

DIVISION 4
Masonry



SECTION 04200 - UNIT MASONRY

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions, Supplementary General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 GENERAL

- A. Performance Requirements: Provide unit masonry that develops installed compressive strengths (f'm) at 28 days as indicated.
- B. Submittals: In addition to product data, submit the following:
 - 1. Shop drawings for reinforcing detailing fabrication, bending, and placement of reinforcing bars.
 - 2. Material certificates for each different masonry product required.
 - 3. Material test reports from a qualified independent testing agency for mortar, grout mixes, and masonry units.
- C. Cold-Weather Requirements: Do not build on frozen subgrade or setting beds. Remove and replace unit masonry damaged by frost or freezing conditions. Comply with the following requirements:
 - 1. Cold-Weather Construction: Heat mixing water and sand to produce mortar and grout temperatures between 40 and 120 deg F. Maintain mortar and grout above freezing. Heat masonry units to 40 deg F if grouting.
 - 2. Cold-Weather Protection: Cover masonry with insulating blankets or provide enclosure and heat to maintain temperatures above 32 deg for 48 hours after construction. Install wind breaks when wind velocity exceeds 15 mi./hr.
- D. Hot-Weather Requirements: Protect unit masonry work from excessive evaporation of water from mortar and grout. Do not apply mortar to substrates with temperatures of 100 deg F and above.

1.3 PRODUCTS

- A. Concrete Masonry Units: ASTM C 90 and as follows:
 - 1. Compressive Strength: 1900 psi minimum average net-area compressive strength.
 - 2. Weight Classification: Normal weight.
 - 3. Provide Type I, moisture-controlled units.

4. Size: Standard units with nominal dimensions of 16 inches long, 8 inches high, and 4 inches thick (15-5/8 by 7-5/8 by 3-5/8 actual).
 5. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.
 6. Provide square-edged units for outside corners, except where indicated as bullnose.
- B. Mortar and Grout Materials: As follows:
1. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
 2. Hydrated Lime: ASTM C 207, Type S.
 3. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or II and hydrated lime complying with ASTM C207, Type S.
 4. For pigmented mortars, use premixed, colored-cement or cement-lime mix of formulation required to produce color indicated.
 5. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch, use aggregate graded with 100 percent passing the No. 16 sieve.
 6. Aggregate for Grout: ASTM C 404.
 7. Mortar Pigments: Iron oxides and chromium oxides, compounded for use in mortar mixes and with a record of satisfactory performance in masonry mortars.
 8. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.
 9. Water: Potable.
- C. Steel Reinforcing Bars: Billet steel complying with ASTM A 615, Grade 60
- D. Deformed Reinforcing Wire: ASTM A 496, with ASTM A 153, Class B-2 zinc coating.
- E. Joint Reinforcement: Provide joint reinforcement formed from galvanized carbon-steel wire, ASTM A , Class 1, for interior walls; and ASTM A 153, Class B-2, for exterior walls.
1. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:
 - a. Wire Diameter for Side Rods: 0.1875 inch.
 - b. Wire Diameter for Cross Rods: 0.1875 inch .

2. For single-wythe masonry, provide truss or ladder design with single pair of side rods:
- F. Ties and Anchors, General: Provide ties and anchors that comply with the following requirements, unless otherwise indicated.
1. Wire: As follows:
 - a. Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating for exterior walls; and with ASTM A 641, Class 1 coating for interior walls.
 2. Steel Sheet: As follows:
 - a. Galvanized Steel Sheet: ASTM A 366 (commercial quality) cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153, Class B-3, for sheet-metal ties and anchors in exterior walls; ASTM A 526, G 60 (commercial quality), steel sheet zinc coated by hot-dip process on continuous lines prior to fabrication, for sheet-metal ties and anchors in interior walls.
- G. Bent Wire Ties: Individual units prefabricated from bent wire to comply with requirements indicated.
- H. Rigid Anchors: Steel bars 1-1/2 inches wide by 1/4 inch thick by 24 inches long, with ends turned up 2 inches or with cross pins. Shop paint with 2 coats of coal-tar epoxy-polyamide paint.
- I. Mortar and Grout Mixes: Do not use admixtures unless otherwise indicated. Do not use calcium chloride in mortar or grout.
1. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification, for types of mortar indicated below:
 - a. Limit cementitious materials in mortar to portland cement and lime.
 2. Grout for Unit Masonry: Comply with ASTM C 476. Use grout of consistency to completely fill spaces intended to receive grout.
- J. Block Insulation Inserts (where shown on drawings): Korfil Inserts
1. Expandable polystyrene.

1.4 EXECUTION

- A. Cut masonry units with motor-driven saws. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

- B. Construction Tolerances: As follows:
1. Variation from Plumb: For vertical lines and surfaces do not exceed 1/4 inch in 10 feet, nor 3/8 inch in 20 feet, nor 1/2 inch in 40 feet or more. For vertical alignment of head joints, do not exceed plus or minus 1/4 inch in 10 feet nor 1/2 inch maximum.
 2. Variation from Level: Do not exceed 1/4 inch in 20 feet nor 1/2 inch in 40 feet.
 3. Variation of Linear Building Line: For position shown in plan, do not exceed 1/2 inch in 20 feet nor 3/4 inch in 40 feet.
 4. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4 inch nor plus 1/2 inch.
 5. Variation in Mortar-Joint Thickness: Do not vary from bed-joint thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from head-joint thickness indicated by more than plus or minus 1/8 inch.
- C. Lay out walls in advance for accurate spacing of surface bond patterns and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.
- D. Pattern Bond: Lay exposed masonry in running bond except where other bonds are indicated at special features.
1. Lay concealed masonry in running bond, or lap units at least 2 inches.
 2. Interlock wythes at corners and offsets in each course with masonry bond.
- E. Built-in Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
- F. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- G. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.
- H. Keep cavities clean of mortar droppings and other materials during construction. Strike joints facing cavities flush.
1. Use wood strips temporarily placed in cavity to collect mortar droppings. As work progresses, remove strips, clean off mortar droppings, and replace in cavity.

- I. Provide continuous horizontal-joint reinforcement as indicated. Install with a minimum cover of 5/8 inch on exterior, 1/2 inch elsewhere. Lap a minimum of 6 inches.
 - 1. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections.
- J. Provide masonry lintels where shown.
- K. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.
 - 1. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.
- L. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
 - 1. Do not exceed the following pour heights:
 - a. For minimum widths of grout spaces of 2 inches, pour height of 60 inches.
- M. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears prior to tooling joints.
- N. Final Cleaning: After mortar is thoroughly set and cured, remove mortar particles with nonmetallic scrapers.
- O. Protection: Institute protective measures as required to ensure that unit masonry work will be clean and undamaged at substantial completion.
- P. Masonry Waste Disposal: Dispose of masonry waste off site.
- Q. Field Quality Control: The Owner will employ a testing agency to perform inspections and to submit inspection reports. Inspections shall satisfy requirements of Schedule of Special Inspection Services prepared by Engineer of Record.

END OF SECTION 04200

SECTION 04300 – BRICK, ARCHITECTURAL STONE AND PRECAST ACCENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions, Supplementary General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Face brick units.
 - 2. Architectural Stone Units.
 - 3. Precast Accents
 - 4. Mortar
 - 5. Reinforcement, anchorage, and accessories.
- B. Related Sections
 - 1. Section 05500 - Metal Fabrications: Loose steel lintels.
 - 2. Section 07620 - Flashing and Sheet Metal: Sheet metal and reglets for flashings.
 - 3. Section 07900 - Joint Sealers: Rod and sealant at control joints.

1.3 REFERENCES

- A. References are as follows:
 - 1. ANSI/ASTM A82 - Cold-Drawn Steel Wire for Concrete Reinforcement.
 - 2. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 3. ASTM A525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
 - 4. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
 - 5. ASTM B370 - Copper Sheet and Strip for Building Construction.
 - 6. ASTM C216 - Facing Brick (Solid Masonry Units Made From Clay or Shale).
 - 7. ASTM C91 Standard Specification for Masonry Cement.
 - 8. ASTM C144 Standard Specification for Aggregate for Masonry Mortar.
 - 9. ASTM C150 Standard Specification for Portland Cement.
 - 10. ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes.

11. ASTM C270 Standard Specification for Mortar for Unit Masonry.
12. ASTM C780 Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
13. ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete.
14. ASTM C1324 Standard Test Method for Compressive Strength of Masonry Prisms
15. ASTM C1329 Standard Specification for Mortar Cement.
16. ASTM C1384 Standard Specification for Admixtures for Masonry Mortar
17. ASTM E514 Standard Test Method for Water Penetration and Leakage Through Masonry
18. IMIAC - International Masonry Industry All-Weather Council: Recommended Practices and Guide Specification for Cold Weather Masonry Construction.

1.4 SUBMITTALS

- A. Along with the submitted bid for the project provide a 24" wide by 32" high panel demonstrating the mason's workmanship that corresponds to the submitted bid amount. The panel shall have the brick ends finished to show how the mortar joint will wrap the corner (full brick corners not required). Follow the drawings and these specifications in all aspects that affect the appearance of the finished brick. Use a buff colored mortar and one of the bricks listed in this specification. Install this mock up in a portable wood frame. Label the mock-up with the brick contractor's name, the brick provided and the mortar color. The purpose of this mock up is to demonstrate workmanship to be provided for this project. This mock up will then be kept at the job site for comparison during construction and assure the agreed to workmanship is maintained.
- B. Submit product data under provisions of Section 01300.
- C. Samples:
 1. Submit samples of each of the face brick selected from the list of brick in this specification. Samples to illustrate color, texture and extremes of color range.
 2. Submit three 12"x24" samples representative of the Architectural Stone to be provided.
 3. Submit one 16"x24" sample representative of the Precast Horizontal Band to be provided.
 4. Submit one 8"x16" " sample representative of the Precast header to be provided.

- D. Submit color selection charts for mortar.
- E. Submit manufacturer's certificate under provisions of Section 01400 that products meet or exceed specified requirements.
- F. Submit mortar manufacturer's installation instructions under provisions of Section 01300.

1.5 QUALIFICATIONS

- A. Installer: Company specializing in and with a minimum of five years experience in performing the work of this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store and protect products under provisions of Section 01600.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: IMIAC - Recommended Practices and Specifications for Cold Weather Masonry Construction.
- B. Do not build or apply mortar products on frozen substrates.
 - 1. Remove and replace unit masonry damaged by frost or by freezing conditions.
- C. Hot-Weather Requirements: Protect unit masonry work from excessive evaporation of water from mortar and grout. Do not apply mortar to substrates with temperatures of 100 deg F and above.

1.8 SEQUENCING AND SCHEDULING

- A. Coordinate work with related trades.
- B. Coordinate the masonry work with installation of window anchors, installation of structural steel, steel joists, metal stairs, and other items as required.

1.9 MOCK UPS

- A. Prior to the start of brick construction the brick and mortar color selections will be made. Provide one 40"x48" mock up for each of the brick colors selected using the mortar color selected for each brick color. This will be reviewed for approval of the brick color, mortar color and workmanship. Allow for one additional mock up wall of each brick color in the event the selections are not approved.
- B. The mock up wall shall show expected workmanship to be provided. If the mock up is rejected due to workmanship and non compliance with the specification a new mock up wall shall be constructed at the contractor's expense correcting the reasons for rejecting previous mock up wall. Work on the building shall not begin until an approved mock up is achieved. Mock up wall shall not to be included as part of the finish work and shall be disposed of properly. The intent is to provide a quality project that is satisfactory to all involved.

PART 2 - PRODUCTS

2.1 BRICK UNITS

- A. Running brick actual size: 3 5/8" x 7 5/8" x 2 1/4" inches.
- B. Provide the brick from each of the colors listed below for the project.
- C. Provide the following ASTM C-216, Grade SW, FBS, bricks :
 - 1. Red Brick, Color Scheme A:
 - a. Morin Brick Company; Old Port Red Range.
 - 2. Brown Brick, Color Scheme B:
 - a. Morin Brick Company; Woodland Brown Brushed Velour.
- D. If a brick substitution is proposed, provide a demonstration of its match to the brick listed above. Provide the cost to the project of this brick along with the costs of the bricks listed above.

2.2 ARCHITECTURAL STONE

- A. Manufacturer: Shouldice Designer Stone.
- B. Product Description
 - 1. Running bond actual size: 3 5/8" x 23 5/8" x 11 5/8" inches.
 - 2. 1"x2" margin at top edge of alternating courses.
 - 3. Profiles as shown on the Drawings.
 - 4. Finish: Tapestry.

5. Color: Antique Bronze. Color to be confirmed during the submittal process along with brick selections.

2.3 PRECAST CONCRETE ACCENTS

- A. Horizontal Precast Accent
 1. Size: 4 5/8" x 47 5/8" x 15 5/8" inches.
 2. Profile as shown on the Drawings.
 3. 1" bevel at top edge.
 4. Dado or kerf in top surface for flashing set in sealant.
 5. Bottom inside corner notched to allow for steel angle support.
 6. Slots formed for tie selected to anchor to structure.
 7. Finish: Smooth.
 8. Color: Color to be selected during the submittal process along with brick selections.
- B. Precast Wall Cap
 1. Size: 14" x 47 5/8" x 7 5/8" inches.
 2. Profile as shown on the Drawings.
 3. 1" bevel at top edges.
 4. Hole formed on bottom to anchor to structure.
 5. Finish: Smooth.
 6. Color: Color to be selected during the submittal process along with brick selections.
- C. Window Lintel Accent
 1. Size: 3 5/8" x 7 5/8" high inches. Length sized for 4" wider than window rough opening width (2" beyond at each jamb).
 2. Profile as shown on the Drawings.
 3. Finish: Smooth.
 4. Color: Color to be selected during the submittal process along with brick selections.

2.4 COLORED MORTAR MIXES

- A. Manufacturer: SPEC MIX, Inc.
 1. Substitutions only permitted with submittal that demonstrate an exact equal to this specified product.
- B. Proprietary Products/Systems. Dry, Pre-blended mortar mixes:
 1. SPEC MIX Pre-Blended Colored Mortar Mix:
 - a. aggregate and color pigments.
 - b. Mortar Type: Property Mixture Type N.
 - c. Aggregate Type: Fine.
 - d. Material Standard for Aggregate: Comply with ASTM C144.

- e. Material Standard for Portland Cement: Comply with ASTM C150.
- f. Material Standard for Hydrated Lime: Comply with ASTM C207.
- g. Material Standard for Masonry Cement: Comply with ASTM C91.
- h. Material Standard for Mortar: Comply with ASTM C270.
- i. Material Standard for Masonry Grout: Comply with ASTM C476.
- j. Material Standard for Pigments: Comply with ASTM C979.
- k. Material Standard for Mortar Cement: Comply with ASTM C1329.
- l. Mortar Color: To be selected from manufacturer's standard color selections.

2.5 REINFORCEMENT AND ANCHORAGE

- A. Single Wythe Joint Reinforcement: Truss or Ladder type; hot dip galvanized after fabrication cold-drawn steel conforming to ANSI/ASTM A82, 3/16 inch side rods with 1/8 inch cross ties.
- B. Strap Anchors: A36 bar stock bent steel shape, section 1 x 1/4 inch G90 unprotected finish as required.
- C. Corrugated Formed Sheet Metal Wall Ties: 12 gage thick, galvanized steel finish.
- D. Formed Steel Wire Wall Ties: 12 gage thick, galvanized steel finish.
- E. Horizontal Precast Accent: Hohmann & Barnard Rotite #429 or SRX type anchors.
- F. Precast Wall Cap Accent: 1/2" steel dowels.

2.6 FLASHINGS

- A. Copper/Kraft Paper Flashings: 3 oz/sq ft sheet copper bonded to fiber reinforced asphalt treated Kraft paper.
- B. Copper: ASTM B370, cold rolled; 24 oz/sq ft, natural finish.
- C. Galvanized Steel: ASTM A525, G90 finish, 24 gage core steel.

2.7 ACCESSORIES

- A. Preformed Control Joints: Rubber, Neoprene or Polyvinylchloride material. Provide with corner and tee accessories, heat or cement fused joints, manufactured by W.R. Grace or equal.

- B. Joint Filler: Closed cell polyvinylchloride; oversized 50 percent to joint width; self-expanding; maximum lengths unjointed; manufactured by W.R. Grace or equal.
- C. Building Paper: #30 asphalt saturated felt.
- D. Mortar Break:
 - 1. Advanced Building Products inc., Mortar Break. .8"x10"x50'.
 - 2. Hohmann & Barnard, Inc., The Mortar Mitt, 3/4"x10"x5'.
 - 3. Wire-Bond, Mortar Net, (2) layers .4"x10"x5'.
- E. Weeps:
 - 1. Advanced Building Products inc., Weep Tubes, 3/8"x4".
 - 2. Hohmann & Barnard, Inc., #341W, 3/8" OD x 4" long tubes.
 - 3. Wire Bond, , #3600, 3/8" OD x 4" long tubes.
- F. Brick Vents:
 - 1. Hohmann & Barnard, Inc., #QV.
- G. Cleaning Solutions: Non-acidic, not harmful to masonry work or adjacent materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other Sections of work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Beginning of installation means installer accepts existing conditions.

3.2 GENERAL

- A. Review and follow manufacturers' installation instructions to achieve desired final appearance of brick.
- B. Install Mortar Breaks above all weep hole locations and as noted here. Provide at bottom of wall, at relieving angle. Provide around the perimeter of the building at the top of all the window openings except it is not required over the windows at the top of the brick veneer.

- C. All brick colors go around the outside corners and change at an inside corner. Review the elevations with the plans further information.

3.3 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied by other Sections.
- B. Fasten wall ties to substrate following manufacturer's instructions for each substrate type.
- C. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.4 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension and as agreed to through approval of mock-up. Form vertical and horizontal joints of uniform thickness.
- C. Brick Units:
 - 1. Bond: Running.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches maximum.
- D. Architectural Stone Units:
 - 1. Bond: Running.
 - 2. Coursing: 12".

3.5 MORTAR

- A. Comply with the instructions and recommendations of the mortar manufacturer.
- B. Specific instructions:
 - 1. Fill head and bed joints for full thickness of the face shells to provide the greatest resistance to water penetration.
 - 2. Tooling:
 - a. Mortar Joints: Recessed concave. No mortar shall be present on the face of the brick.
 - b. Tool the mortar joints when they are thumb print hard to provide the greatest resistance to water-penetration and to help minimize hairline cracks between the mortar and the brick

3. Cover the top of unfinished masonry work to protect it from the weather and to prevent accumulation of water.
4. Follow manufacturer's instructions for mixing mortar.
5. Cleaning:
 - a. Remove "primary" efflorescence from masonry walls exposed in the finished work in accordance with the manufacturer's recommendations and the NCMA TEK Bulletin #8-3A.
 - b. Remove dirt or stains from masonry walls exposed in the finished work in accordance with the manufacturer's recommendations and the NCMA TEK Bulletin #8-2A.
 - c. Promptly remove excess wet mortar containing integral water-repellent mortar admixture from the face of the masonry as work progresses. Do not use strong acids, overaggressive sandblasting or high-pressure cleaning methods.
 - d. Comply with applicable environmental laws and restrictions.

3.6 PLACING AND BONDING

- A. Strictly follow the manufacturers' instructions for the mixing of the mortar and brick installation.
- B. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- C. Lay hollow masonry units with face shell bedding on head and bed joints.
- D. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- E. Remove excess mortar as Work progresses.
- F. Interlock intersections and external corners.
- G. Perform job site cutting of masonry units with proper tools to provide straight edges. Prevent broken masonry unit corners or edges.
- H. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.7 WEEPS

- A. Install weeps in veneer at 16 inches oc in brick and at each joint in other masonry, horizontally above through-wall flashing, above shelf angles and opening lintels, at bottom of walls, and as may be indicated on the drawings.

3.8 REINFORCEMENT AND ANCHORAGES - SINGLE WYTHE MASONRY

- A. Install horizontal joint reinforcement where specified in drawings. Reinforcement shall be 8 guage wire truss, placed @ 16" oc horizontally.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches. Extend minimum 16 inches each side of openings.

3.9 MASONRY FLASHINGS

- A. Extend flashings horizontally at foundation walls, above ledge or shelf angles and lintels, under parapet caps, at bottom of walls, and as indicated on the drawings.
- B. Turn flashing up minimum 12 inches and secure to wall behind, seal to sheathing substrate behind air infiltration barrier.
- C. Lap end joints minimum 6 inches and seal watertight.
- D. Turn flashing, fold, and seal at corners, bends, and interruptions.

3.10 LINTELS

- A. Install loose steel lintels over window openings, door openings, and penetrations.
- B. Place and consolidate grout fill without displacing reinforcing.
- C. Maintain minimum 8 inch bearing on each side of opening.

3.11 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control and expansion joints.
- B. Form control joint with a sheet building paper bond breaker, fitted to one side of the hollow contour end of the block unit. Fill the resultant elliptical core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
- C. Sealant color to match mortar color.
- D. Size control joint in accordance with Section 07900 for sealant performance.

3.12 BUILT-IN WORK

- A. As work progresses, build in steel and aluminum door frames, fabricated metal frames, window frames, wood nailing strips, anchor bolts, plates and other items furnished by other Sections.
- B. Build in items plumb and level.
- C. Do not build in organic materials subject to deterioration.

3.13 TOLERANCES

- A. The following tolerances are maximums. The intent is to avoid spreading or stretching the brick coverage over the wall with wider joints.
- B. Maximum Variation From Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- C. Maximum Variation From Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation From Level Coursing: 1/16 inch in 3 feet and 1/8 inch in 10 feet.
- E. Maximum Variation of Joint Thickness: 1/16 inch in 3 feet.
- F. Maximum Variation From Cross Sectional Thickness of Walls: 1/4 inch.

3.14 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves, grounds, etc. Coordinate with other Sections of work to provide correct size, shape, and location.
- B. Obtain Architect/Engineer approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.15 CLEANING

- A. Cleaning shall be as per specification in BIA Technical Notes #20 and #14.
- B. Clean masonry with the least aggressive cleaning solution and technique possible.
- C. Comply with cleaning procedure and recommendations of the manufacturers of both the cleaning solution and the unit masonry.
- D. Remove excess mortar and mortar smears.
- E. Replace defective mortar. Match adjacent work.
- F. Clean soiled surfaces with cleaning solution.
- G. Use non-metallic tools in cleaning operations.

3.16 PROTECTION OF FINISHED WORK

- A. Protect finished installation under provisions of Section 01500.

END OF SECTION