

CELLULAR CONFINEMENT SYSTEM

****From Middlebury WCRS(9)**

xx. DESCRIPTION. This work shall consist of furnishing and installing a cellular confinement system as shown on the Plans for improving the load carrying capacity of railroad bridge approaches.

xx. MATERIALS.

(a) General. The cellular confinement system shall consist of a cellular material into which specific infill materials are placed.

The cellular material shall be a polyethylene sheet strip assembly, connected by a series of offset, full-depth, ultrasonic welded seams aligned perpendicular to longitudinal axis of strips which, when expanded, form walls of a flexible, 3-dimensional, cellular confinement system.

(b) Cellular Material. The following manufacturers are capable of supplying a cellular confinement system material that meets the requirements of these specifications:

Manufacturer: Presto Geosystems
670 North Perkins Street
PO Box 2399
Appleton, Wisconsin 54912-2399

Product: Geoweb® Type GW30V60829P panels (8'-6" W x 27'-0" L x 6" D)
Tel.: 800-548-3424
Fax: 920-738-1222

Manufacturer: GeoProducts
8615 Golden Spike Lane
Houston, TX 77086

Product: Perforated wall Geocell 30 (29 cells long x 8 cells wide with a 6" cell depth)
Tel.: 281-820-5493
Fax: 281-820-5499
Website: www.geoproducts.org

Manufacturer: Webtec, Inc.
PO Box 19729
Charlotte, NC 28219

Product: Perforated wall TerraCell 175, (29 cells long x 8 cells wide with a 6" cell depth)
Tel.: 800-438-0027
Fax: 704-394-7946
Website: www.webtecgeos.com

Requests for substitutions for the above shall be submitted to the Agency's Office of Contract Administration a minimum of 10 days in advance of the bid opening date. Substitutions for the above after award shall be approved by the Resident Engineer.

- (c) Stakes. Stakes used to hold the cellular material in its expanded shape prior to infilling shall be straight steel stakes meeting the requirements of Subsection 713.01.
- (d) Infill. Infill material shall meet the requirements of Section 301 for Subbase of Crushed Gravel, Fine Graded.
- (e) Geotextile. Geotextile shall meet the requirements of Section 649 for Geotextile for Railroad Ballast.

xx. CONSTRUCTION REQUIREMENTS.

- (a) General. The Contractor shall prepare subgrade and install the cellular confinement system in accordance with the manufacturer's instructions.
- (b) Subgrade. The Contractor shall excavate and shape foundation soils to the grades, elevations, and dimensions shown on the Plans.
- (c) Subbase and Base Installation.
 - (1) Place geotextile over subgrade according to geotextile manufacturer's recommendations.
 - (2) Expand cellular sections into position to the dimensions and configuration shown on the Plans. Hold individual sections in their expanded positions with steel stakes positioned inside selected outer cells.
 - (3) Confirm each cellular section is expanded uniformly to required dimensions and outer cells of each layer are correctly aligned. Interleaf or overlap edges of adjacent sections in each layer, according to which side wall profiles abut. Ensure upper surfaces of adjoining cellular sections are flush at joint and adjoining cells are fully anchored.
 - (4) Overfill cells with the infill material. Maximum particle size of infill material shall not be greater than 2 inches. Level the surface of the infill material approximately 2 inches above cell walls. Maintain sufficient infill material cover to ensure material handling equipment running over the system does not damage cell walls.
 - (5) Compact infill to a minimum of 95 percent dry density in accordance with AASHTO T 99, Method C. Additional cover of infill material over cells may be required as a wear course.

(6) Shape compacted surface to required elevation and grade as shown on the Plans.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Cellular Approach Reinforcement) to be measured for payment will be the number of square meters (square yards) placed in the complete and accepted work. Measurement will be made horizontally between exterior faces of exterior cells.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Cellular Approach Reinforcement) will be paid for at the Contract unit price per square meter (square yard). Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified, including steel stakes and geotextile, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Infill material will be paid for separately under Contract item 301.26.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.675 Special Provision (Cellular Confinement System, Bridge Approach)	Square Meter (Square Yard)