

**KAWARTHA PINE RIDGE DISTRICT SCHOOL BOARD
PUR25-049-ITT
Enniskillen Public School Refresh – Phase 2**

ADDENDUM NO. 2

This addendum shall form an integral part of the bid documents for the above noted Bid and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements as it pertains to the particular and specific items noted below.

Add : Addendum 1, Section 00 91 13, Prepared by Salter Pilon Architecture, (17 pages)

END OF ADDENDUM NO. 2

THE BID DOCUMENTS, CONDITIONS OF CONTRACT, DRAWINGS AND SPECIFICATIONS ARE HEREBY AMENDED, AS FOLLOWS:

Amendment 1

Table of Contents – 00 01 10

- 1.1 Replace Table of Contents Section 00 01 10 issued previously with revised section issued herewith.

Amendment 2

Aluminum Work – 08 44 00

- 2.1 Add Aluminum Work Section 08 44 00 issued herewith.

Amendment 3

Structural Addendum 1

- 3.1 Structural Addendum 1, prepared by Tacoma Engineers issued herewith.

END OF ADDENDUM 1

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END OF SECTION

1 General

1.1 **SECTION INCLUDES**

- .1 Design, labour, Products, tool, equipment and services necessary for Aluminum Work in accordance with the Contract Documents.

1.2 **REFERENCES**

- .1 AAMA 611, Voluntary Standards for Anodized Architectural Aluminum.
- .2 AAMA CW-10, Care and Handling of Architectural Aluminum from Shop to Site.
- .3 CAN/CSA-A440-M/A440.1-M, Windows / User Selection Guide to CSA Standard CAN/CSA A440-M Windows.
- .4 CSA A440/A440.1, Windows, Special Publication.
- .5 ANSI H35.1M, Alloy and Temper Designation Systems for Aluminum (Metric).
- .6 ASTM A167, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- .7 ASTM B209M, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .8 ASTM B221M, Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles and Tubes.
- .9 ASTM C920, Specification for Elastomeric Joint Sealants.
- .10 ASTM E283, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- .11 ASTM E330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .12 ASTM E331, Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
- .13 ASTM F738M, Specification for Stainless Steel Metric Bolts, Screws, and Studs.
- .14 CAN/CGSB 1.108-M, Bituminous Solvent Type Paint.
- .15 CAN/CGSB 79.1-M, Insect Screens.

1.3 **DEFINITION(S)**

- .1 Aluminum Work: Shall mean aluminum windows mentioned in Part 2 of this Specification Section.

1.4 DESIGN REQUIREMENTS

- .1 Design Aluminum work to meet requirements of AAMA/WDMA/CSA 101/I.S.2/A440, ASTM E283, ASTM E330, ASTM E331, NFRC 100, NFRC 200 and to meet performance and energy requirements specified herein and as required by authorities having jurisdiction.
- .2 Design Aluminum Work in accordance with following Climatic Design Data for Hampton contained in the Ontario Building Code:
 - .1 Design temperature: January 1%, July 2 1/2%.
 - .2 Hourly wind pressures: 1 in 50 year occurrence.
- .3 Design Aluminum Work to accommodate following without producing detrimental effect:
 - .1 Cyclic 40°C daily thermal swing of components.
 - .2 Cyclic, dynamic loading and release of loads such as wind loads.
 - .3 13 mm vertical deflection in supporting structure and movement of supporting structure due to live, dead load, and creep or deflections, seismic load, sway displacement and similar items.
- .4 Design to prevent accumulation of condensate on interior side of Aluminum Work framing under the following service conditions:
 - .1 Interior temperature: 25°C.
 - .2 Exterior temperature: -25°C.
 - .3 Interior RH: 35%.
- .5 Design complete aluminum window systems, including glazing, to meet recommended performance criteria.
- .6 Design windows in accordance to AAMA/WDMA/CSA -101/I.S.2/ A440, to the following performance levels:
 - .1 Performance class: CW.
 - .2 Minimum performance grade (PG): 30.
 - .3 Minimum positive design pressure: 1440 Pa.
 - .4 Minimum negative design pressure: - 1440 Pa.
 - .5 Minimum water penetration test pressure: 260 Pa.
 - .6 Minimum air infiltration/exfiltration: A2.
 - .7 Condensation resistance: I57
- .7 Restrict air infiltration/exfiltration, through Aluminum Work in accordance with ASTM E283 at pressure differential as indicated:
 - .1 Window assemblies: 0.0003 m³/s m² at differential of 300 Pa.
- .8 Design and detail controlled drainage path to actively discharge water, which enters into or forms within Aluminum Work, to exterior; prevent accumulation or storage of water within Aluminum Work. Prevent water from entering interior when tested in accordance with ASTM E331.
- .9 Design and detail air barrier, vapour retarder, and rainscreen products and assemblies into continuous and integrated Aluminum Work envelope. Optimize Aluminum Work design to align envelope layers and to minimize thermal bridges.

- .10 Prevent deflection and permanent or progressive glazing displacement. Restrict horizontal and vertical mullion deflection to less than $L/175$ and 19 mm maximum for heights under 4115 mm and $L/240$ and 25 mm maximum for heights over 4115 mm.
- .11 When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span in accordance with ASTM E330.
- .12 Design anchorage inserts for installation as part of other Sections of Work. Design anchorage assemblies to accommodate construction and installation tolerances.
- .13 Provide all reinforcing within aluminum members as required by design and OBC to provide structurally sound assembly. In any case, mullion size shall not be increased due to provision of reinforcing.
- .14 Design Aluminum Work and connections to substrate where the bottom of the Aluminum Work extends to a point below 1070 mm above finished floor level and separates a floor level from an adjacent interconnected space to withstand the required guard and handrail loads in accordance with the OBC and applicable local regulations. When requested by Consultant, provide a letter signed and sealed by a Professional Engineer certifying that the Aluminum Work conforms to the OBC requirements.
- .15 Design operable windows within reach of occupants with limiting stops conforming to requirements of OBC.

1.5 **SUBMITTALS**

- .1 Shop drawings:
 - .1 Submit shop drawings in accordance with the Conditions of the Contract indicating:
 - .1 Plans, sections, details, type of extrusions, profiles, finishes, panels, operating components, related flashings, closures, fillers, and end caps, and sealants.
 - .2 Suspended cross and support framing.
 - .3 Products and glazing types.
 - .4 Anchorage inserts, system installation tolerances.
 - .5 Section and hardware reinforcement, anchorage, assembly fixings.
 - .6 Detailing, locations, and allowances for movement, expansion, contraction.
 - .7 Path of cavity drainage and air pressure equalization.
- .2 Samples:
 - .1 Submit two samples of following in accordance with the Conditions of the Contract:
 - .1 250 mm long samples of each type of extrusion and finish.
 - .2 250 x 200 mm samples of insulating glass unit.
 - .3 200 x 200 mm sample of insect screen for operable windows for Consultant's approval of fibreglass mesh.

- .3 Reports:
 - .1 Submit substantiating engineering data, and independent test results of pre-tested, Aluminum Work to substantiate compliance with the design criteria including air leakage and water penetration conforming to ASTM E283 and ASTM E331.
 - .2 Engineering data demonstrating compliance with test procedures outlined in AAMA 501 including as a minimum air leakage resistance, static pressure water penetration resistance, dynamic pressure water penetration resistance, wind load resistance, vertical live load deflection movement and lateral (horizontal) movement, and condensation resistance.
 - .3 Submit documentation to substantiate ten years of experience in Aluminum Work manufacture and installation.
- .4 Close-out submittals: Submit Aluminum Work data for incorporation into the Operations and Maintenance Manual as part of the Conditions of the Contract.

1.6 **QUALITY ASSURANCE**

- .1 Retain a Professional Engineer, licensed in Province of Ontario, with experience in Aluminum Work of comparable complexity and scope to perform the following services as part of the Work of this Section:
 - .1 Design of Aluminum Work.
 - .2 Review, stamp, and sign shop drawings.
 - .3 Conduct on-Site inspections and prepare and submit inspection reports. Number and frequency of inspection to be sufficient to satisfy Engineer that Aluminum Work is being fabricated and installed in accordance with reviewed shop drawings and design intent.
- .2 Mock-up:
 - .1 Fabricate, deliver, and erect one, full scale mock-up of each type of Aluminum Work, in location acceptable to Consultant.
 - .2 Demonstrate full range of Products, finishes, textures, quality of fabrication, and workmanship.
 - .3 Mock-up may form part of final Work, if acceptable to Consultant. Remove and dispose of mock-ups which do not form part of Work.

1.7 **DELIVERY, STORAGE, AND HANDLING**

- .1 Handle Aluminum Work in accordance with AAMA CW-10.
- .2 Protect aluminum surfaces with strippable coating. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather. Do not remove before final cleaning of building.

1.8 **EXTENDED WARRANTY**

- .1 Submit a extended warranty for Aluminum Work in accordance with General Conditions, except that warranty period is extended to 10 years.
 - .1 Warrant against failure to meet the design criteria and requirements such as interior leakage, insulating glass unit failure, finish degradation, frame condensation.

.2 Coverage: Complete replacement including affected adjacent Work.

.2 Glazing:

.1 Provide a 10 year warranty, commencing from date of Substantial Performance, against defects in the insulating glass units and warrant them to be free from material obstruction of vision as a result of dust or film formation on the internal glass surfaces by any cause, under normal design conditions. Warrant the following:

.1 The insulating glass units shall be free from condensation, fogging material obstruction of vision as a result of dust or film formation on the internal glass surfaces by any cause under design conditions.

.2 The insulating glass units shall not change their mechanical design properties and shall not in any way deteriorate, degrade, delaminate or change their visual appearance.

.3 The glass units will not break due to thermal shock and temperature differential due to inherent glass faults, other than extrinsic glass breakage.

.4 Internal fogging shall be deemed to occur when light transmission of the glass is reduced by 5% in any 50 mm x 50 mm area.

.5 Failure will be deemed to occur when the internal dew point exceeds -40oC in a 21oC ambient temperature (when tested in accordance with ASTM E576).

.2 Warrant that glazing work is water and weather tight and free from distortion; that glazing materials will not deteriorate from exposure to the atmosphere and weather, will not be displaced, and will be free from permanent deformation under load; and that glass and insulating glass units will not be broken, cracked or scratched by causes resulting from defects in material, workmanship or design of glazing installation.

.3 Cracked or scratched glass, shrinking, cracking, staining, hardening, sagging of glazing materials; loosening or rattling of glass; and leaking of glazed joints will be considered defective work.

.4 Warranty shall provide for the removal of defective Products, replacement with new Products conforming to the specifications, and restoration of work damaged by removal and replacement including labour and installation costs.

3. Manufacturer's finish Warranty: Provide manufacturer's written warranty naming Owner as beneficiary and covering finish degradation or failure of factory-applied exterior fluoropolymer finish on Aluminum work within the warranty period; warrant finish per AAMA 2605 for colour fade less than 5 units, maximum chalk rating of 8, and greater than 30% gloss retention. Warranty period for finish: 5 years from date Work is certified as substantially performed.

2 Products

2.1 **ACCEPTABLE MANUFACTURER(S) AND SYSTEM(S)**

.1 Fixed windows: 'RainBlade 1970' by Alumicor Limited, '518 Isoport' by Kawneer Company Canada Limited, or approved alternative by Aerloc or US Aluminum (C.R. Lawrence).

- .2 Operable windows: 'UniVent 1350' by Alumicor Limited, '526 Series' by Kawneer Company Canada Limited or approved alternative by US Aluminum (C.R. Lawrence).

2.2 MATERIALS

- .1 All materials under Work of this Section, including but not limited to, sealants are to have low VOC content limits.
- .2 Aluminum extrusions and channels: ASTM B221 and ANSI H35.1 AA6063 alloy, T6 temper.
 - .1 Profile and dimensions: Refer to Contract Drawings.
 - .2 Thermal breaks in frame members: Vertically aligned with glazing.
- .3 Aluminum sheet: ASTM B209 and ANSI H35.1 AA1100 aluminum alloy, H14 temper, minimum 1.29 mm for sheets less than 610 mm wide and minimum 2.05 mm for sheets of a greater dimension.
- .4 Reinforcements and anchors: ASTM A167, Type 304 to AISI No. 2B finish. Size as shown.
- .5 Glass and glazing materials: As specified in Section 08 80 00.
- .6 Airseal and Aluminum Work sealant: ASTM C920, Type S, Grade NS, Class 100/50; One-part, low-modulus, moisture-curing, silicone. 'Dow Corning 790' by Dow Corning; 'Spectrem 1' by Tremco. Verify compatibility with insulating glass unit manufacturer's secondary sealant. Colour as selected by Consultant. Primer as recommended by manufacturer.
- .7 Frame sealant: Type as recommended by the Aluminum Work manufacturer.
- .8 Joint backing: Closed cell foam polyethylene rod, outsized minimum 30-50% larger than joint width and compatible with joint sealant. Product as recommended by sealant manufacturer.
- .9 Joint Primer, Surface Conditioners and Cleaning Agents: As recommended by respective glazing and sealant compound manufacturer.
- .10 Airseal transition membrane: To match products provided under Section 07 26 00 - Air/Vapour Barriers.
- .11 Anchors, clips, and angles: Extruded aluminum or stainless steel.
- .12 Shims and blocking for frame: Rigid plastic, wood is not permitted.
- .13 Flashings, closures and trim: 1.0 mm minimum aluminum sheet, finish to match curtain wall extrusion finish.
- .14 Screws, bolts and other fasteners: ASTM F738M; Stainless Steel Type 304.
- .15 Isolation coating: CAN/CGSB-1.108-M; Bitumastic coating, acid and alkali resistant material.

- .16 Foam Insulation: One component polyurethane foam-in-place moisture cured caulking sealant insulation, 16 kg per m³ to 32 kg per m³ density; injected from prepackaged pressurized containers for installation within closures and fillers; foam shall be CFC free. Enerfoam by Dow Chemical Canada Inc. or approved alternative.
- .17 Window hardware:
 - .1 Heavy duty window hardware to include all components as required for smooth, secure and complete operation and to be reviewed by the Consultant prior to ordering.
 - .2 Open-out vents: Pivot shoe heavy duty roto operator in conjunction with friction arms, aluminum hinges, and concealed allen key with removable handle and all required additional components.
 - .3 Limiting stops: All operable window within reach of occupants to have limiting stops to OBC requirements.
 - .4 Verify all site conditions regarding location and exact assembly requirements.
- .18 Screens: Fiberglass yarn 14 X 18 mesh screen, conforming to CAN/CGSB 79.1-M, in an extruded aluminium frame finish to match window frame.
- .19 Weatherstripping: Durable, non-absorbing material resistant to deterioration by aging and weathering. Weather stripping shall provide complete air-tight seal at jambs and head of opening. Adapt weatherstripping as required to maintain required performance and provide any/all necessary accessories.

2.3 **FABRICATION**

- .1 Fabricate sections true to detail, free from defects impairing appearance, strength and durability. Fabricate extrusions with sharp, well defined corners.
- .2 Fabricate Aluminum Work in accordance with reviewed shop drawings and manufacturer's written instructions.
- .3 Fabricate, fit, and secure framing joints and corners accurately, with flush surfaces, and hairline joints. Apply frame sealant at joints for weatherproof seams.
- .4 Conceal anchors, reinforcement and attachments from view. Fabricate reinforcement in accordance with design requirements.
- .5 Do not expose manufacturer's identification labels on aluminum assemblies.
- .6 Fabricate continuous sill flashings with intermediate anchor clips, and joint reinforcing, form to profile shown. Fabricate filler and closure pieces as necessary for a complete and weather tight installation.
- .7 Certify aluminum windows as complying with the CAN/CSA-A440-M/A440.1-M design criteria and requirements using an easily removable label located on the inside face of glazing.
- .8 Position operable windows on main frame to provide direction of opening specified, free and smooth operation, without binding or sticking against main frame members.

- .9 Fabricate Aluminum Work closures and trim from aluminum sheet. Form to profile shown. Make weathertight.
- .10 Double weatherstrip windows. Install weatherstripping in specially extruded ports and secure to prevent shrinkage or movement.
- .11 Fabricate glazing recess with drainage to exterior.

2.4 **FINISH**

- .1 Extrusion finish: Clear anodized to AAMA 611 per Aluminum Association Designation System for Aluminum Finishes AA-M12C22A31.
- .2 Panel and sheet finish: As indicated on drawings to match adjacent extrusion finish.

3 Execution

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.

3.2 **INSTALLATION**

- .1 Install Aluminum Work in accordance with reviewed shop drawings, manufacturer's written instructions, and CAN/CSA-A440-M/A440.1-M.
- .2 Install work of this Section securely, in correct location, level, square, plumb, at proper elevations, free of warp or twist.
- .3 Apply isolation coating at 0.8 mm dry film thickness to prevent corrosive or electrolytic action between dissimilar materials such as aluminum to concrete, masonry, galvanized steel and similar conditions.
- .4 Install flashings, closures, and trim pieces.
- .5 Fill voids between aluminum framing and adjacent construction with foam insulation.
- .6 Install sills in maximum lengths possible. For sills over 1200 mm in length, maintain 3 mm to 6 mm space at each end.
- .7 Refer to Contract Drawings for glazing type locations. Install glazing in accordance with Section 08 80 00.
- .8 Install hardware in accordance with hardware templates.
- .9 Adjust fixed and operable hardware for correct clearances and function.

- .10 Remove damaged or unacceptable Products and assemblies from Site and replace to Consultant's acceptance.
- .11 Install glass presence markers, in two cross stripes extending from diagonal corners. Maintain markers until final clean-up.

3.3 **ERECTION TOLERANCES**

- .1 Tolerances: Non-cumulative.
 - .1 Maximum variation from plumb: 1.5 mm/3 m non-cumulative or 12 mm/30 m, whichever is less.
 - .2 Maximum misalignment of two adjoining members abutting in plane: 0.8 mm.
 - .3 Vertical and horizontal positions: +/- 3 mm.
 - .4 Racking of face: 6 mm, nil in elevation.
 - .5 Operable components: Consistent with smooth operation and weatherproof performance.
 - .6 Maximum perimeter sealant joint between Aluminum Work and adjacent construction: 13 mm.

3.4 **GLAZING PERIMETER AIRSEAL**

- .1 Install glazing perimeter airseal at entire perimeter of each insulating glass unit to achieve an airseal from insulating glass unit to curtain wall frame. Do not obstruct path of cavity drainage and air pressure equalization.
- .2 Perform sealant work in accordance with manufacturer's written requirements.

3.5 **AIRSEAL TRANSITION MEMBRANE**

- .1 Install primer and airseal transition membrane in accordance with manufacturer's instructions. Install airseal transition membrane into extrusion reglet as indicated on drawings. If there is no extrusion reglet, mechanically fasten airseal transition membrane to frame with batten bar fastened at 150 mm o.c.
- .2 Overlap airseal transition membrane 75 mm minimum and lap in direction of waterflow.
- .3 Coordinate airseal transition to adjacent parts of Work.

3.6 **JOINT BACKING AND ALUMINUM WORK SEALANT**

- .1 Prepare substrate surface and mask as recommended by sealant manufacturer.
- .2 Install joint backing and sealant at Aluminum Work and perimeter joints for weather tight installation in accordance with sealant manufacturer's instructions. Tool sealant. Remove excess sealant.
- .3 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in sealant. Seal between sill upstand and window-frame. Seal butt joints in continuous sills.

3.7 ADJUSTING

- .1 Adjust operable units to move smoothly, with proper tension, throughout their full range of motion and to fit tightly when closed and locked.
- .2 Lubricate hardware in accordance with manufacturer's instructions.
- .3 Ensure that weatherstripping makes weathertight contact and does not cause binding to affect closing and locking.

3.8 CLEANING

- .1 Maintain Aluminum Work, inside and outside, in clean condition throughout construction period.
- .2 Remove labels, protective material, and glass presence markers from prefinished surfaces.
- .3 Remove CAN/CSA-A440-M/A440.1-M certification labeling when directed by Consultant, in writing.
- .4 Wash Aluminum Work with solution of mild detergent in warm water, with particular attention to recesses and corners. Wipe surfaces clean and dry.

END OF SECTION

Date: April 28, 2025

No. of Pages: 1 + Encl.

Project: Enniskillen PS Reno PH2

Project No.: TA-5688-25

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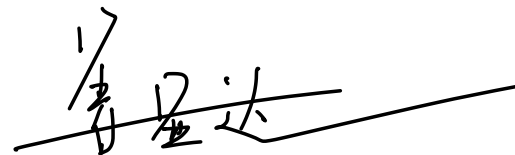
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The following items are revisions to the structural tender drawings issued April 23, 2025:

Drawing	Item
S1.1	<ul style="list-style-type: none">Updated OBC code reference to OBC 2024Added Seismic DataDetail 9/S1.1 has been renumbered to Detail 10/S1.1, and updated to show the existing OWSJAdded direction of existing OWSJ in the corridor areaAdded location and weight of the two ERV unitsAdded location and repair details for the removal of two existing exhaust fansAdded location of existing lintels being retained to Key PlanDetail 7/S1.1 has been updated to show existing cross-bridgingDetail 6/S1.1 has been updated to show diagonal bracingDetail 2/S1.1 has been updated to show the label for wall MW-1

Per



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Encl. Structural Drawings S1.1 (1 page)

- GENERAL NOTES:**
- Unless noted otherwise on the drawings, the following notes shall govern.
 - All work on this project shall conform to the current version of the Ontario Building Code (OBC 2024), any local regulations and bylaws, and the current Occupational Health and Safety Act (OHSA) and current regulations for construction projects. All codes and standards shall be those referenced in OBC 2024.
 - All standards are to be the newer, revised, document numbers, except as per OBC 2012 Division B, T.1.3.1.2. Where discrepancies exist between our drawings and T.1.3.1.2, the table shall govern unless noted otherwise.
 - This set of drawings supersedes and replaces all previous drawings.
 - The contractor shall verify all conditions and measurements at the site and verify all dimensions given on the structural drawings with the architectural drawings. Report to the engineer any discrepancies or unsatisfactory conditions which may adversely affect the proper completion of the project and the safety of the building.
 - If any structural discrepancies on the drawings exist, the most stringent shall apply.
 - Drawings are not to be scaled.
 - Shop drawings shall be submitted as per code.
 - Submit shop drawings as per Table 1. Shop drawings shall be certified by a professional engineer where required and reviewed by the contractor for dimensional correlation with the drawings and field conditions prior to submitting to Tacoma Engineers. Fabrication of elements on shop drawings may not proceed until shop drawings have been reviewed and approved by Tacoma Engineers.
 - Construction loadings shall not exceed the specified design loads indicated on the drawings. The contractor shall make adequate provision for construction loads and temporary bracing to keep all future loads and their alignment at all phases of construction. Any bracing members shown on the drawings are required for the finished structure and may not be sufficient for erection purposes.
 - OBC 2024 Division C, Subsection 12.2 requires general review of the construction by the design professional. Tacoma Engineers' liability shall be a minimum of 48 hours notice at C100, 75% B75. Liability by the Contractor for the following required construction review:

TABLE 1: SHOP DRAWING SUBMITTALS

ITEM	REQUIRED	ENGINEERS SUBMITTALS	NOTES
TEMPORARY SHORING	YES	YES	NEW OPENINGS AT EXTERIOR WALLS. REFER TO PLAN FOR DESIGN LOADS.
STRUCTURAL STEEL	YES	YES	STEEL CONNECTIONS

TABLE 2: REQUIRED TESTING & INSPECTION

RESULTS SHALL BE SUBMITTED DIRECTLY TO TACOMA ENGINEERS FROM THE TESTING COMPANY, FOR REVIEW

ITEM	REQ'D	NOTES
STRUCTURAL STEEL INSPECTION	YES	WELDING INSPECTION - PRIOR TO PAINTING

STRUCTURAL DESIGN LOADS:

- Design loads are indicated unless noted otherwise.
 - Climatic design (Clearing - Zone 6, ON)
 - Snow Load $S_s = 2.6 \text{ kPa}$
 - Wind Pressure $S_r = 0.4 \text{ kPa}$
 - Roof snow load $S = 1.5 \text{ kPa}$
 - Seismic data
 - Importance Factor $I_e = 1.3$
 - Site Designation $S_d = SC2$
 - Seismic Category $SC2$
 - 5% Damped Spectral Accelerations:
 - $S_{d(0.2, X_o)} = 0.314$
 - $S_{d(0.5, X_o)} = 0.304$
 - $S_{d(1.0, X_o)} = 0.182$
 - $S_{d(2.0, X_o)} = 0.088$
 - $S_{d(5.0, X_o)} = 0.023$
 - $S_{d(10.0, X_o)} = 0.007$
 - $P_{d(0.2, X_o)} = 0.183$
 - $P_{d(0.5, X_o)} = 0.195$
 - $P_{d(1.0, X_o)} = 0.195$
 - $P_{d(2.0, X_o)} = 0.195$
 - $P_{d(5.0, X_o)} = 0.195$
 - $P_{d(10.0, X_o)} = 0.195$
 - Structural Configuration
 - Building importance category $I_e = \text{High}$
 - Regular
 - Roof
 - Roof dead load $D_L = 1.0 \text{ kPa}$ (20 psf)
 - Assumed weight of ex. roof for the design of new elements only shown in the structural drawings.
 - Snow Importance Factor $I_s = 1.5$
 - Roof snow load $S = 1.5 \text{ kPa}$ (30 psf)
 - Wind
 - Importance Factor $I_e = 1.15$
 - Internal Pressure Category $I_p = 0.75$
 - Unfactored Wind Internal Load $p_i = 0.45 \text{ kPa}$
- Wind forces in accordance with the procedure described in the OBC 2024 and the National Building Code of Canada (NBCC) Structural Commentary I.

CONCRETE:

- All reinforced concrete elements are designed in accordance with CAN/CSA-A23.3.
- Concrete work shall conform to CAN/CSA-A23.1, 2.3 for materials and workmanship.
- Classes of concrete shall be placed in the locations noted:
 - Class of Concrete I_e Location
 - Interior concrete floor slabs that are not subjected to freezing or chlorides
 - Classes of concrete shall have the following mix requirements:

Class of Concrete	Strength	W/C Ratio	Air Entrainment	Aggregate Size
N-2	25 MPa	0.45	None	10 mm
- Adjust air entrainment percentage for aggregate size based on A23.1 Table 4.
- Concrete design is based on the above mix requirements. Physical properties (slump, aggregate size, etc.) suit to installation by others and shall not affect requirements specified.
- All concrete to be tested shall be tested by a CSA certified testing laboratory. Copies of testing reports to be provided to Tacoma Engineers by testing agency. Test less than one strength test shall be made for each 100 m³ of concrete with at least three tests for each class of concrete used, per day.
- Use high frequency vibration to place all concrete.
- All concrete shall be kept moist during the first 3 days of curing.
- Take adequate measures to protect the concrete from exposure to freezing temperatures at least 7 days after concrete placement. Cold weather protection is required for all concrete placed where it is forecasted that the ambient temperature will drop below 5°C within 24 hours of placement. Protection provided, including insulated blankets, polyethylene covered sand, supplemental heat and/or chemical admixtures, is to be sufficient to maintain a minimum curing temperature of 10°C for 3 days.
- Finish exposed concrete work as per architectural drawings.
- Do not add water to concrete on site.
- Rebar chairs (bar supports) can be of precast concrete, plastic or steel. Wood, clay bricks and concrete blocks are not acceptable. Steel chairs may not be used in corrosive environments, including parking garages.
- Do not hand trowel or machine trowel air entrained concrete slabs because it can lead to delamination and/or blistering.

CONCRETE SLABS ON GRADE:

- Place slab on 150mm (6") granular fill compacted to 98% SPDD founded on native soils or approved engineered fill, unless noted otherwise (refer to geotechnical engineers report for recommendations).
- See architectural drawings for recesses and depressions in slab on grade and maintain slab thickness indicated on structural drawings in all cases.
- Concrete floors shall be covered with plastic and kept moist for the first 3 days of curing.
- Install sawcuts to a minimum of 1/4" slab depth in the floor slab within 24 hours of pour. The maximum center-to-center spacing for sawcuts shall be 24 times the depth unless noted otherwise.
- Fill sawcuts and construction joints with semi-rigid, flexible epoxy joint filler, to the manufacturer's specifications. Acceptable fillers (interior joints): W.R. Meadows Fast-Vulc, Sika Loadflex, or approved alternate.
- All slabs on grade shall be reinforced with welded wire fabric (WVF) 152mm (6") W18 (16" x 6") (6" x 6").
- Slabs on grade to bear on materials suitable for 25 kPa (600 psf) SLB allowable bearing pressures.
- Specified bed bearing capacity for slabs on grade must be verified by a geotechnical engineer prior to placing the slabs. Any non-conformance with the specified minimum capacities must be immediately reported to the structural engineer.
- Where slab on grade is used to be the top of a wall retaining earth, that wall shall be adequately shored until the slab has been placed and attained 75% of its design strength.

REINFORCING STEEL:

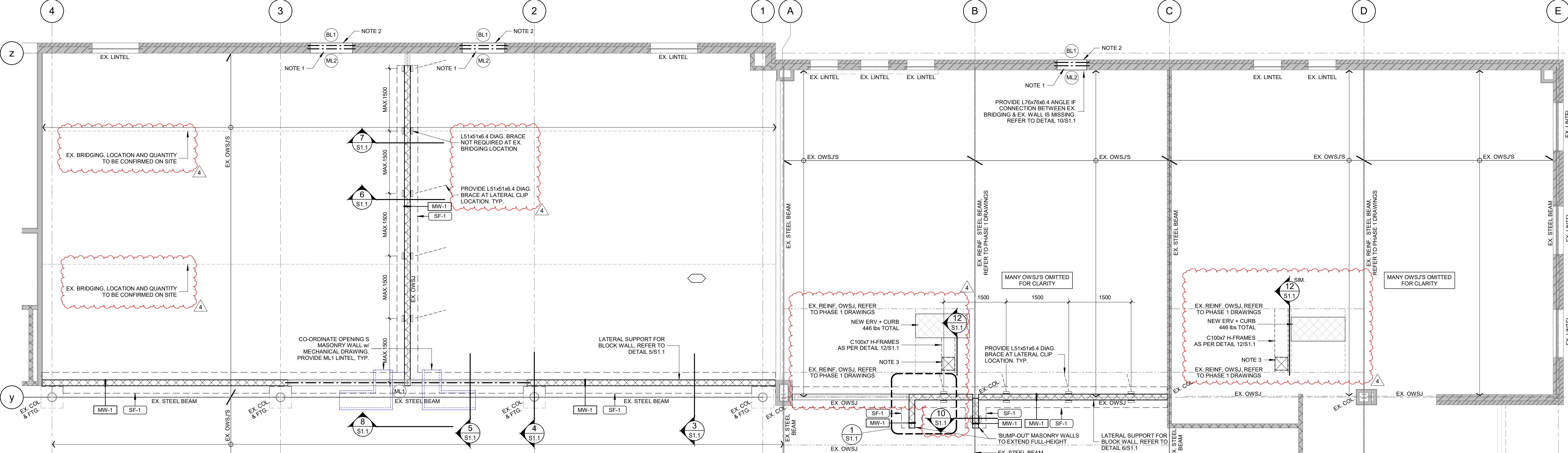
- All rebar shall be as specified herein conforming to CSA C30.18 with a minimum yield strength of 400 MPa.
- Reinforcing steel shall be fabricated by a supplier experienced in bar bending. All bend diameters shall conform to CSA A23.1.
- All rebar shall be delivered, fabricated and placed in accordance with the Reinforcing Steel Manual of Standard Practice (RSCM).
- 40mm (1 1/2") for concrete placed in formwork for 15M or smaller bars.
- Chairs shall be used to maintain the specified concrete cover.
- Minimum rebar lap length (25 MPa, normal delay, uncoated bars) shall be Class B splices as listed below. Multiply by 1.3 for horizontal rebar with more than 300mm (12") of concrete below the lap, except in walls.
 - 450mm (18") for 10M bars
 - 600mm (24") for 15M bars

MASONRY (CONCRETE BLOCK):

- Masonry shall conform to CSA A304 "Design of Masonry Structures" and CSA A371 "Masonry Construction for Buildings".
- Cold weather protection. Protect all work from frost damage in accordance with CSA A371 and Canadian Masonry Design Centre, Bulletin No. 1. No masonry work shall be permitted with temperature below 5°C unless adequate provisions are made for heating materials and protecting completed work.
- Hot weather protection. Protect all work from hot weather in accordance with CSA A371 and National Concrete Masonry Association, Bulletin No. 1. No masonry work shall be permitted with ambient temperature above 38°C or 20°C with wind speed greater than 15 km/h, unless adequate provisions are made.
- Concrete blocks shall be regular weight, 80% solid, with a minimum 28 day compressive strength of 8.5 MPa.
- Mortar shall conform to CSA A179. Mortar shall be type "S" with a minimum 28 day compressive strength of 8.5 MPa.
- GROUT shall conform to CSA A179. 28 day grout strength shall be 10 MPa (minimum) for fine grout and 12.5 MPa (minimum) for coarse grout unless noted.
- Aggregate for mortar and grout mixes shall be proportioned (measured) in a damp, loose state.
- Testing for masonry units, mortar, and grout shall be performed in accordance with CSA S304.
- Vertical control joints shall be installed in all walls at 700mm (28") o.c. maximum, unless noted otherwise. Do not install vertical control joints through bond beams or tension/compression chords. Instead stop the control joint below and above the bond beam and use the bond beam rebar through.
- Install suitable damp course flashing with weepholes at 600mm (24") o.c. Repair all damage to flashing.
- Reinforce all masonry with 3.65mm (9 ga) "ladder" type wire reinforced at 600mm (24") o.c. except where noted otherwise. Provide full overlap at all wall intersections and corners. Lap straight wire with 300mm (12") overlap.
- Beams and lintels shall have a minimum bearing length of 200mm (8"). Solid masonry light into webs at the bearing points.
- Filling of block units with mortar instead of grout is not acceptable.
- Where masonry walls are noted as being reinforced with vertical bars, minimum lap lengths shall be provided and the cores containing the vertical bars shall be filled with grout.
- Where note is made to fill masonry solid, all cores shall be filled solid from the bearing point down to the base of wall with grout.
- Where masonry bears on steel beams, weld 15M x 300mm (12") long weepable rebar dowels at 1200mm (48") o.c. to beams.
- All masonry installed above roof deck elevation or below grade shall be grouted 100% solid.
- Use running bond block construction. Key all masonry joints at wall corners and intersections. Rake back wall construction when turning wall corners. Provide 30mm x 4.8mm (1 1/2" x 5/16") steel wire at every second course tying block walls to adjoining concrete walls and structural steel.
- Minimum rebar lap length (deformed, uncoated bars) shall be:
 - 450mm (18") for 10M bars
 - 600mm (24") for 15M bars
- See architectural drawings for fire-resistance ratings (FRR). Provide 60% solid block for 100mm (8") block requiring a 4-hour FRR.

STRUCTURAL STEEL:

- All structural steel elements are designed in accordance with CSA S16.
- Submit erection and shop drawings for review by the project engineer. Standard connections shall conform to the Handbook of Steel Construction. Non-standard connections (including moment connections) shall be designed and sealed by a professional engineer registered in the province of Ontario.
- Structural steel beams and angles shall conform to ASTM A992/992M grade 50 (F_y = 345 MPa) unless noted.
- Structural steel channels and angles shall conform to CSA G40.21 grade 300W unless noted.
- All steel plate to be A36 (F_y = 250 MPa) material (minimum), unless noted.
- Welding shall conform to CSA W47.1 and CSA W59, by the Canadian Welding Bureau. All welding shall be completed by CWB certified welders. Third party welding inspection shall be performed by firms certified to CSA W178.1 and W178.2.
- Bolted connections shall be made using grade A325 bolts, unless noted otherwise.
- Anchor rods shall conform to ASTM F1554 (formerly ASTM A307). Material shall be minimum grade 36 (F_y = 414 MPa) (formerly ASTM A307 grade C), or CSA G40.21 300W (F_y = 450 MPa).
- Structural steel shall be tested by an independent CSA certified testing company for erection tolerances, plumbness, alignment, connections, elevation, material, and workmanship.
- Galvanizing for metals shall conform to CSA G16 unless noted. Touch-up on site by grinding the surface to bright metal and applying zinc rich paint conforming to CAN/CSG-1.18 (per ASTM A790).
- Coordinate with mechanical, electrical and all other subtrades whom work affects the detailing, fabrication and erection of the structural steel.
- Do not cut openings in structural steel members without approval from Tacoma Engineers.
- Where masonry bears on steel beams, weld 15M x 300mm (12") long weepable rebar dowels at 1200mm (48") o.c. to beams.
- If holes in base plates are oversized to suit site conditions, notify Tacoma Engineers and supply and install plate washers to cover the hole.
- Design steel connections to the maximum UDL loads in the Steel Handbook beam tables, provided no point loads act on the beam and where shears are not indicated.
- Connections shall be concentric and shall not introduce eccentricity into any elements, including beams into which beams frame.



FOUNDATION AND ROOF FRAMING PLAN

SCALE: 1:50

LEGEND:

- REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS
- SPAN OF STRUCTURAL MEMBERS, AS NOTED
- MW- DENOTES MASONRY WALL TYPE. REFER TO MASONRY WALL SCHEDULE FOR REINFORCING REQUIREMENTS
- L- DENOTES DROPPED LINTEL TYPE. REFER TO LINTEL TYPE SCHEDULE FOR SIZE AND REINFORCING

GENERAL NOTES:

- CONTRACTOR TO VERIFY EXISTING CONDITIONS AND REPORT BACK ANY DEFICIENCIES TO TACOMA ENGINEERS.
- CONTRACTOR TO PROVIDE TEMPORARY SHORING PRIOR TO THE REMOVAL OF EXISTING STRUCTURAL ELEMENTS. DESIGN OF TEMPORARY SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL DIMENSIONS SHOWN ON PLAN ARE APPROXIMATE. CONTRACTOR TO SITE CONFIRM DIMENSIONS PRIOR TO CONSTRUCTION.

CONSTRUCTION NOTES:

- (AS REFERENCED ON FRAMING PLAN)
- PROVIDE TEMPORARY SHORING FOR EXISTING BLOCK WALL AT PROPOSED OPENINGS, TYPICAL (PT = 35 kN/m).
 - PROVIDE TEMPORARY SHORING FOR EXISTING BRICK VENEER AT PROPOSED OPENINGS, TYPICAL (PT = 10 kN/m).
 - REMOVE EXISTING ROOF DECK (OR MATCH EXISTING ROOF DECK) AT EXHAUST FAN OPENING.

SLAB THICKENING SCHEDULE

MARK	SIZE	REINFORCING
SL-1	150 WIDE x 150 DEEP CONC	2-15M CONTINUOUS BARS

- NOTES:
- PROVIDE 75 CONCRETE COVER TO U/S OF REINFORCING STEEL PLACED AGAINST SOL. U.N.O.
 - REFER TO WALL SCHEDULE FOR DOWELS REQUIREMENTS.

BRICK LINTEL SCHEDULE

MARK	TYPE	SIZE
BL-1		2-68x8x7.9

- NOTES:
- PROVIDE MIN. 200 BEARING AT EACH END FOR ALL LINTELS, U.N.O.
 - GROUT MASONRY SOLID BELOW ALL LINTEL ENDS FOR ALL CORES BENEATH BEARING POINT.

MASONRY BLOCK LINTEL SCHEDULE

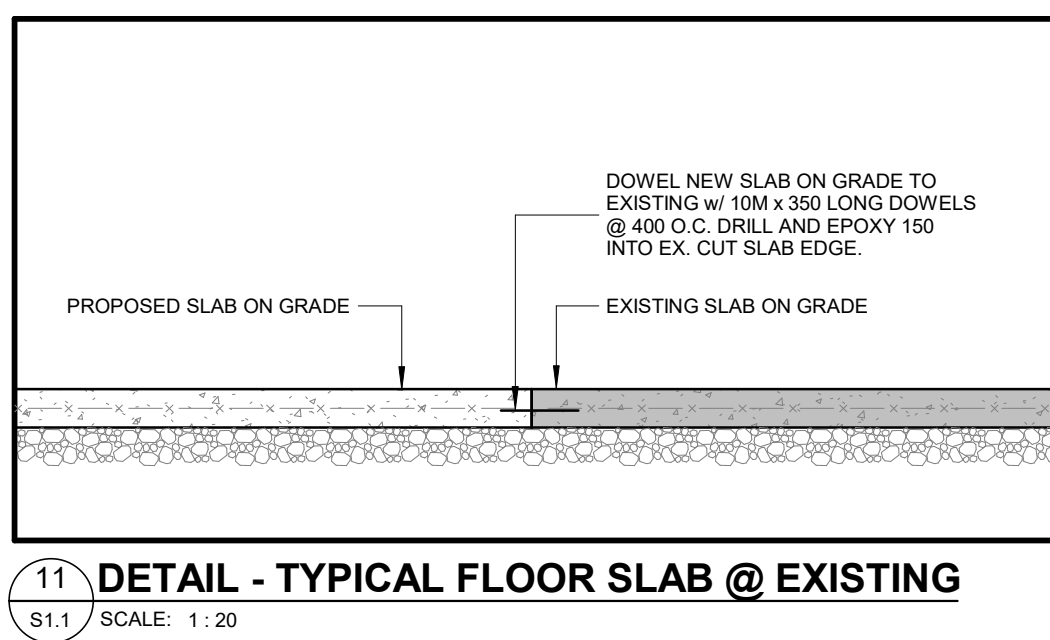
MARK	TYPE	SIZE
SL-1		2-15Mx4x7.9 (LLV)

- NOTES:
- PROVIDE 75 CONCRETE COVER TO U/S OF REINFORCING STEEL PLACED AGAINST SOL. U.N.O.
 - REFER TO WALL SCHEDULE FOR DOWELS REQUIREMENTS.

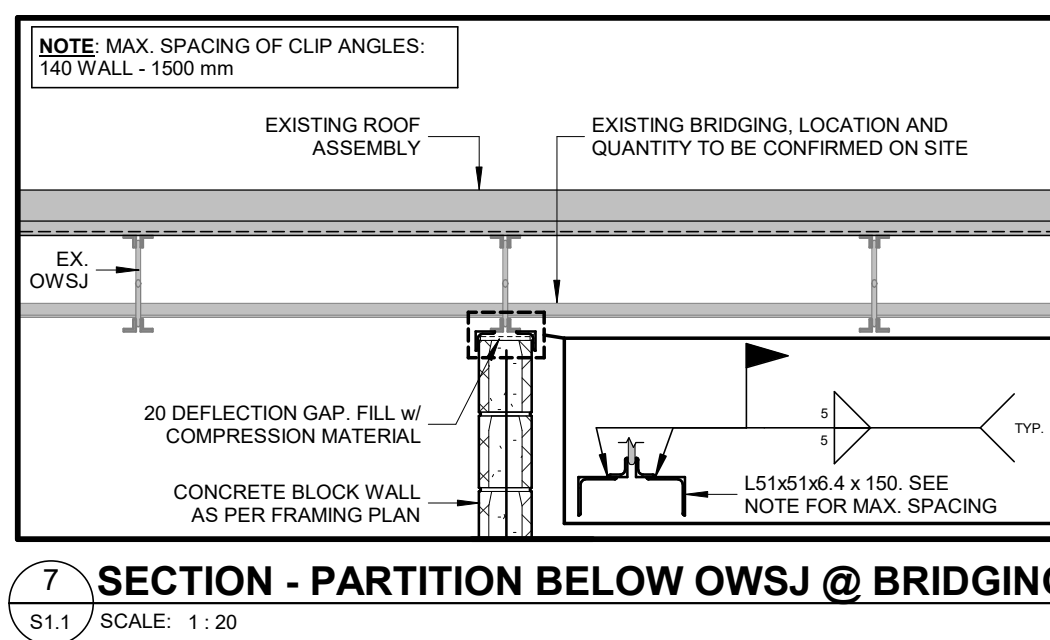
MASONRY WALL SCHEDULE

MARK	WALL TYPE	REINFORCING
MW-1	150 CONCRETE MASONRY UNITS	15M VERTICAL @ 1200 O.C. 15M LADDER TYPE, U/S REINFORCING @ 600 O.C.

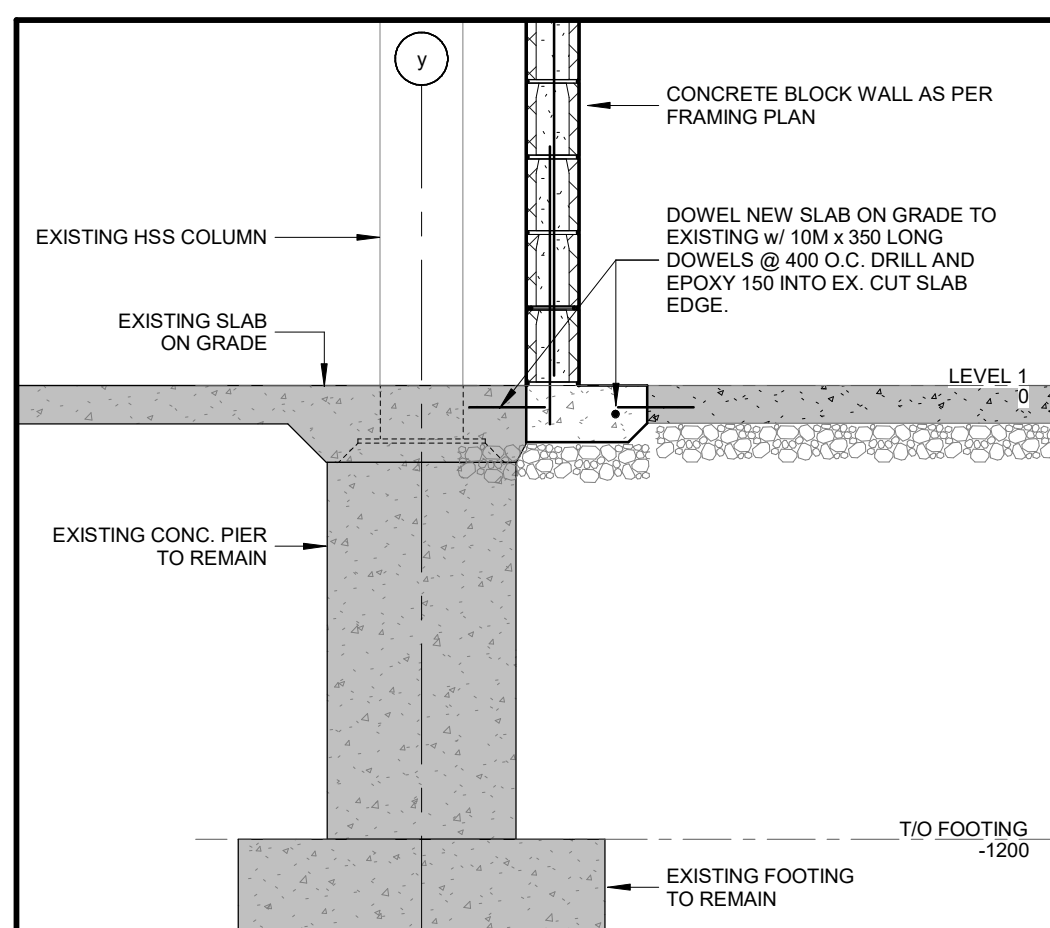
- NOTES:
- HORIZONTAL JOINT REINFORCING TO BE 3.65mm (9S) LADDER JOINT REINFORCING, IN BLOCK BED JOINTS AT 600 O.C. (EVERY THIRD JOINT).
 - PROVIDE 15M x 75S DOWEL TO SLAB THICKENING AS PER DETAIL S1.1.
 - FULL HEIGHT NONLOADBEARING CONCRETE BLOCK WALLS, PROVIDE TOP OF WALL LATERAL SUPPORT.



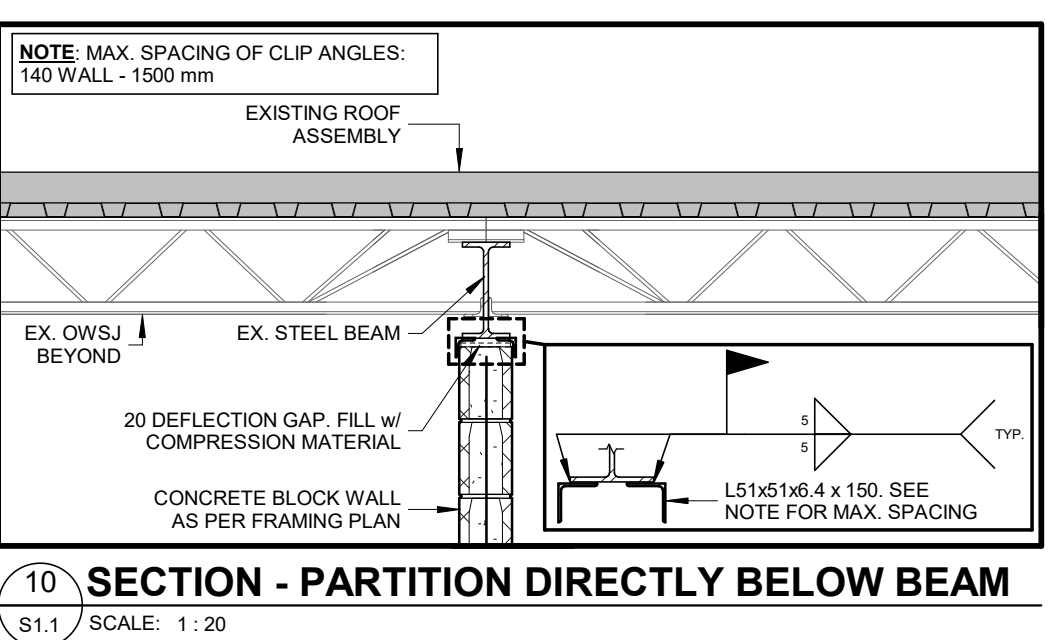
11 DETAIL - TYPICAL FLOOR SLAB @ EXISTING
S1.1 SCALE: 1:20



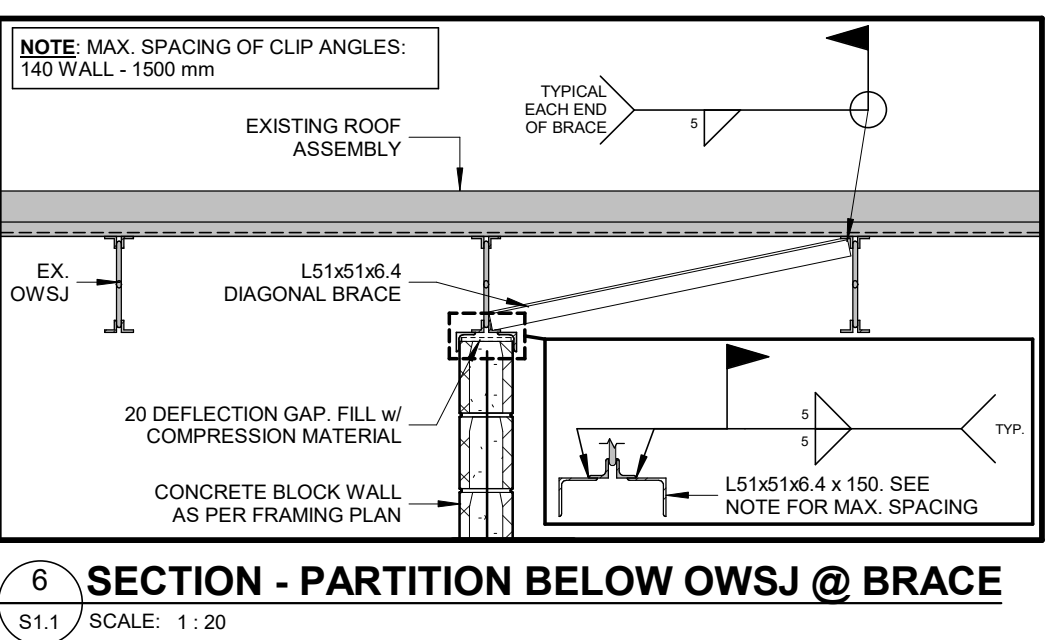
7 SECTION - PARTITION BELOW OWSJ @ BRIDGING
S1.1 SCALE: 1:20



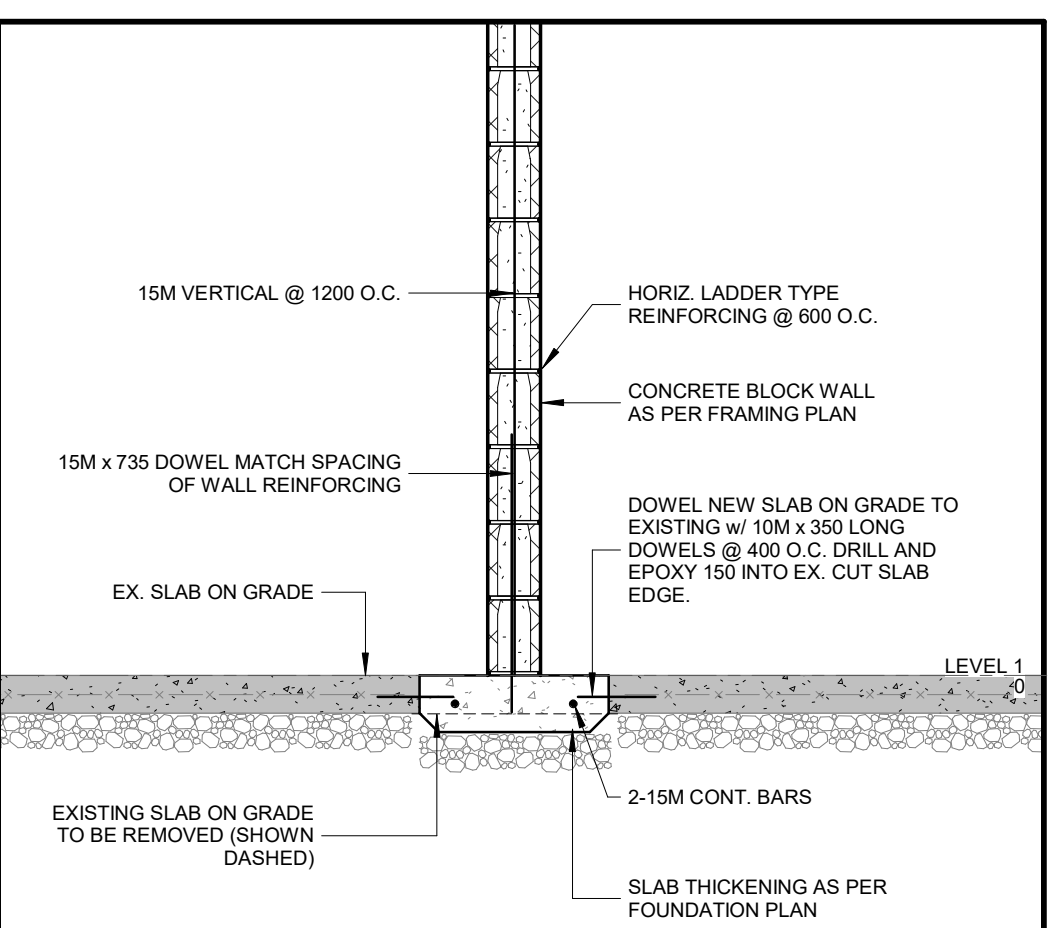
4 STRIP FOOTING AT EXISTING PIER
S1.1 SCALE: 1:20



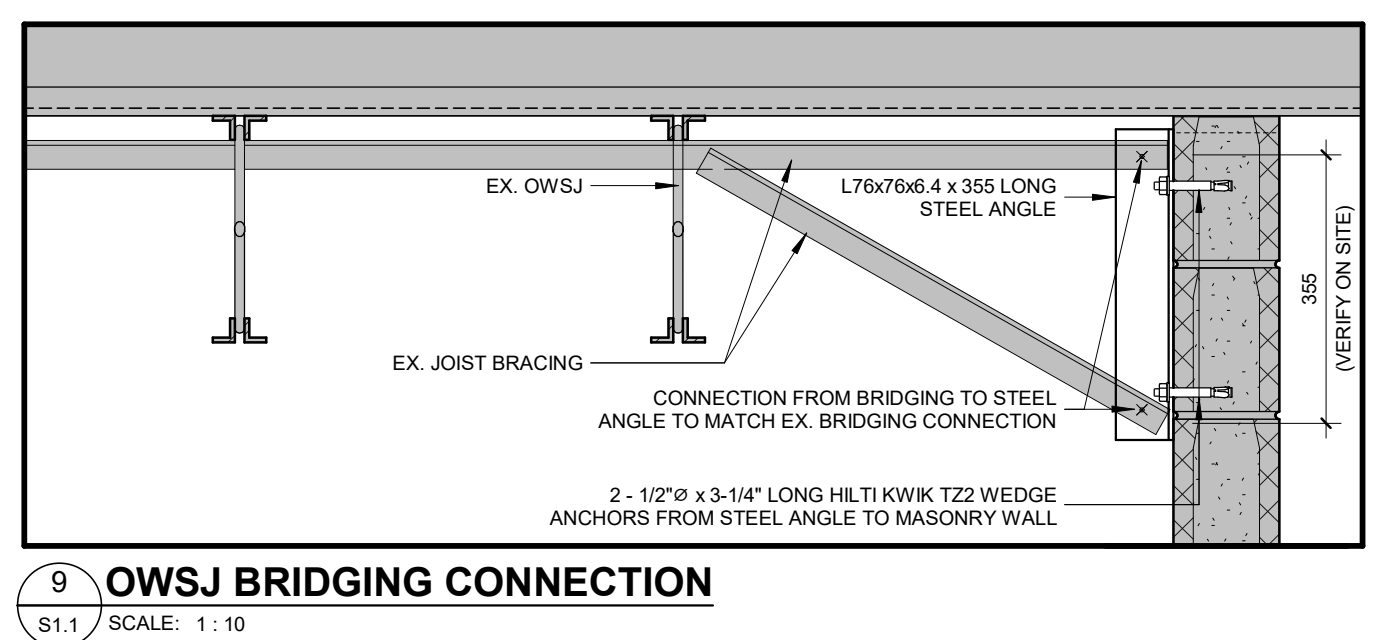
10 SECTION - PARTITION DIRECTLY BELOW BEAM
S1.1 SCALE: 1:20



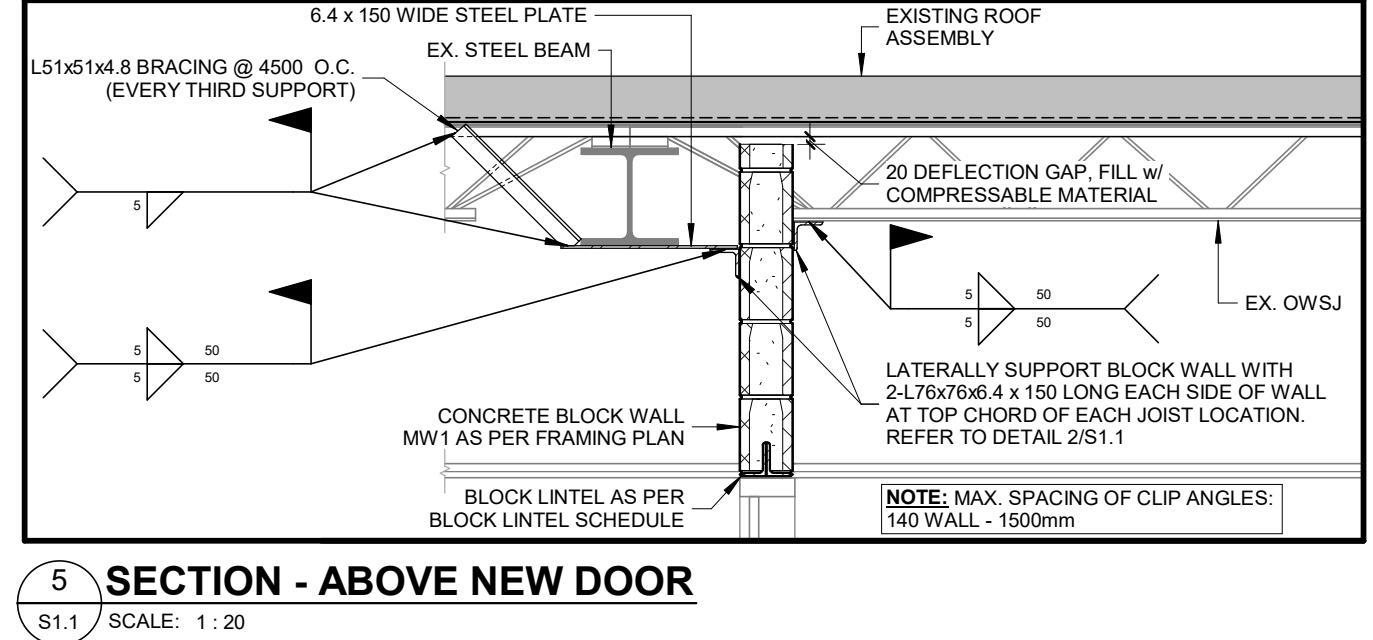
6 SECTION - PARTITION BELOW OWSJ @ BRACE
S1.1 SCALE: 1:20



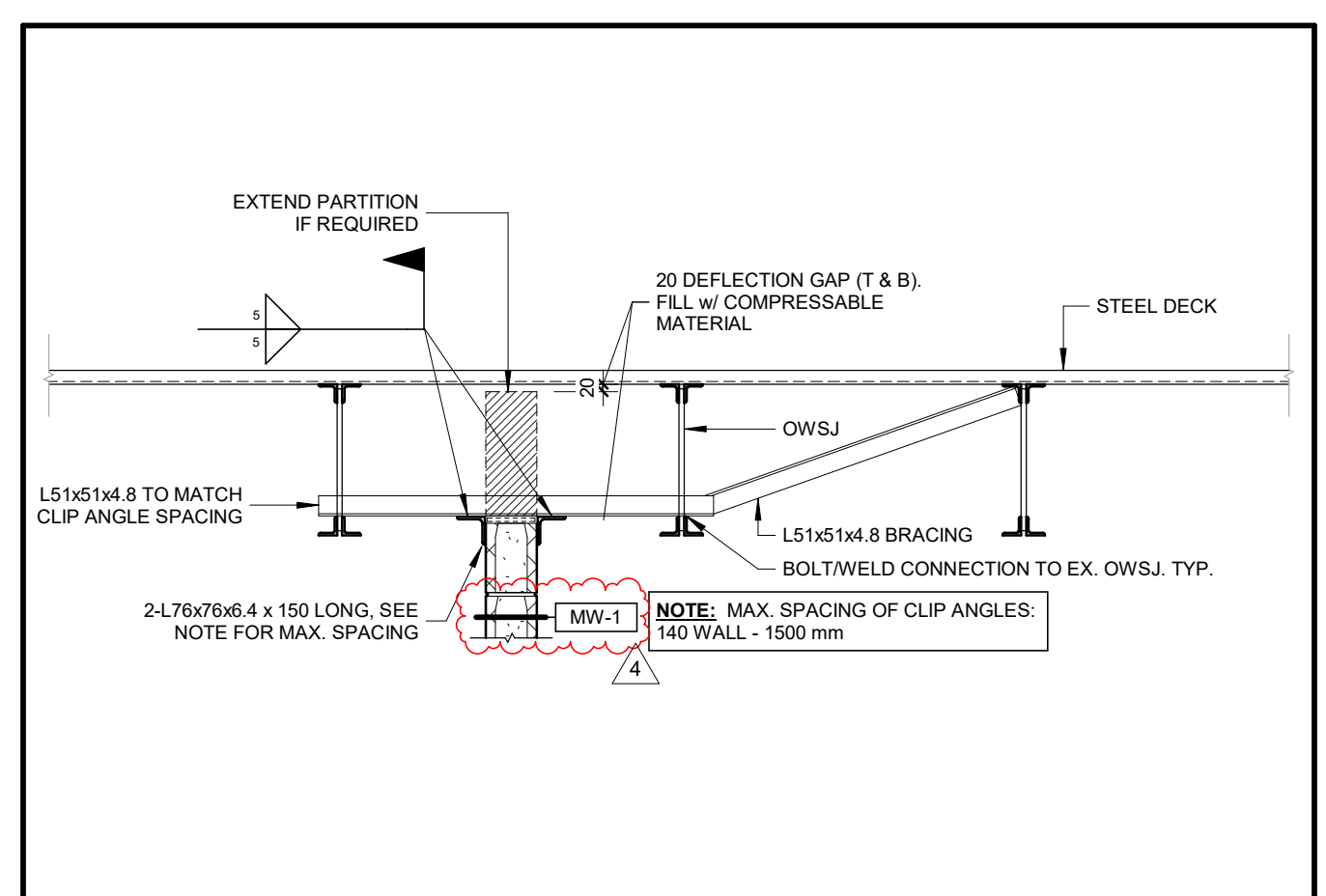
3 TYPICAL SLAB THICKENING
S1.1 SCALE: 1:20



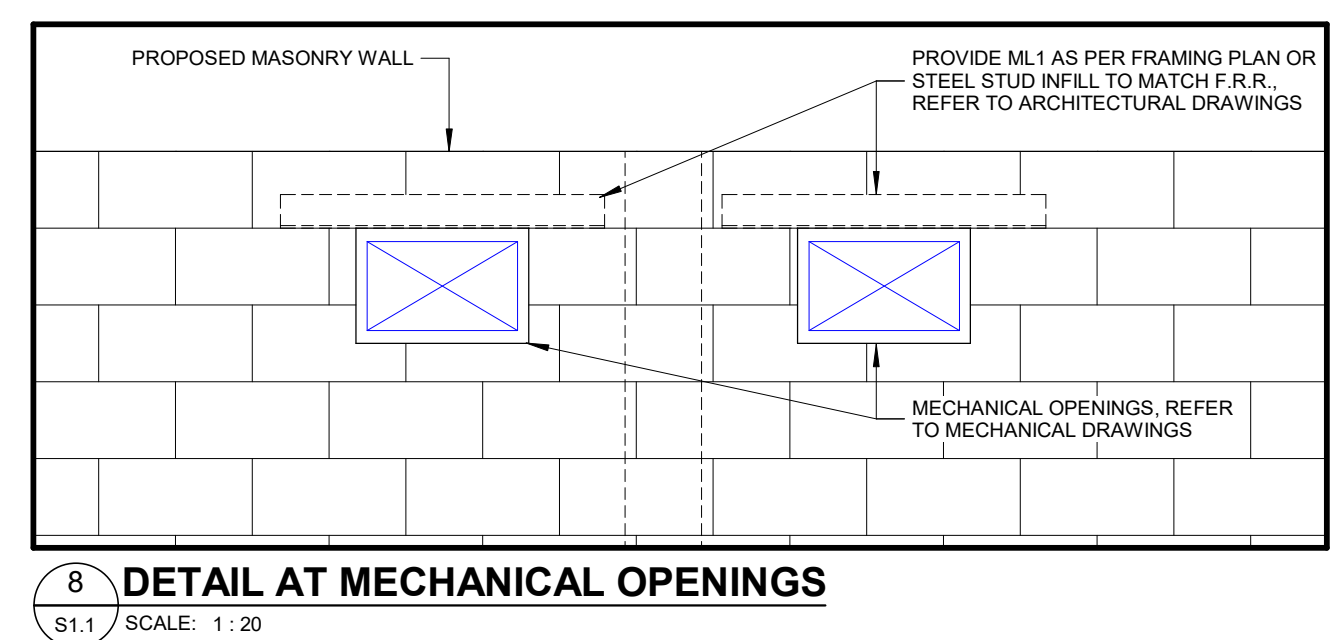
9 OWSJ BRIDGING CONNECTION
S1.1 SCALE: 1:10



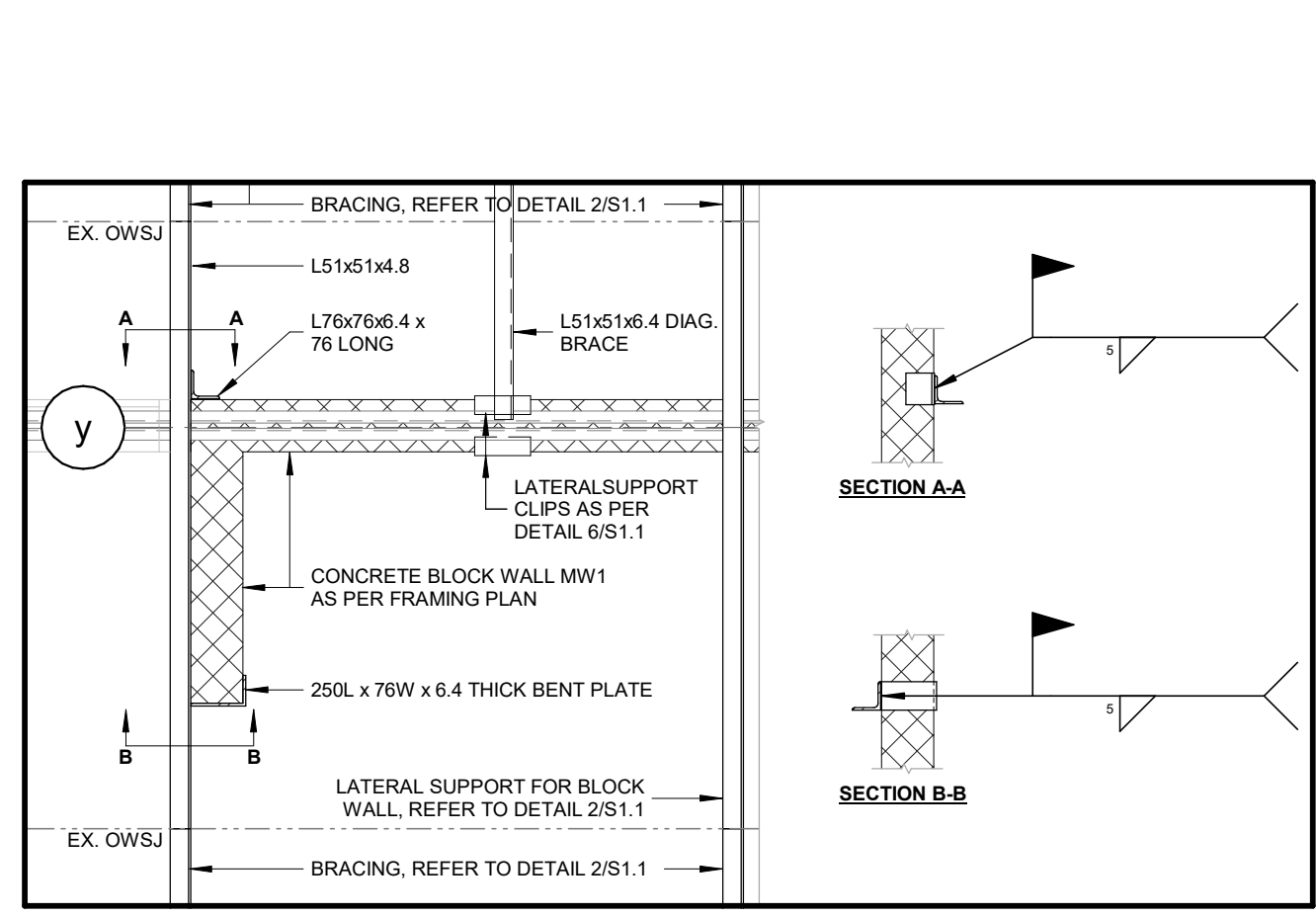
5 SECTION - ABOVE NEW DOOR
S1.1 SCALE: 1:20



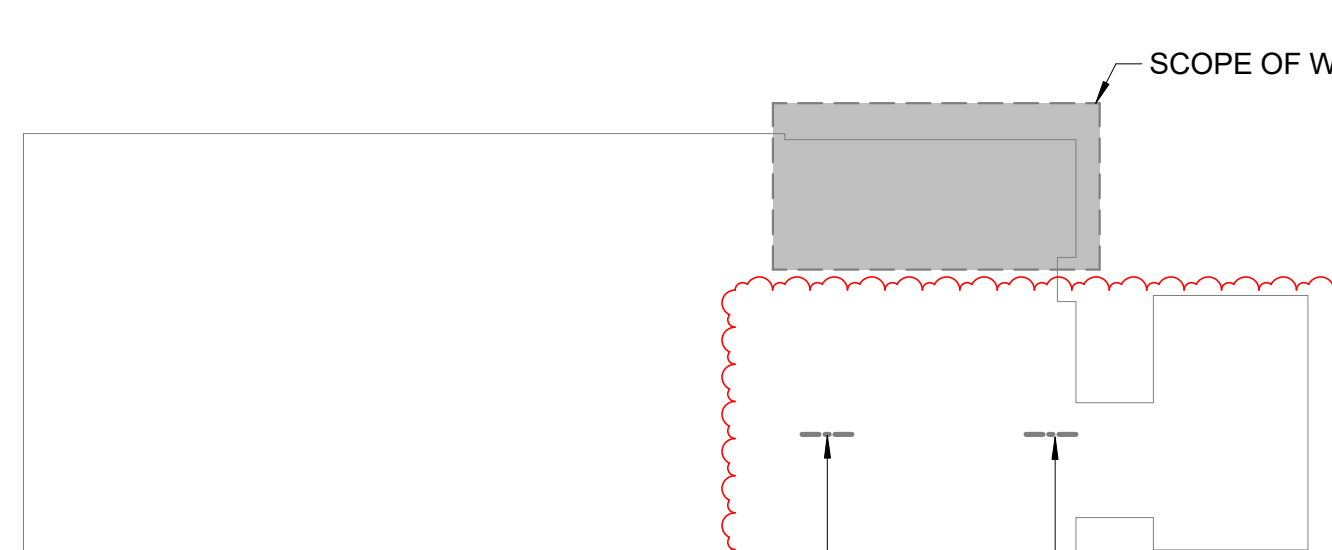
2 SECTION - LATERAL SUPPORT FOR PARTITIONS, U.N.O.
S1.1 N.T.S.



8 DETAIL AT MECHANICAL OPENINGS
S1.1 SCALE: 1:20



1 PLAN DETAIL - LATERAL SUPPORT AT BLOCK WALL
S1.1 SCALE: 1:20

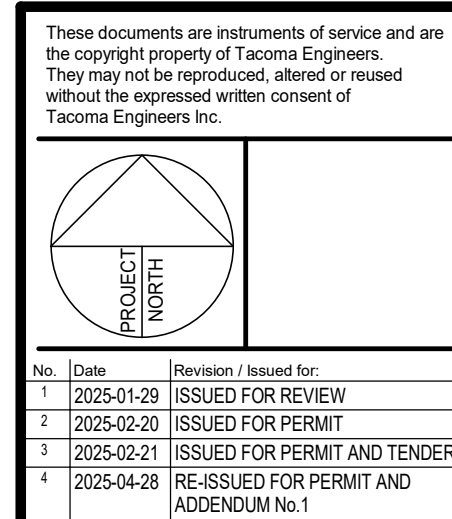


12 DETAIL - H-FRAME
S1.1 N.T.S.

KEY PLAN

SCALE: 1:500

EX WINDOWS TO BE REPLACED WITH WINDOWS OF SAME SIZE AS EXISTING. EXISTING LINTELS TO REMAIN



No.	Date	Revision / Issued for
1	2025-01-29	ISSUED FOR REVIEW
2	2025-02-01	ISSUED FOR PERMIT
3	2025-02-21	ISSUED FOR PERMIT AND TENDER
4	2025-02-28	RE-ISSUED FOR PERMIT AND TENDER

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PROVINCE OF ONTARIO

salterpilon
architecture

ENNISKILLEN P.S.
RENOVATIONS
PHASE 2

FOUNDATION
AND ROOF
FRAMING PLAN

Project No: 1A-5689-25
Drawn by: J. HUTCHINGS

S1.1