

UNIVERSITY OF TORONTO

ADDENDUM 2 – SUMMARY OF REVISIONS TO CONSULTANT ISSUED ARCHITECTURAL SPECIFICATIONS

TOWER FOI RELOCATION

**481 SPADINA AVE
TORONTO, ONTARIO
UNIVERSITY PROJECT NUMBER: P164-25-078**

DATE ISSUED: FEBRUARY 6, 2026

**CONSULTANT:
UNIVERSITY, PLANNING, DESIGN AND CONSTRUCTION –
DESIGN AND ENGINEERING**

Part 1 General

1.1 ADDENDUM FORM

- .1 This Addendum forms part of the Contract Documents and modifies the Bidding Documents dated January 21, 2026 as previously issued, with amendments and additions noted below.
- .2 This addendum summary consists of:
 - .1 Addendum 2 Summary pages
 - .2 Attached specification sections and revisions to specification changes as listed in 1.2 CHANGES TO THE CONSULTANT'S ARCHITECTURAL SPECIFICATIONS

1.2 CHANGES TO THE CONSULTANT'S ARCHITECTURAL SPECIFICATIONS

- .1 Add Section 05 50 00 - Metal Fabrications, dated February 6, 2026.
- .2 Delete Section 07 92 00 - Joint Sealants, dated January 21, 2026, and replace with Section 07 92 00 - Joint Sealants, dated February 6, 2026.
- .3 Add Section 08 31 13 - Access Doors and Frames, dated February 6, 2026.
- .4 Delete Section 08 51 13 - Aluminum Windows, dated January 21, 2026, and replace with Section 08 51 13 - Aluminum Windows, dated February 6, 2026.
- .5 Delete Section 09 21 16 - Gypsum Board Assemblies, dated January 21, 2026, and replace with Section 09 21 16 - Gypsum Board Assemblies, dated February 6, 2026.

END OF ADDENDUM 2 SUMMARY – CONSULTANT ARCHITECTURAL SPECIFICATIONS

Part 1 General

1.1 SECTION INCLUDES

- .1 Shop fabricated miscellaneous metal items:
 - .1 Where existing floor conduit access panels are covered with new carpet finish, provide galvanized sheet metal plate fastened to the floor access panel, to level the floor to the adjacent concrete floor receiving new carpet finish.

1.2 RELATED SECTIONS

- .1 Section 09 65 10 - Resilient Flooring
- .2 Section 09 68 13 - Tile Carpeting

1.3 REFERENCES

- .1 ASTM A653/A653M-13 - Standard Specification for Steel Sheet, Zinc-Coated by the Hot-Dip Process.
- .2 ASTM C1002-14 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

1.4 SUBMITTALS FOR REVIEW

- .1 Section 01 30 00: Submission procedures.
- .2 Shop Drawings:
 - .1 Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include drawings, and details where applicable.

1.5 CLOSEOUT SUBMITTALS

- .1 Section 01 78 39 and section 01 92 00: Submission procedures.

Part 2 Products

2.1 MATERIALS - STEEL

- .1 Galvanized sheet steel 1.5 mm (16 gauge)
- .2 Fasteners: galvanized.
- .3 Shop and Touch-Up Primer: SSPC-Paint 25, zinc oxide, alkyd .

2.2 FABRICATION

- .1 Fit and shop assemble items, for delivery to site.
- .2 Continuously seal joined members by continuous welds.
- .3 Grind exposed to small uniform radius.
- .4 Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- .5 Supply components required for anchorage of fabrications.

2.3 FINISHES - STEEL

- .1 Galvanized finish.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that field conditions are acceptable and are ready to receive work.
- .3 Verify dimensions, tolerances, and method of attachment with other work.

3.2 PREPARATION

- .1 Clean and strip substrate surface before fastening leveling plate in place.

3.3 INSTALLATION

- .1 Install items plumb and level, accurately fitted, free from distortion or defects.
- .2 Obtain approval prior to site cutting or making adjustments not scheduled.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Preparing substrate surfaces.
- .2 Sealant and joint backing.

1.2 RELATED SECTIONS

- .1 Section 06 41 11 - Architectural Cabinetwork
- .2 Section 07 84 00 - Firestopping
- .3 Section 09 21 16 - Gypsum Board Assemblies
- .4 Section 09 51 13 - Acoustic Panel Ceilings
- .5 Section 09 91 10 – Painting
- .6 Mechanical Division – Pipe penetrations
- .7 Electrical Division– Pipe penetrations

1.3 REFERENCES

- .1 ASTM C834-10 - Standard Specification for Latex Sealants.
- .2 ASTM C919-12 - Standard Practice for Use of Sealants in Acoustical Applications.
- .3 ASTM C920-14 - Standard Specification for Elastomeric Joint Sealants.
- .4 ASTM C1184-13 - Standard Specification for Structural Silicone Sealants.
- .5 ASTM C1193-13 - Standard Guide for Use of Joint Sealants.
- .6 ASTM C1311-10 - Standard Specification for Solvent Release Sealants.
- .7 ASTM C1330-02(2013) - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
- .8 ASTM C1401-09a - Standard Guide for Structural Sealant Glazing.

1.4 PERFORMANCE REQUIREMENTS

- .1 Sealant Design: Design structural sealant to withstand specified loads without breakage, loss, and failure of seals, product deterioration, and other defects.

1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Section 01 30 00: Project management and coordination procedures.
- .2 Coordination:
 - .1 Coordinate with other work having a direct bearing on work of this section.
 - .2 Coordinate the work with all sections referencing this section.

1.6 SUBMITTALS FOR REVIEW

- .1 Section 01 30 00: Submission procedures.

- .2 Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations and colour availability.
- .3 Structural Sealant Joint Design: Confirmation that design data provided by Consultant have been reviewed and approved by sealant manufacturer.
- .4 Shop Drawings: Indicate sealant joints and dimensions, materials, structural bite, glueline thickness, joint profile, and support framing.

1.7 SUBMITTALS FOR INFORMATION

- .1 Section 01 30 00: Submission procedures.
- .2 Installation Data: Manufacturer's special installation requirements.
 - .1 Indicate special procedures, surface preparation, perimeter conditions requiring special attention.

1.8 CLOSEOUT SUBMITTALS

- .1 Section 01 78 39 and Section 01 92 00: Submission procedures.

1.9 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 9000 certification requirements.
- .2 Perform sealant application work to ASTM C1193 .
- .3 Perform structural sealant application work to ASTM C1401.
- .4 Perform acoustical sealant application work to ASTM C919.
- .5 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five (5) years documented experience.
- .6 Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.10 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.11 WARRANTY

- .1 Warranty: Provide a two (2) year period after Date of Ready for Take Over: Workmanship and material warranty against failure to meet specified requirements including coverage for installed sealants and accessories which fail to achieve water tight seal air tight seal, exhibit loss of adhesion or cohesion, or do not cure.
- .2

Part 2 Products

2.1 SEALANTS

- .1 Siliconized Acrylic Latex (Type A): ASTM C834; Type OP , Grade NF; single component, non-sagging, non-staining, non-bleeding, paintable; colour: white, paintable

- .1 Elongation Capability 12.5%.
 - .2 Service Temperature Range -54 to 82 degrees C.
 - .3 Shore A Hardness Range 15 to 25.
 - .4 Product: Tremflex 834, manufactured by Tremco, Inc..
- .2 Butyl Sealant (Type B): ASTM C1311, single component, solvent release, non-skinning, non-sagging, colour selected by Consultant.
 - .1 Elongation Capability +/- 10%.
 - .2 Service Temperature Range -28 to 82 degrees C.
 - .3 Shore A Hardness Range 10 to 30.
 - .4 Product: Tremco Butyl Sealant, manufactured by Tremco, Inc..
- .3 Acoustic Sealant (Type C): ASTM C1311, Acoustic grade, single component, solvent release, non-skinning, non-sagging, Grey colour.
 - .1 Elongation Capability 7.5%.
 - .2 Service Temperature Range -28 to 82 degrees C.
 - .3 Shore A Hardness Range 10 to 30.
 - .4 Product: Tremco Acoustical/Curtainwall Sealant, manufactured by Tremco, Inc..
- .4 Silicone Sealant (Type D): ASTM C920, Type S, Grade NS, Class 100/50, Use NT, SWRI Validated; single component, neutral curing, non-sagging, non-staining, non-bleeding, low modulus; colour as selected.
 - .1 Elongation Capability +/-150 %.
 - .2 Service Temperature Range -54 to 82 degrees C.
 - .3 Shore A Hardness Range 15 to 45.
 - .4 Product: Dow Corning 790, manufactured by Dow Corning, or CWS by Dow.
 - .5 Product: Spectrem 1, manufactured by Tremco, Inc.
 - .6 Product: Spectrem 3, manufactured by Tremco, Inc.
- .5 Sanitary Silicone Sealant (Type E): ASTM C920, Grade NS, Class 25, Use NT; single component, acetox curing, non-sagging, non-staining, mildew resistant; colour as selected.
 - .1 Elongation Capability 25%.
 - .2 Service Temperature Range -54 to 82 degrees C.
 - .3 Shore A Hardness Range 15 to 35.
 - .4 Product: DC 786, manufactured by Dow corning.
 - .5 Product: Sanitary 1700, manufactured by GE.
 - .6 Product: Tremsil 200 Sanitary, manufactured by Tremco, Inc.
- .6 Foamed-in-place rigid cellular polyurethane sealant/insulation (Type F) at exterior wall mechanical and electrical penetrations, around exterior and interior of pipe sleeves
 - .1 Thermal Resistance: R-4.27.
 - .2 Air infiltration (ASTM E 283): 0.01 cfm/ft2 @ 1.56 psf (75 Pa)
 - .3 Water infiltration (ASTM E 331): No leakage after 15 minute exposure (@ 2.9 psf)
 - .4 Sound transmission classification (as tested per ASTM E 90): 55
 - .5 Pressure build average (AAMA 812): 0.79 psi (5.4 kPa)
 - .6 Dimensional stability (AAMA 812): +/- 2%
 - .7 Tensile strength (HTC method 2106): 6 N/cm2

- .8 Surface burning characteristics (UL 723): Flame spread: 0; Smoke developed: 5
- .9 Manufacturers:
 - .1 Dupont; Product: Window and Door Foam
 - .2 Hilti; Product: CF 812 Window and Door Pro

2.2 ACCESSORIES

- .1 Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- .2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- .3 Joint Backing: ASTM C1330, round, closed cell ; polyethylene foam rod, oversized 30% to 50% larger than joint width.
- .4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- .5 Masking tape: Non-staining, non-absorbent type compatible with sealant and adjacent surfaces.
- .6 Setting Blocks and Spacers: Compatible with silicone sealant and recommended by sealant manufacturer.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that substrate surfaces and joint openings are clean, dry, and free of frost and ready to receive work.
- .3 Verify that joint backing and release tapes are compatible with sealant .

3.2 PREPARATION

- .1 Remove loose materials and foreign matter which might impair adhesion of sealant.
- .2 Clean and prime joints to sealant manufacturer's written instructions.
- .3 Perform preparation to ASTM C1193 for solvent release and latex base sealants .
- .4 Perform preparation to sealant manufacturer's written instructions.
- .5 Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

- .1 Perform installation in accordance with ASTM C1193 for solvent release and latex base sealants, ASTM C919 for acoustical sealants .
- .2 Install sealant to sealant manufacturer's written instructions.
- .3 Measure joint dimensions and size materials to achieve required 2:1 width/depth ratios.
- .4 Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.
- .5 Install bond breaker where joint backing is not used.
- .6 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

- .7 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- .8 Tool joints concave channel shaped as detailed.

3.4 CLEANING

- .1 Section 01 70 00: Cleaning installed work.
- .2 Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

- .1 Section 01 7 00: Protecting installed work.
- .2 Remove masking tape and excess sealant.
- .3 Protect sealants until cured , remove temporary glass supports.

3.6 SCHEDULE

- .1 Type – A – Interior, Non-fire-rated: door frame/ walls, interior wall to wall joints, interior wall pipe penetrations.
- .2 Type – D – Exterior wall penerations.
- .3 Type – E - Joint between wall construction and cabinet casework, countertops and washroom countertops.
- .4 Type – F - Foamed-in-place rigid cellular polyurethane sealant/insulation (Type F) at exterior wall mechanical and electrical penetrations, around exterior and interior of pipe sleeves

END OF SECTION

Part 1 General

1.1 GENERAL REQUIREMENTS

- .1 Read and conform to:
 - .1 Sections of Division 00 and The General Conditions of the Contract.
 - .2 Schedule 1, Supplementary Conditions.
 - .3 Conform to Sections of Division 01 as applicable.

1.2 SECTION INCLUDES

- .1 Access door and frame units.

1.3 RELATED SECTIONS

- .1 Section 09 21 16 - Gypsum Board Assemblies: Openings in ceilings.
- .2 Section 09 51 13 - Acoustic Panel Ceilings: Openings in ceilings.
- .3 Section 09 91 10 - Painting: Field paint finish.
- .4 Mechanical Division Section: Mechanical components requiring access .
- .5 Electrical Division: : Electrical components requiring access.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Section 01 30 00: Project management and coordination procedures.
- .2 Coordination: Coordinate with other work having a direct bearing on work of this section.
 - .1 Coordinate the work with other work requiring access doors.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 30 00: Submission procedures.
- .2 Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- .3 Shop Drawings: Indicate exact position of all access door units.

1.6 SUBMITTALS FOR INFORMATION

- .1 Section 01 30 00: Submission procedures.
- .2 Installation Data: Manufacturer's special installation requirements, rough-in dimensions .

1.7 CLOSEOUT SUBMITTALS

- .1 Section 01 78 39 and section 01 92 00: Submission procedures.
- .2 Record Documentation: Record actual locations of all access units.

1.8 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 9000 ISO 14000 certification requirements.

- .2 Perform Work in accordance with ULC Assembly Design noted on Drawings. Maintain one (1) copy of document on site.

1.9 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for fire rated access doors.
- .2 Provide certificate of compliance from manufacturer indicating approval of fire rated doors.

Part 2 Products

2.1 ACCESS UNITS - CEILINGS

- .1 Non-Fire Rated Door and Frame Unit: Formed steel, baked white prime coat :
 - .1 In ceiling with acoustic tile finish glued onto Gypsum Board on Metal Furring:
 - .1 Product: UF-5000 Universal Flush Access door for any flush surface, paint finish, manufactured by Acudor.

2.2 FABRICATION - CEILING UNITS

- .1 Fabricate frames and flanges of the following material:
 - .1 Steel: Over 16" X 16" - 14 gauge door, 16 gauge mounting frame
- .2 Door: Flush to frame with rounded safety corners.
- .3 Mounting Frame: One piece outer flange welded to mounting frame.
- .4 Hinge: Continuous, concealed.
- .5 Latch: Stainless Steel Slotted Screwdriver Cam Latch.
- .6 Finish Steel frames and doors:
 - .1 Base Metal Protection: Galvanized, wiped coat finish.
 - .2 Finish: Shop applied and baked white enamel.
 - .3 Final Finish: Field painted by Section 09 91 10.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that rough openings for door and frame are correctly sized and located.

3.2 INSTALLATION

- .1 Install units to manufacturer's written instructions.
- .2 Coordinate with Section 09 21 16 - Gypsum Board Assemblies and Section 09 51 13 - Acoustic Panel Ceilings to provide rough opening with concealed metal framing:
 - .1 For 610 mm x 610 mm size Access Doors: Metal trim angle framing around ceiling opening, as detailed on the drawings.

- .2 For 610 mm x 914 mm size Access Doors: Trim ceiling opening with metal stud channel framing supported by carrying channels, as detailed on the drawings.
- .3 Secure access doors and frames rigidly in place, attached to metal framing around ceiling opening using metal tapping screw fasteners.
- .4 Position unit to provide convenient access to concealed work requiring access.

3.3 SCHEDULES

- .1 Provide access doors where shown: Locations as shown on Drawings and allow sizes as follows:
 - .1 610 mm x 610 mm
 - .2 610 mm x 914 mm

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Remove existing operable vent window units and associated operating hardware and dispose them.
- .2 Modify existing glazing stops to secure and seal in place, new insulated glass units.
- .3 Sealed insulated glass units installed as window infill panels.
- .4 New aluminum mounting brackets, angle jambs and stops.
- .5 Glazing tapes and gaskets
- .6 Sealants.

1.2 RELATED SECTIONS

- .1 Section 07 92 00 - Joint Sealants: Perimeter sealant and back-up materials.

1.3 REFERENCES

- .1 AA (Aluminum Association) DAF 45-2003 - Designation System for Aluminum Finishes.
- .2 AAMA CW-10-15 - Care and Handling of Architectural Aluminum from Shop to Site.
- .3 AAMA 2603-15 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- .4 ASTM B209M-14 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .5 ASTM E331-00(2009) - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- .6 ASTM F588-14 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
- .7 CAN/CSA-A440.4-07 (R2012) - Window, Door, and Skylight Installation.

1.4 SYSTEM DESCRIPTION

- .1 Windows: factory fabricated, factory finished, vision glass, infill panels, related flashings, anchorage and attachment devices.
- .2 Configuration: Fixed double-glazed sealed units.
- .3 Glazing: Exterior.

1.5 PERFORMANCE REQUIREMENTS

- .1 Windows: Conform to CSA-A440S1, Product Designation Class CW-PG30-FW; and labeled by CSA.
- .2 System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall to AAMA/WDMA/CSA-101/S.I.2/A440, Canadian Supplement.
 - .1 Minimum Design Pressure 1440PA
 - .2 Minimum Water Resistance Test Pressure 220 PA

- .3 Member Deflection: Limit member deflection to 1/175 of the longer dimension with full recovery of glazing materials.
- .4 Assembly: To accommodate, without damage to components or deterioration of seals, movement between window and perimeter framing.
- .5 Air Infiltration/Exfiltration: Limit air infiltration/exfiltration for fixed units as 0.2 L/s/sq m.
- .6 Water Leakage: None, in accordance with AAMA/WDMA/CSA/101/I.S.2/A440.
- .7 Air and Vapour Seal: Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.

1.6 ADMINISTRATIVE REQUIREMENTS

- .1 Section 01 30 00: Project management and coordination procedures.
- .2 Pre-Installation Meeting: Convene one (1) week before starting work of this section.

1.7 SUBMITTALS FOR REVIEW

- .1 Section 01 30 00: Submission procedures.
- .2 Product Data: Provide component dimensions, anchorage and fasteners, glass.
- .3 Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, existing window frame configuration and dimension related to the new Insulated Glass Units, Aluminum Angle Frame, stops, sealants and installation requirements.
- .4 Samples:
 - .1 Submit two (2) samples illustrating, factory finished aluminum surfaces, Insulating Glass Units, glazing gaskets and tape materials.

1.8 CLOSEOUT SUBMITTALS

- .1 Section 01 78 39 and section 01 92 00: Submission procedures.

1.9 QUALITY ASSURANCE

- .1 Comply with CSA-A440S1.
- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years experience.
- .3 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

1.10 MOCK-UP

- .1 Section 01 40 00: Requirements for mock-up.
- .2 Mock-ups: Build mock-ups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
- .3 Build mock up for type(s) of window(s) indicated, in location(s) shown on Drawings.
- .4 Locate where directed by Consultant.
- .5 Approved mock-up may remain as part of the Work.

1.11 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 60 00: Transport, handle, store, and protect products.
- .2 Protect factory finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.12 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Do not install sealants when ambient temperature is less than 5 degrees C.
 - .2 Maintain this minimum temperature during and after installation of sealants.

1.13 WARRANTY

- .1 Correct defective Work within a five (5) year period after Date of Ready for Take Over.
- .2 Provide five (5) year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same.
- .3 Warranty: Include coverage for degradation of colour finish.

Part 2 Products

2.1 MATERIALS

- .1 Extruded Aluminum: ASTM B221; 6063-T5 alloy and temper.
- .2 Sheet Aluminum: ASTM B209.
- .3 Fasteners: Stainless steel.

2.2 COMPONENTS

- .1 Aluminum Angle Jamb and Stops: Extruded Aluminum, profile size as required, applied glass stops.
- .2 Infill Insulated Glass Unit Panel: Glazing edge sealed:
- .3 Fasteners: Stainless steel.

2.3 SEALED INSULATING GLASS UNITS

- .1 Insulated Glass Units - Low E, double pane with interior and exterior pane of glass shall be CAN/CGSB 12.1, clear, tempered; minimum 6 mm thick; Low E coating on #2 surface within unit; interpane space filled with argon gas; with warm edge closed cell polymer foam silicone sealant edge seal; total unit thickness of 19 mm.
 - .1 Edge Seal Colour: grey.

2.4 GLAZING ACCESSORIES

- .1 Setting Blocks: ASTM C864, Option I Silicone; 80 to 90 Shore A durometer hardness tested to ASTM D2240, length of 25 mm for each sq m of glazing or minimum x height to suit glazing method and pane weight and area.
- .2 Glazing Tape: Preformed butyl compound with integral EPDM shim spacing device coiled on release paper; black colour: POLYshim II Tape by Tremco

2.5 SEALANT MATERIALS

- .1 Sealant and Backing Materials: As specified in Section 07 92 00 of Types described below.
 - .1 Perimeter Sealant: Silicone Type D.
 - .2 Sealant Used Within System (Not Used for Glazing): Silicone Type D.

2.6 FABRICATION

- .1 Fabricate components with minimum clearances and shim spacing around perimeter of assembly yet enabling installation and dynamic movement of perimeter seal.
- .2 Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.
- .3 Prepare components to receive anchor devices. Fabricate anchors.
- .4 Arrange fasteners and attachments to ensure concealment from view.
- .5 Prepare components with internal reinforcement for operating hardware.
- .6 Factory glazed and sealed Insulated Glass Units.

2.7 FINISHES

- .1 Silicon Modified Polyester Coating: Minimum 0.04 mm dry film thickness.
 - .1 Colour: As selected by Consultant to match existing windows.
 - .2 Location: Interior and exterior exposed aluminum surfaces.
- .2 Apply one (1) coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify wall openings and adjoining air and vapour seal materials are ready to receive work of this Section.

3.2 INSTALLATION

- .1 Install Aluminum Angle Jamb, Insulated Glass Units, Stops, Glazing Tapes to in accordance to CAN/CSA-A440.4 and manufacturer's written instructions.
- .2 Install window assembly to CAN/CSA-A440.4.
- .3 Attach Aluminum Angle Jamb and glazing blocks to perimeter opening to accommodate construction tolerances and other irregularities.
- .4 Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- .5 Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- .6 Coordinate attachment and seal of perimeter air barrier and vapour retarder materials.

- .7 Install Insulated Glass Unit infill panels as specified, to glazing method required to achieve performance criteria.
- .8 Install perimeter sealant to method required to achieve performance criteria. Type D Silicone, foam rod backing materials, and installation criteria as specified in Section 07 92 00.

3.3 ERECTION TOLERANCES

- .1 Section 01 73 00: Tolerances.
- .2 Material and Unit Size Tolerances: As specified in AAMA/WDMA/CSA 101/I.S.2/A440.

3.4 CLEANING

- .1 Section 01 74 00: Cleaning installed work.
- .2 Remove protective material from factory finished aluminum surfaces.
- .3 Wash surfaces by method recommended and acceptable to sealant and window manufacturer, rinse and wipe surfaces clean.
- .4 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Gypsum board and joint treatment: Walls, ceilings and bulkheads.
- .2 Light gauge metal stud wall, ceiling and bulkhead framing.
- .3 Structural metal lightweight stud, ceiling, bulkhead framing and bracing.

1.2 RELATED SECTIONS

- .1 Section 06 10 53 - Miscellaneous Rough Carpentry
- .2 Section 06 41 11 - Architectural Cabinetwork
- .3 Section 07 84 00 - Firestopping
- .4 Section 07 92 00 - Joint Sealants
- .5 Section 08 11 13 - Standard Metal Door Frames
- .6 Section 09 51 13 - Acoustic Panel Ceilings
- .7 Section 09 91 10 - Painting
- .8 Section 10 28 14 - Toilet and Bath Accessories
- .9 Mechanical Division
- .10 Electrical Division

1.3 REFERENCES

- .1 ASTM C475/C475M-12 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- .2 ASTM C645-13 - Standard Specification for Non-structural Steel Framing Members.
- .3 ASTM C665-12 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- .4 ASTM C754-11 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .5 ASTM C840-13 - Standard Specification for Application and Finishing of Gypsum Board.
- .6 ASTM C1002-07(2013) - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .7 ASTM C1047-10a - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .8 ASTM C1396/C1396M-13 - Standard Specification for Gypsum Board.
- .9 ASTM E90-09 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .10 CAN/ULC-S101-07 - Standard Methods of Fire Endurance Tests of Building Construction and Materials.
- .11 CAN/ULC-S102-10 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

- .12 CAN/ULC-S702-09 - Standard for Mineral Fibre Thermal Insulation for Buildings (Includes Amendment 1, 2012).
- .13 Gypsum Association GA-214-10 - Recommended Levels of Gypsum Board Finish.
- .14 Gypsum Association GA-216-13 - Application and Finishing of Gypsum Panel Products.
- .15 Gypsum Association GA-600-12 - Fire Resistance Design Manual.
- .16 Gypsum Association GA-801-07 - Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors.
- .17 ULC-FR-14 - Fire Resistance Directory (2014 Edition).

1.4 SYSTEM DESCRIPTION

- .1 Acoustic Attenuation for Interior Partitions: 55 STC to ASTM E90.
- .2 Thermal Insulation Identified for Interior Partitions.

1.5 SUBMITTALS FOR REVIEW

- .1 Section 01 30 00: Submission procedures.
- .2 Product Data:
 - .1 Provide data on metal framing gypsum board, joint tape, thermal insulation.
- .3 Shop Drawings: Indicate special details associated with acoustic seal for openings, firestopping seal for openings and continuity of building envelope vapour barrier and thermal insulation.
- .4 Shop Drawings: For structural metal lightweight stud, ceiling, bulkhead framing and bracing, provide:
 - .1 Calculations for loadings and stresses of engineered framing in accordance to Ontario Building Code requirements stamped and signed by a licenced Professional Structural Engineer.
 - .2 Indicate component details, framed openings, bearing, anchorage, loading, welds, type and location of fasteners and accessories or items required of related work.
 - .3 Indicate stud, ceiling joist, bulkhead framing and bracing layout.
 - .4 Describe method for securing studs to tracks and for bolted and welded framing connections.

1.6 CLOSEOUT SUBMITTALS

- .1 Section 01 78 39 and section 01 92 00: Submission procedures.

1.7 QUALITY ASSURANCE

- .1 Products of This Section: Manufactured to ISO 9000 certification requirements.
- .2 Obtain services of professional engineer with experience in type of work of comparable complexity and scope, licensed to practice in Province of Ontario to design, review, and provide professional services for work of this Section related to specially fabricated framing such as for bulkhead and ceiling support framing.
- .3 Perform Work for non-structural framing in accordance with ASTM C840, GA-214, GA-216, GA-600. Maintain one (1) copy on site.
- .4 Perform Work for structural framing in accordance with ASTM C955, GA-214, GA-216, GA-600. Maintain one (1) copy on site.

- .1 Performance Criteria:
 - .1 Calculate structural properties of framing members to CSSBI 51, and for welding steel:
 - .1 CSA-W47.1, CSA-W55.3, CSA-W59 requirements. Maintain one (1) copy on site.
 - .2 Size components to withstand design loads as follows:
 - .1 Vertical Assembly: live and dead loads
 - .2 Horizontal Assembly: live and dead loads.
 - .3 Calculate Maximum Allowable Deflection: of span.
 - .4 Structural Metal Lightweight Stud, Ceiling, Bulkhead Framing and Bracing Assembly:
 - .1 Design to CAN/CSA-S136 and CSSBI 51.
 - .2 Design to provide for movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to cyclic temperature ranges.
 - .3 Design assembly to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
 - .4 Seismic Loads: Design and size components to withstand seismic loads and sway displacement as calculated in accordance with code applicable at place of the Work.
- .5 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience .
- .6 Handling Gypsum Board: Comply with GA-801.

Part 2 Products

2.1 MANUFACTURERS

- .1 Other acceptable manufacturers offering functionally and aesthetically equivalent products.
 - .1 CertainTeed.
 - .2 CGC.
 - .3 Westroc.
- .2 Substitutions: Refer to Section 01 60 00 .

2.2 FRAMING MATERIALS

- .1 Non-structural Metal Stud Framing: Studs and Tracks: ASTM C645, GA-216, GA-600; galvanized sheet steel, minimum 0.45 mm (26 gauge).
 - .1 Fasteners: ASTM C1002, GA-216.
 - .2 Furring, Framing, and Accessories: ASTM C645, GA-216, GA-600.
 - .3 Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- .2 Ceiling Access Door Framing:
 - .1 Coordinate with Section 08 31 13 - Access Doors and Frames and Section 09 51 13 - Acoustic Panel Ceilings to provide rough opening with concealed metal trim angle framing around ceiling opening.

- .2 Provide openings for ceiling mounted access panels, in existing suspended gypsum board ceilings finished with a glued in place acoustic ceiling tile and in suspended acoustic tile T-bar grid system:
 - .1 For 610 mm x 610 mm size Access Doors: Metal angle framing around suspended gypsum board ceiling openings, as detailed on the drawings.
 - .1 Metal angle frame: ASTM C955, galvanized sheet steel, cold rolled, minimum 1.2 mm (18 gauge) thick.
 - .2 Fasten Metal angle frame in place using screws and heavy duty polyurethane construction adhesive, ready for access door and frame installation.
 - .2 For 610 mm x 914 mm size Access Doors: Trim ceiling opening with metal stud framing supported by carrying channels, as detailed on the drawings.
 - .1 Non-structural Metal Stud Framing: Studs and Tracks: ASTM C645, GA-216, GA-600; galvanized sheet steel, minimum 0.76 mm (22 gauge) thick, C shape.
 - .2 Secure access doors and frames rigidly in place, attached to metal framing around ceiling opening using metal tapping screw fasteners.
 - .3 Position unit to provide convenient access to concealed work requiring access.
- .3 Studs and Tracks as required by Structural Engineer engaged by this Section: Provide type, and thicknesses as required by Professional Structural Engineer in accordance to the design submitted in Shop Drawings.
 - .1 Structural Framing Materials: Materials: Cold-rolled steel conforming to CAN/CSA-S136], with metallic coating to ASTM A653/A653M, minimum Z180 zinc coating thickness.
 - .1 Studs: ASTM C955, formed to channel shape, solid or punched web, knurled faces; minimum 1.2 mm (18 ga) thick.
 - .2 Track: Formed steel; channel shaped; same width as studs, tight fit; solid web; minimum 1.2 mm (18 ga) thick.
 - .3 Joists: Formed to channel shape, solid or punched] web; minimum 1.2 mm (18 ga) thick.
 - .4 Bracing, Furring, Bridging: Formed sheet steel; minimum 1.2 mm (18 ga) thick.
 - .5 Plates, Gussets, Clips: Formed sheet steel; minimum 1.2 mm (18 ga) thick.
 - .6 Welding Materials: CSA-W59.
 - .2 Bolts, Nuts and Washers: A325M, hot-dip galvanized to minimum requirements of CSSBI.
 - .3 Self-drilling, Self-tapping Screws: Steel, hot dip galvanized to minimum requirements of CSSBI.
 - .4 Anchorage Devices: Drilled expansion bolts, Powder actuated concrete fasteners are not permitted; hot-dip galvanized to minimum requirements of CSSBI.
- .4 Touch-Up Primer for Galvanized Surfaces: SPCC-Paint 20, inorganic zinc-rich.

2.3 FABRICATION OF FRAMING MEMBERS

- .1 Fabricate assemblies of formed sections of sizes and profiles required.
- .2 Provide cut-outs centred in webs of members to accommodate services and though-the knockout style bridging.

- .3 Fit, reinforce, and brace framing members to suit design requirements.
- .4 Fit and assemble in largest practical sections for delivery to site, ready for installation.
- .5 Do welding to CAN/CSA-S136]or CSA-W59, as applicable.

2.4 GYPSUM BOARD MATERIALS

- .1 Gypsum Board: ASTM C1396/C1396M, paper-faced; 1220 mm (48 inches) wide, maximum available length in place; tapered edges, ends square cut.
 - .1 Regular core, 16 mm (5/8 inch) thick.
 - .2 Fire rated core, 16 mm (5/8 inch) thick.
 - .3 Water-resistant Gypsum Wallboard: Comply with ASTM C1396 for 15.9 mm(5/8 in.) Type X:
 - .1 CGC Sheetrock® Brand Mold Tough® Panels Firecode® X (UL Type SCX) are 15.9 mm(5/8 in.) Type X panels

2.5 ACCESSORIES

- .1 Thermal and Acoustic Insulation for Interior Steel Stud Partitions: CAN/ULC-S702; preformed Rockwool fibre, friction fit type, Rockwool AFB.
- .2 Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board. As specified in Section 07 92 00 - Joint Sealants.
- .3 Corner Beads: GA-216 ASTM C1047, metal corner bead.
- .4 Edge Trim: ASTM C1047 GA-216; Type U casing bead L bead LK bead LC bead Control joint.
- .5 Joint Materials: GA-216 ASTM C475/C475M.
 - .1 Reinforcing tape, adhesive, and water.
 - .2 Joint compound: Asbestos-free.
- .6 Gypsum Board Fasteners: ASTM C1002, Type S Type W.
- .7 Top of Wall Acoustic Gasket Tape at Rooms T203 and T204: M-D Building Products 1/4-inch x 1-inch x 13-ft. Expand 'N Seal Expanding Foam Weather-Strip Grey, Model # WS31233:
 - .1 Website: <https://www.homedepot.ca/product/m-d-building-products-1-4-inch-x-1-inch-x-13-ft-expand-n-seal-expanding-foam-weather-strip-grey/1001122617>

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that site conditions are ready to receive work and opening dimensions are as instructed by the manufacturer indicated on shop drawings.

3.2 METAL STUD INSTALLATION

- .1 Install studs to ASTM C475/C475M GA-216 GA-600 and manufacturer's written instructions.
- .2 Align floor and ceiling tracks; locate to wall partition layout. Secure in place with fasteners or by welding at structural studs at maximum. Coordinate installation of acoustic sealant with ceiling and floor tracks.

- .3 Metal Stud Spacing: 400 mm (16 inches) on centre.
- .4 Extend stud framing to ceiling underside of structure. Attach ceiling runner securely to building structure to manufacturer's written instructions and details indicated.
- .5 Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
- .6 Construct corners using minimum three studs. Double stud wall openings, door jambs, and window jambs.
- .7 Erect load bearing studs one piece full length. Splicing of studs is not permitted.
- .8 Erect load bearing studs, brace, and reinforce to develop full strength, to achieve design requirements.
- .9 Blocking: Nail or screw wood blocking to studs. Bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures wall cabinets.
- .10 Coordinate placement of insulation in multiple stud spaces after erection.
- .11 Install intermediate studs above and below openings to align with wall stud spacing.
- .12 Provide deflection allowance in stud track, directly below horizontal building framing at non-load bearing framing.
- .13 Attach [cross studs] [furring channels] to studs for attachment of fixtures anchored to walls.
- .14 Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
- .15 Touch-up field welds and damaged [galvanized] [primed] surfaces with primer.

3.3 CEILING FRAMING INSTALLATION

- .1 Install to manufacturer's written instructions ASTM C754 and GA-216.
- .2 Coordinate location of hangers with other work.
- .3 Install ceiling framing independent of walls, columns, and above ceiling work.
- .4 Place joists at 300 mm to 400 mm on centre; not more than 50 mm from abutting walls. Connect joists to supports using [fastener] [welding] method.
- .5 Set ceiling joists parallel and level, with lateral bracing and bridging.
- .6 Locate joist end bearing directly over load bearing studs or provide load distributing member to top of stud track.
- .7 Provide web stiffeners at reaction points.
- .8 Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 600 mm past each end of openings.
- .9 Laterally brace entire suspension system.
- .10 Touch-up field welds and damaged [galvanized] [primed] surfaces with primer.

3.4 WALL AND CEILING ASSEMBLIES FOR FIRE RATINGS

- .1 Install wall and ceiling assemblies as required for fire resistance ratings indicated and to GA-600 requirements.

3.5 ACOUSTIC AND THERMAL ACCESSORIES INSTALLATION

- .1 Install resilient channels at maximum 600 mm (24 inches) on centre. Locate joints over framing members.
- .2 Install insulation and vapour barrier in exterior walls and ceiling .
- .3 Place thermal/ acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions spaces without gaps or voids. Do not compress insulation.
- .4 Place vapour retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- .5 Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- .6 Extend vapour retarder tight to full perimeter of adjacent window and door frames and other items interrupting the plane of membrane. Tape seal in place.
- .7 Install thermal/acoustic sealant within partitions in accordance with manufacturer's written instructions.
- .8 Install acoustic sealant at gypsum board perimeter at:
 - .1 Metal Framing: Two (2) beads.
 - .2 Base Layer.
 - .3 Face Layer.
 - .4 Caulk all penetrations of partitions by conduit, pipe, duct work, rough-in boxes.
- .9 Install acoustic gasket tape at top of new wall constructed to the underside of existing suspended acoustic tile and T-bar ceiling in Rooms T203 and T204.

3.6 GYPSUM BOARD INSTALLATION

- .1 Install gypsum board to ASTM C840 GA-216 GA-600 manufacturer's written instructions.
- .2 Erect single layer standard gypsum board in most economical direction , with ends and edges occurring over firm bearing.
- .3 Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
- .4 Use screws when fastening gypsum board to metal furring or framing.
- .5 Double Layer Applications: Use gypsum backing board for first layer, placed perpendicular parallel to framing or furring members. Use fire rated gypsum backing board for fire rated partitions and ceilings.
- .6 Double Layer Applications: Secure second layer to first with fasteners . Apply adhesive to manufacturer's written instructions.
- .7 Place second layer perpendicular parallel to first layer. Offset joints of second layer from joints of first layer.
- .8 Erect gypsum soffit board perpendicular to supports, with staggered end joints over supports.
- .9 Treat cut edges and holes in moisture resistant gypsum board exterior gypsum soffit board with sealant.
- .10 Place control joints consistent with lines of building spaces as directed.
- .11 Place corner beads at external corners as indicated. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials as indicated.

3.7 JOINT TREATMENT

- .1 Finish to ASTM C840 GA-214, Level 4.
- .2 Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- .3 Feather coats on to adjoining surfaces so that camber is maximum 0.8 mm (1/32 inch).

3.8 TOLERANCES

- .1 Maximum Variation of Finished Gypsum Board Surface from True Flatness: 3 mm in 3 m (1/8) in any direction.

3.9 SCHEDULES

- .1 Finish Level 1: Above finished ceilings concealed from view.
- .2 Finish Level 4: Walls exposed to view.
- .3 Finish Level 4: Ceilings exposed to view.

END OF SECTION