

1.0 GENERAL INFORMATION

1.1 SCOPE

Work includes the manufacture, delivery, and installation of concrete retaining wall units as required by the drawings and specifications.

1.2 APPLICABLE DOCUMENTS

A. ASTM Standards:

C1372 Standard Specification for Segmental Retaining Wall Units

B. Other Standards:

NCMA Tek 2-4, 15-5, and 15-8

NCMA Design Manual for Segmental Retaining Walls

1.4 DELIVERY AND STORAGE

- A. The contractor shall check the material upon delivery to assure that the style, color, etc. comply with the specification and that the materials are not damaged or defective. Materials that do not meet the specifications or are defective or damaged shall not be used for construction.
- B. The contractor shall protect the materials from ice, snow, excessive mud or any agent that will bond to the unit.

2.0 MATERIALS

2.1. CONCRETE RETAINING WALL UNITS

- A. Units shall be Imperial Retaining Wall units as manufactured by Imperial Concrete Products, 2 Farago Boulevard, Wrightstown, NJ 08562 Phone: 856-628-8039
- B. Retaining wall units shall be manufactured in accordance with ASTM C 1372 requirements. Minimum compressive strength = 2,500 psi. Maximum absorption shall be 10%.
- C. System includes two different heights (3" and 6"), which can be used separately or combined within the same wall. All units are nominally 10" deep and have three lengths (6", 10" and 16").
- D. Units shall be interlocked with glass filled nylon pins, typically one per unit (except for course underneath cap), where possible.
- E. Earth retaining applications shall be built with a batter (nominally 0.5" per course).

2.2 INTERLOCKING PINS

- A. Pins shall be molded glass filled nylon composite.
- B. Pins shall have the following tested properties:
 - Shear resistance - the pins provide 400 lb. /ft. of shear resistance at zero normal load.

2.3 LEVELING PAD BASE

- A. Leveling Pad material shall be crushed stone or granular fill (typically a dense graded aggregate) that is well graded sand or gravel with a Unified Soil Classification of SW or GW. The leveling pad shall be a minimum of 20" wide and a minimum of 6" thick of compacted base is required.
- B. Leveling Pad material shall be compacted using a plate compactor to 95% maximum standard Proctor dry density.
- C. A non-reinforced lean concrete base (500 psi maximum) up to 3" thick may be substituted for the granular base.

2.4 DRAINAGE AGGREGATE

- A. Clean crushed stone material shall with a maximum size of ¾" and a maximum of 5% passing the No. 200 sieve is required immediately behind the retaining wall units and within the cores of the retaining wall units.

- B. The drainage aggregate should extend 12” behind the retaining wall units.
- C. Drainage aggregate material shall be compacted using a plate compactor to 95% maximum standard Proctor dry density.

2.5 WALL BACKFILL

- A. Existing soil on site may be used for backfill behind the unit fill unless deemed unsuitable by the engineer.
- B. Always compact the backfill behind the wall, to 95% of maximum standard Proctor dry density, after each course is laid.

2.6 DRAINAGE TILE

- A. Drain tile shall be plastic perforated pipe with a minimum 4 inch diameter specified by the engineer or designer.

3.0 WALL INSTALLATION

3.1 EXCAVATION

- A. Contractor shall excavate the site as required by the construction drawings.

3.2 FOUNDATION SOIL PREPARATION

- A. The foundation soil shall be excavated as required by the construction drawings.
- B. The engineer shall examine the foundation soil for approval. Unsuitable soil will be removed and replaced with acceptable soil.

3.3 LEVELING PAD

- A. Install leveling pad as required on the construction drawings. A minimum of one 6” course is to be buried below grade.
- B. Compact granular leveling pad material with a mechanical plate compactor to 95% of maximum Proctor dry density.
- C. Prepare the base pad so that the entire length and width of the Imperial Wall unit is in contact with the leveling pad material.

3.4 IMPERIAL WALL UNITS – Maximum Unreinforced total wall height 30”

- A. Lay base course row of Imperial Wall units (bevel face down, non-bevel side up), Check for straightness using a string line at tail of blocks. Level each unit from side to side and from front to back. Align units along the back of each block, not the rockface front.
- B. Backfill one foot behind the units with free draining granular aggregate. Backfill behind this with soil. Use care operating any heavy equipment within 3 feet of the wall. Clean the tops of the units so they are free of aggregate before installing the next course.
- C. Slide the narrow leg of one interlocking pin into the slot on the top of each block, minimum one pin per slot. Position all pins with flag forward (facing front of wall) to create a batter.
- D. Stagger (half bond) the second course on top of the base course. Repeat steps 2, 3, and 4 until the specified height is obtained. At the end of each course turn the units at a radius into the bank or use a 90° corner unit.
- F. Wall system is intended for non-structural landscape applications.

3.5 IMPERIAL WALL CAP UNITS

- A. Cap units are installed after the last course on the wall is installed. Use a high strength and flexible concrete adhesive compound to bond the cap to the wall. Apply the adhesive as recommended by the manufacturer on the front and back of the Imperial Wall unit.
- B. Install the cap with or without an overhang as required by the designer.

3.6 DRAIN TILE

- A. The installation of the drain tile shall be directly behind the Imperial Wall unit at grade level. Cover the drain tile with the granular fill.
- B. Daylight the drain tile on a maximum of 50 ft centers or at the end of the wall.