SECTION 615 TREATED RUSTIC TIMBER ITEMS AND HISTORICAL MARKERS

615.1 Description

(1) This section describes constructing timber rail guard fence, treated timber curbs, timber guard posts, rustic marker posts, and historical markers, appropriate for use in rest areas or waysides.

615.2 Materials

615.2.1 General

(1) Furnish materials conforming to the following:

Lumber and timber ..... section 507
Paint ..... section 517
Wood preservatives 507.2.3
Structural steel 506.2
Miscellaneous metals 506.2
Reinforcement ..... section 505

(2) Furnish concrete conforming to 501.2 as modified in section 716. Provide QMP for class III ancillary concrete as specified in section 716.

615.2.2 Sawed Posts and Timber Curbs

(1) Furnish timber posts and curbs as specified in 614.2.5 for wood posts and offset blocks.

(2) The contractor may use shims for timber curbs that are one of the following: treated, cold-dip treated, or painted with 2 coats of the preservative used for the curbs.

615.2.3 Round Posts

(1) Conform to the requirements for wooden posts in 616.2.2.6. Treat round posts as specified on the plans or in the contract. Peel, trim, shave, and cut posts to length before treatment.

615.2.4 Timber Rails

(1) Furnish sawed rails from one of the species listed in 614.2.5 for wood posts and offset blocks.

(2) Furnish untreated sawed rails, unless required otherwise on the plans, conforming to the grade the plans specify. Grade sawed rails according to the grading rules and requirements specified in 507.2.2. Furnish unsurfaced sawed rails, or surfaced on all 4 sides (S4S), as the plans specify.

615.2.5 Furnishing Posts

(1) Furnish treated, untreated, or cold-dip treated posts, as the plans, or contract specifies.

(2) If treated posts are specified, then treat posts by the pressure process according to the methods, requirements, and minimum retention and penetration of preservative specified for preservative treatment in 507.2.2.6. Except, do not use creosote-coal tar or pentachlorophenol for treatment.

(3) If the plans or contract specifies cold-dip treatment, then treat posts in the manner specified below in 615.2.6.

615.2.6 Cold-Dip Treatment

(1) This method of preservative treatment consists of immersing the wood in a solution composed of 5 percent pentachlorophenol and a suitable petroleum solvent. Allow the wood to soak in the solution. Ensure the pentachlorophenol and petroleum solvent conforms to the requirements of 507.2.3. Unless directed otherwise, use heavy petroleum solvent. The contractor may use the solution at atmospheric temperatures. The contractor may treat both round wood posts and sawed timber. Remove both the outer and inner bark from round wood. Use sufficiently seasoned material for treatment that allows ready absorption of the preservative solution. Allow wood exposed to moisture to dry before treating.

(2) The soaking period for both round wood and sawed timber is dependent on the type of wood, hardwood or softwood, and if using sawed timber, varies according to the thickness of its least dimension. Unless specified otherwise, adhere to following soaking periods:

- For round hardwood posts: 40 to 48 hours.[1]
- For round softwood posts: 20 to 24 hours.[1]

[1] Depending on the tendency and speed of the wood to absorb the oil.

(3) Soak sawed hardwood timber for 5 hours per inch of thickness, with a maximum of 48 hours.

(4) Soak sawed softwood timber 1/2 the time of sawed hardwood timber.

(5) Treat posts for their full length unless the drawings or special provisions specify butt treatment.

(6) Before using, stack and dry all treated wood after removing from the solution.

(7) Butt treatment of posts consists of performing the cold-dip method of preservative treatment, on the ends of the posts to be set in the ground. Immerse the posts in the preservative solution, for the required time, to a depth equal to the depth the post will set in the ground plus 6 inches.

615.2.7 Bolts, Nuts, and Hardware

(1) Furnish all bolts, nuts, and miscellaneous hardware for the work according to the design and dimensions the plans show. Furnish sufficiently threaded bolts to allow secure fastening and supply with the necessary washers.

(2) Unless specified otherwise, furnish all bolts, nuts, washers and other hardware zinc coated. Except that the contractor may furnish plain hardware for timber guard fence and treated timber curbs. The zinc coating must conform to methods specified in 614.2.

615.3 Construction

615.3.1 General

(1) Under the Guard Fence Timber Rail bid item, support a timber rail on wooden posts.

(2) Under the Guard Posts Timber bid item, furnish and erect sawed wooden posts.

(3) Under the Marker Posts Rustic bid item, furnish and erect round wooden posts.

(4) Construct all work according to the plan details specified for the work. Dig the post holes at the required location and depth, and compact the bottom of the holes to provide a stable foundation. The engineer will allow a tolerance of +/- 3 inches in depth, provided the post length is adequate to obtain the required elevation of the finished top. Set the posts plumb and with the front faces in a straight line or to conform to curves the plans show or as the engineer directs. Backfill the placed posts with engineer-approved material, placed in layers, and compacted in a way that avoids disturbing the position or alignment of the post.

(5) After setting the post, determine the finished elevation of the post top and cut off and trim as the plans show. Treat the cut surfaces of treated posts with 2 brush applications of the same type of preservative used in the original treatment. Bore holes in the set posts to support the rails at the required elevation and grade. Bolt the rails to the posts, unless specified otherwise, with round-headed bolts, with heads facing the rail. Burr the threaded ends of all bolts. If the bolt extends one inch or more through the nut, cut off at 1/2 inch from the nut before burring.

(6) Under the Curbs Treated Timber bid item, anchor and support sawed treated timbers on shims.

(7) Perform the drilling, countersinking and beveling of curbs after pressure treatment; however, apply 2 brush applications of the preservative used for the curbs to the surfaces that result from this operation.

(8) Place timber curbs true to line and grade, with the supporting shims placed on a solid foundation. Secure the curbs in place by driving steel pins to firm seating in holes countersunk in the curbs.

(9) Under the Wisconsin Historical Marker bid items, construct a reinforced concrete base, if required, wood post, concrete or stone supports, and hang the designated department-furnished sign.

(10) Construct historical markers according to the plans and applicable special provisions.

615.3.2 Painting

(1) Unless directed otherwise, paint all untreated wood, rails and posts, including the untreated portions of butt treated posts, with 2 coats of brown wood stain conforming to 517.2.9. Allow at least 48 hours to elapse between coats.

(2) This work shall conform to whatever paint or methods of application the plans or special provisions specify.

615.4 Measurement

(1) The department will measure Guard Fence Timber Rail by the linear foot acceptably completed, measured from end to end of the rail.

(2) The department will measure Curbs Treated Timber, Guard Posts Timber, and Marker Posts Rustic as each individual unit acceptably completed.

(3) The department will measure the Wisconsin Historical Marker bid items as a single lump sum unit for each marker acceptably completed.

615.5 Payment

(1) The department will pay for measured quantities at the contract unit price under the following bid items:

ITEM NUMBER	DESCRIPTION	UNIT
615.0100	Guard Fence Timber Rail	LF
615.0200	Curbs Treated Timber	EACH
615.0300	Guard Posts Timber	EACH
615.0400	Marker Posts Rustic	EACH
615.1000	Wisconsin Historical Marker (project)	LS

(2) Payment for Guard Fence Timber Rail is full compensation for providing all materials, including posts, rails, bolts, paint, preservative, and incidentals; for all excavating, erecting, backfilling, and disposing of surplus materials; and for preservative treating and painting.

(3) Payment for Curbs Treated Timber, Guard Posts Timber, or Marker Posts Rustic is full compensation for all materials, including posts, curbs, shims, treatment, painting, pins, and incidentals; and for excavating, backfilling, and disposing of excess material.

(4) Payment for the Wisconsin Historical Marker bid items is full compensation for providing all materials, including posts, stones, reinforcement and concrete if required, paint, bolts, and incidentals; for excavating, erecting, backfilling, and disposing of surplus materials; and for preservative treating, and painting.