Part 1 General

1.1 REFERENCES

.1 Canadian Standards Association (CSA International).

.1 CSA-A165 Series, Standards on Concrete Masonry Units.

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

.3 CSA-A371, Masonry Construction for Buildings.

1.2 SUBMITTALS

.1 Product Data.

.1 Submit manufacturer's printed product literature, specifications and data sheets.

.2 Samples.

.1 If requested by the Contract Administrator, submit samples for testing to laboratories employing technicians certified/trained in procedures for testing masonry units.

.3 Manufacturer's Instructions.

.1 Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

.2 Mock-up.

.1 Construct mock-up panel of masonry wall construction 1200 x 1200 mm showing masonry colours and textures, use of reinforcement, ties, through-wall flashing, weep holes, jointing, coursing, mortar and workmanship.

.2 Mock-up will be used:

.1 To judge workmanship, substrate preparation, operation of equipment and material application.

.2 For testing to determine compliance with performance requirements. Perform following tests.

.1 For clay units, in addition to requirements set out in referenced CSA and ASTM Standards include data indicating initial rate of absorption.

.3 Construct mock-up where directed by the Contract Administrator.

.4 Allow 24 hours for inspection of mock-up by the Contract Administrator before proceeding with work.

.5 If accepted by the Contract Administrator, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, store, handle and protect materials in accordance with the manufacturer's recommendations.

.2 Deliver materials to job site in dry condition.

.3 Storage and Protection.

.1 Keep materials dry until use.

.2 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.5 SITE CONDITIONS

.1 Site Environmental Requirements.

.1 Cold weather requirements.

.1 Supplement Clause 5.15.2 of CSA-A371 with following requirements.

.1 Maintain temperature of mortar between 5 degrees C and 50 degrees C until batch is used or becomes stable.

.2 Maintain ambient temperature between 5 degrees C and 50 degrees C and protect site from windchill.

.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.

Part 2 Products

2.1 MATERIALS

.1 Concrete masonry units: to CSA A165 Series (CSA A165.1). Classification H/15/A/M. Provide purpose made shapes for lintels and bond beams.

.2 Face Brick: burned clay brick: to CSA A82.1, Type: FBS, Grade: SW, Metric modular size. Provide solid units where core exposed in final assembly. Acceptable material: IXL 246 Whistler Gray Rockfaced. Running bond.

.3 Limestone: to ASTM C 568, category II, medium density as quarried and supplied by GillisQuarries Limited, Winnipeg, Manitoba, Canada. Buff colour, rustic finish, 90 mm bed thickness. Sawn-bed, three coursed random ashlar pattern, 15% 57 mm course, 50% 123 mm course, 35% 190 mm course height.

.4 Mortar Materials: to CSA A179. Type N based on Proportion specifications. Use nonstaining mortar for limestone work.

.5 Masonry connectors: to CSA A370 and CSA S304, galvanized. Block Shear Connector assembly as manufactured by Fero Holdings Ltd. Consisting of connector plate, V-Tie and polyethylene insulation support.

.6 Masonry reinforcement:

.1 Wire reinforcement: to CSA A371 and CSA G30.14, truss type, 3.8 mm diameter with deformations, prefabricated corners and intersections.

.2 Bar reinforcement: to CSA A371 and CSA G30.18, Grade 400.

.7 Masonry flashing: self-adhesive modified bitumen sheet membrane: minimum 1.0 mm thick. Bakelite Blueskin SA, WR Grace Perm-A-Barrier, Soprema Colphene 1500.

.8 Metal drip edge: brake formed of 24 gauge prefinished steel sheet of same colour as sheet metal roofing, Form drip edge to extend 100 mm under base course, with 6 - 9 mm formed drip at front edge.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 PREPARATION

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

.2 The Contractor is responsible for ensuring the adequacy of the bracing.

3.3 CONSTRUCTION

.1 Do masonry work in accordance with CSA-A371 except where specified otherwise.

.2 Lay concrete masonry units in running stretcher bond. Coursing height 200 mm of one block and one joint

.3 Lay clay brick in running stretcher bond, coursing height 200 mm for three bricks and three joints. Provide soldier coursing as indicated, using solid units at corners. Exposed cores not permitted.

.4 Lay limestone in random ashlar pattern bond. Joint lines to run horizontally and vertically. Stagger vertical joints and break horizontal joints as often as possible. Balance distribution of stone sizes for best appearance.

.5 Supply and install masonry connectors and reinforcement in accordance with CSA A370, CSA A371, CSA A23.1 and CSA S304.1, and as indicated by the drawings and masonry notes. Coordinate the installation of the roof truss uplift anchors with roof truss supplier and subcontractor.

.1 Minimum horizontal joint reinforcement shall consist of 3.8 mm diameter truss type wire reinforcing with deformations placed every 200 mm. All splices shall be lapped minimum 800 mm from course to course. Joint reinforcement shall be made continuous at all wall corners by means of specifically manufactured "L" shaped pieces.

.2 Minimum horizontal bar reinforcement shall consist of 20 MPa concrete filled 400 mm deep "U" block bond beams reinforced with 2 - 15M continuous with matching corner bars as shown in the drawings.

.3 Provide reinforced lintels over all openings as follows. Up to 1200 mm span, 20 MPa concrete filled 200 mm "U" block reinforced with 2 – 15M bottom bearing 200 mm minimum each end, with 3 cores filled in wall each end. From 1200 to 2400 mm span 20 MPa concrete filled 400 mm "U" block reinforced with 2 – 15M bottom bearing 200 mm minimum each end, with 3 cores filled in wall each end.

.4 Minimum vertical reinforcement shall consist of one 15M full height bar per 20 MPa filled core at 1000 mm o/c, at each wall corner, at each side of doors, and at each side of openings

.6 Build masonry plumb, level, and true to line, with vertical joints in alignment. Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

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

.8 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects. Make cuts straight, clean, and free from uneven edges.

.9 Build in items required to be built into masonry. Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.

.10 Construct continuous control joints in exterior masonry veneer. Fill joints with joint filler, backer rods and sealant.

.11 Tool joints with round jointer to provide concave joints where exposed or to receive paint or other thin finish coating. Strike flush all joints located in concealed spaces.

.12 Keep masonry cavities free of mortar droppings.

.13 Provide weep holes over masonry flashings, spaced at maximum 800 mm on centre.

.14 Build in flashings in masonry in accordance with CAN3-A371. Carry under base course and up backup wall minimum 150 mm and seal stop edge.

.15 Install metal drip edge over masonry flashings at base courses and angle lintels. Align drip edge straight and even. Overlap joints minimum 20 mm.

3.4 SITE TOLERANCES

.1 Tolerances in notes to Clause 5.3 of CSA-A371 apply.

3.5 FIELD QUALITY CONTROL

.1 Inspection and testing will be carried out by Testing Laboratory designated by the Contract Administrator.

3.6 CLEANING

.1 Clean stone as work progresses. Allow mortar droppings on stone to partially dry then remove by means of brushing with a stiff fibre brush.

.2 Post construction: clean area of wall designated by Contract Administrator as directed below and leave for one week. If no harmful effects appear and after mortar has set and cured clean 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 alternative cleaning solutions and methods for difficult to clean stone only after consultation with masonry unit manufacturer.

.3 Protect sills, doors, trim and other work

.4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION