SECTION 04 22 00.13 - Concrete Unit Veneer Masonry

THIN VENEER STONE

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Thin cut veneer masonry construction of natural stone set in cement mortar over a structural wall backing of:
   1. Plywood sheathing.
   2. Concrete masonry.
   3. Metal building.
   4. Other _____.

B. Special decorative sawn thin veneer stone shapes for trim.

C. Installation of built-in accessories.

1.2 RELATED SECTIONS

A. Section 33 01 00 - Operation and Maintenance of Utilities.

B. Section 32 14 13.16 - Precast Concrete Unit Paving Slabs.

C. Section 03 30 00 - Cast-in-Place Concrete.

D. Section 04 22 00.16 - Surface-Bonded Concrete Unit Masonry.

E. Section 04 40 00 - Stone Assemblies.

F. Section 04 40 00 - Stone Assemblies.

G. Section 05 40 00 - Cold-Formed Metal Framing.

H. Section 05 50 00 - Metal Fabrications.

I. Section 06 11 00 - Wood Framing.

J. Section 07 62 00 - Sheet Metal Flashing and Trim.

K. Section 07 65 26 - Self-Adhering Sheet Flashing.

L. Section 07 90 00 - Joint Protection.

M. Section 09 26 00 - Veneer Plastering.

N. Section 13 34 23 - Fabricated Structures.

1.3 REFERENCES

A. ASTM C 91 - Standard Specification for Masonry Cement.

B. ASTM C 97 - Standard Specification for Absorption and Bulk Specific Gravity of Dimension Stone.

C. ASTM C 99 - Standard Specification for Modulus of Rupture of Dimension Stone.

D. ASTM C 144 - Aggregate for Masonry Mortar.

E. ASTM C 150 - Standard Specification for Portland Cement.

F. ASTM C 170 - Standard Specification for Compressive Strength of Dimension Stone.

G. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.

H. ASTM C 270 - Mortar for Unit Masonry.

I. ASTM C 568 - Standard Specification for Limestone Dimension Stone.

J. ASTM C 780 - Preconstruction Evaluation of Mortar for Plain & Reinforced Masonry.

K. ASTM C 847 - Standard Specification for Metal Lath.

L. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.

M. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

N. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures.

O. ACI 530.1/ASCE 6/TMS 602 - Specifications for Masonry Structures.

P. PCA - Portland Cement Plaster (Stucco) Manual

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Design Requirements: Perform Work in accordance with ACI 530/ASCE 5/TMS 402 Building Code Requirements for Masonry Structures, ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures and the applicable Building Code.

B. Design foundations, supporting walls, anchorage, spans, fastening, and joints under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

C. Design, fabricate, and install stonework to withstand normal loads from wind, gravity, movement of building structure, and thermally induced movement, as well as to resist deterioration under conditions of normal use including exposure to weather, without failure.

D. Design to include provisions to prevent galvanic and other forms of corrosion by insulating metals and other materials from direct contact with non-compatible materials, or by suitable coating.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Cleaning methods.

C. Design Data: Submit design mix when Property specification of ASTM C 270 is to be used, with required environmental conditions, and admixture limitations.

D. Selection Samples: For each stone product specified, submit two samples, minimum size 48 inches (1216 mm) square, representing actual product, color, and texture.

E. Samples: Submit samples of mortar representing actual mortar color and color range.

F. Quarrier's Certificate: Certify stone properties conform to specified requirements.

G. Manufacturer's Certificates: Certify mortar and accessory products meet or exceed specified requirements.

1.6 QUALIFICATIONS

A. Stone Quarrier: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

B. Stone Masonry Company: Company specializing in performing Work of this section with minimum five years documented experience.

1.7 QUALITY ASSURANCE

A. Preconstruction Meetings: Conduct preconstruction meetings including the Architect, Contractor, stone masonry subcontractor, and the flashing subcontractor to verify project requirements, substrate conditions, manufacturer's installation instructions and other requirements. Comply with Division 1 requirements.

B. Construct sample panel at location indicated or directed, and as follows:
   1. Recommended Size: 8 feet by 8 feet (2.4 m by 2.4 m) or a size that satisfies the architect. This size should be no less than 4 feet by 4 feet (1.2 m by 1.2 M).
   2. Include all stone unit types and sizes to be used including a typical corner condition, special shapes and mortar joint treatment. Clean the sample panel using the same materials and tools as planned for the final stone masonry construction.
   3. Obtain architect's acceptance of sample panel before beginning construction activities of this section.
   4. Do not remove sample panel until construction activities of this section have been accepted by the Architect.
   5. Remove sample panel at the completion of the work.
   6. Sample panel may be incorporated into the work.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products on pallets, under cover and in manufacturer's unopened packaging until ready for installation.

B. Store stone materials on pallets on a dry level surface. Pallets shall not be stacked and shall be covered with tarps.

C. Store mortar under cover and in an area where temperature is maintained between 4 degrees C (40 degrees F) to 43 degrees C (110 degrees F).

1.9 PROJECT CONDITIONS

A. Hot and Cold Weather Requirements: In accordance with ACI 530.1/ASCE 6/TMS 602 Specifications

for Masonry Structures.

B. Ambient temperature shall be 40 degrees F (4.4 degrees C) or above during erection of stone masonry. When ambient temperature falls below 50 degrees F, mortar mixing water shall be heated.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Eden Valders Stone Co. Inc., which is located at: W4520 Lime Rd; Eden, WI 53019-1108; Tel: 920-477-2521; Fax: 920-477-7000;

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 VENEER STONE

A. Artesian Blend: 60 percent Chilton Machine Cut Veneer, 30 percent Blue Stone Machine Cut Veneer, 10 percent Windsor. Color: Shades of gray, blue, slight lavender, and casual medium golden brown.
   1. Lengths: Random 8 to 36 inches (203 to 914 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm) machine cut veneer, 6 to 12 inches (152 to 356 mm) bedface.
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97. 2 to 9 inches (51 to 229 mm) machine cut veneer, 6 to 14 inches (152 to 356 mm) bedface.
      b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 33,000 average psi when tested in accordance with ASTM C 170.

B. Barkum Blend: 60 percent hand dressed Eden Machine Cut Veneer, 25 percent Red Seam Face, 15 percent Eden Bedface. Color: Shades of gray, red and buff.
   1. Lengths: Random 8 to 36 inches (203 to 914 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm) machine cut veneer, 6 to 12 inches (152 to 305 mm) bedface.
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97. 2 to 9 inches (51 to 229 mm) machine cut veneer, 6 to 14 inches (152 to 356 mm) bedface.
      b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 33,000 average psi when tested in accordance with ASTM C 170.

C. Chilton Weathered Edge Select: Brown to light brown with buff highlights.

1. Lengths: Random 8 to 24 inches (203 to 610 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 30,000 psi average when tested in accordance with ASTM C 170.

D. Chilton Weathered Edge with Red: Brown, light brown, buff, orange, red with some gold.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 30,000 psi average when tested in accordance with ASTM C 170.

E. Chilton Weathered Edge - No Red: Brown, light brown, buff, orange with some gold.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

F. Colonial Blend: 50 percent Eden machine cut veneer, 30 percent Chilton machine cut veneer, 10 percent brown seam face, 10 percent red seam face. Color: Various shades of buff, gray, brown, and red.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 33,000 psi average when tested in accordance with ASTM C 170.

G. Contemporary Blend: Blend: 50 percent Chilton machine cut veneer, 50 percent Valders White sawed cut veneer. Texture: sawed bed, machine cut veneer. Varied heights. Color: gray, slight blue, slight lavender and white.
1. Lengths: 8 to 36 inches (203 to 914 mm).
2. Heights: 2 to 12 inches (51 to 305 mm).
3. Thickness: 3-1/2 to 4-1/2 inches (89 to 114 mm) with some up to 5 inches (127 mm) maximum.

4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 average psi when tested in accordance with ASTM C 170.

H. Country Manor - Eden Blend: 10 percent Seamface, 40 percent Snapped Bedface, 50 Percent Machine Cut veneer. Color: Gray tones turning buff as it ages.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2 to 12 inches (51 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 30,000 psi average when tested in accordance with ASTM C 170.

I. Country Manor - Eden Blend: 10 percent Seamface, 40 percent Snapped Bedface, 50 Percent Machine Cut veneer. Color: Gray tones turning buff as it ages.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2 to 12 inches (51 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 30,000 psi average when tested in accordance with ASTM C 170.

J. Country Manor - Chilton Blend: 10 percent Seamface, 40 percent Snapped Bedface, 50 Percent Machine Cut veneer. Color: Grays, lavenders, slight buff, slight blue.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2 to 12 inches (51 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

K. Country Manor - Oakfield Blend: 10 percent Seamface, 40 percent Snapped Bedface, 50 Percent Machine Cut veneer. Color: Gray with buff tones.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2 to 12 inches (51 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 24,000 psi average when tested in accordance with

ASTM C 170.

L. Fond du Lac (Oakfield) Weathered Edge: Quarry run weathered edge. Color: Various shades of brown and buff.
   1. Lengths: 8 to 24 inches (203 to 610 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm).
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.5 percent when tested in accordance with ASTM C 97.
      b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 24,000 psi average when tested in accordance with ASTM C 170.

M. Country Manor Buckingham Tumbled: 30 percent Buckingham Snapped Bedface, 50 percent Oakfield Machine Cut Veneer, 10 percent Oakfield Snapped Bedface, 10 percent Oakfield Weathered Edge. Colors: Buff to light Buff with slight Gray.
   1. Lengths: 8 to 36 inches (203 to 914 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm).
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.8 percent when tested in accordance with ASTM C 97.
      b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

N. Country Manor Windsor Tumbled: 60 percent Windsor, 30 percent Buckingham Snapped Bedface, 10 percent Eden Machine Cut Veneer. Colors: Buff with Gray tones.
   1. Lengths: 8 to 36 inches (203 to 914 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm).
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.8 percent when tested in accordance with ASTM C 97.
      b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

O. Country Manor Oakfield Tumbled: 50 percent Oakfield Machine Cut Veneer, 40 percent Oakfield Snapped Bedface, 10 percent Oakfield Weathered Edge. Colors: Gray with Buff tones.
   1. Lengths: 8 to 36 inches (203 to 914 mm).
   2. Heights: 2 to 9 inches (51 to 229 mm).
   3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
   4. Material shall conform to ASTM C 568 with the following properties:
      a. Maximum absorption rate of 0.8 percent when tested in accordance with ASTM C 97.
      b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
      c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

P. Forest Blend: 50 percent Chilton Weathered Edge Tumbled, 50 percent Chilton Machine Cut Tumbled. Colors: Brown, Light Brown, Buff, Orange, Red with light to dark Gray.

1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 2 to 6 inches (51 to 152 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.5 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 24,000 psi average when tested in accordance with ASTM C 170.

Q. Heritage Antique Oakfield Blend: 60 percent Oakfield tumbled machine cut veneer, 30 percent Oakfield tumbled webstone, 10 percent Oakfield tumbled seamface. Color: Various shades of brown, buff and gray, slightly more buff as it ages.
1. Lengths: 6 to 18 inches (152 to 457 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.5 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

R. Heritage Antique: Eden Blend: 60 percent Eden tumbled machine cut veneer, 30 percent Eden tumbled webstone, 10 percent Eden tumbled seamface. Color: Gray tones turning buff as it ages.
1. Lengths: 6 to 18 inches (152 to 457 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.4 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

S. Heritage Antique: Chilton Blend: 60 percent Chilton tumbled machine cut veneer, 30 percent Chilton tumbled webstone, 10 percent Chilton tumbled seamface. Color: Grays, lavenders,slight buff and slight blue tones.
1. Lengths: 6 to 18 inches (152 to 457 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.3 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

T. Heritage Antique: Chestnut Blend: 60 percent Chestnut tumbled machine cut veneer, 30 percent Chestnut tumbled webstone, 10 percent Chestnut tumbled seamface. Color: Medium to darker brown tones.
1. Lengths: 6 to 18 inches (152 to 457 mm).

2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.8 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

U. Heritage Antique: Buckingham Blend: 60 percent tumbled machine cut veneer, 30 percent tumbled webstone, 10 percent tumbled seamface. Color: Buff to brown with slight gray tones.
1. Lengths: 6 to 18 inches (152 to 457 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.8 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

V. Jerico Blend: 50 percent Chilton weathered edge with red, 50 percent Windsor. Color: Various shades of red and golden brown.
1. Lengths: 8 to 26 inches (203 to 660 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

W. Kersten Blend: 25 percent Eden bedface, 25 percent Eden rockfaced bedfaced, 25 percent Valders sawed veneer, 25 percent Valders rockfaced, sawed veneer. Color: gray, buff and white.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2-1/4 inch, 5 inch, 7-3/4 inch, 10-1/2 inch.
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

X. Eden Machine Cut Veneers - Splitface: Color: Light gray, slight buff, light buff increases slightly as it ages.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
    b. 6 to 9 inches (152 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).

4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C97.
    c. Minimum compressive strength of 33,000 psi average when tested in accordance with ASTM C170.

Y. Chilton Machine Cut Veneers - Splitface: Color: Grays, slight blue, slight lavender.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
    b. 6 to 9 inches (152 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

Z. Oakfield Machine Cut Veneers - Splitface: Color: Buff, gray and white, slightly more buff as it ages.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
    b. 6 to 9 inches (152 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 24,000 psi average when tested in accordance with ASTM C 170.

AA. Champagne Cobble - Splitface: Color: Buff, gray and white, slightly more buff as it ages.
1. Lengths: Random 6 to 24 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
3. Thickness: 3-1/2 to 4-1/2 inches (89 to 114 mm) with some up to 5 inches (127 mm) maximum.
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 24,000 psi when tested in accordance with ASTM C 170.

BB. Champagne Blend - 25 Percent Snapped Bedface, 75 Percent Machine Cut Veneer Color: Buff, gray and white, slightly more buff as it ages.
1. Lengths: Random 6 to 24 inches (203 to 914 mm).
2. Heights:
    a. 2 to 8 inches (51 to 152 mm).
3. Thickness: 3-1/2 to 4-1/2 inches (89 to 114 mm) with some up to 5 inches (127 mm)

maximum.

4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi when tested in accordance with ASTM C 170.

CC. Pewter Cobble - Splitface: Color: Grays, slight blue, slight lavender.
1. Lengths: Random 6 to 24 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
3. Thickness: 3-1/2 to 4-1/2 inches (89 to 114 mm) with some up to 5 inches (127 mm) maximum.
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 average psi when tested in accordance with ASTM C 170.

DD. Empire Machine Cut Veneers - Splitface: Color: Tan sandstone.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2 to 6 inches (51 to 152 mm).
    b. 6 to 9 inches (152 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

EE. Valders Machine Cut Veneers - Splitface: Heights: Color: Mostly white.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: Varies from 7/8 inch to 9 inches (22 mm to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 150 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

FF. Valders - Machine Cut Veneers - Rockface. Color mostly white but available in buff and gray.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: Varied: 7/8 inch to 8 inch (22 mm to 559 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 150 lbs/cubic ft when tested in accordance with ASTM C 97.

c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

GG. Valders River Bluff Machine Cut Veneer - Splitfaced: Color: Buff to light gray.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights: 2-1/4, 5, 7-3/4 and 10-1/2 inches (57, 127, 197 and 267 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.60 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 160 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 14,500 psi average when tested in accordance with ASTM C 107.

HH. Ledgestone Blend: Eden, Splitface: Color: Light gray, slight buff, light buff increases slightly as it ages.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

II. Ledgestone Blend: Chilton, Splitface: Color: Grays, slight blue, slight lavender.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Lengths: 8 to 24 inches (203 to 610 mm).
3. Heights: 1 to 3 inches (203 to 610 mm).
4. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
5. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

JJ. Ledgestone Blend: Oakfield, Splitface: Color: Buff, gray and white, slightly more buff as it ages.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

KK. Ledgestone Blend: Chestnut, Color: Medium to darker brown tones.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).

4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

LL. Ledgestone Blend: Windsor, Color: Various shades of golden brown.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

MM. Ledgestone Blend: Chilton Weathered Edge, Color: Various shades of red.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

NN. Ledgestone Blend: Fond du Lac Quarry run weathered edge. Color: Various shades of brown and buff.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 1 to 3 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

OO. Palomino Blend: Flat, irregular shapes. Color: 50 percent light gray, 50 percent medium brown flats.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 8 to 24 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

PP. Royal Chateau - Eden: Natural bedfaced stone with sawed top and bottom edges with snapped ends. Colors: Light gray, slightly buff, light buff increases slightly as it ages.

1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2-1/4 inches (57 mm).
    b. 5 inches (127 mm).
    c. 7-3/4 inches (197 mm).
    d. 10-1/2 inches (267 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 33,000 psi average when tested in accordance with ASTM C 170.

QQ. Royal Chateau - Mountain Crest: Natural bedfaced stone with sawed top and bottom edges with snapped ends. Colors: Various shades of gray.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2-1/4 inches (57 mm).
    b. 5 inches (127 mm).
    c. 7-3/4 inches (197 mm).
    d. 10-1/2 inches (267 mm).
    e. 13-1/4 inches (337 mm).
    f. 16 inches (406 mm).
    g. 18-3/4 inches (476 mm).
    h. 21-1/2 inches (546 mm).
3. Thickness: 3-1/2 to 4-1/2 inches (89 to 114 mm) with some up to 5 inches (127 mm) maximum.
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 33,000 average psi when tested in accordance with ASTM C 170.

RR. Royal Chateau - Chilton: Natural bedfaced stone with sawed top and bottom edges with snapped ends. Color: Grays, lavenders, slight blue, slight buff.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
    a. 2-1/4 inches (57 mm).
    b. 5 inches (127 mm).
    c. 7-3/4 inches (197 mm).
    d. 10-1/2 inches (267 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 35,000 psi average when tested in accordance with

ASTM C 170.

SS. Royal Chateau - Valders: Sawed top and bottom edges with snapped ends and flamed or sandblasted face. Color: Mostly white.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
   a. 2-1/4 inches (57 mm).
   b. 5 inches (127 mm).
   c. 7-3/4 inches (197 mm).
   d. 10-1/2 inches (267 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

TT. Weathered Bago Blend - With Red: 70 percent Chilton weathered edge with red, 30 percent Winnebago.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

UU. Weathered Bago Blend - No Red: 70 percent Chilton weathered edge with no red, with 30 percent Winnebago.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

VV. Country Manor Chilton Dimensional: 50 percent Royal Chateau, 50 percent Dimensional Sawn Machine Cut Veneer. Colors: Grays, Lavenders, Reds, Slight Buff and Slight Blue.
1. Lengths: Random 8 to 36 inches (203 to 914 mm).
2. Heights:
   a. 2 to 6 inches (51 to 152 mm).
   b. 6 to 9 inches (152 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.

b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

WW. Webstone - Eden: Flat, irregular shaped limestone. Colors: Light gray, slightly buff, browns, light buff increases slightly as it ages. Contact Eden Stone for preferred blend dimensional range.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 8 to 24 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 33,000 psi average when tested in accordance with ASTM C 170.

XX. Webstone - Chilton: Flat, irregular shaped limestone. Colors: Grays, lavenders, slight blue, slight buff. Contact Eden Stone for preferred blend dimensional range.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 8 to 24 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.20 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 35,000 psi average when tested in accordance with ASTM C 170.

YY. Webstone - Oakfield: Flat, irregular shaped limestone. Colors: Buff tones. Contact Eden Stone for preferred blend dimensional range.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 8 to 24 inches (203 to 610 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.50 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 24,000 psi average when tested in accordance with ASTM C 170.

ZZ. Wendell Blend: 50 percent Eden machine cut veneer, 50 percent Chilton machine cut veneer. Color: shades of gray, lavender, slight blue, buff.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
   a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
   b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
   c. Minimum compressive strength of 33,000 psi when tested in accordance with ASTM C 170.

AAA. Windsor: Eden seamface. Color: Casual medium golden brown.

1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.40 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 33,000 psi average when tested in accordance with ASTM C 170.

BBB. Winnebago Weathered Edge Sandstone: Color: Non-fading medium brown.
1. Lengths: 8 to 26 inches (203 to 660 mm).
2. Heights: 2 to 9 inches (51 to 229 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

CCC. Wisconsin Bronze (Chestnut Flats): Flat, irregular shapes. Depth: 4 inches. Color: Ranges from tan to light brown.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: 6 to 12 inches (152 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.80 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 155 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 25,000 psi average when tested in accordance with ASTM C 170.

DDD. Valders Contemporary Sawed Veneer - Rockfaced. Color: 50 percent Valders white, 50 percent Valders gray.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: Mixed: 20 percent 2-1/4 inch, 50 percent 5 inch, 30 percent 7-3/4 inch (10-1/2 inch available).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

EEE. Valders Contemporary Sawed Veneer - Splitfaced. Color: 50 percent Valders white, 50 percent Valders gray.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: Mixed: 20 percent 2-1/4 inch (57 mm), 50 percent 5 inch (127 mm), 30 percent 7-3/4 inch (197 mm) (10-1/2 inch (267 mm) available).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).

4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 0.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 170 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

FFF. Valders Sawed Veneer - Rockfaced. Color: Typically white but available in buff and gray.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: Mixed: 20 percent 2-1/4 inch, 50 percent 5 inch, 30 percent 7-3/4 inch (10-1/2 inch available).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 150 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

GGG. Valders Sawed Veneer - Splitfaced. Color: Typically white but available in buff and gray.
1. Lengths: 8 to 30 inches (203 to 762 mm).
2. Heights: Mixed: 20 percent 2-1/4 inch, 50 percent 5 inch, 30 percent 7-3/4 inch (10-1/2 inch available).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 150 lbs/cubic ft when tested in accordance with ASTM C97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

HHH. Valders Polar Chunks: Fractured Limestone Chunks: Color: White to slight buff.
1. Lengths: 8 to 24 inches (203 to 610 mm).
2. Heights: 8 to 12 inches (203 to 305 mm).
3. Thickness: 3/4 to 1-1/2 inches (19 mm to 38 mm).
4. Material shall conform to ASTM C 568 with the following properties:
    a. Maximum absorption rate of 1.30 percent when tested in accordance with ASTM C 97.
    b. Minimum density of 150 lbs/cubic ft when tested in accordance with ASTM C 97.
    c. Minimum compressive strength of 20,000 psi average when tested in accordance with ASTM C 170.

2.3 SPECIAL SHAPES

A. Provide special sawn veneer shapes as indicated on the Drawings and as follows:
1. Quoins.
2. Door and Window Surrounds.
3. Keystones.
4. Caps.
5. Cornerstones.
6. Sills.
7. Banding/Belt Course.

8. Medallions
9. Other _____.

B. Stone shall be furnished in sizes indicated plus or minus 1/2 inch (12.5 mm). Materials shall conform to the properties specified for the materials specified.

C. Color shall be:
1. Match the veneer stone.
2. Dovewhite.
3. Dovewhite Blush.
4. Gray.
5. Buff.
6. _____.

D. Finish shall be:
1. Honed.
2. Sandblast.
3. Thermal/flamed.
4. _____.

2.4 ACCESSORIES

A. Expanded Metal Lath Paper Backed: ASTM C 847; galvanized, self furring mesh of weight to suit application; backed with paper.

B. Expanded Metal Lath: ASTM C 847, galvanized, self-furring, minimum 2.5 lb or 18 gauge.

C. Anchorage: Tie wire, nails, screws and other metal supports, galvanized, of type and size to suit application and to rigidly secure materials in place.

D. Setting buttons or shims: Lead or plastic.

E. Building Paper: ASTM D 226, Type 1, No. 15 asphalt saturated felt.

F. Concrete Bonding Agent: Thorobond water-based polyvinyl acetate type as approved by the stone quarrier.

2.5 MORTAR

A. Masonry Cement: Complying with ASTM C91:
1. Type N.
2. Type __.
3. Color, gray.
4. Color, white.
5. Color _____.

B. Portland Cement: Complying with ASTM C150:
1. Type I.

2. Type __.
3. Color, gray.
4. Color, white.
5. Color _____.

C. Mortar Aggregate: Complying with ASTM C144, standard masonry type.

D. Hydrated Lime: Complying with ASTM C207:
1. Type S.
2. Type SA.

E. Water: Clean and potable.

2.6 MIXES

A. Mortar Mixes:
1. Mortar for Structural Masonry: Complying with ASTM C270, using Proportion Specification.
a. Type N.
b. Type __ .

B. Mortar Mixing:
1. Mix mortar ingredients in accordance with ASTM C270. Mix only in quantities needed for immediate use.
2. Do not use anti-freeze compounds to lower freezing point of mortar.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until backing structure is plumb, bearing surfaces are level and substrates are clean and properly prepared.

B. Verify that built-in items are in proper location, and ready for roughing into stone masonry.

C. Notify Architect of unsatisfactory preparation before proceeding.

3.2 STONE PREPARATION

A. Stone must be water saturated, surface-dry when placed. Water down the stone 24 hours prior to placement until saturated. Reapply water to keep stone saturated as required by weather conditions.

B. Coordinate placement of flashings and other moisture control products supplied by other sections.

C. Clean all built-in items of loose rust, ice, mud, or other foreign matter before incorporating into the wall. All ferrous metal built into the wall shall be primed or galvanized.

3.3 PREPARATION FOR INSTALLATION OVER PLYWOOD SHEATHING

A. Cover sheathing with waterproof building paper with all joints lapped shingle style a minimum of 4 inches (102 mm).

B. Install metal lath in accordance with ASTM C1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.

C. Attach metal lath to wood supports using galvanized nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. Fasten with a minimum of a 1 inch (25 mm) penetration of the wood studs. Stop lath 1 inch (25 mm) from finished edges.

D. Continuously reinforce internal angles with corner mesh.

E. Place lath vertically above each top corner and each side of door and glazed frames.

3.4 PREPARATION FOR INSTALLATION OVER CONCRETE OR CONCRETE MASONRY

A. Clean or sandblast concrete masonry to assure a proper mortar bond. Verify no bituminous, water repellent, or form release agents exist on concrete surface that are detrimental to mortar bond.

B. Apply bonding agent in accordance with the manufacturers printed instructions.

C. Install metal lath in accordance with ASTM C 1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.

D. Attach metal lath to concrete using galvanized concrete nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. Stop lath 1 inch (25 mm) from finished edges.

E. Continuously reinforce internal angles with corner mesh.

F. Place lath vertically above each top corner and each side of door and glazed frames.

3.5 PREPARATION FOR INSTALLATION OVER METAL SIDING OR OPEN STUD

A. Install paperbacked metal lath in accordance with ASTM C 1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.

B. Attach metal lath to support members using galvanized 1-1/4 inch (32 mm) type S-12 Panhead Super Tight Screws as manufactured by United States Gypsum. Screws shall penetrate a minimum of 3/8 inch (0.9525 cm) into the metal siding support members. Provide 1 fastener per SF of surface area and do not exceed 6 inches (152 mm) on center in any one direction.

C. Place minimum 4 inch (100 mm) wide strips of metal lath centered over junctions of dissimilar backing materials. Secure rigidly in place.

D. Place lath vertically above each top corner and each side of door and glazed frames.

E. Apply scratch coat in accordance with PCA Plaster (Stucco) Manual.

F. Apply scratch coat to nominal thickness of 1/2 to 3/4 inch (12.5 to 19 mm) over metal lath surfaces.

G. Moist cure scratch coat for minimum period of 48 hours.

H. After curing, dampen previous coat prior to applying mortar and thin stone veneer.

3.6 PREPARATION FOR INSTALLATION OF THIN VENEER STONE

A. Stone must be water saturated, surface-dry when placed. Water down the stone 24 hours prior to placement until saturated. Reapply water to keep stone saturated as required by weather conditions.

B. Coordinate placement of reinforcement, anchors and accessories, flashings and other moisture control products supplied by other sections.

C. Clean all built-in items of loose rust, ice, mud, or other foreign matter before incorporating into the wall. All ferrous metal built into the wall shall be primed or galvanized.

D. If required, provide temporary bracing during installation of masonry work. Maintain bracing in place until building structure provides permanent support.

3.7 INSTALLATION OF THIN VENEER STONE

A. Install thin veneer stone and mortar in accordance with ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures.

B. Maintain masonry courses to uniform dimension(s). Form vertical and horizontal joints of uniform thickness.

C. Pattern Bond:
   1. Lay stone with the bedface, splitface or weather edge exposed. If a color blend is being used, take care to avoid a concentration of any one color to any one wall surface.
   2. Maintain an approximate 1/2 inch (12.5 mm) joint, as stone allows.
   3. Do not use stacked vertical joints.
   4. Lay out work in advance and distribute color range of stone uniformly over total work area.

D. Placing and Bonding:
   1. Dampen substrate as required to reduce excessive suction.
   2. Apply mortar in accordance with PCA Plaster (Stucco) Manual to a thickness of 1/2 to 3/4 inch (12.5 mm to 19 mm) Do not spread more than a workable area of 5 to 10 SF (.46 to .93 SM) so that mortar will not set before stone is applied.
   3. Lay thin veneer stone in a full bed of mortar with full joints.
   4. Work from the bottom up laying corner pieces first.
   5. Remove excessive mortar as work progresses.
   6. Do not shift or tap veneer stone after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.

7. Isolate top of veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant in accordance with Section 07 90 00 - Joint Protection.

E. Joining Work: Where fresh masonry joints partially set masonry.
   1. Remove loose stone and mortar.
   2. Clean and lightly wet surface of set masonry.
   3. To avoid a horizontal run of masonry rack back 1/2 the length of stone in each course.
   4. Toothing is not permitted.

F. Joints:
   1. Lay stone with an approximate 1/2 inch (12.5 mm) mortar joint, as stone allows.
   2. Tool joints when "thumb-print" hard with a jointer slightly larger than the width of the joint.
   3. Trowel-point or concave tool exterior joints below grade.
   4. Flush cut joints to be finished with a soft brush only.
   5. Retempering of mortar is not permitted.
   6. Use non-corrosive stone shims as required to maintain uniform joint thickness.

G. Flashing:
   1. Clean surface of masonry smooth and remove any projections, which could damage flashings.
   2. Place flashing on a bed of mortar.
   3. Cover flashing with mortar.
   4. Provide weep vents at head joints placed every 16 inches (406 mm) along the first course immediately above flashing or as recommended by weep vent manufacturer.

H. Control and Expansion Joints: Keep joints open and free of debris. Coordinate control joint in accordance with Section 07 90 00 - Joint Protection for sealant performance.

I. Sealant Recesses: Provide open joint 3/4 inch (19 mm) deep and 1/4 inch (6 mm) wide, where masonry meets doors, windows and other exterior openings. Coordinate sealant joints in accordance with Section 07 90 00 - Joint Protection for sealant performance.

J. Cutting And Fitting: Cut and fit for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials. Coordinate with other sections of work to provide correct size, shape, and location.

3.8 FIELD QUALITY CONTROL

A. Test mortar and grout in accordance with Section 01 11 13 - Work Covered by Contract Documents.

B. Testing of Mortar Mix: In accordance with ASTM C 780, Annex A4, for mortar aggregate ratio and ASTM C 780, Annex A5, for mortar water content.

3.9 PROTECTION

A. Protect installed products until completion of project.

B. Cover the top of unfinished stone masonry work to protect it from the weather.

C. Extend cover a minimum of 24 inches down both sides and hold securely in place.

D. Prevent staining of stone from mortar, grout, sealants, and other sources. Immediately remove such materials from stone without damage to the stonework.

E. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

F. Protect sills, ledges and projections from droppings of mortar and sealants.

G. Touch-up, repair or replace damaged products before Substantial Completion.

3.10 CLEANING

A. Keep the face of stone free of mortar as the work progresses. If residual mortar is on the face of the stone, allow to dry partially and brush the mortar off the surface and sponge off the residue.

B. When the work is completed and the mortar has set for 2 to 3 days the surface may be cleaned from top to bottom using a mild masonry detergent acceptable to the stone manufacturer. Do not use metal brushes or acids for cleaning.

3.11 SCHEDULES

END OF SECTION