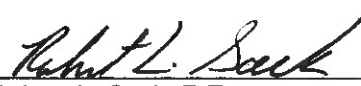


To: MODIFIED BY EI 13-014 EFFECTIVE 1/19/14	MODIFIED BY EI 09-035 EFFECTIVE 9/2/10	 New York State Department of Transportation ENGINEERING INSTRUCTION	EI 08-006
Title: STANDARD SPECIFICATIONS SECTION 207 – GEOSYNTHETICS STANDARD SPECIFICATIONS SECTION 209 – SOIL EROSION AND SEDIMENT CONTROL			
SUPERSEDED BY EB 15-031 EFFECTIVE 9/28/15	Approved:  Robert L. Sack, P.E. Deputy Chief Engineer (Research)		

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective beginning with projects submitted for the letting of September 4, 2008.
- Superseded issuance(s): This EI does not supersede any previous issuances.
- The information transmitted by this issuance will be incorporated into a future revision to the Standard Specifications.

PURPOSE: The purpose of this EI is to issue a replacement of Section 207 – Geotextiles and Prefabricated Composite Drains for Structures and a revision of Section 209 – Soil Erosion and Sediment Control of the Standard Specifications.

TECHNICAL INFORMATION:

- As outlined in EI 08-005, Section 737 is being assigned the material specifications related to Geosynthetics. Section 209-2 Materials was revised to refer to the appropriate subsections of Section 737 - Geosynthetics.
- Section 207 was replaced with an updated section which incorporates the specifications requirements for geomembranes and references to the appropriate subsections of Section 737 – Geosynthetics.

IMPLEMENTATION:

- The Main Office Design Quality Assurance Bureau will insert these standard specification shelf notes beginning with projects submitted for the letting of September 4, 2008.
- The following special specification is disapproved:
Item 207.0601--17: Geomembrane
- The following standard specifications are disapproved:
 - Item 207.10: Geotextile Bedding
 - Item 207.11: Geotextile Separation
 - Item 207.12: Geotextile Drainage
 - Item 207.13: Geotextile Slope Protection
 - Item 207.14: Geotextile Stabilization
 - Item 207.15: Prefabricated Composite Structural Drain
 - Item 207.16: Prefabricated Composite Integral Abutment Drain
- The following standard specifications are approved:
 - Item 207.20: Geotextile Bedding
 - Item 207.21: Geotextile Separation

Item 207.22: Geotextile Drainage
Item 207.23: Geotextile Slope Protection
Item 207.24: Geotextile Stabilization
Item 207.25: Geomembrane
Item 207.26: Prefabricated Composite Structural Drain
Item 207.27: Prefabricated Composite Integral Abutment Drain

TRANSMITTED MATERIALS:

- Standard Specification shelf notes of *Section 207 - Geosynthetics*.
- Standard Specification shelf notes of revised *Section 209-2 Materials*.

BACKGROUND: The NYS Department of Transportation is implementing Transport SiteManager, including both Construction and Materials functionality. Implementation of standard AASHTO software enables SiteManager to allow revising business practices to be more consistent with industry-accepted best practices. The revisions to the Standard Specifications are to conform to SiteManager's methodology in defining its Material Codes and Pay Items.

CONTACT: Questions or comments regarding this issuance should be directed to Randall J. Romer, P.E. of the Geotechnical Engineering Bureau at (518) 457-4714, rromer@dot.state.ny.us.

STANDARD SPECIFICATIONS SECTION 207 - GEOSYNTHETICS

Make the following changes to the Standard Specifications dated May 4, 2006:

Pages 181 through 183, under Section 207- Geotextiles and Prefabricated Composite Drains for Structures, *remove* the entire section and *replace* it with the following:

SECTION 207 - GEOSYNTHETICS

207-1 DESCRIPTION

207-1.01 Geotextiles. The work shall consist of furnishing and installing approved Geotextile of the Class and Type indicated, at the locations, and in the manner shown on the plans or as directed by the Engineer, in writing, prior to performing the work.

207-1.02 Geomembranes. The work shall consist of furnishing and installing approved Geomembrane, including the preparation of the surface upon which the Geomembrane is placed, at the locations and in the manner shown on the plans or as directed by the Engineer, in writing, prior to performing the work.

207-1.03 Prefabricated Composite Drains for Structures. The work shall consist of furnishing and installing an approved Prefabricated Composite Structural Drain (PCSD) or Prefabricated Composite Integral Abutment Drain (PCIAD) as specified at the location (s) shown on the contract documents or as directed by the Engineer, in writing, prior to performing the work.

Prior to installation, the Contractor shall furnish the Engineer with copies of the manufacturer's literature with details and installation requirements for the PCSD or PCIAD. If not included in the manufacturer's literature, a letter identifying the geotextile wrap shall also be provided to the Engineer.

207-2 MATERIALS. Materials shall meet the requirements specified in the following subsections of Section 700 – Materials.

Geotextiles	§737-01
Geotextile Bedding	§737-01 A.
Geotextile Separation	§737-01 B.
Geotextile Drainage	§737-01 C.
Geotextile Slope Protection	§737-01 D.
Geotextile Stabilization	§737-01 E.
Turbidity Curtain	§737-01 F.
Silt Fence	§737-01 G.
Geomembranes	§737-02
Prefabricated Composite Structural Drains	§737-04
Prefabricated Composite Integral Abutment Drains	§737-05

Materials shall be subject to the Department's Quality Assurance (QA) program outlined in Section 737.

207-3 CONSTRUCTION DETAILS

207-3.01 Geotextiles

A. General. The Geotextiles shall be protected from exposure to sunlight during transport and storage. After placement, the Geotextile shall not be left uncovered for more than two (2) weeks.

Traffic or construction equipment will not be permitted directly on the Geotextile. Geotextiles may be joined by either sewing or overlapping. Sewn seams shall be lapped a minimum of 100 mm and

STANDARD SPECIFICATIONS SECTION 207 - GEOSYNTHETICS

double sewn. The thread used to sew the seam shall be nylon or polypropylene. Overlapped seams shall have a minimum overlap of 500 mm except when placed under water where the overlap shall be a minimum of 1 m. All seams shall be subject to the approval of the Engineer. Geotextile which becomes torn or damaged due to the Contractor's operations shall be replaced or patched at no cost to the State. The patch shall extend 1 m beyond the perimeter of the tear or damage.

B. Bedding and Slope Protection. The Geotextile shall be placed and anchored on a prepared surface approved by the Engineer. The Geotextile shall be laid loosely but in intimate contact with the soil so that placement of the overlying materials will not stretch or tear the Geotextile. Where Geotextile is placed above water, the backfill placement shall begin at the toe and proceed up the slope.

Where Geotextile is placed under water, the long dimension (provided that the width dimension is wider than the channel width) shall be placed parallel to the direction of flow. If the width dimension is not wider than the channel width, the long dimension shall be placed perpendicular to the direction of flow. Successive Geotextile sheets shall be overlapped so that the upstream sheet is placed over the downstream sheet. As the Geotextile is placed under water, the backfill material shall be placed on it to the required thickness. The Geotextile placement shall not progress more than 15 m ahead of the backfill placement.

Rip-rap, stone filling (Heavy) or stone filling (Medium) shall not be dropped onto the Geotextile from a height greater than 0.3 m. Slope protection and smaller sizes of stone filling shall not be dropped onto the Geotextile from a height exceeding 1 m.

C. Separation and Stabilization. The Geotextile shall be placed as directed by the Engineer. The Geotextile shall be laid loosely but in intimate contact with the soil so that placement of the overlying material will not stretch or tear the Geotextile.

D. Drainage. The Geotextile shall be placed to conform loosely to the shape of the trench.

After placing the filter material, the Geotextile shall be folded over the top of the filter material to produce a minimum overlap of 300 mm. The Geotextile shall then be covered with the subsequent course.

207-3.02 Geomembranes. The Geomembrane shall be protected during transport and storage. The surface upon which the Geomembrane is to be placed shall be within reasonable conformity to the proposed grade. Traffic or construction equipment will not be permitted directly on the Geomembrane. Care shall be exercised by workers when walking or working on the Geomembrane.

Seams shall be sealed as per the manufacturer's recommendations and to the satisfaction of the Engineer. The edges of the Geomembrane shall be secured in the manner shown on the contract plans or as directed by the Engineer.

Geomembrane which becomes torn or damaged shall be replaced or patched as ordered by the Engineer. The patch shall extend 1 m beyond the perimeter of the tear or damage and the seams shall be approved by the Engineer.

207-3.03 Prefabricated Composite Drains for Structures. The Contractor shall install the drain in conformance with the manufacturer's installation procedures. The drain shall be installed so that the backfill, when placed, will be in contact with the geotextile and forms a continuous drainage layer without interruption within the drain's plane. In installations where concrete is to be poured against the prefabricated composite drain, only drains with impermeable cores will be allowed. At all locations, a positive outlet for the water in the drain shall be provided. This may involve making a hole in the core at the weep hole locations for approved drains with an impermeable core. Do not puncture the geotextile. Any damaged geotextile shall be repaired.

Adhesive shall be applied to the wall surface, and not directly to the drain.

During all periods of shipment and storage, the drain shall be wrapped and protected from direct exposure to sunlight, mud, dirt and debris.

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Care shall be exercised while backfilling to prevent damage to the drain. Repairs or replacements of drain damaged by construction operations shall be performed, as directed by the Engineer, at no cost to the State.

207-4 METHOD OF MEASUREMENT

207-4.01 Geotextiles

A. General. The quantity of Geotextile will be the number of square meters computed from the payment lines shown on the plans or from payment lines established in writing by the Engineer. Measurement will not be made for Geotextile used for repairs, seams, or overlaps. If taken, the amount of quality assurance samples will be added to this quantity.

B. Drainage. The number of square meters shall be computed by multiplying the length of the trench where Geotextile is used by the theoretical perimeter (determined from the typical section).

207-4.02 Geomembranes. The quantity of Geomembrane will be the number of square meters computed from the payment lines shown on the plans or from payment lines established in writing by the Engineer. Measurement will not be made for Geomembranes used for repairs, seams, or overlaps.

207-4.03 Prefabricated Composite Drains for Structures. The quantity of PCSD or PCIAD is the number of square meters satisfactorily installed computed from the payment lines indicated in the contract documents or from payment lines established, in writing, by the Engineer.

207-5 BASIS OF PAYMENT

207-5.01 Geotextiles. The unit price bid per square meter for these items shall include the cost of furnishing all labor, equipment, and materials necessary to complete the work, including the cost of preparing the surface upon which the Geotextile is placed. No payment will be made for replacement or repairs.

207-5.02 Geomembranes. The unit price bid per square meter for this item shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work, including the cost of preparing the surface upon which the Geomembrane is placed and securing the edges of the Geomembrane. No payment will be made for replacement or repairs.

207-5.03 Prefabricated Composite Drains for Structures. The unit price per square meter for this item includes the cost of furnishing all labor, equipment, and material necessary to complete the work. No payment will be made for repairs or replacement.

Payment will be made under:

Item No.	Item	Pay Unit
207.20	Geotextile Bedding	Square Meter
207.21	Geotextile Separation	Square Meter
207.22	Geotextile Drainage	Square Meter
207.23	Geotextile Slope Protection	Square Meter
207.24	Geotextile Stabilization	Square Meter
207.25	Geomembrane	Square Meter
207.26	Prefabricated Composite Structural Drain	Square Meter
207.27	Prefabricated Composite Integral Abutment Drain	Square Meter

STANDARD SPECIFICATIONS SECTION 209 – SOIL EROSION AND SEDIMENT CONTROL

Make the following changes to the Standard Specifications dated May 4, 2006:

delete §209-2.05 and **add** the following:

209-2.05 Geotextile. Geotextiles shall meet the requirements of §737-01 Geotextiles. UV sensitive geotextiles shall be protected from exposure to sunlight during transport and storage.

delete §209-2.08 and **add** the following:

209-2.08 Silt Fence. Silt fence shall meet the requirements of §737-01 G. Silt Fence and be listed in the Approved List. A silt fence assembly shall consist of silt fence geotextile, posts, and fasteners and may include mesh support consistent with the Approved List.

A. Posts. Posts shall meet the following requirements:

1. Either wood, metal, or synthetic posts may be used. Softwood post shall be 38 mm x 89 mm, hardwood post shall be at least 32 mm x 32 mm, steel post shall be "T" or "L" shaped in cross section, with a minimum weight of 2 kg/m.
2. Posts shall be a minimum of 1.2 m long and shall be spaced consistent with the material selected and as indicated in the Approved List.

B. Mesh Support. For those silt fence assemblies on the Approved List that require a mesh support, the support shall consist of 14 gauge (min) welded wire mesh with a maximum 150 mm x 150 mm opening or polymeric mesh. All mesh support shall be a minimum of 750 mm in height.

C. Fasteners. Fasteners shall be heavy duty staples, hog rings, tie wires, or any other fastener compatible with the post material.

delete §209-2.13 and **add** the following:

209-2.13 Stabilized Construction Entrance. Construction entrances shall consist of a geotextile, crushed stone or gravel and, if necessary, a drainage pipe to maintain ditch flow.

A. Geotextile. Geotextiles shall meet the requirements of §737-01 E. Geotextile Stabilization, Strength Class 1.

B. Crushed Stone or Gravel. Crushed stone or gravel shall be 150 mm of coarse aggregate material meeting the gradation requirements of size designation #3 on Table 703-4.

C. Drainage Pipe. The Contractor shall provide a drainage pipe sized with sufficient capacity to carry ditch flow. The pipe dimension shall be consistent with the modified soil erosion and sediment control plan approved by the Engineer. The drainage pipe may consist of new or used material in satisfactory condition and suitable for the intended use. The Engineer will reject any materials determined to be unsatisfactory.