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

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

January 23, 2015
Subject: **Bridge**
State WIN: 016705.00
Location: **Howland**
Amendment No. 1

Dear Sir/Ms:

For your information and review:

The bid opening date for this project has been changed to **February 4, 2015**.

A second project geotechnical report, "Geotechnical Design Report Penobscot River Bridge, Howland/Enfield, Maine", dated October 2013, prepared by GZA GeoEnvironmental has been posted to the MaineDOT web for the contractors review.

Make the following changes to the Bid Documents:

In the Contract Book:

CHANGE, on page 14, "NOTICE TO CONTRACTORS", the bid opening date in the first paragraph from "January 28, 2015" to read "**February 4, 2015**". Make this change in pen and ink.

REMOVE, pages 16 thru 28, "Proposal Schedule of Items", dated 12/18/2014 and **REPLACE** with the attached revised "Proposal Schedule of Items" 13 pages dated 1/22/2015.

REMOVE, page 66 thru 70, "SPECIAL PROVISION, SECTION 105, General Scope of Work, (Environmental Requirements)" dated December 22, 2014 and **REPLACE** with the attached revised "SPECIAL PROVISION, SECTION 105-General Scope of Work (Environmental Requirements)", 5 pages dated January 5, 2015.

REMOVE, page 78, "SPECIAL PROVISION, SECTION 107, Time (Limitation of Operations), (Supplemental Liquidated Damages)" dated December 23, 2014 and **REPLACE** with the attached revised "SPECIAL PROVISION, SECTION 107, Time (Limitation of Operation), (Supplemental Liquidated Damages)" dated January 9, 2015.

REMOVE, page 79, "SPECIAL PROVISION, SECTION 107, TIME, (Supplemental Liquidated Damages for Fabrication Time)", dated December 23, 2014.

REMOVE, page 80, "SPECIAL PROVISION, SECTION 109.5, ADJUSTMENT FOR DELAY, (Delays due to Flooding)" dated December 2, 2014.

REMOVE, page 81 thru page 83, "SPECIAL PROVISION, SECTION 202, REMOVAL OF STRUCTURES AND OBSTRUCTIONS, (Building Removal)" dated November 4, 2014 and **REPLACE** with the attached revised SPECIAL PROVISION, SECTION 202, REMOVAL OF STRUCTURES AND OBSTRUCTIONS, (Building Removal)", 2 pages, dated January 8, 2015.

ADD the attached "SPECIAL PROVISION, SECTION 501, FOUNDATION PILES, (Acoustic Monitor)", 2 pages, dated January 9, 2015.

REMOVE, page 89 thru page 92, "SPECIAL PROVISION, SECTION 501, FOUNDATION PILES, (Dynamic Loading Test)" dated December 15, 2014 and **REPLACE** with the attached revised "SPECIAL PROVISION, SECTION 501, FOUNDATION PILES, (Dynamic Loading Test)", 4 pages, dated January 5, 2015.

ADD the attached "SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE – Composition and Proportioning", 1 page, dated January 9, 2015.

ADD the attached "SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE, (Precast Deck Panels)", 2 pages, dated January 22, 2015.

REMOVE the third paragraph on page 98, "SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE, (Fiber Reinforced Polymer Bride Drains)" page 3 of 14 dated December 15, 2014, with the heading "**General**" and **REPLACE** with the following:

> **General**
> **Size G offset FRP composite scupper (42 inch long x 12 inch wide x 10 inch diameter downspout) shall be used along the curb on the downstream side of the bridge. Size B symmetric FRP composite scupper (14 inch long x 14 inch wide x 10 inch diameter downspout) shall be used along the sidewalk on the upstream side of the bridge. See appendix B for additional details on the scupper/drain. The bottom of the downspout shall extend a minimum of 6 inches below the bottom of the beams with a maximum of 12 inches below the bottom of the beams.**
>
> Make this change in pen and ink.

REMOVE, pages 112 thru 115, "SPECIAL PROVISION, SECTION 530, (Glass Fiber Reinforced Polymer)" dated November 5, 2014 and **REPLACE** with the attached revised "SPECIAL PROVISION, SECTION 530, (Glass Fiber Reinforced Polymer)", 4 pages, dated January 22, 2015.

In the Plan Set:

REMOVE, Sheet 2, "ESTIMATED QUANTITIES", and **REPLACE** with the attached revised Sheet 2 Title "ESTIMATED QUANTITIES" revision date 1/21/2015

REMOVE, Sheet 73, "PIER 1 REINFORCING PLAN & ELEVATION", and **REPLACE** with the attached revised Sheet 73, "PIER 1 REINFORCING PLAN & ELEVATION" revision date 1/21/2015.

REMOVE, Sheet 77, "PIER 2 REINFORCING PLAN & ELEVATION", and **REPLACE** with the attached revised Sheet 77, "PIER 2 REINFORCING PLAN & ELEVATION" revision date 1/21/2015.

REMOVE, Sheet 80, "PIER 3 REINFORCING PLAN & ELEVATION", and **REPLACE** with the attached revised Sheet 80, "PIER 3 REINFORCING PLAN & ELEVATION" revision date 1/21/2015.

REMOVE, Sheet 122, "REINFORCING SCHEDULE 2", and **REPLACE** with the attached revised Sheet 122, "REINFORCING SCHEDULE 2" revision date 1/21/2015.

The following questions have been received:

Question: Will the use of precast panels be allowed?

Response: Yes, precast panels can be used. Please refer to the aforementioned revised SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE, (Precast Deck Panels)" 2 pages dated January 22, 2015, now included in the contract book.

Question: The Proposal contains the "Highway" General Wage Decision Number ME150051 on pages 45 through 49. Please confirm that this wage determination covers all aspects of the project including the construction of the bridge structure and furthermore that General Wage Decision Number ME150019 is not applicable to this project.

Response: The Department plans to make no changes to the wage rates.

Question: Plan sheets 72, 76 and 79 detail a vertical construction joint for the pier stems on Piers 1, 2 and 3. Is this construction joint optional or mandatory?

Response: The vertical construction joint in the pier stems is optional and may be eliminated by the Contractor.

Question: Similarly a construction joint is detailed in the beam seat and backwalls for both Abutments 1 and 2 near the centerline of construction. Is this construction joint optional or mandatory?

Response: The use of a construction joint detailed in the beam seat and backwalls for both Abutments 1 and 2 near the centerline of construction is mandatory.

Question: This question relates to the GFRP requirement on the Penobscot River Bridge Replacement project (WIN(s): 016705.00). After reviewing the plans in detail, we could not find the minimum Mechanical Properties specified. There are references to "Reinforcing Bar: ASTM A615/A615M, Grade 60" on the plans. This ASTM is specific to steel reinforcing not GFRP reinforcing. We have also checked the available MDOT Standard Specification Manual for clarification, but the online version does not mention section 530 (Glass Fiber Reinforced Polymer). The Special Provisions in the Contract Bid Book also does not mention minimum Mechanical Properties. As we have three different grades of GFRP rebar; we would like clarification of a minimum specification needed, so we can tailor the quotation to maximize the cost savings to MDOT.

Response: The mechanical properties for the Glass Fiber Reinforced Polymer are listed on Sheet 1 of the plans in the lower right hand corner under "BASIC DESIGN STRESSES".

Question: Will State of Maine Standard SIP deck panels, with standard reinforcing, be excepted on the this project.

Response: Please refer to the response of the first question.

Question: In the project specifications on page 3 of 14, the first category listed under the Design Guide for FRP Composite Scupper Bodies/Drain Inlets in General. In the first sentence of the General category the description reads, "The bridge shall use a size F offset FRP composite scupper..." but the quantity list and drawings show only Type B and Type G scuppers. Can you confirm which of these material descriptions should take precedence?

Response: Please refer the aforementioned edits to the Bid Documents.

Question: Please confirm that Precast Prestressed Concrete Deck Panels are allowed to be used in the construction of the bridge deck as we can find no reference to their use on the contract plans, however page 79 of the Special Provisions indicates that the Department is allocating 70 calendar days of inspection time for their fabrication.

Response: The response to this question has been addressed by previous responses in this Amendment.

Question: If Precast Prestressed Concrete Deck Panels are allowed please confirm that the reinforcing steel in the panel must be GFRP reinforcement.

Response: Yes, reinforcing in the precast deck panels shall be GFRP. Please refer to the aforementioned revised "SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE, (Precast Deck Panels)" 2 pages, dated January 22, 2015, now included in the contract book.

Question: Please clarify how the payment for the GFRP reinforcement in the Precast Deck Panels will be addressed. If it is to be incidental to the Precast Deck Panels and will not be compensated under bid items 530.30 – GFRP Fab & Deliver and 530.31 – GFRP Placing, please clarify how the bidder is to take credit for the GFRP in the deck panels (at the time of bid) as both items 530.30 & 530.31 are unit price items with a linear foot unit of measure.

Response: Please refer to the aforementioned revised "SPECIAL PROVISION, SECTION 502, STRUCTURAL CONCRETE, (Precast Deck Panels)" 2 pages, dated January 22, 2015, now included in the contract book.

Consider these changes and information prior to submitting your bid on **February 4, 2015**.

Sincerely,

George M. A. Macdougall P.E.
Contracts & Specifications Engineer

Maine Department of Transportation

Proposal Schedule of Items

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0010	201.111 CLEARING	LUMP SUM	LUMP SUM		_____	.____
0020	201.23 REMOVING SINGLE TREE TOP ONLY	3.000 EA	_____	.____	_____	.____
0030	201.24 REMOVING STUMP	5.000 EA	_____	.____	_____	.____
0040	202.08 REMOVING BUILDING NO.: 2	LUMP SUM	LUMP SUM		_____	.____
0050	202.08 REMOVING BUILDING NO.: 1	LUMP SUM	LUMP SUM		_____	.____
0060	202.15 REMOVING MANHOLE OR CATCH BASIN	3.000 EA	_____	.____	_____	.____
0070	202.19 REMOVING EXISTING BRIDGE	LUMP SUM	LUMP SUM		_____	.____
0080	203.20 COMMON EXCAVATION	5,723.000 CY	_____	.____	_____	.____
0090	203.24 COMMON BORROW	188.000 CY	_____	.____	_____	.____
0100	203.25 GRANULAR BORROW	3,750.000 CY	_____	.____	_____	.____
0110	206.061 STRUCTURAL EARTH EXCAVATION - DRAINAGE AND MINOR STRUCTURES, BELOW GRADE	50.000 CY	_____	.____	_____	.____
0120	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	95.000 CY	_____	.____	_____	.____

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
0130	206.10 STRUCTURAL EARTH EXCAVATION - PIERS	3,310.000 CY				
0140	304.16 AGGREGATE BASE COURSE - TYPE C	7,300.000 CY				
0150	403.207 HOT MIX ASPHALT 19.0 MM HMA	1,225.000 T				
0160	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	990.000 T				
0170	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	55.000 T				
0180	403.213 HOT MIX ASPHALT 12.5 MM BASE	990.000 T				
0190	409.15 BITUMINOUS TACK COAT - APPLIED	505.000 G				
0195	501.235 ACOUSTIC MONITOR	20.000 CD				
0200	501.239 DYNAMIC LOADING TESTS - PROVIDING FOR	11.000 EA				
0210	501.50 STEEL H-BEAM PILES 89 LBS/FT, DELIVERED	1,080.000 LF				
0220	501.501 STEEL H-BEAM PILES 89 LBS/FT, IN PLACE	1,080.000 LF				

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
0230	501.54 STEEL H-BEAM PILES 117 LBS/FT, DELIVERED	1,990.000 LF				
0240	501.541 STEEL H-BEAM PILES 117 LBS/FT, IN PLACE	1,990.000 LF				
0250	501.90 PILE TIPS	100.000 EA				
0260	501.91 PILE SPLICES	109.000 EA				
0270	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP SUM	LUMP SUM			
0280	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP SUM	LUMP SUM			
0290	502.239 STRUCTURAL CONCRETE PIERS	LUMP SUM	LUMP SUM			
0300	502.24 STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)	680.000 CY				
0310	502.249 STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER)	LUMP SUM	LUMP SUM			
0320	502.26 STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES	LUMP SUM	LUMP SUM			
0330	502.31 STRUCTURAL CONCRETE APPROACH SLABS	LUMP SUM	LUMP SUM			

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
0340	502.49 STRUCTURAL CONCRETE CURBS AND SIDEWALKS	LUMP SUM	LUMP SUM		_____	_____
0350	502.703 FRP DOWNSPOUT	2.000 EA	_____	_____	_____	_____
0360	502.77 FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE: B	14.000 EA	_____	_____	_____	_____
0370	502.77 FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE: G	4.000 EA	_____	_____	_____	_____
0380	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	229,900.000 LB	_____	_____	_____	_____
0390	503.13 REINFORCING STEEL, PLACING	229,900.000 LB	_____	_____	_____	_____
0400	503.14 EPOXY-COATED REINFORCING STEEL, FABRICATED AND DELIVERED	25,400.000 LB	_____	_____	_____	_____
0410	503.15 EPOXY-COATED REINFORCING STEEL, PLACING	25,400.000 LB	_____	_____	_____	_____
0420	504.702 STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	LUMP SUM	LUMP SUM		_____	_____
0430	504.71 STRUCTURAL STEEL ERECTION	LUMP SUM	LUMP SUM		_____	_____
0440	505.08 SHEAR CONNECTORS	LUMP SUM	LUMP SUM		_____	_____

Maine Department of Transportation

Proposal Schedule of Items

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars Cents	Bid Amount Dollars Cents
0450	507.0821 STEEL BRIDGE RAILING, 3 BAR	LUMP SUM	LUMP SUM	_____.____
0460	507.0831 STEEL BRIDGE RAILING, 4 BAR	LUMP SUM	LUMP SUM	_____.____
0470	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP SUM	LUMP SUM	_____.____
0480	511.07 COFFERDAM: PIER NO.3	LUMP SUM	LUMP SUM	_____.____
0490	511.07 COFFERDAM: PIER NO.2	LUMP SUM	LUMP SUM	_____.____
0500	511.07 COFFERDAM: PIER NO.1	LUMP SUM	LUMP SUM	_____.____
0510	512.081 FRENCH DRAINS	LUMP SUM	LUMP SUM	_____.____
0520	514.06 CURING BOX FOR CONCRETE CYLINDERS	1.000 EA	_____.____	_____.____
0530	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP SUM	LUMP SUM	_____.____
0540	521.23 EXPANSION DEVICE FINGER JOINT	2.000 EA	_____.____	_____.____
0550	521.32 FABRIC TROUGH FOR FINGER JOINT	2.000 EA	_____.____	_____.____
0560	523.52 BEARING INSTALLATION	27.000 EA	_____.____	_____.____

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0570	523.5551 POT OR DISC BEARINGS, FIXED	3.000 EA				
0580	523.5552 POT OR DISC BEARINGS, EXPANSION	24.000 EA				
0590	526.301 TEMPORARY CONCRETE BARRIER TYPE I	LUMP SUM	LUMP SUM			
0600	526.34 PERMANENT CONCRETE TRANSITION BARRIER	1.000 EA				
0610	526.3401 PERMANENT CONCRETE TRANSITION BARRIER - MODIFIED	3.000 EA				
0640	603.155 12 INCH REINFORCED CONCRETE PIPE CLASS III	52.000 LF				
0650	603.159 12 INCH CULVERT PIPE OPTION III	20.000 LF				
0660	603.16 15 INCH CULVERT PIPE OPTION I	80.000 LF				
0670	603.169 15 INCH CULVERT PIPE OPTION III	32.000 LF				
0680	603.175 18 INCH REINFORCED CONCRETE PIPE CLASS III	80.000 LF				
0690	603.179 18 INCH CULVERT PIPE OPTION III	88.000 LF				

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
0700	603.195 24 INCH REINFORCED CONCRETE PIPE CLASS III	72.000 LF				
0710	603.199 24 INCH CULVERT PIPE OPTION III	130.000 LF				
0720	603.55 CONCRETE PIPE TIES	5.000 GP				
0730	604.09 CATCH BASIN TYPE B1	1.000 EA				
0740	604.092 CATCH BASIN TYPE B1-C	6.000 EA				
0750	604.093 60 INCH CATCH BASIN TYPE B1	2.000 EA				
0760	604.096 60 INCH CATCH BASIN TYPE B1-C	1.000 EA				
0770	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	3.000 EA				
0780	604.244 CATCH BASIN TYPE F4	1.000 EA				
0790	604.247 CATCH BASIN TYPE F5-C	1.000 EA				
0800	605.09 6 INCH UNDERDRAIN TYPE B	1,075.000 LF				
0810	605.10 6 INCH UNDERDRAIN OUTLET	20.000 LF				
0820	605.11 12 INCH UNDERDRAIN TYPE C	155.000 LF				

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0830	606.1721 BRIDGE TRANSITION - TYPE 1	4.000 EA				
0840	606.23 GUARDRAIL TYPE 3C - SINGLE RAIL	390.000 LF				
0850	606.232 GUARDRAIL TYPE 3C - OVER 15 FOOT RADIUS	188.000 LF				
0860	606.259 ANCHORAGE ASSEMBLY	1.000 EA				
0870	606.265 TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	1.000 EA				
0880	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	4.000 EA				
0890	606.356 UNDERDRAIN DELINEATOR POST	1.000 EA				
0900	606.79 GUARDRAIL 350 FLARED TERMINAL	2.000 EA				
0910	607.17 CHAIN LINK FENCE - 6 FOOT	170.000 LF				
0920	608.26 CURB RAMP DETECTABLE WARNING FIELD	18.000 SF				
0930	609.31 CURB TYPE 3	830.000 LF				
0940	610.08 PLAIN RIPRAP	5,086.000 CY				

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price Dollars	 Cents	Bid Amount Dollars	 Cents
0950	610.18 STONE DITCH PROTECTION	29.000 CY				
0960	613.319 EROSION CONTROL BLANKET	580.000 SY				
0970	615.07 LOAM	440.000 CY				
0980	618.13 SEEDING METHOD NUMBER 1	5.000 UN				
0990	618.14 SEEDING METHOD NUMBER 2	57.000 UN				
1000	618.141 SEEDING METHOD NUMBER 3	14.000 UN				
1010	619.1201 MULCH - PLAN QUANTITY	76.000 UN				
1020	619.1401 EROSION CONTROL MIX	10.000 CY				
1030	620.58 EROSION CONTROL GEOTEXTILE	4,095.000 SY				
1040	626.22 NON-METALLIC CONDUIT	1,200.000 LF				
1050	627.18 12 " SOLID WHITE PAVEMENT MARKING	110.000 LF				
1060	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	7,525.000 LF				

Maine Department of Transportation

Proposal Schedule of Items

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1070	627.76 TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	LUMP SUM	LUMP SUM		_____	_____
1080	629.05 HAND LABOR, STRAIGHT TIME	40.000 HR	_____	_____	_____	_____
1090	631.10 AIR COMPRESSOR (INCLUDING OPERATOR)	5.000 HR	_____	_____	_____	_____
1100	631.11 AIR TOOL (INCLUDING OPERATOR)	5.000 HR	_____	_____	_____	_____
1110	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	20.000 HR	_____	_____	_____	_____
1120	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	30.000 HR	_____	_____	_____	_____
1130	631.20 STUMP CHIPPER (INCLUDING OPERATOR)	5.000 HR	_____	_____	_____	_____
1140	631.221 SMALL FRONT-END LOADER (INCLUDING OPERATOR)	20.000 HR	_____	_____	_____	_____
1150	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	5.000 HR	_____	_____	_____	_____
1160	634.160 HIGHWAY LIGHTING	LUMP SUM	LUMP SUM		_____	_____
1170	634.210 CONVENTIONAL LIGHT STANDARD	7.000 EA	_____	_____	_____	_____

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1180	634.25 SERVICE POLE COMPLETE WITH CABINET AND CONTROLS	2.000 EA				
1190	637.071 DUST CONTROL	LUMP SUM	LUMP SUM			
1200	639.18 FIELD OFFICE TYPE A	1.000 EA				
1210	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	4.000 EA				
1220	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	4.000 EA				
1230	652.311 TYPE II BARRICADE	20.000 EA				
1240	652.312 TYPE III BARRICADE	6.000 EA				
1250	652.33 DRUM	100.000 EA				
1260	652.34 CONE	300.000 EA				
1270	652.35 CONSTRUCTION SIGNS	1,000.000 SF				
1280	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP SUM	LUMP SUM			
1290	652.38 FLAGGER	7,500.000 HR				

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 1 INITIAL GROUP

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1300	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM	LUMP SUM		_____	_____
1310	658.20 ACRYLIC LATEX COLOR FINISH, GREEN	21.000 SY	_____	_____	_____	_____
1320	659.10 MOBILIZATION	LUMP SUM	LUMP SUM		_____	_____
1330	660.21 ON-THE-JOB TRAINING (BID)	1,000.000 HR	_____	_____	_____	_____
	Section: 1		**Total:**		_____	_____

SECTION: 2 OTT & TWC OPTION NO.1

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1340	910.301 SPECIAL WORK UTILITY CONDUIT OTT AND TWC - APPROACHES ONLY	LUMP SUM	LUMP SUM		_____	_____
1350	910.301 SPECIAL WORK UTILITY CONDUIT OTT AND TWC - BRIDGE ONLY	LUMP SUM	LUMP SUM		_____	_____
	Section: 2		**Total:**		_____	_____

Proposal ID: 016705.00 **Project(s):** 016705.00

SECTION: 3 OPTION NO.2

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1360	910.301 SPECIAL WORK WATER	LUMP SUM	LUMP SUM		_____	.____
	Section: 3		**Total:**		_____	.____

SECTION: 4 OPTION NO.3

Alt Set ID: **Alt Mbr ID:**

Contractor: _____

Proposal Line Number	Item ID / Description	Approximate Quantity and Units	Unit Price Dollars	Unit Price Cents	Bid Amount Dollars	Bid Amount Cents
1370	910.301 SPECIAL WORK SEWER	LUMP SUM	LUMP SUM		_____	.____
	Section: 4		**Total:**		_____	.____
			Total Bid:		_____	.____

SPECIAL PROVISION
SECTION 105
General Scope of Work
(Environmental Requirements)

In-Water work consists of any activity conducted below the normal high water mark of a river, steam, brook, lake, pond or "Coastal Wetland" areas that are subject to tidal action during the highest tide level for the year which an activity is proposed as identified in the tide tables published by the National Ocean Service. http://www.oceanservice.noaa.gov/ For the full definition of "Coastal Wetlands", please refer to 38 MRSA 480-B(2)

I. In-Water Work shall be conditionally allowed anytime as follows:

Activity	**Conditions and Requirements**
Pile Driving	1. Noise levels may not exceed sound level limits of 187dB accumulated sound exposure level (SEL) and 206 dB peak. Pile driving by impact hammer that occurs in the water shall require noise monitoring and probable noise attenuation as further described in Section IV of this Special Provision. 2. Noise levels greater than 150dbRMS shall not exceed 12 consecutive hours in a 24-hour period and a 12-hour recovery period (in-water work noise below 150 dB RMS or ambient levels) shall be provided in-between work days. 3. Pile driving may occur unrestricted if completed in the dry.
Cofferdam construction	1. Cofferdam construction shall be completed in consultation with MaineDOT Environmental Office to coordinate fish exclusion from work area. The contractor shall allow for access by MaineDOT Biologist(s) to identify and evacuate fish if present in the work area if cofferdam is sealed between April 1 and December 15 of any year. 2. To avoid salmon entrapment in partially completed cofferdams, the contractor shall leave at least 60 percent of the cofferdam open, based on perimeter length, if a cofferdam is left overnight or longer than 12 hours at any time.
Hydraulic rock breaker/hoe ram	1. Noise levels may not exceed sound level limits of 187dB accumulated sound exposure level (SEL) and 206 dB peak. 2. Noise levels greater than 150dbRMS shall not exceed 12 consecutive hours in a 24-hour period and a 12-hour recovery period (in-water work noise below 150 dB RMS or ambient levels) shall be provided in-between work days.
Temporary Construction Access	1. Pile-supported structures are permitted in accordance with pile-driving requirements listed above 2. Temporary wetland and river impacts from access roads, combined with all other temporary wetland and stream impacts shall not exceed 3,000 square feet and shall be located between the existing bridge and the proposed bridge.

	3. Temporary fill access shall be : a. Constructed of washed heavy riprap on top of a geotextile fabric filter layer. The fill material shall be free of sediment sources; b. Shall not exceed 100 linear feet (both sides of the river added together) at any one time; c. Turbidity curtains shall be used to the extent practicable; d. Shall be removed and pre-construction grades shall be restored as within 48 hours of completion of its use e. Water velocity may not exceed 6.5 ft/sec as a result of the temporary fill.

II. In-Water work applies to the Penobscot River at the proposed bridge replacement

III. Special Conditions:

1. **Individual Permit Application with the Army Corps of Engineers is currently pending. In-water work may not begin until an ACOE permit has been issued. These documents will be provided to the contractor as soon as they are available. In-water work shall <u>NOT</u> begin without written permission from the MaineDOT.**
2. Special Conditions of Formal Endangered Species Act (Section 7) and Essential Fish Habitat Consultation (EFH) with U.S. Fish and Wildlife Service (summarized in this Special Provision 105).
3. The contractor shall contact Eric Ham of MaineDOT Environmental Office (207-215-7356) at least two weeks prior to installation of cofferdams.
4. The contractor shall hold a pre-construction meeting for each project with appropriate MaineDOT Environmental Office staff, other MaineDOT staff, and the MaineDOT construction crew or contractor(s) to review all procedures and requirements for avoiding and minimizing effects to Atlantic salmon and to emphasize the importance of these measures for protecting salmon and their habitat. ACOE (Jay Clement, Jay.l.clement@usace.army.mil), FHWA (Cassandra Chase, Cassandra.Chase@dot.gov) and U.S. Fish and Wildlife Service staff (Thomas Davidowicz, thomas_davidowicz@fws.gov) shall be invited to attend these meetings.
5. The contractor shall minimize the potential for effects to Atlantic salmon and their habitat by conducting all construction activities for each project in accordance with the MEDOT-approved Soil Erosion and Water Pollution Control Plan. In stream turbidity shall be visually monitored and all erosion controls will be inspected daily to ensure that the measures taken are adequate. If inspection shows that the erosion controls are ineffective, immediate action shall be taken to repair, replace, or reinforce controls as necessary.
6. Disturbed areas adjacent to the stream shall be stabilized and re-vegetated with a seed mix appropriate for riparian areas in Maine, except in areas where riprap has been placed.
7. Cofferdams shall be removed from the stream immediately following completion of construction, allowing for minor delays due to high stream flows following heavy precipitation, so that fish and other aquatic organism passage is not unnecessarily restricted.
8. To minimize the spread of noxious weeds into the riparian zone, all off-road equipment and vehicles (operating off of existing open and maintained roads) shall be cleaned prior to entering the construction site to remove all soil, seeds, vegetation, or other debris that could contain seeds or reproductive portions of plants. All equipment shall be inspected prior to off-loading to ensure that they are clean.

9. As a component of the SEWPCP required for each project, MaineDOT or their contractor will develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) designed to avoid any stream impacts from hazardous chemicals, such as diesel fuel, oil, lubricants, and other hazardous materials. All refueling or equipment maintenance will take place away from the stream and in a careful manner that prohibits chemical or other hazardous materials from entering the stream. These measures include the following:
   a. All vehicle and equipment refueling activities shall occur more than 100 feet from any water course.
   b. All vehicles carrying fuel shall have specific equipment and materials needed to contain or clean up any incidental spills at the Project site. Equipment and materials would include spill kits appropriately sized for specific quantities of fuel, shovels, absorbent pads, straw bales, containment structures and liners, and/or booms.
   c. During use, all pumps and generators shall have appropriate spill containment structures and/or absorbent pads in place.
   d. All equipment used for in-stream work shall be cleaned of external oil, grease, dirt, and mud.
   e. Any leaks or accumulations of these materials would be corrected before entering areas that drain directly to streams or wetlands.
10. The use of large cranes over water temporary construction accesses will require extra review of the SPCCP. These measures include the following:
    a. All vehicles carrying fuel shall have specific equipment and materials needed to contain or clean up any incidental spills at the project site. Equipment and materials would include spill kits appropriately sized for specific quantities of fuel, shovels, absorbent pads, straw bales, containment structures and liners, and/or booms.
    b. During use, all pumps and generators shall have appropriate spill containment structures and/or absorbent pads in place.
    c. All equipment used for in-stream work shall be cleaned of external oil, grease, dirt, and mud. Any leaks or accumulations of these materials would be corrected before entering streams or areas that drain directly to streams or wetlands.
11. In-water blasting is prohibited within project limits.

IV. Underwater Noise Monitoring and Noise Attenuation (applies to pile-driving with impact hammer),

1. The contractor shall provide MaineDOT and USFWS a draft hydroacoustic monitoring plan at least 30 days prior to implementation for review. **No in-stream noise-generating activities may commence until UFWS has approved the monitoring protocol.** The monitoring plan shall describe monitoring locations, equipment and protocols, and personnel and shall describe how the contractor will complete the following:

   a. Monitor Sound Pressure Level (SPL) during all impact hammer pile-driving using a series of hydrophones and a digital recorder capable of operating at a minimum of 3,000 samples per second for a minimum of one second, with an adjustable trigger level, and a range of at least 30 psi.

      Initially, a minimum of three hydrophones must be used, located approximately 33, 66, and 100 feet from the in-stream sound producing activity. Additional hydrophones may be

required to document sound levels remain below the previously established thresholds at mid-stream, and at the farthest bank.

b. Ensure that the sound pressure levels at all hydrophones be maintained below 206 dB PEAK re 1 µPa and below 187 dB CSEL re 1 µPa. In-water noise levels greater than 150dB RMS re 1µ Pa measured at any hydrophone must not persist in excess of 12 consecutive hours on any given day, and a 12 hour recovery period (i.e., in-water noise below 150dB RMS re lµ Pa, or a return to ambient levels) must be provided between work days.

c. Acoustic monitoring will be required at the beginning of each activity and activity location. If noise intensity levels approach the published threshold for having the potential to injure listed species (187 dB re 1 µPa CSEL and/or 206 PEAK dB re 1 µPa), noise minimization measures shall be used during that noise-producing activity. Should recorded underwater noise fall below the threshold for indication of potential injury of listing species (187 dB re 1 µPa CSEL and/or 206 PEAK dB re 1 µPa) during the activity, then persistent acoustic monitoring can be replaced with intermittent subset monitoring for the remainder of the activity at that location. Monitoring will continue until recorded underwater noise is shown to be consistently below the threshold for potential behavioral modification by listed species. This decision will be made in conjunction with FHWA, USACE, and USFWS.

d. Mitigate excessive underwater noise (>206 dB PEAK re 1 µPa, 187 dB SEL re 1 µPa, or 150dB RMS re 1µ Pa in excess of 12 hours) through passive measures such as changing hammer type, reducing driving duration, reducing force settings on the hammer, or through active measures such as but not limited to cushions, blast mats, or bubble curtains. The contractor shall employ all reasonable and prudent measures including but not limited to those listed above. If underwater noise continues to exceed noise limits, the contractor shall the stop noise-producing activity and shall contact MaineDOT to determine next steps.

2. The contractor shall be responsible for implementing monitoring and noise attenuation measures as needed. Payment for this work will be made by contract modification according to Standard Specification Section 109, Changes; **except idle equipment time will not be charged for the first five Working Days to construct, implement, and test noise attenuation devices.** If idle equipment time exceeds more than five (5) Working Days, the Department will pay the Contractor in accordance to Standard Specification 109.7.5c and supplements thereto. Or:

3. Links to information on noise attenuation are provided below:

http://www.dot.ca.gov/hq/env/bio/files/Guidance_Manual_2_09.pdf
http://www.trb.org/Publications/Blurbs/166159.aspx
http://www.trb.org/main/blurbs/162054.aspx

V. Approvals:

1. Temporary Soil Erosion and Water Pollution Control Plan
2. Hydroacoustic Monitoring Plan

NOTE: Regulatory Review and Approval is required to modify the existing In-Water work restrictions. Requests for work window extensions must be submitted to the MaineDOT Environmental Office. Approvals of requests for work window extensions are not guaranteed and may result in delays in construction schedule that are the sole responsibility of the contractor.

SPECIAL PROVISION
SECTION 107
TIME
(Limitation of Operations)
(Supplemental Liquidated Damages)

The Contractor's operation shall accommodate the turning movement and off tracking of large tractor trailers (i.e. WB-62) at the intersection of Route 116 and Route 155/6 at all times during construction.

The new bridge shall be open to two lanes of traffic with surface pavement and bridge rail in place by August 15, 2017.

Supplemental liquidated damages will be assessed to the contract at the rate of Five Hundred ($500.00) U.S. dollars per day for each day that the project remains incomplete beyond the specified contract completion date.

This assessment of supplemental liquidated damages will be in addition to the liquidated damages specified in section 107 of the Department of Transportation Standard specification.

Town: Howland-Enfield
Project: BH-1670(500)X
WIN: 016705.00
Date: January 8, 2015

SPECIAL PROVISION
SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS
(Building Removal)

Description

The work shall consist of the complete demolition and removal of the following units:

Building No. 1: Foundation for a house at station 26+85+/-, 25'+/- right. The existing foundation hole has been filled in with common borrow.

Building No. 2: Concrete slab for a former garage at station 81+43 +/-, 45'+/- right

General: The following shall be completely removed: Foundations; slabs and footings; steps; walks; piers and posts as well as all pavement.

All excavations shall be filled and compacted using vibratory equipment in one-foot layers to the surrounding existing grade levels. In this process, the contour and grades of the abutting land are to be followed. Erosion control including loaming, seeding, and mulch shall be done and will be considered to be incidental to the contract.

All debris and unusable materials shall be removed to an approved transfer station or approved landfill. Under no circumstances shall any material or debris be disposed of by burning on the premises nor shall the debris be burned at an off premise site.

All fill material used for foundation cavities and other shall meet the Standard Specification requirements for Common Borrow, Section 703.18.

Removal of building shall include all attached structures steps, slabs, walks, piers, posts, driveways and other incidentals, as directed by the Resident.

Contractor shall provide and maintain all temporary barricades, signs or other safety measures as necessary to complete the work. Contractor shall obtain any and all permits or licenses necessary for the performance of the work and conform to all Federal, State and local laws, regulations or ordinances applicable to the work.

For Building #1, the well located south of the foundation at station 80+72, 43' right shall be abandoned in accordance with CMR CHAPTER 232 – Well Drillers and Pump Installer Rules. A Maine Licensed Well Driller shall be employed to properly abandon the potable

water supply in accordance with Chapter 7 of the above referenced rules. The top of the well casing shall be a minimum of 2' below the finished grade.

Method of Measurement: Removing building will each be measured by the lump sum.

Basis of Payment: All work for will be paid for at the contract Lump Sum price, which shall be full compensation for all materials, labor and equipment necessary for the work described above and as shown in the Plans, and/or as directed by the Resident.

Payment will be made under:

Pay Item		Pay Unit
202.08	Removing Building No. 1	Lump Sum
202.08	Removing Building No. 2	Lump Sum

SPECIAL PROVISION
SECTION 501
FOUNDATION PILES
(Acoustic Monitor)

Description:

This work shall consist of the preparation and implementation of a hydro acoustic monitoring plan, in accordance with Special Provision 105 Environmental Requirements and the requirements here in.

Acoustic Monitoring for the installation of a Temporary Work Trestle shall be at no additional cost to the Department.

General:

Idle equipment time will not be charged for the first five working days to construct, implement and test noise attenuation devices. If idle equipment time exceeds more than give (5) working days, the Department will pay the Contractor in accordance to Standard Specification 109.7.5c and supplements thereto.

The Contractor shall retain the services of a qualified person or firm to prepare and implement a hydro acoustic monitoring plan. A list of pre-qualified noise monitoring persons and firms can be found at the following link under Item 502.30 – Underwater Sound Pressure Monitoring:

http://www.maine.gov/tools/whatsnew/attach.php?id=94083&an=2.

Other qualified person(s) or firms not on the prequalified list may be used if they have experience performing hydro acoustic monitoring on at least two projects in the last 5 years. The Contractor shall provide the Resident with a list of the previous projects worked on by the person(s) or firm for review and approval.

Method of Measurement:

This work will be measured for payment by the Calendar Day.

Basis of Payment:

Acoustic Monitor will be paid for at the contract unit Calendar Day, which shall be full compensation for all requirements specified in Special Provision 105 Environmental Requirements.

Payment will be made under:

Pay Item		Pay Unit
501.235	Acoustic Monitor	Calendar Day

SPECIAL PROVISION
SECTION 501
FOUNDATION PILES
(Dynamic Loading Test)

Description. This work shall consist of driving foundation piles in accordance with Section 501 of the Standard Specifications, except as amended herein.

Under Section 501.046 Driven Pile Capacity, Pile Testing, and Acceptance, replace the subsection labeled Dynamic Pile Tests, with the following:

Dynamic Pile Testing: This work shall consist of coordinating for dynamic pile load testing, furnishing equipment and personnel to drive piles for testing, and providing access to foundation piles for Agents of the Department to perform dynamic pile load tests. Included with this work is Contractor stand-by-time to allow for dynamic pile load testing. Dynamic pile load tests shall be performed on foundation piles noted on the plans, and as directed by the Engineer. Dynamic load tests will be performed for the full-length of the test pile during initial drive.

The Contractor will provide the proposed dynamic pile testing schedule to the Resident a minimum of 48 hours before the start of testing. In the event that the Contractor is not able to perform the dynamic testing according to schedule, the cost of the Department's testing Agent shall be paid by the Contractor.

Drilling, Tapping, and Attaching/Removing Instruments: The Contractor shall provide the Department's Agents reasonable means of access to the piles for drilling and tapping purposes. Preference shall be given to drilling and tapping piles on the ground. For drilling and tapping of pipe pile on the ground the Department's Agent will need up to one hour per pile to be tested. For drilling and tapping of H-pile on the ground the Department's Agent will need up to 30 minutes per pile to be tested. The Contractor shall assist the Department's Agent by moving pile as necessary to complete drilling and tapping.

If the Contractor elects to place the pile in the leads prior to drilling and tapping, the Department's Agent will need up to two hours per pipe pile and up to one hour per H-pile for drilling and tapping per pile to be tested. The Contractor shall provide reasonable means of access to the piles in the leads for drilling and tapping, as required.

At the Contractor's option, the piles may be drilled and tapped by the Contractor. The drilling and tapping layout for H-piles are shown on Figure 1of this Section. If the Contractor elects to drill and tap the piles, the holes shall be center-punched prior to drilling. Care shall be taken to prevent over-drilling and rounding of drill-holes. Prior to instrument attachment, the Department's Agent will inspect the drilled and tapped holes for conformance. If determined necessary by the Department's Agent, the holes will be redrilled and tapped by the Department's Agent. No additional time, or compensation, will be allowed for redrilling and tapping of holes done by the Contractor

The Contractor shall provide reasonable means of access to the piles in the leads for attaching and removing instruments to the piles. It is estimated that the Department's Agents will need up to one hour per pile to attach instruments. The Department's Agent will need up to 30 minutes per pile to remove instruments.

General Accommodations: The Contractor shall provide access to electric power for the dynamic test equipment. The power supply at the outlet shall be 10 amp, 115 volt, 55-60 cycle, AC only.

The Contractor shall provide a location that has a line-of-sight to the test piles and is within 75 feet of the piles to be tested, where the Department's Agents can park a wheeled, passenger vehicle (either van or car), from where dynamic pile testing measurements can be processed and analyzed.

The Contractor shall provide access to and a location within 10 feet of the test pile where a representative of the Department can stand and maintain a field driving log for all test piles.

Testing: With the dynamic testing equipment attached, the Contractor shall drive the pile to the minimum tip elevation, or to the required capacity, as shown on the plans. The stresses in the piles will be monitored during driving with the dynamic test equipment to ensure that the driving stresses do not exceed the allowable stress shown on the plans. If necessary, the Contractor shall reduce the driving energy transmitted to the pile by using additional cushions or reducing the energy output of the hammer in order to maintain stresses below the allowable driving stresses shown on the plans. If non-axial driving is indicated by the dynamic test measurements, the Contractor shall immediately realign the driving system.

When directed by the Resident, the Contractor shall wait up to 24 hours and, after instruments are reattached, retap (redrive) load test piles. A cold hammer shall not be used for the redrive. The hammer shall be warmed-up before redrive begins by applying at least 20 blows to another pile. The maximum amount of penetration required during redrive shall be 6 in., or the maximum total number of hammer blows will be 50, whichever occurs first. After retapping, the Resident will either provide the cutoff elevation or specify additional pile penetration and testing. The time for the Departments Agent to attach and remove instruments for retapping shall be as specified herein. The general accommodations provided by the Contractor to perform retap testing shall be as specified herein.

Equipment Damage: The Contractor shall take measures to not damage dynamic pile load testing equipment. Any equipment of the Department's Agents damaged due to Contractor operations, as determined by the Resident, shall be replaced at no additional cost to the Contract. The compensation due the Department's Agents for equipment damaged by Contractor operations shall be as follows:

Main Cable	$495.00
Pigtail Cable	$540.00
Force Transducer	$670.00
Piezoresistive Accelerometer	$1225.00
Piezoelectric Accelerometer	$925.00
Accelerometer Cable	$350.00

Driving Equipment Malfunction. If pile driving equipment is underperforming as required by the rated energy in the Wave Equation rated energy or not functioning correctly, and a relevant dynamic pile test cannot be completed, then the Contractor will compensate the Department's Agent for travel, unsuccessful field testing and overnight stay (if required) according to the schedule below:

Travel	$ 700.00 /trip
Field Testing	$1,275.00 /day
Overnight Stay	$ 165.00 /day

Pile Acceptance: Acceptance of foundation piles shall be based on the results of the dynamic testing completed by the Department's Agents. Within 24 hours of the completion of testing, the Resident will provide the Contractor a determination of whether the dynamic load test results is acceptable.

501.11 Method of Measurement. The method of measurement for Dynamic Loading Tests, as described herein, shall be as described in Section 501.05g, of the Standard Specifications.

501.12 Basis of Payment. Payment for Providing for Dynamic Loading Tests, as described herein, shall include coordinating for dynamic pile load testing, moving piles on the ground and providing access to drill and tap piles, drilling and tapping piles (at the Contractor's option), providing access to electric power, providing a location to monitor foundation piles during driving, providing access to foundation piles to attach/remove instruments, furnishing equipment and personnel to drive piles for testing, Contractor time to drive test piles, Contractor time to allow replacement of dynamic testing equipment damaged by the Contractor (as determined by the Resident), and Contractor stand-by-time.

Payment will be made under:

Pay Item	Pay Unit
501.239 Dynamic Loading Tests –Providing For	Each

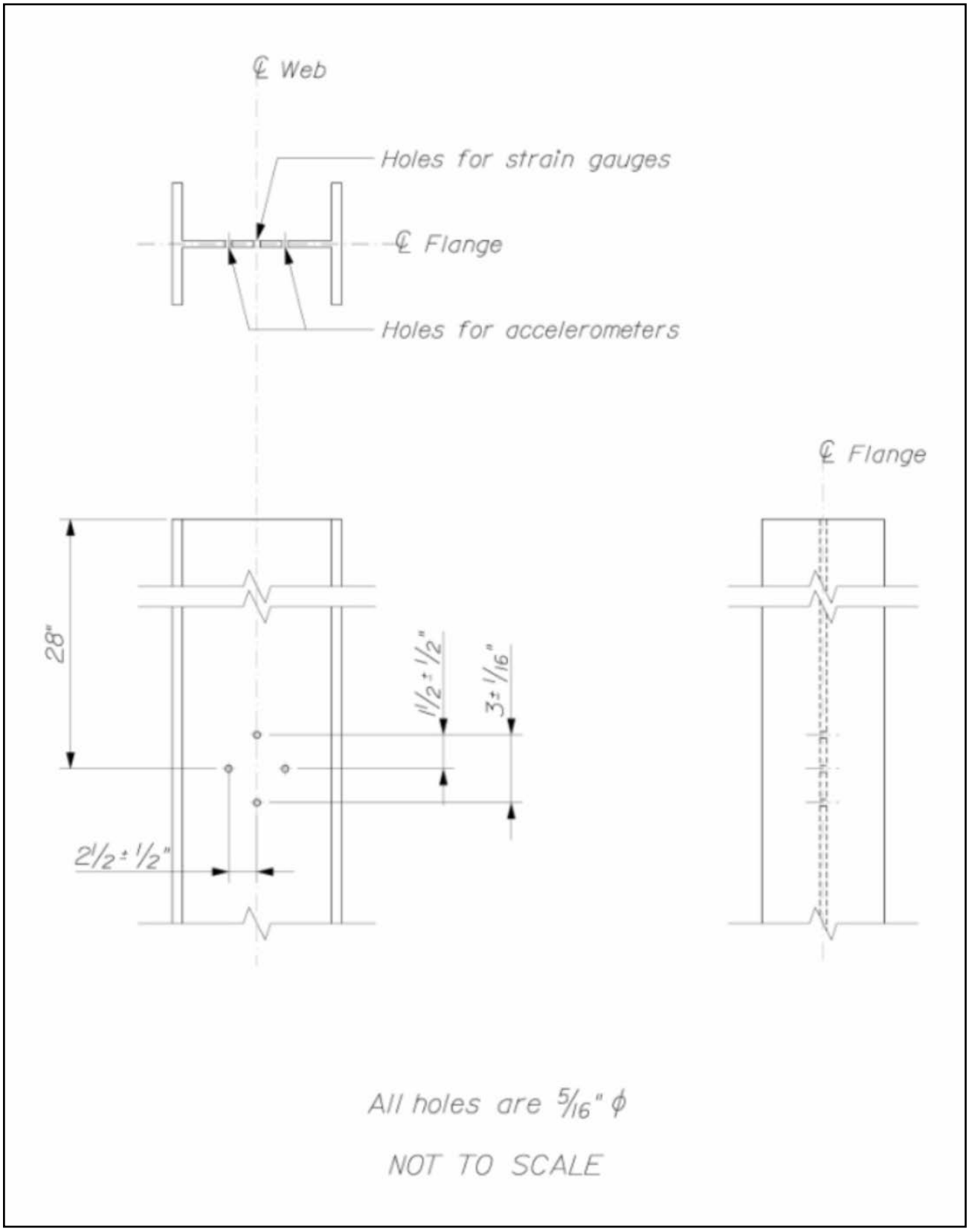

Figure 1. Drill-Hole Layout for H-Piles

Howland-Enfield
WIN: 016705.00
Januay 9, 2015

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
Composition and Proportioning

The following changes to Standard Specification Section 502, Structural Concrete Table 1 shall be made:

Class “A” concrete Compressive Strength shall be 4,350 psi.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Precast Deck Panels)

Description This work shall consist of casting, furnishing, and erecting prestressed structural concrete deck panels (hereafter called "precast deck panels") and all related materials as an optional stay-in-place forming system in accordance with the contract plans and specifications.

Materials All reinforcing steel shown in the Maine Department of Transportation Standard Details for Precast Concrete Deck Panels shall be changed to GFRP reinforcement in accordance with the Special Provision Section 530 (Glass Fiber Reinforced Polymer). All GFRP bars shall provide the same or greater cross sectional area than the steel reinforcement. The material properties of the GFRP shall meet the requirements listed on sheet 1 of the plans.

Construction Precast Deck Panels shall comply with Section 535 – Precast, Prestressed Concrete Superstructure.

Precast deck panels shall be manufactured in conformity with the following tolerances:

Depth of slab	- 3 mm, + 6 mm [-1/8 in, + 1/4 in]
Width of slab	-0, + 6 mm [-0, + 1/4 in]
Length of slab	± 6 mm [± 1/4 in]
Horizontal alignment	6 mm [1/4 in] (deviation from line parallel to centerline)
Squareness	13 mm [1/2 in] max. Difference in diagonal meas.
Vertical Position of Strand group	+0, - 6 mm [+0, -1/4 in] Meas. from bottom of slab
Vertical position of individual strands	± 6 mm [± 1/4 in]
Horizontal strand position	± 13 mm [± 1/2 in]
Strand Projection	-6mm, +19 mm [- 1/4 in, + 3/4 in]
Bowing	± 6 mm [± 1/4 in]
Threaded jack inserts	± 6 mm [± 1/4 in] longitudinally and transversely

Basis of Payment All work will be considered incidental to and included in Pay Item 502.26 Structural Concrete Roadway and Sidewalk Slab on Steel Bridges. Payment shall include full compensation for all materials wholly or partly in the precast deck panels and related materials or work required for the panel erected as shown on the plans. Related materials and work will include, but not limited to furnishing and installing temporary supports, including adhesive and grout bedding, reinforcing steel, welded wire fabric and cast-in-place concrete.

SPECIAL PROVISION
SECTION 530
(Glass Fiber Reinforced Polymer)

Section 530 Glass Fiber Reinforced Polymer of the Standard Specifications is added as follows:

530.01 Description This work shall also consist of furnishing and placing Glass Fiber Reinforced Polymer (GFRP) reinforcement bars, in accordance with these specifications and in conformance with the Plans, Supplemental Specifications and Special Provisions.

530.02 Materials All GFRP reinforcement will conform to the requirements shown in the AASHTO Bridge Design Guide Specifications for GFRP Reinforced Concrete Bridge Decks and Traffic Railings (November 2009), except as shown on the plans, and as stated herein. All GFRP reinforcement shall be deformed or sand coated.

GFRP bars shall be according to the modulus grade specified on the plans and shall be from one of the following approved manufacturers:

1. Aslan 100 by Hughes Brothers Inc.
2. V-Rod by Pultrall Inc.
3. ComBAR by Schoeck Bauteile
4. Mateen-bar from Sigma Development Group, LLC

All GFRP bars in the same structural component shall be supplied by the same manufacturer; there shall be no mixing of products from different manufacturers in a component unless permitted in the contract drawings.

Documentation For all GFRP reinforcement to be used on Department projects, the bar manufacturer is to furnish the Resident with two (2) copies of written certifications that the GFRP reinforcement meets the requirements of this specification. In addition, the certification is to list the test values and test procedures used to determine the physical properties of the GFRP reinforcement. Certifications bearing the notarized signature of a responsible authorized representative of the bar manufacturer are required. Each bundle of GFRP reinforcement will be identified with a corresponding lot number with the lot numbers affixed to each bundle by means of a durable tag.

Repair Material The material used to repair the cut ends of GFRP reinforcement shall comply with the requirements established by the bar manufacturer.

530.03 Schedule of Material When the Department does not furnish GFRP reinforcing bar schedules, the Contractor shall submit order lists, shape diagrams and bar layout drawings to the Resident for approval. The reinforcing bars shall not be ordered until these lists and drawings are approved. Approval shall not relieve the Contractor of full responsibility for the satisfactory completion of this item. When the Department allows the use of precast concrete deck panels, or any other significant changes that affect the quantity of reinforcing bars, the Contractor shall be

responsible for revising the reinforcing bar schedule; the revised schedule shall be submitted to the Resident for approval.

530.04 Protection of Material Delivery, storage and handling of GFRP bars shall be in accordance with the manufacturer's instructions to prevent damage. Prevent bending, coating with earth, oil, or other material, or otherwise damaging the GFRP reinforcement. When handling GFRP reinforcement, use equipment that avoids damaging or abrading the GFRP bar. Do not drop or drag GFRP reinforcement.

GFRP reinforcement shall be stored on skids or other supports a minimum of 12 inches above the ground surface and protected at all times from damage and surface contamination. The storage supports shall be constructed of wood or other material that will not damage the surface of the reinforcement or sand coating. Bundles of bars shall be stored on supports in a single layer. Each bundle shall be placed on the supports out of contact with adjacent bundles. If it is expected that GFRP bars will be required to be stored outdoors for a period in excess of two months, then they shall be protected from ultraviolet radiation. Prevent exposure of GFRP to temperatures above 120 degrees Fahrenheit during storage.

The maximum total un-repaired visible damage permitted on each liner foot of each GFRP bar shall not exceed 2 percent of the surface area in that linear foot of bar. The depth of the permissible damage shall not exceed 0.04 inches.

530.05 Fabrication Forming of GFRP reinforcing bars and tolerances for forming of GFRP reinforcing bars shall be in conformance with the latest edition of the "Manual of Standard Practice of the Concrete Reinforcing Steel Institute" and the "Detailing Manual of the American Concrete Institute".

All handling of GFRP reinforcing bars by mechanical means shall be done by equipment having padded contact areas, or by the use of nylon webbing slings. The use of chains or wire rope slings will not be allowed, even when used with padding. All bundles of GFRP bars shall be lifted with a strong back, spreader bar, multiple supports or a platform bridge to prevent bar-to-bar abrasion from sags in the bundles. Support points during lifting or transporting of bundled GFRP reinforcing bars shall be spaced at a maximum of 15 ft, or as required by the manufacturer, whichever is more restrictive. Bundled bars shall be strapped together with non-metallic or padded straps in a manner to prevent bar-to-bar abrasion due to relative movement between bars.

Individual bars shall be handled in a manner that prevents damage to the coating due to abrasion or impact, and at no time shall any bar be moved by dragging over any surface, including other reinforcing bars. Sufficient personnel shall be assigned to assure that there is compliance with the above. Bars loaded for transport shall be loaded and strapped down in a manner that will prevent damage from motion and vibration, to the greatest extent possible. Bundles of bent bars shall be transported strapped to wooden platforms or shall be crated. All individual bundles and layers of bundles shall be separated, and supported by dunnage.

530.06 Placing and Fastening

All GFRP reinforcement shall be accurately placed in the positions shown on the plans and shall be firmly held there during the placing and setting of the concrete. Immediately before placing concrete, GFRP reinforcement shall be free from all foreign material, which could decrease the bond between the GFRP and concrete. Such foreign material shall include, but not be limited to: dirt, paint, oil, bitumen and dried concrete mortar.

GFRP bars within the formwork shall be secured to prevent movement during concrete placement. The bars must be adequately supported or tied to resist settlement, floating upward, or movement in any direction during concrete placement. Field bending of GFRP will not be allowed.

Field cutting of GFRP will be permitted only with the approval of the Resident. The field cutting shall be with a high speed cutter, fine blade saw, diamond blade or masonry saw. The GFRP bars shall not be shear cut. The ends of all field cut bars shall be treated per the manufacturer's recommendations.

GFRP reinforcing bars supported on formwork shall rest on non-metallic bar supports or other acceptable materials. Wire bar supports will not be allowed. Reinforcing bars used as support bars shall be GFRP or epoxy-coated. Tie wire for GFRP reinforcing bars shall be soft annealed wire that has been nylon, epoxy or plastic coated.

Bars shall be fastened together at all intersections except where spacing is less than 1 ft in either direction, in which case, fastening at alternate intersections of each bar with other bars will be permitted providing this will hold all the bars securely in position. This fastening may be tightly twisted polymer coated wire or plastic ties.

Proper distances from the forms shall be maintained by means of stays, blocks, ties, hangers or other approved means. Blocks used for this purpose shall be precast portland cement mortar blocks of approved shape and dimensions. Chairs may be used for this purpose and, when used, must be GFRP or plastic. Layers of bars may be separated by precast portland cement mortar blocks or other approved devices. The use of pebbles, pieces of broken stone or brick, metal pipe or wooden blocks will not be allowed. The placing of reinforcement as concrete placement progresses, without definite and secure means of holding the bar in its correct position, will not be allowed.

Reinforcement shall be inspected and approved by the Resident before any concrete is placed.

530.07 Splicing Reinforcing bars shall be spliced in accordance with the requirements of this section, and in the locations shown on the plans. No modifications of, or additions to, the splice arrangements shown on the plans shall be made without the Resident's prior approval.

Any additional splices authorized shall be staggered as much as possible. All splices shall be made in a manner that will ensure that not less than 75% of the clear concrete cover and not less

than 75% of the minimum clear distance to other bars will be maintained, as compared to the cover and clear distance requirements for the unspliced bar.

Lapped splices shall be made by placing the bars in contact and wiring/tying them together. Splice laps shall be made in accordance with the plans.

530.08 Substitution Substitution of different size bars shall not be permitted except with the written authorization of the Resident.

530.09 Method of Measurement

GFRP reinforcing bars shall be measured by the linear feet reinforcement authorized. Linear feet will be as per plan estimated quantity as shown in the reinforcing schedule. If precast concrete deck panels are used, GFRP in the precast concrete deck panels will not be paid for directly, but will be considered incidental to the deck concrete.

530.10 Basis of Payment

All work associated with fabrication, delivery, and placement of GFRP Reinforcement in accordance with the plans and this special provision will be considered incidental to and included in Pay Item 502.26 Structural Concrete Roadway and Sidewalk Slab on Steel Bridges and shall include any additional reinforcement required if precast deck panels are used.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION		QUANTITY	UNIT
~~201.11~~	~~CLEARING~~		~~0.7~~	~~AC~~
201.23	REMOVING SINGLE TREE TOP ONLY		3	EA
201.24	REMOVE STUMP		5	EA
202.08	REMOVING BUILDING NO. 1		1	LS
202.08	REMOVING BUILDING NO. 2		1	LS
202.15	REMOVING EXISTING MANHOLE OR CATCH BASIN		3	EA
202.19	REMOVING EXISTING BRIDGE	(760 T, 1600 CY)	1	LS
203.20	COMMON EXCAVATION		5723	CY
203.24	COMMON BORROW		188	CY
203.25	GRANULAR BORROW		3750	CY
206.061	STRUCTURAL EARTH EXCAVATION - DRAINAGE MINOR STRUCTURES BELOW GRADE		50	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES, PLAN QUANTITY		95	CY
206.10	STRUCTURAL EARTH EXCAVATION - PIERS		3310	CY
304.16	AGGREGATE BASE COURSE- TYPE C		7300	CY
403.207	HOT MIX ASPHALT, 19.0 MM NOMINAL MAXIMUM SIZE		1225	Ton
403.2081	HOT MIX ASPHALT - 12.5 MM NOMINAL MAXIMUM SIZE (POLYMER MODIFIED)		990	Ton
403.209	HOT MIX ASPHALT, 9.5 MM NOMINAL MAXIMUM SIZE (SIDEWALKS, DRIVES, ISLANDS & INC.)		55	Ton
403.213	HOT MIX ASPHALT, 12.5 MM NOMINAL MAXIMUM SIZE, (BASE & INTERMEDIATE BASE COURSE)		990	Ton
409.15	BITUMINOUS TACK COAT, APPLIED		505	G
501.239	DYNAMIC LOADING TEST, PROVIDING FOR		11	EA
501.50	STEEL H-BEAM PILE, 89 LBS/FT, DELIVERED		1080	LF
501.501	STEEL H-BEAM PILE, 89 LBS/FT, IN-PLACE		1080	LF
501.54	STEEL H-BEAM PILE, 117 LBS/FT, DELIVERED		1990	LF
501.541	STEEL H-BEAM PILE, 117 LBS/FT, IN-PLACE		1990	LF
501.90	PILE TIPS		100	EA
501.91	PILE SPLICES		109	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION		1	LS
502.219	STRUCTURAL CONCRETE ABUTMENTS AND RETAINING WALLS	(605 CY)	1	LS
502.239	STRUCTURAL CONCRETE PIERS	(759 CY)	1	LS
502.24	STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER) (PIER 1)		680	CY
502.249	STRUCTURAL CONCRETE PIERS (PLACED UNDER WATER) (PIERS 2 & 3)	(1512 CY)	1	LS
502.26	STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLAB ON STEEL BRIDGES	(1068 CY)	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLAB	(32 CY)	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS	(431 CY)	1	LS
502.703	FRP DOWNSPOUT		2	EA
502.77	FRP BRIDGE DRAIN - TYPE B		14	EA
502.77	FRP BRIDGE DRAIN - TYPE G		4	EA
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED		229900 ~~225300~~	LB
503.13	REINFORCING STEEL, PLACING		229900 ~~225300~~	LB
503.14	EPOXY-COATED REINFORCING STEEL, FABRICATED AND DELIVERED		25400	LB
503.15	EPOXY-COATED REINFORCING STEEL, PLACING		25400	LB
504.702	STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	(2110000 LB)	1	LS
504.71	STRUCTURAL STEEL ERECTION	(2110000 LB)	1	LS
505.08	SHEAR CONNECTORS	(9201 EA)	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR	(938 LF)	1	LS
507.0831	STEEL BRIDGE RAILING, 4 BAR	(957 LF)	1	LS
508.14	HIGH PERFORMANCE WATERPROOFING MEMBRANE	(3190 SY)	1	LS
511.07	COFFERDAM: PIER NO. 1		1	LS
511.07	COFFERDAM: PIER NO. 2		1	LS
511.07	COFFERDAM: PIER NO. 3		1	LS
512.081	FRENCH DRAINS	(165 LF)	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS		1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	(1850 SY)	1	LS
521.23	EXPANSION DEVICE - FINGER JOINT		2	EA
521.32	FABRIC TROUGH FOR FINGER JOINT		2	EA
523.52	BEARING INSTALLATION		27	EA
523.5551	POT OR DISC BEARINGS, FIXED		3	EA
523.5552	POT OR DISC BEARINGS, EXPANSION		24	EA
526.301	TEMPORARY CONCRETE BARRIER- TYPE I	(50 LF)	1	LS
526.34	PERMANENT CONCRETE TRANSITION BARRIER		1	EA
526.3401	PERMANENT CONCRETE TRANSITION BARRIER, MODIFIED		3	EA
~~530.30~~	~~GLASS FIBER REINFORCED POLYMER, FABRICATED AND DELIVERED~~		~~383000~~	~~LF~~
~~530.31~~	~~GLASS FIBER REINFORCED POLYMER, PLACING~~		~~383000~~	~~LF~~
603.155	12" RCP CLASS III		52	LF
603.159	12" CULVERT PIPE OPTION III		20	LF
603.16	15" CULVERT PIPE OPTION I		80	LF
603.169	15" CULVERT PIPE OPTION III		32	LF
603.175	18" RCP CLASS III		80	LF
603.179	18" CULVERT PIPE OPTION III		88	LF
603.195	24" RCP CLASS III		72	LF
603.199	24" CULVERT PIPE OPTION III		130	LF
603.55	CONCRETE PIPE TIES		5	GP

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION		QUANTITY	UNIT
604.09	CATCH BASIN TYPE B1		1	EA
604.092	CATCH BASIN TYPE B1-C		6	EA
604.093	60" CATCH BASIN TYPE B1		2	EA
604.096	60" CATCH BASIN TYPE B1-C		1	EA
604.18	ADJUST MANHOLE OR CB TO GRADE		3	EA
604.244	CATCH BASIN TYPE F4		1	EA
604.247	CATCH BASIN TYPE F5-C		1	EA
605.09	6" UNDERDRAIN TYPE B		1075	LF
605.10	6" UNDERDRAIN OUTLET		20	LF
605.11	12" UNDERDRAIN TYPE C		155	LF
606.1721	BRIDGE TRANSITION - TYPE I		4	EA
606.23	GUARDRAIL TYPE 3C - SINGLE RAIL		390	LF
606.232	GUARDRAIL TYPE 3C - OVER 15' RADIUS		188	LF
606.259	ANCHORAGE ASSEMBLY		1	EA
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL		1	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER		4	EA
606.356	UNDERDRAIN DELINEATOR POST		1	EA
606.79	GUARDRAIL 350 FLARED TERMINAL		2	EA
607.17	CHAIN LINK FENCE - 6'		170	LF
608.26	CURB RAMP DETECTABLE WARNING FIELD		18	SF
609.31	CURB TYPE 3		830	LF
610.08	PLAIN RIPRAP		5086	CY
610.18	STONE DITCH PROTECTION		29	CY
613.319	EROSION CONTROL BLANKET		580	SY
615.07	LOAM		440	CY
618.13	SEEDING METHOD NUMBER 1, PLAN QUANTITY		5	Unit
618.14	SEEDING METHOD NUMBER 2, PLAN QUANTITY		57	Unit
618.141	SEEDING METHOD NUMBER 3, PLAN QUANTITY		14	Unit
619.1201	MULCH		76	Unit
619.1401	EROSION CONTROL MIX		10	CY
620.58	EROSION CONTROL GEOTEXTILE		4095	SY
626.22	NON-METALIC CONDUIT		1200	LF
627.18	12" SOLID WHITE PAVEMENT MARKING LINE		110	LF
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE		7525	LF
627.76	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW		1	LS
629.05	HAND LABOR, STRAIGHT TIME		40	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)		5	HR
631.11	AIR TOOL (INCLUDING OPERATOR)		5	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)		20	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)		30	HR
631.20	STUMP CHIPPER RENTAL (INCLUDING OPERATOR)		5	HR
631.221	SMALL FRONT END LOADER (INCLUDING OPERATOR)		20	HR
631.32	CULVERT CLEANER (INCLUDING OPERATORS)		5	HR
634.160	HIGHWAY LIGHTING		1	LS
634.210	CONVENTIONAL LIGHT STANDARD		7	EA
634.25	SERVICE POLE COMPLETE w/CABINET & CONTR		2	EA
637.071	DUST CONTROL		1	LS
639.18	FIELD OFFICE TYPE A		1	EA
645.106	DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER SIGNS		4	EA
645.116	REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER SIGNS		4	EA
652.311	TYPE II BARRICADE		20	EA
652.312	TYPE III BARRICADES		6	EA
652.33	DRUM		100	EA
652.34	CONE		300	EA
652.35	CONSTRUCTION SIGNS		1000	SF
~~652.36~~	~~MAINTENANCE OF TRAFFIC CONTROL DEVICES~~		~~1000~~	~~CD~~
652.38	FLAGGERS		7500	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL		1	LS
658.20	ACRYLIC LAYTEX FINISH, GREEN		21	SY
659.10	MOBILIZATION		1	LS
660.21	ON THE JOB TRAINING		1000	HR
910.301	SPECIAL WORK_UTILITY CONDUIT (OTT AND TWC - APPROACHES ONLY)		1	LS
910.301	SPECIAL WORK_UTILITY CONDUIT (OTT AND TWC - BRIDGE ONLY)		1	LS
910.301	SPECIAL WORK - WATER		1	LS
910.301	SPECIAL WORK - SEWER		1	LS
201.111	CLEARING	(0.7 AC)	1	LS
501.235	ACOUSTIC MONITOR		20	CD
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES		1	LS

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PROJ. MANAGER	NLB	BY	DATE
DESIGN-DETAILED	DSM	DSM	.
CHECKED-REVIEWED	NLB	NLB	.
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	DSM: Pay item/qty change		1/21/2015
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

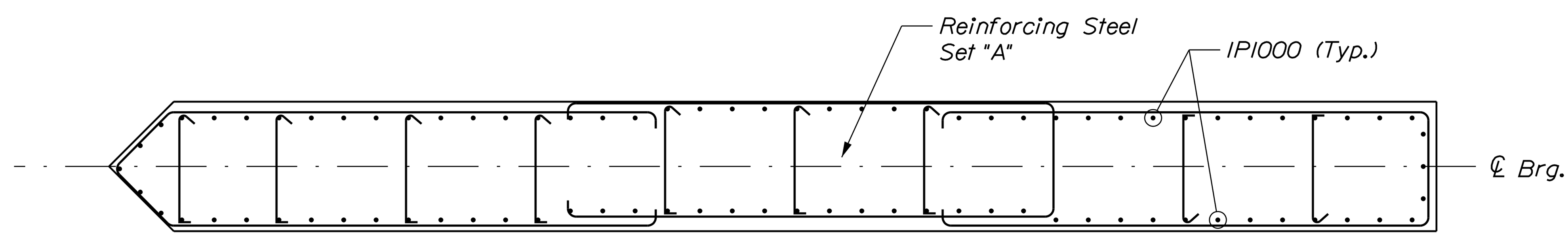
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2660 WIN 16705.00 BRIDGE PLANS

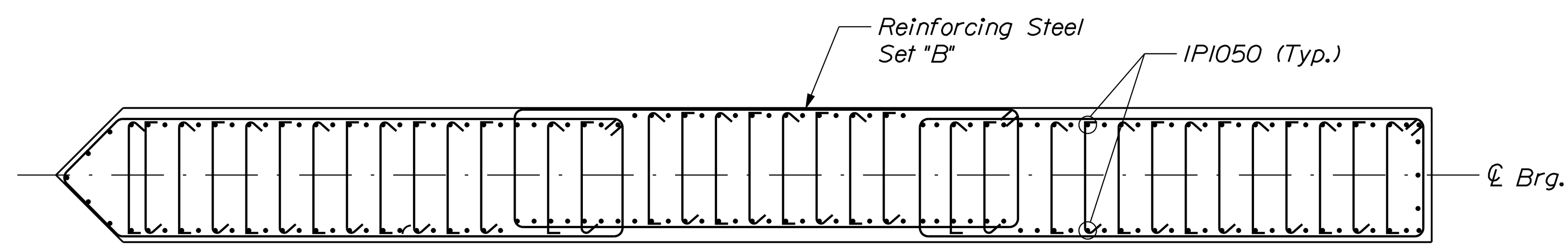
PENOBSCOT RIVER BRIDGE
PENOBSCOT RIVER
HOWLAND-ENFIELD PENOBSCOT COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER 2 OF 127



SECTION A-A



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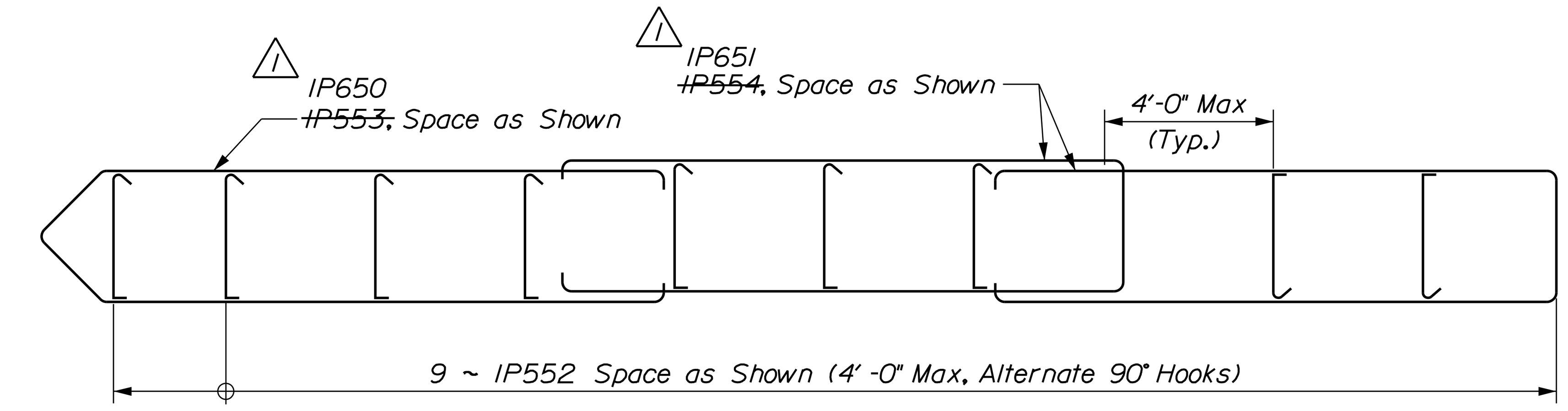

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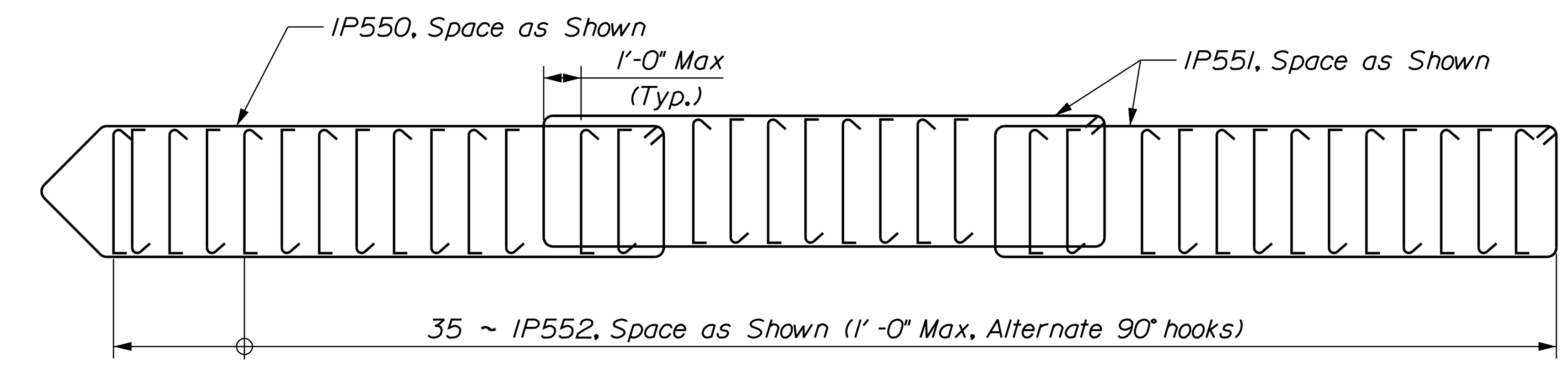

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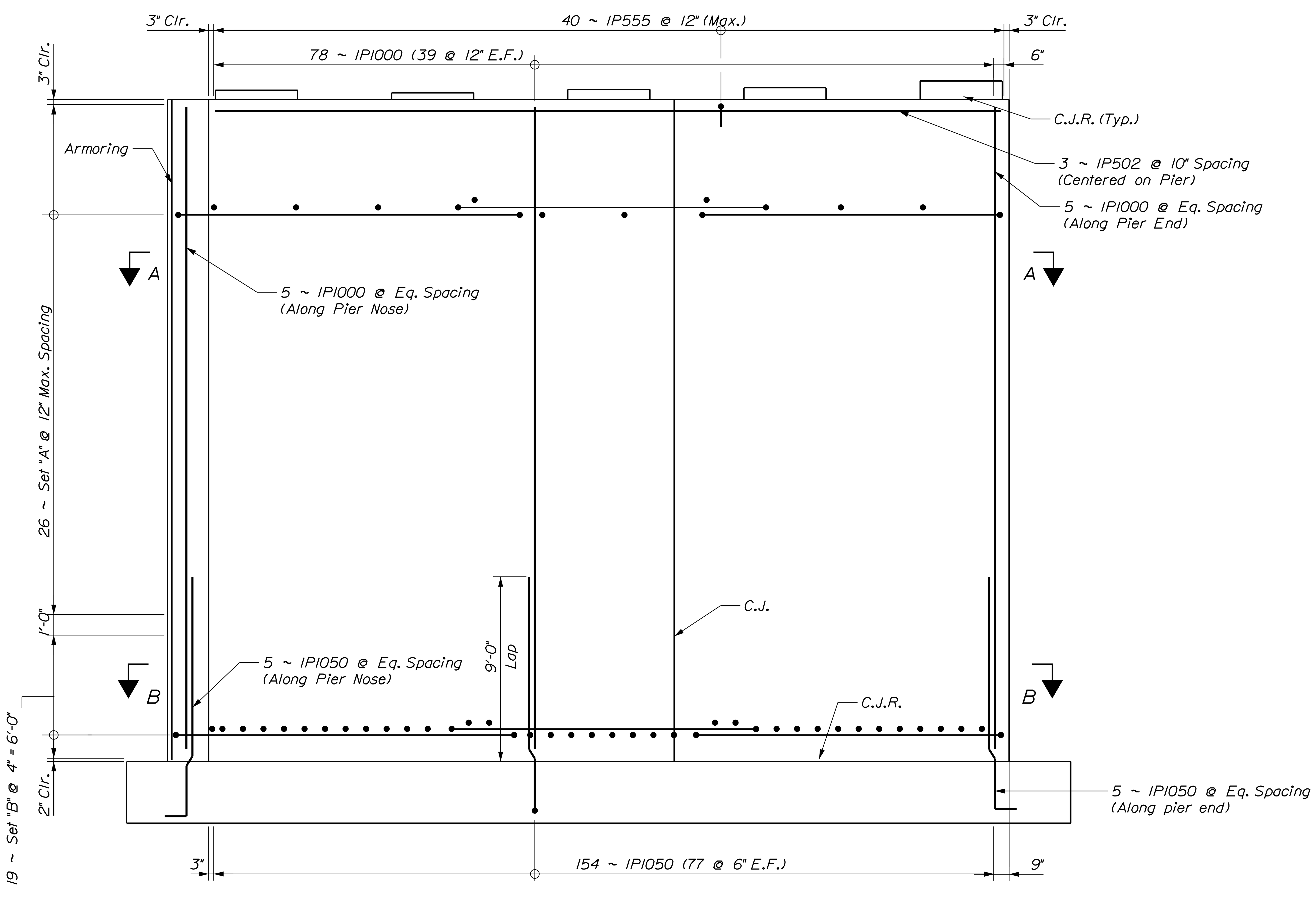
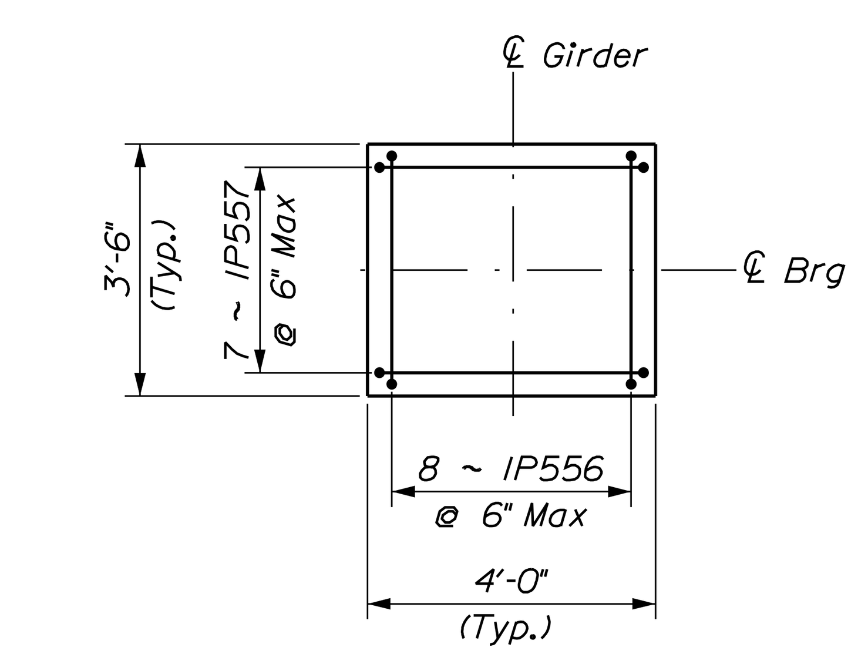
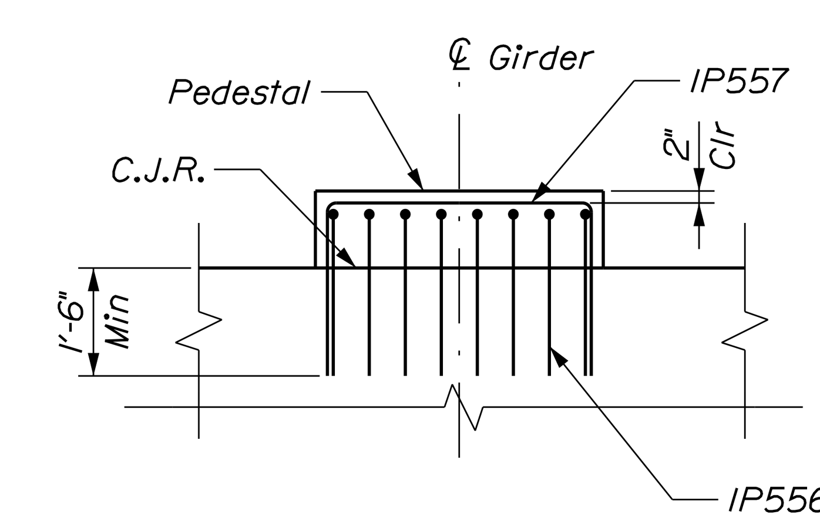




PEDESTAL REINFORCEMENT PLAN



PEDESTAL REINFORCEMENT ELEVATION

LEGEND:
C.J. = Construction Joint
C.J.R. = Construction Joint, Roughen Surface 1/4" profile Min. (Typ.)
E.F. = Each Face

PIER NO. 1 ELEVATION

Flow →

T·Y·LIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2660 | WIN 16705.00 | BRIDGE PLANS

PROJ. MANAGER	NLB	BY	DATE
DESIGN-DETAILED	DSM	SAM	-
CHECKED-REVIEWED	RMH	RMH	-
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	DSM: Bar mark change		1/21/2015
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

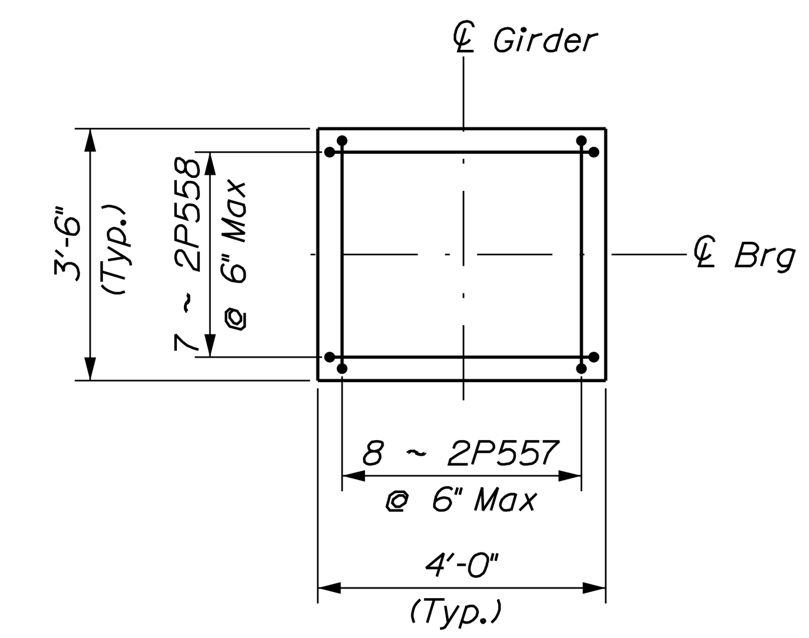
SIGNATURE
P.E. NUMBER
DATE

PENOBSCOT RIVER BRIDGE
PENOBSCOT RIVER
HOWLAND-ENFIELD PENOBSCOT COUNTY

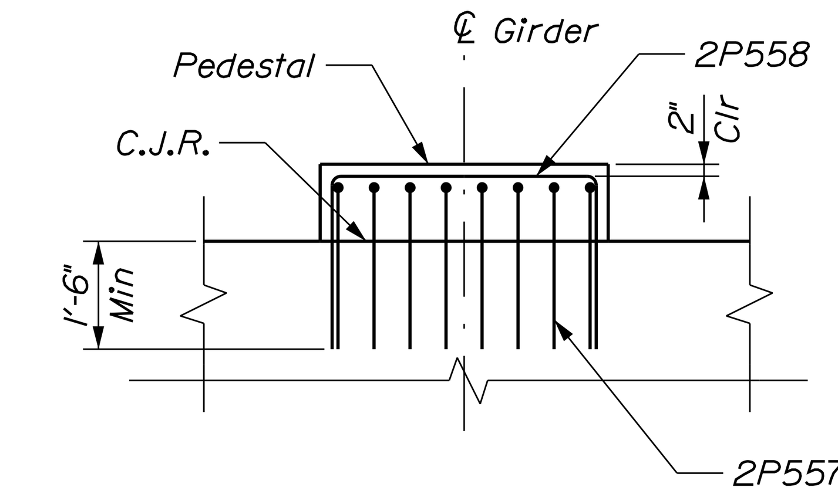
PIER 1 REINFORCING PLAN & ELEVATION

SHEET NUMBER
73
OF 127

Filename: ...\073A_Pier 1_Reinforcing_Plan_Elev.dgn Division: HIGHWAY Username: Date:1/21/2015



PEDESTAL REINFORCEMENT PLAN



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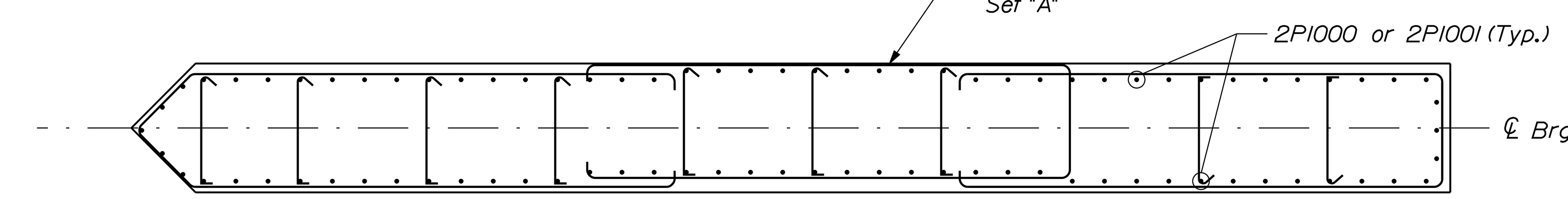

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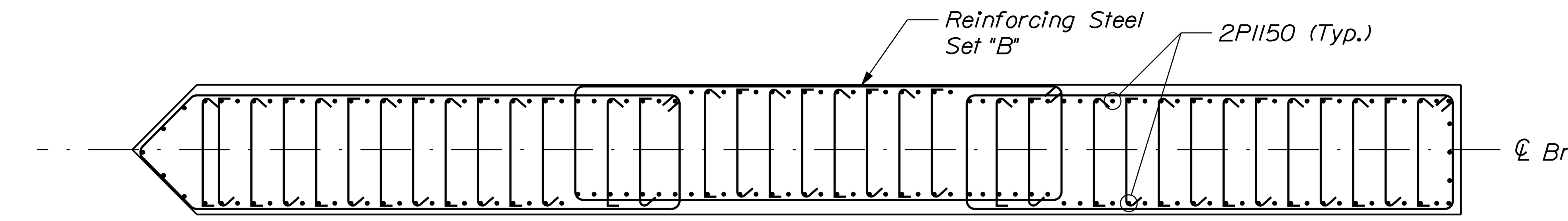

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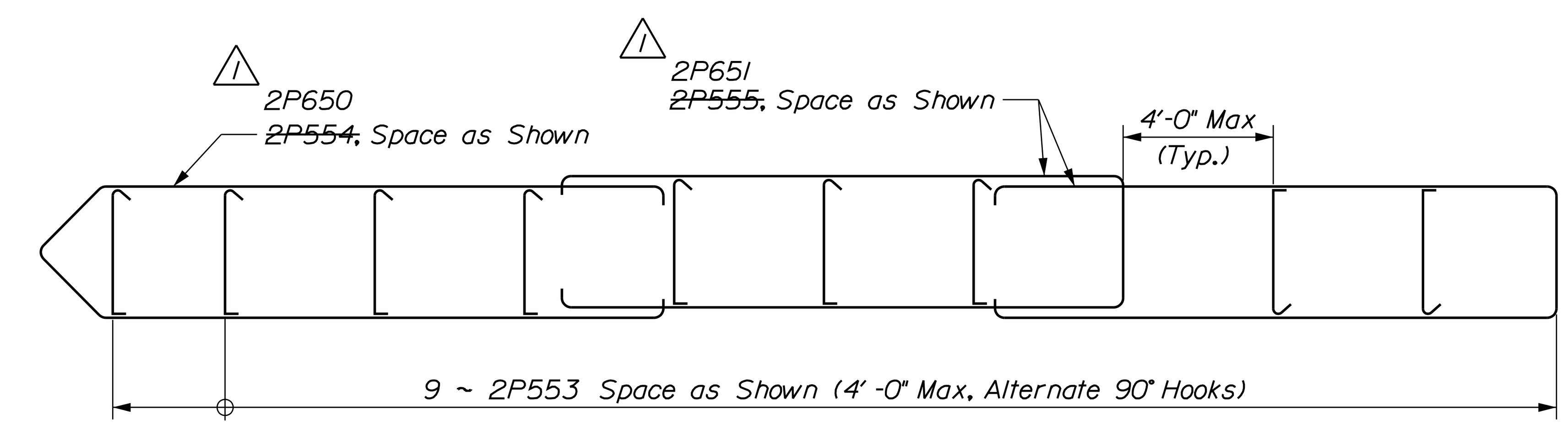

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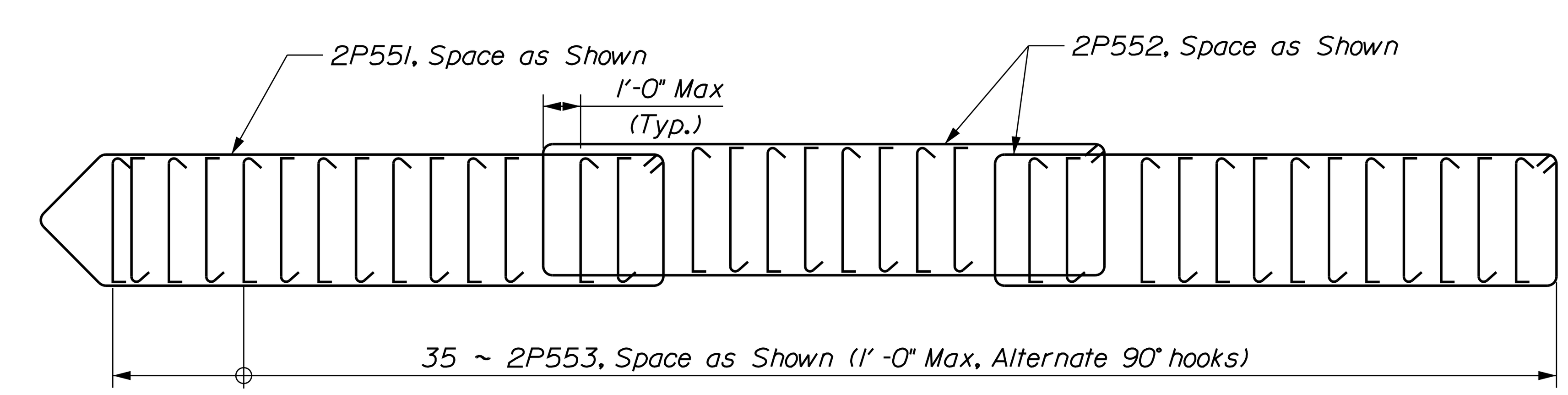

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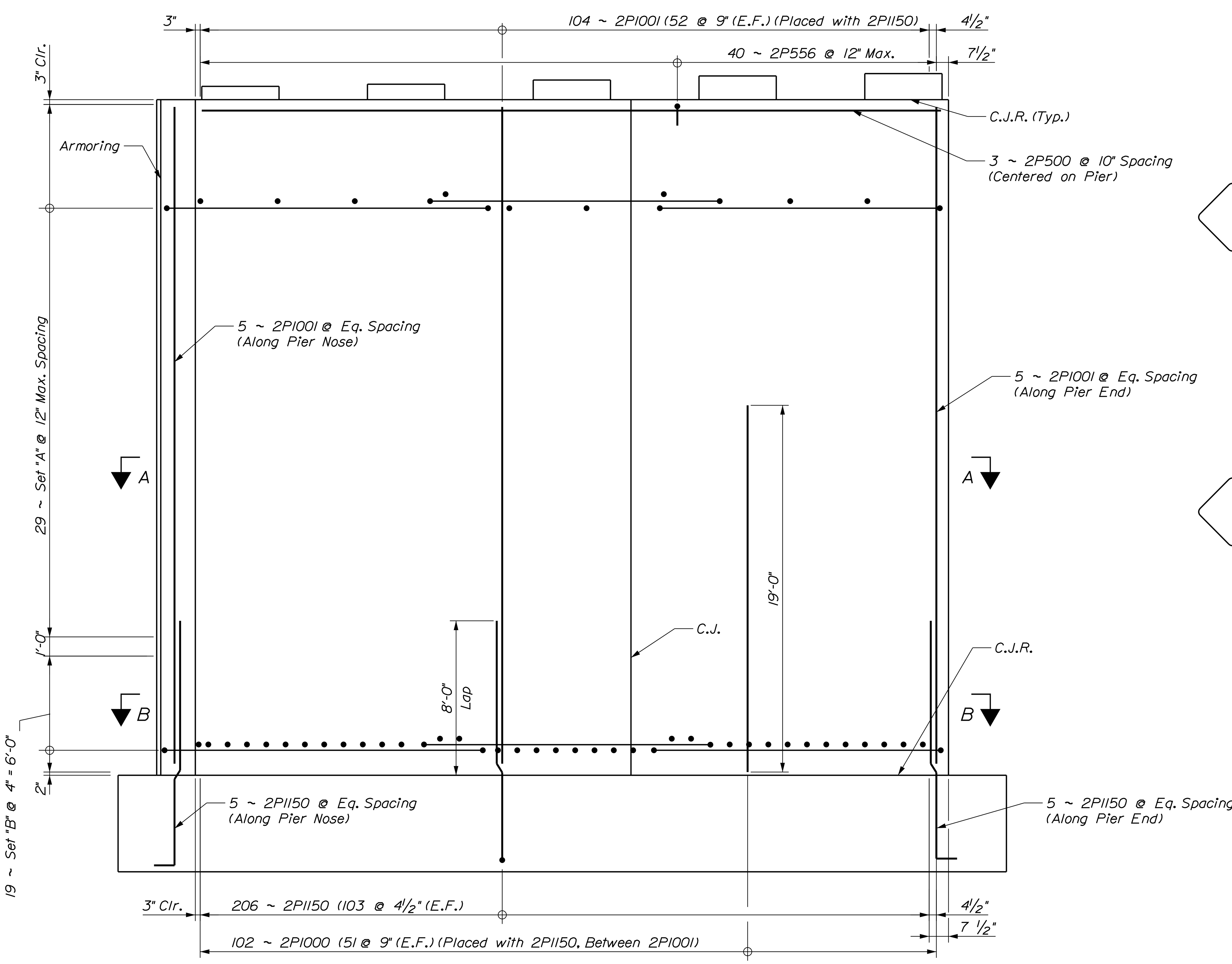


PIER NO. 2 ELEVATION

Flow

LEGEND:

C.J. = Construction Joint
C.J.R. = Construction Joint, Roughen Surface 1/4" profile Min. (Typ.)
E.F. = Each Face

T·Y·LIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2660 | WIN 16705.00 | BRIDGE PLANS

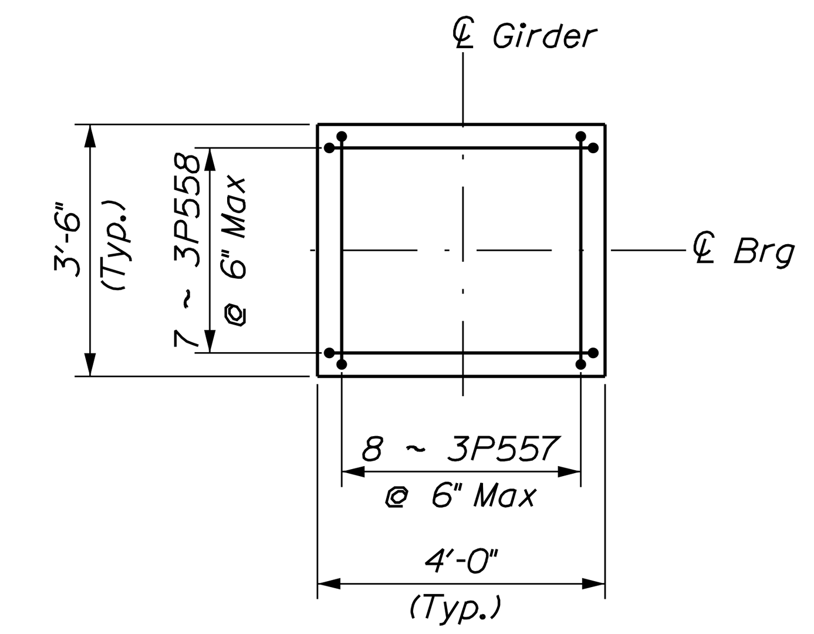
		BY	DATE
PROJ. MANAGER	NLB		
DESIGN-DETAILED	DSM	SAM	
CHECKED-REVIEWED	RMH	RMH	
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	DSM: Bar mark change		1/21/2015
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

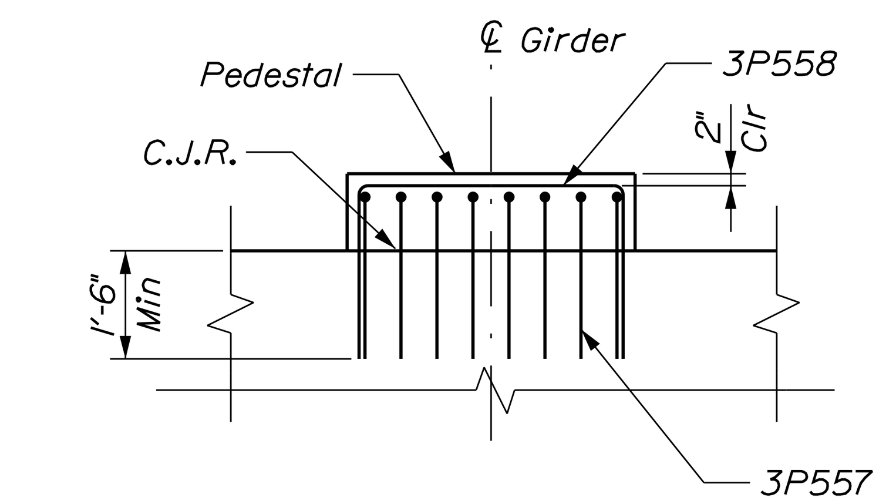
PENOBSCOT RIVER BRIDGE
PENOBSCOT RIVER
HOWLAND-ENFIELD PENOBSCOT COUNTY

PIER 2 REINFORCING PLAN & ELEVATION

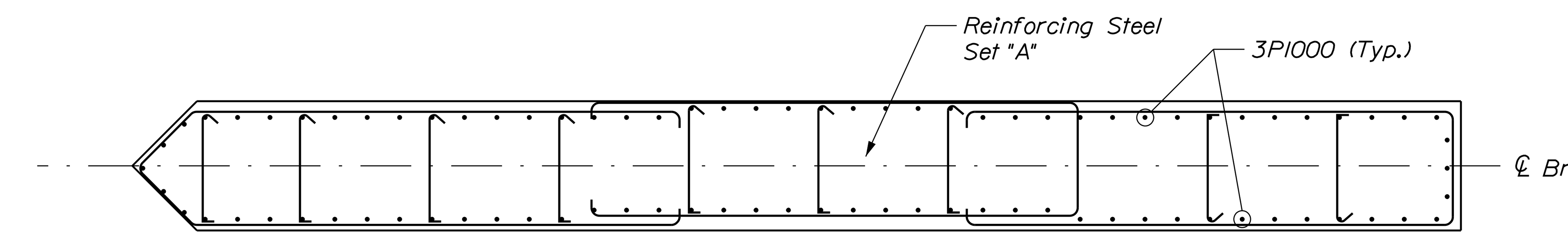
SHEET NUMBER
77
OF 127



PEDESTAL REINFORCEMENT PLAN



PEDESTAL REINFORCEMENT ELEVATION



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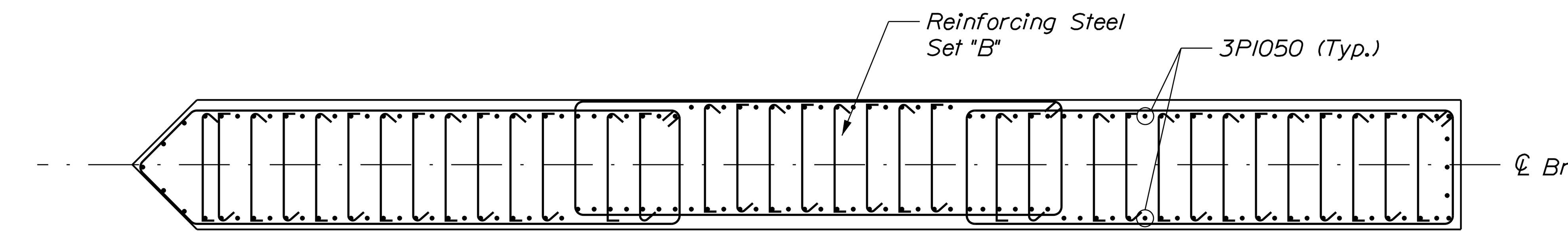

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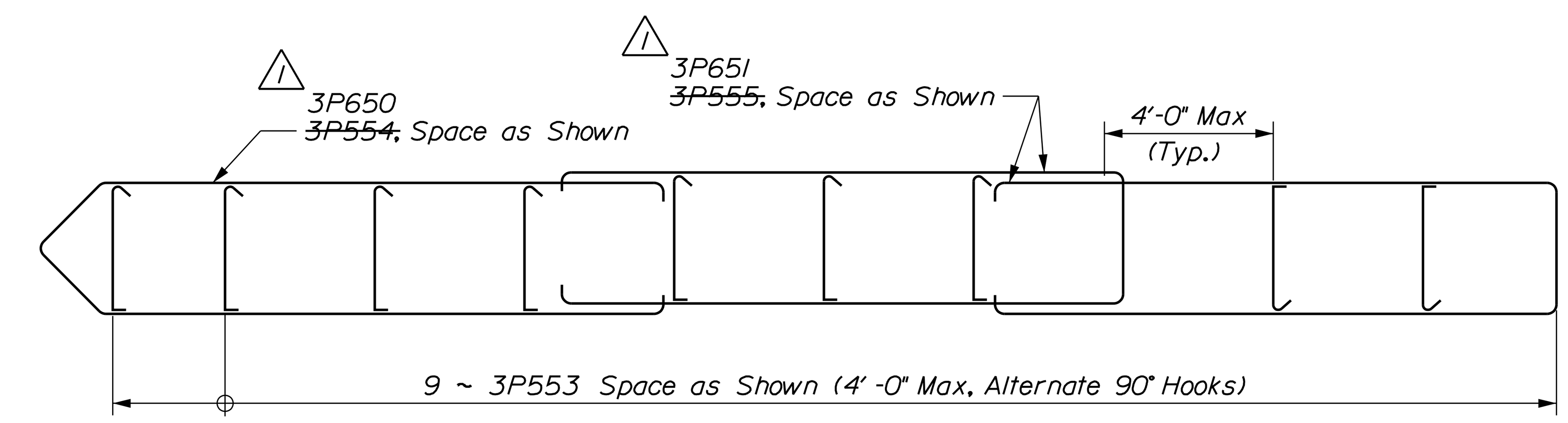
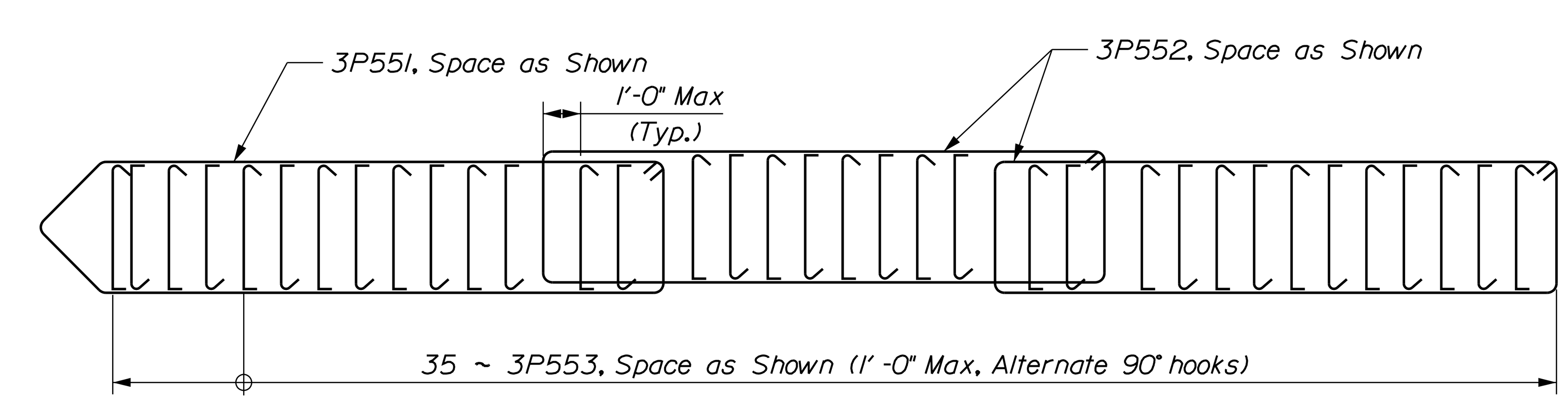


REINFORCING STEEL SET "A"



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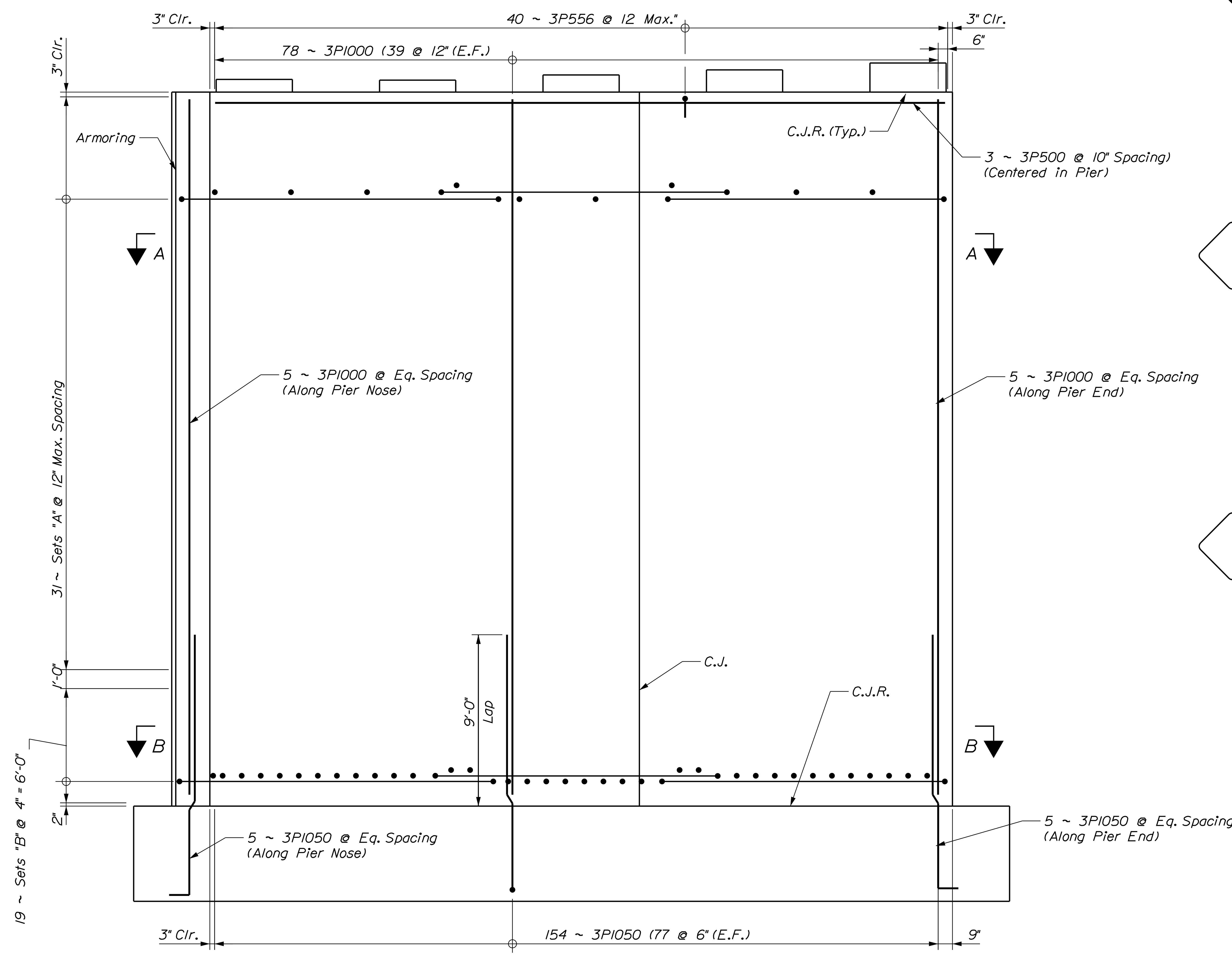


PIER NO. 3 ELEVATION

Flow

LEGEND:
C.J. = Construction Joint
C.J.R. = Construction Joint, Roughen Surface 1/4" profile Min. (Typ.)
E.F. = Each Face

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2660
WIN
16705.00
BRIDGE PLANS

PROJ. MANAGER	NLB	BY	DATE
DESIGN-DETAILED	DSM	SAM	.
CHECKED-REVIEWED	RMH	RMH	.
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	DSM: Bar mark change		1/21/2015
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

PENOBSCOT RIVER BRIDGE
PENOBSCOT RIVER
HOWLAND-ENFIELD PENOBSCOT COUNTY

PIER 3 REINFORCING
PLAN & ELEVATION

SHEET NUMBER
80
OF 127

T·Y·LIN INTERNATIONAL

Filename: ...\080A_Pier 3_Reinforcing_Plan_Elev.dgnDivision: HIGHWAY Username: Date:1/21/2015

REINFORCING SCHEDULE 2

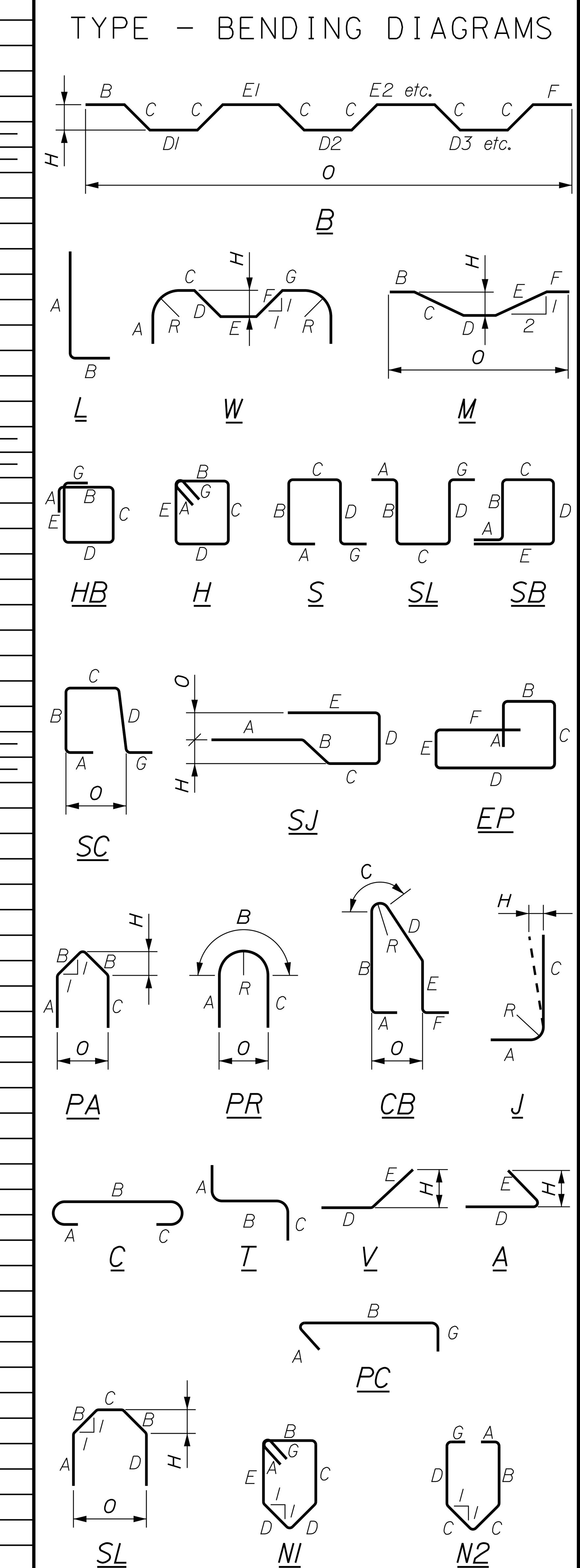
STRAIGHT BARS

MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION
Pier No.1							
1P500	47	11'-6"	Longitudinal - Footing				
1P501	13	45'-6"	Transverse - Footing				
1P502	3	38'-6"	Top - Pier				
1P700	13	45'-6"	Transverse - Footing				
1P900	15	3'-6"	Footing/Seal Dowels				
1P901	47	11'-6"	Longitudinal - Footing				
1P1000	88	31'-6"	Vertical - Pier				
Pier No.2							
2P500	3	38'-6"	Top - Pier				
2P700	55	27'-6"	Longitudinal - Footing				
2P701	66	45'-6"	Transverse - Footing				
2P1000	102	19'-0"	Vertical - Pier				
2P1001	114	34'-3"	Vertical - Pier				
2P1100	92	27'-6"	Longitudinal - Footing				
Pier No.3							
3P500	3	38'-6"	Top - Pier				
3P700	55	11'-6"	Longitudinal - Footing				
3P701	34	45'-6"	Transverse - Footing				
3P900	47	11'-6"	Longitudinal - Footing				
3P1000	88	36'-9"	Vertical - Pier				
Superstructure Slab							
S500G	488	42'-6"	Longitudinal - Pour 1	S530G	273	47'-10"	Longitudinal - Curb/SW
S501G	876	47'-4"	Longitudinal - Pour 2	S531G	4	50'-0"	Longitudinal - Pour 1 Flare
S502G	876	46'-4"	Longitudinal - Pour 3	S532G	12	8'-2"	Transverse - End of Deck
S503G	780	47'-11"	Longitudinal - Pour 4	S533G	3	8'-6"	Transverse - End of Deck
S504G	6	40'-0"	Longitudinal - Pour 1 Flare	S534G	3	6'-2"	Transverse - End of Deck
S505G	2	36'-5"	Longitudinal - Pour 1 Flare	S535G	3	3'-7"	Transverse - End of Deck
S506G	2	23'-8"	Longitudinal - Pour 1 Flare	S536G	3	3'-2"	Transverse - End of Deck
S507G	2	13'-11"	Longitudinal - Pour 1 Flare	S537G	9	8'-4"	Transverse - End of Deck
S508G	2	42'-9"	Longitudinal - Pour 1 Flare	S538G	3	10'-9"	Transverse - End of Deck
S509G	2	37'-2"	Longitudinal - Pour 1 Flare	S539G	6	2'-7"	Transverse - End of Deck
S510G	2	32'-10"	Longitudinal - Pour 1 Flare				
S511G	2	29'-3"	Longitudinal - Pour 1 Flare	S600G	2058	34'-4"	Transverse - Top
S512G	2	26'-0"	Longitudinal - Pour 1 Flare	S601G	100	5'-6"	Transverse - Top Flare
S513G	2	23'-2"	Longitudinal - Pour 1 Flare	S602G	74	7'-5"	Transverse - Top Flare
S514G	2	20'-6"	Longitudinal - Pour 1 Flare	S603G	33	11'-3"	Transverse - Top Flare
S515G	2	18'-1"	Longitudinal - Pour 1 Flare	S604G	25	15'-1"	Transverse - Top Flare
S516G	2	15'-9"	Longitudinal - Pour 1 Flare	S605G	21	18'-11"	Transverse - Top Flare
S517G	2	13'-7"	Longitudinal - Pour 1 Flare	S606G	452	34'-4"	Transverse - Bottom
S518G	2	11'-6"	Longitudinal - Pour 1 Flare	S607G	288	4'-0"	Bridge Drain Detail
S519G	2	9'-6"	Longitudinal - Pour 1 Flare	S608G	144	7'-5"	Bridge Drain Detail
S520G	2	7'-8"	Longitudinal - Pour 1 Flare				
S521G	2	5'-10"	Longitudinal - Pour 1 Flare	S700G	452	34'-4"	Transverse - Top
S522G	2	4'-1"	Longitudinal - Pour 1 Flare				
S523G	2	2'-8"	Longitudinal - Pour 1 Flare				
S524G	2058	34'-4"	Transverse - Bottom				
S525G	100	5'-6"	Transverse - Bottom Flare				
S526G	74	7'-5"	Transverse - Bottom Flare				
S527G	33	11'-3"	Transverse - Bottom Flare				
S528G	25	15'-1"	Transverse - Bottom Flare				
S529G	21	18'-11"	Transverse - Bottom Flare				
Approach Slab No.1							
1AS501	16	30'-0"	Transverse				
1AS502	16	30'-8"	Transverse				
1AS601	119	15'-0"	Longitudinal				
Approach Slab No.2							
2AS501	16	28'-11"	Transverse				
2AS601	59	15'-0"	Longitudinal				

BENT BARS

MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
Pier No. 1														
1P550	26	39'-3"	N1	5½"	3'-6"	15'-0"	2'-5"	15'-0"		5½"	1'-9"			Horizontal - Pier Nose
1P551	52	37'-11"	H	5½"	3'-6"	15'-0"	3'-6"	15'-0"		5½"				Horizontal - Pier
1P552	1144	4'-6½"	PC	5½"	3'-7"					6"				Horizontal - Pier Crossties
~~1P553~~	~~26~~	~~35'-10"~~	~~N2~~	~~6"~~	~~15'-0"~~	~~2'-5"~~	~~15'-0"~~			~~6"~~				~~Horizontal - Pier Nose~~
~~1P554~~	~~52~~	~~34'-6"~~	~~HB~~	~~6"~~	~~15'-0"~~	~~3'-6"~~	~~15'-0"~~	~~6"~~		~~0"~~				~~Horizontal - Pier~~
1P555	40	7'-8"	S	0"	2'-2"	3'-4"	2'-2"			0"				Top - Pier
1P556	40	9'-2"	S	0"	3'-1"	3'-0"	3'-1"			0"				Longitudinal - Pedestal
1P557	35	9'-8"	S	0"	3'-1"	3'-6"	3'-1"			0"				Transverse - Pedestal
1P1050	164	13'-6"	L	11'-8"	1'-10"									Pier/Footing Dowels
Pier No. 2														
2P550	56	6'-6"	S	0"	1'-0"	4'-6"	1'-0"			0"				Footing Stirrups
2P551	26	39'-3"	N1	5½"	3'-6"	15'-0"	2'-5"	15'-0"		5½"	1'-9"			Horizontal - Pier Nose
2P552	52	37'-11"	H	5½"	3'-6"	15'-0"	3'-6"	15'-0"						Horizontal - Pier
2P553	1171	4'-6½"	PC	5½"	3'-7"					6"				Horizontal - Pier Crossties
~~2P554~~	~~29~~	~~35'-10"~~	~~N2~~	~~6"~~	~~15'-0"~~	~~2'-5"~~	~~15'-0"~~			~~6"~~				~~Horizontal - Pier Nose~~
~~2P555~~	~~58~~	~~34'-6"~~	~~HB~~	~~6"~~	~~15'-0"~~	~~3'-6"~~	~~15'-0"~~	~~6"~~		~~0"~~				~~Horizontal - Pier~~
2P556	40	7'-8"	S	0"	2'-2"	3'-4"	2'-2"			0"				Top - Pier
2P557	40	9'-2"	S	0"	3'-1"	3'-0"	3'-1"			0"				Longitudinal - Pedestal
2P558	35	9'-8"	S	0"	3'-1"	3'-6"	3'-1"			0"				Transverse - Pedestal
2P1150	216	14'-9"	L	12'-9"	2'-0"									Pier/Footing Dowels
Pier No. 3														
3P550	44	6'-6"	S	0"	1'-0"	4'-6"	1'-0"			0"				Footing Stirrups
3P551	26	39'-3"	N1	5½"	3'-6"	15'-0"	2'-5"	15'-0"		5½"	1'-9"			Horizontal - Pier Nose
3P552	52	37'-11"	H	5½"	3'-6"	15'-0"	3'-6"	15'-0"						Horizontal - Pier
3P553	1189	4'-6½"	PC	5½"	3'-7"					6"				Horizontal - Pier Crossties
~~3P554~~	~~31~~	~~35'-10"~~	~~N2~~	~~6"~~	~~15'-0"~~	~~2'-5"~~	~~15'-0"~~			~~6"~~				~~Horizontal - Pier Nose~~
~~3P555~~	~~62~~	~~34'-6"~~	~~HB~~	~~6"~~	~~15'-0"~~	~~3'-6"~~	~~15'-0"~~	~~6"~~		~~0"~~				~~Horizontal - Pier~~
3P556	40	7'-8"	S	0"	2'-2"	3'-4"	2'-2"			0"				Top - Pier
3P557	40	9'-2"	S	0"	3'-1"	3'-0"	3'-1"			0"				Longitudinal - Pedestal
3P558	35	9'-8"	S	0"	3'-1"	3'-6"	3'-1"			0"				Transverse - Pedestal
3P1050	164	15'-7"	L	13'-9"	1'-10"									Pier/Footing Dowels
Superstructure Slab														
S550E	105	5'-1"	SJ	10"	15"	14"	12"	10"						End of Deck Stirrup
S551E	26	6'-8"	S	0"	3'-0"	8"	3'-0"			0"				End of Curb/SW Stirrup
S552G	153	11'-8"	V				4'-3"	7'-5"			6"			Transverse - Bottom
S553G	409	9'-2"	V				3'-8"	5'-6"			4"			Transverse - Bottom
S554G	1497	9'-2"	V				3'-8"	5'-6"			3"			Transverse - Bottom
S555G	320	10'-8"	V				5'-2"	5'-6"			4"			Transverse - Bottom
S556G	132	12'-2"	V				6'-8"	5'-6"			4"			Transverse - Bottom
S557E	783	12'-7"	S	10"	1'-7"	8'-1"	1'-4"			10"				Transverse - Sidewalk
S558E	172	9'-0"	T	6'-10"	1'-2"	10"								Transverse - Sidewalk
S559E	172	9'-3"	S	0"	6'-10"	1'-7"	10"			0"				Transverse - Sidewalk
S560E	360	6'-2"	S	10"	1'-7"	1'-4"	1'-7"			10"				Transverse - Sidewalk
S561E	1297	6'-0"	S	10"	1'-7"	1'-2"	1'-7"			10"				Transverse - Curb
S562E	1	11'-8"	HB	0"	10"	9"	8'-1"	1'-2"		10"				Transverse - Sidewalk
S563E	1	14'-2"	HB	0"	10"	9"	10'-7"	1'-2"		10"				Transverse - Sidewalk
S564E	21	6'-11"	S	0"	2'-8"	1'-7"	2'-8"			0"				Luminaire Corbel
S565E	21	7'-8"	SL	1'-8"	1'-8"	1'-0"	1'-8"				1'-2"			Luminaire Corbel
S650G	153	11'-8"	V				4'-3"	7'-5"			6"			Transverse - Top
S651G	409	9'-2"	V				3'-8"	5'-6"			4"			Transverse - Top
S652G	1497	9'-2"	V				3'-8"	5'-6"			3"			Transverse - Top
S653G	320	10'-8"	V				5'-2"	5'-6"			4"			Transverse - Top
S654G	132	12'-2"	V				6'-8"	5'-6"			4"			Transverse - Top
S655E	7	5'-0"	H	8"	1'-1"	9"	1'-1"	9"		8"				Transverse - Curb
S656E	23	6'-4"	S	1'-0"	1'-7"	1'-2"	1'-7"			1'-0"				Transverse - Curb/SW
Pier No. 1														
1P650	26	36'-10"	N2	1'-0"	15'-0"	2'-5"	15'-0"			1'-0"				Horizontal - Pier Nose
1P651	52	35'-6"	HB	1'-0"	15'-0"	3'-6"	15'-0"	1'-0"		0"				Horizontal - Pier
Pier No. 2														
2P650	29	36'-10"	N2	1'-0"	15'-0"	2'-5"	15'-0"			1'-0"				Horizontal - Pier Nose
2P651	58	35'-6"	HB	1'-0"	15'-0"	3'-6"	15'-0"	1'-0"		0"				Horizontal - Pier
Pier No. 3														
3P650	31	36'-10"	N2	1'-0"	15'-0"	2'-5"	15'-0"			1'-0"				Horizontal - Pier Nose
3P651	62	35'-6"	HB	1'-0"	15'-0"	3'-6"	15'-0"	1'-0"		0"				Horizontal - Pier

TYPE - BENDING DIAGRAMS



All dimensions are out-to-out of bar.

Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.

Reinforcing Bar: ASTM A615/A615M, Grade 60

GENERAL NOTES

1. The first two digits following the letter(s) of the mark indicate the size of the bar:

   Mark "A0502" = bar size #5
   Mark "P0805" = bar size #8
   Mark "S1150" = bar size #11

2. Each crank bar, Type B, may be replaced by two (2) straight bars (one top and one bottom) of the same bar size as the crank bar. Payment in either case shall be based on crank bars as schedule on the plans.

3. Bar marks ending with an "E" indicate epoxy coating required.

4. Bar marks with a "G" indicate Glass Fiber Reinforced Polymer (GFRP) bars.

T·Y·LIN INTERNATIONAL

PROJ. MANAGER	NLB	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	DSM: Bar mark change		1/21/2015
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 2660
WIN 16705.00
BRIDGE PLANS

PENOBSCOT RIVER BRIDGE
PENOBSCOT RIVER
HOWLAND-ENFIELD PENOBSCOT COUNTY

REINFORCING SCHEDULE 2

SHEET NUMBER
122