

# ALABAMA DEPARTMENT OF TRANSPORTATION

DATE: June 26, 2012

Special Provision No. 12-0335

EFFECTIVE DATE: November 1, 2012

SUBJECT: Treated Wood.

Alabama Standard Specifications, 2012 Edition, shall be amended as follows:

## SECTION 509 UNTREATED AND TREATED TIMBER

509.02 Materials.

*This Article (509.02) shall be replaced by the following:*

509.02 Materials.

All materials shall conform to the appropriate provisions of Division 800, Materials. Specific reference is made to **Section 833, Lumber and Timber, Untreated and Treated**.

## SECTION 816 TIMBER PRESERVATIVES

*This Section shall be deleted from the Standard Specifications.*

## SECTION 833 LUMBER AND TIMBER - UNTREATED AND TREATED

*This Section shall be replaced by the following:*

## SECTION 833 LUMBER AND TIMBER - UNTREATED AND TREATED

833.01 Structural Lumber and Timber.

Structural lumber and timber shall be Southern Yellow Pine, unless otherwise noted on the plans or in the proposal, meeting the requirements of AASHTO M 168 **"Standard Specification for Wood Products"**. The grade of structural wood shall be as shown on the plans.

833.02 Preservative Treatment.

Preservatives for treated wood shall meet the requirements of AASHTO M 133 **"Preservatives and Pressure Treatment Processes for Timber"**.

## SECTION 864 GUARDRAIL AND BARRIER RAIL MATERIALS

*This Section shall be replaced by the following:*

## SECTION 864 GUARDRAIL AND BARRIER RAIL MATERIALS

### 864.01 Rail Elements.

#### (a) BEAM PLATE GUARDRAIL.

##### 1. STEEL.

Steel rail elements and accessories shall conform to the requirements given in AASHTO M 180.

Zinc coating shall be Type II, 4.00 ounces per square foot {1220 g/m<sup>2</sup>}, minimum triple spot test.

Chemical composition for Type 4 beams shall conform to one of the following based on ladle analysis.

CHEMICAL COMPOSITION TYPE 4 BEAMS									
Blend	C	Mn	P	S	Si	Cu	Cr	Ni	Zr
No. 1	0-12 Max.	0.20 to 0.50	0.07 to 0.15	0.05 Max.	0.25 to 0.75	0.25 to 0.55	0.30 to 1.25	0.65 Max.	- - -
No. 2	Shall conform to the requirements of ASTM A 606 for Type 4, high strength - low alloy - hot rolled sheet or strip. Members or accessories for beams meeting ASTM A 606 which require welding shall meet the requirements of ASTM A 588 for Grade A or B Material.								

In addition, for Type 4 beams after fabrication, all steel shall be blast cleaned or pickled to remove all mill scale. Blast cleaning shall conform to Steel Structures Painting Council Surface Preparation Specification No. 10 Near-White Metal Blast Cleaning (SSPC-SP10). All pickling acid shall be thoroughly rinsed off. All fabricated steel parts shall be handled with care to avoid gouges, scratches, and dents. The steel shall be kept clean of all foreign material, such as paint, grease, oil, chalk marks, crayon marks, concrete spatter, or other deleterious substances. Natural oxidation of the steel will not be considered foreign material. Storage in transit, in open cars and trucks, for an extended period will not be permitted. Steel parts stored outside in yards or at job-sites shall be positioned to allow free drainage and air circulation.

##### 2. ALUMINUM.

Aluminum alloy rail element shall be aluminum alloy 2023 T-3 conforming to the requirements of ASTM B 209. The rail shall be of such thickness as will meet strength requirements of AASHTO M 180 for the strength class designated; however, in no case will the tensile strength of the full size beam (including a splice at the center) be less than 80,000 pounds {355 kN} for Class A or 100,000 pounds {445 kN} for Class B. The shape shall meet AASHTO M 180 requirements.

#### (b) BARRIER RAIL.

The barrier rail elements, including all accessories, shall conform to the material requirements shown on the plans for the type material of which the barrier rail is to be constructed.

### 864.02 Posts.

#### (a) TREATED TIMBER POSTS.

Timber posts shall be sawed to within plus or minus 1 inch {25 mm} of the length and plus or minus 3/8 of an inch {10 mm} of the full end dimensions shown on the plans. Timber block-outs shall be sawed to within 1/4 of an inch {6 mm} of the length and plus or minus 3/8 of an inch {10 mm} of the

full end dimensions shown on the plans. Holes shall be drilled slightly smaller than the designated bolt size so as to provide a driving fit.

All timber shall be Southern Yellow pine, Grade No. 1SR or better, in accordance with the Southern Yellow Pine Inspection Bureau's grading system. Post and blockout treatment shall be in accordance with AWP-U-1 as applicable to guardrail posts. The preservative shall be one recommended under AWP-U-1 except that within a contract only one type will be permitted unless otherwise permitted in writing by the Engineer. All timber posts and blockouts should be fabricated and holes drilled before treatment, but where field modifications of necessity are made after treatment, the new surfaces shall be given a preservative treatment in accordance with the provisions of AWP-M-4 using a method approved by the Engineer.

**(b) METAL POSTS.**

Steel posts, including block-outs for guardrail, shall comply with the requirements of ASTM A 36, modified to waive the maximum tensile strength. All material shall be new and of the size, shape, etc. noted by the plan details, hot-dip galvanized after fabrication.

Metal posts for barrier rails shall be steel meeting the requirements noted in paragraph one above or when aluminum barrier rail is used, aluminum posts conforming to the requirements of ASTM B 221, Alloy 6351-T4 or 6061-T4 of the size, shape, etc. noted by plan details.

**864.03 Anchors.**

Concrete for anchors shall be constructed of Class "A" Concrete in conformity with the detailed requirements of Section 501 with attention directed to Item 501.03(k)2. All surfaces shall be given a Class 1 finish with all exposed surface given a Class 2 surface finish.

Metal parts used in anchors shall comply with the appropriate requirements for metals noted elsewhere in this Section or other portions of these Specifications.

Wire rope (cable) for anchors shall be 3/4 inch {19 mm} nominal diameter meeting the requirements of AASHTO M 30, Type II, having a Class A galvanization coating.

**864.04 Galvanization.**

All metal required by the plans or specifications to be galvanized shall be galvanized after fabrication in accordance with AASHTO M 111 amended to cover the weight {mass} of the zinc coating specified in Article 864.01. Shop fabrication shall be considered to include all work necessary to prepare the unit for immediate and complete installation. No punching, cutting, burning, or welding will be permitted in the field except for special details in exceptional cases as may be directed by the Engineer; however, in such cases, holes shall be drilled and cutting done by sawing and the area treated as provided in Subarticle 630.03(c).