



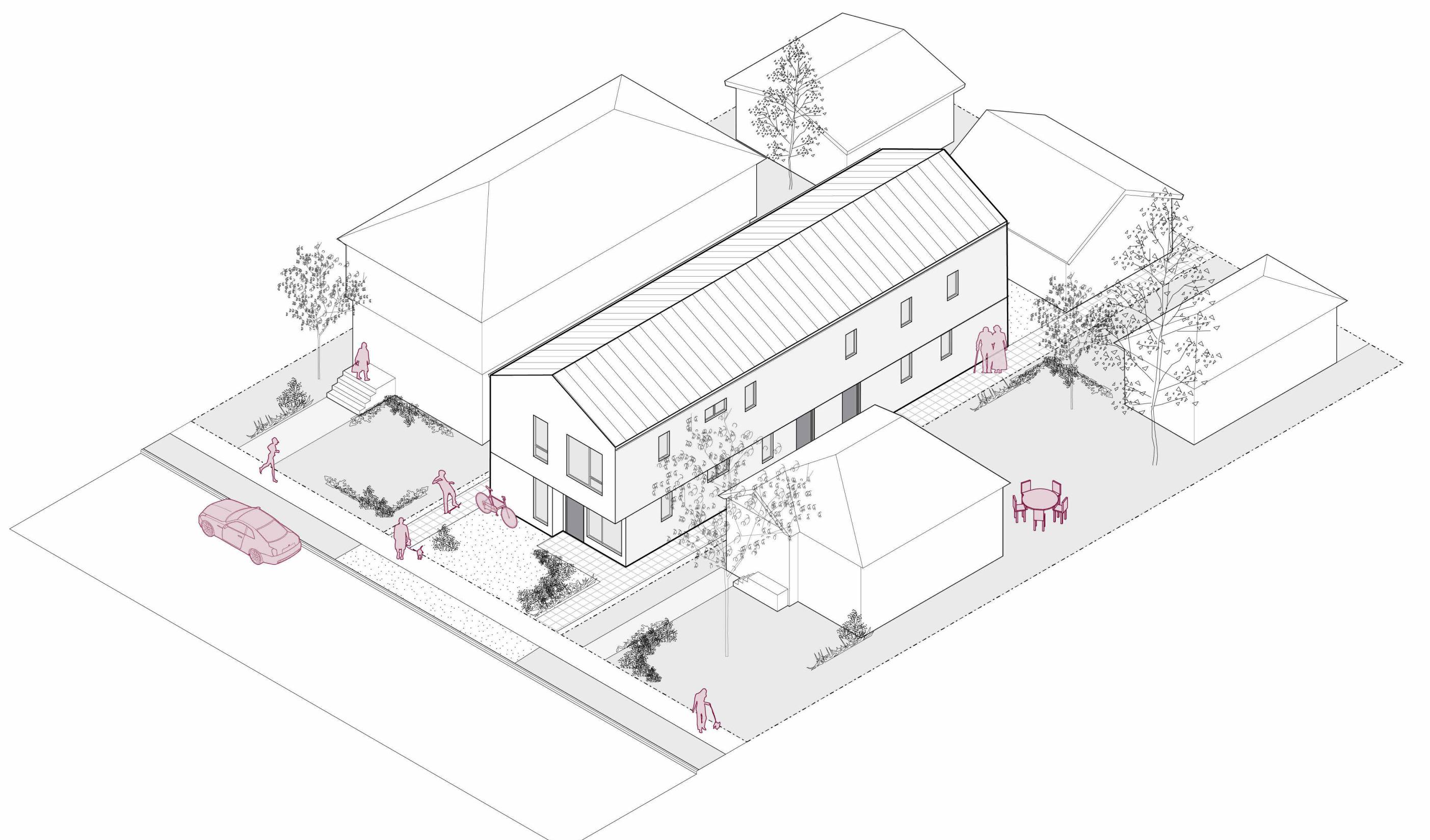
HOUSING DESIGN CATALOGUE

AB FOURPLEX 01

CMHC HOUSING DESIGN CATALOGUE

AB FOURPLEX 01

ARCHITECTURAL DRAWINGS



BUILDING DATA	
BUILDING FOOTPRINT	154.00m ² (1657.64ft ²)
BUILDING HEIGHT	8.02m (36'-4")
STOREYS	2 STOREY
NUMBER OF UNITS	4

UNIT SUMMARY	
UNIT 1	2 BEDROOM, 1 BATHROOM
UNIT 2	2 BEDROOM, 1 BATHROOM, ACCESSIBLE READY
UNIT 2(ALT)	1 BEDROOM, 1 BATHROOM, ENHANCED ACCESSIBILITY
UNIT 3	2 BEDROOM, 1 BATHROOM
UNIT 4	2 BEDROOM, 1 BATHROOM

ARCHITECTURAL SHEET LIST	
000	TITLE SHEET
A000	COVER SHEET
A003	ASSEMBLIES SCHEDULE
A004	OPENINGS SCHEDULE
A005	FIRE RATING DETAILS
A006	TYP. DETAILS
A007	TYP. DETAILS
A008	TYP. DETAILS
A009	TYP. DETAILS
A010	SITE PLAN & CODE MATRIX
A101	MAIN FLOOR PLAN - ACCESSIBLE READY
A101a	MAIN FLOOR PLAN - ENHANCED ACCESSIBILITY
A102	SECOND FLOOR PLAN
A104	ROOF PLAN
A200	ELEVATIONS
A201	ELEVATIONS
A300	SECTIONS
A301	SECTIONS

DISCLAIMER
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ABBREVIATIONS	
ABBREVIATIONS MAY OR MAY NOT INCLUDE PERIOD PUNCTUATION. ABBREVIATIONS APPLY TO ARCHITECTURAL DOCUMENTS ONLY.	
ARCH	ARCHITECTURAL
BF	BARRIER FREE
C/C	CENTRE TO CENTRE
CL	CENTER LINE
CIV	CIVIL
DIA	DIAMETER
DIM	DIMENSION
DWG	DRAWING
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
GEOTECH	GEOTECHNICAL
GWB	GYPSUM WALL BOARD
FFE	FINISH FLOOR ELEVATION
FRR	FIRE RESISTANCE RATING
FD	FLOOR DRAIN
HR	HOUR
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
NBC (AE)	NATIONAL BUILDING CODE (ALBERTA EDITION)
N/A	NOT APPLICABLE
NTS	NOT TO SCALE
O/C	ON CENTRE
RM	ROOM
R/O	ROUGH OPENING
RWL	RAIN WATER LEADER
SCH	SCHEDULE
SF	SQUARE FEET
SIM	SIMILAR
SM	SQUARE METER
SPEC	SPECIFICATION
STC	SOUND TRANSMISSION CLASS
STRUC	STRUCTURAL
TBD	TO BE DETERMINED
T/O	TOP OF
T&G	TONGUE & GROOVE
TYP	TYPICAL
U/S	UNDERSIDE
W/C	WASHROOM

ANNOTATION LEGEND	
ASSEMBLY TAGS	EXTERIOR WALL TAG INTERIOR PARTITION TAG ROOF TAG FLOOR TAG (REFER TO ASSEMBLIES SCHEDULES)
TAGS	DOOR TAG (REFER TO DOOR SCHEDULE) WINDOW TAG (REFER TO WINDOW SCHEDULE) MATERIAL TAG
KEYNOTES	KEYNOTES (REFER TO SHEET SPECIFIC KEYNOTE SCHEDULE)
DRAWING TAGS	DETAIL NUMBER DRAWING SHEET NUMBER BUILDING SECTION NUMBER DRAWING SHEET NUMBER EXTERIOR ELEVATION NUMBER DRAWING SHEET NUMBER GRID BUBBLE SPOT ELEVATION (ABOVE FINISH FLOOR) ROOM TAG CENTRELINE

1 2025-02-21 Issued as Prototypical Drawing
NO. DATE DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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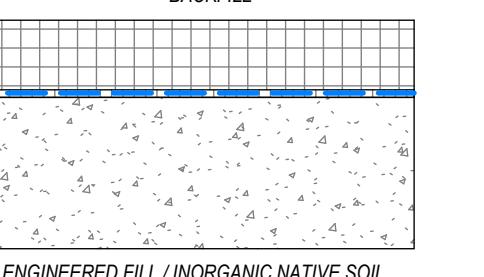
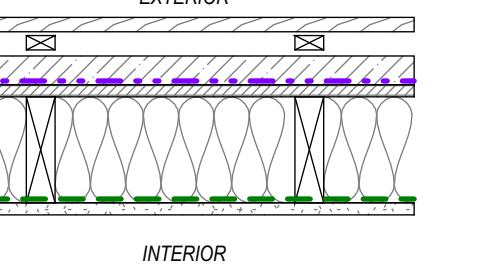
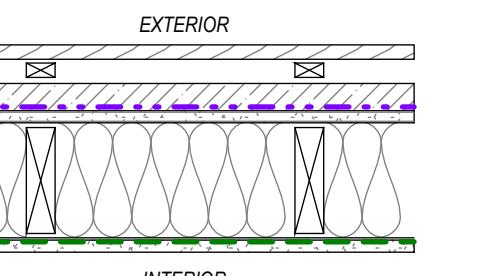
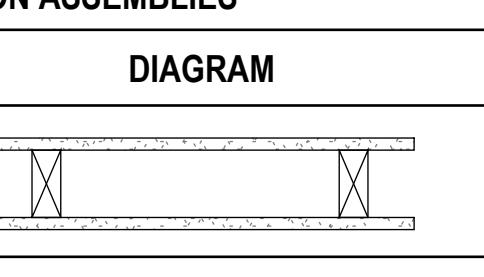
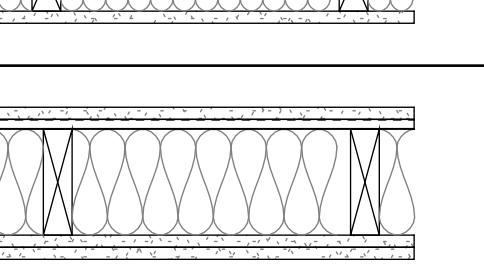
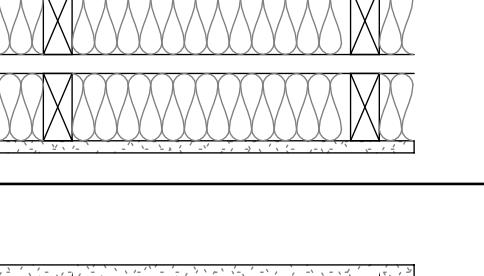
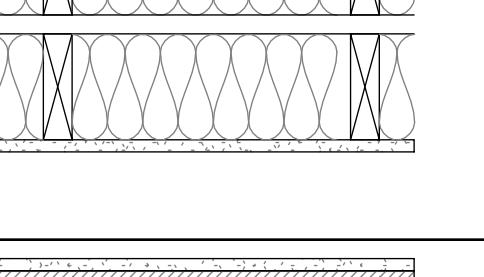
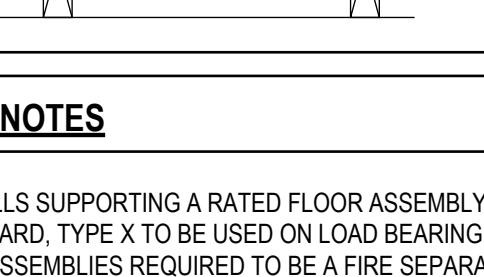
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COVER SHEET

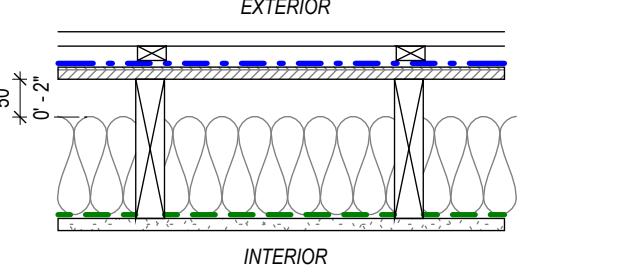
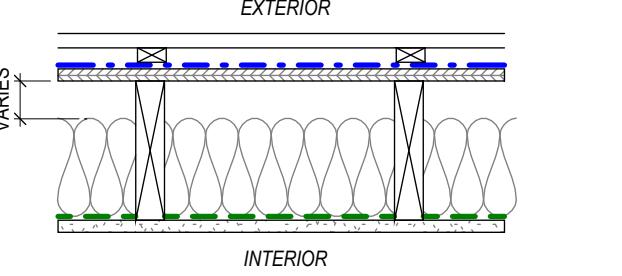
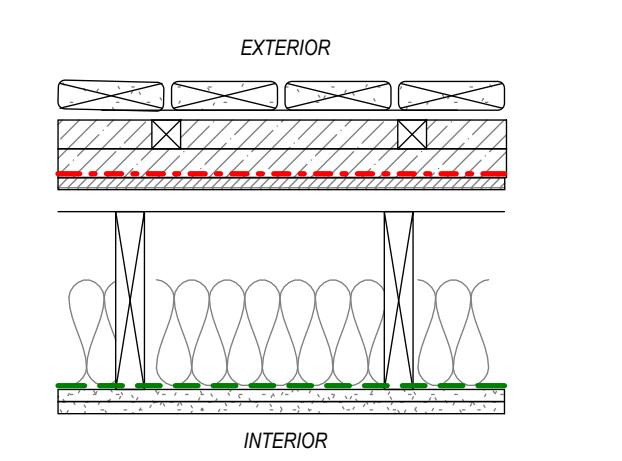
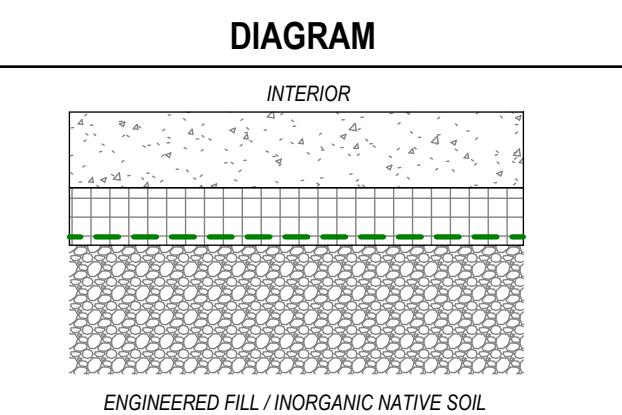
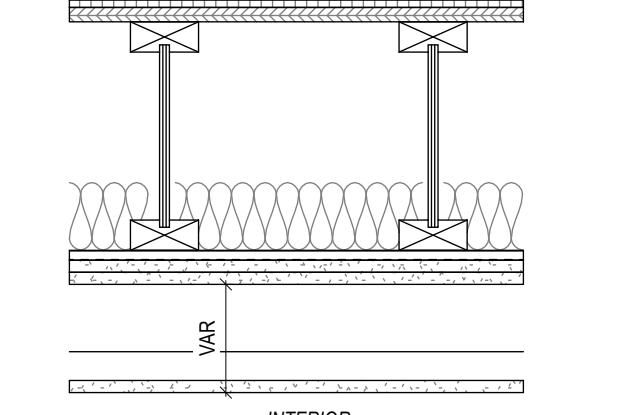
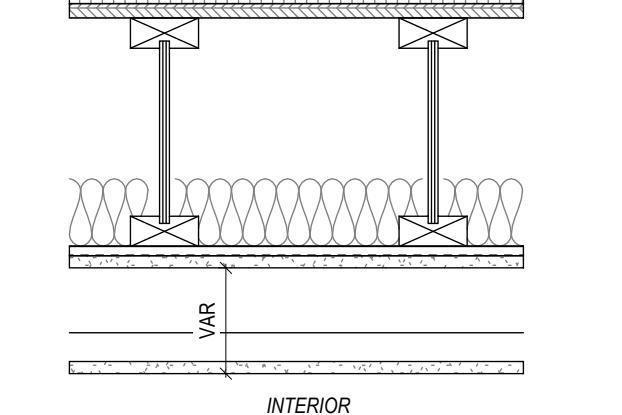
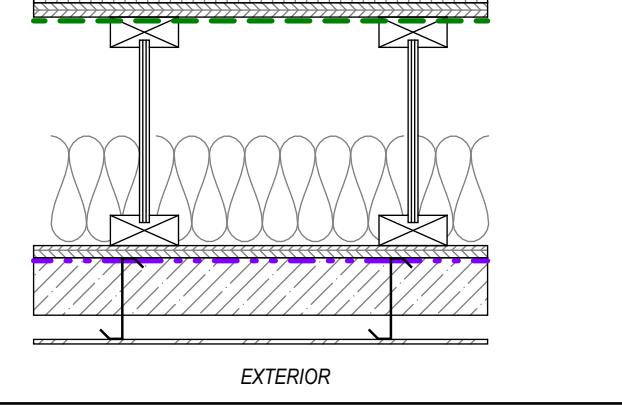
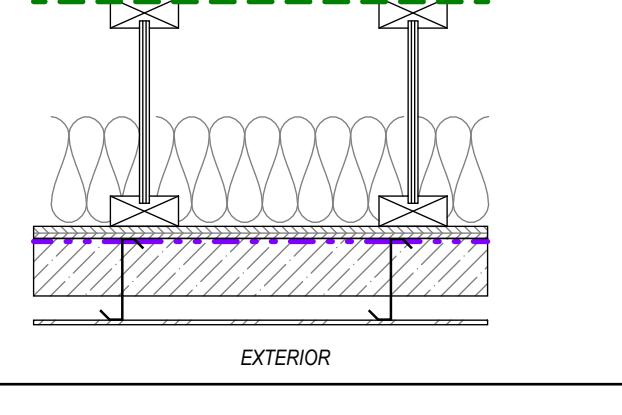
AB Fourplex 01

PROJECT NO: 241058
SCALE: As indicated

SHEET NO:
A000

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N - FOUNDATION WALL ASSEMBLIES			
TYPE	DIAGRAM	DESCRIPTION	PERFORMANCE
		FOUNDATION PARGING CEMENT COATING 4" (51mm) 18" (10mm) 4" (20mm) DRAINS AND PROTECTION BOARD FOUNDATION DAMP PROOFING GRADE BEAM (REFER TO STRUCTURAL)	R-VALUE MIN. R 18.32 / MIN RSI 3.22
W - EXTERIOR WALL ASSEMBLIES			
		EXTERIOR ENVELOPE WALL 19mm (3/4") 19mm (3/4") 25mm (1") AIR BARRIER, VAPOR PERMEABLE 16mm (5/8") 140mm (5 1/2") STUD CAVITY IN-FILL INSULATION VAPOR CONTROL BARRIER GYPSUM BOARD	R-VALUE MIN. R 34.64 / MIN RSI 6.1
		EXTERIOR ENVELOPE WALL - NON-COMBUSTIBLE 3/4" (19mm) 12" (13mm) 1" (25mm) VAR 5/8" (16mm) 5 1/2" (140mm) NON-COMBUSTIBLE LIGHT-WEIGHT CLADDING PLACE HOLDER VENTED CAVITY W/ METAL Z-GIRTS @ 400mm O/C RIGID INSULATION AIR BARRIER, VAPOR PERMEABLE 5/8" (16mm) 5 1/2" (140mm) STUD CAVITY IN-FILL INSULATION VAPOR CONTROL BARRIER GYPSUM BOARD, TYPE X	R-VALUE MIN. R 34.64 / MIN RSI 6.1 FRR 1HR FRR BASED ON EW2a AS PER NBC (AE) 9.10.3.1-A INSULATION R/RSI VALUES TO BE SPECIFIED FOR PROJECT LOCATION AS PER NBC(AE) 9.36 STUD CAVITY INSULATION AND RIGID INSULATION TO BE NON COMBUSTIBLE
P - INTERIOR PARTITION ASSEMBLIES			
		2x4 INTERIOR PARTITION 5/8" (16mm) GYPSUM BOARD 3 1/2" (89mm) WOOD STUD FRAMING @ 406mm O/C 5/8" (16mm) GYPSUM BOARD	FRR N/A
		2x4 INTERIOR PARTITION W/ BATT 3 1/2" (89mm) GYPSUM BOARD 3 1/2" (89mm) WOOD STUD FRAMING @ 406mm O/C C/W 5/8" (16mm) ACOUSTIC BATT IN-FILL INSULATION 5/8" (16mm) GYPSUM BOARD	FRR N/A STC 34
		2x6 INTERIOR PARTITION - BETWEEN UNIT & STAIRS, RATED 5/8" (16mm) GYPSUM BOARD, TYPE X 1/2" (13mm) RESILIENT FURRING CHANNELS @ 406mm O/C 5 1/2" (140mm) WOOD STUD FRAMING @ 614/100mm O/C C/W 5 1/2" (140mm) ACOUSTIC BATT IN-FILL INSULATION 5/8" (16mm) GYPSUM BOARD, TYPE X FRR BASED ON W1a AS PER NBC (AE) 9.10.3.1-A	FRR 1HR STC 51 FRR BASED ON W1a AS PER NBC (AE) 9.10.3.1-A
		2x6 DEMISING WALL - LOAD BEARING, RATED 5/8" (16mm) GYPSUM BOARD, TYPE X 3 1/2" (89mm) WOOD STUD FRAMING @ 406mm O/C C/W 3 1/2" (89mm) ACOUSTIC BATT IN-FILL INSULATION 1" (25mm) AIR SPACE 3 1/2" (89mm) WOOD STUD FRAMING @ 406mm O/C C/W 3 1/2" (89mm) ACOUSTIC BATT IN-FILL INSULATION 5/8" (16mm) GYPSUM BOARD, TYPE X	FRR 1HR STC 61 FRR BASED ON W1a AS PER NBC (AE) 9.10.3.1-A
		PLUMBING CHASE 5/8" (16mm) GYPSUM BOARD 1/2" (13mm) PLYWOOD SHEATHING (REFER TO STRUCTURAL) 3 1/2" (89mm) WOOD STUD FRAMING @ 406mm O/C	FRR N/A STC N/A
ASSEMBLY GENERAL NOTES			
1. ALL LOAD BEARING WALLS SUPPORTING A RATED FLOOR ASSEMBLY SHALL HAVE A FIRE RESISTANCE RATING NOTLESS THAN THE SUPPORTED FLOOR ABOVE AS PER NBC(AE) 9.10.8.3. 2. 16MM (5/8") GYPSUM BOARD, TYPE X TO BE USED ON LOAD BEARING WALLS (SEE STRUCTURAL) TO PROVIDE FRR. 3. ALL WALL AND FLOOR ASSEMBLIES REQUIRED TO BE A FIRE SEPARATION SHALL BE CONSTRUCTED AS A CONTINUOUS BARRIER AGAINST THE SPREAD OF FIRE AND SMOKE AS PER NBC(AE) 9.10.9.2. 4. ALL PENETRATIONS THROUGH A REQUIRED FIRE SEPARATION TO MEET REQUIREMENTS OF NBC(AE) 9.10.9.6. 5. ALL PIPING PENETRATIONS THROUGH A RATED ASSEMBLY OR A MEMBRANE THAT FORMS PART OF A RATED ASSEMBLY TO CONFORM TO NBC(AE) 9.10.9.7. 6. ALL OPENINGS FOR ELECTRICAL OR SIMILAR OUTLET BOXES IN RATED ASSEMBLIES TO CONFORM TO NBC(AE) 9.10.9.8. 7. RECESSED LIGHTING FIXTURES SHALL NOT BE LOCATED IN INSULATED CEILINGS UNLESS THE FIXTURES ARE DESIGNED FOR SUCH INSTALLATIONS AS PER NBC(AE) 9.34.1.4. STRUCTURAL SLAB: EFFECTIVE THERMAL RESISTANCE OF AN UNHEATED FLOOR ABOVE FROSTLINE IN CONTACT WITH GROUND WITH A HRV FOR CLIMATE ZONE 7A: MINIMUM EFFECTIVE THERMAL RESISTANCE RSI 1.8. REFER TO NBC(AE) 9.36. 9. WALLS: EFFECTIVE THERMAL RESISTANCE OF ABOVE-GROUND OPAQUE ASSEMBLIES WITH A HRV IN CLIMATE ZONE 7A: RSI 6.1. REFER TO NBC(AE) 9.36. 10. ROOFS: EFFECTIVE THERMAL RESISTANCE OF ABOVE-GROUND OPAQUE ASSEMBLIES WITH A HRV IN CLIMATE ZONE 7A: RSI 6.5. REFER TO NBC(AE) 9.36. 11. FOAMED PLASTICS TO BE THERMALLY PROTECTED AS PER NBC(AE) 9.10.17.10. 12. ROOFING MATERIAL AND INSTALLATION AS PER NBC(AE) 9.26.2. 13. VAPOUR BARRIER AS PER NBC(AE) 9.27. 14. INSULATION AS PER NBC(AE) 9.25.2.1. 15. CLADDING AS PER NBC(AE) 9.25.4. 16. WHERE CLOSED CELL SPRAY INSULATION ACTS AS VAPOUR CONTROL, ENSURE SUFFICIENT QUANTITY TO MEET NBC(AE) 9.25.4.2.(8).			

R - ROOF ASSEMBLIES			
TYPE	DIAGRAM	DESCRIPTION	PERFORMANCE
		EXTERIOR ENVELOPE ROOF - VAULTED CEILING 5/8" (16mm) 3/4" (19mm) VAR 5/8" (16mm) ROOFING PLACEHOLDER VENTED CAVITY W/ WOOD FURRING ROOF MEMBRANE EXTERIOR GRADE PLYWOOD STUD CAVITY IN-FILL INSULATION VAPOR CONTROL BARRIER GYPSUM BOARD	R-VALUE MIN. R 36.91 / MIN RSI 6.5
		EXTERIOR ENVELOPE ROOF - PRE FABRICATED ROOF TRUSS 5/8" (16mm) 3/4" (19mm) VAR 5/8" (16mm) ROOFING PLACEHOLDER VENTED CAVITY W/ WOOD FURRING ROOF MEMBRANE EXTERIOR GRADE PLYWOOD PRE FABRICATED ROOF TRUSS (REFER TO STRUCTURAL) STUD CAVITY IN-FILL INSULATION VAPOR CONTROL BARRIER GYPSUM BOARD	R-VALUE MIN. R 36.91 / MIN RSI 6.5
		TERRACE ROOF 1 1/2" (38mm) 1/2" (13mm) 1 1/2" (38mm) WOOD DECKING VENTED CAVITY W/ PLASTIC SHIMS PRESSURE TREATED WOOD FRAMING PERPENDICULAR TO DIRECTION OF SLOPE 2W 1 1/2" (38mm) 1 1/2" (38mm) RIGID INSULATION PRESSURE TREATED WOOD FRAMING IN DIRECTION OF SLOPE CW 1 1/2" (38mm) 1/2" (13mm) 1 1/2" (38mm) ROOF MEMBRANE, 2 PLY MOD-BIT EXTERIOR GRADE PLYWOOD ENGINEERED WOOD SLEEPERS, MIN 2% SLOPE 2W 5 1/2" (140mm) VAR 5/8" (16mm) STUD CAVITY IN-FILL INSULATION VAPOR CONTROL BARRIER GYPSUM BOARD, TYPE X GYPSUM BOARD, TYPE X	R-VALUE MIN. R 36.91 / MIN RSI 6.5 FRR 1HR AS PER NBC (AE) 9.10.3.1.1 FRR BASED ON F4b AS PER NBC (AE) 9.10.3.1-B INSULATION R/RSI VALUES TO BE SPECIFIED FOR PROJECT LOCATION AS PER NBC(AE) 9.36 STUD CAVITY INSULATION AND RIGID INSULATION TO BE NON COMBUSTIBLE
F - FLOOR ASSEMBLIES			
TYPE	DIAGRAM	DESCRIPTION	PERFORMANCE
		SLAB ON GRADE /AR CAST-IN-PLACE CONCRETE SLAB-ON-GRADE, REFER TO STRUCTURAL 3" (76mm) VAR 8" (200mm) BELOW GRADE RIGID INSULATION VAPOUR CONTROL BARRIER FREE-DRAINING GRANULAR BASE ENGINEERED FILL / INORGANIC NATIVE SOIL	R-VALUE MIN. R 13.2 / MIN RSI 2.43
		WOOD FRAMED FLOOR, RATED 3/4" (19mm) 3/8" (10mm) 3/4" (19mm) VAR 6" (152mm) 1/2" (13mm) 5/8" (16mm) 5/8" (16mm) FLOOR FINISH RUBBER UNDERLAY T&G PLYWOOD SUBFLOOR, SCREWED & GLUED ENGINEERED WOOD JOIST OR I-JOIST (REFER TO STRUCTURAL) RESILIENT FURRING CHANNELS @ 800mm O/C INTERIOR GYPSUM BOARD, TYPE X INTERIOR GYPSUM BOARD, TYPE X WOOD FRAMED WITH GYPSUM BOARD BULKHEAD SUSPENDED CEILING AT MECH DUCTS, REFER TO MECHANICAL	FRR 1HR AS PER NBC (AE) 9.10.3.1.1 STC 54 IIC 48 FRR BASED ON F6b AS PER NBC (AE) 9.10.3.1-B
		WOOD FRAMED FLOOR 3/4" (19mm) 1" (25mm) 3/4" (19mm) FLOOR FINISH RUBBER UNDERLAY T&G PLYWOOD SUBFLOOR, SCREWED & GLUED ENGINEERED WOOD JOIST OR I-JOIST (REFER TO STRUCTURAL) ACOUSTIC BATT IN-FILL INSULATION RESILIENT FURRING CHANNELS WOOD FRAMED WITH GYPSUM BOARD BULKHEAD SUSPENDED CEILING AT MECH DUCTS, REFER TO MECHANICAL	FRR N/A STC N/A IIC N/A
		EXTERIOR ENVELOPE SOFFIT 1/4" (19mm) 1/8" (10mm) 1/4" (19mm) FLOOR FINISH RUBBER UNDERLAY T&G PLYWOOD SUBFLOOR, SCREWED & GLUED VAPOUR BARRIER STUD CAVITY IN-FILL INSULATION (R-24.0) EXTERIOR GRADE PLYWOOD RIGID INSULATION (R-12.8) VENTED CAVITY W/ METAL Z-GIRTS METAL SOFFIT	R-VALUE MIN. R 10.22 / MIN RSI 1.8 INSULATION R/RSI VALUES TO BE SPECIFIED FOR PROJECT LOCATION AS PER NBC(AE) 9.36
		EXTERIOR ENVELOPE SOFFIT, RATED 1/4" (19mm) 1/8" (10mm) 1/4" (19mm) FLOOR FINISH RUBBER UNDERLAY T&G PLYWOOD SUBFLOOR, SCREWED & GLUED VAPOUR BARRIER ENGINEERED WOOD JOIST OR I-JOIST (REFER TO STRUCTURAL) 5 1/2" (140mm) 3/8" (16mm) STUD CAVITY IN-FILL INSULATION (R-24.0) EXTERIOR GRADE PLYWOOD RIGID INSULATION (R-12.8) VENTED CAVITY W/ METAL Z-GIRTS METAL SOFFIT	R-VALUE MIN. R 10.22 / MIN RSI 1.8 FRR 1HR AS PER NBC (AE) 9.10.3.1.1 FRR BASED ON F4b AS PER NBC (AE) 9.10.3.1-B INSULATION R/RSI VALUES TO BE SPECIFIED FOR PROJECT LOCATION AS PER NBC(AE) 9.36 STUD CAVITY INSULATION AND RIGID INSULATION TO BE NON COMBUSTIBLE

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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SHEET TITLE:

ASSEMBLIES SCHEDULE

AB Fourplex 01

PROJECT NO: 241058

SCALE: 1:10

SHEET NO:

A003

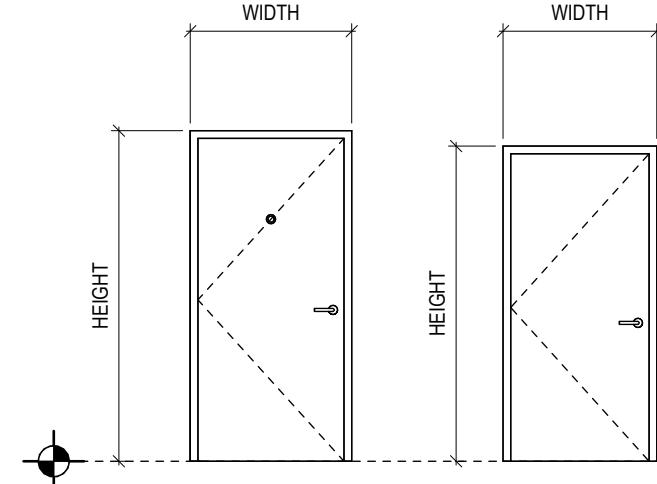
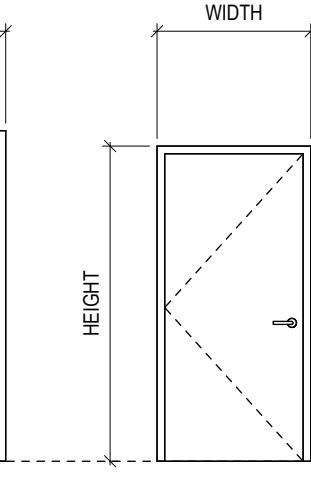
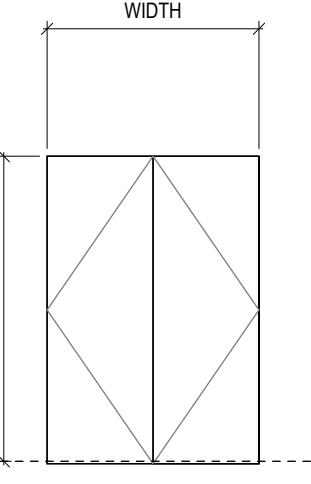
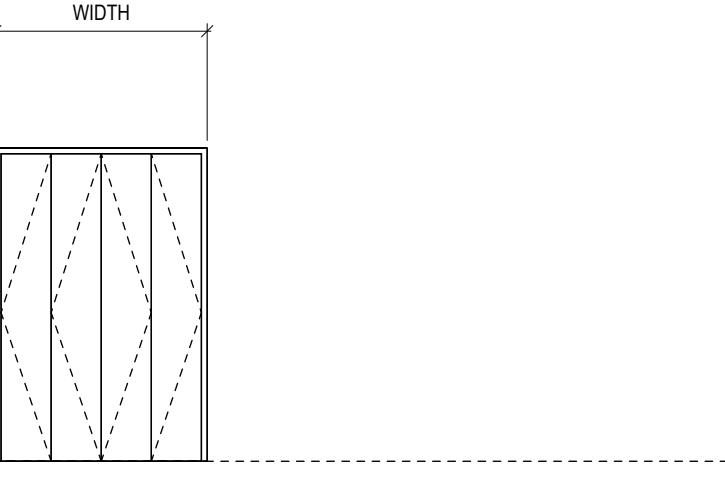
INSULATION LEGEND	
	RIGID INSULATION
	BELLOW GRADE RIGID INSULATION
	MINERAL WOOL BATT

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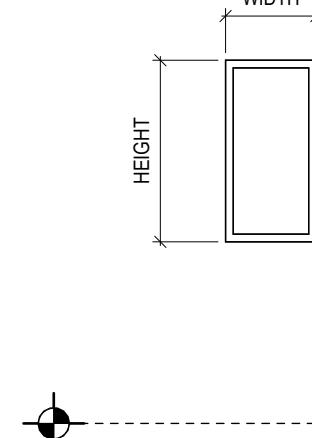
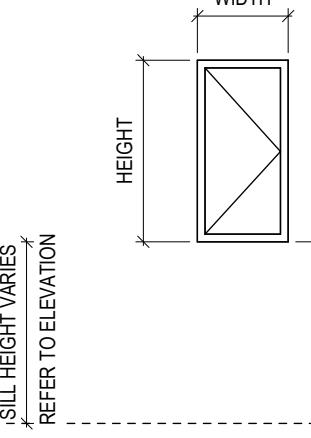
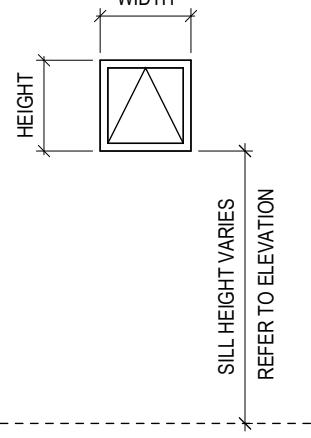
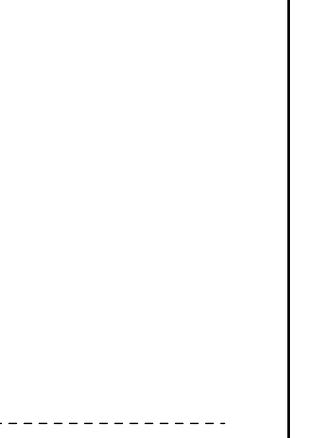
Issued as Prototypical Drawing

NO.	DATE	DESCRIPTION
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DOOR TYPES			
	DOOR TYPE A EXTERIOR SOLID PANEL WITH DOOR VIEWER		DOOR TYPE B INTERIOR SOLID PANEL
	DOOR TYPE C INTERIOR DOUBLE SOLID PANEL		DOOR TYPE D INTERIOR 4 PANEL FOLDING CLOSET DOOR

DOOR SCHEDULE							
TAG	TYPE	METRIC SIZE (mm)		IMPERIAL SIZE (FT-IN")		FIRE RATING	COMMENTS
		WIDTH	HEIGHT	WIDTH	HEIGHT		
DA01	DOOR TYPE A	914	2350	3'-0"	7'-8 1/2"	N/A	DOOR VIEWER AS PER NBC(AE) 9.7.2.1
DA02	DOOR TYPE A	914	2350	3'-0"	7'-8 1/2"	45 min	DOOR VIEWER AS PER NBC(AE) 9.7.2.1 RATING AS PER NBC(AE) 9.10.13.2.
DB01	DOOR TYPE B	914	2032	3'-0"	6'-8"	N/A	
DB02	DOOR TYPE B	711	2032	2'-4"	6'-8"	N/A	
DD01	DOOR TYPE D	1000	2032	3'-3 3/8"	6'-8"	N/A	
DD02	DOOR TYPE D	1400	2032	4'-7 1/8"	6'-8"	N/A	
DD03	DOOR TYPE D	1600	2032	5'-3"	6'-8"	N/A	
DD04	DOOR TYPE D	1800	2032	5'-10 7/8"	6'-8"	N/A	

WINDOW TYPES			
	WINDOW TYPE A FIXED		WINDOW TYPE B CASEMENT
	WINDOW TYPE C AWNING		

DOOR, WINDOW & SKYLIGHT GENERAL NOTES							
<ol style="list-style-type: none"> WINDOWS AND DOORS TO CONFORM TO REQUIREMENTS OF NBC(AE) 9.7.3 AND NBC(AE) 9.7.4 MAXIMUM U-VALUE FOR WINDOWS TO CONFORM TO ABC TABLE NBC(AE) 9.7.3.3 AND NBC(AE) 9.36.2.7-A ALL OPERABLE WINDOWS WITH A SILL HEIGHT OR OPERABLE SECTION LESS THAN 900mm ABOVE FINISHED FLOOR AND 1800mm ABOVE THE FLOOR OR GROUND ON THE OTHER SIDE OF THE WINDOW SHALL BE PROTECTED BY A SWING LIMITER RESTRICTING THE SWING TO NOT MORE THAN 100mm EITHER VERTICALLY OR HORIZONTALLY PER NBC(AE) 9.8.8.1.5. ALL GLASS TO MEET MATERIAL STANDARDS PER NBC(AE) 9.6.1.2 ALL SIDELIGHTS OR GLAZING AT INDOOR/ENTRIES TO DWELLING UNITS TO BE TEMPERED OR LAMINATED PER NBC(AE) 9.6.1.4 MINIMUM REQUIRED THERMAL CHARACTERISTIC OF FENESTRATION AND DOORS HAS BEEN SHOWN AS CLIMATE ZONE 7A: MAX. U-VALUE 2.0 . PROFESSIONAL DESIGNER TO REVISE AS REQUIRED FOR SITE CONDITION MIN. ALL PRINCIPAL ENTRANCE DOORS, EXIT DOORS OR DOORS TO SUITES INCLUDING EXTERIOR DOORS TO DWELLING UNITS SHALL BE OPERABLE FROM THE INSIDE WITHOUT KEYS AND DOOR RELEASE HARDWARE; SHALL BE GRASPABLE WITH ONE HAND; AND INSTALLED AT 900mm ABOVE FINISHED FLOOR PER NBC(AE) 9.9.6.7. ALL EXTERIOR DOORS TO HAVE INSULATED CORE & INSTALLED WITH WEATHERSTRIPPING. EACH BEDROOM TO HAVE AT LEAST ONE WINDOW OR EXTERIOR DOOR IN COMPLIANCE WITH NBC(AE) 9.9.10.1. FOR EGRESS WINDOWS OR DOORS FOR BEDROOMS. DOORS, DAMPERS, AND OTHER CLOSURES IN FIRE SEPARATIONS TO BE INSTALLED AS PER NBC(AE) 9.10.13. DOOR STOP REQUIRED AS PER NBC(AE) 9.10.13.16. FLAME-SPREAD RATING OF ALL WINDOWS TO CONFORM TO NBC(AE) 9.10.17.1 REFER TO NBC(AE) 9.7.2.2 FOR ADDITIONAL REQUIREMENTS FOR WINDOWS & DOORS. ALL GLAZING SHOWN AS TRIPLE 							

WINDOW SCHEDULE							
TAG	TYPE	METRIC SIZE (mm)		IMPERIAL SIZE (ft-in")		WIDTH	HEIGHT
		WIDTH	HEIGHT	WIDTH	HEIGHT		
WA01	WINDOW TYPE A	600	600	1'-11 5/8"	1'-11 5/8"		
WA02	WINDOW TYPE A	1200	2000	3'-11 1/4"	6'-6 3/4"		
WB01	WINDOW TYPE B	600	1200	1'-11 5/8"	3'-11 1/4"		
WB02	WINDOW TYPE B	800	2000	2'-7 1/2"	6'-6 3/4"		
WB03	WINDOW TYPE B	800	500	2'-7 1/2"	1'-7 11/16"		
WB04	WINDOW TYPE B	800	1500	2'-7 1/2"	4'-11 1/16"		
WC01	WINDOW TYPE C	600	600	1'-11 5/8"	1'-11 5/8"		

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

**NOT FOR PERMIT
OR CONSTRUCTION**

SHEET TITLE:
OPENINGS SCHEDULE

AB Fourplex 01

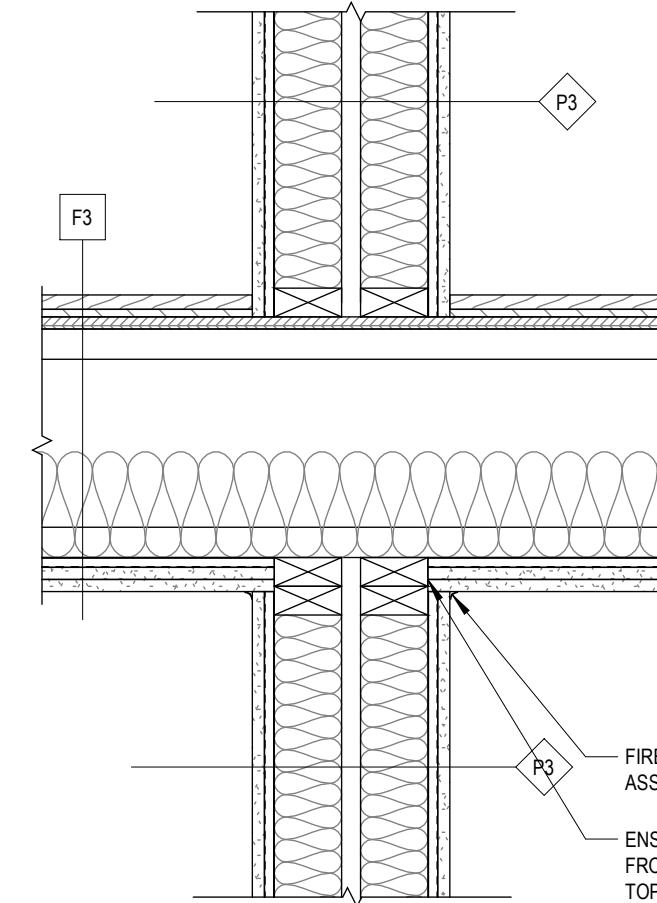
PROJECT NO: 241058
 SCALE: 1:50

SHEET NO:

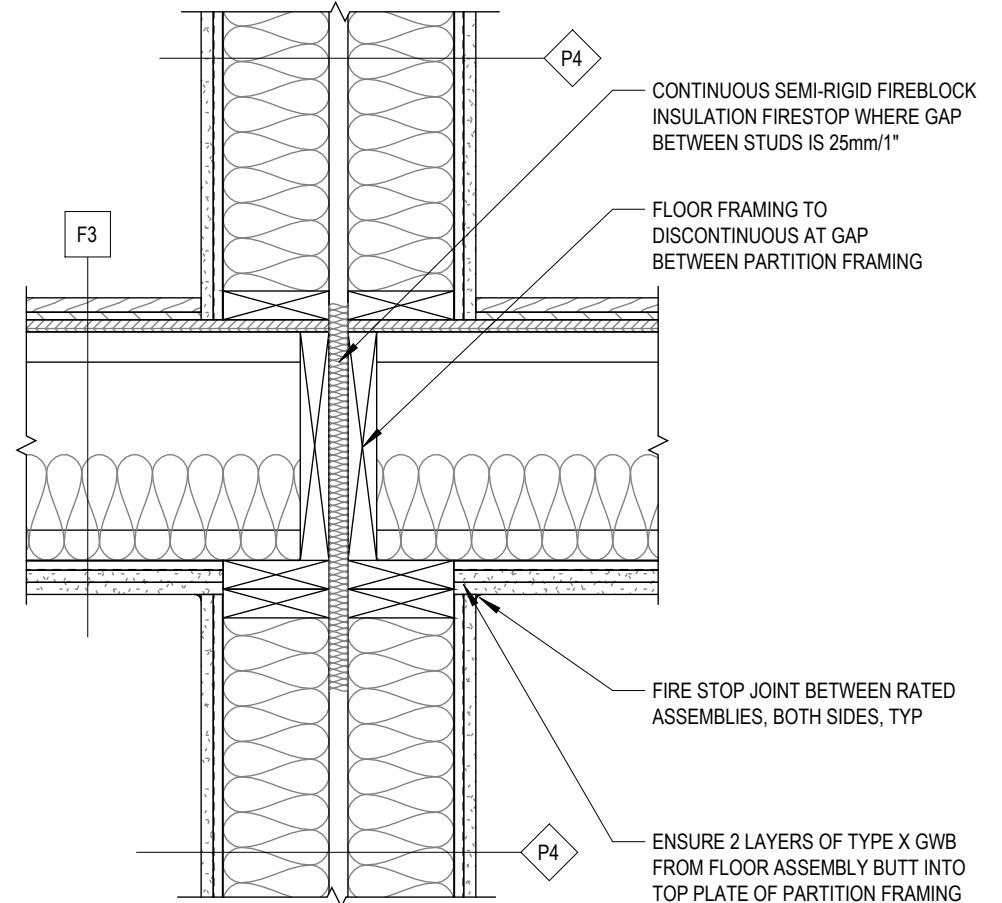
A004

DISCLAIMER

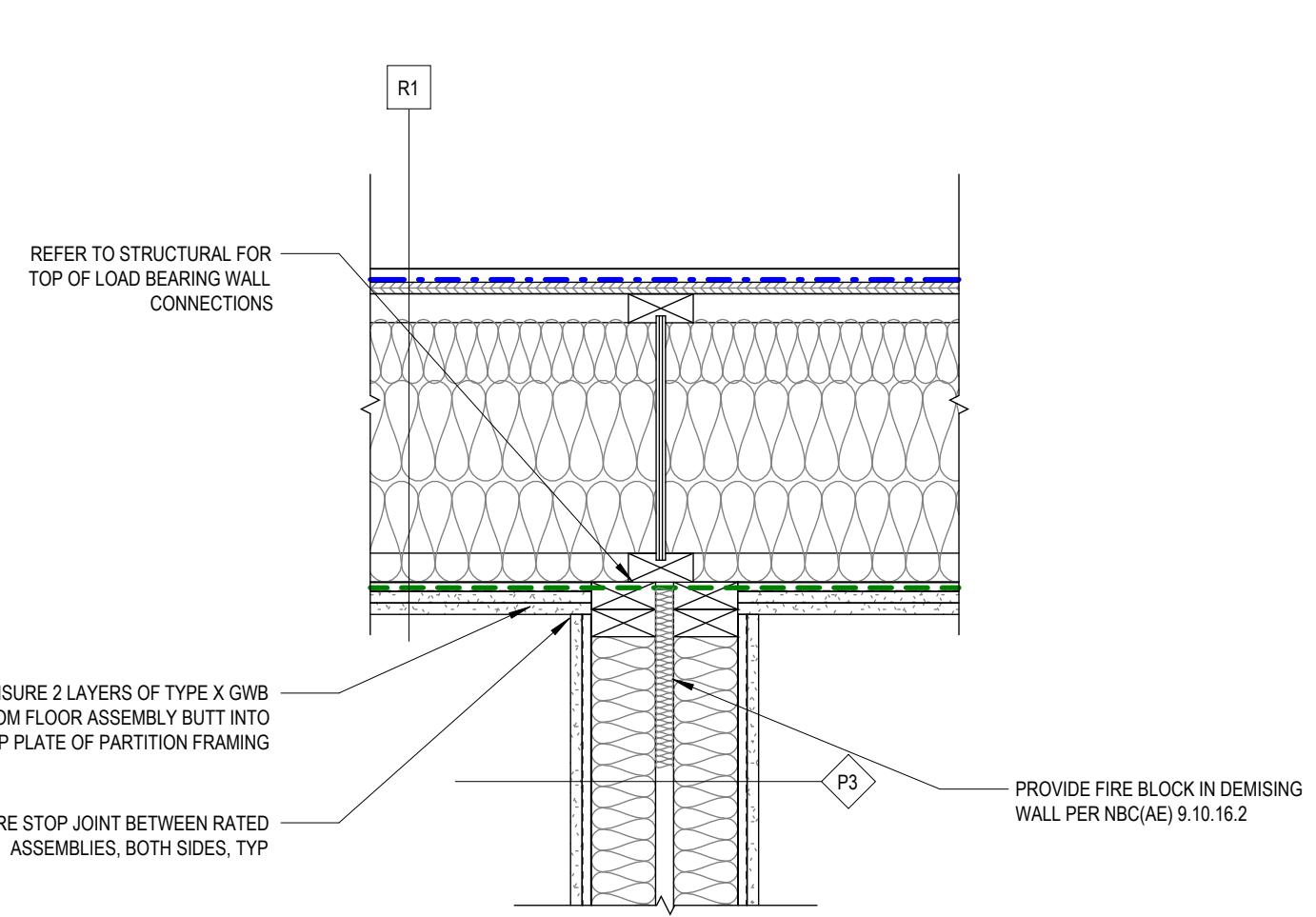
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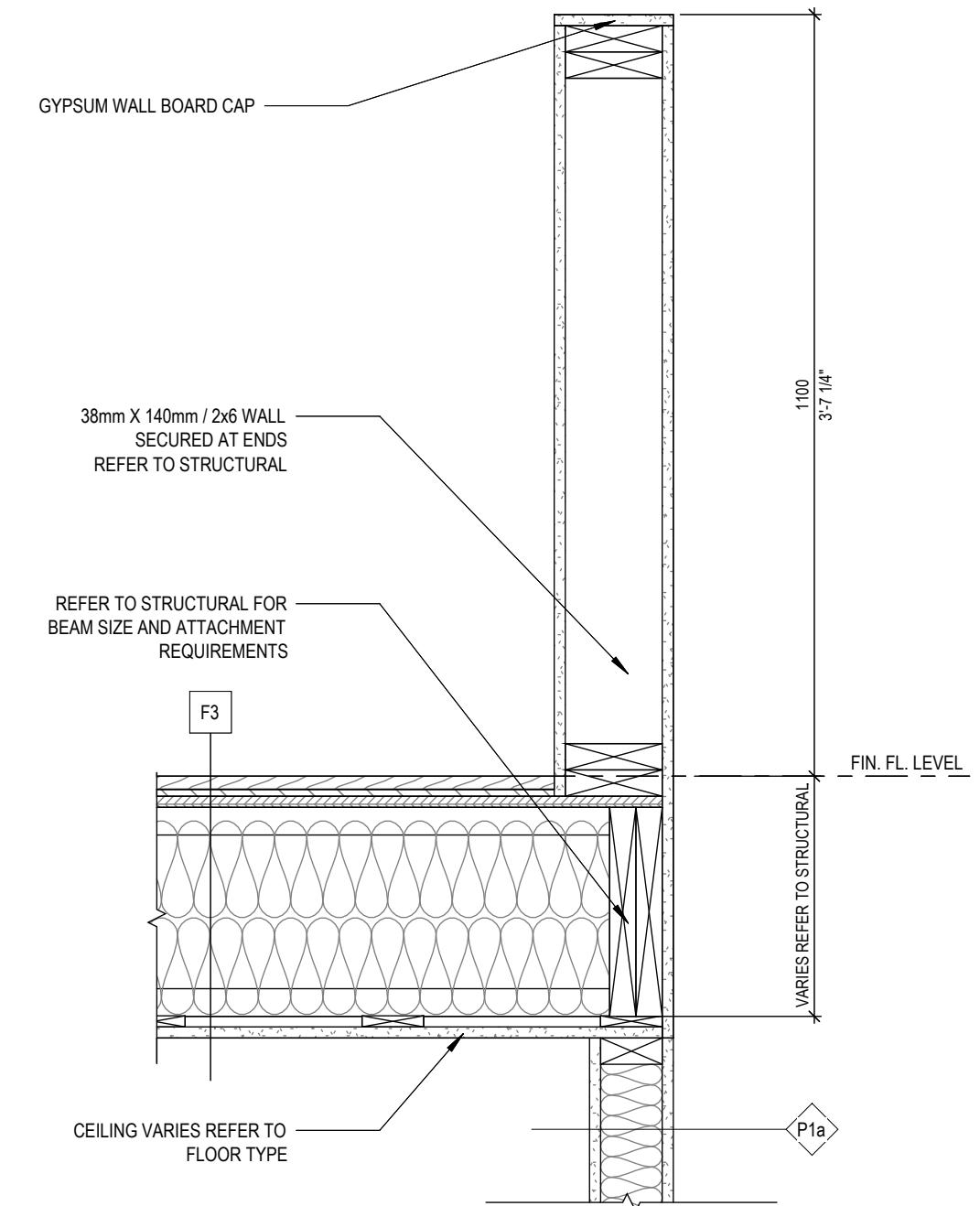
1 SECTION - FIRE SEPARATION, NON-LOAD BEARING WALL TO FLOOR
A005 1 : 10



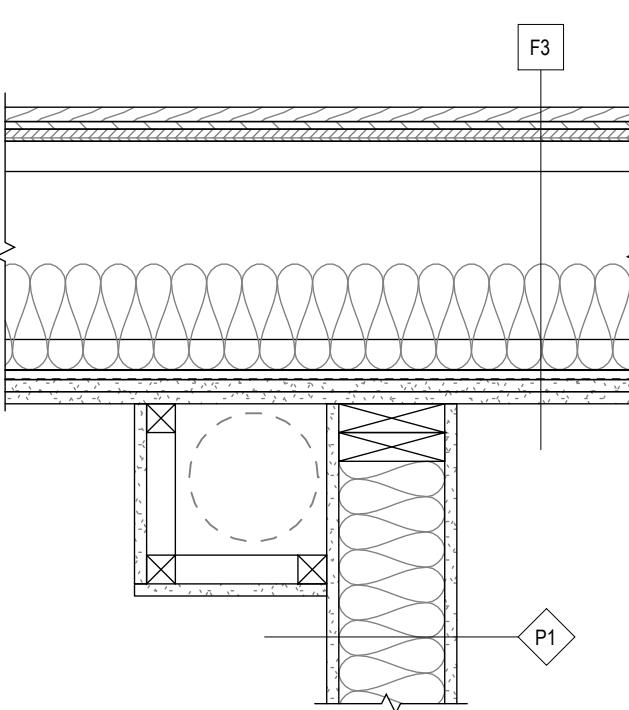
2 SECTION - FIRE SEPARATION, LOAD BEARING WALL TO FLOOR
A005 1 : 10



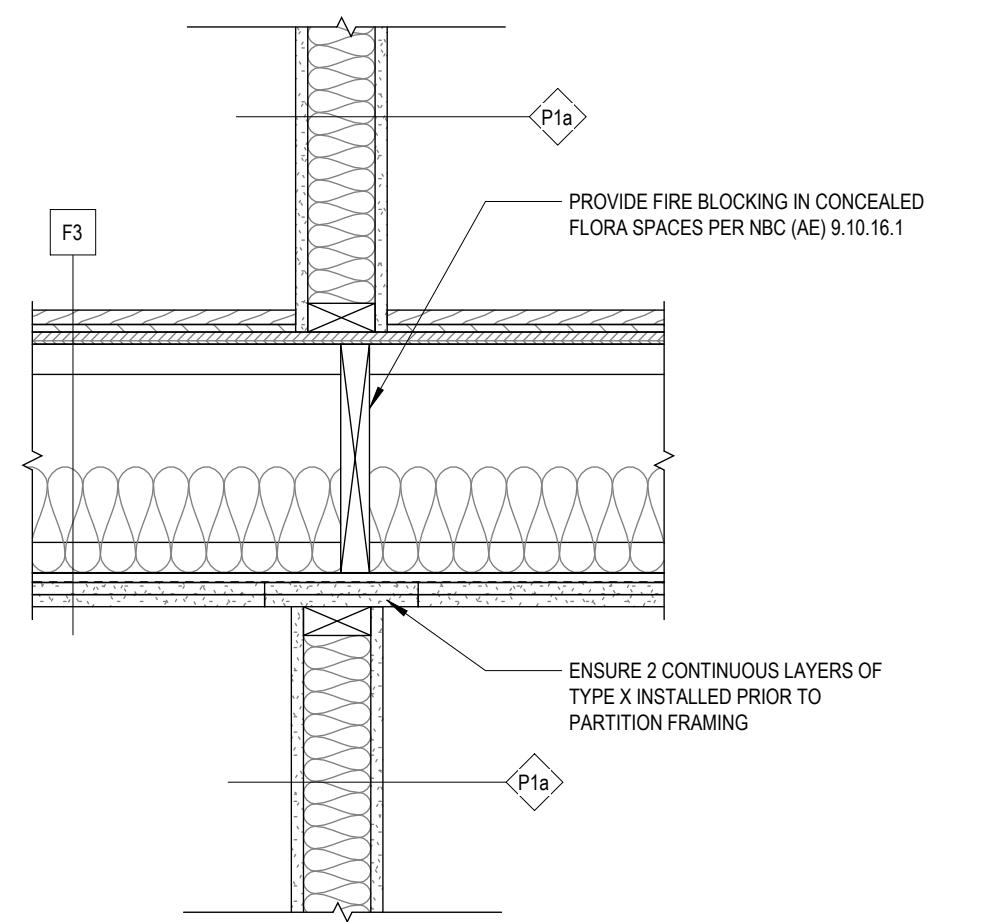
3 SECTION - FIRE SEPARATION, LOAD BEARING WALL TO RATED ROOF
A005 1 : 10



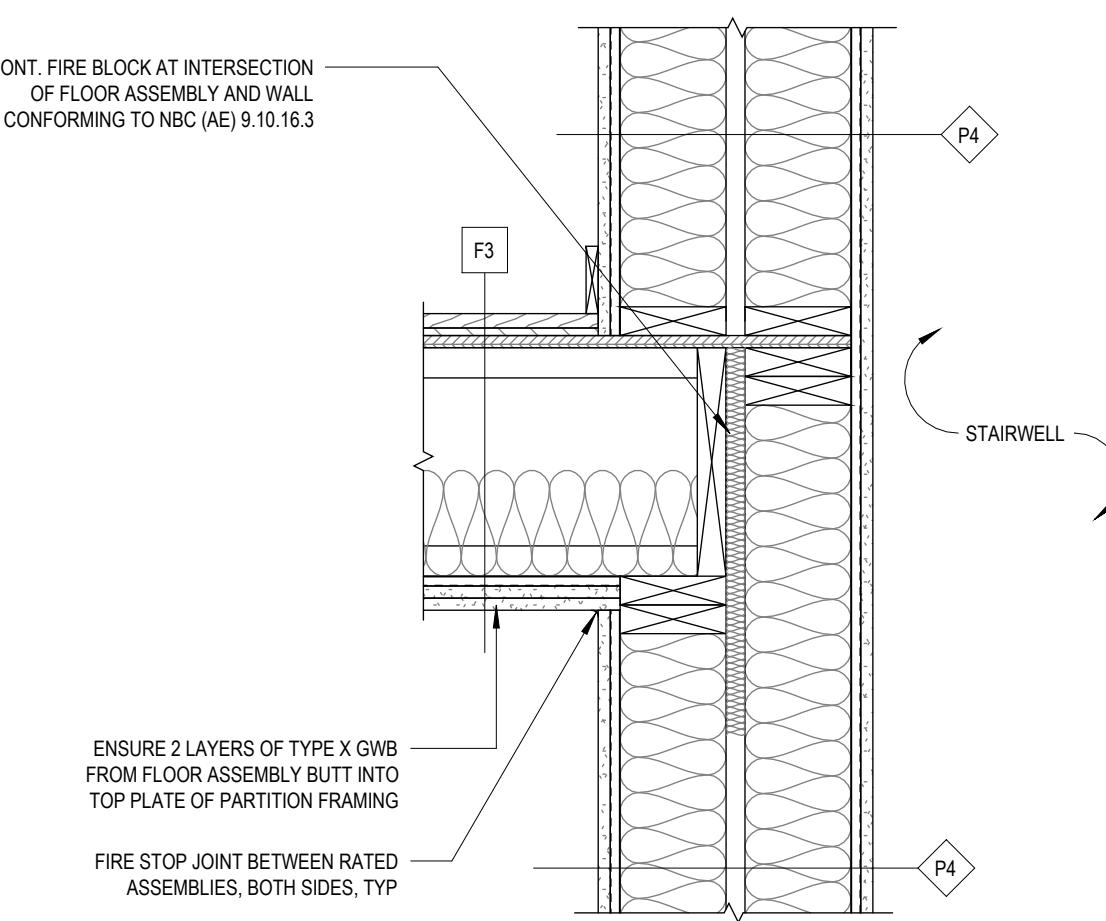
4 SECTION - TYP. INTERIOR GUARD
A005 1 : 10



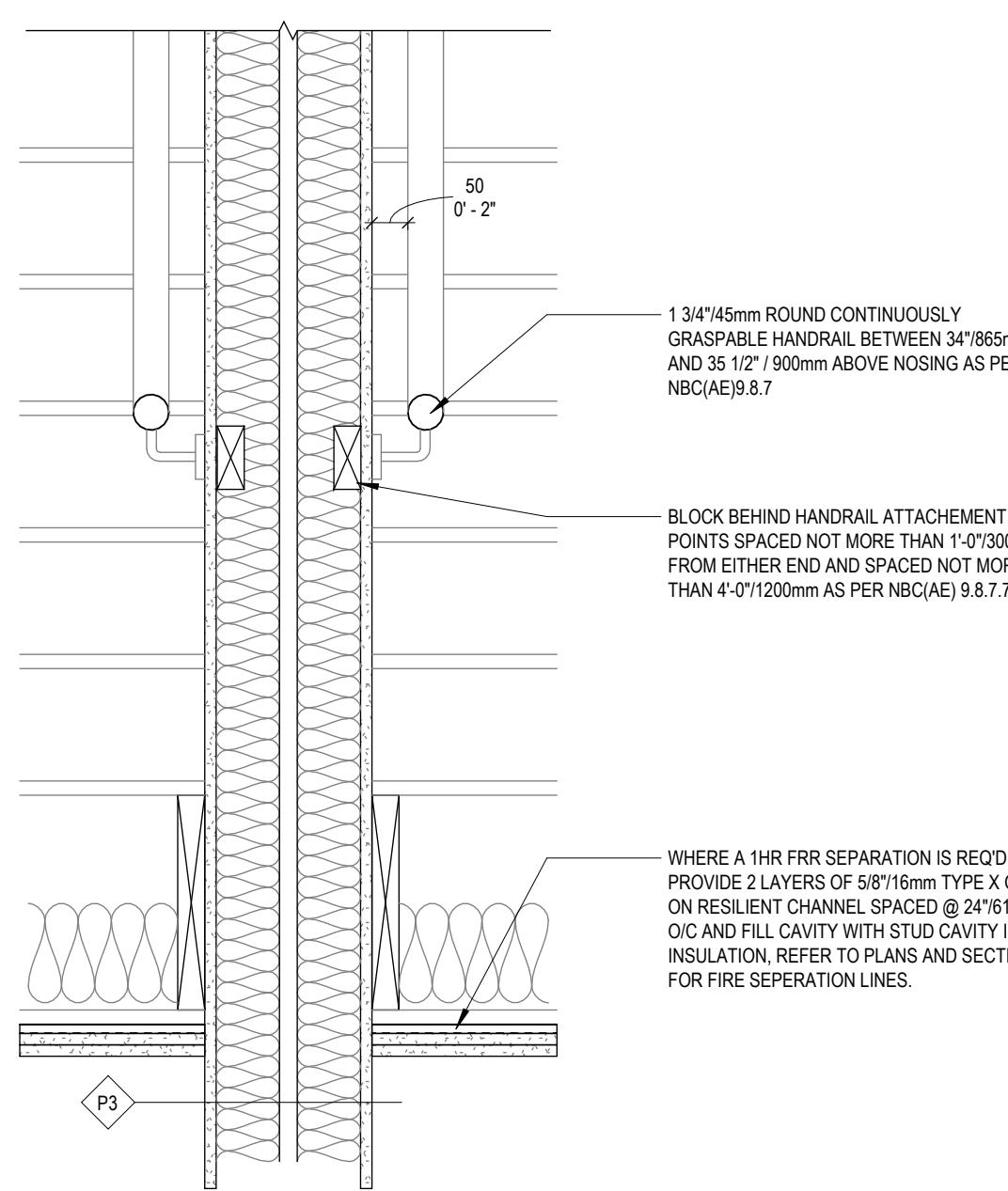
5 SECTION - FIRE SEPARATION, PARTITION & BULKHEAD TO FLOOR
A005 1 : 10



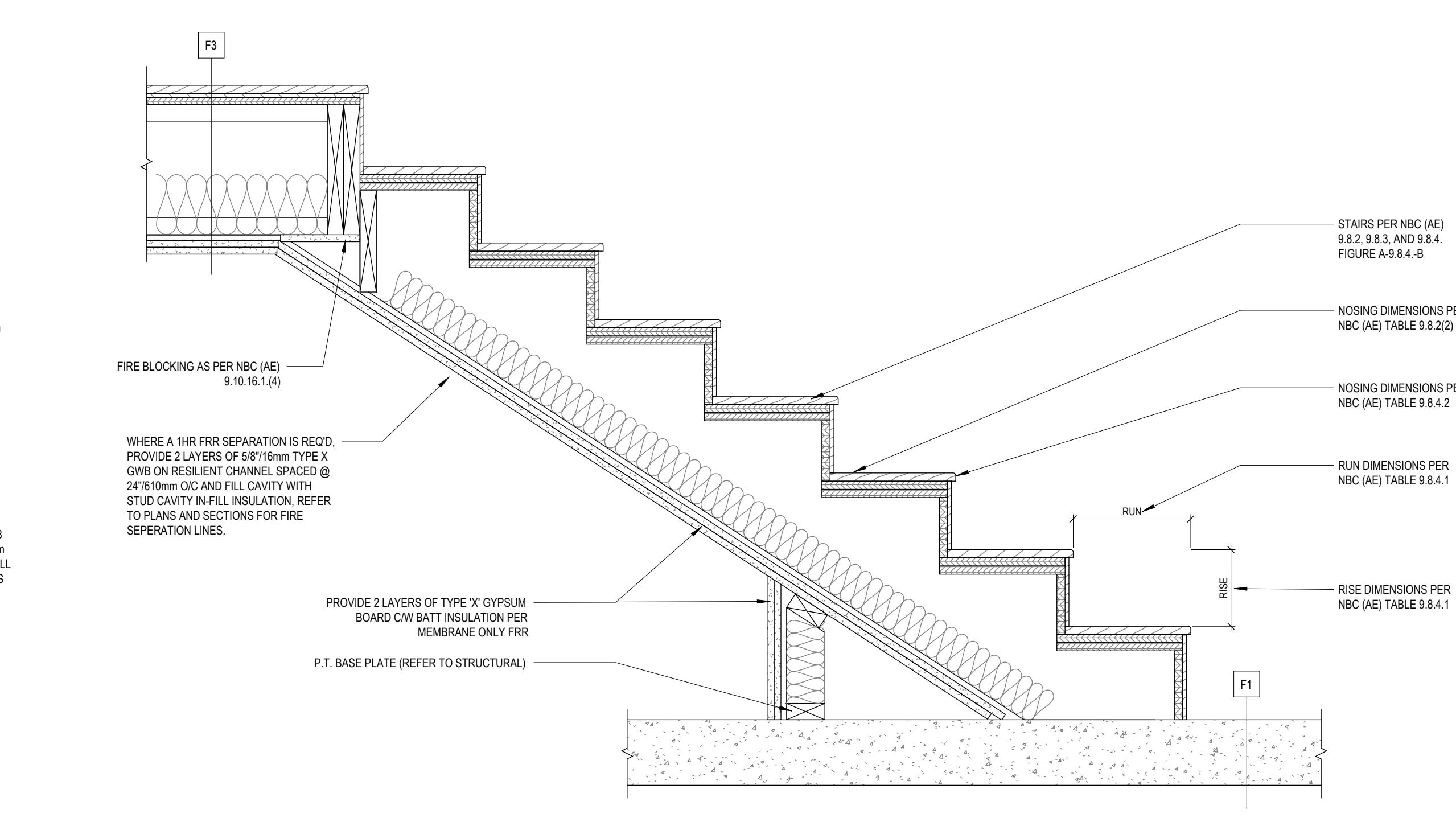
6 SECTION - FIRE SEPARATION, RATED FLOOR, NON-LOAD BEARING PARTITION
A005 1 : 10



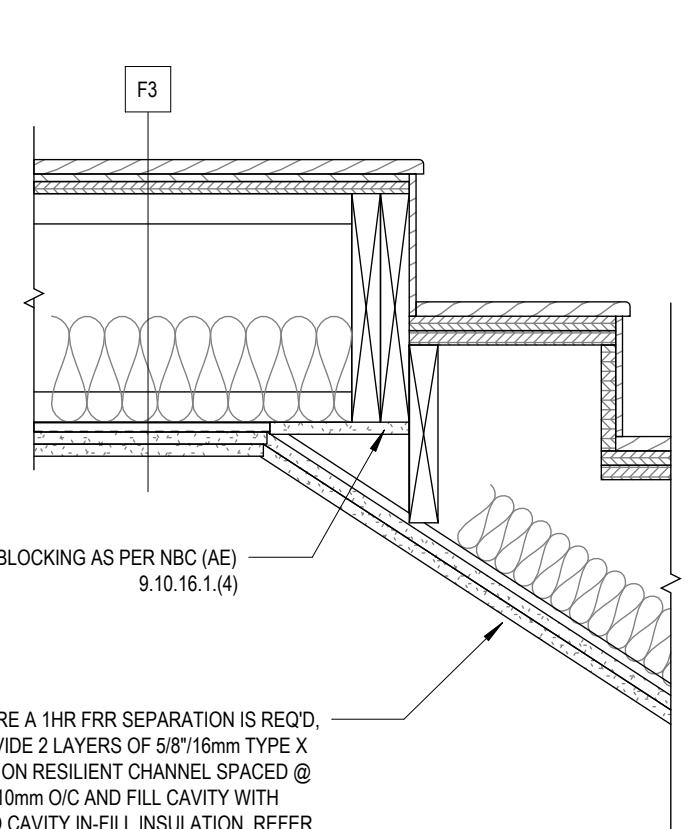
7 SECTION - FIRE SEPARATION, LOAD BEARING WALL TO FLOOR @ STAIRWELL
A005 1 : 10



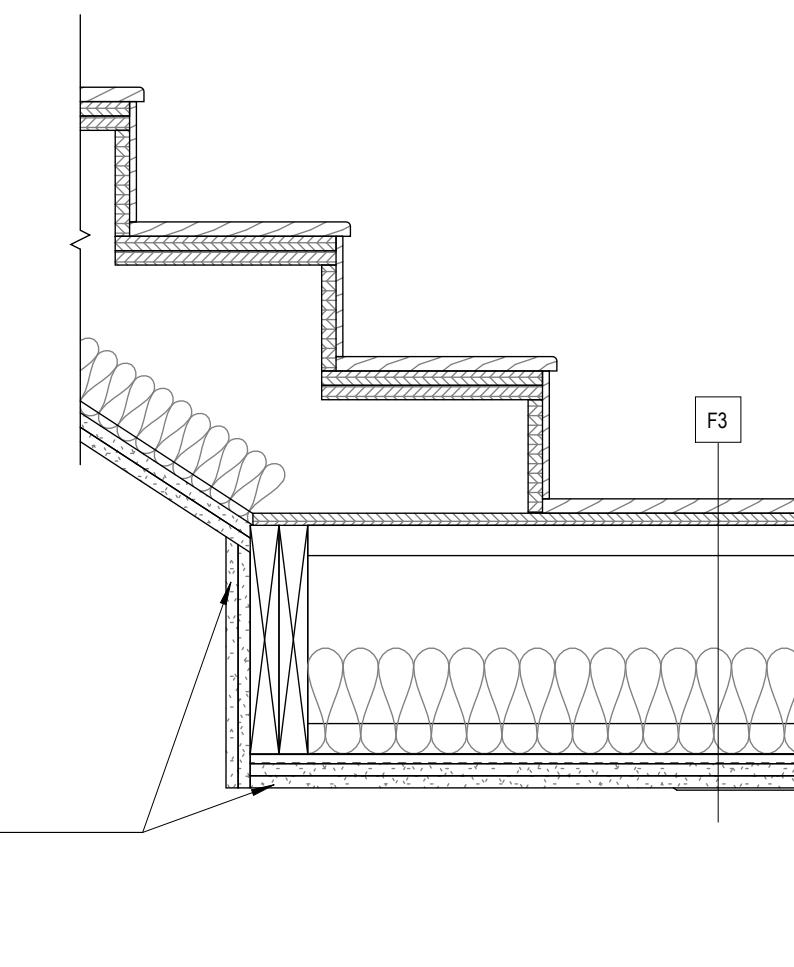
8 SECTION - FIRE SEPARATION, STAIR 02
A005 1 : 10



9 SECTION - FIRE SEPARATION, STAIR
A005 1 : 10



10 SECTION - FIRE SEPARATION, UPPER STAIRS
A005 1 : 10



1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
FIRE RATING DETAILS

AB Fourplex 01

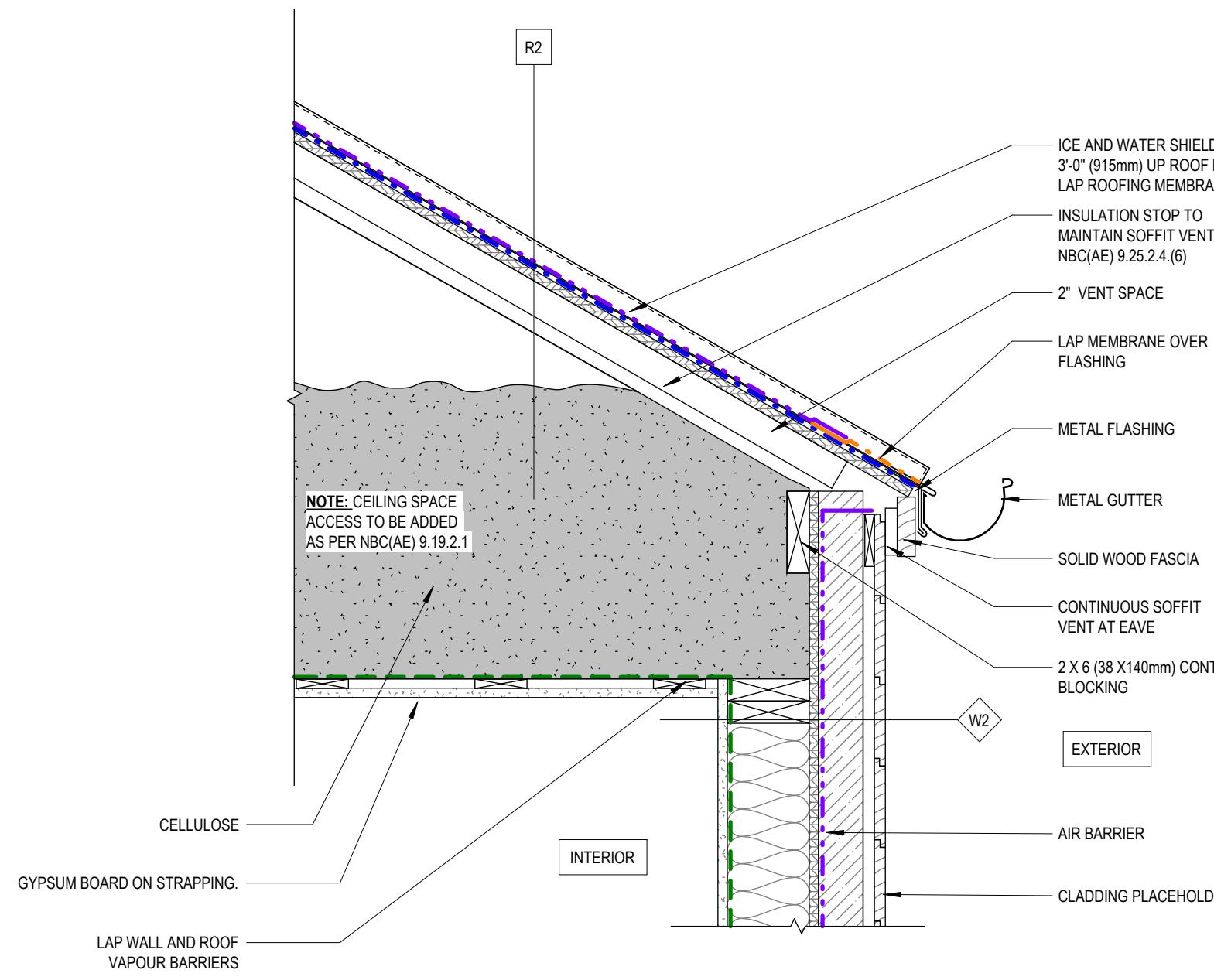
PROJECT NO: 241058
SCALE: 1:10

SHEET NO:

A005

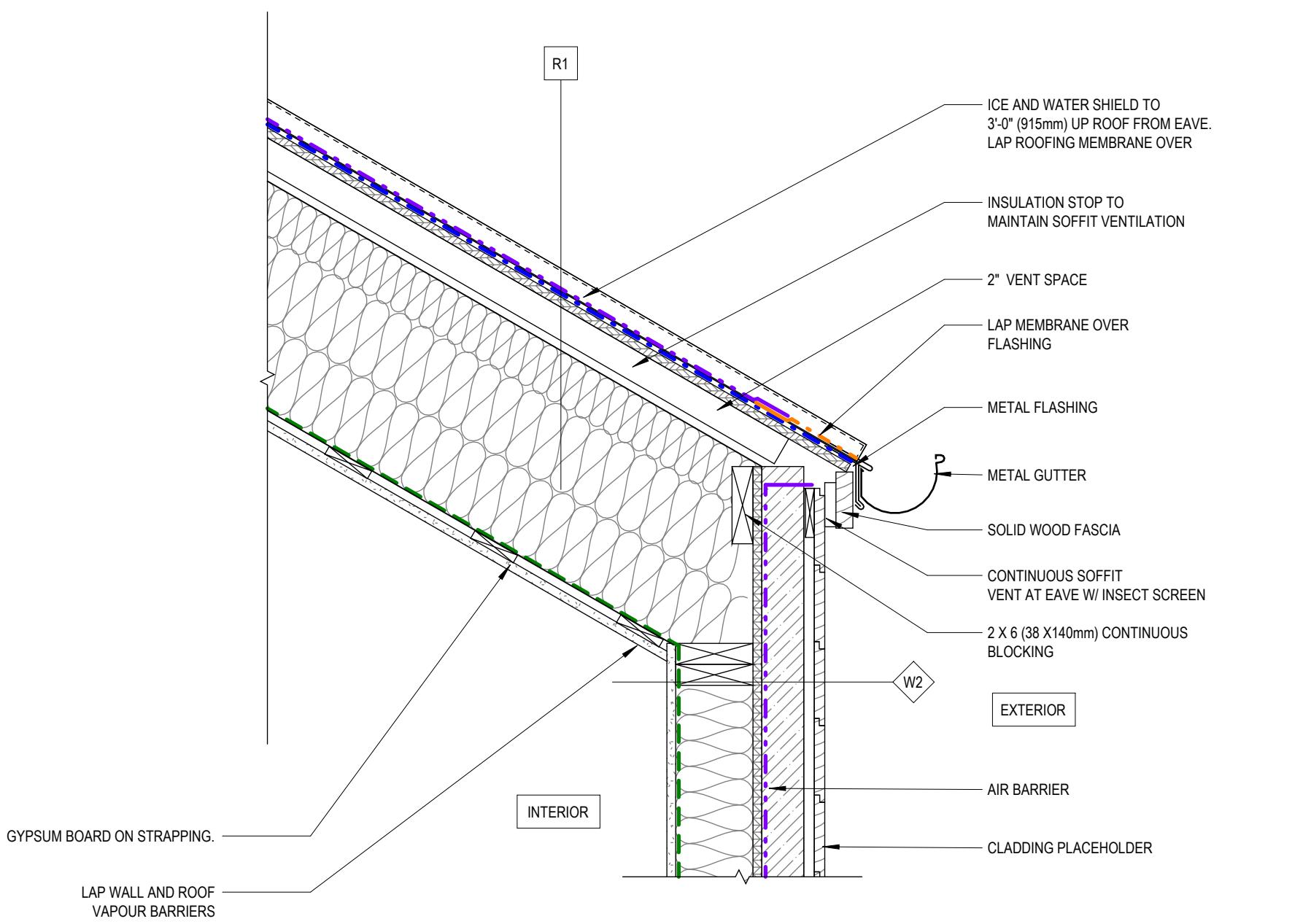
DISCLAIMER

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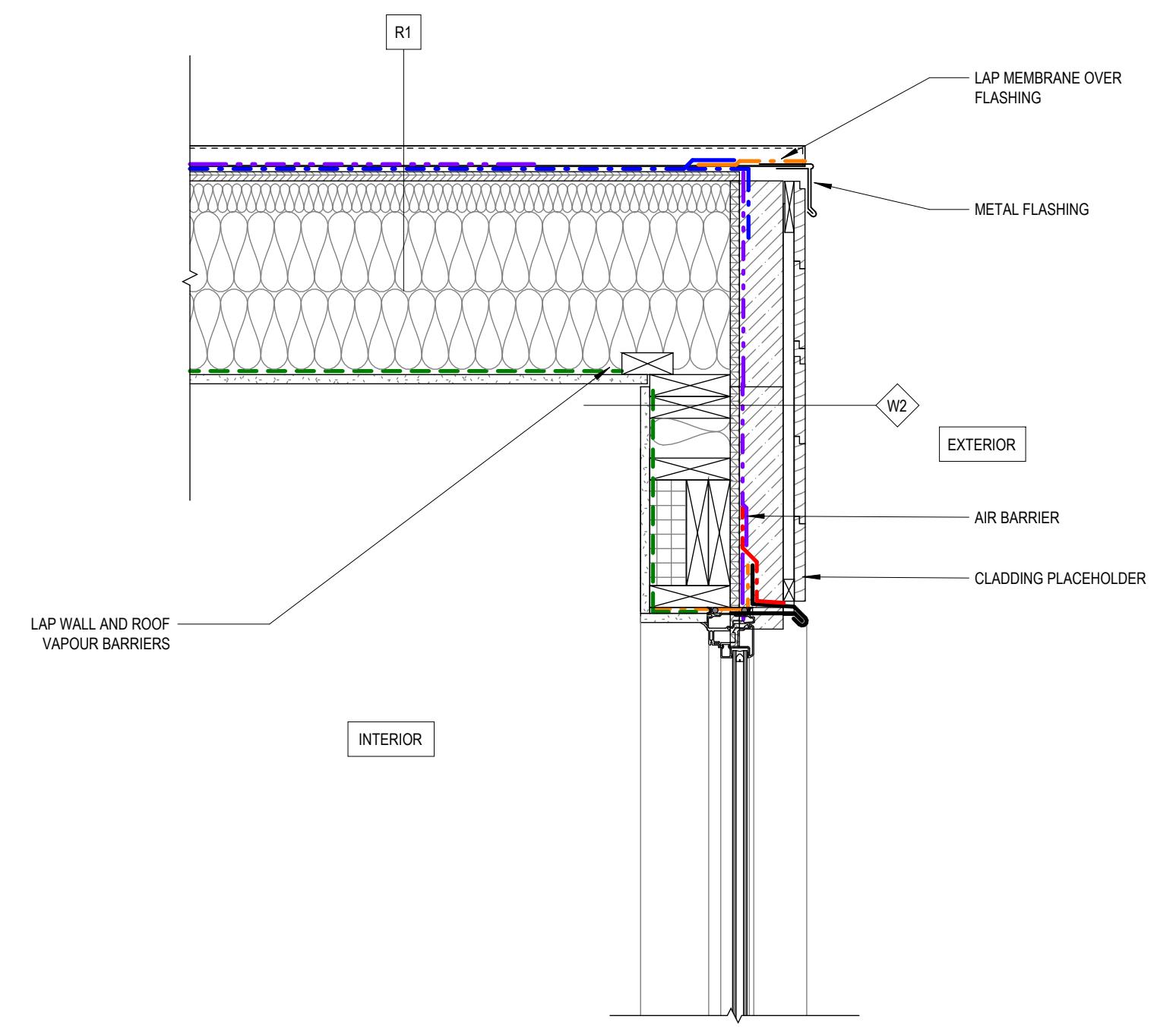
1 SECTION DETAIL - TYP. R2 EAVE W/ GUTTER

1 A006 1 : 10



2 SECTION DETAIL - TYP. R1 EAVE W/ GUTTER

2 A006 1 : 10



3 SECTION DETAIL - ROOF RIDGE

3 A006 1 : 10

MEMBRANE LEGEND

- - - - - AIR BARRIER, VAPOUR PERMEABLE
- - - - - AIR BARRIER, NON-VAPOUR PERMEABLE
- - - - - TRANSITION MEMBRANE
- - - - - THROUGH-WALL FLASHING
- - - - - VAPOUR CONTROL BARRIER
- - - - - FOUNDATION DAMP PROOFING
- - - - - PRE-FIN METAL FLASHING

INSULATION LEGEND

- - - - - MINERAL WOOL, SEMI-RIGID
- - - - - EXTRUDED POLYSTYRENE
- - - - - EXPANDED POLYISOCYANURATE
- - - - - SPRAY FOAM
- - - - - MINERAL WOOL BATT

1	2025-02-21	Issued as Prototypical Drawing	

NO. DATE DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
TYP. DETAILS

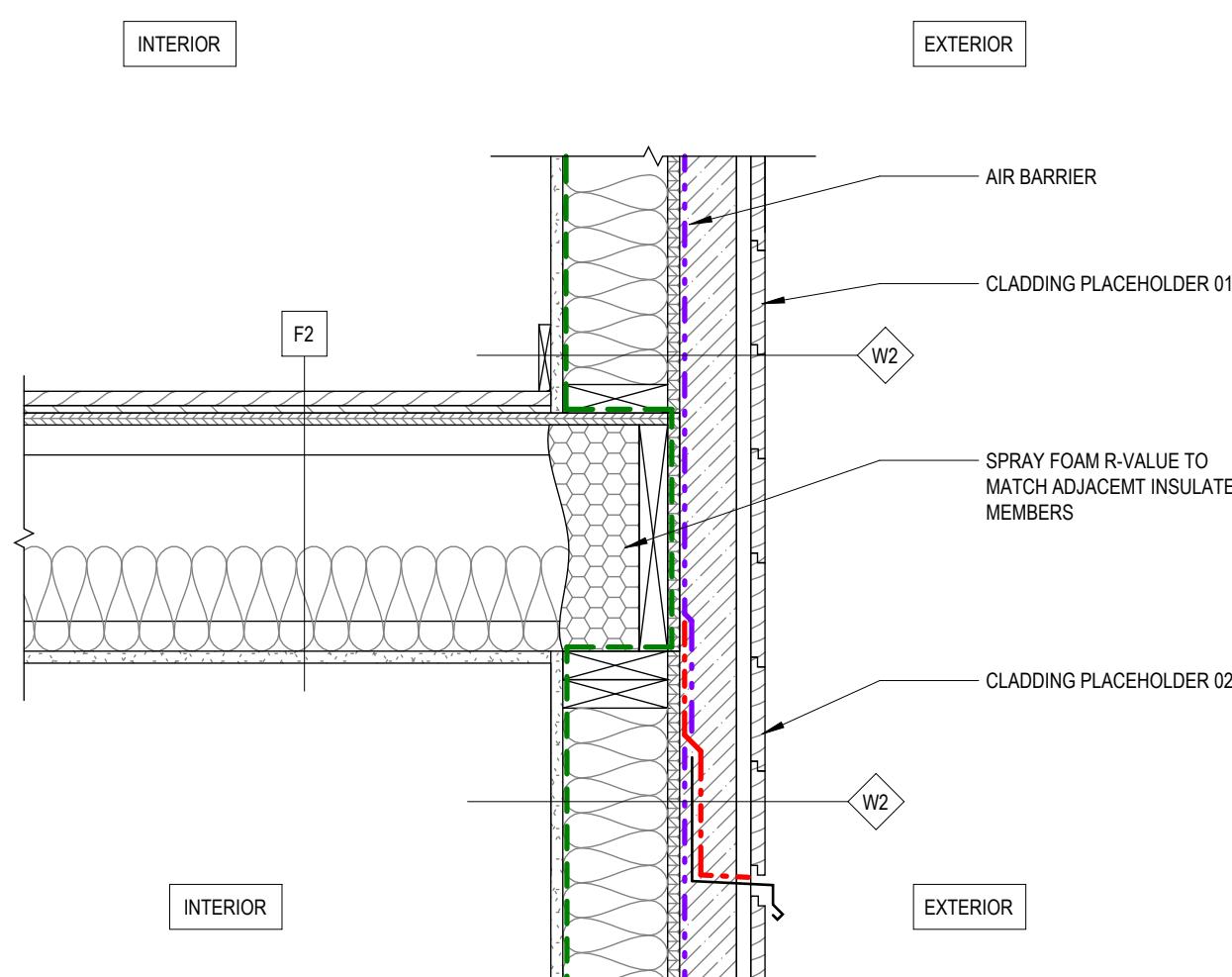
AB Fourplex 01

PROJECT NO: 241058
SCALE: As indicated

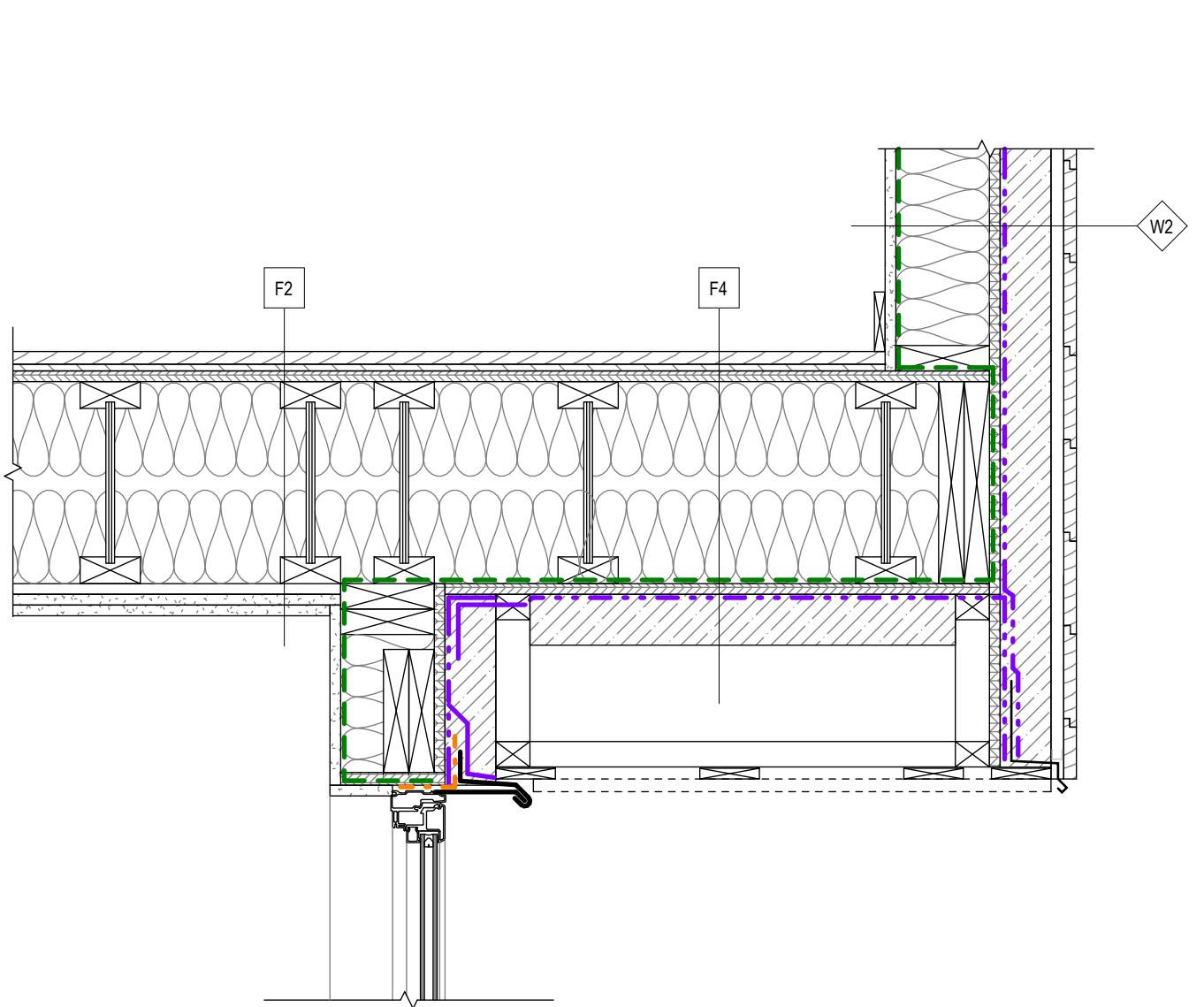
SHEET NO:
A006

DISCLAIMER

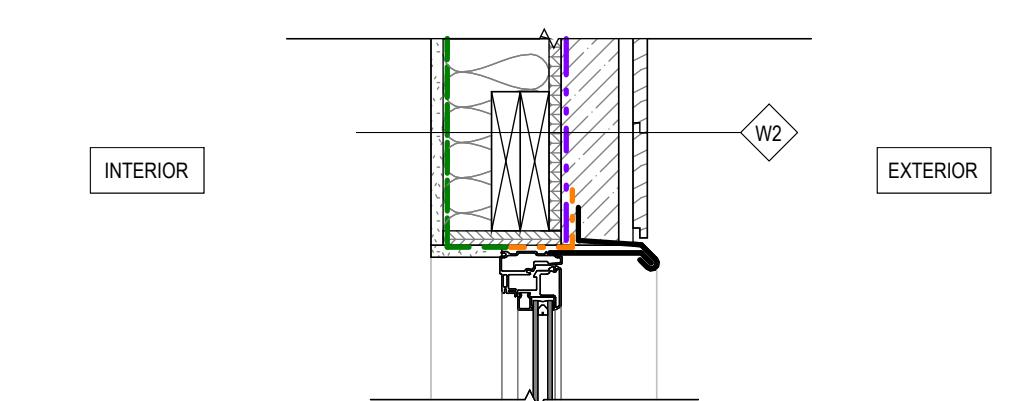
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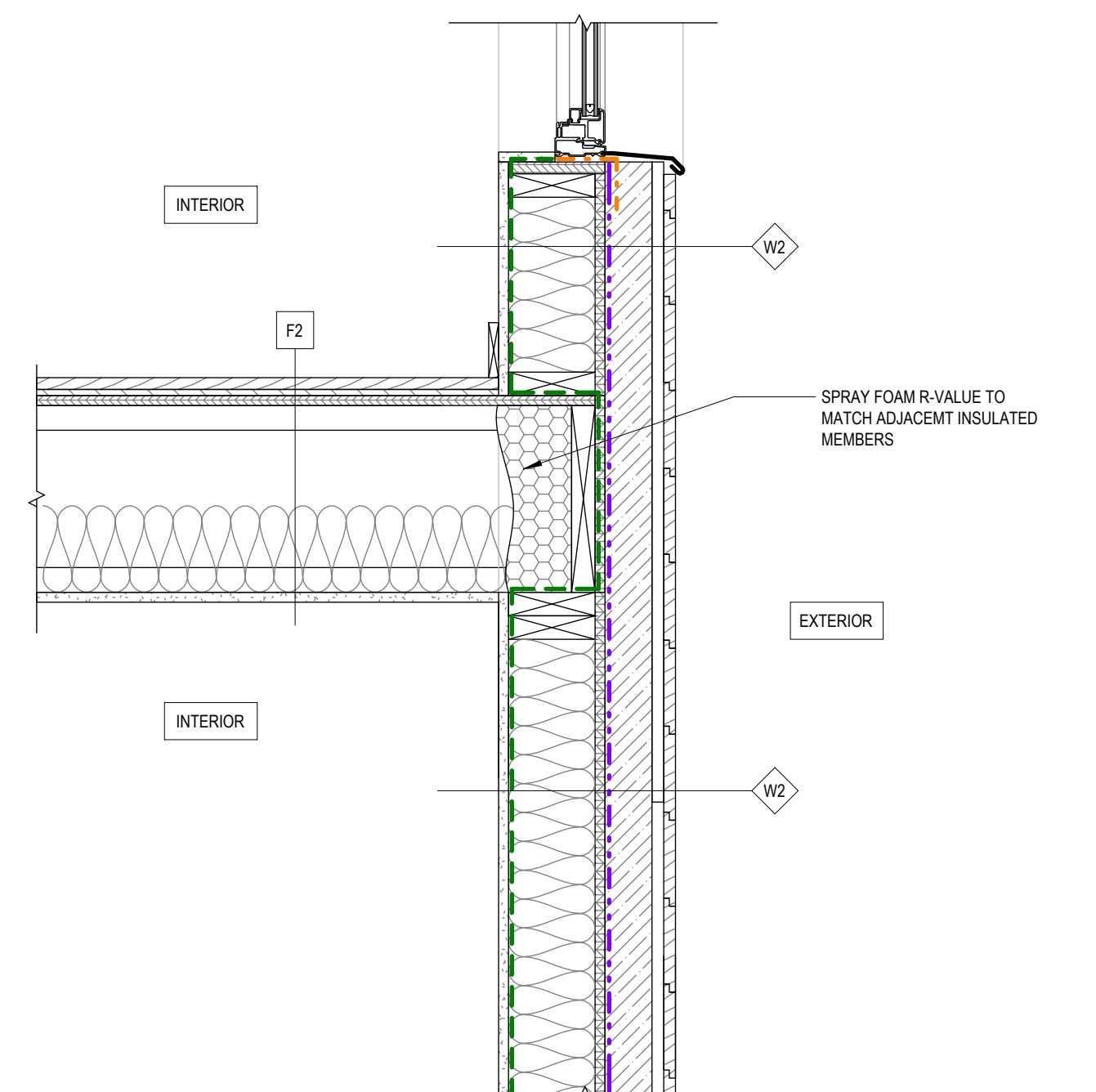
1 SECTION - TYP. THRU WALL FLASHING AT FLOOR
A007 1 : 10



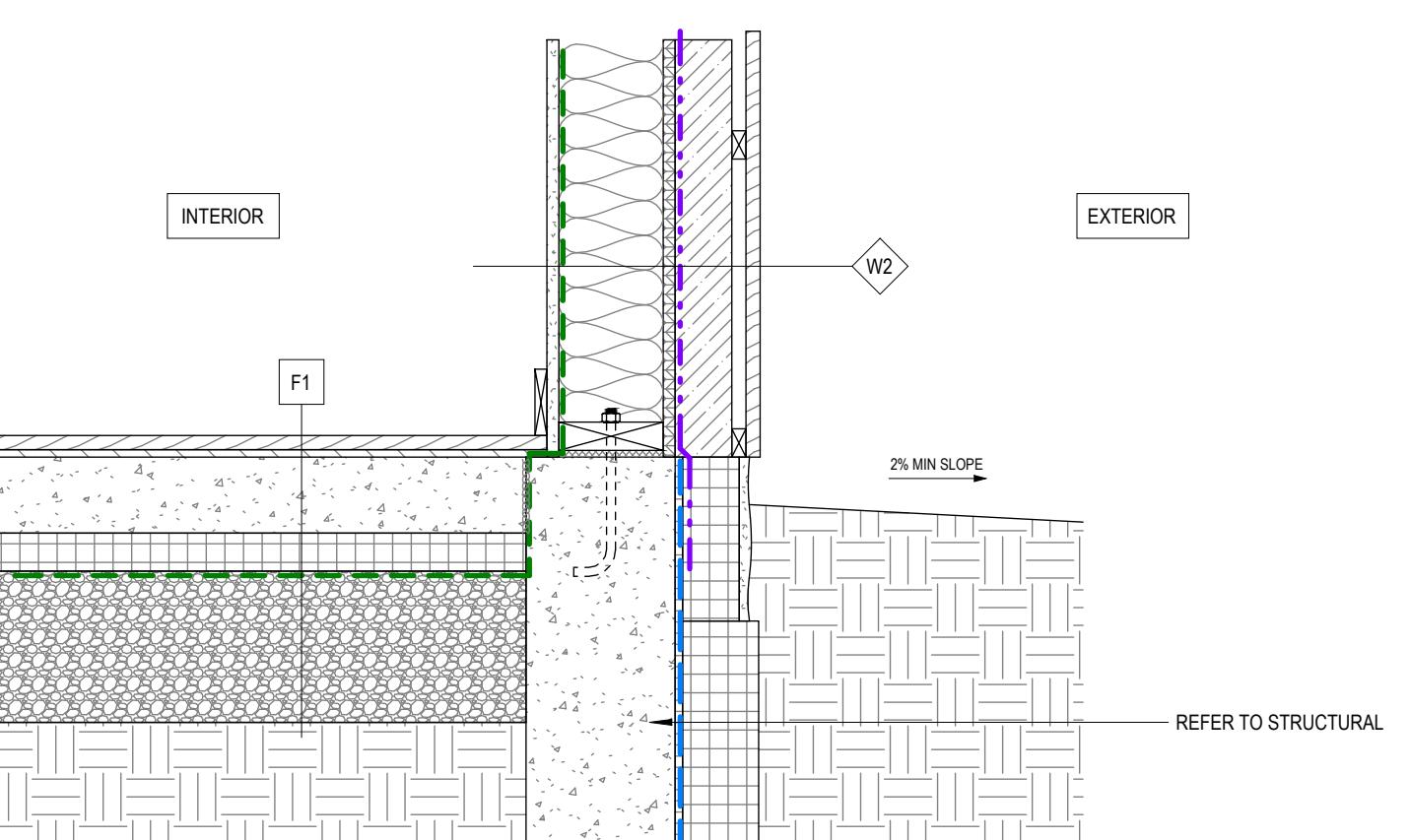
2 SECTION - TYP. WINDOW SOFFIT DETAIL
A007 1 : 10



3 SECTION DETAIL - TYP. EAVE & WINDOW HEAD
A007 1 : 10



4 SECTION DETAIL - TYP. FLOOR TO WALL & WINDOW SILL
A007 1 : 10



5 SECTION DETAIL - TYP. FOUNDATION DETAIL
A007 1 : 10

MEMBRANE LEGEND	
	AIR BARRIER, VAPOUR PERMEABLE
	AIR BARRIER, NON-VAPOUR PERMEABLE
	TRANSITION MEMBRANE
	THROUGH-WALL FLASHING
	VAPOUR CONTROL BARRIER
	FOUNDATION DAMP PROOFING
	PRE-FIN METAL FLASHING

INSULATION LEGEND	
	MINERAL WOOL, SEMI-RIGID
	EXTRUDED POLYSTYRENE
	EXPANDED POLYISOCYANURATE
	SPRAY FOAM
	MINERAL WOOL BATT

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

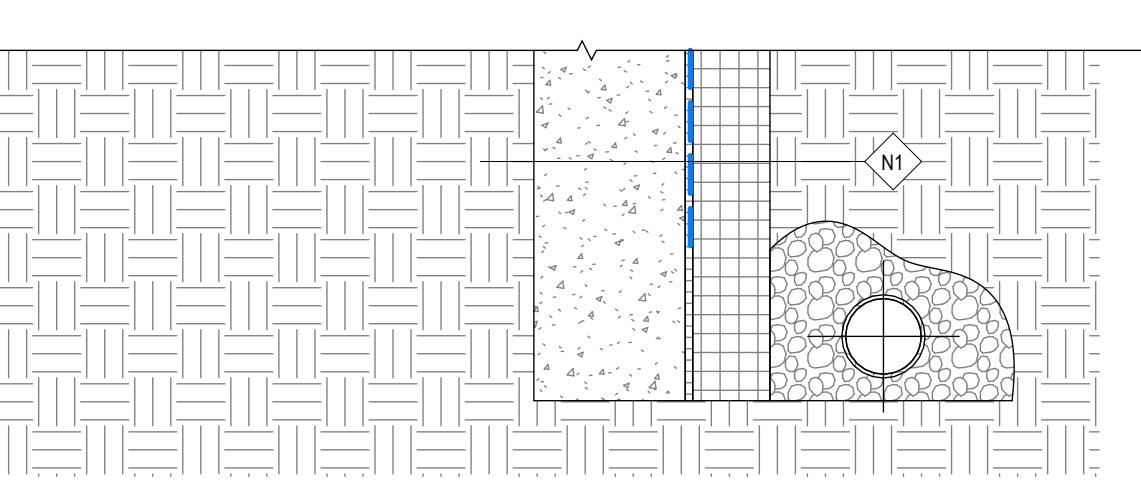
ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
TYP. DETAILS

AB Fourplex 01

PROJECT NO: 241058
SCALE: As indicated



SHEET NO:
A007

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MEMBRANE LEGEND

-  AIR BARRIER, VAPOUR PERMEABLE
-  AIR BARRIER, NON-VAPOUR PERMEABLE
-  TRANSITION MEMBRANE
-  THROUGH-WALL FLASHING
-  VAPOUR CONTROL BARRIER
-  FOUNDATION DAMP PROOFING
-  PRE-FIN METAL FLASHING

INSULATION LEGEND

	MINERAL WOOL, SEMI-RIGID
	EXTRUDED POLYSTYRENE
	EXPANDED POLYISOCYANURATE
	SPRAY FOAM
	MINERAL WOOL, BATT

NO	DATE	DESCRIPTION
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PROJECT:

CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

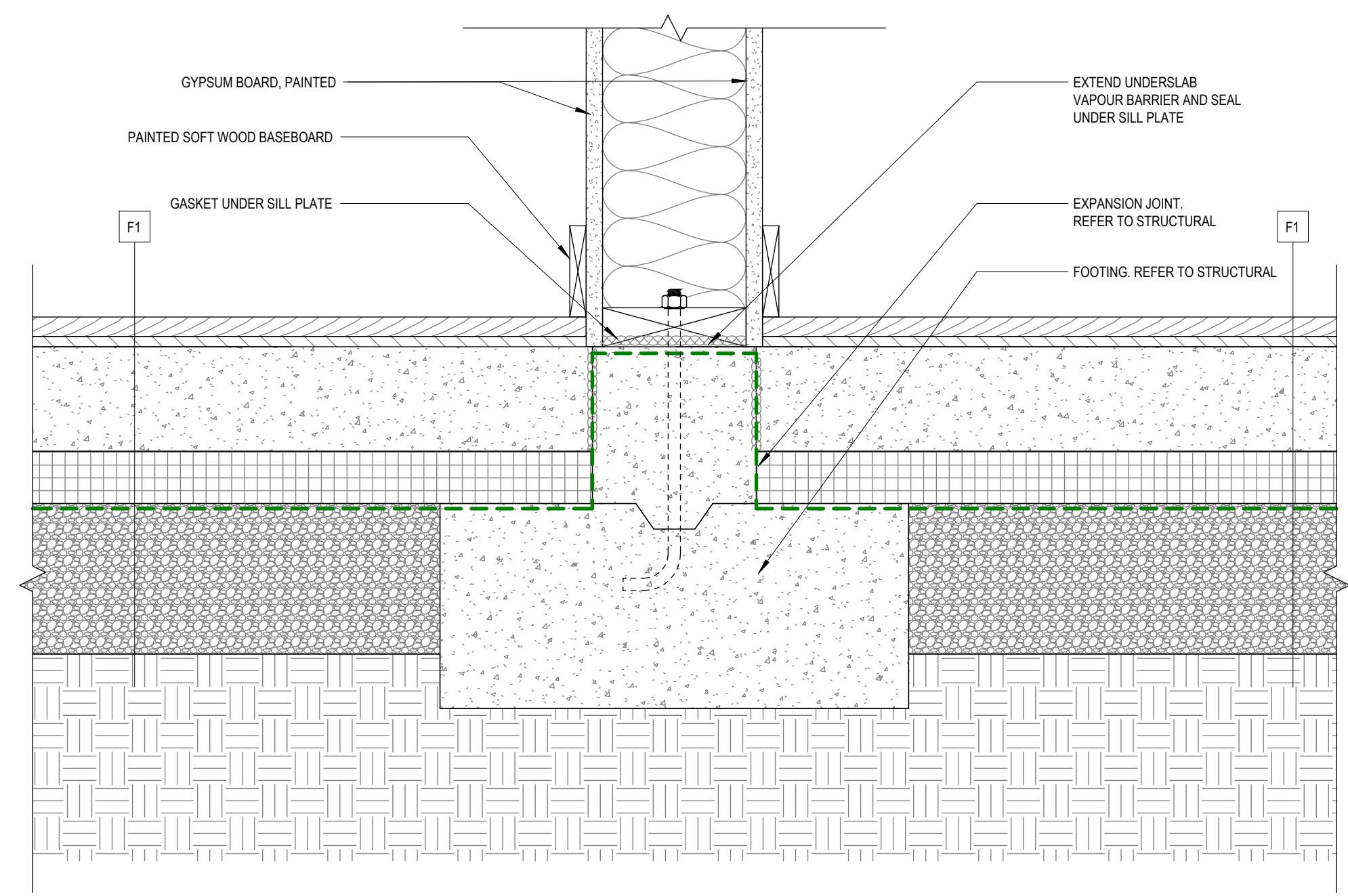
SHEET TITLE:

AB Fourplex 01

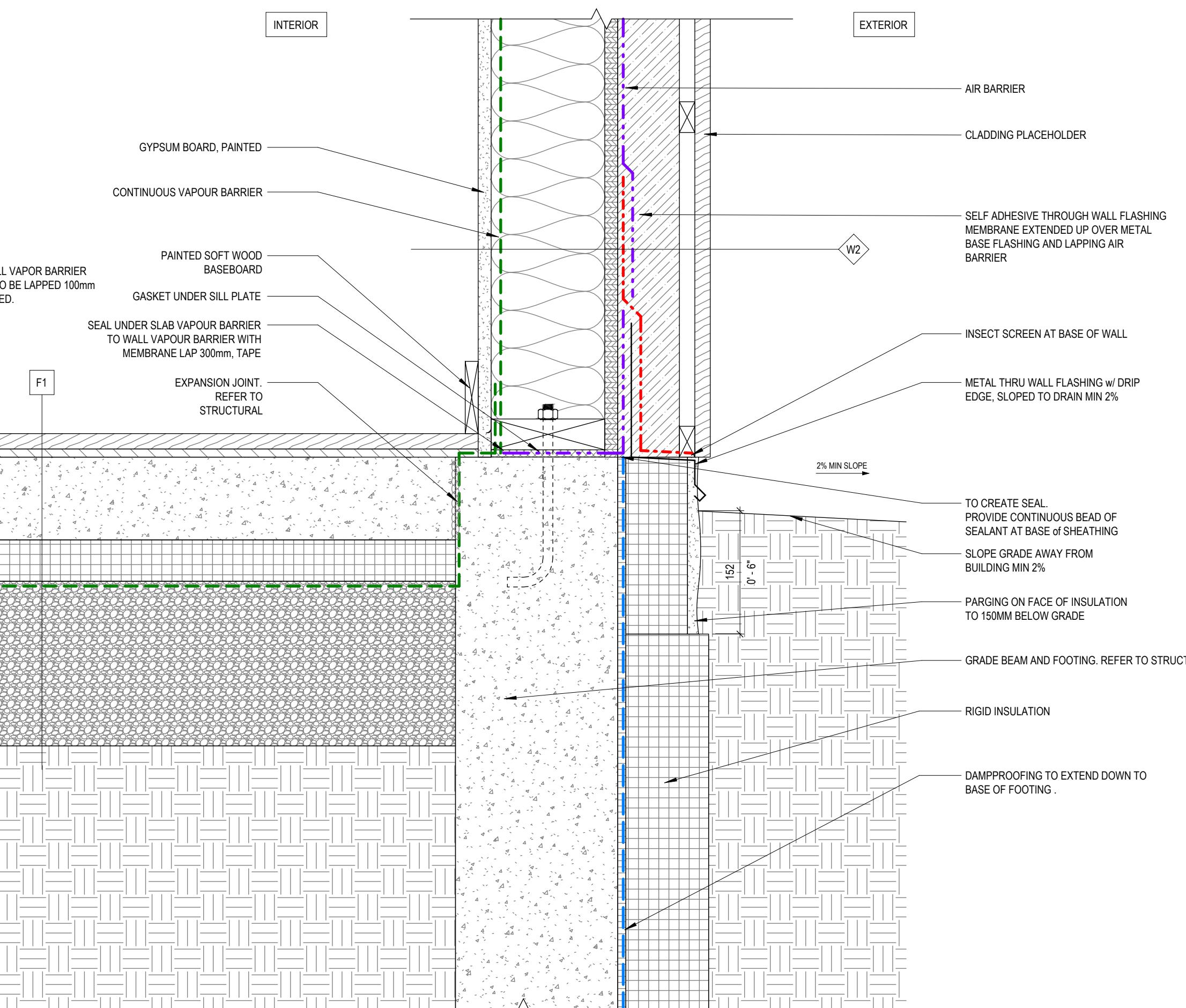
PROJECT NO: 241058
SCALE: As indicated

SHEET NO:

A008



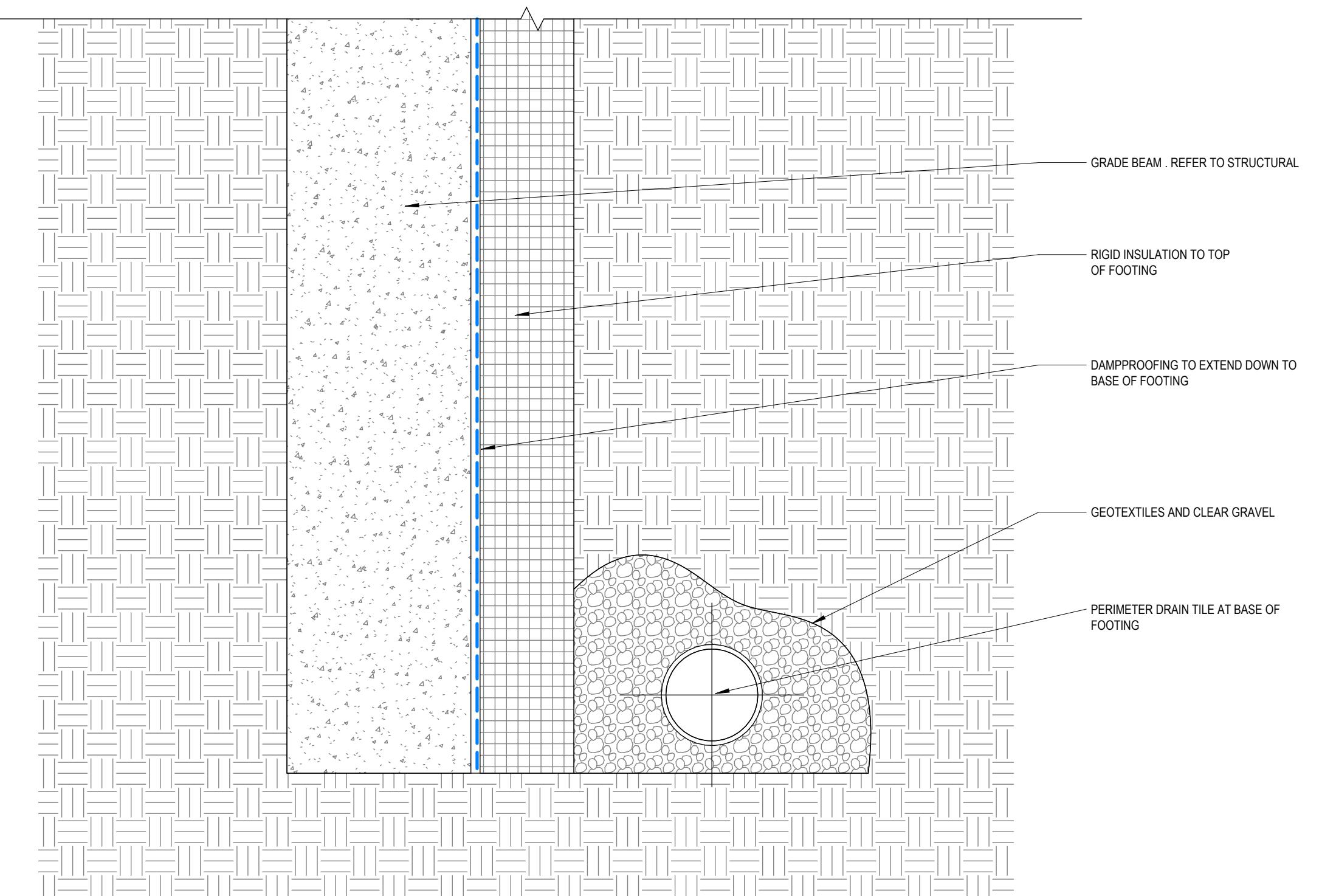
SECTION DETAIL - TYP. STRIP FOOTING



2
008

SECTION DETAIL - SECTION - TYP. FOOTING

1:5



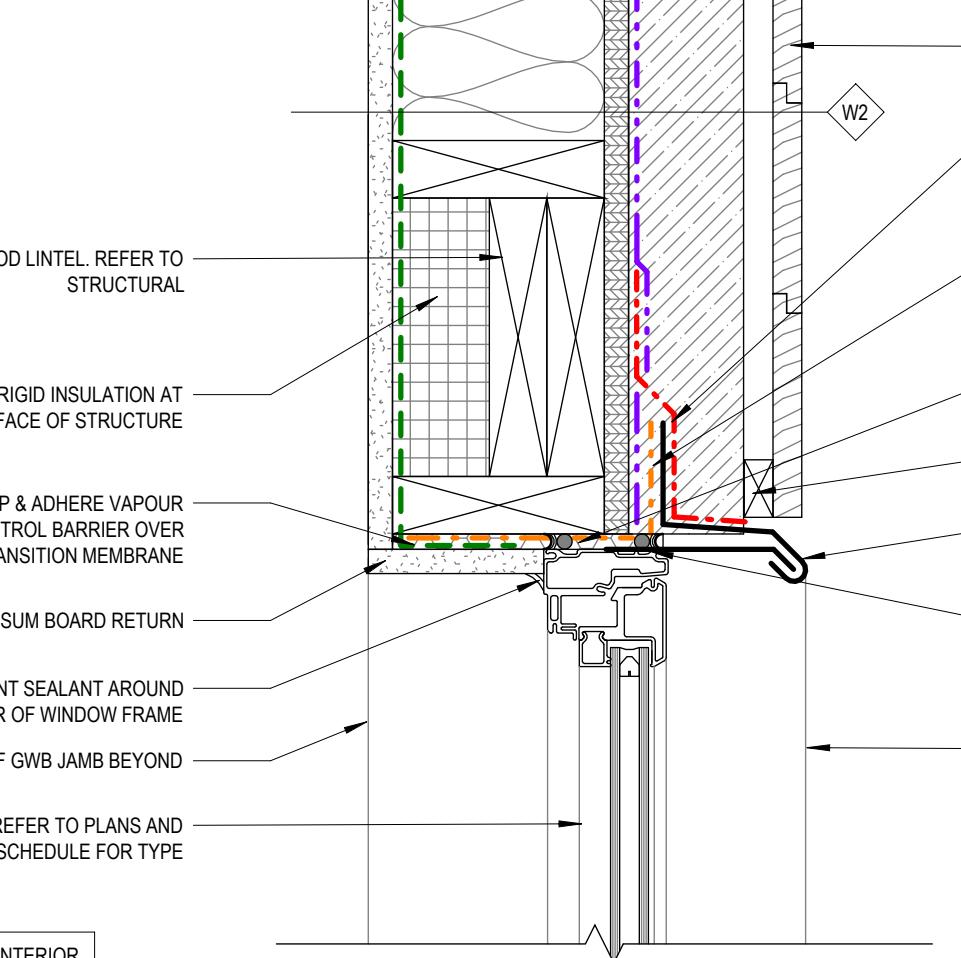
3
008

SECTION DETAIL - SECTION - TYP. WALL TO FOUNDATION

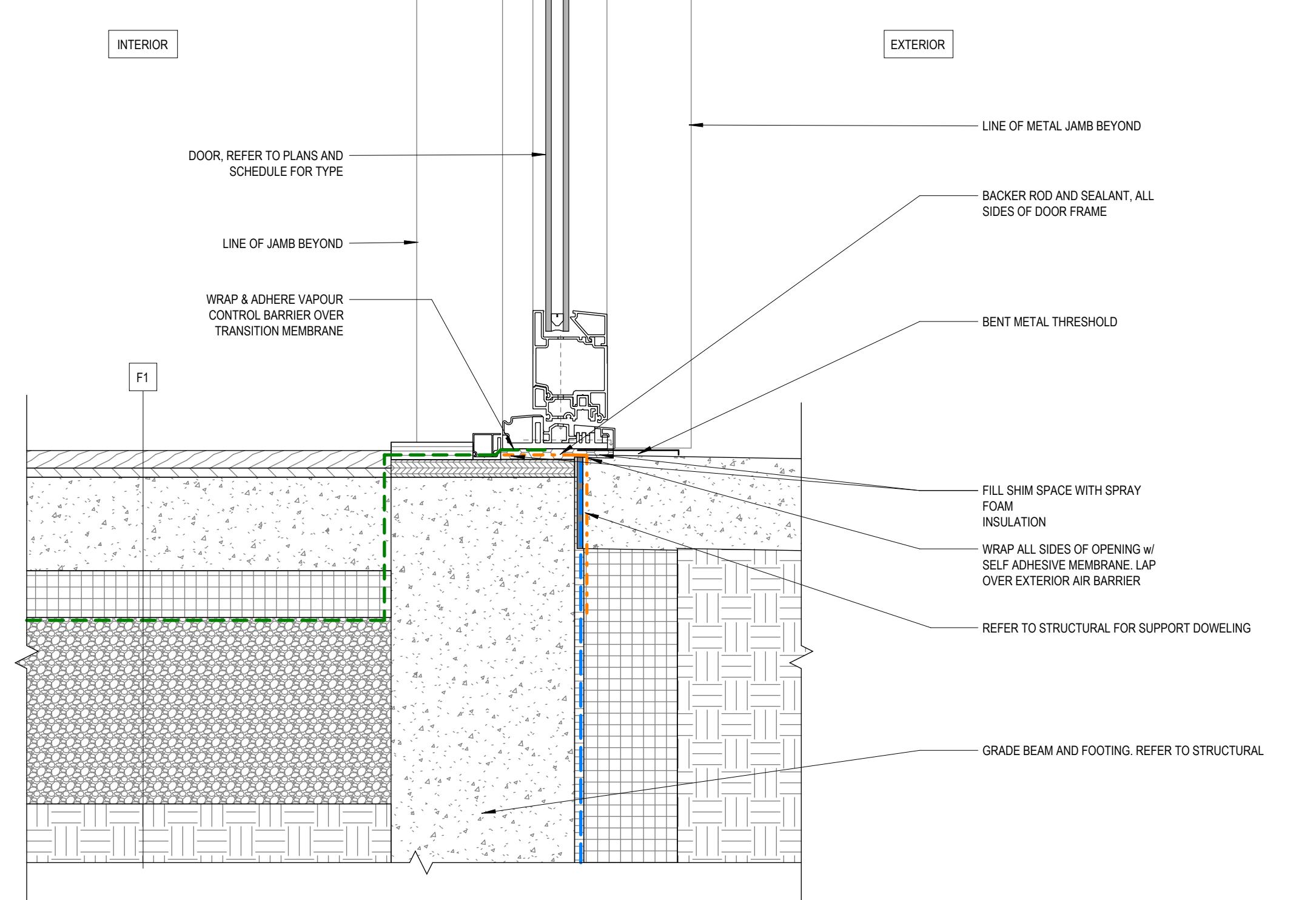
1 : 5

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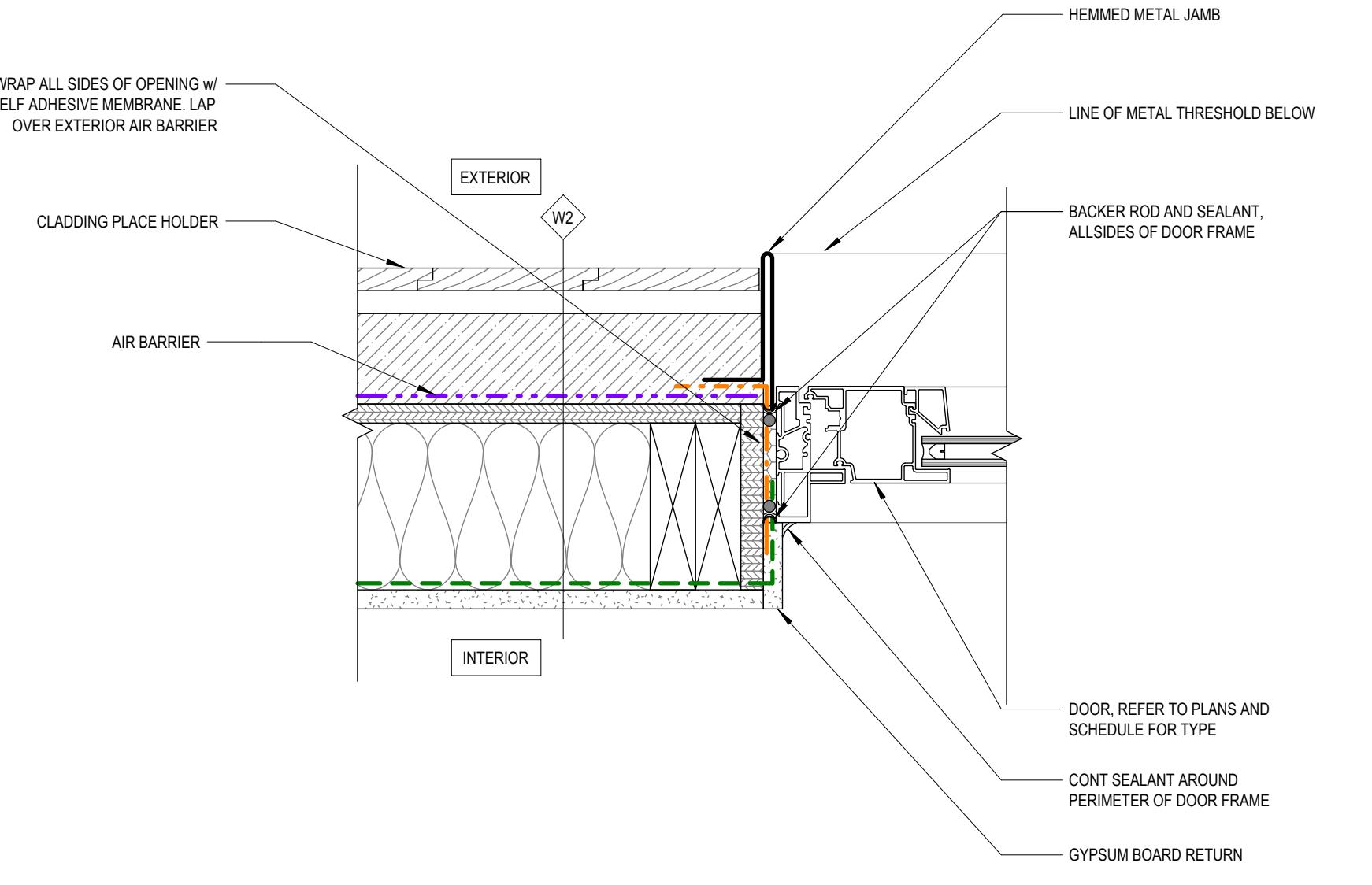


SECTION DETAIL - TYP. EXT. DOOR HEAD
A009 1 : 5

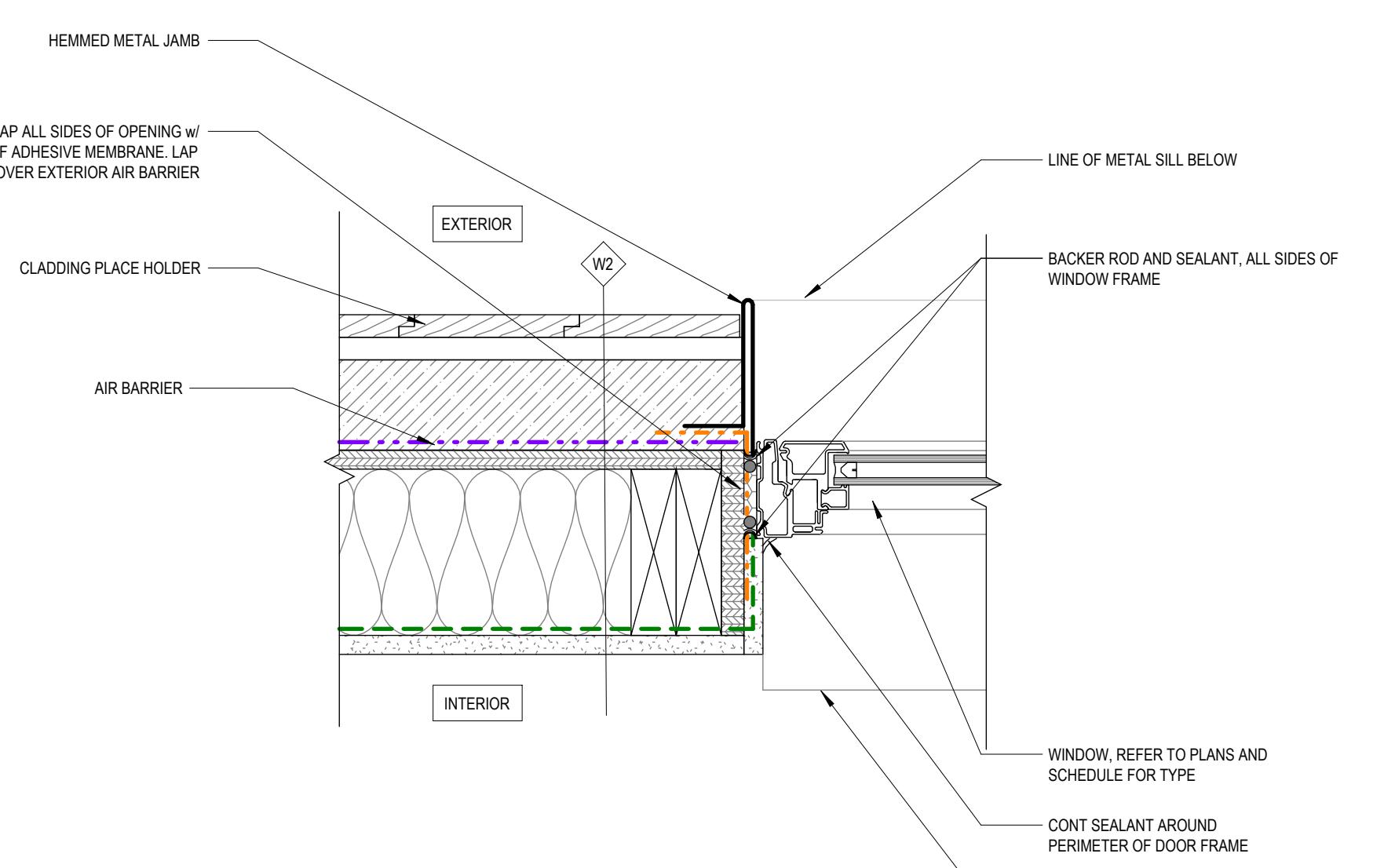


SECTION DETAIL - TYP. WINDOW SILL
A009 1 : 5

SECTION DETAIL - TYP. EXT. DOOR THRESHOLD
A009 1 : 5



PLAN - TYP. EXTERIOR DOOR JAMB
A009 1 : 5



PLAN - TYP. WINDOW JAMB
A009 1 : 5

MEMBRANE LEGEND

- AIR BARRIER, VAPOUR PERMEABLE
- AIR BARRIER, NON-VAPOUR PERMEABLE
- TRANSITION MEMBRANE
- THROUGH-WALL FLASHING
- VAPOUR CONTROL BARRIER
- FOUNDATION DAMP PROOFING
- PRE-FIN METAL FLASHING

INSULATION LEGEND

- MINERAL WOOL, SEM-RIGID
- EXTRUDED POLYSTYRENE
- EXPANDED POLYISOCYANURATE
- SPRAY FOAM
- MINERAL WOOL BATT

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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SHEET TITLE:
TYP. DETAILS

AB Fourplex 01

PROJECT NO: 241058
SCALE: As indicated

SHEET NO:

A009

SITE DATA	
ADDRESS	N/A
LOT & PLAN NO.	N/A
ZONING	N/A
	EXISTING
LOT AREA	365 m ²
BUILDING AREA	151.9 m ²
COVERAGE	41.6%
LANDSCAPED OPEN SPACE	213.1 m ²
SOFTSCAPE AREA	125.5 m ² (34.4%)
HARDSCAPE AREA	87.6 m ² (24%)
PARKING SPOTS	-
SETBACKS	REQUIRED
FRONT	ASSUMED 4.5m
SIDE 1	ASSUMED 1.5m
REAR	ASSUMED 10.0m
SIDE 2	ASSUMED 1.5m
BUILDING DEPTH	22.0m

SITE PLAN GENERAL NOTES

1. SITE DESIGN TO CONFORM TO FIREFIGHTING ACCESS REQUIREMENTS AS PER NBC(AE) 9.10.20.3.
2. GRADE TO BE SLOPED AWAY FROM BUILDING AS PER NBC(AE) 9.14.6.1
3. DOWNSPOUT TO CONFORM TO NBC(AE) 9.26.18.2.
4. SITE DESIGN TO CONFORM TO BARRIER FREE REQUIREMENTS AS PER NBC(AE) 3.8.1.1. FOR ACCESS TO BARRIER FREE UNITS
5. ENTRANCE TO BARRIER FREE UNIT TO CONFORM TO NBC(AE) 3.8.1.2. AND NBC(AE) 3.8.3.3.
6. EXTERIOR WALKS THAT FORM PART OF A BARRIER-FREE PATH OF TRAVEL TO CONFORM FOR NBC(AE) 3.8.3.2.
7. SITE DESIGN TO CONFORM TO CSA/ASC B651 FOR ACCESS TO CSA/ASC B652 ENHANCED ACCESSIBILITY UNIT

SITE LEGEND

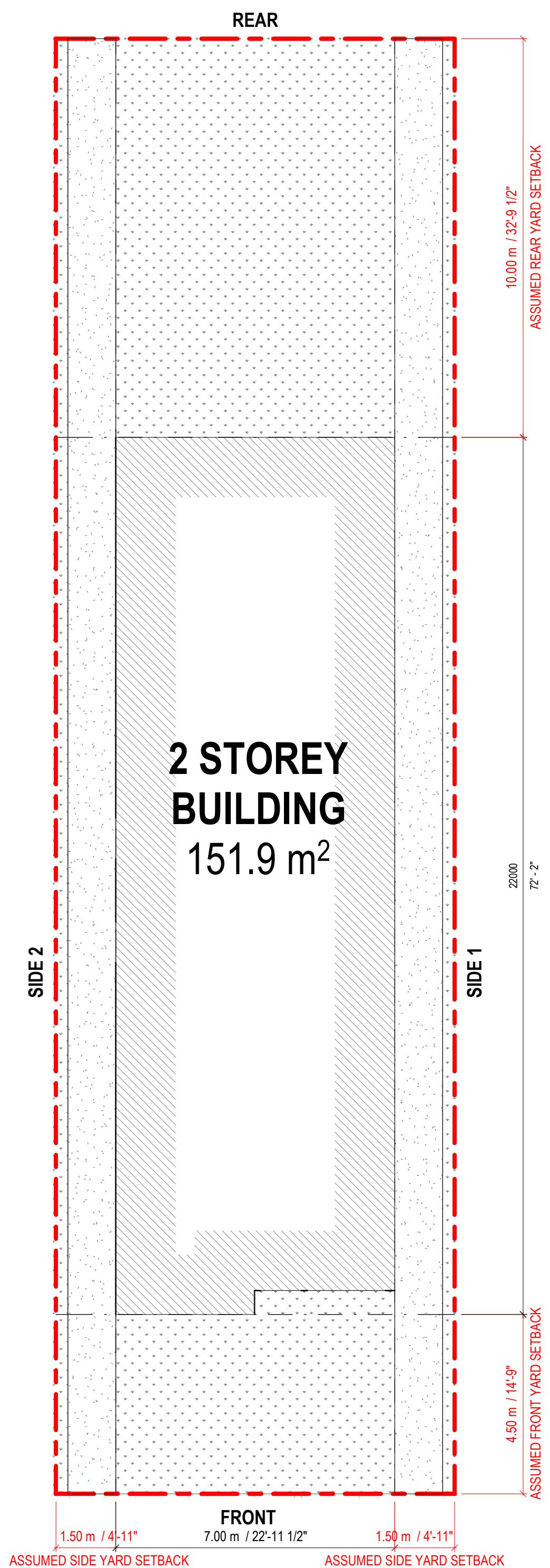
ASSUMED PROPERTY LINE

SETBACK

BUILDING

SOFTSCAPE

HARDSCAPE



1 SITE PLAN

A010 1 : 100

1	2025-02-21	Issued as Prototypical Drawing

PROJECT:

CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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AB Fourplex 01

PROJECT NO: 241058
SCALE: As indicated

SHEET NO:

A010



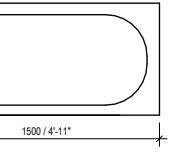
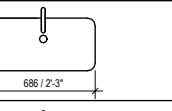
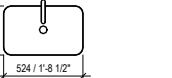
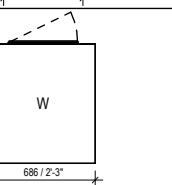
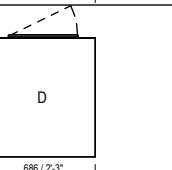
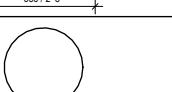
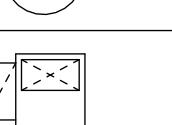
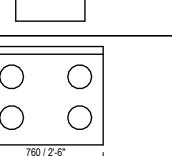
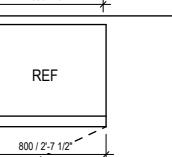
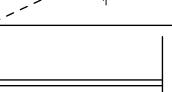
FLOOR PLAN GENERAL NOTES

1. ALL DIMENSIONS ARE TAKEN TO THE FINISH FACE OF THE INTERIOR PARTITIONS AND EXTERIOR WALLS, UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AT EXTERIOR WINDOWS AND DOORS ARE TAKEN TO THE OUTSIDE EDGE OF THE FRAME, UNLESS NOTED OTHERWISE.
3. LOCATE ROUGH OPENINGS OF INTERIOR DOORS 100mm FROM INSIDE FACE IF INTERSECTING PARTITION, UNLESS NOTED OTHERWISE.
4. CLOSET DOORS TO BE CENTERED ALONG INTERIOR CLOSET WIDTH, UNLESS NOTED OTHERWISE.
5. ALL DROPPED CEILINGS AND BULKHEADS FOR MECHANICAL TO PROVIDE MIN 2100mm CLEAR BELOW .
6. MIN CEILING HEIGHTS AS PER ABC TABLE 9.5.3.1
BATHROOMS & HALLWAYS=2100mm
BEDROOM = 2100mm
LIVING/DINING/KITCHEN = 2100mm
7. REFER TO LANDSCAPE DOCUMENTS FOR EXTERIOR HARDSCAPE AND PLANTING ELEMENTS, AND PAVING TERMINATION DETAILS ADJACENT TO THE BUILDING.

FIRE SEPARATION LEGEND

_____ 1 HOUR E.R.R.

FLOOR PLAN LEGEND

	FLOOR MOUNTED TOILET
	PRE-FAB TUB
	KITCHEN SINK
	WASHROOM SINK
	WASHER
	DRYER
	DOMESTIC HOT WATER
	AIR HANDLER
	RANGE, TYPICAL
	REFRIGERATOR
	CLOSET COAT ROD

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PROJECT: CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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SHEET TITLE:

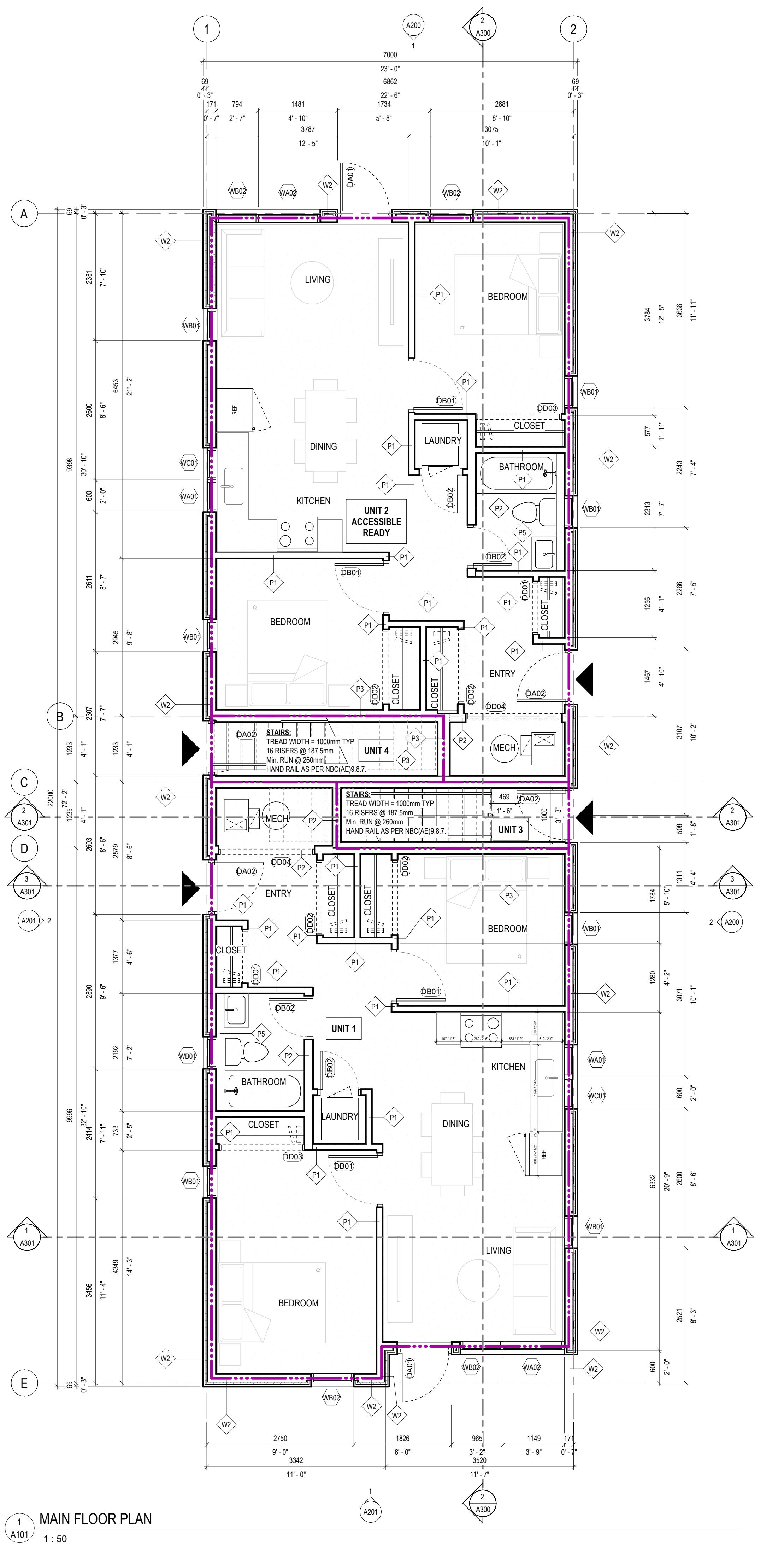
MAIN FLOOR PLAN - ACCESSIBLE READY

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1:50

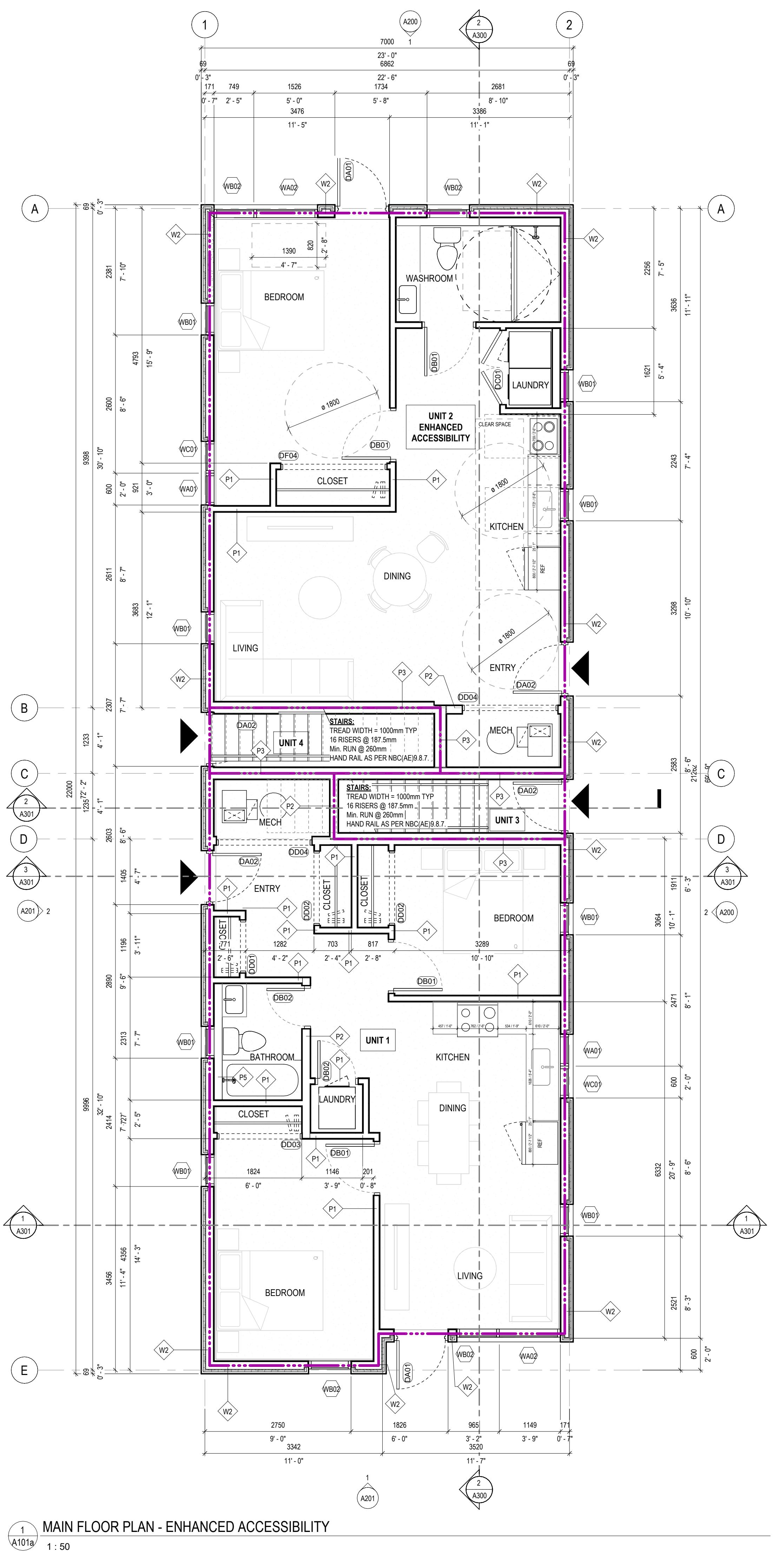
SHEET NO:

A101



DISCLAIMER

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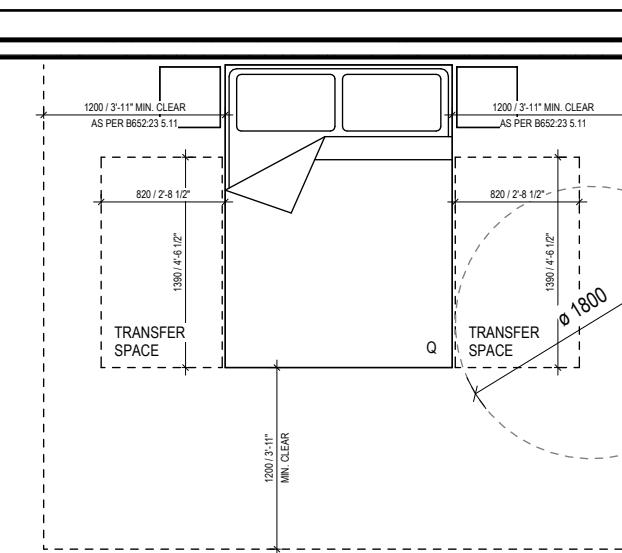
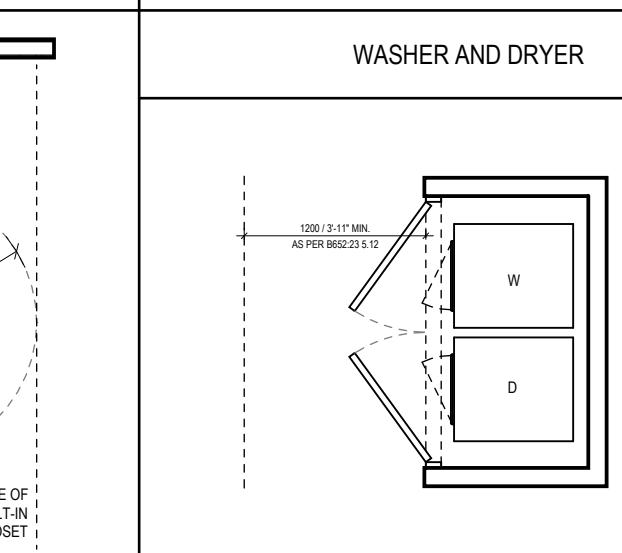
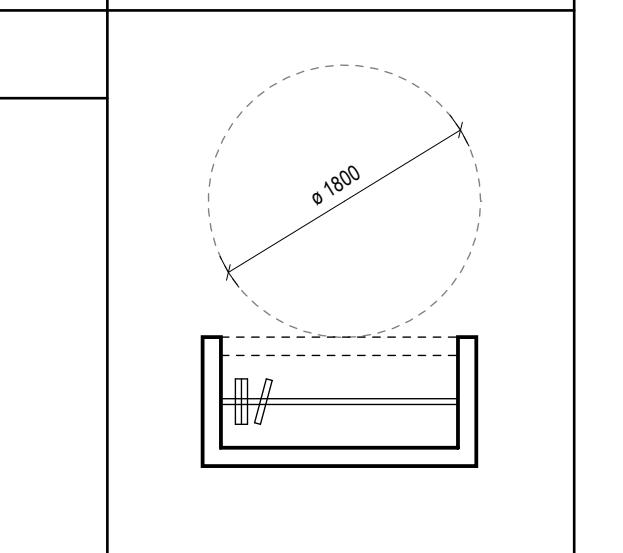


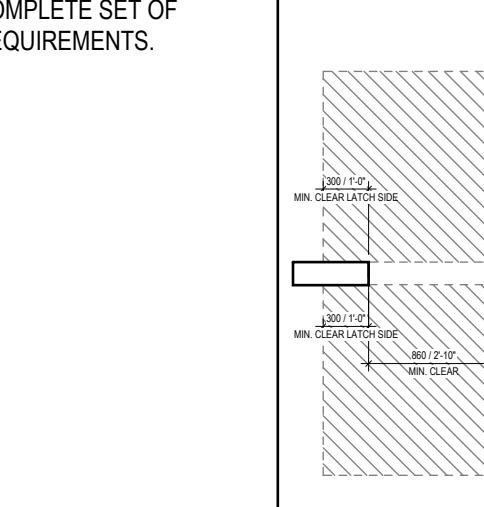
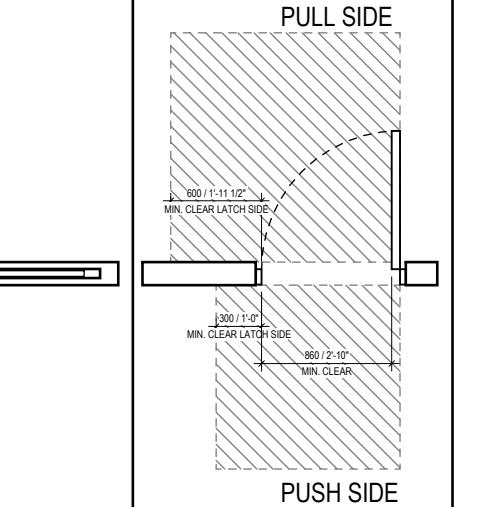
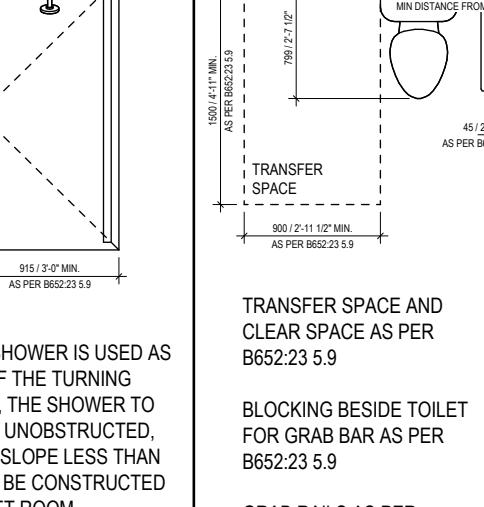
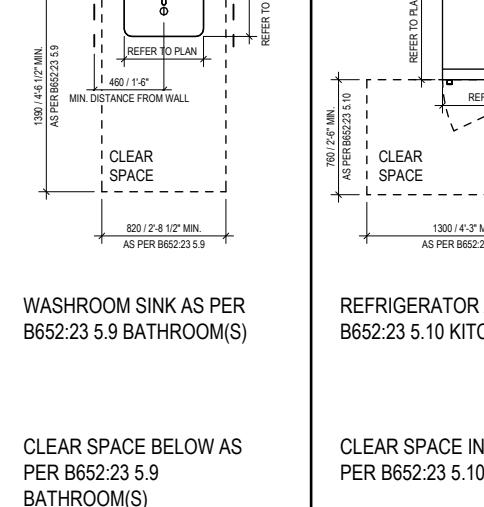
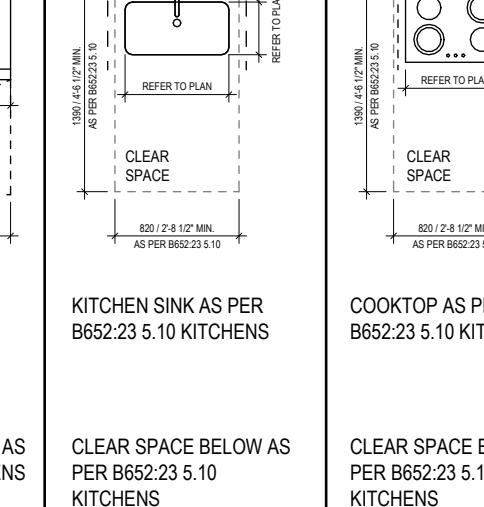
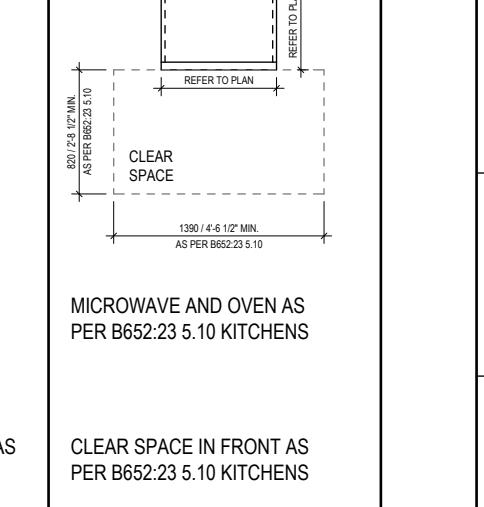
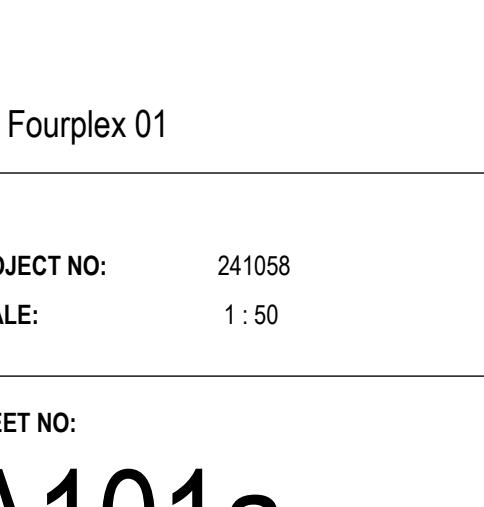
FLOOR PLAN GENERAL NOTES	
1.	ALL DIMENSIONS ARE TAKEN TO THE FINISH FACE OF THE INTERIOR PARTITIONS AND EXTERIOR WALLS, UNLESS NOTED OTHERWISE.
2.	ALL DIMENSIONS AT EXTERIOR WINDOWS AND DOORS ARE TAKEN TO THE OUTSIDE EDGE OF THE FRAME, UNLESS NOTED OTHERWISE.
3.	LOCATE ROUGH OPENINGS OF INTERIOR DOORS 100mm FROM INSIDE FACE IF INTERSECTING PARTITION, UNLESS NOTED OTHERWISE.
4.	CLOSET DOORS TO BE CENTERED ALONG INTERIOR CLOSET WIDTH, UNLESS NOTED OTHERWISE.
5.	ALL DROPPED CEILINGS AND BULKHEADS FOR MECHANICAL TO PROVIDE MIN 2100mm CLEAR BELOW.
6.	MIN CEILING HEIGHTS AS PER ABC TABLE 9.5.3.1 BATHROOMS & HALLWAYS = 2100mm BEDROOM = 2100mm LIVING/DINING/KITCHEN = 2100mm
7.	REFER TO LANDSCAPE DOCUMENTS FOR EXTERIOR HARDCAPE AND PLANTING ELEMENTS, AND PAVING TERMINATION DETAILS ADJACENT TO THE BUILDING.

FIRE SEPARATION LEGEND	
	1 HOUR F.R.R.

FLOOR PLAN LEGEND	
	FLOOR MOUNTED TOILET
	PRE-FAB TUB
	KITCHEN SINK
	WASHROOM SINK
	WASHER
	DRYER
	DOMESTIC HOT WATER
	AIR HANDLER
	RANGE, TYPICAL
	REFRIGERATOR
	CLOSET COAT ROD

DOOR SCHEDULE - ACCESSIBLE OPTION					
TAG	TYPE	METRIC SIZE (mm)		IMPERIAL SIZE (FT'-IN")	
		WIDTH	HEIGHT	WIDTH	HEIGHT
DA01	DOOR TYPE A	914	2350	3'-0"	7'-8 1/2"
DA02	DOOR TYPE A	914	2350	3'-0"	7'-8 1/2"
DB01	DOOR TYPE B	914	2032	3'-0"	6'-8"
DB02	DOOR TYPE B	711	2032	2'-4"	6'-8"
DC01	DOOR TYPE C	1400	2032	4'-7 1/8"	6'-8"
DD01	DOOR TYPE D	1000	2032	3'-3 3/8"	6'-8"
DD02	DOOR TYPE D	1400	2032	4'-7 1/8"	6'-8"
DD03	DOOR TYPE D	1600	2032	5'-3"	6'-8"
DD04	DOOR TYPE D	1800	2032	5'-10 7/8"	6'-8"
DF04	DOOR TYPE F	2000	2032	6'-6 3/4"	6'-8"

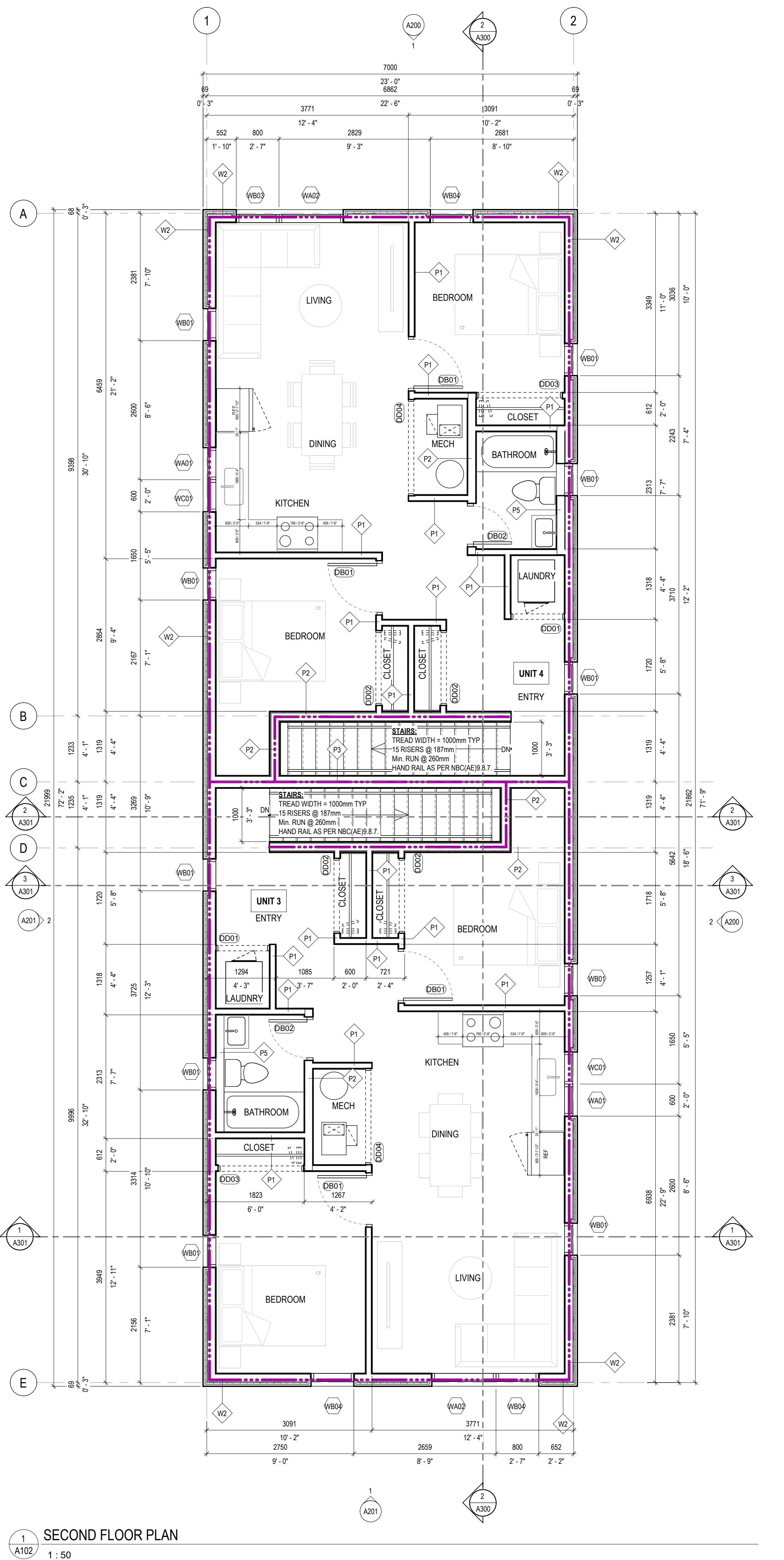
BEDROOMS (B652:23 5.11)		LAUNDRY (B652:23 5.12)		CLOSETS (B652:23 5.13)	
REFER TO B652:23 5.11 BEDROOMS FOR ADDITIONAL REQUIREMENTS:		REFER TO B652:23 5.12 LAUNDRY FOR ADDITIONAL REQUIREMENTS:		REFER TO B652:23 5.13 CLOSETS FOR ADDITIONAL REQUIREMENTS:	
1. CLEAR SPACE AND TRANSFER SPACES AROUND BED 2. ELECTRICAL REQUIREMENTS IN BEDROOMS		1. APPLIANCE REQUIREMENTS CLOSET DOORS SHALL ALLOW FULL ACCESS TO SIDE-BY-SIDE UNITS 2. STORAGE AND ACCESSORY REQUIREMENTS		1. SHELVES, HANGING ROD HEIGHTS AND STORAGE REQUIREMENTS	
 <p>THE BED SHALL HAVE A 1200mm ACCESSIBLE PATH ON THREE SIDES AND PROVIDE A TURNING RADIUS OF 1800mm WHERE A BEDROOM CONTAINS A BUILT-IN CLOSET</p>		 <p>WASHER AND DRYER AS PER B652:23 5.12 KITCHENS</p>		 <p>1800mm MIN. TURNING RADIUS IN FRONT OF BEDROOM CLOSET AS PER B652:23 5.11 BEDROOMS</p>	

LEGEND	DOORS AND DOORWAYS (B652:23 5.7)		BATHROOMS (B652:23 5.9)			KITCHEN (B652:23 5.10)			
	SLIDING DOOR	SWINGING DOOR	ROLL-IN SHOWER	TOILET	BATHROOM SINK	REFRIGERATOR	KITCHEN SINK	COOKTOP	MICROWAVE
GENERAL NOTE: CSA/ASC B652.3 - "ACCESSIBLE DWELLINGS" WAS USED AS A GUIDE FOR SPACE PLANNING PURPOSES WITHIN UNIT(S) LABELED "ENHANCED ACCESSIBILITY - CSA/ASC B652". CONSULT THE STANDARD FOR A COMPLETE SET OF REQUIREMENTS.	REFER TO B652:23 5.7 DOORS AND DOORWAYS FOR ADDITIONAL REQUIREMENTS: 1. DOOR WIDTH AND CLEARANCE REQUIREMENTS 2. POWER DOOR OPERATOR REQUIREMENTS	REFER TO B652:23 5.9 BATHROOM(S) FOR ADDITIONAL REQUIREMENTS: 1. WALL REINFORCING BACKING AND GRAB BARS 2. VANITY AND ACCESSORY REQUIREMENTS 3. WASHROOM ILLUMINATION REQUIREMENTS	REFER TO B652:23 5.10 KITCHENS FOR ADDITIONAL REQUIREMENTS: 1. MIN. REQ COUNTER SPACE BETWEEN COOKTOP AND SINK NOT LESS THAN 820mm 2. ADDITIONAL KITCHEN FIXTURE AND APPLIANCE REQUIREMENTS 3. ELECTRICAL REQUIREMENTS IN KITCHEN 4. ADDITIONAL CABINETRY AND SPACE PLANNING REQUIREMENTS						
									

1 2025-02-21 Issued as Prototypical Drawing
NO. DATE DESCRIPTION
PROJECT: CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA
NOT FOR PERMIT OR CONSTRUCTION
SHEET TITLE: MAIN FLOOR PLAN - ENHANCED ACCESSIBILITY
PROJECT NO: 241058
SCALE: 1 : 50
SHEET NO: A101a
AB Fourplex 01

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FLOOR PLAN GENERAL NOTES	
1.	ALL DIMENSIONS ARE TAKEN TO THE FINISH FACE OF THE INTERIOR PARTITIONS AND EXTERIOR WALLS, UNLESS NOTED OTHERWISE.
2.	ALL DIMENSIONS AT EXTERIOR WINDOWS AND DOORS ARE TAKEN TO THE OUTSIDE EDGE OF THE FRAME, UNLESS NOTED OTHERWISE.
3.	LOCATE ROUGH OPENINGS OF INTERIOR DOORS 100mm FROM INSIDE FACE IF INTERSECTING PARTITION, UNLESS NOTED OTHERWISE.
4.	CLOSET DOORS TO BE CENTERED ALONG INTERIOR CLOSET WIDTH, UNLESS NOTED OTHERWISE.
5.	ALL DROPPED CEILINGS AND BULKHEADS FOR MECHANICAL TO PROVIDE MIN 2100mm CLEAR BELOW.
6.	MIN CEILING HEIGHTS AS PER ABC TABLE 9.5.3.1 BATHROOMS & HALLWAYS=2100mm BEDROOM = 2100mm LIVING/DINING/KITCHEN = 2100mm
7.	REFER TO LANDSCAPE DOCUMENTS FOR EXTERIOR HARDCAPE AND PLANTING ELEMENTS, AND PAVING TERMINATION DETAILS ADJACENT TO THE BUILDING.

FIRE SEPARATION LEGEND	
	1 HOUR F.R.R.

FLOOR PLAN LEGEND	
	FLOOR MOUNTED TOILET
	PRE-FAB TUB
	KITCHEN SINK
	WASHROOM SINK
	WASHER
	DRYER
	DOMESTIC HOT WATER
	AIR HANDLER
	RANGE, TYPICAL
	REFRIGERATOR
	CLOSET COAT ROD

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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SHEET TITLE:
SECOND FLOOR PLAN

AB Fourplex 01

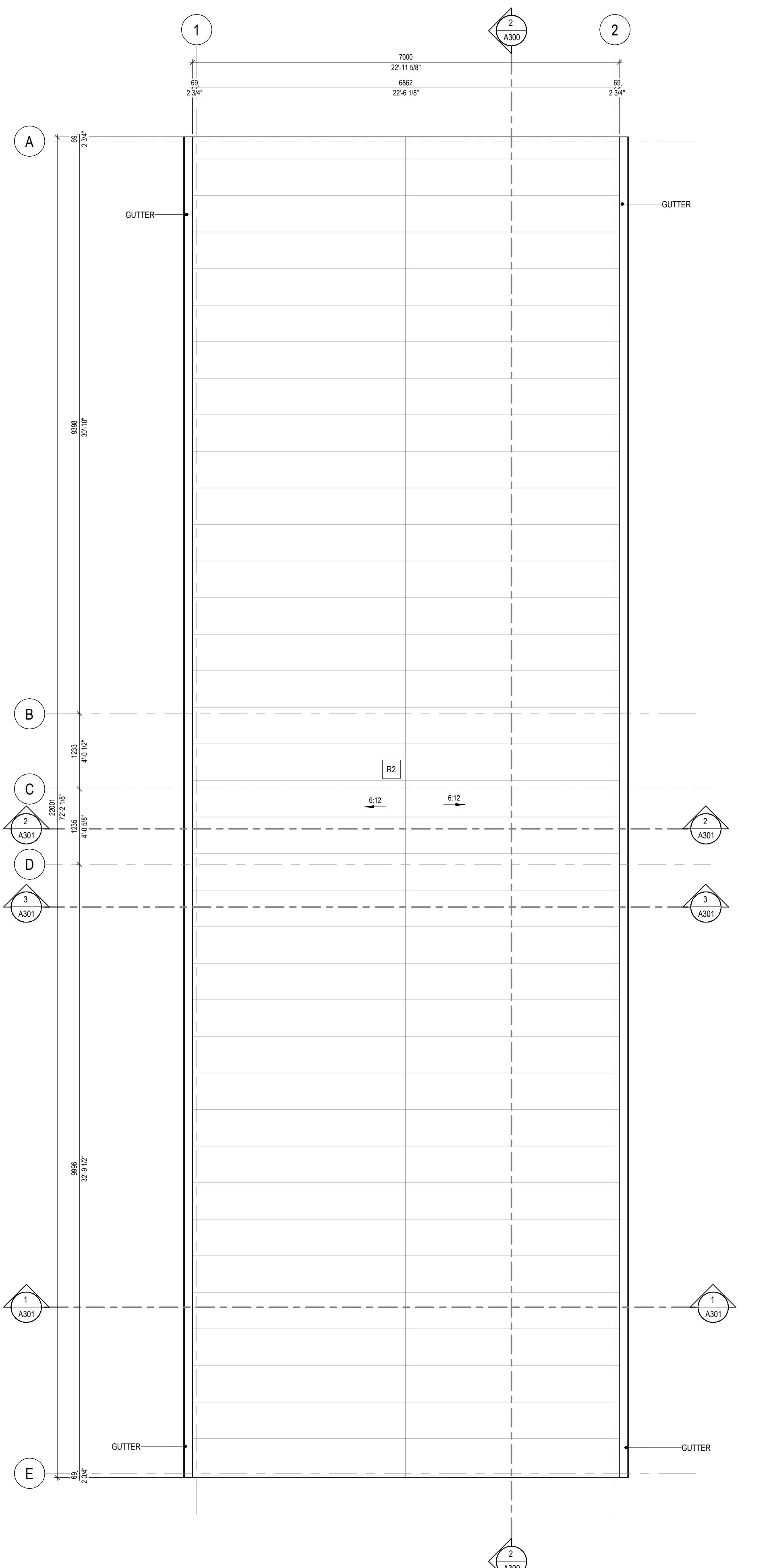
PROJECT NO: 241058
SCALE: 1:50

SHEET NO:

A102

ROOF PLAN GENERAL NOTES
1. ALL ROOFING TYPES TO COMPLY WITH REQUIRED MINIMUM SLOPES AS PER ABC(AE) 9.26.3 AND MANUFACTURER REQUIREMENTS FOR SPECIFIED ROOFING TYPES
2. ALL ROOFS, GUTTERS AND TROUGHS HAVE POSITIVE SLOPE TO DRAIN.
3. ROOF VENTING TO COMPLY WITH 9.19.1.2

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1 ROOF PLAN
A104 1 : 50

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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ROOF PLAN

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1 : 50

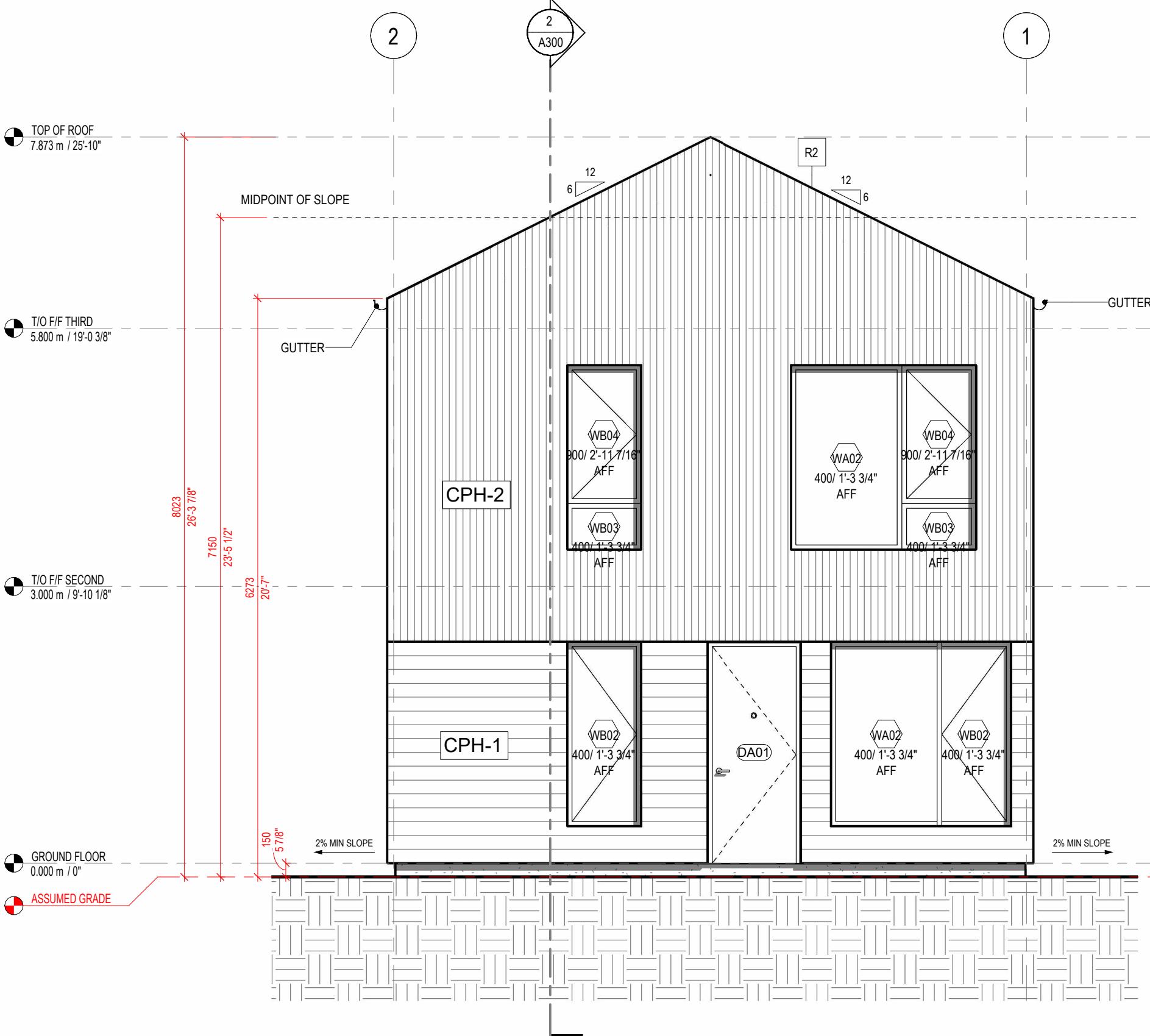
SHEET NO:
A104

ELEVATION MATERIAL SCHEDULE	
TAG	MATERIAL
CPH-1	CLADDING PLACEHOLDER, TYPE 1
CPH-2	CLADDING PLACEHOLDER, TYPE 2

NOTE: CLADDING FINISHES WITHIN 200MM OF GRADE ARE TO BE MOISTURE RESISTANT

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1 BUILDING ELEVATION - REAR
A200 1 : 50



2 BUILDING ELEVATION - SIDE 1
A200 1 : 50

1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN
CATALOGUE

ALBERTA, CANADA

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OR CONSTRUCTION

SHEET TITLE:
ELEVATIONS

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1 : 50

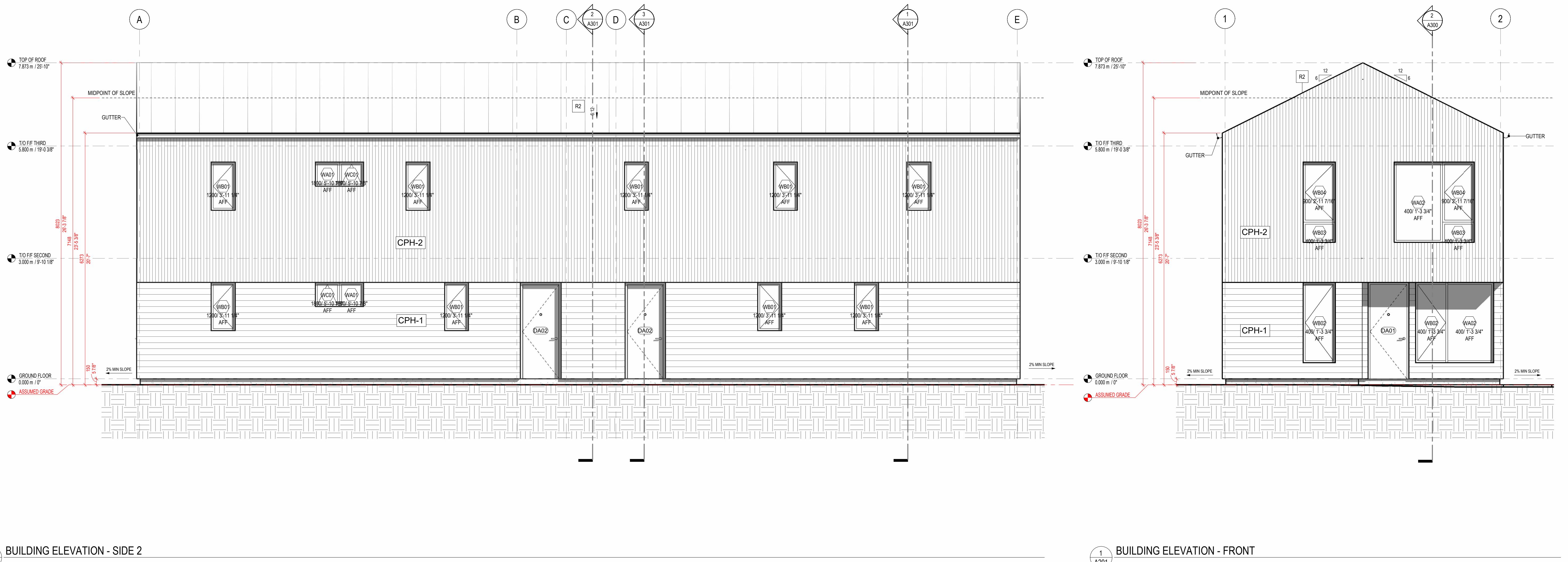
SHEET NO:
A200

ELEVATION MATERIAL SCHEDULE	
TAG	MATERIAL
CPH-1	CLADDING PLACEHOLDER, TYPE 1
CPH-2	CLADDING PLACEHOLDER, TYPE 2

NOTE: CLADDING FINISHES WITHIN 200MM OF GRADE ARE TO BE MOISTURE RESISTANT

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PROJECT:
CMHC HOUSING DESIGN
CATALOGUE

ALBERTA, CANADA

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SHEET TITLE:
ELEVATIONS

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1:50

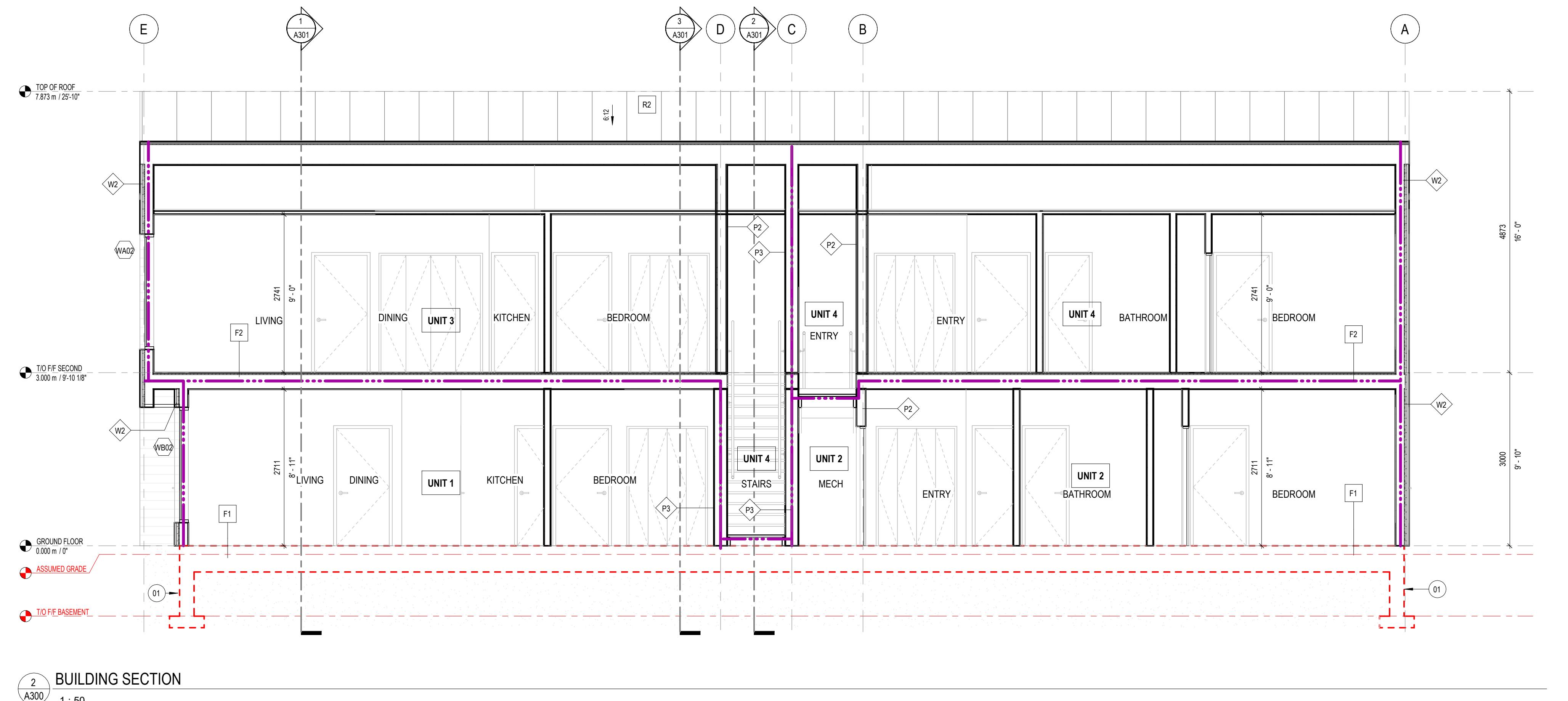
SHEET NO:

A201

SECTION KEYNOTES	
01	FOUNDATIONS ASSUMED. REFER TO STRUCTURAL DRAWINGS
FIRE SEPARATION LEGEND	
	1HR

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NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

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SECTIONS

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1:50

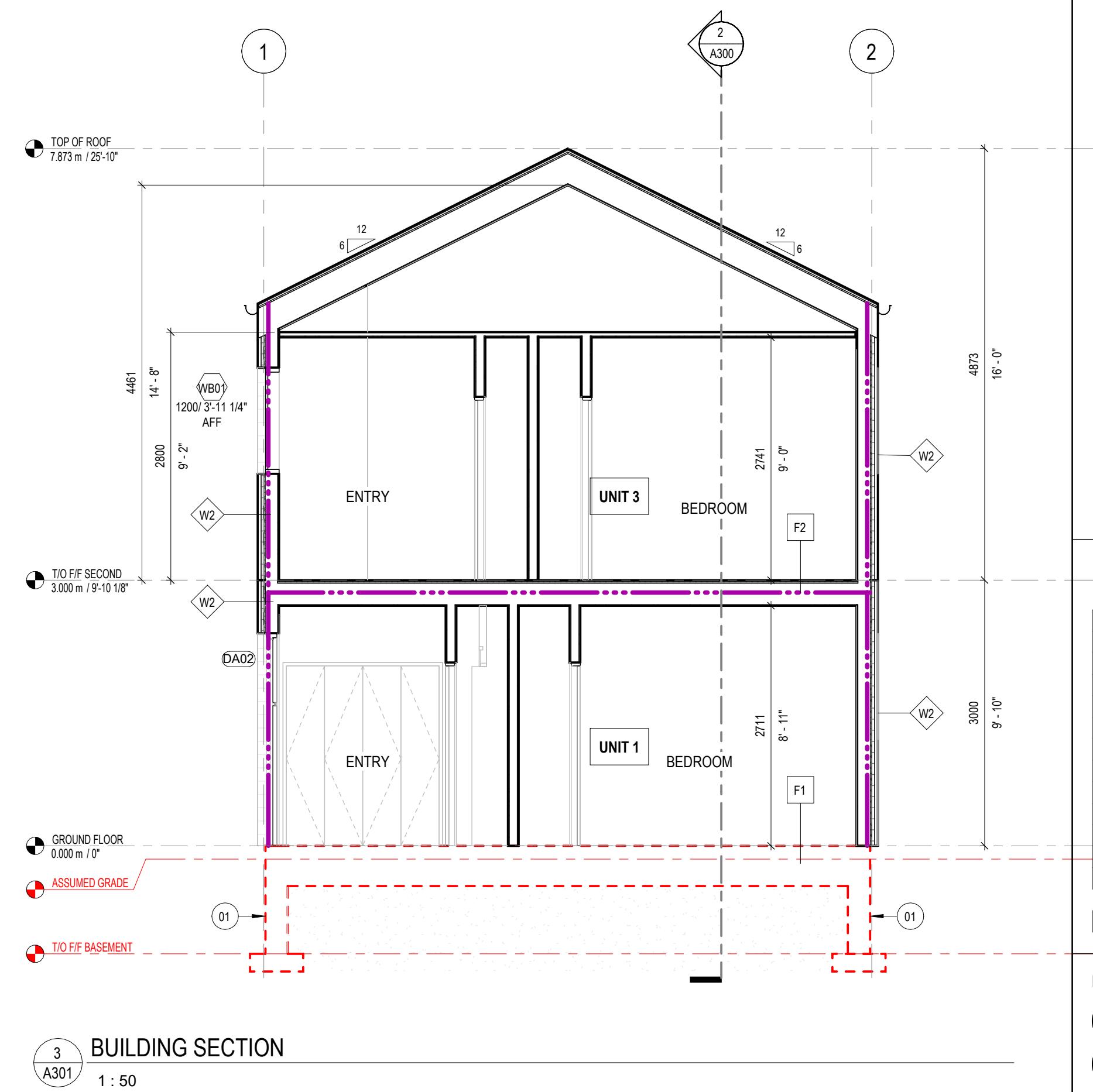
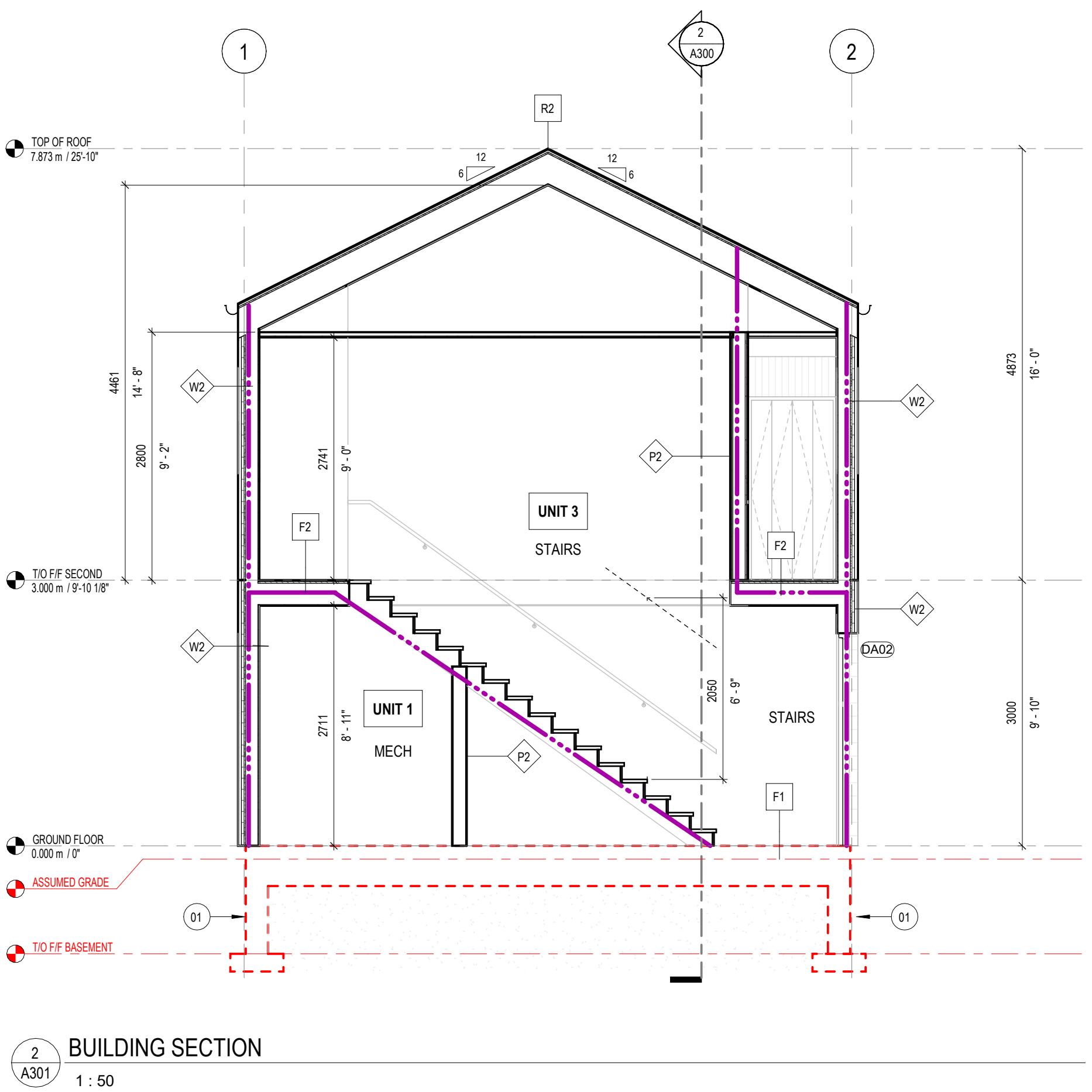
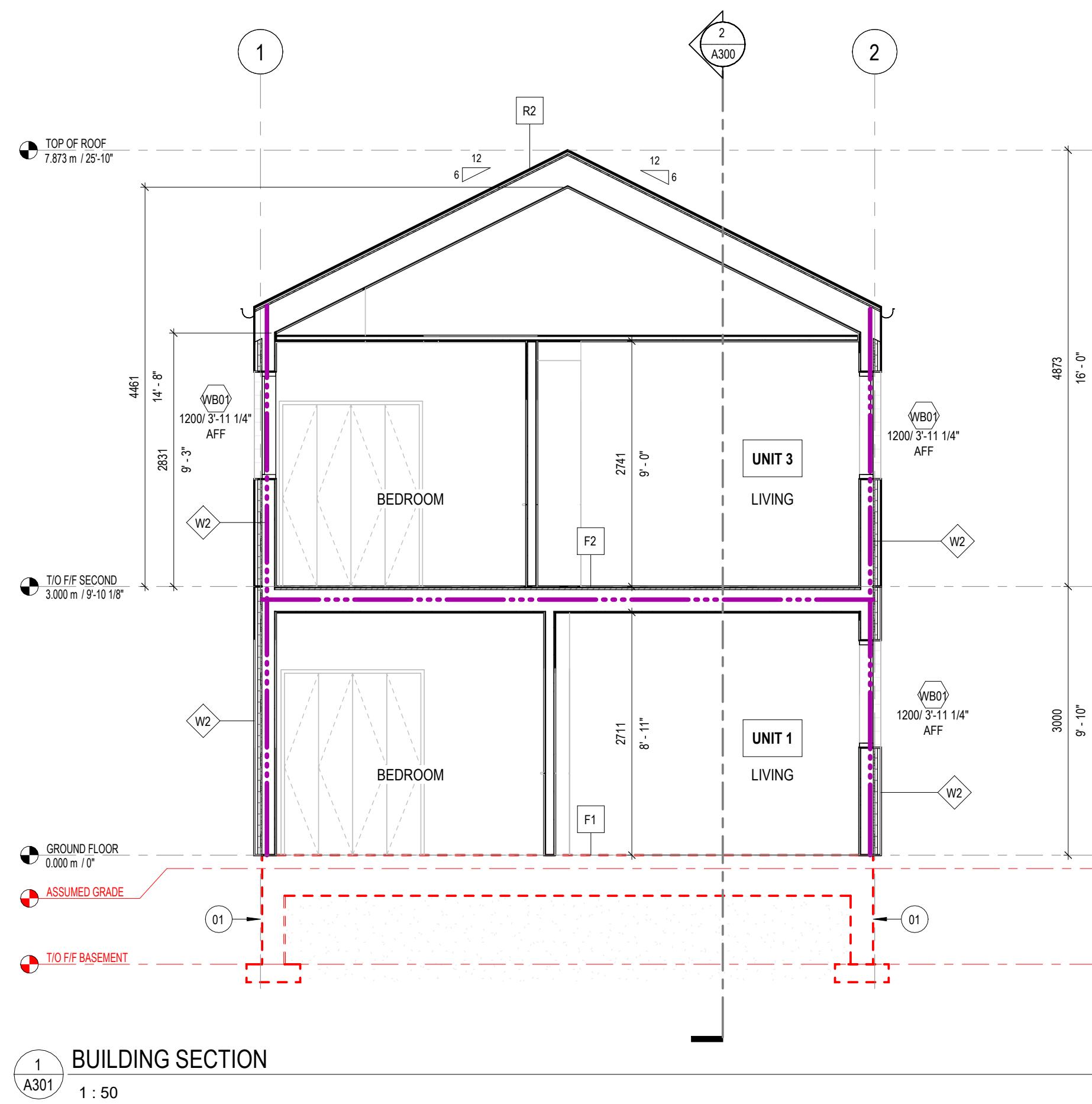
SHEET NO:

A300

SECTION KEYNOTES	
01	FOUNDATIONS ASSUMED. REFER TO STRUCTURAL DRAWINGS
FIRE SEPARATION LEGEND	
	1HR

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1	2025-02-21	Issued as Prototypical Drawing
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
SECTIONS

AB Fourplex 01

PROJECT NO: 241058
SCALE: 1 : 50

SHEET NO:
A301

CMHC HOUSING DESIGN CATALOGUE

FOURPLEX 01

STRUCTURAL DRAWINGS

STRUCTURAL DRAWING LIST	
DWG. No.	DRAWING NAME
S000	COVER SHEET
S101	TYPICAL NOTES
S102	TYPICAL DETAILS
S103	TYPICAL DETAILS
S104	TYPICAL DETAILS
S105	STRUCTURAL SPECIFICATIONS
S201	FOUNDATION PLAN
S301	FRAMING PLANS
S302	BUILDING SECTIONS
S401	TYPICAL FOUNDATION SECTIONS
S501	TYPICAL FLOOR SECTIONS
S601	TYPICAL ROOF SECTIONS

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STRUCTURAL ABBREVIATIONS	
A.B.	ANCHOR BOLT
ALT.	ALTERNATE
ANCHS.	ANCHORS
APPROX.	APPROXIMATELY
ARCH.	ARCHITECTURAL
B.PL.	BASE PLATE
BLK.	BLOCK
BM.	BEAM
BOT.	BOTTOM
BT.PL.	BEAM PLATE
C.W.	COMPLETE WITH
C.J.	CONTROL JOINT
CL.	CENTER LINE
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
DET.	DETAIL
DIA. OR Ø	DIAMETER
DIM.	DIMENSION
DJ	DOUBLE JOIST
DO	DOWN TO
DP	DEEP
DWG.	DRAWING
E.F.	EACH FACE
ELEC.	ELECTRICAL
E.S.	EACH SIDE
E.W.	EACH WAY
EA.	EACH
ELEV.	ELEVATION
EQ.	EQUAL
EXIST.	EXISTING
F.F.	FINISHED FLOOR
FDN.	FOUNDATION
ft	FOOT
FTG.	FOOTING
Ga	GAUGE
GB	GRADE BEAM
GH.V.	GAZED
GRD	GRADE
HORZ.	HORIZONTAL
H.D.	HEAVY DUTY
H.D.G.	HOT DIPPED GALVANIZED
H.P.	HIGH POINT
HHT	HIGH
in.	INCH
I.D.	INSIDE DIAMETER
kN.	KILONEWTON
kPa	KILOPASCAL
L	ANGLE
L.G.	LONG
L.P.	LOW POINT
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MAX.	MAXIMUM
MED.H.	MEDICAL
MID	MIDDLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
m	METRE
mm	MILLIMETRE
MPa	MEGAPASCAL
N.T.S.	NOT TO SCALE
No.	NUMBER
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
PL.	PLATE
psf	POUNDS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
R.C.	REINFORCED CONCRETE
R.D.	ROOF DRAWS
R.O.	ROUND OPENING
REF.	REFERENCE
REINF.	REINFORCED
REQD.	REQUIRED
RTU	ROOF TOP UNIT
SECT.	SECTION
S.G.	SLAB GRADE
S.S.	STAINLESS STEEL
STL.	STEEL
STRUCT.	STRUCTURAL
T.&B.	TOP AND BOTTOM
TO	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UIS	UNDERSIDE
VERT.	VERTICAL
W.	WORKING POINT
W.P.	WELDED WIRE MESH
W.W.M.	SPACED AT

2 2025-02-19 ISSUED FOR PROTOTYPICAL DRAWING
 NO. DATE DESCRIPTION

PROJECT:
CMHC HOUSING
CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT
OR CONSTRUCTION

SHEET TITLE:
COVER SHEET

AB Fourplex 01

PROJECT NO: 02500462
 SCALE: 1:20

SHEET NO:
S000

GENERAL STRUCTURAL NOTES

1. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, LANDSCAPE, MECHANICAL AND ELECTRICAL DRAWINGS.
2. CHECK AND VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS BEFORE COMMENCING WITH WORK.
3. DRAWINGS SHOW COMPLETED STRUCTURE ONLY. TEMPORARY SUPPORT AND BRACING FOR CONSTRUCTION LOADING CONDITIONS IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION".
5. READ THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.
6. GENERAL CONTRACTOR TO VERIFY AND MARK ALL UNDERGROUND LINES AND RE-ENSURE THAT NEW FOUNDATION LOCATIONS DO NOT INTERFERE WITH ANY UNDERGROUND UTILITY LINES.
7. VERIFY AND LOCATE ALL EXISTING FOUNDATIONS AND COORDINATE WITH THE LOCATIONS OF NEW FOUNDATIONS PRIOR TO COMMENCING WITH WORK.
8. ANY CLARIFICATIONS IN REGARDS TO STRUCTURAL DRAWINGS CONTACT THE ENGINEER ON RECORD.

SITE REVIEW

1. NOTIFY THE ENGINEER 48 HOURS IN ADVANCE FOR REVIEW OF THE FOLLOWING:

CONCRETE REINFORCEMENT BEFORE EACH FLOOR
WOOD FRAMING BEFORE COVERING UP

ENGINEERING SITE REVIEWS WILL BE REQUIRED IN ORDER TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

SHOP DRAWINGS REVIEWS WILL BE REQUIRED FOR THIRD PARTY WORK. THE REVIEW IS NOT AN APPROVAL OF THE DESIGN, DETAILS AND DIMENSIONS INHERENT IN THE DESIGNS SUBMITTED BY OTHERS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

BUILDING CODE AND STANDARDS

- NATIONAL BUILDING CODE - 2023 ALBERTA EDITION
- ALBERTA INFRASTRUCTURE TECHNICAL DESIGN REQUIREMENTS, VERSION 7 (AUGUST 2022)
- CSA A23.1-14 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
- CSA A23.6 DESIGN OF STEEL STRUCTURES
- CSA A23.3 DESIGN OF CONCRETE STRUCTURES
- CSA S304 DESIGN OF MASONRY STRUCTURES
- CSA S136 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

DESIGN LOADS

UNLESS NOTED OTHERWISE LOADS BELOW ARE SPECIFIED LOADS. LOADS ARE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION

NOTE:

THIS PROTOTYPE HAS BEEN PREPARED BASED ON THE CONDITIONS SPECIFIC TO EDMONTON. ALL LOAD CONSIDERATIONS MUST BE REVIEWED AND VERIFIED BASED ON THE EXACT LOCATION OF EACH PROJECT. THE STRUCTURAL DESIGN MUST ADHERE TO THE LATEST ASSESSMENTS, BUILDING CODES, AND GEOTECHNICAL REPORTS APPLICABLE TO THE SITE.

1. LATERAL LOADS FROM WIND
 - WIND LOADS:
 - REFERENCE WIND PRESSURE (q 1/10) 0.36 kPa
 - REFERENCE WIND PRESSURE (q 1/50) 0.45 kPa
 - INTERNAL PRESSURE CATEGORY 2
 - ULS IMPORTANCE FACTOR 1 (HIGH IMPORTANCE)
 - SLS IMPORTANCE FACTOR 0.75 (HIGH IMPORTANCE)
 - WIND INTERSTORY DRIFT LIMIT H5/50 (WHERE H IS THE HEIGHT OF THE STOREY)

2. EARTHQUAKE LOADS
 - SITE CLASSIFICATION CLASS D-X (ASSUMED, BASED ON EDMONTON AREA),
 - Sa (0.2, Xc) 0.199
 - Sa (0.5, Xc) 0.167
 - Sa (1.0, Xc) 0.097
 - Sa (2.0, Xc) 0.048
 - Sa (5.0, Xc) 0.024
 - Sa (10.0, Xc) 0.0146
 - PGA (Xc) 0.126
 - PGV (Xc) 0.104
 - SEISMIC CATEGORY SC1
 - ULS IMPORTANCE FACTOR 1
 - Rd 3
 - Ro = 1.7
 - SEISMIC INTERSTORY DEFLECTION LIMIT 0.01 hs (FOR POST-DISASTER)
0.02 hs (FOR HIGH IMPORTANCE)
0.025 hs (FOR NORMAL IMPORTANCE)

(WHERE hs IS THE INTERSTORY HEIGHT OF THE STRUCTURE)

- LATERAL LOADS FROM WIND AND EARTHQUAKE ARE RESISTED BY SHEAR WALLS. DIAPHRAGM ACTION OF THE ROOF AND THE FLOOR PLATES IS USED TO TRANSFER LATERAL LOADS HORIZONTALLY TO THE BRACING SYSTEM.

2. FLOOR LOADS

DEAD LOAD (SPECIFIED DEAD LOADS HAVE INCORPORATED A SUPERIMPOSED DEAD LOAD OF 1.0 kPa FOR PARTITION LOADS)

MAIN FLOOR	1.7 kPa
SECOND FLOOR	1.7 kPa

LIVE LOAD
MAIN FLOOR 1.9 kPa
SECOND FLOOR 1.9 kPa

OTHER LOADS:

- FLOOR JOISTS ABOVE MECHANICAL ROOM TO BE DESIGNED FOR AN ADDITIONAL BOTTOM CHORD LIVE LOAD OF 10 psf.
- BULL HEADS 10 psf REFER TO ARCH DRAWINGS FOR LOCATIONS.
- MISCELLANEOUS LOADS SHOWN DIRECTLY ON THE PLANS.
- WATER LINE LOADS SEE THIS DRAWING.

3. ROOF LOADS

DEAD LOAD	1.2 kPa
LIVE LOAD	1.46 kPa
SNOW LOAD	1.7 kPa
S	1.46 kPa+ SNOW PILING

RAIN LOAD
Sf 0.1 kPa

ULS IMPORTANCE FACTOR
SLS IMPORTANCE FACTOR

RAIN 97mm (ONE DAY RAIN)

OTHER LOADS:

- ALLOW FOR ADDITIONAL 75 psf SNOW PILING IN ALL VALLEYS. SNOW PILING TO BE TAPERED TO REGULAR ROOF SNOW LOAD AT 300mm EACH SIDE OF VALLEYS.
- WIND INTERSTORY DRIFT LIMITS. TRUSS SUPPLIER TO DESIGN ROOF TRUSSES FOR WIND UPLIFT ACCORDING TO THE LATEST BUILDING CODE.
- BULL HEADS 10 psf REFER TO ARCH DRAWINGS FOR LOCATIONS.
- MISCELLANEOUS LOADS SHOWN DIRECTLY ON THE PLANS.
- WATER LINE LOADS SEE THIS DRAWING.

4. TEMPORARY CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN PARAMETERS AND SHALL NOT BE APPLIED BEFORE THE STRUCTURE HAS SUFFICIENT STRENGTH AND STABILITY.

NON-STRUCTURAL ELEMENTS

1. NON-STRUCTURAL ELEMENTS TO BE DESIGNED BY OTHERS.
2. EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
 - A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, LADDER, FLAG POSTS, AWNINGS, CEILINGS, MILLWORK ETC.
 - B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, ETC.
 - C. CLADDING, GLAZING, WINDOW MULLIONS, PARTITION WALLS.
 - D. ARCHITECTURAL PRECAST, PRECAST CLADDING.
 - E. SIGNAGE.
 - F. MECHANICAL AND ELECTRICAL EQUIPMENT, COMPONENTS AND THEIR ATTACHMENT DETAILS.
 - G. WINDOW WASHING EQUIPMENT AND THEIR ATTACHMENTS.
 - H. ESCALATORS, ELEVATORS AND CONVEYING SYSTEMS.
 - I. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS.
 - J. NON STRUCTURAL CONCRETE TOPPINGS.

3. DRAWINGS FOR NON STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE REFERRED TO ENGINEER ON RECORD (E.O.R.). THESE DRAWINGS WILL BE REVIEWED ONLY FOR THE EFFECT OF THE ELEMENT ON THE PRIMARY STRUCTURAL SYSTEM.

4. PERIMETER STEEL FRAMING ABOVE WINDOWS IN STEEL STUD WALLS HAS BEEN DESIGNED TO L/240 TOTAL LOAD DEFLECTION - U.N.O.

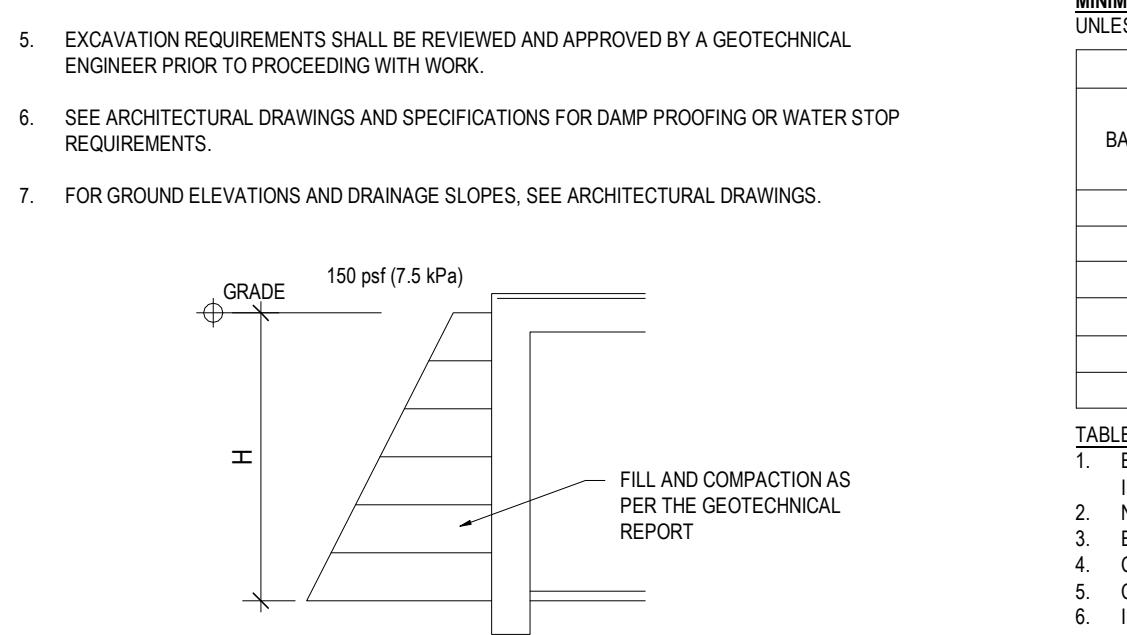
5. ROOF BEAMS AND JOISTS HAVE BEEN DESIGNED TO L/240 TOTAL LOAD DEFLECTION - U.N.O.

6. FLOOR BEAMS AND JOISTS HAVE BEEN DESIGNED TO L/360 TOTAL LOAD DEFLECTION - U.N.O.

7. EXPECTED SLAB ON GRADE MOVEMENT TO BE +/- 1". CONFIRM WITH GEOTECHNICAL REPORT.

GEOTECHNICAL NOTES

1. GEOTECHNICAL EVALUATION OF THE SITE WILL BE REQUIRED PRIOR TO COMMENCING WITH THE PREPARATION OF DRAWINGS AND / OR CONSTRUCTION. EOR TO REVIEW THE GEOTECHNICAL REPORT AND REVISE THE FOUNDATIONS ACCORDINGLY.
2. REFER TO FOUNDATION PLAN FOR ADDITIONAL NOTES REGARDING THE APPLICABLE FOUNDATION SYSTEM.
3. LATERAL SOIL PRESSURE ON WALLS INCLUDING SURCHARGE SHALL BE AS FOLLOWS. UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT.
4. ALL BACKFILL MATERIALS AND BACKFILL INSTALLATION SHALL BE REVIEWED BY A GEOTECHNICAL ENGINEER TO ENSURE COMPLIANCE WITH THE RECOMMENDATIONS AS NOTED IN THE GEOTECHNICAL REPORT.
5. EXCAVATION REQUIREMENTS SHALL BE REVIEWED AND APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH WORK.
6. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DAMP PROOFING OR WATER STOP REQUIREMENTS.
7. FOR GROUND ELEVATIONS AND DRAINAGE SLOPES, SEE ARCHITECTURAL DRAWINGS.


(SCREW PILES) FOUNDATION

1. SCREW PILES SHALL BE DESIGNED BY THE PILING CONTRACTOR FOR THE LOADS INDICATED ON DRAWINGS AND SHALL BE DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
2. PROVIDE APPROPRIATE NUMBER OF SHOP DRAWINGS FOR ALL PILES. SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA RESPONSIBLE FOR THE DESIGN OF ALL PILES.
3. INSTALLATION OF PILES SHALL BE UNDER THE DIRECT SUPERVISION OF THE GEOTECHNICAL ENGINEER RESPONSIBLE FOR PRODUCING THE GEOTECHNICAL REPORT. PROVIDE AN ACCURATE REPORT AT COMPLETION OF WORK WITH ALL PILE LOGS. FINAL REPORT SHALL BE SIGNED AND SEALED BY THE GEOTECHNICAL ENGINEER SUPERVISING THE INSTALLATION. PROVIDE SCHEDULES A, B, AND C AS REQUIRED BY THE LOCAL AUTHORITIES AND COPIES TO ENGINEER OF RECORD.
4. PILING CONTRACTOR TO ADVISE GENERAL CONTRACTOR TO THE NUMBER OF PILES REQUIRED IN ALL LOCATIONS, AS CAPABLES MAY BE REQUIRED. COORDINATE WITH THE GENERAL CONTRACTOR PRIOR TO TENDER CLOSING.
5. GENERAL CONTRACTOR TO ALLOW FOR PILE CAPS AS ADVISED BY PILING CONTRACTOR.
6. VERIFY AND MARK ALL UNDERGROUND LINES AND RE-ENSURE THAT NEW PILE LOCATIONS DO NOT INTERFERE WITH ANY UNDERGROUND UTILITY LINES.
7. PROVIDE MINIMUM PILE SHAFT DIAMETER OF 200mm TYP. ALL SIM. LOCATIONS.

CONCRETE FOWRK

FORM WORK TO CONFORM TO THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS.

1. REFER TO ARCHITECTURAL DRAWINGS FOR CHAMFERS ON CORNERS OF COLUMNS, BEAMS AND WALLS. USE 19mm x 19mm FORMED CHAMFERS ON EXPOSED CORNERS UNLESS OTHERWISE SHOWN ON DRAWINGS / ARCHITECTURAL DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS / THE REQUIREMENTS IN THE SPECIFICATIONS.

2. VOID FORM MATERIALS SHALL BE DYNAVOID (40144) OR EQUIVALENT U.N.O.

3. REBAR SHALL BE FREE OF RESIDUAL CEMENT PASTE AND FORM OIL.

4. FOR ADDITIONAL NOTES AND REQUIREMENTS SEE SPECIFICATIONS.

CONCRETE

1. CONCRETE TO CONFORM TO THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS BEING NORMAL WEIGHT MEETING THE FOLLOWING REQUIREMENTS / THE REQUIREMENTS IN THE SPECIFICATIONS.

2. ADMIXTURES CONTAINING CALCIUM CHLORIDE ARE NOT PERMITTED.

3. SUPERPLASTICIZING ADMIXTURES IS PERMITTED TO ALLOW PUMPING OR IMPROVE SURFACE FINISHING OF CONCRETE. SUPERPLASTICIZING TO BE IN STRICT ACCORDANCE WITH THE CONCRETE SUPPLIER'S RECOMMENDATIONS.

4. FOR FLOOR SLABS, DESIGN THE CONCRETE MIXTURE WITH AGGREGATE GRADING AND WATER TO CEMENTING MATERIALS RATIO THAT MINIMIZES SHRINKAGE.

5. REJECT ALL CONCRETE WHEN TIME BETWEEN BATCHING AND PLACING EXCEEDS TWO HOURS.

6. DO NOT ADD WATER TO THE CONCRETE ON SITE UNLESS AUTHORIZED BY THE CONCRETE SUPPLIER.

7. PROTECT CONCRETE FROM ADVERSE WEATHER CONDITIONS IN ACCORDANCE WITH THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS.

8. FOR ADDITIONAL NOTES AND REQUIREMENTS SEE SPECIFICATIONS.

CONCRETE STRENGTH AND MIX SPECIFICATIONS

EXPOSURE CLASS	USE	CEMENT TYPE	MIN. STRENGTH	SLUMP	MAX. AGG. SIZE	WC RATIO	AIR ENTRAINMENT	MAX. FLY ASH CONTENT (%)
S-2	GRADE BEAMS	HS	32 MPa @ 28 DAYS	80mm	3/4" (19mm)	0.45	4% - 7%	-
N	INTERIOR SLABS ON GRADE	GU	25 MPa @ 28 DAYS	80mm	3/4" (19mm)	0.55	NONE REQUIRED	-
C-1	STOOPS (STRUCTURAL OR ON GRADE)	GU	35 MPa @ 28 DAYS	80mm	3/4" (19mm)	0.40	5% - 8%	-
C-2	SIDEWALKS	GU	32 MPa @ 28 DAYS	80mm	3/4" (19mm)	0.40	5% - 8%	-

REINFORCEMENT FOR CONCRETE

1. REINFORCED CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION 9 AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS.
2. REINFORCING STEEL BILLET STEEL CONFORMING TO THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS. ALL REINFORCING SHALL BE GRADE 400. USE GRADE 400W WHERE WELDING IS NOTED.
3. BENDING, CUTTING AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS.
4. WELDING SHALL CONFORM TO THE NATIONAL BUILDING CODE - 2023 ALBERTA EDITION AND STANDARDS AS NOTED IN THE PROJECT SPECIFICATIONS.
5. MINIMUM REINFORCEMENT AS PER THE MINIMUM REQUIREMENTS NOTED BELOW.
6. REBAR SHALL BE FREE OF RESIDUAL CEMENT PASTE AND FORM OIL.
7. CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW THAT RESULTS IN THE GREATER AMOUNT OF COVER.

CONCRETE COVER SCHEDULE

	FIRE RESISTANCE RATING (SEE ARCHITECTURAL DRAWINGS) UP TO
GRADE BEAMS	50mm
SLAB ON GRADE	
SINGLE-LAYER REINFORCEMENT	PLACE REINFORCEMENT AT MID DEPTH

• COVER IS TO PRIMARY REINFORCEMENT, NOT TO STIRRUPS OR TIES
• APPLIES TO NORMAL EXPOSURE ONLY

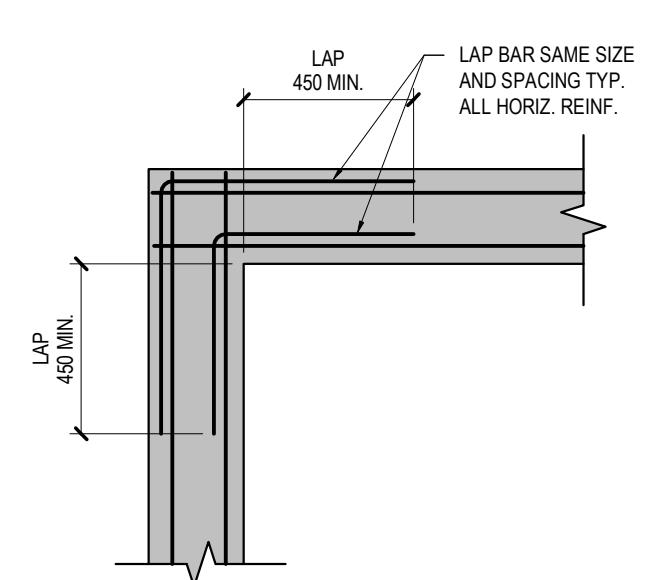
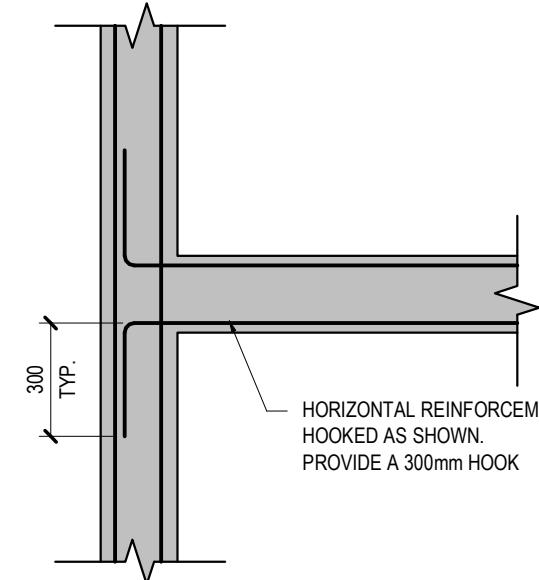
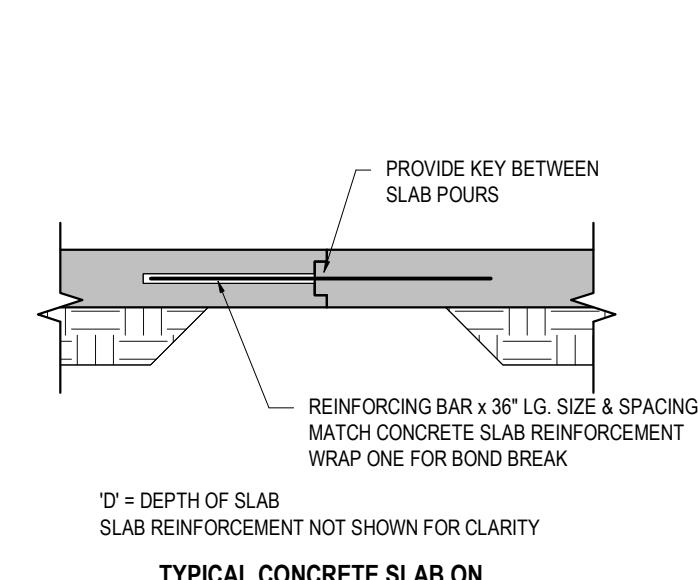
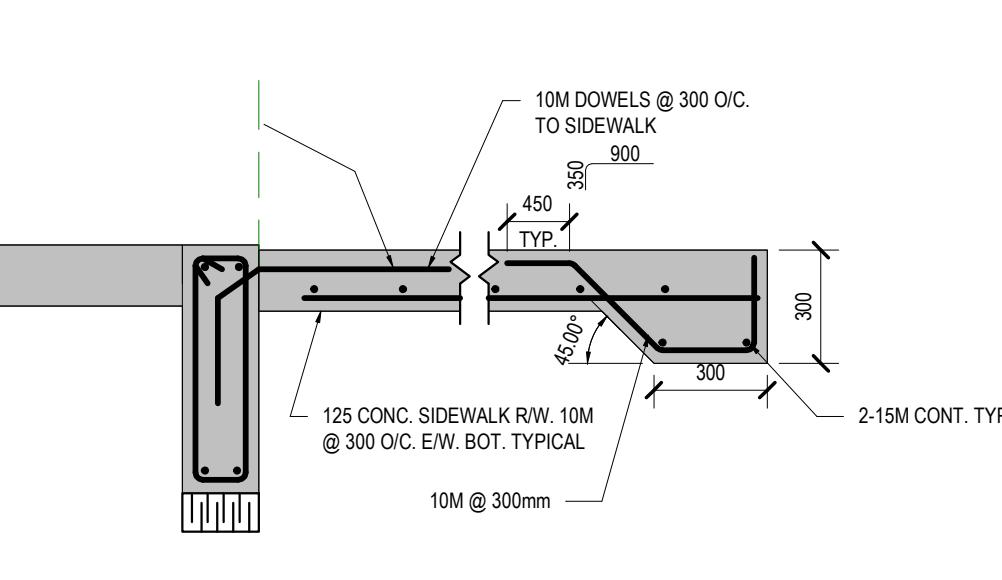
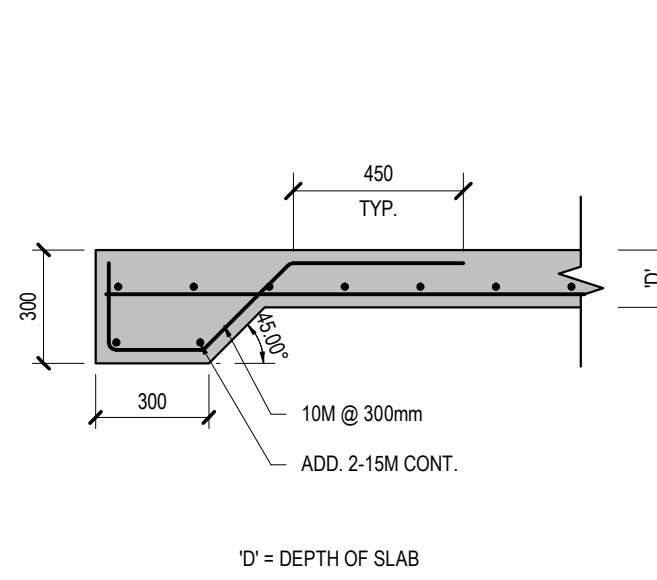
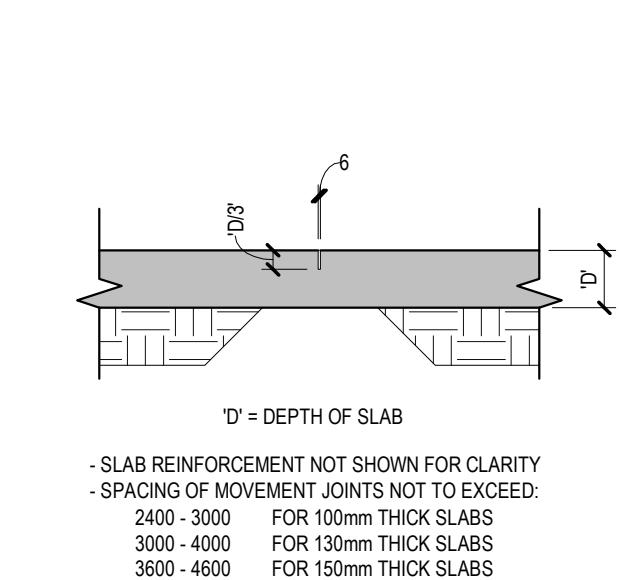
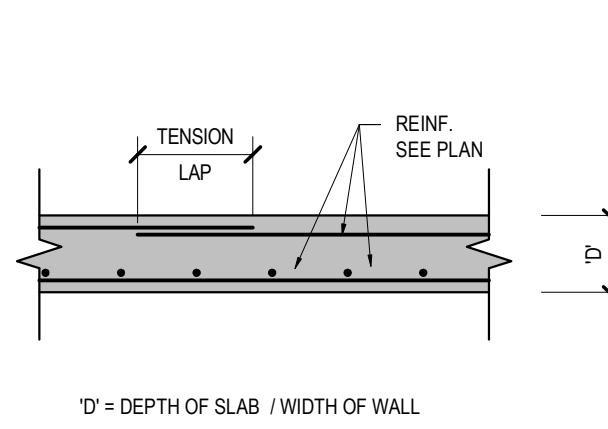
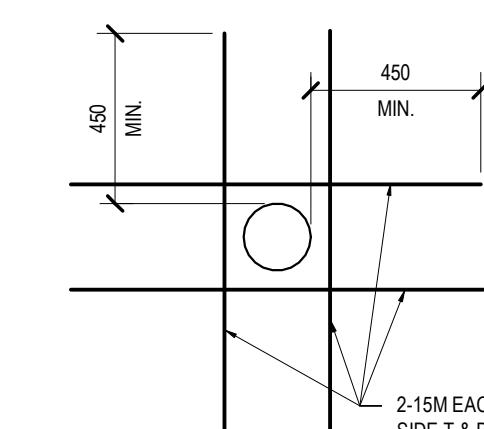
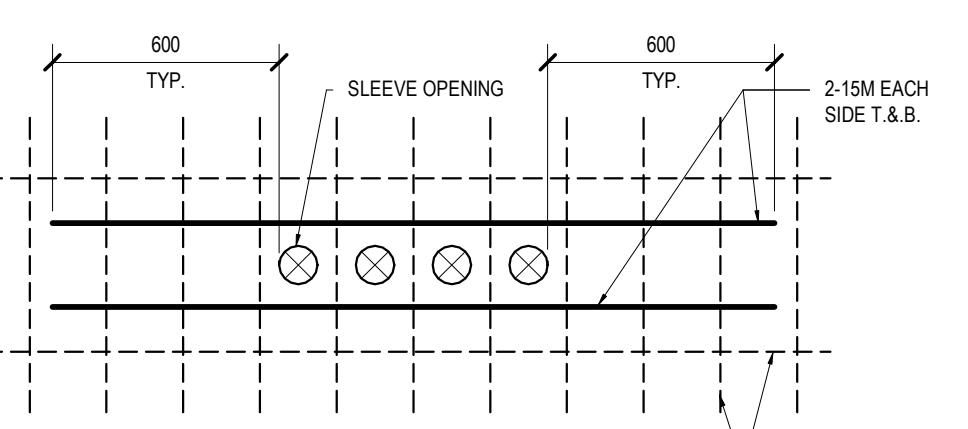
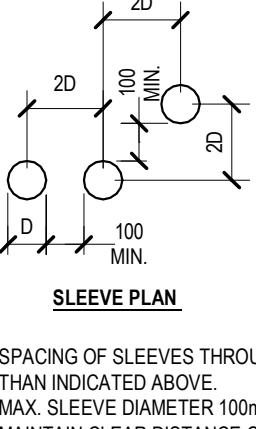
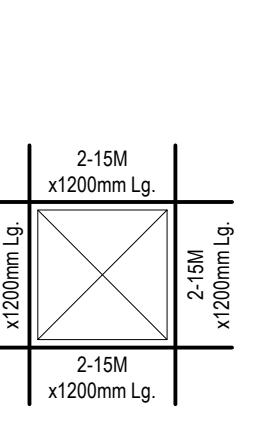
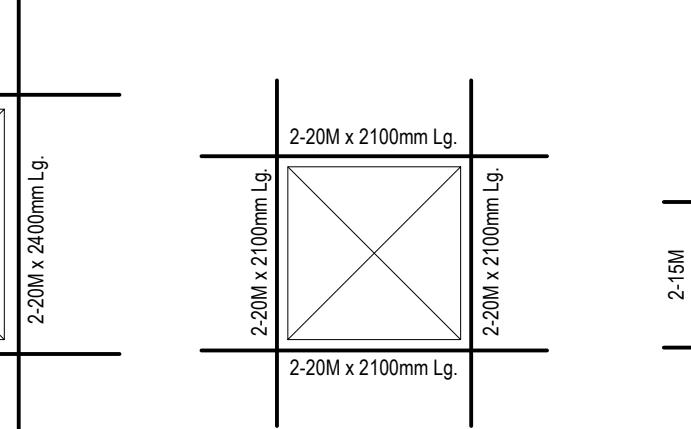
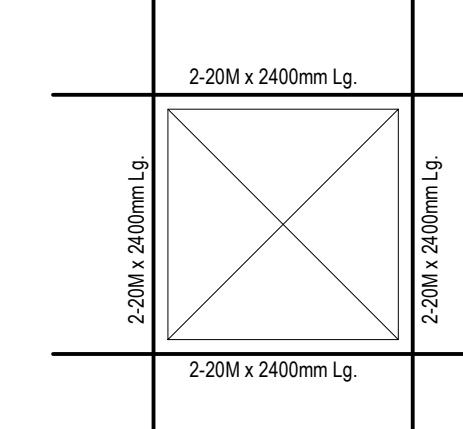
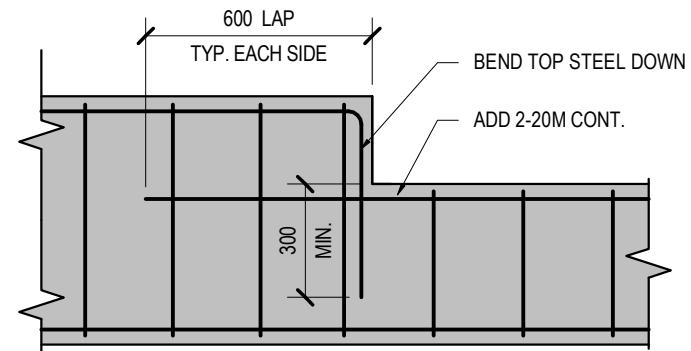
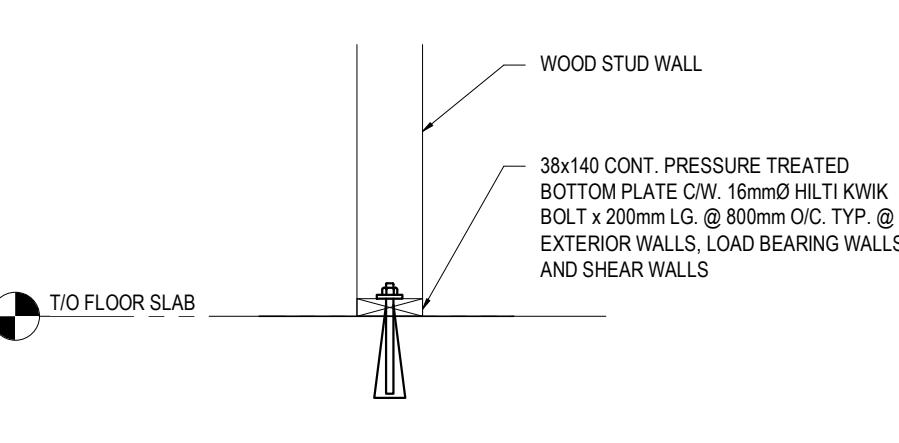
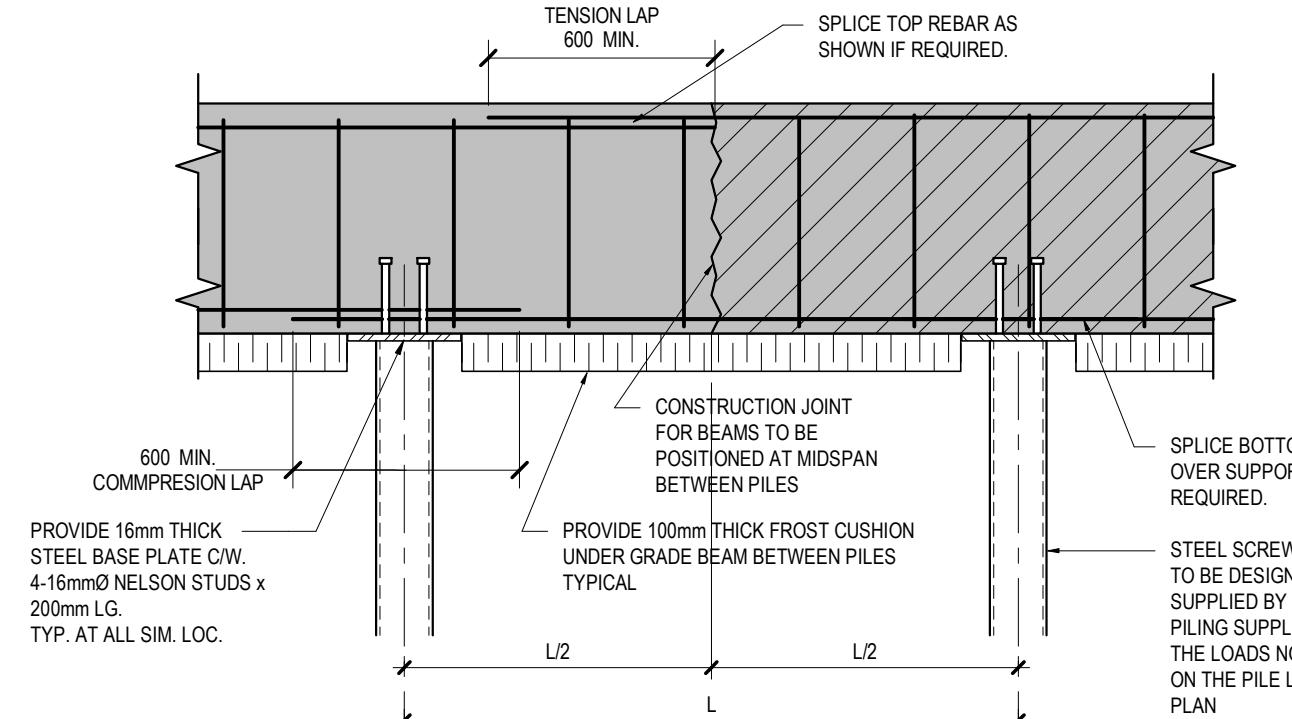
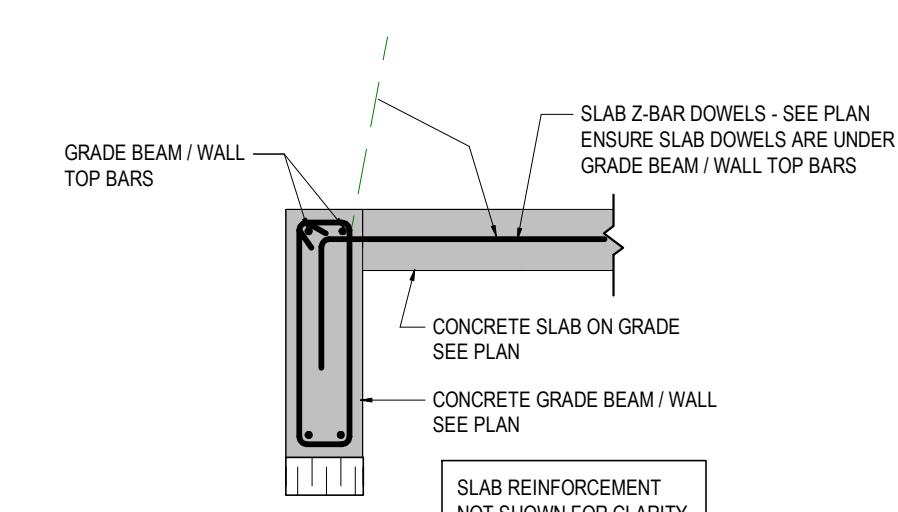
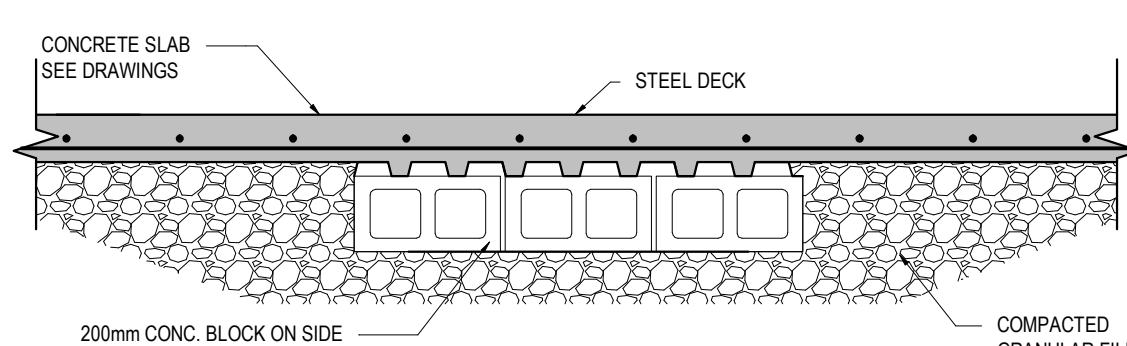
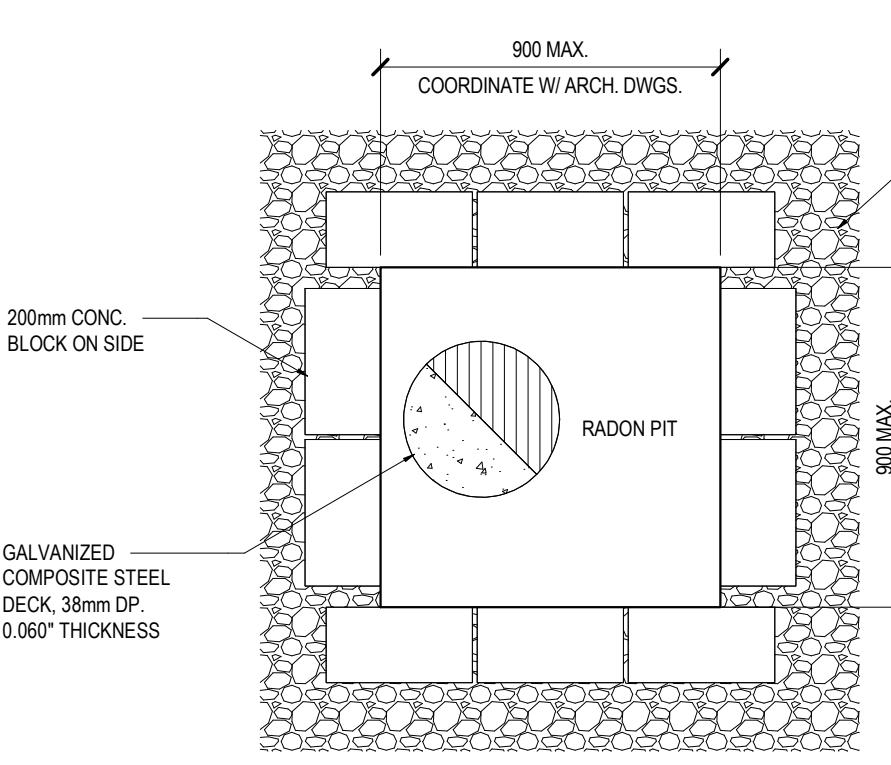
CONTRACTOR TO CONFIRM FIRE RATING REQUIREMENTS FOR ALL CONCRETE ELEMENTS WITH ARCHITECTURAL DRAWINGS.
CONTRACTOR TO ENSURE CLEAR COVER REQUIREMENTS AS PER THE CONCRETE COVER SCHEDULE ARE MET.

8. SUBMIT TO ENGINEER ON RECORD (E.O.R.) FOR REVIEW THE LOCATIONS OF ALL SLEEPS AND OPENINGS NOT SHOWN ON THE DRAWINGS. ENGINEER ON RECORD (E.O.R.) WILL PROVIDE STRUCTURAL DETAILS UPON REQUEST.
9. SLEEPS SHALL NOT BE PLACED HORIZONTALLY ALONG OR VERTICALLY THROUGH BEAMS UNLESS AUTHORIZED BY ENGINEER ON RECORD (E.O.R.).

10. LUMBER EXPOSED TO THE EXTERIOR TO BE PRESSURE TREATED (P.T.) LUMBER IN CONTACT WITH CONCRETE/NAS TO BE PRESSURE TREATED OR OTHERWISE PROTECTED FROM DECAY BY 0.5MM POLYETHYLENE FILM OR TYPE 1 P.T. OF 25MM OR 38MM OR 50MM OR 63MM OR 75MM OR 90MM OR 105MM OR 120MM OR 135MM OR 150MM OR 165MM OR 180MM OR 195MM OR 210MM OR 225MM OR 240MM OR 255MM OR 270MM OR 285MM OR 300MM OR 315MM OR 330MM OR 345MM OR 360MM OR 375MM OR 390MM OR 405MM OR 420MM OR 435MM OR 450MM OR 465MM OR 480MM OR 495MM OR 51

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TYPICAL LAPPING AT CORNERS

**TYPICAL CORNER BARS AT
INTERSECTING WALLS AND GRADE BEAMS**

**TYPICAL CONCRETE SLAB ON
GRADE POUR BREAK (FLOOR JOINT)**

TYPICAL CONCRETE SIDEWALK DETAIL

TYPICAL CONCRETE SLAB THICKENING

**TYPICAL SAWCUT FOR CONCRETE
SLAB ON GRADE**

**TYPICAL REINFORCEMENT LAP IN
WALLS AND SLABS UNLESS NOTED
OTHERWISE**

**REINFORCEMENT AROUND SLEEVES WITH DIAMETERS
LARGER THAN 100mm**

**ADDITIONAL SLAB REINFORCEMENT
WITH FOUR OR MORE SLEEVES**

**TYPICAL SPACING OF SLEEVES IN / THROUGH
SLABS, BEAMS AND OR CONCRETE WALLS**

**TYPICAL REINFORCEMENT FOR OPENINGS IN SLABS
AND / OR CONCRETE WALLS**

CHANGE IN GRADE BEAM HEIGHT DETAIL

**TYP. WOOD STUD WALL TO
CONCRETE DETAIL**

TYPICAL GRADE BEAM SPLICE DETAIL

TYPICAL SLAB ON GRADE TO GRADE BEAM / WALL Z-BAR DOWEL

SECTION VIEW

PLAN VIEW
TYPICAL RADON PIT DETAIL

1. COORDINATE LOCATION TO AVOID HIGHLY LOADED AREAS (EG. RACKING, HIGH TRAFFIC ZONES, PONT LOADS)
2. SEE ARCH. DWGS. FOR NUMBER, EXTENT AND LOCATIONS OF PITS

2 2025-02-19 ISSUED FOR PROTOTYPICAL DRAWING
NO. DATE DESCRIPTION

PROJECT:
**CMHC HOUSING
CATALOGUE**

ALBERTA, CANADA

**NOT FOR PERMIT
OR CONSTRUCTION**

SHEET TITLE:
TYPICAL DETAILS

AB Fourplex 01

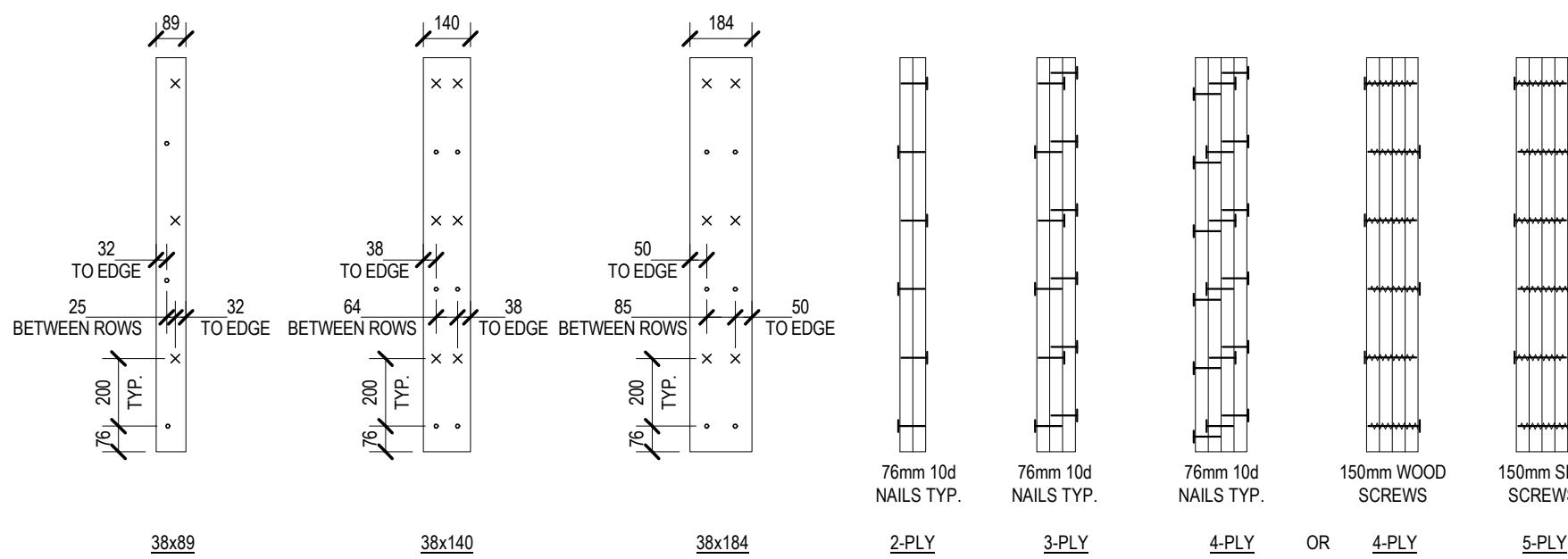
PROJECT NO: 02500462
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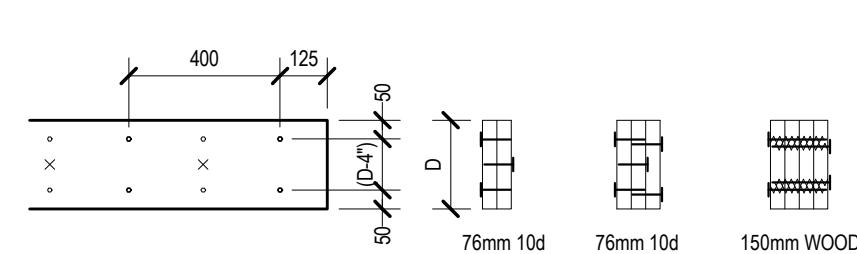
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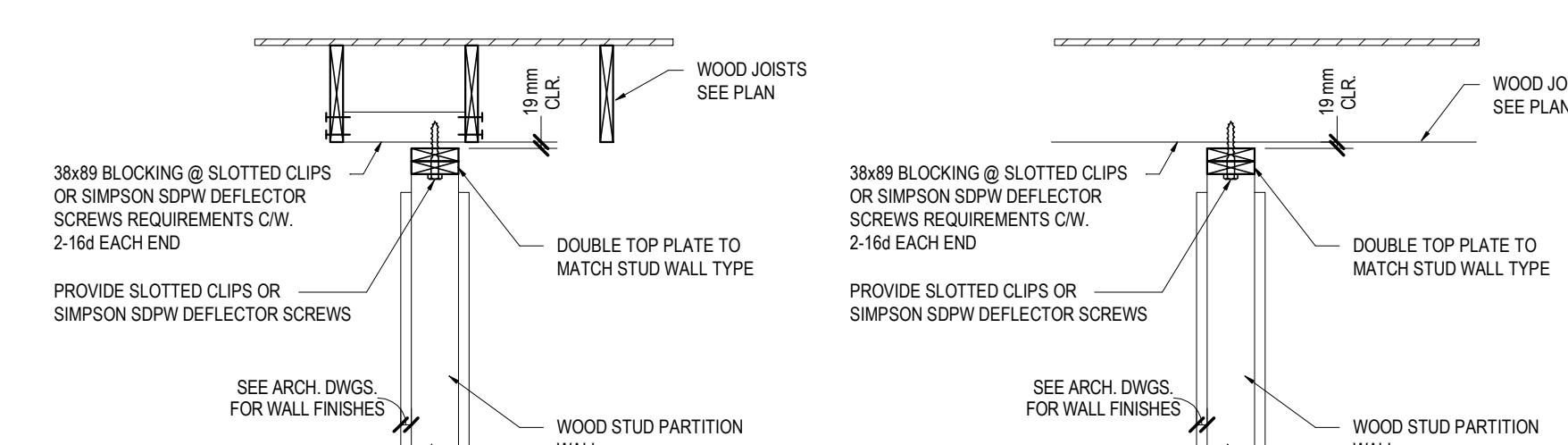
BUILT-UP COLUMN NAILING PATTERN

1. BUILT-UP STRUCTURAL COMPOSITE LUMBER (LVL, LSL) COLUMNS TO BE FASTENED AS PER MANUFACTURER'S REQUIREMENTS

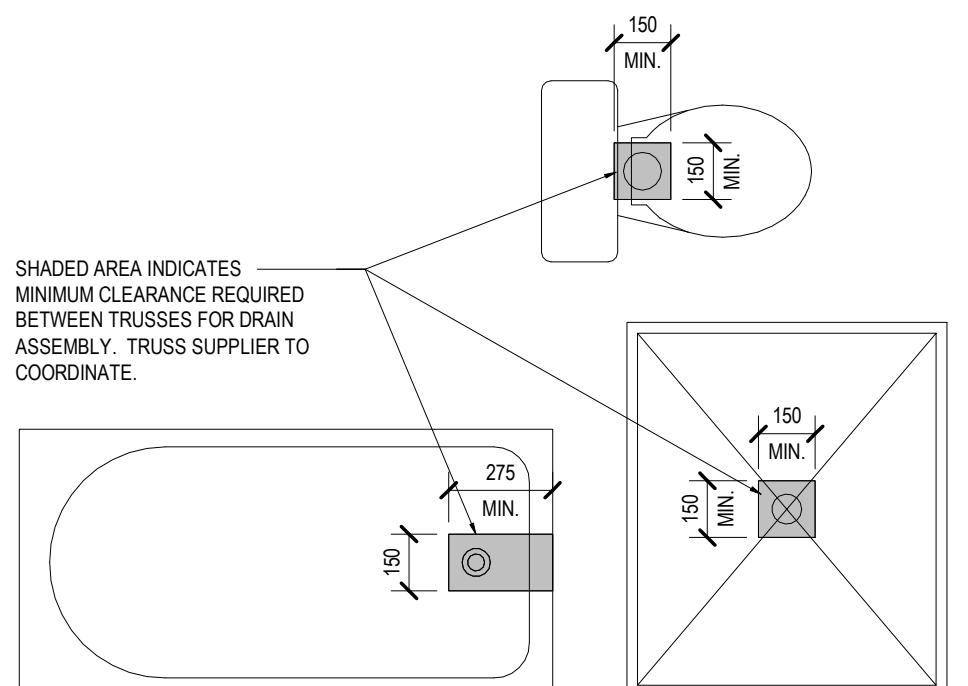


BUILT-UP BEAM NAILING PATTERN

1. BUILT-UP STRUCTURAL COMPOSITE LUMBER (LVL, LSL) COLUMNS TO BE FASTENED AS PER MANUFACTURER'S REQUIREMENTS

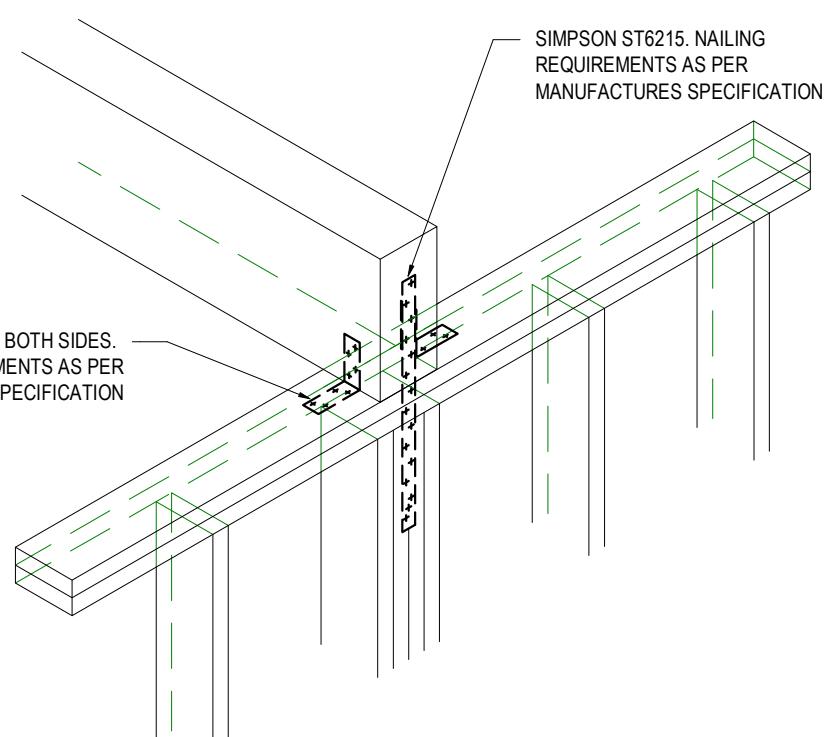


WOOD STUD PARTITION WALL DETAIL

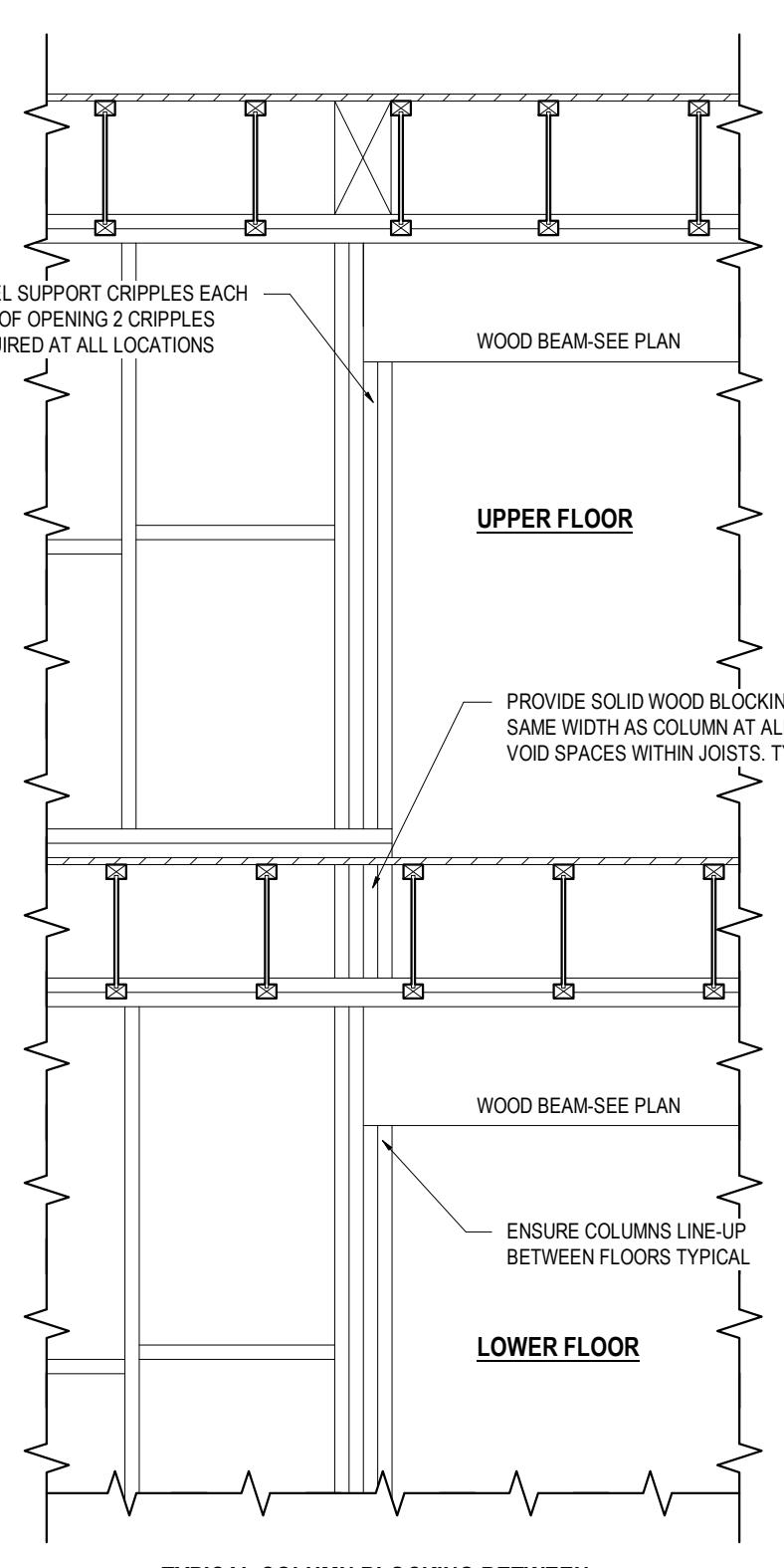


FRAMING REQUIREMENTS UNDER TUBS AND SHOWERS

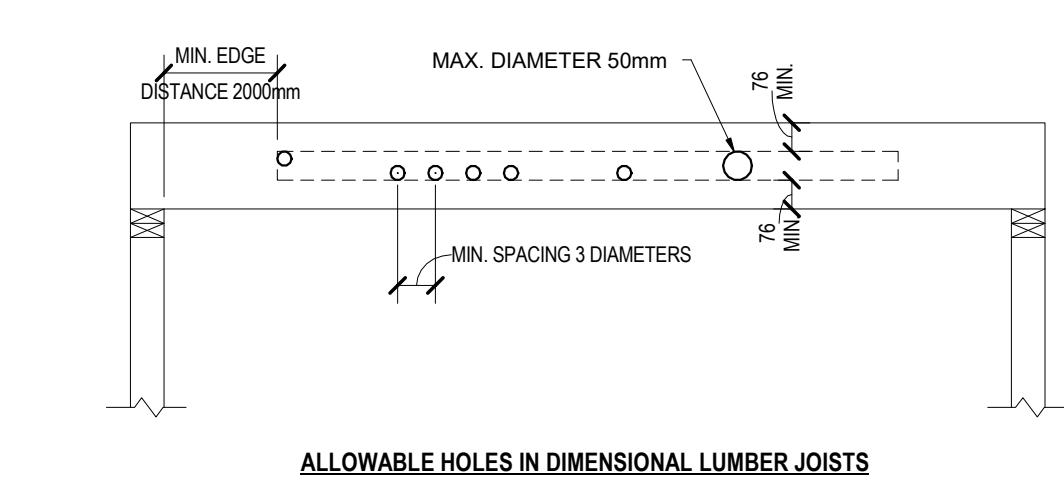
(SEE ARCHITECTURAL DRAWINGS FOR TUB AND SHOWER LOCATIONS)



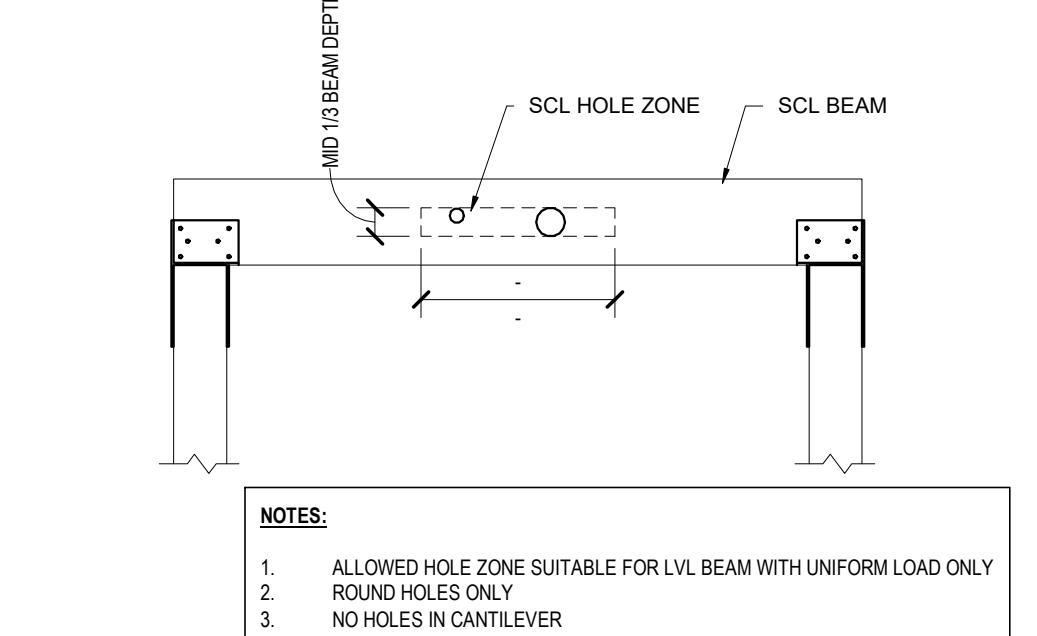
TYPICAL WOOD BEAM TO WOOD COLUMN WITHIN STUD WALL CONNECTION (WALL PERPENDICULAR TO BEAM)



TYPICAL COLUMN BLOCKING BETWEEN FLOORS

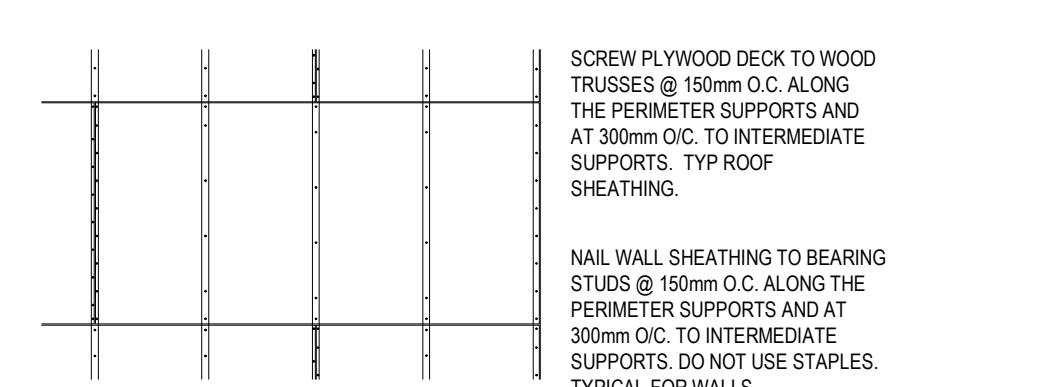


ALLOWABLE HOLES IN DIMENSIONAL LUMBER JOISTS

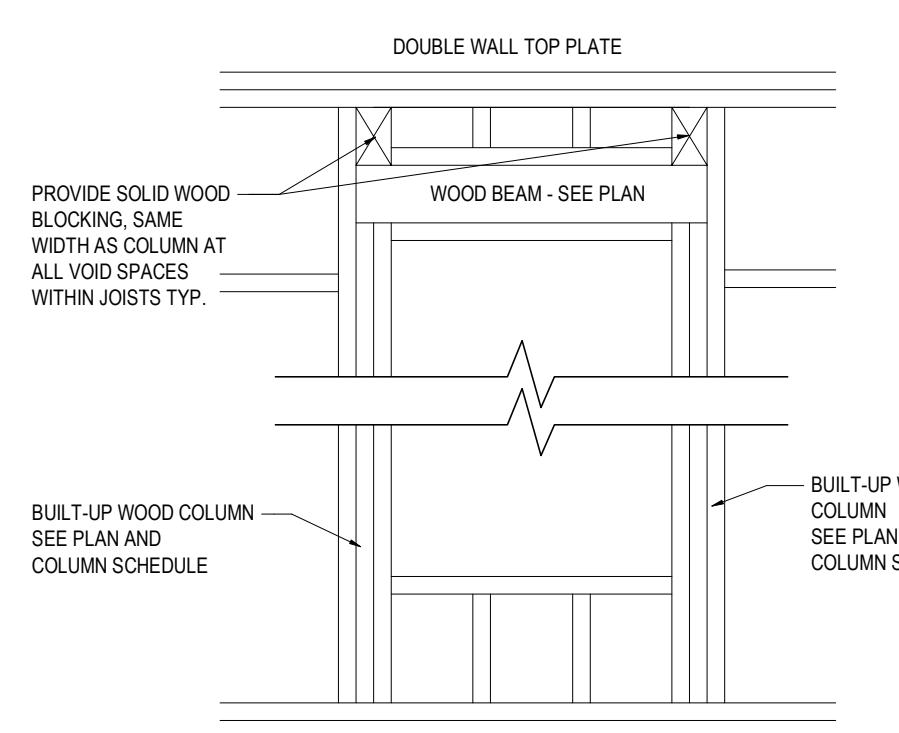


NOTES:

1. ALLOWED HOLE ZONE SUITABLE FOR LVL BEAM WITH UNIFORM LOAD ONLY
2. ROUND HOLE
3. Holes in cantilever
4. NO Holes in LVL BEAM IN PLANK ORIENTATION
5. MAXIMUM ROUND HOLE SIZE: 50mm dia.

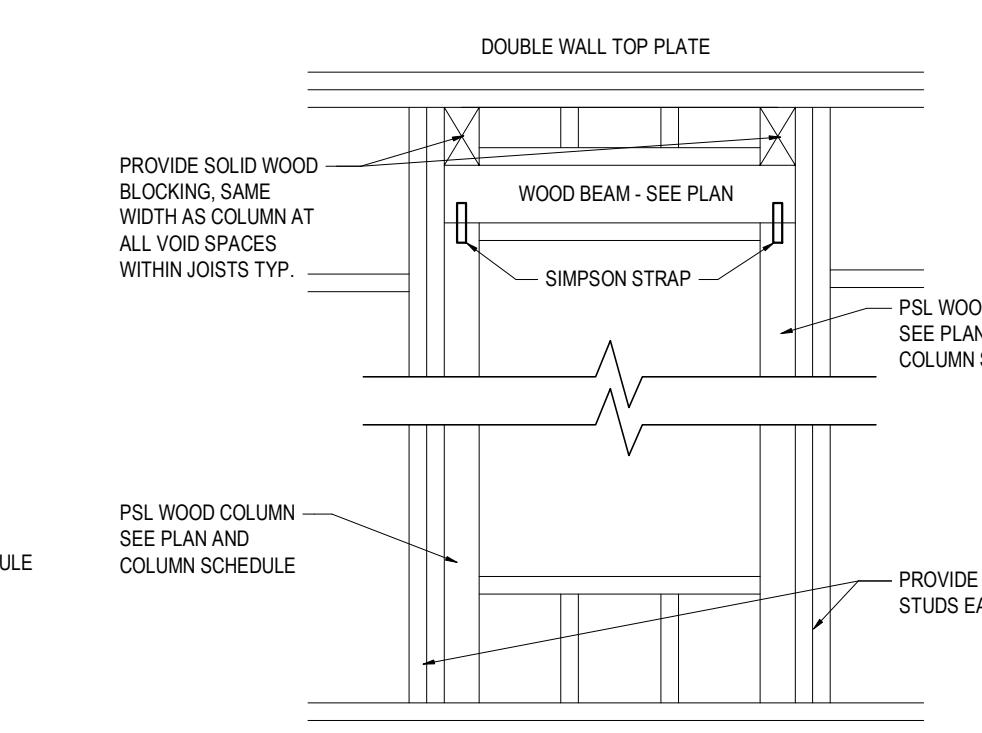


PLYWOOD SHEATHING NAILING REQUIREMENTS



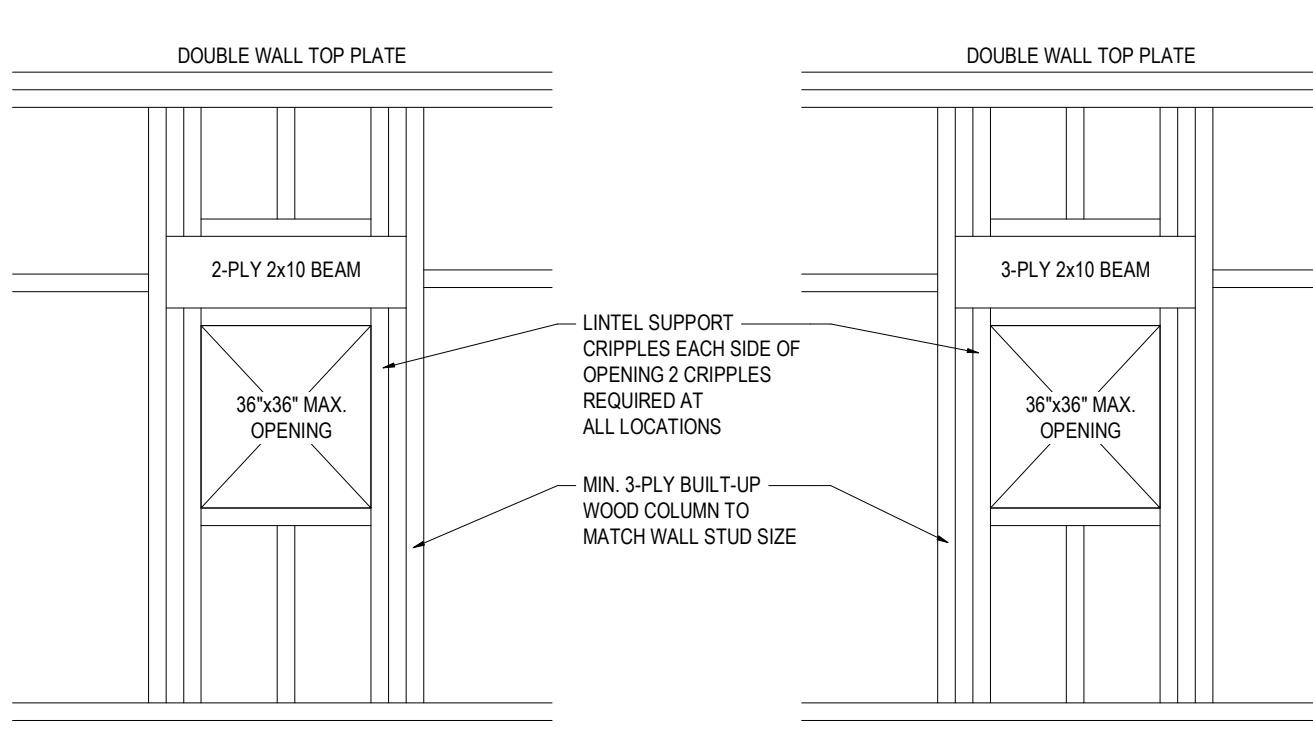
TYPICAL OPENING AT EXTERIOR WINDOW OR PATIO AT MAIN FLOOR (BUILT-UP COLUMN)

- 2 CRIPPLES
- COORDINATE SIZE AND LOCATION(S) OF OPENING WITH ARCHITECTURAL DRAWINGS TYPICAL



TYPICAL OPENING AT EXTERIOR WINDOW OR PATIO AT MAIN FLOOR (PSL COLUMN)

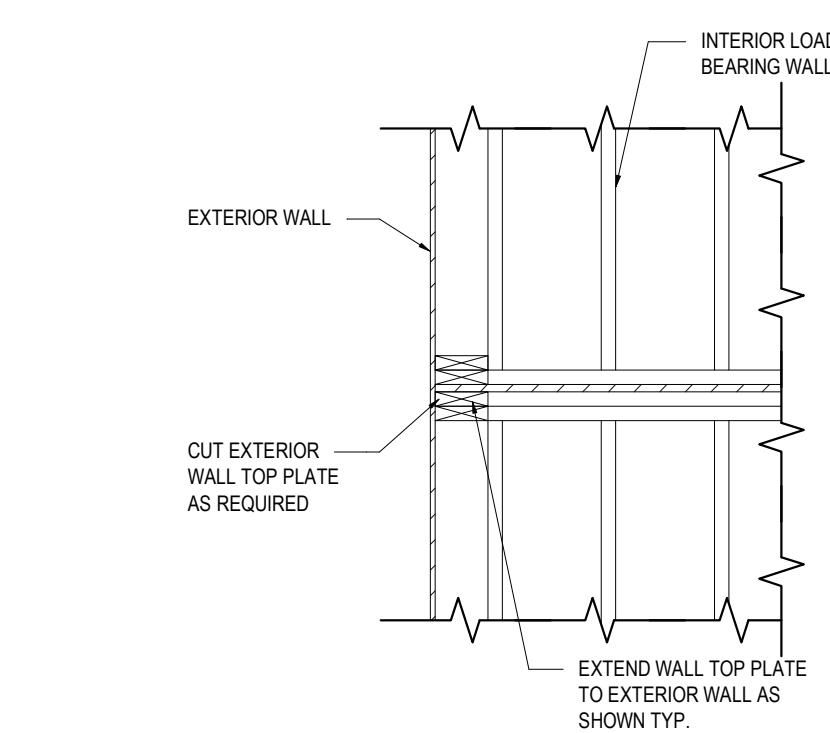
- COORDINATE SIZE AND LOCATION(S) OF OPENING WITH ARCHITECTURAL DRAWINGS TYPICAL



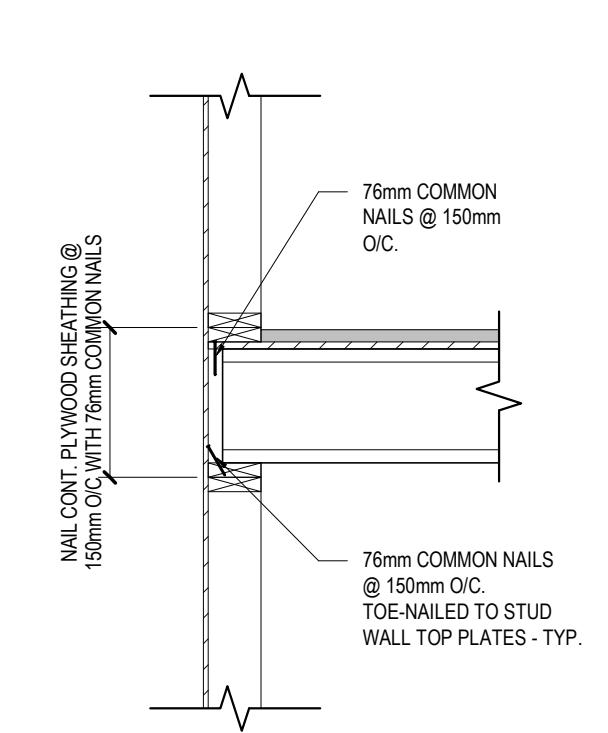
MECHANICAL DUCT OPENINGS IN 2x4 WALLS

• COORDINATE SIZE AND LOCATIONS(S) OF OPENING WITH MECHANICAL DRAWINGS TYPICAL

MECHANICAL DUCT OPENINGS IN 2x6 WALLS



INTERIOR LOAD BEARING WALL TO EXTERIOR WALL DETAIL



NAILING REQUIREMENTS FOR WOOD I-JOISTS AT EXTERIOR WALLS

2	2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:

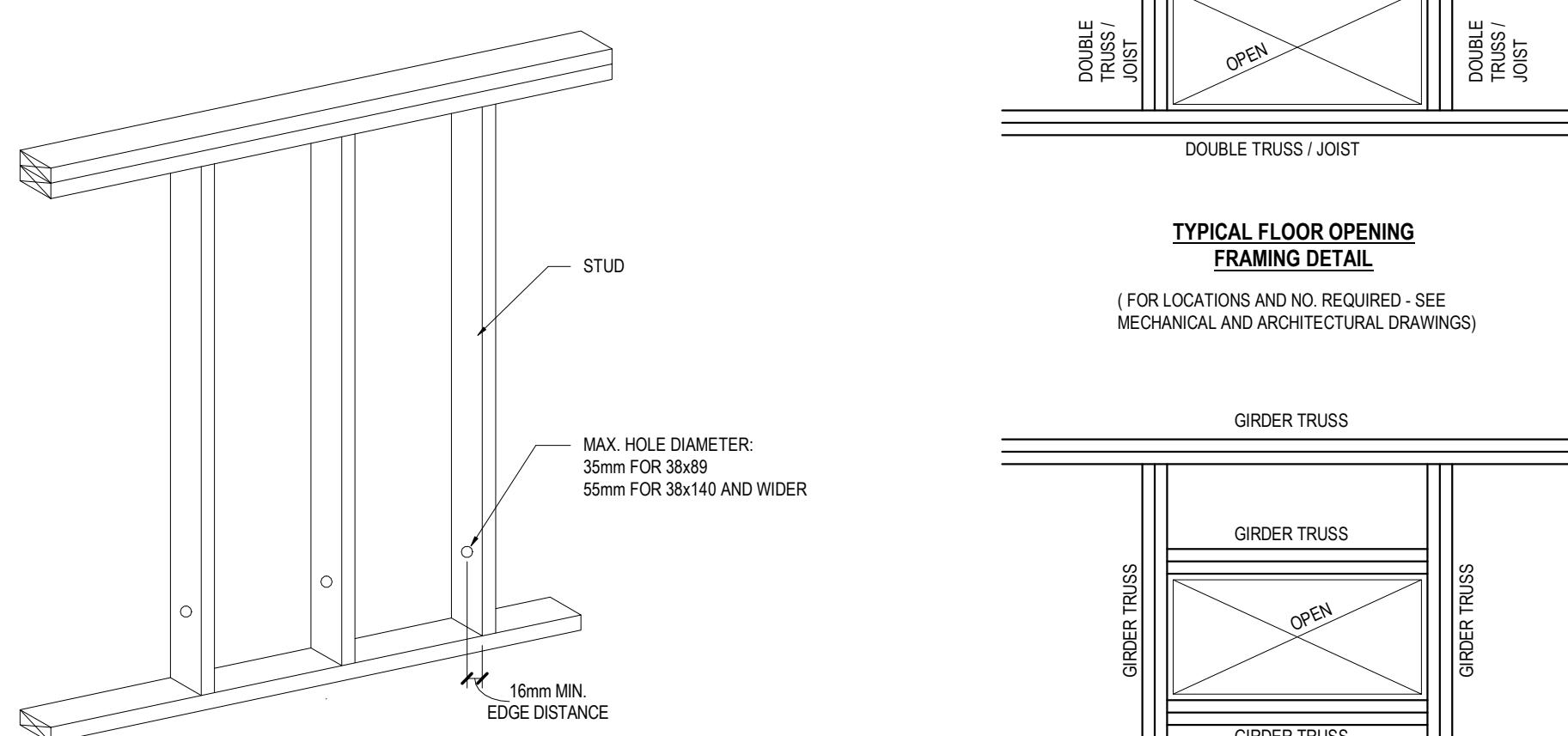
TYPICAL DETAILS

AB Fourplex 01

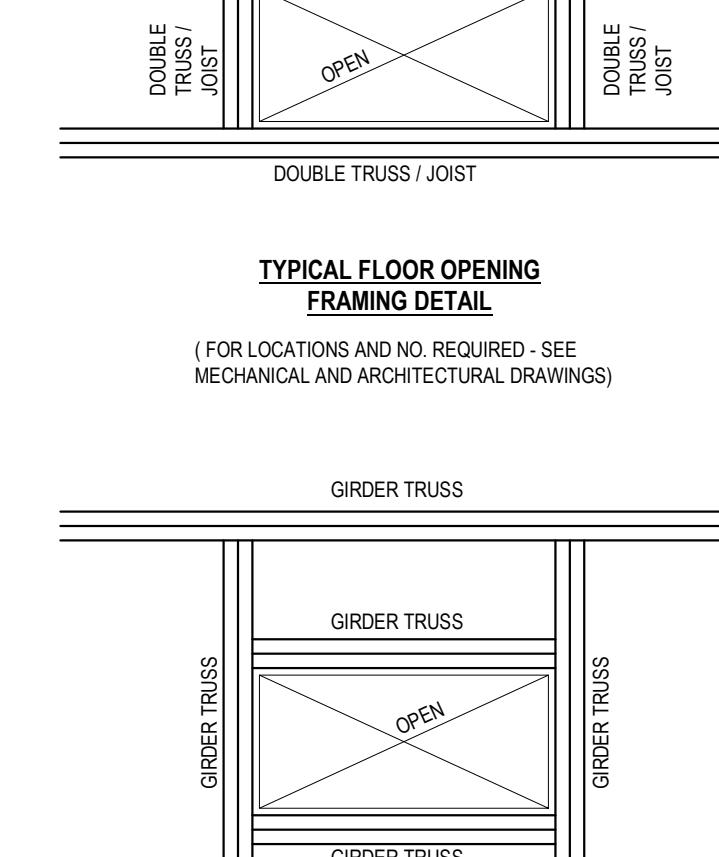
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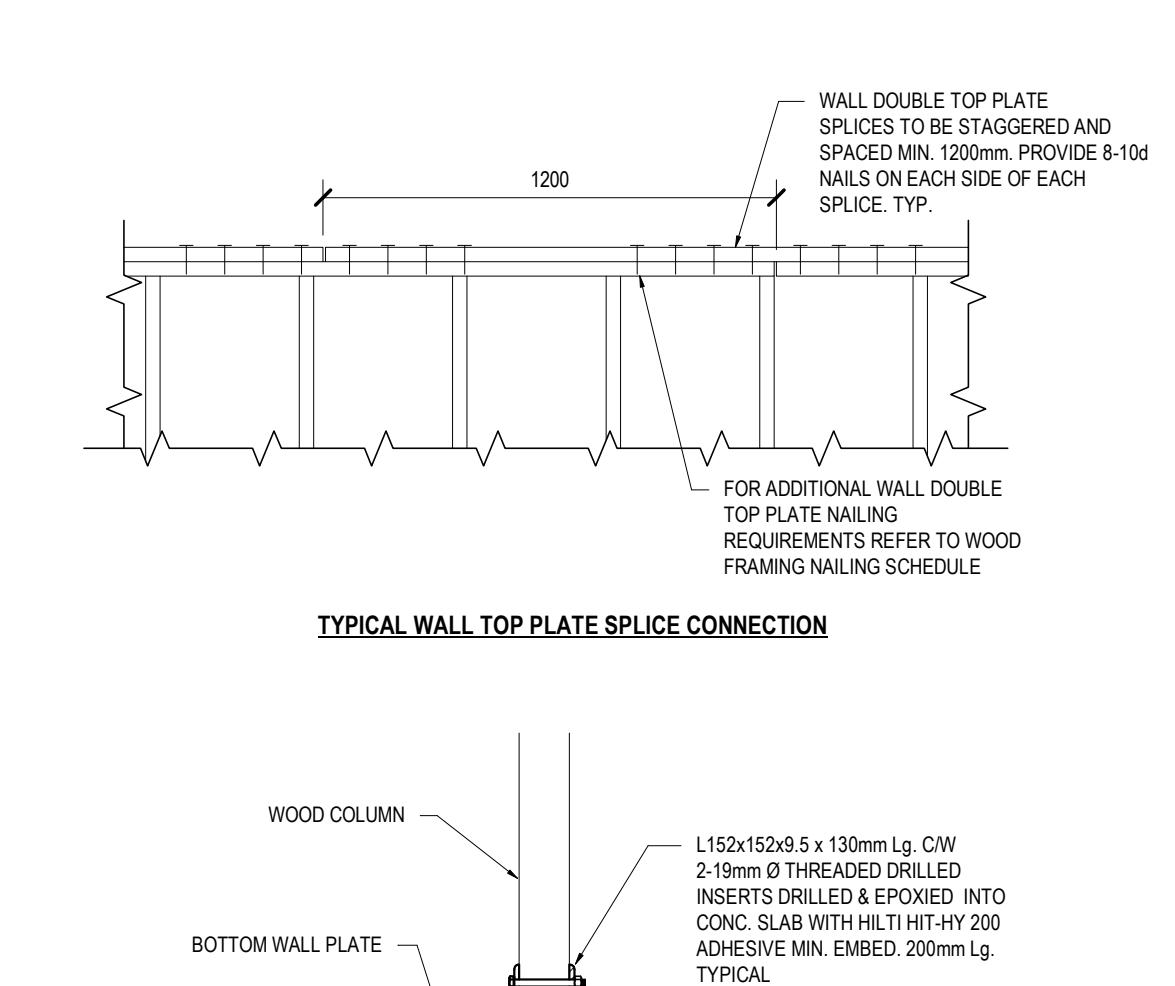
S103



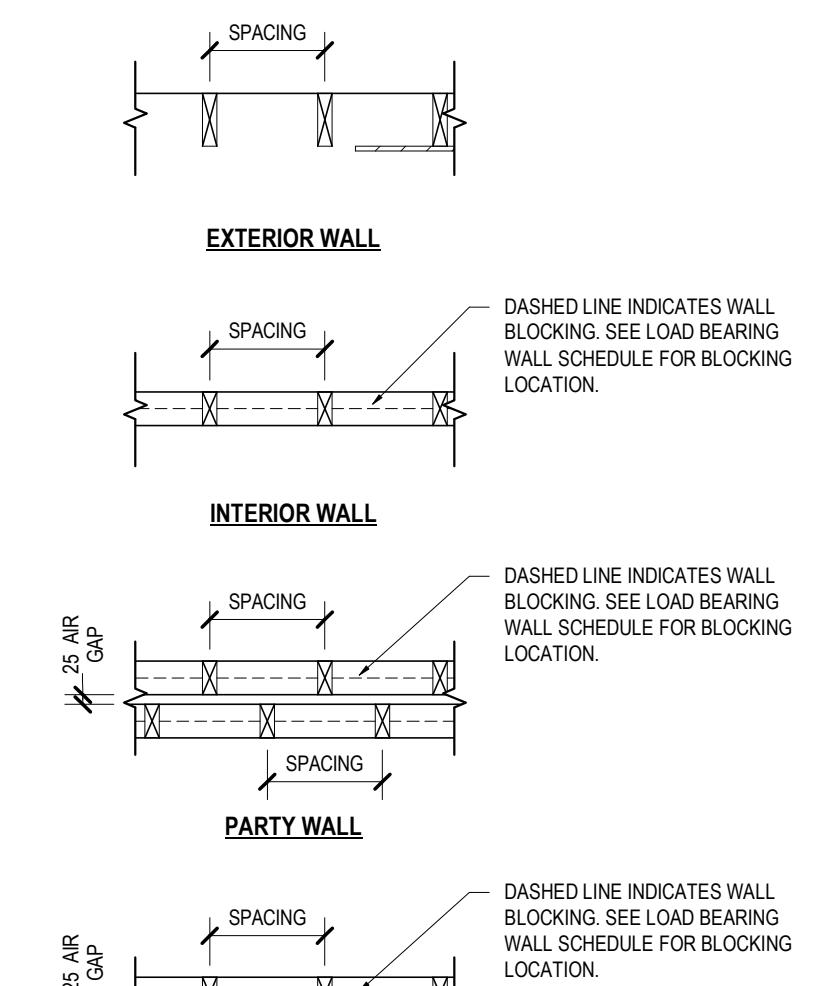
DRILLING DETAIL FOR WALL STUDS



TYPICAL FLOOR OPENING FRAMING DETAIL
(FOR LOCATIONS AND NO. REQUIRED - SEE MECHANICAL AND ARCHITECTURAL DRAWINGS)

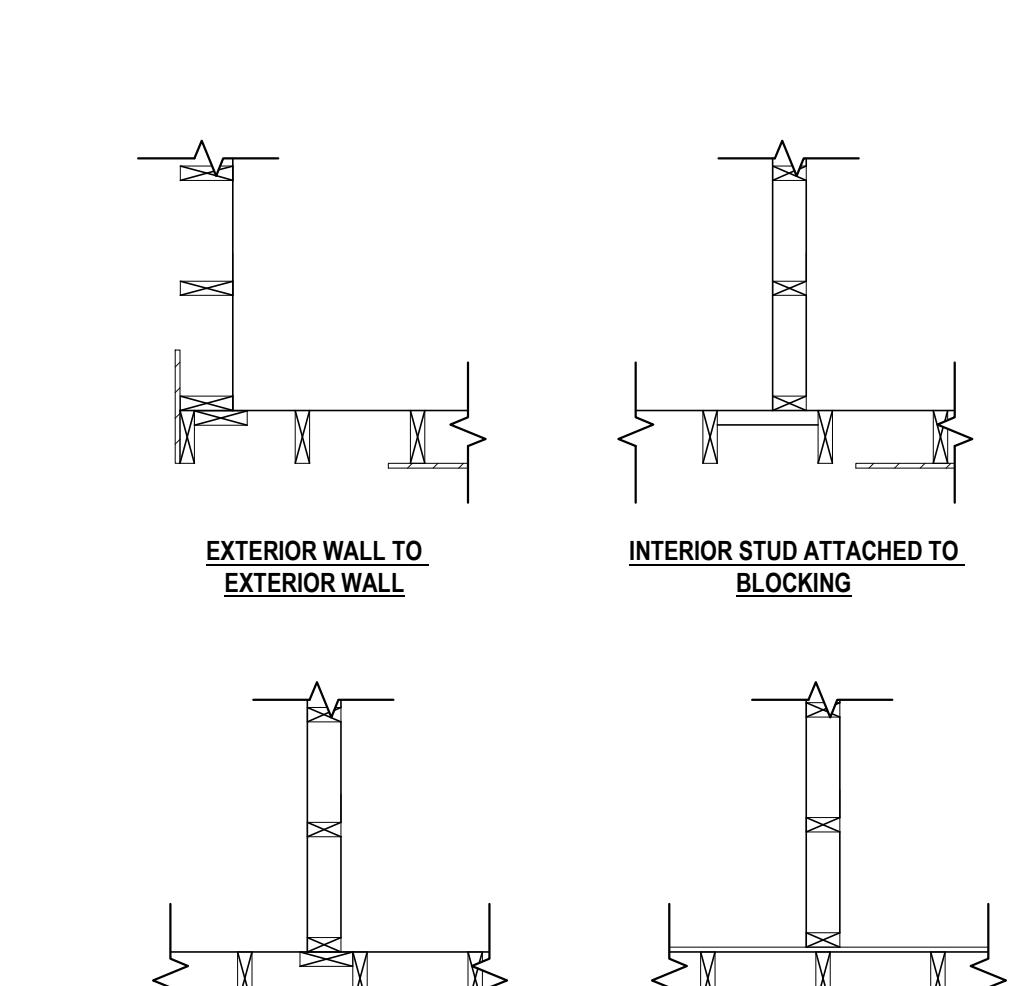


TYPICAL WALL TOP PLATE SPLICING CONNECTION



WOOD COLUMN TO FOUNDATION WALL CONNECTION (EXCEPT BUILT-UP COLUMNS)

1. SEE FRAMING NAILING SCHEDULE AND / OR SHEAR WALL SCHEDULE FOR NAILING REQUIREMENTS



WALL TO WALL CONNECTION DETAILS

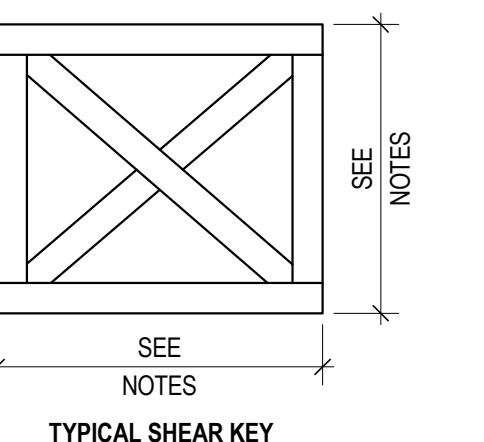
DISCLAIMER
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MINIMUM TRUSS/JOIST SQUASH BLOCKING TABLE	
LEVEL	MINIMUM REQUIREMENTS
2ND FLOOR FRAMING	ONE EACH SIDE
3RD FLOOR FRAMING	ONE EACH SIDE
4TH FLOOR FRAMING	ONE PER TRUSS/JOIST
ROOF FRAMING	NONE

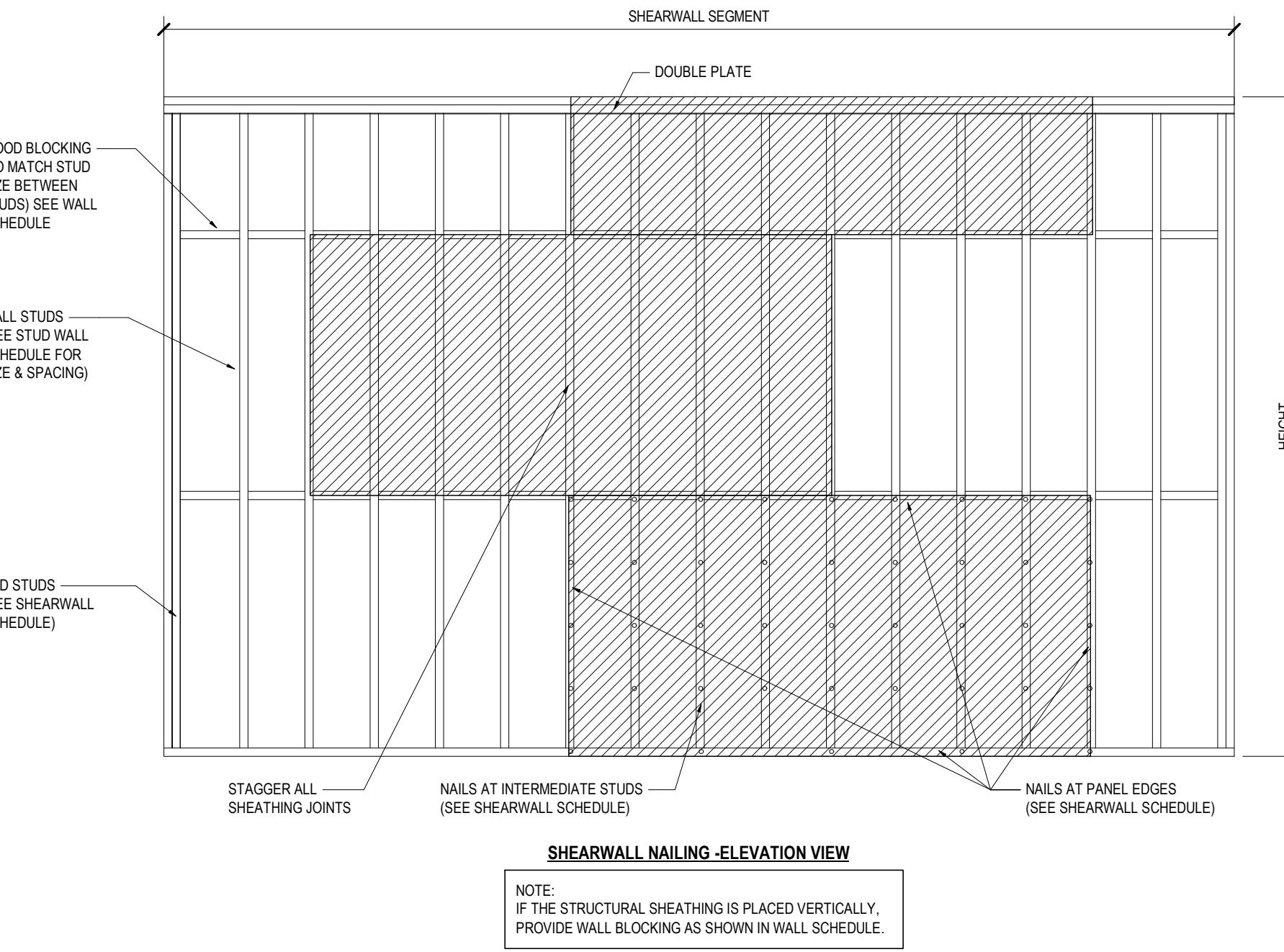
1. ADDITIONAL SQUASH BLOCKS MAY BE REQUIRED AS PER TRUSS JOIST MANUFACTURER'S RECOMMENDATIONS

SHEAR KEY TABLE	
WALL TYPE	MINIMUM REQUIREMENTS
EXTERIOR WALLS	3 PER SUITE
CORRIDOR WALLS	3 PER SUITE
LOAD BEARING PARTY WALLS	3 PER WALL EQUALLY SPACED
INTERIOR LOAD BEARING WALLS	3 PER SUITE

ADDITIONAL SHEAR KEYS MAY BE REQUIRED AS PER TRUSS SUPPLIERS MANUFACTURER'S RECOMMENDATIONS

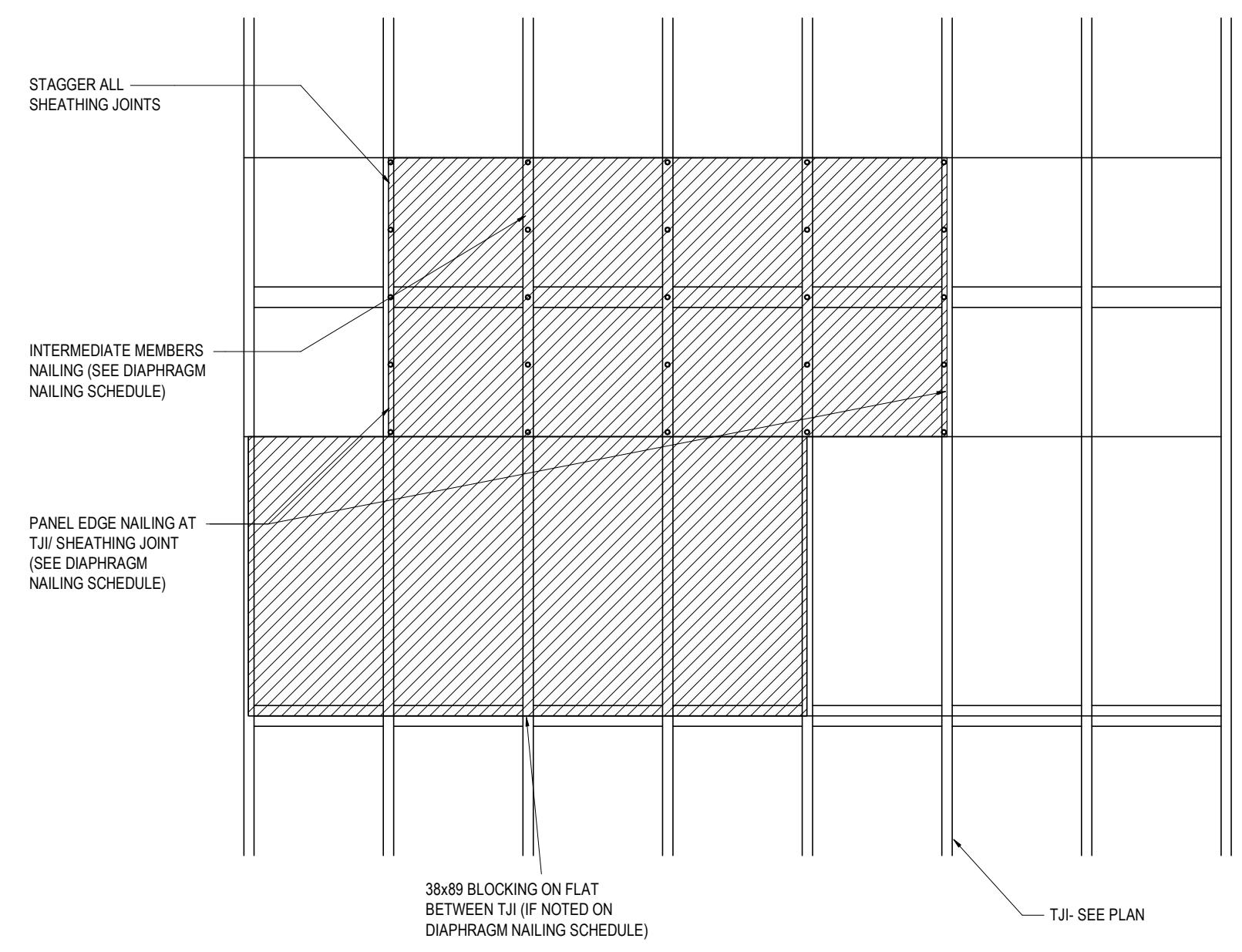


Typical Shear Key

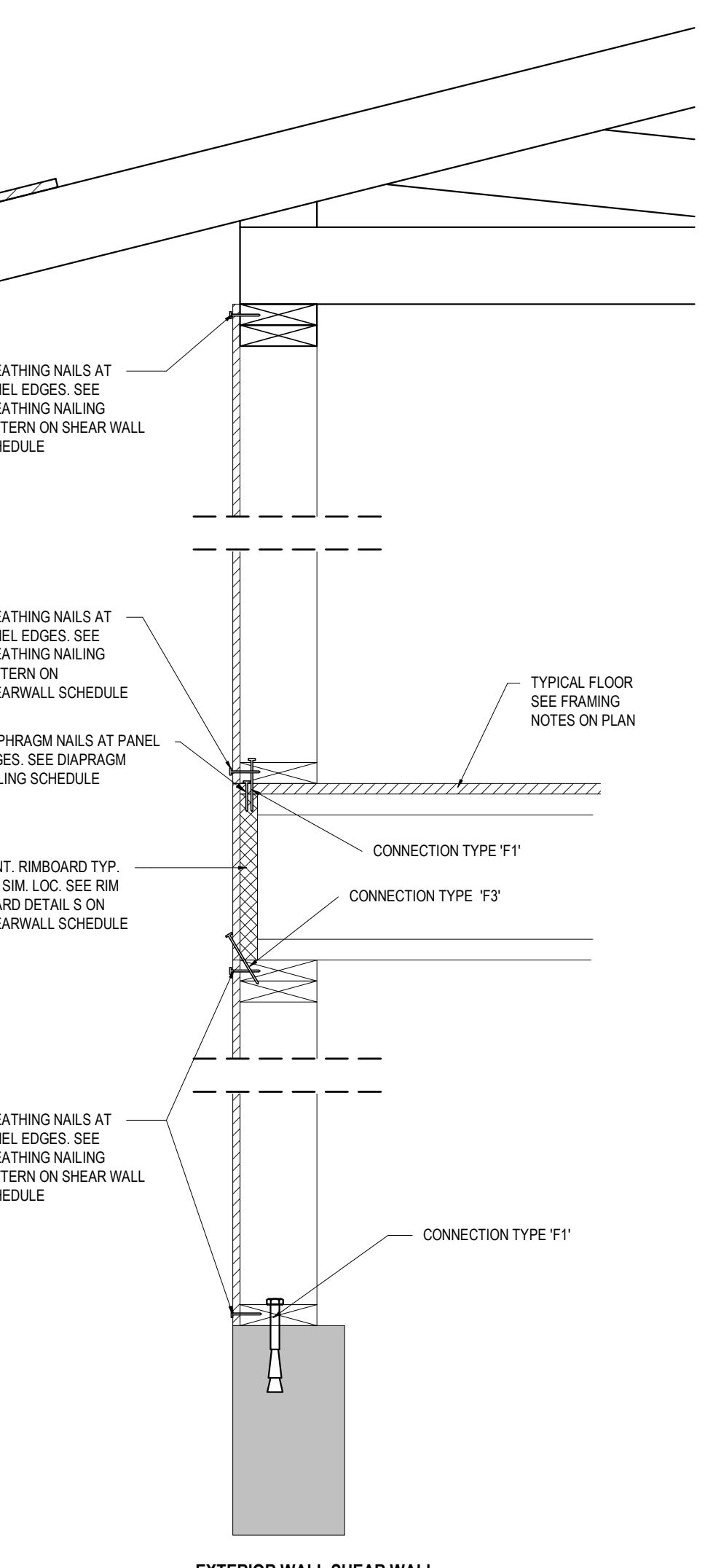
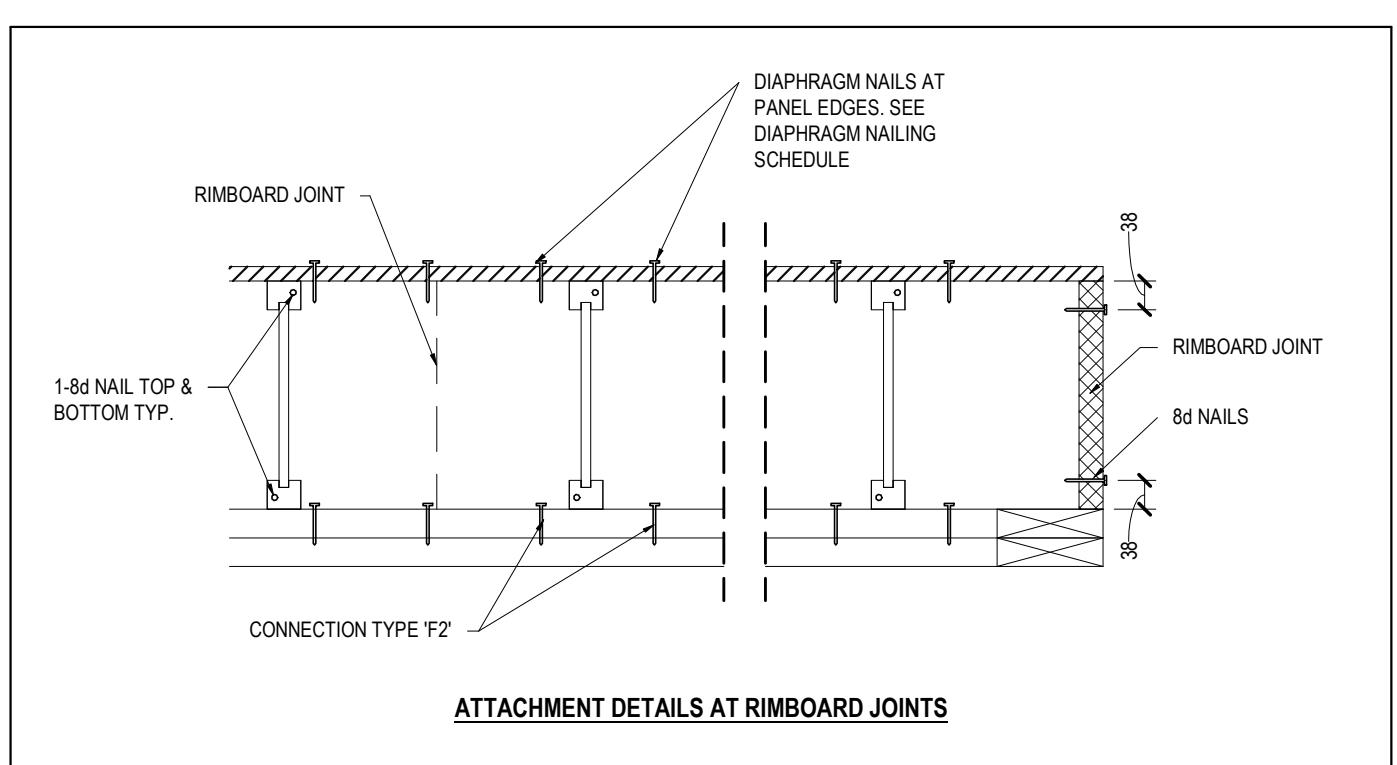


SHEAR WALL AND DIAPHRAGM NOTES:

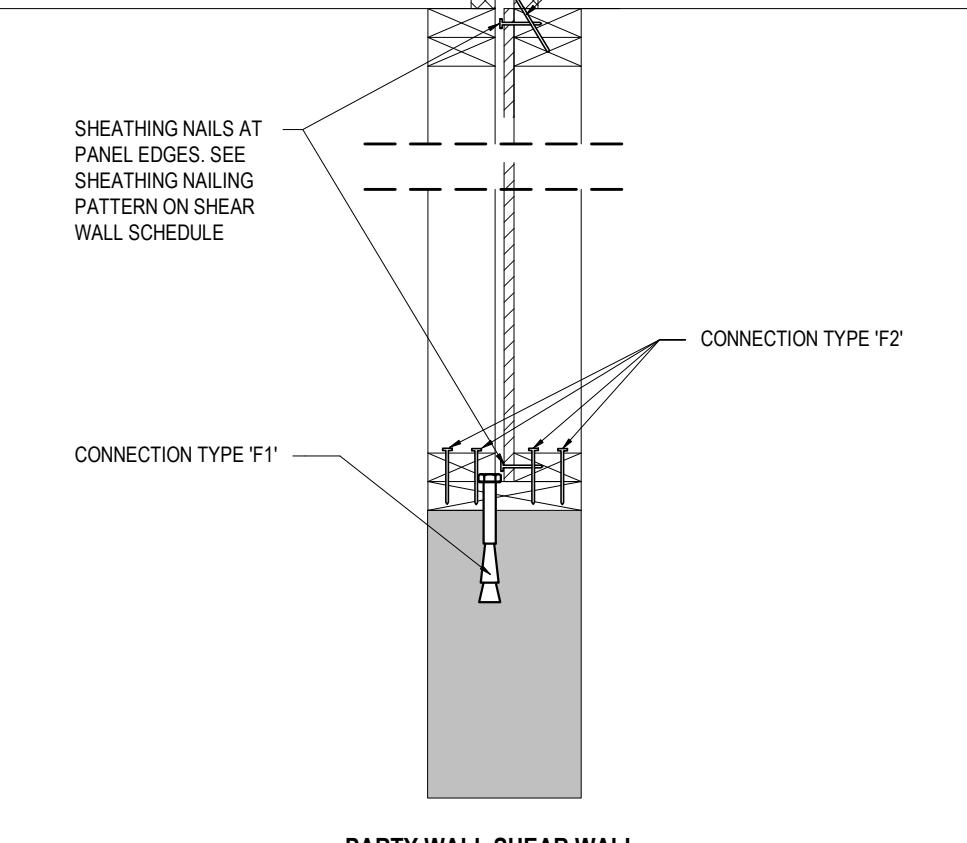
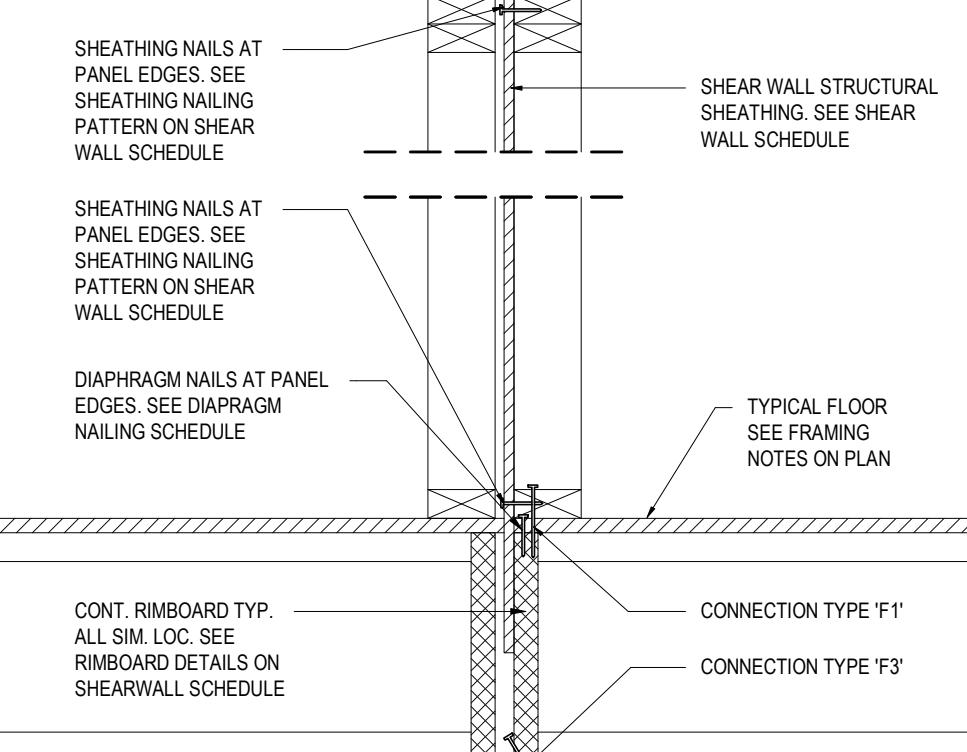
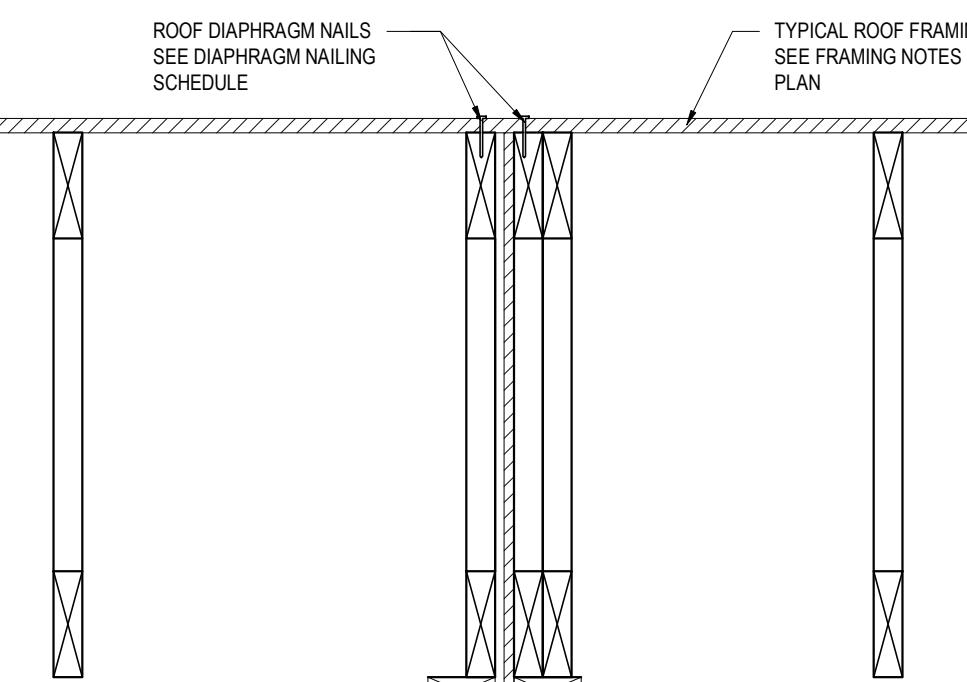
1. ALL NAILS TO BE COMMON WIRE NAILS BY LENGTH AND SPACING NOTED.
2. WHERE NAILS ARE SPACED 50MM ON CENTER, STUDS AND BLOCKS ADJOINING PANEL EDGES TO BE DOUBLED AND NAILS TO BE 10MM @ 10MM OC. NAILS AT PANEL EDGES TO BE STAGGERED.
3. HOLLOW TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
4. SHEAR WALL BOTTOM PLATES TO BE CONNECTED TO CONCRETE WITH 16mm O/C Hilti Kwik Bolt 1 CS ANCHORS @ 600mm O/C. 100mm EMBED. ANCHORS TO BE INSTALLED 98mm FROM FACE TO CONCRETE.
5. WALL SHEATHING PANELS TO BE STAGGERED AND PLACED HORIZONTALLY. PROVIDE BLOCKING AT ALL HORIZONTAL SHEATHING JOINTS.
6. FLOOR SHEATHING TO BE INSTALLED WITH STRONG AXIS AT RIGHT ANGLES TO JOISTS/JROSSES.
7. FLOOR ROOF SHEATHING TO BE CONTINUOUS ABOVE PARTY WALLS (SHEATHING CANNOT BE CUT FOR IMPROVED ACOUSTICS).
8. NAILS TO BE PLACED NOT LESS THAN 9.5mm FROM FRAMING EDGES AND SHALL NOT BE OVERRIVEN.
9. A MINIMUM OF 3mm GAP TO BE LEFT BETWEEN ADJACENT WALL AND FLOOR/ROOF SHEATHING PANELS.
10. FOR LOAD-BEARING WALLS THAT ARE NOT SHEAR WALLS, WALL-TO-FLOOR CONNECTION DETAILS TO MATCH 9.7.1.
11. RIMBOARD THICKNESS INDICATED IN SHEAR WALL SCHEDULES ARE MIN. REQUIRED AND APPLY TO SHEAR WALLS ONLY. AT OTHER LOCATIONS, RIM BOARD THICKNESS CAN BE REDUCED AS PER FLOOR SUPPLIER'S SHOP DRAWINGS BUT CANNOT BE LESS THAN 32mm.



DIAPHRAGM NAILING - PLAN VIEW



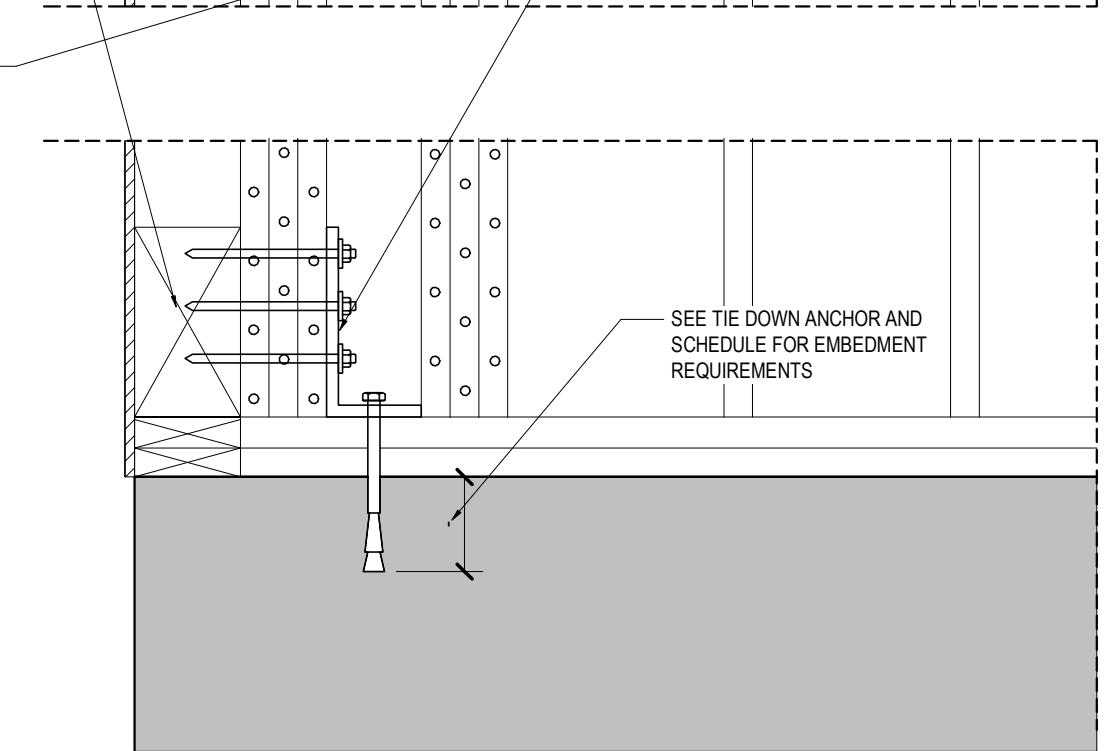
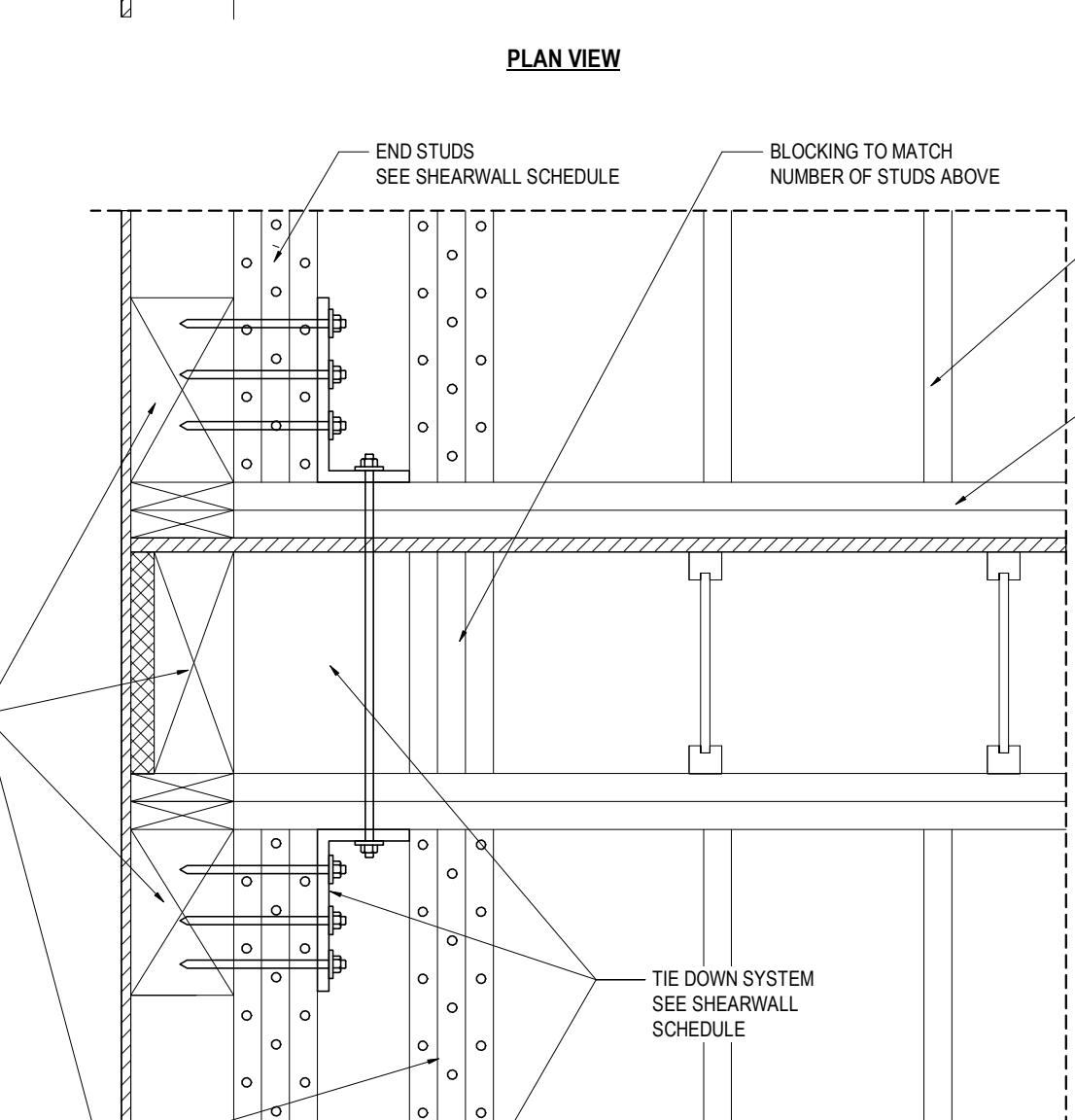
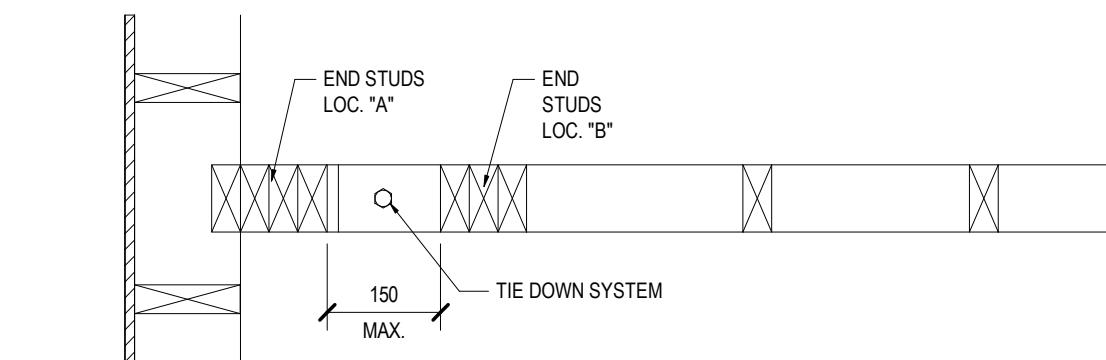
EXTERIOR WALL SHEAR WALL



PARTY WALL SHEAR WALL

WOOD FRAMING NAILING SCHEDULE	MIN. LENGTH OF NAILS	MIN. NUMBER OF NAILS / MAX. NAIL SPACING
WALL STUDS TO WALL TOP / BOTTOM PLATES - TOE NAILS	2 1/2"	4
WALL STUDS TO WALL TOP / BOTTOM PLATES - END NAILS	3 1/4"	2
WALL DOUBLE TOP / BOTTOM PLATES	3"	24" O/C
BOTTOM WALL PLATE OR SOLE PLATE TO FLOOR JOISTS, RIM JOISTS OR BLOCKING - EXTERIOR WALLS	3 1/4"	6" O/C
BOTTOM WALL PLATE OR SOLE PLATE TO FLOOR JOISTS, RIM JOISTS OR BLOCKING - INTERIOR WALLS	3 1/4"	16" O/C
DOUBLED STUDS AT OPENINGS, WALL ENDS	3"	12" O/C
WALL BLOCKING TO WALL STUDS - TOE NAILS	2 1/2"	2 EACH SIDE
LUMBER JOISTS OR BLOCKING TO WALL TOP PLATES - TOE NAILS	3"	2 EACH SIDE
RIM BOARD TO WALL TOP PLATES - TOE NAILS	3 1/4"	6" O/C
JOISTS BLOCKING TO LUMBER JOISTS - END NAILS	3"	2 EACH SIDE
DOOR / WINDOW HEADERS TO STUDS - TOE NAILS	3 1/4"	3 EACH SIDE

1. REFER TO SHEARWALL SCHEDULE ON DWG. SX.X FOR ADDITIONAL NAILING REQUIREMENTS AT SHEARWALL LOCATIONS.



1. 2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO. DATE	DESCRIPTION

PROJECT:
CMHC HOUSING CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:

TYPICAL DETAILS

AB Fourplex 01

PROJECT NO: 02500462
 SCALE: As indicated

SHEET NO:

S104

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SECTION 03100 CONCRETE FORMWORK

- CONCRETE FORMWORK SHALL CONFORM WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS:
 - NATIONAL BUILDING CODE - 2019 ALBERTA EDITION
 - CSA A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION"
 - CSA S29.1 "FALSEWORK AND FORMWORK"
- THE DESIGN OF CONCRETE FORMWORK AND ADEQUATE SHORING SYSTEMS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONSTRUCT FORMWORK TO MAINTAIN THE FOLLOWING MAXIMUM TOLERANCES UNLESS SPECIFICALLY SHOWN OTHERWISE ON THE DRAWINGS:
 - DEVIATION FROM HORIZONTAL AND VERTICAL LINES 3/8" (10mm) IN 6 ft (20m).
 - DEVIATION OF BUILDING DIMENSIONS NOT MORE THAN 3/16" (6mm).
 - DEVIATION OF CROSS SECTIONAL DIMENSIONS OF COLUMNS OR BEAMS +/- 1/8" (3mm).

SECTION 03200 CONCRETE REINFORCEMENT

- CONCRETE REINFORCEMENT SHALL CONFORM WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS:
 - ACI 355.1 ACI DETAILING MANUAL
 - CSA A23.1 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
 - CSA G40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL"
 - CSA S29.1 "WELDED DEFORMED STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT"
 - CAN/CSA G30.18 "CARBON STEEL BARS FOR CONCRETE REINFORCEMENT"
 - CAN/CSA W18.6 "WELDING OF REINFORCING BARS FOR CONCRETE CONSTRUCTION"
 - ASTM A775 "EPOXY-COATED STEEL REINFORCING BARS"
- SUBMIT SHOP DRAWINGS FOR ALL REINFORCING STEEL.
- REINFORCING STEEL TO CSA G30.18 400 MPa YIELD GRADE SPECIAL LOW ALLOY DEFORMED STEEL, 12.5% TENSILE STRAIN, AND A YIELD STRAIN NOT EXCEEDING 0.2% AND/OR BENDING WHERE BENDING RADIUS IS SMALLER THAN RECOMMENDED STANDARDS.
- SHOP BEND BARS COLD, IDENTIFY STEEL, HOOKS, BENDS, CAPS AND SIMILAR DETAILS TO ACI DETAILING MANUAL 315.
- CLEAN REINFORCEMENT TO CSA A23.1.
- CONCRETE REINFORCEMENT DETAILS AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE DRAWINGS, USE THE GREATER VALUE OF CODE IN THIS SPECIFICATION OR ON THE DRAWINGS.
- LAP HORIZONTAL STEEL IN ACCORDANCE WITH CSA A23.1.
- PROVIDE ADDITIONAL REINFORCEMENT TO THAT INDICATED ON DRAWINGS AS FOLLOWS:
 - 2-15M VERTICALS AT EDGES OF WALLS.
 - 2-15M HORIZONTALS ABOVE AN OPENINGS IN WALLS. EXTEND REINFORCEMENT 18" (450mm) BEYOND EDGE OF OPENING ON EACH SIDE.
 - PROVIDE CORNER BARS TO ALL CORNERS AND INTERSECTIONS.

SECTION 03300 CAST-IN-PLACE CONCRETE

- CAST-IN-PLACE CONCRETE SHALL CONFORM WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS:
 - NATIONAL BUILDING CODE - 2019 ALBERTA EDITION
 - CAN/CSA-A100 PORTLAND CEMENT
 - CSA A23.1 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION
 - CSA A23.2 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE"
 - CAN 3-265.1-M18 "CHEMICAL ADMIXTURES FOR CONCRETE"
 - CSA G40.20 "TEST METHODS FOR CONCRETE TESTING LABORATORIES"
 - CSA G265.1-M18 "AIR-ENTRAINING ADMIXTURES FOR CONCRETE"
- TO ENSURE THAT THE REQUIRED CONCRETE STRENGTHS ARE BEING ACHIEVED, TESTING SHALL BE PERFORMED BY A RECOGNIZED TESTING LABORATORY AS FOLLOWS:
 - ONE SET OF THREE (3) STANDARD TEST SPECIMENS, TO BE MADE FOR EACH CLASS OF CONCRETE, ON THE DAY POUR OR MORE THAN ONE DAY AFTER POURING FOR POURS OF MORE THAN 80 CUBIC METRES, OR ONE SET OF THREE (3) TEST SPECIMENS.
 - ONE ADDITIONAL STANDARD TEST SPECIMEN TO BE MADE DURING COLD WEATHER.
 - CONCRETE TO BE SAMPLED AT THE POINT OF DEPOSIT OF THE CONCRETE.
 - FOR EACH SET OF TEST SPECIMENS A SLUMP TEST AND ENTRAINED AIR TEST IS TO BE INCLUDED.
- CONCRETE REQUIREMENTS:
 - REFRAIN FROM ADDING CONCRETE TO ASTM CM (LATEST VERSION).
 - REFER TO CONCRETE SCHEDULE FOR MIX REQUIREMENTS.
 - AGGREGATES TO CSA A23.1 AND ASTM C330-17A MAXIMUM SIZE 3/4" (20mm) COARSE AGGREGATE.
- CONCRETE WORKS BE WITHIN THE TOLERANCE LISTED BELOW:
 - VARIATION OF THE LINEAR BUILDING LINES LESS THAN 3/16" (6mm).
 - VARIATION OF GROSS SECTION OF THICKNESS OF SLABS +/- 1/4" (6mm).
 - VARIATION FROM LEVEL OR FROM GRADES INDICATED FOR SURFACES OF SLAB SHALL NOT EXCEED UNDER A 3m STRAIGHT EDGE IMMEDIATELY AFTER TROWELLING.

- CONDUITS, PIPES AND SLEEVES IN CONCRETE:
 - ACCURATELY LOCATE AND SET IN PLACE ITEMS WHICH ARE TO BE CAST DIRECTLY INTO CONCRETE.
 - COORDINATE WORK WITH OTHER TRADES.
 - PLACE CONDUITS, SLEEVES, ETC. SHALL NOT IMPAIR THE STRUCTURAL STRENGTH OF STRUCTURE. CENTER LINE SPACING TO BE NOT LESS THAN 3 CONDUIT DIAMETERS. CENTER LINE SPACING FOR PARALLEL CONDUITS AND REINFORCEMENT SLEEVES SHALL NOT EXCEED 10 CONDUITS.
 - SLEEVES OR CONDUITS THROUGH COLUMNS NOT ALLOWED.
 - SLEEVES THROUGH BEAMS NOT ALLOWED.
 - DO NOT PLACE SLEEVES NEXT TO COLUMNS. MAINTAIN SLEEVES 4 ft (1200mm) MINIMUM DISTANCE AWAY FROM FACE OF COLUMN.
 - SPREAD SLEEVES THROUGH SLABS TO BE 2 TIMES THE DIAMETERS MINIMUM. SUPPORT SLAB BUT NOT REINFORCEMENT ON SLAB BOLSTERS TO MAINTAIN CONCRETE PROTECTION AS REQUIRED.
 - SLAB POURS SHALL NOT EXCEED 8500 ft².
 - LAYOUT CONSTRUCTION JOINTS PRIOR TO PLACEMENT OF CONCRETE. CONSTRUCTION JOINTS ARE TO BE REVIEWED AND APPROVED BY THE CONSULTANT.
 - HOKS ON COLUMNS CULD BEND 135°.
 - DO NOT EXPOSE FORMWORK BEFORE CONCRETE HAS REACHED 75% OF SPECIFIED 28 DAY STRENGTH.

- CURING:
 - CONCRETE CURING TO CSA A23.1.
 - CONCRETE CURING TO MAINTAIN THE SURFACE CONTINUOUSLY MOIST UNTIL CONCRETE TEMPERATURE IS 10°C. CURING IS TO PEAKED AND DROPPED SEVERAL DEGREES, OR FOR THREE DAYS AT A MINIMUM TEMPERATURE OF 10°C.
 - ADDITIONAL CURING: IMMEDIATELY FOLLOWING BASIC CURING AND BEFORE THE CONCRETE HAS DRIED, CURE FOR AN ADDITIONAL FOUR DAYS, MAINTAINING THE TEMPERATURE OF THE AIR IN CONTACT WITH THE CONCRETE ABOVE 10°C.
 - ACCEPTABLE CURING METHODS:
 - WATER SPRINKLING.
 - ABSORBENT MAT OR FABRIC KEPT CONTINUOUSLY WET.
 - DAMP SAND, EARTH, OR SIMILAR MOIST MATERIAL.
 - CONTINUOUS STEAM VAPOUR MIST BATH NOT EXCEEDING 70°C.
 - CURING COMPOUND.
 - WATERPROOFING OR PLASTIC FILM.
 - OTHER CURE-RETAINING METHODS APPROVED BY THE CONSULTANT.
 - FORMS IN CONTACT WITH CONCRETE SURFACE.

- DO NOT USE CURING COMPOUNDS ON CONCRETE SURFACES, WHICH ARE RECEIVED TO RECEIVING, TIPPING, HARDENING, OR OTHER TYPE OF BONDING FINISH UNLESS APPROVED BY THE CONSULTANT.
- PROJECT CONTRACTOR SHALL PLACE AND CONSOLIDATED CONCRETE AGAINST DAMAGE OR DEFECTS FROM ADVERSE WEATHER CONDITIONS.
- EXPOSED CONCRETE WALKING SURFACES NOT TO RECEIVE AN INTEGRAL HARDEENER, COAT WITH CURING COMPOUND OR CURING METHOD THAT PROVIDES PERMANENT SEAL IN AREAS WITH AN EXPOSED CONCRETE FLOOR SURFACE, APPLY THE HARDEENER AND DUST-PROOFING AGENT STRICTLY TO THE MANUFACTURER'S INSTRUCTIONS.
- SUMMIT RECOMMENDED METHODS OF PROTECTION AND CURING WHEN AIR TEMPERATURE IS AT OR ABOVE 25°C OR AT OR BELOW 5°C, OR LIKELY TO BE SO WITHIN 24 HOURS OF PLACING TIME.
- WATER FOR CURING SHALL BE CLEAN AND FREE FROM MATERIALS THAT WILL CAUSE STAINING OR DISCOLORATION OF THE CONCRETE.
- IF DAMP SAND, EARTH OR SIMILAR MOIST MATERIAL, SPREAD 2" (50mm) OVER THE ENTIRE SURFACE AND KEEP SATURATED WITH WATER.
- FOR VERTICAL SURFACES SUCH AS WALLS, COLUMNS, PIERs, LOOSEN THE FORMS, LEAVE FORM IN PLACE.
- IF MOIST CURING IS NOT USED, THEN SPRAYED CURING COMPOUNDS ARE TO BE USED.
- CURING COMPOUNDS TO BE OF THE LIQUID MEMBRANE TYPE FOR CURING CONCRETE, AND SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
- CURING COMPOUNDS USED FOR EXPOSED CONCRETE MUST NOT DISCOLOR THE CONCRETE, NOR BE SUCH AS TO PROHIBIT THE SUBSEQUENT APPLICATION OF PAINT, TILES, PAVERS OR OTHER COMPLETING SURFACES.
- FOR EXPOSED CONCRETE SURFACES, AFTER THE COMPLETION OF FINISHING OPERATIONS AND IMMEDIATELY AFTER THE DISAPPEARANCE OF SURFACE MOISTURE, APPLY THE SPRAYED CURING COMPOUND.

SECTION 316223 SCREW PILES

- SCREW PILES SHALL CONFORM WITH THE CURRENT EDITIONS OF THE FOLLOWING STANDARDS:
 - ASTM A36/A38M "CARBON STEEL".
 - ASTM A252 "WELDED AND SEAMLESS STEEL PIPE PILES".
 - ASTM F1132 "STAINLESS STEEL PIPE PILES FOR DEEP FOUNDATIONS UNDER STATIC AND COMPRESSIVE LOAD".
 - CSA/CSA-G40.20/40.21 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".
 - CSA W47.1 "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL".
 - CSA W48 "FILLER METALS AND ALLIED MATERIALS FOR METAL ARC WELDING".
 - CSA W59 "WELDED STEEL CONSTRUCTION (METAL ARC WELDING)".

- DESIGN REQUIREMENTS:
 - DESIGN PILES FOR THE LOADING SHOWN ON DRAWINGS.
 - DESIGN CONCRETE FORMS AND SHORING SYSTEMS NECESSARY TO RESIST ALL LOADS INDICATED ON DRAWINGS.
 - PILE DESIGN SHALL BE SIGNED AND SEALED BY A P.ENG DESIGNATED IN THE PROVINCE OF ALBERTA.
 - ALL HELICAL PILES TO BE DESIGNED BY THE SUPPLIER FOR A MINIMUM 75 YEAR OPERATIONAL LIFE. REVIEW OF THE GEOTECHNICAL INFORMATION IS INCUMBENT UPON THE HELICAL PILES SUPPLIER

- SHOP DRAWINGS:
 - INCLUDE THE FOLLOWING INFORMATION:
 - PILE LAYOUT.
 - TYPE OF PILE.
 - PILE LENGTH.
 - GRADE AND DETAILS OF STEEL.
 - ELEVATION OF PILE BASES.
 - ELEVATION OF TOP OF PILE CAPS.
 - SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA.

- QUALITY ASSURANCE:
 - PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS OF CSA G40.21, UNLESS INDICATED OTHERWISE HEREIN.
 - SUPERVISION: PILING IS TO BE INSTALLED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA. THE CONSULTANT IS TO APPROVE THE CONSULTANT FOR PROVIDING THE GEOTECHNICAL REPORT, RETAINED AND PAID FOR BY THE CONTRACTOR, AND APPROVED BY THE CONSULTANT.
 - INSPECTION OF CAP PLATES AND WELDED ANCHORS.
 - MATERIALS AND WORKMANSHIP WILL BE SUBJECT TO INSPECTION AND TESTING BY AN INDEPENDENT INSPECTOR APPROVED BY THE CONSULTANT AND APPROVED BY THE CONTRACTOR AND APPROVED BY THE CONSULTANT.
 - TESTING CONDUCTED TO CSA W59 AND CAN/CSA S16.1 STANDARDS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 - GENERAL EXAMINATION OF ALL WELDS AND WORKMANSHIP THAT ARE READILY ACCESSIBLE (100%).
 - RANDOM MAGNETIC PARTICLE TESTING OF SELECTED FIELD WELDS OF ALL COMPONENTS (10% OF CONSTRUCTION).
 - BOLT SPECIFICATIONS, GRADED AND FASTENING VERIFICATION (10% OF CONNECTIONS).
 - REVIEW OF DRAWINGS, WELDING PROCEDURES, WELDING CERTIFICATIONS, DATA SHEETS AND WELDING CONSUMABLES STORAGE (FIELD).
 - TRACKING OF ALL NOTED DEFICIENCIES, TIMELY FAXING OF TECHNICAL REPORTS TO ALL RELEVANT PARTIES, IMMEDIATE CORRESPONDENCE OF IMPORTANT ISSUES TO THE ENGINEER OF RECORD, AND A FINAL SUMMARY REPORT INCLUDING ALL RELATED DOCUMENTATION THE FINAL PROJECT STATUS.
 - BY AN INDEPENDENT INSPECTION AND TESTING FIRM TO SUBMIT TO THE CONSULTANT A FINAL REPORT CERTIFYING ALL WELDS AND CONNECTIONS, INCLUDING CONFIRMATION THAT ALL REQUIREMENTS HAVE BEEN MET. THIS REPORT IS TO BE SUBMITTED TO THE CONSULTANT AND THE SIGNATURE OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA.

- CONCRETE REQUIREMENTS:
 - REFRAIN FROM ADDING CONCRETE TO ASTM CM (LATEST VERSION).
 - REFER TO CONCRETE SCHEDULE FOR MIX REQUIREMENTS.
 - AGGREGATES TO CSA A23.1 AND ASTM C330-17A MAXIMUM SIZE 3/4" (20mm) COARSE AGGREGATE.

- CONCRETE WORKS BE WITHIN THE TOLERANCE LISTED BELOW:
 - VARIATION OF THE LINEAR BUILDING LINES LESS THAN 3/16" (6mm).
 - VARIATION OF GROSS SECTION OF THICKNESS OF SLABS +/- 1/4" (6mm).
 - VARIATION FROM LEVEL OR FROM GRADES INDICATED FOR SURFACES OF SLAB SHALL NOT EXCEED UNDER A 3m STRAIGHT EDGE IMMEDIATELY AFTER TROWELLING.

- CONDUITS, PIPES AND SLEEVES IN CONCRETE:
 - ACCURATELY LOCATE AND SET IN PLACE ITEMS WHICH ARE TO BE CAST DIRECTLY INTO CONCRETE.
 - COORDINATE WORK WITH OTHER TRADES.
 - PLACE CONDUITS, SLEEVES, ETC. SHALL NOT IMPAIR THE STRUCTURAL STRENGTH OF STRUCTURE. CENTER LINE SPACING TO BE NOT LESS THAN 3 CONDUIT DIAMETERS. CENTER LINE SPACING FOR PARALLEL CONDUITS AND REINFORCEMENT SLEEVES SHALL NOT EXCEED 10 CONDUITS.
 - SLEEVES OR CONDUITS THROUGH COLUMNS NOT ALLOWED.
 - SLEEVES THROUGH BEAMS NOT ALLOWED.
 - DO NOT PLACE SLEEVES NEXT TO COLUMNS. MAINTAIN SLEEVES 4 ft (1200mm) MINIMUM DISTANCE AWAY FROM FACE OF COLUMN.
 - SPREAD SLEEVES THROUGH SLABS TO BE 2 TIMES THE DIAMETERS MINIMUM. SUPPORT SLAB BUT NOT REINFORCEMENT ON SLAB BOLSTERS TO MAINTAIN CONCRETE PROTECTION AS REQUIRED.
 - SLAB POURS SHALL NOT EXCEED 8500 ft².
 - LAYOUT CONSTRUCTION JOINTS PRIOR TO PLACEMENT OF CONCRETE. CONSTRUCTION JOINTS ARE TO BE REVIEWED AND APPROVED BY THE CONSULTANT.
 - HOKS ON COLUMNS CULD BEND 135°.
 - DO NOT EXPOSE FORMWORK BEFORE CONCRETE HAS REACHED 75% OF SPECIFIED 28 DAY STRENGTH.

- CURING:
 - CONCRETE CURING TO CSA A23.1.
 - CONCRETE CURING TO MAINTAIN THE SURFACE CONTINUOUSLY MOIST UNTIL CONCRETE TEMPERATURE IS 10°C. CURING IS TO PEAKED AND DROPPED SEVERAL DEGREES, OR FOR THREE DAYS AT A MINIMUM TEMPERATURE OF 10°C.
 - ADDITIONAL CURING: IMMEDIATELY FOLLOWING BASIC CURING AND BEFORE THE CONCRETE HAS DRIED, CURE FOR AN ADDITIONAL FOUR DAYS, MAINTAINING THE TEMPERATURE OF THE AIR IN CONTACT WITH THE CONCRETE ABOVE 10°C.
 - ACCEPTABLE CURING METHODS:
 - WATER SPRINKLING.
 - ABSORBENT MAT OR FABRIC KEPT CONTINUOUSLY WET.
 - DAMP SAND, EARTH, OR SIMILAR MOIST MATERIAL.
 - CONTINUOUS STEAM VAPOUR MIST BATH NOT EXCEEDING 70°C.
 - CURING COMPOUND.
 - WATERPROOFING OR PLASTIC FILM.
 - OTHER CURE-RETAINING METHODS APPROVED BY THE CONSULTANT.
 - FORMS IN CONTACT WITH CONCRETE SURFACE.

- DO NOT USE CURING COMPOUNDS ON CONCRETE SURFACES, WHICH ARE RECEIVED TO RECEIVING, TIPPING, HARDENING, OR OTHER TYPE OF BONDING FINISH UNLESS APPROVED BY THE CONSULTANT.
- PROJECT CONTRACTOR SHALL PLACE AND CONSOLIDATED CONCRETE AGAINST DAMAGE OR DEFECTS FROM ADVERSE WEATHER CONDITIONS.
- EXPOSED CONCRETE WALKING SURFACES NOT TO RECEIVE AN INTEGRAL HARDEENER, COAT WITH CURING COMPOUND OR CURING METHOD THAT PROVIDES PERMANENT SEAL IN AREAS WITH AN EXPOSED CONCRETE FLOOR SURFACE, APPLY THE HARDEENER AND DUST-PROOFING AGENT STRICTLY TO THE MANUFACTURER'S INSTRUCTIONS.
- SUMMIT RECOMMENDED METHODS OF PROTECTION AND CURING WHEN AIR TEMPERATURE IS AT OR ABOVE 25°C OR AT OR BELOW 5°C, OR LIKELY TO BE SO WITHIN 24 HOURS OF PLACING TIME.
- WATER FOR CURING SHALL BE CLEAN AND FREE FROM MATERIALS THAT WILL CAUSE STAINING OR DISCOLORATION OF THE CONCRETE.
- IF DAMP SAND, EARTH OR SIMILAR MOIST MATERIAL, SPREAD 2" (50mm) OVER THE ENTIRE SURFACE AND KEEP SATURATED WITH WATER.
- FOR VERTICAL SURFACES SUCH AS WALLS, COLUMNS, PIERs, LOOSEN THE FORMS, LEAVE FORM IN PLACE.
- IF MOIST CURING IS NOT USED, THEN SPRAYED CURING COMPOUNDS ARE TO BE USED.
- CURING COMPOUNDS TO BE OF THE LIQUID MEMBRANE TYPE FOR CURING CONCRETE, AND SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
- CURING COMPOUNDS USED FOR EXPOSED CONCRETE MUST NOT DISCOLOR THE CONCRETE, NOR BE SUCH AS TO PROHIBIT THE SUBSEQUENT APPLICATION OF PAINT, TILES, PAVERS OR OTHER COMPLETING SURFACES.
- FOR EXPOSED CONCRETE SURFACES, AFTER THE COMPLETION OF FINISHING OPERATIONS AND IMMEDIATELY AFTER THE DISAPPEARANCE OF SURFACE MOISTURE, APPLY THE SPRAYED CURING COMPOUND.

SECTION 061733 WOOD I-JOISTS
PART 1 GENERAL

- REFERENCES:
 - NATIONAL BUILDING CODE - 2019 ALBERTA EDITION
 - CSA 086 ENGINEERING DESIGN IN WOOD.
 - NLGA 14: STANDARD GRADING RULES FOR CANADIAN LUMBER.
 - CSA 0121:2012: DESIGN IN WOOD.
 - CSA 0111: CANADIAN SOFTWOOD PLYWOOD.
 - CSA-0325: CONSTRUCTION SHEATHING.
 - ASTM D5955: STANDARD SPECIFICATION FOR ESTABLISHING AND MONITORING STRUCTURAL CAPACITIES OF PREFABRICATED WOOD I-JOISTS.
 - ISOIEC 17065: CONFORMITY ASSESSMENT - REQUIREMENTS FOR BODIES CERTIFYING PRODUCTS AND SERVICES.
 - CSA 0122 SERIES: CSA STANDARDS FOR WOOD ADHESIVES

- DESIGN REQUIREMENTS:
 - DESIGN WOOD I-JOISTS, BRACING, BLOCKING, FRAMED OPENINGS, AND CONNECTIONS IN ACCORDANCE WITH CSA 086 TO SAFELY CARRY ALL LOADS INDICATED ON DRAWINGS INCLUDING MECHANICAL AND OTHER EQUIPMENT NOT LISTED.
 - ALL HELICAL PILES TO BE DESIGNED BY THE SUPPLIER FOR A MINIMUM 75 YEAR OPERATIONAL LIFE. REVIEW OF THE GEOTECHNICAL INFORMATION IS INCUMBENT UPON THE HELICAL PILES SUPPLIER

- SHOP DRAWINGS:
 - INCLUDE THE FOLLOWING INFORMATION:
 - PILE LAYOUT.
 - TYPE OF PILE.
 - PILE LENGTH.
 - GRADE AND DETAILS OF STEEL.
 - ELEVATION OF PILE BASES.
 - ELEVATION OF TOP OF PILE CAPS.
 - SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA.

- DELIVERY, STORAGE, AND PROTECTION:
 - STORAGE AND HANDLING REQUIREMENTS:
 - PILE LUMBER ON RAISED SUPPORTS, COVER MATERIALS WITH WATERPROOF COATING, PROVIDE ADEQUATE AIR CIRCULATION AND VENTILATION.
 - PROTECT I-JOISTS FROM WEATHER AND STORE THEM ON JOB SITE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PROVIDE BEARING SUPPORTS AND BRACINGS TO PREVENT BENDING OR OVERTURNING DURING TRANSIT AND STORAGE.

- SHOP DRAWINGS:
 - SUBMIT SHOP DRAWINGS PRIOR TO FABRICATION.
 - CLEARLY INDICATE THE TYPE OF PRODUCT, LOADS, DESIGN LOADS INCLUDING SNOW DRIFT LOADS, EARTHQUAKE, GROUND VIBRATION, ETC. AND ALL OTHER APPROPRIATE DESIGN LOADS.
 - PILE DRILLS, HOLE PUNCHES, FASTENERS, BEARING CONDITIONS AND CONNECTION HARDWARE, ALSO QUANTITY OF ALL MEMBER TYPES, CONNECTIONS AND ACCESSORIES, AS WELL AS ALL BRACING, BLOCKING AND FRAMING ACCESSORIES REQUIRED FOR INSTALLATION.
 - DRAWINGS TO BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA.
 - THE STAMP OF THE PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ALBERTA IS TO BE APPROVED BY THE CONSULTANT.
 - TESTING CONDUCTED TO CSA W59 AND CAN/CSA S16.1 STANDARDS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
 - GENERAL EXAMINATION OF ALL WELDS AND WORKMANSHIP THAT ARE READILY ACCESSIBLE (100%).
 - RANDOM MAGNETIC PARTICLE TESTING OF SELECTED FIELD WELDS OF ALL COMPONENTS (10% OF CONSTRUCTION).
 - BOLT SPECIFICATIONS, GRADED AND FASTENING VERIFICATION (10% OF CONNECTIONS).
 - REVIEW OF DRAWINGS, WELDING PROCEDURES, WELDING CERTIFICATIONS, DATA SHEETS AND WELDING CONSUMABLES STORAGE (FIELD).
 - TRACKING OF ALL NOTED DEFICIENCIES, TIMELY FAXING OF TECHNICAL REPORTS TO ALL RELEVANT PARTIES, IMMEDIATE CORRESPONDENCE OF IMPORTANT ISSUES TO THE ENGINEER OF RECORD, AND A FINAL SUMMARY REPORT INCLUDING ALL RELATED DOCUMENTATION THE FINAL PROJECT STATUS.

- QUALITY ASSURANCE:
 - MEET OR EXCEED REQUIREMENTS OF CSA 086-19.
 - DESIGN STRUCTURAL MEMBERS UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED IN THE PROVINCE WHERE THE PROJECT IS LOCATED.

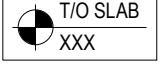
- Part 2 PRODUCTS

- MATERIALS:
 - FLANGE MATERIALS: SAWN LUMBER GRADED IN ACCORDANCE WITH NLGA OR SCL

FOUNDATION PLAN

1 : 50

FOUNDATION PLAN NOTES (PILES)

1. SEE DRAWINGS ON S100 SERIES FOR GENERAL NOTES & TYPICAL DETAILS.
2. LEAVE GRADE BEAM FORMS INTACT UNTIL CONCRETE HAS REACHED 70% OF ITS SPECIFIED STRENGTH.
3. C.J. ON PLAN INDICATES CONTROL JOINT. FILL JOINTS WITH WATERPROOF SEALANT. CONTROL JOINTS ARE NOT TO BE PLACED IN STRUCTURAL SLABS. VERIFY WITH ARCH. DWGS. FOR TILE FLOOR LAYOUT PATTERNS BEFORE COMMENCING WITH WORK.
4. T/O CONCRETE SLAB ELEVATION = 0.000 U.N.O. IS SHOWN ON PLAN AS THUS: 
5. T/O PILE ELEVATION U.N.O. IS SHOWN ON PLAN AS THUS:

6. SLOPE SLAB TO DRAINS AS PER ARCHITECTURAL AND MECHANICAL DRAWINGS. MAINTAIN FULL SLAB THICKNESS THROUGHOUT.
7. CONCRETE SLAB ON GRADE TO CONSIST OF 130mm THICK CONCRETE SLAB R/W. 10M @ 300 EACH WAY MIDDLE, ON SOIL GAS IMPERMEABLE MEMBRANE / VAPOUR BARRIER (15 mil) ON RADON ROCK ON COMPACTED GRANULAR FILL TYP. U.N.O. ON PLAN. COORDINATE AND CONFIRM THE ABOVE WITH ARCHITECTURAL, MECHANICAL AND GEOTECHNICAL REPORT. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
8. FOR FLOOR CURBS, TRENCHES AND MISCELLANEOUS DETAILS SEE ARCHITECTURAL AND MECHANICAL DRAWINGS. FOR LOCATION OF ALL SIDEWALKS AND / OR CONCRETE STOOPS SEE ARCHITECTURAL DRAWINGS.
9. PROVIDE BLOCKOUT IN GRADE BEAMS AT DOORWAYS TYP. SHOWN ON PLAN AS THUS: 
10. ENSURE ALL GRADE BEAMS ARE TEMPORARILY BRACED AND LATERALLY SUPPORTED.
11. PILE MINIMUM SIZE SHALL BE 400mmØ AND REINFORCEMENT SHALL BE 4-15M VERTICAL FULL LENGTH. PROVIDE 10M @ 300mm O/C. TIES.
12. UNLESS NOTED OTHERWISE ON DRAWINGS, PROVIDE 4-15M x 1200mm LG. DOWELS AT ALL PILE TO GRADE BEAM LOCATIONS AND 6-15M x 1200mm LG. DOWELS AT ALL PILE TO CONCRETE PIER LOCATIONS.
13. UNLESS NOTED OTHERWISE PROVIDE 1200mm LONG DOWELS FROM PILES TO MATCH SIZE AND NUMBER OF VERTICAL REINFORCEMENT IN CONCRETE COLUMNS ABOVE.
14. PROVIDE A FULL TENSION SPLICING AT ALL LAPS IN SLAB REBAR.
15. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATIONS OF SLAB DEPRESSIONS. MAINTAIN FULL SLAB THICKNESS THROUGHOUT.
16. PROTECT SUBGRADE FROM WEATHER ELEMENTS BEFORE, DURING AND AFTER SLAB ON GRADE IS POURED. PROVIDE ADEQUATE PROTECTION TO MAINTAIN SUBGRADE TEMPERATURE ABOVE 5°C.

IMPORTANT NOTE:
CONTROL JOINTS ARE NOT TO BE PLACED IN STRUCTURAL SLABS.

SUBGRADE / SUB-BASE PREPARATION FOR GRADE SUPPORTED FLOOR SLABS

1. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT FOR PREPARATION / PROTECTION OF SUBGRADE / SUB-BASE. PREPARATION OF THE SUB-GRADE / SUB-BASE AND NEW FILL REQUIREMENTS SHALL BE REVIEWED AND APPROVED BY A GEOTECHNICAL ENGINEER WITHIN 24 HOURS PRIOR TO POURING CONCRETE.
2. REMOVE ALL ORGANIC TOPSOIL, FILL AND OTHER DELETERIOUS MATERIAL FROM THE BUILDING SLAB AREA. DEPTHS OF TOP SOIL AND FILL MAY VARY THROUGHOUT THE SITE GEOTECHNICAL ENGINEER TO REVIEW AND ADVISE.
3. FOLLOWING THE SUBCUTTING OF THE ORGANIC TOPSOIL AND FILL LAYERS, THE GRADE SHALL BE COMPACTED AND ANY SOFT SOILS BE IDENTIFIED AND ROLL PROOFED PRIOR TO PLACEMENT OF THE NEW BACKFILL. GEOTECHNICAL ENGINEER TO ADVISE CONTRACTOR ACCORDINGLY.
4. NEW ENGINEERED FILL SHALL BE COMPACTED AS PER THE GEOTECHNICAL REPORT. FILL MATERIAL SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
5. PROVIDE 15 mil POLYETHYLENE VAPOUR BARRIER WITH TAPED JOINTS TO THE UNDERSIDE OF SLAB ON GRADE. LAP ALL JOINTS 200mm (8") MIN.
6. PROTECT SUBGRADE FROM WEATHER ELEMENTS BEFORE, DURING AND AFTER SLAB ON GRADE IS POURED. PROVIDE ADEQUATE PROTECTION TO MAINTAIN SUBGRADE TEMPERATURE ABOVE 5°C.
7. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

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PROJECT: **CMHC HOUSING CATALOGUE**

ALBERTA CANADA

**NOT FOR PERMIT
OR CONSTRUCTION**

SHEET TITLE:

AB Fourplex 01

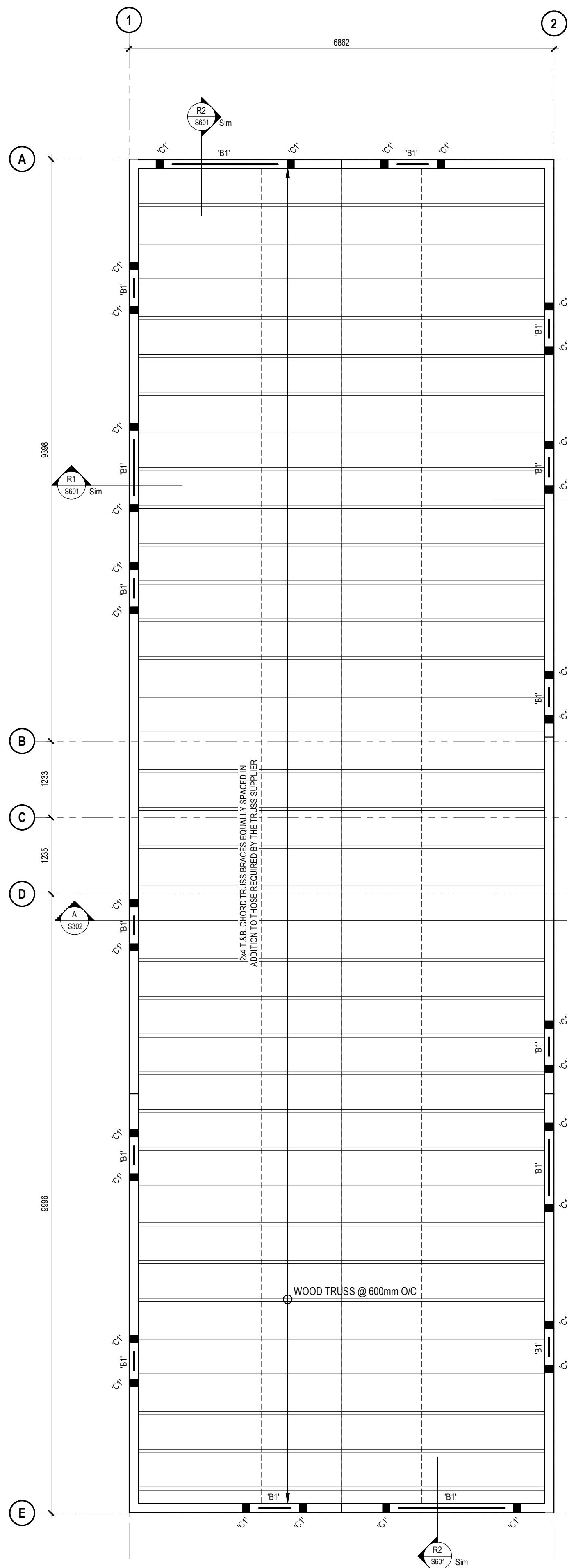
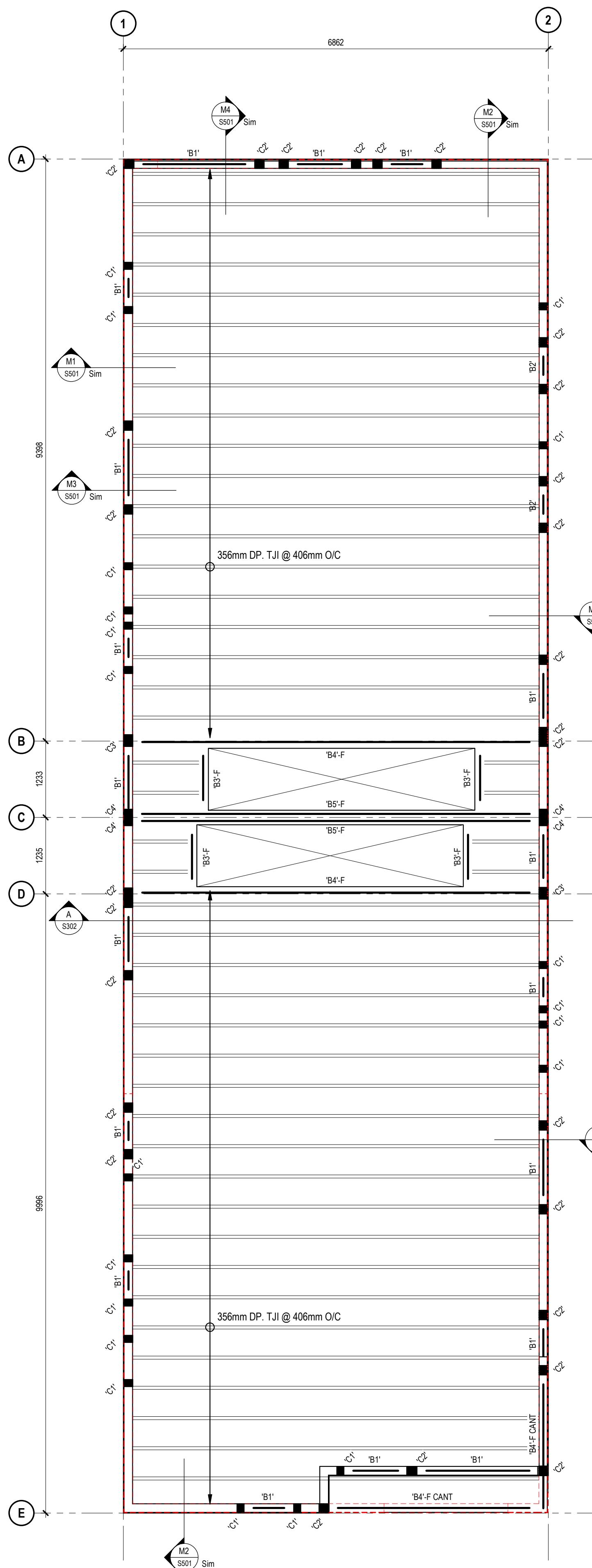
PROJECT NO: 02500462
SCALE: As indicated

SHEET NO:

S201

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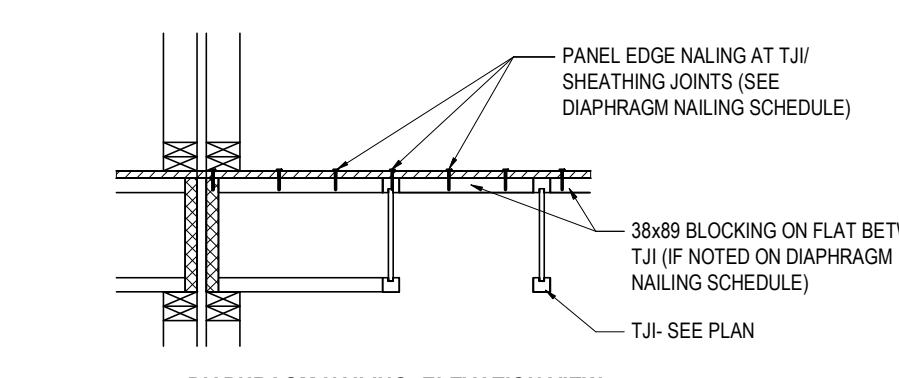
COLUMN SCHEDULE 'C'		
TYPE	SIZE	REMARKS
C1'	3-2x6	SPF No.1 No.2 BUILT-UP
C2'	4-2x6	SPF No.1 No.2 BUILT-UP
C3'	5-2x6	SPF No.1 No.2 BUILT-UP
C4'	5 1/4" x 5 1/4"	1.8E PARALLAM PSL

WOOD BEAM SCHEDULE 'B'		
TYPE	SIZE	REMARKS
B1'	3-2x10	SPF No.1 No.2 BUILT-UP
B2'	3-2x12	SPF No.1 No.2 BUILT-UP
B3'	2-4x356	2.0E LVL
B4'	3-4x356	2.0E LVL
B5'	2-4x406	2.0E LVL

WALL HEIGHT	STUD SPACING	GRADE	SHEARWALL NAILING REQUIREMENTS	
			PANEL EDGES	INTERIOR STUD LOCATIONS
STUDS UP TO 15'	2x6 @ 16" O/C	SPF No.2		
STUDS UP TO 18'	2-2x6 @ 16" O/C	SPF No.2		

WOOD BEARING WALL SCHEDULE			
WALL TYPE	SECOND FLOOR FRAMING (MAIN FLOOR WALLS)	ROOF FRAMING (SECOND FLOOR WALLS)	GRADE
EXTERIOR WALLS	2x6 @ 16" O/C CW 3/8" OSB SHEATHING PROVIDE BLOCKING @ SHEATHING JOINTS	2x6 @ 16" O/C CW 3/8" OSB SHEATHING PROVIDE BLOCKING @ SHEATHING JOINTS	SPF No.2 OR BETTER

LEVEL	SHEATHING TYPE	FASTENER TYPE	FASTENER SPACING	
			PANEL EDGES	INTERMEDIATE MEMBERS
ROOF FRAMING	11mm T&G OSB	8d COMMON WIRE NAILS (0.131x2.57 NAILED AND GLUED)	100mm	300mm
2nd FLOOR FRAMING	19mm T&G OSB		150mm	300mm



2	2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
FRAMING PLANS

AB Fourplex 01

PROJECT NO: 0250046
SCALE: As indicated

SHEET NO:

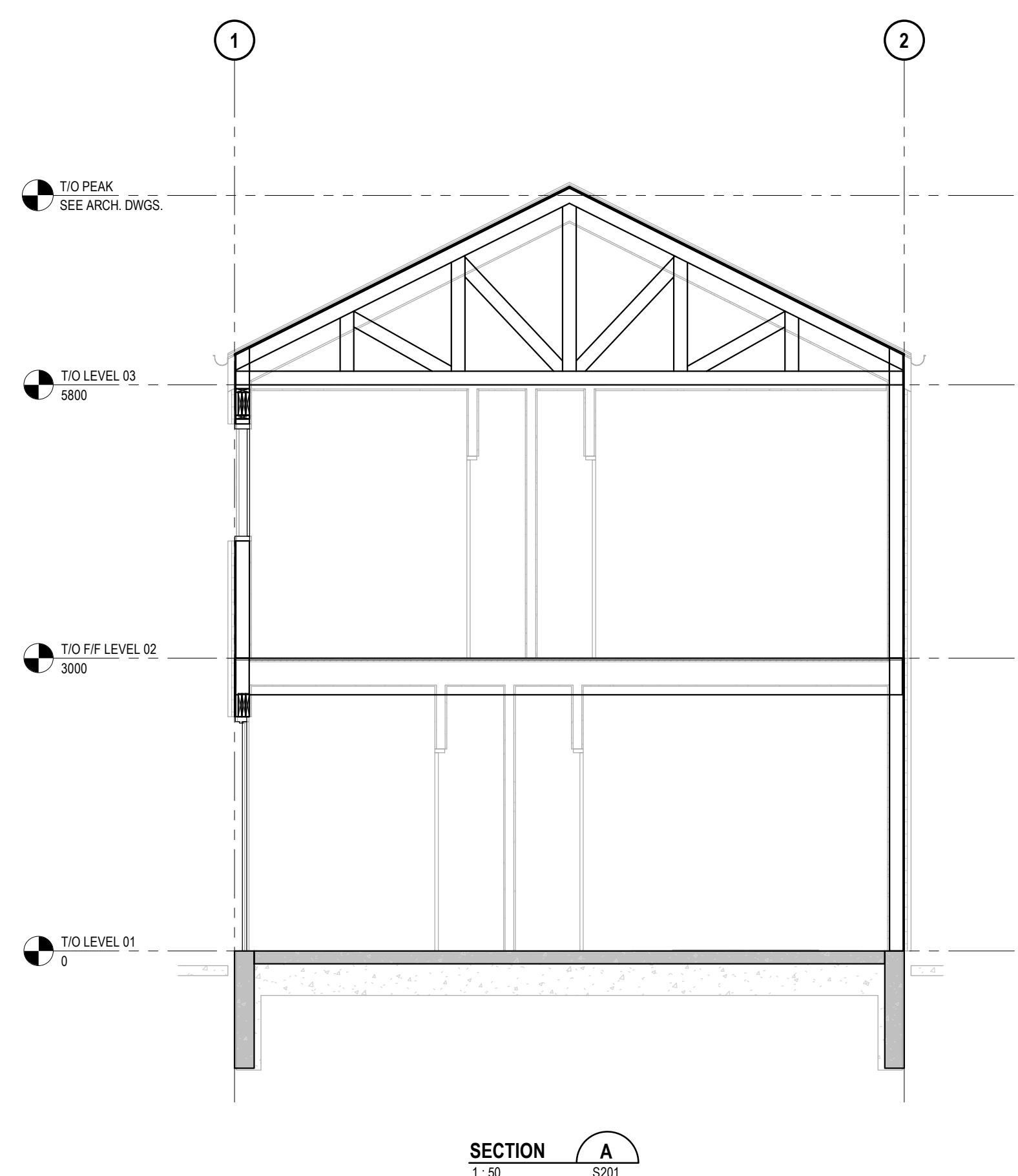
S301



DISCLAIMER

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PROJECT: CMHC HOUSING CATALOGUE

LIBERTA CANADA

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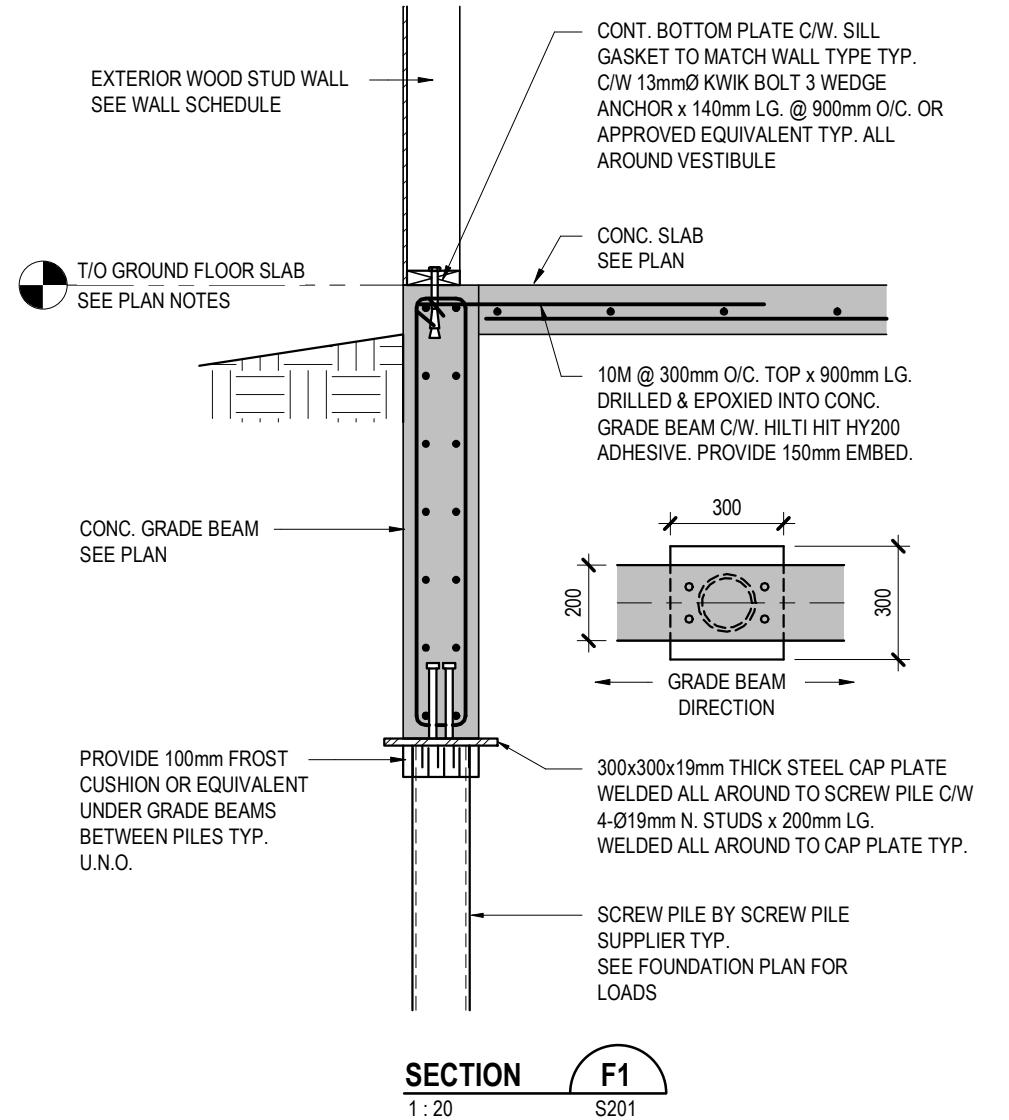
HEET TITLE: **BUILDING SECTIONS**

AB Fourplex 01

PROJECT NO: 02500462
CALE: 1 : 50

HEET NO:

S302



SECTION F1
1:20 S201

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2	2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING
CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT
OR CONSTRUCTION

SHEET TITLE:
TYPICAL FOUNDATION
SECTIONS

AB Fourplex 01

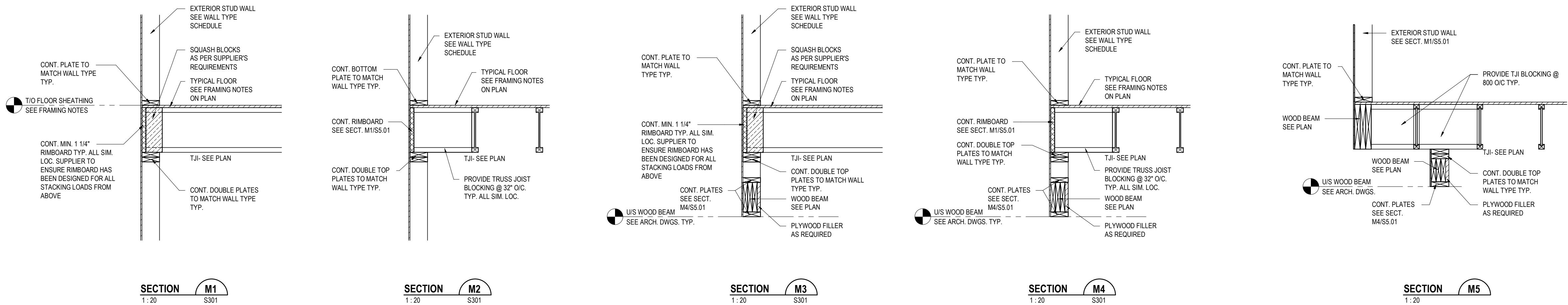
PROJECT NO: 02500462
SCALE: 1:20

SHEET NO:

S401

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2	2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING
CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT
OR CONSTRUCTION

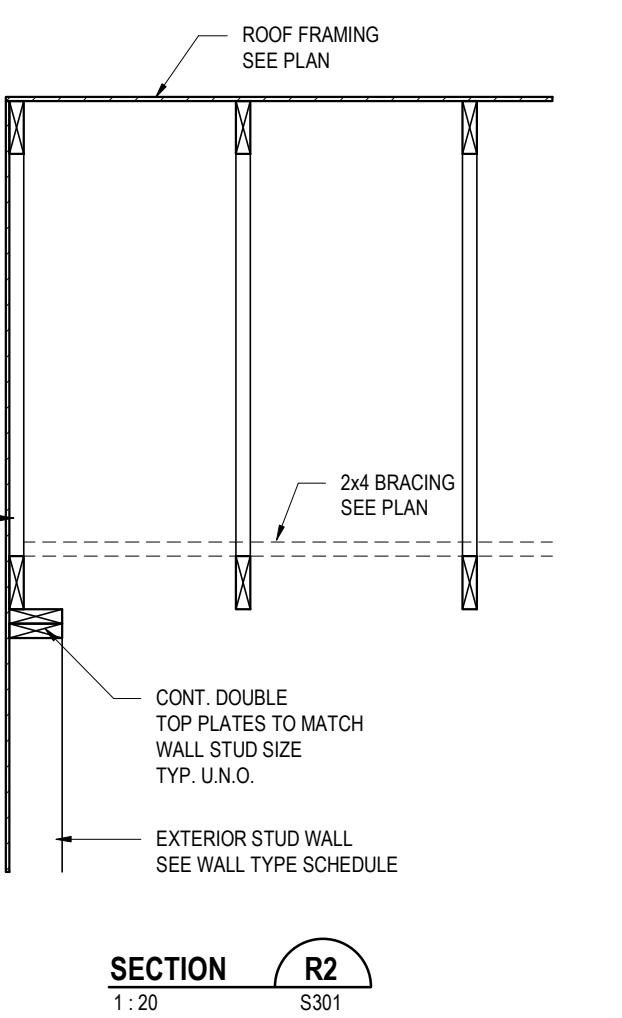
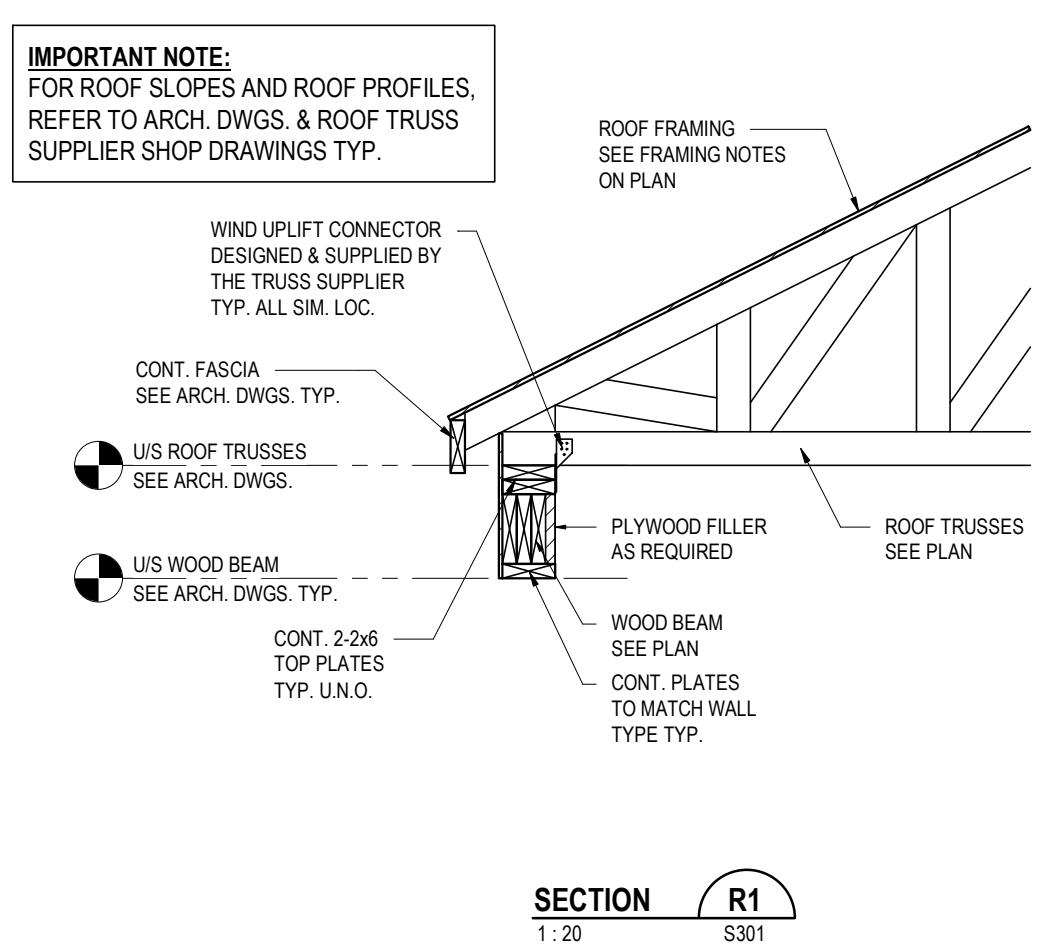
SHEET TITLE:
TYPICAL FLOOR
SECTIONS

AB Fourplex 01

PROJECT NO: 02500462
SCALE: 1:20

SHEET NO:
S501

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2	2025-02-19	ISSUED FOR PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING CATALOGUE

ALBERTA, CANADA

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
TYPICAL ROOF SECTIONS

AB Fourplex 01

PROJECT NO: 02500462
 SCALE: 1:20

SHEET NO:
S601



CMHC HOUSING DESIGN CATALOGUE

AB FOURPLEX 01

MECHANICAL DRAWINGS

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MECHANICAL SHEET LIST 4 PLEX 01	
O.	SHEET NAME
00	MECHANICAL COVER SHEET
01	MECHANICAL LEGENDS
00	FOUNDATION PLAN
01	GROUND FLOOR PLUMBING PLAN
02	SECOND FLOOR PLUMBING PLAN
01	GROUND FLOOR VENTILATION PLAN
02	SECOND FLOOR VENTILATION PLAN
00	MECHANICAL SCHEMATICS & DETAILS
00	MECHANICAL SCHEDULES
00	MECHANICAL SPECIFICATIONS

1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING

PROJECT:

CMHC HOUSING DESIGN CATALOGUE

Project Address

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:

MECHANICAL COVER

SHEET

AB Fourplex 01

PROJECT NO: 024-07-769

SHEET NO:

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MECHANICAL LEGEND	
NOTE: SOME SYMBOL REFERENCES MAY NOT BE USED ON THIS PROJECT	
LINETYPES	
— - - - -	CONTROLS WIRING
— SAN —	SANITARY PIPING
— STM —	STORM PIPING
— - - V - - -	SANITARY VENT BRANCH PIPING
— - - V - - ->	SANITARY VENT UP TO NEXT LEVEL
— - - V - - -<	SANITARY VENT UP THROUGH ROOF
— - -	DOMESTIC COLD WATER PIPING
— - -	DOMESTIC HOT WATER PIPING
— - -	DOMESTIC HOT WATER RECIRC. PIPING
— G —	NATURAL GAS PIPING
— C —	CONDENSATE PIPING
— RS —	REFRIGERANT SUPPLY PIPING
— RR —	REFRIGERANT RETURN PIPING
PLUMBING	
—>	PIPE FLOW ARROW
—>—	PIPE CAP
—>—	PIPE CONNECTION
—>—	PIPE DROP
—>—	PIPE RISE
—>—	PIPE TEE (BELOW)
—>—	PIPE TEE (ABOVE)
—>—	SANITARY P-TRAP
—>—	RUNNING P-TRAP
—>—	HEAT TRACING
—>—	FLOOR DRAIN
—>—	ROOF DRAIN
—>—	HOSE BIBB
—>—	CLEANOUT
—>—	BUILDING CLEANOUT
—>—	GAS METER
—>—	WATER METER
—>—	THRUST BLOCK
CONTROLS	
—>—	CO = CARBON MONOXIDE
—>—	THERMOSTAT (COVER/NO COVER)
—>—	WALL SWITCH (ON-OFF/VARIABLE)
TAGS	
TYPE	S-1
NECK (mm)	200 ^b
FLOW (L/s)	120
DETAIL NUMBER	1
DRAWING NUMBER	MX
DETAIL NUMBER	1
DRAWING NUMBER	MX
P-1	EQUIPMENT TAG
	KEYNOTE REFERENCE
VENTILATION	
—>—	OUTDOOR AIR DUCT UP/DOWN
—>—	SUPPLY AIR DUCT UP/DOWN
—>—	RETURN AIR DUCT UP/DOWN
—>—	EXHAUST AIR DUCT UP/DOWN
—>—	ROUND DUCT UP/DOWN
—>—	ACOUSTIC DUCT INSULATION
—>—	BALANCING DAMPER
—>—	BD = BACKDRAFT DAMPER
—>—	FD = FIRE DAMPER
—>—	SD = SMOKE DAMPER
—>—	SIDEWALL GRILLE
—>—	SQUARE DIFFUSER C/W TAKEOFF AND BALANCING DAMPER
—>—	ROUND DIFFUSER C/W TAKEOFF AND BALANCING DAMPER
—>—	TURNING VANES
FIRE PROTECTION	
—>—	FIRE EXTINGUISHER
SCHEMATICS	
—>—	HOSE END WITH CAP & CHAIN FOR DRAINING
—>—	FLEX PIPE CONNECTION
—>—	2-WAY CONTROL VALVE
—>—	3-WAY CONTROL VALVE
—>—	BACKFLOW PREVENTER
—>—	NORMALLY OPEN BACKWATER VALVE
—>—	CIRCUIT BALANCING/MEASUREMENT VALVE
—>—	CHECK VALVE
—>—	ISOLATION VALVE
—>—	MANUAL BALANCING VALVE
—>—	PRESSURE/TEMPERATURE PORT
—>—	PRESSURE REGULATING VALVE
—>—	SOLENOID VALVE
—>—	UNION
—>—	AIR SEPARATOR
—>—	AIR VENT - AUTOMATIC
—>—	AIR VENT - AUTOMATIC
—>—	CARTRIDGE FILTER
—>—	PUMP
—>—	WYE STRAINER C/W BALL VALVE, CAP & CHAIN
—>—	PRESSURE SAFETY VALVE
—>—	PRESSURE GAUGE C/W ISOLATION
—>—	TEMPERATURE GAUGE
—>—	TS = TEMPERATURE SWITCH
—>—	CENTRIFUGAL FAN

ABBREVIATIONS	
BT	BATHTUB
CO	CLEANOUT
CP	CONDENSATE PUMP
CU	CONDENSING UNIT
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DWH	DOMESTIC WATER HEATER
ERV	ENERGY RECOVERY VENTILATOR
ET	EXPANSION TANK
F/A	"FROM ABOVE"
F/B	"FROM BELOW"
FD	FLOOR DRAIN
FN	FURNACE
GSV	GAS SHUTOFF VALVE
HB	HOSE BIBB
LAV	LAVATORY
NC	"NORMALLY CLOSED"
NO	"NORMALLY OPEN"
P	PUMP
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RH	KITCHEN RANGE HOOD
SH	SHOWER
SK	SINK
T/A	"TO ABOVE"
T/B	"TO BELOW"
UNO	"UNLESS NOTED OTHERWISE"
UTR	"UP THROUGH ROOF"
WC	WATER CLOSEST

SITE-SPECIFIC DESIGN REQUIREMENTS

ALL SITE-SPECIFIC ELEMENTS TO BE REVIEWED & DESIGNED BY THE RESPONSIBLE DESIGN PROFESSIONAL ISSUING THE DRAWINGS FOR PERMIT & CONSTRUCTION AT THE LOCATION DETERMINED. THIS INCLUDES:

- 1 SITE SERVICING: INCOMING WATER, GAS, SANITARY & STORM SEWER CONNECTIONS TO BE CONFIRMED FOR SITE.
- 2 ENERGY EFFICIENCY: ISSUING DESIGN PROFESSIONAL TO REVIEW & CONFIRM ALL RELEVANT SITE DATA INCLUDING CLIMATE ZONE, HEATING/COOLING DEGREE DAYS, ORIENTATION, ADJACENT BUILDINGS (ROW/HOUSE), MECHANICAL SYSTEM, ENVELOPE & GLAZING PERFORMANCE IN ORDER TO ACCURATELY DETERMINE:
 - i. EQUIPMENT SIZING FURNACE, AIR CONDITIONING, AND/OR HEAT PUMP CAPACITIES & ASSOCIATED DUCT SIZING TO BE DESIGNED & REVIEWED BY THE ISSUING DESIGN PROFESSIONAL IN ACCORDANCE WITH THE LOCAL CLIMATIC CONDITIONS AS OUTLINED ABOVE.

1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN
CATALOGUE

Project Address

NOT FOR PERMIT
OR CONSTRUCTION

SHEET TITLE:
MECHANICAL LEGENDS

AB Fourplex 01

PROJECT NO: 024-07-769
SCALE: 1:1

SHEET NO:

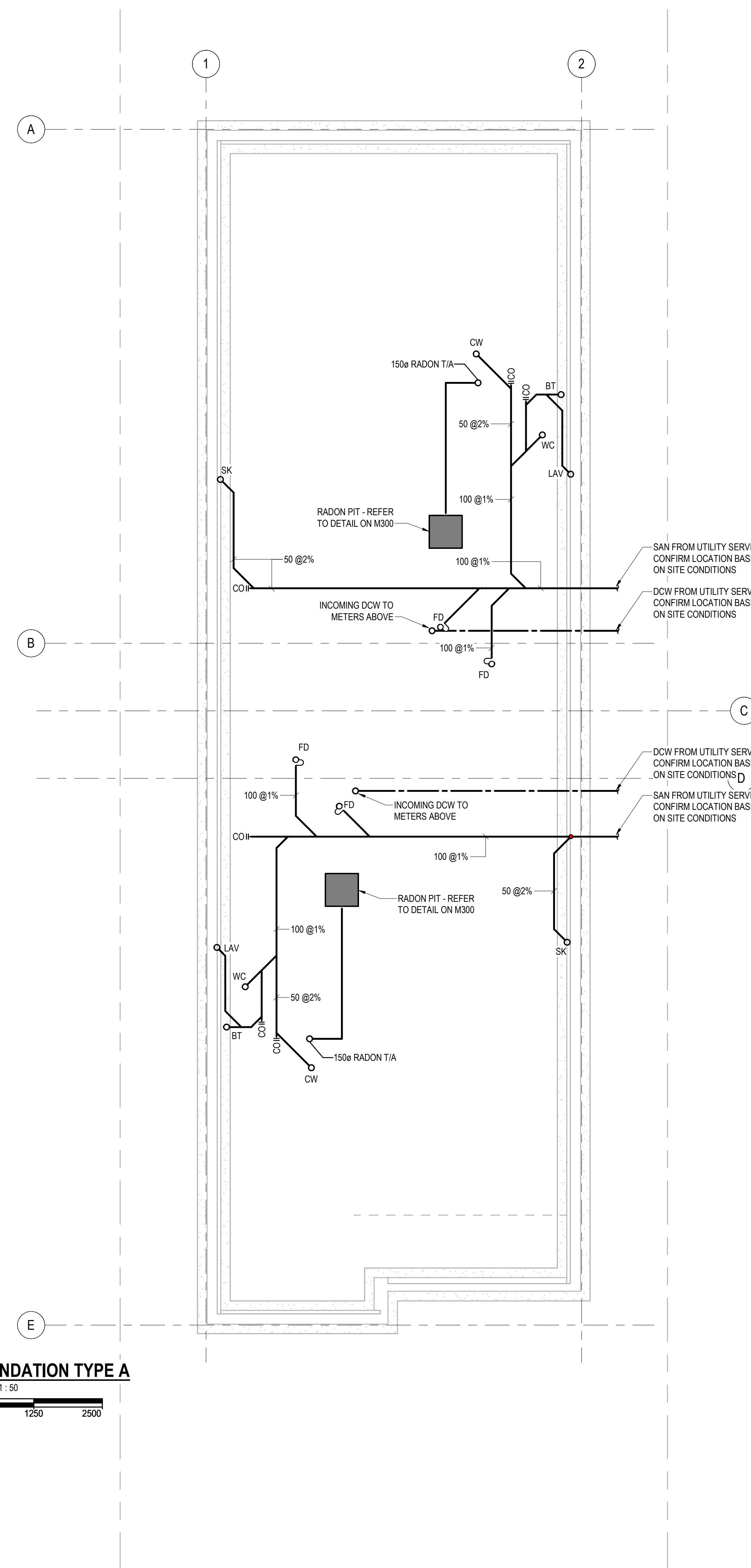
M001

FOUNDATION GENERAL NOTES

1 CONNECT RAIN WATER LEADERS TO UNDERGROUND STORM SERVICE WHERE REQUIRED BY LOCAL CODE.

DISCLAIMER

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PROJECT:
**CMHC HOUSING DESIGN
CATALOGUE**

Project Address

**NOT FOR PERMIT
OR CONSTRUCTION**

HEET TITLE:

AB Fourplex 01

PROJECT NO: 024-07-769
CALE: 1 : 50

HEET NO:

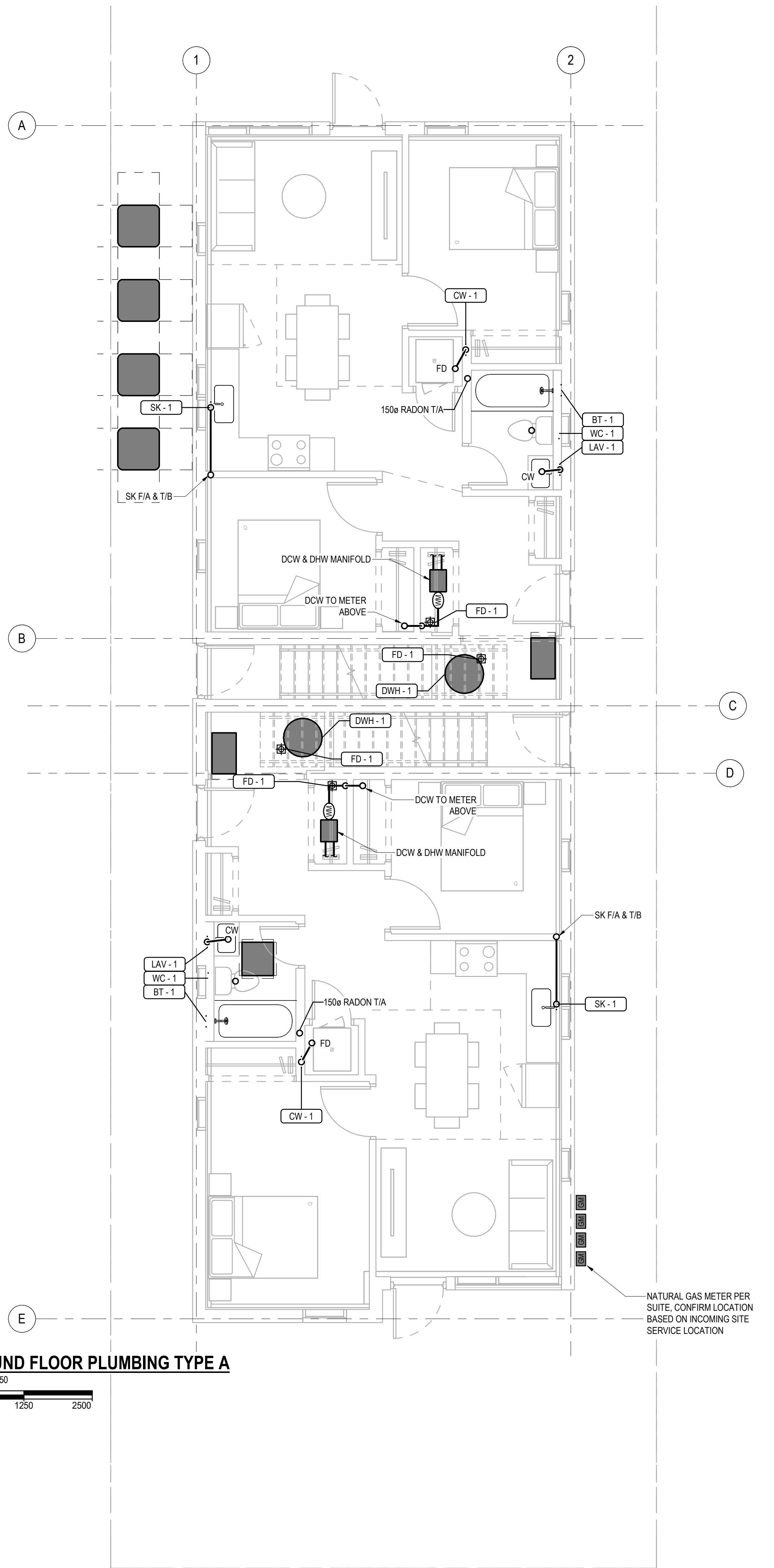
M100

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PLUMBING GENERAL NOTES

- 1 RUN INDIVIDUAL DOMESTIC HOT WATER AND COLD WATER LINES TO ALL PLUMBING FIXTURES AS REQUIRED.
- 2 NATURAL GAS METERS TO BE LOCATED A MINIMUM OF 3.0M AWAY FROM ANY OPERABLE WINDOWS OR DOORS.
- 3 INSTALL NATURAL GAS PIPING FROM THE UTILITY METER TO ALL GAS-FIRED APPLIANCES IN ACCORDANCE WITH CSA B149.1.


GROUND FLOOR PLUMBING TYPE A

1
M101
SCALE: 1:50

0 1250 2500

1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN
CATALOGUE

Project Address

**NOT FOR PERMIT
OR CONSTRUCTION**

SHEET TITLE:
GROUND FLOOR
PLUMBING PLAN

AB Fourplex 01

PROJECT NO: 024-07-769
SCALE: 1:50

SHEET NO:

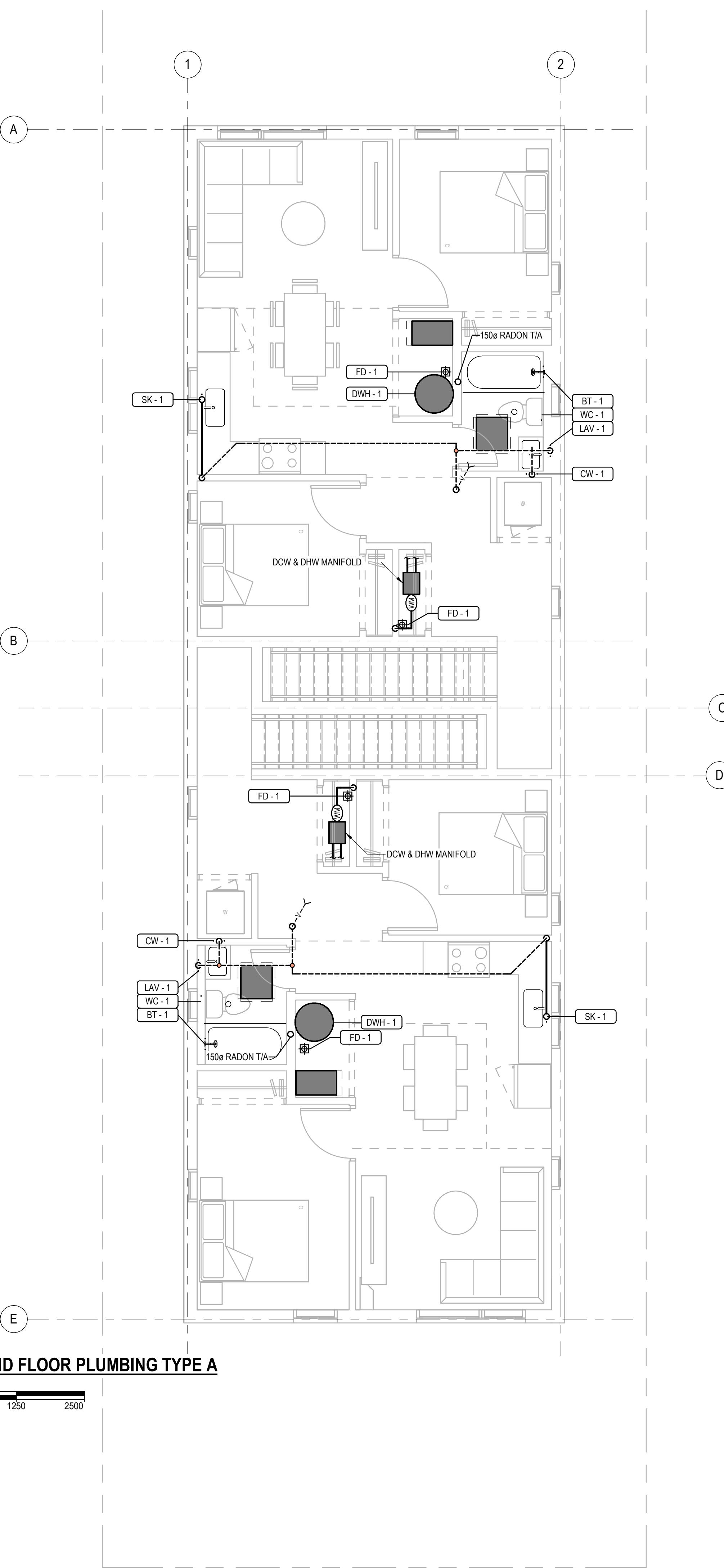
M101

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PLUMBING GENERAL NOTES

- 1 RUN INDIVIDUAL DOMESTIC HOT WATER AND COLD WATER LINES TO ALL PLUMBING FIXTURES AS REQUIRED.
- 2 NATURAL GAS METERS TO BE LOCATED A MINIMUM OF 3.0M AWAY FROM ANY OPERABLE WINDOWS OR DOORS.
- 3 INSTALL NATURAL GAS PIPING FROM THE UTILITY METER TO ALL GAS-FIRED APPLIANCES IN ACCORDANCE WITH CSA B149.1.


SECOND FLOOR PLUMBING TYPE A
M102

SCALE: 1:50

0 1250 2500

1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN
CATALOGUE

Project Address

**NOT FOR PERMIT
OR CONSTRUCTION**

SHEET TITLE:
SECOND FLOOR
PLUMBING PLAN

AB Fourplex 01

PROJECT NO: 024-07-769
SCALE: 1:50

SHEET NO:

M102

DISCLAIMER

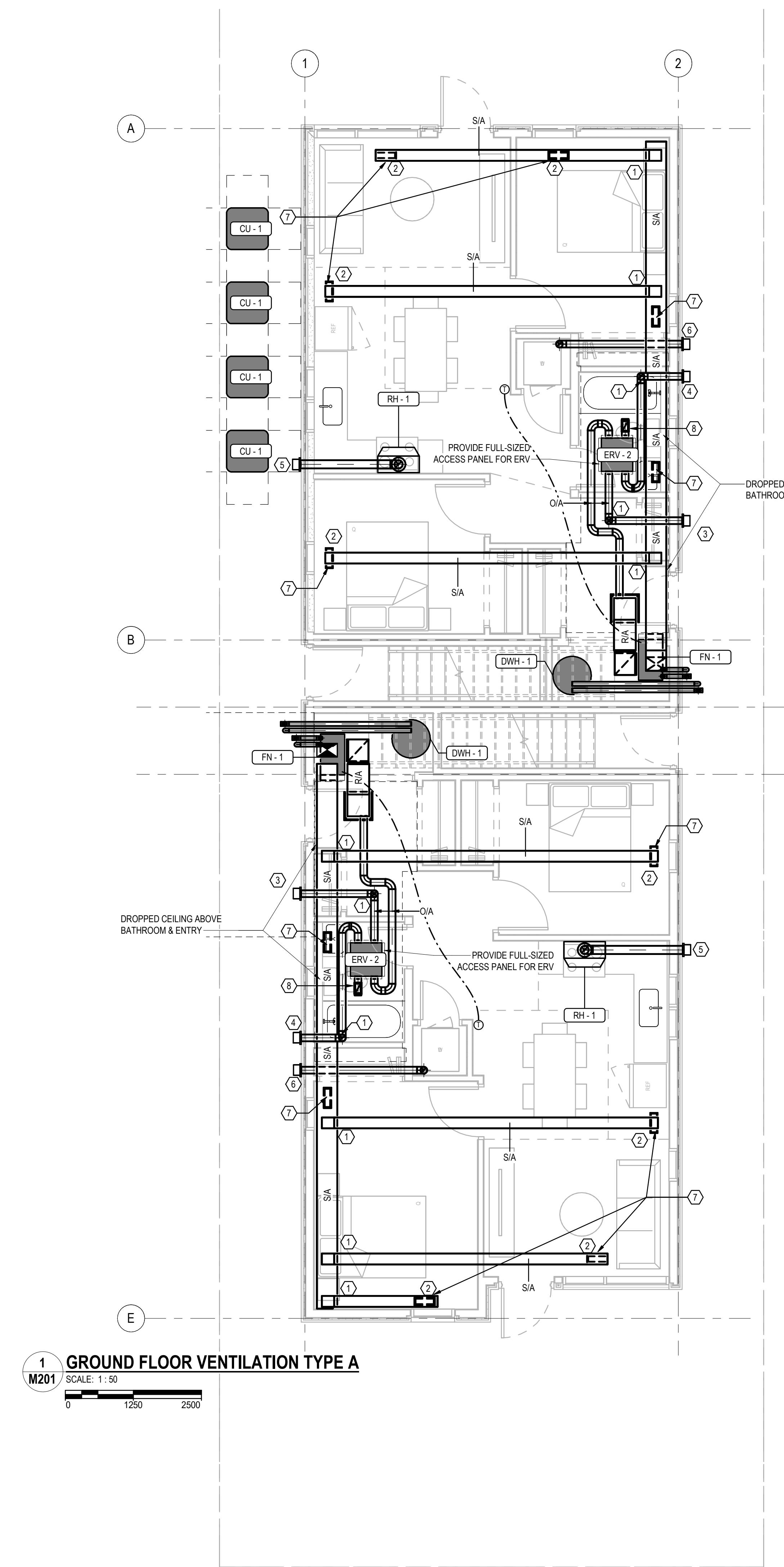
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VENTILATION GENERAL NOTES

1 SUPPLY AIR GRILLES TO BE COMPLETE WITH INTEGRAL OPPOSED-BLADE DAMPER FOR BALANCING.

M201 KEYNOTES

1 PROVIDE FIRE DAMPER AT DUCT PENETRATION INTO RATED JOIST SPACE
 2 PROVIDE FIRE STOP FLAP AT GRILLES IN RATED CEILING
 3 ERV O/A INTAKE - MAINTAIN MINIMUM 1800 CLEARANCE FROM ALL EXHAUSTS/VENTS
 4 ERV E/A OUTLET
 5 RH-1 E/A OUTLET
 6 LAUNDRY E/A OUTLET
 7 S/A GRILLE (CEILING)
 8 BATHROOM E/A GRILLE



1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

Project Address

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SHEET TITLE:
GROUND FLOOR VENTILATION PLAN

AB Fourplex 01

PROJECT NO: 024-07-769
 SCALE: 1:50

SHEET NO:

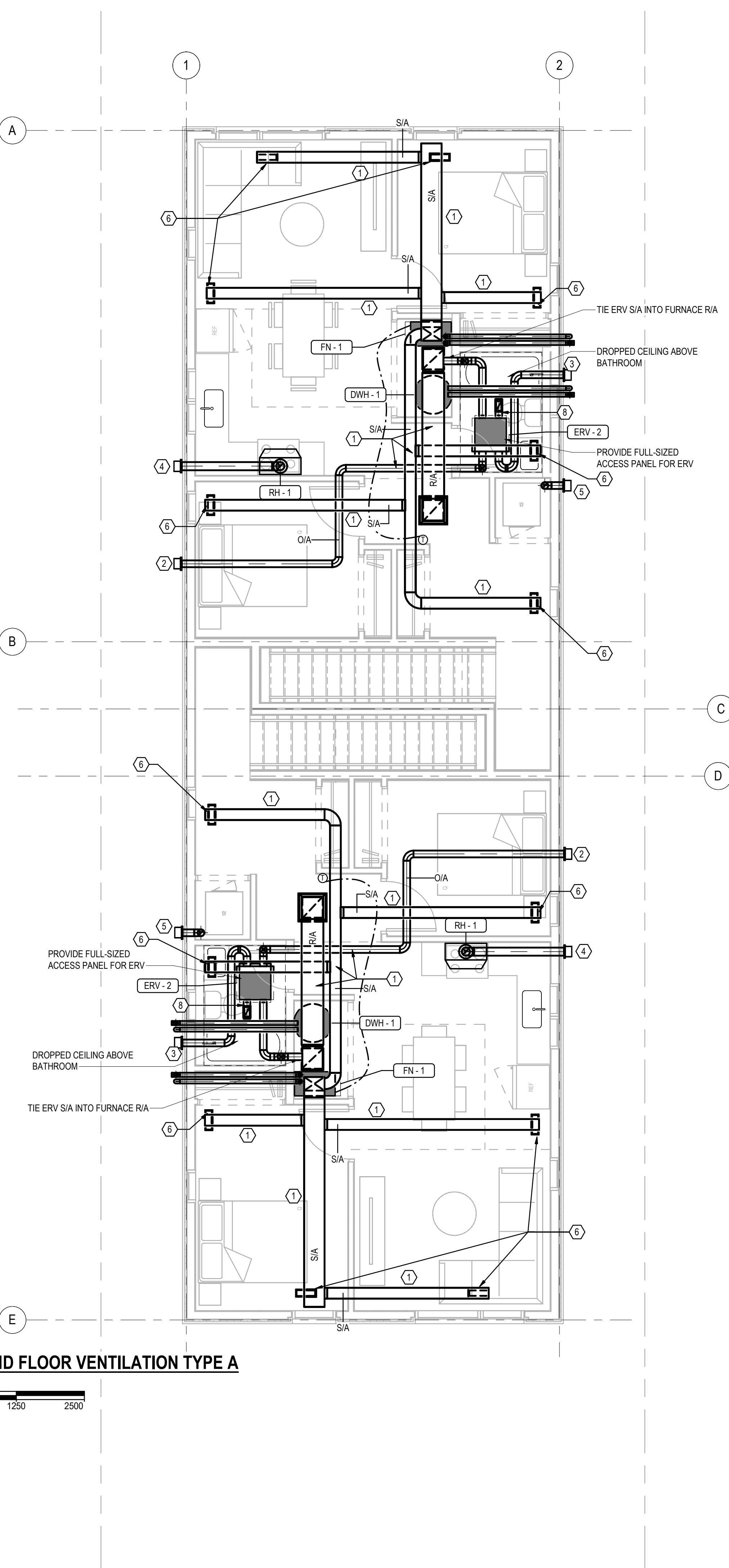
M201

VENTILATION GENERAL NOTES

SUPPLY AIR GRILLES TO BE COMPLETE WITH INTEGRAL
OPPOSED-BLADE DAMPER FOR BALANCING.

M202 KEYNOTES

INSULATE ALL DUCTS RUN IN ATTIC
ERV O/A INTAKE - MAINTAIN MINIMUM 1800 CLEARANCE FROM ALL EXHAUSTS/VENTS
ERV E/A OUTLET
RH-1 E/A OUTLET
LAUNDRY E/A OUTLET
S/A GRILLE (CEILING)
S/A GRILLE (WALL)
BATHROOM E/A GRILLE



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2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
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PROJECT:
**CMHC HOUSING DESIGN
CATALOGUE**

Project Address

NOT FOR PERMIT OR CONSTRUCTION

MEET TITLE: SECOND FLOOR VENTILATION PLAN

AB Fourplex 01

PROJECT NO: 024-07-769
SCALE: 1 : 50

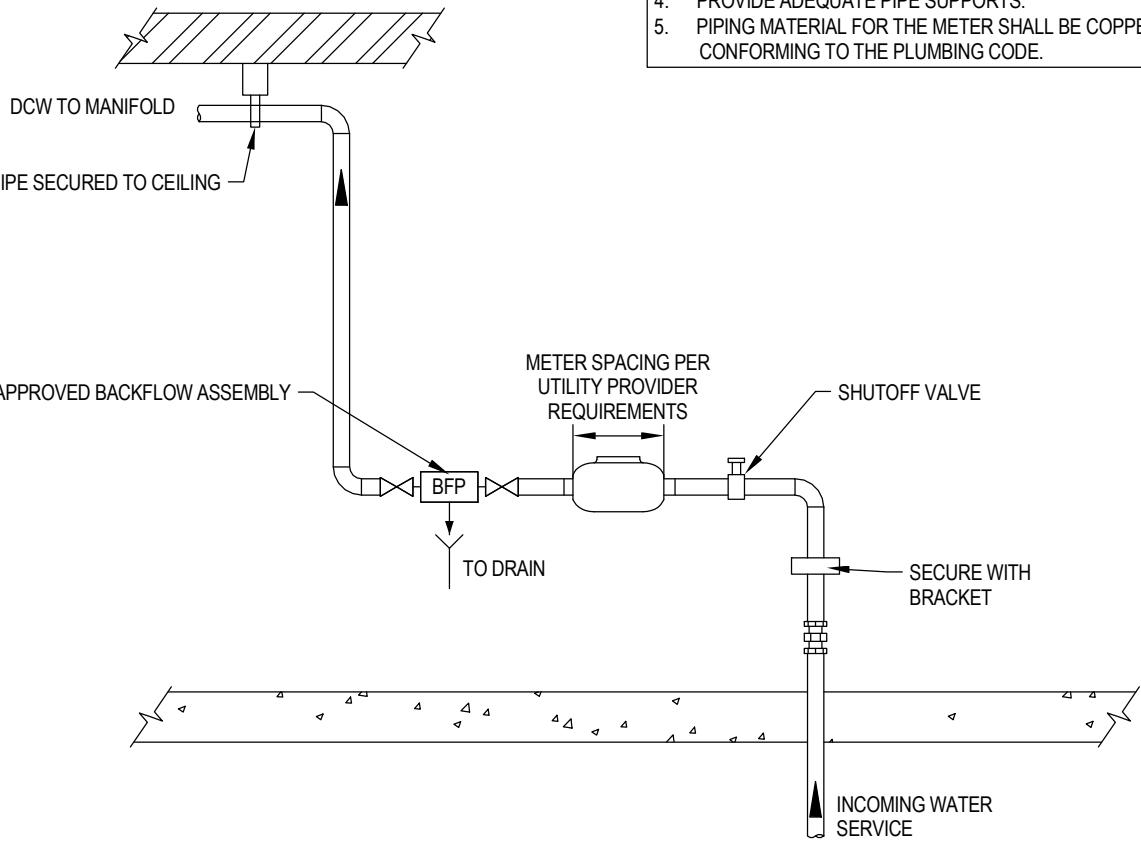
MEET NO:

M202

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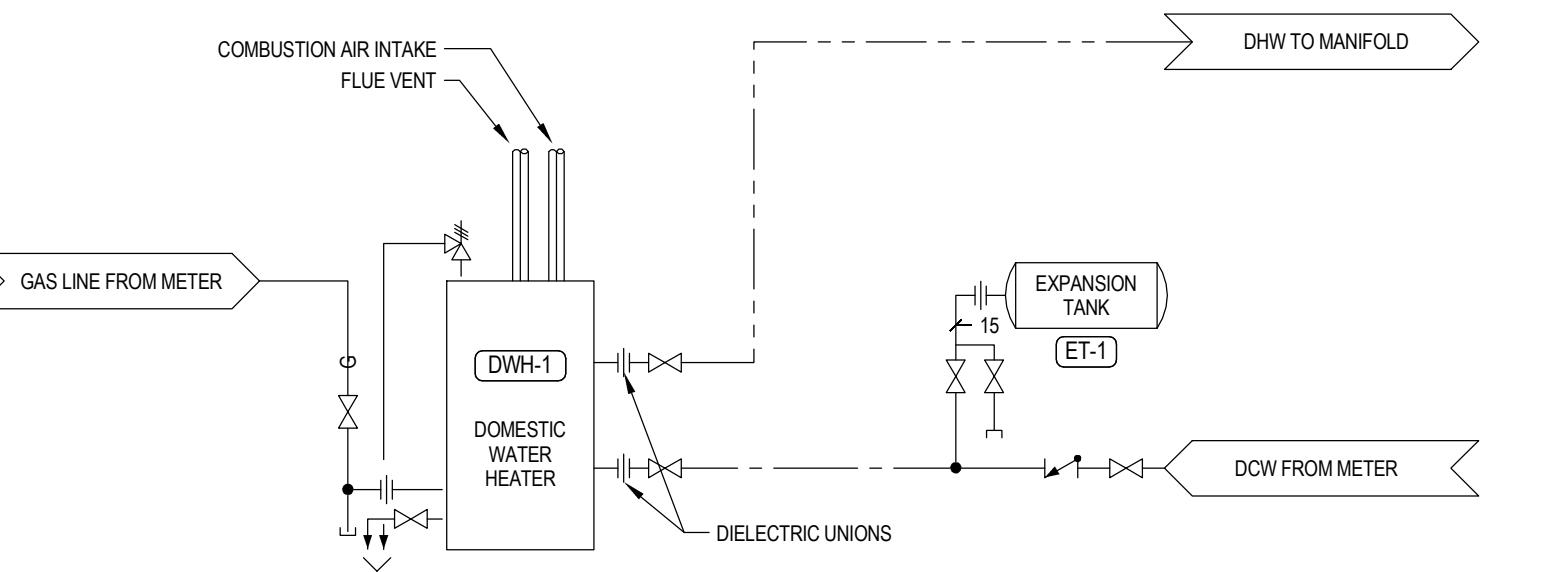
GENERAL NOTES:

1. SPACE FOR METER INSTALLATION TO BE AS REQUIRED BY UTILITY PROVIDER
2. APPROVED BACKFLOW ASSEMBLY, APPROPRIATE FOR THE HAZARD CLASSIFICATION MUST BE INSTALLED WITHIN 3m OF SERVICE ENTRY
3. PROVIDE A SUITABLE SITE FOR THE WATER METER AT A HORIZONTAL SETTING, WITHIN 2m OF POINT OF ENTRY FOR THE WATER SERVICE CONNECTION INSIDE THE BUILDING
4. PROVIDE APPROVED PIPE SUPPORTS
5. PROVING MATERIAL FOR THE METER SHALL BE COPPER OR STAINLESS STEEL CONFORMING TO THE PLUMBING CODE



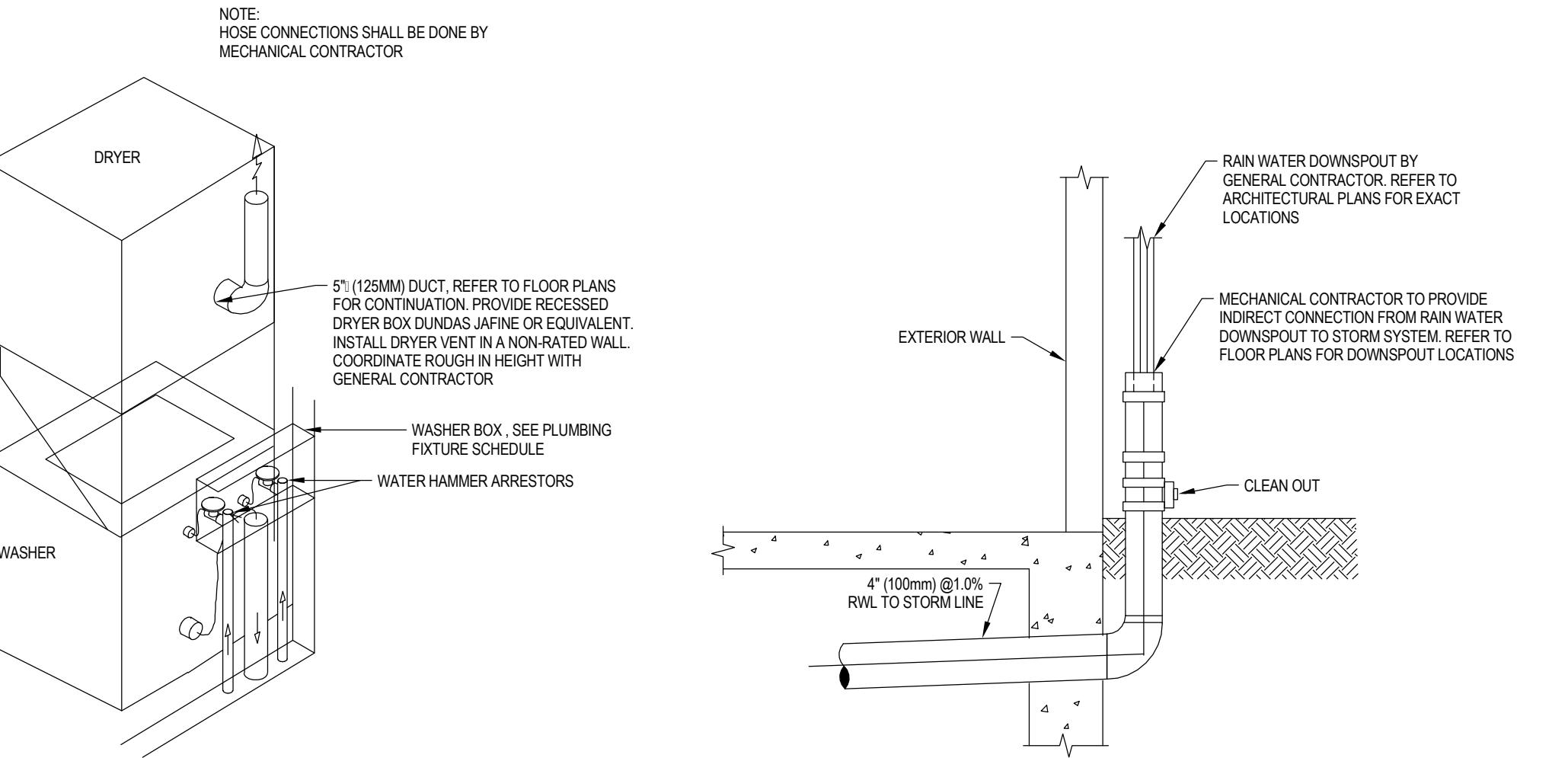
TYPICAL WATER METER INSTALLATION

SCALE: N.T.S



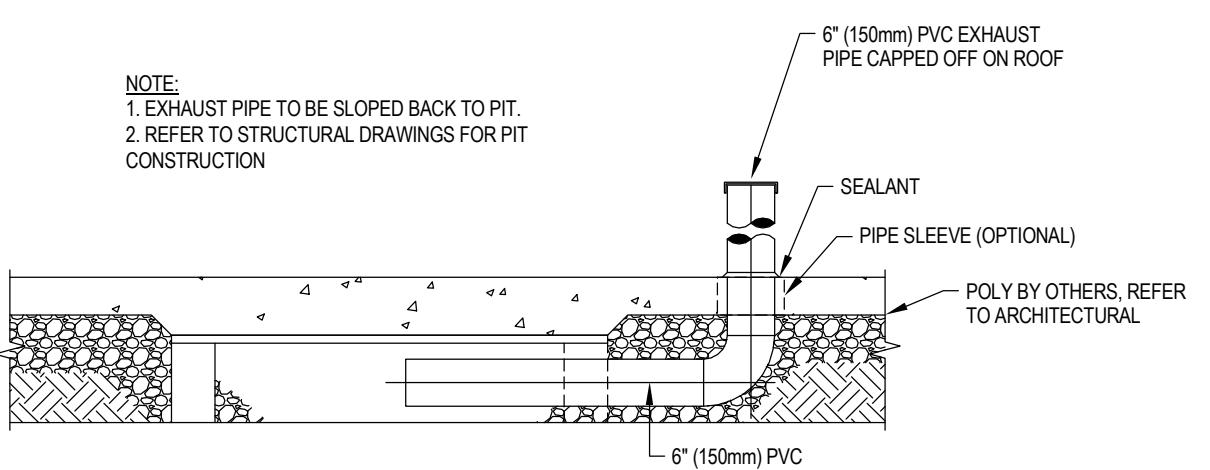
TYPICAL DOMESTIC WATER HEATER INSTALLATION

SCALE: N.T.S



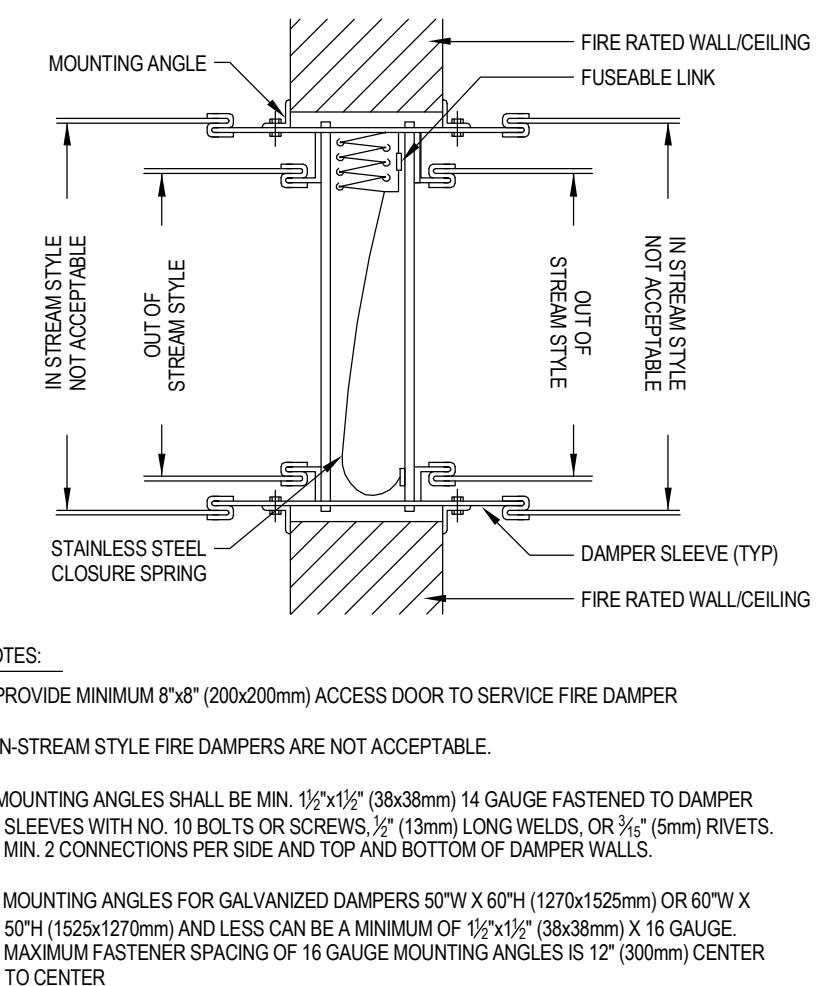
TYPICAL WASHER & DRYER ROUGH-IN DETAIL

SCALE: N.T.S



RADON SUCTION PIT PIPING DETAIL

SCALE: N.T.S



FIRE DAMPER DETAIL

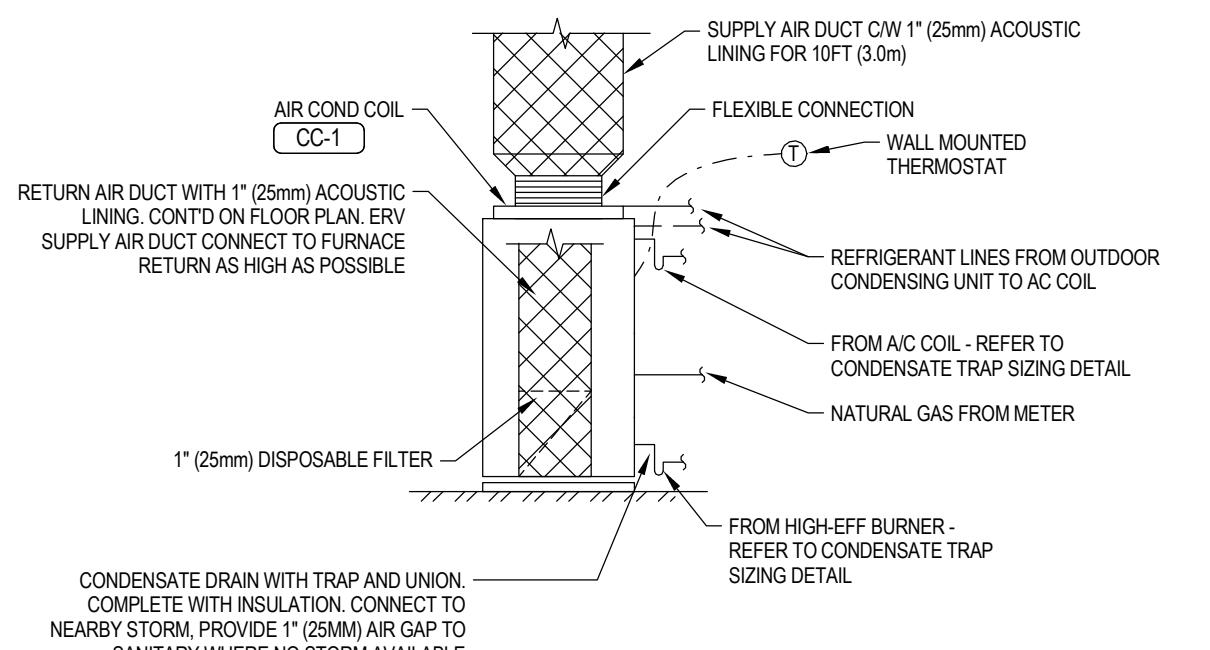
SCALE: N.T.S

NOTES:

- 1) EXHAUST PIPE TO BE SLOPED BACK TO PIT.
- 2) REFER TO STRUCTURAL DRAWINGS FOR PIT CONSTRUCTION
- 3) 6" (150mm) PVC EXHAUST PIPE CAPPED OFF ON ROOF
- 4) PIPE SLEEVE (OPTIONAL)
- 5) SEALANT
- 6) POLY BY OTHERS, REFER TO ARCHITECTURAL

NOTES:

- 1) PROVIDE MINIMUM 8"x8" (200x200mm) ACCESS DOOR TO SERVICE FIRE DAMPER
- 2) IN-STREAM STYLE FIRE DAMPERS ARE NOT ACCEPTABLE.
- 3) MOUNTING ANGLES SHALL BE MIN. 1/2"x1/2" (38x38mm) 16 GAUGE FASTENED TO DAMPER SLEEVES WITH NO. 10 BOLTS OR SCREWS, 1/2" (12mm) LONG HELDS, OR 3/8" (9mm) RIVETS. MIN. 2 CONNECTIONS PER SIDE AND TOP AND BOTTOM OF DAMPER WALLS.
- 4) MOUNTING ANGLES FOR GALVANIZED DAMPERS 50W X 60H (1270x1525mm) OR 60W X 50H (1525x1270mm) AND LESS CAN BE A MINIMUM OF 1/2"x1/2" (38x38mm) X 16 GAUGE. MAXIMUM FASTENER SPACING OF 16 GAUGE MOUNTING ANGLES IS 12" (300mm) CENTER TO CENTER



GAS FURNACE WITH AIR COND COIL DETAIL

SCALE: N.T.S

1	2025-02-21	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

Project Address

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SHEET TITLE:
MECHANICAL SCHEMATICS & DETAILS

PROJECT NO: 024-07-769
SCALE:

SHEET NO:

M300

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BASE OPTION - PRIMARY GAS-FIRED FURNACE WITH AIR CONDITIONING
FURNACE SCHEDULE

TAG	AFUE (%)	BLOWER MOTOR TYPE	GAS VALVE TYPE	FUEL	COOLING COIL	NOTES
FN-1	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	CC-1	1,2
FN-2	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	CC-2	1,2

NOTES:
1. FURNACE TO BE SUPPLIED WITH 24V 7-DAY PROGRAMMABLE THERMOSTAT WITH FAN-ON MODE
2. ALL CONDENSING APPLIANCES: INTAKE AND FLUE PIPING TO BE RUN INDEPENDENTLY TO EXTERIOR OF BUILDING, OBSERVE REQUIRED SPACING PER MANUFACTURER AND CODE REQUIREMENTS. CONCENTRIC VENT KITS NOT ACCEPTABLE. PIPE PENETRATIONS TO EXTERIOR TO BE C/W BIRDSCREEN, NO PIPE CAP TO BE PROVIDED FOR VENT PIPING. PROVIDE CONDENSATE NEUTRALIZATION KIT FOR ALL CONDENSATE DRAINAGE POINTS. INSTALL CONDENSATE NEUTRALIZER C/W BYPASS WHERE REQUIRED.

ALTERNATE OPTION 1 - PRIMARY COLD-CLIMATE AIR SOURCE HEATPUMP WITH SUPPLEMENTARY GAS HEATING
FURNACE SCHEDULE

TAG	AFUE (%)	BLOWER MOTOR TYPE	GAS VALVE TYPE	FUEL	HEATING/COOLING COIL	NOTES
FN-1	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	HP-1	1,2,3
FN-2	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	HP-2	1,2,3

NOTES:
1. FURNACE TO BE SUPPLIED WITH 24V 7-DAY PROGRAMMABLE THERMOSTAT WITH FAN-ON MODE
2. ALL CONDENSING APPLIANCES: INTAKE AND FLUE PIPING TO BE RUN INDEPENDENTLY TO EXTERIOR OF BUILDING, OBSERVE REQUIRED SPACING PER MANUFACTURER AND CODE REQUIREMENTS. CONCENTRIC VENT KITS NOT ACCEPTABLE. PIPE PENETRATIONS TO EXTERIOR TO BE C/W BIRDSCREEN, NO PIPE CAP TO BE PROVIDED FOR VENT PIPING. PROVIDE CONDENSATE NEUTRALIZATION KIT FOR ALL CONDENSATE DRAINAGE POINTS. INSTALL CONDENSATE NEUTRALIZER C/W BYPASS WHERE REQUIRED.
3. PRIMARY HEATING TO BE PROVIDED BY HEAT PUMPS HP-1/2, GAS HEATING TO BE SECOND-STAGE HEAT.

CONDENSING UNIT SCHEDULE

TAG	COMPRESSOR STAGES	REFRIGERANT	SERVES	SEER
CU-1	1	R410A	FN-X	17.0

ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	LOCATION	TYPE	SENSIBLE EFFICIENCY (%)	SUPPLY FAN			EXHAUST FAN			ELECTRICAL (V/Ph/Hz)	NOTES
				AIRFLOW (CFM)	MOTOR (HP)	ESP (in.W.G.)	AIRFLOW (CFM)	MOTOR (HP)	ESP (in.W.G.)		
ERV-1	1-BEDROOM UNITS	ENTHALPY CORE	67.0	45	FRAC	0.40	45	FRAC	0.40	120/160	1,2
ERV-2	2-BEDROOM UNITS	ENTHALPY CORE	67.0	50	FRAC	0.40	50	FRAC	0.40	120/160	1,2
ERV-3	3-BEDROOM UNITS	ENTHALPY CORE	67.0	60	FRAC	0.40	60	FRAC	0.40	120/160	1,2
ERV-4	4-BEDROOM UNITS	ENTHALPY CORE	67.0	75	FRAC	0.40	75	FRAC	0.40	120/160	1,2

NOTES:
1. ERV CONTROL:
ERV CENTRAL SWITCH (ON/OFF) FOR LOW SPEED LOCATED AND LABELLED AS 'VENTILATION FAN' LOCATED BESIDE FN TSTAT
PROVIDE TIMER SWITCHES IN ALL WASHROOMS.
2. PROVIDE BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST AIR DUCTS

COOLING COIL SCHEDULE

TAG	SERVES	CONDENSING UNIT	REFRIGERANT	SEER	NOTES
CC-1	FN-1	CU-1	R410A	17.0	1,2
CC-2	FN-2	CU-1	R410A	17.0	1,2

NOTES:
1. PROVIDE INDIRECT CONNECTION TO DRAIN
2. COIL TO BE HEAT RESISTANT

DOMESTIC WATER HEATER SCHEDULE (GAS)

TAG	LOCATION		ENERGY FACTOR	NOTES
DWH-1	WATER HEATER CLOSET		0.7	1,2,3

NOTES:
1. LOCATE FLOOR DRAIN IN WATER HEATER ROOM NEAR T&P VALVE
2. ALL CONDENSING APPLIANCES: INTAKE AND FLUE PIPING TO BE RUN INDEPENDENTLY TO EXTERIOR OF BUILDING, OBSERVE REQUIRED SPACING PER MANUFACTURER AND CODE REQUIREMENTS. CONCENTRIC VENT KITS NOT ACCEPTABLE. PIPE PENETRATIONS TO EXTERIOR TO BE C/W BIRDSCREEN, NO PIPE CAP TO BE PROVIDED FOR VENT PIPING. PROVIDE CONDENSATE NEUTRALIZATION KIT FOR ALL CONDENSATE DRAINAGE POINTS. INSTALL CONDENSATE NEUTRALIZER C/W BYPASS WHERE REQUIRED.
3. PROVIDE DRAIN PAN.

FAN SCHEDULE

TAG	TYPE	FUNCTION	LOCATION	AIR CAPACITY (CFM)	ESP (in.W.C.)	MOTOR (HP)	_SOUND LEVEL (SONES)	ELECTRICAL (V/Ph/Hz)	DRIVE
RH-1	UNDER CABINET	RANGE HOOD	KITCHEN (TYPICAL)	100	0.25	FRAC	6.5	115/160	DIRECT

PLUMBING FIXTURE PIPE SIZE SCHEDULE

TAG	DCW		DHW		DRAIN		VENT		DRAIN UNDERGROUND	
	in	mm	in	mm	in	mm	in	mm	in	mm
WC (TANK)	1/2	15	-	-	3	75	1 1/2	40	3	75
LAV	1/2	15	1/2	15	1 1/2	40	1 1/4	30	2	50
SK	1/2	15	1/2	15	1 1/2	40	1 1/4	30	2	50
SH	1/2	15	1/2	15	2	50	1 1/2	40	2	50
BT	1/2	15	1/2	15	1 1/2	40	1 1/4	30	2	50
FD	-	-	-	-	4	100	1 1/2	40	4	100
HB	3/4	20	-	-	-	-	-	-	-	-
CW (DOM.)	1/2	15	1/2	15	2	50	1 1/2	40	2	50

NOTES:
1. REFER TO MANUFACTURER'S SPECIFICATIONS

ALTERNATE OPTION 1 - PRIMARY COLD-CLIMATE AIR SOURCE HEATPUMP WITH SUPPLEMENTARY GAS HEATING
FURNACE SCHEDULE

TAG	AFUE (%)	BLOWER MOTOR TYPE	GAS VALVE TYPE	FUEL	HEATING/COOLING COIL	NOTES
FN-1	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	HP-1	1,2,3
FN-2	96.3	VARIABLE SPEED ECM	2-STAGE	NATURAL GAS	HP-2	1,2,3

NOTES:
1. FURNACE TO BE SUPPLIED WITH 24V 7-DAY PROGRAMMABLE THERMOSTAT WITH FAN-ON MODE
2. ALL CONDENSING APPLIANCES: INTAKE AND FLUE PIPING TO BE RUN INDEPENDENTLY TO EXTERIOR OF BUILDING, OBSERVE REQUIRED SPACING PER MANUFACTURER AND CODE REQUIREMENTS. CONCENTRIC VENT KITS NOT ACCEPTABLE. PIPE PENETRATIONS TO EXTERIOR TO BE C/W BIRDSCREEN, NO PIPE CAP TO BE PROVIDED FOR VENT PIPING. PROVIDE CONDENSATE NEUTRALIZATION KIT FOR ALL CONDENSATE DRAINAGE POINTS. INSTALL CONDENSATE NEUTRALIZER C/W BYPASS WHERE REQUIRED.
3. PRIMARY HEATING TO BE PROVIDED BY HEAT PUMPS HP-1/2, GAS HEATING TO BE SECOND-STAGE HEAT.

CONDENSING UNIT SCHEDULE

TAG	COMPRESSOR STAGES	REFRIGERANT	SERVES	SEER
CU-1	1	R410A	FN-X	17.0

NOTES:
1. OUTDOOR UNIT C/W ULTRA-LOW AMBIENT KIT, RATED TO -40°C/F

ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	LOCATION	TYPE	SENSIBLE EFFICIENCY (%)	SUPPLY FAN			EXHAUST FAN			ELECTRICAL (V/Ph/Hz)	NOTES

CMHC HOUSING DESIGN CATALOGUE

AB FOURPLEX 01

ELECTRICAL DRAWINGS

ACCESSIBILITY - GENERAL NOTES

- THE FOLLOWING REQUIREMENTS ARE REFERENCED FROM CSA B652 - ACCESSIBILITY STANDARDS CANADA (ASC).
- CLAUSE 4.3.3-b)-ii - PARKING AND GARAGES:
 - ILLUMINATION IS TO BE PROVIDED FOR ANY EXTERIOR MOTION SENSOR CONTROLS.
 - WHERE VISUAL DISPLAYS ARE REQUIRED TO BE READ, DISPLAYS ARE REQUIRED TO BE ILLUMINATED TO ACHIEVE A MINIMUM OF 200LX ON SIGNAGE.
 - WHERE DISPLAYS ARE NOT REQUIRED TO BE READ OR BACKLIGHTING HAS BEEN ACHIEVED, ILLUMINATION BETWEEN 50LX AND 100LX IS NECESSARY ON SIGNAGE.
- CLAUSE 4.3.5.1-b) - GENERAL - OPERATING CONTROLS:
 - WHERE VISUAL DISPLAYS ARE REQUIRED TO BE READ, DISPLAYS ARE REQUIRED TO BE ILLUMINATED TO ACHIEVE A MINIMUM OF 200LX ON SIGNAGE.
 - WHERE DISPLAYS ARE NOT REQUIRED TO BE READ OR BACKLIGHTING HAS BEEN ACHIEVED, ILLUMINATION BETWEEN 50LX AND 100LX IS NECESSARY ON SIGNAGE.
- CLAUSE 4.3.5.1-e) - GENERAL ILLUMINATION: MINIMUM LIGHTING LEVELS (4.8), REFER TO THE FOLLOWING REQUIREMENTS:
 - GENERAL ILLUMINATION: 50LX AT FLOOR LEVEL
 - KITCHEN BUILT-IN: 300LX, COUNTER TOP: 75LX
 - ADULT BEDROOM: 100-300LX, READING DESK: 500LX
 - CHILD BEDROOM: 500LX, READING DESK: 800LX
 - BATHROOM: 300LX, MIRROR (VERTICAL): 300-700LX
 - LIVING ROOM: 300LX, READING: 500LX
 - FAMILY ROOM / THEATRE: 300LX (150LX FOR TV VIEWING), READING / TABLE: 500LX
 - LAUNDRY / UTILITY: 200LX, COUNTERTOP: 300LX
 - DINING ROOM: 200LX
 - HALLWAY: STAIRS: 100-500LX
 - HOME OFFICE: 500LX, DESK / READING: 800LX
 - GARAGE: 500LX, WORKTABLE: 750LX
 - WORKSHOP: 800LX, BENCH: 1100LX
 - EXTERIOR PERIMETER: 50LX
- CLAUSE 4.3.5.2 - DOORS:
 - DOOR HARDWARE - ROUGH-IN ELECTRICAL TO BE PROVIDED FOR FUTURE INSTALLATION OF A POWER ASSISTED DOOR AT THE BATHROOM, MAIN ENTRANCE AND GARAGE ENTRANCE.
 - CONTROLS FOR POWER-ASSISTED DOORS SHOULD BE LOCATED ALONG THE ACCESSIBLE PATH OF TRAVEL, CLEARLY VISIBLE BEFORE REACHING THE DOOR, ADJACENT TO A CLEAR FLOOR AREA OF 820x1390mm AND BETWEEN 600-1500mm FROM LATCH EDGE OF DOOR.
- CLAUSE 5.9.6 - BATHROOM ILLUMINATION - MINIMUM REQUIREMENTS:
 - BATHROOM: 300LX
 - MIRROR TASK LIGHTING: 300-700LX, BE MOUNTED BETWEEN 300-500mm PERPENDICULAR TO THE MIRROR SIDE, AND AT 1000-1700mm.
 - BE DIMMABLE BETWEEN 50LX AND 300LX.
 - SHOWER OR BATHUB LIGHTING SHALL HAVE AS A MINIMUM, ONE FIXTURE CENTERED IN THE CEILING.
- CLAUSE 5.9.8 - BATHROOM:

2xGFCI REQUIRED:

 - NEXT TO THE SINK 150mm FROM THE FRONT EDGE OF FRONT FACE OF THE VANITY AND
 - NEXT TO THE TOILET 150mm FROM THE FRONT EDGE AND 300-600mm AFF.
- CLAUSE 5.10.5 - KITCHEN:

OPERATING CONTROLS SHALL BE:

 - ACCESSIBLE
 - SWITCHES AND OUTLETS INSTALLED ON FRONT FACES OF COUNTERS
 - INCLUDED IN SIDE WALL OUTLETS
 - WHERE PROVIDED, RANGE HOODS OPERABLE FROM SEATED POSITION
- CLAUSE 5.11.5 - BEDROOM:

ELECTRICAL:

 - SHALL BE ACCESSIBLE
 - PROVIDE AT LEAST ONE SWITCH BESIDE BED AT A HEIGHT BETWEEN 550-650mm AFF.
 - HAVE TWO WALLS WITH A MINIMUM OF TWO QUAD RECEPTACLES PER WALL
 - HAVE OUTLETS PLACED AT A MINIMUM 600mm FROM THE CORNER OF THE ROOM AND A MAXIMUM DISTANCE OF 2000mm BETWEEN EACH
- CLAUSE 5.11.6 - BEDROOM:

OUTLET CONNECTIONS:

 - ONE OUTLET FOR COMPUTER NETWORK AT A HEIGHT BETWEEN 400-1100mm AFF, LESS THAN 600mm HORIZONTALLY FROM BED EDGE AND IN A LOCATION WHERE ACCESS IS NOT IMPEDED BY FURNITURE.
- CLAUSE 5.14 - HOME AUTOMATION:
 - USER INTERFACE, PROVIDE MINIMUM 200LX WHERE READING IS NECESSARY.
- CLAUSE 5.16 - ALERT & SIGNAL DEVICES:
 - EMERGENCY ALERT AND SIGNAL DEVICES SHALL BE EQUIPPED TO PROVIDE BOTH VISUAL AND AUDIBLE SIGNALS.

ELECTRICAL SYMBOL LEGEND

NOTE: SOME SYMBOL REFERENCES MAY NOT BE PART OF THIS PROJECT	
LIGHTING	
↔	LINE VOLTAGE SWITCH
↔	WALL MOUNT OCCUPANCY SENSOR SWITCH
○	CEILING MOUNT OCCUPANCY SENSOR
○#	LOW VOLTAGE SWITCH, # INDICATES BUTTONS
○	CEILING MOUNT EXIT SIGN, LINE DENOTES FACE
○	EXIT SIGN C/W EMERGENCY HEADS
↔	REMOTE EMERGENCY HEADS
○	BATTERY PACK C/W EMERGENCY HEADS
○	HATCH INDICATES EMERGENCY FIXTURE
○	FIXTURE TYPEMARKER
○	CCT CIRCUIT
○	a/Z1 SWITCH ID / LIGHTING CONTROL ZONE
○	900AFF MOUNTING HEIGHT / SUSPENSION LENGTH
○	RECESSED MOUNTED LIGHT FIXTURE
○	SURFACE MOUNTED LIGHT FIXTURE
○	SUSPENDED LIGHT FIXTURE
○	STRIP LIGHT FIXTURE
○	WALL MOUNTED LINEAR LIGHT FIXTURE
○	WALL MOUNTED LIGHT FIXTURE
○	SURFACE MOUNTED LIGHT FIXTURE
○	RECESSED DOWNLIGHT
○	PENDANT MOUNT LIGHT FIXTURE
○	TRACK LIGHT, NO. OF HEADS AS PER PLANS
○	STRIP LIGHT FIXTURE
○	ILLUMINATED BOLLARD
○	POLE MOUNTED LIGHT FIXTURE

LIGHTING SYMBOL ANNOTATIONS:

PEC	PHOTOELECTRIC CELL	D	DIMMER
TC	TIME CLOCK	DT	DUAL TECHNOLOGY
NL	NIGHTLIGHT (UN-SWITCHED)	VAC	VACANCY SENSOR (MANUAL ON, AUTO OFF)
3	3-WAY	EM	FIXTURE POWERED FROM EMERGENCY SOURCE
LV	LOW VOLTAGE	EM#	EMERGENCY BATTERY PACK I.D.

POWER

⊕	DUPLEX RECEPTACLE	⊕	SPECIAL RECEPTACLE
⊕	QUAD RECEPTACLE	⊕	JUNCTION BOX
⊕	GFI RECEPTACLE	□	PAC POLE
⊕	SPLIT FED RECEPTACLE	○	MOTOR
⊕	HALF SWITCHED RECEPTACLE	□	DISCONNECT SWITCH
⊕	ISOLATED GROUND RECEPTACLE	MS / VFD	MAGNETIC STARTER / VFD
⊕	PEDESTAL MOUNTED RECEPTACLE	SPD	SURGE PROTECTION DEVICE

POWER SYMBOL ANNOTATIONS:

T	T-SLOT (20A)	TR	TAMPER RESISTANT
WP	WEATHERPROOF	U	USB CHARGER

DISTRIBUTION

■	SURFACE MOUNTED PANELBOARD	□	UTILITY METER STACK
■	RECESSED MOUNTED PANELBOARD	□	UTILITY METER
■	COMMUNICATIONS BACKBOARD	→	GROUND BAR
□	LOW TENSION PANEL / CABINET	☒	TRANSFORMER

DISTRIBUTION SYMBOL ANNOTATIONS:

MDP	MAIN DISTRIBUTION PANEL	LVR	LOW VOLTAGE RELAY PANEL
CDP	CENTRAL DISTRIBUTION PANEL	CB	COMMUNICATIONS BACKBOARD
MCC	MOTOR CONTROL CENTER	TX	TRANSFORMER

LOW TENSION

◀	DATA NETWORK JACK	WAP	WIRELESS ACCESS POINT
◀	TELEPHONE JACK	○	PROVIDE DATA DROP IN CEILING SPACE
◀	COMBINATION TELEPHONE / DATA JACK	□	PUSHBUTTON
◀	TELEVISION COAX OUTLET	■	UP / DOWN / STOP PUSHBUTTON
◀	HDMI OUTLET	○	CEILING MOUNTED SPEAKER
□	DOORBELL BUZZER / DOORBELL CHIME	○	WALL MOUNTED SPEAKER
○	THERMOSTAT	○○	CO ₂ / NO SENSORS

LOW TENSION SYMBOL ANNOTATIONS:

NUMBER INDICATES QUANTITY OF CABLES / DROPS AT EACH LOCATION

FIRE ALARM

FK	HORN	○ ft	HEAT DETECTOR - FIXED TEMPERATURE
FK #	HORN STROBE	○	HEAT DETECTOR - RATE OF RISE
FK #	STROBE	○	SMOKE DETECTOR
□	MANUAL STATION	○ A	SMOKE ALARM (120V)
○	SPEAKER	○ D	DUCT SMOKE DETECTOR
○#	SPEAKER STROBE	□	END OF LINE RESISTOR
□	ELECTROMAGNETIC DOOR HOLD OPEN	□	FIRE ALARM MODULE
□	FIRE ALARM PANEL	◀ f	FIRE PHONE

FIRE ALARM SYMBOL ANNOTATIONS:

#	CANDLELA RATING FOR STROBE	MM	MONITORING MODULE
FACP	FIRE ALARM CONTROL PANEL	CM	CONTROL MODULE
FAAP	FIRE ALARM ANNUNCIATOR PANEL	FS	FLOW SWITCH
IM	ISOLATOR MODULE	TS	TAMPER SWITCH

SECURITY

○	MOTION SENSOR	???	SECURITY DEVICE
□	VISUAL INDICATOR LIGHT	□	SECURITY CAMERA (CAT6 OUTLET)

SECURITY SYMBOL ANNOTATIONS:

CR	CARD READER	KP	KEY PAD
ES	ELECTRIC STRIKE	GB	GLASS BREAK
DC	DOOR CONTACT / DOOR POSITION SWITCH	ML	MAGNETIC LOCK
RTX	REQUEST TO EXIT	EC	ELECTRONIC CLOSER

ANNOTATIONS

---	UNDERGROUND / UNDERSLAB CONDUIT	#	KEY NOTE
---	OVERHEAD / SURFACE MOUNT CONDUIT	•	DOT ABOVE ANY SYMBOL INDICATES ABOVE COUNTER MOUNTING HEIGHT
---	CONDUIT STUB	○	CONDUIT STUB
1	DRAWING REFERENCE	□	SQUARE AROUND ANY SYMBOL INDICATES FLOOR MOUNT DEVICE
EX	SECTION REFERENCE	○	CIRCLE AROUND ANY SYMBOL INDICATES CEILING MOUNT DEVICE
X#	SINGLE LINE DIAGRAM WIRE TAG, Y = WYE, D = DELTA CONFIGURATION		

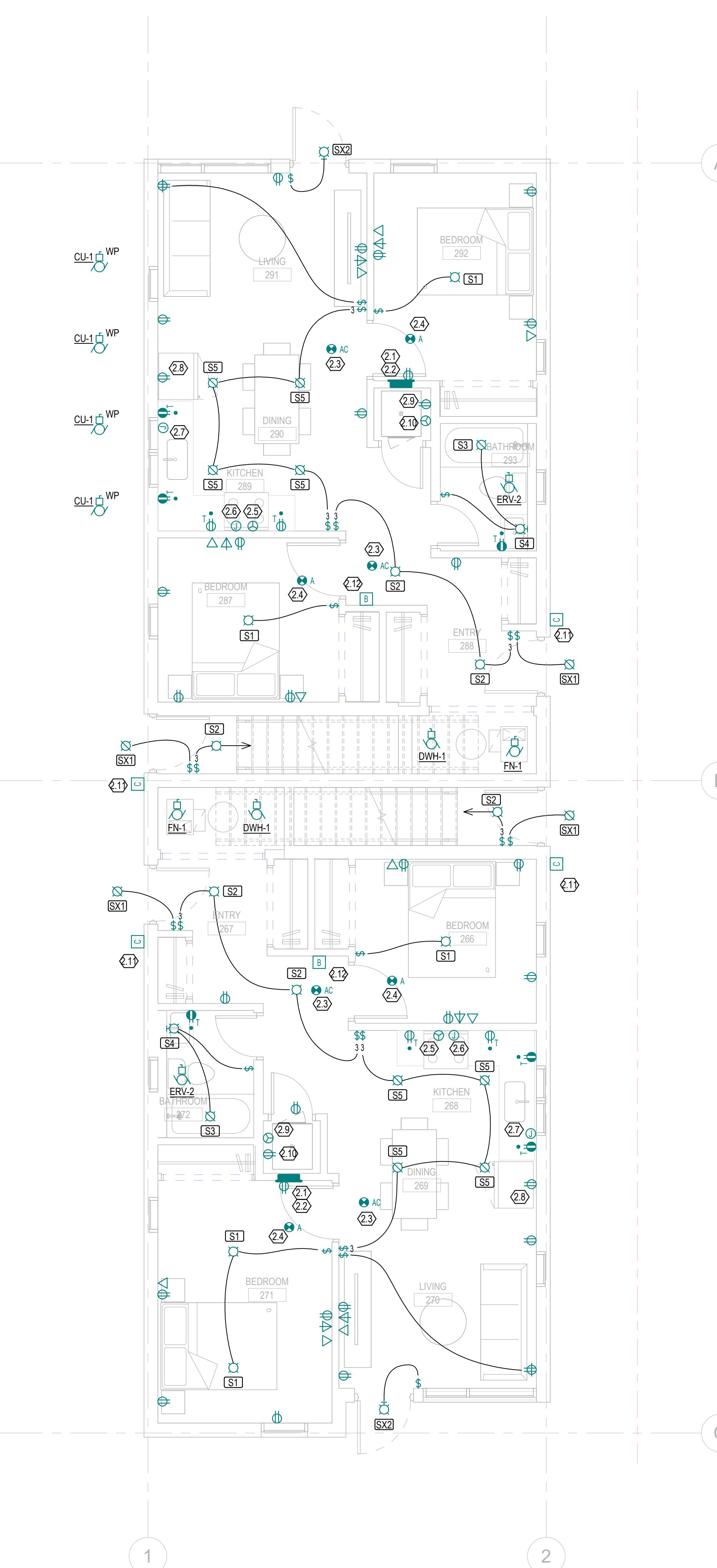
ELECTRICAL SHEET LIST

NO.	SHEET NAME

</

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GENERAL SUITE NOTES

- 1 PROVIDE ARC FAULT BREAKERS FOR ALL RECEPTACLES IN RESIDENTIAL SUITES IN ACCORDANCE WITH CEC 26-68.
- 2 PROVIDE TAMPER RESISTANT RECEPTACLES IN EACH SUITE TO CEC 26-706.
- 3 PROVIDE GROUND FAULT CIRCUIT INTERRUPTION FOR RECEPTACLES WITHIN 1.5m OF ANY SINK OR WASHBASIN AND FOR EXTERIOR PATIOS.
- 4 TO PREVENT SOUND TRANSMISSION BETWEEN ROOMS, PROVIDE HORIZONTAL SEPARATION OF AT LEAST 1 STUD SPACE FOR RECESSED WALL JUNCTION BOXES IN SUITE WALLS WHEN THE JUNCTION BOXES ARE INSTALLED ON EITHER SIDE OF THE WALL.
- 5 PROVIDE MOLDABLE FIRE RESISTANT PUTTY PADS (3M FIRE BARRIER OR EQUAL) IN SUITE PARTY WALLS WHEN JUNCTION BOXES ARE INSTALLED WITHIN THE SAME STUD SPACE ON EITHER SIDE OF THE WALL. WHERE PRACTICAL, EFFORT SHOULD BE MADE TO AVOID PLACING JUNCTION BOXES IN THE SAME STUD SPACE. CONFIRM WITH ENGINEER.
- 6 PROVIDE RECEPTACLES IN SUITES WITH APPROPRIATE SPACING IN ACCORDANCE WITH SECTION 26 OF THE CEC WHETHER SHOWN CORRECTLY ON THE DRAWINGS OR NOT. ALLOW FOR ADDITIONAL RECEPTACLES AS REQUIRED. NO EXTRAS WILL BE PERMITTED FOR NOT COMPLYING WITH CEC SPACING REQUIREMENTS.
- 7 PROVIDE SWITCHES FOR BEDROOMS, KITCHENS, LIVING ROOMS, UTILITY ROOMS, DINING ROOMS, LAUNDRY ROOMS, BATHROOMS, HALLWAYS, STORAGE ROOMS, FRONT ENTRY, BALCONY ON THE LATCH SIDE OF THE DOOR. CONFIRM DOOR SWING ON SITE PRIOR TO ROUGH IN. INSTALL WITHIN 50mm OF THE DOOR. PROVIDE ADDITIONAL BLOCKING IF REQUIRED.
- 8 BALCONY LIGHT FIXTURES TO BE ALIGNED IN A VERTICAL LINE BETWEEN FLOORS FROM GROUND FLOOR TO HIGHEST FLOOR IF POSSIBLE. REFER TO ARCHITECTURAL ELEVATIONS.
- 9 ALL SUITE LIGHT SWITCHES AND RECEPTACLES TO BE DECORA STYLE, RESIDENTIAL GRADE.
- 10 REFER TO LATEST MECHANICAL ENGINEER'S PLANS FOR THERMOSTAT AND HUMIDISTAT LOCATIONS. REFER TO SPECIFICATIONS.
- 11 REFER TO LATEST MECHANICAL ENGINEER'S PLANS FOR VENTILATION EQUIPMENT OR HEATING/COOLING EQUIPMENT ELECTRICAL REQUIREMENTS (FURNACES, FAN COILS, CONDENSING UNITS, RADIATOR ZONE VALVES ETC). CONNECT ALL MECHANICAL HEATING/COOLING EQUIPMENT. CONTACT ENGINEER IF DISCREPANCIES EXIST.
- 12 CONFIRM EXACT PLACEMENT OF LIGHT FIXTURES WITH OWNER.
- 13 PROVIDE SUITE PATIO RECEPTACLE NEAR BBB GAS CONNECTION IF POSSIBLE. COORDINATE WITH MECHANICAL TRADE AND RELOCATE IF REQUIRED.
- 14 ALL SUITE TELEPHONE AND DATA JACKS TO BE CAT6 TO ALLOW FOR PATCHING FOR USE AS EITHER TELEPHONE OR DATA.

KEYNOTES - SUITES

- 2.1 SUITE PANEL: PANEL TO BE FLUSH MOUNTED CW HINGED SMOOTH COVER.
- 2.2 SUITE COMMUNICATION CABINET: SUPPLIED BY UTILITY. INSTALLED BY ELECTRICAL CONTRACTOR CW HINGED SMOOTH COVER. INCLUDE NETWORK PATCH PANEL MODULE, 6 PORT VOICE/DATA MODULE, CATV SPLITTER, TELEPHONE MODULE AND RECEPTACLE. HOME RUN TELEPHONE, CATV AND DATA LINES TO THIS LOCATION.
- 2.3 SMOKE/CO ALARM - PROVIDE AND INSTALL 120V DETECTOR CW BATTERY BACKUP AND MANUAL SILENCE BUTTON. WHERE MULTIPLE ALARMS ARE SHOWN WITHIN EACH SUITE, INTERLOCK SUCH THAT ALL UNITS WILL ALARM TOGETHER.
- 2.4 SMOKE ALARMS - PROVIDE AND INSTALL A 120V CW BATTERY BACK UP. WHERE MULTIPLE ALARMS ARE SHOWN WITHIN EACH SUITE, INTERLOCK SUCH THAT ALL DEVICES WILL ALARM TOGETHER INCLUDING COMBINATION CO/ALARMS. BATTERY TO BE TYPE 'A'. ALL SUITE SMOKE ALARMS AND OR CO DETECTORS TO BE WIRED WITH LIGHTING ON NON ARCH FAULT CIRCUIT.
- 2.5 RANGE: PROVIDE AND INSTALL 40A, 240V (OR 208V), 1 PHASE RECEPTACLE AT MAXIMUM 130mm AFF TO CENTER OF BOX.
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- 2.7 DISHWASHER - PROVIDE ELECTRICAL INSTALLATION FOR A DISHWASHER. COORDINATE INSTALLATION WITH APPLIANCE SUPPLIER.
- 2.8 REFRIGERATOR: PROVIDE DEDICATED RECEPTACLE.
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- 2.10 DRYER - PROVIDE AND INSTALL 30A, 208V (OR 240V), 1 PHASE RECEPTACLE.
- 2.11 CHIME - PROVIDE ROUGH IN FOR A DOOR CHIME NUTONE LA11WH. PROVIDE ALL WIRING AND ACCESSORIES FOR COMPLETE OPERATION INCLUDING (BUT NOT LIMITED TO) 16V TRANSFORMER, WHITE LIGHTED PUSHBUTTON(S) ETC.
- 2.12 DOOR BUZZER (CHIME) - PROVIDE AND INSTALL A DOOR CHIME NUTONE LA11WH. PROVIDE ALL WIRING AND ACCESSORIES FOR COMPLETE OPERATION INCLUDING (BUT NOT LIMITED TO) 16V TRANSFORMER, WHITE LIGHTED EXTERIOR DOOR PUSHBUTTON.

TYPICAL SUITE PANEL

DESCRIPTION	BRKR	CCT	CCT	BRKR	DESCRIPTION
LIGHTING & POWER	15A	1	2		40A RANGE
LIGHTING & POWER	15A	3	4		
LIGHTING & POWER	15A	5	6		
LIGHTING & POWER	15A	7	8		30A DRYER
LIGHTING & POWER	15A	9	10		15A WASHER
KITCHEN	20A	11	12		
KITCHEN	20A	13	14		20A ERV-2
KITCHEN	20A	15	16		
MICROWAVE	15A	17	18		20A CU-1
DISHWASHER	15A	19	20		15A FN-1
FRIDGE	15A	21	22		15A DWH-1
	15A	23	24		
	15A	25	26		
	15A	27	28		15A
	15A	29	30		15A
	15A	31	32		15A
	15A	33	34		15A
SPARE	15A	35	36		SPARE
SPARE	15A	37	38		SPARE
SPARE	15A	39	40		SPARE
SPARE	15A	41	42		SPARE

NOTES:

- DO NOT EXCEED 10 DEVICES PER CIRCUIT.
- REFER TO MECH SHOP DRAWINGS OR LATEST PLANS FOR ELECTRICAL REQUIREMENTS OF HVAC & AC EQUIPMENT.
- PANEL TO BE 24 CCT (48 MINI BREAKERS) EQUIPPED WITH 100A RATED BUS, 1 PHASE, 120/240V.
- PROVIDE ARC FAULT BREAKERS FOR ALL RECEPTACLES IN RESIDENTIAL SUITES IN ACCORDANCE WITH CEC 26-68.

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ADDRESS

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE:
AB FOURPLEX 01 - MAIN FLOOR SUITE PLAN - OPTION 1

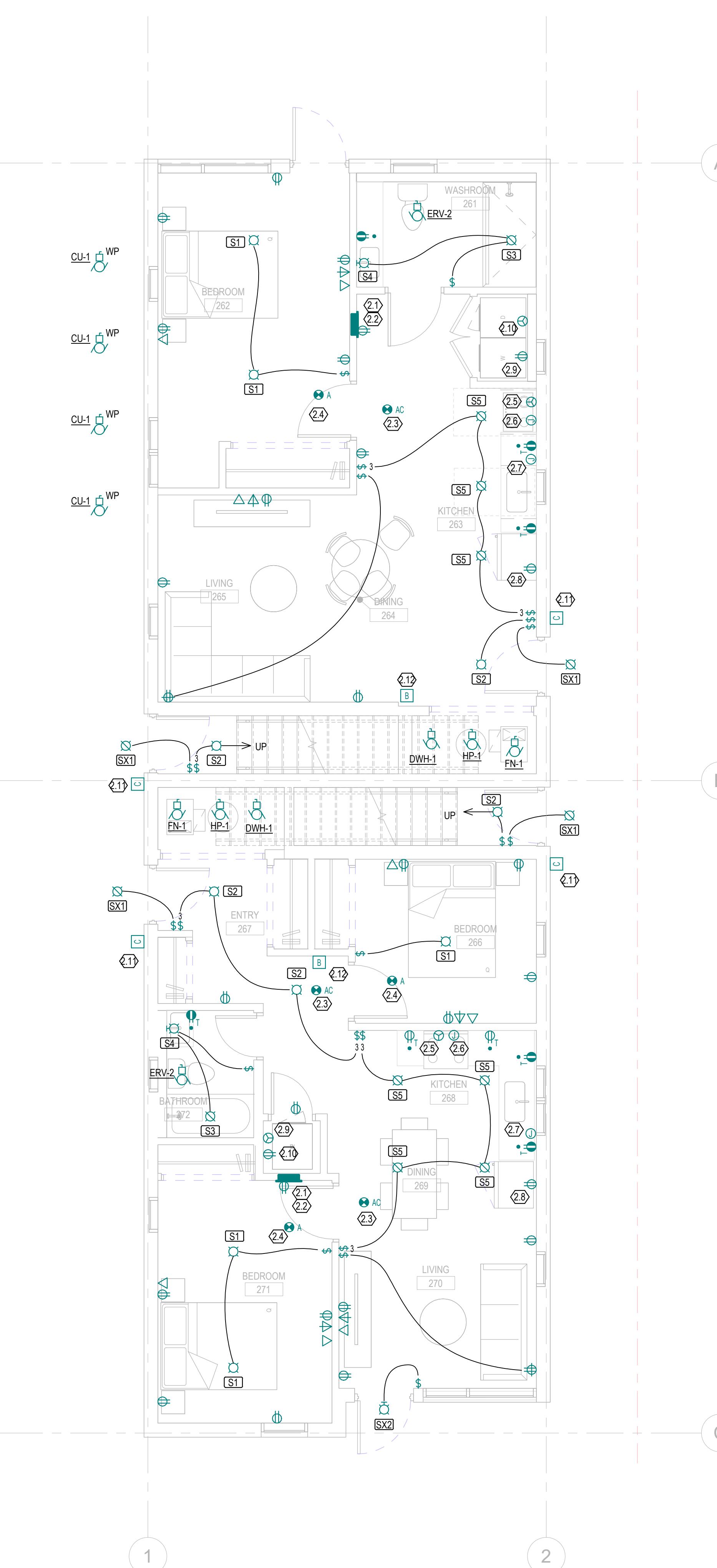
PROJECT NO: 241058
SCALE: As indicated

SHEET NO:

E201A

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MAIN FLOOR SUITE PLAN - OPTION 2

SCALE: 1 : 50

GENERAL SUITE NOTES

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LIGHTING & POWER	15A	9	10	15A	KITCHEN
KITCHEN	20A	11	12	20A	HP-1
KITCHEN	20A	13	14	15A	FN-1
MICROWAVE	15A	15	16	15A	DWH-1
DISHWASHER	15A	19	20	15A	FRIDGE
FRIDGE	15A	21	22	15A	HP-1
	15A	23	24	15A	
	15A	25	26	15A	
	15A	27	28	15A	
	15A	29	30	15A	
	15A	31	32	15A	
	15A	33	34	15A	
SPARE	15A	35	36	15A	SPARE
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SPARE	15A	39	40	15A	SPARE
SPARE	15A	41	42	15A	SPARE

NOTES:
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- PROVIDE ARC FAULT BREAKERS FOR ALL RECEPTACLES IN RESIDENTIAL SUITES IN ACCORDANCE WITH CEC 26-688.

1 03/26/25 ISSUED AS PROTOTYPICAL DRAWING
NO. DATE DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ADDRESS

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SHEET TITLE:
AB FOURPLEX 01 - MAIN FLOOR SUITE PLAN - OPTION 2

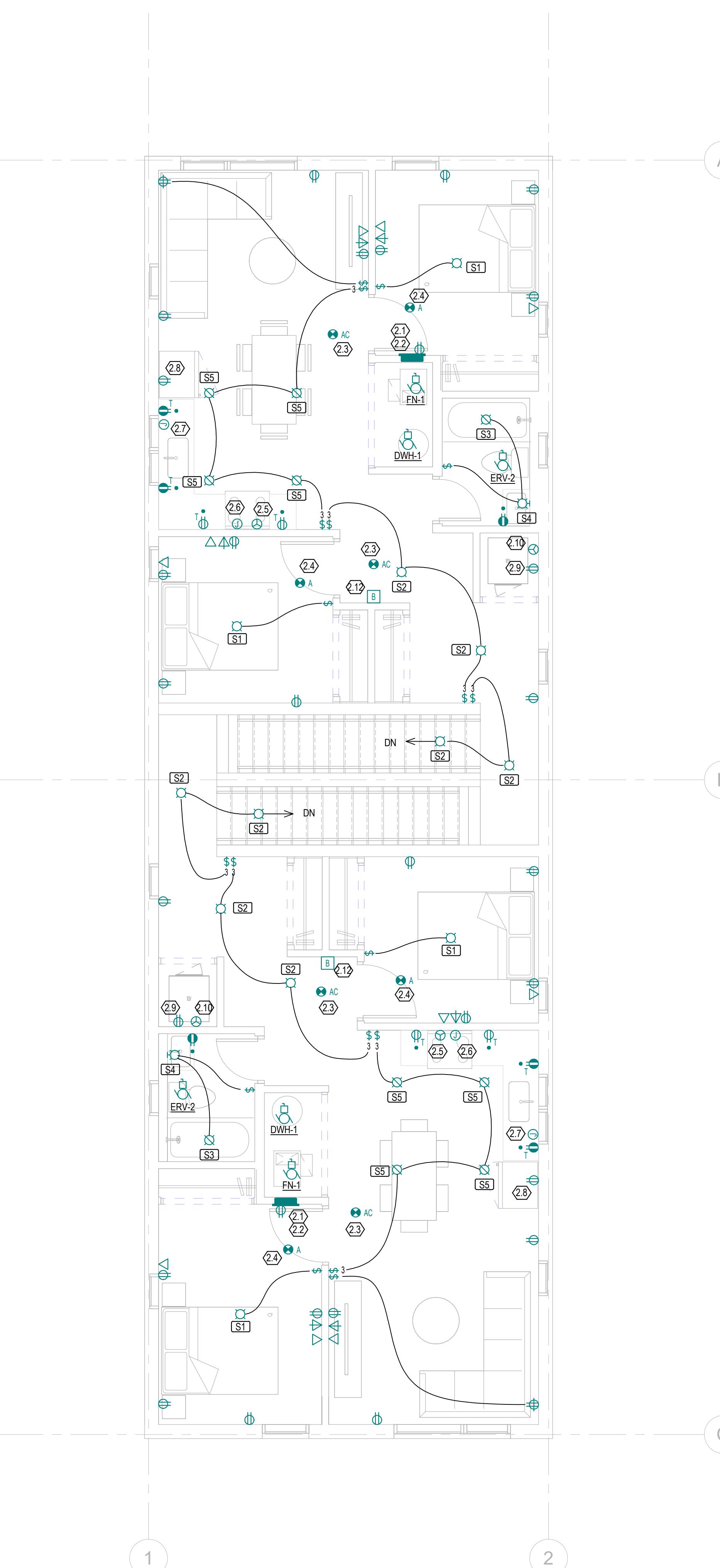
PROJECT NO: 241058
SCALE: As indicated

SHEET NO:

E201B

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SECOND FLOOR SUITE PLAN

SCALE: 1:50

GENERAL SUITE NOTES

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KEYNOTES - SUITES

- 2.1 SUITE PANEL; PANEL TO BE FLUSH MOUNTED C/W HINGED SMOOTH COVER.
- 2.2 SUITE COMMUNICATION CABINET; SUPPLIED BY UTILITY, INSTALLED BY ELECTRICAL CONTRACTOR C/W HINGED SMOOTH COVER. INCLUDE NETWORK PATCH PANEL MODULE, 6 PORT VOICE/DATA MODULE, CATV SPLITTER, TELEPHONE MODULE AND RECEPTACLE. HOME RUN TELEPHONE, CATV AND DATA LINES TO THIS LOCATION.
- 2.3 SMOKE/CO ALARM - PROVIDE AND INSTALL 120V C/W BATTERY BACKUP AND MANUAL SILENCE BUTTON WHERE MULTIPLE ALARMS ARE SHOWN WITHIN EACH SUITE. INTERLOCK SUCH THAT ALL UNITS WILL ALARM TOGETHER.
- 2.4 SMOKE ALARMS - PROVIDE AND INSTALL A 120V C/W BATTERY BACK UP WHERE MULTIPLE ALARMS ARE SHOWN WITHIN EACH SUITE. INTERLOCK SUCH THAT ALL DEVICES WILL ALARM TOGETHER INCLUDING COMBINATION CO/ALARMS. BATTERY TO BE TYPE 'A'. ALL SUITE SMOKE ALARMS AND CO/CO DETECTORS TO BE WIRED WITH LIGHTING ON NON ARCH FAULT CIRCUIT.
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1	03/26/25	ISSUED AS PROTOTYPICAL DRAWING
NO.	DATE	DESCRIPTION

PROJECT:
CMHC HOUSING DESIGN CATALOGUE

ADDRESS

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SHEET TITLE:
AB FOURPLEX 01 - SECOND FLOOR SUITE PLAN

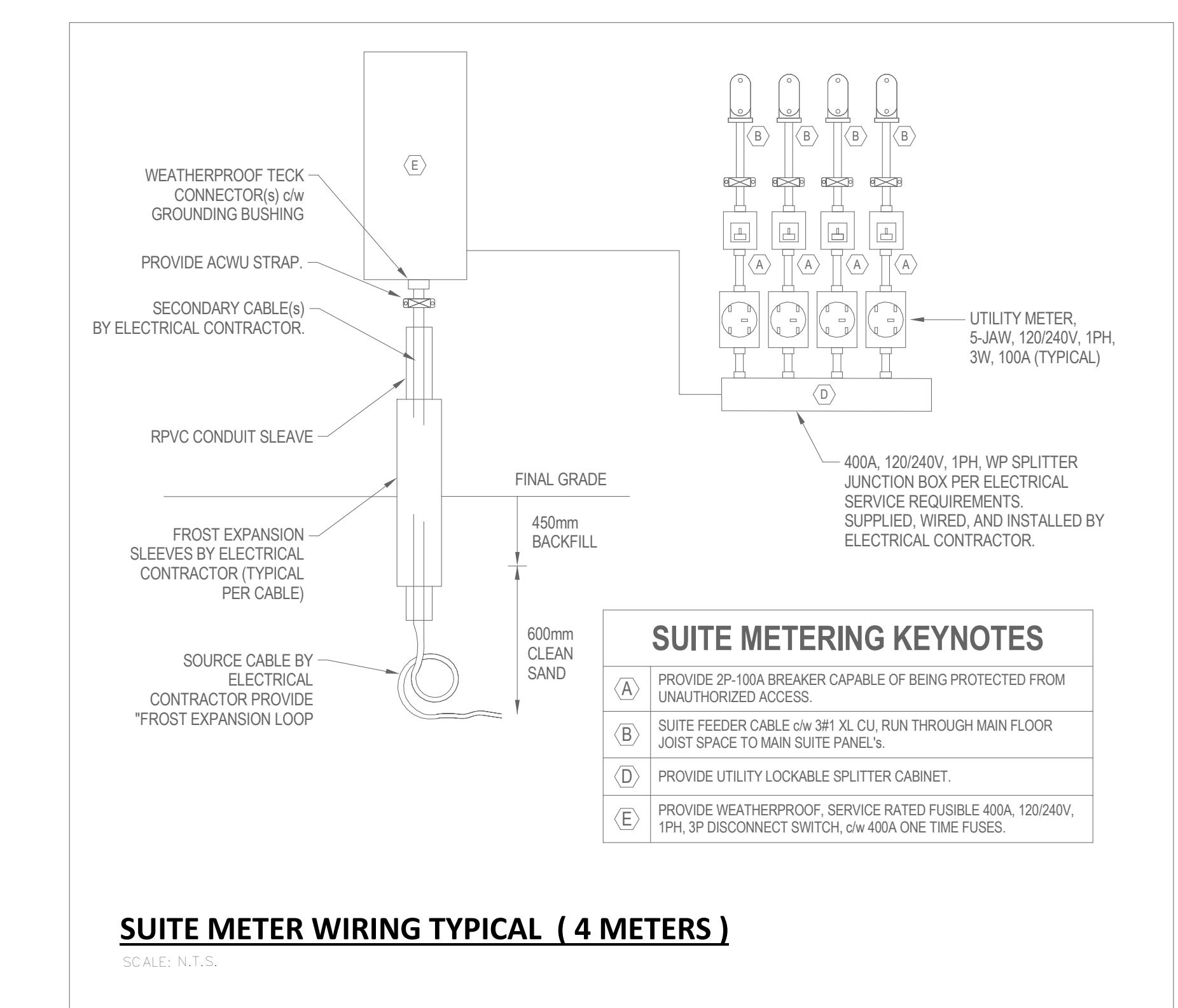
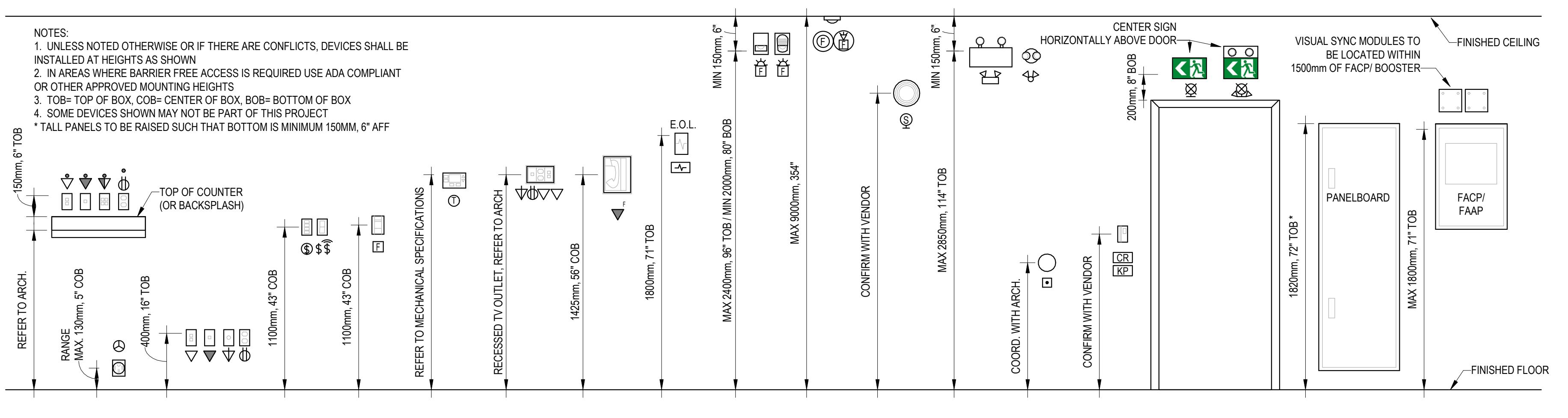
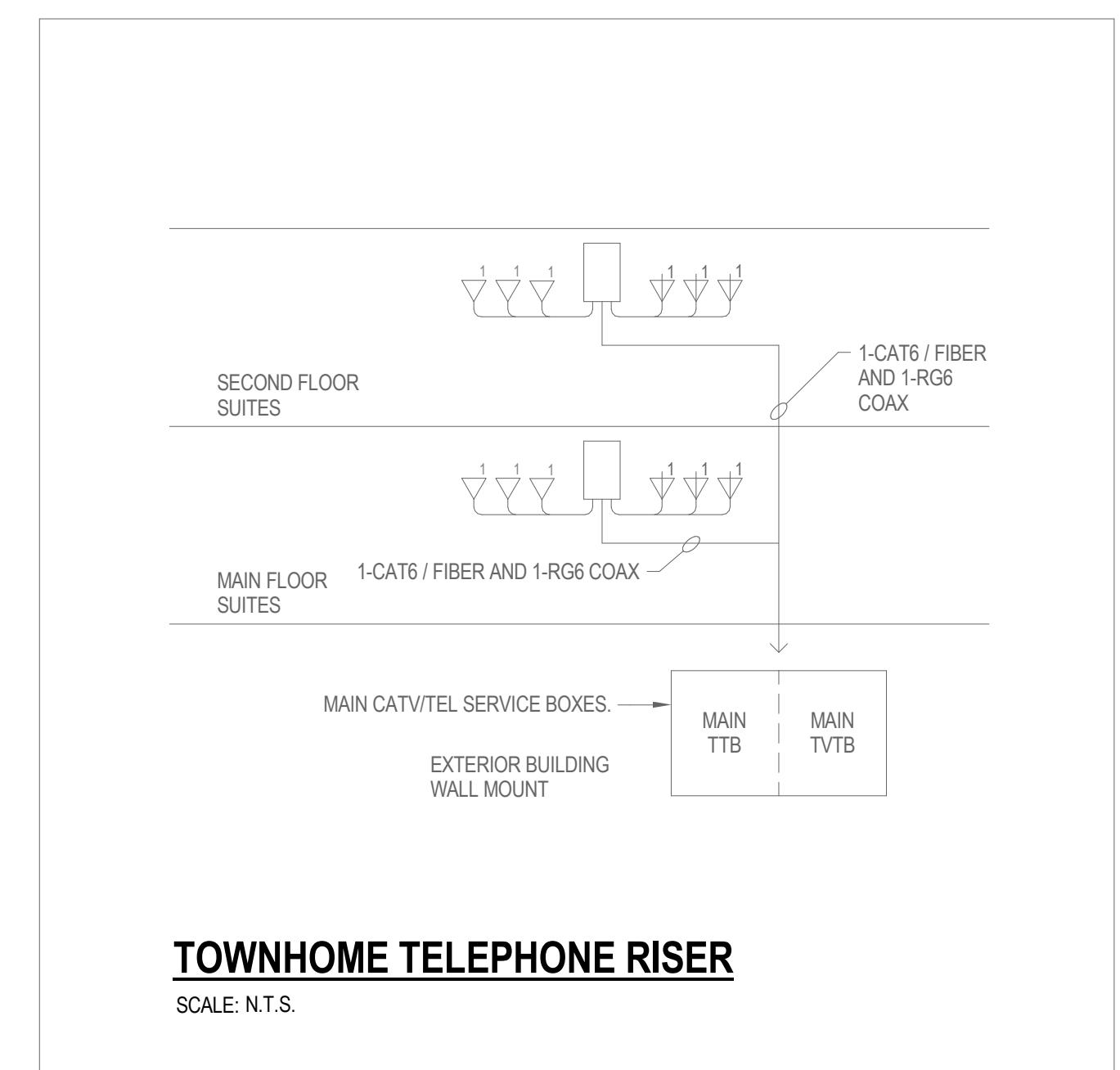
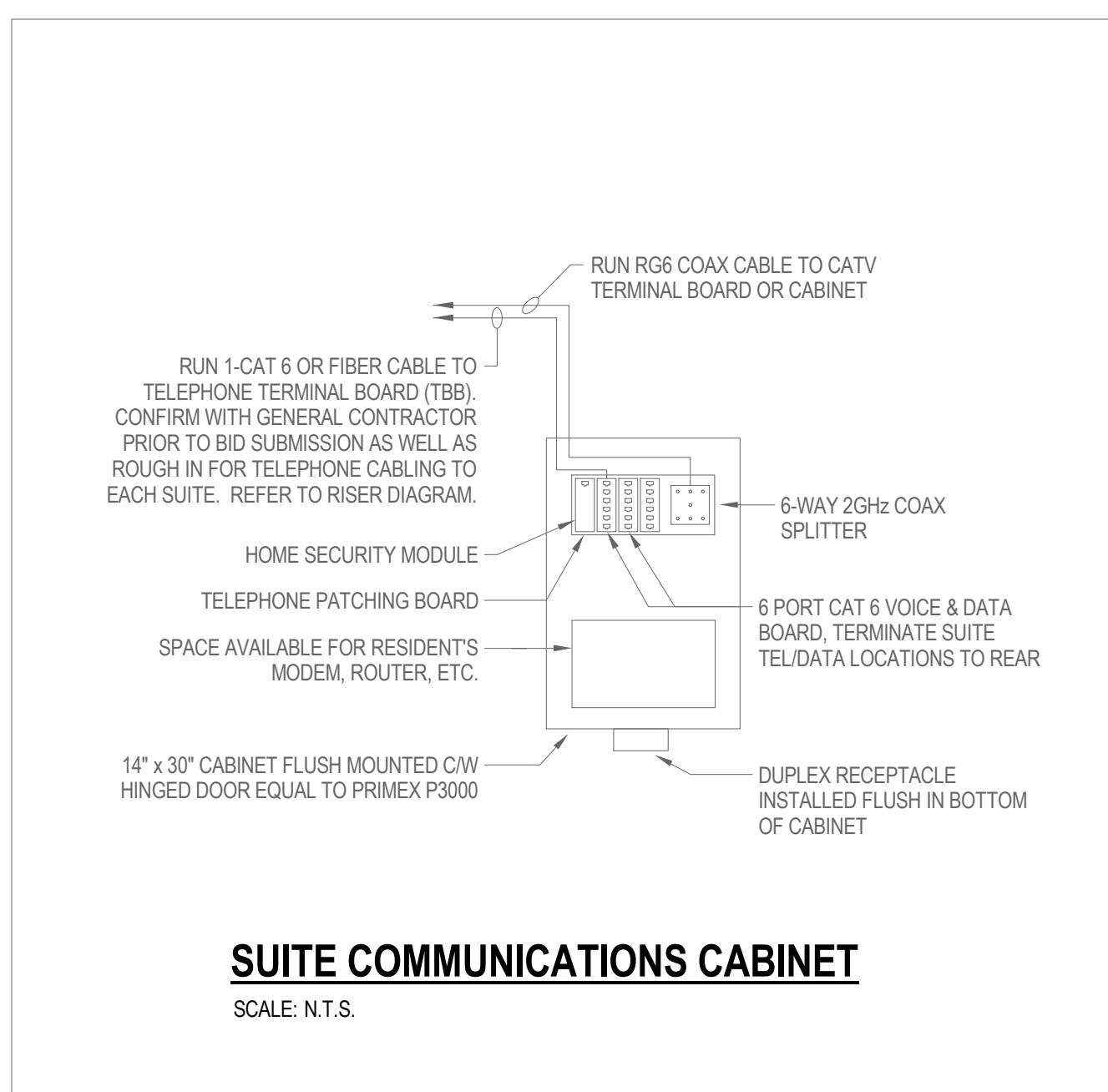
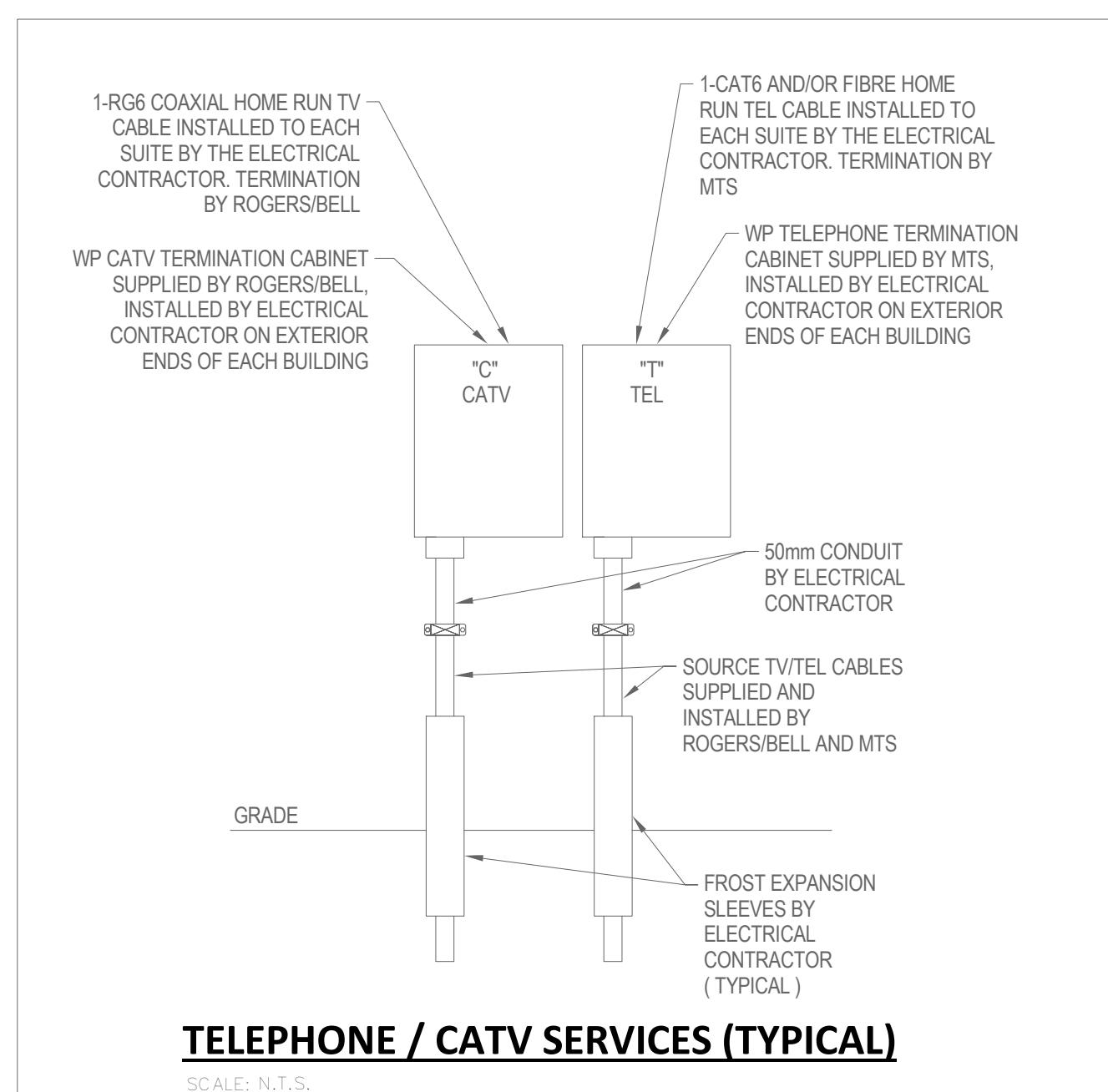
PROJECT NO: 241058
SCALE: 1:50

SHEET NO:
E202

DISCLAIMER
 This design was created for use solely as part of the CMHC Housing Design Catalogue. It is a sample of standardized housing design, reflecting general design intention only and does not incorporate any elements of other information specific to any location or project. This design is provided for illustrative purposes only and must not be used for construction or permitting purposes. In using this design, you are responsible for your compliance with the Terms and Conditions, including but not limited to engaging the services of a Qualified Professional.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	MODEL NUMBER	VOLTAGE	WATTAGE	LAMP	MOUNTING	DESCRIPTION
INTERIOR							
S1	BY CONTRACTOR	BY CONTRACTOR	120 V	21 VA	1815 LUMEN LED	SURFACE MOUNT	13" DIAMETER, WHITE FINISH, DIMMING
S2	BY CONTRACTOR	BY CONTRACTOR	120 V	15 VA	1300 LUMEN LED	SURFACE MOUNT	10" DIAMETER, WHITE FINISH, DIMMING
S3	BY CONTRACTOR	BY CONTRACTOR	120 V	10 VA	784 LUMEN LED	RECESSED	4" LED WET LISTED DOWNLIGHT, PHASE DIMMABLE SPRING CLIP MOUNTED CW UNIVERSAL MOUNTING PLATE
S4	BY CONTRACTOR	BY CONTRACTOR	120 V	30 VA	— LUMEN LED	WALL MOUNT	WALL MOUNT VANTY, TRIAC DIMMABLE, 3xMED BASE E26 SCREW-IN LAMPS
S5	BY CONTRACTOR	BY CONTRACTOR	120 V	10 VA	650 LUMEN LED	RECESSED	4" RECESSED LED OPEN DOWNLIGHT - REGRESSED BAFFLE, SPRING CLIP CW UNIVERSAL MOUNTING PLATE
SX1	BY CONTRACTOR	BY CONTRACTOR	120 V	10 VA	784 LUMEN LED	RECESSED	4" LED WET LISTED DOWNLIGHT, PHASE DIMMABLE SPRING CLIP MOUNTED CW UNIVERSAL MOUNTING PLATE
SX2	BY CONTRACTOR	BY CONTRACTOR	120 V	23 VA	2983 LUMEN LED	WALL MOUNT	DECORATIVE WALL SCONCE - ABOVE GARAGE DOOR



SUITE METER WIRING TYPICAL (4 METERS)

1 03/26/25 ISSUED AS PROTOTYPICAL DRAWING
 NO. DATE DESCRIPTION
 PROJECT: CMHC HOUSING DESIGN CATALOGUE

NOT FOR PERMIT OR CONSTRUCTION

SHEET TITLE: AB FOURPLEX 01 - DETAILS

PROJECT NO: 241058
 SCALE: N.T.S.

SHEET NO: E300

ELECTRICAL CONTRACTOR GENERAL REQUIREMENTS

General Requirements, Division 1, shall form part of this Division, and all instructions to bidders, General Conditions, amendments thereto, and General Requirements of that Division apply to and govern the work of this Division.

- This section contains requirements applicable and supplementary to other Divisions, and are to be read in conjunction with these Divisions.
- "Utility" as used hereafter means the electrical power supply company, telephone supply company, these network supply company and cable TV supply company.
- The electrical installation shall adhere to the latest edition of the Canadian Electrical Code (CEC), applicable building code, and all other codes in force by the local Authority Having Jurisdiction (AHJ).
- Electrical drawings and these specifications are complementary to each other. Treat discrepancies between them as requirement to adhere to the most restrictive conditions. Contact Engineer 5 days prior to tender close if discrepancies or omissions are found.
- Provide labour, materials, tools, equipment, and transportation required for the complete installation and testing of all systems described herein.
- Conduct all electrical work in accordance with the applicable codes, devices and drawings from architectural and structural drawings. Make any necessary adjustments to accommodate structural and architectural conditions without additional charge. Notify engineer prior to commencement.
- Materials are to be new, unless to the quality specified, and conform to standards issued by CSA, ULC, or any other Canadian standards agency.
- Where materials are specified by technical description, provide the best commercial qualities available for the purpose.
- Maintain uniformity of material, type, and style within a particular group or class of equipment throughout the work.
- All work and materials covered by these specifications shall be subject to inspection at any time and at all times by the Engineer or the Owner's representative. If the inspection finds any material that does not conform to the above specifications, the Electrical Contractor, within 3 days after being notified by the Engineer or Owner, remove the material from the premises and is not entitled to any additional charge.
- Notify Engineer of all inspection required by him at least 48 hours in advance.
- Provide all necessary measurements and assistance to Engineer on his visits to the site at any phase of the project, including after completion.
- No deviations from the drawings shall be permitted without written permission from the Engineer.
- Workmanship

 - All work is to be executed in a neat and orderly manner, with all surface conduit following building lines, and concrete-embedded conduit having minimum 25% of slab thickness coverage. Coordinate with structural engineer.
 - Keep competent foreman on the project for its duration, unless able to provide satisfactory reasons for changing that person.
 - Tradesmen under foreman, including specialty electrical sub-trades, are to be competent in all aspects of work to which they are assigned. Specialty sub-trades include, but may not be limited to, audio/visual systems, video/data infrastructure (provide copy of workers' certification by equipment manufacturer), public address, intercommunication, security/access control, and lighting control.
 - Do not remove device boxes based on Electrical drawings unless dimensions are shown. Determine placement of device boxes from Architectural drawings. If placement is not shown, consult with Architect or Engineer for clarification.
 - Provide device boxes horizontally and vertically so the centrelines align. Boxes on opposite sides of a wall are to be separated by at least one stud space, unless directed otherwise, or provide sound-deadening material between them.
 - Locating devices 3 meters or less from position shown on drawings as directed by engineer at rough-in shall not entitle contractor to any extra charges.
 - Protect all finished and unfinished work and equipment.
 - Any damage by this contractor to be repaired at the expense to Owner.
 - Provide and protect electrical equipment required by Owner.
 - Where applicable, repair any damage to equipment.
 - All newly installed equipment to be left clean and in new condition at the completion of the project.
 - Excavating, Backfilling, etc.
 - All electrical underground work requiring excavating, trenching, etc. shall be the responsibility of the electrical contractor.
 - All underground work to be coordinated with Utility companies and General Contractor.
 - Provide 300mm of screen sand above 80mm of clean screen sand as base for conduits. Provide 300mm of screen sand on top of conduits prior to backfilling.
 - Where underground conduits require protection, Provide 75mm of concrete encasement. Electrical contractor to confirm with utility companies, and local inspection department, requirements of encasement prior to backfilling.
 - It is the responsibility of the electrical contractor to notify the inspection department prior to backfilling.
 - Prior to commencing any work, the electrical contractor is responsible for reviewing all mechanical / electrical services including deep service to avoid any possible conflict. Refer to Mechanical and Civil drawings prior to starting work.
 15. Site / Preliminary drawings in order to ensure working conditions. No extra will be paid based on site or working conditions.
 16. Provide fixtures, inserts, etc. as required, to General Contractor or place them in concrete, and supervise their placement. Correct incorrect placement at own expense.
 17. Remove daily debris and surplus materials resulting from this trade's work.
 18. No consideration will be given to requests for extra materials or equipment substitution due to late ordering of material, including delays due to rejection of shop drawings.

SHOP DRAWINGS SUBMITTALS

1. All shop drawings shall be manufacturers' data sheets and information. Provide shop drawings in electronic/PDF format. No facsimiles, screen captures, blank catalogue pages, or poor quality reproductions will be accepted.

2. Include only information relative to the equipment for which the shop drawing is submitted. Where equipment choices exist on cut sheets, indicate the proposed equipment with arrows or highlighting. Additionally, provide a list of the submitted equipment. Shop drawings to clearly state equipment designations.

3. All shop drawings submitted to the Engineer must bear the approvals of the Contractor prior to engineer review. Work shall not proceed with items until Engineer's reviews are complete and shop drawings are reviewed.

4. Consultant's review will be for conformity with the design concept and requirements of any and all related construction documents, and that the materials suit the site conditions and fit in the available space.

5. Supply shop drawings for at least the following items or item types:

- A. Distribution and sub-distribution panels, panelboards, disconnect switches, transformers, SPDs, circuit breakers, fuses, and their characteristics, instrument transformers, protective relays, etc., and complete fault and coordination study.
- B. Motor control equipment, including starters, contactors, overload heaters, control relays, time-delay relays, motor circuit and control fuses and breakers, pilot lights, control transformers, and selector switches.
- C. All light fixtures and controls (line/voltage controls).
- D. All low voltage systems' components including fire alarm, structured cabling, etc.
- E. Wiring and cabling devices including receptacles, switches, floor boxes, power poles, cable tray, data racks, UPS systems, and disconnect switches.
- F. Emergency gasket and switch equipment (where specified).
- G. Firestopping system and details. (See firestop section below).

ALTERNATES

1. No alternates will be allowed without written acceptance on alternate submittals from the engineer prior to close of tender.

2. The contractor remains solely responsible for ensuring that the materials meet or exceed the requirements of any and all related construction documents, and that the materials suit the site conditions and fit in the available space.

PERMITS, CERTIFICATES, AND FEES

1. Obtain, pay for, and submit all permits and necessary documents (including drawing approvals by the Electrical Inspection Authority) necessary for the electrical work to commence.

2. On completion of the work, submit a Certificate of Acceptance from the Inspection Authority to the Engineer.

FIRE STOPPING

1. The electrical contractor, in coordination with the general contractor, is responsible for the installation of all fire stopping systems relating to electrical penetrations through fire rated ceilings, wall or assemblies. The fire stopping systems utilized, shall maintain an effective barrier against the spread of flames, smoke and hot gases and shall have passed the CANULC-S115 approved testing procedure.

2. The electrical contractor must provide adequate notification to the electrical engineer that firestopping has been completed to allow for field observations and reporting prior to concealment.

3. Submit shop drawings for approval of all fire stopping system details, including but not limited to, product manufacturer's specifications, technical data for each material and CUL approved documentation.

PROCESS CLAIMS, EXTRAS, AND CREDITS

1. Immediately after award of contract, provide Engineer with an itemized schedule of the tender price, with major items, milestones, etc. as line items (examples: Mobilization, Conduit, Service Equipment, Luminaires, Wiring, Voice/Data system shown), totaling to the quoted total price. Thereafter, when submitting progress claims, this schedule shall be used, and claims shall be made based upon percentage completion of each item. Extras or credits shall be shown added or deleted to contract.

2. Any claim for progress or extras of proposed electrical changes must be accompanied by a complete breakdown of labour and materials, together with explanation of any conditions, requirements, and costs of the proposed changes. Submit information in writing to the immediate supervisor of the claim or other.

A. Such claim must show quantities, unit prices, labour rates and hours, suppliers' invoices, and any other substantiating documentation.

B. All equipment and material related to a claim must be installed or stored on site in a secure and safe location.

C. Where agreement cannot be arrived at, claims are to be dealt with under General Conditions, and proposed changes are to be directed as writing.

INSPECTIONS AND TESTS

1. Before energizing any portion of the electrical system, provide and pay for testing equipment as part of this contract to perform 1000 volt megger tests (L-L, L-N, L-G) on all feeders and branch circuits, and verify that results conform to the Canadian Electrical Code, and to the satisfaction of the Inspection Authority and to the Engineer.

2. Contact the Engineer for field reviews at the following stages of construction (provide 5 (five) working days notice):

- A. Foundation.
- B. Substantial Completions.
- C. Completion of Deficiencies (if required).

2. The following items are to be completed prior to substantial inspection:

- A. Fire alarm verification report from manufacturer's representative and witnessing engineer's certificate to be completed. Send copies to Engineer.
- B. Connection of fire alarm system to central monitoring agency as per ULC-S561 to be complete and operational with certificate.
- C. All electrical equipment to be tested, operational and fully charged as per drawings. Contractor to conduct load test prior to review.
- D. All devices not installed must have wiring terminated inside a junction box or raceway (no exposed wiring).
- E. All electrical equipment to have covers and doors installed.

3. Failure to inform the Engineer of construction progress as described above may result in the Engineer being unable to issue an "Assurance of Professional Review and Compliance" (Schedule 'C') to the local building authority which is required for occupancy.

4. Cost for additional site reviews being required due to failure to comply with these requirements will be charged to the contractor.

AS-BUILT DRAWINGS

1. Maintain at the job site, one set of prints on which is recorded, day-by-day, all outlets, conduit, fixtures, and equipment as installed; together with any changes made to the work. Checking of progress on the preparation of the as built drawings will be carried out by the supervising Engineer regularly.

2. Dimension underground services installed relative to the structure, clearly dimension and mark, to ensure ease of locating at future date, all concealed conduits and/or other equipment.

3. Upon completion, obtain the most current floor plan from the engineer and transpose all as-built markings onto a clean set and scan to PDF.

OPERATION AND MAINTENANCE MANUALS

1. Provide to the Owner electronic copy of C&M Manuals for the electrical systems and equipment in PDF format. PDF shall be organized with bookmarked chapters and sections. Manuals to include written system description and operating procedures, drawing list, maintenance and installation brochures, test certificates, start-up reports, maintenance schedules, shop drawings, warranty letter, list of subcontractors and equipment suppliers, CWB addresses and phone numbers. Instruct the Owner in the operation and maintenance of the electrical systems. A suitable deficiency holdback will be retained until the above and related contract close-out requirements are completed.

GUARANTEE/WARRANTY

1. All electrical equipment and systems installed and connected shall be guaranteed free of defective material and workmanship for a period of the greater of one year or any manufacturer offered extended warranty on specific items or systems, with time started from date of substantial completion (or system start-up, if later than substantial completion). Any defects shall be remedied without cost to Owner during this period.

2. Provide documents of guarantee/warranty in the Q&M Manuals, stating commencement of warranty period. Any manufacturer's extended warranty/warranties shall be provided as part of these documents, and drawn to the Owner's notice on issuance of manuals.

IDENTIFICATION and LABELING

1. All items of electrical equipment such as power, lighting, signal, telephone panels, disconnect switches, manual and automatic control devices, etc., shall have nameplates. These nameplates shall be, unless otherwise specified, black and white, plastic laminated with engraved white lettering. Nameplates shall be neat and uniform in appearance.

2. Nameplates shall indicate the use and voltage of equipment, as specified and shown on the drawings.

A. Panels: Voltage, phase, identification

B. Low Voltage Panels: System name

C. Manual Controls: Name of equipment controlled

D. Automatic Controls: Identify as on drawings

3. Disconnect panels shall have identification and individual nameplates indicating each circuit's use.

4. Branch circuit panels shall have type circuit identifiers behind clear plastic on the inside of the panel door.

5. Identify all receptacle covers with clear self-adhesive Mylar tape with black lettering indicating panel and circuit number (i.e. "A25"). Alternatively, covers shall be mechanically engraved.

6. All fuse disconnects and breakers with adjusted trip settings to have lamacod label stating "MOPC_ _A".

7. Identification of Panels and Junction Boxes:

A. Each panel, junction box and junction box cover shall be colour identified by system type carried:

a. 120/208 V Red

b. 277/480 V Maroon

c. 347/600 V Sand

d. High voltage (above 750 V) Orange

8. Conductors to be colour coded per following schedule for 120V and above:

a. Phase A' Red

b. Phase B' Black

c. Phase C' Blue

d. Neutral White

Ground Green

GROUNDING and BONDING

1. Provide system ground via ground rod network in accordance with CEC Section 10 and Table 16.

2. Ground rods to be 19mm x 300mm, install minimum of three rods spaced 300mm apart.

3. Maximum resistance to ground shall be 20 ohms.

4. Buried grounding conductors shall be #20 AWG copper. Use approved connection method only, refer to local inspection department and utility service provider requirements.

5. All metal equipment and piping shall be bonded to ground shall be sized according to CEC Table 16.

6. Bond all electrically powered equipment to ground using suitable connectors. Equipment bonding conductors shall be sized according to CEC Table 16.

7. Install #12 green ground wires in all conduits.

8. Bond all cable-tray sections together as required by CEC Section 12-2008.

9. Bond incoming gas and water pipes with size #6 AWG to main building ground.

10. All metal fixtures, jacks, hot tubs and spas as per CEC Section 18. Ensure all metal parts, railings, fittings, re-bar have been properly bonded to ground and inform both the electrical inspection department having jurisdiction and electrical engineer when completed to facilitate inspection prior to concealment. Coordinate additional requirements with pool supplier.

11. Provide bonding bus bar or clw all telephone/TV backboards, communications cabinets, and data racks. Bond all wall or free standing data racks to ground with #6 green insulated ground wire.

RACEWAYS and JUNCTION BOXES

1. Conductors of rigid steel, electric metallic tubing (EMT), rigid PVC, DB-2, high-density polyethylene (HDPE) Flex tubing or liquid-tight flex.

2. Minimum conduit size to be 21mm (3/4") unless specifically noted otherwise.

3. Bushings to be installed on all metal conduit.

4. Direct buried conduits to be rigid PVC, EMT, DB-2 or plastic approved "Core-Flex" tubing.

5. Conduits installed in concrete slab to be rigid PVC, EMT, DB-2 or plastic approved "Core-Flex" tubing.

6. All metal conduits to be clearly labeled on both ends and have pull cord installed.

7. All empty conduits to be clearly labeled on both ends and have pull cord installed.

8. Provide water-tight fittings, conduit and junction boxes for all wet bay, exterior installations and damp locations.

9. Provide explosion proof approved conduits, fittings, seals and boxes in all classified areas as required by CEC.

10. All EMT strap, couplings and connectors to be zinc plated steel unless otherwise specified by the engineer.

11. Racers, junction boxes to be identified and colour coded as per identification and Labeling section, this specification.

12. All conductors, junction boxes and couplings to be identified and colour coded as per identification and Labeling section.

13. All wiring to be "swaged" clean and properly capped off if installed for future use. Mark on as-built drawings, exact location of all underground conduits.

14. All conduits, junction boxes to be concealed. Conduit with engineer, where and if surface conduit and junction boxes will be allowed. Electrical contractor to coordinate with general contractor to provide labour force for all concrete slab and masonry installations. Use only approved man boxes and fittings.

15. It is the responsibility of the electrical contractor to provide and install any specialty recessed fittings or plates as shown as details in the electrical drawings.

16. All interior junction boxes to be rigid PVC, EMT, DB-2 or plastic approved "Core-Flex" tubing.

17. All lighting control wiring to be in conduit in open ceilings and inaccessible ceilings. Free-air wiring is permitted in accessible dropped ceilings. See "Conductors and Cables" for FT ratings.

CONDUCTORS and CABLES

1. Minimum line voltage conductor size is #12AWG copper. All conductors to be copper unless otherwise noted. Aluminum conductors shall be acceptable for sizes 200A and larger unless noted otherwise.

2. All wiring in plenum space must be rated FT6 unless installed in an enclosed raceway. All raceways installed in plenum space must meet the same rating.

3. Power conductors shall be RW00 PVC, 600V insulation unless indicated otherwise.

4. Armored Cable: To CSA C22.2 No. 51-14 (2018). Use in concealed and dry locations only.

5. TECK 90 Cable: To CSA C22.2 No. 131 and No.174. Use where specified.

6. FEP Cable: To CSA C22.2 No. 123, use for wiring installations between VFD and motor terminals.

7. Full size copper ground conductors.

8. Fiberglass shield or dual spiral copper tape shielding.

9. Non-Metallic Sheathed Cable: To CSA C22.2 No. 48-M90 and as follows:

A. Insulation: PVC NMN030, 300V insulation

B. Control Cable: To CSA C22.2 No. 51-14 (2018). Use in concealed and dry locations only.

C. Armored Cable: To CSA C22.2 No. 131

D. FEP Cable: To CSA C22.2 No. 123

E. Use only approved fire retardant cables.

F. Use only approved fire retardant cables and fittings when terminating cables.

G. Use only approved fire retardant cables and fittings when terminating cables.

H. All low voltage wiring in non-combustible buildings permitted to be installed free air with appropriate cable support (maximum spacing 5'). For wall and inaccessible ceiling spaces provide conduit/raceway.

I. Neutral conductors to be fully rated. De-rating of any neutral conductors is not acceptable.

J. Use only approved fire retardant cables and fittings when terminating cables.

K. Use only approved fire retardant cables and fittings when terminating cables.

L. Use only approved fire retardant cables and fittings when terminating cables.

M. Use only approved fire retardant cables and fittings when terminating cables.

N. Use only approved fire retardant cables and fittings when terminating cables.

O. Use only approved fire retardant cables and fittings when terminating cables.

P. Use only approved fire retardant cables and fittings when terminating cables.

Q. Use only approved fire retardant cables and fittings when terminating cables.

R. Use only approved fire retardant cables and fittings when terminating cables.

S. Use only approved fire retardant cables and fittings when terminating cables.

T. Use only approved fire retardant cables and fittings when terminating cables.

U. Use only approved fire retardant cables and fittings when terminating cables.

V. Use only approved fire retardant cables and fittings when terminating cables.

W. Use only approved fire retardant cables and fittings when terminating cables.

X. Use only approved fire retardant cables and fittings when terminating cables.

Y. Use only approved fire retardant cables and fittings when terminating cables.

Z. Use only approved fire retardant cables and fittings when terminating cables.

AA. Use only approved fire retardant cables and fittings when terminating cables.

BB. Use only approved fire retardant cables and fittings when terminating cables.

CC. Use only approved fire retardant cables and fittings when terminating cables.