PART 1 - GENERAL

1.1 WORK INCLUDED

.1 This Section specifies requirements for supplying, transporting and installing stone veneer masonry including all required accessories, connectors, mortar and grout where indicated.

1.2 RELATED SECTIONS

.1 Sealants: Section 07 92 00

.2 Hollow Metal Doors and Frames: Section 08 11 14

1.3 REFERENCE STANDARDS

.1 ASTM C39-2014, Standard Test Method for Compressive Strength of Cylindrial Concrete Specimens.

.2 ASTM C67-2013a, Standard Test Method for Sampling and Testing Brick and Structural Clay Tile.

.3 ASTM C177-2013, Standard Test method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus.

.4 ASTM C192-2013a, Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory.

.5 ASTM C482-02(R2009), Standard Test Method for Board Strength of Ceramic Tile to Portland Cement Paste.

.6 ASTM D1056-2014, Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.

.7 CSA A23.1/A23.2-2009, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.8 CSA A165 Series-04(R2014), CSA Standards on Concrete Masonry Units.

.9 CSA A179-04(R2014), Mortar and Grout for Unit Masonry.

.10 CSA A370-2014, Connectors for Masonry.

.11 ASTM C1063, Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portlant Cement based Plaster.

1.3 REFERENCE STANDARDS (Cont'd)

.12 Installation Guide and Detailing Options for Compliance with ASTM C1780 for Adhered Manufactured Stone.

.13 Standard Practice for Installation Methods for Adhered Manufacturered Stone Masonry Veneer, ASTM C1780-14.

.14 CSA A371-04(R2014), Masonry Construction for Buildings.

.15 CSA G30.18-2009, Billet-Steel Bars for Concrete Reinforcement.

.16 CSA S304.1-04(R2010), Masonry Design for Building.

.17 CSA W186-M1990(R2012), Welding of Reinforcing Bars in Reinforced Concrete Construction.

1.4 REQUIREMENTS OF REGULATORY AGENCIES

.1 Construct masonry work as required by jurisdictional authorities.

.2 Before commencing masonry Work, verify that site conditions will allow construction of masonry within required limitations of wall heights, wall thicknesses, openings, bond, anchorage, lateral support, and compressive strength of masonry units and mortars.

1.5 SHOP DRAWINGS

.1 Submit shop drawings for masonry reinforcement and connectors in accordance with Section 01 33 00.

.2 Shop drawings consist of bar bending details, lists and placing drawings.

.3 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and connectors.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

.1 Handle and store product according to manufacturer's written instructions.

.2 Deliver materials to job site in dry condition.

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

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING (Cont'd)

.4 Deliver products to the place on site as directed, and to meet installation schedule.

1.7 ENVIRONMENTAL REQUIREMENTS

.1 Cold weather requirements:
.1 Conduct all work in accordance with CSA-A371. 2 .Supplement Clause 5.15.2 of CSA-A371 with following requirements:
.1 Maintain temperature of mortar between 5°C and 50°C 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.

1.8 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 system is in place.

PART 2 - PRODUCTS

2.1 MORTAR AND GROUT MIXING

.1 Mortar: to CSA A179.

.2 Shrinkage compensating grout: premixed compound consisting of non-metallic aggregate, Portland cement, water reducing and plasticizing agents.
.1 Compressive strength: 50 MPa at 28 days.
.2 Consistency:
.1 Fluid: to ASTM C827. Time of efflux through flow cone (ASTM C939), under 30 s.

2.1 MORTAR AND GROUT MIXING (Cont'd)

.2 Shrinkage compensating grout:(Cont'd)
.2 Consistency:(Cont'd)
.2 Flowable: to ASTM C827. Flow table, 5 drops in 3 s, (ASTM C109, applicable portion) 125 to 145%.
.3 Plastic: to ASTM C827. Flow table, 5 drops in 3 s, (ASTM C109, applicable portions) 100 to 125%.
.4 Dry pack to manufacturer's requirements.
.3 Acceptable products: SikaGrout 212 as manufactured by Sika Canada Inc., Masterflow 928 as manufactured by BASF Corporation, or approved equivalent.

.3 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.

.4 Mortar for all walls: Type S based on Proportion specifications of CSA-A179.

2.2 STONE VENEER MASONRY

.1 Properties:
.1 Compressive strength: 12.4 MPa to ASTM C192/ASTM C39.
.2 Board strength: 345kPa (50psi) to ASTM C482.
.3 Thermal resistance: 0.335/inch of thickness to ASTM C177.
.4 Freeze/thaw: no disintegration and less than 3% weight loss to ASTM C67.
.5 Accessories: corners.
.6 Profile and colour as selected by Departmental Representative.

2.3 METAL LATH

.1 Lath to ASTM C1063.

.2 Properties:
.1 Self furred or use self furred fasteners.
.2 Corrosion resistant, galvanized or stainless steel or non-metallic lath.

.3 Fasteners:
.1 Corrosion resistant fasteners galvanized or stainless steel.

PART 3 - EXECUTION

3.1 WORKMANSHIP

.1 Conduct all work in accordance with CSA A371, ASTM C1063, ASTM C1780-14 and the manufacturer's written instructions.

.2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

.3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

.4 Exercise care to provide full mortar joint coverage on all bearing surfaces of masonry. Replace masonry that does not meet above requirement.

3.2 TOLERANCES

.1 Tolerances in notes to Clause 6.2 of CSA-A371 apply.

3.3 DAMAGED MASONRY

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

3.4 BUILDING-IN

.1 Verify accessories, frame anchors, guards, and such items specified in other Sections are available for building in before Work commences. Cooperate in the setting and aligning of built-in Work and provide for later installation of items which are included in the Work of other Sections, to avoid cutting, fitting, and patching.

.2 Prevent displacement of built-in items during construction.

3.5 CUTTING

.1 Cut out neatly for electrical switches, outlet boxes, and other recessed or built-in objects.

.2 Make cuts straight, clean and free from uneven edges.

3.6 PLACING GROUT

.1 Grout where indicated using procedures in accordance with the manufacturer's written instructions and resulting in 100% contact over grouted area.

3.7 INSTALLING MASONRY UNITS

.1 Using a trowel, apply motar 12.7mm - 19.1mm thick to prepared surface area. Do not spread more than a workable area of 0.47 - 0.93m2 so that mortar will not set up before stone is applied. Provide complete coverage between the mortar bed and back surface of the stone. Mortar may also be applied to the entire back of the stone.

.2 Apply mortar and stone working from the bottom up, or most stones can be applied from the top down. Working from the top down may help avoid splashing previously applied stone with dripping mortar. Ledgestone types should be installed from the bottom up.

.3 Joint width: in order to obtain the most natural look, joints should be as narrow as possible, average joints should not exceed 12.7 - 19.1mm in width.

.4 Setting the stones: press each stone into the mortar setting bed firmly enough to squeeze some mortar out around the stone's edges. Apply pressure to the stone to achieve good bond.

3.8 MORTAR AND GROUT MIXING

.1 Prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp workable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour nor more than 2 hour then remix with sufficient water to produce mortar of proper consistency for pointing.

.2 Mix mortar in mechanical batch mixer using material proportions to produce specified strengths while keeping water-cement ratios to the minimum required to produce proper workability.

.3 Mix grout to semi-fluid consistency to manufacturer's instructions.

3.9 PROVISION FOR MOVEMENT

.1 Provide joint fillers and sealant at top of masonry walls. Materials as specified in Section.

.2 Caulk corner joints of all block work where walls butt into continuous walls, at dissimilar material intersections (precast concrete walls, concrete walls and columns, etc.) and at masonry wall intersection with floor slabs, caulking to be done before painting. Slightly rake the vertical mortar joint during installation so as to provide slight slot for caulking joint.

3.10 CLEANING

.1 Clean concrete block and brick masonry as work progresses.

.2 Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block and finally by brushing.

END