



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

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

January 13, 2023
Subject: Main St. Bridge
Replacement
State WIN: 022260.01
Location: **Solon**
Amendment No. 4

Dear Sir/Ms.:

Make the following changes in the Bid Documents:

In the bid book:

On page 14, "NOTICE TO CONTRACTORS", CHANGE the bid opening date in the first paragraph which reads "January 18, 2023" per Amendment No. 1 to now read "**January 25, 2023**". Make this change in pen and ink.

Remove pages 108 to 113, Special Provision Section 509 Composite Tub Girder With Precast Concrete Deck, totaling 6 pages and **Replace** with the attached Special Provision Section 509 Composite Tub Girder With Precast Concrete Deck dated 1/13/23 and totaling 6 pages

Insert the attached Special Provision Section 502 Structural Concrete (Lightweight Concrete Deck) dated 1/13/2023 and totaling 3 pages.

In the Plan set:

Remove Sheet 64 of 66, Reinforcing Steel Schedule dated Nov 2022 and **Replace** with the attached Sheet 64 of 66, Reinforcing Steel Schedule with Revision 1 dated 1/11/2023.

Remove Sheet 8C of 10C, Superstructure Section & Notes dated 11/09/22 and **Replace** with the attached Sheet 8C of 10C, Superstructure Section & Notes with Revision 1 dated 1/12/2023.

The following questions have been received:

Question: Will the Department allow the use of lightweight concrete for precast elements, provided the mix design meets the specifications?

Response: Yes, Lightweight Concrete will be allowed for the precast elements. If Lightweight Concrete is used in the precast elements, it must also be used for the cast-in-place closure pours in the deck.

Consider these changes and information prior to submitting your bid on **January 25, 2023**.

Sincerely,



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

SPECIAL PROVISION
SECTION 509
COMPOSITE TUB GIRDER WITH PRECAST CONCRETE DECK

509.01 Description This work shall consist of furnishing and erecting Composite Tub Girders (CT Girders) with a precast concrete deck (PCD) to the dimensions and configurations shown on the Plans and according to the requirements of the Standard Specifications and these Special Provisions. CT Girders with a PCD for incorporation into the project shall include the FRP CT girders, interface shear reinforcement, and precast concrete deck as detailed on the Plans.

509.02 Definitions Terms and definitions found within this document shall be defined as outlined in the Standard Specifications, with the following added terms:

Composite Tub Girder (CT Girder): A structural member consisting of a Fiber Reinforced Polymer (FRP) laminate composed of glass fiber, carbon fiber, foam core, and resin.

Double T: A section comprised of two CT Girders and a partial or full-depth precast concrete deck.

Interface Shear Reinforcement: A member with one end embedded in the concrete deck and the opposing end connected through the girder top flange. Interface Shear Reinforcement is utilized to ensure a positive connection between the intentionally roughened girder top flange and bridge deck surface which facilitates composite bending behavior between the CT Girder and the concrete deck.

Closure Plate: A member permanently attached to the top flange of the CT Girder to act as stay-in-place formwork for the PCD.

Preforms: Individual element components of materials to be incorporated into the CT Girder, e.g. glass fiber fabric, carbon fiber fabric, foam core.

Tooling: The molds or forms that are used in the fabrication of CT Girders.

Manufacturer: The manufacturer and supplier of the CT Girders is Advanced Infrastructure Technologies, LLC (AIT Composites) of 55 Baker Boulevard, Brewer, ME 04412.

509.03 Materials Materials shall conform to the following. Any substitutions to the materials specified below must be submitted to the Department for approval.

- 1) Fiber Reinforcement: The CT Girder fiber reinforcement shall be comprised of a mix of carbon fiber fabric, glass fiber fabric, foam core, gun roving, and a resin matrix.
 - a. Carbon Fiber Fabric: Carbon fibers shall be standard modulus fibers. Tensile strength, tensile modulus, and strain of the fibers shall be documented in accordance with the manufacturer's test specifications. In lieu of material testing, a Certificate of Conformance may be submitted to the Department for approval.
 - i. Carbon Fiber Tow specifications:
 1. Mechanical Properties

- a. Minimum Tow Tensile Strength 525 Ksi
- b. Minimum Tow Tensile Modulus 34 Msi

b. Glass Fiber Fabric: Glass fibers shall be E-glass manufactured in accordance with ASTM D578 and tested in accordance with ASTM D2343. In lieu of material testing, a Certificate of Conformance may be submitted to the Department for approval.

i. Unidirectional Glass Fiber Reinforcement specifications:

1. Physical Properties

- a. Minimum Aerial Weight 41.5 oz/yd² 1.41 kg/m²

ii. Biaxial Glass Fiber Reinforcement specifications:

1. Physical Properties

- a. Minimum Aerial Weight 24.2 oz/yd² 0.82 kg/m²

c. Foam Core: The foam core shall be comprised of medium density closed cell foam with an average density of 4.0-6.6 lbs/cubic foot as determined by ASTM D1622 and a compressive strength greater than 100-300 psi as measured by ISO 844 or ASTM D1621.

d. Gun Roving: The gun roving shall be E-Glass fiber roving with a nominal filament diameter of 13µm per ISO 1888.

e. Resin: The matrix used in the manufacturing of CT Girders shall be an epoxy-vinyl ester resin listed on the MaineDOT Fiber Reinforced Polymer Systems Qualified Products List with a dynamic viscosity between 100 and 400 centipoise at 77° Fahrenheit appropriate for resin infusion using the Vacuum Infusion Process (VIP).

- 2) Interface Shear Reinforcement: The interface shear reinforcement shall be comprised of ASTM F3125 Grade A325 Type 1 bolts or threaded rods hot dip galvanized in accordance with ASTM A153. Heavy hex nuts shall conform to ASTM A563 Grade DH. Washers shall be ASTM F436-1 hot dip galvanized in accordance with ASTM A153.
- 3) Closure Plate: The closure plate shall be comprised of FRP stock flat sheets, with dimensions in conformance to the Plans, attached to a portion of the top flange of the girder using a combination of cleats, self-tapping screws, and/or structural adhesive.
- 4) Structural Adhesives: Structural adhesives shall be used where indicated on the Working Drawings. Structural adhesives shall be a medium viscosity, methacrylate, rubber, or urethane suitable for bonding FRP.
- 5) Precast Concrete Deck (PCD): The PCD or any other precast concrete element included in this portion of the work shall be manufactured in accordance with the standards and materials found in Standard Specification 534 - Structural Precast Concrete except that the concrete may be Class A Lightweight Concrete meeting the requirements of Special Provision Section 502 Structural Concrete (Lightweight Concrete Deck).

509.04 Working Drawings Prior to beginning fabrication, the Contractor shall submit complete Working Drawings to the Department for review and comment in accordance with Section 105.7 Working Drawings of the Standard Specifications. Each drawing shall provide adequate space for review and comments at the lower right corner. Each drawing shall be completely titled according to the contract plan, including the structure number, state contract number, route, and town and shall pertain to only one structure. If the Working Drawings have significant discrepancies, revised sets must be submitted until details comply with the contract requirements.

As a minimum, Working Drawings shall include:

- 1) Layout drawings identifying piece marks and orientation in the structure (including a north arrow)
- 2) Individual piece drawings indicating the length, depth, width, and thickness of piece, along with the spacing of interface shear reinforcement, location of piece marks, weight, location of all holes and/or inserts, location of lifting points, and any other information necessary to fabricate each Double T.

509.05 Facilities for Inspection Provide a private office at the fabrication plant for the Department's inspection personnel, or Quality Assurance Inspectors (QAI's) in accordance with Section 535.05 of the Standard Specifications.

509.06 Notice of Beginning Work Give the Department a minimum of two weeks' notice prior to beginning production. Advise the Fabrication Engineer of the production schedule and any changes to it. 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.

509.07 Quality Control Quality Control (QC) is the responsibility of the Contractor. A copy of the Quality System Manual will be provided to the Fabrication Engineer if requested. Calibration certifications will be provided to the Quality Assurance Inspector (QAI) prior to beginning fabrication. Quality Control Inspector (QCI) should have a valid ACMA Certified Composite Technician Certification in the Vacuum Infusion Process. Quality Control for precast shall meet the requirements of Standard Specification 712.061 except the QC inspector shall hold a PCI level 1 or equivalent certification acceptable to the Fabrication Engineer.

509.08 Quality Assurance Quality Assurance (QA) is the prerogative of the Department. The QAI will witness or review documentation, workmanship, and testing to assure the Work is being performed in accordance with the Contract Documents. The QAI has the authority to reject materials and products that do not meet the Contract requirements. The acceptance of material or workmanship by the QAI will not preclude subsequent rejection, if found unacceptable by the Department, at a later date.

509.09 Fabrication The Quality Assurance Inspector’s presence is required for the following activities: Verification of the fiber layups schedule, drop test, infusion of part, and Barcol readings.

Lap splices in the fabric will be permitted in the longitudinal direction of the girder. Longitudinal lap splices shall be no less than 6 inches in length. Lap splices in the fabric will be permitted in transverse direction. Transverse lap splices shall be no less than 2 inches in length. Butt splices in the fabric will be permitted in the longitudinal direction but limited to the top flange only.

Foam core shall be machine cut to full depth sections and may be butt jointed together longitudinally. Gaps in the joints between adjacent pieces of foam shall not exceed ¼ inch prior to pulling vacuum on the tooling.

Vinyl ester resins and other chemicals necessary for catalyzing the infusion matrix shall be stored in a temperature-controlled environment, and in accordance with the manufacturer’s recommendations for each component.

The girder shall not be removed from the tooling unless a Barcol hardness reading of 35 or more can be obtained. Measurements should be taken from the quarter points and a mixture of top flange, web, and bottom flange locations.

Precast concrete shall be done in accordance with applicable sections of Standard Specification 534: Precast Structural Concrete.

509.10 Tolerances The dimensional tolerances for the CT Girders shall be as follows:

Maximum Allowable Dimensional Tolerances for CT Girders

CT Girder Component or Dimension	Tolerance
Depth, overall	± 1/4”
Width, overall	± 1/4”
Length (string line measurement along bottom of beam)	± 1/4” per 25’, max ± 3/4”
Variation from specified elevation and squareness or skew	± 1/8” per 12”, max ±3/4”
Camber variation from design camber	± 1/8” per 10’, max ±3/4”
Tipping and flushness of beam seat bearing area	± 1/8” per 24”
Interface shear reinforcement location, longitudinal	± 1”
Interface shear reinforcement, transverse	± 1/2”

509.11 Post Processing Once the laminate has been allowed to cure, the CT Girder may be removed from the tooling and all post processing work may begin. This will include, de-bagging, removal of peel ply, sanding, grinding, cutting, drilling, machining, attachment of interface shear reinforcement and closure plate. Fascia surfaces shall be smooth in texture and uniform in color, non-fascia surfaces shall be smooth in texture.

509.12 Handling, Storage, and Transportation Prior to moving any CT Girders to storage, it shall be clearly marked with the mark number which indicates the date of fabrication and the location shown on the Working Drawings. All CT Girders shall be stored in an upright position on suitable dunnage as detailed in the Working Drawings. The CT Girders may be stacked. When stacking, the CT Girders shall always be maintained in the upright position and each beam shall be supported with cribbing at the same location as the girder below.

CT Girders shall not be released for shipment until all dimensional tolerances have been checked and witness panel coupons exceed the design stress listed on the Contract Plans. If the CT Girders are to be stored on site, the same provisions outlined above for storage at the manufacturer's facility shall apply.

The manufacturer is responsible for securing and transporting the CT Girders to the precast plant. Transportation from the precast plant to the jobsite will be the responsibility of the precast plant. All CT Girders shall be shipped upright and supported by cribbing at the locations shown in the Working Drawings. It is the Contractor's responsibility to unload the CT Girders with PCD at the jobsite.

If the CT Girders are damaged during transport, handling, and/or storage prior to their incorporation into the structure, the damaged CT Girders shall be repaired or replaced by the Contractor at the Resident Engineer's discretion and at no additional cost to the Department.

509.13 Erection At least 30 days prior to erection, the Contractor shall submit an Erection Plan indicating lifting methods, erection sequence, and any other pertinent information. Penetrations in the CT Girder for construction purposes shall be shown on the Erection Plan and will not be permitted unless approved by the Engineer of Record.

Girders shall be placed on clean bridge seats and tops of bearing devices. Any shifting of the girders shall be done while they are free of the supports.

Girders shall be handled with a suitable hoisting device or crane of sufficient capacity to handle the members. Lifting anchors sized and located in accordance with the Working Drawings may be used to hoist the girders only if explicitly stated on the Working Drawings.

509.14 Method of Measurement Composite Tub Girders with precast concrete deck panels will be measured by the lump sum.

509.15 Basis of Payment Acceptable work done under CT Girder with PCD will be paid for at the Contract lump sum price for the respective Pay Item. Payment shall be compensation for fabrication of the CT Girders and precast concrete deck elements. Related materials and work include fabrication and post-processing CT Girders, installation of closure plate, interface shear reinforcement, PCD, precast backwall, shipping to the jobsite, and all submittals related to this work.

Erection will be paid for at the lump sum price. Payment shall be compensation for unloading, storage, handling, erecting, and all submittals required for approval prior to execution of this work.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
509.743	CT Girder with PCD – Fabrication and Delivery	Lump Sum
509.744	CT Girder with PCD – Erection	Lump Sum

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Lightweight Concrete Deck)

502.01 Description This section has been amended to include:

The Contractor may furnish lightweight concrete in place of normal weight concrete for the precast concrete deck and the concrete closure pours as shown in the Contract Documents for Bid Alternate 2 – Composite G-Beam, and in accordance with the manufacturers' recommendations.

The concrete shall consist of the precast superstructure slab (Item 509.743) and the closure pours (Item 502.262) as shown in the contract documents.

502.02 Classification This section has been amended to include:

Structural Concrete, Lightweight shall be used to construct the structural concrete superstructure slab. The concrete shall meet the requirements of "Class A" concrete, except as modified herein.

502.03 Materials This section has been amended to include:

LIGHTWEIGHT AGGREGATES The lightweight aggregates shall be prepared by expanding or sintering materials such as shale, slate, clay, fly ash, or blast furnace slag. The requirements of ASTM C330 shall apply except as modified in these specifications. In addition to ASTM C330, the lightweight aggregates shall meet the requirements given in the Table below, Lightweight Aggregate Requirements (Testing). The Durability Factor of concrete made from lightweight aggregates shall not be less than 80 percent.

A lightweight aggregate meeting the requirements of this specification shall be accepted unless service records indicate that the aggregate is unsound or that the material is otherwise determined to be unsatisfactory by the Department. Lightweight aggregates not meeting these requirements may be further evaluated by additional testing, petrographic examination, geologic studies, a review of the lightweight aggregate processing and the performance history. If the results of the evaluation indicate that the lightweight aggregate should perform satisfactorily, the material may be accepted by the Department.

Acceptance of lightweight aggregates is determined by the Department on the basis of tests on representative samples of the materials; review of Quarry Reports and Plant Flow Information; petrographic examination and other geologic studies; and performance histories where applicable. The material is incorporated into the work on the basis that it is accepted and conforms to procedural directives of the Department and the aggregate shall meet the gradation requirement at the concrete supplier's stockpile.

LIGHTWEIGHT AGGREGATE REQUIREMENTS (TESTING)	
Test Method	Coarse Aggregate
Magnesium Sulfate Loss by Weight 5 cycles, & Max.	18
Los Angeles Abrasion Test (ASTM C131) ¹ . Loss by Weight (Grading B or C), % Max.	50

1. The Modified Los Angeles Abrasion test (reference FM 1-T 096) may be used.

502.05 Composition and Proportioning This section has been amended to include:

Lightweight Concrete

- A. Design. The Contractor shall design a lightweight, low permeability concrete mixture, proportioned according to the American Concrete Institute Manual of Concrete Practice, ACI 211.2, Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
 - a. Produce a homogeneous mixture of cement, pozzolan (Fly Ash or GGBFS), microsilica (Silica Fume), fine aggregate, lightweight coarse aggregate, air entraining agent, normal range set-retarding, water-reducing admixture, and water, as designed.
 - b. Use Type I, I/II, II (701.01), Type 1L, or Type SF (consisting of portland cement and microsilica in which the microsilica content does not exceed 10 percent by weight) cement. Use a minimum cementitious content of 675 lb/yd³. Use 15- 30% Flyash (701.10) or 30-50% GGBRS (701.13).
 - c. Use lightweight coarse aggregate conforming to the requirements of Section 502.03 and the size requirements for Class A concrete. Gradations shall meet ASTM C330 Table 1 standards.
 - d. Determine the cement content for each trial batch by means of a yield test according to ASTM C138.
 - i. At least 10 working days prior to concrete placement, provide the Resident Engineer with a copy of the trial mix design with the following data:
 - 1. Fine and coarse aggregate (saturated, surface dry condition) content in lb/yd³.
 - 2. Cementitious content in lb/yd³.
 - 3. Water content in lb/yd³.
 - 4. Unit weight of freshly mixed concrete in accordance with

ASTM C138.

5. Equilibrium unit weight in accordance with ASTM C567.
6. 28-day compressive strengths.
7. Batch quantities of all materials as they will appear on the batch record.

- ii. The Resident Engineer, or their representative, will approve the batch quantities prior to use. Use these values to manufacture all lightweight concrete for this project, and periodically correct the batch weights to account for changes in the fine aggregate fineness modulus and aggregate moisture contents in accordance with current Department directives.

- B. Stockpile Handling. Construct lightweight coarse aggregate stockpile(s) at the production facility so as to maintain uniform moisture throughout the pile. Continuously and uniformly sprinkle the stockpile(s) with water using a sprinkler system approved by the Resident Engineer. Soak for a minimum of 48 hours, or until the stockpile has achieved a minimum internal moisture content of 15% by weight.

If a steady rain of comparable intensity occurs, turn off the sprinkler system. If the rain ceases prior to the end of the wetting period, restart the sprinkling system. At the end of the wetting period, or when a rainfall ceases beyond the end of the wetting period, allow stockpiles to drain for 12 to 15 hours immediately prior to use.

- C. Density Determination. When tested in accordance with ASTM C567 and ASTM C138, the following densities shall be achieved:

Maximum Equilibrium weight shall be 118 pcf

Minimum Equilibrium weight shall be 112 pcf

Maximum Plastic Unit Weight shall be 125 pcf

Target Equilibrium Unit Weight shall be 115 pcf

Date: 1/11/2023

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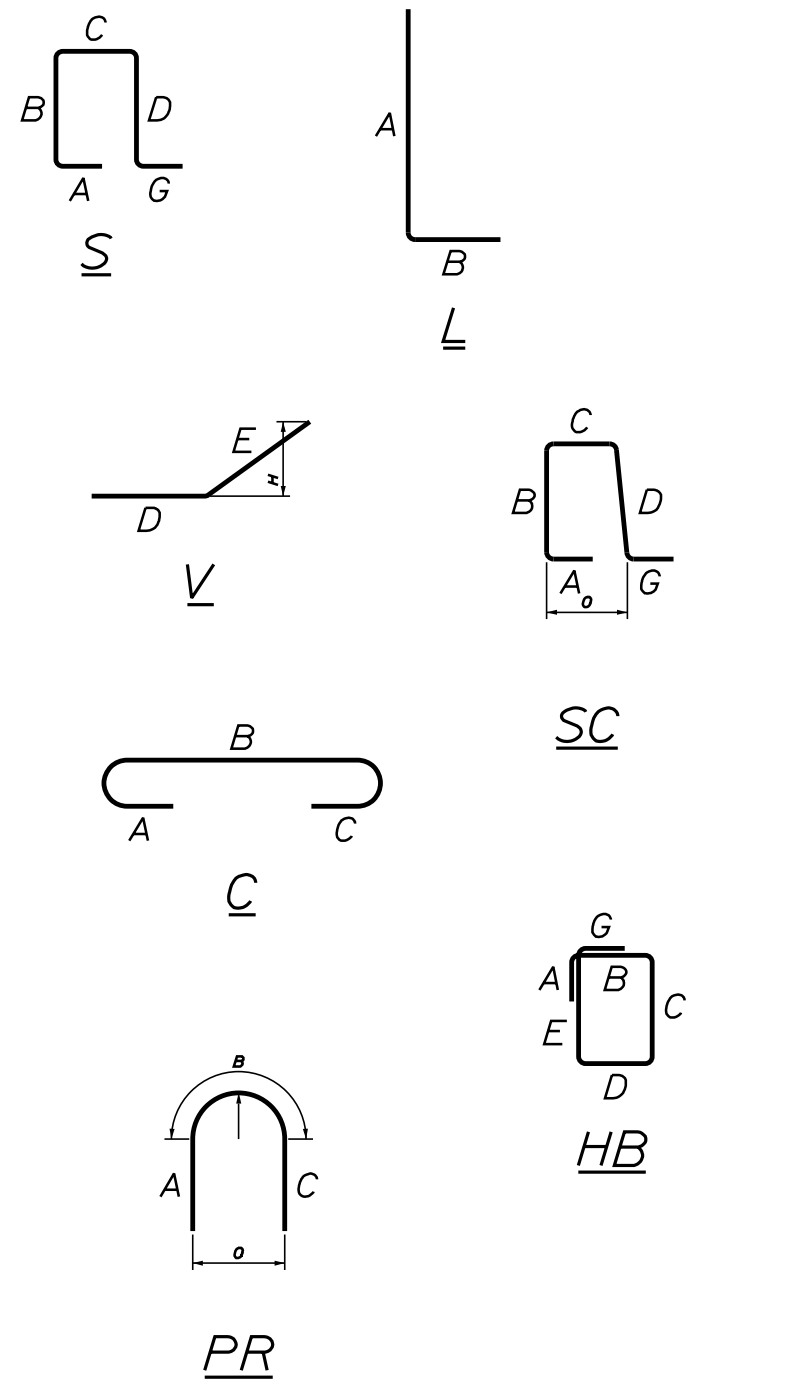
Division: BRIDGE

Filename: ... \00\BRIDGE\MSTA\064_Rebar.dgn

STRAIGHT BARS				NEXT-F BEAM ALTERNATE ONLY			
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION
SUPERSTRUCTURE				SUPERSTRUCTURE			
S501p	224	42'-5"	Transverse Deck				
S502p	140	40'-0"	Longitudinal Deck				
S503P	140	19'-0"	Longitudinal Deck				
S504p	10	35'-0"	Diaphragm Backwall				
S505p	10	10'-4"	Diaphragm Backwall				
ABUTMENT NO. 1 (CHROMIUM)				ABUTMENT NO. 2 (CHROMIUM)			
A801c	25	4'-0"	Superstructure Dowel	B801c	25	4'-0"	Superstructure Dowel
CT GIRDER ALTERNATE ONLY				CT GIRDER ALTERNATE ONLY			
PRECAST SUPERSTRUCTURE				PRECAST SUPERSTRUCTURE			
PC500p	224	16'-3"	Transverse Deck Δ	PC551c	86	5'-9"	S 10" 1'-5" 1'-3" 1'-5" - - 10"
PC501p	224	17'-5"	Transverse Deck	PC552c	29	6'-6"	S 10" 1'-9" 1'-4" 1'-9" - - 10"
PC502p	224	15'-9"	Transverse Deck Δ	PC553c	57	11'-9"	S 10" 1'-9" 6'-11" 1'-5" - - 10"
PC503p	104	40'-0"	Longitudinal Deck	PC554c	224	5'-9"	C 7" 5'-2" - - - - -
PC504p	104	19'-3"	Longitudinal Deck Δ	PC555c	68	5'-8"	L 2'-10" 2'-10" - - - - -
PC505p	9	15'-9"	Diaphragm Backwall Δ	PC556c	56	8'-1"	HB 10" 2'-1" 2'-3" 2'-1" 10" - - -
PC506p	9	17'-5"	Diaphragm Backwall	PC557c	6	5'-2"	S - 10" 3'-6" 10" - - -
PC507p	9	16'-3"	Diaphragm Backwall Δ				
SUPERSTRUCTURE				SUPERSTRUCTURE (CHROMIUM)			
S503p	36	40'-0"	Longitudinal Deck	S555c	16	5'-8"	L 2'-10" 2'-10" - - - - -
S504p	36	19'-3"	Longitudinal Deck Δ	S556c	16	8'-1"	HB 10" 2'-1" 2'-3" 2'-1" 10" - - -
ABUTMENT NO. 1 (CHROMIUM)				ABUTMENT NO. 2 (CHROMIUM)			
A701c	18	4'-0"	Superstructure Dowel	B701c	18	4'-0"	Superstructure Dowel

BENT BARS																
MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION		
NEXT-F BEAM ALTERNATE ONLY																
SUPERSTRUCTURE																
S551c	86	5'-9"	S	0'-10"	1'-5"	1'-3"	1'-5"	-	-	0'-10"						Curb Stirrup
S552c	29	6'-6"	S	0'-10"	1'-9"	1'-4"	1'-9"	-	-	0'-10"						Curb Stirrup
S553c	57	11'-9"	S	0'-10"	1'-9"	6'-11"	1'-5"	-	-	0'-10"						Sidewalk Stirrup
S554c	224	5'-9"	C	0'-7"	5'-2"	-	-	-	-	-						Overhang Bar
S555c	88	7'-8"	L	3'-2"	4'-5"	-	-	-	-	-						End Deck L-Bar
S556c	30	5'-2"	S	-	0'-10"	3'-6"	0'-10"	-	-	-						Diaphragm - Between Stems
S557c	18	5'-8"	S	-	0'-10"	4'-0"	0'-10"	-	-	-						Diaphragm Between Beams
S558c	82	7'-10"	HB	0'-10"	2'-1"	2'-0"	2'-1"	0'-10"	-	-						Vert. Diaphragm Stirrup
S559c	12	7'-4"	HB	0'-10"	1'-10"	2'-0"	1'-10"	0'-10"	-	-						Horz. Overhang Diaphragm Stirrup
CT GIRDER ALTERNATE ONLY																
PRECAST SUPERSTRUCTURE																
PC551c	86	5'-9"	S	10"	1'-5"	1'-3"	1'-5"	-	-	10"						Curb Stirrup
PC552c	29	6'-6"	S	10"	1'-9"	1'-4"	1'-9"	-	-	10"						Curb Stirrup
PC553c	57	11'-9"	S	10"	1'-9"	6'-11"	1'-5"	-	-	10"						Sidewalk Stirrup
PC554c	224	5'-9"	C	7"	5'-2"	-	-	-	-	-						Overhang Bar
PC555c	68	5'-8"	L	2'-10"	2'-10"	-	-	-	-	-						End Deck L-Bar
PC556c	56	8'-1"	HB	10"	2'-1"	2'-3"	2'-1"	10"	-	-						Vert. Diaphragm Stirrup
PC557c	6	5'-2"	S	-	10"	3'-6"	10"	-	-	-						Diaphragm Between Utility Sleeve
SUPERSTRUCTURE (CHROMIUM)																
S555c	16	5'-8"	L	2'-10"	2'-10"	-	-	-	-	-						End Deck L-Bar
S556c	16	8'-1"	HB	10"	2'-1"	2'-3"	2'-1"	10"	-	-						Vert. Diaphragm Stirrup

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.

Plain Reinforcing Steel: ASTM A 615, Grade 60
 Stainless Steel Reinforcing: ASTM A955, Grade 75
 Glass Fiber Reinforced Polymer: ASTM D7957
 Low-Carbon Chromium Steel: ASTM A1035, Type CS, Grade 100

GENERAL NOTES

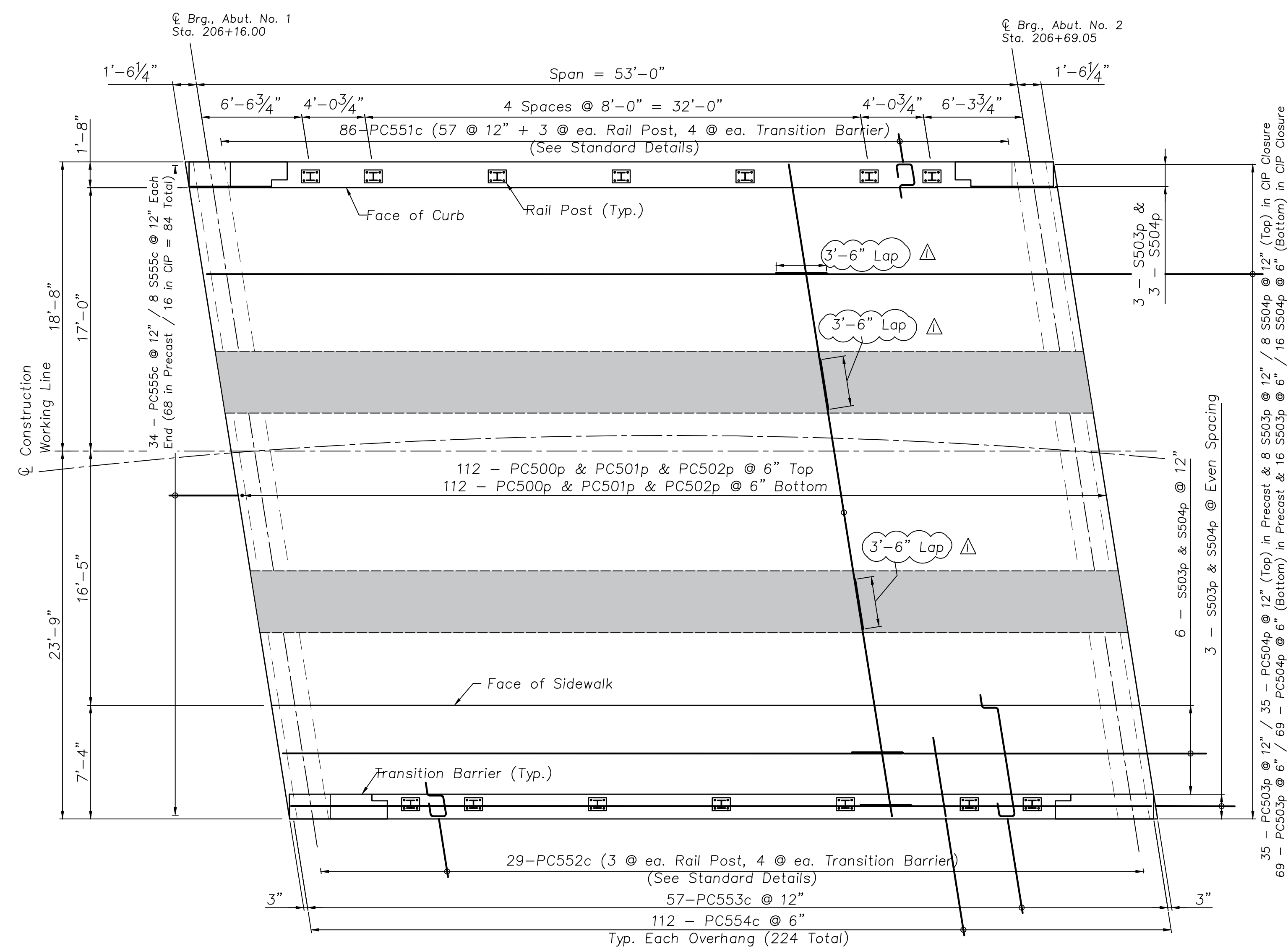
- The first digit(s) following the letter(s) of the mark indicate the size of the bar:
 Mark "A502" = bar size #5
 Mark "P805" = bar size #8
 Mark "S650" = bar size #6
 Mark "P1404" = bar size #14
- The lower case letter following the bar number indicates the material of the bar.
 "A500" = (Black) Plain Steel
 "A550s", s = Stainless Steel
 "S500p", p = Glass Fiber Reinforced Polymer
 "P510c", c = Low-Carbon Chromium Steel

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2189401		WIN 022260101	
BRIDGE NO. 2504		BRIDGE PLANS			
MAIN STREET BRIDGE FALL BROOK		SOMERSET COUNTY		SOLON	
REINFORCING STEEL SCHEDULE		SHEET NUMBER		64	
OF 66					

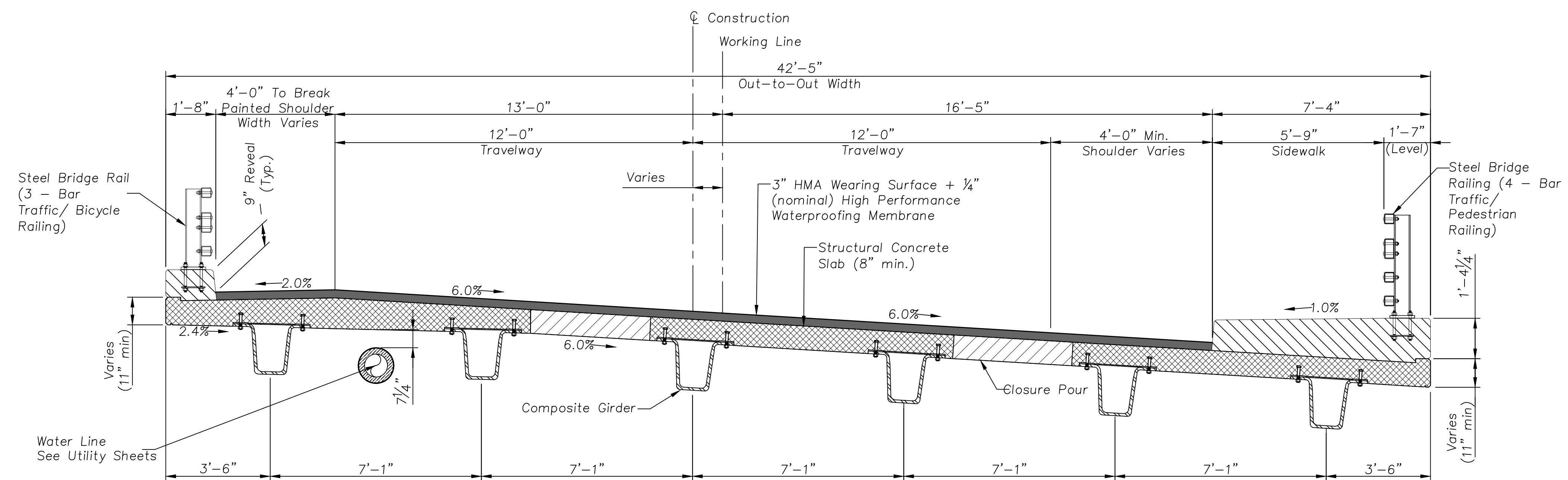
Date: 1/12/2023

Username:

Filename:AIT Fall Brook Final Drawings with LMC (1-11-2023).dwg Division: BRIDGE



SUPERSTRUCTURE PLAN



TYPICAL SUPERSTRUCTURE SECTION
Composite Girder Bid Alternate

SUPERSTRUCTURE NOTES

- Superstructure option shown is for G-Beam Composite Bid Alternate. See sheets 58-62 for NEXT-F precast, prestressed concrete beam option.
- Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
- Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
- Provide 4 additional stirrups in the curbs at each Transition Barrier location.
- The closure pour concrete (Class A) shall be placed continuously and shall be kept plastic until the entire placement, including both end diaphragm closures, has been made.
- Transition Barrier reinforcing steel shall be low-carbon chromium.
- Place one piece of 1 inch thick closed cell preformed expansion joint filler between the end diaphragm and wingwall parapet. Foam shall extend from the bridge seat 1/2" below the top of the wingwall parapet and the full wingwall parapet thickness. The preformed expansion joint filler shall be sealed with 1"x 1/2" silicone joint minus 1/2" on each side. The preformed expansion joint filler and silicone sealant will be considered incidental to related items.
- The precaster shall install Transition Barrier vertical closed stirrups as shown in Standard Details Section 526.
- 6" diameter PVC sleeve and silicon sealant for Abutment anchorage will be considered incidental to related items. The sealant shall be listed on the MaineDOT Silicone and Polyurethane Joint Sealants Qualified Products List.
- Prefabricated Bridge Units (PBU's) shall consist of 2 CT Girders with attached full depth precast slab panel. PBU's shall be shipped to the site as a completely assembled unit. PBU's shall be protected from damage during shipping and erection. The Contractor shall submit an erection plan for approval prior to construction.
- Superstructure is constructed on a tangent, with curved horizontal alignment striped across the bridge. Lanes shall be marked with 12'-0" travelway and 4'-0" minimum shoulder. Grade break on bridge shall be parallel to the working line.
- Precast deck and closure pour concrete may be all normal weight concrete or all lightweight concrete. The combination of normal weight and light weight concrete will not be permitted.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2189401		BRIDGE PLANS	
PROJECT: MAIN STREET BRIDGE		LOCATION: FALL BROOK		COUNTY: SOMERSET COUNTY		SHEET NUMBER	
PROJ. MANAGER: ANDREW LAYNE		BY: C. LEE		DATE: 10/14/22		WIN	
DESIGN-DETAILED: I. KENNERSON		CHECKED-REVIEWED: P. CHEN		SIGNATURE: K. SWENNEY		DATE: 11/09/22	
DESIGN2-DETAILED3: P. CHEN		DESIGN3-DETAILED3: P. CHEN		REVISIONS 1: Bar Splice & LWC Note		DATE: 1/12/23	
REVISIONS 2: P.E. NUMBER		REVISIONS 3: P.E. NUMBER		REVISIONS 4: P.E. NUMBER		DATE: P.E. NUMBER	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	
BRIDGE NO. 2504		022260.01		BRIDGE PLANS		OF 10C	