

TRAIL GATE

****From Statewide STP SWRT(1)**

- xx. DESCRIPTION. This work shall consist of furnishing and erecting trail gate(s) at the locations indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 620 of the Standard Specifications.

- xx. MATERIALS. Materials shall meet the requirements of the following Subsections:

Concrete.....541.02
Miscellaneous Steel.....727.02(b)

- (a) Posts, Rails, and Braces. Posts, rails, and braces shall be galvanized steel pipe conforming to the requirements of ASTM F 1083.

Top and brace rails shall be 3 inches O.D.

Swing gate posts shall be 4 inches O.D. Swing gate post sleeve and terminal post shall be 6 inch O.D.

- (b) Miscellaneous Fittings and Hardware. Miscellaneous steel fittings and hardware for use with zinc-coated steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with the rail and post elements specified herein. All steel fittings and hardware shall be protected with a zinc coating applied in conformance with ASTM A153. Gates and fittings shall withstand a load of 250 pounds applied vertically to the outermost end of the arm.

- (c) Concrete. Concrete for post footings shall meet the requirements of Section 541 for Concrete, Class B. The maximum size aggregate shall be 1".

- (d) Fabrication Drawings and Certifications. The Contractor shall submit manufacturer's Fabrication Drawings and Certifications of Compliance for the trail gate, including all components. The Contractor shall submit a Certification of Compliance for the concrete.

- (e) Painting. Post and gate frame to be painted black with polyester powder coating process. Shop paint after galvanizing and touch up in field as necessary. All cover surface preparation and powder coating shall be in accordance with ASTM D7803.

- (f) Reflective Tape. For information regarding reflective tape application, contact Rick Hedding of the Vermont Department of Forests, Parks and Recreation [Tel.: (802)786-3854].

xx. CONSTRUCTION METHODS.

- (a) Clearing Gate Sites. The sites of the gates shall be sufficiently cleared of obstructions, and surface irregularities shall be graded so that the gate will conform to the general contour of the ground. The gate sites shall be cleared to a minimum width of 3 feet on each side. This clearing shall consist of the removal of all stumps, brush, rocks, trees, or other obstructions which will interfere with proper construction of the gate. Stumps within the cleared area of the fence line shall be grubbed or material cleared, excavated, or removed, as directed by the Engineer regardless of the type, character, composition, or condition of such material encountered. All clearing shall be completed as specified in Section 201 of the Standard Specifications, unless otherwise directed by the Engineer. Modification of alignment may be made as directed by the Engineer to preserve valuable trees or other features.

- (b) Excavation of Post Holes. Post holes shall be augured or carefully excavated to provide nearly vertical sides in accordance with the dimensions shown on the Plans. The diameter of the hole at the bottom shall in no case be smaller than the diameter of the hole at the ground surface.

All material loosened during the excavation must be removed from each hole. The use of temporary forms to insure concrete has nearly vertical sides may be required in loose soil.

Where the ground is too soft to firmly hold the gate post, a post of sufficient length shall be used to obtain stability as directed by the Engineer.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

When boulders are encountered they shall be removed. The hole shall be backfilled with suitable material and thoroughly compacted. The post hole will then be redrilled before installing the posts in the usual manner.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation or drilling and grouting.

The Contactor shall legally dispose of all excavated material at the approved waste site. The Contractor shall be responsible for obtaining all permits and paying all fees necessary for the disposal.

- (c) Installing Posts. All post shall be set in concrete at the required dimension and depth and at the spacing shown on the Plans.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish. The top of the concrete shall be 1 inch below finished grade and covered with bituminous concrete pavement or other material as directed by the Engineer. The top of the concrete shall be slightly sloped to drain away from the posts. All posts shall be set plumb and to required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within 7 days after the individual post footing is completed.

- (d) Installing Top Rails. The top rail shall be continuous and shall align with the terminal post as shown on the Plans.

- (e) Installing Braces. Diagonal brace rails shall be installed between the swing gate sleeve and top rail as shown on the Plans.

- (f) Installing Gates. Gates shall be installed to slide in the direction indicated on the Plans or as directed by the Engineer. All hardware shall be thoroughly secured, properly adjusted, and left in perfect working order. Hinges and diagonal bracing in gates shall be adjusted so that the gates will be level. The Contractor shall install a second terminal post as shown on the Plans to support the gate in its open position.

All gates shall be provided with a combination steel or malleable iron catch and drop locking devices to engage with a flush mounted center block. The drop bar should not lift from the center block until the gate is unlocked.

- (g) Restoration. Any areas disturbed by the Contractor, whether directly or indirectly related to the gate operation, shall be restored to at least their original condition to the satisfaction of the Engineer.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Trail Gate) to be measured for payment will for each gate installed in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Trail Gate) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing, transporting, handling, assembling, and placing the materials specified and for furnishing all labor, tool, equipment, and incidentals necessary to complete the work.

The costs of clearing and grubbing, excavation, disposal of excavated material, backfilling, concrete bases, drilling of rock, grouting of holes, extra length posts, and countersunk posts will not be paid for directly but will be considered incidental to Special Provision (Trail Gate).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Trail Gate)	Each