

SECTION 857—CONCRETE BLOCK REVETMENT SYSTEMS

857.1 DESCRIPTION—This work is construction of an articulating system of interlocking precast concrete blocks or cable-connected precast concrete block mats for erosion protection of slopes and channels.

857.2 MATERIAL—

(a) **Blocks.** Precast, [Section 714](#), or if machine-made, [Section 713](#) and having 28-day compressive strength of 28 MPa (4,000 pounds per square inch) and an absorption of 6% or less when tested according to [ASTM C 140](#) and a minimum durability factor of 80 when tested according to [ASTM C 666](#) (Procedure A, freezing and thawing in water).

(b) **Stainless Steel Cable.** For connected block systems, [ASTM A 368](#) or [MIL-W-87161](#).

(c) **Geotextile.** As specified by the system manufacturer, and from a manufacturer listed in [Bulletin 15](#).

(d) **Soil Anchors.** Conforming to the manufacturer's recommendations.

(e) **Other Material.** Backfill.

1. **Aggregate.** [Section 703](#)

2. **Topsoil.** [Section 802](#)

- Seeding and Soil Supplements—[Section 804](#)
- Mulching—[Section 805](#)
- Erosion Control Mulch Blanket—[Section 806.2\(a\)2](#)

(f) **Hydraulic Performance Requirements.** Provide documented evidence that the system being furnished meets hydraulic performance characteristics, derived from tests conducted under controlled flow conditions and conforming to U.S. Federal Highway Administration and U.S. Bureau of Reclamation Testing protocol, as documented in “Hydraulic Stability of Articulating Concrete Block Revetment Systems During Overtopping Flow,” Report No. FHWA-RD-89-199.

(g) **Certification.** [Section 106.03\(b\)3](#)

(h) **Delivery, Storage, and Handling.** Transport blocks in a manner that minimizes damage during shipping. Store and handle in a manner that protects them from damage by construction activities or traffic.

857.3. CONSTRUCTION—Excavate to allow placement of the geotextile and concrete blocks as indicated or directed. Remove obstructions such as tree roots, projecting stones, or other foreign matter to a depth of 0.16 m (6 inches) below subgrade. Grade the slope to a smooth surface. Backfill voids or soft areas with suitable material and compact to non-movement. Fine grade the area and hand dress, where necessary, before placing the geotextile. Place geotextile as specified in [Section 212.3\(c\)](#).

Place concrete blocks over a geotextile, according to the system manufacturer's instructions. Submit field samples to MTD to verify that the manufacturer's prescribed geotextile is installed. Secure cable connected concrete block systems to the slope with soil anchors as indicated or directed. Do not use unsound or damaged blocks. Minor cracks, incidental to the usual methods of manufacturer, or minor chipping resulting from shipment and delivery are not grounds for rejection unless the Representative determines the material unacceptable. After placing blocks, backfill the open areas of the block with topsoil or aggregate, as indicated, to the top of the blocks. Complete backfilling within 7 days of placing the geotextile. If using aggregate, size aggregate according to the

manufacturer's recommendation. If using topsoil, seed the backfill area as specified in [Section 804](#) and mulch as specified in [Section 805](#). Use an erosion control mulch blanket (ECB), as specified in [Section 806.2\(a\)2](#), to establish vegetation in a wet weather channel as directed.

857.4 MEASUREMENT AND PAYMENT—

- (a) **Concrete Block Retention System.** Square Meter (Square Yard)
Aggregate backfill, if used, is incidental to the work.
- (b) **Seeding and Soil Supplements.** [Section 804.4\(a\)](#) as indicated.
- (c) **Mulching.** [Section 805.4](#) as indicated.
- (d) **Erosion Control Mulch Blanket.** [Section 806.4\(b\)](#)
- (e) **Topsoil.** [Section 802.4](#) as indicated.