

**SPECIFICATION: RETAINING WALL**

**Delivery, Storage, and Handling**

- A. Retaining Wall Units:
  1. Contractor shall check the units upon delivery to ensure that proper materials have been received.
  2. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials from being deposited on the units.
  3. Contractor shall protect the units from damage (i.e. cracks, chips, spalls). Damaged units shall be evaluated for usage in the wall according to ASTM: C-145-75 (1981 Rev.)

**PRODUCTS**

- 2.01 Definitions
  - A. Retaining wall units – Masonry units.
  - B. Reinforced fill – compacted soil which is within the reinforced soil mass.
  - C. Drainage fill – compacted granular fill directly behind the retaining wall units.
  - D. Backfill – compacted or in-situ soil located behind the reinforced soil mass.
  - E. Foundation soil – compacted or in-situ soil beneath the entire wall.
  - F. Leveling Pad – a smooth flat surface upon which the first course of retaining wall units is placed.
- 2.02 Modular Concrete Retaining Wall Units
  - A. Concrete wall units shall have a minimum 28 day compressive strength of 3000 psi. The concrete shall have adequate freeze/thaw protection with a maximum moisture absorption rate of 6%.
  - B. Exterior dimensions may vary. The unit must also be capable of concave and convex alignment curves with a minimum radius of 3 feet and 90 degree inside and outside corners.
  - C. Exterior face shall be textured and colored as specified by the Owner.
  - D. Units shall be free from all cracks and be resistant to flexural cracking.
- 2.03 Geotextile
  - A. Material shall be a polypropylene woven geotextile, with a minimum flow rate of 6 gpm/psi. ft. (ASTM D4491).
  - B. Product shall be installed in accordance with manufacturer's requirements.

**PART 3 FILL AND FOUNDATION MATERIALS**

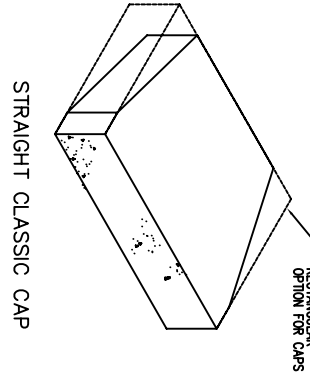
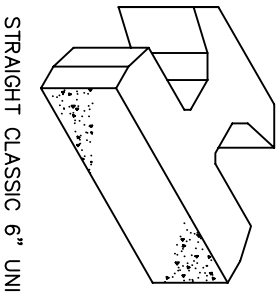
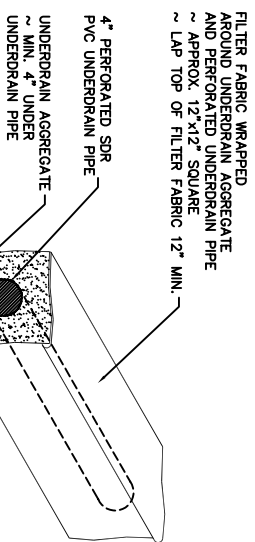
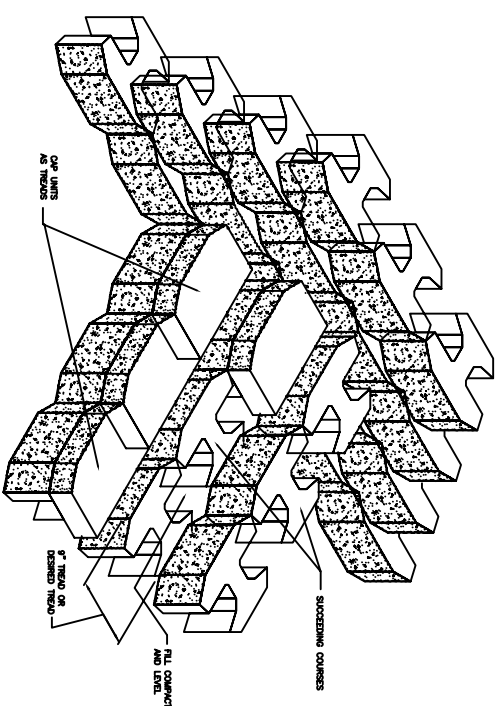
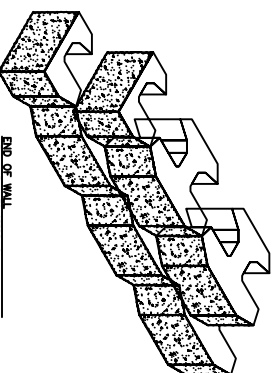
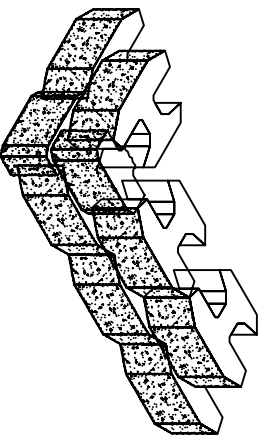
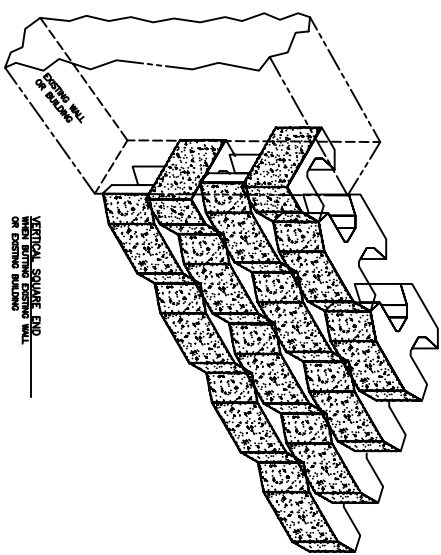
- 3.01 Foundation Base Material
  - A. Material from the leveling pad shall consist of compacted sand, gravel and/or concrete rubble. The leveling pad construction depth shall be a minimum of 6 inches of compacted base is required. (When using concrete, the leveling pad should be a minimum of 3" thick non-reinforced concrete.)
- 3.02 Drainage Fill
  - A. Fill placed behind the units shall consist of free-draining 3/4" crushed stone or granular fill. Gradation shall include material with fines limited to 5% passing the #200 sieve and less than 50% passing the #40 sieve. Maximum size shall be 3/4".
  - B. The drainage fill shall be placed in 6" lifts with each lift compacted to 95% of maximum dry density.
  - C. Drainage fill shall be placed in 6" lifts with each lift compacted to 95% of maximum dry density.
  - D. Drainage fill may be required. Cap backfill with 1 foot of impervious material.

**PART 4 CONSTRUCTION**

- 4.01 Excavation
  - A. Contractor shall excavate to the lines and grades shown on the construction drawings. Over-excavation shall not be paid for and replacement with compacted granular fill shall be at the contractor's expense.
  - B. Contractor shall be careful not to disturb base beyond the lines shown.
- 4.02 Foundation Soil Preparation
  - A. Foundation soil shall be excavated as required for footing dimensions and degree of tilt-back shown on the construction drawings, or as directed by the Engineer.
  - B. Foundation soil shall be examined by the Contractor to insure that the actual soil strength meets or exceeds assumed design strength. Soil not meeting the required strength shall be removed and replaced with acceptable material.
  - C. Over-excavated areas shall be filled with compacted backfill material.
  - D. As a minimum, soil shall be rolled before construction proceeds.
- 4.03 Base Preparation
  - A. Place base material in excavated trench and compact.
  - B. Base material shall be compacted to assure no gaps between the base and the retaining wall units.
- 4.04 Unit Installation (see Manufacturer's specs for additional details)
  - A. Place the first course of retaining wall units end to end on the prepared base so they are touching. Proper alignment may be achieved with the aid of a string line or other from a bossline.
  - B. Backfill units shall be placed side by side for the full length of the wall.
  - C. Install the units of the second row, set squarely with no rocking on the first row. Backfill units with drainage fill, set squarely with no rocking on the first row.
  - D. All excess material shall be swept from the top of units prior to installing the next course. Each course shall be completely backfilled prior to proceeding to the next course.
  - E. Make sure the material is compacted behind the units. Backfill and compact every course.
- 4.05 Back Fill Placement
  - A. Backfill shall be placed and compacted in lifts not to exceed 8 inches.
  - B. Only lightweight hand-operated compaction equipment shall be allowed within 3 feet of the wall units.

**PART 5 MEASUREMENT AND PAYMENT**

1. Retaining wall units shall be measured on a linear foot basis taken along the base of the wall.
2. Payment for the retaining wall will be made on a linear foot basis of the contract unit price bid shall be considered full compensation for all labor, materials, and equipment to install modular concrete retaining wall units, including drainage fill, backfill, base, supervision, engineering, design, construction, cleanup and incidentals.
3. Quantities may vary from that shown on construction drawings depending on existing topography. Changes to the total quantity of materials will be at the contract unit price bid.



**GENERAL INFORMATION**

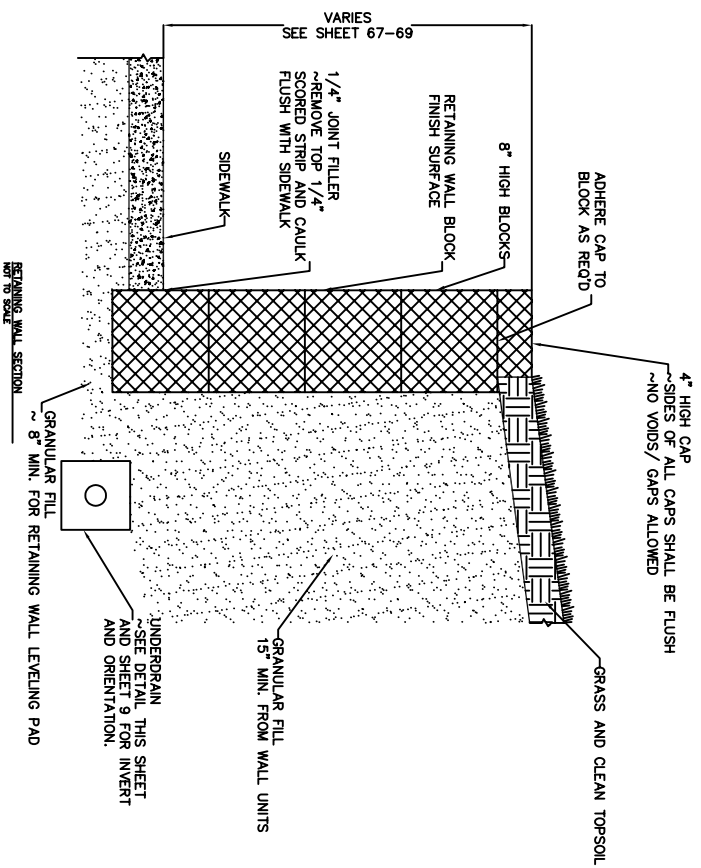
ABSORPTION SHALL MEET OR EXCEED ASTM C90-75 STANDARDS  
 COMPRESSIVE STRENGTH SHALL MEET OR EXCEED 3000 PSI APPROXIMATE  
 COMPOSITION SHALL BE HIGH STRENGTH, HIGH DENSITY, "0" SLUMP CONCRETE

**UNIT INFORMATION**

UNIT INFORMATION	BEVELED CLASSIC UNIT
18" BEVELED SPILT FACE	8' H X 18" W, 78 LBS. APPROX. . . . . 1.00 SQ.FT. FACE
18" BEVELED SPILT FACE	6' H X 18" W, 56 LBS. APPROX. . . . . 0.75 SQ.FT. FACE
18" CAP BEVELED SPILT FACE	4' H X 18" W, 50 LBS. APPROX. . . . . 0.50 SQ.FT. FACE
STRAIGHT CLASSIC UNIT	
18" STRAIGHT SPILT FACE	8' H X 18" W, 80 LBS. APPROX. . . . . 1.00 SQ.FT. FACE
18" STRAIGHT SPILT FACE	6' H X 18" W, 58 LBS. APPROX. . . . . 0.75 SQ.FT. FACE
18" CAP STRAIGHT SPILT FACE	4' H X 18" W, 51 LBS. APPROX. . . . . 0.50 SQ.FT. FACE

**COLOR AND FACE OPTIONS**

COLOR SHALL BE BUFF  
 FACE PATTERNS SHALL BE STRAIGHT SPILT FACE



**RETAINING WALL DETAILS**

STREET IMPROVEMENTS IN PANNEE, FROM PALISADE TO MARKET  
 City of Wichita, Kansas

**YOUNG & ASSOCIATES, P.A.**  
 Civil and Environmental Engineers

100 S. Georgie, Derby, KS 67037  
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Scale: as noted  
 drawn by: dos  
 checked by: cty  
 date: Mar. 2006  
 revisions:

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