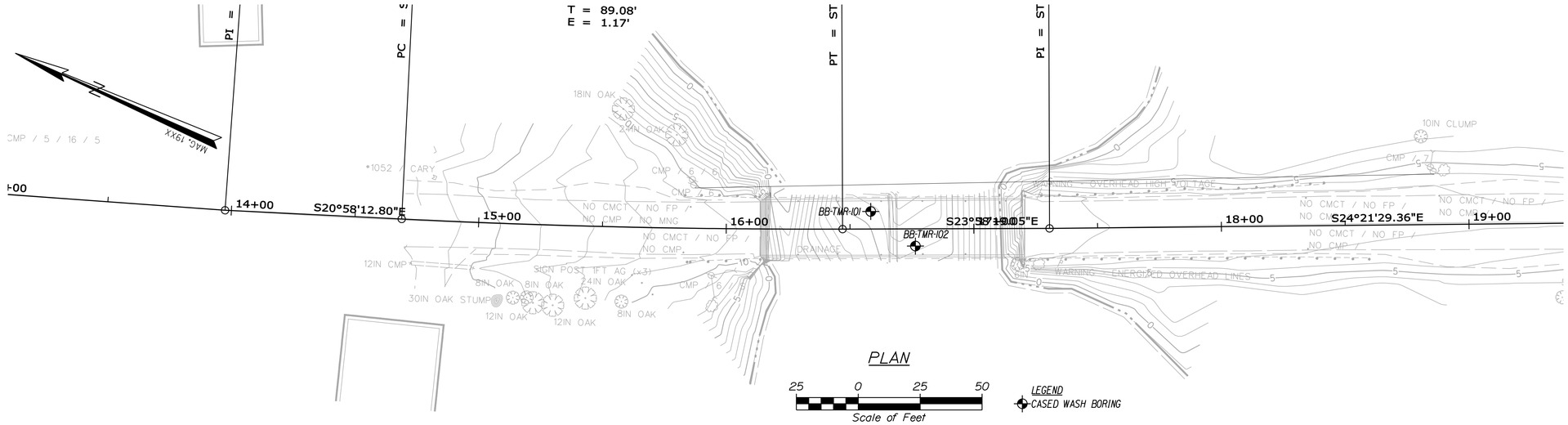
MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

QUANTITIES & NOTES

SHEET NUMBER

2

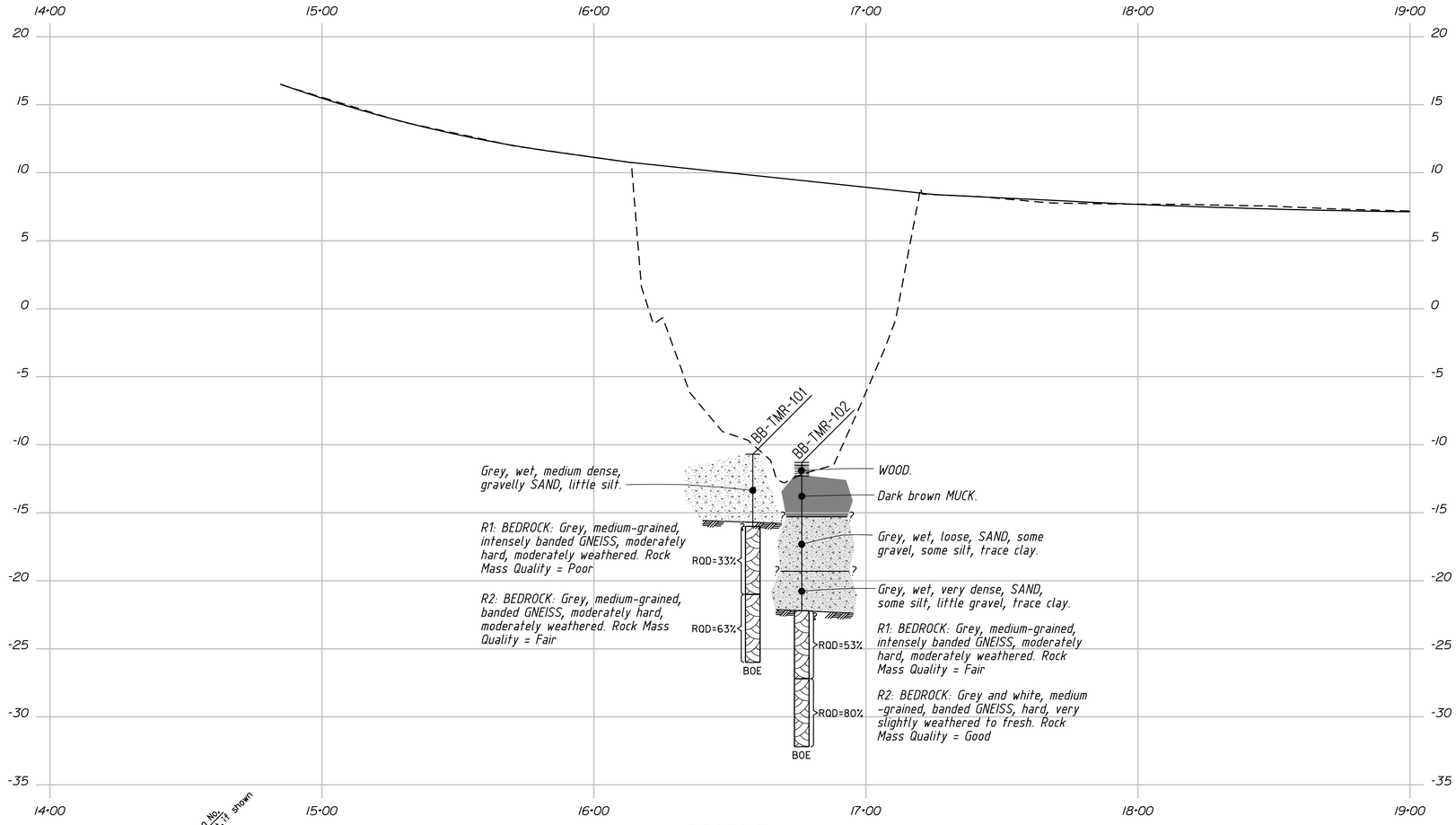
OF 11



PLAN

25 0 25 50
Scale of Feet

LEGEND
CASED WASH BORING



Boring No.
Offset, if shown
Pavement Thickness if applicable
Strata Interface
Boring
ROD= Rock Quality Designation for Rock Core Sample
BOE= Bottom Of Exploration

PROFILE

HORIZ 25 0 25 50
VERT 5 0 5 10
SCALE

Note: 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.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE PLANS

BRIDGE NO. 3825

	BY	DATE
PROJ. MANAGER	----------	
DESIGN-DETAILED	L.KRUSINSKI	JAN 2011
CHECKED-REVIEWED	-----	-----
DESIGN2-DETAILED2	----------	----------
DESIGN3-DETAILED3	----------	----------
REVISIONS 1	------	------
REVISIONS 2	------	------
REVISIONS 3	------	------
REVISIONS 4	------	------
FIELD CHANGES	------	------

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
TOPSHAM SAGADAHOC COUNTY

BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER
3
OF 11

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Muddy River Bridge #3825 carries Foreside Road over Muddy River
Location: Topsham, Maine

Boring No.: BB-TMR-101
PIN: 16756.00

Driller:	MaineDOT	Elevation (ft.)	-10.7	Auger ID/OD:	N/A
Operator:	Giguere/Giles/Daggett	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	10/12/2010: 08:30-11:30	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	16+58.4, 7.1 Lt.	Casing ID/OD:	NW	Water Level*:	Water Boring (Tidal)
Hammer Efficiency Factor: 0.84		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

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

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/17	0.00 - 2.00	10/12/7/12	19	27	4			Grey, wet, medium dense, gravelly fine to coarse SAND, little silt.	G#240086 A-1-b, SM WC=11.5%
							17				
							53				
							39				
							108				
	R1	60/60	5.30 - 10.30	RQD = 33%			NQ-2	-15.70		5.00 Top of Bedrock at Elev. -15.7 ft. Roller Coned ahead to 5.3 ft bgs. R1:Bedrock: Grey. intensely banded. medium grained. quartz, feldspar. biotite GNEISS. moderately hard. moderately weathered. discontinuities and joints along banding at chaotic angles to predominantly low angles. 2nd joint set at steep angles. surfaces tight to open. stained and oxidized. no infilling. Nehumkeag Pond Formation. Rock Mass Quality: Poor. R1:Core Times (min:sec) 5.3-6.3 ft (3:00) 6.3-7.3 ft (2:30) 7.3-8.3 ft (2:15) 8.3-9.3 ft (2:30) 9.3-10.3 ft (2:40) 100% Recovery R2:Bedrock: Grey. medium grained. quartz. feldspar. biotite. banded GNEISS. moderately hard. moderately weathered. highly banded to massive joint set along banding at moderately dipping angles. very stained and oxidized. biotite bands relatively soft. Nehumkeag Pond Formation. Rock Mass Quality: Fair. R2:Core Times (min:sec) 10.3-11.3 ft (2:00) 11.3-12.3 ft (2:40) 12.3-13.3 ft (4:45) 13.3-14.3 ft (5:22) 14.3-15.3 ft (3:00) 100% Recovery	
6	R2	60/60	10.30 - 15.30	RQD = 63%				-26.00		15.30 Bottom of Exploration at 15.30 feet below ground surface.	
12											
18											
24											
30											

Remarks:
20.0 ft from Bridge Deck to Ground.

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

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

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Muddy River Bridge #3825 carries Foreside Road over Muddy River
Location: Topsham, Maine

Boring No.: BB-TMR-102
PIN: 16756.00

Driller:	MaineDOT	Elevation (ft.)	-11.3	Auger ID/OD:	N/A
Operator:	Giguere/Giles/Daggett	Datum:	NAVD 88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	10/12/2010: 12:30-15:00	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	16+76.4, 7.0 Rt.	Casing ID/OD:	NW	Water Level*:	Water Boring (Tidal)
Hammer Efficiency Factor: 0.84		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

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

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0	1D	24/3	0.00 - 2.00	3/2/WOH/WOH	2	3	12	-11.50		0.20 WOOD from 0.2-1.0 ft bgs.	
							WOC	-12.30		1.00 Dark brown muck in wash water from 1.0- 3.0 ft bgs.	
							WOC				
							16	-15.30		4.00 Grey, saturated, very loose, fine to coarse SAND, some gravel, some silt, trace clay.	G#240087 A-2-4, SC-SM WC=17.8%
	2D	24/18	4.00 - 6.00	9/2/1/3	3	4	16				
							5				
							9				
							5				
							12	-19.30		8.00 Grey, wet, very dense, fine to coarse SAND, some silt, little gravel, trace clay, rock fragments in tip of spoon. Ø64 blows for 0.9 ft.	G#240088 A-2-4, SC-SM WC=4.9%
6	3D	22.8/17	9.00 - 10.90	5/42/32/50	74	104	5				
	R1	60/58	10.90 - 15.90	RQD = 53%			Ø64 NQ-2	-22.20		10.90 Top of Bedrock at Elev. -22.2 ft. R1:Bedrock: Grey, medium grained, Quartz, Feldspar. Biotite, intensely banded GNEISS, moderately hard, moderately weathered, joint set along banding at moderately dipping angles, tight to healed, stained and oxidized, no infilling. Nehumkeag Pond Formation. Rock Mass Quality: Fair. R1:Core Times (min:sec) 10.9-11.9 ft (2:15) 11.9-12.9 ft (2:40) 12.9-13.9 ft (2:25) 13.9-14.9 ft (2:00) 14.9-15.9 ft (2:00) 97% Recovery R2:Bedrock: Grey and white, banded, medium grained. Quartz, Feldspar, Biotite, GNEISS, hard, very slightly weathered to fresh, banding at low to moderate angles, joints widely spaced, tight, stained, no infilling. Nehumkeag Pond Formation. Rock Mass Quality: Good. R2:Core Times (min:sec) 15.9-16.9 ft (1:50) 16.9-17.9 ft (2:10) 17.9-18.9 ft (2:40) 18.9-19.9 ft (3:25) 19.9-20.9 ft (4:10) 100% Recovery	
12	R2	60/60	15.90 - 20.90	RQD = 80%				-32.20		20.90 Bottom of Exploration at 20.90 feet below ground surface.	
18											
24											
30											

Remarks:
20.3 ft from Bridge Deck to Ground.

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

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00
BRIDGE NO. 3825
BRIDGE PLANS

	BY	DATE
PROJ. MANAGER	----------	------
DESIGN-DETAILED	L.KRUSINSKI	MAR 2011
CHECKED-REVIEWED	----	------
DESIGN2-DETAILED2	----------	------
DESIGN3-DETAILED3	----------	------
REVISIONS 1	----------	------
REVISIONS 2	----------	------
REVISIONS 3	----------	------
REVISIONS 4	----------	------
FIELD CHANGES	----------	------

SIGNATURE

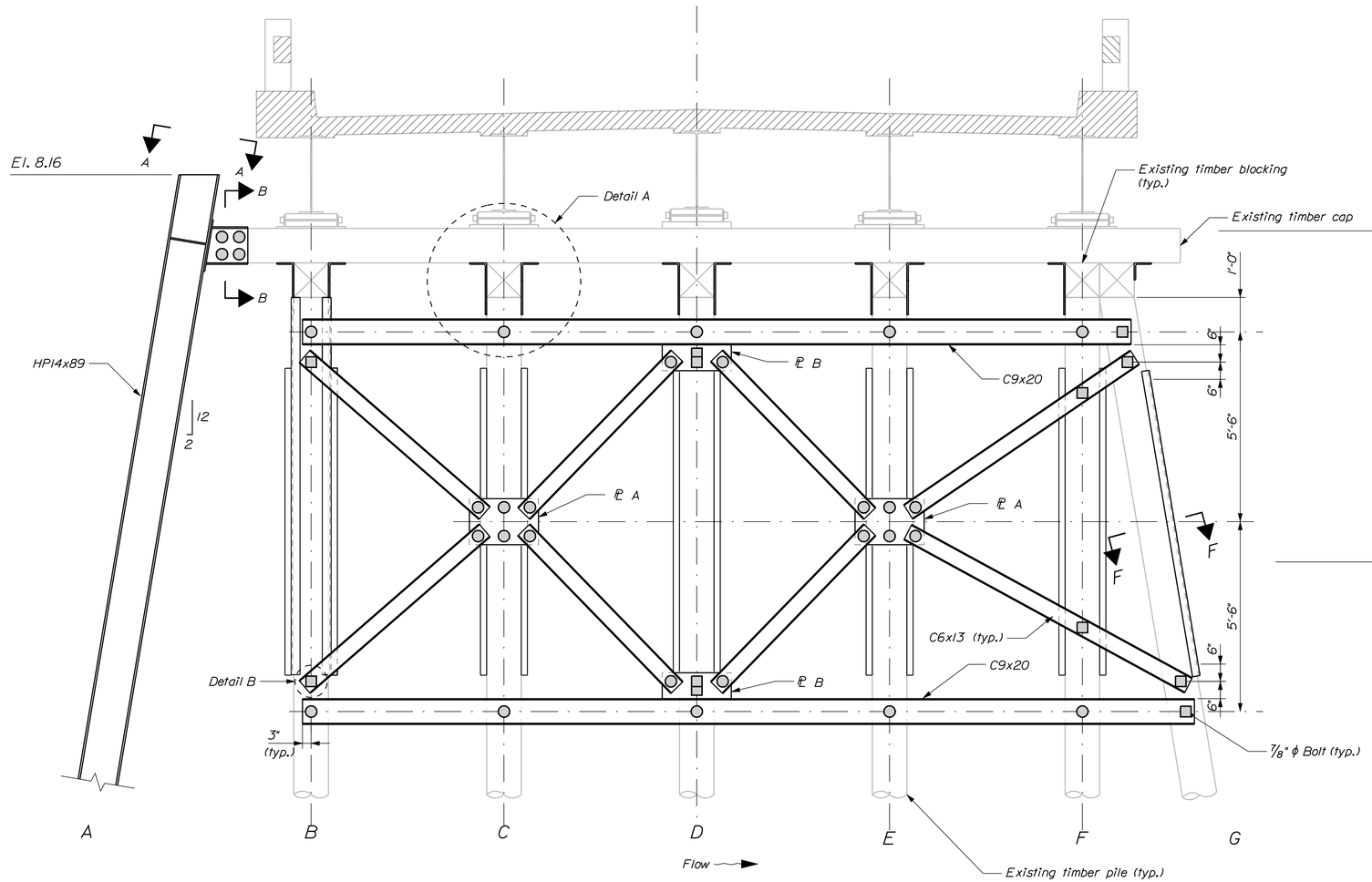
P.E. NUMBER

DATE

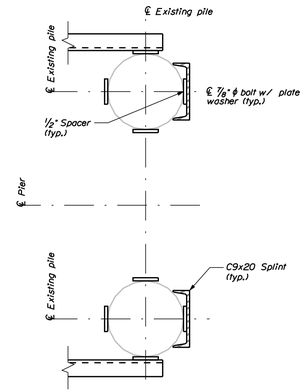
MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

BORING LOGS

SHEET NUMBER
4
OF 11



SOUTH ELEVATION
Longitudinal



SECTION F-F
Pile Line G

LEGEND	
○	7/8"ϕ bolt w/ plain washer & plain washer
□	7/8"ϕ bolt w/ plain washer & plate washer

PILE NOTES

1. The maximum factored pile load is 20 kips, Extreme Event II.

2. Estimate of piles required:

   Pier: 2 ~ HP 14x89 @ 30 feet

3. The Contractor shall perform and submit a wave equation analysis for review and acceptance by the Resident. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.50 per LRFD Specifications. The maximum allowable driving stress is 0.90 times Fy. The submittal analyses shall include the proposed stopping criteria based on the wave equation analysis and the proposed driving system. The stopping criteria shall include the blows per inch and the number of 1-in. intervals at which pile installation may be terminated. The cost of performing the wave equation analysis will be considered incidental to Item No. 501.92, Pile Driving Equipment Mobilization.

4. Piles shall be driven to the required nominal resistance and shall bear on or within bedrock.

5. All piles shall be equipped with a pile tip conforming to APF Rock Injector HP-80500, or approved equal.

6. H-pile material shall be ASTM A572, Grade 50

7. The contractor is required to support the H-piles laterally in their final positions until the pier rehabilitation is complete

8. There is potential the timber piles, cut off timber piles, cribbing, cobbles and boulders may be encountered and obstruct pile driving operations at the pier location. Obstructions may be cleared by predrilling, spudding or other methods of the contractor's choice. Payment for this work shall be considered incidental to related contract items. No additional payment will be made.

9. Unfactored longitudinal design ice load: 50 kips per bent.
Unfactored transverse design ice load: 2.1 kips per pile line.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825

BRIDGE PLANS

PROJ. MANAGER	M. Perlin		
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

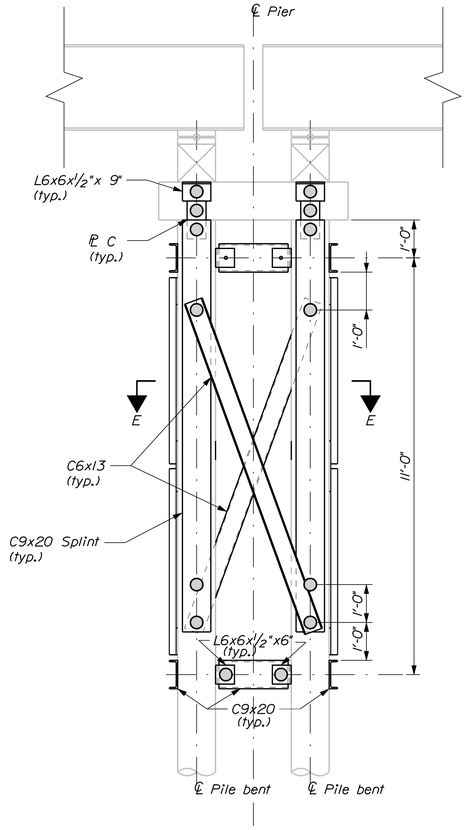
REHABILITATION ELEVATION

SHEET NUMBER

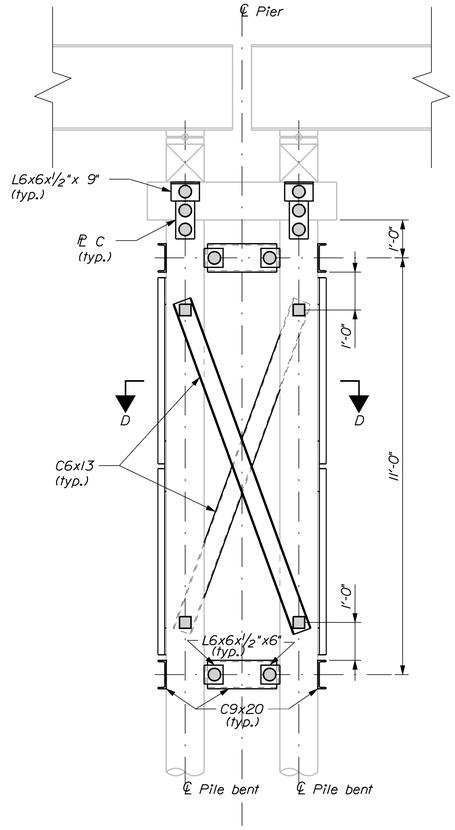
5

OF 11

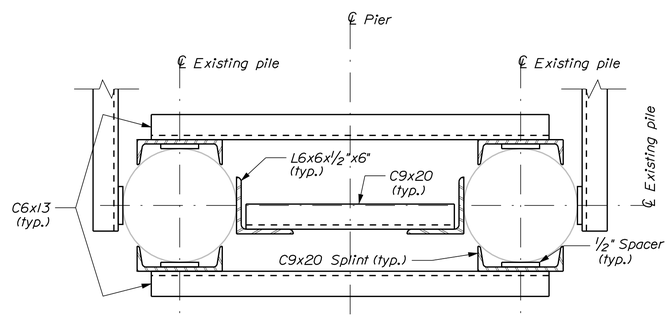
LEGEND	
○	7/8"ϕ bolt w/ plain washer & plain washer
□	7/8"ϕ bolt w/ plain washer & plate washer



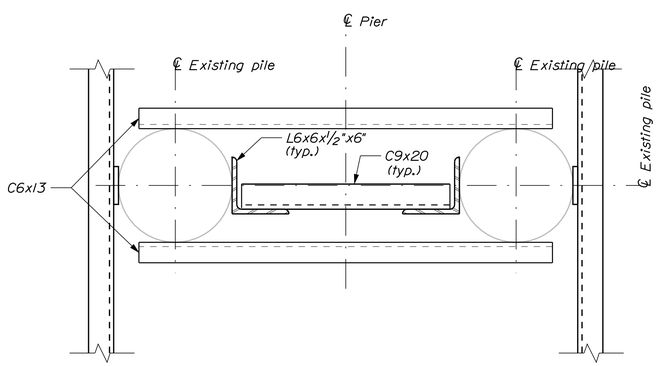
PIER SECTION
Transverse
(Pile Line B)



PIER SECTION
Transverse
(typical)



SECTION E-E
Pile Line B



SECTION D-D
Pile Line C-F

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825

BRIDGE PLANS

PROJ. MANAGER	M. Perlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

REHABILITATION SECTIONS

SHEET NUMBER

6

OF 11

Filename: ...\bridge\rmsta\006_Rehab_Sect.dgn Division: BRIDGE Username: garrett.a.gustafson Date:6/10/2011

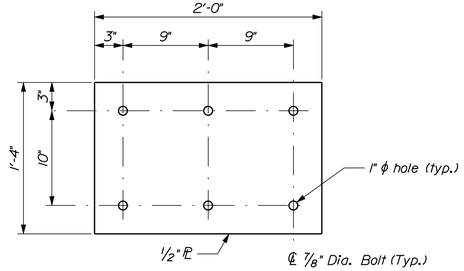
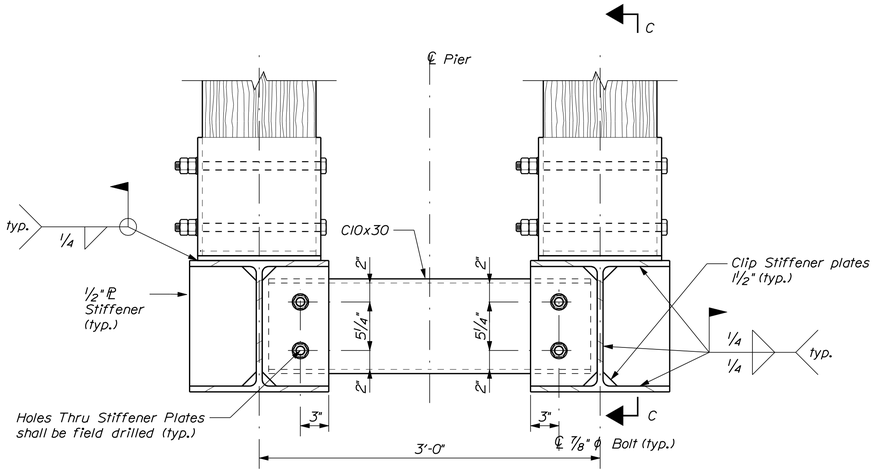
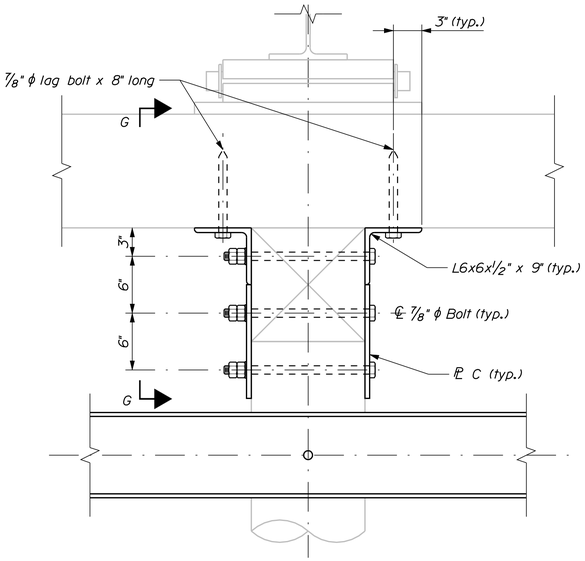


PLATE A



VIEW A-A



DETAIL A

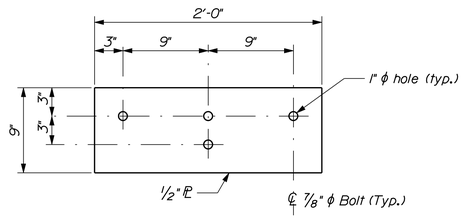
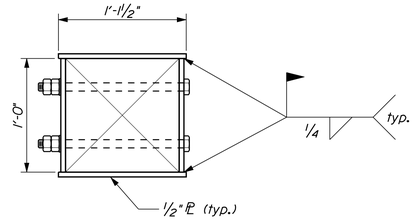


PLATE B



SECTION B-B

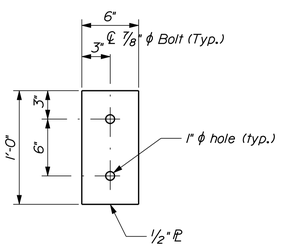
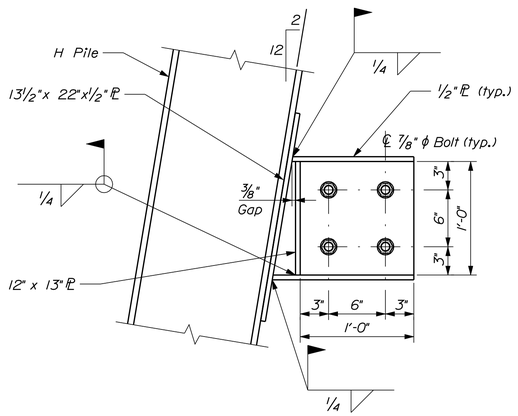
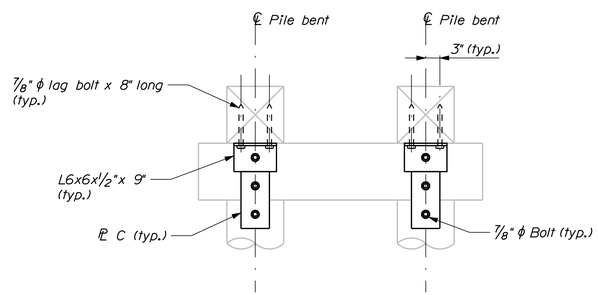


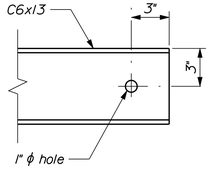
PLATE C



SECTION C-C



SECTION G-G



DETAIL B
(typical)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825

BRIDGE PLANS

PROJ. MANAGER	M. Perlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

REHABILITATION DETAILS

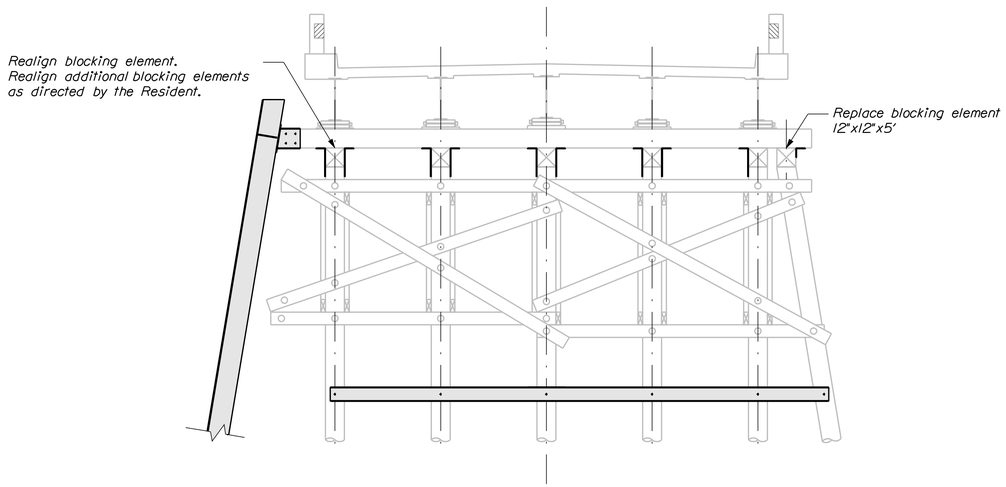
SHEET NUMBER

7

OF 11

PHASE I NOTES

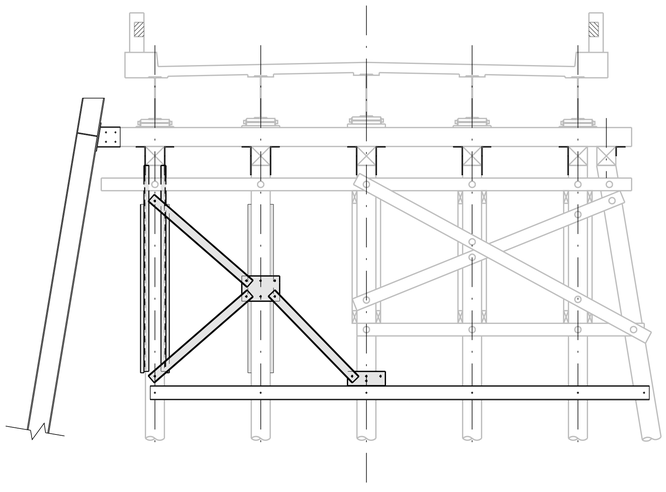
1. Install the two new H-Piles
2. Connect the new H-Piles to the existing pier caps and install new C10x30 diaphargm
3. Install all longitudinal and transverse bottom horizontal braces
4. Realign the existing timber blocking and replace the downstream timber blocking element
5. Install angle and plate fasteners on both bents



PHASE I

PHASE II NOTES

1. Remove the upstream longitudinal x-bracing and the transverse bracing at pile lines B and C
2. Install pile line B channel splints, both bents
3. Install the transverse x-bracing for pile lines B and C
4. Install the pile C connection plate and the bottom connection plate at pile D
5. Install three of the four legs of the upstream longitudinal x-bracing. Exclude the leg that will connect to the top connection plate at pile D



PHASE II

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00
BRIDGE NO. 3825
BRIDGE PLANS

PROJ. MANAGER	M. Perlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

PHASE I & II

SHEET NUMBER

8

OF 11

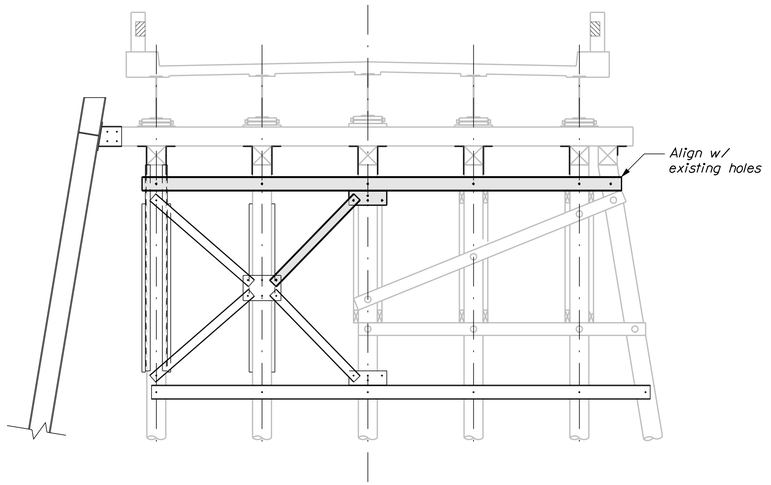
PHASE III NOTES

1. Remove the existing downstream longitudinal x-bracing member which conflicts with installation of the top connection plate at pile D

2. Install the top connection plate at pile D and the remaining leg of the upstream longitudinal x-bracing

3. Remove the top horizontal longitudinal brace

4. Install the longitudinal top horizontal brace and transverse clip angles. Install transverse top horizontal braces during installation of longitudinal top horizontal brace on second side.



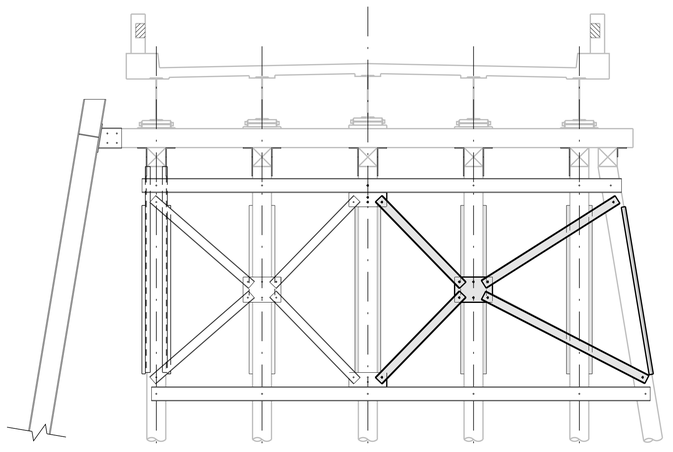
PHASE III

PHASE IV NOTES

1. Remove the remaining downstream longitudinal x-bracing member, the bottom horizontal brace, and the transverse bracing for pile lines D, E, and F

2. Install the transverse x-bracing for pile lines D, E, and F

3. Install the pile line G channel splint, the pile E connection plate, and longitudinal x-bracing



PHASE IV

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825

BRIDGE PLANS

PROJ. MANAGER	M. Parlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	ADN	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
SAGADAHOC COUNTY
TOPSHAM

PHASE III & IV

SHEET NUMBER

9

OF 11

1 — ROAD CLOSED 1 MILE AHEAD — 48" x 48"

2 — ROAD CLOSED 2 MILES AHEAD — 48" x 48"

3 — ROAD CLOSED 1000 FT. — 48" x 48"

4 — ROAD CLOSED 500 FT. — 48" x 48"

5 — FORESIDE RD. — 36" x 8"
END DETOUR — 24" x 18"

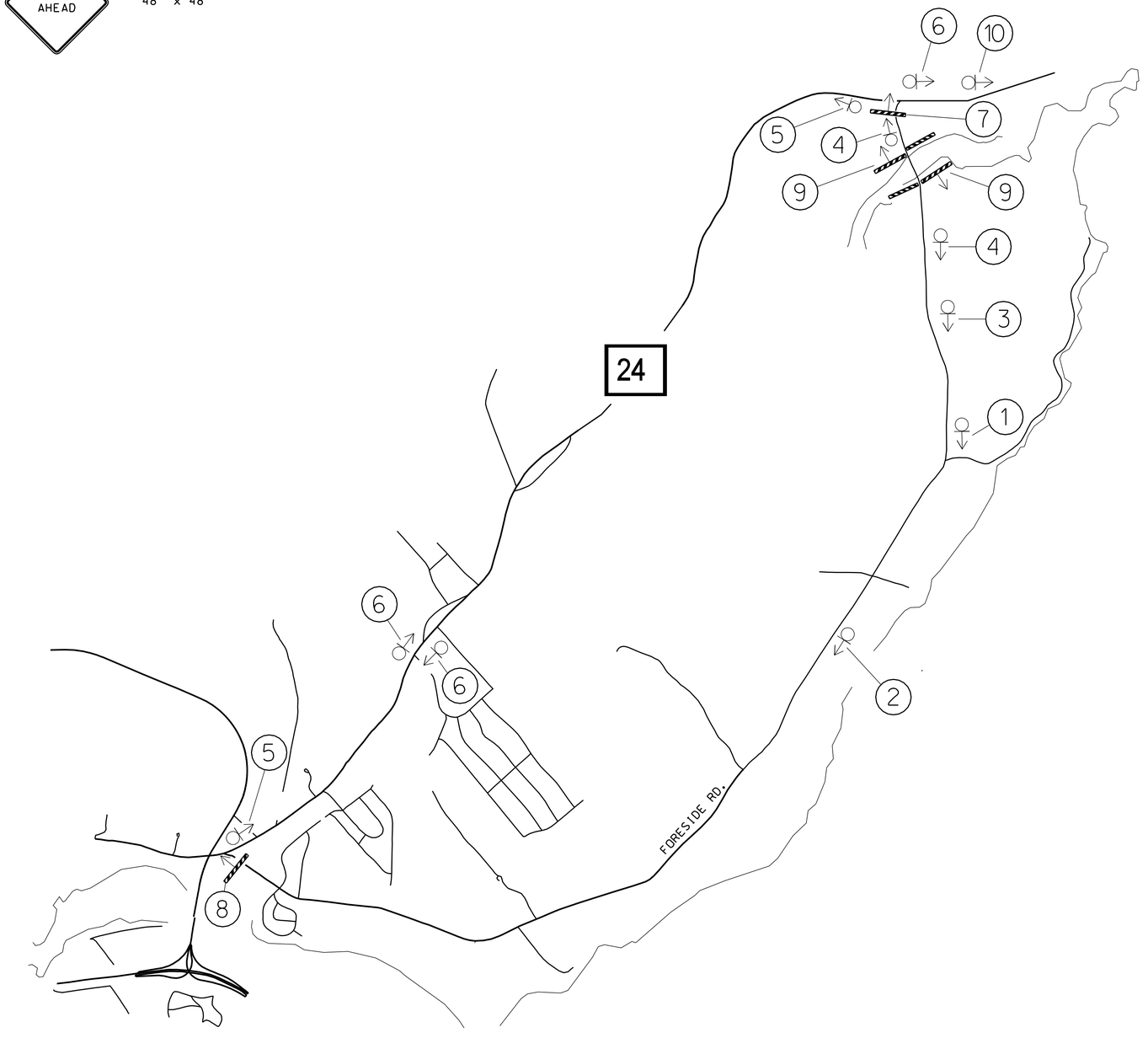
6 — FORESIDE RD. — 36" x 8"
DETOUR — 30" x 24"

7 — ROAD CLOSED 0.2 MILES AHEAD LOCAL TRAFFIC ONLY — 60" x 30"
DETOUR — 48" x 18"

8 — ROAD CLOSED 4.9 MILES AHEAD LOCAL TRAFFIC ONLY — 60" x 30"
DETOUR — 48" x 18"

9 — ROAD CLOSED — 48" x 30"

10 — DETOUR AHEAD — 48" x 48"



NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BH-1675(600)X

PIN 16756.00

BRIDGE NO. 3825

BRIDGE PLANS

PROJ. MANAGER	M. Perlin	BY	DATE
DESIGN-DETAILED	G. Gustafson	D. Hanks	JUNE 2011
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

MUDDY RIVER BRIDGE
MUDDY RIVER
TOPSHAM SAGADAHOC COUNTY

DETOUR

SHEET NUMBER
10
OF 11

Username: garrett.a.gustafson Date:6/10/2011

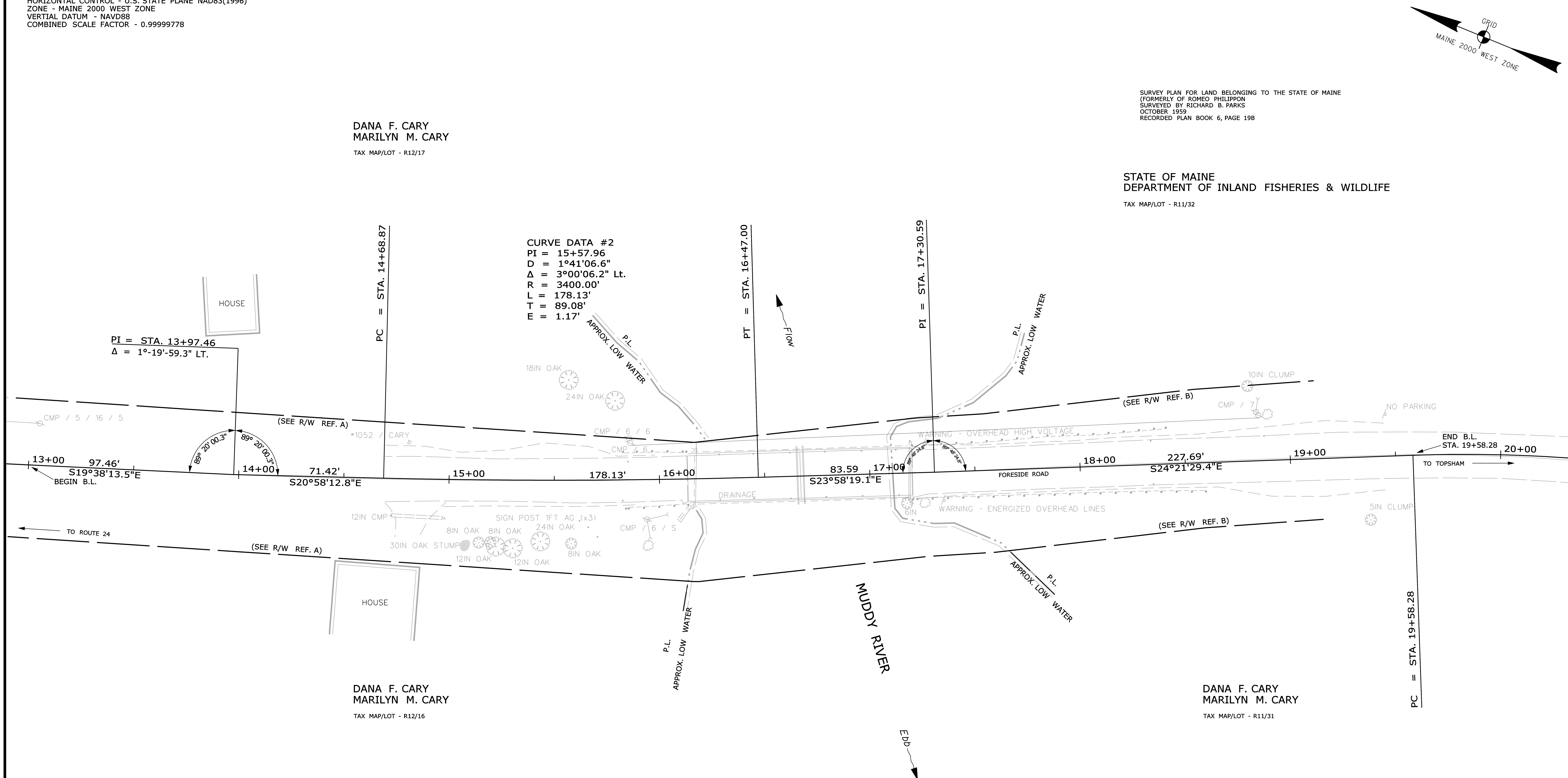
Division: BRIDGE

Filename: ...\00\ROW\MSTA\001_RWPLAN1.dgn

CONTROL INFORMATION

HORIZONTAL CONTROL - U.S. STATE PLANE NAD83(1996)
ZONE - MAINE 2000 WEST ZONE
VERTIAL DATUM - NAVD88
COMBINED SCALE FACTOR - 0.99999778

SURVEY PLAN FOR LAND BELONGING TO THE STATE OF MAINE
(FORMERLY OF ROMEO PHILIPPON
SURVEYED BY RICHARD B. PARKS
OCTOBER 1959
RECORDED PLAN BOOK 6, PAGE 19B



EXISTING RIGHT OF WAY REFERENCES

A) LINCOLN COUNTY COMMISSIONERS RECORDS
VOLUME 6, PAGE 390
1840 4 RODS WIDE (66')

B) S.H.C. BRIDGE DIVISION
MUDDY RIVER BRIDGE OVER MUDDY RIVER
PLAN 40-16 DEC 1941

C) LINCOLN COUNTY COMMISSIONERS RECORDS
VOLUME 6, PAGE 301
1839 4 RODS WIDE (66')

D) LINCOLN COUNTY COMMISSIONERS RECORDS
VOLUME 8, PAGE 219
1852 4 RODS WIDE (66')

SYMBOLS

● IP or ● IPF (IRON PIPE or PIN FOUND); ○ WELL (WELL); □ S.T. (SEPTIC TANK); ⊠ (ROW MONUMENT); ⊡ (TRAVERSE POINT); WATER LINE; GAS LINE; ELECTRIC LINE; TELEPHONE LINE; SEWER LINE; GRADING LIMIT LINE; CONSTRUCTION LIMIT LINE; PROPERTY LINE PL; 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	N.B.D.	-
EXIST. R/W	N.B.D.	C.W.K.
PROP. LINES	N.B.D.	C.W.K.
AREAS	N.B.D.	G.L.L.

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

STATE OF MAINE
REGISTRY OF DEEDS
COUNTY ____________________
RECEIVED ____________________,
at ______h______m______M and recorded in
Plan Book __________, Page __________
Attest: ____________________
REGISTER

BRIDGE NO. 3825

PIN 16756.00

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK ____ PAGE ____ COUNTY RECORD

NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

DAVID BERNHARDT
COMMISSIONER
KENNETH L. SWEENEY
CHIEF ENGINEER
DATE

STATE OF MAINE CHRISTOPHER W. KNIGHT 2257 PROFESSIONAL LAND SURVEYOR

To the best of my knowledge and belief the Highway Right of Way lines depicted hereon are based upon a survey conforming to the Standards of Practice promulgated by the Maine Board of Licensure for Professional Land Surveyors 02-360 CMR, Chapter 90; Exceptions: (1) No separate survey report, (2) Monumentation only as shown on plan. See sheet X of this plan set for coordinates. (3) Other boundary lines, including lines between abutters are approximate and for general reference purposes only.

FORESIDE ROAD

TOPSHAM SAGADAHOC COUNTY

FEDERAL AID PROJECT NO. BH-1675(600)X

JUNE 2011 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 12-127

SCALE 1" = 25' | SHEET 1 OF 1