

**SECTION 32 15 42  
STONE SURFACING**

**PART 1 - GENERAL**

**1.01 GENERAL PROVISIONS**

- A. Attention is directed to the PROCUREMENT AND CONTRACTING REQUIREMENTS and all Sections within DIVISION 01, GENERAL REQUIREMENTS, which are made a part of this Section of the Specifications.

**1.02 DESCRIPTION OF WORK**

- A. Provide all equipment and materials, and do all work necessary to construct the crushed stone surfacing as a drip strip, including sand bed, filter fabric and edging, as indicated on the Drawings and as specified. Stone surfacing shall include two types:
1. Drip Strip at Building: 3/8 inch. crushed, angular bluestone.
  2. Stone base under Shipping Containers: 3/8 inch. crushed, angular bluestone.

**1.03 RELATED REQUIREMENTS**

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
1. Section 055901, METAL EDGING.
  2. Section 312300, SITE EXCAVATING, BACKFILLING AND COMPACTING; Ecavation and backfill and establishment of subgrade elevations.

**1.04 REFERENCES**

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirement shall govern.
1. American Society for Testing and Materials (ASTM):
    - a. D 698 Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (6000kN- m/m<sup>3</sup>))
    - b. D 1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN- m/m<sup>3</sup>))
  2. Commonwealth of Massachusetts Highway Department (MHD):
    - a. Specifications Standard Specifications for Highways and Bridges

**1.05 SUBMITTALS**

- A. Samples: The following samples shall be submitted: Material Sample Size or Quantity
1. Crushed stone 1 lb.
  2. Washed rounded stone 5 lb.
  3. Filter fabric 1 sq. ft.
- B. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:
1. Filter fabric

**1.06 TESTING AND INSPECTION**

- A. The Owner reserves the right to test and inspect materials and construction of crushed stone surfacing in accordance with the requirements of Division 1 – General Requirements.

**PART 2 PRODUCTS**

**2.01 STONE AGGREGATE**

- A. Drip Strip at Building: stone aggregate shall be an angular, washed, durable, 3/8 inch. crushed bluestone.
1. Color shall be light brown and warm grey mix approved by Architect.
- B. Stone at Courtyard: stone aggregate shall be washed, natural, round stone, supplied by
1. W.J. Graves Construction Co., Inc., 192 Depot Road, Templeton, MA 01468; Tel. 978-939- 5568; Fax: 978-939-5295, or other Architect approved source.

2. Color shall be light brown and warm grey mix approved by Architect.
3. Size: 1-1/2 to 3 inch. washed rounded stone.

**2.02 EDGING**

- A. Refer to Section 055901, METAL EDGING.

**2.03 FILTER FABRIC**

- A. Filter fabric shall be a non-woven polypropylene fabric equal to Mirafi 140N, manufactured by Tencate, 365 South Holland Drive, Pendergrass, GA 30567; Tel 800 685 9990; Tel 706 693 2226; Fax 706 693 4400; [www.mirafi.com](http://www.mirafi.com), or approved equal.

**2.04 SAND SETTING BED**

- A. Sand shall be a clean, sharp, natural sand conforming to ASTM C 33, except that the fineness modulus shall be 2.25 + 0.10.
  1. Gradation for setting bed sand shall be as follows: Sieve Size % Passing by Weight

3/8 inch.		100
No. 4	95 - 100	
No. 8	80 - 100	
No. 16	50 - 85	
No. 50	10 - 30	
No. 100	5 - 15	
No. 200	0 - 10	

**2.05 PRE-EMERGENT HERBICIDE**

- A. Herbicide shall be LESCO Ornamental Herbicide 5G, pre-emergent grassy and selected broadleaf weed control for ornamental plants, nursery stock and ground covers, #019515, manufactured by LESCO, Rocky River, OH 44116; Sierraron, manufactured by Scotts; Preen, manufactured by Lebanon Seaboard Corporation, or approved equal.

**PART 3 EXECUTION**

**3.01 GRADING**

- A. Areas to receive crushed stone surfacing will be compacted and brought to subgrade elevation under Section 312300, SITE EXCAVATING, BACKFILLING AND COMPACTING before work of this section is performed. Final fine grading, furnishing and installing crushed stone surfacing and compaction of these materials shall be done under this Section.
- B. Existing subgrade material which will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade and to replace unsuitable material removed shall be material conforming to Section 312300, SITE EXCAVATING, BACKFILLING AND COMPACTING.
- C. Immediately prior to paving, subgrade below exterior pavements shall be rough graded as needed, and then scarified and recompact. This process shall include scarifying the exposed subgrade to a depth of about 9 inches, moisture conditioning the scarified soil to within -2 to +3 percent of the material's optimum, and compacting the scarified soil to at least 98% of standard Proctor density ((ASTM D698)). Scarified soils which cannot be recompact to this degree should be undercut and replaced with stable material. Subgrade compaction shall extend for a distance of at least 1 feet beyond pavement edge.
  1. Field testing shall be conducted to determine in-place density, accompanied by visual inspection of the compaction methods being used.
- D. Excavation required in subgrade shall be completed before fine grading and final compaction of subgrade are performed. Where excavation must be performed in completed subgrade, subsequent backfill and compaction shall be performed as directed by the Architect as specified in Section 312300, SITE EXCAVATING, BACKFILLING AND COMPACTING. Completed subgrade after filling such areas shall be uniformly and properly graded.

- E. Areas being graded or compacted shall be kept shaped and drained during construction. Ruts greater than or equal to 1 inch. deep in subgrade, shall be graded out, reshaped as required, and recompacted before placing crushed stone surfacing.
- F. Materials shall not be stored or stockpiled on subgrade.
- G. Disposal of debris and other material excavated and/or stripped under this section, and material unsuitable for or in excess of requirements for completing work of this section shall be disposed of off-site.

### **3.02 FILTER FABRIC**

- A. Filter fabric shall be placed on compacted subgrade in accordance with manufacturer's printed instructions and as indicated on the Drawings. Where fabric edges meet, they shall overlap a minimum of 12 inch.

### **3.03 SAND SETTING BED**

- A. Sand shall be spread over aggregate base as a setting bed for stone surfacing where indicated on the Drawings. Minimum thickness of setting bed after compaction shall be 2 inch., leveled to required slope and grade.
- B. Surface tolerance shall be within 1/4 inch. of required grade as measured with a 10 feet straightedge in both the transverse and longitudinal directions.

### **3.04 EDGING**

- A. Steel edging shall be installed at locations indicated on the Drawings. Refer to Section 055901, METAL EDGING.

### **3.05 STONE SURFACING**

- A. Stone surfacing shall be done only after excavation and construction work which might injure it has been completed. Damage caused during construction shall be repaired before acceptance.
- B. Stone surfacing shall be constructed on prepared subgrade or compacted sand setting bed as indicated.
- C. Stone shall be spread evenly over the base or sand setting bed to depth indicated on the Drawings.

**END OF SECTION 32 15 42**