

## CONCRETE SEGMENTAL FREESTANDING WALL SYSTEM

### PART 1: GENERAL SPECIFICATIONS

#### 1.01 Work Included

- A. Work shall consist of furnishing and constructing a StoneHedge 8™ unit segmental freestanding wall in accordance with these specifications to the lines and grades shown on the construction plans and drawings. Alternate wall systems will not be considered.
- B. Work includes preparing foundation soil and furnishing and installing base leveling pad to the lines and grades shown on the construction plans and drawings.

#### 1.02 Related Sections

- A. Section \_\_\_\_\_ - Site Preparation (Not applicable)
- B. Section \_\_\_\_\_ - Earthwork (Not applicable)
- C. Section \_\_\_\_\_ - Concrete Segmental Retaining Wall System (Not applicable)

#### 1.03 Reference Documents

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C 140 Sampling and Testing Concrete Masonry Units
  - 2. ASTM D 422 Particle Size Analysis
  - 3. ASTM D 698 Laboratory Compaction Characteristics of Soil -Standard Effort
  - 4. ASTM D 1262 Freeze-Thaw Durability of Concrete Units

#### 1.04 Submittals/Certification

- A. Prior to the start of work, the Owner should have the proposed freestanding wall permitted by the appropriate governing authorities.
- B. Prior to start of work, the Contractor shall submit a manufacturer's certification for each of the freestanding wall system components. The certification shall state that the component meets the requirements of this specification.

#### 1.05 Quality Assurance

- A. The Contractor shall be competent and experienced in the construction of freestanding walls.
- B. The Contractor shall insure that all work that precedes the construction of the freestanding wall is complete and ready for the construction of the wall.

#### 1.06 Delivery, Storage and Handling

- A. The Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification have been received.

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- B. The Contractor shall protect all materials from damage due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

**PART 2: COMPONENTS**

**2.01 Definitions**

**Block** - a Rockwood StoneHedge 8™ concrete segmental freestanding wall unit.

**Cap** - a Rockwood Universal Cap concrete segmental freestanding wall unit.

**Base Leveling Pad** – aggregate base material or concrete used as a foundation for the blocks.

**Unit Fill** – crushed rock aggregate that is placed within the block. Same as *core fill*, *drainage fill* and *drainage rock*.

**2.02 Blocks and Caps**

- A. Blocks shall be Rockwood StoneHedge 8™ concrete segmental freestanding wall units. The Owner shall specify the color.
- B. Caps shall be Rockwood Universal Cap concrete segmental freestanding wall units. The Owner shall specify the color.
- C. Blocks and caps shall conform to the following requirements:
  - 1. Block dimensions shall be: H = 6", L = 18", W = 10".
  - 2. Blocks shall have a built in anchor bar protruding 5/8" from the base of the block.
  - 3. Cap dimensions shall be: H = 4", L<sub>FRONT</sub> = 18", L<sub>REAR</sub> = 14", W = 10.5"
  - 4. Permissible variations in block/cap dimensions shall be per ASTM C140.
  - 5. The finish and appearance of blocks/caps shall be per ASTM C 140.
  - 6. Strength and absorption requirements shall be per ASTM C 140.
  - 7. The unit weight (weight per unit volume with unit fill) of a block shall be greater than 115 pcf.

**2.03 Base Leveling Pad Material**

- A. Base leveling pad material shall consist of compacted aggregate base or non-reinforced concrete, as shown on the construction drawings and/or determined based upon field conditions. Aggregate base material shall meet the following gradation in accordance with ASTM D-422:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
no. 4	35 – 70
no. 200	0 – 15

**2.04 Unit Fill Material**

- A. Unit fill material shall consist of crushed rock meeting the following gradation in accordance with ASTM D-422:

<u>Sieve Size</u>	<u>Percent Passing</u>
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1 inch	100
¾ inch	75-100
no. 4	0 – 25
no. 200	0 – 5

**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 a minimum of 95 % of the maximum density per ASTM D-698.

**3.02 Base Leveling Pad**

- A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and 22 inches wide.
- 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. When placing the first course of units on top of a retaining wall, insure that the top of the retaining wall is level and free of protrusions that would interfere with proper placement.
- B. The first course of units shall be placed 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 or retaining wall block and properly seated. Follow manufacturers recommendations for determining orientation of anchor bar. Place the units side-by-side on top of the base leveling pad or retaining wall. Do not leave gaps between adjacent units. Layout of corners, pillars and curves shall be in accordance with manufacturers recommendations.
- C. Each unit shall be fully adhered to the unit below. Thoroughly brush off the top surface of the previous course of wall units and insure that the surface is free of any grease, paint or other substance that would interfere with proper application of the Super-Stik™ Adhesive, in accordance with manufacturers recommendations.
- D. Place the subsequent courses of units side-by-side on top of the previous course in a running bond pattern, in accordance with the manufacturers recommendations. Do not leave gaps between adjacent units. Units may need to be trimmed to fit tight and without gaps.

- E. Walls over 3'-0" in height shall have all core spaces filled with unit fill for the full height of the wall. Do not stack more than two courses of block prior to placing and compacting unit fill. Compact unit fill by probing.
- F. The top course of units shall be installed with the anchor bar facing down to facilitate the cap installation.

### **3.07 Cap Installation**

- A. Caps shall be fully adhered to underlying blocks with Super-Stik™.
- B. Caps shall be cut and trimmed to fit in accordance with the manufacturers recommendations.

### **3.08 As-Built Construction Tolerances**

- A. **Vertical Alignment:** the top and bottom of the wall shall be within 1.25" of design elevations.
- B. **Wall Batter:** the wall shall be within 1.25" of vertical, measured from the top of the base leveling pad to the upper edge of the top full wall unit.
- C. **Horizontal alignment:** the wall shall be within 0'-3" of design alignment.
- D. **Maximum horizontal gap:** the gap between installed blocks shall be a maximum of 3/8 inch.

### **3.09 Field Quality Control**

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