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**ADDENDUM NUMBER: SEPW No. ONE**

**PROJECT: WINDOW REPLACEMENT  
REGINA, SK**

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This Addendum forms part of the Contract Documents and amends the original Drawings and Specifications as noted below. This addendum consists of **19** pages, and **1** drawing as listed below.

Ensure that all parties are aware of all items included in this Addendum.

**The following revised or additional Drawings accompany and form an integral part of this Addendum:**

<b>Dwg. No.</b>	<b>Title</b>	<b>Date of Issue</b>
AR01	PARTIAL SOUTH ELEVATION WING 'B'	2013-12-20

**A1-1 SPECIFICATION SECTION 04 03 07 MASONRY REPOINTING AND REPAIR**

.1 ADD this Section in its entirety (7 pages)

**A1-2 SPECIFICATION SECTION 04 03 41 REPAIR OF STONE**

.1 ADD this Section in its entirety (7 pages)

**A1-3 SPECIFICATION SECTION 04 99 99 REFERENCE PHOTOS**

.1 ADD this Section in its entirety (3 pages)

**A1-4 REF. SPECIFICATION SECTION 08 54 13 FIBERGLASS WINDOWS**

.1 2.1.4.6 DELETE argon gas filled cavities.

.2 GENERAL – CLARIFICATION: the Departmental Representative may provide further direction to the Contractor for the location of operable and non-operable windows.

.3 ADD: Provide 2.0 mil thickness self-adhesive vinyl film on all washroom window locations. 104 window pane locations; approximate size 900mm x 900mm. Acceptable produce 3M or Avery “Frosted” pattern. Provide samples for selection to Departmental Representative. Install without blisters, bubbles, tears, scratches, edge defects or visual distortion. Remove and replace, without glass replacement, film that continues to show blisters, bubbles, tears, scratches, edge defects or vision distortion in film when viewed under natural daylight from 1.0 m minimum after 30 day period. Warranty against delamination for five (5) years.

.4 ADD: Provide 6 mil thickness (0.152mm) self-adhesive micro-layered laminated security film to window unit located between Grids 12 and 13 on the first floor. Break Strength of 180 lbs/in. Tensile strength of 30,000 psi. Max. tear of 7.2 when tested to ASTM D1938. Pattern to be confirmed. Provide samples for selection to Departmental Representative. Provide 3mm bead of Dow 995 architectural adhesive around frame. Install to interior of glass without blisters, bubbles, tears, scratches, edge defects or visual distortion. Remove and

replace, without glass replacement, film that continues to show blisters, bubbles, tears, scratches, edge defects or vision distortion in film when viewed under natural daylight from 1.0 m minimum after 30 day period. Warranty against delamination for five (10) years.

**A1-4 REF. DRAWING A2.1 EXTERIOR ELEVATIONS**

.1 Reference Detail 2 – South Elevation Wing ‘C’:

- .1 CHANGE location where new window is not required from between Grids ‘J’ and ‘K’ to location between Grids ‘K’ and ‘L’. Refer to attached sketch AR01.

**A1-5 REF. DRAWING A2.3 EXTERIOR ELEVATIONS**

.1 Reference Detail 6 – East Elevation Wing ‘A’:

- .1 CHANGE window type “D” between Grids 12 and 13 on first floor to type “C”. Do not re-install metal grille on window at this location.
- .2 CHANGE window type “C” between Grids 13 and 14 on first floor to type “D”.

**END OF SECTION**

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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 00 05 General Requirements.
- .2        Section 04 03 41 Repair of Stone.

**1.2                MEASUREMENT PROCEDURES**

- .1        Refer to Bid Form. Base Unit Price on an estimated 300 lineal metres of mortar joint repointing for localized repointing of stone spandrel panels around entire building. (This represents approximately 1/3 of the stone joints.)
- .2        Where actual re-pointing required is less than or in excess of 300 lineal metres then cost of work will be adjusted in accordance with the per metre price provided with Bid. This cost will include all associated costs of supplying materials, and executing work as described herein and reflected in contract.
- .3        Provide with Bid, a Per Metre Unit Price that will apply to Repointing Work. The per unit price will be used in the evaluation of Bids.

**1.3                ALTERNATIVES**

- .1        Obtain Departmental Representative's approval before changing procedures, manufacturer's brands, sources of supply of materials during entire contract.

**1.4                REFERENCES**

- .1        Canadian Standards Association (CSA International)
  - .1        CAN/CSA A179-04, Mortar and Grout for Unit Masonry.
  - .2        CSA-A371-04, Masonry Construction for Buildings.

**1.5                DEFINITIONS**

- .1        Raking: the removal of loose/deteriorated mortar to 2 – 2 ½ joint thickness minimum 25mm is reached. May require deeper raking if mortar is deteriorated.
- .2        Repointing: filling and finishing of masonry joints from which mortar is missing, has been raked out or has been omitted.
- .3        Tooling: finishing of masonry joints using tool to provide final contour.
- .4        Repair: using adhesives to rebond sections of fractured masonry.

**1.6                SYSTEM DESCRIPTION**

- .1        Work of this Section includes but is not limited to:
  - .1        Raking joints to be repointed as identified on drawings.

- .2 Preparation of masonry surface including joints surface cleaning, cleaning of voids and open joints, and masonry wetting prior to repointing.
- .3 Repointing of identified masonry joints.

### **1.7 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 00 05 - General Requirements.
- .2 Provide all material specifications for review and approval.
- .3 Submit all MSDS sheets for products to be used on site. Provide copies to the Departmental Representative, owner and for posting on site.

### **1.8 QUALIFICATIONS**

- .1 Masonry Contractor:
  - .1 Use single Masonry Contractor for all masonry work.
  - .2 Masonry contractor to have 5 years experience minimum in stone masonry work.
- .2 Masons:
  - .1 Mason to have 5 years minimum experience in stone masonry work.
  - .2 Provide curriculum vitae of all individuals who will be working on site for the review by Departmental Representative when requested.

### **1.9 MOCK-UPS**

- .1 Construct mock-up in accordance with Section 01 00 05 - General Requirements .
- .2 Construct mock-up of one stone to demonstrate procedure. These are to be done sequentially and each process approved prior to moving on to the next.
  - .1 Raking of joints.
  - .2 Repointing of joints.
- .3 Provide aged mortar samples for review and selection.
- .4 Construct mock-up under supervision of Departmental Representative to demonstrate a full understanding of specified procedures, techniques and formulations are achieved before work commences.
- .5 Construct mock-up where directed by Departmental Representative.
- .6 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with masonry repointing and repair work.
- .7 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

### **1.10 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading:

- .1 Deliver, store, handle and protect materials in accordance with Section 01 00 05 - General Requirements.
- .2 Store cementitious materials and aggregates in accordance with CAN/CSA A23.1.
- .3 Store lime putty in plastic lined sealed drums.
- .4 Keep material dry. Protect from weather, freezing and contamination.
- .5 Ensure that manufacturer's labels and seals are intact upon delivery.
- .6 Remove rejected or contaminated material from site.
- .7 At end of each working day, cover unprotected work with waterproof membranes. Membranes should extend to 0.5 m over surface area of work and be tightly installed to prevent finished work from drying out too rapidly.
- .8 Protect adjacent finished work against damage which may be caused by on-going work.

### **1.11 EXISTING CONDITIONS**

- .1 Report in writing, to Departmental Representative areas of deteriorated masonry revealed during work. Obtain Departmental Representative's approval before proceeding with repair work.

### **1.12 WORK RESTRICTIONS**

- .1 Coordinate work activities with Departmental Representatives and schedule of training activities that may occur from time to time on streets surrounding the building site. When requested to do so, stop activities that may generate noise or dust.
- .2 Cooperate with other Contractors on this site involved in other projects.

### **1.13 AMBIENT CONDITIONS**

- .1 Maintain masonry temperature between 10 degrees C and 25 degrees C for duration of work. Provide hoarding and heat for duration of work and curing period, not less than 30 days.
- .2 When ambient outside air temperature is below 10 degrees C:
  - .1 Store cements and sands for immediate use within heated enclosure. Allow cement and sands to reach minimum temperature of 10 degrees C.
  - .2 Heat and maintain water to minimum of 20 degrees C and maximum of 30 degrees C:
    - .1 At time of use temperature of mortar to be minimum of 15 degrees C and maximum of 30 degrees C.
    - .2 Do not mix cement with water or with aggregate or with water-aggregate mixtures having higher temperature than 30 degrees C.
    - .3 Maintain aggregate temperature between 10 degrees C and 30 degrees.
    - .4 Maintain mortar mix between 10 degrees and 40 degrees.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Mortar: in accordance with CAN/CSA A179; unless specified otherwise herein.
- .2 Obtain test report for existing mortar composition and strength characteristics from laboratory acceptable to Departmental Representative.
- .3 Final mortar strength to be between 4 to 10 MPa. But weaker than existing tested mortar.
- .4 Have new mortar mix tested for strength and replace mortar if requirements are not met. Test at 1 week, 30 days.. Submit test results to Departmental Representative.
- .5 Water: potable, clean and free from contaminants.
- .6 Sand: to ASTM C144.

Sieve Size	% By Weight Passing Each Sieve	% By Weight Retained on Each Sieve
No. 4 (4.75 mm)	100	0
No. 8	90	5
No. 16	70	25
No. 30 (600 micron)	50	20
No. 50 (300 micron)	30	20
No. 100 (150 micron)	15	15
No. 200 (75 micron)	0	15

- .1 Sharp, screened and washed pit sand, free of organic material, with final grading and colour to review of Departmental Representative..
- .2 Custom blend sands where necessary to provide appropriate colour match and gradation to review of Departmental Representative. Do not use larger aggregate than the maximum size found in the existing mortar.
- .3 Store sand in a dry area and protect from contamination with ground materials, and precipitation. Keep moisture content of sand constant so proportions are consistent. Do not store directly in contact with the ground.
- .7 Portland cement: to CAN/CSA-A3000 (A5). Do not use grey Portland cement for stone.
- .8 Lime:
  - .1 Hydrated Lime): to ASTM C207 Mix lime putty in accordance with the manufacturer's requirements and allow to stand for several days so excess lime water separates and can be drawn off from the top of the mixing container.

**2.2 MORTAR MIXES**

- .1 Proportion requirements:
  - .1 For stonework:

- .1 1:2:9 gauged non-staining white cement: hydrated lime: sand (sharp beige/tan sand - a suitable product can be obtained from Inland Aggregates.)
- .2 Mix putty with sand to form roughage and immediately prior to use gauge with appropriate amount of cement.
- .3 Do not add water or re-temper mortar. Mix only what can be used prior to mortar starts to set. Lime based mortars begin to set within half an hour.
- .4 Do not use any Retarders or additives apart from the pigment.
- .5 Mix in a clean mixing trough.

### **Part 3 Execution**

#### **3.1 SITE VERIFICATION OF CONDITIONS**

- .1 Report in writing to Departmental Representative areas of deteriorated masonry not previously identified.
- .2 Obtain Departmental Representative's written approval and instructions for repair and replacement of masonry units before proceeding with repair work.
- .3 Stop work in that area and report Departmental Representative immediately evidence of mould.

#### **3.2 EXAMINATION/TESTING**

- .1 Procedure of testing: examine joints visually for obvious signs of deteriorated masonry.
- .2 Test joints not visually deteriorated as follows:
  - .1 Test for voids and weakness by using hammers or other approved means.
  - .2 Perform testing in co-operation with Departmental Representative so that unsound joints can be marked and recorded.

#### **3.3 REPAIR**

- .1 Perform work in accordance with CSA-A371.

#### **3.4 RAKING JOINTS**

- .1 Use manual raking or pre-approved small power tools (do not use saws) to remove deteriorated mortar to sound mortar 2 to 2 ½ times the thickness of the joint but in no case less than 25 mm leaving square corners and a flat surface at back of cut. Clean out voids and cavities encountered.
- .2 Use ONE pass with cutting tool down the centre of the mortar joint. Do not cut backwards or conduct more than one pass with cutting tool. Carefully chisel off remaining mortar out of joint by hand.
- .3 Remove dust at source using extraction method that will not allow dust to spread out onto the site. If suitable dust extraction is not able to be done at the source then provide hoarding to contain dust when cutting.

- .4 Work slowly and carefully to ensure that no masonry units are chipped, altered or damaged by work to remove mortar.
- .5 Clean by compressed air, with non-ferrous brush surfaces of joints without damaging texture of exposed joints or masonry units.

### **3.5 REPOINTING:**

- .1 Work from top down, protected from direct sun.
- .2 Dampen joints. No surface water shall be present on joint when pointing begins.
- .3 Keep masonry damp while pointing is being performed.
- .4 Keep pointing back from surface.. Avoid feather edges. Do not smear mortar on face of stone units. Use masking material on each side of joints to prevent smearing mortar on stone.
- .5 Tool and compact using jointing tool to force mortar into joint.
- .6 Build-up pointing in two layers. Allow each layer to set to fingernail hard before applying subsequent layers. Maintain joint width.
- .7 Tool joints as follows; tool mortar slightly back from face of stone 1 to 2 mm.
- .8 Once hardened to the point where a fingernail will make a small impression then finish joints by stippling them by striking with a stiff fibre brush to soften the texture of the joint and to match existing original mortar as closely as possible.
- .9 Remove excess mortar from masonry face before it sets.

### **3.6 RESETTING**

- .1 Reset stone masonry units to match original joint width.
- .2 Set stone on full-bed of mortar. Tool when set to a point when a slight depression can be made with a fingernail
- .3 Use stainless steel ties installed into the block back up where stone masonry is to be reinstated.

### **3.7 CLEANING**

- .1 Clean surfaces of mortar droppings, stains and other blemishes resulting from work of this contract as work progresses.
- .2 Clean mortar from stone using stiff natural bristle or nylon brush after mortar has obtained its initial set and has not fully cured (1 – 2 hours).
- .3 Clean masonry with stiff natural bristle brushes and plain water only if mortar has fully cured.

**3.8 PROTECTION OF COMPLETED WORK**

- .1 Cover completed and partially completed work not enclosed or sheltered at end of each work day.
- .2 Cover open top of stones with waterproof tarps to prevent weather from entering the wall cavity or eroding recently repointed material.
  - .1 Maintain tarps in place for minimum of 2 weeks after repointing.
  - .2 Ensure that bottoms of tarps permit airflow to reach mortar in joints.
- .3 Anchor coverings securely in position. Do not anchor directly onto building.
- .4 Shade areas of work from direct sunlight during periods over 25 degrees C, and maintain constant dampness of burlap.
- .5 Maintain ambient temperature of 10 degrees C for minimum of 4 weeks after repointing masonry.

**END OF SECTION**

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**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01 00 05 General Requirements.
- .2        Section 04 03 07 Masonry Repointing and Repair.

**1.2                MEASUREMENT PROCEDURES**

- .1        Refer to Bid Form for Unit Pricing. Base Unit Pricing on repair of 30 stone units using a “Fractured Stone” repair and 30 stone units using a “Dutchman” repair.
- .2        Where actual repair is less than or in excess of 30 “Fractured Stone” and 30 “Dutchman” repairs then the cost of the work will be adjusted in accordance with the per unit price provided with the Bid. This cost will include all associated costs of supplying materials, and executing work as described herein and reflected in contract.
- .3        Provide with Bid, a Per Unit Price for each repair method, that will apply to Stone Repair Work. The per unit price will be used for the evaluation of Bids.

**1.3                ALTERNATIVES**

- .1        Obtain Departmental Representative's approval before changing procedures, manufacturer's brands, sources of supply of materials during entire contract.

**1.4                REFERENCES**

- .1        American Society for Testing and Materials International (ASTM)
  - .1        ASTM C144-04, Standard Specification for Aggregate for Masonry Mortar.
- .2        Canadian Standards Association (CSA International)
  - .1        CAN/CSA A179-04, Mortar and Grout for Unit Masonry.

**1.5                DEFINITIONS**

- .1        Repair of Stone: mechanical or plastic repair, done to restore original appearance and function of partly deteriorated stones.
- .2        Filling: material used to rebuild broken or deteriorated part of stone.
- .3        Adhesive: material used to fasten broken/fractured stone elements by direct application at fracture interface and/or by application to added reinforcing elements such as dowels.
- .4        Mortar: material used to repoint the adjacent mortar joints to stone element being repaired.

**1.6                SUBMITTALS**

- .1        Provide submittals in accordance with Section 01 33 00 - Submittal Procedures .
- .2        Provide samples in accordance with Section 01 33 00 - Submittal Procedures .

- .3 Provide adhesive, mortar, filling samples.

### **1.7 QUALIFICATIONS**

.1 Masonry Contractor:

- .1 Use single Masonry Contractor for all masonry work.  
.2 Masonry contractor to have 5 years experience minimum in stone masonry repair work.

.2 Masons:

- .1 Mason to have 5 years minimum experience in stone masonry repair work.  
.2 Provide curriculum vitae of all individuals who will be working on site for the review by Departmental Representative when requested.

### **1.8 QUALITY ASSURANCE**

.1 Mock-ups:

- .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control .  
.2 Construct one mock-up of stonework to be repaired using “Dutchman” repair.  
.3 Construct one mock-up of stonework to be repaired using “Fractured Stone” repair.  
.4 Construct one mock-up of stonework to be refaced with specified materials and methods. (Filling of voids or missing pieces of stone)  
.5 Allow 48 hours for inspection of mock-up by Departmental Representative before proceeding with stone repair work.  
.6 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.  
.7 Clean mock-up to demonstrate cleaning operations to Departmental Representative before starting cleaning work.

### **1.9 DELIVERY, STORAGE AND HANDLING**

.1 Packing, shipping, handling and unloading:

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements .  
.2 Keep material dry. Protect from weather, freezing and contamination. Store materials in a dry area and supported free of ground.

.2 Waste Management and Disposal:

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal .

### **1.10 AMBIENT CONDITIONS**

- .1 Maintain a minimum temperature of 10 degrees C during and 48 hours after repair, throughout thickness of stone.  
.2 Allow materials to reach minimum temperature of 10 degrees C prior to use.

- .3 Maintain temperature between 21 degrees C and 24 degrees C during repair and 48 hours after, throughout thickness of stone.
- .4 Ensure epoxy resin compatible with humidity condition of stone as specified by manufacturer.
- .5 Provide temporary enclosures and heating equipment to maintain specified temperatures. Take precautions to avoid overheating masonry.
- .6 Refer to manufacturer's instructions for environmental requirements of products.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Epoxy mixture for adhesive:
  - .1 Thermo-setting epoxy – 2 component, 100% solids, solvent-free, high-modulus, high-strength, structural epoxy paste. To ASTM C-881, Types I and IV, Grade-3, Class B/C. For use in bonding of masonry to a maximum glue line of 3mm. Non-staining. Colour to match stone if possible.
- .2 Water: clean and free of deleterious materials such as acid, alkali and organic material in accordance to CAN/CSA A179.
- .3 Dowels: stainless steel 6 mm diameter by length to suit.

### **2.2 FILLING MIXES**

- .1 Proprietary products from King masonry products or Cathedral Stone for repair of stone are acceptable. Match colour to existing Tyndall stone. This is intended for use on small pockets where after the stone is repaired there is a small area of missing stone. It is not intended for building up of the fractured stone area to be repaired.
- .2 Submit product information.

## **Part 3 Execution**

### **3.1 SITE VERIFICATION OF CONDITIONS**

- .1 Report in writing to Departmental Representative areas of deteriorated stone not identified in the documents.
- .2 Obtain Departmental Representative's approval and instructions for repair and replacement of masonry units before proceeding with repair work.
- .3 Stop work in that area and report to Departmental Representative immediately any evidence of mould.

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### 3.2 REMOVAL OF STONE UNITS

- .1 Where repair in place is not practical or will not achieve good results then removal of the damaged unit will be required. Remove stones for repair in accordance with this specification.

### 3.3 LOOSENING STONES

- .1 Use approved methods to loosen stones which will cause no damage either to stones or to other architectural elements.
- .2 The use of a small hand held power tool will be allowed to cut a single reglet down the centre of each mortar joint to facilitate the removal of the existing grout. Prior to the use of the any power tools a demonstration of its use is required by the Consultant to ensure competency by the Contractor and acceptability for use on site.
- .3 Provide dust control if power tools are used for cutting of mortar joints. Use suction extraction right at tool with collector for dust. Do not allow dust to spread to site. If dust extraction at source is not practical then provide hoarding to control dust.
- .4 Obtain Consultant's approval for use of all power tools before commencing work.
- .5 In all other cases use hand tools only.

### 3.4 SPECIAL TECHNIQUES

- .1 Lift stone directly upward when removing. DO NOT tilt stone forward.
- .2 DO NOT damage arris of stone when removing mortar or freeing up stone unit. Use techniques that will prevent damage to the arris of the stone. Demonstrate technique to Departmental Representative.
- .3 Use soft wood wedges where required to remove or dislocate stone.
  - .1 Use flat pry bars protected with impact absorbing protection.
- .4 Use nylon hoisting belts. Use at least 2 belts per stone.
- .5 Avoid damaging edges of stone by protecting when hoisting and lifting from position. Use separators or soft wood shims to isolate units from hoisting belts.
  - .1 Where damage occurs, repair stone in accordance with these specifications.

### 3.5 HANDLING

- .1 Place detached stones on wood surfaces during handling. Prevent contact with metal.
- .2 When stones are lowered to ground, place directly on wooden pallets that will be used for storage.
- .3 Store stones vertically, do not stack stones. Prevent stones from contacting one another while they are in storage.
- .4 Ensure that sharp edges of stones do not come into contact with any hard object.

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**3.6 TEMPORARY STORAGE STAGING AREA**

- .1 Store stones in hoarded area adjacent to location on building from where they were removed.
- .2 Stones to be accessible and retrievable when required.

**3.7 PRELIMINARY WORK BEFORE RESETTING**

- .1 Remove excess mortar by using hand tools.
- .2 Clean stone and mortar dust off stone units prior to reinstallation.

**3.8 SCAFFOLDING**

- .1 Unless Contractor can illustrate that other methods to access stone units for the preparation, removal, repair and review of the stone to the approval of the Departmental Representative, then use scaffolding. Design and construct scaffolding in accordance with CSA S269.2.
- .2 Scaffolding is to accommodate and support hoist for stone. Hoist shall be able to accommodate X and Y axis movement so that stone can be pulled away from the face of the wall and moved to the side to be transferred to a pallet for storage.
- .3 Design scaffolding to accommodate all dead and live loads likely to be encountered during Work including environmental conditions. Submit shop drawings to consultant. Shop drawings are to bear seal and signature of qualified Professional licensed to practice in Saskatchewan.
- .4 Do not mechanically fasten any part of the scaffold to the existing building. In locations where the scaffolding may touch the building provide a protective material between the scaffolding and the building. Ensure this material prevents any damage including marking or staining to the stone, or other parts of the building.
- .5 Construct shoring and cradling, and other temporary framing work needed to support stones and work platforms during removal operations
- .6 Scaffolding is to remain in place until after stone is reinstalled and work has been approved by the Consultant.

**3.9 PREPARATION**

- .1 Carefully remove spalled or deteriorated portions of stones using low impact removal methods until sound surface is reached.
- .2 Clean dust and particles from stone face to be repaired. Use low pressure dry compressed air and soft bristle brush.
- .3 Examine fractured stone unit to determine suitability of repair method to be employed. Advise Departmental Representative of proposed method of repair for review by Departmental Representative.

**3.10 PROTECTION**

- .1 Prevent damage to building, trees and landscaping, and pavement. Make good all damage.

- .2 Protect surrounding components from damage during work.
- .3 Take utmost care not to damage stone, or masonry in place or to be removed. Make good any damage.
- .4 Obtain Departmental Representative's approval for repair methodology.

### **3.11 REPAIR OF A FRACTURED STONE**

- .1 This method is only to be used where a sound fractured stone face can be repaired back onto sound stone material using epoxy adhesive. Where stone condition is suspect or if fractured stone has feathered edges then use "Dutchman" repair method.
- .2 Where stone thickness allows drill 8 mm diameter holes in each section at fracture.
- .3 Insert 6 mm diameter dowels, by length to suit, and apply specified adhesive to holes and interface. Let adhesive cure for 4 hours minimum prior to undertaking further work on stone.
- .4 Reinstatement consolidated element into work and repoint with specified mortar. Joints to match existing.
- .5 Obtain Departmental Representative's approval for alternative repair methodology before commencing work.

### **3.12 REFACING PARTLY DETERIORATED STONE WITH INFILL "DUTCHMAN"**

- .1 Cut out deteriorated stone in rectangular shape the size of the widest portion of the deteriorated stone. Edges shall be cut straight and true. DO NOT overcut the stone leaving no saw marks in the stone to be repaired.
- .2 Cut a piece of stone from salvage or new material matching the colouration and patterning of the existing stone to be repaired. Size shall match the cut out.
- .3 Drill 8 mm diameter holes, 40 mm long at interface of existing and new stone slabs.
- .4 Insert 6 mm diameter stainless steel dowels, 75 mm long into existing stone and apply specified adhesive to holes and interface.
- .5 Fill dowel holes of new stone slab with specified adhesive. Apply adhesive in accordance with manufacturer's printed instructions onto both faces of each stone being careful to keep the adhesive back 6mm from the exposed face of the stone so that adhesive will not bleed out through seam of repaired stones.
- .6 Allow adhesive to set for minimum 4 hours before erecting stone slab into position. Secure stone temporarily to allow adhesive to set.
- .7 Repoint with specified mortar. Joints to match existing.

### **3.13 REFACING PARTLY DETERIORATED STONE WITH FILLING**

- .1 Where small pieces of stone have come loose or are missing fill depressions with proprietary stone patch material as specified.

- .2 Match colour of stone patch to existing stone.

**3.14 MORTAR JOINT REPAIR**

- .1 Make good any damage to mortar joints.
- .2 Where repointing is required mask stone on each side of joint to avoid coating existing stones with mortar. Remove masking after installing mortar.

**3.15 CLEANING**

- .1 Obtain Departmental Representative's approval of cleaning operations before starting cleaning work.
- .2 Protect plants, grass vegetation and adjacent grounds.
- .3 Clean stone work surfaces after repairs have been completed and mortar has set.
- .4 Use low pressure, dry compressed air (drain compressor to ensure no water in compressor) and natural bristle brush to clean stone masonry when complete. Do not use water unless approved by Departmental Representative.
- .5 Clean stone surfaces of adhesive or mortar residue resulting from work performed without damage to stone or joints.
- .6 Clear site of debris, surplus material and equipment, leaving work area in clean and safe condition.

**3.16 PROTECTION OF COMPLETED WORK**

- .1 Provide protection of finished work from ingress of water until new window replacement units are in place.

**3.17 REMOVAL OF STONE PANELS FOR SALVAGE**

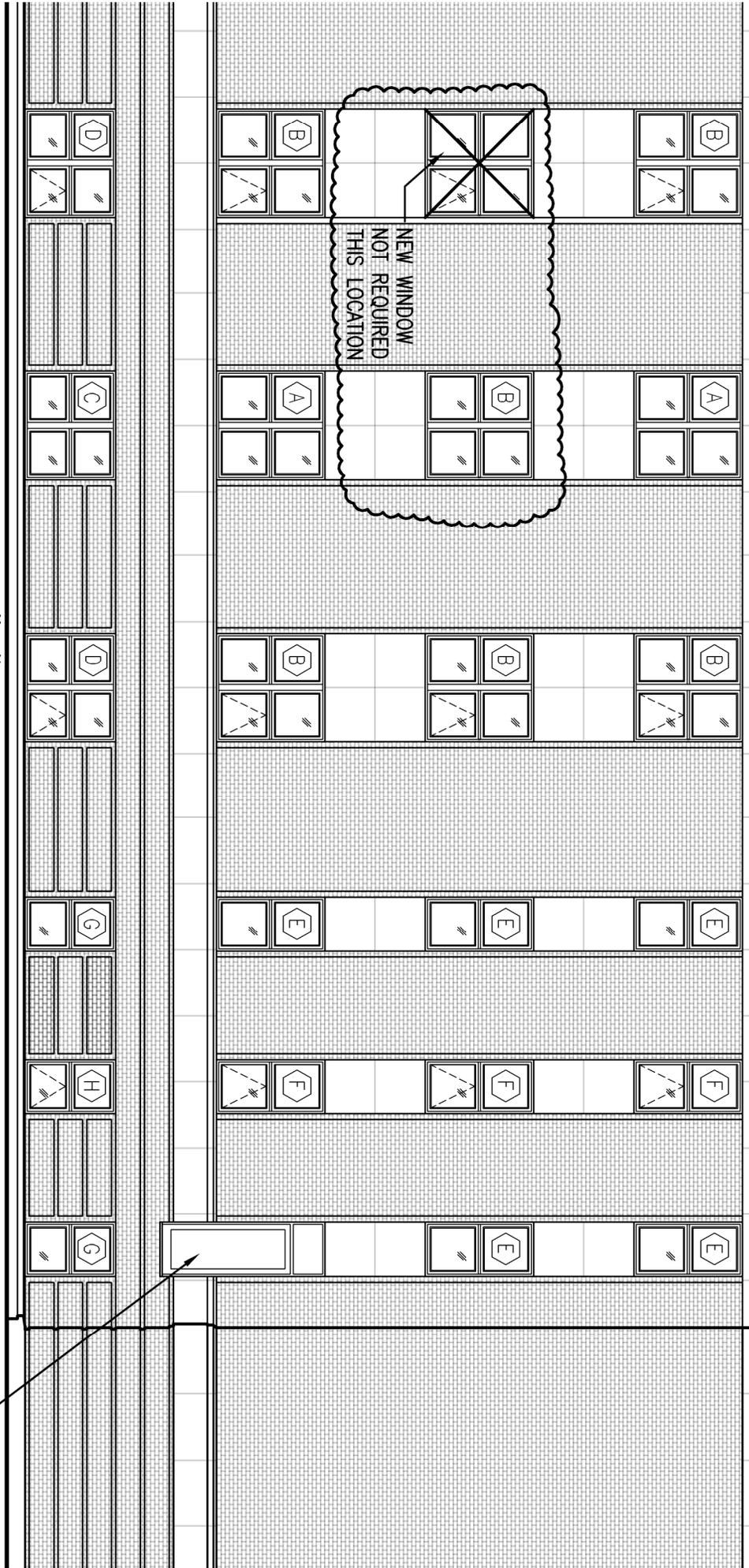
- .1 Up to four (4) existing stone panels may be utilized for repair of stones where Dutchman repair is undertaken. These can be removed at a location on the existing building as directed by the Departmental Representative.
- .2 Replace all salvaged removed stones with new Tyndall Stone units to match size and colouration. Provide stone samples for matching, to the Departmental Representative for approval.
- .3 Install new stones where full units are removed, using stainless steel anchors and mortar as specified.

**END OF SECTION**









4  
A2.2

**SOUTH ELEVATION WING "B"**

1:100



109 - 3725 Pasqua Street Regina, SK. S4S 0W8 ph: (306) 569-2285  
 204 - 2100 Airport Drive Saskatoon SK. S7L 6W6 ph: (306) 652-6457  
 website: www.sepwa.ca

PROJECT TITLE  
WINDOW REPLACEMENT

DRAWING TITLE  
PARTIAL SOUTH ELEVATION WING 'B'

DATE  
2013-12-20

PROJECT NO.  
32/2013

SCALE  
SHOWN

DRAWING NO.

DRAWN  
RP

CHECKED  
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**AR01**