

TEMPORARY RETAINING WALL

****From Montgomery BHO 1448(23)**

- xx. DESCRIPTION. This work shall consist of designing, constructing, maintaining, and removing temporary retaining walls in accordance with these specifications; in conformance with the lines, grades, design, and dimensions shown in the Plans; and as directed by the Engineer.
- xx. MATERIALS.
- (a) General. The Contractor shall make all arrangements to purchase the materials required for performing the work, including modular concrete retaining wall block units, joint materials, and all necessary incidentals, from an approved wall system supplier. The Contractor, or the supplier as the Contractor's agent, shall furnish the Engineer a Type A Certification in accordance with Subsection 700.02. Materials not conforming to these specifications shall not be used without the written consent of the Engineer. Material Certifications shall be submitted to the Engineer a minimum of two (2) weeks prior to beginning any wall related construction.
 - (b) Precast Modular Concrete Retaining Wall Block Units. Precast modular concrete retaining wall block units shall have a minimum concrete cover on reinforcing steel (if used) of 38 mm (1½ inches). Reinforcing steel shall conform to Section 507 Concrete shall have a minimum compressive strength of 3000 psi at 28 days. Lifting devices shall be set in place to the dimensions and tolerances shown on the approved Construction Drawings prior to casting.
 - (c) Cast-In-Place Concrete Leveling Pads. Concrete shall have a minimum compressive strength of 3000 psi at 28 days.
 - (d) Underdrain. Perforated underdrain pipe shall meet the requirements of Subsection 605.02.
 - (e) Drainage Aggregate. Drainage aggregate shall meet the requirements of Subsection 704.16.
 - (f) Geotextile. Geotextile fabric shall meet the requirements of Section 720 for Geotextile for Underdrain Trench Lining.
 - (g) Subbase. Subbase shall meet the requirements of Subsection 704.06.
- xx. GENERAL REQUIREMENTS. Temporary retaining walls shall consist of dense graded crushed stone subbase or cast-in-place concrete leveling pad; precast modular concrete retaining wall block units; drainage aggregate fill placed directly behind the wall, lined with a geotextile fabric to prevent erosion behind and in front of the wall; perforated underdrain pipe; and connections to daylight the drainage.

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xx. SUBMITTALS. Prior to commencement of the work, the Contractor shall submit Construction Drawings and calculations in accordance with Section 105. Calculations shall be provided for internal and external stability (sliding, overturning, and maximum bearing pressure) for earth, surcharge, and water pressures performed in accordance with the VAOT Structures Manual. These documents shall be prepared, signed, and sealed by a Professional Engineer (Civil or Structural) licensed in the State of Vermont. The submittal shall be made a minimum of two (2) weeks prior to the beginning of any wall related construction.

xx. CONSTRUCTION REQUIREMENTS.

(a) Preparation of Foundation. The bottom course of precast modular concrete retaining wall block units shall be constructed with full horizontal beds. Unless otherwise specified or authorized in writing by the Engineer, foundations shall be constructed in the dry. The site shall be dewatered to or below the footing elevation or lowest elevation of the structural component.

The excavation shall be carried to either ledge or a solid foundation and as shown in the Plans, unless otherwise specified. If sloping ledge is encountered, the foundation shall be stepped as directed by the Engineer. All loose material shall be removed and all seams in the rock shall be cleaned out and filled with concrete or as directed by the Engineer. No excavation shall be performed below the elevations shown on the Plans unless authorized in writing by the Engineer. Any material excavated without authority shall be replaced with concrete or as directed by the Engineer at the Contractor's expense.

When the bottom course of precast modular concrete retaining wall block units is to be constructed on an excavated surface other than rock, particular care shall be taken not to disturb the bottom of excavation. No excavation shall be performed below the elevations shown on the Plans unless authorized in writing by the Engineer. Any material excavated without authority shall be replaced with approved backfill and thoroughly compacted in accordance with Subsection 204.08(a) at the Contractor's expense.

When poor foundation material is encountered at the designed foundation level, it shall be removed and replaced with an approved material conforming to the requirements of Subsection 704.08 or other suitable material as shown on the approved Construction Drawings or as directed by the Engineer, and thoroughly compacted in accordance with Subsection 204.08(a).

(b) Precast Modular Concrete Retaining Wall Block Units. Precast modular concrete retaining wall block units may be placed in the wall when the initial concrete compressive strength of the units equals or exceeds 85 percent of the 28 day requirement. The units shall be erected in

accordance with the wall supplier's recommendations. Special care shall be taken in setting the bottom course of units to true line and grade. Assembly of the various components shall be performed in such a manner that no undue strain or stress is placed in the structure. Shims shall not be permitted without prior approval of the Engineer.

The vertical joint opening on the front face of the wall units shall not exceed 50 mm (2 inches). Horizontal alignment tolerance measured from the face line shown on the Plans shall not exceed 19 mm (3/4 inch) when measured along a 2.4 m (8 feet) straightedge. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed 13 mm (1/2 inch) per 2.4 m (8 feet) of wall height or 25 mm (1 inch) total, whichever is less, measured from the face line shown on the Plans.

Joint materials and bearing pads shall be installed in accordance with the wall supplier's requirements and the details shown on the approved Construction Drawings.

- (c) Backfill. Backfill material placed behind the wall shall meet the requirements of Subsection 704.08 and compacted to a dry density equal to 90% of the maximum dry density as determined in accordance with AASHTO T 99. Backfill placement shall closely follow erection of each course of wall units and shall be placed systematically in horizontal layers not more than 300 mm (12 inches) in thickness, prior to compaction. Backfill shall be placed in such a manner as to avoid any damage to the wall materials or misalignment of the units. Any backfill material placed within the soil mass which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense, as directed by the Engineer.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Temporary Retaining Wall) to be measured for payment will be the number of square meters (square feet) of wall installed in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Retaining Wall) will be paid for at the Contract unit price per square meter (square foot). Payment shall be full compensation for furnishing, transporting, handling, and placing the materials specified; dewatering, excavating, and backfilling; removing the installed wall and restoring the area to preconstruction conditions; and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.670 Special Provision (Temporary Retaining Wall)	Square Foot

10/2/2012

900.675	Special Provision (Temporary Retaining Wall)	Square Meter
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