ABBREVIATIONS

A.B.	AIR BARRIER
AC	ACOUSTIC
ACT / AT	ACOUSTIC CEILING TILE
ACB	ACOUSTIC CONCRETE BLOCK
AD	AREA DRAIN
ADD'L	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AL / ALUM	ALUMINUM
AO	AUTO OPENER
ARCH.	ARCHITECTURAL
AVB /	AIR & VAPOUR BARRIER MEMBRANE
A/V BARRIER /	AIR & VAPOUR BARRIER MEMBRANE
A.V. BARRIER	AIR & VAPOUR BARRIER MEMBRANE
B	BENCH - FOLD-UP BARRIER FREE SHOWER BENCH
BC	BRICK COURSES
BF	BARRIER FREE
BFIN	BROOM FINISH DIRECTION
BMEC	BUILDING MATERIALS EVALUATION COMMISSION
BR	BRICK MASONRY
B/O	BOTTOM OF
CB	CONCRETE BLOCK
C.I.P.	CAST IN PLACE
C.O.J.	CHECK ON JOB
CONC	CONCRETE
CONT	CONTINUOUS
CC	CENTRE TO CENTRE
CJ	CONTROL JOINT
CLR	CLEAR
C/L	CENTRE LINE
CO	CLEAN OUT
CP	CONTROL PANEL
CR	CARD READER
CS	CLEAR SEALER
CPT	CARPET
CT	CERAMIC TILE
CTO	COOKTOP
C/W	COMPLETE WITH
CW / C.W.	CURTAINWALL
DCT	DIAPER CHANGING TABLE
DF	DRINKING FOUNTAIN
DW	DISHWASHER
DWG	DRAWING
EIFS	EXTERIOR INSULATED FINISHING SYSTEM
ELECT	ELECTRICAL
EP	ELECTRICAL PANEL
EPX	EPOXY COATING (FLOORING)
EX. / EXIST.	EXISTING
EXP	EXPOSED
ENCL.	ENCLOSURE
EXT	EXTERIOR
FD	FLOOR DRAIN
FHC	FIRE HOSE CABINET
FIN	FINISH
FL / FLR	FLOOR
FL-#	METAL CLADDING/ FLASHINGS
FO	FINISHED OPENING
FP	FIRE PROTECTION
F.R.R.	FIRE RESISTANCE RATING
GALV	GALVANIZED
GL	GLASS/GLAZING
GW / GWG	GEORGIAN WIRED GLASS
GWB	GYPSUM WALL BOARD
HC	BARRIER FREE DOOR OPERATOR PUSH BUTTON
HB	HOSE BIB
HCW	HOLLOW CORE WOOD
HM	HOLLOW METAL
HO	MAGNETIC HOLD OPEN
HTG	HEATING
I/F	INSIDE FACE
IMP	INSULATED METAL PANEL
INT	INTERIOR
INTK	INTAKE
IR/GWB	IMPACT RESISTANT GWB
JT	JOINT
LF	LIGHT FIXTURE
LIN	LINOLEUM
MAT'L	MATERIAL
MECH.	MECHANICAL
MD	METAL DECK
MFR	MANUFACTURER
MIR	MIRROR
MO	MASONRY OPENING
MS	METAL SIDING
MTL	METAL
MW	MICROWAVE
NBC	NATIONAL BUILDING CODE
NIC	NOT IN CONTRACT
No.	NUMBER
NRC	NATIONAL RESEARCH COUNCIL
OBC	ONTARIO BUILDING CODE
OC	ON CENTRE
O/F	OUTSIDE FACE
O.T.B.	OPEN TO BELOW
PC	PARTICLE CORE
PCT1	PORCELAIN TILE 1
PCT2	PORCELAIN TILE 2
PERIM.	PERIMETER
PERF.	PERFORATED
PL	PLATE
PLAM	PLASTIC LAMINATE
PML	PERFORATED METAL
PREFIN / PR	PREFINISHED
PSC	PLASTER SKIM COAT ON GWB
PT	PAINT
PTD	PAINTED
PC-T	PORCELAIN TILE
P.T.	PRESSURE TREATED
PWF	PRESERVED WOOD FOUNDATION GRADE PLYWOOD
RAH	ROOF ACCESS HATCH
RBR	RUBBER FLOORING
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC.	RECESSED
REFURB	REFURBISHED
RO	ROUGH OPENING
RWL	RAIN WATER LEADER
SAM / S.A.M.	SELF ADHERED MEMBRANE (FORMING PART OF CONTINUOUS AIR / VAPOUR BARRIER)
SG / SGL	SANDBLASTED GLAZING
SIAM.	SIAMESE CONNECTION
S, SC	SCREEN
SCW	SOLID CORE WOOD
SMD	SMOKE DETECTOR
SPF	SPORTS FLOORING
SPL	SPANDREL PANEL/ GLASS
SS / S.STL	STAINLESS STEEL
SSG	STRUCTURAL SILICONE GLAZING SYSTEM
ST.T	STONE TILE
STL	STEEL
STN	STAIN
STRUCT	STRUCTURAL
SYN.	SYNTHETIC WD POLYMER LUMBER
TB	TACK BOARD
TBI	TO BE ISSUED
TCS	TINTED CONCRETE SEALER
TGL	TEMPERED GLASS
TMP	TEMPERED
TP/TEC	TECTUM PRODUCT PANELS
TWA	TRANSLUCENT WALL ASSEMBLY
TYP	TYPICAL
T.B.I	TO BE ISSUED
TCP	TEXTURED CORE PLAST
TYP	TYPICAL
U/S	UNDERSIDE OF
V	VINYL
VCT	VINYL COMPOSITION TILE
W / WIN	WINDOW
WB	WHITE BOARD
WC	WATER CLOSET
WD	WOOD
WF	WATER FOUNTAIN
WV	WOOD VENEER
ZN	ZINC

GENERAL NOTES

1. THE CONTRACTOR SHALL EXAMINE AND BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS IN THEIR ENTIRETY. SURVEY THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND SCOPE OF WORK. ALL COSTS SUBMITTED SHALL BE BASED ON THE THOROUGH KNOWLEDGE OF ALL WORK AND MATERIALS REQUIRED.

2. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE FEDERAL, LOCAL, AND PROVINCIAL CODES AND AMENDMENTS.

3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF WORK, AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. CONTRACTOR SHALL HIRE SUB CONTRACTORS AND SUPPLIERS WITH PROVEN ABILITY TO PROVIDE/PERFORM QUALITY WORKMANSHIP ON THIS TYPE OF PROJECT.

4. ANY ERRORS, OMISSIONS OR INCONSISTENCIES ON THESE DRAWINGS OR ANY VARIATIONS OR AMBIGUITIES BETWEEN THESE DRAWINGS AND ACTUAL SITE AND CONSTRUCTION CONDITIONS AND/OR REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING, IMMEDIATELY.

5. IN THE EVENT A DISCREPANCY IS FOUND IN THE CONTRACT DOCUMENTS, THE OWNER AND ARCHITECT SHALL BE NOTIFIED IMMEDIATELY.

6. ANY DISCREPANCIES BETWEEN ANY DRAWING OR SPECIFICATION ITEM, THE CONTRACTOR SHALL BID, PROVIDE AND INSTALL THE GREATER ITEM IN QUALITY, QUANTITY, STABILITY, DURABILITY, ECT.

7. CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT SITE AND BE RESPONSIBLE FOR ACCURACY AND CORRECTNESS OF SAME. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

8. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

9. THESE DRAWINGS CONTAIN COMPLETE SPECIFICATIONS, DETAILS AND INFORMATION REQUIRED FOR THE INTERIOR FINISHES OF THE PROJECT. ADDITIONAL INFORMATION SHALL BE OBTAINED FROM THE OWNER.

10. STORE MATERIALS IN SPACES DESIGNATED BY OWNER. REMOVE AND REPLACE ALL DAMAGED MATERIALS.

11. REMOVE RUBBISH FROM PREMISES AS OFTEN AS NECESSARY OR AS DIRECTED TO MAINTAIN A CLEAN AND SAFE PROJECT.

12. ALL WORK AND EQUIPMENT SHALL BE CLEANED TO THE SATISFACTION OF THE OWNER BEFORE TURNING SAME OVER TO OWNER.

13. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO ORDERING, FABRICATION AND INSTALLATION FOR ANY EQUIPMENT, MATERIALS, ASSEMBLIES, ECT.

14. THE CONTRACTOR SHALL PAY ALL FEES EXCLUDING BUILDING PERMIT, GIVE ALL NOTICES, FILE ALL NECESSARY DRAWINGS AND OBTAIN ALL PERMITS AND CERTIFICATES OR APPROVAL REQUIRED IN CONNECTION WITH ALL WORK UNDER THESE CONTRACT DOCUMENTS. HE OR SHE SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION.

15. THERE SHALL BE NO DEVIATION FROM SPECIFICATIONS WITHOUT THE WRITTEN APPROVAL OF THE OWNER, ARCHITECT AND/OR ENGINEER.

16. THE CONTRACTOR SHALL EMPLOY AN APPROVED TESTING LABORATORY TO MAKE ALL TEST FOR ACOUSTICAL, CONCRETE, SOIL COMPACTION, WELDING OF STEEL, SHEER NAILING, WATERPROOF TESTING AND ROOFING TO INSURE COMPLIANCE WITH PLANS, STANDARDS AND CODES. ALSO PROVIDE WRITTEN REPORTS OF THE RESULTS TO ARCHITECT FOR REVIEW.

17. DRYWALL INSTALLATION SHALL BE IN CONFORMANCE WITH THE GYPSUM ASSOCIATION'S RECOMMENDED PRACTICES FOR THICKNESS, NAILING, TAPING AND CORRECT STUD SPACING.

19. THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, OPENINGS AND CHARACTERISTICS OF ALL WORK AND EQUIPMENT TO BE FURNISHED BY THE OWNER OR OTHERS WITH THE MANUFACTURER OR SUPPLIER BEFORE STARTING ANY CONSTRUCTION RELATED TO SAID WORK AND/OR EQUIPMENT.

20. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, MEET U.L.C. REQUIREMENTS, HAVE U.L.C. SEAL OF APPROVAL AND OF DOMESTIC MANUFACTURE AND SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS AND/OR RECOMMENDATIONS UNLESS INDICATED OTHERWISE IN THE DRAWINGS AND SPECIFICATIONS.

21. LOCATION OF MECHANICAL UNITS ARE APPROXIMATE. INSTALL PER MANUFACTURER'S REQUIREMENTS.

22. REFER TO E-01 OF MEP DRAWING FOR LOCATION OF ELECTRICAL AND GAS METERS, TELEPHONE AND CABLE CLOSETS.

23. THE CONTRACTOR SHALL VERIFY WITH ARCHITECT FOR ANY CHASE AREA NOT SHOWN ON DRAWINGS. ALL SHOP DRAWINGS TO BE SUBMITTED FOR APPROVAL PRIOR TO ORDERING ANY EQUIPMENT.

24. THE CONTRACTORS SHALL BEAR THE TOTAL EXPENSE FOR AND SHALL REPAIR TO EXISTING CONDITION, ANY DAMAGE TO EXISTING UNDERGROUND UTILITIES, PIPING, CONDUIT OR EQUIPMENT.

25. SPECIFIED PRODUCTS HAVE BEEN USED IN PREPARING THE CONTRACT DOCUMENTS TO ESTABLISH MINIMUM QUALITIES. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SUBSTITUTIONS THAT ARE EQUAL TO THE SPECIFIED PRODUCTS. ADEQUATE SUPPORTING INFORMATION MUST ACCOMPANY ALL SUBSTATION SUBMITTALS AND MUST BE SUBMITTED TO THE ARCHITECT WITHIN 30 DAYS AFTER CONTRACT AWARD TO RECEIVE CONSIDERATION AND ON THE ARCHITECT'S SUBSTITUTION FORM.

26. EXIT CORRIDORS TO HAVE A MINIMUM RATED 2A:10B:C FIRE EXTINGUISHER WITHIN A 75-FOOT TRAVEL DISTANCE AND MOUNTED ON THE WALL OR IN CABINETS SUCH THAT THE TOP IS NOT MORE THAN 4-FEET ABOVE FLOOR LEVEL.

27. THE CONTRACTOR MUST PROVIDE ALL REQUIRED RATINGS FOR FIRE-RESISTIVE TENANT SEPARATION WALLS, FLOOR/CEILING ASSEMBLIES, IN ACCORDANCE WITH THE LATEST EDITION OF THE GOVERNING CODE AND LOCAL CODES.

28. THE CONTRACTOR SHALL VERIFY ALL ROUGH OPENINGS.

29. THE BOTTOM 250mm OF ALL DOORS EXCEPT SLIDING DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.

30. EVERY EXIT WAY OR CHANGE OF DIRECTION IN A EXIT CORRIDOR SHALL BE MARKED WITH WELL-LIGHTED EXIT SIGNS HAVING LETTERS OF AT LEAST 125mm IN HEIGHT.

31. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SUCH AS SPRINKLER SYSTEM, PRE-FIN. METAL GUARDS, ALUM. ECT. SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. REFER TO IBC SECTION 106.3.4.2 OR LOCAL CODE SECTIONS.

32. THE TOTAL SQUARE FOOTAGE FIGURES MAY VARY DEPENDING ON THE FORMULA USED BY THE ARCHITECT. THE ARCHITECT SHALL PROVIDE GROSS SQUARE FOOTAGES FOR BUILDING DEPARTMENT PURPOSES. THE ARCHITECT WILL NOT PROVIDE INFORMATION RELATED TO TAX ASSESSOR'S REQUIREMENTS OR FOR CONDOMINIUM SALES PURPOSES. THESE DUTIES REMAIN THE RESPONSIBILITY OF THE OWNER AND THE OWNER'S ATTORNEY TO ENSURE THAT ALL CONDOMINIUM SALES DOCUMENTS ACCURATELY DEPICT THE SURVEYOR'S INFORMATION AS REQUIRED BY THE LOCAL GOVERNING JURISDICTION.

NAME OF PRACTICE:
JASON FUNG ARCHITECT INC.
675 King Street W Unit 211
Toronto, ON M5V 1M9
Contact:

NAME OF PROJECT:
2428 2025-P02103 HWDSB Bennetto Elementary School

LOCATION: 47 Simcoe St E

ONTARIO ASSOCIATION OF ARCHITECTS
JASON WAYNE FUNG
LICENCE
8013

ITEM	ONTARIO BUILDING CODE DATA MATRIX PART 3 OR 9		BUILDING CODE REFERENCE References are to Division B unless noted [A] for Division A or [C] for Division C.	
1	Project Description: ☐ New ■ Addition ☐ Change of Use ■ Alteration	■ Part 11 11.1. to 11.4.	■ Part 3 1.1.2. [A]	☐ Part 9 1.1.2. [A]&9.10.1.3.
2	Major Occupancy(s): Group A2 Assembly - Elementary School		3.1.2.1.(1)	9.10.2.
3	Building Area (m2) Existing: 4331 m^2 New: 0 m^2 Total: 4331 m^2		1.4.1.2.[A]	1.4.1.2.[A]
4	Gross Area (m2) Existing: 6529 m^2 New: 15 m^2 Total: 6541 m^2		1.4.1.2.[A]	1.4.1.2.[A]
5	Number of Storeys Above Grade: 2 Below Grade: x		1.4.1.2.[A]&3.2.1.1.	1.4.1.2.[A]&9.10.4.
6	Number of Streets / Fire Fighter Access: 2		3.2.2.10.&3.2.5.	9.10.20.
7	Building Classification: 3.2.2.25. Group A2 up to 2 storeys - 2 hour firewalls existing between each building		3.2.2.20. - 83	9.10.2.
8	Sprinkler System Proposed: ☐ Entire building ☐ Selected compartments ☐ Selected floor areas ☐ Basement ☐ In lieu of roof rating ■ Not required		3.2.2.20. - 83 3.2.1.5. 3.2.2.17. INDEX	9.10.8.2. INDEX
9	Standpipe Required ☐ Yes ■ No		3.2.9.	N/A
10	Fire Alarm Required ■ Yes ☐ No		3.2.4.	9.10.18.
11	Water Service / Supply is Adequate ■ Yes ☐ No		3.2.5.7.	N/A
12	High Building ☐ Yes ■ No		3.2.6.	N/A
13	Construction Restrictions ☐ Combustible permitted ■ Non-combustible required ☐ Both; Actual Construction ☐ Combustible ■ Non-combustible ☐ Both		3.2.2.20. - 83	9.10.6.
14	Mezzanine(s) Area (m2): 0 m^2		3.2.1.1.(3)-(8)	9.10.4.1.
15	Occupant Load based on ☐ m2 / person ☐ Design of building; 1st Floor Occupancy ___ Load ___ persons; 2nd Floor Occupancy ___ Load ___ persons		3.1.17.	9.9.1.3
16	Barrier-Free Design ■ Yes ☐ No (Explain):		3.8.	9.5.2.
17	Hazardous Substances ☐ Yes ■ No		3.3.1.2.&3.3.1.19.	9.10.1.3.(4)
18	REQUIRED FIRE RESISTANCE RATING (FRR): Horizontal Assemblies FRR (Hours): Floors N/A hours; Roof N/A hours; Mezzanine hours — Listed Design No. or Description (SG-2)		3.3.3.30 - 83 3.2.1.4.	9.10.8. 9.10.9.
	FRR of Supporting Members: Floors N/A hours; Roof N/A hours; Mezzanine hours		3.3.1.2. 3.3.1.19.	9.10.1.3.(4)
19	Spatial Separation - Construction of Exterior Walls		3.2.3.	9.10.14.

Wall	Area of EBF (m2)	L.D. (m)	L/H or H/L	Permitted Max. % of Openings	Proposed % of Openings	FRR (hours)	Listed Design or Description	Comb Const	Comb. Constr. Nonc. Cladding	Non-Comb. Constr.
North										
South										
East										
West										

20 Plumbing Fixture Requirements

Male/Female Count @ 50 % / 50 %
except as noted otherwise

BUILDING CODE REFERENCE
References are to Division B unless noted [A] for Division A or [C] for Division C.
☐ Part 3 ☐ Part 9

		Occupant Load	BC Table Number	Fixtures Required	Fixtures Provided		
1st Floor	Men:						
	Women:						
2nd Floor	Men:						
	Women:						

NAME OF PRACTICE:
Jason Fung Architect INC.
675 King Street W , Unit 211
Toronto, ON M5V 1M9
Contact: Project Architect/Lead

NAME OF PROJECT:
2428 2025-P02103 HWDSB Bennetto Elementary School

LOCATION: 47 Simcoe St E

ONTARIO ASSOCIATION OF ARCHITECTS
JASON WAYNE FUNG
LICENCE
8013

ITEM		ONTARIO BUILDING CODE DATA MATRIX PART 11: RENOVATION OF EXISTING BUILDING	BUILDING CODE REFERENCE
11.1	Building Classification	Describe Existing Use: GROUP A2 Describe Change of Use (if applicable): Construction Index: x Hazard Index: x ■ Not Applicable (no change of major occupancy)	11.2.1. T 11.2.1.1A T 11.2.1.1B to N
11.2	Alteration to Existing Building is:	■ Basic Renovation ☐ Extensive Renovation	11.3.3.1. 11.3.3.2.
11.3	Reduction in Performance Level:	Structural: ■ No ☐ Yes By Increase in occupant load: ■ No ☐ Yes By change of major occupancy: ■ No ☐ Yes Plumbing: ■ No ☐ Yes Sewage-system ■ No ☐ Yes	11.4.2. 11.4.2.1. 11.4.2.2. 11.4.2.3. 11.4.2.4. 11.4.2.5.
11.4	Compensating Construction:	Structural: ■ No ☐ Yes (explain) By Increase in occupant load: ■ No ☐ Yes (explain) By change of major occupancy: ■ No ☐ Yes (explain) Plumbing: ■ No ☐ Yes (explain) Sewage-system ■ No ☐ Yes (explain)	11.4.3. 11.4.3.2. 11.4.2.3. 11.4.2.4. 11.4.2.5. 11.4.2.6.
11.5	Compliance Alternatives Proposed:	■ No ☐ Yes (give number[s])	11.5.1.
	Notes		

GRAPHIC MATERIAL LEGEND

GENERAL PLAN DRAWING LEGEND:

- Room name 101 — ROOM NAME AND NUMBER
- + #### — FLOOR/CEILING ELEVATION (IN PLAN)
- Name / Elevation — ELEVATION (IN ELEVATION/SECTION), LOCATION
- 101 — DOOR TYPE
- 1i — WINDOW TYPE
- 1t — WALL TYPE
- S# — SOFFIT TYPE
- 1hr — WALL FIRE RATING
- 1i — FLOOR SLAB TYPE
- 1t — CEILING TYPE
- 1 — REVISION TO DRAWING
- 1t — RAILING TYPE
- D### — DETAIL NUMBER
- #/A#.# — ELEVATION NUMBER
- #/A#.# — DRAWING NUMBER
- 1/A101 Ref — SECTION NUMBER, DRAWING NUMBER
- N/E/S/W #/A#.# — INTERIOR ELEVATION DIRECTION, DRAWING NUMBER
- 1 View Name / View Scale — DRAWING TITLE
- 0 — GRID REFERENCE

WALL SECTION / DETAIL MATERIALS/HATCH LEGEND:

SHEET MATERIALS
- EXTERIOR GRADE PLYWOOD
- CEMENT PANEL
- STRUCTURAL STEEL/METAL SHEATHING
- FIBRE / PROTECTION BOARD
- SHEATHING BOARD

CONCRETE/MASONRY
- CAST IN PLACE CONCRETE
- CONCRETE BLOCK

SOIL/GRANULAR
- GRANULAR
- NATIVE SOIL
- LANDSCAPING RIVERSTONES
- ASPHALT

SURFACE FINISHES
- GYPSUM BOARD
- ACOUSTIC CEILING TILE

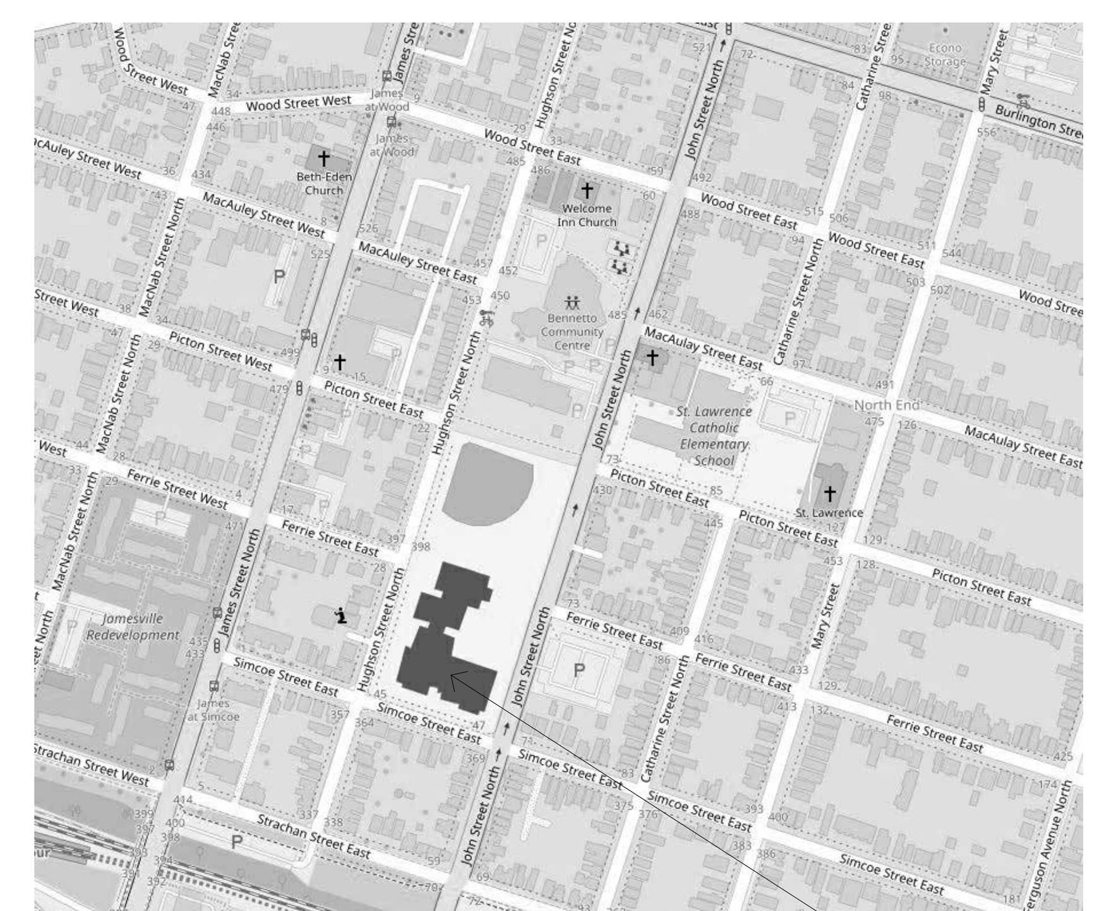
INSULATION
- SEMI-RIGID INSULATION
- RIGID INSULATION
- BATT INSULATION

SEALANTS
- COMPRESSIVE JOINT FILLER
- FIRE STOPPING

WOOD
- SOLID HARDWOOD
- CONTINUOUS WOOD BLOCKING/STUD/JOIST
- INTERMITTANT WOOD BLOCKING/STUD/JOIST

INTERIOR MATERIALS
- GYPSUM BOARD
- ACOUSTIC CEILING TILE
- RESILIENT CHANNELS
- TEMPERED GLASS

TRIMS (DIVISION 5,6,8,9)
- TRIM-1: (D200 DRYWALL METAL EDGE TRIM, BAILEY LTD.)
- TRIM-2: (D300 DRYWALL REVEAL TRIM, BAILEY LTD.)
- TRIM-3: (4411 CHANNEL EDGE TRIM, BAILEY LTD.)



SITE

BENNETTO ELEMENTARY SCHOOL ACCESSIBILITY PROJECT

DRAWING LIST

ARCHITECTURAL

A0.01	COVER
A1.02	SCHEDULES AND ASSEMBLIES
A1.10	PROPOSED SITE PLAN
A2.11	DEMO PLANS / RCP - ELEVATOR
A2.12	DEMO ELEVATIONS / SECTIONS - ELEVATOR
A2.21	DEMO PLANS / ELEVATIONS - UNIVERSAL WASHROOM
A3.11	PROPOSED PLANS / RCP - ELEVATOR
A3.12	PROPOSED ELEVATIONS / SECTIONS - ELEVATOR
A3.21	PROPOSED UNIVERSAL WASHROOM
A3.31	PROPOSED SECOND FLOOR CHAIRLIFT

STRUCTURAL

S0.01	GENERAL NOTES
S0.02	TYPICAL DETAILS
S1.01	ELEVATOR - FOUNDATIONS
S1.02	ELEVATOR - 2ND FLOOR FRAMING
S1.03	ELEVATOR - ROOF FRAMING
S2.01	SECTIONS
S2.02	SECTIONS
S2.03	SECTIONS

MECHANICAL

M-01	MECHANICAL SPECIFICATIONS
M-02	WASHROOM ALTERATIONS
M-03	ELEVATOR INSTALLATION

ELECTRICAL

E-01	WASHROOM ALTERATIONS
E-02	ELEVATOR INSTALLATION
E-04	2ND FLOOR CHAIRLIFT INSTALLATION

ISSUED FOR TENDER
JANUARY 10 2025

JFA
675 KING ST W UNIT 211
TORONTO, ONTARIO M5V 1M9
(647) 948-9176
jason@jasonfung.ca
www.jasonfung.ca

DATE	ISSUED FOR
2024/11/06	ISSUED FOR PERMIT
2025/01/10	ISSUED FOR TENDER

Architect's Stamp

Project: BENNETTO ELEMENTARY SCHOOL ACCESSIBILITY PROJECT

Address: 47 SIMCOE ST E, HAMILTON, ON

Client	HWDSB
Project no.	2428
Scale	As indicated
Drawn By	SM/KP/BG
Print Date	2025/01/10

Project North

Drawing Title: COVER

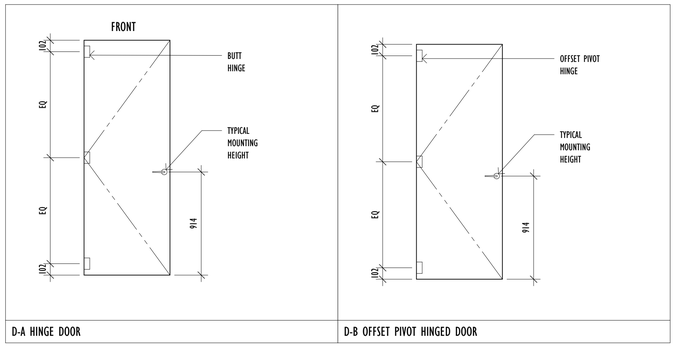
Sheet no. A0.01

DOOR SCHEDULE

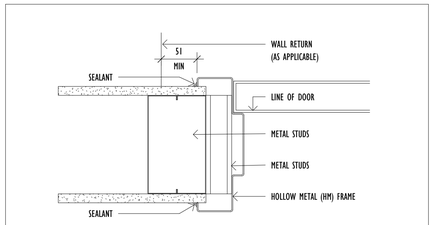
No.	Fire Rating	Room	Door						Frame			Hardware Group	NOTES
			Width	Height	Thickness	Panel Material	Panel Finish	Door Type	Frame Material	Frame Finish	Frame Type		
D102		PROPOSED UNIVERSAL WASHROOM UNIVERSAL BATHROOM	915	2134	44	HM	PT	DT-B	HM	PT	F-1	N-4	INSTALL OFFSET HINGES TO MEET OBC 3.8.3.3 MIN. CLEARANCE OF 860 MM (34")
D103	1HR	ELEVATOR ROOM	915	2134	44	HM	PT	DT-A	HM	PT	F-1	N-3	FIRE RATED INTUMESCENT AIR TRANSFER GRILLE
D204		HALLWAY	915	2134	44	HM	PT	DT-A	HM	PT	F-1	N-2, N-3	-

N-1 indicates requirement for privacy lockset
N-2 indicates requirement for keyed lockset
N-3 indicates requirement for weatherstripping
N-4 indicates requirments for universal bathroom lockset with door operator and emergency call system as per OBC

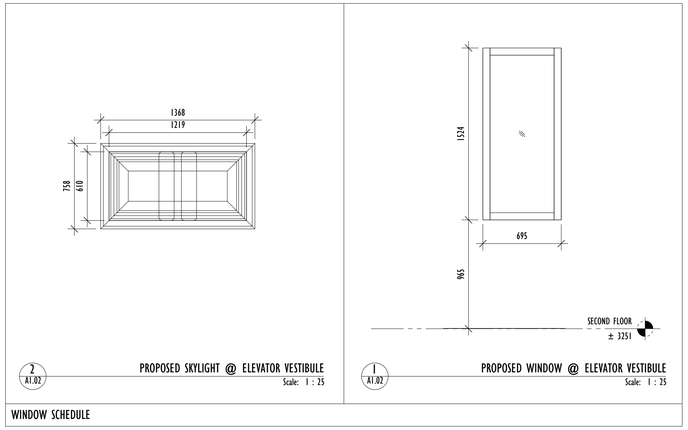
General Note:
Hinge side of door shall be offset 4" from corners unless otherwise noted.



D-A HINGE DOOR | D-B OFFSET PIVOT HINGED DOOR



F-1 HOLLOW METAL FRAME

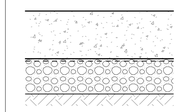


2 A1.02 PROPOSED SKYLIGHT @ ELEVATOR VESTIBULE
Scale: 1 : 25

1 A1.02 PROPOSED WINDOW @ ELEVATOR VESTIBULE
Scale: 1 : 25

WINDOW SCHEDULE

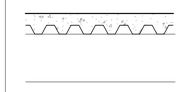
FLOORS



FL1

ELEVATOR PIT SLAB

203mm Concrete Slab (Refer to Structural)
- Air Barrier
152mm Gravel (Refer to Structural
- Earth



FL2

NEW STEEL FRAME FLOOR

- Finish
51mm Concrete Topping
38mm Composite Stel Deck
- Steel Framing (Refer to Structural)

FL3

VINYL FLOOR TILE ON SUBSTRATE

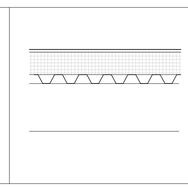
- Vinyl Tile
- Underlayment
- Substrate

FL4

BATHROOM FLOOR FINISH ON SUBSTRATE

- Epoxy on
- Terrazzo, Ground and Polished
- Substrate

ROOFS

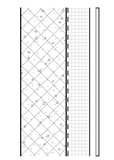


RF1

METAL DECK ROOF
min. R30

- Roofing - EPDM
150mm Rigid Insulation
38.1mm Metal Deck
- Steel Framing, sloped to drain (Refer to Structural)

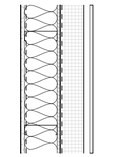
EXTERIOR WALLS



EW1

CMU WALL - METAL SIDING
min. R20ci

- Vertical Metal Siding
25mm Air Space
100mm Cavity Wall Insulation
- Galv. Metal 'Z' Girt Supports @ 600mm o.c.
- Air Barrier
203mm CMU Wall - Refer to Structural

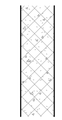


EW2

METAL STUD WALL - METAL SIDING
min. R14+20ci

- Vertical Metal Siding
25mm Air Space
100mm Cavity Wall Insulation
- Galv. Metal 'Z' Girt Supports @ 600mm o.c.
- Air Barrier
12.7mm Exterior Sheathing
152mm Metal Stud @ 600mm o.c.
- Batt Insulation
- Vapour Retarder
15.9mm Gypsum Board Type X

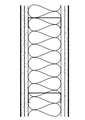
INTERIOR PARTITION



P1

ELEVATOR SHAFT WALL - CMU
Design No. U935, 1.5 HR FRR

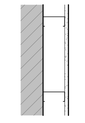
- Finish
203mm CMU - Refer to Structural



P2

ELEVATOR MACHINE ROOM PARTITION
Design No. U452, 1.5 HR FRR, STC 58

31.8mm 2 Layers - Gypsum Board Type X
152mm Metal Stud @ 600mm o.c.
- Fibreglass Batt Insulation
- Resilient Channel @ 600 mm o.c.
15.9mm Gypsum Board Type X



P3

PLUMBING CHASE

12.7mm Gypsum Board
92mm Metal Stud @ 600mm o.c.
- Existing Substrate

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2025/01/10	ISSUED FOR TENDER

Architect's Stamp

Project
BENNETTO ELEMENTARY SCHOOL
ACCESSIBILITY PROJECT

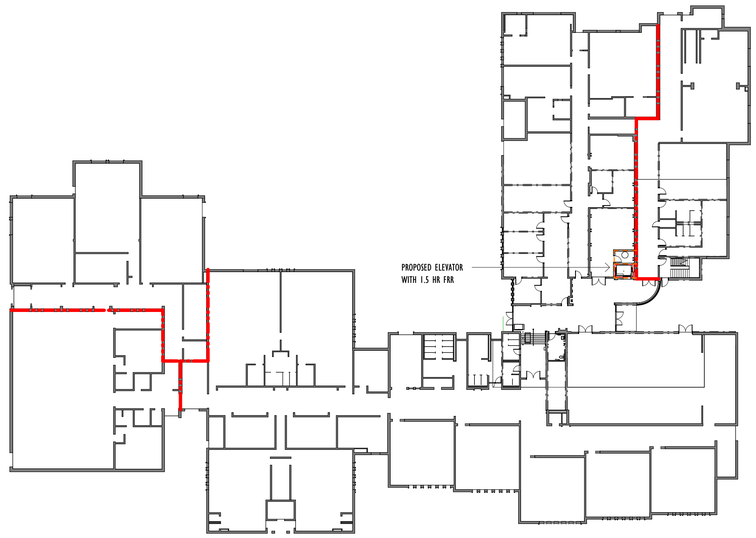
Address 47 SIMCOE ST E, HAMILTON, ON

Project North

Client	HWDSB
Project no.	2420
Scale	As indicated
Drawn By	SM/KP/BG
Print Date	2025/01/10

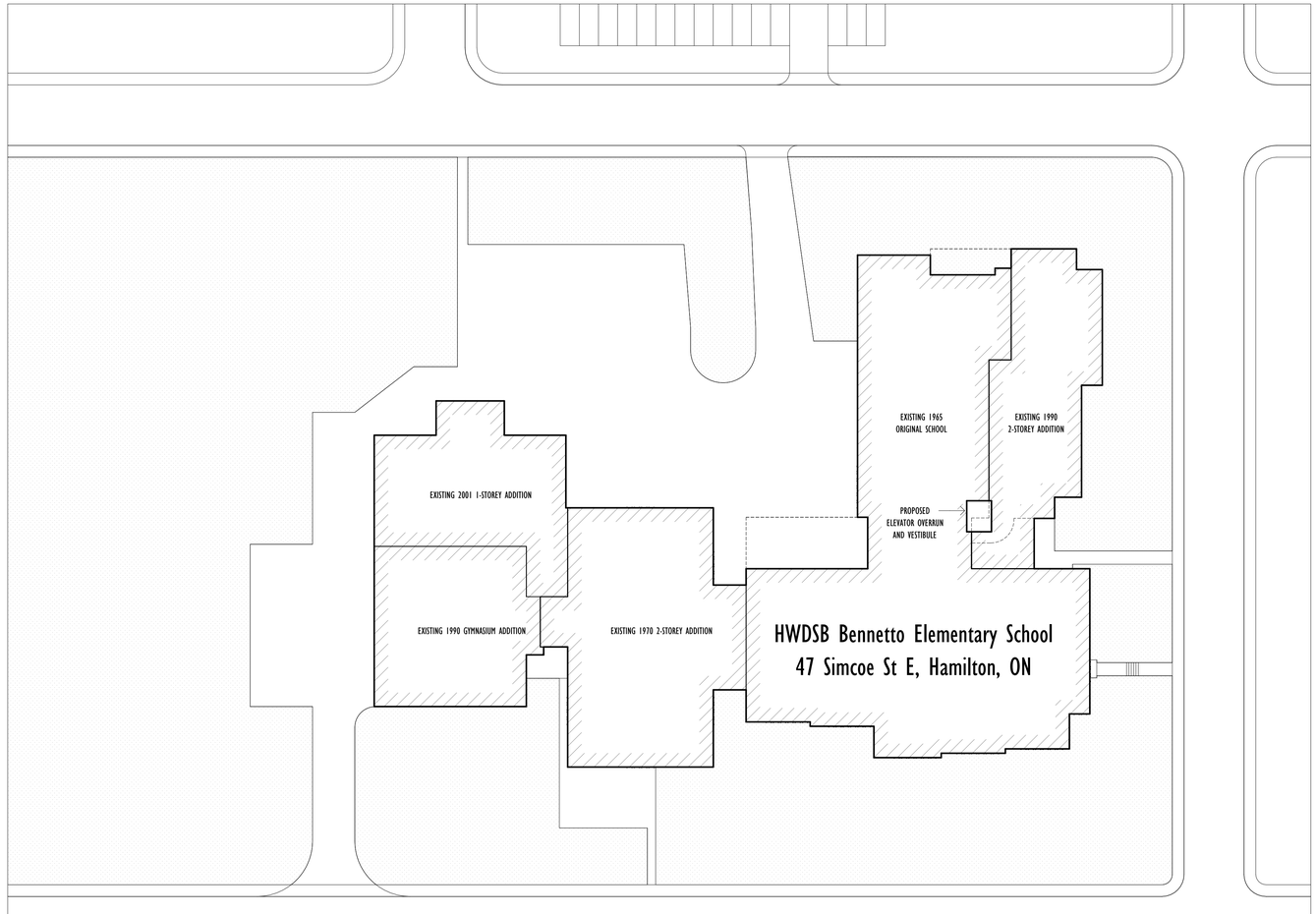
Drawing Title
SCHEDULES AND ASSEMBLIES

Sheet no.
A1.02



2
A1.10

GROUND FLOOR PLAN - FIRE PROTECTION PLAN
Scale: 1 : 400



1
A1.10

SITE PLAN
Scale: 1 : 400

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LEGEND:

- EXISTING BUILDING
- PROPOSED ELEVATOR ADDITION
- 1.5 HR FRR
- 2 HR FRR

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Project
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Drawing Title
PROPOSED SITE PLAN

Sheet no.
A1.10

GENERAL NOTES

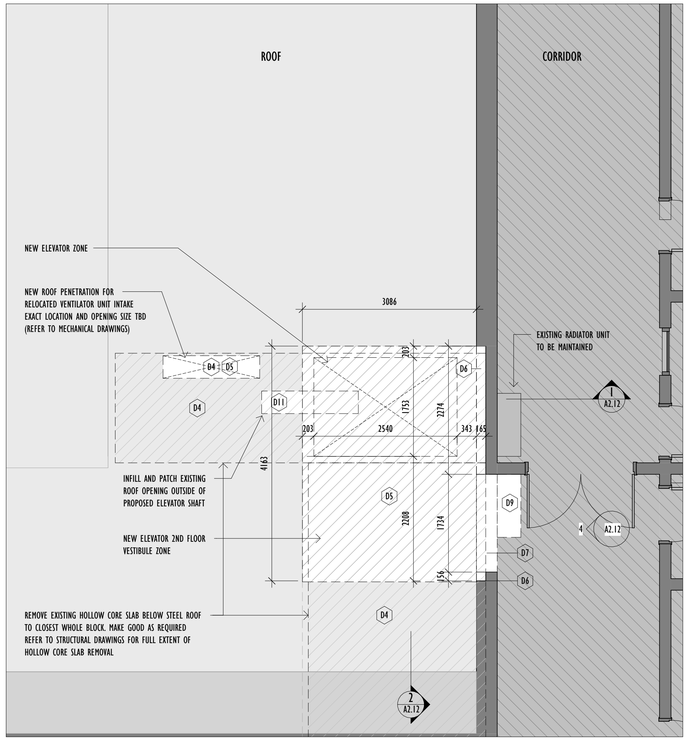
1. FILL IN AND PATCH ANY EXISTING ROOF PENETRATIONS AS REQUIRED. MAKE GOOD TO RECEIVE NEW FINISH

2. ANY PENETRATIONS THROUGH FIRE SEPARATIONS MUST BE FIRE SEALED.

3. LOCATION OF ALL EXISTING PLUMBING STACKS AND LINES TO BE CONFIRMED ON SITE AND COMMUNICATED TO SCHOOL BOARD AND ARCHITECT

4. GC TO REVIEW CONFLICTS BETWEEN TRADES

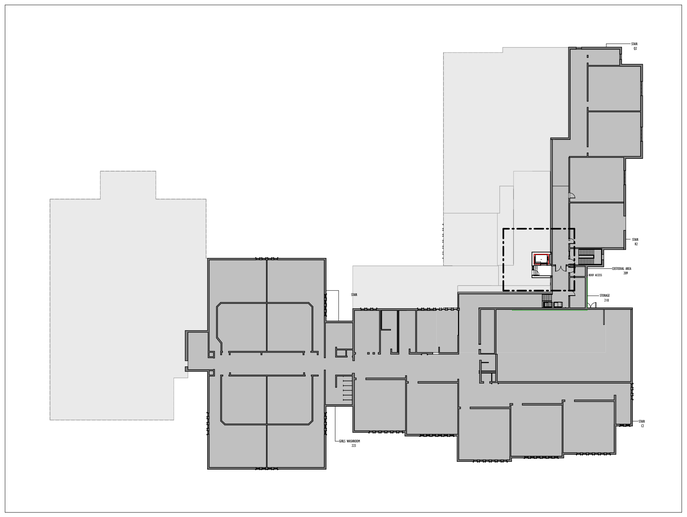
5. GC TO NOTIFY ARCHITECT OF ANY SITE DISCREPANCIES



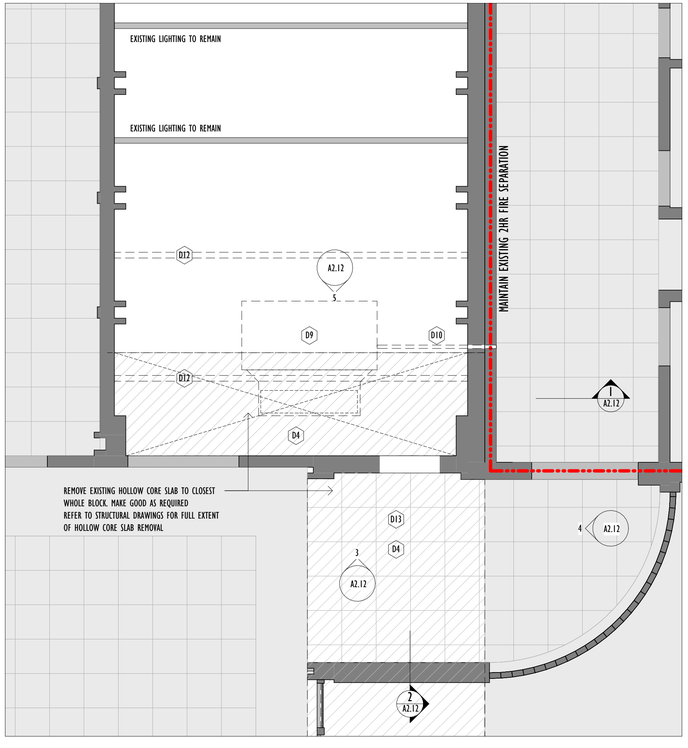
4 A2.11 DEMO SECOND FLOOR PLAN - ELEVATOR
Scale: 1 : 50

DEMO LEGEND

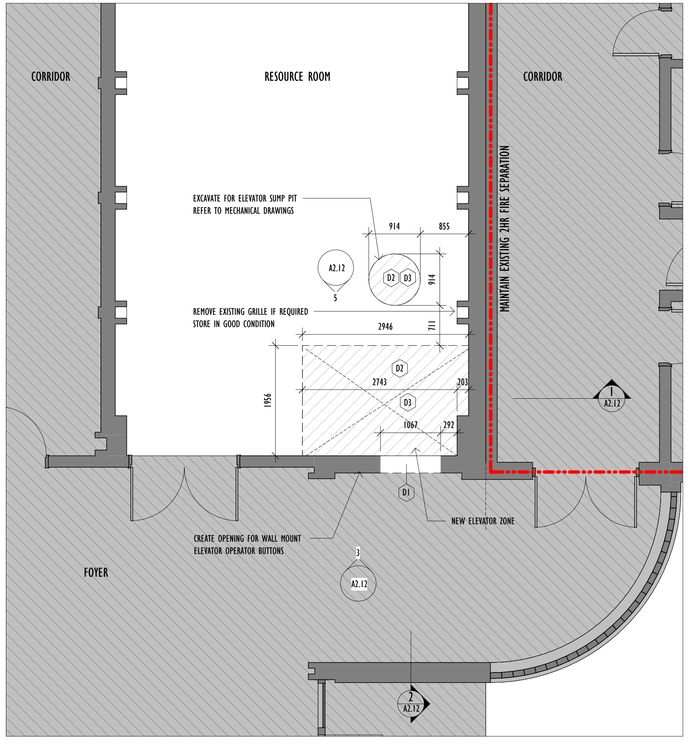
- D1 REMOVE EXISTING BRICK MASONRY WALL. PATCH AND MAKE GOOD TO RECEIVE NEW ELEVATOR DOOR AND FINISHES. PROVIDE SHORING AND REINFORCEMENT AS REQUIRED. REFER TO STRUCTURAL DRAWINGS.
- D2 REMOVE EXISTING VINYL FLOOR TILE. COORDINATE WITH ABATEMENT SUBTRADE.
- D3 REMOVE EXISTING CONCRETE SLAB ON GRADE AND EXCAVATE AS REQUIRED. PREPARE FOR NEW FOUNDATION, FOOTINGS, AND SLAB.
- D4 REMOVE EXISTING PRECAST SLAB. PATCH AND MAKE GOOD AS REQUIRED. PROVIDE SHORING AND REINFORCEMENT AS REQUIRED. REFER TO STRUCTURAL DRAWINGS.
- D5 REMOVE EXISTING SLOPED STEEL ROOF ASSEMBLY. PATCH AND MAKE GOOD PRECAST SLAB UNDERNEATH TO RECEIVE NEW FLOORING AND WALLS. PROVIDE SHORING AND REINFORCEMENT AS REQUIRED. REFER TO STRUCTURAL DRAWINGS.
- D6 REMOVE EXISTING CLADDING AND INSULATION. PATCH AND MAKE GOOD TO RECEIVE NEW WALL.
- D7 REMOVE EXISTING CMU WALL. PATCH AND MAKE GOOD TO RECEIVE NEW FINISH. PROVIDE SHORING AND REINFORCEMENT AS REQUIRED. REFER TO STRUCTURAL DRAWINGS.
- D8 REMOVE EXISTING BURIED DUCT AND CONCRETE AND ASSOCIATED INSULATION.
- D9 REMOVE EXISTING VENTILATOR UNIT AND ASSOCIATED DUCTS/CONDUITS. STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED. REFER TO MECHANICAL DRAWINGS
- D10 DECOMMISSION HOT WATER SUPPLY, HOT WATER RETURN, REFRIGERANT LINES, AND DRAIN LINES FOR VENTILATOR UNIT. RELOCATED AND TIE BACK INTO EXISTING BUILDING SYSTEM REFER TO MECHANICAL DRAWINGS
- D11 REMOVE EXISTING ROOFTOP MECHANICAL UNIT. STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED. REFER TO MECHANICAL DRAWINGS
- D12 REMOVE EXISTING LIGHT FIXUTRES. STORE IN GOOD CONDITION FOR REINSTALLATION. CUT DOWN TO SIZE AS REQUIRED. REFER TO PROPOSED RCP AND MECHANICAL DRAWINGS
- D13 REMOVE EXISTING ACT CEILING AND ASSOCIATED LIGHTING / ELECTRICAL FIXTURES. STORE ELECTRICAL FIXTURES IN GOOD CONDITION FOR REUSE.
- D14 REMOVE EXISTING SHELVING UNITS. STORE IN GOOD CONDITION FOR REUSE.
- D15 PREPARE EXISTING MASONRY WALL TO RECEIVE NEW FINISH
- D16 REMOVE EXISTING WALL BASE AND MAKE GOOD TO RECEIVE NEW BASE



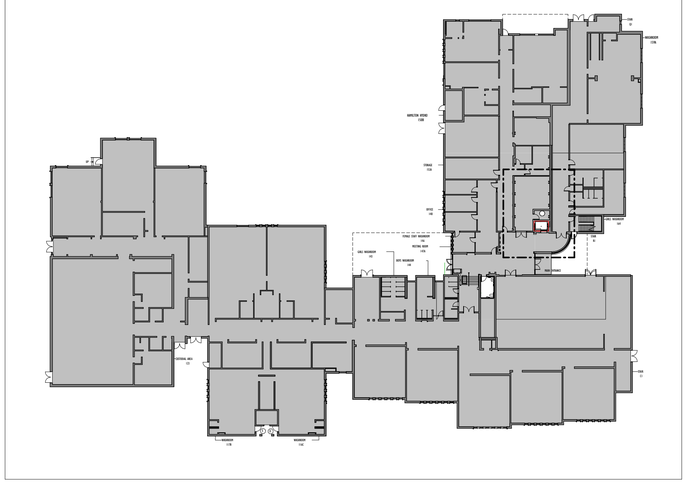
2 A2.11 SECOND FLOOR KEY PLAN - ELEVATOR
Scale: 1 : 500



5 A2.11 DEMO GROUND FLOOR RCP - ELEVATOR
Scale: 1 : 50



3 A2.11 DEMO GROUND FLOOR PLAN - ELEVATOR
Scale: 1 : 50



1 A2.11 GROUND FLOOR KEY PLAN - ELEVATOR
Scale: 1 : 500

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LEGEND:
- EXISTING
- DEMO
- PROPOSED

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Project
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Drawn By	SM/KP/BG
Project North	Print Date 2025/01/10

Drawing Title
DEMO PLANS / RCP - ELEVATOR

Sheet no.
A2.11

DEMO LEGEND

D1 REMOVE EXISTING BRICK MASONRY WALL.
PATCH AND MAKE GOOD TO RECEIVE NEW ELEVATOR DOOR AND FINISHES.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D2 REMOVE EXISTING VINYL FLOOR TILE.
COORDINATE WITH ABATEMENT SUBTRADE.

D3 REMOVE EXISTING CONCRETE SLAB ON GRADE AND EXCAVATE AS REQUIRED.
PREPARE FOR NEW FOUNDATION, FOOTINGS, AND SLAB.

D4 REMOVE EXISTING PRECAST SLAB. PATCH AND MAKE GOOD AS REQUIRED.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D5 REMOVE EXISTING SLOPED STEEL ROOF ASSEMBLY.
PATCH AND MAKE GOOD PRECAST SLAB UNDERNEATH TO RECEIVE NEW FLOORING AND WALLS.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D6 REMOVE EXISTING CLADDING AND INSULATION.
PATCH AND MAKE GOOD TO RECEIVE NEW WALL.

D7 REMOVE EXISTING CMU WALL.
PATCH AND MAKE GOOD TO RECEIVE NEW FINISH.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D8 REMOVE EXISTING BURIED DUCT AND CONCRETE AND ASSOCIATED INSULATION.

D9 REMOVE EXISTING VENTILATOR UNIT AND ASSOCIATED DUCTS/CONDUITS.
STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED.
REFER TO MECHANICAL DRAWINGS

D10 DECOMMISSION HOT WATER SUPPLY, HOT WATER RETURN, REFRIGERANT LINES, AND DRAIN LINES FOR VENTILATOR UNIT. RELOCATED AND TIE BACK INTO EXISTING BUILDING SYSTEM
REFER TO MECHANICAL DRAWINGS

D11 REMOVE EXISTING ROOFTOP MECHANICAL UNIT.
STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED.
REFER TO MECHANICAL DRAWINGS

D12 REMOVE EXISTING LIGHT FIXUTRES.
STORE IN GOOD CONDITION FOR REINSTALLATION. CUT DOWN TO SIZE AS REQUIRED.
REFER TO PROPOSED RCP AND MECHANICAL DRAWINGS

D13 REMOVE EXISTING ACT CEILING AND ASSOCIATED LIGHTING / ELECTRICAL FIXTURES.
STORE ELECTRICAL FIXTURES IN GOOD CONDITION FOR REUSE.

D14 REMOVE EXISTING SHELVING UNITS.
STORE IN GOOD CONDITION FOR REUSE.

D15 PREPARE EXISTING MASONRY WALL TO RECEIVE NEW FINISH

D16 REMOVE EXISTING WALL BASE AND MAKE GOOD TO RECEIVE NEW BASE

GENERAL NOTES

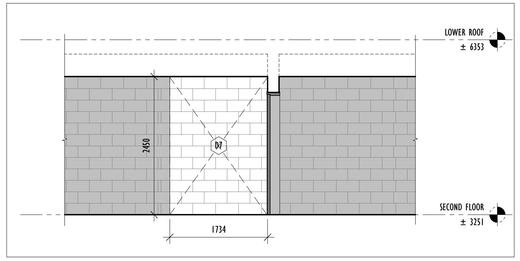
1. FILL IN AND PATCH ANY EXISTING ROOF PENETRATIONS AS REQUIRED. MAKE GOOD TO RECEIVE NEW FINISH

2. ANY PENETRATIONS THROUGH FIRE SEPARATIONS MUST BE FIRE SEALED.

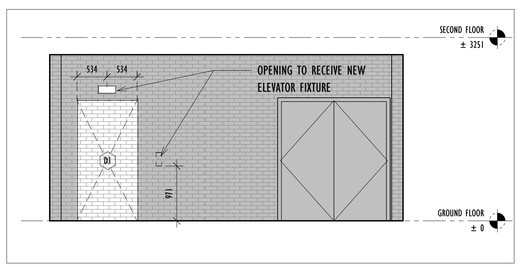
3. LOCATION OF ALL EXISTING PLUMBING STACKS AND LINES TO BE CONFIRMED ON SITE AND COMMUNICATED TO SCHOOL BOARD AND ARCHITECT

4. GC TO REVIEW CONFLICTS BETWEEN TRADES

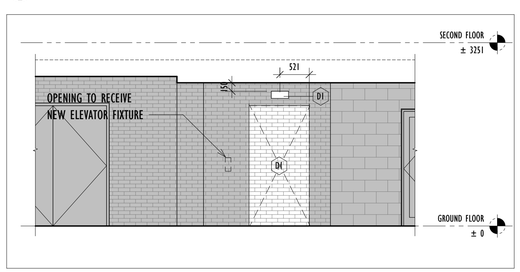
5. GC TO NOTIFY ARCHITECT OF ANY SITE DISCREPANCIES



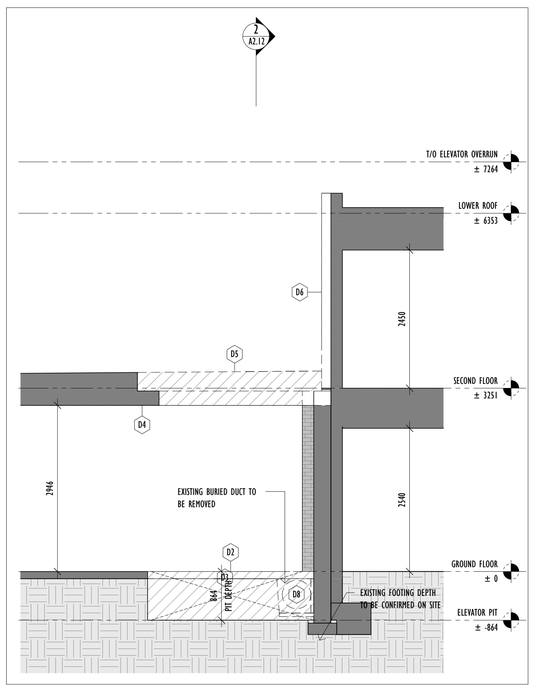
4 A2.12 DEMO ELEVATION SECOND FLOOR - ELEVATOR OPENING
Scale: 1 : 50



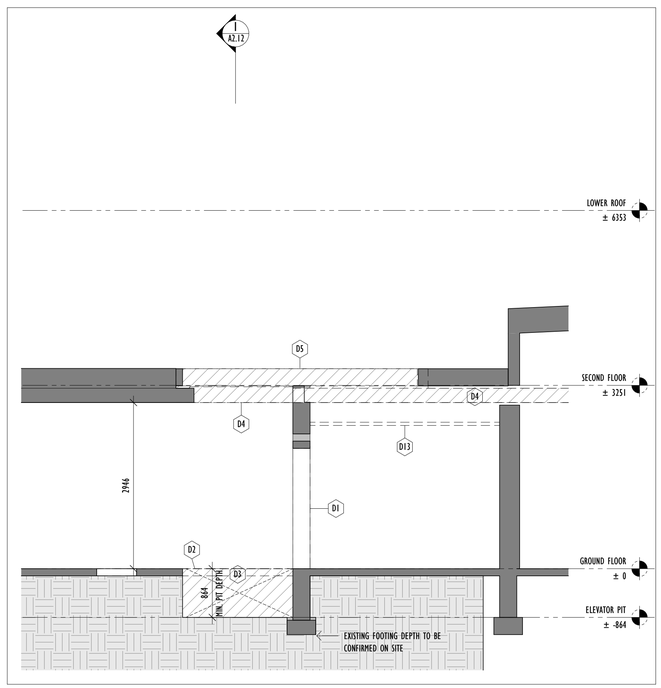
5 A2.12 DEMO ELEVATION GROUND FLOOR - ELEVATOR DOOR OPENING
Scale: 1 : 50



3 A2.12 DEMO ELEVATION GROUND FLOOR - ELEVATOR DOOR OPENING
Scale: 1 : 50



1 A2.12 DEMO SECTION A - ELEVATOR
Scale: 1 : 50



2 A2.12 DEMO SECTION B - ELEVATOR
Scale: 1 : 50

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LEGEND:
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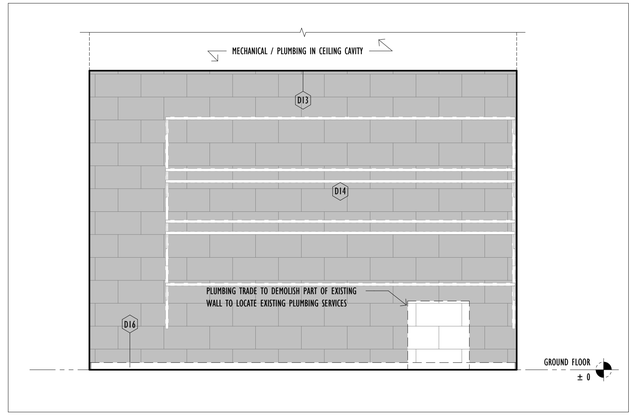
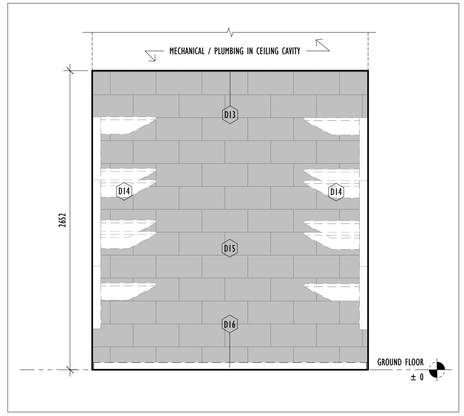
Project North

Drawing Title
DEMO ELEVATIONS / SECTIONS - ELEVATOR

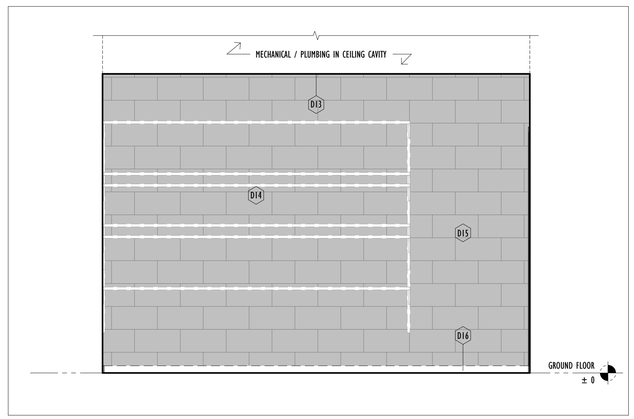
Sheet no.
A2.12



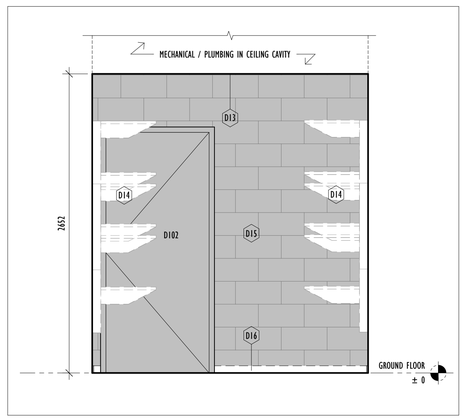
6 A2.21 EXISTING STORAGE ROOM - SOUTH ELEVATION
Scale: 1 : 25



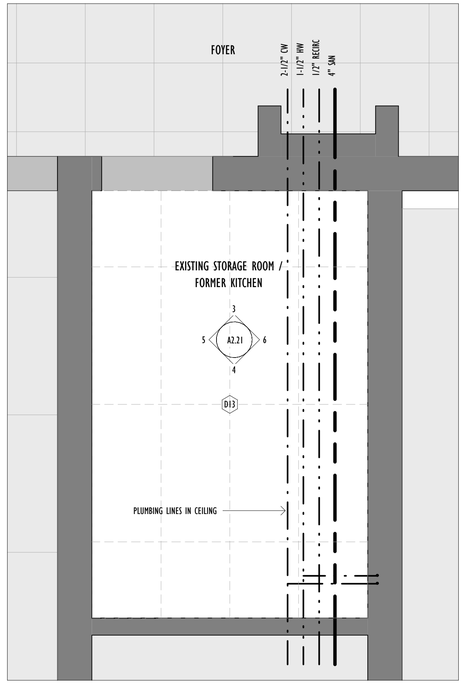
4 A2.21 EXISTING STORAGE ROOM - WEST ELEVATION
Scale: 1 : 25



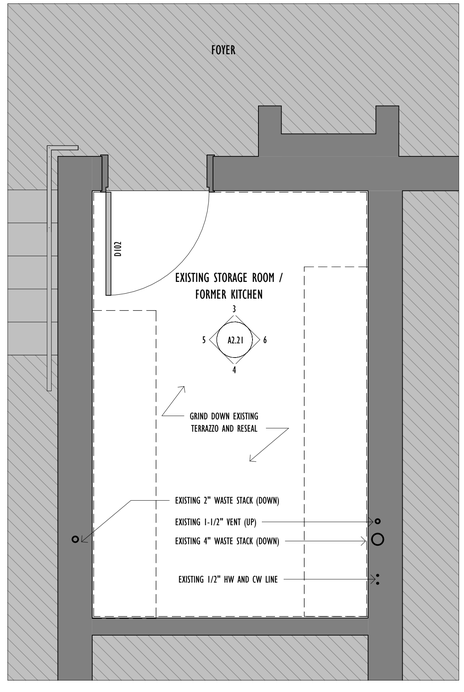
5 A2.21 EXISTING STORAGE ROOM - NORTH ELEVATION
Scale: 1 : 25



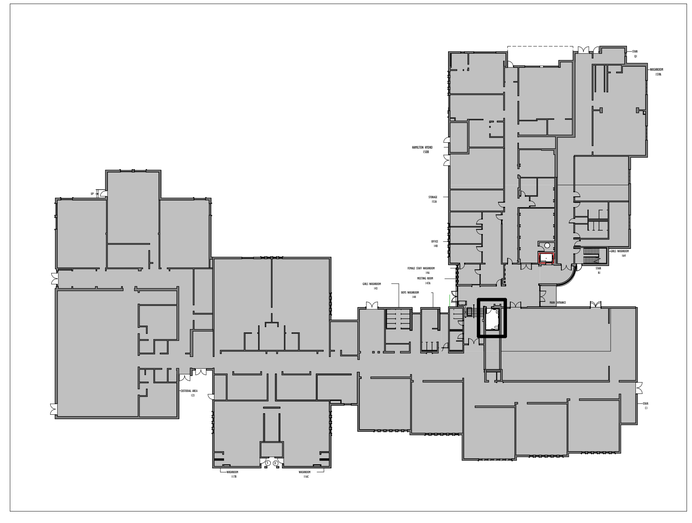
3 A2.21 EXISTING STORAGE ROOM - EAST ELEVATION
Scale: 1 : 25



7 A2.21 DEMO GROUND FLOOR RCP - UNIVERSAL WASHROOM
Scale: 1 : 25



2 A2.21 DEMO GROUND FLOOR PLAN - UNIVERSAL WASHROOM
Scale: 1 : 25



1 A2.21 GROUND FLOOR KEY PLAN - UNIVERSAL WASHROOM
Scale: 1 : 500

DEMO LEGEND

D1 REMOVE EXISTING BRICK MASONRY WALL.
PATCH AND MAKE GOOD TO RECEIVE NEW ELEVATOR DOOR AND FINISHES.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D2 REMOVE EXISTING VINYL FLOOR TILE.
COORDINATE WITH ABATEMENT SUBTRADE.

D3 REMOVE EXISTING CONCRETE SLAB ON GRADE AND EXCAVATE AS REQUIRED.
PREPARE FOR NEW FOUNDATION, FOOTINGS, AND SLAB.

D4 REMOVE EXISTING PRECAST SLAB. PATCH AND MAKE GOOD AS REQUIRED.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D5 REMOVE EXISTING SLOPED STEEL ROOF ASSEMBLY.
PATCH AND MAKE GOOD PRECAST SLAB UNDERNEATH TO RECEIVE NEW FLOORING AND WALLS.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D6 REMOVE EXISTING CLADDING AND INSULATION.
PATCH AND MAKE GOOD TO RECEIVE NEW WALL.

D7 REMOVE EXISTING CMU WALL.
PATCH AND MAKE GOOD TO RECEIVE NEW FINISH.
PROVIDE SHORING AND REINFORCEMENT AS REQUIRED.
REFER TO STRUCTURAL DRAWINGS.

D8 REMOVE EXISTING BURIED DUCT AND CONCRETE AND ASSOCIATED INSULATION.

D9 REMOVE EXISTING VENTILATOR UNIT AND ASSOCIATED DUCTS/CONDUITS.
STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED.
REFER TO MECHANICAL DRAWINGS

D10 DECOMMISSION HOT WATER SUPPLY, HOT WATER RETURN, REFRIGERANT LINES, AND DRAIN LINES FOR VENTILATOR UNIT. RELOCATED AND TIE BACK INTO EXISTING BUILDING SYSTEM
REFER TO MECHANICAL DRAWINGS

D11 REMOVE EXISTING ROOFTOP MECHANICAL UNIT.
STORE IN GOOD CONDITION FOR REINSTALLATION. RELOCATE AS REQUIRED.
REFER TO MECHANICAL DRAWINGS

D12 REMOVE EXISTING LIGHT FIXUTRES.
STORE IN GOOD CONDITION FOR REINSTALLATION. CUT DOWN TO SIZE AS REQUIRED.
REFER TO PROPOSED RCP AND MECHANICAL DRAWINGS

D13 REMOVE EXISTING ACT CEILING AND ASSOCIATED LIGHTING / ELECTRICAL FIXTURES.
STORE ELECTRICAL FIXTURES IN GOOD CONDITION FOR REUSE.

D14 REMOVE EXISTING SHELVING UNITS.
STORE IN GOOD CONDITION FOR REUSE.

D15 PREPARE EXISTING MASONRY WALL TO RECEIVE NEW FINISH

D16 REMOVE EXISTING WALL BASE AND MAKE GOOD TO RECEIVE NEW BASE

GENERAL NOTES

1. FILL IN AND PATCH ANY EXISTING ROOF PENETRATIONS AS REQUIRED. MAKE GOOD TO RECEIVE NEW FINISH

2. ANY PENETRATIONS THROUGH FIRE SEPARATIONS MUST BE FIRE SEALED.

3. LOCATION OF ALL EXISTING PLUMBING STACKS AND LINES TO BE CONFIRMED ON SITE AND COMMUNICATED TO SCHOOL BOARD AND ARCHITECT

4. GC TO REVIEW CONFLICTS BETWEEN TRADES

5. GC TO NOTIFY ARCHITECT OF ANY SITE DISCREPANCIES

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LEGEND:
EXISTING
DEMO
PROPOSED

DATE	ISSUED FOR
2024/11/06	ISSUED FOR PERMIT
2025/01/10	ISSUED FOR TENDER

Architect's Stamp

Project
BENNETTO ELEMENTARY SCHOOL ACCESSIBILITY PROJECT

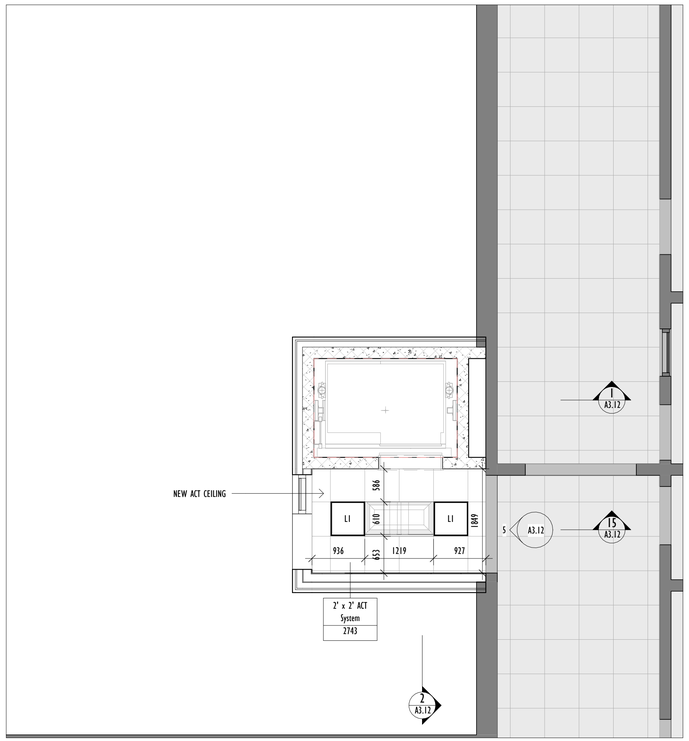
Address: 47 SIMCOE ST E, HAMILTON, ON

Client	HWDSB
Project no.	2428
Scale	As indicated
Drawn By	SM/KF/BG
Print Date	2025/01/10

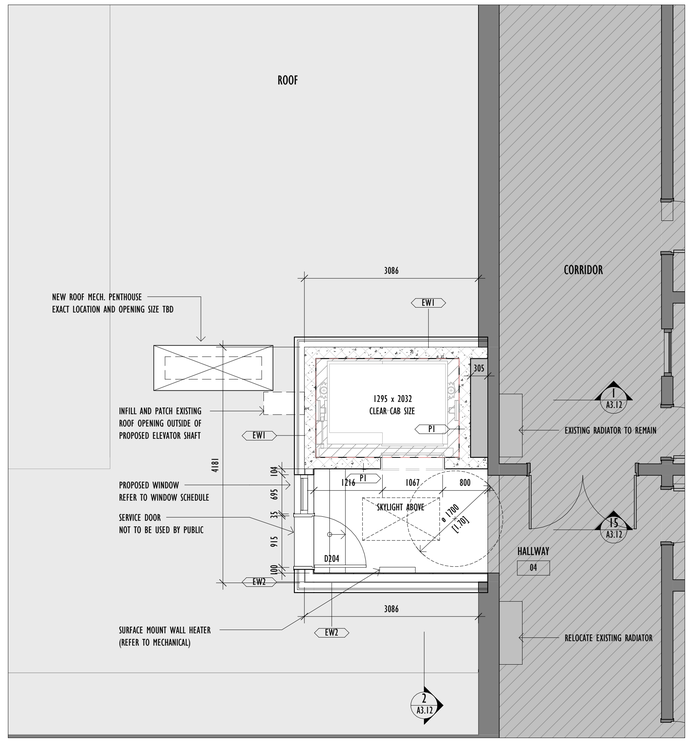
Project North

Drawing Title
DEMO PLANS / ELEVATIONS - UNIVERSAL WASHROOM

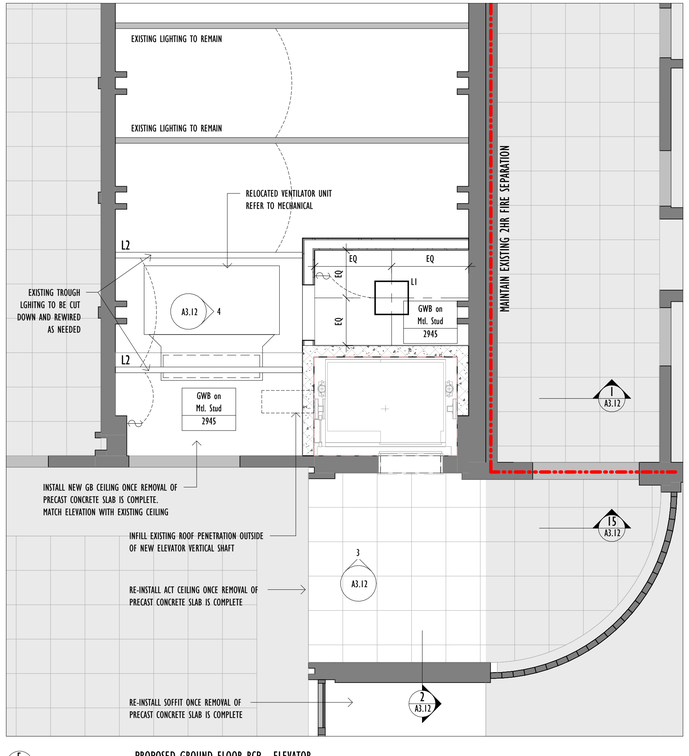
Sheet no.
A2.21



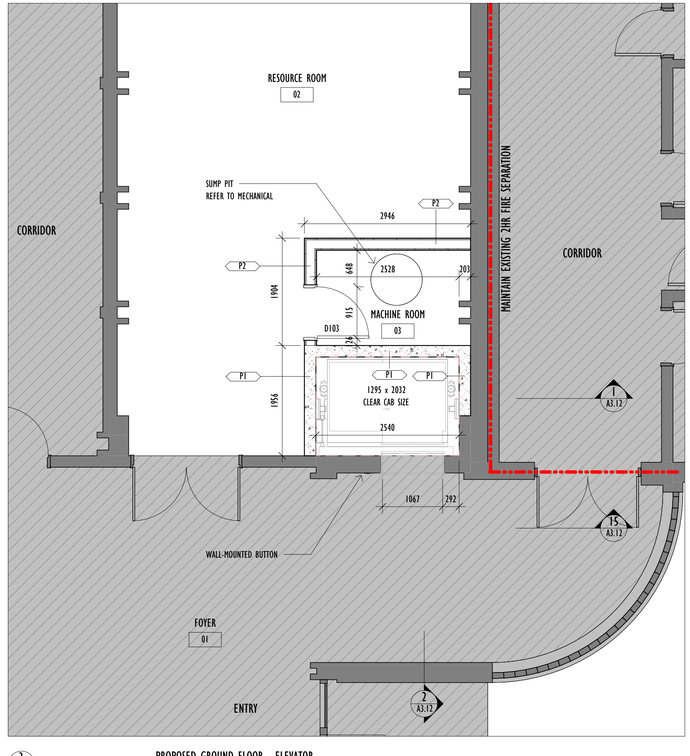
6 A3.11 PROPOSED SECOND FLOOR RCP - ELEVATOR
Scale: 1 : 50



4 A3.11 PROPOSED SECOND FLOOR PLAN - ELEVATOR
Scale: 1 : 50



5 A3.11 PROPOSED GROUND FLOOR RCP - ELEVATOR
Scale: 1 : 50



3 A3.11 PROPOSED GROUND FLOOR - ELEVATOR
Scale: 1 : 50

GENERAL NOTES

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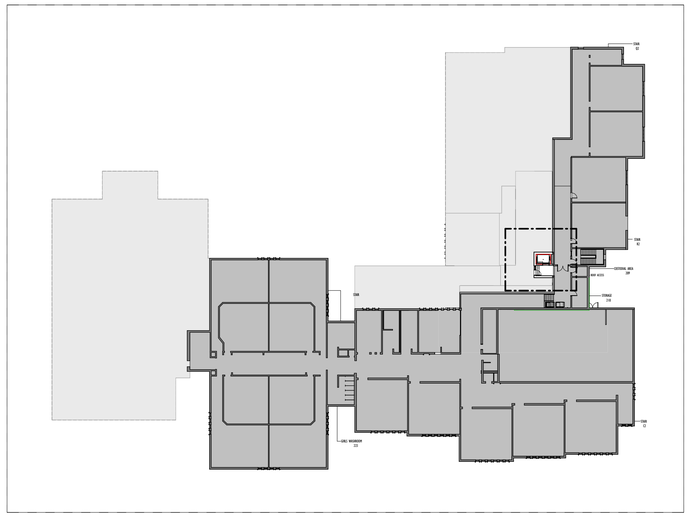
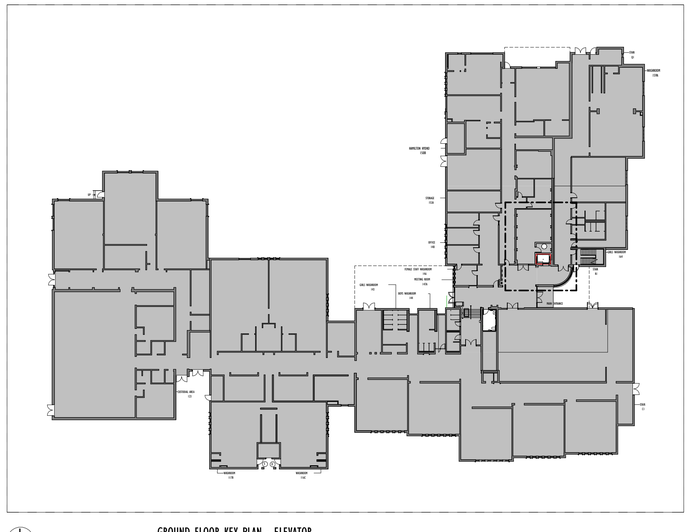
4. GC TO REVIEW CONFLICTS BETWEEN TRADES
5. GC TO NOTIFY ARCHITECT OF ANY SITE DISCREPANCIES



2 A3.11 SECOND FLOOR KEY PLAN - ELEVATOR
Scale: 1 : 500



1 A3.11 GROUND FLOOR KEY PLAN - ELEVATOR
Scale: 1 : 500

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LEGEND:
EXISTING
DEMO
PROPOSED

LIGHTING LEGEND:
LI Surface Mounted Light
L2 Trough Light

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2025/01/10	ISSUED FOR TENDER

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Project
BENNETTO ELEMENTARY SCHOOL
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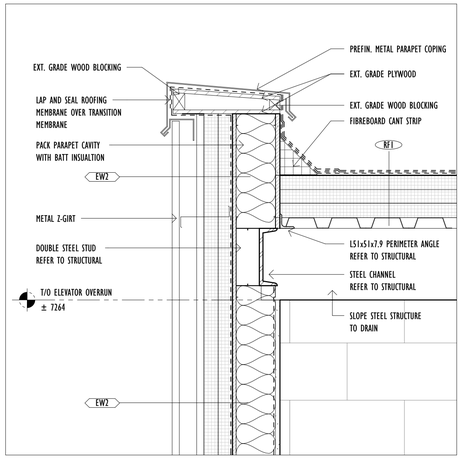
Print Date	2025/01/10

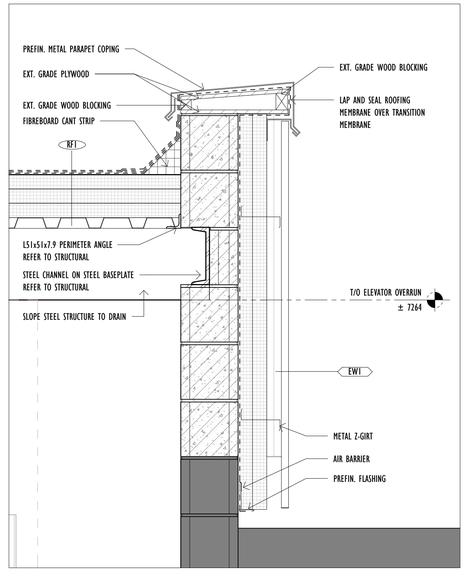
Project North

Drawing Title
PROPOSED PLANS / RCP - ELEVATOR

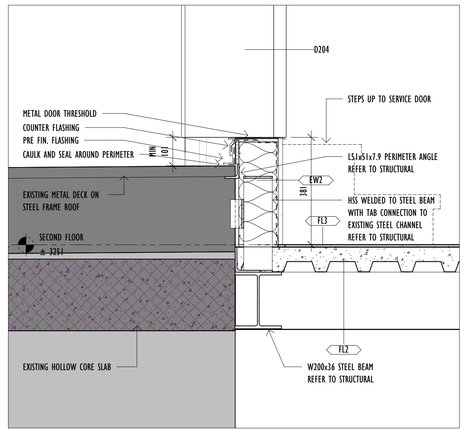
Sheet no.
A3.11



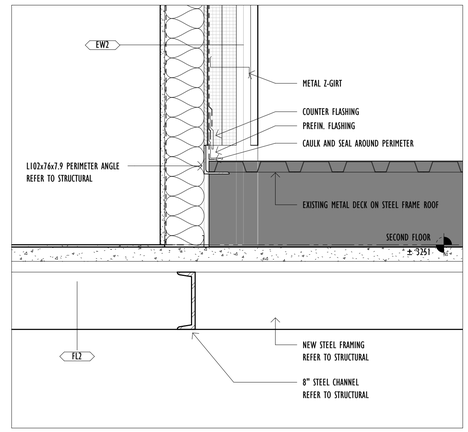
13 A3.12 PROPOSED DETAIL - NEW PARAPET
Scale: 1 : 10



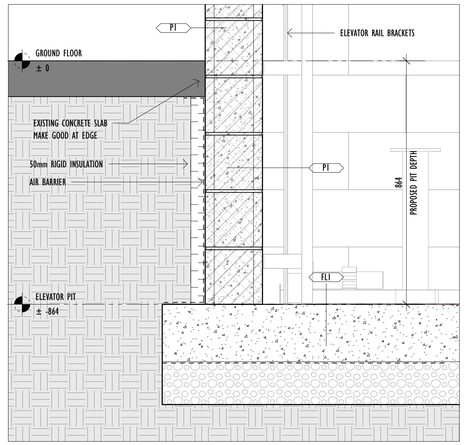
14 A3.12 PROPOSED DETAIL - PARAPET @ EXISTING PARAPET
Scale: 1 : 10



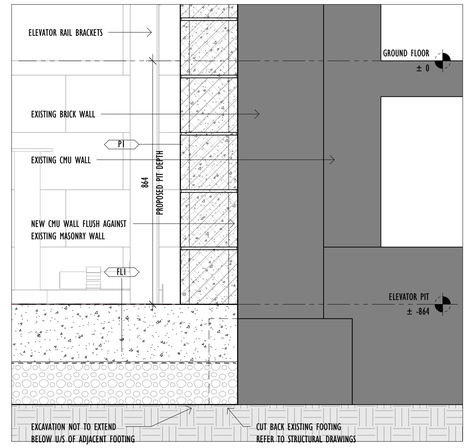
6 A3.12 PROPOSED DETAIL - 2ND FLOOR DOOR THRESHOLD DETAIL
Scale: 1 : 10



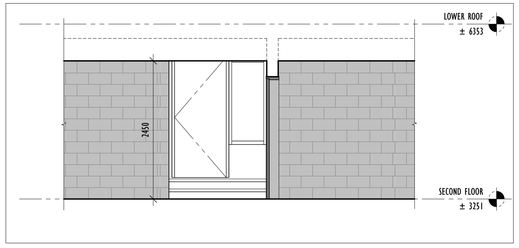
7 A3.12 Detail 0
Scale: 1 : 10



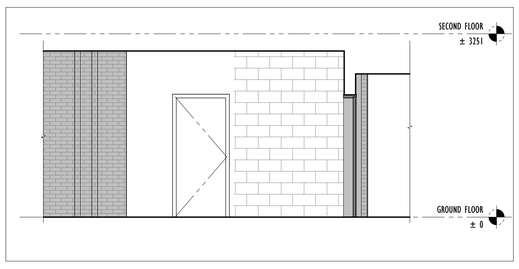
16 A3.12 PROPOSED DETAIL - ELEVATOR PIT SLAB
Scale: 1 : 10



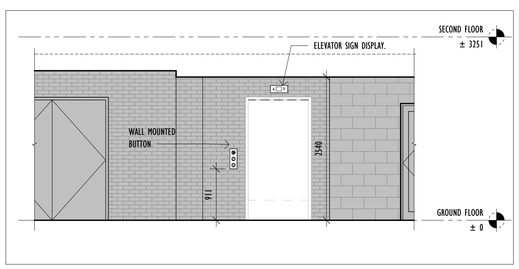
11 A3.12 PROPOSED DETAIL - ELEVATOR PIT @ EXISTING FOOTING
Scale: 1 : 10



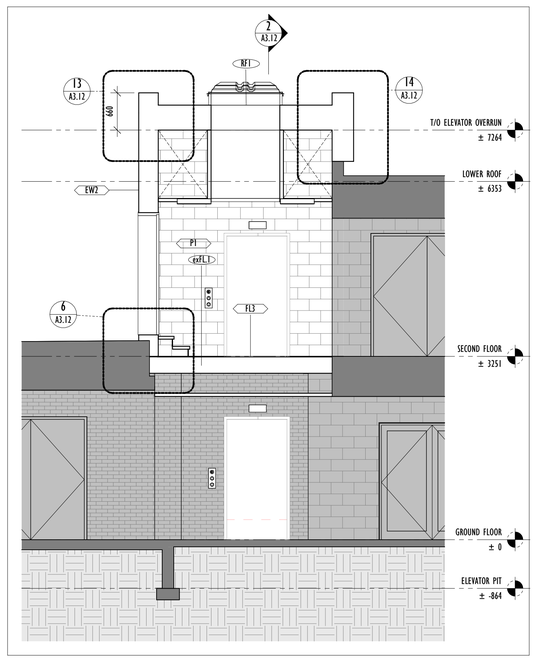
5 A3.12 PROPOSED ELEVATION SECOND FLOOR - NEW OPENING
Scale: 1 : 50



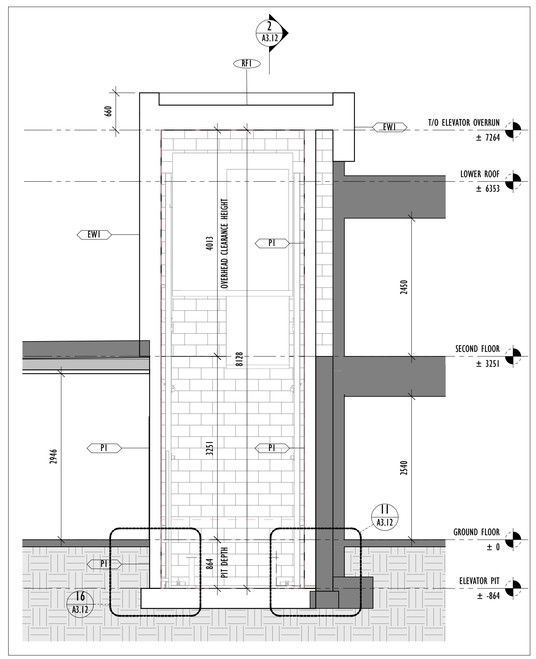
4 A3.12 PROPOSED ELEVATION GROUND FLOOR - MACHINE ROOM
Scale: 1 : 50



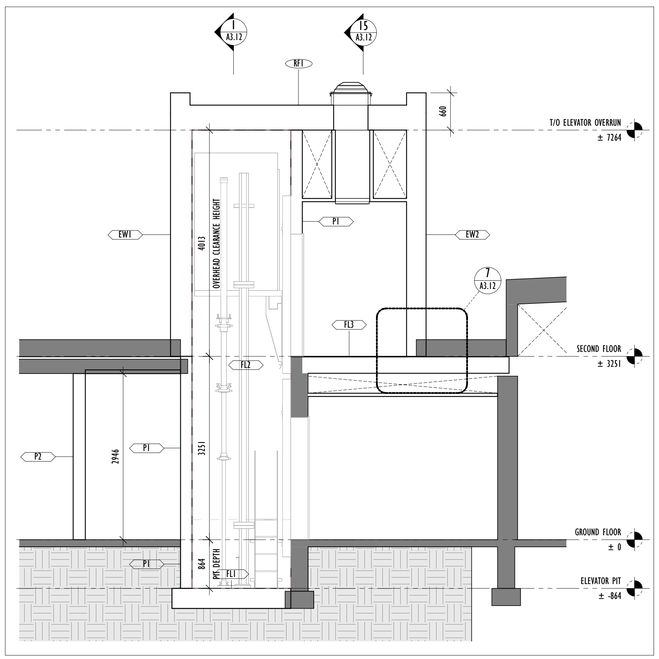
3 A3.12 PROPOSED ELEVATION GROUND FLOOR - ELEVATOR DOOR
Scale: 1 : 50



15 A3.12 PROPOSED SECTION A2 - ELEVATOR
Scale: 1 : 50



1 A3.12 PROPOSED SECTION A - ELEVATOR
Scale: 1 : 50



2 A3.12 PROPOSED SECTION B - ELEVATOR
Scale: 1 : 50

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Architect's Stamp

Project
BENNETTO ELEMENTARY SCHOOL ACCESSIBILITY PROJECT

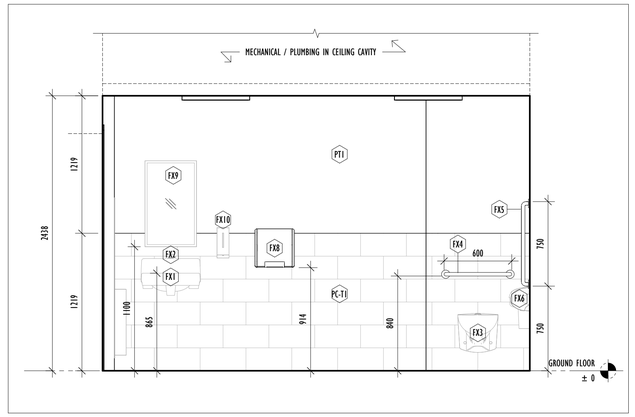
Address: 47 SIMCOE ST E, HAMILTON, ON

Client	HWDSB
Project no.	2428
Scale	As indicated
Drawn By	SM/KP/BG
Print Date	2025/01/10

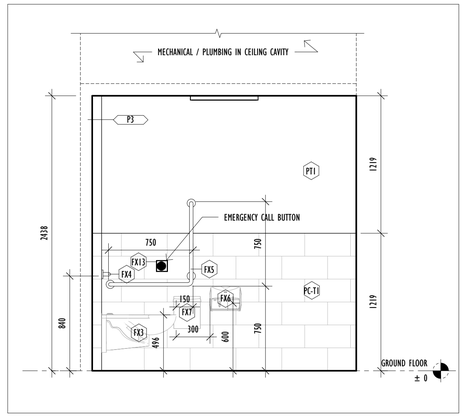
Project North

Drawing Title
PROPOSED ELEVATIONS / SECTIONS - ELEVATOR

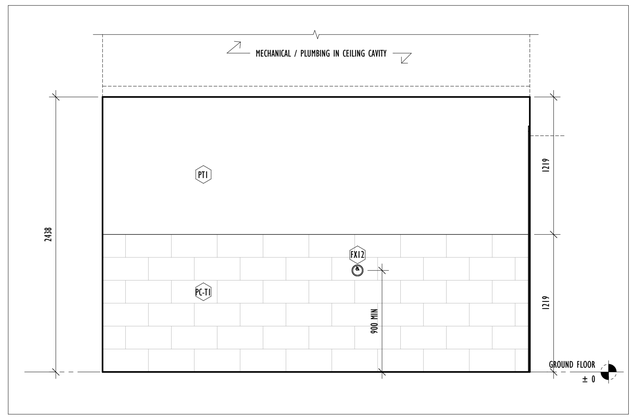
Sheet no.
A3.12



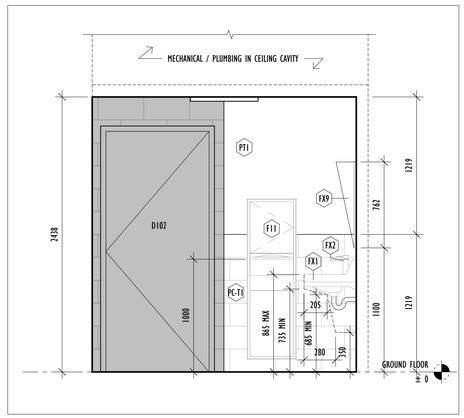
4 A3.21 PROPOSED UNIVERSAL WASHROOM - SOUTH ELEVATION
Scale: 1 : 25



3 A3.21 PROPOSED UNIVERSAL WASHROOM - WEST ELEVATION
Scale: 1 : 25



6 A3.21 PROPOSED UNIVERSAL WASHROOM - NORTH ELEVATION
Scale: 1 : 25



5 A3.21 PROPOSED UNIVERSAL WASHROOM - EAST ELEVATION
Scale: 1 : 25

FIXTURE AND FINISH LEGEND

FX1	PROPOSED SINK	PT1	EGGSHELL PAINT 1
FX2	PROPOSED FAUCET	PT2	MATTE PAINT 1
FX3	PROPOSED WALL HUNG WATER CLOSET	PC-T1	PORCELAIN TILE 1
FX4	PROPOSED HORIZONTAL GRAB BAR	EPFF	EPOXY FLOOR FINISH
FX5	PROPOSED L-SHAPE GRAB BAR	L1	PROPOSED 600X600 SURFACE MOUNTED LIGHT
FX6	PROPOSED TOILET PAPER DISPENSER	E	PROPOSED EXHAUST FAN
FX7	PROPOSED SANITARY NAPKIN DISPOSAL	OS	PROPOSED OCCUPANCY SENSOR
FX8	PROPOSED HAND DRYER		
FX9	PROPOSED OBC COMPLIANT TILTED MIRROR		
FX10	PROPOSED SOAP DISPENSER		
FX11	PROPOSED RECESSED COMBINED PAPER TOWEL DISPENSER AND WASTE DISPOSAL		
FX12	6" ROUND AUTOMATIC DOOR OPERATOR PUSH PLATE		
FX13	EMERGENCY CALL BUTTON		

GENERAL NOTES

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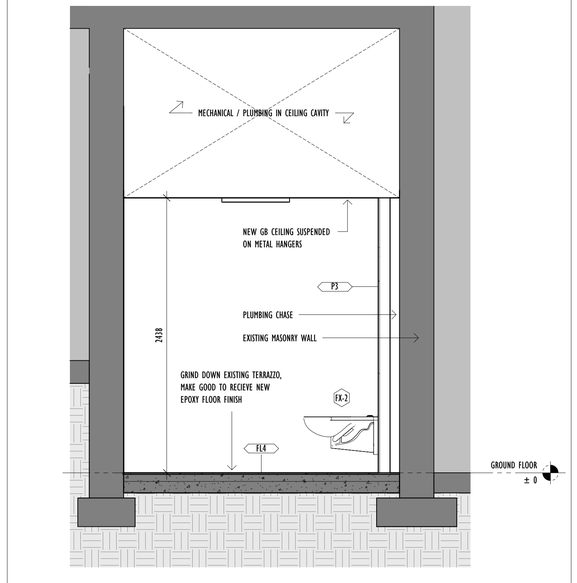
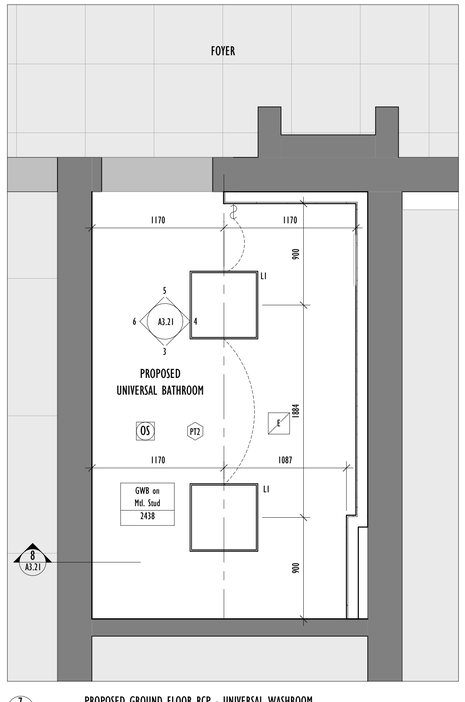
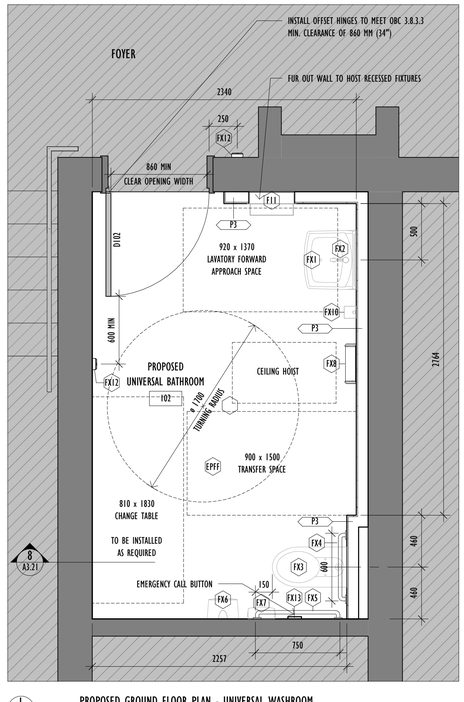


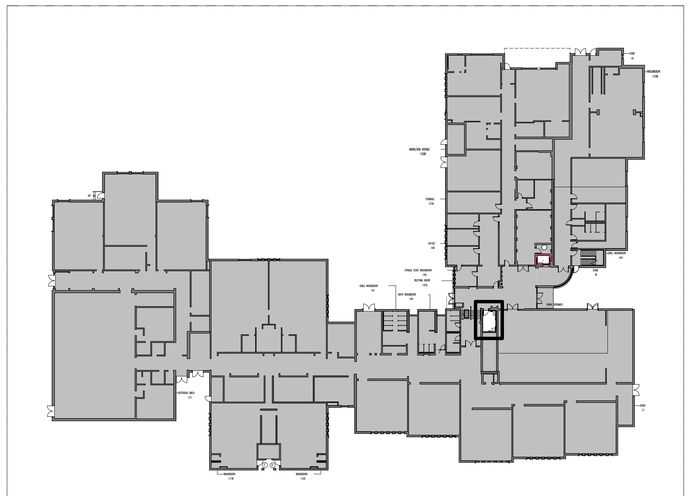
8 A3.21 PROPOSED SECTION - UNIVERSAL WASHROOM
Scale: 1 : 25



7 A3.21 PROPOSED GROUND FLOOR RCP - UNIVERSAL WASHROOM
Scale: 1 : 25



1 A3.21 PROPOSED GROUND FLOOR PLAN - UNIVERSAL WASHROOM
Scale: 1 : 25



2 A3.21 GROUND FLOOR KEY PLAN - UNIVERSAL WASHROOM
Scale: 1 : 500

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Architect's Stamp

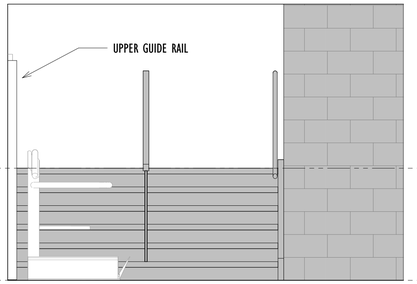
Project
BENNETTO ELEMENTARY SCHOOL ACCESSIBILITY PROJECT
Address 47 SIMCOE ST E, HAMILTON, ON

Client	HWDSB
Project no.	2428
Scale	As indicated
Drawn By	SM/KP/BG
Print Date	2025/01/10

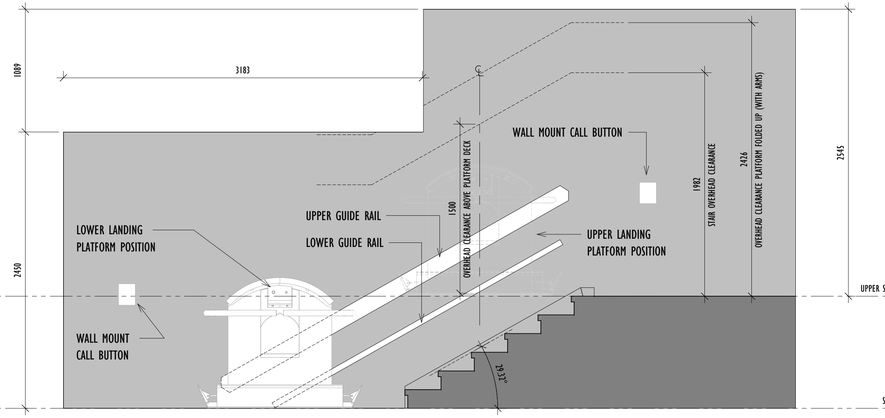
Project North

Drawing Title
PROPOSED UNIVERSAL WASHROOM

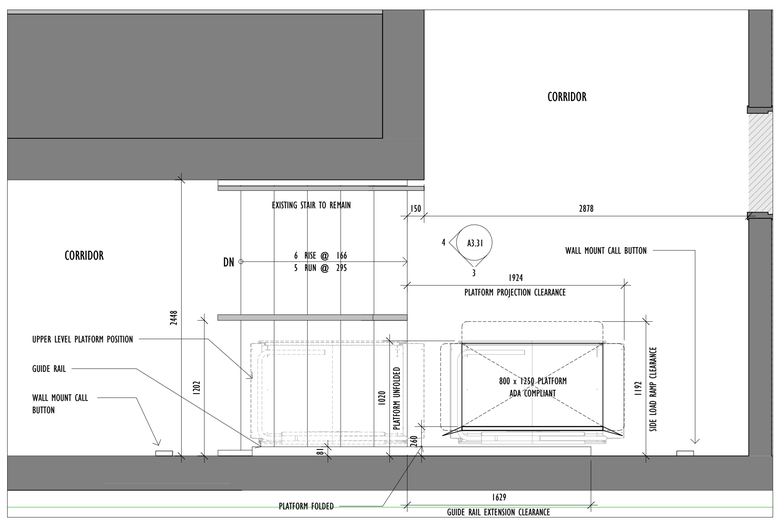
Sheet no.
A3.21



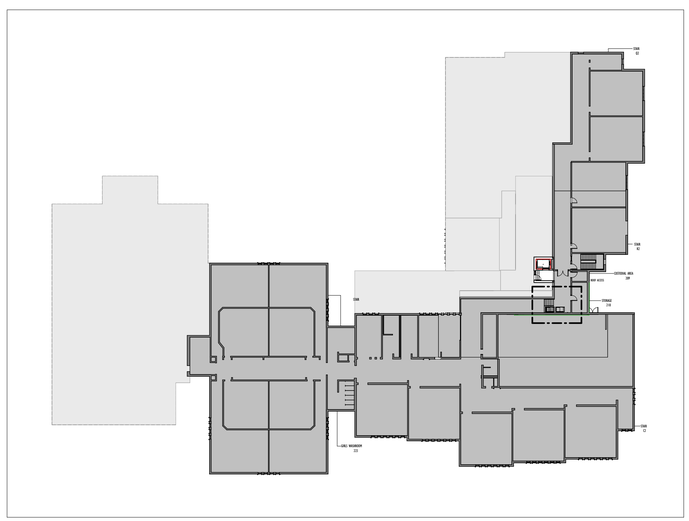
4 A3.31 PROPOSED ELEVATION - SECOND FLOOR CHAIRLIFT
Scale: 1 : 25



3 A3.31 PROPOSED ELEVATION - SECOND FLOOR CHAIRLIFT
Scale: 1 : 25



2 A3.31 PROPOSED SECOND FLOOR PLAN - CHAIRLIFT
Scale: 1 : 25



1 A3.31 SECOND FLOOR KEY PLAN - CHAIRLIFT
Scale: 1 : 500

NOTE:

SELECTED CHAIRLIFT TO BE REVIEWED BY HWDSB AND ARCHITECT
MANUFACTURER TO PROVIDE SPECIFICATIONS AND SHOP DRAWINGS FOR REVIEW

GENERAL NOTES

1. FILL IN AND PATCH ANY EXISTING ROOF PENETRATIONS AS REQUIRED. MAKE GOOD TO RECEIVE NEW FINISH
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Architect's Stamp

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Address 47 SIMCOE ST E, HAMILTON, ON

Project North

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Project no.	2428
Scale	As indicated
Drawn By	SM/KF
Print Date	2025/01/10

Drawing Title
PROPOSED SECOND FLOOR CHAIRLIFT

Sheet no.
A3.31

010000 GENERAL

1. CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE 2012, AND ANY APPLICABLE ACTS OF AUTHORITY HAVING JURISDICTION.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.
3. BEFORE PROCEEDING WITH WORK, CHECK ALL THE DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND REPORT DISCREPANCIES TO THE CONSULTANT. DO NOT SCALE THE DRAWINGS.
4. REFER TO THE ARCHITECTURAL AND OTHER DRAWINGS FOR LOCATIONS AND DIMENSIONING OF OPENINGS AND SLEEVES NOT SHOWN ON THE STRUCTURAL DRAWINGS. HOWEVER, OBTAIN THE CONSULTANT'S PRIOR APPROVAL BEFORE INSTALLING OPENINGS, SLEEVES, ETC. WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
5. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF PITS, BASES, SUMPS, TRENCHES, DEPRESSIONS, GROOVES, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON STRUCTURAL DRAWINGS.
6. HORIZONTAL AND VERTICAL DESIGN LOADS ARE NOTED. THEY SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
7. TYPICAL STRUCTURAL DETAILS SHALL GOVERN THE WORK. IF DETAILS DIFFER ON THE DRAWINGS, THE MOST STRINGENT SHALL GOVERN.
8. ALL TEMPORARY WORKS INCLUDING SHORING ARE TO BE PROVIDED BY THE CONTRACTOR.
9. SEE SPECIFICATIONS FOR DETAILED REQUIREMENTS.

010001 DESIGN NOTES

1. THE BUILDING IS DESIGNATED AS BELONGING TO THE NORAML IMPORTANCE CATEGORY, AS DEFINED IN THE OBC 2012.
2. ALL REINFORCED CONCRETE ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD A23.3.
3. ALL STRUCTURAL STEEL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CAN/CSA-S16.
4. ALL STRUCTURAL TIMBER ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD O86.
5. ALL STRUCTURAL MASONRY ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD S304.1.
6. LIVE AND OTHER LOADS
   a) SEE NOTES BELOW FLOOR PLANS.

010004 SUBMITTALS

1. STRUCTURAL STEEL
   a) DESIGN DETAILS, CONNECTIONS, AND THE LIKE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE FOR THE FORCES SHOWN ON THE DRAWINGS.
   b) SUBMIT SKETCHES AND DESIGN CALCULATIONS STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN PROVINCE OF ONTARIO FOR NON STANDARD CONNECTIONS.
   c) SUBMIT SHOP, ERECTION, AND SETTING DRAWINGS FOR REVIEW BY THE CONSULTANT.
   d) ENSURE FABRICATOR DRAWINGS SHOWING DESIGNED ASSEMBLIES, COMPONENTS AND CONNECTIONS ARE STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
2. STEEL JOISTS
   a) DESIGN STEEL JOISTS, BRIDGING, AND THE LIKE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE FOR THE FORCES SHOWN ON THE DRAWINGS.
   b) SUBMIT SHOP DETAILS AND ERECTION DRAWINGS FOR REVIEW BY THE CONSULTANT.
   c) SUBMIT DRAWINGS STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
3. METAL DECK
   a) DESIGN DECK IN CONFORMANCE WITH THE REQUIREMENTS OF CAN/CSA-S136, FOR THE FORCES SHOWN ON THE DRAWINGS.
   b) SUBMIT SHOP DRAWINGS STAMPED AND SIGNED BY QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
4. LIGHTWEIGHT STEEL FRAMING
   a) SUBMIT SHOP AND ERECTION DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO, FOR REVIEW BY THE CONSULTANT.

050000 STRUCTURAL STEEL

1. MATERIALS
   a) WIDE FLANGE SHAPES - CONFORM TO THE REQUIREMENTS OF ASTM A992/A992M, Fy=345MPa
   b) HSS MEMBERS - CONFORM TO THE REQUIREMENTS OF G40.21 350W CLASS C
      i. NOTE THAT ASTM A500 IS NOT AN ACCEPTABLE ALTERNATE FOR HSS MEMBERS WITHOUT REVIEW AND RESIZING (INCREASED SECTION SIZE OR WALL THICKNESS) BY THE CONSULTANT.
      ii. HSS PRODUCED TO ASTM A1085 IS AN ACCEPTABLE ALTERNATE TO CSA G40.21 350W CLASS C.
   c) CHANNELS AND ANGLES - CONFORM TO THE REQUIREMENTS OF CSA G40.21 GRADE 350W
   d) BOLTS, NUTS AND WASHERS - "[ASTM F3125, GRADE A325]"
   e) WELDS- CONFORM WITH CSA W59-03
   f) ANCHOR RODS - CONFORM TO THE REQUIREMENTS OF CSA G40.21 GRADE 300W UNLESS NOTED OTHERWISE.
   g) ALL OTHER - CONFORM TO THE REQUIREMENTS OF CSA G40.21 GRADE 300W
   h) NOMINAL GRADE PAINT PROTECTION: IN ACCORDANCE WITH CISC/CPMA 1-73a - A QUICK-DRYING ONE COAT PAINT FOR USE ON STRUCTURAL STEEL.
2. EXECUTION
   a) CENTRE BEARING PLATES UNDER BEAMS, OR AS NOTED.
   b) BEARING PLATE DIMENSION GIVEN FIRST INDICATES SIDE PARALLEL TO BEAM WEB.
   c) NO STRUCTURAL STEEL SHALL BE CUT WITHOUT THE PERMISSION OF THE CONSULTANT.
   d) CONNECT BEAMS FOR THE FACTORED REACTIONS INDICATED ON THE DRAWINGS. IF BEAM REACTIONS ARE NOT INDICATED, THE CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF THE TOTAL UNIFORM LOAD CAPACITY OF THE SIMPLE SPAN BEAM FOR THE GIVEN SPAN PRESENTED IN THE CISC HANDBOOK OF STEEL CONSTRUCTION. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS.

040000 MASONRY

1. MATERIALS
   a) ALL MASONRY UNITS SHALL COMPLY WITH THE REQUIREMENTS OF CSA STANDARD A371-04, MINIMUM NET AREA COMPRESSIVE STRENGTH, 15 MPa.
   b) GROUT FILL - TO BE IN ACCORDANCE WITH THE PROPORTION SPECIFICATION IN CSA A179.
   c) MORTAR - CONFORM TO THE REQUIREMENTS OF CSA STANDARD A179-04, TYPE S .
2. EXECUTION
   a) WHERE REINFORCING BARS, DOWELS, ANCHOR BOLTS, ETC. ARE SHOWN EMBEDDED IN MASONRY, BUILD THESE TIGHT INTO MASONRY VOIDS WITH GROUT FILL.
   b) BENEATH STEEL AND CONCRETE BEAMS AND COLUMNS, PROVIDE A MINIMUM DEPTH OF 400 mm OF 100% SOLID MASONRY UNITS OR HOLLOW MASONRY UNITS FILLED SOLID, PROJECTING A MINIMUM OF 200 mm BEYOND THE EDGES OF BEARING PLATES, EXCEPT AS NOTED OTHERWISE.
   c) BENEATH SLABS, METAL OR TIMBER DECK, AND STEEL OR TIMBER JOISTS, PROVIDE A MINIMUM DEPTH OF 200 mm OF 100% SOLID MASONRY UNITS OR HOLLOW MASONRY UNITS FILLED SOLID.
   d) BENEATH STEEL, CONCRETE OR REINFORCED MASONRY LINTELS PROVIDE A MINIMUM LENGTH OF 200 mm AND A MINIMUM DEPTH OF 200 mm OF 100% SOLID MASONRY UNITS OR HOLLOW MASONRY UNITS FILLED SOLID.
   e) BUILD MASONRY TIGHT INTO WEBS OF ALL WALL BEARING STEEL BEAMS AT THEIR POINTS OF BEARING.

030000 CONCRETE

1. MATERIALS
   a) CONCRETE
      i. CONFORM TO THE REQUIREMENTS OF CSA STANDARD A23.1 (LATEST VERSION) AND THE FOLLOWING FOR STRENGTH, WATER-TO-CEMENTING MATERIALS CONTENT AND AIR CONTENT.
      ii. NOMINAL MAXIMUM SIZE OF AGGREGATE SHALL BE 20 mm. USE SMALLER AGGREGATES AS APPROPRIATE IN AREAS OF CONGESTED REINFORCING STEEL OR TO IMPROVE WORKABILITY. MODIFY MIX DESIGNS TO SUIT. WHERE AGGREGATES SMALLER THAN 14 mm ARE USED, INCREASE AIR CONTENT BY 1%.
      iii. STRENGTHS INDICATED IN TABLE BELOW ARE MINIMUM REQUIRED. SEE ALSO PLAN AND SCHEDULES FOR AREAS OF HIGHER CONCRETE STRENGTH.

	CATEGORY	DESCRIPTION	EXPOSURE CLASS PER A23.1	CONCRETE STRENGTH f'c (MPa)	MAX. W/C RATIO	AIR CONTENT	SCOPE
INTERIOR (NOT EXPOSED)	CM 1	SLAB MIX	N	25	0.4	5%-8%	INTERIOR SLABS

   b) REINFORCEMENT:
      i. CONFORM TO THE REQUIREMENTS OF CSA STANDARD G30 SERIES.
      ii. REINFORCING BARS SHALL HAVE A MINIMUM YIELD STRENGTH fy = 400 MPa, AND WELDED WIRE FABRIC SHALL HAVE A MINIMUM YIELD STRENGTH OF fy = 386 MPa, SUPPLY IN FLAT SHEETS.
      iii. WHERE WELDING OF REBAR IS INDICATED, WELDABLE GRADE REBAR SHALL BE USED.
2. EXECUTION
   a) SLAB ON GRADE
      i. PLACE SLABS ON GRADE ON MATERIAL CAPABLE OF SUSTAINING WITHOUT SETTLEMENT RELATIVE TO THE BUILDING FOOTINGS.
      ii. BEFORE PLACING SLAB, PLACE 200 mm OF COARSE CLEAN GRANULAR MATERIAL OVER THE SUBGRADE, CONTAINING NOT MORE THAN 10% OF MATERIAL THAT WILL PASS A 4 mm SIEVE.
   b) CONCRETE AND REINFORCEMENT
      i. PROVIDE DOWELS TO WALLS AND COLUMNS SIMILAR IN NUMBER, SIZE, AND SPACING TO THE VERTICAL STEEL IN THE WALL OR COLUMN EXCEPT WHEN NOTED OTHERWISE.
      ii. CONSTRUCTION JOINTS:
         - HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE MADE IN BEAMS OR JOISTS, UNLESS SHOWN OR REVIEWED BY THE CONSULTANT.
         - VERTICAL CONSTRUCTION JOINS MAY BE MADE ONLY AT MID-SPAN OF BEAMS, JOISTS, AND SLABS UNLESS OTHERWISE SHOWN OR DIRECTED AND THEIR LOCATION SHALL BE REVIEWED BY THE CONSULTANT.
         - PROVIDE 38x89 KEYS AT CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
      iii. NO SLEEVES TO BE PLACED VERTICALLY OR HORIZONTALLY THROUGH BEAMS WITHOUT BEING REVIEWED BY THE CONSULTANT.
      iv. NO OPENINGS SHALL BE MADE IN FLAT SLAB COLUMN STRIPS UNLESS SHOWN OR REVIEWED BY THE CONSULTANT.
      v. WELDING OF REBAR SHALL BE DONE IN ACCORDANCE WITH CSA W186.
      vi. REBAR CHAIRS TO BE PROVIDED FOR ALL SLAB ON GRADE AND FOOTING REINFORCEMENT TO ACHIEVE CONCRETE COVER NOTED IN SECTION.

054100 LIGHTWEIGHT STEEL FRAMING:

1. MATERIALS
   a) USE SUPPLIER PRE-CUT MEMBERS FOR ALL LOAD BEARING WALLS.
   b) CONFORM TO THE REQUIREMENTS OF CAN/CSA-S16.1-01 AND CSA-S136.
   c) MINIMUM YIELD STRENGTH OF;
      i. 230 MPa FOR DESIGN THICKNESSES LESS THAN OR EQUAL TO 1.146mm
      ii. 345 MPa FOR DESIGN THICKNESSES MORE THAN OR EQUAL TO 1.438mm
   d) ALL PERFORATIONS SHALL BE AT MID-DEPTH AND;
      i. MINIMUM SPACING 610mm
      ii. MINIMUM END DISTANCE 305mm
      iii. MAXIMUM OPENING SIZE 102mm LONG AND 38mm WIDE
   e) USE METALLIC COATINGS CONFORMING TO ASTM-A653M OR ASTM-A792M AND THE FOLLOWING:
      i. MINIMUM COATING OF Z180 GALVANIZING IN ACCORDANCE WITH ASTM-A653M FOR EXTERIOR BUILDING ENVELOPE FRAMING.
      ii. MINIMUM Z275 GALVANIZED COATING FOR STEEL STUD/BRICK VENEER ASSEMBLIES.
   f) BOLTS, NUTS AND WASHERS - ASTM A307 OR ASTM A325-M79 HOT-DIP GALVANIZED WHERE EXPOSED TO CORROSION POTENTIAL.
   g) USE ZINC RICH PAINT CONFORMING TO CAN/CGSB-1.181 FOR TOUCHING UP WELDS AND DAMAGED METALLIC COATING.
   h) MINIMUM PLATE DESIGN THICKNESSES, EXCLUSIVE OF COATING:
      i. MEMB ER DEPTH 152mm OR LESS - 0.882mm, AND 1.09mm FOR WALL STUDS SUPPORTING BRICK VENEER
      ii. MEMBER DEPTH 203mm - 1.150mm
      iii. MEMBER DEPTH 254mm - 1.444mm
      iv. MEMBER DEPTH 305mm OR MORE - 1.818mm
      v. BRIDGING CHANNELS - 1.092mm FOR STUDS, 1.372mm FOR JOISTS
      vi. CLIP ANGLES - 1.372mm FOR STUDS, 1.727mm FOR JOISTS
2. DESIGN AND EXECUTION
   a) USE SUPPLIER PRE-CUT MEMBERS FOR ALL LOAD BEARING WALLS. BED STUDS INTO EACH TRACK FOR FULL AND TIGHT BEARING CONTACT.
   b) NO STEEL SHALL BE CUT WITHOUT THE PERMISSION OF THE CONSULTANT.
   c) WHERE COLUMNS ARE STABILIZED BY WALLS PROVIDE CONNECTION AT ABUTTING WALLS. PROVIDE TEMPORARY BRACING UNTIL WALLS ARE BUILT TIGHT TO COLUMNS.
   d) DESIGN ALL FRAMING, INCLUDING CONNECTIONS, BRIDGING, TRACKS, CLOSURE CHANNELS, WEB STIFFENERS, WEB CUT-OUTS, SHEAR WALL CROSS BRACING, AND THE LIKE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 2006 AND CSA-S136 FOR THE FORCES SHOWN ON THE DRAWINGS.
   e) DESIGN ROOF JOISTS FOR THE NET UPLIFT SHOWN BUT NOT LESS THAN 0.70 kPa.
   f) PERFORM FIELD REVIEW FOR THE ABOVE, AND SUBMIT FIELD REVIEW REPORTS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO, FOR REVIEW BY THE CONSULTANT.
   g) SUBMIT SHOP AND ERECTION DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO FOR REVIEW BY THE CONSULTANT.
   h) AT THE REQUEST OF THE CONSULTANT SUBMIT CALCULATIONS BEARING THE SIGNATURE AND SEAL OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
   i) PROVIDED CUT-OUTS CENTRED IN WEBS OF MEMBERS TO ACCOMMODATE SERVICES WHERE REQUIRED FOR MECHANICAL AND ELECTRICAL. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICES.
   j) AT A MINIMUM, FOLLOW BEST COMMON PRACTICE.
   k) PLACE ALL LOAD-BEARING MEMBERS IN-LINE (i.e. ALIGN FLOOR JOISTS WITH WALL STUDS). CENTERLINES OF MEMBERS WITHIN 19mm OF EACH OTHER, AND WEBS OF MEMBERS WITHIN 3mm OF EACH OTHER WHEN WEB STIFFENERS DO NOT INTERSECT SUPPORTING STUDS.
   l) SUBMIT SHOP AND ERECTION DRAWINGS FOR REVIEW BY THE CONSULTANT.
   m) STUD WALLS
      i. SHEATH BOTH FACES OF WALLS. USE STRUCTURAL SHEATHING (i.e. OSB OR PLYWOOD) FOR LOAD BEARING WALLS, UNLESS SPECIFIED ON PLAN AS UNSHEATHED.
      ii. PROVIDE CONTINUOUS HORIZONTAL BRIDGING EVERY 1.5 METERS FOR WIND BEARING WALLS AND EVERY1.2 METERS FOR LOAD BEARING WALLS.
      iii. USE TRACKS THICKER THAN OR EQUAL TO STUD THICKNESS.
      iv. CONNECT BOTH FLANGES OF EACH STUD TO BOTH TRACKS, MINIMUM 1 SCREW EACH CONNECTION.
      v. CONNECT TOP TRACKS TOGETHER WITH MINIMUM 4 SCREWS AT SPLICES AND INTERSECTIONS.
      vi. PROVIDE BUILT UP WALL STUDS EACH SIDE OF WALL OPENINGS, WITH PLIES MATCHING THE NUMBER OF STUDS CROSSED BY THE OPENING. AT A MINIMUM PROVIDE 2 PLIES; KING AND JACK IN LOAD BEARING WALLS, DOUBLE KING IN WIND BEARING WALLS.
   n) FLOOR JOISTS
      i. BEAR JOISTS MINIMUM 76mm AT SUPPORTS.
      ii. PROVIDE WEB STIFFENERS OVER ALL SUPPORTS AND BELOW ALL LOAD BEARING WALLS.
      iii. SECURE JOISTS OVER SUPPORTS WITH CONTINUOUS CLOSURE CHANNELS OR BLOCKING, SCREWED NEAR THE TOP AND BOTTOM OF EACH JOIST. WHERE BLOCKED, USE CONTINUOUS JOISTS, OR OVERLAP JOISTS MINIMUM 152mm BACK TO BACK.
      iv. SHEATH THE TOP OF FLOORS WITH STRUCTURAL SHEATHING (i.e. OSB OR PLYWOOD).
      v. PROVIDE CONTINUOUS HORIZONTAL BRIDGING EVERY 2.1 METERS.
   o) WEB STIFFENERS
      i. USE SHORT PIECES OF LOAD BEARING STUD AT LEAST 0.879mm THICK, OR TRACK SECTION AT LEAST 1.146mm THICK. STIFFENER LENGTH SHALL BE WITHIN 9mm OF JOIST DEPTH.
      ii. FASTEN STIFFENERS TO JOISTS WITH 3-#10 SCREWS, AND TO CLOSURE CHANNELS WITH 2-#10 SCREWS.
   p) BRIDGING
      i. UNLESS OTHERWISE SPECIFIED, PROVIDE CONTINUOUS FLAT STRAPPING MINIMUM 38mm WIDE x 0.879mm THICK PULLED TAUT OVER FRAMING, AND FASTENED TO EACH MEMBER WITH 1 SCREW.
      ii. APPLY THE STRAPPING TO BOTH FACES OF WALLS, AND TERMINATE IN BLOCKING EACH END WITH 2 SCREWS.
      iii. APPLY THE STRAPPING TO UNSHEATHED FACES OF FLOORS, AND TERMINATE IN BLOCKING EACH END WITH 4 SCREWS. ADD INTERMEDIATE BLOCKING EVERY 2.4 METERS.
   q) SCREW CONNECTIONS
      i. WHERE SCREWS ARE NOT SPECIFIED, JOIN INTERSECTIONS OF STUDS, JOISTS, TRACKS, BLOCKING AND THE LIKE WITH MINIMUM 2 SCREWS, MINIMUM SIZE AS SHOWN IN THE TABLE BELOW;

SCREW SIZE	POINT TYPE	TOTAL THICKNESS OF CONNECTED STEEL (mm)
#8	#2	UP TO 0.88
#8	#2 SMS	0.88 TO 2.78
#8	#3 SMS	2.79 TO 3.56
#10	#3 SMS	3.57 TO 4.45
#12	#3 SMS	4.46 TO 5.33

      ii. CENTER SCREWS MINIMUM 1.5 DIAMETERS FROM EDGES, AND MINIMUM 2.5 DIAMETERS FROM EACH OTHER.
      iii. EXTEND SCREWS THROUGH STEEL A MINIMUM OF 3 EXPOSED THREADS.
      iv. REPLACE SCREWS THAT STRIP OR CONTINUE TO ROTATE AFTER INSTALL.
      v. SCREW PLIES OF BUILT-UP MEMBERS TOGETHER EVERY 610mm.

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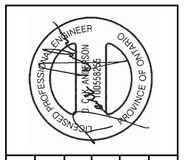


MK:	DATE:	DESCRIPTION:
	2025-01-08	ISSUED FOR TENDER
01	2024-10-31	ISSUED FOR PERMIT
02	2024-10-22	

DRAWN BY: DA
CHECKED BY: DA
DATE: 2024-10-22
SCALE: NA
24228

PROJECT: BENNETTO ELEMENTARY SCHOOL
SHEET TITLE: GENERAL NOTES

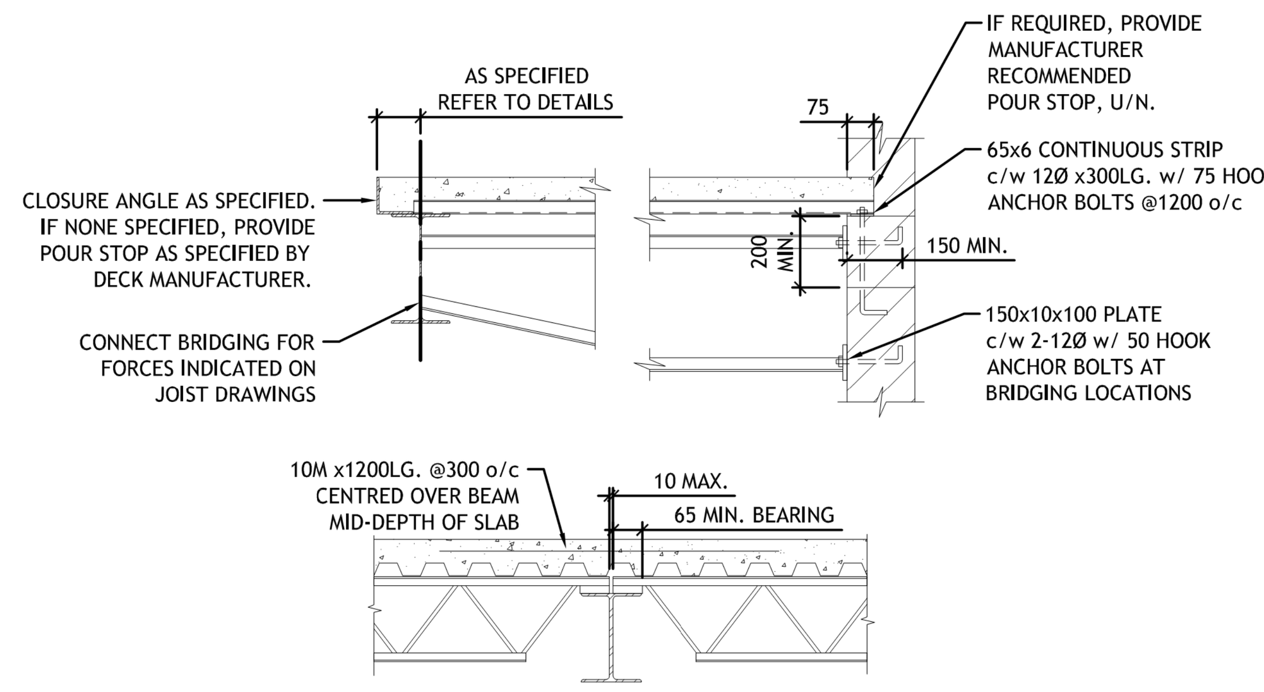
S0.01

LINTELS FOR MASONRY WALLS

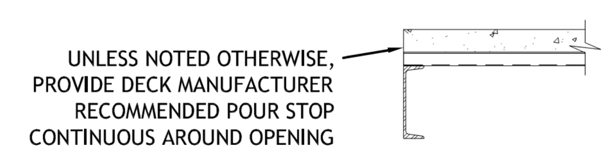
WALL TYPE	UP TO 1200 SPAN	OVER 1200 BUT NOT MORE THAN 1800 SPAN	OVER 1800 BUT NOT MORE THAN 2200 SPAN
90 VENEER	L89X89X7.9	L102X89X7.9	L127X89X7.9
90 SOLID WALL	LINTEL BLOCK REINF. WITH 1-10M T & B	LINTEL BLOCK REINF. WITH 1-15M T & B	NOT APPLICABLE
140 SOLID WALL	LINTEL BLOCK REINF. WITH 1-15M T & B	LINTEL BLOCK REINF. WITH 1-15M T & B	NOT APPLICABLE
190 SOLID WALL	2Ls - 89X89X7.9	2Ls - 102X89X7.9	2Ls - 127X89X7.9
240 SOLID WALL	2Ls - 102X102X7.9	2Ls - 102X102X9.5	2Ls - 152X102X7.9
290 SOLID WALL	3Ls - 89X89X7.9	3Ls - 127X89X7.9	3Ls - 152X102X7.9
90 + 90 CAVITY WALL	1L - 89X89X7.9 + LINTEL BLOCK REINF. WITH 1-10M T& B	1L - 102X89X7.9 + LINTEL BLOCK REINF. WITH 1-15M T & B	NOT APPLICABLE
90 + 140 CAVITY WALL	1L - 89X89X7.9 + LINTLE BLOCK REINF. WITH 1-15M T & B	1L - 102X89X7.9 + LINTEL BLOCK REINF. WITH 1-15M T & B	NOT APPLICABLE
90 + 190 CAVITY WALL	1L - 89X89X7.9 + 2Ls - 89X89X7.9	1L - 102X89X7.9 + 2Ls - 102X89X7.9	1L - 127X89X7.9 + 2Ls - 127X89X7.9
90 + 240 CAVTIY WALL	1L - 89X89X7.9 + 2Ls - 102X102X7.9	1L - 102X89X7.9 + 2Ls - 102X102X9.5	1L - 127X89X7.9 + 2Ls - 152X102X7.9
90 + 290 CAVITY WALL	1L - 89X89X7.9 + 3Ls - 89X89X7.9	1L - 102X89X7.9 3Ls - 127X89X7.9	1Ls - 127X89X7.9 + 3Ls - 152X89X7.9

NOTE:
1. LINTELS DESCRIBED ON THIS TYPICAL DETAIL ARE FOR NON-LOAD BEARING WALLS. THE LINTELS SHALL ONLY BE USED IN LOAD BEARING MASONRY WALLS IF REVIEWED BY THE CONSULTANT.
2. PROVIDE STEEL PACKING PLATES UNDER THE ENDS OF LINTELS AS REQUIRED TO ENSURE EVEN BEARING
3. FOR OPENINGS OVER 600mm IN WIDTH, BOLT DOUBLE ANGLES BACK TO BACK USING 16mm DIAM. BOLTS AT 450mm C/C. PROVIDE BOLTS 75mm FROM EACH END. ALTERNATIVELY, PROVIDE 6mm X 50mm LONG FILLET WELDS AT 450mm C/C TOP AND BOTTOM.
4. FILL LINTEL BLOCKS WITH CONCRETE GROUT IN CONFORMANCE WITH CSA STANDARDS.
5. PROVIDE 200mm MINIMUM LENGTH OF BEARING AT EACH END. PROVIDE A MINIMUM LENGTH OF 200mm AND A MINIMUM DEPTH OF 400mm OF 100% SOLID MASONRY BELOW THE LINTEL BEARING EACH END.
6. WHERE LINTELS ABUT CONCRETE COLUMNS AND WALLS, OR STEEL MEMBERS, PROVIDE L100X100X10 ANCHORED TO CONCRETE WITH 2-20mm DIAM. BOLTS WITH ADJUSTABLE ANCHORS, OR WELDED TO STEEL FOR V=10kN
7. HORIZONTAL REINFORCEMENT SHALL EXTEND 200mm BEYOND FACE OF OPENING
8. LINTELS IN EXTERIOR WALLS EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED.
9. VERTICAL CONTROL JOINTS SHALL NOT BE LOCATED IN LINE WITH WALL OPENINGS. REFER TO TYPICAL DETAIL 0409 FOR CONTROL JOINTS IN MASONRY WALLS.

CONCRETE SLAB ON STEEL DECK FRAMING DETAILS



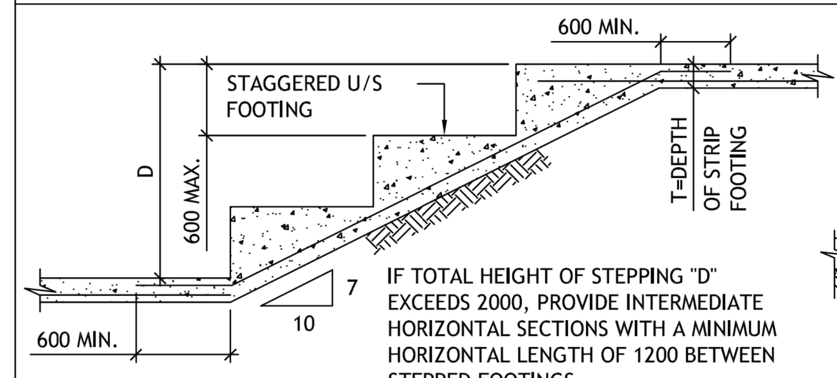
NOTES:
1. WHEN THE JOIST FRAME ONTO BEAM FROM ONE SIDE ONLY, CENTRE JOIST SHOE OVER BEAM CENTRE LINE.
2. OFFSET JOISTS IF BEAM FLANGE IS LESS THAN 130 WIDE.



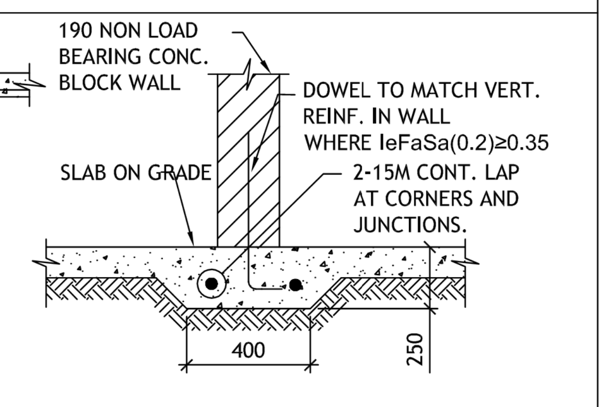
DETAIL AT FRAMED OPENINGS

NOTES:
1. PROVIDE CONTINUOUS PERMANENT BRIDGING FOR TOP AND BOTTOM JOIST CHORDS IN ACCORDANCE WITH CSA S16.
2. TAKE ALL NECESSARY PRECAUTIONS WHEN POURING CONCRETE SLAB OVER STEEL DECK TO PREVENT LARGE CONCENTRATIONS OF CONCRETE WHICH MIGHT LOCALLY OVERSTRESS THE DECK.
3. IF NECESSARY, OFFSET JOIST BEARING AND/OR ANY CONNECTION PLATE FROM MASONRY CONTROL JOISTS.
4. PROVIDE A MINIMUM DEPTH OF 200mm OF 100% SOLID MASONRY UNITS FOR STEEL JOISTS BEARING ON MASONRY.

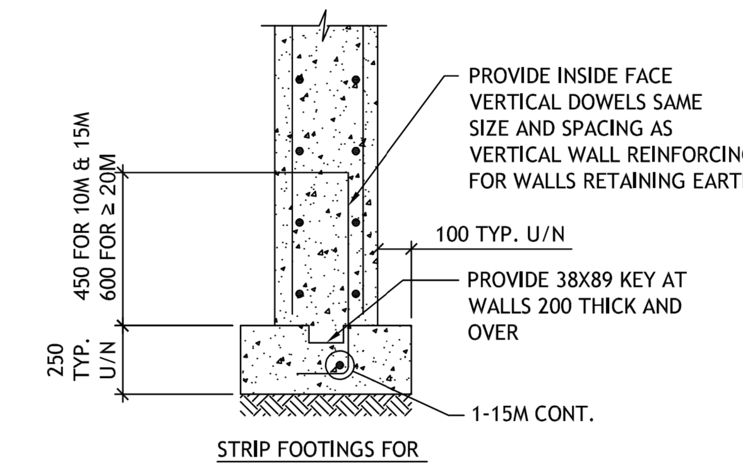
WALL FOOTINGS



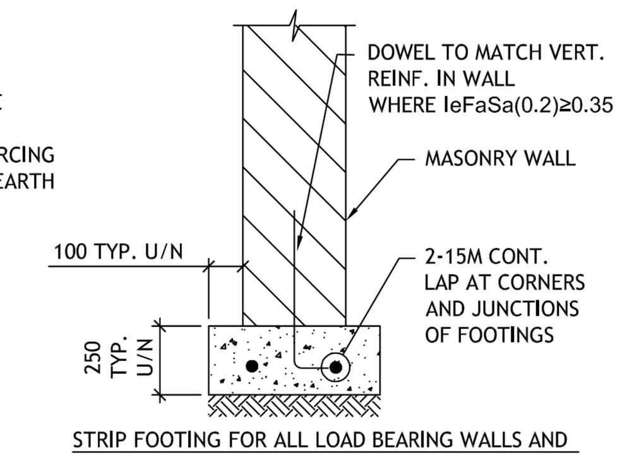
TYPICAL STEPPING DETAIL FOR STRIP FOOTINGS MARKED SDF (STEP DOWN FOOTING) ON PLAN



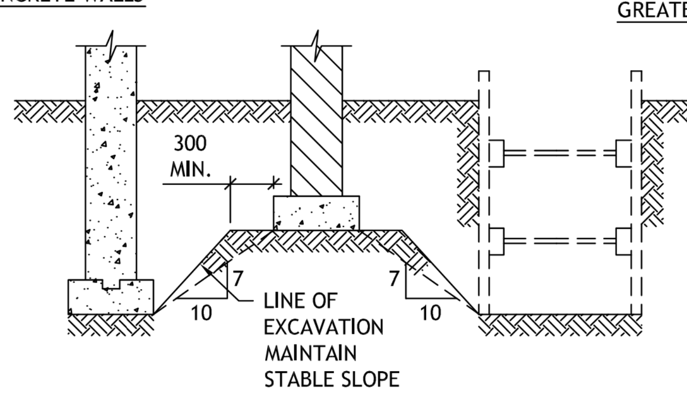
SLAB THICKENING UNDER 140mm AND 190mm NON LOAD BEARING WALLS



STRIP FOOTINGS FOR CONCRETE WALLS



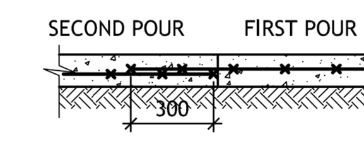
STRIP FOOTING FOR ALL LOAD BEARING WALLS AND THOSE NON LOAD BEARING GREATER THAN 190mm THICK



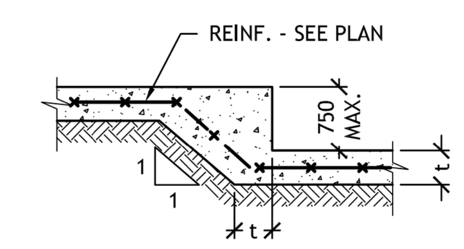
ADJUST FOOTING ELEVATIONS SHOWN ON DRAWINGS IF NECESSARY TO MAINTAIN THE MAX. 7 TO 10 SLOPE BETWEEN FOOTINGS AND ADJACENT EXCAVATIONS FOR DRAINS OR OTHER ITEMS

RELATION TO ADJACENT FOOTINGS AND EXCAVATIONS

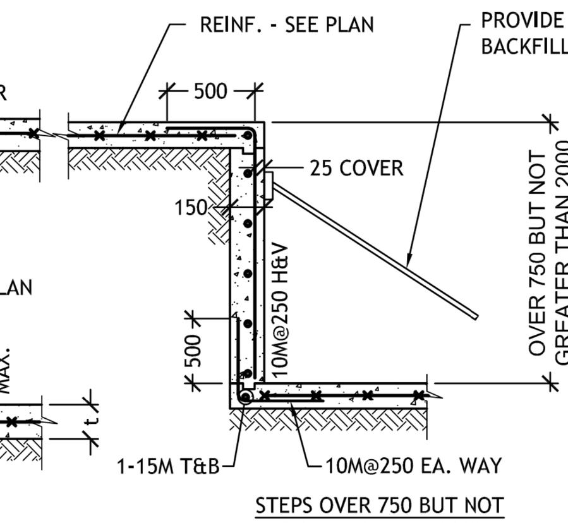
SLABS ON GRADE: JOINTS, STEPS, SAWCUTS AND STAIRS



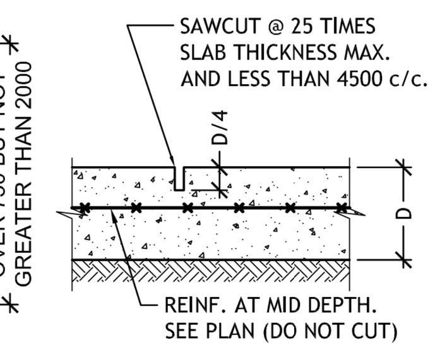
CONSTRUCTION JOINT



STEPS UP TO 750

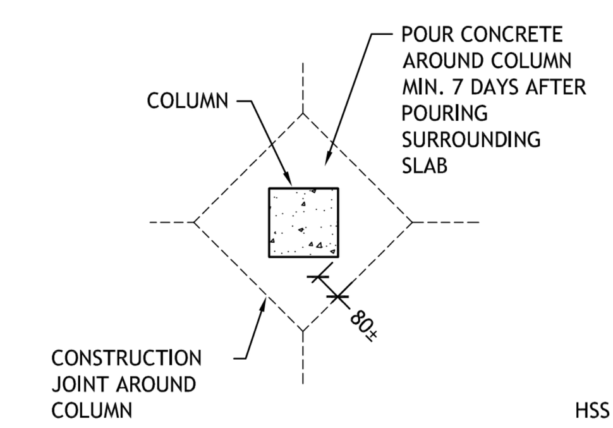


STEPS OVER 750 BUT NOT GREATER THAN 2000

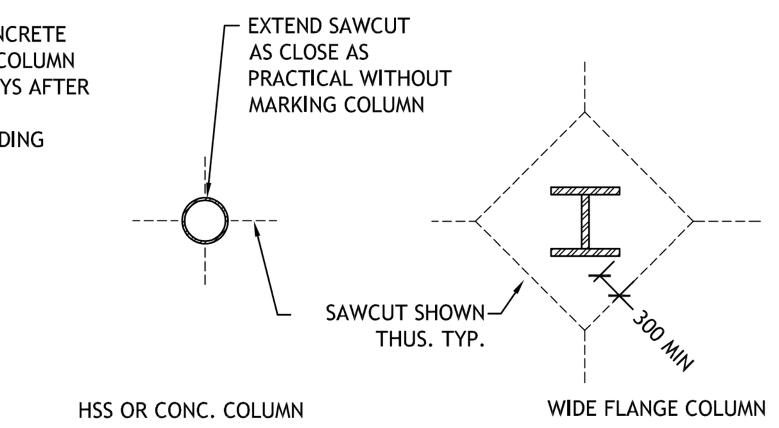


NOTE: U/N REFER TO ARCH FOR SAWCUT LAYOUT

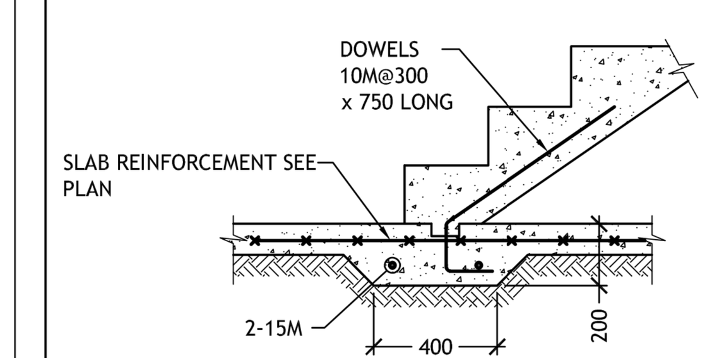
TYPICAL SAWCUT



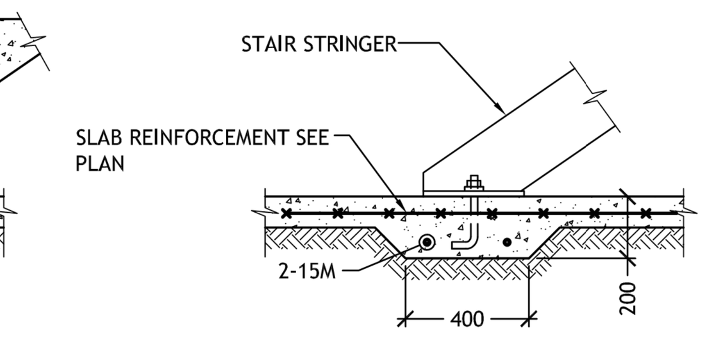
ISOLATION JOINT AROUND COLUMN



SAWCUTS AT COLUMN



CONCRETE STAIRS SUPPORTED ON GRADE



STEEL STAIRS SUPPORTED ON GRADE

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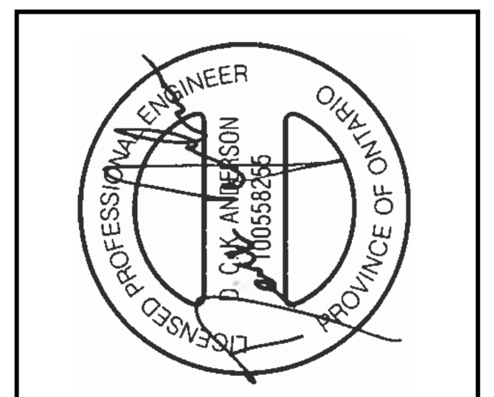


MK:	DATE:	DESCRIPTION:
01	2024-10-31	ISSUED FOR PERMIT
02	2025-01-08	ISSUED FOR TENDER

PROJECT:
BENNETTO ELEMENTARY SCHOOL

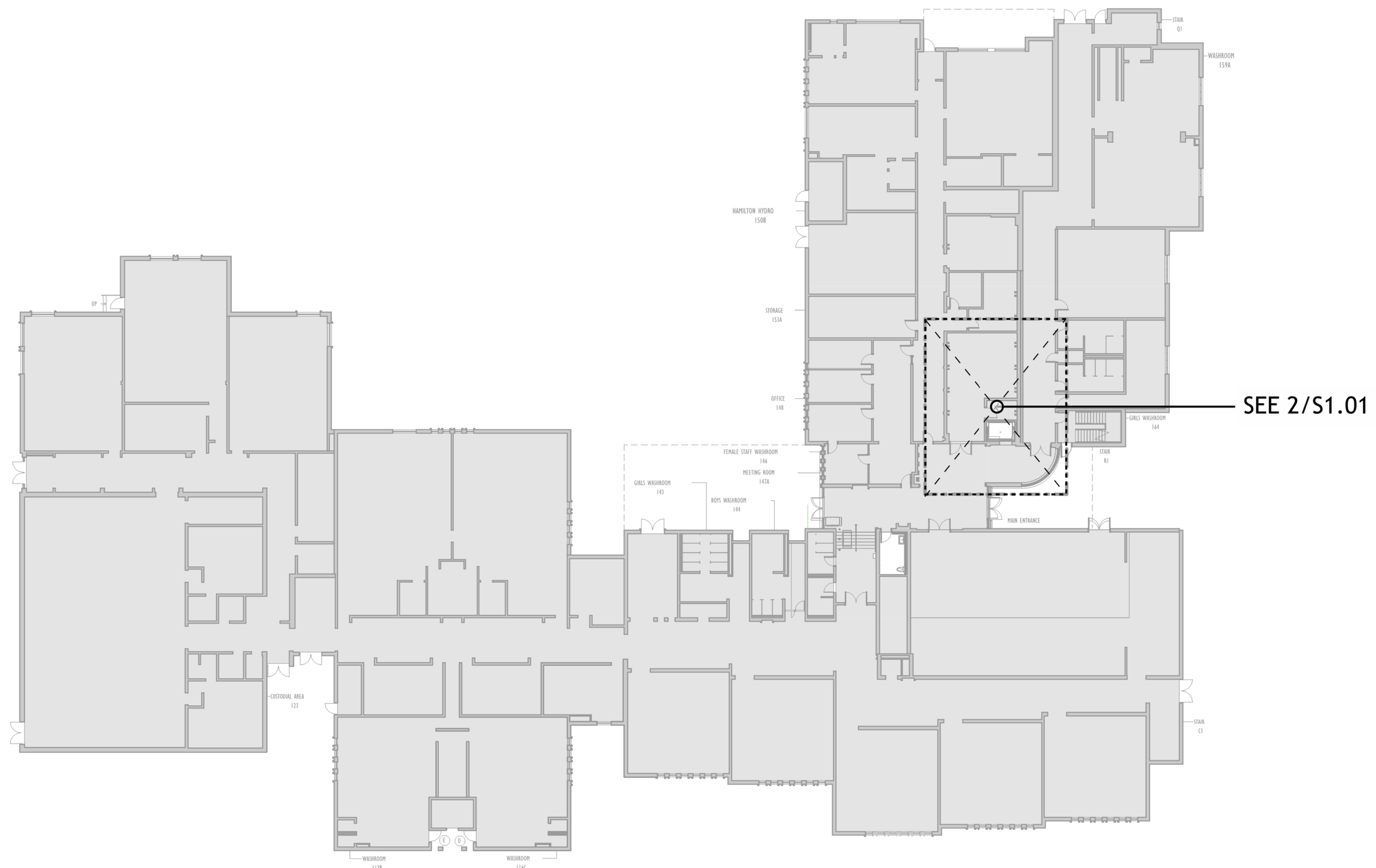
SHEET TITLE:
TYPICAL DETAILS

CHECKED BY: DA
DRAWN BY: DA
SCALE: NA
DATE: 2024-10-22
24228

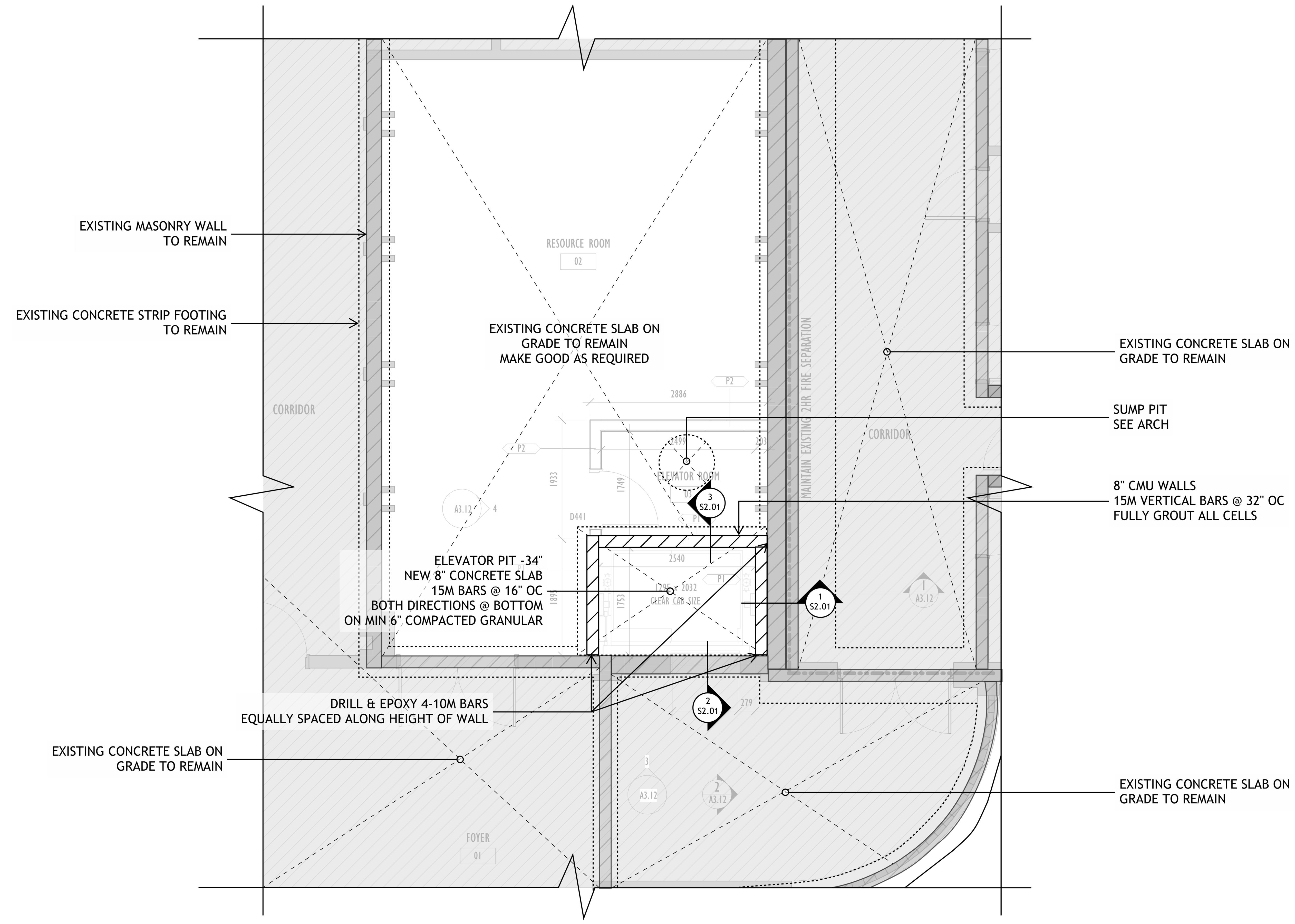
S0.02

DRAWING LEGEND

	NEW CONCRETE WALL		NEW BEAM
	EXISTING CONCRETE WALL		EXISTING BEAM
	NEW MASONRY WALL		NEW JOISTS
	EXISTING MASONRY WALL		EXISTING JOISTS
	NEW WOOD STUD WALL		EXISTING POST
	EXISTING WOOD STUD WALL		NEW POST
	BEARING WALL ABOVE		POST ABOVE



1 S1.01 GROUND FLOOR KEY PLAN
1:500



2 S1.01 FOUNDATION PLAN
1:50

FOUNDATION NOTES

1. ALL NEW FOOTINGS TO BE SUPPORTED ON NATIVE UNDISTURBED SOIL. A BEARING CAPACITY OF 190kPa (SLS) AND 285kPa (ULS) HAS BEEN USED FOR THE FOOTING DESIGN IN ACCORDANCE WITH ADDITIONS AND RENOVATIONS TO CENTENNIAL SCHOOL HAMILTON ONTARIO, BY PHILIPS PLANNING & ENGINEERING LTD (DATED 1990-06-06). GEOTECHNICAL ENGINEER TO CONFIRM ON SITE.

2. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT AND SHORING AS REQUIRED THROUGHOUT CONSTRUCTION

3. MAINTAIN A MAXIMUM SLOPE OF 7 VERTICAL TO 10 HORIZONTAL BETWEEN THE UNDERSIDES OF ADJACENT FOOTINGS

4. FOUND ALL FOOTINGS EXPOSED TO FROST 4'-0" BELOW GRADE

5. CONTRACTOR TO NOTIFY CONTACT ENGINEERING IF ANY OF THE EXISITNG STRUCTURE VARIES FROM WHAT IS NOTED ON THE DRAWINGS

contact ENGINEERING

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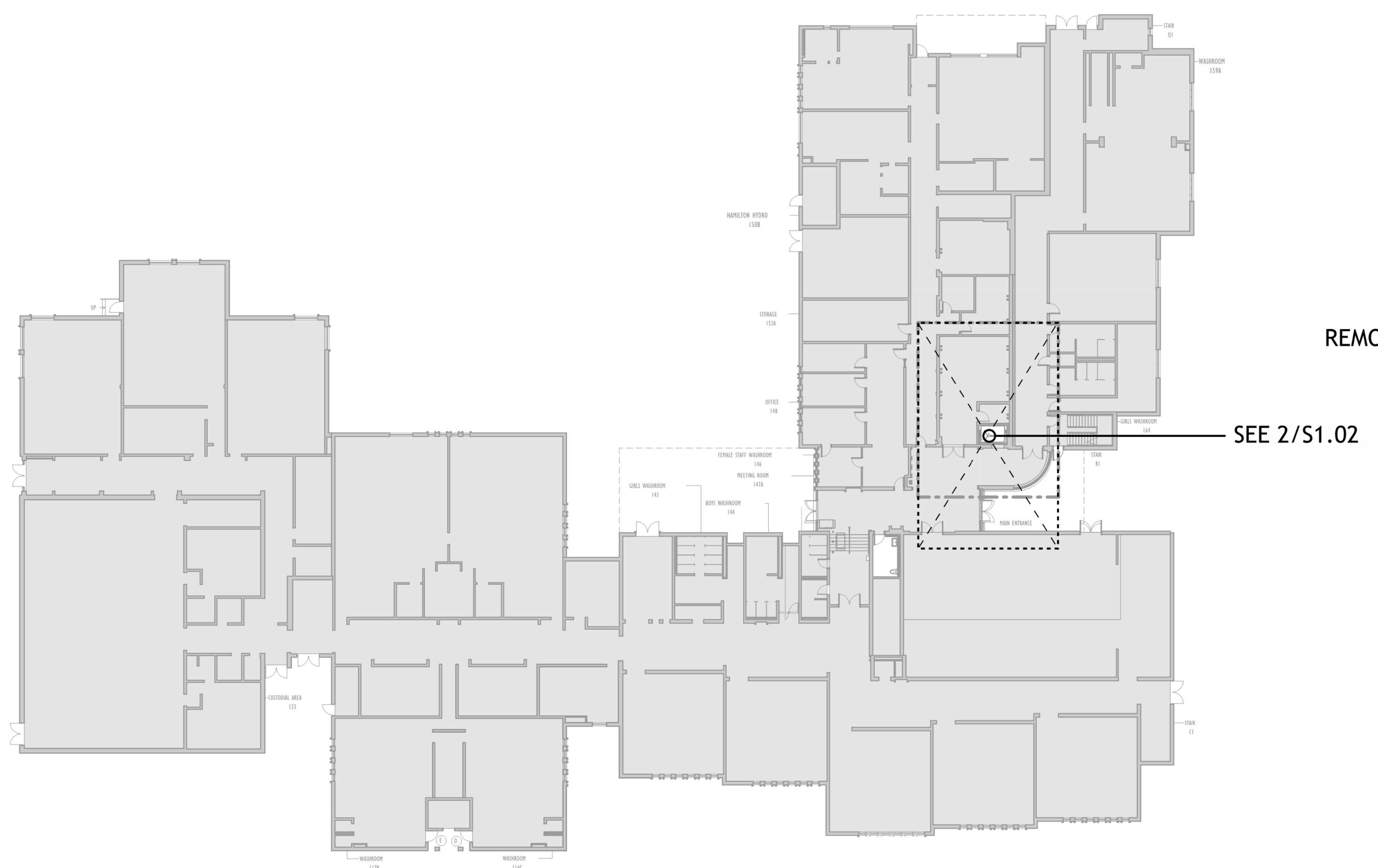
SCALE: AS INDICATED
24228

PROJECT: BENNETTO ELEMENTARY SCHOOL
SHEET TITLE: ELEVATOR - FOUNDATIONS

S1.01



1 S1.02 GROUND FLOOR KEY PLAN
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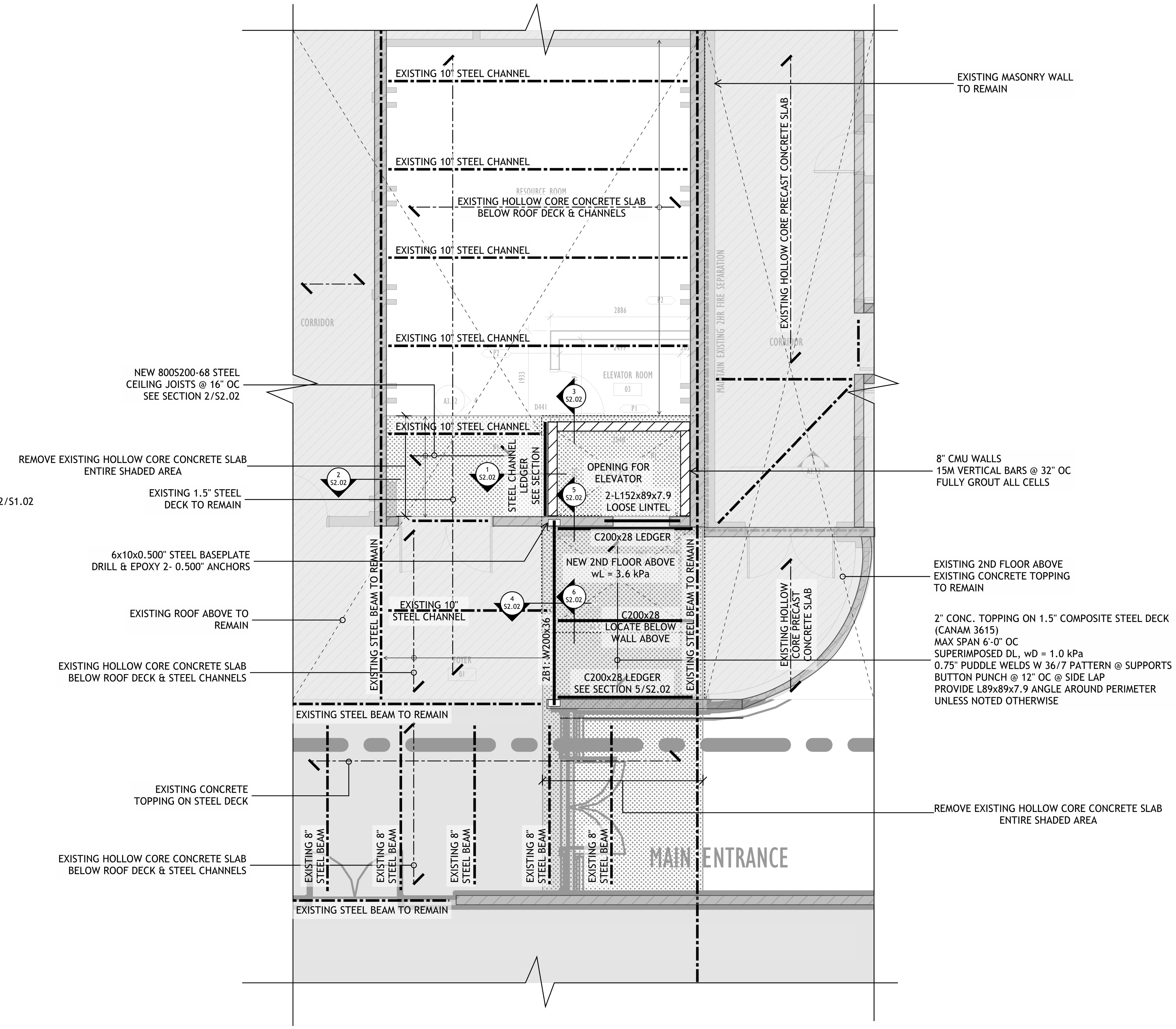

2 S1.02 GROUND FLOOR PLAN SHOWING 2ND FLOOR FRAMING
1:50

2ND FLOOR FRAMING NOTES

1. LOADS USED IN THE DESIGN:

LIVE, 4.80 kPa (ASSEMBLY AREA)
3.60 kPa (MECHANICAL AREA)
DEAD, 3.00 kPa

2. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT AND SHORING AS REQUIRED THROUGHOUT CONSTRUCTION

3. PROVIDE APPROPRIATE HANGERS AT ALL BEAM-TO-BEAM AND JOIST-TO-BEAM CONNECTIONS

4. DO NOT SCALE THE STRUCTURAL DRAWINGS

5. ALL JOIST-TO-BEAM AND BEAM-TO-BEAM CONNECTIONS TO BE FACE-MOUNT HANGERS UNLESS OTHERWISE NOTED

6. CONTRACTOR TO NOTIFY CONTACT ENGINEERING IF ANY OF THE EXISITNG STRUCTURE VARIES FROM WHAT IS NOTED ON THE DRAWINGS

7. POCKET ALL LOOSE LINTELS MINIMUM 6"

contact ENGINEERING

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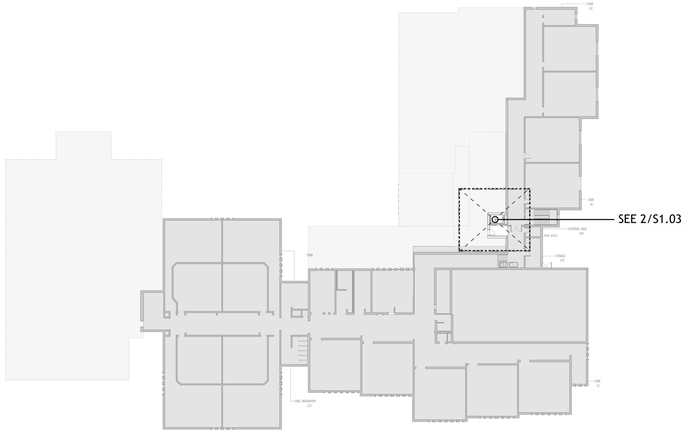
SHEET TITLE: ELEVATOR - 2ND FLOOR FRAMING

S1.02



1 / S1.03 2ND FLOOR KEY PLAN
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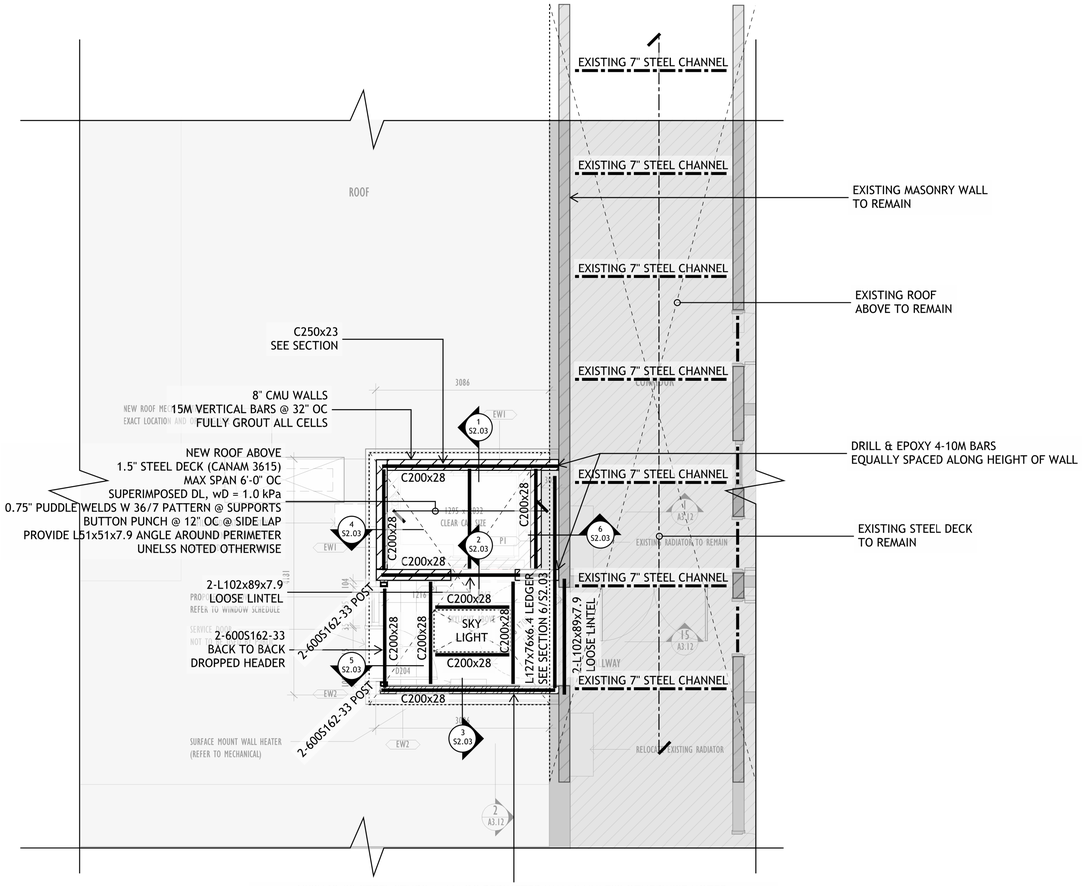


600S162-33 STEEL STUDS @ 16" OC PERIMETER WALLS UNLESS OTHERWISE NOTED.
STEEL STUDS TO HAVE SLOTTED CONNECTION TO STEEL TRACKS.
PROVIDE CONTINUOUS SHEATHING ON ALL PERIMETER WALLS CONFORMING TO OBC CL. 9.23.10.2

2 / S1.03 2ND FLOOR PLAN SHOWING ROOF FRAMING
1:50

ROOF FRAMING NOTES

1. LOADS USED IN THE DESIGN:

SNOW, 1.10 kPa (OBC 9.4.2.2, HAMILTON)
DEAD, 1.80 kPa

2. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT AND SHORING AS REQUIRED THROUGHOUT CONSTRUCTION

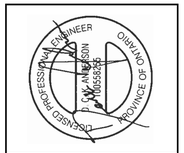
3. DO NOT SCALE THE STRUCTURAL DRAWINGS

4. CONTRACTOR TO NOTIFY CONTACT ENGINEERING IF ANY OF THE EXISITNG STRUCTURE VARIES FROM WHAT IS NOTED ON THE DRAWINGS

5. POCKET LOOSE LINTELS MINIMUM 6"

6. ALL STEEL FRAMING MEMBERS TO BE CONNECTED VIA SHEAR TAB CONNECTIONS UNLESS NOTED OTHERWISE

contact ENGINEERING



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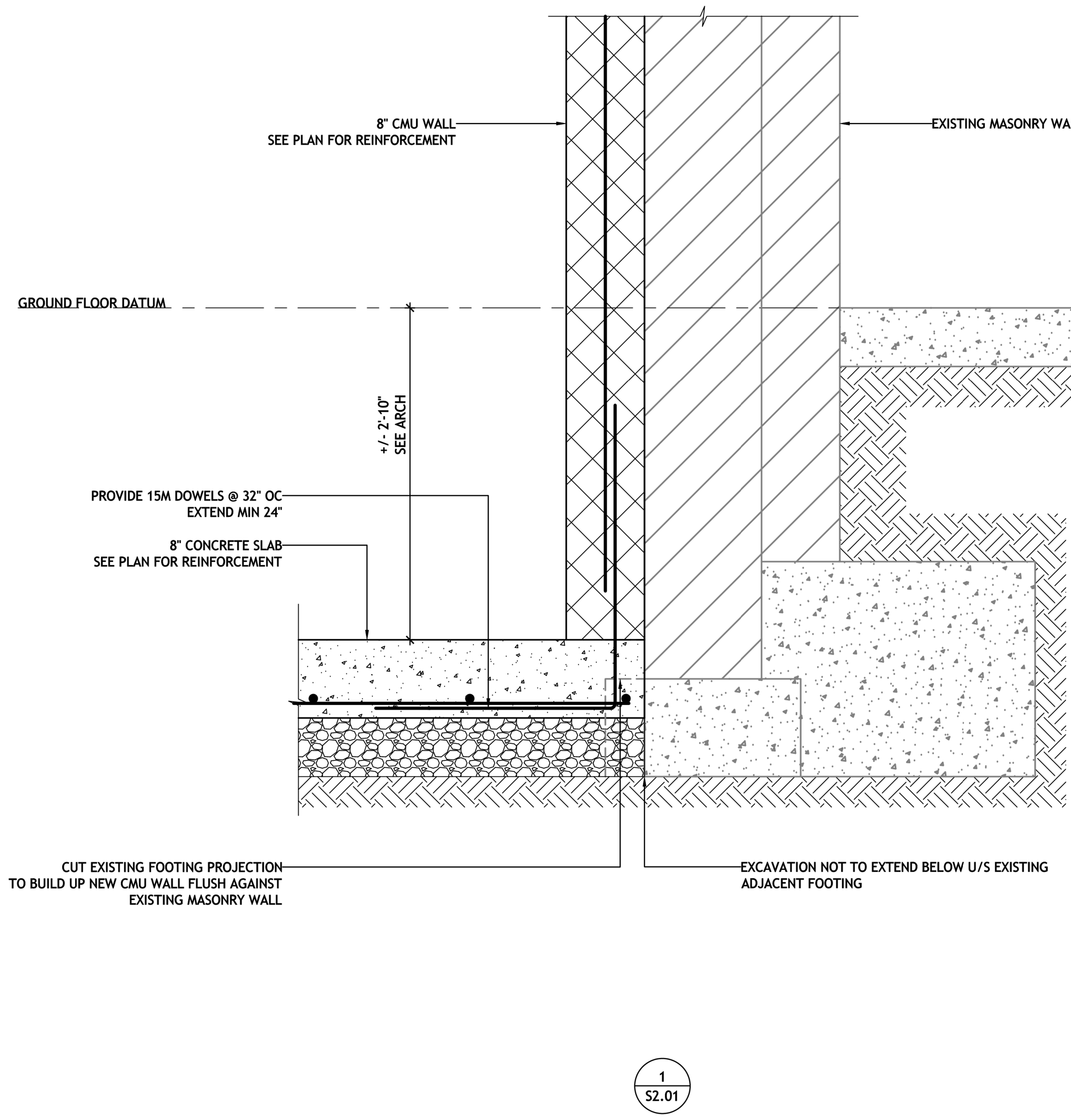
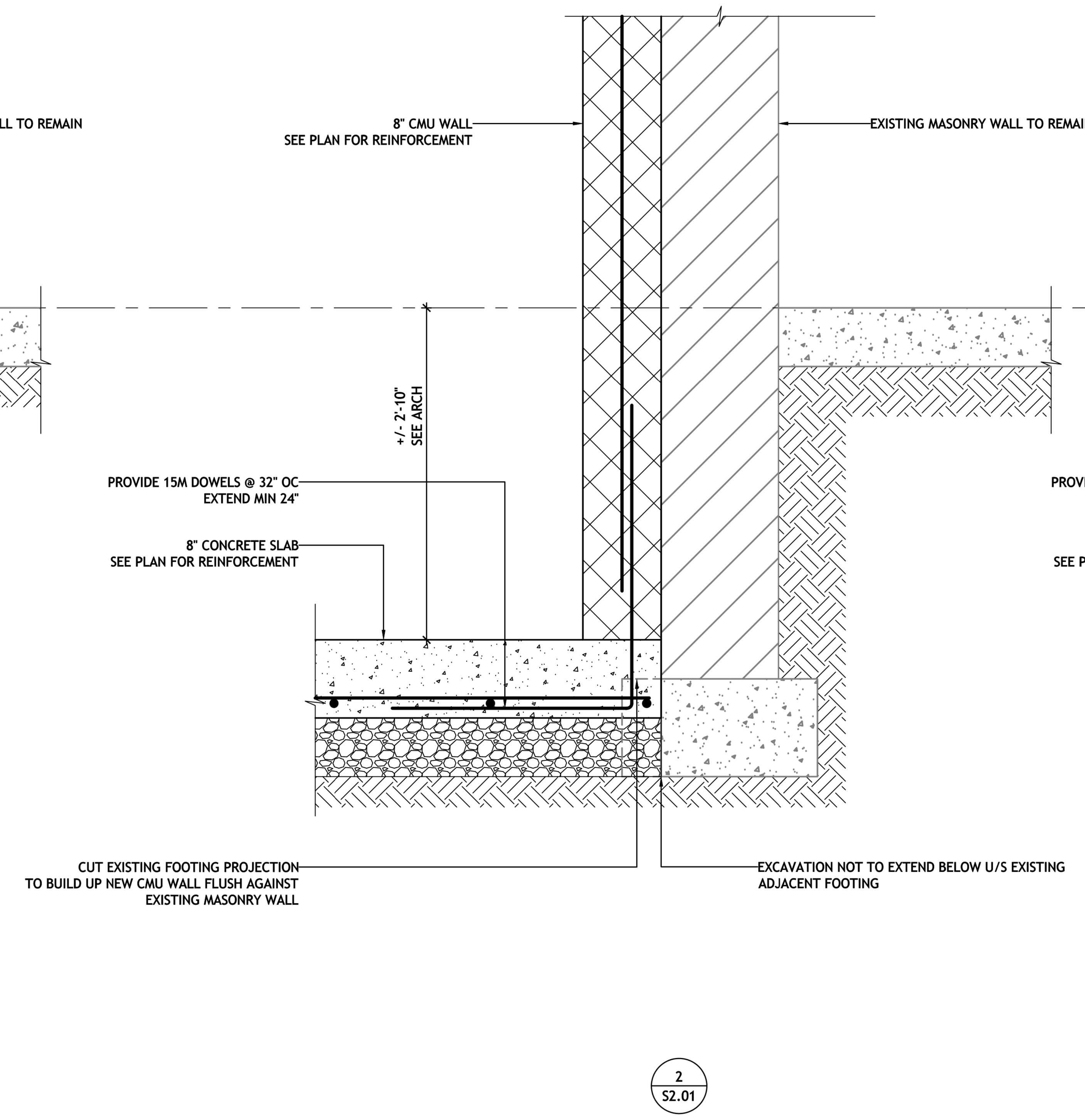
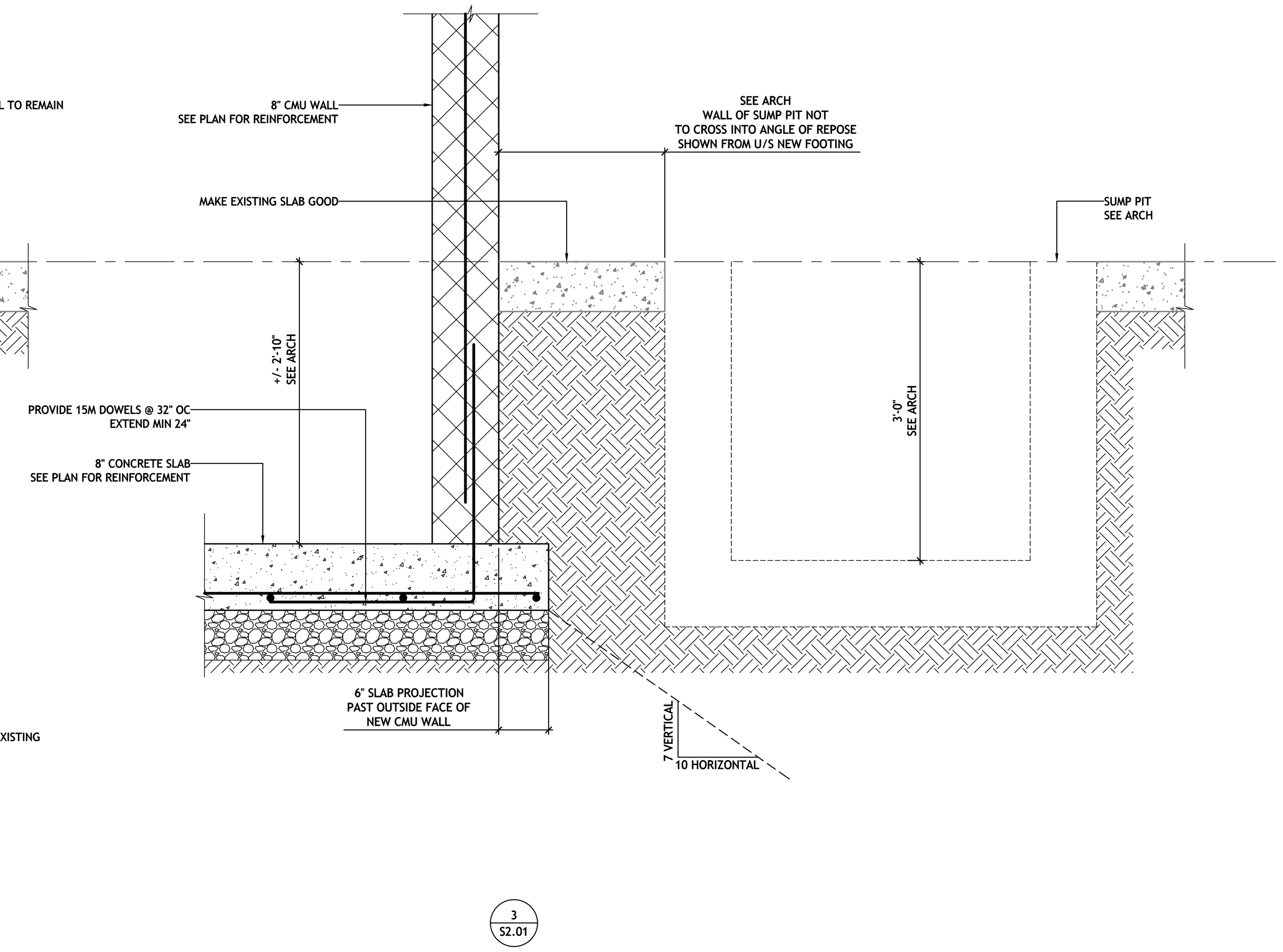
PROJECT: BENNETTO ELEMENTARY SCHOOL
SHEET TITLE: ELEVATOR - ROOF FRAMING

S1.03







contact
ENGINEERING

LICENSED PROFESSIONAL ENGINEER
D. C.K. ANDERSON
100558255
PROVINCE OF ONTARIO

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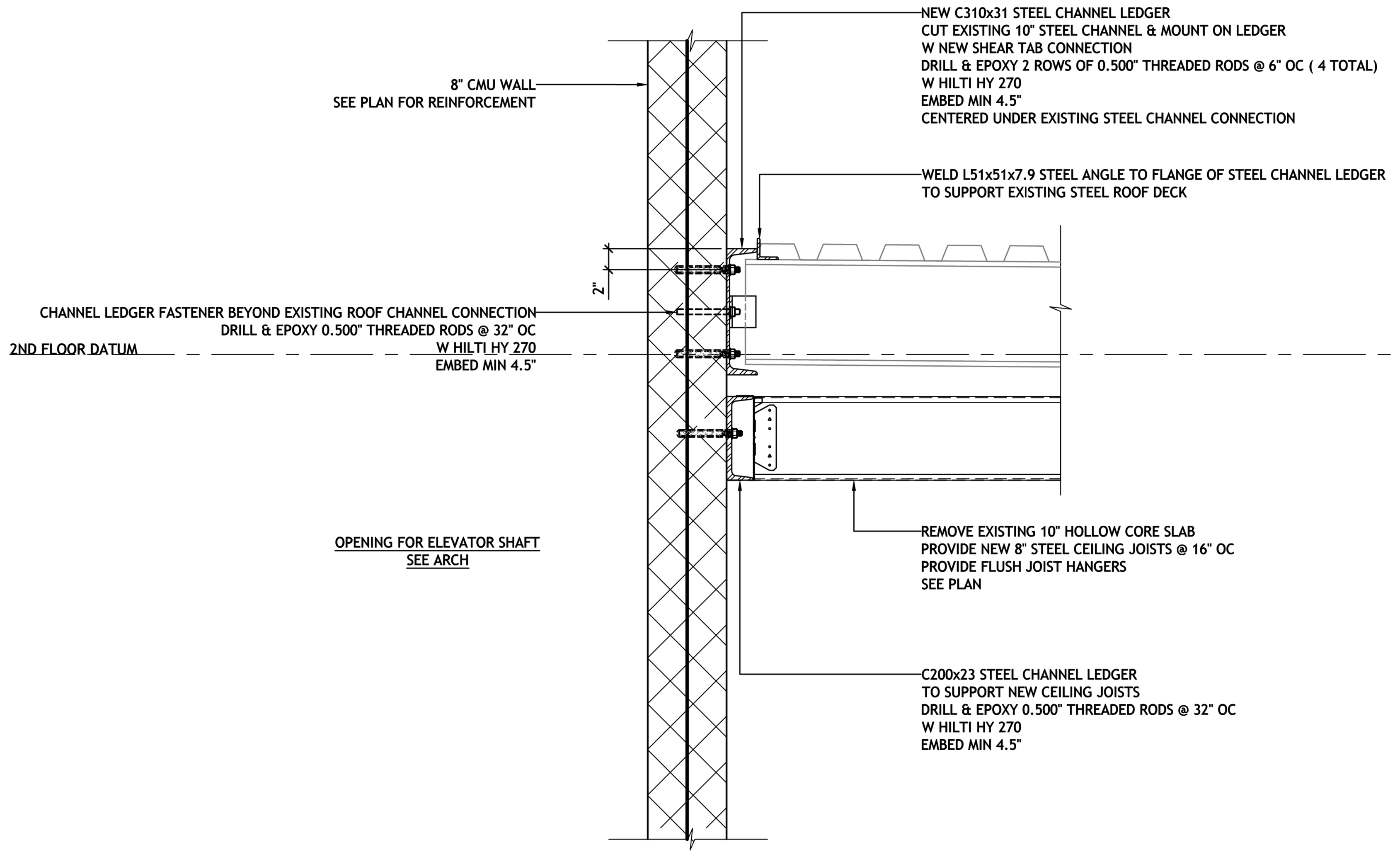
PROJECT: BENNETTO ELEMENTARY SCHOOL
SHEET TITLE: SECTIONS

S2.01



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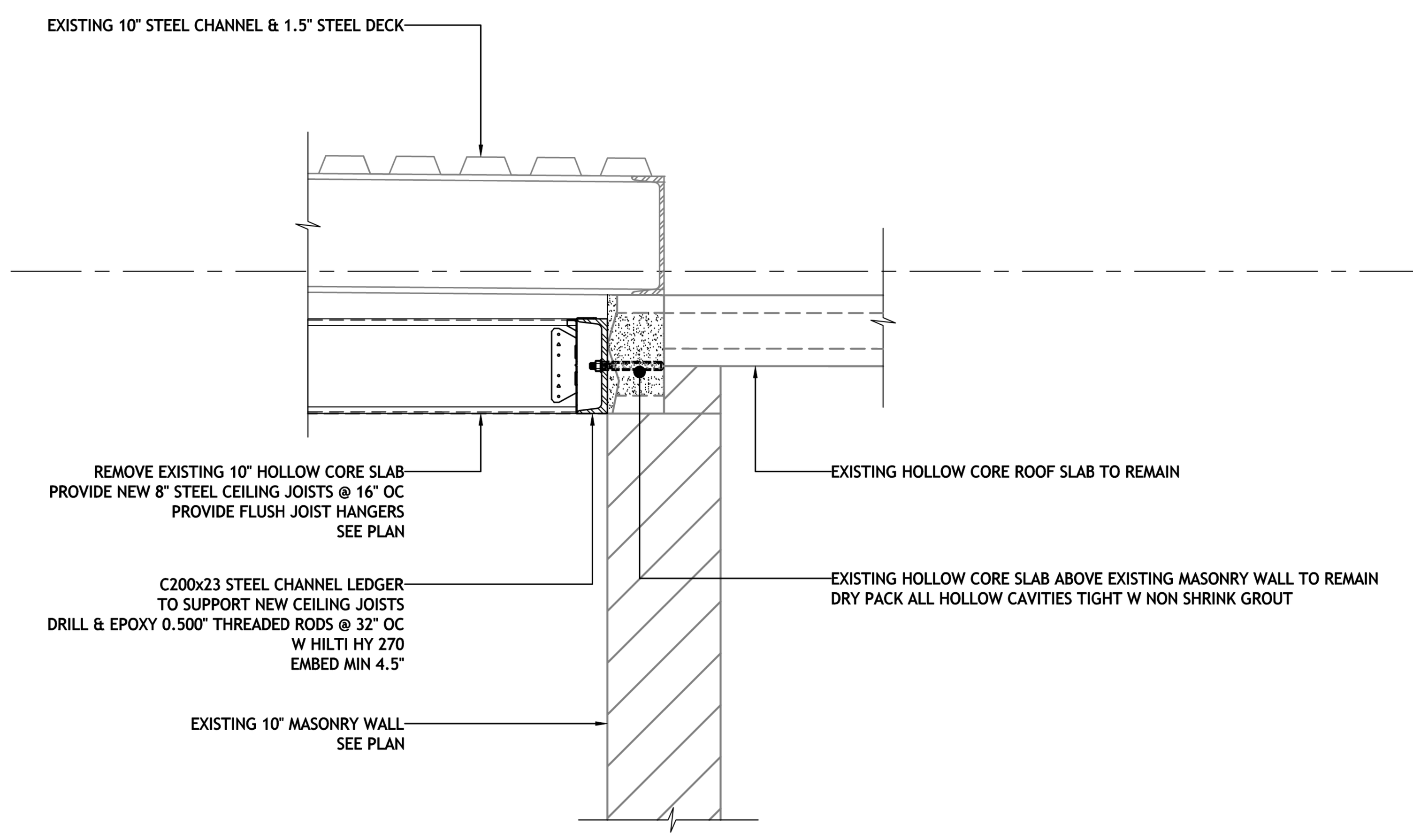

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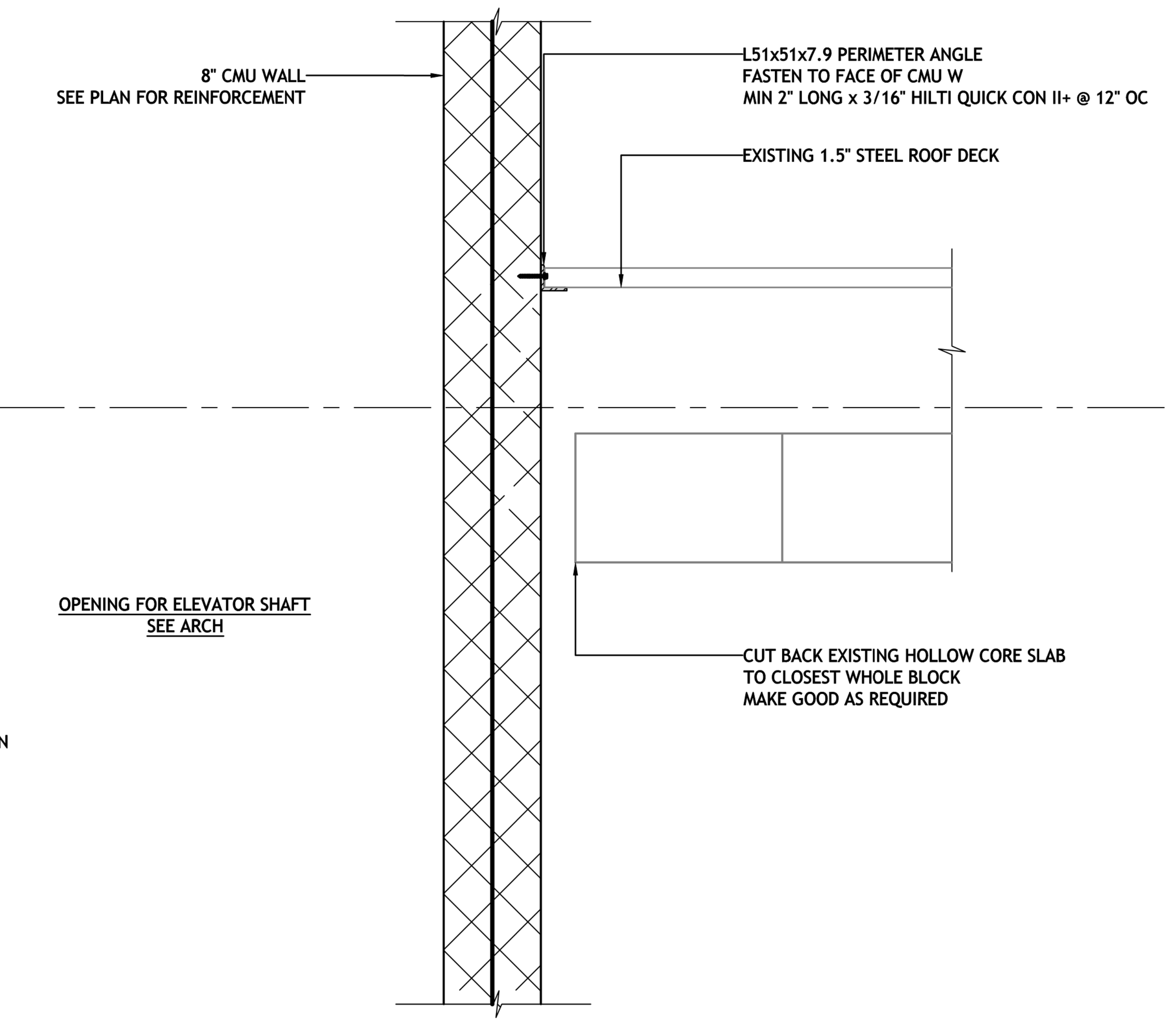

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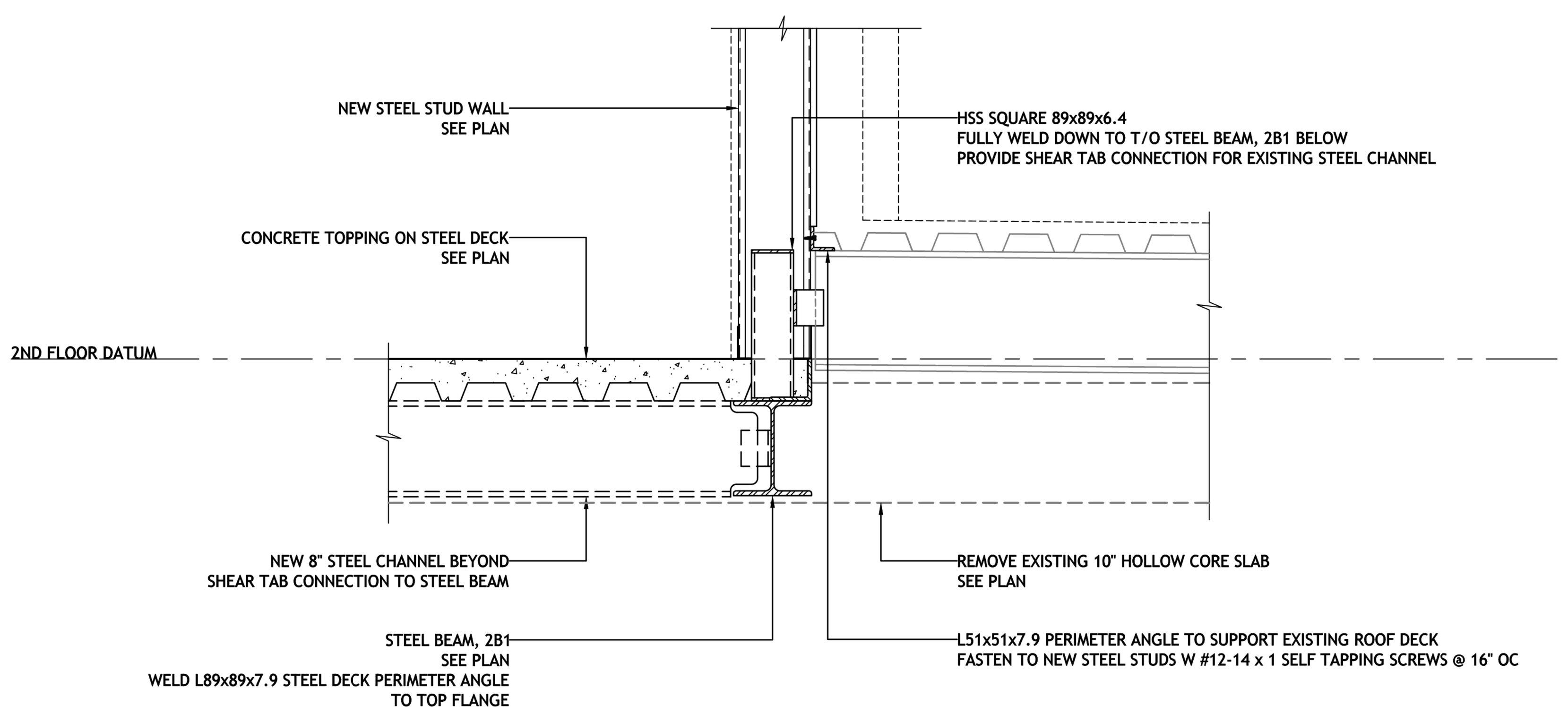

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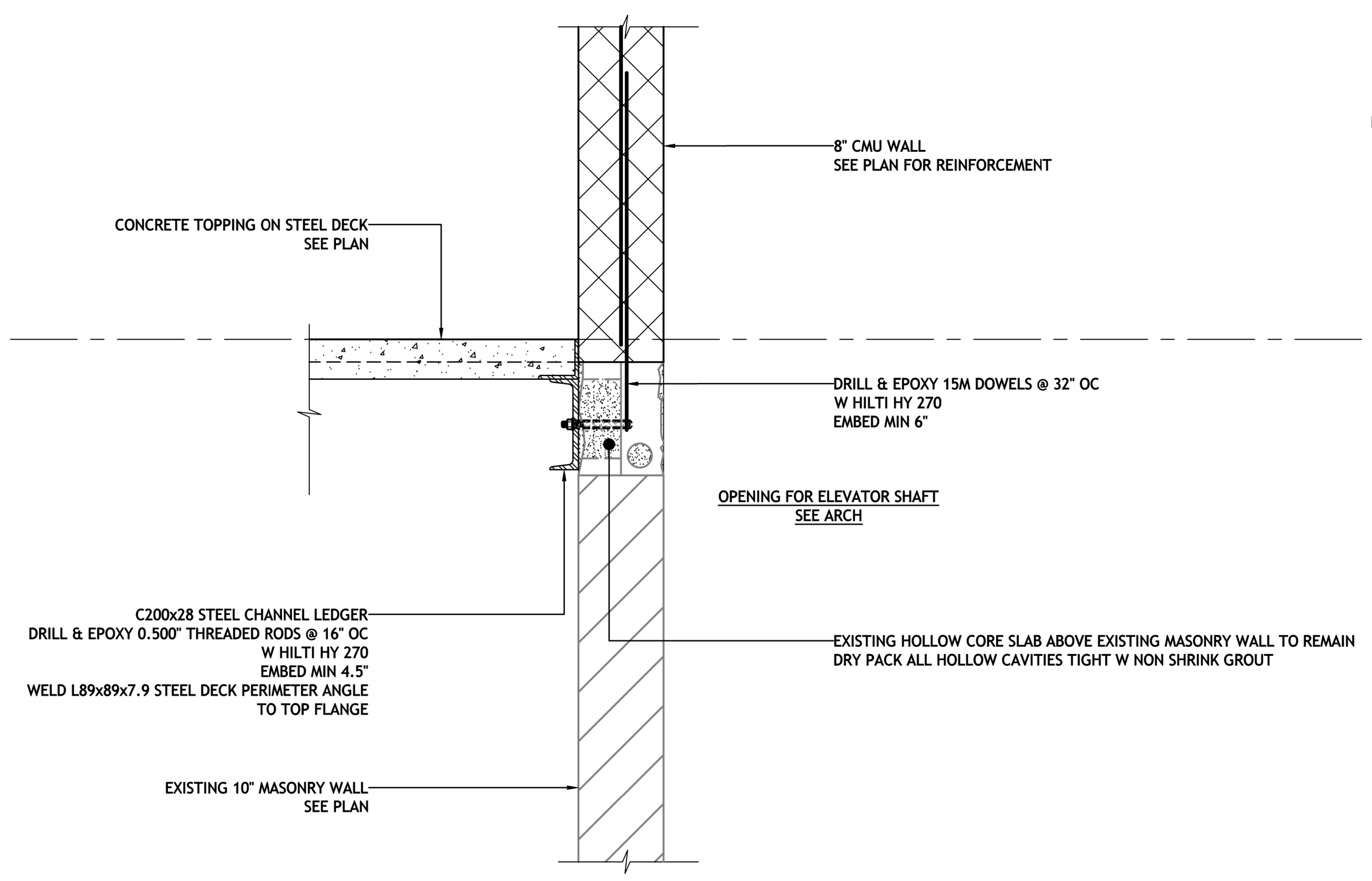

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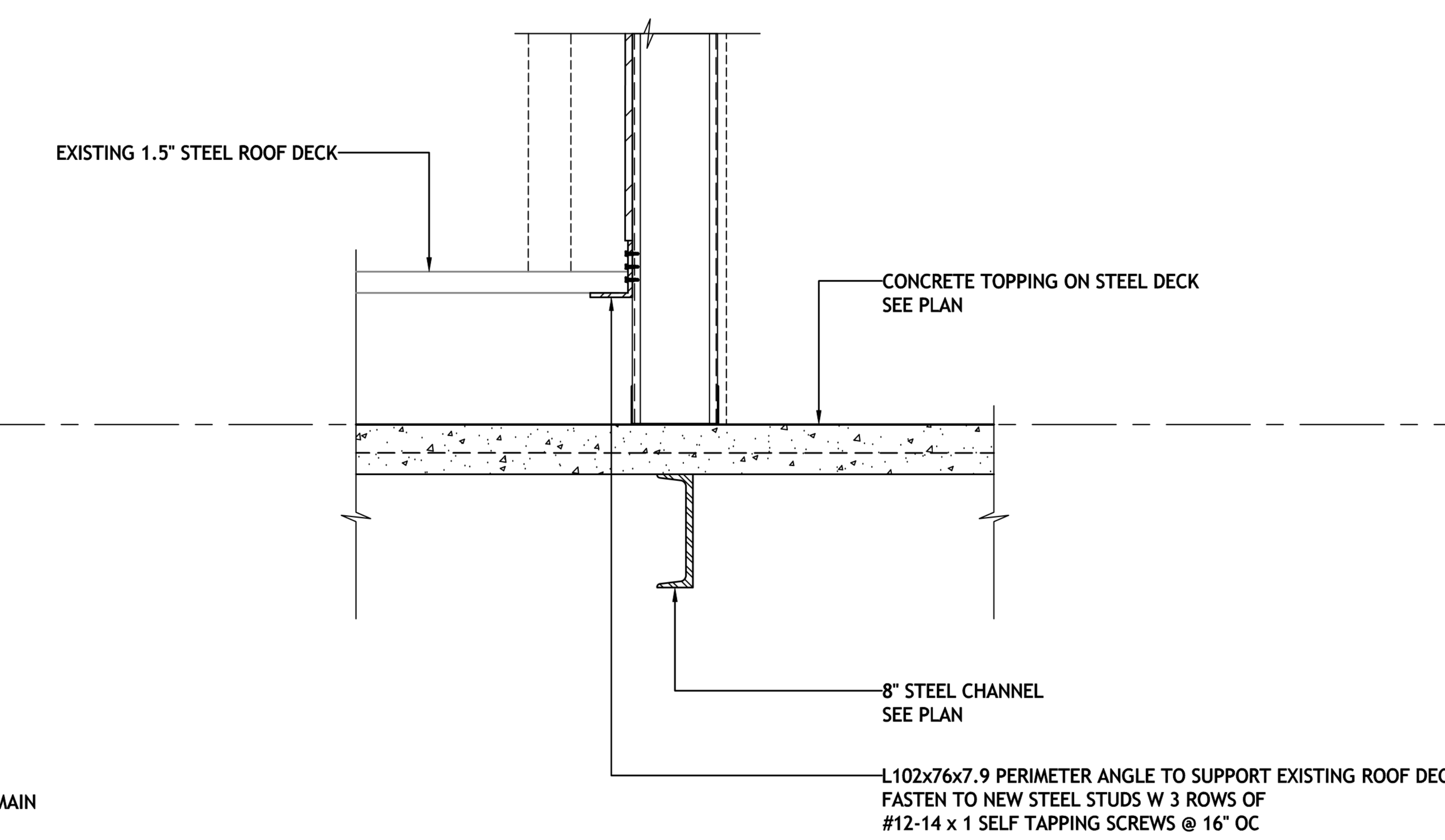

6
2.02

contact
ENGINEERING

LICENSED PROFESSIONAL ENGINEER
D. C.K. ANDERSON
100558256
PROVINCE OF ONTARIO

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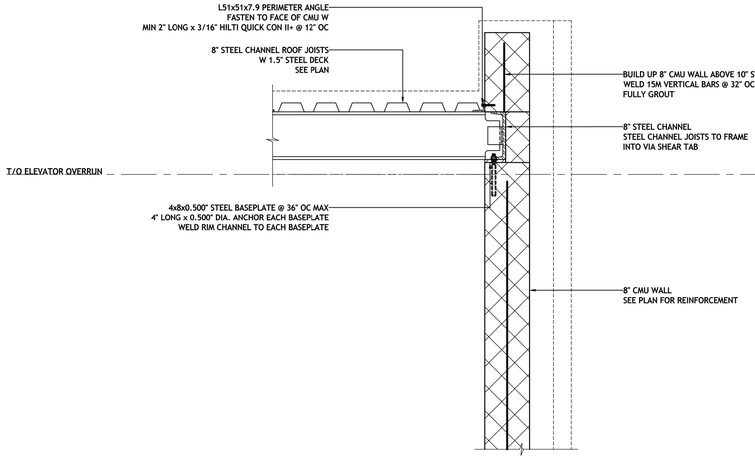
S2.02



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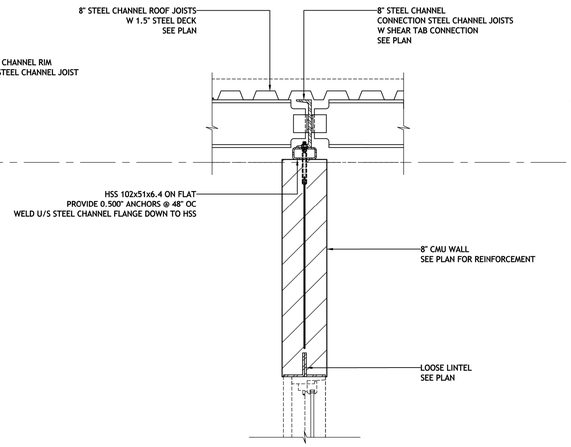

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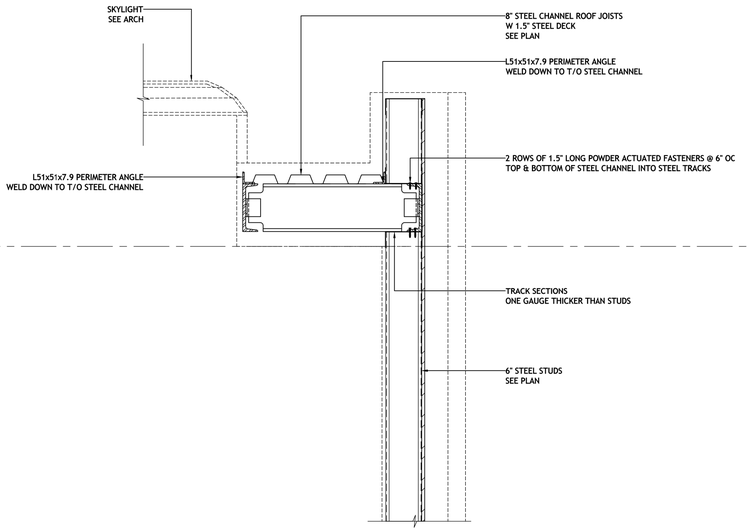

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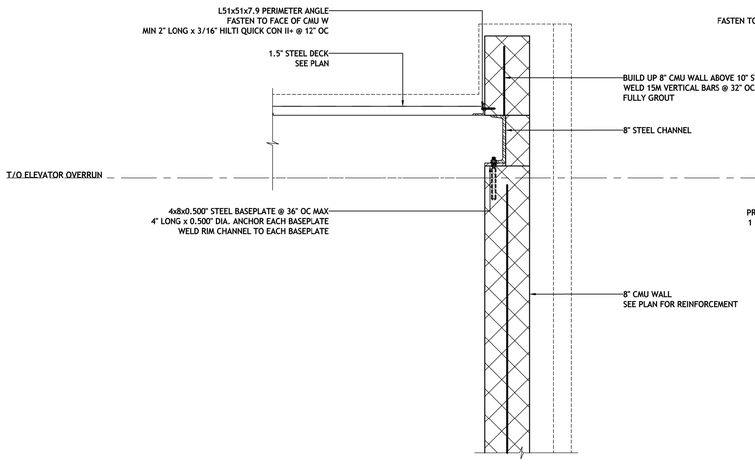

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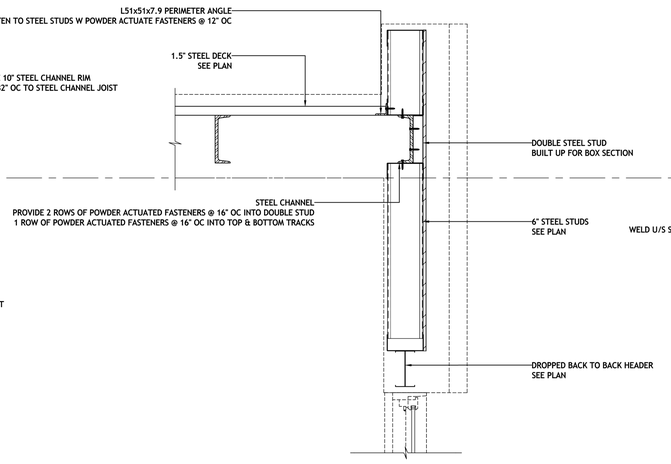

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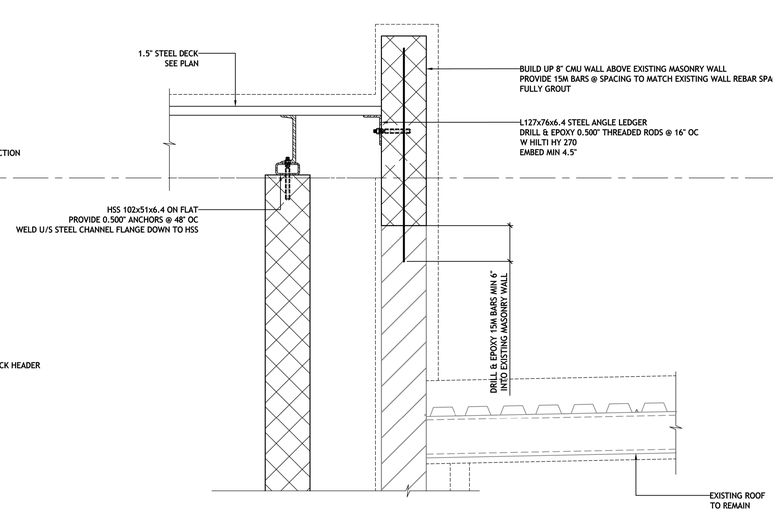

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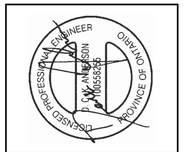
S2.03

contact ENGINEERING



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SHEET TITLE: SECTIONS

S2.03

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1.0 SCOPE OF WORK

1.1 CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.

1.2 THE GENERAL MECHANICAL SPECIFICATION SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.

1.3 COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C., ALL OTHER APPLICABLE CODES, REGULATIONS, BY-LAWS AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND INTERPRETATIONS OF THE AUTHORITIES HAVING JURISDICTION.
THESE CODES & STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS.
IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.

2.0 EXAMINATION OF SITE AND INFORMATION

2.1 EACH SUBCONTRACTOR, BEFORE TENDERING, SHALL EXAMINE THE SITE, THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND HE SHALL FAMILIARIZE HIMSELF WITH THE BUILDING CONSTRUCTION AND FINISH IN ORDER THAT HIS TENDER MAY INCLUDE EVERYTHING NECESSARY FOR THE PROPER COMPLETION OF THE WORK.

2.2 IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY THAT MATERIAL AND EQUIPMENT BE BROUGHT INTO THE BUILDING IN SUCH ASSEMBLIES AND SIZES AS TO ENTER INTO THE SPACES WHERE THEY ARE TO BE LOCATED AND TO BE SMALL ENOUGH TO BE HOISTED INTO THE BUILDING WITHOUT DIFFICULTY. ANY CUTTING, PATCHING, ETC., INVOLVED IN GETTING LARGE ASSEMBLIES INTO PLACE, SHALL BE THE RESPONSIBILITY OF THIS SUBCONTRACTOR.

3.0 RELATIONSHIP TO OTHER TRADES

3.1 THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS INSTALLING EQUIPMENT, PLANT PIPING, OTHER WORK, FOUNDATIONS, ETC., WHICH MAY AFFECT HIS INSTALLATION, AND HE SHALL ARRANGE HIS EQUIPMENT, PIPING, ETC., IN PROPER RELATION WITH OTHER APPARATUS, AND WITH THE BUILDING CONSTRUCTION. HE SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER EQUIPMENT ACCORDINGLY.

3.2 SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.

3.3 THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENINGS, FOUNDATION WORK, HANGERS, INSERTS, ANCHORS, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF HIS WORK, AND HE SHALL FURNISH ALL INFORMATION AND NECESSARY MATERIALS IN AMPLE TIME SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL SUPPLY AND CORRECTLY AND ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC.

3.4 FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER HIM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS AT A LATER DATE, AND THE SUBSEQUENT PATCHING, ETC., THEREBY REQUIRED.

3.5 NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY TRADESMEN SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.

4.0 SHOP DRAWINGS

4.1 EACH SUBCONTRACTOR SHALL SUBMIT EIGHT (8) COPIES OF THE SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW OF MATERIAL, EQUIPMENT, AND APPARATUS BEING PROVIDED BY HIM. THESE SHALL SHOW IN DETAIL THE DESIGN AND CONSTRUCTION AND PERFORMANCE OF ALL APPARATUS, ETC.

4.2 THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND MANUFACTURER'S SPECIFICATIONS OF ANY EQUIPMENT IS GENERAL AND IS NOT INTENDED TO SERVE AS FINAL CHECK AND IT SHALL NOT RELIEVE THE SUBCONTRACTOR OF THE RESPONSIBILITY FOR ERRORS OR OF THE NECESSITY OF CHECKING THE DRAWING HIMSELF, OR OF FURNISHING ANY OF THE MATERIALS AND PERFORMING THE WORK REQUIRED BY THE DRAWINGS AND SPECIFICATIONS TO THE FULL INTENT OF THIS SPECIFICATION.

4.3 BEFORE SUBMISSION, THIS SUBCONTRACTOR SHALL CHECK ALL SHOP DRAWINGS FOR ACCURACY OF DETAILS, DIMENSIONS, ETC. AND SHALL BE SATISFIED THAT THE DRAWINGS ARE CORRECT AND THAT THE EQUIPMENT WILL FIT PROPERLY IN THE ALLOTTED SPACE. THE SHOP DRAWINGS SHALL BE STAMPED BY THIS SUBCONTRACTOR WITH THE WORD 'REVIEWED', THE DATE OF APPROVAL, AND THE FIRM'S NAME PRIOR TO SUBMISSION.

5.0 REQUIREMENTS OF INSPECTION DEPARTMENTS

5.1 ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.

5.2 EACH SUBCONTRACTOR SHALL PREPARE DRAWINGS IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.

5.3 IN THE EVENT THAT THE INSPECTION DEPARTMENT'S REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, SUBCONTRACTOR SHALL CONSULT THE ENGINEER BEFORE PROCEEDING WITH SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE GENERALLY ACCEPTABLE TO INSPECTION DEPARTMENTS AND MINOR SUPPLEMENTS NEED ONLY BE MADE BY SUBCONTRACTORS.

6.0 CERTIFICATES, PERMITS, FEES

6.1 SUBCONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CONNECTIONS TO STORM, SANITARY, WATER AND GAS IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND HE SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.

6.2 SUBCONTRACTOR SHALL CONTACT THE LOCAL GAS COMPANY AS SOON AS POSSIBLE AND VERIFY THAT GAS SERVICE IS AVAILABLE AT PRESSURE AND CAPACITY REQUIRED FOR THE PROJECT. HE SHALL INFORM ENGINEER IMMEDIATELY, IF THERE IS ANY PROBLEM WITH GAS SERVICE WHATSOEVER.
IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY TO COORDINATE GAS REQUIREMENTS WITH THE GAS COMPANY BEFORE ANY HIS WORK PROCEEDS.

7.0 GUARANTEE

7.1 THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND PROPER AND EFFICIENT OPERATION, AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE YEAR AFTER WRITTEN ACCEPTANCE OF HIS WORK, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEMS OF EQUIPMENT.

7.2 ALL INJURIES TO ADJACENT WORK, PARTICULARLY PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT, CAUSED BY SUCH DEFECTS OF THIS SUBCONTRACTOR'S
WORK OR BY SUBSEQUENT REPLACEMENTS AND REPAIRS, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR. ALL REPAIR WORK SHALL BE DONE BY TRADES RESPONSIBLE FOR THE ORIGINAL WORK.

8.0 EXCAVATING AND BACKFILLING

8.1 UNLESS OTHERWISE INDICATED, ALL NECESSARY EXCAVATING AND BACKFILLING SHALL BE DONE BY THIS SUBCONTRACTOR.

8.2 BEFORE COMMENCING WITH WORK, CHECK LOCATIONS OF ALL EXISTING SERVICES. THIS SUBCONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES AND SUBSEQUENT EXPENSES RESULTING FROM HIS NEGLIGENCE IN THIS RESPECT.

8.3 KEEP EXCAVATION FREE OF WATER.

8.4 PROVIDE ANY NECESSARY SHORING AS MAY BE REQUIRED FOR THE SAFETY OF THE TRADE INSTALLING THE WORK.

8.5 BACKFILL INSIDE BUILDING AND UNDER PAVED AREAS WITH PIT RUN GRAVEL OR SAND PROPERLY TAMPED IN 12" LAYERS.

8.6 IN ALL OTHER AREAS BACKFILL WITH GOOD CLEAN EARTH PROPERLY TAMPED IN 12" LAYERS.

8.7 EXCESS EXCAVATED MATERIAL SHALL BE PILED ON THE SITE WHERE DIRECTED BY THE FIELD SUPERVISOR FOR REMOVAL BY OTHERS.

8.8 LAY ALL PIPING ON A BED OF SOLID UNDISTURBED EARTH OR WHERE THIS IS NOT OBTAINABLE, ON CONCRETE PADS, SUPPORTED BY CONCRETE PIERS EXTENDED DOWN TO UNDISTURBED BEARING.

8.9 WHERE ANY EXCAVATING IS NECESSARY IN CLOSE PROXIMITY TO OR BELOW ANY FOOTING LEVEL, BACKFILL WITH 1,500 LB. CONCRETE TO THE LEVEL OF THE TOP OF THE HIGHEST ADJACENT FOOTING.

8.10 AT THE COMPLETION OF THE PROJECT FILL IN AND LEVEL OFF EXTERIOR EXCAVATIONS.

9.0 DRAWINGS

9.1 THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR THE SPECIAL APPARATUS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWINGS IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND MAY BE ALTERED, AS APPROVED BY THE ENGINEER, TO MEET THE REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR HIS WORK THROUGHOUT, AND HE SHALL ARRANGE HIS PIPING, WIRING AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO-OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.

9.2 THE SUBCONTRACTOR IS PARTICULARLY CAUTIONED THAT SMALL SCALE ENGINEER'S PLANS MUST BE SUPPLEMENTED BY HIS OWN DETAIL DRAWINGS WHERE NECESSARY FOR PROPER CO-ORDINATION OF THE WORK.

9.3 ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.

9.4 ITEMS OBVIOUSLY REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM BUT NOT SPECIFIED NOR SHOWN SHALL BE INCLUDED.

10.0 CONTRACTOR'S SHOP

10.1 EACH SUBCONTRACTOR SHALL PROVIDE HIS OWN OFFICE, WORKSHOP, TOOLS AND MATERIALS STORAGE AND BE RESPONSIBLE FOR ANY LOSS OR DAMAGE THERETO. BUILDING SHALL BE ERECTED UNDER THE SUPERVISION OF THE CONTRACTOR.

11.0 RESPONSIBILITY AND LIABILITY

11.1 EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF HIS WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH OTHERS WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. HE SHALL PROTECT FINISHED AND UNFINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED. OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING HIS TENDER. HE SHALL ABIDE BY THE DECISION GIVEN HIM IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON HIS PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE HIM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.

12.0 CLEAN-UP

12.1 DURING THE COURSE OF CONSTRUCTION, EACH SUBCONTRACTOR SHALL KEEP HIS WORK TIDY AND NOT ALLOW AN ACCUMULATION OF DEBRIS RESULTING FROM HIS WORK.

12.2 UPON COMPLETION OF HIS WORK HE SHALL LEAVE THE PREMISES IN A BROOM-CLEAN CONDITION.

13.0 PROTECTION

13.1 PROTECT YOUR WORK FROM CONSTRUCTION DIRT OR DAMAGE FROM ANY CAUSE. SECURELY PLUG AND CAP ALL OPENINGS IN PIPE, EQUIPMENT AND FIXTURES TO PREVENT OBSTRUCTIONS.

14.0 IDENTIFICATION OF EQUIPMENT

14.1 IDENTIFY ALL FANS, PUMPS, MOTOR STARTERS AND OTHER MECHANICAL EQUIPMENT AS TO SERVICE, BY A ENGRAVED PLASTIC LAMACOID NAMEPLATE, FIRMLY AFFIXED BY ADHESIVE AND SCREWS TO EACH UNIT. NOTE THAT BOTH UNIT AND ITS REMOTE STARTER SHALL BE TAGGED. PROVIDE PRESSURE SENSITIVE TAPE MARKERS, SHOWING PIPE SERVICE AND ARROWS INDICATING DIRECTION OF FLOW ON EXPOSED PIPES. ON CONCEALED PIPES, PROVIDE MARKERS ADJACENT TO ACCESS DOORS THROUGHOUT THE LENGTH OF PIPES AT INTERVALS NOT EXCEEDING 50 FEET. INSTALL MARKERS AFTER PIPE HAS BEEN PAINTED AND ON BOTH SIDES OF ANY WALL THROUGH WHICH PIPE PASSES.

15.0 TAGS

15.1 AT THE COMPLETION OF THE INSTALLATION, THE MECHANICAL CONTRACTOR SHALL TAG ALL VALVES WITH NUMBERED BRASS DISCS AND SHALL PROVIDE THE OWNER WITH A FRAMED LIST OF THE TAGS TO INDICATE LOCATION AND SERVICE OF ALL VALVES.

16.0 OPERATING INSTRUCTIONS AND RECORD DRAWINGS

16.1 FOR EACH ITEM OF SPECIAL APPARATUS, OPERATING AND MAINTENANCE INSTRUCTIONS SHALL BE PROVIDED IN 3 COPIES FOR OWNER'S USE. THESE SHALL INCLUDE:

1. GENERAL ARRANGEMENT SHOP DRAWINGS.
2. COMPLETE EXPLANATION OF OPERATING PRINCIPLES AND SEQUENCE.
3. COMPLETE PART LISTS WITH NUMBERS.
4. RECOMMENDED MAINTENANCE PRACTICES AND PRECAUTIONS.
5. COMPLETE WIRING AND CONNECTION DIAGRAMS.

16.2 OBTAIN TWO SETS OF MECHANICAL DRAWING WHITE PRINTS FROM THE CONTRACTOR AND KEEP A RECORD IN RED PENCIL OF ANY DEVIATION FROM THE DRAWN LOCATION OF PIPES, DUCTS, ETC. ONE SET SHALL BE TURNED OVER TO THE OWNER WITH THE OPERATING INSTRUCTIONS, AND THE OTHER SET SHALL BE HANDED TO THE ENGINEER. ALL BURIED PIPING SHALL BE ADEQUATELY DIMENSIONED FOR FUTURE LOCATION AND DEPTH SHALL BE SHOWN AT MAIN REFERENCE POINTS.

17.0 ELECTRICAL WIRING AND CONTROLS

17.1 ALL POWER WIRING FOR MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL DIVISION. THE MECHANICAL TRADE INVOLVED SHALL PROVIDE STARTERS, THERMOSTATS, VALVES, CONTROL TRANSFORMERS, RELAYS, ETC. ALL CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR, UNLESS OTHERWISE NOTED ELSEWHERE IN THIS SPECIFICATION.

18.0 TESTS AND BALANCING

18.1 AIR TEST AND BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCING COMPANY. THE AIR BALANCING COMPANY SHALL BE APPOINTED BY THE ENGINEER.

18.2 SCOPE OF WORK:

1. ALL LISTED AIR HANDLING SYSTEMS SHALL BE BALANCED WITHIN 5% OF THE NOTED DESIGN AIR VOLUMES AS PER PLANS AND SPECIFICATIONS.
2. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE H.V.A.C. SYSTEM FULLY OPERATIONAL TWO (2) WEEKS BEFORE TURNOVER TO THE OWNER. THIS WILL INCLUDE THE REQUIREMENT TO INSTALL CLEAN FILTERS IN ALL RELATED HVAC EQUIPMENT BEFORE TIME OF AIR TESTING AND TO MAKE ALL AIR SYSTEMS FULLY OPERATIONAL.

18.3 PRELIMINARY PROCEDURE FOR AIR BALANCING. BEFORE OPERATING THE SYSTEM, THE FOLLOWING STEPS SHOULD BE PERFORMED:
1. OBTAIN AS-BUILT DESIGN DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY ACQUAINTED WITH THE DESIGN INTENT.
2. OBTAIN COPIES OF APPROVED SHOP DRAWINGS OF ALL AIR-HANDLING EQUIPMENT, OUTLETS (SUPPLY, RETURN AND EXHAUST), AND TEMPERATURE CONTROL DIAGRAMS INCLUDING PERFORMANCE CURVES. COMPARE DESIGN REQUIREMENTS WITH SHOP DRAWING CAPACITIES.
3. COMPARE DESIGN TO INSTALLED EQUIPMENT AND FIELD INSTALLATION.
4. WALK THE SYSTEM FROM THE AIR HANDLING EQUIPMENT TO TERMINAL UNITS TO DETERMINE VARIATIONS OF INSTALLATION FROM DESIGN.
5. CHECK DAMPERS (BOTH VOLUME AND FIRE) FOR CORRECT AND LOCKED POSITION AND TEMPERATURE CONTROL FOR COMPLETENESS OF INSTALLATION BEFORE STARTING FANS.
6. PREPARE TEST REPORT SHEETS FOR BOTH FANS AND OUTLETS. OBTAIN MANUFACTURER'S OUTLET FACTORS AND RECOMMENDED TESTING PROCEDURE. A SUMMATION OF REQUIRED OUTLET VOLUMES PERMITS A CROSS-CHECKING WITH REQUIRED FAN VOLUMES.
7. DETERMINE BEST LOCATIONS IN MAIN AND BRANCH DUCTWORK FOR MOST ACCURATE DUCT TRAVERSES.
8. PLACE ALL OUTLET DAMPERS IN THE FULL OPEN POSITION.
9. PREPARE SCHEMATIC DIAGRAMS OF SYSTEM AS-BUILT DUCTWORK AND PIPING LAYOUTS TO FACILITATE REPORTING.
10. CHECK FILTERS FOR CLEANLINESS AND PROPER INSTALLATION (NO AIR BYPASS). IF SPECIFICATIONS REQUIRE, ESTABLISH PROCEDURE TO SIMULATE DIRTY FILTERS.

19.0 PAINTING

19.1 ALL EQUIPMENT FABRICATED FROM STEEL AND NOT FACTORY FINISH PAINTED SHALL BE SUPPLIED WITH A PRIME COAT DONE AT THE SUPPLIER'S FACTORY. IF DAMAGED IN TRANSIT OR ON THE JOB, THIS CONTRACTOR SHALL TOUCH UP WITH RED LEAD PRIMER BEFORE FINISH PAINTING.

20.0 ACCESS DOORS

20.1 LOCATE ACCESS DOORS WHERE REQUIRED AND OF SUFFICIENT SIZE FOR SERVICING VALVES, DAMPERS, CLEANOUTS, ETC.

20.2 THESE SHALL BE FLUSH MOUNTING, SCREWDRIVER ACCESS, METAL TYPES, 16 GAUGE PRIMED STEEL.

PLUMBING, DRAINAGE AND PIPING

1.0 GENERAL

1.1 WORK SHALL INCLUDE ALL PLUMBING AND DRAINAGE AS REQUIRED AND/OR SHOWN ON THE DRAWINGS. ALL WORK SHALL BE INSTALLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE AND LOCAL PLUMBING CODES, BY-LAWS AND REGULATIONS.

1.2 ALL REQUIRED TESTS SHALL BE MADE IN THE PRESENCE OF THE AUTHORIZED INSPECTOR CERTIFYING THE TEST. UPON COMPLETION OF TEST, WRITTEN REPORT TO THE ARCHITECT, SUMMARIZING COMPLETE TEST DATA AND RESULTS.

1.3 PROVIDE SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, FLOORS, ROOFS, OR WALLS. SLEEVES SHALL BE SCHEDULE 40 GALVANIZED STEEL OR WROUGHT IRON PIPE, OR TYPE "L" OR "K" COPPER TUBE THROUGH FOUNDATIONS, FLOORS, OR ROOFS, AND OF 20 GAUGE GALVANIZED STEEL SHEET THROUGH ABOVE GRADE WALLS. SLEEVES ARE NOT REQUIRED FOR PLUMBING VENTS. ALL SLEEVES SHALL BE SIZED TO ACCEPT INSULATED PIPE.

1.4 HORIZONTAL PIPING SHALL BE SUPPORTED AT INTERVALS AS FOLLOWS:

PIPE SIZES UP TO 3/4"	6'-0"
PIPE SIZES 1" TO 3"	8'-0"
PIPE SIZES 4" & OVER	12'-0"

1.5 PIPE HANGERS SHALL CONSIST OF GRINNELL NO. 260 CLEVIS HANGERS WITH THREADED RODS AND SUITABLE CLAMPING DEVICE AT TOP END. GRAPPLER STRAP HANGERS ARE NOT ACCEPTABLE.

1.6 WHERE SUPPORTING COPPER PIPE, THE PIPE SHALL BE ISOLATED FROM THE HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.

1.7 VERTICAL PIPING SHALL BE SUPPORTED AT THE FLOOR AND/OR WITH INTERMEDIATE WALL SUPPORTS AT 10'-0" INTERVALS FOR PIPING 2" AND OVER, AND 6'-0" INTERVALS FOR PIPING UP TO 1-1/2". MORE FREQUENT SUPPORTS SHALL BE PROVIDED WHERE NECESSARY TO PREVENT MOVEMENT.

1.8 ALL PIPING SHALL BE INSTALLED TO MAKE PROVISION FOR THE EXPANSION AND CONTRACTION OF PIPES AND TO BE FREE FROM STRAINS AND DISTORTIONS. PROVIDE SWING JOINTS ON ALL BRANCH LINES, EXPANSION LOOPS ON ALL STRAIGHT RUNS OVER 100 FEET, AND ANCHORS TO LIMIT HORIZONTAL EXPANSION.

1.9 PROVIDE DRAIN COCKS AT ALL LOW POINTS OF WATER SYSTEMS TO ALLOW DRAINAGE OF SYSTEM AND WHERE REQUIRED TO PREVENT FREEZING.

1.10 ALL EXPOSED FITTINGS, VALVES, WASTE AND WATER PIPING SHALL BE CHROME PLATTED IN WASHROOM AND KITCHEN AREAS AND OTHER FINISHED AREAS.

1.11 PROVIDE STOPS TO EACH PLUMBING FIXTURE OF LOCKSHIELD OR HANDWHEEL TYPE AS SPECIFIED. PROVIDE ISOLATING VALVES TO EACH GROUP OF PLUMBING FIXTURES.

1.12 PROVIDE AIR COLUMN CHAMBERS AT EACH GROUP OF PLUMBING FIXTURES. THESE SHALL BE 1" MINIMUM PIPE WITH CAP. 18" LONG MOUNTED ON THE TOP OF THE SUPPLY HEADERS OF HOT AND COLD WATER. WHERE THE HEADER IS LARGER THAN 1", THE COLUMN SHALL BE ONE SIZE LARGER THAN THE HEADER. ALTERNATIVELY, PROVIDE ANCON "SHOK-GARD" OR APPROVED EQUAL WATER HAMMER ARRESTOR, SIZED FOR THE APPLICATIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.13 PROVIDE AUTOMATIC TRAP SEAL PRIMER, ANCON NO. MS-810 OR APPROVED EQUAL, FOR EVERY FLOOR DRAIN, HUB DRAIN, AND COMBINATION DRAINS. TRAP SEAL PRIMER SHALL BE CONNECTED TO NEAREST WATER SUPPLY. WHERE SEVERAL TRAPS WITH PRIMER REQUIREMENTS ARE LOCATED IN CLOSE VICINITY, THE USE OF A PROPERLY SIZED FLUSH TANK IS ACCEPTABLE.

1.14 PROVIDE DIELECTRIC UNIONS OR COUPLINGS AT ALL CONNECTION BETWEEN COPPER AND PIPING.

1.15 PROVIDE COMPLETE PLUMBING VENT SYSTEM AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES.

2.0 MATERIALS

2.1 UNDERGROUND WATERMAINS SHALL BE P.V.C. CERTIFIED TO CAN/CSA-B137.3 "RIGID POLYVINYL CHLORIDE PIPE FOR PRESSURE APPLICATIONS" MINIMUM PRESSURE RATING: 1034 KPA (150 PSI) SIZE 100 MM (4") DIA. TO 200 MM (8") DIA.
NOTE: SOME MUNICIPALITIES REQUIRE THAT BURIED P.V.C. WATERMAINS MUST BE DUCTILE IRON ENTERING A BUILDING. CONTACT THE LOCAL AUTHORITY HAVING JURISDICTION. DUCTILE IRON WATERMAINS SHALL CONFORM TO ANSI/AWWA C151/A21-51 AND SHALL HAVE A CEMENT-MORTAR LINING IN CONFORMANCE WITH ANSI/AWWA C104/A21-4.

2.2 UNDERGROUND WATERMAINS 50 MM (2") DIA. AND SMALLER SHALL BE TYPE 'K' SOFT COPPER CERTIFIED TO ASTM B88, "SEAMLESS COPPER WATER TUBE".
NOTE: SOLDER JOINTS ARE NOT PERMITTED IN UNDERGROUND WATERMAIN SYSTEMS. SOLDER JOINTS ABOVE GROUND SHALL CONFORM TO ANSI B16-18 OR B16-22. FLARED JOINT FITTINGS SHALL CONFORM TO ANSI B16-26.

2.3 ALL ABOVE GROUND DOMESTIC WATER PIPES – COPPER TYPE 'L', ASTM B88, THIRD PARTY CERTIFIED WITH LEAD FREE SOLDER.

3.0 VALVES FOR DOMESTIC HOT AND COLD WATER DISTRIBUTION

3.1 DOMESTIC AND NON-POTABLE HOT & COLD WATER:
– TYPE OF PIPING: TYPE 'L' COPPER
– PRESSURE RATING: 1380 KPA (200 PSIG) W.O.G.
1. GATE VALVES
– 65 MM (2-1/2") & UNDER – ALL BRONZE, SOLDER ENDS;
–75 MM (3") AND OVER – IRON BODY, BRONZE MOUNTED, FLANGED.
INSTALL BALL VALVES ON HOT AND COLD WATER RISER CONNECTIONS (UP TO 50 MM (2")) TO MAIN RUNS.

MANUFACTURER	CATALOGUE NO. 65 MM (2-1/2") & UNDER RISING STEM	NON-RISING STEM	75 MM (3") & OVER RISING STEM	NON-RISING STEM
RED WHITE	299	281A	421A	415A
CRANE	459	440	465-1/2C	461
KITZ	44	41	72	75

NOTE: USE NON-RISING STEM ONLY WHERE THERE IS INSUFFICIENT CLEARANCE FOR RISING STEM TYPE.
2. GLOBE VALVES
– 50 MM (2") & UNDER – BRONZE, COMPOSITION DISC, SOLDER ENDS.

MANUFACTURER	CATALOGUE NO. 65 MM (2-1/2") & UNDER	75 MM (3") & OVER
RED WHITE	220	400A
CRANE	03	76
KITZ	7	351
JENKINS	106AP	2342

NOTE: USE COMPOSITION DISCS TO SUIT FLUID TEMPERATURE RATING.
3. BUTTERFLY VALVES:
– 1065 KPA (150 PSIG) WP; – 65 MM (2-1/2") AND OVER – IRON BODY, DUCTILE IRON COATED DISC, STAINLESS STEEL STEM, FULL EPT LINER. LEVER OPERATION FOR SIZE 150 MM (6") AND UNDER. GEAR OPERATION FOR SIZE 200 MM (8") AND OVER.

MANUFACTURER	CATALOGUE NO. WAFER	LUG
CENTRELINE	L200W-E	L200L-E
JENKINS	220 EL	230 EL
KEYSTONE	1000	122

NOTE: BUTTERFLY VALVES MAY BE USED IN LIEU OF GATE OR GLOBE VALVES, 65 MM (2-1/2") AND OVER.
4. CHECK VALVES
– 50 MM (2") & UNDER – BRONZE, SWING CHECK WITH REGRINDABLE BRONZE DISCS, SOLDER ENDS.
– 65 MM (2-1/2") & OVER – IRON BODY, BRONZE MOUNTED, SWING CHECK, FLANGED.

MANUFACTURER	CATALOGUE NO. 50 MM (2") & UNDER	65 MM (2-1/2") & OVER
CRANE	1342	374
JENKINS	4092	587
RED WHITE	236	435A
KITZ	22	78

3.2 INSTALLATION:
1. REFER TO SECTION 15050 PIPING INSTALLATION.
2. INSTALL VALVES AT THE FOLLOWING LOCATIONS:
– EACH RISER BASE;
– EACH MAIN BRANCH;
– EACH SINGLE PLUMBING FIXTURE;
– EACH SINGLE ITEM OF EQUIPMENT;
– WHERE INDICATED IN THE CONTRACT DOCUMENTS.

3.3 PRESSURE REDUCING VALVES
1. CLAYTON SERIES 90-B OR 90-BKT OR APPROVED EQUAL PRESSURE REDUCING VALVES (PILOT OPERATED) WITH IRON BODY, BRONZE & RESILIENT TRIM. FOR SMALLER THAN 30 MM (1-1/4") USE CRD-KT 1725 (250 PSI).
2. INSTALL PRESSURE REDUCING VALVE ASSEMBLIES COMPLETE WITH 3 VALVE BY-PASS STRAINER AND OUTLET PRESSURE GAUGE CONNECTION.

3.4 BACKFLOW PREVENTERS
1. LAWN IRRIGATION: WATTS #909 SERIES OR APPROVED EQUAL BACKFLOW PREVENTER ASSEMBLY CONSISTING OF TWO CHECK VALVES AND A PROTECTION ZONE WITH A PRESSURE DIFFERENTIAL RELIEF VALVE TO ATMOSPHERE, 1725 KPA (250 PSI) WORKING PRESSURE. USE SCREWED CONNECTIONS TO 50 MM (2") SIZE, FLANGED CONNECTIONS FOR LARGER SIZED VALVES, BRONZE OR CAST IRON BODY, BRONZE TRIM, AND STAINLESS STEEL PILOT TRIM. BACKFLOW PREVENTER CERTIFIED TO CAN/CSA B-64.
2. CARBONATED BEVERAGE MACHINES & TEA/COFFEE MACHINE: WATTS MODEL SD-2 DUAL CHECK WITH ATMOSPHERIC PORT.
3. ALL OTHER APPLICATIONS: WATTS SERIES 007QT, CERTIFIED TO CSA STANDARD B64.
4. INSTALL BACKFLOW PREVENTERS AT DOMESTIC WATER CONNECTIONS TO ALL HEATING, COOLING AND REFRIGERATION EQUIPMENT AND WHERE SPECIFIED IN THE CONTRACT DOCUMENTS.

4.0 DRAINAGE PIPE & FITTINGS – INSIDE BUILDING

4.1 UNDERGROUND SANITARY & STORM:
1. TRANSITE SOIL PIPE WITH JOHN MANSVILLE RING-TITE SOIL FITTINGS CGSB-34-GP-22 (CSA APPROVED). OR
2. CLASS 4000 CAST IRON MECHANICAL JOINT PIPE AND FITTINGS WITH MECHANICAL JOINT STAINLESS STEEL COUPLINGS, CSA B70-1971. OR
3. PVC DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA-B181.2 SIZES 100 MM (4") DIA. TO 900 MM (36") DIA. OR
4. ABS DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA-B181.1 FOR SIZES 75 MM (3") DIA. OR
5. PROFILE (RIBBED) PVC SEWER PIPE AND FITTINGS CERTIFIED TO CAN/CSA-B182.4 FOR STORM SEWERS 200 MM (8") DIA. TO 600 MM (24") DIA. ONLY.

4.2 SOIL, WASTE AND VENT STACKS, DRAINS AND RAINWATER LEADERS ABOVE GROUND, 75 MM AND LARGER:
1. TRANSITE SOIL PIPE WITH JOHN MANSVILLE RING-TITE SOIL FITTINGS CGSB-34-GP-22 (CSA APPROVED). OR
2. CLASS 4000 CAST IRON MECHANICAL JOINT PIPE AND FITTINGS WITH MECHANICAL STAINLESS STEEL COUPLINGS, CSA-B70-1971. OR
3. DWV COPPER WITH CAST BRASS OR WROUGHT COPPER DRAINAGE FITTINGS AND SOLDER JOINTS (SOLDERING TO CONTAIN NOT MORE THAN 0.2% LEAD CONTENT) OR
4. PVC DRAIN WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA-B181.1 AND CAN/CSA-B181.2 (SOLVENT WELD ONLY).
5. NOTE : ALL PVC OR ABS TYPE PIPING TO BE USED ABOVE GROUND SHALL BE CONFIRMED TO BE ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.
6. PLASTIC PIPING SHALL NOT BE USED IN A CEILING SPACE USED AS A RETURN AIR PLENUM.

4.3 SOIL, WASTE AND VENT STACKS, DRAINS 65 MM DIA. AND SMALLER:
1. DWV COPPER PIPING WITH WROUGHT COPPER SOLDER JOINTS FOR ABOVE GRADE. (BELOW GRADE, PROVIDE TYPE 'L' OR TYPE 'K' COPPER PIPING).
2. ABS DRAIN, WASTE AND VENT PIPE AND PIPE FITTINGS CERTIFIED TO CAN/CSA-B181.1. WHERE ENCLOSED INSIDE WALL.
3. NOTE : ALL PVC OR ABS TYPE PIPING TO BE USED ABOVE GROUND SHALL BE CONFIRMED TO BE ACCEPTABLE BY THE AUTHORITY HAVING JURISDICTION.
4. PLASTIC PIPING SHALL NOT BE USED IN A CEILING SPACE USED AS A RETURN AIR PLENUM.

4.4 PIPE INSTALLATION:
1. FOR PIPE INSTALLATION, REFER TO SECTION 15000.
2. FOR EXCAVATION AND BACKFILLING, REFER TO SECTION 15000.
3. CLASS 4000 MECHANICAL JOINT CAST IRON SOIL PIPE AND MECHANICAL JOINT COUPLINGS SHALL BE OF ONE MANUFACTURER.
4. LAY UNDERGROUND PIPING STRAIGHT AND TRUE TO LINE AND GRADE WITH UNIFORM INVERT. SPIGOT ENDS ON GROOVE SHALL POINT IN DIRECTION OF FLOW.
5. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 75 MM (3").

5.0 CLEANOUTS

5.1 INSTALL CLEANOUTS IN STORM AND SANITARY DRAINAGE PIPING IN THE FOLLOWING LOCATIONS:
1. BUILDING DRAINS LEAVING BUILDING ON UPSTREAM SIDE OF EXTERIOR WALL.
2. CHANGES OF DIRECTION MORE THAN 45°.
3. ON HORIZONTAL BRANCHES AND MAIN DRAINS AT INTERVALS NOT EXCEEDING 15 METERS (50') FOR 100 MM (4") AND SMALLER, AND 30 METERS (100') FOR 150 MM (6") AND LARGER.
4. DRAIN FROM SINK, KITCHEN PIPING OR GREASE WASTE PIPING, AT INTERVALS NOT EXCEEDING 6 METERS (20') FOR ALL SIZES OF PIPE.
5. ENDS OF ALL HORIZONTAL DRAINAGE LINES.
6. BASE OF SOIL OR WASTE STACKS AND RAINWATER LEADERS.
7. WHERE REQUIRED BY BUILDING AND PLUMBING CODES.

5.2. GENERAL REQUIREMENTS:
1. CLEANOUTS SHALL BE FULL FOR PIPES UP TO 100 MM (4") AND NOT LESS THAN 100 MM (4") FOR LARGER SIZES.
2. CLEANOUTS SHALL BE OF THE FOLLOWING TYPES:
– BARRETT TYPE FITTING WITH BOLTED COVERPLATE AND GASKET;
– FITTING WITH THREADED PLUG.
– CLEANOUT FERRULES INSTALLED IN "Y" OR EXTENDED "Y".

5.3. PRODUCTS:
1. ACCEPTABLE MANUFACTURERS: JAY R. SMITH, ZURN ANCON (JAY R. SMITH NOTED FOR REFERENCE).
2. OUTSIDE AREAS – HEAVY DUTY – SERIES 4250.
3. UNFINISHED CONCRETE – SERIES 4250.
4. LINO TILED AREA – SERIES 4160 (SQUARE), SERIES 4140 (ROUND).
5. CERAMIC TILE FLOOR – SERIES 4160 (SQUARE), SERIES 4140 (ROUND).
6. TERRAZZO TILE FLOOR – SERIES 4200 (SQUARE), SERIES 4180 (ROUND).
7. LATEX DECK/MEMBRANE FLOOR SYSTEMS – SERIES DX4343 (ROUND).
8. CARPETED AREA – SERIES 4160 (SQUARE), SERIES 4140 (ROUND).
9. CLEANOUTS SHALL BE DUCO CAST IRON WITH SECURED NICKEL BRONZE TOP.

5.4. INSTALLATION:
1. LOCATE CLEANOUTS TO BE READILY ACCESSIBLE WITH SUFFICIENT CLEARANCES FOR RODDING AND CLEANING.
2. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL UNLESS EXPOSED IN UNFINISHED BASEMENT AREA, PIPE TUNNEL, ACCESSIBLE CRAWL SPACE OR MECHANICAL ROOM.
3. IN WET FLOOR AREAS, EXTEND CLEANOUT TO WALLS OR PROVIDE WITH GASKETTED WATERPROOF TOP.
4. WHERE CLEANOUTS PASS THROUGH WATERPROOF FLOOR OR ARE INSTALLED IN SLABS ON GRADE, PROVIDE CLAMPING COLLAR AND CLAMP TO MEMBRANE OR PROVIDE LEAD FLASHING TO SUIT.
5. ON OUTSIDE DRAINS, BRING CLEANOUT TO GRADE AND ANCHOR IN CONCRETE COLLAR.
6. ALL CLEANOUTS IN FINISHED AREAS SHALL BE THE SAME SHAPE (SQUARE OR ROUND).
7. COVER CLEANOUTS CONCEALED BEHIND FINISHED WALLS WITH ROUND CHROMED, BRONZE OR STAINLESS ACCESS PLATE SECURED TO CLEANOUT WITH 6 MM (1/4") DIA. COUNTER SUNK MACHINE SCREW. COVERPLATE SHALL BE SUFFICIENTLY LARGE FOR ACCESS AND RODDING. INSTALL CLEANOUT NO MORE THAN 25 MM (1") BEHIND FACES OF FINISHED WALLS.

6.0 DRAINS

UNLESS OTHERWISE SPECIFIED ON DRAWINGS. USE THE FOLOWING:

6.1 F.D. – FLOOR DRAIN – Ancon Series FD-300, epoxy coated cast iron body with serrated clamping flange, adjustable collar and non-tilt (7") 179 mm diameter epoxy coated cast iron tractor gate.

6.2 A.D. – AREA DRAIN – Ancon Series FD-460AF, epoxy coated cast iron floor drain with anchor flange, weepholes, adjustable collar and 600 x 600 (12-3/4" x 12-3/4") square locking type epoxy coated cast iron grate with vandal proof top and sediment bucket.

6.3 R.D. – ROOF DRAIN – ZURN Control-Flo ERC-105 suitable for conventional roof systems, cast iron body roof drain with underdeck clamp bearing pan.

7.0 MATERIALS INSIDE BUILDING

7.1 GAS PIPING
– ENTIRE NATURAL GAS INSTALLATION SHALL CONFORM TO NATIONAL STANDARD OF CANADA CAN/CSA-B149.M86 NATURAL GAS INSTALLATION CODE AS PREPARED BY CANADIAN GAS ASSOCIATION AND IN ACCORDANCE WITH THE LATEST LOCAL AMENDMENTS. PIPING SHALL BE SCHEDULE 40 BLACK CARBON STEEL PIPE COMPLYING WITH ASTM-A53. FITTINGS SHALL BE OF EITHER MALLEABLE IRON OR STEEL SCREWED FITTINGS COMPLYING WITH ANSI-B16.3.
– A READILY ACCESSIBLE MANUAL SHUT-OFF VALVE SHALL BE INSTALLED FOR EACH APPLIANCE AND SHALL BE OF EITHER LUBRICATED PLUG, OR ACCENTRIC TYPE. ALL GAS PIPING SHALL BE PAINTED YELLOW-ORANGE BY GENERAL CONTRACTOR.

7.2 REFRIGERANT PIPING
– SUCTION AND LIQUID LINES SHALL BE TYPE A.C&R COPPER WITH SOLDER TYPE FITTINGS USING 95/9 SILVER SOLDER. EVACUATE COMPLETED SYSTEM WITH VACUUM PUMP TO ENSURE REMOVAL OF MOISTURE. RECHARGE WITH FREON TO MANFACTURERS SPECIFICATIONS. THROUGHLY CHECK ENTIRE SYSTEM WITH LEAK DETECTOR WHEN UNDER PRESSURE AND REPAIR ANY LEAK.

HEATING, VENTILATING AND AIR CONDITIONING

1.0 GENERAL

1.1 ALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT SHALL BE CSA LISTED, BEAR THE CSA SEAL, AND BE INSTALLED IN ACCORDANCE WITH CSA STANDARDS.

1.2 IN ADDITION TO THE PROVISIONS OF SENTENCE (1), ALL FANS SHALL BE LICENSED TO BEAR THE AMCA SEAL.

1.3 ALL DUCTWORK SHALL BE CONSTRUCTED, INSTALLED & SUPPORTED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.

1.4 IN ADDITION TO THE PROVISIONS OF SENTENCE (3), ALL RIGID DUCTWORK SHALL BE FABRICATED FROM GALVANIZED STEEL SHEETS IN ACCORDANCE WITH NFPA-90A, ULC-S110, AND ASTM-A525; AND OF THE US SHEET GAUGES AS TABLED BELOW.

SHEET GAUGE	RECTANGULAR DUCT	ROUND DUCT
26	UP TO 12"	UP TO 13"
24	13" – 30"	14" – 22"
22	31" – 54"	23" – 36"
20	55" – 84"	37" – 50"
18	85" & ABOVE	51" – 60"

FLAT AREAS OF DUCT OVER 18" WIDE SHALL BE STIFFENED BY CROSS BREAKING ACROSS THE CORNERS, AND ALL DUCTS SHALL BE SELF-SUPPORTING.

1.5 IN ADDITION TO THE PROVISIONS OF SENTENCE (3), ALL FLEXIBLE DUCTWORK SHALL BE SUBJECT TO NFPA-90A AND ULC-S110 STANDARDS FOR FLAME SPREAD AND SMOKE DEVELOPED, BE ULC LISTED, AND BEAR THE ULC SEAL. ALL CONNECTIONS SHALL USE JOINT TREATMENT TYPE AS DETAILED IN MANUFACTURER'S INSTRUCTIONS. MAXIMUM LENGTH OF FLEXIBLE DUCTWORK SHALL BE 12'- 6", USED ONLY IN HORIZONTAL RUNS, AND SHALL NOT PENETRATE FIRE SEPARATIONS.

1.6 DUCTWORK SHALL BE MADE SUBSTANTIALLY AIR TIGHT THROUGHOUT AND SHALL HAVE NO OPENINGS OTHER THAN THOSE REQUIRED FOR PROPER OPERATION AND MAINTENANCE. THE ALLOWABLE LEAKAGE FACTOR SHALL NOT EXCEED 2% THROUGH THE LONGEST DUCT RUN. ALL DUCT JOINTS SHALL BE SEALED WITH JOINT TAPE MEETING THE FLAME RESISTANCE REQUIREMENTS OF ULC-S109.

1.7 ALL AIR HANDLING SYSTEMS SHALL BE TESTED AND BALANCED BY A QUALIFIED TESTING COMPANY TO WITHIN 5% OF THE DESIGN AIR VOLUMES. THREE (3) COPIES OF THE FINAL TESTING AND BALANCING REPORT SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW BY THE ENGINEER.

1.8 ELBOWS SHALL BE CONSTRUCTED USING A RADIUS OF 1.5 TIMES OF DUCT DIAMETER / WIDTH. HOLLOW TURNING VANES IN VANE RAILS SHALL BE USED WHEN THIS IS NOT POSSIBLE.

1.9 BALANCING DAMPERS SHALL BE INSTALLED AT ALL TAKE-OFFS FROM BRANCH DUCTS, AND ALL BRANCH DUCT CONNECTIONS TO MAIN DUCTS. BALANCING DAMPERS SHALL BE MANUALLY OPERATED OPPOSED BLADE TYPE, SPLITTER TYPE, OR BUTTERFLY TYPE, COMPLETE WITH LOCKING QUADRANT OPERATOR.

1.10 FIRE DAMPERS SHALL BE INSTALLED IN THE PLANE OF PENETRATION OF FIRE SEPARATIONS AND IN ACCORDANCE WITH NFPA-90A AND ULC-S505, AND SHALL BEAR THE ULC SEAL. DAMPERS SHALL BE TYPES A OR B, 1.5 HOUR FIRE RATED AND COMPLETE WITH 160 DEG. F REPLACEABLE LINK. A TIGHTLY FITTED ACCESS DOOR SHALL BE INSTALLED FOR EACH FIRE DAMPER TO PROVIDE ACCESS FOR INSPECTION, AND RESETTING OF DAMPER, AND REPLACING OF FUSIBLE LINK. FIRE DAMPERS SHALL BE SUPPORTED INDEPENDENTLY FROM DUCTWORK.

1.11 VIBRATION ISOLATION FLEXIBLE DUCT CONNECTORS SHALL BE USED WHERE DUCTWORK CONNECTS DIRECTLY TO AIR HANDLING EQUIPMENT. CONNECTORS SHALL BE NONCOMBUSTIBLE, OR OF COMBUSTIBLE FABRIC CONSTRUCTION PROVIDED THEY DO NOT EXCEED 10" IN LENGTH AND COMPLY WITH THE FLAME RESISTANCE REQUIREMENTS OF ULC-S109. COLLARS SHALL BE GALVANIZED IRON AND FASTENED SECURELY TO ENSURE A LEAKPROOF CONNECTION.

1.12 ALL DUCTWORK SHALL BE INSTALLED TO ALLOW FREEDOM FROM VIBRATION DURING OPERATING CONDITIONS. DUCT HANGERS SHALL BE SUPPORTED FROM STRUCTURAL STEEL AND STRUCTURAL CONCRETE SLAB, BUT NOT FROM ROOF DECK. BENT GALVANIZED IRON HANGERS SHALL BE USED FOR DUCTS UP TO 36" IN WIDTH. FOR WIDER DUCTS, 1/2" DIAMETER RODS AND 1-1/2" STRUCTURAL ANGLE IRONS SHALL BE USED. DUCT HANGERS SHALL BE SPACED MAXIMUM 8' – 6" APART. WHERE DUCTS PASS THROUGH WALLS AND FLOORS, THE SPACE AROUND THE DUCT SHALL BE PACKED AND SEALED WITH FIRE RESISTANT SEALING COMPOUND.

1.13 KITCHEN EXHAUST DUCTWORK SHALL BE INSTALLED IN COMPLIANCE WITH N.F.P.A. # 96 LATEST EDITION. PROVIDE ALL ACCESS, CLEANOUT, SEPARATIONS AS PER N.F.P.A. #96 WHETHER SHOWN ON PLANS OR NOT. ALL KITCHEN EXHAUST DUCTWORK SHALL BE 16 GAUGE WELDED.

1.14 SPIRAL DUCTWORK SHALL BE SPIRAL HELIX AS MANUFACTURED BY WESBELL HIGH-TEC MANUFACTURING INC.

EQUIPMENT AND SYSTEM CHECK.

1.0 PLACE ALL FANS (SUPPLY, RETURN AND EXHAUST) IN OPERATION AND IMMEDIATELY CHECK THE FOLLOWING ITEMS:
A) MOTOR AMPERAGE & VOLTAGE TO GUARD AGAINST OVERLOAD.
B) FAN ROTATION.
C) OPERABILITY OF STATIC PRESSURE LIMIT SWITCH.
D) AUTOMATIC DAMPERS FOR PROPER POSITION.
E) AIR & WATER RESETS OPERATING TO DELIVER REQUIRED TEMPERATURES.

2.0 TRAVERSE THE MAIN SUPPLY DUCTWORK WHENEVER POSSIBLE. ALL MAIN BRANCHES SHOULD ALSO BE TRAVERSED WHERE DUCT ARRANGEMENT PERMITS. SELECTION OF TRAVERSE POINTS AND METHOD OF TRAVERSE SHOULD BE AS FOLLOWS:
A) TRAVERSE EACH MAIN OR BRANCH AFTER THE LONGEST POSSIBLE RUN FOR THE DUCT INVOLVED.
B) FOR TEST HOLE SPACING, REFER TO CHAPTER 14 OF THE 1997 ASHRAE HANDBOOK-FUNDAMENTALS.
C) TRAVERSE USING A PITOT TUBE AND MANOMETER WHERE VELOCITIES ARE OVER 600 FPM. BELOW THIS VELOCITY, USE EITHER A MICROMANOMETER AND PITOT TUBE OR A RECENTLY CALIBRATED THERMAL ANEMOMETER.
D) NOTE TEMPERATURE AND BAROMETRIC PRESSURE TO DETERMINE IF THEY NEED TO BE CORRECTED FOR STANDARD AIR QUANTITY. CORRECTIONS ARE NORMALLY INSIGNIFICANT BELOW 2000 FT. ELEVATION; HOWEVER, WHERE ACCURATE RESULTS ARE DESIRABLE, CORRECTIONS ARE JUSTIFIED.
E) AFTER ESTABLISHING TOTAL AIR BEING DELIVERED, ADJUST FAN SPEED TO OBTAIN DESIGN AIRFLOW, IF NECESSARY. CHECK POWER & SPEED TO SEE THAT MOTOR POWER AND/OR CRITICAL FAN SPEED HAVE NOT BEEN
F) PROPORTIONALLY ADJUST BRANCH DAMPERS UNTIL EACH HAS THE PROPER AIR VOLUME.
G) WITH ALL DAMPERS AND REGISTERS IN THE SYSTEM OPEN, AND WITH THE SUPPLY, RETURN AND EXHAUST BLOWERS OPERATING AT OR NEAR DESIGN SPEED, SET MINIMUM OUTDOOR AND RETURN AIR RATIO. IF DUCT TRAVERSE LOCATIONS ARE NOT AVAILABLE, THIS CAN BE DONE BY MEASURING THE MIXTURE TEMPERATURE WITH THERMOMETERS IN THE RETURN AIR, OUTDOOR AIR LOUVER, AND FILTER SECTION. AS AN APPROXIMATION, THE TEMPERATURE OF THE MIXTURE MAY BE CALCULATED FROM EQUATION (1). THE GREATER THE TEMPERATURE DIFFERENCE BETWEEN HOT AND COLD AIR, THE EASIER IT IS TO GET ACCURATE DAMPER SETTINGS. TAKE THE TEMPERATURE AT MANY POINTS IN A UNIFORM TRAVERSE TO BE SURE THERE IS NO STRATIFICATION. AFTER THE MINIMUM OUTDOOR AIR DAMPER HAS BEEN SET FOR THE PROPER PERCENTAGE OF OUTDOOR AIR, TAKE ANOTHER TRAVERSE OF MIXTURE TEMPERATURES AND INSTALL BAFFLING IF THE VARIATION FROM THE AVERAGE IS MORE THAN 5%. REMEMBER THAT STRATIFIED MIXED AIR TEMPERATURES VARY GREATLY WITH THE OUTDOOR TEMPERATURE IN COLD WEATHER, WHILE RETURN AIR TEMPERATURE HAS ONLY A MINOR EFFECT.

3.0 CAREFULLY SET THE SYSTEM FOR BALANCE USING THE FOLLOWING PROCEDURE: ADJUST THE SYSTEM WITH MIXING DAMPERS POSITIONED FOR MINIMUM DESIGN OUTDOOR AIR QUANTITIES NOTED.

4.0 BALANCE THE TERMINAL OUTLETS IN EACH CONTROL ZONE IN PROPORTION TO EACH OTHER. THE FOLLOWING STEPS MAY BE FOLLOWED TO BALANCE THE TERMINALS:
A) ONCE THE PRELIMINARY FAN QUANTITY IS SET, PROPORTION THE TERMINAL OUTLET BALANCE FROM THE OUTLETS INTO THE BRANCHES TO THE FAN. CONCENTRATE ON PROPORTIONING THE FLOW RATHER THAN THE ABSOLUTE QUANTITY. AS CHANGES ARE MADE TO THE FAN SETTINGS AND BRANCH DAMPERS, THE OUTLET TERMINAL QUANTITIES REMAIN PROPORTIONAL. BRANCH DAMPERS SHOULD BE USED FOR MAJOR ADJUSTING AND TERMINAL DAMPERS FOR TRIM OR MINOR ADJUSTMENT ONLY. IT MAY BE NECESSARY TO INSTALL ADDITIONAL SUB BRANCH DAMPERS TO DECREASE THE USE OF TERMINAL DAMPERS THAT CREATE OBJECTIONABLE NOISE.
B) NORMALLY, SEVERAL PASSES THROUGH THE ENTIRE SYSTEM ARE NECESSARY TO OBTAIN PROPER OUTLET VALUES.
C) THE TOTAL TESTED OUTLET AIR QUANTITY COMPARED TO DUCT TRAVERSE AIR QUANTITIES MAY BE AN INDICATOR OF DUCT LEAKAGE.
D) WITH TOTAL DESIGN AIR ESTABLISHED IN BRANCHES AND AT OUTLETS, PERFORM THE FOLLOWING:
(1) TAKE NEW FAN MOTOR AMPERAGE READINGS
(2) FIND STATIC PRESSURE ACROSS THE FAN
(3) READ AND RECORD STATIC PRESSURE ACROSS EACH COMPONENT (INTAKE, FILTERS, COILS AND MIXING DAMPERS)
(4) TAKE A FINAL DUCT TRAVERSE.

5.0 KITCHEN EXHAUST FANS SHALL BE AIR BALANCED AS FOLLOWS:
A) DETERMINE TOTAL EXHAUST AIR VOLUME AT DISCHARGE SIDE OF FAN.
B) DETERMINE VELOCITY AT EACH FILTER OF THE EXHAUST HOOD (MAIN HOOD = 19 FILTERS) AND AVERAGE THE READINGS TO DETERMINE THE AIR VOLUME UTILIZING THE FILTER AREA FACTOR OF 1.15.
C) RECORD AND COMPARE ITEMS A) AND B) ABOVE TO OBTAIN TRUE EXHAUST AIR VOLUME.

INSULATION

1.0 GENERAL

1.1 INSULATION SHALL BE APPLIED ON CLEAN, DRY SURFACES AND ONLY AFTER TESTS AND APPROVALS REQUIRED HAVE BEEN COMPLETED.

1.2 ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALL AND CEILING OPENINGS AND SLEEVES. SUITABLE FIRE STOPS SHALL BE INSTALLED WHERE REQUIRED.

1.3 INSULATION ON ALL COLD SURFACES MUST BE APPLIED WITH A CONTINUOUS, UNBROKEN VAPOUR SEAL.

1.4 HANGERS, SUPPORTS, ANCHORS, ETC., THAT ARE SECURED DIRECTLY TO COLD SURFACES, MUST BE ADEQUATELY INSULATED AND VAPOUR SEALED TO PREVENT CONDENSATION.

1.5 ALL SURFACE FINISHES SHALL BE EXTENDED TO PROTECT ALL SURFACES, ENDS, AND RAW EDGES OF INSULATION.

1.6 ALL DOMESTIC HOT AND COLD WATER PIPING SHALL BE INSULATED.

2.0 PLUMBING AND PIPING INSULATION

2.1 INSULATION MATERIAL
PIPE INSULATION: GLASS FIBRE INSULATION WITH FACTORY APPLIED JACKET; JOHNS-MANVILLE MICRO-LOK 650 OR APPROVED EQUAL.
JACKET EXPOSED: CANVAS FREE – A VAPOUR BARRIER JACKET, CONSISTING OF A WHITE GLASS FIBRE SURFACE BONDED TO AN ALUMINIZED FILM.
JACKET CONCEALED: ALL PURPOSE – A VAPOUR BARRIER JACKET, CONSISTING OF A HIGH INTENSITY WHITE KRAFT PAPER SURFACE BONDED TO AN ALUMINIZED FILM AND REINFORCED WITH A GLASS FIBRE YARN.
FITTINGS: PRE-MOULDED ONE PIECE PVC INSULATED FITTING COVERS; JOHNS-MANVILLE ZESTON OR APPROVED EQUAL.
AIR CONDITIONING UNIT RUNOUTS AND DRAIN LINES: ALL RUNOUTS FROM RISER OR MAIN TO THE AIR CONDITIONING UNITS AND AIR CONDITIONING UNIT DRAIN LINES SHALL BE INSTALLED WITH FLEXIBLE FOAM, CLOSED CELL STRUCTURE, PLASTIC INSULATION; JOHNS-MANVILLE AEROTUBE OR APPROVED EQUAL.

2.2 MINIMUM THICKNESS

A. DOMESTIC COLD WATER:
DOMESTIC HOT WATER SUPPLY:
DOMESTIC HOT WATER RETURN:

AMBIENT TEMPERATURE	PIPE SIZE	THICKNESS
BELOW 35F	ALL	1-1/2"
ABOVE 35F	ALL	1"

B. HYDRONIC HEATING SUPPLY:
HYDRONIC HEATING RETURN:

PIPE SIZE	THICKNESS
UP TO 2"	1"
2-1/2" TO 4"	1-1/2"
OVER 4"	2"

C. CHILLED WATER SUPPLY:
CHILLED WATER RETURN:
HORIZONTAL DRAINS:

PIPE SIZE	THICKNESS
UP TO 1-1/4"	1"
1-1/2" AND OVER	1-1/2"

D. AIR CONDITIONING UNIT RUNOUTS AND DRAIN LINES:

PIPE SIZE	THICKNESS
UP TO 3"	1/2"
4" AND OVER	3/4"

CUTS AND BUTT JOINTS OF INSULATION SHALL BE JOINED BE SEALING WITH A WATERPROOF VAPOUR BARRIER ADHESIVE.

3.0 DUCTWORK INSULATION

INSULATE ONLY DUCTWORK SHOWN AND/OR NOTED ON DRAWINGS.

A. THERMAL:

RECTANGULAR DUCT – RIGID GLASS FIBRE 1-1/2" THICK BOARD; JOHNS-MANVILLE SPIN-GLAS 650 BOARD OR APPROVED EQUAL. VAPOUR BARRIER SHALL CONSIST OF A FOIL SCRIM KRAFT PAPER LAMINATE CONSISTING OF ALUMINUM FOIL REINFORCED WITH GLASS FIBRE YARN AND LAMINATED TO A CHEMICALLY TREATED FIRE RESISTANT KRAFT.

ROUND DUCT – FLEXIBLE GLASS FIBRE 1-1/2" THICK BLANKET; JOHNS-MANVILLE MICROLITE WITH A FOIL SCRIM KRAFT FACING OR APPROVED EQUAL.

ALL EXHAUST DUCTS SHALL BE INSULATED WITHIN 6'-0" OF COLD OUTLET AT ROOF, ATTIC OR WALL WITH 1" THICK GLASS FIBRE INSULATION WITH FOIL FACED VAPOUR BARRIER (AS ABOVE).

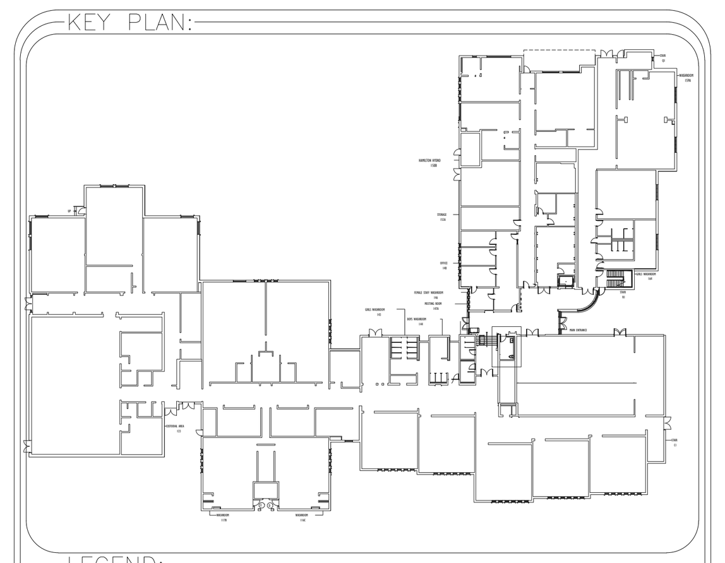
INSULATED OUTDOOR OR EXPOSED DUCTWORK SHALL BE FINISHED WITH 6 OZ. FIRE RETARDANT CANVAS LAGGED IN PLACE WITH FIRE RETARDANT LAGGING ADHESIVE, OUTDOOR VAPOUR BARRIER MASTIC FINISH WITH A REINFORCING MEMBRANE, ALL JOINTS SHALL HAVE A MINIMUM OVERLAP OF 3".

FLEXIBLE DUCT – CANA-FLEX TYPE C1-IV INSULATED POLYOLEFIN JACKET, CAN-FLEX TYPE C1-IA INSULATED ALUMINIZED JACKET, OR APPROVED EQUAL.

B. ACOUSTIC:

FLEXIBLE GLASS FIBRE 1" THICK DUCT LINER; JOHNS-MANVILLE LINACOUSTIC OR APPROVED EQUAL.

KEY PLAN:



LEGEND:

SYMBOL	DESCRIPTION

ISSUED:

No	DATE:	ISSUED:
0	OCT. 22/24	FOR PERMIT
1	NOV. 29/24	AS PER CLIENT COMMENTS

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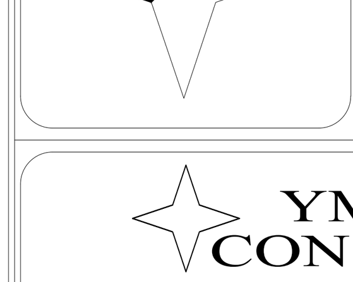

SEAL:

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226 Pacific Ave, Toronto, ON, M6P 2P5
Tel:(416) 3-888-444; Fax:(416) 849-0390
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THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN, AND HAS THE QUALIFICATIONS AND MEETS THE REQUIREMENTS SET OUT IN THE ONTARIO BUILDING CODE TO DESIGN THE WORK SHOWN ON THE ATTACHED DOCUMENTS.
QUALIFICATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.3. (5) OF THE BUILDING CODE
DAN D.M. PUSICA — NAME — SIGNATURE — 21266 BCIN
REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE
YMSD Consulting 29265

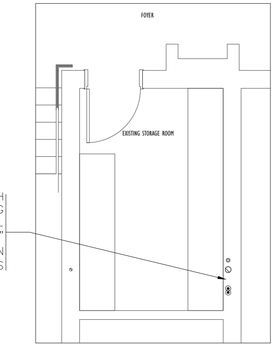
PROJECT:
BENNETTO ELEMENTARY SCH., HAMILTON, ONTARIO

SHEET TITLE:
MECHANICAL SPECIFICATIONS

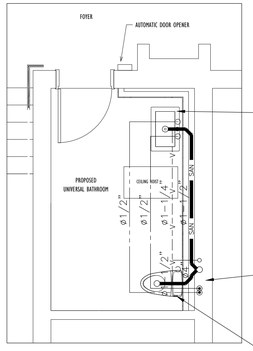
SCALE:	DATE:
1/4" = 1'	NOV. 29/24

PROJECT No:	DRAWING No:
W944_QE0	M-01

PLUMBING CONTRACTOR TO DEMOLISH PART OF WALL TO LOCATE EXISTING PLUMBING SERVICES IN WALL
EXISTING SERVICE RISERS: ø4" SANITARY DRAIN, ø2" SANITARY DRAIN AND ø1/2" D.C.W. AND D.H.W. LINES



PLUMBING DEMOLITION PLAN



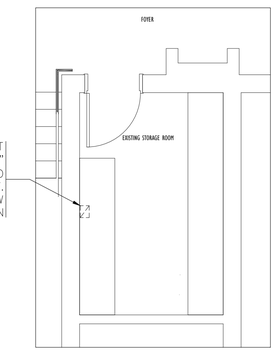
ø1-1/2" SANITARY DRAIN, 1-1/4" SANITARY VENT AND ø1/2" D.C.W. AND D.H.W. CONNECTIONS FOR NEW LAVATORY. LAVATORY AND FAUCET MAKE AND MODEL TO BE SELECTED BY ARCHITECT

EXISTING SERVICE RISERS FOR NEW FIXTURES TO BE CONNECTED: ø4" SANITARY DRAIN, ø2" SANITARY DRAIN AND ø1/2" D.C.W. AND D.H.W. LINES

ø4" SANITARY DRAIN, 1-1/2" SANITARY VENT AND ø1/2" D.C.W. CONNECTIONS FOR NEW TOILET. TOILET AND TRIM MAKE AND MODEL TO BE SELECTED BY ARCHITECT

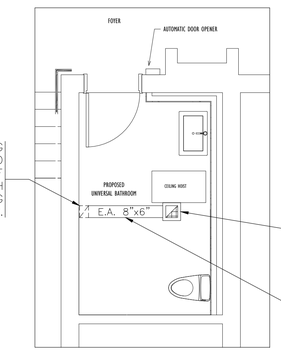
PLUMBING PROPOSED PLAN

HVAC CONTRACTOR TO DEMOLISH PART OF CEILING TO LOCATE EXISTING 8"x6" CAPPED EXHAUST DUCT LEADING TO EXISTING EXHAUST FAN ON ROOF. REMOVE DUCT CAP TO PROVIDE NEW LINE AS PER PROPOSED PLAN



HVAC DEMOLITION PLAN

CONNECT NEW DUCT TO EXISTING DUCT RISER, HVAC CONTRACTOR TO VERIFY WORKING CONDITIONS OF EXISTING FAN ON ROOF, REPLACE WITH UNIT OF EQUAL CAPACITIES IF EXISTING UNIT ID TO BE DECOMMISSIONED.

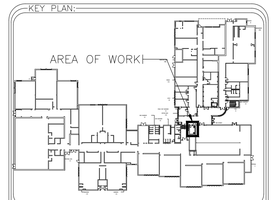


NEW 12"x12" EXHAUST GRILLE SIMILAR TO EH PRICE MODEL 80. COLOUR AND STYLE TO BE DECIDED BY ARCHITECT

NEW 8"x6" EXHAUST DUCT FROM EXISTING RISER TO NEW GRILLE. PROVIDE WITH BACKDRAFT DAMPER NEAR GRILLE.

HVAC PROPOSED PLAN

KEY PLAN:



LEGEND:

SYMBOL	DESCRIPTION
E.A.	NEW EXHAUST AIR DUCT
E.A.	EXISTING EXHAUST AIR DUCT
	EXHAUST GRILLE
	COLD WATER LINE
	HOT WATER LINE
SAN	SANITARY LINE
V	SANITARY VENT LINE

ISSUED:

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DAN PUSICA, P.ENG

SIGNATURE: .....

DATE: .....

NORTH ARROW:

SEAL:

LICENSED PROFESSIONAL ENGINEER
D.PUSICA
90525346
NOV. 29/24
PROVINCE OF ONTARIO

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QUALIFICATION INFORMATION
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DAN D.M. PUSICA		21266
name	signature	BCIN

REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE

YMSD Consulting	29265

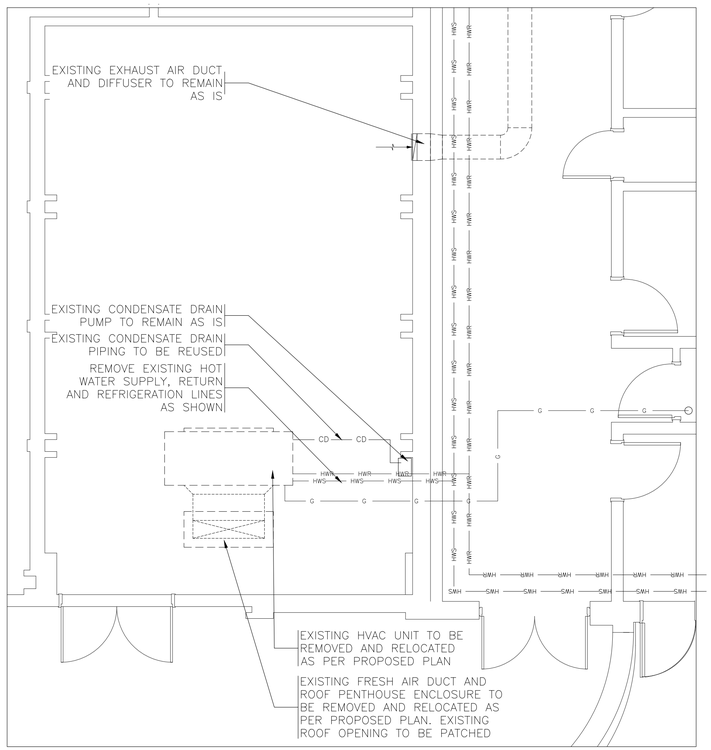
PROJECT:

BENNETTO ELEMENTARY SCH.,
HAMILTON, ONTARIO

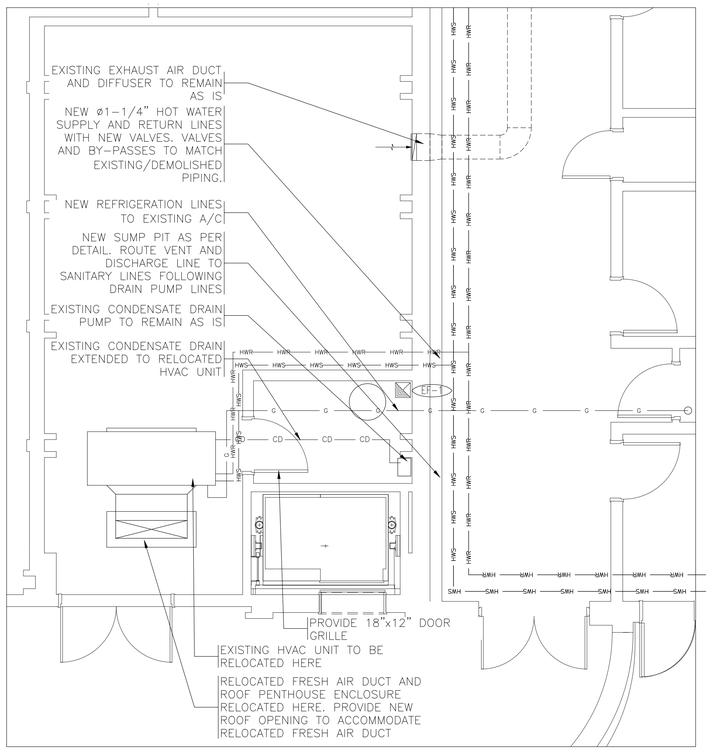
SHEET TITLE:

WASHROOM ALTERATIONS

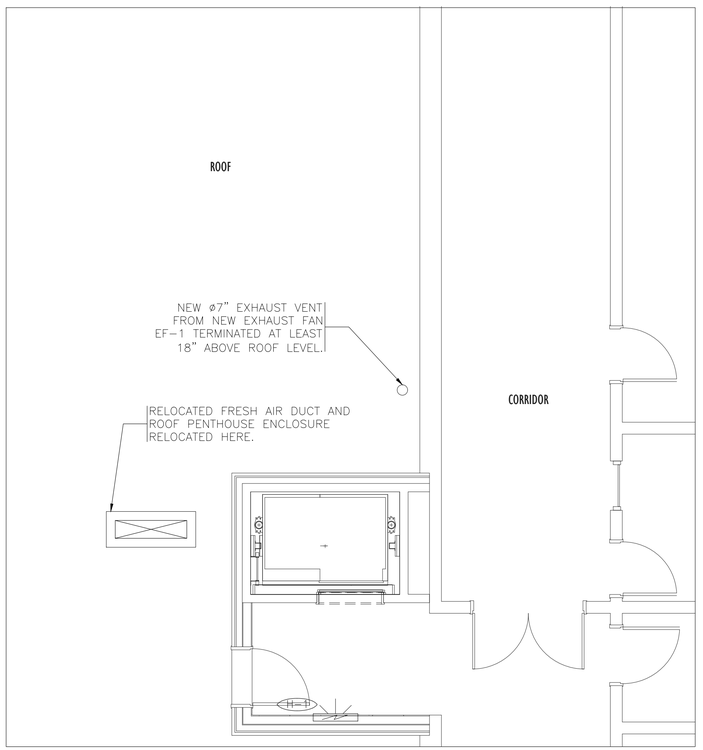
SCALE:	DATE:
1/4" = 1'	NOV. 29/24
PROJECT No:	DRAWING No:
W944_QE0	M-02



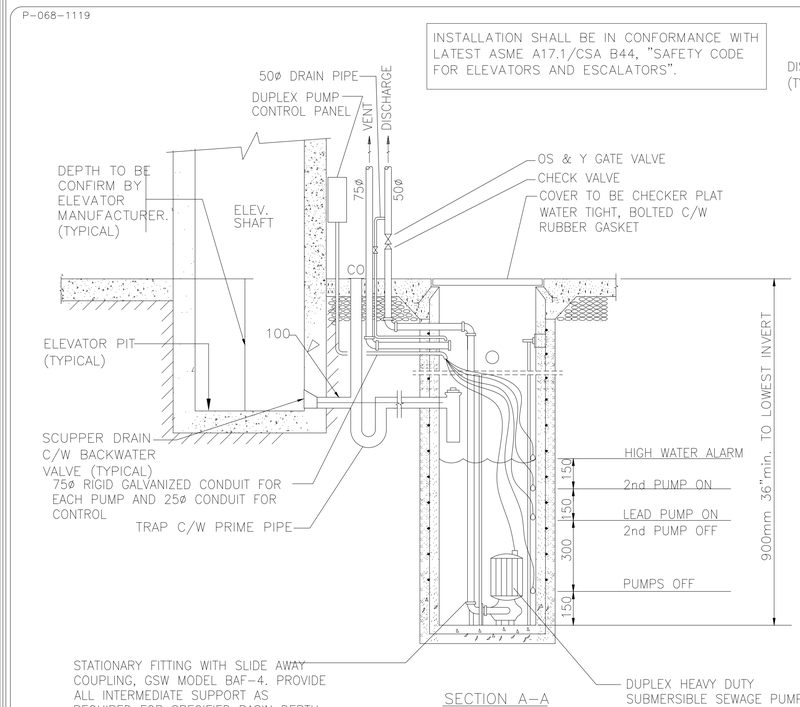
HVAC DEMOLITION PLAN MAIN FLOOR



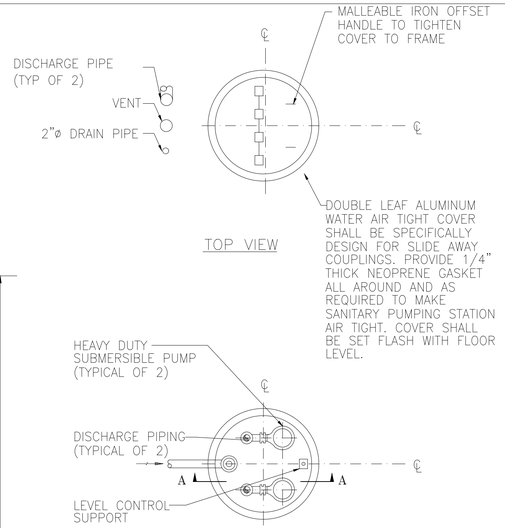
HVAC PROPOSED PLAN MAIN FLOOR



ROOF PLAN/ SECOND FLOOR PLAN



SECTION A-A

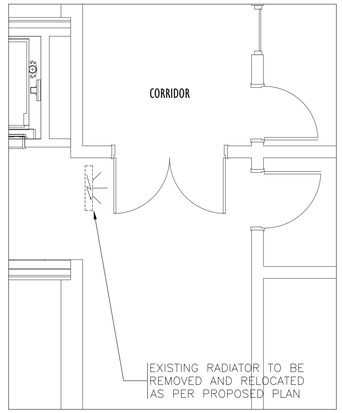


TOP VIEW

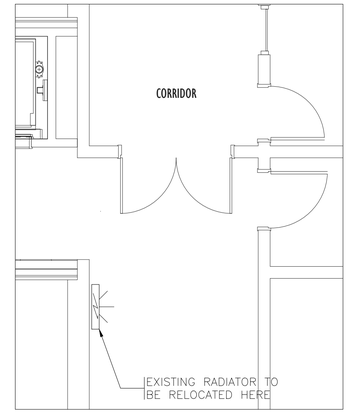
PLAN

NOTE:
SUMP PIT TO BE MINIMUM 36"x36"
SUBMERSIBLE PUMPS:
2 BARNES 2SEV2022L SUBMERSIBLE PUMPS, 2hp,3450RPM 240v, 1-phase, 20'cords,
each handling a capacity of 50 gpm @20' T.D.H., 2" discharges.
LDP115 DUPLEX ALTERNATING CONTROL PANEL, 115v, 1-phase, circuit-breakers, Cema 1 enclosure.
LHW115 HIGH WATER ALARM PANEL, 115v, extra-relay, Cema 1 enclosure.
4 LS20 Mechanical Float Switches
30"dia. 48" deep fiberglass basin, c/w checkered steel cover plate.

ELEVATOR DRAIN PUMPING STATION
SCALE: N.T.S.



HVAC DEMOLITION PLAN SECOND FLOOR



HVAC PROPOSED PLAN SECOND FLOOR

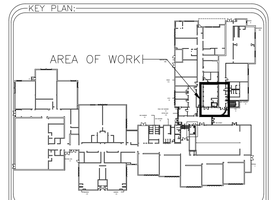
EXHAUST FAN SCHEDULE

TAG	MAKE	MODEL	TYPE	CFM	ESP	RPM	ELECTRICAL		REMARKS
							AMPS	VOLTAGE	
EF-1	REVERSOMATIC	QCF-500	COMMERCIAL EXHAUST FAN BOX WITH GRILLE	450	0.15	1050	4.2	115/1/60	c/ REVERSE ACTING T'STAT IN ELEV. MACHINE ROOM

ELECTRIC HEATER SCHEDULE

TAG	MAKE	MODEL	TYPE	HEATING OUTPUT (BTU/H)	ELECTRICAL		REMARKS
					AMPS	VOLTAGE	
H-1	MARLEY	QMARK CWH1201DSAQ	COMMERCIAL FAN FORCED WALL HEATER	6824 (2kW)	15	120/1/60	65 CFM AIR FLOW BUILT-IN THERMOSTAT

KEY PLAN:



LEGEND:

SYMBOL	DESCRIPTION
E.A.	EXISTING EXHAUST AIR DUCT
F.A.	NEW FRESH AIR DUCT
F.A.	REMOVED FRESH AIR DUCT
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY EXISTING
HWR	HOT WATER RETURN EXISTING
HWS	HOT WATER SUPPLY DEMO
HWR	HOT WATER RETURN DEMO
G	REFRIGERATION LINE NEW
G	REFRIGERATION LINE DEMO
CD	CONDENSATE DRAIN NEW
CD	CONDENSATE DRAIN EXISTING
EF-1	EXHAUST FAN
H-1	ELECTRIC HEATER

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NORTH ARROW:

SEAL:

LICENSED PROFESSIONAL ENGINEER
D.PUSICA
90525346
NOV. 29/24
PROVINCE OF ONTARIO

YMSD CONSULTING
226 Pacific Ave, Toronto, ON, M6P 2P5
Tel:(416) 3-888-444; Fax:(416) 849-0390
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THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN, AND HAS THE QUALIFICATIONS AND MEETS THE REQUIREMENTS SET OUT IN THE ONTARIO BUILDING CODE TO DESIGN THE WORK SHOWN ON THE ATTACHED DOCUMENTS.
QUALIFICATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.1 (5) OF THE BUILDING CODE
DAN D.M. PUSICA — 21266
NAME — SIGNATURE — BCIN
REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE
YMSD Consulting — 29265

PROJECT:

BENNETTO ELEMENTARY SCH., HAMILTON, ONTARIO

SHEET TITLE:

ELEVATOR INSTALLATION

SCALE: 1/4" = 1'

DATE: NOV. 29/24

PROJECT No: W944_QE0

DRAWING No: M-03

P-068-1119

GENERAL ELECTRICAL NOTES

1. MAKE SITE VISIT(S) AS NECESSARY BEFORE TENDER TO CHECK AND VERIFY ALL EXISTING CONDITIONS. MAKE ALLOWANCE FOR ANY NEW OR EXISTING SERVICE AND EQUIPMENT REALLOCATIONS NECESSARY TO COMPLETE THE WORK AND INCLUDE IN THE TENDER PRICE.
2. THE DRAWINGS SHOW THE GENERAL INTENT OF THE WORK, NOT THE DETAILS OF INSTALLATION. CO-ORDINATE THE ROUTING AND INSTALLATION OF ALL ELECTRICAL SERVICES WITH ALL EXISTING CONDITIONS, STRUCTURE AND THE WORK OF ALL OTHER TRADES.
3. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL OR INTERIOR DESIGN DRAWINGS FOR THE EXACT LOCATION OF ANY DEVICES, FIXTURES, ETC.
4. BASE BUILDING DRAWINGS AND SPECIFICATIONS ARE TO BE READ IN CONJUNCTION WITH THESE DRAWINGS AND SPECIFICATIONS SUCH THAT THE MAXIMUM CONDITIONS WILL GOVERN AND BE ALLOWED FOR.
5. PROVIDE A WRITTEN WARRANTY FOR ALL MATERIALS, EQUIPMENT AND LABOR FOR A ONE-YEAR PERIOD TO BEGIN AT THE TIME WHEN THE WORK IS DESIGNATED ACCEPTABLE BY THE CONSULTANT.
6. CO-ORDINATE THE ELECTRICAL WORK WITH ALL OTHER TRADES AND ENSURE THAT ALL SUBCONTRACTORS ARE OF COMPATIBLE UNION AFFILIATIONS.
7. PROVIDE WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, BYLAWS AND TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION. MAKE APPLICATION, PROVIDE, OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND INSPECTIONS.
8. ENSURE THAT BOTH PROVINCIAL AND FEDERAL TAXES ARE INCLUDED WHERE REQUIRED.
9. PROVIDE IN THE TENDER PRICE ANY COSTS FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE.
10. PROVIDE ALL CLEAN-UPS, STORAGE, LIFTING, FLASHING, DRILLING, CUTTING AND PATCHING AS REQUIRED. OBTAIN PERMISSION BEFORE PENETRATING FLOOR SLAB OR STRUCTURE. PROVIDE X-RAY OF SLAB IF REQUIRED BY LANDLORD OR BASE BUILDING STRUCTURAL CONSULTANT. PATCH AND SEAL ALL OPENINGS IN FLOORS, WALLS AND PARTITIONS WITH FIRE RESISTANT INSULATION AND APPROVED FIRE STOP SEALANT.
11. NO ALTERNATIVES FOR EQUIPMENT SHALL BE ACCEPTED WITHOUT WRITTEN APPROVAL OF THE CONSULTANT.
12. PRODUCTS NOT SPECIFICALLY SPECIFIED SHALL BE OF A QUALITY CONSISTENT WITH THE REMAINDER OF THE SPECIFICATION.

EXIT AND EMERGENCY LIGHTS NOTES

1. THE FOLLOWING NOTES SHALL APPLY TO THE CONSTRUCTION GOVERNED BY ALL DRAWINGS ATTACHED HERETO. ALL REFERENCES ARE TO THE APPLICABLE REQUIREMENTS OF THE ONTARIO REGULATION 403/97 UPDATE JULY 1, 2005 CONTAINING ONTARIO REGULATION 245/05 UNDER THE ONTARIO BUILDING CODE ACT THE ONTARIO BUILDING CODE (O.B.C.)
2. GENERAL CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK, AND TO REPORT ANY DISCREPANCIES TO THE ARCHITECT.
3. INSTALLATION OF ALL PRODUCTS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND SPECIFICATIONS. WHERE IN CONFLICT WITH GOVERNING CODES AND/OR REGULATIONS, THE CODES/REGULATIONS SHALL APPLY.
4. EXIT LIGHTS SHALL BE PROVIDED AS PER O.B.C. ARTICLE 3.4.5.11
5. MINIMUM LIGHTING SHALL BE PROVIDED IN CONFORMANCE WITH O.B.C. ARTICLE 3.2.7.1
6. EMERGENCY LIGHTING SHALL BE PROVIDED IN EXITS AND PRINCIPLE ROUTES PROVIDING ACCESS TO AN EXIT IN OPEN FLOOR AREAS AS PER O.B.C. ARTICLE 3.2.7.3
7. APPLY FOR ALL PERMITS, SERVICES & AND PAY ALL FEES TO THE AUTHORITIES HAVING JURISDICTION.
8. CONTRACTORS SHALL BE RESPONSIBLE FOR EXAMINING THE SITE TO DETERMINE THE EXTENT OF EXISTING CONDITIONS, PRIOR TO PROCEEDING WITH ANY QUOTATIONS.
9. ELECTRICAL WIRING AND CABLES EXPOSED WITHIN THE CEILING SPACE MUST CONFORM TO THE PLENUM REQUIREMENTS OF OBC SENTENCE 3.6.4.3.(1).
10. BATTERY OPERATED EMERGENCY LIGHTING UNITS MUST HAVE SUFFICIENT BATTERY CAPACITY TO OPERATE THE EMERGENCY LIGHTS FOR AT LEAST 2 HOURS AND CONFORM TO CSA C22.2 No. 141-02

LIGHTING SCHEDULE

SYMBOL	DESCRIPTION/SPECIFICATION
	4' x 2' LED LUMINAIRE
	2' x 2' LED LUMINAIRE
	14" x 4' LED LUMINAIRE
	THREE WAY TOGGLE SWITCH
	GANGED SWITCHES
	MOTION SENSOR SWITCHES
	SINGLE POLE TOGGLE SWITCH
	MOTION SENSOR
	EXISTING LIGHTS TO REMAIN

1. ALL LUMINAIRES WILL BE SELECTED BY CLIENT OR ARCHITECT

UNIVERSAL WASHROOM KIT

SYMBOL	DESCRIPTION/SPECIFICATION
	WASHROOMS VISUAL WARNING
PP20 2P	TIMING RELAY C/W TWO CONTACTS
	POWER DOOR OPENER (PUSH BUTTON) 120V, 15A CIRCUIT
$M	MOTION SWITCH

EMERGENCY LIGHTING

SYMBOL	DESCRIPTION/SPECIFICATION
	WALL/CEILING EXIT LIGHT ARROWS AS INDICATED
	WALL EXIT LIGHT EMERGENCY REMOTE HEAD COMBO
	BATTERY PACK C/W HEADS AS INDICATED
	WALL/CEILING MOUNTED EMERGENCY REMOTE HEADS

ELECTRICAL NOTES

1. ALL WORK MUST CONFORM TO ONTARIO ELECTRICAL SAFETY CODE, LOCAL MUNICIPAL & PROVINCIAL LOWS AND REGULATIONS.
2. APPLY FOR ALL PERMITS, SERVICES & AND PAY ALL FEES TO THE AUTHORITIES HAVING JURISDICTION.
3. CONTRACTORS SHALL BE RESPONSIBLE FOR EXAMINING THE SITE TO DETERMINE THE EXTENT OF EXISTING CONDITIONS, PRIOR TO PROCEEDING WITH ANY QUOTATIONS.
4. ALL CONTRACTORS SHALL INCLUDE ALL ITEMS/FIXTURES AS SPECIFIED BY ENGINEER'S DRAWINGS. ANY SUBSTITUTION SHALL BE APPROVED BY THE DESIGNERS PRIOR TO PROCEEDING WITH ANY WORK.
5. ALL ELECTRICAL EQUIPMENT MOUNTED, CONNECTED OR DISCONNECTED BY THIS CONTRACTOR, WHETHER SUPPLIED BY HIM OR NOT SHALL BE IDENTIFIED.
6. ARRANGE INSPECTION OF ALL WORK BY THE POWER AUTHORITY INSPECTION DEPARTMENT, ON COMPLETION OF WORK PRESENT TO THE OWNER THE UNCONDITIONAL CERTIFICATE OF APPROVAL.
7. ALL ELECTRICAL EQUIPMENT REQUIRED TO COMPLETE THE WORK, WHETHER SHOWN, MENTIONED OR NOT SHALL BE INCLUDED.
8. PROVIDED "AS BUILT" DRAWING TO THE OWNER, ON COMPLETION OF THE WORK. ARRANGE INSPECTION BY THE ENGINEER.
9. PROVIDE TO THE OWNER A WRITTEN GUARANTEE FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE.
10. ALL MATERIAL SHALL BE NEW, OF TYPE SPECIFIED, FREE FROM DEFECTS AND C.S.A. APPROVED. SUBMIT SHOP DRAWINGS FOR ALL ELECTRICAL EQUIPMENT REPORTED TO THE DESIGNERS.
11. THE MECHANICAL & ELECTRICAL ENGINEER'S DRAWINGS & SPECIFICATIONS SHALL GOVERN, WITH THE EXCEPTION OF THE LOCATION OF FIXTURES, OUTLETS, SWITCHES & OPENINGS NOTED & DIMENSIONED ON THE DESIGN DRAWINGS. DISCREPANCIES TO BE OPENINGS NOTED & DIMENSIONED ON THE DESIGN DRAWINGS. DISCREPANCIES TO BE REPORTED TO THE DESIGNERS.
12. GENERAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL DIVISION 16 WORK (INCLUDING CABLE INSTALLERS, BELL, SECURITY & OTHER ELECTRICAL SUB TRADES) AND SHALL SCHEDULE TRADES AS REQUIRED.
13. ALL OUTLETS, SWITCHES, DEVICES, FIXTURES & OPENINGS ARE DIMENSIONED TO CENTER OF OUTLET BOX UNLESS OTHERWISE NOTED. USE MULTI-GANGED OUTLET BOXES WHEREVER POSSIBLE (WITH COMMON FACE PLATES) UNLESS DIMENSIONED AS SEPARATE ON DESIGNERS DRAWINGS. REPORT ANY DISCREPANCIES OR QUERIES TO THE DESIGNER PRIOR TO PROCEEDING WITH ANY WORK.
14. ALL OUTLET BOXES SHALL BE STAGGERED IN PARTITION (NOT BACK TO BACK) AS REQUIRED TO ENSURE THAT CONTINUOUS SOUND ATTENUATION BATTS CAN BE INSTALLED WITHOUT INTERRUPTION.
15. WIRING SYSTEM SHOULD BE WITH BX CABLES MIN. SIZE #12 AWG
16. PROVIDE ALL ELECTRICAL INSTALLATION FOR NEW OR RELOCATED MECHANICAL EQUIPMENT.
17. CONTRACTOR TO PROVIDE AFCI BREAKERS FOR ALL RECEPTACLES INSTALLED IN BEDROOMS
18. CONTRACTOR SHALL PROVIDE AND INSTALL 5-20A GFI RECEPTACLES ON EITHER SIDE OF THE KITCHEN SINK WITH NO MORE THAN 2 GFI RECEPTACLES ON ONE 20A CIRCUIT

NOTE: CONTRACTOR DO NOT HAVE INFORMATIONS REGARDING ELECTRICAL SPECS OF ELEVATOR(AMPACITY, VOLTAGE AND PHASE NUMBER).

ELECTRICAL SCHEDULE

SYMBOL	DESCRIPTION/SPECIFICATION
	DUPLEX RECEPTACLE 115V, 15A
GFI	GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX RECEPTACLE DEDICATED CIRCUIT 120V, 15A/20A.
	SPECIAL PURPOSE RECEPTACLE 220V,30A
	RECEPTACLES MOUNTED OVER COUNTER
	DIRECT CONNECTION, CIRCUIT 220V
	CEILING MOUNTED RECEPTACLE
	EXHAUST FAN
	VOICE/DATA 2-PORT SURFACE MOUNT HOUSING, CAT6
	FLOOR MOUNTED RECEPTACLE
	PANELBOARD FLUSH MOUNTED/ SURFACE MOUNTED
	POWER DOOR OPENER (PUSH BUTTON) 120V, 15A CIRCUIT

1. NOT ALL SYMBOLS SHOWN IN LEGEND ARE NECESSARILY USED IN THE DRAWING SET

LIGHTING & DISTRIBUTION PANELS "P"

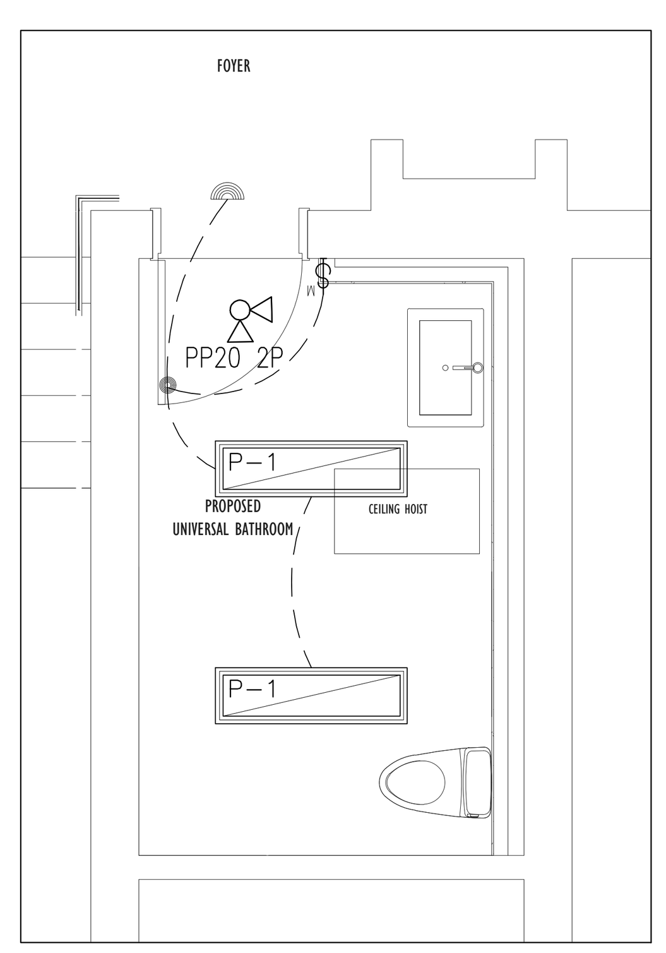
VOLTAGE: 120/208V
MAINS: 200A, 3ø, 4W
MOUNTING: FLUSH WITH WALL OR SURFACE
LOCATION:

DESCRIPTION	WIRE	BKR	CIRCUIT	CIRCUIT	BKR	WIRE	DESCRIPTION
GENERAL LIGHTING	2#12AWG + GND	15A	1	2			
EMERGENCY LIGHTING	2#12AWG + GND	15A	3	4			
GFI RECEPTACLES	2#12AWG + GND	15A	5	6			
POWER DOOR OPENER	2#12AWG + GND	15A	7	8			
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			
			31	32			
			33	34			
			35	36			
			37	38			
			39	40			
			41	42			
			43	44			
			45	46			
			47	48			

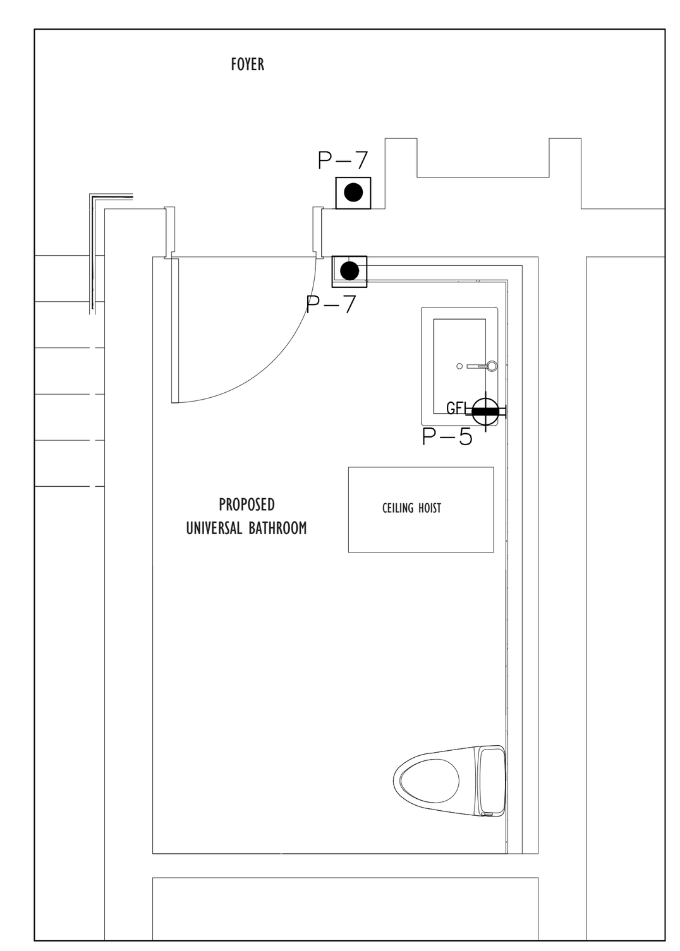
NOTES:
- PANELS C/W "PLUG-IN" OR BOLT-ON BREAKERS
- PANELS SHALL BE SUITABLE FOR THE USE OF DOUBLE BREAKERS WHICH SHALL BE USED SHOULD THE ACTUAL PROPORTION OF REQUIRED CIRCUITS/EMPTY SPACE EXCEED CODE REQUIREMENTS.

10kA

CIRCUIT NUMBERS ON THIS DRAWING ARE FOR DESIGN PURPOSE ONLY, CONTRACTOR SHALL ESTABLISHED A CORRECT CONNECTION CIRCUT NUMBER AT SITE DURING

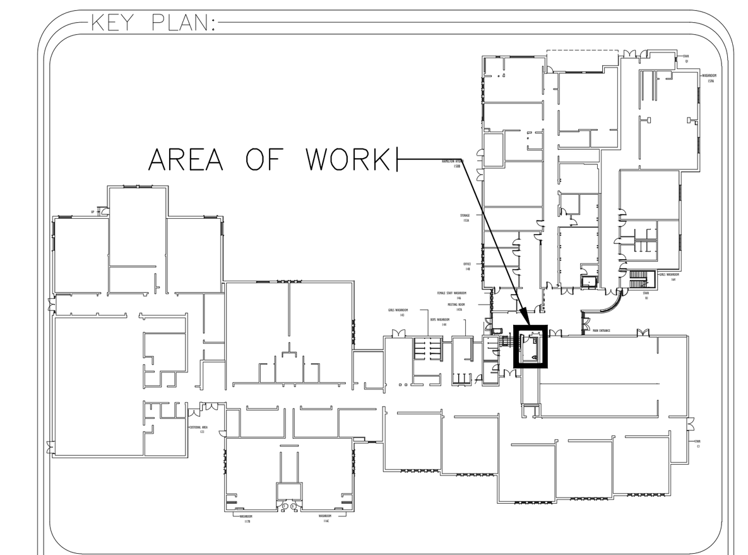


LIGHTING PROPOSED PLAN



SMALL POWER PROPOSED PLAN

KEY PLAN:



LEGEND:

SYMBOL	DESCRIPTION

ISSUED:

No:	DATE:	ISSUED:
0	OCT. 22/24	FOR PERMIT
1	NOV. 28/24	AS PER CLIENT COMMENTS

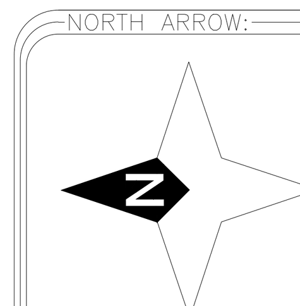
CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT DECREPANCIES TO ENGINEER. AND AWAIT FURTHER INSTRUCTION BEFORE COMMENCING WORK.
DO NOT SCALE DRAWINGS

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS SIGNED BY: DAN PUSICA, P.ENG

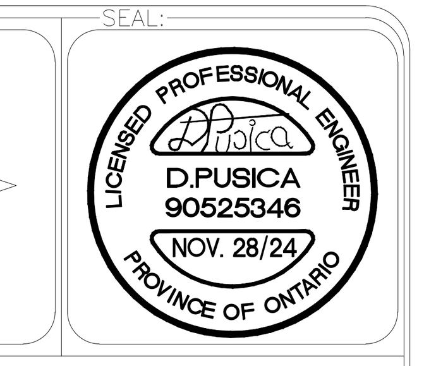
SIGNATURE: ....

DATE: ....

NORTH ARROW:



SEAL:



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REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.3. (5) OF THE BUILDING CODE

DAN D.M. PUSICA — 21266
NAME — SIGNATURE — BCIN

REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE

YMSD Consulting — 29265

PROJECT:

BENNETTO ELEMENTARY SCH., HAMILTON, ONTARIO

SHEET TITLE:

WASHROOM ALTERATIONS

SCALE:	DATE:
1/4" = 1'	NOV. 28/24
PROJECT No:	DRAWING No:
W944_QE0	E-01

LIGHTING & DISTRIBUTION PANELS "A"

VOLTAGE: 120/208V
MAINS: 200A, 3ϕ, 4W
MOUNTING: FLUSH WITH WALL OR SURFACE
LOCATION:

DESCRIPTION	WIRE	BKR	CIRCUIT	BKR	WIRE	DESCRIPTION
GENERAL LIGHTING	3ϕ5WG + GND	15A	1 2	15A	3ϕ5WG + GND	GENERAL LIGHTING
RECEPTACLES	3ϕ5WG + GND	15A	3 4	15A	3ϕ5WG + GND	RECEPTACLES
EMERGENCY LIGHTING	3ϕ5WG + GND	15A	5 6			
			7 8			
			9 10			
			11 12			
			13 14			
			15 16			
			17 18			
			19 20			
			21 22			
			23 24			
			25 26			
			27 28			
			29 30			
			31 32			
			33 34			
			35 36			
			37 38			
			39 40			
			41 42			
			43 44			
			45 46			
			47 48			

NOTES:
- PANELS C/W "PLUG-IN" OR BOLT-ON BREAKERS
- PANELS SHALL BE SUITABLE FOR THE USE OF DOUBLE BREAKERS WHICH SHALL BE USED SHOULD THE ACTUAL PROPORTION OF REQUIRED CIRCUITS/EMPTY SPACE EXCEED CODE REQUIREMENTS.

10kA

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LIGHTING & DISTRIBUTION PANELS "B"

VOLTAGE: 120/208V
MAINS: 200A, 3ϕ, 4W
MOUNTING: FLUSH WITH WALL OR SURFACE
LOCATION:

DESCRIPTION	WIRE	BKR	CIRCUIT	BKR	WIRE	DESCRIPTION
GENERAL LIGHTING	3ϕ5WG + GND	15A	1 2			
H-1	3ϕ5WG + GND	20A	3 4			
PUMP	3ϕ5WG + GND	15A	5 6			
PUMP	3ϕ5WG + GND	15A	7 8			
LDP115	3ϕ5WG + GND	15A	9 10			
LHR115	3ϕ5WG + GND	15A	11 12			
EMERGENCY LIGHTING	3ϕ5WG + GND	15A	13 14			
			15 16			
			17 18			
			19 20			
			21 22			
			23 24			
			25 26			
			27 28			
			29 30			
			31 32			
			33 34			
			35 36			
			37 38			
			39 40			
			41 42			
			43 44			
			45 46			
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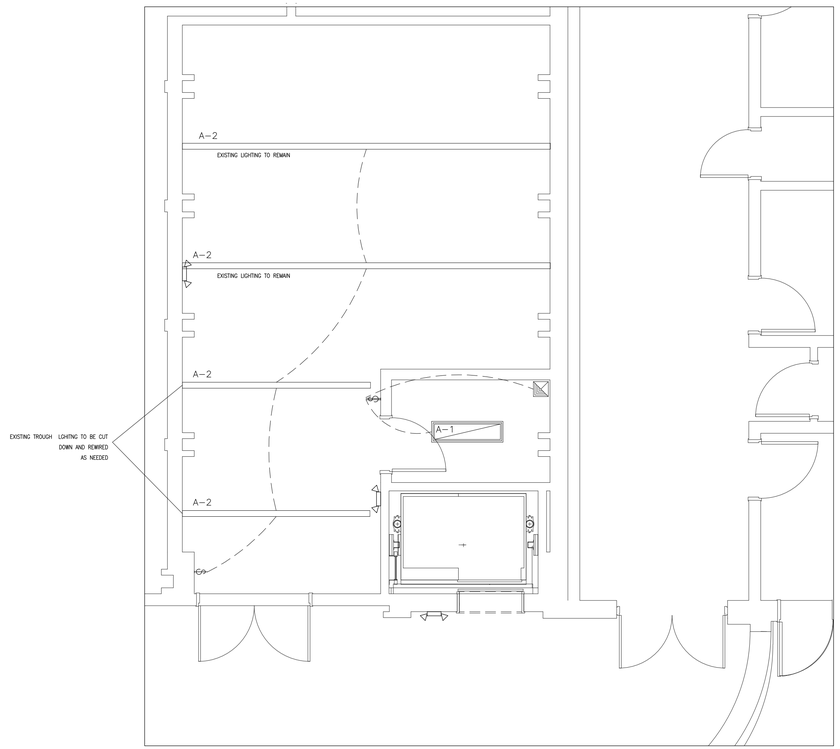
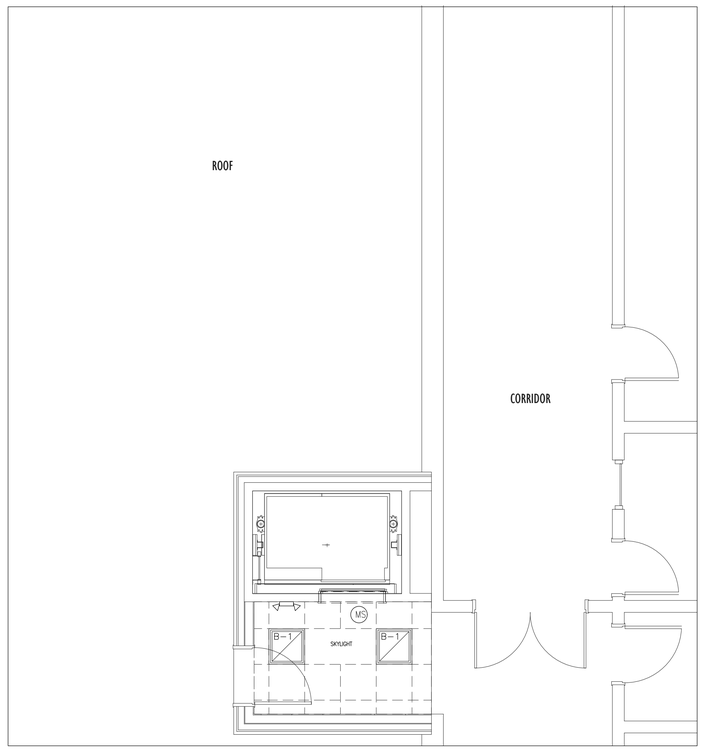
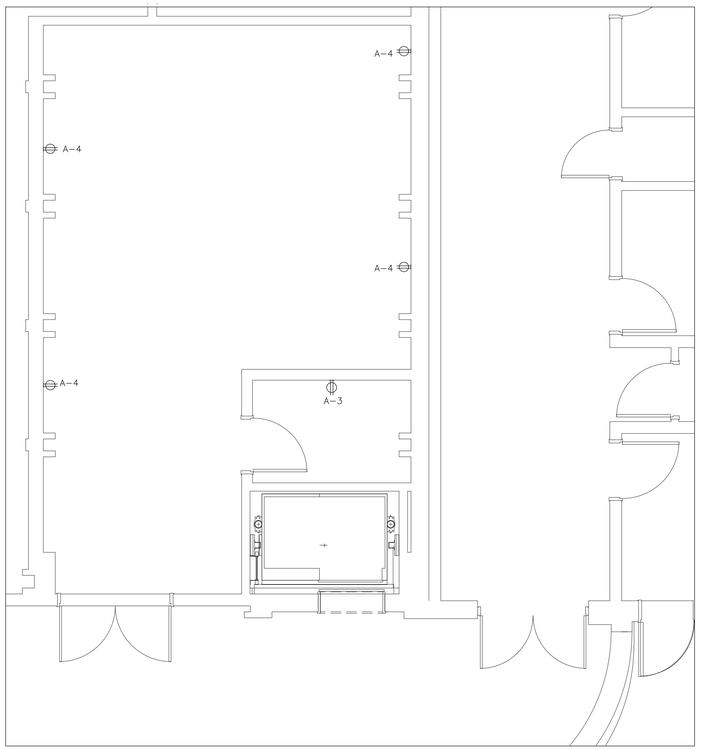


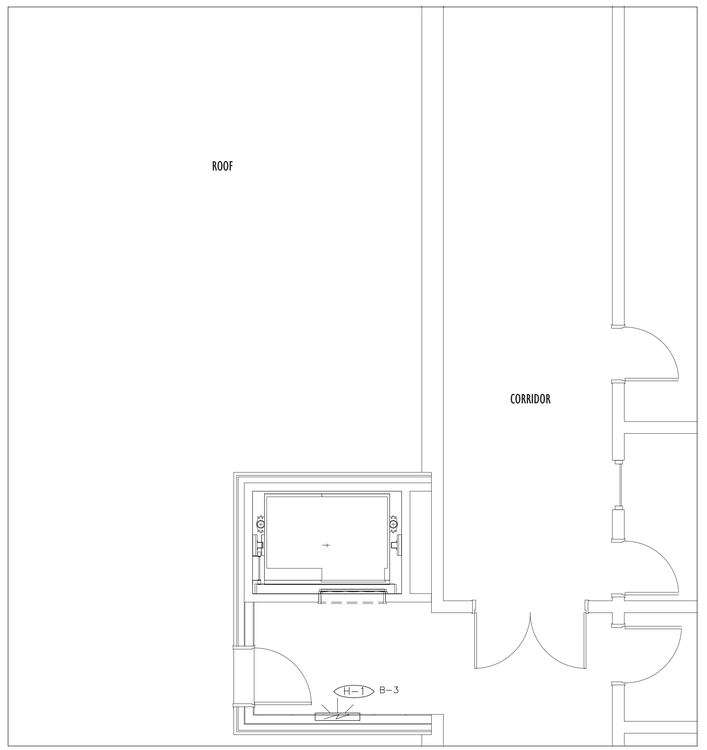
LIGHTING PROPOSED PLAN MAIN FLOOR



LIGHTING ROOF PLAN/ SECOND FLOOR PLAN

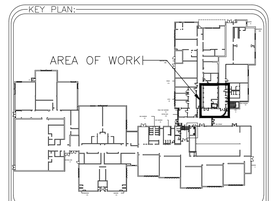


SMALL POWER PROPOSED PLAN MAIN FLOOR



SMALL POWER ROOF PLAN/ SECOND FLOOR PLAN

KEY PLAN:



LEGEND:

SYMBOL	DESCRIPTION

ISSUED:

No:	DATE:	ISSUED:
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SIGNATURE: .....

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LICENSED PROFESSIONAL ENGINEER
D.PUSICA
90525346
NOV. 28/24
PROVINCE OF ONTARIO

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NAME — SIGNATURE — BCIN

REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE
YMSD Consulting — 29265

PROJECT:

BENNETTO ELEMENTARY SCH.,
HAMILTON, ONTARIO

SHEET TITLE:

ELEVATOR INSTALLATION

SCALE:	DATE:
1/4" = 1'	NOV. 28/24

PROJECT No:	DRAWING No:
W944_QEO	E-02

ELECTRICAL NOTES

1. ALL WORK MUST CONFORM TO ONTARIO ELECTRICAL SAFETY CODE, LOCAL MUNICIPAL & PROVINCIAL LOWS AND REGULATIONS.
2. APPLY FOR ALL PERMITS, SERVICES & AND PAY ALL FEES TO THE AUTHORITIES HAVING JURISDICTION.
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14. ALL OUTLET BOXES SHALL BE STAGGERED IN PARTITION (NOT BACK TO BACK) AS REQUIRED TO ENSURE THAT CONTINUOUS SOUND ATTENUATION BATTS CAN BE INSTALLED WITHOUT INTERRUPTION.
15. WIRING SYSTEM SHOULD BE WITH BX CABLES MIN. SIZE #12 AWG
16. PROVIDE ALL ELECTRICAL INSTALLATION FOR NEW OR RELOCATED MECHANICAL EQUIPMENT.
17. CONTRACTOR TO PROVIDE AFCI BREAKERS FOR ALL RECEPTACLES INSTALLED IN BEDROOMS
18. CONTRACTOR SHALL PROVIDE AND INSTALL 5-20A GFI RECEPTACLES ON EITHER SIDE OF THE KITCHEN SINK WITH NO MORE THAN 2 GFI RECEPTACLES ON ONE 20A CIRCUIT

NOTE: CONTRACTOR TO CHECK POWER REQUIREMENTS FOR CHAIR/STAIR LIFTS (AMPACITY, PHASE AND VOLTAGE).

ELECTRICAL SCHEDULE	
SYMBOL	DESCRIPTION/SPECIFICATION
	DUPLEX RECEPTACLE 115V, 15A
GFI	GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX RECEPTACLE DEDICATED CIRCUIT 120V, 15A/20A.
	SPECIAL PURPOSE RECEPTACLE 220V,30A
	RECEPTACLES MOUNTED OVER COUNTER
	DIRECT CONNECTION, CIRCUIT 220V
	CEILING MOUNTED RECEPTACLE
	EXHAUST FAN
	VOICE/DATA 2-PORT SURFACE MOUNT HOUSING, CAT6
	FLOOR MOUNTED RECEPTACLE
	PANELBOARD FLUSH MOUNTED/ SURFACE MOUNTED
	POWER DOOR OPENER (PUSH BUTTON) 120V, 15A CIRCUIT
1. NOT ALL SYMBOLS SHOWN IN LEGEND ARE NECESSARILY USED IN THE DRAWING SET	

LIGHTING & DISTRIBUTION PANELS "B"

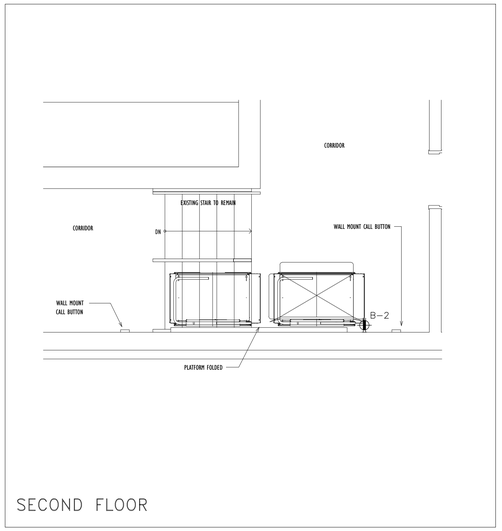
VOLTAGE: 120/208V
MAINS: 200A, 3Ø, 4W
MOUNTING: FLUSH WITH WALL OR SURFACE
LOCATION:

DESCRIPTION	WIRE	BKR	CIRCUIT		BKR	WIRE	DESCRIPTION
			1	2	20A	1Ø#10AWG + GND	CHAIR/STAIR LIFTS
			3	4			
			5	6			
			7	8			
			9	10			
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			
			31	32			
			33	34			
			35	36			
			37	38			
			39	40			
			41	42			
			43	44			
			45	46			
			47	48			

NOTES:
- PANELS C/W "PLUG-IN" OR BOLT-ON BREAKERS
- PANELS SHALL BE SUITABLE FOR THE USE OF DOUBLE BREAKERS WHICH SHALL BE USED SHOULD THE ACTUAL PROPORTION OF REQUIRED CIRCUITS/EMPTY SPACE EXCEED CODE REQUIREMENTS.

10kA

CIRCUIT NUMBERS ON THIS DRAWING ARE FOR DESIGN PURPOSE ONLY, CONTRACTOR SHALL ESTABLISHED A CORRECT CONNECTION CIRCUT NUMBER AT SITE DURING



SECOND FLOOR

KEY PLAN:

LEGEND:

SYMBOL	DESCRIPTION

ISSUED:

No:	DATE:	ISSUED:
0	NOV. 20/24	FOR PERMIT

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS SIGNED BY:
DAN PUSICA, P.ENG

SIGNATURE: .....

DATE: .....

NORTH ARROW:

SEAL:

LICENSED PROFESSIONAL ENGINEER
D.PUSICA
90525346
NOV. 20/24
PROVINCE OF ONTARIO

YMSD CONSULTING
226 Pacific Ave, Toronto, ON, M6P 2P5
Tel:(416) 3-888-444; Fax:(416) 849-0390
EMAIL: project@ymsd.com www.ymsd.com

THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN, AND HAS THE QUALIFICATIONS AND REGISTRATION REQUIRED BY THE ONTARIO BUILDING CODE TO DESIGN THE WORK SHOWN ON THE ATTACHED DOCUMENTS.

QUALIFICATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.1 (3) OF THE BUILDING CODE

NAME	SIGNATURE	BCIN
DAN D.M. PUSICA	D.Pusica	21266

REGISTRATION INFORMATION
REQUIRED UNLESS DESIGN IS EXEMPT UNDER 3.2.4.7 OF THE BUILDING CODE

YMSD Consulting	29265

PROJECT:

BENNETTO ELEMENTARY SCH.,
HAMILTON, ONTARIO

SHEET TITLE:

CHAIR/STAIR LIFTS INSTALLATION

SCALE:	DATE:
1/4" = 1'	NOV. 20/24
PROJECT No:	DRAWING No:
W944_QEO	E-04