

SECTION R615 - LANDSCAPE MISCELLANEOUS

R615-1 DESCRIPTION

The work shall consist of installing steel and timber bollards, pipe bumper rail, ryerson edging, timber curb, lane stanchion, wire core rope, linked chain, galvanized cable, and benches as shown on the plans and as directed by the Project Manager.

R615-2 MATERIALS

R615-2.01 Steel Bollards

Steel bollards shall be 4 inch or 6 inch outside diameter, 6 feet 6 inches long, new galvanized steel pipe with steel acorn caps, painted flat black. Chain loops shall be 1/4 inch diameter by 2 inch galvanized steel welded to the bollard. Chain loops will be installed only in locations as shown on the plans.

R615-2.02 Pipe Bumper Rail

Pipe bumper rail shall be 4 inch outside diameter, 4 feet 6 inches long, extra-strength hot dip galvanized steel pipe conforming to ASTM A120.

R615-2.03 Ryerson Edging

Ryerson edging shall be Ryerson Landscape edging, 3/16 inch by 4 inch, minimum 3 feet long, as manufactured by Ryerson Steel Company, or approved equivalent.

R615-2.04 Timber Curb

Timber curb shall be Grade 1 Hardwood or Southern Yellow Pine, 6 inch by 6 inch, with a minimum length of 3 feet, pressure treated CCA preservative to 0.4 retention, or approved equivalent.

Pins for fastening shall be 5/8 inch rebars cut to 2 foot lengths.

R615-2.05 Timber Bollards

Timber bollards shall be Grade 1 Hardwood, or Southern Yellow Pine, 6 inch by 6 inch or 8 inch by 8 inch, 6 feet 6 inches long with angled top, pressure impregnated with CCA preservative, or approved equivalent.

R615-2.06 Linked Chain

Linked chain shall be 3/8 inch, hot dip galvanized for use with 8 inch by 8 inch timber bollards. Eye bolts shall be 3/8 inch by 8 inch hot dip galvanized.

R615-2.07 Cable

Cable shall be 1/2 inch, standard galvanized common strand, for use with 6 inch by 6 inch timber bollards. Cable clips shall be 1/2 inch standard cable clips, to receive 1/2 inch cable.

R615-2.08 Bench

Bench shall be Model 3378 as manufactured by Kenneth Lynch and Son, or approved equivalent. The bench shall be 6 feet long with wood seats and back. The metal portions of the bench shall be painted black by the manufacturer.

The bench seat shall be constructed from purpleheart or approved substitute. The word "Rochester" shall be cast in each bench leg.

Anchor bolts shall be 5/8 inch by 4-1/4 inch long steel Red Head Phillips Sleeve Anchors as manufactured by ITT Phillips Drill Division (Catalogue No. HN-5842, Hex Nut), or approved equivalent.

Paint shall conform to Rustoleum - flat black, or approved equivalent.

R615-2.09 Park Bench

Park bench shall be Model 3.12 Balustrade outdoor, purple heart wood bench as manufactured by Landscape Forms, or approved equivalent.

R615-2.10 Classic Victorian Bench

Classic victorian benches shall be Model 120-006 as manufactured by Mexico Forge, or approved equivalent.

R615-2.11 Concrete

Concrete shall be Class K conforming to the requirements of Section R504.

R615-2.12 Gravel

Gravel shall be subbase course Type 1 conforming to the requirements of NYSDOT Section 304.

R615-3 CONSTRUCTION DETAILS

R615-3.01 Steel Bollard

Tops of all bollards shall be uniform in height and line. Interior surface of post cap in contact with the bollard shall be coated with epoxy, prior to being wedged in place. Prior to installation of the post cap, the bollard shall be filled with concrete. If required, chain loops shall be welded onto the bollard, with the top of the chain loop being 2 inches down from the top of the bollard.

Bollards shall be set in a concrete footing, 3 feet deep, with 3 inch all around encasement, on a 6 inch bed of gravel. Top of footing shall be flush with finished grade in paved areas and domed in grass areas.

R615-3.02 Pipe Bumper Rail

Vertical members shall be placed 10 foot on center. The top of the vertical member shall be cut to accommodate the horizontal members.

Horizontal members shall be welded to each vertical member. The weld areas shall be cleaned, and one coat of silver or aluminized paint, compatible with galvanized surface, applied.

Vertical members shall be set in a concrete footing, 3 feet deep, with 3 inch all around encasement, on a 6 inch bed of gravel. Top of footing shall be domed. Height of top rail above finished grade shall be 1 foot 6 inches.

R615-3.03 Reset Existing Pipe Bumper Rail

Existing pipe bumper rail shall be removed and reinstalled. Existing pipe bumper rail shall be cleaned of all extraneous material.

Where a portion of an existing pipe bumper rail is to be reset, the rail shall be separated at the junction point of a horizontal member with a vertical member. Before the horizontal member is rewelded to the vertical member, the areas shall be cleaned, and one coat of silver or aluminized paint compatible with galvanized surface, applied.

Vertical members shall be set in a concrete footing, 3 feet deep, with 3 inch all around encasement, on a 6 inch bed of gravel. Top of footing shall be domed. Height of top rail above finished grade shall be 1 foot 6 inches.

R615-3.04 Ryerson Edging

Edging shall be installed uniformly and flush to the finished grade. Edging shall be installed to line and grade with standard ryerson stakes set flush to the edging. All bends are to be preformed to prevent kinking. All sharp edges and burrs shall be removed, and exposed metal shall be painted to match factory coat.

The edging shall be protected and kept in proper alignment and good condition until the completion of the contract.

R615-3.05 Timber Curb

Timbers shall be installed to line and grade, and parallel to the edge of the parking lot. Exposed end of the end timber shall be cut at a 45° angle. Timbers shall be predrilled on a bias in order to receive rebar pins.

Timbers shall be pinned with a minimum of three rebars per 7 foot length, and two rebars for 3 to 6 foot lengths. Rebars shall be driven through the timber and into the ground. The top of the rebars shall be deformed so the top does not go into the timber.

R615-3.06 Timber Bollard

Timber bollards shall be uniform in line and height. Bollards shall be installed on equal spacing, in a concrete footing, 3 feet deep, with 3 inch all around encasement, on a 6 inch bed of gravel. Top of the footing shall be domed.

R615-3.07 Linked Chain

The right end of the chain shall be fastened with split link to an eye bolt installed on the bollard, with a maximum 6 inch sag in the midpoint of the chain.

R615-3.08 Cable

Cable shall pass through each post to form a continuous rail with a maximum 2 inch sag in the midpoint of the cable. Cut ends of cable to be securely bound to prevent unravelling.

R615-3.09 Benches

Bench shall be set level and trued vertical, with all items and fittings, as per manufacturer's latest instructions and as approved by the Project Manager.

R615-4 METHOD OF MEASUREMENT

R615-4.01 Steel Bollards, Timber Bollards, Benches

The quantity to be measured for payment shall be the number of each item furnished and installed.

R615-4.02 Pipe Bumper Rail, Ryerson Edging, Timber Curb, Linked Chain, Cable

The quantity to be measured for payment shall be the number of linear feet of each item furnished and installed.

R615-5 BASIS OF PAYMENT

The unit price bid shall include the cost of: furnishing and installing all materials including but not limited to steel pipe, acorn caps, pipe sleeves, chain loops, rebars, twister plates, timber, ryerson edging, linked chain, cable, eye bolts, clips, benches, anchor bolts; painting; excavation; concrete footings; gravel; and furnishing all labor, material and equipment necessary to complete the work.

Payment will be made under:

ITEM NO.	ITEM	PAY UNIT
R615.05	4" Bollard	Each
R615.06	6" Bollard	Each
R615.07	Pipe Bumper Rail	Linear Foot
R615.08	Reset Existing Pipe Bumper Rail	Linear Foot
R615.09	Ryerson Edging	Linear Foot
R615.10	Timber Curb	Linear Foot
R615.11	6 "x 6" Timber Bollard	Each
R615.12	8" x 8" Timber Bollard	Each

ITEM NO.	ITEM	PAY UNIT
R615.13	3/8" Galvanized Linked Chain	Linear Foot
R615.14	1/2" Galvanized Cable	Linear Foot
R615.15	Bench	Each
R615.16	Park Bench	Each
R615.17	Classic Victorian Bench	Each