



Paul R. LePage  
GOVERNOR

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

May 16, 2011  
Subject: **Mount Desert**  
State PIN: 016718.00  
**Amendment No. 2**

David Bernhardt  
COMMISSIONER

Dear Sir/Ms:

Make the following changes to the Bid Documents:

In the Bid Book (pages 93 – 96), **REMOVE** “SPECIAL PROVISION, SECTION 528, STRUCTURAL TIMBER, (Glued Laminated Timber Bridge Rail),” 4 pages dated May 13, 2011 (replaced in amendment #1) and **REPLACE** with the attached new “SPECIAL PROVISION, SECTION 528, STRUCTURAL TIMBER, (Glued Laminated Timber Bridge Rail),” 4 pages dated May 16, 2011.

In the Bid Book (page 131), **REMOVE** "SPECIAL PROVISION, SECTION 703 AGGREGATES, (Plain and Heavy Riprap) ", 1 page dated April 14, 2011 and **REPLACE** with the attached new "SPECIAL PROVISION, SECTION 703, AGGREGATES, (Plain and Heavy Riprap) ", 1 page dated May 16, 2011.

The following questions have been received:

**Question:** We need some clarification on the specs for the glulam railing required on the project. In Section 528 (a) 3 of the specifications, it states that the glulams can be either SYP or DF and it gives minimum design values. We can meet values in both for the first three items. There is no Douglas Fir combination that will meet the last two items. For FV parallel to wide face = 260 psi, the best we can get in DF is 230. For FV perpendicular to wide face = 300 psi, the best we can get in DF is 265.

**Response:** The allowable design values shall be changed to  $F_v$  parallel to wide face = 230 psi and  $F_v$  perpendicular to wide face = 265 psi. Reference the updated attached Special Provision 528, Structural Timber (Glued Laminated Timber Bridge Rail) dated May 16, 2011.

**Question:** Section 528 (b) 2 line 1 calls for Alkaline Chromated Copper Arsenate - Type B as a treatment, this is not listed in AWWA Standard P5, do you mean ACC?

**Response:** The required preservative treatment shall be changed to Penta Type A applied in conformance with the latest AWWA Standard. Reference the updated attached Special Provision 528, Structural Timber (Glued Laminated Timber Bridge Rail) dated May 16, 2011.



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**Question:** Section 528 (b) 2 line 3 refers to AWP Standard C14 and Section 528 (b) 3 line 1 refers to AWP Standard C28, there are no longer any C categories. Please clarify

**Response:** Preservative treatment shall be applied in accordance with the latest AWP Standard for glulam. Use Category shall be UC4B. Reference the updated attached Special Provision 528, Structural Timber (Glued Laminated Timber Bridge Rail) dated May 16, 2011.

**Question:** Section 528 (b) 4 paragraph states that glulams to be treated after fabrication. The only waterborne preservative for glulams after fabrication is ACZA. SYP glulams cannot be treated with ACZA. Douglas Fir glulams can be treated with ACZA, but they would need to change design values for Fir as stated above. Another option would be to treat with Penta Type C, which is a light solvent and is clean to the touch. This is usually done prior to fabrication.

**Response:** See the above responses. The allowable design values have been changed and the preservative treatment has been changed. Reference the updated attached Special Provision 528, Structural Timber (Glued Laminated Timber Bridge Rail) dated May 16, 2011.

**Question:** The dimension of the granite blocks for the dry laid masonry wall appears to be 2' based on the cross section given. Then a dimension of 1'-3" is given from the edge of block to centerline of the 6" cedar post on page 8 of the plans. Is the wall intended to be 2' wide or 2'-6" wide?

**Response:** The wall is intended to have a minimum width of 2'-6" wide.

**Question:** The method of measurement for the granite masonry facing is paid by the square foot of exposed granite masonry. Can we assume that this is for all square feet of surface area exposed, not just the vertical face area.

**Response:** The area used for payment is the vertical face surface area on one side of the wall.

**Question:** The answer in Amendment #1 regarding SPECIAL PROVISION 703 AGGREGATES (Plain and heavy riprap) says "the stone needs to match the Jonesboro Red Color per the National Granite Quarries Association color classification." Under the 703 Special Provision, the Contractor is allowed to use any salvage granite from the project that meets dimensions as riprap. The native stone on site is MDI granite which matches the natural color of the stone of the area, whereas Jonesboro Red does not. In lieu of the observation can it be stated that the local area granite may be approved by the Resident for use for all riprap and stone applications?

**Response:** Please refer to the attached new SPECIAL PROVISION, SECTION 703 AGGREGATES (Plain and Heavy Riprap) ", 1 page dated May 16, 2011.

**Question:** Bid item 832.07 Testing Allowance. Should this item have an allowance stated instead a lump sum bid price?

**Response:** Please refer to page 149, under item 12 (832.07) Owner's Testing Allowance, Item #4.

Consider these changes and information prior to submitting your bid on May 18, 2011.

Sincerely,



Scott Bickford

*For* Contracts & Specifications Engineer

**SPECIAL PROVISION**  
**SECTION 528**  
**STRUCTURAL TIMBER**  
(Glued Laminated Timber Bridge Rail)

Description This work shall consist of detailing, fabricating, treating, delivering, assembling, and erecting the structural glued laminated timber (glulam) rail system over the bridge structure.

The rail system shall consist of rail posts, traffic rails, pedestrian rails, splice plates, and all necessary hardware.

Materials The materials required for timber construction shall conform to the following requirements:

(a) Structural Timber

1. Manufacture, grading, and quality control of structural glued laminated timber shall be in accordance with AASHTO M168 Wood Products and AWPA (American Institute of Timber Construction) Voluntary Product Standard PS 56.
2. Adhesives shall be for wet-use conforming to ASTM D 2559.
3. Glued laminated timber shall be manufactured from either Southern Pine or coastal Douglas Fir, with allowable design values equal to or exceeding the following:
  - $E = 1,800,000$  psi
  - $F_c$  perpendicular to grain = 650 psi
  - $F_{by} = 2400$  psi
  - $F_v$  parallel to wide face = 230 psi
  - $F_v$  perpendicular to wide face = 265 psi
4. Material shall be sound and free from any decay. Materials which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned, or too small shall not be used.
5. All lumber shall have a moisture content between 16 and 19% (oven dry basis) prior to fabrication and assembly. Moisture content is to be confirmed in accordance with AWPA A6, using a minimum sample size of 40 cores per lot of lumber taken at random throughout the lot. The length of each core sample shall be one-half the thickness of the section. The cored lumber shall be discarded and shall not be used in the manufacture of the superstructure.

6. All lumber and timber shall be graded, approved, and stamped or tagged by a lumber grader, certified by an agency that has been approved by the Board of Review of the American Lumber Standards Committee.

(b) Treatment

1. All Timber shall be treated in accordance with AASHTO M 133-90 Preservatives and Pressure Treatment Process for Timber.
2. The rail system shall be treated with Pentachlorophenol in Type A oil conforming to the latest AWWA Standard for glulam to a minimum retention of 0.60 PCF. The treatment shall be applied after gluing. Use Category is UC4B.
3. All members shall be free of excess preservative and solvent at the conclusion of the treating process.
4. As specified in section M4 of the AWWA standards, all lumber and timber members shall be dimensioned, cut, machined and drilled to the maximum extent prior to preservative treatment.
5. Field cuts shall be limited to holes and trimming rail pieces to the correct length. Any field drilling, field cutting or abrasions shall be site flooded with copper naphthenate preservative or treated in accordance with the latest AWWA Standard or the damaged components shall be replaced if required by the inspector.
6. Holes remaining after removal of nails and spikes used to attach temporary forms or bracing to treated material shall be filled by plugging holes with plugs treated with the same preservative as the material.
7. Any damaged members are subject to rejection by the Resident.
8. Field treatment of materials with CCA shall be done in such a manner to prevent any CCA from entering the surface waters. CCA shall not be applied over water unless absolutely necessary, in which case a tarp or other containment system shall be provided to catch the drips. Spraying will not be allowed.

(c) Hardware

1. Except as modified herein, all steel required to assemble the rail system, including posts, splice plates, and all hardware, shall conform to Standard Specification Section 504 – Structural Steel and shall be hot dip galvanized.
2. Bolts shall be as specified in the Plans.

Drawings The Contractor shall prepare shop detail, erection, and any other necessary working drawings in accordance with the requirements of Subsection 105.7 Working Drawings.

Rail pieces shall be attached to a minimum of 2 rail posts.

Rejections Rejected material and workmanship shall be replaced promptly or corrected by the Contractor. Acceptance of any material or finished members by the Resident will not preclude their subsequent rejection, if found defective at a later date.

## CONSTRUCTION REQUIREMENTS

### General

1. Type of construction shall be as shown on plans. Workmanship and finish shall be equal to best general practice in modern timber fabrication shop.
2. Glued laminated timber furnished under this Specification shall be fabricated by an AITC Licensed Laminator with proven experience in the field of timber bridge design and construction. Fabrication must comply with the latest edition of the American National Standards for Wood Products – Structural Glued Laminated Timber, ANSI/AITC A 190.1.
3. Unless otherwise specified, all material shall be fabricated prior to treatment.
4. Bolt hole dimensions and locations within prefabricated material shall be within a tolerance of 1/16” of the details specified.

### Storage and Handling

1. Timber stored on site shall be kept in orderly piles, close stacked and on supports that provide at least 12 inches of ground clearance. For outside storage, ground area in the vicinity of the material shall be cleared of grass, weeds, and rubbish. When authorized by Resident, treated material may be left uncovered.
2. Prior to assembly, fabricated material shall be stored in a manner that will prevent distortion of the members, such as warping or bending.
3. All handling of timber shall be conducted so that the timber is kept clean and free from injury. Timber shall be so handled that there is no breaking of outer fibers or penetrating of the surface with tools. No material shall be dropped, thrown or dragged on the ground.
4. Lifting equipment shall employ fabric belts or other slings which will not mar or dent the timber.

Framing

1. All framing shall be true and exact so that joints will have full and even bearing over the entire contact surface. Shimming will not be accepted.
2. Contractor shall provide false work and all tools & machinery necessary for expeditious conduct of the work.

Connections

Bolt holes shall be perpendicular to the face of the material and 1/16" larger in diameter than the bolts.

Posts

Bridge railing posts shall be installed as truly vertical as possible within the following tolerance limit: 5/16" in any direction as measured from grade to the top of the post.

Method of Measurement Each Glued Laminated Timber Bridge Rail component listed below shall be measured as Lump Sum of bridge rail erected and accepted. Measurements will be along the face in reasonable close conformity with the lines shown on the Plans.

Basis of Payment The accepted quantity of each Glued Laminated Timber Bridge Rail component listed below will be paid for at the Contract unit price per Lump Sum, completed, and accepted. Price shall be full compensation for detailing, furnishing, transporting, handling, installing/erecting, painting or treating the material as specified, all hardware, and the furnishing of all labor, materials, tools, equipment and incidentals necessary to complete the work. False work, forms, bracing, sheeting, or other timber used for erection purposes will not be paid for directly but shall be considered as included in the unit price for these items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
528.9101 Glue - Lam Timber Bridge Rail	Lump Sum
528.9101 Glue - Lam Timber Bridge Rail - Transition	Lump Sum
528.9104 Glue - Lam Timber Bridge Rail, 4 Bar	Lump Sum

**SPECIAL PROVISION**  
**SECTION 703**  
**AGGREGATES**  
(Plain and Heavy Riprap)

703.26 Plain and Hand Laid Riprap Add the following to the Supplemental Specifications:

Stone shall be either of the following

- 1.) Jonesboro Red granite per the National Building Granite Quarries Association color classification.
- 2.) Pink granite per the National Building Granite Quarries Association color classification from Mount Desert Island.

Stone from the existing bridge abutments and approach retaining walls may be reused as Plain Riprap as long as the geometric requirements in the Specifications are satisfied.

703.28 Heavy Riprap Add the following to the Supplemental Specifications:

Stone shall be either of the following

- 1.) Jonesboro Red granite per the National Building Granite Quarries Association color classification.
- 2.) Pink granite per the National Building Granite Quarries Association color classification from Mount Desert Island.

Stone from the existing bridge abutments and approach retaining walls may be reused as Heavy Riprap as long as the geometric requirements in the Specifications are satisfied.