

N.Y.S.D.O.T. CABLE CONCRETE SPECIFICATION

ITEM 05620.XXXX - CONCRETE MAT, BANK AND CHANNEL PROTECTION

DESCRIPTION: This work shall consist of furnishing all plant, labor, equipment and materials to place a protective covering of erosion - resistant material to place a protective covering of erosion- resistant material on embankment slopes, stream banks, at culvert inlets or outlets, on bottoms and side slopes of channels, at structure foundations, and at other locations shown on the plans or as directed by the Engineer. The work shall be done in accordance with these specifications and in conformity with the lines, grades, thicknesses, and typical sections shown on the plans or established by the Engineer.

MATERIALS

Concrete Mats: Concrete shall be the following sizes for project selection:

NOTE: Engineer should verify selected size for site conditions (ie) flow velocities, slope.

#-35 4.5" high block, 35 lbs per sq/ft, 4 ft x 16 ft @ 64 sq/ft per mat = 2240 lbs per mat
#-45 5.5" high block, 45 lbs per sq/ft, 4 ft X 16 ft @ 64 sq/ft per mat = 2880 lbs per mat
#-70 8.5" high block, 70 lbs per sq/ft, 4 ft x 16 ft @ 64 sq/ft per mat = 4480 lbs per mat
#-100 10" high block, 100 lbs per sq/ft, 4 ft x 16 ft 1 @ 64 sq/ft per mat = 6400 lbs per mat

- A. **Bedding Material:** Bedding material shall consist of granular materials placed in a layer where required, on ground surface prior to placing concrete mats for leveling purposes only. Bedding material shall be in conformance with the applicable sections of NYSDOT 620 Bank and Channel Protection.
- B. **Concrete:** Concrete shall be in conformance with NYSDOT 704-04 precast concrete general, except that cement shall be Class III, concrete shall be a minimum of 3,000 PSI @ 28 days, and air shall be in the range of 4-8%.
- C. **Geotextile:** Shall be a 6 oz. non-woven geotextile fabric from the approved geotextile list. The geotextile shall be physically bonded to bottom of trapezoidal concrete blocks during manufacturing process (i.e.) while concrete is in the "plastic state" and prior to initial set.
- D. **Anchors:** Provide anchors at 2' o.c. on the upstream leading edge of the mats. Anchor every 4'-9' for other outside edges. Depth of anchor: 36".
- E. **Clamps:** Mats shall be clamped together at every other loop with a U-type cable clamp.
- F. **Cable:** Shall be stainless steel type 302, 1 x 19 construction. Cable shall be stainless steel type 302
1 X 19 Construction
Type: 302 Industry Standard
18-8 Grade
18% Chromium
8% Nickel
1 X 19 Construction
1 wire of 19 wrap
- Sizes:** 1/8" 5/32" 3/16"
- Spec:** Military Specification
Mil-W-87161 Type 2, Comp-B, Const 2
From ASD (ASNPS)
Wright Patterson - AFB
Ohio 45433

CONSTRUCTION DETAILS

- A. **General:** Concrete mats shall be placed as protective material on stream banks, in channels and elsewhere as required in order to provide protection against erosion. The ground surface on which bank or channel protection is to be placed shall be free of brush, trees, stumps, and other objectionable material and shall be dressed to a smooth surface. All soft or spongy material shall be removed to the depth shown on the plans or if not shown on the plans as directed by the Engineer and replaced with approved material. Filled areas shall be compacted in accordance with applicable provisions of 203-3.12, Compaction. Protection for structure foundations shall be provided as early as the foundations construction permits. The type of protection shall be placed in accordance with these specifications and the contract documents. Submittals shall include Jet Velocity tests, Rip Rap equivalency tables, mannings "N" design data.
- B. **Concrete Mat:** Each concrete mat shall be laid from the downstream end of the site and with the overlapping of the mats on the geotextile fabric. The upstream leading edge and other outside edges of the Concrete area shall be trenched at least one block high, and backfilled. (This may vary depending on site conditions, refer to the project plans for any additional details that may be required.) The remainder of the mat shall be laid so that the top of the blocks are flush with the ground. After placement of the Concrete Mats the following final surface treatment shall be performed.

1. Leave voids of the Concrete Mat to naturally silt in.

Refer to the project plans and specifications for layout and further information.

METHOD OF MEASUREMENT: The work shall be measured as the number of square feet of surface area of the Concrete Mat computed from the payment lines as shown on the plans covered with the complete channel protection mat system. No separate measurement shall be made for day lighting the edges of the concrete mat at the top of bank into the existing grade.

BASIS OF PAYMENT: The unit price bid per square foot for this item shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

No payments will be made for any work necessitated by damage attributable to the Contractor's operations.

No additional payment will be made for patching damaged areas of a concrete mat system.

Payment for the sizes indicated on the plans shall be made under:

<u>ITEM NO.</u>	<u>DESCRIPTION</u>
5620.5004	Concrete Mat, Bank and Channel Protection, 35 LB/SF
5620.5007	Concrete Mat, Bank and Channel Protection, 45 LB/SF
5620.5010	Concrete Mat, Bank and Channel Protection, 70 LB/SF
5620.5013	Concrete Mat, Bank and Channel Protection, 100 LB/SF

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<u>ITEM #</u>	<u>SIZE DESIGNATION</u>	<u>INSTALLATION DESIGNATION</u>
05620.5004	CABLE CONCRETE - 35	VOID EMPTY
05620.5005	CABLE CONCRETE - 35	FILL VOID SOIL & SEED
05620.5006	CABLE CONCRETE - 35	FILL VOID WITH CRUSHED STONE
05620.5007	CABLE CONCRETE - 45	VOID EMPTY
05620.5008	CABLE CONCRETE - 45	FILL VOID SOIL & SEED
05620.5009	CABLE CONCRETE - 45	FILL VOID WITH CRUSHED STONE
05620.5010	CABLE CONCRETE - 70	VOID EMPTY
05620.5011	CABLE CONCRETE - 70	FILL VOID SOIL & SEED
05620.5012	CABLE CONCRETE - 70	FILL VOID WITH CRUSHED STONE
05620.5013	CABLE CONCRETE - 100	VOID EMPTY
05620.5014	CABLE CONCRETE - 100	FILL VOID SOIL & SEED
05620.5015	CABLE CONCRETE - 100	FILL VOID WITH CRUSHED STONE