STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Seventh Edition 2014 and Interim Specifications through 2016.

DESIGN LOADING

Live Load ..... HL - 93 Modified

TRAFFIC DATA

Current (2016) AADT	1030
Future (2036) AADT	1240
DHV - % of AADT	14%
Design Hour Volume	174
% Heavy Trucks (AADT)	6%
% Heavy Trucks (DHV)	3%
Directional Distribution (DHV)	50%
18 kip Equivalent P 2.0	33
18 kip Equivalent P 2.5	31
Design Speed (mph)	25 MPH

HYDROLOGIC DATA

Mean Lower Low Water (MLLW)	-5.28 ft
Mean Low Water (MLW)	-4.93 ft
Mean Tide Level (MTL)	-0.35 ft
Mean High Water (MHW)	4.23 ft
Mean Higher High Water (MHHW)	4.62 ft
2015 Predicted High Tide	6.32 ft
Q10 Elevation	8.5 ft
Q50 Elevation	9.5 ft
Q100 Elevation	9.9 ft

MATERIALS

Concrete:	
Unless noted otherwise	Class "A"
Deck & Curbs (Swing Span)	Class "LP", Lightweight
Precast	Class "P"
Curbs & Transition Barriers (Approach Spans)	Class "LP"
Closure Pours and CMP Voids	Class "LP", High Early Strength
Center Void (Pier 2)	Class "Fill"
Concrete Seals	Class "S"
Reinforcing Steel:	
Superstructure	ASTM A615/A767, Grade 60, Galvanized
Substructure	ASTM A995, Grade 75, Stainless
Control House Foundation	ASTM A615/A615M, Grade 60
Structural Steel:	
All Material (except as noted)	ASTM A709, Grade 50, Metallized
High Strength Bolts	ASTM F3125, Grade A325, Type 1 H.D.G.
Anchor Rods	ASTM F1554, Grade 55
Timber:	
Beams, Columns, Studs, and Joists	Spruce-Pine-Fir No. 1/No. 2
All Other Framing	Spruce-Pine-Fir, Construction Grade

BASIC DESIGN STRESSES

Concrete:	
Class "A"	f 'c = 4,000 psi
Class "P" & "LP"	f 'c = 5,000 psi
Class "S"	f 'c = 3,000 psi
Class "Fill"	f' c = 3,000 psi
Reinforcing Steel:	
Galvanized	f y = 60,000 psi
Stainless Steel	f y = 75,000 psi
Plain	f y = 60,000 psi
Structural Steel:	
ASTM A709, Grade 50	F y = 50,000 psi
ASTM A709, Grade 36	F y = 36,000 psi
ASTM F3125, Grade A325	F u = 120,000 psi
ASTM F1554, Grade 55	F y = 55,000 psi
Timber:	
Spruce-Pine-Fir No. 1/No. 2	F b = 875 psi
Spruce-Pine-Fir, Construction Grade	F b = 975 psi

COAST GUARD PERMIT REQUIRED

BOOTHBAY
LINCOLN COUNTY
BARTERS ISLAND BRIDGE
OVER
BACK RIVER
PROJECT NO. STP-2260(700)
WEST BARTERS ISLAND ROAD
PROJECT LENGTH 0.052 mi.
BRIDGE NO. 2039

LIST OF DRAWINGS

MAINTENANCE OF TRAFFIC

A temporary bridge, with alternating one-way traffic, will be constructed to maintain traffic during construction.

UTILITIES

Central Maine Power Company
Fairpoint
Time Warner Cable
Boothbay Water District

PROJECT LOCATION:	Barters Island Bridge (#2039), West Barters Island Road over the Back River Latitude: 43° 52' 53"N Longitude: 69° 40' 18"W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge rehabilitation and swing span replacement with approach work.

STP-2260(700) WIN 22607.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED
COMMISSIONER: [signature] DATE 10/25/18
CHIEF ENGINEER: [signature] DATE 10-25-18

THOMAS T. HENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE
Thomas T. Hendrick SIGNATURE 10075 P.E. NUMBER 10/19/2018 DATE

PROJECT INFORMATION

PROGRAM	BRIDGE PROGRAM
PROJECT MANAGER	LEANNE TIMBERLAKE
DESIGNER	McFARLAND JOHNSON, INC.
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

BOOTHBAY
BARTERS ISLAND BRIDGE

TITLE SHEET

SHEET NUMBER 1 OF 132

Filename: ...\Draw\Drawings\001_Title.dgn Division: BRIDGE Username: msmith Date:10/19/2018

ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
202.08	REMOVE BUILDING: OPERATOR'S HOUSE	1	LS
202.12	REMOVE EXISTING STRUCTURAL CONCRETE	3	CY
202.19	REMOVING EXISTING BRIDGE (690 CY, 46.5 T)	1	LS
202.202	REMOVING PAVEMENT SURFACE	790	SY
202.55	REMOVE AND DISPOSE OF ADVANCED WARNING SIGN SYSTEM	1	LS
203.20	COMMON EXCAVATION	155	CY
203.2318	DISPOSAL OF SPECIAL WASTE	220	T
203.24	COMMON BORROW	10	CY
204.41	REHABILITATION OF EXISTING SHOULDER, PLAN QUANTITY	220	SY
206.07	STRUCTURAL ROCK EXCAVATION - DRAINAGE & MINOR STRUCTURES	10	CY
206.10	STRUCTURAL EARTH EXCAVATION - PIERS	130	CY
206.11	STRUCTURAL ROCK EXCAVATION - PIERS	30	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	80	CY
403.2081	HOT MIX ASPHALT 12.5 MM (POLYMER MODIFIED)	85	T
403.209	HOT MIX ASPHALT 9.5 MM (INCIDENTALS)	12	T
403.213	HOT MIX ASPHALT 12.5 MM (BASE)	10	T
409.15	BITUMINOUS TACK COAT - APPLIED	36	G
411.09	UNTREATED AGGREGATE SURFACE COURSE	10	CY
461.131	TEMPORARY PAVEMENT	110	T
501.237	NOISE ATTENUATION AND UNDERWATER NOISE MONITORING	1	LS
502.23	STRUCTURAL CONCRETE PIERS	2	CY
502.24	STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)	350	CY
502.251	GRID REINFORCED CONCRETE DECK	329	SY
502.291	SAW CUT GROOVING	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (15 CY)	1	LS
502.70	BRIDGE DRAINS	4	EA
503.22	ZINC-COATED (GALVANIZED) REINFORCING STEEL, FABRICATED AND DELIVERED	3300	LB
503.23	ZINC-COATED (GALVANIZED) REINFORCING STEEL, PLACING	3300	LB
503.26	STAINLESS STEEL REINFORCEMENT, FABRICATED AND DELIVERED	165	LB
503.27	STAINLESS STEEL REINFORCEMENT, PLACING	165	LB
504.70	STRUCTURAL STEEL FABRICATED AND DELIVERED (181000 LB)	1	LS
504.71	STRUCTURAL STEEL ERECTION (181000 LB)	1	LS
504.906	ROCK DOWELS (12 EA)	1	LS
505.08	SHEAR CONNECTORS (2784 EA)	1	LS
506.9104	THERMAL SPRAY COATING (SHOP APPLIED) (14000 SF)	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR (551 LF)	1	LS
510.10	SPECIAL DETOUR, 16 FOOT ROADWAY WIDTH VEHICULAR AND PEDESTRIAN TRAFFIC NOT SEPARATED	1	LS
511.07	COFFERDAM: PIER 2	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (630 SY)	1	LS
520.60	SWING - APPR SPAN OPEN JOINT	2	EA
523.52	BEARING INSTALLATION	8	EA
523.5401	LAMINATED ELASTOMERIC BEARINGS, FIXED	8	EA
524.30	TEMPORARY STRUCTURAL SUPPORT	2	EA
526.301	TEMPORARY CONCRETE BARRIER TYPE 1 (180 LF)	1	LS
526.34	PERMANENT CONCRETE TRANSITION BARRIER	4	EA
527.34	WORK ZONE CRASH CUSHIONS	3	EA
529.01	COMPOSITE FENDER PROTECTION SYSTEM	1	LS
603.159	12" CULVERT PIPE OPTION III	40	LF
604.092	CATCH BASIN TYPE B1-C	2	EA
606.1301	31" W-BEAM GUARDRAIL - MID-WAY SPLICE (STEEL POST, 8" OFFSET BLOCKS, SINGLE FACED)	50	LF
606.1303	31" W-BEAM GUARDRAIL - MID-WAY SPLICE (STEEL POST, 8" OFFSET BLOCKS, 15' RADIUS AND LESS)	25	LF
606.1304	31" W-BEAM GUARDRAIL - MID-WAY SPLICE (STEEL POST, 8" OFFSET BLOCKS, OVER 15' RADIUS)	12.5	LF
606.1305	31" W-BM GR, MID-WAY SPLICE FLARED TERMINAL	1	EA
606.1307	BRIDGE TRANSITION (ASYMMETRICAL) - TYPE 1	4	EA
606.257	TERMINAL CONNECTOR - THRIE BEAM	2	EA
606.265	TERMINAL END-SINGLE RAIL - GALVANIZED STEEL	5	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	12	EA
606.52	REMOVE AND RESET MAILBOX	1	EA
606.65	GUARDRAIL THRIE BEAM - SINGLE RAIL	12.5	LF
613.319	EROSION CONTROL BLANKET	130	SY
615.07	LOAM	13	CY
618.13	SEEDING METHOD NUMBER 1	1	UN
618.14	SEEDING METHOD NUMBER 2	2	UN
619.12	MULCH	1	UN
619.14	EROSION CONTROL MIX	19	CY
621.039	EVERGREEN TREES GROUP C 5' - 6' B&B	5	EA
626.32	24 INCH DIAMETER FOUNDATION	3	EA
626.37	SPECIAL FOUNDATION	4	EA
627.18	12" SOLID WHITE PAVEMENT MARKING	25	LF
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1725	LF

ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
627.78	TEMPORARY 4" PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	200	LF
627.781	TEMPORARY 6" PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	50	LF
629.05	HAND LABOR, STRAIGHT TIME	20	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	12	HR
631.11	AIR TOOL (INCLUDING OPERATOR)	12	HR
631.12	ALL-PURPOSE EXCAVATOR (INCLUDING OPERATOR)	12	HR
631.172	TRUCK-LARGE (INCLUDING OPERATOR)	12	HR
631.21	ROAD BROOM (INCLUDING OPERATOR AND HAULER)	12	HR
631.22	FRONT END LOADER (INCLUDING OPERATOR)	12	HR
637.071	DUST CONTROL	1	LS
638.022	BRIDGE NAVIGATION LIGHTINGS AND MARINE COMMUNICATION	1	LS
639.18	FIELD OFFICE TYPE A	1	EA
643.01	TRAFFIC SIGNALS AND GATES	1	LS
643.60	FLASHING BEACON AT: WEST APPROACH	1	LS
643.60	FLASHING BEACON AT: EAST APPROACH	1	LS
643.72	TEMPORARY TRAFFIC SIGNAL	1	LS
643.80	TRAFFIC SIGNALS AT: WEST APPROACH	1	LS
643.80	TRAFFIC SIGNALS AT: EAST APPROACH	1	LS
643.91	MAST ARM POLE 12 FT MAST ARM	2	EA
643.96	DRAWBRIDGE WARNING SIGN	2	EA
645.106	DEMOUNT REGULATORY, WARNING, CONFIRMATION, AND ROUTE MARKER ASSEMBLY SIGN	2	EA
645.116	REINSTALL REGULATORY, WARNING, CONFIRMATION, AND ROUTE MARKER ASSEMBLY SIGN	2	EA
645.271	REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGN, TYPE I	12	SF
645.289	STEEL H-BEAM POLES	870	LB
652.312	TYPE III BARRICADE	6	EA
652.33	DRUM	20	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	490	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (213 Calendar Days)	1	LS
652.38	FLAGGERS	560	HR
655.202	ELECTRICAL SERVICE AND DISTRIBUTION SYSTEM	1	LS
655.2053	SUBMARINE AND DROOP CABLES	1	LS
655.3002	BRIDGE CONTROL SYSTEM	1	LS
655.72	OPERATION AND MAINTENANCE MANUALS	1	LS
655.73	FIELD TESTING AND COMMISSIONING	1	LS
656.75	TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS
660.21	ON-THE-JOB TRAINING	2000	HR
815.00	BUILDING: CONTROL HOUSE	1	LS
845.20	UTILITY ACCESS LADDER, AND PLATFORMS (535 SF)	1	LS
860.182	CENTER BEARING ASSEMBLY	1	LS
860.183	BALANCE WHEEL ASSEMBIES	1	LS
860.184	RACK/TRACK SEGMENTS	1	LS
860.185	CENTER LIVE LOAD ROLLERS	1	LS
860.186	END CASTERS	1	LS
860.1861	END LIFT ASSEMBLIES	1	LS
860.1862	END STOPS	1	LS
860.231	SPAN DRIVE MACHINERY	1	LS
860.30	FUNCTIONAL TESTING	1	LS
880.02	BRIDGE BALANCING	1	LS
880.031	BALANCE BLOCK - STEEL	1	LS
880.114	COUNTERWEIGHT - STEEL	1	LS
910.301	SPECIAL WORK - STAFF GAUGES	1	LS

ESTIMATED QUANTITIES: CAST-IN-PLACE PIER COLUMN ALTERNATE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
502.23	STRUCTURAL CONCRETE PIERS	227	CY
503.26	STAINLESS STEEL REINFORCEMENT, FABRICATED AND DELIVERED	11250	LB
503.27	STAINLESS STEEL REINFORCEMENT, PLACING	11250	LB

ESTIMATED QUANTITIES: PRECAST PIER COLUMN ALTERNATE

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
502.23	STRUCTURAL CONCRETE PIERS	68	CY
502.2301	STRUCTURAL CONCRETE PIERS, HIGH EARLY STRENGTH	36	CY
502.565	CONCRETE FILL	60	CY
503.26	STAINLESS STEEL REINFORCEMENT, FABRICATED AND DELIVERED	10350	LB
503.27	STAINLESS STEEL REINFORCEMENT, PLACING	10350	LB
534.7602	PRECAST PIER (65 CY)	1	LS

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE PLANS

BRIDGE NO. 2039

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGULAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER
2
OF 132

Date:10/23/2018
Username:
Division:
Filename: ...\002_Estimated Quants.dgn

GENERAL CONSTRUCTION NOTES

1. During construction, Barters Island Road will be detoured onto a temporary bridge with alternating one-way 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. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

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

5. Loam shall be placed to a nominal depth of 4 inches in lawn areas and 2 inches in all other areas unless otherwise noted or directed by the Resident.

6. 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. 619.14, Erosion Control Mix.

7. Guardrail end treatments shall be installed concurrently with the placement of each section of beam guardrail.

8. 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.

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

   All exposed surfaces of concrete curbs.
   Fascias down to the drip notch.
   All exposed surfaces of Concrete Transition Barriers, and Swing Span concrete wearing surface.

   Protective Coating for Concrete Surfaces shall be applied to the finished top face of concrete placed for approach span bridge drains and deck joints. Payment shall be incidental to the respective pay items for Bridge Drains and Swing-Appr Span Open Joint.

10. Project information referred to below may be accessed at the following MaineDOT web address: http://www.maine.gov/mdot/contractors/

11. 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.

12. The project geotechnical report titled: Geotechnical Design Report for the Barters Island Bridge No. 2039 Over the Back River Boothbay, Maine dated August, 2017 and memorandum for bedrock dowels dated May 2018, may be accessed at the MaineDOT web address.

13. Geotechnical information furnished or referred to in this plan set is for 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 Bidder's 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 discreet locations. Data provided may not be representative of the subsurface conditions between the boring locations.

14. 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 alterations which may have been made to the bridge during its lifespan.

15. The Maine Department of Environmental Protection (MDEP) has reported spills and releases involving petroleum products adjacent to the project. This involves releases due to spillage of petroleum products at the Mill Cove Lobster Pound located between roughly Maine Department of Transportation (MaineDOT) station 106+50 to roughly MaineDOT station 107+50 left of center. Based on the scope of work presented, available data suggests that this contamination may only be adjacent to the immediate areas of any excavation proposed by the MaineDOT. However, in light of MDEP's findings, the Contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with working near petroleum-impacted soils. Furthermore, the Contractor shall remain alert for any additionally evidence of contamination. If the Contractor encounters evidence of soil or groundwater contamination, the Contractor shall secure the excavation, stop work in the contaminated area, and immediately notify the Resident. The Resident shall contact the Senior Geologist in MaineDOT's Office of Safety and Compliance at 624-3004 and the MDEP at 800-482-0777. Work may only continue with authorization from the Resident.

16. 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.

17. The Contractor shall submit a Bridge Demolition Plan to the Resident at least 10 business days prior to the start of demolition work. The plan shall outline the methods and equipment to be used to remove and dispose of all materials included in the existing bridge. No work related to the removal of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Demolition Plan for appropriateness and completeness. Payment for all work neccessary for developing, submitting and finalizing the Demolition Plan will be considered incidental to the Bridge Removal pay item.

18. The existing steel truss swing span shall be removed by and become the property of the Contractor. Bridge Removal includes the pony truss, central pier, and existing approach span bridge rail and transition barriers as shown in the plans. The existing approach spans and piers shall remain. The steel portions of the existing bridge are coated with a lead-based paint system. The Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste generated by the process of demolishing the bridge. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once the existing bridge is removed, the Contractor is solely responsible for the care, custody and control of the components of the existing bridge and any hazardous waste generated as a result of the storage, recycling or disposal of the bridge components, including lead-coated steel. The Contractor shall recycle or reuse the steel in accordance with the Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations," Chapter 850. A copy of this regulation is available at MaineDOT's offices on Child Street in Augusta. Payment for all labor, materials, equipment and other costs required to remove and dispose of the existing bridge will be considered incidental to the Bridge Removal pay item.

19. Reinforcing Steel Schedules for the precast pier column alternate and the Control House Foundations will be the responsibility of the Contractor. Refer to Subsection 503.03 of the Standard Specifications for more information. Payment for all work associated with developing reinforcing steel schedules will be considered incidental to the related contract items. Reinforcing steel schedules shall be submitted to the Resident for approval prior to rebar fabrication.

20. Minimum splice lengths for reinforcing steel not otherwise shown shall be as given in the table of Subsection 503.07 of the Standard Specifications.

21. All utility facilities shall be adjusted by the respective utilities.

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

23. 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 related Contract items.

24. Unless otherwise noted Seeding Method No. 1 shall be utilized on all lawns and developed areas; Seeding Method No. 2 shall be utilized on all non-guardrail slopes, all guardrail fill slopes, and on long non-guardrail backslopes.

25. Any base pavement not surfaced before winter will require temporary pavement markings of paint, both yellow centerline and white edge lines.

26. The Contractor will be responsible for maintaining all existing mailboxes to ensure that the mail will be deliverable. No separate payment will be made for this work; it shall be considered incidental to the contract.

27. The existing signs for marine traffic shall be removed and re-attached to the new respective portions of the bridge as directed by the Resident. There are four (4) signs on each the upstream and downstream faces. This work shall not be paid for separately, but shall be considered incidental to Pay Item 910.301 - Special Work - Staff Gauges.

28. No separate payment for superintendent or foreman will be made for the supervision of equipment being paid for under the equipment rental items.

29. All work shall be done in accordance with the Maine Department of Transportation's Best Management Practices for Erosion Control and Sediment Control, Latest Edition.

30. Catch basin and rim elevations noted on the cross sections are the top of grate elevations at the center of grate. Catch basin offset locations are measured to the center of grate.

31. The Contractor shall maintain access to all commercial driveways and residential driveways during construction.

32. The Contractor shall limit the number of vehicles on the project site to prevent blocking private residences and drives or creating unsafe traffic conditions near the project site. Only those vehicles which are required for the work shall be on site. The Contractor's workers shall park away from the site.

33. All waste material not used on the project shall be disposed of off the project site in waste areas approved by the Resident.

34. All embankment material, except as otherwise shown, placed below El. 4.62 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

35. The modifications at existing Pier 1 and the modifications at existing Pier 3 include jacking of the existing approach spans and placing new bearings on bolsters to raise the profile grade. Payment for all labor, materials, equipment and other costs required for temporary supports for this work will be paid for under Item 524.30, Temporary Structural Support, one located at each Pier 1 and Pier 3.

36. Payment for all labor, materials, equipment and other costs required for temporary supports for constructing the swing span will be considered incidental to the Structural Steel Erection pay item.

37. The Contractor shall protect and maintain the seasonal water lines that service the adjacent properties. The Contractor shall submit their plan to maintain the water lines to the Resident. No construction shall be undertaken by the Contractor until the Resident has reviewed the water line maintenance plan for appropriateness and completeness. This work shall not be paid for separately but shall be considered incidental to the Contract.

38. The Contractor should be aware that existing structure dimensions and elevations shown in these plans were taken from the original bridge plans and subsequent rehabilitation plans and do not necessarily represent "as-built" dimensions and elevations. The Contractor shall field verify all dimensions and elevations of existing structures and be prepared to make adjustments required to properly complete the proposed reconstruction. Any discrepancies in dimensions, character, or extent of existing featured, shall be brought to the attention of the Resident prior to advancing the work.

39. The precast concrete submarine cable protection and all costs associated with fabrication, delivery, installation, and any other related costs shall be considered incidental to Pay Item 655.2053 - Submarine and Droop Cables. Refer to Special Provisions for more information.

40. These plans include two alternatives for Pier 2: a cast-in-place pier stem or a precast pier stem.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — THOMAS T. KENDRICK — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

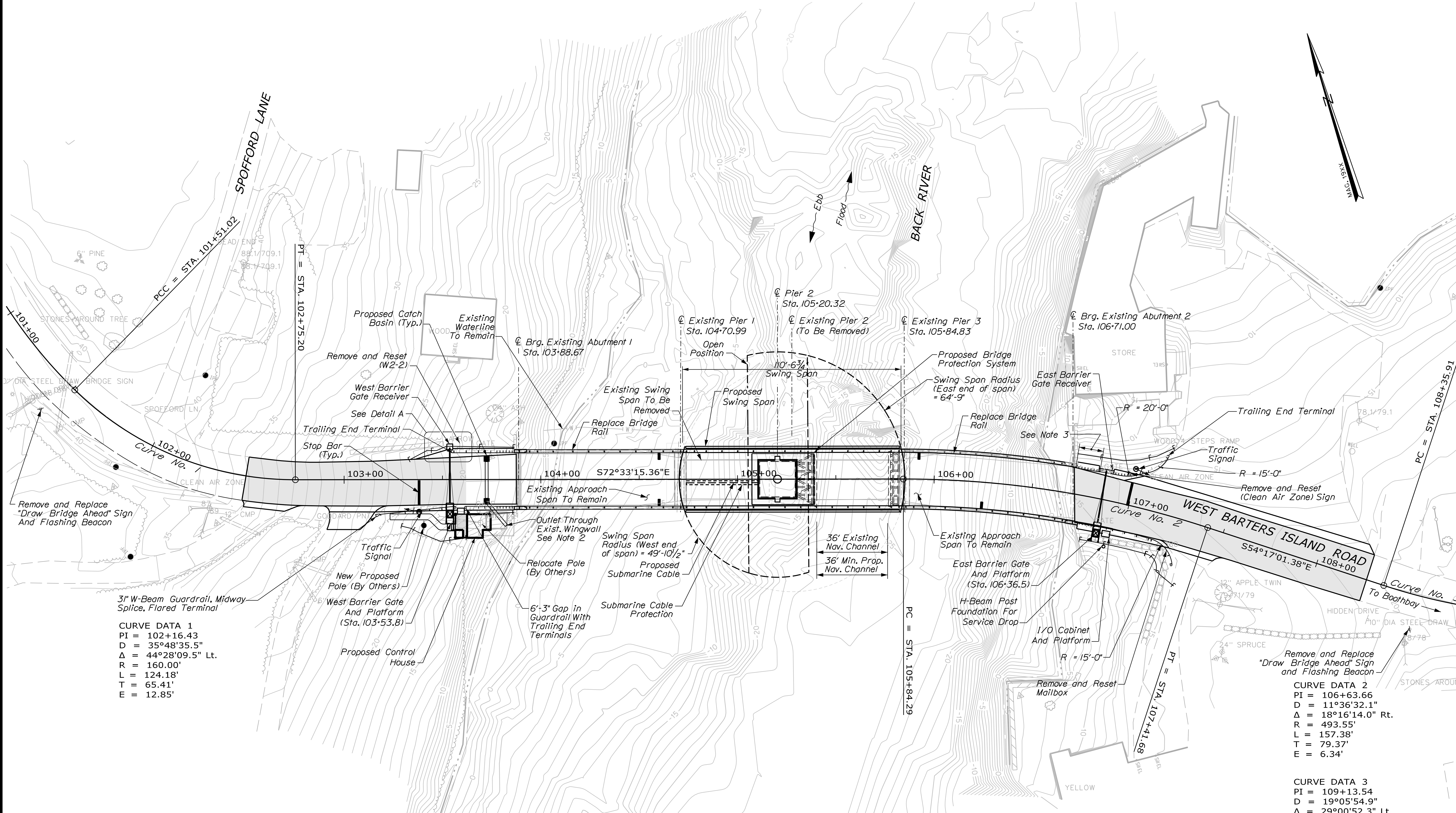
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

GENERAL CONSTRUCTION NOTES

SHEET NUMBER
3
OF 132

Filename: ...\003_Project_Notes_1.dgn Division: Username: Date:10/19/2018

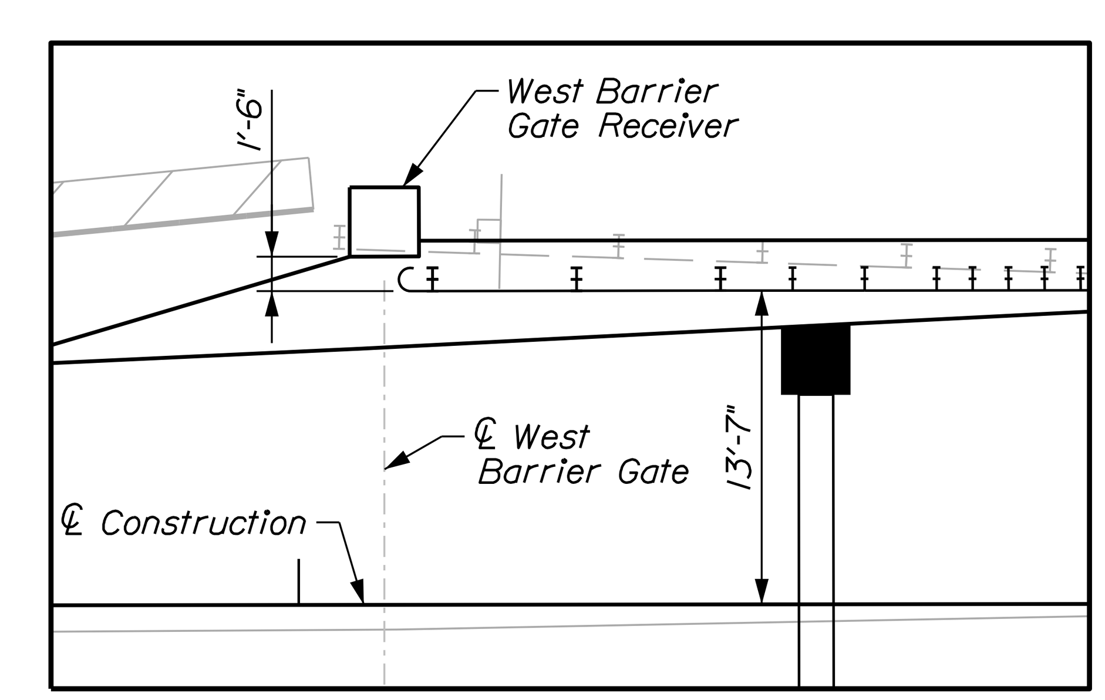
Date:10/19/2018 Username: Division: Filename: ...\Drawings\006_General_Plan.dgn



SPOFFORD LANE
PCC = STA. 101+51.02
PT = STA. 102+75.20
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
Curve No. 1
Curve No. 2
Curve No. 3
S72°33'15.36"E
S54°17'01.38"E
WEST BARTERS ISLAND ROAD
To Boothbay
BACK RIVER
Ebb
Flood
STORE
YELLOW
HIDDEN DRIVE
CLEAN AIR ZONE
MAG. 19XX
Proposed Catch Basin (Typ.)
Existing Waterline To Remain
℄ Brg. Existing Abutment 1 Sta. 103+88.67
℄ Existing Pier 1 Sta. 104+70.99
℄ Pier 2 Sta. 105+20.32
℄ Existing Pier 2 (To Be Removed)
℄ Existing Pier 3 Sta. 105+84.83
℄ Brg. Existing Abutment 2 Sta. 106+71.00
Open Position
110'-6¾" Swing Span
Proposed Bridge Protection System
Swing Span Radius (East end of span) = 64'-9"
East Barrier Gate Receiver
R = 20'-0"
Trailing End Terminal
Remove and Reset (W2-2)
West Barrier Gate Receiver
See Detail A
Trailing End Terminal
Stop Bar (Typ.)
Existing Swing Span To Be Removed
Proposed Swing Span
Replace Bridge Rail
Replace Bridge Rail
See Note 3
Traffic Signal
R = 15'-0"
Remove and Reset (Clean Air Zone) Sign
PC = STA. 108+35.91
Remove and Replace "Draw Bridge Ahead" Sign And Flashing Beacon
Existing Approach Span To Remain
Outlet Through Exist. Wingwall See Note 2
Swing Span Radius (West end of span) = 49'-10½"
Proposed Submarine Cable
36' Existing Nav. Channel
36' Min. Prop. Nav. Channel
Existing Approach Span To Remain
East Barrier Gate And Platform (Sta. 106+36.5)
H-Beam Post Foundation For Service Drop
I/O Cabinet And Platform
R = 15'-0"
Traffic Signal
New Proposed Pole (By Others)
Relocate Pole (By Others)
31' W-Beam Guardrail, Midway Splice, Flared Terminal
West Barrier Gate And Platform (Sta. 103+53.8)
6'-3" Gap in Guardrail With Trailing End Terminals
Submarine Cable Protection
PC = STA. 105+84.29
PT = STA. 107+41.68
Proposed Control House
Remove and Reset Mailbox
Remove and Replace "Draw Bridge Ahead" Sign and Flashing Beacon
CURVE DATA 1
PI = 102+16.43
D = 35°48'35.5"
Δ = 44°28'09.5" Lt.
R = 160.00'
L = 124.18'
T = 65.41'
E = 12.85'
CURVE DATA 2
PI = 106+63.66
D = 11°36'32.1"
Δ = 18°16'14.0" Rt.
R = 493.55'
L = 157.38'
T = 79.37'
E = 6.34'
CURVE DATA 3
PI = 109+13.54
D = 19°05'54.9"
Δ = 29°00'52.3" Lt.
R = 300.00'
L = 151.92'
T = 77.63'
E = 9.88'
PLAN
25 0 25 50
Scale in Feet

Notes:

1. For temporary impacts see Temporary Detour Plan.
2. Contractor shall drill through the existing wingwall to allow for the outlet pipe. Contractor shall then patch the hole around the outlet pipe. Both the drilling and patching shall be completed in accordance with Standard Specification 518. The drilling and patching shall not be paid for separately, but shall be considered incidental to Pay Item 603.159.
3. (8) spaces @ 1'-6¾" = 12'-6" - Thrie Beam Section with (2) Terminal Connectors (one each end). Paid for under Pay Items 606.257 and 606.65.



DETAIL A

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 — STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	T. AGUILAR / D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE / T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN / S. OZANA	10-19-18
DESIGN3-DETAILED3		10-19-18
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
P.E. NUMBER 10075
DATE 10/19/2018

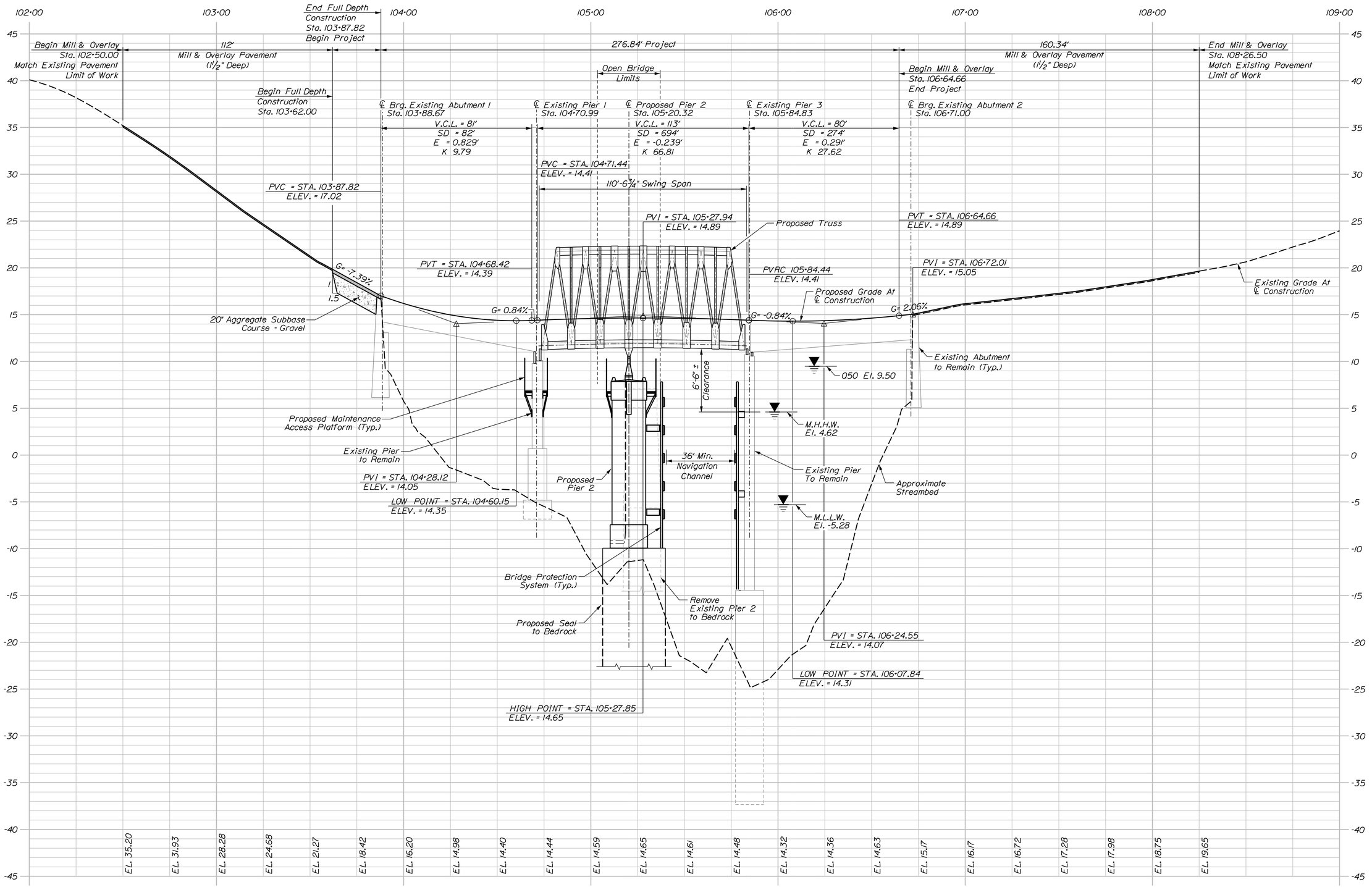
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

GENERAL PLAN

SHEET NUMBER
4
OF 132

Filename: ...\Drawings\007_Profile.dgn Division:

Username: Date:10/19/2018



PROFILE - BARTERS ISLAND ROAD

HORIZ. 25 0 25 50

VERT. 5 0 5 10

SCALE

NOTES:

1. Vertical geometry on approach spans for reference only.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE PLANS

BRIDGE NO. 2039

THOMAS T. HEDRICK No. 10075 STATE OF MAINE LICENSED PROFESSIONAL ENGINEER

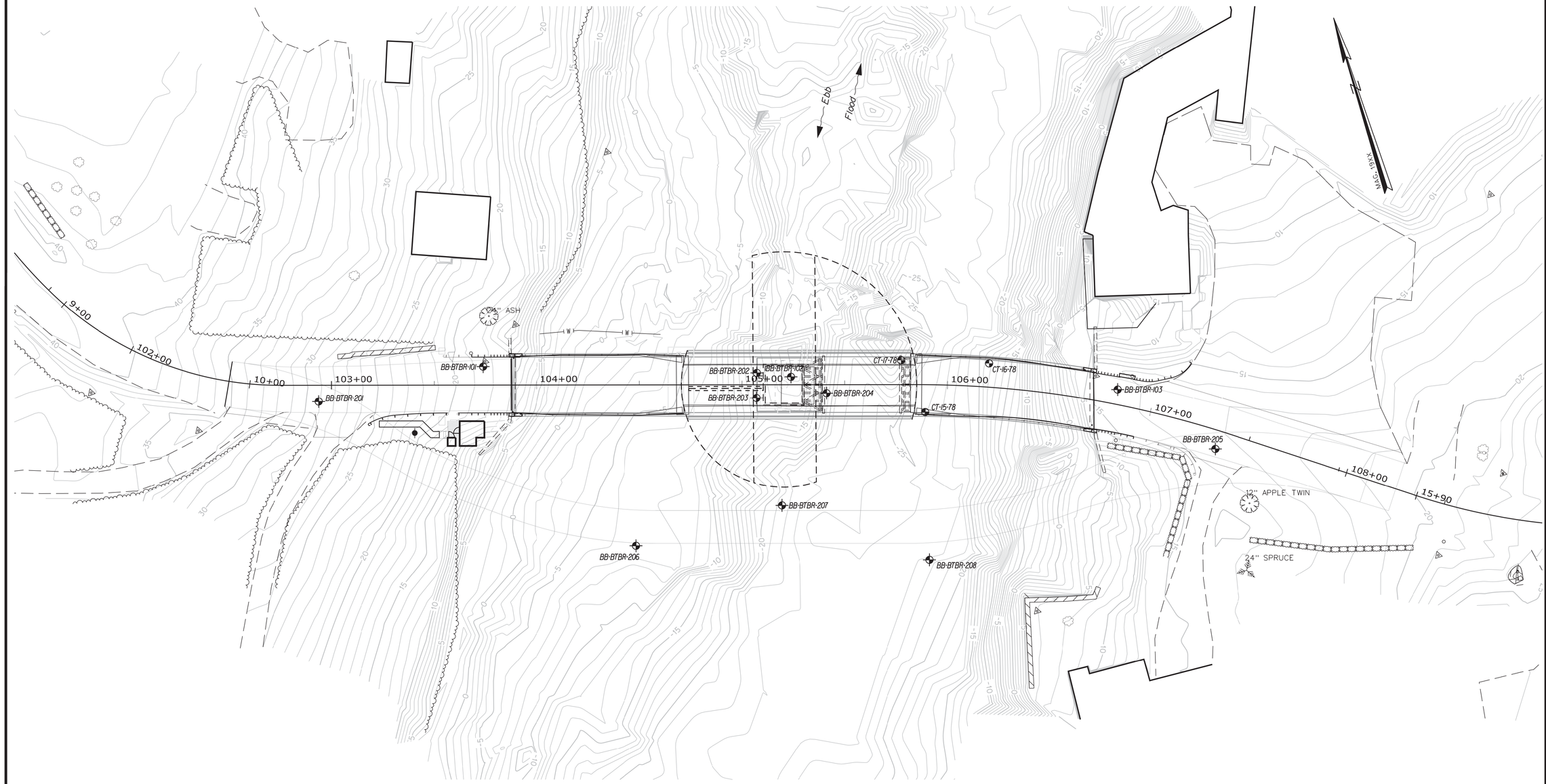
Thomas T. Hedrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO 10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK 10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA 10-19-18
DESIGN3-DETAILED3		10-19-18
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

PROFILE

SHEET NUMBER
5
OF 132



NOTES

1) Base map developed from electronic files provided by McFarland Johnson on October 01, 2018 (File: BDplan20181001.dgn).

2) The as-drilled locations of the test borings were surveyed by a MaineDOT survey crew and supplied to GZA on June 28, 2017 (File: Borings_28jun17.dgn).

3) BB-BTBR-100 and BB-BTBR-200 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel between May 26 and 27, 2015 and between June 15 and 25, 2017, respectively.

4) The CT-series boring locations and soil strata descriptions were taken from the State of Maine, Department of Transportation, Barter's Island over Back Bay, Foundation Survey Plan, dated November 1978.

LEGEND

BB-BTBR-208 Location and designation of cased wash boring

CT-17-78 Location and designation of 1978 Boring

PLAN

25 0 25 50

Scale

PREPARED BY:

GZA

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE CHRISTOPHER L. SNOW No. 7275 LICENSED PROFESSIONAL ENGINEER

SIGNATURE

7275

P.E. NUMBER

10-3-2018

DATE

PROJ. MANAGER	XXXX		DATE
DESIGN-DETAILED	BMC	BMC	JULY 2018
CHECKED-REVIEWED	CLS	ARB	JULY 2018
DESIGN2-DETAILED?			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
OVER BACK RIVER
BOOTHBAY LINCOLN COUNTY

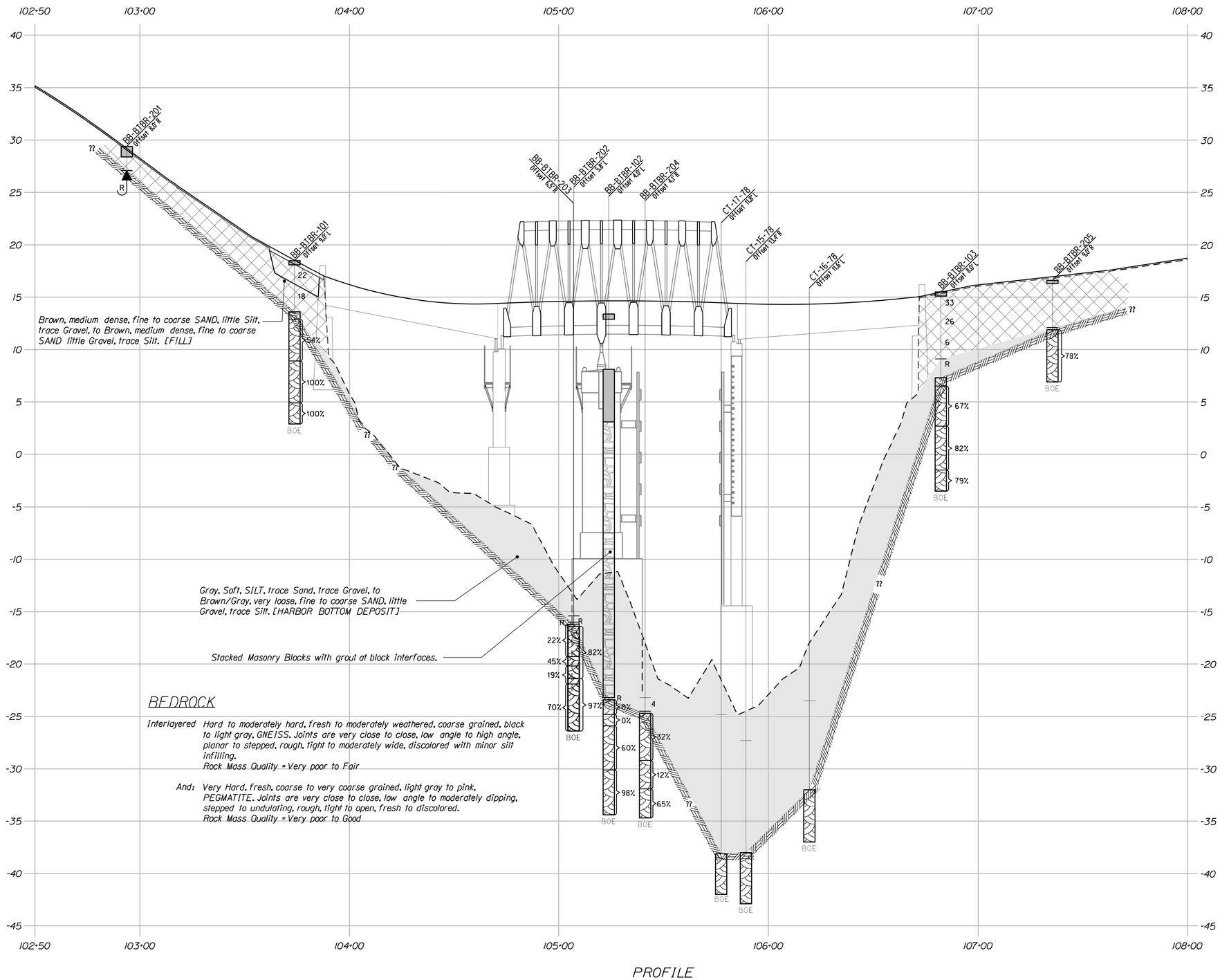
BORING LOCATION PLAN

SHEET NUMBER

6

OF 132

Filename: ...\00\Geotech\MSTA\006_BLP.dgn Division: HIGHWAY Username: common Date:10/3/2018

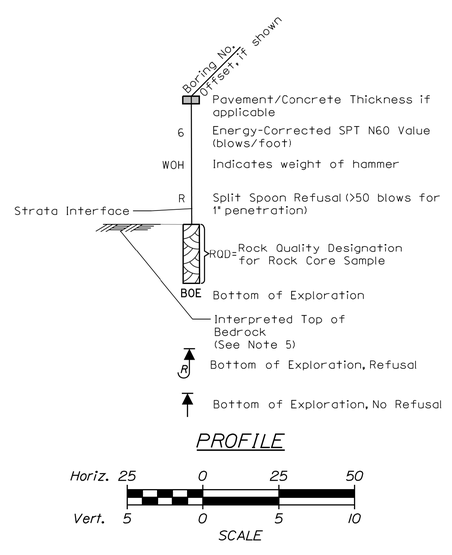


NOTES

1) Profile developed from electronic files provided by McFarland Johnson on July 26, 2018 (File: Profile.dgn).

2) 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.

INTERPRETIVE SUBSURFACE PROFILE LEGEND



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE PLANS

BRIDGE NO. 2039

STATE OF MAINE CHRISTOPHER L. STOCK No. 7275 LICENSED PROFESSIONAL ENGINEER

SIGNATURE

7275

P.E. NUMBER

10-3-2018

DATE

XXXX	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	BMC	JULY 2018
CHECKED-REVIEWED	CLS	JULY 2018
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
OVER BACK RIVER
BOOTHBAY LINCOLN COUNTY

INTERPRETIVE SUBSURFACE PROFILE

PREPARED BY:

GZA

SHEET NUMBER

7

OF 132

common
Date:10/3/2018
Division: HIGHWAY
Username:
Filename: ...\MSTA\007_ISP Bridge.dgn

Filename: ...\00\Geotech\MSTA\08_Logs.dgn   Division: HIGHWAY   Username: common   Date:10/3/2018

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

Project:	Barters Island Bridge #2039	Location:	Boothbay, Maine	Boring No.:	BB-BTBR-101
				PIN:	22607.00
Driller:	New England Boring	Elevation (ft.)	18.5'	Auger ID/OD:	4"
Operator:	Brad Enos	Datum:		Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck	Hammer Wt./Fall:	140/30
Date Start/Finish:	5/27/15-5/27/15	Drilling Method:	Drive & Wash / SSA	Core Barrel:	NQ
Boring Location:		Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:	0.6	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
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 = weight of rods
WO1P = 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

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
1D	24/13	0.4 - 2.4	10-11-11-15	22	22	SSA	18.1	PAVEMENT (0.4)	
								Brown, dry, medium dense, fine to coarse SAND, some Gravel. -FILL- (SM)	
2D	24/16	2.4 - 4.4	13-11-7-9	18	18			Brown, moist, medium dense, fine to coarse SAND, some Gravel, little Silt. -FILL- (SM) SSA auger refusal at 4.9' bgs. Spun casing to 6.0' bgs. Set up to start core at 5.6' bgs.	G#3 A-1-b, SM WC=9.2
						SPUN	13.6	(4.9)	
R1	48/45	5.6 - 9.6	RQD = 54%			NQ		Hard, fresh to slightly weathered, fine to medium grained, gray, GNEISS. Joints are close to moderately close, low to high angle, undulating, rough, fresh, tight to open. Rock Mass Quality = Fair Rock Core Times (min/ft): 1.75, 1.15, 2. 0, 1.5	q_p=6.0 ksi
R2	48/51	9.6 - 13.6	RQD = 100%					Hard, fresh, fine to medium grained, gray, GNEISS. Joints are close to wide, undulating, rough, fresh, tight to open. Rock Mass Quality = Excellent Rock Core Times (min/ft): 1.5, 1.5, 1.5, 1.75	
R3	24/24	13.6 - 15.6	RQD = 100%				2.9	Hard, fresh, fine to medium grained, gray, GNEISS. Joints are moderately close, low angle, undulating, rough, open. Rock Mass Quality = Excellent Rock Core Times (min/ft): 1.0, 1.5 (15.6)	
								Bottom of Exploration at 15.60 feet below ground surface.	

Remarks:
1. Spun 3" casing to 6.0' bgs, NQ to 15.6' bgs.

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-BTBR-101

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

Project:	Barters Island Bridge #2039	Location:	Boothbay, Maine	Boring No.:	BB-BTBR-102
				PIN:	22607.00
Driller:	New England Boring	Elevation (ft.)	13.5'	Auger ID/OD:	4"
Operator:	Brad Enos	Datum:		Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck	Hammer Wt./Fall:	140/30
Date Start/Finish:	5/26/15-5/27/15	Drilling Method:	Drive & Wash / SSA	Core Barrel:	NQ
Boring Location:		Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:	0.6	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; 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 = weight of rods; WO1P = 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

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
						SPUN	13.0	Bridge Deck (0.5) Set up to core at 5.3' below top of deck.	
R1	60/55	5.3 - 10.3				NQ	8.2	CONCRETE (Bridge Structure) Rock Core Times (min/ft): 1.5, 2.25, 2.5, 3.0 (5.3)	
R2	73/65	10.3 - 16.4					3.2	BLOCK FOUNDATION Varying color/type of rock. Block thickness typically between 10"-15". (10.3)	
R3	14/8	16.4 - 17.6						BLOCK FOUNDATION Blcok thickness 4" or less.	
R4	40/11	17.6 - 20.9						BLOCK FOUNDATION. Block thickness 3" or less. Some Sand infilling.	
R5	24/22	21.1 - 23.1						BLOCK FOUNDATION. Blocks ranged in thickness from 3"-13". Grout encountered in voids.	
R6	32/40	23.1 - 25.8						BLOCK FOUNDATION Block thickness ranged from 5"-12". Grout encountered in voids.	
R7	14/6	25.8 - 27.0						BLOCK FOUNDATION (6" thick block)	
R8	20/7	27.0 - 28.7						BLOCK FOUNDATION Block pieces 3" or less.	
R9	88/46	28.8 - 36.1						BLOCK FOUNDATION Block thickness ranged from 5"-18". Voids encountered varying from 2"-6" based on drilling action.	
1D	2/2	36.6 - 36.8	50/2"	R			-23.1	Gray, wet, dense, fine SAND and shells (likely wash material). (36.6)	
R10	17/14	36.8 - 38.2	RQD = 0%				-23.3	Hard to medium hard, fresh to slightly weathered, fine to medium grained, gray, GNEISS. Joints are very close to close, low to high angle, undulating, rough, partially open to open. Rock Mass Quality = Very Poor Rock Core Times (min/ft): 1.5, 6.0, 2.0/2" (36.8)	
R11	13/18	38.2 - 39.3	RQD = 0%					Hard to medium hard, fresh to slightly weathered, fine to medium grained, gray, GNEISS. Joints are very close to close, low to high angle, undulating, rough, partially open to open. Rock Mass Quality = Very Poor Rock Core Times (min/ft): 2.5/13"	
R12	50/48	39.3 - 43.5	RQD = 60%					Hard to medium hard, fresh, fine to medium grained, gray, GNEISS. Joints are close to moderately close, low to high angle, undulating, rough, fresh, tight to partially open. Rock Mass Quality = Fair Rock Core Times (min/ft): 2.0/8", 2.5, 2.25, 2.0, 1.75/6".	q_p=7.2 ksi
R13	51/53	43.5 - 47.8	RQD = 98%				-34.3	Hard to medium hard, fresh, fine to medium grained, gray, GNEISS. Joints are close to moderately close, low to high angle, undulating, rough, fresh, tight to partially open. Rock Mass Quality = Excellent Rock Core Times (min/ft): .5/6", 3.5, 2. 0, 2.5/9" (47.8)	
								Bottom of Exploration at 47.80 feet below ground surface.	

Remarks:
1. 5.3' from top of deck to top of concrete surface, spun 3" casing 6" into concrete and set up to core. NQ casing removed due to possible blocking collapse at approximately 20.0' below deck surface (bds). Spun 3" casing to 35.5' bds.
2. Based on recovery and drilling effort, TOR is approximately 36.8' below Top of Bridge Deck.
3. Casing spun to 39.1' bds, then cored to 47.8' bds.
4. Mean water height 17.0' bds at time of drilling.

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-BTBR-102

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

Project:	Barters Island Bridge #2039	Location:	Boothbay, Maine	Boring No.:	BB-BTBR-103
				PIN:	22607.00
Driller:	New England Boring	Elevation (ft.)	15.5'	Auger ID/OD:	4"
Operator:	Brad Enos	Datum:		Sampler:	Split Spoon
Logged By:	Blaine Cardali	Rig Type:	Truck	Hammer Wt./Fall:	140/30
Date Start/Finish:	5/26/15-5/27/15	Drilling Method:	Drive & Wash / SSA	Core Barrel:	NQ
Boring Location:		Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:	0.6	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; 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 = weight of rods; WO1P = 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

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
1D	24/16	0.4 - 2.4	14-15-18-19	33	33	SPUN	15.1	PAVEMENT (0.4) Brown, dry, dense, fine to coarse SAND, some Gravel, trace Silt. -FILL- (SM)	
2D	24/10	2.4 - 4.4	20-14-12-8	26	26			Brown, dry, medium dense, fine to coarse SAND, some Gravel, trace Silt. -FILL- (SM)	
3D	24/5	4.4 - 6.4	5-4-2-1	6	6			Brown, dry, loose, fine to coarse SAND, some Gravel, trace Silt. -FILL- (SM)	
4D	21/7	6.4 - 8.2	3-3-2-50/3"	R			9.1	(6.4) Dark brown, moist, loose, fine to coarse SAND, some Gravel, some Silt. -SAND- (SM) Split spoon refusal at 8.2' bgs. Spun casing to 9.0' bgs and setup to core.	G#4 A-1-b, SM wc=20.9
						NQ	7.3	(8.2)	
R1	46/45	9.0 - 12.8	RQD = 67%					Hard, fresh, fine to medium grained, gray, GNEISS. Joints are moderately close, high angle, undulating, rough, tight to partially open. Rock Mass Quality = Fair Rock Core Times (min/ft): 1.75, 1.5, 1.5, 1.5/9"	
R2	50/50	12.8 - 17.0	RQD = 82%					Hard, fresh to slightly weathered, fine to medium grained, gray, GNEISS. Joints are close to moderately close, low angle, undulating, rough, fresh, partially open to moderately wide. Rock Mass Quality = Good Rock Core Times (min/ft): 0.5/2", 2.0, 1.5, 1.5, 1.25	
R3	24/24	17.0 - 19.0	RQD = 79%				-3.5	Hard, fresh to slightly weathered, fine to medium grained, gray, gneiss. Joints are close to moderately close, undulating, rough, fresh, partially open. Rock Mass Quality = Good Rock Core Times (min/ft): 1.0, 1.25 (19.0)	
								Bottom of Exploration at 19.00 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-BTBR-103

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

Project:	Barter's Island Bridge #2039 Over Back River	Location:	Boothbay, Maine	Boring No.:	BB-BTBR-201
				PIN:	22607.00
Driller:	New England Boring Contractors	Elevation (ft.)	29.4	Auger ID/OD:	3.5"
Operator:	Mike Porter	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/15/17 - 06/15/17	Drilling Method:	SSA	Core Barrel:	--
Boring Location:	N139569.1, E1496092.9	Casing ID/OD:	-	Water Level *:	Not observed
Hammer Efficiency Factor:		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; 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 = weight of rods; WO1P = 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

Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
						SSA		-ASPHALT-	
1D	15/15	1.0 - 2.3	8-30-50/2"	R			28.4	(1.0) 1.0'-1.9': Brown and black, moist, fine to coarse SAND, little Silt, trace Gravel, with Mica fragments. (SM) -FILL-	
							27.5	(1.9) 1.9'-2.3': White and gray, dry, weathered Rock (PEGMATITE), pulverized to fine to coarse Sand, little Gravel/Rock fragments.	
							27.1	(2.3) Bottom of Exploration at 2.30 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-BTBR-201

PREPARED BY: GZA

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

STATE OF MAINE ★ CHRISTOPHER L. SNOW No. 7275 ★ LICENSED PROFESSIONAL ENGINEER

SIGNATURE
P.E. NUMBER 7275
DATE 10-3-2018

		BY	DATE
PROJ. MANAGER	XXXX		
DESIGN-DETAILED	BMC	BMC	JULY 2018
CHECKED-REVIEWED	CLS	ARB	JULY 2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
OVER BACK RIVER
BOOTHBAY   LINCOLN COUNTY

BORING LOGS

SHEET NUMBER
8
OF 132

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Barter's Island Bridge *2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-202

PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.):	-15.4	Auger ID/OD:	-
Operator:	Mike Porter	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/12/17 - 06/12/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139518.2, E1496300.6	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☒ Hydraulic ☐	Rope & Cathead ☐	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
T = Thin Wall Tube Sample
MJ = Unsuccessful Thin Wall Tube Sample attempt
V = Hollo Vane Shear Test
MV = Unsuccessful Hollo 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 = weight of rods
WOP = Weight of one person
S_u = Hollo Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
Nunconcorrected = 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/Nuncorrected
$S_{u(LAB)}$ = 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	18/6	0.0 - 1.5	WOH-1-80			R/C NQ	-16.4		Gray, medium to coarse SAND, little Gravel (rock fragments), trace organics (shells), trace Silt, wet. (SP) -HARBOR BOTTOM DEPOSIT- -Casing refusal at 0.9'. Roller bit to 1.0', begin core.	
	R1	60/60	1.0 - 6.0	RQD = 82%			NQ			R1: Hard, fresh to discolored, gray and black, coarse grained, GNEISS. Joints are wide, slightly weathered (discolored), dark gray and rusty, with minor gray silt infilling. At 4.7', Fractured zone at 4.7'. Rock Mass Quality = Good Recovery = 100% Rock Core Times (min/sec): 1.0-2.0 (0:51) 2.0-3.0 (1:11) 3.0-4.0 (1:32) 4.0-5.0 (2:46) 5.0-6.0 (1:00) R2: Hard, fresh to slightly weathered, gray and black, medium to coarse grained, GNEISS. Joints are horizontal to low angle, close to moderately spaced, moderately wide to tight, slightly weathered, trace silt infilling. Rock Mass Quality = Excellent Recovery = 100% Rock Core Times (min/sec): 6.0-7.0 (1:22) 7.0-8.0 (1:49) 8.0-9.0 (1:35) 9.0-10.0 (1:52) 10.0-11.0 (1:34)	-1.0
	R2	60/60	6.0 - 11.0	RQD = 97%				-26.4			-11.0
										Bottom of Exploration at 11.00 feet below ground surface.	
30											

Remarks:

1. Deck surveyed at El. 13.6', 29.0' to mudline.
2. Casing refusal at 0.9'. Split spoon drove to 1.5' without refusal (likely walking down rock slope).
3. Advanced roller bit to 1.0', began core.
4. No water return during coring.

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-BTBR-202

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Barter's Island Bridge *2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-203

PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.):	-16.0	Auger ID/OD:	-
Operator:	Mike Porter	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/12/17 - 06/12/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139506.6, E1496296.7	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☒ Hydraulic ☐	Rope & Cathead ☐	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
T = Thin Wall Tube Sample
MJ = Unsuccessful Thin Wall Tube Sample attempt
V = Hollo Vane Shear Test
MV = Unsuccessful Hollo 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 = weight of rods
WOP = Weight of one person
S_u = Hollo Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
Nunconcorrected = 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/Nuncorrected
$S_{u(LAB)}$ = 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	ST5	2/1 - 37/33	0.0 - 0.2 0.2 - 3.3	50/2" RQD = 52%			R/C NQ	-16.2		Glass fragments, little fine Sand, little Silt, trace Gravel (rock fragments). Split spoon refusal at 0.2'. Begin core.	
	R1	11/10	3.3 - 4.2	RQD = 45%				-19.1		R1: C.2'-3.7': Hard, discolored to slightly weathered (rusty, black), black and light gray, medium to coarse grained, GNEISS, joints are low angle to high angle, very close to close, partially open to moderately wide, slightly weathered (discolored), dark gray and rusty, with minor gray silt infilling.	
	R2	20/21	4.2 - 5.9	RQD = 19%						R1: 3.7'-3.3': Very hard, discolored, light gray and pink, coarse to very coarse grained, PEGMATITE (quartz feldspar). Rock Mass Quality = Poor Recovery = 100% Rock Core Times (min/sec): 0.2-1.2 (1:54) 1.2-2.2 (2:51) 2.2-3.2 (3:52) 3.2-3.3 (2:20) R2: Hard, discolored (rusty), light gray/ white, coarse to very coarse grained, PEGMATITE, Joints are horizontal, rough, planar, very close to close, moderately wide, with minor silt infilling. Rock Mass Quality = Poor Recovery = 90% Rock Core Times (min/sec): 3.3-4.2 (3:30) R3: Hard, discolored (rusty), light gray/ white, coarse to very coarse grained, PEGMATITE, Joints are low angle to moderately dipping, rough to smooth, planar, very close to close, open, slightly weathered, discolored with minor sand infilling. Biotite present at 4.7'. Rock Mass Quality = Very Poor Recovery = 105% Rock Core Times (min/sec): 4.2-5.2 (3:40) 5.2-5.9 (1:55) R4: 5.9'-9.0': Hard, discolored (rusty), light gray/white, coarse to very coarse grained, PEGMATITE, Joints are low angle, planar, rough, moderately close, discolored to fresh. R4: 9.0'-10.4': Hard, slightly to moderately weathered, black and gray, coarse grained, GNEISS. Joints are low angle to high angle, undulating and stepped, rough, close, partially open, moderately weathered, with minor silt infilling. Rock Mass Quality = Fair Recovery = 94% Rock Core Times (min/sec): 5.9-6.9 (1:13) 6.9-7.9 (2:18) 7.9-8.9 (2:13) 8.9-9.9 (1:51) 9.9-10.4 (1:30)	-3.1
	R3	20/20	5.9 - 10.4	RQD = 70%				-25.0			-9.0
								-28.4			-10.4
										Bottom of Exploration at 10.40 feet below ground surface.	
30											

Remarks:

1. Deck surveyed at El. 13.5', 29.5' to mudline.

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-BTBR-203

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Barter's Island Bridge *2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-204

PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.):	-23.2	Auger ID/OD:	-
Operator:	Mike Porter	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/13/17 - 06/13/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139498.5, E1496330.1	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☒ Hydraulic ☐	Rope & Cathead ☐	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
T = Thin Wall Tube Sample
MJ = Unsuccessful Thin Wall Tube Sample attempt
V = Hollo Vane Shear Test
MV = Unsuccessful Hollo 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 = weight of rods
WOP = Weight of one person
S_u = Hollo Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
Nunconcorrected = 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/Nuncorrected
$S_{u(LAB)}$ = 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	18/7	0.0 - 1.5	9-3-1-4	4	0	15	-24.5		0.0'-1.3': Brown, wet, very loose, fine to coarse SAND, little organics (shells), little Silt, trace Gravel (rock fragments), poorly graded (coarse). (SP-SM)	
	R1	54/41	1.5 - 6.0	RQD = 37%		4 5.5		-24.7		1.3'-1.5': Blue-gray, wet, SILT, little fine to coarse Sand, trace Gravel (rock fragments), trace organics (shells). (ML) -HARBOR BOTTOM DEPOSIT- -Roller bit to 1.5', begin to core.	
						ND		-26.8		R1: 1.5'-3.6': Hard, fresh, black and light gray, medium to coarse grained, GNEISS. Joints are low angle, planar, undulating, smooth, close to moderately spaced, partially open, fresh to discolored (rusty).	
	R2	32/32	6.0 - 8.7	RQD = 12%				-26.9		R1: 3.6'-3.7': Very hard, discolored to slightly weathered, light gray to gray, coarse grained, PEGMATITE.	-1.5
										R1: 3.7'-6.0': Soft, highly weathered, brown, fine to medium grained, GNEISS, joints are very close to close, weathered to gravel, brown sand, and clay. Rock Mass Quality = Poor Recovery = 76% Rock Core Times (min/sec): 1.5-2.5 (1:48) 2.5-3.5 (1:33) 3.5-4.5 (0:54) 4.5-5.5 (2:58) 5.5-6.0 (3:12) R2: 6.0'-8.7': Hard, moderately weathered, black and light gray and brown, medium to coarse grained, GNEISS. Joints are very close to close, moderately dipping to steep, rough, undulating, open, discolored, slightly weathered, with minor silt infilling. Rock Mass Quality = Very Poor Recovery = 100% Rock Core Times (min/sec): 6.0-7.0 (1:08) 7.0-8.0 (2:20) 8.0-8.7 (3:30)	-3.6
	R3	34/34	8.7 - 11.5	RQD = 55%				-11.9 -32.7			-3.7
								-34.7		R3: 8.7'-8.9': Hard, fresh, gray and light gray, coarse grained, PEGMATITE.	-8.7
										R3: 8.9'-11.5': Hard, fresh to discolored, black to light gray, coarse grained, GNEISS. Joints are low angle to steep, rough, planar to stepped, very close to close, moderately wide to tight, discolored, with minor gray silt infilling. Rock Mass Quality = Fair Recovery = 100% Rock Core Times (min/sec): 8.7-9.7 (2:59) 9.7-10.7 (1:54) 10.7-11.5 (2:40)	-9.1
										Bottom of Exploration at 11.50 feet below ground surface.	-11.5
30											

Remarks:

1. Deck surveyed at El. 13.6', 36.8' to mudline.
2. Casing refusal at 1.5'. Split spoon drove to 2.0' without refusal (likely walking down rock slope).

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-BTBR-204

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Barter's Island Bridge *2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-205

PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.):	16.6	Auger ID/OD:	-
Operator:	Mike Porter	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/13/17 - 06/13/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139415.7, E1496502.4	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☒ Hydraulic ☐	Rope & Cathead ☐	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
T = Thin Wall Tube Sample
MJ = Unsuccessful Thin Wall Tube Sample attempt
V = Hollo Vane Shear Test
MV = Unsuccessful Hollo 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 = weight of rods
WOP = Weight of one person
S_u = Hollo Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
Nunconcorrected = 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/Nuncorrected
$S_{u(LAB)}$ = 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										Top 4": ASPHALT	-0.3
	1D	24/15	0.3 - 2.3	11-17-12-16	29	0	R/C AWJ	16.3		Brown, moist, medium dense, fine to coarse SAND, little Gravel, trace Silt. -FILL-	-4.5
	S2	2/1	4.5 - 4.7	50/2"						Brown/black, sandy SILT, trace Gravel. (Split spoon refusal at 4.7', begin to core.	-4.7
	R1	60/58	4.7 - 9.7	RQD = 78%				12.1 11.9		R1: Hard to moderately hard, fresh to slightly weathered, black and light gray, medium to coarse grained, GNEISS. Joints are wide to very close, low angle to horizontal, rough, stepped, partially open to wide, slightly weathered, mica in joint surface.	
								8.0			-8.6
								6.9		R1: 8.6'-9.7': Very hard, fresh, light gray and pink, coarse to very coarse grained, PEGMATITE. Joints are low angle, rough, stepped, very close to close, tight, fresh (quartz, feldspar, mica). Rock Mass Quality = Good Recovery = 96% Rock Core Times (min/sec): 4.7-5.7 (1:50) 5.7-6.7 (1:15) 6.7-7.7 (1:39) 7.7-8.7 (1:41) 8.7-9.7 (1:56)	-9.7
										Bottom of Exploration at 9.70 feet below ground surface.	
30											

Remarks:

1. 3.0'-4.0': Sandy clay in auger cuttings.
2. Boring relocated approximately 4' to west of original location for road access.
3. 4.5': Spoon broken upon removal, penetration likely less than 2".
4. Casing at 4.7'.

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-BTBR-205

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — CHRISTOPHER L. BROOKS — No. 7275 — LICENSED PROFESSIONAL ENGINEER

SIGNATURE

7275
P.E. NUMBER

10-3-2018
DATE

PROJ. MANAGER	XXXX	BY	DATE
DESIGN-DETAILED	BMC	BMC	JULY 2018
CHECKED-REVIEWED	CLS	ARB	JULY 2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
OVER BACK RIVER
BOOTHBAY — LINCOLN COUNTY

BORING LOGS

PREPARED BY: GZA

SHEET NUMBER 9 OF 132

Filename: ...\00\Geotech\MSTA\09_Logs.dgn Division: HIGHWAY Username: common Date:10/3/2018

Filename: ...\00\Geotech\MSTA\010_Logs.dgn Division: HIGHWAY Username: common Date:10/3/2018

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

Project: Barter's Island Bridge #2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-206 PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.)	-4.9	Auger ID/OD:	-
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	Truck Mobile B-53	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/20/17 - 06/20/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139455.6, E1496219.2	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		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; 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 = weight of rods; WO1P = 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.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	1D	14/0	0.0 - 1.2	WOR-WOR-50/3"			R/C		0'-1.3': No recovery. Roller bit to 2.0' and began to core.	
2.0	R1	60/60	2.0 - 7.0	RQD = 43%			NQ	-6.9	R1: Hard, discolored to slightly weathered, gray and light gray, coarse to very coarse grained, PEGMATITE. Joints are horizontal to steep, rough, undulating, very close to close, open to moderately wide. Brown sand and clay infilling, weathered to gravel from 3.7'-4.5' (feldspar, quartz, mica). Rock Mass Quality = Poor. Recovery = 100%. Rock Core Times (min:sec): 2.0-3.0 (2:30), 3.0-4.0 (2:27), 4.0-5.0 (2:20), 5.0-6.0 (2:24), 6.0-7.0 (2:40)	
7.0	R2	60/60	7.0 - 12.0	RQD = 50%					R2: Hard, fresh to discolored, gray and light gray to black, coarse to very coarse grained, PEGMATITE. Joints are horizontal to moderately dipping, rough, undulating, very close to close, open to wide. Sand infilling, discolored to moderately weathered. Fractured zone from 9.9'-10.3'. Rock Mass Quality = Poor. Recovery = 100%. Rock Core Times (min:sec): 7.0-8.0 (2:21), 8.0-9.0 (1.56), 9.0-10.0 (2:05), 10.0-11.0 (2:18), 11.0-12.0 (2:35)	
12.0								-16.9	Bottom of Exploration at 12.00 feet below ground surface.	

Remarks:
1. Drove 3" casing to 2.0' below mudline.

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-BTBR-206

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

Project: Barter's Island Bridge #2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-207 PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.)	-25.6	Auger ID/OD:	-
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	CME 45	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/20/17 - 06/20/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139453.0, E1496292.9	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions: (as above)

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.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	1D	24/4	0.0 - 2.0	7-4-1-0	5	0	R/C		Brown, wet, loose, medium to coarse SAND, poorly graded, little organics (shells), trace glass fragments. (SP)	
5.0	R1	18/18	5.0 - 6.5	RQD = 0%			NQ	-30.6	R1: Medium hard, gray and dark gray, medium to coarse grained, GNEISS. Joints are weathered, high angle, rough, undulating, planar, very close to close, open to wide; greenish gray silty infilling, moderately weathered. Rock Mass Quality = Very Poor. Recovery = 100%. Rock Core Times (min:sec): 5.0-6.0 (2:20), 6.0-6.5 (1:50)	
	R2	21/18	6.5 - 8.3	RQD = 43%					R2: Medium hard, greenish gray to dark gray, medium to coarse grained, GNEISS. Joints are moderately weathered, low angle to high angle, smooth to rough, planar, undulating, very close to close, open to wide; silt and coarse sand infilling, moderately weathered. Rock Mass Quality = Poor. Recovery = 86%. Rock Core Times (min:sec): 6.5-7.0 (1:12), 7.0-8.0 (3:18), 8.0-8.3 (2:00)	
	R3	43/43	8.3 - 11.9	RQD = 33%					R3: Medium to hard, moderately weathered, greenish gray and dark gray, medium to very coarse grained, GNEISS. Joints are with zones of coarse grained, steep to low angle, rough to smooth, undulating to planar, very close to close, open to wide. Rock Mass Quality = Poor. Recovery = 100%. Rock Core Times (min:sec): 8.3-9.0 (1:15), 9.0-10.0 (3:20), 10.0-11.0 (2:20), 11.0-11.9 (3:00)	
	R4	17/14	11.9 - 13.3	RQD = 0%					R4: Greenish gray and dark gray, medium to very coarse grained, GNEISS. Joints are very high angle, smooth, rough, undulating, very close. Gray silt infilling. Rock Mass Quality = Very Poor. Recovery = 82%. Rock Core Times (min:sec): 11.9-12.0 (0:10), 12.0-13.0 (1:46), 13.0-13.3 (3:00)	
13.3								-38.9	Bottom of Exploration at 13.30 feet below ground surface.	

Remarks:
1. Mudline at El -25.6'.

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 mecsurements were made.

Page 1 of 1 Boring No.: BB-BTBR-207

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

Project: Barter's Island Bridge #2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-208A PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.)		Auger ID/OD:	-
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	CME 45	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/21/17 - 06/21/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:		Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions: (as above)

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.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	1D	24/24	0.0 - 2.0	WOR-WOR-WOR-WOR			SS		Blue gray, wet, very soft, SILT & CLAY, trace fine Sand, trace organics (shells), slightly (medium) plastic. (ML)	
2.0								-2.0	Bottom of Exploration at 2.00 feet below ground surface.	

Remarks:
1. Current pushed drill off location after first sample interval. Reset barge and began new hole.

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-BTBR-208A

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

Project: Barter's Island Bridge #2039 Over Back River
Location: Boothbay, Maine

Boring No.: BB-BTBR-208 PIN: 22607.00

Driller:	New England Boring Contractors	Elevation (ft.)	-26.3	Auger ID/OD:	-
Operator:	Brad Enos	Datum:	NAVD 88	Sampler:	Split Spoon
Logged By:	E. Friede	Rig Type:	CME 45	Hammer Wt./Fall:	140/30
Date Start/Finish:	06/21/17 - 06/21/17	Drilling Method:	Drive & Wash	Core Barrel:	NQ Wireline
Boring Location:	N139406.1, E1496353.4	Casing ID/OD:	3"	Water Level *:	Tidal
Hammer Efficiency Factor:		Hammer Type:	Automatic ☐ Hydraulic ☐ Rope & Cathead ☒		

Definitions: (as above)

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.)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Advanced boring to 4.0' below mudline; see BB-BTBR-208(A) for drilling details.	
4.0	S1	24/24	4.0 - 6.0	WOR-WOR-WOR-WOR			R/C	-30.3	Blue-gray, wet, very soft, SILT & CLAY.	
	2D	24/24	9.0 - 11.0	WOR-WOR-WOR-WOR					Blue-gray, wet, very soft, SILT & CLAY, some fine Sand.	
13.2								-39.5	-WEATHERED ROCK-	
14.0	R1	15/13	14.0 - 15.3	RQD = 0%			NQ	-40.3	R1: Hard, slightly weathered, light g ray, weathered, coarse grained, PEGMATITE. Joints are low angle to moderately dipping, rough, undulating, very close, open to wide. Coarse sand and gray clay infilling, moderately weathered. Rock Mass Quality = Very Poor. Recovery = 86%. Rock Core Times (min:sec): 14.0-15.0 (2:09), 15.0-15.3 (1:00)	
	R2	44/15	15.3 - 19.0	RQD = 0%					R2: Hard, moderately weathered, gray and dark gray, coarse grained, PEGMATITE. Joints are moderately dipping, rough, undulating, stepped, very close, open to wide. Sand and light gray clay infilling (possible weathered material). Moderately weathered. Rock Mass Quality = Very Poor. Recovery = 34%. Rock Core Times (min:sec): 15.3-16.3 (2:13), 16.3-17.3 (2:16), 17.3-18.3 (2:20), 18.3-19.0 (2:04)	
	R3	15/12	19.0 - 20.3	RQD = 0%					R3: Hard, moderately weathered, gray and light gray, coarse grained, PEGMATITE. Joints are moderately dipping to steep, rough, undulating, very close, wide. Light gray clay and coarse sand infilling. Joints highly weathered. Rock Mass Quality = Very Poor. Recovery = 80%. Rock Core Times (min:sec): 19.0-20.0 (1:58), 20.0-20.3 (2:06)	
	R4	34/25	20.3 - 23.1	RQD = 12%					R4: 20.3'-21.6': Hard, discolored, gray to light gray, coarse to very coarse grained, PEGMATITE. Joints are low angle to moderately dipping, rough, undulating, very close to close, open to wide. Coarse sand and gray clay infilling. Rock Mass Quality =Very Poor. Recovery = 74%. Rock Core Times (min:sec): 20.3-21.0 (1:30), 21.0-22.0 (2:10), 22.0-23.0 (3:00), 23.0-23.1 (2:20)	
21.6								-47.9	R4: 21.6'-23.1: Highly weathered zone. Weathered to gray clay, coarse sand, and rock fragments.	
23.1	R5	42/42	23.1 - 26.6	RQD = 36%				-49.4	R5: 23.1'-24.8': Hard, discolored, dark to light gray, medium to very coarse, GNEISS. Joints are low angle to moderately dipping, rough, stepped, planar, very close to close, partially open to moderately wide. Trace gray clay infilling at interface (24.8'). R5: 24.8'-26.6': Hard, discolored, gray to light gray, coarse to very coarse, PEGMATITE. Joints are moderately dipping to high angle, rough, undulating, close to very close, partially open to wide. Gray clay infilling at 24.8' interface. Highly fractured zone from 25.7'- 26.1'. Rock Mass Quality = Poor. Recovery = 100%. Rock Core Times (min:sec): 23.1-24.0 (2:18), 24.0-25.0 (2:30), 25.0-26.0 (2:24), 26.0-26.6 (2:10)	
26.6								-52.9	Bottom of Exploration at 26.60 feet below ground surface.	

Remarks:
1. Advanced rollerbit from 13.2' to 14.0', begin core.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
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Page 1 of 1 Boring No.: BB-BTBR-208

PREPARED BY: GZA

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN 22607.00
BRIDGE NO. 2039
BRIDGE PLANS

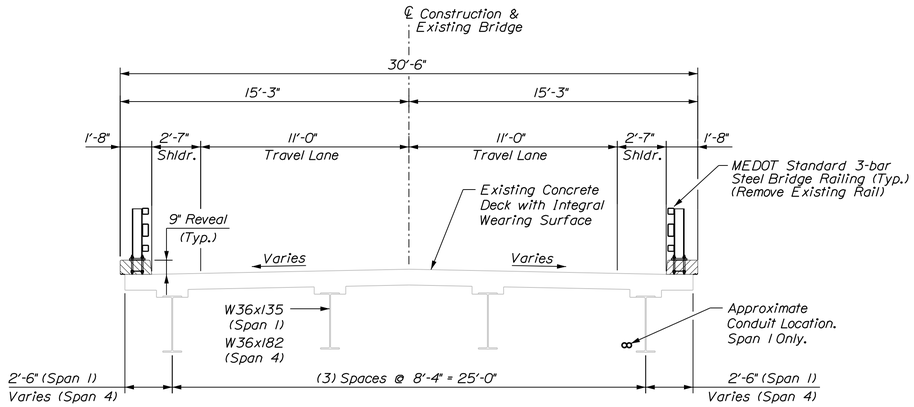
CHRISTOPHER L. SNOW No. 7275 — STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER
SIGNATURE
P.E. NUMBER 7275
DATE 10-3-2018

	XXXX	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	BMC	BMC	JULY 2018
CHECKED-REVIEWED	CLS	ARB	JULY 2018
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
OVER BACK RIVER
BOOTHBAY LINCOLN COUNTY

BORING LOGS

SHEET NUMBER 10 OF 132



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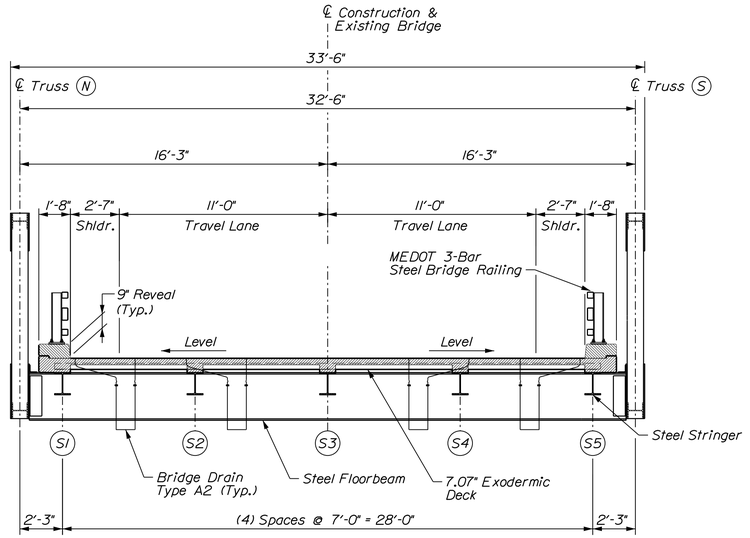

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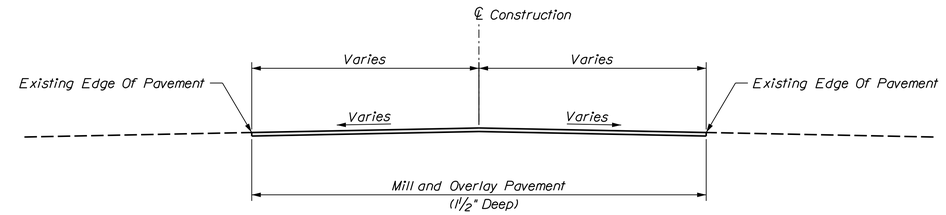

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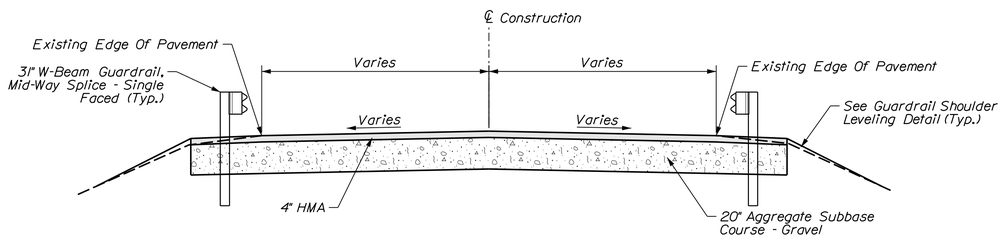

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FULL DEPTH CONSTRUCTION SECTION

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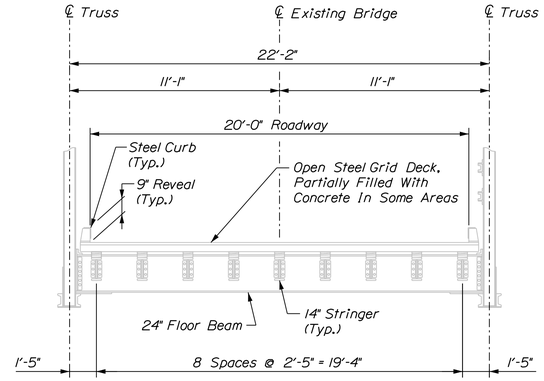

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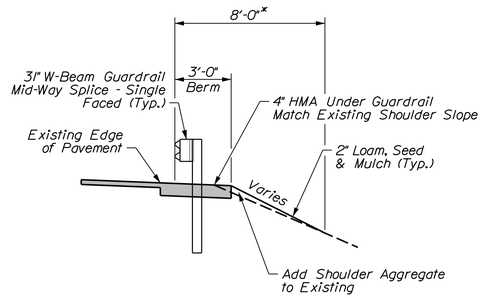

GUARDRAIL SHOULDER LEVELING

Sta. 103+12.53 To Sta. 103+86.31
Sta. 106+69.51 To Sta. 107+30.69

* - 3'-0" Sta. 103+54.4, LT
To Sta. 103+86.5, LT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK
No. 10075
STATE OF MAINE
REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	T. AGUILAR	
DESIGN2-DETAILED2	T. MCAULIFFE	10-19-18
DESIGN3-DETAILED3	B. COLBURN	
DESIGN3-DETAILED3	S. OZANA	10-19-18
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

TYPICAL SECTIONS

SHEET NUMBER
11
OF 132

McFarland Johnson

Filename: Division: Username: Date:10/19/2018

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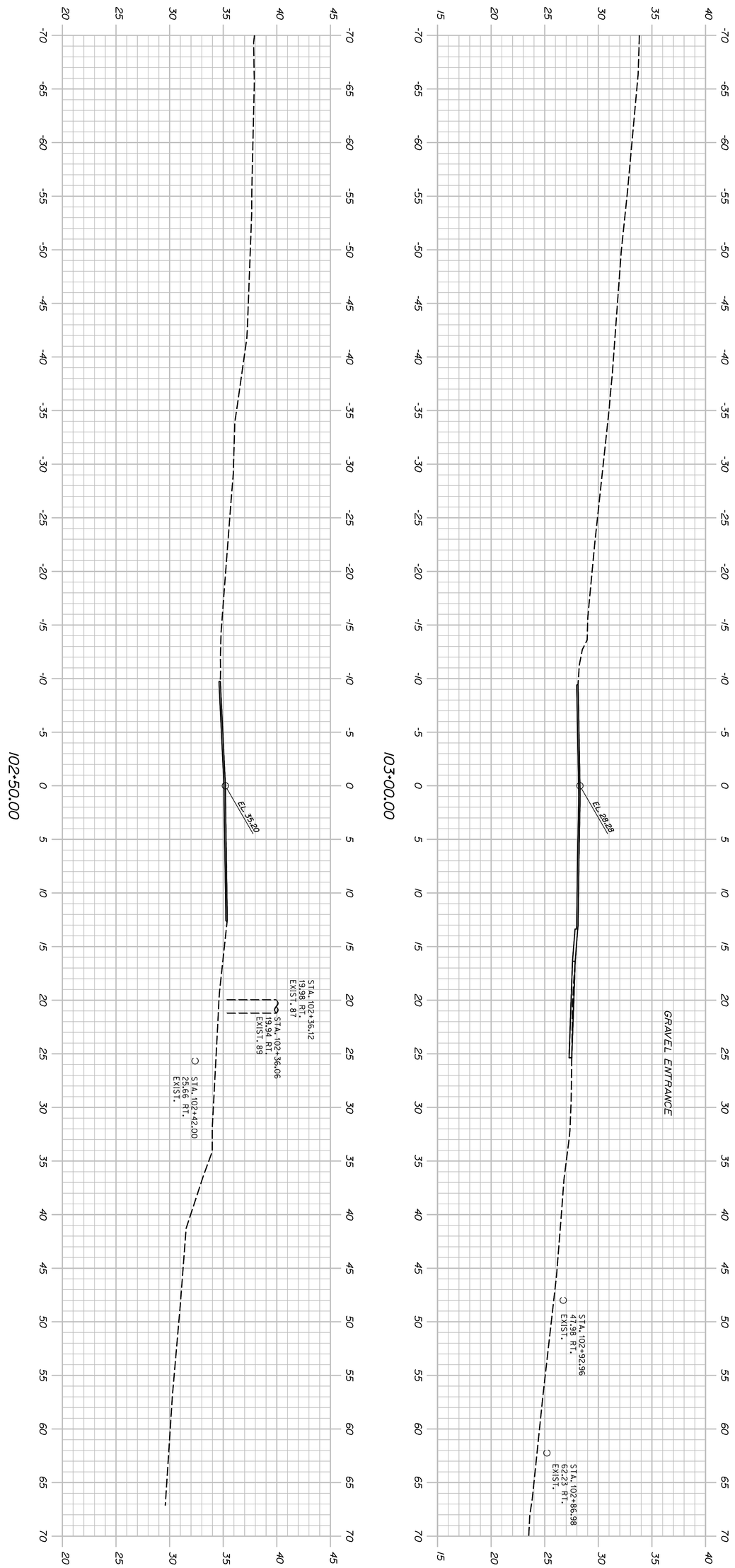


BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

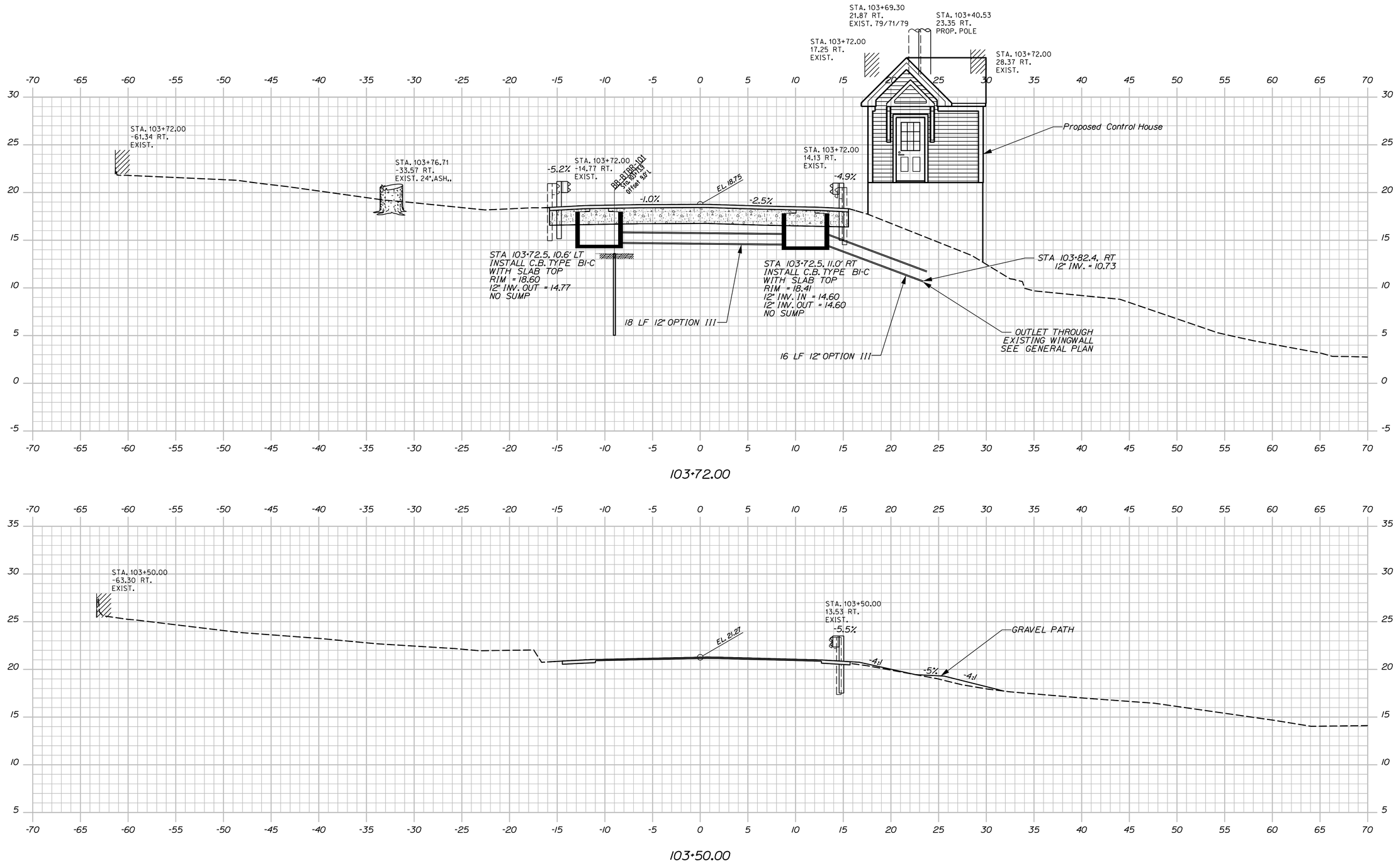
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

SHEET NUMBER 12 OF 132



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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — THOMAS T. KENDRICK — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick — SIGNATURE
10075 — P.E. NUMBER
10/19/2018 — DATE

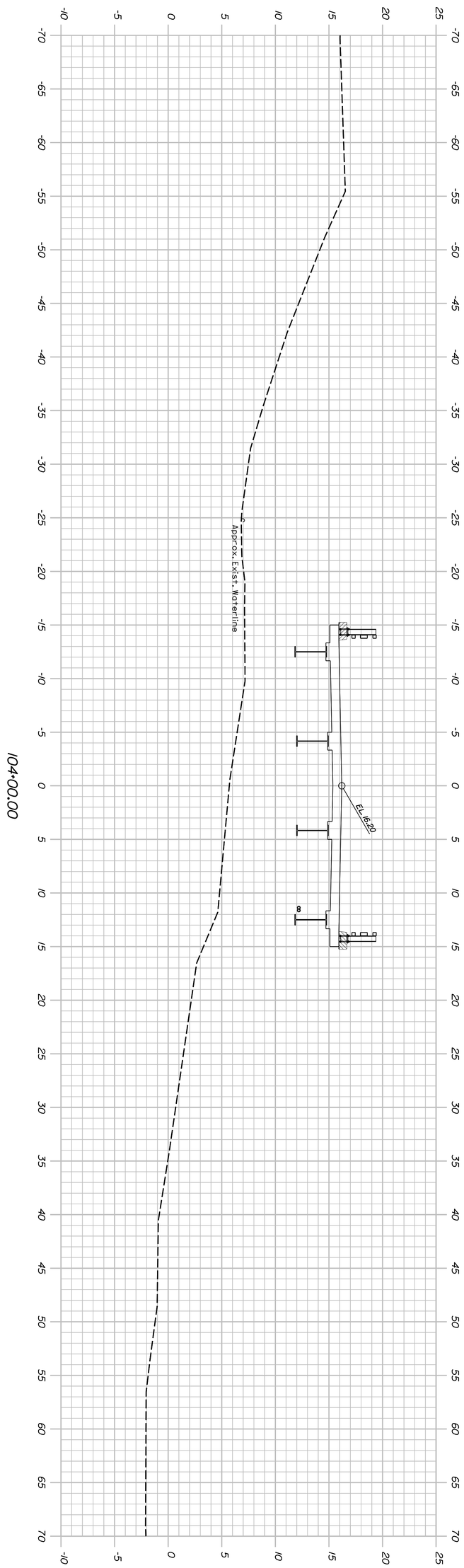
			DATE
PROJ. MANAGER	L. TIMBERLAKE	BY	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

CROSS SECTIONS

SHEET NUMBER
13
OF 132

Sta. 104+00.00 to Sta. 104+00.00



BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

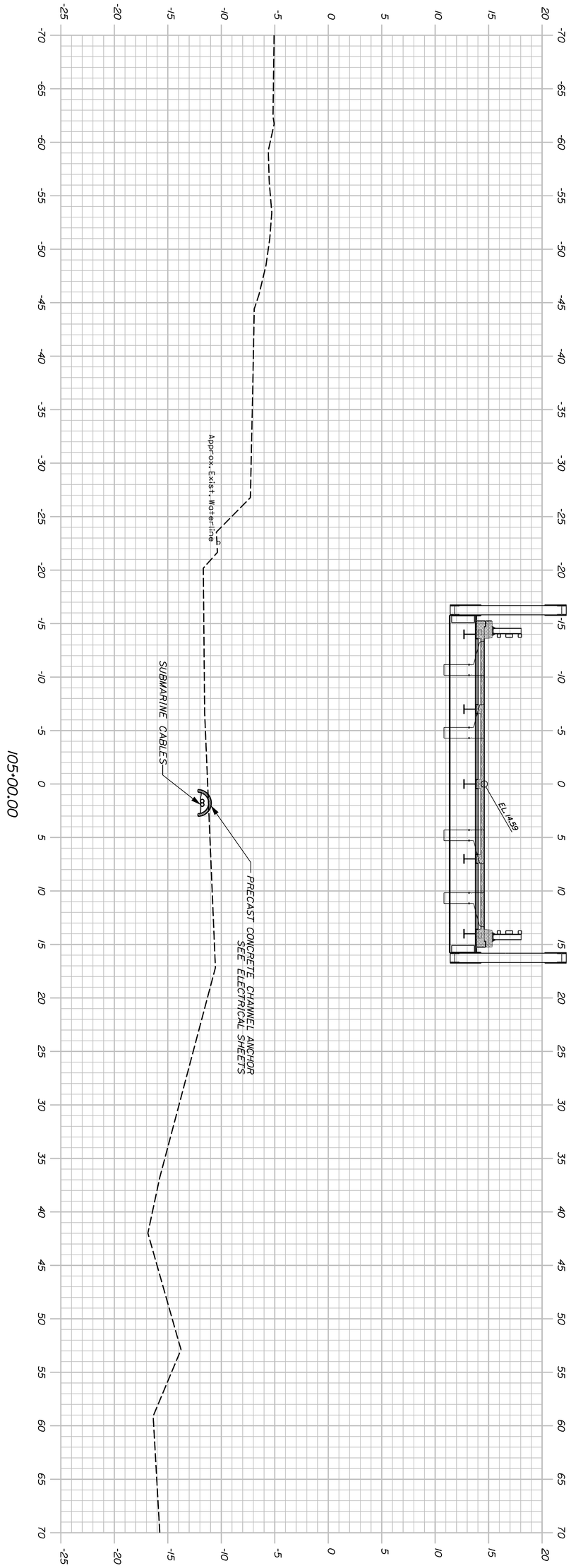
STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

SHEET NUMBER 14 OF 132

Sta. 105+00.00 to Sta. 105+00.00



BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

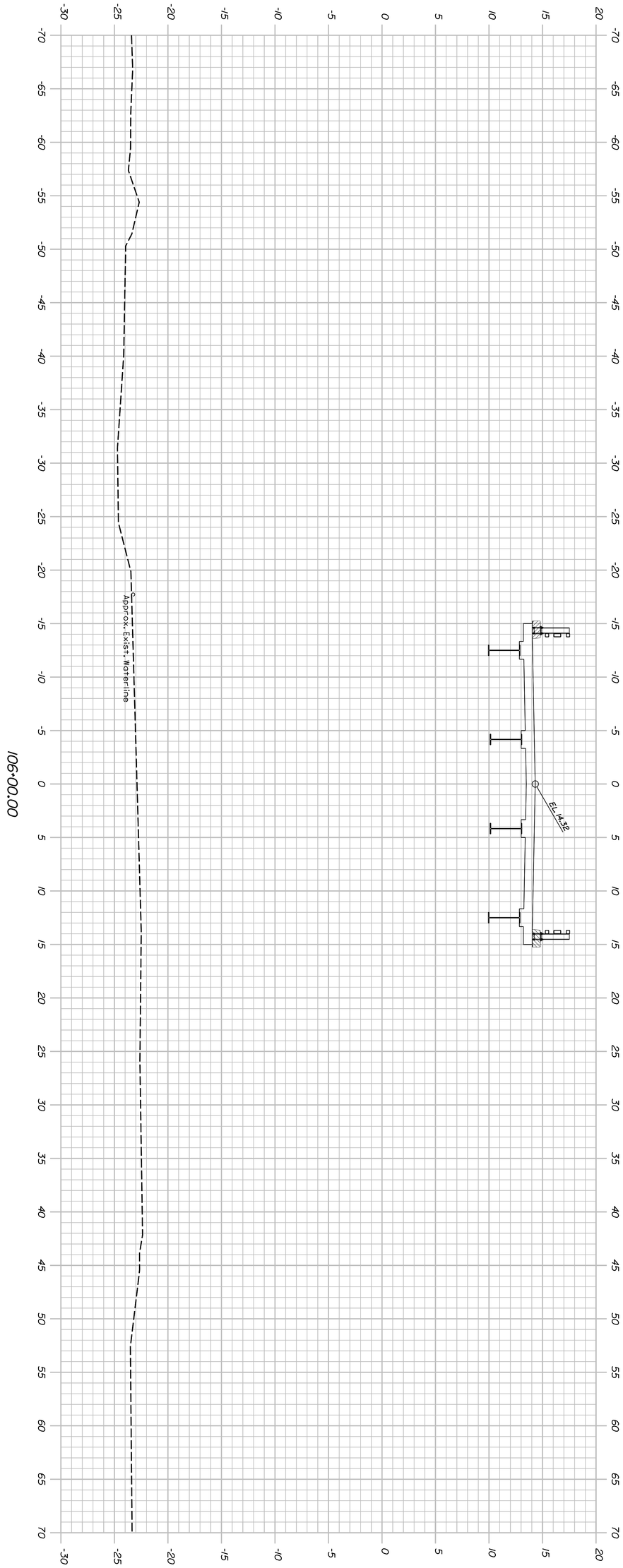
STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

SHEET NUMBER 15 OF 132

Sta. 106+00.00 to Sta. 106+00.00



BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

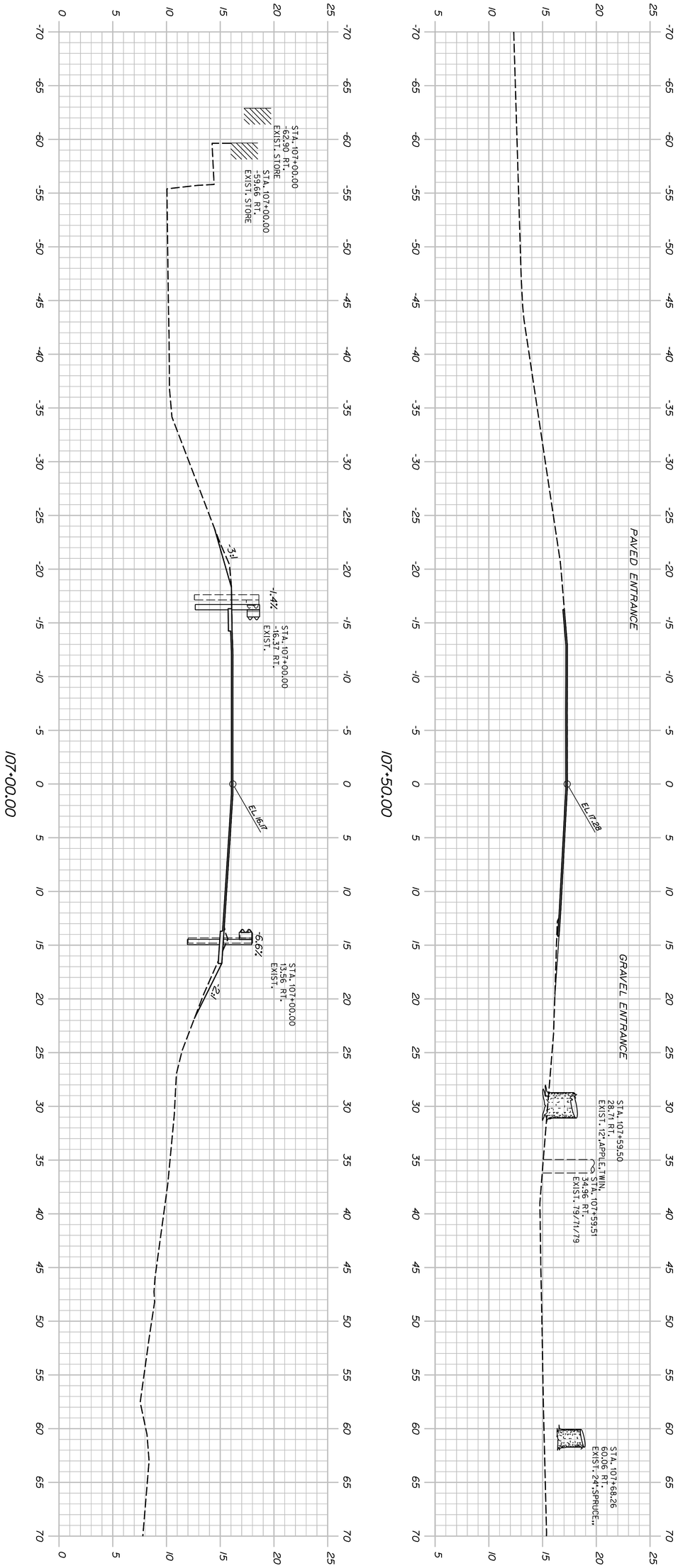
STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

SHEET NUMBER 16 OF 132

Sta. 107+00.00 to Sta. 107+50.00



PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

SHEET NUMBER 17 OF 132

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

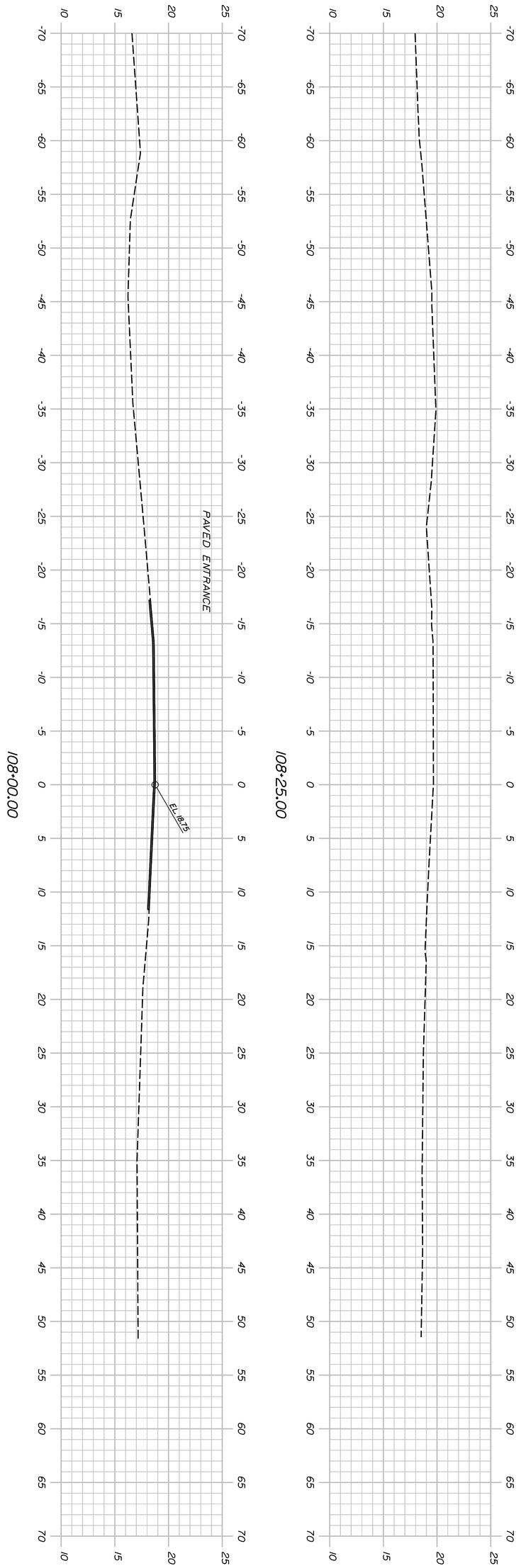
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

Sta. 108+00.00 to Sta. 108+25.00



BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CROSS SECTIONS

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

THOMAS T KENDRICK No. 10075 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

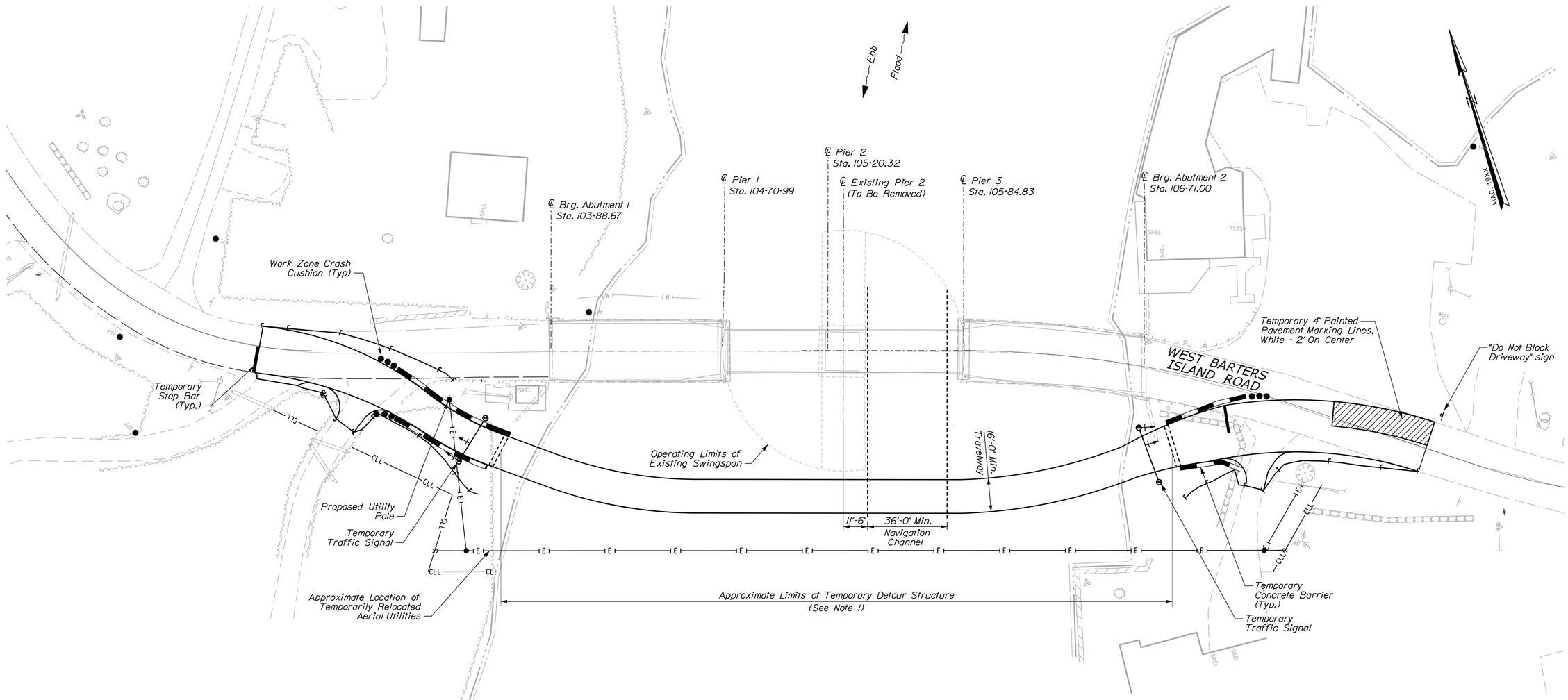
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

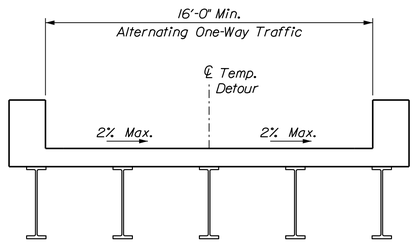
STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

SHEET NUMBER 18 OF 132





TEMPORARY DETOUR STRUCTURE
TYPICAL SECTION
(NOT TO SCALE)

PLAN

25 0 25 50
Scale in Feet

Notes:

1. The Special Detour is shown for general illustrative purposes only. The actual location, design, and layout shall be determined by the Contractor.
2. The Temporary Traffic Signals shall be set according to MUTCD Part 4 "Highway Traffic Signals" Chapter 4H, Section 4D.32, and Part 6 "Temporary Traffic Control" Section 6F.84.
3. The temporary detour Structure shall provide for a minimum vertical clearance over the navigation Channel of 6.77 ft. above the Mean High Water elevation.
4. The temporary detour Structure shall be located so that the existing swing span can remain operational.

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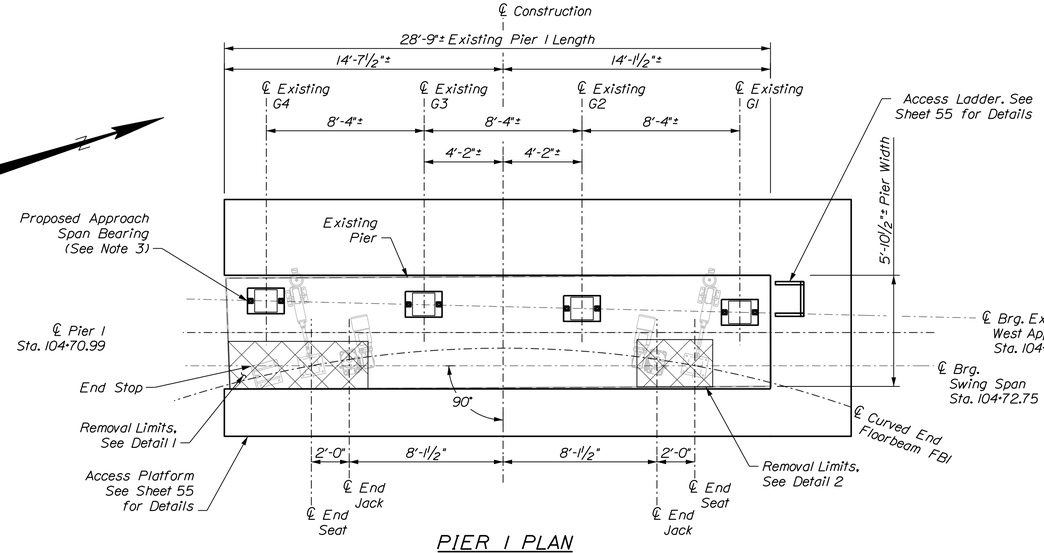
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

TEMPORARY DETOUR PLAN

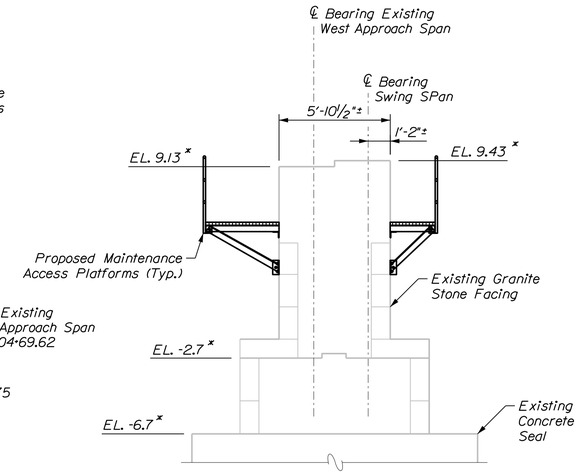
SHEET NUMBER
19
OF 132

Username:
Date:10/19/2018
Division:
Filename: ...\Drawings\020_Detour_Plan.dgn



PIER 1 PLAN

(Truss, bracing, stringers, and deck not shown for clarity)

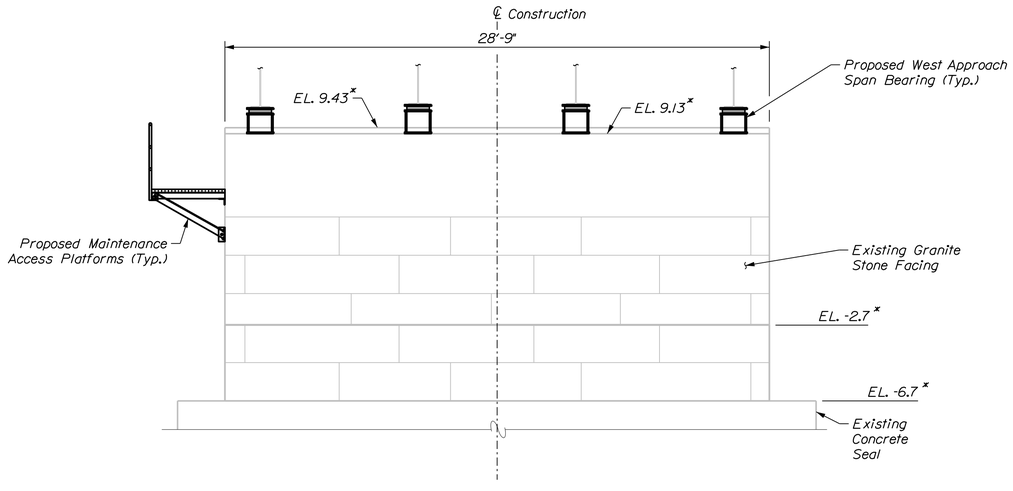


PIER 1 - SOUTH ELEVATION

x - See Note 1

PIER MODIFICATION NOTES

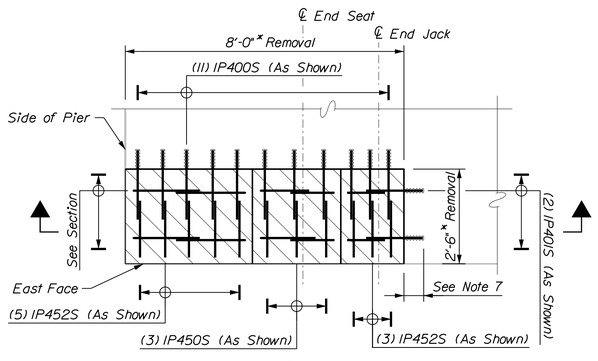
1. Existing pier dimensions and elevations are taken from limited survey data, existing plans, and subsequent rehabilitation plans. It is the responsibility of the Contractor to field verify all dimensions and elevations and to be prepared to make adjustments required to complete the work.
2. The ℄ Bearing for the Approach Span is an interpreted line from survey data. The proposed bearings shall be placed in the locations of the existing bearings.
3. Removal limits shown are approximate. Contractor shall coordinate removal limits with the details shown on Mechanical sheets MI5, MI7, and M20, and the shop fabrication details in order to achieve the desired top of concrete elevation.
4. For all pier removals, the minimum depth of concrete cast after cutting is 7¾".
5. Minimum clear cover is 3".
6. All reinforcing bars shall be size #4, stainless steel.
7. Embed rebar per adhesive manufacturer's recommendations. It is the responsibility of the Contractor to adjust the bar length accordingly.
8. Concrete formed and poured shall be paid for under Pay Item 502.23. Reinforcement Bars shall be paid for under Pay Items 503.26 and 503.27.
9. No separate payment will be made for drilling and anchoring of reinforcing steel, but shall be incidental to the related contract item.
10. Existing reinforcement shall be retained. The Contractor shall use care not to damage the existing reinforcing steel. Any damaged reinforcing steel shall be replaced as directed by the Resident at no expense to the Department. Refer to Standard Specifications Section 518 for requirements related to existing reinforcement retained in the piers.
11. Where the anchor bolts required for the mechanical components conflict with existing or proposed reinforcement, the reinforcement shall either be bent or adjusted. Where this is not possible, the Contractor may cut the reinforcement and shall replace it in kind, as directed by the Resident.
12. Where drilling and anchoring of reinforcing is required, the Contractor shall use materials listed on the Maine Department of Transportation Qualified Products List of Concrete Adhesive Anchoring Systems.



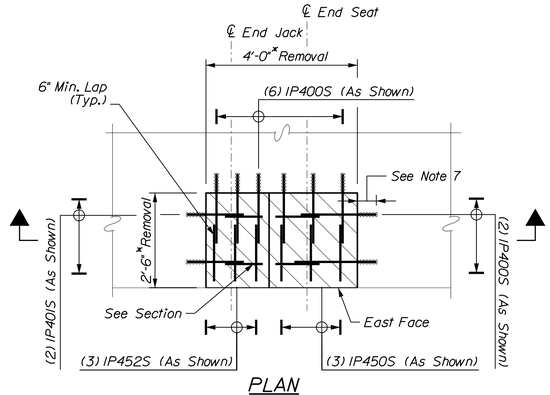
PIER 1 ELEVATION

(Looking East)

x - See Note 1



PLAN DETAIL 1



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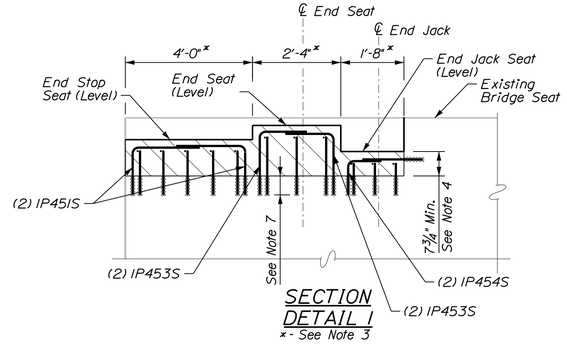
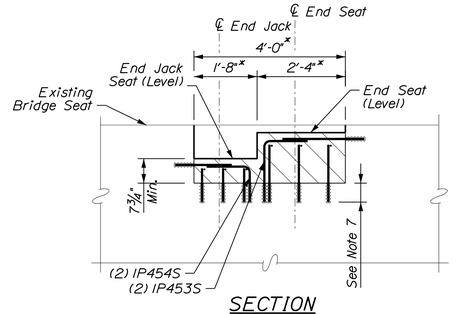


SECTION DETAIL 1

x - See Note 3



SECTION DETAIL 2

x - See Note 3

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STATE OF MAINE
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STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

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Thomas T. Kendrick
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10075
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10/19/2018
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DESIGN3-DETAILED3	

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FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

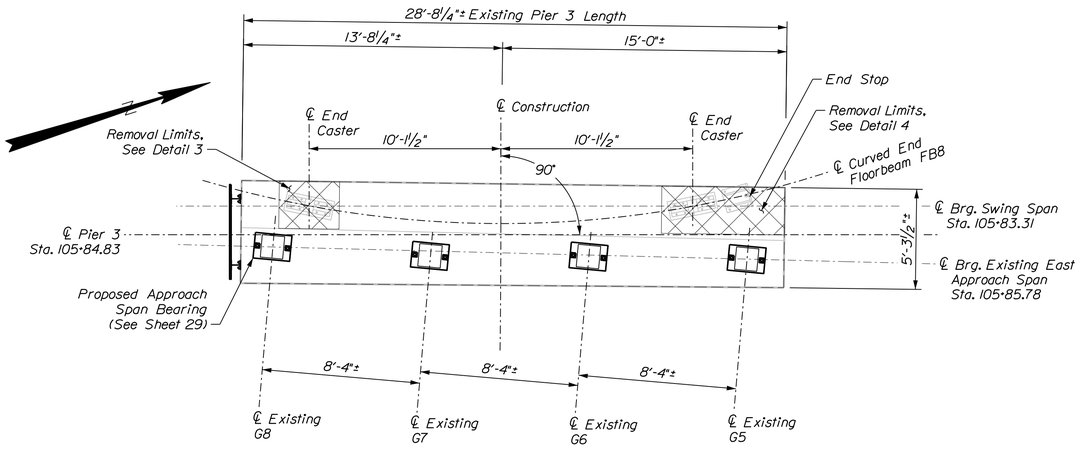
PIER 1 MODIFICATION DETAILS

SHEET NUMBER

20

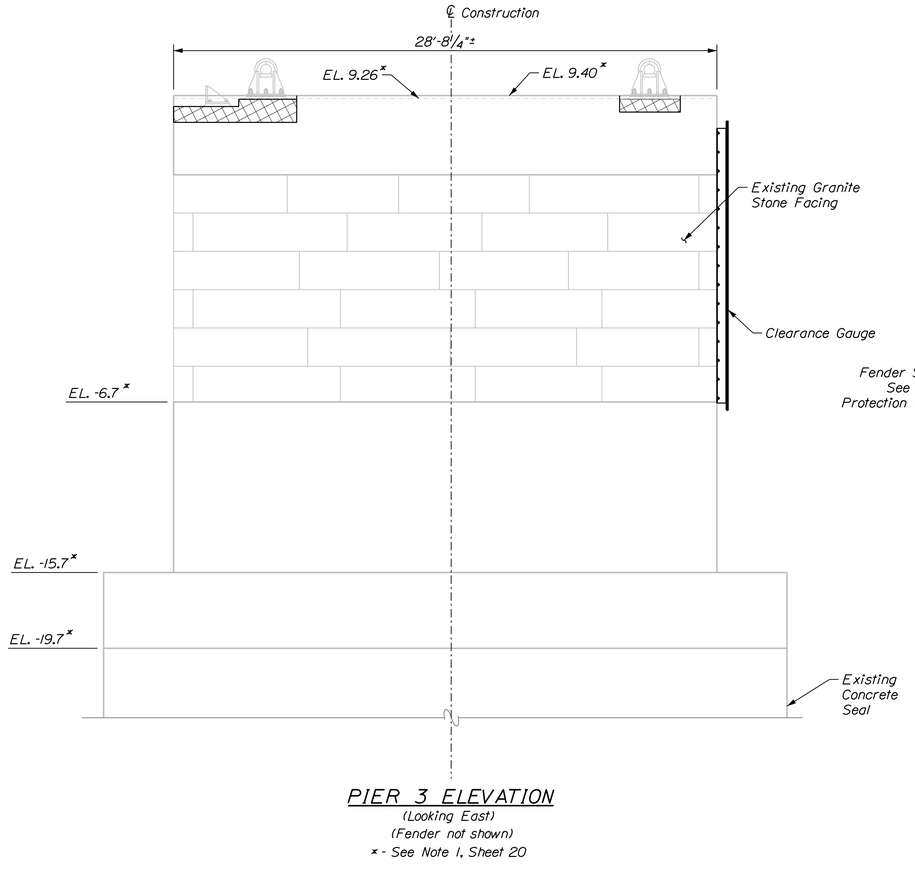
OF 132

Filename: ...\Drow\Drawings\022_Pier_1.dgn Division: Username: Date:10/19/2018



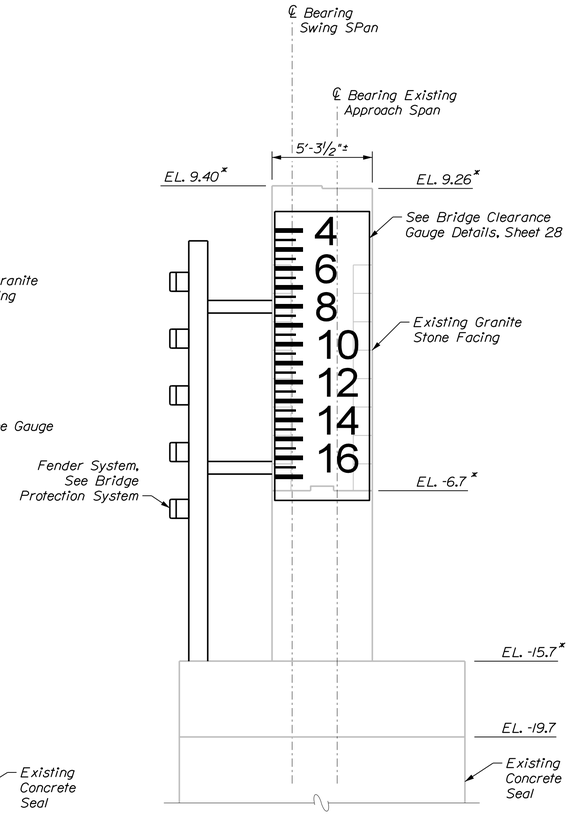
PIER 3 PLAN

(Fender system, truss, bracing, stringers, and deck not shown for clarity)



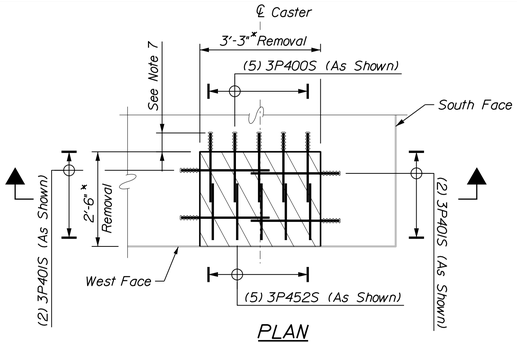
PIER 3 ELEVATION

(Looking East)
(Fender not shown)
* - See Note 1, Sheet 20

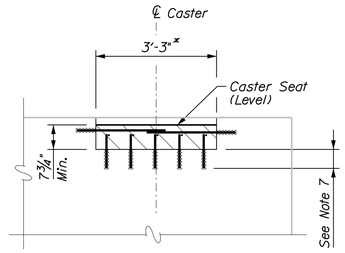


PIER 3 SOUTH ELEVATION

* - See Note 1, Sheet 20



PLAN DETAIL 3



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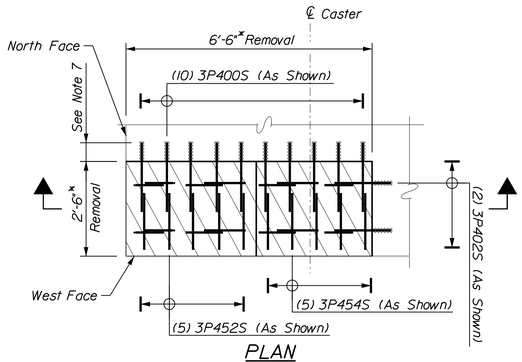
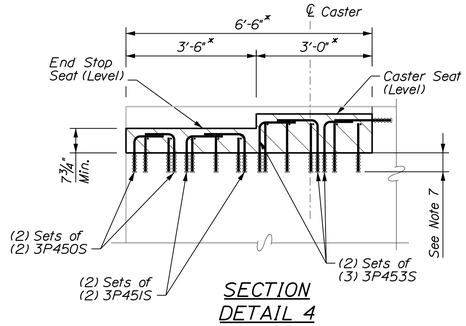
* - See Note 3, Sheet 20



PLAN DETAIL 4



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* - See Note 3, Sheet 20

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STATE OF MAINE
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WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
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DESIGN3-DETAILED3	

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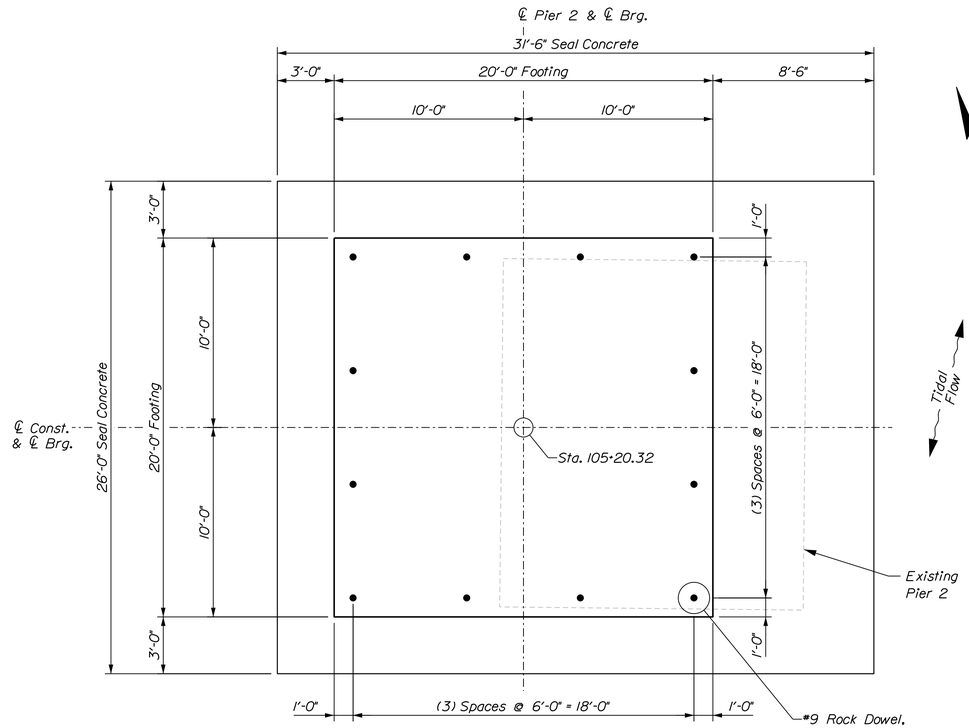
REVISIONS 3	S. OZANA	10-19-18
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

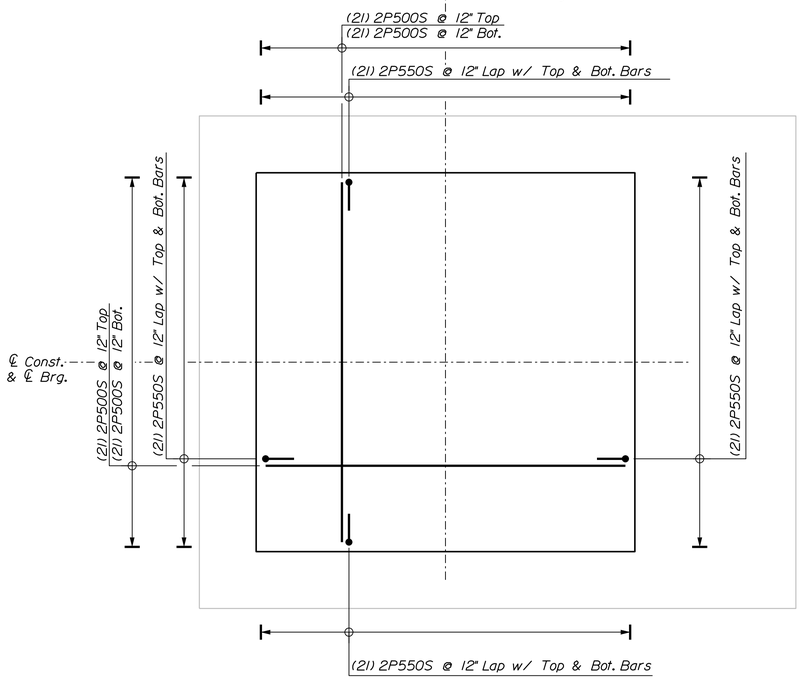
PIER 3 MODIFICATION DETAILS

SHEET NUMBER
21
OF 132

Filename: ...\Drow\Drawings\023_Pier_3.dgn Division: Username: Date:10/19/2018



FOOTING & SEAL PLAN



FOOTING REINFORCEMENT PLAN

For reinforcing into column see Pier 2 Reinforcment sheet or Precast Column Alternate sheets.

ROCK DOWEL NOTES:

1. *Rock dowels shall project into the footing a mininimum of 2'-0" and shall be grouted into bedrock a minimum of 3'-0".*
2. *Rock dowels shall be stainless steel #9 deformed bars conforming to ASTM A955, with a minimum yield strength of 75 ksi.*
3. *Dowels shall be installed in a minimum of 3-inch diameter drilled hole and grouted.*
4. *Grout shall have a minimum 28-day compressive strength of 5000 psi and a maximum water cement ratio of 0.45.*
5. *Rock dowels shall be paid for as a Lump Sum, Item No. 504.906 - Rock Dowels. Payment for Rock Dowels shall include compensation for providing all materials, equipment, personnel, labor, tools, mobilization/demobilization costs and incidental items necessary to complete the dowel installation.*

PIER 2 DESIGN CRITERIA:

1. *Critical AASHTO Load Combination:*
   Maine Modified Strength 1 with Ice
   Extreme Event II with Ice
2. *Buoyancy: Q1.1 - Water level at EL. 4.23*
   Q50 - Water level at EL. 9.5
3. *Stream flow: Q1.1 - Velocity of 5 fps*
   Q50 - Velocity of 5 fps, applied 20 degrees to longitudinal centerline of pier. Debris loading accounted for by increasing exposed surface area of pier by 25%.
4. *Wind: 115 mph*
5. *Ice: Q1.1 - Thickness 0'-6", pressure 30.7 ksf*
   (1'-0" thickness at Extreme Event II)
   Q50 - Thickness of 0'-6", pressure 15.3 ksf
   (1'-0" thickness at Extreme Event II)
   30% of nose force applied transverse to pier.
6. *Scour: Q100 - Water level at El. 9.9*
   Scour depth assumed at El. -21.5
7. *Vessel Collision:*
   Deadweight Tonnage - 25 Tonnes
   Velocity of 8.78 fps
   Water Level at El. 4.23

PIER NOTES:

1. *The maximum factored applied footing pressure is 19 ksf. (Extreme Event II with Ice)*
2. *The maximum factored applied seal pressure is 17.8 ksf. (Strength 1 with Ice)*
3. *Reinforcing steel shall have a minimum concrete cover of 3 inches in the footing and 2 inches in the cap and column unless otherwise noted.*
4. *The bedrock will vary in nature, slope, and degree of fracturing. Bedrock elevations shown are estimated based on the boring information. Actual rock elevations may vary. After the foundation excavations are completed and all unsound bedrock removed, the Contractor shall survey the foundation bedrock and provide the exact bedrock elevations to the Resident for review and approval by the Engineer.*
5. *If the bedrock elevations vary from the elevations assumed in the development of the plan set, the pier may need to be modified. The Contractor shall grant the Department seven (7) Calendar Days to modify the plans from the date the Resident accepts the bedrock survey.*
6. *Pier seal concrete shall be placed on bedrock cleaned of all loose, weathered or fractured rock and loose soil. Cofferdam excavation inspection shall be the responsibility of the Contractor and shall be conducted in accordance with Special Provision 511 Cofferdams*
7. *Bedrock which protrudes above a horizontal plane 12 inches below the proposed footing elevation shall be removed. Payment for bedrock removal will be made under Item No. 206.11, Structural Rock Excavation - Piers.*
8. *Refer to Special Provisions for mass concrete pour requirements for Cast-in-Place Pier Column Alternate.*
9. *The Contractor may adjust reinforcing steel in the cap, corbels, and center bearing pedestal as required to allow for the precise installation of the anchor bolts. All adjustments made shall be approved and verified by the Resident.*

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. *In no case shall the sheet piling protrude into the navigation channel.*
5. *The depth of the seal to bedrock is set for a maximum water elevation of 4.62. At this water elevation, in order to provide sufficient resistance to buoyancy, the top of seal elevations require that the average bottom of seal elevation be below or equal to EL. -23.0. If the water elevation at the time of construction is higher or the elevation of the bottom of seal differs from the elevations noted, notify the Resident immediately.*
6. *If the average elevation of the bottom surface of the seal exceeds the respective limits, the pertinent information shall be forwarded to the Resident for new seal depth design. The Contractor shall adequately vent the cofferdams to ensure the maximum water surface elevation remains at 4.62 feet or below.*
7. *Each seal shall be cored full depth in at least three (3) locations to ensure that the seal was satisfactorily placed. The final core run shall sample the concrete/bedrock interface and extend at least one foot into the bedrock. Holes drilled for dowels may be acceptable to confirm seal placement provided these are cored as described herein. These locations will be approved by the Resident. Seal concrete core samples will be a minimum of 3 inches O.D., be adequately stored in boxes and each core run labeled. In the event that voids or any other defects are found, the Contractor shall correct the defects in a manner approved by the resident. For each core that reveals a void or defect, two additional cores shall be taken after repairs are made. One of the two additional cores shall be taken in approximately the same location as the original core. The other core will be located by the Resident. All core holes shall be refilled using a non-shrink grout. The cost of all coring and repairs will be considered incidental to "Structural Concrete Piers (Placed Under Water)".*

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Thomas T. Kendrick

SIGNATURE

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BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

PIER 2
FOOTING & SEAL PLAN

SHEET NUMBER

22

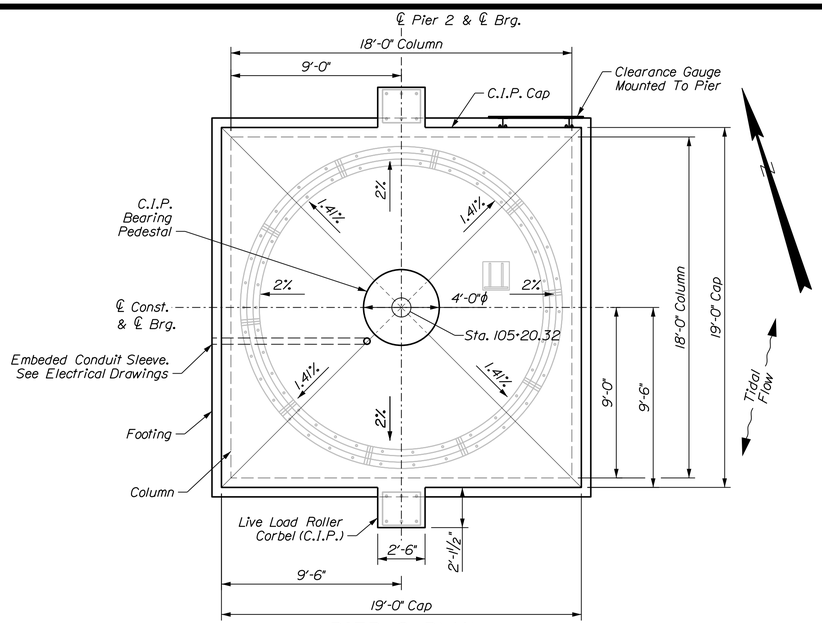
OF 132

Date:10/19/2018

Username:

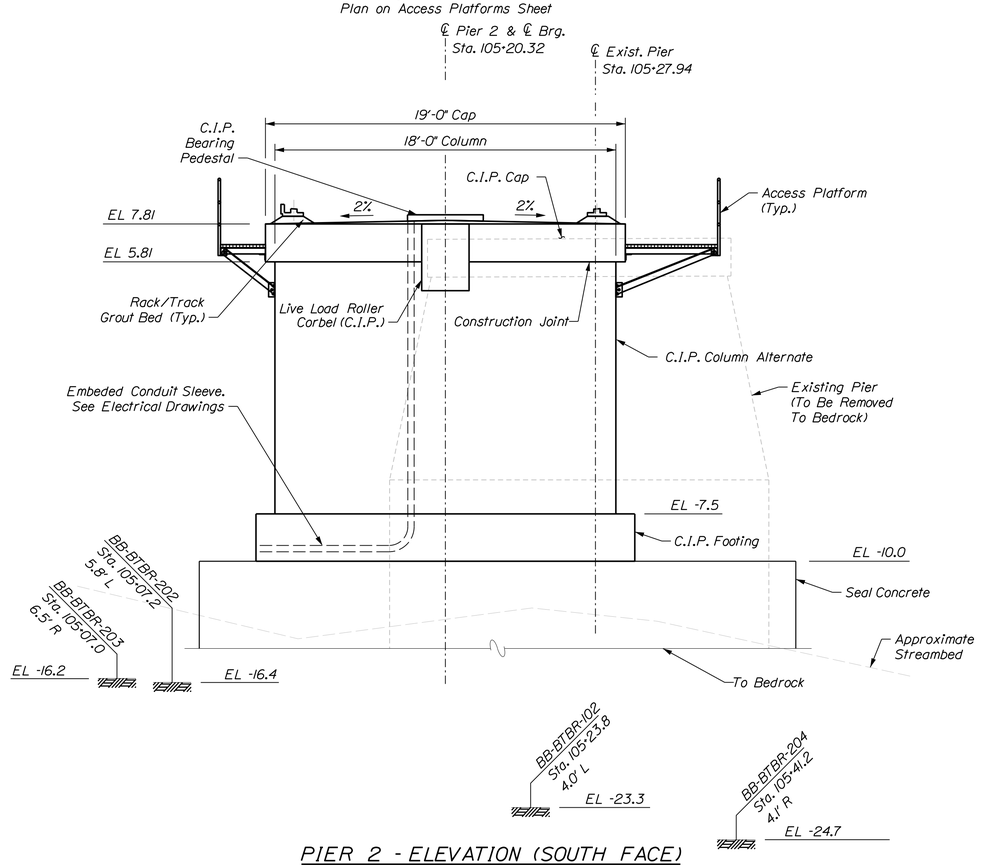
Division:

Filename: ...\024_Pier2_FootandSeal.dgn



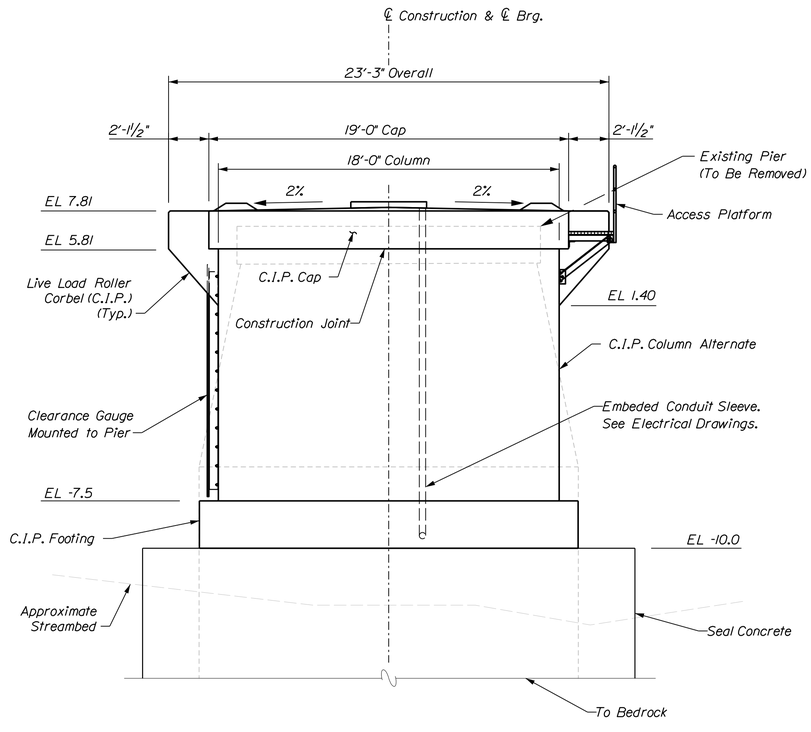
PIER 2 PLAN

Note: Access Platforms not shown for clarity. See Access Platform Plan on Access Platforms Sheet



PIER 2 - ELEVATION (SOUTH FACE)

Note: Bearing pedestal thickness may vary in order to achieve the required finished machinery elevations.



PIER 2 - ELEVATION (WEST FACE)

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BARTERS ISLAND BRIDGE
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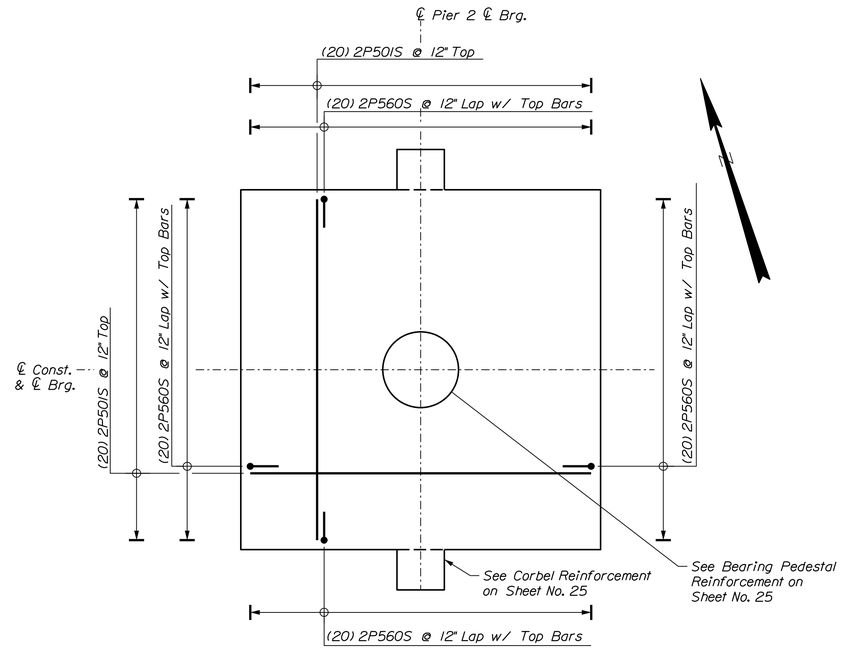
BOOTHBAY LINCOLN COUNTY

PIER 2 PLAN & ELEVATIONS

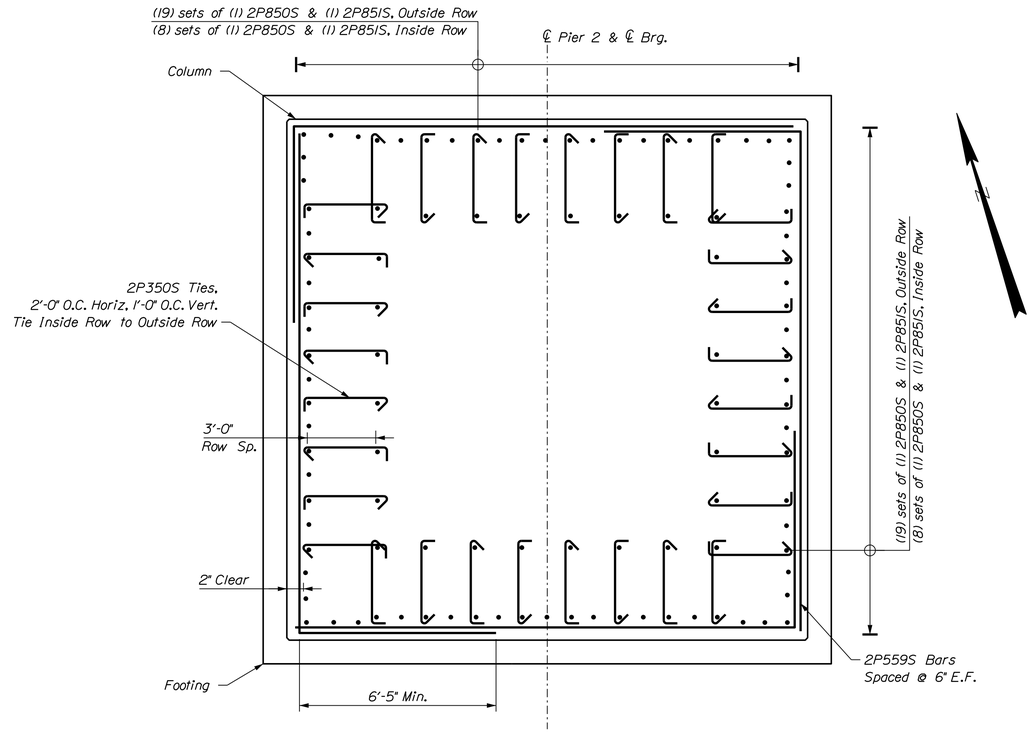
SHEET NUMBER
23
OF 132

McFarland Johnson

Filename: ...\Drawings\025_Pier2_Plan.dgn Division: Username: Date:10/19/2018



PIER 2 CAP PLAN



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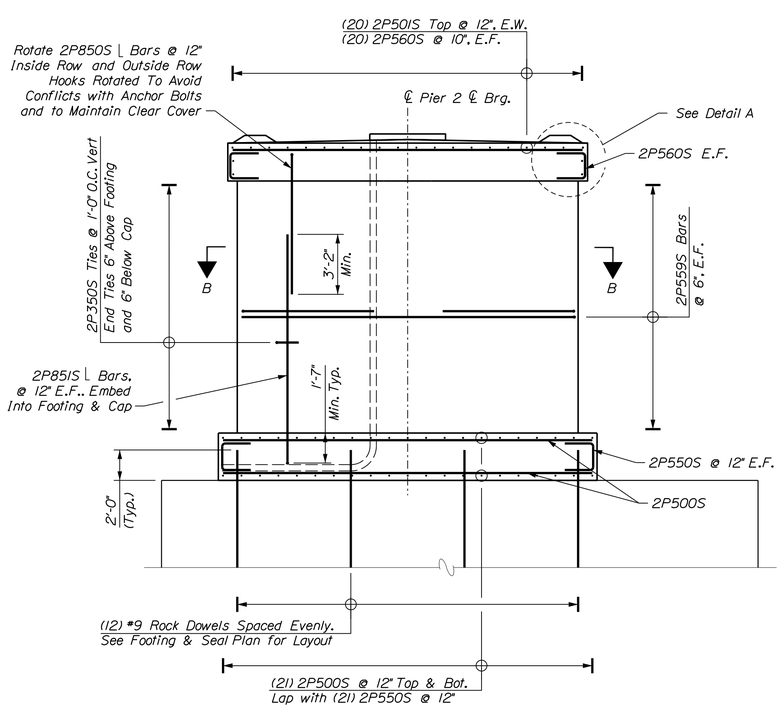
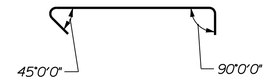
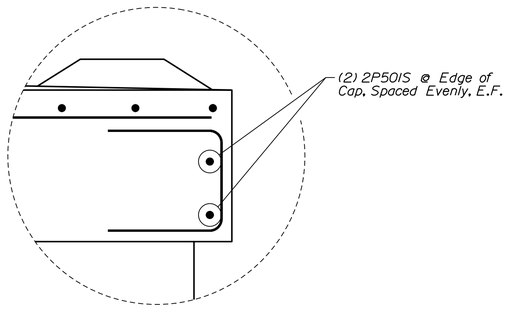


PIER 2 ELEVATION

Note: Access platforms and corbels omitted for clarity.



TIE DETAIL



DETAIL A

Legend:

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
MID = Middle

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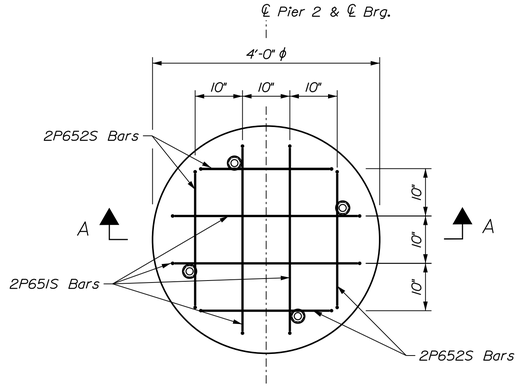
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

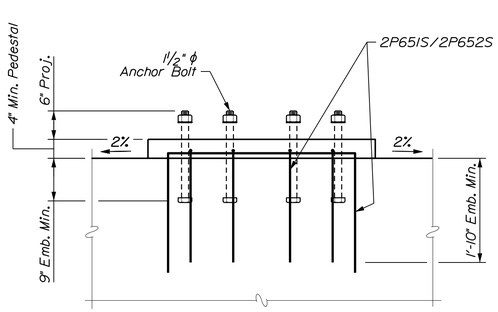
PIER 2 REINFORCEMENT

SHEET NUMBER
24
OF 132

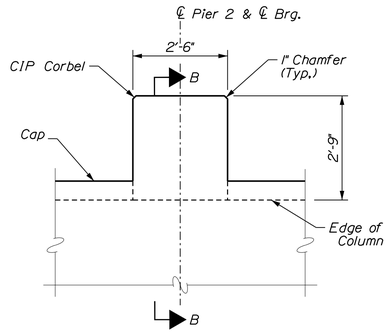
Filename: ...\Drawings\026_Pier2_Rebar.dgn Division: Username: Date:10/19/2018



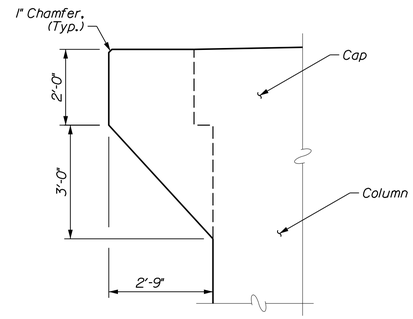
PEDESTAL PLAN REINFORCEMENT



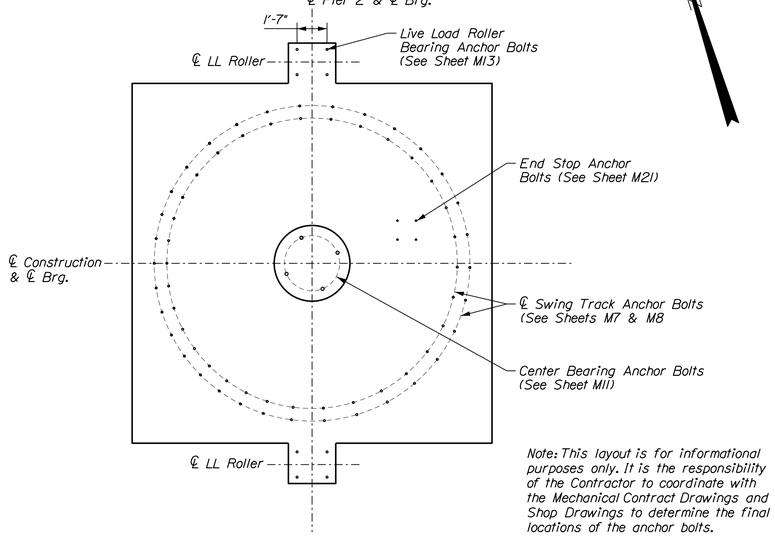
SECTION A-A



CORBEL PLAN

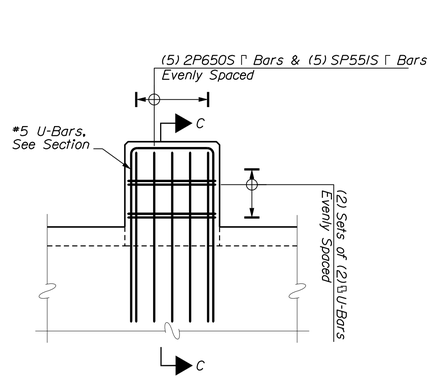


SECTION B-B

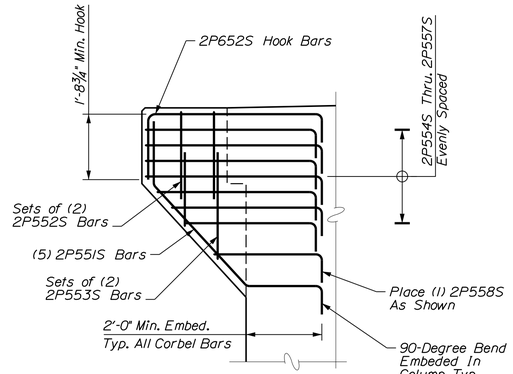


Note: This layout is for informational purposes only. It is the responsibility of the Contractor to coordinate with the Mechanical Contract Drawings and Shop Drawings to determine the final locations of the anchor bolts.

ANCHOR BOLT LAYOUT PLAN



CORBEL PLAN REINFORCEMENT



SECTION C-C

Legend:

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
MID = Middle

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

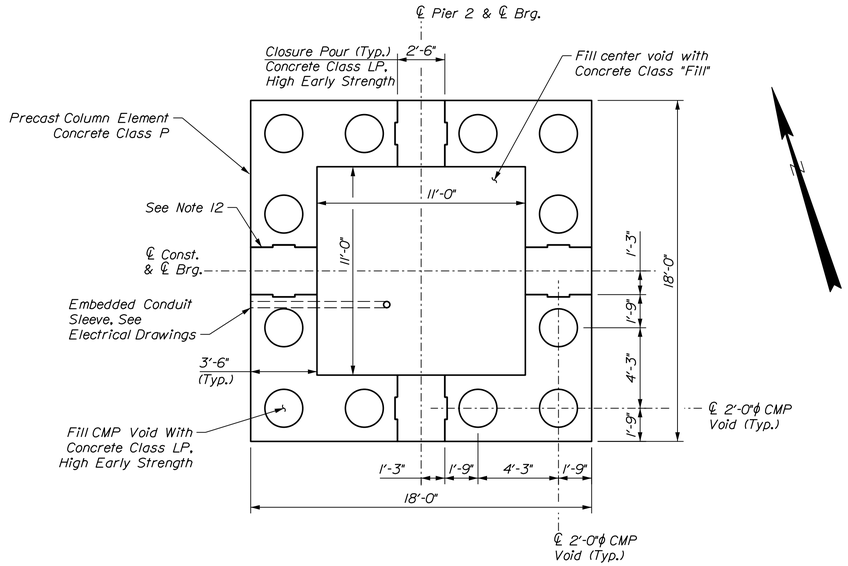
	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. AGUILAR	10-19-18
DESIGN2-DETAILED2	T. MCAULIFFE	10-19-18
DESIGN3-DETAILED3	B. COLBURN	10-19-18
REVISIONS 1	S. OZANA	
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

PIER 2 MISCELLANEOUS DETAILS

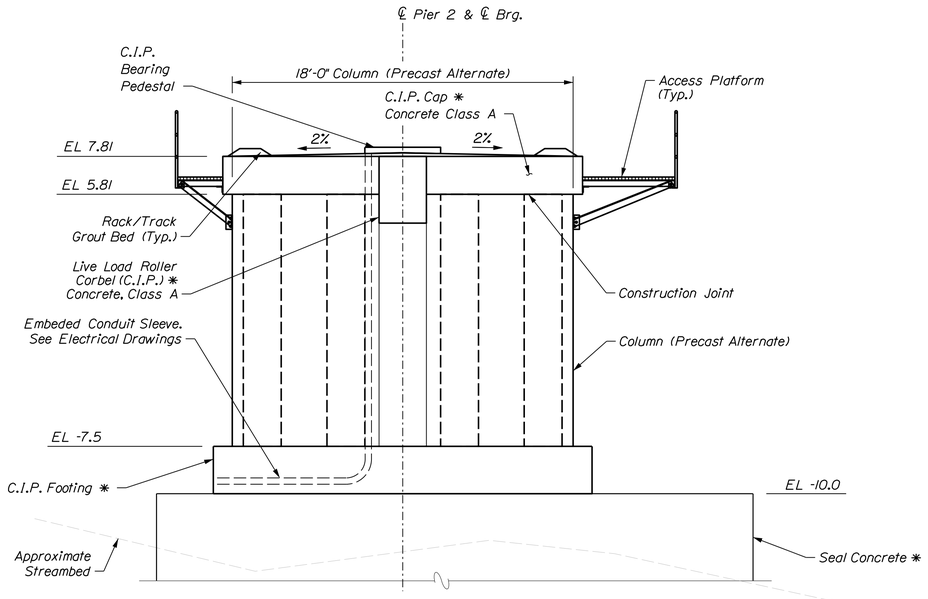
SHEET NUMBER
25
OF 132

Filename: ...\Drawings\027_Pier2_Details.dgn Division: Username: Date:10/19/2018



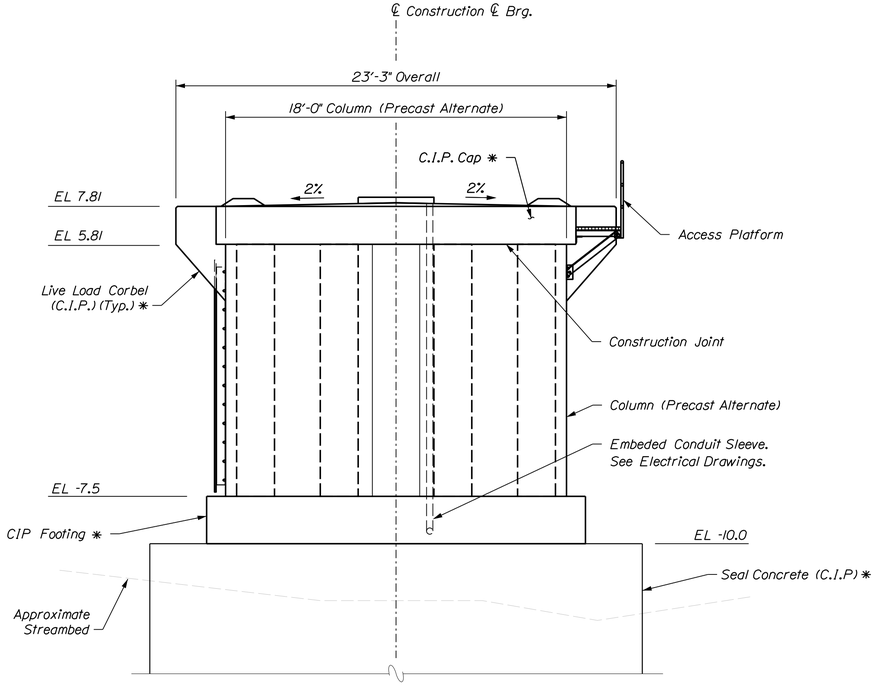
PIER 2 PRECAST ALTERNATE PLAN

Note:
C.I.P. Cap and Access Platforms not shown for clarity.



PIER 2 ELEVATION (SOUTH FACE) PRECAST ALTERNATE

* - See Sheet 22 for dimensions



PIER 2 ELEVATION (WEST FACE) PRECAST ALTERNATE

Legend:

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
MID = Middle
O.C. = On Center

COLUMN (PRECAST ALTERNATE) NOTES:

1. The Precast Column may be substituted for the CIP Column shown on Sheets 23 and 24.
2. All finished Elevations and Dimensions of the Precast alternate shall match the CIP alternate.
3. If the Contractor chooses the use the Precast alternate, the Contractor shall provide shop details in accordance with the MaineDOT Standard Specifications.
4. For the Bearing Pedestal, Live Load Roller Corbel, and Anchor Bolt details, see Sheet 25.
5. The reinforcement in the Precast elements shall be considered incidental to the Precast Pier Pay Item.
6. Faces of Precast elements in contact with closure pour concrete shall have an exposed aggregate finish and saturdated surface dry at the time of closure pour.
7. Corrugated metal pipes shall be galvanized.
8. All reinforcing shall be Grade 75, stainless steel.
9. Clear cover = 3", unless noted otherwise.
10. Stainless steel shall be clear of galvanized CMP by a minimum of 2".
11. CMP void concrete and closure pour concrete shall be no less than 3 ksi when the center void is poured.
12. Provide a shear key as shown on Standard Detail 502(01) in the closure pour interface. A PVC waterstop is not required.

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BRIDGE PLANS

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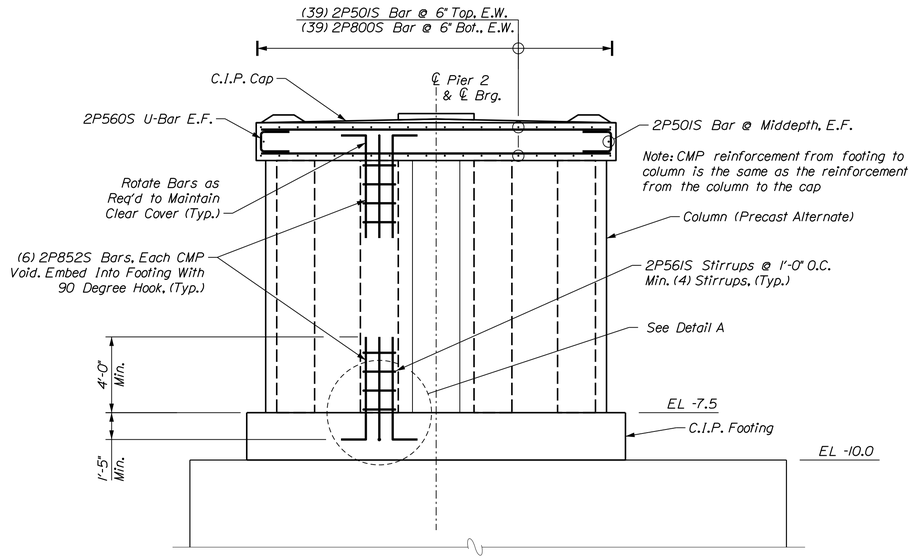
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

PIER 2 PRECAST ALTERNATE 1 OF 2

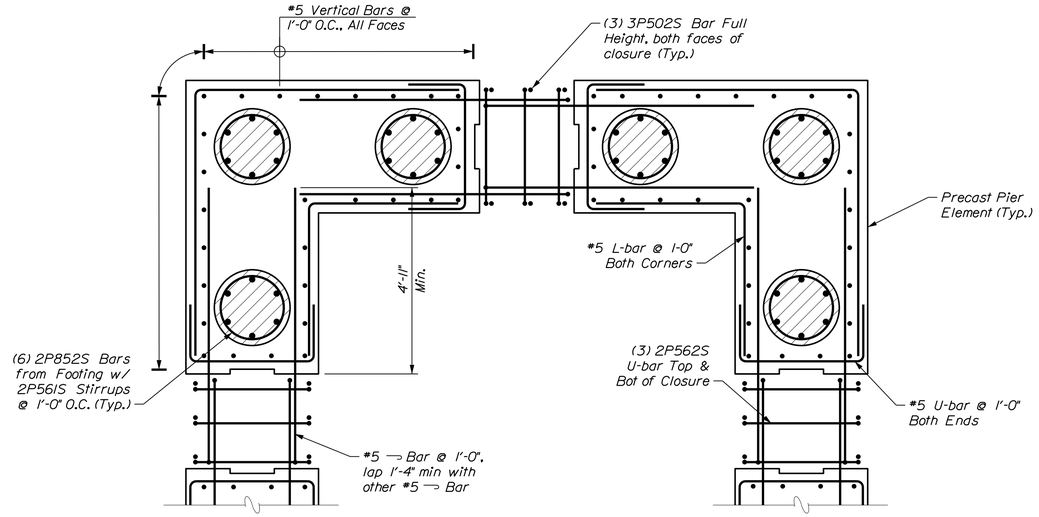
SHEET NUMBER
26
OF 132

Filename: ...\Drawings\028_Pier2_Precast.dgn Division: Username: Date:10/19/2018

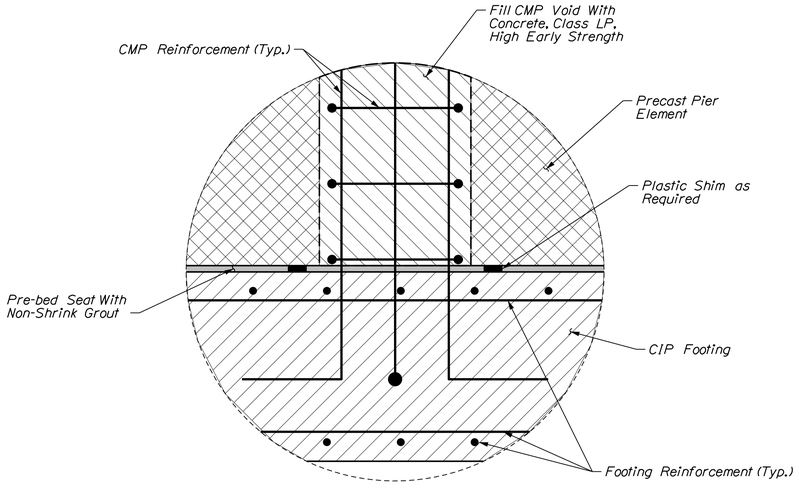


PIER 2 ELEVATION (SOUTH FACE) PRECAST ALTERNATE

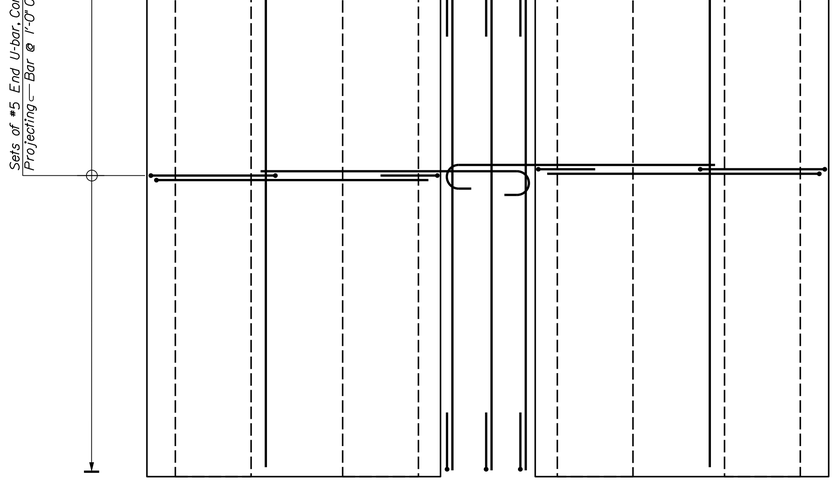
Notes:
-Access platforms and corbels omitted for clarity.
-See Sheets 22 & 24 for reinforcing in footing.



PRECAST REINFORCEMENT PLAN



DETAIL A



PRECAST REINFORCEMENT ELEVATION

Legend:

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
MID = Middle
O.C. = On Center

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN 22607.00
BRIDGE NO. 2039
BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
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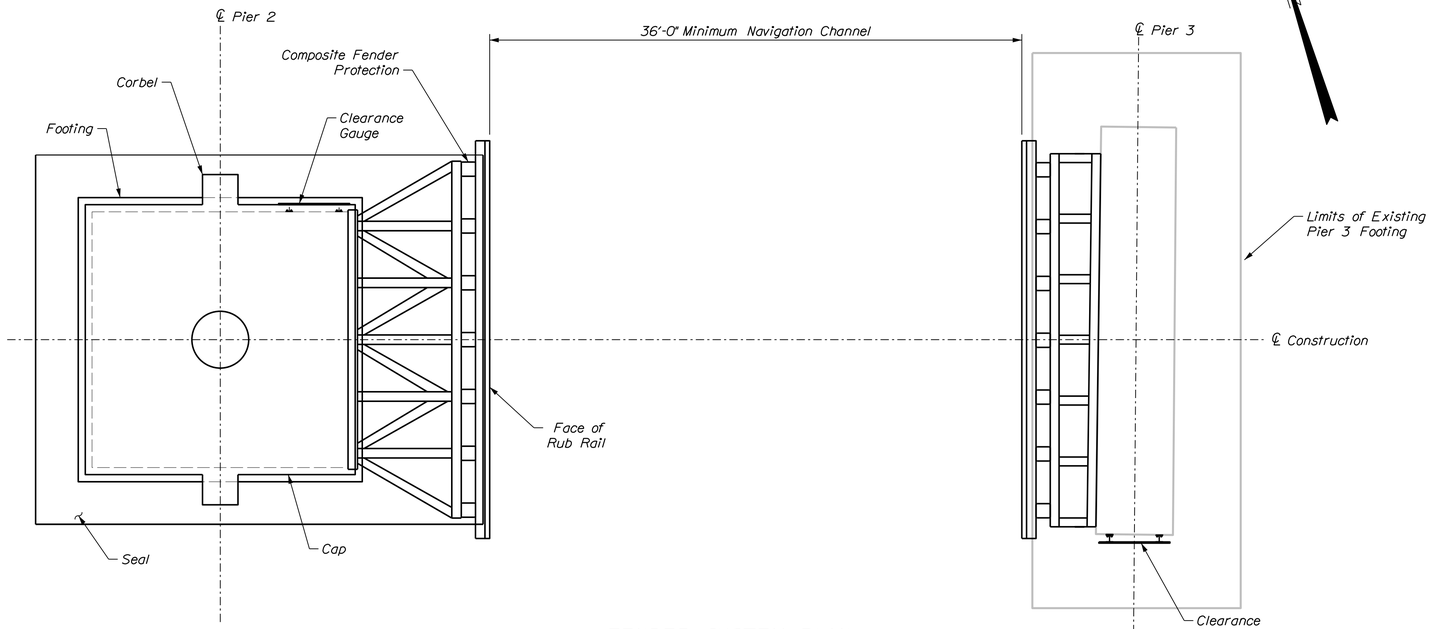
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

PIER 2 PRECAST ALTERNATE 2 OF 2

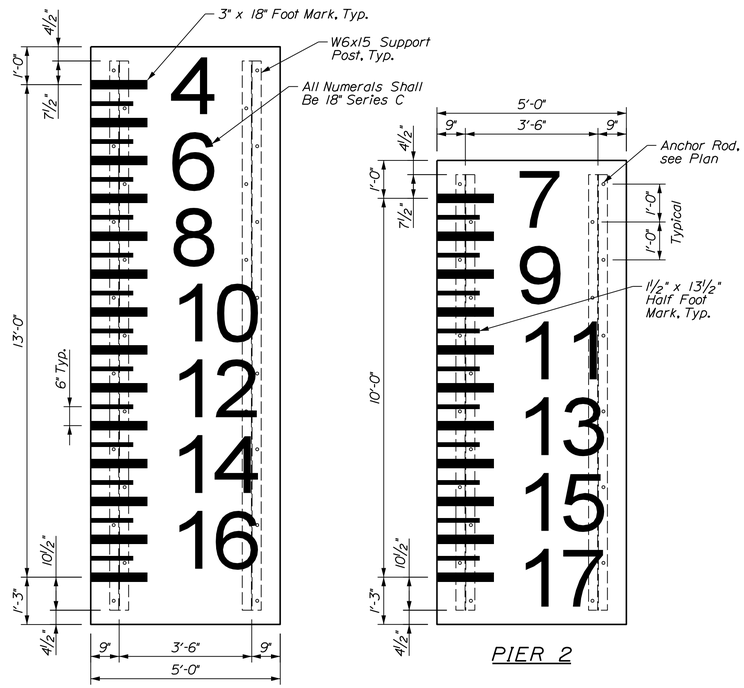
SHEET NUMBER
27
OF 132

Filename: ...\029_Pier2_Precast Rebar.dgn Division: Username: Date:10/19/2018

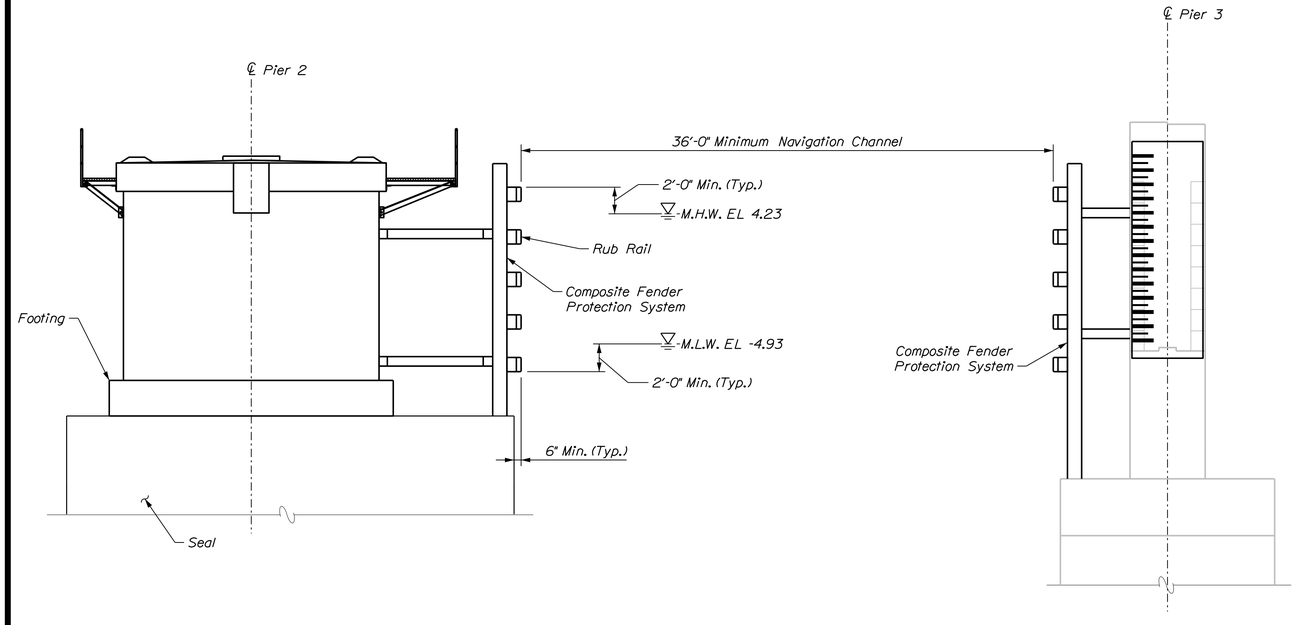


FENDER SYSTEM PLAN

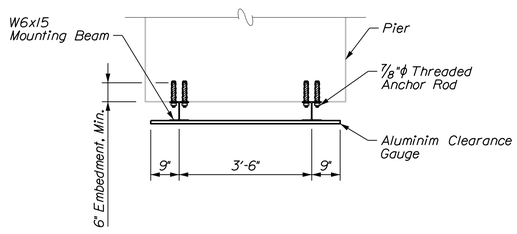
Note: Access platforms omitted for clarity.
See Pier 2 Access Platform Plan.



CLEARANCE GAUGE ELEVATION



FENDER SYSTEM ELEVATION



CLEARANCE GAUGE MOUNTING PLAN

Note: Pier 3 shown. Mounting Plan for Pier 2 similar.
The Contractor may opt to use cast-in anchors for
Pier 2 at his or her own discretion.

COMPOSITE FENDER PROTECTION SYSTEM NOTES

1. The details provided here are interpretive only. The fender system, connections, attachments, and all associated components shall be designed and detailed by the Contractor.
2. See Special Provision Section 529 - Navigational Aids (Composite Fender Protection System) for more detail.
3. All fender system materials shall be constructed of fiber reinforced polymer composites in accordance with the Special Provisions.
4. All fasteners and associated hardware shall be Type 316 Stainless Steel.
5. A minimum 36'-0" wide navigation channel shall be provided.
6. The fender system shall provide protection from 2'-0" above MHW and 2'-0" below MLW.

CLEARANCE GAUGE NOTES

1. The details provided here are interpretive only. The clearance gauge, connections, attachments and all associated components shall be designed and detailed by the Contractor.
2. See Special Provision Section 910 - Special Work (Staff Gauges) for more information.
3. All letters, marks, and finishes shall comply with 33 CFR 118 and the USCG Bridge Permit Application Guide.
4. All fasteners and associated hardware shall be 316 stainless steel.
5. Nominal Day Visibility is 500 to 750 feet.

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STATE OF MAINE
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STP-2260(700)

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BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — THOMAS T KENDRICK No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

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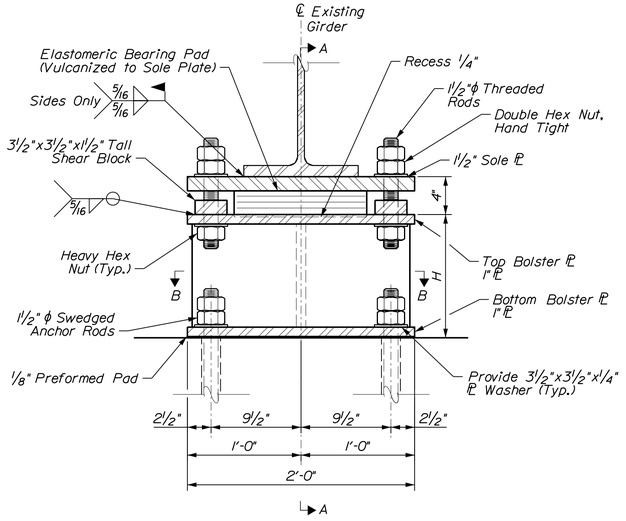
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

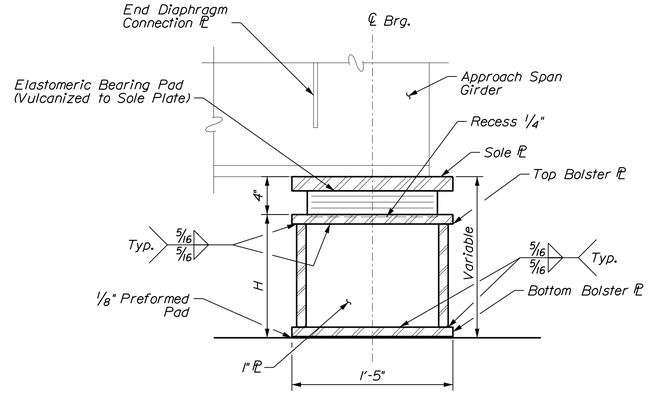
BRIDGE PROTECTION SYSTEM

SHEET NUMBER
28
OF 132

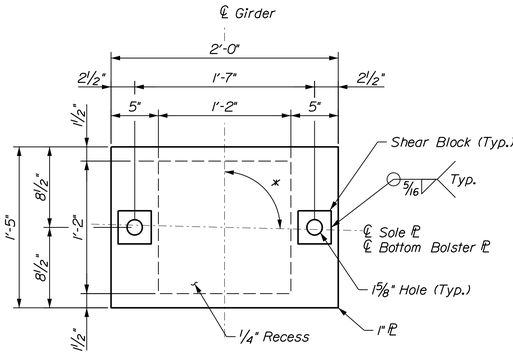
Filename: ...\029_Bridge_Protection_System.dgn Division: Username: Date:10/19/2018



APPROACH SPAN BEARING DETAIL

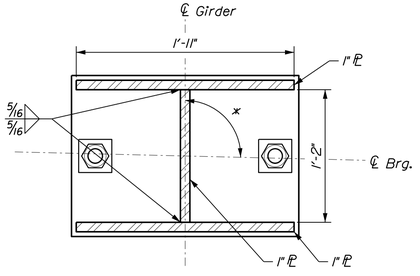


SECTION A-A

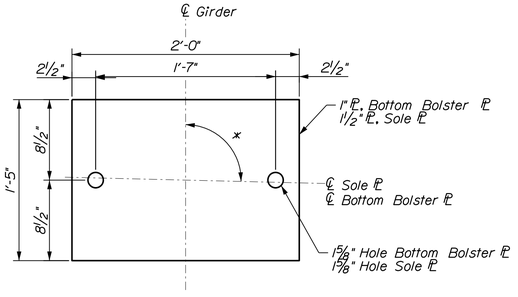


TOP BOLSTER PLATE DETAIL

* See Note 17.

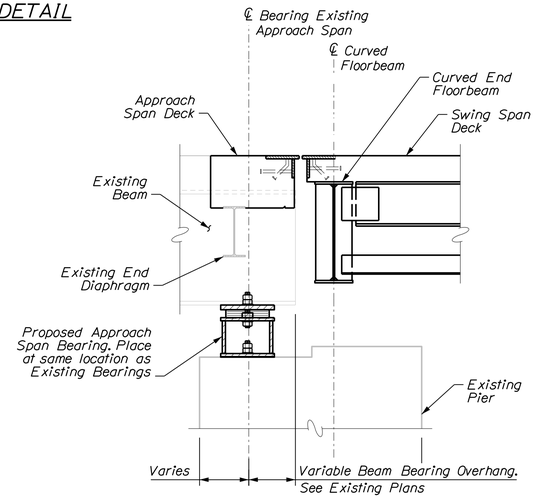


SECTION B-B



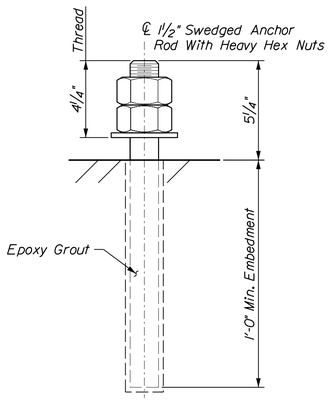
BOTTOM BOLSTER PLATE AND SOLE PLATE DETAIL

* See Note 17.

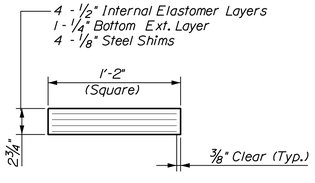


PIER BEARING DETAIL

Pier 1 shown.
Pier 3 similar.



ANCHOR ROD DETAIL



ELASTOMERIC PAD SECTION

ELASTOMERIC BEARING NOTES

1. All steel reinforced elastomeric bearings are designed using Method A. The design temperature range is 150 deg (F) (-30 deg to 120 deg).
2. Elastomer shall have a hardness of 60 durometer and a shear modulus of 165 psi +/- 15%. The elastomer shall be 100% neoprene.
3. Vulcanizing of the elastomer to the sole plate shall be done during the primary mold process.
4. Bearings shall be covered during transit.
5. Bolsters, sole plates and shear blocks shall meet the requirements of ASTM A709/A 709M, Grade 50.
6. Anchor rods shall meet the requirements of ASTM F 1554, Grade 55 and shall be swedged on the embedded portion of the rod.
7. Heavy Hex nuts for anchor rods shall meet the requirements of ASTM A 563M, Class 5.
8. Hot dip galvanize bolsters in accordance with Standard Specification Section 506.
9. Welds shall terminate ¼" from edges of sole plates and shear blocks.
10. Furnishing and installing the drilled and grouted anchor rods shall not be paid for separately, but shall be considered incidental to the bearing pay items.
11. For drilling and anchoring the anchor rods, the Contractor shall use material listed on the Maine Department of Transportation Qualified Products List of Concrete Adhesive Anchoring Systems.
12. The bearings are designed so that the beams may be set when the actual air temperature averaged over a 24-hour period immediately preceding the setting event is between 28°F and 52°F. If beams are set outside this range, the bearings shall be reset as directed by the Resident.
13. All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge, and a direction arrow that points up-station. All marks shall be permanent and shall be visible after the bearing is installed.
14. All necessary precautions shall be taken to protect bearing components from field weld flash and splatter. Heat from welding operations shall be controlled such that steel adjacent to the elastomer does not exceed 200°F. The temperature shall be verified by the use of temperature indicating crayons or other suitable means.
15. The given bolster heights are only approximate. The Contractor shall field measure and verify the actual required bolster height after jacking the approach spans to match the required profile grade prior to fabrication of the approach span bolsters.
16. The Contractor may grind the pier cap at each bolster no more than ½" to provide an even surface for installation of the bolsters. The ground area for each bolster shall not extend more than 6" beyond the edge of the bottom bolster plate in any direction.
17. The angle between the ℄ of Bearing and the ℄ of each girder shall match the existing bearing orientation. Typical for all bearings at Pier 1 and Pier 3.
18. Upset the threads on the threaded rods after assembly. Provide ⅛" gap between double hex nuts and hardened washer plate.

BEARING DESIGN LOADS (UNFACTORED)

Brg. Type	VERTICAL REACTIONS (kips)			Horiz. Load - Long. (kips)	Horiz. Load - Trans. (kips)
	Dead Load	Live Load	Total		
Fixed @ Pier 1/3	73	101	174	17	30

BOLSTER HEIGHT "H"

Pier 1	Pier 3
G1 = 9½"	G1 = 10⅛"
G2 = 9¾"	G2 = 10⅛"
G3 = 9⅞"	G3 = 10⅛"
G4 = 10⅛"	G4 = 10⅛"

Note: G1 = North Fascia Girder

STATE OF MAINE
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REVISIONS 1		
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REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

APPROACH SPAN BEARINGS

SHEET NUMBER
29
OF 132

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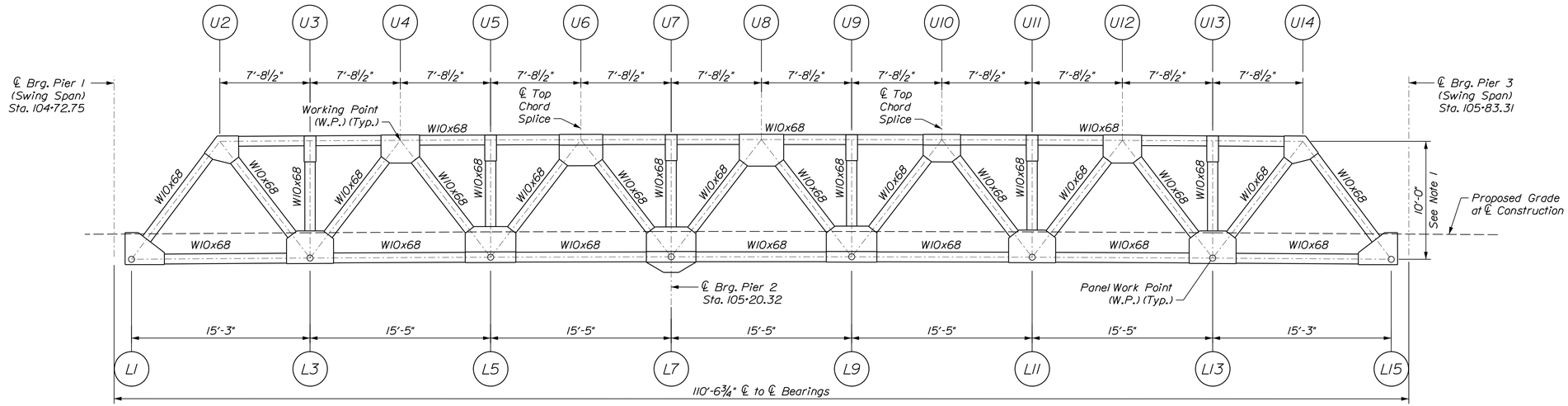
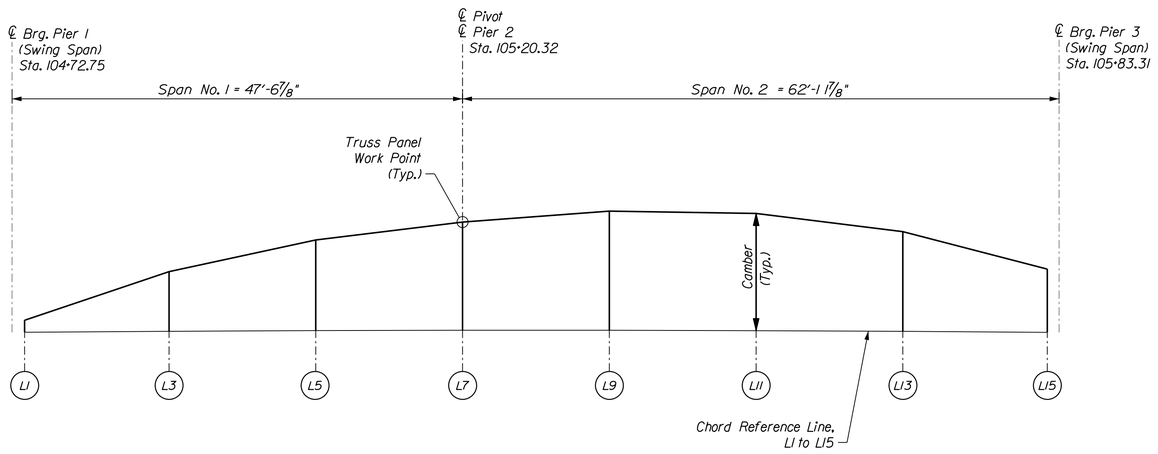
Filename: ...\030_Appspan_Bearings.dgn Division: Username: Date:10/19/2018



TRUSS FRAMING ELEVATION

(South Truss shown, North Truss similar)
(All dimensions are horizontal or vertical and are given at 68°F)

TRUSS CAMBER TABLE (in)									
Truss Panel Work Point		L1	L3	L5	L7	L9	L11	L13	L15
North Truss	Total Dead Load	1.13	0.79	0.47	0.32	0.52	0.91	1.37	1.82
	Droop	-1.01	-0.64	-0.31	-0.06	0.07	0.10	0.07	0.02
	Vertical Curve Ordinate	0.00	1.27	2.12	2.55	2.55	2.13	1.27	0.00
	Total Camber	0.12	1.42	2.29	2.80	3.14	3.13	2.71	1.83
South Truss	Total Dead Load	1.33	0.93	0.54	0.32	0.47	0.80	1.21	1.61
	Droop	-1.02	-0.65	-0.31	-0.06	0.07	0.10	0.08	0.02
	Vertical Curve Ordinate	0.00	1.27	2.12	2.55	2.55	2.13	1.27	0.00
	Total Camber	0.31	1.54	2.35	2.81	3.09	3.03	2.55	1.63



TRUSS CAMBER DIAGRAM

TRUSS GEOMETRY NOTES:

1. Each vertical member shall be constructed 10'-0" between upper and lower panel work points.
2. See Sheet 31 for typical upper and lower gusset plate connection details.
3. See Sheet 31 for gusset plate thickness table.
4. Truss camber ordinates, as shown, are computed to account for all dead load deflections, counterweight deflections, deflections from mechanical supports, and for the curvature of the finished grade profile.
5. The Droop Camber is based on an unfactored 28Kip Force from the End Jacks.
6. The Contractor is advised to monitor deflections during erection and project the Final Droop at key points during the construction of the Superstructure.
7. The total dead load camber is based on the total weight of the superstructure including the weight of all structural, electrical, and mechanical components.

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BRIDGE PLANS

STATE OF MAINE — THOMAS T KENDRICK No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick — 10075 — 10/19/2018

SIGNATURE — P.E. NUMBER — DATE

			DATE
PROJ. MANAGER	L. TIMBERLAKE	BY	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

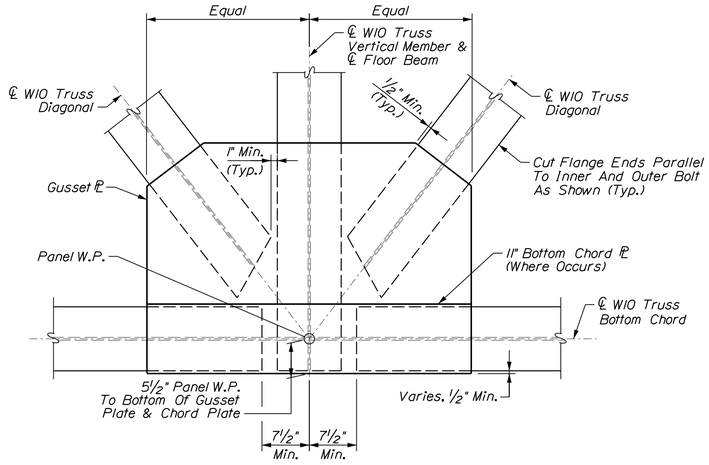
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

TRUSS ELEVATION & CAMBER

SHEET NUMBER
30
OF 132

McFarland Johnson

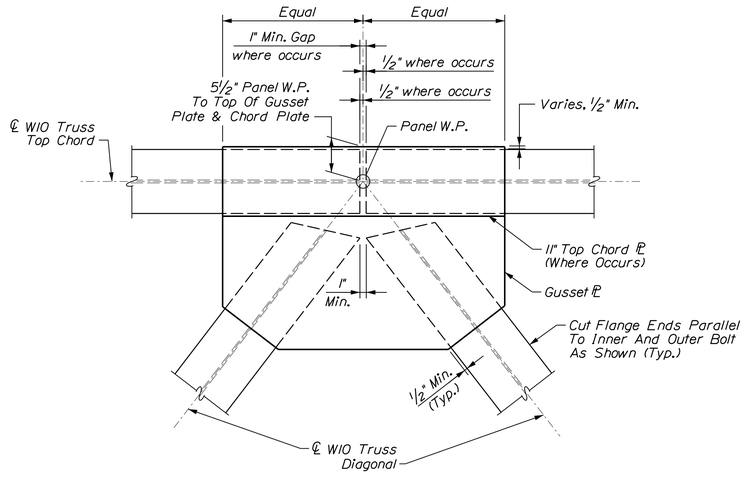
Date:10/19/2018
Username:
Division:
Filename: ...\031_Truss_Elevation.dgn



Note: Inside And Outside Gusset Plates And Chord Plates Shall Be The Same Size.

TYPICAL LOWER GUSSET PLATE CONNECTION DETAIL

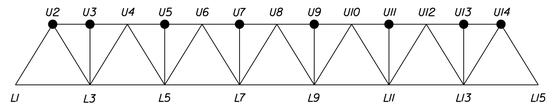
NTS



Note: Inside And Outside Gusset Plates And Chord Plates Shall Be The Same Size.

TYPICAL UPPER GUSSET PLATE CONNECTION DETAIL

NTS

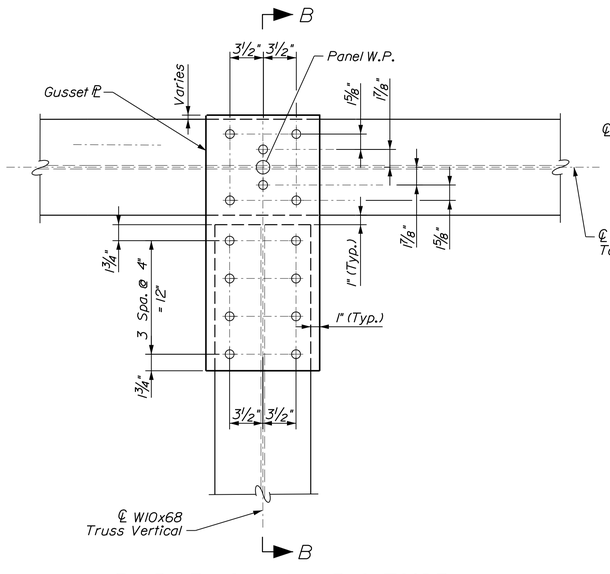


KEY PLAN

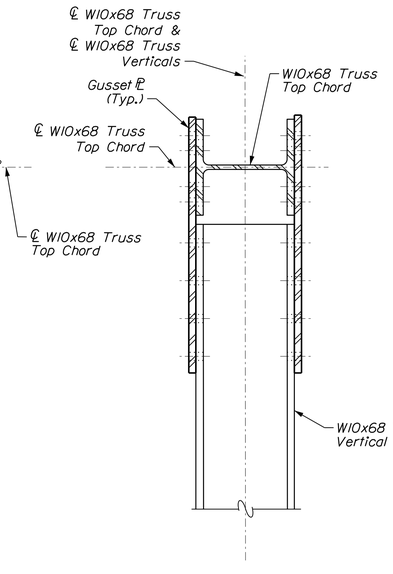
PLATE THICKNESS		
JOINT NO.	GUSSET ℄ THICKNESS	TOP & BOT. CHORD ℄ THICKNESS
U3, U5, U7, U9, U11, U13	3/4"	NONE
U2, U4, U12, U14	3/4"	NONE
U6, U10	3/4"	3/4"
U8	3/4"	NONE
L1, L15	3/4"	NONE
L11, L11, L13	3/4"	NONE
L5, L9	3/4"	3/4"
L7	3/4"	3/4"

STRUCTURAL STEEL NOTES:

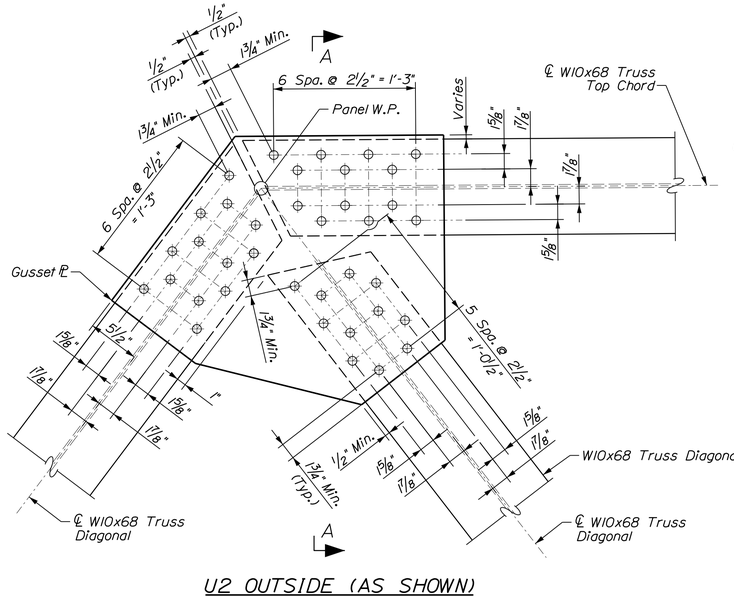
1. No transverse butt weld splices will be allowed in the flange plates or web plates.
2. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
3. Diaphragm connection plates may be either plumb or normal to the top flange.
4. All connection plates and bearing stiffeners shall be welded to the top & bottom flanges using a 5/16 inch weld unless otherwise noted.
5. Filler plates may be steel conforming to the requirements of A709, Grade 36.
6. All members, plates, bolts, and associated connection elements shall be coated in accordance with Standard Specification, Shop Applied Protective Coating - Steel, Thermal Spray Coating (506.30 to 506.39) and Special Propvision Section 506.
7. Ends of FB1, FB4 and FB8 shall be fabricated so that under full dead load the ends will be plumb in closed position on final supports.
8. All fasteners shall be 7/8" diameter in standard 15/16" diameter holes except as noted.
9. All bolted connections shall be slip-critical connections with Class B surface conditions except as noted.
10. All fracture critical members shall be fabricated according to the provisions of Clause 12 specified in the AASHTO/AWS D1.5M/D1.5 Bridge Welding Code.
11. All truss diagonal members, vertical members, bottom chords, top chords, and all floorbeams, gusset plates, and chord plates shall be considered fracture critical. Truss connection plates welded to end of floorbeams shall also be considered fracture critical.
12. Any lateral bracing denoted by <CVN> and all stringers and welded connection plates shall conform to Zone 2 Charpy V-Notch Impact test requirements of AASHTO M M270, Table 10, Zone 2.
13. The Contractor shall submit the Steel Erection Plan to the Resident prior to beginning steel erection in accordance with MaineDOT Standard Specifications Section 504.
14. The main truss shall be shop assembled to the extent practical due to shipping limitations. The gusset plate connections required shall be pre-assembled prior to shipment as necessary to verify the fit and geometry of the completed structure. The method and details of pre-assembly shall be consistent with the Contractor's Steel Erection Plan.



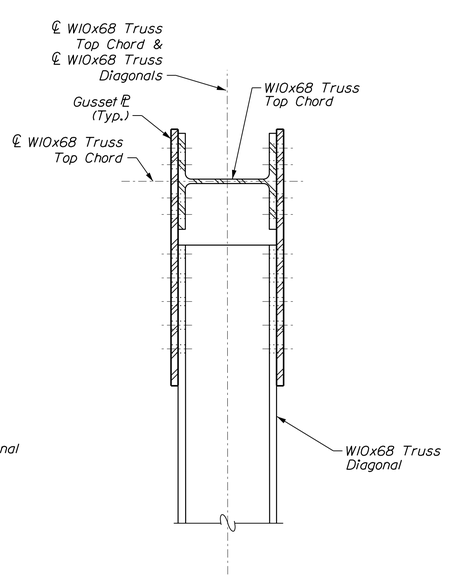
U3, U5, U7, U9, U11 & U13 OUTSIDE



SECTION B-B



U2 OUTSIDE (AS SHOWN) U14 OUTSIDE (OPP. HAND)



SECTION A-A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
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10/19/2018
DATE

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CHECKED-REVIEWED	T. MCAULIFFE
DESIGN2-DETAILED2	B. COLBURN
DESIGN3-DETAILED3	

	DATE	BY
REVISIONS 1	10-19-18	D. DEPAOLO
REVISIONS 2	10-19-18	T. KENDRICK
REVISIONS 3	10-19-18	S. OZANA
REVISIONS 4		
FIELD CHANGES		

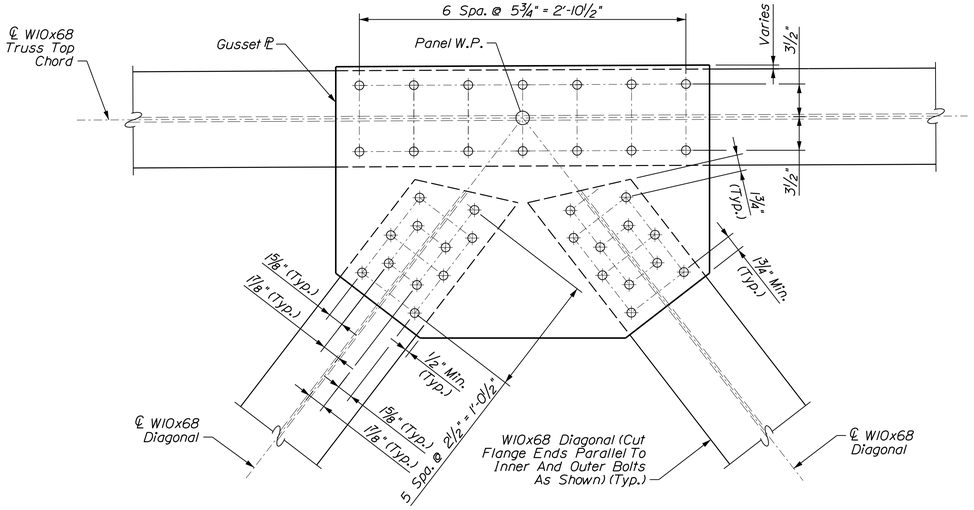
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

TRUSS CONNECTION DETAILS 1 OF 5

SHEET NUMBER
31
OF 132

McFarland Johnson

Date:10/19/2018
Username:
Division:
Filename: ...\032_Truss_Details_1.dgn



U4 & U12 OUTSIDE
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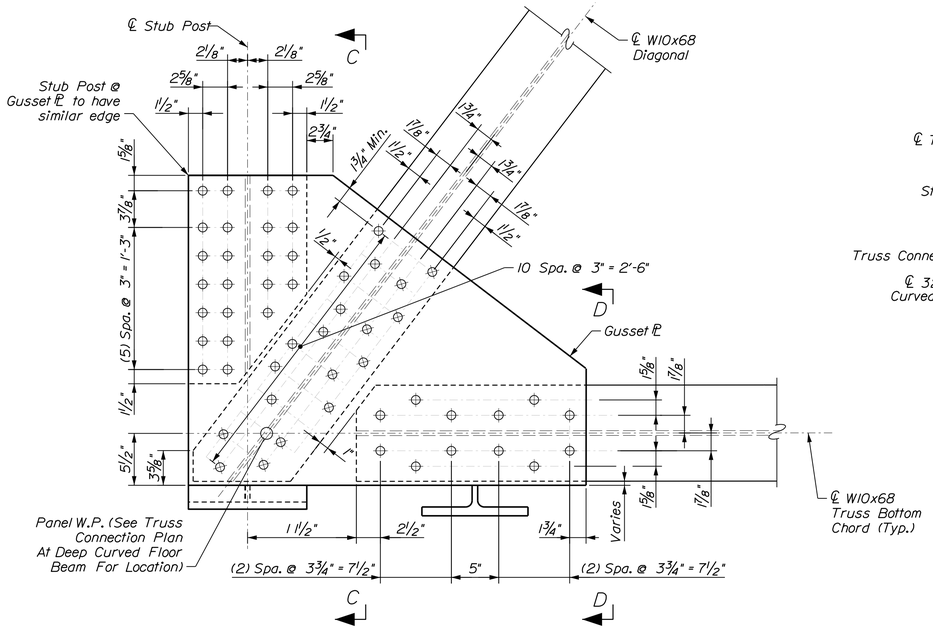
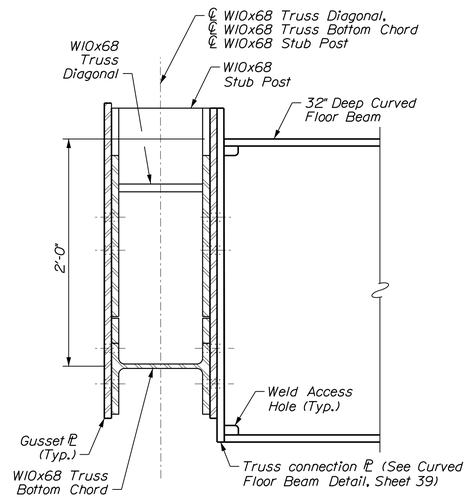
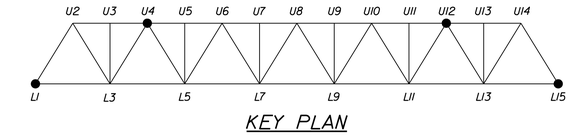


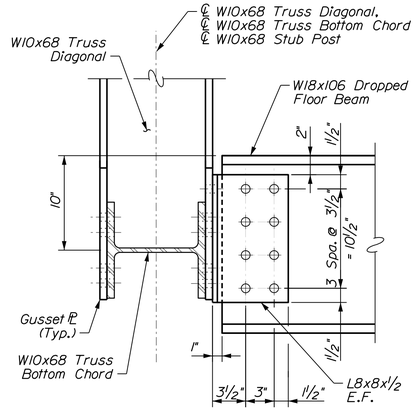
U1 OUTSIDE (AS SHOWN)
U15 OUTSIDE (OPP. HAND)



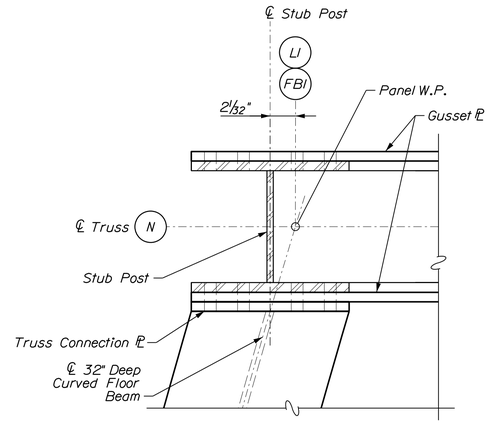
SECTION C-C



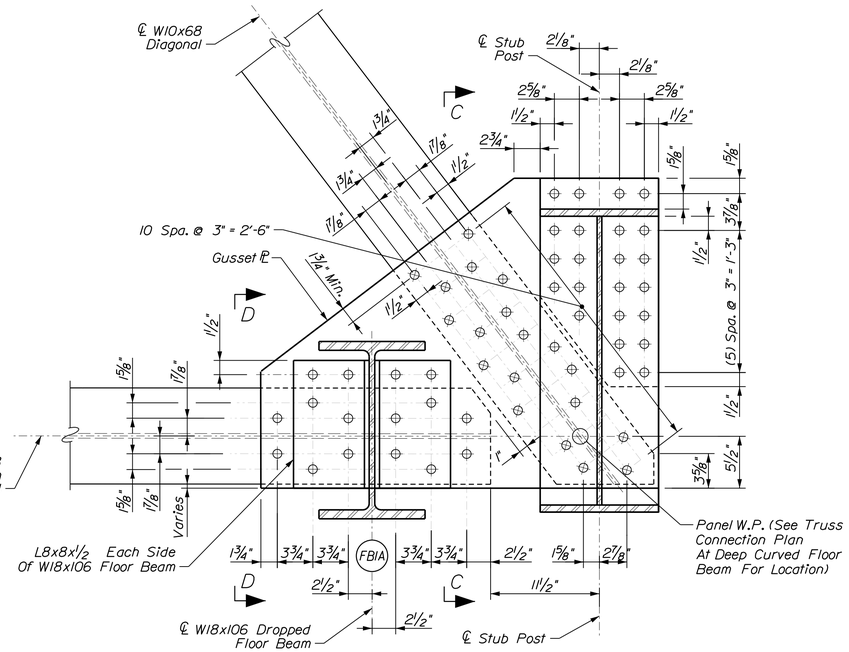
KEY PLAN



SECTION D-D



TRUSS CONNECTION PLAN AT DEEP CURVED FLOOR BEAM (TYPICAL)



L1 INSIDE (AS SHOWN)
L15 INSIDE (OPP. HAND)

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
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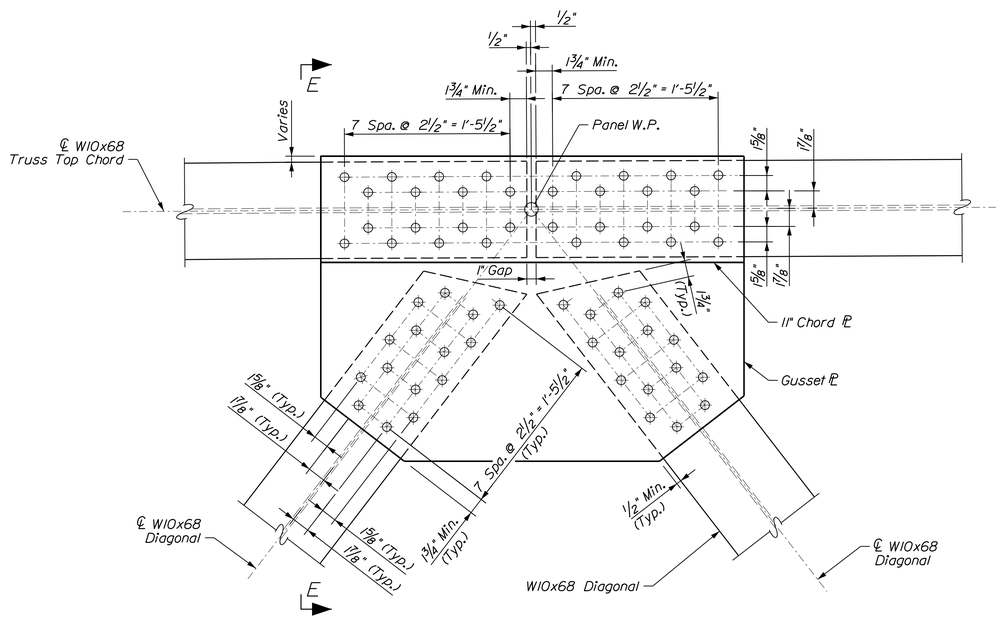
	B. COLBURN	
	S. OZANA	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

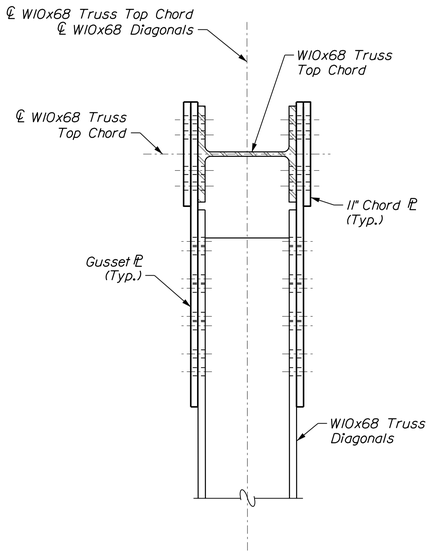
TRUSS CONNECTION DETAILS 2 OF 5

SHEET NUMBER
32
OF 132

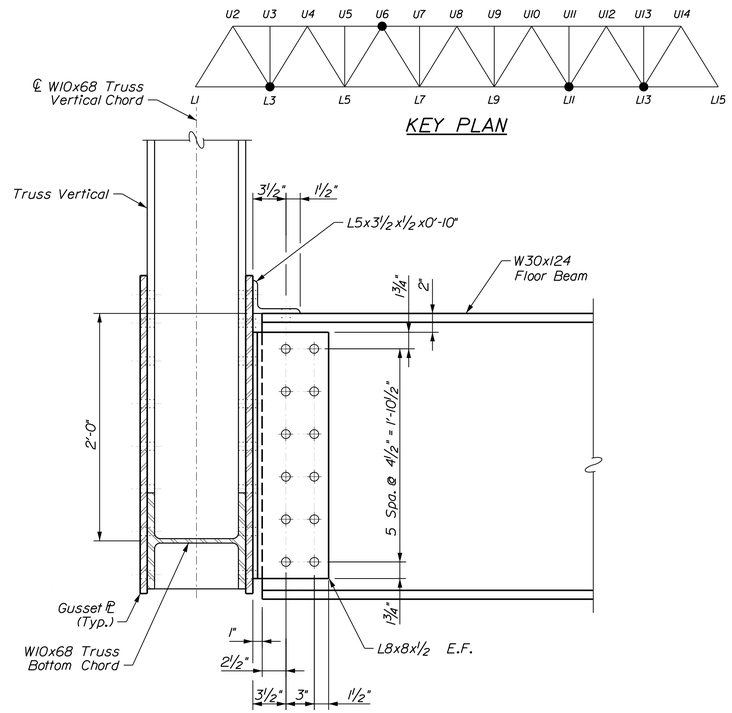
Filename: ...\033_Truss_Details_2.dgn Division: Username: Date:10/19/2018



U6 OUTSIDE
(Inside Similar)

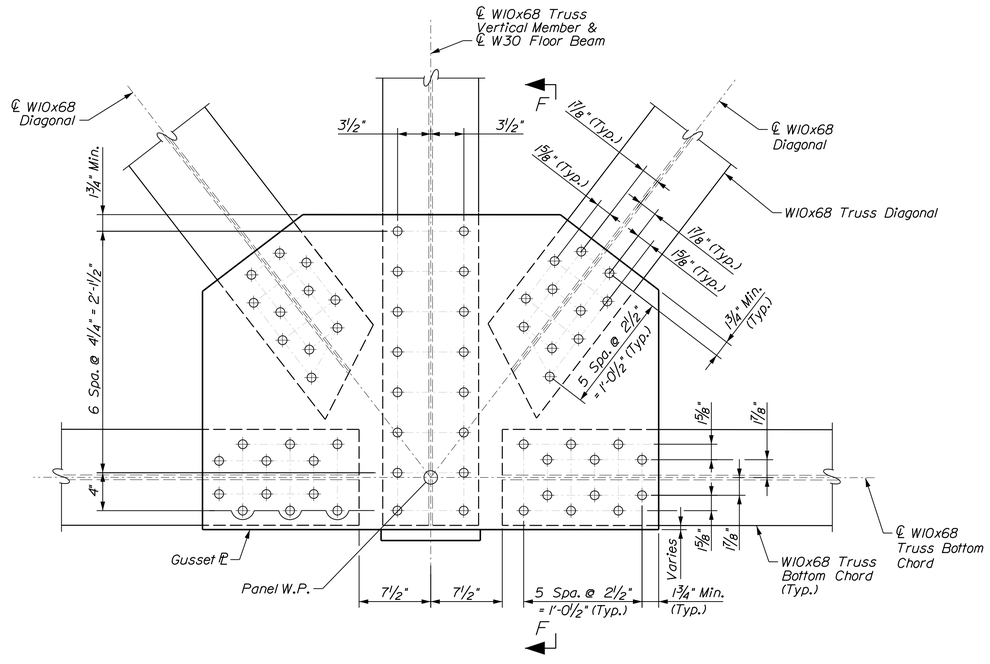


SECTION E-E

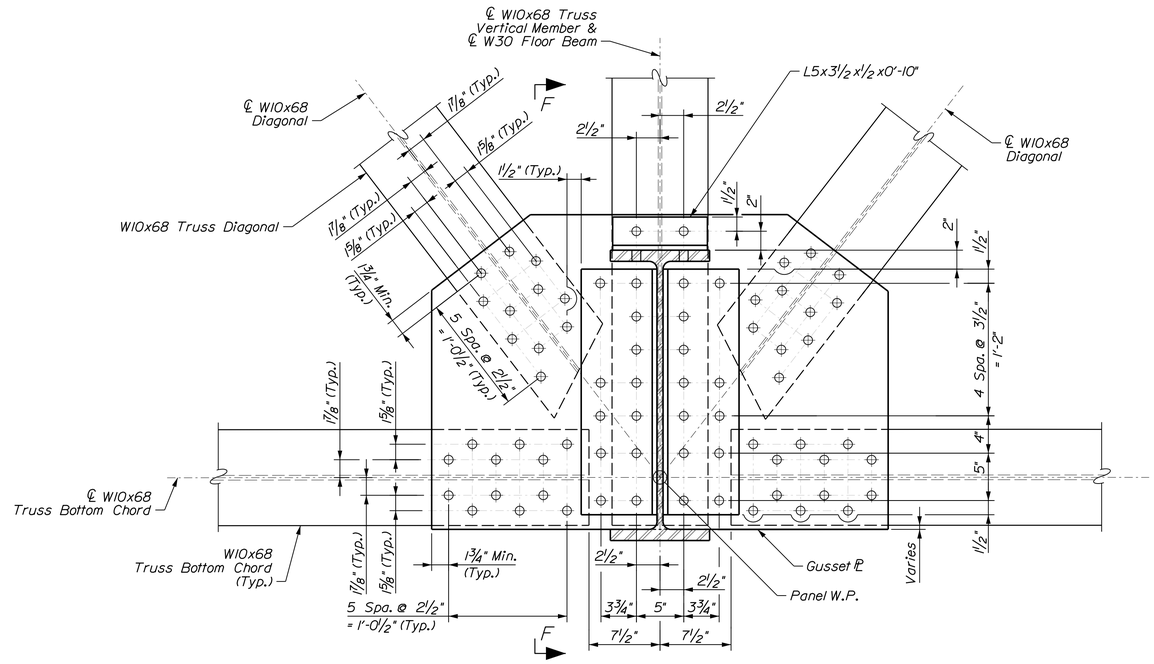


KEY PLAN

SECTION F-F
Note: Diagonals not shown for clarity.



L3 OUTSIDE (AS SHOWN)
L11 OUTSIDE (OPP. HAND)
L13 OUTSIDE (OPP. HAND)



L3 INSIDE (AS SHOWN)
L11 INSIDE (OPP. HAND)
L13 INSIDE (OPP. HAND)

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

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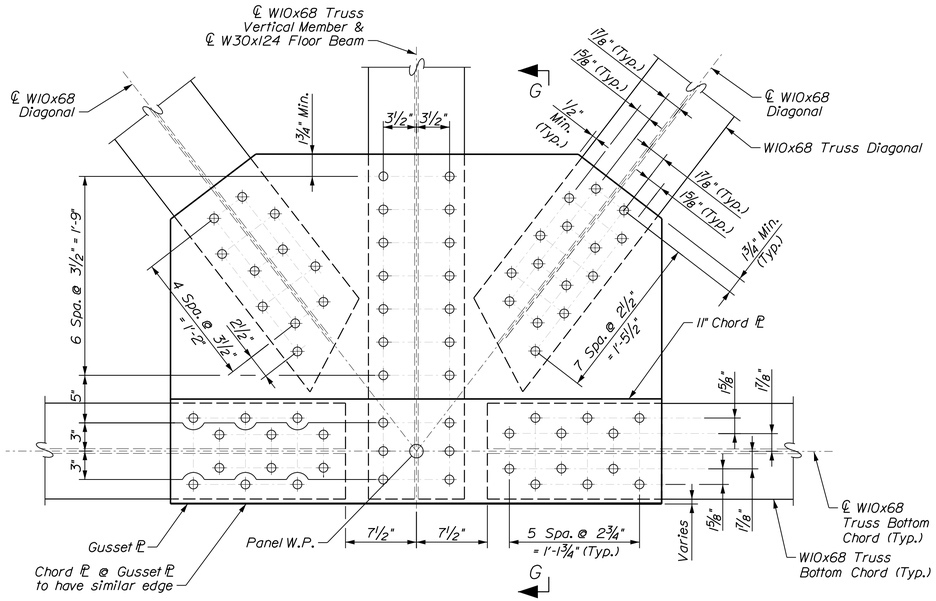
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

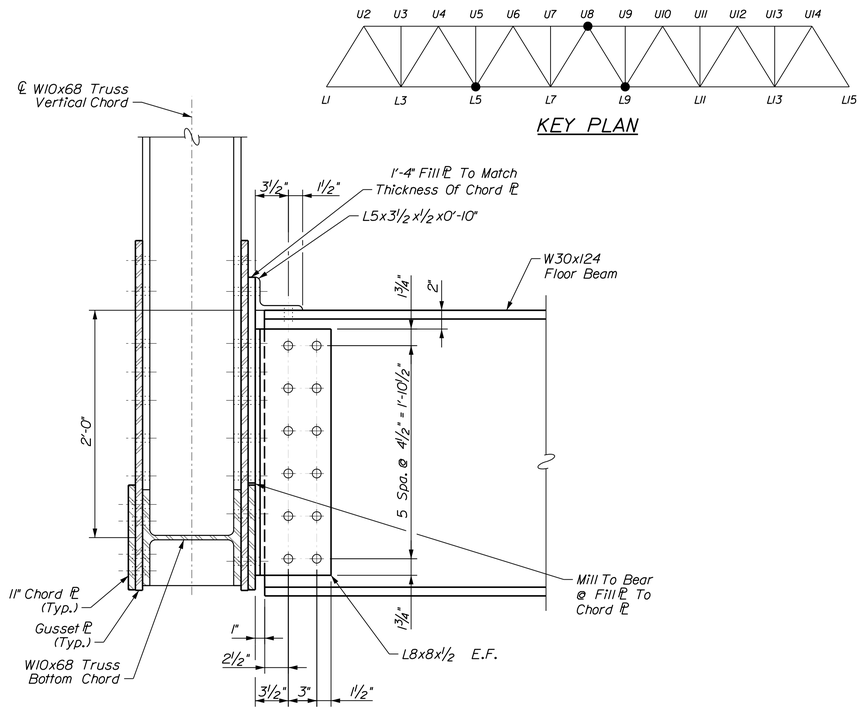
TRUSS CONNECTION DETAILS
3 OF 5

SHEET NUMBER
33
OF 132

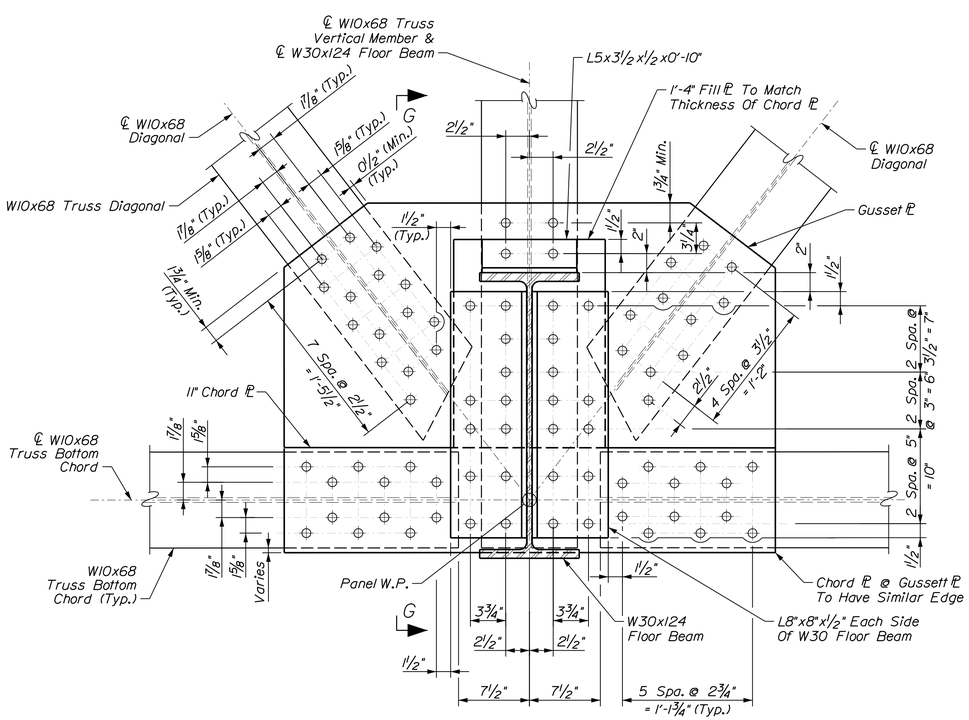
Filename: ...\034_Truss_Details_3.dgn Division: Username: Date:10/19/2018



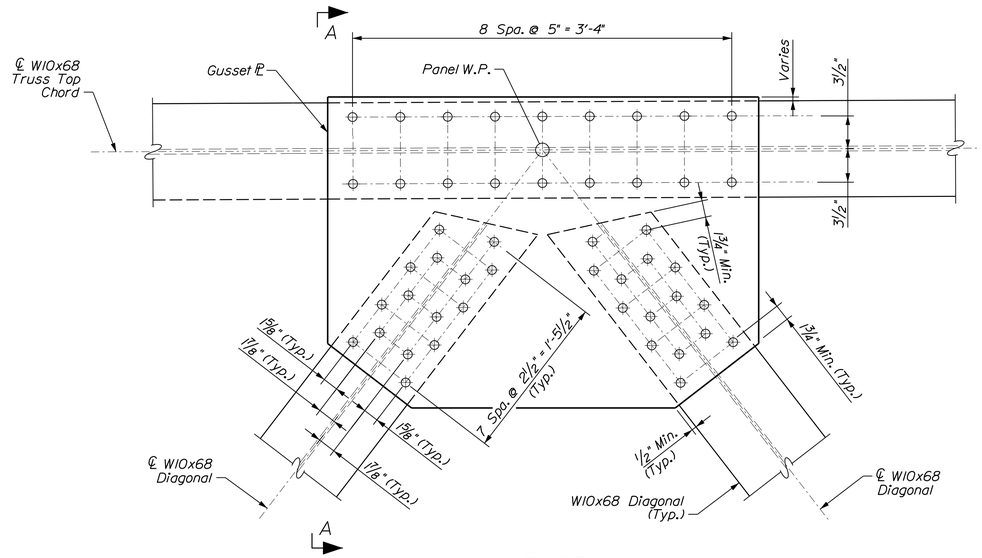
L5 OUTSIDE (AS SHOWN)
L9 OUTSIDE (OPP. HAND)



SECTION G-G
Note: Diagonals not shown for clarity.



L5 INSIDE (AS SHOWN)
L9 INSIDE (OPP. HAND)



U8 OUTSIDE
(Inside Similar)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
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REVISIONS 4			
FIELD CHANGES			

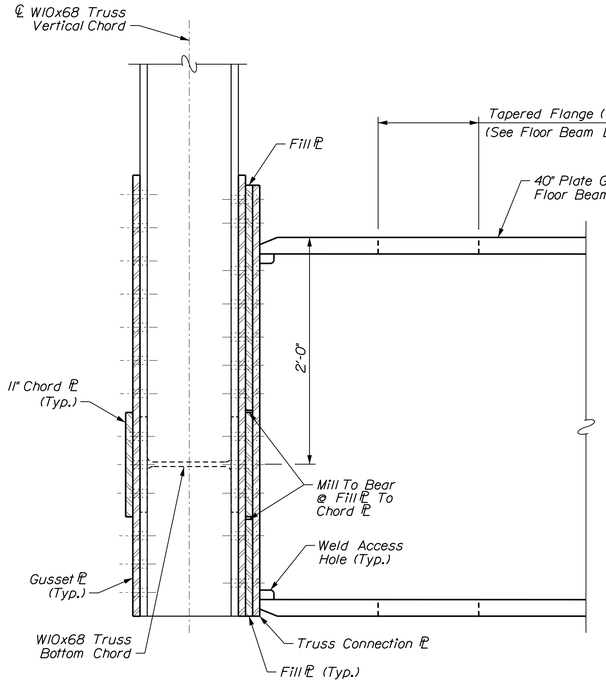
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

TRUSS CONNECTION DETAILS
4 OF 5

SHEET NUMBER
34
OF 132

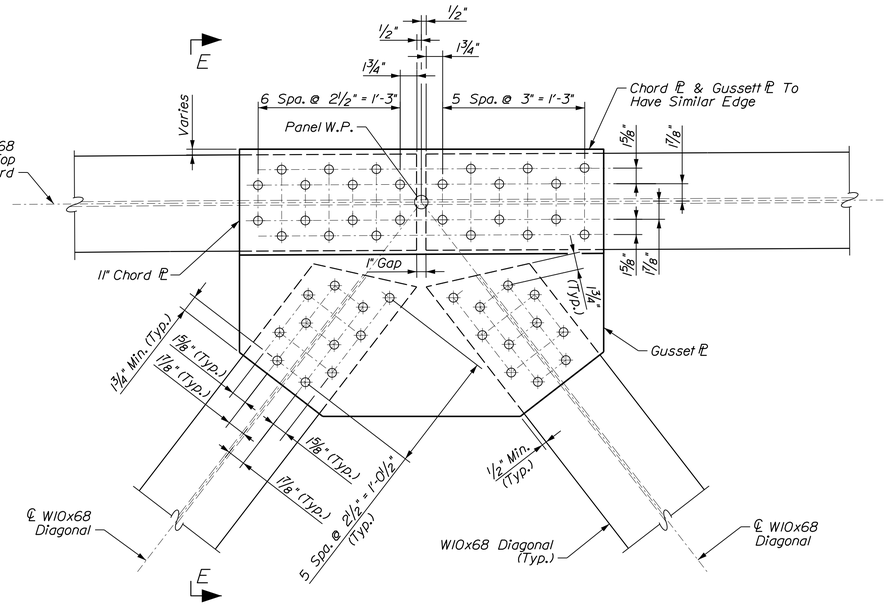
McFarland Johnson

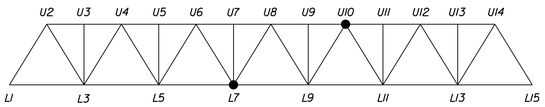
Date:10/19/2018
Username:
Division:
Filename: ...\035_Truss_Details_4.dgn



SECTION H-H

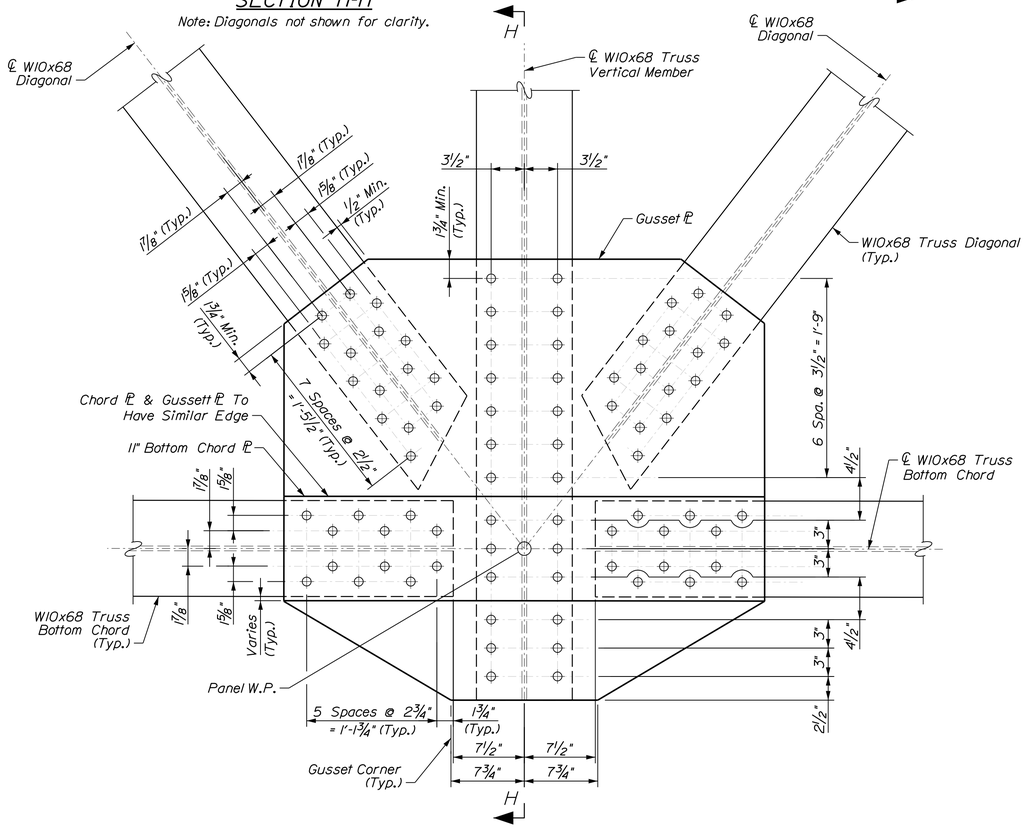
Note: Diagonals not shown for clarity.



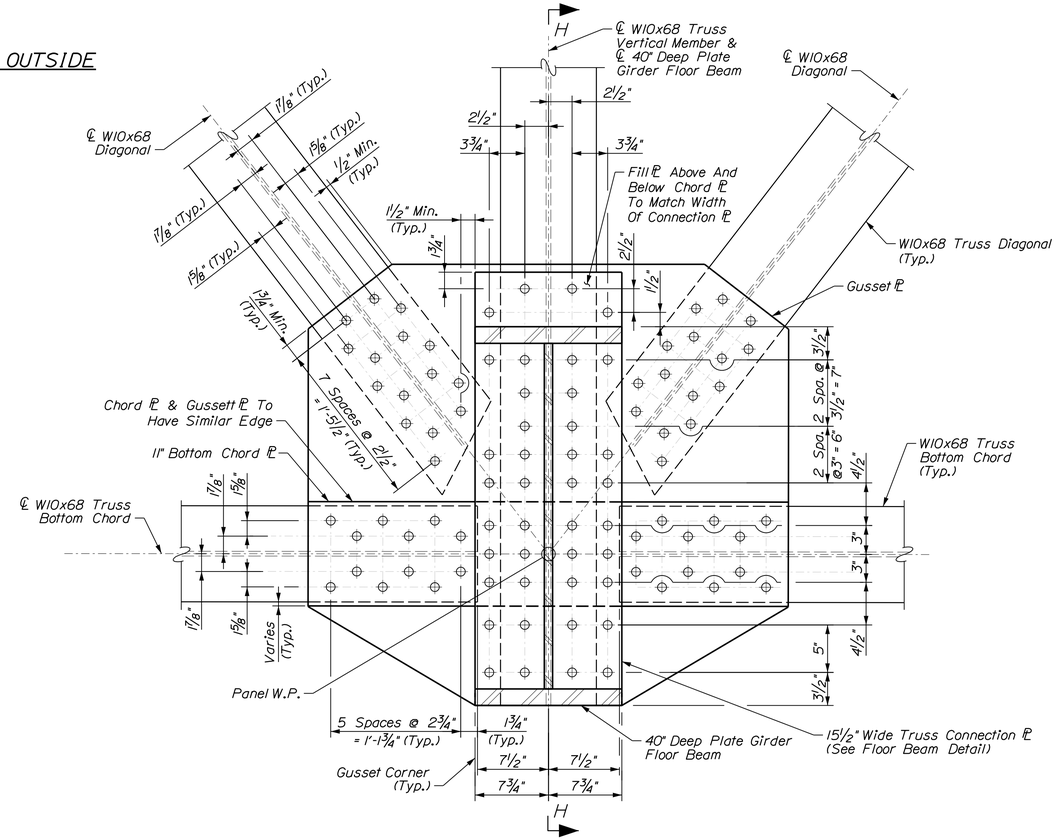


KEY PLAN

U10 OUTSIDE



L7 OUTSIDE



L7 INSIDE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK — STATE OF MAINE — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
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FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

TRUSS CONNECTION DETAILS 5 OF 5

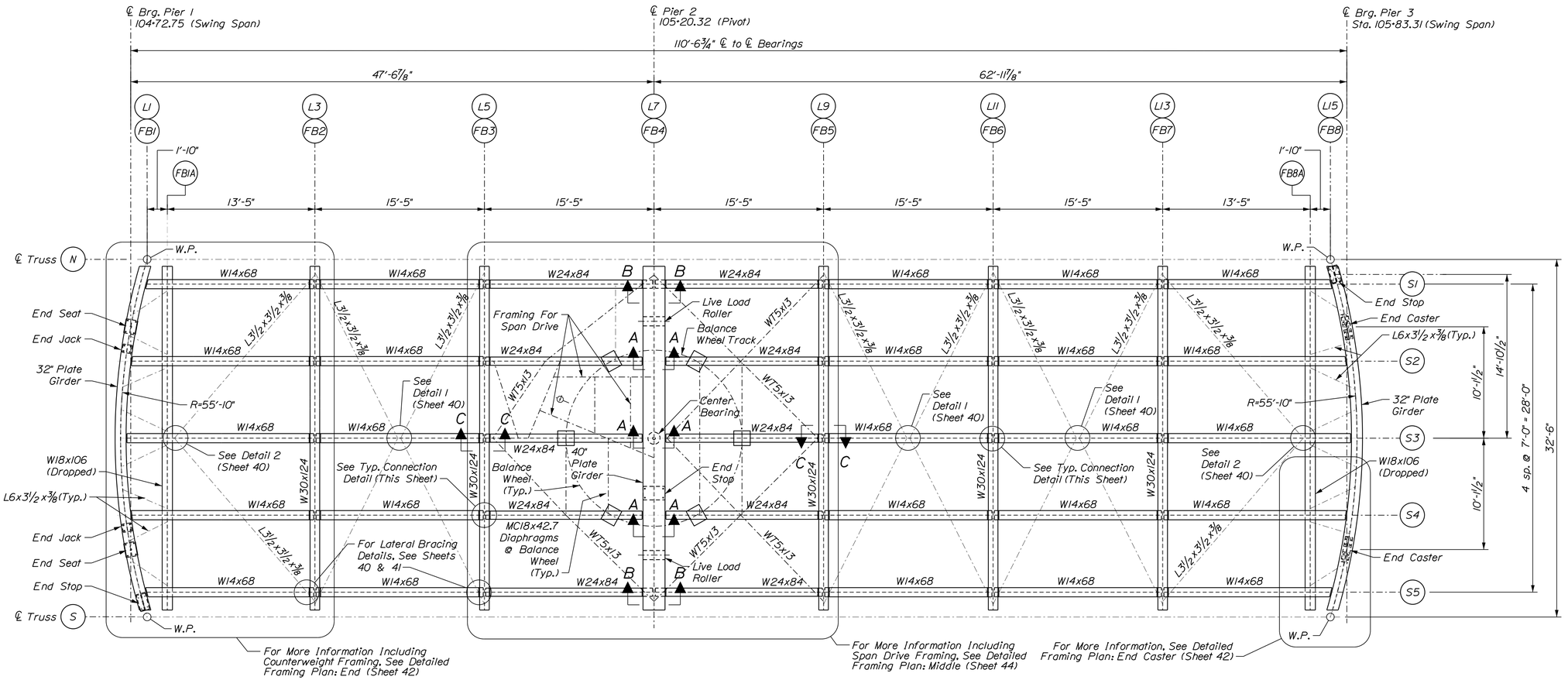
SHEET NUMBER

35

OF 132

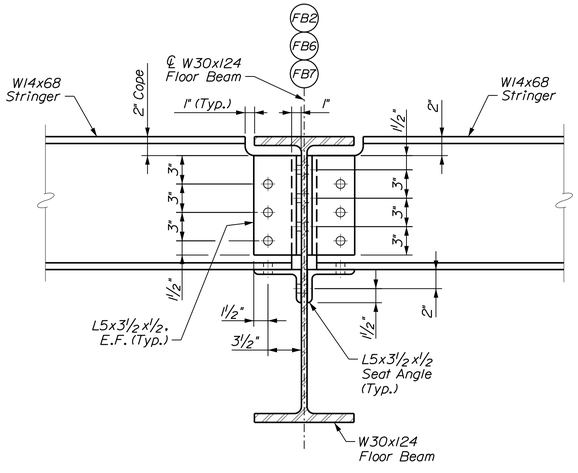
McFarland Johnson

Date:10/19/2018
Username:
Division:
Filename: ...\036_Truss_Details_5.dgn

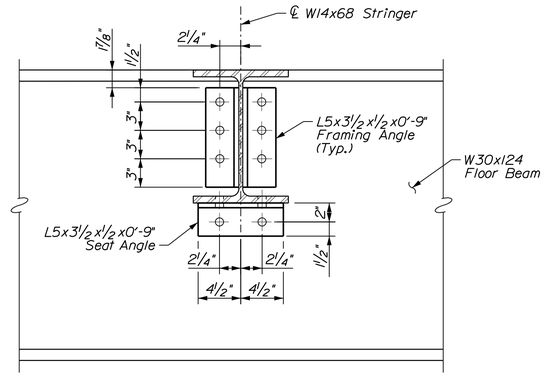


FRAMING PLAN

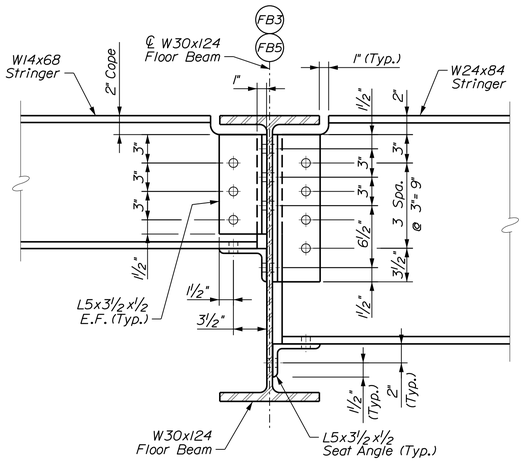
Note: Counterweight Framing Not Shown For Clarity



TYPICAL W14x68 TO W30x124 FLOOR BEAM CONNECTION



TYPICAL STRINGER TO FLOOR BEAM CONNECTION
(W14x68 SHOWN, W24x84 SIMILAR)



TYPICAL W14x68 & W24x84 TO W30x124 FLOOR BEAM CONNECTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

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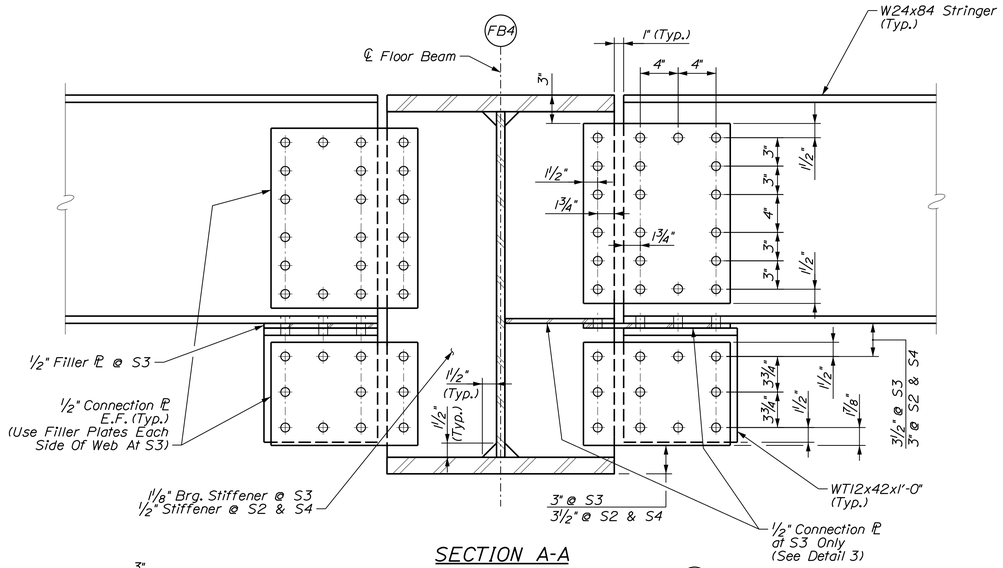
10/19/2018
DATE

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

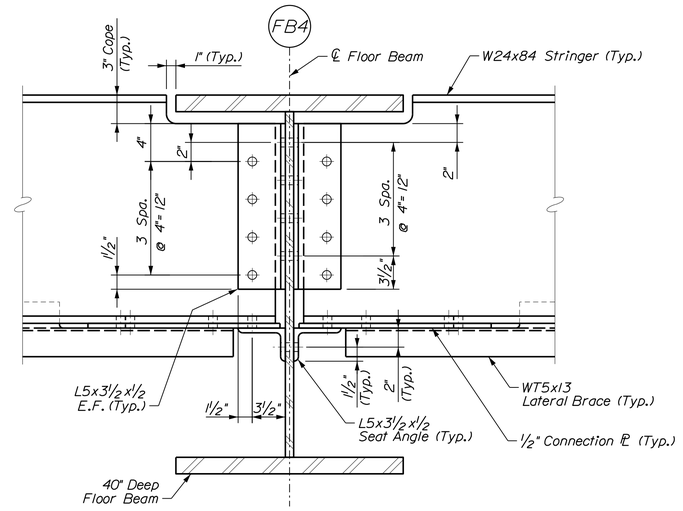
FRAMING PLAN & DETAILS

SHEET NUMBER
36
OF 132

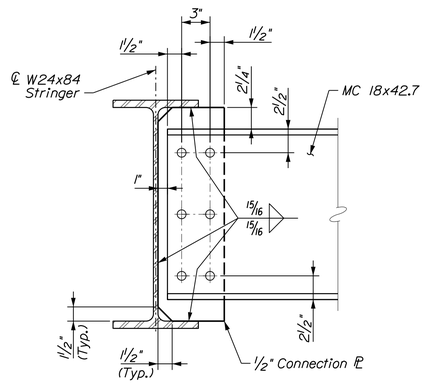
McFarland Johnson



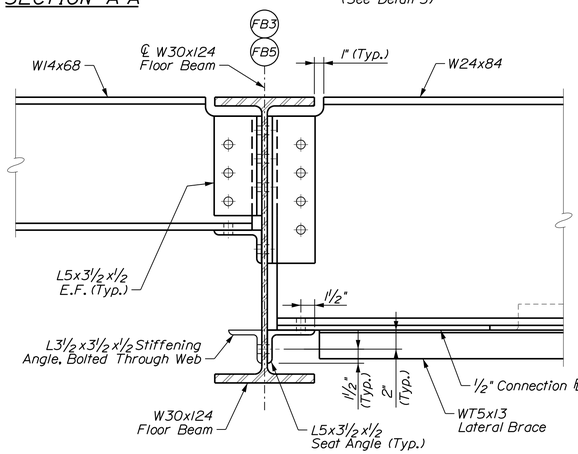
SECTION A-A



SECTION B-B



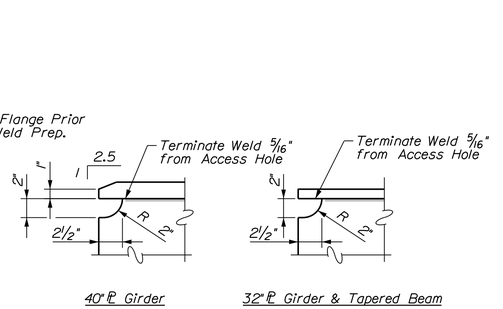
DIAPHRAGM CONNECTION AT BALANCE WHEELS



SECTION C-C

Note:

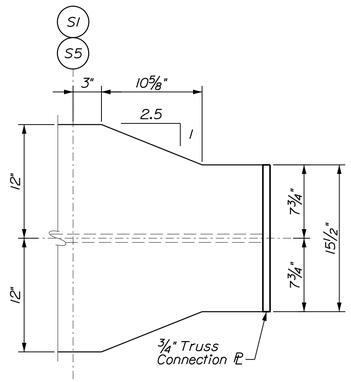
Chamfer Flange Prior to CJP Weld Prep.



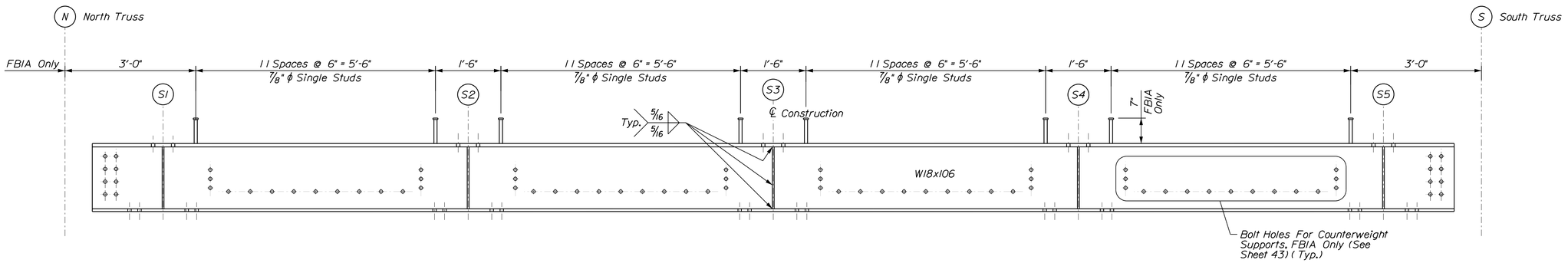
40" ℄ Girder

32" ℄ Girder & Tapered Beam

WELD ACCESS HOLE DETAIL



FLANGE TAPER DETAIL



FBIA FB8A TYPICAL W18x106 DROPPED FLOORBEAM ELEVATION (FBIA SHOWN, FB8A SIMILAR)

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

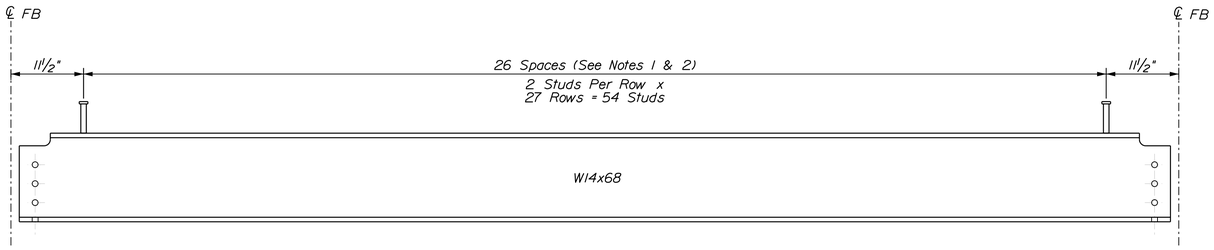
10/19/2018
DATE

PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO 10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK 10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA 10-19-18
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

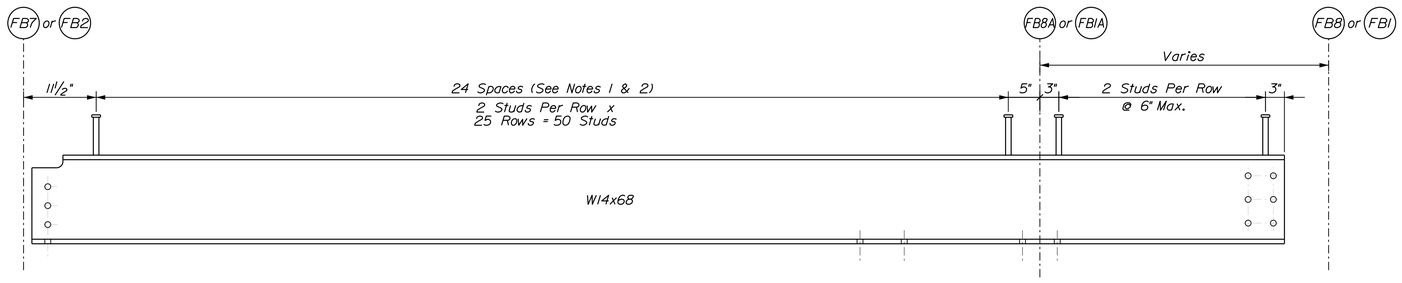
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

STRINGER AND FLOORBEAM DETAILS - 1 OF 3

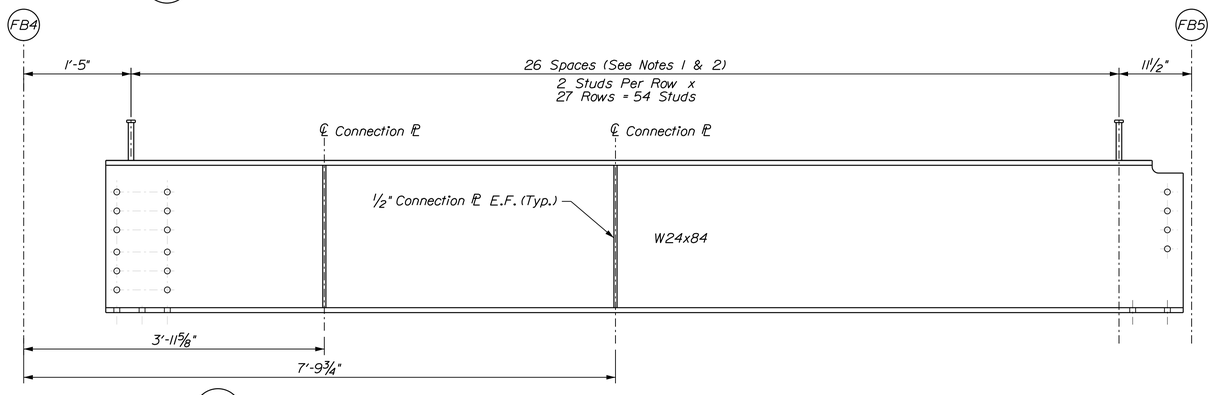
SHEET NUMBER
37
OF 132



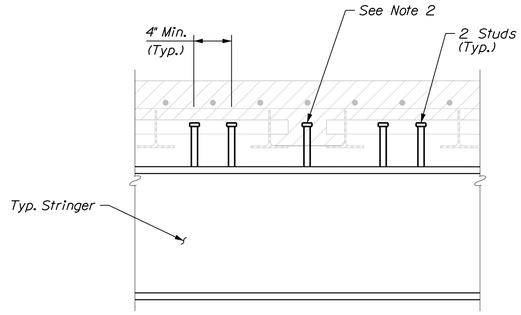
S2 S4 TYPICAL W14x68 STRINGER ELEVATION (S2 AND S4 SHOWN. OTHERS SIMILAR)



S2 TYPICAL 14x68 STRINGER ELEVATION (S2 SHOWN, OTHERS SIMILAR)



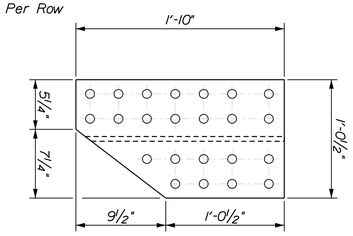
S3 TYPICAL W24x84 STRINGER ELEVATION (S3 SHOWN, OTHERS SIMILAR)



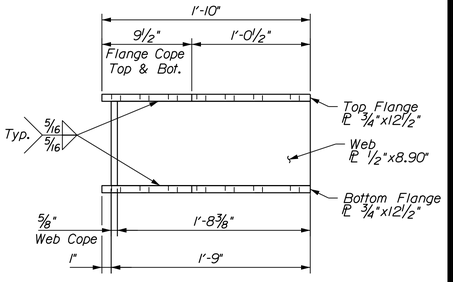
SHEAR STUD LAYOUT

Notes:

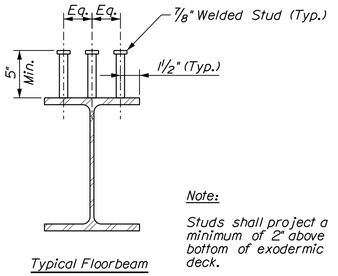
1. Two rows of studs installed between "main bearing bars" WT-sections on exodermic deck, except between panel splices (sections C & D on sheet 49).
2. One row of studs installed between exodermic deck panel splices (sections C & D on sheet 49).



STUB POST PLAN



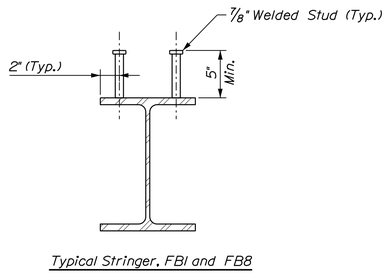
STUB POST ELEVATION



Typical Floorbeam

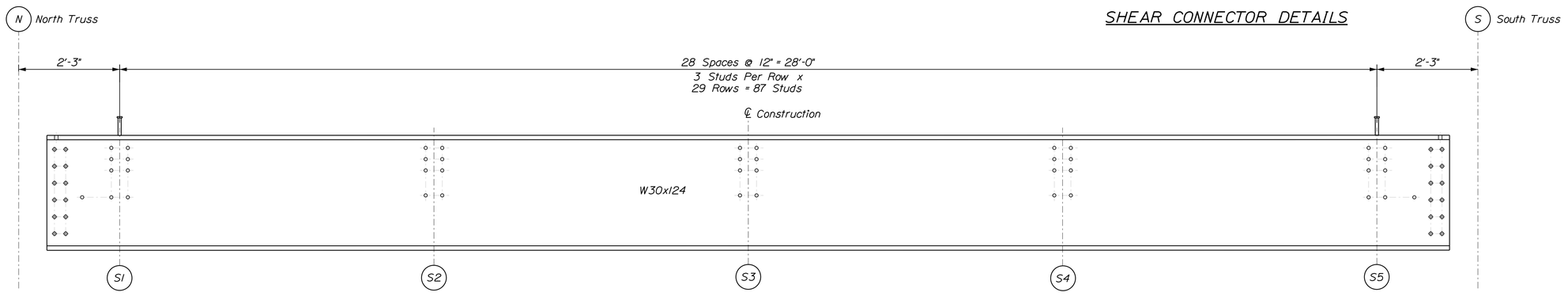
Note:

Studs shall project a minimum of 2" above bottom of exodermic deck.



Typical Stringer, FB1 and FB8

SHEAR CONNECTOR DETAILS



FB6 FB7 TYPICAL W30x124 FLOORBEAM ELEVATION (FB6 AND FB7 SHOWN, OTHERS SIMILAR)

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
DATE

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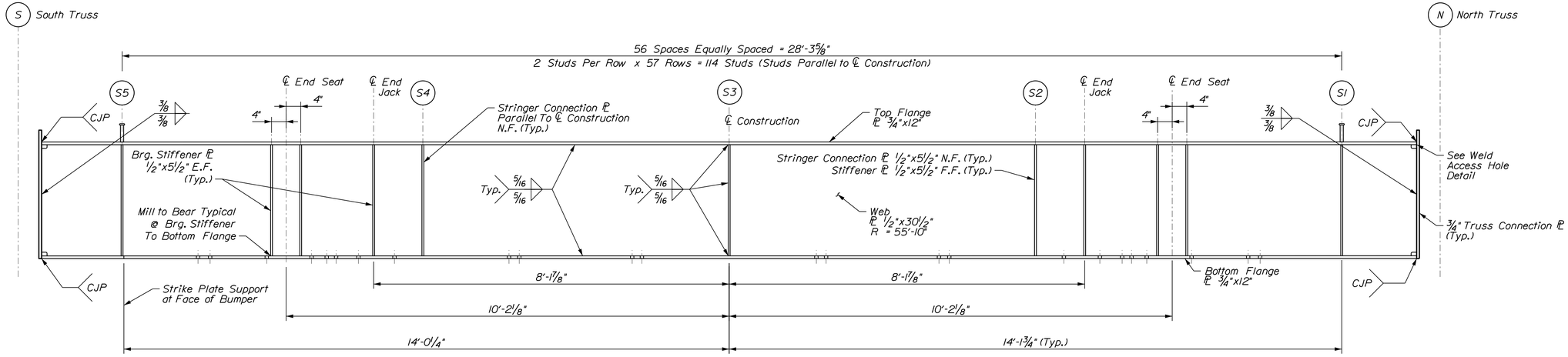
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

STRINGER AND FLOORBEAM DETAILS - 2 OF 3

SHEET NUMBER
38
OF 132

Date:10/19/2018
Username:
Filename: ...\039_Stringer_Floorbeam_Details_2.dgn Division:

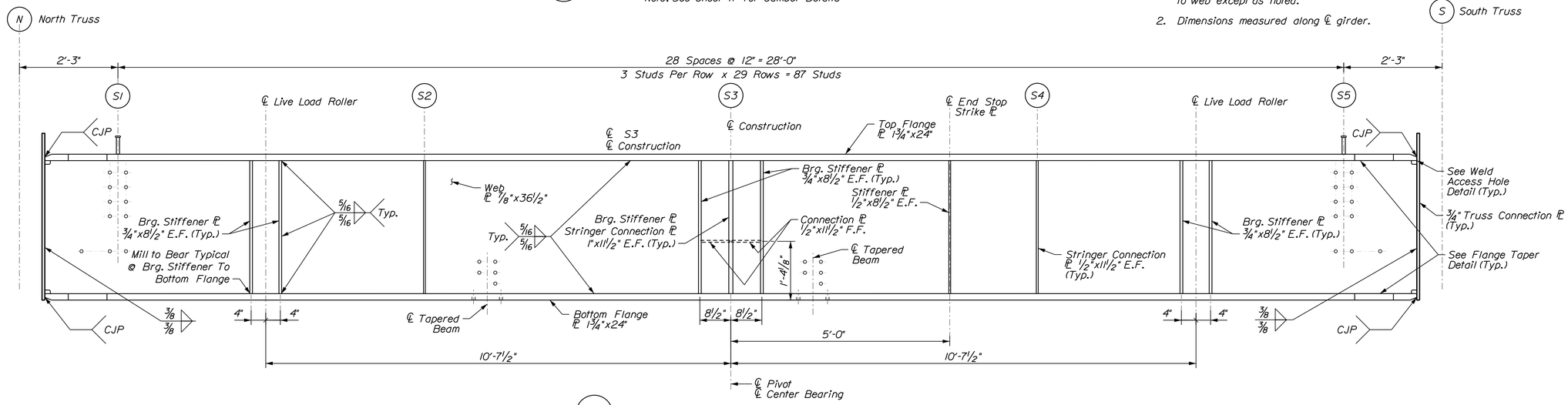


FB1 **32" CURVED PLATE GIRDER ELEVATION**

Note: See sheet 47 for Camber Details

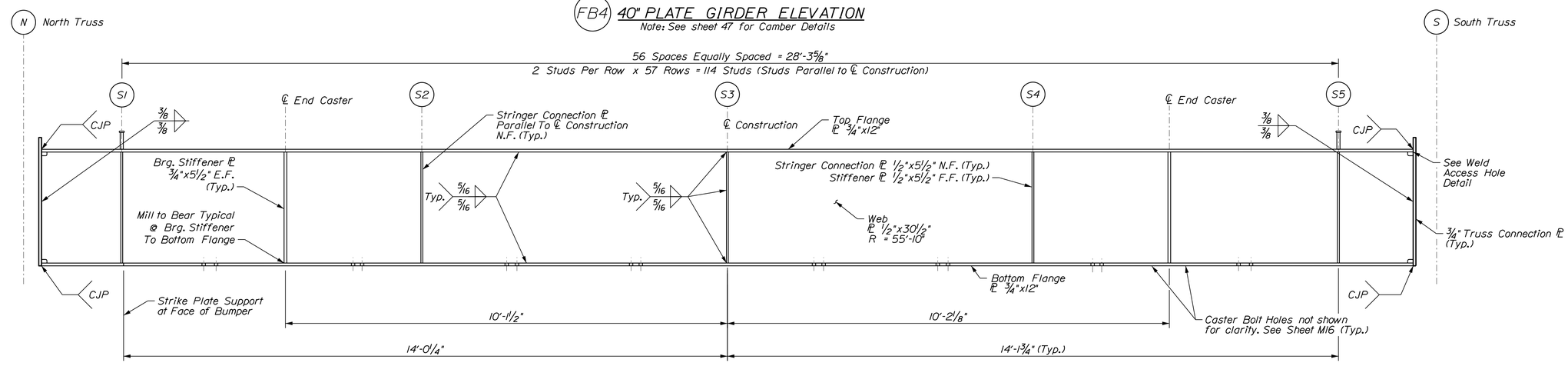
Notes:

1. Connection Plates & Stiffeners shall be perpendicular to web except as noted.
2. Dimensions measured along ℄ girder.



FB4 **40" PLATE GIRDER ELEVATION**

Note: See sheet 47 for Camber Details



FB8 **32" CURVED PLATE GIRDER ELEVATION**

Note: See sheet 47 for Camber Details

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
DATE

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DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

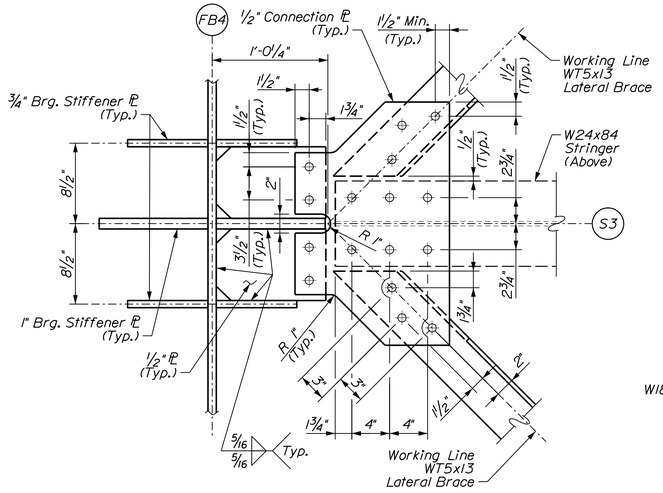
STRINGER AND FLOORBEAM DETAILS - 3 OF 3

SHEET NUMBER

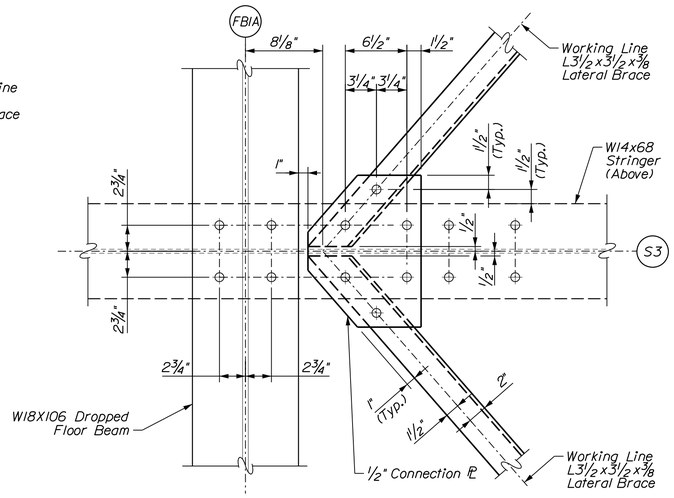
39

OF 132

Filename: ...\040_Stringer_Floorbeam_Details_3.dgn Division: Username: Date:10/19/2018



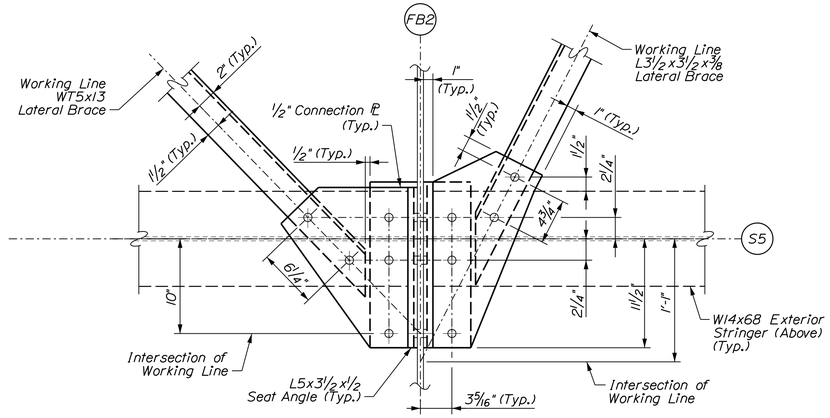
DETAIL 3



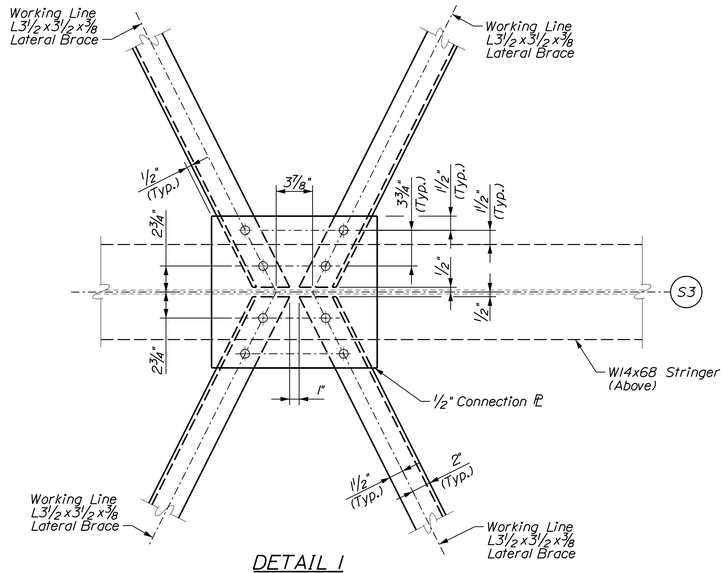
DETAIL 2

(FB1A Shown, FB8A similar)

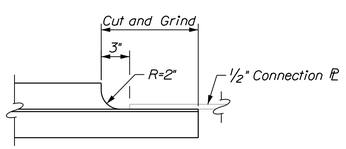
Note: Counterweight framing not shown for clarity.



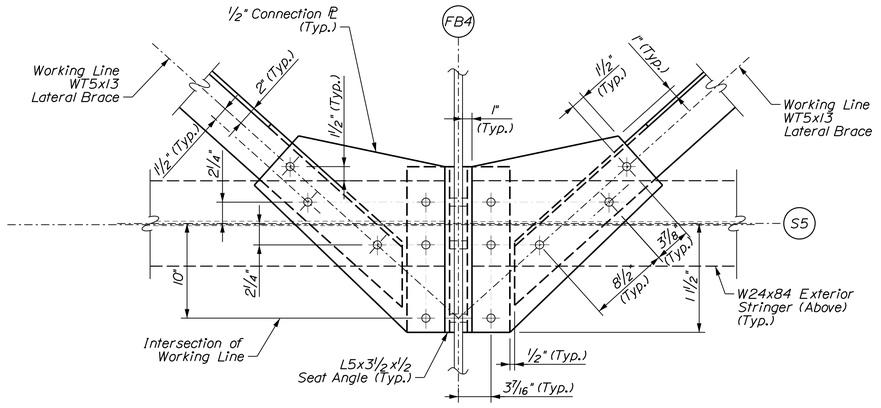
FB2 PLAN (AS SHOWN)
FB6 PLAN (SIMILAR)
FB7 PLAN (OPP. HAND)



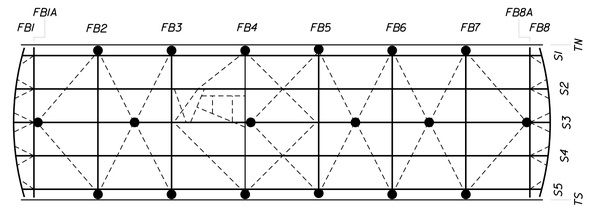
DETAIL 1



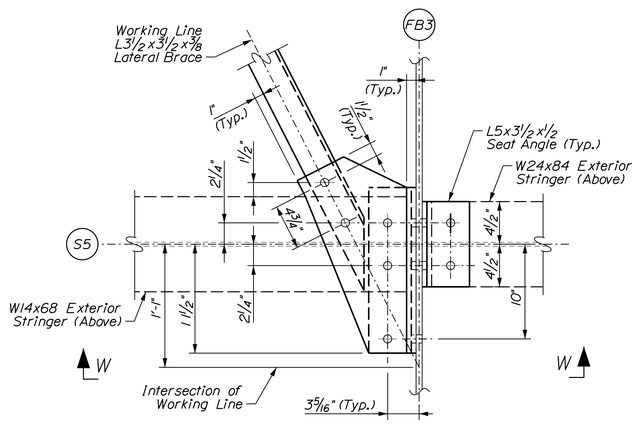
TYPICAL WT15x13 CUT DETAIL



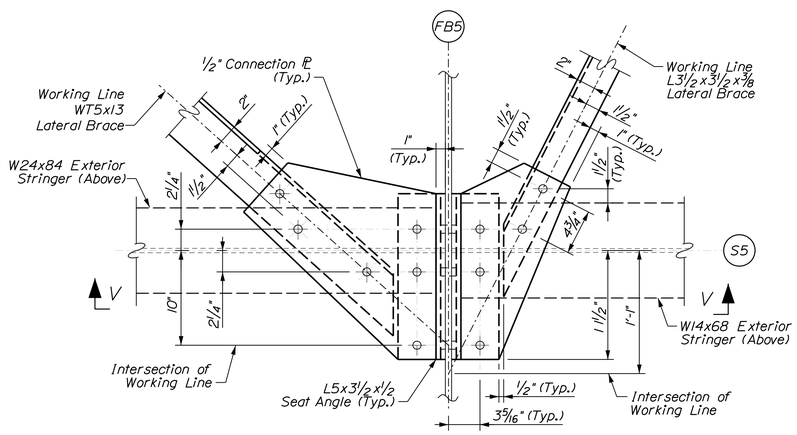
FB4 PLAN



LATERAL BRACING KEY PLAN



FB3 PLAN



FB5 PLAN

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick

10075 SIGNATURE

P.E. NUMBER

10/19/2018 DATE

	BY	DATE
L. TIMBERLAKE		
PROJ. MANAGER		
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. AGUILAR	10-19-18
DESIGN2-DETAILED2	T. MCAULIFFE	10-19-18
DESIGN3-DETAILED3	B. COLBURN	10-19-18
REVISIONS 1	S. OZANA	
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

LATERAL BRACING DETAILS 1 OF 2

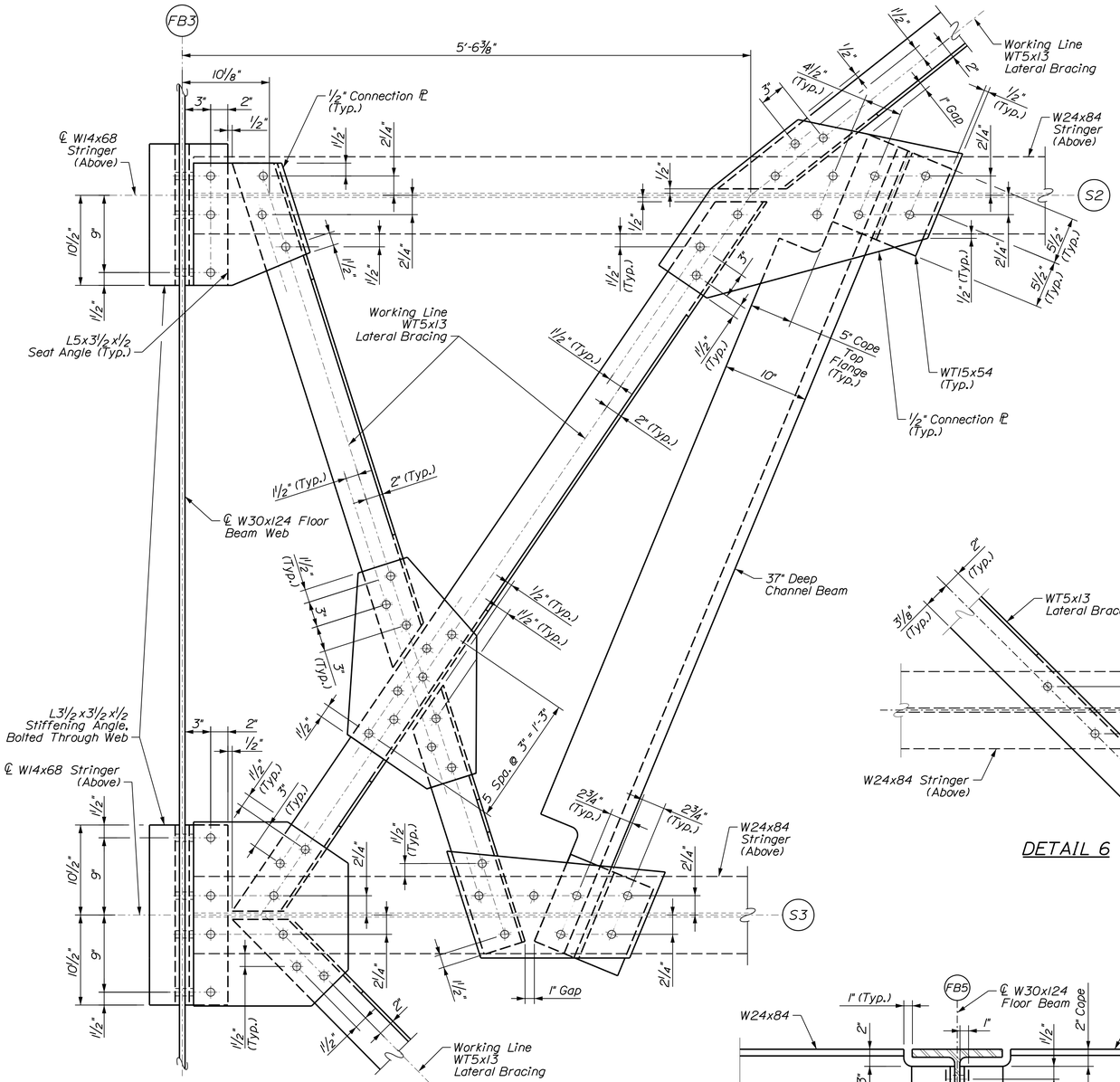
SHEET NUMBER

40

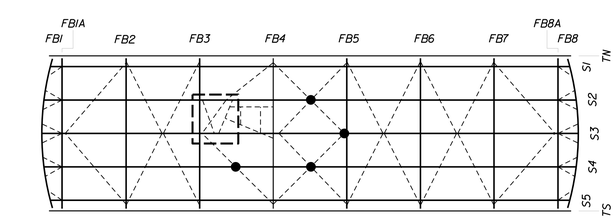
OF 132

McFarland Johnson

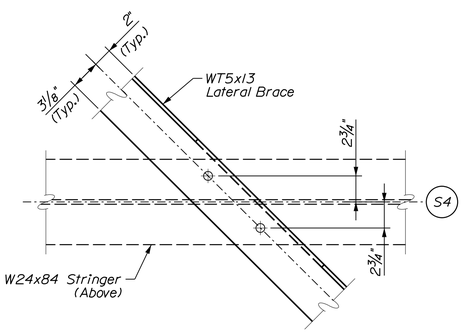
Filename: ...\041_Laterol_Bracing_Details_1.dgn Division: Username: Date:10/19/2018



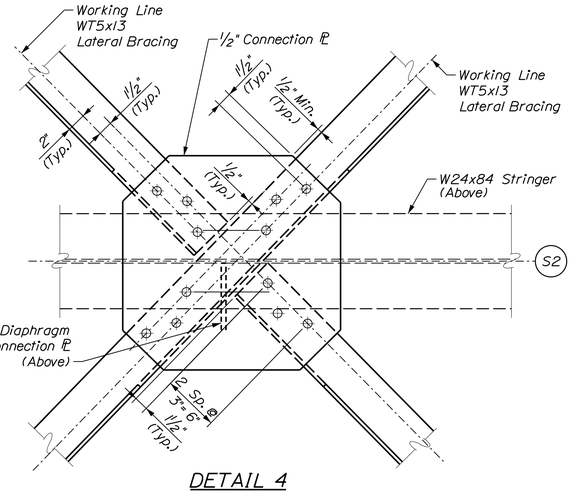
CHANNEL BEAM BRACING PLAN



LATERAL BRACING KEY PLAN

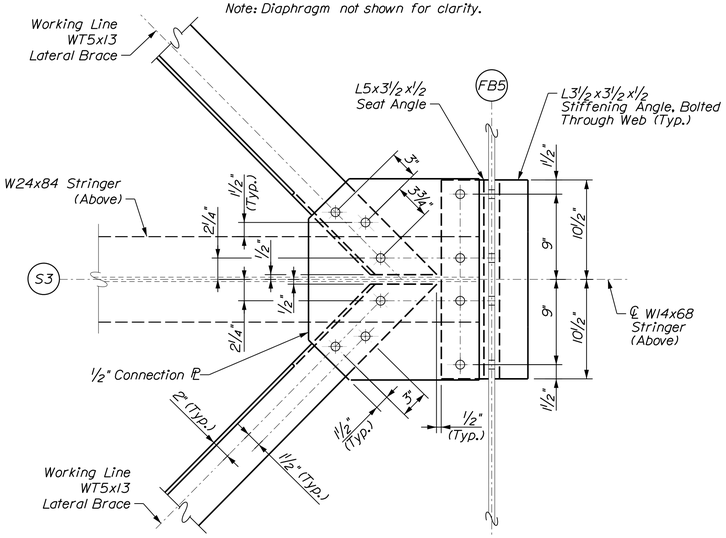


DETAIL 6

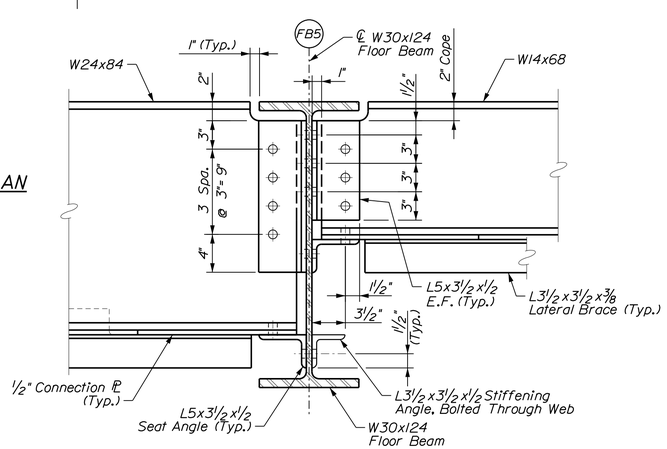


DETAIL 4

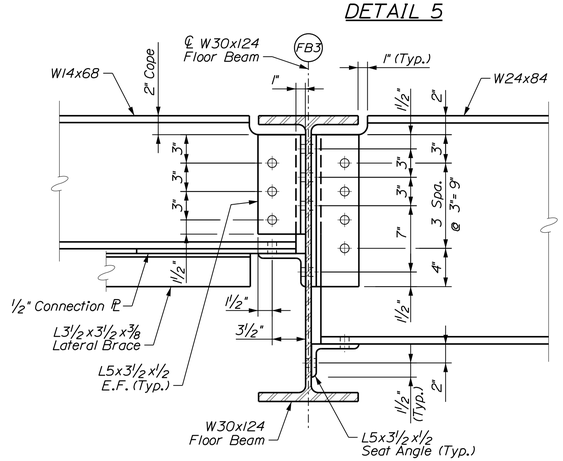
(S2 Shown, S4 similar)
Note: Diaphragm not shown for clarity.



DETAIL 5



SECTION V-V



SECTION W-W

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
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PROJ. MANAGER	L. TIMBERLAKE	
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REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

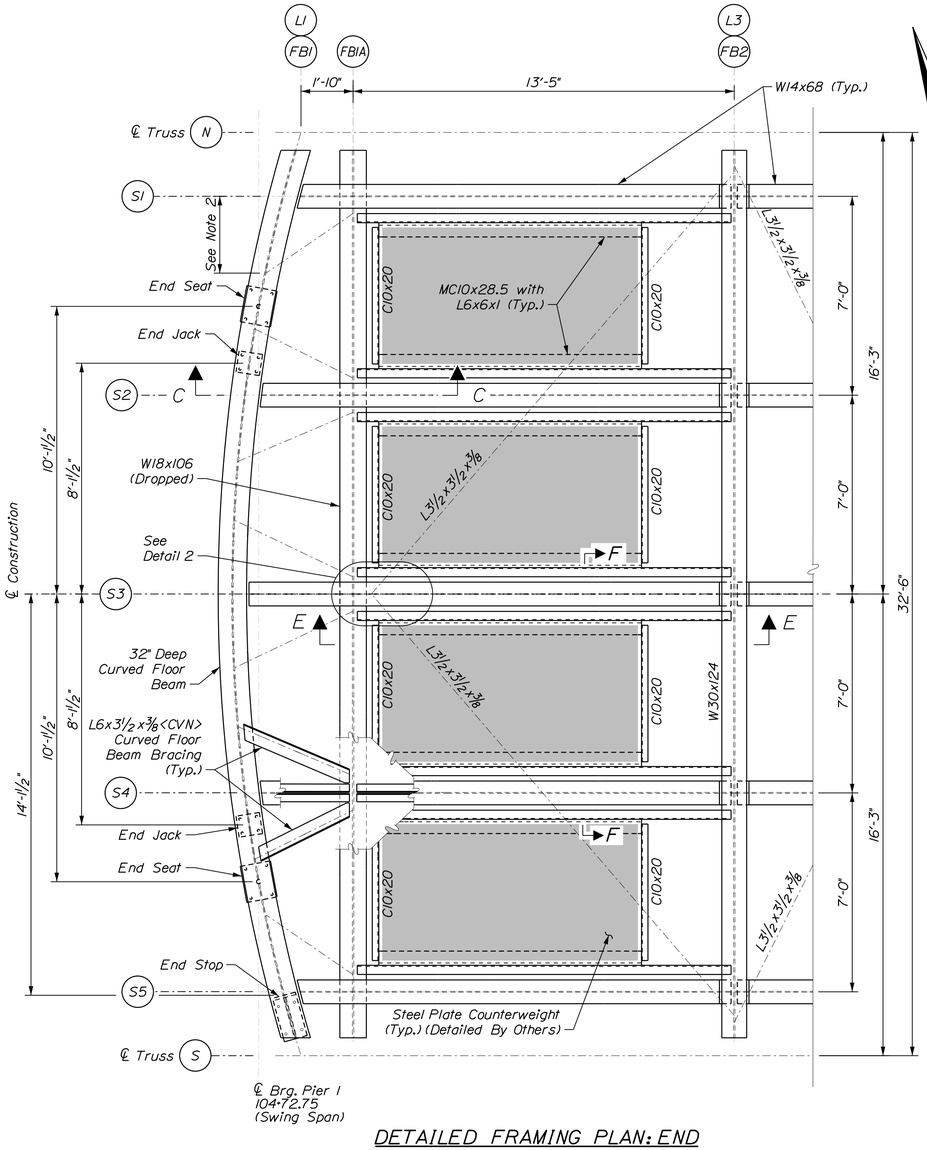
LATERAL BRACING DETAILS 2 OF 2

SHEET NUMBER

41

OF 132

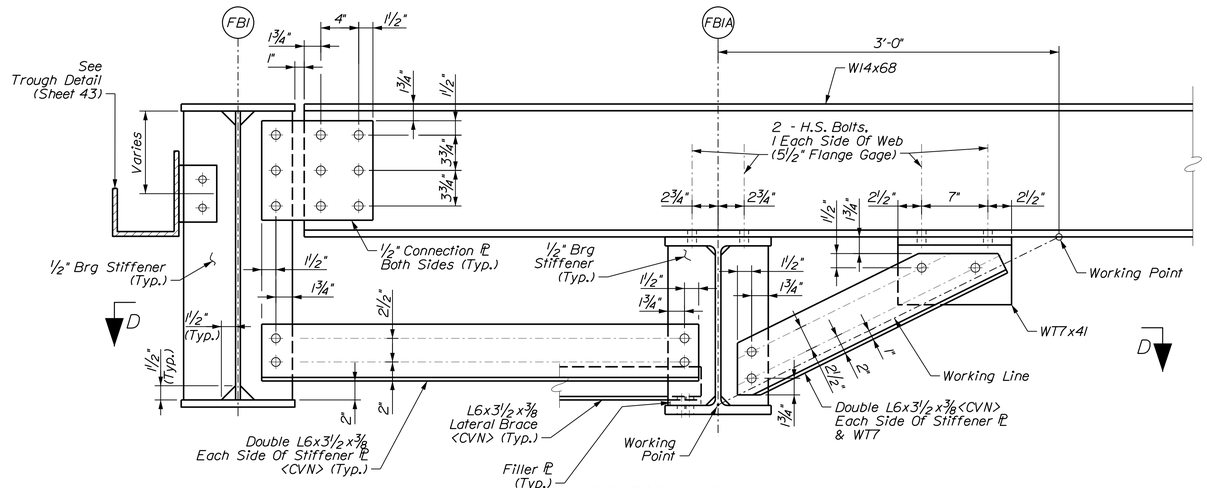
McFarland Johnson



DETAILED FRAMING PLAN: END

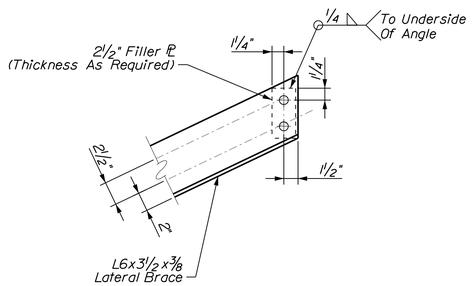
Notes:

1. No counterweights or framing to support counterweights on Pier 3 end.
2. All Curved Floorbeam bracing spaced as shown in section D-D, except at End Caster locations (See Detailed Bracing Plan: End Caster).
3. Lateral bracing in bay FB1A-FB2 to be installed immediately after counterweights installed.
4. <CVN> - See Sheet 31, Note 12.

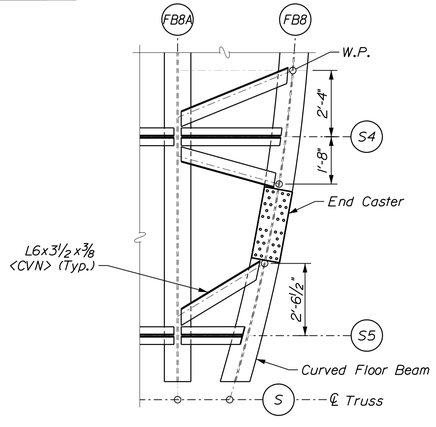


SECTION C-C

West End shown, FB8 - FB8A similar.
<CVN> - See Sheet 31, Note 12.

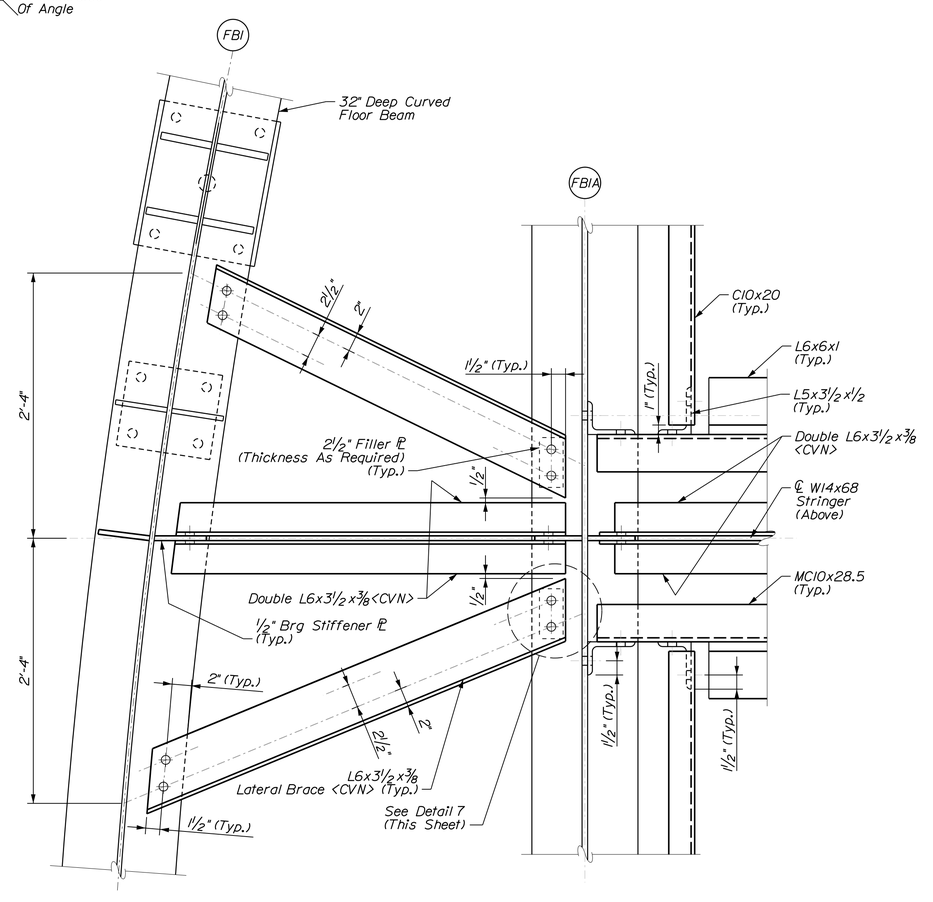


DETAIL 7



DETAILED BRACING PLAN: END CASTER

Bay S4/S5 Shown, Bay S1/S2 Similar
(Stringers not shown for clarity)
<CVN> - See Sheet 31, Note 12.



SECTION D-D

West End shown, FB8 - FB8A similar
<CVN> - See Sheet 31, Note 12.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

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Thomas T. Kendrick

SIGNATURE

10075

P.E. NUMBER

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REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

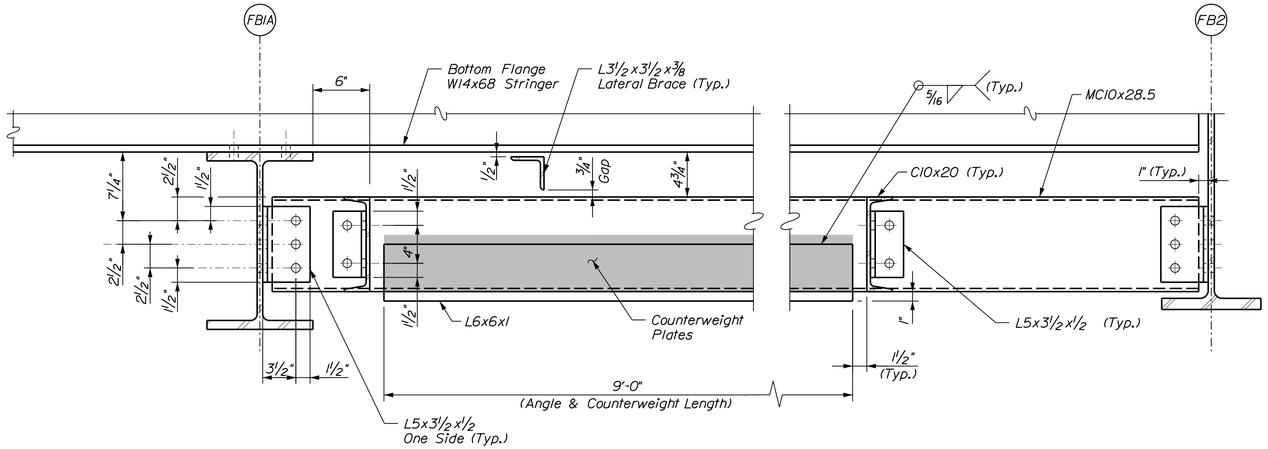
DETAILED FRAMING PLAN: END

SHEET NUMBER

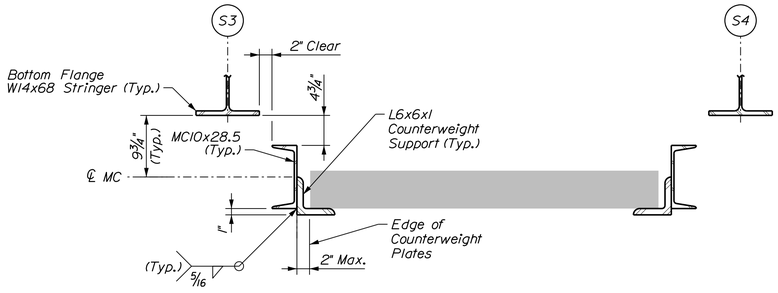
42

OF 132

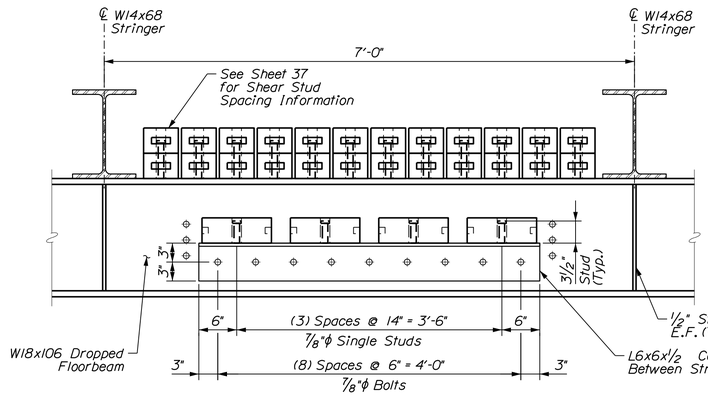
Filename: ...\043_Detailed_Framing_Plan_End_1.dgn Division: Username: Date:10/19/2018



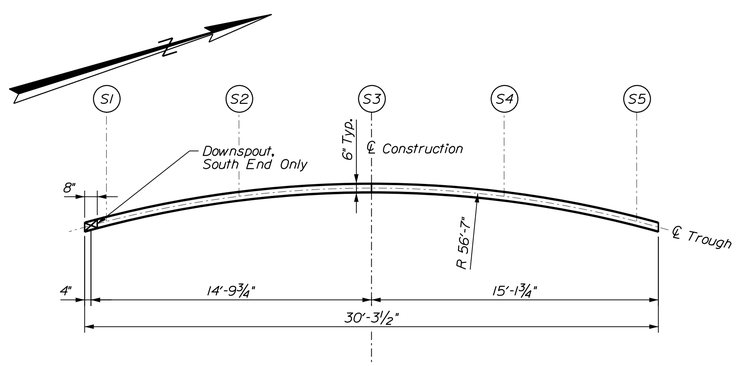
SECTION E-E



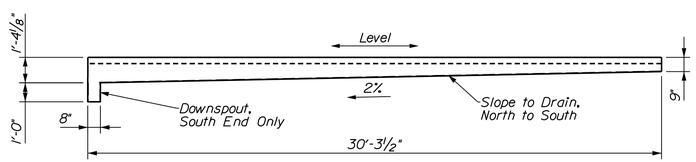
SECTION F-F



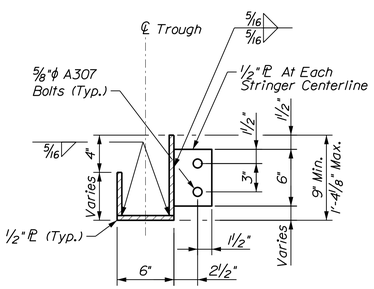
BALANCE BLOCK LAYOUT DETAIL



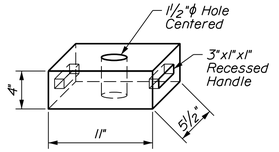
TROUGH PLAN



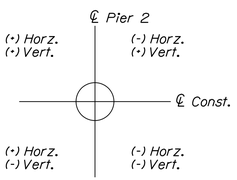
TROUGH ELEVATION



TROUGH DETAIL



BALANCE BLOCK DETAIL



SCHEMATIC MOMENT SIGN CONVENTION

BALANCE BLOCK DETAIL

BALANCE TABLE (COUNTERWEIGHT LOADS PER BAY)

Bay	Counterweight (LB)	Balance Block (EA)	Total Load (LB)
S1/S2	15000	8	15519.36
S2/S3	15999	8	16518.36
S3/S4	15999	8	16518.36
S4/S5	18107	9	18691.28
Total Counterweight and Balance Block Load = 67247.36			

BALANCE NOTES:

1. Values shown in the Balance Table are for the balance in the closed position.
2. The Contractor shall prepare and submit balance computations in accordance with the Specifications.
3. The locations and quantitites of the balance materials shown on this sheet are approximate. The exact quantity, location, and size of balance material shall be determined and documented by the Contractor in accordance with the Specifications.
4. Weight of one balance block is 64.92 lbs.
5. Maximum Balance Block Weight = 7271.04 lbs
   (12) studs x 2 blocks/stud x (4) bays x 64.92 lbs/block
   (4) studs x 1 block/stud x (4) bays x 64.92 lbs/block
6. The maximum number of blocks per bay is shown here for clarity only.
7. Balance blocks and counterweight plates shall be steel and shall have a metallized or galvanized protective coating per section 506.
8. Dimensions and weights shown are for the steel only, see specifications for coating.
9. In addition to the balance blocks located on the bridge, a minimum of 16 spare balance blocks shall be provided. Spare balance blocks shall be stored at a location determined by the Resident.
10. Refer to Special Provision 880 - Balancing Bridge.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	S. OZANA	10-19-18
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

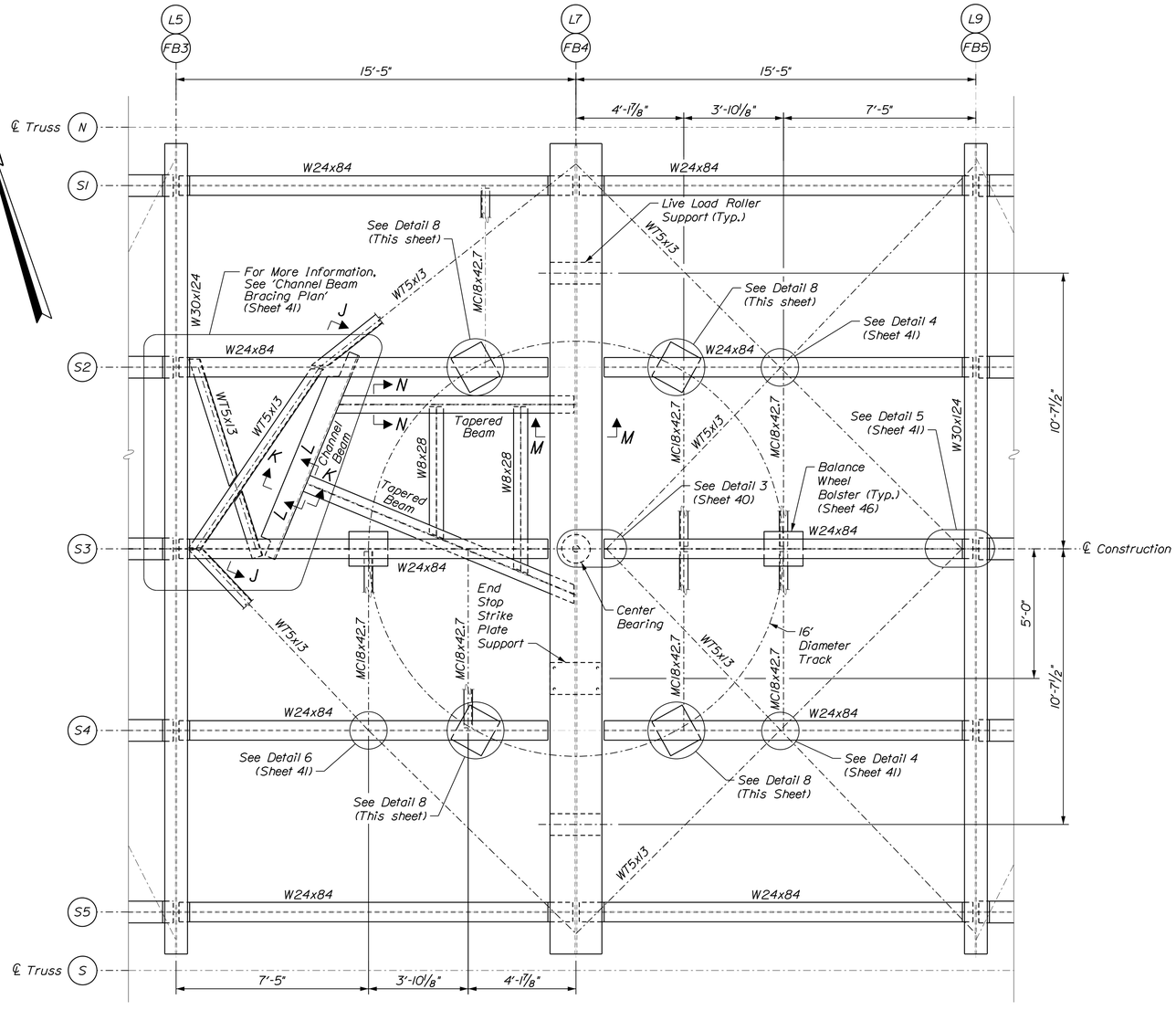
PROJ. MANAGER: L. TIMBERLAKE
DESIGNED: T. AGUILAR
CHECKED: T. MCAULIFFE
DETAILED2: B. COLBURN

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

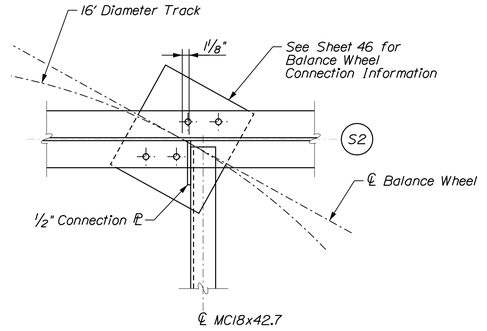
SECTIONS & DETAILS: END

SHEET NUMBER
43
OF 132

Date:10/19/2018
Username:
Filename: ...\044_Detailed_Framing_Plan_End_2.dgnDivision:

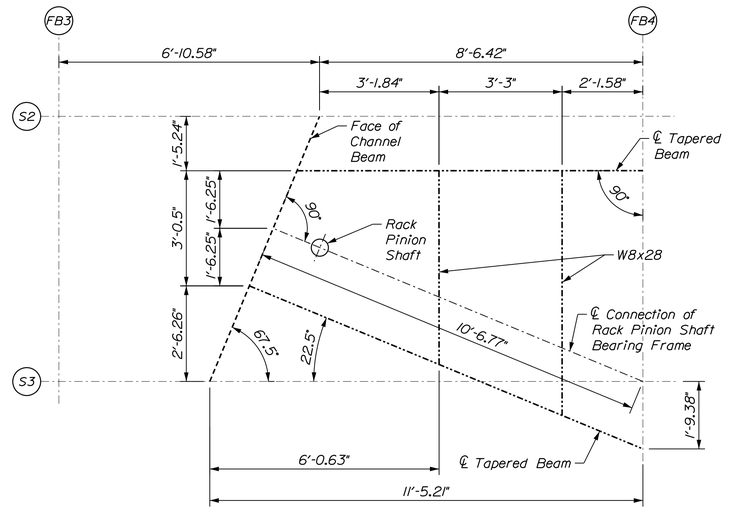


DETAILED FRAMING PLAN: MIDDLE



DETAIL 8

S2 Shown, S4 Similar



SPAN DRIVE FRAMING LAYOUT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

DETAILED FRAMING PLAN: MIDDLE

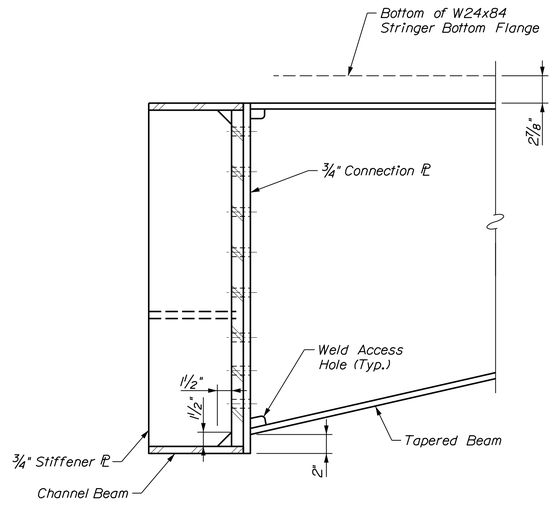
SHEET NUMBER

44

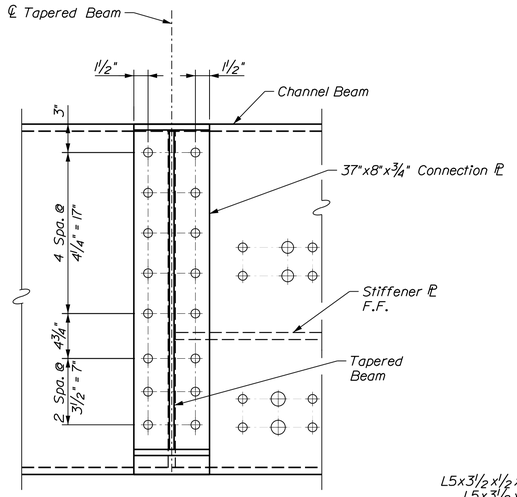
OF 132

McFarland Johnson

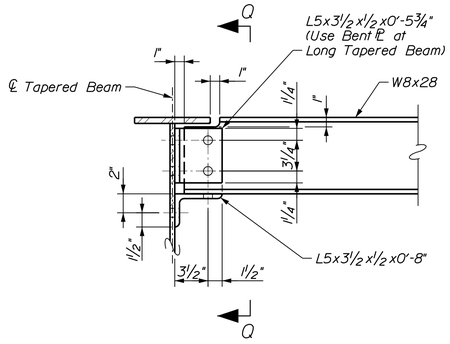
Filename: ...\045_Detailed_Framing_Plan_Mid_1.dgn Division: Username: Date:10/19/2018



SECTION K-K



SECTION L-L



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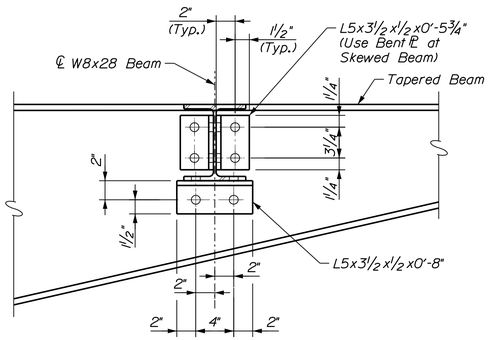

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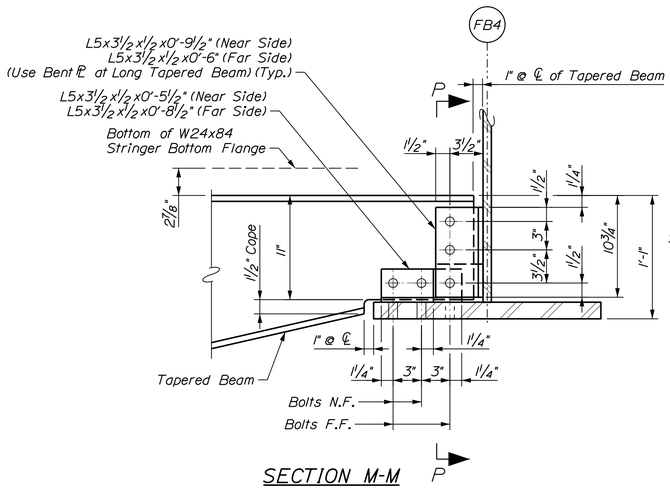

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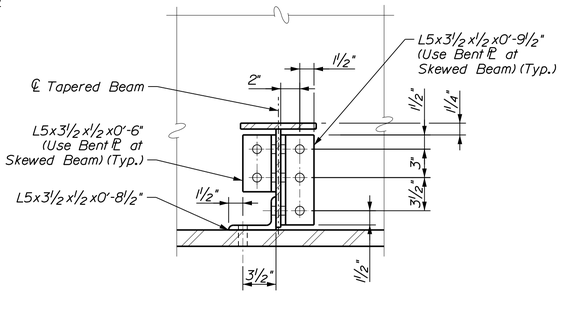

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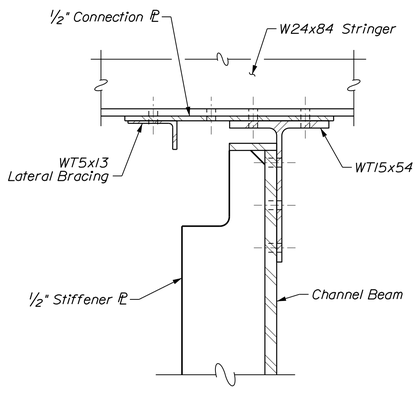
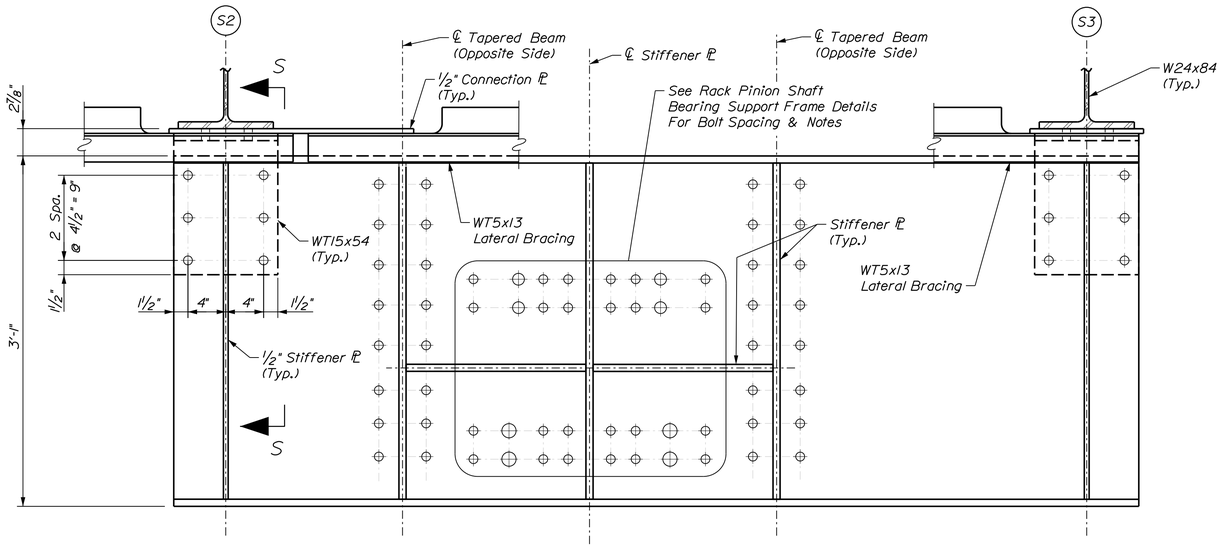


SECTION S-S



SECTION J-J AT CHANNEL BEAM

(See Sheet 46 for Beam Elevation)

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK — STATE OF MAINE — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick — SIGNATURE

10075 — P.E. NUMBER

10/19/2018 — DATE

PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

SECTIONS AND DETAILS: MIDDLE (1 OF 2)

SHEET NUMBER

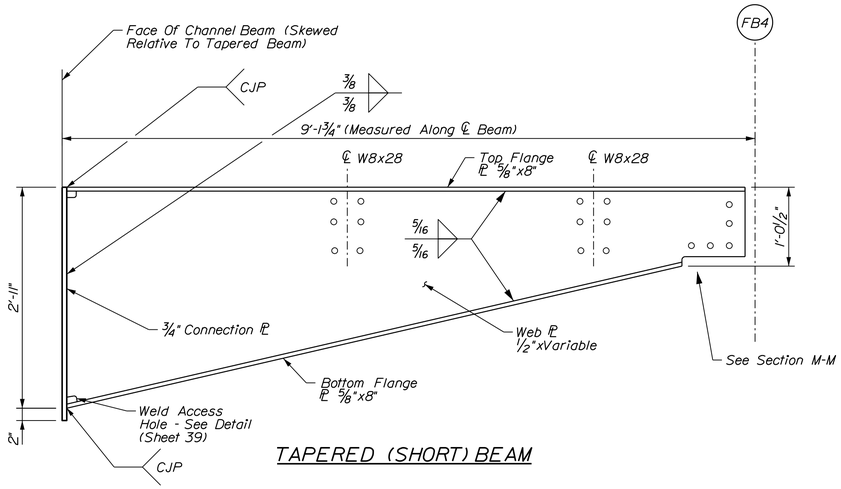
45

OF 132

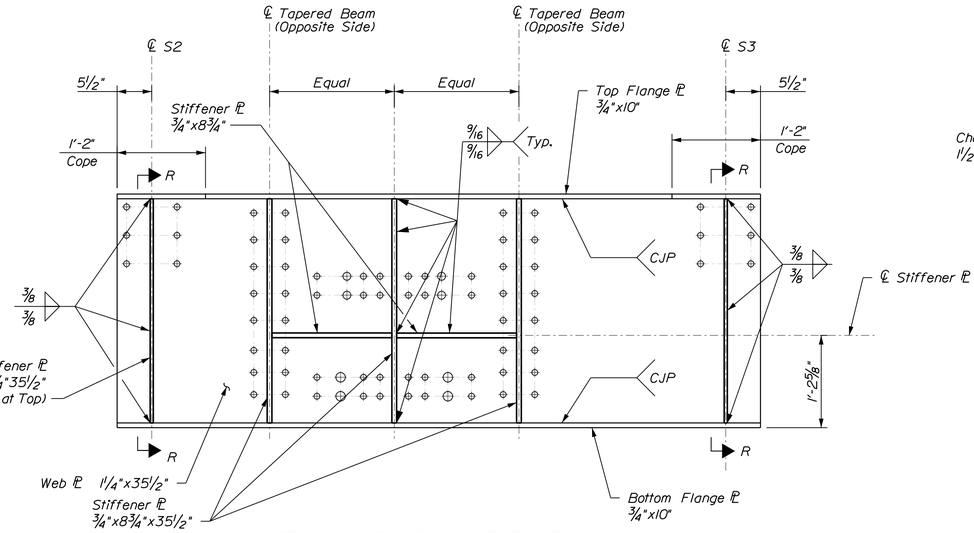
Date:10/19/2018

Username:

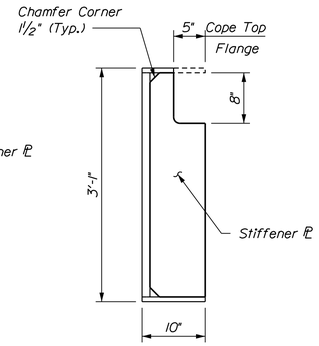
Filename: ...\046_Detailed_Framing_Plan_Mid_2.dgnDivision:



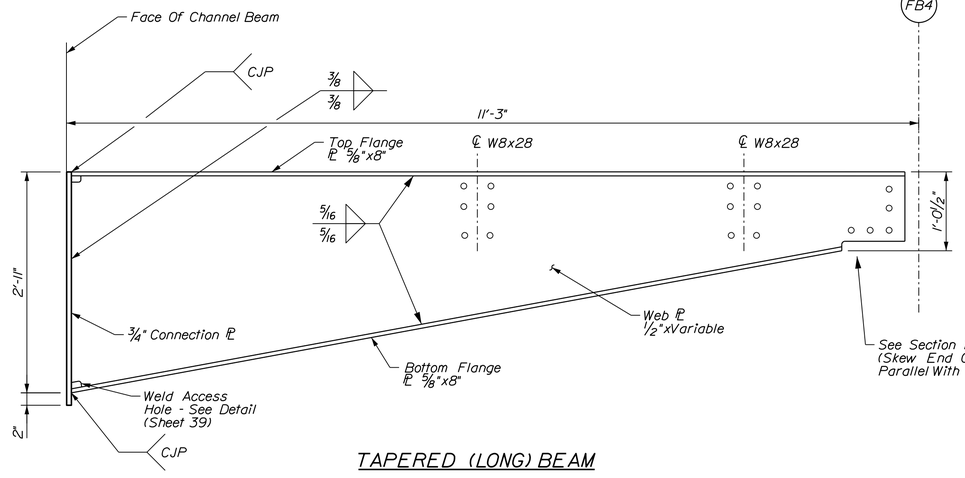
TAPERED (SHORT) BEAM



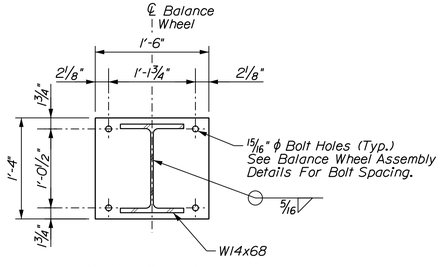
37" CHANNEL BEAM ELEVATION



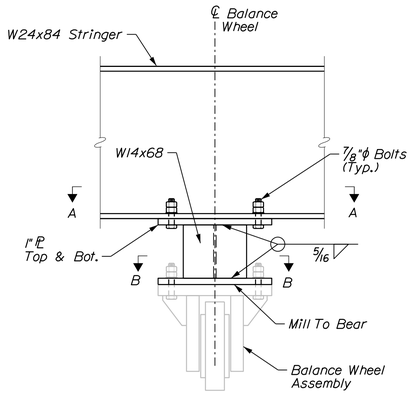
SECTION R-R



TAPERED (LONG) BEAM

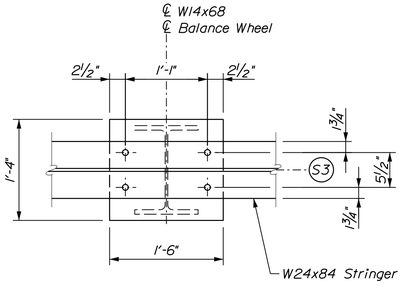


SECTION B-B



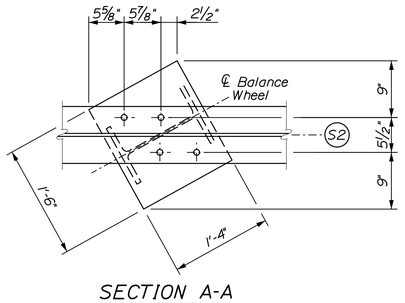
BALANCE WHEEL BOLSTER DETAIL

For Balance Wheel Assembly Details, see Mechanical Sheet M9



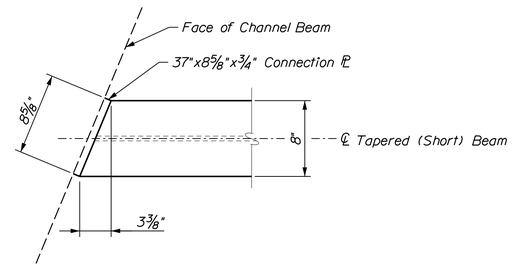
SECTION A-A

Stringer S3, Typical

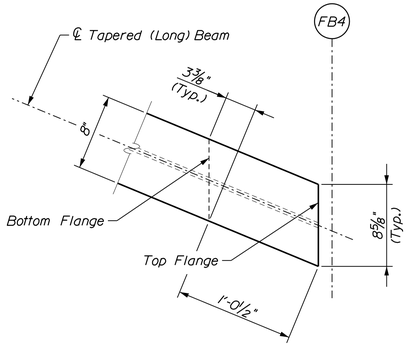


SECTION A-A

Stringer S2, Bay FB3-FB4 Shown
Other Locations Similar



CLIPPING PLAN: TAPERED (SHORT) BEAM



CLIPPING PLAN: TAPERED (LONG) BEAM

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	T. MCAULIFFE	10-19-18
DESIGN3-DETAILED3	T. AGUILAR	
REVISIONS 1	B. COLBURN	
REVISIONS 2	S. OZANA	
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

SECTIONS AND DETAILS: MIDDLE (2 OF 2)

SHEET NUMBER
46
OF 132

McFarland Johnson

Filename: ...\047_Detailed_Framing_Plan_Mid_3.dgn Username:
Division: Date:10/19/2018

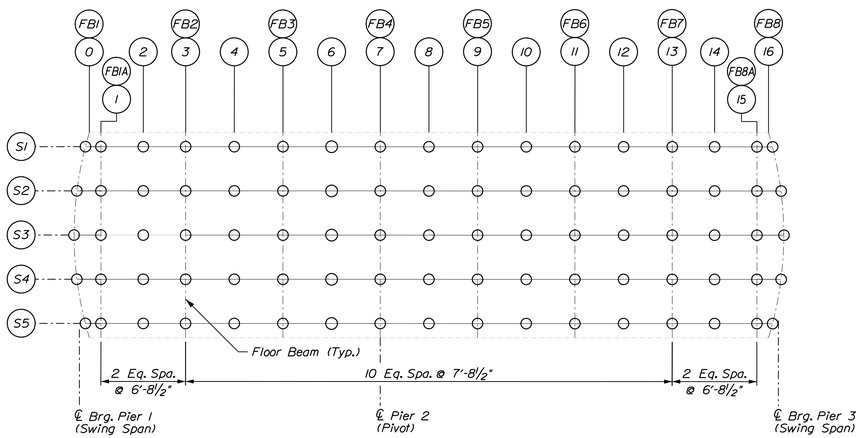
Table of Deflections (in) - Stringer Line 1																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Steel DL	-0.07	-0.12	-0.18	-0.18	-0.14	-0.09	-0.05	-0.02	-0.04	-0.05	-0.07	-0.08	-0.09	-0.09	-0.08	-0.06	-0.04
Deck	-0.03	-0.05	-0.08	-0.08	-0.09	-0.06	-0.04	-0.01	-0.06	-0.09	-0.14	-0.15	-0.17	-0.16	-0.15	-0.10	-0.07
SDL	0.00	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	0.00	-0.01	-0.02	-0.03	-0.02	-0.03	-0.02	-0.02	-0.01	-0.01

Table of Deflections (in) - Stringer Line 2																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Steel DL	0.03	-0.12	-0.27	-0.33	-0.23	-0.12	-0.05	0.00	-0.03	-0.06	-0.09	-0.11	-0.12	-0.13	-0.09	-0.03	0.02
Deck	0.01	-0.05	-0.14	-0.17	-0.16	-0.10	-0.05	0.00	-0.07	-0.14	-0.21	-0.23	-0.27	-0.25	-0.19	-0.06	0.03
SDL	0.00	0.00	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	0.00	0.00

Table of Deflections (in) - Stringer Line 3																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Steel DL	0.05	-0.12	-0.29	-0.39	-0.27	-0.13	-0.07	0.00	-0.03	-0.07	-0.10	-0.12	-0.14	-0.14	-0.09	-0.02	0.04
Deck	0.02	-0.06	-0.15	-0.20	-0.19	-0.12	-0.06	0.00	-0.08	-0.16	-0.24	-0.26	-0.30	-0.29	-0.20	-0.05	0.06
SDL	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.01	0.00	0.01

Table of Deflections (in) - Stringer Line 4																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Steel DL	0.03	-0.11	-0.27	-0.33	-0.23	-0.12	-0.06	0.00	-0.02	-0.06	-0.09	-0.11	-0.12	-0.13	-0.09	-0.03	0.02
Deck	0.01	-0.05	-0.14	-0.17	-0.16	-0.10	-0.05	0.00	-0.07	-0.14	-0.21	-0.23	-0.27	-0.25	-0.19	-0.06	0.03
SDL	0.00	0.00	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	0.00	0.00

Table of Deflections (in) - Stringer Line 5																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Steel DL	-0.07	-0.11	-0.17	-0.18	-0.14	-0.09	-0.05	-0.02	-0.04	-0.05	-0.07	-0.08	-0.09	-0.09	-0.08	-0.06	-0.04
Deck	-0.03	-0.05	-0.08	-0.08	-0.09	-0.06	-0.04	-0.01	-0.06	-0.09	-0.14	-0.15	-0.17	-0.16	-0.15	-0.09	-0.07
SDL	0.00	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	0.00	-0.01	-0.02	-0.03	-0.02	-0.03	-0.02	-0.02	-0.01	-0.01

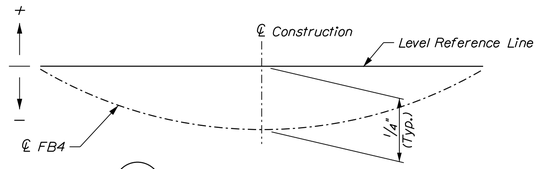


STRINGER ORDINATE KEY PLAN

NOTES:

1. After the structural steel is erected and counterweights and mechanical machinery are installed, but prior to installing the exodermic deck panels, the Contractor shall obtain and submit the top of steel profile elevations of the stringers and floorbeams as directed by the Resident for use in determining bottom of slab elevations.

2. The Contractor shall submit a detailed plan to the Resident for review and approval for the temporary support of the superstructure during all phases of construction. Note that multiple temporary support conditions will be required during different phases of construction, including but not limited to: steel erection, deck installation, deck curing, end lift construction, and span balancing and testing.



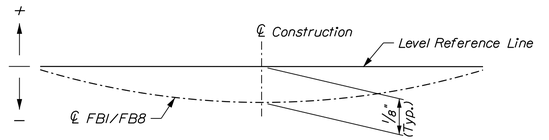
FB4 CAMBER DIAGRAM

Camber Notes:

1. Level reference lines measured at centerline of uncambered girder.

2. Camber values given at weightless state.

3. Camber tolerance -0", +1/2".



FB1 FB8 CAMBER DIAGRAM

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	T. MCAULIFFE	
DESIGN3-DETAILED3	T. AGUILAR	
REVISIONS 1	B. COLBURN	10-19-18
REVISIONS 2	S. OZANA	
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REVISIONS 4		
FIELD CHANGES		

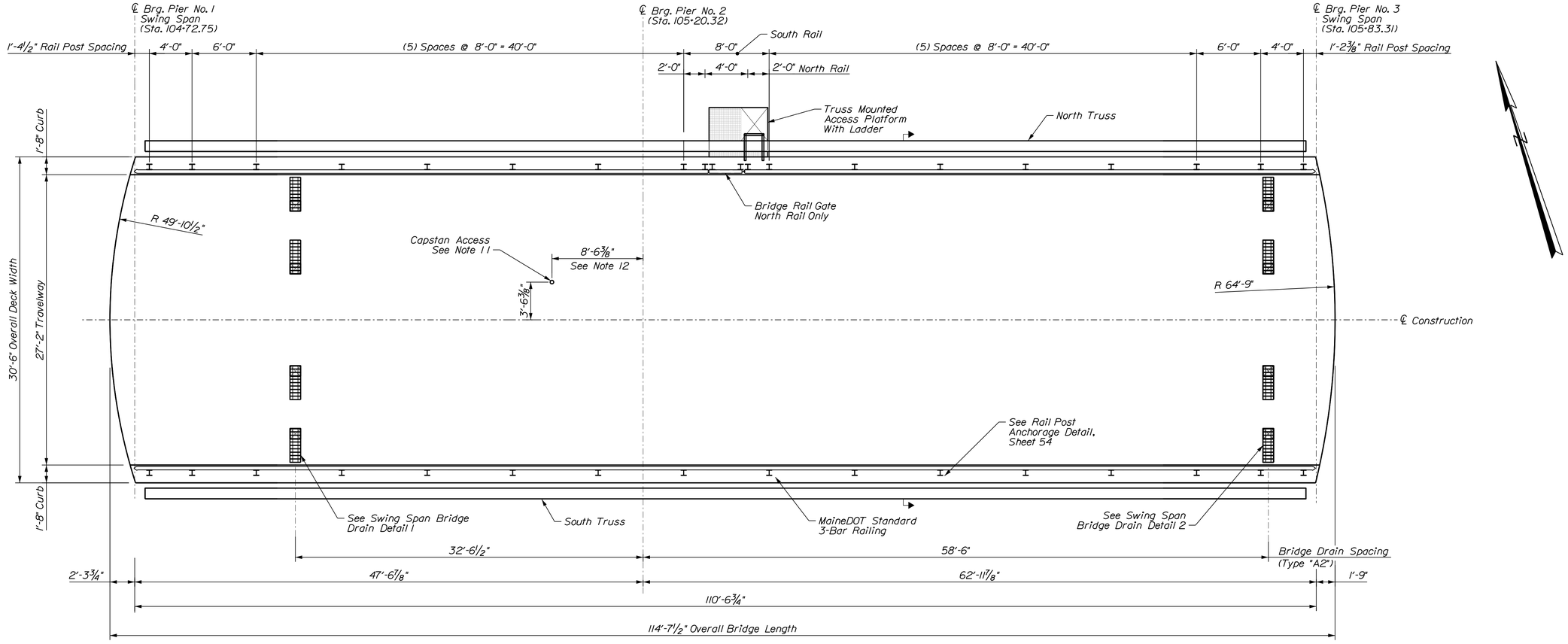
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

STRINGER DEFLECTIONS & FLOORBEAM CAMBER

SHEET NUMBER
47
OF 132

McFarland Johnson

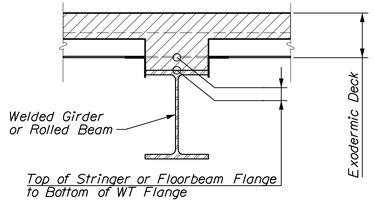
Filename: ...\048_Deck_Elev_Beam_Deflections.dgn Division: Username: Date:10/19/2018



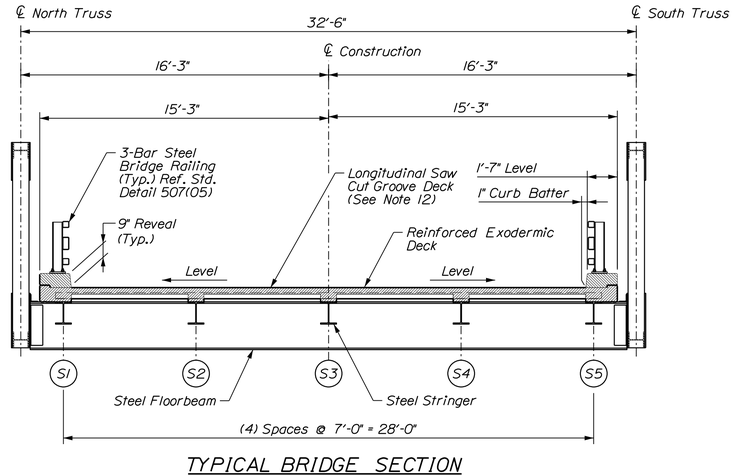
DECK PLAN

SUPERSTRUCTURE NOTES

1. The theoretical blocking used for design of the structure is 2". Refer to the "Theoretical Blocking Detail", this sheet.
2. Reinforcing steel shall have a minimum cover of 2 inches, unless otherwise noted.
3. Reinforcing steel shall be galvanized.
4. Adjust reinforcing steel to fit around the bridge drains in Spans 1 & 4 in a manner approved by the Resident. See Approach Span Detail.
5. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
6. Provide (3) additional curb stirrups at each rail post location.
7. After placement of the superstructure concrete, the piers shall be thoroughly cleaned of all stains by a method approved by the Resident. Payment will be considered incidental to Contract Items.
8. The deck and bridge rail curb concrete shall be placed in two separate pour operations separated by at least 96 hours. Each concrete placement shall be performed in one continuous pour while the superstructure is temporarily supported. Upon completion of each concrete placement and while the concrete is still plastic, the temporary supports shall be removed and the deck shall cure with the ends of the superstructure unsupported to limit concrete tensile stresses in the deck slab. Additional temporary support of the superstructure will be required during the deck curing operation due to the unbalanced loading condition. This additional temporary support shall be located as near as practicable to Pier No. 2 to maximize deck end deflections during the cure period. See Note 2 on Sheet 47 for additional information.
9. Vary the stations of distribution reinforcement lap locations.
10. The following items shall not be paid for separately, but shall be considered incidental to Pay Item 502.251 - Grid Reinforced Concrete Deck:
    - -Partial depth concrete in grid
    - -Full depth concrete at swing span deck fascias and swing span deck ends
    - -Reinforcement in the swing span deck
    - -Swing span curb concrete
    - -Reinforcement in the swing span curbs
    - -Swing span deck drains
    - -Capstan access
11. Capstan Access hole through deck shall have 4 inch diameter clear opening. Cap shall be removable to accomodate capstan manual operation. Cap shall be flush with the riding surface and shall be watertight.
12. Coordinate location of Capstan Access hole in the exodermic grid panel with the Span Drive Machinery. See Mechanical Sheet M2 for more information.
13. Longitudinal saw cut groove the entire deck surface per Special Provision 502 - Longitudinal Saw Cut Grooving of Concrete Wearing Surface. Paid for under item 502.291.



THEORETICAL BLOCKING DETAIL



TYPICAL BRIDGE SECTION

Note:
For floorbeam and stringer sizes,
see Framing Plan

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

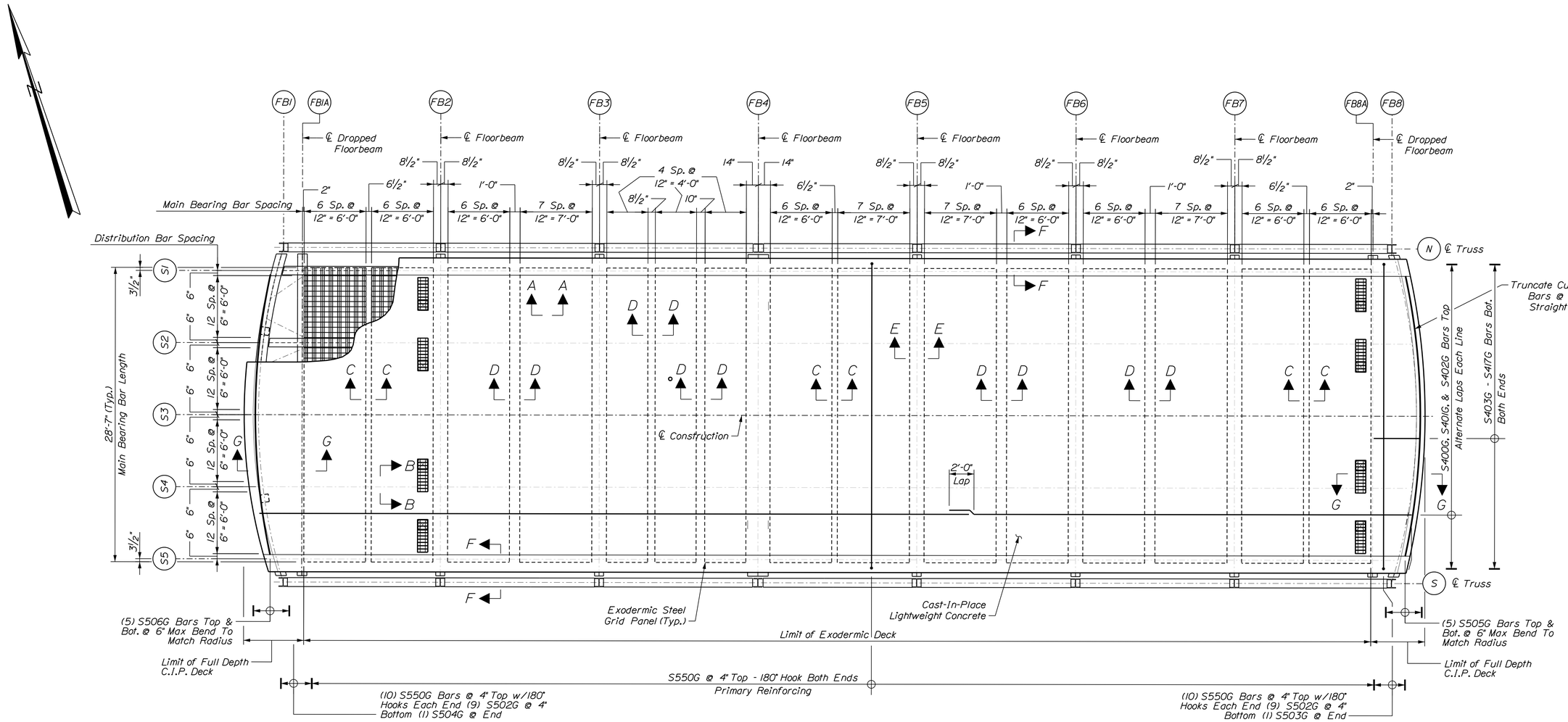
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

DECK PLAN AND SECTION

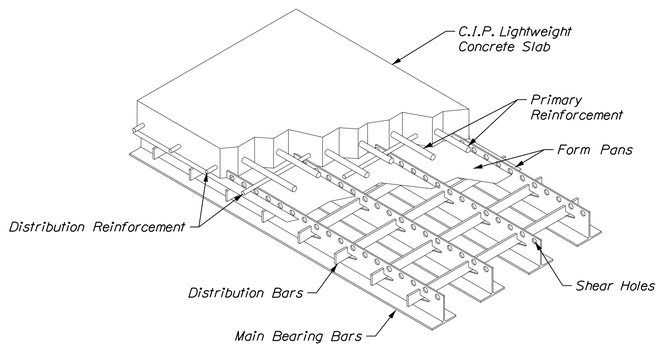
SHEET NUMBER
48
OF 132

McFarland Johnson

Username:
Date:10/19/2018
Division:
Filename: ...\Drawings\049_Deck_Plan.dgn



EXODERMIC DECK PLAN



EXODERMIC DECK ISOMETRIC

(ILLUSTRATIVE ONLY, N.T.S.)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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BRIDGE NO. 2039 — BRIDGE PLANS

THOMAS T KENDRICK No. 10075 — STATE OF MAINE — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE

10075
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FIELD CHANGES		

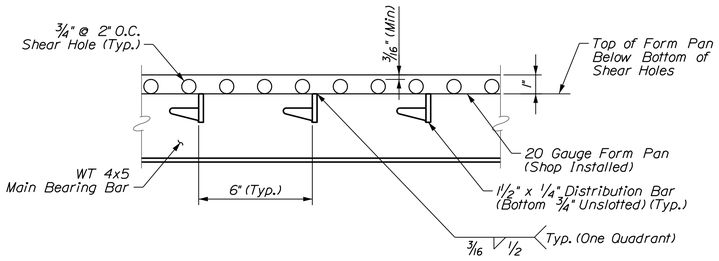
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

EXODERMIC DECK PLAN

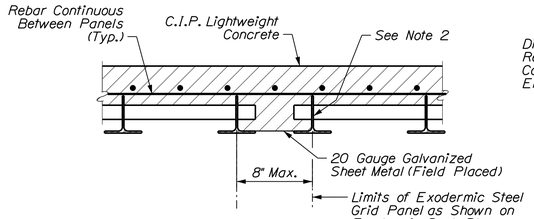
SHEET NUMBER
49
OF 132

McFarland Johnson

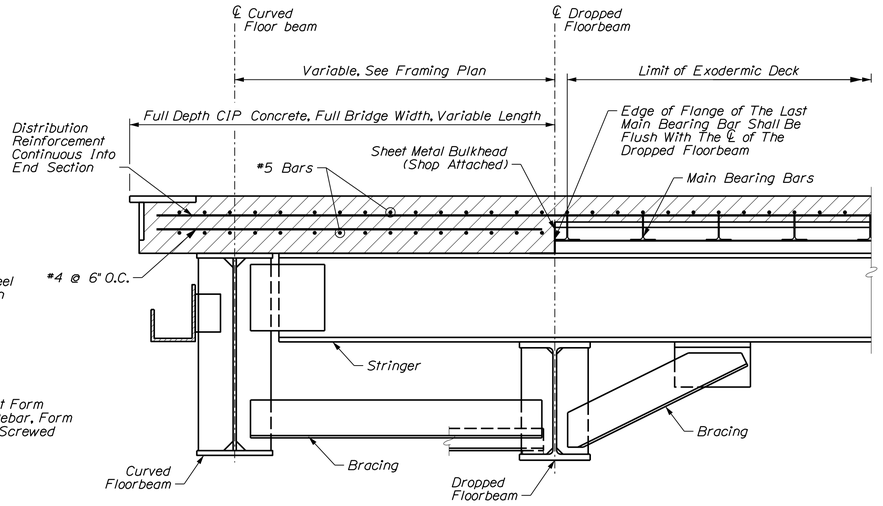
Filename: ...\050_Exodermic_Deck_Plan.dgn Division: Username: Date:10/19/2018



EXODERMIC STEEL GRID

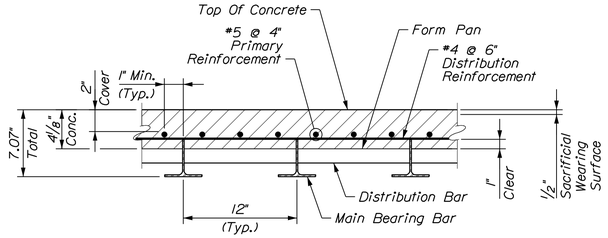


SECTION C-C



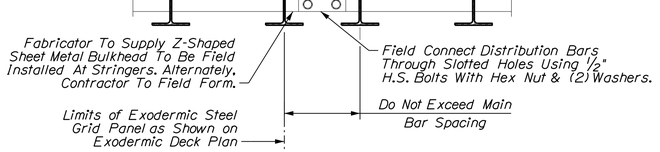
SECTION G-G

(Exodermic Deck End Section)

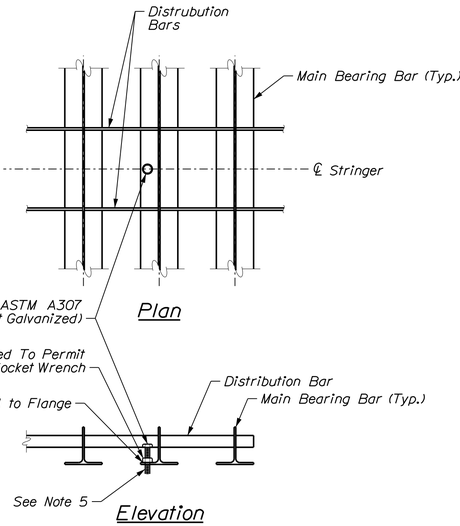


SECTION A-A

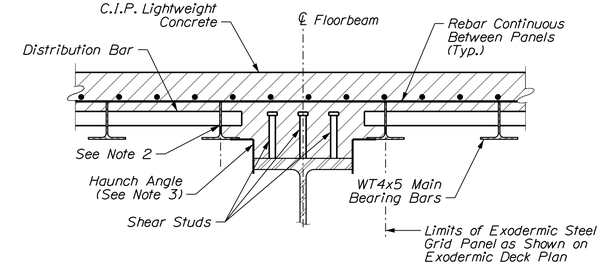
(Typical Section Through Deck)



SECTION D-D

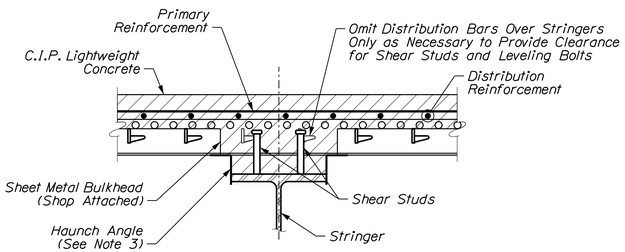


HEIGHT ADJUSTMENT DETAIL



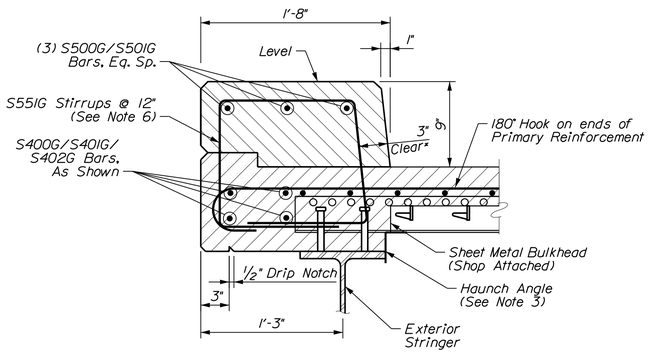
SECTION E-E

(Floorbeam Haunch)



SECTION B-B

(Stringer Haunch)



SECTION F-F

*Note: The clear cover given is for the face of curb only. Clear cover shall be 2" at all other locations.

EXODERMIC DECK NOTES:

1. See Special Provision 502 - Grid Reinforced Concrete Deck.
2. Field plug or tape holes in Main Bearing Bars at haunches before placing concrete.
3. Haunch angles shall be field attached by straps.
4. Galvanize steel grid.
5. Install three ¾" nut and bolt assemblies per panel at each stringer centerline. Locate on on each first interior WT main bearing bar and on at the center most WT main bearing bar.
6. Provide 3 additional stirrups at rail post locations. Reference Standard Detail 507 (13).
7. Swing span drains and capstan access shall be shop installed into the exodermic steel grid prior to galvanizing.

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STATE OF MAINE
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STP-2260(700)

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BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
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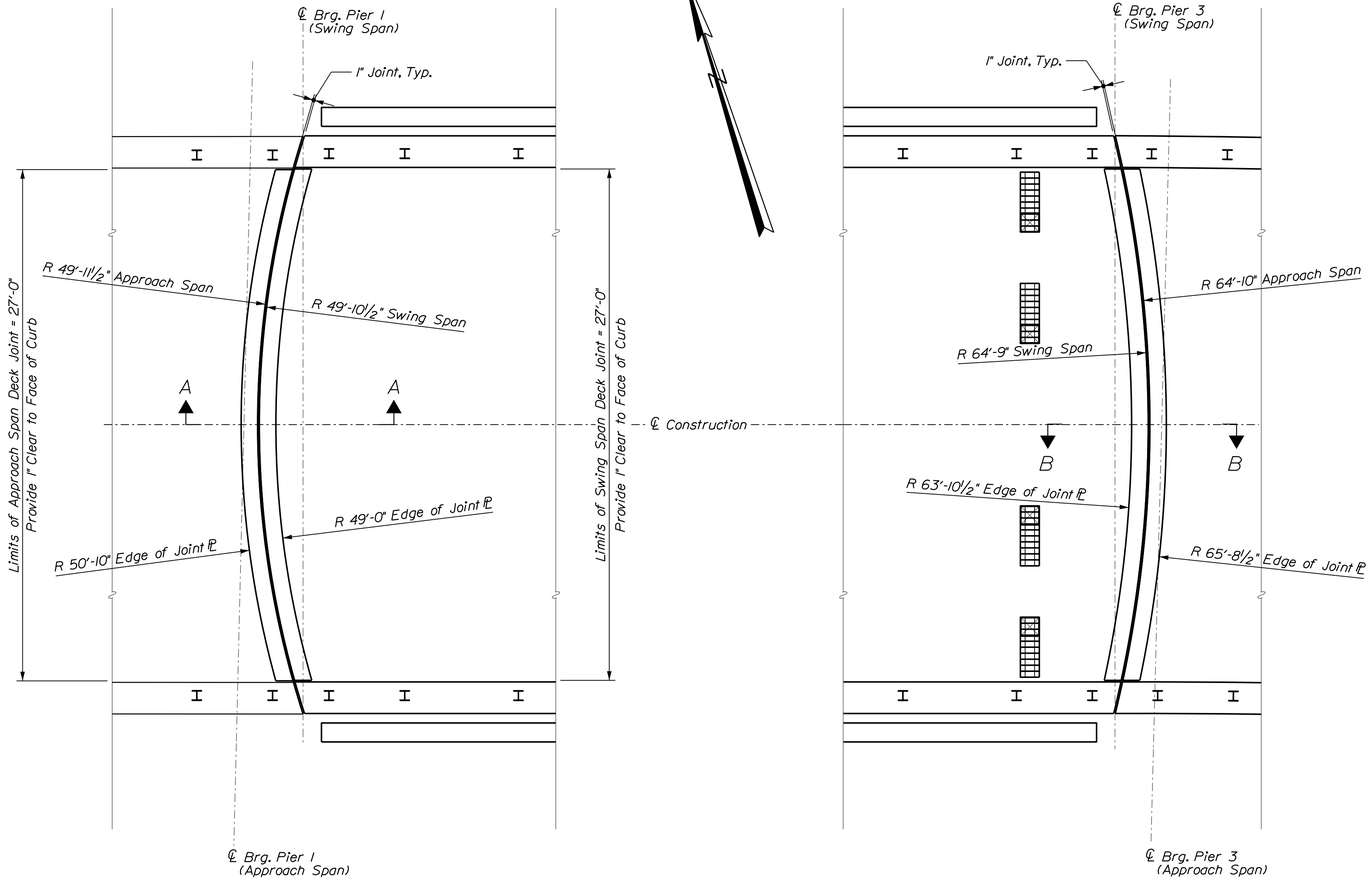
REVISIONS 2	T. KENDRICK	10-19-18
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

DECK DETAILS (1 OF 3)

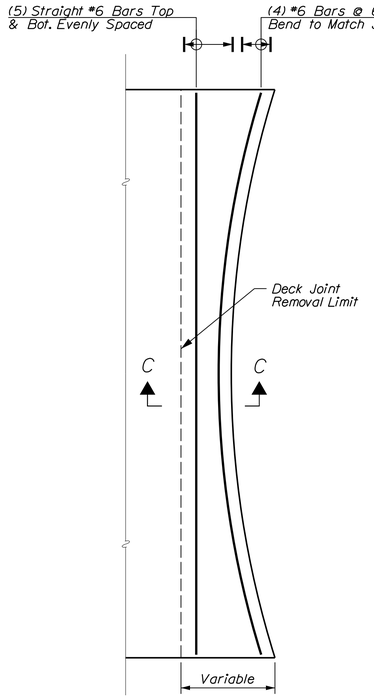
SHEET NUMBER
50
OF 132

Filename: ...\051_Deck_Details_1.dgn Division: Username: Date:10/19/2018



PIER 1 DECK JOINT PLAN

PIER 3 DECK JOINT PLAN



DECK JOINT REPLACEMENT PLAN

2" Clear Cover, U.N.O.
Approach Span 1 Shown.
Approach Span 4 Similar.

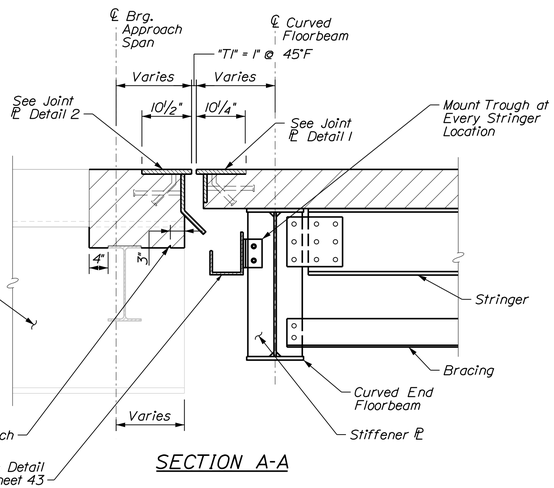
DECK JOINT NOTES

1. All concrete removal, reinforcing bar cutting, reinforcing bar placed, and concrete placed shall not be paid for separately, but shall be paid for under pay item 520.60 - Swing - Appr Span Open Joint.
2. All reinforcing bar in the joint replacement shall be galvanized.

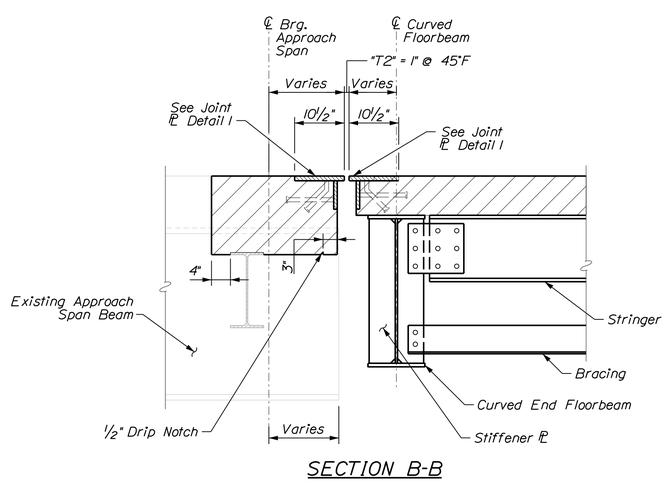
TEMP	"T1"	"T2"
0°F	1 3/16"	1 1/4"
15°F	1 1/8"	1 1/8"
30°F	1 1/16"	1 1/16"
45°F	1"	1"
60°F	15/16"	15/16"
75°F	7/8"	7/8"
90°F	13/16"	3/4"

TEMPERTURE ADJUSTMENT TABLE

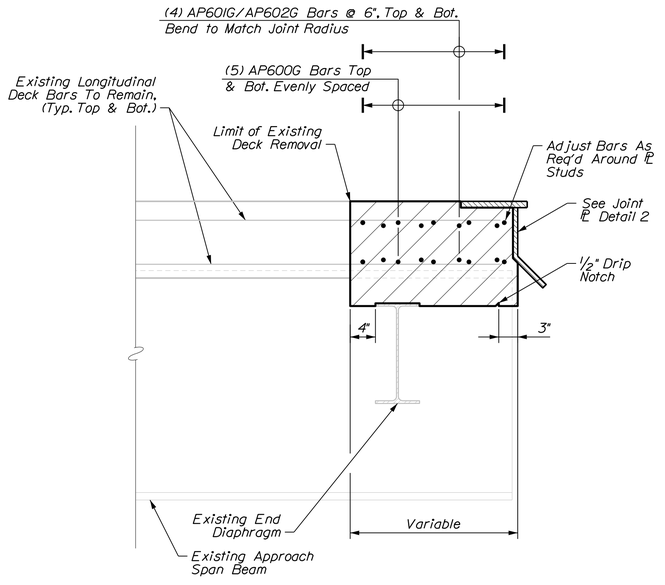
Note:
"T1" = joint opening at Pier 1
"T2" = joint opening at Pier 3



SECTION A-A



SECTION B-B



SECTION C-C

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
DATE

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CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK 10-19-18
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REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

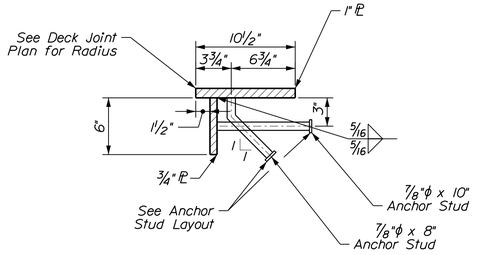
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

DECK DETAILS (2 OF 3)

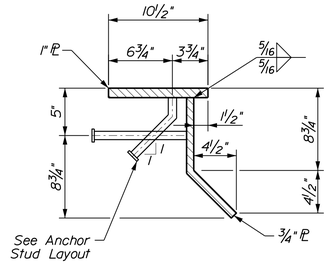
SHEET NUMBER
51
OF 132

McFarland Johnson

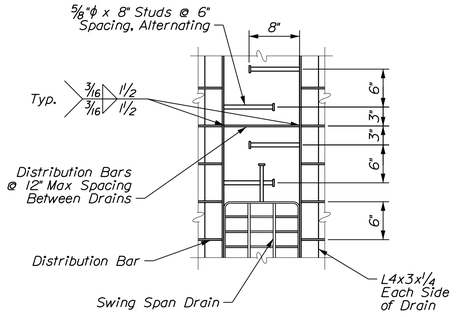
Username:
Division:
Date:10/19/2018
Filename: ...\052_Deck_Details_2.dgn



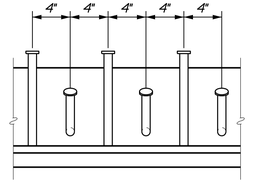
JOINT ℄ DETAIL 1



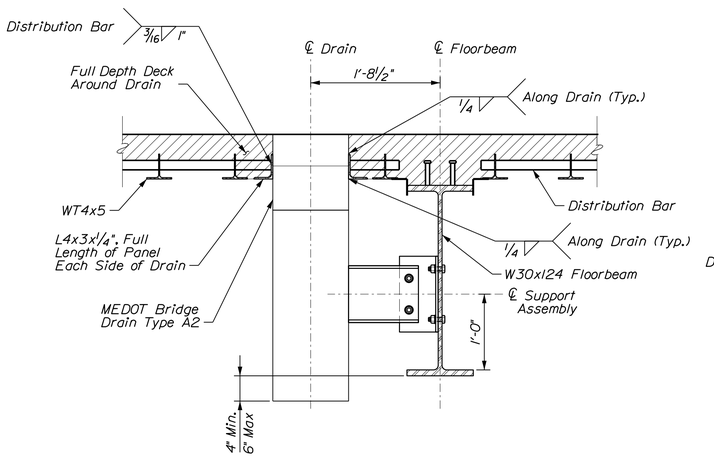
JOINT ℄ DETAIL 2



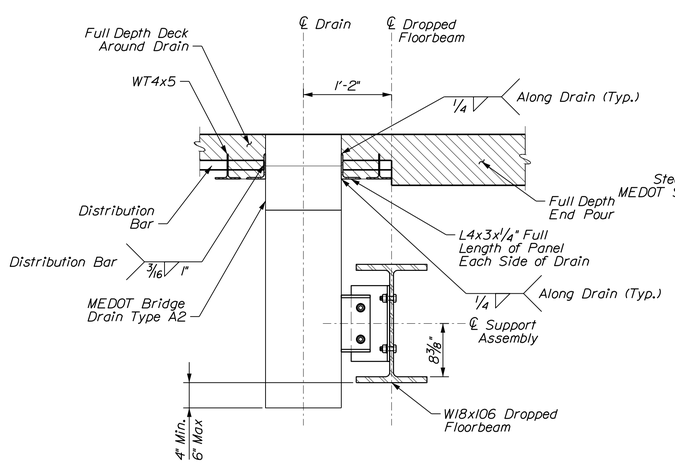
SWING SPAN DRAIN EXODERMIC STEEL GRID PARTIAL PLAN



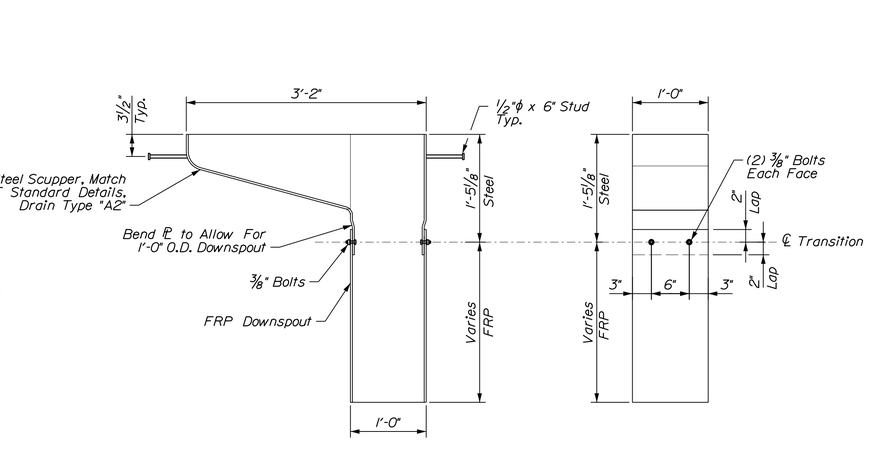
ANCHOR STUD LAYOUT



SWING SPAN BRIDGE DRAIN DETAIL 1



SWING SPAN BRIDGE DRAIN DETAIL 2



SWING SPAN BRIDGE DRAIN

STATE OF MAINE
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STP-2260(700)
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BRIDGE PLANS

STATE OF MAINE THOMAS T. KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER
Thomas T. Kendrick
SIGNATURE
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REVISIONS 4			
FIELD CHANGES			

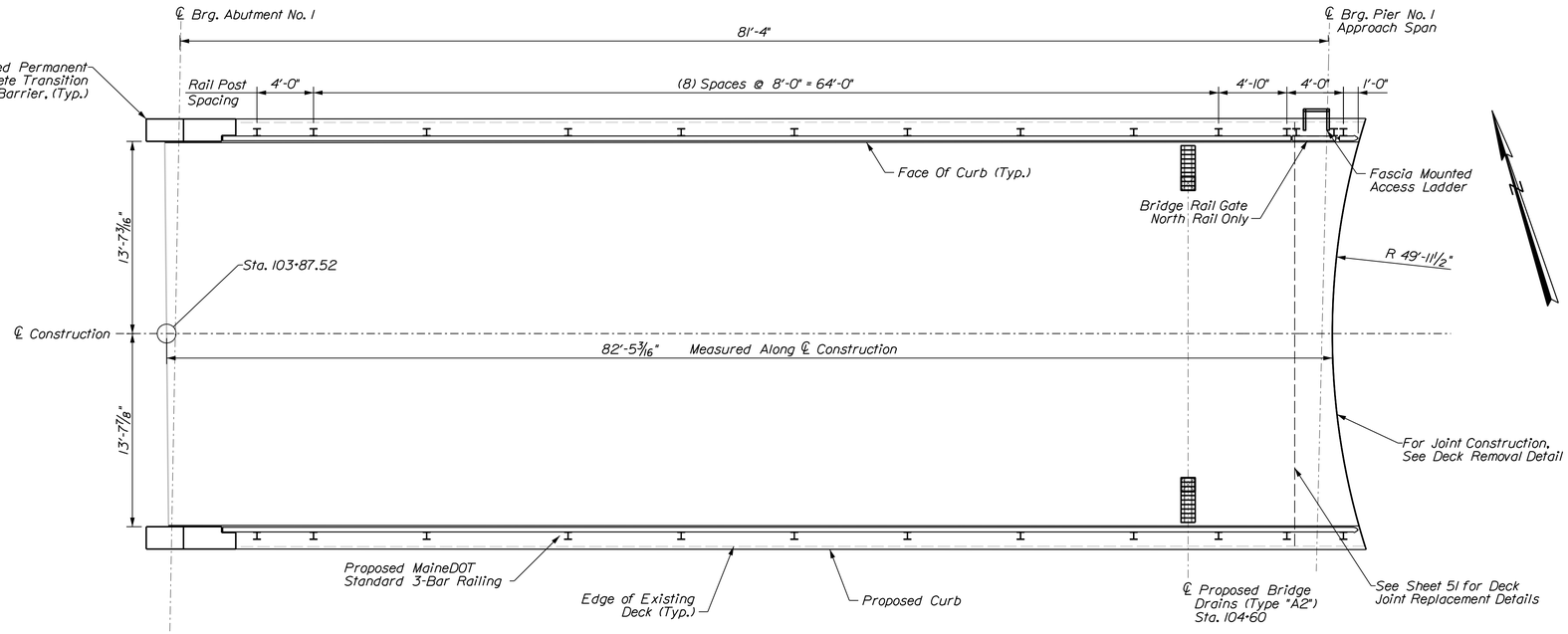
BOOTHBAY — BARTERS ISLAND BRIDGE — BACK RIVER — LINCOLN COUNTY

DECK DETAILS (3 OF 3)

SHEET NUMBER
52
OF 132

McFarland Johnson

Filename: ...\053_Deck_Details_3.dgn Division: Username: Date:10/19/2018



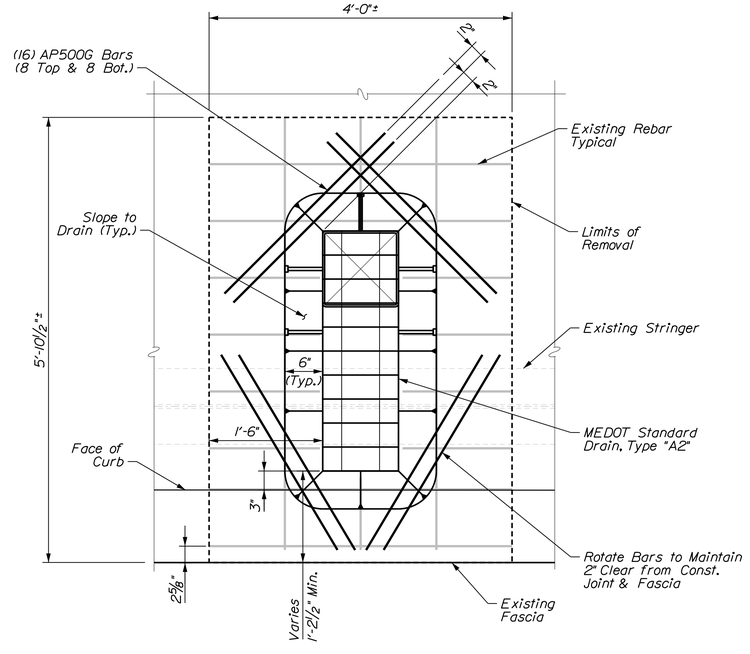
APPROACH PLAN - SPAN 1

BRIDGE DRAIN NOTES:

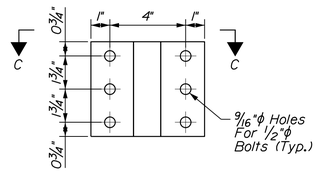
1. Unless otherwise noted, all materials, dimensions, and procedures shall conform to MaineDOT Standard Details.
2. The deck drain locations shown here are approximate. The contractor shall locate the low point on the deck to place the drains after jacking and setting approach spans on new bearing.
3. The existing reinforcement shall be retained.
4. Up to (1) transverse bar and (4) longitudinal bars (top and bottom) may be cut to place the drains.
5. Other bars may be manually bent to allow for the downspout
6. All concrete removal, reinforcing bar cut, reinforcing bar placed, and concrete placed associated with the bridge drains shall not be paid for separately, but shall be paid for under Pay Item 502.7 - Bridge Drains.

BRIDGE RAIL GATE NOTES:

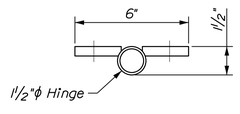
1. Unless otherwise noted, all materials, dimensions, and procedures shall conform to MaineDOT Standard Details for Bridge Rail.
2. Heavy duty hinge shall be Crown Industrial CBI-8508 Full Mortise Hinges or approved equal and shall be furnsihed with a zinc rich coating.
3. Provide latch capable of securing gate in closed position. Latch shall be furnished with a zinc rich coating.
4. Provide a padlock capable of sercuring the latch in the closed position. Each padlock shall be furnished with a minimum of two sets of keys.
5. All materials, labor, and associated services required for the Bridge Rai Gate will not be paid for separately, but shall be considered incidental to the Pay Item 507.0821 - Steel Bridge Railing, 3 Bar.



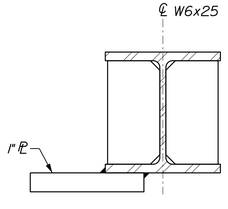
APPROACH SPAN DRAIN DETAIL



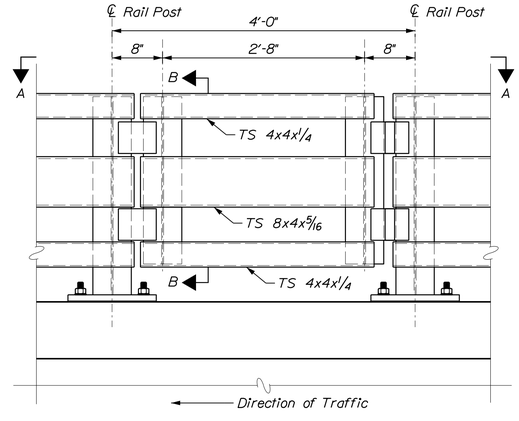
HINGE DETAIL



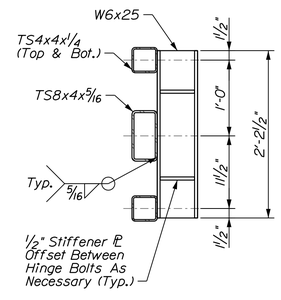
SECTION C-C



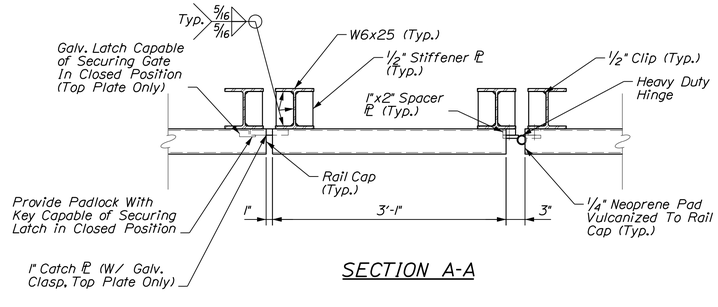
CATCH PLATE DETAIL



BRIDGE RAIL GATE



SECTION B-B



SECTION A-A

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

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DESIGN2-DETAILED2	B. COLBURN
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	D. DEPAOLO	10-19-18
REVISIONS 2	T. KENDRICK	10-19-18
REVISIONS 3	S. OZANA	10-19-18
REVISIONS 4		
FIELD CHANGES		

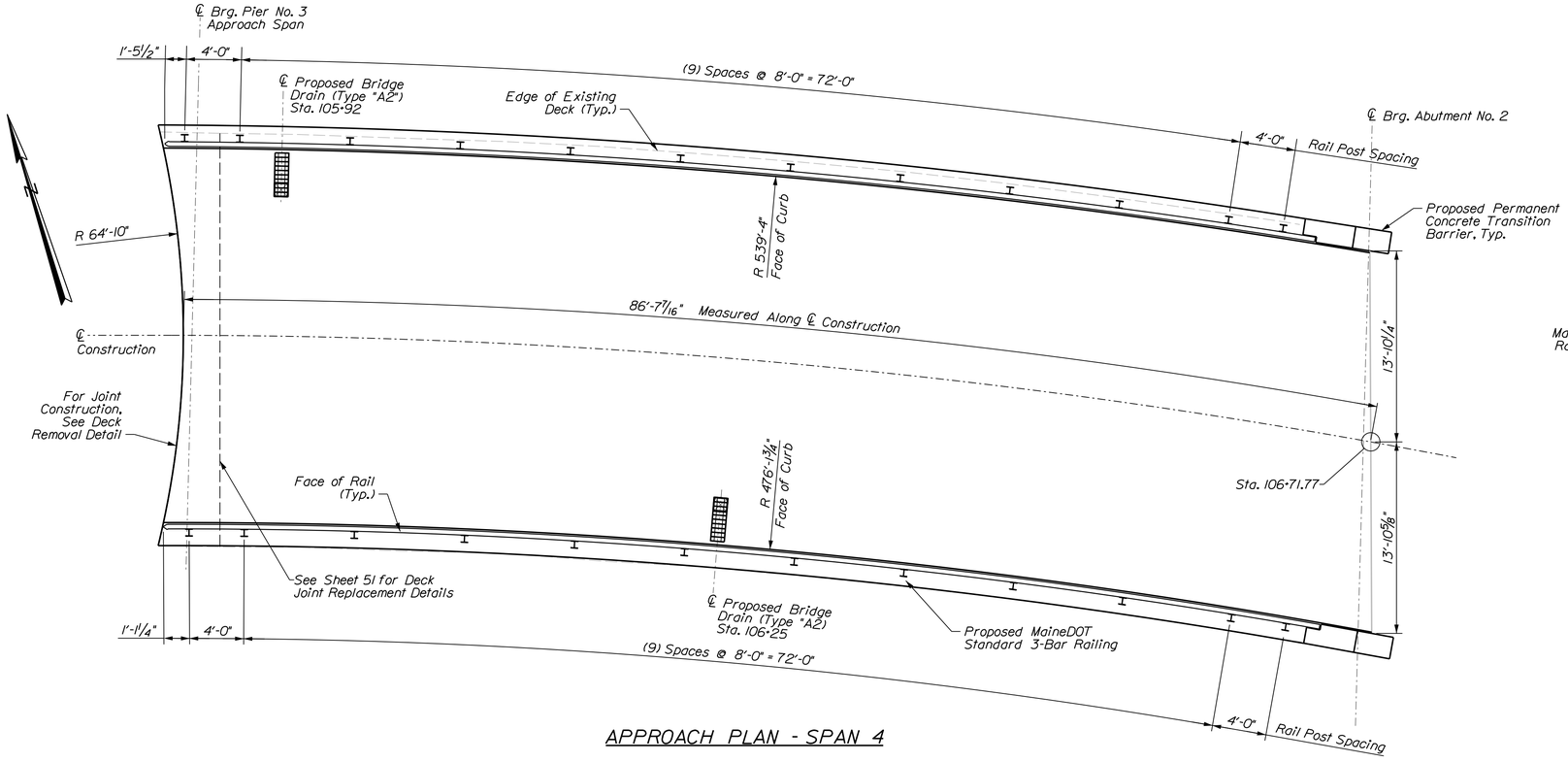
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

DECK PLAN - SPAN 1

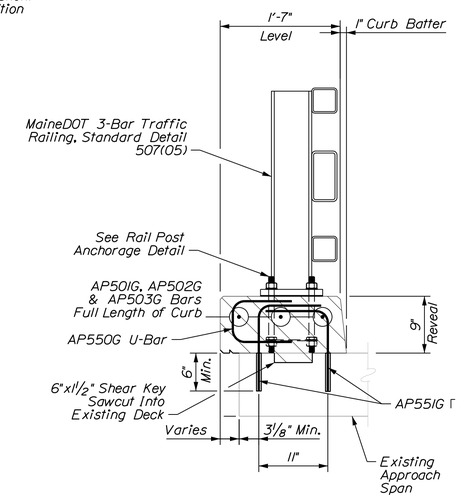
SHEET NUMBER
53
OF 132

McFarland Johnson

Filename: ...\054_Bridge_Rail_Span_1.dgn Division: Username: Date:10/19/2018



APPROACH PLAN - SPAN 4

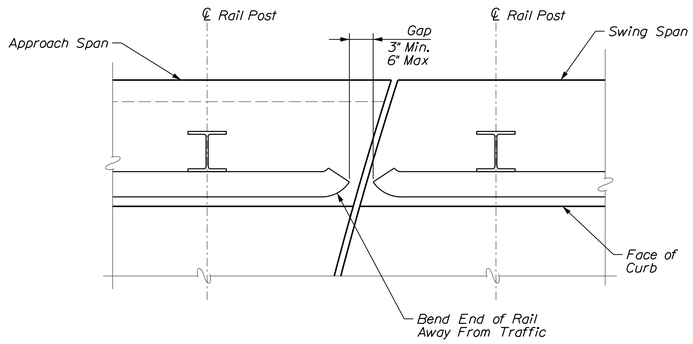


3-BAR RAILING W/ MODIFIED CURB APPROACH SPANS

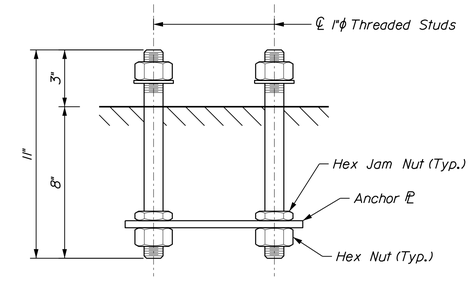
Note: Replace the MaineDOT Standard Detail Curb Stirrup (see section 507(13)) with sets of (1) AP550G and (2) AP551G as shown. Spacing shall be in accordance with MaineDOT Standard Details.

BRIDGE RAIL NOTES:

1. Unless otherwise noted, all materials, dimensions, and procedures shall conform to MaineDOT Standard Details.
2. The rail post layout and rail bar radius given is conceptual and will require field verification by the Contractor.
3. The finished approach span rail-to-rail width shall be 27'-4". The curb overhang may vary to achieve this roadway width at all cross sections. The edge of curb shall not be inboard of the deck fascia. The curb shall not overhang the deck more than 4".
4. If it is determined that the 27'-4" rail-to-rail width is not possible within the constraints defined above, contact the Engineer of Record immediately.
5. Embeded #5 L-bars shall have a minimum horizontal leg of 8", after the bend.
6. Provide 2" minimum clear for bars in CIP curb.
7. Provide (3) additional curb stirrups at each rail post location.
8. Clean and prepare the existing approach span surface in contact with the proposed curb in accordance with Standard Specifications section 518.05.



BRIDGE RAIL JOINT PLAN



RAIL POST ANCHORAGE DETAIL

Note: Unless otherwise shown here, all materials, dimensions, tolerances, finishes, and other components of the rail post anchorage shall conform to the MaineDOT Standard Details.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 — BRIDGE PLANS

THOMAS T KENDRICK No. 10075 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MAINE

Thomas T. Kendrick — SIGNATURE
10075 — P.E. NUMBER
10/19/2018 — DATE

PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

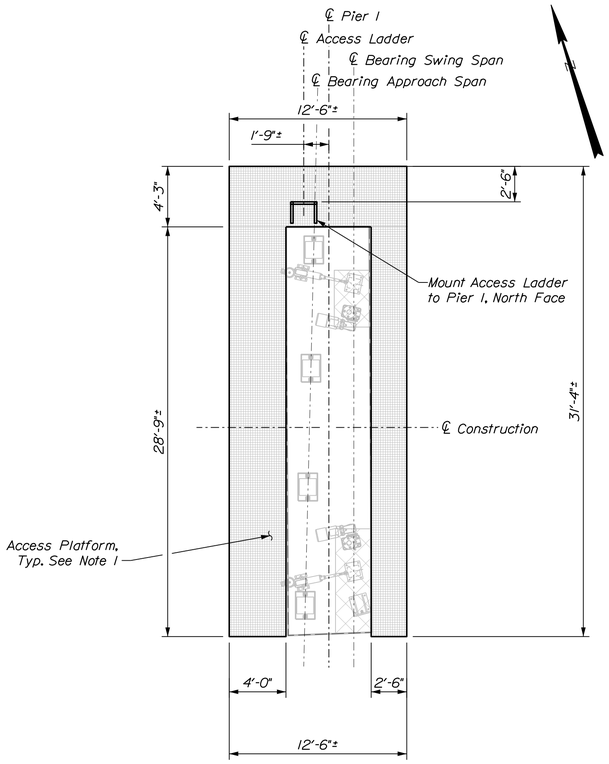
BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

DECK PLAN - SPAN 4

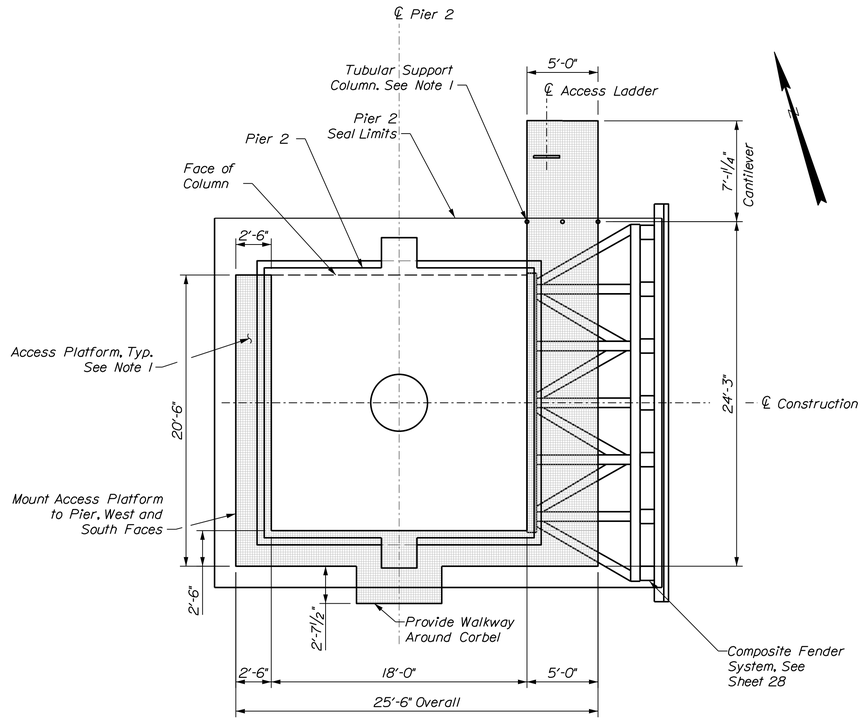
SHEET NUMBER
54
OF 132

McFarland Johnson

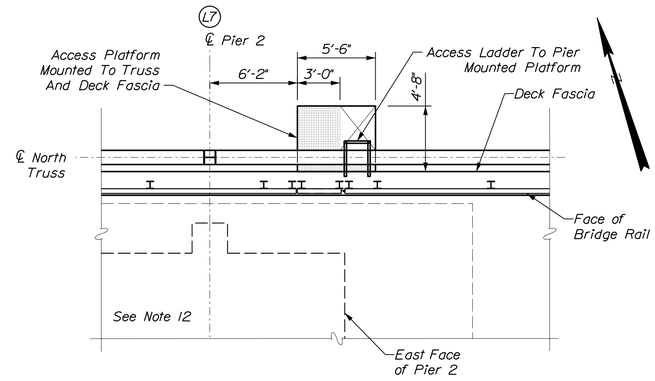
Filename: ...\055_Bridge_Rail_Span_2.dgn Division: Username: Date:10/19/2018



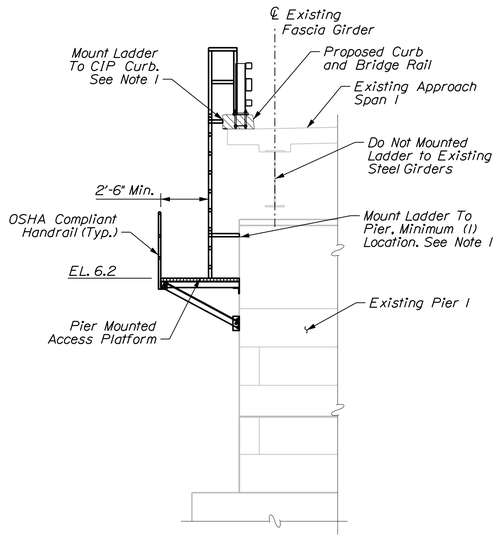
PIER 1 ACCESS PLATFORM PLAN



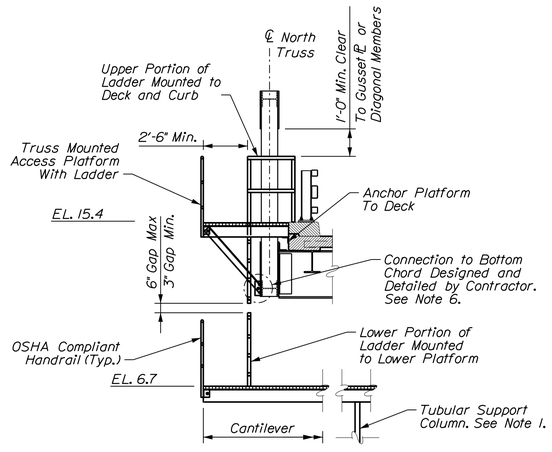
PIER 2 ACCESS PLATFORM PLAN



TRUSS MOUNTED ACCESS PLATFORM



BRIDGE MOUNTED ACCESS PLATFORM APPROACH SPAN 1 SECTION



BRIDGE MOUNTED ACCESS PLATFORM SWING SPAN SECTION

ACCESS PLATFORM NOTES

1) Access Platforms, supports, ladders, rails, and all associated components shall be designed and detailed by Contractor.

2) For materials, loads, tolerances, and all other requirements, see Special Provision 845 - Utility Access Ladder, and Platforms.

3) Dimensions are given to the walkway portion of the access platform and do not include the dimensions of the handrail.

4) Dimensions given here are general guidelines, and should be interpreted as minimums. The dimensions given are not intended to supercede requirements set forth by OSHA, the MEDOT Standard Specifications, or the Special Provisions of this project. It is the responsibility of the Contractor to conform to the requirements set forth by the aforementioned parties.

5) The Access platform may, at the discretion of the Contractor, be supported off of the Composite Fender System. It is the responsibility of the Contractor to coordinate, design, and detail all connections, supports, and geometry between the Composite Fender and the Access Platforms.

6) The Contractor shall coordinate the Access Platform shop fabrication details with the steel shop fabrication details. No field drilling in the truss steel will be allowed.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — THOMAS T KENDRICK — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

	BY	DATE
PROJ. MANAGER	L. TIMBERLAKE	
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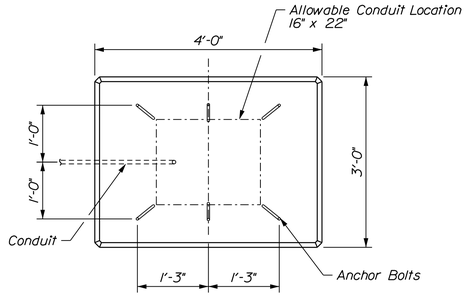
CHECKED-REVIEWED	T. MCAULIFFE	10-19-18
DESIGN2-DETAILED2	B. COLBURN	10-19-18
DESIGN3-DETAILED3	S. OZANA	10-19-18
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

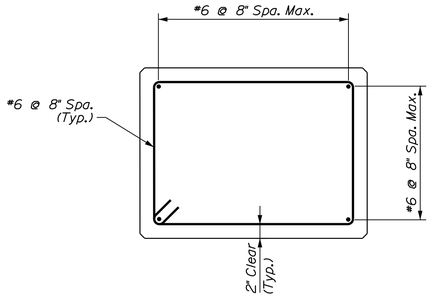
ACCESS PLATFORMS

SHEET NUMBER
55
OF 132

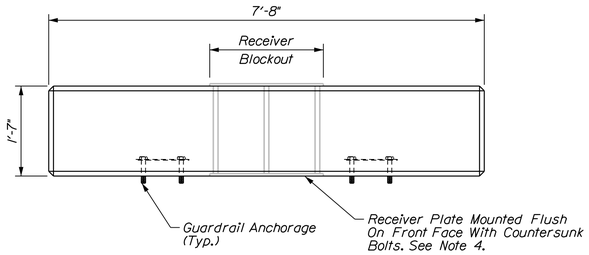
Filename: ...\056_Ladder_Access_Platforms.dgn Division: Username: Date:10/19/2018



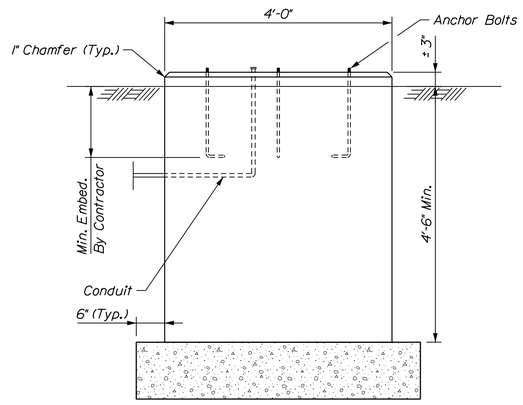
BARRIER GATE PLAN



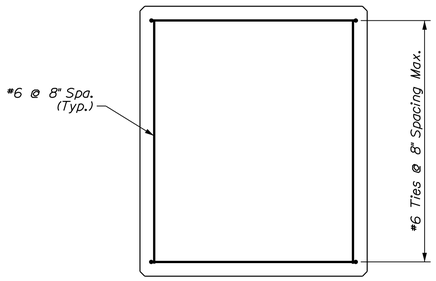
BARRIER GATE REINFORCEMENT PLAN



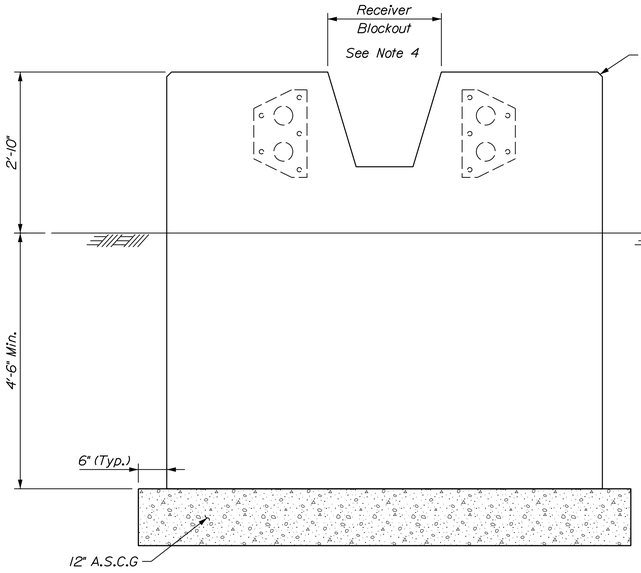
EAST BARRIER GATE RECEIVER PLAN



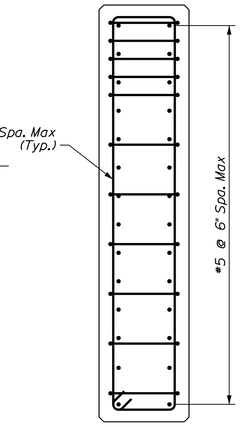
BARRIER GATE ELEVATION



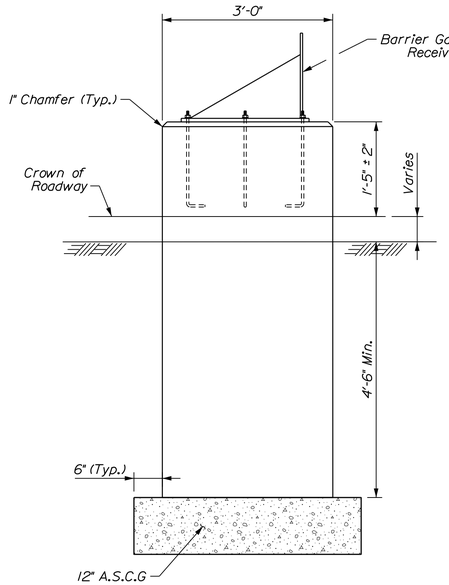
BARRIER GATE REINFORCEMENT ELEVATION



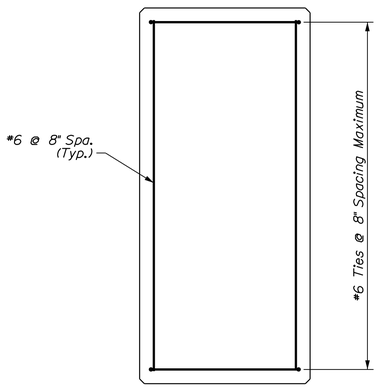
EAST BARRIER GATE RECEIVER ELEVATION



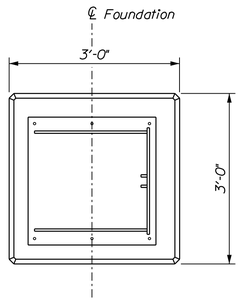
REINFORCEMENT SECTION
See Note 3



WEST BARRIER GATE RECEIVER ELEVATION



WEST BARRIER GATE RECEIVER REINFORCEMENT ELEVATION



WEST BARRIER GATE RECEIVER PLAN

BARRIER GATE FOUNDATION NOTES

1. A.S.C.G = Aggregate Subbase Course - Gravel
2. East Barrier Gate Receiver, West Barrier Gate Receiver, and the Barrier Gate Foundations shall be paid for under Pay Item 626.37 - Special Foundation.
3. Reinforcement, conduits, anchor bolts, and embedded plates in all foundations shall be considered indicental to Pay Item 626.37 - Special Foundation.
4. Reinforcement is shown for bidding purposes only. Contractor to detail reinforcement for East Barrier Gate Receiver. See Maine DOT Standard Detail 526 Concrete Transition Barrier. Modify bars as required to accommodate the Receiver Blockout.
5. Final details of East Barrier Gate Receiver to be coordinated with gate manufacturer based on receiver requirements.
6. For East Remote I/O Cabinet foundation, use the same foundation detail as barrier gates. Adjust anchor bolt and conduit as necessary. Final details to be coordinated with I/O cabinet manufacturer based on receiver requirements.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

STATE OF MAINE — THOMAS T KENDRICK No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

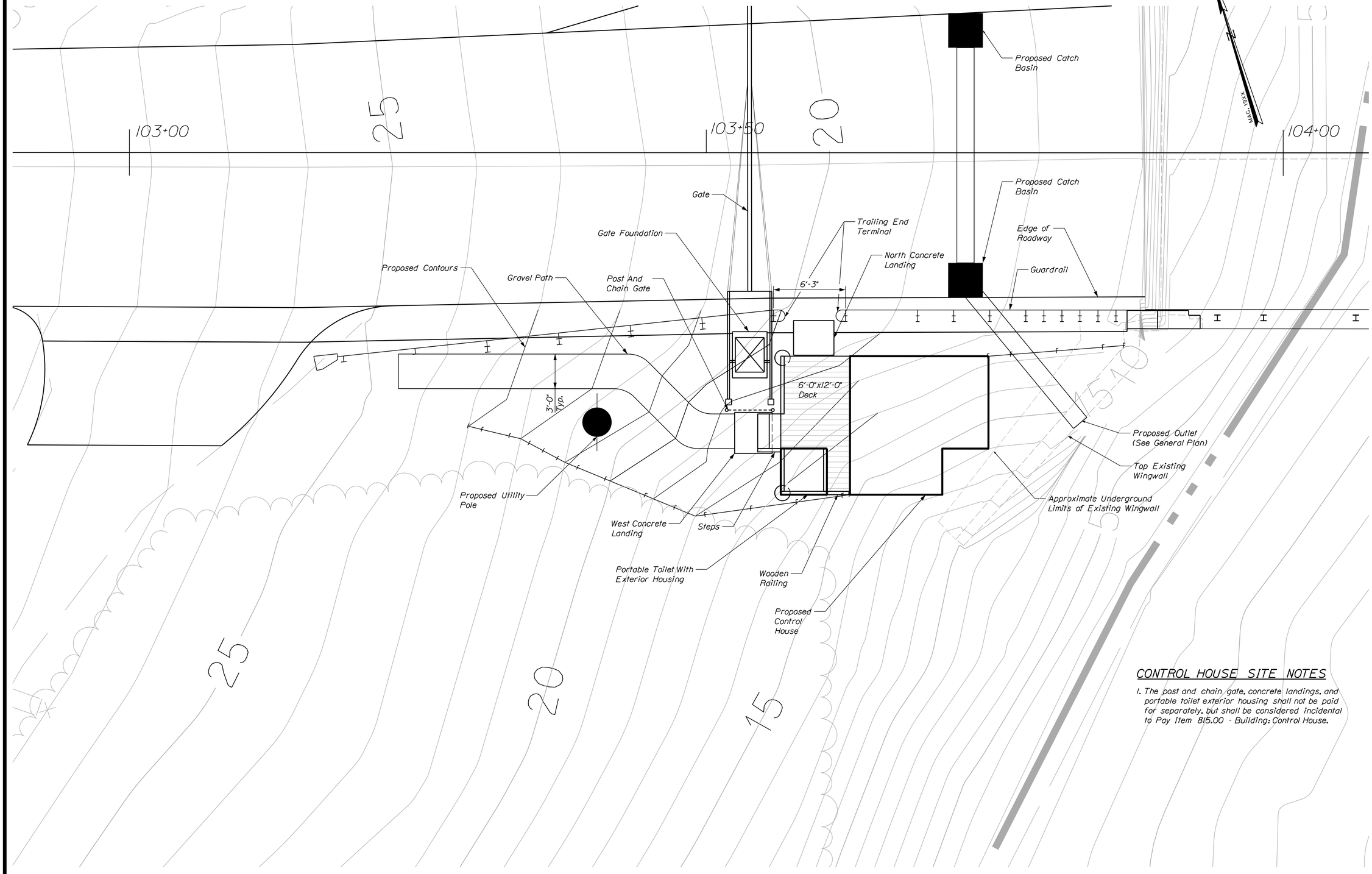
			DATE
PROJ. MANAGER	L. TIMBERLAKE	BY	
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY

BARRIER GATE FOUNDATION DETAILS

SHEET NUMBER
56
OF 132

Username:
Date:10/19/2018
Filename: ...\057_Barrier_Gate_Foundation_Details.dgn
Division:



CONTROL HOUSE SITE NOTES

1. The post and chain gate, concrete landings, and portable toilet exterior housing shall not be paid for separately, but shall be considered incidental to Pay Item 815.00 - Building: Control House.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

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BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

Thomas T. Kendrick
SIGNATURE

10075
P.E. NUMBER

10/19/2018
DATE

PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
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REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

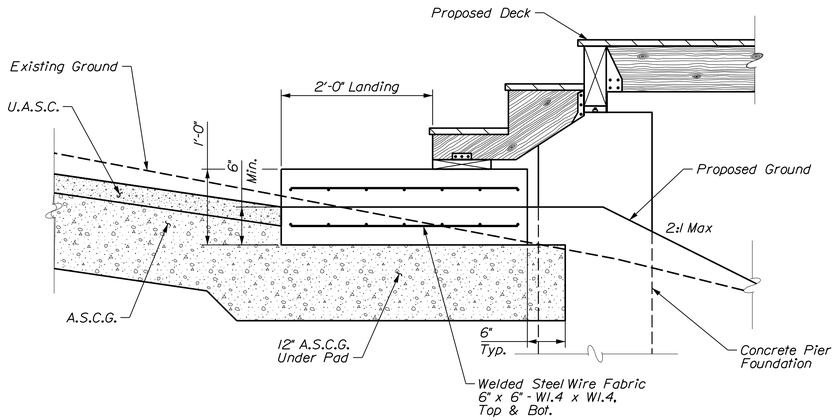
CONTROL HOUSE SITE PLAN

SHEET NUMBER

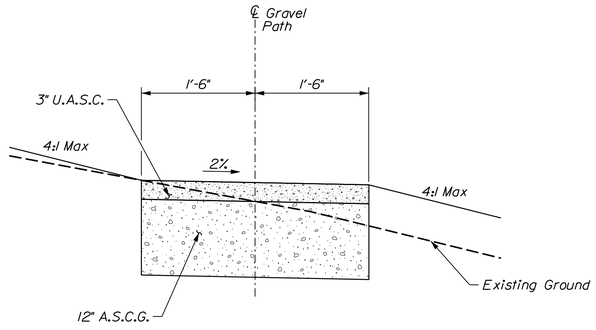
57

OF 132

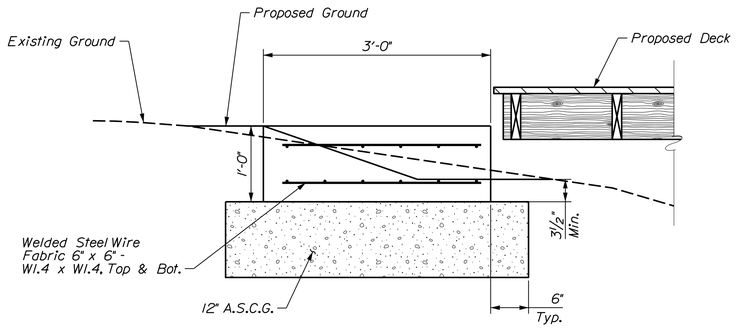
Filename: ...\058_Prop_Tenderhouse_Siteplan.dgn Division: Username: Date:10/19/2018



WEST CONCRETE LANDING DETAIL



TYPICAL GRAVEL PATH SECTION



NORTH CONCRETE LANDING DETAIL

Control House Site Plan Notes

1. A.S.C.G. = Aggregate Subbase Course - Gravel
   U.A.S.C = Untreated Aggregate Surface Course
2. Subgrade shall be sloped to match the surface grade.
3. The maximum finished slope of a cut or fill shall be 3:1, unless otherwise noted.
4. Concrete cover to top, bottom, and sides is 3 inches.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 — BRIDGE PLANS

THOMAS T KENDRICK No. 10075 — STATE OF MAINE — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick — SIGNATURE
10075 — P.E. NUMBER
10/19/2018 — DATE

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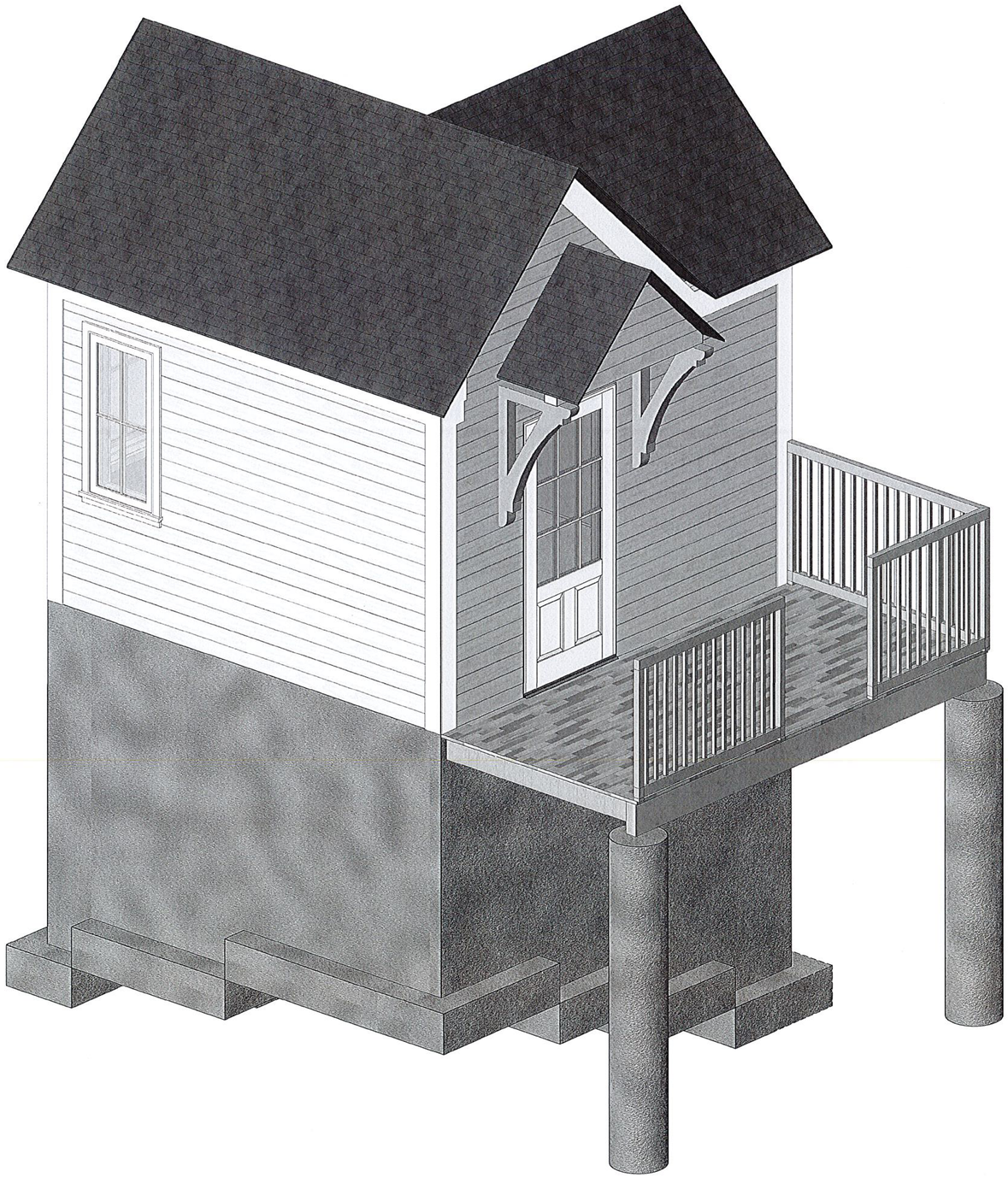
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

CONTROL HOUSE SITE DETAILS

SHEET NUMBER
58
OF 132

Filename: ...\059_Control_House_Site_Details.dgn Division: Username: Date:10/19/2018



COLOR SCHEDULE

Roofing	Charcoal
Siding	Gray
Trim	White
Doors	White
Window Trim	White
Exposed Wood	White

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T. KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE

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REVISIONS 3	S. OZANA	10-19-18
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CONTROL HOUSE PERSPECTIVE VIEW

SHEET NUMBER

59

OF 132

McFarland Johnson

Filename: ...\059-066_ControlHouse_Details.dgn Division: Username: Date:10/19/2018

FOUNDATION NOTES

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SITE, MECHANICAL, ELECTRICAL DRAWINGS AND THE SPECIFICATIONS.

2. CONCRETE FOUNDATIONS SHALL BE CLASS A.

3. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60 (ASTM A615M GRADE 400) EXCEPT AS OTHERWISE NOTED.

4. LAP ALL BARS 48 DIAMETERS MINIMUM AT SPLICES UNLESS INDICATED OTHERWISE ON THE DRAWINGS. TOP BARS TO BE SPLICED AT MIDSPAN AND BOTTOM BARS AT SUPPORTS. WELDED WIRE FABRIC TO BE LAPPED ONE FULL MESH AT SIDES AND ENDS.

5. REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPER PLACE BEFORE AND DURING POURING OPERATIONS USING APPROVED CHAIRS AND SPACERS AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE RESIDENT. USE PLASTIC TIPPED ACCESSORIES IN CONCRETE EXPOSED TO WEATHER, WATER OR VIEW.

6. WHERE CONTINUOUS BARS ARE CALLED FOR, INDICATED OR REQUIRED, THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS, DOWELED INTO INTERSECTING WALLS AND LAPPED AT NECESSARY SPLICES WITH SPLICES STAGGERED WHEREVER POSSIBLE.

7. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER	
#5 (16) AND SMALLER	1 1/2"
#6 (#19) AND LARGER	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
SLABS, WALLS AND JOISTS	3/4"
BEAMS AND COLUMNS	1 1/2"

8. THE CONCRETE CONTRACTOR SHALL INSTALL (OR GIVE OTHER TRADES AMPLE OPPORTUNITY TO INSTALL) ALL ANCHORS, BOLTS, PLATE, NAILERS, SLOTS, CHASES, PIPE SLEEVES, ETC., AS REQUIRED BY OTHER TRADES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE SETTING SCREEDS AND FORMS.

9. FOOTINGS SHALL REST ON CLEAN SOLID COMPETENT BEDROCK. APPROXIMATE FOUNDATION ELEVATIONS ARE SHOWN BUT SHALL BE ADJUSTED IN THE FIELD BASED ON ACTUAL CONDITIONS. THE ENGINEER SHALL BE NOTIFIED PROMPTLY OF ANY WEAK STRATA, WATER CONDITIONS OR OTHER POOR BEARING CONDITIONS.

10. FOOTING EXCAVATIONS SHALL BE DONE IN SUCH A MANNER AS TO DRAIN AWAY ALL SURFACE AND GROUND WATER. EXCAVATION EQUIPMENT AND PROCEDURES SHALL BE USED SUCH THAT FIRM SOIL BEARING CONDITIONS ARE MAINTAINED.

11. BACKFILLING AGAINST FOUNDATION WALLS SHALL BE DONE BY PLACING SIMULTANEOUS LEVEL LAYERS ON BOTH SIDES OF THE WALL SUCH THAT THE DIFFERENCE BETWEEN ONE SIDE AND THE OTHER DOES NOT EXCEED 24 INCHES. PROVIDE TEMPORARY SHORING OF FOUNDATION WALLS WHEN INTERIOR BACKFILL EXCEEDS EXTERIOR GRADE BY MORE THAN 24".

SAFETY AND PROTECTION

CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE THE NECESSARY PROTECTION TO PREVENT DAMAGE INJURY OR LOSS TO:

1. ALL EMPLOYEES ON THE WORK AND OTHER PERSONS WHO MAY BE AFFECTED THEREBY.

2. ALL THE WORK AND ALL MATERIALS OR EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR OFF, THE SITE, AND

3. OTHER PROPERTY AT THE SITE OR ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT IN THE COURSE OF CONSTRUCTION.

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STANDARDS (SPECIFICALLY INCLUDING OSHA, AND ANY OTHER STATE ADOPTED OSHA PROGRAM), LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR TO PROTECT THEM FROM DAMAGE, INJURY OR LOSS; AND SHALL ERECT AND MAINTAIN ALL NECESSARY SAFEGUARDS FOR SUCH SAFETY AND PROTECTION. CONTRACTOR SHALL NOTIFY OWNERS OF ADJACENT PROPERTY AND UTILITIES WHEN EXECUTION OF THE WORK MAY AFFECT THEM.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS AND OTHER COSTS ARISING FROM ANY DAMAGE AT THE SITE OR ADJACENT THERETO.

CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS ALL THE WORK IS COMPLETED.

ROOF DESIGN LOADS

Pf = 47 PSF
Ce = 1.0
I = 1.0
Ct = 1.1

WOOD CONSTRUCTION NOTES

1. ALL WOOD CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CODES AND REGULATIONS:

   A. "TIMBER CONSTRUCTION MANUAL" BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION.

   B. "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.

   C. "AMERICAN SOFTWOOD LUMBER STANDARD" BY THE NATIONAL BUREAU OF STANDARDS, VOLUNTARY PRODUCT STANDARD.

   D. "PLYWOOD DESIGN SPECIFICATION" BY THE AMERICAN PLYWOOD ASSOCIATION.

   E. "U.S. PRODUCT STANDARD FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD".

   F. "AMERICAN NATIONAL STANDARD FOR WOOD PRODUCTS – STRUCTURAL GLUE LAMINATED TIMBER", ANSI/AITC A190.1.

2. LUMBER FOR MISCELLANEOUS WOOD FRAMING AND BLOCKING SHALL BE SPRUCE–PINE–FIR, CONSTRUCTION GRADE AND BETTER WITH A MINIMUM ALLOWABLE BENDING STRESS OF 975 PSI (SINGLE MEMBER USE) AND A MODULUS OF ELASTICITY OF 1,300,000 PSI.

3. LUMBER FOR WOOD BEAMS, COLUMNS, STUDS AND JOISTS SHALL BE SPRUCE–PINE–FIR, NO. 1/NO. 2 GRADE WITH A MINIMUM ALLOWABLE BENDING STRESS OF 875 PSI (SINGLE MEMBER USE) AND A MODULUS OF ELASTICITY OF 1,400,000 PSI.

4. ALL DIMENSION LUMBER SHALL BE STRAIGHT AND NEW, IN SOUND CONDITION, KILN DRIED OR SURFACED DRY, WITH A MAXIMUM MOISTURE CONTENT OF 19%. ALL LUMBER SHALL BEAR THE GRADE AND MARK OF THE ASSOCIATION UNDER WHOSE RULES IT IS PRODUCED AND A MARK OF MILL IDENTIFICATION.

5. PROTECTION FROM THE ELEMENTS: THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO KEEP THE WOOD DECKING AND STRUCTURAL MEMBERS DRY DURING CONSTRUCTION. ANY STAINING OR DAMAGE SHALL BE CORRECTED TO THE RESIDENT'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.

6. SHEATHING SHALL BE APA RATED, EXPOSURE 1 SHEATHING PANELS WITH C–D OR BETTER VENEER FACES.

7. ALL WOOD FRAMING CONSTRUCTION SHALL BE ERECTED TRUE TO LINE AND DIMENSIONS, WELL FASTENED AND PROPERLY BRACED.

8. LAMINATED VENEER LUMBER (LVL) SHALL CONSIST OF DOUGLAS FIR OR SOUTHERN YELLOW PINE VENEERS LAMINATED TOGETHER IN A CONTINUOUS PRESS USING EXTERIOR TYPE ADHESIVES COMPLYING WITH ASTM D2559 TO PRODUCE MEMBERS WITH GRAIN OF VENEERS PARALLEL WITH THEIR LENGTHS. LAMINATED VENEER SHALL BE "MICROLLAM LVL HEADERS AND BEAMS" WITH A MINIMUM BENDING STRESS OF 2600 PSI, A MINIMUM SHEAR STRESS OF 285 PSI AND A MODULUS OF ELASTICITY OF 1,900,000 PSI.

McFarland Johnson

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 BRIDGE PLANS

STATE OF MAINE — THOMAS T KENDRICK — No. 10075 — REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
SIGNATURE
10075
P.E. NUMBER
10/19/2018
DATE

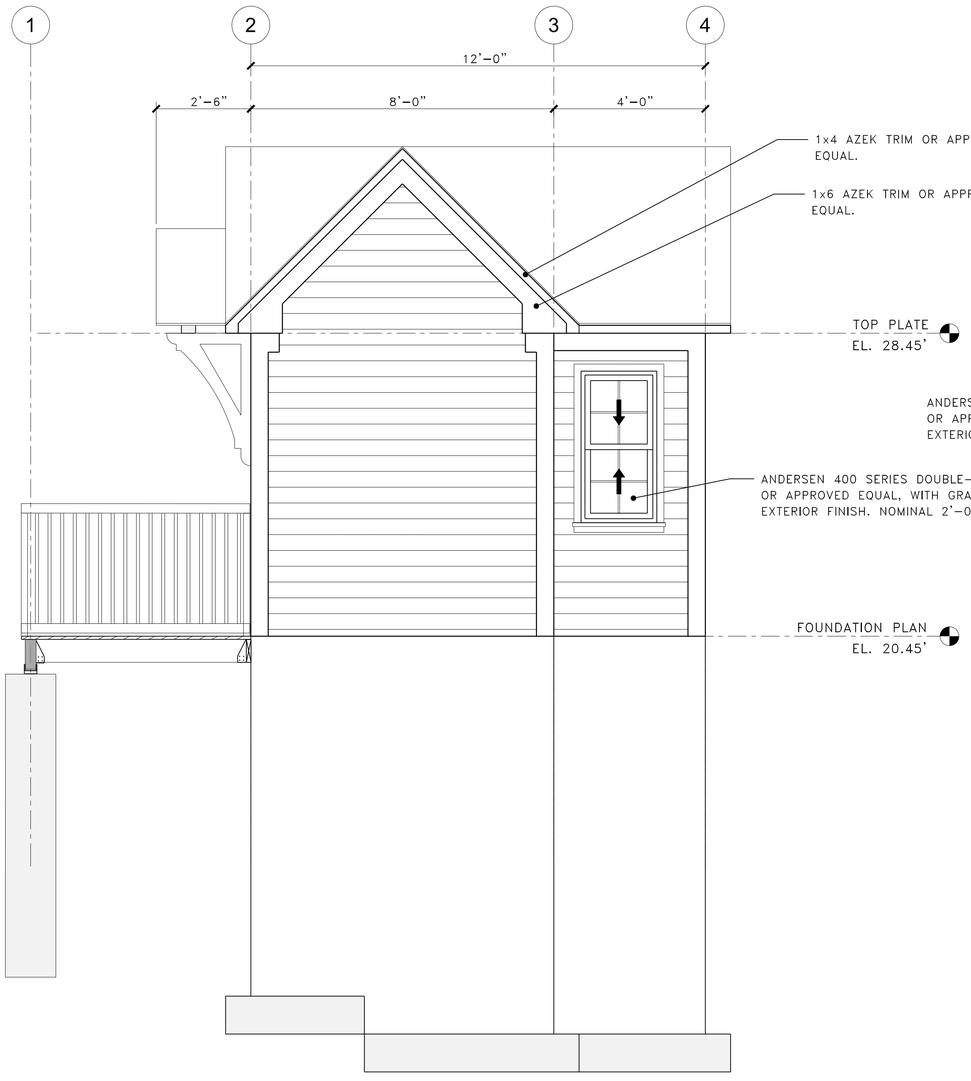
PROJ. MANAGER	L. TIMBERLAKE		
DESIGN-DETAILED	T. AGUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCAULIFFE	T. KENDRICK	10-19-18
DESIGN2-DETAILED2	B. COLBURN	S. OZANA	10-19-18
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

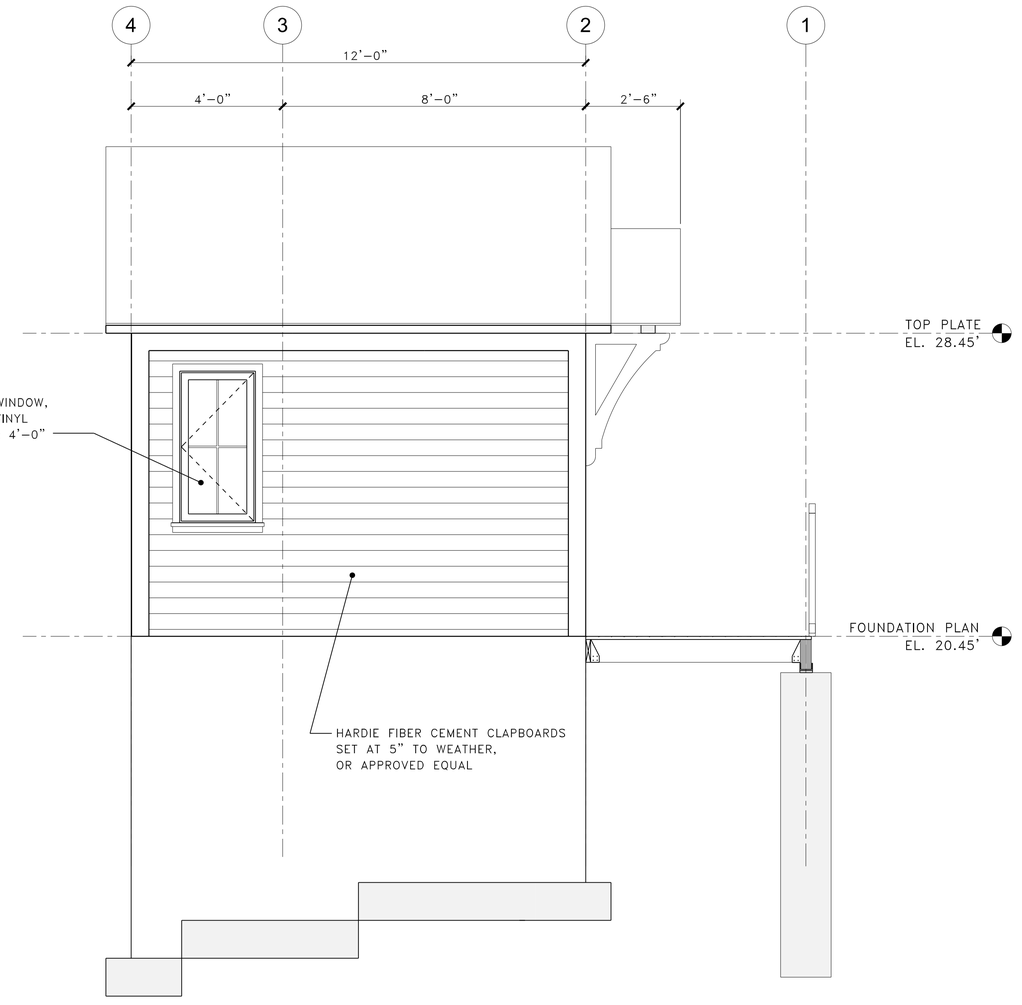
CONTROL HOUSE GENERAL NOTES

SHEET NUMBER
60
OF 132

Filename: ...\059-066_ControlHouse_Details.dgn Division: Username: Date:10/19/2018



SOUTH ELEVATION



NORTH ELEVATION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039 — BRIDGE PLANS

THOMAS T KENDRICK No. 10075 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

Thomas T. Kendrick
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REVISIONS 3			
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FIELD CHANGES			

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY — LINCOLN COUNTY

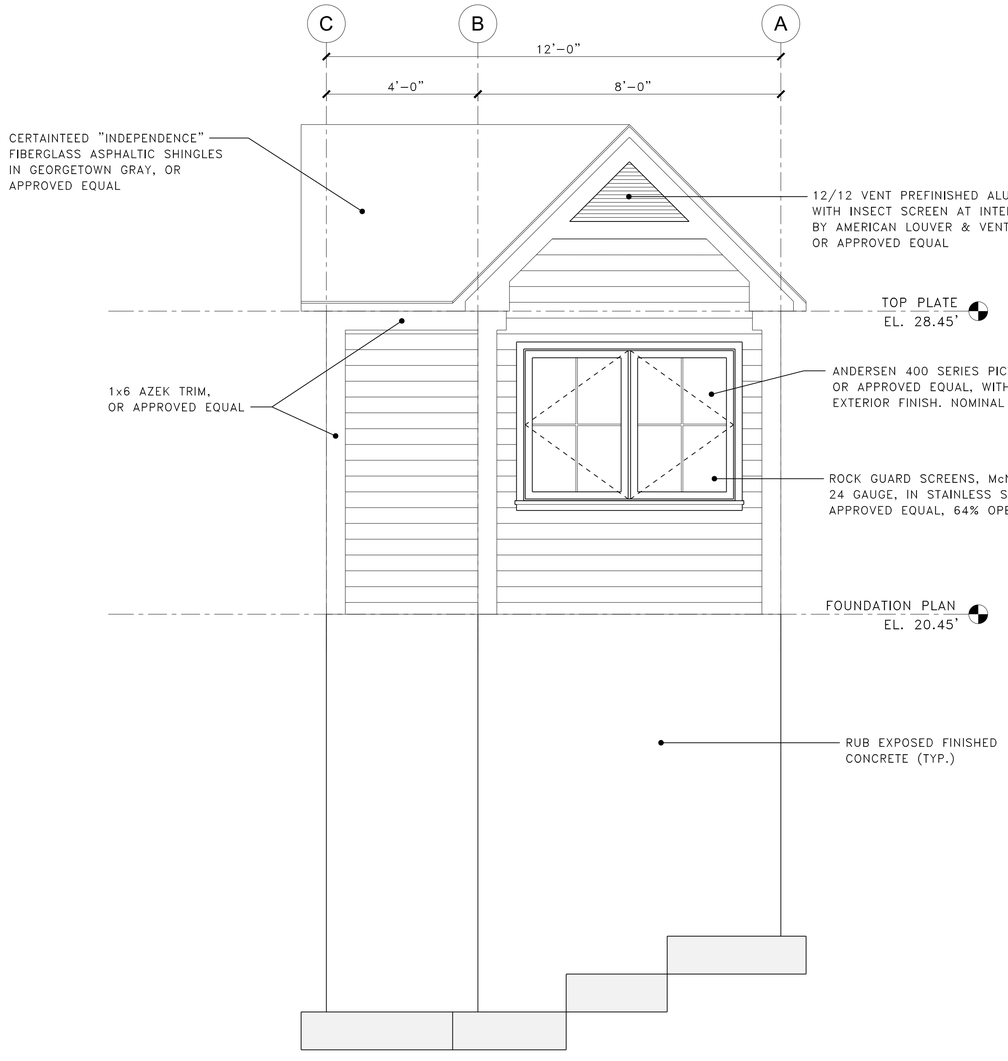
CONTROL HOUSE ELEVATIONS (1 OF 2)

SHEET NUMBER

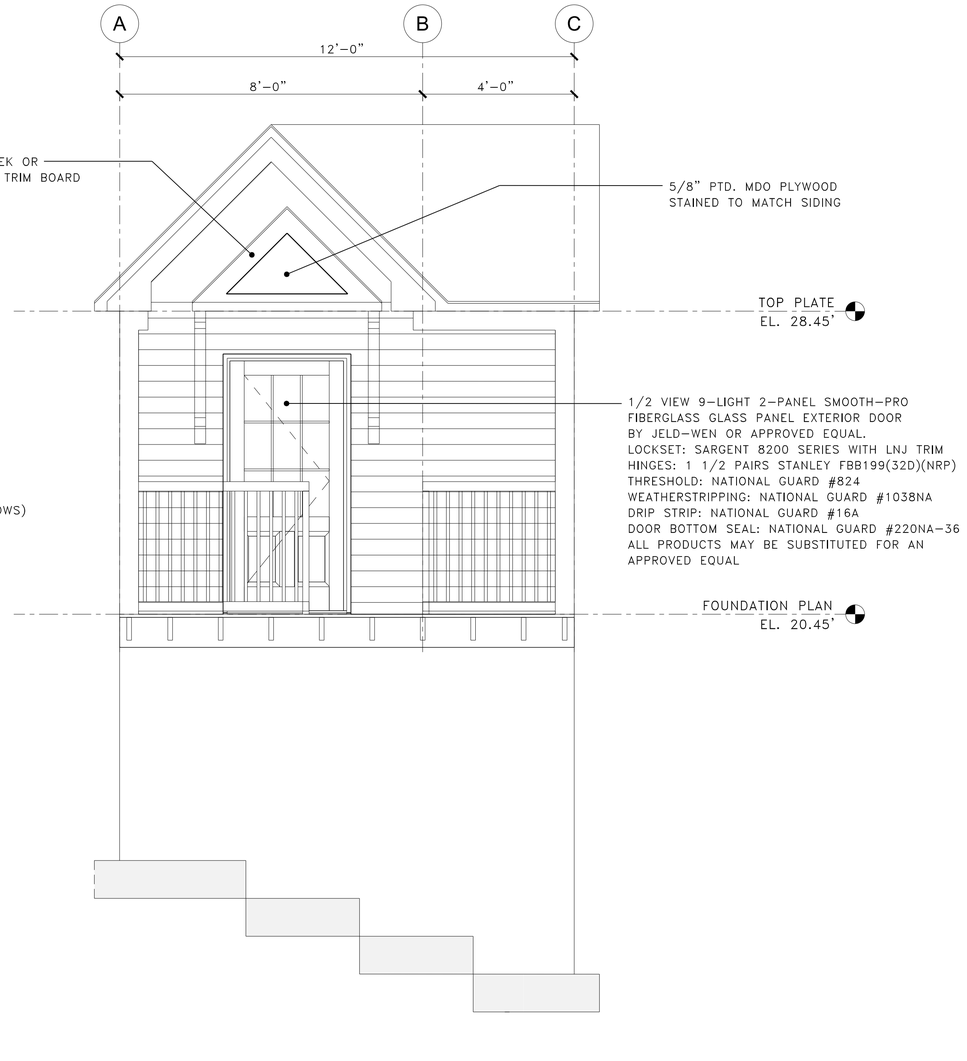
61

OF 132

McFarland Johnson



EAST ELEVATION



WEST ELEVATION

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STATE OF MAINE
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BRIDGE PLANS

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Thomas T. Kendrick
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REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

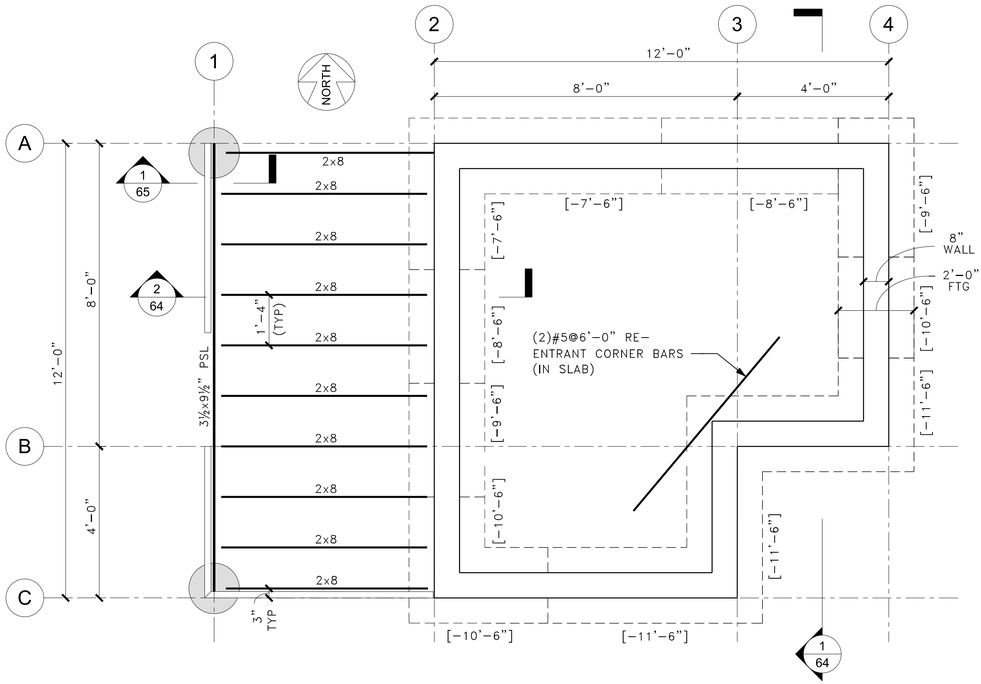
CONTROL HOUSE ELEVATIONS (2 OF 2)

SHEET NUMBER

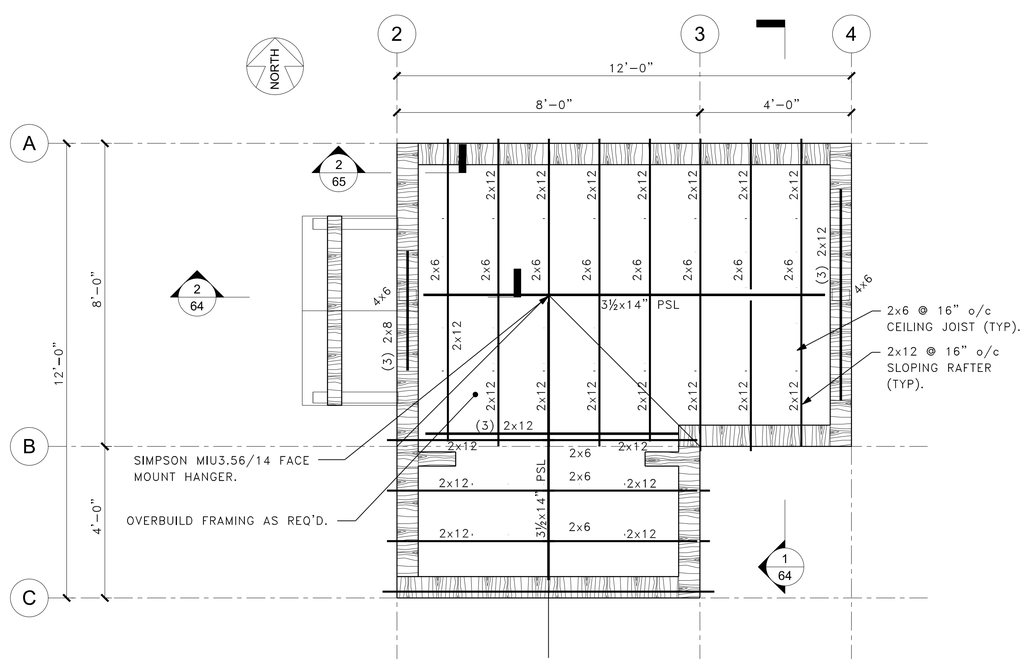
62

OF 132

McFarland Johnson



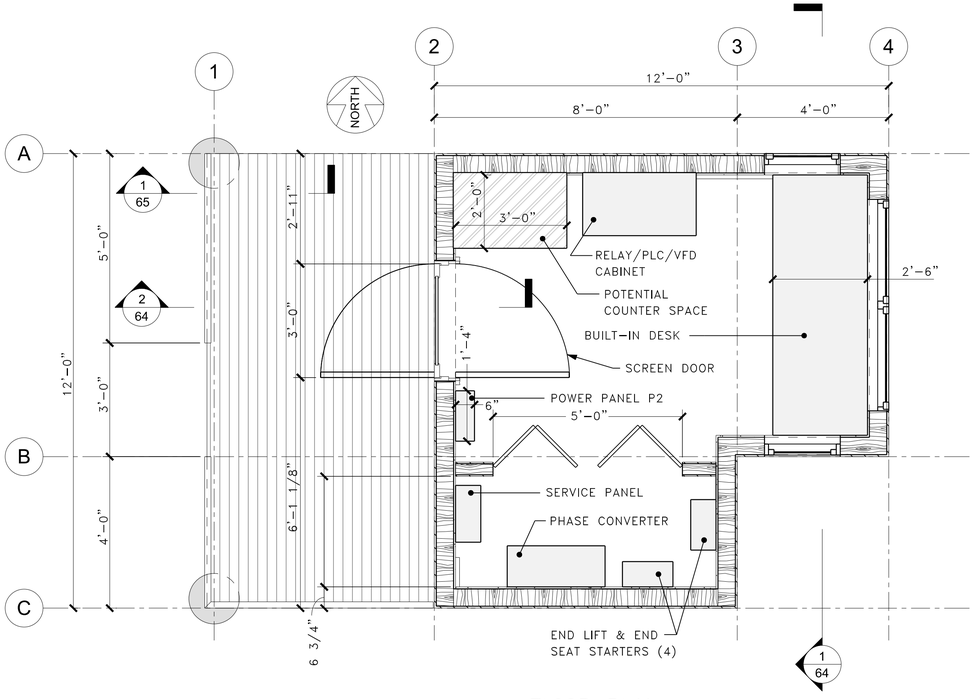
FOUNDATION PLAN



TOP PLATE

NOTES

1. SLAB ON GRADE TO BE 4" THICK CONCRETE SLAB REINFORCED W/#4 BAR AT 16" o/c EA WAY TOP. PROVIDE ASTM E1745 CLASS A VAPOR BARRIER DIRECTLY UNDER SLAB.
2. ELEVATION OF SLAB 20.45'.
3. ELEVATION BOTTOM OF FOOTINGS INDICATED THUS [_____] ON PLAN RELATIVE TO TOP OF SLAB.
4. ELEVATION OF BOTTOM OF FOOTING ARE APPROXIMATE AND GIVEN FOR BIDDING PURPOSES ONLY. ACTUAL ELEVATIONS MAY BE ADJUSTED BASED ON FIELD CONDITIONS.
5. THE BOTTOM OF FOOTING SHALL BE A MINIMUM OF 5'-0" BELOW FINISH GRADE OR FOUNDED ON SOLID BEDROCK.



FLOOR PLAN

STATE OF MAINE
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STP-2260(700)

WIN 22607.00

BRIDGE NO. 2039

BRIDGE PLANS

THOMAS T KENDRICK No. 10075 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE

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DESIGN2-DETAILED2	B. COLBURN	
DESIGN3-DETAILED3		

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

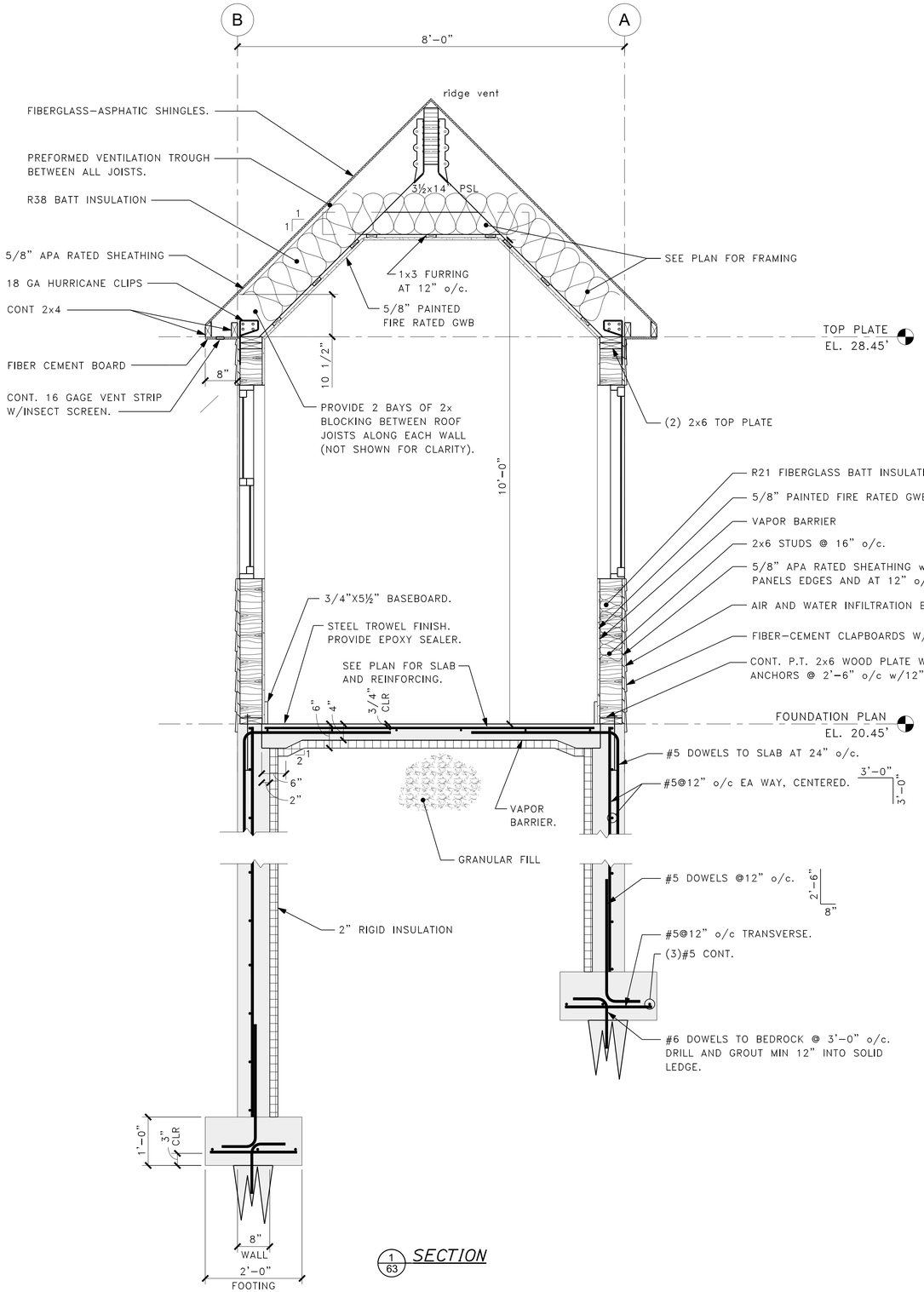
CONTROL HOUSE PLANS

SHEET NUMBER

63

OF 132

McFarland Johnson



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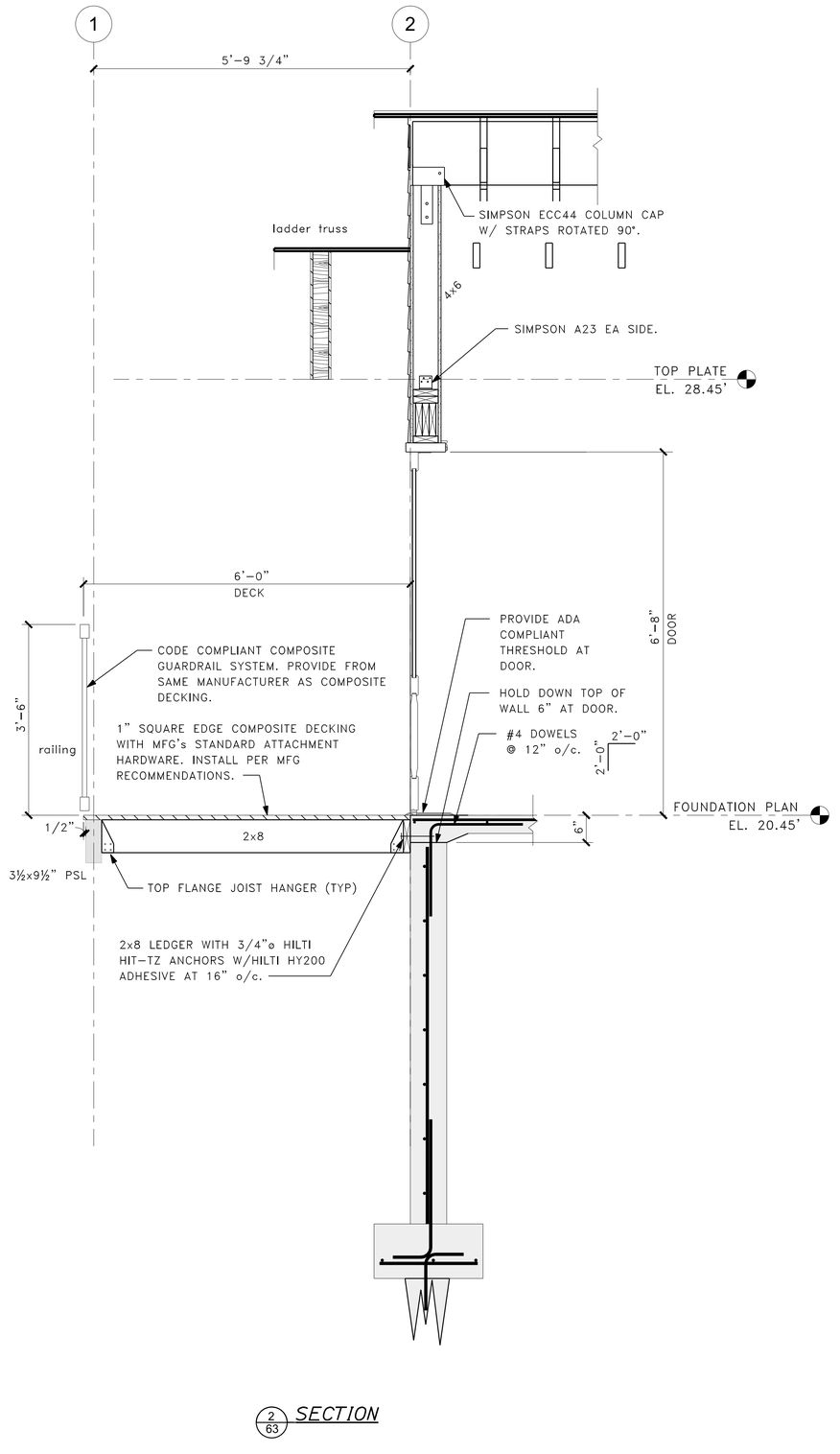

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BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CONTROL HOUSE SECTIONS

SHEET NUMBER
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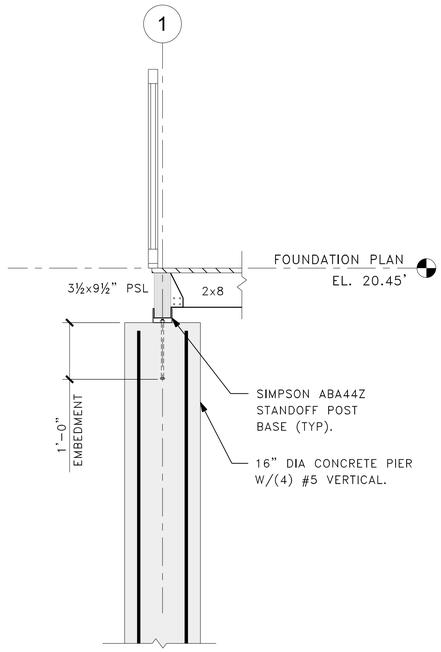
OF 132

McFarland Johnson



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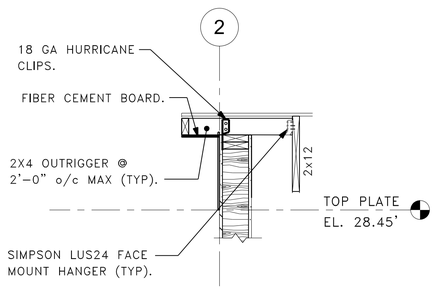

2/63 SECTION

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BARTERS ISLAND BRIDGE
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BOOTHBAY LINCOLN COUNTY

CONTROL HOUSE DETAILS

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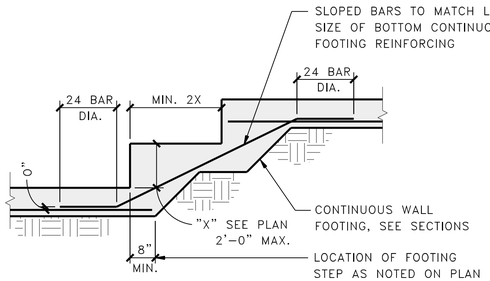
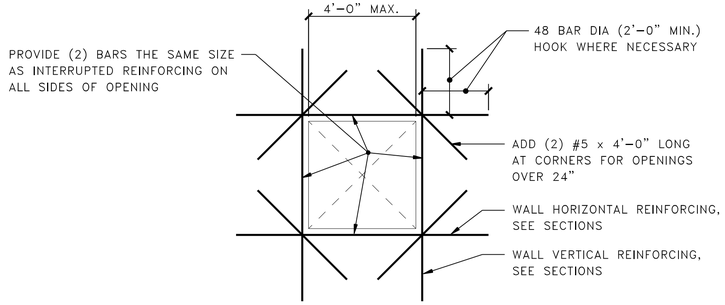


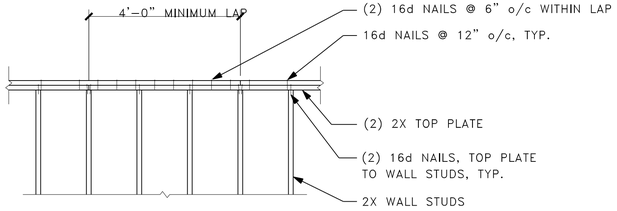
ELEVATION VIEW

TYPICAL DETAIL OF FOOTING REINFORCING AT STEPPED WALL FOOTING

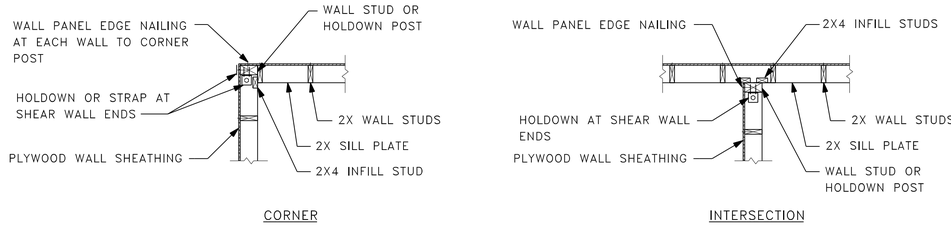


ELEVATION

TYPICAL DETAIL OF REINFORCING AT CONCRETE WALL OPENINGS

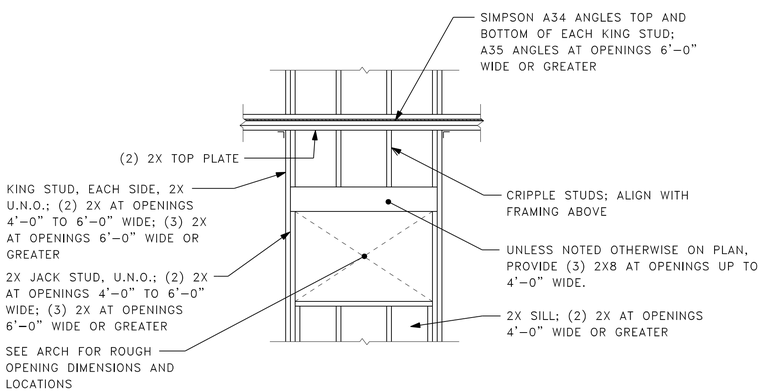


TYPICAL DETAIL OF TOP PLATE NAILING

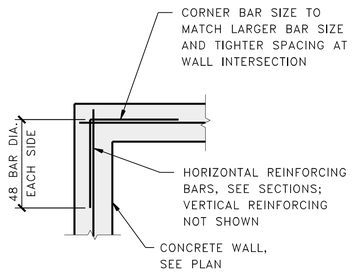


CORNER INTERSECTION

TYPICAL DETAIL OF WALL FRAMING AT CORNERS AND INTERSECTIONS



TYPICAL DETAIL OF FRAMING AT WALL OPENINGS



PLAN VIEW

TYPICAL DETAIL AT WALL CORNER: SINGLE LAYER OF REINFORCING

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CONTROL HOUSE STANDARD DETAILS

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