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THIN VENEER STONE ASSEMBLIES – SECTION 04852

PART 1 GENERAL

1.1 Section Includes

- A. Section includes 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. Section includes special decorative cut stone shapes for trim.
- C. Section includes installation of built-in accessories.

1.2 Related Sections

- A. Section 03300 - Cast-In-Place Concrete: Concrete foundations.
- B. Section 04810 - Unit Masonry Assemblies: Masonry supporting wall.
- C. Section 05500 - Metal Fabrications: Shelf angles, structural supports, anchors and other built-in components for building into stone masonry by this section.
- D. Section 05400 - Cold-Formed Metal Framing: Formed steel framed supporting wall.
- E. Section 06112 - Framing and Sheathing: Wood frame supporting wall.
- F. Section 07620 - Sheet Metal Flashing and Trim.
- G. Section 07900 - Joint Sealers: Sealant for perimeter and control joints.
- H. Section 09220 - Cement Plaster: Metal lath and scratch coat back-up supporting walls.
- I. Section 13121 - Pre-Engineered Metal Buildings.

1.3 References

- A. ASTM C91 - Standard Specification for Masonry Cement.
- B. ASTM C97 - Standard Specification for Absorption and Bulk Specific Gravity of Dimension Stone.
- C. ASTM C144 - Aggregate for Masonry Mortar.
- D. ASTM C150 - Standard Specification for Portland Cement.
- E. ASTM C170 - Standard Specification for Compressive Strength of Dimension Stone.
- F. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
- G. ASTM C270 - Mortar for Unit Masonry.
- H. ASTM C568 - Standard Specification for Limestone Dimension Stone.
- I. ASTM C616 - Standard Specification for Quartz Based Dimension Stone.
- J. ASTM C780 - Preconstruction Evaluation of Mortar for Plain & Reinforced Masonry.
- K. ASTM C847 - Standard Specification for Metal Lath.
- L. ASTM C880 - Standard Specification for Flexural Strength of Dimension Stone.
- M. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
- N. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- O. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures.
- P. ACI 530.1/ASCE 6/TMS 602 - Specifications for Masonry Structures.
- Q. PCA - Portland Cement Plaster (Stucco) Manual

1.4 Submittals

- A. Submit under provisions of Section 01300.
- B. Product Data: Quarrier of natural stone data sheets on stone and mortar mix 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 C270 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 and mortar mix will conform to specified requirements.

- G. 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 x 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.

1.5 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.

1.6 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.

1.7 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).

1.8 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 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 Stone Quarrier: Buechel Stone Corporation, W3639 Highway H, Chilton, Wisconsin 53014-9643, Phone: 800.236.4473, Fax: 920.849.8229 or Buechel Stone Corporation, N4399 Highway 175 South, Fond du Lac, Wisconsin 54937-9266, Phone: 920.922.4790, Fax: 920.922.5298.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 Veneer Stone

- A. Fond du Lac Castle Rock: Material shall be machine split four sides with heights of 6, 8, and 12 inches (152, 203, and 304 mm) and is furnished in random lengths up to 24 inches (up to 609 mm) to and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The bedface is to be exposed. Color shall be a full range of gray to buff. A change of color in one piece is acceptable. Material shall conform to ASTM C568 with the following properties:
 - 1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 - 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 - 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 - 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- B. Full Color Castle Rock: Material shall be machine split four edges in heights of 6, 8, and 12 inches (152, 203, and 304 mm) and is furnished in random lengths up to 24 inches (up to 609 mm) to and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The bed face is to be exposed. A change of color in one piece is acceptable. Color shall be a full range of lavenders, browns and grays. Material shall conform to ASTM C568 with the following properties:
 - 1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 - 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 - 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 - 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- C. Fond du Lac Country Squire: Material shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. Color shall be a full range gray to white. Material shall conform to ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- D. Chilton Country Squire: Material shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. Color shall range from gray to charcoal and occasional mauve. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- E. English Tudor: Material shall be furnished in random lengths from 3 inches to 14 inches (76 to 355 mm), a random rise from 3 to 5 inches (76 to 127 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The bedface is to be exposed. Color shall be a full range of lavenders, browns and grays. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- F. Fond du Lac Rustic: Material shall be furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The weathered edge is to be exposed. Color shall be a range of soft beige, tan and gold. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance

with ASTM C880.

- G. Chilton Rustic: Material shall be furnished in random lengths up to 40 inches (up to 1016 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The weathered edge is to be exposed. Color shall be shades of browns to reds. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- H. Imperial Weathered Edge: Material shall be furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 7 inches (50 to 178 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The weathered edge is to be exposed. Color shall be a range of browns to reds (deep stratifications). Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- I. Fond du Lac Tailored Blend: Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (56 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). All beds are sawn, the ends are split, and the bedface is to be exposed. Color shall be a range of colors from gray to buff. Material to conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- J. Chilton Tailored Blend: Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (56 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). All beds are sawn,

the ends are split, and the bedface is to be exposed. Full color range of lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

K. Fond du Lac Tailored Blend 50 percent Rockfaced (50 percent bedface): Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (57 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). All beds are sawn and the ends are split. Exposed face to be a blend of 50 percent bedface and 50 percent rock faced. All 2 1/4 rise material shall be bedface only. Colors shall range from light gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

L. Chilton Tailored Blend 50 percent Rockfaced (50 percent bedface): Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (57 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). All beds are sawn; the ends are split. The exposed face to be a blend of 50 percent bedface and 50 percent rockfaced. All 2 1/4" rise material shall be bedface only. Full color range of lavenders, browns, and grays. Material shall conform when tested with ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- M. Fond du Lac Cambrian Blend: Material shall be furnished in lengths from up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 75 percent splitface material that ranges in color gray to white and 25 percent weathered edge that range from soft beige, tan and gold. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- N. Chilton Cambrian Blend: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 75 percent splitface material that will offer a full color range of gray to charcoal and occasional mauve. There shall be 25 percent weathered edge material that shall provide a range of color from brown to red. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- O. Fond du Lac Heritage Blend: Material shall be furnished in lengths from 4 inches to random and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This stone exposes a random mix of rough and irregular shaped bedface and splitface pieces. Color range shall range from gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- P. Chilton Heritage Blend: Material shall be furnished in lengths from 4 inches to random and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This stone exposes a random mix of rough and irregular shaped bedface and splitface pieces. Color shall be a naturally wide range of red, brown, cream and beige. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- Q. Fond du Lac Kensington Blend: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 mm to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 70 percent splitface material that will offer a full range from gray to white and 30 percent bedface that ranges in color from light gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- R. Chilton Kensington Blend: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 mm to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 70 percent splitface material that will offer a full range from gray to charcoal and occasional mauve and 30 percent bedface that ranges in color from lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- S. Fond du Lac Custom Country Blend: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 65 percent splitface material that will offer a full range from gray to white and 25 percent weathered edge material shall provide a naturally wide range of soft beige, tan and gold and 10 percent bedface that ranges in color from gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- T. Chilton Custom Country Blend: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 65 percent splitface material that will offer a full range of gray to charcoal and occasional mauve and 25 percent weathered edge material shall provide a full range browns to reds and 10 percent bedface with full range of lavenders, browns and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- U. Fond du Lac Web Wall: Material shall be furnished in random irregular sizes ranging from 1 to 4 SF (.09 to .37 sm). The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). Material shall be installed exposing 100 percent bedface and color shall range from light gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- V. Chilton Web Wall: Material shall be furnished in random irregular sizes from 1 to 4 SF (.09 to .37 sm) The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). Material shall be installed as exposing 100 percent bedface and color shall range from lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- W. Fond du Lac Antique Web Wall: Material shall be furnished in random irregular sizes ranging from 1 to 4 SF (.09 to .37 sm). The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). Material shall be installed as exposing 100 percent bedface and color shall range from light gray to buff. Material that is rockfaced is to be exposed. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- X. Chilton Antique Web Wall: Material shall be furnished in random irregular sizes ranging from 1 to 4 SF (.09 to .37 sm). The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). Material shall be installed as exposing 100 percent bedface and color shall be a full range of lavenders, browns and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- Y. Fond du Lac Colonial Pavers: Material shall be furnished in a nominal size of 5 inches x 5 inches (126 mm x 126 mm) or 5 inches x 10 inches (126 mm x 252 mm) with a natural bed top and 2 sawn edges and split 2 edges, then tumbled at the quarry. Thickness to be 1 inch (25 mm) plus or minus ¼ inch (6 mm). Color is a range of gray to buff. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- Z. Chilton Colonial Pavers: Material shall be furnished in a nominal size of 5 inches x 5 inches (126 mm x 126 mm) or 5 inches x 10 inches (126 mm x 252 mm) with a natural bed top and 2 sawn edges and 2 split edges, then tumbled at the quarry. Thickness to be 1 inch (25 mm) plus or minus ¼ inch (6 mm). Color is a range of lavenders, browns, and grays. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- AA. Victorian Blend River Rock: Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (56 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 ½ inches (267 mm). Thickness to be 1 inch (25 mm) plus or minus ¼ inch (6 mm). All beds are sawn, the ends are split, then the product is tumbled to provide a distressed look. The bedface is to be exposed. Full color range of lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- BB. Palace Blend River Rock: Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (56 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). Thickness to be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). All beds are sawn, the ends are split, then the product is tumbled to provide a distressed look. The bedface is to be exposed. Color shall be a range of colors from gray to buff. Material to conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- CC. Stratford Cross: Material shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 mm to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. The color range is 50 percent Chilton colors of tray to charcoal and occasional mauve and 50 percent Fond du Lac colors gray to white. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- DD. Gray Cobble Creek: Material shall be 100 percent machine split and is furnished in random lengths of 8 inches to 16 inches (202 mm to 404 mm), a random rise from 3 inches to 8 inches (76 mm to 202 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is exposed. Color shall be a full range of gray to white. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- EE. Charcoal Cobble Creek: Material shall be 100 percent machine spilt and is furnished in random lengths of 8 inches to 16 inches (202 mm to 404 mm), a random rise from 3 inches to 8 inches (76 mm to 202 mm) and the nominal bed depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is exposed. Color shall be a full range of gray to charcoal and occasional mauve. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- FF. Stratford Cross Cobble Creek: Material shall be 100 percent machine spilt and is furnished in random lengths of 8 inches to 16 inches (202 mm to 404 mm), a random rise from 3 inches to 8 inches (76 mm to 202 mm) and the nominal bed depth of 4 inches (102 mm) plus or minus 3/4 inch (19 mm). The split face is exposed. Colors shall be a 50 percent blend of Chilton colors of gray to charcoal and occasional mauve and 50 percent Fond du Lac colors gray to white. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- GG. Cabin Creek River Rock: Material shall be furnished in lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). This blend exposes 65 percent splitface material with a full color range of gray to charcoal and occasional mauve and 25 percent weathered edge material shall provide a full range browns to reds and 10 percent bedface with full range of lavenders, browns and grays. The product is then tumbled. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- HH. Cream City River Rock: Material shall be 100 percent machine split and is furnished in random lengths up to 20 inches (up to 508 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The product is then tumbled and the splitface is to be exposed. Color shall be a full range of gray to white. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- II. Colonial Gray River Rock: Material shall be 100 percent machine split and is furnished in random lengths up to 20 inches (up to 508 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The product is then tumbled and the splitface is to be exposed. Color shall range from gray to charcoal and occasional mauve. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- JJ. Byron River Rock: Material shall be furnished in random irregular sizes ranging from 1 to 4 SF (.09 to .37 sm). The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The product is then tumbled. Material shall be installed as exposing 100 percent bedface and color shall range from light gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

- KK. Blue Ridge River Rock: Material shall be furnished in random irregular sizes from 1 to 4 SF (.09 to .37 sm) The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The product is then tumbled. Material shall expose 100 percent bedface and range from lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- LL. Mountain River Jax: Material shall be furnished in random disc-like shapes ranging from 4 to 7 inches (101 mm to 178 mm) or 7 to 12 inches (178 mm to 306 mm). The depth of the material is 1 inch (25 mm) plus or minus 1/4 (6 mm). The finish is smooth. Expect a full color range of reds, blues, blacks and grays. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 12 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2690 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 143 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 10.2 Mpa when tested in accordance with ASTM C880.
- MM. Glacier River Rock: Material shall have the characteristics of a naturally distressed holey boulder. It will have irregular shapes, pieces up to 18 inches (457 mm) in size and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). It will have a color range of buff, tan, and charcoal. Material shall conform to ASTM C568 with the following properties.
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- NN. Granite Cobbles: Material shall be generally round in shape. It will have random face sizes from 3 inches to 12 inches (76 mm to 305 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 (6 mm). It has a wide range of red, pink, black, and blue tones. Material shall conform when tested in accordance with ASTM C568 with the following properties:

1. Maximum absorption rate of 12 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2690 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 143 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 10.2 Mpa when tested in accordance with ASTM C880.
- OO. Split Granite Fieldstone: Material shall be split granite with irregular shaped sizes of 8 inches to 18 inches (203 mm to 457 mm) and have a nominal depth of 1 inch (25 mm) plus or minus ¼ inch (6 mm). It will have a wide range of reds, pinks, blacks, and blues. Material shall conform to ASTM C568 with the following properties:
1. Maximum absorption rate of 12 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2690 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 143 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 10.2 Mpa when tested in accordance with ASTM C880.
- PP. Chilton Woodlake Blend: Material shall be furnished in a mix of random irregular and random ashlar stones. 70 percent shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. Color shall range from gray to charcoal and occasional mauve. 30 percent shall be furnished in random irregular sizes from 1 to 4 SF (.09 to .37 sm) The depth of this material shall be 1 inch (25 mm) plus or minus 1/4 inch (6 mm). Material shall be installed as exposing 100 percent bedface and range from lavenders, browns, and grays. Material shall conform when tested in accordance with ASTM C568 with the following properties:
1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- QQ. Fond du Lac Woodlake Blend: Material shall be furnished in a mix of random irregular and random ashlar stones. 70 percent shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 8 inches (50 to 204 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. Color shall be a full range of gray to white. 30 percent shall be furnished in random irregular sizes ranging from 1 to 4 SF (.09 to .37 sm). The depth of this material shall be 1 inch (25 mm)

plus or minus 1/4 inch (6 mm). Material shall be installed as exposing 100 percent bedface and color shall range from light gray to buff. Material shall conform when tested in accordance with ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

RR. Mill Creek Castle Rock: Material shall be machine split four edges in heights of 6, 8, and 12 inches (152, 203, and 304 mm) and is furnished in random lengths up to 24 inches (up to 609 mm) to and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The bedface is to be exposed. A change of color in one piece is acceptable. Color shall be brown to buff. Material shall conform to ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

SS. Mill Creek Tailored Blend: Material shall be furnished in lengths of 6 inches to 24 inches (152 mm to 609 mm) and in 4 separate rises of 20 percent - 2 1/4 inches (56 mm); 40 percent - 5 inches (127 mm); 30 percent - 7 3/4 inches (197 mm); 10 percent - 10 1/2 inches (267 mm). All beds are sawn, the ends are split, and the bedface is to be exposed. Color range from brown to buff. Material to conform when tested in accordance with ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

TT. Mill Creek Country Squire: Material shall be 100 percent machine split and is furnished in random lengths up to 24 inches (up to 609 mm), a random rise from 2 to 6 inches (50 to 152 mm) and a nominal depth of 1 inch (25 mm) plus or minus 1/4 inch (6 mm). The splitface is to be exposed. Color shall range from gray to buff. Material shall conform to ASTM C568 with the following properties:

1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.

2.3 Special Shapes

- A. Provide special shapes as indicated on the Drawings and as follows:
 1. Quoins.
 2. Keystones.
 3. Edgestones.
 4. Cornerstones.
 5. Sills.
 6. Ledges.
 7. Medallions
 8. Other _____.
- B. Stone shall be furnished in sizes indicated plus or minus 1/2 inch. Material shall conform to ASTM C568 with the following properties:
 1. Maximum absorption rate of 3 percent when tested in accordance with ASTM C97.
 2. Minimum density of 2560 kg/m³ when tested in accordance with ASTM C97.
 3. Minimum compressive strength of 55 Mpa when tested in accordance with ASTM C170.
 4. Minimum flexural strength of 8.27 Mpa when tested in accordance with ASTM C880.
- C. Color shall be:
 1. Match the veneer stone.
 2. _____.

2.4 Accessories

- A. Expanded Metal Lath Paper Backed: ASTM C847; galvanized, self furring mesh of weight to suit application; backed with paper.
- B. Expanded Metal Lath: ASTM C847, galvanized, self-furring.
- C. Lath 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. Building Paper: ASTM D 226, No. 30 asphalt saturated felt or two layers of No 15 asphalt saturated felt.
- E. Concrete Bonding Agent: Latex type as approved by the stone quarrier which includes TK Products TK-225 and Thoro Products Acryl 60.
- F. Setting Buttons and Shims: Lead or Plastic.

2.5 Mortar

- A. Masonry Cement: Complying with ASTM C91:
 - 1. Type S.
 - 2. Color, gray is recommend
 - 3. Color, white is optional
 - 4. Color _____.
- B. Portland Cement: Complying with ASTM C150:
 - 1. Type I.
 - 2. Type __.
 - 3. Color, gray is recommended
 - 4. Color, white is optional
 - 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. Bonding Agent (TK Products TK-225 and Thoro Products Acryl 60 or approved other).
- F. Water: Clean and potable.

2.6 Mixes

- A. Mortar Mixes:
 - 1. Mortar for Structural Masonry: Complying with ASTM C270, using Proportion Specification.
 - a. Type S.
- 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 masonry.
- C. Notify architect of unsatisfactory preparation before proceeding.

3.2 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.

3.3 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.
 - 1. Acryl 60.
 - 2. TK Products TK-225.
- C. 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.
- D. Attach metal lath to concrete using galvanized concrete nails at maximum 6 inches (152 mm) on center vertically and 16 inches 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.

3.4 Preparation for Installation over Metal Siding

- A. Install paperbacked 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.
- B. Attach metal lath to metal siding 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 4inch (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. Scratch coat can be either wet or dry when installing.
- H. After curing, dampen previous coat prior to applying mortar and thin stone veneer.

3.5 Preparation for Installation of Natural Thin Veneer Stone

- A. Coordinate placement of reinforcement, anchors and accessories, flashings and weep holes and other moisture control products supplied by other sections.
- B. 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.
- C. If required, provide temporary bracing during installation of masonry work. Maintain bracing in place until building structure provides permanent support.

3.6 Installation of Natural 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, as described in stone veneer section 2.2. Take care to avoid a concentration of any one color to any one wall surface.
 - 2. Maintain an approximate 1/2 inch 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. Do not spread more than a workable area of 5 to 10 SF so that mortar will not set before stone is applied.
 - 3. Lay thin veneer stone in a full bed of mortar with full head 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 07900.
- 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. Tothing 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 round 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. Re-tempering or 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 Buechel Stone EMC3639 Weep System behind the stone veneer and provide WOW weeps at bottom of wall, spaced 16" apart.
- H. Control and Expansion Joints: Keep joints open and free of debris. Coordinate control joint in accordance with Section 07900 for sealant performance.
- I. Sealant Recesses: Provide open joint 3/4 inch deep and 1/4 inch wide, where masonry meets doors, windows and other exterior openings. Coordinate sealant joints in accordance with Section 07900 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.

3.7 Field Quality Control

- A. Test mortar and grout in accordance with Section 01110.
- B. Testing of Mortar Mix: In accordance with ASTM C780, Annex A4, for mortar aggregate ratio and ASTM C780, Annex A5, for mortar water content.

3.8 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. Touch-up, repair or replace damaged products before substantial completion.

3.9 Cleaning

Remove excess mortar after it is set, but not cured. Clean stone masonry with a stiff nylon brush and clean water only. If it is necessary to clean stonework with chemicals please go to www.buechelstone.com for cleaning details and recommendations.

END OF SECTION