Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 04 43 26 - Dimensional Stone Veneer Cladding

1.2 REFERENCES

.1 ASTM International

.1 ASTM A496/A496M-07, Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.

.2 ASTM C 920 Standard Specification for Elastomeric Joint Sealants

.2 CSA International

.1 CAN/CSA-A165 SERIES-04(R2009), CSA Standards on Concrete Masonry Units covers: A165.1, A165.2, A165.3.

.2 CAN/CSA-A179-04(R2009), Mortar and Grout for Unit Masonry.

.3 CAN/CSA-A370-04(R2009), Connectors for Masonry.

.4 CAN/CSA A371-04(R2009), Masonry Construction for Buildings.

.5 CSA G30.18-09, Carbon Steel Bars for Concrete Reinforcement.

.6 CSA S304.1-04(R2009), Design of Masonry Structures.

.3 Standards Council of Canada

.1 CAN/CGSB – 19.13-M87 Sealing Compound, One Component, Elastomeric, Chemical Curing

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for masonry products and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Samples:

.1 Submit for review and acceptance of each unit.

.2 Samples will be returned for inclusion into work.

.3 Submit duplicate full size samples of each type masonry units.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect masonry products from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

Part 2 Products

2.1 MASONRY UNITS

.1 Concrete Block Masonry Units (CMU): CSA-A165 Series (CSA-A165.1), Type H/15/A/M. and SS/15/A/M

.1 Standard Size: 190 mm high x 390 mm long x 100 mm and 200 mm

.2 Special shapes: Provide bond beam units, bull-nose units and other shapes as indicated and as required.

.2 Decorative Screen Block Concrete Block Masonry Units (CMU): CSA-A165 Series (CSA-A165.1), Type H/15/A/M. and SS/15/A/M

.1 Standard Size: modular 290 mm high x 290 mm long x depth indicated and or required.

.2 Design: Clover Leaf

.3 Special shapes: Provide solid cap units, and other shapes as indicated and as required.

2.2 REINFORCEMENT AND CONNECTORS

.1 Single Wythe Joint Reinforcement: can/ CSA A370, continuous ladder type; 316 stainless steel wire.

.1 Finish:

.1 316 Stainless steel to ASTM A123/A123M after fabrication.

.2 Wire Size: 3.66 mm.

.3 Ladder cross rods at 400 mm o.c.

.4 Every second course.

2.3 LATERAL SUPPORT

.1 75 x 75 x 6 steel angle, 300 mm long located each side of masonry wall, spaced at 800 mm o.c. welded to steel structure or to 6 x 200 x 700 steel plate secured or to structure above.

.2 Continuous bent plate on one side and clips on other. See drawings.

.3 Provide 64 x 64 x 6.4 steel angle tie back braces at top of wall to nearest structure located connected to panel points and top of beams, maximum 2400 o.c.

2.4 MORTAR AND GROUT

.1 Cementitious Material: CAN/CSA A179.

.1 Portland Cement: CSA A3001, Type GU, grey colour.

.2 Mortar Aggregate: CAN/ CSA A179, fine aggregate.

.1 Mortar for Interior Above Grade:

.2 Non-Load bearing Wall Partitions: CSA A179, Type N using the Proportion specification.

.3 Stain Resistant Pointing Mortar: CSA-A179, non-staining masonry cement for cementitious portion of specified mortar type.

.4 Following applies regardless of mortar types and uses specified above:

.1 Mortar for stonework: type N based on property specifications.

.2 Mortar for grouted reinforced masonry: type S based on property specifications.

.5 Grout Aggregate: CAN/ CSA-A179, fine aggregate.

.6 Parging mortar; CAN/CSA-A179.

.7 Water: Clean and potable.

2.1 **ACCESSORIES**

.1 Nailing Inserts: 0.5 mm minimum thickness, 316 stainless steel.

.2 Masonry Joint Filler: to ASTM C920, Type S, Grade NS, Class 25, Use NT, M, A and O and CAN / CGSB – 19.13-M87.

.1 Paintable, one-component, texturized, moisture curing gun grade polyurethane concrete crack filler / sealant.

.2 Type suitable for filling interior and exterior masonry joints and remaining flexible.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

3.2 INSTALLATION

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

.1 Bond: running stretcher bond with vertical joints in perpendicular alignment and centred on adjacent stretchers above and below.

.2 Coursing height: 200 mm for one block and one joint for three bricks and three joints.

.3 Jointing: tool to provide smooth compressed concave surface.

.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.

3.3 CONSTRUCTION

.1 Exposed masonry:

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

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

.2 Building-in:

.1 Install masonry connectors and reinforcement where indicated on drawings.

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

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

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

.5 Install loose steel lintels over openings where indicated.

.3 Concrete block lintels:

.1 Install reinforced concrete block lintels over openings in masonry where steel or reinforced concrete lintels are not indicated.

.2 End bearing: not less than 200 mm as indicated on drawings.

.4 Support of loads:

.1 Use grout to CAN/CSA-A179 where grout is used in lieu of solid units.

.2 Install building paper below voids to be filled with grout; keep paper 25 mm back from faces of units.

.5 Provision for movement:

.1 Leave 6 mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.

.2 Built masonry to tie in with stabilizers, with provision for vertical movement.

.6 Interface with other work:

.1 Cut openings in existing work as indicated.

.2 Openings in walls: approved Departmental Representative.

.3 Make good existing work. Use materials to match existing.

3.4 BOND BEAMS AND LINTELS

.1 Reinforce masonry lintels and bond beams as indicated.

.2 Place and grout reinforcement in accordance with CAN/CSA-A179, CAN/CSA-A371 and CSA S304.1.

.3 Minimum reinforcing lap 600 mm.

.4 Minimum reinforcing beyond opening 400 mm each side

.5 Top of walls:

.1 Place 2 # 15M bars in continuous bond beams at top of walls

.6 Top of openings

.1 See drawings for details

.2 Provide precast concrete lintels in concrete masonry where bottom of lintels are exposed. i.e. head of openings, windows etc..

3.5 REINFORCING AND CONNECTING

.1 Install masonry connectors and reinforcement in accordance with CAN/CSA-A370, CAN/CSA-A371 and CSA S304.1 unless indicated otherwise.

.2 Supply and install metal anchors as indicated.

.3 Supply and install lateral support and anchorage in accordance with CSA S304.1 and as indicated.

.4 Prior to placing mortar grout, obtain Departmental Representative's approval of placement of reinforcement and connectors.

.5 Vertical Reinforcement

.1 Place # 15M bars minimum every 1200 mm on center vertically secured to minimum 300 mm long rod and expansion anchors dowelled into concrete slab on grade or welded to structure at raised slabs.

.2 End of wall and corners

.3 Additional reinforcing required on sides of openings.

.4 Minimum lap 600 mm.

.6 Tie masonry veneer to backing in accordance with NBC, CAN/CSA-A371, CSA S304.1 and as indicated.

3.6 GROUTING

.1 Grout masonry in accordance with CAN/CSA-A179, CAN/CSA-A371 and CSA S304.1 and as indicated.

3.7 EXISTING MASONRY JOINT FILLING

.1 In locations shown on the drawings, fill all existing masonry joints with masonry joint filler specified.

.2 Prepare joints and surfaces as per manufacture’s written instructions.

.3 Clean walls as noted under Cleaning.

3.8 SITE TOLERANCES

.1 Tolerances of CAN/CSA-A371 apply.

3.9 FIELD QUALITY CONTROL

.1 Inspection and testing will be carried out by Testing Laboratory designated by Departmental Representative.

3.10 CLEANING

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

.2 Clean wall surface with suitable brush or burlap.

.3 Clean soiled surfaces with cleaning solution.

.4 Sand, grind, repair and or replace all Work not acceptable to Departmental Representative.

.5 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.11 PROTECTION

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

.2 Repair damage to adjacent materials caused by masonry products installation.

END OF SECTION

Part 1 General

.1 Section 04 04 99 Masonry for Minor Works

1.2 REFERENCES

.1 American Concrete Institute (ACI)

.1 ACI 530/530.1-11, Building Code Requirements and Specifications for Masonry Structures and Related Commentaries.

.2 ASTM International

.1 ASTM A153/A153M-09, Standard Specification for Zinc Coated (Hot Dip) on Iron and Steel Hardware.

.2 ASTM A580/A580M-13a, Standard Specification for Stainless Steel Wire.

.3 ASTM C97/C97M-09, Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.

.4 ASTM C99/C99M-09, Standard Test Method for Modulus of Rupture of Dimension Stone.

.5 ASTM C119-11, Standard Terminology Relating to Dimension Stone.

.6 ASTM C144-11, Standard Specification for Aggregate for Masonry Mortar.

.7 ASTM C150/C150M-12, Standard Specification for Portland Cement.

.8 ASTM C170/C170M-09, Standard Test Method for Compressive Strength of Dimension Stone.

.9 ASTM C207-06(2011), Standard Specification for Hydrated Lime for Masonry Purposes.

.10 ASTM C241/C241M-13, Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic.

.11 ASTM C270-12a, Standard Specification for Mortar for Unit Masonry.

.12 ASTM C568/C568M-10, Standard Specification for Limestone Dimension Stone.

.13 ASTM C780/C780M-12a, Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

.14 ASTM C880/C880M-09, Standard Test Method for Flexural Strength of Dimension Stone.

.15 ASTM C1242-12ae1, Standard Guide for Design, Selection, and Installation of Stone Anchors and Anchoring Systems.

.3 CSA Group

.1 CAN/CSA-A179-04(R2009), Mortar and Grout for Unit Masonry.

.2 CAN/CSA-A370-04(R2009), Connectors for Masonry.

.3 CAN/CSA-A371-04(R2009), Masonry Construction for Buildings.

.4 CAN/CSA-A3000-08, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

.4 International Masonry Industry All-Weather Council (IMIAC)

.1 Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for dimensional stone veneer cladding and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province Territory of New Brunswick.

.2 Indicate sizes and sections of stone, arrangements of joints and bonding, anchoring, dowelling and cramping.

.3 Each stone indicated on shop drawings must bear corresponding number marked on its back or bed.

.4 Samples:

.1 Submit sample for each finish product specified, 2 complete sets representing manufacturer's full range of available colours, textures, and patterns.

1.4 QUALITY ASSURANCE

.1 Test Reports: submit certified test reports including sand gradation tests in accordance with CAN/CSA-A179 showing compliance with specified performance characteristics and physical properties, and in accordance with Section 04 05 00 - Common Work Results for Masonry.

.2 Mock-ups:

.1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.

.1 Construct mock-up panel of exterior dimension stone veneer construction 1200 x 1800 mm, showing colours and textures, use of reinforcement, ties, through wall flashing, weep holes, jointing, coursing, mortar and quality of work.

.2 Mock-up used:

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

.3 Perform test cleaning on mock-up to ensure desired result as per article CLEANING.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect dimension stone veneer cladding from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

1.6 SITE CONDITIONS

.1 Ambient Conditions:

.1 Do not install at temperatures below 12 degrees C or above 38 degrees C.

.2 Maintain temperatures at or above 12 degrees C until cementitious materials have fully cured.

.3 Cold Weather Requirements: IMIAC - Recommended Practices and Specifications for Cold Weather Masonry Construction.

.4 Do not apply epoxy mortar and grouts at temperatures below 15 degrees C or above 25 degrees C.

.2 Field Measurements:

.1 Make field measurements necessary to ensure the proper fit of all members.

Part 2 Products

2.1 DESIGN CRITERIA

.1 General: design, fabricate and install stonework to withstand normal loads from wind, gravity, movement of building structure, seismic forces and thermally induced movement, as well as to resist deterioration under conditions of normal use including exposure to weather, without failure.

.2 Retain services of cladding engineer, as described below, to design the cladding support and retention system. Cladding engineer will prepare engineering calculations for justification of principal stonework, units, fasteners, and anchorage components for compliance with performance criteria.

.3 Engineering Calculations: base calculations on design loads, material properties, and applicable safety factors, in compliance with applicable codes and Building Standards. Include following information as part of calculations:

.1 Stone loads and allowable loads,

.2 Stone thicknesses,

.3 Support and anchorage loads, stresses, safety factors, design loads, and allowable loads,

.4 Support and anchorage sizes.

.4 Design connections and attachments for limestone to CAN/CSA-A370.

.5 Design, detail and fabricate connections to provide allowance for fabrication tolerances, erection tolerances and structural deflections. Refer to CAN/CSA-A370 CAN/CSA-A371 ASTM C1242.

.6 Control of Corrosion: prevent galvanic and other forms of corrosion by insulating metals and other materials from direct contact with non-compatible materials, or by suitable coating.

2.2 MORTAR MATERIALS

.1 Portland Cement: to CAN/CSA-A3000, Type GU; ASTM C150/C150M, Type IA; grey colour as selected by the Departmental Representative

.2 Hydrated Lime: to ASTM C207, Type SA.

.3 Mortar Aggregate: to CAN/CSA-A179 ASTM C144, standard masonry white silica type; clean, dry, protected against dampness, freezing, and foreign matter.

.4 Colour Pigment: Natural oxyde pigment,

.5 Water: potable, clean and free of deleterious amounts of acids, alkalis or organic materials.

2.3 STONE MATERIALS

.1 Dolomite Limestone: to ASTM C568/C568M, Category III - High Density; special shapes as indicated; having the following average properties when tested to the identified standard:

.1 Compressive Strength: 206.1 MPa, to ASTM C170/C170M.

.2 Absorption: 0.75 percent, to ASTM C97/C97M.

.3 Density: 2,670 kg/m^3, to ASTM C97/C97M.

.4 Modulus of Rupture: 15.4 MPa, to ASTM C99/C99M.

.5 Flexural Strength: 11.0 MPa to ASTM C880/C880M.

.6 Abrasion Resistance: 19.9 to ASTM C241/C241M.

2.4 MANUFACTURED UNITS

.1 Ashlar Stone Panels: dolomite limestone panels, as described below:

.1 Bed Thickness: 55 mm thick;

.2 Ashlar Sizes: random lengths,

.3 Finish: bush hammered and flamed

.4 Colour and Pattern: blue-grey colour, striated pattern, to match approved sample range.

2.5 REINFORCEMENT AND ANCHORAGES

.1 Anchors, Cramps, Dowels: stainless steel, Type 316.

.2 Wall Ties: to CAN/CSA-A370, 316 stainless steel.

.3 Fasteners: 316 stainless steel.

.4 Shop Finishing:

.1 Stainless Steel: to ASTM A508/A508M, Type 316.

2.6 FLASHING

.1 Flexible Flashing: air/vapour barrier sheet membrane, as specified under Section 07 27 10.

.2 Flexible Flashing: sheet polyvinyl chloride polyethylene; 0.25 0.5 mm thick.

.3 Exposed Sheet Metal: 316 stainless steel.

2.7 ACCESSORIES

.1 Mortar: in accordance with Section 04 04 99 - Masonry for Minor Works

.2 Setting Buttons: resilient plastic type; non-staining; sized to suit joint thicknesses and bed depths without intruding into required depths of joint sealants or causing third-side adhesion between sealant and setting button.

.3 Weep Hole Vents: moulded polyvinyl chloride grilles, insect proof.

.4 Sealant and Backer Rod: in accordance with Section 07 92 00 - Joint Sealants.

2.8 MORTAR MIXES

.1 Limestone Dimension Stone Mortar: to CAN/CSA-A179 ASTM C270, Proportion specification, 1 part Portland cement, 1 part hydrated lime, 6 parts mortar aggregate by volume for both cementitious materials and aggregate; integral colour selected by Departmental Representative.

2.9 MORTAR MIXING

.1 Coordinate with Section 04 04 99 - Masonry for Minor Works

.2 Thoroughly mix mortar ingredients in proper quantities needed for immediate use to requirements of CAN/CSA-A179 ASTM C270.

.3 Add mortar colour and admixtures to requirements of manufacturer's instructions.

.4 Provide uniformity of mix and colouration.

.5 Start masonry work after mortar is tested and approved by Departmental Representative DCC Representative Consultant.

.6 Take representative samples for testing consistency of strength and colour according toCAN/CSA-A179 ASTM C780/C780M.

.7 Use mortar within 2 hours after mixing at temperatures of 26 degrees C, or 2-1/2 hours at temperatures under 10 degrees C.

2.10 FABRICATION

.1 Cut stone to shape and dimensions and full to square with joints as indicated.

.1 Dress exposed faces true.

.2 Cut stone for caps, copings, cornices, sills, to lay on its natural quarry bed.

.2 Cut-in reglets for flashings where indicated.

.3 Execute profiled work from full size details and templates.

.1 Make exposed arises in true alignment and ease slightly to prevent snipping.

.4 Back-check stone contacting structural members as indicated.

.1 Allow minimum of 25 mm clearance between back of stone and steel and concrete structural members.

.2 Shape beds of stone resting on structural work to fit supports.

.5 Cut stones for anchors, cramps, dowels and support systems.

.1 Provide Lewis pin and clamp holes in pieces which can not be manually lifted.

.2 Do not cut holes in exposed surfaces.

.6 Finish exposed faces and edges of stones to comply with requirements indicated for finish and to match approved samples and field-constructed mock-up.

2.11 GROUT

.1 In accordance with Section 04 04 99 - Masonry for Minor Works

2.12 JOINT SEALANTS AND BACKER RODS

.1 Non-staining type, as specified in Section 07 92 00 - Joint Sealants.

2.13 FABRICATION TOLERANCES

.1 Fabricate limestone dimension stone to the following tolerances:

.1 Unit Length: plus or minus 3 mm.

.2 Unit Height: plus or minus 3 mm.

.3 Deviation From Square: plus or minus 3 mm, with measurement taken using the longest edge as the base.

.4 Bed Depth: plus or minus 3 mm.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for dimensional stone veneer cladding installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

.1 Waterproof exterior slabs on back prior to setting.

.2 Clean stone surfaces by washing with stiff fibre brush and water.

3.3 INSTALLATION/TOLERANCES

.1 Variation from Plumb: plus or minus 6 mm per 3 metres maximum.

.2 Variation from Level: plus or minus 13 mm per 6 metres maximum.

.3 Variation from Linear Building Line: plus or minus 13 mm per 6 metres maximum.

.4 Variation in Cross-Sectional Dimensions: plus 13 mm or minus 6 mm.

3.4 SETTING STONE - GENERAL

.1 Construction in accordance with CAN/CSA-A371.

.2 Reinforcement and anchorage in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

.3 Set stones plumb, true, and level, to requirements as indicated and approved shop drawings.

.4 Align stone edges and faces according to established relationships and indicated tolerances.

.5 Provide movement joints of widths and at locations indicated. Ensure movement joints are kept free of mortar.

3.5 SETTING STONE WITH MORTAR

.1 Set stones in full bed of mortar with vertical joints buttered and placed full, except where otherwise specified.

.1 Completely fill anchor, dowel and lifting holes.

.2 Lay stone veneer in ashlar bond.

.1 Connect stone veneer to structural back-up with approved wall ties, spaced not more than 405 mm horizontally and 610 mm vertically.

.3 Lay stone panel cladding to patterns indicated on drawings.

.1 Install anchors, dowels and cramps.

.2 Shim and adjust supports to set stones accurately in locations indicated with uniform joints of widths indicated.

.4 Make joints 10 mm thick.

.5 Embed only ends of lugged sills and steps in mortar.

.1 Leave balance of joint open for final pointing.

.6 Place setting buttons under stones to maintain joint thickness.

.1 Set heavy stones and projecting courses after mortar in courses below has hardened sufficiently to support weight.

.7 Brace and anchor projecting stones until wall above is set.

.8 Use soaked softwood wedges to support stone in proper alignment until mortar has set.

.1 Remove wedges when dry and without breaking them off, fill voids with pointing mortar.

.9 Install through-wall flashing membranes at continuous shelf angles, steel lintels, ledges and similar obstructions to the downward flow of water.

.10 Install weep hole vents at 600 mm on centre horizontally above through-wall flashing above shelf angles, at bottom of walls.

.11 Tool joints after initial set has occurred.

.12 Rake out joints to 25 mm depth and make ready for pointing with pointing mortar sealant.

.1 Sponge stone face along joints and remove droppings and splashed mortar immediately.

.13 Set cornices, copings, projecting belt courses, steps platforms with unfilled vertical joints.

.14 Grouting: pack ends of exposed joints with plastic foam joint filler and after wetting ends of stone, fill joint with grouting mortar to within 19 mm of top.

.1 Grout vertical joints of cornices, copings, projecting belt courses, steps platforms.

.2 After grout has set, remove packing for pointing.

.15 Pointing: remove dirt and loose mortar from joints by using pressurized airstream.

.1 Wet joints for mortar pointing. Dry joints for sealant pointing.

.2 Point joints with pointing mortar in 2 3 stages. Rub smooth with appropriate tool to slightly concave joint.

.3 Point coping sill joints with sealant. Do work in accordance with Section 07 92 00 - Joint Sealants.

3.6 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Clean stone as work progresses.

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

.3 Post-Construction: clean walls to manufacturer’s printed instructions and as follows:.

.4 If no harmful effects appear and after mortar has set and cured, clean masonry as follows:

.1 Protect windows, sills, doors, trim and other work from damage.

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

.3 Scrub with solution of 25 ml trisodium phosphate and 25 ml household detergent dissolved in 1 litres of clean water using stiff fibre brushes, then clean off immediately with clean water using hose.

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

.5 Use alternative cleaning solutions and methods for difficult to clean stone only after consultation with masonry unit manufacturer.

3.7 PROTECTION

.1 Protect stone from damage resulting from subsequent construction operations.

.2 Use protection materials and methods which will not stain or damage stone.

.3 Remove protection materials upon Substantial Performance of Work, or when risk of damage is no longer present.

END OF SECTION