

F. STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST VERSION OF CAN/CSA-S16 AND THE CISC CODE OF STANDARD PRACTICE.
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST VERSION OF CAN/CSA G40.20, G40.21 GRADE 350W CLASS C FOR H.S.S., G40.21 GRADE 350W FOR W SHAPE SECTIONS AND G40.21 GRADE 300W FOR CHANNELS, ANGLES AND MISCELLANEOUS METAL.
- BOLTED CONNECTIONS SHALL USE GRADE A325 BOLTS.
- WELDING SHALL CONFORM TO CSA W59 AND CSA W47 DIVISION 1 OR DIVISION 2.1 BY THE CANADIAN WELDING BUREAU. WELDING SHALL BE COMPLETED BY CWB CERTIFIED FABRICATOR AND ERECTOR TO THE CSA STANDARDS W178.1 AND W178.2.
- ALL ROOF OPENINGS IN METAL DECK AND SUPPORT OF ALL ROOF UNIT CURBS ON METAL DECK ARE TO BE REINFORCED WITH C5x6.7 CHANNEL FRAMES UNLESS NOTED OTHERWISE.
- ALL STRUCTURAL STEEL IS TO BE SHOP PRIME PAINTED UNLESS NOTED OTHERWISE. STRUCTURAL STEEL WHICH IS TO BE PROTECTED WITH SPRAY APPLIED FIREPROOFING IS TO BE KEPT CLEAN AND UNCOATED. STRUCTURAL STEEL EXPOSED TO WEATHER IS TO BE HOT DIP GALVANIZED CONFORMING TO THE LATEST VERSION OF CAN/CSA-G 164. ALL COATINGS ARE TO BE TOUCHED UP ON SITE WITH APPROVED PAINT FOR PRIMED STEEL AND ZINC RICH PAINT FOR GALVANIZED STEEL.
- DESIGN METAL DECK IN CONFORMANCE TO THE LATEST VERSION OF CAN/CSA-S16 INCLUDING SUPPLEMENT CAN/CSA-S136S1.
- ROOF DECK SHALL BE MINIMUM 1 1/2"x0.030" (38mmx0.76mm) LZC UNLESS NOTED OTHERWISE.
- FASTENING FROM DECK TO STRUCTURAL STEEL SHALL BE MINIMUM 3/4" (19mm) DIAMETER PUDDLE WELD OR HLT X-EDN19 / HLT X-EDN22 / HLT X-ENP-19 OR APPROVED ALTERNATIVE (FOLLOW MANUFACTURER RECOMMENDATIONS FOR PIN INSTALLATIONS BASED ON CONNECTED MEMBER THICKNESS) AT THE FOLLOWING MINIMUM SPACING:
 - TRANSVERSE WELDS 12" (305mm) OR PINS 8" (200mm)
 - PERIMETER WELDS 12" (305mm) OR PINS 8" (200mm)
 - LONGITUDINAL WELDS 24" (610mm) OR PINS 16" (400mm)
 - BUTTON PUNCH ALL SEAMS @ 12" (305mm) O.C.
- DECK OVERLAP AND MINIMUM BEARING LENGTH TO BE MINIMUM 2" (51mm).
- DECK WELDS SHALL BE TOUCHED UP WITH APPROVED PAINT.

G. LUMBER

- WOOD FRAMING DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST VERSION OF CSA O86.
- SAWN LUMBER SHALL CONFORM TO CSA STANDARD O141 AND BE S-P-F GRADE NO. 2 OR BETTER.
- GLUE LAMINATED MEMBERS ARE TO CONFORM TO THE LATEST VERSION OF CAN/CSA-0122. THE MANUFACTURER SHALL BE QUALIFIED PER CSA STANDARD 0177. CONNECTIONS AND END BEARING CONDITIONS TO CONFORM TO CSA STANDARD S16. GLUE LAMINATED MEMBERS ARE NOT TO BE CUT OR MODIFIED IN THE FIELD. COAT ENDS OF GLUE LAMINATED MEMBERS WITH APPROVED END SEALER.
- NAILS SHALL CONFORM TO STEEL WIRE NAILS AND SPIKES AS DEFINED IN CSA B111 UNLESS NOTED OTHERWISE.
- LATERALLY SUPPORT ALL STEEL BEAMS BY PRE-DRILLING FLANGES FOR 1/2" (13mm) BOLTED ATTACHMENT OF WOOD NAILERS WITH 5/8" (16mm) HOLES STAGGERED @ 24" (600mm) O.C.
- ALL NAILS AND FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD ARE TO BE HOT DIP GALVANIZED OR STAINLESS STEEL.
- RETIGHTEN ALL BOLTED CONNECTIONS SIX MONTHS AFTER FIRST INSTALLATION AND EVERY SIX MONTHS THEREAFTER UNTIL NO APPRECIABLE CHANGE IS EVIDENT.

SHOP DRAWINGS REQUIREMENTS

NAME	REQ'D	P. ENG. STAMP	MIN. CERTIFICATION REQS.
STRUCTURAL STEEL	YES	YES	CONNECTIONS ONLY
STEEL DECK	YES	YES	WELDS, MATERIALS, & FINISHES
MASONRY WALL BRACING	YES	YES	LAYOUT, & ANCHORAGE
STEEL STUD FRAMING	YES	YES	MATERIALS, CONNECTIONS, BRACING & BRIDGING

SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO ISSUING TO THE ENGINEER FOR REVIEW.

CONSTRUCTION NOTES:

A. GENERAL

- ALL WORK SHALL CONFORM TO THE ONTARIO BUILDING CODE AND ALL STANDARDS REFERENCED WITHIN, LOCAL REGULATIONS AND BYLAWS, AND THE OCCUPATIONAL HEALTH AND SAFETY ACT FOR CONSTRUCTION PROJECTS. THE LATEST VERSIONS OF STANDARDS SHALL APPLY.
- READ THESE DRAWINGS IN CONJUNCTION WITH ALL RELATED CONTRACT DOCUMENTS AND CONSULTANT DRAWINGS.
- THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS WHICH MAY ADVERSELY AFFECT THE PROPER COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS IN RELATION TO THE DRAWINGS AND NOTIFY THE ENGINEER TO ALL DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
- DRAWINGS ARE NOT TO BE SCALED.
- THE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE WITH THE PARTY WHOM THE ENGINEER HAS ENTERED INTO CONTRACT. THERE ARE NO REPRESENTATIONS MADE TO ANY PARTY WITH WHOM THE ENGINEER HAS NOT ENTERED INTO CONTRACT.
- THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING AND INSPECTION COMPANY TO ENSURE THAT THE WORK IS DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS INCLUDING COMPACTION TESTING, REINFORCING STEEL PLACEMENT, CONCRETE TESTING AND STRUCTURAL STEEL.
- THE ENGINEER SHALL BE GIVEN MINIMUM 24 HOURS NOTICE BY THE CONTRACTOR FOR ALL CONSTRUCTION REVIEWS, SITE VISITS AND REVIEWS BY THE ENGINEER OR THEIR REPRESENTATIVES ARE INTENDED FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT. THE REVIEWS SHALL NOT MEAN THAT THE ENGINEER HAS SEEN ALL CONSTRUCTION PROCEDURES. REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS AND FOR MEETING ALL THE REQUIREMENTS OF THE CONSTRUCTION AND CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS FOR CONSTRUCTION LOADS AND TEMPORARY BRACING TO ENSURE SAFETY AND THE BUILDING IS PLUMB AND IN TRUE ALIGNMENT AT ALL PHASES OF CONSTRUCTION AS PER O REG 213/91. ALL BRACING MEMBERS SHOWN ON THE DRAWINGS ARE DESIGNED FOR THE FINISHED STRUCTURE AND MAY NOT BE SUFFICIENT FOR ERECTION PURPOSES. SHORING AND BRACING IS REQUIRED UNTIL PROPOSED STRUCTURE IS PROPERLY IN PLACE. SHORING AND BRACING SHALL BE DESIGNED, REVIEWED AND APPROVED BY A PROFESSIONAL ENGINEER. SHOP DRAWINGS SHALL BE SUBMITTED WITH P. ENGS STAMP FOR OUR REVIEW PRIOR TO CONSTRUCTION.
- NO SUBSTITUTIONS FROM THE SPECIFIED PRODUCTS AND MATERIALS ARE PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.

TESTING REQUIREMENTS

TEST	COMMENTS
STRUCTURAL STEEL CONNECTIONS	INSPECT ALL FIELD WELDS
ALL TESTING TO BE COMPLETED BY A CERTIFIED INDEPENDENT TESTING AND INSPECTION COMPANY. COPIES OF ALL REPORTS ARE TO BE FORWARDED TO THE ENGINEER FOR REVIEW.	

B. DESIGN PARAMETERS

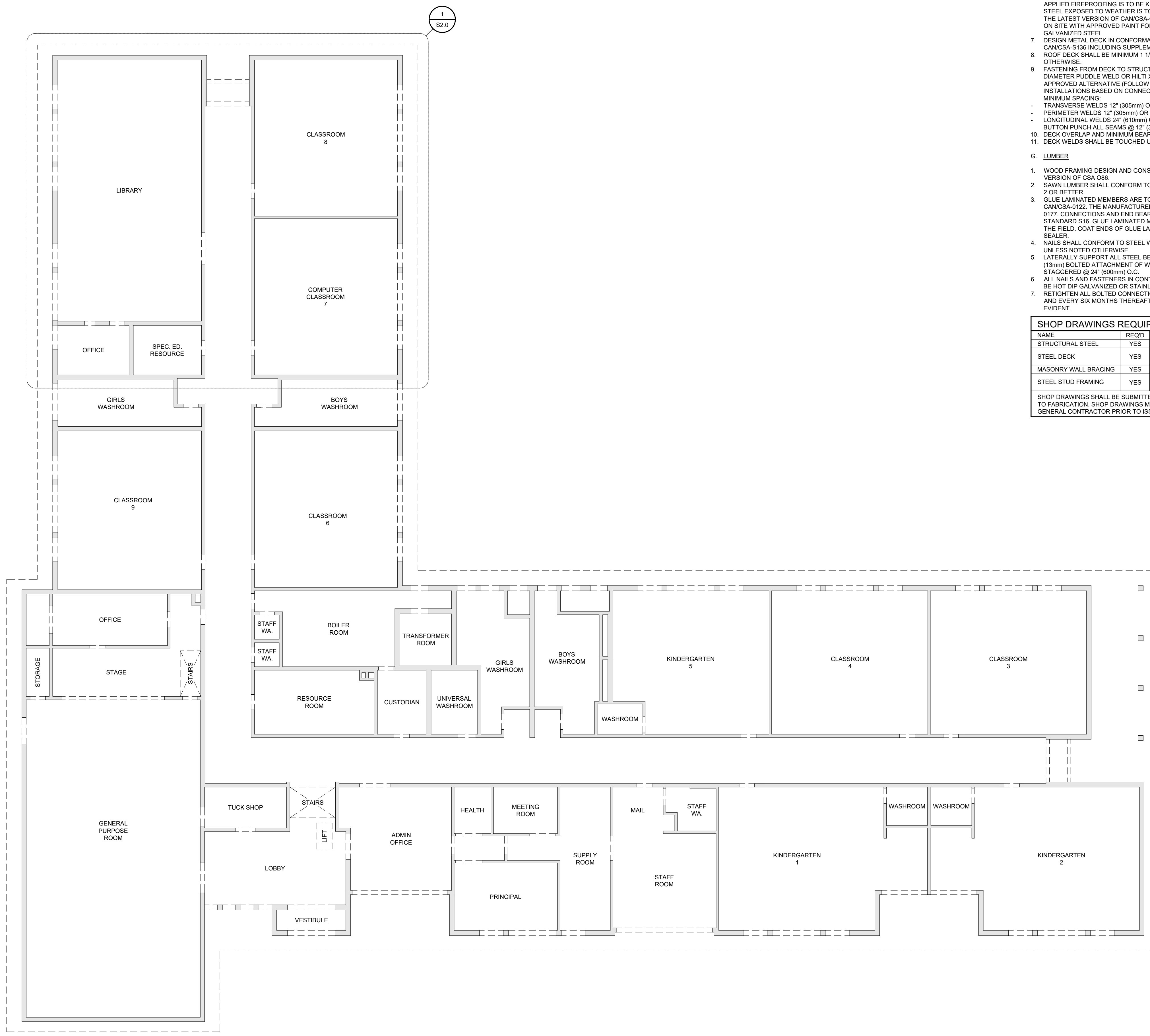
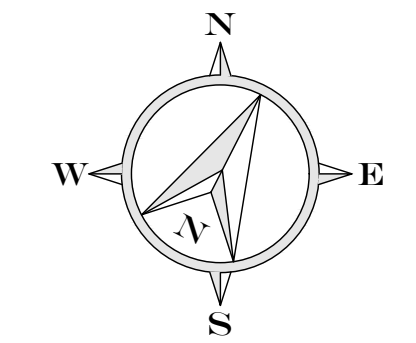
- REFERENCE FRAMING PLANS FOR DESIGN LOADS OF FLOORS AND ROOFS.
- BUILDING IMPORTANCE CATEGORY: HIGH IMPORTANCE
- CLIMATIC DESIGN DATA:

SHOWING	EARTHQUAKE
Ss = 2.0 kPa	Sa (0.2 X) = 0.252
Sr = 0.4 kPa	Sa (0.5 X) = 0.247
Cb = 0.8	Sa (1.0 X) = 0.146
Cw = 1.0	Sa (2.0 X) = 0.0708
Cs = 1.0	Sa (5.0 X) = 0.0185
Ca = 1.0	Sa (10.0 X) = 0.00584
PGA (X) = 0.147	PGA (X) = 0.147
CATEGORY 2	SITE CLASS "D"
Iw = 1.0	Rd Ro = 1.5 x 1.5
	Ie = 1.0
- SEISMIC CATEGORY = SC2
- ADDITIONAL DEAD LOAD ALLOWANCE SHALL BE INCLUDED IN ADDITION TO THE LOADS SPECIFIED ON THE DRAWINGS FOR PIPING IN EXCESS OF 3" (76mm) CARRYING FLUIDS (SPRINKLERS), ROOF TOP MECHANICAL UNITS AND ROOF TOP PATIO SLABS.
- ALL ROOF FRAMING ELEMENTS INCLUDING JOISTS, OWLS AND TRUSSES ARE TO BE DESIGNED FOR WIND UPLIFT IN ACCORDANCE WITH CBC 2022 AND NBC 2020. STRUCTURAL COMMENTARIES USING THE ABOVE NOTED DESIGN PARAMETERS.

C. MASONRY

- MASONRY TO CONFORM TO THE LATEST VERSION OF CAN/CSA-S304.1 AND CSA A371.
- STRENGTH OF LOAD-BEARING MASONRY UNITS TO BE MINIMUM 15 MPa FOR HOLLOW UNITS BASED ON NET AREA.
- TYPE 'S' MORTAR SHALL BE USED FOR CONCRETE BLOCK. TYPE 'N' MORTAR SHALL BE USED FOR BRICK AND DECORATIVE BLOCK. GROUT STRENGTH SHALL BE 20 MPa UNLESS NOTED OTHERWISE. MORTAR AND GROUT TO CONFORM TO THE LATEST VERSION OF CSA A179.
- ALL MASONRY WALLS SHALL BE CONSTRUCTED WITH FULL MORTAR JOINTS.
- VERTICAL CONTROL JOINTS SHALL BE INSTALLED AT 20' 0" (6000mm) SPACING. MAXIMUM REINFORCING SHALL NOT CROSS A CONTROL JOINT. PROVIDE FOAM BACKING ROD AND CAULKING AT CONTROL JOINTS AND ENSURE MORTAR DOES NOT FILL THE JOINT.
- REINFORCE ALL MASONRY WITH HOT DIP GALVANIZED NO. 9 TRUSS TYPE WIRE REINFORCING @ 16" (400mm). PROVIDE FULL OVERLAP AT ALL INTERSECTIONS AND CORNERS.
- INSTALLATION OF ALL PROPRIETARY ANCHORS IS TO BE COMPLETED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS. SPECIALIZED TRAINING MAYBE REQUIRED DEPENDING ON THE PRODUCT. CONTRACTOR IS TO CONTACT THE MANUFACTURER/SUPPLIER TO ARRANGE THE REQUIRED TRAINING. ADHESIVE ANCHORS INTO HOLLOW CONCRETE BLOCK ARE TO BE INSTALLED WITH SCREEN TUBES.
- ALL STEEL BEAMS AND JOISTS SHALL BE SUPPORTED BY BEARING PLATES DESIGNED TO THE LATEST VERSION OF CAN/CSA S16. BEARING PLATES SHALL HAVE MINIMUM (2) 1/2" (13mm) DIAMETER x 18" (450mm) LONG ANCHORS WITH 2" (51mm) HOOK OR (1) 1.5M x 24" (600mm) WELDABLE REBAR ANCHOR.
- ALL MASONRY UNDER CONCENTRATED LOADS SHALL BE FILLED SOLID WITH GROUT FOR A WIDTH AND DEPTH EQUAL TO 3 TIMES THE LENGTH OF BEARING. WHERE OPEN WEB STEEL JOISTS OR BEAMS BEAR ON UNREINFORCED MASONRY WALLS PROVIDE (1) 1.5M VERTICAL x 48" (1200mm) LONG UNDER BEARING PLATE. ALL MASONRY WALLS ARE TO BE ADEQUATELY BRACED DURING CONSTRUCTION UNTIL THE FLOOR AND ROOF STRUCTURES ARE IN PLACE. BRACING SHALL BE DESIGNED, REVIEWED AND APPROVED BY CONTRACTOR'S ENGINEER. SHOP DRAWINGS SHALL BE SUBMITTED WITH ENGINEERING'S STAMP FOR OUR REVIEW PRIOR TO CONSTRUCTION.
- ALL MASONRY INSTALLED ABOVE PARAPETS OR BELOW GRADE ARE TO BE FULLY GROUTED.
- FOR MASONRY OPENINGS NOT SHOWN ON THE FRAMING PLANS UP TO 48" (1200mm) WIDE, PROVIDE ONE L3 1/2x3 1/2x1/4 FOR EACH 3 1/2" (89mm) THICKNESS OF MASONRY.
- PROVIDE DOWELS FROM THE FOUNDATION WALL TO MASONRY WALLS TO MATCH VERTICAL REINFORCING SPACING AND SIZE.
- PROVIDE 1.5M BAR GROUTED INTO EACH EMPTY CORE 8" (200mm) O.C., CONTINUOUS BEHIND EACH ELEVATOR INSERT.
- REINFORCED MASONRY
 - GROUT ALL REINFORCED CELLS SOLID AS PER NOTE 3. REINFORCED CELLS TO BE KEPT CLEAR OF MORTAR.
 - PROVIDE (1) FULL HEIGHT VERTICAL BAR EACH SIDE OF CONTROL JOINTS, OPENINGS, INTERSECTIONS AND ENDS OF WALLS.
 - LAP ALL REINFORCING AS PER REINFORCING STEEL CHART ABOVE (MIN).

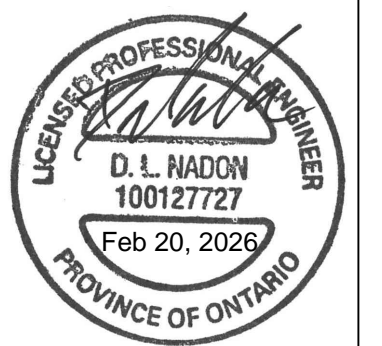
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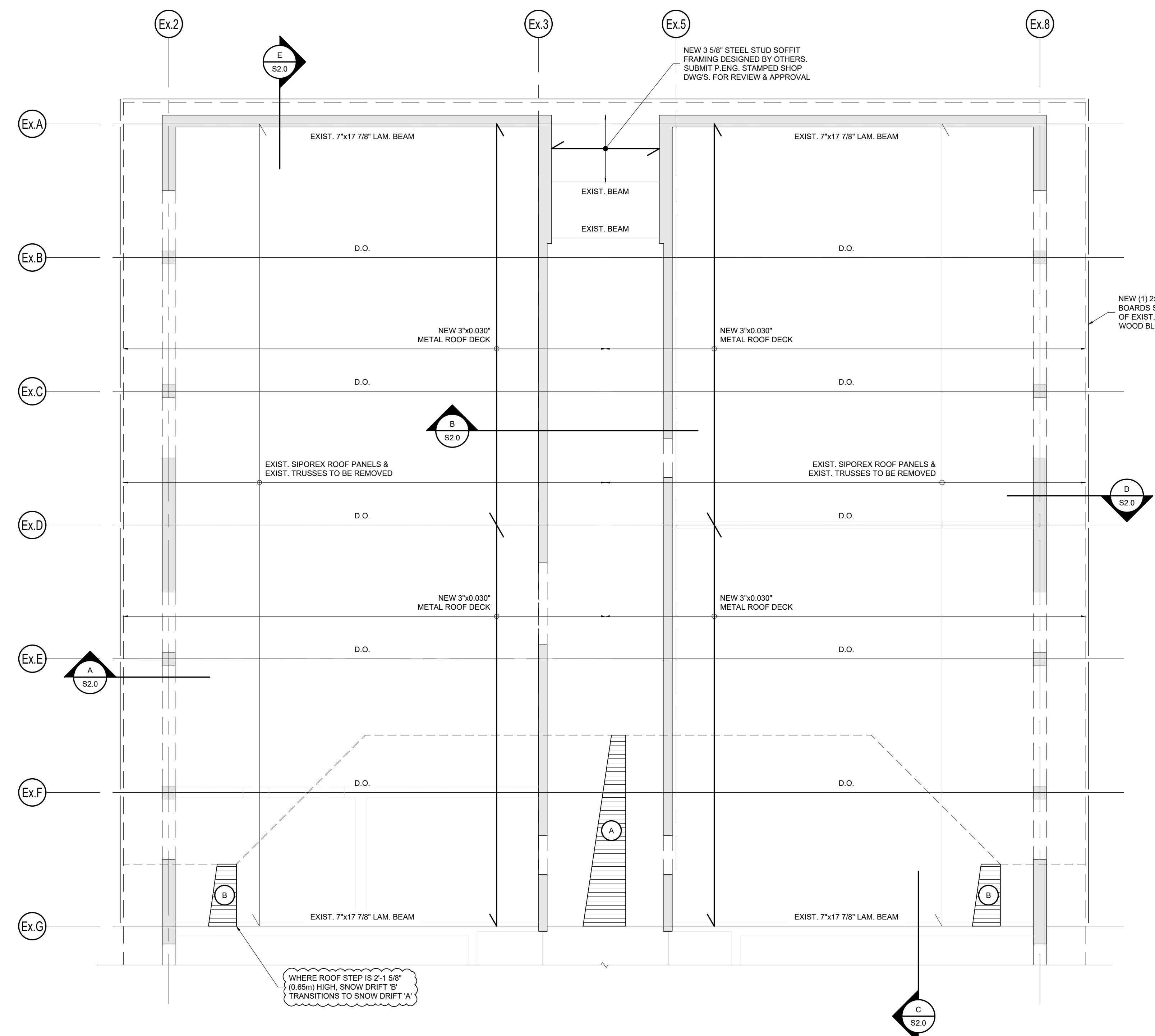
KEY PLAN 3/32" = 1'-0"

NO.	DATE	REVISION
4	2026.02.20	ISSUED FOR TENDER
3	2026.02.06	ISSUED FOR PERMIT
2	2026.02.02	ISSUED FOR COORDINATION
1	2025.12.01	ISSUED FOR PRELIMINARY REVIEW

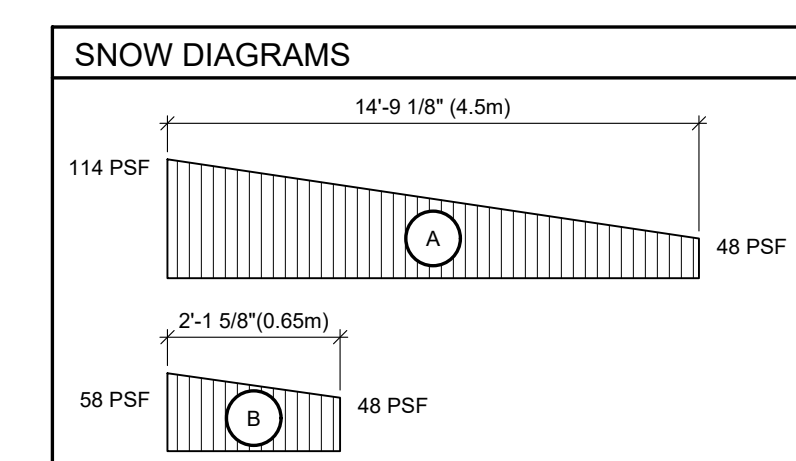
WitzelDyce ENGINEERING INC.
 826 King Street North, Unit 20
 Waterloo, Ontario, N2J 4G8
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PROJECT
WINSTON CHURCHILL PUBLIC SCHOOL ROOF REPLACEMENT
 100 MILFORD AVENUE WATERLOO, ON.
 DRAWING
CONSTRUCTION NOTES & KEY PLAN
 DESIGNER: TGEC / DLN PROJECT NO. 11285-110
 DRAWN: RAM DRAWING NO.
 DATE: FEBRUARY 2026
 SCALE: AS NOTED
S1.0

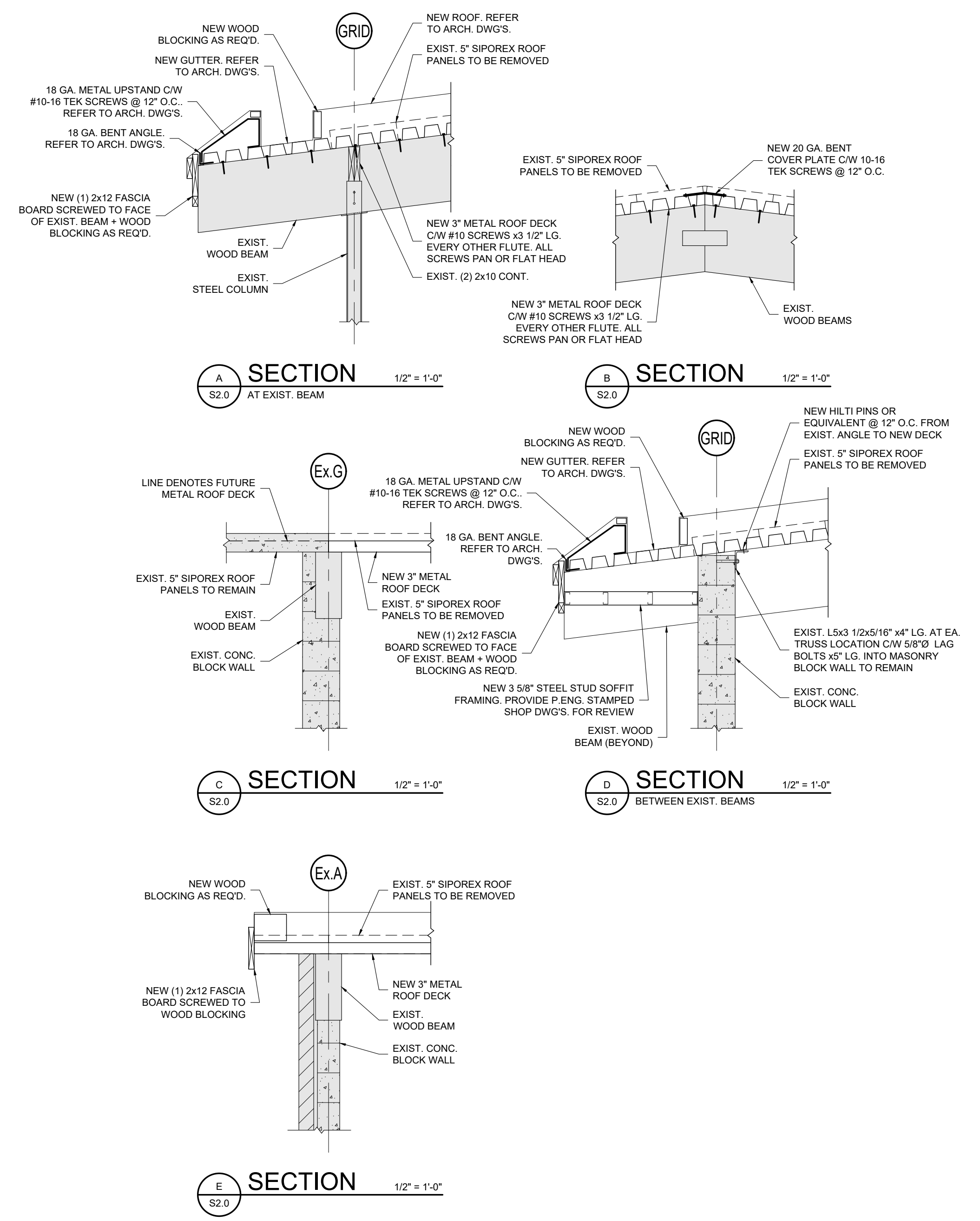


1 PLAN BLOW-UP
S2.0 PHASE ONE
3/16" = 1'-0"



NOTE:
ALL MASONRY WALLS ARE TO BE ADEQUATELY BRACED DURING CONSTRUCTION UNTIL THE ROOF STRUCTURE IS IN PLACE. BRACING SHALL BE DESIGNED, REVIEWED & APPROVED BY CONTRACTOR'S ENGINEER. SHOP DWGS. SHALL BE SUBMITTED W/ ENGINEERING'S STAMP FOR OUR REVIEW PRIOR TO CONSTRUCTION.

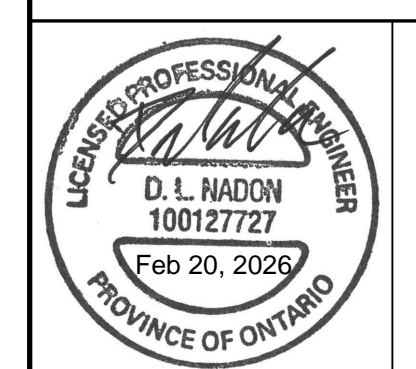
ROOF DESIGN LOADS	
DEAD LOAD	= 29.2 PSF
SNOW LOAD	= 42 PSF



WHERE ROOF STEP IS 2'-1 5/8" (0.65m) HIGH, SNOW DRIFT 'B' TRANSITIONS TO SNOW DRIFT 'A'

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PROJECT
WINSTON CHURCHILL PUBLIC SCHOOL ROOF REPLACEMENT
100 MILFORD AVENUE WATERLOO, ON.

DRAWING
PHASE ONE FRAMING PLAN BLOW-UP & DETAILS

DESIGNER TGEC / DLN	PROJECT NO. 11285-110
DRAWN RAM	DRAWING NO.
DATE FEBRUARY 2026	S2.0
SCALE AS NOTED	