

**SECTION 02110 – POSTS, BLOCKS, AND BRACES**

*(Follow all instructions and make all edits with “Track Changes” turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)*

Comply with Section 02110 of the Standard Specifications modified as follows:

**02110.10(a) General** - Replace this subsection, except for the subsection number and title, with the following:

Furnish posts for guardrail and median barrier of the size shown, manufactured from Douglas fir, Hem-fir, or Southern Yellow Pine. A minimum extreme fiber bending stress ( $F_b$ ) of 1,200 psi is required for wood posts. Only treated posts from approved Suppliers that are listed in the *Nonfield-Tested Materials Acceptance Guide* are allowed.

**02110.10(b) Grading** - Replace the paragraph that begins "Grading of posts shall..." with the following paragraph:

Furnish posts with grading meeting the following:

**02110.10(c) Certificates** - Replace this subsection, except for the subsection number and title, with the following:

Provide certificates of lumber inspection by a recognized inspection agency.

**02110.10(f) Seasoning and Checking** - Replace this subsection, except for the subsection number and title, with the following:

Furnish preservative treated post that show evidence of reasonable amount of seasoning or conditioning having occurred prior to treatment, so that further shrinkage of treated posts will not create checking that would expose untreated wood.

At the time of inspection at the plant and at the time of installation each treated post is subject to inspection for evidence of seasoning having occurred. The presence of checking on the surface of the post will not be cause for rejection unless the width of the widest check, shake, or split exceeds 1/2 inch (surface measurement).

If an otherwise acceptable treated post has a through check, shake, or end split in the same slope of grain or plane as the bolt hole and extending from the top of the post to within 3 inches of the bolt hole, the post is rejected unless it is provided with a tight fastening across the separation, centered on the post, and 2 inches below the top. Fasten with a 1/2-inch diameter galvanized bolt and nut with a galvanized washer under the bolt head and under the nut after final curing of post is achieved. Treat holes for fastenings according to 00570.40.

**02110.10(g) Inspection, Rejection and Marking at Plant** - Replace this subsection, except for the subsection number and title, with the following:

Posts are subject to inspection at the treating plant at any time before, during or after treatment. Normally, inspection of treated posts is made by the Agency's Inspector not later than 10 Calendar Days after treatment, provided the Inspector is notified of the time that treating is to be done.

Inspection of treated posts for compliance with the requirements of 02110.10(e) is according to applicable AWP standards, except as follows:

- The Inspector will choose the number of treated posts from any one charge of the treating cylinder for determining penetration of treatment.
- Each post selected for testing is representative as a basis of acceptance or rejection of a pro rata number of posts in the charge.
- If 20 percent of the posts randomly selected for testing fail to conform to requirements, all of the posts in the entire charge from where they are selected may be classed as unacceptable.

At the Inspector's discretion, each treated post or a representative random selection of treated posts may be inspected for compliance with the requirements of 02110.10(f) "Seasoning and Checking".

Posts that fail to conform to requirements of this Subsection are subject to rejection at the treating plant singly, by partial lots, or by whole lots. (A "lot" comprises the posts in any charge of the treating cylinder.)

Apply a permanent mark or metal tag to each treated post that identifies the Supplier and year of treatment, placed by the Supplier either:

- On the top of the post, or
- On the back of the post, 8 inches to 10 inches below the bolt hole.

**02110.10(h) Field Inspection, Acceptance and Rejection** - Replace the paragraph that begins "Posts that show a check ..." with the following paragraph:

Posts that show a check, shake, or split exceeding 1/2 inch in width (surface measurement) on any surface are rejected.

Replace the paragraph that begins "Acceptance of Material..." with the following paragraph:

Acceptance of Material is according to 00165.35, 02110.10(g), and the Specifications.

**02110.20 Guardrail Blocks** - Replace this subsection, except for the subsection number and title, with the following:

**(a) General** - Furnish wood guardrail blocks of the dimensions shown. Furnish blocks either Douglas fir or Hem-fir meeting the requirements of 02110.10, or pine or Southern Yellow Pine meeting the requirements of 02110.20(b) and 02110.10 except for

02110.10(b). The requirements of marking and branding the treated blocks, according to the last paragraph of 02110.10(g), is waived provided that the Supplier of the treated blocks provides certification with each shipment stating that the blocks conform to Specifications and that the preservative treating was done under the inspection and with the approval of the Engineer.

(b) **Grading** - Furnish pine guardrail blocks according to the requirements of paragraph 80.11 of the current WWPA Grading Rules. Furnish Southern Yellow Pine guardrail blocks according to the requirements for No. 1 timber as specified in section 402 of the current SPIB Grading Rules.

(c) **Recycled Plastic** - Recycled plastic guardrail blocks from the QPL may be used.

(d) **Acceptance** - Acceptance of Material is according to 00165.35 and this Section.

**02110.30 Fence Posts and Braces** - Replace this subsection, except for the subsection number and title, with the following:

Furnish fence posts and brace rails of the sizes and dimensions shown and of sound Douglas fir, western hemlock, or western pine free from decay, end splits, and multiple crooks. Seasoning checks of not more than 5/16-inch width (surface measurement) is allowed. Allowable crooks may be in one plane only. Do not allow a line drawn between the centers of the butt and tip of each post and brace rail to fall outside of the actual longitudinal centerline of the post or rail by more than 1.67 percent of its length, with an allowable maximum of 2 inches.

Posts and brace rails may be square, rough, or dressed lumber, or may be peeled round posts, as the Contractor elects. Furnish round members free from bark, protruding knots and irregularities detrimental to a pleasing appearance.

Fabricate posts and brace rails before pressure treatment. Where field boring or field cutting of a treated member is required, field-treat the exposed untreated surface of the member according to 00570.40. Do not allow the size of holes after treatment to exceed the size of the dowels or bolts to be inserted by more than 1/16 inch.

Posts intended to be driven may be machine-pointed on either the small end or the large end, before pressure treatment.

Pressure treat the posts and brace rails according to Section 02190.

Acceptance of Material is according to 00165.35 and the Specifications.

**02110.40(a) Grading** - Replace the paragraph that begins "Grading requirements..." with the following paragraph:

Furnish wood signposts with grading according to the applicable paragraphs of either the current WCLIB Grading Rules or the current WWPA Grading Rules, as follows:

**02110.40(b)(1) Length** - Replace the paragraph that begins "The length of the posts..." with the following paragraph:

Furnish posts of the length as shown or, where not shown, a sufficient length to provide proper sign mounting, a proper mounting height and the required foundation depth.

**02110.40(b)(4) Cuts and Abrasions** - Replace this subsection, except for the subsection number and title, with the following:

Treat cuts, abrasions and bolt-holes, prior to shipping, with the same preservative as originally used to treat the post, except that if the post was originally treated with pentachlorophenol - volatile petroleum solvent (LPG) solution, treat cuts, abrasions and bolt-holes with pentachlorophenol - mineral spirits solvent solution according to AWWPA Standard M4.

**02110.40(c) Cuts and Abrasions** - Replace this subsection, except for the subsection number and title, with the following:

Acceptance of Material is according to 00165.35 and this Section.