



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

Janet T. Mills  
GOVERNOR

Bruce A. Van Note  
COMMISSIONER

October 31, 2023  
Subject: Bridge Construction  
State WIN: 027098.10  
Location: **Levant**  
**Amendment No. 2**

Dear Sir/Ms.:

Make the following changes to the bid documents:

In the bid book:

**Remove** pages thirty two through forty two titled SECTION 504 STRUCTURAL STEEL (Fabrication and Delivery) dated September 8, 2023, totaling 11 pages and **Replace** with the attached SECTION 504 STRUCTURAL STEEL (Fabrication and Delivery) dated October 27, 2023 totaling 11 pages

In the Plan sheet:

Remove sheet three FRAMING PLAN ESTIMATED QUANTITIES AND NOTES dated 09/27/2023 and Replace with the attached FRAMING PLAN ESTIMATED QUANTITIES AND NOTES dated 10/26/2023.

The following questions have been received:

**Question:** Is galvanizing, in lieu of metalizing, an acceptable coating option for the girders as it is for the secondary members (diaphragms & cross frames)?

**Response:** Yes, please review the revised plan sheet and revised Special Provision 504 Structural Steel-Fabrication and Delivery.

Consider these changes and information prior to submitting your bid on **November 1, 2023**.

Sincerely,

*Kevin Hanlon* for

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

SECTION 504 STRUCTURAL STEEL  
(Fabrication and Delivery)

GENERAL REQUIREMENTS

504.01 Description This work shall consist of detailing, fabricating of the pre buy Structural Steel Materials. Materials, workmanship, inspection and documentation not specifically addressed by this Specification shall done be in accordance with the applicable sections of the AASHTO/AWS D1.5 Bridge Welding Code including Commentary (the D1.5 Code), the AASHTO Guide Specification For Highway Bridge Fabrication with HPS 70W (HPS 485W) STEEL (the Fab Guide) and other Standards and Specifications referenced herein.

ALL REQUIREMENTS IN THIS SPECIFICATION ARE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.

504.02 Materials Materials shall meet the requirements of the following sections of Division 700-Materials:

Structural Steel	713.01
Heavy-Hex Structural Bolts, Washers, Nuts and DTI's	713.02

Note: The Department maintains a list of pre-approved welding consumables that the Contractor may use without furnishing Certificates of Conformance from the electrode/consumable manufacturer. This list is available on the Department's Qualified Products List of Electrodes for Field Welding.

504.03 Drawings Prepare shop details and other necessary drawings in accordance with Section 105.7-Working Drawings. Show nondestructive examination symbols on the Shop Drawings. Include a fastener assembly table showing the number, size, length location and number of all bolts. Procedure Qualification Records and Weld Procedure Specifications are part of the shop drawing submittal. Weld Procedure Specifications that have been previously reviewed by the Department and are in conformance with the D1.5 Code need not be re-submitted. The drawings will be reviewed in accordance with the applicable requirements of Section 105.7 of the Standard Specifications, the AASHTO/NSBA Shop Detail Drawing Review/Approval Guidelines, G1.1 and this Specification. Review times will be in accordance with Section 105.7.2 of the Standard Specifications.

504.04 Facility Requirements Fabricate steel in a facility holding a current AISC or Department shop certification as follows:

Type of Product	Type of Certification Required <sup>1,2,3,4</sup>
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1. Welded Plate Girders 2. Spliced Rolled Beams 3. Complex Bridges and Movable Bridges 4. All Structures that include the use of High Performance Grade Steel (HPS)	AISC CBR
1. Unspliced Rolled Beam Bridges 2. Steel for Bridge Repair and Rehabilitation	AISC CBR or SBR
1. Ancillary Products (See Section 713.01) 2. Structural Supports (See Section 504.58)	Any AISC Fabrication Certification or MaineDOT

<sup>1</sup> Application of protective coatings requires a “P” endorsement or SSPC QP3 Certification.

<sup>2</sup> Fracture Critical fabrication requires an “F” endorsement.

<sup>3</sup> All materials fabricated in a non-certified shop will be rejected.

<sup>4</sup> Work shall not be subcontracted to a non-certified facility, except that machining operations may be performed in non-certified facilities, as approved by the Fabrication Engineer.

504.05 Notice of Beginning Work Give the Fabrication Engineer a minimum of two weeks notice for in-state work and three weeks notice for out-of-state work prior to beginning production. Provide the Fabrication Engineer with a copy of the production schedule. If the production schedule changes, notify the Fabrication Engineer no less than 3 working days prior to the initial start-up date. If work is suspended on a project, the Fabrication Engineer will require 72 hours notice prior to the resumption of work. Any work done without the Quality Assurance Inspector (QAI) present will be subject to rejection.

504.06 Inspection Quality Control (QC) is the responsibility of the Contractor. Inspect all aspects of the work and supervise all nondestructive examination (NDE). Record measurements and test results in a clear and legible manner. Reject materials and workmanship that do not meet contract requirements. The Contractor may perform NDE in addition to the minimum required. Provide a copy of all measurements and testing to the QAI.

Quality Assurance (QA) is the prerogative of the Department. The QAI will ensure that the QC Department is performing properly, verify documentation, periodically inspect workmanship and witness NDE. The QAI will schedule testing deemed necessary by the Fabrication Engineer in addition to the minimum testing requirements in a manner that minimizes interference with the production schedule.

504.07 Inspector's Authority The QAI has the authority to reject material or workmanship that does not meet the contract requirements. The acceptance of material or workmanship by the QAI will not prevent subsequent rejection if the work or material is found unacceptable.

504.08 Rejections Correct or replace rejected material and/or workmanship. Generate a non-conformance report (NCR). Provide a copy to the QAI and forward a copy to the Fabrication Engineer for review and comments. Structural Defects: Repair structural defects only with the approval of the Fabrication Engineer. Submit a nonconformance report (NCR)

to the Fabrication Engineer with a proposed repair procedure. Do not perform structural repairs without an NCR that has been reviewed by the Fabrication Engineer. Give the QAI adequate notice prior to beginning structural repairs.

In the event that an item fabricated under this Specification does not meet the contract requirements but is deemed suitable for use by the Department, said item may be accepted in accordance with Section 100 of the Standard Specifications (see 106.8), Non-Conforming Work.

504.09 Facilities for Fabrication Inspection Provide a private office at the fabrication plant for QA personnel. The office shall be in close proximity to the work. The office shall be climate controlled to maintain the temperature between 68° F and 75° F and have the exit(s) closed by a door(s) equipped with a lock and two keys which shall be furnished to the QAI (s).

The QAIs' office shall meet the following minimum requirements:

<u>Description</u>	<u>Quantity</u>
Office area (minimum ft <sup>2</sup> )	100
Drafting Table Surface (ft <sup>2</sup> )	35
Drafting stools-each	1
Office Desk	1
Ergonomic Swivel Chairs	1 per inspector
Folding Chairs	2
High-speed internet connection (ports) or wireless	1 per inspector
Fluorescent Lighting of 100 ft-candles minimum for all work areas	2
110 Volt 60 Cycle Electric Wall Outlets	3
Wall Closet	1
Waste Basket with trash bags	1
Water Cooler	1
Broom	1
Dustpan	1
Cleaning Materials-floor, surfaces, windows -	duration of the project

The Contractor is responsible for disposing of trash and supplying commercially bottled water for the water cooler.

The QAI will have the option to reject any furniture or supplies provided to the Inspector's Office based on general condition.

Provide parking spaces for QA personnel in close proximity to the QAIs' Office. Maintain the pathway between the parking area and the QAIs' office so that it is free of obstacles, debris, snow and ice.

The facilities and all furnishings shall remain the property of the Contractor upon completion of the work. Payment for the facilities, heating, lighting, telephone installation, internet connection, basic monthly telephone and internet charges and all furnishings shall be incidental to the Contract.

Failure to comply with the above requirements will be considered denial of access to work for the purpose of inspection. The Department will reject all work done when access for inspection is denied.

504.10 Mill Test Reports Provide legible Certified Mill Test Reports (CMTRs) for all steel and iron material. Provide the CMTRs prior to fabrication. If the Contractor begins fabrication, including cutting material, before the QAI has verified the CMTRs and mill markings, the material will be rejected.

Furnish Certified Mill Test Reports for fasteners. The supplier shall perform a Rotational Capacity Test (RCT) for both plain and galvanized bolts in accordance with AASHTO M 164M/M 164 (ASTM A 325) for each combination of bolts, nuts and washers supplied. Each combination shall be assigned a unique Rotational Capacity (R-C) lot number.

504.11 Material Identification and Control Mark steel plates and shapes as specified in AASHTO M 160 (ASTM A 6). Only use material from stock if it can be positively identified, properly documented and the direction of rolling can be determined.

Store material and fabricated items off the ground. Protect the material and fabricated items from dirt, grease, other foreign materials and significant corrosion.

Store fasteners in a protected environment. Provide four fastener assemblies for each lot, length and combination to the Fabrication Engineer for testing. A fastener assembly consists of a bolt, washer, nut and direct tension indicator (when required). Provide the fastener samples to the Fabrication Engineer immediately upon delivery to the fabrication shop or job site.

Provide Certificates of Conformance for welding consumables that are not on the Department's pre-approved electrode list.

504.12 Protective Coatings Apply the coating in accordance with Section 506 of the Standard Specifications or Special Provision 506 as applicable.

Dimensional tolerances shall be checked and be in conformance with the AWS D1.5 code after galvanizing and prior to leaving the galvanizer for delivery.

Galvanize fasteners in accordance with ASTM F 2329-05 or AASHTO M 198 Class 50 (ASTM B 695 Class 50). Galvanized nuts shall be lubricated with a water-soluble lubricant containing a dye that contrasts with the color of the galvanizing.

504.13 Steel Cleaning Clean all surfaces to a minimum SSPC-SP 6, Commercial Blast Cleaning. Steel may be abrasive-blast cleaned prior to fabrication.

### HIGHWAY BRIDGE FABRICATION

504.14 Materials for Bridges The grade of steel is designated on the Plans. Do not substitute material without the approval of the Fabrication Engineer.

504.15 Handling Material Handle material in a manner that prevents nicks, gouges or other damage from chains, wire ropes or other handling devices during all phases of fabrication.

504.16 Plates for Fabricated Members Cut plates subject to calculated stress, including splice plates, so that the direction of rolling is parallel to the primary stresses. The direction of primary stresses for web and field splice material is parallel to the flanges unless otherwise shown. Transfer heat numbers to each primary member used in fabrication. Primary members include flanges, webs, splice plates, bearing stiffeners, connection plates and diaphragm material on curved bridges.

504.17 Correcting Materials Correct material by a method that does not damage the material. If heating of the steel is required, submit a written procedure to the Fabrication Engineer for review. Do not use external force in conjunction with heating unless authorized in the procedure. Following corrective work, inspect the steel with nondestructive testing methods acceptable to the Fabrication Engineer. The presence of cracks or fractures will be cause for rejection of the material.

504.18 Base Metal Repairs Make base metal repairs in accordance with the D1.5 Code. Submit an NCR to the Fabrication Engineer for review if the repair area exceeds the allowable limits for base metal repairs as specified in the D1.5 Code. Notify the QAI prior to beginning the repairs.

504.19 Thermal Cutting Thermal cut steel using automatic equipment or a mechanical guide. Adjust the rate of travel of the cutting equipment to prevent hardening the steel. Do not cut material freehand.

504.20 Edge Hardness Edge Hardness testing is not required.

504.21 Edge Planing Plane sheared edges of plates greater than 5/8 inch thick to a depth of 3/16 inch.

504.22 Bent Plates Cold-bend rolled steel plates in accordance with the AASHTO/NSBA S 2.1 Steel Bridge Fabrication Guide Specifications, Table 4.2 and the following:

- (a) The bend line will be at right angles to the direction of rolling.
- (b) The radius of bends shall be such that no cracking of the plate occurs. Measure the radii at the concave surface as follows:

MATERIAL		Radius in terms of plate thickness (inches)*		
ASTM Specification	Grade	T<1	1<t<2	2<t
ASTM A709	Gr. 36	1.5t	1.5t	2.0t
ASTM A709	Gr. 50, Gr.50W	1.5t	2.0t	2.5t
ASTM A709	Gr. 70W	1.5t	2.5t	3.0t

\* A radius of 5t is required if the plate is subject to calculated stresses

- (c) If a smaller radius is required, heat the bend line to a temperature between 1000° F and 1150° F before bending. Heat plates greater than 2 inches in thickness to a temperature of between 900° F and 1150° F before bending. Do not heat HPS70W without written approval of the Fabrication Engineer.

504.23 Die Stamping Die stamp primary members (including splice material, diaphragms and cross frames on curved bridges) in no-stress locations. No-stress locations include the ends of girders within the cross-sectional area, web splice plates in the middle third of the plate height and outside the outermost row of bolt holes and flange splice plate ends between the outermost row of holes and the edge. Use blunt-nose, low-stress dies.

504.24 Camber and Curvature When camber or curvature is required for stringers or girders, it will be specified on the Plans. Measure and record specified camber or curvature using the same ordinates shown on the reviewed shop drawings after all welding is complete. When no camber or curvature is specified, variations in straightness of rolled shapes, with and without cover plates, shall not exceed the tolerances of AASHTO M 160 (ASTM A 6).

504.25 Heat Cambering and Curving Minor correction of camber or sweep of welded plate girders is considered part of ordinary shop fabrication practice and does not require an approved procedure, however, use the following guidelines:

1. Notify the QAI prior to beginning heat correction
2. Do not use hammers
3. Have suitable temperature indicating crayons at the work station
4. Do not exceed 1150° F
5. Cool in still air to 600 ° F. Below 600 ° F compressed air may be used

All cambering and curving operations that are not corrective shall meet the following:

Use a camber/curving procedure reviewed by the Fabrication Engineer. The procedure shall include:

1. The heating pattern and sequencing of heating
2. Method of support of the member
3. Proposed minimum and maximum base metal temperature
4. Method of heating (fuel, nozzle size, etc.)

Clean structural steel to SSPC SP-6 prior to heating. Heat both the flanges and the web using two torches (one torch on either side of the plate). Do not use restraint or jacking devices unless approved by the Fabrication Engineer. Submit calculations showing that the nominal bending stress in the member does not exceed  $0.60 F_y$  if restraint or jacking is proposed.

The target temperature for all ASTM A709 steel is 1100° F. Steel heated in excess of 1200° F will be subject to rejection. Measure the temperature of the steel with temperature indicating crayons applied to the heated area 10-15 seconds after the torch is removed or with a pyrometer that has been calibrated within the past year. Provide temperature-indicating crayons in increments of 50 ° F between 1050° F and 1250° F to each torch operator. Stop the cambering/curving operation if a torch operator fails to demonstrate the proper skill and technique necessary to prevent potential damage to the steel.

Camber stringers and girders using a "V" pattern with a 10-15 degree included angle that extends the full web depth, less 2 inches at the apex. Heat the web first beginning at the apex of the triangle and proceeding toward the base. Begin heating the flange immediately after completion of the web.

The Contractor may curve stringers and girders using a combination of line heats applied to the edge of both flanges simultaneously with automatic track torches and "V" heats. "V" heats shall have an included angle of 15-30 degrees and a minimum height of 65% of the flange width. Apply heat to adjacent areas on both flanges simultaneously.

Perform all cambering and curving in the presence of the QAI. Heating a structural member without the QAI present shall be cause for rejection of the member. Measure and record camber and sweep after the steel has reached ambient temperature and all stiffeners and connection plates have been welded.

504.26 Welding Qualify welders and Weld Procedure Specifications in accordance with the most recent edition of the D1.5 Code. Provide a list of qualified welders including process and position to the QAI prior to beginning fabrication. Submit the Weld Procedure Specifications to the Fabrication Engineer for review prior to beginning work. Weld

Procedure Specifications previously reviewed and still valid in accordance with the D1.5 Code are acceptable without re-submission.

504.27 Welding Requirements Calibrate welding equipment at the intervals indicated in the D1.5 Code. Meters shall be accurate within 2% throughout the range of the WPS. Work done with equipment that is not properly calibrated will be rejected. Provide copies of the calibration records to the QAI. The QAI can require the Contractor to demonstrate the accuracy of the meters at any time.

Display a copy of the applicable Weld Procedure Specification at each welding station. Weld within the parameters of the Weld Procedure Specification. Failure to display a Weld Procedure Specification at the welding station will make all welding performed at that station subject to rejection.

Perform all preheat, welding and postheat in accordance with the D1.5 Code and this Specification.

Provide the appropriate temperature indicating crayons at each workstation to verify preheat. Calibrated digital thermometers may be used with the approval of the Fabrication Engineer instead of temperature indicating crayons.

Weld flange plate and web plate butt joints, web to flange welds, stiffener and connection plate to web welds, and cover plate to flange welds using an automatic weld process.

Make repairs with the same process used for the original welds, except that repairs less than 12 inches in length may be made with a different process using an approved Weld Procedure Specification. Do not blend repair welds by grinding unless the original weld requires grinding.

504.28 Welded Fabrication Each side of complete joint penetration welds, once begun, shall be welded to completion without interruption or a delay between passes except as necessary to maintain interpass temperature requirements. After backgouging, the groove and 3 inches on either side of the groove and through the thickness of the steel shall be preheated in accordance with the D1.5 Code immediately before the resumption of welding.

Single-pass fillet welds may be qualified by a Fillet Weld Soundness Test performed in accordance with the D1.5 Code as modified herein. Perform the "T" test by welding the smallest fillet weld to be used in production on one side and the largest fillet weld used in production on the other side of the "T". Macroetch the test specimens in accordance with the requirements of Clause 5, Method of Testing Specimens, of the D1.5 Code. Acceptance and re-testing, if required, shall be in accordance with Clause 5 Test Results Required and Retests, of the D1.5 Code.

The minimum heat input for single-pass fillet welds during testing and production shall be 35 kilojoules/in.

504.29 Welding ASTM A 709 HPS 70W Steel In addition to 504.28, use the most recent edition of the D1.5 Code and the Fab Guide as amended herein when welding ASTM A 709 Gr. HPS 70W. Use only consumables that produce weld metal with diffusible hydrogen of  $H_8$  or less. Handle and store consumables in accordance with the requirements of Clause 12 of the D1.5 Code. Preheat in accordance with Clause 4 of the D1.5 Code through the thickness of the steel and three inches in all directions from the weldment. Failure to properly preheat the steel will result in rejection of the weld metal. Remove and re-weld rejected weldments.

HPS 70W may be joined to Grade 50W steel using a Weld Procedure Specification qualified for Grade 50W steel if the diffusible hydrogen content of the deposited weld metal is  $H_8$  or less. Use minimum preheat temperature for Gr. HPS 70W in accordance with the D1.5 Code.

504.30 Nondestructive Testing Perform nondestructive testing in accordance with the D1.5 Code and these Specifications. The QAI will witness nondestructive testing. Give the QAI adequate notice to facilitate the QAI's presence. Failure to notify the QAI will result in re-testing with the QAI present. Document nondestructive testing on the appropriate forms from Annex III of the D1.5 Code, or an equivalent form.

504.31 Shop Assembly Assemble stringers and girders in accordance with the shop assembly drawings. Measure and record the bearing-to-bearing dimensions, the bearing-to-field-splice dimensions and the offset from the reference line dimensions as shown on the shop assembly drawings. Give the QAI the opportunity to verify the measurements prior to disassembly.

504.32 Tolerances Dimensional tolerances for welded plate girders are described in the D1.5 Code. Dimensional tolerances for rolled shapes are described in AASHTO M 160 (ASTM A6). The tolerance for the length of any primary bridge member is  $\pm 1/4$  inch. The bearing-to-bearing tolerance is  $\pm 1/8$  inch. The bearing elevation tolerance is  $\pm 1/8$  inch. The offset tolerance for bolted field splices is  $\pm 3/4$  inch.

504.33 Match marking Match mark drill assembled or ream assembled field splice material prior to disassembly. Preserve the match marking through field erection.

504.34 Holes for High Strength Bolts Oversize holes are not allowed unless noted on the Plans. Drill bolt holes full-size. Splice plates may be used as one-time templates to drill webs and flanges. The plates shall remain with the splice. Replace damaged plates used as a template. The Contractor may temporarily tack weld web splice plates to the web in the middle 1/3 of the web only. Completely remove tack welds by grinding and MT the tack areas. Do not tack weld flange splice plates to flanges.

Holes for cross frames, diaphragms and associated connection plates may be punched when the thickness of the plate is  $\leq 3/8$  inch. The diameter of the die shall not exceed the diameter of the punch by more than  $1/16$  inch. Holes shall be clean cut, without torn or ragged edges.

Make holes cylindrical and perpendicular to the member. Remove burrs from parts after drilling or reaming. Remove all visible drilling oil, lubricants and coolants, including water soluble lubricants and coolants from faying surfaces in accordance with SSPC-SP 1-Solvent Cleaning.

The Contractor may thermal cut holes in bearing base plates using an automatic process. Do not exceed a surface roughness of ANSI 1000 micro-inches.

504.35 Accuracy of Holes Following the completion of the drilling of holes in a contiguous group, with all plies of a connection in their proper position for assembly, all bolt holes shall accept a pin  $1/32$  inch smaller in diameter than the nominal bolt hole diameter. Provide a pin of the applicable diameter for inspection purposes.

No finished bolt hole shall be located more than  $1/8$  inch from its theoretical location. The repair of mislocated holes shall be subject to the approval of the Fabrication Engineer.

504.36 Shop Bolts Install shop bolts in accordance with this Specification except that adequately lubricated fastener assemblies that have been Rotational Capacity (Ro Cap) tested by the supplier do not need to be Ro Cap tested prior to installation. As an alternative, Tension Control (TC) bolts meeting the requirements of ASTM F1852 may be used with the approval of the Fabrication Engineer. Submit a tensioning procedure for TC bolts to the Resident for review.

504.37 Bearings Finish bearings, base plates and other contact surfaces to the requirements of Section 523.

504.38 Marking and Delivery Mark each piece as shown on the Shop Drawings. Place erection marks, match marks and piece marks where they will not be exposed on the finished structure.

Notify the Fabrication Engineer after the girders and stringers have been loaded on trailers and prior to shipment. Furnish the Resident copies of shipping documents.

Package bolts of each length and diameter, along with the required number of nuts and washers in waterproof containers. Attach a list of the fastener assemblies, including the identifying shipping lot number and Rotational-Capacity lot number in a waterproof envelope to the outside of the container.

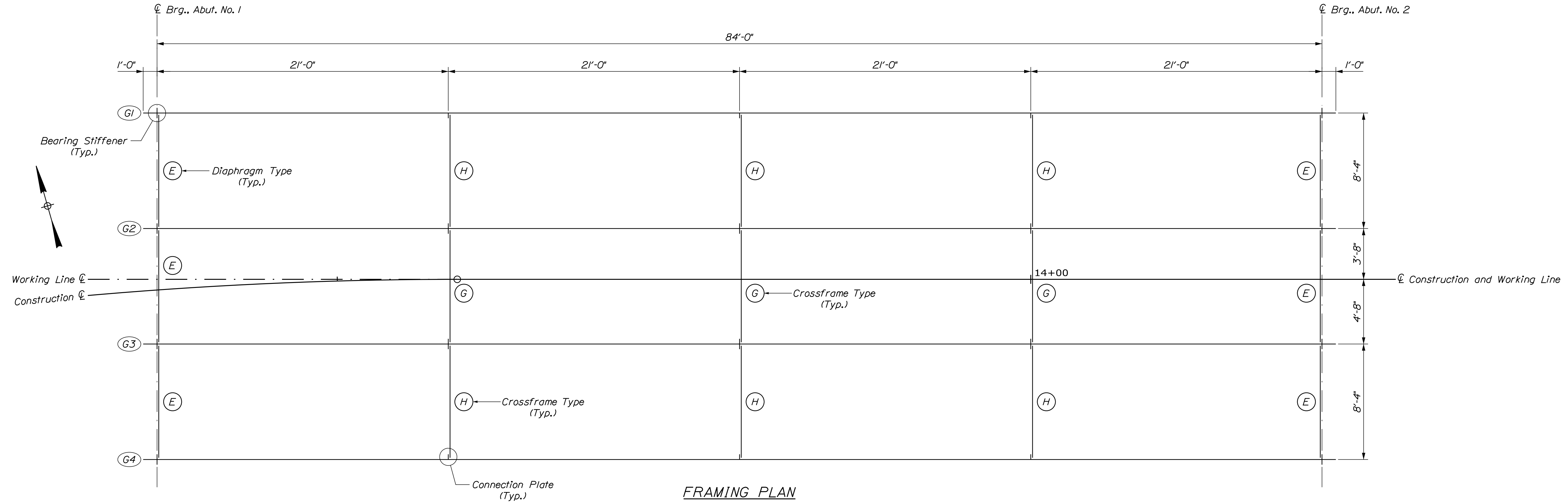
504.39 Handling and Storing Materials Store beams and girders in an upright position on platforms, skids or other supports above the ground. Support material in a manner that will prevent damage due to excessive deflection and torsion. Do not use chains and wire rope slings in direct contact with fabricated members when being lifted or transported. Store bolts under sheltered conditions at all times.

504.40 Method of Measurement Unless otherwise specified, structural steel will be measured as one lump sum complete, accepted and delivered, consisting of all metal and related materials in the fabricated structural steel.

504.41 Basis of Payment Structural steel will be paid for at the contract lump sum price for the respective contract items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
504.702 Structural steel fabricated and delivered, welded	Lump Sum



FRAMING PLAN

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
504.702	STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED (73,000 LBS)	1	LS
506.9104	THERMAL SPRAY COATING - SHOP APPLIED	1	LS

**GENERAL CONSTRUCTION NOTES**

1. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

- a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.
- b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.
- c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.

**STRUCTURAL STEEL NOTES**

1. Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.
2. No transverse butt weld splices will be allowed in the flange plates or web plates within 10 feet or 10 percent of the span length (whichever is greater) from the points of maximum negative moment or maximum positive moment. Butt weld splices in flanges shall be not less than one foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within one foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.
3. Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be not less than 20 feet in length unless otherwise shown on the plans.
4. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
5. Crossframe or diaphragm connection plates may be either plumb or normal to the top flange.
6. All connection plate and stiffener welds shall be  $\frac{5}{16}$ " fillet welds.
7. Girder webs shall be vertical under full dead load.
8. Drip Bars shall be used adjacent to Abutment 1 and 2, as shown in the Standard Details.
9. All structural steel including the girders, stiffeners, connection plates, and cross frames shall be coated with Thermal Spray Coating in accordance with Standard Specifications Section 506, Shop Applied Protective Coating.
10. At the Contractor's option, all Structural Steel may be Hot-Dipped Galvanized in accordance with Standard Specifications Section 506, Shop Applied Protective Coating, as approved by the Department. Double Hot-Dipped galvanizing shall be approved by the Department. Payment will be considered incidental to Item 506.9104, Thermal Spray Coating (Shop Applied), no separate payments will be made.
11. All bolts, nuts, and washers shall be hot-dip galvanized in accordance with ASTM A153.
12. Repairs to the Thermal Spray Coating that modify the surface roughness in the area of the faying surfaces shall not be performed without the approval of the Fabrication Engineer.
13. Bolted diaphragms or cross frame connections shall be made using  $\frac{7}{8}$ " diameter, ASTM F3125, Grade A325, Type 1 H.S. bolts. Hole size shall be  $\frac{15}{16}$ " diameter. The minimum edge distance shall be  $\frac{1}{2}$ " unless otherwise shown. Oversized or short-slotted holes are not permitted. Bolt threads shall be excluded from the shear plane of cross frame or diaphragm connections.
14. Structural steel was designed with a vertical construction load of 50 lb/sf and lateral wind velocity of 80 mph.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2709810	WIN 27098.10	BRIDGE NO. 6133 BRIDGE PLANS
PERKINS BRIDGE BLACK STREAM	PENOBSCOT COUNTY	FRAMING PLAN, ESTIMATED QUANTITIES AND NOTES	
LEVANT	SHEET NUMBER <b>3</b> OF 5		

PROJ. MANAGER	CHECKED	DESIGN	DESIGN	REVISIONS	REVISIONS	REVISIONS	REVISIONS	FIELD
J. STEYSON	B. BARTLETT	D. SHAW	AUG 2023	NOTE TO REVISED	OCT 2023	P.E. NUMBER	DATE	