

UNIT BLOCK RETAINING WALL

****From Richmond STP 0284(17) Richmond CMG PARK(31)**

- xx. DESCRIPTION. This work shall consist of constructing a concrete unit block retaining wall in accordance with these specifications, in reasonably close conformity with the lines and grades shown in the Contract Documents, and as directed by the Engineer.

This work shall be performed in accordance with these provisions, the Plans, and with reference to the Geotechnical Office Memoranda included in the Contract Documents.

- xx. MATERIALS.

- (a) Unit Block Wall. Prefabricated concrete blocks shall be LedgeStone manufactured by Redi-Rock International or approved equal manufactured by the following:

Redi-Rock International
05481 US 31 South
Charleviox, MI 49720

The Neel Company
8328-D Traford Lane
Springfield, VA 22152

ReCon Retaining Wall Systems, Inc.
7600 W 27th Street #229
St. Louis Park, MN 55426

The concrete block wall shall have a rough, irregular stone-like surface. Individual blocks shall have the following dimensions:

- (1) Top Course - 46" X 28" X 18"
- (2) Middle Courses - 46" X 41" X 18"
- (3) Bottom Course - 46" X 41" X 18"

Each block shall have a minimum compressive strength of 3000 psi. Calcium styrate-based water repellent shall be added to the blocks at the dosage recommended by the water repellent manufacturer. Individual block faces shall be textured to resemble multiple irregular stone pieces. All visible sides shall have a textured finish. The blocks shall be of uniform color and texture and be capable of providing all corners or radii shown in the Plans. The color shall be New England LedgeStone, or approved equal. All blocks shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or degrade the strength or performance of the construction.

7/18/2013

- (b) Drainage Aggregate. Drainage Aggregate shall meet the requirements of Subsection 704.16.
- (c) Geotextile. Geotextile shall meet the requirements of Section 649 for Underdrain Trench Lining.
- (d) Concrete. Concrete for leveling pad shall meet the minimum requirements of Section 541 for Concrete, Class B or as specified by the manufacturer.

- xx. DESIGN AND SUBMITTALS. The wall shall be designed to support the embankment. Filter fabric shall be included in the design and sized to prevent soil migration.

The Contractor shall submit manufacturer's product data for proposed materials and method of installation to the Engineer prior to ordering materials.

The Contractor shall submit a manufacturer's certification to the Engineer, prior to the start of work, that the retaining wall system components meet the requirements of these specifications.

The Contractor shall submit to the Engineer detailed Construction Drawings and calculations prepared by a licensed Professional Engineer experienced with unit block retaining wall systems and registered in the State of Vermont. Engineering designs, techniques, and material evaluations shall be performed in accordance with manufacturer's requirements and these specifications.

- xx. CONSTRUCTION REQUIREMENTS.

- (a) General. The Contractor shall verify that layout dimensions are correct and substrate is in proper condition for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

The Contractor shall confirm the location of existing structures and utilities prior to excavation. The Contractor shall ensure all surrounding structures are protected from the effects of wall excavation.

The Contractor shall provide one foreman, experienced in the construction of at least 20,000 square feet of soil-reinforced unit block walls, to oversee the construction of the wall.

Materials shall be stored and handled based on manufacturer's requirements. Any material damaged due to improper storage and handling shall be replaced at the expense of the Contractor.

The Contractor shall construct a 15 foot mock-up section of wall in place for approval by the Engineer for wall pattern and color. If approved, the mock-up section will be accepted as part of the wall.

7/18/2013

- (b) Excavation. The Contractor shall excavate to the lines and grades shown on the Construction Drawings.
- (c) Unit Block Wall. The wall shall be designed to support the embankment. Filter fabric shall be included in the design and sized to prevent soil migration.

The Contractor shall follow the manufacturer's recommendations and the requirements below while constructing the unit block wall:

- (1) The units shall be placed on the approved base to conform to the required line and grade. Units shall be fitted tightly together and aligned to provide a continuous face with no gaps.
 - (2) The drainage aggregate and backfill shall be placed and compacted to 95% of the maximum Standard Proctor density in layers not to exceed 6 inches.
 - (3) Follow manufacturer's instructions for placement and protection of geogrid.
 - (4) Drainage pipe shall be installed in accordance with the Construction Drawings.
 - (5) The top course of the wall shall consist of cap units that fit together without excessive or irregular gapping. Apply adhesive continuously to both the cap course and the course directly beneath the cap.
 - (6) Where wall is exposed on both sides, the Contractor shall use freestanding block units, and where wall is exposed on only one side, the Contractor shall use retaining wall block units, installed in accordance with the manufacturer's specifications.
- (d) Geogrid. Geogrid shall be as recommended by the wall system manufacturer to meet the requirements of these specifications.
 - (e) Drainage Aggregate. A minimum 12 inch depth of drainage aggregate shall be placed as specified by the Manufacturer.

Filter fabric shall be wrapped around the drainage aggregate layer as shown on the Plans.

- (f) Backfill. Backfill in the reinforced soil zone shall meet the requirements of Subsection 704.08 for Granular Backfill for Structures, with a maximum aggregate size of 0.8 inch, unless more restrictive requirements are specified on the Construction Drawings.

The Contractor shall be responsible for independent soil testing services during earthwork operations to ensure that materials and compaction conform to the specifications.

7/18/2013

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Unit Block Retaining Wall) to be measured for payment will be the number of square meters (square yards) of wall placed in the complete and accepted work, rounded to the nearest square meter (square yard) for the full front face of wall from top to bottom and end to end.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Unit Block Retaining Wall) will be paid for at the Contract unit price per square meter (square yard). Payment will be full compensation for fabricating, detailing, furnishing, transporting, handling, assembling, and placing the materials specified, including unit concrete blocks, cap units, leveling pad, concrete adhesive, geosynthetic reinforcement, drainage aggregate, and geotextile fabric; for excavating, stockpiling, replacing, and compacting existing fill material; for providing wall mock-up(s) as specified; and for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work.

The installation of temporary earth support system(s) and underdrain pipe, if required as specified by the manufacturer, will be considered incidental to Special Provision (Unit Block Retaining Wall).

Granular Backfill for Structures will be paid separately under Contract item 204.30.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.675 Special Provision (Unit Block Retaining Wall)	Square Meter (Square Yard)