

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
338/IL 59	2011-035-1	DUPAGE		
			CONTRACT 60P42	
FED.ROAD.DIST.NO.	ILLINOIS	FED. AID PROJECT		

- B. Backfill shall have a Plasticity Index (PI) < 15 and Liquid Limit (LL) < 40 per ASTM D 4318.
- C. The Contractor shall obtain independent laboratory test results to verify that the backfill meets the requirements of 2.06 A. and B.

2.06 Geogrid

- A. The geogrid, as required by the Contractor's Designer in the construction plans and drawings, shall be manufactured specifically for soil reinforcement applications.

2.07 Drainage Pipe

- A. If required, drainage pipe shall be PVC pipe manufactured in accordance with ASTM D-3034 or corrugated HDPE pipe manufactured in accordance with ASTM D-1248. Drainage pipe shall be perforated, slotted, or non-perforated as shown in the construction drawings.

PART 3: EXECUTION

3.01 Excavation

- A. The Contractor shall excavate to the lines and grades shown on the construction drawings. The Contractor and/or Owner's representative shall inspect the excavation and approve/disapprove its competency as a foundation soil prior to placement of the leveling pad or backfill.
- B. If remedial work is required to improve the foundation soil, the Owner shall compensate the Contractor as mutually agreed.
- C. The foundation soil shall be compacted to minimum of 95% of the maximum density per ASTM D-698.
- D. If seepage or evidence of past seepage is observed in the excavation, the Contractor shall consult the Contractor Design Engineer in order to add or modify a drainage system to mitigate future seepage.

3.02 Base Leveling Pad

- A. Leveling pad materials shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches, extending laterally a minimum of 6 inch, both in front of and behind the block.
- B. Leveling pad materials shall be compacted to a minimum of 95% of the maximum density per ASTM D-698.
- C. Leveling pad shall be prepared to insure full contact to the base surface of the block.

3.03 Block Installation

- A. First course of units shall be placed on the leveling pad at the appropriate line and grade as shown on the construction drawings. Alignment and level shall be checked in all directions. Ensure that all units are in full contact with the leveling pad and properly seated.
- B. Place the front of unit side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
- C. Place drainage fills within and behind blocks. Place backfill behind drainage fill in lifts no greater than 6 to 12 inches and compact to a minimum of 95% of the maximum density per ASTM D-698. After placement of backfill, compact drainage fills by probing.
- D. Do not stack more than two courses of block prior to placing and compacting drainage fill and backfill.

3.04 Geogrid Installation

- A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
- B. Geogrid shall be placed at the type, lengths, and elevations shown on the construction drawings or as directed by the Contractor's Design Engineer.
- C. The geogrid shall be laid horizontally from within 2 inches of the face of the block back across compacted backfill. Place the next course of blocks over the geogrid. The geogrid shall be pulled taut and anchored prior to placing additional drainage fill or backfill.
- D. Geogrid shall be continuous throughout their embedment length. Geogrid shall be placed side-by-side or overlapped with 3 inch backfill between to provide 100% coverage at each designed geogrid level where possible. Geogrid shall not be spliced along its designed embedment length.

3.05 Backfill Placement

- A. Backfill shall be placed, spread, and compacted in such a manner that minimize the development of crack and installation damage in the geogrid.
- B. Backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 to 12 inches (depending on soil type and soil processing) where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required compaction.
- C. Backfill shall be compacted to 95% of the maximum density per ASTM D-698. The moisture content of the backfill material, prior to and during compaction, shall be uniformly distributed throughout each layer and shall be within 20% of the optimum moisture content as determined by ASTM D-698.
- D. Only lightweight hand-operated equipment shall be allowed within 4 feet from the face of the block.

- E. Tracked construction equipment shall not be operated directly upon the geogrid. A minimum of 6 inches of backfill is required over the geogrid prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the backfill and damaging the geogrid.
- F. Rubber tired equipment may pass over geogrid at slow speeds, less than 10 mph. Sudden braking and sharp turning shall be avoided.
- G. At the end of each day's operation, the Contractor shall slope the last lift of backfill away from the blocks and drainage fill in order to direct runoff away from wall face. The Contractor shall ensure surface runoff from adjacent areas does not enter the wall construction site.

3.06 Drainage System Installation

- A. Drainage systems, both internal to the wall and surficial, shall be determined based upon site conditions by the Contractor in consultation with the Owner and the Contractor's Design Engineer.
- B. Within the time of construction, the Contractor must ensure that all surficial drainage is directed away from the wall system by use of drainage swales, area drains, or other competent measure.
- C. Within the lifetime of the wall, the Owner must ensure that all surficial drainage is directed away from the wall system.

3.07 Cap Installation

- A. Caps shall be adhered to underlying blocks and caps with Super-Stik™.

3.08 As-Built Construction Tolerances

- A. **Vertical Alignment:** the top of wall shall be within 0.1 feet (1.2 inch) from design grade.
- B. **Wall Batter:** within 2 degrees of design batter, excluding a negative batter.
- C. **Horizontal alignment:** the bottom of the wall (B.W.), at design B.W. grade, shall within 1 foot of design line.
- D. **Maximum horizontal gap:** between erected blocks shall be 1/4 inch.

3.09 Field Quality Control

- A. The Contractor shall engage inspection and testing services (quality control) during construction to ensure project specification are met. The lack of quality control by the Contractor does not relieve the Contractor from meeting project specifications.
- B. Quality control should include, but not be limited to: foundation soil inspection; verification of geotechnical design parameters; and verification that construction is in general compliance with the design drawings and project specifications. (Quality Assurance is usually best performed by the site geotechnical engineer.)
- C. Only qualified and experienced technicians and engineers shall perform testing and inspection services.

NAPERVILLE PUBLIC UTILITIES DEPARTMENT ELECTRIC STANDARDS	SEGMENTAL CONCRETE BLOCK WALL SYSTEM	DATE: 01-02-08 Page 4 of 6 60468-400
--	--------------------------------------	--

NAPERVILLE PUBLIC UTILITIES DEPARTMENT ELECTRIC STANDARDS	SEGMENTAL CONCRETE BLOCK WALL SYSTEM	DATE: 01-02-08 Page 6 of 6 60468-400
--	--------------------------------------	--

NAPERVILLE PUBLIC UTILITIES DEPARTMENT ELECTRIC STANDARDS	SEGMENTAL CONCRETE BLOCK WALL SYSTEM	DATE: 01-02-08 Page 6 of 6 60468-400
--	--------------------------------------	--

PROJECT TITLE: ROUTE 59 ROAD IMPROVEMENTS					
PROJECT DESCRIPTION: DETAILS AND STANDARDS					
ENGINEER: BCC	DRAWING DATE: 5-11-12	DATE: 4211,4212,4223	SCALE: N.T.S.		
DESIGN BY: DL	DRAWN BY: PSM	REVISIONS DATE:	START/JOINT AGREEMENT #	PROJECT #	
			N/A	EU-12	
CHECKED BY:	APPROVED BY:	CAD FILE: 0060648001D141.DWG	SHEET #	41 OF 63	
Naperville			Department of Public Utilities Electric Division		WORK REQUEST # 60468