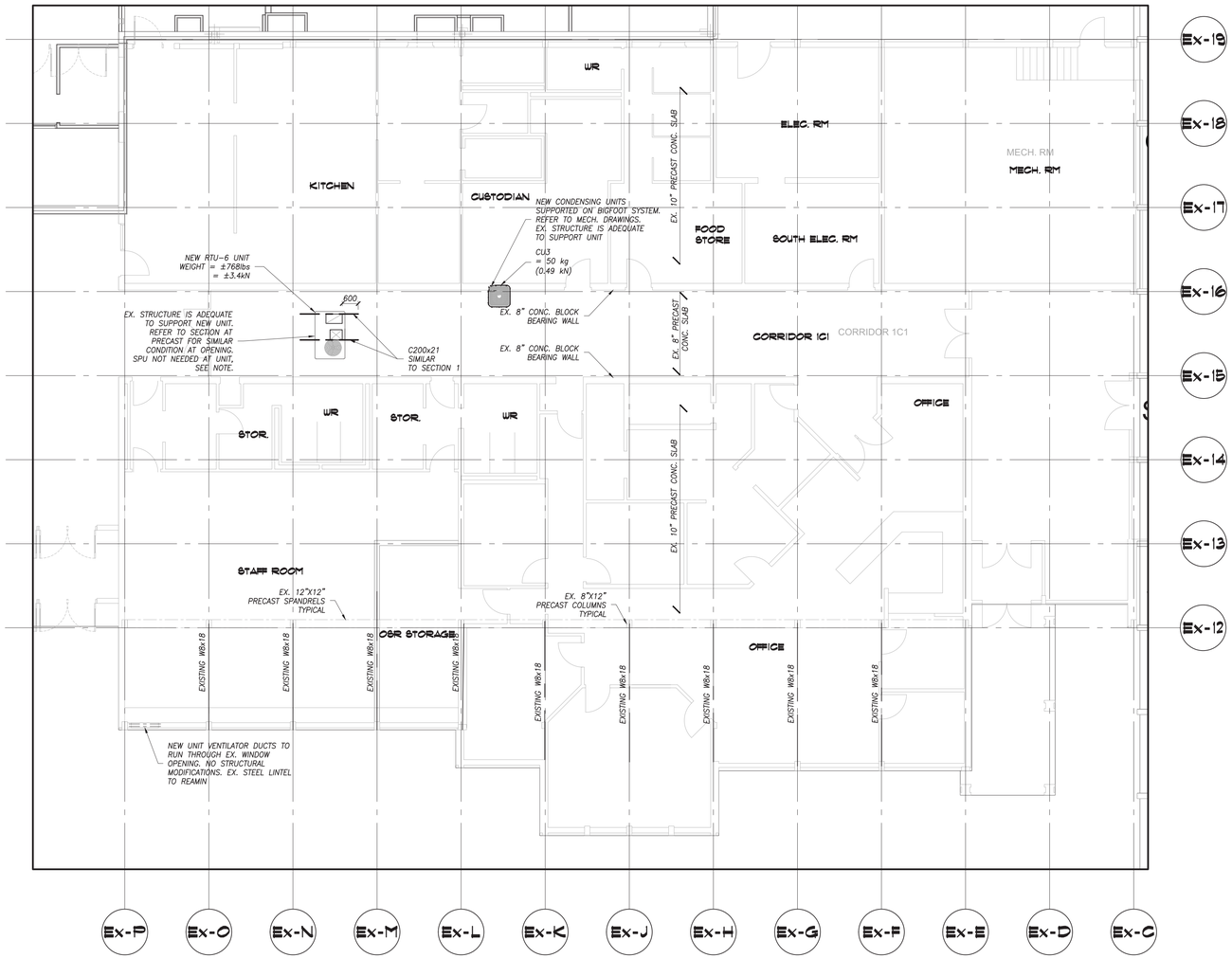
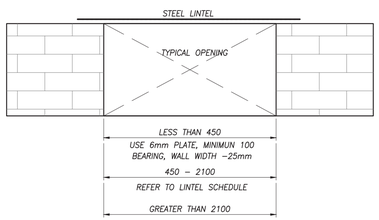
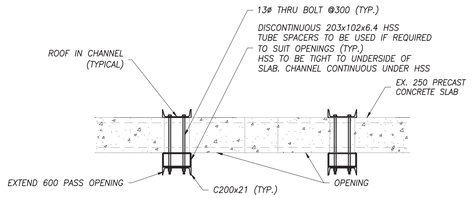


PARTIAL ROOF FRAMING PLAN (1)

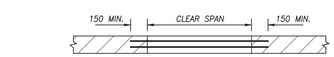
SCALE: 100





SECTION (1)

SCALE: 1:20



CLEAR SPAN	140 WALL	190 WALL
UP to 1200	2Ls 75x65x8	2Ls 90x90x8
1200 to 1800	2Ls 90x65x8	2Ls 125x90x8
1800 to 2100	2Ls 90x65x10	2Ls 150x90x8

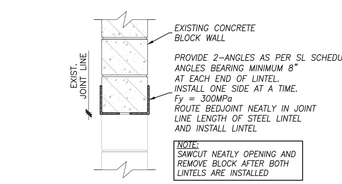
CLEAR SPAN	240 WALL	290 WALL
UP to 1200	2Ls 100x100x8	3Ls 90x90x8
1200 to 1800	2Ls 150x100x8	3Ls 125x90x8
1800 to 2100	2Ls 150x100x8	3Ls 150x90x8

FOR LINTELS IN 90 VENEER, USE 1 ANGLE OF THAT NOTED FOR 190 WALL ON SIMILAR SPAN.

DOUBLE ANGLES TO BE STITCH WELDED BACK TO BACK. TOE IN ANGLES OPTION ACCEPTABLE AT MECHANICAL OPENINGS

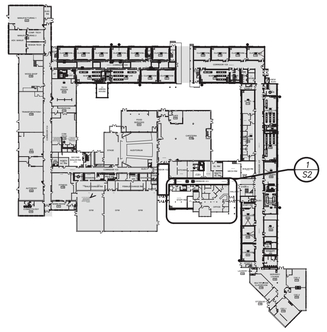
TYPICAL STEEL LINTEL DETAIL

NOT TO SCALE



TOE IN STEEL LINTEL SECTION

SCALE: NTS



KEY PLAN

LOADING SUMMARY

DESIGN STANDARDS

- ONTARIO BUILDING CODE, 2012, PART 4: STRUCTURAL DESIGN
- CAN/CSA-A23.3-14, DESIGN OF CONCRETE STRUCTURES
- CAN/CSA-A23.4-16, DESIGN OF PRECAST CONCRETE STRUCTURES
- CAN/CSA-S304.1-14, MASONRY DESIGN FOR BUILDINGS
- CAN/CSA-S16-14, LIMIT STATES DESIGN OF STEEL STRUCTURES
- CAN/CSA-S136-16, DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS

SNOW, ICE AND RAIN LOADS

APPLIED PER OBC, PART 4, SECTION 4.1.6

- IMPORTANCE FACTOR, Is — 0.9 (SLS) 1.15 (ULS)
- GROUND SNOW LOAD, Ss — 1.1 kPa (23.0 PSF)
- ASSOCIATED RAIN LOAD, Sr, — 0.4 kPa (8.40 PSF)
- WIND EXPOSURE FACTOR, Cw, — 1.0
- ROOF SNOW LOAD, S, — 1.47 kPa (30.8 PSF)
- DRIFT LOADS PER CLAUSE 4.1.6.2.8
- SLOPE FACTORS PER CLAUSE 4.1.6.2.(5) TO (7)

WIND LOADS

APPLIED PER OBC, PART 4, SECTION 4.1.7

- IMPORTANCE FACTOR, Iw — 0.75 (SLS) 1.15 (ULS)
- REFERENCE VELOCITY PRESSURE FOR STRUCTURAL MEMBERS
  - 0.46 kPa 1/50 YEAR PROBABILITY (9.6 PSF)
- REFERENCE VELOCITY PRESSURE FOR CLADDING & NON-STRUCTURAL MEMBERS
  - 0.36 kPa 1/10 YEAR PROBABILITY (7.5 PSF)
- GUST FACTORS Cg:
  - 2.0 FOR WHOLE & MAIN STRUCTURAL MEMBERS
  - 2.5 FOR SMALL ELEMENTS INCLUDING CLADDING
  - 2.0 FOR INTERNAL PRESSURES
- BUILDING INTERNAL PRESSURE CATEGORY _2_ PER NBC 2010 STRUCTURAL COMMENTARY (PART 8), COMMENTARY B.

SEISMIC LOADS

APPLIED PER OBC, PART 4, SECTION 4.1.8

- IMPORTANCE FACTOR, Ie — 1.3 (ULS)

Sa(0.2)	0.266
Sa(0.5)	0.131
Sa(1.0)	0.062
Sa(2.0)	0.029
Sa(5.0)	0.0068
Sa(10.0)	0.0027
PGA	0.172
PGV	0.102
SOIL CLASS	C (ASSUMED)
Fa	1.0

SEISMIC SWAY BRACING

ARTICLE 4.1.8.18(2) OF THE ONTARIO BUILDING CODE NOTES THAT IF THE PRODUCT OF Ie • Fa * Sa(0.2) IS LESS THAN 0.35, THE REQUIREMENTS NOTED ABOVE NEED NOT APPLY. THESE VALUES ARE EXPLORED BELOW. THIS EXEMPTION IS NOT APPLICABLE TO POST-DISASTER BUILDINGS.

BASED ON THE ABOVE NOTED VALUES, THE PRODUCT OF Ie • Fa * Sa(0.2) = 1.3 * 1.0 * 0.266 = 0.346. GIVEN THIS IS LESS THAN THE THRESHOLD OF 0.35, THE APPLICATION OF THE LATERAL FORCE (Vp) TO ALL ELEMENTS AND COMPONENTS AND SWAY BRACING IS NOT REQUIRED.

DESIGN LOADS

ROOF LOADS (BASED ON EXISTING DRAWINGS):

DEAD:

- ROOFING	0.34 kPa (7.00 psf)
- STEEL DECK	0.19 kPa (3.97 psf)
- STRUCTURAL STEEL	0.19 kPa (3.97 psf)
- CEILING	0.145kPa (3.03 psf)
TOTAL	0.86 kPa (17.97 psf)
USED	0.86 kPa (17.97 psf)

FLOOR LOADS AT 1963 CLASSROM WING CORRIDOR

DEAD:

- CONCRETE FINISH	1.44 kPa (30.00 psf)
- DECK	2.00 kPa (42.00 psf)
- STRUCTURAL STEEL	0.14 kPa (3.00 psf)
- CEILING	0.24 kPa (5.00 psf)
TOTAL	3.82 kPa (80.00 psf)
USED	3.82 kPa (80.00 psf)

SNOW: LL = 1.53 kPa + SPU

DEAD LOAD AT AUDITORIUM:

- SUPERIMPOSED DEAD LOAD	1.4 kPa (29.25 psf)
- 10" PRECAST	3.54 kPa (74 psf)

SNOW PILE-UP NOTE: (APPLICABLE TO RTU 6)

SNOW PILE-UP DUE TO THE PROPOSED RTU NEED NOT BE CONSIDERED (UNLESS OTHERWISE NOTED) AS PER O.B.C. 2012 CLAUSE 4.1.6.7.(3) WHICH STATES:

(3) WHERE THE LONGEST HORIZONTAL DIMENSION OF ROOF PROJECTION IS LESS THAN 3m, THE DRIFT SURCHARGE ADJACENT TO THE PROJECTION NEED NOT BE CONSIDERED.

SHORING NOTES:

1. ALL FRAMES AND SHORING JACKS TO BE PLUMB AND LEVEL
2. SHORING JACKS TO BE DESIGNED BY THE SUPPLIER FOR THE LOADS AND HEIGHTS SHOWN, INCLUDING BRACING
3. MAX EXTENSION OF SCREWJACKS WILL BE 16" UNLESS NOTED
4. SCAFFOLDING SHALL BE ERECTED IN ACCORDANCE TO C.S.A. CODE S269.1
5. SHORING TO REMAIN IN PLACE UNTIL BEAM AND ALL BRACING IS COMPLETELY INSTALLED
6. PREPARE AND SUBMIT FULL SHORING DRAWINGS FOR APPROVAL FOR ALL TEMPORARY SUPPORTS, PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER, PRIOR TO ANY REMOVALS

PROVIDE TEMPORARY SHORING TO STRUCTURE ABOVE PRIOR TO ANY REMOVALS

GENERAL NOTES

1. CHECK ALL DIMENSIONS ON THESE DRAWINGS WITH ALL OTHER DRAWINGS, INCLUDING BUT NOT LIMITED TO DRAWINGS PREPARED ARCHITECTURAL, MECHANICAL OR ELECTRICAL CONSULTANTS. REPORT ANY INCONSISTENCIES TO THE ARCHITECT OR ENGINEER PRIOR TO COMMENCING WITH THE WORK. DO NOT SCALE THE DRAWINGS.
2. THE DESIGN LIVE LOADS ARE INDICATED ON THE DRAWINGS. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LOADS.
3. THE COMPLETED STRUCTURE IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING AND ANY OTHER TEMPORARY OR PERMANENT MEASURES AS REQUIRED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SUPPORT OF EXISTING OR ADJACENT STRUCTURES AS REQUIRED. ALL BRACING AND SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. CONSTRUCTION FEATURES NOT FULLY SHOWN ARE COMPARABLE TO SIMILAR CONDITION DETAILS.
5. REFER TO OTHER CONSULTANTS DRAWINGS FOR DETAILS OF OPENINGS, PITS, CHAMFERS, DEPRESSIONS NOT INDICATED ON THE STRUCTURAL DRAWINGS.
6. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST ONTARIO BUILDING CODE, LATEST APPLICABLE REGULATIONS, AND GOOD CONSTRUCTION PRACTICES.
7. THE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS.
8. CLARIFY ANY QUERIES WITH THE ENGINEER REGARDING THE INTERPRETATION OF THE DRAWINGS, PRIOR TO THE COMMENCEMENT OF ANY WORK.
9. INFORMATION FROM EXISTING STRUCTURAL DRAWINGS BY SHORE & MOFFAT ARCHITECTS DATED 1956 AND WALL YAMAMOTO & MATTHEWS ARCHITECT DATED 1963

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL ELEMENTS, INCLUDING DESIGN OF ELEMENTS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH CAN/CSA S16.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO CSA G40.21 (300W) EXCEPT W SECTIONS AND PLATES G40.21 (350W), HSS MEMBERS G40.21 (350W) CLASS C OR ASTM A500 GRADE C, ANCHOR BOLTS ASTM A307, COLD FORMED SECTIONS ASTM A570M GRADE 350W. UNLESS OTHERWISE NOTED, ALL SECTIONS SHALL BE PRIME PAINTED WITH THE SURFACE PREPARATION AND PAINTING PROCEDURES IN ACCORDANCE WITH CAN/CGSB 85.10.
3. ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA W59. THE STEEL FABRICATOR SHALL BE FULLY QUALIFIED UNDER THE REQUIREMENTS BY THE CANADIAN WELDING BUREAU IN CONFORMANCE WITH CAN/CSA W47.1.
4. DESIGN ALL MOMENT AND SHEAR CONNECTIONS FOR THE FULL CAPACITY OF THE SMALLER MEMBER IN THE CONNECTION UNLESS OTHERWISE NOTED.
5. PROVIDE MINIMUM BEARING LENGTH OF STEEL MEMBERS AS FOLLOWS:
   - ON MASONRY - 150mm
   - ON STEEL - 90mm
6. PROVIDE MINIMUM 175x10x175 BEARING PLATES FOR ALL STRUCTURAL STEEL c/w 2-15ø ANCHORS UNLESS OTHERWISE NOTED.
7. ALL BOLTS SHALL BE TIGHTENED WITH A SUITABLE TORQUE WRENCH IN ACCORDANCE WITH CSA S16.
8. ALL STEEL EXPOSED TO THE EXTERIOR TO BE HOT DIP GALVANIZED.
9. ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CSA S16 AND IN CONFORMANCE WITH THE APPROVED SHOP DRAWINGS.

SUBMITTALS

1. SUBMIT FOR REVIEW BY THE CONSULTANT, DETAILED SHOP DRAWINGS FOR ALL STRUCTURAL WORK INCLUDING, BUT NOT LIMITED TO STRUCTURAL STEEL AND TEMPORARY SHORING.
2. THE SCALE OF THE DRAWINGS SHALL BE SUCH THAT THE DETAILS OF THE STRUCTURAL WORK ARE CLEARLY SHOWN, AND IN NO CASE SMALLER THAN 1:50 (¼"=1'-0").
3. THE STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED, IN WHOLE OR IN PART, FOR USE AS SHOP DRAWINGS.
4. EACH DRAWING SUBMITTED FOR STRUCTURAL STEEL AND TEMPORARY SHORING SHALL BEAR THE SEAL AND SIGNATURE OF A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
5. CONTRACTOR SHALL ALLOW FOR A 5 WORKING DAY TURN AROUND TIME FOR STRUCTURAL CONSULTANT TO REVIEW THE SHOP DRAWINGS.

NOTE:

1. INFILL EXISTING BLOCK AT ABANDONED DUCT OPENINGS.
2. PROVIDE SHORING AND BREAK OPEN EXISTING WALL, AND PROVIDE STEEL LINTEL AS PER TYPICAL LINTEL SCHEDULE AT ALL NEW DUCT OPENINGS. MAKE GOOD EXISTING BLOCK AS REQUIRED. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS AND QUANTITIES.
3. INFILL EXISTING OPENINGS IN ROOF DECK AS REQUIRED, AS PER MECHANICAL DETAIL. NOT ALL LOCATIONS SHOWN ON PLAN.
4. PROVIDE FRAMING FOR ALL FLOOR & ROOF OPENINGS AS PER TYP. DETAIL. REFER TO MECHANICAL FOR LOCATIONS.
5. SHORING SHALL BE, BUT MAY NOT BE LIMITED TO, NEEDLE SHORING. CONTRACTOR TO PROVIDE TEMPORARY SHORING AS REQUIRED TO SUIT PROPOSED SCOPE OF WORK.
6. REMOVE/MODIFY OWSJ BRIDGING TO SUIT
7. DO NOT CORE THROUGH RAPIDEX REINFORCING TENDON

EXISTING STRUCTURAL INFORMATION FROM DRAWINGS PREPARED BY: SHORE & MOFFAT ARCHITECTS DATED 1956
BY: WALL YAMAMOTO & MATTHEWS ARCHITECT DATED 1963

Halton District School Board

2050 Guelph Line
Burlington, Ontario

NELSON HIGH SCHOOL BOILER REPLACEMENT

4181 NEW STREET
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Tel: - -

Structural Consultants
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Hamilton, Ontario, L8R 3K6
Tel: 905-333-9119

Key Plan N.T.S.

Project North True North

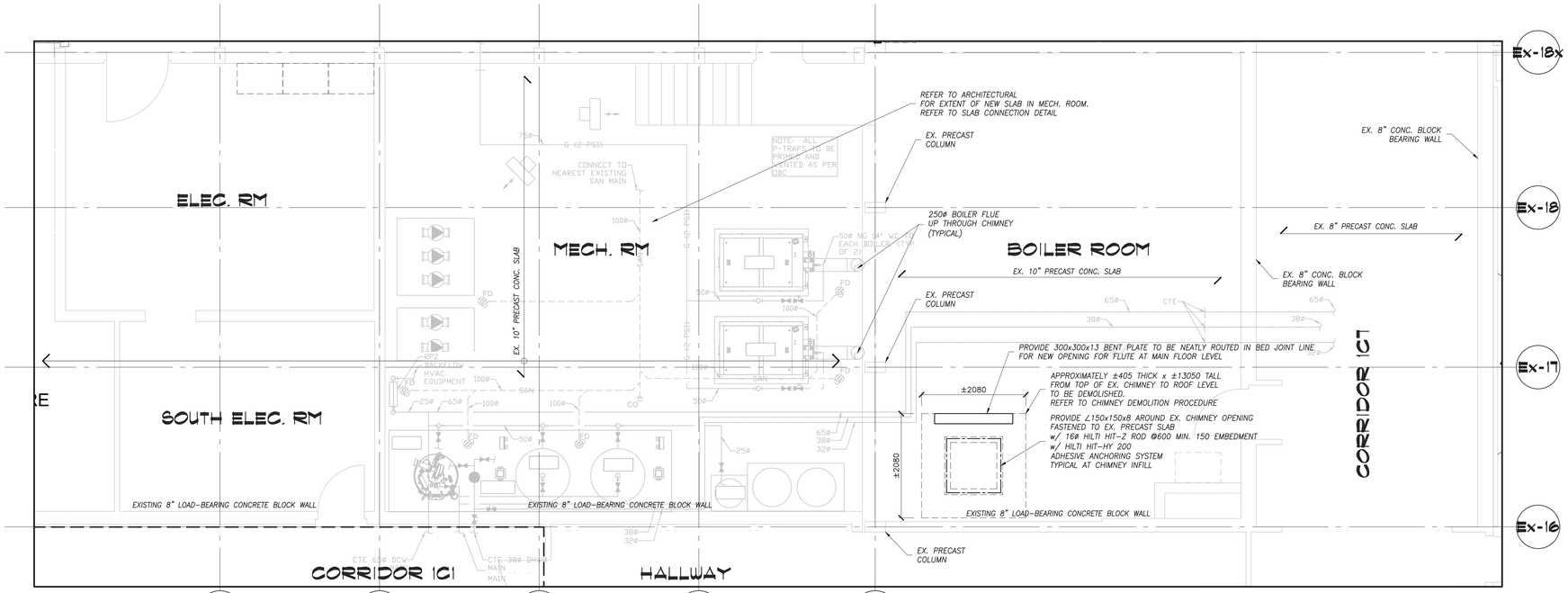
No.	Revisions	Date
1	ISSUED FOR PERMIT AND PRICING	10/30/2024
2	ISSUED FOR CONSTRUCTION	03/19/2025
No.	Issue	Date

General Contractor shall check and verify all dimensions and report all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.

Drawing Title:

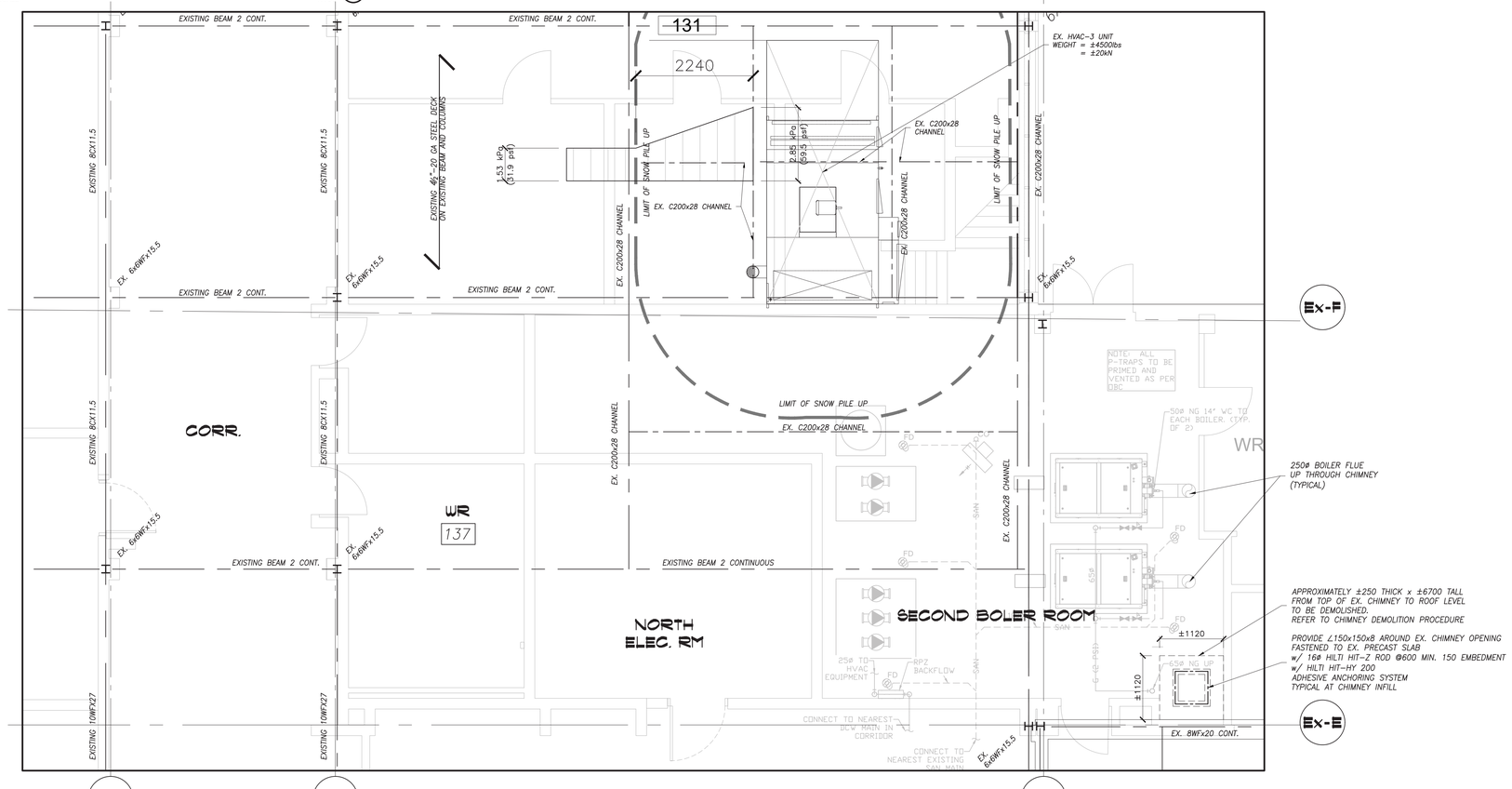
FRAMING PLANS AND NOTES PHASE 2

Scale:	1:100	Date:	03/19/2025
Drawn by:	QN	Checked by:	
Job No.	24023	Drawing No.	S1



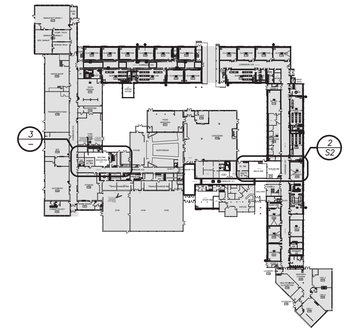
PARTIAL BOILER ROOM FRAMING PLAN (2/S2)

SCALE 1:100



PARTIAL INCINERATOR ROOM FRAMING PLAN (3/S2)

SCALE 1:100

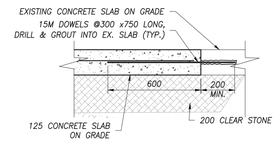


KEY PLAN

CHIMNEY DEMOLITION PROCEDURE

1. PROVIDE SCAFFOLDING PRIOR TO DEMOLITION
2. CAREFULLY REMOVE EX. CHIMNEY BRICKS OR BLOCK FROM THE TOP, ONE BY ONE DOWN TO THE EX. ROOF LEVEL AS REQUIRED.
3. DO NOT LOAD REMOVED BRICKS ON TOP OF EXISTING OF ROOF. PROVIDE CHUTES OR SCAFFOLD BUCKETS TO SAFELY TRANSPORT MATERIAL DOWN FROM ROOF OR USE EX. CHIMNEY OPENING FOR BRICK DISPOSAL AREA
4. CLEAN AND CLEAR THE OPENING FOR ANY LOOSE DEBRIS OR DUST. PREPARE SURFACE FOR INFILL.
5. PROVIDE ∠150x150x8 AROUND EX. CHIMNEY OPENING FASTENED TO EX. PRECAST SLAB w/ 16ø HILTI HIT-Z ROD @600 MIN. 150 EMBEDMENT w/ HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM
6. PROVIDE 38MM 22 GAUGE MIN. STEEL DECK FASTENED OVER EXISTING OPENING. DECK INFILL TO HAVE MINIMUM OF 150MM BEARING ON EXISTING DECK.

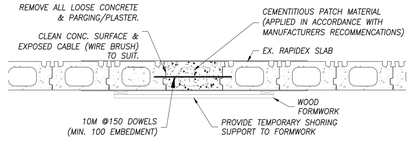
REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND NUMBER OF AREAS



TYPICAL SLAB CONNECTION DETAIL

NOT TO SCALE

NOTE: NEW SLAB REQUIRED AT NEW FLOOR DRAIN AND UNDERGROUND MECHANICAL CONNECTIONS. REFER TO ARCHITECTURAL FOR EXTENTS OF NEW SLAB



RAPIDEX/PRECAST SLAB INFILL DETAIL

SCALE 1:20

1. SAWCUT AROUND PERIMETER APPROXIMATE 25mm DEEP
2. PROVIDE CLEARANCE OF 19mm BEHIND REINFORCEMENT
3. CLEAN DELAMINATED AREA OF ALL LOOSE CONCRETE AND PROVIDE 10M DOWELS AT 150mm SPACING WITH A MINIMUM 100 EMBEDMENT.
4. APPLY BONDING AGENT
5. FORM & FILL VOID WITH CONCRETE/CEMENTITOUS PATCH MATERIAL

CEMENTITIOUS PATCH MATERIAL
(APPLIED IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS)
POLYMER MODIFIED MORTAR MATERIALS:
BONDING AGENT: USE CEMENTITIOUS/LATEX SLURRY BONDING AGENT OF THE SAME MATERIALS AS THE PATCHING OR REPAIR IN ALL APPLICATIONS PATCH MATERIAL
DELAMINATION REPAIRS:
-FA-S6-CONCRETE BY KING
-SIKATOP 123 BY SIKA CANADA INC.
-RENDOROC HB BY FOSROC INC.

STEEL DECK INFILL PROCEDURE

FOR EXISTING OPENINGS LESS THAN 2 METRES IN STEEL DECK ROOF STRUCTURE:

PROVIDE 38MM 22 GAUGE MIN. STEEL DECK FASTENED OVER EXISTING OPENING.
DECK INFILL TO HAVE MINIMUM OF 150MM BEARING ON EXISTING DECK.

REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND NUMBER OF AREAS

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LICENSED PROFESSIONAL ENGINEER
J.P.G. CAMPANA
100138224
25-03-19
No. 24023
PROVINCE OF ONTARIO

Drawing Title:
FRAMING PLANS AND NOTES PHASE 2

Scale:	1:100	Date:	10/23/2024
Drawn by:	QN	Checked by:	
Job No.	24023	Drawing No.	S2