PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete Masonry Units:
   1. Castle Rock Block.
   2. Heritage Collection Designer Concrete Brick.
   3. Premier Ultra Burnished Masonry Units.
   4. Scored Smooth Block.
   5. Shadow Stone Block.
   6. Splitface Block.
   7. Transplit Block.
   8. Wirecut Block.

B. Concrete Face Brick:
   1. Heritage Collection Designer Concrete Brick.
   2. Reflection Brick.

C. Concrete Masonry Veneer Units:
   1. County Stone.
   2. Reflection Stone.
   3. Reflection Stone GRAND.

D. Concrete Thin Veneers:
   1. County Stone.
   2. Heritage Collection Designer Concrete Brick.
   3. Premier Ultra Burnished Masonry Units.
   5. Reflection Stone GRAND
   6. Reflection Brick.
   7. Splitface Block.

E. Mortar, reinforcement, anchorages, and accessories.

1.2 RELATED SECTIONS

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

B. Section 03 45 13 - Faced Architectural Precast Concrete.

C. Section 04 05 16.16 - Chemical-Resistant Masonry Grouting.
D. Section 04 05 19.13 - Continuous Joint Reinforcing.
E. Section 04 27 23 - Cavity Wall Unit Masonry.
F. Section 04 22 00.14 - Concrete Thin Veneers.
G. Section 07 60 00 - Flashing and Sheet Metal.

1.3 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A 82 / A 82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
   3. ASTM A 496 / A 496M - Standard Specification Steel Wire, Deformed, for Concrete Reinforcement.
   8. ASTM C 90 - Standard Specification for Loadbearing Concrete Masonry Units.
   10. ASTM C 140 - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.

B. International Building Code (IBC):
   1. IBC - Chapter 7 Fire-Resistance-Rated Construction 721.3 Concrete Masonry.
   2. IBC - Chapter 21 Masonry.

C. Masonry Standards Joint Committee (MSJC):
   2. Specifications for Masonry Structures.

E. Precast/Prestressed Concrete Institute (PCI): MNL-122 - Architectural Precast Concrete.

F. National Concrete Masonry Association (NCMA):
   1. TEK Manual for Concrete Masonry Design and Construction.


1.4 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. Storage and handling requirements and recommendations.
   2. Installation methods.
   3. Cleaning and maintenance instructions provided by cleaning or another agent manufacturer.

C. Shop Drawings: Provide shop drawings indicating details of construction, control joints and installation requirements.

D. Certificates: Letter of compliance to specified performance requirements.

   1. Dimensional Analysis.
   2. Absorption Analysis.
   3. Compressive Strength Analysis.
      a. Selection Samples: Submit two sets of samples showing all available colors, patterns, textures, and finishes.

F. Verification Samples: For each product specified, two samples, representing types, colors, textures, and finishes to be installed.

G. USGBC LEED Submittals: Submit manufacturer's documentation of the following items:
   1. MR Credit 4.1 and 4.2: Recycled content of products, indicating percentages of supplementary cementitious content.
   2. MR Credit 5.1 and 5.2: For projects within 500 miles of manufacturing location where materials are extracted, processed and manufactured.

1.5 QUALITY ASSURANCE

A. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Construct a separate (not part of the actual building) sample wall panel not less than 4 feet by 4 feet (1.2 m x 1.2 m) with units in the pattern, type, color, texture, finish and shape as indicated on Drawings and specifications. Water repellent in mortar, cleaning agents, sealing agents if applicable, and methods shall be performed prior to approval of the sample panel.
   2. Do not proceed with remaining work until workmanship, patterns, types, colors, textures, finishes, shape, application methods for water repellent in mortar, cleaning agents and sealing agents if applicable are approved by Architect in writing. Maintain Mock-up during construction for workmanship standard.
   3. Rework mock-up area as required to produce acceptable work.

B. Control Joints: Comply with requirements on the Drawings, designed to reduce
restraint and permit longitudinal movement, and as recommended by NCMA Tek Note 10-2C and 10-4.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Stack cubes only one cube high. Protect from damage.

B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver units in manufacturer's unopened, labeled, packaging. Units shall be inspected upon delivery. Defective units shall be removed immediately.

D. Storage: Store materials off the ground and keep free from groundwater, soil contamination, mud and dust. Materials shall be protected from precipitation and harmful weather conditions. Product with visible frozen moisture shall not be installed.

E. Handling: Units shall be handled in a manner that prevents breakage and damage.

1.7 PROJECT CONDITIONS

A. Temperature and Weather:
   1. Protect concrete masonry units from rain and freezing temperatures prior to, during, and for 48 hours after installation of materials.
   2. When ambient temperature is below 40 degrees F (4.4 degrees C) or exceeds 90 degrees F (32.2 degrees C), comply with requirements for project conditions in accordance with MSJC Specification for Masonry Structures including the following:
      a. Par. 1.8 C. Cold Weather Construction.
      b. Par. 1.8 D. Hot Weather Construction.
   3. Do not continue masonry construction during heavy rains, as partially set or plastic mortar is susceptible to washout until 8 to 24 hours of curing occurs (depending upon environmental conditions).
   4. When rain is likely, cover construction materials. Newly constructed masonry shall be protected from rain by draping a weather-resistant covering over the assembly. The cover shall be secured in place and extend over mortar that is susceptible to washout.
      a. Abide by manufacturer's absolute limits for storage temperature and direct sunlight, to prevent compromising wax coating.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: County Materials Corporation, which is located at: 205 North St. P. O. Box 100; Marathon, WI 54448-0100; Toll Free Tel: 800-242-7733; Tel: 715-848-1365; Fax: 715-443-3691; Email: request.info (info@countymaterials.com); Web: www.countymaterials.com

B. Substitutions: Not permitted.

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

2.2 CONCRETE MASONRY UNITS
A. Basis of Design: Castle Rock Block as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Shape: Stretcher:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 12 inches.
6. Shape: Flush End/ Sash/ Spiltable:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 12 inches.
7. Shape: Bond Beam:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 12 inches.
8. Shape: Double Flush End:
   b. Nominal Width: 8 inches.
   c. Nominal Width: 12 inches.
9. Shape: All Solid:
10. Color: As selected from manufacturer's standard range.
12. Color: ______.

B. Basis of Design: Heritage Collection Designer Concrete Brick as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Facing Texture Style:
   a. Smooth.
   b. Splitface.
   c. Rough Estate.
   d. Tumbled.
6. Size and Shape:
   a. 4x4x16: 3-5/8 x 3-5/8 x 15-5/8 inches.
   b. 6x4x16: 5-5/8 x 3-5/8 x 15-5/8 inches.
   c. 8x4x16: 7-5/8 x 3-5/8 x 15-5/8 inches.
   d. 10x4x16: 9-5/8 x 3-5/8 x 15-5/8 inches.
   e. 12x4x16: 11-5/8 x 3-5/8 x 15-5/8 inches.
7. Style: Blended.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.
8. Style: No Flash.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
C. Basis of Design: Premier Ultra Burnished Masonry Units as manufactured by County Materials Corporation.
1. Description: Integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Finish: Ground Face.
6. Size and Shape: ______.
7. Special Shapes, Finished Ends, Scores, Chamfers: As required.
   e. Cap: _____.
   f. Banding: _____.
   g. Other: ______.
8. Style: Hollow.
10. Style: Solid.
11. Color: As selected from manufacturer's standard range.
13. Color: ______.
14. Scoring: None.
15. Square Scoring: V1, single score line.
16. Square Scoring: V2, two score lines.
17. Square Scoring: V3, three score lines.

D. Basis of Design: Scored Smooth Block as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Shape: Stretcher:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.
   d. Nominal Width: 14 inches.
   e. Nominal Width: 16 inches.
6. Shape: Flush End/ Sash/ Spiltable:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.
   g. Nominal Width: 16 inches.
7. Shape: Bond Beam:
   b. Nominal Width: 8 inches.
c. Nominal Width: 10 inches.
d. Nominal Width: 12 inches.
e. Nominal Width: 14 inches.
f. Nominal Width: 16 inches.

8. Shape: Double Flush End:
b. Nominal Width: 6 inches.
c. Nominal Width: 8 inches.
d. Nominal Width: 10 inches.
e. Nominal Width: 12 inches.
g. Nominal Width: 16 inches.

9. Shape: All Solid:

10. Shape: Half Block, 8 inches long:
a. Nominal Width: 8 inches.
b. Nominal Width: 12 inches.

11. Shape: Half High, 4 inches high:
b. Nominal Width: 6 inches.
c. Nominal Width: 8 inches.
d. Nominal Width: 10 inches.
e. Nominal Width: 12 inches.

12. Shape: _____

13. Color: As selected from manufacturer's standard range.


15. Color: _____

16. Score Shape: 3/8 inch square score.
a. 1 Score.
b. 3 Score.
c. 5 Score.
d. 7 Score.
e. Random Score.

17. Score Shape: 3/8 inch small V score.
a. 1 Score.
b. 3 Score.
c. 5 Score.
d. 7 Score.
e. Random Score.

18. Score Shape: 3/8 inch round score, 1/4 inch deep.
a. 1 Score.

19. Score Shape: 3/8 inch round score, 1/8 inch deep.
a. 1 Score.
b. 3 Score.
c. 5 Score.

E. Basis of Design: Shadow Stone Block as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Shape: Stretcher:
a. Nominal Width: 8 inches.
b. Nominal Width: 12 inches.

6. Shape: Flush End / Sash / Spillable:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 12 inches.

7. Shape: Bond Beam:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 12 inches.

8. Shape: Double Flush End:
   a. Nominal Width: 8 inches.

9. Shape: All Solid:

10. Color: As selected from manufacturer's standard range.
12. Color: ______.

F. Basis of Design: Splitface / Fullface Split / Rockface Block as manufactured by County Materials Corporation.

1. Description: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Shape: Stretcher:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.
   d. Nominal Width: 14 inches.
   e. Nominal Width: 16 inches.

6. Shape: Flush End / Sash / Spillable:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.
   d. Nominal Width: 14 inches.
   e. Nominal Width: 16 inches.

7. Shape: Bond Beam:
   b. Nominal Width: 8 inches.
   c. Nominal Width: 10 inches.
   d. Nominal Width: 12 inches.
   e. Nominal Width: 14 inches.
   f. Nominal Width: 16 inches.

8. Shape: Double Flush End:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.
   g. Nominal Width: 16 inches.

9. Shape: All Solid:

10. Shape: Half Block, 8 inches long:
    a. Nominal Width: 8 inches.
    b. Nominal Width: 10 inches.
    c. Nominal Width: 12 inches.
11. **Shape**: Half High, 4 inches high:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.

12. **Shape**: ________.

13. **Color**: As selected from manufacturer's standard range.

14. **Color**: As indicated on the Drawings.

15. **Color**: ________.

16. **Score Shape**: 3/8 inch square score.
   a. 1 Score.
   b. 3 Score.
   c. 5 Score.
   d. 7 Score.

17. **Score Shape**: 1 inch round score, 1/2 inch deep.
   a. 7 Score.

18. **Score Shape**: 7/8 inch deep V score.
   a. 1 Score.
   b. 3 Score.
   c. 5 Score.

**G. Basis of Design: Transplit Block as manufactured by County Materials Corporation.**
1. **Description**: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. **Compliance**: ASTM C 90.
3. **Coloring**: Integral, through-body coloring; synthetic or natural iron oxide pigments.

5. **Shape**: Stretcher:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.

6. **Shape**: Flush End/ Sash/ Spiltable:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.

7. **Shape**: Bond Beam:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.

8. **Shape**: Double Flush End:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.

**H. Basis of Design: Wirecut/ Striated/ Combed Block as manufactured by County Materials Corporation.**
1. **Description**: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 2000 psi.
2. **Compliance**: ASTM C 90.
3. **Coloring**: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Shape: Stretcher:
   a. Nominal Width: 8 inches.
   b. Nominal Width: 10 inches.
   c. Nominal Width: 12 inches.
   d. Nominal Width: 14 inches.
   e. Nominal Width: 16 inches.

6. Shape: Flush End/ Sash/ Spillable:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.
   g. Nominal Width: 16 inches.

7. Shape: Bond Beam:
   b. Nominal Width: 8 inches.
   c. Nominal Width: 10 inches.
   d. Nominal Width: 12 inches.
   e. Nominal Width: 14 inches.
   f. Nominal Width: 16 inches.

8. Shape: Double Flush End:
   b. Nominal Width: 6 inches.
   c. Nominal Width: 8 inches.
   d. Nominal Width: 10 inches.
   e. Nominal Width: 12 inches.
   g. Nominal Width: 16 inches.

9. Shape: All Solid:
   b. Nominal Width: 4 inches.

10. Shape: Half High, 4 inches high:
    b. Nominal Width: 6 inches.
    c. Nominal Width: 8 inches.
    d. Nominal Width: 10 inches.
    e. Nominal Width: 12 inches.

11. Shape: ______.

12. Color: As selected from manufacturer's standard range.


14. Color: ______.

15. Score Shape: 3/8 inch square score.
    a. 1 Score.
    b. 3 Score.
    c. 5 Score.
    d. 7 Score.

16. Score Shape: 3/8 inch small V score.
    a. 1 Score.
    b. 3 Score.
    c. 5 Score.
    d. 7 Score.

17. Score Shape: 3/8 inch round score.
    a. 1 Score.
    b. 3 Score.
    c. 5 Score.
2.3 CONCRETE FACE BRICK

A. Basis of Design: Heritage Collection Designer Concrete Brick as manufactured by County Materials Corporation.
   1. Description: Normal weight, integrally pigmented loadbearing hollow units with a net area compressive strength of greater than or equal to 3500 psi.
   3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
   5. Facing Texture Style:
      a. Smooth.
      b. Splitface.
      c. Rough Estate.
      d. Tumbled.
   6. Size and Shape:
      a. Modular Brick: 3-5/8 x 2-1/4 x 7-5/8 inches.
      c. King Size Brick: 3-5/8 x 3 x 9-3/4 inches.
      d. Closure Brick: 3-5/8 x 3-5/8 x 7-5/8 inches.
      e. Utility Brick: 3-5/8 x 3-5/8 x 11-5/8 inches.
   7. Style: Blended.
      a. Color: As selected from manufacturer's standard range.
      b. Color: As indicated on the Drawings.
      c. Color: ______.
   8. Style: No Flash.
      a. Color: As selected from manufacturer's standard range.
      b. Color: As indicated on the Drawings.
      c. Color: ______.

B. Basis of Design: Reflection Brick as manufactured by County Materials Corporation.
   1. Description: Normal weight, integrally pigmented non-loadbearing solid units with a net area compressive strength of greater than or equal to 3500 psi.
   3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
   4. Units specified to have a fine finish surface manufactured with County Materials’ proprietary face mix.
   5. Concrete Face Brick are manufactured with Integral Water Repellent.
   6. Size, RB2: 3-1/4 x 3-3/4 x 7 inches.
   7. Size, RB3: 3-1/4 x 3-3/4 x 10-3/4 inches.
   8. Size, RB4: 3-1/4 x 3-3/4 x 14-1/2 inches.
   9. Size, RB5: 3-1/4 x 3-3/4 x 18-1/4 inches.
      a. Color: As selected from manufacturer's standard range.
      b. Color: As indicated on the Drawings.
      c. Color: ______.

2.4 CONCRETE MASONRY VENEER UNITS

A. Basis of Design: County Stone Masonry Units as manufactured by County Materials Corporation.
   1. Description: Normal weight, integrally pigmented loadbearing solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Sizes, mixed:
   b. Two Quarter Solid: 3-5/8 x 7-5/8 x 7-5/8 inches.
6. Color, Blended:
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.
7. Color, Solid:
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.
B. Basis of Design: Reflection Stone Masonry Units as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented loadbearing solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
4. Units specified to have a fine finish surface manufactured with County Materials' proprietary face mix.
5. Concrete Masonry Veneer Units are manufactured with Integral Polymer Emulsion Water Repellent.
7. Size, RG2: 10-3/4 x 3-3/4 x 14-11/16 inches.
C. Basis of Design: Reflection Stone GRAND Masonry Units as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented loadbearing solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
4. Units specified to have a fine finish surface manufactured with County Materials' proprietary face mix.
5. Concrete Masonry Veneer Units are manufactured with Integral Polymer Emulsion Water Repellent.
7. Size, RG2: 10-3/4 x 3-3/4 x 14-11/16 inches.
2.5 CONCRETE THIN VENEER UNITS

A. Basis of Design: County Stone Masonry Units as manufactured by County Materials Corporation.
   1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
   2. Compliance: ASTM C 90.
   3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
   5. Facing Texture Style: Tumbled
   6. Sizes, mixed:
      b. Two Quarter Face: 3/4 x 7-5/8 x 7-5/8 inches.
      e. Three Quarter Corner: 3/4 x 7-5/8 x 11-5/8 inches, with 3-5/8 inch return.
   7. Color, Blended:
      a. Color: As selected from manufacturer's standard range.
      b. Color: As indicated on the Drawings.
      c. Color: ______.
   8. Color, Solid:
      a. Color: As selected from manufacturer's standard range.
      b. Color: As indicated on the Drawings.
      c. Color: ______.

B. Basis of Design: Heritage Collection Designer Concrete Brick as manufactured by County Materials Corporation.
   1. Description: Normal weight, integrally pigmented units with a net area compressive strength of greater than or equal to 2000 psi.
   2. Compliance: ASTM C 90.
   3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
   5. Facing Texture Style:
      a. Smooth.
      b. Splitface.
      c. Rough Estate.
      d. Tumbled.
   6. Size and Shape:
      a. Modular Face: 3/4 x 2-1/4 x 7-5/8 inches.
      c. Modular Edge Cap: 3-5/8 x 2-1/4 x 7-5/8 inches, 3/4 inch thickness.
      d. Engineer Face: 3/4 x 2-3/4 x 7-5/8 inches.
      f. Closure Face: 3/4 x 3-5/8 x 7-5/8 inches.
      g. Closure Corner: 3-5/8 x 3-5/8 x 7-5/8 inches, 3/4 inch thickness.
h. Utility Face: 3/4 x 3-5/8 x 11-5/8 inches.
m. Full High Face: 3/4 x 7-5/8 x 15-5/8 inches.

7. Style: Blended.
a. Color: As selected from manufacturer's standard range.
b. Color: As indicated on the Drawings.
c. Color: 

8. Style: No Flash.
a. Color: As selected from manufacturer's standard range.
b. Color: As indicated on the Drawings.
c. Color: 

C. Basis of Design: Premier Ultra Burnished Masonry Units as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
13. Corner Size: 3-5/8 x 3-5/8 x 15-5/8 inches, 1 inch thickness.
15. Corner Size: 3-5/8 x 11-5/8 x 15-5/8 inches, 1 inch thickness.
17. Color: As selected from manufacturer's standard range.
19. Color: 

D. Basis of Design: Reflection Stone Masonry Units as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
4. Units specified to have a fine finish surface manufactured with County Materials' proprietary face mix.
5. Concrete Masonry Veneer Units are manufactured with Integral Polymer Emulsion Water Repellent.
6. Size, RTV1: 3-1/4 x 1 x 3-1/4 inches.
7. Size, RTV2: 3-1/4 x 1 x 7 inches.
8. Size, RTV3: 3-1/4 x 1 x 10-3/4 inches.
9. Size, RTV4: 3-1/4 x 1 x 14-1/2 inches.
10. Size, RTV5: 3-1/4 x 1 x 18-1/4 inches.
11. Size, RTV6: 7 x 1 x 7 inches.
12. Size, RTV7: 7 x 1 x 10-3/4 inches.
13. Size, RTV8: 7 x 1 x 14-1/2 inches.
15. Corner Size, RTVC2: 3-1/4 x 3-3/4 x 7 inches, 1 inch thickness.
16. Corner Size, RTVC3: 3-1/4 x 3-3/4 x 10-3/4 inches, 1 inch thickness.
17. Corner Size, RTVC4: 3-1/4 x 3-3/4 x 14-1/2 inches, 1 inch thickness.
18. Corner Size, RTVC5: 3-1/4 x 3-3/4 x 18-1/4 inches, 1 inch thickness.
19. Corner Size, RTVC6: 7 x 3-3/4 x 7 inches, 1 inch thickness.
20. Corner Size, RTVC7: 7 x 3-3/4 x 10-3/4 inches, 1 inch thickness.
21. Corner Size, RTVC8: 7 x 3-3/4 x 14-1/2 inches, 1 inch thickness.
22. Corner Size, RTVC9: 7 x 3-3/4 x 18-1/4 inches, 1 inch thickness.
23. Color: Variegated color blending as selected from manufacturers standard selections.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.

E. Basis of Design: Reflection Stone GRAND Masonry Units as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
4. Units specified to have a fine finish surface manufactured with County Materials' proprietary face mix.
5. Concrete Masonry Veneer Units are manufactured with Integral Polymer Emulsion Water Repellent.
7. Size, RGTV2: 10-3/4 x 1 x 14-11/16 inches.
8. Size, RGTV3: 10-3/4 x 1 x 18-7/16 inches.
10. Corner Size, RGTVC1: 10-3/4 x 3-3/4 x 10-3/4 inches, 1 inch thickness.
11. Corner Size, RGTVC2: 10-3/4 x 3-3/4 x 14-11/16 inches, 1 inch thickness.
12. Corner Size, RGTVC3: 10-3/4 x 3-3/4 x 18-7/16 inches, 1 inch thickness.
13. Color: Variegated color blending as selected from manufacturers standard selections.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.

F. Basis of Design: Heritage Collection Designer Concrete Brick as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
5. Facing Texture Style:
   a. Smooth.
   b. Splitface.
   c. Rough Estate.
   d. Tumbled.
6. Size, RBTV2: 3-1/4 x 1 x 7 inches.
7. Size, RBTV3: 3-1/4 x 1 x 10-3/4 inches.
8. Size, RBTV4: 3-1/4 x 1 x 14-1/2 inches.
9. Size, RBTV5: 3-1/4 x 1 x 18-1/4 inches.
10. Corner Size, RBTVC2: 3-1/4 x 3-3/4 x 7 inches, 1 inch thickness.
12. Corner Size, RBTVC4: 3-1/4 x 3-3/4 x 14-1/2 inches.
13. Corner Size, RBTVC5: 3-1/4 x 3-3/4 x 18-1/4 inches.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.
15. Style: No Flash.
   a. Color: As selected from manufacturer's standard range.
   b. Color: As indicated on the Drawings.
   c. Color: ______.

G. Basis of Design: Splitface/ Fullface Split/ Rockface Block as manufactured by County Materials Corporation.
1. Description: Normal weight, integrally pigmented solid units with a net area compressive strength of greater than or equal to 2000 psi.
2. Compliance: ASTM C 90.
3. Coloring: Integral, through-body coloring; synthetic or natural iron oxide pigments.
13. Color: As selected from manufacturer's standard range.
15. Color: ______.

2.6 ACCESSORIES

A. Single-Wythe Joint Reinforcement:
   1. Truss Type: Fabricated from cold drawn steel wire ASTM A 82; conforming to ASTM A 951; 9 gauge deformed side rods conforming to ASTM A 496 / A 496M; 9 gauge cross rods.
   2. Coatings for Corrosion Protection: Mill galvanized per ASTM A 641 /A 641M, Zinc Coated (0.1 oz. per sq.ft.).
   3. Coatings for Corrosion Protection: Hot-dipped galvanized per ASTM A 153 / A 153M Class B.
   4. Width selected shall be approximately 2 inches (51 mm) less than nominal width of Concrete Masonry Unit.
   5. Install continuously in horizontal mortar joints in vertical intervals of not more than 16 inches (406 mm).
   6. Type and Manufacturer: ______.

B. Veneer Joint Reinforcement:
   1. Truss Type: Fabricated from cold drawn steel wire ASTM A 82; conforming to ASTM A 951; 9 gauge deformed side rods conforming to ASTM A 496 / A 496M; 9 gauge cross rods.
2. Coating for Corrosion Protection: Mill galvanized per ASTM A 641 / A 641M, Zinc Coated (0.1 oz. per sq.ft.).
3. Coating for Corrosion Protection: Hot-dipped galvanized per ASTM A 153 / A 153M Class B.
4. Width: Nominal 4 inch wire; actual - approximately 2 inches.
5. Install continuously in horizontal mortar joints in vertical intervals of not more than 16 inches (406 mm) O.C.
6. Type and Manufacturer: ______.

C. Veneer Anchors for Masonry Back-up: Ladder Type with Ties.
1. Truss Portion: Fabricated from cold drawn steel wire ASTM A 82; conforming to ASTM A 951; 9 gauge deformed side rods conforming to ASTM A 496 / A 496M; 9 gauge cross rods.
   a. Hot-dipped galvanized per ASTM A 153 / A 153M Class B.
   b. 3/16 inch (4.76 mm) diameter wire tabs shall be welded to truss portion at 16 inch (406 mm) O.C. horizontal spacing.
2. Ties: 3/16 inch (4.76 mm) diameter wire; Hot-dipped galvanized ASTM A 153 / A 153M Class B.
3. Truss width shall be approximately 2 inches (51 mm) less than nominal width of Concrete Masonry.
4. Ties shall be of sufficient length to embed longitudinal portion of tie into center of brick veneer +/- 1 inch (25 mm).
5. Install continuously in horizontal mortar joints in vertical intervals of not more than 16 inches (406 mm).
6. Type and Manufacturer: ______.

D. Veneer Anchors for Steel Stud Back-up: 2-Piece anchors.
1. Plate Portion: 14 gauge; Hot-dipped galvanized ASTM A 153 / A 153M Class B.
2. Ties: 3/16 inch (4.76 mm) diameter wire; Hot-dipped galvanized ASTM A 153 / A 153M Class B.
3. Ties shall be of sufficient length to embed longitudinal portion of tie into center of brick veneer +/- 1 inch (25 mm).
4. Install continuously in both horizontal and vertical intervals of not more than 16 inch (406 mm) O.C.
5. Anchors shall be installed per NCMA TEK 3-6C-12, 1 tie / 2.67 ft2 of wall surface.
6. Type and Manufacturer: ______.

E. Flashing for Single-Wythe Concrete Masonry Unit:
1. Embedded, overlapping, polypropylene pan system with integral weep spouts.
2. Flashing shall be installed at all locations where the free drainage of water is blocked.
3. Type and Manufacturer: ______.

F. Flashing for Concrete Face Brick and Concrete Masonry Veneer Unit:
1. 40-mil flexible flashing with integral drainage mat, stainless steel drip edge and weep tabs.
2. Type and Manufacturer: ______.

G. Weep Vents for Concrete Face Brick and Concrete Masonry Veneer Unit:
1. 2-5/8 inches x 3-1/2 inches x 1/2 inches (67 mm x 89 mm x 13 mm) open-weave recycled polyester mesh.
2. Weep Vents shall be installed a minimum of 32 inches (813 mm) O.C.
3. Weep Vents color shall match color of the mortar joints.
4. Type and Manufacturer: ______.
H. Conventional Grout:
1. Shall conform to ASTM C 476 and the recommendations of NCMA TEK 9-4A.
2. Grout shall be proportioned to provide slump of 8 to 11 inches as measured by ASTM C 143 / C 143M.
3. Type and Manufacturer: _______.

I. Self-consolidating Grout: Shall conform to ASTM C 476 and MSJC.
1. Type and Manufacturer: _______.

J. Mortar for Single-Wythe Concrete Masonry Units:
1. Masonry Cement conforming to ASTM C 91, Type S.
   b. Hydrated Lime ASTM C 207, Type S.
   c. Portland and Lime shall be mixed to meet ASTM C 270 property specification Type S.
3. Type and Manufacturer: _______.

K. Mortar for Concrete Face Brick and Concrete Masonry Veneer Unit:
1. Masonry Cement conforming to ASTM C 91, Type N.
   a. Portland Cement: ASTM C 150
   b. Hydrated Lime ASTM C 207, Type S.
   c. Portland and Lime shall be mixed to meet ASTM C 270 property specification Type N.
3. Mortar Color: ______________.
5. Mortar Color: As indicated on Drawings.
6. Joint Striking: ____________.

L. Aggregate for Mortar: ASTM C 144.

M. Water-Repellant Admixture: Liquid water-repellant mortar admixture or manufacturer approved equal. A complimentary water repellent mortar admixture used in the concrete unit shall be used in the mortar to ensure compatibility and bond.
1. Type and Manufacturer: _______.

N. Water: Clean and potable.

O. Control Joints shall be built into Single-Wythe Concrete Masonry Unit walls according to the recommendations of NCMA TEK 10-2C. Joints shall not exceed the lesser of: a maximum panel length to height ratio of 1-1/2:1 or a distance of 25 ft (7.6 m).

P. Control Joints shall be built into Concrete Face Brick and Concrete Masonry Veneer Unit walls according to the recommendations of NCMA TEK 10-4. Joints shall not exceed the lesser of: a maximum panel length to height ratio of 1-1/2:1 or a distance of 20 ft (6.1 m).

Q. Control Joint Gasket: 2-5/8 inch (67 mm) PVC compound with 80 Durometer hardness conforming to ASTM D 2240.

R. Backer Rods: Backer rod diameter shall be 1/8 inch (3 mm) larger than width of the control joint.
1. Closed-cell polyethylene foam complying to ASTM C 1330, Type C.
2. Type and Manufacturer: _______.

S. Sealant:
1. Elastomeric polyurethane conforming to ASTM C 920.
2. Sealant Depth at midpoint shall be minimum 1/4 inch (6 mm); maximum 3/8 (9.5 mm).
3. Sealant color shall match color of concrete face brick and concrete masonry unit.
4. Type and Manufacturer: _______.

T. Cleaners: Non muriatic acid cleaner.

U. Cleaners: As applicable and after a test area is prepared.

V. Sealers: Clear-drying, water-based, silicone emulsion with 6 percent solids as measured by ASTM D 5095.
1. Type and Manufacturer: _______.

W. Sealers: As applicable and after a test area is prepared.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examination:
1. Verify field conditions are acceptable and ready to receive masonry.
2. Verify the foundations or bearing elements are within tolerances conforming to the requirements of ACI 117.
3. Verify built-in items are in proper location, and ready to receive masonry work.
4. Verify concrete brick masonry units are according to project specification and meet appropriate ASTM specification requirements. Commencement of installation constitutes acceptance of Concrete Face Brick, Concrete Masonry Units, Concrete Masonry Veneers, and Concrete Thin Veneers.

B. Preparation: Prepare surfaces and materials in accordance with MSJC Specifications for Masonry Structures. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

C. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

3.2 INSTALLATION - CONCRETE MASONRY UNITS

A. Concrete Masonry Units:
1. Install concrete masonry units in accordance with standard masonry practices, NCMA and MSJC Specifications for Masonry Structures and manufacturer's instructions.
2. Bond Pattern for Exposed Masonry: Running Bond.
4. Bond Pattern for Exposed Masonry: As indicated on Drawings.
5. Lay units by selecting product from more than one pallet at a time during installation.
6. Lay units with full mortar head and bed joints.
7. All cutting shall be done with masonry saw to provide, clean, sharp,
unchipped edges.
8. Do not use masonry units with broken corners and edges in excess of ASTM C90 and ASTM C1634.
9. Temporary Formwork and Shores: Construct formwork to support reinforced masonry elements during construction.
10. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

B. Control Joints: Designed to reduce restraint and permit longitudinal movement. Per NCMA Tek Note 10-2C and 10-4, proper control joint spacing is required for concrete masonry walls.
   1. Single-Wythe Concrete Masonry Units: Joints shall not exceed the lesser of: a maximum panel length to height ration of 1-1/2:1 or a distance of 25 feet.
   2. Concrete Face Brick: Joints shall not exceed the lesser of: a maximum panel length to height ratio of 1-1/2:1 or a distance of 20 feet.

C. Mortar and Mortar Joints:
   1. Mortar Mixing.
      a. Mix mortar ingredients in accordance with ASTM C270.
      b. Add mortar coloring.
      c. Add water repellent admixture specified by manufacturer.
      d. Mix mortar components between 3 and five minutes.
   2. Mortar Joints
      a. Tool exposed joints when mortar is thumbprint hard, using jointer larger than joint thickness.
      b. Remove excess mortar smears as work progresses.

D. Horizontal Joint Reinforcement:
   1. Place joint reinforcements in horizontal mortar joints in first course, at 8 inches above and below openings, and below bearing locations.
   2. Install joint reinforcement in the bed joints 16 inches (406 mm) on center vertically in veneer applications, in the exterior wythe of composite and noncomposite wall construction, and in through-wall masonry construction.
   3. Nonstructural, horizontal, joint reinforcement should not be installed continuously through control joints.

E. Veneer Anchors and Ties: Install to allow for vertical and horizontal movement. Ties must be securely attached to studs through sheathing and/or insulation and not to the sheathing/insulation alone.

F. Ambient Conditions: When ambient air temperature is outside the range of 40 to 90 degrees F (4.4 to 32.2 degrees C), implement procedures and comply with recommendations in accordance with MSJC Specification for Masonry Structures.

G. During construction and until the walls are roofed, the coping is installed, or the top bond beam course is grouted solid, keep walls covered to prevent rain or snow intrusion into the concrete masonry units cores or wall cavities.

H. Contractor shall keep masonry units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed brick. Remaining mortar shall be removed with a stiff fiber brush.
I. Keep concrete masonry units and walls clean during construction. Prevent grout or mortar from staining the face of masonry. Mortar and grout soiling (droppings, spatters, and smears) shall be removed at the end of each day following standard masonry practices.

J. All concrete masonry units shall be cleaned in strict accordance with specified cleaning agent manufacturer’s instructions. Mild masonry detergents/cleaners and power washing systems shall be properly used. Strong acids, acid washes, or chemicals with a strong acid reaction shall not be used.

K. Loading:
   1. Do not apply uniform floor or roof loads for a minimum of 12 hours after building masonry walls.
   2. Do not apply concentrated loading for a minimum of 3 days after building masonry walls or columns.

L. Flashing and Weeps:
   1. Install flashing as indicated on drawings, as specified herein and in all of the following locations:
      a. Above grade at base of walls.
      b. Under and behind sills.
      c. Over openings.
      d. At spandrels and shelf angles.
      e. On top of bond-beams if used mid-wall.
   2. Weep Vents shall be provided at all flashing locations at intervals not to exceed 32 inches (813 mm) O.C.

M. Cleaning:
   1. All caulking and sealant materials shall be in place and cured prior to cleaning.
   2. Application of cleaner above 50 psi. is prohibited.
   3. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

N. Contractor shall keep concrete units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

O. At installation completion of exposed concrete units, tuck-point holes and imperfections in joints of all exposed masonry surfaces, completely filling with mortar. Tool to match surrounding mortar joints. After pointing hardens, and within fourteen days of finished work, clean masonry surfaces of all excess mortar soiling and dirt.

P. Sealers:
   1. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

Q. Protection:
   1. Protect installed work from damage due to subsequent construction activity on the site.
   2. Protect masonry materials during storage and construction to prevent
moisture intrusion and soilage.
3. During erection, cover tops of walls to prevent moisture penetration into cores of concrete masonry units and cavities of wall system.
4. Provide final protection and maintain jobsite conditions that ensure concrete brick masonry is without damage, deterioration, or soiling.

3.3 INSTALLATION - CONCRETE FACE BRICK

A. Concrete Face Brick:
1. Install concrete units in accordance with standard masonry practices, NCMA and MSJC Specifications for Masonry Structures and manufacturer’s instructions.
2. Bond Pattern for Exposed Masonry: As indicated on Drawings.
3. Lay units by selecting product from more than one pallet at a time during installation.
4. Lay units with full mortar head and bed joints.
5. All cutting shall be done with masonry saw to provide, clean, sharp, unchipped edges.
6. Do not use masonry units with broken corners and edges in excess of ASTM C90 and ASTM C1634.
7. Temporary Formwork and Shores: Construct formwork to support reinforced masonry elements during construction.
8. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

B. Control Joints: Designed to reduce restraint and permit longitudinal movement. Per NCMA Tek Note 10-2C and 10-4, proper control joint spacing is required for concrete masonry veneer walls.
1. Concrete Face Brick: Joints shall not exceed the lesser of: a maximum panel length to height ratio of 1:1/2:1 or a distance of 20 feet.

C. Mortar and Mortar Joints:
1. Mortar Mixing.
   a. Mix mortar ingredients in accordance with ASTM C270.
   b. Add mortar coloring.
   c. Add water repellent admixture specified by manufacturer.
   d. Mix mortar components between 3 and five minutes.
2. Mortar Joints
   a. Tool exposed joints when mortar is thumbprint hard, using jointer larger than joint thickness.
   b. Remove excess mortar smears as work progresses.

D. Horizontal Joint Reinforcement:
1. Place joint reinforcements in horizontal mortar joints in first course, at 8 inches (203 mm) above and below openings, and below bearing locations.
2. Install joint reinforcement in the bed joints 16 inches (406 mm) on center vertically in veneer applications, in the exterior wythe of composite and non-composite wall construction.
3. Nonstructural, horizontal, joint reinforcement shall not be installed continuously through control joints.

E. Veneer Anchors and Ties: Install to allow for vertical and horizontal movement. Ties shall be securely attached to studs through sheathing and/or insulation and not to the sheathing/insulation alone complying with NCMA TEK 3-6C-12

F. Ambient Conditions: When ambient air temperature is outside the range of 40 to 90 degrees F (4.4 to 32.2 degrees C), implement procedures and comply with
recommendations in accordance with MSJC Specification for Masonry Structures.

G. During construction and until the walls are roofed, the coping is installed, or the top bond beam course is grouted solid, keep walls covered to prevent rain or snow intrusion into the concrete face brick or wall cavities.

H. Keep concrete face brick units and walls clean during construction. Prevent grout or mortar from staining the face of masonry. Mortar and grout soiling (droppings, spatters, and smears) shall be removed at the end of each day following standard masonry practices.

I. Loading:

1. Do not apply uniform floor or roof loads for a minimum of 12 hours after building masonry walls.
2. Do not apply concentrated loading for a minimum of 3 days after building masonry walls or columns.

J. Flashing and Weeps:

1. Install flashing as indicated on drawings, as specified herein and in all of the following locations:
   a. Above grade at base of walls.
   b. Under and behind sills.
   c. Over openings.
   d. At spandrels and shelf angles.
   e. On top of bond-beams if used mid-wall.
2. Weep Vents shall be provided at all flashing locations at intervals not to exceed 32 inches (813 mm) O.C.

K. Cleaning:

1. All caulking and sealant materials shall be in place and cured prior to cleaning.
2. Application of cleaner above 50 psi is prohibited.
3. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

L. Contractor shall keep concrete face brick units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

M. At installation completion of exposed concrete face brick units, tuck-point holes and imperfections in joints of all exposed masonry surfaces, completely filling with mortar. Tool to match surrounding mortar joints. After pointing hardens, and within fourteen days of finished work, clean masonry surfaces of all excess mortar soiling and dirt.

N. Protection:

1. Protect installed work from damage due to subsequent construction activity on the site.
2. Protect masonry materials during storage and construction to prevent moisture intrusion and soilage.
3. During erection, cover tops of walls to prevent moisture penetration into concrete face brick units and cavities of wall system.
4. Provide final protection and maintain jobsite conditions that ensure concrete masonry veneer units are without damage, deterioration, or soiling.

3.4 INSTALLATION - CONCRETE MASONRY VENEER UNIT

A. Concrete Masonry Veneer Unit:
   1. Install concrete masonry veneer units in accordance with MSJC Specifications for Masonry Structures and manufacturer's instructions.
   2. Bond Pattern for Exposed Masonry: As indicated on Drawings.
   3. Lay units by selecting product from more than one pallet at a time during installation.
   4. Lay units with full mortar head and bed joints.
   5. All cutting shall be done with masonry saw to provide, clean, sharp, unchipped edges.
   6. Do not use masonry units with broken corners and edges in excess of ASTM C90 and ASTM C1634.
   7. Temporary Formwork and Shores: Construct formwork to support reinforced masonry elements during construction.
   8. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

B. Control Joints: Designed to reduce restraint and permit longitudinal movement. Per NCMA Tek Note 10-2C and 10-4, proper control joint spacing is required for concrete masonry veneer walls.
   1. Concrete Masonry Veneer Unit: Joints shall not exceed the lesser of: a maximum panel length to height ratio of 1-1/2:1 or a distance of 20 feet.

C. Mortar and Mortar Joints:
   1. Mortar Mixing.
      a. Mix mortar ingredients in accordance with ASTM C270.
      b. Add mortar coloring.
      c. Add water repellent admixture specified by manufacturer.
      d. Mix mortar components between 3 and five minutes.
   2. Mortar Joints
      a. Tool exposed joints when mortar is thumbprint hard, using jointer larger than joint thickness.
      b. Remove excess mortar smears as work progresses.

D. Horizontal Joint Reinforcement:
   1. Place joint reinforcements in horizontal mortar joints in first course, at 8 inches (203 mm) above and below openings, and below bearing locations.
   2. Install joint reinforcement in the bed joints 16 inches (406 mm) on center vertically in veneer applications, in the exterior wythe of composite and non-composite wall construction.
   3. Nonstructural, horizontal, joint reinforcement shall not be installed continuously through control joints.

E. Veneer Anchors and Ties: Install to allow for vertical and horizontal movement. Ties shall be securely attached to studs through sheathing and/or insulation and not to the sheathing/insulation alone complying with NCMA TEK 3-6C-12

F. Ambient Conditions: When ambient air temperature is outside the range of 40 to 90 degrees F (4.4 to 32.2 degrees C), implement procedures and comply with recommendations in accordance with MSJC Specification for Masonry Structures.

G. During construction and until the walls are roofed, the coping is installed, or the top bond beam course is grouted solid, keep walls covered to prevent rain or snow
intrusion into the Concrete Masonry Veneer Unit or wall cavities.

H. Keep concrete masonry veneer units and walls clean during construction. Prevent grout or mortar from staining the face of masonry. Mortar and grout soiling (droppings, spatters, and smears) shall be removed at the end of each day following standard masonry practices.

I. Loading:
1. Do not apply uniform floor or roof loads for a minimum of 12 hours after building masonry walls.
2. Do not apply concentrated loading for a minimum of 3 days after building masonry walls or columns.

J. Flashing and Weeps:
1. Install flashing as indicated on drawings, as specified herein and in all of the following locations:
   a. Above grade at base of walls.
   b. Under and behind sills.
   c. Over openings.
   d. At spandrels and shelf angles.
   e. On top of bond-beams if used mid-wall.
2. Weep Vents shall be provided at all flashing locations at intervals not to exceed 32 inches (813 mm) O.C.

K. Cleaning:
1. All caulking and sealant materials shall be in place and cured prior to cleaning.
2. Application of cleaner above 50 psi is prohibited.
3. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

L. Contractor shall keep concrete masonry veneer units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

M. Contractor shall keep concrete masonry veneer units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

N. At installation completion of exposed concrete masonry veneer units, tuck-point holes and imperfections in joints of all exposed masonry surfaces, completely filling with mortar. Tool to match surrounding mortar joints. After pointing hardens, and within fourteen days of finished work, clean masonry surfaces of all excess mortar soiling and dirt.

O. Protection:
1. Protect installed work from damage due to subsequent construction activity
on the site.
2. Protect masonry materials during storage and construction to prevent moisture intrusion and soilage.
3. During erection, cover tops of walls to prevent moisture penetration into concrete masonry veneer units and cavities of wall system.
4. Provide final protection and maintain jobsite conditions that ensure concrete masonry veneer units are without damage, deterioration, or soiling.

3.5 INSTALLATION - CONCRETE THIN VENEERS

A. Install concrete thin veneers in accordance with manufacturer's written instructions and recommendations.
   1. For Field Applications: Install according to the Masonry Veneer Manufacturers Association Installation Guide for Adhered Masonry Veneer and local building codes.
   2. For Field Applications: Mortared head and bed joints shall be the full thickness of the CMU face shells.
   3. For Precast or Tilt-up Concrete Applications: Install according to Precast Concrete Institute and Tilt-Up Concrete Association guidelines and local building codes.

B. Assembly:
   1. Units shall be mixed from several cartons or pallets during installation.
   2. For Precast or Tilt-up Concrete Applications: Units shall be waxed sufficiently on faces to be exposed to prevent adhesion by concrete/mortar.

C. Control Joints: Designed to reduce restraint and permit longitudinal movement. Per NCMA Tek Note 10-2C and 10-4, proper control joint spacing is required for all concrete masonry walls.

D. Control Joint Placement: Locate control joints where volume changes in the masonry due to drying shrinkage, carbonation, or temperature changes are likely to create tension in the masonry that will exceed its capacity.


F. Empirical Crack Control: For walls containing masonry parapets, do not consider the parapet as part of the masonry wall below if recommended through-wall flashing is utilized at the roof/parapet intersection, which will render the parapet as an independent wall element.

G. Mortar and Mortar Joints for Field Applications: Strike mortar joints when the mortar is thumbprint hard. Raked, flush, beaded, or extruded joints are not recommended by manufacturer as they do not compact the mortar and create ledges that intercept water running down the face of the wall. Mortared head and bed joints shall be the full thickness of the CMU face shells.

H. Cleaning Procedures For Field Application:
   1. All caulking and sealant materials shall be in place and cured prior to cleaning.
   2. Application of cleaner above 50 psi. is prohibited.
   3. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

I. Contractor shall keep concrete units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not
limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

J. Sealers: A test panel shall be cleaned and approved by architect prior to general wall cleaning.

K. Cleaning Procedures: For precast or tilt-up concrete applications:
   1. All caulking and sealant materials shall be in place and cured prior to cleaning.
   2. Application of cleaner above 50 psi. is prohibited.
   3. A test panel shall be cleaned and approved by architect prior to general wall cleaning.

L. Contractor shall keep concrete units, walls and surrounding work clean during construction following standard masonry practices. Mortar soiling (including but not limited to droppings, splatters, smears) shall be removed at the end of each day. Remove mortar soiling from masonry work and connecting work before its final set. Mortar droppings that adhere to the exposed face of the units shall be removed using brick/block scrap after being allowed to harden, without causing damage to the exposed face of installed units. Remaining mortar shall be removed with a stiff fiber brush.

M. Sealers: A test panel shall be cleaned and approved by architect prior to general wall cleaning.

N. Protection: Protect installed work from damage due to subsequent construction activity on the site.
   1. Strong acids, acid washes, chemicals with a strong acid reaction and abrasives may not be used, as they may etch the surface and distort color.

END OF SECTION