Government of Canada
New Building
Issue for Tender
Elk Point, Alberta

Addendum No. 2

March 04, 2016

Stantec

The Bidding Documents are amended as noted in this Addendum, which consists of one (1) page and the following attachments:

1. Added Addendums:
    a. Architectural Addendum A-01, (2) pages, Dated March 4, 2016.
    b. Structural Addendum S-01, (1) pages, Dated March 4, 2016.
    c. Mechanical Addendum M-01, (1) page, Dated March 4, 2016.

This addendum is issued prior to bid closing to amend the bid documents. This Addendum will form part of the Contract Documents. Include in the Bid price all such revisions which will become part of the Work. Perform all such Work in accordance with the contract documents.

Acknowledge receipt of this Addendum by reference in the Bid Form submitted by the bidding Contractors. Ensure that all parties submitting bids are aware of all items included in this addendum.

END OF ADDENDUM NO. TWO

The Bidding Documents are amended as noted in this Addendum, which consists of two (2) pages and the following attachments:

1. Added Drawings:
    a. ASK-001 – Interview Section Detail, Dated 2016.03.04, (1) page.
    b. ASK-002 – Frame Types 08 71 00.01, Dated 2016.03.04, (1) page.
    c. ASK-003 – Glass Block Jamb Detail, Dated 2016.03.04, (1) page.
2. Specifications:
    a. Section 07 52 00 – MODIFIED BITUMINOUS MEMBRANE ROOFING, (14) pages.
    b. Section 08 36 13.02 – SECTIONAL METAL DOORS, (7) pages

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1.

SPECIFICATIONS

.1 Section 01 21 00 – Allowances

.1 Delete Section from specifications. Cash allowance is not to be included in the base bid.

.2 Section 01 29 83 – Payment Procedures For Laboratory Services

.1 Refer to page 1, Paragraph 1.2 - Appointment and Payment. Revise sentence .2 with the following; “The Departmental Representative will pay all costs for testing”.

.3 Section 08 71 00.01 – Door Schedule

.1 Refer to DR_SCH-11 – Frame Types 08 71 00.01. Revise as per ASK-002 attached to this addendum.

2. DRAWINGS

.1 Drawing A603 – Millwork Details

.1 Refer to detail 4/A603. Revise as per ASK-001 attached to this Addendum.

.2 Drawing A502 – Plan Details

.1 Refer to detail 5/A502. Revise as per ASK-003 attached to this Addendum.

.3 Drawing A001 – General Notes, Legends, Key Plan & A111 – Main Floor Plan

.1 Refer to Interior Partitions. Add the following Partition Types;

.1 F3.1 – RESERVED

.2 F4.1 - TYP. FURRING PARTITION
- 16mm TYPE X GYPSUM BOARD
- 152mm STEEL STUDS @ 400mm OC

END OF ARCHITECTURAL ADDENDUM NO. ONE

1 General

1.1 RELATED REQUIREMENTS

.1 Section 06 10 00 - Rough Carpentry

.2 Section 07 27 00.01 - Air/Vapour Barrier

.3 Section 07 62 00 - Sheet Metal Flashing and Trim

.4 Section 07 72 33 - Roof Access Hatch

.5 Section 07 92 00 - Joint Sealing

.6 Division 22 - Roof drains, vents, and flashings

.7 Division 23 - Counter flashing for mechanical equipment

1.2 REFERENCES

.1 ARCA: Alberta Roofing Contractors Association Manual.

.2 ASTM International Inc.
- .1 ASTM C1177/C1177M-13: Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
- .2 ASTM C1396/C1396M-14a: Standard Specification for Gypsum Board.
- .3 ASTM C1289-15: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- .4 ASTM D6162-00a(2015)e1: Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- .5 ASTM D6163-00(2015)e1: Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- .6 ASTM D6164/D6164M-11: Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

.3 Canadian General Standards Board (CGSB)
- .1 CGSB 37-GP-56M plus Amendments No. 1 and 2 dated October 1985: Standard for Membrane, Modified, bituminous, Prefabricated and Reinforced for Roofing.
- .2 CAN/CGSB-51.33-M89: Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.4 Canadian Standards Association (CSA International)
- .1 CSA A123.21-14: Standard Test Method for the Dynamic Wind Uplift Resistance of Mechanically Attached Membrane-Roofing Systems.

.5 CSC TEK.AID REFERENCE on Modified Bituminous Roofing 1993.

.6 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).

.7 Underwriters Laboratories' of Canada (ULC)
- .1 CAN/ULC-S101-14: Fire Endurance Tests of Building Construction and Materials.
- .2 CAN/ULC-S107-10: Fire Tests of Roof Coverings.
- .3 CAN/ULC S701-11: Thermal Insulation, Polystyrene, Boards and Pipe Covering.
- .4 CAN/ULC-S704-11: Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Convene pre-installation meeting one week prior to beginning roofing Work, with roofing contractor's representative, Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
- .1 Verify project requirements.
- .2 Review installation and substrate conditions.
- .3 Co-ordination with other building subtrades.
- .4 Review manufacturer's installation instructions and warranty requirements.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

- .1 Provide two copies of most recent technical roofing components data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements, and indicate VOC content for:
  - .1 Primers.
  - .2 Asphalt.
  - .3 Sealers.
  - .4 Filter fabric.

.3 Provide shop drawings:
- .1 Indicate flashing, control joints, tapered insulation details.
- .2 Provide layout for tapered insulation.

.4 Samples: submit four (4) samples 300 mm x 300 mm long pieces of each type of insulation.

.5 Manufacturer's Certificate: certify that products meet or exceed specified requirements.

.6 Test and Evaluation Reports: submit laboratory test reports certifying compliance of membrane with specification requirements.

.7 Manufacturer's Installation Instructions: indicate special precautions required for seaming the membrane.

.8 Manufacturer's field report: in accordance with Section 01 45 00 - Quality Control.

.9 Reports: indicate procedures followed, ambient temperatures and wind velocity during application.

1.5 QUALITY ASSURANCE

.1 Installer qualifications: company or person specializing in application of modified bituminous roofing systems approved by manufacturer with 5 years documented experience.

1.6 FIRE PROTECTION

.1 Fire Extinguishers:
- .1 Maintain one stored pressure rechargeable type with hose and shut-off nozzle,
- .2 ULC labelled for A, B and C class protection.
- .3 Size 14 kg on roof per torch applicator, within 6 m of torch applicator.

.2 Maintain fire watch for 1 hour after each day's roofing operations cease.

1.7 DELIVERY, STORAGE, AND HANDLING

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

.2 Storage and Handling Requirements:
- .1 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of asphalt, sealing compounds, primers and caulking materials.
- .2 Provide and maintain dry, off-ground weatherproof storage.
- .3 Store rolls of membrane in upright position. Store membrane rolls with salvage edge up.
- .4 Remove only in quantities required for same day use.
- .5 Place plywood runways over completed Work to enable movement of material and other traffic.
- .6 Store sealants at +5 degrees C minimum.
- .7 Store insulation protected from daylight and weather and deleterious materials.

1.8 SITE CONDITIONS

.1 Ambient Conditions
- .1 Do not install roofing when temperature remains below -18 degrees C for torch application, or to manufacturers' recommendations.
- .2 Minimum temperature for solvent-based adhesive is -5 degrees C.

.2 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.9 WARRANTY CERTIFICATE

.1 Provide a written warranty certificate (WC) in the name of the Departmental Representative using ARCA standard form Warranty Certificate, stating that the roofing system, including flashing, will remain weather tight for a minimum period of five (5) years from date of Substantial Performance of the Work, and that any and all damage resulting from failure to provide above stated performance will be repaired to the satisfaction of the Departmental Representative at no additional cost.

.2 At 2nd anniversary of Substantial Performance of the Work, provide independent ARCA accepted roofing inspector to inspect the roofing. Repair or remedy all deficiencies noted in the ARCA accepted roofing inspector's report, to the satisfaction of the ARCA accepted roofing inspector, at no cost to the Departmental Representative.

2 Products

2.1 PERFORMANCE CRITERIA

.1 Compatibility between components of roofing system is essential. Provide written declaration to Departmental Representative stating that materials and components, as assembled in system, meet this requirement.

.2 Roofing System: to CSA A123.21 for wind uplift resistance.

2.2 DECK COVERING

.1 Glass Matt faced Gypsum sheathing: to ASTM C1177/C1177M, glass matt faced silicone treated core gypsum board, as recommended by the roofing membrane manufacturer; 12.7 mm thick.

2.3 DECK PRIMER

.1 Asphalt primer: to CGSB 37-GP-9Ma and as recommended by the membrane manufacturer.

2.4 AIR/VAPOUR BARRIER

.1 Self adhesive air/vapour barrier modified bitumen membrane, of type as recommended by the roofing membrane manufacturer.

2.5 MEMBRANE

.1 Base sheet: to CGSB 37-GP-56M, polyester fibres to ASTM D6164 or glass fibres to ASTM D6163.

.1 Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, non-woven fibreglass reinforcement or 180 g/m^2 non-woven polyester reinforcement, 2.6 mm to 3 mm thickness.

.2 Type 2, fully self adhered.
.3 Class C - plain surfaced.
.4 Grade 2 - heavy duty service.
.5 Top and bottom surfaces:
  .1 Thermofusible plastic film/self adhering with release paper.
.6 Base sheet membrane properties: to CGSB 37-GP-56M.
  .1 Strain energy (longitudinal/transversal): 8.4/8.3 kN/m.
  .2 Tensile strength (longitudinal/transversal): 18/16 N/5 cm.
  .3 Ultimate elongation (longitudinal/transversal): 55/56 %.
  .4 Tear resistance: 12 N.
  .5 Cold bending at -30 degrees C : no cracking.
  .6 Softening point: ≥ 110 degrees C.
  .7 Static puncture resistance: 380.
  .8 Dimensional Stability: 0.1 / 0.4 %.
.7 ULC certification: Class A.

.2 Cap sheet membrane: to CGSB 37-GP-56M polyester fibres to ASTM D6164.
  .1 Styrene-Butadiene-Styrene(SBS) elastomeric polymer, prefabricated sheet, polyester reinforcement, having nominal weight of 250 g/m^2, 4 mm thickness.
  .2 Type 1, fully adhered.
  .3 Class A-slate granule surfaced.
  .4 Grade 2-heavy duty service.
  .5 Bottom surface: thermofusible plastic film.
  .6 Top surface slate granules, colour to be as selected by the Departmental representative from the manufacturer's standard range. Note: use a different coloured granule to roof walkways.
  .7 Cap sheet membrane properties: to CGSB 37-GP-56M.
    .1 Strain energy (longitudinal/transversal): 10/10 kN/m.
    .2 Breaking strength (longitudinal/transversal): 18/16 kN/m.
    .3 Ultimate elongation (longitudinal/transversal): 60/65 %.
    .4 Tear resistance: 75 N.
    .5 Cold bending at -30 degrees C: No cracking.
    .6 Softening point: ≥ 110 degrees C.
    .7 Static puncture resistance: 420.
    .8 Dimensional Stability: -0.8 / -0.2 %.
  .8 ULC certification: Class A.

2.6 ADHESIVE

.1 Adhesive (for insulation and roof underlay board over air/vapour barrier): as recommended by the manufacturer and as approved by ARCA to withstand all superimposed loading, including wind uplift and meeting the requirements of CAN/CSA-A123.21. Ensure adhesive is compatible with insulation, air/vapour barrier and roof underlay board.

2.7 OVERLAY BOARD

.1 Overlay Board: glass faced gypsum roof board conforming to ASTM C1177/C1177M, 12.7 mm thickness, 1220 mm x 2440 mm sized sheets, acrylic coated and glass mat surfacing, moisture resistant; as acceptable to the roofing membrane manufacturer.
.1 Install over insulation to provide torch safe surface.

2.8 TAPERED EXPANDED POLYSTYRENE INSULATION

.1 Tapered Rigid polystyrene insulation: conforming to CAN/ULC-S701, taper sloped to achieve roof backslopes as indicated, square edges, polystyrene board type 2, Class B. Bead board, density approximately 16 kg/m^3.

2.9 POLYISOCYANURATE INSULATION

.1 Polyicocyanurate Insulation: conforming to CAN/ULC-S704, rigid roof insulation board consisting of a polyisocyanurate foam core bonded chemically in the manufacturing process to glass fibre and other facings which are compatible to roofing membrane, 25 lb density; aged RSI value of 1.06 per 25.4 mm thickness; thickness as indicated. Install in maximum 50 mm thick layers, to achieve RSI value as indicated on the drawings. All insulation supplied for this project must have 3rd party certification that it meets the requirements of CAN/ULC-S704, type 2, Class 3. Ensure that insulation is date stamp on date of manufacture, and that the insulation is not installed until 3 months after it has been manufactured. Provide minimum 50 mm thickness of polyisocyanurate on to top layer of all insulation assemblies.

.2 Determine Long Term Thermal Performance (LTTR) of polyisocyanurate insulations in accordance with CAN/ULC-S770.

2.10 SEALERS

.1 Plastic cement: asphalt.

.2 Sealing compound: rubber asphalt type.

.3 Sealants: see Section 07 92 00 - Joint Sealants.

2.11 WALKWAYS

.1 Walkways to consist of one additional ply of cap sheet membrane. Colour to be different from field membrane as selected by Departmental Representative.

2.12 CARPENTRY

.1 Refer to Section 06 10 00 - Rough Carpentry.

2.13 FASTENERS

.1 Covering to steel deck: No. 10 flat head, self tapping, Type A or AB, cadmium plated screws. Recommend FM Approved screw and plate assemblies.

3 Execution

3.1 QUALITY OF WORK

.1 Do examination, preparation and roofing Work in accordance with Roofing Manufacturer's Specification Manual and Alberta Roofing Contractors Association Manual.

.2 Do priming in accordance with manufacturers written recommendations.

.3 The interface of the walls and roof assemblies will be fitted with durable rigid material plywood providing connection point for continuity of air barrier.

.4 Assembly, component and material connections will be made in consideration of appropriate design loads.

3.2 EXAMINATION OF ROOF DECKS

.1 Verification of Conditions:
- .1 Inspect with Departmental Representative deck conditions including parapets, construction joints, roof drains, plumbing vents and ventilation outlets to determine readiness to proceed.

.2 Evaluation and Assessment:
- .1 Prior to beginning of work ensure:
  - .1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris. Do not use calcium or salt for ice or snow removal.
  - .2 Curbs have been built.
  - .3 Roof drains have been installed at proper elevations relative to finished roof surface.
  - .4 Plywood and lumber nailer plates have been installed to deck, walls and parapets as indicated.

.3 Do not install roofing materials during rain or snowfall.

3.3 PROTECTION OF IN-PLACE CONDITIONS

.1 Cover walls, walks and adjacent work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of Work.

.3 Clean off drips and smears of bituminous material immediately.

.4 Dispose of rain water off roof and away from face of building until roof drains or hoppers installed and connected.

.5 Protect roof from traffic and damage. Comply with precautions deemed necessary by Departmental Representative.

.6 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.

.7 Metal connectors and decking will be treated with rust proofing or galvanization.

3.4 PREPARATION OF STEEL DECK (CHANNEL TYPE)

.1 Steel decking will be treated with rust proofing or galvanization.

3.5 DECK SHEATHING

.1 Mechanically fasten to steel deck Glass Mat Gypsum Board with screws to steel deck's upper rib surfaces, spaced 400 mm on centre each way and to meet the requirements of CAN/CSA-A123.21.

.2 Place with long axis of each sheet transverse to steel deck ribs, with end joints staggered and fully supported on ribs.

3.6 PRIMING DECK

.1 Apply deck primer to glass mat gypsum board roofing substrate at the rate recommended by manufacturer.

3.7 AIR/VAPOUR BARRIER

.1 Before installing membrane to substrate in final position, allow the membrane to relax. Position membrane without stretching.

.2 Install self-adhered membrane to manufacturer's directions. Apply a bead of sealant along edge of lower leaf of lap, if temperature or other conditions prevent satisfactory seal to the poly sheet surface.

.3 Apply heavy pressure to membrane at top and bottom terminations of each sheet, using roller as recommended by the manufacturer, to assure positive adhesion at the edge. Apply pressure over entire area, using small roller.

.4 All side laps to be minimum 65 mm and all end laps to be 150 mm minimum.

.5 Carefully plan the installation in advance to avoid excessive layering of the membrane at laps and change in direction bends that will compromise the proper installation of later materials and components. Offset laps so as not to thicken membrane.

.6 Completely adhere the entire membrane to the substrate after application of primer, and roll with a weighted roller, in accordance with the manufacturer's instructions. Install membrane to achieve smooth wrinkle free surfaces, completely bonded to the substrate, without air entrapment.

.7 Ensure complete coverage of (and adhesion to) all substrates to receive air/vapour barrier membrane, including all wall protrusions. Ensure co-operation of other trades to obtain continuity of the membrane.

.8 Apply membrane so the horizontal joints overlap with the upper sheet over the lower sheet, shingle style.

.9 Overlap wall air/vapour barrier membrane minimum 150 mm and completely and continuously seal in place to maintain continuity of the air/vapour barrier at wall/roof junctions. Coordinate with Section 07 27 00.01.

.10 Inspect membrane thoroughly before covering and immediately make any corrections or modifications required. Misaligned or inadequately lapped seams, punctures, fishmouths or other damage must be repaired with patch of membrane extending minimum 150 mm in all directions from edge of damaged area. Seal all edges of the patch with mastic. Slit fishmouths prior to repair with a membrane patch.

3.8 INSTALLATION/INSULATION (FULLY ADHERED)

.1 Insulation: fully adhered, adhesive application:

.2 Install insulation over air/vapour barrier, fully adhered over air/vapour barrier membrane in accordance with manufacturer's directions, using manufacturers and ARCA recommended adhesive and to meet CSA A123.21 and ARCA wind uplift requirements.

.3 Install sloped polystyrene insulation over air/vapour barrier as indicated, to provide positive slopes to drains in accordance with the reviewed shop drawings and in accordance with manufacturer's specifications and recommendations to achieve uniform slopes to drains. Follow numbering of insulation boards corresponding to the manufacturer's shop drawing for location of boards. Place boards with joints in line each way.

.4 Cut and trim insulation boards to provide plain butt joints at perimeter, parapet, curbs and the like. Lay insulation boards in parallel courses, butted together in moderate contact without gaps, with staggered end joints.

.5 Install flat insulation over tapered insulation, in maximum 50 mm thickness layers to achieve total thickness indicated on the drawings. Stagger joints of flat insulation from joints in sloped insulation below. Fully adhere each layer of insulation using specified adhesive, in accordance with manufacturer's directions, using manufacturers and ARCA recommended adhesive and to meet CSA A123.21 and ARCA wind uplift requirements.

.6 Lay multiple layers of insulation with joints offset minimum 300 mm from underlying layer.

.7 Fill gaps over 10 mm wide, with foam in place insulation.

.8 Install fibreglass faced gypsum board insulation overlay board over all roof insulation. Lay fibreglass faced gypsum board in parallel courses with the end joints staggered a minimum of 300 mm. Apply fibreglass faced gypsum insulation overlay board, butt

ends and edges tightly together ensuring complete coverage of insulation and providing a sound uniform surface for membrane application. Use the same care in installation as specified for insulation. Fully adhere each layer of fibreglass faced gypsum board insulation overlay board in accordance with manufacturer's directions, using manufacturers and ARCA recommended adhesive and to meet CSA A123.21 and ARCA wind uplift requirements.

3.9 INSTALLATION/ROOFING MEMBRANE - GENERAL

.1 Install two ply prefabricated and elastomeric bituminous membrane to roof surfaces.

.2 Provide a smooth applications, free of air pockets, wrinkles, fishmouths and tears. Provide a 6 mm bleed out to ensure seal at laps.

.3 Seal around all protrusions through the roof membrane including in accordance with manufacturer's recommendations to form a waterproof seal.

3.10 INSTALLATION/SELF ADHERED BASE SHEET

.1 Ensure that substrates are dry, smooth, even, fully adhered, and primed where required.

.2 Start at slope bottom, unroll each roll dry onto insulation overlay board. Do not immediately remove protective film on paper. Let stand for a few minutes before re-rolling.

.3 Where adhesive is site applied, apply adhesive to insulation overlay board at rate as recommended by the manufacturer. Spread adhesive to areas which can be covered with membrane within the open time allowable for the adhesive. Ensure that membrane is completely adhered to insulation overlay substrate.

.4 Once aligned, re-roll both ends towards the centre.

.5 Using the tip of a sharp blade, cut through surface of protective film without cutting membrane.

.6 Remove small length of protective film and unroll exposed membrane for initial adherence. Continue removing protective film and advance roll onto insulation overlay board deck. Ensure surface remains smooth. Avoid wrinkling or warping. If roll is not properly aligned, do not push to one side or another. Instead, cut roll and realign properly. Overlap end joints minimum 150 mm.

.7 Overlap adjacent rolls 80 mm by removing protective film from top face of side laps. Do not remove protective film before installation, to avoid accumulation of any debris on exposed roll. Overlap all end joints by 150 mm. Stagger end laps minimum 300 mm.

.8 Complete base sheet adhesion to insulation overlay board by rolling over the entire surface as it is installed with 34 kg rollers; roll along each centre and each overlap and finish along sides by aligning roller edge to lower part of overlap. Watch for air pockets beneath end joints. Do not lance; instead, roll air toward edge of seams. Torch weld all parts of overlaps not coated with self adhesive bitumen.

.9 End self-adhesive base sheet a minimum 25 mm along vertical face of upstands.

.10 Obtain review of the base membrane by the roofing inspector prior to placement of any cap sheet.

3.11 INSTALLATION/BASE STRIPPING

.1 Before primer application, remove thin poly film on surface of base sheet with a light torch to prepare surface for overlap zone of self-adhesive membrane.

.2 Apply base sheet flashing only once primer coat is dry.

.3 Install fireguard tape in strict accordance with ARCA requirements.

.4 Install base sheet flashing in metre widths and lapped 100 mm onto roof base sheet. Overlap side laps by 75 mm. Stagger side laps by at least 225 mm from base sheet overlaps on roof to avoid excessive layering.

.5 Continue length of membrane to run up adjacent plywood sheathing and over the top of parapet or curb and down opposite vertical face.

.6 At parapets, extend the flashing base sheet, across the top, flat portion of the parapet and extending 50 mm down the outside wall.

.7 Partially remove release sheet from underside and adhere at vertical junction with membrane pressed tightly into angle changes. Continue to remove release sheet while smoothing membrane onto substrate and ensuring uniform contact. Use a roller over entire surface to complete application.

.8 Nail membrane to substrate with round-top nails according to ARCA guidelines.

.9 Install membrane gussets at all inside and outside corners. Heat membrane surface and press gusset into place.

.10 Torch and trowel membrane edges on vertical and horizontal overlaps to complete waterproof seal.

3.12 INSTALLATION/CAP SHEET (TORCH APPLIED)

.1 Install the cap sheet no later than seven (7) days from the date of installation of base membrane, unless otherwise directed by the Departmental Representative. Do not leave any portion of the base membrane exposed without cap sheet for longer than the specified time.

.2 Do not leave any portion of the base membrane exposed without cap sheet for longer than the specified time.

.3 Prior to cap sheet application, have the manufacturers representative inspect and approve base sheet and base flashing application.

.4 Lay rolls such that minimum end lapping is achieved, throughout the work. Use full rolls wherever possible to reduce to a minimum end laps.

.5 Over the membrane base sheet, fully torch the membrane cap sheet. Lap side joints 90 mm and end joints 150 mm. Stagger end joints and stagger joints between plies of membrane so that at no location will the distance between joints of the bottom ply and the top ply be minimum 300 mm. Stagger end laps no less than 1800 mm.

.6 Torch apply cap sheet in straight even rows, and in the same direction as the base membrane, using torches approved by the membrane manufacturer, and approved mechanics. Ensure that torch heat is sufficient to totally bond cap sheet to base membrane but not so hot as to excessively liquidize, melt, leach out or oxidize the bitumen.

.7 Ensure that the cap sheet selvage is fully covered by each adjacent cap sheet. Exposed selvage is considered a deficiency.

3.13 CAP SHEET STRIPPING

.1 Upon completion of cap sheet install cap sheet stripping.

.2 Do not exceed 1 m width for stripping.

.3 Install one ply of stripping using a self adhered membrane to the vertical surfaces, down to bottom of vertical surface, and extending onto the flat of the roof a minimum of 150 mm from the bottom of the vertical surface.

.4 Stagger joints of the flashing cap sheet and membrane cap sheet a minimum of 300 mm.

.5 Terminate cap sheet stripping a minimum of 75 mm onto top of parapet. Trowel seal leading edge of membrane. Extend cap sheet stripping up vertical surfaces no less than 200 mm, and wrap over curbs, parapets, roof edges, and the like. Lap side joints no less than 75 mm. To walls around roof hatch locations and the like, extend cap sheet stripping to top of wall.

.6 Nail through the top of the completed flashings where indicated, using large head galvanized nails at 150 mm oc. Locate nails not closer than 50 mm from the top edge of membrane flashings.

.7 Ensure the cap sheet stripping selvage is fully covered by each adjacent cap sheet stripping. Exposed selvage is considered a deficiency.

3.14 EXPANSION JOINTS

.1 Construct expansion joints as detailed on the drawings, using expansion joint membrane specified. Install in strict accordance with manufacturer’s recommendations.

3.15 INSTALLATION/ROOF DRAINS, VENTS & FLASHINGS

.1 Supply roof drains, vents and flashings, set in place and connected as part of the work specified under Division 22.

.2 Ensure the drain outlet will not be above the general level of the completed roof membrane and will permit drainage of all water from the roof.

.3 Use base sheet drain cover patch for flashing roof drains.

.4 Prime top surface of flange or metal flashing and allow 24 hours to dry.

.5 Set flange or metal flashing in manufacturer's recommended adhesive and secure in place.

.6 Over flange or metal flashing, apply 1 m square of flashing base sheet (centered over drain or protrusion) and fully torch in place.

.7 Caulk between the plies and the clamping ring with flexible seal caulking.

.8 Apply a bead of flexible seal caulking between the membrane and the metal flashing to direct water away from the joint.

3.16 WALKWAYS

.1 Apply manufacturer’s recommended primer onto surfaces of cap sheets within boundaries of walkway membrane.

.2 Install walkways consisting of an extra layer of cap sheet with a accent coloured of granule as selected by the Departmental Representative. Torch on the extra cap sheet to all areas where walkways are indicated. Walkways are to be of a uniform width of minimum 760 mm unless indicated otherwise, and are to be straight and true to line.

3.17 FIELD QUALITY CONTROL

.1 Inspections:

.1 Inspection and testing of roofing application will be carried out by testing laboratory designated by Departmental Representative.
.2 Departmental Representative will pay for tests as specified in Section 01 45 00 - Quality Control.
.3 Inspection and testing of roofing application will be carried out by testing laboratory designated by Departmental Representative.

3.18 CLEANING

.1 Remove bituminous markings from finished surfaces.

.2 In areas where finished surfaces are soiled caused by work of this section, consult manufacturer of surfaces for cleaning advice and complying with their documented instructions.

.3 Repair or replace defaced or disfigured finishes caused by work of this section.

END OF SECTION

1 General

1.1 RELATED REQUIREMENTS

.1 Section 05 50 00 - Metal Fabrications

.2 Section 09 91 13 - Exterior Painting

.3 Section 09 91 23 - Interior Painting

.4 Division 26 - Electrical Hookup

1.2 REFERENCES

.1 ASTM International
- .1 ASTM A123/A123M-13: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A385/A385M-11: Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip).
- .3 ASTM A653/A653M-15: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .4 ASTM A924/A924M-13: Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- .5 ASTM A1008/A1008M-13: Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- .6 ASTM D6386-10: Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting.

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Pre-Installation Meetings:
- .1 Convene pre-installation meeting 1 week prior to beginning work of this Section, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
  - .1 Verify project requirements.
  - .2 Review installation and substrate conditions.
  - .3 Co-ordination with other construction subtrades.
  - .4 Review manufacturer's written installation instructions and warranty requirements.

.2 Arrange for site visit with Departmental Representative prior to start of Work to examine existing site conditions adjacent to demolition Work.

1.4 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 doors, hardware, and accessories, electrical operators and accessories and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:
.1 Indicate sizes, service rating, types, materials, operating mechanisms, glazing locations and details, hardware and accessories, required clearances and electrical connections.

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

.5 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

.6 Manufacturers Reports:
.1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in Part 3 - FIELD QUALITY CONTROL.

1.5 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for sectional metal doors for incorporation into manual.

1.6 MAINTENANCE MATERIAL SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

1.7 QUALITY ASSURANCE

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

1.8 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
.2 Store and protect sectional metal doors, hardware and accessories from nicks, scratches, and blemishes.
.3 Replace defective or damaged materials with new.

2 Products

2.1 DESIGN CRITERIA

.1 Design exterior door assembly to withstand wind load as outlined in the Alberta Building Code 2014 and National Building Code of Canada 2010, for the Elk Point area with a maximum horizontal deflection of 1/240 of opening width.

.2 Design door panel assemblies with thermal insulation factor 1.25 RSI minimum.

.3 Design door assembly to withstand minimum 100,000 total life cycle.

2.2 MATERIALS

.1 Steel sheet: commercial quality sheet steel to ASTM A653/A653M with Z275 designation zinc coating to ASTM A924/A924M.
  .1 To Secure Bay Doors and Garage Doors: 1.6 mm thick for the exterior door skin and 1.2 mm for the interior door skin.

.2 Primer: polyvinylidene fluoride (PVF2) or to CAN/CGSB-1.181-99.

.3 Insulation: polyurethane foam board with RSI value of 2.46 at 24°C.

.4 Primer: to CAN/CGSB-1.181, for galvanized steel surfaces.

.5 Cable: multi-strand galvanized steel aircraft cable.

2.3 DOORS

.1 Secure Bay Door and Garage Bays:
  .1 Type: fully insulated flush steel sectional.
  .2 Door Sections: 1.6 mm roll formed rails, stiles and muntins faced with 1.6 mm sheet; or 1.6 mm roll formed sections with vertical stiffeners at ends and 305 mm oc maximum at intermediate spacings.
  .3 Insulation: fully insulated.
  .4 Backing: 1.2 mm thick sheet.
  .5 Overall door thickness: 45 mm minimum.
  .6 Fasteners:
    .1 Door exterior: rivetted to stiles and stiffeners.
    .2 Door Interior: rivetted to stiles and stiffeners.
  .7 Finish: shop coat primer after fabrication.

.2 Assemble components by means of spot or arc welding or coated rivet system or adhesive and self tapping screws to manufacturer's recommendations.

.3 Apply shop coat of primer after fabrication of door.

2.4 HEAVY DUTY INDUSTRIAL HARDWARE

.1 Track: standard lift, unless low head room hardware is required, with 75 mm size 2.66 mm core thickness galvanized steel track.

.2 Track Supports: 2.3 mm core thickness continuous galvanized steel angle track supports.

.3 Spring counter balance: heavy duty oil tempered torsion spring with manufacturers standard brackets.
- .1 Drum: 200 mm diameter.
- .2 Shaft: 32 mm diameter galvanized steel.

.4 Top roller carrier: galvanized Steel 3.04 mm thick adjustable.

.5 Rollers: full floating grease packed hardened steel, ball bearing 75 mm diameter solid steel tire.

.6 Roller brackets: adjustable, minimum 2.5 mm galvanized steel.

.7 Hinges: heavy duty, 3.04 mm thick as recommended by manufacturer, galvanized.

.8 Cable: 6 mm diameter galvanized steel aircraft cable.

.9 Garage door latching and locking mechanism (no key):
- .1 Cremone bolt function mounted on the inside of a lower section to engage with steel track of each side of door. Provide rigid bar linkage; chain or cable linkage not acceptable.

2.5 OPERATORS/OVERHEAD DOORS

.1 Equip doors for operation by:
- .1 Equip overhead doors for operation by electrical operator, c/w safety manual release.

.2 Electrical motors, controller units, remote pushbutton stations, relays and other electrical components: to CSA approval with CSA general type enclosure.

.3 Power supply: 208 V, 3 phase, 60 Hz; 3/4 HP.

.4 Controller units with integral motor reversing starter, 3 heater elements for overload protection, including 3 pushbuttons and control relays as applicable.

.5 Provide a combination roll rubber safety switch for the full length of the bottom rail of the bottom section of door, enabling the door to reverse to open position when coming in contact with an object on the closing cycle.

.6 Garage Bay Operation:
- *.1 Standard Garage Bay*
  - *.1 Interior Operation:*

.1 Remote pushbutton stations: NEMA 1, flush mounted, adjacent to each door, with "OPEN-STOP-CLOSE" "SECURITY LOCKOUT" designations on pushbuttons in English. 24 V.

.2 Room 144 Operation:

.1 Exterior Operation

.1 Remote pushbutton stations: mounted on exterior concrete pedestal, with "OPEN-STOP-CLOSE" "SECURITY LOCKOUT" designations on pushbuttons in English. Key operated Model No. KY-293 supplied by Square D Company, 2487 Kardar Avenue, Ottawa, Ontario, or CAMDEN C1-1 KXS. Abloy CY403 cylinder to be provided by Division 08 hardware supplier.

.2 Interior Operation:

.1 Remote pushbutton stations: with "OPEN-STOP-CLOSE" "SECURITY LOCKOUT" designations on pushbuttons in English. Key operated Model No. KY-293 supplied by Square D Company, 2487 Kardar Avenue, Ottawa, Ontario, or CAMDEN C1-1 KXS. Abloy CY403 cylinder to be provided by Division 08 hardware supplier.

.7 Manual safety release: wire cable leading from door panel to drive yoke, when pulled, during power failure, to free door for manual operation.

.8 Door speed: 300 mm per second.

.9 For trolley operators:

.1 Attach operator to door with quick release device to disconnect door from operator in event of power failure.

.10 Control transformer: for 24 V AC control voltage.

2.6 ACCESSORIES

.1 Overhead horizontal track and operator supports: galvanized steel, type and size to suit installation.

.2 Track guards: 5 mm thick formed sheet 1500 mm high track guards.

.3 Pusher springs.

.4 Weatherstripping:

.1 Sill: double contact bulb type extruded neoprene weatherstrip for door sill section, full width.

.2 Jambs and Head: extruded aluminum and arctic grade vinyl weatherstrip for jambs and head, to manufacturer's standard.

.5 Finish ferrous hardware items with minimum zinc coating of 300 g/m^2 to ASTM A123/A123M.

3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for sectional metal doors 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 INSTALLATION

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

.2 Install doors and hardware in accordance with manufacturer's instructions.

.3 Rigidly support rail and operator and secure to supporting structure.

.4 Touch-up steel doors with primer where galvanized finish damaged during fabrication.

.5 Install operator including electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for door operation. Coordinate electrical hookup to operators. Provide all wiring, conduit, and equipment from beyond the junction box provided by the Electrical Subcontractor, and connect all wiring to the junction box to provide a complete, operational installation. Set motors, controls and operators and wire low-voltage system.

.6 Lubricate and adjust door operating components to ensure smooth opening and closing of doors.

.7 Adjust weatherstripping to form a weather tight seal.

.8 Adjust doors for smooth operation.

3.3 FIELD QUALITY CONTROL

.1 Manufacturer's Field Services:
  .1 Obtain written reports from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product within 3 days of review.
  .2 Submit manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
  .3 Ensure manufacturer's representative is present before and during critical periods of installation and testing.

.4 Schedule site visits to review Work at stages listed:
.1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
.2 Twice during progress of Work of this Section at 25% and 60% complete.
.3 Upon completion of Work, after cleaning is carried out.

3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
.1 Remove traces of primer; clean doors and frames.
.2 Clean glass and glazing materials with approved non-abrasive cleaner.

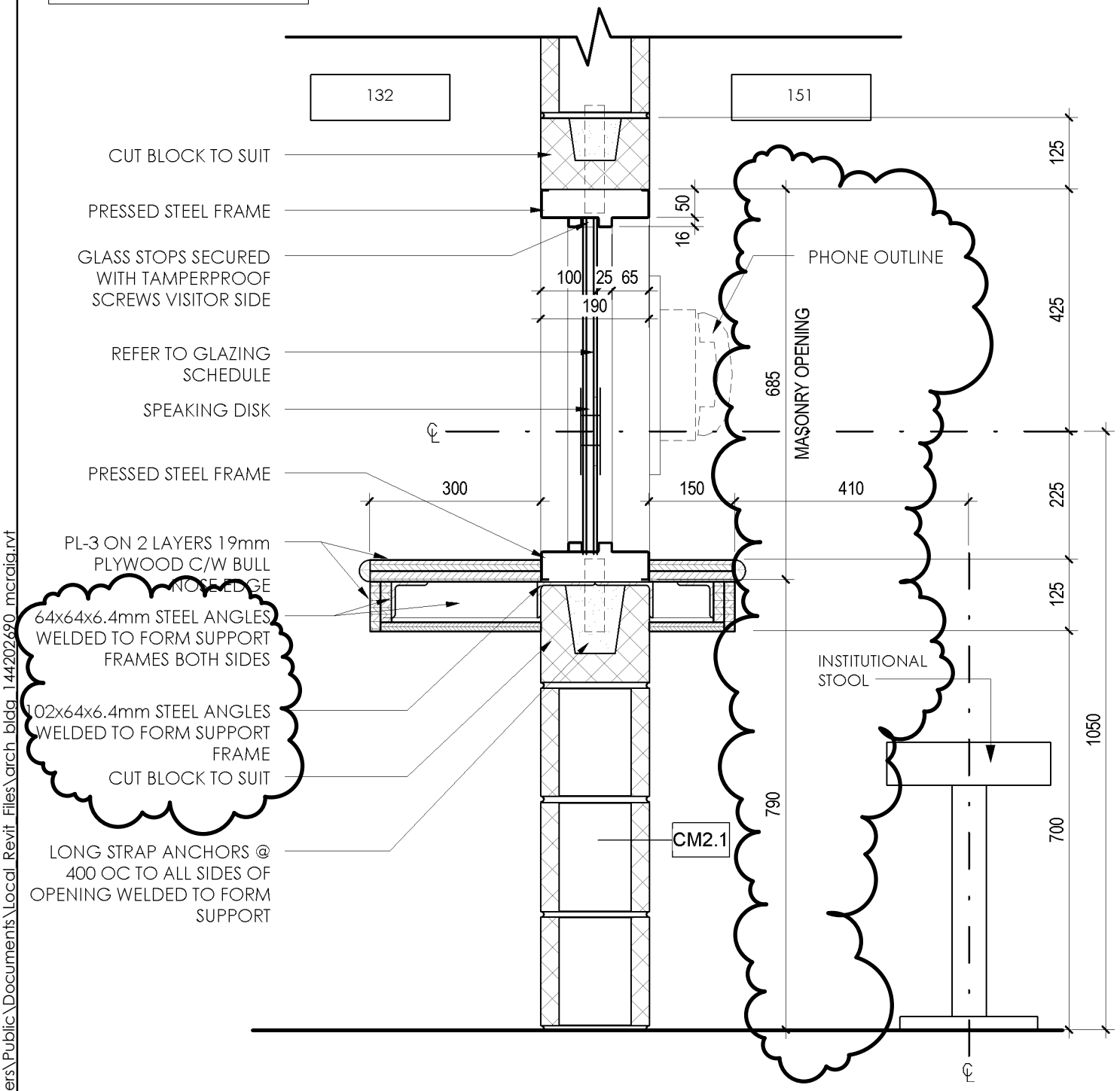
3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by sectional metal door installation.

END OF SECTION

NOTE:
ONLY TAMPER PROOF
SCREWS ARE TO BE USED



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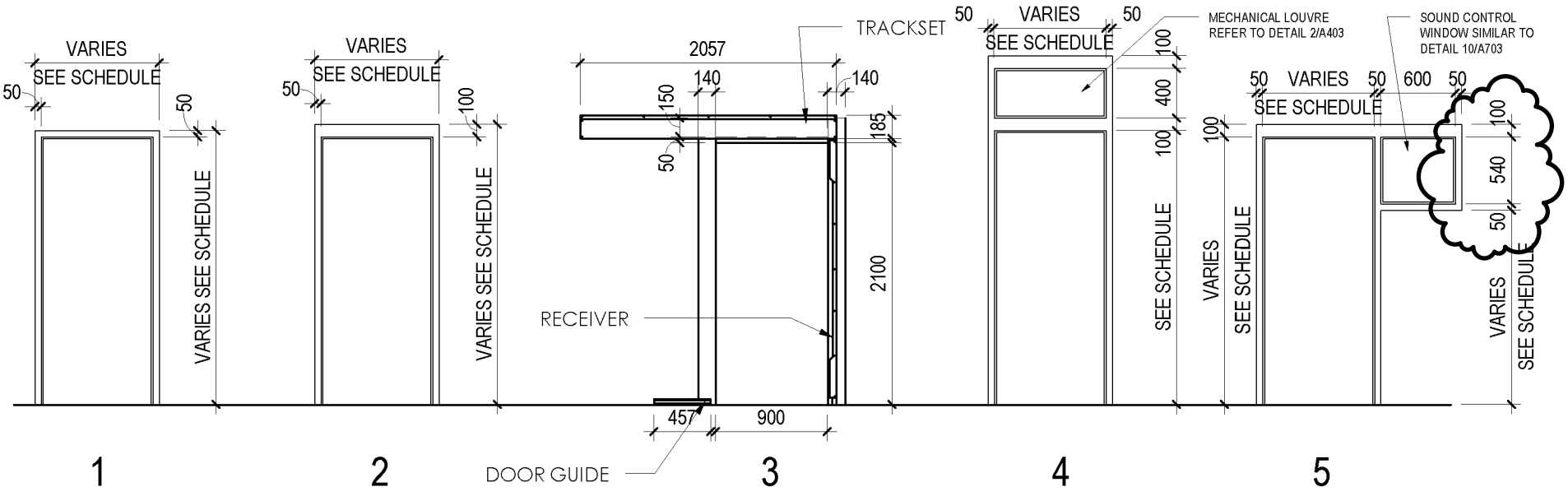
Client/Project
GOVERNMENT OF CANADA
NEW BUILDING

Title
INTERVIEW SECTION DETAIL

ADDENDUM A-01	2016.03.04	
Revision	YYYY.MM.DD	SCALE

Project No.	Reference Sheet	Figure No.
144202690	4/A603	ASK-001



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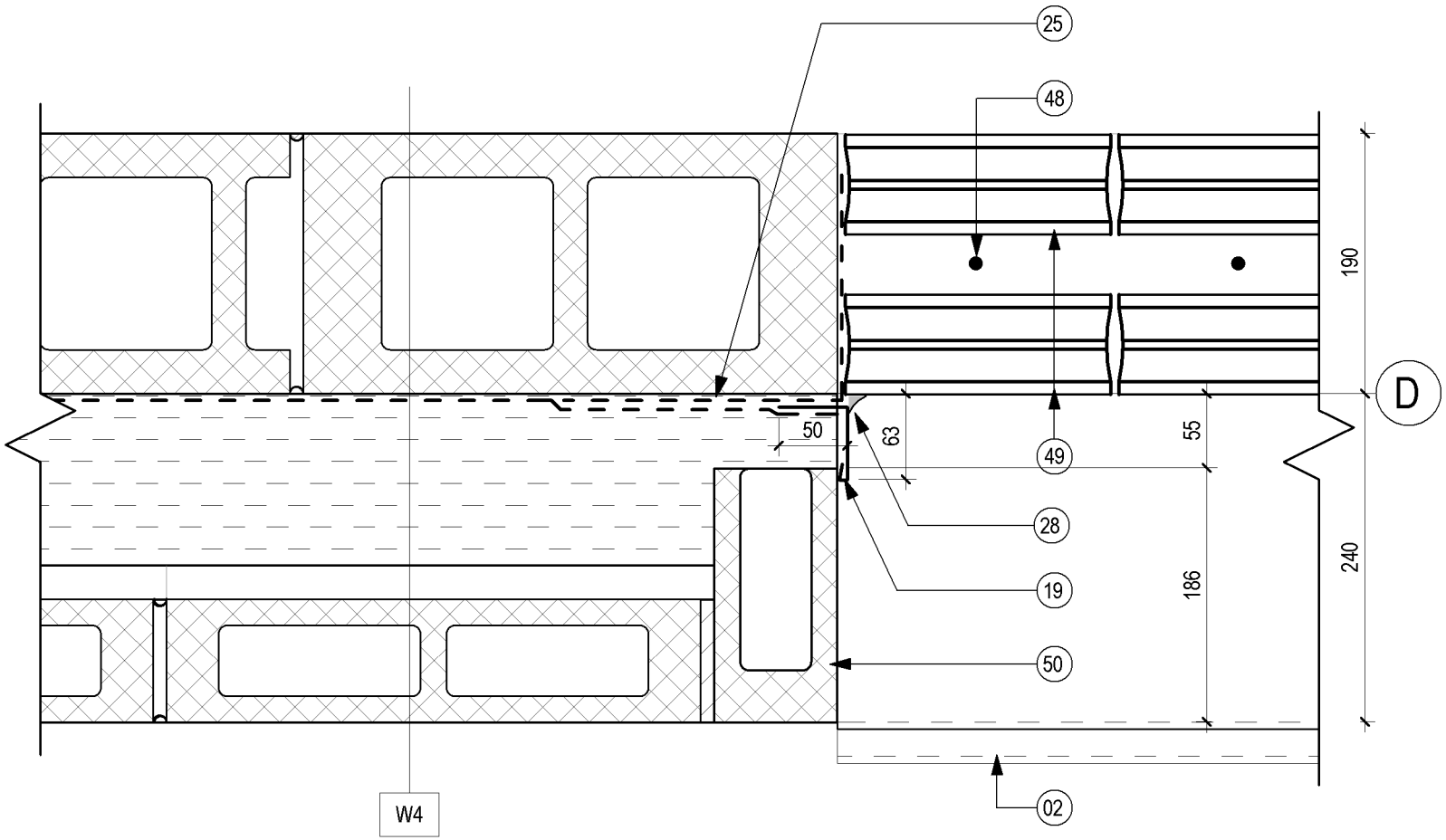
Client/Project
GOVERNMENT OF CANADA

NEW BUILDING

Title
FRAME TYPES 08 71 00.01

Revision	YYYY.MM.DD
ADDENDUM A-01	2016.03.04

Project No.	Reference Sheet	Figure No.
144202690	DR_SCH-11	ASK-002



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Client/Project
GOVERNMENT OF CANADA

NEW BUILDING

Title
GLASS BLOCK JAMB DETAIL

Revision	YYYY.MM.DD

Project No.	Reference Sheet	Figure No.
144202690	5/A502	ASK-003

The Bidding Documents are amended as noted in this Addendum, which consists of one (1) page.

This addendum is issued prior to bid closing to amend the bid documents. This Addendum will form part of the Contract Documents. Include in the Bid price all such revisions which will become part of the Work. Perform all such Work in accordance with the contract documents.

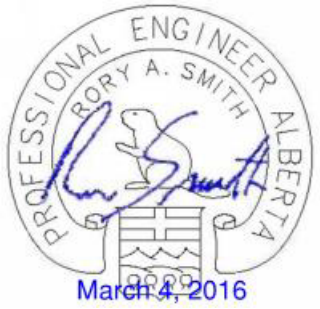
Acknowledge receipt of this Addendum by reference in the Bid Form submitted by the bidding Contractors. Ensure that all parties submitting bids are aware of all items included in this addendum.

1. DRAWINGS

.1 Drawing S002

.1 Refer to Site Information table. Revise the Importance Category from Post-Disaster to HIGH.

END OF ADDENDUM NO. S-01



The Bidding Documents are amended as noted in this Addendum, which consists of one (1) page and the following attachments:

1. Added Specifications:

   N/A

2. Drawings:

   N/A

This addendum is issued prior to bid closing to amend the bid documents. This Addendum will form part of the Contract Documents. Include in the Bid price all such revisions which will become part of the Work. Perform all such Work in accordance with the contract documents.

Acknowledge receipt of this Addendum by reference in the Bid Form submitted by the bidding Contractors. Ensure that all parties submitting bids are aware of all items included in this addendum.

1. SPECIFICATIONS

.1 23 05 00 – Common Work Results for HVAC

.1 2.1.5.4: Add "**.6 Rooftop unit or makeup air units with cooling capacities of 19 kW (65 MBH), or greater, are to have bi-annual refrigerant pressure test as per the Federal Halocarbon Regulation, 2003 and client requirements.**"

.2 Section 23 09 00- Instrumentation and Control for HVAC

.1 Clause 2.1.1: Add "**.5 Nordic Managing Building System – Schneider Electric**" as an approved contractor.

2. DRAWINGS

.1 Drawing M200

.1 Add the following general note: "**.3 Rooftop unit or makeup air units with cooling capacities of 19 kW (65 MBH), or greater, are to have bi-annual refrigerant pressure test as per the Federal Halocarbon Regulation, 2003 and client requirements.**"

END OF MECHANICAL ADDENDUM NO. ONE