1. Expansion joints are not designed into many Church Standard Plans since the type of construction and length of wall runs does not normally require their use. If (due to type of unit masonry available in the area, environmental conditions, or if a standard plan is not used, etc) expansion joints are thought necessary, show the layout on the Drawings and include joint details and specifications. Do not allow saw cut joints. Do not use acid-cure joint sealants. Follow recommendations of the Brick Industry Association.

SECTION 04 2723

CAVITY WALL UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Includes But Not Limited To:
   1. Furnish and install cavity wall unit masonry as described in Contract Documents.
   2. Furnish and install anchor bolts as described in Contract Documents.

B. Products Installed But Not Supplied Under This Section:
   1. Section 05 1223: Metal Lintels.
   2. Section 10 1424: Engraved Stone Panel Signage.

C. Related Sections:
   1. Section 05 0523: Quality of anchor bolts.

1.2 REFERENCES

A. American Society For Testing And Materials:
   1. ASTM A 153-01a, 'Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.'
   2. ASTM C 90-02, 'Standard Specification for Loadbearing Concrete Masonry Units.'
   3. ASTM C 216-04, 'Standard Specification for Facing Brick (Solid Masonry Made from Clay or Shale).'
   4. ASTM C 331-04, 'Standard Specification for Lightweight Aggregates for Concrete Masonry Units.'

1.3 SUBMITTALS

A. Product Data:
   1. Brick Manufacturer's literature or cut sheet.
   2. Brick color and type selection.
   3. Manufacturer's literature for each type of glass masonry unit specified

B. Quality Assurance / Control: Manufacturer's certification that CMU meet compressive strength specified requirements.

1.4 QUALITY ASSURANCE

A. Job Mock-Ups:
1. 4 feet 1200 mm long by 3 feet 900 mm high of proposed color range, texture, bond, mortar, and workmanship. Show wall construction to be used on Project, including reinforcing, rigid insulation, etc.
2. Do not start work until Architect has accepted sample panel.
3. Use panel as standard of comparison for masonry work built of same material.

B. Pre-Installation Conference: Schedule pre-installation conference during construction of mock-up.

1.5 DELIVERY, HANDLING, AND STORAGE

A. Check, carefully unload, and deliver material to site in such a manner as to avoid soiling, damaging, or snipping.

B. Store material on planks clear of ground and protect from damage, dirt, or disfigurement.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Mortar: Type 'S' as specified in Section 04 0513.

2.2 MANUFACTURED UNITS

A. Concrete Masonry Units:
   1. Meet requirements of ASTM C 90, Type I, moisture control units, lightweight classification.
      a. 85 lbs per cu ft 126 kg per cu meter minimum weight classification.
      b. Lightweight aggregates conforming to ASTM C 331.
      c. Do not use re-crushed masonry units as aggregate.
   2. Outside Corners: Square-edged, except where bull nose is indicated on Drawings.
   3. Use special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, etc, as required.
   4. Uniform color and textures with unbroken edges. Smooth face, except where shown otherwise on Drawings.

B. Brick:
   1. 3-5/8 inches 90 mm wide by 2-1/4 inches 56 mm high by 7-5/8 inches 190 mm long modular brick.
   2. 3 inches 75 mm wide by 3 inches 75 mm high by 9 inches 225 mm long queen brick.
   3. Wood molded / Tumbled.
   4. Match existing in size, color, and texture.
   5. Meet requirements of ASTM C 216, Grade SW, Type FBX.
      a. Rating for efflorescence shall be 'Not Effloresced.'
      b. Exposed faces shall be finished and have less than 5 percent chippage and have crack-free appearance when viewed from 15 feet 4,500 mm away.
   7. Brick for Project shall be fired in same run.
   8. Quality Standard: ___________________________________
   9. Type One Acceptable Manufacturers, Style, And Color:
      a. <Insert approved manufacturer, style, color>
      b. <Insert approved manufacturer, style, color>
      c. Equal as approved by Architect before bidding. See Section 01 6000.
2.3 ACCESSORIES

A. Construction Cleaning Compounds:
   1. Type Two Acceptable Products:
      a. 202 or 202V by Diedrich Technologies, Oak Creek, WI  www.execpc.com/diedtech.
      c. Equal as approved by Architect before use. See Section 01 6000.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Site Tolerances:
   1. Masonry work shall be true to vertical and horizontal planes within 1/8 inch 3 mm in 10 feet 3 meters, non-cumulative.
   2. Maintain 3/8 inch 9.5 mm mortar joints throughout.

B. General:
   1. Make cuts proper size to accommodate work of other trades. Replace unit masonry in which larger than necessary openings are cut. Do not patch openings with mortar or other material.
   2. Step back unfinished work for joining with new work. Use toothing only with Architect's approval.

C. Laying:
   1. Layout:
      a. Running bond except where indicated otherwise. Select brick so there is uniform distribution of hues.
      b. Use solid brick where brick coursing would otherwise show cores.
   2. Joints:
      a. Tool concave. Fill completely except where indicated differently.
      b. Do not tool until mortar has taken initial set.
      c. Point holes in joints. Fill and tool properly.
   3. Concrete Masonry Units:
      a. Lay hollow masonry units dry. Do not lay masonry on frozen material.
      b. Align cells or cavities to preserve an unobstructed cavity for grouting.
      c. Full bedding required on both webs and face shell under first course. Other courses need only face shell bedding except where bedding is needed to control the flow of grout.
   4. Brick Masonry Units:
      a. Wet each brick to saturation. Lay brick when surface is dry. Brick absorption when laid should not exceed 0.025 oz/sq inch maximum.
      b. Shove brick into place in full mortar bed, do not lay.
      c. Completely fill horizontal and vertical joints. Do not furrow bed joints.
      d. Strike backside joints on brick flush. Do not allow mortar build-up in cavity between brick veneer and CMU.

D. Weepholes: Install at 33 inches 825 mm on center maximum at bottom courses of walls and at lintels.

E. Mortar Guard: Install continuously between masonry wythes where weepholes are installed.

F. Reinforcing:
   1. Reinforcing shall be free of material that may destroy bond.
   2. Masonry Reinforcing Steel:
      a. Place steel as shown on Drawings.
      b. Hold vertical reinforcing in place every 32 inches 800 mm.
      c. Splice 48 bar diameters minimum.
      d. Place reinforcing and dowels before pouring grout.
      e. Dowel vertical reinforcing bars out of structure below with bars of same size and spacing.
f. Place horizontal bars in 8 inch 200 mm deep bond beam units at top of wall and at 48 inches 1 200 mm on center between. Continue bond beam units and reinforcement uninterrupted around corners.

G. Grouting:
   1. CMU cells:
      a. Fully grout cells as follows:
         1) Cells containing reinforcing bars.
         2) All cells in concrete block foundations.
         3) Bond beams and lintel blocks.
      b. Place grout in 48 inch 1 200 mm maximum lifts.
      c. Consolidate grout twice by means of a mechanical vibrator. Do not use cell reinforcing to rod grout.
         1) Perform first consolidation immediately after placement of grout.
         2) Mechanically reconsolidate grout 20 minutes after first consolidation, but before loss of plasticity.
   2. Provide grout-leveling bed for support of wall plates.

3.2 CLEANING

A. After mortar has hardened, wet masonry and clean with specified cleaning compound. Use stiff fibered brush for application. Rinse masonry surfaces with water immediately after cleaning. Leave masonry clean, free of mortar daubs, and with tight mortar joints.

B. Remove and replace defective material at Architect's direction and at no additional cost to Owner.

C. Clean up masonry debris and remove from site.

3.3 PROTECTION

A. Protect masonry with cover during rainy weather.

B. Cover work at end of each workday with tarpaulins if temperature is 25 to 40 deg F minus 4 to 4 deg C. If temperature is below 25 deg F minus 4 deg C, protect with heaters. Maintain temperature around masonry to 40 deg F 4 deg C minimum for 48 hrs if Type I, 24 hrs if Type III, or longer if required.

C. Brace masonry walls until walls attain adequate strength and are tied into building structure.

D. Do not allow structural loading of masonry walls until walls attain adequate strength.

END OF SECTION