



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

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

July 1, 2025
Subject: Bridge Replacement
WIN: 025161.00
Location: **Cumberland**
Amendment No. 2

Dear Sir/Ms.:

CHANGE on page 14 "NOTICE TO CONTRACTORS", the bid opening date in the first paragraph from "July 2, 2025" to "July 9, 2025". Make this change in pen and ink.

ADD SPECIAL PROVISION SECTION 627 PAVEMENT MARKINGS (Polyurea Pavement Markings) dated June 26, 2025 (8 pages).

ADD SPECIAL PROVISION 627 PAVEMENT MARKINGS (Grooving for Pavement Marking) dated June 26, 2025 (2 pages).

REMOVE pages 16 to 26 titled Proposal Schedule of Items dated 5/28/2025 and **REPLACE** with the attached Proposal Schedule of Items dated 7/1/2025 (11 pages)

REMOVE Sheet Number 2 of 88, ESTIMATED QUANTITIES dated 5/25/2025 and **REPLACE** with the attached Sheet Number 2 of 88, ESTIMATED QUANTITIES dated 6/30/2025.

REMOVE Sheet Number 58 of 88, PIER FOOTING & NOTES dated 5/25/2025 and **REPLACE** with the attached Sheet Number 58 of 88, PIER FOOTING & NOTES dated 6/26/2025.

The following questions have been received:

Question: On sheets 73 & 74 Rebar sets "A", "B" & "C" are noted as 27 pcs. of each bar mark at 18" Top. The bar list on sheet 85 shows 54 of each bar mark. Which quantity is correct?

Response: The quantity on Sheet 85 is correct. 27 is the number of sets spaced transversely, and two bars of each mark are spliced longitudinally. Please also refer to the "Partial Deck Reinforcing Section" on Sheet 75.

Question: On sheet 58 the footing rebar marks 1P850, 2P850 & 3P850 show quantities which are more than that shown on the Pier elevations on sheets 60, 61 & 62 as well as the bar lists on sheets 84 & 85. What are the correct quantities?

Response: The quantities on Sheets 84 and 85 are correct. Sheets 60, 61, and 62 show the quantity of one face. See the revised Sheet 58 above.

Question: Would the Department consider changing the method of measurement for reinforcing steel to be by the pound rather than lump sum? If not, how will reinforcing steel changes be handled? We have never seen reinforcing steel be paid as lump sum on past projects or current projects out to bid.

Response: The reinforcing items have been changed to pound quantities. See updated Sheet 2 and Proposal Schedule of Items.

Question: Does excavation to demo the existing abutment and piers to 2' below grade get paid for under common excavation?

Response: Yes, the excavation to demolish the existing abutment will be paid for under pay item 202.19 Common Excavation.

Question: How was the common borrow calculated? The quantity seems extremely high.

Response: Please see the updated quantity on Sheet 2.

Consider these changes and information prior to submitting your bid on **July 9, 2025**.

Sincerely,



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

SPECIAL PROVISION
SECTION 627
PAVEMENT MARKINGS
(Grooving for Pavement Marking)

627.30 Description

This work shall consist of furnishing and installing a groove in the pavement for placement of pavement markings as shown on the Plans or as directed by the Resident.

627.30.1 Construction Requirements

Prior to grooving any recessed lines, the Contractor shall layout the proposed pavement markings on the surface course with a chalk line or other suitable method so that the Resident can inspect the locations. Once the Resident has inspected and approved the proposed striping layout, the grooves for the proposed pavement markings may be ground. No pavement grooving shall be done without the prior approval of the Resident.

The Contractor shall use gang stacked diamond tipped cutting blades that will produce a smooth texture at the bottom of the groove that will be a flat, uniform texture with minimal variation in height so that the rise in the finished groove between each bottom of the cutting blade does not exceed 10 mils in depth. The acceptability of the surface texture will be decided by the Resident and/or Manufacturer's Technical Representative.

The final depth of the groove shall be 105 mils \pm 5 mils for paint applications, the final depth of groove shall be 125 mils \pm 5 mils for any tape application. The width of the groove shall be one (1) \pm 1/4 inch wider than the width of the painted lines indicated in the Contract or as directed by the Resident. A two (2) inch offset from the edge of the recessed groove to the longitudinal surface course pavement joint is desirable. Lengths of grooves shall be determined in the Contract. Depth plates shall be provided by the contractor to assure that desired groove depth is achieved.

Grooves shall be clean, dry with no visible moisture, free of laitance, oil, dirt, grease, paint or other foreign contaminants. Prior to the installation of the pavement marking the grooves shall be air blasted to remove any remaining dirt and residue. The Contractor shall prevent traffic from traversing and damaging the grooves and re-groove or re-clean grooves as necessary prior to application of any pavement markings. All debris resulting from the installation of the grooves shall be removed and disposed of by the contractor.

All grooved locations shall be constructed in accordance with this specification and any additional manufacturer's recommended procedures.

627.30.2 Method of Measurement

The quantity of grooving for markings measured for payment will be the number of Square Feet as shown in the Schedule of Items in the Contract. Additional measurement will not be made except for authorized changes during construction or where significant errors are found in the contract quantity. The revision or correction in quantity will be measured, computed and added to or deducted from the contract quantity. When required, grooves will be measured separately and made to the nearest square foot.

When grooving is used for sections of broken lines for acceleration/deceleration, auxiliary lanes and passing zones the length measured for payment shall include only the grooved areas. Breaks or gaps will not be included in the length measured for payment.

627.30.3 Basis of Payment

The accepted quantity of grooving will be paid for at the contract unit price per each of the pay items included in the contract. Payment will be considered full compensation for all labor, equipment, necessary material to complete the described work, including cleaning, loading, hauling, stockpiling and disposal of material; and any other incidental items.

<u>Pay Item</u>		<u>Pay Unit</u>
627.30	Grooving for Pavement Marking	Square Foot

SPECIAL PROVISION
SECTION 627
PAVEMENT MARKINGS
(Polyurea Pavement Markings)

627.01 Description This work shall consist of furnishing and placing reflectorized polyurea pavement lines and markings, and furnishing and applying polyurea reflectorized paint to curbing in reasonably close conformity with the Contract Documents or as directed by the Resident.

The liquid marking material shall be applied by spray method onto hot mix asphalt and Portland cement concrete surfaces. Following an application of retroreflective optics, and upon curing, the resulting marking shall be an adherent reflectorized stripe during dry and wet conditions of the specified thickness and width that is capable of resisting deformation by traffic.

Work under these items shall consist of the furnishing and installation of white and lead-free yellow polyurea reflectorized pavement markings (including edge lines, center lines, skip lines, cross walks, stop bars and symbols) on all pavement surfaces noted in the Contract Documents or as directed by the Resident.

627.02 Materials Polyurea Material shall conform to the following requirements:

The Contractor shall use a polyurea paint that is classified as **very fast curing polyurea traffic paint** (no-track times < 10 minutes). The polyurea paint used shall be listed on the Department's Qualified Products List (QPL) or approved equal.

At least one component shall be composed of secondary amines, pigments and fillers as needed to meet performance requirements of this specification.

These films shall be manufactured without the use of lead chromate pigments or other similar, lead-containing chemicals.

The white polyurea shall contain not less than 13% by weight rutile titanium dioxide pigment to ensure adequate opacity, hiding power and reflective properties.

The reflective media must include a first drop of 3M CR AW 90 Series elements and second drop of Swarco 18/50 beads (former Utah Performance) bead blend based on manufacturers recommended drop rates. These beads and elements shall be for drop-on application applied simultaneously with paint by pressurized or mechanical means.

627.03 General The pavement markings shall be applied in accordance with the Manual on Uniform Traffic Control Devices.

Longitudinal lines placed on tangent roadway segments shall be straight and true. Longitudinal lines placed on curves shall be continuous smoothly curved lines consistent with the roadway alignment. All pavement markings placed shall meet the tolerance limits shown in the Contract Documents. Broken lines shall consist of alternate 10- foot painted line segments and 30 -foot gaps on non- Interstate or expressway. Broken lines on Interstate and expressway shall consist of alternate 15- foot painted line segments and 25- foot gaps.

Newly painted lines shall be protected from traffic using cones, stationary vehicles or other approved methods until the paint is dry.

627.03.1 Polyurea Marking Polyurea Marking equipment shall be certified by the manufacturer as suitable for the application of the polyurea and reflective media. The striping equipment shall bear a decal identifying it as manufacturer certified.

At any time throughout the duration of the project, the Contractor shall provide free access to his application equipment for inspection by the Resident, his authorized representative, or the materials representative.

627.04 Polyurea Performance Requirements The Polyurea marking material shall consist of white and yellow films with pigments selected and blended to conform to standard highway colors.

The mixed polyurea compound, both white and yellow, when applied to a 144 in² aluminum panel at 15±3 mil in thickness with no glass beads and exposed for 500 hours in a Q.U.V. Environmental Testing Chamber, as described in ASTM G-154, Cycle #1, shall conform to the following minimum requirements. The color of the white polyurea system shall not be darker than Federal Standard No. 595A-17778. The color of the yellow polyurea system shall be reasonably close to Federal Standard No. 595A-13538.

The surface of the retroreflective marking shall provide an initial average skid resistance value of 45 BPN when tested according to ASTM E303.

When tested in accordance with ASTM D711 the polyurea marking material shall reach a track-free condition in 7 minutes or less at 15 mils with no retroreflective material.

When installed at 77° F, at a wet film thickness of 22±1 mils and reflectorized with glass beads, the polyurea markings shall reach a no-track condition in less than 6 minutes. Dry to “no-tracking” shall be considered as the condition where no visual deposition of the polyurea marking to the pavement surface is observed when viewed from a distance of 50 feet, after a

traveling vehicle's tires have passed over the line.

The polyurea pavement marking materials, when tested according to ACI Method 503, shall demonstrate 100% concrete failure in the performance of this test. The prepared specimens shall be conditioned at room temperature ($75^{\circ} \pm 2^{\circ}$ F) for a minimum of 24 hours and maximum of 72 hours prior to the performance of the tests indicated.

The polyurea pavement marking materials, when tested according to ACI Method 503, shall demonstrate 100% asphalt failure in the performance of this test. The prepared specimens shall be conditioned at room temperature ($75^{\circ} \pm 2^{\circ}$ F) for a minimum of 24 hours and maximum of 72 hours prior to the performance of the tests indicated.

The material shall have a minimum Shore D Hardness of between 70 and 100 when tested in accordance with ASTM D 2240.

The material shall have a maximum abrasion resistance of 150 mg at 15 ± 1 mil (0.375 ± 0.025 mm) when tested in accordance with ASTM D4060 (formally ASTM C 501).

The Contractor shall furnish a certificate of compliance showing the Polyurea material conforms to all requirements of this specification.

627.05 Preparation of Surface At the time of Polyurea application all pavement surfaces shall be grooved to create a recess for the paint that shall be in accordance with specification 627.30 Grooving for Pavement Markings in addition any polyurea manufacturer's recommended procedures. The acceptability of the surface texture will be decided by the Resident and/or Manufacturer's Technical Representative prior to application.

Temporary pavement marking will not require grooving.

The pavement surface temperature and the ambient temperature shall be above 32° F at the time of application. The Resident shall determine the atmospheric conditions and pavement surface conditions that produce satisfactory results.

627.06 Application All work shall be done in accordance with the Material Suppliers specifications and the following:

1. The polyurea binder shall be applied at rates to achieve a minimum uniform wet thickness of 25 ± 2 mils.

2. Marking Performance: The typical dry average initial retro reflectance of the markings shall be 600 [(mcd(ft-2)(fc-1)] for white and 400 [(mcd(ft-2)(fc-1)] for yellow per ASTM E1710. The typical wet average initial retro reflectance of the markings shall be 375 [(mcd(ft-2)(fc-1)] for white and 275 [(mcd(ft-2)(fc-1)] for yellow per ASTM E2177.

The average initial retro reflectance shall be determined according to the measurement and sampling procedures outlined in ASTM D 6359, using a 30 meter retro reflectometer. The 30 meter retro reflectometer shall measure the coefficient of retroreflected luminance, RL, at an observation angle of 1.05 degrees and an entrance angle of 88.76 degrees. RL shall be expressed in units of millicandelas per square foot per foot-candle [(mcd(ft-2)(fc-1)]. The metric equivalent shall be expressed in units of millicandelas per square yard per lux [mcd(m-2)(lux-1)].

627.07 Installation The Contractor shall provide equipment containing a Data Logging System (DLS) for long line paint striping trucks. No separate or additional payment will be made for the use of DLS. The costs to furnish and operate the DLS, all manufacturer representation, labor, equipment, reports, documentation, and materials necessary for striping operations will not be paid for directly but will be considered incidental to related Contract items.

The DLS details and specification requirements are found in appendix A of this special provision.

The Department will measure initial performance of the pavement markings within fourteen (14) days after application. Measurements shall also be made six (6) and twelve (12) months after application for data purposes only.

627.09 Removing Lines and Markings Removing lines and markings shall be done in accordance with Standard Specification Section 627, Pavement Markings.

627.10 Method of Measurement The quantity of permanent pavement marking lines measured for payment will be the number of linear feet, measured in place and accepted.

Polyurea Pavement Marking Lines, either Recessed or Temporary, including restriping of temporary marking lines, shall be measured by the linear foot. Double yellow centerline, broken or solid, will be considered one line for measurement purposes. Any broken or dotted white lines measurement will not include the gaps. All other pavement markings will be measured by the square foot for work completed in accordance with the contract. The Data Logging System (DLS) shall be made part of the unit price in the contract.

627.11 Basis of Payment The accepted quantity of permanent or temporary pavement marking lines will be paid for at the contract unit price per linear foot. No adjustment will be made to the quantity for payment, except as described under Method of Measurement above. All other permanent pavement markings will be paid for at the contract unit price per square foot.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
627.734 4" White or Yellow Polyurea Pavement Marking Line (Recessed)	Linear Foot
627.745 6" White or Yellow Polyurea Pavement Marking Line (Recessed)	Linear Foot
627.751 White or Yellow Polyurea Pavement Markings (Recessed)	Square Foot
627.782 4" White or Yellow Polyurea Pavement Marking Line (Temporary)	Linear Foot
627.783 6" White or Yellow Polyurea Pavement Marking Line (Temporary)	Linear Foot

Appendix A

Description: This work shall consist of providing equipment containing a Data Logging System (DLS) for long line paint striping trucks. No separate or additional payment will be made for the use of DLS. The costs to furnish and operate the DLS, all manufacturer representation, labor, equipment, reports, documentation, and materials necessary for striping operations will not be paid for directly, but will be considered incidental to items 627.734, 627.745 and 627.751.

Equipment and System Requirements: Long line paint striping trucks for this project shall be equipped with a DLS that meets the following requirements:

- (1) Measuring and recording the application vehicle speed to the nearest 0.1 mile per hour (mph).
- (2) Measuring and recording the weight in pounds (lbs.) and/or volume in gallons (gals) of binder. Measurement shall be made with a positive displacement pump mechanism, a flow meter, or load cells under the material tanks.
- (3) Measuring and recording the weight in pounds of reflective glass beads or elements used. Measurement shall be made with load cells under the bead or element tanks.
- (4) Measuring and recording the pavement surface temperature (Degrees F).
- (5) Measuring and recording the air temperature (Degrees F).
- (6) Measuring and recording the dew point (Degrees F).
- (7) Measuring and recording the humidity (Percent).
- (8) Calculating and recording the average material application rates and film thicknesses over each segment painted.
- (9) Providing the Project WIN, town name, with the beginning and ending reference points rounded to the nearest thousandth of a mile, the beginning and ending coordinates determined by a Global Positioning System receiver with an accuracy of 16 feet, and the direction of travel in terms of increasing or decreasing reference points.
- (10) Providing cellular capabilities for field data transport to website.
- (11) Providing a GPS mapping system that is capable of real time (within 20 minutes) tracking of material application rates, film thickness, bead pounds per gallon, vehicle speed, time, date, project numbers, operator manual data, and color-coded alarms for film thickness. Film thickness alarms shall have a tolerance of ± 0.5 mils.

Documentation and Reporting Requirements: The system must record and report the average material application rates for paint and beads with each application. Each road (segment) will be calculated over an entire control section (CS) in increments of 5 miles. When the CS is less than 5 miles long, it will be evaluated over its entire length and considered a segment. Control sections greater than 5 miles long will be broken into 5 mile segments, (e.g. a CS that is 20 miles long would have four 5 mile long segments, a CS that is 17 miles long would have three 5 mile long segments and one 2 mile long segment). At the beginning and end of each CS, the Contractor shall ensure that the material is settled in the tanks prior to logging the system information.

The DLS system shall store data and export to the Resident or Department designee on a daily basis. The data shall be in Microsoft Excel format, containing data identified below. Two versions of the DLS Report are contained in each Excel file: DLS Short Report and DLS Full Report, which are on separate sheet tabs. The DLS Short Report is an abbreviated format containing only critical application information which can be easily printed on 8.5 x 11 paper. DLS Full Reports contain all project application and environmental data.

The DLS reports shall include the following information:

- (1) Date and beginning and ending time of application.
- (2) Vendor and product (binder and reflective material).
- (3) Lot numbers of product used.
- (4) Specific weight of binder lots used in pounds per gallon (lbs./gal).
- (5) Striping Contractor.
- (6) Designation of the marking being applied (LEL = Left Edge Line, REL = Right Edge Line, CL = Centerline, LL = Lane Line).
- (7) Width of marking being applied.
- (8) Application vehicle speed to the nearest 0.1 mph.
- (9) Weight in pounds or volume in gallons of binder used by color, measured per the requirements in Subsection 2.(a)(2) of this special provision.
- (10) Weight in pounds of reflective glass beads or elements used, measured per the requirements in Subsection 2.(a)(3) of this special provision.
- (11) Pavement surface temperature (Degrees F).
- (12) Air temperature (Degrees F).
- (13) Dew point (Degrees F).
- (14) Humidity (Percent).
- (15) Average material application rates and film thicknesses over each segment painted.
- (16) Total linear feet painted for each segment, broken down by line color and width (e.g. total 4" yellow in segment, total 6" white in segment, etc.).
- (17) The highway number, highway name, and town name, with the beginning and ending reference points rounded to the nearest thousandth of a mile, the beginning and ending coordinates determined by a Global Positioning System receiver to an accuracy of 16 feet, and the direction of travel in terms of increasing or decreasing reference points.

The DLS reports shall be available to the Resident within 24 hours of the striping work and will be submitted to the Resident or designated field personnel for inclusion with project documentation records. The electronic records shall be produced in their final form prior to the records being removed from the pavement marking equipment.

Paint Application: The Department may randomly perform field verifications of the DLS operation and calibration at any time to ensure the accuracy of the DLS printouts. If the Resident or Department designee believe that the DLS printouts are not accurate, then additional checks may be performed. The DLS shall be operational, calibrated and in use during all pavement marking operations. Data shall be collected for any non-handwork longitudinal pavement marking application of 300 feet (drive length) or greater.

The Contractor shall provide the resident with the DLS manufacturer's recommendations for equipment calibration frequency and provide certification that the equipment meets the manufacturer's recommended calibration. Every DLS shall be calibrated annually, prior to being used. A signed DLS calibration sticker shall be present in the driver's door and shall carry a date from the current calendar year.

In the event the DLS equipment fails, the Contractor shall notify the Resident of DLS failure before proceeding with any paint application. The Department will allow the completion of work for the individual day of a DLS failure. The Contractor shall document the application and material usage quantities from the time of the DLS failure and make calculations to determine the gallons of binder per mile and pounds of beads per mile.

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Proposal Schedule of Items

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Proposal ID: 025161.00

Project(s): 025161.00

SECTION: 1 INITIAL GROUP

Alt Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0010	201.11 CLEARING	1.400 AC	_____	_____	_____	_____
0020	202.13 REMOVING EXISTING RAILINGS (RETAINED BY DEPARTMENT)	1,056.000 LF	_____	_____	_____	_____
0030	202.19 REMOVING EXISTING BRIDGE	LUMP SUM	LUMP SUM		_____	_____
0040	202.202 REMOVING PAVEMENT SURFACE	370.000 SY	_____	_____	_____	_____
0050	203.20 COMMON EXCAVATION	4,700.000 CY	_____	_____	_____	_____
0060	203.24 COMMON BORROW	8,400.000 CY	_____	_____	_____	_____
0070	203.25 GRANULAR BORROW	370.000 CY	_____	_____	_____	_____
0080	203.4338 LIGHTWEIGHT FILL FOAMED GLASS AGGREGATE	8,150.000 CY	_____	_____	_____	_____
0090	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	830.000 CY	_____	_____	_____	_____
0100	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	3,050.000 CY	_____	_____	_____	_____
0110	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	780.000 T	_____	_____	_____	_____
0120	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	210.000 T	_____	_____	_____	_____

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Proposal ID: 025161.00

Project(s): 025161.00

SECTION: 1 INITIAL GROUP

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0130	403.2131 12.5 MM POLYMER MODIFIED HMA BASE	450.000 T	_____	_____	_____	_____
0140	409.15 BITUMINOUS TACK COAT - APPLIED	1,400.000 G	_____	_____	_____	_____
0150	501.231 DYNAMIC LOADING TEST	10.000 EA	_____	_____	_____	_____
0160	501.50 STEEL H-BEAM PILES 89 LBS/FT, DELIVERED	4,582.000 LF	_____	_____	_____	_____
0170	501.501 STEEL H-BEAM PILES 89 LBS/FT, IN PLACE	4,582.000 LF	_____	_____	_____	_____
0180	501.90 PILE TIPS	108.000 EA	_____	_____	_____	_____
0190	501.91 PILE SPLICES	174.000 EA	_____	_____	_____	_____
0200	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP SUM	LUMP SUM	_____	_____	_____
0210	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP SUM	LUMP SUM	_____	_____	_____
0220	502.239 STRUCTURAL CONCRETE PIERS	LUMP SUM	LUMP SUM	_____	_____	_____
0230	502.26 STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES	LUMP SUM	LUMP SUM	_____	_____	_____

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Proposal ID: 025161.00

Project(s): 025161.00

SECTION: 1 INITIAL GROUP

Alt Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0240	502.31 STRUCTURAL CONCRETE APPROACH SLABS	LUMP SUM	LUMP	SUM	_____	_____
0250	502.49 STRUCTURAL CONCRETE CURBS AND SIDEWALKS	LUMP SUM	LUMP	SUM	_____	_____
0260	502.77 FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE: E	5.000 EA	_____	_____	_____	_____
0270	502.77 FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE: F	5.000 EA	_____	_____	_____	_____
0280	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	38,200.000 LB	_____	_____	_____	_____
0290	503.13 REINFORCING STEEL, PLACING	38,200.000 LB	_____	_____	_____	_____
0300	503.19 LOW-CARBON, CHROMIUM REINFORCEMENT - FABRICATED & DELIVERED	279,400.000 LB	_____	_____	_____	_____
0310	503.20 LOW-CARBON, CHROMIUM REINFORCEMENT - PLACING	279,400.000 LB	_____	_____	_____	_____
0320	504.702 STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	LUMP SUM	LUMP	SUM	_____	_____
0330	504.71 STRUCTURAL STEEL ERECTION	LUMP SUM	LUMP	SUM	_____	_____
0340	505.08 SHEAR CONNECTORS	LUMP SUM	LUMP	SUM	_____	_____

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Project(s): 025161.00

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Alt Set ID: Alt Mbr ID:

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0350	506.9104 THERMAL SPRAY COATING - SHOP APPLIED	LUMP SUM		LUMP SUM		
0360	507.08161 STEEL APPROACH RAILING, 4 BAR	2.000 EA				
0370	507.0821 STEEL BRIDGE RAILING, 3 BAR	LUMP SUM		LUMP SUM		
0380	507.0822 STEEL APPROACH RAILING, 3-BAR	2.000 EA				
0390	507.0831 STEEL BRIDGE RAILING, 4 BAR	LUMP SUM		LUMP SUM		
0400	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP SUM		LUMP SUM		
0410	512.081 FRENCH DRAINS	LUMP SUM		LUMP SUM		
0420	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP SUM		LUMP SUM		
0430	520.21 EXPANSION DEVICE - GLAND SEAL	1.000 EA				
0440	521.23 EXPANSION DEVICE FINGER JOINT	1.000 EA				
0450	521.32 FABRIC TROUGH FOR FINGER JOINT	1.000 EA				
0460	523.52 BEARING INSTALLATION	25.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0470	523.5551 POT OR DISC BEARINGS, FIXED	5.000 EA	_____	 _____	_____	 _____
0480	523.5552 POT OR DISC BEARINGS, EXPANSION	20.000 EA	_____	 _____	_____	 _____
0490	524.301 TEMPORARY STRUCTURAL SUPPORT ABUT NO.1	LUMP SUM	LUMP	 SUM	_____	 _____
0500	524.301 TEMPORARY STRUCTURAL SUPPORT ABUT NO.2	LUMP SUM	LUMP	 SUM	_____	 _____
0510	524.301 TEMPORARY STRUCTURAL SUPPORT APPROACHES	LUMP SUM	LUMP	 SUM	_____	 _____
0520	524.301 TEMPORARY STRUCTURAL SUPPORT PIER NO.1	LUMP SUM	LUMP	 SUM	_____	 _____
0530	524.301 TEMPORARY STRUCTURAL SUPPORT PIER NO.2	LUMP SUM	LUMP	 SUM	_____	 _____
0540	524.301 TEMPORARY STRUCTURAL SUPPORT PIER NO.3	LUMP SUM	LUMP	 SUM	_____	 _____
0550	524.40 PROTECTIVE SHIELD	LUMP SUM	LUMP	 SUM	_____	 _____
0560	526.301 PORTABLE CONCRETE BARRIER TYPE I	LUMP SUM	LUMP	 SUM	_____	 _____
0570	527.33 TRUCK MOUNTED ATTENUATOR	2.000 EA	_____	 _____	_____	 _____
0580	527.34 WORK ZONE CRASH CUSHIONS	2.000 UN	_____	 _____	_____	 _____

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Project(s): 025161.00

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Alt Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0590	603.179 18 INCH CULVERT PIPE OPTION III	60.000 LF	_____	_____	_____	_____
0600	603.199 24 INCH CULVERT PIPE OPTION III	60.000 LF	_____	_____	_____	_____
0610	604.072 CATCH BASIN TYPE A1-C	6.000 EA	_____	_____	_____	_____
0620	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	1.000 EA	_____	_____	_____	_____
0630	605.13 18 INCH UNDERDRAIN TYPE C	680.000 LF	_____	_____	_____	_____
0640	606.1301 31" W-BM GR, MID-WAY SPLICE-SGL FACED	1,800.000 LF	_____	_____	_____	_____
0650	606.1303 31" W-BM GR, MID-WAY SPLICE-15' RAD AND LESS	75.000 LF	_____	_____	_____	_____
0660	606.1304 31" W-BM GR, MID-WAY SPLICE-OVER 15' RAD	75.000 LF	_____	_____	_____	_____
0670	606.1305 31" W-BM GR, MID-WAY SPLICE FLARED TERMINAL	6.000 EA	_____	_____	_____	_____
0680	606.1306 31" W-BM GR, MID-WAY SPLICE TANGENT TERMINAL	1.000 EA	_____	_____	_____	_____
0690	606.1721 BRIDGE TRANSITION - TYPE 1	2.000 EA	_____	_____	_____	_____
0700	606.1733 BRIDGE TRANSITION - TYPE 3	2.000 EA	_____	_____	_____	_____

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Proposal Schedule of Items

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Proposal ID: 025161.00

Project(s): 025161.00

SECTION: 1 INITIAL GROUP

Alt Set ID: Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0710	606.265 TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	2.000 EA	_____	 _____	_____	 _____
0720	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	18.000 EA	_____	 _____	_____	 _____
0730	607.183 CHAIN LINK SNOW FENCE 33 INCH	LUMP SUM	LUMP SUM		_____	 _____
0740	608.26 CURB RAMP DETECTABLE WARNING FIELD	12.000 SF	_____	 _____	_____	 _____
0750	609.161 CONCRETE SLIPFORM CURB - VERTICAL	900.000 LF	_____	 _____	_____	 _____
0760	609.219 CONCRETE SLIPFORM CURB - TERMINAL END	40.000 LF	_____	 _____	_____	 _____
0770	610.08 PLAIN RIPRAP	540.000 CY	_____	 _____	_____	 _____
0780	610.18 STONE DITCH PROTECTION	10.000 CY	_____	 _____	_____	 _____
0790	613.319 EROSION CONTROL BLANKET	650.000 SY	_____	 _____	_____	 _____
0800	615.07 LOAM	500.000 CY	_____	 _____	_____	 _____
0810	618.14 SEEDING METHOD NUMBER 2	80.000 UN	_____	 _____	_____	 _____
0820	619.12 MULCH	80.000 UN	_____	 _____	_____	 _____

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Proposal Schedule of Items

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Proposal ID: 025161.00

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SECTION: 1 INITIAL GROUP

Alt Set ID:

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0830	619.14 EROSION CONTROL MIX	1,000.000 CY	_____	_____	_____	_____
0840	620.58 EROSION CONTROL GEOTEXTILE	5,650.000 SY	_____	_____	_____	_____
0850	627.18 12 " SOLID WHITE PAVEMENT MARKING	260.000 LF	_____	_____	_____	_____
0860	627.30 GROOVING FOR PAVEMENT MARKING	6,800.000 SF	_____	_____	_____	_____
0870	627.734 4" WHITE OR YELLOW POLYUREA PAVEMENT MARKING LINE (RECESSED)	14,600.000 LF	_____	_____	_____	_____
0880	627.745 6" WHITE OR YELLOW POLYUREA PAVEMENT MARKING LINE (RECESSED)	17,400.000 LF	_____	_____	_____	_____
0890	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	1,100.000 SF	_____	_____	_____	_____
0900	627.77 REMOVING PAVEMENT MARKINGS	1,600.000 SF	_____	_____	_____	_____
0910	627.782 TEMPORARY 4 INCH POLYUREA PAVEMENT MARKING LINE, WHITE OR YELLOW	11,600.000 LF	_____	_____	_____	_____
0920	627.783 TEMPORARY 6 INCH POLYUREA PAVEMENT MARKING LINE, WHITE OR YELLOW	18,000.000 LF	_____	_____	_____	_____

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Proposal ID: 025161.00

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SECTION: 1 INITIAL GROUP

Alt Set ID:

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0930	629.05 HAND LABOR, STRAIGHT TIME	40.000 HR	_____	_____	_____	_____
0940	631.10 AIR COMPRESSOR (INCLUDING OPERATOR)	20.000 HR	_____	_____	_____	_____
0950	631.11 AIR TOOL (INCLUDING OPERATOR)	20.000 HR	_____	_____	_____	_____
0960	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	25.000 HR	_____	_____	_____	_____
0970	631.14 GRADER (INCLUDING OPERATOR)	20.000 HR	_____	_____	_____	_____
0980	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	25.000 HR	_____	_____	_____	_____
0990	631.22 FRONT END LOADER (INCLUDING OPERATOR)	25.000 HR	_____	_____	_____	_____
1000	639.18 FIELD OFFICE TYPE A	1.000 EA	_____	_____	_____	_____
1010	643.61 FLASHING BEACON MODIFICATION	LUMP SUM	LUMP SUM		_____	_____
1020	645.103 DEMOUNT GUIDE SIGN	8.000 EA	_____	_____	_____	_____
1030	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	39.000 EA	_____	_____	_____	_____
1040	645.108 DEMOUNT POLE	47.000 EA	_____	_____	_____	_____

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Proposal ID: 025161.00

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Alt Set ID: Alt Mbr ID:

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1050	645.113 REINSTALL GUIDE SIGN	8.000 EA	_____	_____	_____	_____
1060	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	18.000 EA	_____	_____	_____	_____
1070	645.118 REINSTALL POLE	26.000 EA	_____	_____	_____	_____
1080	645.292 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE II	150.000 SF	_____	_____	_____	_____
1090	645.513 ADVANCED SOLAR POWERED FLASHING WARNING SIGN	2.000 EA	_____	_____	_____	_____
1100	645.561 36" STOP SIGN - SOLAR POWERED	6.000 EA	_____	_____	_____	_____
1110	652.30 FLASHING ARROW BOARD	2.000 EA	_____	_____	_____	_____
1120	652.312 TYPE III BARRICADE	6.000 EA	_____	_____	_____	_____
1130	652.33 DRUM	50.000 EA	_____	_____	_____	_____
1140	652.34 CONE	100.000 EA	_____	_____	_____	_____
1150	652.35 CONSTRUCTION SIGNS	700.000 SF	_____	_____	_____	_____
1160	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP SUM	LUMP SUM		_____	_____

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Proposal ID: 025161.00

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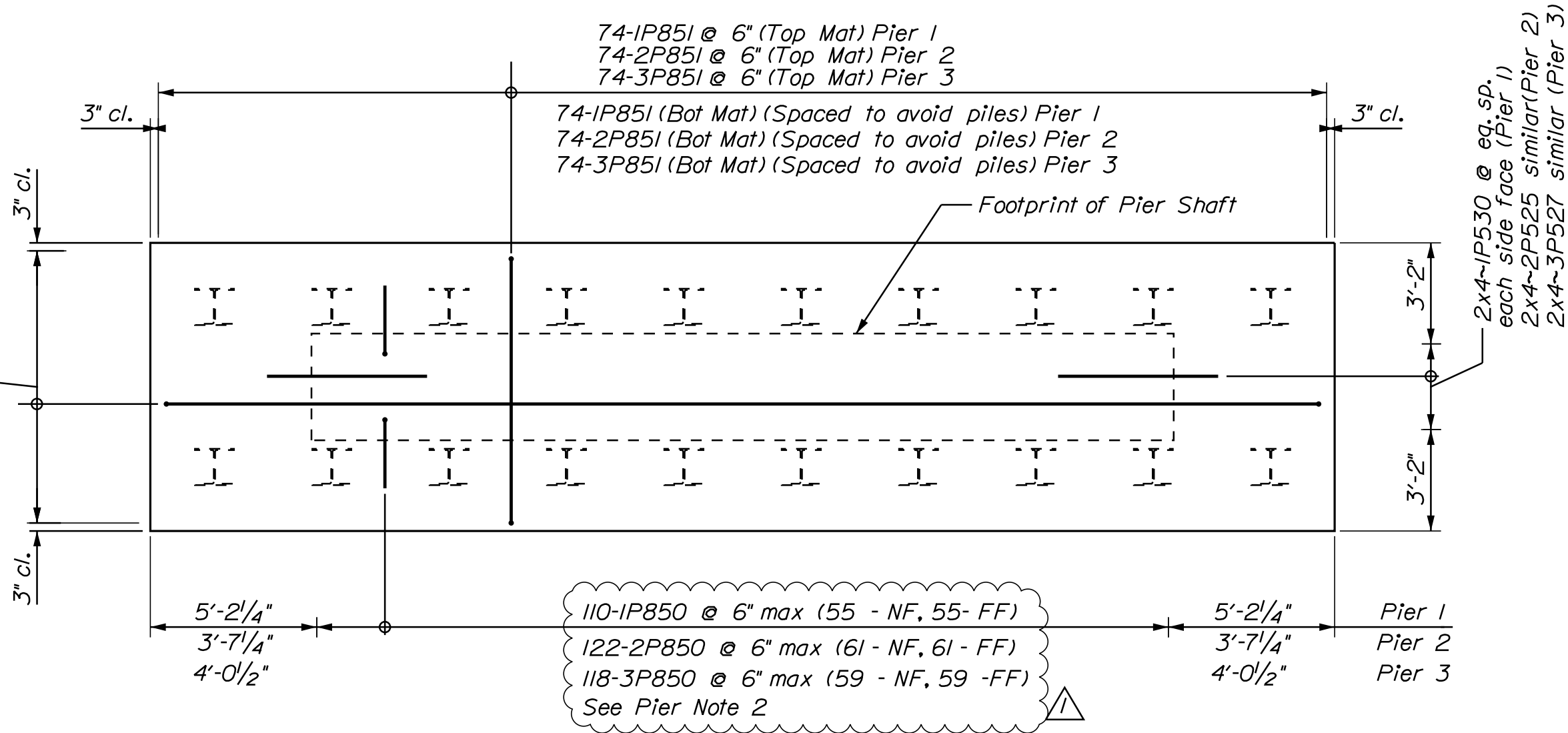
Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1170	652.38 FLAGGER	850.000 HR	_____	_____	_____	_____
1180	652.381 TRAFFIC OFFICER	40.000 HR	_____	_____	_____	_____
1190	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	5.000 EA	_____	_____	_____	_____
1200	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM	LUMP SUM	_____	_____	_____
1210	659.10 MOBILIZATION	LUMP SUM	LUMP SUM	_____	_____	_____
1220	910.301 SPECIAL WORK CC APPR ONLY	LUMP SUM	LUMP SUM	_____	_____	_____
1230	910.301 SPECIAL WORK CC BR ONLY	LUMP SUM	LUMP SUM	_____	_____	_____
Section: 1			Total:		_____	_____
			Total Bid:		_____	_____

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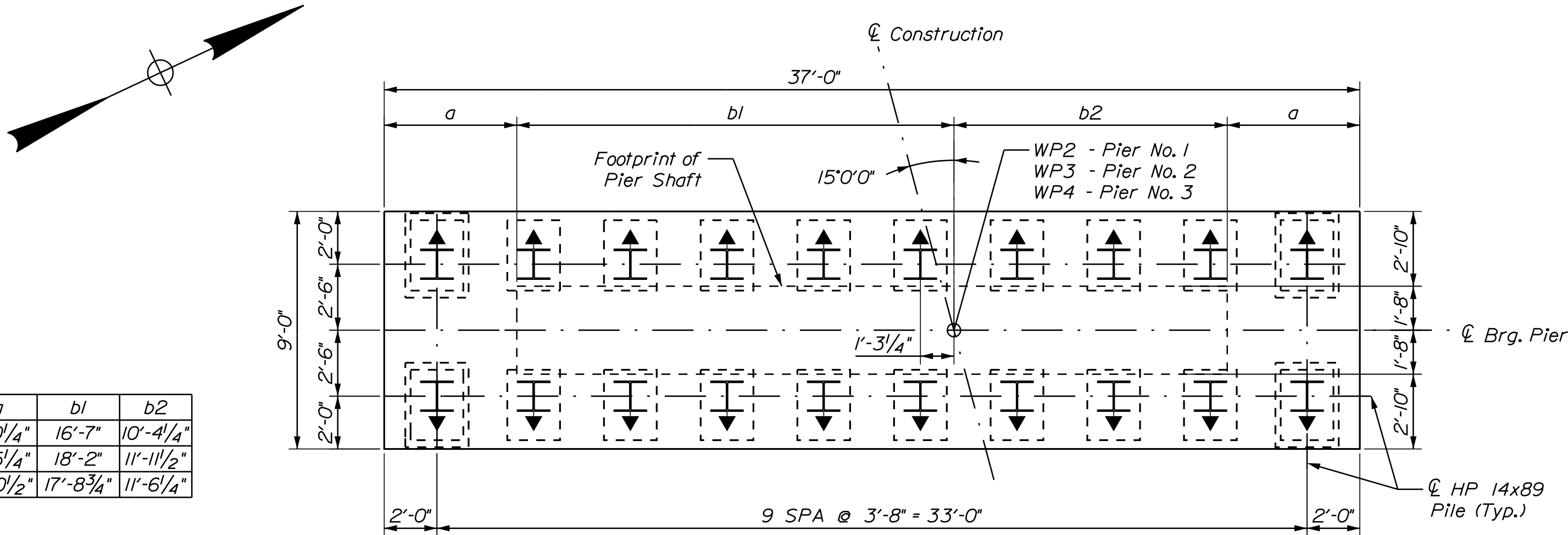
SHEET NUMBER	2	OF 88	TUTTLE ROAD BRIDGE										PROJ. MANAGER	Cerdia Dostie	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION					
			INTERSTATE 295, RTE US 1 & MCRR										DESIGN-DETAILED	CT	CT	03/2025						
			CUMBERLAND CUMBERLAND COUNTY										CHECKED-REVIEWED	RF	RF	03/2025						
													DESIGN2-DETAILED2									
													DESIGN3-DETAILED3									
ESTIMATED QUANTITIES													REVISIONS 1	UPDATED QUANTITIES			P.E. NUMBER	2516100				
													REVISIONS 2									
													REVISIONS 3									
													REVISIONS 4									
													FIELD CHANGES									
																				BRIDGE NO. 5801	WIN 25161.00	BRIDGE PLANS

	a	b1	b2
Pier. No. 1	5'-0 1/4"	16'-7"	10'-4 1/4"
Pier. No. 2	3'-5 1/4"	18'-2"	11'-11 1/2"
Pier. No. 3	3'-10 1/2"	17'-8 3/4"	11'-6 1/4"

10~1P654 @ 12" (Top Mat)
10~1P654 (Bot Mat Spaced to avoid piles) Pier 1
10~2P654 @ 12" (Top)
10~2P654 (Bot Mat Spaced to avoid piles) Pier 2
10~3P654 @ 12" (Top)
10~3P654 (Bot Mat Spaced to avoid piles) Pier 3



PIER FOOTING REINFORCING



PIER FOOTING PLAN

PIER PILE NOTES

1. The maximum factored pile loads at the Strength Limit State are:

Pier No. 1:	295 kips
Pier No. 2:	306 kips
Pier No. 3:	311 kips

2. Piles shall be driven to the required resistance on or within bedrock in accordance with Standard Specification Section 501.

3. Estimate of piles required:

Pier No. 1:	20 - HP 14 x 89 @ 37 feet
Pier No. 2:	20 - HP 14 x 89 @ 49 feet
Pier No. 3:	20 - HP 14 x 89 @ 47 feet

The order lengths of the piles shall include an additional 5 feet of length for each test pile to accommodate dynamic pile testing equipment.

4. Top of rock varies across the project site; anticipate adjustments to the pile tip elevation. The pile lengths given include approximately 5 feet of additional length to account for variable bedrock.

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

6. H-pile splices shall be in accordance with Standard Detail 501(03). Pile splices are not permitted within upper 15 feet of piles.

7. Moderate to severe driving conditions are anticipated. All piles shall be equipped with a pile tip in accordance with Standard Specifications Subsections 501.048, Prefabricated Pile Tips and 711.10 H-Beam Piles, Spliced and Tips. To mitigate damage to the piles, the refusal criteria of 10 blows per 0.5 inches shall be implemented.

8. Piles marked with an arrow shall be battered 2 inches/foot in the direction of the arrow.

9. The top of any pile driven its full length into the ground shall not vary from the plan location by more than 4 inches. The orientation of piles shall be within 10 degrees of the orientation shown on the plans. A driving frame/template is recommended to keep piles within allowable tolerances.

10. The Contractor shall perform and submit a wave equation analysis for review and acceptance by the Resident. The maximum allowable driving stress is 0.90 times Fy. The submittal analyses shall include the proposed stopping criteria based on the wave equation analysis and the proposed driving system.

11. The Contractor shall perform two (2) dynamic load test(s) per pier, with 24-hour (minimum) restrike tests to confirm the nominal resistance of the piles. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.65 per LRFD Specifications. The dynamic test shall be performed on the first two (2) production piles driven at each pier preferably located at either ends of the pier in the transverse direction.

12. Proposed H-piles at each substructure should be driven in a sequence beginning from south to north and initially driven with low energy (short stroke) as necessary to mitigate risk to the existing Tuttle Road Bridge.

PIER NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches in the stem and 3 inches in the footing unless otherwise noted.

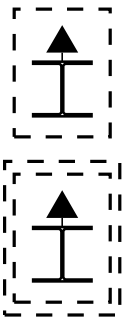
2. Rotate horizontal leg of bar IP850, 2P850, 3P850 up to 45 degrees to avoid piles.

3 The concrete pedestal elevations shown are approximate. The actual elevations shall be adjusted to accommodate the bearings supplied by the Contractor. The elevations provided on the Plans assume overall bearing heights as described on the "Bearing Details" sheet.

PIER DESIGN CRITERIA

- Critical AASHTO Load Combination - Strength I Limit State.
- Wind: 120 mph or 0.059 ksf.

LEGEND



Tension Pile, Pier 3 Only - For Details, See Drawing Abutment No. 1 Reinforcing

Tension Pile, Pier 1, 2, and 3 - For Details, See Drawing Abutment No. 1 Reinforcing

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2516100		WIN 25161.00		BRIDGE NO. 6601		BRIDGE PLANS	
	TUTTLE ROAD BRIDGE		INTERSTATE 295, RTE US 1 & MCRR		CUMBERLAND COUNTY		PIER FOOTING & NOTES	
	SHEET NUMBER		58		OF 88			