PART 1 - GENERAL

1.1 Related Sections

.1 Insulation: Section 07 21 20.

.2 Loose steel lintels: structural drawings.

.3 Air/Vapour Barrier: Section 07 27 00.

.4 Sheet metal Flashing and Trim: Section 07 62 00

.5 Sealants: Section 07 90 00.

1.2 Reference Standards

.1 CSA A23.1. Concrete Materials and Methods of Construction.

.2 CAN/CSA-A82.1 Burned Clay Brick (Solid Masonry Units Made From Clay or Shale).

.3 CAN3-A165 Series (CAN3-A165.1) (CAN3-A165.3) (CAN3-A165.4) CSA Standards on Concrete Masonry Units.

.4 CSA A179, Mortar and Grout for Unit Masonry.

.5 CSA A370, Connectors for Masonry.

.6 CSA A371, Masonry Construction for Buildings.

.7 CSA S304, Design of Masonry Structures.

1.3 Job Mock-Up

.1 Construct mock-ups in accordance with the conditions of the contract.

.2 Construct mock-up panel of exterior masonry wall construction 1200 x 1800 mm showing masonry texture, use of reinforcement, ties, through-wall flashing, weep holes, jointing, coursing, mortar and workmanship.

.3 Construct mock-up where directed by Project Manager.

.4 Allow 24 hours for review of mock-up by Consultant before proceeding with work.

.5 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.4 Product Delivery, Storage and Handling

.1 Deliver materials to job site in dry condition.

.2 Keep materials dry until use. Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

.3 Store cementitious material in accordance with CAN/CSA-A362. Store aggregates in accordance with CSA A23.1, CSA A23.2.

1.5 Environmental Requirements

.1 Cold weather requirements
.1 Supplement Clause 5.15.2 of CAN3-A371 with following requirements:
.1 Maintain temperature of mortar between 5C and 50C until batch is used.

.2 Hot weather requirements
.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.
.2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction.

1.6 Protection

.1 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.

.2 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

PART 2 - PRODUCTS

2.1 Brick

.1 Face brick.
.1 Burned clay brick: to CAN/CSA A82.
.1 to be selected by owner.

2.2 Concrete Block

.1 Standard concrete masonry units to CAN3-A165, size: modular.

.2 Special shapes: bullnosed units for exposed corners. Purpose made shapes for lintels and bond beams as required.

.3 Hollow load bearing block to ASTM C 90.

.4 Solid load bearing block to ASTM C145.

2.2 Mortar Materials

.1 Mortar shall conform to CAN/CSA A179:
- .1 Aggregate shall conform ASTM C144.
- .2 Cement: Portland, to ASTM C150M, Type I
- .3 Hydrated lime: ASTM C207.
- .4 Masonry cement: to ASTM C270.
- .5 Pigments for Integrally Colored Concrete to ASTM C979.
- .6 No anti-freeze liquids, salts or other substances shall be used in the mortar to lower the freezing point.

2.3 Mortar Mix

.1 Conform to CSA A179. Type to suit the following categories:
- .1 Type S - Masonry below grade in contact with earth and load bearing applications.
- .2 Type N - General Use

.2 Proportion within the limits set forth in Proportion Specifications CSA-A179, Table 2.

.3 Consistency of mortar shall be adjusted by amount of water addition consistent with workability to provide maximum tensile bond strength.

.4 Use same brands of materials and source of aggregate for entire project.

.5 Colour Additive: for brick masonry, True Tone by Davis Colours or equal to ASTM C979, colour selected by owner.

2.4 Grout Mix

.1 Proportion within the limits set forth in the proportion specifications CSA-A179, Table 3.

2.5 Accessories

.1 Anchors, cramps, dowels: stainless steel type 302 or 304. Refer to structural drawings.

.2 Concrete Block Reinforcing: Truss type, 4.67mm wire, hot dipped galvanized, BL-37 with System 2000 adjustable tie by Blok-Lok.

.3 Anchors: refer to structural drawings.

.4 Flashing: Blueskin TWF by Henry.

.5 Transition membrane: Blueskin SA, refer to Section 07 27 00.

.6 Insulation: refer to Section 07 21 00.

.7 Cell vent weep hole ventilator by Dur-O-Wall or approved equal at minimum 800mm o.c. spacing.

.8 Mortar drop protection: Mortar Net or approved equal.

PART 3 - EXECUTION

3.1 Preparation

.1 Establish all lines, levels and coursing and protect from disturbance.

.2 Co-ordinate all work of this Section with others such as lintels, flashing, air/vapour barrier installation, insulation application, etc.

.3 Prepare all items which are to be built-in as the work proceeds, either supplied and installed by others, or installed under this Section.

.4 Install transition membranes, TWF flashing and masonry anchors prior to installation of spray foam thermal barrier.

3.2 Workmanship

.1 Comply with requirements for masonry indicated on the structural drawings.

.2 Install mortar net and weep holes at base of wall and at lintels. Minimize mortar droppings in wall cavity.

.3 Build masonry plumb, level, and true to line, with vertical alignment.

.4 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.
.1 Bond: for concrete block running stretcher.
.2 Jointing: concave.

.5 Mixing and blending of brick: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.

.6 Where two walls join use true masonry bond or connect by metal anchors conforming to the requirements of the 2012 Ontario Building Code.

.7 Install masonry connectors, anchors and reinforcement whether supplied by this trade or by others in accordance with CAN3-A370 and CAN3-A371 as indicated.

.8 Place masonry reinforcement and anchors in accordance with applicable building codes.

.9 Build masonry reinforcing continuously with 150mm laps into bed-joints and 200mm and 400mm from floor, and every third bed joint throughout entire walls.

.10 Do not extend masonry reinforcement through control joints.

.11 Place masonry reinforcement in first two consecutive block bed-joints over all openings and extending 600 beyond openings.

3.3 Mortar

.1 Use Portland cement-lime or masonry cement mortar.

.2 Mix, control, and handle mortar in strict accordance with manufacturer's instructions.

.3 Use colour additives for mortar for exterior walls.

.4 Add colour additives in strict accordance with the manufacturer's recommendations.

3.4 Tolerances

.1 Tolerances to CAN3-A371.

3.5 Exposed Masonry

.1 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.

.2 Clean exposed masonry as work progresses.
.1 Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of brick and finally by brushing.

3.6 Jointing

.1 Allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, compressed, uniformly concave joints.

.2 Strike flush all joints concealed in walls and joints in walls to receive insulation, or other applied material except paint or similar thin finish coating.

3.7 Fitting

.1 Fit masonry neatly around electrical outlet boxes, hose bibbs, louvers, and other recessed or built-in objects.

3.8 Building-In

.1 Build in items required to be built into masonry.

.2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.

.3 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.

3.9 Provision for Movement

.1 Leave 25mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.

3.10 Loose Steel Lintels

.1 Install loose steel lintels. Centre over opening width.

.2 End bearing: not less than 200mm.

.3 Provide flashing end dams 25 high at ends of all exterior lintels.

3.11 Steel Lintels Built-in Work

.1 Lintels, Built-in work:

.1 Build in all loose and miscellaneous items of steel and iron, including sleeves, or plates that form an integral part of the masonry wall; and which are built-in as the masonry work progresses. These items shall be grouted in place using cement or mortar as specified.

.2 Provide flashing end dams 25 high both sides of openings on lintels.

3.12 Shelf Angles

.1 Provide TWF flashing on shelf angles.

3.13 Weep Hole Vents

.1 Provide weep hole vents at base of wall, at shelf angles, at lintels and at top of wall at maximum 600 on centre and as indicated on drawings.

3.14 Movement Joints

.1 Provide continuous movement joints as indicated on drawings and a maximum 7200.

3.15 Flashing

.1 Install flashings under exterior masonry bearing on foundation walls, slabs and angle lintels. Extend from front edge of masonry under wythe,turn up at wall face minimum 200mm and seal to wall. Where exposed use the heaviest manufactured weight or thickness of the specified product.

.2 At door and window openings extend flashing 200 beyond opening and turn up 150 at each end to create a waterproof dam.

.3 Install sheet metal flashings in below masonry work in accordance with Section 07 62 00 and as indicated on drawings.

.4 Install continuous mortar mesh on all flashings.

.5 Install weephole vents above the flashing at 800 o.c.

3.16 Cleaning

.1 Clean unglazed clay masonry: 10 m area of wall designated by Consultant mock up panel as directed below and leave for one week. If no harmful effects appear and after mortar has set and cured, protect windows, sills, doors, trim and other work, and clean brick masonry as follows:

.1 Remove large particles with wood paddles without damaging surface. Saturate masonry with clean water and flush off loose mortar and dirt.

.2 Scrub with solution of 25 mL trisodium phosphate and 25 mL household detergent dissolved in 1 L of clean water using stiff fibre brushes, then clean off immediately with clean water using hose. Alternatively, use proprietary compound recommended by brick masonry manufacturer in accordance with manufacturer's directions.

.3 Repeat cleaning process as often as necessary to remove mortar and other stains.

.4 Use acid solution treatment for difficult to clean masonry as described in Technical Note No. 20 published by Brick Institute of America dated June 2006.

.2 Clean glazed clay masonry as work progresses using soft, clean cloths, within few minutes after laying.

.1 Upon completion, when mortar has set so that it will not be damaged by cleaning, clean with soft sponge or brush, and clean water. Polish with soft, clean cloths.

END OF SECTION 04 00 00