

Rec'd 11/10/24
per SA



Pennsylvania Office of Open Records

Standard Right-to-Know Law Request Form

Please read carefully. Complete this form and retain a copy of **both** pages; this copy may be required if an appeal is filed. You have 15 business days to appeal after a request is denied or deemed denied. More information about the RTKL is available at <https://www.openrecords.pa.gov>. In most cases, a completed RTKL request form is a public record.

SUBMITTED TO AGENCY NAME: CITY OF DUBOIS, PENNSYLVANIA (Attn: AORO)

Date Request Submitted: 11/3/24 Submitted via: Email U.S. Mail Fax In Person

PERSON MAKING REQUEST:

Full Name: JUDITH SUPLIZIO

Company (if applicable): _____

Please send response via: Email U.S. Mail

If you wish to obtain records that only exist in hard copy, or must be provided on an electronic storage device, you may be required to provide a mailing address to the agency. See Section 703.

Email: [REDACTED]

Mailing Address: 314 Hamor Street

City: DuBois State: Pa Zip: 15801 Telephone: [REDACTED]

How do you prefer to be contacted if the agency has questions? Telephone Email U.S. Mail

By checking this box, I affirm that my full name and contact information is true and correct, and that I am a legal resident of the United States. I understand that failure to check this box may result in the denial of my request and the dismissal of any appeal filed with the Office of Open Records.

RECORDS REQUESTED: Provide as much detail as possible, including subject matter, time frame, and type of record sought. RTKL requests must seek records, not ask questions. Use additional pages if necessary.

"I would say the most significant impact to the schedule has been the masonry block" quoted the City's Engineer HRG Engineering. Masonry block? Masonry block is a shelf item. And should not have been a surprise. How could masonry block delay a over \$90million Project causing schedule penalties absorbed by city taxpayers?

Please provide the engineer's specification illustrating the unique requirements of a masonry block, why this was missed, what caused the delay in supply, the supply chain records clarifying this delay, the records highlighting Management Areas of Concern for masonry blocks, and the recorded proactive measures by the City Manager to void any penalty.

Form continues on page 2. Retain a copy of **both** pages.

RECORDS REQUESTED (continued):

DO YOU WANT COPIES? Yes, printed Yes, electronic No, in-person inspection

Records shall be provided in the medium requested if they exist in that medium; otherwise, they shall be provided in the medium in which they exist. See Section 701. Your request may require payment or prepayment of fees. View the Official RTKL Fee Schedule for more details.

I understand that my request may incur fees. Notify me before further processing if fees will be more than \$100 (or) \$_____.

Do you want certified copies? Yes (may be subject to additional costs) No

ITEMS BELOW THIS LINE FOR AGENCY USE ONLY

Tracking: _____ Date Received: _____ Response Due (5 bus. days): _____

30-Day Ext.? Yes No (If Yes, Final Due Date: _____) Actual Response Date: _____

Request was: Granted Partially Granted & Denied Denied Cost to Requester: \$_____

Appropriate third parties notified and given an opportunity to object to the release of requested records.

Retain a copy of both pages of this Form.

KORBI SLOCUM

From: Shawn Arbaugh <sarbaugh@sandytownship.net>
Sent: Tuesday, November 12, 2024 10:37 AM
To: KORBI SLOCUM
Subject: RE: RTK Requests

Good Morning Korbi,

The Block request was received on Nov. 10. The other two requests were received on Nov. 11.

Thanks,
Shawn

Shawn Arbaugh | Sandy Township / DuBois City Manager
Sandy Township and City of DuBois, Clearfield County
16 W. Scribner Ave. | DuBois, PA 15801
Phone: 814.371.2000 X 109 | Fax: 814.375.7837
sarbaugh@sandytownship.net | www.sandytownship.net / www.duboispa.gov

From: KORBI SLOCUM <korbi.slocum@duboispa.gov>
Sent: Tuesday, November 12, 2024 10:00 AM
To: Shawn Arbaugh <sarbaugh@sandytownship.net>
Subject: RE: RTK Requests

Shawn,

Can you confirm when these were received so they can be accurately logged? Judy's request for the masonry block has a request date of 11/3/2024. Casey's request for itemized legal invoices is dated 11/11/20 which I'm guessing should be 11/11/2024?

Judy's PUC request is properly dated 11/11/2024.

Thanks,
Korbi

*Korbi Slocum
Administrative Secretary
City of DuBois*

From: Shawn Arbaugh <sarbaugh@sandytownship.net>
Sent: Tuesday, November 12, 2024 8:53 AM
To: KORBI SLOCUM <korbi.slocum@duboispa.gov>
Subject: RTK Requests

Good Morning Korbi,



CITY OF DuBOIS, PENNSYLVANIA

P.O. BOX 408

16 W. SCRIBNER AVE.

DuBOIS, PENNSYLVANIA 15801

TELEPHONE: (814) 371-2000

FAX: (814) 371-1290

November 15, 2024

Ms. Judy Suplizio
314 Hamor Street
DuBois, PA 15801

Dear Ms. Suplizio,

Thank you for writing the City of DuBois with your request for information pursuant to the Pennsylvania Right-To-Know law.

On November 10, 2024, you requested the engineer's specification illustrating the unique requirements of a masonry block, why this was missed, what caused the delay in supply, the supply chain records clarifying this delay, the records highlighting Management Areas of Concern for masonry blocks, and the recorded proactive measures by the City Manager to void any penalty.

Pursuant to Section 902(a) of the Right to Know Law, the City of DuBois requires an additional 30 days to respond to the request:

- A timely response to the request cannot be accomplished due to bona fide and specified staffing limitations.
- A legal review is necessary to determine whether the records are subject to access under this act.

The City of DuBois expects to respond to your request on or before December 13, 2024.

Respectfully,

Shawn Arbaugh
City Manager
City of DuBois, Clearfield County

"Gateway To Big Game Country"



CITY OF DuBOIS, PENNSYLVANIA

P.O. BOX 408

16 W. SCRIBNER AVE.

DuBOIS, PENNSYLVANIA 15801

TELEPHONE: (814) 371-2000

FAX: (814) 371-1290

November 27, 2024

Ms. Judy Suplizio
314 Hamor Street
DuBois, PA 15801

Dear Ms. Suplizio,

Thank you for writing the City of DuBois with your request for information pursuant to the Pennsylvania Right-To-Know law.

On November 10, 2024, you requested the engineer's specification illustrating the unique requirements of a masonry block, why this was missed, what caused the delay in supply, the supply chain records clarifying this delay, the records highlighting Management Areas of Concern for masonry blocks, and the recorded proactive measures by the City Manager to void any penalty.

Your request is granted, and the responsive records are attached.

Respectfully,

Shawn Arbaugh
City Manager
City of DuBois, Clearfield County

Enclosures

"Gateway To Big Game Country"

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.

- B. Related Requirements:
 - 1. Section 03 20 00 - Concrete Reinforcing: Product requirements for steel reinforcing in masonry cavities and cores for installation by this Section.
 - 2. Section 08 42 00 0 – Aluminum OH Doors and Frames: Product requirements for door anchors for placement by this Section.
 - 3. Section 08 51 13 – Aluminum Windows: product requirements for anchors for placement by this Section.

1.2 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A153- Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 3. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - 4. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
 - 5. ASTM A580 - Standard Specification for Stainless Steel Wire.
 - 6. ASTM A615 - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement.
 - 7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 8. ASTM A951 - Standard Specification for Steel Wire for Masonry Joint Reinforcement.
 - 9. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
 - 10. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
 - 11. ASTM C27 - Standard Classification of Fireclay and High-Alumina Refractory Brick.
 - 12. ASTM C34 - Standard Specification for Structural Clay Load-Bearing Wall Tile.
 - 13. ASTM C55 - Standard Specification for Concrete Building Brick.
 - 14. ASTM C56 - Standard Specification for Structural Clay Nonloadbearing Tile.
 - 15. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).

16. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
17. ASTM C73 - Standard Specification for Calcium Silicate Brick (Sand-Lime Brick).
18. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
19. ASTM C126 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
20. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.
21. ASTM C140 - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
22. ASTM C212 - Standard Specification for Structural Clay Facing Tile.
23. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
24. ASTM C315 - Standard Specification for Clay Flue Liners and Chimney Pots.
25. ASTM C530 - Standard Specification for Structural Clay Nonloadbearing Screen Tile.
26. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
27. ASTM C652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale).
28. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.
29. ASTM C1261 - Standard Specification for Firebox Brick for Residential Fireplaces.
30. ASTM C1283 - Standard Practice for Installing Clay Flue Lining.
31. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms.
32. ASTM C1405 - Standard Specification for Glazed Brick (Single Fired, Brick Units).
33. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
34. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
35. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

- B. The Masonry Society:
 1. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures and Related Commentaries.

1.3 COORDINATION

- A. Section 01 31 13 – Project Coordination: Requirements for coordination.

1.4 PREINSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Requirements for pre-installation meeting.
- B. Convene minimum one week prior to commencing Work of this Section.

1.5 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 - 1. Submit data for masonry units masonry wire reinforcement and other accessories.
- C. Samples:
 - 1. Submit two full-size samples of CMU units to illustrate color, texture, and extremes of color range.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Source Quality-Control Submittals: Indicate results of factory tests and inspections.
- F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- G. Qualifications Statements:
 - 1. Submit qualifications for installer.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Section 01 73 00 - Execution Requirements: Requirements for maintenance materials.
- B. Extra Stock Materials:
 - 1. Furnish 4 of each size, color, and type of CMU units.

1.7 QUALITY ASSURANCE

- A. Perform Work according to TMS 402/602.

1.8 QUALIFICATIONS

- A. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.9 MOCKUPS

- A. Section 01 40 00 - Quality Requirements: Requirements for mockups.
- B. Size: Construct masonry wall mockup, 4 feet long by 4 feet high, including masonry, mortar and accessories.
- C. Locate where directed by Engineer.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 61 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept CMU units on-Site. Inspect for damage.

1.11 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.
- B. Do not store reinforcing material directly on ground. Utilize blocking and other methods to prevent rust on accessories prior to installation.
- C. Cold Weather Requirements: According to TMS 402/602 when ambient temperature or temperature of masonry units is less than 40 degrees F.
- D. Hot Weather Requirements: According to TMS 402/602 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

1.12 EXISTING CONDITIONS

- A. Field Measurements: Verify elevations, dimensions, and alignment of foundations prior to beginning Work. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

- A. Concrete Masonry Compressive Strength (f'm): 2,250 psi for all exterior walls, below grade walls and all interior load bearing walls, 2,000 psi for all non-load bearing interior walls; determined by unit strength method.
 - 1. Concrete Masonry Units (CMU):
 - a. 2,600 psi minimum net area compressive strength for all exterior wall, below grade walls, and all interior 12" CMU load bearing walls.
 - b. 2,000 psi minimum net area compressive strength for all interior 8" walls and 12" non-load bearing walls.

2.2 UNIT MASONRY ASSEMBLIES

- A. Masonry Unit
 - 1. Manufacturers:
 - a. Fizzano Brothers, 1776 Chester Pike, Crum Lynne, PA, 19022
 - b. Oberfields LLC, 528 London Road, Delaware, OH 43015
 - c. A. Jandris & Sons, 202 High Street, Gardner, MA 01440
 - d. York Building Products.
 - e. Substitutions: Section 01 61 00 - Product Requirements.

2.3 MATERIALS

- A. Hollow Load-Bearing CMU: ASTM C90; normal weight – Interior walls and below grade walls.
- B. Decorative CMU: ASTM C90; normal weight – at grade and above grade exterior walls; color as selected by Owner to the following design:
 - 1. Hi-R CMU – 12” units with an R-value of 11.4 or higher. Include integral waterproofing – Dry-Block as manufactured by Grace Construction Products.
 - 2. Hi-R CMU – 8” units and other sizes as needed for transitions at corners, openings and masonry control joints - w/ integral waterproofing – Dry-Block as manufactured by Grace Construction Products.
 - 3. CMU – 4” units and other sizes as needed for transitions at corners, openings, columns, and masonry control joints - w/ integral waterproofing – Dry-Block as manufactured by Grace Construction Products.
- C. Concrete Brick Units: ASTM C55, same weight as block units.
- D. Plain CMU Size: Nominal modular size of 8 by 8 by 16 inches and 12 by 8 by 16 inches.
- E. Special CMU Shape: Furnish special units for 90 degree corners; surface texture on sides and ends for outside wall corners.

2.4 ACCESSORIES

- A. Single-Wythe Joint Reinforcement: ASTM A951; ladder type; steel; 0.188-inch-diameter side rods with 0.148-inch-diameter cross ties; hot-dip galvanized.
- B. Reinforcing Steel: ASTM A615, 60 ksi yield grade, deformed billet bars, uncoated finish.
- C. Partition “Z” strap anchors: Bent steel strap, 16 inch long by 3/16 inch thick with 2 inch bent legs at each end; ASTM A153, hot-dip galvanized.
- D. Anchor Rods: ASTM A307; Grade C; J- or L-shaped; complete with washers and heavy hex nuts; sized for minimum 6-inch embedment; galvanized finish.
 - 1. Hot-Dip Galvanizing: ASTM A153.
 - 2. Mechanical Galvanizing: ASTM B695, Class 55.
- E. Mortar and Grout: As specified in Section 040513 - Masonry Mortaring and Section 040516 - Masonry Grouting.
- F. Cavity Drain Material: Open polyethylene mesh thickness required to fill cavity space and shaped to ensure moisture drainage to cavity weeps.
 - 1. Manufacturers:
 - a. Advanced Building Products, Inc, “Mortar Break”, Springvale, ME, www.advancedflashing.com 800-252-2306.
 - b. Dayton Superior Corporation, “Mortar Stop”, Dayton, OH, www.daytonsuperior.com 888-977-9600.

- c. Mortar Net Solutions, 6575 Daniel Burnham Drive, Suite G, Portage, IN 46368, 800-664-6638, www.mortarnet.com
 - d. Substitutions: Section 01 60 00 - Product Requirements.
- G. Drainage System: BlockFlash – single wythe flashing system – use on exterior walls.
- 1. Manufacturer: Mortar Net Solutions, 6575 Daniel Burnham Drive, Suite G, Portage, IN 46368, 800-664-6638, www.mortarnet.com.
- H. Weeps: Honeycomb rectangular plastic weep hole material, 1-1/2" x 3-1/2".
- 1. Manufacturer: Hohmann and Barnard, Inc. 631-234-0600, www.h-b.com
 - 2. Substitutions: Section 01 60 00 - Product Requirements.
- I. Cleaning Solution: Non-acidic, not harmful to masonry Work or adjacent materials.
- J. Steel Lintels: Sizes as indicated on Drawing; hot-dip galvanized, 36 ksi minimum yield strength.
- K. Masonry Lintels: Sizes & reinforced as indicated on Drawings, 3,000 psi concrete compressive strength, ASTM A615 Grade 60 reinforcement.

2.5 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for testing, inspection, and analysis.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution Requirements: Requirements for installation examination.
- B. Verify that field conditions are acceptable and ready to receive Work.
- C. Verify that items provided by other Sections of Work are properly sized and located.
- D. Verify that built-in items are in proper location and ready for roughing into masonry Work.

3.2 PREPARATION

- A. Section 01 73 00 - Execution Requirements: Requirements for installation preparation.
- B. Direct and coordinate placement of metal anchors supplied to other Sections.
- C. Furnish temporary bracing during installation of masonry Work. Maintain in place until building structure provides permanent support.
- D. Wet clay and shale brick before laying when initial rate of absorption is greater than 30 g per min./30 sq. in. when tested according to ASTM C67.

3.3 INSTALLATION

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.
- C. Coursing of CMU:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.
- D. Placing and Bonding:
 - 1. Lay solid masonry units in full bed of mortar, with full head joints.
 - 2. Lay hollow masonry units with face shell bedding on head and bed joints.
 - 3. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
 - 4. Remove excess mortar as Work progresses.
 - 5. Interlock intersections and external corners.
 - 6. Reinforce Intersections with Z-strap anchors at 16 inches o.c.
 - 7. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
 - 8. Perform Project Site cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Weeps and Vents: Furnish weeps and vents in outer wythe at 32 inches o.c. horizontally above shelf angles and lintels.
- F. Drainage System: Install BlockFlash system at bottom of exterior wall CMU except at solid grouted cores.
- G. Joint Reinforcement and Anchorage - Single-Wythe Masonry:
 - 1. Install horizontal joint reinforcement 16 inches o.c. vertically.
 - 2. Place masonry joint reinforcement in first two horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
 - 3. Lap joint reinforcement ends minimum 6 inches.
- H. Masonry Flashings:
 - 1. Extend Drainage System horizontally through outer face of CMU at first CMU joint above grade.
- I. Masonry Core Insulation Inserts:
 - 1. Install masonry core insulation Inserts at masonry manufacturing plant prior to delivery to Site.
 - 2. Do not remove inserts except where specifically noted on Drawings. Ensure that all inserts are properly installed in each course prior to installing subsequent courses.

- J. Lintels:
1. Install loose steel, precast concrete, and concrete masonry bond beam lintels over openings.
 2. Install reinforced unit masonry lintels over miscellaneous openings more than 12 inches wide where lintels are not scheduled or indicated.
 3. Do not splice reinforcing bars.
 4. Support and secure reinforcing bars from displacement.
 5. Place and consolidate grout fill without displacing reinforcing.
 6. Maintain temporary support under masonry lintels for a minimum of seven days. Do not apply floor, roof, equipment, or similar loads to masonry lintels for twenty-eight days unless temporary supports are maintained in place or the loads are approved by the Engineer.
 7. Maintain minimum 8-inch bearing on each side of opening for masonry lintels and 4-inch minimum for steel angles or as noted on drawings.
- K. Grouted Components:
1. Reinforce bond beams as indicated on Drawings. Maintain minimum of 1 inch rebar clearance from bottom web.
 2. Lap splices bar diameters as required by code.
 3. Support and secure reinforcing bars from displacement.
 4. Place and consolidate grout fill without displacing reinforcing.
 5. At bearing locations, fill masonry cores with grout for minimum 12 inches both sides of opening.
 6. All cores occupied by reinforcement, dowels, or anchors must be grouted full.
- L. Reinforced Masonry:
1. Lay masonry units with cells vertically aligned and clear of mortar and unobstructed.
 2. Place reinforcement bars at locations indicated on Drawings and vertical bars midway between wall faces unless noted otherwise.
 3. Splice reinforcement as indicated on Drawings.
 4. Support and secure reinforcement from displacement.
 5. Place and consolidate grout fill without displacing reinforcing.
 6. Place grout according to TMS 402/602.
- M. Control Joints:
1. Install control joints at the following maximum spacings, unless otherwise indicated on Drawings:
 - a. Exterior Walls: 20 feet o.c. and within 48 inches on one side of each interior and exterior corner.
 - b. Interior Walls: 30 feet o.c.
 - c. At changes in wall height.
 2. Do not continue horizontal joint reinforcement through control joints. (Install bond beam reinforcement continuous through control joints U.N.O.)
 3. Install preformed control joint device in continuous lengths. Seal butt and corner joints.
- N. Built-in Work:

1. As Work progresses, install built-in metal door frames and other items to be built in the Work and furnished by other Sections.
 2. Install built-in items plumb and level.
 3. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout or mortar. Fill adjacent masonry cores with grout minimum 8 inches from framed openings.
 4. Do not build in materials subject to deterioration.
- O. Cutting and Fitting:
1. Cut and fit for pipes, conduit, and miscellaneous penetrations. Coordinate with other Sections of Work to provide correct size, shape, and location.
 2. Obtain Engineer's approval prior to cutting or fitting masonry Work not indicated or where appearance or strength of masonry Work may be impaired.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Requirements for tolerances.
- B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch on exterior of wall.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 feet and 1/4 inch in 10 feet; 1/2 inch in 30 feet.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.
- H. Maximum Variation for Steel Reinforcement:
1. Install reinforcement within the tolerances specified in TMS 402/602 for foundation walls.
 2. Plus or minus 1/2 inch when distance from centerline of steel to opposite face of masonry is 8 inches or less.
 3. Plus or minus 1 inch when distance is between 8 and 24 inches.
 4. Plus or minus 1-1/4 inch when distance is greater than 24 inches.
 5. Plus or minus 2 inches from location along face of wall.

3.5 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.
- B. CMU: Test each type according to ASTM C140.
1. Unit Strength Method – provide certifications that the masonry units, grout, and mortar meet the specified requirements.

- C. Prism Tests: Test compressive strength of completed reinforced masonry according to ASTM C1314.
- D. Mortar: Submit certifications for materials demonstrating compliance with specifications. Special Inspections of site-prepared mortar.

3.6 CLEANING

- A. Section 01 73 00 - Execution Requirements: Requirements for cleaning.
- B. Section 04 01 20 – Masonry Cleaning.
- C. Remove excess mortar and mortar smears as Work progresses.
- D. Replace defective mortar. Match adjacent Work.
- E. Clean soiled surfaces with cleaning solution. [Coordinate with Work of specified water-repellent or surface coating.]
- F. Use non-metallic tools in cleaning operations.

3.7 PROTECTION

- A. Section 01 73 00 - Execution Requirements: Requirements for protecting finished Work.
- B. Protect exposed external corners subject to damage.
- C. Protect base of walls from mud and mortar splatter.
- D. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.
- E. Protect tops of masonry Work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when Work is not in progress. Maintain protection on tops of completed exterior walls until installation of permanent waterproof cap materials.

3.8 SCHEDULE

- A. Refer to the Room Finish Schedule on Drawing 00A-11 for colors of the exterior decorative masonry. The Architectural drawings define the textures of the decorative masonry.

END OF SECTION 04 20 00

SECTION 04 26 13 - MASONRY VENEER

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Reinforcement, anchorage, and accessories.

B. Related Requirements:

1. Section 04 20 00 – Unit Masonry.
2. Section 05 50 00 - Metal Fabrications: Execution requirements for loose steel lintels for placement by this Section.
3. Section 07 27 00 - Air Barriers: Air barrier placed on exterior face of wall insulation sheathing.
4. Section 07 62 00 - Sheet Metal Flashing and Trim: Product requirements for flashings by this Section.
5. Section 07 90 00 - Joint Protection: Rod and sealant at control and expansion joints.
6. Section 13 34 19 – Metal Building Systems

1.2 DEFINITIONS

- A. **Running Bond:** Laying masonry units to a horizontal pattern by overlaying each masonry unit to 1/2 coverage of the unit below. (Also referred to as a "stretcher bond.")
- B. **CMU:** A concrete masonry unit of normal-, medium-, or lightweight aggregate, cured by steam or autoclaving. Units are classified as either hollow (containing cores where net cross-sectional area is less than 75 percent of gross area) or solid (greater than 75 percent gross area). Units are categorized as load or non-load bearing.
- C. **Control Joint:** A joint space created in a masonry wythe to encourage dynamic or thermal movement to occur at the joint and minimize random cracking within the masonry assembly.
- D. **Coping:** The capping or covering of a wall.

- E. Course: A continuous horizontal layer of similarly sized masonry, one unit high, usually in a wall.
- F. Flashing: Sheet metal or sheet membrane placed in the wall to direct moisture from within the wall to the exterior. Flashings are usually placed under the bottom course of masonry, above lintels or horizontal structural elements, and under masonry copings or sills.
- G. Concave Joint: A mortar joint tooled to a smooth, dense, concave profile.
- H. Joint Reinforcement: Masonry reinforcement of two parallel steel rods joined with cross rods or wire designed to be inserted in a mortar joint.
- I. Lintel: A load-bearing building component designed to support masonry above an opening.
- J. Parapet: A wall extension built above the edge of a roof or walking surface.
- K. Pilaster: A structural or decorative vertical "column" integral with adjacent masonry wall construction.
- L. Reglet: A narrow architectural molding or recess in a masonry wall designed for the purpose of embedding counterflashing.
- M. Veneer: A non-structural outer layer applied to a surface for decoration or protection.
- N. Weep (Hole): A small opening that allows water to drain from within an assembly.
- O. Wythe: A single vertical masonry element.

1.3 REFERENCE STANDARDS

- A. American Concrete Institute: The Masonry Society (TMS):
 - 1. ACI 530/530.1 TMS 402/602 - Building Code Requirements and Specification for Masonry Structures and Related Commentaries.
- B. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

3. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
4. ASTM A580 - Standard Specification for Stainless Steel Wire.
5. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
6. ASTM A951 - Standard Specification for Steel Wire for Masonry Joint Reinforcement.
7. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
8. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.

1.4 COORDINATION

- A. Section 01 31 13 – Project Coordination: Requirements for coordination.
- B. Coordinate Work of this Section with installation of window and door anchors.

1.5 PREINSTALLATION MEETINGS

- A. Section 01 31 19 – Project Meetings: Requirements for preInstallation meeting.

1.6 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data:
 1. Submit data for decorative CMU masonry units fabricated wire reinforcement, wall ties, anchors, and other accessories.
- C. Samples: Submit two samples of each type of decorative CMU, illustrating color, texture, and extremes of color range.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Section 01 73 00 - Execution Requirements: Requirements for maintenance materials.

B. Extra Stock Materials:

1. Furnish 50 of each size, color, and type of decorative units.

1.8 QUALITY ASSURANCE

- A. Perform Work according to ACI 530/530.1. TMS 402/602.

1.9 MOCKUPS

- A. Section 01 40 00 - Quality Requirements: Requirements for mockups.
- B. Size: Construct masonry wall mockup, 6 feet long by 6 feet high, including masonry, mortar and accessories, structural backing, wall openings, lintels, flashings, wall insulation, air barrier, and weep holes.
- C. Locate where directed by Engineer.
- D. Remove mockup when directed by Engineer.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 61 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. Inspection: Accept decorative units on-Site in manufacturer's packaging. Inspect for damage.

1.11 AMBIENT CONDITIONS

- A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.
- B. Use blocking and other methods to prevent rust on accessories prior to installation.
- C. Cold Weather Requirements: According to ACI 530.1 TMS 402/602 when ambient temperature or temperature of masonry units is less than 40 degrees F.
- D. Hot Weather Requirements: According to ACI 530.1 TMS 402/602 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

1.12 EXISTING CONDITIONS

- A. Field Measurements: Verify elevations, dimensions, and alignment of foundations and supporting construction prior to beginning Work.

PART 2 - PRODUCTS

2.1 UNIT MASONRY ASSEMBLIES

A. Manufacturers:

1. York Building Products, 950 Smile Way, York, PA 17404
2. Fizzano Brothers, 1776 Chester Pike, Crum Lynne, PA, 19022
3. Oberfields LLC, 528 London Road, Delaware, OH 43015
4. Substitutions: Section 01 61 00 - Product Requirements.

B. Performance and Design Criteria:

1. Concrete Masonry Compressive Strength (f'm): 2,000 psi; determined by unit strength method.
 - a. CMU: 2000 psi minimum net area compressive strength.

2.2 MATERIALS

A. Decorative CMU: ASTM C90; – at grade and above grade exterior walls to the following designs:

1. Split face CMU -4"
 - a. Basis of Design: York Building Products "Charcoal" color.
2. Ground lightly polished and face CMU – 4"
 - a. Basis of Design: York Building Products "Hershey Red" Gemstone.

B. CMU Size: Nominal modular size of 4" by 8" by 16".

2.3 ACCESSORIES

- A. Single-Wythe Joint Reinforcement: ASTM A951; ladder type; steel; 0.188-inch-diameter side rods with 0.148-inch-diameter cross ties; hot-dip galvanized.**
- B. Mortar and Grout: As specified in Section 04 05 13 - Masonry Mortaring and Section 04 05 16 - Masonry Grouting.**
- C. Cavity Drain Material: Open polyethylene mesh thickness required to fill cavity space and**

shaped to ensure moisture drainage to cavity weeps.

1. Manufacturers:

- a. Advanced Building Products, Inc, "Mortar Break", Springvale, ME
- b. Dayton Superior Corporation, "Mortar Stop", Dayton, OH,
- c. Mortar Net Solutions, 6575 Daniel Burnham Drive, Suite G, Portage, IN
- d. Substitutions: Section 01 60 00 - Product Requirements.

D. Weeps: Honeycomb rectangular plastic weep hole material, 1-1/2" x 3-1/2".

1. Manufacturers:

- a. Hohmann and Barnard, Inc., Quarto-Vent
- b. Advance Building Products
- c. Mortar Net
- d. Substitutions: Section 01 60 00 - Product Requirements.

E. Cleaning Solution: Non-acidic, not harmful to masonry Work or adjacent materials.

F. Steel Lintels: Sizes as indicated on Drawing; hot-dip galvanized, 36 ksi minimum yield strength.

G. Wall Ties

1. Manufacturers:

- a. Heckmann Building products
- b. Hohmann & Barnard, Inc.
- c. Block-Lok
- d. Substitutions: Section 01 61 00 - Product Requirements.

H. Mortar and Grout: As specified In Section 04 05 14 - Masonry Mortaring and Grouting.

I. Flexible Flashing:

- 1. Products of manufacturers listed below meeting indicated standards and specified manufacturer's product data characteristics, except as modified below, are

acceptable for use, subject to compliance with specified requirements:

- a. Product standard of quality:
 - 1). York Manufacturing, Inc.; York 304 SS.
 - 2). Illinois Products, Inc.; IPCO Self-Adhesive Stainless Steel.
 - 3). STS Coatings, Inc.; Wall Guardian Self Adhering Stainless Steel Flashing.
 - 4). TK Products, Inc.; TK Self-Adhering Stainless Steel TWF.
 - 5). Vapro Shield, Inc.; VaproThru-Wall Flashing SA.
 - 6). Or approved equal.
 - 2. Characteristics:
 - a. Type: stainless steel core with one uncoated (bare) stainless steel face (outward facing) with a butyl block co-polymer adhesive (inward facing).
 - b. Stainless steel: type 304, ASTM A240. Domestically sourced per DFARS 252.225-7008 and/or DFARS 252.225-7009.
 - c. Adhesive: block co-polymer.
 - d. Size: Manufacturer's standard width rolls.
- J. Accessories:
- 1. Polyether sealant:
 - a. York Manufacturing Inc.; UniverSeal US-100.
 - b. STS Coatings; GreatSeal LT-100.
 - c. Prosoco, Inc.; R-Guard Joint Seam Sealer.
 - d. Or approved Equal.

2. Splice Tape:
 3. Corner and End Dams: form the stainless steel flashing in the field or use 26 gauge stainless steel pre-manufactured corners.
 4. Mortar deflection: polyester strands that will not degrade and will keep weep vents from clogging with mortar.
 5. Termination bar: rigid PVC or stainless steel termination bar with sealant catch lip.
- K. Lap Sealant: Butyl type.
- L. Preformed Control Joints: Neoprene material. Furnish with corner and T-accessories, heat-fused joints. Profile as indicated on Drawings.

2.4 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Requirements for testing, inspection, and analysis.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 73 00 - Execution Requirements: Requirements for installation examination.
- B. Verify that field conditions are acceptable and are ready to receive Work.
- C. Verify that items provided by other Sections of Work are properly sized and located.
- D. Verify that built-in items are in proper location and ready for roughing into masonry work.

3.2 PREPARATION

- A. Section 01 73 00 - Execution Requirements: Requirements for installation preparation.
- B. Direct and coordinate placement of metal anchors supplied to other Sections.
- C. Furnish temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent support.

3.3 INSTALLATION

- A. Establish lines, levels, and coursing indicated. Protect from displacement.

- B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.
- C. Coursing of Decorative CMU:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 Inches.
 - 3. Mortar Joints: Concave.
- D. Placing and Bonding:
 - 1. Lay hollow masonry units with face shell bedding on head and bed joints.
 - 2. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
 - 3. Remove excess mortar as Work progresses.
 - 4. Interlock intersections and external corners.
 - 5. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
 - 6. Perform Site-cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Weeps and Vents: Furnish weeps and vents in outer wythe at 32 inches o.c. horizontally above through-wall flashing, above shelf angles, and lintels and at bottom of walls.
- F. Cavity Wall: Do not permit mortar to drop or accumulate into cavity air space or to plug weeps. Build inner wythe ahead of outer wythe to receive cavity insulation and air/vapor retarder adhesive.
 - 1. Install cavity drain material continuously at bottom of each cavity and above through-wall flashing.
- G. Joint Reinforcement and Anchorage - Masonry Veneer:
 - 1. Install horizontal joint reinforcement 16 inches o.c.
 - 2. Place masonry joint reinforcement in first horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
 - 3. Lap joint reinforcement ends minimum 6 inches.

4. Embed wall ties in masonry backing to bond veneer at maximum 16 inches o.c. vertically, and 16 inches o.c. horizontally. Place wall ties at maximum 8 inches o.c. vertically within 8 inches of jamb of wall openings.

H. Masonry Flashings:

1. Extend flashings horizontally through outer wythe at foundation walls, above ledge or shelf angles and lintels, and at bottom of walls and turn down on outside face to form drip.
2. Turn flashing up minimum 8 inches and seal to sheathing over framed backing.
3. Lap end joints minimum 6 inches and seal watertight.
4. Turn flashing, fold, and seal at corners, bends, and interruptions.

I. Lintels:

1. Install loose steel lintels over openings.
2. Maintain minimum 4-inch bearing on each side of opening.

J. Control Joints:

1. Install control joints at the following maximum spacings, unless otherwise indicated on Drawings:
 - a. Exterior Walls: 20 feet o.c. and within 24 inches on one side of each interior and exterior corner.
 - b. At changes in wall height.
2. Install preformed control joint device in continuous lengths. Seal butt and corner joints.
3. Size control joint according to Section 07 90 00 - Joint Protection for sealant performance.

K. Built-in Work:

1. As Work progresses, install built-in metal door frames, window frames, and other items to be built in the Work and furnished by other Sections.
2. Install built-in items plumb and level.
3. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout or mortar.

4. Do not build in materials subject to deterioration.
- L. Cutting and Fitting:
1. Cut and fit for pipes, conduit, sleeves, and other miscellaneous items. Coordinate with other Sections of Work to provide correct size, shape, and location.
 2. Obtain Architect/Engineer's approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Requirements for tolerances.
- B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 feet and 1/4 inch in 10 feet; 1/2 inch in 30 feet.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.

3.5 CLEANING

- A. Section 01 73 00 - Execution Requirements: Requirements for cleaning.
- B. Remove excess mortar and mortar smears as Work progresses.
- C. Replace defective mortar. Match adjacent Work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

3.6 PROTECTION

- A. Section 01 73 00 - Execution Requirements: Requirements for protecting finished Work.
- B. Protect exposed external corners subject to damage.
- C. Protect base of walls from mud and mortar splatter.
- D. Protect masonry and other items built into masonry walls from mortar droppings and

staining caused by mortar.

- E. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when Work is not in progress. Maintain protection on tops of completed exterior walls until installation of permanent waterproof cap materials.

END OF SECTION 04 26 13

SECTION 04 72 00 – CAST STONE MASONRY

PART 1 – GENERAL

1.01 STIPULATIONS

- A. The specification sections ‘General Conditions of the Contract’, ‘Special Conditions’ and ‘Division 01 - General Requirements’ form a part of this section by this reference thereto and shall have the same force and effect as if printed herewith in full.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.03 SUMMARY

A. Section Includes:

- 1. Cast stone trim.
 - a. Wall caps.
 - b. Corner Stone.

B. Related Sections:

- 1. Section 04 20 00 ‘Unit Masonry’
- 2. Section 04 73 00 ‘Manufactured Masonry Veneer’

1.04 ACTION SUBMITTALS

- A. **Product Data:** For each type of product indicated.
 - 1. For cast stone units, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. **Shop Drawings:** Show fabrication and installation details for cast stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces.
 - 1. Include elevations showing layout of units and locations of joints and anchors.

C. Samples for Verification.

1. For each color and texture of cast stone required, 10 inches square in size.
2. For colored mortar. Make Samples using same sand and mortar ingredients to be used on Project.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C 1364, including test for resistance to freezing and thawing.

1. Provide test reports based on testing within previous two years.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer of cast stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units.

B. Source Limitations for Cast Stone: Obtain cast stone units through single source from single manufacturer.

1.07 DELIVERY, STORAGE AND HANDLING

A. Pack, handle, and ship cast stone units in suitable packs or pallets.

1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast stone units, if required, using dollies with wood supports.
2. Store cast stone units on wood skids or pallets with nonstaining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store mortar aggregates where grading and other required characteristics can be maintained, and contamination can be avoided.

1.08 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until cast stone has dried, but no fewer than seven days after completing cleaning.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements in ACI 530.1/ASCE 6/TMS 602.

PART 2 – PRODUCTS

2.01 CAST STONE MATERIALS

- A. General: Comply with ASTM C 1364 and the following:
- B. Portland Cement: ASTM C 150, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C 114. Provide natural color or white cement as required to produce cast stone color indicated.
- C. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C 33; gradation and colors as needed to produce required cast stone textures and colors.
- D. Fine Aggregates: Natural sand or crushed stone complying with ASTM C 33, gradation and colors as needed to produce required cast stone textures and colors.
- E. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- F. Admixtures: Use only admixtures specified or approved in writing by Architect.
 - 1. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
 - 2. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.

3. Air-Entraining Admixture: ASTM C 260. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
 4. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 5. Water-Reducing, Retarding Admixture: ASTM C 494/C 494M, Type D.
 6. Water-Reducing, Accelerating Admixture: ASTM C 494/C 494M, Type E.
- G. Reinforcement: Deformed steel bars complying with ASTM A 615/A 615M, Grade 60. Use galvanized or epoxy-coated reinforcement when covered with less than 1-1/2 inches of cast stone material.
1. Epoxy Coating: ASTM A 775/A 775M.
- H. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666, Type 304.

2.02 CAST STONE UNITS

- A. Provide cast stone units complying with ASTM C 1364 using either the vibrant dry tamp or wet-cast method.
1. Provide units that are resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.
- B. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
 2. Provide drips on projecting elements unless otherwise indicated.
- C. Fabrication Tolerances:
1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
 2. Variation in Length: Do not vary from indicated dimensions by more than 1/8 inch.

3. Warp, Bow, and Twist: Not to exceed 1/8 inch.
 4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
- D. Cure units as follows:
1. Cure units in enclosed moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
 2. Keep units damp and continue curing to comply with one of the following:
 - a. No fewer than five days at mean daily temperature of 70 deg F or above.
- E. Acid etch units after curing to remove cement film from surfaces to be exposed to view.
- F. Colors and Textures: As selected by Architect from manufacturer's full range.

2.03 MORTAR MATERIALS

- A. Provide mortar materials that comply with Section 04 20 00 "Unit Masonry".
- B. Masonry Cement: ASTM C 91.
- C. Mortar Cement: ASTM C 1329.
- D. Colored Cement Product: Packaged blend made from masonry cement or mortar cement and mortar pigments, all complying with specified requirements and containing no other ingredients.
 1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
- E. Aggregate for Mortar: ASTM C 144.
 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

- 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
 - 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- F. Water: Potable.

2.04 ACCESSORIES

- A. Anchors: Type and size indicated, fabricated from Type 304 stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666.
- B. Dowels: 1/2-inch diameter, round bars, fabricated from Type 304 stainless steel complying with ASTM A 240/A 240M, ASTM A 276, or ASTM A 666.
- C. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cast stone manufacturer and expressly approved by cleaner manufacturer for use on cast stone and adjacent masonry materials.

2.05 MORTAR MIXES

- A. Comply with requirements in Section 04 20 00 "Unit Masonry" for mortar mixes.
- B. Do not use admixtures including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use masonry cement or mortar cement mortar unless otherwise indicated.
- C. Comply with ASTM C 270, Proportion Specification.
- D. Pigmented Mortar: Use colored cement product Do not add pigments to colored cement products.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SETTING CAST STONE IN MORTAR

- A. Install cast stone units to comply with requirements in Section 04 20 00 "Unit Masonry".
- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
 - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - 2. Coordinate installation of cast stone with installation of flashing specified in other Sections.
- C. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- D. Set units in full bed of mortar with full head joints unless otherwise indicated.
 - 1. Set units with joints 1/4 to 3/8 inch wide unless otherwise indicated.
 - 2. Build anchors and ties into mortar joints as units are set.
 - 3. Fill dowel holes and anchor slots with mortar.
 - 4. Fill collar joints solid as units are set.
 - 5. Build concealed flashing into mortar joints as units are set.
 - 6. Keep head joints in coping and other units with exposed horizontal surfaces open to receive sealant.
 - 7. Keep joints at shelf angles open to receive sealant.
- E. Rake out joints for pointing with mortar to depths of not less than 3/4 inch. Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- F. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch.

Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.

- G. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- H. Provide sealant joints at copings and other horizontal surfaces, at expansion, control, and pressure-relieving joints, and at locations indicated.
 - 1. Keep joints free of mortar and other rigid materials.
 - 2. Form joint of width indicated, but not less than 3/8 inch.
 - 3. Prime cast stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
 - 4. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 07 92 00 "Joint Sealants".

3.03 SETTING ANCHORED CAST STONE WITH SEALANT FILLED-JOINTS

- A. Set cast stone as indicated on Drawings. Set units accurately in locations indicated with edges and faces aligned according to established relationships and indicated tolerances.
 - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - 2. Shim and adjust anchors, supports, and accessories to set cast stone in locations indicated with uniform joints.
- B. Keep cavities open where unfilled space is indicated between back of cast stone units and backup wall; do not fill cavities with mortar or grout.
- C. Fill anchor holes with sealant.
 - 1. Where dowel holes occur at pressure-relieving joints, provide compressible material at ends of dowels.
- D. Set cast stone supported on clip or continuous angles on resilient setting shims. Use material of thickness required to maintain uniform joint widths. Hold shims back from face of cast stone a distance at least equal to width of joint.

- E. Keep joints free of mortar and other rigid materials. Remove temporary shims and spacers from joints after anchors and supports are secured in place and cast stone units are anchored. Do not begin sealant installation until temporary shims and spacers are removed.
 - 1. Form open joint of width indicated, but not less than 3/8 inch.
- F. Prime cast stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
- G. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 07 92 00 "Joint Sealants".

3.04 INSTALLATION TOLERANCES

- A. Variation from Plumb: Do not exceed 1/8 inch in 10 feet.
- B. Variation from Level: Do not exceed 1/8 inch in 10 feet.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches or one-fourth of nominal joint width, whichever is less.
- D. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch, except where variation is due to warpage of units within tolerances specified.

3.05 ADJUSTING AND CLEANING

- A. Remove and replace stained and otherwise damaged units and units not matching approved samples. Cast stone may be repaired if methods and results are approved by Architect.
- B. Replace units in a manner that results in cast stone matching approved samples, complying with other requirements, and showing no evidence of replacement.
- C. In-Progress Cleaning: Clean cast stone as work progresses.
 - 1. Remove mortar fins and smears before tooling joints.
 - 2. Remove excess sealant immediately, including spills, smears, and spatter.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as

follows.

1. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
2. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION

DIVISION 4 - MASONRY
SECTION 04 73 00 – MANUFACTURED MASONRY VENEER

PART 1 – GENERAL

1.01 STIPULATIONS

- A. The specification sections ‘General Conditions of the Contract’, “Special Conditions” and “Division 01 - General Requirements” form a part of this section by this reference thereto and shall have the same force and effect as if printed herewith in full.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.03 SUMMARY

- A. Section Includes:
 - 1. Portland cement based manufactured stone veneer and trim.

1.04 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 2. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - 3. ASTM C 144 – Standard Specification for Aggregate for Masonry Mortar.
 - 4. ASTM C 177 – Standard Test Method for Steady-State Head Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.

5. ASTM C 207 – Standard Specification for Hydrated Lime for Masonry Purposes.
 6. ASTM C 270 – Standard Specification for Mortar for Unit Masonry.
 7. ASTM C 482 – Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
 8. ASTM C 567 – Standard Test Method for Determining Density of Structural Lightweight Concrete.
 9. ASTM C 847 – Standard Specification for Metal Lath.
 10. ASTM C 932 – Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
 11. ASTM C 979 – Standard Specification for Pigments for Integrally Colored Concrete.
 12. ASTM C 1032 – Standard Specification for Woven Wire Plaster Base.
 13. ASTM C 1059 – Standard Specification for Latex Agents for Bonding Fresh To Hardened Concrete.
 14. ASTM D 226 – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 15. ASTM C1063 – Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
 16. ASTM C1329 Standard specification for Portland cement.
 17. ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 18. ASTM C1289 – Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
 19. ASTM E2556/E2556M – Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers Intended for Mechanical Attachment.
- C. Other Standards:
1. ICC AC308 Acceptance Criteria for Water Resistive Barriers.

- D. International Code Council (ICC):
 - 1. ESR Report.
- E. Underwriter's Laboratory (UL): Building Materials Directory.

1.05 SUBMITTALS

- A. Product Data.
- B. Samples:
 - 1. Standard sample board consisting of small-scale pieces of veneer units showing full range of textures and colors.
 - 2. Full range or mortar colors.
- C. Quality Assurance/Control Submittals:
 - 1. Qualifications:
 - a. Proof of manufacturer's qualifications.
 - b. Proof of installer's qualifications.
 - 2. Regulatory Requirements: Evaluation reports.
 - 3. Veneer manufacturer's installation instructions.
 - 4. Installation instructions for other materials.
- B. Closeout Submittals:
 - 1. Maintenance Instructions.
 - 2. Special Warranties.

1.06 QUALITY ASSURANCE

- A. Qualifications:

1. Manufacturer Qualifications.
 2. Installer Qualifications: Experienced mason familiar with Installation procedures and related local, state and federal codes masonry.
- B. Certifications:
1. ICC Evaluation Service – Evaluation Report ESR-1215.
- C. Field Sample:
1. prepare 4 by 4 foot sample at a location on the structure as selected by the Architect. Use approved selection sample materials and colors.
 2. Obtain Architect's approval.
 3. Protect and retain sample as a basis for approval of completed manufactured stone work. Approved sample may be incorporated into completed work.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Reference Section 01 66 00–Product Storage and Handling Requirements.
- B. Follow manufacturer's instructions.

1.08 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: When air temperature is 40 degrees F (4.5 degrees C) or below, consult local building code for Cold-Weather Construction requirements.

1.09 WARRANTY

- A. Special Warranty: Manufacturer's standard warranty coverage against defects in materials when installed in accordance with manufacturer's installation instructions

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design: Subject to compliance with requirements, provide "Silver Lining" stone manufactured by Eldorado Stone, LLC., or comparable product by one of the following:

1. Coronado Stone Products.
2. Echelon Masonry.
3. Or approved equal.

2.02 MATERIALS

A. Stone Veneer:

1. Profile: Stack Stone. Include matching corner pieces.

B. Veneer Unit properties: Precast veneer units consisting of portland cement, lightweight aggregates, and mineral oxide pigments.

1. Compressive Strength: ASTM C 192 and ASTM C 39, 5 sample average: greater than 1,800 psi.
2. Shear Bond: ASTM C 482: 50 psi, minimum.
3. Freeze-Thaw Test: ASTM C 67: Less than 3 percent weight loss and no disintegration.
4. Thermal Resistance: ASTM C 177: 0.473 at 1.387 inches thick.
5. Weight per square foot: 2012 IBC and 2012 IRC, ASTM C1670, 15 pounds, saturated

C. Weather Barrier: ASTM D 226, Type 1, No.15, non-perforated asphalt-saturated felt paper.

D. Reinforcing: ASTM C 847, 2.5lb/yd² galvanized expanded metal lath.

E. Mortar:

1. Cement: Portland cement complying with ASTM C 1329.
2. Lime: ASTM C 207.
3. Sand: ASTM C 144, natural or manufactured sand.
4. Color Pigment: ASTM C 979, mineral oxide pigments.
5. Water: Potable.

- 6. Pre-Packaged Latex-Portland Cement Mortar: ANSI A118.4.
- F. Bonding Agent: Exterior integral bonding agent meeting ASTM C 932.
- G. Water Repellent: Water based silane or siloxane masonry water repellent,

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which work will be installed.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Commencement of work by installer is acceptance of substrate.

3.02 PREPARATION

- A. Protection: Protect adjacent work from contact with mortar.
- B. Surface Preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

3.03 INSTALLATION

- A. Install and clean stone in accordance with manufacturer's installation instructions for Standard Installation Jointless/Dry-Stacked installation as specified above.
- B. Apply repellent in accordance with repellent manufacturer's application instructions.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Manufacturer's Field Service Representative shall make one periodic site visits review of on-going installation process but is not responsible for any errors or omissions that are not observed or are previously completed.

3.05 CLEANING

- A. Reference Section 01 74 00–Cleaning and Waste Management.
- B. Remove protective coverings from adjacent work.

C. Cleaning Veneer Units.

1. Wash with soft bristle brush and water/granulated detergent solution.
2. Rinse immediately with clean water.

D. Removing Efflorescence.

1. Allow veneer to dry thoroughly.
2. Scrub with soft bristle brush and clean water.
3. Rinse Immediately with clean water; allow to dry.
4. If efflorescence is still visible, contact Customer Service for assistance.

END OF SECTION