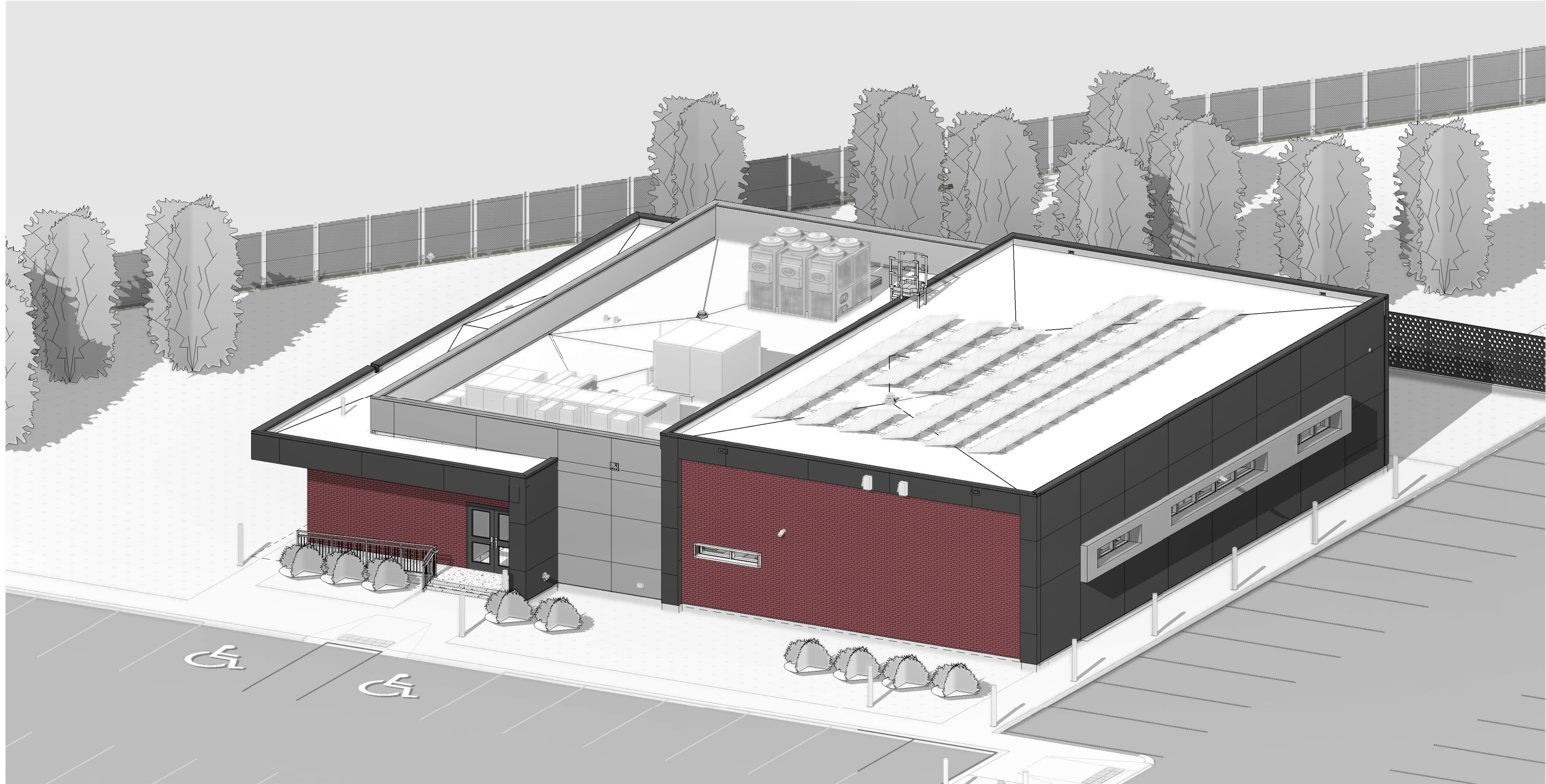


## Appendix D - Tender Package Drawings





SHEET LIST - ARCHITECTURAL	
SHEET#	SHEET NAME
A000	COVER SHEET AND DRAWING INDEX
A001	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS
A002	LIFE SAFETY AND OBC MATRIX
A003	BUILDING ASSEMBLIES
A004	DOOR AND WINDOW SCHEDULE
A101	DEMOLITION SITE PLAN
A102	NEW SITE PLAN AND HOARDING
A103	ENLARGED NEW SITE PLAN
A111	FLOOR PLAN
A112	ROOF PLAN
A121	FURNITURE, FIXTURES, AND EQUIPMENT PLAN
A131	REFLECTED CEILING PLAN
A141	FINISHES PLAN
A201	BUILDING ELEVATIONS
A202	BUILDING ELEVATIONS
A301	BUILDING SECTIONS
A311	WALL SECTIONS
A312	WALL SECTIONS
A313	WALL SECTIONS
A400	ENLARGED PLAN AND DETAILS - UNIVERSAL WASHROOM
A401	ENLARGED PLAN AND DETAILS - WASHROOMS & JANITOR
A402	ENLARGED PLAN AND DETAILS - KITCHEN
A403	ENLARGED PLAN AND DETAILS - LIFT AND STAIRS
A404	ENLARGED PLAN AND DETAILS - CORRIDOR
A405	FACADE DETAIL
A701	INTERIOR PLAN DETAILS
A702	INTERIOR SECTION DETAILS
A703	INTERIOR SECTION DETAILS
A704	INTERIOR SECTION DETAILS
A705	EXTERIOR PLAN DETAILS
A706	EXTERIOR SECTION DETAILS
A707	EXTERIOR SECTION DETAILS
A708	EXTERIOR SECTION DETAILS
A709	EXTERIOR SECTION DETAILS - WINDOW OPENINGS
A710	EXTERIOR SECTION DETAILS - DOOR OPENINGS
A711	ROOF DETAILS
A712	ROOF DETAILS
A713	LADDER DETAILS
A714	MILLWORK DETAILS
A810	FLOOR FINISH TRANSITION DETAILS
A900	SLAB EDGE DRAWING
A910	ROOF DECK EDGE DRAWING

SHEET LIST - CIVIL	
SHEET#	SHEET NAME
C101	EXISTING CONDITIONS, REMOVALS AND EROSION AND SEDIMENT CONTROL PLAN
C102	PROPOSED SITE GRADING
C103	PROPOSED SITE SERVICING
D100	GENERAL CIVIL DETAILS
D200	GENERAL CIVIL NOTES
D300	STORMTECH DETAILS
D301	STORMTECH DETAILS
D302	STORMTECH DETAILS
D303	STORMTECH DETAILS
D304	STORMTECH DETAILS
FIGURE 4	POSTDEVELOPEMNT SWM CATCHMENT PLAN

SHEET LIST - LANDSCAPE	
SHEET#	SHEET NAME
L101	LANDSCAPE SITE PLAN
L501	LANDSCAPE DETAILS
L502	LANDSCAPE DETAILS

SHEET LIST - MECHANICAL	
SHEET#	SHEET NAME
M001	MECHANICAL SITE PLAN
M002	SYMBOLS, LEGENDS, ABBREVIATIONS
M003	SCHEDULES (1 OF 2)
M004	SCHEDULES (2 OF 2)
M100	ROOF PLAN
M200	GROUND FLOOR PLAN - UNDERSLAB PLUMBING
M201	GROUND FLOOR PLAN - PLUMBING
M301	GROUND FLOOR PLAN - FIRE PROTECTION
M401	GROUND FLOOR PLAN - HVAC
M451	GROUND FLOOR PLAN - HVAC PIPING
M501	SCHEMATICS - PLUMBING & GAS
M502	SCHEMATICS - FIRE PROTECTION
M503	SCHEMATICS - HEATING WATER & CHILLED WATER
M504	CONTROL SCHEMATICS - GENERAL
M505	CONTROL SCHEMATICS - CRAC, RTU-1, FCU
M506	CONTROL SCHEMATICS - HRU-1
M507	CONTROL SCHEMATICS - HEATING AND CHILLED WATER PLANT
M601	MECHANICAL ROOM
M701	DETAILS
M702	DETAILS
M703	DETAILS

SHEET LIST - STRUCTURAL	
SHEET#	SHEET NAME
S001	STRUCTURAL GENERAL NOTES
S002	TYPICAL DETAILS (1)
S003	TYPICAL DETAILS (2)
S004	TYPICAL DETAILS (3)
S005	TYPICAL DETAILS (4)
S006	TYPICAL DETAILS (5)
S101	FOUNDATION AND GROUND FLOOR PLAN
S111	ROOF FRAMING PLAN(T/O STEEL EL. 50.0)
S201	ELEVATIONS
S202	ELEVATIONS
S301	SECTIONS
S601	SCHEDULE

SHEET LIST - ELECTRICAL	
SHEET#	SHEET NAME
E001	ELECTRICAL LEGEND & ABBREVIATIONS 1 of 3
E002	ELECTRICAL LEGEND & ABBREVIATIONS 2 of 3
E003	ELECTRICAL LEGEND & ABBREVIATIONS 3 of 3
E004	LUMINAIRE SCHEDULE 1 OF 2
E005	LUMINAIRE SCHEDULE 2 OF 2
E101	ELECTRICAL SITE PLAN
E102	ELECTRICAL DETAILS
E201	GROUND FLOOR LIGHTING PLAN
E202	ROOF LIGHTING PLAN
E203	LIGHTING CONTROL DEVICE SCHEDULE AND LIGHTING CONTROL SEQUENCE OF OPERATION
E204	LIGHTING CONTROL DETAILS
E301	GROUND FLOOR POWER PLAN
E302	ROOF POWER PLAN
E401	GROUND FLOOR FIRE ALARM PLAN
E502	FIRE ALARM RISER DIAGRAM
E701	GROUND FLOOR COMMUNICATIONS PLAN
E702	ENLARGED IT ROOM LAYOUT
E703	COMMUNICATIONS RISER DIAGRAMS
E704	COMMUNICATIONS DETAILS 1/2
E705	COMMUNICATIONS DETAILS 2/2
E801	GROUND FLOOR SECURITY PLAN
E802	CCTV RISER DIAGRAM AND SCHEDULE
E803	ACCESS CONTROL RISER DIAGRAM AND SCHEDULE
E804	INTRUSION ALARM RISER DIAGRAM AND SCHEDULE
E805	CCTV VIDEO SURVEILLANCE DETAILS
E806	ACCESS CONTROL DETAILS
E807	INTRUSION ALARM DETAILS
E901	SINGLE LINE DIAGRAM
E910	PANEL SCHEDULES
E911	PANEL SCHEDULES 2
E912	PANEL SCHEDULES 3
E913	PANEL SCHEDULES 4
E914	PANEL SCHEDULES 5
FIGURE 4	POSTDEVELOPEMNT SWM CATCHMENT PLAN

## LOCATION MAP



## PROJECT DIRECTORY

### CLIENT

Nicole Menard, Senior Project Manager  
Niagara Region Police Service  
1815 Sir Isaac Brock Way  
Thorold ON L2V 4T7  
905-321-1688  
Nicole.Menard@niagararegion.ca

### ARCHITECT/COORDINATING PROFESSIONAL

Daniel Nedecki OAA NCARB MArch  
AECOM Canada Ltd.  
50 Sportsworld Crossing Rd  
Kitchener ON N2P 0A4  
226-750-5105  
daniel.nedecki@aecom.com

### CIVIL

Duncaun McLeod P.Eng.  
AECOM Canada Ltd.  
50 Sportsworld Crossing Rd  
Kitchener ON N2P 0A4  
519-503-6634  
duncaun.mcleod@aecom.com

### STRUCTURAL

Michael Pan P.Eng.  
AECOM Canada Ltd.  
50 Sportsworld Crossing Rd  
Kitchener ON N2P 0A4  
416-433-5316  
michael.pan@aecom.com

### MECHANICAL

Alex Penlington P.Eng.  
AECOM Canada Ltd.  
105 Commerce Valley Dr W  
Markham ON L3T 7W3  
905-747-7856  
alex.penlington@aecom.com

### ELECTRICAL

Massy Adel P.Eng.  
AECOM Canada Ltd.  
105 Commerce Valley Dr W  
Markham ON L3T 7W3  
289-451-1598  
massy.adel@aecom.com



# Niagara Region Police Service NG911 BACKUP CENTRE

5 LINCOLN STREET, WELLAND, ONTARIO

ISSUED FOR TENDER

2025-01-23

AECOM

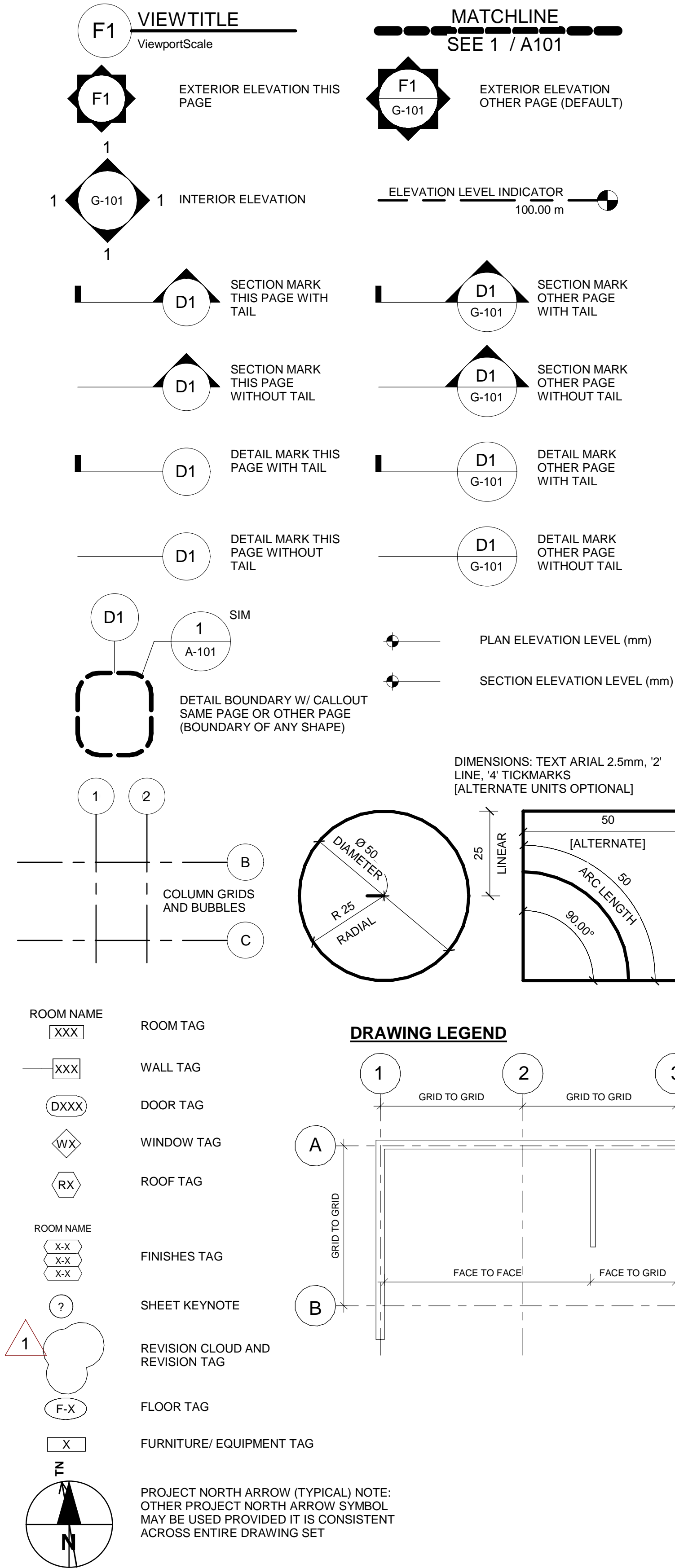
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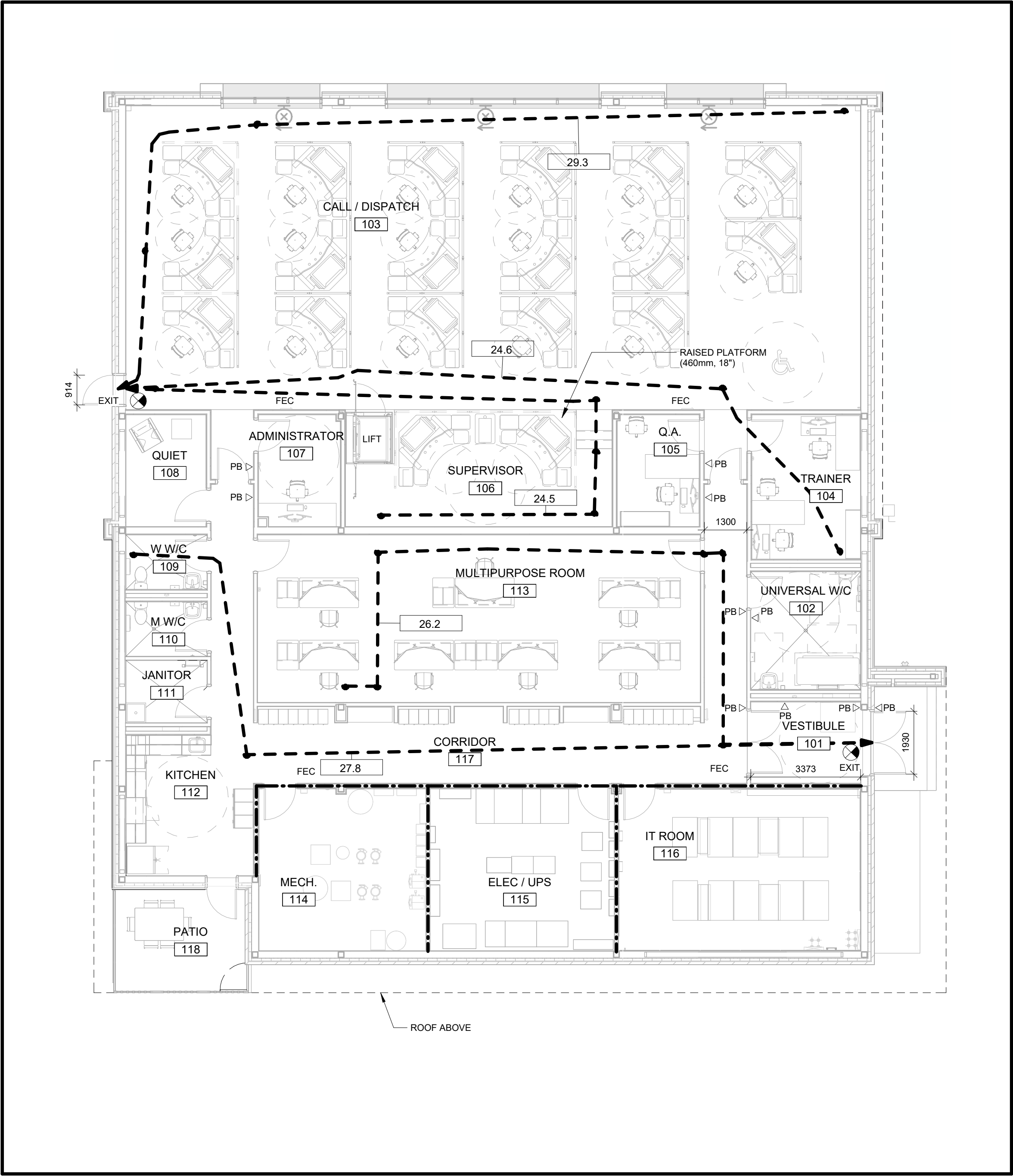
GENERAL NOTES

- 1
- ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ABBREVIATIONS, SYMBOLS, WALL TYPES AND GENERAL NOTES UNLESS NOTED OTHERWISE.
- 2
- ALL AREAS ARE IN SQUARE METERS AND ALL DIMENSIONS IN MILLIMETERS.
- 3
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012, NATIONAL BUILDING CODE 2020 AND ABIDE BY LOCAL MUNICIPAL BY-LAWS AND OTHER REGULATORY AGENCIES THAT MAY AFFECT THE WORK.
- 4
- ALL DIMENSIONS, ELEVATIONS, OPENINGS FOR PIPES, SLEEVES, EQUIPMENT LOCATIONS AND THE LIKE SHALL BE CHECKED WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. REPORT ANY DISCREPANCIES TO THE OWNER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THESE DRAWINGS.
- 5
- REVIEW THE SITE CONDITIONS AND ASSUME RESPONSIBILITY FOR EXISTING SERVICES (WATER; POWER; SEWAGE; GAS ETC.) THAT POTENTIALLY EXIST AT THE SITE.
- 6
- DESIGN AND PROVIDE ALL NECESSARY SHORING, SCAFFOLDING AND UNDERPINNING TO EXECUTE THE PROJECT SAFELY.
- 7
- CARE TO BE TAKEN DURING THE WORK TO NOT DAMAGE EXISTING SERVICES.
- 8
- TYPICAL FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
- 9
- PROVIDE BARRICADE AND SIGNS (TYPE AND SIZE AS PER SPECIFICATIONS AND NRPS REQUIREMENTS) TO PROTECT WORKERS AND WORK AREA DURING THE WORK.
- 10
- MAKE GOOD ANY DAMAGES DONE DURING CONSTRUCTION.
- 11
- FOR LOCATION OF EQUIPMENT BASES REFER TO OTHER DISCIPLINES' DRAWINGS. PROVIDE CONCRETE EQUIPMENT BASES 150mm WIDER OVERALL THAN EQUIPMENT.
- 12
- PROVIDE ACCESS PANELS AS REQUIRED BY STATUTORY REQUIREMENTS AND AS REQUIRED FOR MECHANICAL, ELECTRICAL, HYDRAULIC, FIRE PROTECTION EQUIPMENT. ALL ACCESS PANELS SHALL BE UNOBTUSIVE AND CONCEALED WHERE LOCATED IN PUBLIC AREAS.
- 13
- FOR LOCATION OF CCTV, ALARM, SYSTEM INSTALLATIONS AND SERVICE OUTLETS SEE ELECTRICAL DRAWINGS.
- 14
- WHERE SPECIFIC DIMENSION DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT WITH THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK. PRIOR TO COMMENCEMENT OF WORK REPORT ANY DISCREPANCIES TO THE ARCHITECT. VARIATIONS AND MODIFICATIONS TO WORK SHOWN WILL NOT BE ALLOWED WITHOUT THE WRITTEN PERMISSION OF THE ARCHITECT.
- 15
- ALL THE HOARDING IS TO BE PROVIDED AND INSTALLED BY G.C.
- 16
- DESIGN TO COMPLY WITH CITY BY-LAWS AND STANDARDS FOR "SAFETY CODES".
- 17
- ALL FURNITURE NOT IN CONTRACT IS SHOWN FOR REFERENCE ONLY. OWNER TO SUPPLY AND INSTALL LATER.
- 18
- ARCHITECTURAL F.F.E. AT 178.00 IS REPRESENTED AS LEVEL 0.00.
- 19
- PARAPET STUD FRAMING DELEGATED DESIGN BY OTHERS. REFER TO SPECIFICATIONS
- 20
- CONTRACTOR TO COORDINATE ROOF CURB LOCATION WITH MECHANICAL UNITS

GENERAL SYMBOL LEGEND







1 FLOOR PLAN - LIFE SAFETY  
A201 A002 1 : 100

LIFE SAFETY LEGEND:			
---	1 HOUR FIRE RESISTANCE RATING		
---	2 HOURS FIRE RESISTANCE RATING		
---	TRAVEL DISTANCE		
EXIT	EXITS. REFER TO ELECTRICAL FOR EXIT SIGNS & LOCATIONS		
FEC	FIRE EXTINGUISHER CABINET. COORDINATE W/ MECHANICAL		
PB	PUSH BUTTON DOOR OPERATORS		

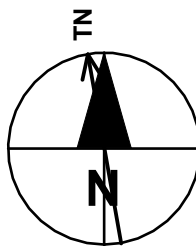
ITEM	2012 ONTARIO BUILDING CODE DATA MATRIX - PART 3						CODE REFERENCE				
							REFERENCES ARE TO DIV. B UNLESS NOTED [A] FOR DIV. A OR [C] FOR DIV. C				
01	PROJECT DESCRIPTION: NEW CONSTRUCTION OF 615SQM POLICE DISPATCH FACILITY				<input checked="" type="checkbox"/> NEW <input type="checkbox"/> ADDITION <input type="checkbox"/> ALTERATION		<input checked="" type="checkbox"/> PART 3 1.1.2.[A]	<input type="checkbox"/> PART 9			
02	MAJOR OCCUPANCY(S):  GROUP D - BUSINESS AND PERSONAL SERVICES						3.1.2.1.(1) APPENDIX "A"				
03	IMPORTANCE CATEGORY: <input type="checkbox"/> LOW <input type="checkbox"/> MED <input type="checkbox"/> HIGH <input checked="" type="checkbox"/> POST-DISASTER										
04	BUILDING AREA (m²):	EXISTING: 0 m²	NEW: 620 m²	TOTAL: 620 m²			1.4.1.2.[A]				
05	GROSS FLOOR AREA (m²):	EXISTING: 0 m²	NEW: 620 m²	TOTAL: 620 m²			1.4.1.2.[A]				
	INTERNAL MEZZANINE(S) AREA (m²):	EXISTING: 0 m²	NEW: 0 m²	TOTAL: 0 m²			3.2.1.1.(3) - (8)				
	EXTERNAL MEZZANINE(S) AREA (m²):	EXISTING: 0 m²	NEW: 0 m²	TOTAL: 0 m²							
	MEZZANINE 10% OR LESS ENCLOSED AREA (m²):	0 m²									
	MEZZANINE 40% OR MORE ENCLOSED AREA (m²):	0 m²									
06	NUMBER OF STOREYS:	ABOVE GRADE: 1	BELOW GRADE: 0			1.4.1.2.[A] & 3.2.1.1.					
07	BUILDING HEIGHT (m):	5.9 m				HIGH POINT	1.4.1.2.[A]				
08	NUMBER OF STREETS / FIRE FIGHTER ACCESS:	1				3.2.2.10. & 3.2.5.					
09	BUILDING CLASSIFICATION: 3.2.2.56 - GROUP D, UP 2 STOREYS, SPRINKLERED						3.2.2.56				
10	SPRINKLER SYSTEM PROPOSED:				<input checked="" type="checkbox"/> ENTIRE BUILDING		3.2.2.56				
					<input type="checkbox"/> SELECTED COMPARTMENTS		3.2.1.5.				
					<input type="checkbox"/> SELECTED FLOOR AREAS		3.2.2.17.				
					<input type="checkbox"/> BASEMENT ONLY		INDEX				
					<input type="checkbox"/> IN LIEU OF ROOF RATING		INDEX				
					<input type="checkbox"/> NOT REQUIRED						
11	STANDPIPE SYSTEM REQUIRED: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				HOSE CABINET LOCATION: N/A		3.2.9. 3.2.8.4.(1) 3.2.8.4.(2)(8)				
12	FIRE ALARM REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO				WATER SERVICE/SUPPLY IS ADEQUATE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		3.2.4.				
13	HIGH BUILDING: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				IF YES, REFER TO HIGH BUILDING REQUIREMENTS CHART		3.2.5.7.				
14	CONSTRUCTION RESTRICTIONS:						3.2.2.20. - 3.2.2.83.				
	REQUIRED: <input type="checkbox"/> COMBUSTIBLE PERMITTED <input type="checkbox"/> NON-COMBUSTIBLE <input checked="" type="checkbox"/> BOTH				PROVIDED: <input type="checkbox"/> COMBUSTIBLE <input checked="" type="checkbox"/> NON-COMBUSTIBLE <input type="checkbox"/> BOTH						
16	HAZARDOUS SUBSTANCES: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				BARRIER-FREE DESIGN: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		3.3.1.2. & 3.3.1.19.				
17	IF NO, EXPLAIN: WRITE EXPLANATION HERE						3.8.				
18	BARRIER-FREE ENTRANCES:						3.8.1.2.				
	NUMBER OF ENTRANCES REQ'D TO BE BARRIER FREE: 1				POWER DOOR OPERATORS REQ'D: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		3.8.3.3.				
19	REQUIRED FIRE RESISTANCE RATINGS:	HORIZONTAL ASSEMBLIES FIRE RESISTANCE RATINGS (F.R.R.)			LISTED DESIGN No. (ULC) OR ASSEMBLY DESCRIPTION (SB-2)						
		FLOOR: 0 (NON-COMBUSTIBLE)			FLOOR: N/A			3.2.2.56			
		ROOF: N/A			ROOF: N/A			3.2.2.56			
		MEZZANINE: N/A			MEZZANINE: N/A			3.2.2.56			
		FIRE RESISTANCE RATINGS OF SUPPORTING MEMBERS (F.R.R.)			LISTED DESIGN No. (ULC) OR ASSEMBLY DESCRIPTION (SB-2)						
		FLOOR: 0 (NON-COMBUSTIBLE)			FLOOR: N/A			3.2.2.56			
		ROOF: N/A			ROOF: N/A			3.2.2.56			
20	REQUIRED SEPARATION FIRE RESISTANCE RATINGS:	MEZZANINE: N/A			MEZZANINE: N/A			3.2.2.56			
		SPACE NAME:			REQUIRED RATING:		SPECIFIC REFERENCE(S):				
		SUITES			N/A						
		PUBLIC CORRIDORS			N/A						
		JANITOR ROOMS			0		3.3.1.20.(3)				
		SERVICE ROOMS			1		3.6.2.1.(1)				
		VERTICAL SERVICE SPACES			N/A						
21	EXITS:	HORIZONTAL SERVICE SPACES			N/A						
		ELEVATOR - HOISTWAY			N/A						
		ELEVATOR - MACHINE ROOM			N/A						
		EXITS - STAIR TOWERS			N/A						
		EXITS - CORRIDORS			N/A						
		LOBBY SEPARATION TO OTHER EXITS			N/A						
		MAXIMUM TRAVEL DISTANCE			45 m		3.4.				
		MAXIMUM DEAD END CORRIDOR			9 m		3.4.2.5.(1)(c)				
							3.3.1.9.(11)				
22	EXPOSED BUILDING FACE & SPATIAL SEPARATION:						3.2.3.				
	WALL FACE	AREA OF E.B.F. (m²)	AREA OF U.P.O. (m²)	LIMITING DISTANCE (m)	RATIO L/H OR H/L (1 : x)	PERMITTED MAX. % OF OPENINGS	PROPOSED MAX. % OF OPENINGS	REQUIRED F.R.R. OF WALL (HR)	LISTED DESIGN OR DESCRIPTION	NON-COMB. CONSTRUCTION REQ'D	NON-COMB. CLADDING REQ'D
	NORTH	154	13.6	19.7	1 : 4	100	8.83	N/A	-	NO	NO
	EAST	141	5	37.7	1 : 4	100	3.55	N/A	-	NO	NO
	SOUTH	154	2	10.7	1 : 4	100	1.3	N/A	-	NO	NO
	WEST	141	2.7	10.7	1 : 4	100	1.91	N/A	-	NO	NO
	REFERENCE: Table 3.2.3.1.D										
23	OCCUPANT LOAD:						3.1.17.		9.9.1.3.		
	(REFER TO OCCUPANT LOAD CHART FOR SPECIFICS)										
	OCCUPANT LOAD BASED ON: <input checked="" type="checkbox"/> m²/PERSON <input type="checkbox"/> DESIGN OF BUILDING										
	LEVEL:	OCCUPANCY:	AREA:	LOAD:	PERSONS:						
	LEVEL 01:	GROUP D - OFFICES	375 m²	9.3	41						
	TOTAL OCCUPANT LOAD: 41 PERSONS										
24	WASHROOM REQUIREMENTS:						3.7.4.		3.7.4.2.(1) (AREA PER PERSON IS 14 m²).		
	OCCUPANT LOAD FOR PLUMBING = 375 / 14 = 27 PERSONS						REQUIRED FIXTURES:		3.7.4.2.(7), Table 3.7.4.7 (UNIVERSAL COUNTS AS 1 MALE AND 1 FEMALE WASHROOM), 3.7.4.2.(8)(b)		
	LEVEL:	OCCUPANCY:	PERSONS:	MALE	FEMALE	MALE	FEMALE				
		LEVEL 01:	GROUP D - OFFICES	14 PER SEX	2	2	2	2			
	TOTALS: 1 UNIVERSAL, 1 MALE, 1 FEMALE										
25	EXIT WIDTH REQUIREMENTS						Table 3.1.17.1				
	EXIT WIDTH REQUIRED: 41 x 6.1 mm = 250.1 mm						3.4.3.2.(1)(a)				
	EXIT WIDTH PROVIDED: 1,930 mm + 965 mm = 2,995 mm										



AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario N2P 0A4

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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History

Filename: 2020.2.5

Project Number: 60686829  
Project Manager: John Page  
Project Administrator: BIM/MDC Manager:

Sustainability Target: LEED Silver  
Designed: Author  
Drawn: Author  
Reviewed: Author  
Checked: Allan Man  
Approved: Approver

Date (yyyy-mm-dd):  
Date (yyyy-mm-dd):  
Date (yyyy-mm-dd):  
Date (yyyy-mm-dd):

Title:

LIFE SAFETY AND OBC MATRIX

Page Size: ANSI D  
Scale: As indicated  
Sheet: A002  
Rev: F  
of:

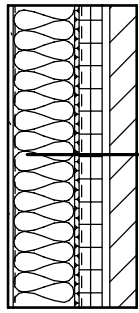


GENERAL NOTES

- ALL INTERIOR WALL PARTITIONS AND CEILINGS TO BE SEISMICALLY RESTRAINED.
- FOR CEILINGS AND SOFFITS PROVIDE ALL REQUIRED SEISMIC RESTRAINTS INCLUDING COMPRESSION STRUT, SEISMIC CLIP AND EDGE STRIP INCLUDING 2.5mm DIAMETER WIRE RATED FOR SEISMIC.
- ALL PARTITIONS SHOULD BE FULL-HEIGHT, SLAB TO SLAB.
- WHERE MULTIPLE LAYERS OF DRYWALL ARE USED, STAGGER THE JOINTS BETWEEN LAYERS.
- WHENEVER GWB MEETS ANOTHER MATERIAL, SEAL WITH ACOUSTICAL SEALANT.
- NO CONTINUOUS GWB LAYERS BETWEEN ROOMS, I.E. INTERRUPT AT ALL INTERSECTIONS.
- USE SOUND BARRIER PADS FOR ALL OUTLET BOXES IN SOUND RATED PARTITIONS.
- PROVIDE 5-SIDED GWB ENCLOSURES AROUND OUTLET/JUNCTION BOXES LARGER THAN FOUR-GANG.
- FILL PENETRATIONS THROUGH ACOUSTICALLY RATED PARTITIONS (DUCTS, PIPES, CABLE TRAYS ETC.) WITH BATT INSULATION AND/OR FIRE SAFING AND/OR SEAL AIRTIGHT WITH ACOUSTICAL SEALANT.
- AVOID RECESSED ELEMENTS IN STC 50 OR HIGHER PARTITIONS.
- USE MOISTURE RESISTANT GYPSUM ON ALL GYPSUM WALLS THAT ARE IN MOISTURE SENSITIVE AREAS SUCH AS WASHROOMS, SHOWERS, ETC.
- LIMITING HEIGHTS FOR PARTITIONS ARE APPROXIMATELY CALCULATED. CONTRACTOR TO VERIFY LIMITING HEIGHTS AND DEFLECTIONS AND ENSURE PARTITIONS ARE USED APPROPRIATELY.

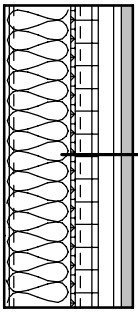
EXTERIOR WALL ASSEMBLIES:

EW1 - EXTERIOR WALL - BRICK ON METAL STUDS [425mm]



- 90mm BRICK VENEER w/ 10mm COURSE TYP.
- 25mm AIR SPACE
- 75mm ISO RIGID INSULATION (R-18)
- AIR BARRIER
- 16mm GYPSUM SHEATHING
- 203mm METAL STUDS @ 400 O.C.
- C/W BATT INSULATION (R-24)
- VAPOUR BARRIER
- 16mm GYPSUM BOARD

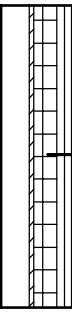
EW2 - EXTERIOR WALL - ACM PANELS ON METAL STUDS [425mm]



- 38mm ACM PANELS ( COLOUR AS SCHEDULED)
- 25mm FURRING CHANNELS @ 400 O.C.
- 127mm THERMALLY BROKEN VERTICAL CLIP @ 600mm O.C. VERT. AND 400mm O.C. HORIZ. C. W.
- 75mm ISO RIGID INSULATION (R-18)
- AIR BARRIER
- 16mm GYPSUM SHEATHING
- 203mm METAL STUDS @ 400 O.C. (R-24)
- C/W BATT INSULATION (R-24)
- VAPOUR BARRIER
- 16mm GYPSUM BOARD

\* USE 16mm CEMENT BACKER BOARD WHERE TILE IS BEING APPLIED

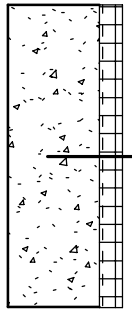
EW4 - EXTERIOR WALL - ALUMINUM SIDING ON METAL STUDS [245mm]



- 12mm ALUMINUM SIDING (LONGBOARD)
- 22mm FURRING CHANNELS @ 400 O.C.
- 102mm THERMALLY BROKEN VERTICAL CLIP @ 400 O.C. VERT. AND 600 O.C. HORIZ. C/W. 75mm ISO RIGID INSULATION
- 16mm GYPSUM SHEATHING
- 92mm METAL STUDS @ 400 O.C.

FOUNDATION WALL ASSEMBLIES:

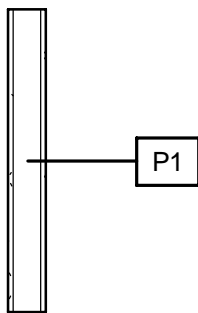
FW1 - STRUCTURAL FOUNDATION WALL



- CAST IN PLACE CONCRETE FOUNDATION WALL (SEE STRUCTURAL)
- 50mm INSULATION
- WATERPROOFING MEMBRANE

INTERIOR PARTITION ASSEMBLIES:

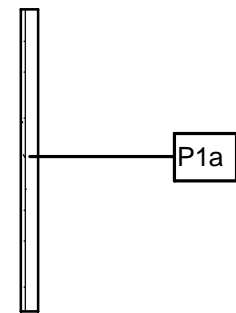
P1 - INTERIOR PARTITION [124mm] (1 HR F.R.R. - UL U 419)



- 16mm TYPE "X" GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- 16mm TYPE "X" GYPSUM BOARD

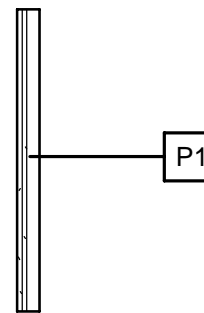
LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

P1a - INTERIOR FURRING [67mm]



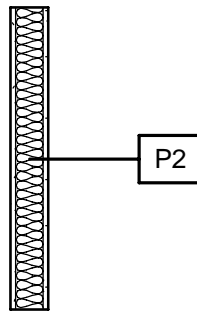
- 16mm GYPSUM BOARD
- 41mm METAL STUDS @400mm O.C.

P1b - INTERIOR FURRING [73mm] ( 1 HR F.R.R.)



- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD
- 41mm METAL STUDS @400mm O.C.

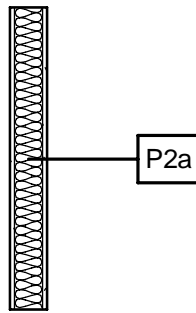
P2 - FULL HEIGHT INTERIOR PARTITION [124mm, STC 40]



- 16mm GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION
- 16mm GYPSUM BOARD

LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

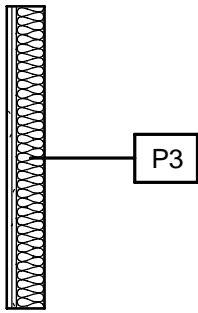
P2a - FULL HEIGHT INTERIOR PARTITION [124mm, STC 40]



- 16mm CEMENT BACKER BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION
- 16mm GYPSUM BOARD

LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

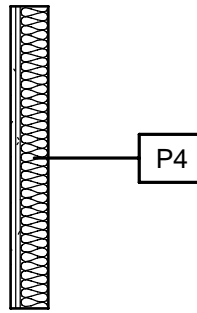
P3 - FULL HEIGHT INTERIOR PARTITION [124mm, STC 45/50]



- 2 LAYERS 16mm GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION

LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

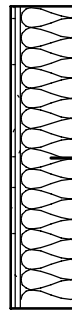
P4 - FULL HEIGHT INTERIOR PARTITION [124mm, STC 45/50]



- 1 LAYER 16mm CEMENT BACKER BOARD
- 1 LAYER 16mm MOISTURE RESISTANT GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION

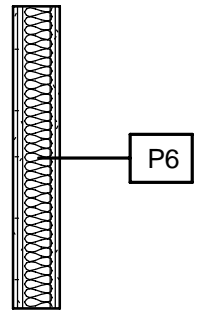
LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

P5 - FULL HEIGHT INTERIOR PARTITION [251mm, STC 45/50] (1HR F.R.R.)



- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD
- 203mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION
- 1 LAYER 16mm TYPE "X" GYPSUM BOARD

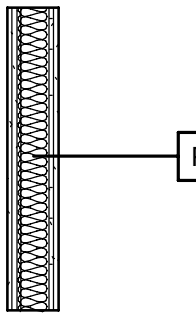
P6 - FULL HEIGHT INTERIOR PARTITION [156mm, STC 50] (2 HR F.R.R. - UL U 419.)



- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION
- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD

LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

P7 - FULL HEIGHT INTERIOR PARTITION [169mm, STC 60] (1 HR F.R.R. - UL U 419)

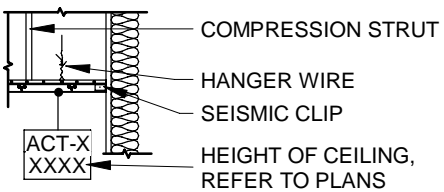


- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD
- 92mm METAL STUDS @400mm O.C.
- C/W MINERAL FIBRE ACOUSTIC BATT INSULATION
- 13mm RESILIENT SOUND ISOLATION CLIPS
- 2 LAYERS 16mm TYPE "X" GYPSUM BOARD

LIMITING HEIGHTS:  
5588mm L/240 ( for 5psf)  
4900 mm L/360 ( for 5 psf)

CEILING ASSEMBLIES:

TYPICAL ACOUSTIC TILE CEILING



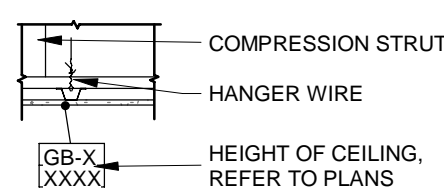
ACT-1 - CEILING

- 610 x 610 (ACT-1) ACOUSTIC CEILING TILE IN EXPOSED T-BAR SUSPENSION SYSTEM
- PROVIDE SYSTEM FOR SEISMIC RESTRAINT FOR CEILINGS

ACT-2 - CEILING

- 1220 x 1220 (ACT-2) ACOUSTIC CEILING TILE IN EXPOSED T-BAR SUSPENSION SYSTEM
- PROVIDE SYSTEM FOR SEISMIC RESTRAINT FOR CEILINGS

TYPICAL GYPSUM BOARD CEILING



GC-1 - TYPICAL GYPSUM CEILING ASSEMBLY

- STEEL GRID SUSPENSION FRAMING
- 16mm GYPSUM BOARD
- PROVIDE SYSTEM FOR SEISMIC RESTRAINT FOR CEILINGS

SOFFIT ASSEMBLIES:

AS-1 SOFFIT



- 92mm METAL STUD RUN PERPENDICULARLY TO THE ORIENTATION OF THE LONGBOARD
- 16mm EXTERIOR SHEATHING
- AIR BARRIER
- 102mm THERMALLY BROKEN HORIZONTAL CLIP @ 400 O.C. VERT. AND 600 O.C. HORIZ. C/W. 75mm ISO RIGID INSULATION
- 22 METAL FURRING CHANNELS @ 400 O.C. RUN PERPENDICULARLY TO THE ORIENTATION OF THE LONGBOARD
- 12mm ALUMINUM SIDING (WOOD PATTERN)
- PROVIDE SYSTEM FOR SEISMIC RESTRAINT FOR CEILINGS

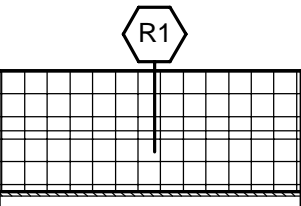
ACM-1 SOFFIT



- 41mm METAL STUD FRAMING
- 16mm EXTERIOR SHEATHING
- AIR BARRIER
- 78mm THERMALLY BROKEN HORIZONTAL CLIP @ 400 O.C. VERT. AND 600 O.C. HORIZ. C/W. 75mm ISO RIGID INSULATION
- 22 METAL FURRING CHANNELS @ 400 O.C.
- 38mm ALUMINUM COMPOSITE PANELS
- PROVIDE SYSTEM FOR SEISMIC RESTRAINT FOR CEILINGS

ROOF ASSEMBLIES:

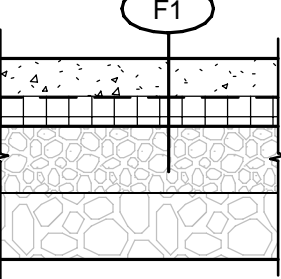
R1 - ROOF [ +/- 260mm]



- SBS MODIFIED BITUMINOUS MEMBRANE
- SBS MEMBRANE UNDERLAYMENT (PROTECTION BOARD)
- TAPERED INSULATION (REFER TO A112 FOR SLOPES)
- 200mm ISO RIGID INSULATION (R49)
- AIR/VAPOUR BARRIER
- 16mm GYPSUM ROOF BOARD
- METAL DECK (SEE STRUCTURAL)

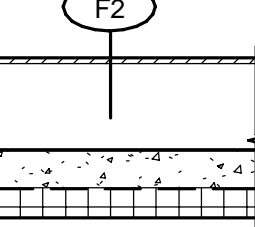
FLOOR ASSEMBLIES:

F1 - SLAB ON GRADE



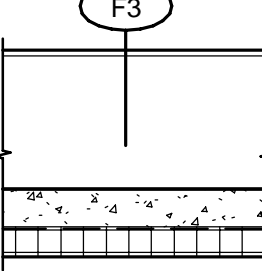
- CAST-IN-PLACE CONCRETE SLAB ON GRADE (SEE STRUCTURAL)
- CONTINUOUS VAPOUR BARRIER
- 100mm RIGID INSULATION (R24)
- GRANULAR 'A' FILL (SEE STRUCTURAL)
- GRANULAR 'B' FILL (SEE STRUCTURAL)

F2 - RAISED FLOOR SYSTEM [300mm]



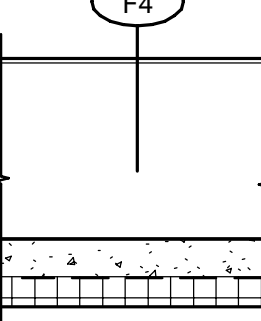
- 300mm RAISED FLOOR SYSTEM (FOR FLOOR COVERING SEE FINISHES PLAN)
- FLOOR TYPE F1 BELOW

F3 - RAISED FLOOR SYSTEM [460mm]



- 460mm RAISED FLOOR SYSTEM (FOR FLOOR COVERING SEE FINISHES PLAN)
- FLOOR TYPE F1 BELOW

F4 - RAISED FLOOR SYSTEM [600mm]



- 600mm RAISED FLOOR SYSTEM (FOR FLOOR COVERING SEE FINISHES PLAN)
- FLOOR TYPE F1 BELOW



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Kitchener, Ontario N2P 0A4

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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:  
60686829

Owner's Contract Number:  
987654321

Mark	Date	Description
F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Revision History			
Filename :		Version : 2020.2.5	
Project Number : 60686829		Project Manager : John Page	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target : LEED Silver		IPMS 1 (m²) :	IPMS 2 (m²) :
Designed : Designer		Date (yyyy-mm-dd) :	
Drawn : Author		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked: Allan Man		Date (yyyy-mm-dd) :	
Approved: Approver		Date (yyyy-mm-dd) :	

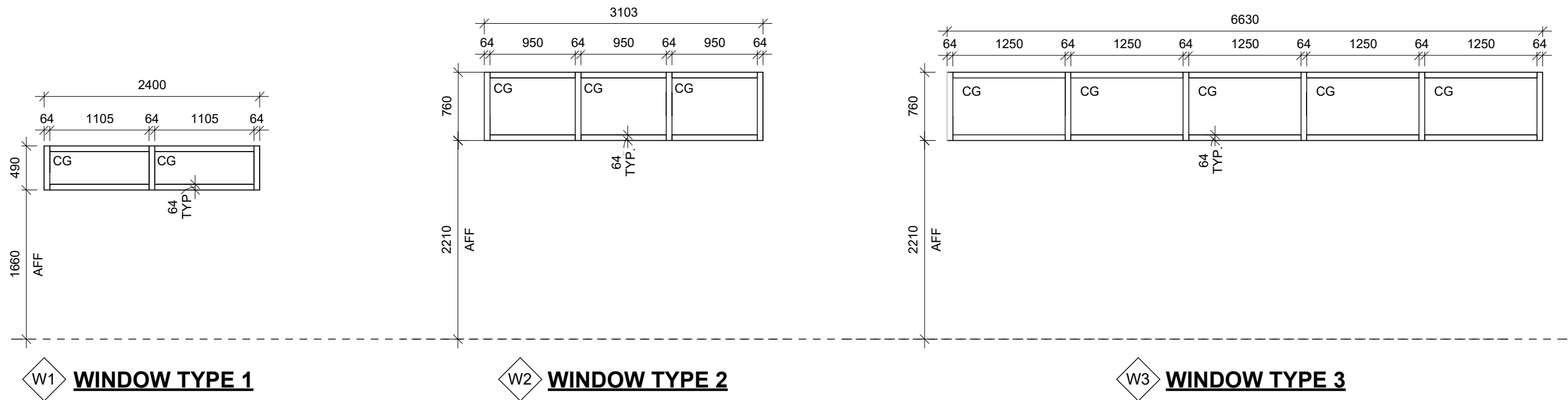
BUILDING ASSEMBLIES



Autodesk Docs/0P-AMER (CAN) 60686829-NRPS 911 Backup\_Dispatch/0686829-NRPS 911 Backup\_Dispatch - BLD - RVT24.rvt  
Print Date: 25/01/2025 15:50:44  
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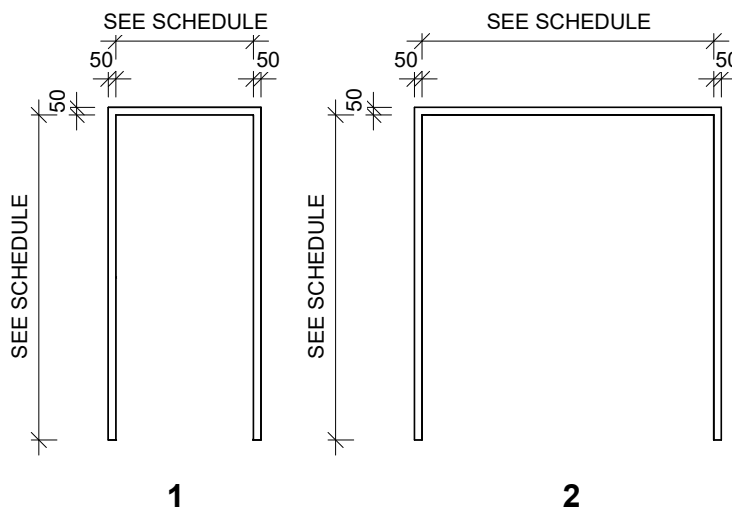
WINDOW SCHEDULE						
TYPE	QUANTITY	WIDTH	HEIGHT	SILL HEIGHT	U-VALUE	COMMENTS
W1	1	2400	490	1660	0.80	TRIPLE GLAZED LOW-E
W2	2	3103	760	2210	0.80	TRIPLE GLAZED LOW-E
W3	1	6630	760	2210	0.80	TRIPLE GLAZED LOW-E

WINDOW TYPES



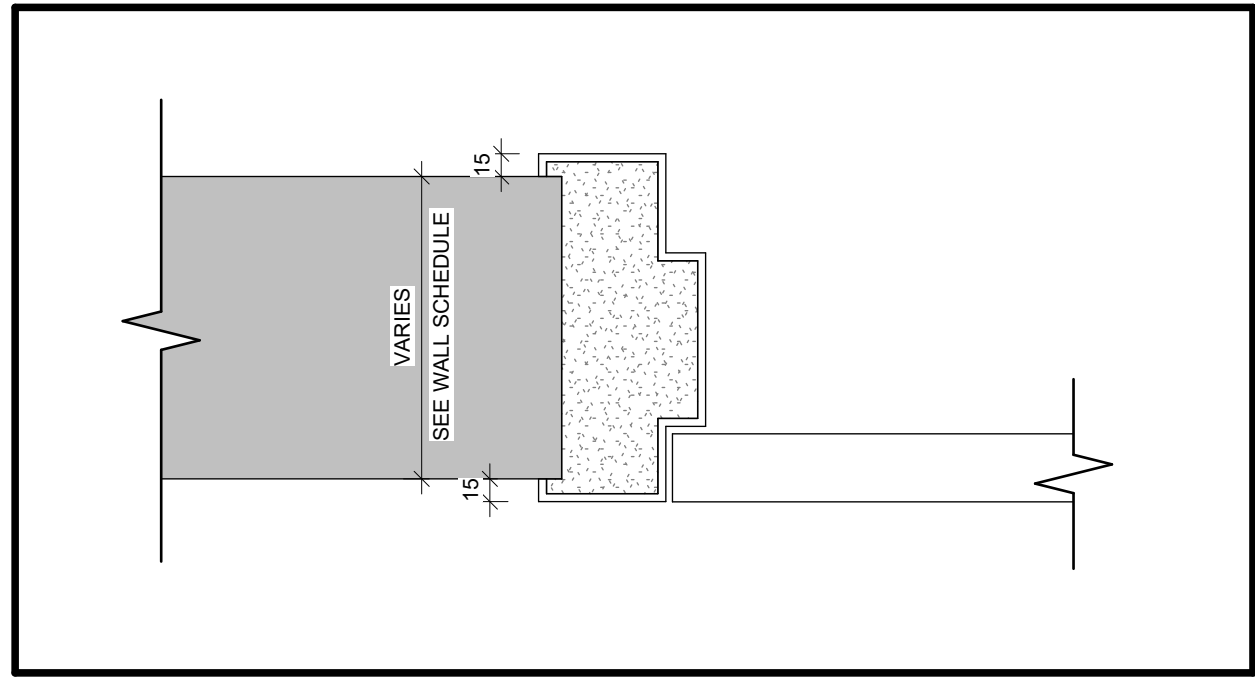
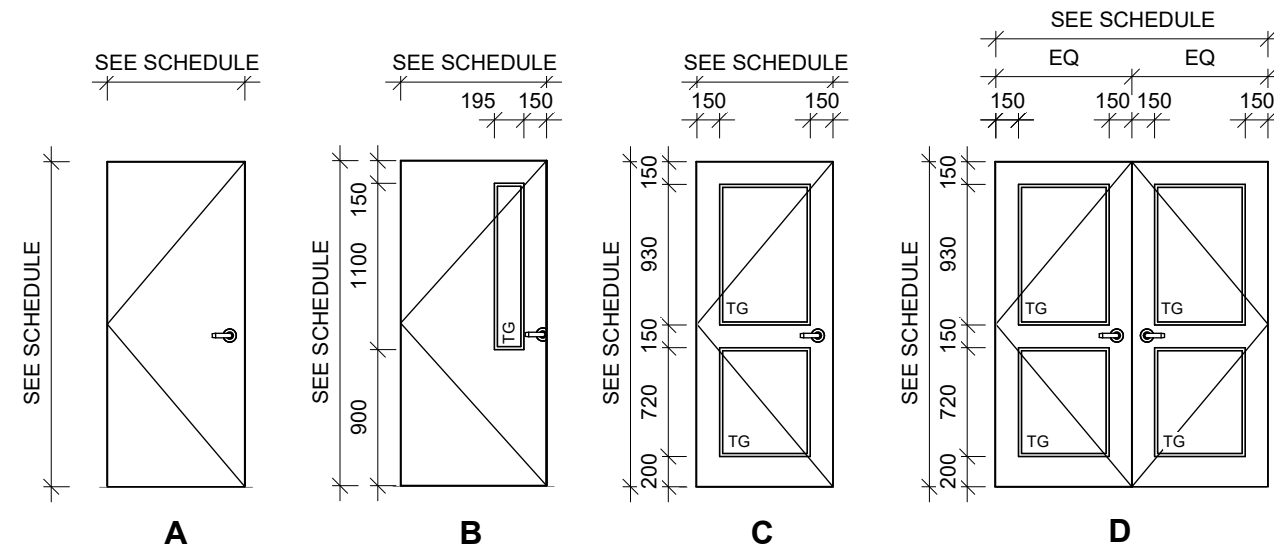
DOOR AND FRAME SCHEDULE														
DOOR No.	DOOR							FRAME			ACOUSTIC INSULATION	INSULATION	FIRE RATING	HARDWARE GROUP
	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH				
D101a	1930	2134	45	D	HM	PT	TG	2	STL	PT	-	YES	-	1
D101b	1930	2134	45	D	HM	PT	TG	2	STL	PT	-	-	-	2
D102	965	2134	45	A	HM	PT	N/A	1	STL	PT	35	-	-	8
D103A	965	2134	45	B	HM	PT	FG	1	STL	PT	40	-	-	4
D103B	965	2134	45	B	HM	PT	FG	1	STL	PT	40	-	-	4
D103C	914	2150	45	A	HM	PT	N/A	1	STL	PT	-	YES	-	3
D104	965	2134	45	B	HM	PT	FG	1	STL	PT	50	-	-	5
D105	965	2134	45	B	HM	PT	FG	1	STL	PT	50	-	-	5
D107	965	2134	45	B	HM	PT	FG	1	STL	PT	50	-	-	5
D108	965	2134	45	A	HM	PT	TG	1	STL	PT	50	-	-	5
D109	965	2134	45	A	HM	PT	N/A	1	STL	PT	35	-	-	7
D110	965	2134	45	A	HM	PT	N/A	1	STL	PT	35	-	-	7
D111	965	2134	45	A	HM	PT	N/A	1	STL	PT	35	YES	-	9
D112	914	2150	45	C	HM	PT	TG	1	STL	PT	-	YES	-	3
D113A	965	2134	45	B	HM	PT	TG	1	STL	PT	40	-	-	5
D113B	965	2134	45	B	HM	PT	TG	1	STL	PT	40	-	-	5
D114	965	2134	45	A	HM	PT	N/A	1	STL	PT	50	YES	45 MIN	6
D115	965	2134	45	A	HM	PT	N/A	1	STL	PT	50	YES	45 MIN	6
D116	965	2134	45	A	HM	PT	N/A	1	STL	PT	50	YES	45 MIN	6
Grand total: 19														

FRAME ELEVATIONS



DOOR ELEVATIONS

NOTE: - SEE MECHANICAL FOR COORDINATION OF DOOR UNDERCUTS AND TRANSFER GRILLES



1 TYPICAL INTERIOR JAMB PLAN DETAIL  
A004 1 : 5

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
------	------	-------------

Revision History

Filename: 60686829  
Version: 2020.2.5.

Project Number: 60686829  
Project Administrator: John Page  
Project Manager: BIM/VDC Manager:

Sustainability Target: LEED Silver  
IPMS 1 (m²):  
IPMS 2 (m²):

Designed: Designer  
Date (yyyy-mm-dd):

Drawn: Author  
Date (yyyy-mm-dd):

Reviewed: Approved  
Date (yyyy-mm-dd):

Checked: Allan Man  
Date (yyyy-mm-dd):

Approved: Approver  
Date (yyyy-mm-dd):

Title:

DOOR AND WINDOW SCHEDULE

Page Size: ANSI D  
Scale: As indicated  
Sheet: A004  
Rev: F  
of: 1



Rev : F  
Sheet :  
of :

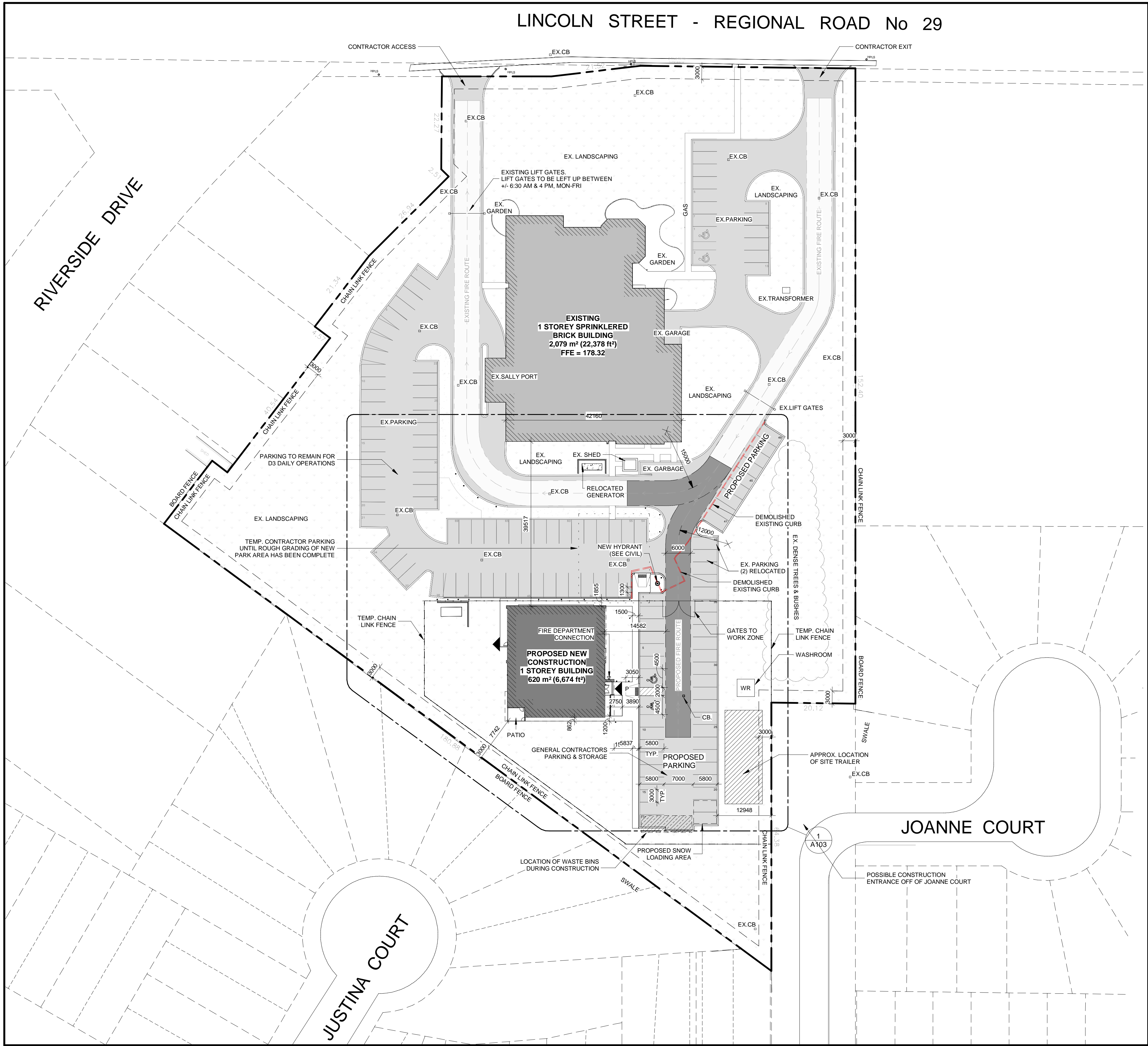


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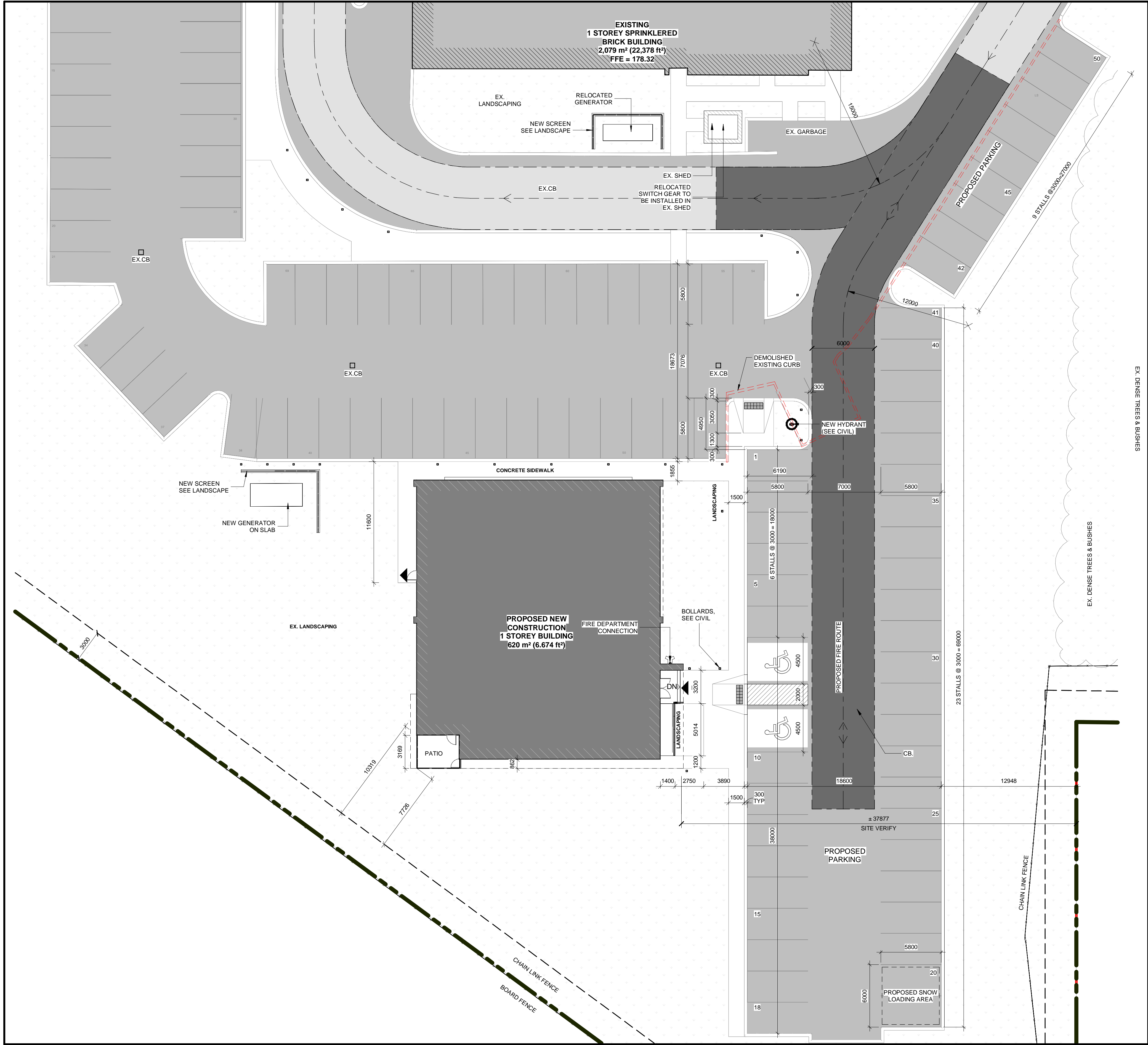
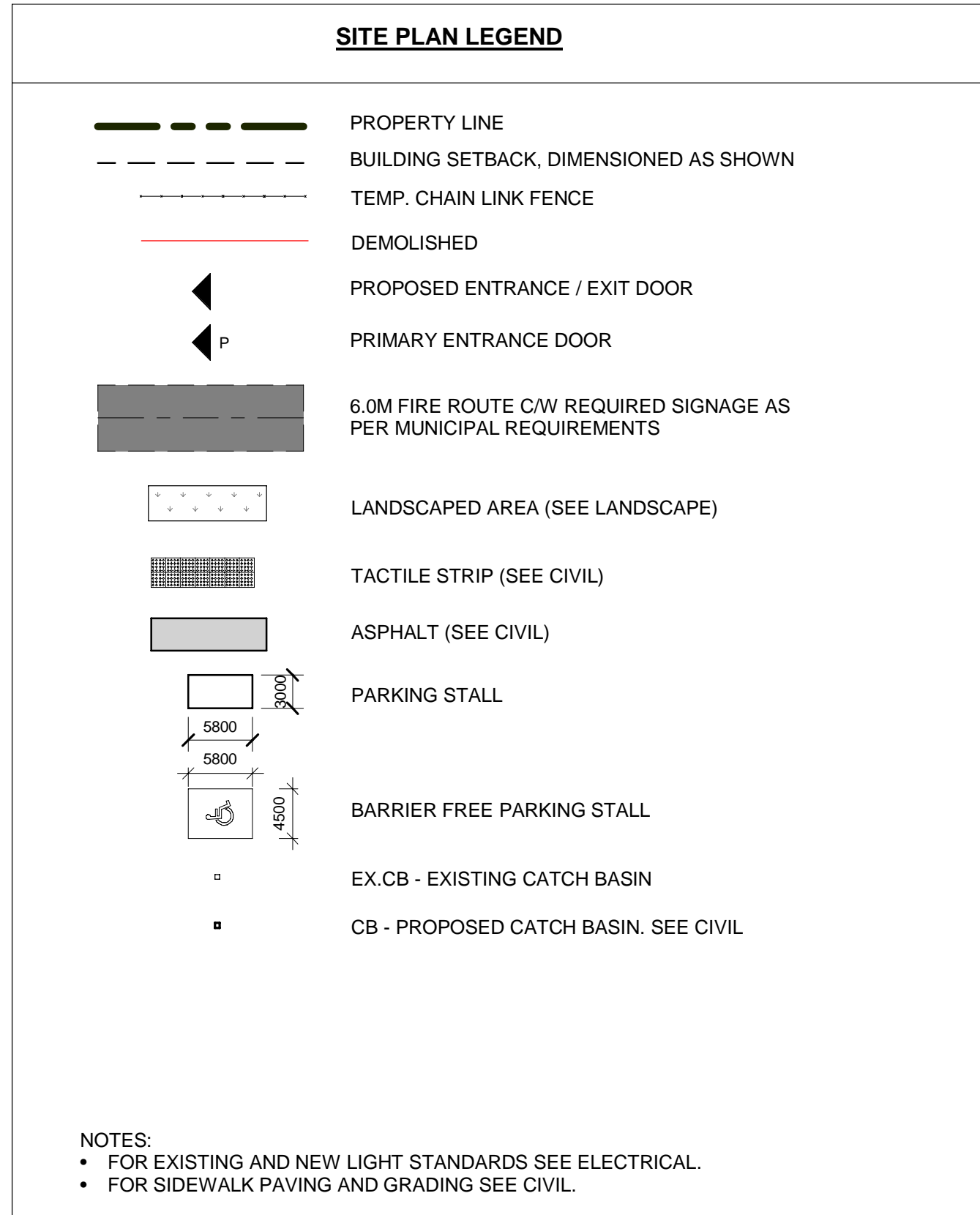
- FOR EXISTING AND NEW LIGHT STANDARDS SEE ELECTRICAL
- FOR SIDEWALK PAVING AND GRADING SEE CIVIL.

SITE LEGAL	Con. 6 PT Lot 29 PT 1 59R627 PTS 1 & 2 59R8315 PT RD		
SITE SIZE	22,138.64 m2 (5.47 ACRES)		
LOCATION	5 LINCOLN ST. WELLAND ON, DISTRICT 6 - WARD 3		
EXISTING BUILDING GROUND FLOOR AREA	2,079 m <sup>2</sup>		
EXISTING BUILDING GROSS AREA	2,585 m <sup>2</sup>		
PROPOSED ADDITION	620 m <sup>2</sup> (STAND ALONE FACILITY)		
	REQUIRED	PROPOSED	CONFORMS (Y/N)
ZONE	INSH (Institutional and Community Wellness - Health and Wellness)	INSH (Institutional and Community Wellness - Health and Wellness)	Y
MIN. LOT FRONTAGE	12m	99m	Y
MIN. LOT AREA	N/A	-	Y
MAX. LOT AREA	N/A	-	Y
MIN. FRONT, SIDE AND REAR YARD SETBACKS	3m	>3m	Y
MAX. HEIGHT	24m	5.9m	Y
MAX. LOT COVERAGE	N/A	-	Y
MIN. LANDSCAPE AREA	15%	51%	Y
MIN. PARKING REQ'D	NO MINIMUM REQUIRED (BYLAW 6.4.4)	133 PROVIDED (SEE PARKING LEGEND)	Y
LOADING REQ'D	NO LOADING AREAS NEEDED FOR BUILDING	-	Y
SNOW STORAGE REQ'D	2% OF PARKING AREA	PROVIDED IN OPEN LANDSCAPE AREA	Y

COUNT	TYPE
2	EXISTING BARRIER FREE
82	EXISTING TYPICAL PARKING
2	PROPOSED BARRIER FREE
47	PROPOSED TYPICAL PARKING
<b>133</b>	<b>TOTAL</b>



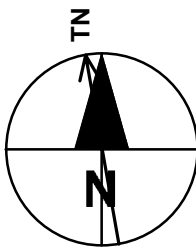




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NORTH



SEAL

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number :  
60686829

Owner's Contract Number :  
987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Revision History	
Filename :	Version : 2020.2.5.

Project Number : <b>60686829</b>	Project Manager : <b>John Page</b>
Project Administrator :	BIM/VDC Manager :

Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
-------------------------	----------------------------	----------------------------

Designed :	Date (yyyy-mm-dd) :
------------	---------------------

Drawn :	Date (yyyy-mm-dd) :
Author :	

Reviewed :	Date (yyyy-mm-dd) :
------------	---------------------

Checked : Allen Men	Date (yyyy-mm-dd) :
------------------------	---------------------

Approved : Approver	Date (yyyy-mm-dd) :
------------------------	---------------------

**Title :**

ENLARGED NEW SITE PLAN





Page Size : <b>ANSI D</b>	Sheet : <b>A103</b>	Rev : 
Scale : As indicated		Sheet : of :

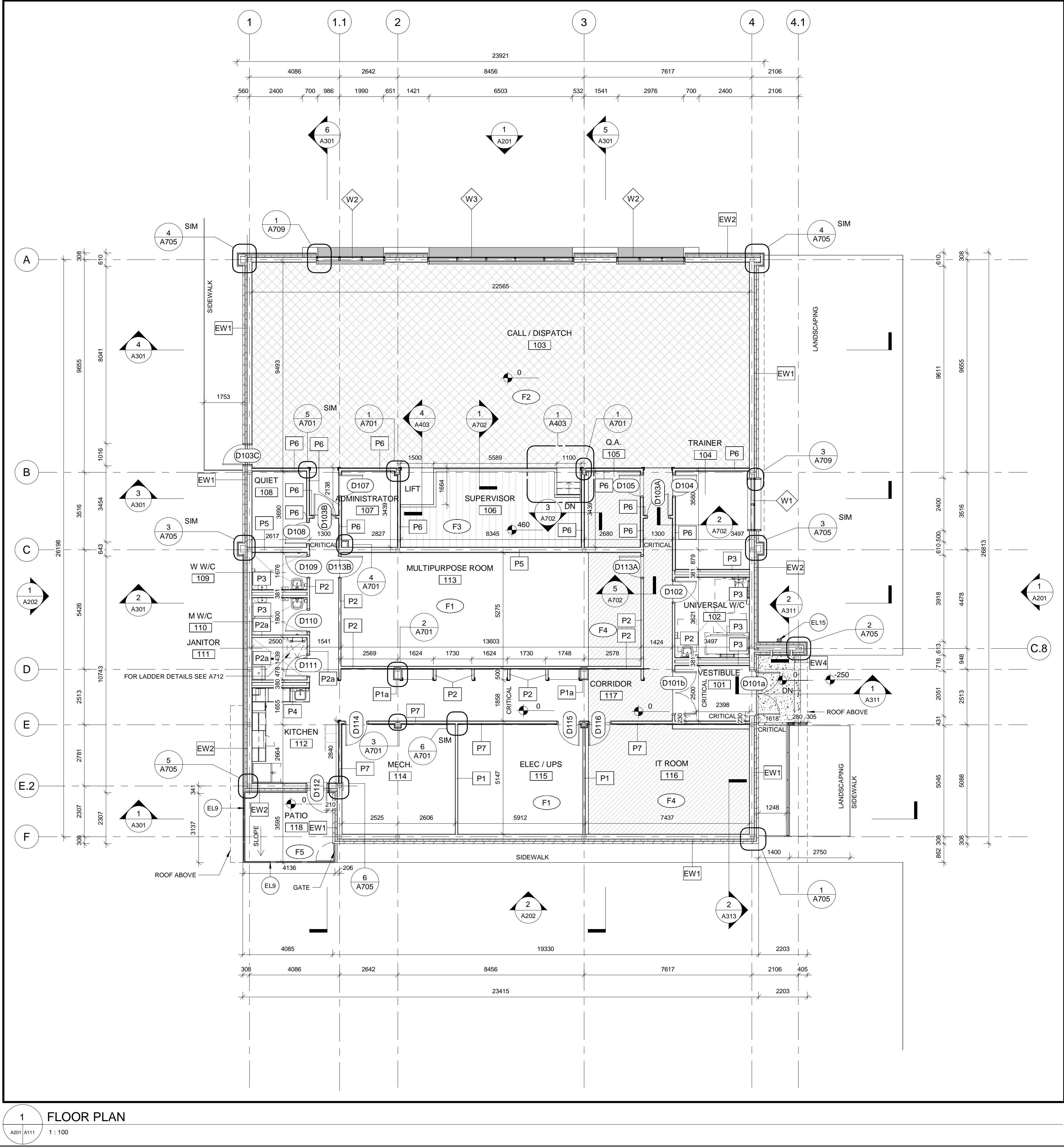


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KEYNOTE LEGEND	
KEYNOTE	DESCRIPTION
EL9	PERFORATED METAL SCREENS (COLOUR CHARCOAL)
EL15	FIRE DEPARTMENT CONNECTION SEE MECHANICAL

**NOTE:**  
ALL INTERIOR DOORS TO BE LOCATED 100mm FROM THE NEAREST ADJACENT WALL ON PLAN, UNLESS NOTED OTHERWISE.

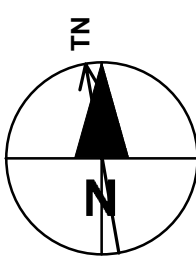
FLOOR TYPES:	
	F1 CONCRETE SLAB ON GRADE (REFER TO STRUCTURAL)
	F2 300 RAISED FLOOR SYSTEM (REFER TO STRUCTURAL FOR CONCRETE SLAB)
	F3 460 RAISED FLOOR SYSTEM (REFER TO STRUCTURAL FOR CONCRETE SLAB)
	F4 600 RAISED FLOOR SYSTEM (REFER TO STRUCTURAL FOR CONCRETE SLAB)



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Kitchener, Ontario N2P 0A4

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NORTH:



Niagara Region



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

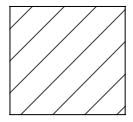
Mark	Date	Description
Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	Project Manager: John Page
Project Administrator:		BIM/MVDC Manager:
Sustainability Target:	LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed:		Date (yyyy-mm-dd):
Designer:		Date (yyyy-mm-dd):
Drawn:		Date (yyyy-mm-dd):
Author:		Date (yyyy-mm-dd):
Reviewed:		Date (yyyy-mm-dd):
Checked:	Allan Man	Date (yyyy-mm-dd):
Approved:	Approver	Date (yyyy-mm-dd):
Title:		

FLOOR PLAN

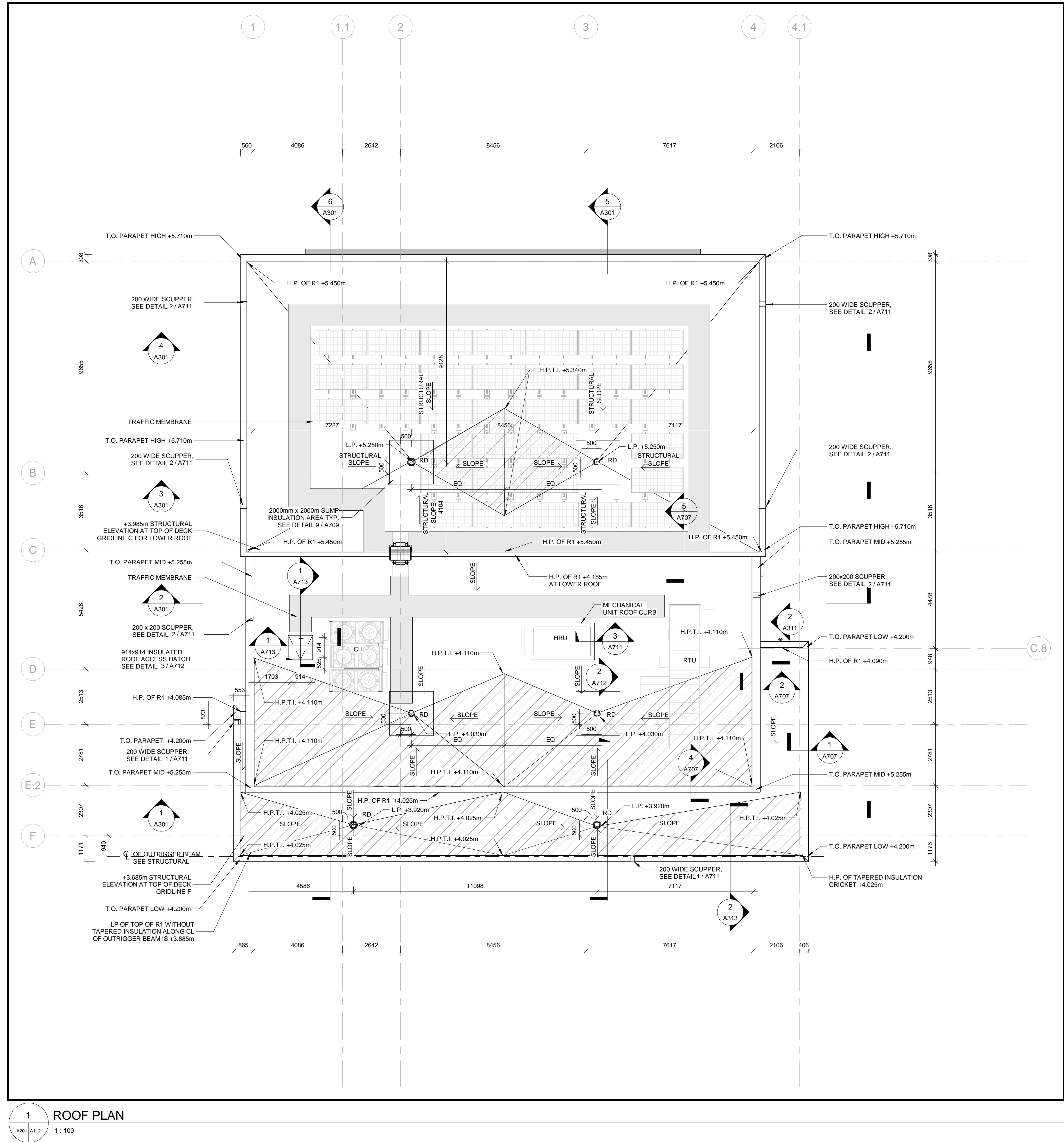
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**LEGEND:**



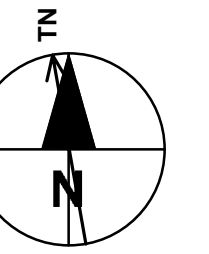
### TAPERED INSULATION



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number :  
60686829

er's Contract Number :  
987654321

F	2025-01-23	ISSUED FOR TENDER
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C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History			
Filename :		Version : 2020.2.5.	
Project Number : 60686829		Project Manager : John Page	
Project Administrator :		BLM/VDC Manager :	
Sustainability Target : LEED Silver		IPMS 1 (m²) : IPMS 2 (m²) :	
Designed : Designer		Date (yyyy-mm-dd) :	
Drawn : Author		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : Allan Man		Date (yyyy-mm-dd) :	
Approved :		Date (yyyy-mm-dd) :	
Approver :			

### ROOF PLAN

Page Size : <b>ANSI D</b>	Sheet : <b>A112</b>	Rev : <b>F</b>
Scale : <b>As indicated</b>		Sheet : of : <b>—</b>

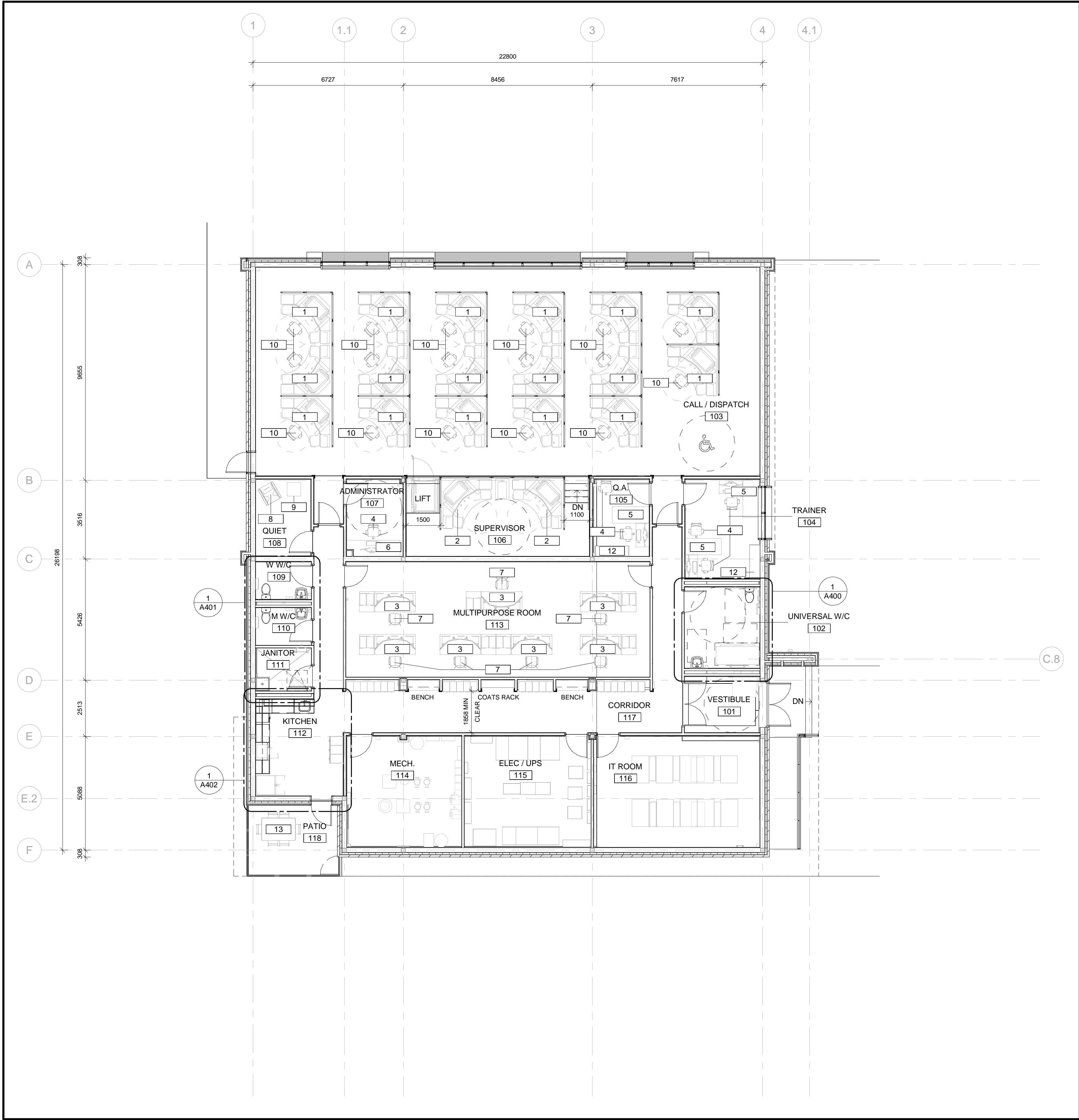


FURNITURE & EQUIPMENT SCHEDULE

1	- CALL TAKER / DISPATCH DESK
2	- SUPERVISOR DESK
3	- MULTIPURPOSE DESK
4	- OFFICE CHAIR
5	- L-SHAPED DESK
6	- DESK
7	- CHAIR
8	- RECLINER CHAIR
9	- SIDE TABLE
10	- CALLER / DISPATCH CHAIR
11	- SUPERVISOR CHAIR
12	- BOOKSHELVES
13	- PATIO TABLE AND CHAIRS

NOTES:

1. ALL THE FURNITURE IS FOR REFERENCE ONLY. OWNER TO SUPPLY AND INSTALL. CONTRACTOR TO ASSIST WITH ACCOMMODATING INSTALLATION.
2. CONTRACTOR TO COORDINATE DISPATCH DESK INSTALLATION WITH SUPPLIER AND ENSURE COORDINATION OF ALL DATA AND ELECTRICAL REQUIREMENTS.



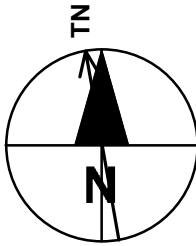
1 GROUND FLOOR PLAN  
A201 A121 1 : 100



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
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C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename:	Version:
60686829	2020.2.5.
Project Number:	Project Manager:
60686829	John Page
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²):
LEED Silver	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):
Designer	
Drawn:	Date (yyyy-mm-dd):
Author	
Reviewed:	Date (yyyy-mm-dd):
Checked:	Date (yyyy-mm-dd):
Allan Man	
Approved:	Date (yyyy-mm-dd):
Approver	
Title:	

FURNITURE, FIXTURES, AND  
EQUIPMENT PLAN

Page Size:	Sheet:	Rev:
ANSI D	A121	F
Scale:	1 : 100	Sheet:
		of:



**CEILING TYPES:**

ACT-1  
ELEV.

600x600 ACOUSTIC CEILING TILES  
(SEE CEILING PLAN FOR ELEVATIONS)

ACT-2  
ELEV.

1220X1220 ACOUSTIC CEILING TILES  
(SEE CEILING PLAN FOR ELEVATIONS)

GC-1  
ELEV.

PAINTED GYPSUM BOARD CEILING  
(SEE CEILING PLAN FOR ELEVATIONS)

AS-1  
ELEV.

ALUMINUM SIDING SOFFIT - LONGBOARD  
(SEE CEILING PLAN FOR ELEVATIONS)

ACM-1  
ELEV.

ALUMINUM COMPOSITE PANELS - CHARCOAL  
(SEE CEILING PLAN FOR ELEVATIONS)

**RCP LEGEND**

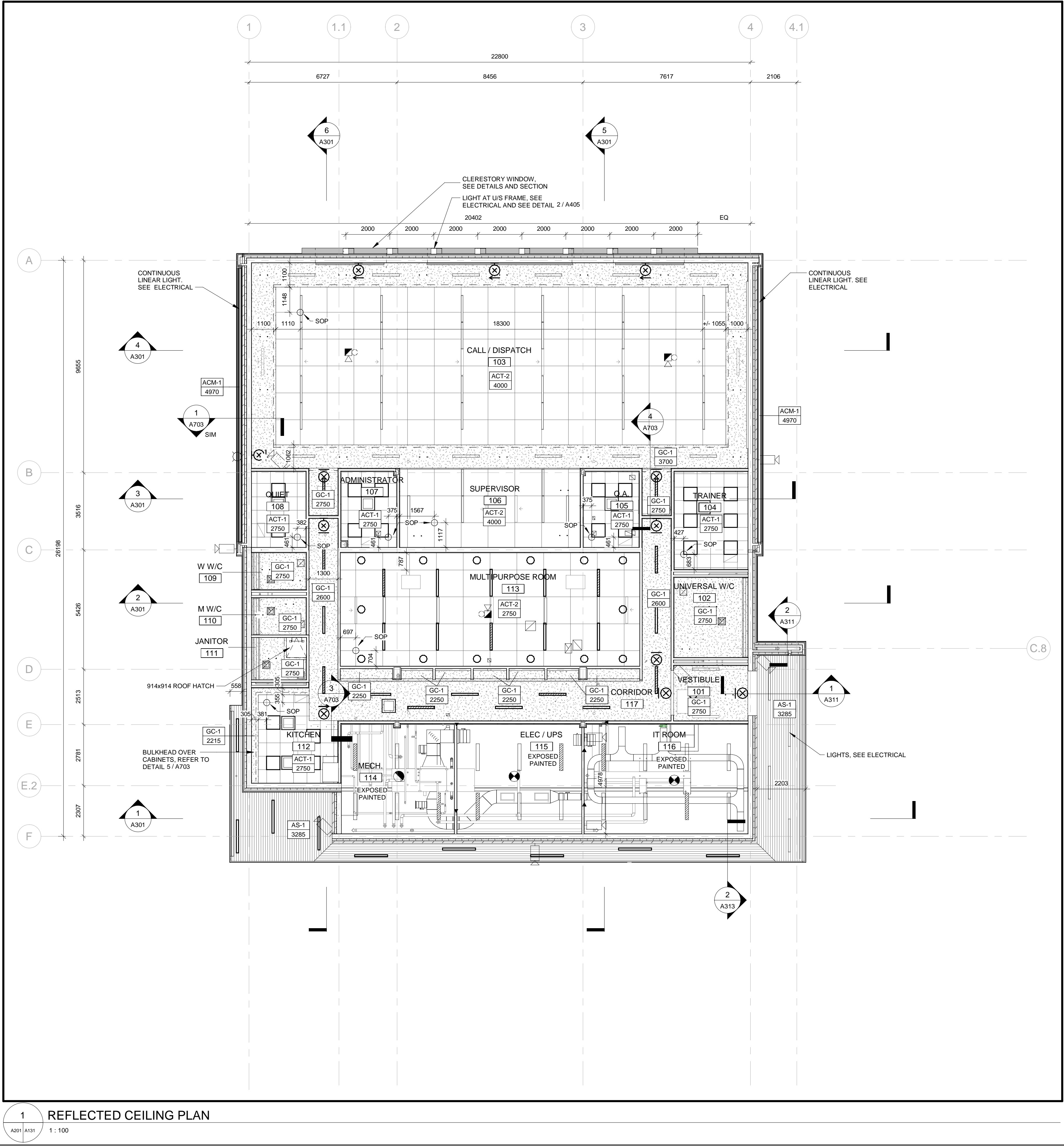
LIGHT FIXTURES. SEE ELECTRICAL

EXIT SIGN AND FIRE ALARM DEVICES.  
SEE ELECTRICAL

RETURN / EXHAUST GRILLES.  
SEE MECHANICAL

SUPPLY GRILLES. SEE MECHANICAL

SECURITY CAMERA. SEE ELECTRICAL



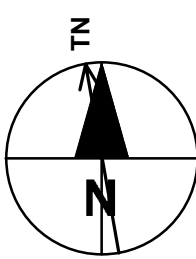
1 REFLECTED CEILING PLAN  
A201 A131 1 : 100



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
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Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	Project Manager: John Page
Project Administrator:		BIM/VDC Manager:
Sustainability Target:	LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed:		Date (yyyy-mm-dd):
Designer:		Date (yyyy-mm-dd):
Drawn:		Date (yyyy-mm-dd):
Author:		Date (yyyy-mm-dd):
Reviewed:		Date (yyyy-mm-dd):
Checked:	Allan Man	Date (yyyy-mm-dd):
Approved:	Approver	Date (yyyy-mm-dd):
Title:		

REFLECTED CEILING PLAN

Page Size:	ANSI D	Sheet:	A131	Rev:	F
Scale:	As indicated				



ROOM FINISH LEGEND

WALLS

- PT-X - PAINT
- WT-X - WALL TILE
- WP-X - WALL PROTECTION PANEL

BASE

- RB-X - RUBBER BASE
- TB-X - TILE BASE

FLOOR

- SD-X - STATIC DISSIPATIVE TILE
- SC-X - SEALED CONCRETE
- T-X - TILE
- LVT-X - LUXURY VINYL TILE
- VCT-X - VINYL COMPOSITE TILE
- CPT-X - CARPET TILE
- PM-X - PEDI-MAT

GENERAL NOTES

1. COORDINATE WITH REFLECTED CEILING PLANS
2. REFER TO SCHEDULE OF FINISHES SECTION 06 00 AND INTERIOR ELEVATIONS.

FINISHES NOTES

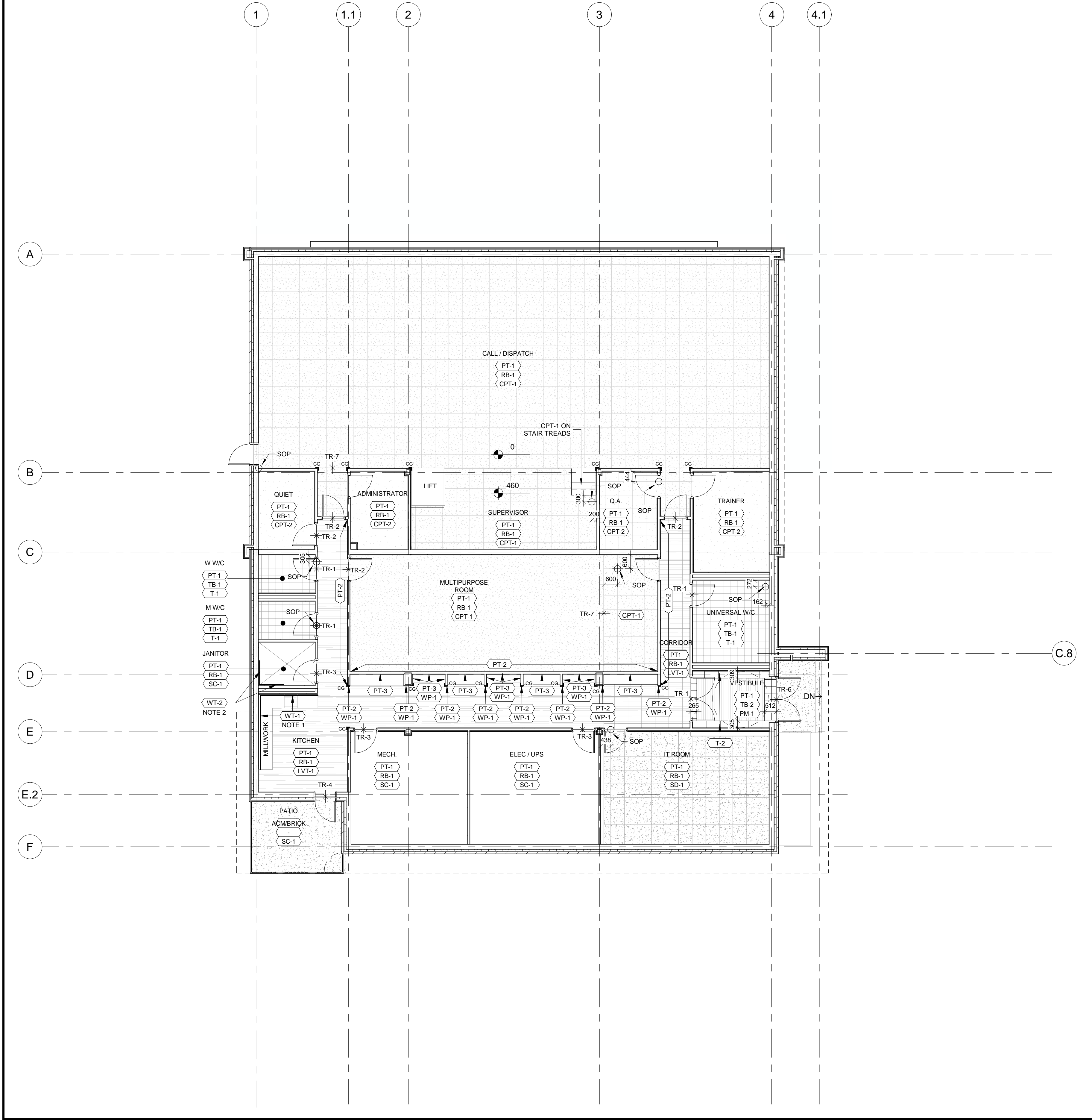
1. SEE A402 FOR KITCHEN ELEVATIONS AND EXTENT OF WALL TILE.
2. TILE UP TO 1300mm A.F.F

SYMBOL LEGEND

- ✱ DENOTES FLOOR FINISH TRANSITION
- TR-X FLOOR FINISH TRANSITION TYPE
- DIRECTION OF PATTERN
- └ CG 12X12X1220mm ANODIZED ALUMINUM CORNER GUARD
- RAISED FLOOR SYSTEM FINISH SUPPORT

ORDER OF FINISHES

- XXX-X WALL FINISH
- XXX-X BASE FINISH
- XXX-X FLOOR FINISH



1 FURNITURE AND FINISHES PLAN

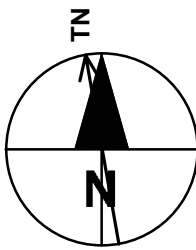
A201 A141 1 : 100



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
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A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
------	------	-------------

Revision History

Filename: 2020.2.5. Version: 2020.2.5.

Project Number: 60686829 Project Manager: John Page  
Project Administrator: BIM/VDC Manager:

Sustainability Target: LEED Silver IPMS 1 (m²): IPMS 2 (m²):

Designed: Designer Date (yyyy-mm-dd):

Drawn: Author Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: Allan Man Date (yyyy-mm-dd):

Approved: Approver Date (yyyy-mm-dd):

Title:

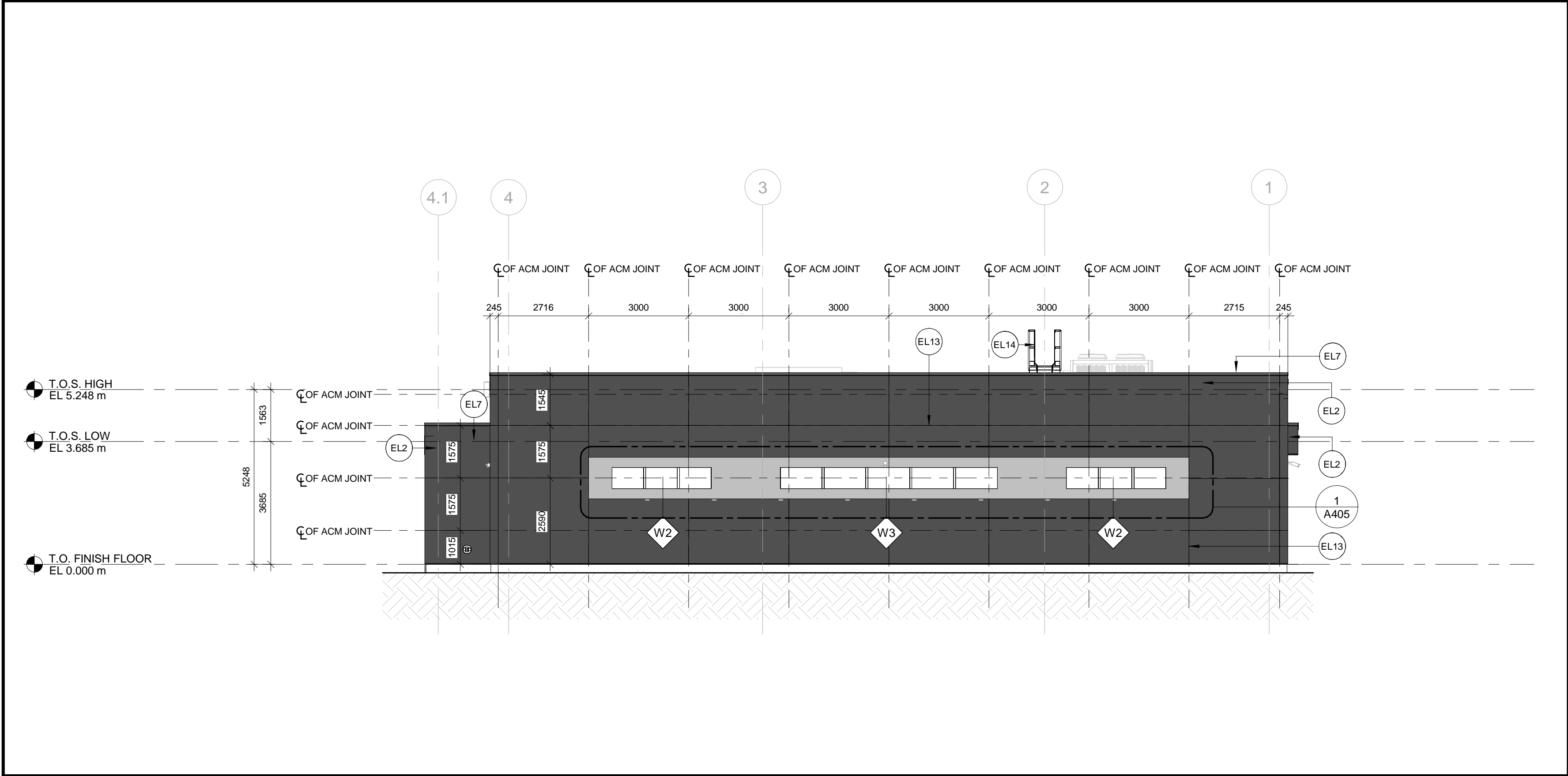
FINISHES PLAN

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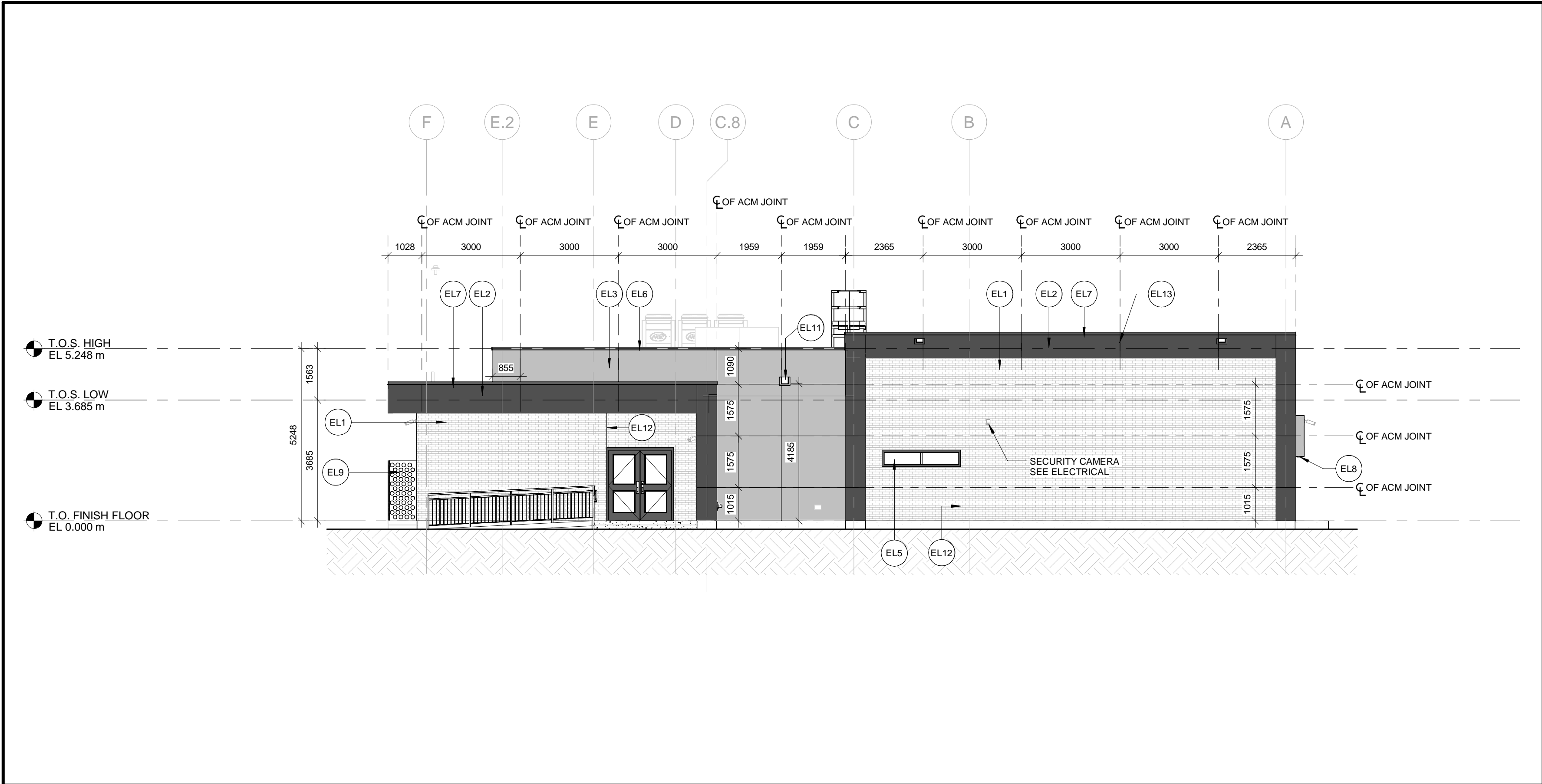


KEYNOTE LEGEND	
KEYNOTE	DESCRIPTION
EL1	BRICK VENEER (COLOUR AND FINISH)
EL2	ALUMINUM COMPOSITE PANELS (COLOUR CHARCOAL)
EL3	ALUMINUM COMPOSITE PANELS (COLOUR LIGHT GREY)
EL5	WINDOW WALL GLAZING (FRAME COLOUR CHARCOAL)
EL6	PREFINISHED METAL FLASHING (COLOUR LIGHT GREY)
EL7	PREFINISHED METAL FLASHING (COLOUR CHARCOAL)
EL8	LIGHTING FIXTURE UNDER CLERESTORY WINDOW FRAME. SEE ELECTRICAL
EL9	PERFORATED METAL SCREENS (COLOUR CHARCOAL)
EL11	200 WIDE PREFIN. METAL SCUPPER, COLOUR TO MATCH ADJACENT SIDING
EL12	TYPICAL CONTROL JOINT
EL13	TYPICAL PANEL JOINT
EL14	PREFIN. METAL ROOF ACCESS LADDER

EXTERIOR FINISHES:	
	EL1 BRICK VENEER (SEE WALL ASSEMBLIES)
	EL2 ALUMINUM COMPOSITE PANELS - COLOUR CHARCOAL (SEE WALL ASSEMBLIES)
	EL3 ALUMINUM COMPOSITE PANELS - COLOUR LIGHT GREY (SEE WALL ASSEMBLIES)
	EL4 PERFORATED METAL SCREENS - COLOUR CHARCOAL (SEE LANDSCAPE)
	EL9 PERFORATED METAL SCREENS - COLOUR CHARCOAL
	EL-10 ALUMINUM COMPOSITE SIDING - LONGBOARD WOOD PATTERN (SEE WALL ASSEMBLIES)



2 NORTH ELEVATION  
SKA-003 | A201 1 : 100



1 EAST ELEVATION  
A111 | A201 1 : 100



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
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C	2024-10-30	ISSUED FOR PERMIT
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A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
Revision History		
Filename:	Version:	2020.2.5.

Project Number:	Project Manager:	John Page
Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
Designer:	Date (yyyy-mm-dd):	
Drawn:	Date (yyyy-mm-dd):	
Author:	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	
Approver:	Date (yyyy-mm-dd):	
Title:		

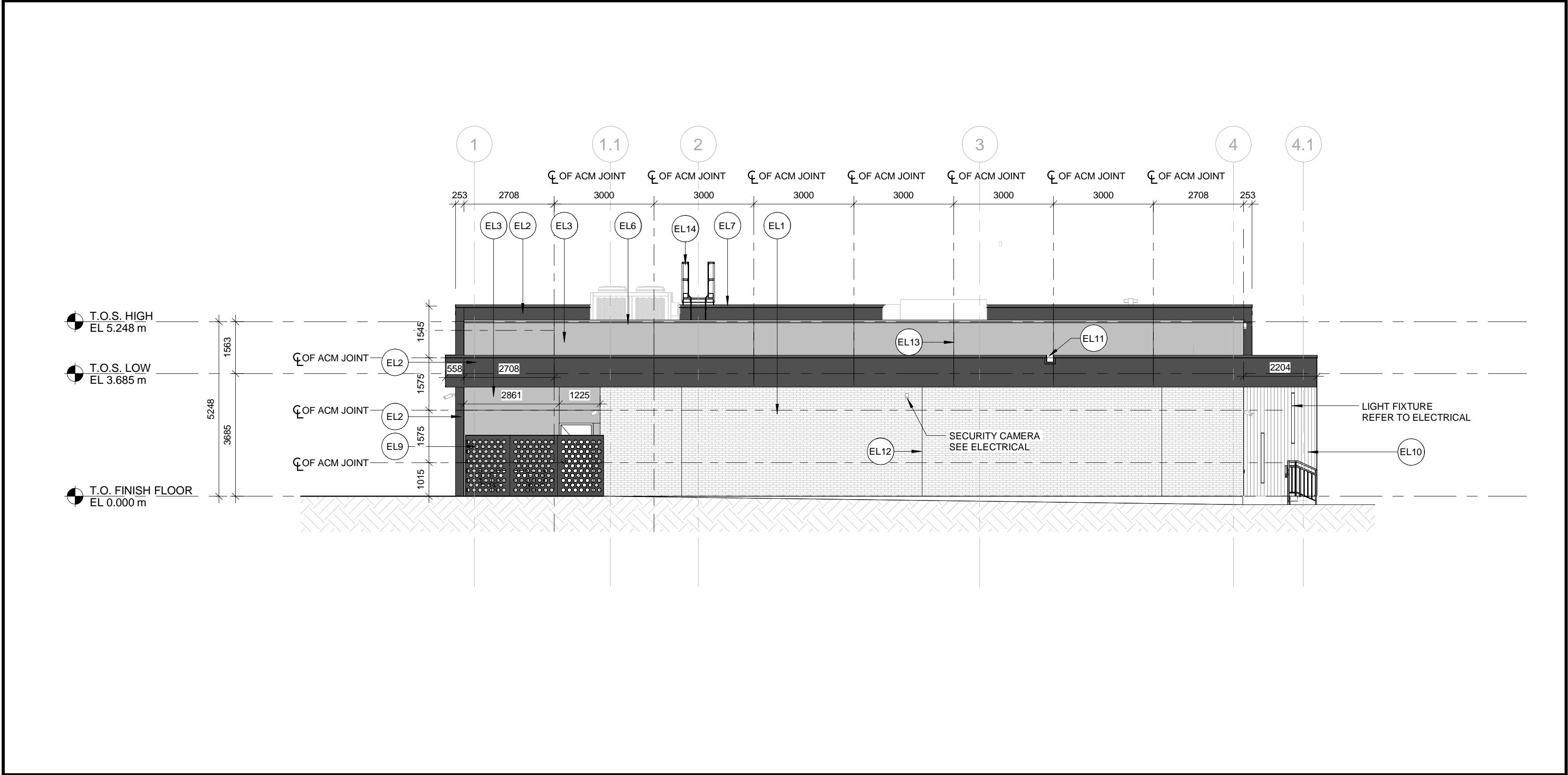
BUILDING ELEVATIONS

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ANSI D	A201	F
Scale:	As indicated	Sheet of:

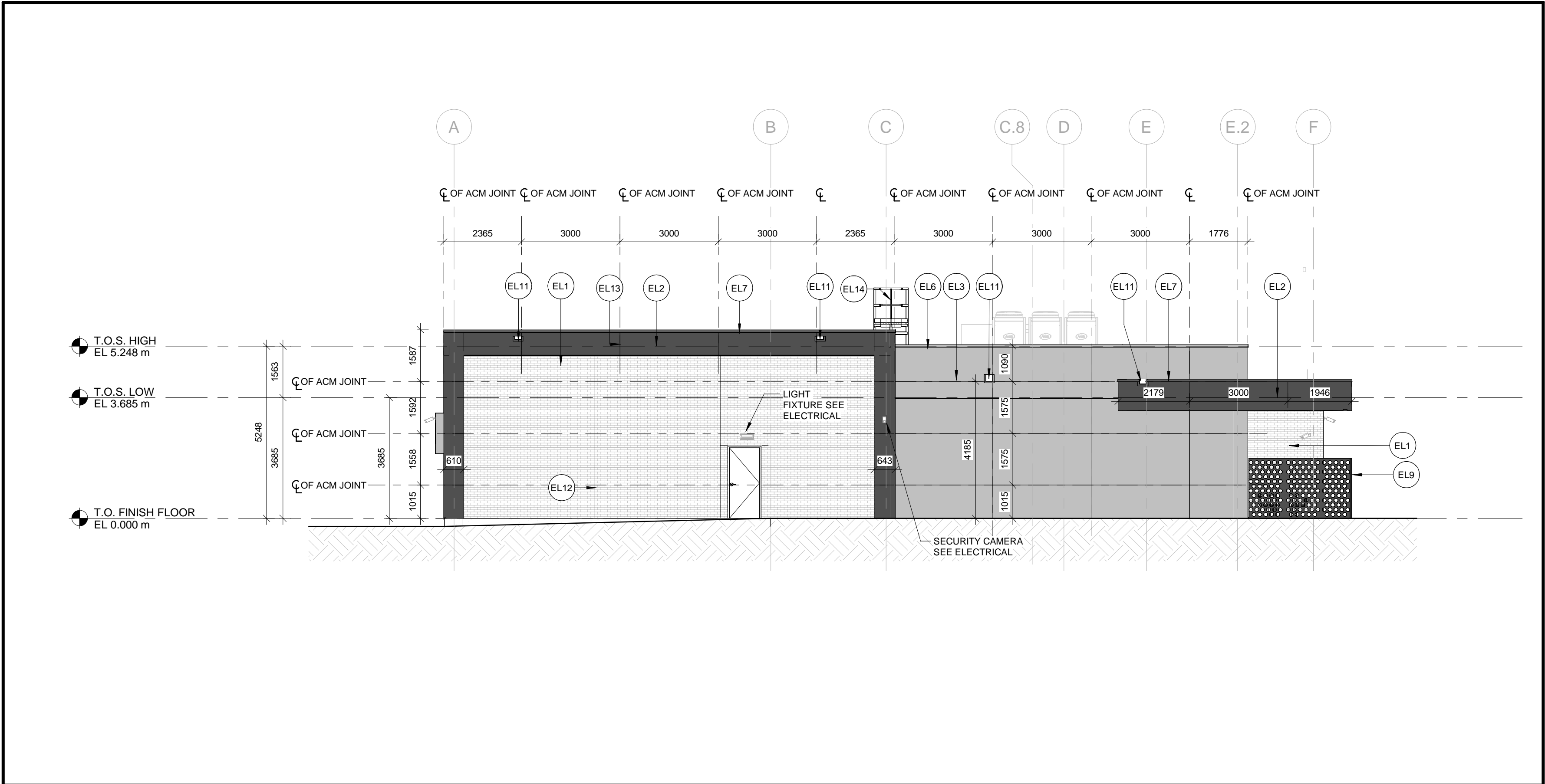


KEYNOTE LEGEND	
KEYNOTE	DESCRIPTION
EL1	BRICK VENEER (COLOUR AND FINISH)
EL2	ALUMINUM COMPOSITE PANELS (COLOUR CHARCOAL)
EL3	ALUMINUM COMPOSITE PANELS (COLOUR LIGHT GREY)
EL6	PREFINISHED METAL FLASHING (COLOUR LIGHT GREY)
EL7	PREFINISHED METAL FLASHING (COLOUR CHARCOAL)
EL9	PERFORATED METAL SCREENS (COLOUR CHARCOAL)
EL10	VERTICAL WOOD VENEER (COLOUR TBD)
EL11	200 WIDE PREFIN. METAL SCUPPER, COLOUR TO MATCH ADJACENT SIDING
EL12	TYPICAL CONTROL JOINT
EL13	TYPICAL PANEL JOINT
EL14	PREFIN. METAL ROOF ACCESS LADDER

EXTERIOR FINISHES:	
	EL1 BRICK VENEER (SEE WALL ASSEMBLIES)
	EL2 ALUMINUM COMPOSITE PANELS - COLOUR CHARCOAL (SEE WALL ASSEMBLIES)
	EL3 ALUMINUM COMPOSITE PANELS - COLOUR LIGHT GREY (SEE WALL ASSEMBLIES)
	EL4 PERFORATED METAL SCREENS - COLOUR CHARCOAL (SEE LANDSCAPE)
	EL9 PERFORATED METAL SCREENS - COLOUR CHARCOAL
	EL10 ALUMINUM COMPOSITE SIDING - LONGBOARD WOOD PATTERN (SEE WALL ASSEMBLIES)



2 SOUTH ELEVATION  
A111 A202 1 : 100



1 WEST ELEVATION  
A111 A202 1 : 100

AECOM

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Kitchener, Ontario N2P 0A4

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

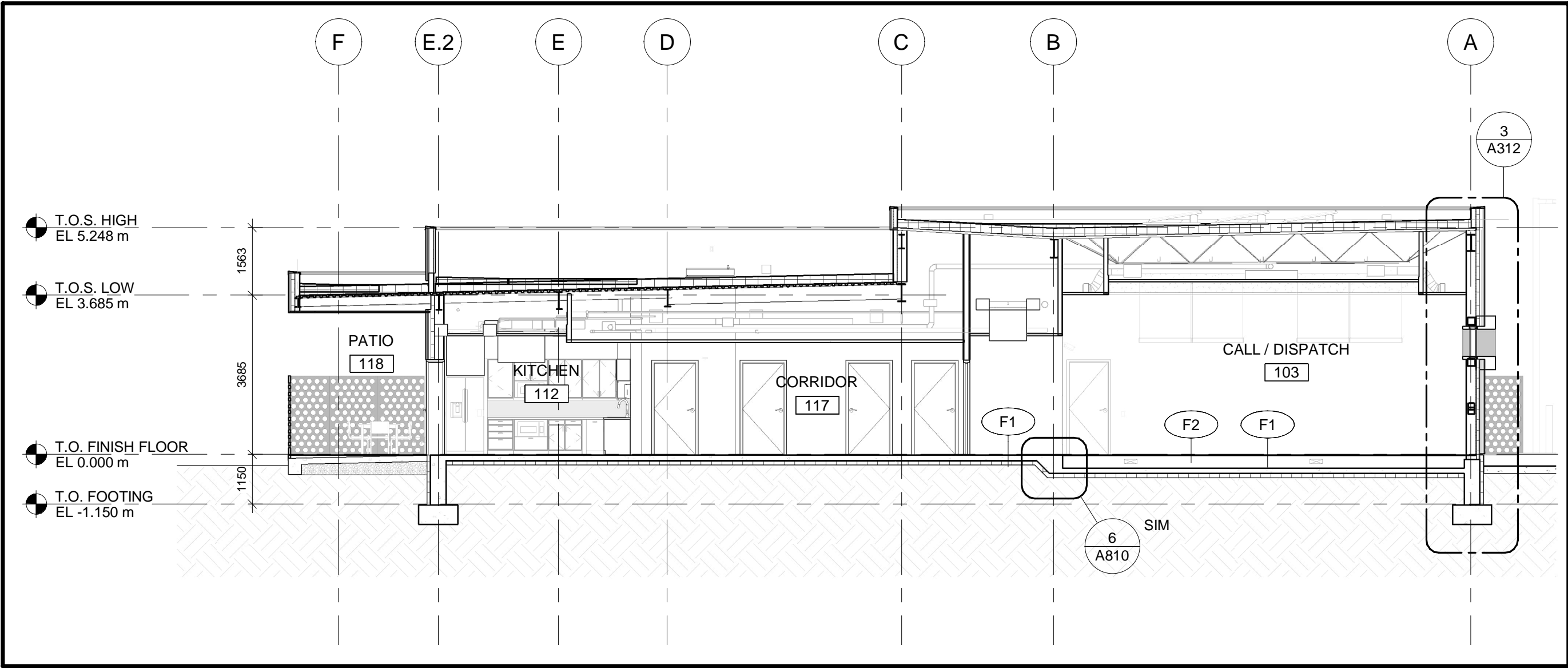
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D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
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A	2024-07-26	ISSUED FOR 100% DD

Revision History			
Filename :		Version : 2020.2.5	
Project Number : 60686829		Project Manager : John Page	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target : LEED Silver		IPMS 1 ( m <sup>2</sup> ) :	IPMS 2 ( m <sup>2</sup> ) :
Designed : Designer		Date (yyyy-mm-dd) :	
Drawn : Author		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : Allan Man		Date (yyyy-mm-dd) :	
Approved : Approver		Date (yyyy-mm-dd) :	

BUILDING ELEVATIONS

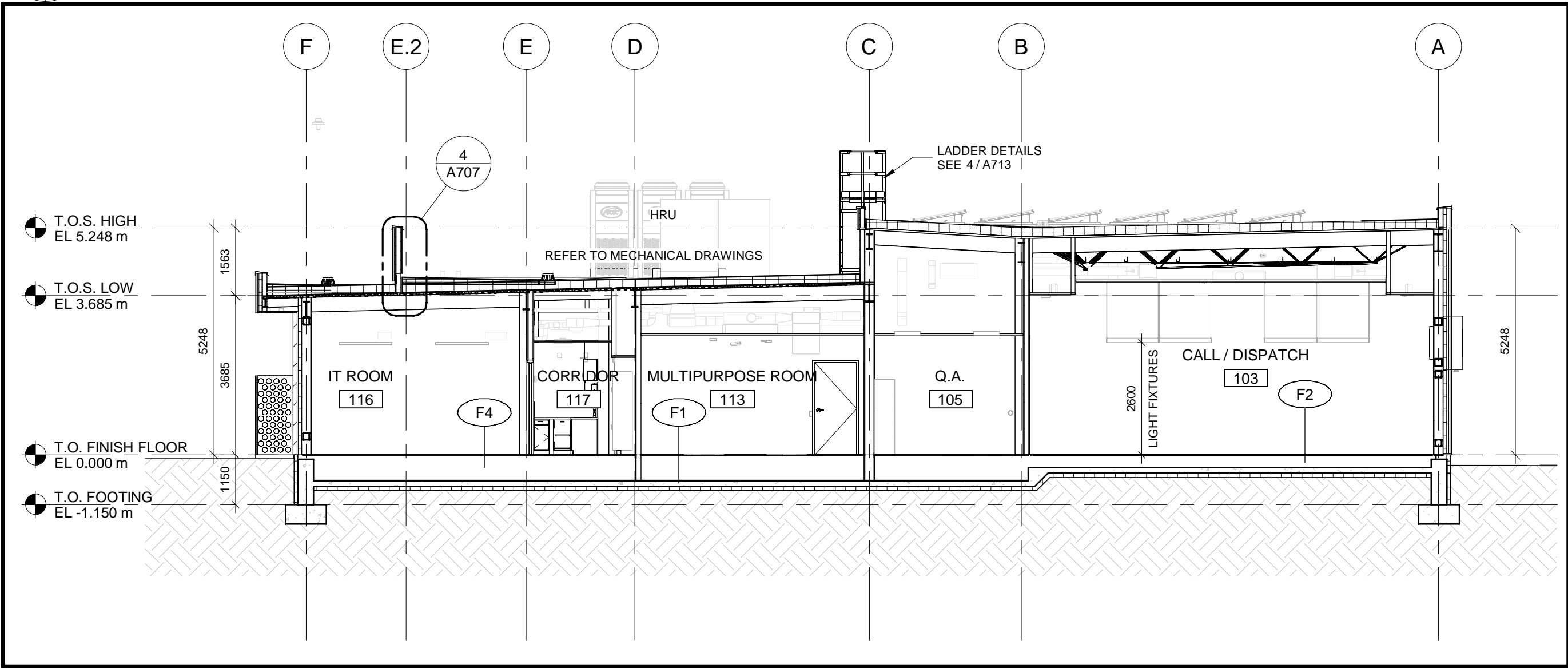
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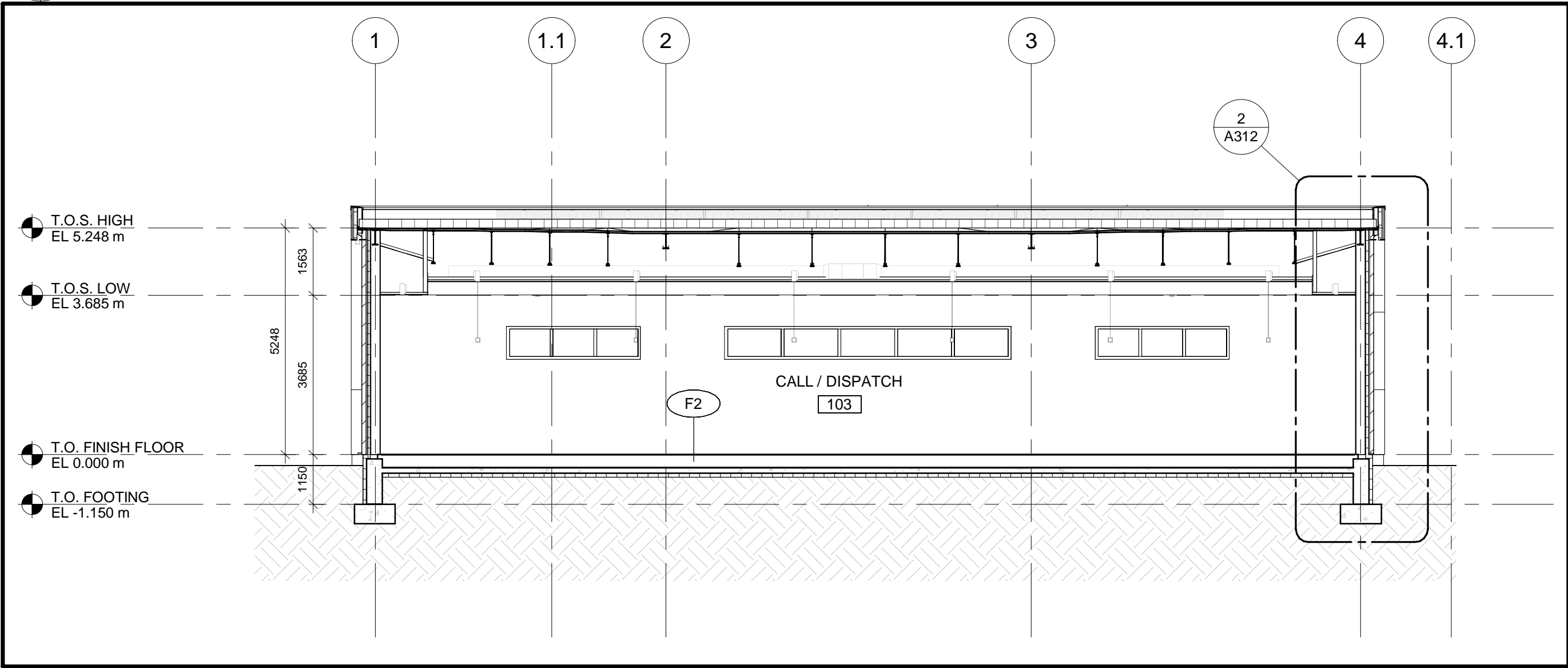
6 LONGITUDINAL SECTION

A111 A301 1 : 100



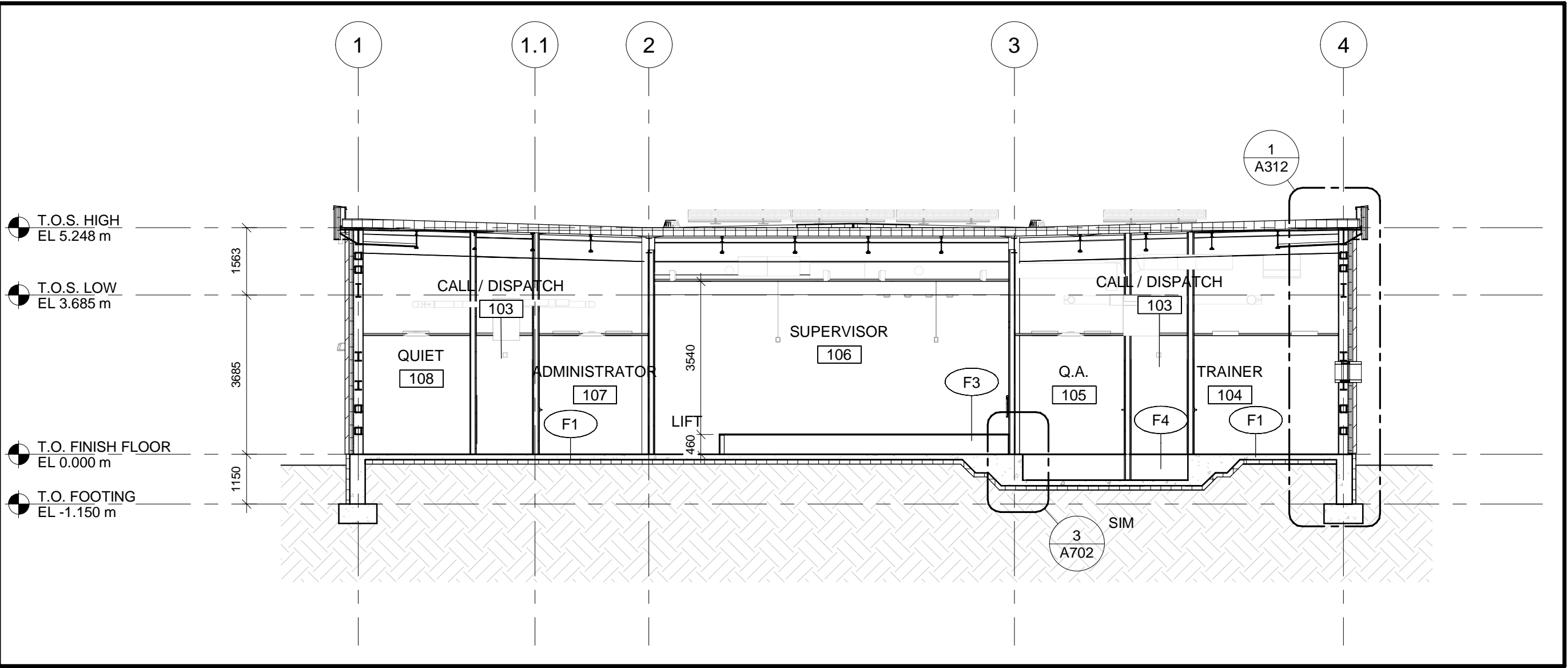
5 LONGITUDINAL SECTION

A111 A301 1 : 100



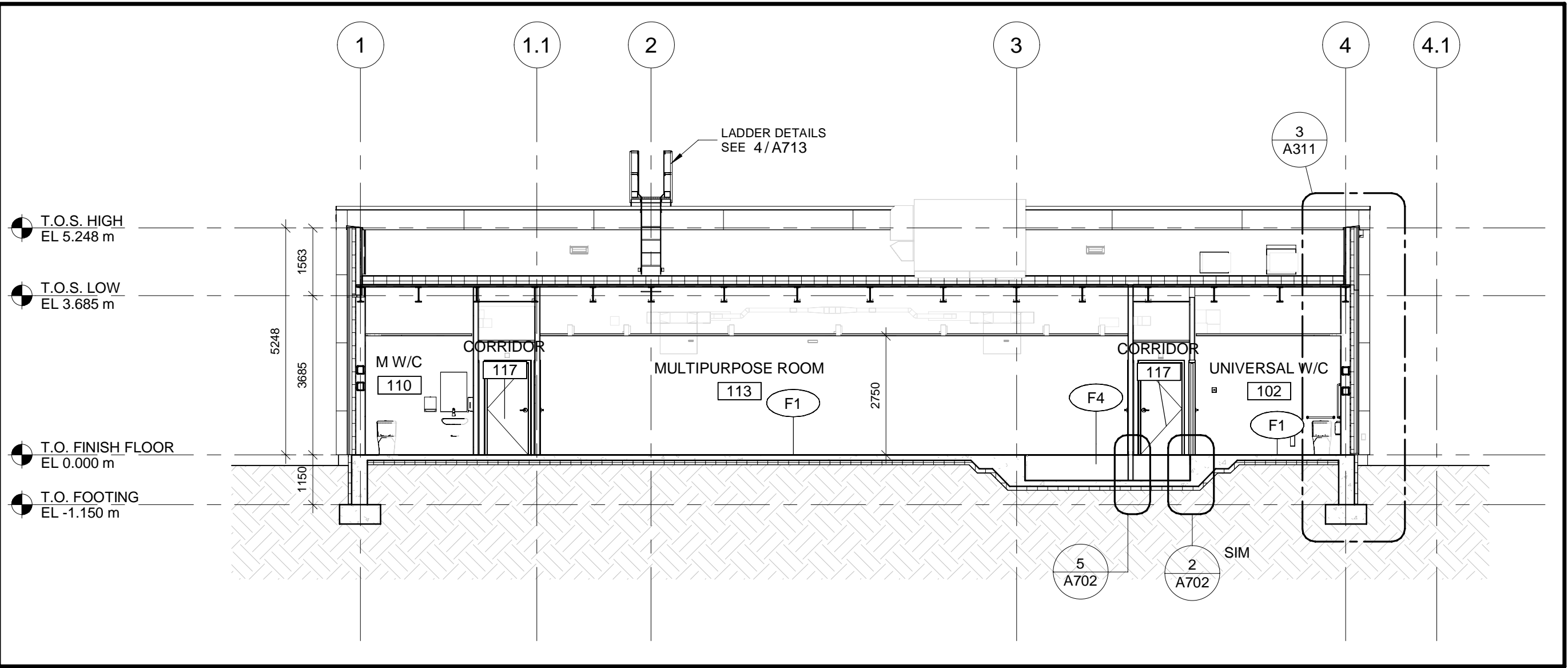
4 LATITUDINAL SECTION - HIGHER ROOF

A111 A301 1 : 100



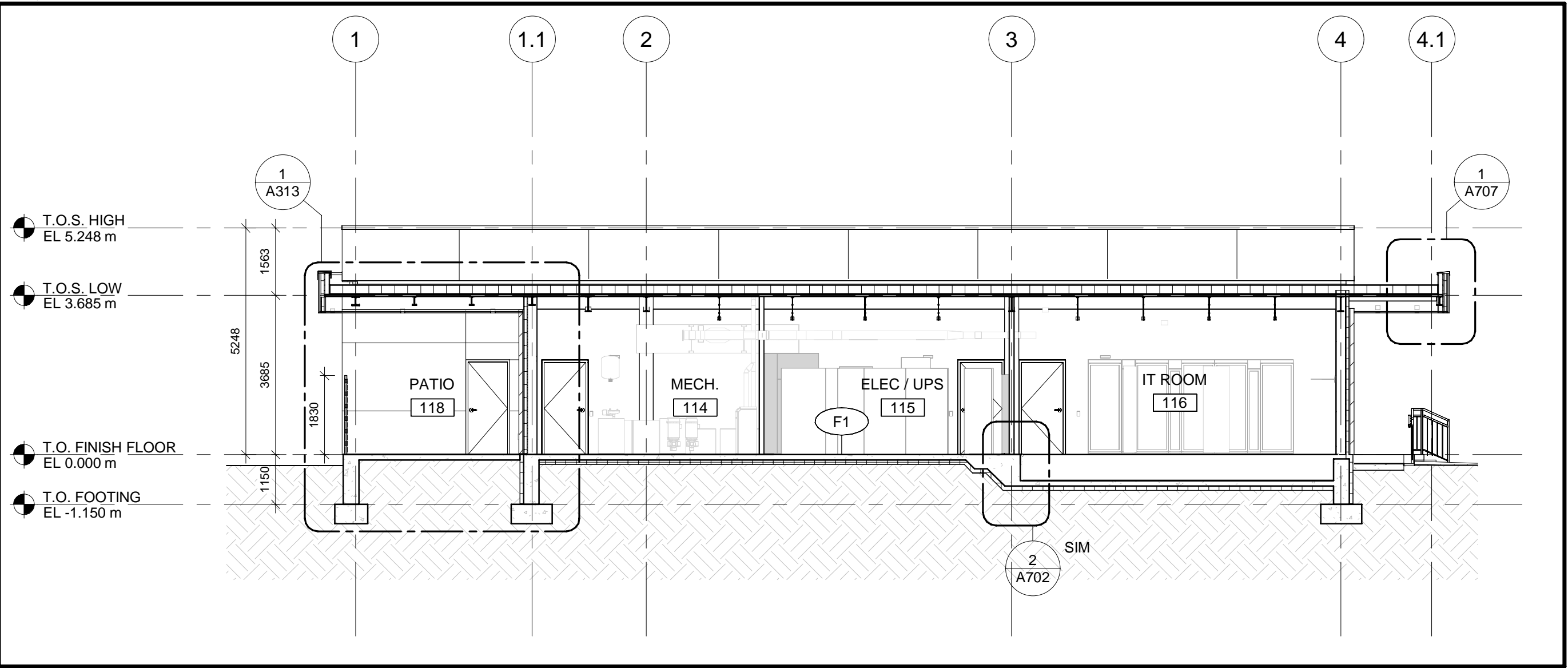
3 LATITUDINAL SECTION - HIGHER ROOF

A111 A301 1 : 100



2 LATITUDINAL SECTION - LOWER ROOF

A111 A301 1 : 100



1 LATITUDINAL SECTION - LOWER ROOF

A111 A301 1 : 100



Mark	Date	Description
F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
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Revision History

Filename:	Version:
60686829	2020.2.5
Project Number:	Project Manager:
60686829	John Page
Project Administrator:	BIM/MDC Manager:
LEED Silver	IPMS 1 (m²):
Designed:	Date (yyyy-mm-dd):
Designer:	IPMS 2 (m²):
Drawn:	Date (yyyy-mm-dd):
Author:	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked:	Date (yyyy-mm-dd):
Allan Man	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):
Approver:	Date (yyyy-mm-dd):
Tale:	

BUILDING SECTIONS





SEAL

Owner's Project Number : <b>60686829</b>	Owner's Contract Number : <b>987654321</b>
---	---

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
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A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

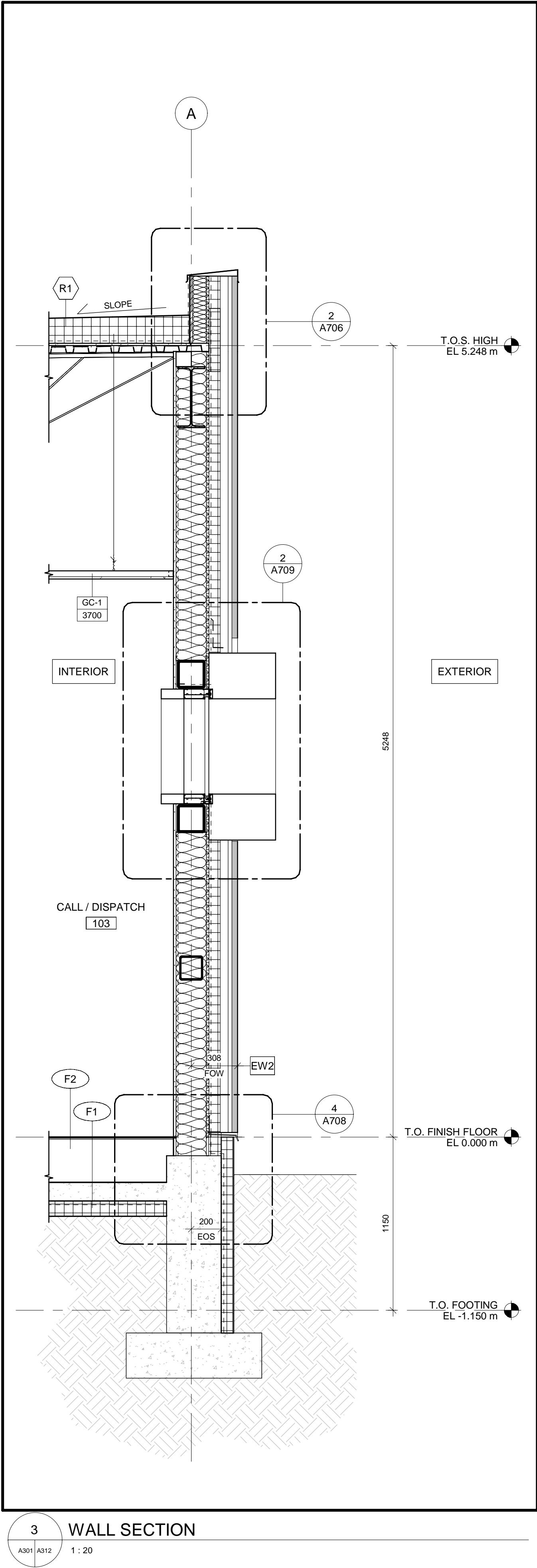
## Revision History

Filename :		Version : <b>2020.2.5</b>	
Project Number : <b>60686829</b>		Project Manager : <b>John Page</b>	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target : <b>LEED Silver</b>		IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>Designer</b>		Date (yyyy-mm-dd) :	
Drawn : <b>Author</b>		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : <b>Allan Man</b>		Date (yyyy-mm-dd) :	
Approved : <b>Approver</b>		Date (yyyy-mm-dd) :	

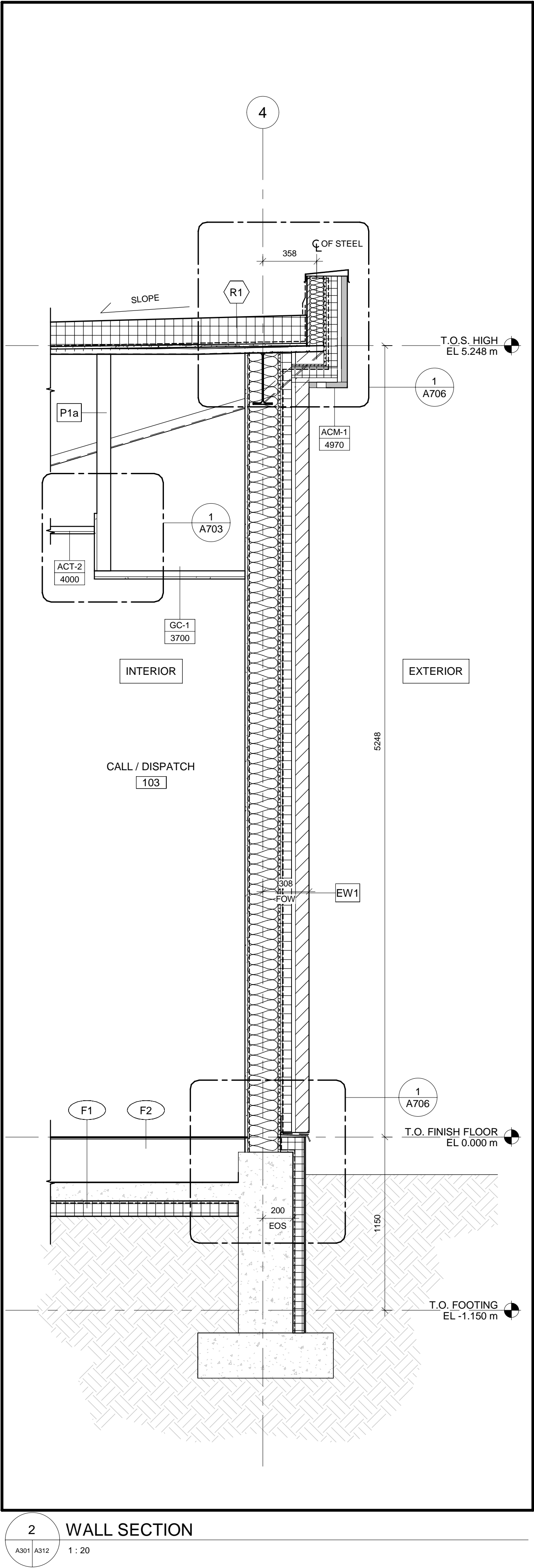
## WALL SECTIONS

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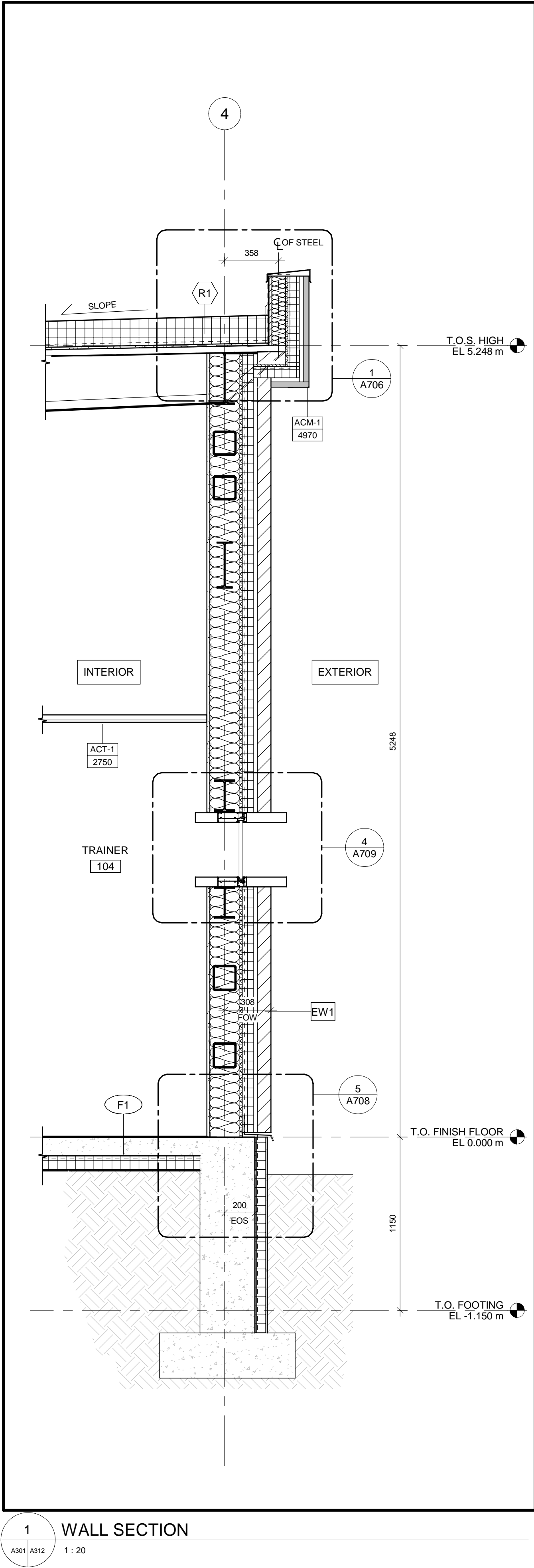




3 WALL SECTION  
A301 A312 1 : 20



2 WALL SECTION  
A301 A312 1 : 20



1 WALL SECTION  
A301 A312 1 : 20



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

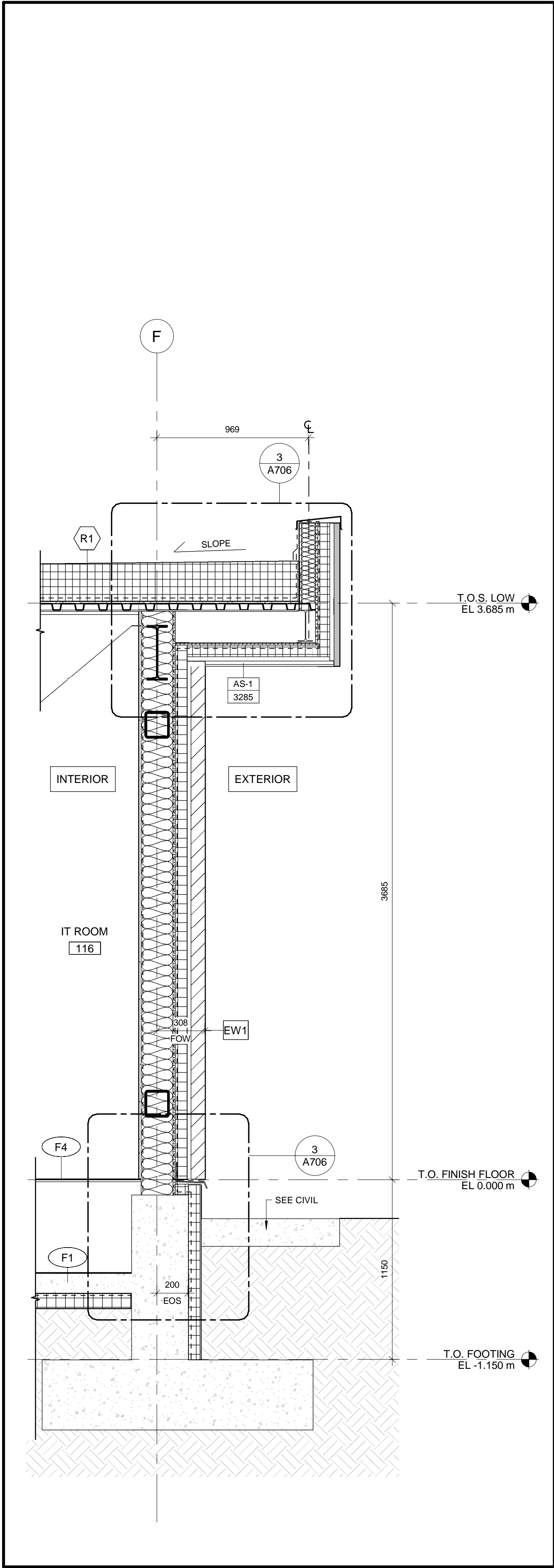
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E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Revision History		
Filename :		Version : 2020.2.5
Project Number : 60686829	Project Manager : John Page	
Project Administrator :	BIM/MVDC Manager :	
Sustainability Target : LEED Silver	IPMS 1 ( m <sup>2</sup> ) :	IPMS 2 ( m <sup>2</sup> ) :
Designed : Designer	Date (yyyy-mm-dd) :	
Drawn : Author	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : Allan Man	Date (yyyy-mm-dd) :	
Approved : Approver	Date (yyyy-mm-dd) :	

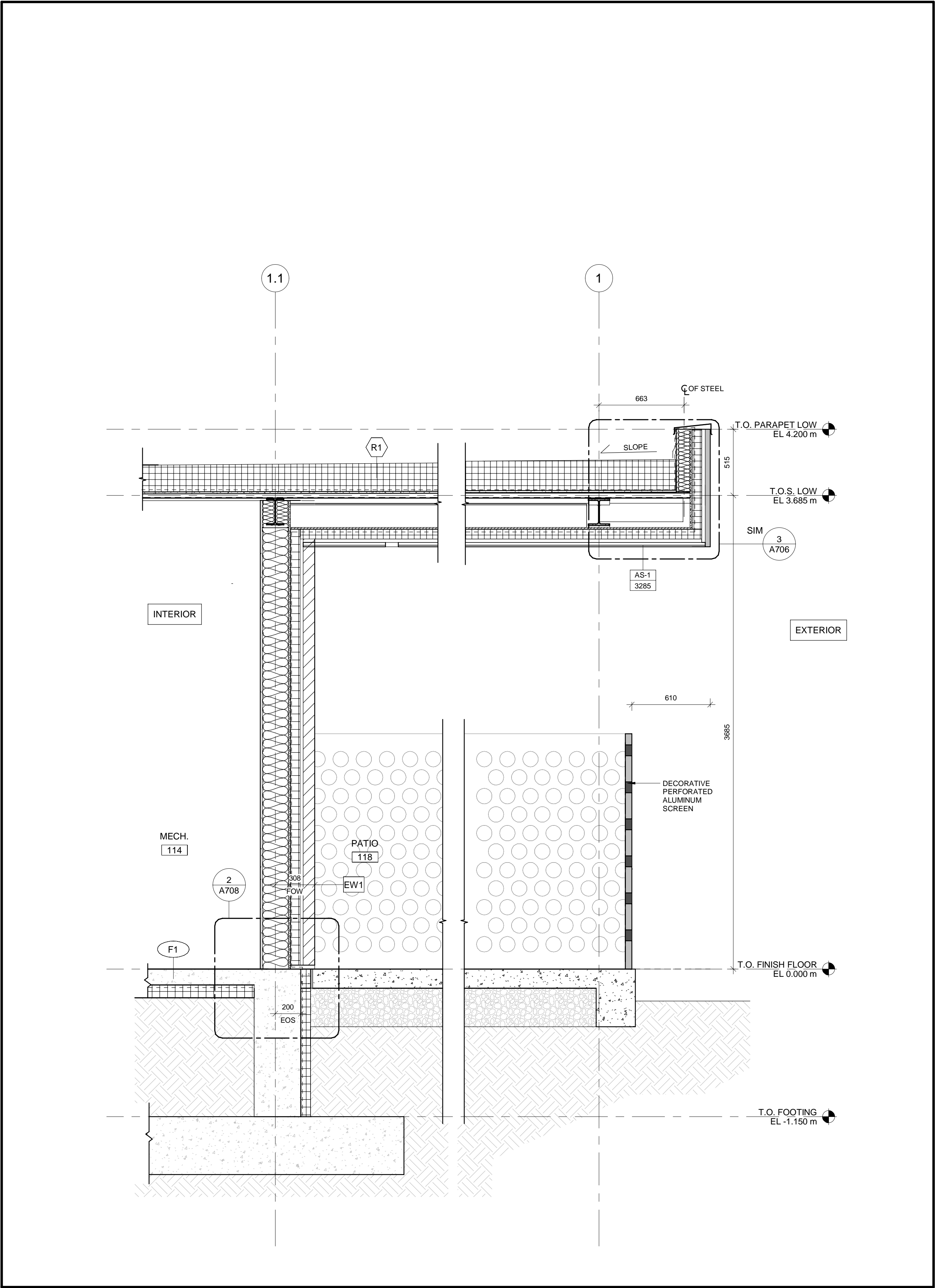
WALL SECTIONS

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ANSI D	A312	F
Scale:	1 : 20	Sheet:
		of:





2 WALL SECTION  
A111 A313 1 : 20



1 WALL SECTION  
A301 A313 1 : 20



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Administrator: John Page  
BIM/MVDC Manager:

Sustainability Target: LEED Silver  
Designed: IPMS 1 (m²): IPMS 2 (m²):  
Designer: Date (yyyy-mm-dd):  
Drawn: Author Date (yyyy-mm-dd):  
Reviewed: Date (yyyy-mm-dd):  
Checked: Allan Man Date (yyyy-mm-dd):  
Approved: Approver Date (yyyy-mm-dd):  
Title:

WALL SECTIONS

Page Size: ANSI D  
Scale: 1 : 20  
Sheet: A313  
Rev: F  
Sheet: of:



**NOTE:**

ALL N.I.C. FIXTURES AND FURNITURE TO BE SUPPLIED BY OWNER BUT INSTALLED BY CONTRACTOR TYP.

NORTH



SEAL

Owner's Project Number : <b>60686829</b>	Owner's Contract Number : <b>987654321</b>
---	---

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

### Revision History

Project Number : <b>60686829</b>	Project Manager : <b>John Page</b>	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target : <b>LEED Silver</b>	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>Designer</b>	Date (yyyy-mm-dd) :	
Drawn : <b>Author</b>	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : <b>Allan Man</b>	Date (yyyy-mm-dd) :	
Approved : <b>Approver</b>	Date (yyyy-mm-dd) :	

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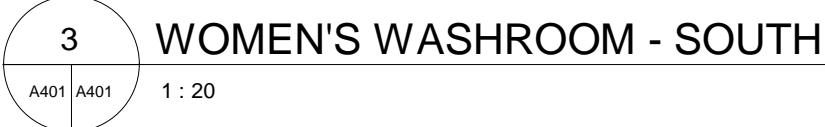



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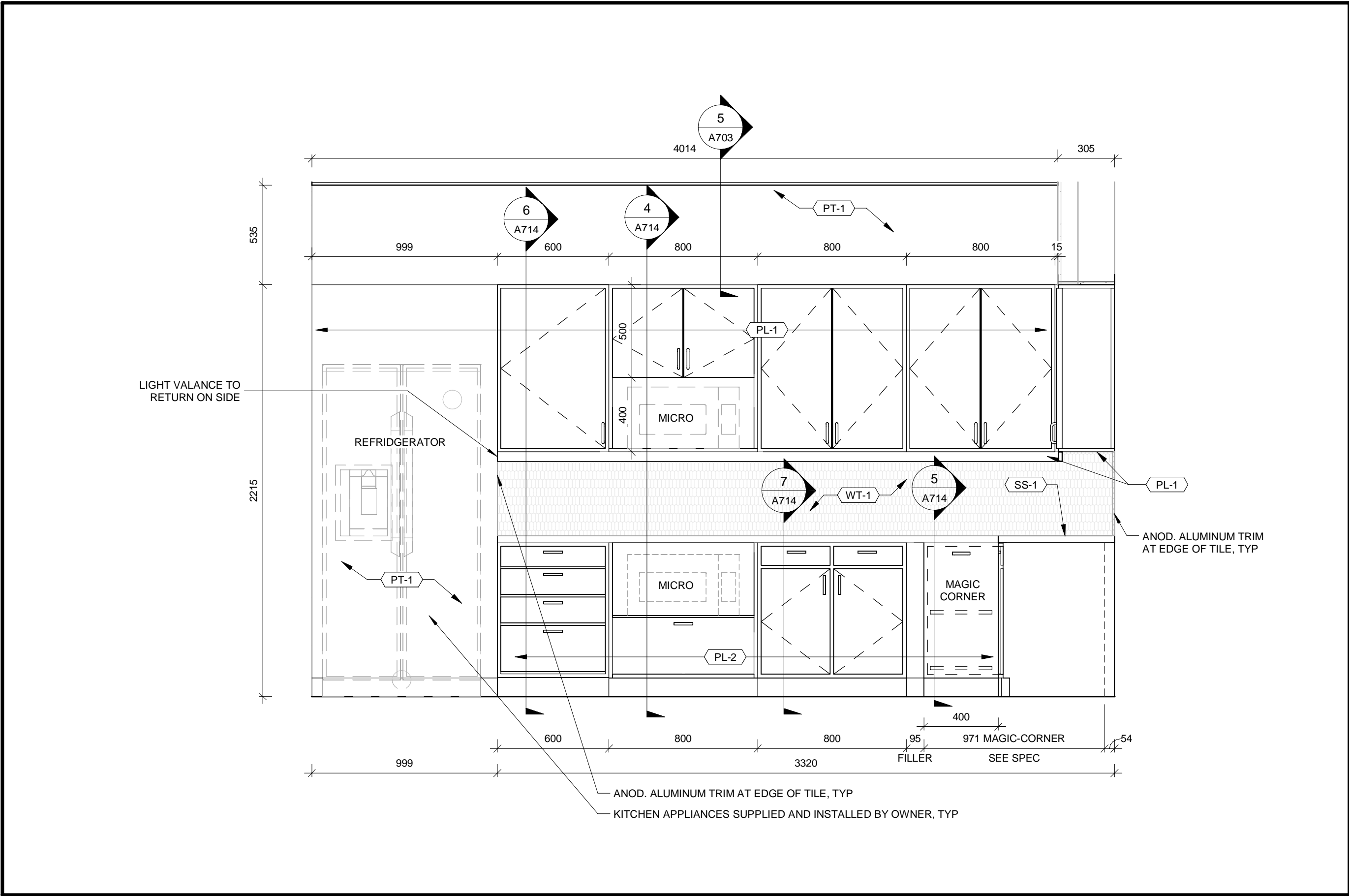
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NORTH:



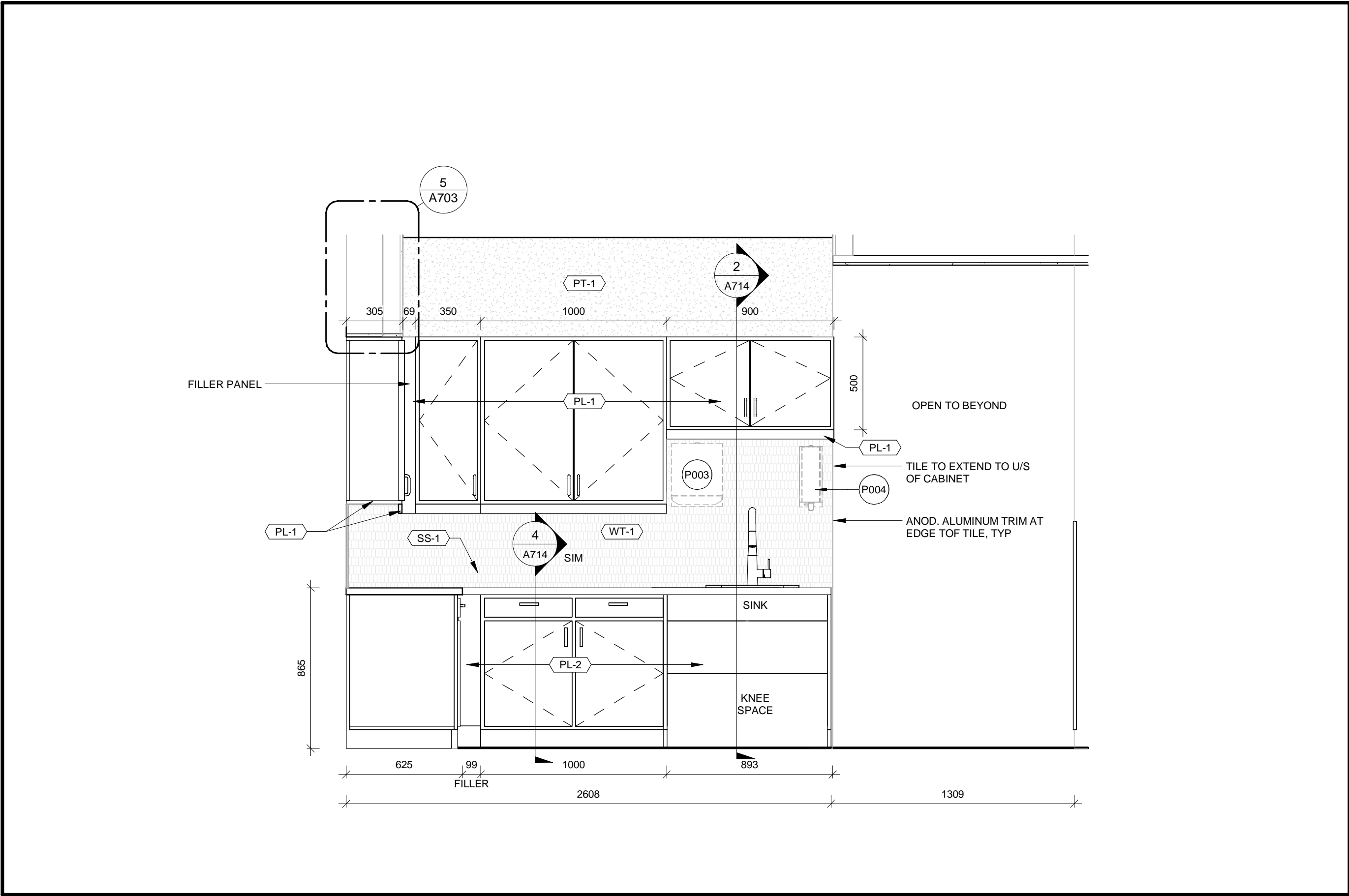
		
<b>SEAL:</b>		
<b>NRPS NG911 BACKUP CENTRE</b> <b>5 LINCOLN STREET</b> <b>WELLAND, ONTARIO</b>		
<b>Owner's Project Number</b> <b>60686829</b>	<b>Owner's Contract Number</b> <b>987654321</b>	
F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description
<b>Revision History</b>		
<b>Filename :</b>		<b>Version:</b> <b>2020.2.5</b>
<b>Project Number :</b> <b>60686829</b>		<b>Project Manager:</b> <b>John Page</b>
<b>Project Administrator :</b>		<b>BM/VOC Manager :</b>
<b>Sustainability Target :</b> <b>LEED Silver</b>		<b>IPMS 1 (m<sup>2</sup>) :</b>
<b>Designed :</b> <b>Designer</b>		<b>IPMS 2 (m<sup>2</sup>) :</b>
<b>Drawn :</b> <b>Author</b>		<b>Date (yyyy-mm-dd) :</b>
<b>Reviewed :</b>		<b>Date (yyyy-mm-dd) :</b>
<b>Checked :</b> <b>Allan Man</b>		<b>Date (yyyy-mm-dd) :</b>
<b>Approved :</b> <b>Approver</b>		<b>Date (yyyy-mm-dd) :</b>
<b>Title :</b>		
<b>ENLARGED PLAN AND DETAILS -</b> <b>WASHROOMS &amp; JANITOR</b>		
<b>Page Size</b> <b>ANSI D</b>	<b>Sheet :</b>	<b>Rev :</b> <b>F</b>
<b>Scale :</b> <b>1 : 20</b>	<b>A401</b>	<b>Sheet :</b> <b>of :</b>





4 KITCHEN ELEVATION - WEST

A401 A402 1 : 20

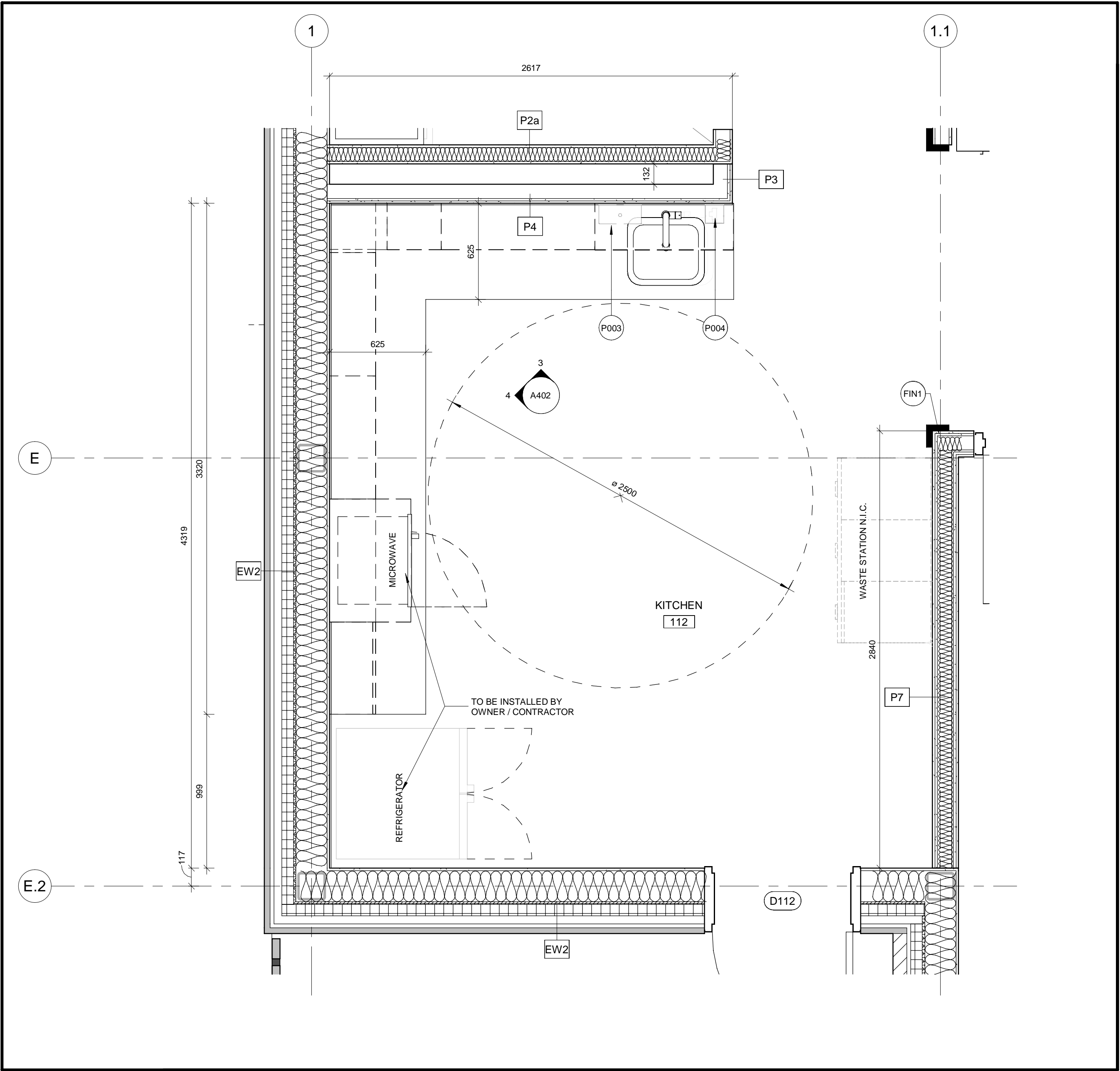


3 KITCHEN ELEVATION - NORTH

A402 A402 1 : 20

KEYNOTE LEGEND	
KEYNOTE	DESCRIPTION
FIN1	PROVIDE 12x12x1/20 ANODIZED ALUMINUM CORNER GUARDS AT ALL EXPOSED CORNERS. ADHERE TO WALL WITH CONSTRUCTION ADHESIVE (NO MECHANICAL FASTENERS)
P003	WALL MOUNTED PAPER TOWEL DISPENSER, N.I.C.
P004	WALL MOUNTED SOAP DISPENSER, N.I.C.
<b>NOTE:</b> ALL N.I.C. FIXTURES AND FURNITURE TO BE SUPPLIED BY OWNER BUT INSTALLED BY CONTRACTOR TYP.	

ROOM FINISH LEGEND	
<b>WALLS</b>	
PT-X	- PAINT
WT-X	- BACKSPLASH WALL TILE
<b>MILLWORK</b>	
PL-X	- HIGH PRESSURE LAMINATE
SS-X	- SOLID SURFACE
<b>GENERAL NOTES</b>	
1. COORDINATE WITH REFLECTED CEILING PLANS	
2. REFER TO SCHEDULE OF FINISHES SECTION 09 06 00 AND INTERIOR ELEVATIONS.	



1 KITCHEN FLOOR PLAN

A121 A402 1 : 20



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

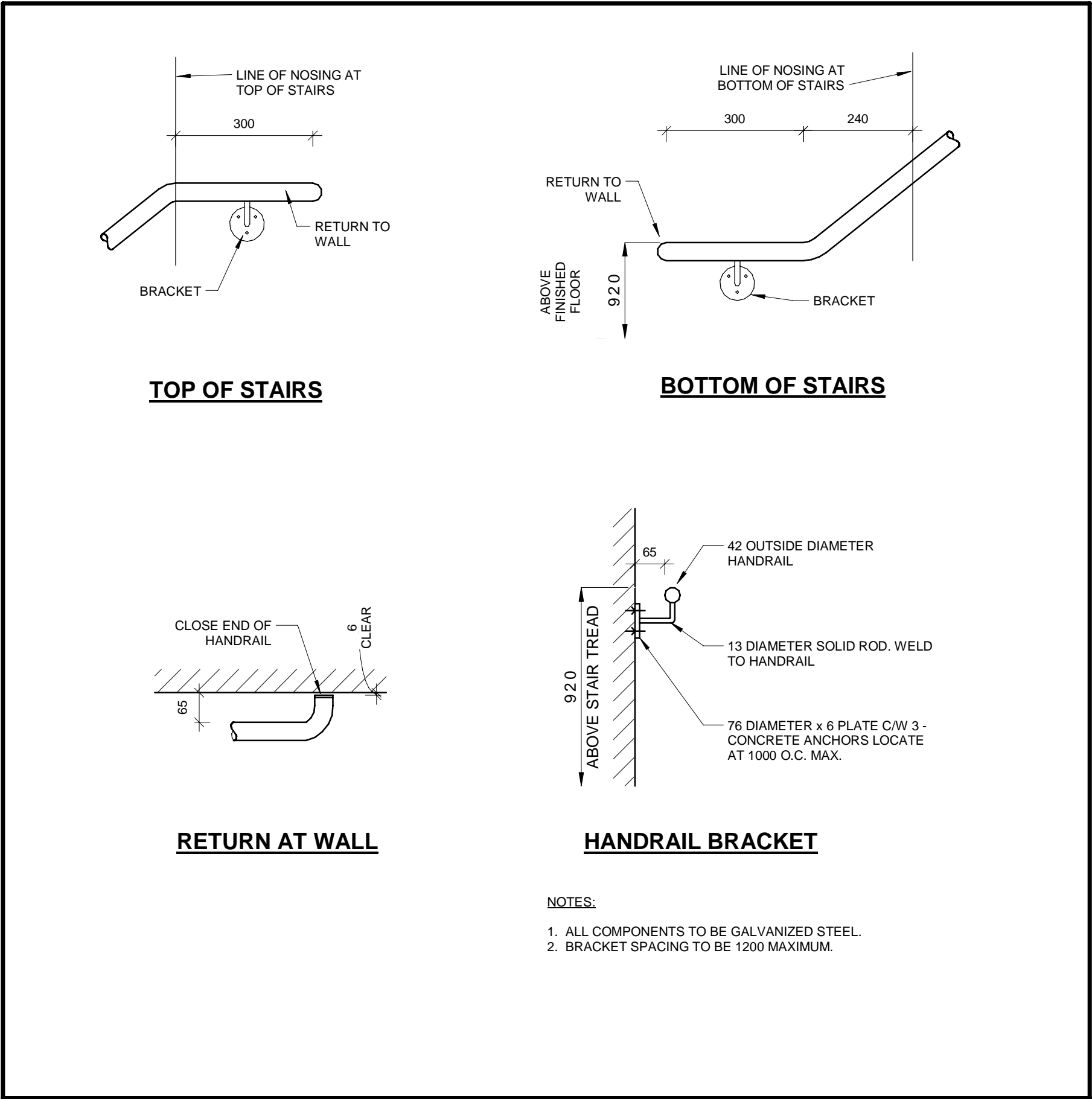
Mark	Date	Description
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E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Revision History	
Filename:	Version: 2020.2.5.
Project Number: 60686829	Project Manager: John Page
Project Administrator:	BIM/MVDC Manager:
Sustainability Target: LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed: Designer	Date (yyyy-mm-dd):
Drawn: Author	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: Allan Man	Date (yyyy-mm-dd):
Approved: Approver	Date (yyyy-mm-dd):
Title:	

ENLARGED PLAN AND DETAILS - KITCHEN

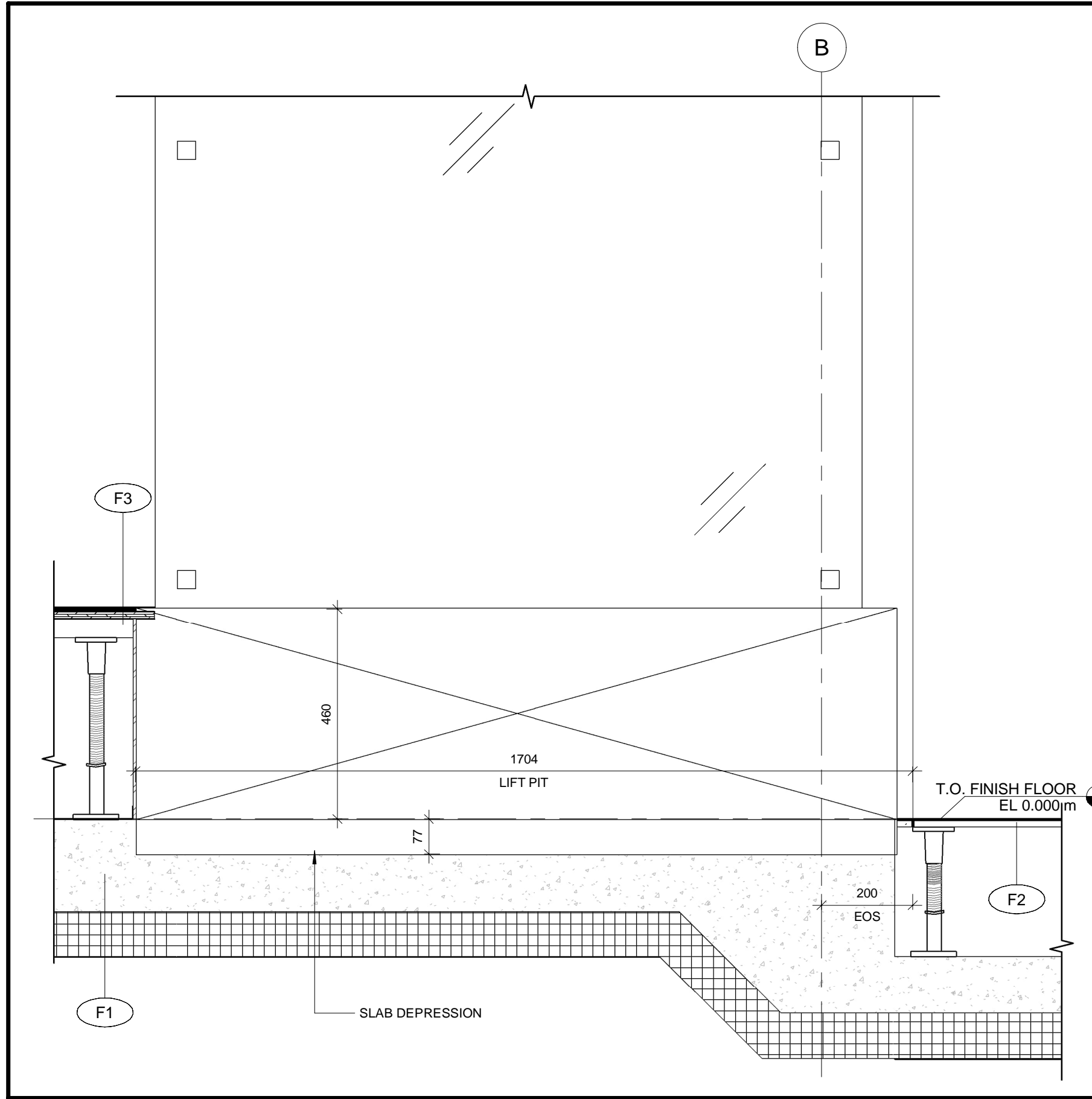
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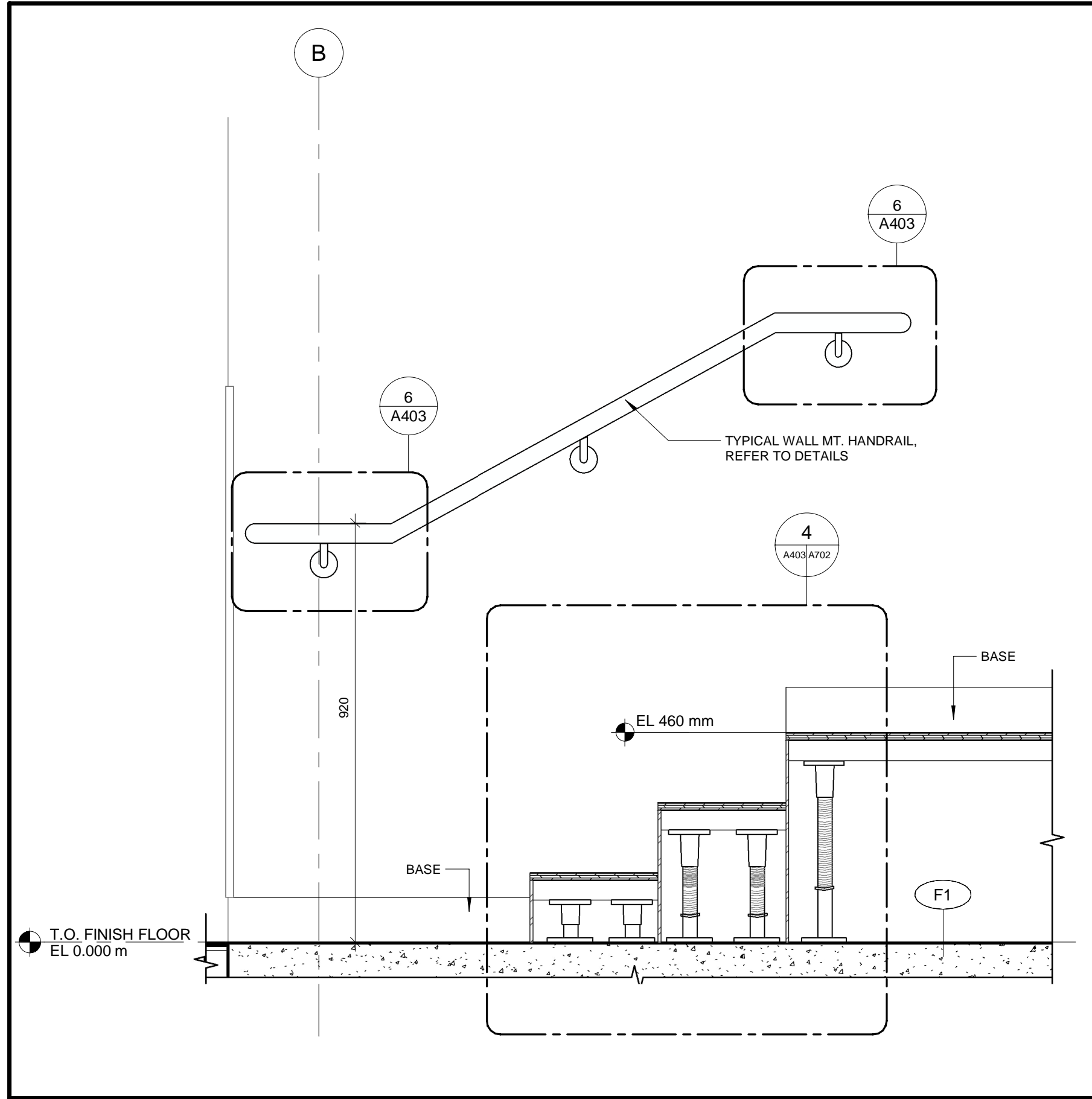
6 WALL MOUNTED HANDRAIL DETAILS

A403 A403 1 : 10



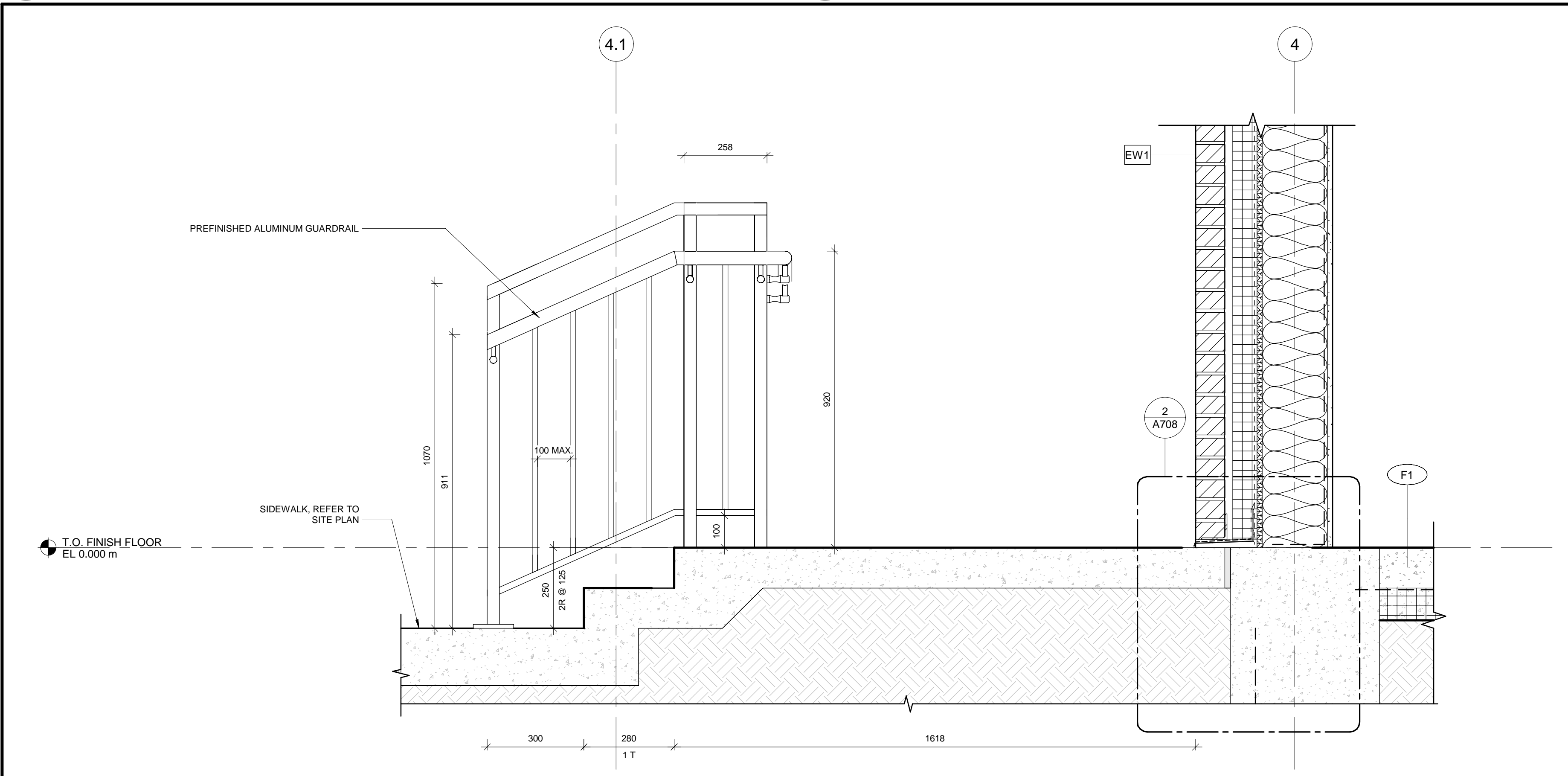
4 LIFT SECTION

A111 A403 1 : 10



2 SUPERVISOR - STAIR SECTION

A403 A403 1 : 10





KEYNOTE LEGEND	
KEYNOTE	DESCRIPTION
FIN1	PROVIDE 12x12x1/2 ANODIZED ALUMINUM CORNER GUARDS AT ALL EXPOSED CORNERS. ADHERE TO WALL WITH CONSTRUCTION ADHESIVE (NO MECHANICAL FASTENERS)

**NOTE:**  
ALL N.I.C. FIXTURES AND FURNITURE TO BE SUPPLIED BY OWNER BUT INSTALLED BY CONTRACTOR TYP.

**ROOM FINISH LEGEND**

WALLS:

PT-X - PAINT

WP-X - PROTECTIVE WALL PANELS

**GENERAL NOTES**

- COORDINATE WITH REFLECTED CEILING PLANS
- REFER TO SCHEDULE OF FINISHES SECTION 09 06 00 AND INTERIOR ELEVATIONS.



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

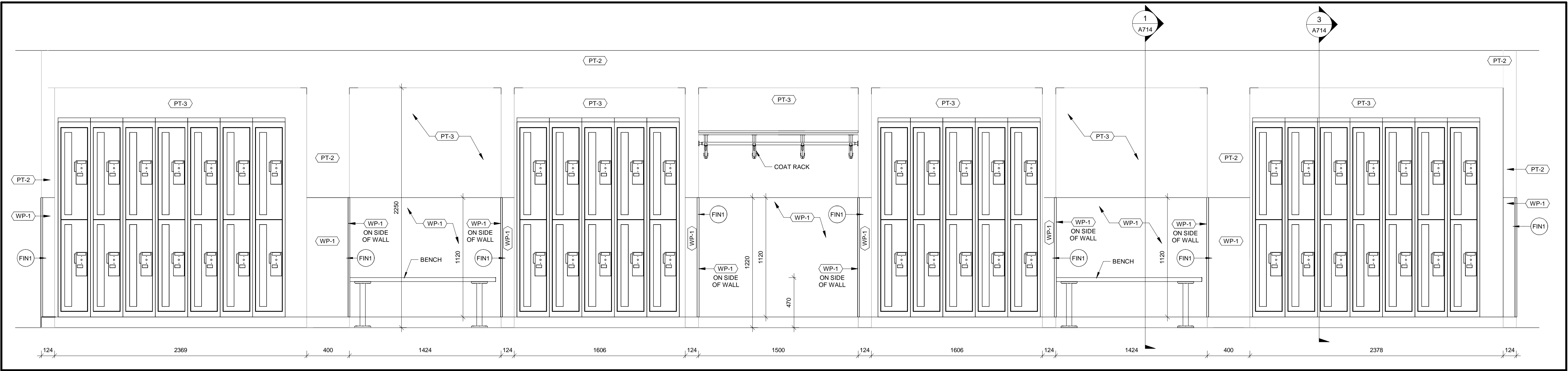
Owner's Project Number:	Owner's Contract Number:
60686829	987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	Project Manager: John Page
Project Administrator:		BIM/MDC Manager:
Sustainability Target:	LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed:		Date (yyyy-mm-dd):
Designer:		Date (yyyy-mm-dd):
Drawn:		Date (yyyy-mm-dd):
Author:		Date (yyyy-mm-dd):
Reviewed:		Date (yyyy-mm-dd):
Checked:	Allan Man	Date (yyyy-mm-dd):
Approved:	Approver	Date (yyyy-mm-dd):
Title:		

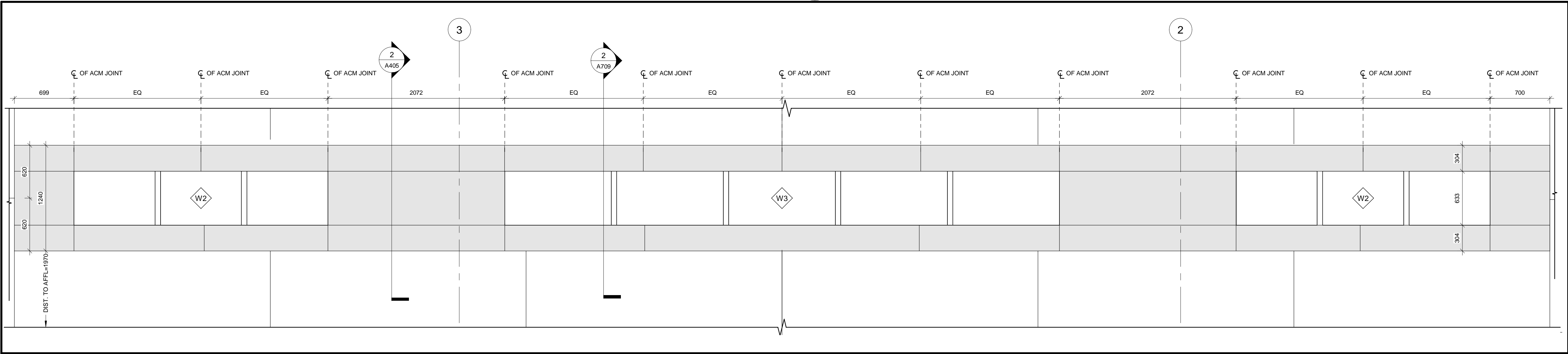
ENLARGED PLAN AND DETAILS -  
CORRIDOR

Page Size:	ANSI D	Sheet:	A404	Rev:	F
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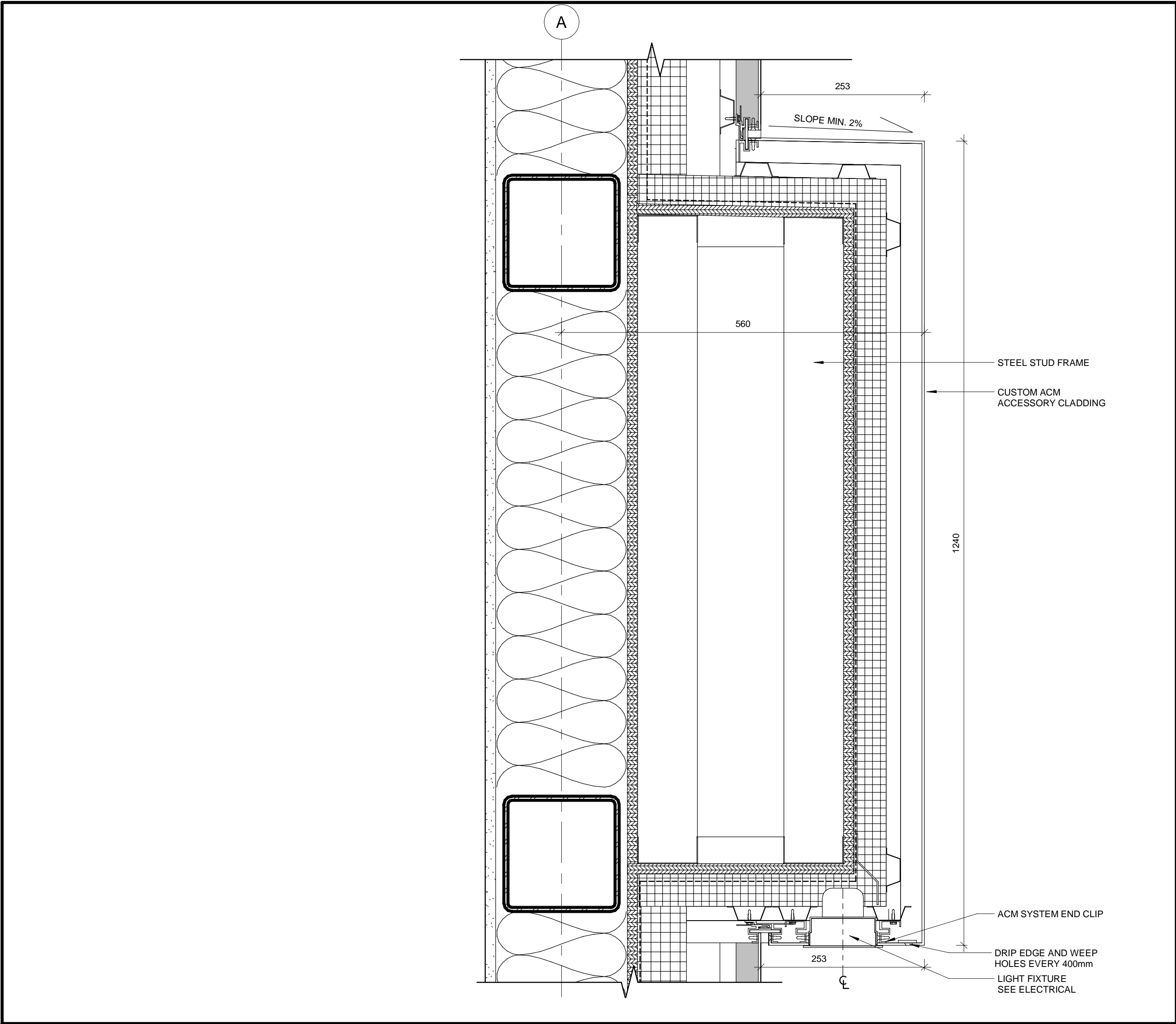
1 CORRIDOR ELEVATION





1 FACADE DETAIL

A201 A405 1 : 25



2 WINDOW FEATURE FRAME SECTION DETAIL

A405 A405 1 : 5

AECOM

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
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Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Manager: John Page

Project Administrator: BIM/VDC Manager:

Sustainability Target: LEED Silver

Designed: Designer

Drawn: Author

Reviewed: Approver

Checked: Allan Man

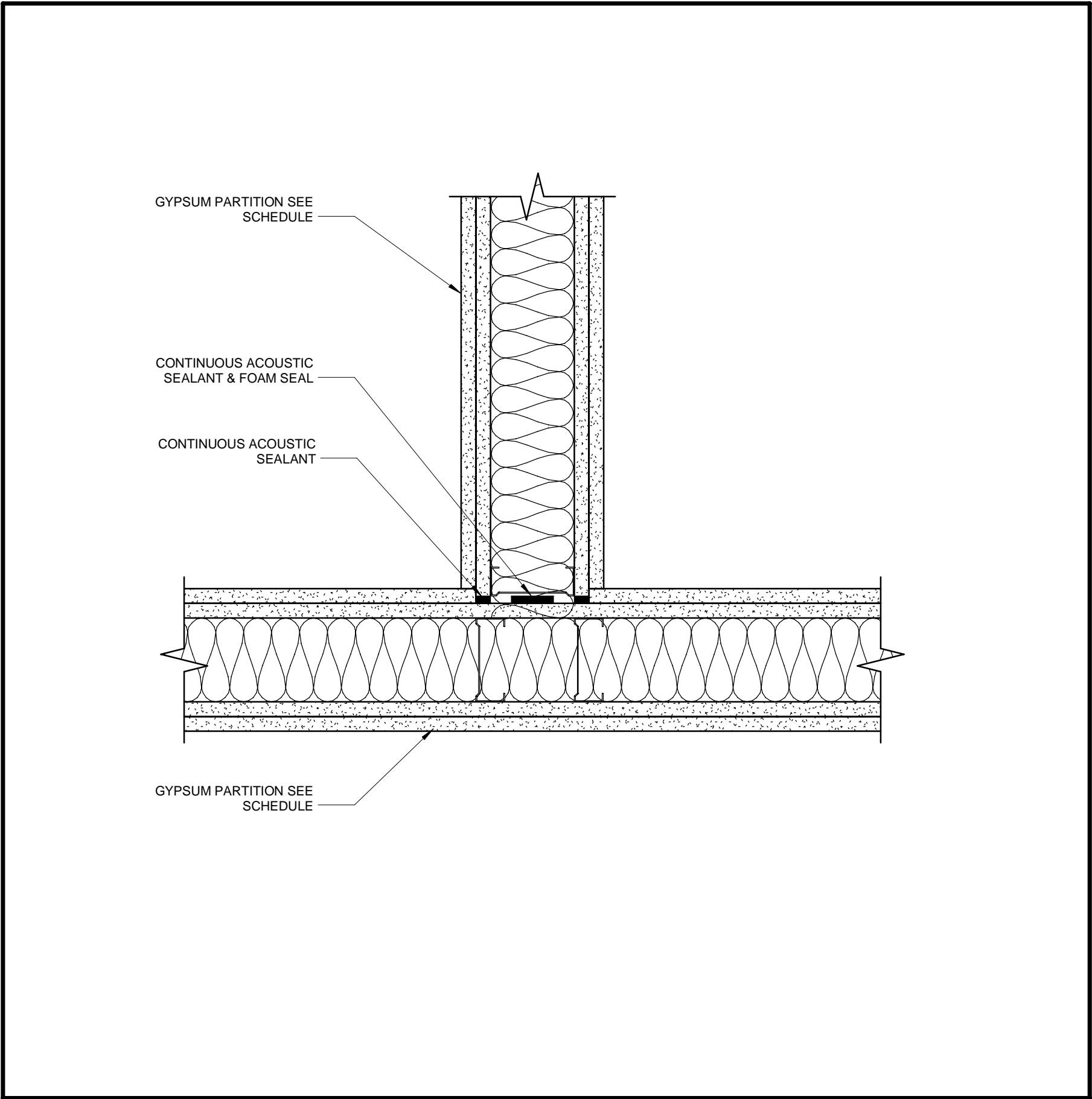
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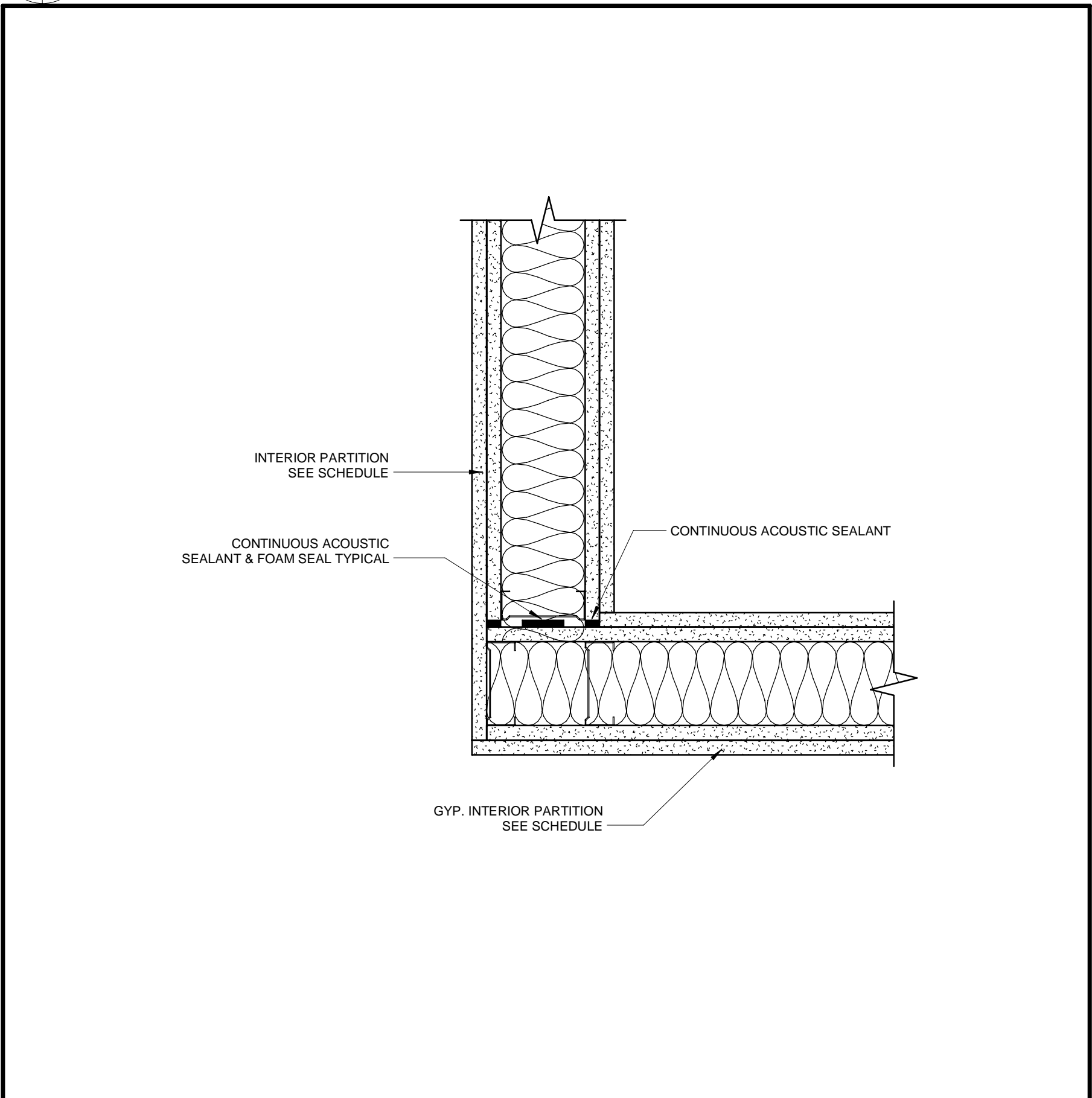
FACADE DETAIL

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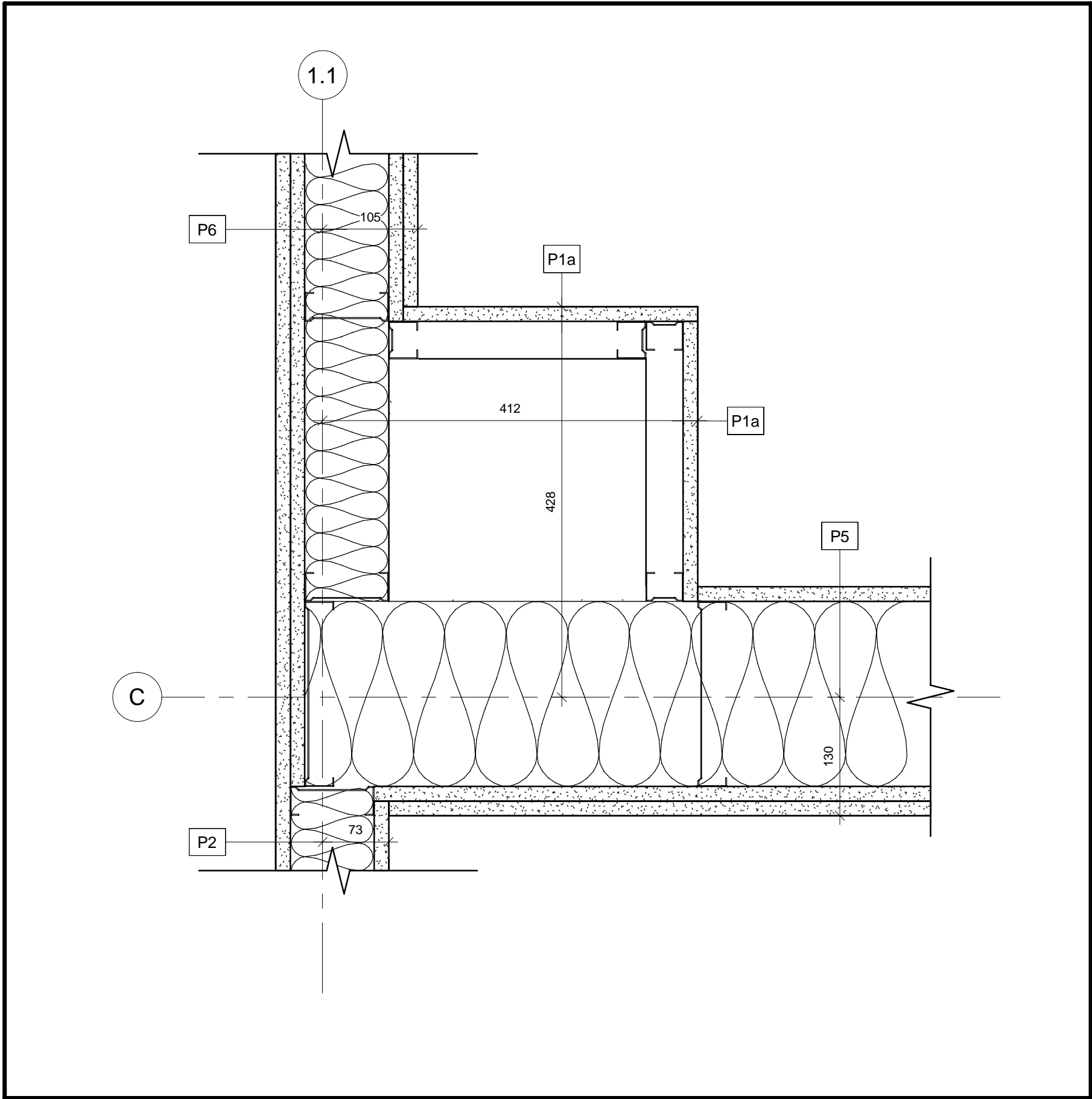




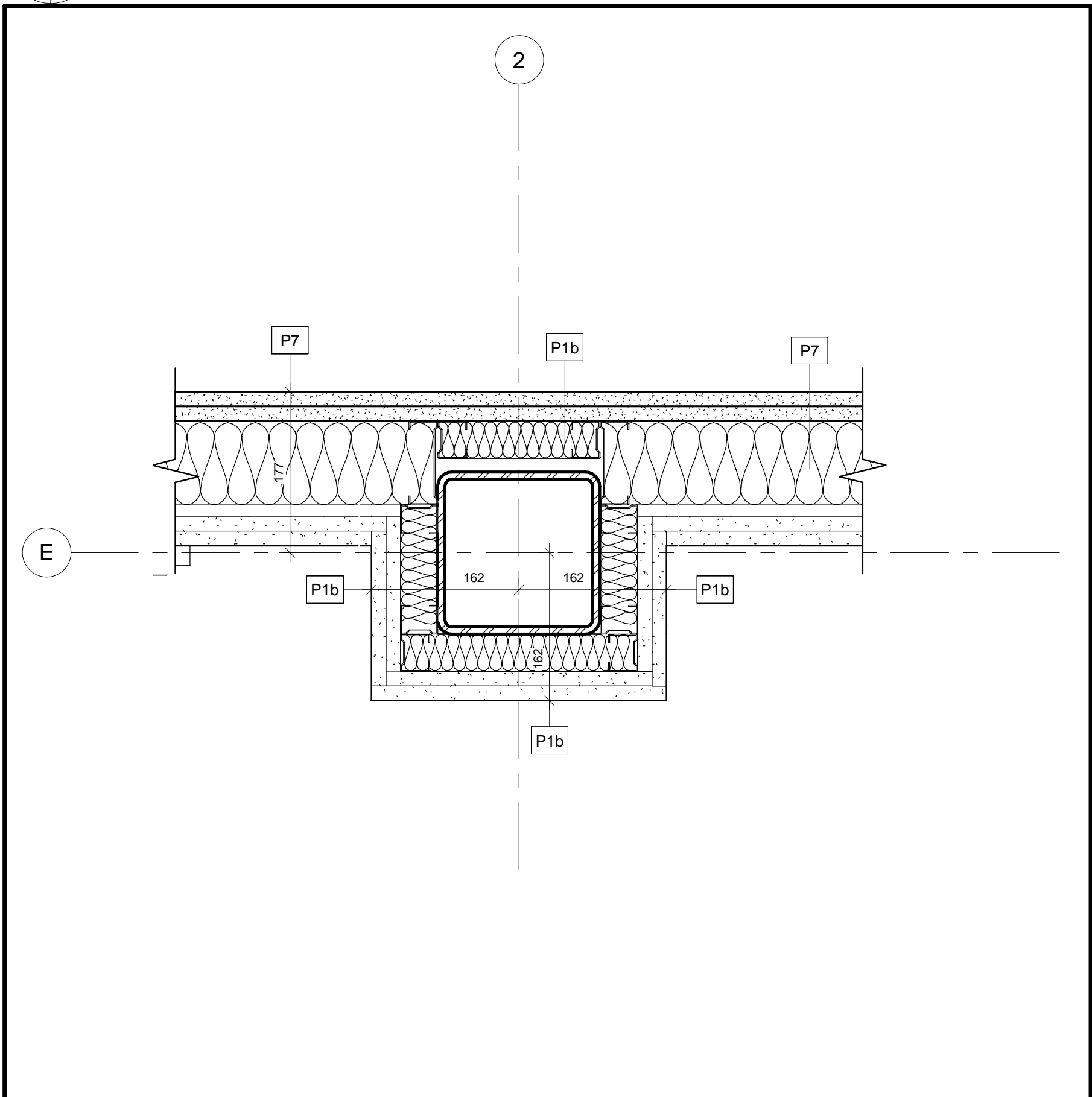
6 TYP. WALL INTERSECTION ACOUSTIC SEALANTPLAN DETAIL  
A111 A701 1 : 5



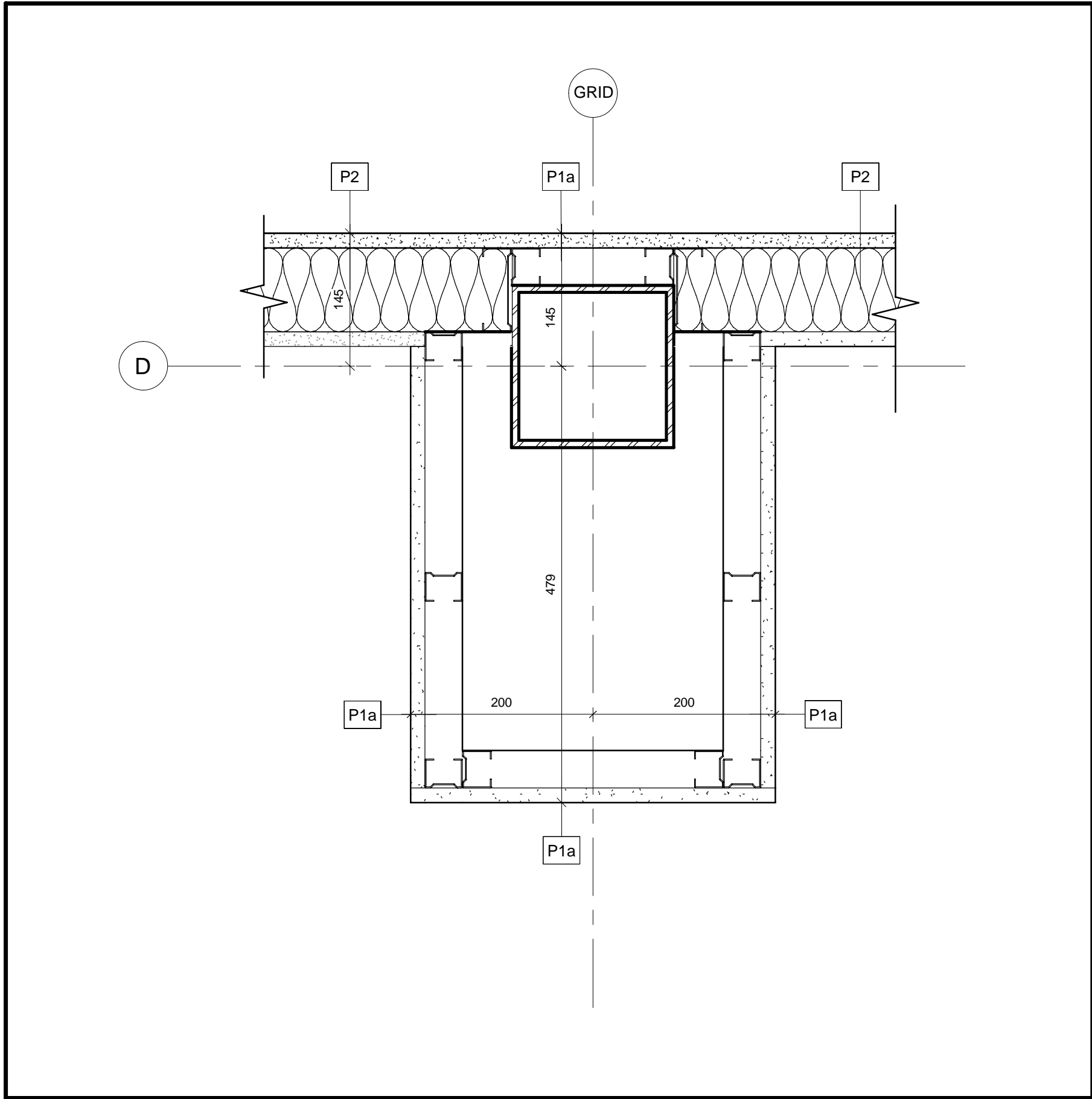
5 TYP. INTERIOR PARTITION CORNER ACOUSTIC SEALANT PLAN DETAIL  
A111 A701 1 : 5



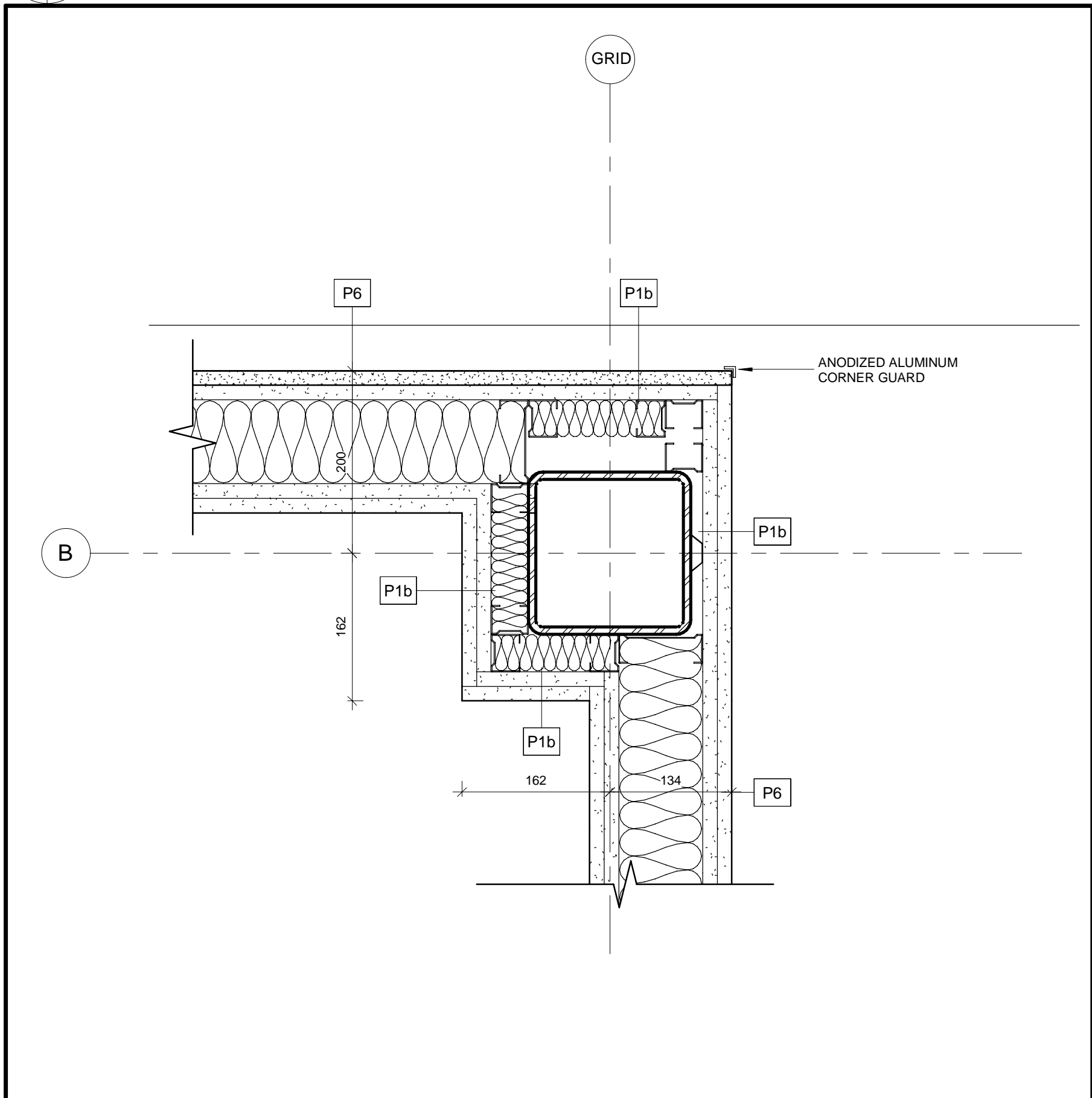
4 COLUMN SHEATHING AT CHASE PLAN DETAIL  
A111 A701 1 : 5



3 COLUMN SHEATHING AT FIRE-RATED WALL PLAN DETAIL  
A111 A701 1 : 5



2 COLUMN SHEATHING PLAN DETAIL  
A111 A701 1 : 5



1 COLUMN SHEATHING AT FIRE-RATED WALLS PLAN DETAIL  
A111 A701 1 : 5



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

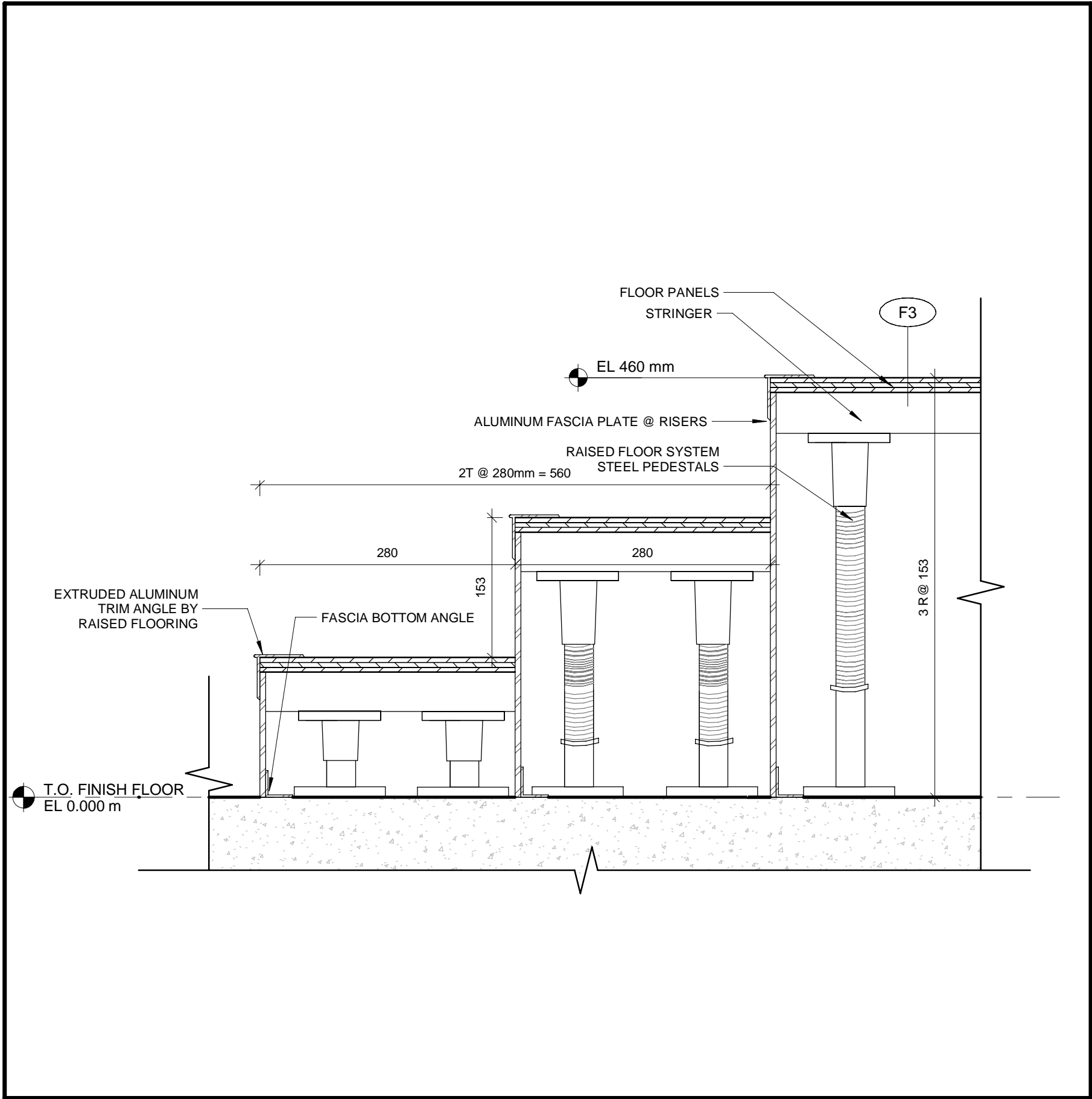
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C	2024-12-13	IFP RE-SUBMISSION
B	2024-11-29	ISSUED FOR OWNER REVIEW
A	2024-10-30	ISSUED FOR PERMIT

Revision History			
Filename :		Version : 2020.2.5.	
Project Number : 60686829		Project Manager : John Page	
Project Administrator :		BIM/MVC Manager :	
Sustainability Target : LEED Silver		IPMS 1 ( m² ) :	IPMS 2 ( m² ) :
Designed : Designer		Date (yyyy-mm-dd) :	
Drawn : Author		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : Allan Man		Date (yyyy-mm-dd) :	
Approved :		Date (yyyy-mm-dd) :	
Approver :		Date (yyyy-mm-dd) :	

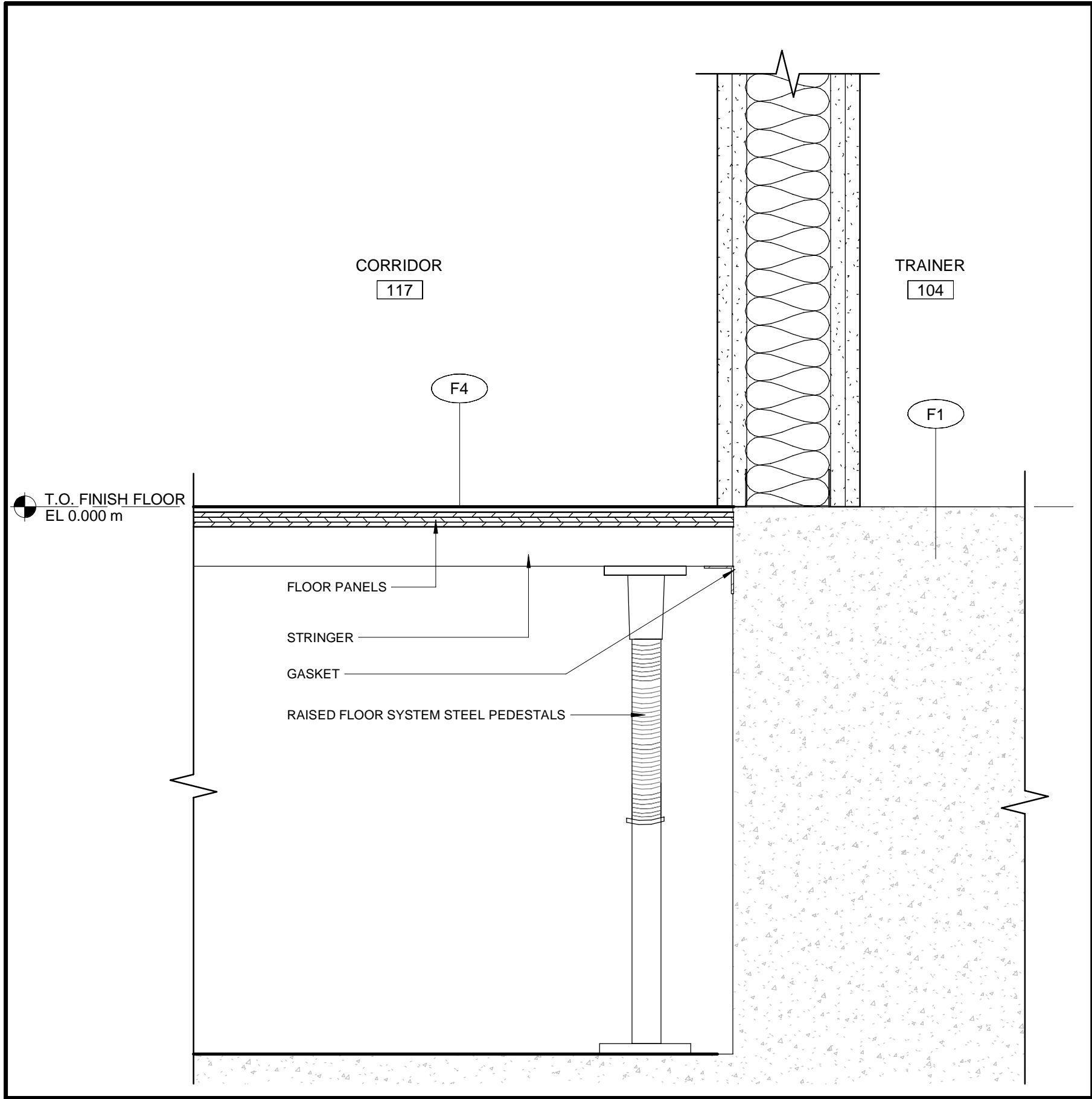
INTERIOR PLAN DETAILS

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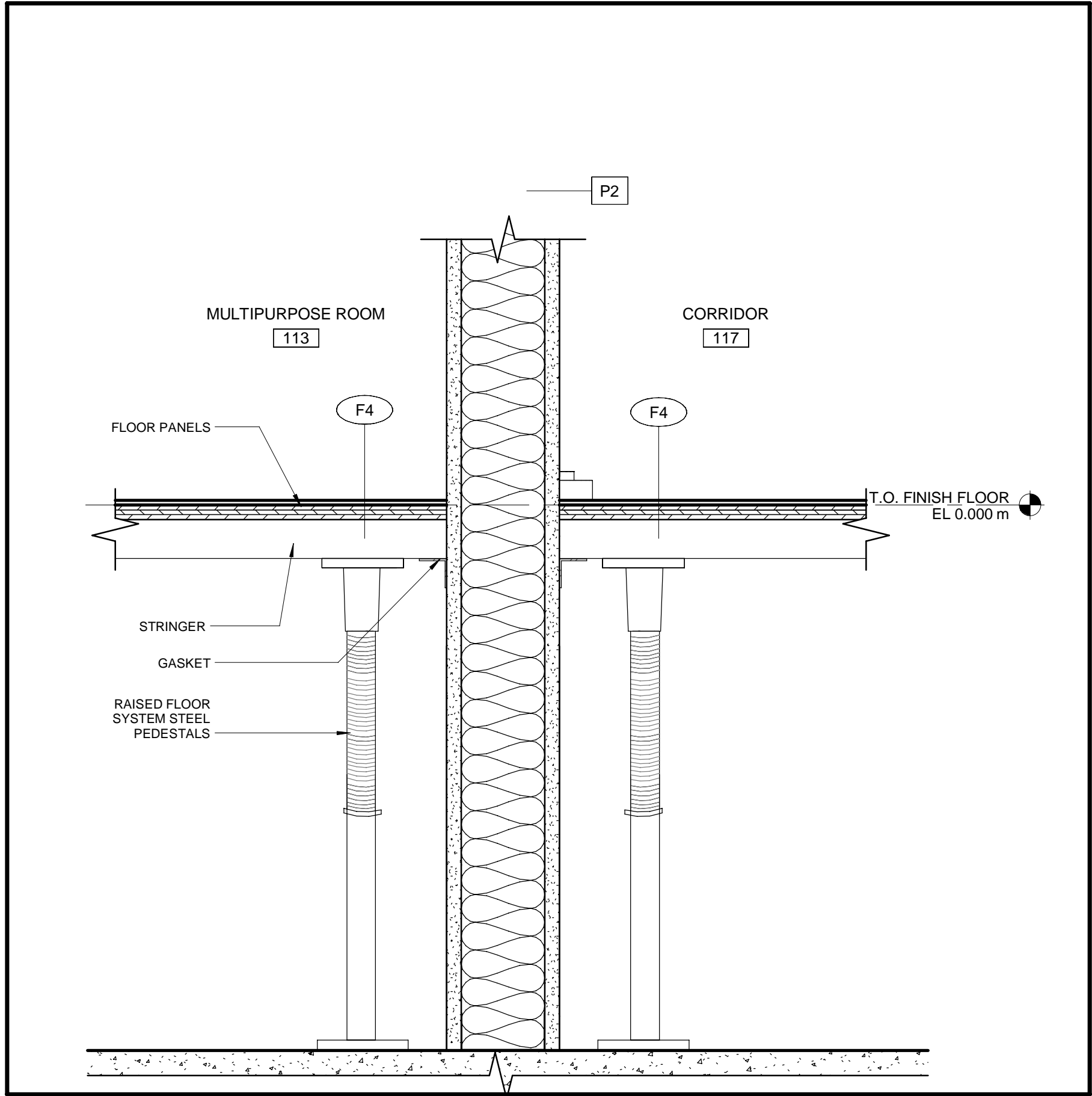




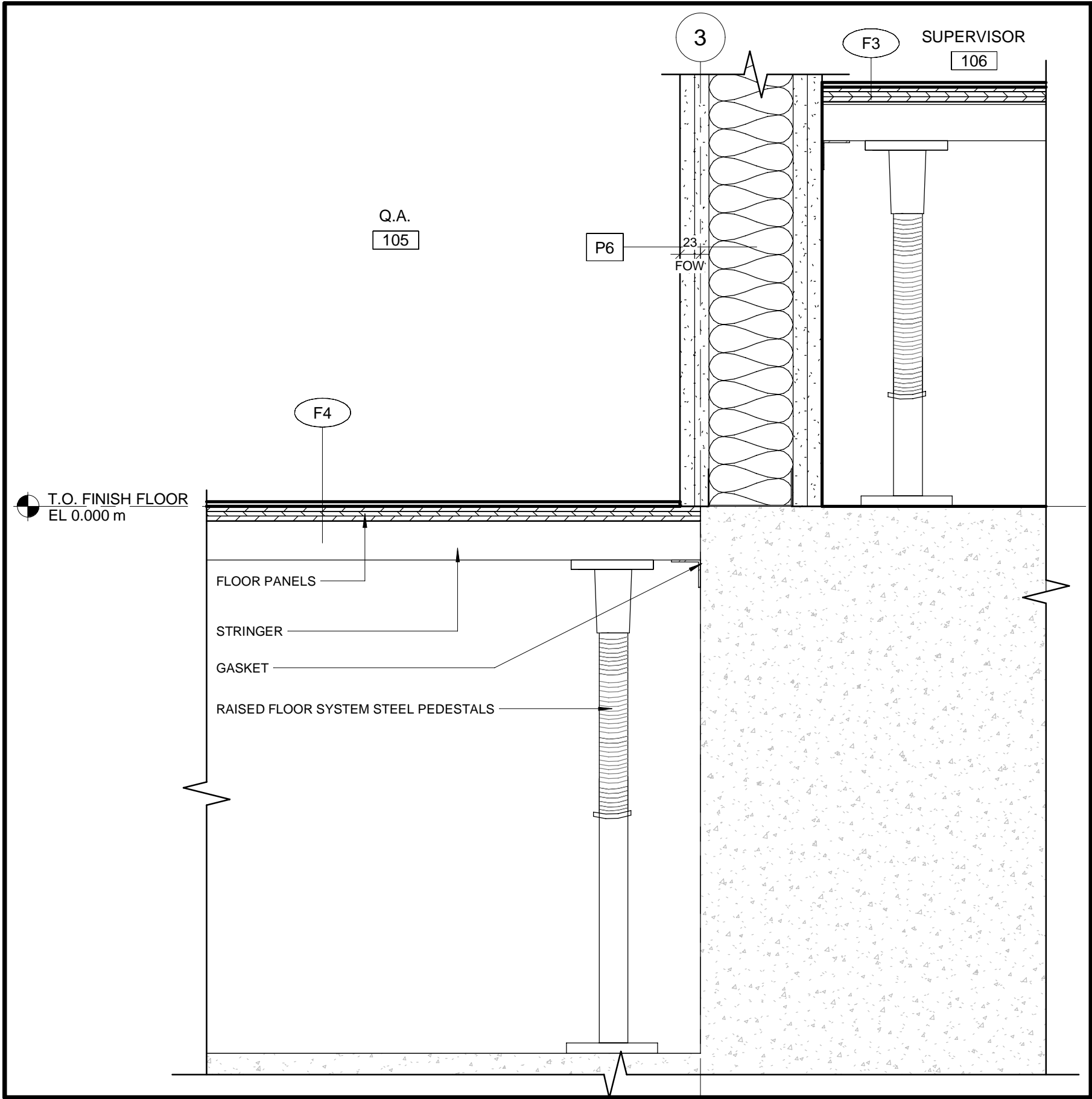
4 RAISED FLOOR SYSTEM STAIR SECTION DETAIL  
A403 A702 1:5



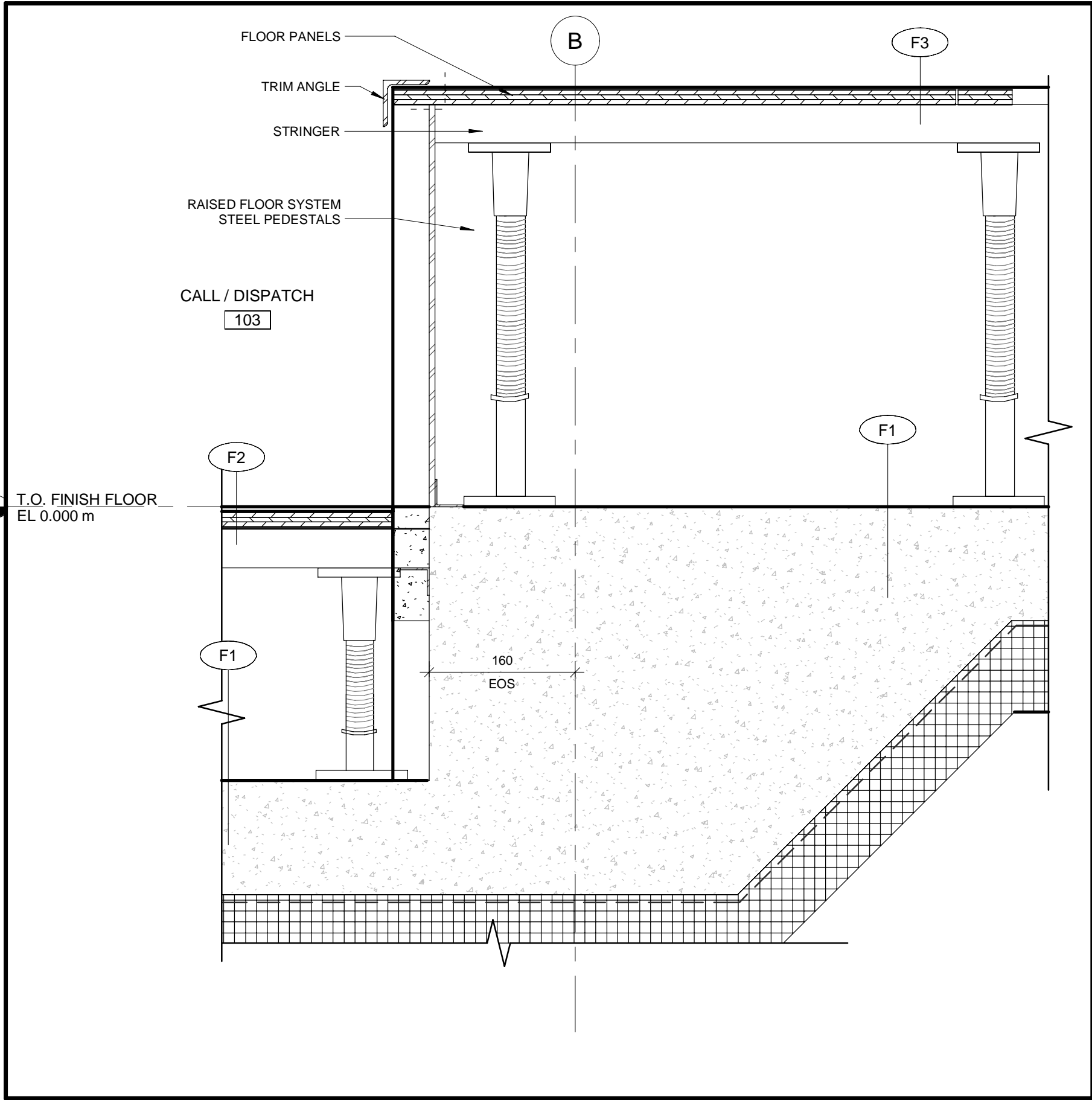
2 RAISED FLOOR AT SLAB DROP SECTION DETAIL  
A111 A702 1:5



5 INTERIOR PARTITION BASE @ RAISED FLOOR SYSTEM  
A111 A702 1:5



3 RAISED FLOOR AT SLAB DROP SECTION DETAIL  
A111 A702 1:5



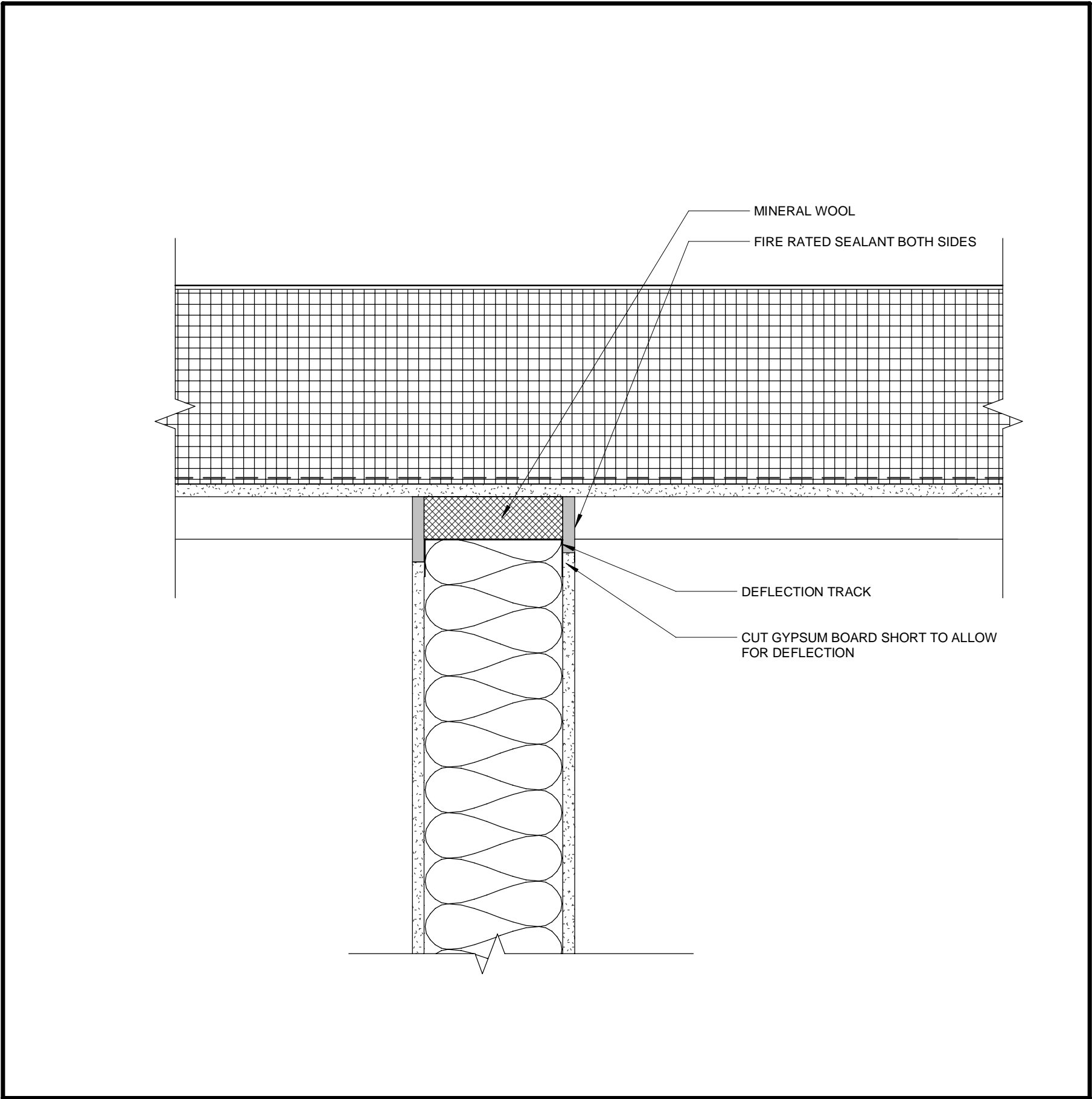
1 RAISED FLOOR @ SUPERVISOR SECTION DETAIL  
A111 A702 1:5



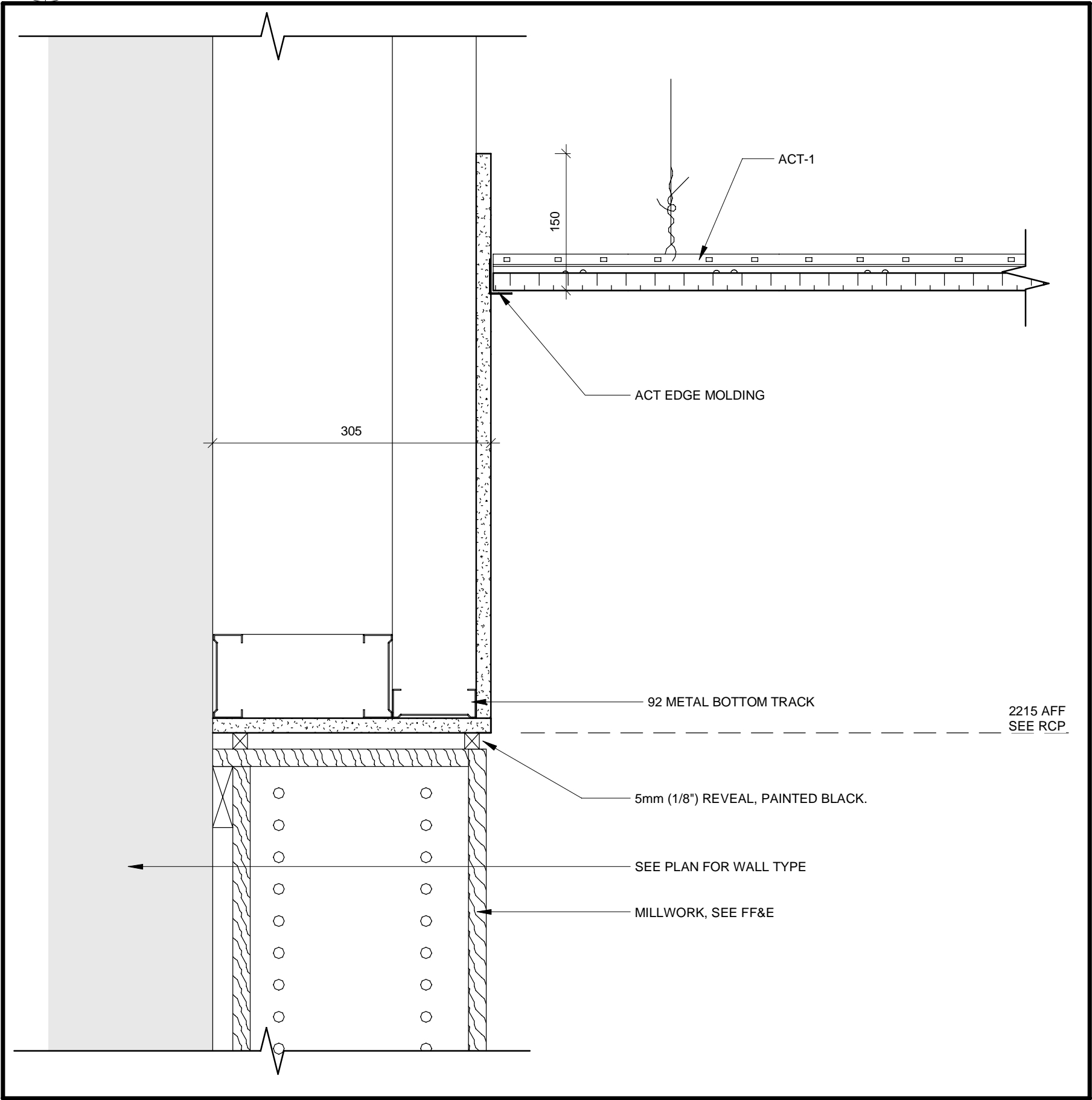
D	2025-01-23	ISSUED FOR TENDER
C	2024-12-13	IFP RE-SUBMISSION
B	2024-11-29	ISSUED FOR OWNER REVIEW
A	2024-10-30	ISSUED FOR PERMIT

Mark	Date	Description
Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	Project Manager: John Page
Project Administrator:		BIM/MVDC Manager:
Sustainability Target:	LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed:		Date (yyyy-mm-dd):
Drawn:	Author	Date (yyyy-mm-dd):
Reviewed:		Date (yyyy-mm-dd):
Checked:	Allan Man	Date (yyyy-mm-dd):
Approved:	Approver	Date (yyyy-mm-dd):
Title:		

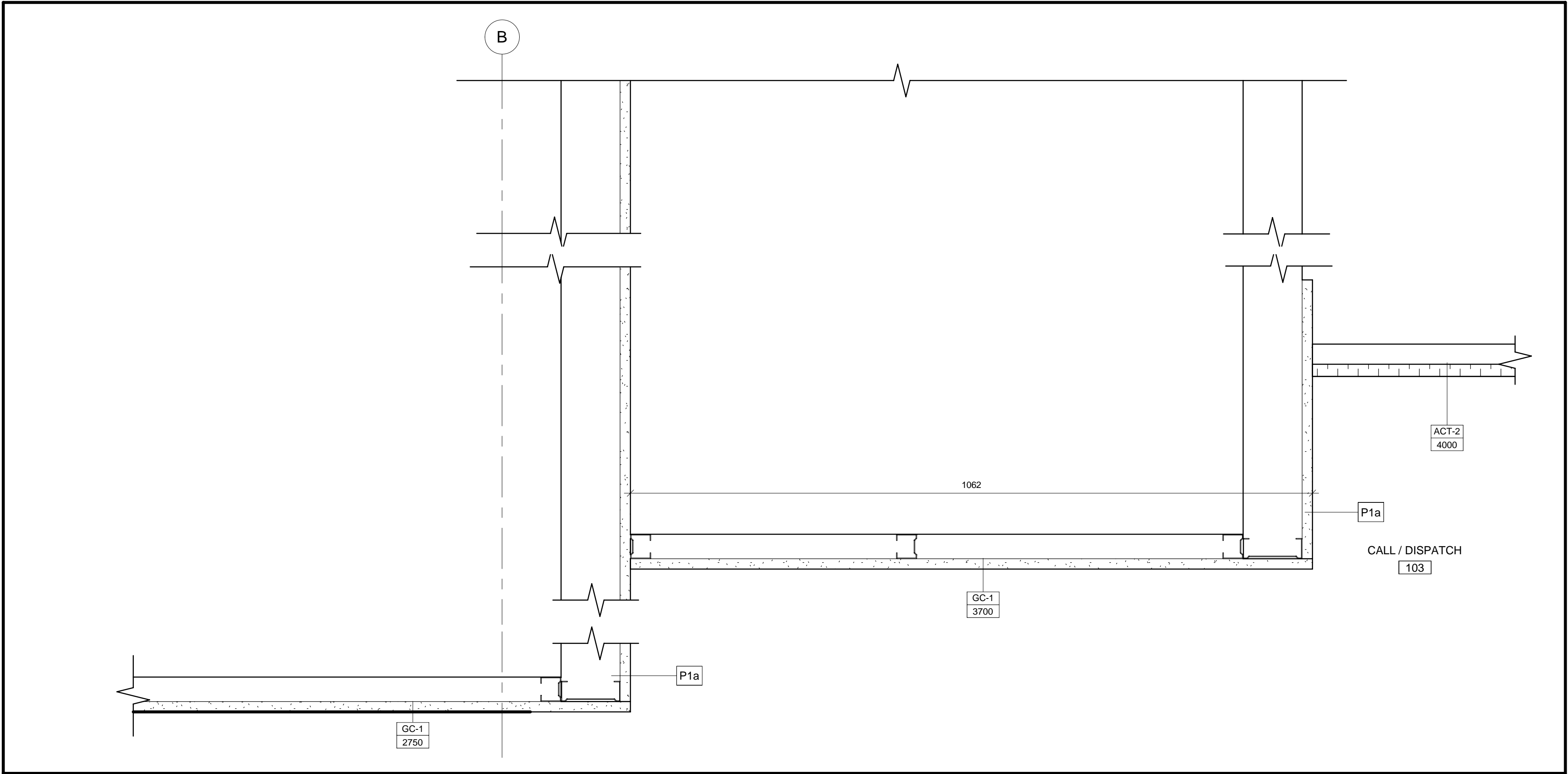




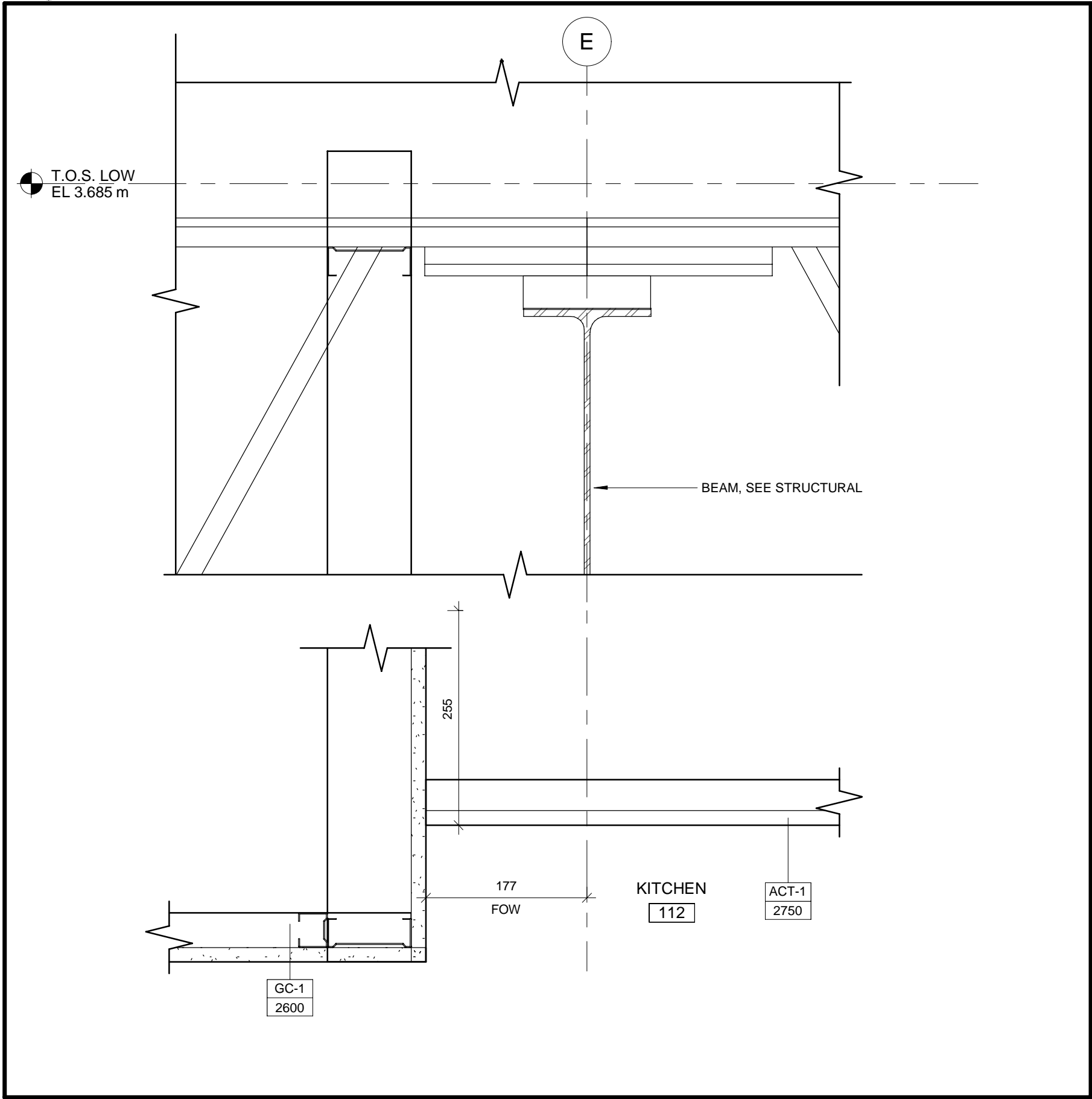
6 TYPICAL FIRE RATED T.O. WALL DETAIL SECTION



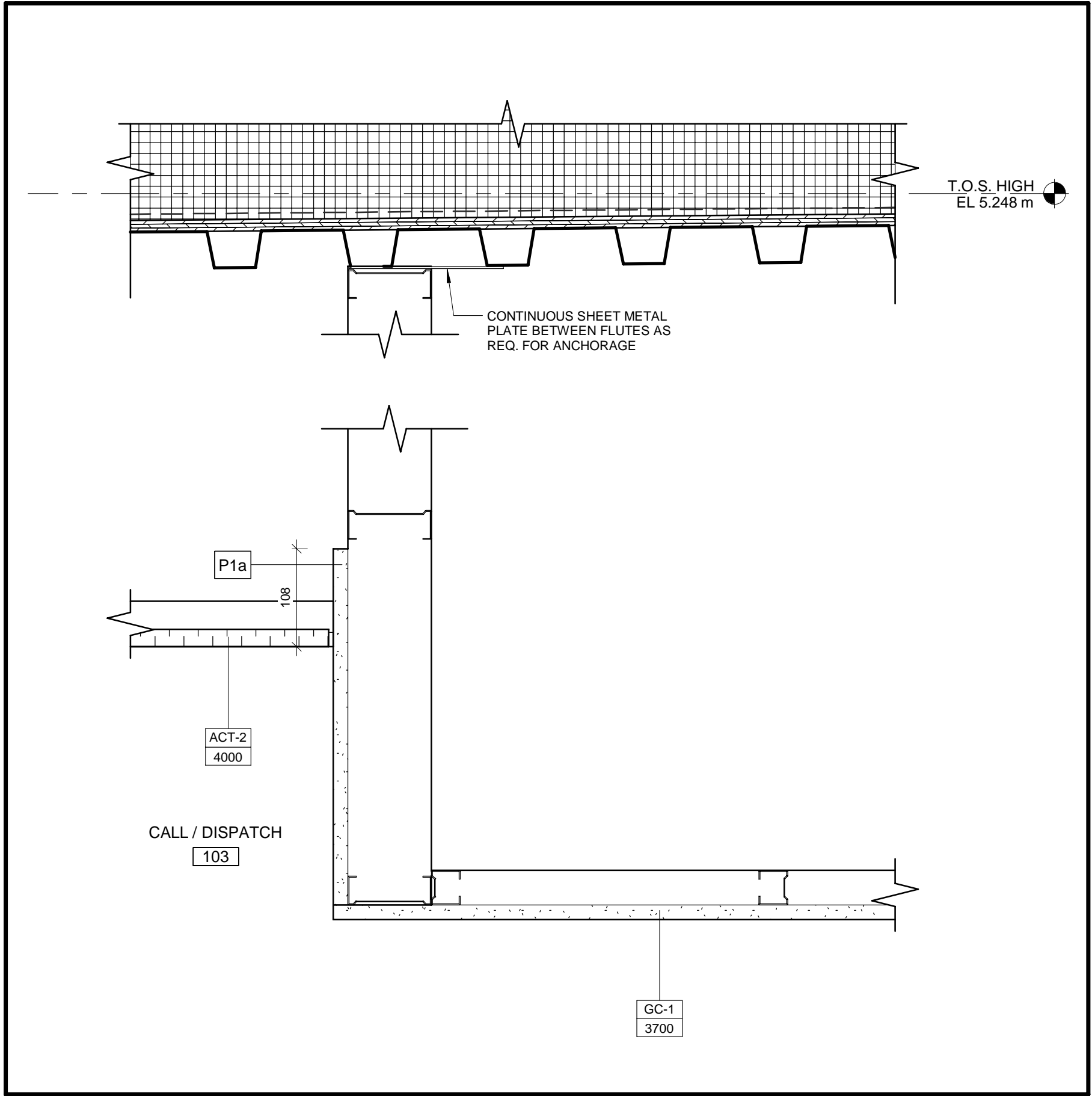
5 BULKHEAD ABOVE KICTHEN MILLWORK SECTION DETAIL



4 BULKHEAD @ CALL / DISPATCH SECTION DETAIL 1



3 BULKHEAD @ KICTHEN AND CORRIDOR SECTION DETAIL



1 BULKHEAD @ CALL / DISPATCH SECTION DETAIL



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

D	2025-01-23	ISSUED FOR TENDER
C	2024-12-13	IFP RE-SUBMISSION
B	2024-11-29	ISSUED FOR OWNER REVIEW
A	2024-10-30	ISSUED FOR PERMIT
Mark	Date	Description

Revision History

Filename: Version: 2020.2.5.

Project Number: 60686829  
Project Manager: John Page  
Project Administrator: BIM/MDC Manager:

Sustainability Target: LEED Silver  
IPMS 1 (m²): IPMS 2 (m²):

Designed: Designer  
Date (yyyy-mm-dd):

Drawn: Author  
Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: Allan Man  
Date (yyyy-mm-dd):

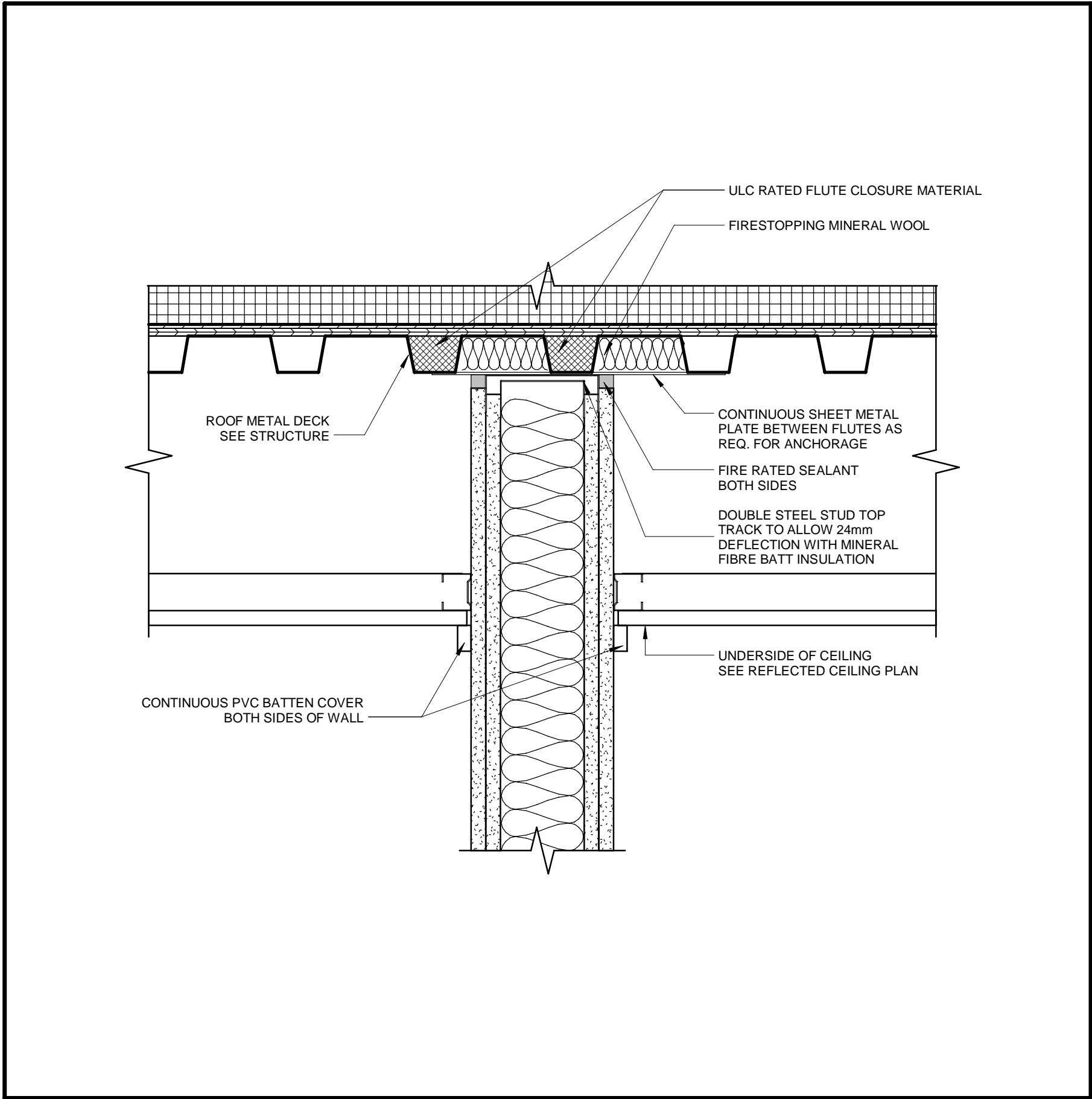
Approved: Approver  
Date (yyyy-mm-dd):

Title:

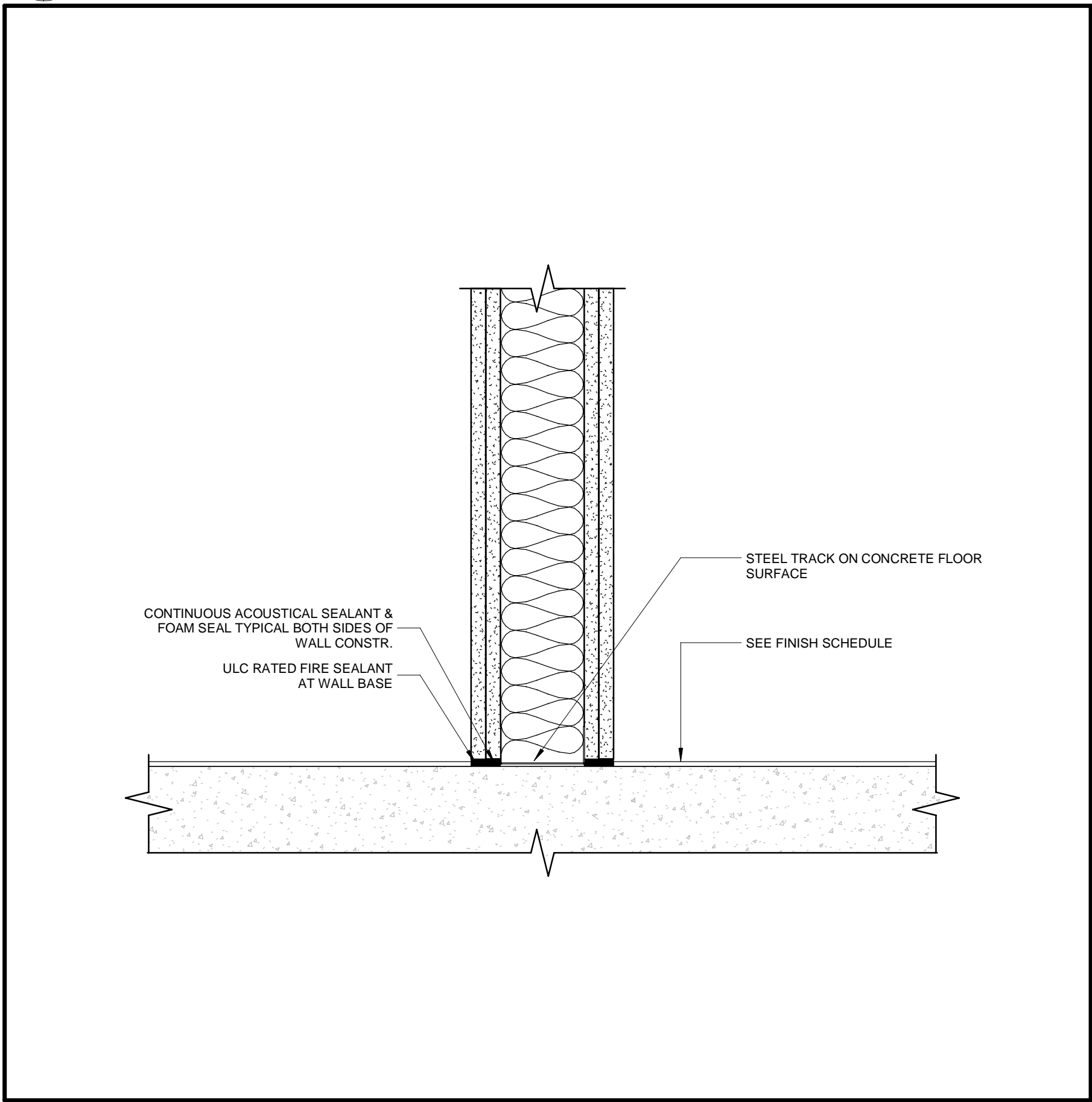
INTERIOR SECTION DETAILS

Page Size: ANSI D  
Scale: 1:5  
Sheet: A703  
Rev: D  
of: 1

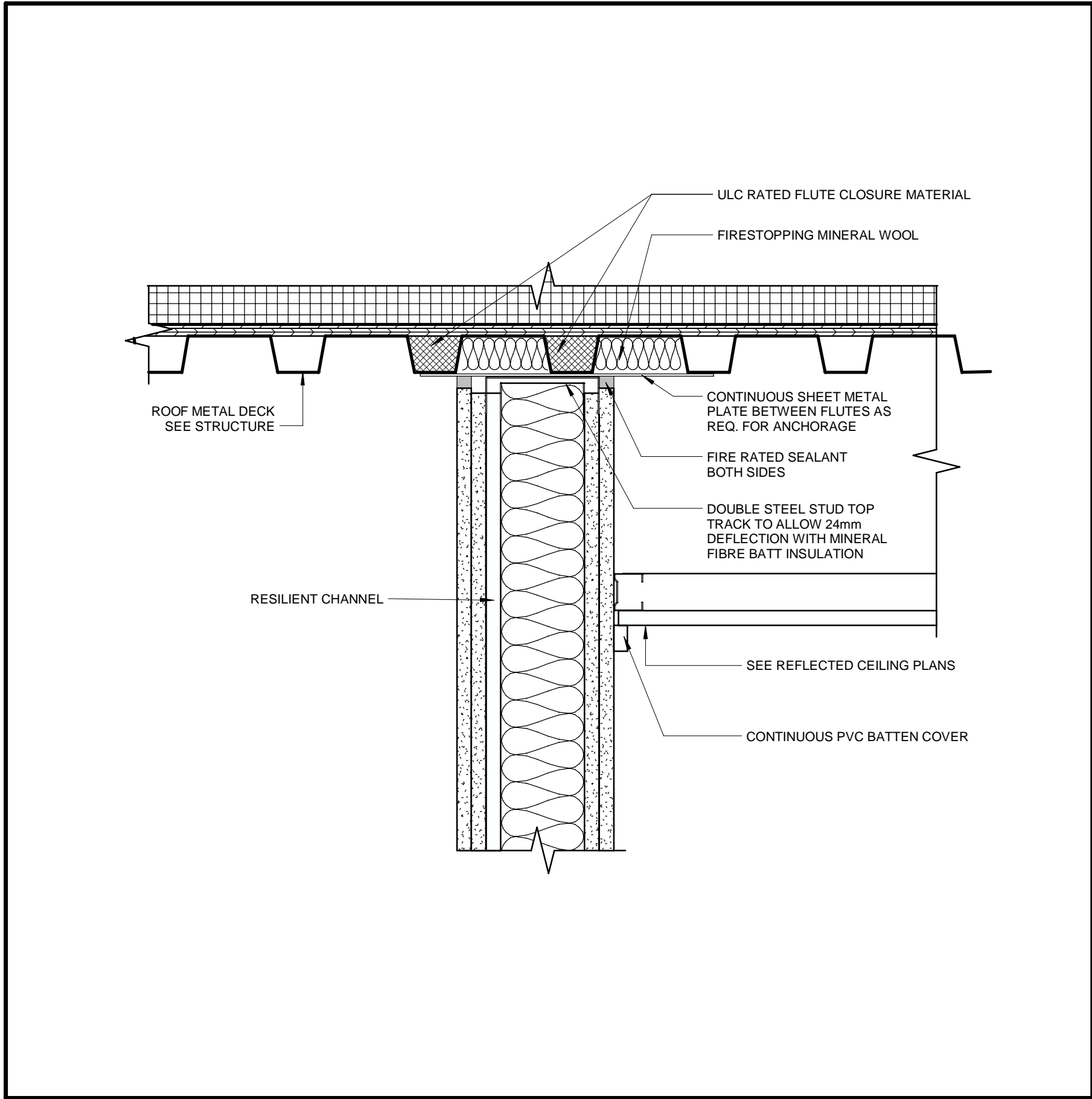




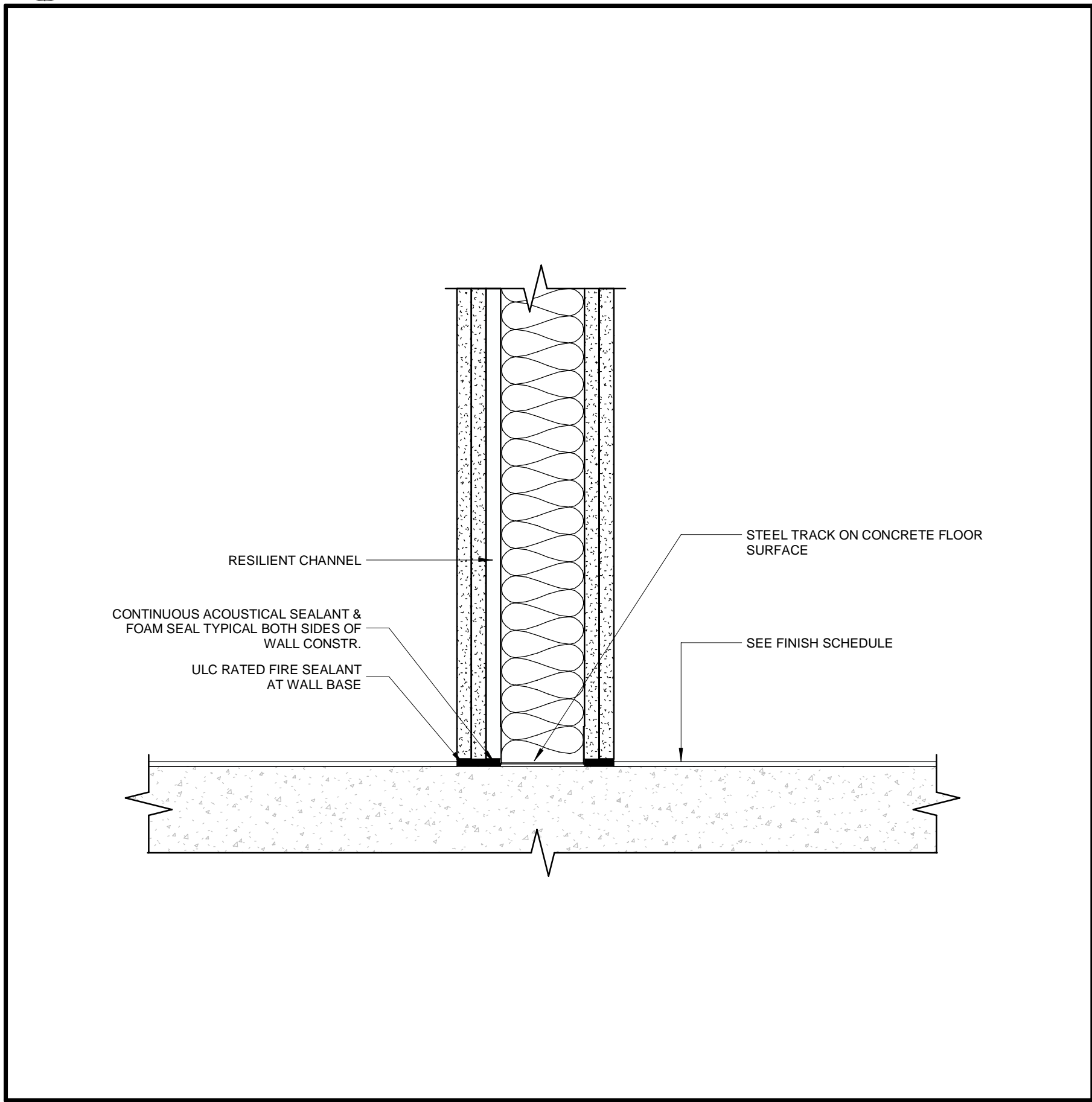
4 ACoustically Rated Wall @ Metal Deck Section Detail  
A704 1 : 5



3 TYP. ACoustically Rated Interior Partition Base Section Detail  
A704 1 : 5



2 ACoustically Rated Wall @ Metal Deck Section Detail  
A704 1 : 5



1 ACoustically Rated Interior Partition Base Section Detail  
A704 1 : 5

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Administrator: John Page  
BIM/VDC Manager:

Sustainability Target: LEED Silver  
Designed: Designer  
Date (yyyy-mm-dd):

Drawn: Author  
Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: Allan Man  
Date (yyyy-mm-dd):

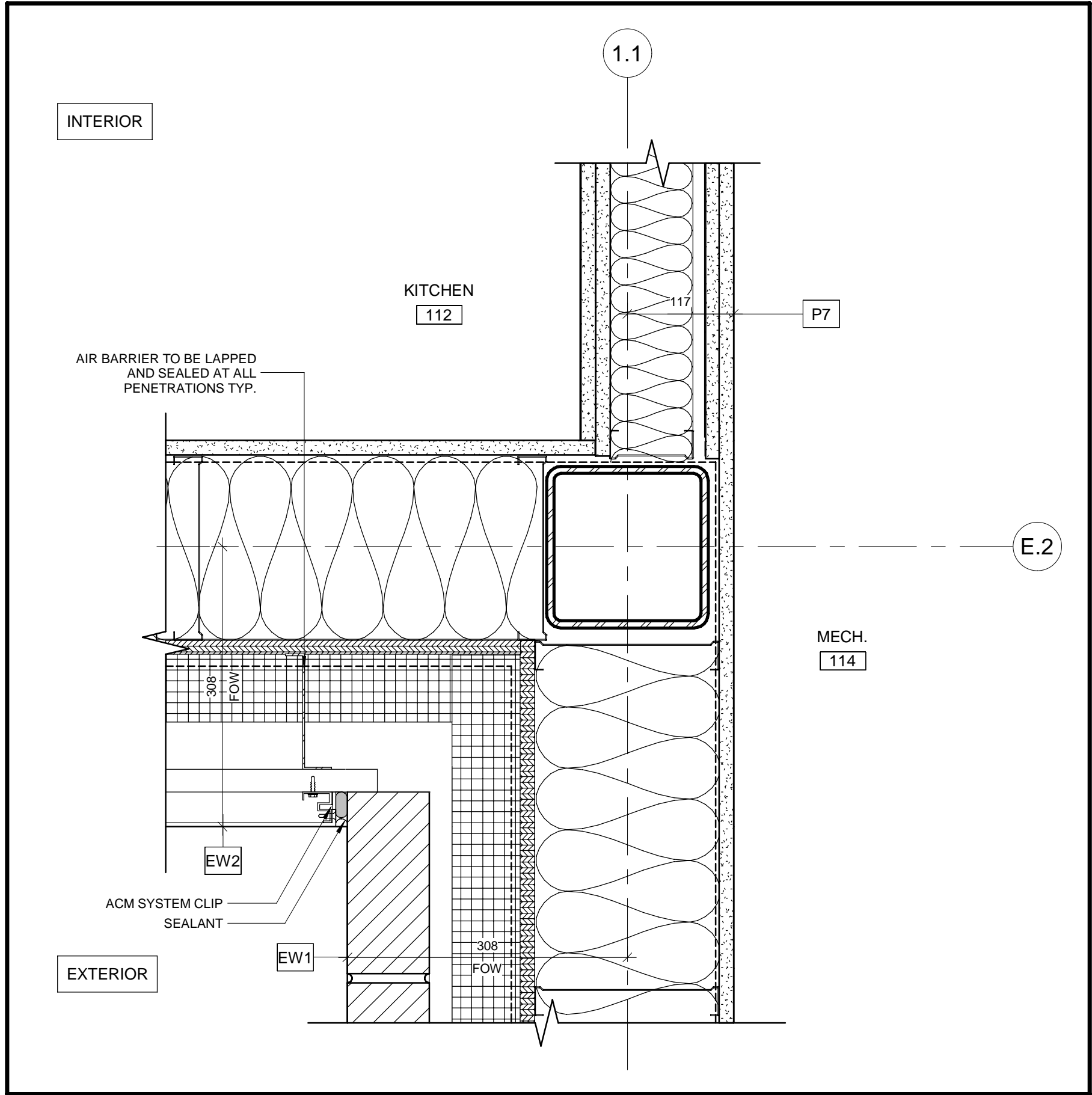
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Date (yyyy-mm-dd):

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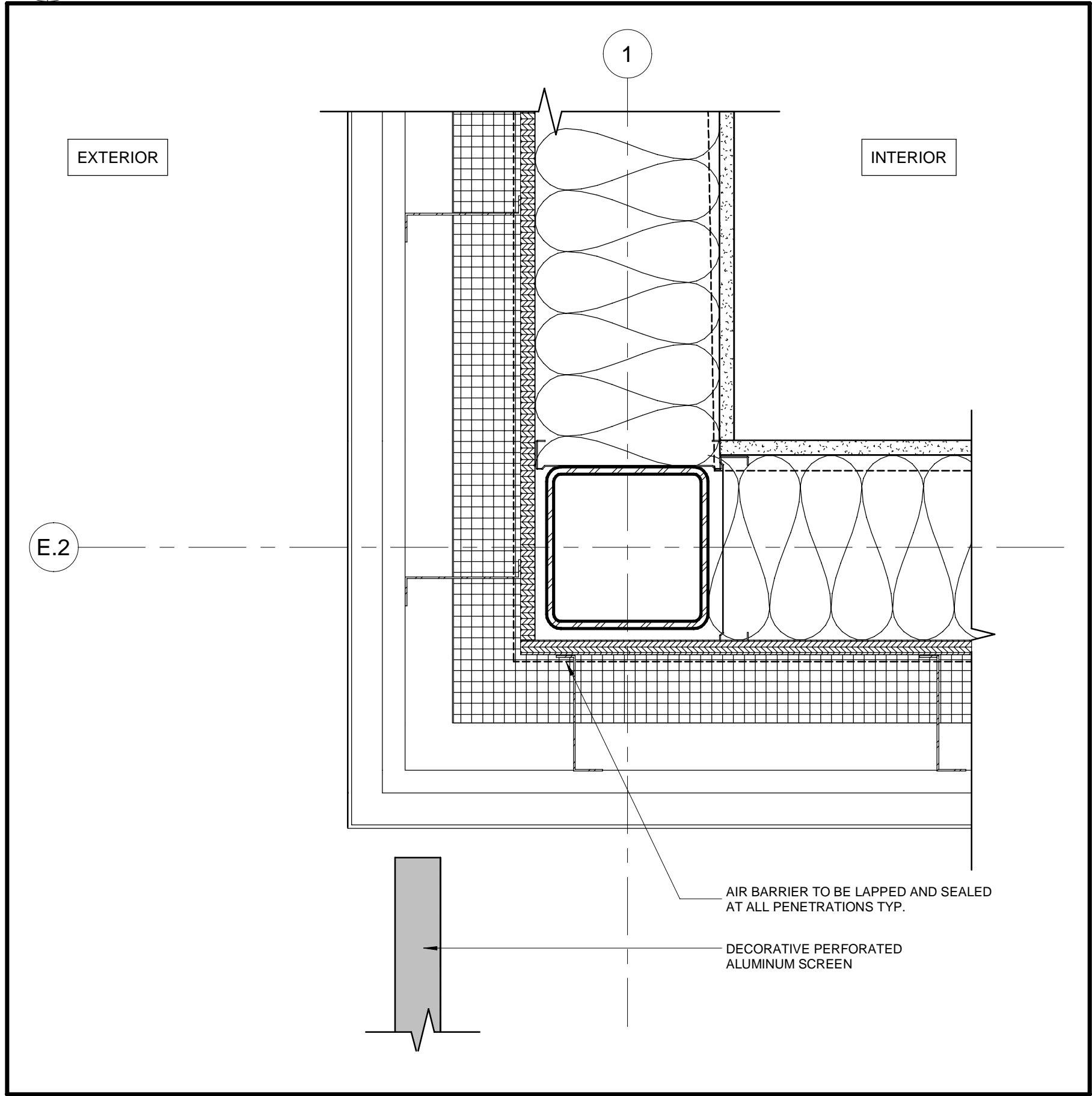
INTERIOR SECTION DETAILS

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Sheet: A704  
Rev: F  
Sheet of:

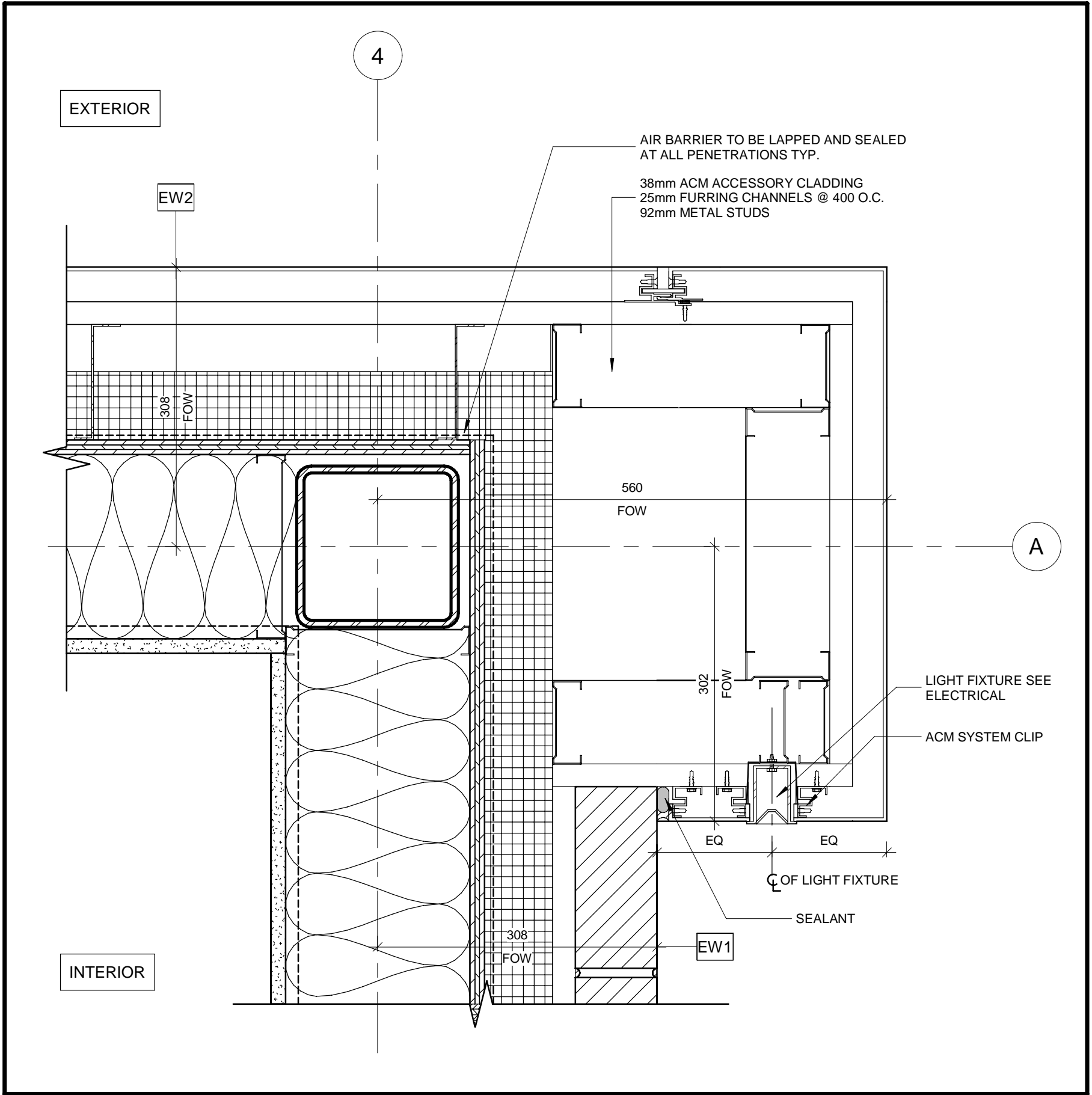




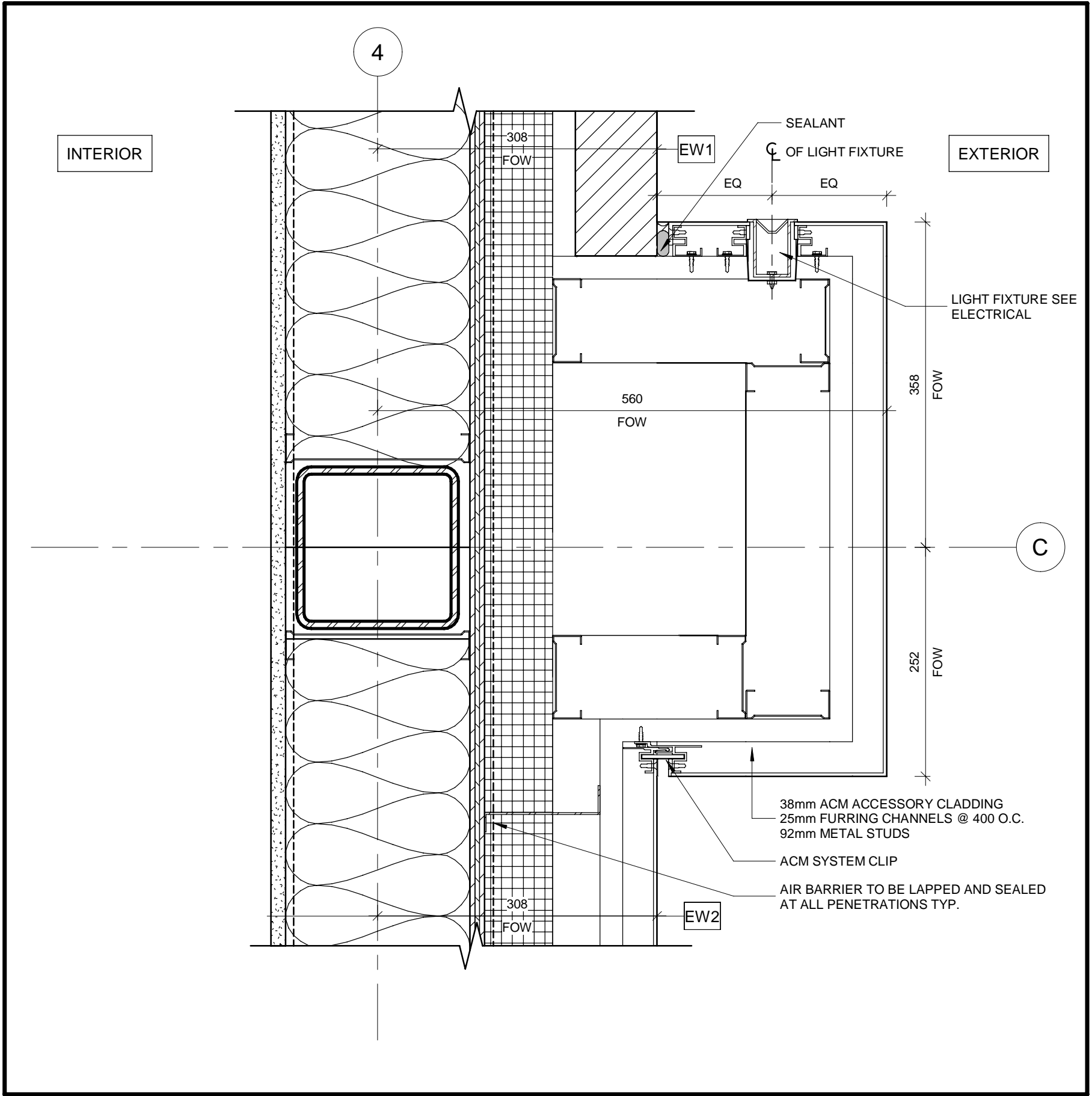
6 INTERIOR CORNER PLAN DETAIL  
A111 A705 1 : 5



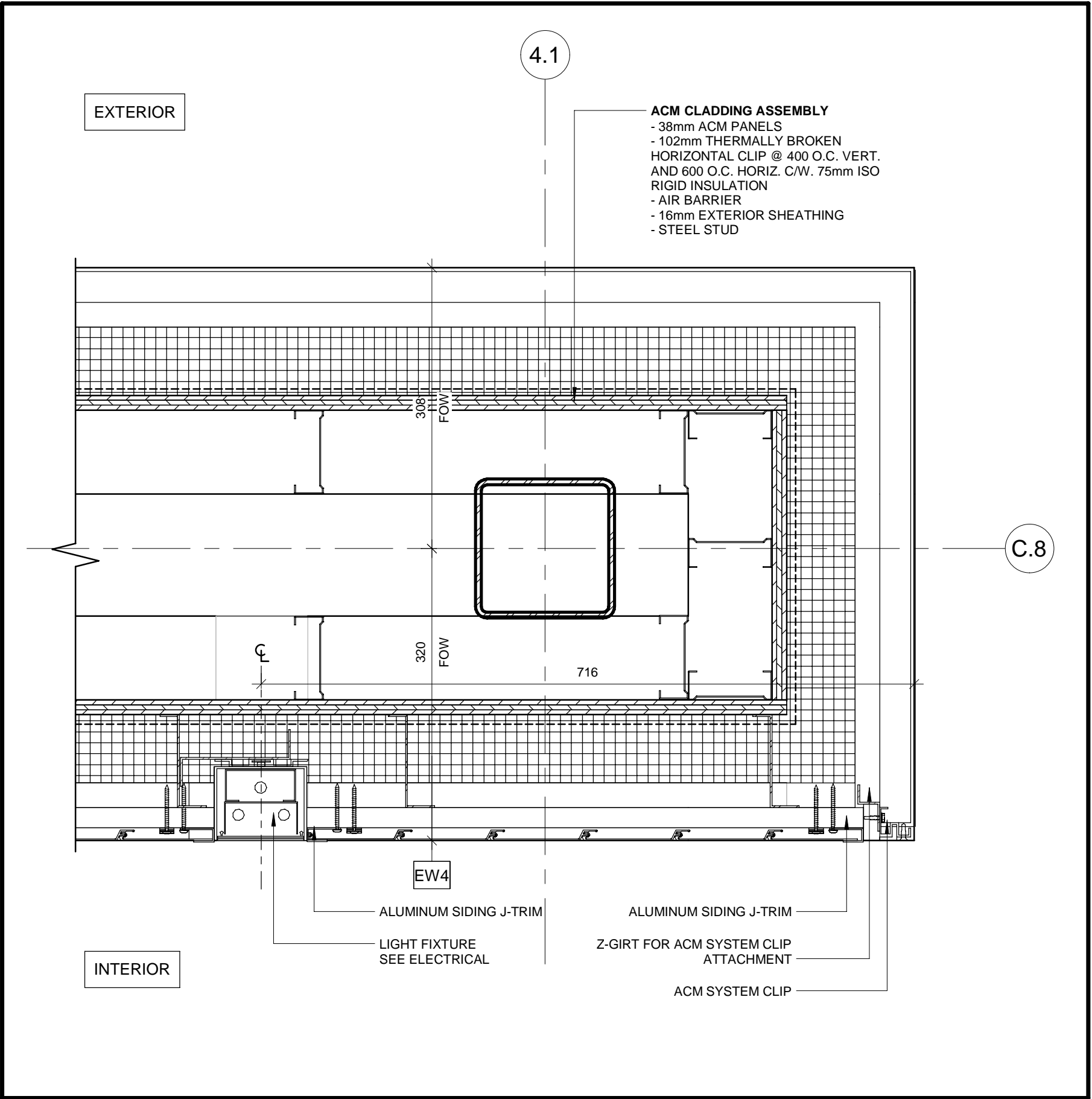
5 COLUMN AT ACM EXTERIOR CORNER PLAN DETAIL  
A111 A705 1 : 5



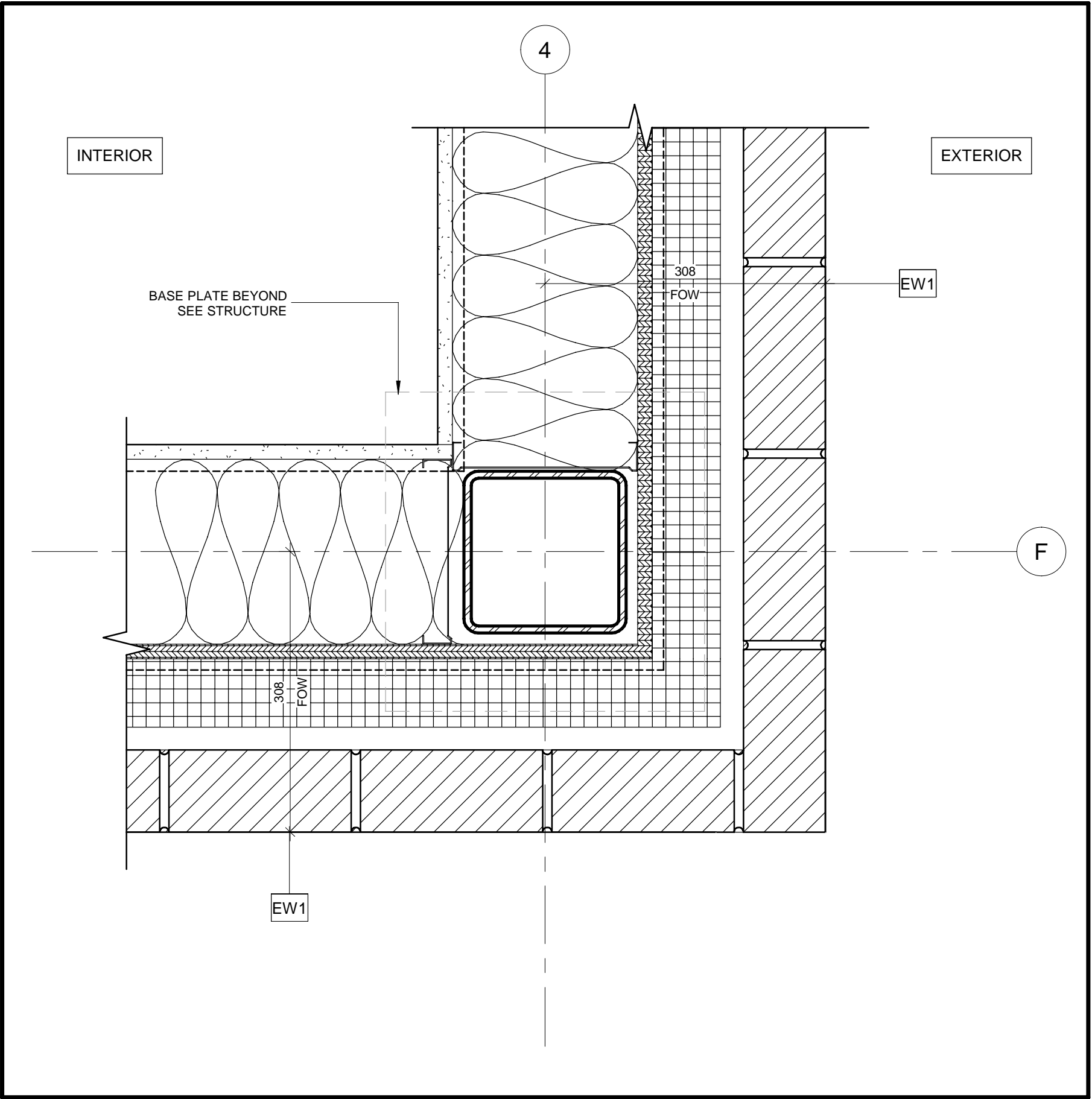
4 CORNER COLUMN PLAN DETAIL  
A111 A705 1 : 5



3 COLUMN AT ACM AND BRICK WALL INTERSECTION PLAN DETAIL  
A111 A705 1 : 5



2 ACM PANELS @ EXTERIOR COLUMN PLAN DETAIL  
A111 A705 1 : 5



1 CORNER COLUMN AT BRICK WALL PLAN DETAIL  
A111 A705 1 : 5



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NORTH:



SEAL:

**NRPS NG911 BACKUP CENTRE**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Administrator: John Page  
Project Manager: BIM/MDC Manager

Sustainability Target: LEED Silver  
Designed: Designer  
Drawn: Author  
Reviewed: Approver

IPMS 1 (m<sup>2</sup>):  
IPMS 2 (m<sup>2</sup>):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

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Date (yyyy-mm-dd):

Date (yyyy-mm-dd):

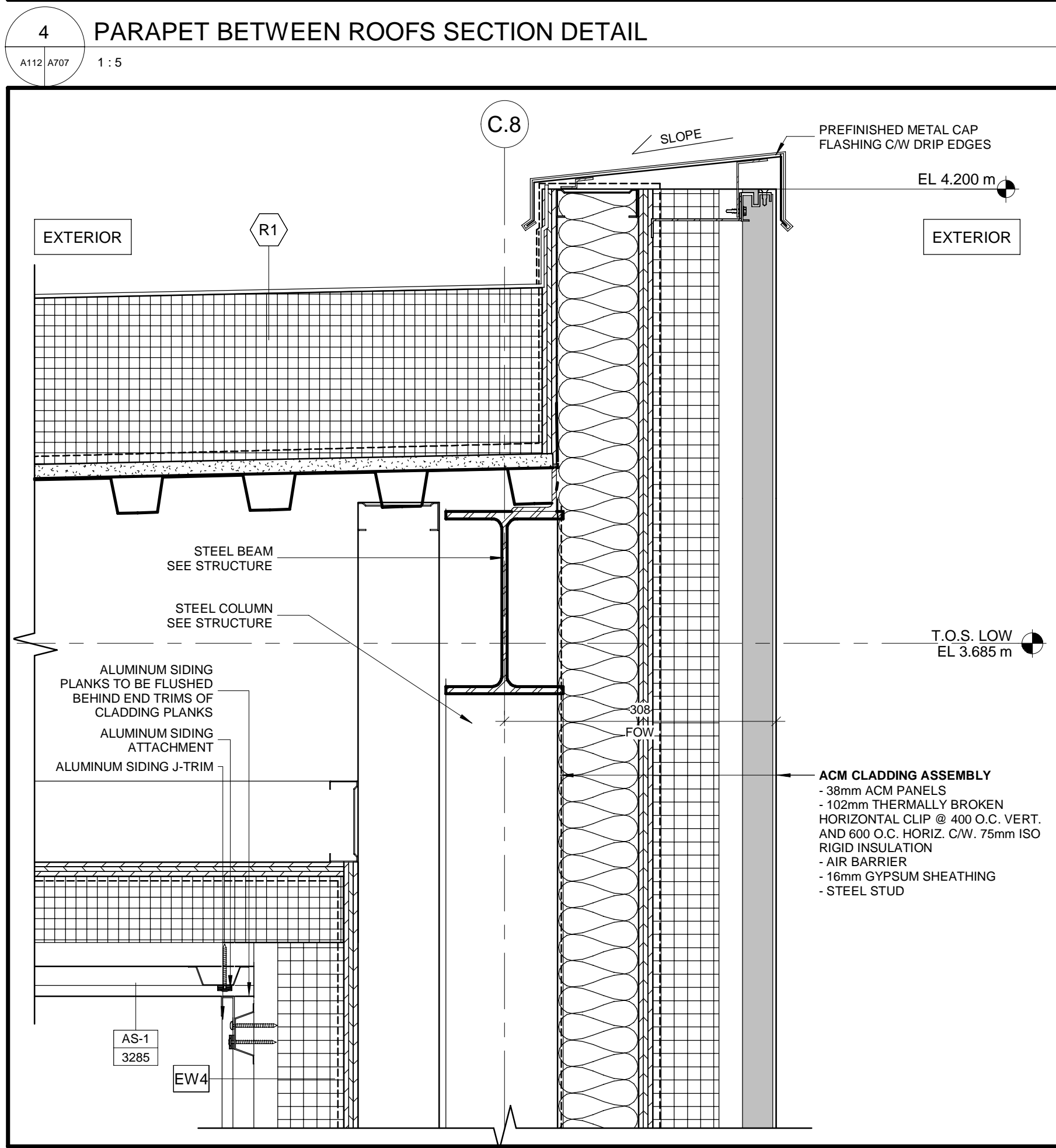
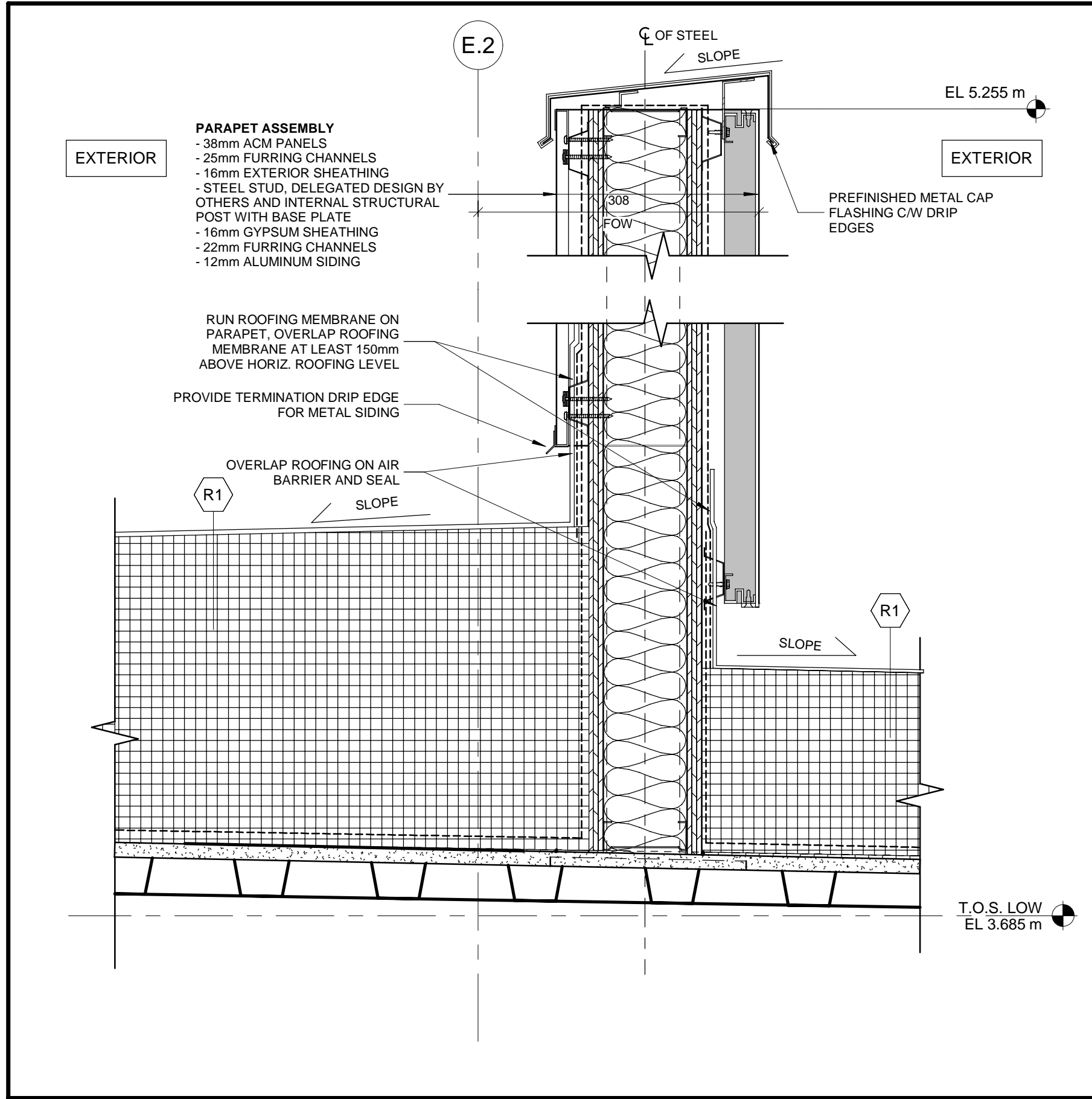
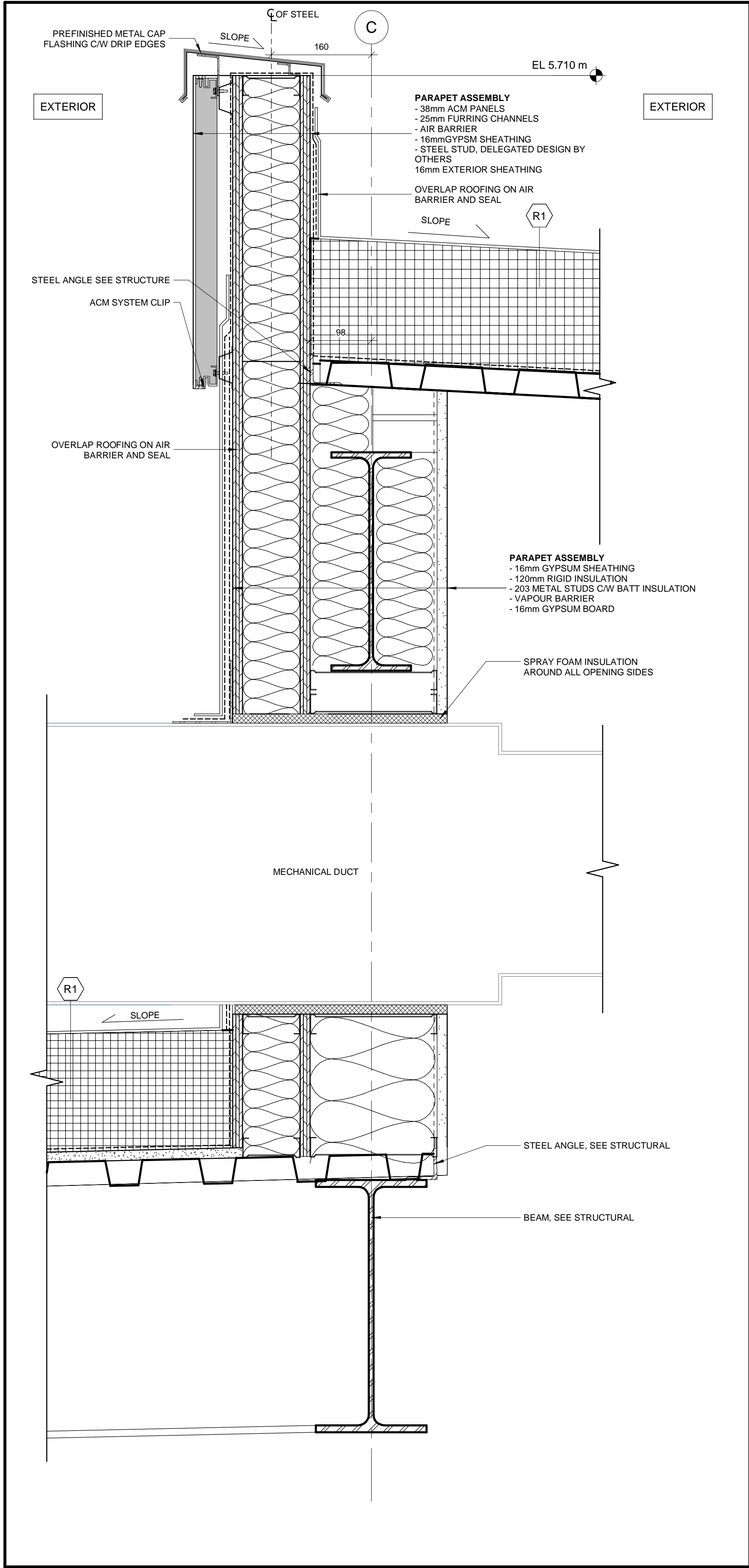
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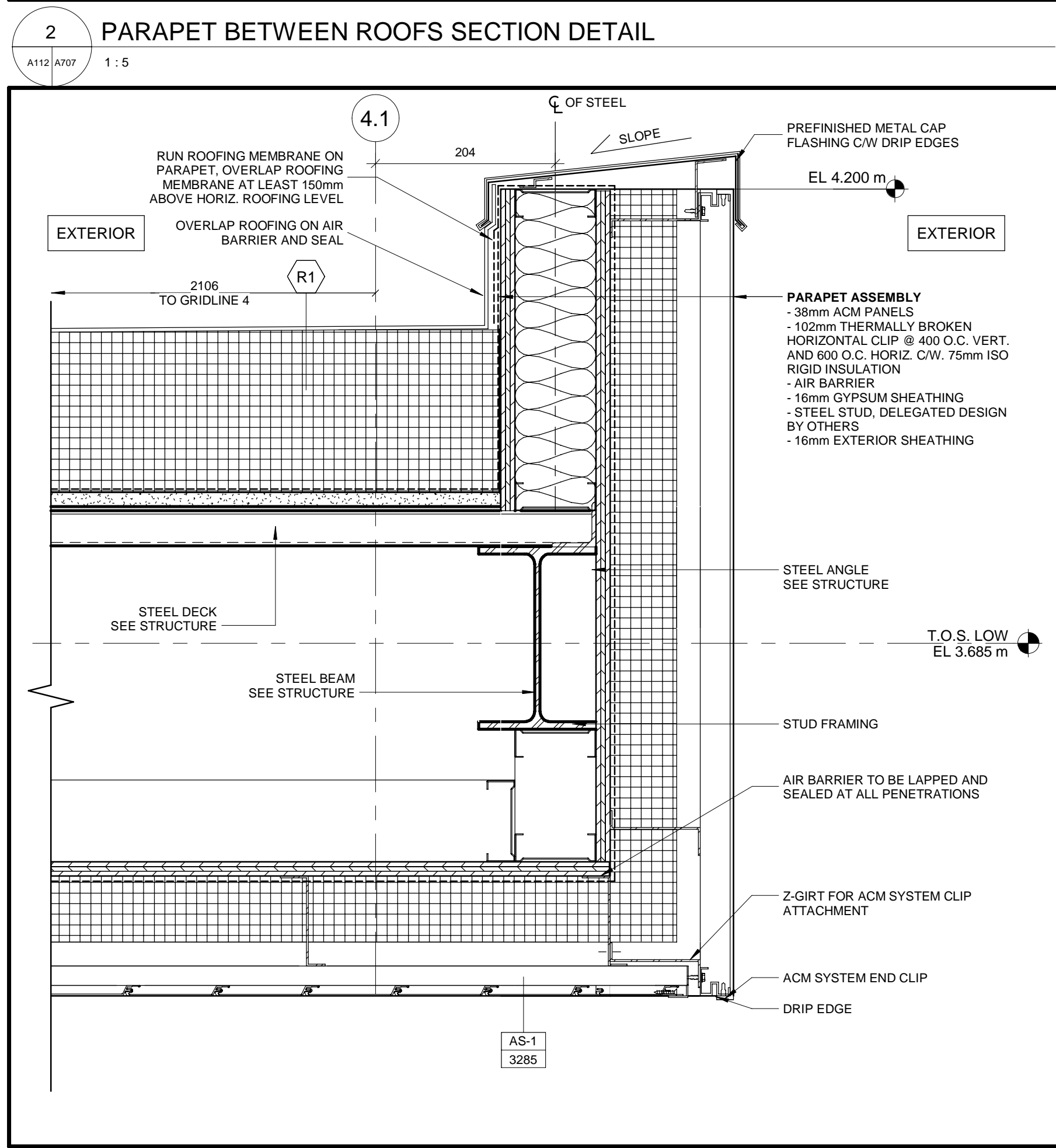
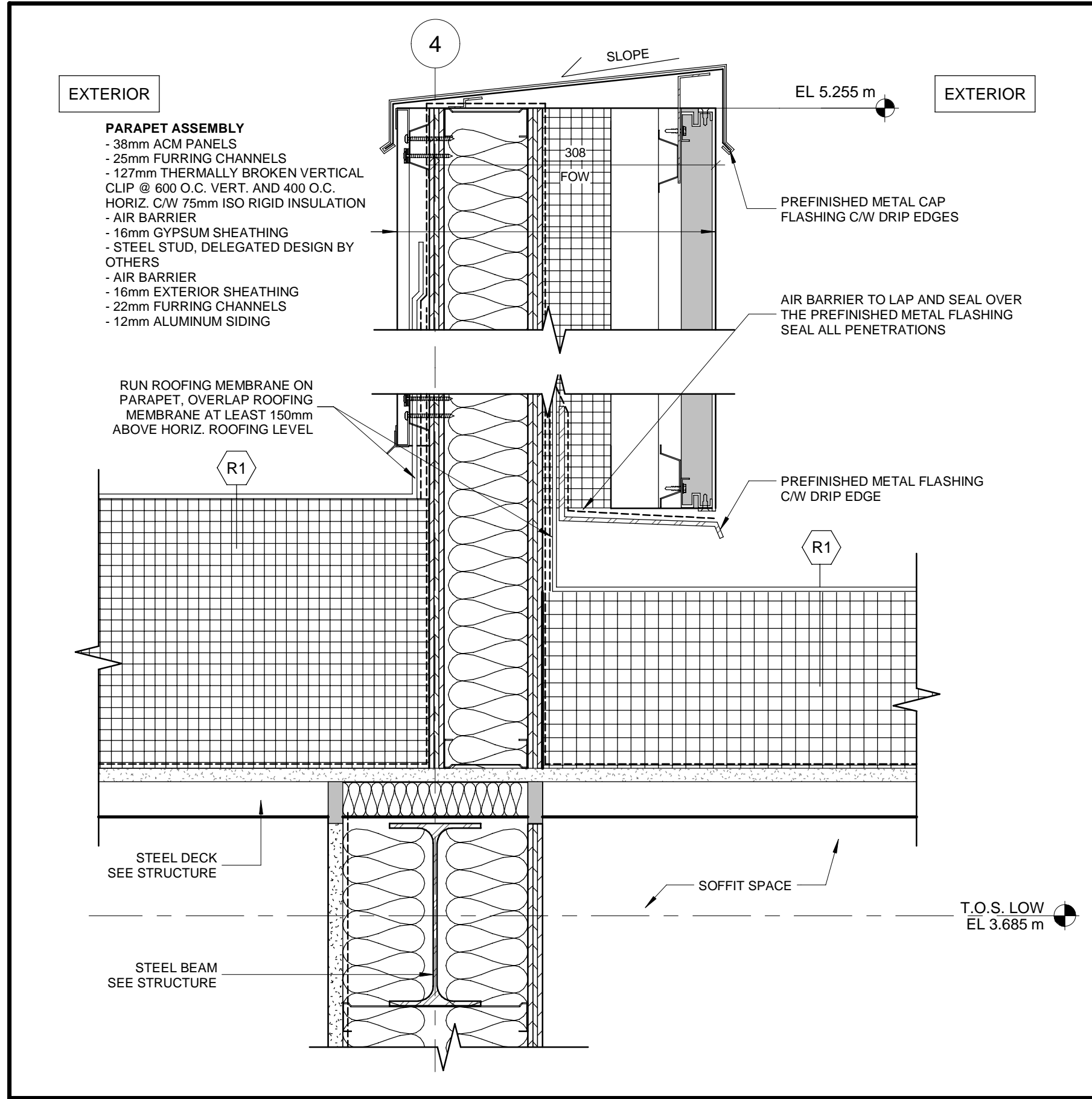






**3 PARAPET @ SOFFIT SECTION DETAIL**

AS11 A707 1 : 5



**1 PARAPET @ SOFFIT SECTION DETAIL**

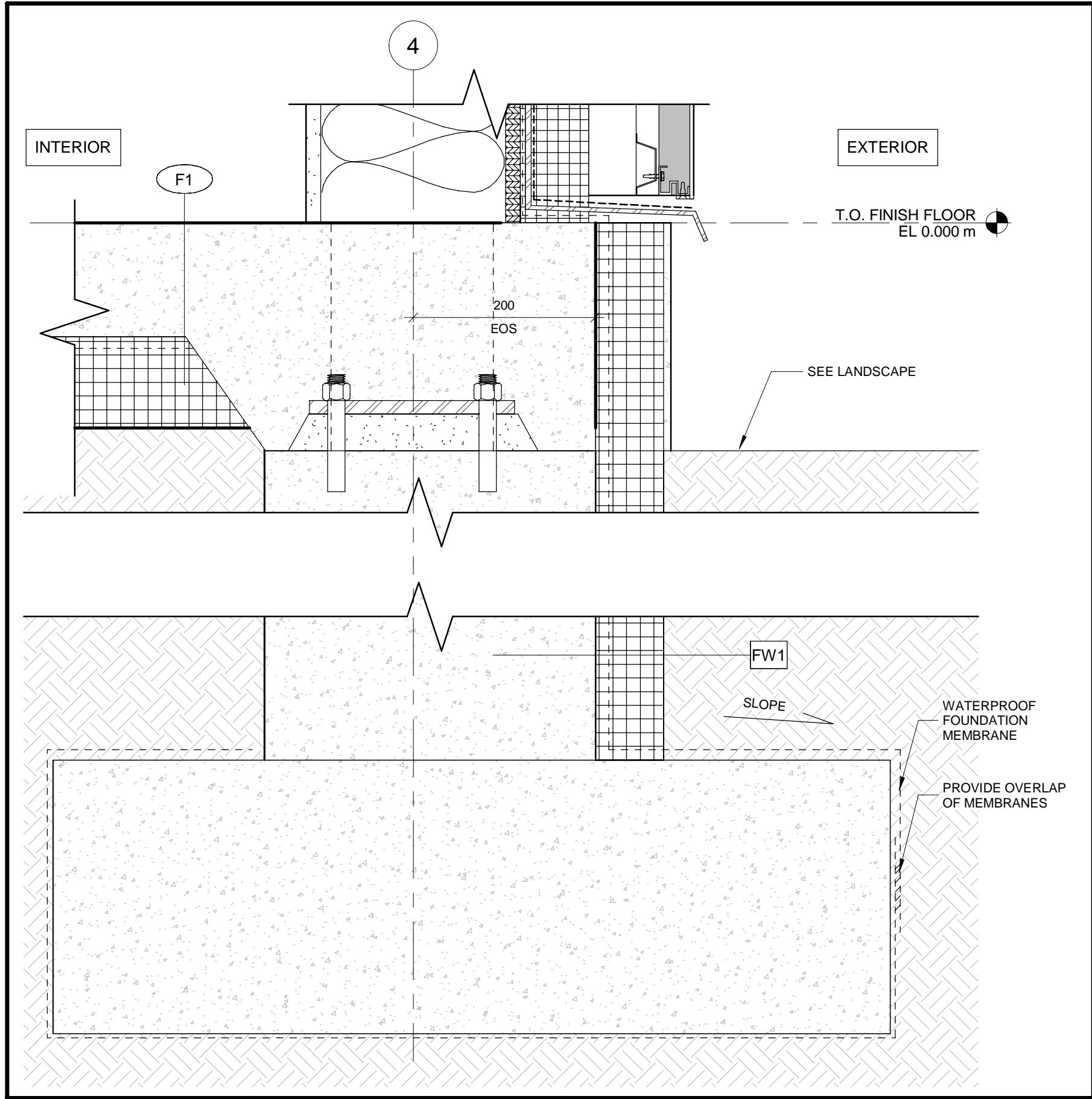
A112 A707 1 : 5



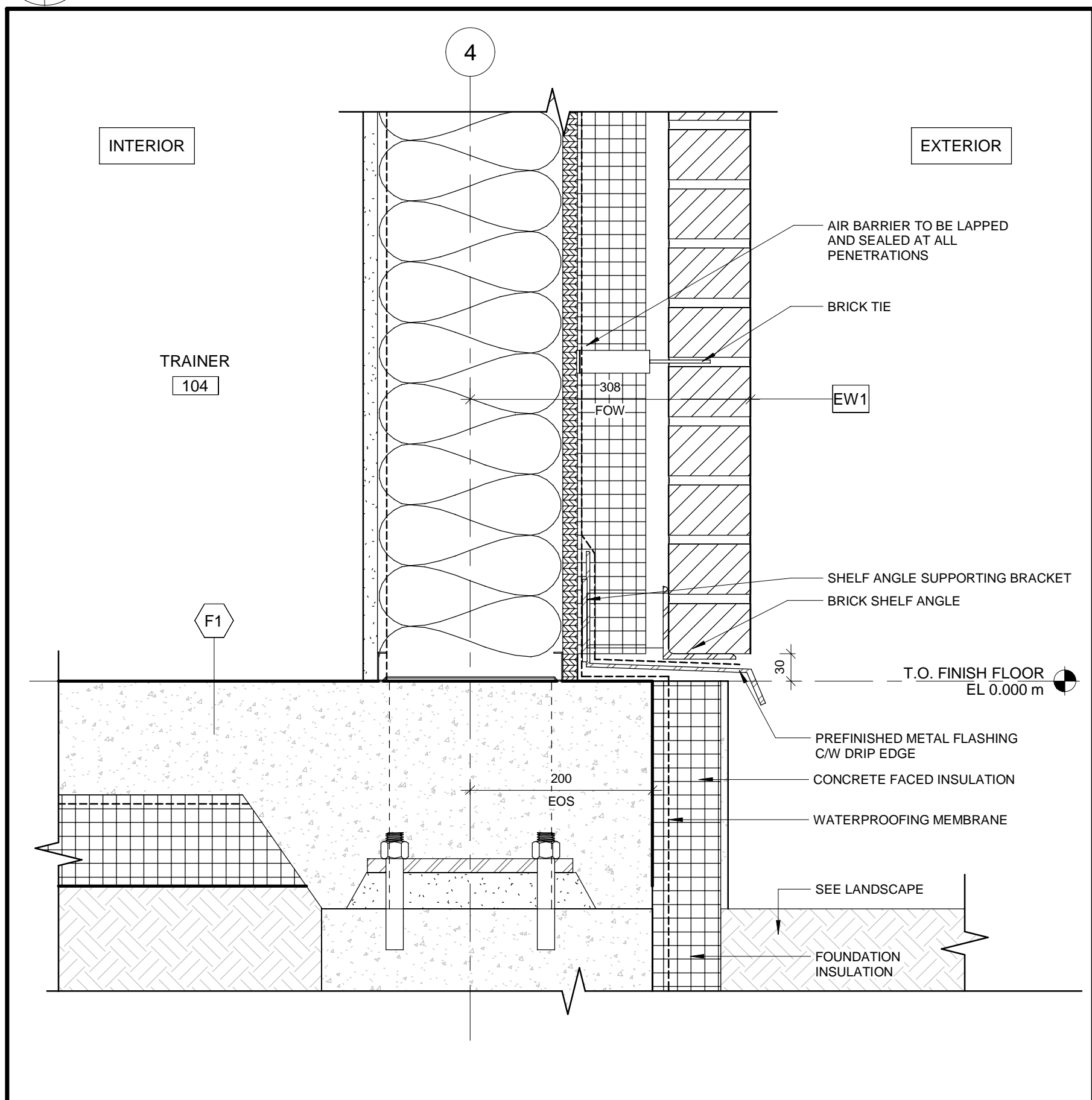
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E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History		Version: 2020.2.5.
Filename:		
Project Number: 60686829	Project Manager: John Page	
Project Administrator:	BIM/VDC Manager:	
Sustainability Target: LEED Silver	IPMS 1 (m²):	IPMS 2 (m²):
Designed: Designer	Date (yyyy-mm-dd):	
Drawn: Author	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked: Allan Man	Date (yyyy-mm-dd):	
Approved: Approver	Date (yyyy-mm-dd):	
Title:		

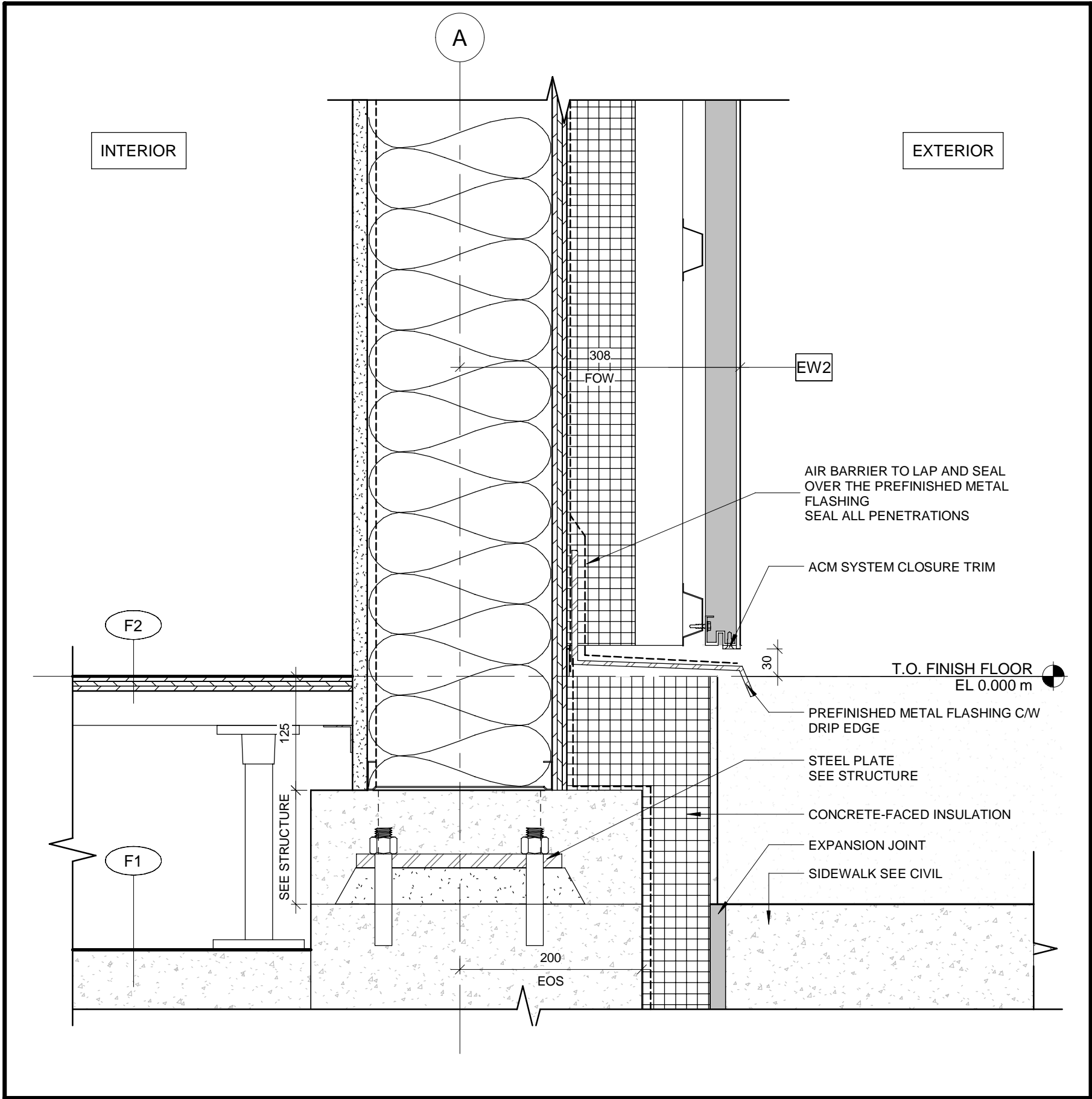




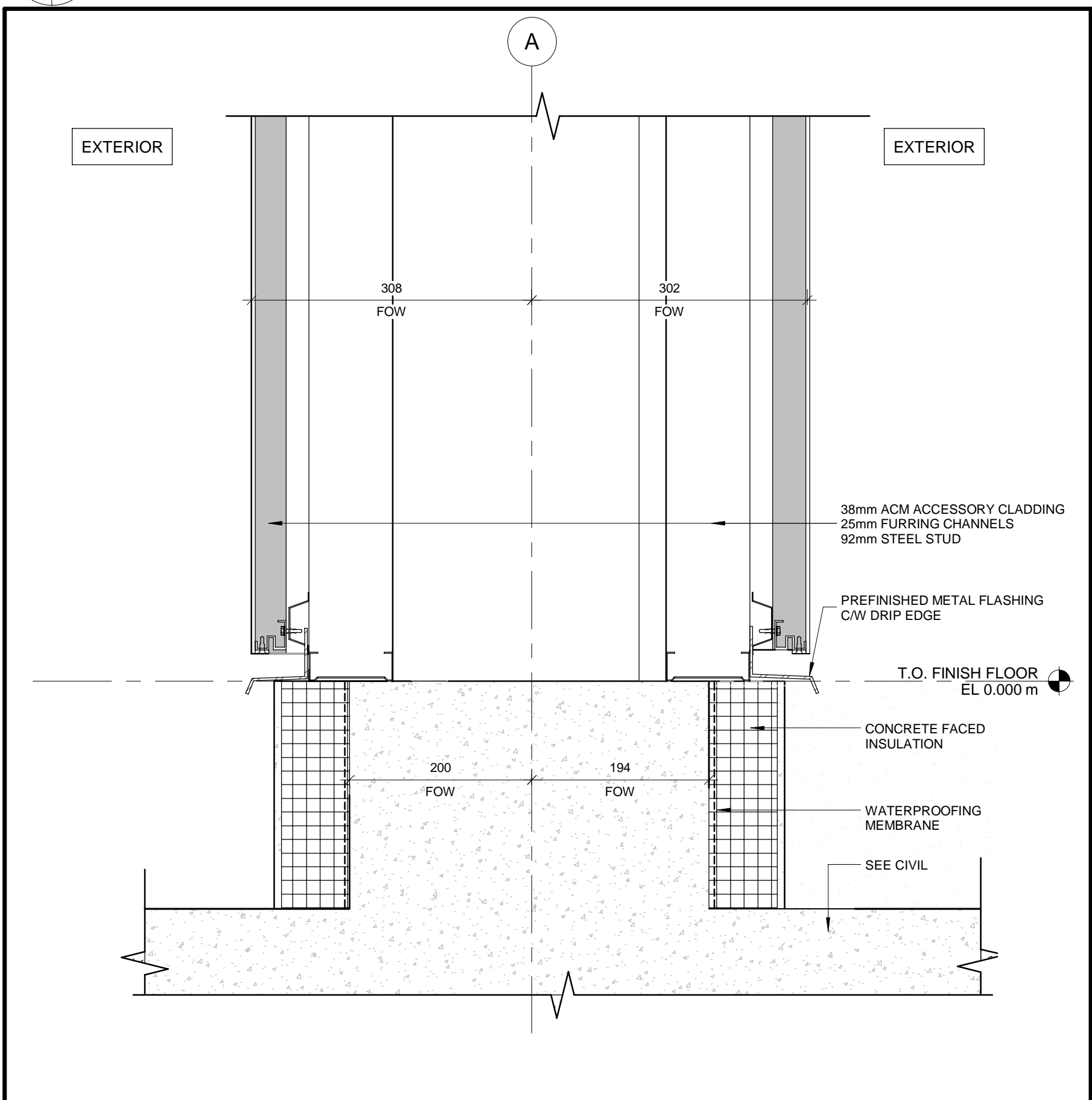
6 FOUNDATION WATERPROOFING DETAIL  
A708 1 : 5



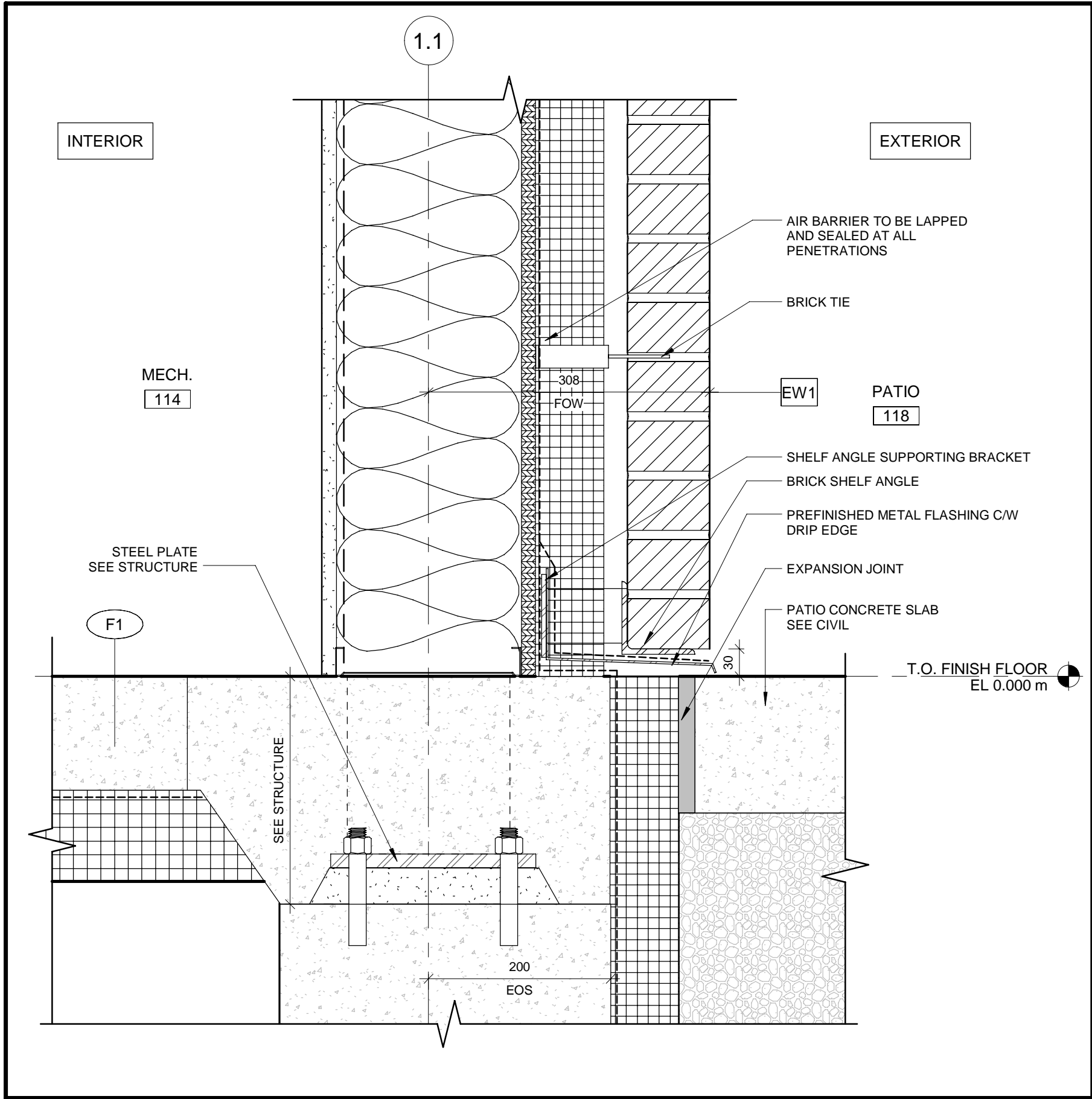
5 BRICK VENEER WALL BASE SECTION DETAIL  
A312 A708 1 : 5



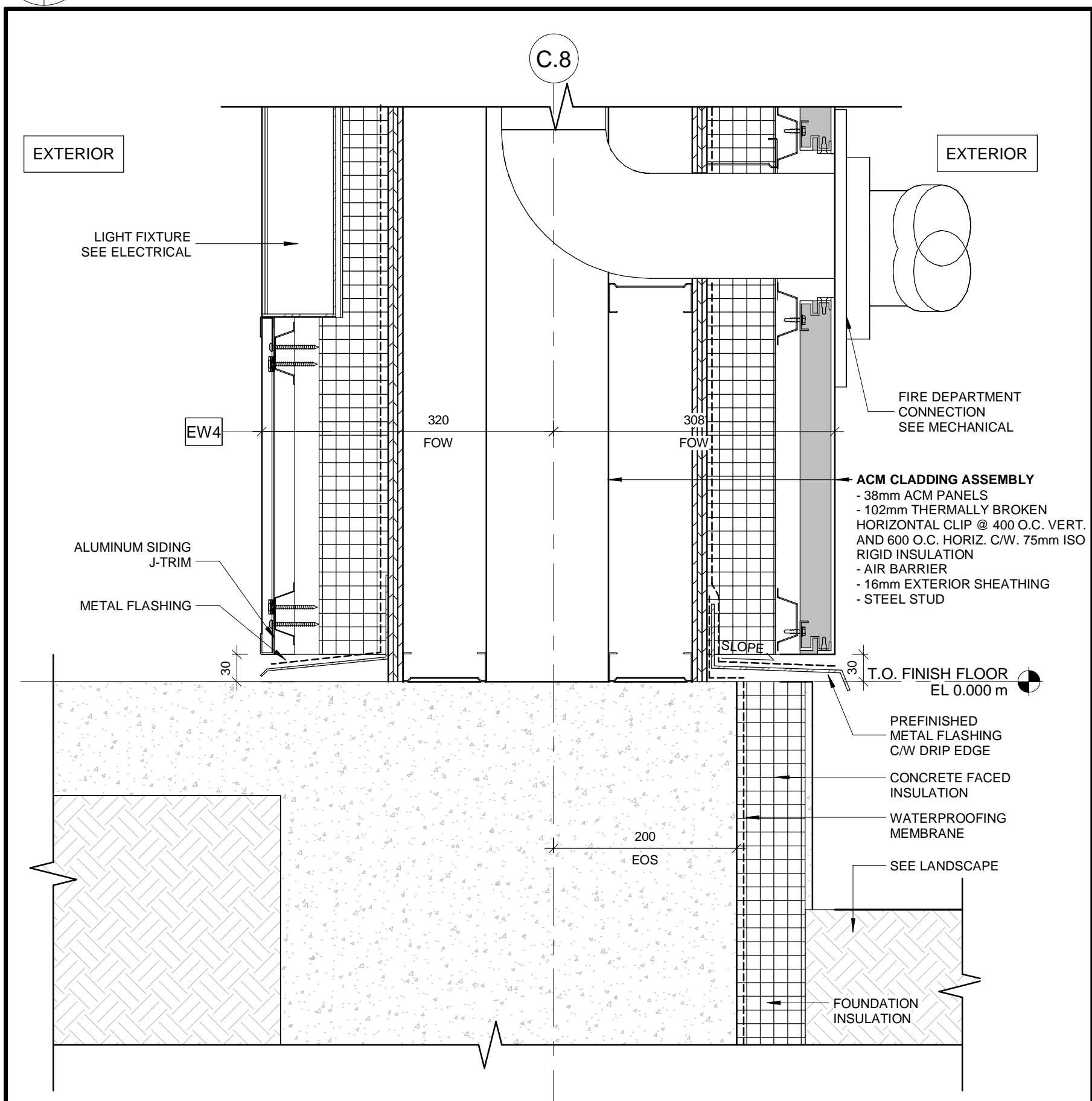
4 ACM WALL BASE SCTON DETAIL  
A312 A708 1 : 5



3 COLUMN CLADDING AT BASE SECTION DETAIL  
SK-2 A708 1 : 5



2 EXTERIOR WALL AT PATIO SLAB SECTION DETAIL  
A313 A708 1 : 5



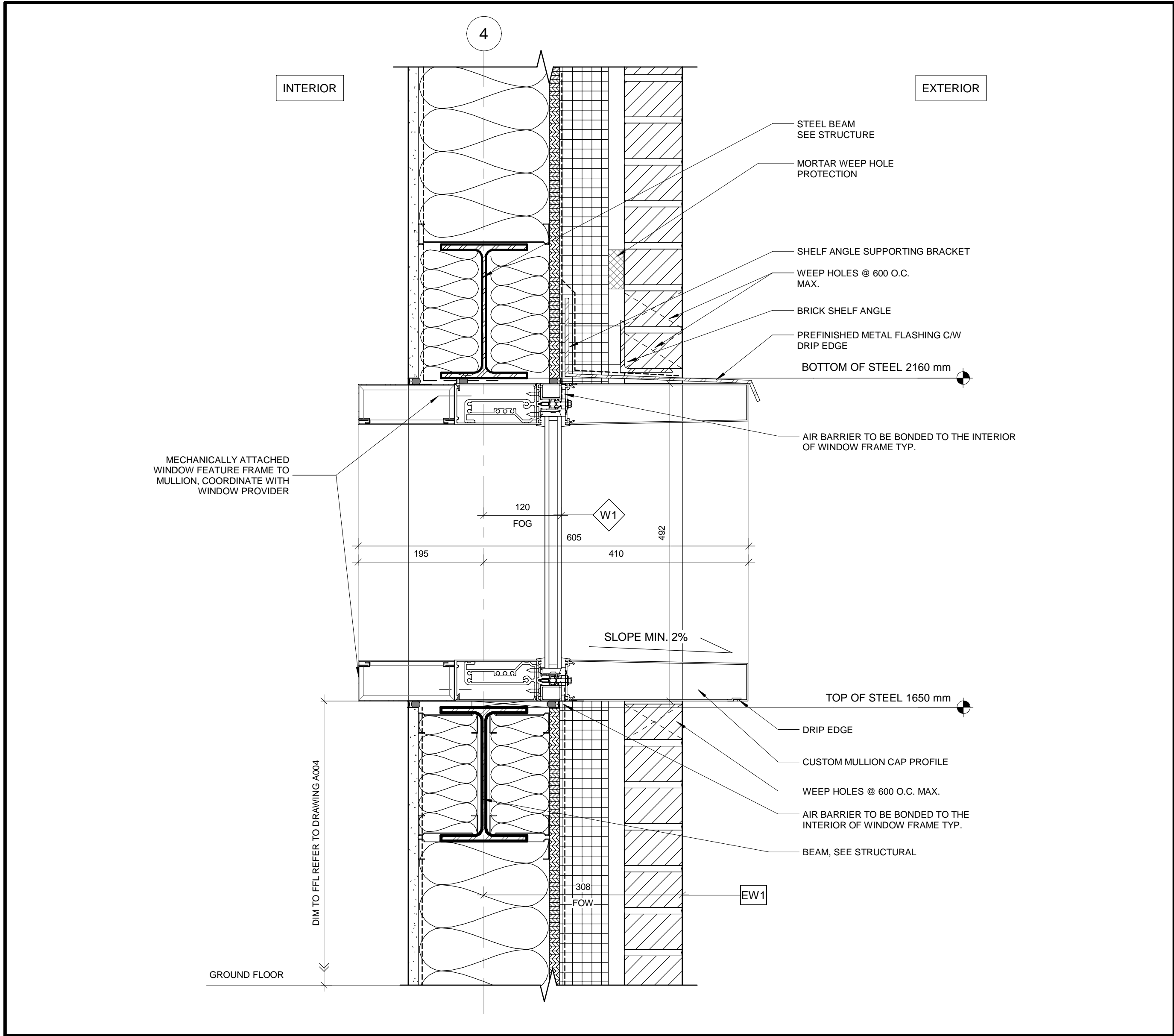
1 FIRE DEPARTMENT CONNECTION SECTION DETAIL  
A311 A708 1 : 5



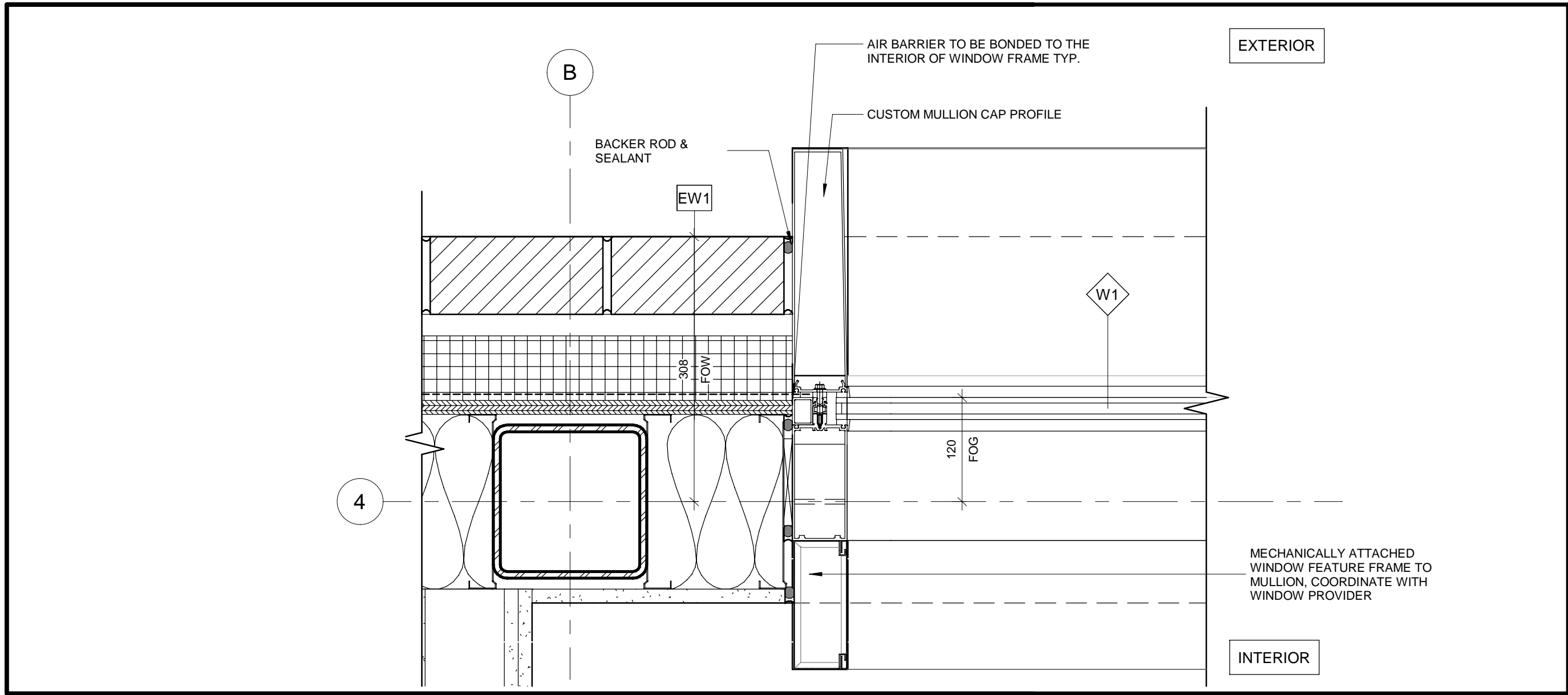
F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	Project Manager: John Page
Project Administrator:		BIM/VDC Manager:
Sustainability Target:	LEED Silver	IPMS 1 (m²): IPMS 2 (m²):
Designed:	Author	Date (yyyy-mm-dd):
Drawn:		Date (yyyy-mm-dd):
Reviewed:		Date (yyyy-mm-dd):
Checked:	Allan Man	Date (yyyy-mm-dd):
Approved:	Approver	Date (yyyy-mm-dd):
Title:		

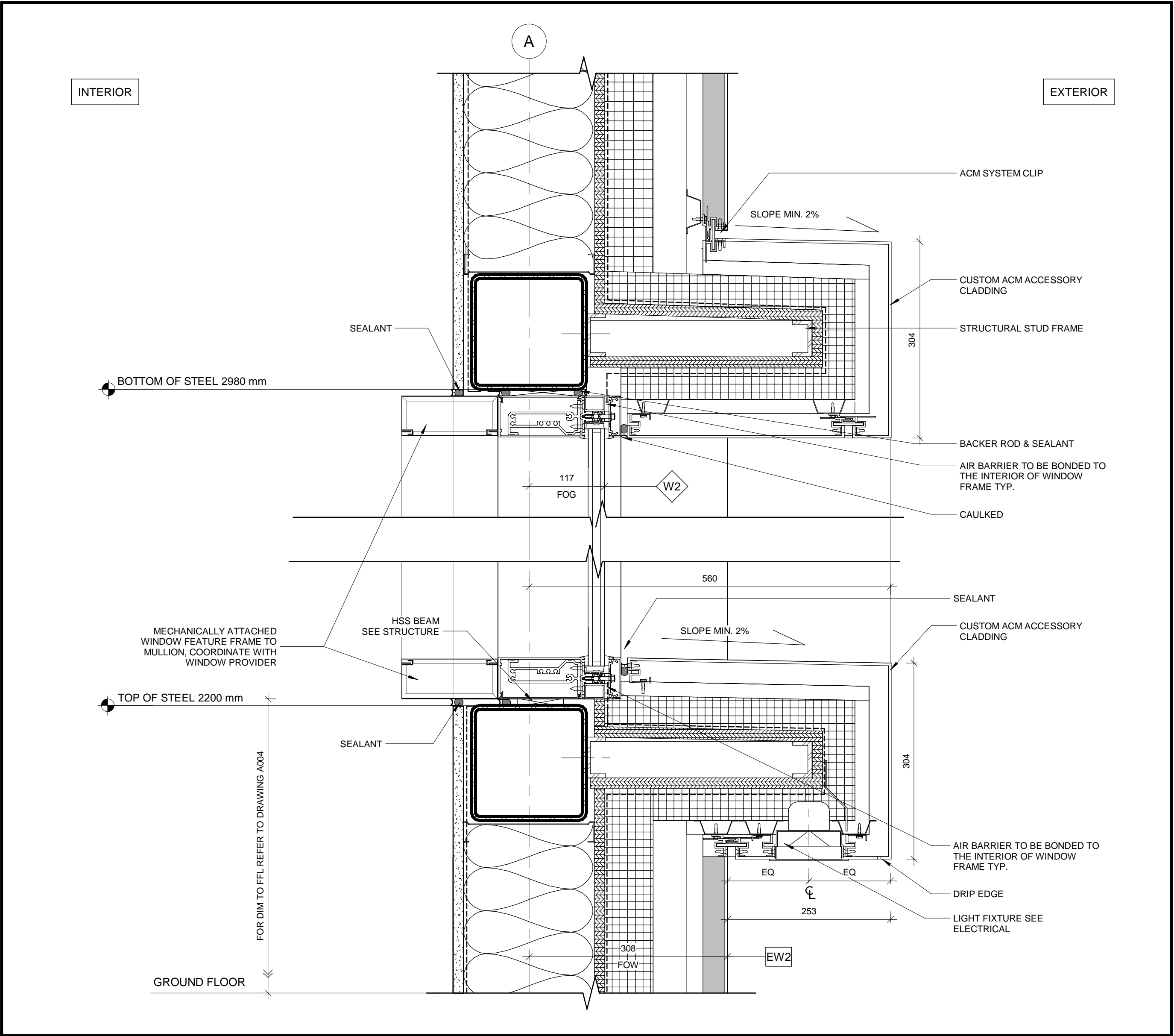




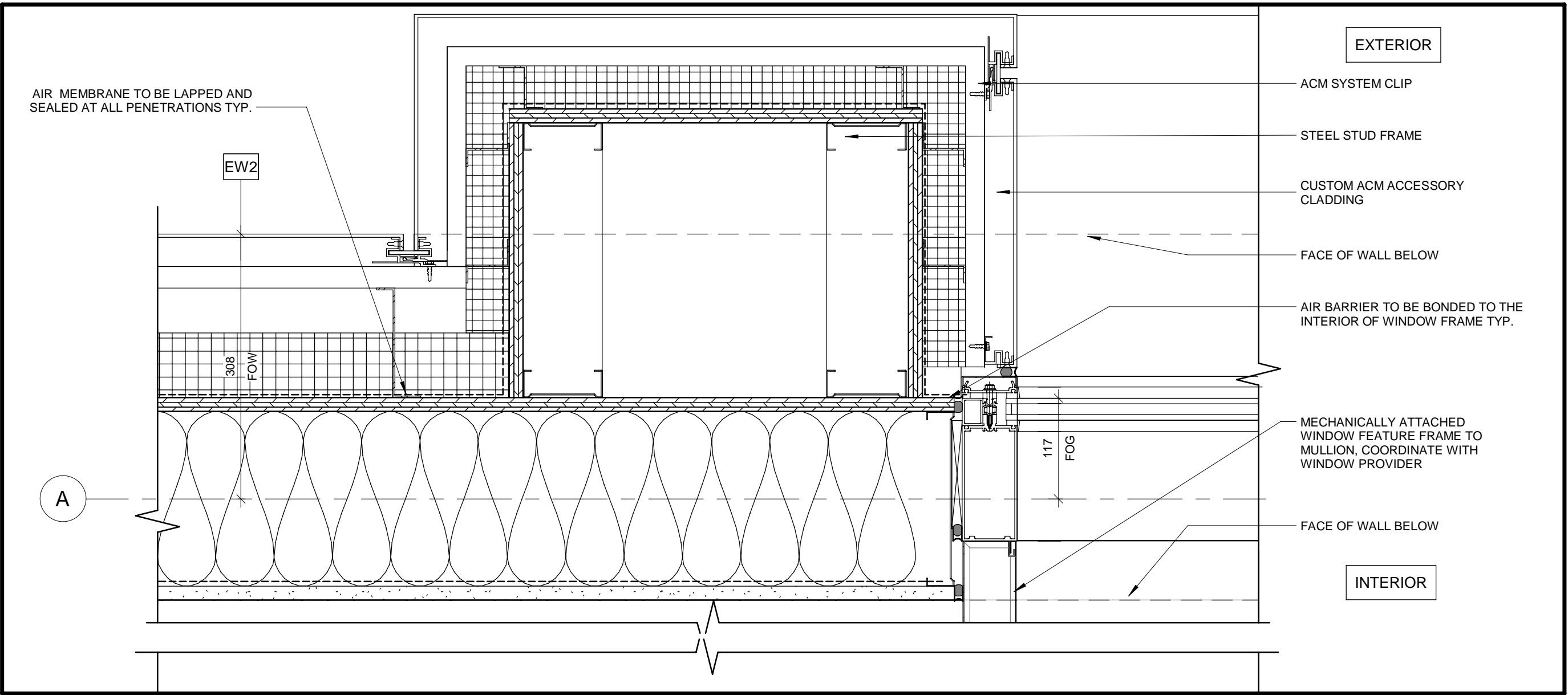
4 WINDOW @ BRICK VENEER HEAD AND SILL SECTION DETAIL  
A312 A709 1 : 5



3 WINDOW @ BRICK VENEER WALL JAMB DETAIL  
A111 A709 1 : 5



2 SECTION DETAIL - WINDOW AT ACM (WINDOW TYPE 2 & 3)  
A312 A709 1 : 5



1 WINDOW AT ACM WALL JAMB DETAIL  
A111 A709 1 : 5



D	2025-01-23	ISSUED FOR TENDER
C	2024-12-13	IFP RE-SUBMISSION
B	2024-11-29	ISSUED FOR OWNER REVIEW
A	2024-10-30	ISSUED FOR PERMIT

Mark	Date	Description
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Revision History	
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Filename:	Version:
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Project Number:	Project Manager:
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Project Administrator:	BIM/MVDC Manager:
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Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
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Designed:	Date (yyyy-mm-dd):
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Drawn:	Date (yyyy-mm-dd):
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Reviewed:	Date (yyyy-mm-dd):
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Checked:	Date (yyyy-mm-dd):
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Approved:	Date (yyyy-mm-dd):
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Author	
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Approver	
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Title:	
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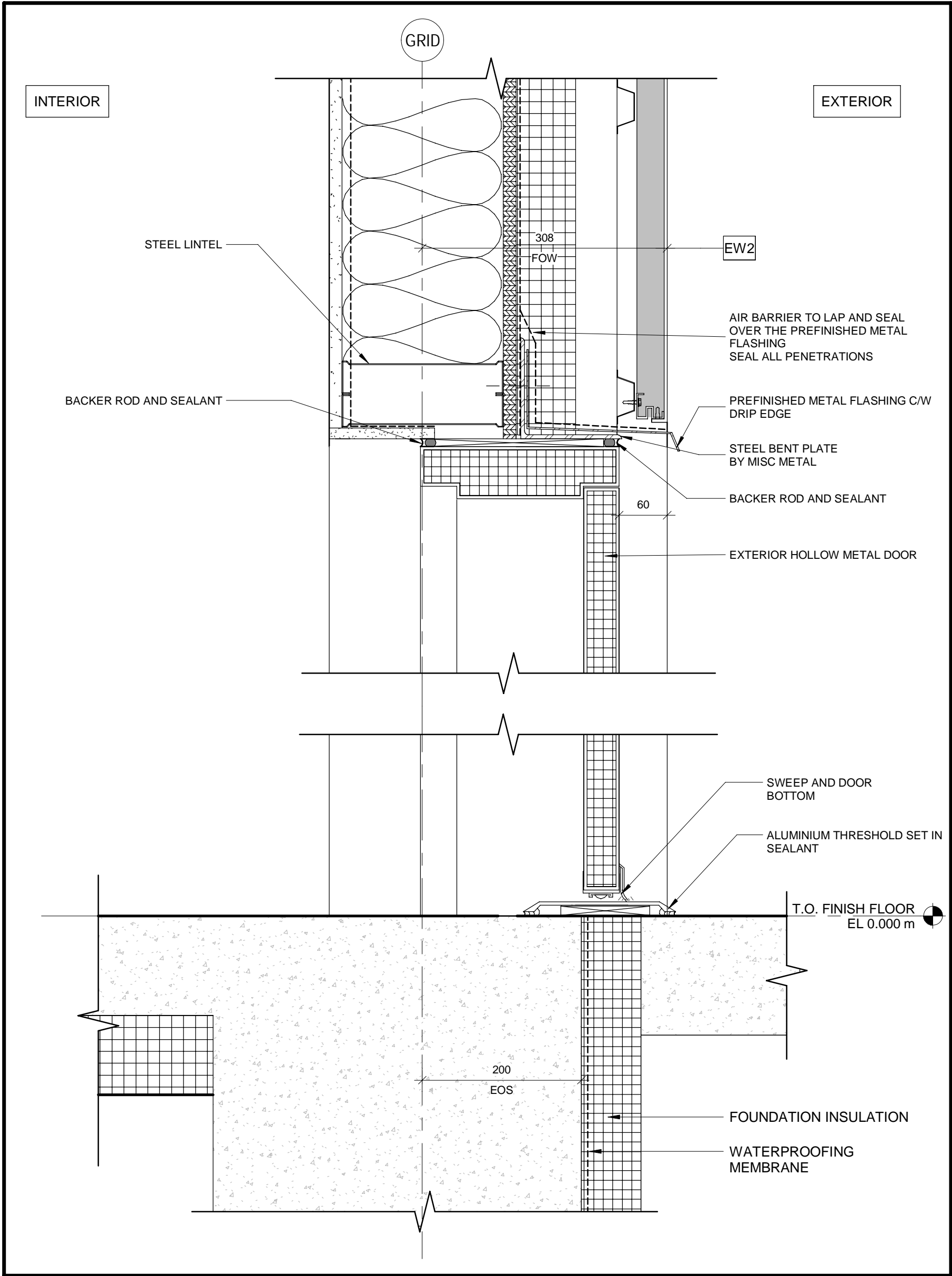
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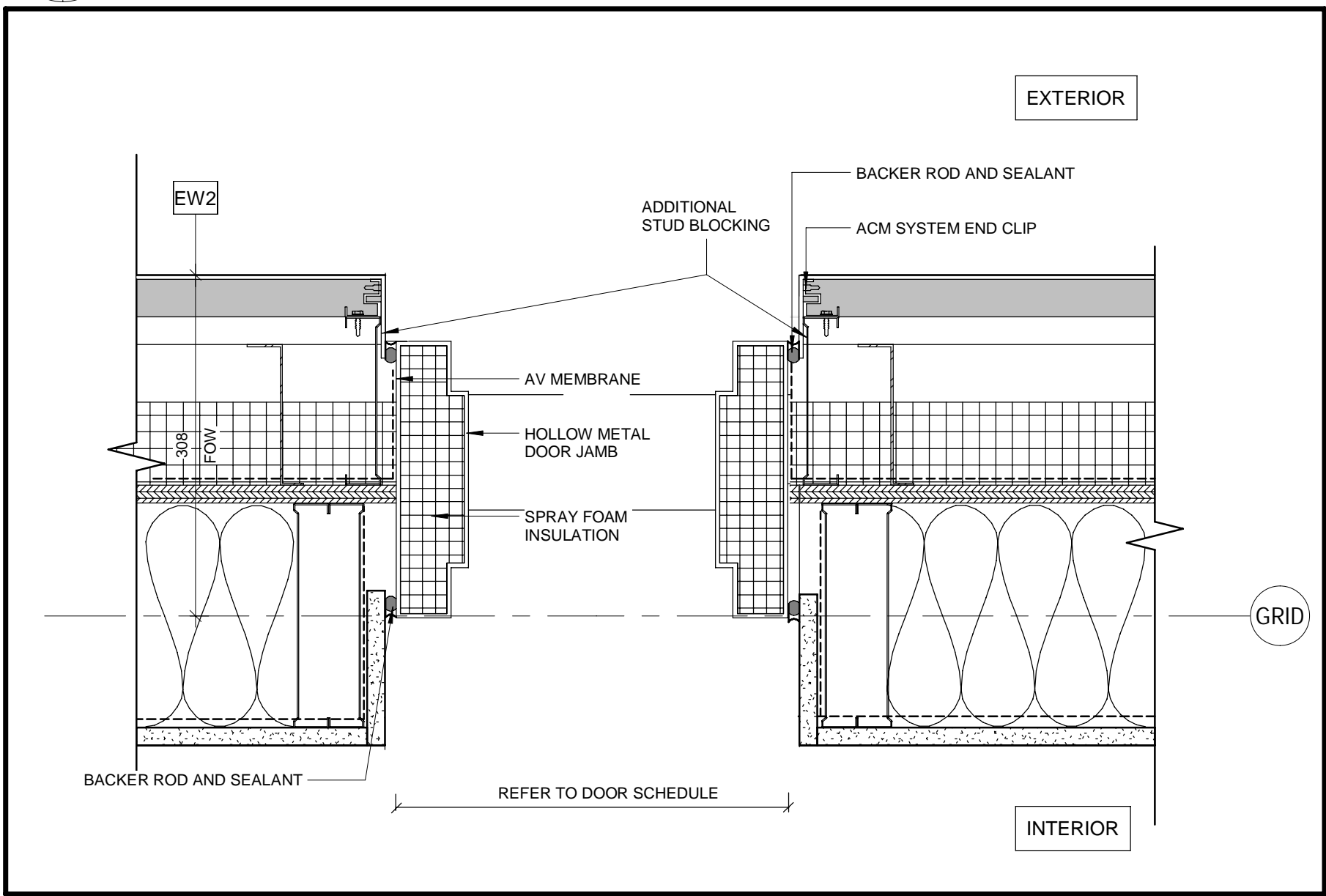
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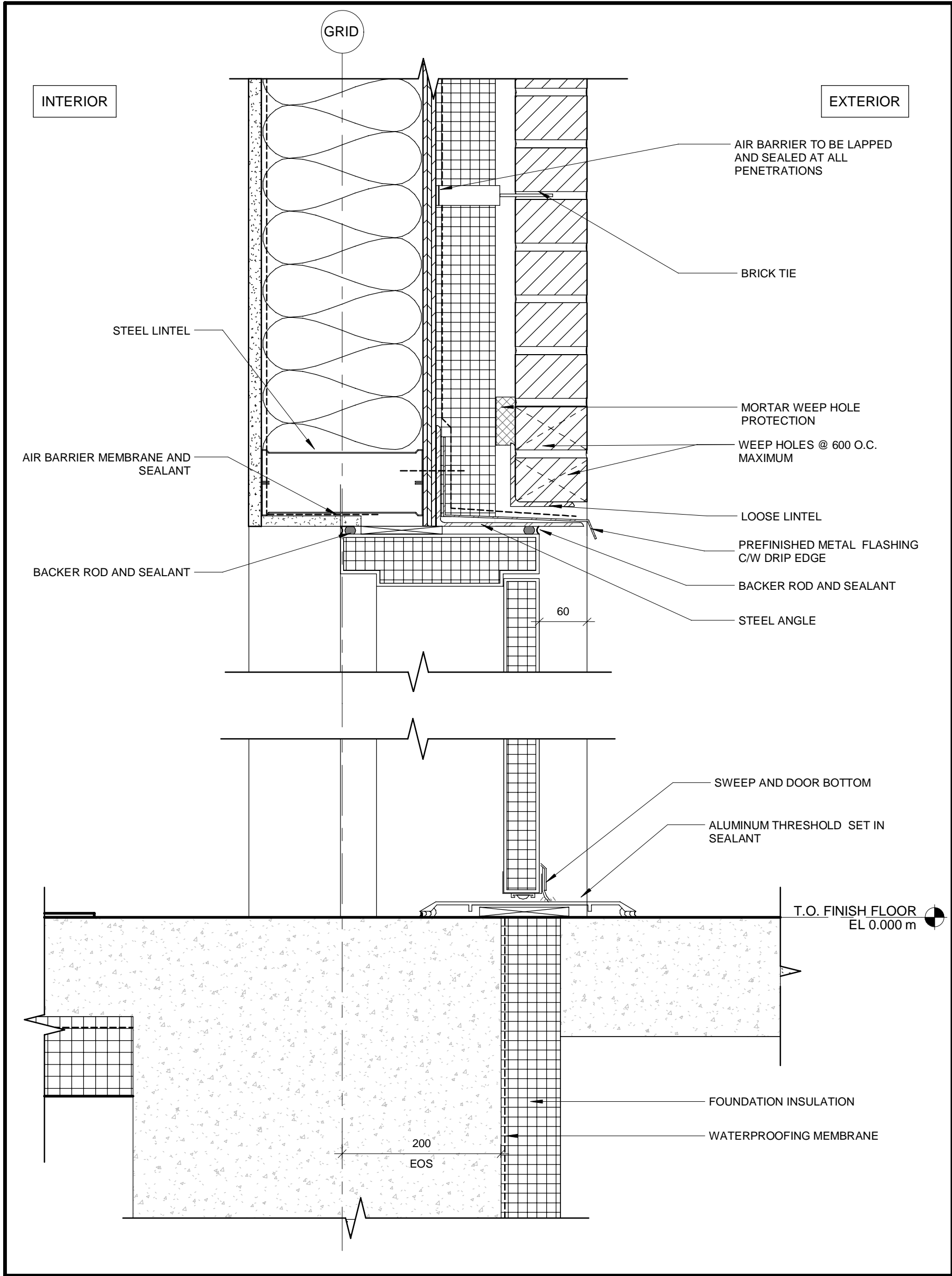
4 TYPICAL DOOR IN ACM WALL HEAD & THRESHOLD DETAIL

A710 1:5



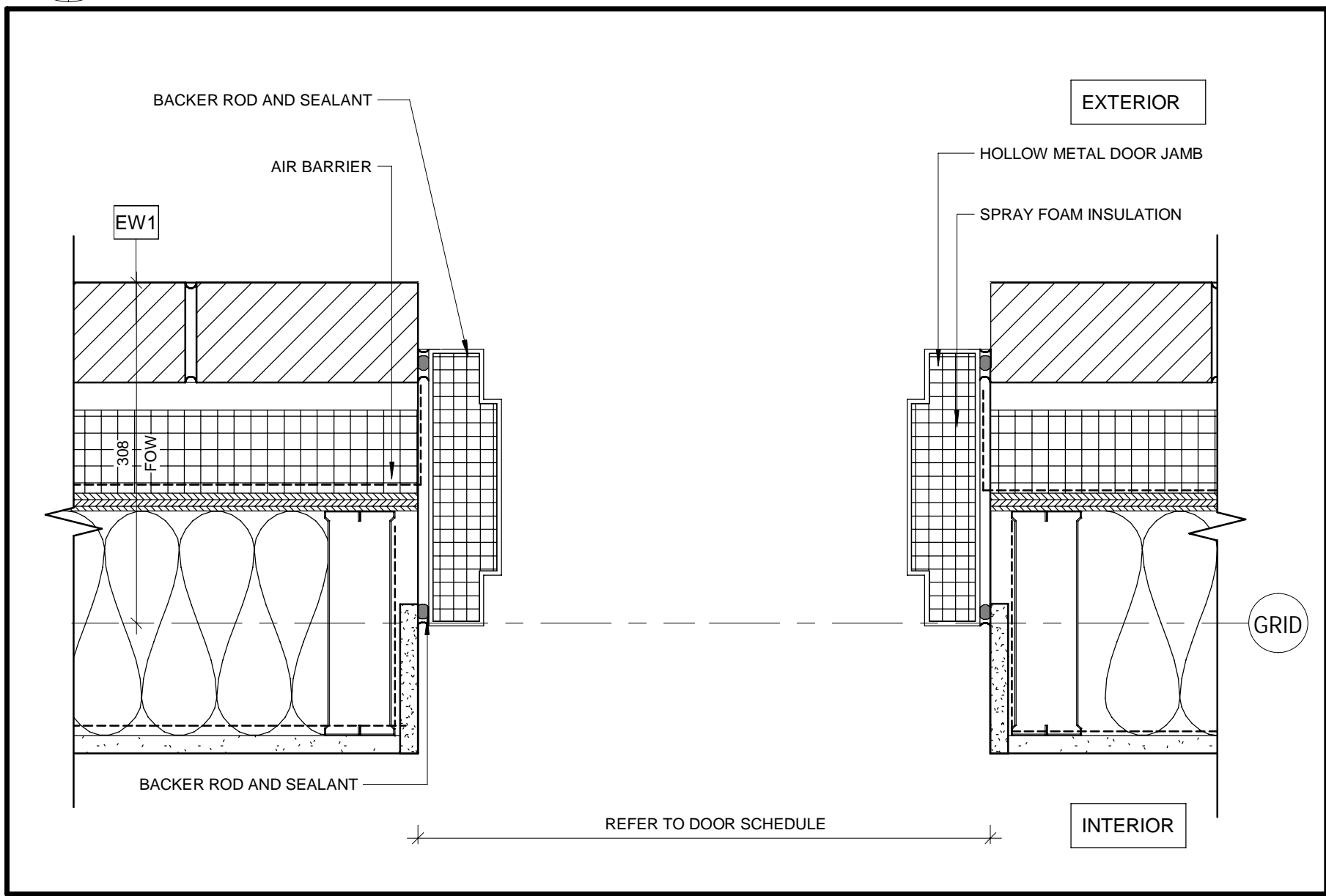
3 TYPICAL DOOR AT ACM WALL JAMB DETAIL

A710 1:5



2 TYPICAL DOOR IN BRICK WALL HEAD & THRESHOLD DETAIL

A311 A710 1:5



1 TYPICAL DOOR AT BRICK WALL JAMB DETAIL

A710 1:5

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

D	2025-01-23	ISSUED FOR TENDER
C	2024-12-13	IFP RE-SUBMISSION
B	2024-11-29	ISSUED FOR OWNER REVIEW
A	2024-10-30	ISSUED FOR PERMIT

Mark	Date	Description
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Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Administrator: BIM/VDC Manager

Project Manager: John Page

Sustainability Target: LEED Silver

Designed: Designer

Drawn: Author

Reviewed: Approver

Checked: Allan Man

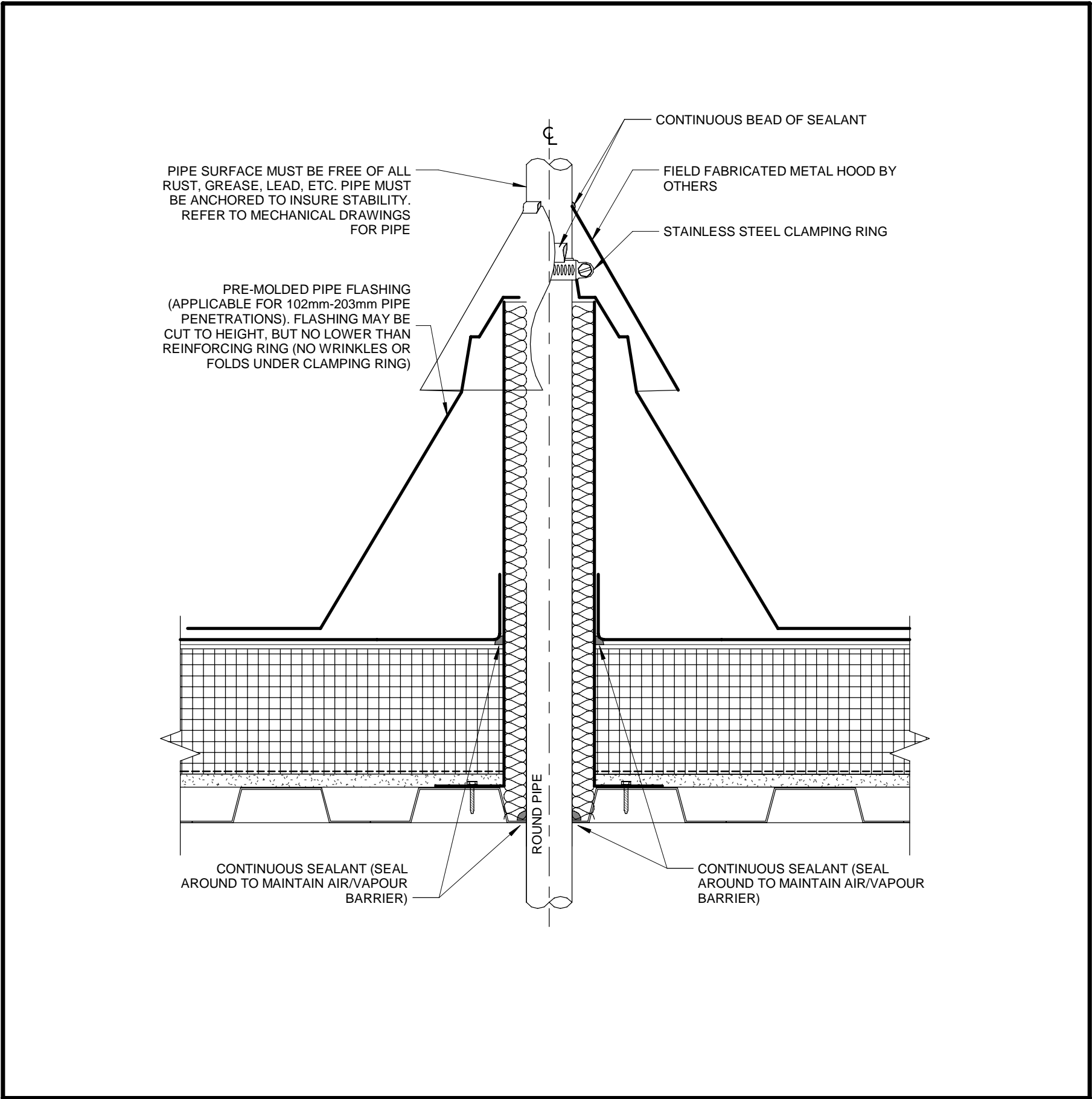
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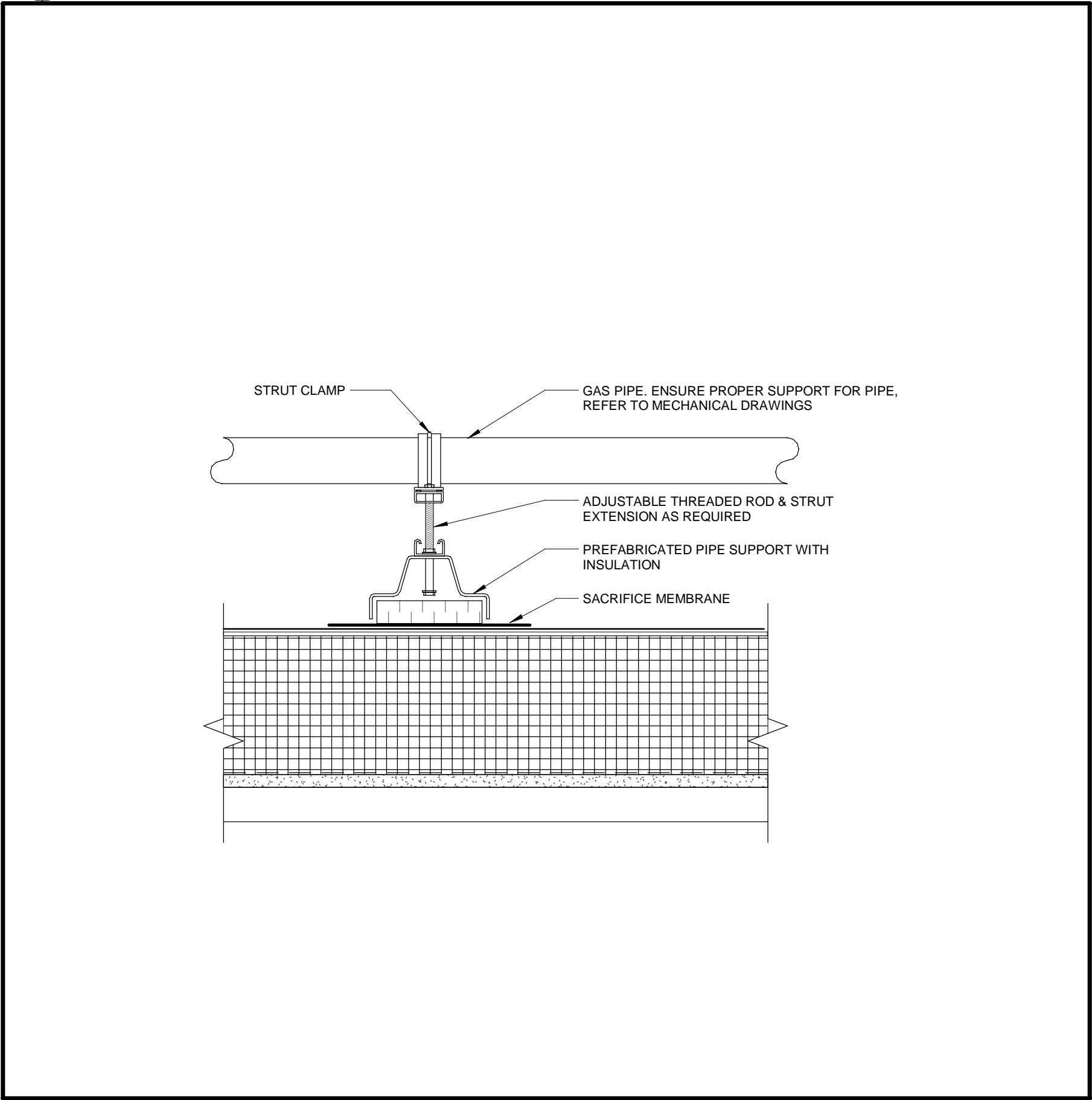
EXTERIOR SECTION DETAILS - DOOR OPENINGS

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Sheet: A710  
Rev: D  
of: 1

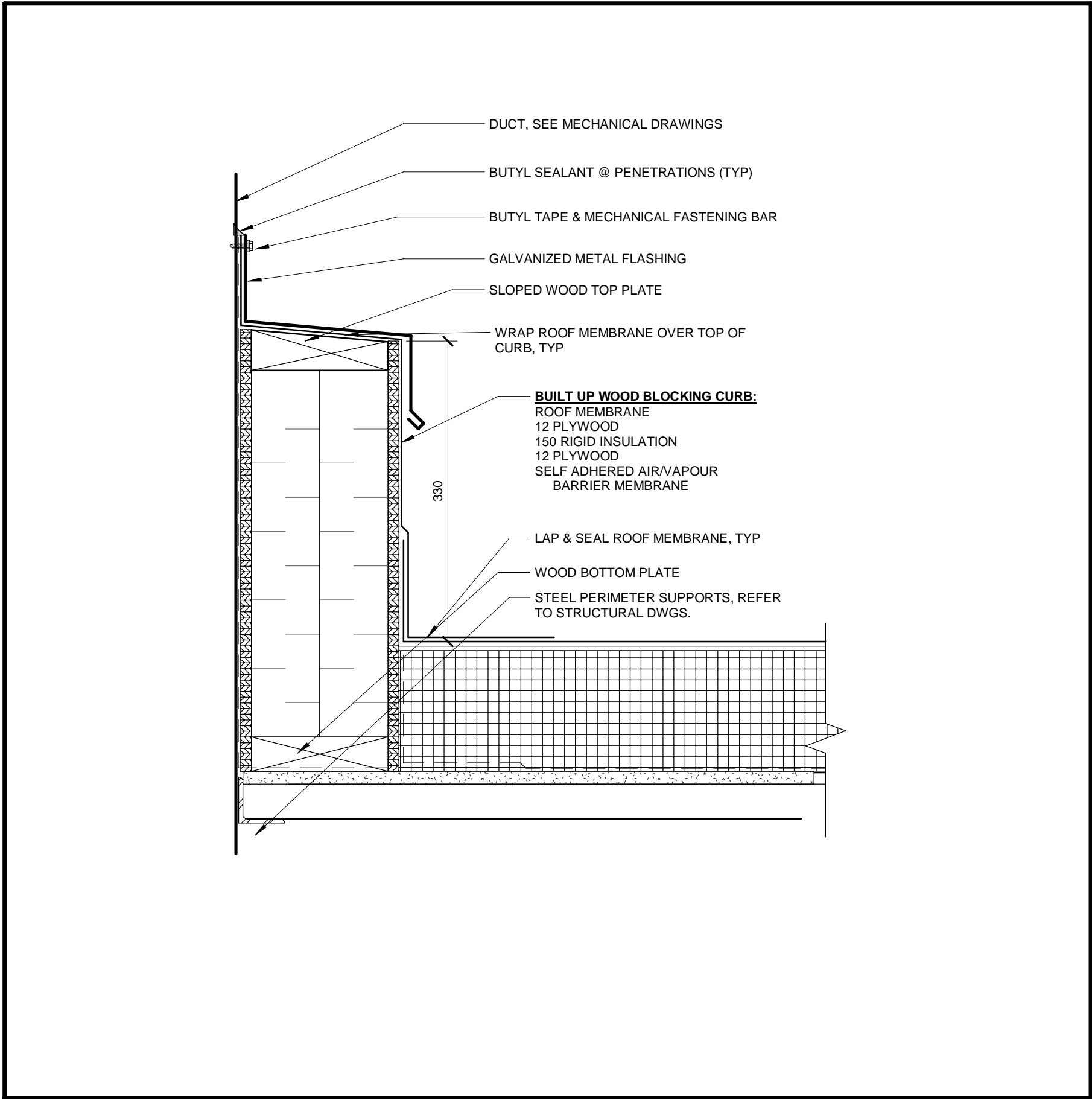




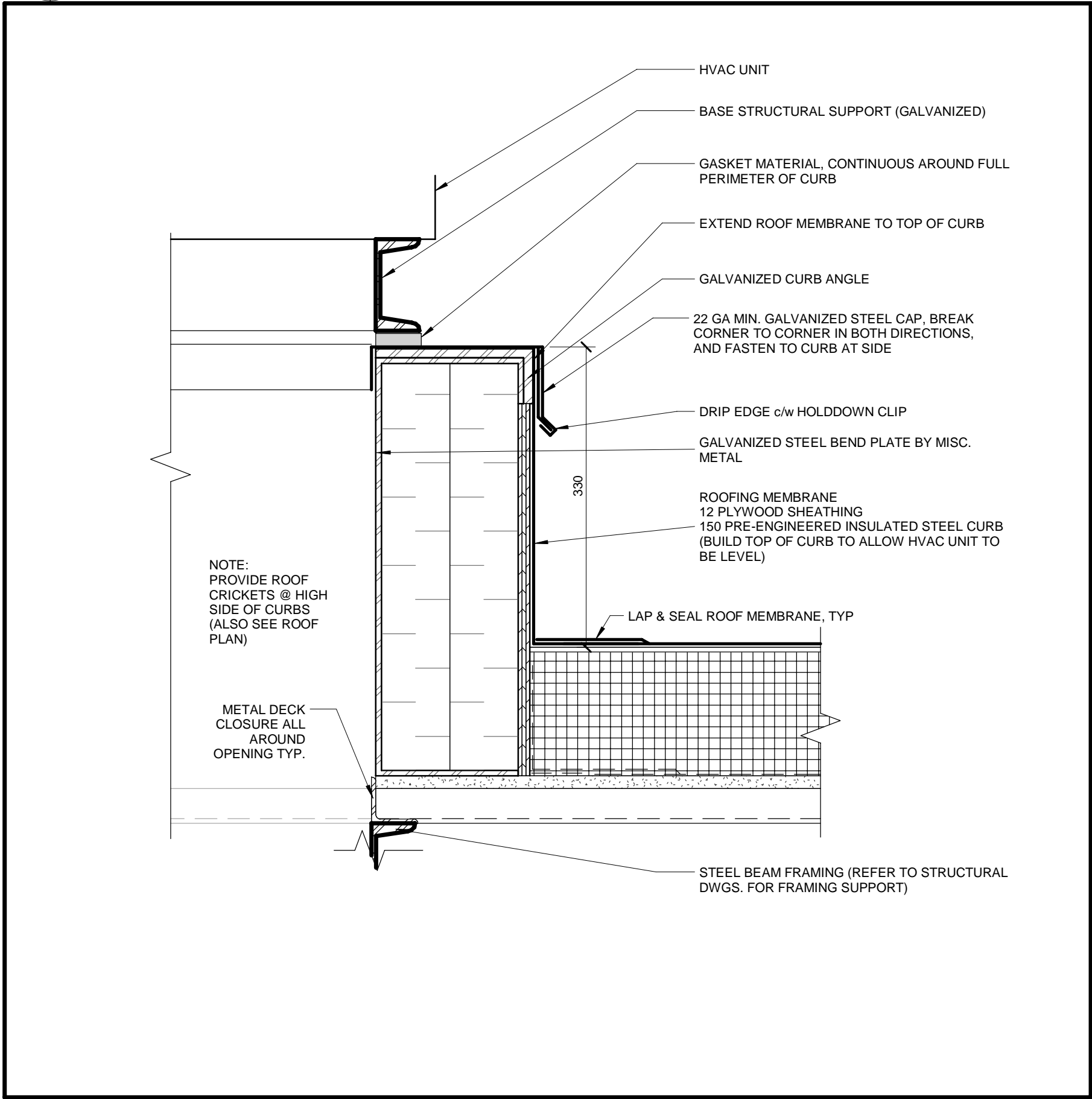
6 PIPE PENETRATION AT ROOF  
A711 1 : 5



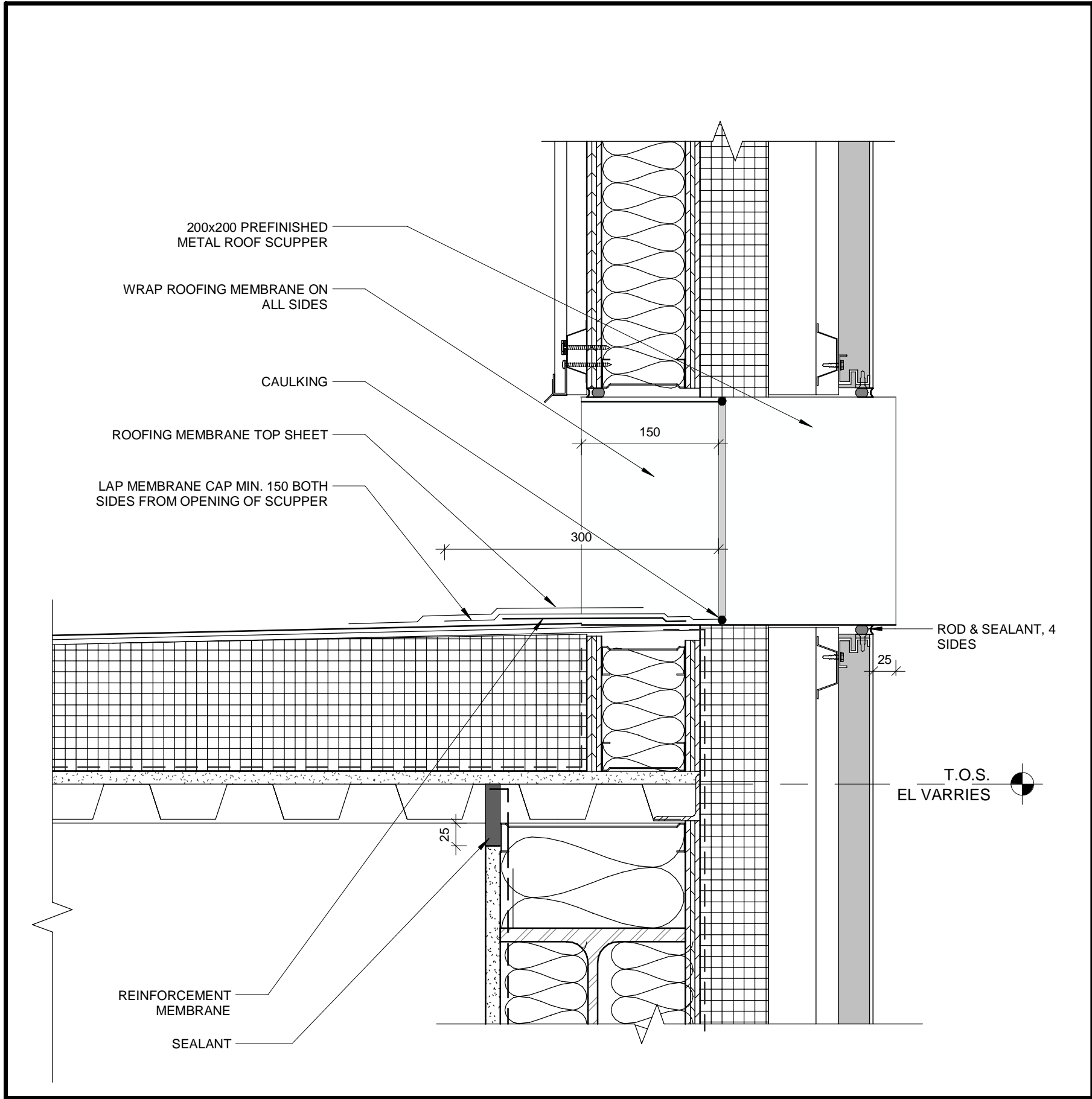
5 GAS LINE SUPPORT  
A711 1 : 5



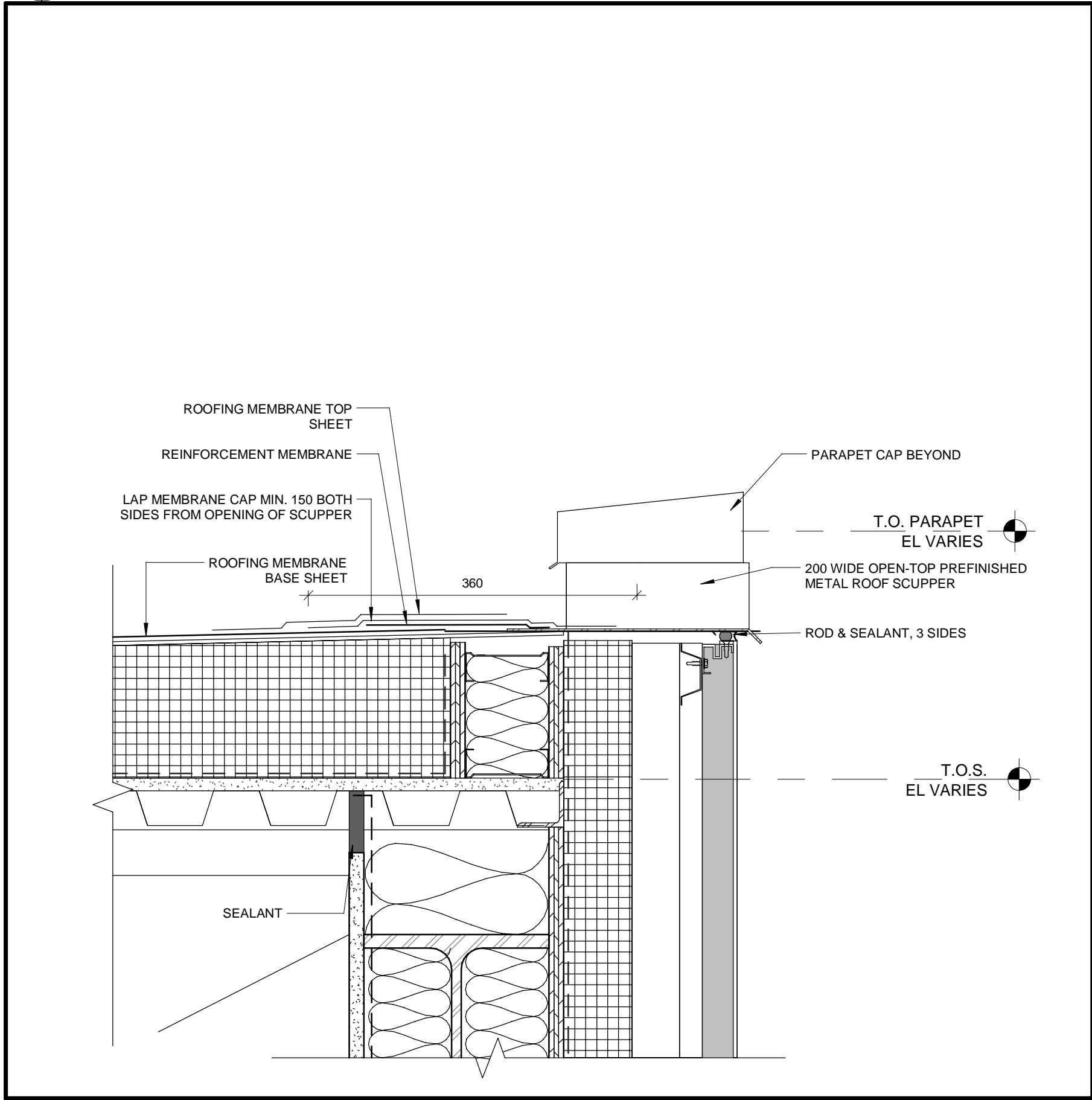
4 DUCT PENETRATION AT ROOF  
A711 1 : 5



3 MECHANICAL UNIT ROOF CURB  
A112 A711 1 : 5



2 SCUPPER DETAIL - CLOSED  
A711 1 : 5



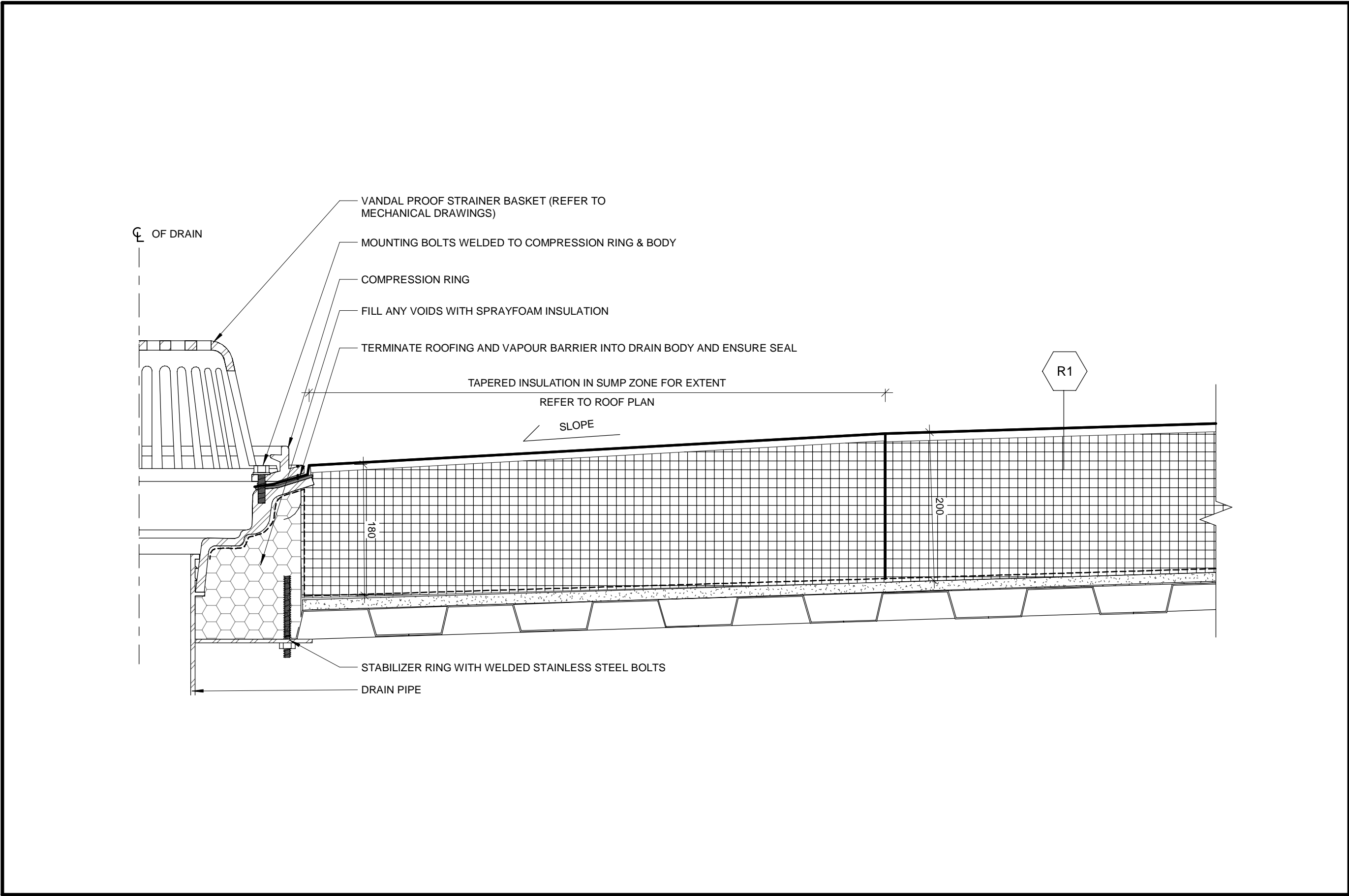
1 SCUPPER DETAIL - OPEN TOP  
A711 1 : 5



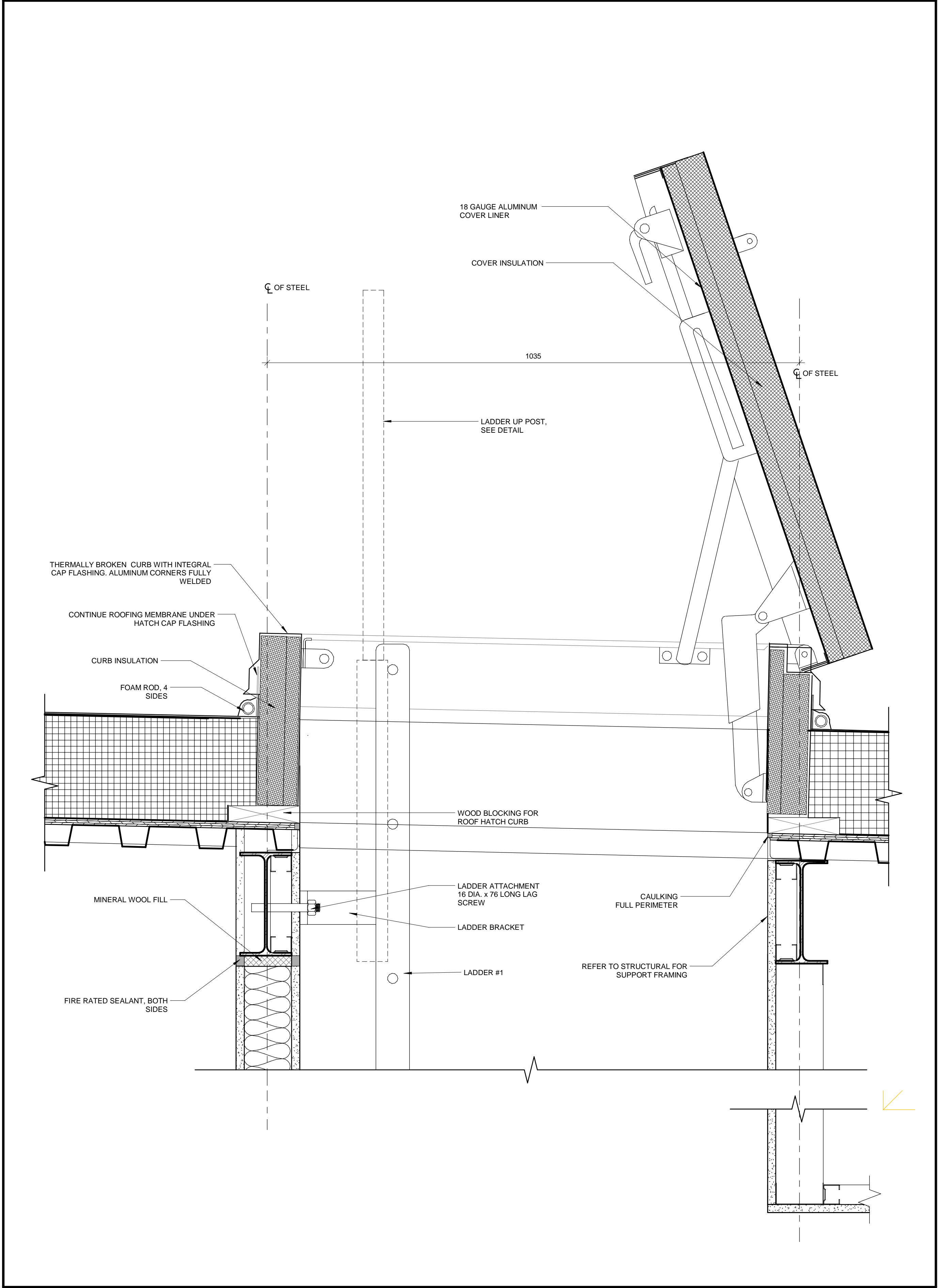
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E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
Revision History		
Filename:	Version:	2020.2.5.
Project Number:	Project Manager:	John Page
Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
Designer:	Date (yyyy-mm-dd):	
Drawn:	Date (yyyy-mm-dd):	
Author:	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	
Approver:	Date (yyyy-mm-dd):	
Title:		





2 ROOF DRAIN



3 ROOF HATCH DETAIL



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

F	2025-01-23	ISSUED FOR TENDER
E	2024-12-13	IFP RE-SUBMISSION
D	2024-11-29	ISSUED FOR OWNER REVIEW
C	2024-10-30	ISSUED FOR PERMIT
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename: Version: 2020.2.5.

Project Number: 60686829 Project Manager: John Page

Project Administrator: BIM/VDC Manager:

Sustainability Target: LEED Silver IPMS 1 (m²): IPMS 2 (m²):

Designed: Designer Date (yyyy-mm-dd):

Drawn: Author Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: Allan Man Date (yyyy-mm-dd):

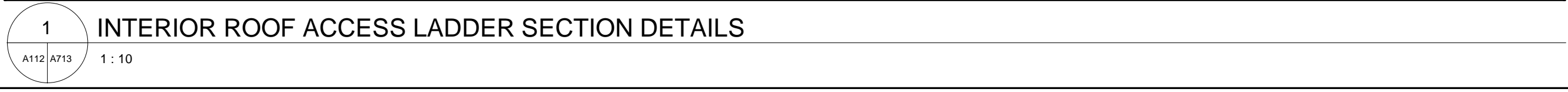
Approved: Approver Date (yyyy-mm-dd):

Title:

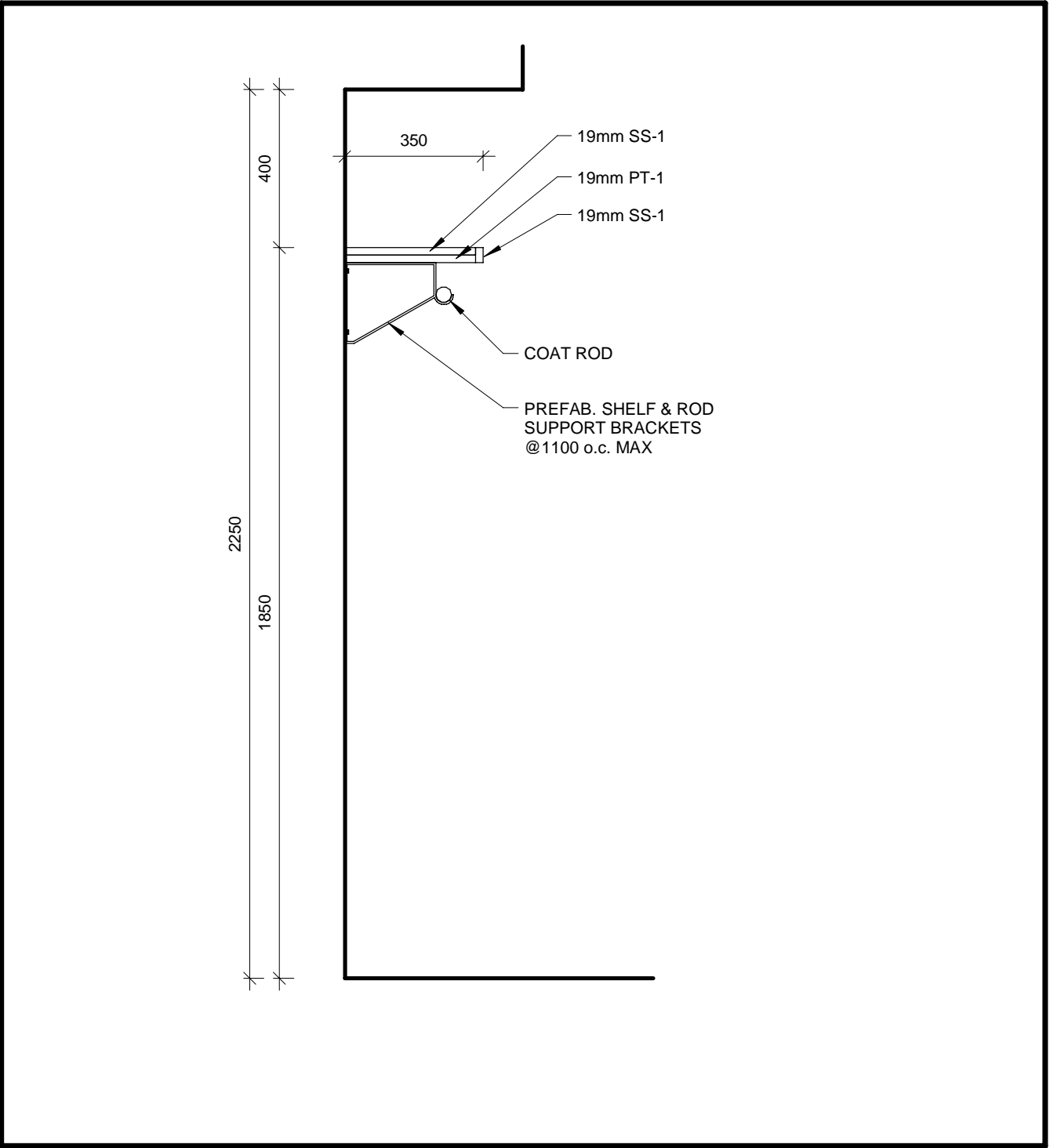
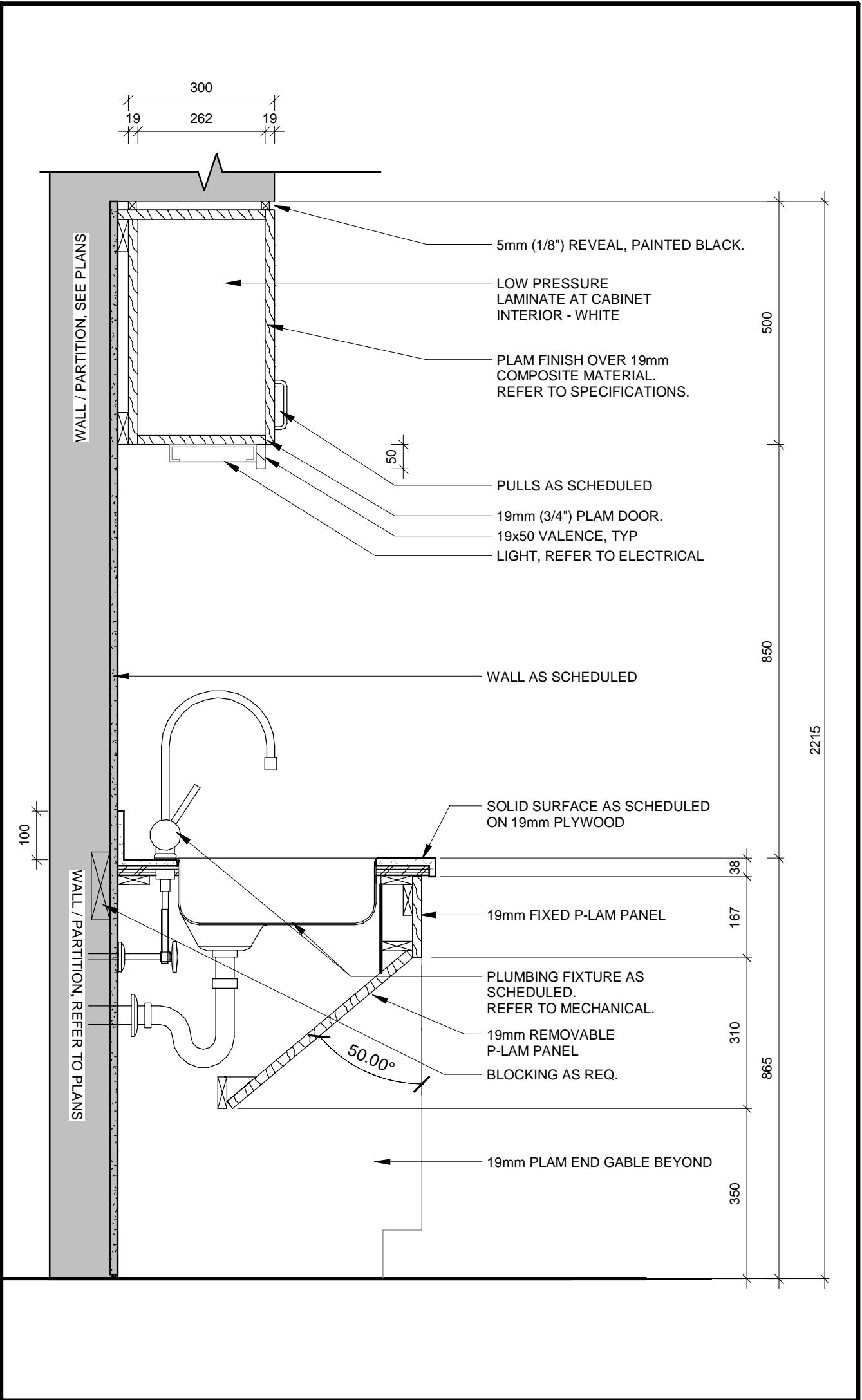
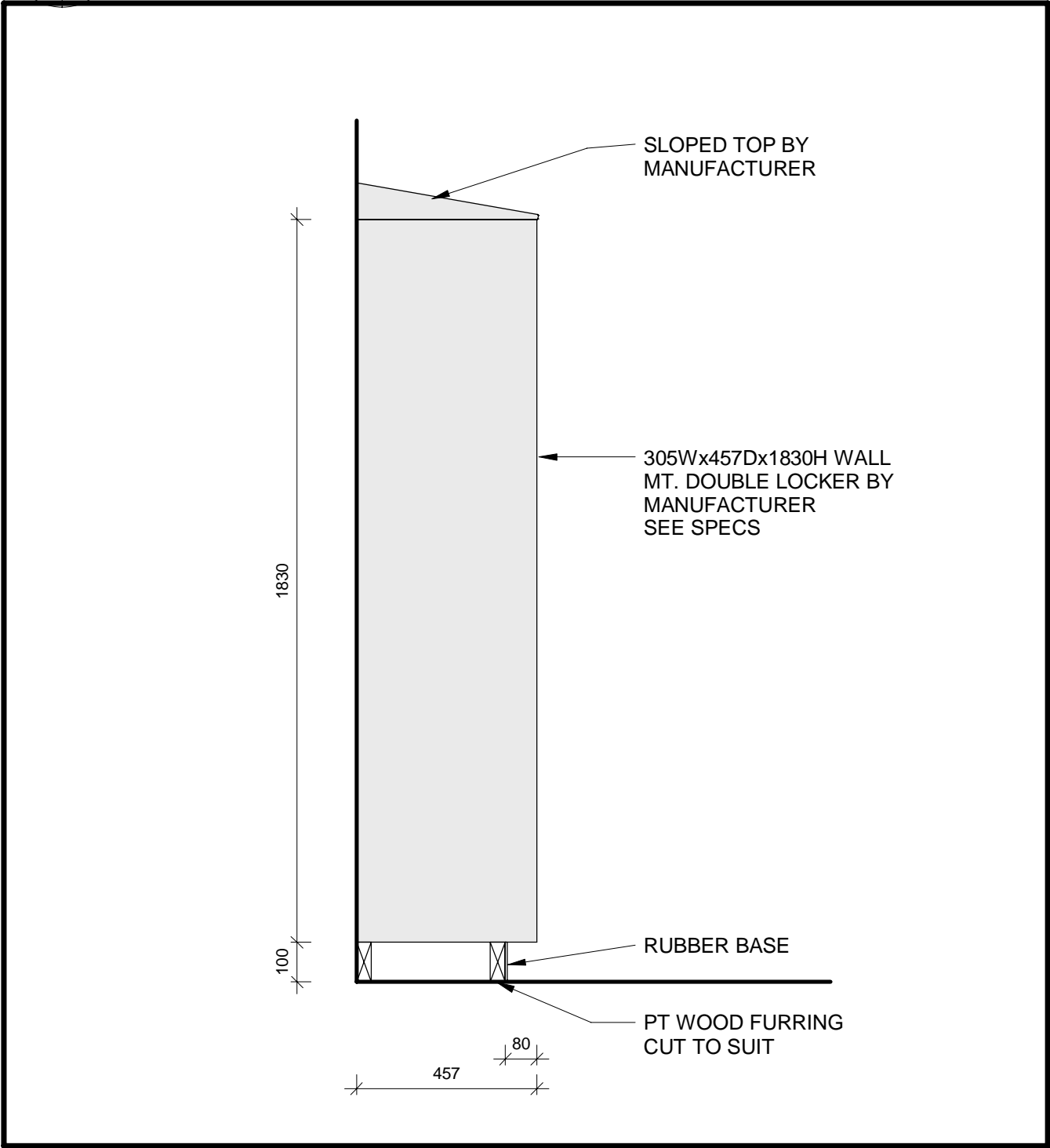
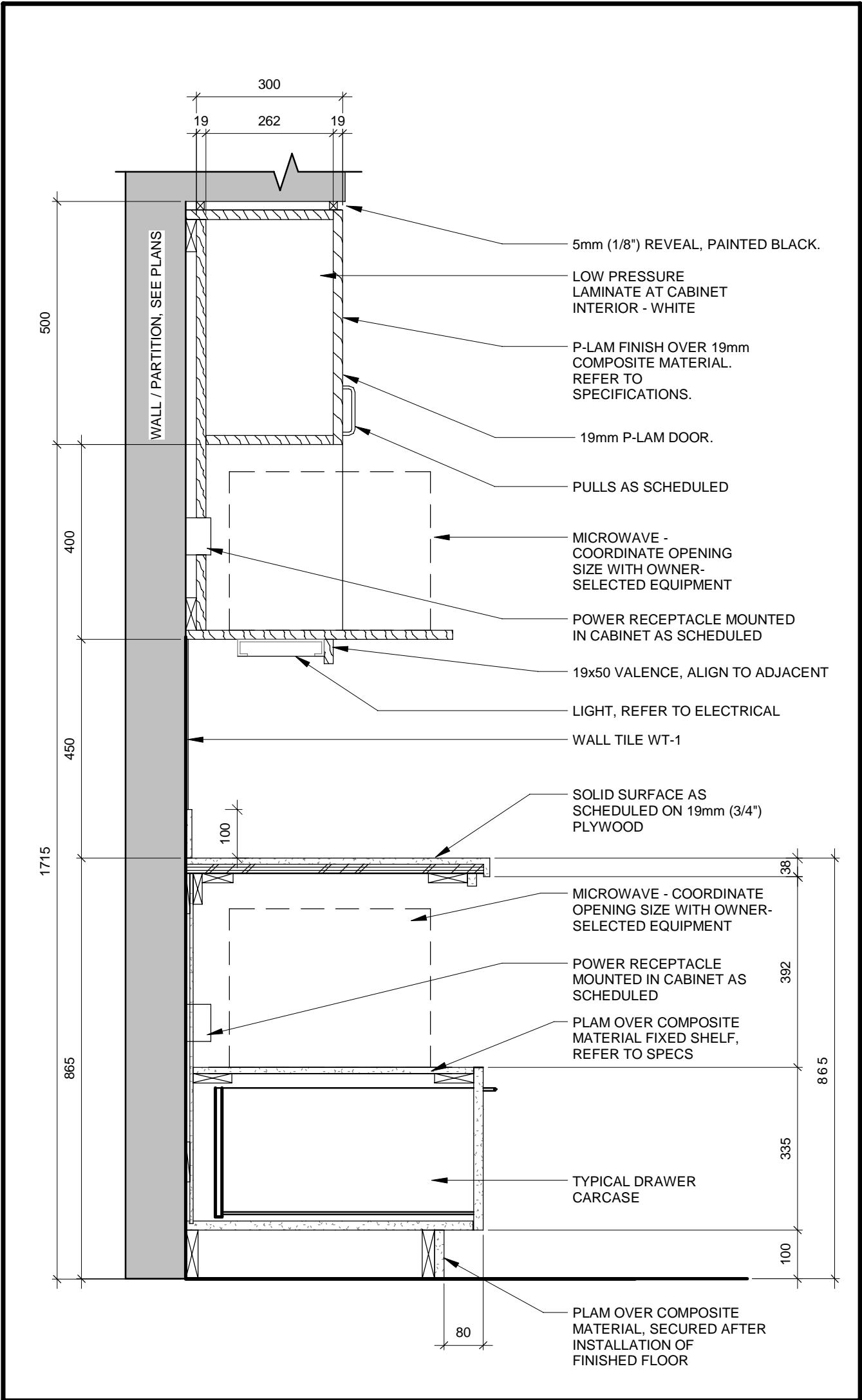
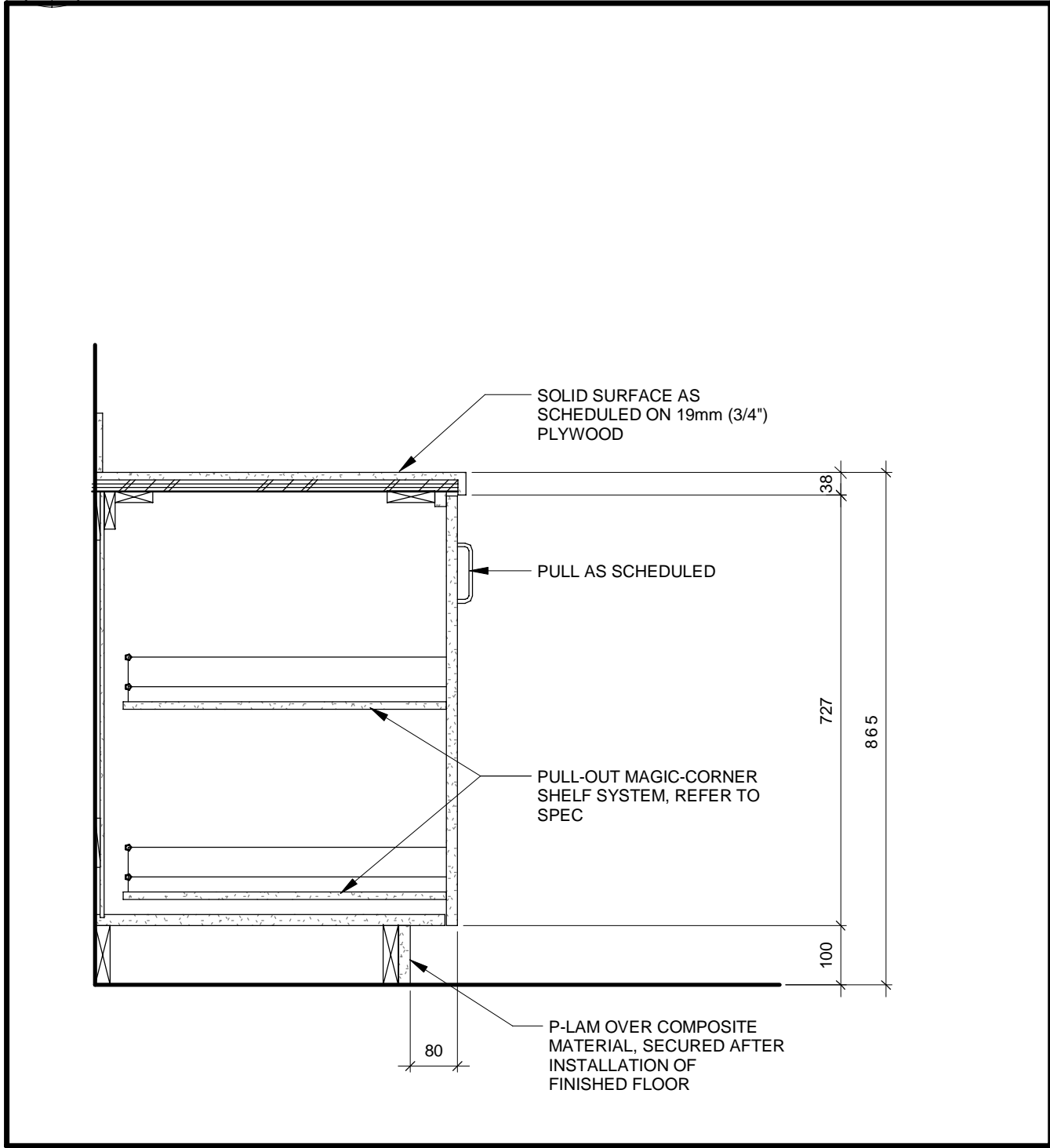
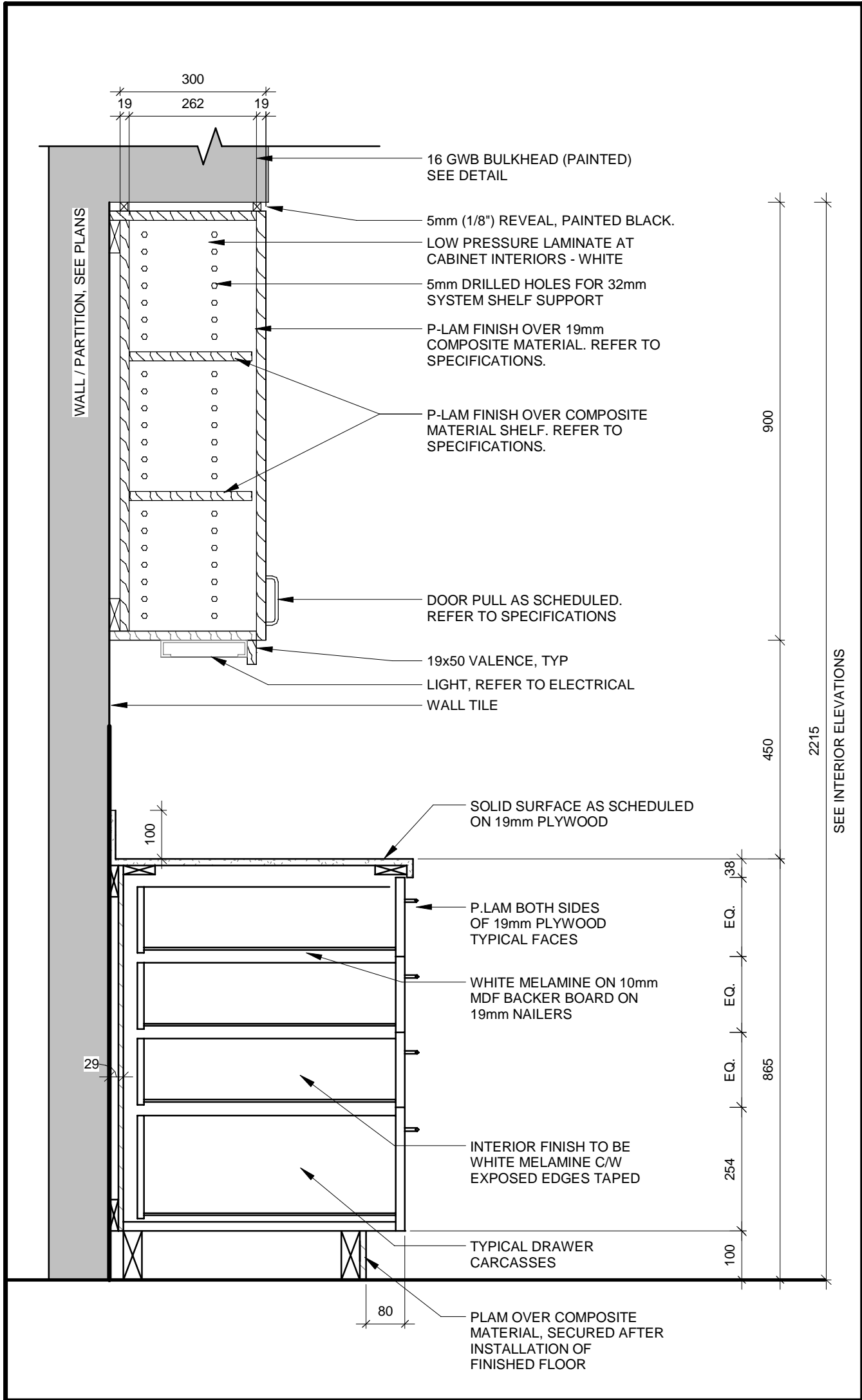
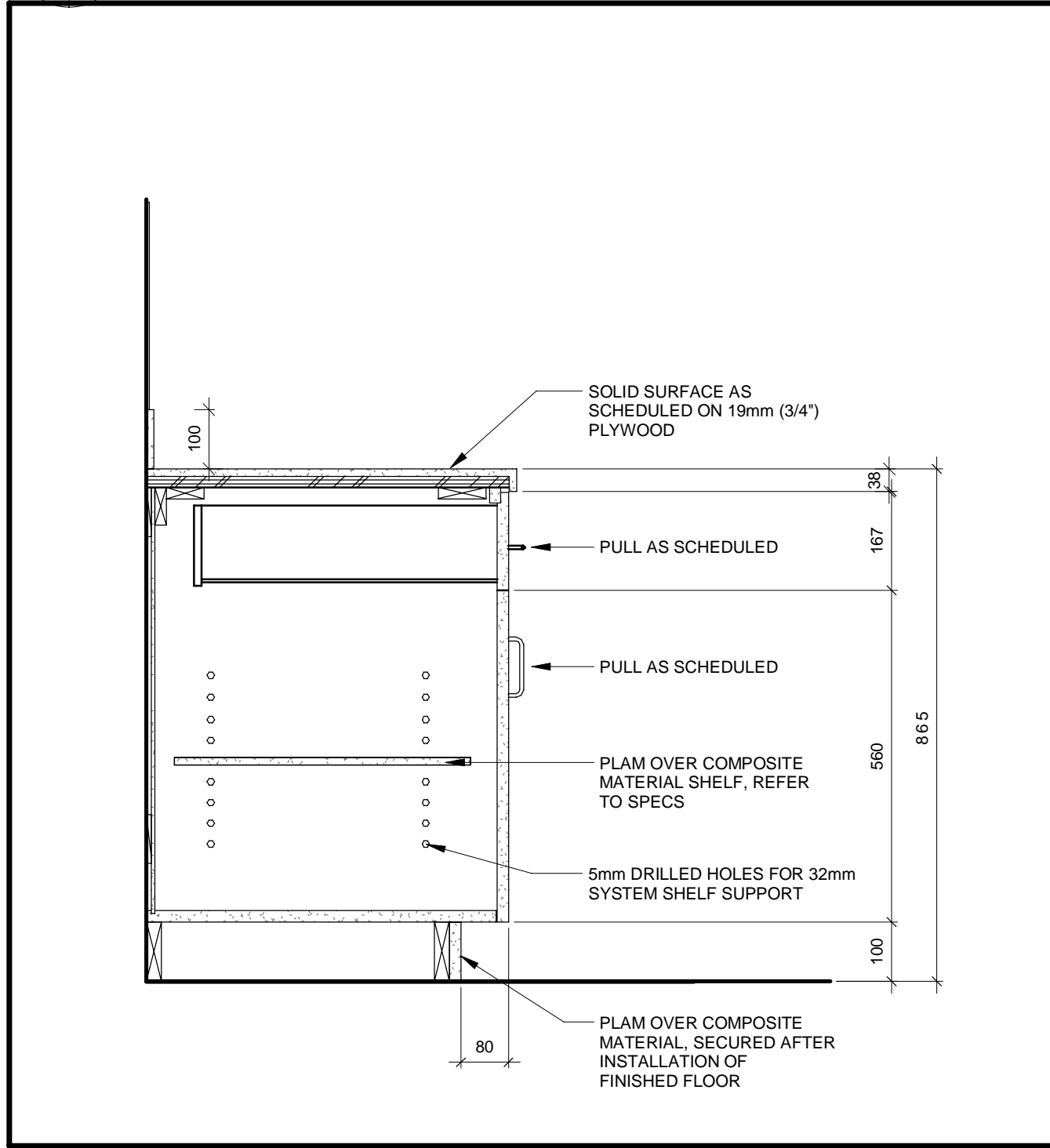
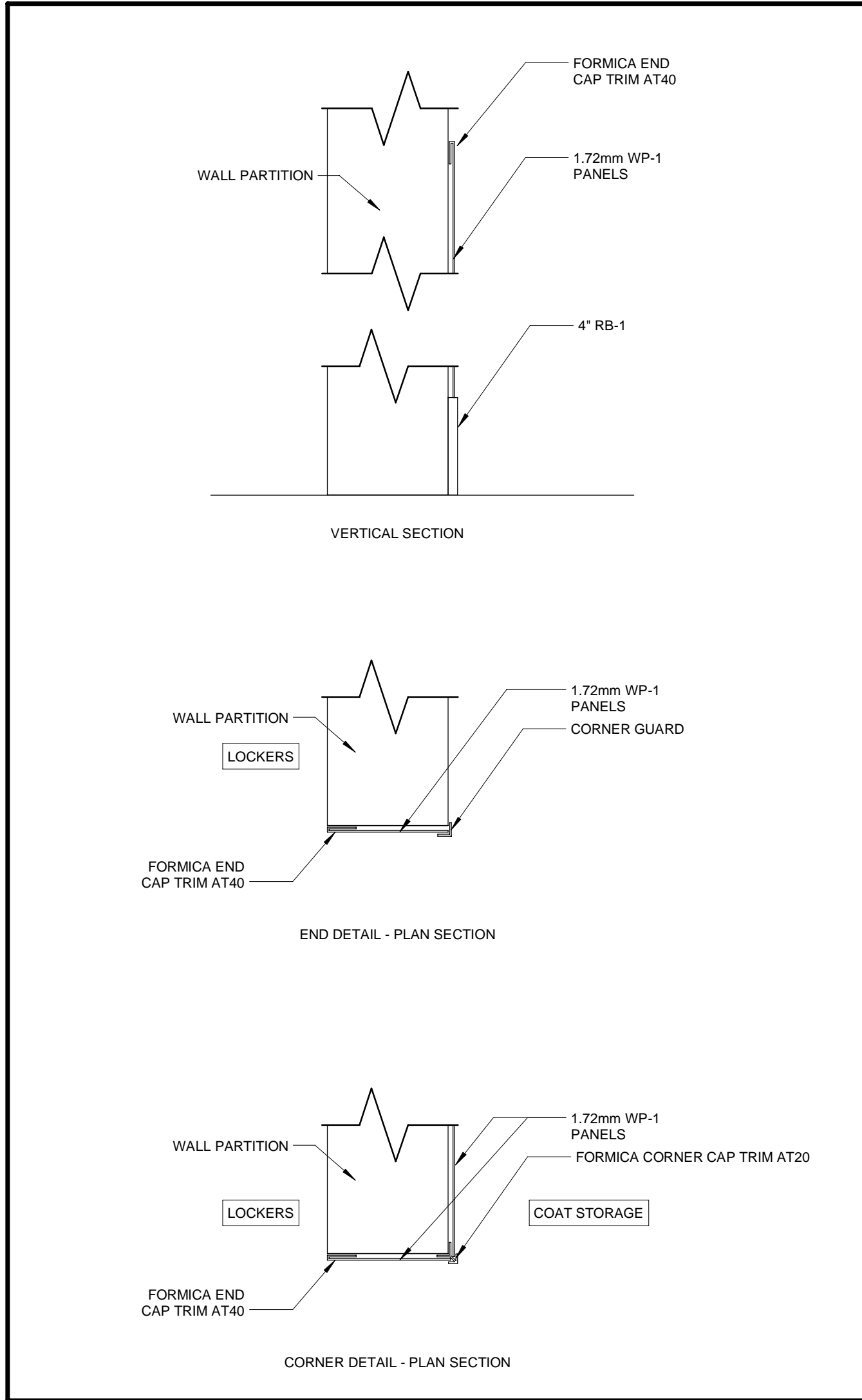
ROOF DETAILS

Page Size: ANSI D Sheet: A712 Rev: F  
Scale: 1:5 of:









E	2025-01-23	ISSUED FOR TENDER
D	2024-12-13	IFP RE-SUBMISSION
C	2024-11-29	ISSUED FOR OWNER REVIEW
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD

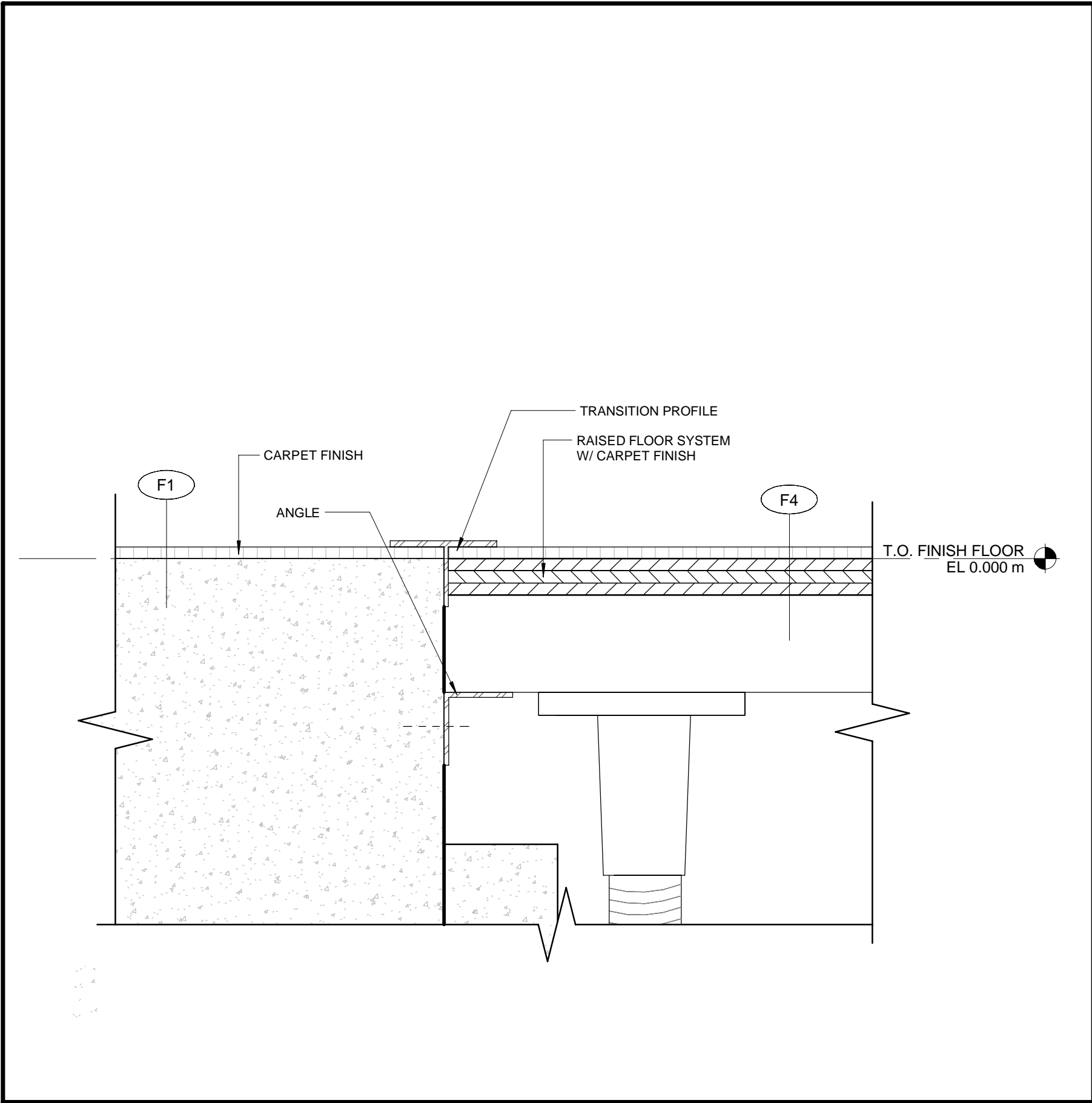
Mark	Date	Description
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Revision History

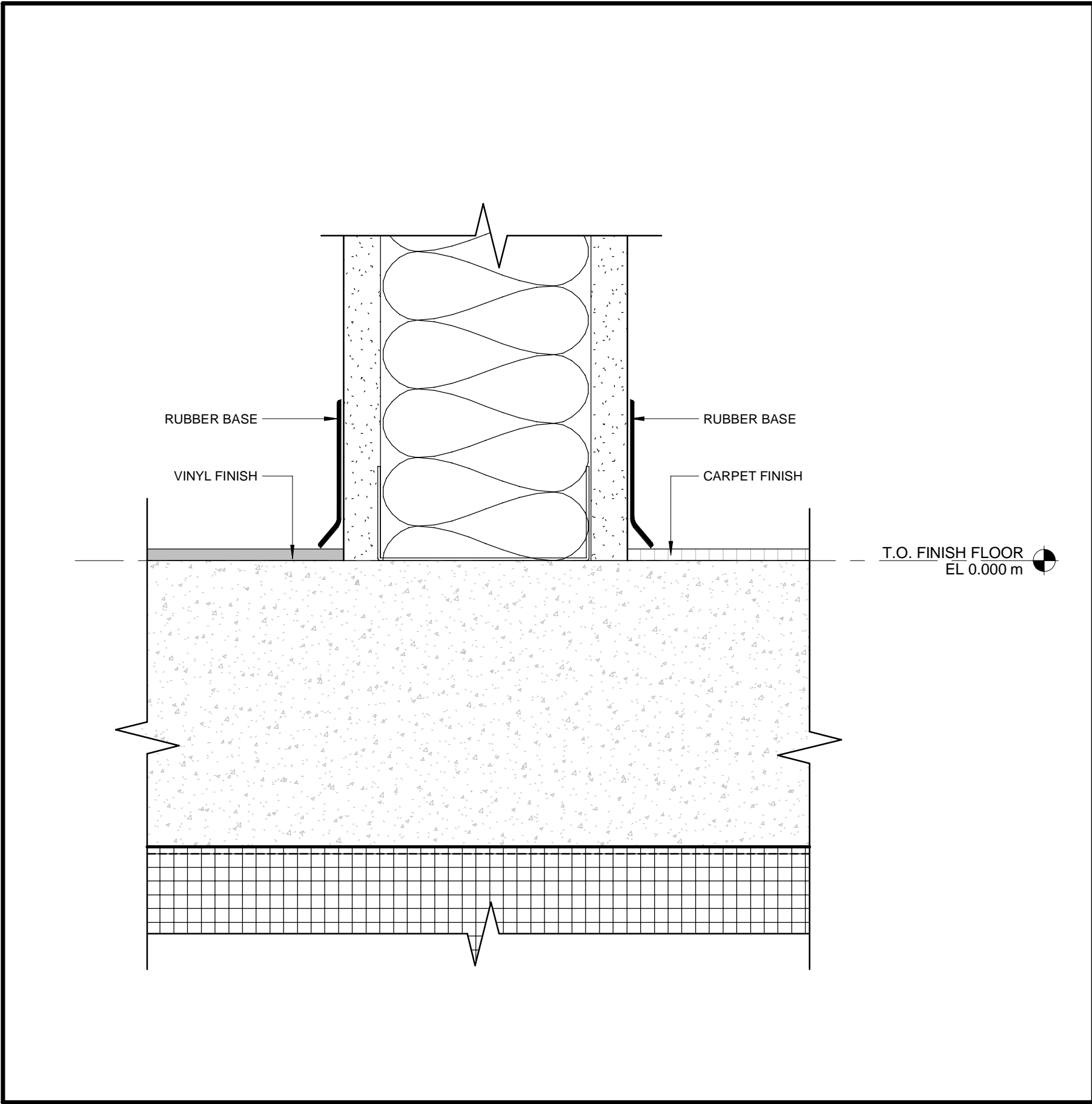
Filename:	Version:
60686829	2020.2.5.
Project Number:	Project Manager:
60686829	John Page
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²):
LEED Silver	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):
Author	Date (yyyy-mm-dd):
Drawn:	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked:	Date (yyyy-mm-dd):
Allan Man	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):
Approver	
Title:	

MILLWORK DETAILS

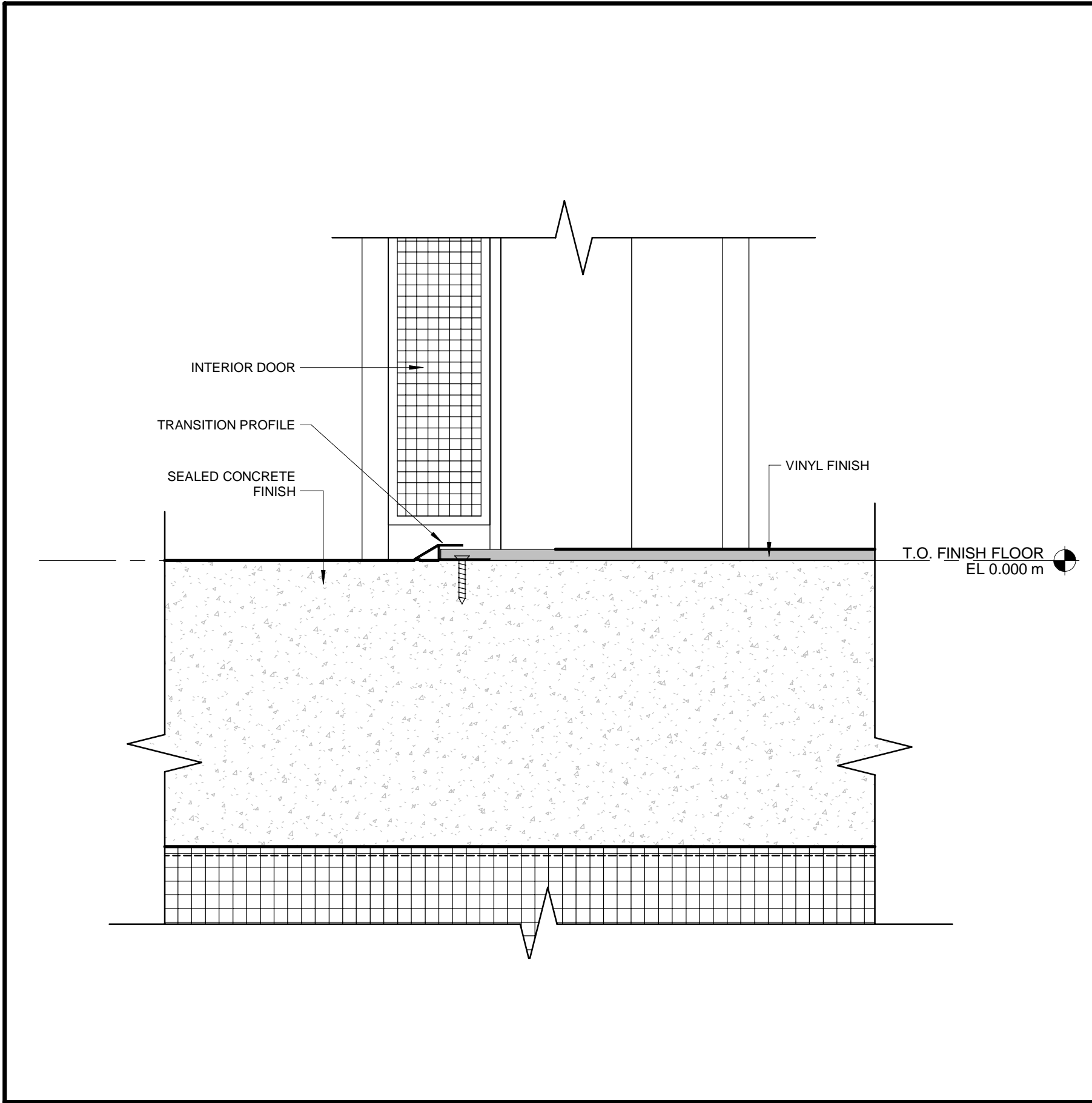




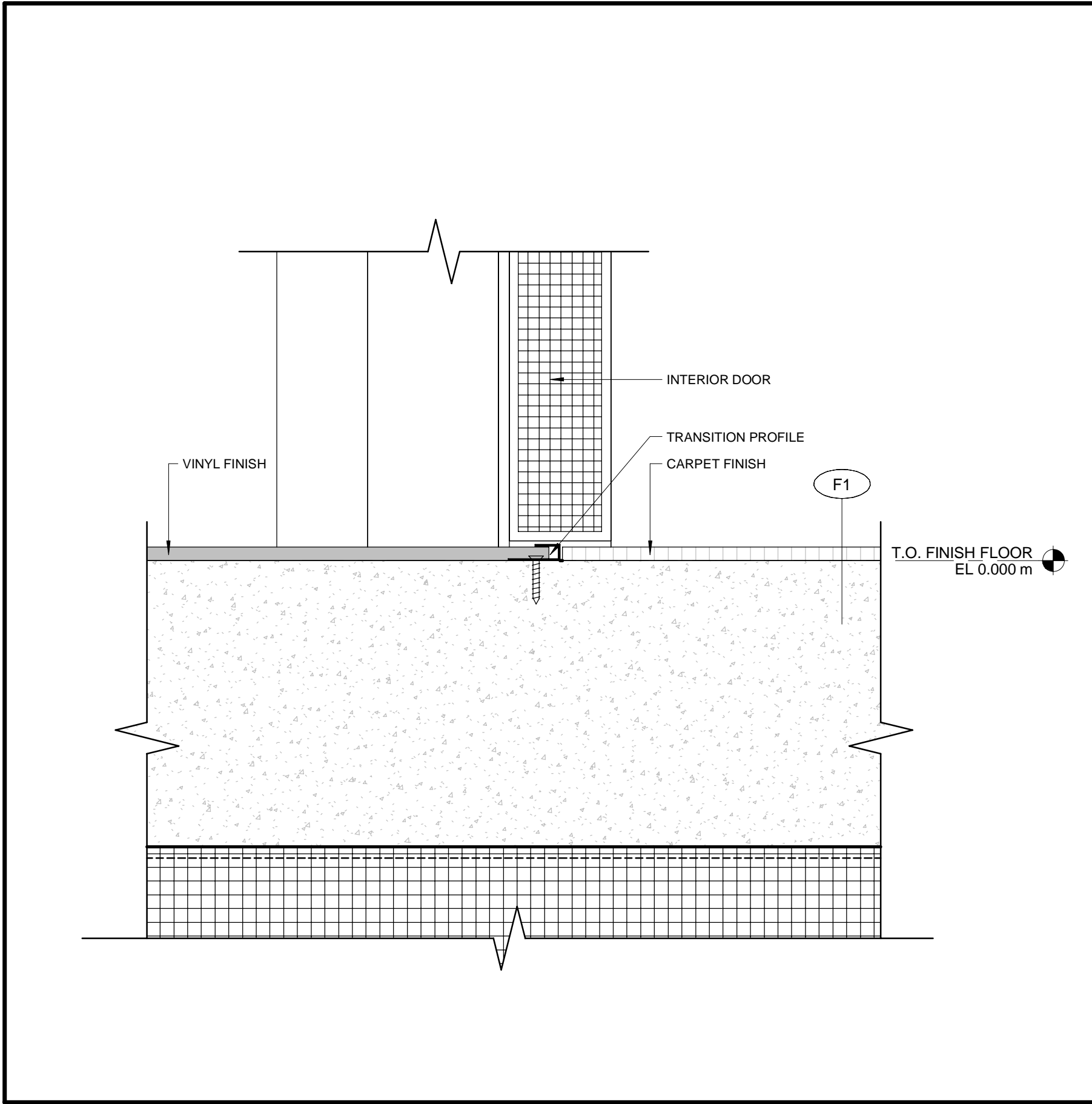
6 FLOOR TRANSITION AT SLAB DROP SECTION DETAIL  
A301 A810 1:2



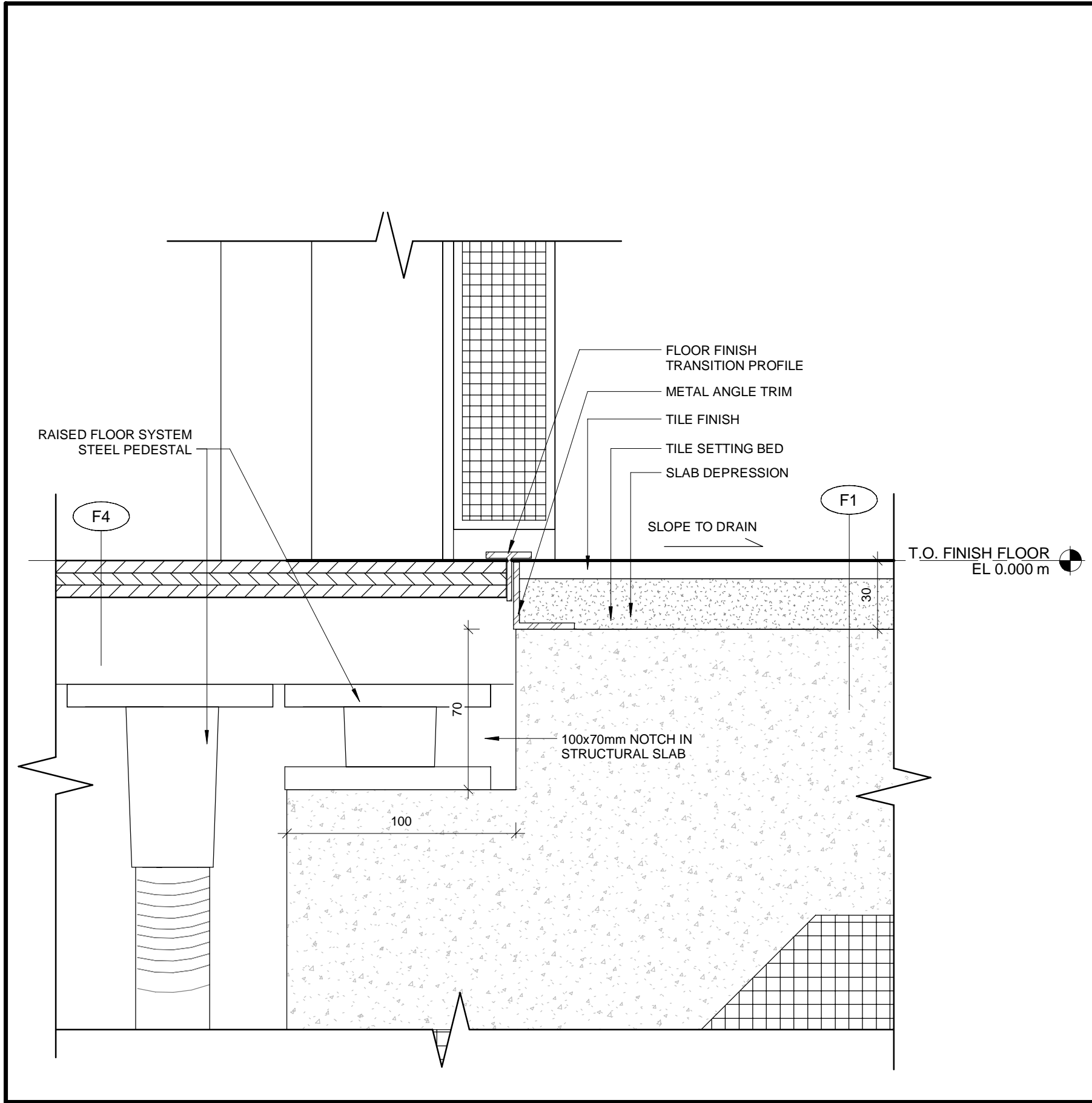
5 VINYL AND CARPET BASE SECTION DETAIL  
A810 1:2



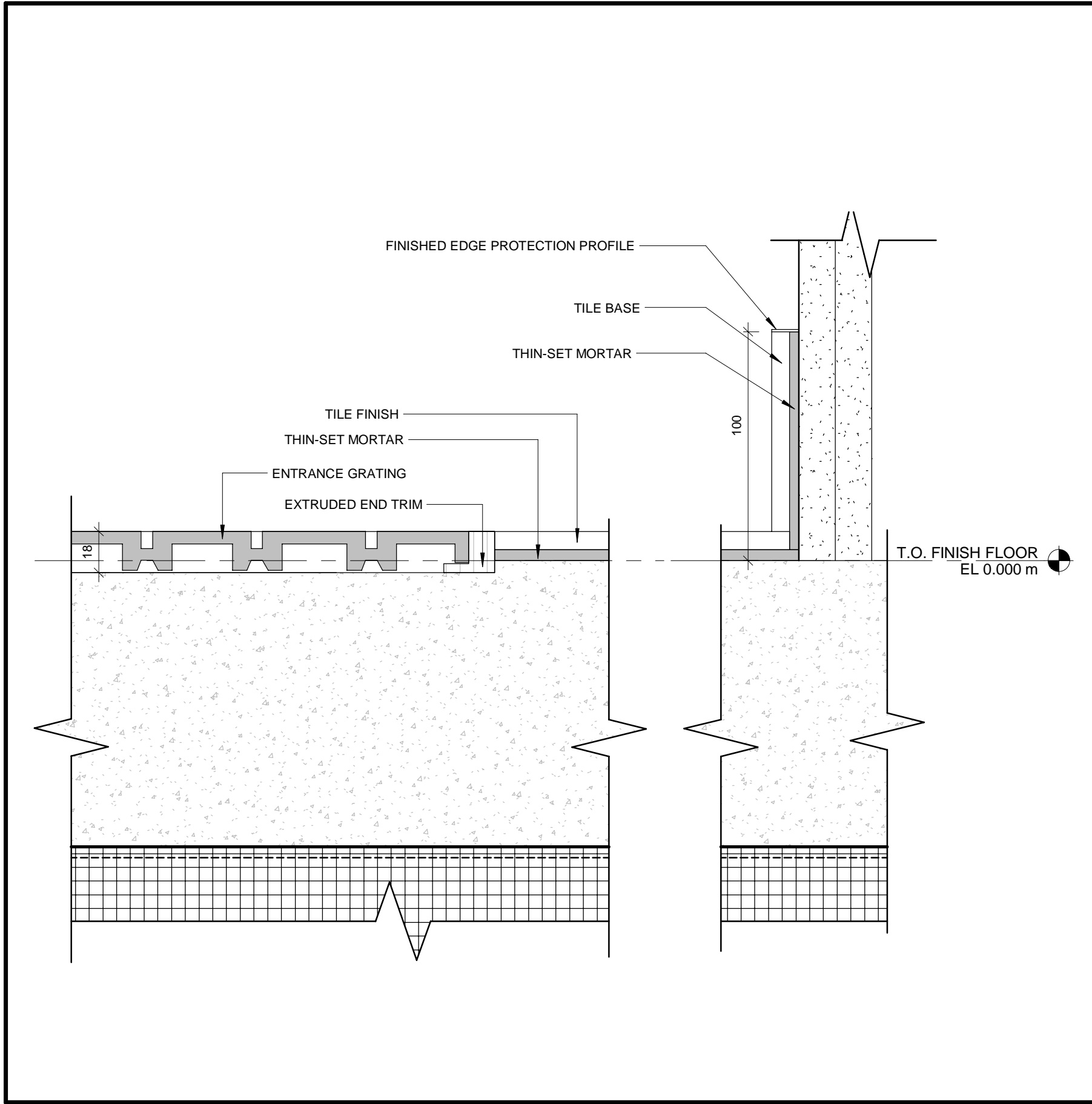
4 VINYL TO CONCRETE FLOOR FINISH TRANSITION SECTION DETAIL  
A810 1:2



3 VINYL TO CARPET FLOOR FINISH TRANSITION SECTION DETAIL  
A810 1:2



2 VINYL TO TILE FINISH FLOOR TRANSITION SECTION DETAIL  
A810 1:2



1 PEDI-MAT SLAB DEPRESSION SECTION DETAIL  
A810 1:2

AECOM

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NORTH:

Niagara Region



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

E	2025-01-23	ISSUED FOR TENDER
D	2024-12-13	IFP RE-SUBMISSION
C	2024-11-29	ISSUED FOR OWNER REVIEW
B	2024-08-30	ISSUED FOR 30% CD
A	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History

Filename: 2020.2.5.

Project Number: 60686829  
Project Administrator: John Page  
Project Manager: BIM/MVDC Manager:

Sustainability Target: LEED Silver  
Designed: Designer  
Date (yyyy-mm-dd):

Drawn: Author  
Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: Allan Man  
Date (yyyy-mm-dd):

Approved: Approver  
Date (yyyy-mm-dd):

Title:

FLOOR FINISH TRANSITION  
DETAILS

Page Size: ANSI D  
Scale: 1:2  
Sheet: A810  
Rev: E  
of: 1



LEGEND

CONCRETE SLAB EL. 0mm

CONCRETE SLAB EL. -300mm

CONCRETE SLAB EL. -600mm

SLAB DEPRESSION

LIFT PIT

T/O SLAB

70

100

T/O SLAB

100

100

3

STRUCT. SLAB NOTCH

A300 A900

1 : 5

1

SLAB EDGE DRAWING

A300 A900

1 : 100

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NORTH:

SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829	Owner's Contract Number: 987654321
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A	2025-01-23	ISSUED FOR TENDER
Mark	Date	Description

Revision History

Filename:	Version:
60686829	2020.2.5.

Project Number: 60686829	Project Manager: John Page
Project Administrator:	BIM/VDC Manager:

Sustainability Target: LEED Silver	IPMS 1 (m²):	IPMS 2 (m²):
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Designed: Designer	Date (yyyy-mm-dd):
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Drawn: Author	Date (yyyy-mm-dd):
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Reviewed:	Date (yyyy-mm-dd):
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Checked: Allan Man	Date (yyyy-mm-dd):
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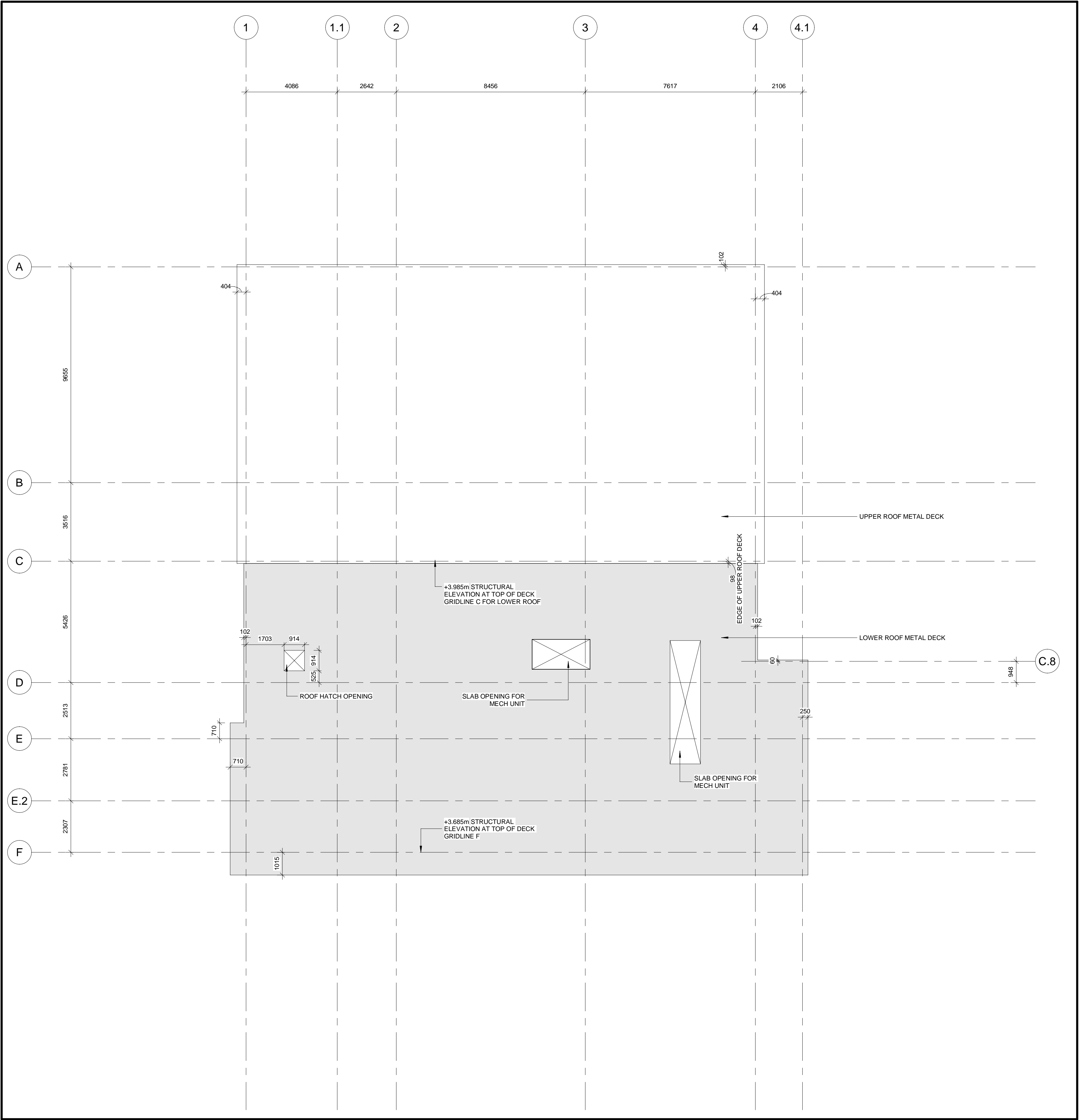
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Title:

SLAB EDGE DRAWING

Page Size: ANSI D	Sheet: A	Rev: A
Scale: As indicated	Sheet: A900	Rev: A





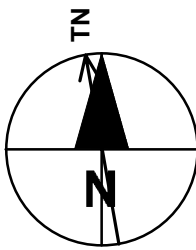
1 METAL ROOF DECK PLAN  
SK-2 A910 1 : 100



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NORTH:



SEAL:

NRPS NG911 BACKUP CENTRE  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:  
60686829

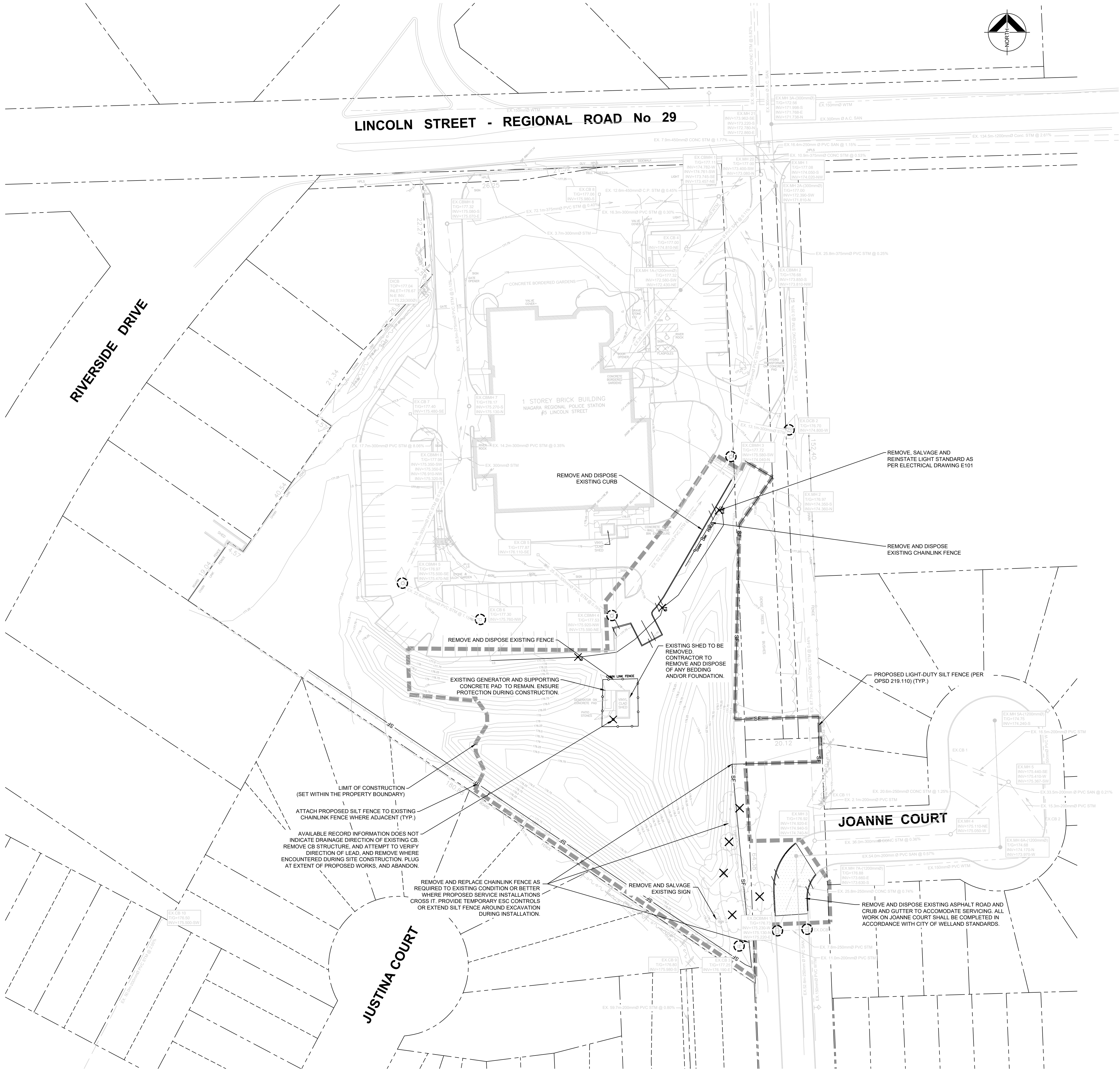
Owner's Contract Number:  
987654321

Mark	Date	Description	
Revision History			
Filename :		Version: <b>2020.2.5</b>	
Project Number : <b>60686829</b>		Project Manager: <b>John Page</b>	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target: <b>LEED Silver</b>		IPMS 1 ( m <sup>2</sup> ) :	IPMS 2 ( m <sup>2</sup> ) :
Designed : <b>Designer</b>		Date (yyyy-mm-dd) :	
Drawn : <b>Author</b>		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : <b>Allan Man</b>		Date (yyyy-mm-dd) :	
Approved: <b>Approver</b>		Date (yyyy-mm-dd) :	
Title :			

ROOF DECK EDGE DRAWING

Page Size: ANSI D	Sheet: A910	Rev: 1 of 100
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SURVEY NOTES

METRIC NOTE  
ALL DISTANCES SHOWN HEREON ARE IN METERS AND CAN BE CONVERTED TO IMPERIAL FEET BY DIVIDING BY 0.3048.

VERTICAL DATUM  
ELEVATIONS HEREON ARE GEODETIC AND WERE DERIVED FROM THE TOPNET RKT NETWORK, NAD83 CSRS, VERSION 3, EPOC 2010

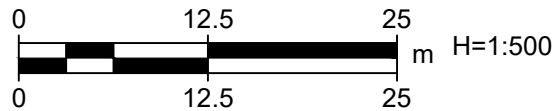
COMPLETION NOTE  
TOPOGRAPHIC SURVEY WAS DONE BY CHAMBERS AND ASSOCIATES SURVEYING LTD. DATED JUNE 07, 2022

PROPERTY BOUNDARIES

PROPERTY BOUNDARY INFORMATION SHOWN WAS PROVIDED BY CHAMBERS AND ASSOCIATES SURVEYING LTD. ALL DIMENSIONS ARE APPROXIMATE. THIS DOCUMENT IN ITSELF CAN NOT BE USED TO ESTABLISH PROPERTY LIMITS.

LEGEND

- PROPERTY LINE
- PROPERTY BAR
- EX. CONTOUR
- EX. SPOT ELEVATION
- EX. VEGETATION
- EX. CB, DCB, CBMH AND MH
- EX. SWALE/ DITCH
- EX. CHAIN LINK FENCE
- EX. POST & WIRE FENCE
- EX. ABOVE GROUND HYDRO LINE
- ASPHALT/CONCRETE REMOVALS FULL DEPTH
- REMOVALS
- SILT FENCE (PER OPSD 219.110)
- LIMIT OF CONSTRUCTION
- CATCHBASIN SILT SAC PROTECTION (PER DETAIL ON D200)



PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
911 BACKUP DISPATCH  
5 LINCOLN STREET, WELLAND, ONTARIO

CLIENT



CONSULTANT

AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario, N2P 0A4  
519 650 5313 tel 519 650 3424 fax  
www.aecom.com

NOTE:  
IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO INFORM THEMSELVES OF THE EXACT LOCATION OF AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWING, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.

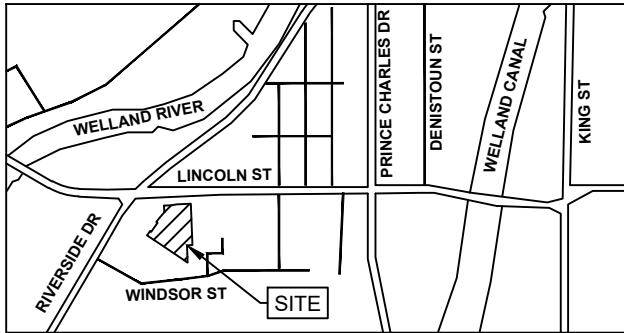
WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
8	2025-01-22	ISSUED FOR TENDER
7	2024-12-13	IFP RE-SUBMISSION
6	2024-11-29	ISSUED FOR OWNER REVIEW
5	2024-10-30	ISSUED FOR PERMIT
4	2024-07-26	ISSUED FOR 100% DD
3	2023-07-28	RE-ISSUED FOR SPE

KEY PLAN



PROJECT NUMBER

60686829

SHEET TITLE

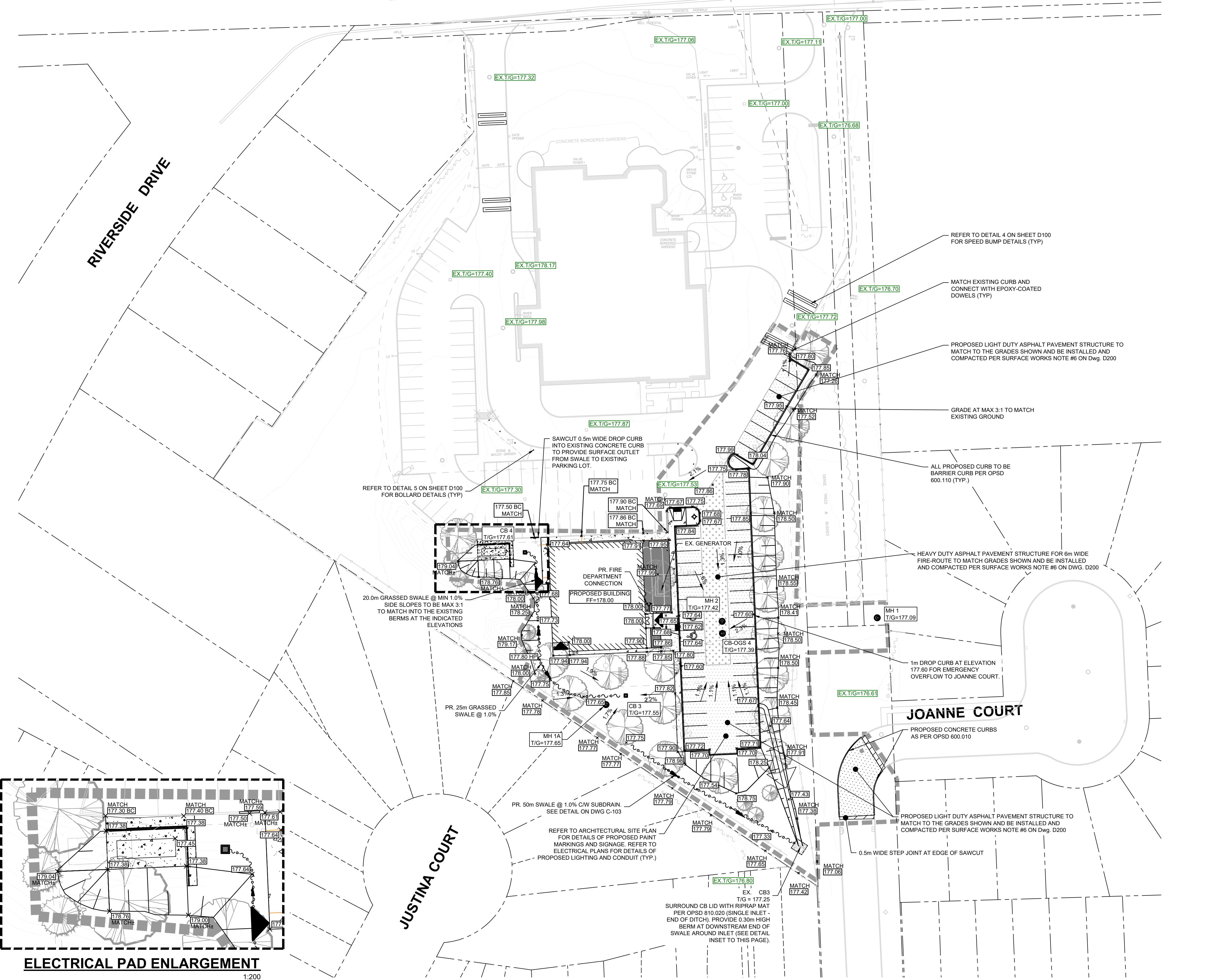
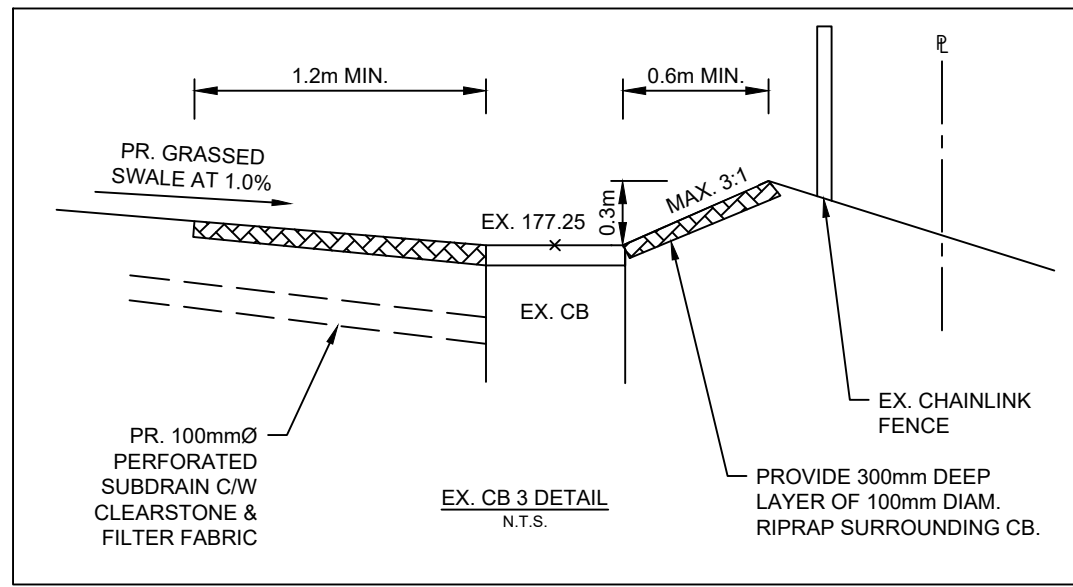
EXISTING CONDITIONS, REMOVALS,  
AND EROSION AND SEDIMENT  
CONTROL PLAN

SHEET NUMBER

C101

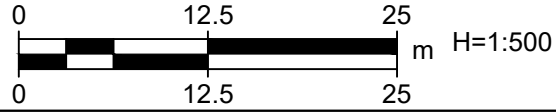
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**LEGEND**

- PROPERTY LINE
- PROPERTY BAR
- EX. CONTOUR
- EX. SPOT ELEVATION
- EX. VEGETATION
- EX. CB, DCB, CBMH AND MH
- EX. SWALE/ DITCH
- EX. CHAIN LINK FENCE
- EX. POST & WIRE FENCE
- EX. ABOVE GROUND HYDRO LINE
- EX. MAN DOOR
- PROPOSED CB, DCB, CBMH, DCBMH AND MH
- DIRECTION OF SURFACE FLOW
- PROPOSED ELEVATION
- MATCH EXISTING ELEVATION
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED CONCRETE
- PROPOSED SWALE
- PROPOSED BARRIER CURB (AS PER OPSD 600.110)
- PROPOSED DROP CURB
- DRAINAGE DIVIDE
- SNOW STORAGE
- LIMIT OF CONSTRUCTION
- OVERLAND FLOW



PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
911 BACKUP DISPATCH  
5 LINCOLN STREET, WELLAND, ONTARIO

CLIENT



CONSULTANT

AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario, N2P 0A4  
519 650 5313 tel 519 650 3424 fax  
www.aecom.com

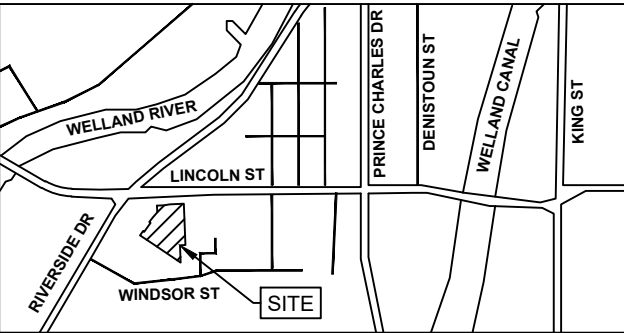
**NOTE:**  
IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO INFORM THEMSELVES OF THE EXACT LOCATION OF AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWING, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.  
WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.  
ALL INDICATED ELEVATIONS ALONG CURB LINES ARE TO BE INTERPRETED AS BOTTOM OF CURB/ASPHALT ELEVATIONS. ADJACENT TOP OF CURB ELEVATIONS SHALL BE 0.10M HIGHER (PER OPSD 600.110 FOR BARRIER CURB) UNLESS OTHERWISE INDICATED.

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
8	2025-01-22	ISSUED FOR TENDER
7	2024-12-13	IFP RE-SUBMISSION
6	2024-11-29	ISSUED FOR OWNER REVIEW
5	2024-10-30	ISSUED FOR PERMIT
4	2024-07-26	ISSUED FOR 100% DD
3	2023-07-28	RE-ISSUED FOR SPE

KEY PLAN



PROJECT NUMBER

60686829

SHEET TITLE

PROPOSED SITE GRADING

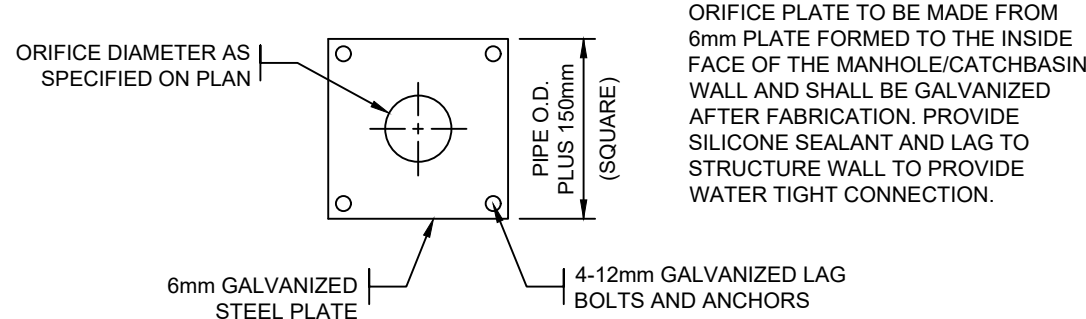
SHEET NUMBER

C102

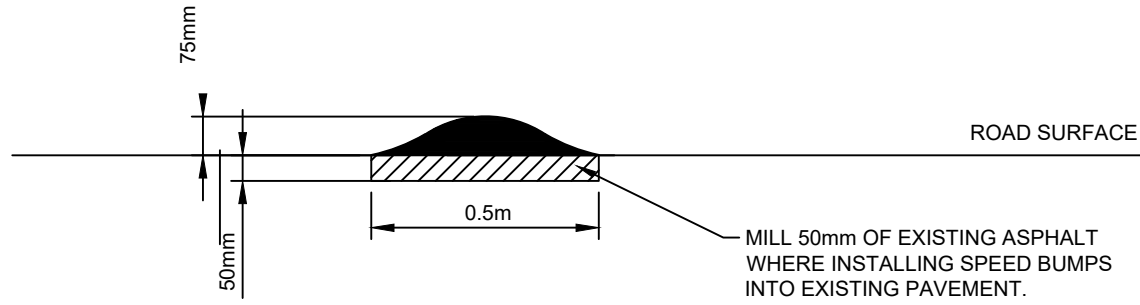




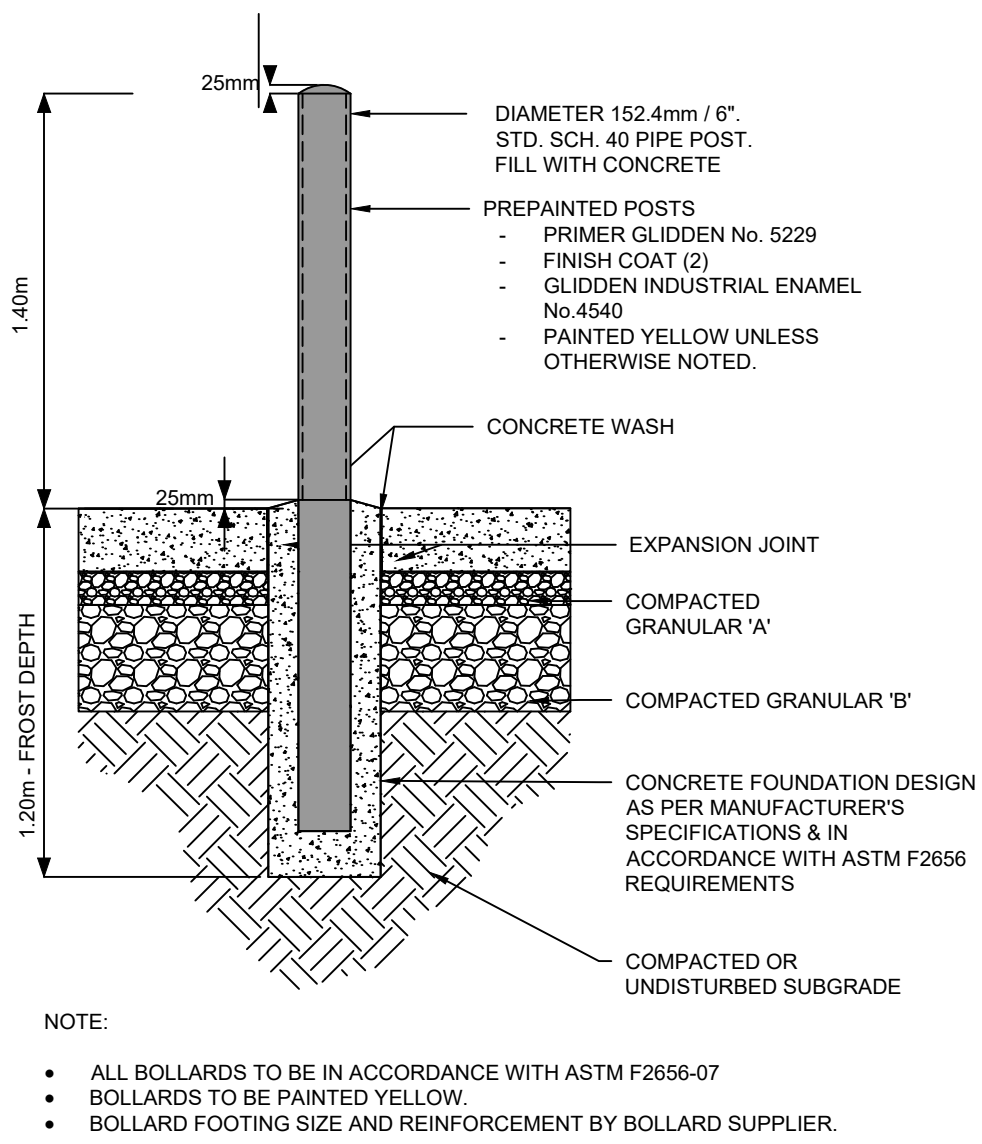




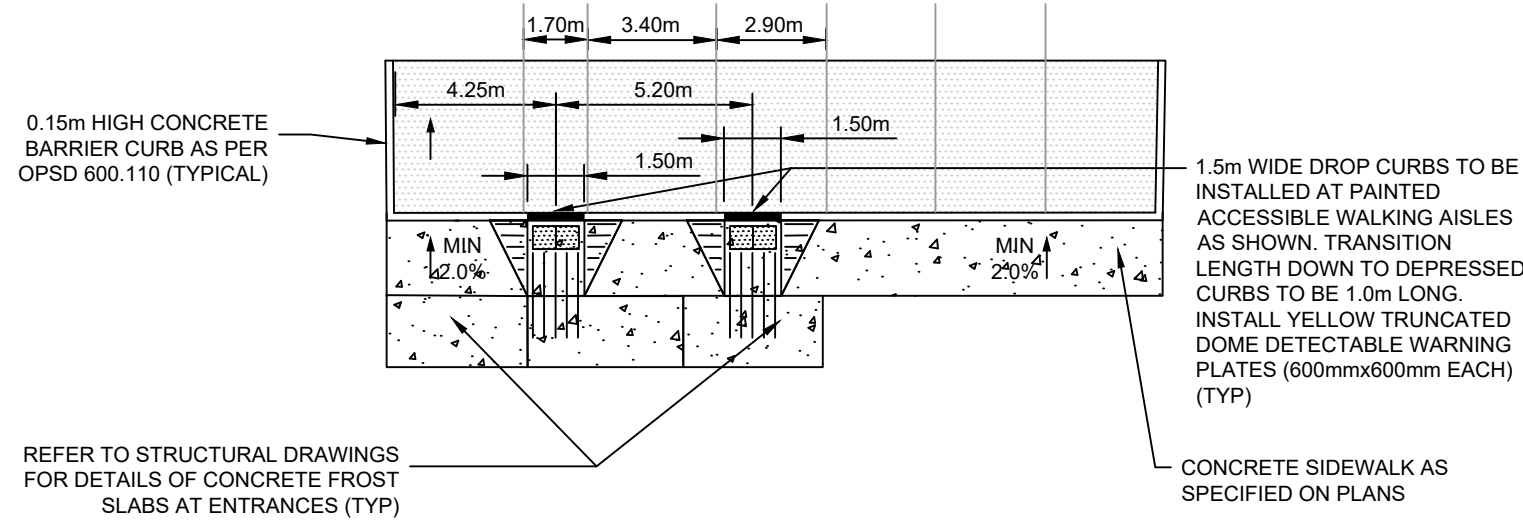
DETAIL 1 ORIFICE PLATE CONSTRUCTION FOR MANHOLE WALL INSTALLATION



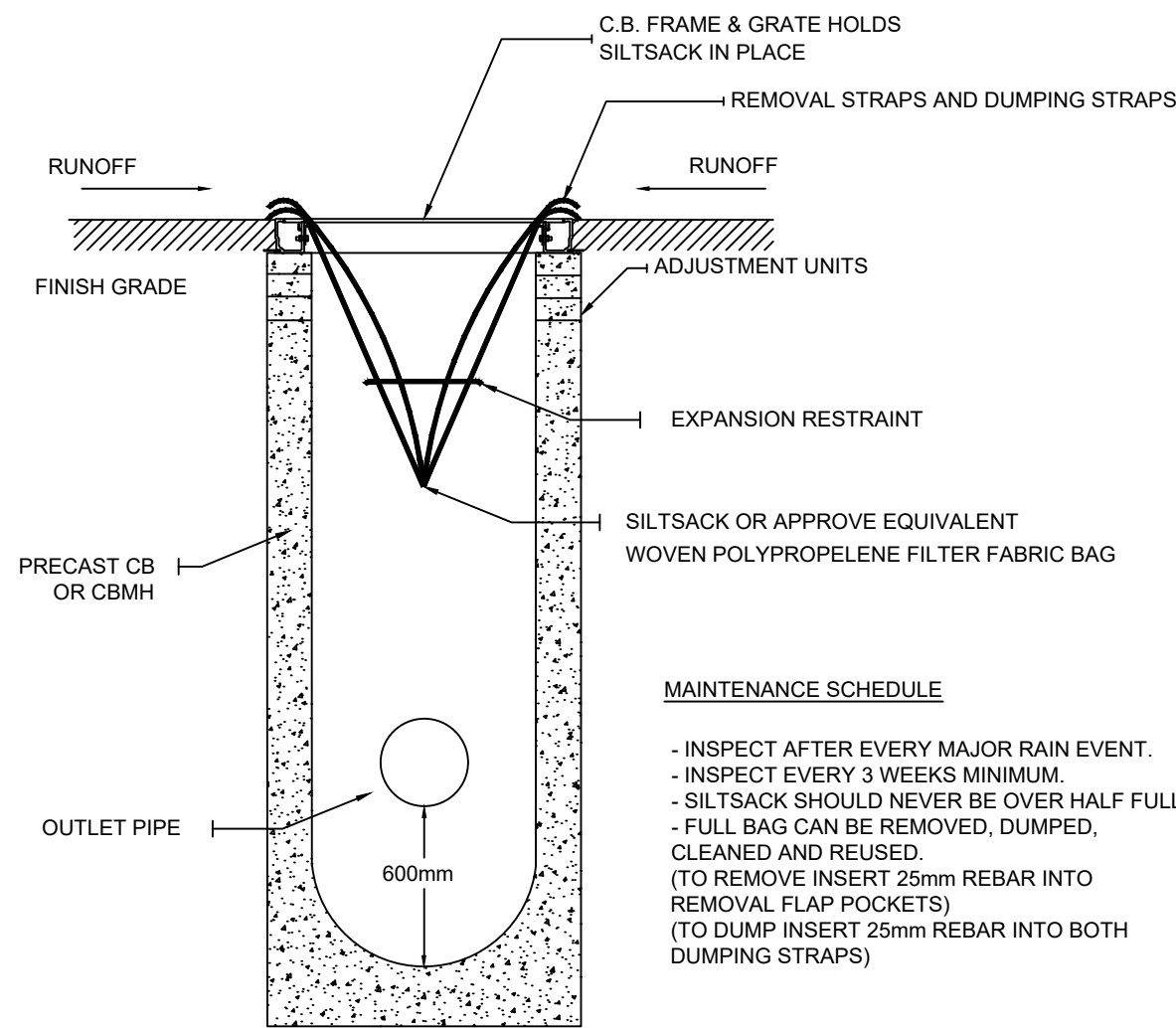
DETAIL 4 SPEED BUMP



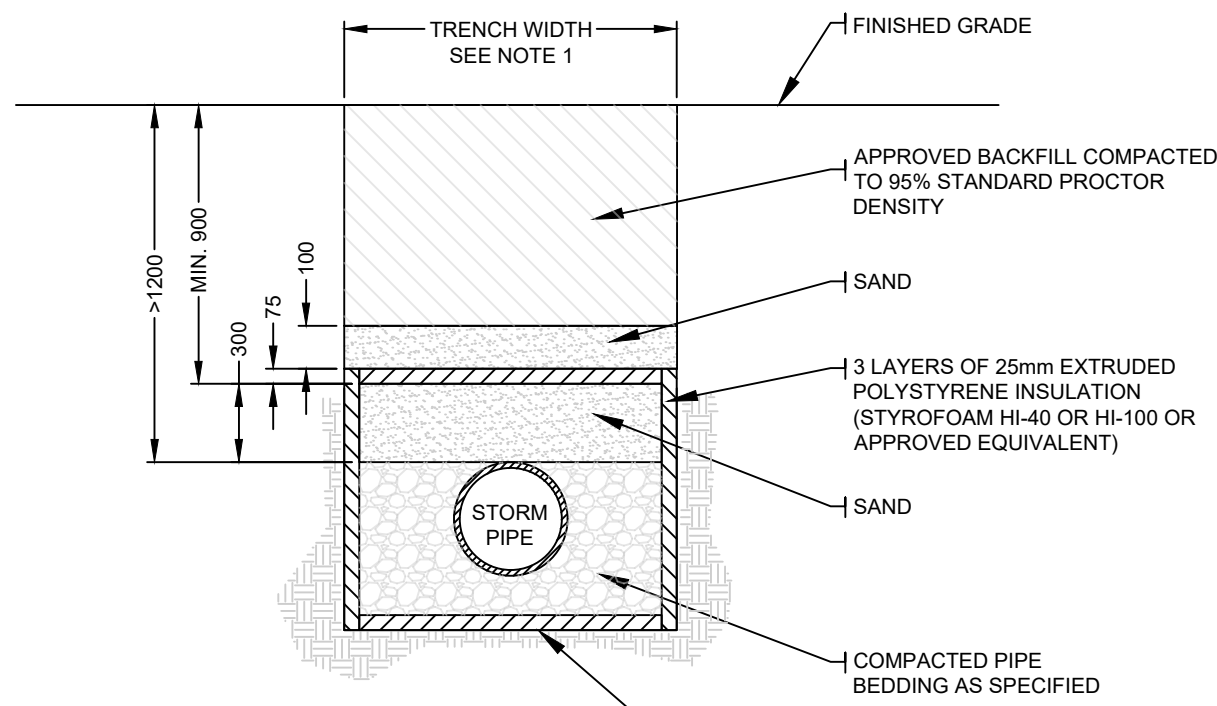
DETAIL 5 STANDARD BOLLARD



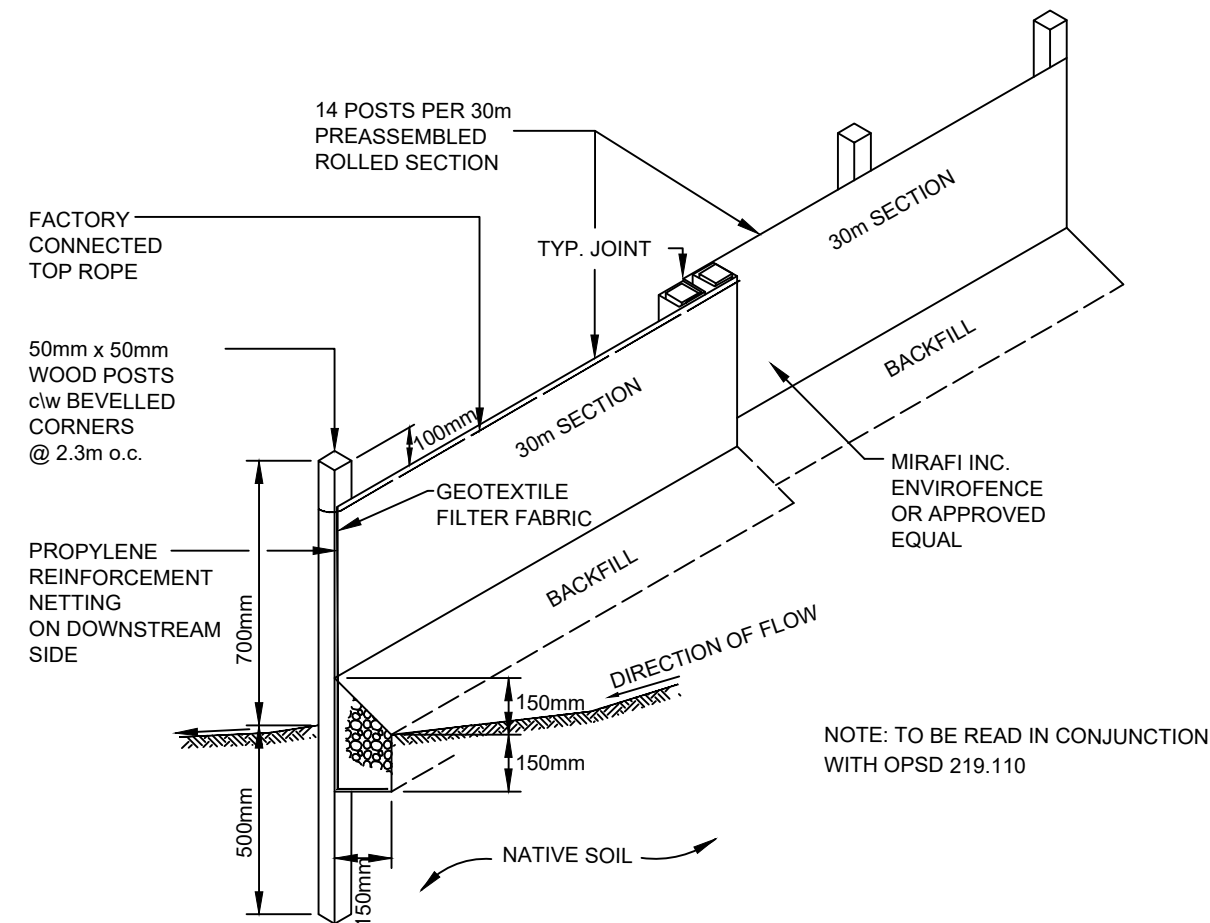
DETAIL 2 TRUNCATED DOME PLATES



DETAIL 3 CATCH BASIN PROTECTION



DETAIL 6 PIPE INSULATION



DETAIL 7 SILTATION CONTROL FENCE

8	2025-01-22	ISSUED FOR TENDER
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4	2024-07-26	ISSUED FOR 100% DD
3	2023-07-28	RE-ISSUED FOR SPE
I/R	DATE	DESCRIPTION



GENERAL NOTES

- ALL DIMENSIONS ARE SHOWN IN METERS UNLESS NOTED OTHERWISE.
- CIVIL AND GEOTECHNICAL TESTING AND INSPECTION AGENCY: CONTRACTOR SHALL HIRE A PROFESSIONAL CIVIL AND GEOTECHNICAL ENGINEER LICENSED IN THE PLACE OF WORK TO PROVIDE TESTING AND INSPECTION SERVICES. TESTING AND INSPECTION AGENCY SHALL PROVIDE ALL SITE RELATED ENGINEERING SERVICES AS FOLLOWS FOR CIVIL AND GEOTECHNICAL SCOPE OF WORK:
  - REVIEW OF MATERIAL DATA, MIX DESIGNS, AND SHOP DRAWINGS IN ACCORDANCE WITH CONSULTANTS DRAWINGS AND SPECIFICATIONS.
  - PROVIDE TESTING AND INSPECTION REPORTS DURING CONSTRUCTION INCLUDING PHOTOGRAPHS.
  - PROVIDE DEFICIENCY LISTS AND REPORTS ON CORRECTIVE ACTIONS TAKEN WITH PHOTOS FOR CONSULTANTS' FINAL
- ALL DIMENSIONS AND INFORMATION SHALL BE CHECKED AND VERIFIED ON SITE AND ANY DISCREPANCIES MUST BE REPORTED TO THE CONSULTANT, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL BENCH-MARKS, ELEVATIONS, DIMENSIONS AND GRADES MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE CONSULTANT. AT LEAST TWO DIFFERENT BENCHMARKS MUST BE REFERRED TO AT ALL TIMES.
- ALL REFERENCES TO 'MUNICIPALITY' HEREIN REFER TO THE CITY IF WELLAND. ALL REFERENCES TO 'REGION' HEREIN REFER TO NIAGARA REGION.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER THROUGH A REQUES FOR INFORMATION. THE ENGINEER SHALL PROVIDE APPROPRIATE GUIDANCE WITHIN THE ALLOTTED TIME AS PER THE CONTRACT OCCUMENT.
- CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING SURVEY MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED ONTARIO LAND SURVEYOR.
- BUILDING SETBACK DIMENSIONS FROM PROPERTY LINES SHALL HOLD OVER ALL OTHER CALLOUTS. PROPERTY LINES AND ASSOCIATED BUILDING SETBACKS SHALL BE VERIFIED PRIOR TO CONSTRUCTION LAYOUT.
- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LOCAL MUNICIPALITY AND/OR REGION STANDARDS, APPLICABLE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS & STANDARD DRAWINGS, AND ONTARIO BUILDING CODE.
- THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, PROVINCIAL, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ALL UTILITIES TO ADJACENT FACILITIES AT ALL TIMES DURING CONSTRUCTION.
- THE CONSULTANT OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ONTARIO'S OH&S ACT AND REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH TESTING AGENCY.
- CONTRACTOR SHALL NOTIFY THE OWNER, THE CONSULTANT, THE TESTING AGENCY AND ALL APPLICABLE LOCAL AGENCIES / INSPECTORS 120 HOURS BEFORE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, THE CONSULTANT, THE TESTING AGENCY, THE CONTRACTOR AND THE LOCAL MUNICIPALITY.
- CONTRACTOR SHALL USE THE ISSUED FOR CONSTRUCTION (IFC) DRAWING FOR CONSTRUCTION ONLY.
- ALL DRAWINGS REMAIN THE PROPERTY OF THE CONSULTANT AND MAY NOT BE REPRODUCED OR REVISED WITHOUT THE CONSULTANTS WRITTEN PERMISSION.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WITHIN THE ROAD ALLOWANCE, THE CONTRACTOR SHALL OBTAIN A WORK PERMIT FROM THE MUNICIPALITY AND/OR REGION WITH THE REQUIRED SECURITIES.
- MAINTAIN ALL TRAFFIC & PEDESTRIAN TRAVEL IN AND AROUND THE WORK AREA AT ALL TIMES FOR THE DURATION OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO TESTING AGENCY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE A CONSTRUCTION MANAGEMENT PLAN TO TESTING AGENCY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
- ALL WORK INVOLVED IN THE CONSTRUCTION, RELOCATION, REPAIR OF MUNICIPAL SERVICES FOR THE PROJECT SHALL BE TO THE SATISFACTION OF THE DIRECTOR OF PLANNING AND CHIEF PLANNER, PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT.
- THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE CONTRACTOR FROM THE REQUIREMENTS TO OBTAIN THE VARIOUS PERMITS/APPROVALS NORMALLY REQUIRED TO COMPLETE A CONSTRUCTION PROJECT, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING:
  - BUILDING PERMIT
  - ROAD CUT PERMITS
  - APPROACH APPROVAL PERMITS
  - COMMITTEE OF ADJUSTMENT
  - SEWER AND WATER PERMITS
  - RELOCATION OF SERVICES
  - ENCROACHMENT AGREEMENTS (IF REQUIRED)
- FOR CIVIL WORK, THE SANITARY SERVICE WILL TERMINATE 1.5m FROM THE FOUNDATION WALL. IF THE CIVIL WORK IS CONSTRUCTED AFTER THE SANITARY SERVICE CONNECTION IS COMPLETED FROM THE BUILDING TO 1.5m FROM THE BUILDING (BY OTHERS), THE CIVIL CONTRACTOR WILL COMPLETE THE CONNECTION TO THE EXISTING SERVICE PIPE. OTHERWISE, THE SANITARY SERVICE WILL BE CAPPED AND THE FINAL CONNECTION WILL BE COMPLETED BY OTHERS.
- FOR CIVIL WORK, THE STORM SERVICE WILL TERMINATE 1.5m FROM THE FOUNDATION WALL. IF THE CIVIL WORK IS CONSTRUCTED AFTER THE STORM SERVICE CONNECTION IS COMPLETED FROM THE BUILDING TO 1.5m FROM THE BUILDING (BY OTHERS), THE CIVIL CONTRACTOR WILL COMPLETE THE CONNECTION TO THE EXISTING SERVICE PIPE. OTHERWISE, THE STORM SERVICE WILL BE CAPPED AND THE FINAL CONNECTION WILL BE COMPLETED BY OTHERS.
- FOR CIVIL WORK, THE WATER SERVICE WILL TERMINATE 1.5m FROM THE FOUNDATION WALL. IF THE CIVIL WORK IS CONSTRUCTED AFTER THE WATER SERVICE CONNECTION IS COMPLETED FROM THE BUILDING TO 1.5m FROM THE BUILDING (BY OTHERS), THE CIVIL CONTRACTOR WILL COMPLETE THE CONNECTION TO THE EXISTING SERVICE PIPE. OTHERWISE, THE WATER SERVICE WILL BE CAPPED AND THE FINAL CONNECTION WILL BE COMPLETED BY OTHERS. THE CIVIL CONTRACTOR WILL BE RESPONSIBLE FOR ALL TESTING AND COMMISSIONING OF THE WATERMAIN THAT THEY HAVE INSTALLED.

EROSION AND SEDIMENT CONTROL (ESC) NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES.
- CONTRACTOR TO HOLD A PRE-CONSTRUCTION MEETING INCLUDING ALL RELEVANT PROJECT CONSTRUCTION PERSONNEL, INCLUDING THE TESTING AGENCY, TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH LOCAL AND PROVINCIAL REQUIREMENTS.
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH LOCAL AND PROVINCIAL REQUIREMENTS.
- RETAIN A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN (ESC) AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO THE PROVINCIAL OR LOCAL MUNICIPALITY, DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS. THE ABOVE RECORDS MUST BE RETAINED BY THE CONTRACTOR AND/OR PERMIT REGISTRANT (IF PERMIT IS REQUIRED), BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE.
- ALL CONTRACTORS AND/OR PERMIT REGISTRANTS (IF PERMIT IS REQUIRED) MUST IMPLEMENT THE EROSION AND SEDIMENT CONTROL PLANS. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE EROSION AND SEDIMENT CONTROL PLANS IS A VIOLATION OF THE PERMIT.
- THE EROSION AND SEDIMENT CONTROL PLANS MUST BE ACCURATE AND REFLECT SITE CONDITIONS.
- THE EROSION AND SEDIMENT CONTROL PLANS MAY BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
- ALTERNATIVE EROSION CONTROL MEASURES MUST BE REVIEWED AND APPROVED BY THE TESTING AGENCY AND THE MUNICIPALITY BEFORE IMPLEMENTATION.
- ALL BASE ESC MEASURES, INCLUDING CATCH BASIN PROTECTION AS PER DETAIL ON SHEET D100, MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
- INLET PROTECTION SHALL BE RE-INSTALLED IMMEDIATELY FOLLOWING PAVING ACTIVITIES OR ADJUSTMENT OF FRAME AND GRATES.
- EROSION & SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED IN ACCORDANCE WITH APPLICABLE CONSERVATION AUTHORITY, AS WELL AS ALL APPLICABLE MUNICIPAL STANDARDS AND SPECIFICATIONS.
- SITES MAY REQUIRE DIVERSION SWALES AND TEMPORARY SEDIMENTATION BASINS UNLESS IT IS SHOWN THAT THE EROSION INLET FACTOR IS LOW ENOUGH THAT SUCH A FACILITY IS NOT WARRANTED.
- SILT FENCING, AS PER DETAIL ON DRAWING D101, TO BE INSTALLED PRIOR TO COMMENCEMENT OF ANY AREA GRADING OR EXCAVATING WORKS OPSD 219-110.
- EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY BY TESTING AND INSPECTION AGENCY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF ONE THIRD (1/3) THE HEIGHT OF THE SILT FENCE.
- CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY.
- CONSTRUCTION ENTRANCES SHALL BE ADJUSTED AS NECESSARY DURING CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING APPROPRIATE METHODS SUCH AS, CONSTRUCTION ENTRANCES, MUD MATS, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, TEMPORARY GRAVEL ROADS LOCATED WITHIN THE SITE, OR EXIT TIRE WASH STATIONS. THESE PROCEDURES MUST BE IN PLACE PRIOR TO LAND DISTURBING ACTIVITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MUNICIPAL AND/OR REGION OWNED ROADWAYS TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AT THE END OF EACH WORK DAY.

- ANY MUD / MATERIAL TRACKED ONTO ROADWAYS SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE EQUIPMENT.
- WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE.
- ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK.
- ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS.
- CONTRACTOR SHALL SUBMIT A PLAN INDICATING THE CONTROL AND DISPOSAL METHODS OF PROHIBITED MATERIALS, AS PER MUNICIPAL REQUIREMENTS. CONTROL PROHIBITED DISCHARGES SUCH AS CONCRETE WASH-OUT AND WASTEWATER FROM CLEANOUT OF STUCCO, PAINT, AND CURING COMPOUNDS FROM LEAVING THE CONSTRUCTION SITE AT ALL TIMES AS PER THE APPROVED PLAN.
- PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS.
- IMPLEMENT THE FOLLOWING PROCEDURES WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE COVERED STORAGE AREAS FOR WASTE AND SUPPLIES.
- DURING CONSTRUCTION MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE. PROTECT ALL DISTURBED AREAS FROM RUNOFF.
- CONTRACTOR TO PRESERVE VEGETATION ON STEEP SLOPES UNTIL IT BECOMES NECESSARY TO DISTURB FOR CONSTRUCTION.
- CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND DURING WET WEATHER.
- PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREAS WILL NOT BE REHABILITATED WITHIN 30 DAYS.
- USE WATER, SOIL-BINDING AGENTS, OR OTHER DUST CONTROL TECHNIQUES AS REQUIRED TO CONTROL WIND-BLOWN DUST AND SOIL TO ACCEPTABLE LEVELS.
- THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. REFER TO LANDSCAPING SPECIFICATIONS IF APPLICABLE.
- INSPECT CATCH BASIN TREATMENT AND CATCH BASIN SUMPS WEEKLY AND AFTER EVERY STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY. CLEAN CATCH BASINS BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT.
- REMOVE TRAPPED SEDIMENTS FROM SEDIMENT BASINS AND SEDIMENT TRAPS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT.
- SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE MUST BE REMEDIATED WITHIN 24 HOURS. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT ADDITIONAL CONTROLS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE PROVINCIAL AND LOCAL AUTHORITIES TIMEFRAME.
- THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS BY THE CONTRACTOR AT HIS OWN EXPENSE.
- CONTRACTOR TO TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIALS, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS THAT HAVE BEEN AFFECTED.
- ALL EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED WITH PAVEMENT OR GROUND COVER AND VEGETATION HAS BEEN ESTABLISHED.
- AT THE COMPLETION OF CONSTRUCTION, AND ONCE ALL DISTURBED AREAS HAVE BEEN REHABILITATED AND STABILIZED, REMOVE FILTER CLOTHS AND CATCHBASIN TREATMENT ON CATCH BASINS AND MANHOLE COVERS. INSPECT AND CLEAN CATCH BASIN SUMPS AND SEWERS.

CONSTRUCTION NOTES

PROJECT NOTES

- THESE DRAWINGS TO BE READ IN CONJUNCTION WITH THE FOLLOWING ADDITIONAL INFORMATION:
  - SITE PLAN BY AECOM CANADA LTD. DATED JANUARY 22 2025
  - FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT BY AECOM CANADA LTD. DATED JULY 2023
  - GEOTECHNICAL INVESTIGATION COMPLETED BY NTL DATED OCTOBER 2022LANDSCAPE PLAN BY AECOM CANADA LTD. DATED JANUARY 22 2025
- SURVEY AND ELEVATIONS:
  - TOPOGRAPHIC SURVEY COMPLETED BY CHAMBERS AND ASSOCIATES SURVEYING LTD. DATED JUNE 2022"
  - TOPOGRAPHIC SURVEY MAY NOT BE COMPLETE OR ACCURATE. CONTRACTOR TO VERIFY EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.

GENERAL

OPSS AND OPSD REFER TO ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS. COW REFERS TO CITY OF WELLAND MUNICIPAL STANDARDS.

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST MUNICIPAL STANDARDS AND SPECIFICATIONS.
- ALL MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM TESTING AGENCY PRIOR TO INSTALLATION.
- ALL BEDDING, COVER MATERIAL AND EMBEDMENT MATERIAL TO BE COMPACTED GRANULAR 'A' UNLESS NOTED OTHERWISE.
- EARTH FILL MATERIALS TO BE COMPACTED TO AT LEAST 98% STANDARD PROCTOR DENSITY (SPD), UNLESS OTHERWISE INDICATED IN THE LATEST GEOTECHNICAL REPORT. GRANULAR MATERIALS TO BE COMPACTED TO 100% SPD, UNLESS OTHERWISE INDICATED IN THE LATEST GEOTECHNICAL REPORT. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.
- ALL BEDDING, GRANULAR BASE AND THRUST BLOCKING TO BE FOUNDED ON APPROVED SUBGRADE BY GEOTECHNICAL ENGINEER.
- PLACEMENT OF GRANULAR MATERIALS 'A' AND 'B' ARE TO BE IN COMPLIANCE WITH OPSS MUNI 102, OPSS MUNI 314 AND OPSS MUNI 501. PLACEMENT OF RIP RAP TO BE IN COMPLIANCE WITH OPSS 511. PLACEMENT OF HL8, HL4 AND HL3 ASPHALT ARE TO BE IN COMPLIANCE WITH OPSS MUNI 102 AND OPSS MUNI 310.
- GRADING AND COMPACTION METHODS ARE TO BE IN COMPLIANCE WITH THE LATEST GEOTECHNICAL REPORT, OPSS MUNI 206, OPSS MUNI 314 AND OPSS MUNI 501.
- ALL SURPLUS MATERIALS NOT DESIGNATED FOR SALVAGE TO BE DISPOSED OF OFF-SITE BY CONTRACTOR AND TO CONFORM TO ON-SITE AND EXCESS SOIL MANAGEMENT REGULATION OF ONTARIO. PROVIDE PROPERTY OWNER RELEASE FORM TO THE SATISFACTION OF A QUALIFIED PROFESSIONAL (QP) AND TESTING AGENCY.
- CONCRETE FOR CURBS, SIDEWALK AND DRIVEWAYS SHALL HAVE MINIMUM COMPRESSIVE STRENGTH AS SPECIFIED.
- SPECIAL INSPECTION BY THE TESTING AGENCY REQUIRED FOR ALL COMPACTION TESTING.
- SUBGRADE INSPECTION BEFORE PLACING GRANULAR BASE SHALL BE COMPLETED BY TESTING AGENCY
- REFER TO LATEST GEOTECHNICAL REPORT AND HYDROGEOLOGICAL REPORT FOR DEWATERING REQUIREMENTS AND EARTH WORK MATERIALS CRITERIA FOR EXCAVATION, BEDDING BACKFILL AND GRADE RAISE. ALL MATERIALS TO BE APPROVED BY TESTING AGENCY.
- TOPSOIL/SOIL STOCKPILE LOCATION TO BE CONFIRMED BY CONTRACTOR. SILT FENCE TO BE PLACED AROUND PERIMETER OF STOCKPILE. MAXIMUM HEIGHT OF TOPSOIL STOCKPILES TO BE 3.0m.

DEMOLITION

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA AS IDENTIFIED IN THE PLANS.
- EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY. CONTRACTOR SHALL PROVIDE LOCATION OF DISPOSAL SITES AND APPROPRIATE RELEASE FORMS FROM LAND OWNERS ACCEPTING THE MATERIAL AT THE COMPLETION OF THE PROJECT.
- ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND STORED AT THE PROJECT SITE AS DIRECTED BY THE TESTING AGENCY.
- ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
- CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
- SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT

UTILITIES

- ADJUST ALL INCIDENTAL STRUCTURES, HYDRANTS, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS TO FINISHED GRADE.
- CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ETC.) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ETC.) WHERE CONFLICT OCCURS.
- CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OF OR ADJUSTMENT TO NATURAL GAS, ELECTRICAL, COAXIAL, FIBRE OPTIC, AND TELEPHONE SERVICES.
- BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH OF UTILITIES AND SUBMIT TO THE ENGINEER.
- ALL WORK TO CONFORM TO OPSD STANDARDS, ONTARIO BUILDING CODE, AND THE LOCAL MUNICIPALITY AND/OR REGION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THEMSELVES OF THE EXACT LOCATION OF, AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE, BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWINGS, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.

SEWER

- MANHOLE FRAME AND COVERS TO BE OPSD 401.010 TYPE 'A', UNLESS SPECIFIED OTHERWISE BY LOCAL MUNICIPALITY.
- CATCH BASIN AND CATCHBASIN MANHOLE FRAMES AND GRATES TO BE OPSD 400.100, UNLESS SPECIFIED OTHERWISE BY LOCAL MUNICIPALITY.
- FRAME AND COVERS AND FRAME AND GRATES TO BE INSTALLED WITH MINIMUM OF ONE ADJUSTMENT UNIT (75mm) TO A MAXIMUM OF 3 ADJUSTMENT UNITS (300mm), AND BE INSTALLED AS PER OPSD 704.010.
- PRECAST CONCRETE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH OPSS 407, OPSD 704.010-704.012 AND SHALL INCLUDE FRAME AND GRATE AND OTHER APPURTENANCES:
  - MAINTENANCE HOLES AND CATCHBASIN MAINTENANCE HOLES:
    - 12000 - PER OPSD 701.010, 701.030, 701.031.
    - 15000 - PER OPSD 701.011, 701.040, 701.041.
    - BENCHING ACCORDING TO OPSD 701.021.
    - STEPS TO BE HOLLOW CIRCULAR ALUMINUM PER OPSD 405.010.
  - CATCHBASINS:
    - SINGLE: OPSD 705.010, STD 1680mm HEIGHT, MIN. 250mm DIAMETER LEAD AT 1.0%, 600mm SUMP.
    - DOUBLE: OPSD 705.020, STD 1680mm HEIGHT, MIN. 300mm DIAMETER LEAD AT 1.0%.
    - DITCH INLET: OPSD 705.030.
  - FRAMES & GRATES:
    - OPSD 400.020, CATCHBASIN FRAME AND GRATE
    - OPSD 401.010, MAINTENANCE HOLE COVER, TYPE A "CLOSED" (SANITARY), TYPE B "OPEN" (STORM)
- SEWERS SHALL BE INSTALLED IN ACCORDANCE WITH OPSS MUNI 410. ALL PIPES SHALL INCLUDE REQUIRED COUPLER GASKETS. CONNECTIONS TO MANHOLES SHALL BE PER OPSD 708.020.
  - PVC PIPE WITH BEDDING AND COVER MATERIAL PER OPSD 802.010 TO 802.024.
    - <200mm DIAMETER-DR-28 PER CSA B182.2
    - <240mm DIAMETER-DR-35 PER CSA B182.2
  - RIGID (CONCRETE) PIPE WITH BEDDING AND COVER MATERIAL PER OPSD 802.030
    - >450mm DIAMETER-CONCRETE CLASS 65-D
- INTERNAL JOINTS IN PRECAST SECTIONS SHALL BE MORTARED AND BRUSHED FINISHED AND ALL LIFT HOLES COMPLETELY FILLED WITH MORTAR.
- FOR PIPES INSTALLED WITH LESS THAN 1.2m COVER, REFER TO OPSD 3090.101, AND PROVIDE INSULATION COVER IN ACCORDANCE WITH STANDARDS. PROVIDE FROST TAPERS IN ACCORDANCE WITH OPSD 803.030 USING COMPACTED GRAN "A" BACKFILL, EXCEPT IN LANDSCAPED AREAS.
- SHOP DRAWINGS TO BE PROVIDED, AT A MINIMUM, FOR ALL STRUCTURES INCLUDING CATCH BASINS, CATCH BASIN MANHOLES, MANHOLES, OUTLET STRUCTURES, UNDERGROUND STORAGE TANKS, QUALITY CONTROL STRUCTURES, JERSEY BARRIERS, GUIDE RAIL SYSTEMS, AND RETAINING WALLS.

WATERMAIN NOTES

- WATERMAINS SHALL BE INSTALLED IN ACCORDANCE WITH OPSS MUNI 441
- WATERMAINS CLEARANCES AND CROSSINGS PER SECTION 7.3.5.7 OF THE 2012 OBC AND SECTION 15 OF THE WATERMAIN DESIGN CRITERIA FOR FUTURE ALTERATIONS AUTHORIZED UNDER A DRINKING WATER WORKS PERMIT (MOEE, JUNE 2012).
  - MINIMUM 2.5m CLEAR HORIZONTAL FROM ANY SEWER
  - WATERMAINS SHALL CROSS OVER SEWER WITH 0.5m CLEARANCE AND UNDER SEWER WITH 0.5m CLEARANCE, ADEQUATE SUPPORT, AND JOINTS FURTHER THAN 2.44m FROM THE SEWER.
- WATERMAINS AND SERVICES TO HAVE 1.7m MINIMUM COVER FROM FINAL GRADES
- WATER SYSTEMS 100mm DIAMETER AND LARGER SHALL BE ISOLATED FROM THE MUNICIPAL WATER SUPPLY WITH A CERTIFIED BACKFLOW PREVENTION DEVICE. DURING CONSTRUCTION, ALL TESTING, SAMPLING, AND ACTIVITIES SHALL BE INCLUDED IN THE SCOPE OF THE WORK BY THE CONTRACTOR AND WITNESSED BY THE OWNERS REPRESENTATIVE AND THE CONTRACT ADMINISTRATOR.
- WATERMAINS AND APPURTENANCES SHALL BE FLUSHED, CHLORINATED, AND DISINFECTED TO THE SATISFACTION OF THE COW PUBLIC WORKS DIVISION AND TO THE STANDARDS IDENTIFIED IN OBC 7.6.2.8 AND APPENDIX A-7.6.2.2
- PVC PIPE
  - a. 100-300mm DIAMETER-DR-18 PER AWWA C900.
- CATHODIC PROTECTION. ANTI-CORROSION WRAPS FOR WATERMAINS ND FITTINGS SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH OPSD1109.011 AND OPSD 1109.012.
- WATER COMMISSIONING AND CHLORINE RESIDUAL MAINTENANCE PLANS TO BE SUBMITTED FOR COW APPROVAL.
- WATERMAINS, JOINTS, AND FITTINGS TO BE SUPPORTED BY CONCRETE THRUST BLOCKS PER OPSD 1103.010.
- FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH OPSD 1105.010 AND COW MATERIALS FOR WATERMAINS (APPENDIX D) AND HAVE 1-100mm NOZZLE WITH STORZ CONNECTION, 2-65mm NOZZLES, AND 1-150mm MECHANICAL JOINT OUTLET. HYDRANTS SHALL BE KEPT VISIBLE AND ACCESSIBLE AT ALL TIMES. STORZ CONNECTION SHALL FACE THE OUTLET ROAD.
- VALVES SHALL BE INSTALLED IN ACCORDANCE WITH OPSD 1101.020
- TRACER WIRE SHALL BE PROVIDED FOR ALL WATERMAINS IN ACCORDANCE WITH COW MUNICIPAL STANDARDS SECTION 8.3.7 AND STANDARD DRAWING 3 AND 4.
- WATERMAIN BEDDING, COVER AND BACKFILL MATERIAL SHALL CONFORM TO COW MUNICIPAL STANDARD SECTION 8.9 AND PER OPSD 802.010-802.024.

SURFACE WORKS

- JOINTS AT EXISTING PAVEMENT SHALL BE SAWCUT AND MILLED IN ACCORDANCE WITH MUNICIPAL STANDARDS.
- PROPOSED CURBS WITHIN THE PROPERTY SHALL BE BARRIER CURB PER OPSD 800.110 UNLESS OTHERWISE SPECIFIED. CURBS WITHIN THE MUNICIPAL RIGHT-OF-WAY SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.
- CONCRETE SIDEWALK AS PER OPSS AND OPSD, UNLESS SPECIFIED OTHERWISE BY LOCAL MUNICIPALITY. SIDEWALKS TO HAVE MINIMUM BEDDING OF 150mm COMPACTED GRANULAR A. CONCRETE SIDEWALK THICKNESS TO BE MINIMUM 125mm. SIDEWALK THICKNESS TO BE INCREASED TO 200mm AT ENTRANCES TO RESIDENTIAL BLOCKS, COMMERCIAL BLOCKS, AND MAINTENANCE ACCESS AREAS.
- ALL CONCRETE STRENGTH IS 32 MPa WITHIN 28 DAYS WITH 6% +/- 1% AIR ENTRAINMENT, UNLESS OTHERWISE STATED.
- GRASSED AREAS:
  - 150mm TOP SOIL AND SEED SHALL BE IN ACCORDANCE WITH OPSS MUNI 802 & 804
  - 150mm TOP SOIL AND NO.1 NURSERY SOD SHALL BE IN ACCORDANCE WITH OPSS MUNI 803 & 804
  - BOULEVARD TO BE GRADED AND SEEDED OVER 150mm OF TOP SOIL BY OWNER TO THE CITY'S SATISFACTION (IN ACCORDANCE WITH OPSS MUNI 803 & 804)
- PAVEMENT STRUCTURE FOR PROPOSED OR RECONSTRUCTED ASPHALT AREAS TO BE:
  - LIGHT DUTY PAVEMENT STRUCTURE
    - 40mm HL3 SURFACE COURSE, PER OPSS 310, COMPACTED TO 92% MRD
    - 50mm HL8 BINDER COURSE PER OPSS 310, COMPACTED TO 92% MRD
    - 150mm GRANULAR 'A' BASE PER OPSS MUNI 206, 314, COMPACTED TO 98% SPMD
    - 300mm GRANULAR 'B' SUBBASE PER OPSS MUNI 206, 314, COMPACTED TO 98% SPMD
  - HEAVY DUTY PAVEMENT STRUCTURE
    - 40mm HL3 SURFACE COURSE, PER OPSS 310, COMPACTED TO 92% MRD
    - 65mm HL8 BINDER COURSE PER OPSS 310, COMPACTED TO 92% MRD
    - 150mm GRANULAR 'A' BASE PER OPSS MUNI 206, 314, COMPACTED TO 98% SPMD
    - 350mm GRANULAR 'B' SUBBASE PER OPSS MUNI 206, 314, COMPACTED TO 98% SPMD
    - EXISTING ASPHALT AREAS TO BE REMOVED AND REPLACED SHALL MATCH EXISTING DEPTHS MEASURED DURING REMOVALS (TYP.)
- LINE PAINTING SHALL BE IN ACCORDANCE WITH OPSS 710 AND 1716.



PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
911 BACKUP DISPATCH  
5 LINCOLN STREET, WELLAND, ONTARIO

CLIENT



CONSULTANT

AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario, N2P 0A4  
519 650 5313 tel 519 650 3424 fax  
www.aecom.com

NOTE:

IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO INFORM THEMSELVES OF THE EXACT LOCATION OF, AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, CONSTRUCTION ACTIVITIES WHETHER ABOVE GROUND OR BELOW GRADE BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWING, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.

WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

REGISTRATION

ISSUE/REVISION

8	2025-01-22	ISSUED FOR TENDER
7	2024-12-13	IFP RE-SUBMISSION
6	2024-11-29	ISSUED FOR OWNER REVIEW
5	2024-10-30	ISSUED FOR PERMIT
4	2024-07-26	ISSUED FOR 100% DD
3	2023-07-28	RE-ISSUED FOR SPE
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60686829

SHEET TITLE

GENERAL CIVIL NOTES

SHEET NUMBER

D200



PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



## 5 LINCOLN ST WELLAND, ON, CANADA

### SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT<sup>3</sup>%, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 20-50 mm (3/4-2").
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

### NOTES FOR CONSTRUCTION EQUIPMENT

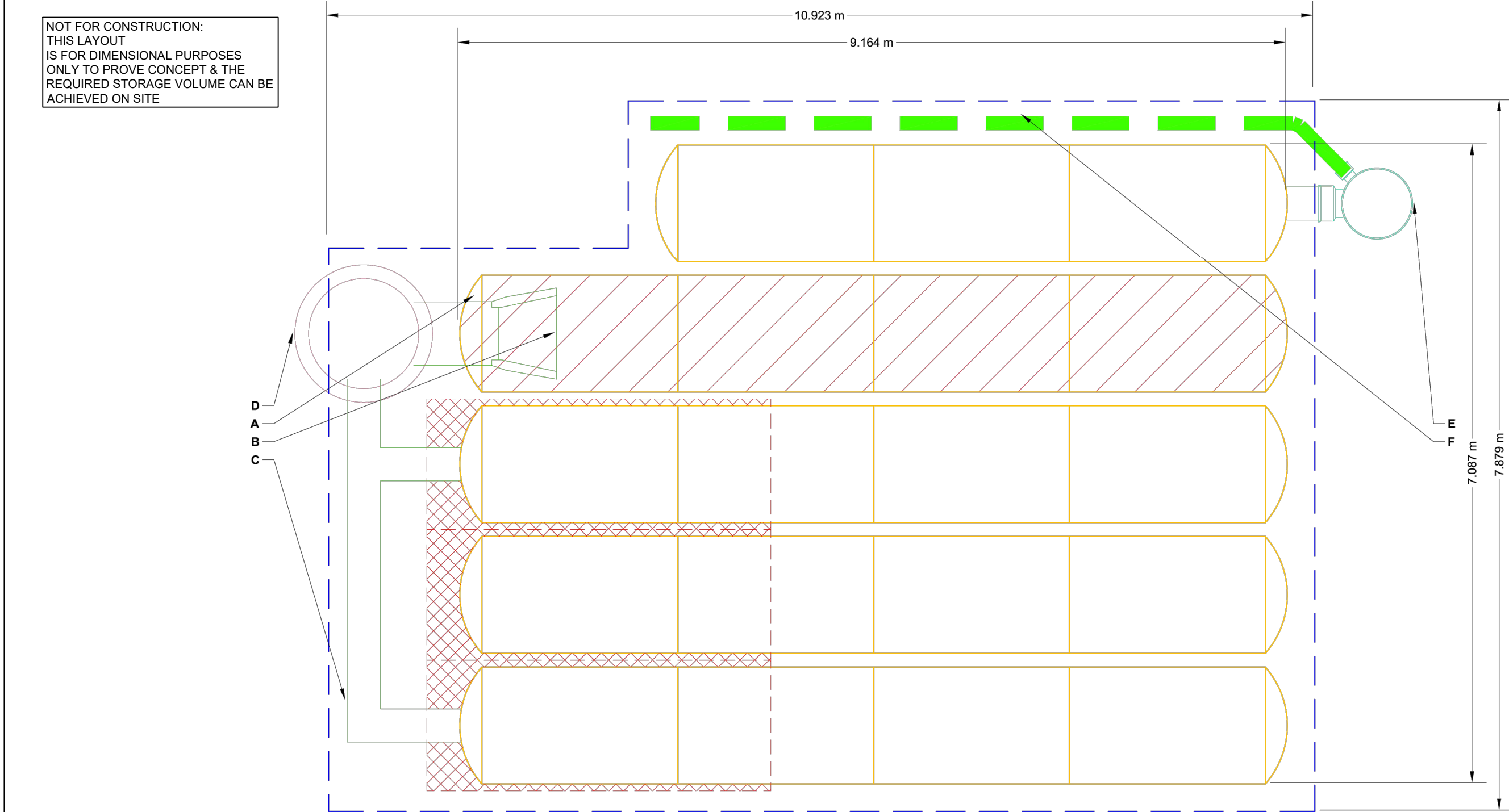
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIRE LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

**USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.**

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT: STORAGE		PROPOSED ELEVATIONS: STORAGE		*INVERT ABOVE BASE OF CHAMBER		
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION
19	STORMTECH SC-740 CHAMBERS					
10	STORMTECH SC-740 END CAPS					
152	STONE ABOVE (mm)					
152	STONE BELOW (mm)					
40	STONE VOID					
53.4	INSTALLED SYSTEM VOLUME (m <sup>3</sup> )	TOP OF STONE:	176.419			
	(PERIMETER STONE INCLUDED)	TOP OF SC-740 CHAMBER:	176.419			
	(COVER STONE INCLUDED)	300 mm x 300 mm TOP MANIFOLD INVERT:	175.815			
	(BASE STONE INCLUDED)	300 mm BOTTOM CONNECTION INVERT:	175.528			
80.7	SYSTEM AREA (m <sup>2</sup> )	300 mm ISOLATOR ROW PLUS INVERT:	175.500			
37.6	SYSTEM PERIMETER (m)	BOTTOM OF SC-740 CHAMBER:	175.497			
		UNDERDRAIN INVERT:	175.345			
		BOTTOM OF STONE:	175.345			

NOT FOR CONSTRUCTION:  
THIS LAYOUT  
IS FOR DIMENSIONAL PURPOSES  
ONLY TO PROVE CONCEPT & THE  
REQUIRED STORAGE VOLUME CAN BE  
ACHIEVED ON SITE



ISOLATOR ROW PLUS  
(SEE DETAIL)

PLACE MINIMUM 3.810 m OF ADSPLUS125 WOVEN GEOTEXTILE OVER  
BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR  
PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

### NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6 32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

# AECOM

### PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
911 BACKUP DISPATCH  
5 LINCOLN STREET, WELLAND, ONTARIO

### CLIENT



### CONSULTANT

AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario, N2P 0A4  
519 650 5313 tel 519 650 3424 fax  
www.aecom.com

**NOTE:**  
IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO INFORM THEMSELVES OF THE EXACT LOCATION OF AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE BEFORE COMMENCING THE WORK. SUCH INFORMATION IS NOT NECESSARILY SHOWN ON THE DRAWING, AND WHERE SHOWN, THE ACCURACY CANNOT BE GUARANTEED.

WITH THE SOLE EXCEPTION OF THE BENCHMARK(S) SPECIFICALLY DESCRIBED FOR THIS PROJECT, NO ELEVATION INDICATED OR ASSUMED HEREON IS TO BE USED AS A REFERENCE ELEVATION FOR ANY PURPOSE.

### REGISTRATION

### ISSUE/REVISION

7	2025-01-22	ISSUED FOR TENDER
6	2024-12-13	IFP RE-SUBMISSION
5	2024-11-29	ISSUED FOR OWNER REVIEW
4	2024-10-30	ISSUED FOR PERMIT
3	2024-07-26	ISSUED FOR 100% DD
2	2023-07-28	RE-ISSUED FOR SPE
I/R	DATE	DESCRIPTION

### KEY PLAN

### PROJECT NUMBER

60686829

### SHEET TITLE

STORMTECH DETAILS

### SHEET NUMBER

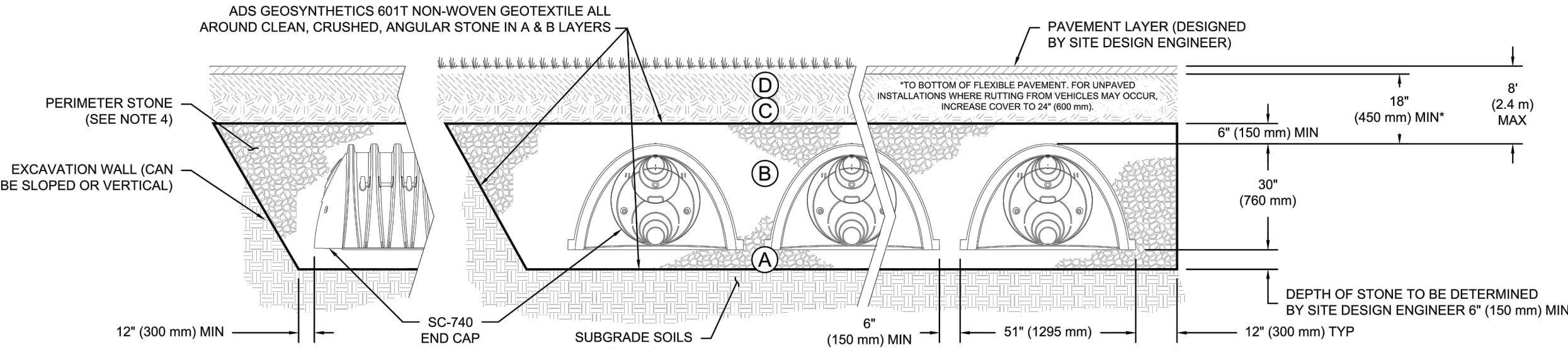
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

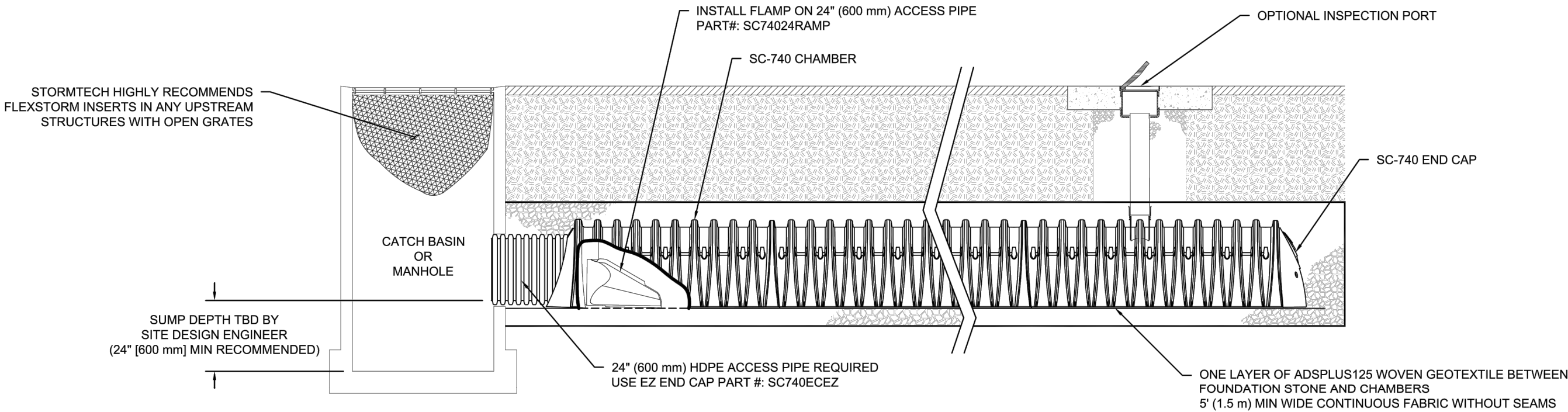
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL-GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

PLEASE NOTE:  
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".  
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.  
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.  
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT<sup>3</sup>%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



SC-740 ISOLATOR ROW PLUS DETAIL  
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
- i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
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5 LINCOLN STREET, WELLAND, ONTARIO

CLIENT



CONSULTANT

AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
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KEY PLAN

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60686829

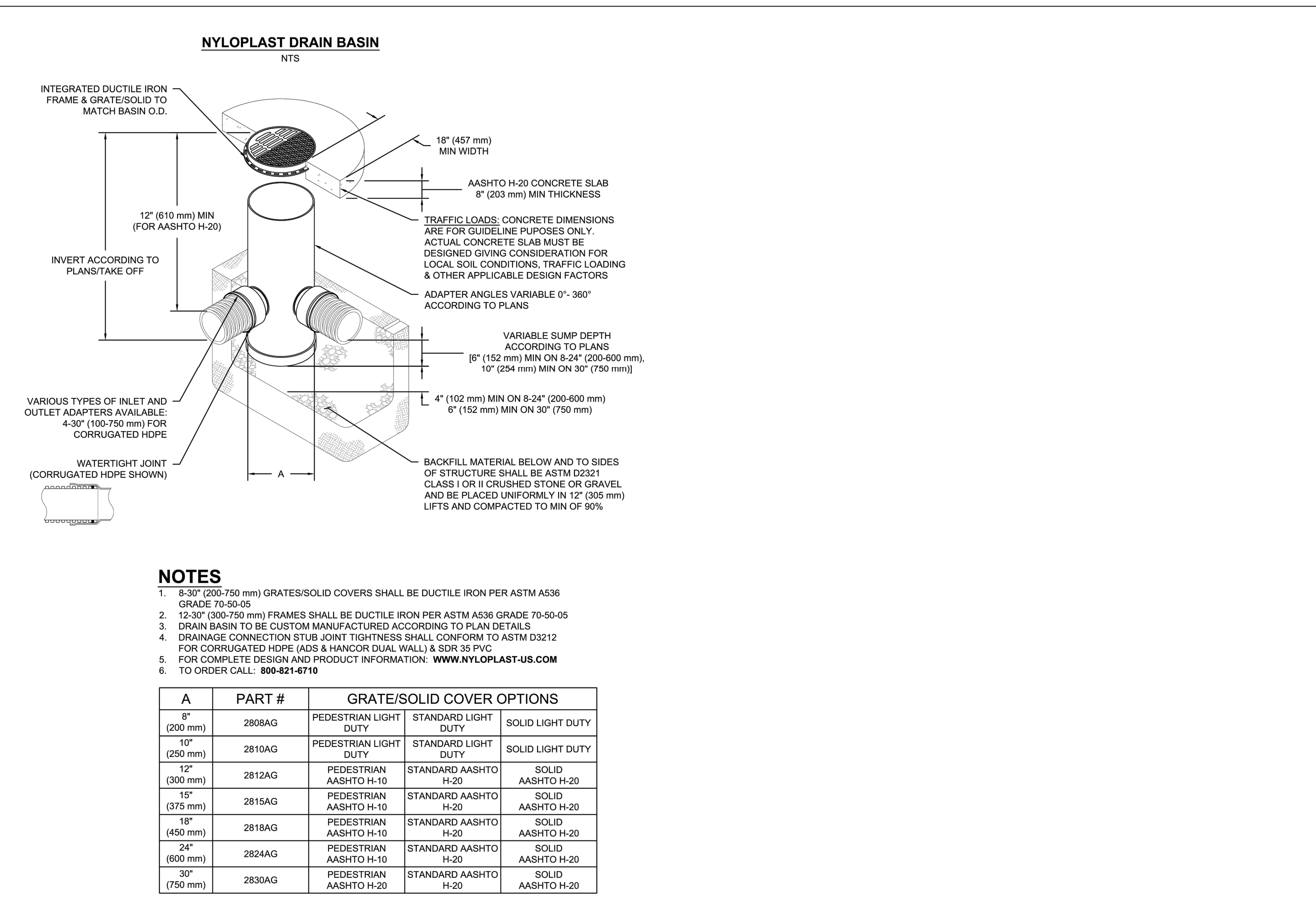
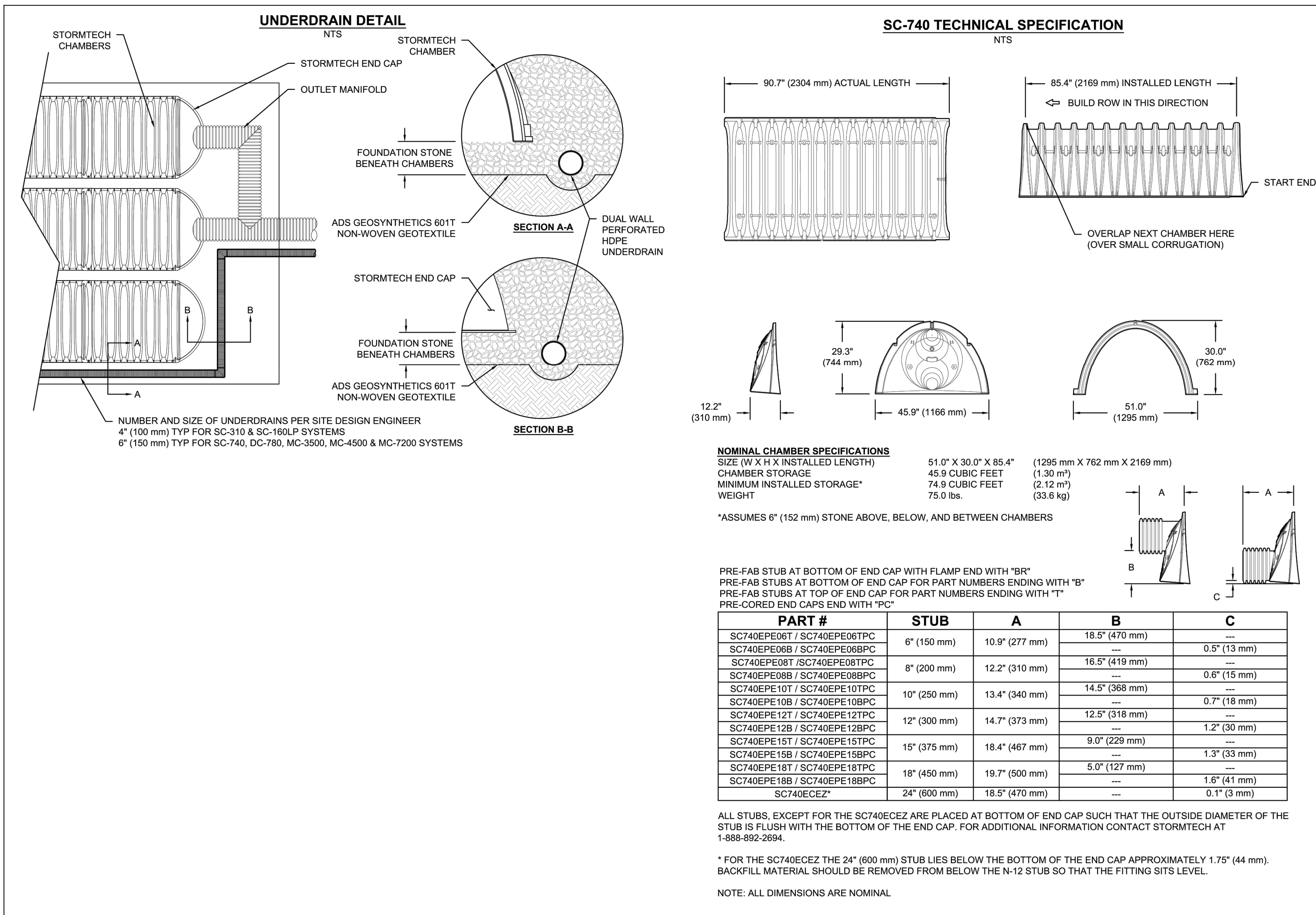
SHEET TITLE

STORMTECH DETAILS

SHEET NUMBER

D301







PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



## 5 LINCOLN ST WELLAND, ON, CANADA

### MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B194, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES" AND MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 75 mm (3").
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT<sup>7</sup>% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

### IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 300 mm (12") INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE WELL GRADED BETWEEN ¾" AND 2" (20-50 mm).
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

### NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

**USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.**

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

### PROPOSED LAYOUT - WEST BED

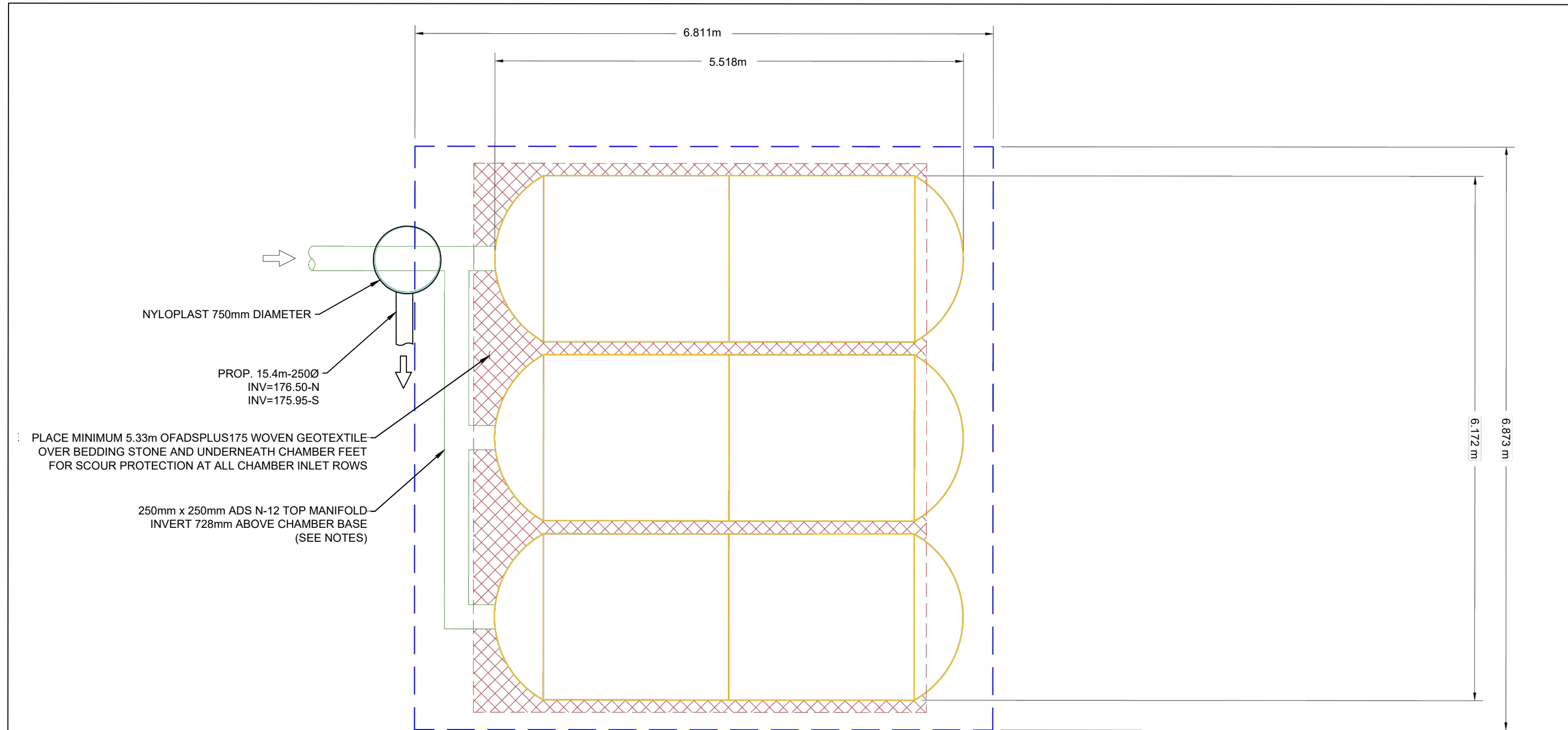
6	STORMTECH MC-3500 CHAMBERS
6	STORMTECH MC-3500 END CAPS
305	STONE ABOVE (mm)
610	STONE BELOW (mm)
40	% STONE VOID
51.2	INSTALLED SYSTEM VOLUME (m <sup>3</sup> ) (PERIMETER STONE INCLUDED)
46.8	SYSTEM AREA (m <sup>2</sup> )
27.3	SYSTEM PERIMETER (m)

### PROPOSED ELEVATIONS - WEST BED

176.380	TOP OF STONE:
176.075	TOP OF MC-3500 CHAMBER:
175.670	250 mm TOP MANIFOLD INVERT:
174.932	BOTTOM OF MC-3500 CHAMBER:
174.322	BOTTOM OF STONE:

### NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSTITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE BUILDING/STRUCTURE. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS. THE SITE DESIGN ENGINEER MUST CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON BEARING CAPACITY OF SOILS AND SEEPAGE INTO BASEMENTS.
- THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE PRIOR APPROVAL OF THE PROJECT'S ENGINEER OF RECORD ("EOR"). AS WITH ALL PROPOSED ADS LAYOUTS, THE EOR SHOULD REVIEW AND APPROVE THIS DRAWING PRIOR TO USE IN BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND THE ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.



### PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
911 BACKUP DISPATCH  
5 LINCOLN STREET, WELLAND, ONTARIO

### CLIENT



### CONSULTANT

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Kitchener, Ontario, N2P 0A4  
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3	2024-07-26	ISSUED FOR 100% DD
2	2023-07-28	RE-ISSUED FOR SPE
I/R	DATE	DESCRIPTION

### KEY PLAN

### PROJECT NUMBER

60686829

### SHEET TITLE

STORMTECH DETAILS

### SHEET NUMBER

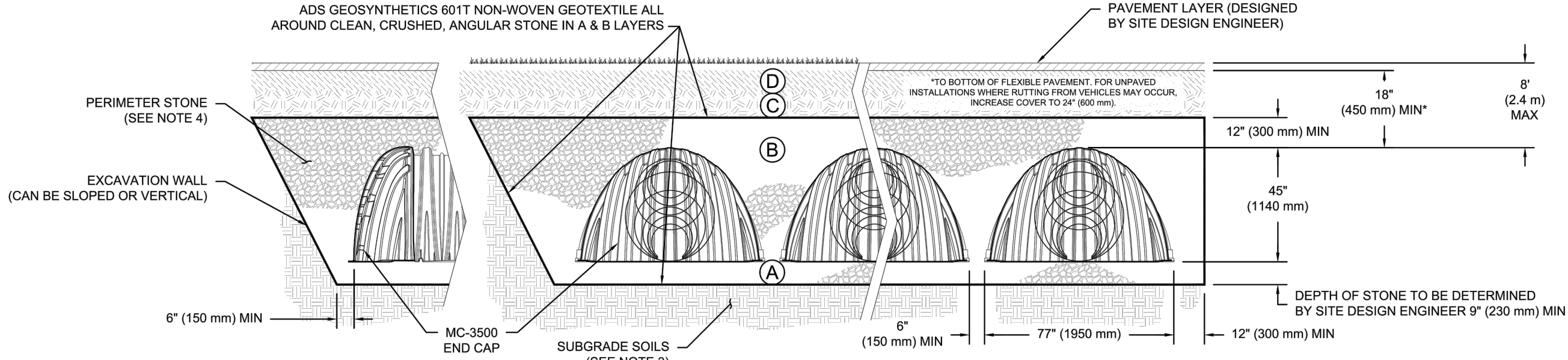
D303



ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.  MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR  AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	NO COMPACTION REQUIRED.
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

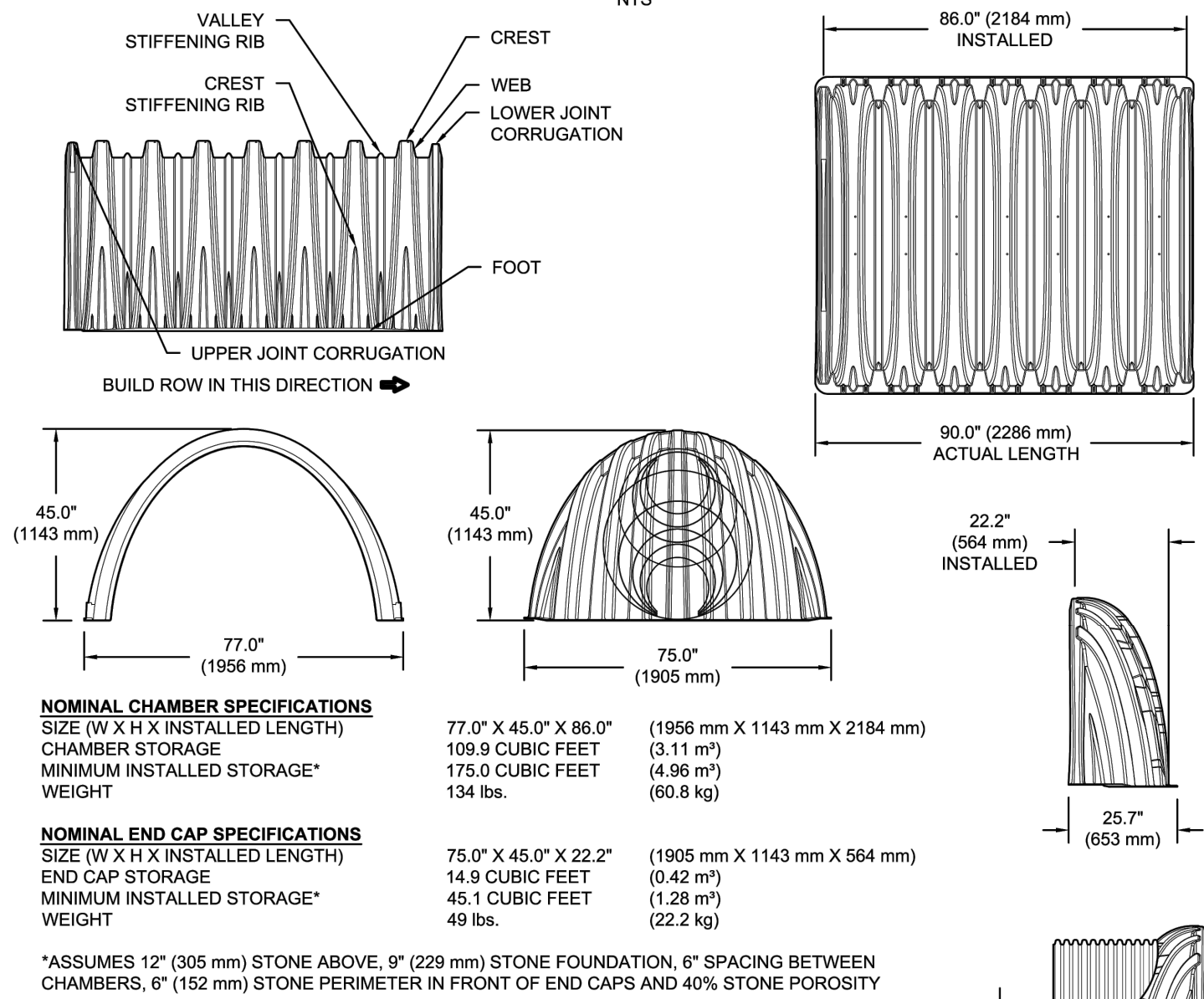
PLEASE NOTE:  
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".  
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.  
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.  
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



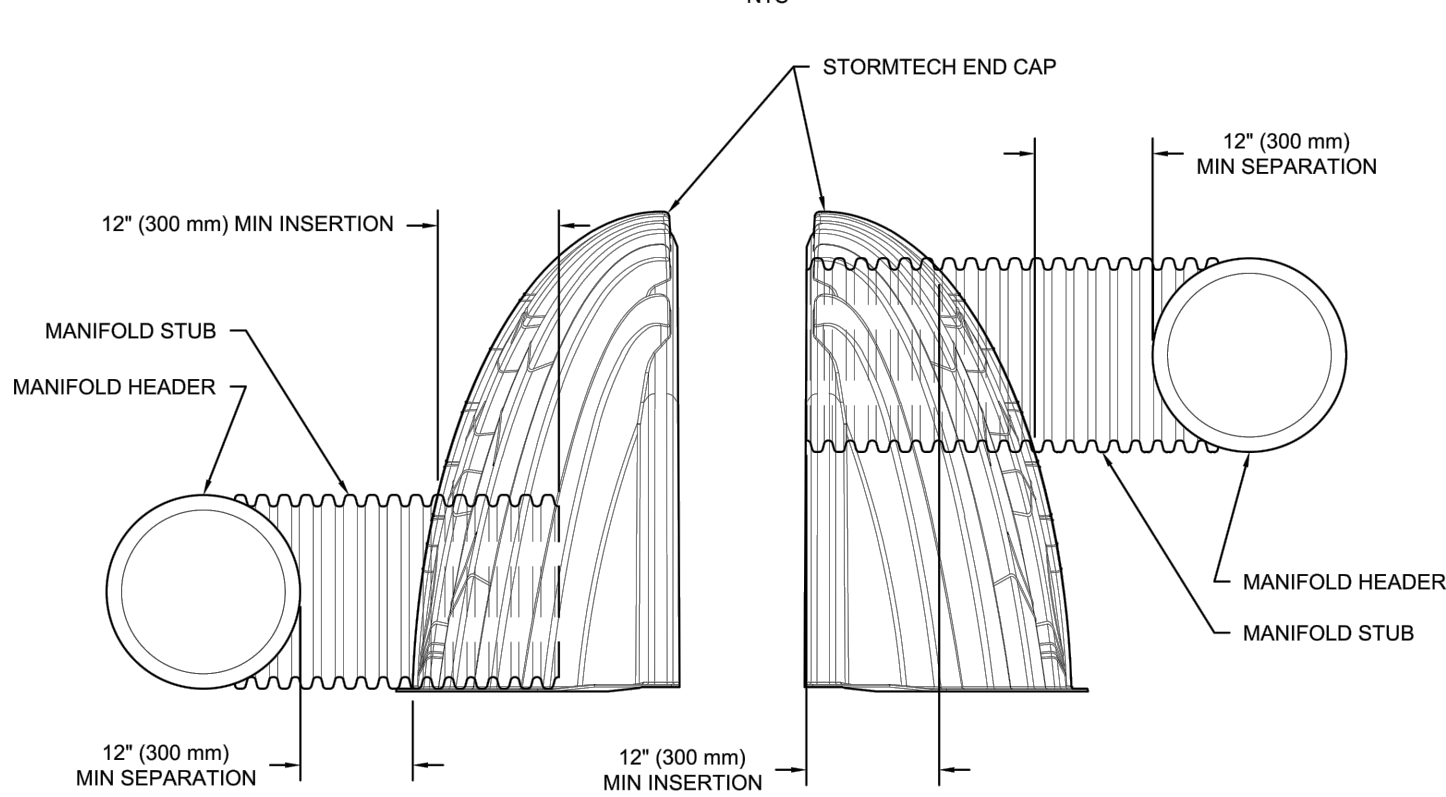
NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT<sup>3</sup>. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MC-3500 TECHNICAL SPECIFICATION



MC-SERIES END CAP INSERTION DETAIL

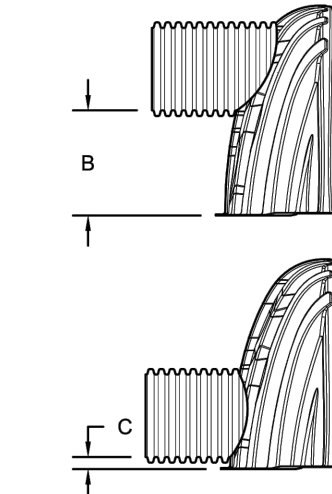


NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
END CAPS WITH A WELDED CROWN PLATE END WITH "C"  
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "H"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B	---	---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B	---	---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B	---	---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B	---	---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B	---	---	1.50" (38 mm)
MC3500IEPP18TC	---	20.03" (509 mm)	---
MC3500IEPP18TW	18" (450 mm)	---	---
MC3500IEPP18BC	---	---	1.77" (45 mm)
MC3500IEPP18BW	---	---	---
MC3500IEPP24TC	---	14.48" (368 mm)	---
MC3500IEPP24TW	24" (600 mm)	---	---
MC3500IEPP24BC	---	---	2.06" (52 mm)
MC3500IEPP24BW	---	---	---
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

PROJECT

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REGISTRATION

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4	2024-10-30	ISSUED FOR PERMIT
3	2024-07-26	ISSUED FOR 100% DD
2	2023-07-28	RE-ISSUED FOR SPE
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60686829

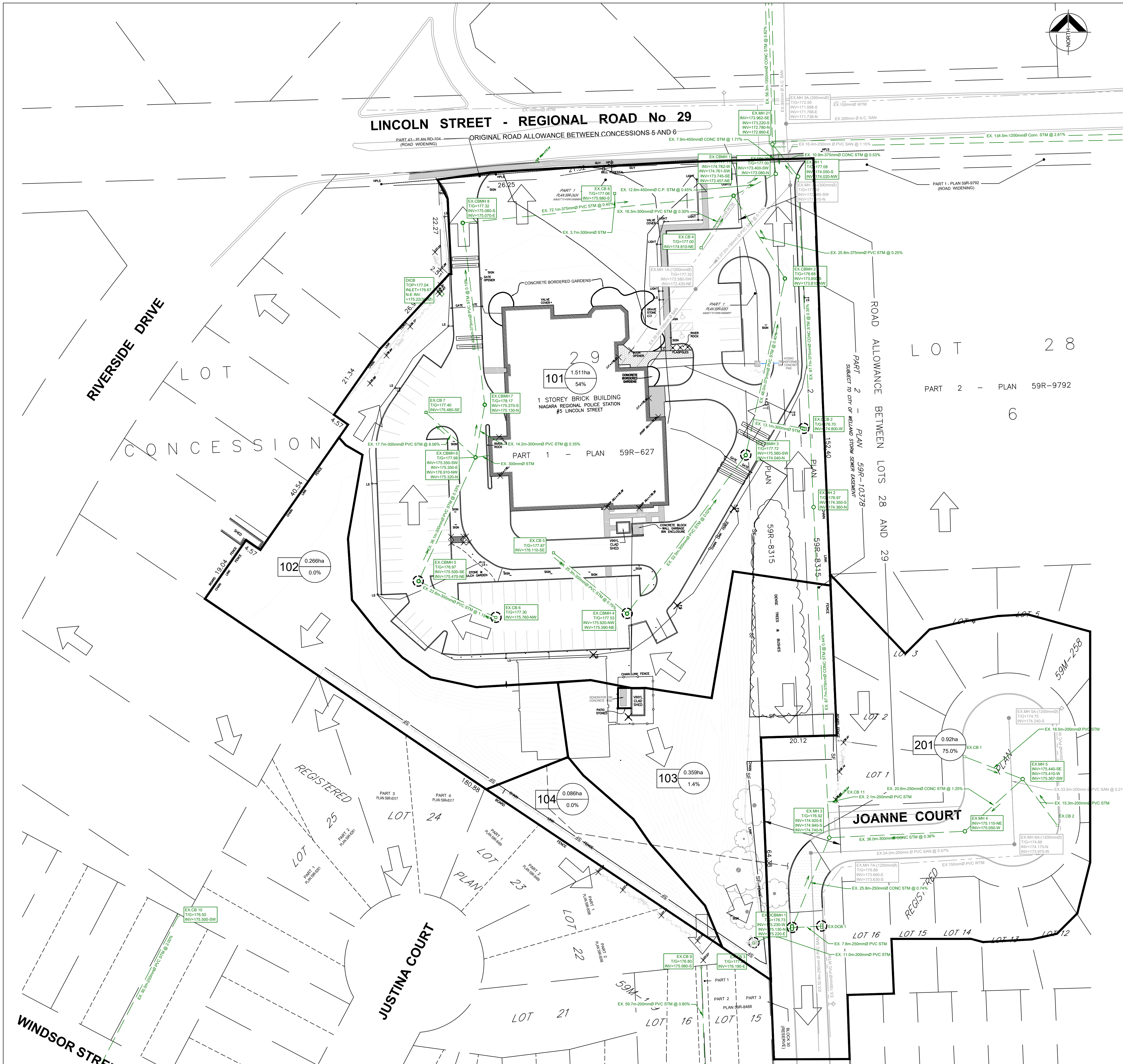
SHEET TITLE

STORMTECH DETAILS

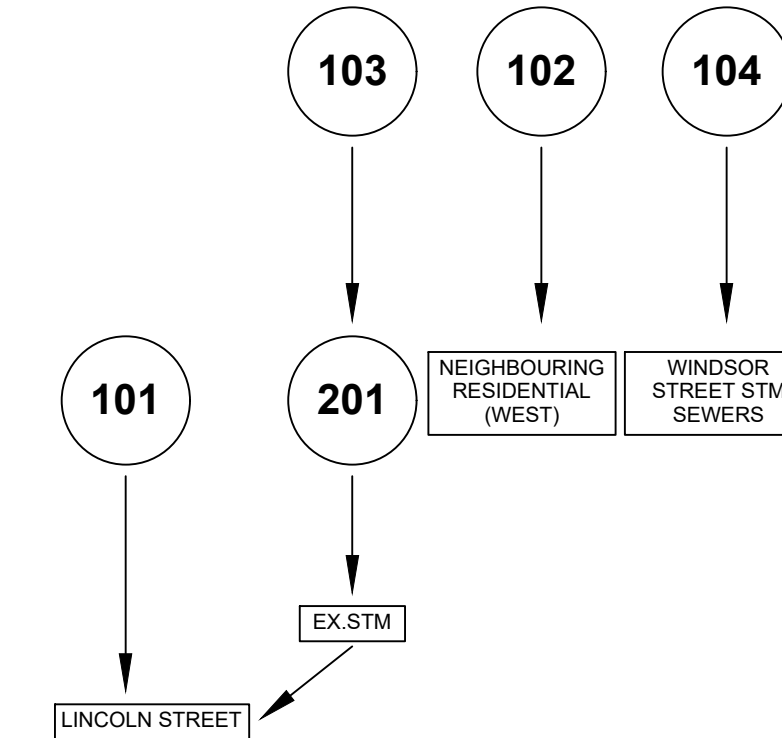
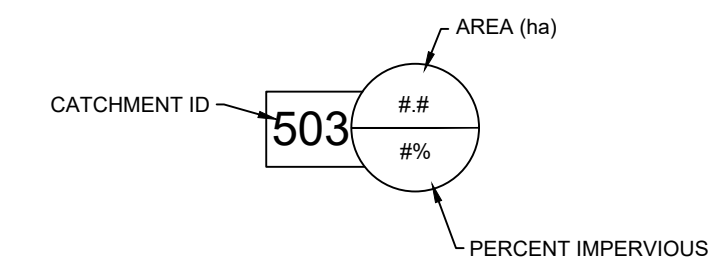
SHEET NUMBER

D304





LEGEND:

**AECOM**

## PROJECT

**NIAGARA REGIONAL  
POLICE SERVICE  
NIAGARA, ONTARIO**  
HORNBY SHARED SERVICES

**CLIENT**

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**ISSUE/REVISION**

6		
5		
4	2025-01-22	ISSUED FOR TENDER
3	2024-07-26	ISSUED FOR 100% DD
2	2023-04-06	RE-ISSUED FOR SPA
1	2022-12-16	ISSUED FOR SPA
I/R	DATE	DESCRIPTION

## KEY PLAN

## PROJECT NUMBER

60686829

**SHEET TITLE**

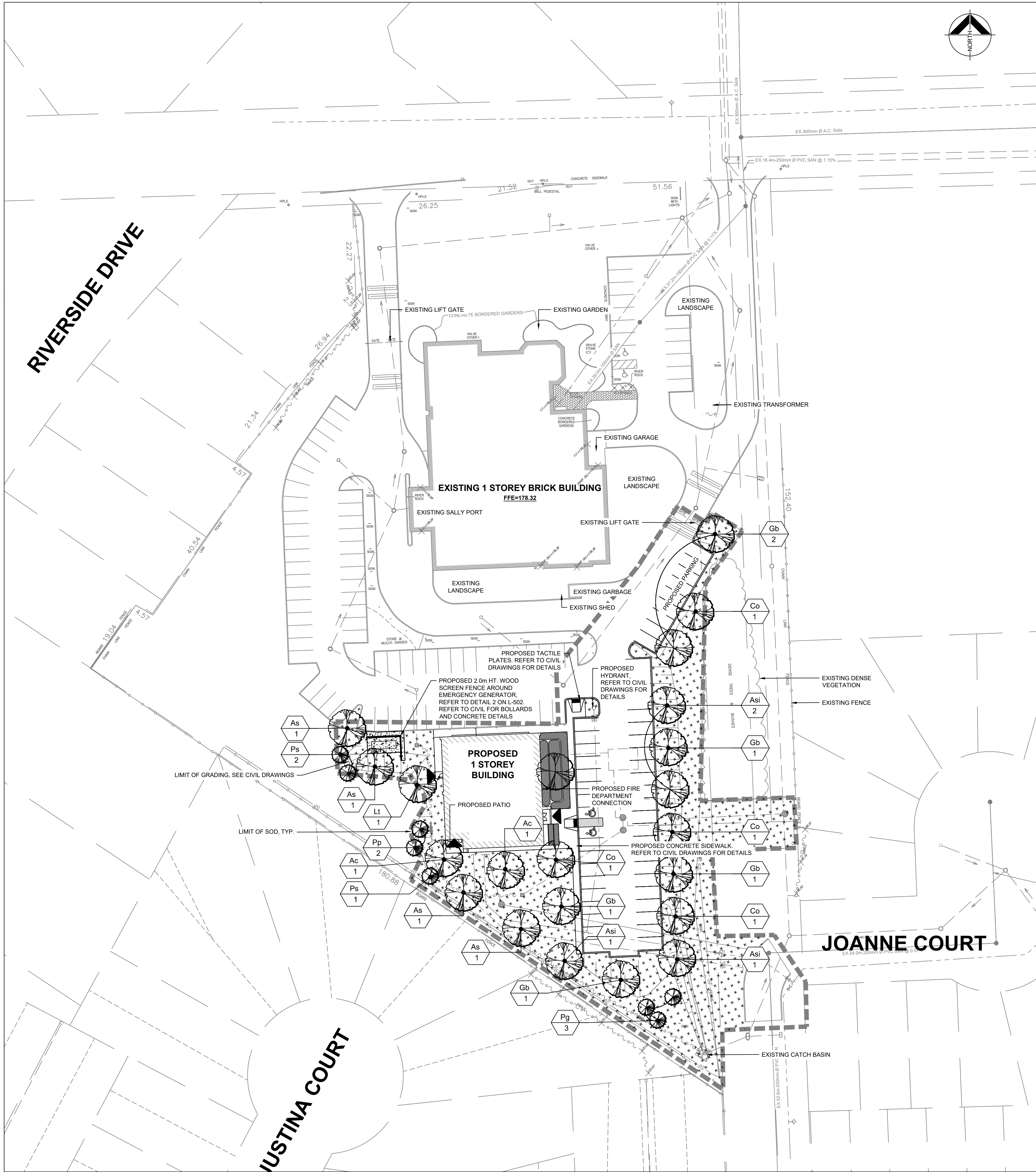
## PRE-DEVELOPMENT SWM CATCHMENT PLAN

**SHEET NUMBER**

FIGURE 3







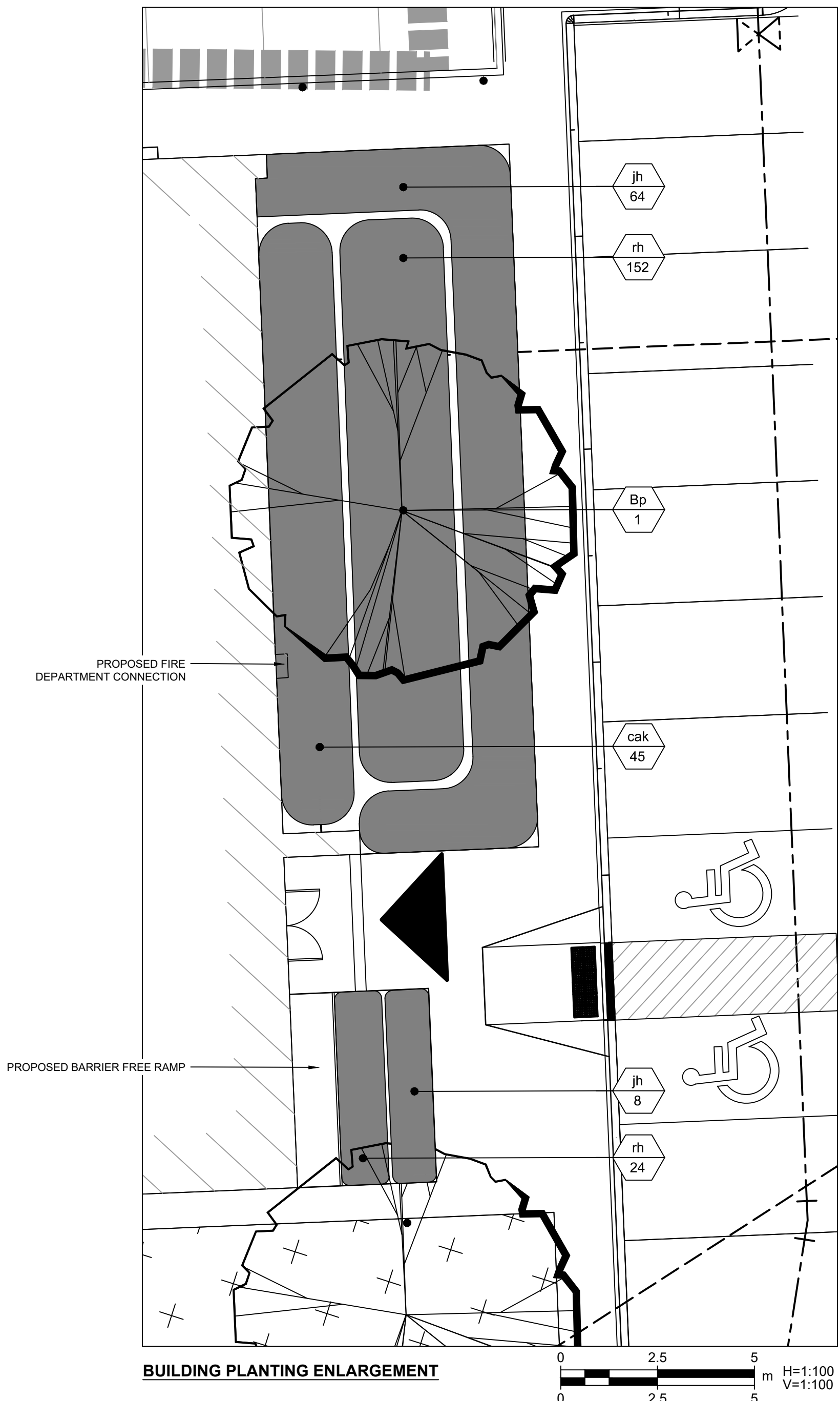
#### LEGEND

- LIMIT OF DISTURBANCE
- EXISTING DENSE VEGETATION
- EXISTING RESIDENTIAL PROPERTY LINES
- PROPOSED SOD
- PROPOSED DECIDUOUS TREE
- PROPOSED CONIFEROUS TREE
- PROPOSED SHRUBS, PERENNIALS AND GRASSES
- PROPOSED SWALE, REFER TO CIVIL DRAWINGS FOR DETAILS

#### GENERAL NOTES

- THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNLESS STAMPED AND SIGNED BY THE LANDSCAPE ARCHITECT.
- ANY AMBIGUITY IN THE DRAWINGS, SPECIFICATIONS OR DETAILS IS TO BE REPORTED TO THE CONTRACT ADMINISTRATOR FOR DIRECTION. DO NOT PROCEED IN UNCERTAINTY.
- DRAWINGS MAY BE SCALED FOR APPROPRIATE LAYOUT ONLY. ALL MEASUREMENTS IN METRIC. ALL LAYOUT, INCLUDING PLANTING, TO BE STAKED BY THE CONTRACTOR AND APPROVED BY THE CONTRACT ADMINISTRATOR.
- THE CONTRACTOR IS TO TAKE NECESSARY PRECAUTION TO PROTECT ALL EXISTING SITE FEATURES UNLESS SPECIFIED FOR DEMOLITION. THIS INCLUDES ALL SURVEY BARS, STAKES AND MONUMENTS. MAKE GOOD ANY DAMAGE.
- UPON COMPLETION OF WORK EACH DAY, REMOVE ALL DEBRIS, GARBAGE AND SURPLUS MATERIALS FROM THE SITE. KEEP THE SITE CLEAN AND USABLE AT ALL TIMES.
- ALL LANDSCAPE WORKMANSHIP AND MATERIALS, INCLUDING PLANTS, TO HAVE A WARRANTY FOR ONE FULL YEAR FOLLOWING FINAL ACCEPTANCE OF THE PROJECT. ALL WORKMANSHIP TO THE STANDARDS OF LANDSCAPE ONTARIO.
- AT THE TIME OF FINAL INSPECTION, ALL PLANTS SHALL BE IN A HEALTHY, VIGOROUS GROWING CONDITION, PLANTED IN FULL ACCORDANCE WITH DRAWINGS AND CONDITIONS.
- ANY CHANGES TO THIS ACCEPTED PLAN MUST BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR.
- ALL DISTURBED AREAS ARE TO RECEIVE 150mm MINIMUM THICK TOPSOIL AND SOD.

KEY	QTY	BOTANICAL NAME	PLANT LIST COMMON NAME	SIZE	CONDITION	SPACING	NOTES
DECIDUOUS TREE							
Ac	2	Amelanchier canadensis	Serviceberry	50mm cal.	WB	As Noted	
As	4	Acer saccharum	Sugar Maple	50mm cal.	WB	As Noted	
Asl	4	Acer saccharinum	Silver Maple	50mm cal.	WB	As Noted	
Bp	1	Betula papyrifera	Paper Birch	50mm cal.	WB	As Noted	Multi-stem
Co	4	Celtis occidentalis	Common Hackberry	50mm cal.	WB	As Noted	
Gb	6	Ginkgo biloba	Maldenhair Tree	50mm cal.	WB	As Noted	
Lt	1	Liriodendron tulipifera	Tulip Tree	50mm cal.	WB	As Noted	
CONIFEROUS TREE							
Pg	3	Picea glauca	White Spruce	2.4m ht.	WB	As Noted	
Pp	2	Picea pungens	Colorado Spruce	2.0m ht.	WB	As Noted	
Ps	3	Pinus strobus	Eastern White Pine	1.8m ht.	WB	As Noted	
SHRUBS, PERENNIALS AND GRASSES							
cak	45	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	1 gal.	Potted	0.8m O.C.	
jh	72	Juniperus horizontalis 'Gold Strike'	Gold Strike Creeping Juniper	1 gal.	Potted	0.8m O.C.	
rh	176	Rudbeckia hirta	Black Eyed Susan	1 gal.	Potted	0.5m O.C.	



# AECOM

#### PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
NIAGARA, ONTARIO  
HORNBY SHARED SERVICES

#### CLIENT

Niagara Region

#### CONSULTANT

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6	2025-01-23	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	OWNER REVIEW
3	2024-07-26	ISSUED FOR 100% DD
2	2023-07-28	ISSUED FOR SPE
1	2023-04-06	SITE PLAN EXEMPTION

#### KEY PLAN

#### PROJECT NUMBER

60686829

#### SHEET TITLE

LANDSCAPE SITE PLAN

#### SHEET NUMBER

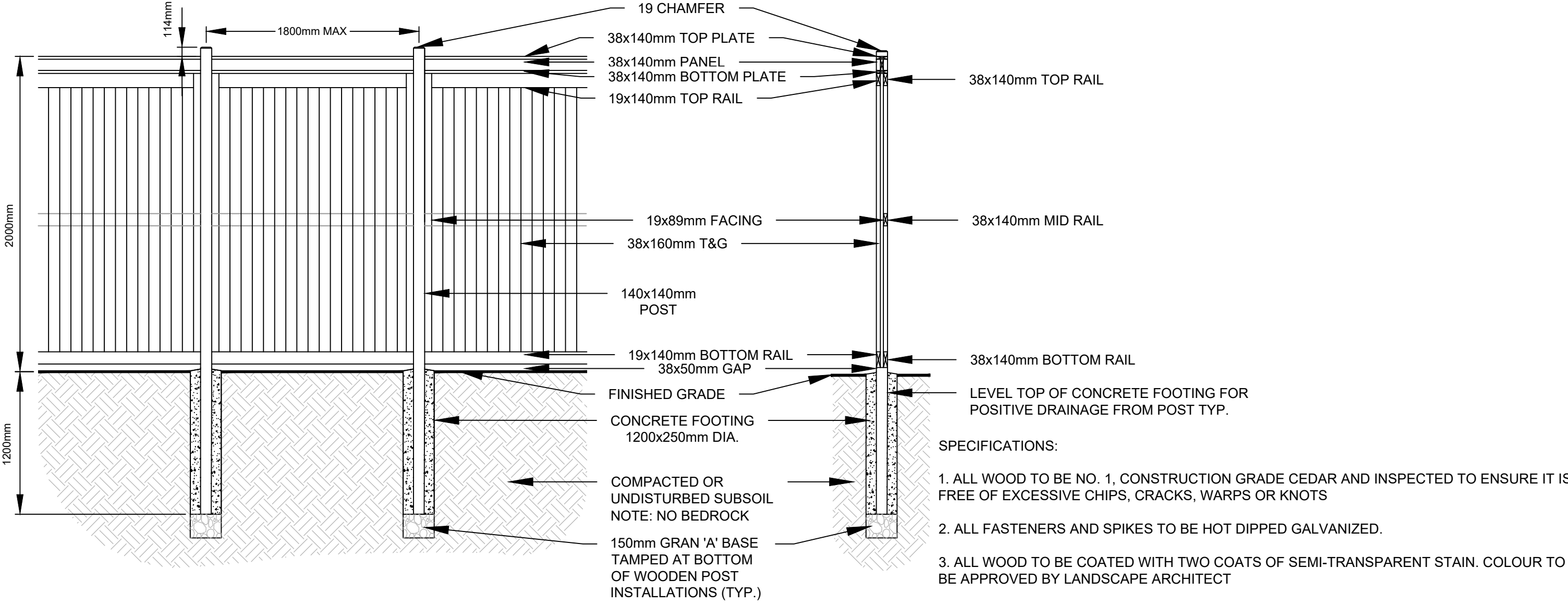
L101

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DETAIL 2.0m HT WOOD SCREEN FENCE

SCALE 1:25

D1

L502

PROJECT

NIAGARA REGIONAL  
POLICE SERVICE  
NIAGARA, ONTARIO  
HORNBY SHARED SERVICES

CLIENT



CONSULTANT

AECOM Canada Ltd.  
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4		
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I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60686829

SHEET TITLE

LANDSCAPE DETAILS

SHEET NUMBER

L502



GENERAL NOTES

1. CONFORM TO NATIONAL BUILDING CODE OF CANADA 2020, AND CANADA OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION OF THIS PROJECT.
2. DIMENSIONS IN MILLIMETERS. ELEVATIONS IN MILLIMETERS.
3. EMBEDDED ITEMS REQUIRED FOR ELECTRICAL SHALL BE INCORPORATED INTO THE STRUCTURES.
4. FOR LOCATIONS AND DETAILS OF EQUIPMENT BASES, OPENINGS, AND SIMILAR ITEMS CONTRACTOR TO COORDINATE WITH ELECTRICAL DRAWINGS, EQUIPMENT SUPPLIERS AND SHOP DRAWINGS.
5. OBTAIN APPROVAL FROM THE DCC REPRESENTATIVE BEFORE INSTALLING OPENINGS AND SLEEVES LARGER THAN 150mmØ WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
6. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH OTHER DISCIPLINES AND SPECIFICATIONS. REPORT ANY DISCREPANCIES.
7. BEFORE PROCEEDING WITH THE WORK, CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS. REPORT ANY DISCREPANCIES.
8. DIMENSIONS, ELEVATIONS AND CONFIGURATION OF EXISTING STRUCTURES TAKEN FROM PREVIOUS DESIGN DRAWINGS. CONTRACTOR TO CONFIRM AND ADJUST AS NEEDED. REPORT ANY DISCREPANCIES.
9. THE STRUCTURE IS DESIGNED TO RESIST DESIGN LOADS IN THE COMPLETED STAGE ONLY. PROVIDE CONFIRMATION OF ANY CONSTRUCTION LOADING IMPOSED ON THE PARTIALLY COMPLETED STRUCTURE, INCLUDING THE REMOVAL OF SUPPORT BRACING, BACKFILLING, SHORING AND FORMWORK FOR CONCRETE.

DESIGN NOTES

1. DESIGN IS BASED ON THE FOLLOWING CODES AND ASSOCIATED REFERENCE CODES.
- NATIONAL BUILDING CODE OF CANADA, 2020
- CSA STANDARD A23.3-19
- CSA STANDARD S16-19

DESIGN LOADS

1. REFERENCE LOCATION: WELLAND, ON
2. IMPORTANCE CATEGORY: POST- DISASTER

3. SEISMIC PARAMETERS:	Sa(0.2, X <sub>250</sub> )	= 0.433
	Sa(0.5, X <sub>250</sub> )	= 0.342
	Sa(1.0, X <sub>250</sub> )	= 0.189
	Sa(2.0, X <sub>250</sub> )	= 0.0863
	Sa(5.0, X <sub>250</sub> )	= 0.0221
	Sa(10.0, X <sub>250</sub> )	= 0.00675
	PGA(X <sub>250</sub> )	= 0.276
	PGV(X <sub>250</sub> )	= 0.224
IMPORTANCE FACTOR	I <sub>s</sub> (ULS)	= 1.50
SEISMIC SITE CLASSIFICATION:	D	
SFRS:	CONVENTIONAL CONSTRUCTION OF STEEL BRACED FRAMES	

4. INTERNAL PRESSURE COEFFICIENT	C <sub>pi</sub>	= -0.45 to +0.30
4. HOURLY WIND PRESSURE IMPORTANCE FACTORS	q	= 0.43 kPa (1/50)
	I <sub>w</sub> (ULS)	= 1.25
	I <sub>w</sub> (SLS)	= 0.75

5. GROUND SNOW LOAD	S <sub>s</sub>	= 2.0 kPa
ASSOCIATED RAIN LOAD	S <sub>r</sub>	= 0.40 kPa
SPECIFIED SNOW LOAD	S/Is	= 2.5 kPa
IMPORTANCE FACTORS	I <sub>s</sub> (ULS)	= 1.25
	I <sub>s</sub> (SLS)	= 0.90

6. RAIN: ONE DAY (1/50) :	103 mm
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BUILDING LOADS

7. EXTERIOR WALL COMPONENTS, INCLUDING OVERHEAD DOORS, DESIGNED FOR A MINIMUM UNFACTORED NET WIND PRESSURE OF 0.77kPa (SLS) AND 1.00kPa (ULS).

8. ROOF DEAD LOADS:	
TPO-BOARD-INSULATION	0.22kPa
STEEL DECK 1.21mm THICK	0.14kPa
OWSJ	0.15kPa
STEEL BEAMS/JOISTS GIRDER &COLUMNS	0.25kPa

TOTAL PERMANENT DEAD LOAD: 0.76kPa

MECH (INCLUDING SPRINKLER)	0.20kPa
ELECTRICAL	0.15kPa
FUTURE PV SOLAR PANEL	0.50kPa (HIGH ROOF ONLY)

TOTAL SUPERIMPOSED DEAD LOAD: 2.75kPa

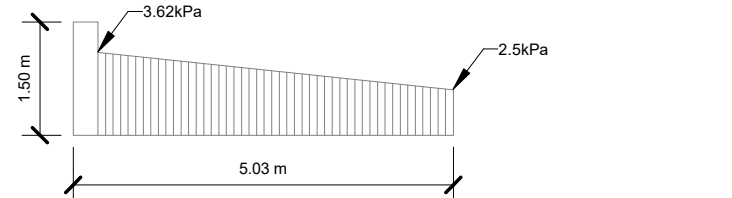
TOTAL DEAD LOAD: 3.51kPa

9. ROOF LIVE LOAD: (MAINTENANCE)	1.0kPa
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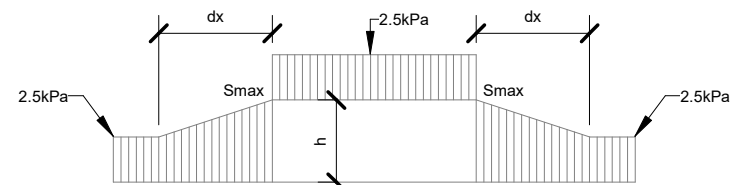
10. IMPOSED LOAD DEFLECTION:	
JOISTS: L/300	
BEAMS: L/300	

11. GROUND FLOOR SLAB LIVE LOAD	12.0kPa
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MECHANICAL ROOF TOP UNIT WEIGHTS.



PARAPET SNOW DIAGRAM (OFFICE AREA)



SNOW BUILD-UP AT ROOF TOP HVAC UNITS

UNIT	HEIGHT (h) (including curb)	LENGTH	WIDTH	xd	Smax	WEIGHT
CH1,2,3	2864 mm	3048 mm	2991 mm			4885 kg
HRU-1	2316 mm	3094 mm	1336 mm			1544 kg
RTU-1	1615 mm	6608 mm	1283 mm			1907 kg

FOUNDATIONS

1. FOOTINGS SHALL BE FOUNDED ON NATURAL UNDISTURBED SOIL CAPABLE OF SAFELY SUSTAINING THE FOLLOWING FACTORED GEOTECHNICAL RESISTANCES: AT BEARING DEPTH OF 1.2mbGS

FOOTING SIZE	FACTORED NET GEOTECHNICAL RESISTANCE AT ULS (kPa)*	GEOTECHNICAL NET REACTION AT SLS (kPa)**
0.6 m x 0.6 m	135	150
1.0 m x 1.0 m	225	150
1.5 m x 1.5 m	225	150
2.0 m x 2.0 m	225	150
0.6 m WIDE STRIP	135	150
0.9 m WIDE STRIP	200	150

2. SEE SOIL REPORT "PROPOSED SINGLE STOREY INSTITUTIONAL BUILDING", No. NT22216, PREPARED BY NIAGARA TESTING AND INSPECTION LTD.
3. COORDINATE AND COOPERATE WITH DCC REPRESENTATIVE.
4. DO NOT POUR CONCRETE OVER BEARING SURFACES UNTIL APPROVAL PROVIDED BY DCC REPRESENTATIVE.
5. PROOF ROLL BASE OF FOUNDATIONS AND FOOTINGS, AND CLEAN THE BASE OF FOUNDATIONS, FOOTINGS, DRILLED PIERS TO THE SATISFACTION OF THE DCC REPRESENTATIVE AND GEOTECHNICAL ENGINEER.
6. REFER TO SOIL REPORT FOR EXCAVATION SLOPE STABILITY, DEWATERING, BACKFILL, CLEANING AND COMPACTION REQUIREMENTS. SUBMIT DETAILS OF PROPOSED DEWATERING, UNDERPINNING, BRACING AND CONSTRUCTION SEQUENCE TO DCC REPRESENTATIVE FOR REVIEW PRIOR TO COMMENCING ANY PORTION OF WORK, AS REQUIRED.
7. PROTECT ALL SLABS ON GRADE AND ADJACENT SOIL AGAINST FROST ACTION AND FREEZING AT ALL TIMES DURING CONSTRUCTION.
8. DEPTH OF FROST PENETRATION: 1.2m BELOW GRADE.
9. PROVIDE 150 MIN THK. LAYER OF 19mm CLEAR STONE UNDERSIDE OF GROUND FLOOR SLAB. REMOVE ALL LOOSE ORGANIC AND DISTURBED MATERIALS AND COMPACT FOUNDING SOILS/FILL PRIOR TO PLACING CLEAR STONE.

EXCAVATION

1. COORDINATE WITH DCC REPRESENTATIVE AND GEOTECHNICAL ENGINEER ON RE-USE AND DISPOSAL OF EXCAVATED SOILS.

CONCRETE

1. CONCRETE MEMBERS ARE DESIGNED IN ACCORDANCE WITH CSA A23.3-19, U.N.O.
2. METHODS OF TEST FOR CONCRETE TO CSA A23.2-19.

LOCATION	DESIGN STRENGTH	EXPOSURE CLASS
EXTERIOR FOOTINGS, PIERS, FOUNDATION WALLS & RETAINING WALLS	35MPa @ 28 DAYS	F-2
EXTERIOR SLAB-ON-GRADE & EQUIPMENT PADS	35MPa @ 28 DAYS	C-1
INTERIOR FOOTINGS & PIERS	35MPa @ 28 DAYS	N
INTERIOR SLAB-ON-GRADE	25MPa @ 28 DAYS	N
LEAN CONCRETE FILL/ MUD SLABS	15MPa @ 28 DAYS	N

MINIMUM CONCRETE COVER TO REINFORCING BARS:

EXPOSURE CONDITION	N	F-2	C-1
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75mm	75mm	75mm
BEAMS AND PIERS	30mm	40mm	60mm
SLABS, WALLS, JOISTS, SHELLS AND FOLDED PLATES	20mm	40mm	60mm
RATIO OF COVER TO NOMINAL BAR DIAMETER	1.0	1.5	2.0
RATIO OF COVER TO NOMINAL MAXIMUM AGGREGATE SIZE	1.0	1.5	2.0

5. REINFORCING STEEL TO CAN/CSA G30.18-M92 GRADE 400R. REINFORCING STEEL TO BE WELDED TO CAN/CSA G30.18-M92 GRADE 400W.
6. BAR SPLICES CLASS B TENSION LAP WITH MINIMUM LAP LENGTH OF 42 TIMES BAR DIAMETER, UNO.
7. GROUT: NON-SHRINK, NON-FERROUS TYPE WITH A MINIMUM COMPRESSIVE STRENGTH OF 50MPa.
8. ALL EXPOSED EDGES TO BE CHAMFERED 20mmx20mm.
9. CONCRETE COVER SHALL BE TO CSA A23.1-14 UNO.
10. ADJUST REINFORCING STEEL AROUND OPENINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCING AROUND OPENINGS.
11. HOOK ENDS OF ALL BARS.

12. WHERE THE STRUCTURAL THICKNESS OF A SLAB VARIES OR WHERE THE TOP SURFACE OF A SLAB IS SHOWN SLOPED, MAINTAIN CONSTANT COVER TO THE REINFORCING STEEL. TOP REINFORCING STEEL SHALL FOLLOW THE SLOPE OF THE SLAB (UNO), MAINTAIN MIN. SLAB THICKNESS AS SHOWN ON THE DRAWINGS.
13. SLAB-ON-GRADE THICKENING REQUIRED BELOW ALL MASONRY/BLOCK WALLS AS PER TYPICAL DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL LOCATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
14. CONSTRUCTION JOINTS NOT SHOWN ON STRUCTURAL DRAWING SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW.

MASONRY

1. DESIGN MASONRY TO COMPLY WITH THE REQUIREMENTS OF CSA-S304.1 "MASONRY DESIGN FOR BUILDING LIMIT STATES DESIGN".
2. MASONRY CONSTRUCTION AND REINFORCEMENT TO THE REQUIREMENTS OF CSA-A371 "MASONRY CONSTRUCTION FOR BUILDINGS".
3. MASONRY CONNECTORS TO CSA-A370.
4. HOLLOW CONCRETE BLOCK WALL TO CSA-A165.1 "CONCRETE MASONRY UNITS".
5. MORTAR AND GROUT TO CSA-A179, TYPE 'S' (UNO).
6. LOAD BEARING SOLID CONCRETE BLOCK TO CSA A165.1, TYPE SF15/C1M.

7. LOAD BEARING HOLLOW CONCRETE BLOCK TO CSA A165.1, TYPE H20/C1M.

8. GROUT FILL: 15 MPa AT 28 DAYS BY CYLINDER TEST UNDER PROPERTY SPECIFICATION; MAXIMUM AGGREGATE SIZE 12mm DIAMETER; SLUMP 200 TO 250mm.

9. NON-LOAD BEARING MASONRY WALL: PROVIDE MIN 15M@1200 c/c x 600 LONG VERTICAL DOWELS WITH MIN 150 EMBEDMENT INTO SOG.

10. MASONRY WALLS SHALL BE ADEQUATELY BRACED TO RESIST WIND PRESSURE AND OTHER LATERAL FORCES DURING CONSTRUCTION.

11. PROVIDE LINTELS OVER ALL OPENINGS OR RECESSES IN MASONRY WALLS INCLUDING THOSE FOR MECHANICAL AND ELECTRICAL SERVICES OR EQUIPMENT.

12. PROVIDE ADDITIONAL 1-15M VERTICAL FULL HEIGHT COMPLETE WITH MATCHING DOWELS AT CORNERS, INTERSECTIONS, EACH SIDE OF OPENINGS, AND EACH SIDE OF CONTROL JOINTS. (UNO)

13. PROVIDE REINFORCING DOWELS INTO FOUNDATION TO MATCH VERTICAL REINFORCING IN BLOCK WALLS. 600 LAP FOR 15M, 800 LAP FOR 20M.

14. MASONRY WALLS SHOWN ON STRUCTURAL DRAWINGS ARE LOAD BEARING (UNO).

15. FULLY GROUT CONCRETE MASONRY BLOCK CELLS THAT HAVE REINFORCEMENT.

16. PROVIDE CHASES AND POCKETS IN WALLS FOR STRUCTURAL STEEL BEARING AND INSTALL ALL BEARING PLATES.

17. BLOCK IN SOLID AROUND ALL BEAM AND CHANNEL BEARING LOCATIONS IN MASONRY WALLS.

18. GROUT SOLID 2 BLOCK COURSES BELOW CONCENTRATED LOADS BEARING SUPPORTS OR AS NOTED OTHERWISE.

19. NO MASONRY WORK PERMITTED WITH TEMPERATURES BELOW 5°C UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK. SEE SPECIFICATIONS FOR SPECIAL PROVISIONS.

20. HIGH LIFT GROUTING IS NOT PERMITTED. MAXIMUM HEIGHT OF GROUT POUR SHALL BE 1.5m.

21. PROVIDE CONTINUOUS BOND BEAM AT TOP OF ALL MASONRY WALLS REINFORCED WITH 2-15M CONTINUOUS.

22. THICKEN SLAB-ON-GRADE UNDER ALL MASONRY WALLS PER TYPICAL DETAILS.

23. PROVIDE LATERAL SUPPORT AT TOP OF ALL MASONRY WALLS. SEE TYPICAL DETAILS.

STRUCTURAL STEEL

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL IN ACCORDANCE WITH CSA S16-19 EDITION.
2. MATERIAL:
  - STRUCTURAL WIDE FLANGE SHAPES (W) AND PLATES (PL) TO CSA 40.20/G40.21-13 GRADE 350W.
  - ANGLES (L) AND CHANNELS (C) TO CSA 40.20/G40.21-13 GRADE 300W
  - HOLLOW STRUCTURAL SECTIONS (HSS) TO CSA 40.20/G40.21-13 350W/ CLASS C UNLESS NOTED OTHERWISE .
3. USE ASTM F3125 GRADE A325 OR A325M BOLTS FOR ALL FIELD BOLTED CONNECTIONS; M20 MINIMUM DIAMETER (UNO) C/W DOUBLE NUTS AND ONE (1) HARDENED WASHER; MINIMUM TWO (2) BOLTS PER CONNECTION. GALVANIZED WHERE STEEL GALVANIZED.
4. CONTRACTOR SHALL SUBMIT TO DCC REPRESENTATIVE FOR REVIEW STRUCTURAL SHOP DRAWINGS SHOWING FRAMING, CONNECTION DETAILS, ETC., STAMPED BY A PROFESSIONAL ENGINEER, LICENSED TO PRACTICE IN ONTARIO.
5. FIELD CHECK ALL DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF STEEL.
6. EXTERIOR EXPOSED STEEL SHALL BE HOT-DIP GALVANIZED. ANCHOR RODS, CONNECTIONS AND HARDWARE SHALL BE HOT-DIP GALVANIZED OR STAINLESS STEEL. TOUCH-UP DAMAGED SURFACES WITH ZINC-RICH PRIMER. ALL INTERIOR/NON-EXPOSED STEEL SHALL BE SHOP PRIMED (UNO).
7. WELDING SHALL CONFORM TO THE CSA SPECIFICATION W59-13 USING E480XX ELECTRODES, AND TO BE UNDERTAKEN BY A FABRICATOR FULLY APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA SPECIFICATION W47.1-09. MIN. WELD SIZE=6mm CONTINUOUS FILLET WELD UNO. ALL EXPOSED WELDS SHALL BE GROUND SMOOTH AND MADE GOOD.
8. ALL CONNECTIONS SHALL BE WELDED U.N.O.
9. BURNING OF HOLES WILL AND FLAME / TORCH CUTTING OF STRUCTURAL STEEL SHALL NOT BE PERMITTED.
10. PROVIDE 6.4mm THK CAP PLATES AT THE ENDS OF ALL HSS SECTIONS (UNO).
11. ANCHOR BOLTS TO ASTM F1554, GRADE 55 ksi, GALVANIZED.
12. ALL ANCHOR BOLTS SHALL BE CAST IN CONCRETE UNO.

STEEL DECK

1. DESIGN, FABRICATION AND ERECTION TO CSA S16 AND CSA S136.
2. MATERIAL: ASTM A653M, GRADE 33 (230 MPa) OR HIGHER.
3. SUBMIT DESIGN BRIEFS, ERECTION AND SHOP DRAWINGS TO THE CONSULTANT FOR REVIEW.
4. DESIGN FOR MINIMUM 3-SPAN CONTINUOUS AND SPANNING IN DIRECTION SHOWN (UNO).
5. REINFORCE OPENINGS UP TO 300 mm BY DECK SUPPLIER. REINFORCE OPENINGS 300 TO 1200 ALL SIDES WITH C150x12. SEE DRAWINGS FOR REINFORCING WHERE OPENINGS ARE LARGER THAN 1200 mm. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR OPENINGS SIZE AND LOCATIONS (UNO).

6. PROVIDE CLOSURE ANGLE ALL AROUND STEEL DECK:
  - ROOF: 10 mm THK BENT PLATE; MIN 76 VERT AND HORIZ LEGS; SIZE TO SUIT.

7. DESIGN AND INSTALL STEEL DECK FOR DIAPHRAGM ACTION IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE CANADIAN SHEET STEEL BUILDING INSTITUTE. DESIGN DIAPHRAGM AND CONNECTORS FOR G=9000 kN/m (MIN), Q=8 kN/m (MIN), AND SHEAR FORCE SHOWN ON DRAWINGS.

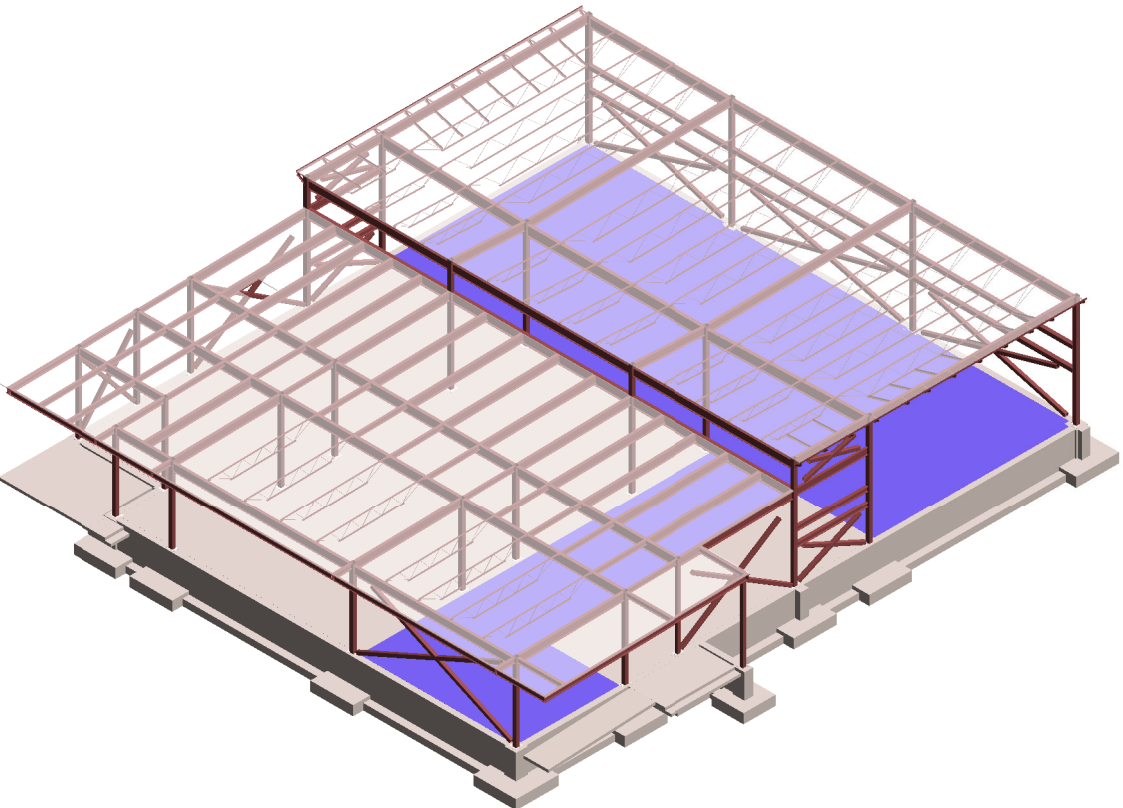
8. BASIS OF DESIGN: CANAM P-3615/3606, TYPE 20, 1.22 THICK, TRIPLE SPAN.

OPEN WEB STEEL JOISTS

1. STEEL JOISTS SHALL BE MANUFACTURED FROM HOT ROLLED STEEL SUITABLE FOR WELDING CONFORMING TO CSA G40.20-13/G40.21-13 OR COLD FORMED STEEL SECTIONS TO CSA S136-12.
2. DESIGN, FABRICATION AND ERECTION OF STEEL JOISTS TO CSA S16.
3. PROVIDE HORIZONTAL BRIDGING IN ACCORDANCE WITH CSA S16.
4. JOISTS DESIGNATED AS T.J. (TIE JOIST) HAVE BOTTOM CHORDS EXTENDED AND CONNECTED TO SUPPORTING MEMBERS AT EACH END OR BOTTOM FLANGE OF SUPPORTING BEAM AT EACH END.
5. MAXIMUM LIVE LOAD DEFLECTION: ROOFS: SPAN/360.
6. PROVIDE HEADERS OF ADEQUATE STRENGTH AND SIZE FOR JOIST SUPPORT AT OPENINGS.
7. VERIFY SIZE AND LOCATION OF ALL OPENINGS PRIOR TO FABRICATION OF JOISTS AND HEADERS.
8. TOP AND BOTTOM CHORDS SHALL BE CONTINUOUS WITHOUT ANY SPLICED MATERIAL.
9. BEFORE STEEL DECK IS PLACED, ATTACH ALL BRIDGING TO THE JOISTS AND ANCHOR ALL BRIDGING TERMINATING AT WALLS AND BEAMS. WELD OR BOLT ALL BRIDGING CONNECTIONS TO STEEL JOISTS AND BEAMS.
10. DESIGN FOR ALL SUSPENDED AND CONCENTRATED LOADS. COORDINATE SUSPENDED AND CONCENTRATED LOADS WITH ALL DISCIPLINE DRAWINGS.
11. PROVIDE CONNECTIONS FOR JOISTS.
12. PROVIDE 100mm DEEP SHOES FOR OWSJ U.N.O.
13. DESIGN JOISTS AND BRACING FOR FALL ARREST ANCHORS INDICATED ON THE DRAWINGS. SEE TYPICAL DETAILS FOR LOADING. LOADING CAN BE APPLIED IN ANY LATERAL DIRECTION.

STRUCTURAL ABBREVIATION LIST

AB	ANCHOR BOLT
ADDL	ADDITIONAL
BOT	BOTTOM
BF	BOTTOM FACE
BL	BOTTOM LOWER LAYER
BUL	BOTTOM UPPER LAYER
BM	BEAM
C/W	COMES WITH
CANT	CANTILEVER
CI	FACTORED AXIAL COMPRESSION
CL	CENTER TO CENTER
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEARANCE, CLEAR
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DB	DIAGONAL BRACE
DIA	DIAMETER
DWG	DRAWING
DWLS	DOWELS
EA	EACH
EE	EACH END
EF	EACH FACE
EL, ELEV	ELEVATION
ES	EACH SIDE
EW	EACH WAY
EJ	EXPANSION JOINT
EX, EXIST	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FF	FAR FACE
FFP	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FTG	FOOTING
GL	GRIDLINE
GALV	GALVANIZED (HOT DIP)
GRAN	GRANULAR
HORIZ	HORIZONTAL
HEF	HORIZONTAL EACH FACE
HFF	HORIZONTAL FAR FACE
HIF	HORIZONTAL INSIDE FACE
HK	HOOK
HNF	HORIZONTAL NEAR FACE
HOF	HORIZONTAL OUTSIDE FACE
HP	HIGH POINT
HSC	HORIZONTAL SLOTTED CONNECTION
IF	INSIDE FACE
INT	INTERIOR
IJ	ISOLATION JOINT
LG	LONG
LONG.	LONGITUDINAL
LP	LOW POINT
M&E	MECHANICAL AND ELECTRICAL
M&E	FACTORED MOMENT
MAX	MAXIMUM
MIN	MINIMUM
NF	NEAR FACE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTER DIAMETER
OF	OUTSIDE FACE
o/o	OUT TO OUT
OPNG	OPENING
OWSJ	OPEN WEB STEEL JOIST
PF	FACTORED POINT LOAD
PL	PLATE
R/W	REINFORCED WITH
REINF.	REINFORCE / REINFORCEMENT
SIM	SIMILAR
SLS	SERVICEABILITY LIMIT STATES
SOG	SLAB ON GRADE
SPECS	SPECIFICATIONS
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
SO	SQUARE
SS	STAINLESS STEEL
ST	STEEL
STD	STANDARD
STIF	STIFFENER
T&B	TOP & BOTTOM
TBC	TO BE CONFIRMED
TEW	TOP EACH WAY
TF	TOP FACE
TI	FACTORED AXIAL TENSION
THK	THICK
TLL	TOP LOWER LAYER
T/O	TOP OF
TOC	TOP OF CONCRETE OR TOP OF CURB
TOF	TOP OF FOOTING/FLOOR
TOS	TOP OF STEEL
TOW	TOP OF WALL
TUL	TOP UPPER LAYER
TYP	TYPICAL
U.N.O., UNO	UNLESS NOTED OTHERWISE
ULS	ULTIMATE LIMIT STATE
US	UNDER SIDE OF
VF	FACTORED SHEAR
VEF	VERTICAL EACH FACE
VFF	VERTICAL FAR FACE
VIF	VERTICAL INSIDE FACE
VNF	VERTICAL NEAR FACE
VOF	VERTICAL OUTSIDE FACE
VSC	VERTICAL SLIDING CONNECTION
W/	WITH



**AECOM Canada Ltd.**  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario N2F 0A4

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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
**5 LINCOLN STREET**  
**WELLAND, ONTARIO**

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Mark	Date	Description
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Revision History

Filename : Version: 2020.2.5

Project Number : 60686829 Project Manager :

Project Administrator : BIM/VDC Manager :

Sustainability Target : IPMS 1 (m²) : IPMS 2 (m²) :

Designed : A.C. Date (yyyy-mm-dd) :

Drawn : D.W. Date (yyyy-mm-dd) :

Reviewed : Date (yyyy-mm-dd) :

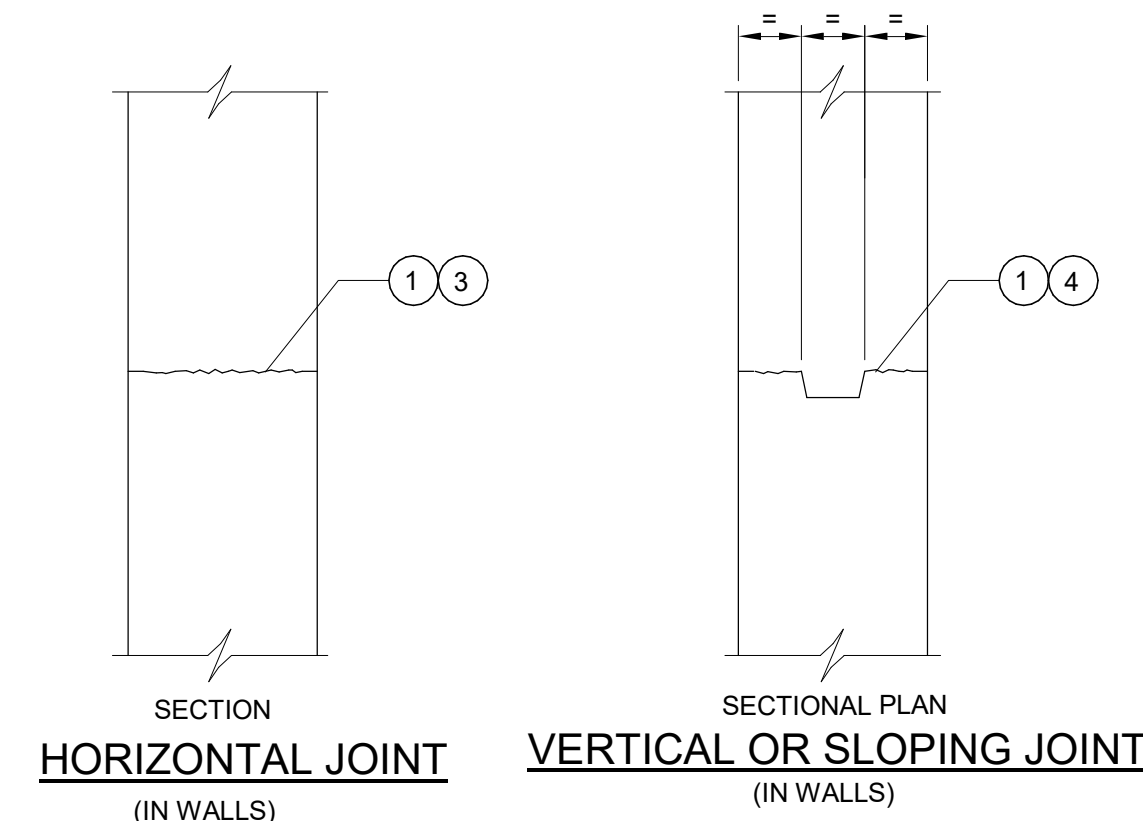
Checked : A.C. Date (yyyy-mm-dd) :

Approved : Date (yyyy-mm-dd) :

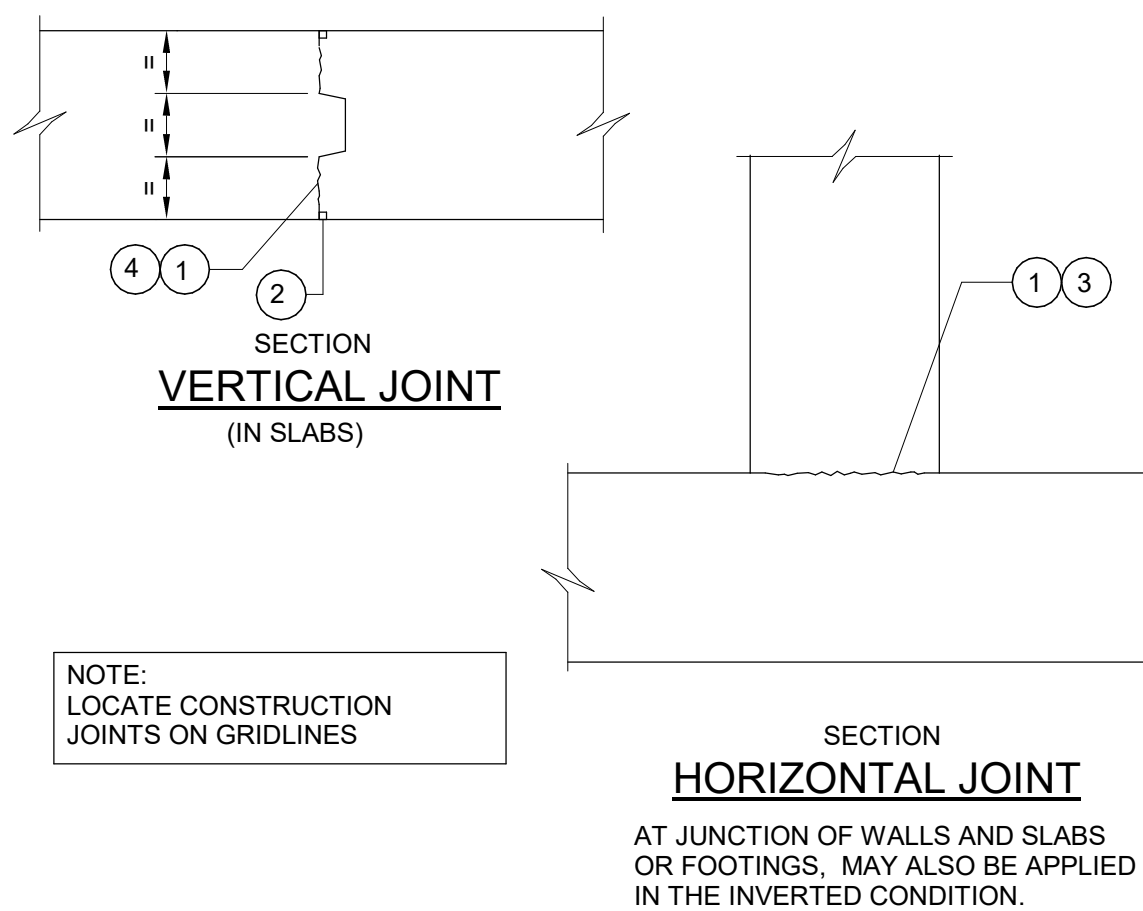
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STRUCTURAL GENERAL NOTES



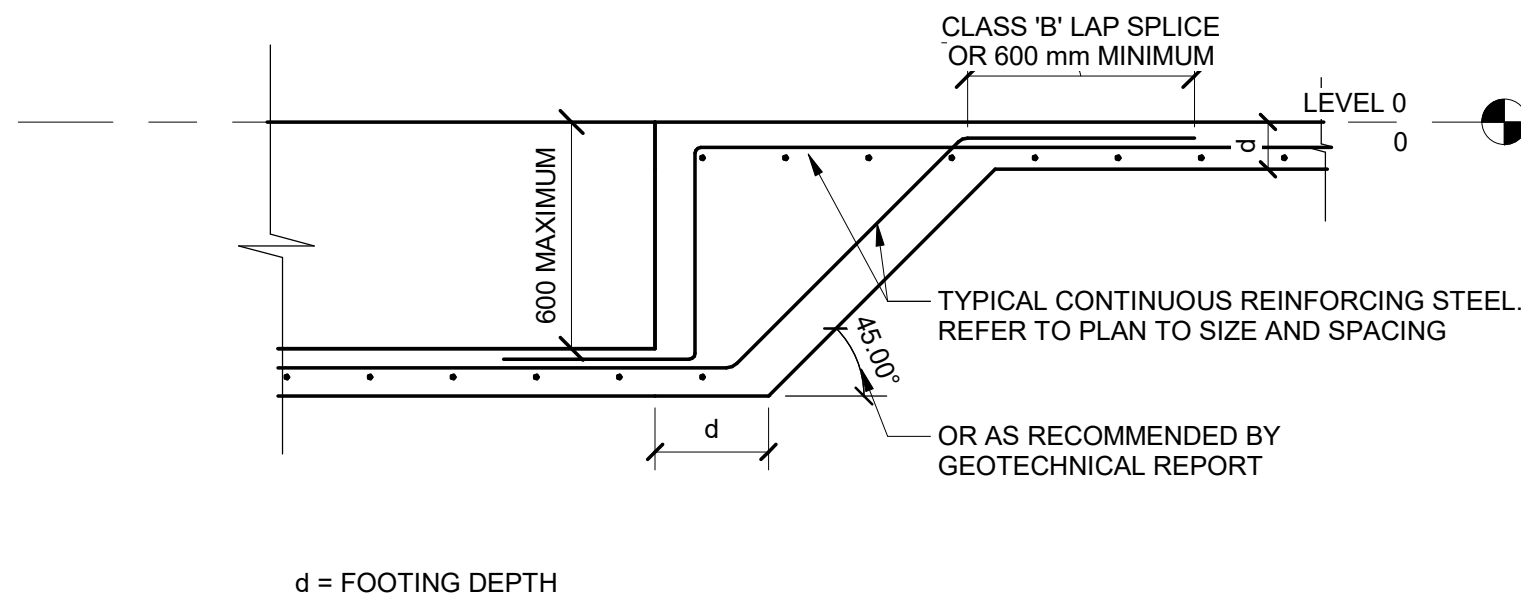


- 1 CLEAN FIRST POUR SURFACE THOROUGHLY BEFORE SECOND POUR.
- 2 20mm SQUARE REGLET IN FIRST POUR FOR CLASS 1 FINISH AREAS.
- 3 THE SURFACE TO BE ROUGHENED TO A FULL AMPLITUDE OF 6mm BETWEEN POURS AT HORIZONTAL JOINTS.
- 4 FORM JOINTS AT VERTICAL AND SLOPING JOINTS.

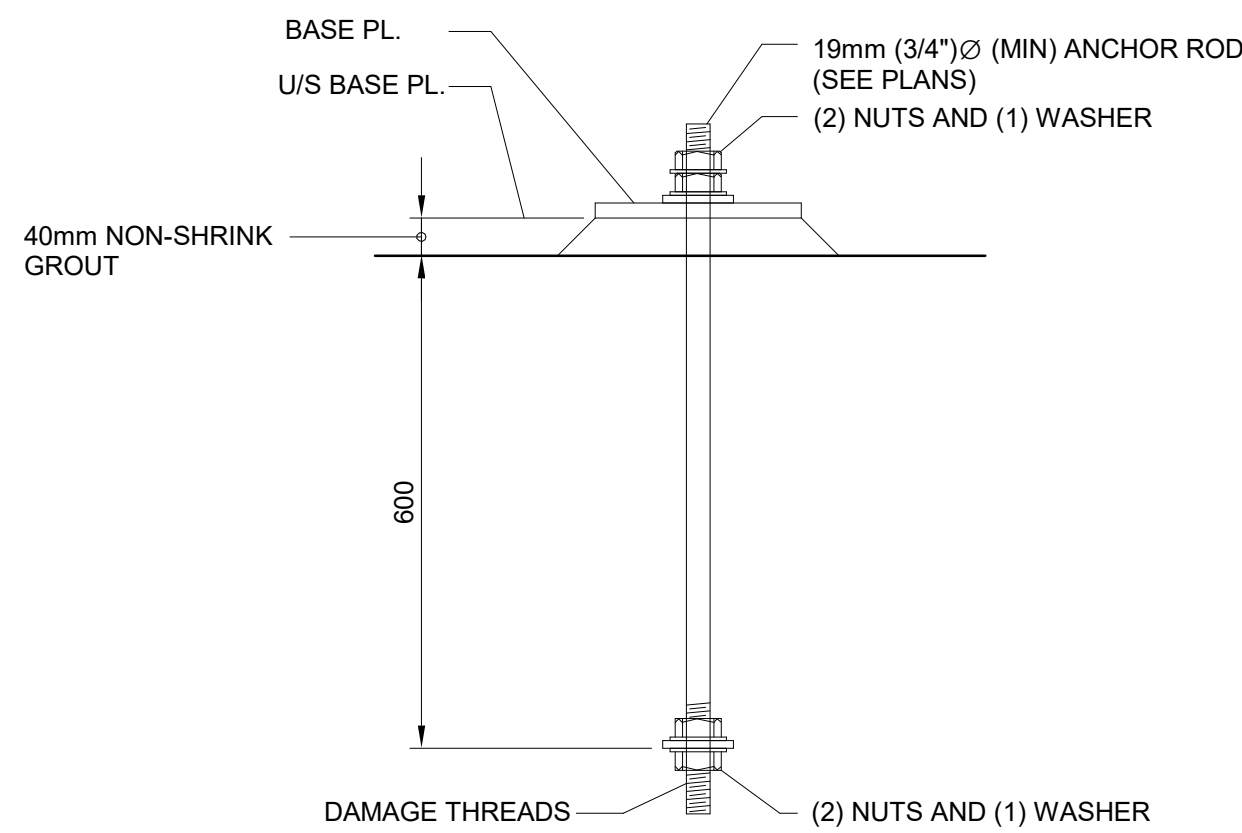


NOTE:  
LOCATE CONSTRUCTION JOINTS ON GRIDLINES

### CONSTRUCTION JOINT DETAIL



### TYPICAL FOUNDATION STEP DETAIL

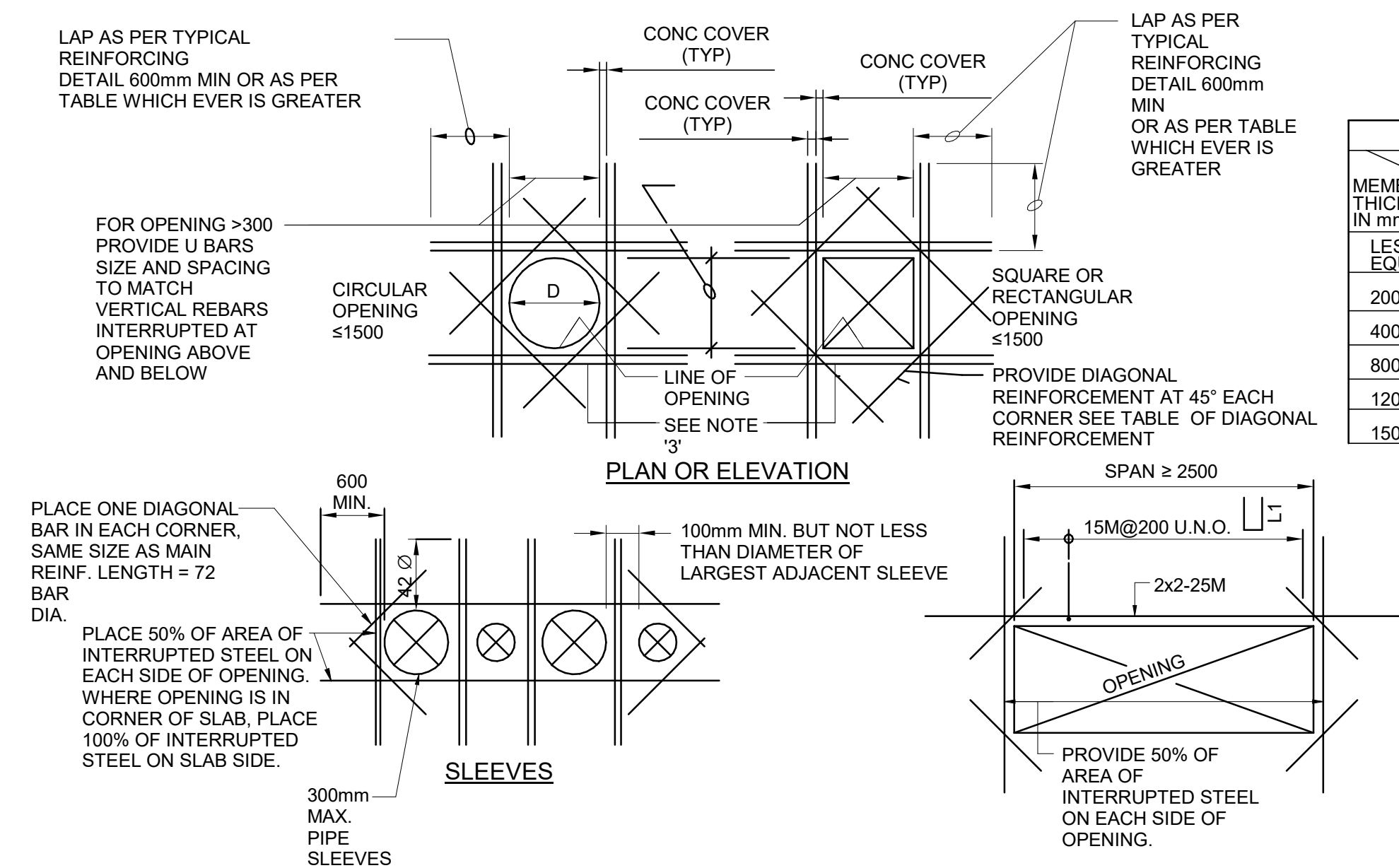


#### NOTES:

1. CONTRACTOR TO PROVIDE MIN. 4 ANCHOR RODS PER BASE PLATE INCLUDING NUTS AND WASHERS.
2. CONTRACTOR TO SITE VERIFY AND CONFIRM ANCHOR ROD LOCATIONS.
3. CONTRACTOR TO CONFIRM REQUIRED THREADED LENGTH.
4. ALL ANCHOR BOLTS SHALL BE CAST IN CONCRETE UNO.
5. CONTRACOR TO ENSURE THAT ANCHOR BOLTS FOR RECESSED COLUMNS DO NOT EXTEND ABOVE THE TOP OF SLAB-ON-GRADE.
6. BURR THREADS OF THE BOLTS TO PREVENT THEM FROM WORKING LOOSE AFTER BOLTING IS COMPLETED AND FINAL.
7. GALVANIZE ALL ANCHOR RODS, NUTS AND WASHERS.

### TYPICAL ANCHOR ROD DETAIL

N.T.S.

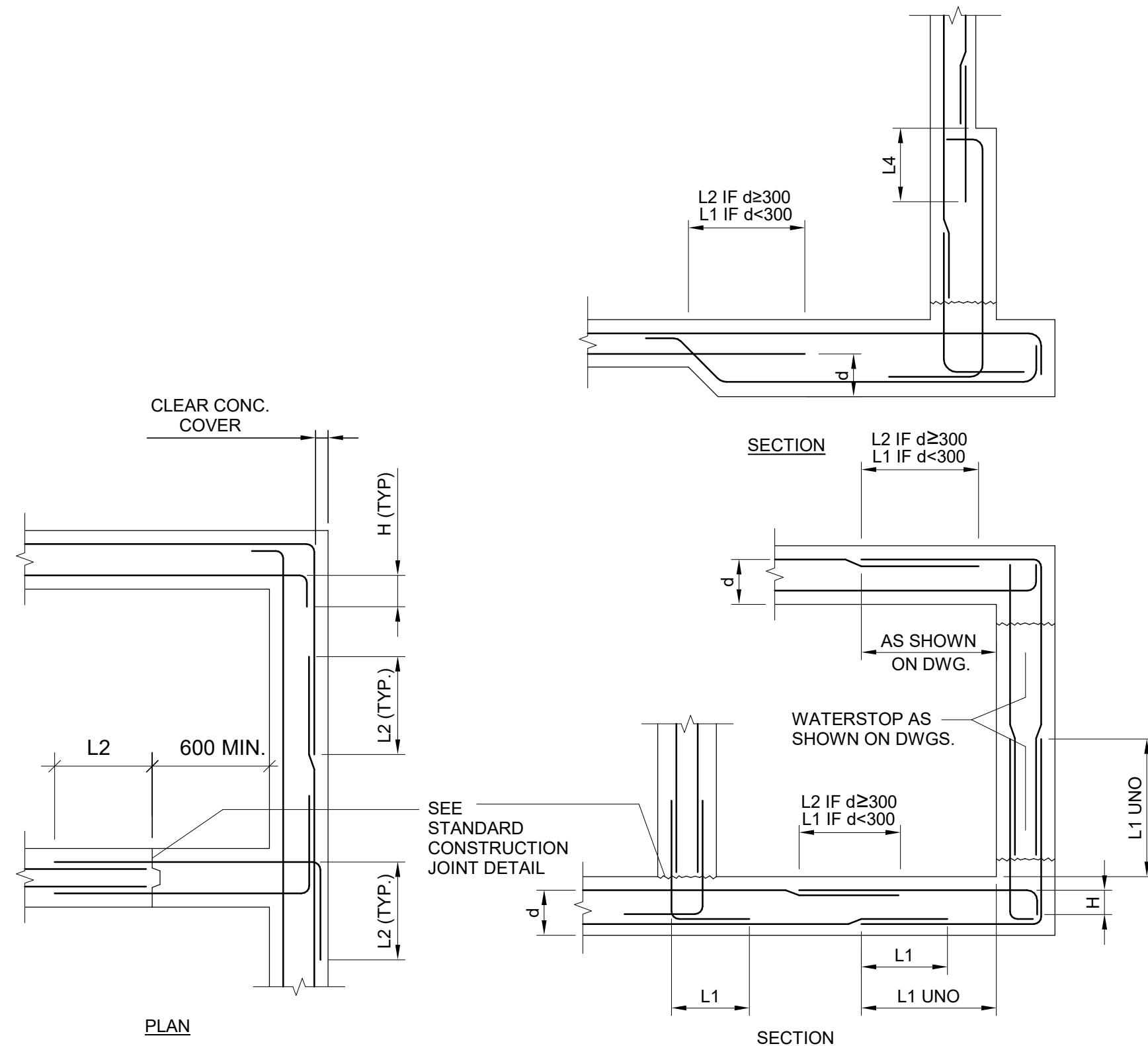


### TYPICAL ADD'L REINFORCING TO OPENINGS IN CONCRETE WALLS AND SLABS

MEMBER THICKNESS IN mm	TABLE OF DIAGONAL REINFORCEMENT				
	LARGEST OPENING DIMENSION IN mm				
	LESS THAN 300	300 TO 900	900 TO 1200	1200 TO 1500	1500 AND LARGER
LESS THAN OR EQUAL TO 200	NONE	2-15Mx1220 EF	2-15Mx1220 EF	2-20Mx1220 EF	2-20Mx1220 EF
200 TO 400	NONE	2-15Mx1220 EF	2-15Mx1220 EF	2-20Mx1220 EF	2-20Mx1220 EF
400 TO 800	NONE	2-20Mx1220 EF	2-20Mx1220 EF	2-25Mx1375 EF	2-25Mx1375 EF
800 TO 1200	NONE	2-20Mx1220 EF	2-25Mx1375 EF	2-25Mx1375 EF	2-25Mx1525 EF
1200 TO 1500	NONE	2-25Mx1375 EF	2-25Mx1375 EF	2-25Mx1525 EF	2-25Mx1525 EF
1500 AND LARGER	NONE	2-25Mx1375 EF	2-25Mx1525 EF	2-25Mx1525 EF	2-30Mx1850 EF

#### NOTES:

1. UNLESS NOTED OTHERWISE ON PLANS AND SECTIONS, REINFORCE AROUND OPENINGS AS SHOWN IN TABLE.
2. DO NOT MAKE OPENINGS LARGER THAN THE MAXIMUM DIMENSIONS NOTED BELOW WITHOUT PRIOR APPROVAL FROM THE CONSULTANT OR UNLESS NOTED ON STRUCTURAL DRAWINGS.
3. PLACE 50% OF AREA OF INTERRUPTED STEEL ON EACH SIDE EACH FACE OF 2-15M ES EF, WHICHEVER IS GREATER. WHERE OPENING IS IN CORNER OF SLAB, PLACE 100% OF INTERRUPTED STEEL ON SLAB SIDE (TYP UNO).
4. FOR OPENINGS LESS THAN 400mm. NO EXTRA BARS ARE REQUIRED ADJUST REGULAR REINFORCING AROUND OPENINGS.
5. SPACING BETWEEN OPENINGS SHALL BE EQUAL TO OR GREATER THAN OPENING SIZE.
6. THIS DETAIL ALSO APPLIES AT PIPE OPENINGS.



### TYPICAL ARRANGEMENTS

TABLE OF CLEAR CONCRETE COVER (+5mm MAX. TOLERANCE)				
EXPOSURE CONDITION CSA DEFINITIONS (SEE SPECS.)	NOTE 1.1 N	NOTE 1.2 F-1, F-2, S-1, S-2	NOTE 1.3 C-XL, C-1, C-3, A-1, A-2, A-3	NOTES: 1.1 CONSTANTLY DRY, NOT EXPOSED TO CHLORIDES, FREEZING AND THAWING 1.2 EXPOSURE TO WEATHER; FREEZING AND THAWING. (NOT EXPOSED TO CHLORIDES) 1.3 EXPOSURE TO CHLORIDES AND ALL SEVERE ENVIRONMENTS WITH OR WITHOUT FREEZING AND THAWING
REINF. IN FORMED CONCRETE 30M BARS AND SMALLER 35M BARS	30 mm 40 mm	40 mm 55 mm	60 mm 70 mm	
COLUMNS, SLABS 30M BARS AND SMALLER 35M BARS	50 mm 50 mm	50 mm 55 mm	60 mm 70 mm	
COARSE AGGREGATE MAX. SIZE	20 mm	20 mm	20 mm	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.		75 mm		

TABLE OF REINFORCEMENT LAP SPLICES, HOOK AND DEVELOPMENT LENGTHS Fy = 400 MPa - fc' ≥ 30 MPa					
BAR SIZE	CLASS B TENSION LAP		HOOK	CLASS B TENSION DEVELOPMENT LENGTH	
	STANDARD LAP	TOP BARS		STANDARD	TOP BARS
	L1	L2	H		
10M	400	500	180	260	340
15M	600	700	260	390	510
20M	700	900	310	530	690
25M	1100	1400	400	820	1070
30M	1300	1700	510	990	1290
35M	1500	2000	610	1150	1500

NOTES:

- 2.1 ALL LENGTHS AND DIMENSIONS ARE IN MILLIMETERS.
- 2.2 TOP BAR REFERS TO REINF. WITH 300mm OR MORE CONCRETE BELOW IT.  
HORIZONTAL BARS IN WALLS ARE TOP BARS.
- 2.3 REINFORCING DETAILS FOR COLUMNS AND BEAMS AS SHOWN ON DRAWINGS.
- 2.4 MECHANICAL SPLICES AND COATED BARS AS SPECIFIED AND SHOWN ON DRAWINGS.

### STANDARD REINFORCING DETAILS

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NORTH:

Niagara Region



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Mark	Date	Description
Revision History		
Filename :	Version: 2020.2.5.	
Project Number : 60686829	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed : A.C.	Date (yyyy-mm-dd) :	
Drawn : D.W.	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : A.C.	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	

Title:

TYPICAL DETAILS (1)

Page Size: ANSI D  
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Sheet: S002  
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of: 1



### PLAN - INTERIOR COLUMNS

**PLAN - EXTERIOR COLUMNS**

## SECTION

### TYPICAL ISOLATION JOINT DETAIL AROUND RECESSED COLUMN

### TYPICAL ARRANGEMENT OF PIER

## PIPE INSTALLED THROUGH FOUNDATION WALL

## PIPE INSTALLED UNDER A STRUCTURE

## EARTHWORKS DETAIL AT STRUCTURES

N.T.S.

### CONTROL JOINT-SAWCUT DETAIL

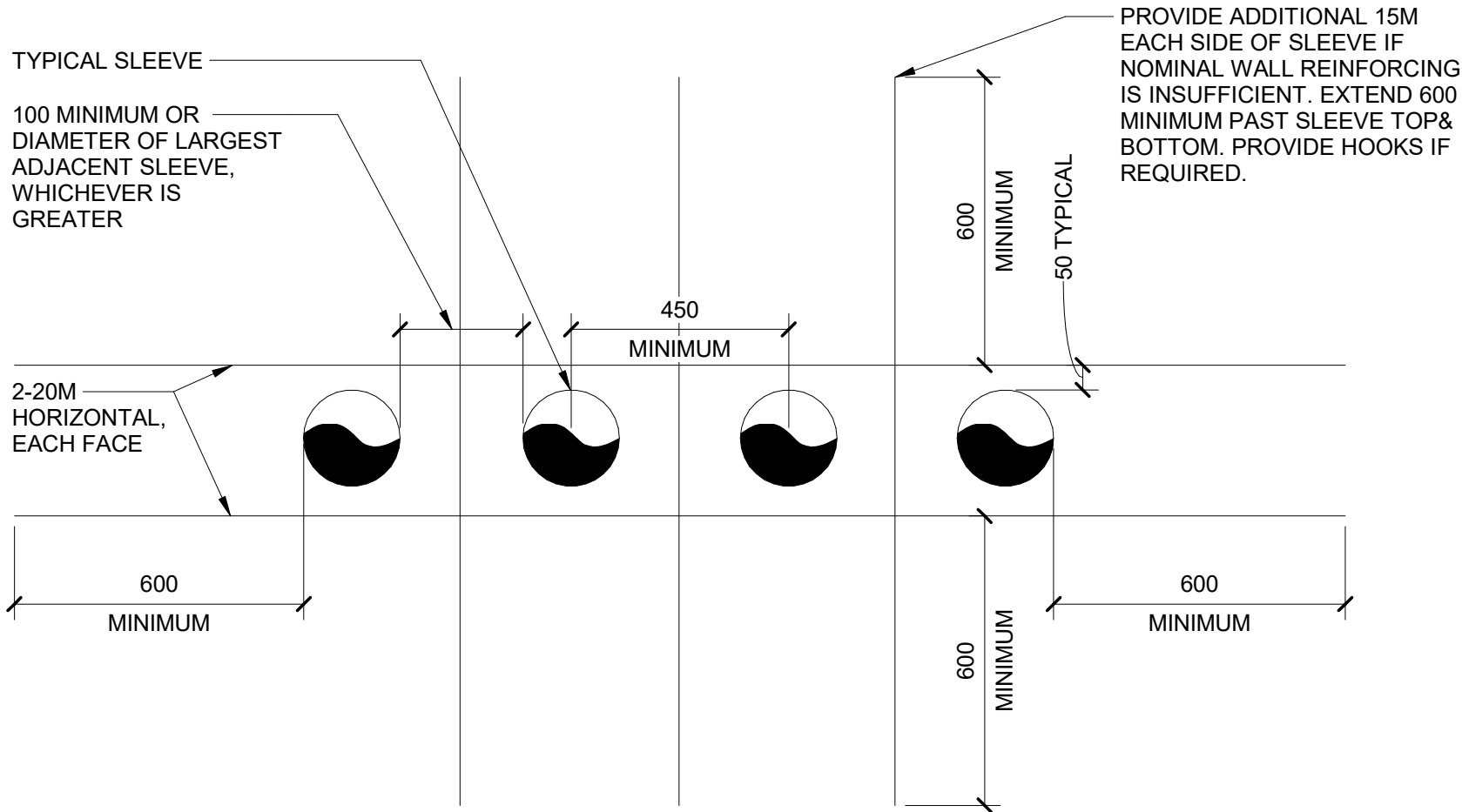
SECTION

## PLAN

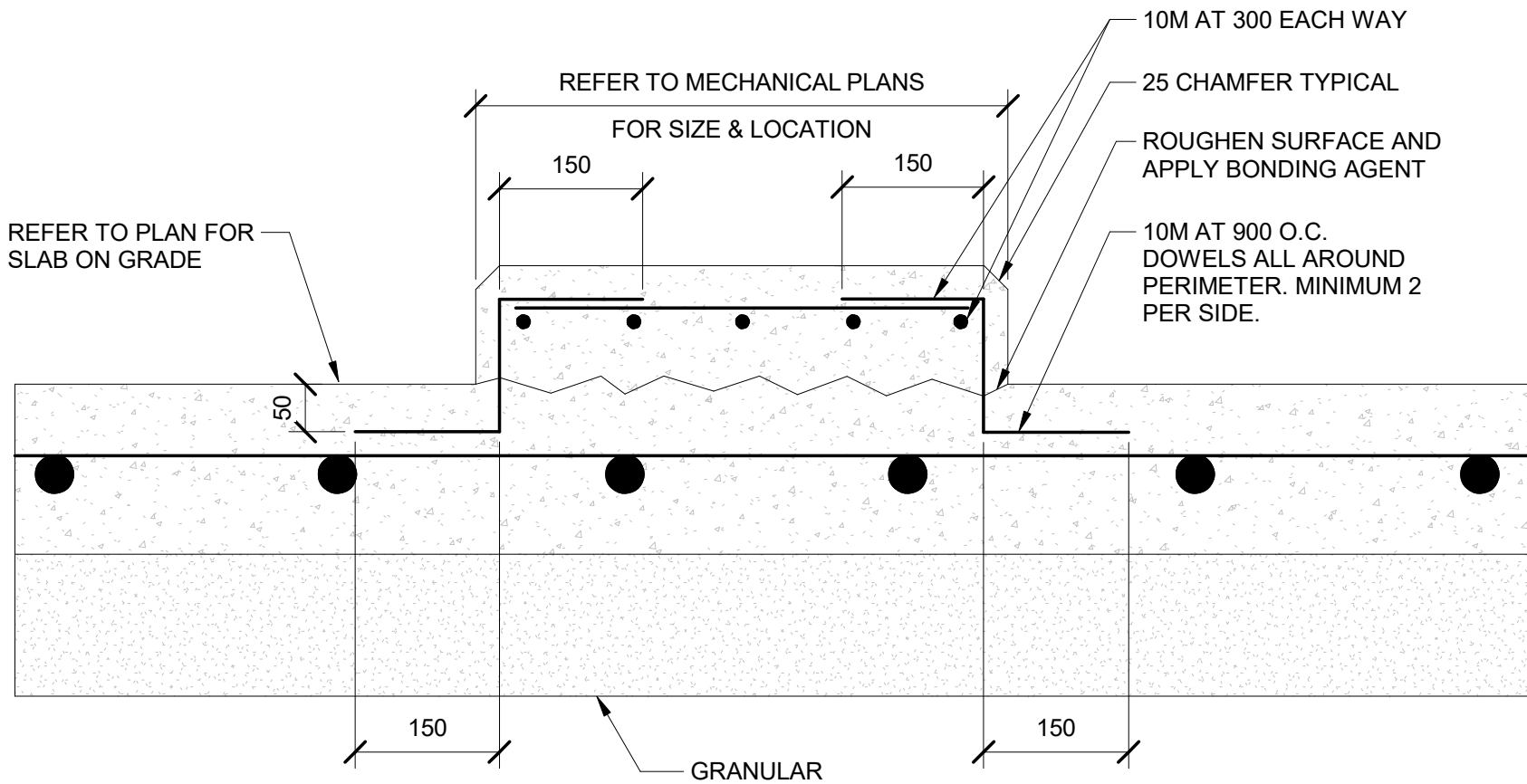
## TYPICAL ISOLATION JOINT DETAILS



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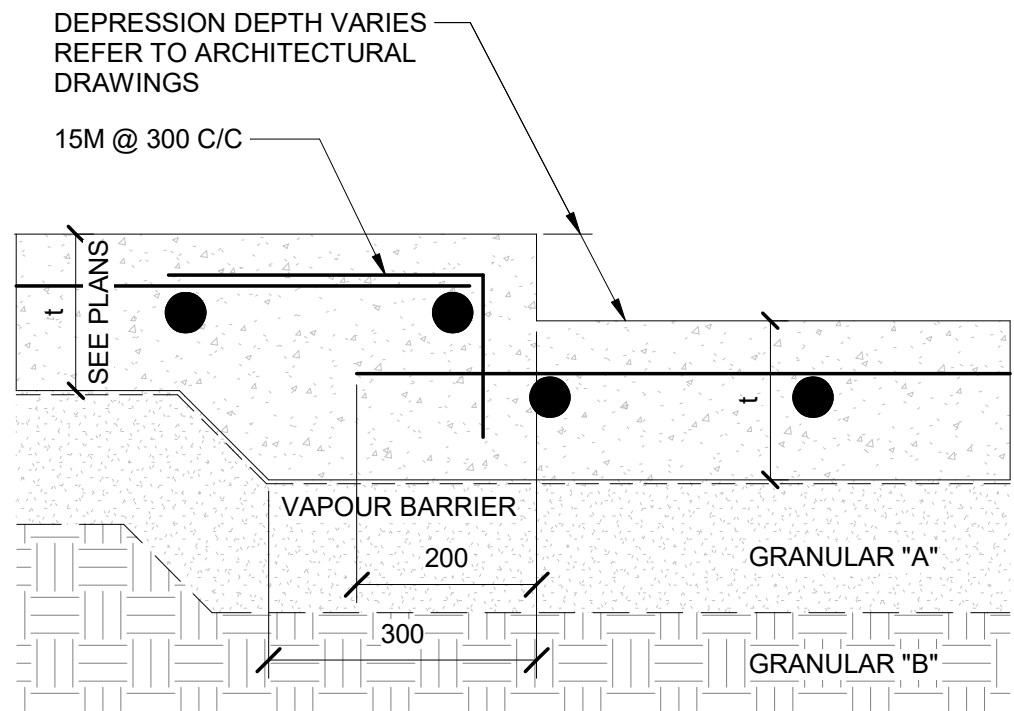


PIPE SLEEVES THROUGH FOUNDATION WALL

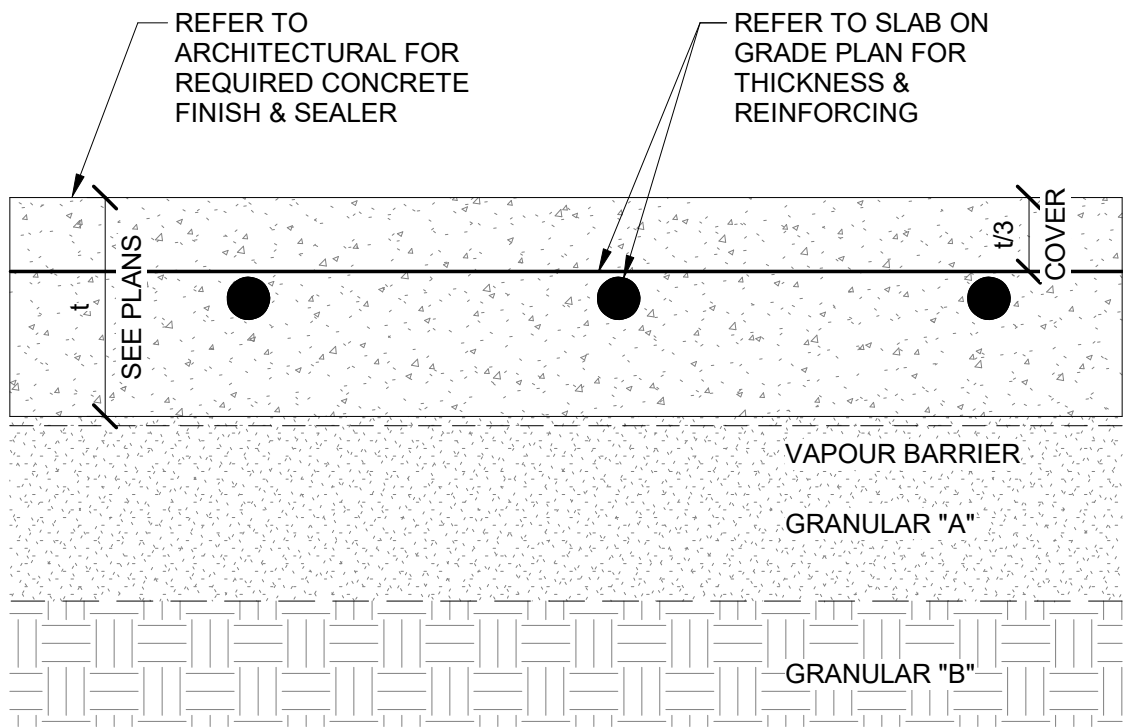


- NOTES:
1. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL FOR PADS NOT SHOWN ON STRUCTURAL DRAWINGS. WHERE SLAB PREVIOUSLY POURED DRILL AND EPOXY GROUT USING HILTI EPOXY SYSTEM.
  2. FOR PADS LESS THAN 100, USE 152X152 WWF AND MAINTAIN DOWELS.

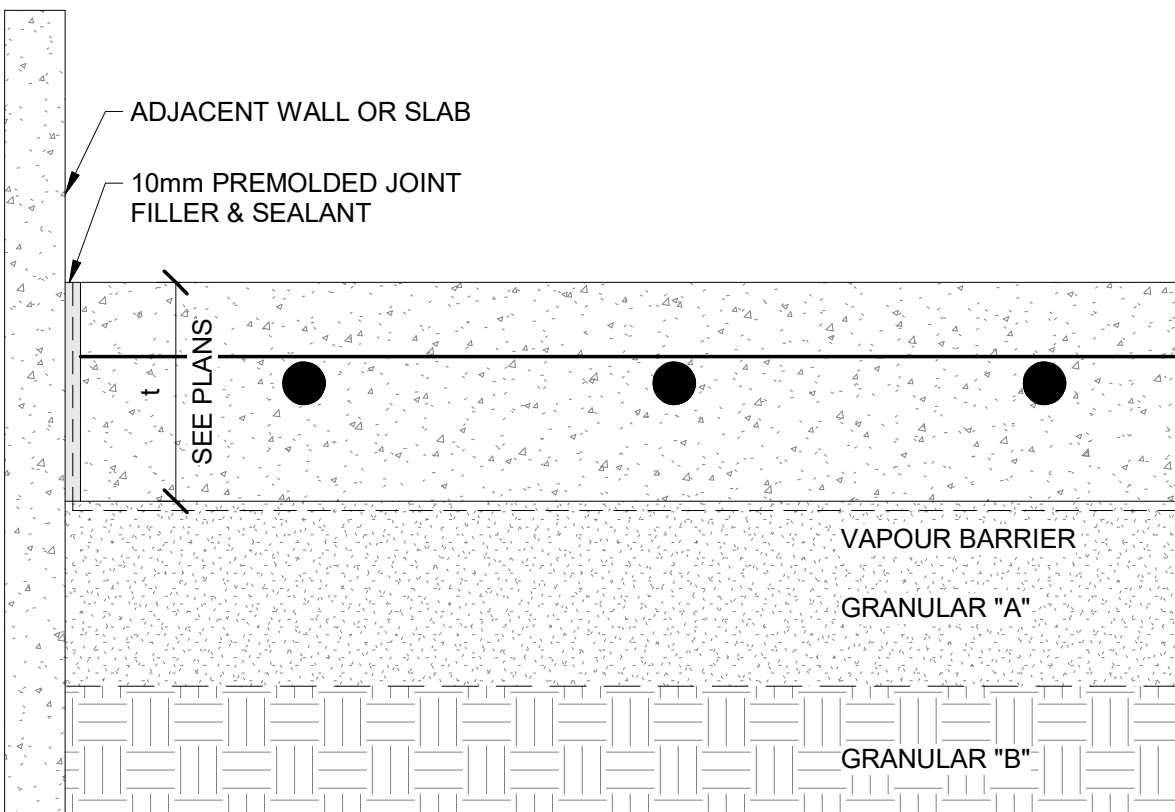
HOUSEKEEPING PAD



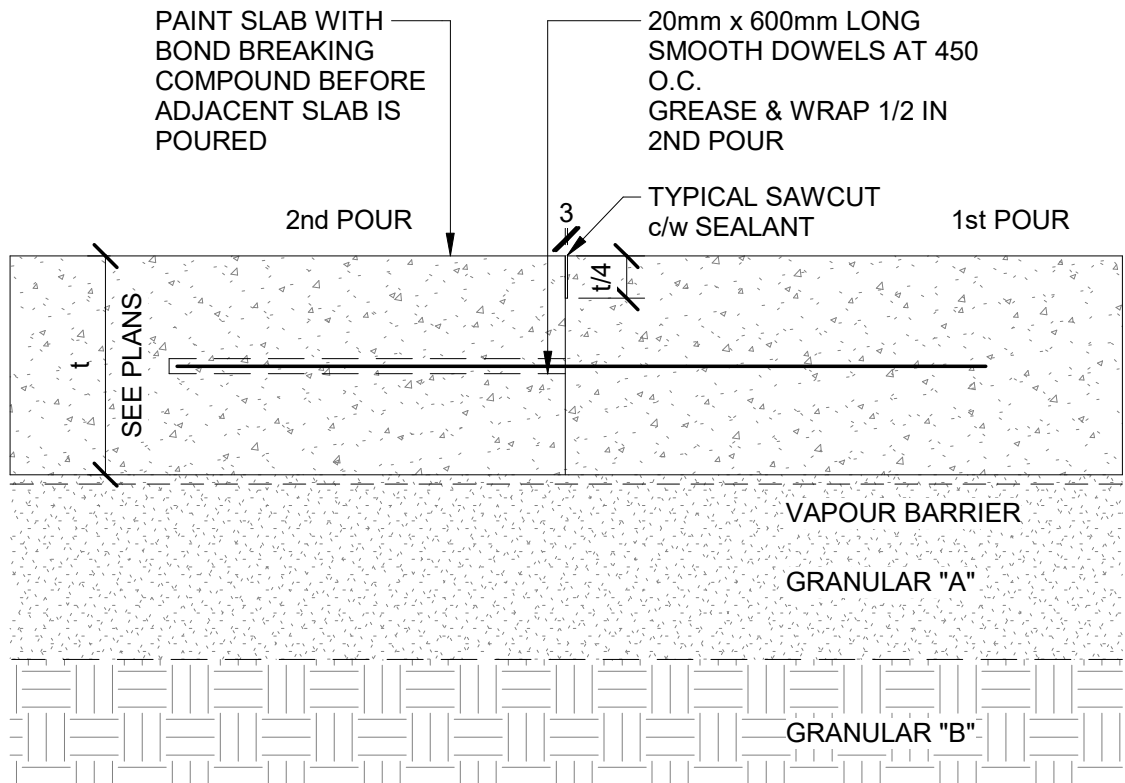
SLAB ON GRADE  
TYPICAL SLAB DEPRESSION AT DOORS



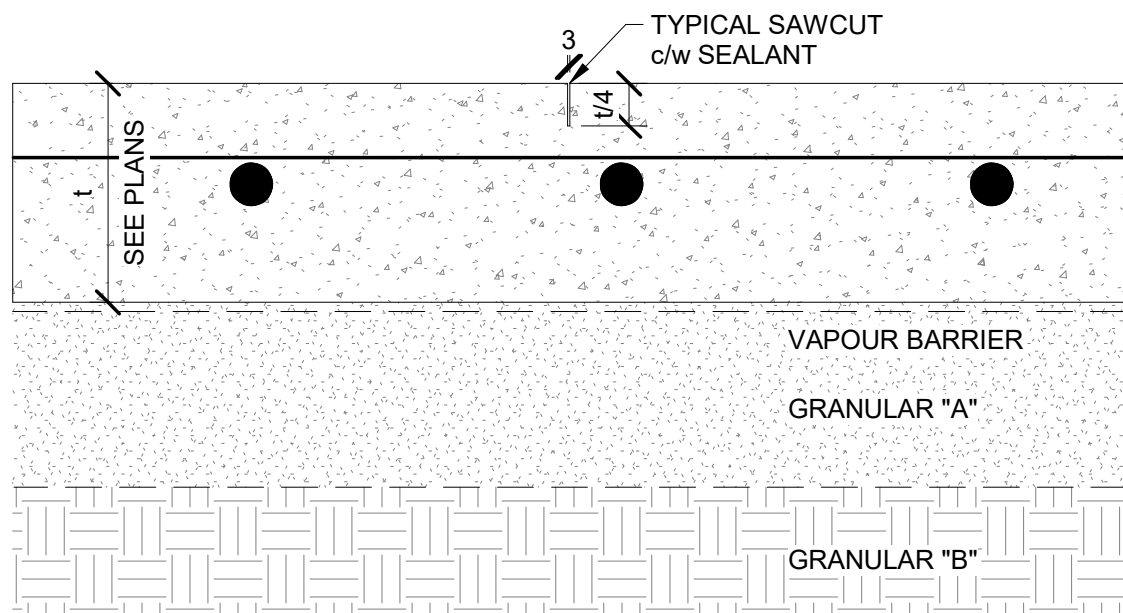
INTERIOR SLAB ON GRADE



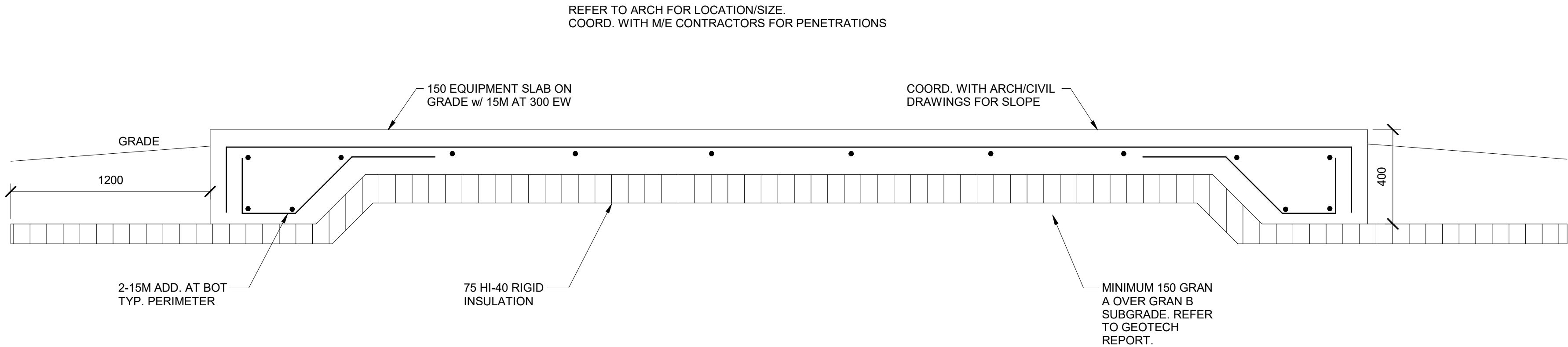
SLAB ON GRADE ISOLATION JOINT



SLAB ON GRADE CONSTRUCTION JOINT



SLAB ON GRADE SAW CUT



EXTERIOR EQUIPMENT SLAB (FOR ELECTRICAL GENERATOR)

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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:  
60686829

Owner's Contract Number:  
987654321

Mark	Date	Description
4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Revision History	
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Project Number: 60686829	Project Manager:
Project Administrator:	BIM/MVDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: A.C.	Date (yyyy-mm-dd):
Drawn: D.W.	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: A.C.	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

Title:

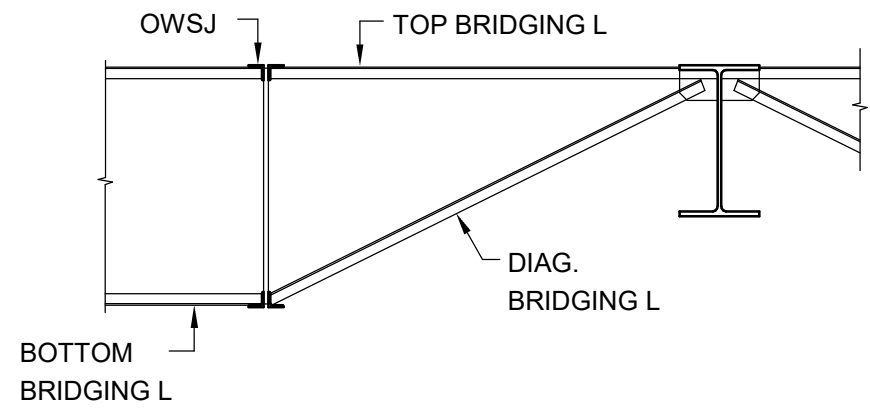
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of: 3

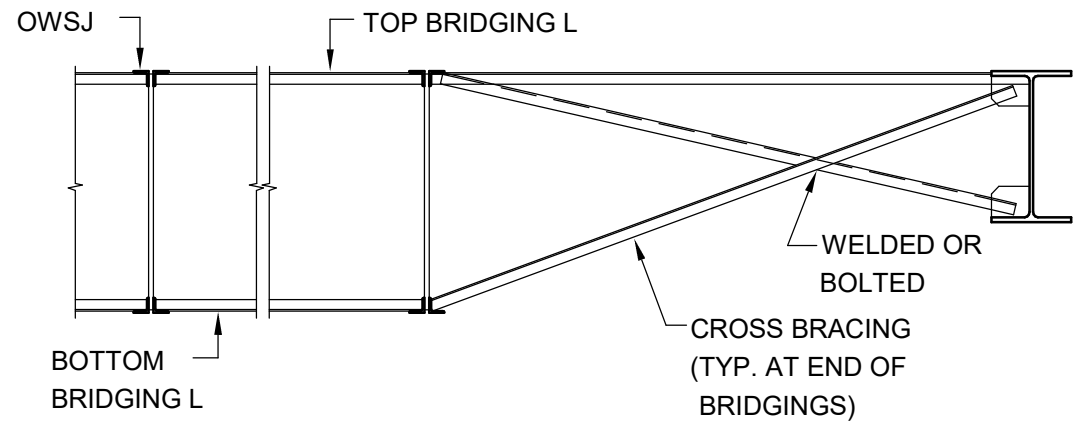
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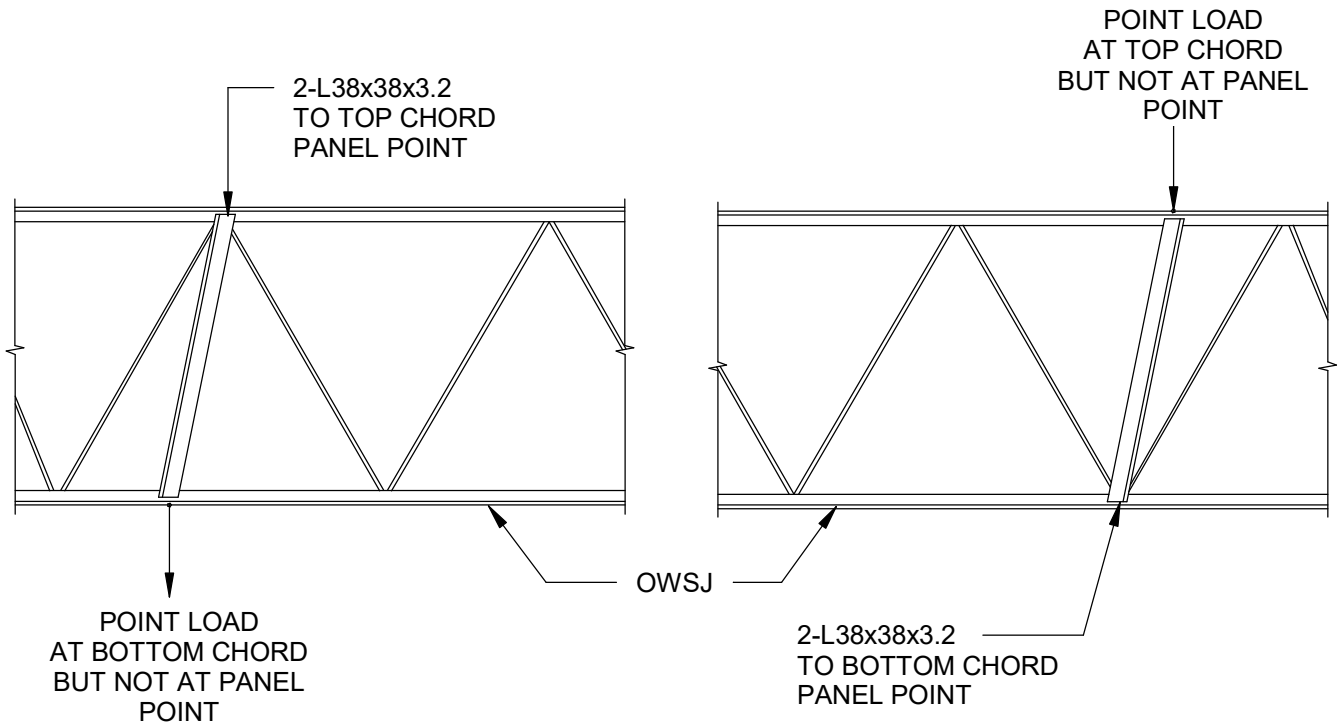


O.W.S.J. BRIDGING AT BEAM

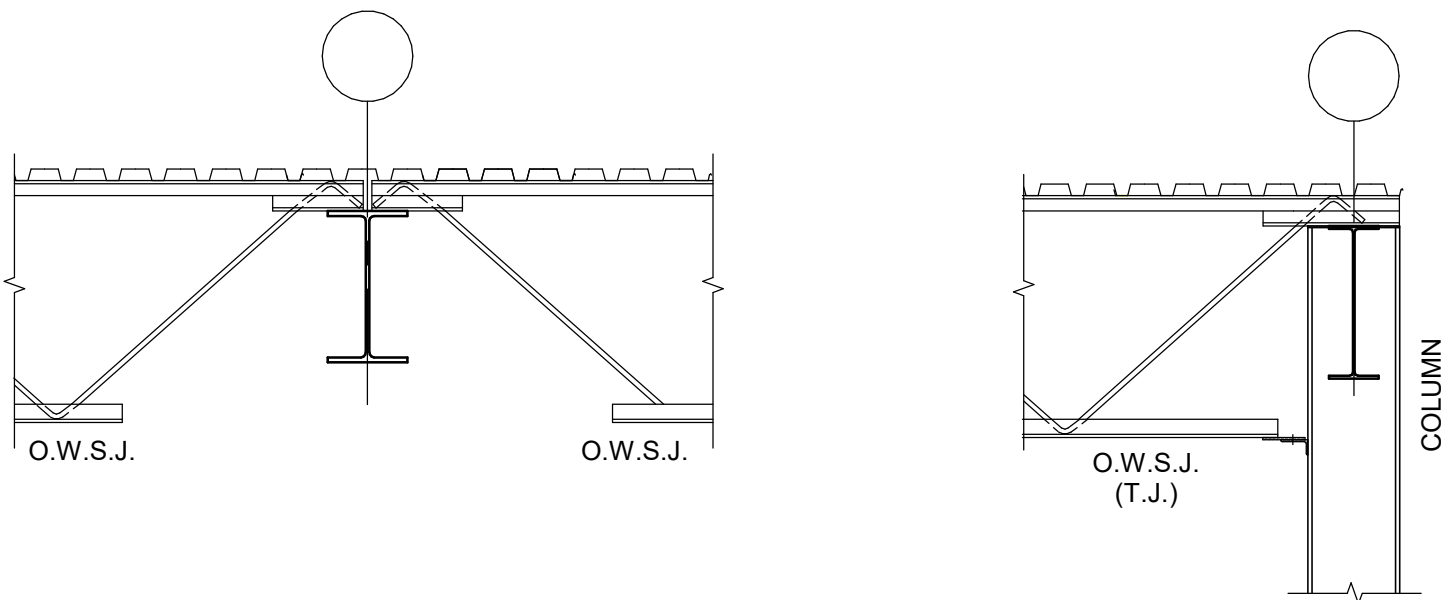


O.W.S.J. BRIDGING AT EAVE BEAM

STEEL JOIST BRIDGING DETAIL



LOCAL JOIST REINFORCING DETAIL

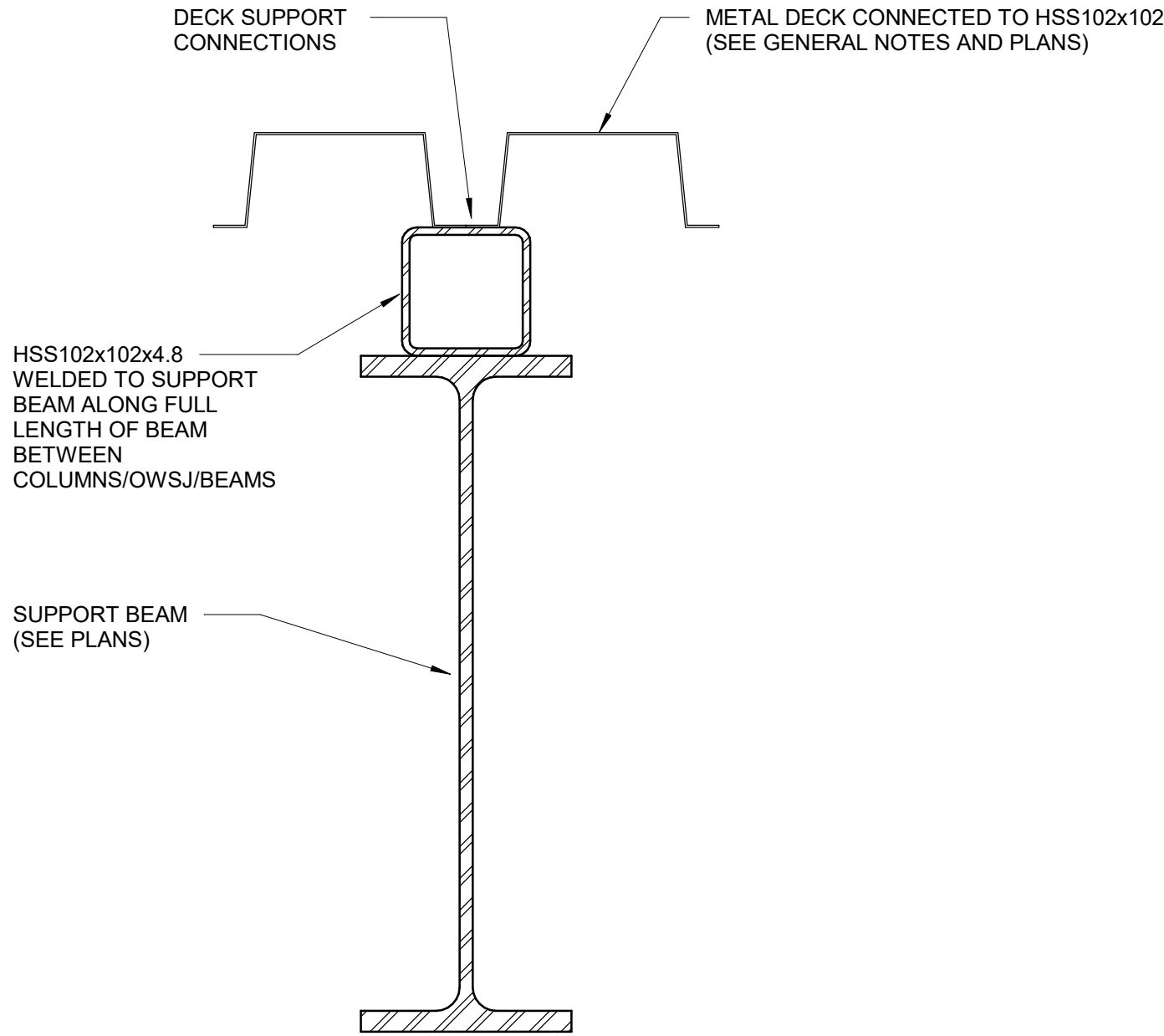


O.W.S.J. TO BEAM

O.W.S.J. TO COLUMN (TIE JOIST)

NOTE: T.J. DENOTES TIE JOIST

OWSJ CONNECTION DETAILS



SHEAR COLLECTOR TYPICAL DETAIL



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SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

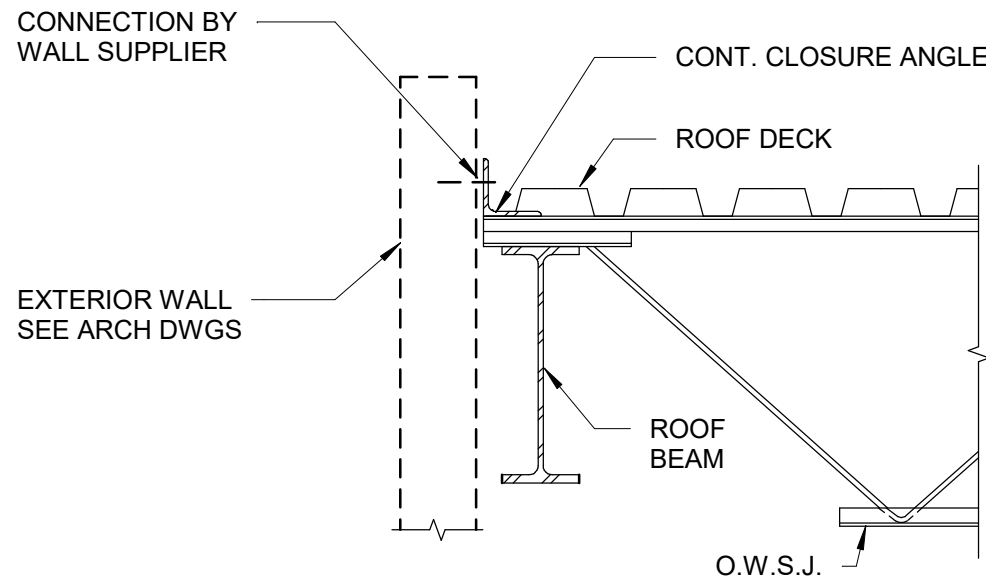
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Reviewed :	Date (yyyy-mm-dd) :	
Checked : A.C.	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	

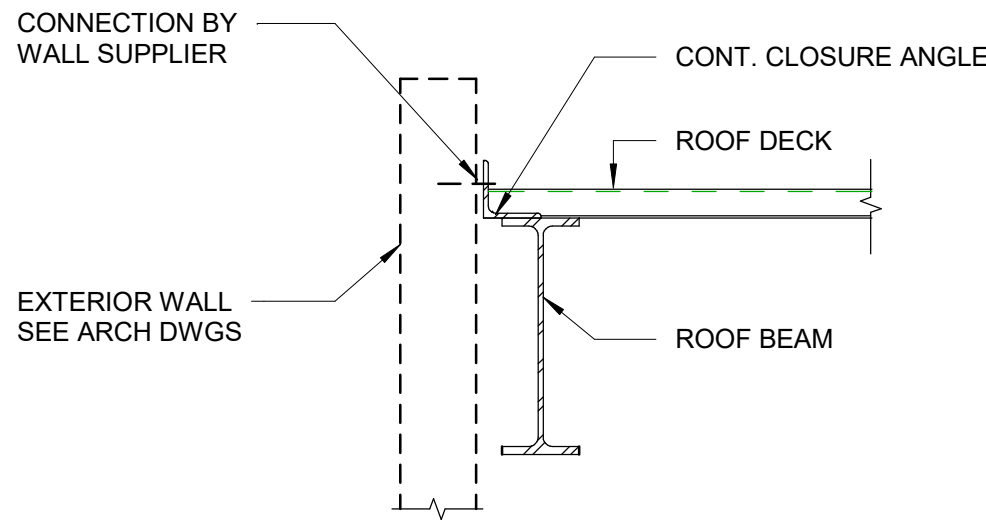
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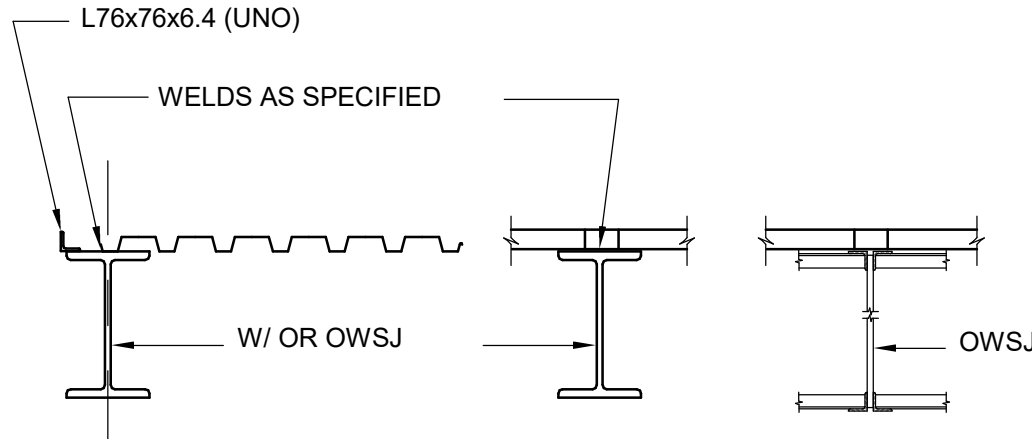
CASE 1



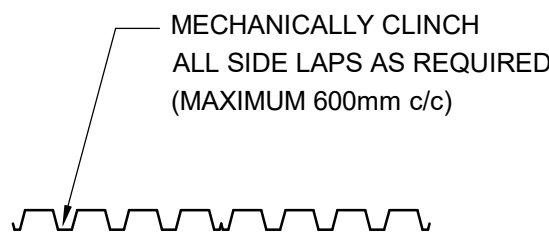
CASE 2

- NOTES:
1. CONNECTION AT CLOSURE ANGLE OR ROOF BEAM TOP FLANGE.
  2. SUPPLIER MAY PROVIDE ALTERNATE LOCATION FOR CONNECTION SUBJECT TO REVIEW.
  3. SUBMIT STAMPED SHOP DRAWINGS AND CALCULATIONS FOR REVIEW AND APPROVAL.
  4. REFER TO ARCHITECTURAL WALL SECTIONS FOR WALL LOCATIONS.

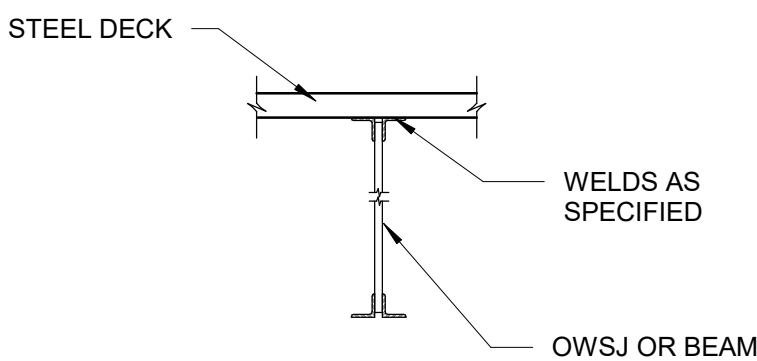
TYPICAL EXTERIOR WALL LATERAL CONNECTION DETAILS



TYPICAL DETAILS -  
STANDARD ROOF DECK BEARING DETAILS

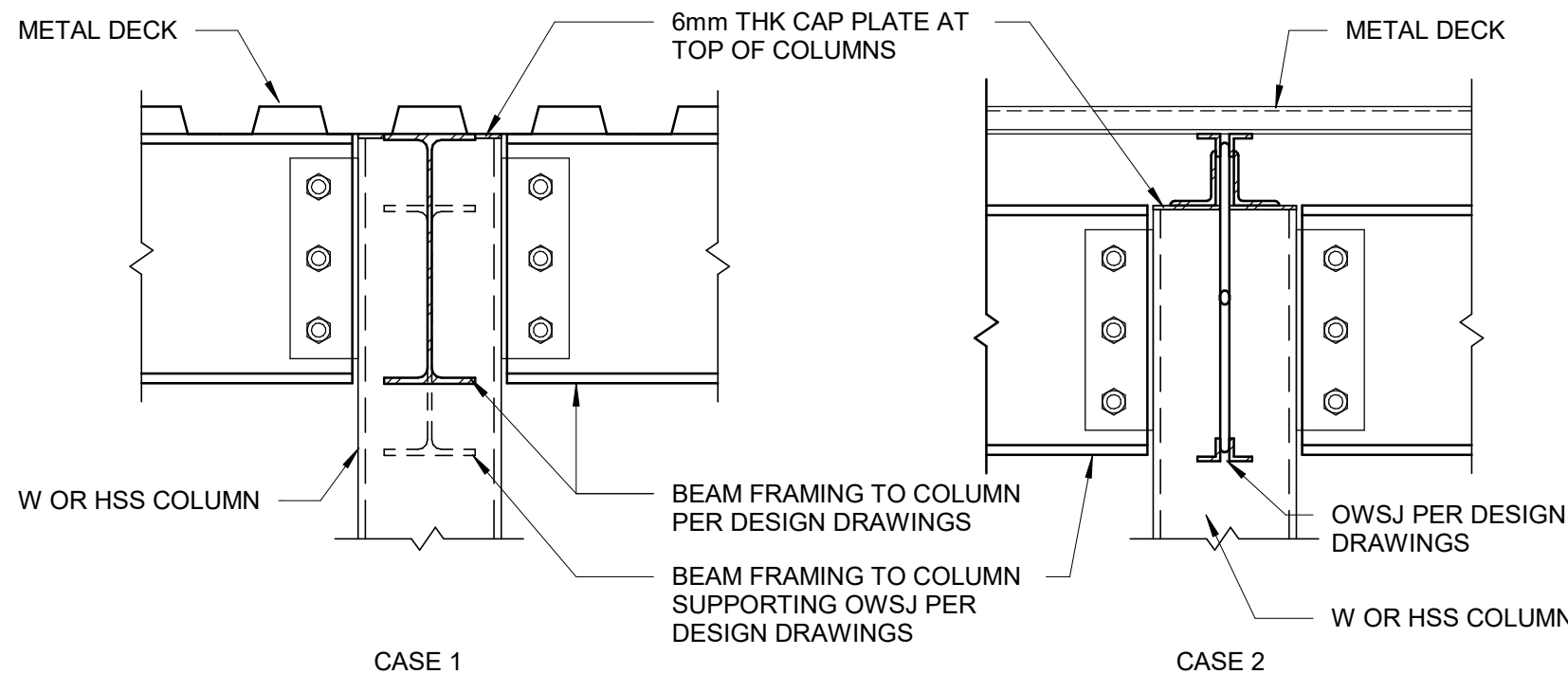


TYPICAL DETAILS -  
STANDARD ROOF DECK DETAILS



TYPICAL DETAILS -  
INCLINED STEEL DECK TO OWSJ OR BEAM DETAILS

STEEL DECK DETAIL

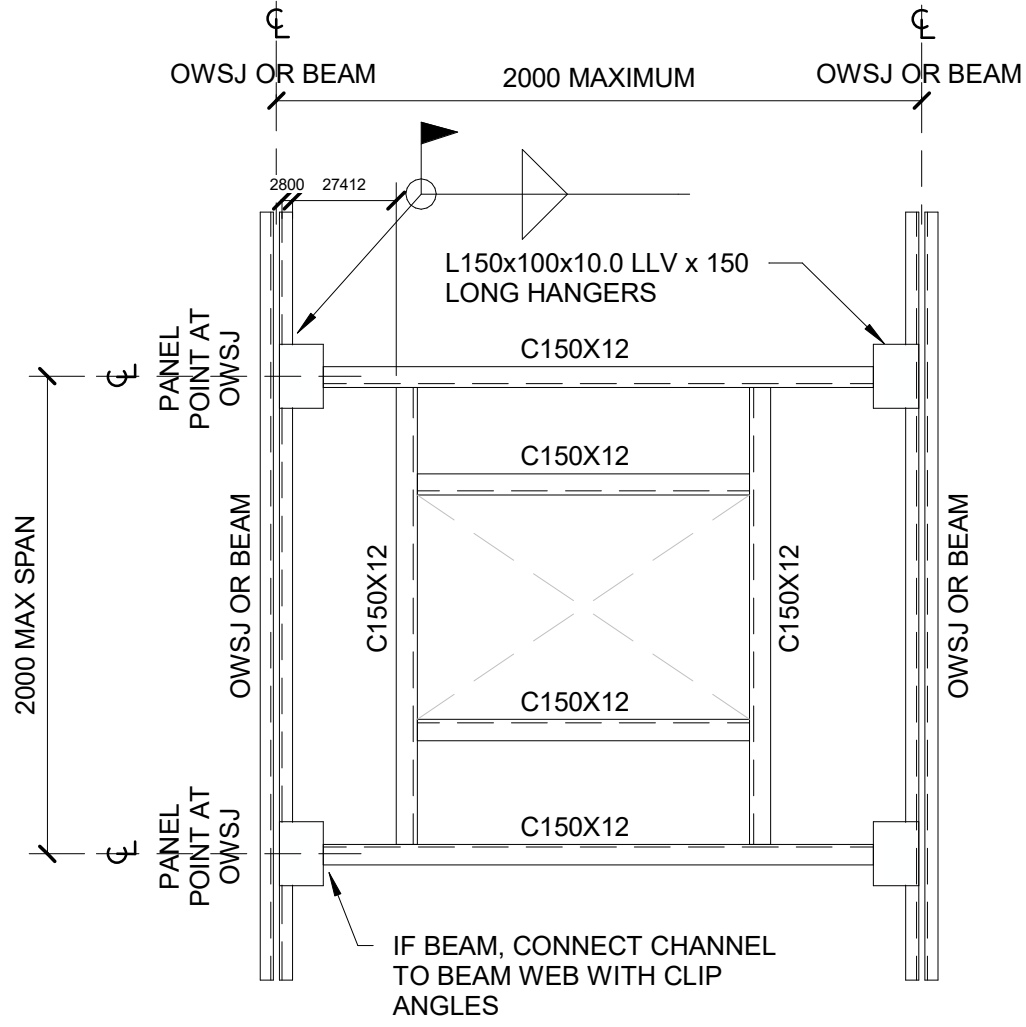


NOTE: DETAIL DOES NOT APPLY TO BEAM-COLUMN MOMENT CONNECTION OR CONTINUOUS BEAM OVER COLUMN SUPPORT.

TYPICAL COLUMN TOP DETAIL

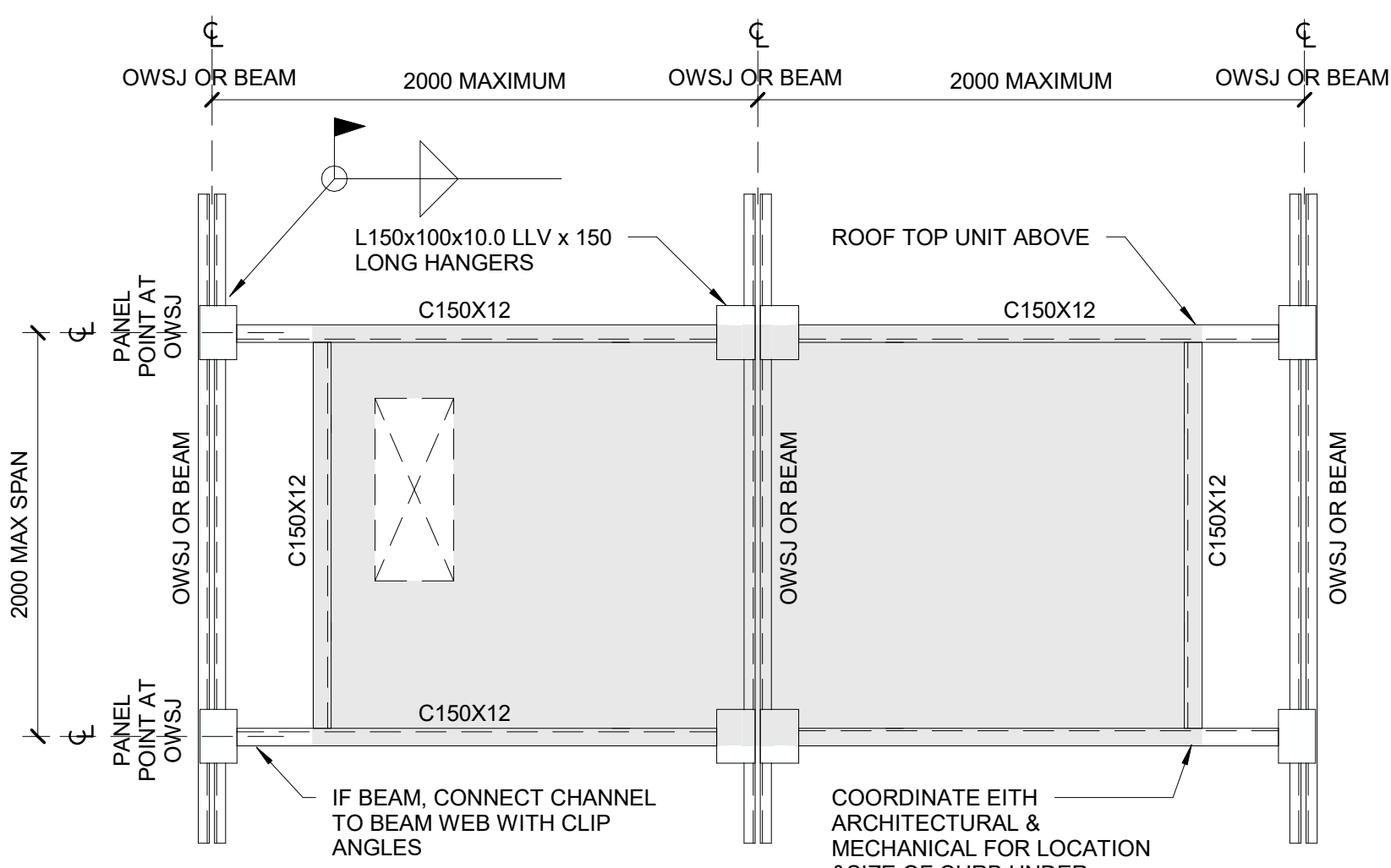


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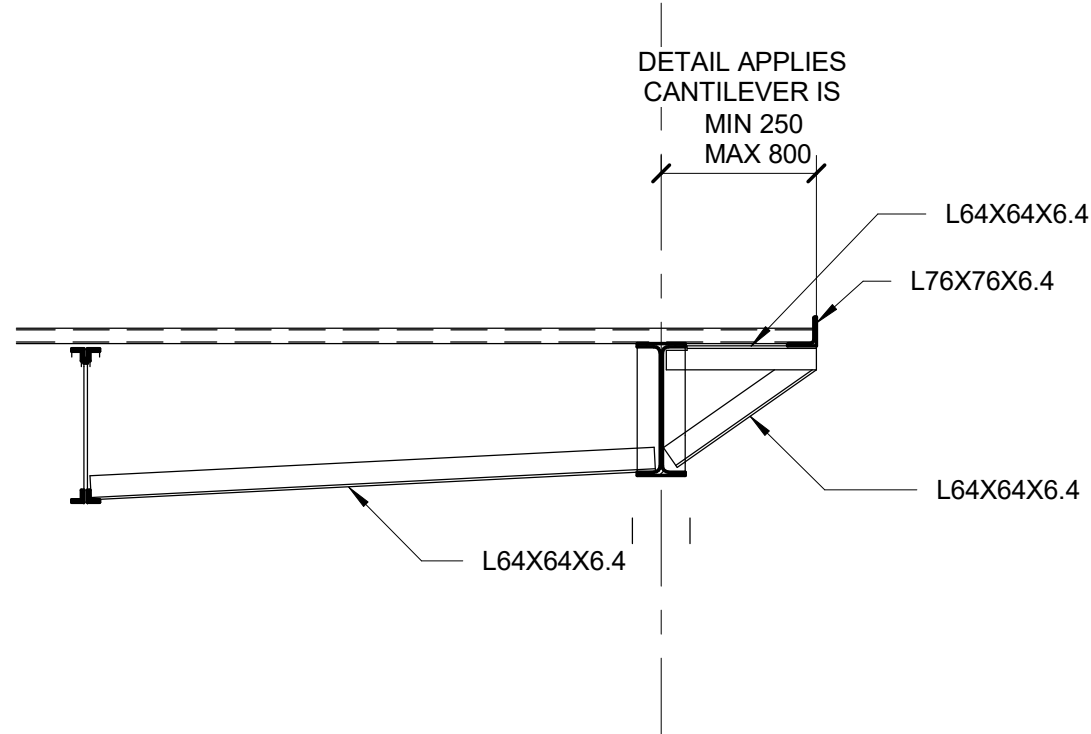
PLAN

STEEL DECK / ROOF OPENING FRAMING



PLAN

ROOF TOP UNIT SUPPORT FRAMING



TYPICAL CANTILEVER DETAIL



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

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3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Mark Date Description

Revision History

Filename: 2020.2.5.

Project Number: 60686829

Project Manager:

Project Administrator: BIM/VDC Manager:

Sustainability Target: IPMS 1 (m²): IPMS 2 (m²):

Designed: A.C. Date (yyyy-mm-dd):

Drawn: D.W. Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: A.C. Date (yyyy-mm-dd):

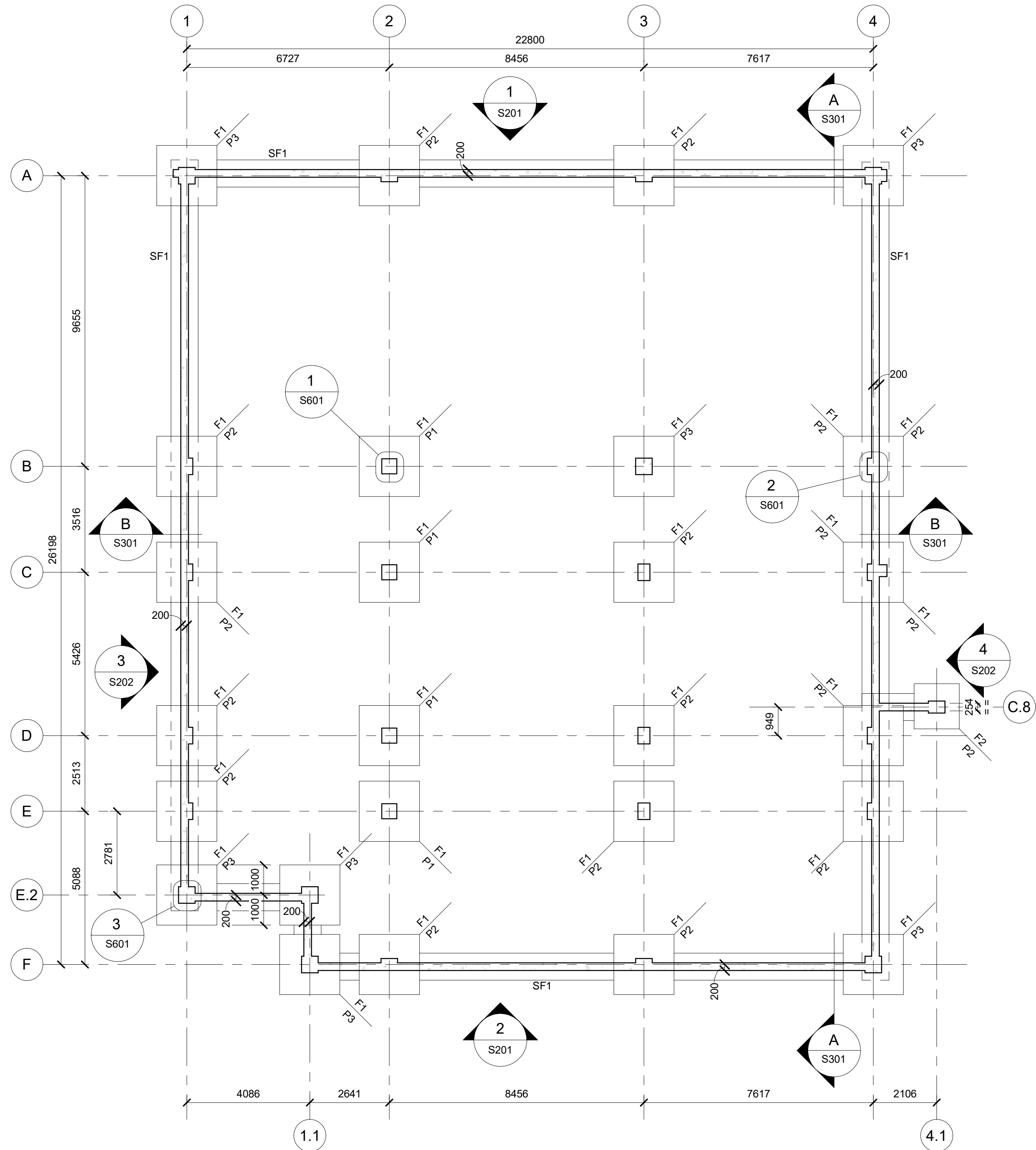
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Rev: 3  
of: 3





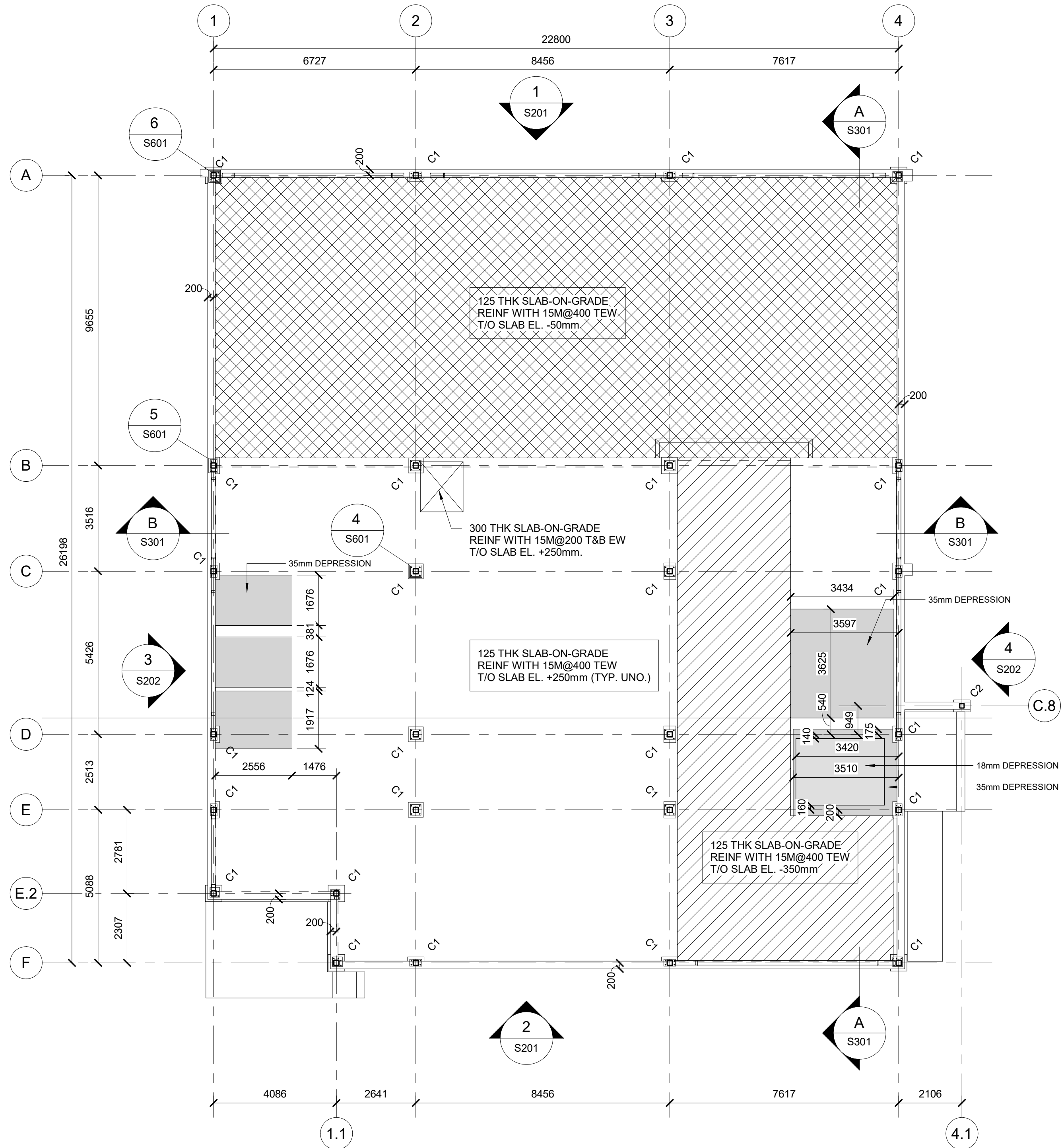
## 1 FOUNDATION PLAN

1 : 100

## FOUNDATION PLAN

NOTES:

1. TOP OF SLAB ELEVATION AT HIGH POINT IS AT DATUM ELEVATION 0.0 m. SEE ARCHITECTURAL DRAWINGS FOR SLOPES.
2. ALL FOOTINGS TO BE CENTERED UNDER COLUMNS.
3. SEE GENERAL NOTES AND TYPICAL DETAILS.
4. FOOTING ELEVATIONS SHOWN ON PLAN ARE UNDERSIDE OF FOOTING RELATIVE TO DATUM IN mm.
5. MINIMUM FROST DEPTH IS 1200 BELOW GRADE.
6. SEE DWG \$601 FOR FOOTING, CONCRETE PIER AND STEEL COLUMN SCHEDULE.



## 2 GROUND FLOOR PLAN

1 : 100

### GROUND FLOOR PLAN

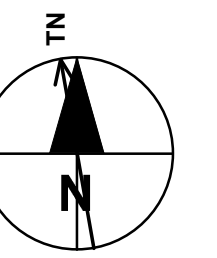
NOTES:

1. TOP OF SLAB ELEVATION AT HIGH POINT IS AT DATUM ELEVATION 0.0 m. SEE ARCHITECTURAL DRAWINGS FOR SLOPES.
2. DATUM ELEVATION IS AT GEODETIC ELEVATION \_\_\_\_\_ m. SEE CIVIL DRAWINGS.
3. REFER TO ARCHITECTURAL DRAWINGS FOR SLAB ELEVATIONS, RECESSES, SLOPES, DRAIN LOCATIONS, CURBS AND DEPRESSIONS.
4. SEE GENERAL NOTES AND TYPICAL DETAILS.
5. SLAB-ON-GRADE: PROVIDE 40 COVER TO TOP OF REINFORCING WITH  $\pm 5$  MAX TOLERANCE.
6. INTERIOR SLAB-ON-GRADE LIVE LOAD: 4.8 kPa.
7. SEE DWG S601 FOR FOOTING, CONCRETE PIER AND STEEL COLUMN SCHEDULE.

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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
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Mark	Date	Description

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Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>A.C.</b>	Date (yyyy-mm-dd) :	
Drawn : <b>D.W.</b>	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : <b>A.C.</b>	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	

## FOUNDATION AND GROUND FLOOR PLAN

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S101

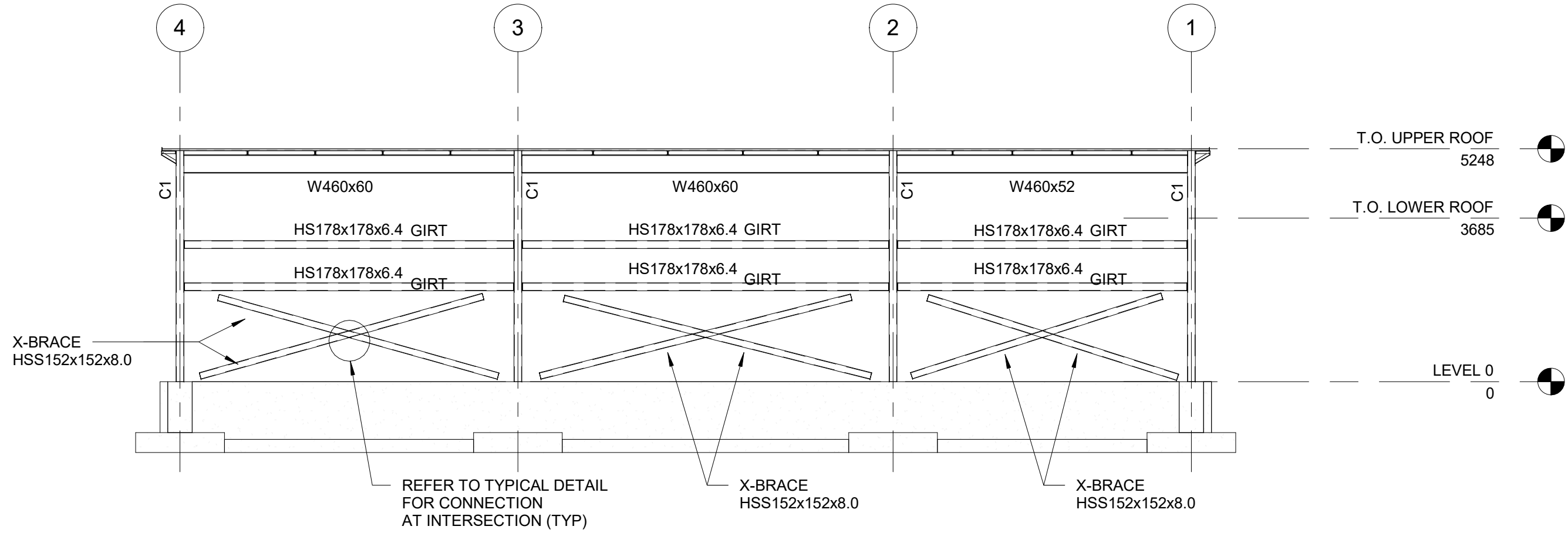
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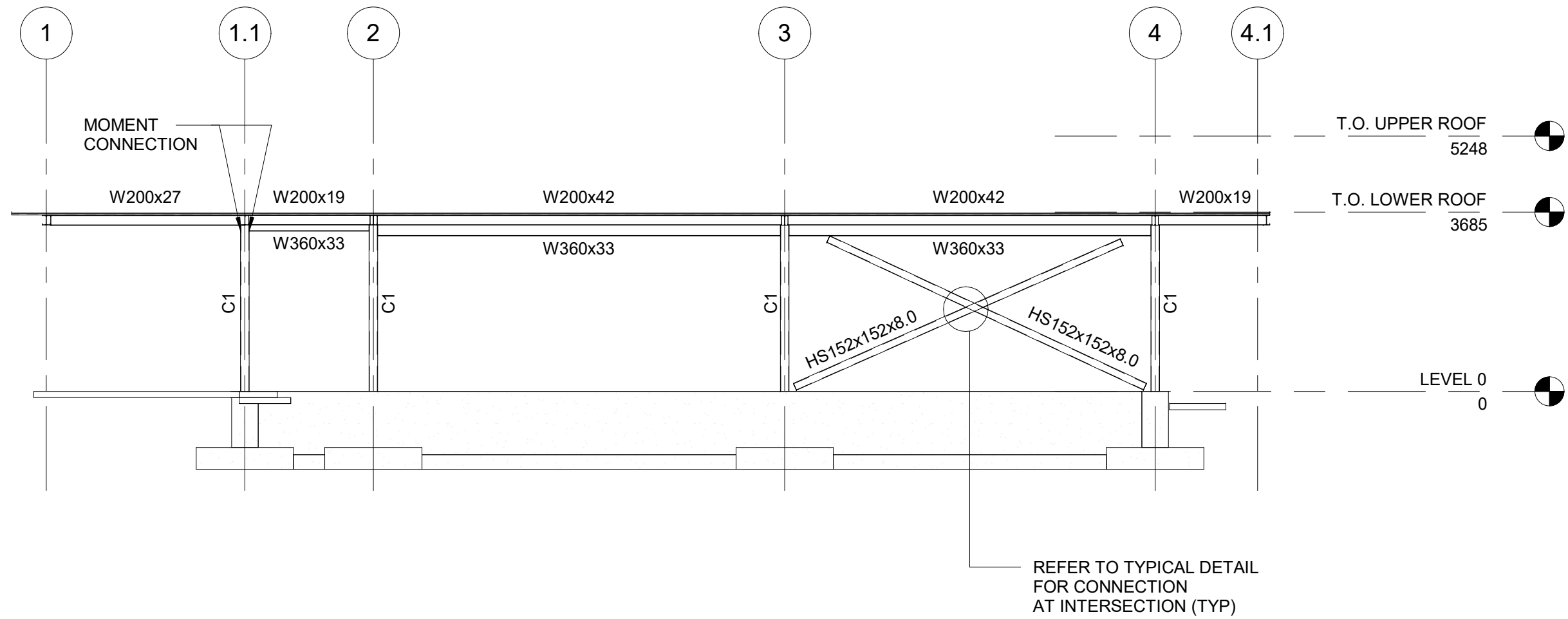




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1 ELEVATION ALONG GRIDLINE A  
1 : 100



2 ELEVATION ALONG GRIDLINE F  
1 : 100



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NORTH:



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NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

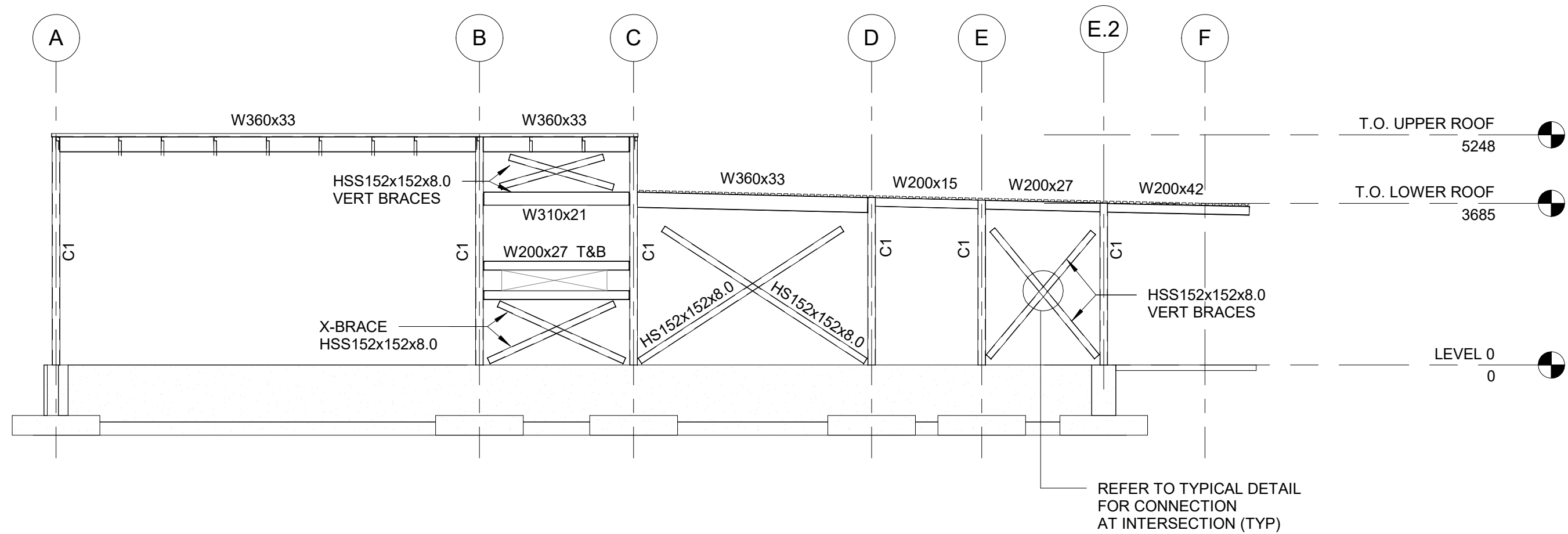
Owner's Project Number: 60686829  
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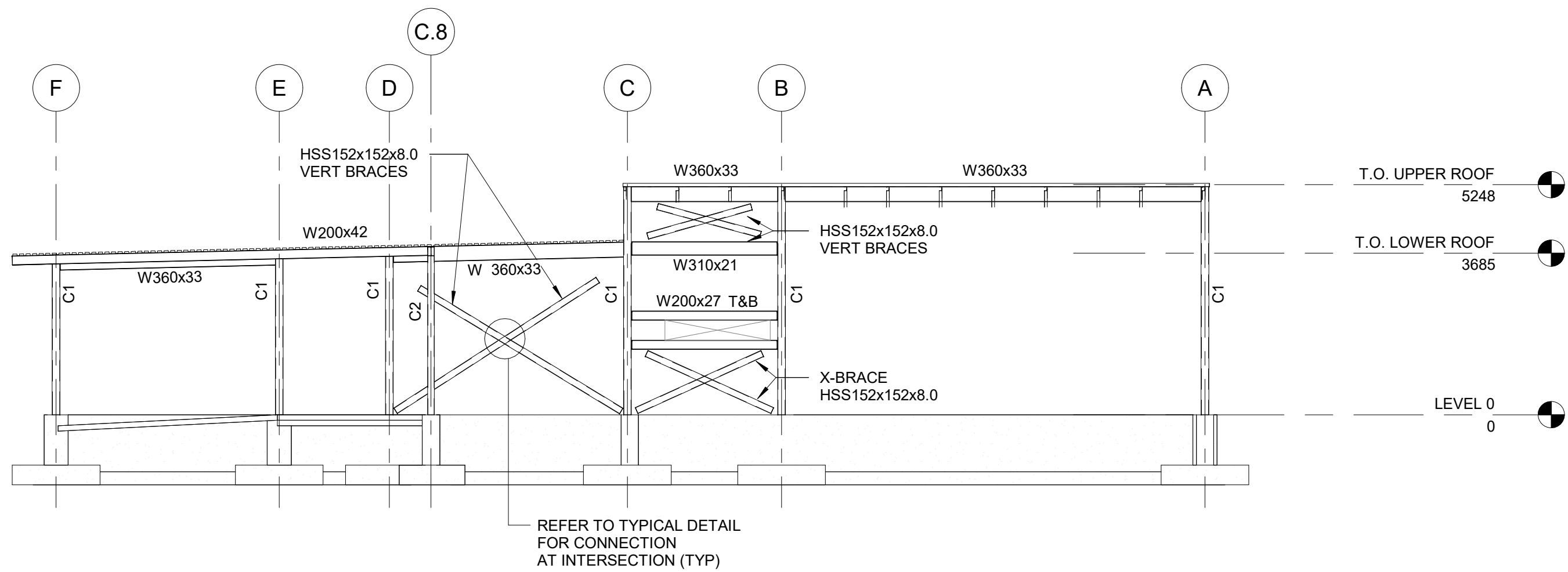
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Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
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Drawn:	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	

Title:		
ELEVATIONS		
Page Size: ANSI D	Sheet:	Rev: 3
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3 ELEVATION ALONG GRIDLINE 1  
1 : 100



4 ELEVATION ALONG GRIDLINE 4  
1 : 100



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5 LINCOLN STREET  
WELLAND, ONTARIO

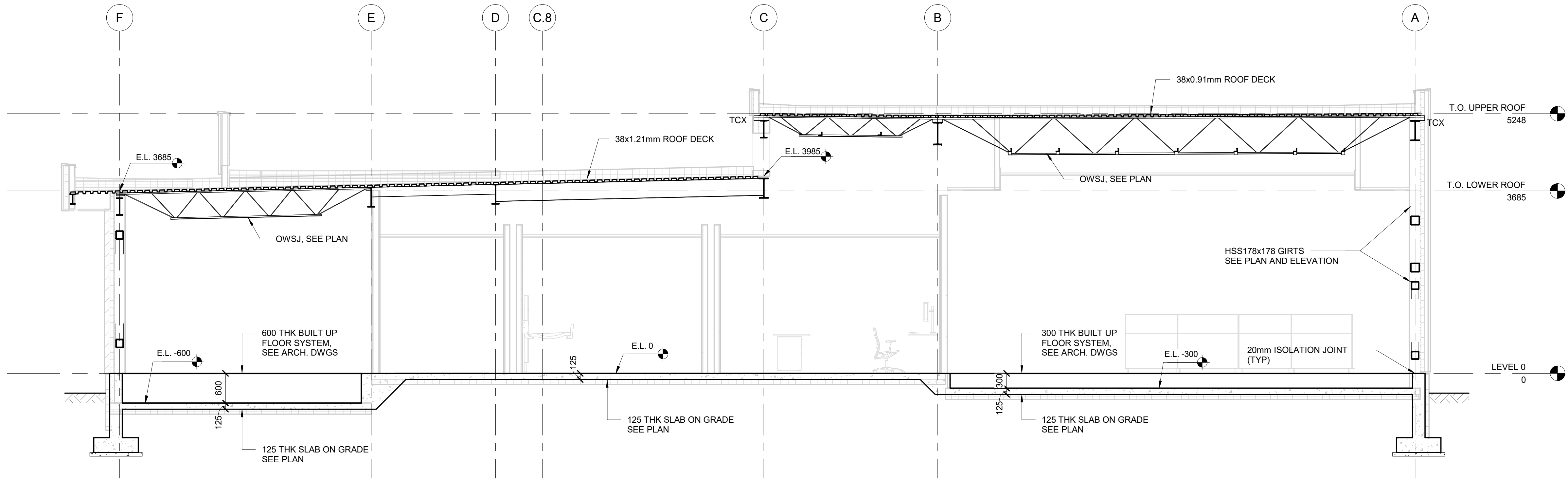
Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

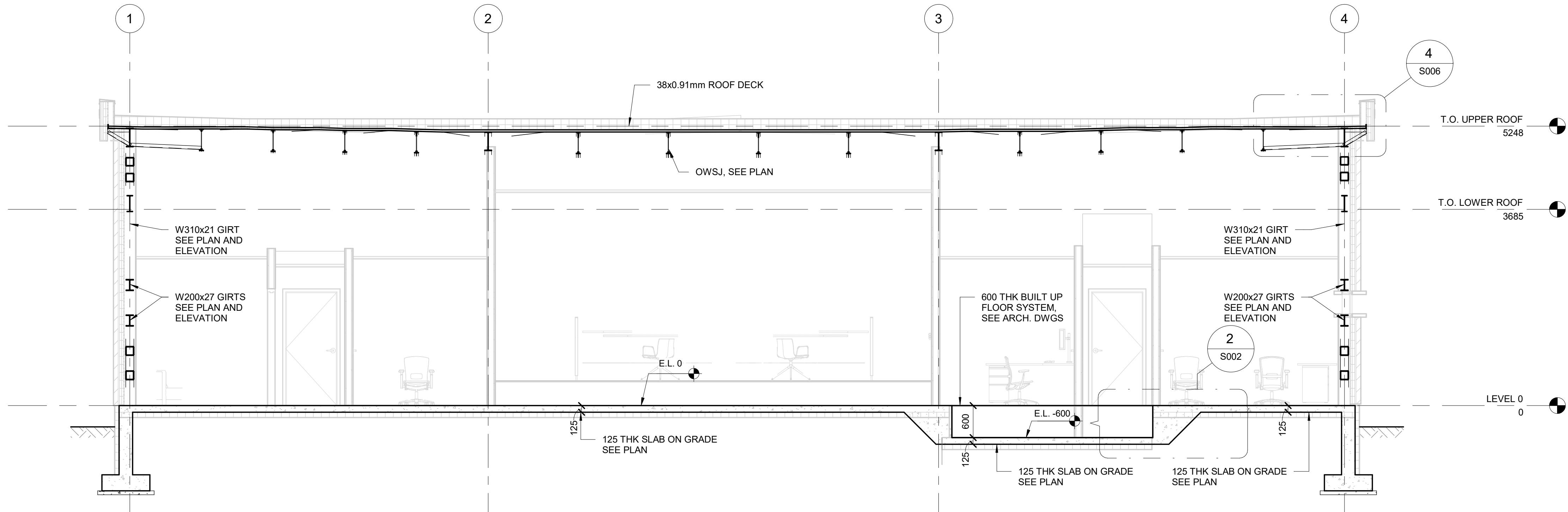
Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	
Project Manager:	BIM/VDC Manager:	
Project Administrator:	Sustainability Target:	
Designed:	IPMS 1 (m²):	IPMS 2 (m²):
Drawn:	Date (yyyy-mm-dd):	
D.W.	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
A.C.	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	

Title:		
ELEVATIONS		
Page Size: ANSI D	Sheet: S202	Rev: 3
Scale: 1 : 100	Sheet of:	





A SECTION  
1 : 50



B SECTION  
1 : 50



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Kitchener, Ontario N2P 0A4

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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Mark	Date	Description
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Revision History

Filename: Version: 2020.2.5

Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: A.C.	Date (yyyy-mm-dd):
Drawn: D.W.	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: A.C.	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

Title:

SECTIONS

Page Size: ANSI D	Sheet: S301	Rev: 3
Scale: 1 : 50	of:	



Autodesk Docs:\BP-AMER (CAN) 60686823-NRPS 911\_Backup\_Dispatch\60686823-NRPS 911\_Backup\_Dispatch - S - RVT24.rvt  
Print Date: 1/16/2025 2:24:01 PM  
ANSI D Title Block Revision 0.0. Designed by Eric Leimer. ©2022 AECOM Canada. All Rights Reserved.

CONCRETE FOOTING SCHEDULE							
MARK	WIDTH	LENGTH	THICKNESS	BLL	BUL	TLL	TUL
F1	2000	2000	450	9-20M	9-20M	9-20M	9-20M
SF1	900	CONT.	300	15M@300	3-15M CONT.	3-15M CONT.	15M@300
FW	254	CONT.		15M@300	15M@300	15M@300	15M@300

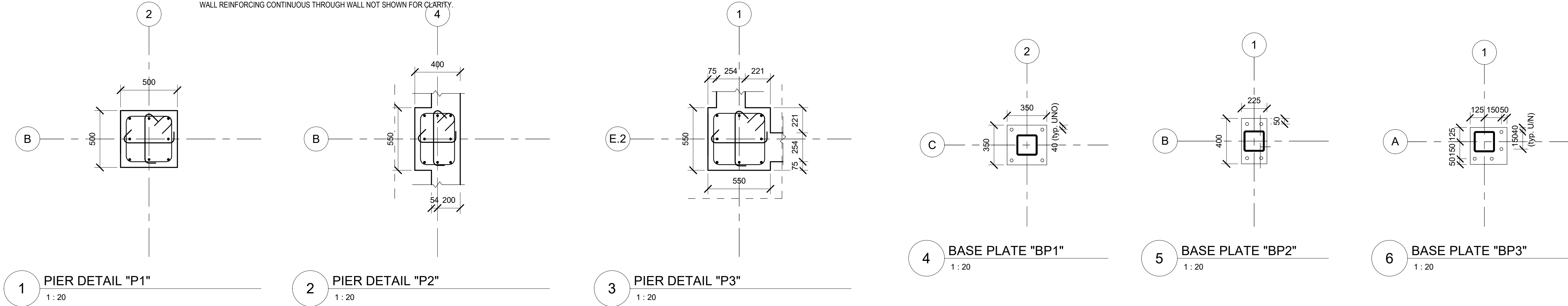
NOTES:  
1. HOOK ENDS OF ALL BARS.  
2. FOOTINGS TO BE CENTERED ON STEEL COLUMN/GRIDS UNO. STRIP FOOTING TO BE CENTERED ON FOUNDATION WALL.

CONCRETE PIER SCHEDULE				
MARK	SIZE (bxh)	REINFORCEMENT		REMARKS
		VERTICAL	TIES	
P1	500 x 500	8-25M	3-15M@250	SEE PIER DETAIL "P1"
P2	550 x 400	8-25M	3-15M@250	SEE PIER DETAIL "P2"
P3	550 x 550	8-25M	3-15M@250	SEE PIER DETAIL "P3"

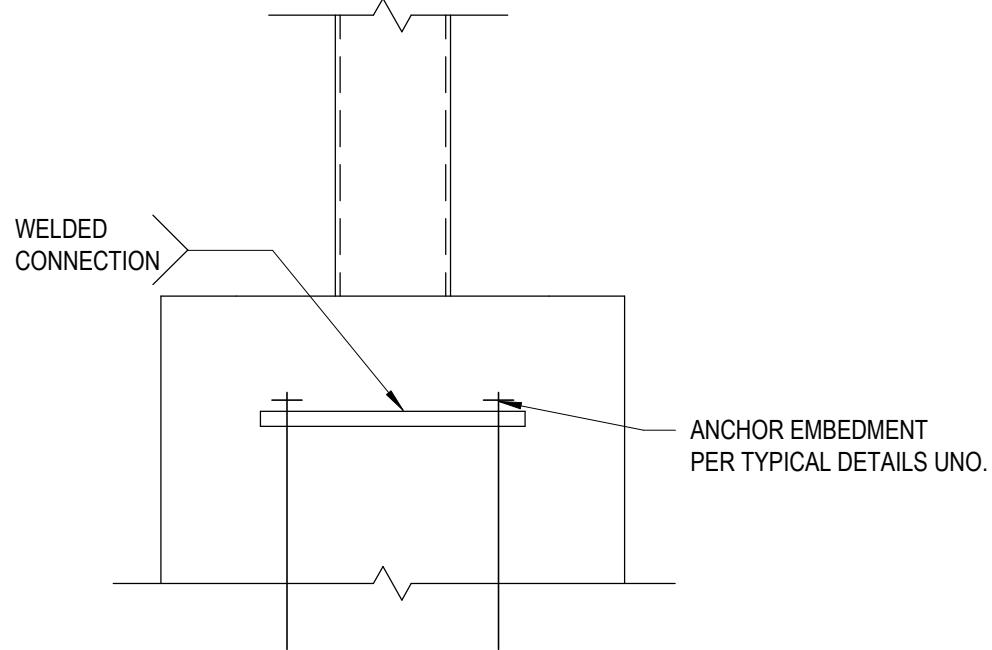
NOTE:  
1. CONSTRUCT PIERS INTEGRALLY WITH FOUNDATION WALLS.  
2. TOP OF CONCRETE PIER EL. -250mm.

CONCRETE PIER DETAIL

NOTE:  
WALL REINFORCING CONTINUOUS THROUGH WALL NOT SHOWN FOR CLARITY.



COLUMN SCHEDULE				
	C1	C1	C1	C2
HIGH ROOF (VARIES)				
GROUND FLOOR				
SIZE	HS178x178x8	HS178x178x8	HS178x178x8	HS152.4x152.4x6.4
BASE PLATE (TxWxL)	BP1 20x350x350	BP2 20x225x400	BP3 20x325x325	BP3 20x350x350
ANCHOR RODS	4-20Ø	4-20Ø	4-20Ø	4-20Ø
NOTES	RECESS COLUMN & BASE PLATE	RECESS COLUMN & BASE PLATE	RECESS COLUMN & BASE PLATE	RECESS COLUMN & BASE PLATE
	* DENOTES DIMENSION FROM FINISHED FLOOR TO U/S BASE PLATE			



ANCHOR ROD DIAMETER	MIN EDGE DISTANCE, e
19 (3/4"), 20	34
22 (7/8")	38
25 (1")	44

AECOM

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Kitchener, Ontario N2P 0A4

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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

4	2025-01-23	ISSUED FOR TENDER
3	2024-11-29	ISSUED FOR 95% CD
2	2024-10-30	ISSUED FOR PERMIT
1	2024-07-26	ISSUED FOR 30% CD

Mark	Date	Description
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Revision History

Filename: Version: 2020.2.5.

Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: A.C.	Date (yyyy-mm-dd):
Drawn: D.W.	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: A.C.	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

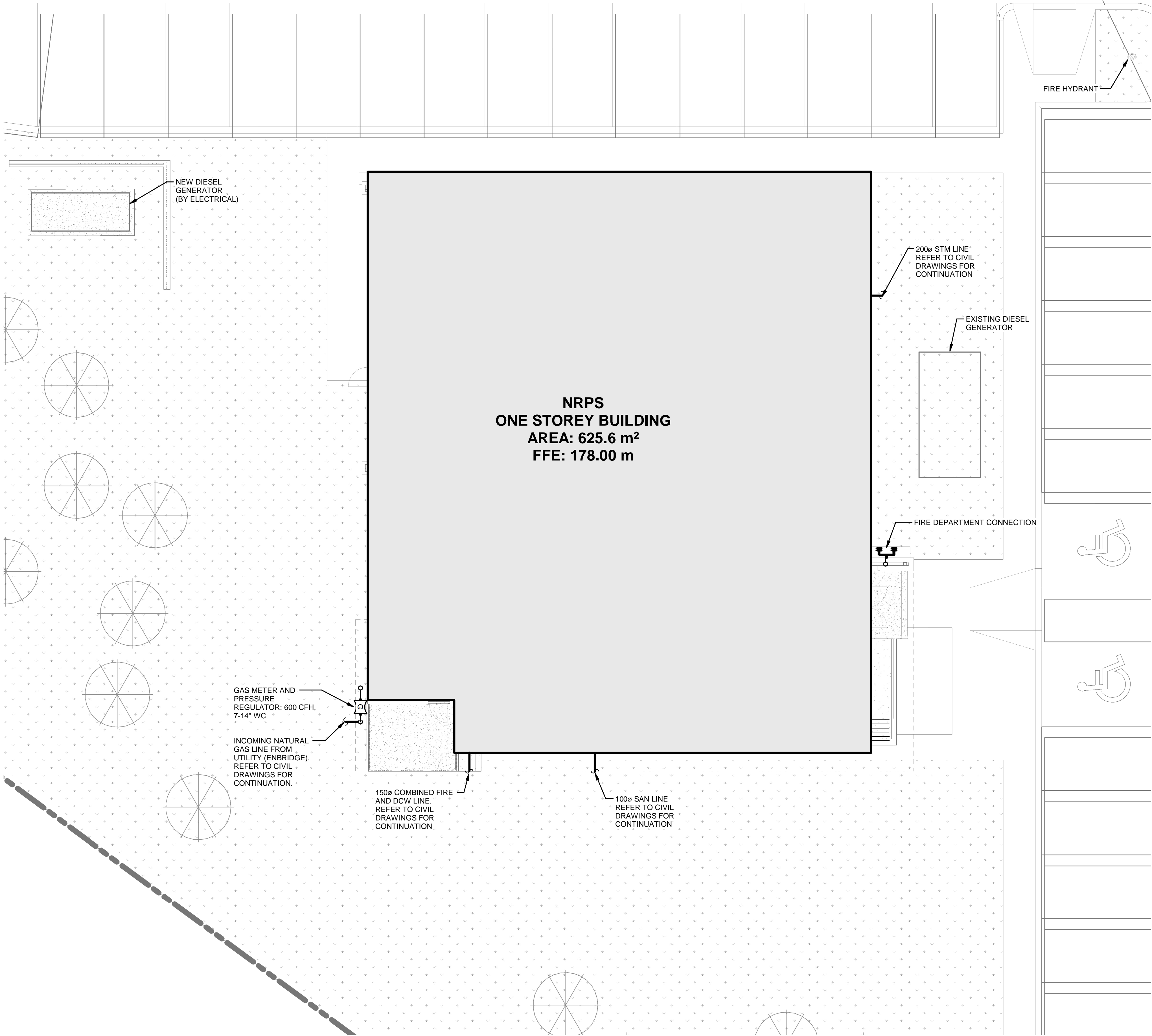
Title:

SCHEDULE

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Scale: As indicated		Sheet of:



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Print Date: 23-Jan-2025 5:35:13 PM  
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GENERAL NOTES:

- DO NOT SCALE DRAWINGS. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR SPECIFIED THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. ANY INFORMATION INVOLVING MEASUREMENTS OF THE BUILDING SHALL BE TAKEN FROM THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE SITE CONDITIONS. REVIEW ALL REVISIONS WITH THE CONSULTANT.
- FLOOR PLANS SHALL BE READ IN CONJUNCTION WITH SCHEMATICS, DETAILS AND SPECIFICATIONS. NEITHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE USED ALONE. MISINTERPRETATION OF ANY REQUIREMENTS OF EITHER PLANS OR SPECIFICATIONS SHALL NOT CHANGE THE REQUIREMENTS OR INTENT OF THE SPECIFICATIONS FOR PROPER COMPLETION OF THE WORK TO THE FULL APPROVAL OF THE CONSULTANT AND THE OWNER.
- INFORMATION SHOWN ON THE FLOOR PLANS SHALL BE ASSUMED TO BE APPLICABLE TO THE RELATED SYSTEM SCHEMATIC AND DETAIL AND VICE-VERSA TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- SHOULD ANY DISCREPANCY APPEAR BETWEEN THE DRAWINGS AND SPECIFICATIONS TO CAUSE DOUBT AS TO THE TRUE MEANING AND INTENT OF THE DRAWINGS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER BEFORE SUBMITTING THE TENDER. IF THIS NOT DONE, IT WILL BE ASSUMED THAT THE MORE EXPENSIVE ALTERNATIVE HAS BEEN INCLUDED IN THE CONTRACT.
- VERIFY STRUCTURAL INTEGRITY OF ALL TEMPORARY AND PERMANENT OPENINGS. ADDITIONAL FRAMING TO ENSURE STRUCTURAL INTEGRITY SHALL BE INCLUDED UNDER THIS CONTRACT.
- PRIOR TO COMMENCEMENT OF WORK, ORDERING OF EQUIPMENT AND/OR FABRICATING MATERIALS, THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS. THIS SHALL BE DONE IN ORDER TO CONFIRM THAT EQUIPMENT AND SERVICES CAN BE INSTALLED SHOWN ON DRAWINGS OR SPECIFIED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CONSULTANT OF ANY DISCREPANCIES, OMISSIONS, AND/OR INTERFERENCES PRIOR TO COMMENCEMENT OF WORK. PROVIDE INTERFERENCE DRAWINGS.
- CONNECT TO CIVIL SITE SERVICES (WATER, SANITARY, STORM) 1.5 m BEYOND BUILDING WALL.

PLUMBING FIXTURE CONNECTION SCHEDULE					
DESIGNATION	FIXTURE	DCW	DHW	DRAIN	VENT
WC	WATER CLOSET	25ø	-	75ø	38ø
LAV	LAVATORY	12ø	12ø	32ø	32ø
S, KS, SS	SINK	12ø	12ø	38ø	32ø
JS	JANITOR SINK	19ø	19ø	75ø	38ø
SH	SHOWER	12ø	12ø	-	-
DF	DRINKING FOUNTAIN	12ø	-	32ø	32ø
HB	HOSE BIBB	19ø	19ø	-	-
NFWH	NON-FREEZE WATER HYDRANT	19ø	-	-	-
FD, FFD	FLOOR DRAIN	-	-	75ø	50ø
EW	EYEWASH	12ø	12ø	32ø	32ø
		TANK			
		SINGLE & DOUBLE COMPARTMENTS			
		C/W 75ø FLOOR DRAIN			
		*IF DHW APPLICABLE			
		12ø TRAP PRIMER			
		C/W THERMOSTATIC MIXING VALVE			

PLUMBING LOADS TABLE	
DOMESTIC COLD WATER	103 FUs
SANITARY	41 FUs
STORM	16,631 L
NATURAL GAS	7-14" WC, 600 CFH

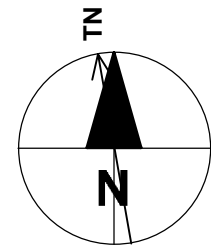
SHEET LIST			
NO.	NAME	REV #	DATE
06 MECHANICAL			
M001	MECHANICAL SITE PLAN	6	2024-01-23
M002	SYMBOLS, LEGENDS, ABBREVIATIONS	6	2024-01-23
M003	SCHEDULES (1 OF 2)	6	2024-01-23
M004	SCHEDULES (2 OF 2)	6	2024-01-23
M100	ROOF PLAN	6	2024-01-23
M200	GROUND FLOOR PLAN - UNDERSLAB PLUMBING	6	2024-01-23
M201	GROUND FLOOR PLAN - PLUMBING	6	2024-01-23
M301	GROUND FLOOR PLAN - FIRE PROTECTION	6	2024-01-23
M401	GROUND FLOOR PLAN - HVAC	6	2024-01-23
M451	GROUND FLOOR PLAN - HVAC PIPING	6	2024-01-23
M501	SCHEMATICS - PLUMBING & GAS	6	2024-01-23
M502	SCHEMATICS - FIRE PROTECTION	6	2024-01-23
M503	SCHEMATICS - HEATING WATER & CHILLED WATER	6	2024-01-23
M510	CONTROL SCHEMATICS - GENERAL	3	2024-01-23
M511	CONTROL SCHEMATICS - HRU-1	3	2024-01-23
M512	CONTROL SCHEMATICS - RTU-1	3	2024-01-23
M513	CONTROL SCHEMATICS - CRAC, RTU-1, FCU	3	2024-01-23
M514	CONTROL SCHEMATICS - HEATING AND CHILLED WATER PLANT	3	2024-01-23
M601	MECHANICAL ROOM	6	2024-01-23
M701	DETAILS	6	2024-01-23
M702	DETAILS	6	2024-01-23
M703	DETAILS	6	2024-01-23
M704	DETAILS	1	2024-01-23
M705	DETAILS	1	2024-01-23
M706	DETAILS	1	2024-01-23



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105 Commerce Valley Dr. W, 7th Floor  
Markham, Ontario, L3T 7W3

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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

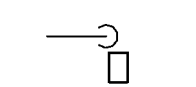
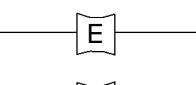
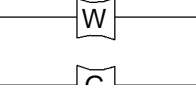

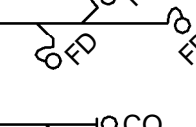
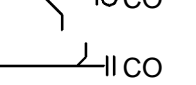



Mark	Date	Description
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5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

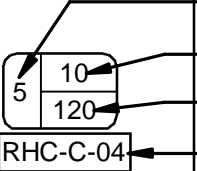
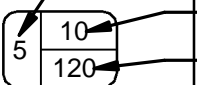
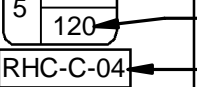
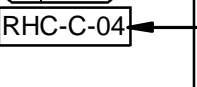
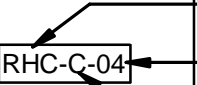
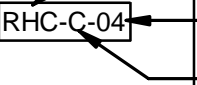

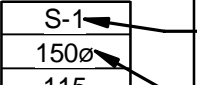
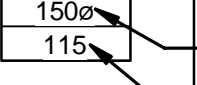
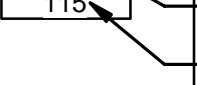
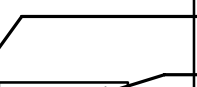
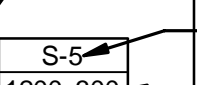
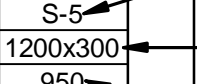
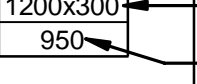
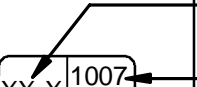
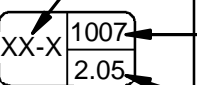
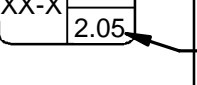
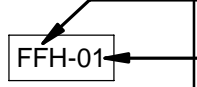
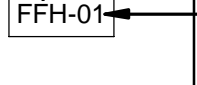
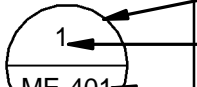
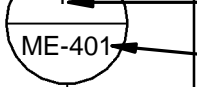
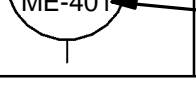
Revision History	
Filename:	Version: 2020.2.5.
Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: AP	Date (yyyy-mm-dd):
Drawn: LD	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: JS	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):
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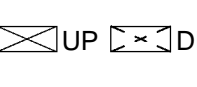
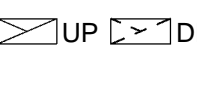
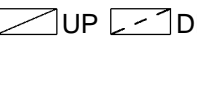
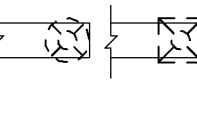
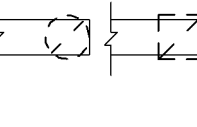
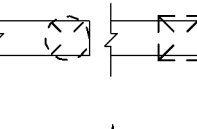
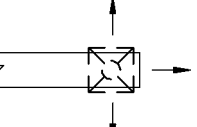
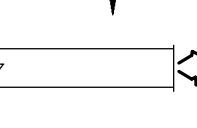
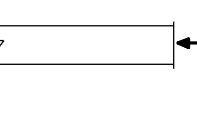

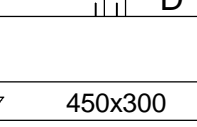
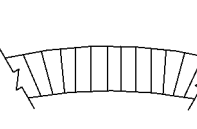
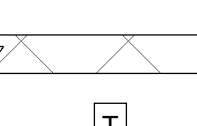
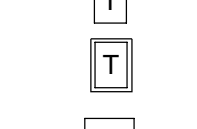






























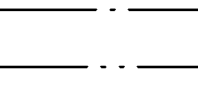
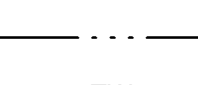
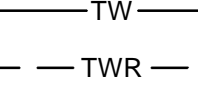
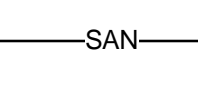
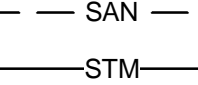
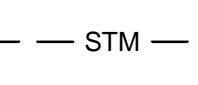
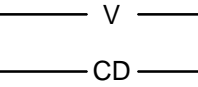
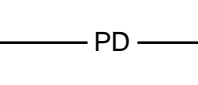
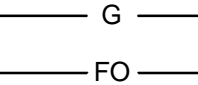
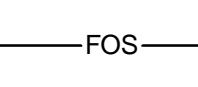
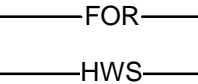
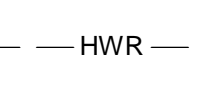
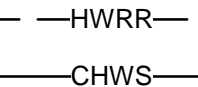
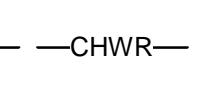
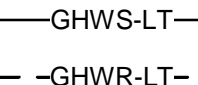
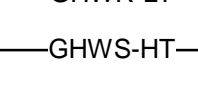
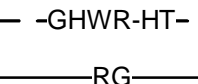
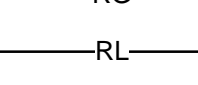
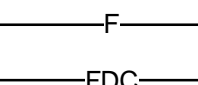
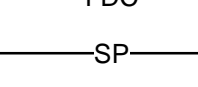
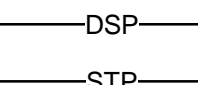
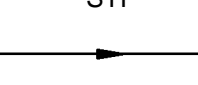
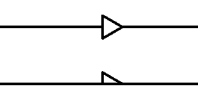
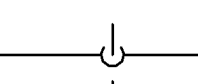
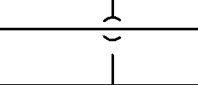
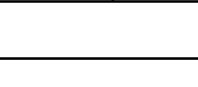
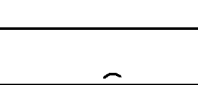
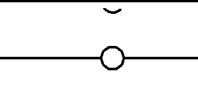
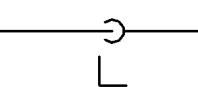
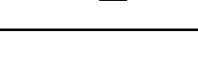
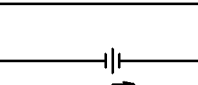
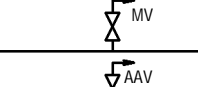
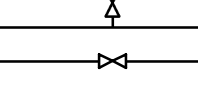
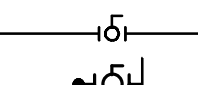

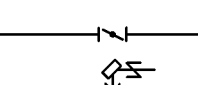
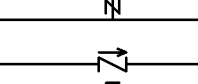
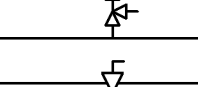
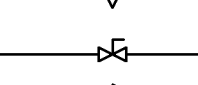
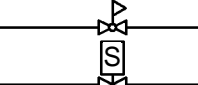


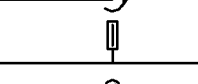
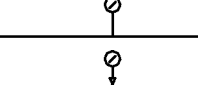
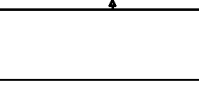



ABBREVIATIONS	
Symbol	Description
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AG	AIR GAP
AMP	AMPERAGE
AP	ACCESS PANEL
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
AS	AIR SEPARATOR
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERINCAL SOCIETY OF PLUMBING ENGINEERS
AV	AIR VENT
BDD	BACK DRAFT DAMPER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSE POWER
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTU/H	BRITISH THERMAL UNITS PER HOUR
CAV	CONTROL AIR VOLUME
CBV	CIRCUIT BALANCE VALVE
CC	COOLING COIL
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CO	CLEAN OUT, OR CARBON MONOXIDE
CO2	CARBON DIOXIDE
CTE	CONNECT TO EXISTING
CV	CONTROL VALVE
DB	DRY BULB
dB	DECIBELS
DCBP	DOUBLE CHECK BACKFLOW PREVENTER
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DF	DRINKING FOUNTAIN
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRC
DIA	DIAMETER
DN	DOWN
DP	DEW POINT TEMPERATURE
DPS	DIFFERENTIAL PRESSURE SENSOR
DWG	DRAWING
DVV	DRAIN WASTE VENT
DX	DIRECT EXPANSION
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EL	ELEVATION
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESH	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
EW	EMERGENCY EYEWASH
EWT	ENTERING WATER TEMPERATURE
F/D	FIRE DAMPER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FLA	FULL LOAD AMPERE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FEET
FU	FIXTURE UNIT
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
HOA	HAND/OFF/AUTOMATIC
HP	HORSE POWER
HR	HOUR
HYD	HYDRANT
I/O	INPUT/OUTPUT
IN	INCHES
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IN WG	INCH WATER GAUGE
INV	INVERT
KS	KITCHEN SINK
kW	KILOWATT
kWh	KILOWATT HOUR
L	LITER
L/s	LITERS PER SECOND
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LB	POUNDS
LB/HR	POUNDS PER HOUR
LWT	LEAVING WATER TEMPERATURE
m	METER
m/s	METERS PER SECOND
MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MH	MANHOLE
MIN	MINIMUM


ABBREVIATIONS	
Symbol	Description
mm	MILLIMETER
MOCBP	MINIMUM OVER CURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
N/A	NOT APPLICABLE
NC	NOISE CRITERIA, OR NORMALLY CLOSED
NFWH	NON-FREEZE WATER HYDRANT
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NOx	NITROUS OXIDES
NPW	NON POTABLE WATER
NTS	NOT TO SCALE
O/A	OUTSIDE AIR
OC	ON CENTER
Pa	PASCAL
PD	PRESSURE DROP, AND, PUMP DISCHARGE
PF	PENAL FIXTURE
PG	PRESSURE GAUGE
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING / REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
PSIG	POUNDS PER SQUARE INCH - GAUGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
R/A	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RD	ROOF DRAIN, AND, RELIEF DAMPER
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUN LOAD AMPERE
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RWL	RAIN WATER LEADER
S/A	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
SQ FT	SQUARE FEET
SS	STAINLESS STEEL
SV	SUPERVISED VALVE
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TSP	TOTAL STATIC PRESSURE, AND, TRAP SEAL PRIMER
TSTAT	THERMOSTAT
TYP	TYPICAL
U/C	UNDERCUT
U/G	UNDERGROUND
UL / ULC	UNDERWRITERS LABORATORY / CANADA
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WATTS
Wb	WET BULB
WC	WATER CLOSET
WG	WATER GAUGE
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTER
WPD	WATER PRESSURE DROP
WS	WATER SOFTENER
°C	DEGREES CENTIGRADE (CELCIUS)
°F	DEGREES FAHRENHEIT
ø	DIAMETER
ΔP	CHANGE IN PRESSURE
ΔT	CHANGE IN TEMPERATURE

SYMBOLS	
	HOSE BIBB, WALL HYDRANT
	ENERGY METER
	WATER METER
	GAS METER
	DRAINS ABOVE
	FLOOR CLEANOUT
	CLEANOUT PLUG
	FLOOR DRAIN
	ROOF DRAIN

ANNOTATION	
TAGS	DESCRIPTION
	VAV BOX SIZE
	MIN. AIR FLOW [L/s]
	MAX. AIR FLOW [L/s]
	REHEAT COIL
	EQUIPMENT TAG
	SEQUENTIAL NUMBER
	BUILDING
	DIFFUSER TYPE
	NECK SIZE [mm]
	AIR FLOW [L/s]
	TYPICAL QUANTITY
	GRILLE TYPE
	GRILLE SIZE [mmxmm]
	AIR FLOW [L/s]
	HEATER TYPE/TAG
	HEATING CAPACITY [W]
	FLUID FLOW [L/s]
	EQUIPMENT TAG
	SEQUENTIAL NUMBER
	CALLOUT HEAD
	DETAIL NUMBER
	REFERENCING SHEET

SYMBOLS	
	SUPPLY / OUTSIDE AIR DUCT (UP & DOWN)
	EXHAUST DUCT (UP & DOWN)
	RETURN DUCT (UP & DOWN)
	ROUND AND SQUARE CEILING SUPPLY OUTLET
	ROUND AND SQUARE CEILING RETURN INLET
	ROUND AND SQUARE CEILING EXHAUST INLET
	SQUARE DIRECTIONAL CEILING SUPPLY OUTLET
	WALL SUPPLY OUTLET
	WALL RETURN / EXHAUST INLET
	INCLINED RISE, IN DIRECTION OF AIR FLOW
	INCLINED DROP, IN DIRECTION OF AIR FLOW
	NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)
	FLEXIBLE DUCTWORK
	DUCT WITH ACOUSTIC LINING
	THERMOSTAT
	THERMOSTAT WITH COVER
	TEMPERATURE SENSOR
	HUMIDISTAT
	DIFFERENTIAL PRESSURE SENSOR
	STATIC PRESSURE SENSOR
	CARBON MONOXIDE SENSOR
	CARBON DIOXIDE SENSOR
	NITROGEN DIOXIDE SENSOR
	FLOW SWITCH
	ALARM PANEL
	CONTROL PANEL
	MOTOR OPERATED DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE & SMOKE DAMPER
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER, IN RECESSED CABINET
	FIRE HOSE CABINET
	FIRE HOSE RACK
	ALARM CHECK VALVE, WET SPRINKLER SYSTEM
	ALARM CHECK VALVE, DRY SPRINKLER SYSTEM
	PIPE ANCHOR
	PIPE GUIDE
	EXPANSION JOINT
	VIBRATION ISOLATOR
	PIPE/DUCT FLEXIBLE CONNECTION
	ELECTRIC HEAT TRACING
	DOUBLE CHECK BACKFLOW PREVENTER
	PLUGGED PRESSURE GAUGE CONNECTION
	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	CIRCUIT BALANCING VALVE
	STRAINER


SYMBOLS	
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN
	TEMPERED WATER
	TEMPERED WATER RETURN
	SANITARY ABOVE SLAB
	SANITARY BELOW SLAB
	STORM ABOVE SLAB
	STORM BELOW SLAB
	VENT
	GRAVITY FED CONDENSATE DRAIN
	PUMPED DISCHARGE
	NATURAL GAS
	FUEL OIL
	FUEL OIL SUPPLY
	FUEL OIL RETURN
	HOT WATER SUPPLY
	HOT WATER RETURN
	HOT WATER REVERSE RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	GLYCOL HOT WATER SUPPLY, LOW TEMPERATURE
	GLYCOL HOT WATER RETURN, LOW TEMPERATURE
	GLYCOL HOT WATER SUPPLY, HIGH TEMPERATURE
	GLYCOL HOT WATER RETURN, HIGH TEMPERATURE
	REFRIGERANT GAS
	REFRIGERANT LIQUID
	FIRE
	FIRE DEPARTMENT CONNECTION
	SPRINKLER PIPING
	DRY SPRINKLER PIPING
	STANDPIPE PIPING
	DIRECTION OF FLOW
	CONCENTRIC REDUCER OR INCREASER
	ECCESTRIC REDUCER OR INCREASER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	SIDE CONNECTION
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISER DOWN (IN PIPE)
	RISER UP (IN PIPE)
	RISE OR DROP IN PIPE
	ELBOW
	PIPE BREAK
	CAP ON END OF PIPE
	UNION
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	GATE VALVE OR GENERIC VALVE REFER TO SPECIFICATIONS
	BALL VALVE
	DRAIN VALVE WITH THREADED HOSE END CONNECTION
	GATE VALVE, O.S.&Y.
	BUTTERFLY VALVE
	2-WAY BUTTERFLY VALVE
	CHECK VALVE
	ANGLE GLOBE VALVE
	PLUG VALVE
	GAS COCK
	PRESSURE REGULATING VALVE
	SOLENOID VALVE
	PRESSURE RELIEF VALVE
	VALVE IN RISE
	VALVE IN DROP
	THERMOMETER
	PRESSURE GAUGE
	PRESSURE GAUGE W/ STOPCOCK




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105 Commerce Valley Dr. W, 7th Floor  
Markham, Ontario, L3T 7W3

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NORTH:





SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:  
**60686829**

Owner's Contract Number:  
**987654321**

6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Filename :  
**60686829**

Version:  
**2020.2.5.**

Project Manager :  
BIM/VDC Manager :

Sustainability Target :  
IPMS 1 (m²) :  
IPMS 2 (m²) :

Designed :  
**AP**  
Date (yyyy-mm-dd) :

Drawn :  
**LD**  
Date (yyyy-mm-dd) :

Reviewed :  
Date (yyyy-mm-dd) :

Checked :  
**JS**  
Date (yyyy-mm-dd) :

Approved :  
Date (yyyy-mm-dd) :

Title :

Page Size :  
**ANSI D**

Sheet :  
**1** of **100**

Rev :  
**6**  
Sheet :  
of

**M002**



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HEAT RECOVERY UNIT SCHEDULE (2 OF 2)				
Cooling Coil (CC)	Fluid Medium	40% Propylene Glycol		
	Nominal Capacity, tons	2.2		
	Total Cooling, kW (MBH)	8	26	
	Sensible Cooling, kW (MBH)	6	19	
	EAT, Dry Bulb, °C (°F)	24.8	76.6	
	EAT, Wet Bulb, °C (°F)	18.3	65.0	
	LAT, Dry Bulb, °C (°F)	12.0	53.6	
	LAT, Wet Bulb, °C (°F)	11.9	53.4	
	Airflow, L/s (cfm)	354	750	
	Air Velocity, m/s (fpm)	0.71	139	
	Air PD, Pa (in. WC)	10.0	0.04	
	EFT, °C (°F)	5.6	42.0	
Electrical	LFT, °C (°F)	11.1	52.0	
	Fluid Flowrate, L/m (gpm)	22	5.9	
	Fluid Velocity, m/s (fps)	0.61	2.0	
	Fluid PD, kPa (ft WC)	9.0	3.0	
	Unit Elec. Supply (V/Ph/Hz)	575/3/60		
	Unit FLA, A	6.00		
	Unit MCA, A	7.50		
	Unit MOP, A	8		
	Lights & Controls Elec. Supply (V/Ph/Hz @ A)	120/1/60 @ 15A		
Dimensions	Max. Dimensions, WxLxH, mm (in.)	1336 x 3094 x 1809	52.6 x 121.8 x 71.2	
	Curb Height, mm (in)	457	18	
	Air Intake/Discharge Orientation	Bottom - S/A, R/A Side - E/A, Rear - O/A		
	Piping Feed	Side		
	Weight, kg (lb)	1,270	2,800	
Notes				

Notes	
(1)	Refer to specification section 23 72 00 - Hydronic Air Handling Units
(2)	Frost control shall be achieved by monitoring outdoor air temperature, exhaust air relative humidity, and differential pressure across the wheel. When frost or frosting conditions are detected wheel speed shall be modulated down (via the VFD) to reduce the amount of latent transfer and prevent frosting.
(3)	
(4)	
(5)	

PUMP SCHEDULE					
Tag Information	Tag No.	P-1 (A,B)		P-2 (A,B)	
	Location	Mechanical Room (114)		Mechanical Room (114)	
	Service	Heating Glycol Loop		Chilled Glycol Loop	
	Manufacturer	Armstrong		Armstrong	
	Model No.	Series 4380 1505-001.5		Series 4380 0205-005.0	
Performance	Pump Type	Packaged Vertical Inline		Packaged Vertical Inline	
	Configuration	Duplex (Duty-Standby)		Duplex (Duty-Standby)	
	Control	Variable Speed Pressure Control		Variable Speed Pressure Control	
	Fluid	40% Propylene Glycol		40% Propylene Glycol	
	Fluid Flow - System, L/s (gpm)	2.839	45	8.517	135
	Fluid Flow - per Pump, L/s (gpm)	2.839	45	8.517	135
	Pressure - Suction, kPa (ft wc)	75	25	75	25
	Pressure - Head, kPa (ft wc)	135	45	239	80
	Pressure - Discharge, kPa (ft wc)	209	70	314	105
	Rated Speed, RPM	2904		3498	
Dimensions	Pump Weight, kg (lb)	28	62	136	300
	Max. Pump Dimensions, WxLxH, mm (in.)	268 x 331 x 464	10.6 x 13 x 18.3	301 x 331 x 530	11.9 x 13 x 20.9
	Panel Weight, kg (lb)	-	-	-	-
	Max. Panel Dimensions, WxLxH, mm (in.)	-	-	-	-
Electrical	Motor Horsepower, hp	2 x 1.5 HP		2 x 5 HP	
	Brake Horsepower, hp	1 x 0.92 HP		2 x 3.91 HP	
	Motor Starter	VFD		VFD	
	Electrical Supply (V/Ph/Hz)	575/3/60		575/3/60	
	Notes	(1),(2),(3)		(1),(2),(3)	

Notes	
(1)	Refer to specifications section 23 21 23 - Hydronic Pumps.
(2)	C/w BMS interface (refer to control drawings for alarms, sensors, inputs, outputs, etc).

HEAT RECOVERY UNIT SCHEDULE (1 OF 2)				
Tag Information	Tag No.	HRU-1		
	Location	ROOF		
	Service	Main Building O/A		
	Manufacturer	Aldes		
	Model No.	CW2000e		
	Type	Outdoor - 100% O/A		
Supply Fan	Type, Quantity	Plenum Fan (1)		
	Airflow, L/s (cfm)	354	750	
	O/A airflow, L/s (cfm)	187	0.75	
	Max. TSP, Pa (in. wc)	348.4	1.40	
	Drive Type	Direct		
	Motor Control	VFD		
	RPM	1,434		
	Brake hp	0.35		
	Motor hp	1		
	S/A Discharge, Acoustic Bands 1 - 8, dB	63 65 75 65 65 60 55 49		
	O/A Intake, Acoustic Bands 1 - 8, dB			
	Casing, Acoustic Bands 1 - 8, dB			
Exhaust Fan	Type, Quantity	Plenum Fan (1)		
	Airflow, L/s (cfm)	307	650	
	ESP, Pa (in. wc)	187	0.75	
	Max. TSP, Pa (in. wc)	314	1.26	
	Drive Type	Direct		
	Motor Control	VFD		
	RPM	1,365		
	Brake Horsepower, bhp	1		
	Motor Power, hp	0.3		
	R/A Intake, Acoustic Bands 1 - 8, dB	62 65 74 64 63 59 53 48		
	E/A Discharge, Acoustic Bands 1 - 8, dB			
Filters	Supply Air - Pre-Filter	MERV 8		
	Supply Air - Final Filter	MERV 13		
	Return Air - Final Filter	MERV 8		

Winter Conditions:				
O/A EAT DB, °C (°F)	-17.0	1.4		
O/A EAT WB, °C (°F)	-17.8	-0.1		
O/A LAT, DB, °C (°F)	13.7	56.6		
O/A LAT, WB, °C (°F)	7.2	44.9		
E/A EAT, DB, °C (°F)	-13.6	7.5		
E/A EAT, WB, °C (°F)	-13.8	7.1		
E/A LAT, DB, °C (°F)	22.2	72.0		
E/A LAT, WB, °C (°F)	12.2	54.0		
Tot. Heat Recovery, kW (MBH)	16.6	56.5		
Air Pressure Drop, Pa (in. WC)	92	0.37		
Sensible Efficiency, %	89.8%			
Latent Efficiency, %	84.6%			
Total Efficiency, %	88.4%			

Summer Conditions:				
O/A EAT DB, °C (°F)	30.0	86.0		
O/A EAT WB, °C (°F)	23.0	73.4		
O/A LAT, DB, °C (°F)	25.1	77.2		
O/A LAT, WB, °C (°F)	18.7	65.6		
E/A EAT, DB, °C (°F)	29.4	85.0		
E/A EAT, WB, °C (°F)	22.4	72.3		
E/A LAT, DB, °C (°F)	23.9	75.0		
E/A LAT, WB, °C (°F)	17.2	63.0		
Tot. Heat Recovery, kW (MBH)	6.3	21.6		
Air Pressure Drop, Pa (in. WC)	92	0.37		
Sensible Efficiency, %	89.6%			
Latent Efficiency, %	84.3%			
Total Efficiency, %	86.1%			

Heat Recovery Wheel Cooling Perf.	Fluid Medium	40% Propylene Glycol		
	Total Capacity, kW (MBH)	24	81	
	EAT, °C (°F)	-17.0	1.4	
	LAT, °C (°F)	38.7	101.7	
	Airflow, L/s (cfm)	354	750	
	Air Velocity, m/s (fpm)	0.71	139	
	Air PD, Pa (in. wc)	7.5	0.03	
	EFT, °C (°F)	54.4	130.0	
	LFT, °C (°F)	43.3	110.0	
	Fluid Flowrate, L/s (USgpm)	0.568	9.0	
	Fluid Velocity, m/s (fps)	1.46	4.8	
	Fluid PD, kPa (ft WC)	34.97	11.70	
Heating Coil (HC)	Tag	not used		
	EAT, DB (Post Wheel & HC), °C (°F)	-	-	
	Entering Air Relative Humidity, %	-		
	Leaving Air Relative Humidity, %	-		
	Manifold Capacity, kg/h (lb/h)	-	-	
	Type	-		

ROOFTOP UNIT SCHEDULE				
Tag Information	Tag No.	RTU-1		
	Location	ROOF		
	Service	102-CALL DISPATCH		
	Basis of Design	Trane CSAA008		
	Model No.	Trane CSAA008		
	Type	Outdoor		
Supply Fan	Type, Quantity	Plenum Fan, (1)		-
	Airflow, L/s (cfm)	1,534	3,250	-
	O/A airflow, L/s (cfm)	131	278	-
	O/A Percentage (%)	9%		-
	ESP, Pa (in. wc)	187	0.75	-
	Max. TSP, Pa (in. wc)	717	2.88	-
	Drive Type	Direct		-
	Motor Control	VFD		-
	RPM	2,180		-
	Brake Horsepower, bhp	2.47		-
	Motor Power, hp	3		-
	Inlet Sound Octave Bands 1 - 8, dB	-		-
Return Fan	Type	Plenum Fan, (1)		-
	Airflow, L/s (cfm)	1,534	3,250	-
	ESP, Pa (in. wc)	124	0.50	-
	Max. TSP, Pa (in. wc)	286	1.15	-
	Drive Type	Direct		-
	Motor Control	VFD		-
	RPM	1,826		-
	Brake Horsepower, bhp	1.33		-
	Motor Power, hp	1.5		-
	Inlet Sound Octave Bands 1 - 8, dB	-		-
	Outlet Sound Octave Bands 1 - 8, dB	-		-
Filter	Pre-Filter	MERV 8		-
	Final Filter	N/A		-

Heating Coil (HC)	Fluid Medium	40% Propylene Glycol		
	Total, kW (MBH)	20.7	70.5	
	EAT, °C (°F)	18.3	65.0	
	LAT, °C (°F)	29.4	85.0	
	Airflow, L/s (cfm)	1,534	3,250	
	Air Velocity, m/s (fpm)	2.1	407	
	Air PD, Pa (in. wc)	25.4	0.10	
	EFT, °C (°F)	54.4	130.0	
	LFT, °C (°F)	43.3	110.0	
	Fluid Flowrate, L/min (USgpm)	29.7	7.8	
	Fluid Velocity, m/s (fps)	0.2	0.6	
	Fluid PD, kPa (ft WC)	1.6	0.5	
Humidifier	Tag	-		-
	Type	-		-
	Required Manifold Capacity, kg/h (lb/h)	-	-	-
Cooling Coil	Fluid Medium	40% Propylene Glycol		
	Nominal Capacity, tons	10.8		
	Total Cooling, kW (MBH)	38.1	130	
	Sensible Cooling, kW (MBH)	22.1	75	
	EAT, Dry Bulb, °C (°F)	24.4	76.0	
	EAT, Wet Bulb, °C (°F)	19.7	67.5	
	LAT, Dry Bulb, °C (°F)	12.8	55.0	
	LAT, Wet Bulb, °C (°F)	12.6	54.7	
	Air Velocity, m/s (fpm)	2.0	400.0	
	Air PD, Pa (in. wc)	130	0.5	
	EFT, °C (°F)	5.6	42.0	
	LFT, °C (°F)	11.1	52.0	
Elec.	Fluid Flowrate, L/s (USgpm)	1.820	28.9	
	Fluid Velocity, m/s (fps)	0.7	2.3	
	Fluid PD, kPa (ft WC)	17.7	5.9	
	Unit Elec. Supply (V/Ph/Hz)	575/3/60		
	Unit FLA, A	8.84		
Dimensions	Unit MCA, A	9.82		
	Unit MOP, A	15		
	Lights & Controls Elec. Supply (V/Ph/Hz @ A)	120/1/60 @ 15A		
	Max. Dimensions, WxLxH, mm (in.)	1283 x 6607 x 1107	50.5 x 260.1 x 43.6	
	Curb Height, mm (in.)	457	18	
Humidifier	Airflow Discharge Orientation	Rear		
	Piping Feed	Side		
	Weight, kg (lb)	1,571	3461	

Humidifier	Tag			-	-	
	Type			-	-	
	Required Manifold Capacity, kg/h (lb/h)			-	-	
Cooling Coil	Fluid Medium	40% Propylene Glycol			-	
	Nominal Capacity, tons	10.8			-	
	Total Cooling, kW (MBH)	38.1	130	-	-	
	Sensible Cooling, kW (MBH)	22.1	75	-	-	
	EAT, Dry Bulb, °C (°F)	24.4	76.0	-	-	
	EAT, Wet Bulb, °C (°F)	19.7	67.5	-	-	
	LAT, Dry Bulb, °C (°F)	12.8	55.0	-	-	
	LAT, Wet Bulb, °C (°F)	12.6	54.7	-	-	
	Air Velocity, m/s (fpm)	2.0	400.0	-	-	
	Air PD, Pa (in. wc)	130	0.5	-	-	
	EFT, °C (°F)	5.6	42.0	-	-	
	LFT, °C (°F)	11.1	52.0	-	-	
Elec.	Fluid Flowrate, L/s (USgpm)	1.820	28.9	-	-	
	Fluid Velocity, m/s (fps)	0.7	2.3	-	-	
	Fluid PD, kPa (ft WC)	17.7	5.9	-	-	
	Unit Elec. Supply (V/Ph/Hz)	575/3/60			-	
	Unit FLA, A	8.84			-	
	Unit MCA, A	9.82			-	
	Unit MOP, A	15			-	
	Lights & Controls	120/1/60 @ 15A			-	
	Elec. Supply (V/Ph/Hz @ A)				-	
	Dimensions	Max. Dimensions, WxLxH, mm (in.)	1283 x 6607 x 1107	50.5 x 260.1 x 43.6	-	-
		Curb Height, mm (in.)	457	18	-	-
		Airflow Discharge Orientation	Rear			-
Piping Feed		Side			-	
Weight, kg (lb)		1,571	3461	-	-	






Notes
(1) Refer to specifications section 22 34 37 - Domestic Hot Water Heaters.
(2) C/w selectable display including: Celsius/Fahrenheit, setpoint, flow rate, inlet temperature, outlet temperature

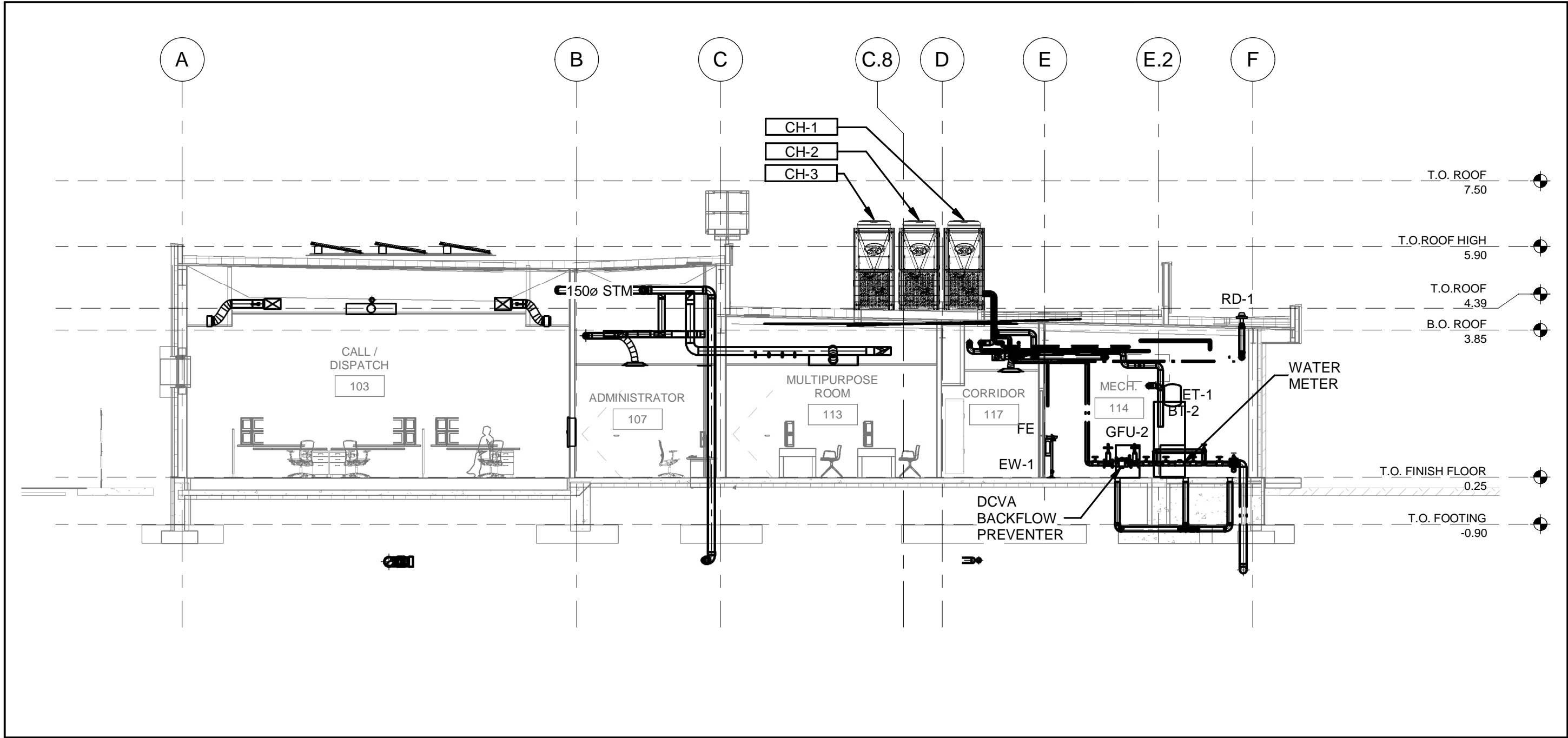
(1) Refer to specifications section 23 82 39 - Cabinet and Unit Heaters.
(2) C/w unit mounted thermostat and starter.

- (1) Refer to specifications section 23 82 19 - Fan Coil Units.
- (2) Units shall come complete with 0-10V EC motors.
- (3) Each FCU shall be provisioned to include a condensate pump (at zero additional cost to client) to ensure condensate can be removed. Refer to 23 13 19 - Drainage Waste and Vent Piping Specialties
- (4) Add two layers of composite acoustic lagging (min 10 kg/m<sup>2</sup>) around FCU casing.

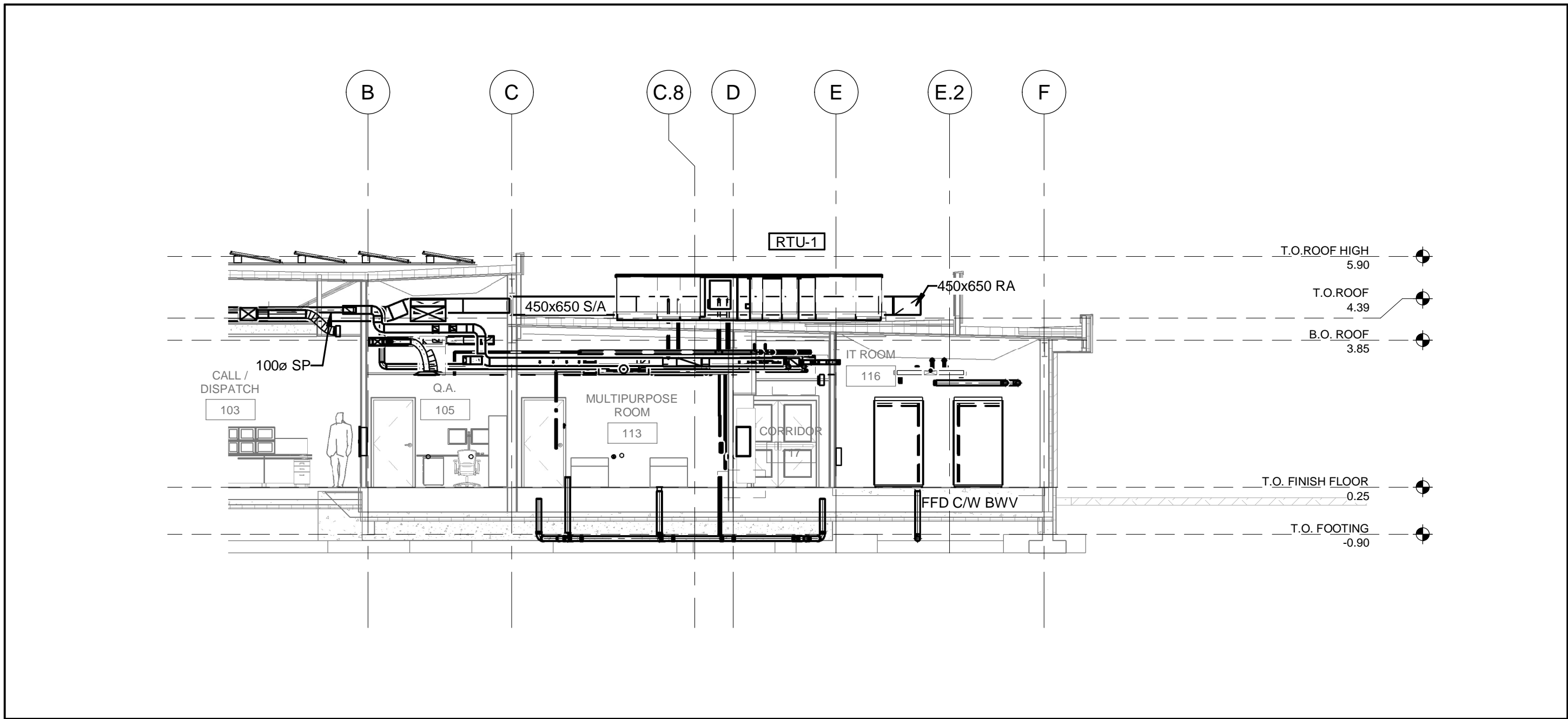
Notes
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<div style="text-align: center;"><b>AECOM Canada Ltd.</b> 105 Commerce Valley Dr. W. 7th Floor Markham, Ontario, L3T 7W3</div>					
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NORTH:					
<div style="text-align: center;"></div>					
<div style="text-align: center;"></div>					
SEAL:					
<div style="text-align: center;"><b>NRPS - 911 BACKUP DISPATCH</b> <b>5 LINCOLN STREET</b> <b>WELLAND, ONTARIO</b></div>					
Owner's Project Number : <b>60686829</b>			Owner's Contract Number : <b>987654321</b>		
6	2024-01-23	ISSUED FOR TENDER			
5	2024-12-13	RE-ISSUED FOR PERMIT			
4	2024-11-29	ISSUED FOR CLIENT REVIEW			
3	2024-10-30	ISSUED FOR PERMIT			
2	2024-08-30	ISSUED FOR 30% CD			
1	2024-07-26	ISSUED FOR 100% DD			
Mark	Date	Description			
Revision History					
Filename :			Version : <b>2020.2.5</b>		
ANSI D <b>60686829</b>			Project Manager :		
Project Administrator :			BIM/VDC Manager :		
Sustainability Target :			IPMS 1 (m²) :		IPMS 2 (m²) :
Designed : <b>AP</b>		Date (yyyy-mm-dd) :			
Drawn : <b>LD</b>		Date (yyyy-mm-dd) :			
Reviewed :		Date (yyyy-mm-dd) :			
Checked : <b>JS</b>		Date (yyyy-mm-dd) :			
Approved :		Date (yyyy-mm-dd) :			
Title :					
<b>SCHEDULES (2 OF 2)</b>					
Paper Size: <b>ANSI D</b>		Sheet : <b>M004</b>		Rev : <b>6</b>	
Scale :				Sheet : of : _____	





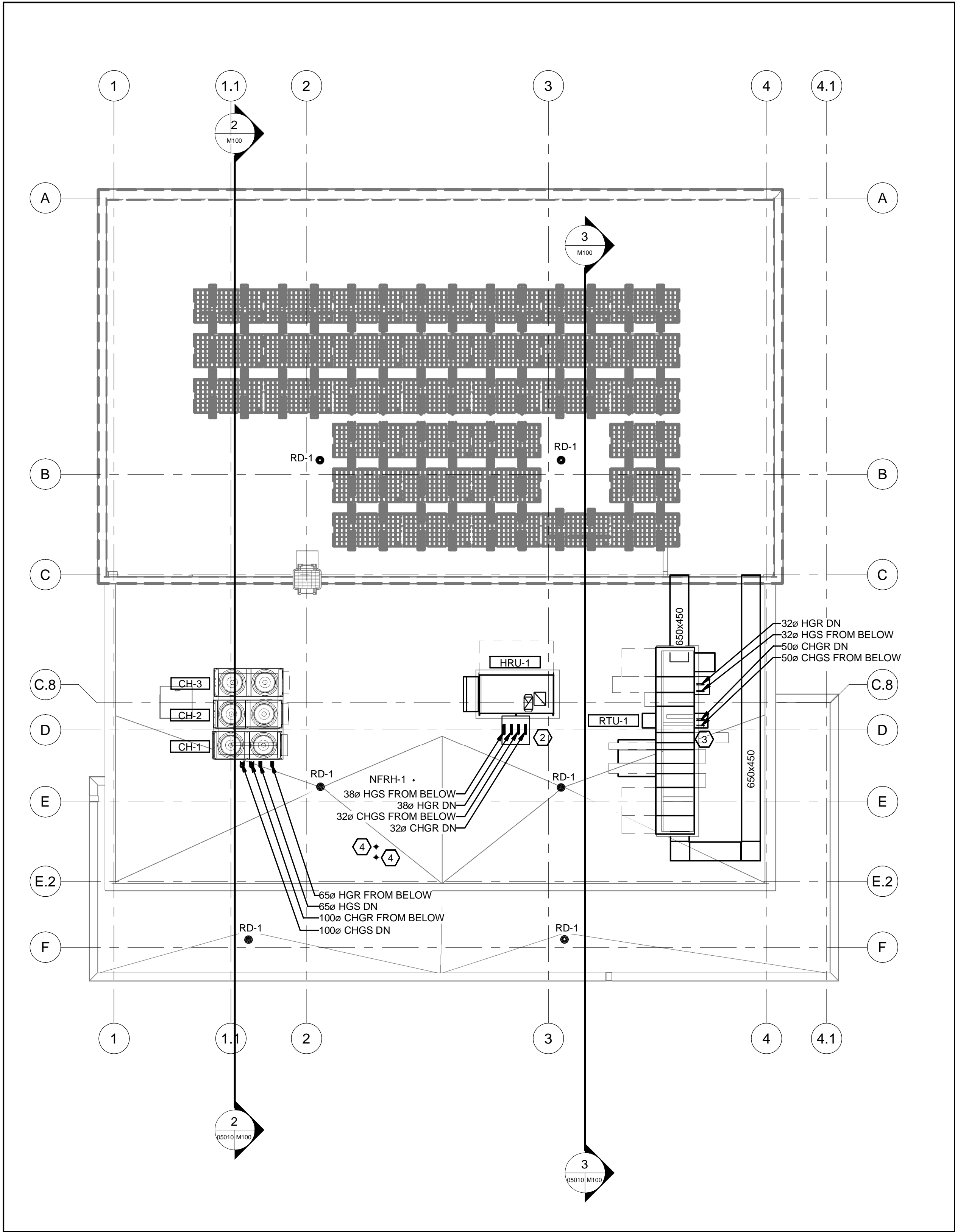
2 ROOF PLAN VIEW - SECTION 1  
M100 1 : 100



3 ROOF PLAN VIEW - SECTION 2  
M100 1 : 100

KEYNOTES:

- 1 REFER TO STRUCTURAL DRAWINGS FOR ALLOWABLE ZONES TO PLACE ROOFTOP EQUIPMENT.
- 2 HRU-1 SHALL BE COMPLETE WITH INSULATED ENCLOSURE AROUND ALL PIPES.
- 3 RTU-1 SHALL BE COMPLETE WITH INSULATED ENCLOSURE AROUND ALL PIPES.
- 4 1000 CONCENTRIC VENT AND COMBUSTION AIR INTAKE FROM BOILER.



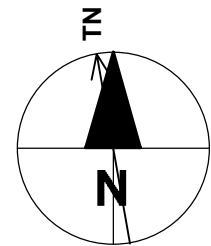
1 ROOF PLAN  
M100 1 : 100



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Markham, Ontario, L3T 7W3

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NORTH:



Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

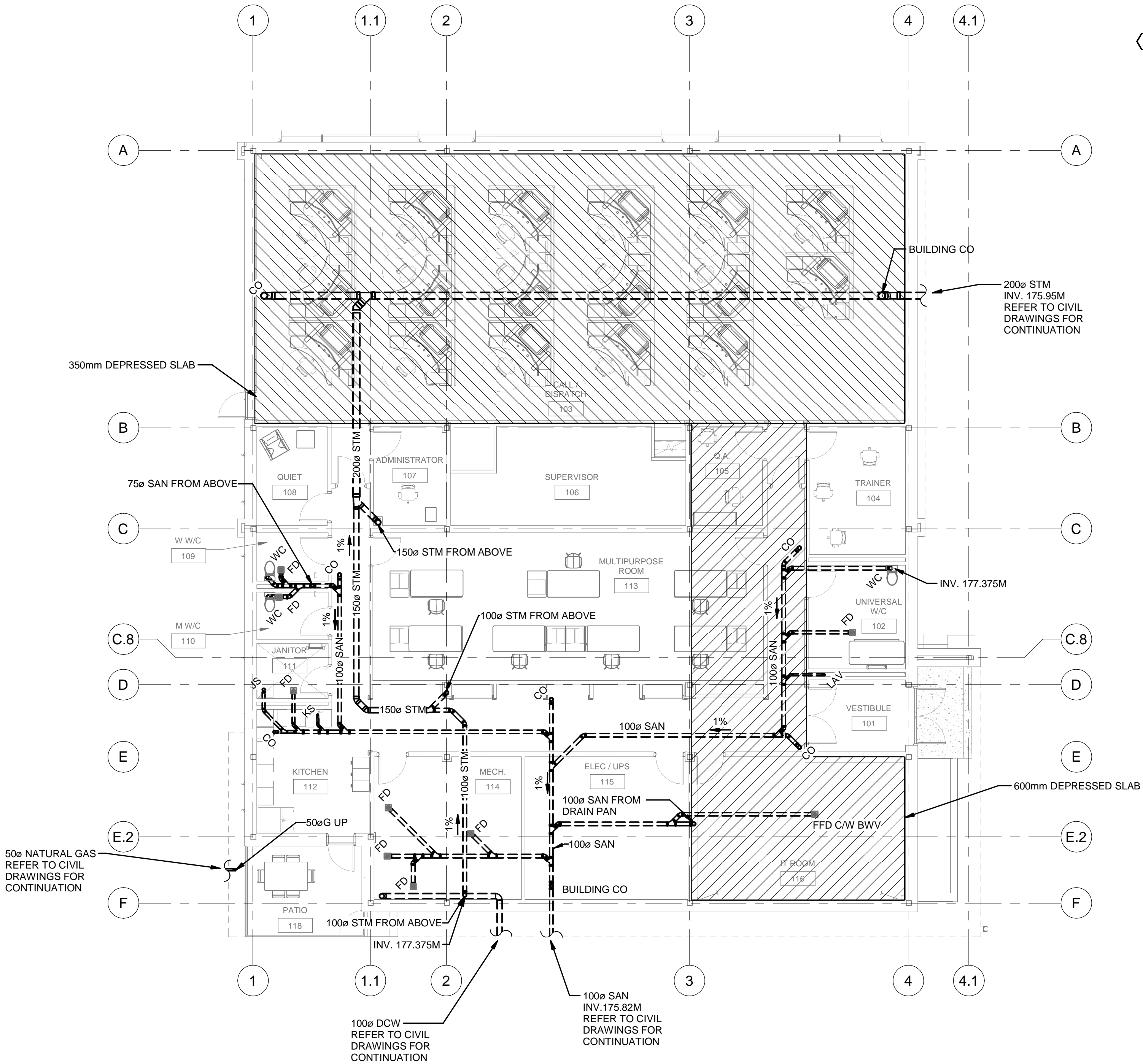
6	2024-01-23	ISSUED FOR TENDER
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2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
Revision History		
Filename:		Version: 2020.2.5.
Project Number:	60686829	
Project Manager:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
Drawn:	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	

Title:

ROOF PLAN





- GENERAL PLUMBING AND DRAINAGE NOTES (UNDERSLAB):**
1. THE ENTIRE PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ONTARIO BUILDING CODE AND ALL LOCAL BYLAWS AND REGULATIONS IN EFFECT AT THE TIME OF TENDERING AND CONSTRUCTION.
  2. ALL SANITARY DRAINAGE BELOW GRADE SHALL BE MINIMUM OF 75 mm (3 IN.) UNLESS INDICATED OTHERWISE.
  3. ALL FLOOR DRAINS SHALL BE COMPLETE WITH TRAPS AND TRAP PRIMERS.
  4. ALL STORM DRAINAGE BELOW GRADE SHALL BE MINIMUM 100 mm (4 IN.) UNLESS INDICATED OTHERWISE.
  5. CONTRACTOR TO SIZE AND ROUTE ALL SANITARY VENTING TO LATEST ONTARIO PLUMBING CODE.
  6. COORDINATE FINAL LOCATION WITH FLOOR DRAINS, AND HUB DRAINS THAT RECEIVE CONDENSATE DRAINAGE FROM HVAC AND OTHER EQUIPMENT.
  7. COORDINATE FINAL LOCATIONS OF ALL STORM AND SANITARY CLEANOUTS WITH FINAL EQUIPMENT LAYOUT. ENSURE CLEANOUTS ARE ACCESSIBLE.
  8. CLEANOUT IS REQUIRED AT THE BASE OF EVERY STORM AND SANITARY PIPE DROP.

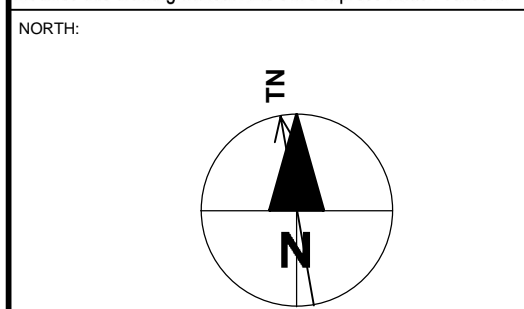
**KEYNOTES:**

①



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SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

Mark	Date	Description
6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Revision History

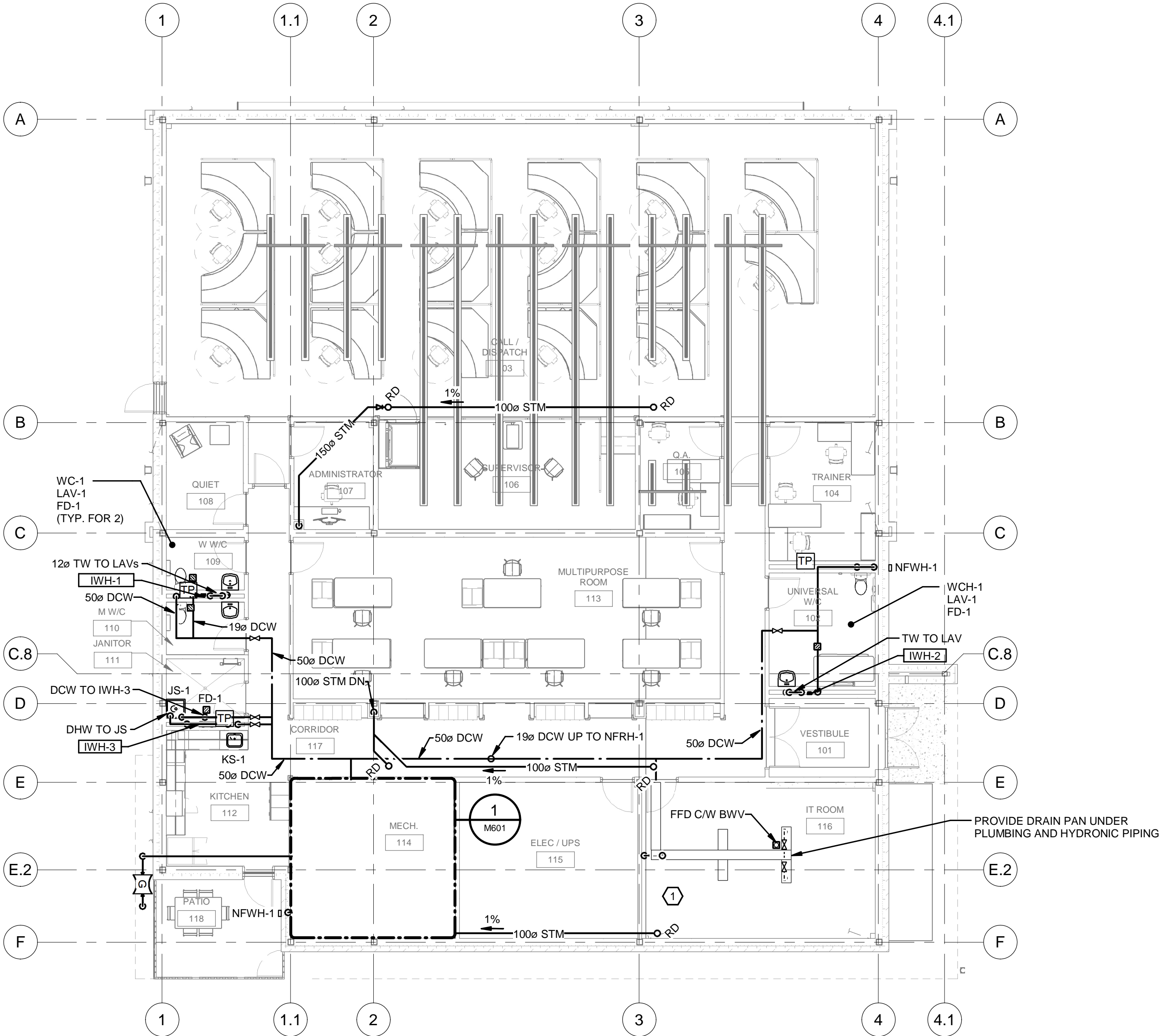
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Project Number : 60686829		Project Manager :	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target :		IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : AP		Date (yyyy-mm-dd) :	
Drawn : LD		Date (yyyy-mm-dd) :	
Reviewed :		Date (yyyy-mm-dd) :	
Checked : JS		Date (yyyy-mm-dd) :	
Approved :		Date (yyyy-mm-dd) :	

Title:

**GROUND FLOOR PLAN -  
UNDERSLAB PLUMBING**



Autodesk Docs:WP-MER (CAN) 60686829-NRPS 911 Backup Dispatch - M - RV724.dwg      Print Date: 23-Jan-2025 5:35:46 PM      ANSI D Title Block Revision 0.0    Designed by: Eric Leimer    ©2022 AECOM Canada. All Rights Reserved.



GENERAL PLUMBING AND DRAINAGE NOTES (ABOVE GRADE):

1. THE ENTIRE PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ONTARIO PLUMBING CODE AND ALL LOCAL BYLAWS AND REGULATIONS IN EFFECT AT THE TIME OF TENDERING AND CONSTRUCTION.
2. ALL FLOOR DRAINS SHALL BE COMPLETE WITH TRAPS AND TRAP PRIMERS.
3. ALL DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPES SHALL BE MINIMUM 19 MM (3/4 IN.) UNLESS INDICATED OTHERWISE.
4. ALL PIPING SHALL BE OVERHEAD.
5. CONTRACTOR TO SIZE AND ROUTE ALL SANITARY VENTING TO LATEST ONTARIO PLUMBING CODE.
6. COORDINATE FINAL LOCATION WITH FLOOR DRAINS, AND HUB DRAINS THAT RECEIVE CONDENSATE DRAINAGE FROM HVAC AND OTHER EQUIPMENT.
7. PROVIDE 25 MM INSULATION ON ALL HORIZONTAL RAINWATER PIPING (FROM ROOF DRAIN TO VERTICAL LEADER).
8. PROVIDE A CLEANOUT AT THE BASE OF EVERY STORM OR SANITARY DROP PRIOR TO DROPPING BELOW SLAB.

KEYNOTES:

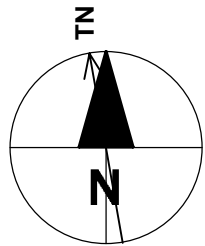
- ① HUMIDIFIERS TO BE C/W LEAK DETECTION UNDERNEATH.



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: **60686829**      Owner's Contract Number: **987654321**

6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Mark      Date      Description

Revision History

Filename:      Version: **2020.2.5.**

Project Number:	Project Manager:	
<b>60686829</b>		
Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
<b>AP</b>		
Drawn:	Date (yyyy-mm-dd):	
<b>LD</b>		
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
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Approved:	Date (yyyy-mm-dd):	

Title:

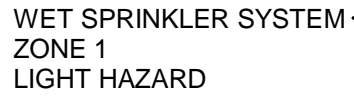
**GROUND FLOOR PLAN - PLUMBING**

Page Size:      Sheet:      Rev: **6**  
ANSI D      M201      Sheet:      of:        
indicated



WEIGHT OF FULL SPRINKLER MAINS		
SIZE OF SPRINKLER MAIN	WEIGHT	
	kg/m	lbs/ft.
150 mm (6 in.)	35	23
200 mm (8 in.)	60	40
250 mm (10 in.)	83	56

1. FIRE PROTECTION CONTRACTOR SHALL PROVIDE DRAWINGS AND HYDRAULIC CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
2. THE SPRINKLER LAYOUTS SHALL INCLUDE ALL PIPING AND VALVES NECESSARY TO SERVE THE ARCHITECTURAL CEILING PLANS. PROPOSED LAYOUTS SHALL BE PROVIDED AS SHOP DRAWINGS FOR REVIEW PRIOR TO INSTALLATION.
3. FLOW INDICATION AND PRESSURE SWITCHES ARE SHOWN ON SCHEMATICS FOR CLARITY AND ARE CONSIDERED PART OF A COMPLETE LISTED ALARM CHECK VALVE ASSEMBLY.
4. AT THE COMPLETION OF THE PROJECT, FIRE PROTECTION CONTRACTOR SHALL ISSUE A LIST PROVIDED AND SEALED BY A PROFESSIONAL ENGINEER CONFIRMING THE INSTALLATION COMPLIES WITH NFPA 13.
5. REFER TO ARCHITECTURAL DRAWINGS FOR REFLECTED CEILING PLANS.



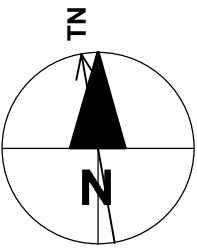
WET SPRINKLER SYSTEM  
ZONE 1  
ORDINARY HAZARD (GR 1)

FIRE  
-DEPARTMENT  
CONNECTION

WET SPRINKLER SYSTEM  
ZONE 1  
ORDINARY HAZARD (GR 1)

PRE-ACTION SPRINKLER SYSTEM  
ZONE 2  
ORDINARY HAZARD (GR 1)

- CLEAN AGENT SYSTEM  
AREA



SEAL-

Owner's Project Number : <b>60686829</b>	Owner's Contract Number : <b>987654321</b>
---	---

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4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

### Revision History

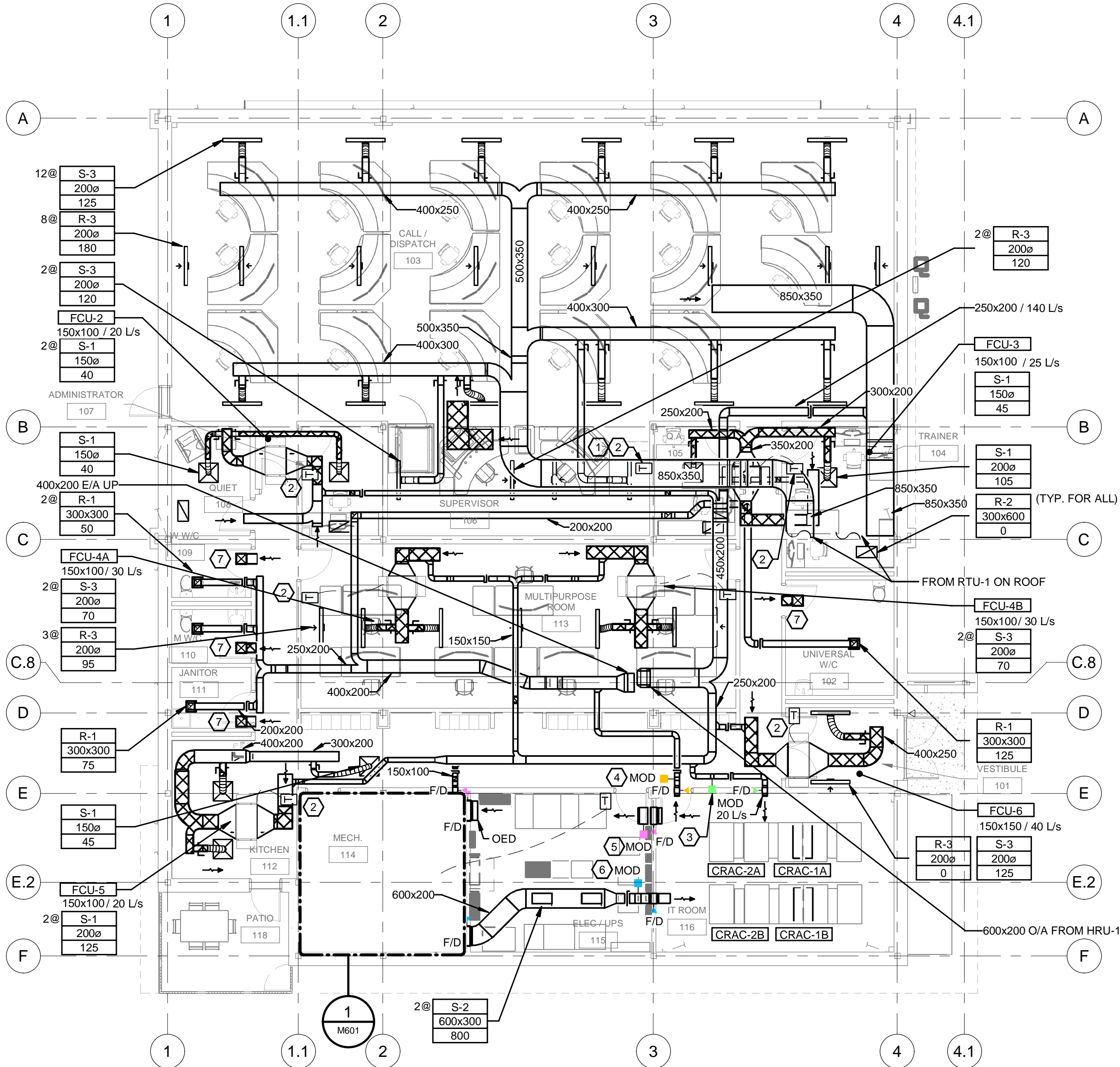
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Project Number : <b>60686829</b>	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m²)	IPMS 2 (m²)
Designed : <b>AP</b>	Date (yyyy-mm-dd) :	
Drawn : <b>LD</b>	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : <b>JS</b>	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	

## GROUND FLOOR PLAN - FIRE PROTECTION



Autodesk Docs:\BP-AMER (CAN) 60686829-NRPS 911 Backup Dispatch\60686829-NRPS 911 Backup Dispatch - M - RV724.dwg      Print Date: 23-Jan-2025 5:39:57 PM      ANSI D Title Block Revision 0.0 - Designed by Eric Leimer, ©2025 AECOM Canada. All Rights Reserved.



GENERAL HVAC SYSTEM NOTES:

1. ALL TRANSFER AIR DUCTS SHALL BE ACOUSTICALLY LINED ELBOW OR STRAIGHT DUCT AS SHOWN OR UNLESS INDICATED OTHERWISE. TRANSFER AIR DUCTS SHALL NOT BE USED IN LIEU OF SILENCERS.
2. ALL DUCTWORK DOWNSTREAM OF VAV BOXES, SHALL BE EQUAL TO THE BOX OUTLET SIZE (MINIMUM) OR LARGER AS INDICATED. WHERE OUTLET SIZES ARE ODD SIZES, THE DUCT SIZES SHALL BE ROUNDED UP TO THE NEAREST EVEN SIZE. PROVIDE TRANSITION DUCTS AS REQUIRED.
3. COORDINATE LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS WITH REFLECTED CEILING PLANS, IF IN CASE OF ANY DISCREPANCY, NOTIFY CONSULTANT PRIOR TO PROCEEDING.
4. DIFFUSER DUCT RUN-OUTS SHALL BE THE SAME SIZE AS THE DIFFUSER INLETS UNLESS INDICATED OTHERWISE.
5. IN OFFICE AREA MAINTAIN A MINIMUM OF 2400 MM (96 IN.) CLEARANCE TO THE UNDERSIDE OF ALL OVERHEAD SERVICES AND EQUIPMENT THROUGHOUT ACCESS ROUTES.
6. ARRANGE EQUIPMENT INTO THE AVAILABLE SPACE IN A MANNER TO MAKE ALL WORKING PARTS ACCESSIBLE FOR MAINTENANCE AND SERVICE, AND TO REDUCE AMOUNT OF ACCESS PANELS REQUIRED.
7. MOUNT THERMOSTATS AT LEAST 1200 MM ABOVE FINISHED FLOOR.
8. FAN COIL UNIT RETURN DUCT SIZE TO MATCH SUPPLY DUCT SIZE UNLESS NOTED OTHERWISE.

KEYNOTES:

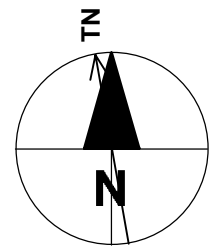
- 1 THERMOSTAT TO SERVE RTU-1.
- 2 ALL BAS THERMOSTATS TO BE COMPLETE WITH TEMPERATURE, HUMIDITY, CO<sub>2</sub>, AND OCCUPANCY SENSORS.
- 3 F/A DAMPER TO BE NORMALLY OPEN TO DELIVER FRESH AIR TO THE SPACE.
- 4 E/A DAMPER TO BE NORMALLY CLOSED. DAMPER SHALL BE OPENED BY THE OPERATOR, AFTER CLEAN AGENT HAS BEEN RELEASED, TO PURGE THE CLEAN AGENT FROM THE SPACE.
- 5 S/A DAMPER FROM FCU-1 TO BE NORMALLY CLOSED. DAMPER SHALL ONLY OPEN OF A LOW TEMPERATURE ALARM IS DETECTED INSIDE THE IT ROOM. T/A DUCT TO BE OPENED TO ALLOW FOR A RETURN PATH.
- 6 T/A DAMPER TO BE NORMALLY CLOSED. DAMPER SHALL ACT AS A PRESSURE RELIEF DAMPER AND SHALL OPEN IF HIGH PRESSURE IS DETECTED INSIDE THE IT ROOM AFTER CLEAN AGENT DISCHARGE.
- 7 300X300 T/A DUCT C/W 300X300 R-1 GRILLE.



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829      Owner's Contract Number: 987654321

6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

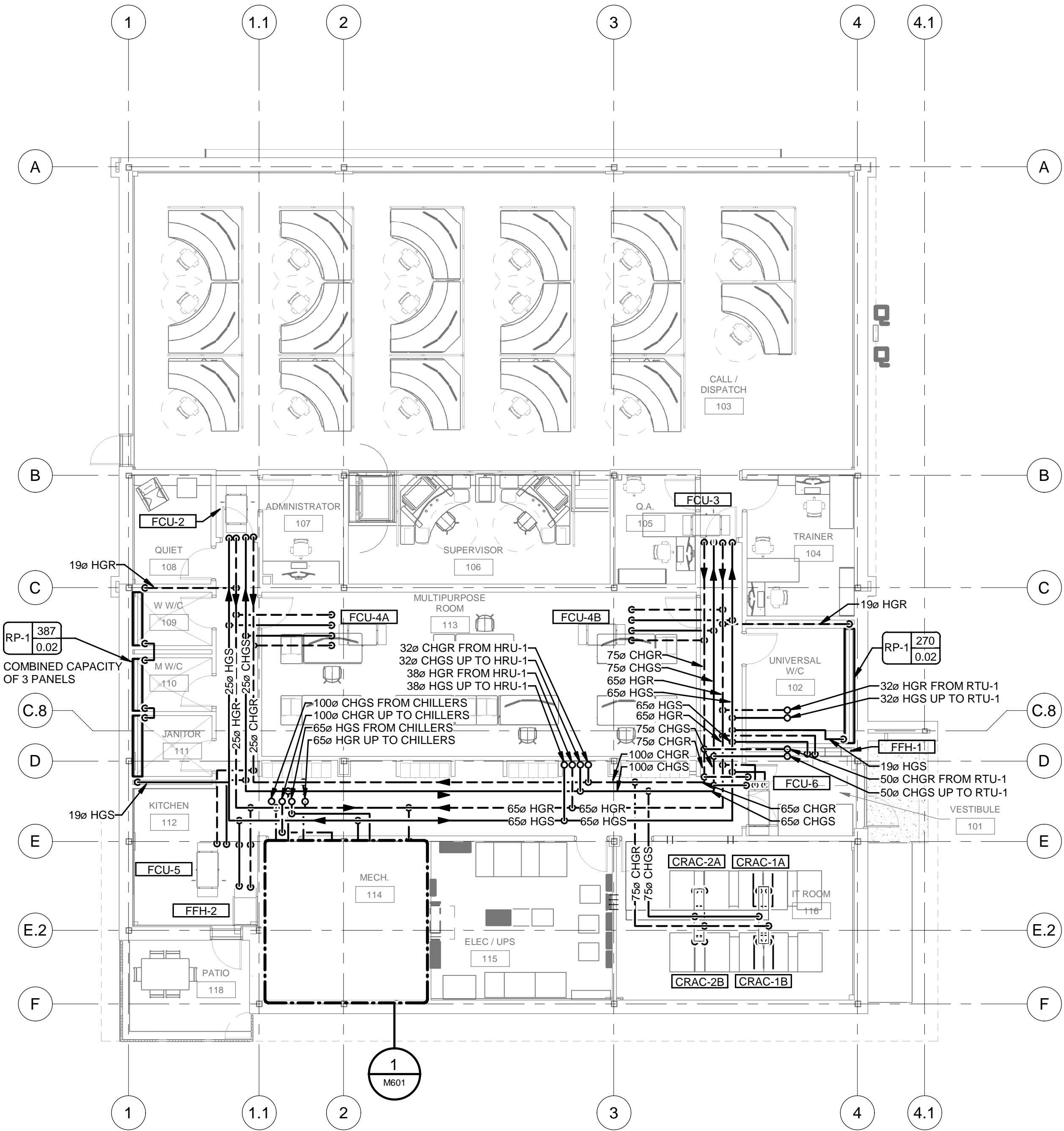
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Filename:	Version:	2020.2.5.
Project Number:	Project Manager:	
60686829		
Project Administrator:	BIM/VDC Manager:	
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Designed:	Date (yyyy-mm-dd):	
AP		
Drawn:	Date (yyyy-mm-dd):	
LD		
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
JS		
Approved:	Date (yyyy-mm-dd):	

Title:

GROUND FLOOR PLAN - HVAC

Page Size: A      Sheet: 1      Rev: 6  
ANSI D      M401  
Scale: AS      of: 1





GENERAL HYDRONIC SYSTEM NOTES:

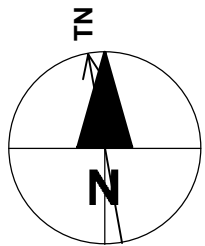
1. ALL HYDRONIC PIPING SHALL BE MINIMUM OF 19 MM (3/4 IN.) UNLESS INDICATED OTHERWISE.
2. TEMPERATURE SENSORS ARE LOCATED TO AID IN PRICING ONLY AND ALL REQUIRED SENSORS MAY NOT BE SHOWN. COORDINATE FINAL LOCATION WITH THE ARCHITECTS WITHIN 1000 MM (40 IN.) OF THE SHOWN LOCATION.
3. TEMPERATURE SENSORS SHALL BE 1200 MM (48 IN.) ABOVE THE FINISHED FLOOR UNLESS INDICATED OTHERWISE.
4. ALL PIPING SHALL BE OVERHEAD, TIGHT TO UNDERSIDE OF THE STRUCTURE WITH SUFFICIENT ROOM FOR INSULATION UNLESS INDICATED OTHERWISE. RUN PIPING WITHIN STRUCTURAL STEEL STRATA WHERE PRACTICAL AND IN EXPOSED AREAS.



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NORTH:



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**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: **60686829** Owner's Contract Number: **987654321**

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Mark	Date	Description
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Revision History

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Project Number:	Project Manager:	
60686829		
Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
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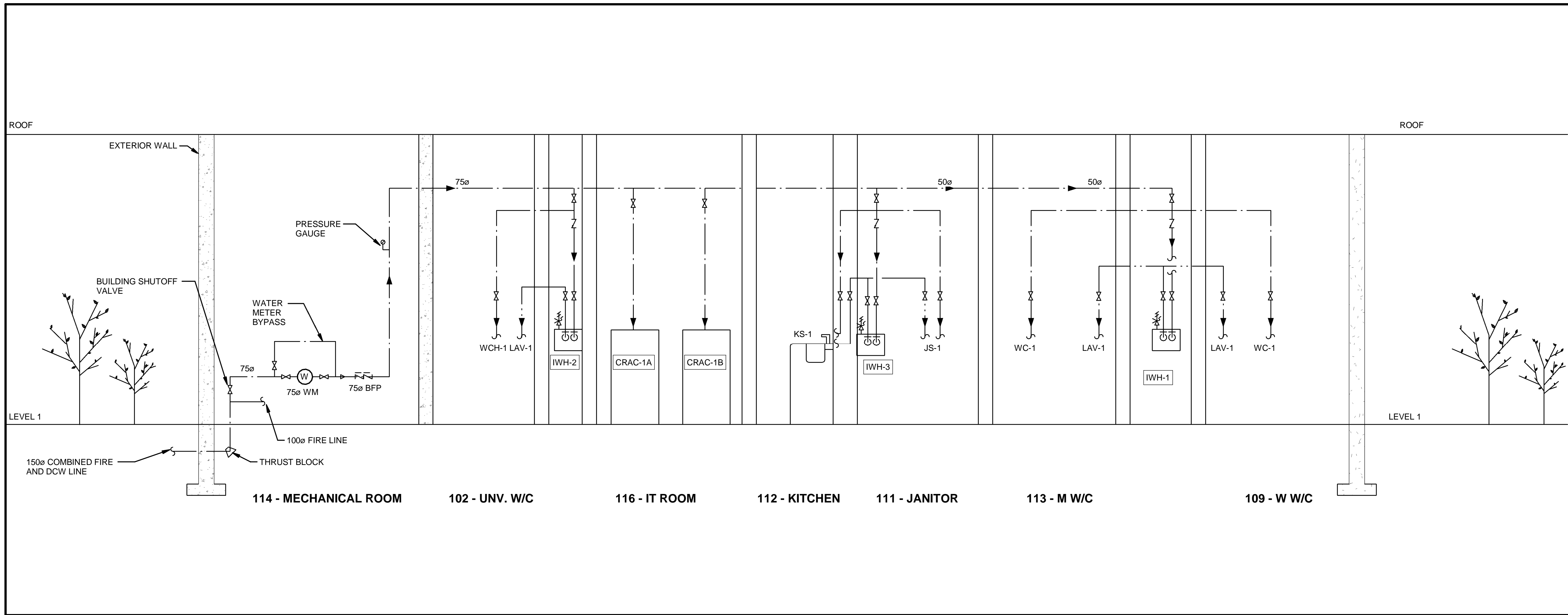
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**GROUND FLOOR PLAN - HVAC PIPING**

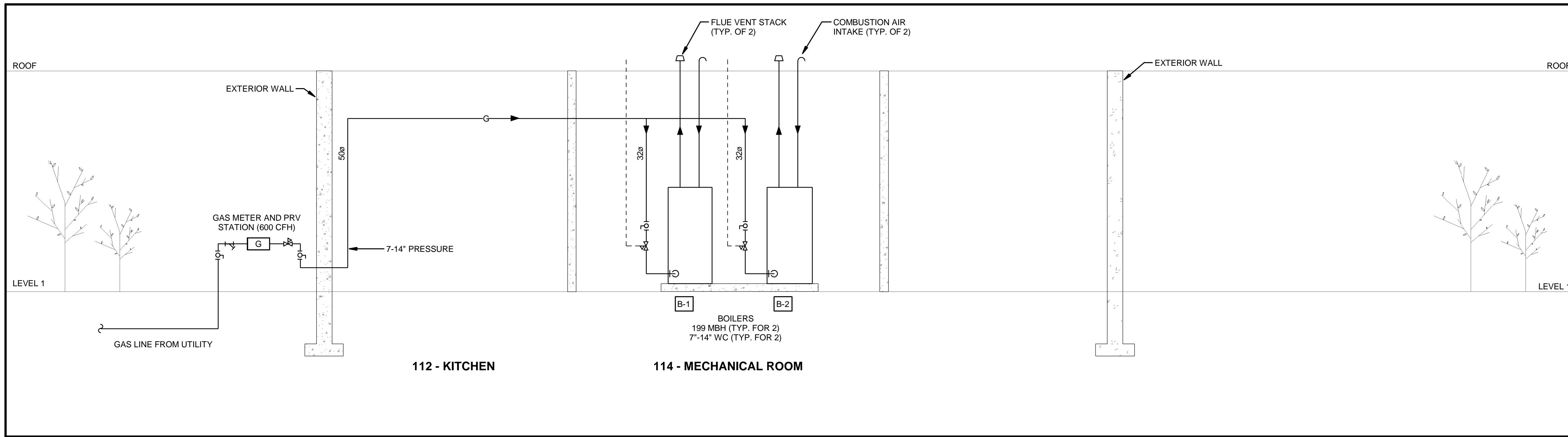
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1 : 100		of

**M451**





1 DOMESTIC WATER SCHEMATIC  
M501 NTS



2 GAS SCHEMATIC  
M501 NTS



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NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

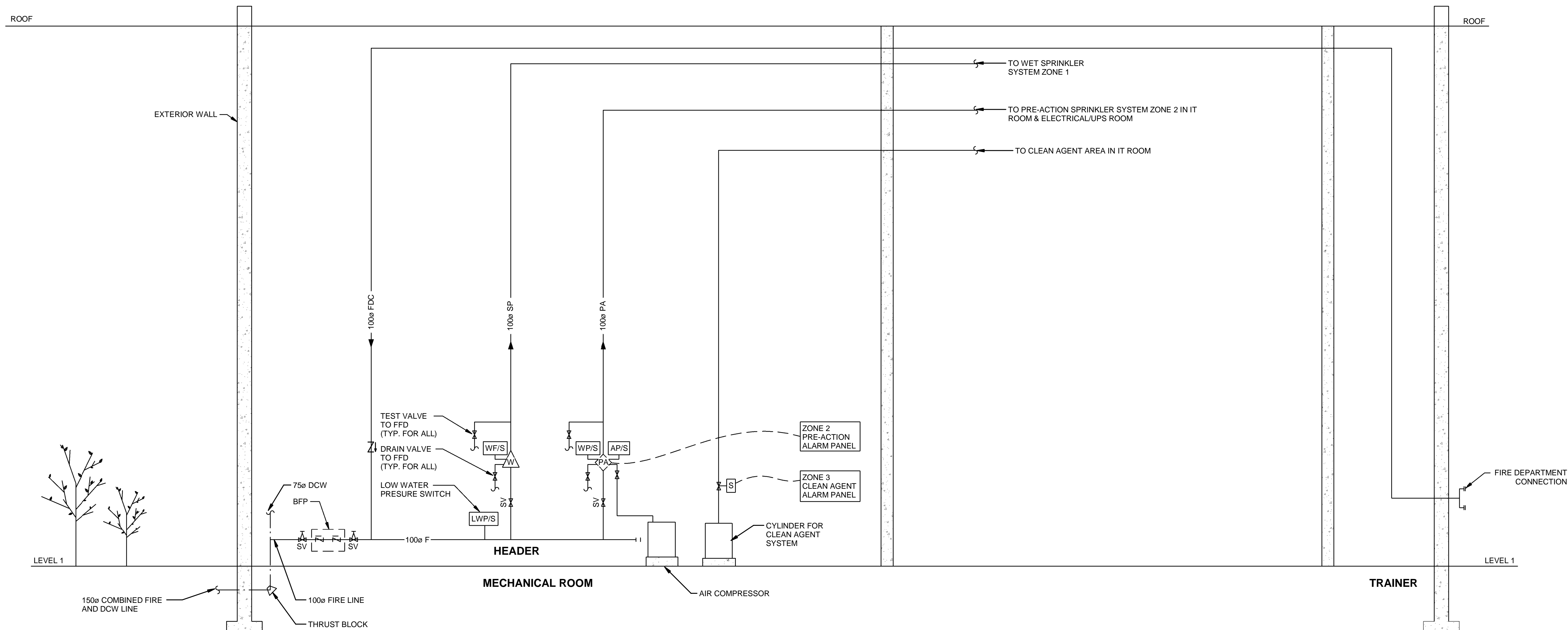
Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
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Revision History	
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Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
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Reviewed:	Date (yyyy-mm-dd):
Checked: JS	Date (yyyy-mm-dd):
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SCHEMATICS - PLUMBING & GAS	
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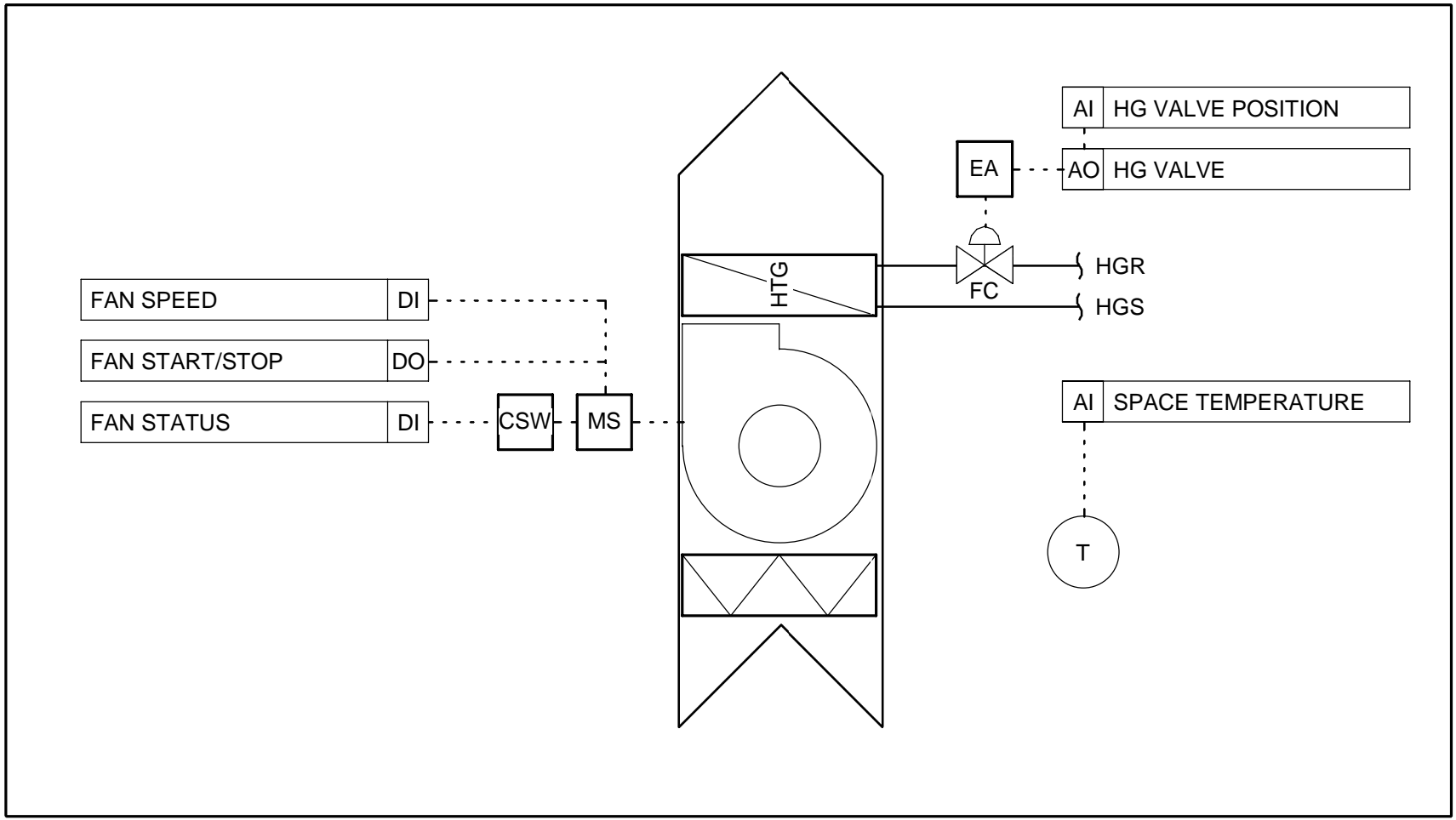




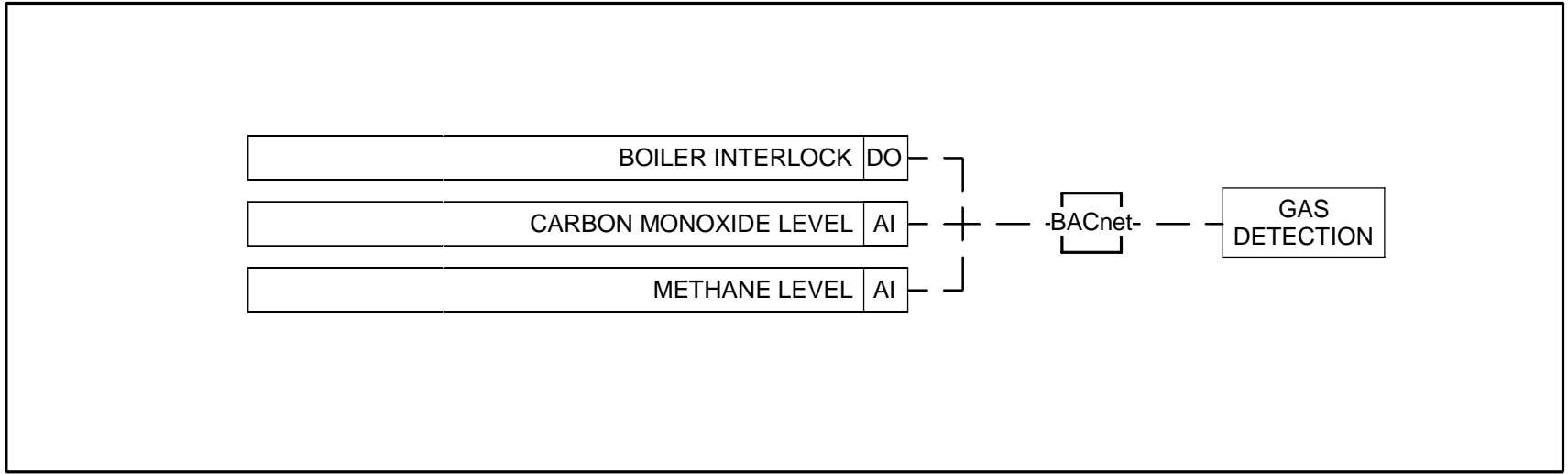




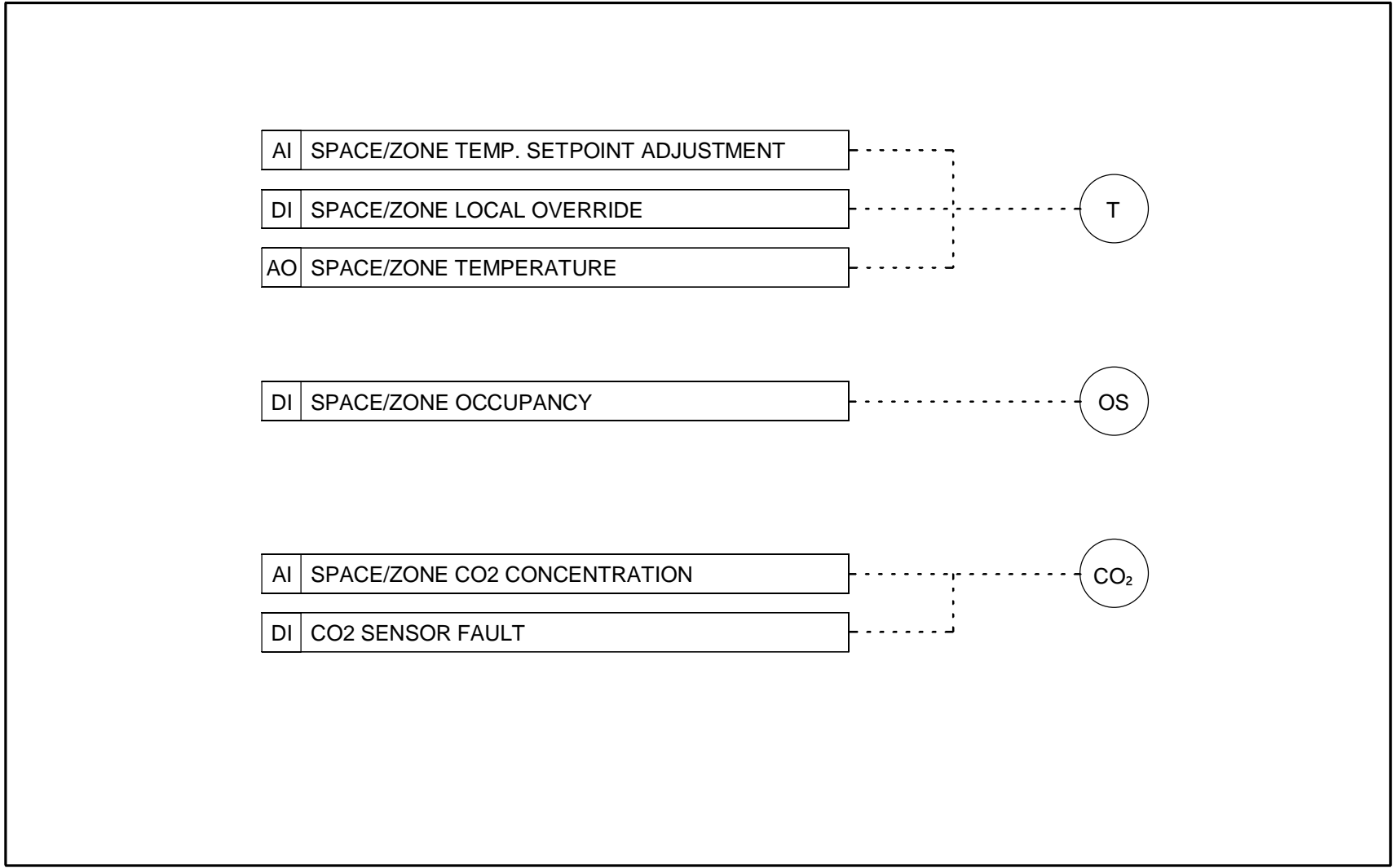




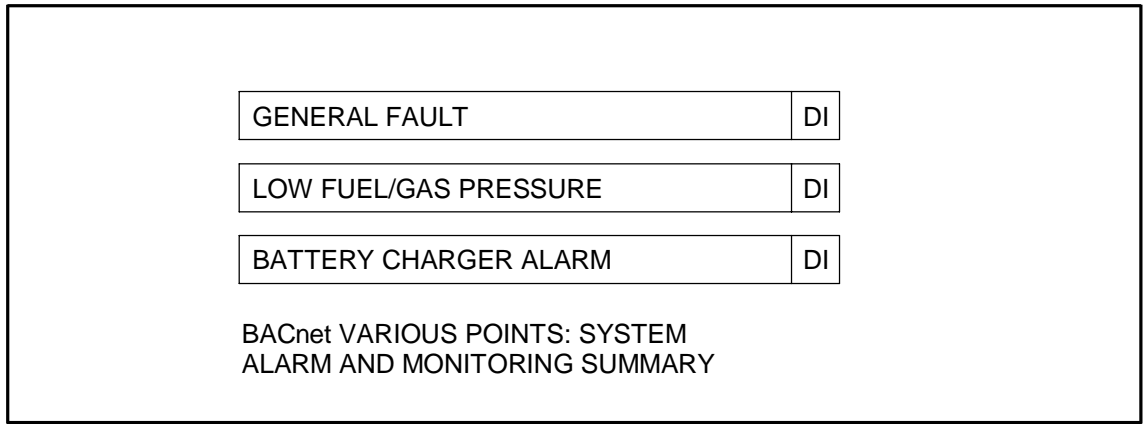
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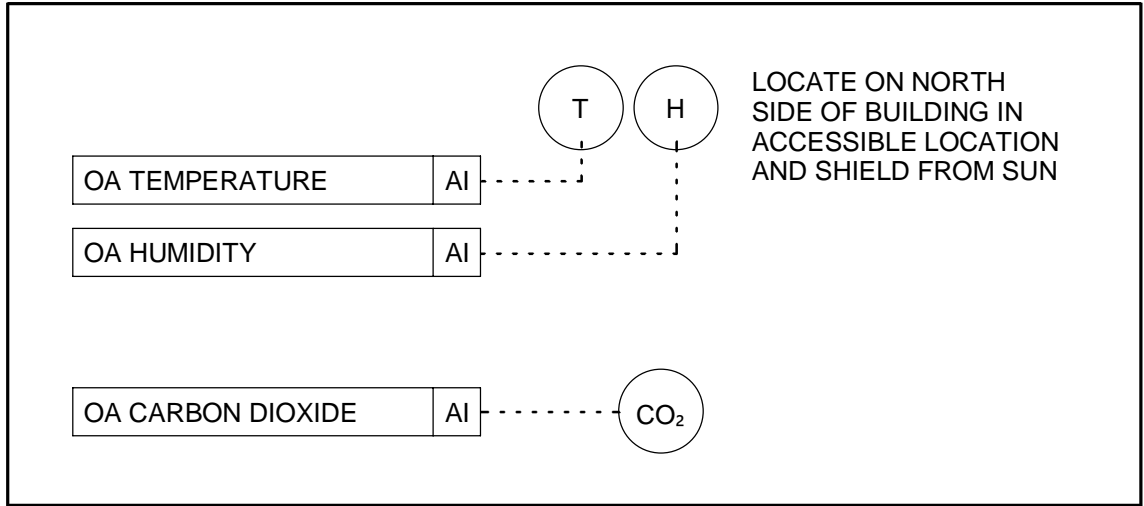
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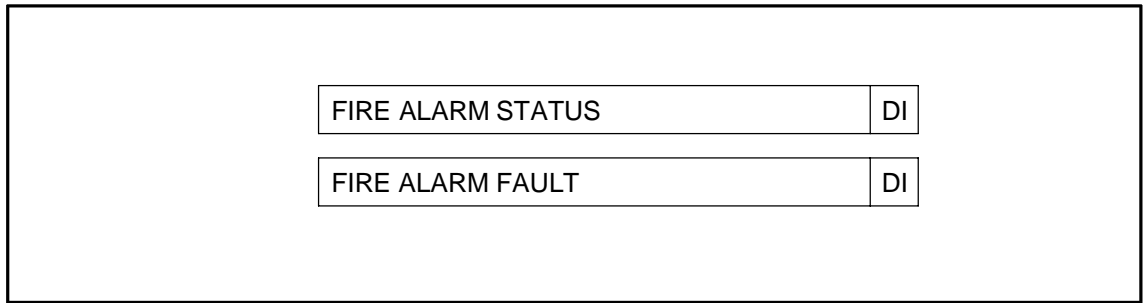
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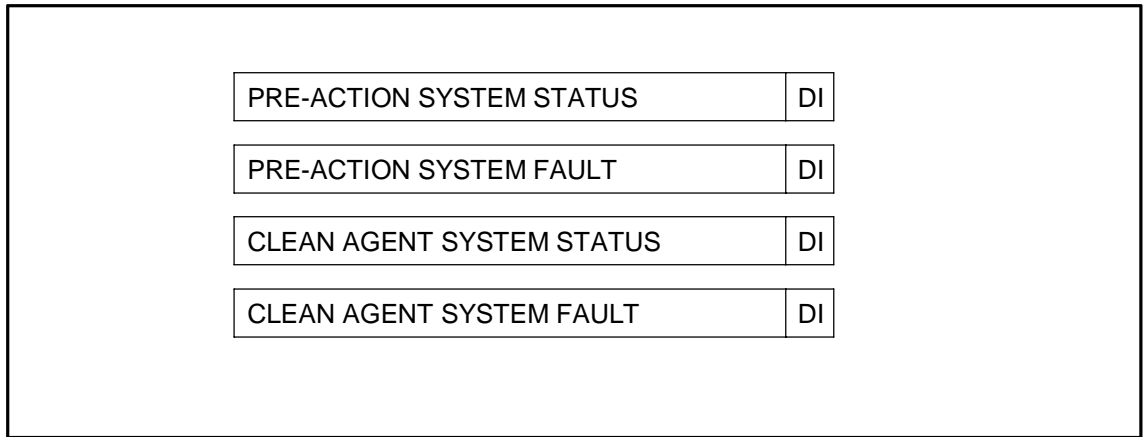
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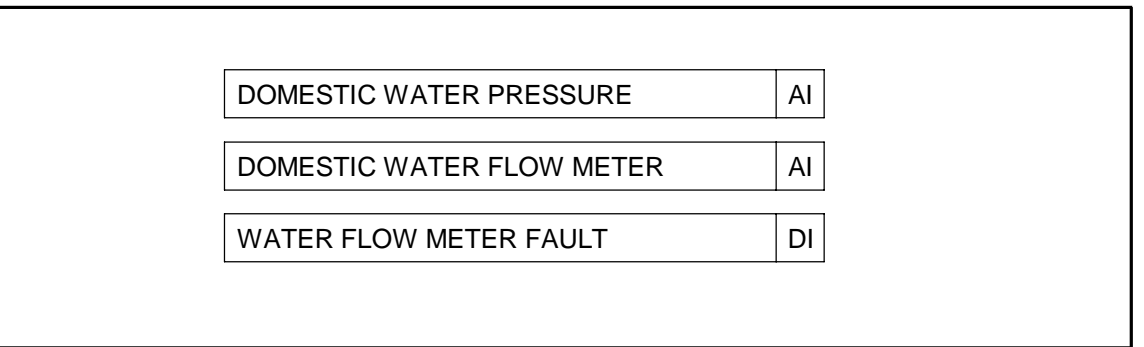
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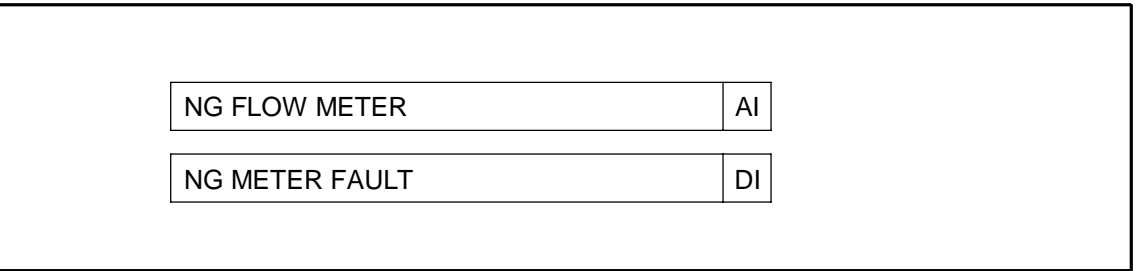
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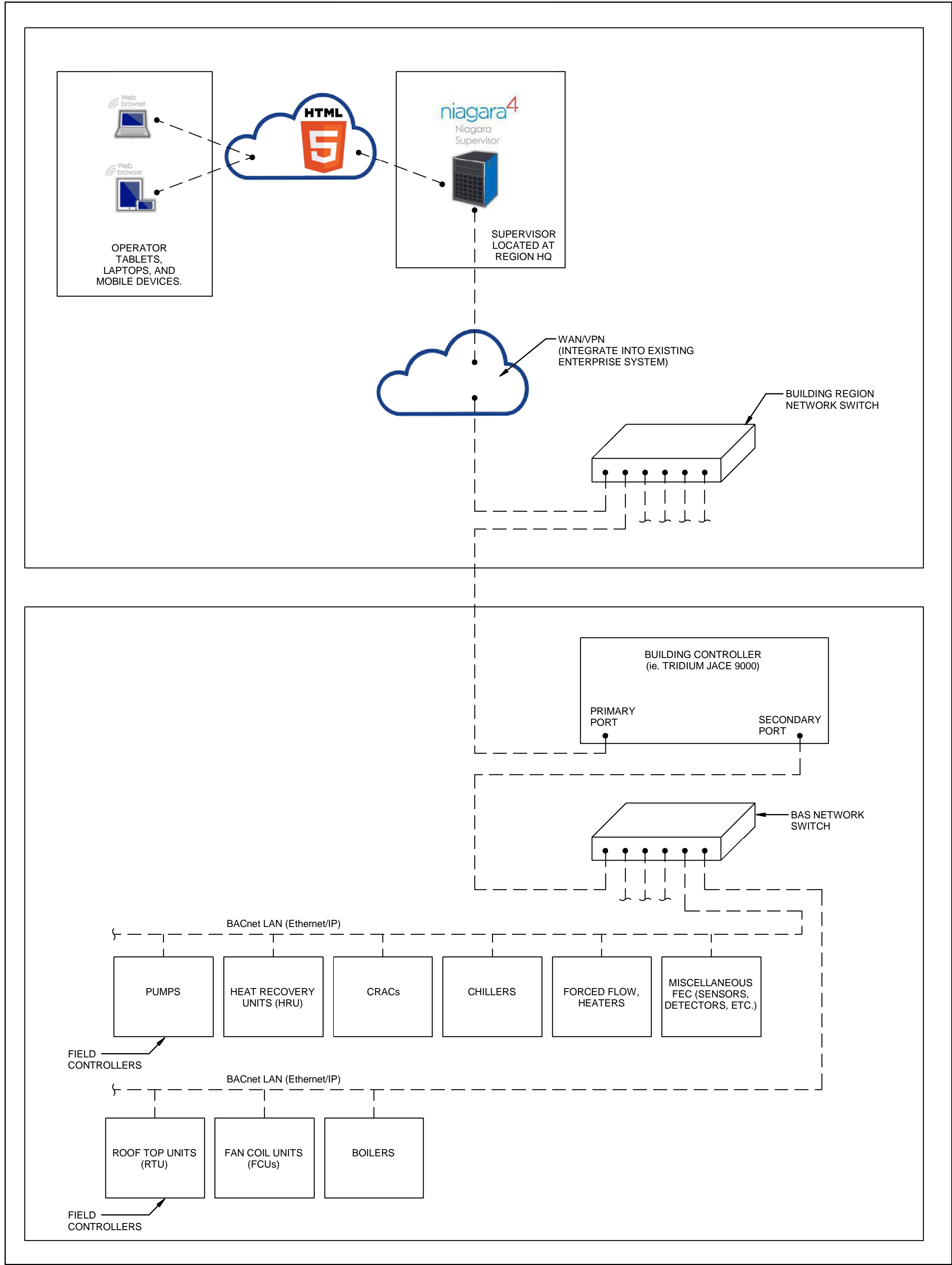
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7 TYPICAL DOMESTIC WATER MONITORING  
Scale: NTS



8 TYPICAL NATURAL GAS METERING  
Scale: NTS



1 TYPICAL BACnet ARCHITECTURE DIAGRAM  
Scale: NTS



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
3	2024-01-23	ISSUED FOR TENDER
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1	2024-11-29	ISSUED FOR CLIENT REVIEW

Revision History

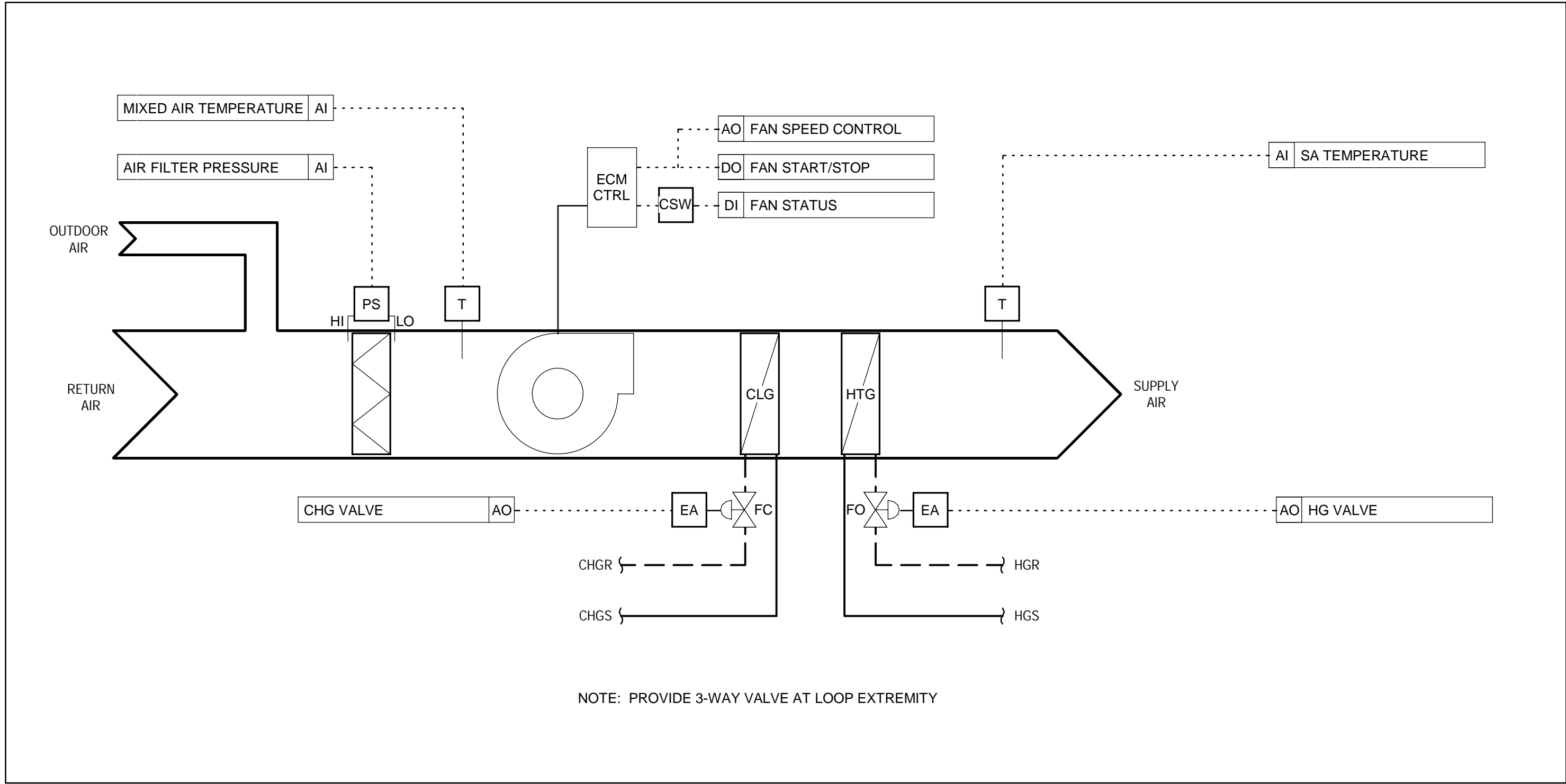
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Designed:	AP	Date (yyyy-mm-dd):	
Drawn:	LD	Date (yyyy-mm-dd):	
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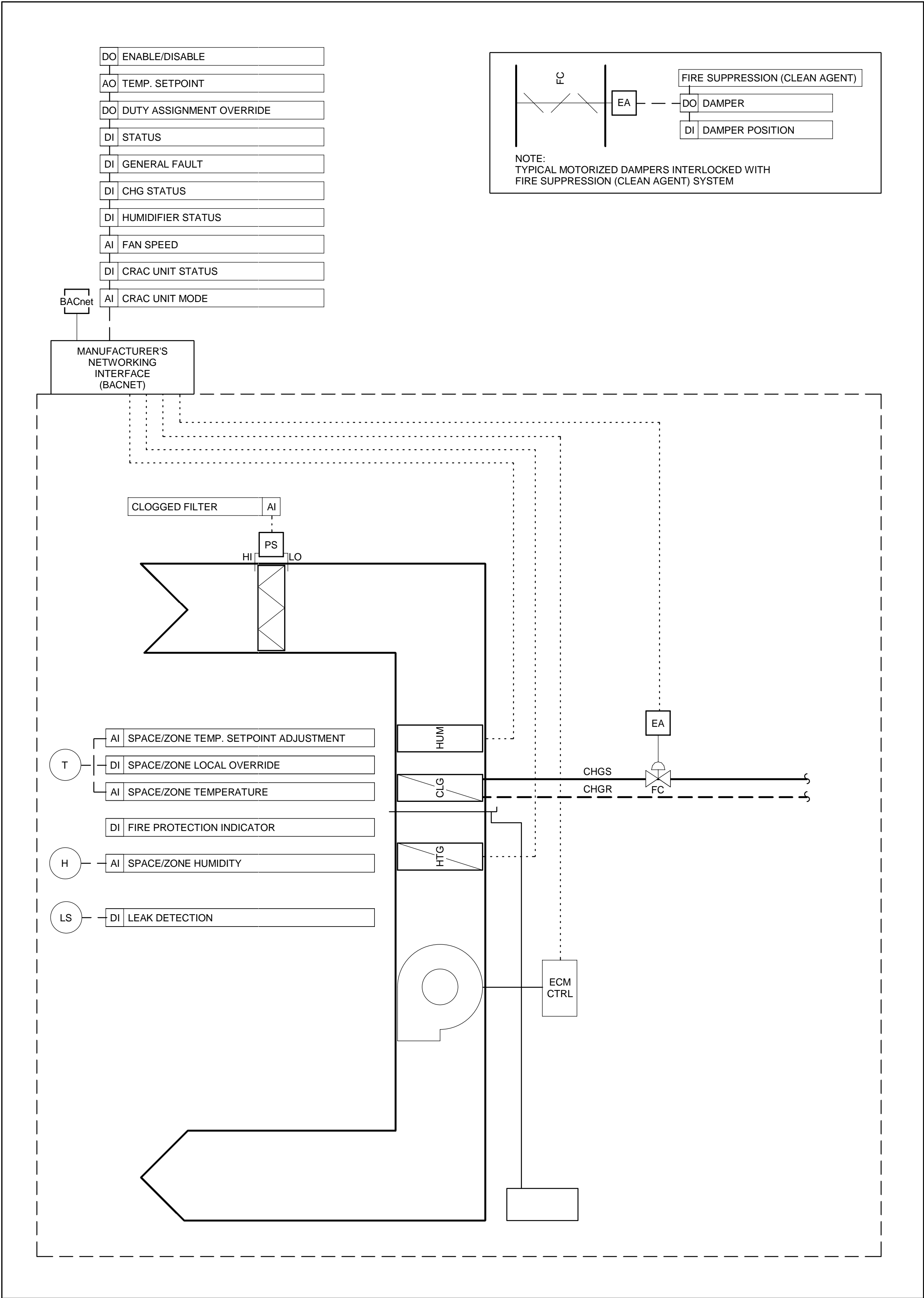
CONTROL SCHEMATICS - GENERAL



Autodesk Docs:RPB-AMER (CAN) 60686829-NRPS 911 Backup Dispatch 60686829-NRPS 911 Backup Dispatch - M - RVT24.dvt  
Print Date: 23-Jun-2025 5:40:19 PM  
ANSI D Title Block Revision 0.0. Designed by Eric Leimer. ©2022 AECOM Canada. All Rights Reserved.



2 | TYPICAL FAN COIL UNITS  
Scale: NTS



1 | TYPICAL CRAC UNIT  
Scale: NTS



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Approved:		Date (yyyy-mm-dd):	

Title:

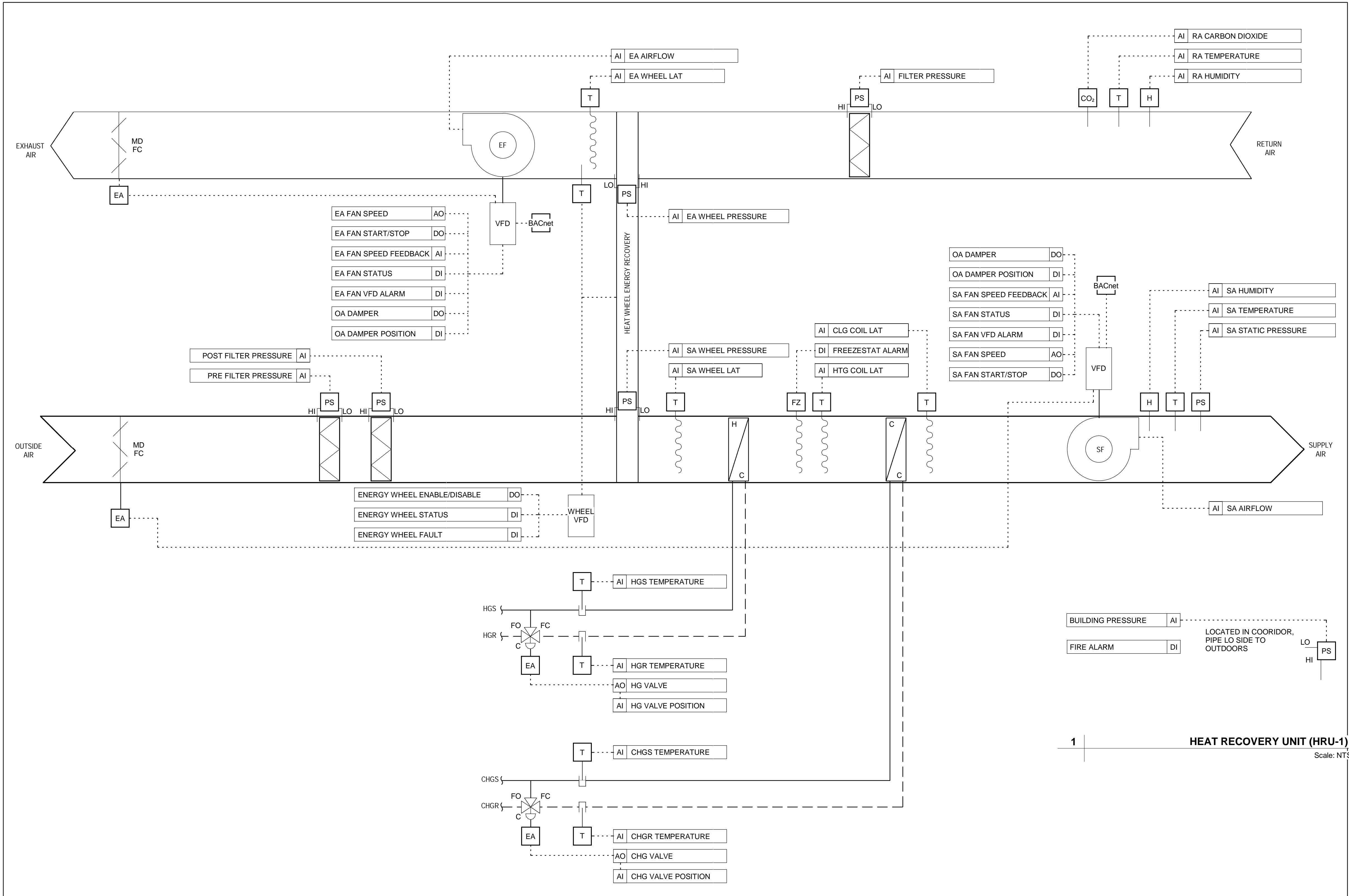
CONTROL SCHEMATICS - CRAC, RTU-1, FCU

Page Size:	ANSI D	Sheet:		Rev:	3
Scale:	NTS	Sheet:		of:	

M513



Autodesk Docs:\BP-AMER (CAN) 60686829-NRPS 911 Backup Dispatch\60686829-NRPS 911 Backup Dispatch - M - RV724.dwg  
Print Date: 23-Jun-2025 5:40:23 PM  
ANSI D Title Block Revision 0.0 - Designed by Eric Leimer. ©2022 AECOM Canada. All Rights Reserved.



1 | HEAT RECOVERY UNIT (HRU-1)  
Scale: NTS



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
3	2024-01-23	ISSUED FOR TENDER
2	2024-12-13	RE-ISSUED FOR PERMIT
1	2024-11-29	ISSUED FOR CLIENT REVIEW

Revision History

Filename: 2020.2.5

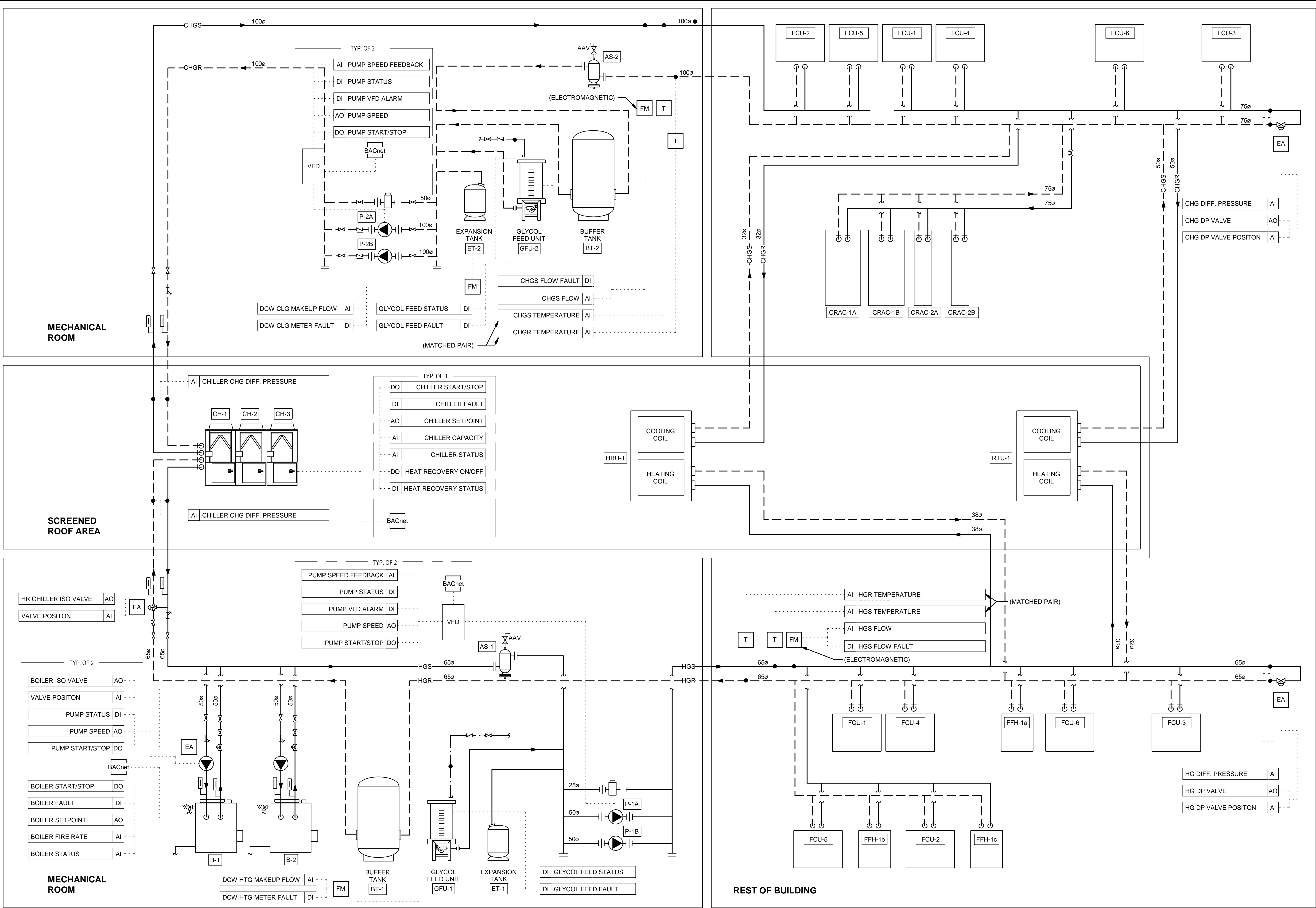
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Project Administrator:		BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):	
Designed:	AP	Date (yyyy-mm-dd):	
Drawn:	LD	Date (yyyy-mm-dd):	
Reviewed:		Date (yyyy-mm-dd):	
Checked:	JS	Date (yyyy-mm-dd):	
Approved:		Date (yyyy-mm-dd):	

Title:

CONTROL SCHEMATICS - HRU-1

Page Size: ANSI D  
Scale: NTS  
Sheet: 3  
Rev: 3  
of: 3





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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

3	2024-01-23	ISSUED FOR TENDER
2	2024-12-13	RE-ISSUED FOR PERMIT
1	2024-11-29	ISSUED FOR CLIENT REVIEW
Mark	Date	Description

Revision History	
Filename:	Version: 2020.2.5
Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: AP	Date (yyyy-mm-dd):
Drawn: LD	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: JS	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

Title:  
**CONTROL SCHEMATICS -  
HEATING AND CHILLED WATER  
PLANT**

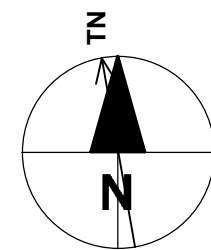




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NORTH



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

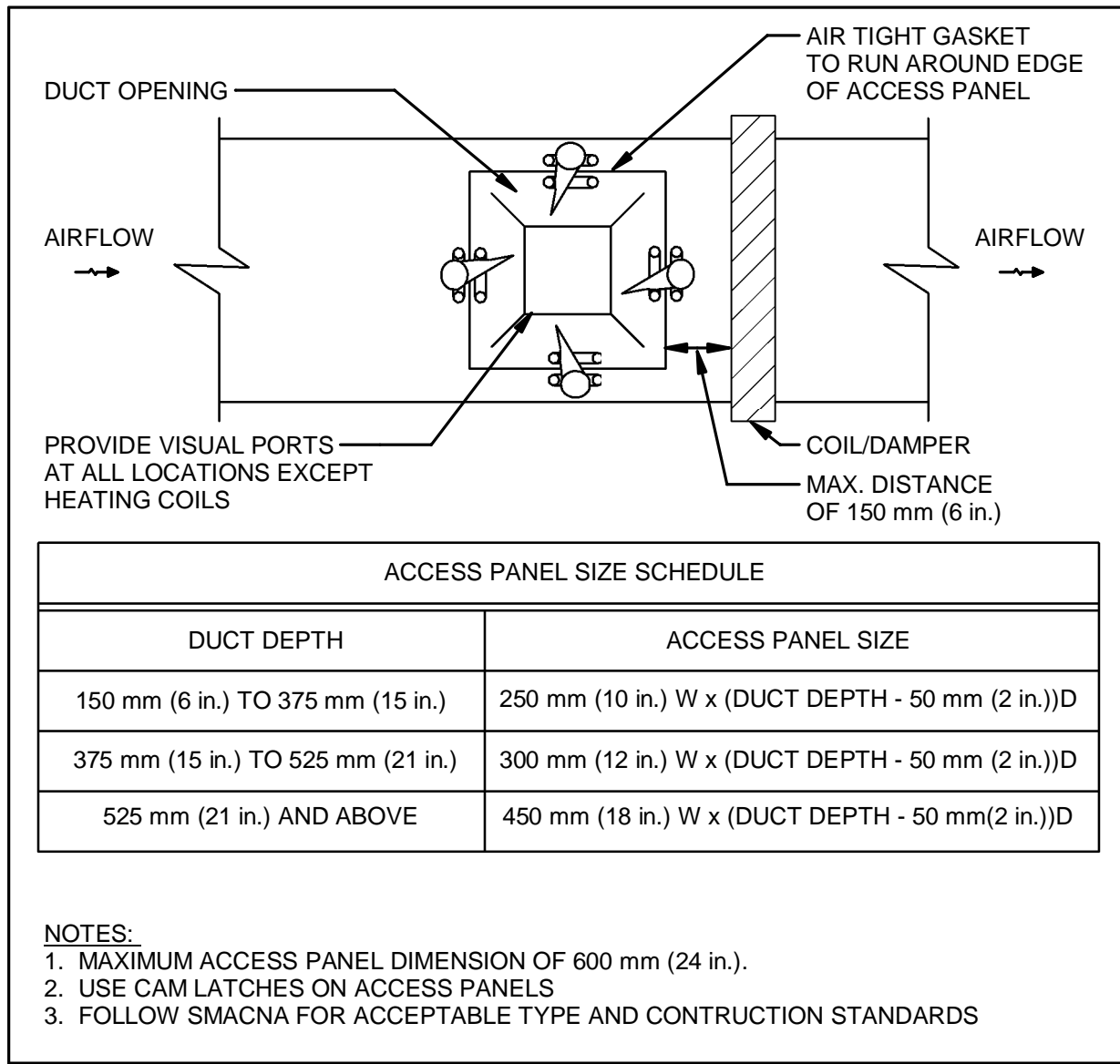
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6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

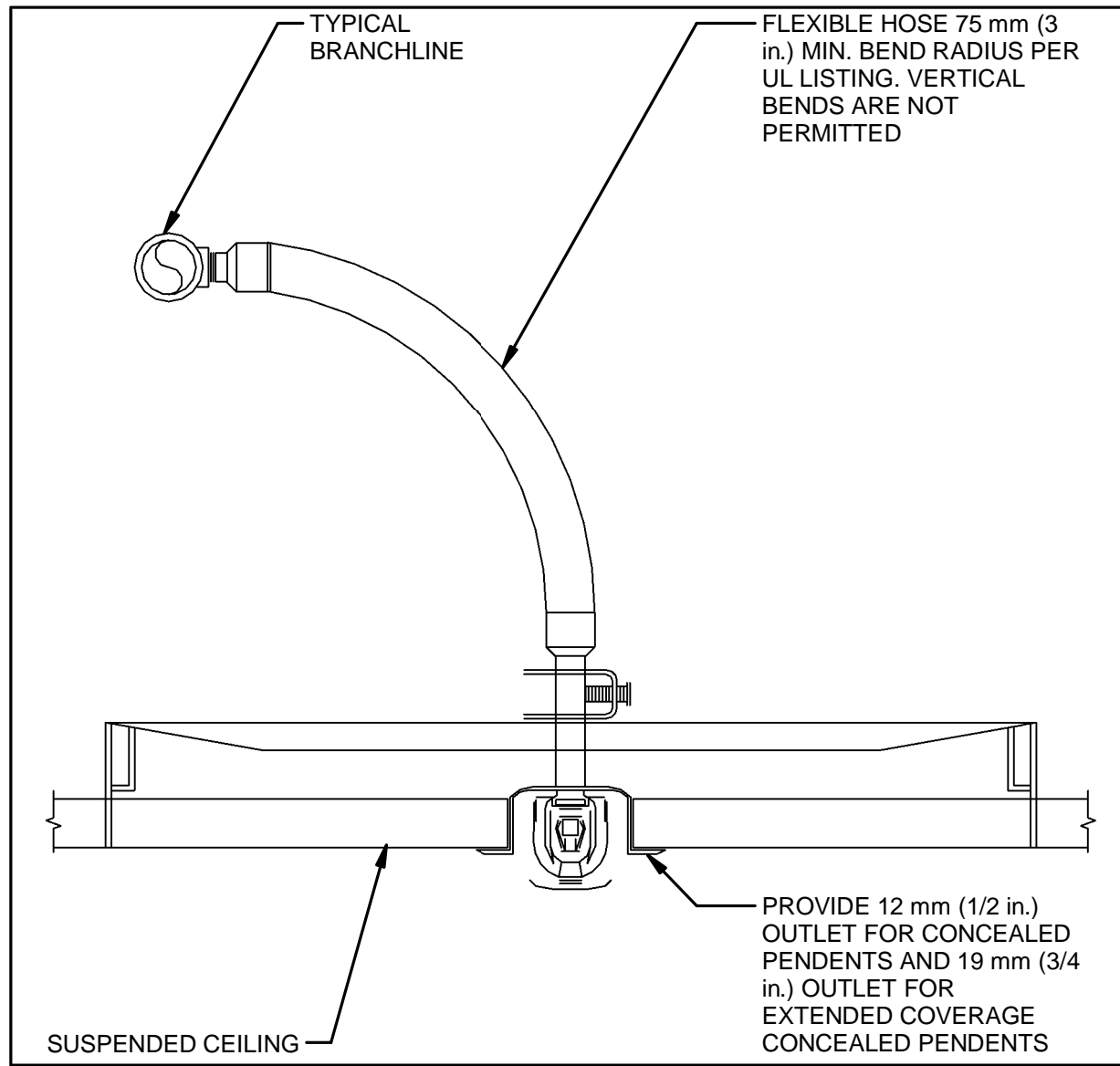
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Project Number : 60686829		Project Manager :
Project Administrator :		BIM/VDC Manager :
Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : AP	Date (yyyy-mm-dd) :	
Drawn : LD	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : JS	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	

MECHANICAL ROOM

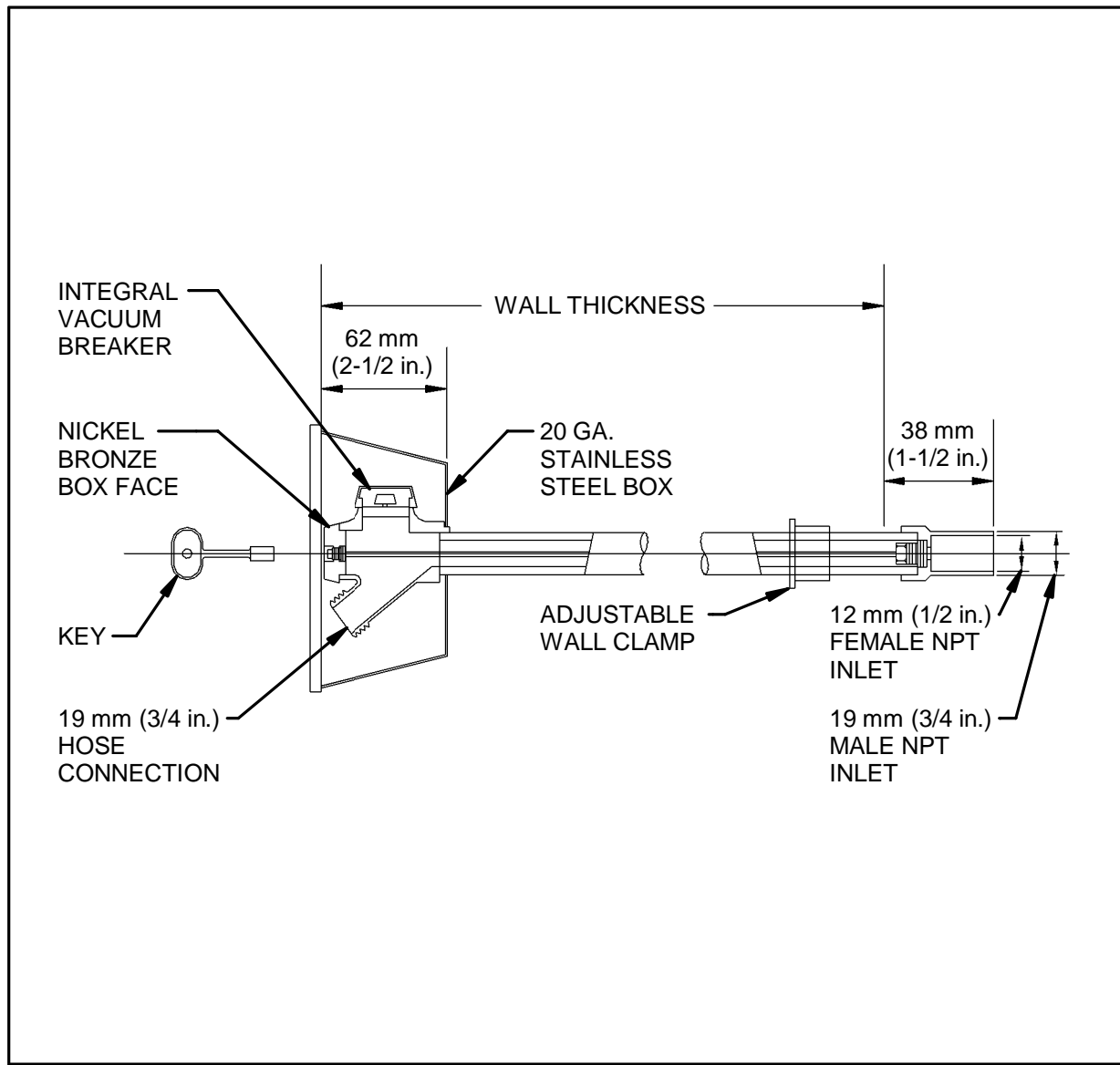




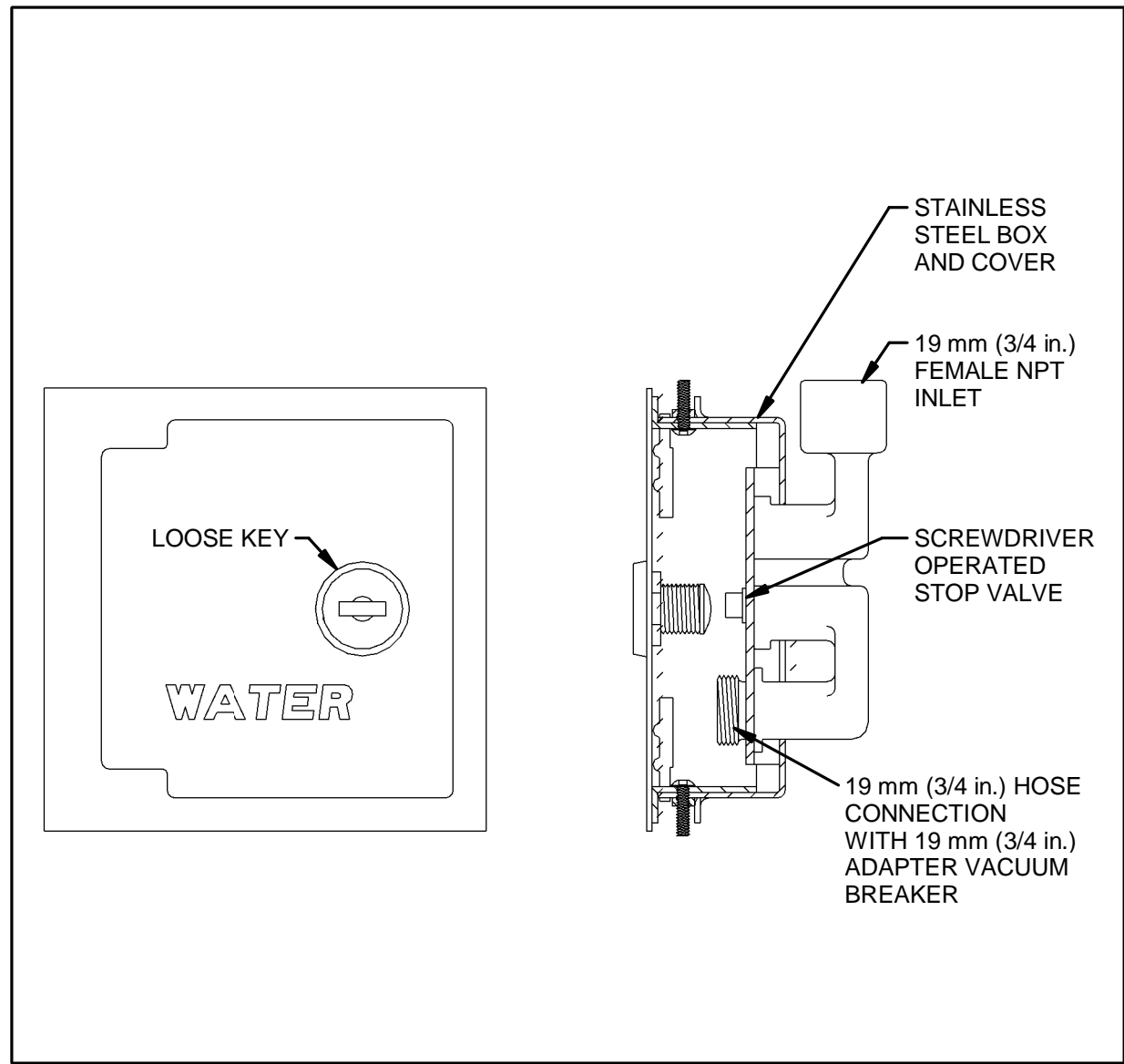
10 DUCT ACCESS PANEL SIZING  
Scale: NTS



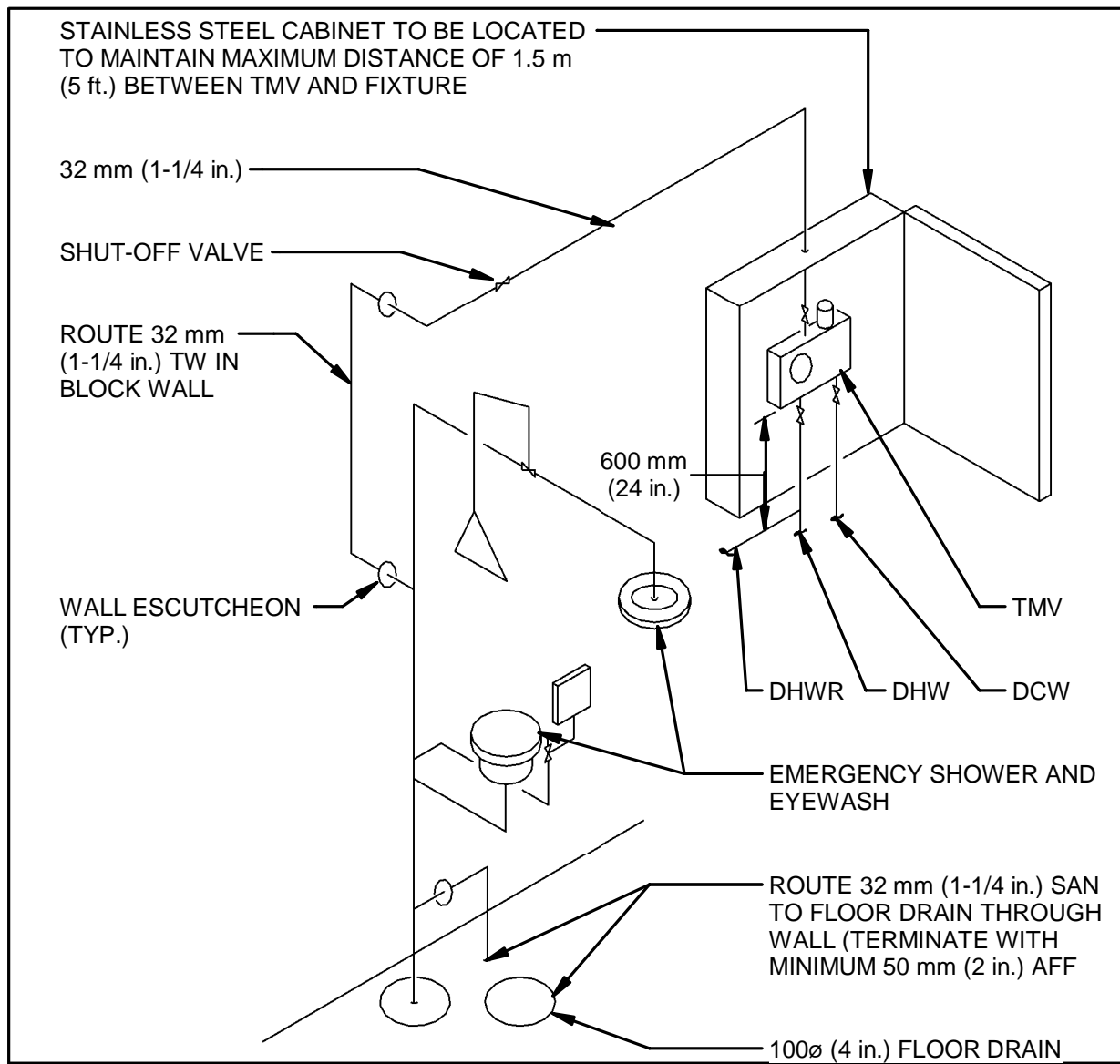
7 SPRINKLER ON FLEX DROP  
Scale: NTS



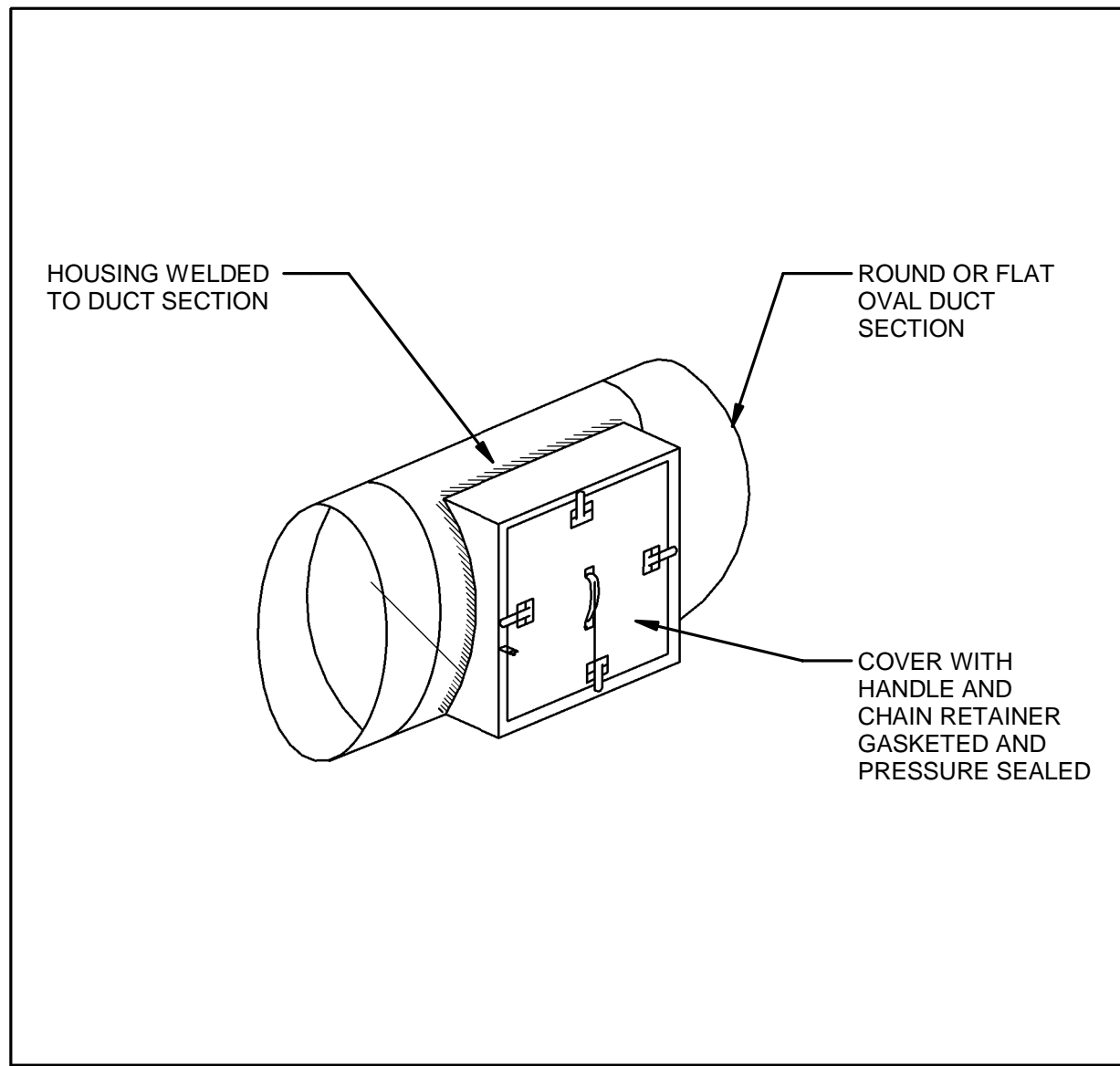
4 NON-FREEZE HOSE-BIBB  
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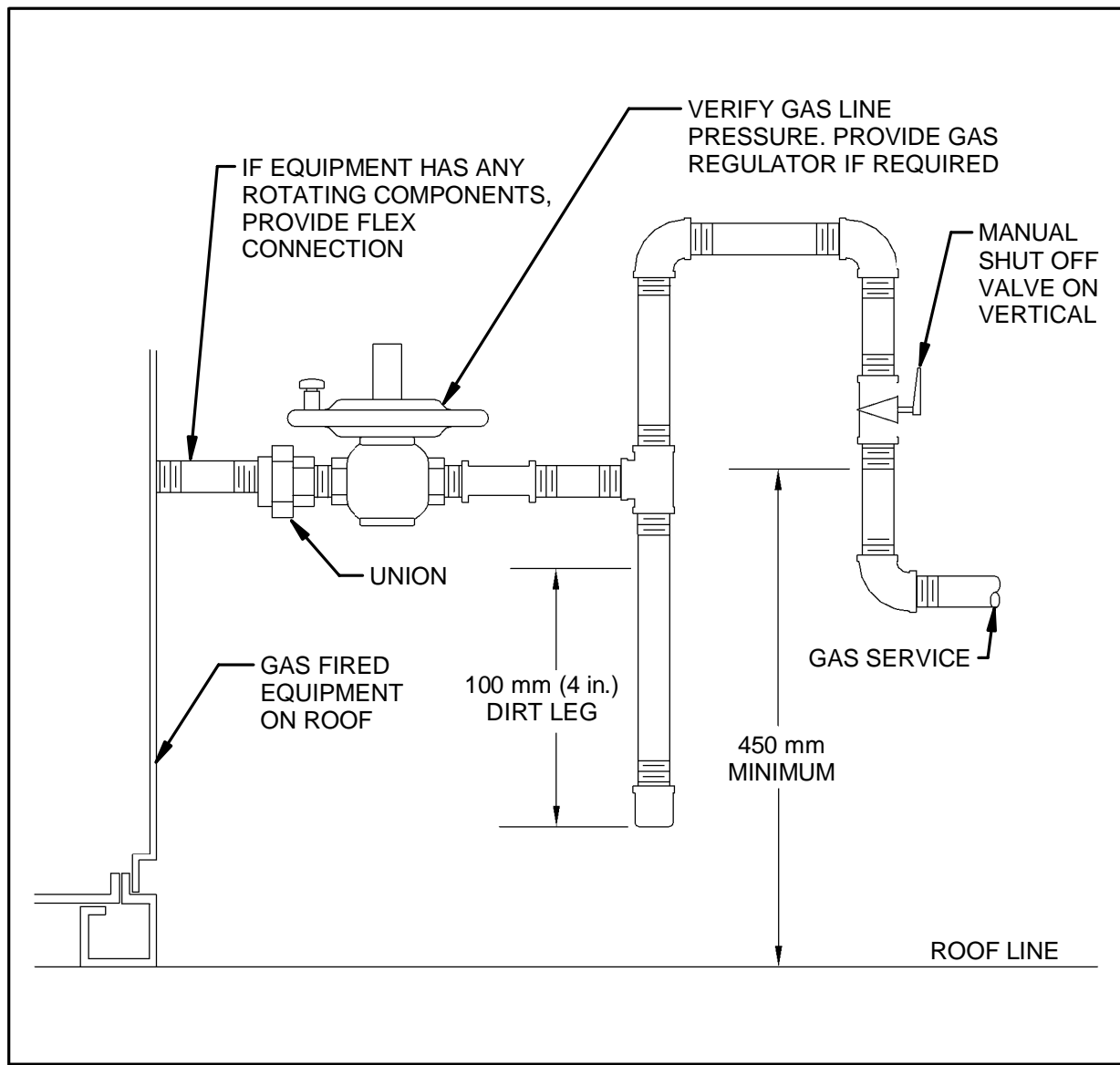
1 HOSE-BIBB DETAIL  
Scale: NTS



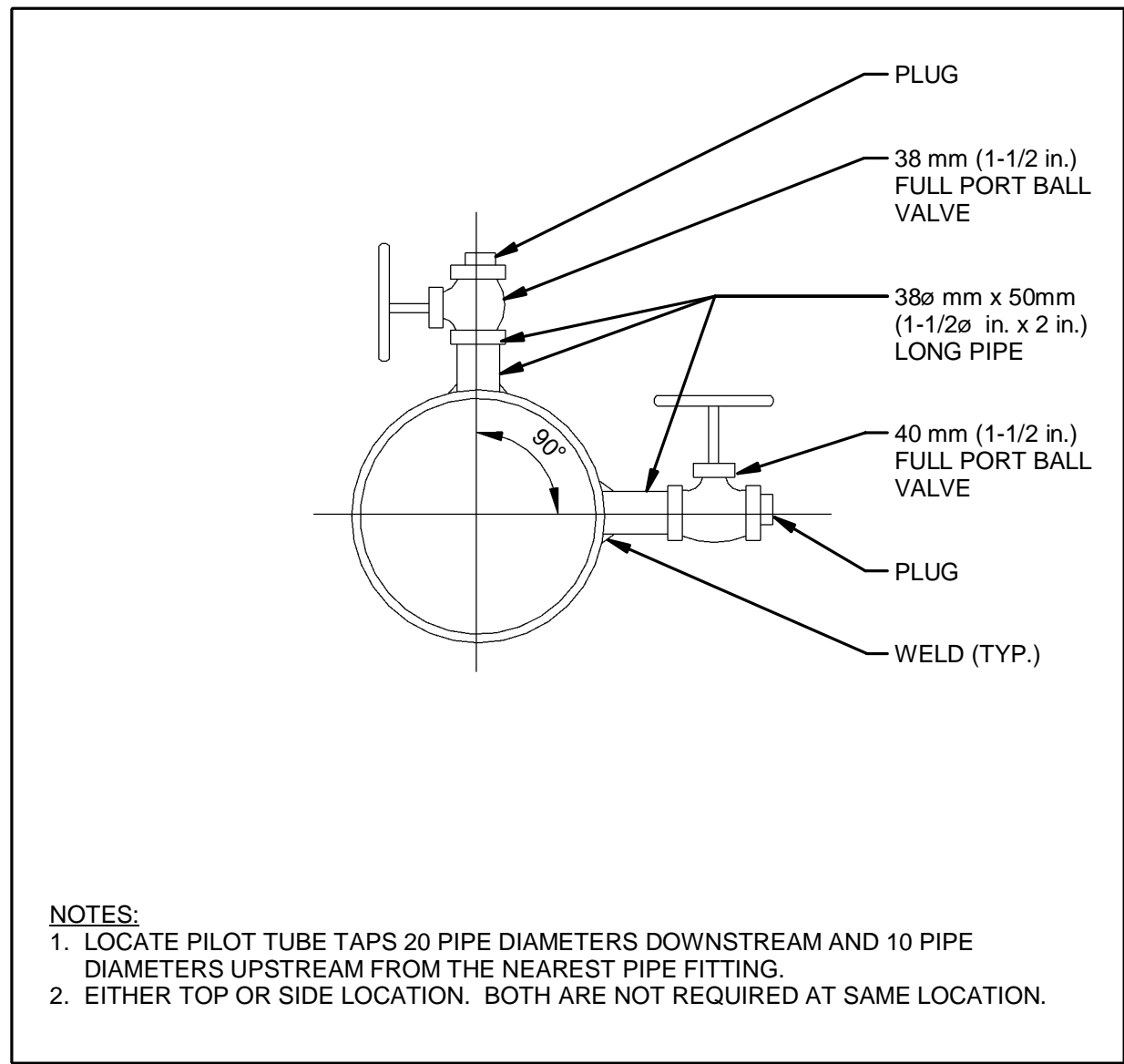
11 EMERGENCY SHOWER / EYEWASH DETAIL  
Scale: NTS



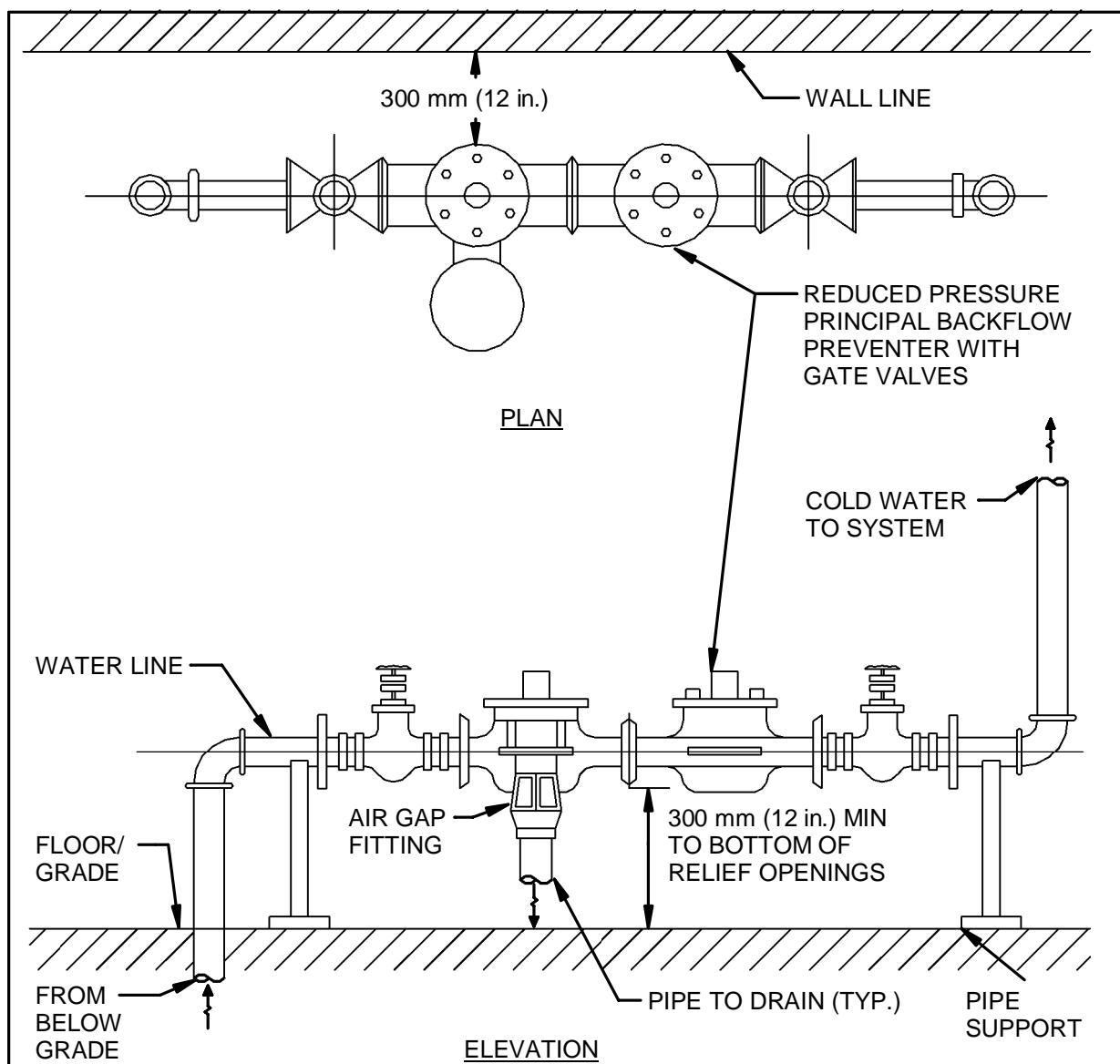
8 ACCESS SECTION FOR ROUND/OVAL DUCT  
Scale: NTS



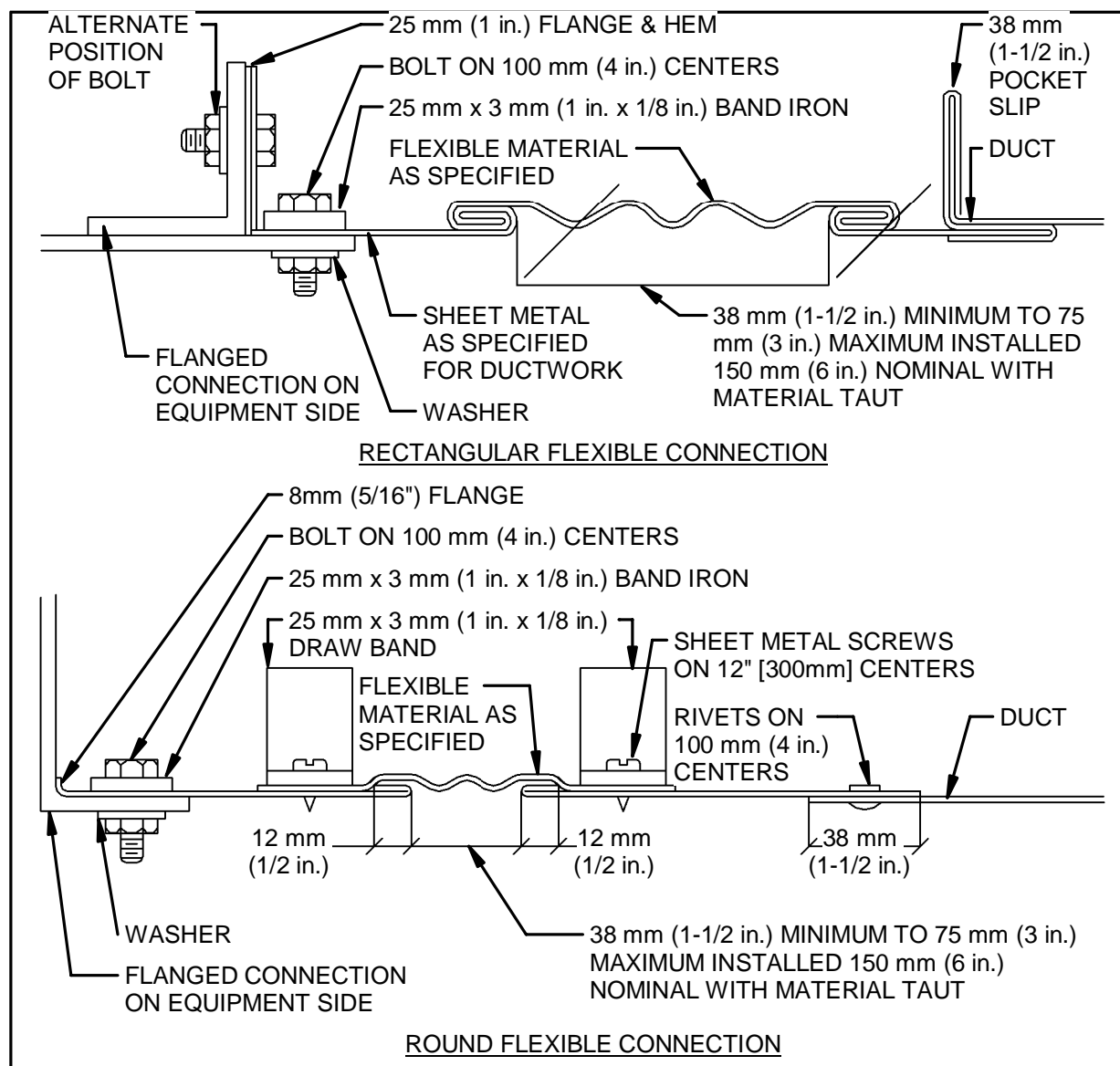
5 GAS CONNECTION TO EQUIPMENT  
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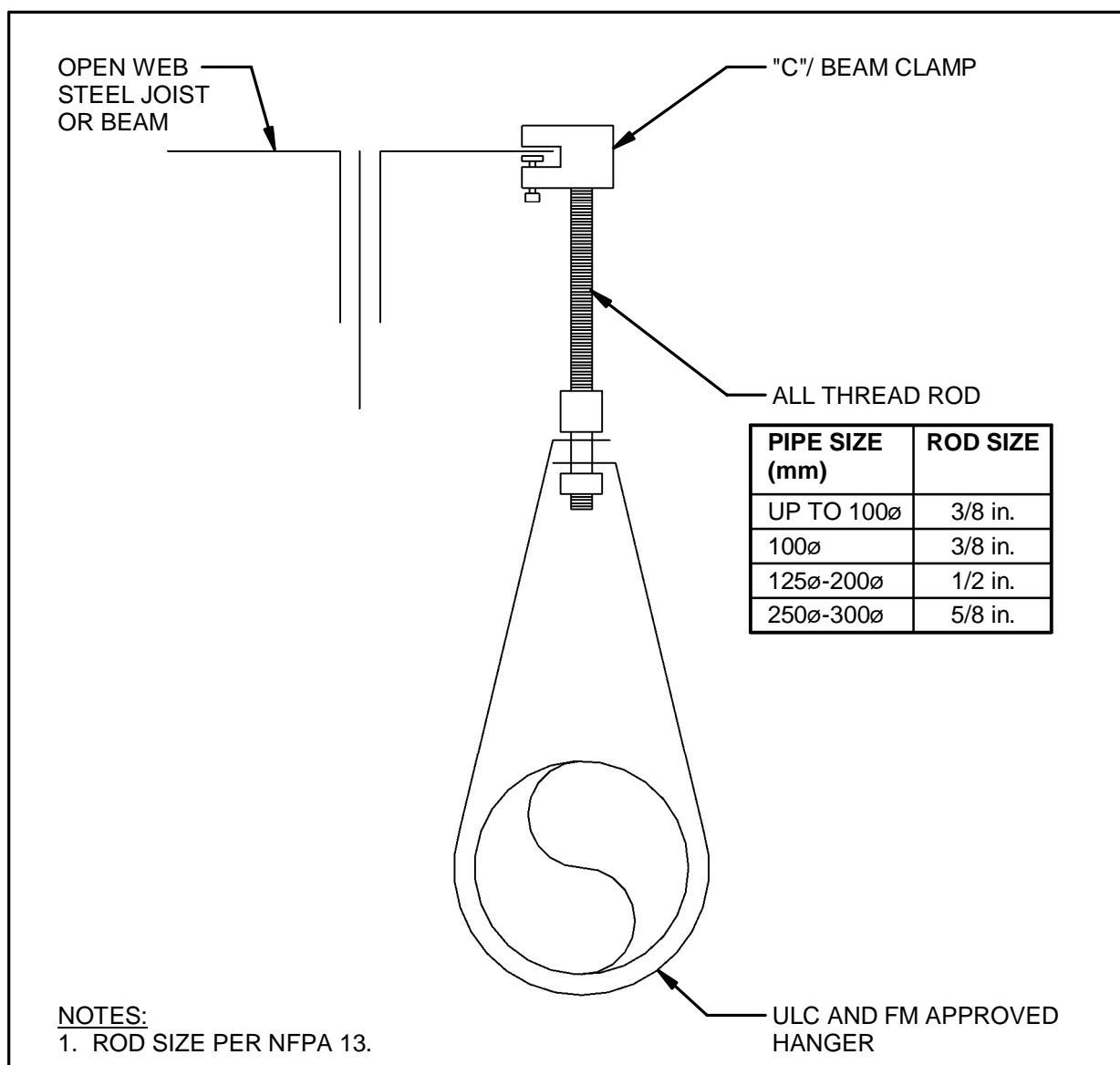
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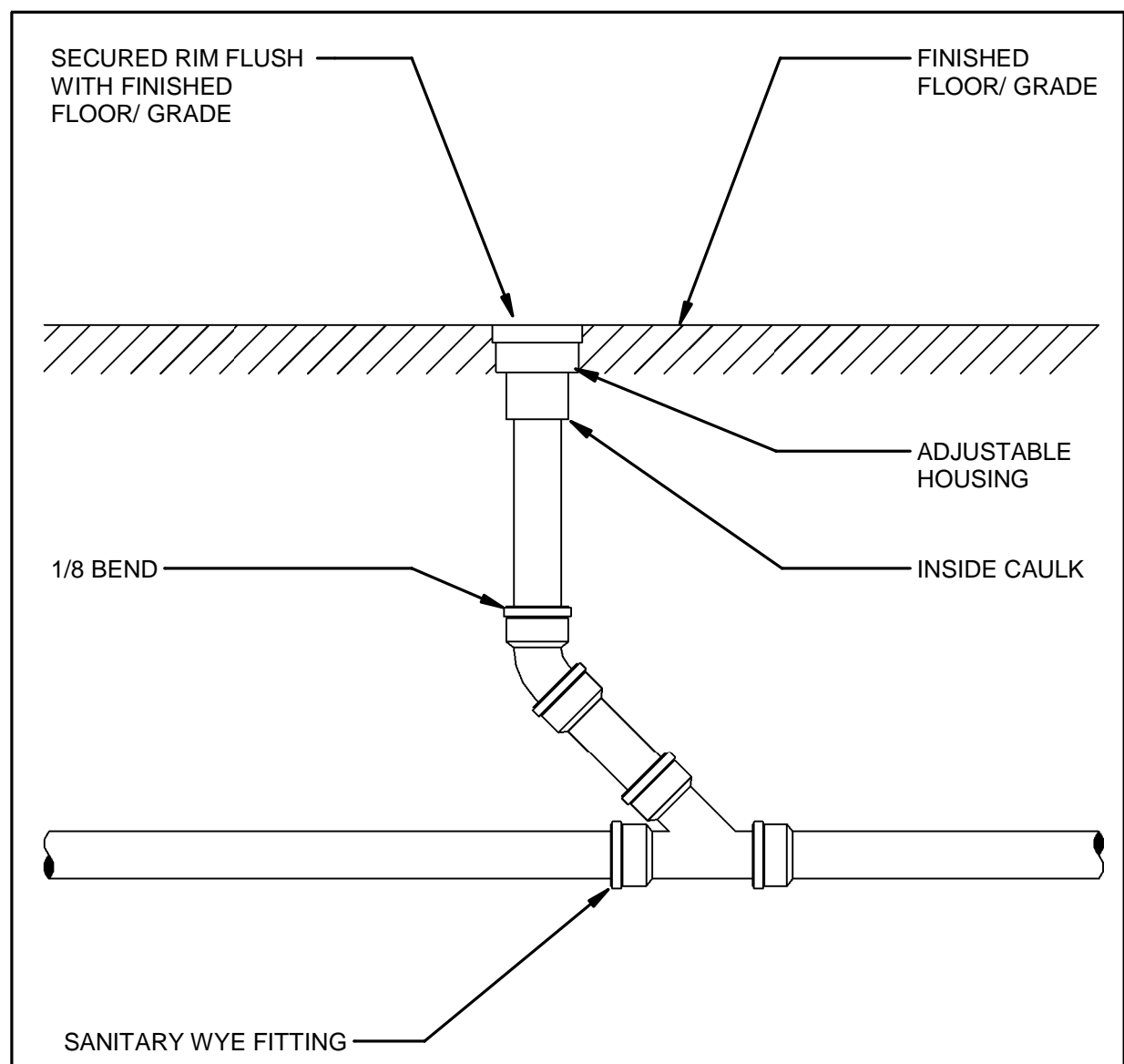
12 BACKFLOW PREVENTER PIPING DETAIL  
Scale: NTS



9 FLEXIBLE DUCT CONNECTIONS  
Scale: NTS



6 HANGER DETAIL  
Scale: NTS



3 FLOOR CLEANOUT  
Scale: NTS



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History

Filename: Version: 2020.2.5

Project Number: 60686829 Project Manager:

Project Administrator: BIM/VDC Manager:

Sustainability Target: IPMS 1 (m²): IPMS 2 (m²):

Designed: AP Date (yyyy-mm-dd):

Drawn: LD Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

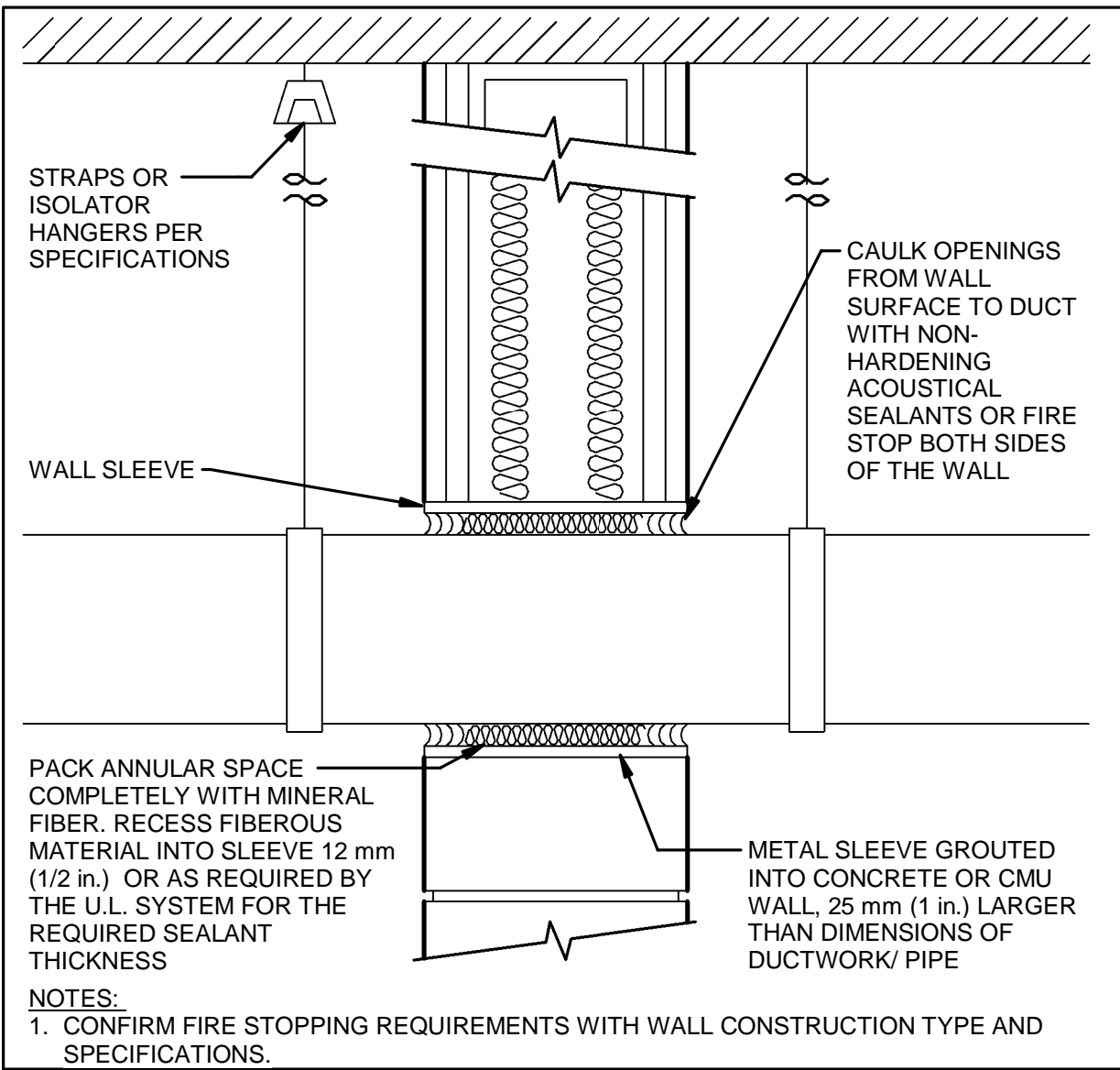
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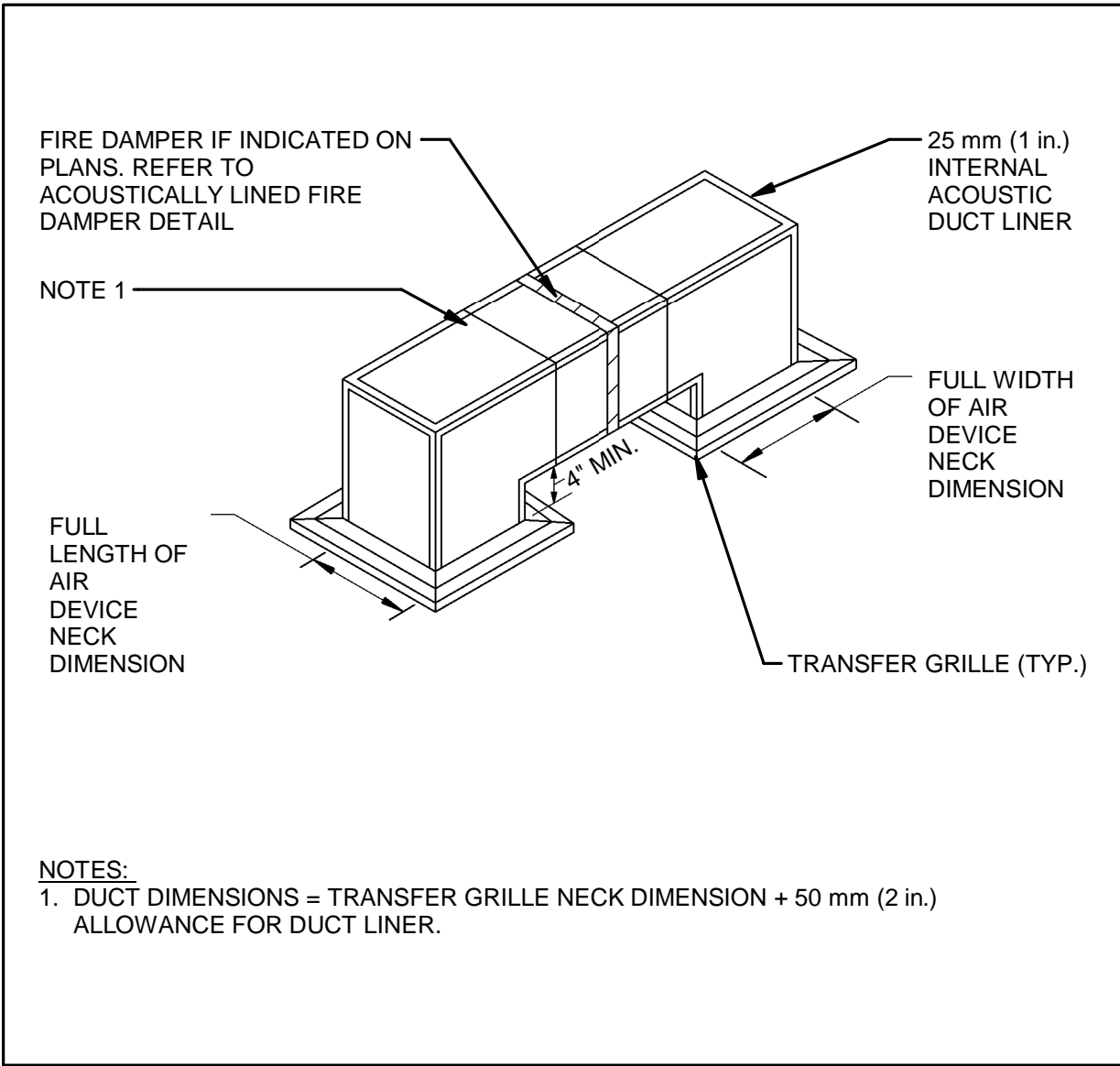
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DETAILS

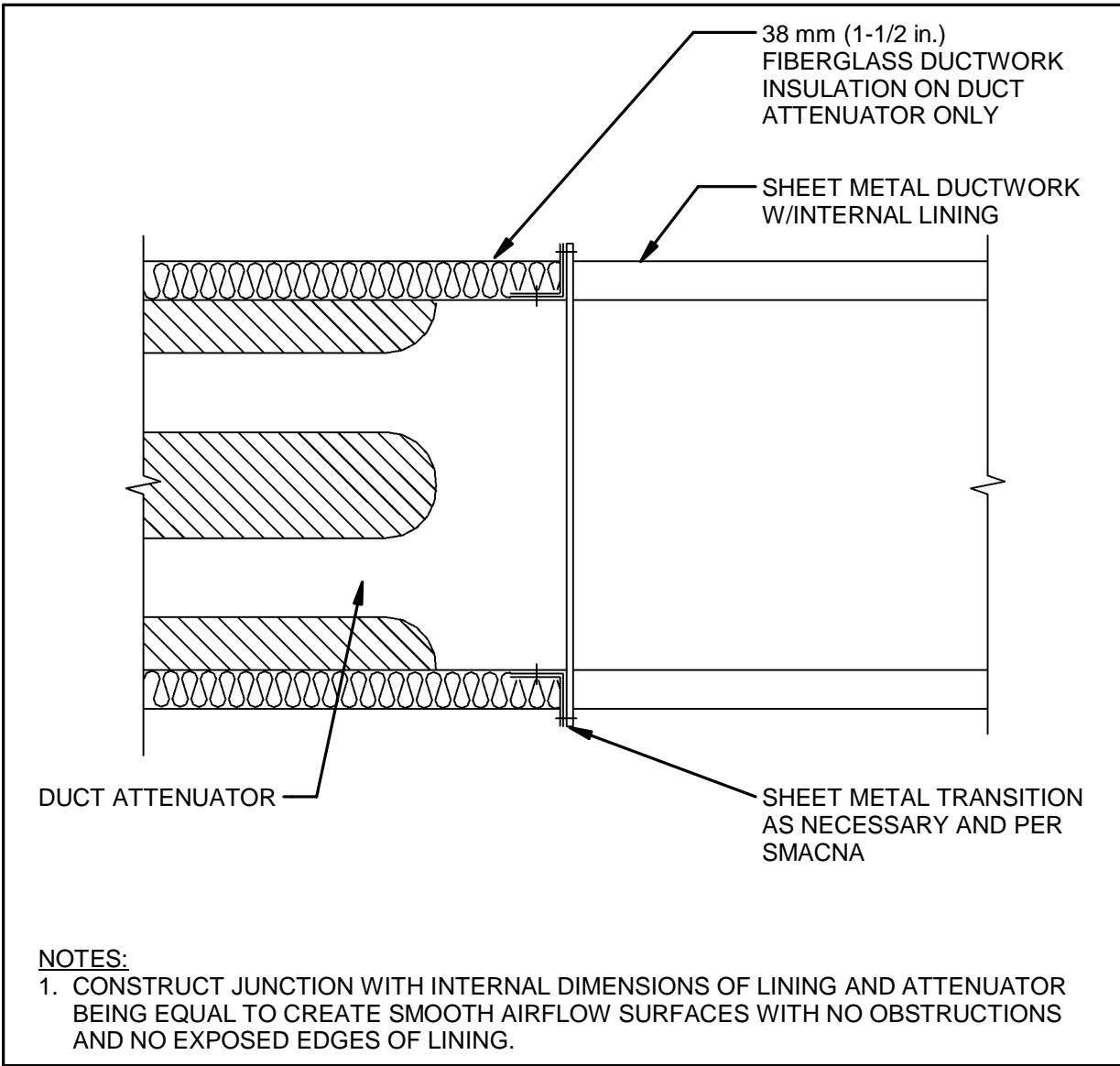




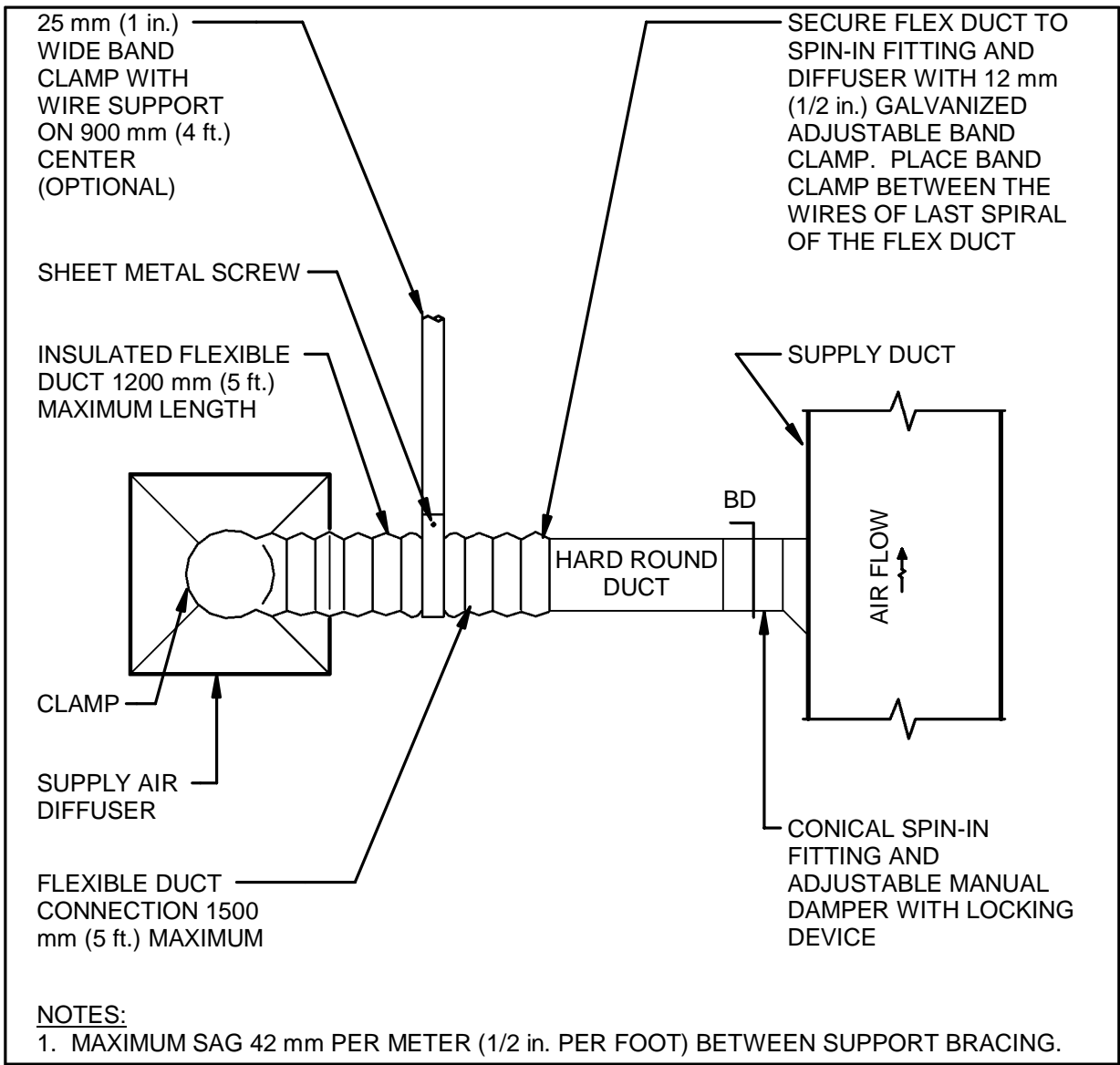
10 DUCT/PIPE WALL PENETRATION Scale: NTS



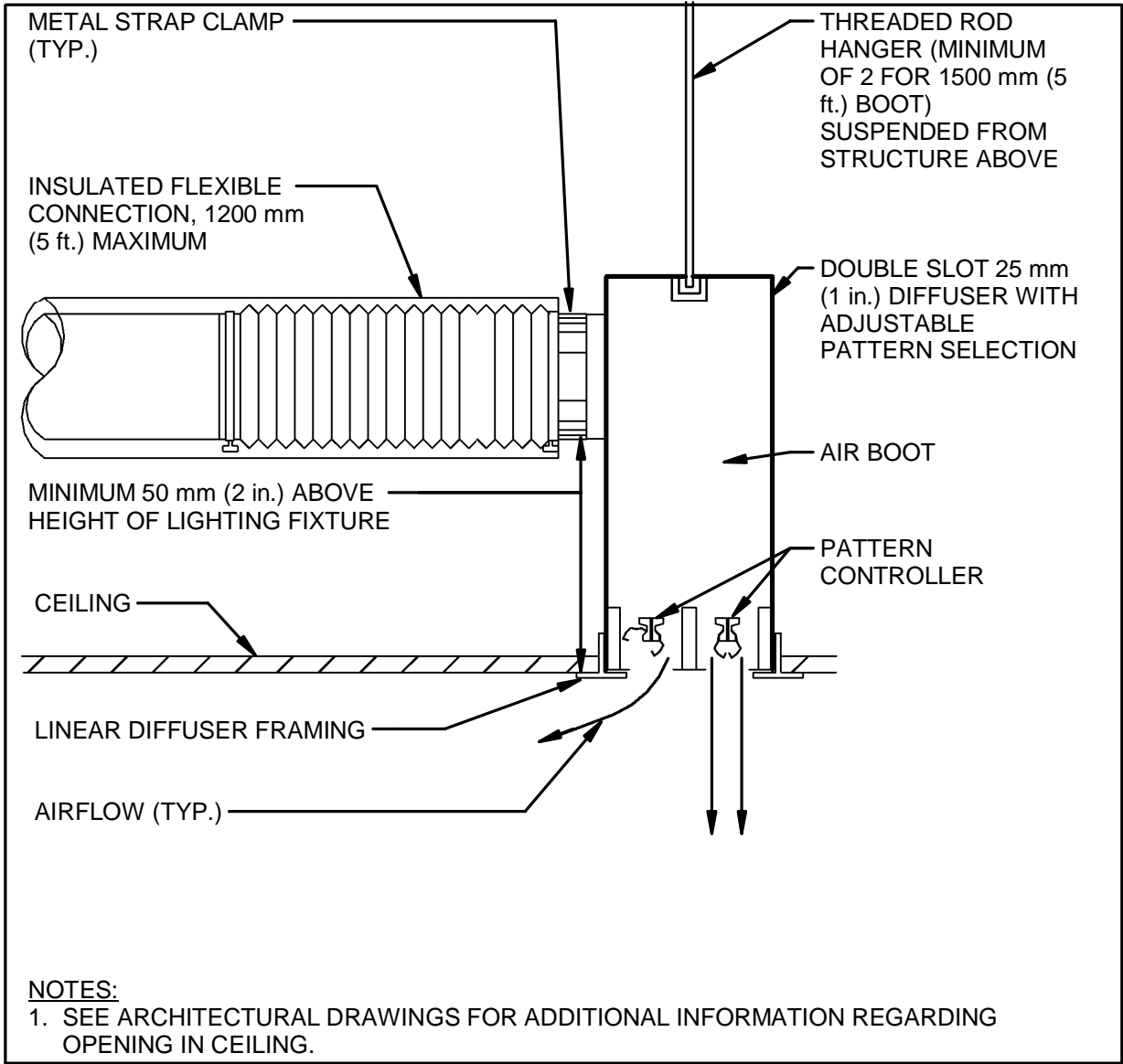
11 DUCTED RETURN AIR TRANSFER DUCT Scale: NTS



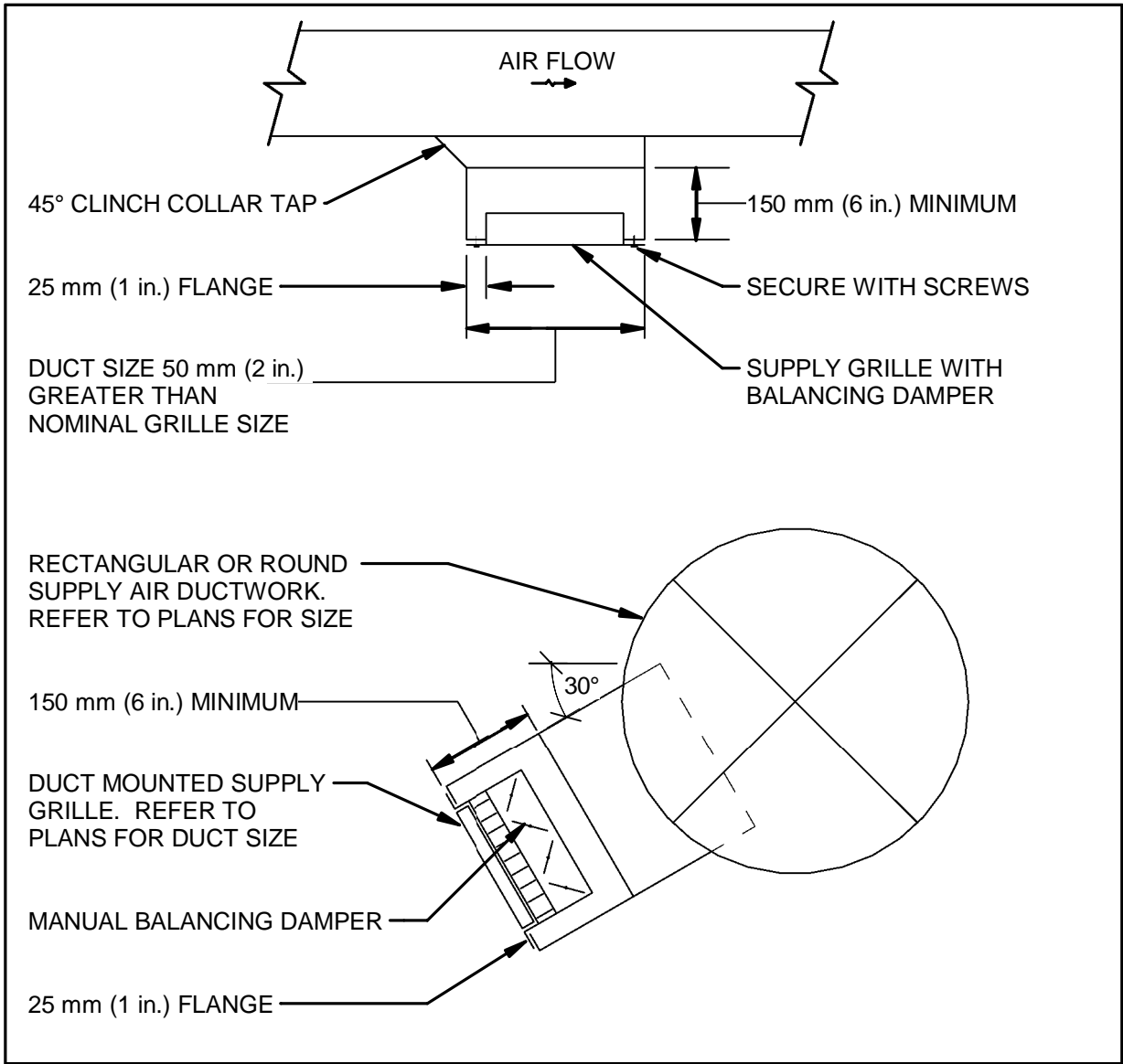
12 DUCTWORK/ATTENUATOR CONNECTION DETAIL Scale: NTS



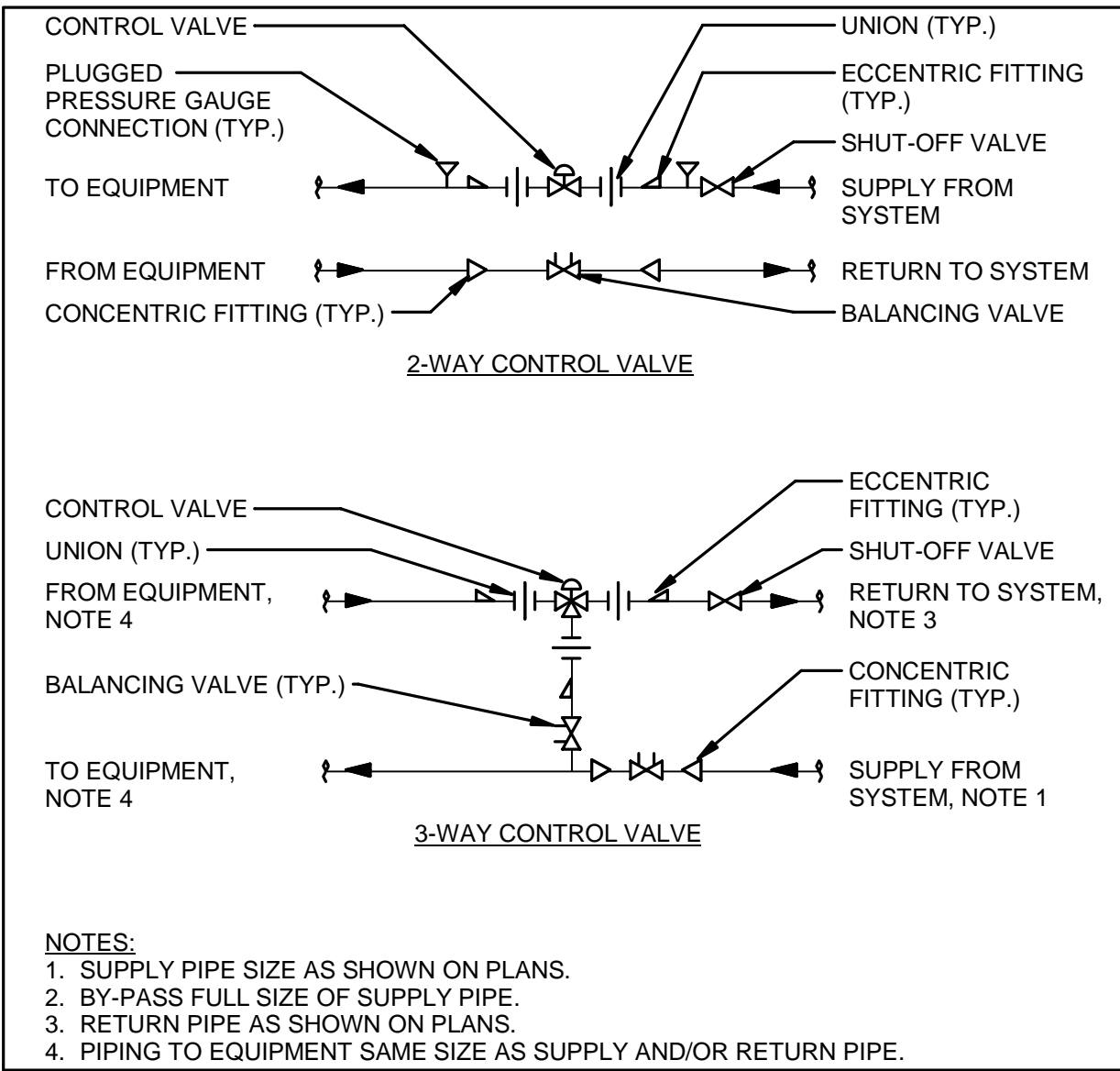
7 DIFFUSER CONNECTION DETAIL Scale: NTS



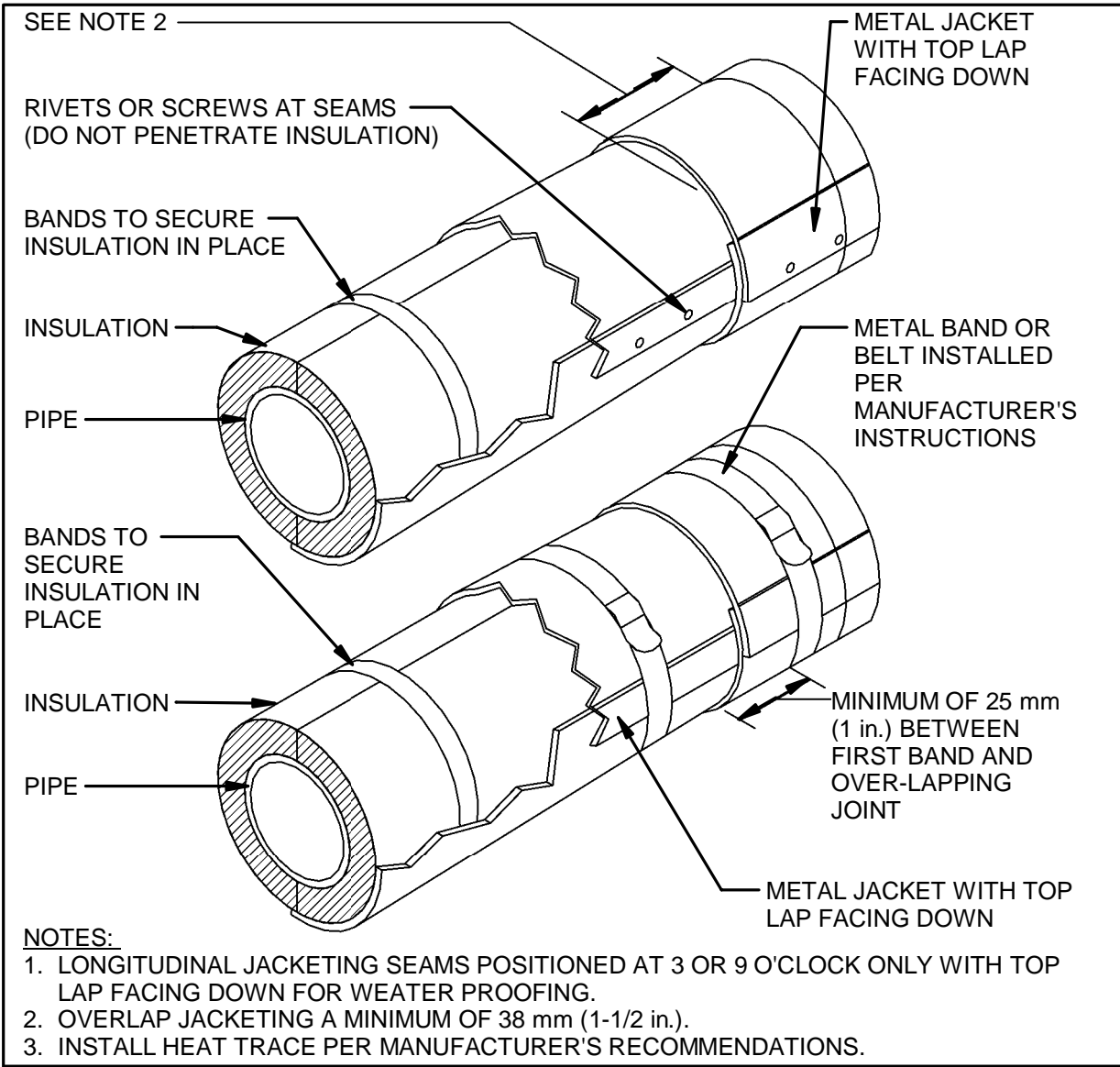
8 LINEAR DIFFUSER AIRFLOW PATTERN Scale: NTS



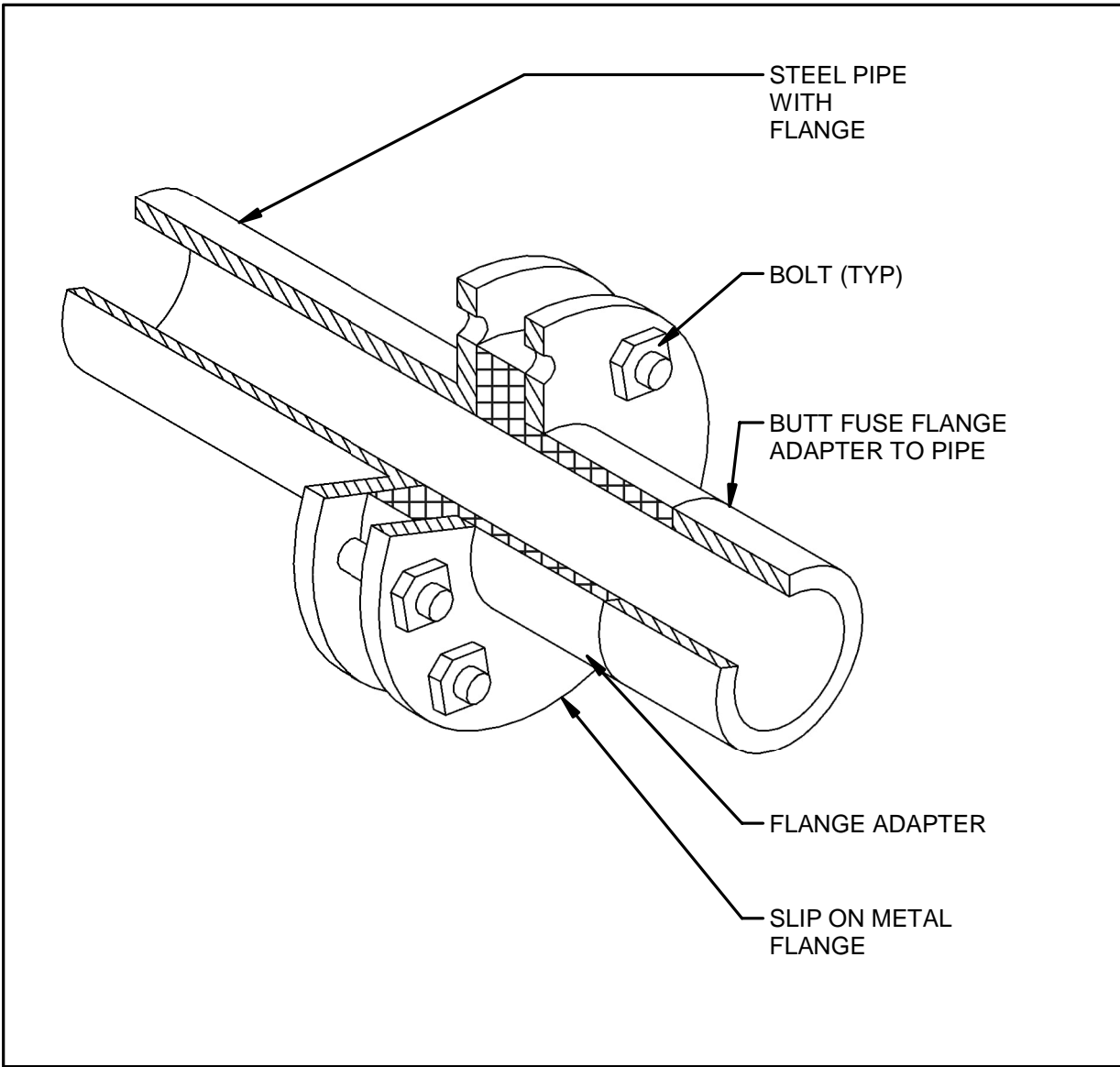
9 EXPOSED SUPPLY GRILLE Scale: NTS



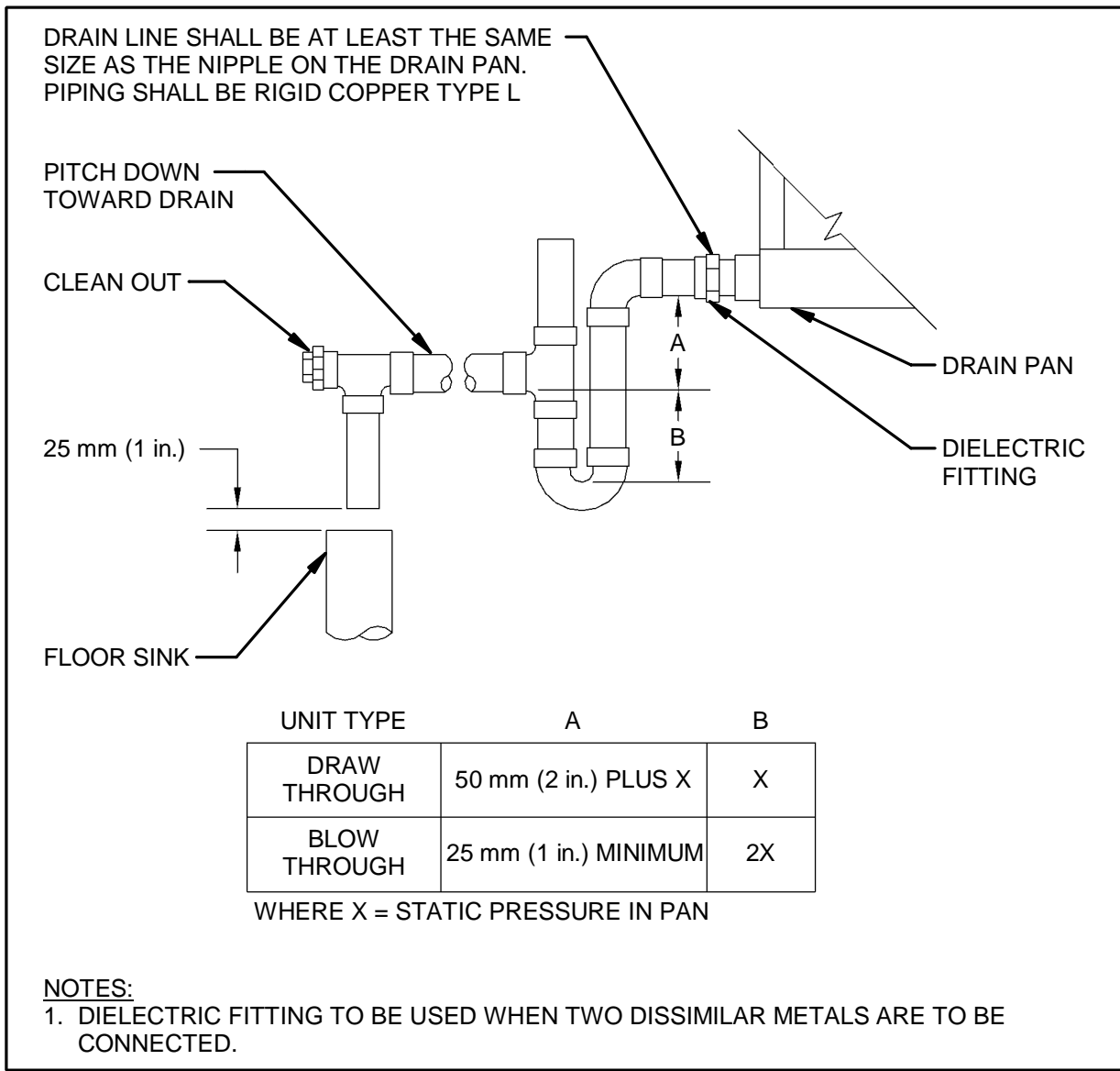
4 CONTROL VALVE PIPING ARRANGMENTS Scale: NTS



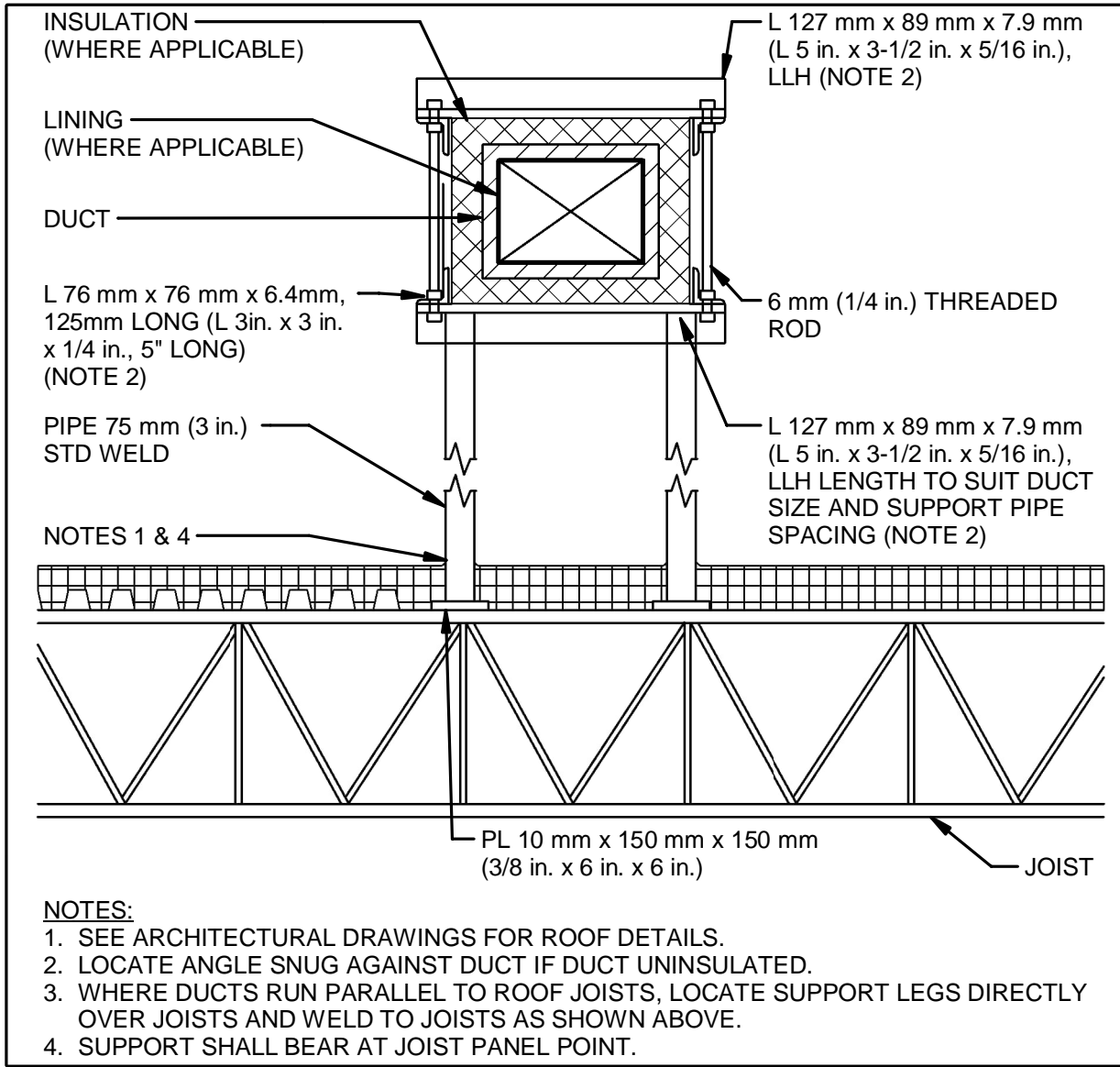
5 FIELD APPLIED METAL JACKETING OVER PIPE INSULATION Scale: NTS



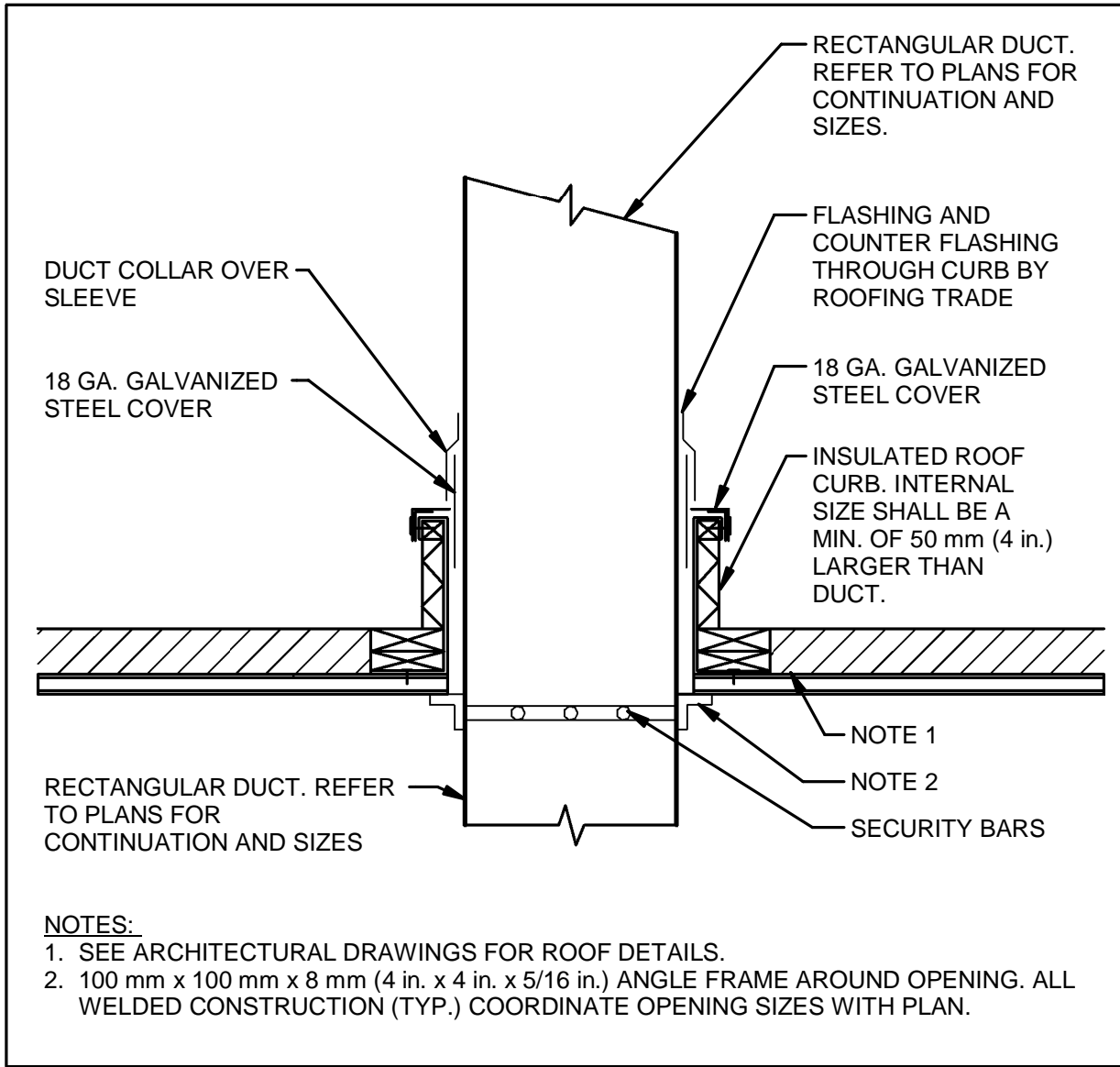
6 DISSIMILAR PIPING MATERIAL CONNECTION Scale: NTS



1 CONDENSATE DRAIN TRAP Scale: NTS



2 TYPICAL SUPPORT FOR ROOF-MOUNTED DUCT Scale: NTS



3 DUCTWORK ROOF PENETRATION Scale: NTS



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

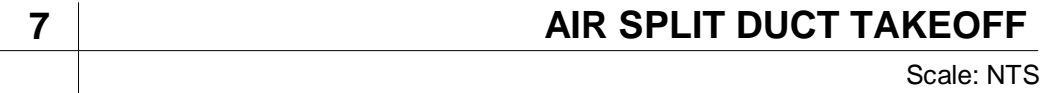
Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
6	2024-01-23	ISSUED FOR TENDER
5	2024-12-13	RE-ISSUED FOR PERMIT
4	2024-11-29	ISSUED FOR CLIENT REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Revision History	
Filename:	Version: 2020.2.5
Project Number: 60686829	Project Manager:
Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: AP	Date (yyyy-mm-dd):
Drawn: LD	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: JS	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

Title:	
DETAILS	
Page Size: A	Sheet: 6
Scale: AS	Indicated
M702	
Sheet: 6 of	







10	RADIANT CEILING PANELS - PIPING CONNECTIONS
	Scale: NT

<b>7</b>	<b>TOP BRANCH TAKE-OFF</b>
	Scale: NTS

4	HORIZONTAL IN-LINE PUMP TYPE 1 & 2
	Scale: NTS

1	<b>BYPASS SHOT FEEDER - UP TO 7.6 L (2 USGAL)</b>
	Scale: N"

11	<b>GAS-FIRED BOILER DETAIL</b>
	Scale: N.T.

8	MULTI HW PREHEAT COIL PIPING DETAIL (3-WAY)
	Scale: NTS

5	AIR SEPARATOR
	Scale: NTS

2	BYPASS SHOT FEEDER OVER 7.6 L (2 USGAL)
	Scale: N"

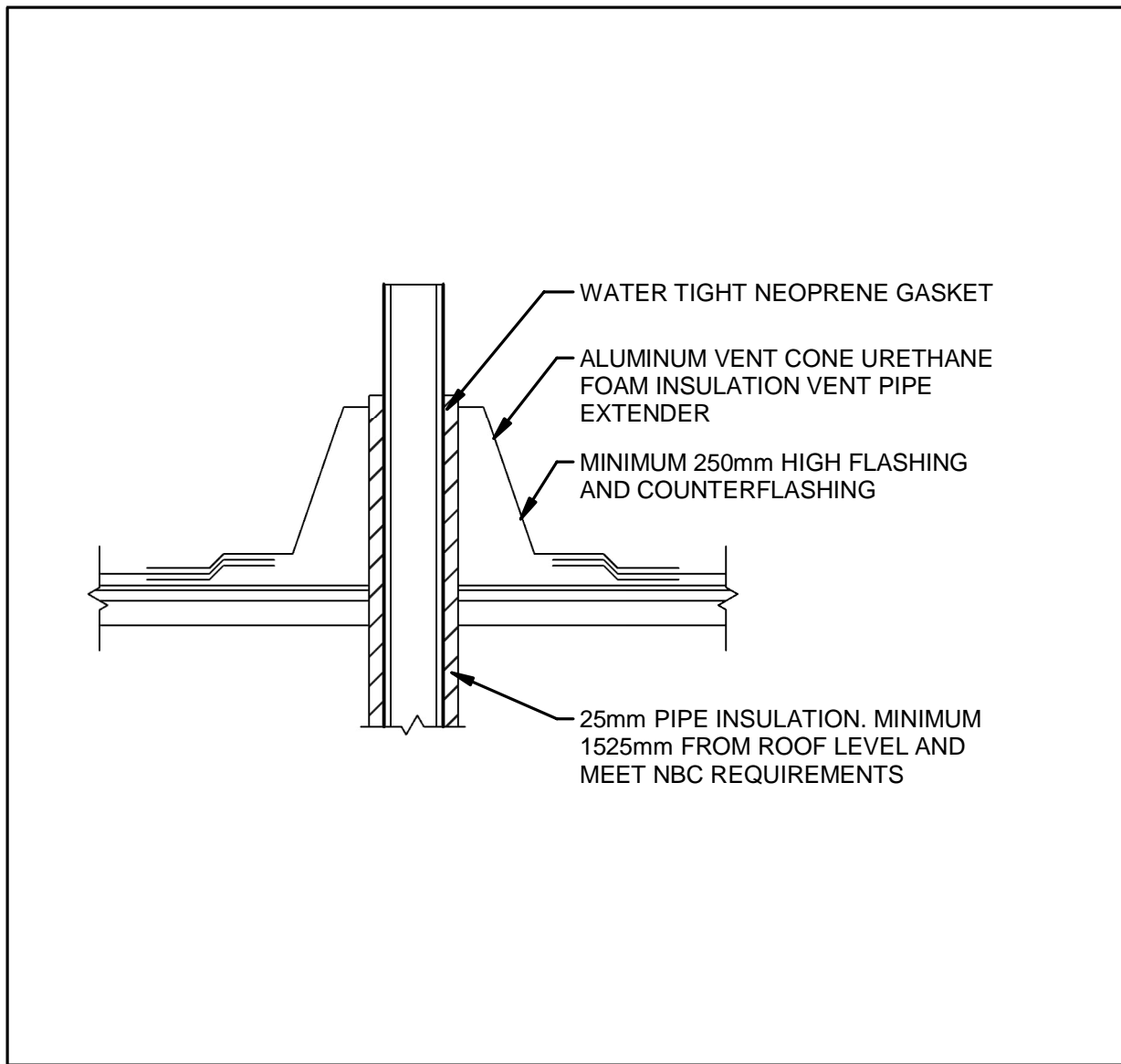
## 12 TYPICAL FIELD TESTING ACCESS PORTS/HOLES DETAILS

9	<b>RADIANT CEILING PANEL INSTALLATION</b>	Scale: NTS
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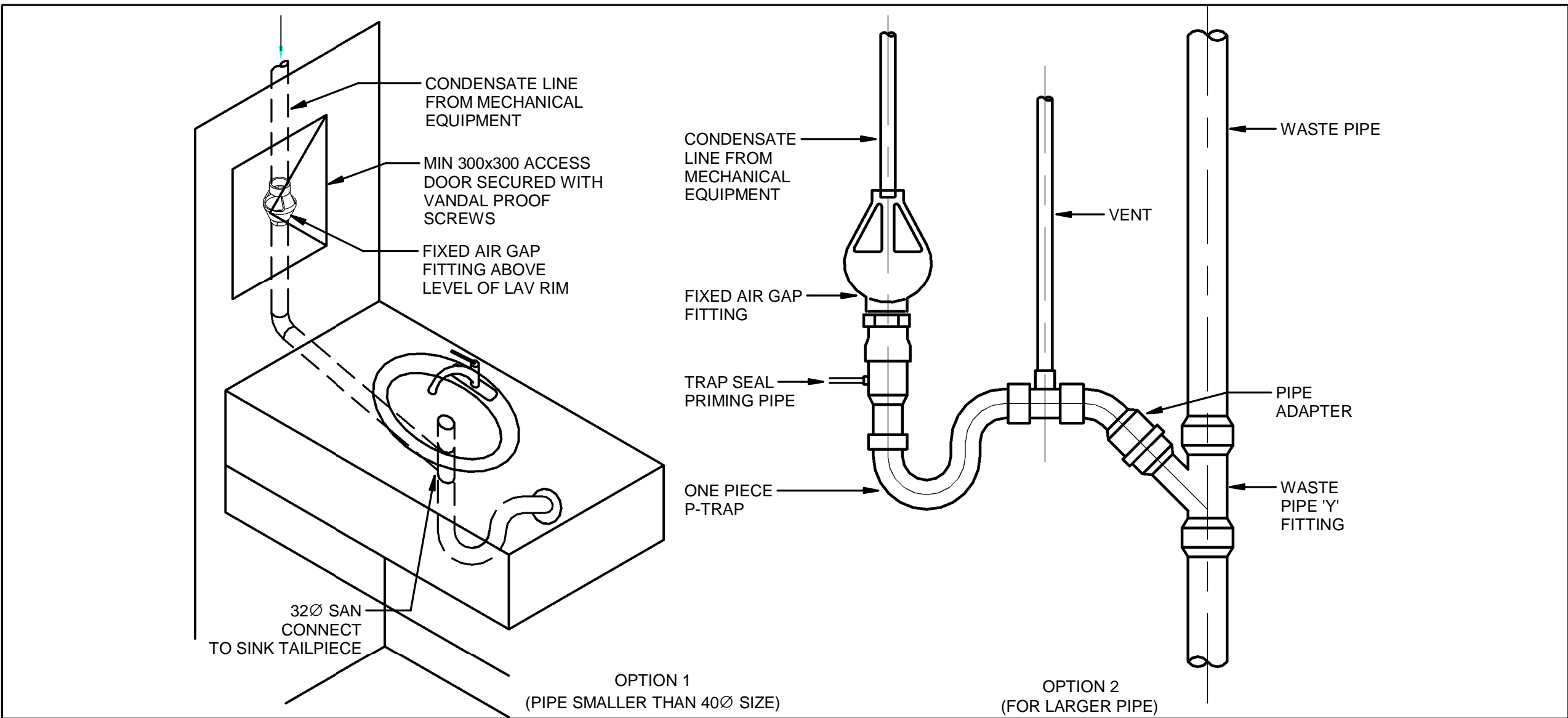
**6** **BOTTOM BRANCH TAKE-OFF** Scale: NTS

### 3 | BYPASS SHOT FEEDER & FILTER PIPING ARRANGMENT

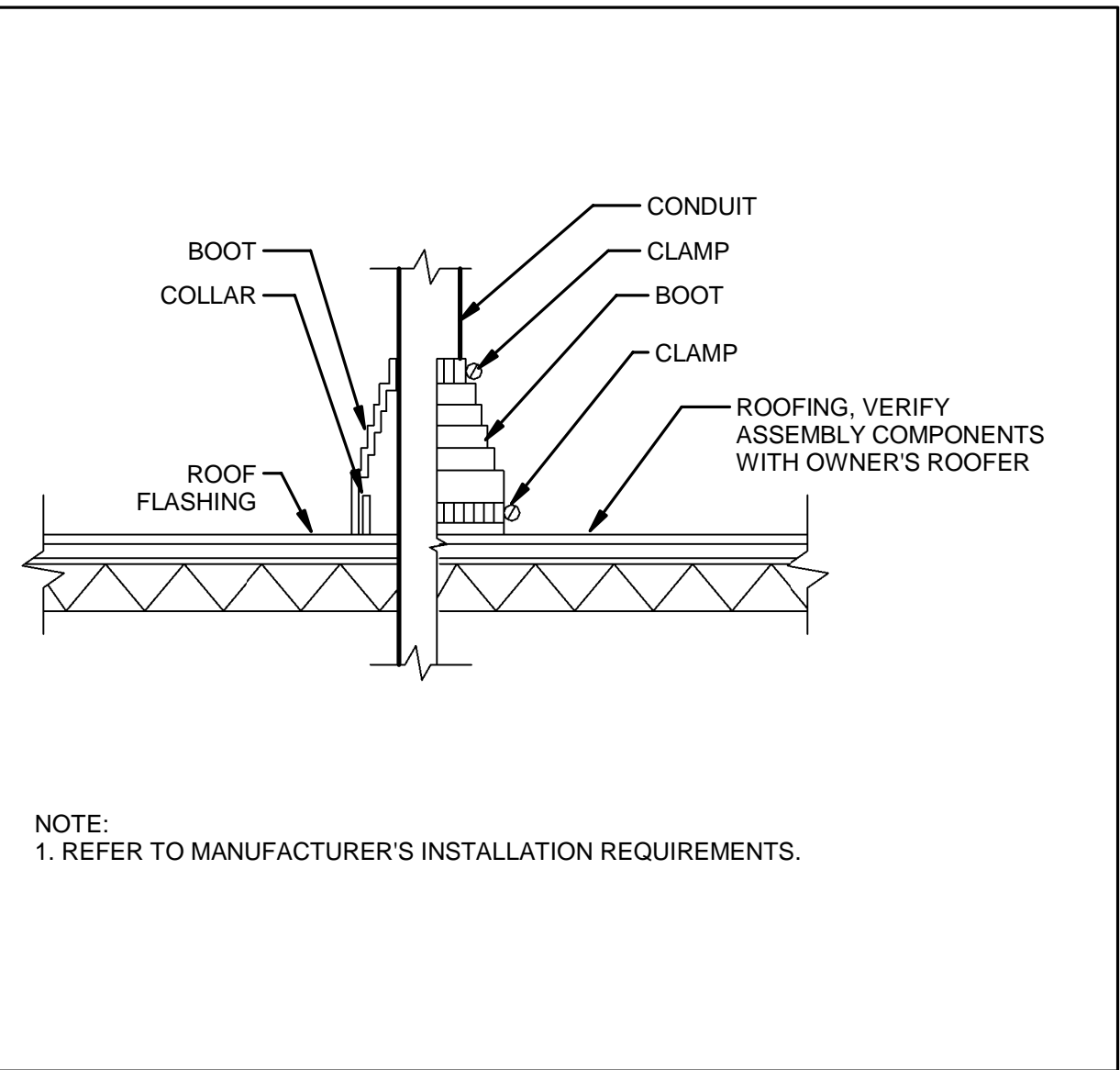




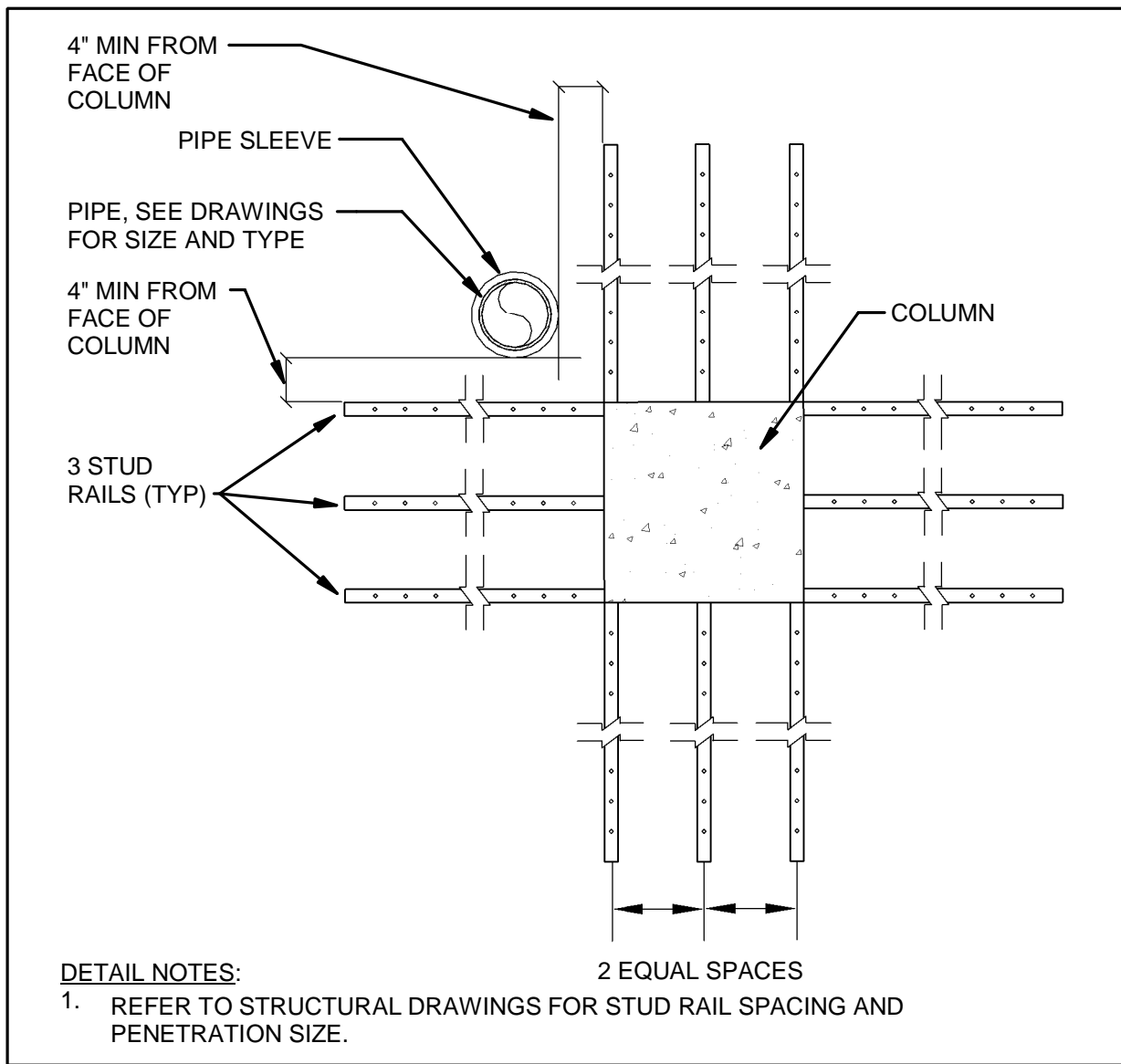
7 PLUMBING VENT THROUGH ROOF DETAIL  
Scale: NTS



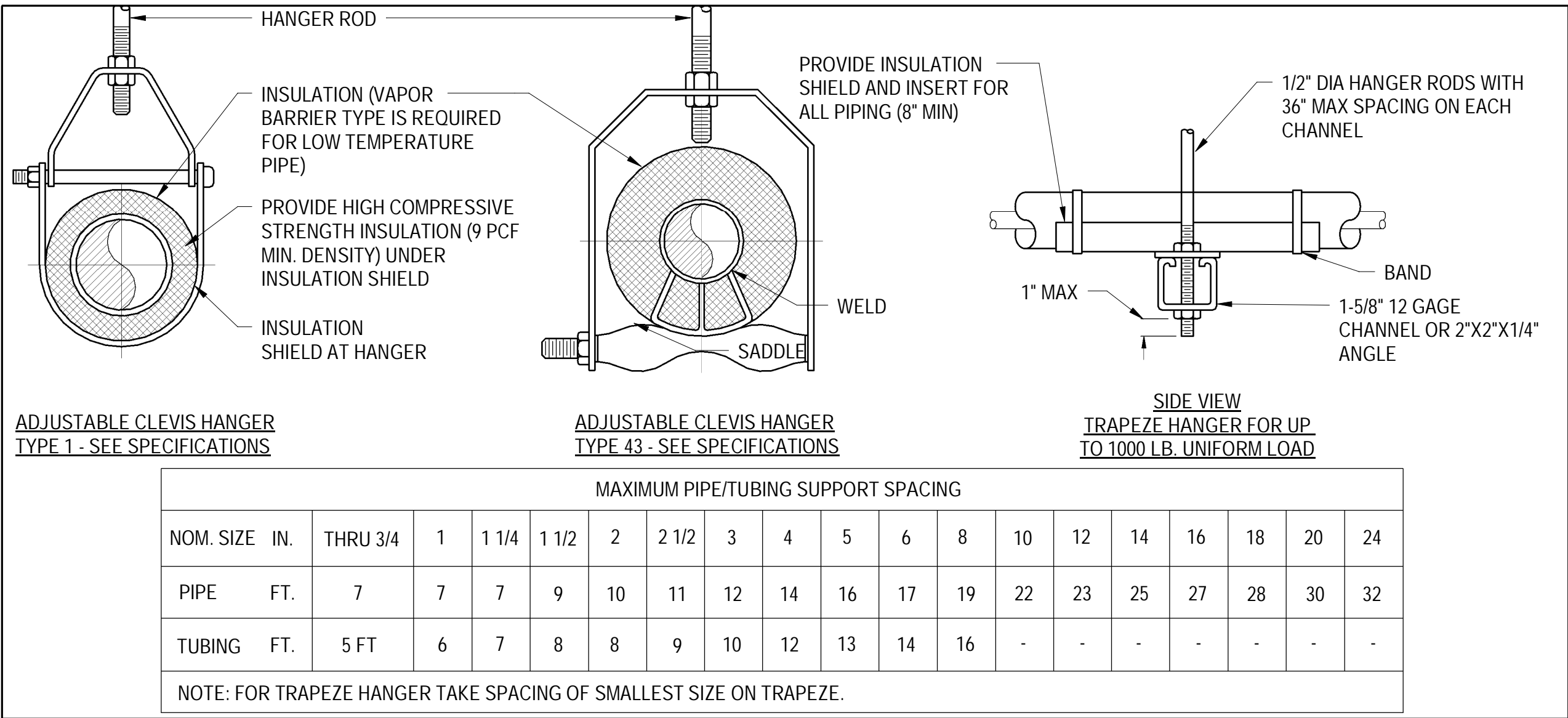
4 CONDENSATE DRAIN CONNECTION DETAIL  
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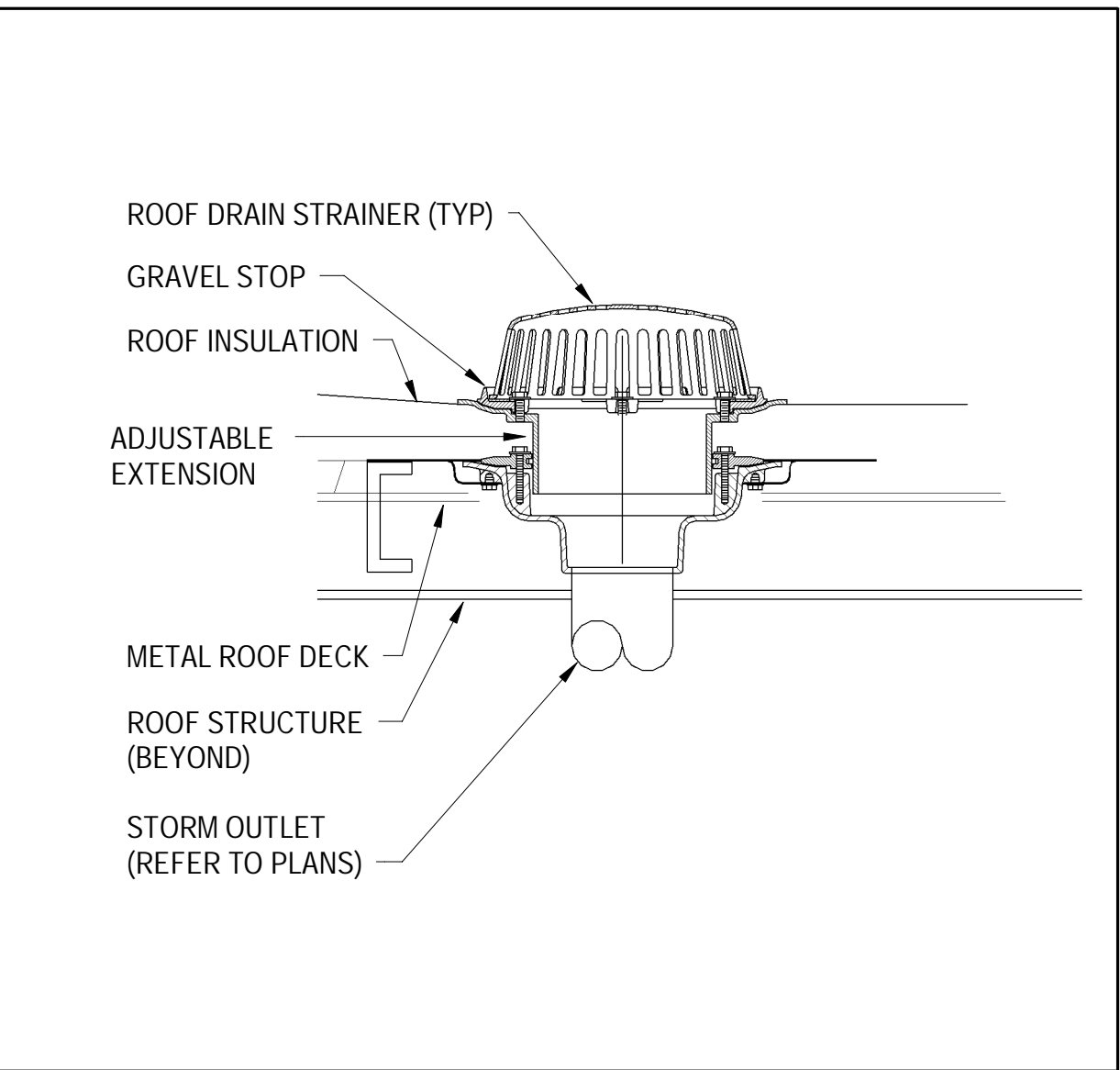
1 PIPE/CONDUIT CURB DETAIL  
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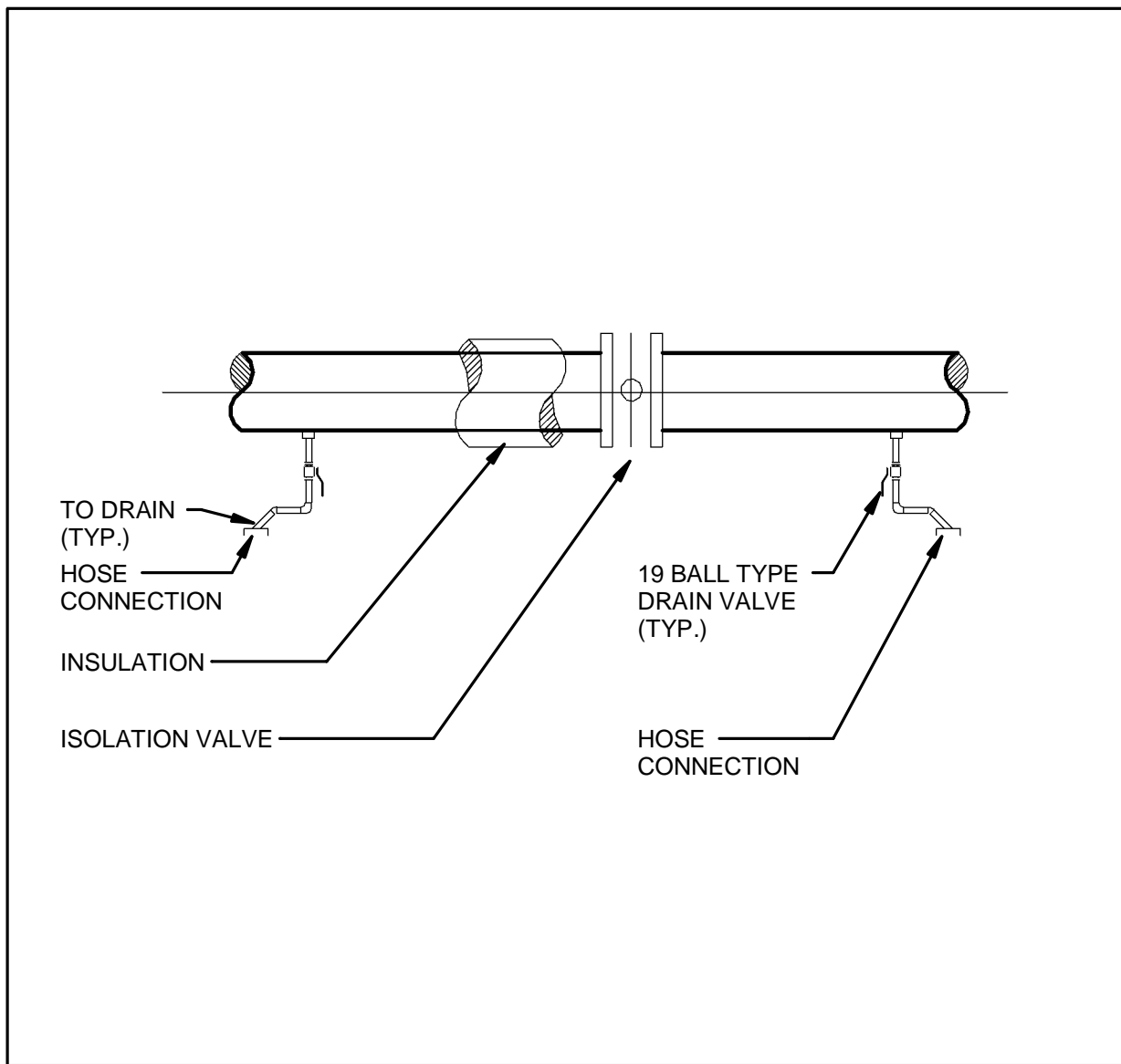
8 PIPE PENETRATION THRU SLAB  
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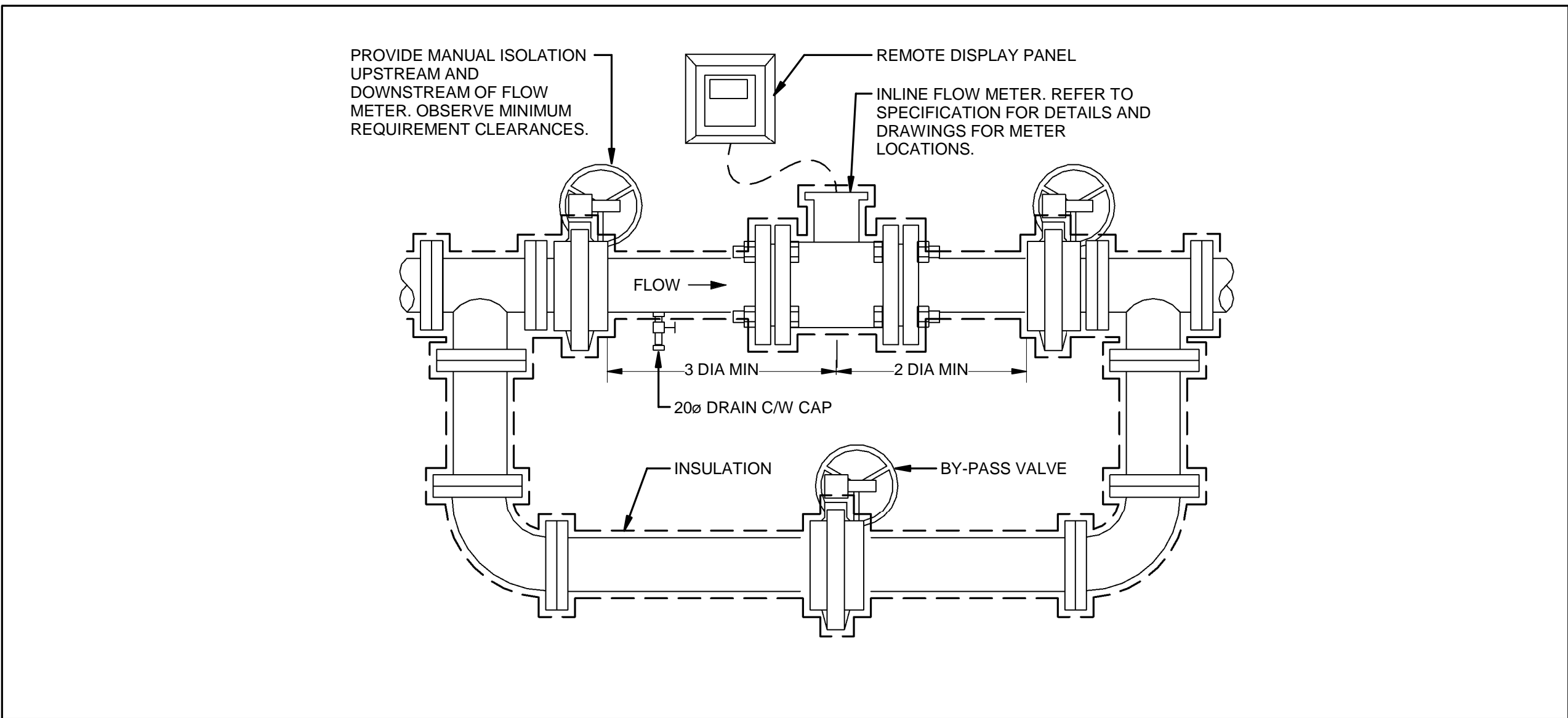
5 TYPICAL PIPE HANGERS  
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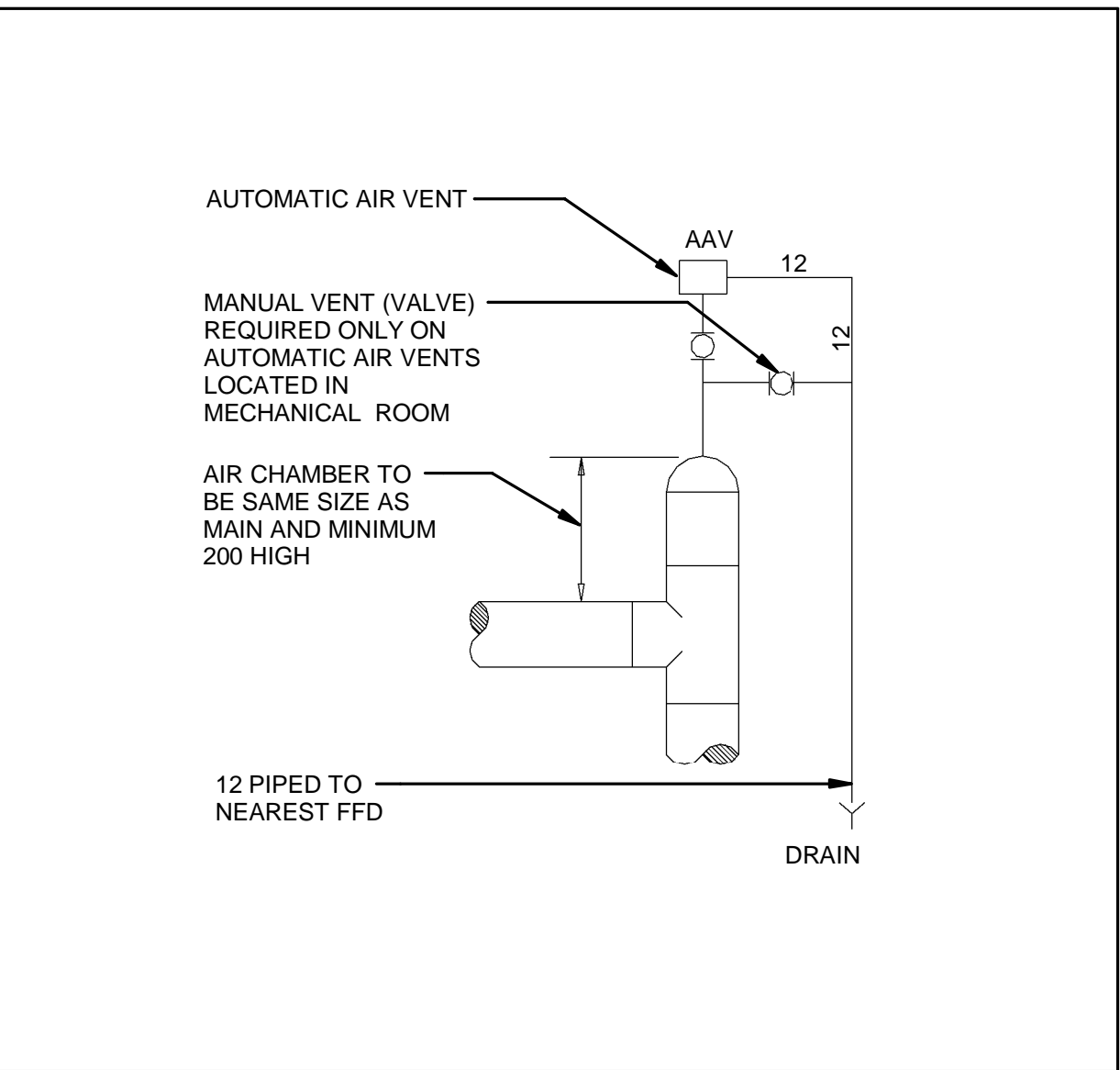
2 ROOF DRAIN DETAILS  
Scale: NTS



9 ISOLATION VALVE DETAIL  
Scale: NTS



6 INLINE FLOW METER INSTALLATION DETAIL  
Scale: NTS



3 AUTOMATIC AIR VENT INSTALLATION DETAIL  
Scale: NTS



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

1 2024-01-23 ISSUED FOR TENDER  
Mark Date Description

Revision History

Filename: Version: 2020.2.5

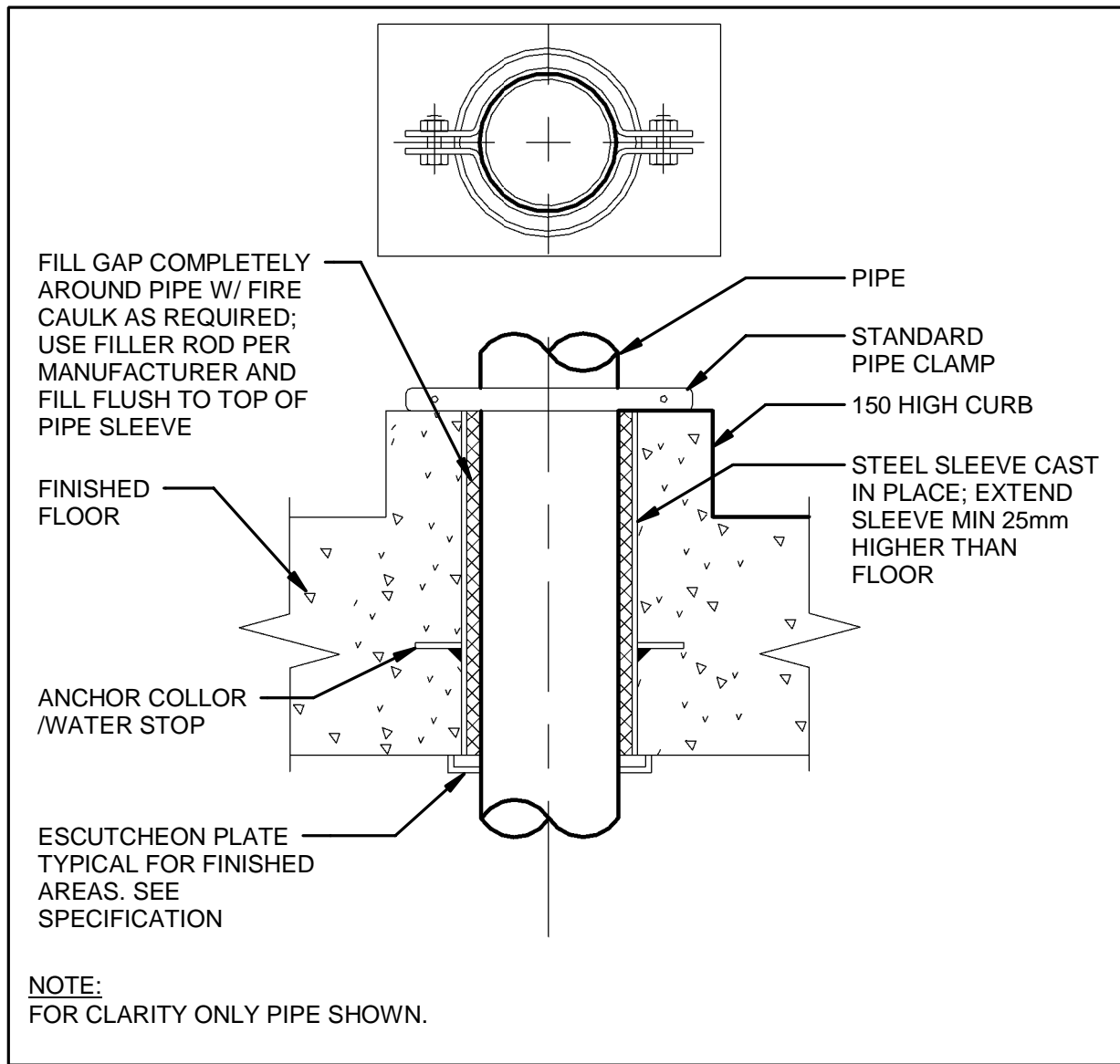
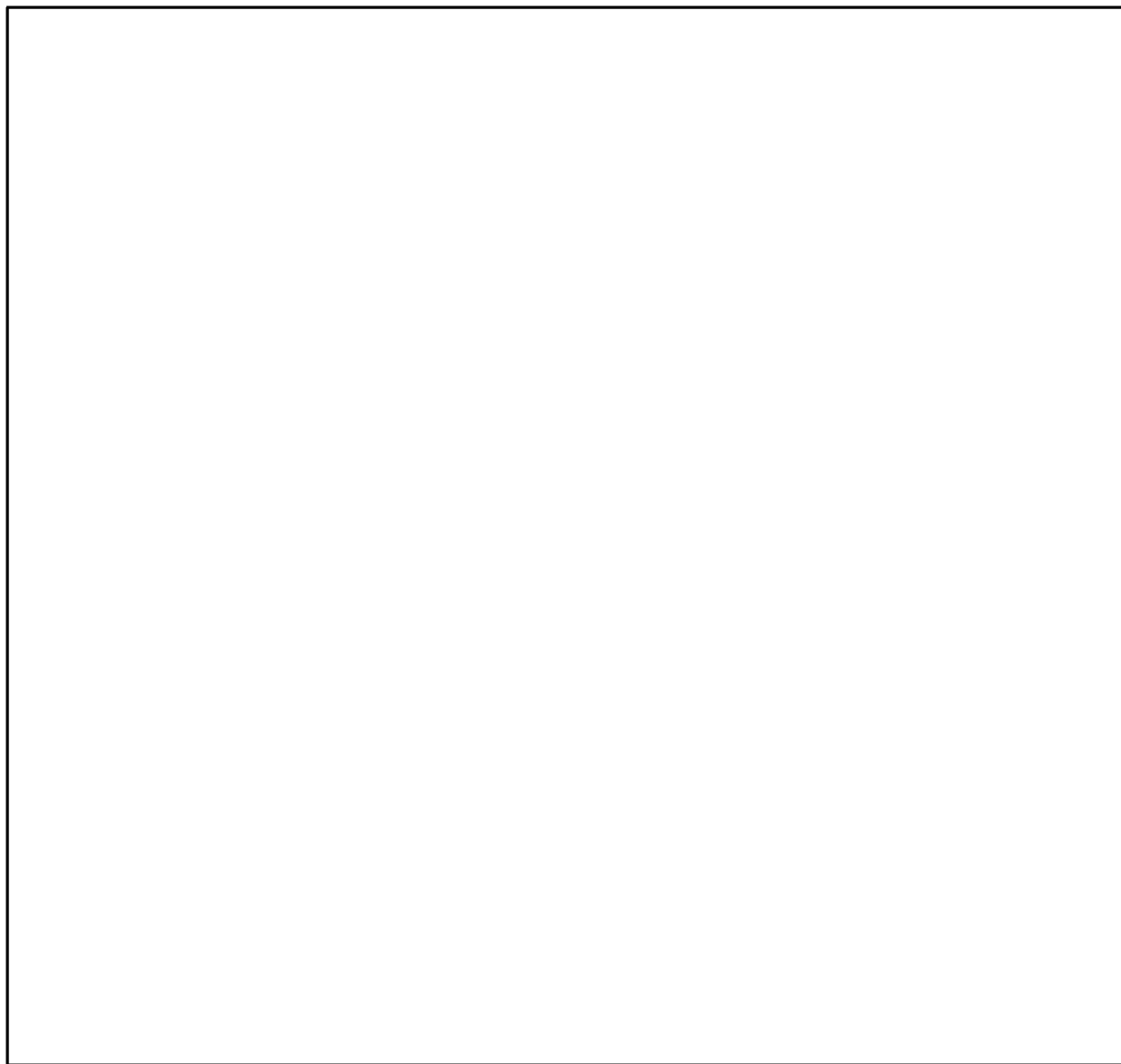
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Project Administrator:	BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²): IPMS 2 (m²):
Designed: AP	Date (yyyy-mm-dd):
Drawn: LD	Date (yyyy-mm-dd):
Reviewed:	Date (yyyy-mm-dd):
Checked: JS	Date (yyyy-mm-dd):
Approved:	Date (yyyy-mm-dd):

Title:

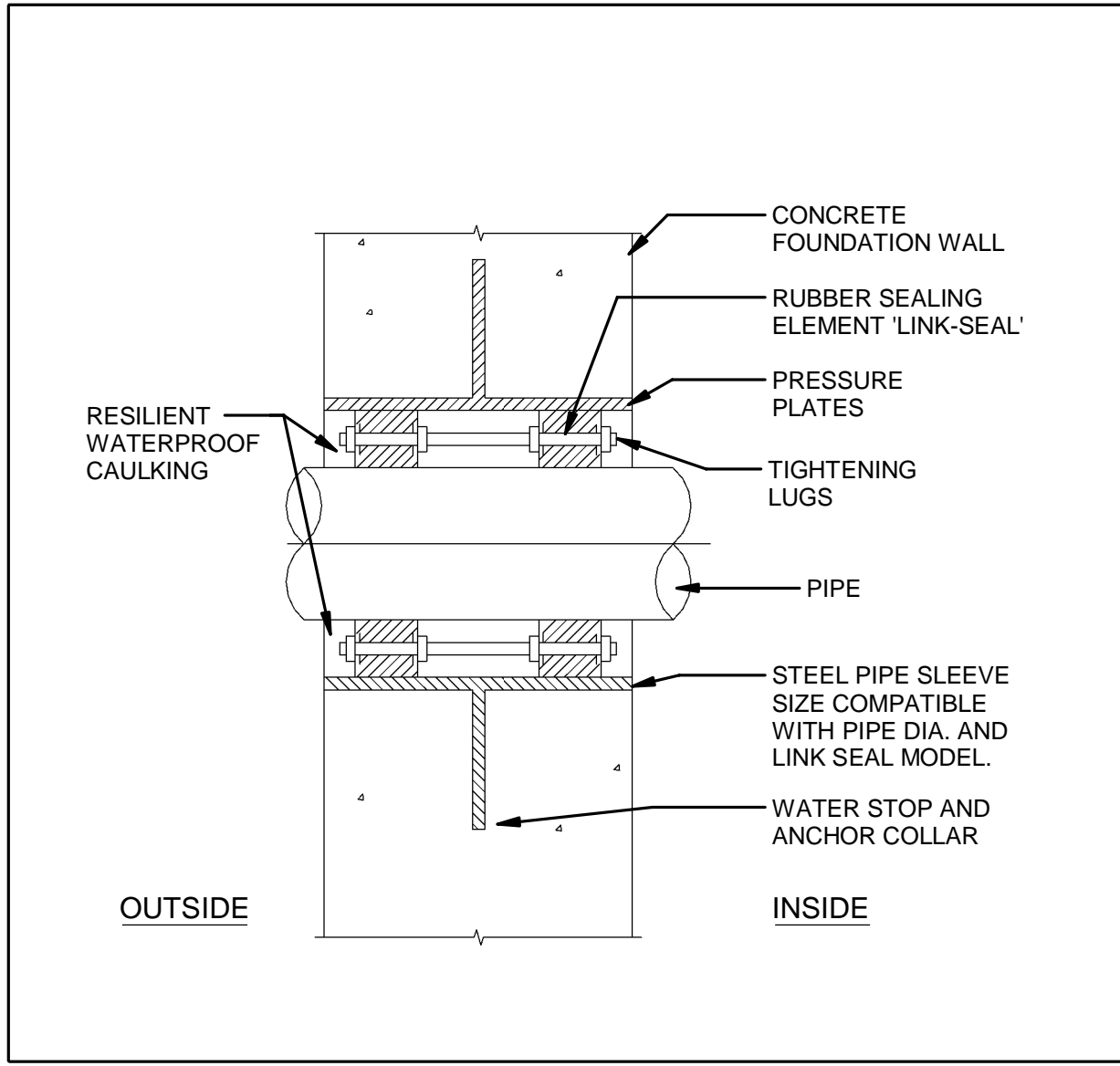
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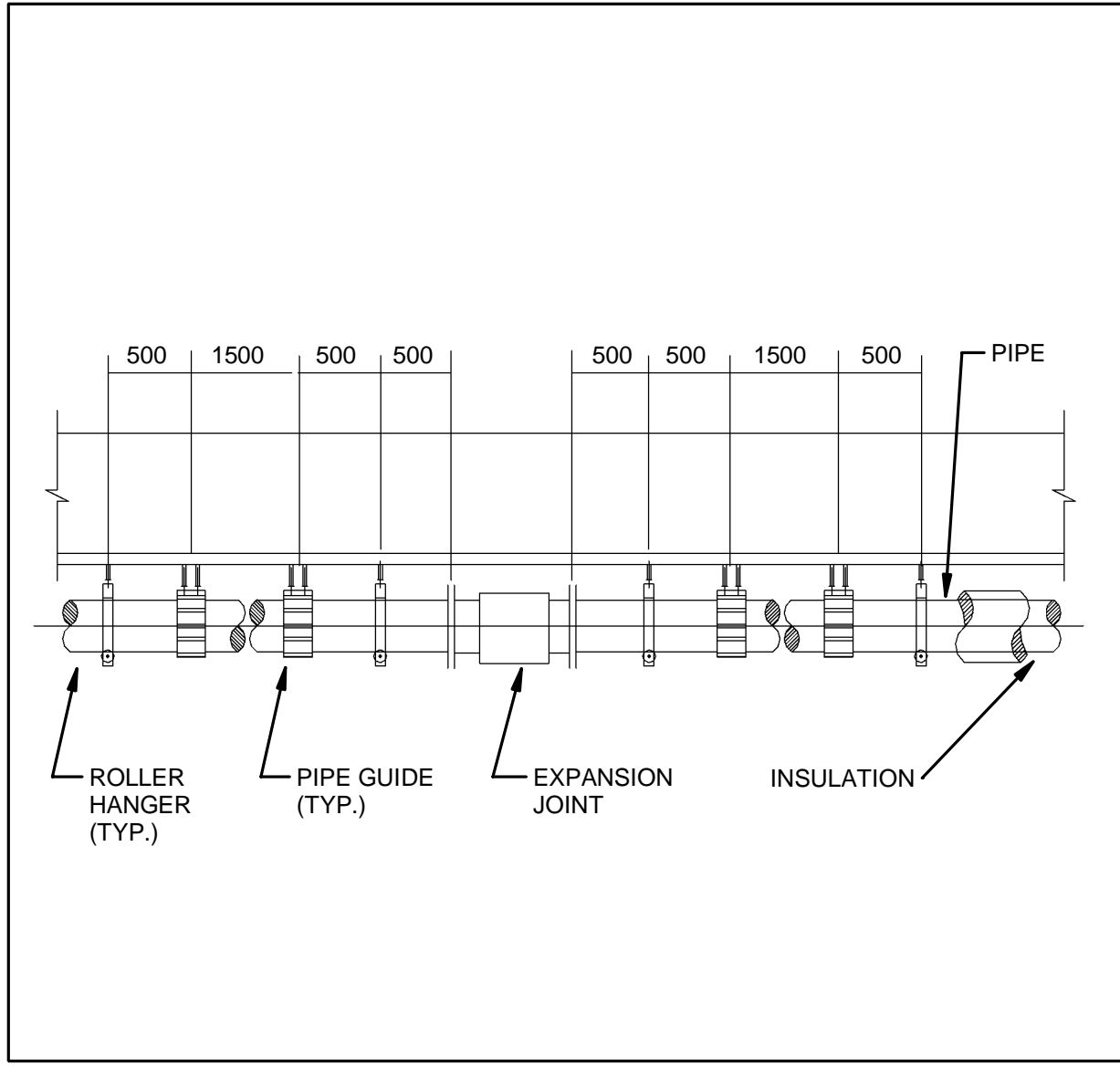




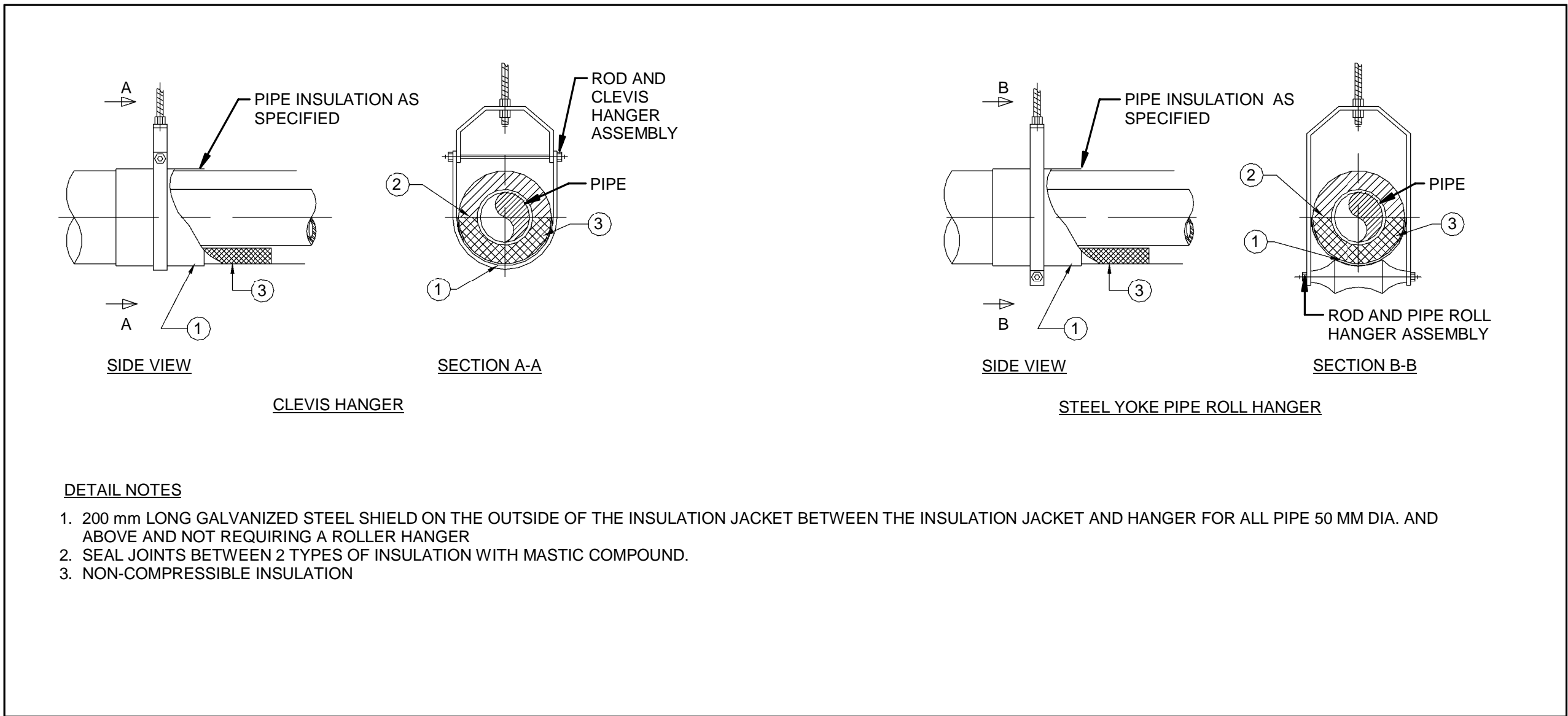
4 PIPE/DUCT SLEEVE THROUGH FLOOR DETAIL  
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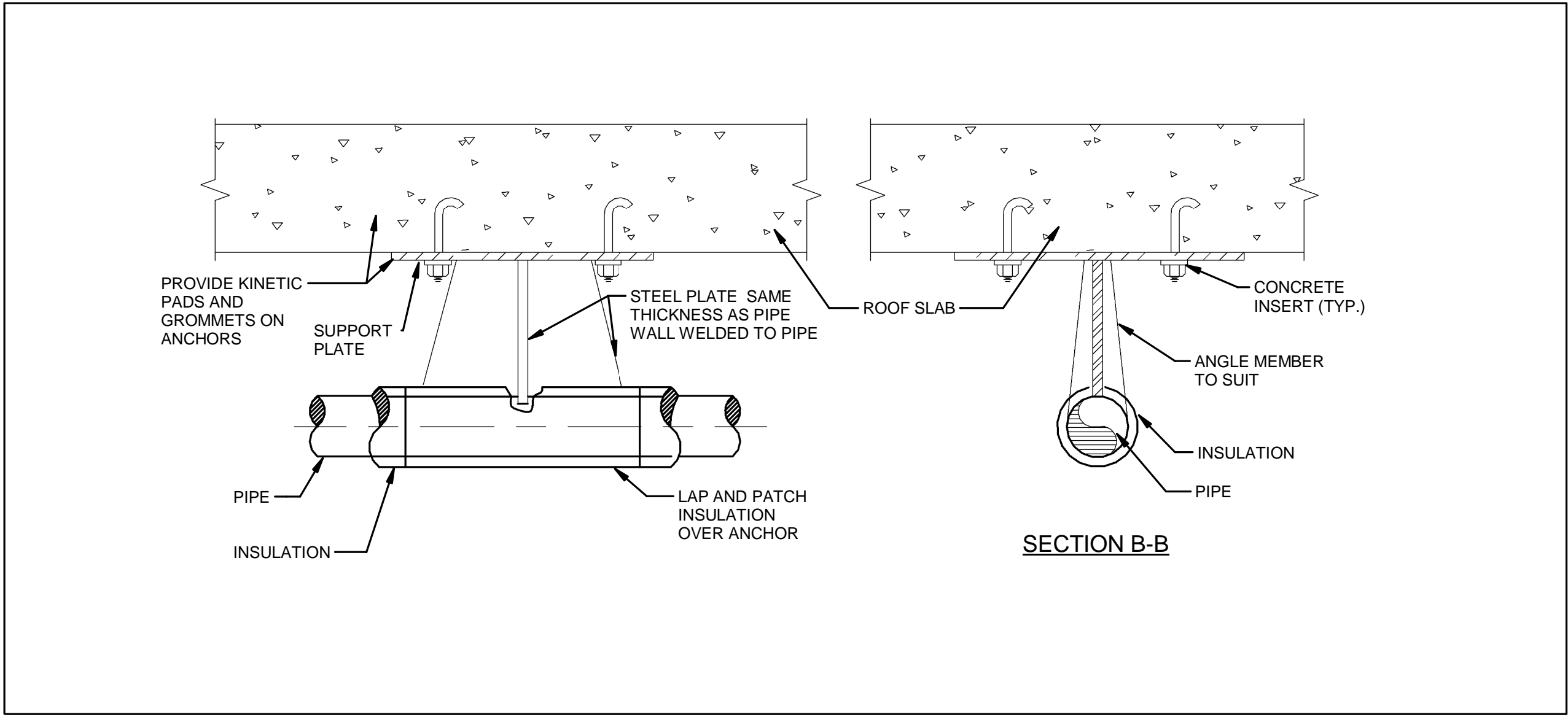
5 PIPE PENETRATION (EXTERIOR WALL)  
Scale: NTS



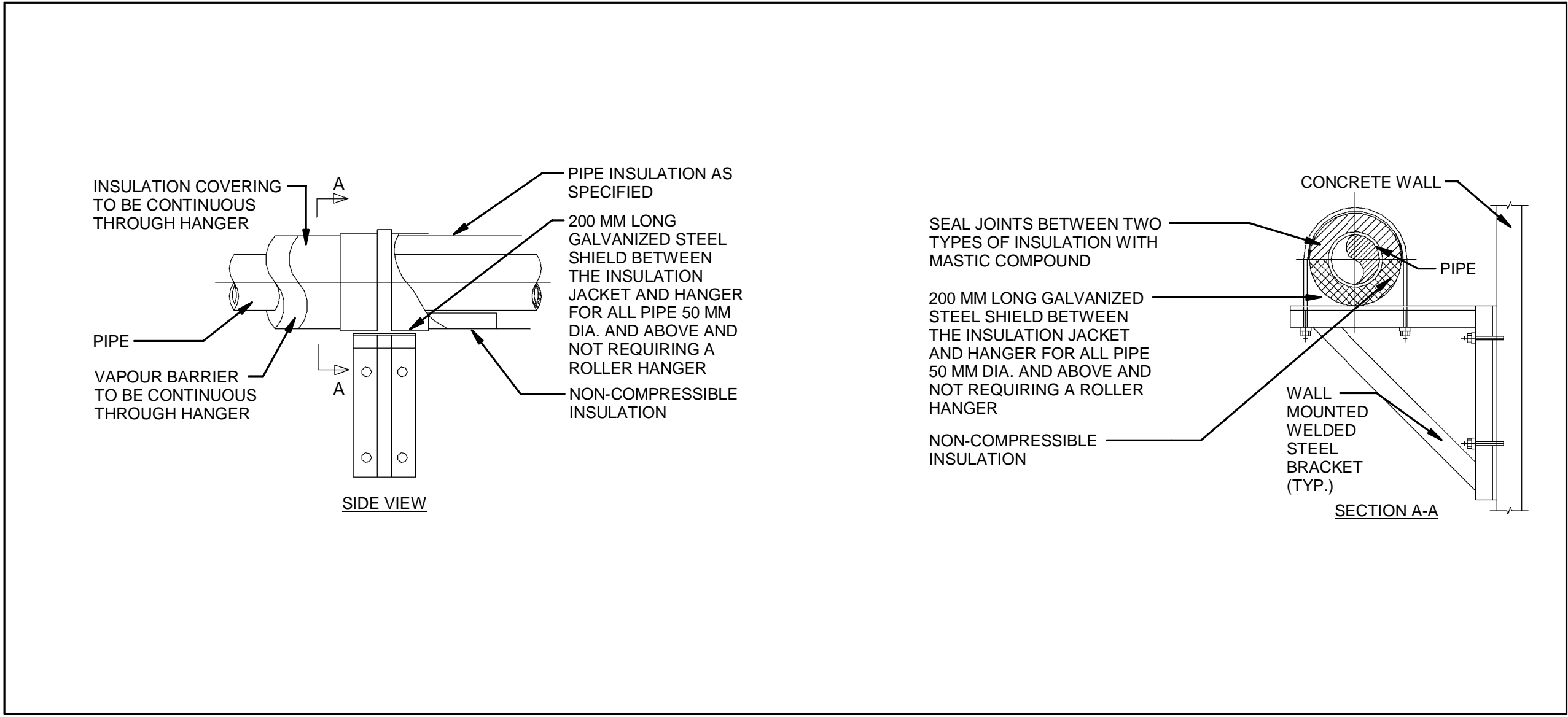
6 EXPANSION JOINT DETAIL (SUSPENDED)  
Scale: NTS



1 TYPICAL PIPE HANGER DETAIL  
Scale: NTS



2 PIPE ANCHOR DETAIL  
Scale: NTS



3 TYPICAL PIPE INSULATION DETAIL (BRACKET)  
Scale: NTS



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Markham, Ontario, L3T 7W3

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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

1 2024-01-23 ISSUED FOR TENDER  
Mark Date Description

Revision History

Filename: 60686829 Version: 2020.2.5

Project Number: 60686829 Project Manager:

Project Administrator: BIM/VDC Manager:

Sustainability Target: IPMS 1 (m²): IPMS 2 (m²):

Designed: AP Date (yyyy-mm-dd):

Drawn: LD Date (yyyy-mm-dd):

Reviewed: Date (yyyy-mm-dd):

Checked: JS Date (yyyy-mm-dd):

Approved: Date (yyyy-mm-dd):

Title:

DETAILS

Page Size: ANSI D Sheet: NTS Rev: 1 of 1  
M706



- ELECTRICAL GENERAL NOTES:
1.

ALL WORK IN THIS CONTRACT SHALL CONFORM TO THE REQUIREMENTS OF LATEST ONTARIO BUILDING CODE AND ONTARIO ELECTRICAL SAFETY CODE INCLUDING ALL AMENDMENTS AND REVISIONS.
2.

ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH DRAWINGS OF ALL OTHER ASSOCIATED DISCIPLINES/TRADES INCLUDING CIVIL/ARCHITECTURAL/STRUCTURAL/INTERIOR/MECHANICAL & LANDSCAPE DRAWINGS, ETC.
3.

WIRE AND CONDUIT SIZES ARE INDICATED ON DRAWING AND SPECIFICATION AND WIRE TO BE OVERSIZED AS REQUIRED TO SUIT VOLTAGE DROP AS PER SPECIFICATION AND OESC. IF WIRE AND CONDUIT SIZES ARE NOT INDICATED ON DRAWING AND SPECIFICATION, MINIMUM WIRE SIZE SHALL BE #12 AWG STRANDED COPPER WIRE AND WIRE TO BE SIZED AS PER OESC AND OVERSIZED TO SUIT VOLTAGE DROP AS PER OESC.
4.

ALL 15A RECEPTACLES AND OTHER RECEPTACLES THROUGHOUT THIS PROJECT SHALL BE WIRED WITH MINIMUM #12 AWG COPPER CONDUCTORS.
5.

ALL FLOOR-MOUNTED TRANSFORMERS SHALL BE PROVIDED WITH HOUSE KEEPING CONCRETE PAD REFER TO STRUCTURAL DRAWING FOR DETAILS.
6.

WHERE APPLICABLE, FLOOR BOXES' LOCATIONS ON VOICE/DATA AND POWER LAYOUTS ARE APPROXIMATE AND SHALL BE ADJUSTED TO SUIT CONFIGURATION/FINAL ORIENTATION OF THE FURNITURE APPROVED/SUPPLIER FOR THIS PROJECT. CONTRACTOR SHALL COORDINATE BOX LOCATION WITH FURNITURE SUPPLIER/MANUFACTURER AND SHALL INSTALL BOX IN LEAST VISIBLE/OBSTRUCTED LOCATION.
7.

CONTRACTOR TO PROVIDE PERMANENT LABELS ATTACHED TO ALL SWITCHGEAR/SWITCHBOARD AND PANELBOARD TO CLEARLY INDICATE FOR EACH ADJUSTABLE TRIP BREAKER. THE MAXIMUM PERMISSIBLE TRIP SETTING FOR THE INSTALLATION AND IF THE AMPERE RATING OF THE ADJUSTABLE BREAKERS CAN BE CHANGED WITHOUT REMOVING THE TRIP UNIT, THE MEANS OF ADJUSTMENT SHALL BE FACTORY SEALED OR BEHIND SEALED COVERS. AS REQUIRED BY OESC RULE 2-100 AND BULLETIN 14-1-1.
8.

CONTRACTOR SHALL LIMIT CONDUIT AND DUCT BENDS TO MAXIMUM OF 270° TOTAL BENDS. ALLOW FOR PULL POINTS SUCH AS PULL BOXES OR CONDULETTE AS REQUIRED. ENSURE ALL SPARE DUCTS/CONDUITS COME WITH PROPER PULL STRING/ROPE AND CAPPED AT EITHER END.
9.

LUMINAIRE MOUNTING HEIGHTS, WHERE SPECIFIED, IS GIVEN FROM FINISHED FLOOR TO THE UNDERSIDE OF LUMINAIRE UNLESS INDICATED OTHERWISE.
10.

PROVIDE PT'S, CT'S, AND ASSOCIATED WIRING IN CONDUIT CONNECTIONS FOR DIGITAL METERS AND HYDRO UTILITIES METER CABINET. PRIOR TO START OF WORK, COORDINATE WITH EQUIPMENT MANUFACTURERS (SWITCHBOARD MANUFACTURERS, DISTRIBUTION PANEL MANUFACTURERS, METERING MANUFACTURERS, ETC.) AND LOCAL UTILITIES FOR THE INSTALLATION DETAILS INCLUDING PT'S AND CT'S REQUIREMENTS, ASSOCIATED WIRING IN CONDUIT CONNECTIONS, ETC, AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER REQUIREMENT OF CODES, MANUFACTURERS, AND LOCAL UTILITIES AND ENSURE THAT PT'S AND CT'S ARE COMPATIBLE WITH DIGITAL METERS.
11.

ALL SWITCHBOARDS USED THROUGHOUT THIS PROJECT SHALL BE FREE-STANDING ON CONCRETE PAD AND SHALL BE C/W WIREWAY SECTION READY TO ACCEPT MULTIPLE PARALLEL CABLE RUNS. WIDTH OF THE WIREWAY SHALL BE CO-ORDINATED WITH SWITCHBOARD MANUFACTURER, SITE CONDITIONS AND CABLE PHYSICAL CHARACTERISTICS.
12.

ALL DISTRIBUTION SWITCHBOARDS, PANELBOARD, AND DISCONNECT SWITCHES SHOWN ON DRAWINGS ARE BASED ON DIMENSIONS OF EQUIPMENT BY SCHNEIDER ELECTRIC CANADA. CONTRACTOR SHALL LAYOUT EQUIPMENT BASED ON ACTUAL DIMENSIONS FROM EQUIPMENT SUPPLIER AND PROVIDE SUFFICIENT CLEARANCES TO MEET CODE, MAINTENANCE AND OPERATIONAL REQUIREMENTS.
13.

EXACT LOCATION OF FINAL POWER CONNECTION TO ALL EQUIPMENTS SHALL BE COORDINATED WITH EQUIPMENT SHOP DRAWINGS.
14.

"PROVIDE OR PROVISION" DENOTES SUPPLY AND INSTALL.
15.

MOUNT EXIT LIGHTS AT A LEVEL SO THAT THEY ARE CLEARLY VISIBLE AND NOT BLOCKED FROM ALL DIRECTIONS, AND TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION. MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES.
16.

EXAMINE THE SITE AND LOCAL CONDITIONS AFFECTING THE WORK. REPORT ANY FORESEEABLE PROBLEMS, INTERFERENCES AND CONFLICTS DUE TO SITE CONDITIONS. REPORT TO ENGINEER TO OBTAIN INSTRUCTIONS. NO ALLOWANCES WILL BE MADE SUBSEQUENTLY FOR CONSIDERATION BECAUSE OF OVERLOOKED.
17.

PROVIDE ALL MATERIAL, EQUIPMENT AND LABOUR TO COMPLETE THE ELECTRICAL WORK AS SHOWN ON DRAWINGS.
18.

THE ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS SHALL GOVERN, WITH THE EXCEPTION OF THE LOCATION OF FIXTURES, OUTLETS, SWITCHES AND OPENINGS NOTED AND DIMENSIONED ON THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER, PRIOR TO PROCEEDING WITH THE WORK.
19.

WHERE EXPOSED TO THE WEATHER, RECEPTACLES OF CONFIGURATIONS 5-15R, 5-20R, 5-20RA, 6-15R, 6-20R AND 6-20RA SHALL BE PROVIDED WITH IN-USE COVER PLATES SUITABLE FOR WET LOCATIONS WHETHER OR NOT A PLUG IS INSERTED INTO THE RECEPTACLE, AND MARKED "EXTRA DUTY".
20.

ALL DATA OUTLETS SYMBOLS INDICATED ON THE FLOOR PLANS SHALL BE PROVIDED WITH ASSOCIATE CAT6A WIRING PULLED AND TERMINATED AT THE PATCH PANEL SERVICING THE AREA. CABLES SHALL BE TERMINATED AND CERTIFIED ON BOTH ENDS. UNLESS OTHERWISE NOTED EACH DATA SYMBOL REPRESENTS ONE (1) – DATA CABLE DROPS TERMINATED IN ASSOCIATED SINGLE GANG BOX COMPLETE WITH DECOR TYPE STAINLESS STEEL FACEPLATE AND TWO COLOUR CODED JACKS. ALL VOICE AND DATA OUTLETS SHALL BE COMPLETE WITH STAINLESS STEEL FACEPLATES HAVING TYPED IDENTIFICATION ATTACHED TO IT. ALL IDENTIFICATIONS SHALL BE AS PER CONTRACT SPECIFICATIONS. ALL VOICE (TELEPHONES OUTLETS) SYMBOLS INDICATED ON FLOOR PLANS REPRESENT SINGLE GANG DEVICE BOX ROUGH-IN C/W 16MM CONDUIT AND PULL STRING INTO CEILING SPACE.
21.

COMMUNICATION CABLE TRAY SHALL BE GROUNDED TO THE COMMUNICATION GROUNDING SYSTEMS. TRAY SHALL BE ISOLATED FROM COMMUNICATION RACKS WITH BOLTED INSULATORS IN QUANTITIES AS REQUIRED TO PROVIDE SOLID/RIGID MECHANICAL CONNECTION.
22.

COORDINATE EQUIPMENT/DEVICE CONNECTION LUGS/CONNECTORS TO SUIT INCOMING AND OUTGOING CABLE CONNECTION. PRIOR TO START OF WORK, COORDINATE WITH MANUFACTURER AND SITE CONDITIONS AND MAKE ALL PROVISIONS INCLUDING CABLE REDUCER, INCREASING BREAKER FRAME SIZE, JUNCTION BOX, ADDITIONAL LUG/CONNECTOR, ETC. TO FACILITATE THE INCOMING AND OUTGOING CABLE CONNECTION AS PER OESC REQUIREMENT.
23.

COORDINATE WITH PROTECTION COORDINATION STUDY AND SHORT CIRCUIT CALCULATION TO ENSURE THAT EQUIPMENT COMES WITH PROPER WITHSTANDING RATING AND INTERRUPTING CAPACITY CAN SAFELY WITHSTAND INTERRUPT LEVEL OF FAULT CURRENT AS PER CODES AND MANUFACTURER RECOMMENDATIONS. CONTRACTOR SHALL SUBMIT PRELIMINARY SHORT CIRCUIT STUDY PRIOR TO SUBMITTING EQUIPMENT SHOP DRAWINGS TO VERY EQUIPMENT SHORT CIRCUIT RATINGS.
24.

ENGAGE ALL ASSOCIATED AUTHORITIES HAVING JURISDICTION INCLUDING ESA, CITY INSPECTOR, ETC. FOR INSPECTION AND APPROVAL OF WORKS AS PER CODES AND STANDARDS.
25.

MAKE ALL PROVISIONS TO ENSURE GROUNDING AND BONDING SYSTEM ARE PROPERLY INSTALLED AND CONNECTED AS PER REQUIREMENT OF ONTARIO ELECTRICAL SAFETY CODE SUCH AS GROUNDING ROD, GROUNDING GRID, GROUNDING CONDUCTOR, GROUNDING BUS, ETC. MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES.
26.

THE ROUTING OF SERVICES AND CONDUIT/DUCT SHOWN ARE NOTIONAL TO SHOW DESIGN INTENT. PRIOR TO START OF WORK, CAREFULLY COORDINATE THE ROUTING OF ALL SERVICES AND CONDUIT/DUCT WITH SERVICE PROVIDER, SITE CONDITIONS, BUILDING STRUCTURE, MECHANICAL, UNDERGROUND SITE SERVICES, CONDUIT/DUCT ENTRY LOCATION TO EQUIPMENT, EQUIPMENT SHOP DRAWING, AND ALL OTHER ASSOCIATED DISCIPLINE/TRADES AND MAKE ALL PROVISIONS INCLUDING OFFSETS, SLEEVES, TRANSFORMATIONS, PULL BOX/VAULTS, ETC. TO FACILITATE CONDUIT/DUCT AND CABLE/CONDUCTORS INSTALLATION ABOVE GRADE AND UNDERGROUND FOR A COMPLETE INSTALLATION AS PER REQUIREMENTS OF SERVICE PROVIDERS AND CODES, AND ENSURE THAT ALL EMPTY CONDUITS/DUCTS COME WITH PULL STRINGS AND THE REQUIRED CEILING HEIGHTS ARE MAINTAINED.
27.

FOR FINAL EQUIPMENT CONNECTION LOCATIONS, CABLE AND CONDUIT/DUCT TERMINATION LOCATION, REFER TO AND COORDINATE WITH MANUFACTURER'S SHOP DRAWINGS.
28.

EXACT LOCATION OF ALL EXTERIOR LIGHTING AND CONDUIT RUNS SHALL BE COORDINATED WITH FINAL LANDSCAPE, EXTERIOR PLANS AND ARCHITECTURAL ELEVATIONS. COORDINATE BURIAL DEPTH OF CONDUITS WITH OTHER UNDERGROUND UTILITIES.
29.

PROVIDE REQUIRED CABLE PULL BOX AND PULL VAULT TO FACILITATE THE NEW INSTALLATION AS PER CODES AND MANUFACTURER RECOMMENDATION.
30.

CONDUCTOR/CABLE SIZE SHOWN IS MINIMUM, CONTRACTOR TO OVERSIZE CONDUCTOR/CABLE TO SUIT VOLTAGE DROP REQUIREMENTS AS PER OESC.
31.

FOR ALL CIRCUITING, COMMON NEUTRAL CONFIGURATION IS NOT ACCEPTABLE. CONDUCTORS TO BE OVERSIZED TO SUIT VOLTAGE DROP AS PER OESC. MAKE ALL PROVISIONS INCLUDING JUNCTION BOXES, PULL BOXES, TERMINATION LUGS, ETC. FOR A COMPLETE INSTALLATION AS PER CODES.
32.

PROVIDE AN EMPTY SINGLE GANG BACKBOX WITH A 21mm (3/4") EMPTY CONDUIT (STUBBED INTO CEILING SPACE OF ROOM AND c/w PULL STRING) FOR MECHANICAL CONTROL THERMOSTATS. BE RESPONSIBLE FOR CONFIRMING EXACT QUANTITIES AND LOCATIONS WITH MECHANICAL CONTROLS CONTRACTOR ON SITE. REFER TO MECHANICAL DRAWINGS FOR EXACT QUANTITY AND LOCATIONS OF THERMOSTATS.
33.

BE RESPONSIBLE FOR PROVIDING LINE AND LOAD SIDE WIRING OF ALL MECHANICAL VARIABLE FREQUENCY DRIVES (VFD), MOTOR STARTERS AND CONTROLLER. MECHANICAL VFD, STARTER AND CONTROLLER ARE TO BE SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED AND WIRED BY ELECTRICAL. PRIOR TO START OF WORK, COORDINATE WITH SITE CONDITION, MANUFACTURER AND MECHANICAL DESIGN DOCUMENTS AND MECHANICAL CONTRACTOR FOR INSTALLATION DETAILS INCLUDING LOCATIONS, MOUNTING DETAILS, TERMINATION LOCATIONS, CONNECTION REQUIREMENTS, ETC AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODE AND MANUFACTURER RECOMMENDATION.
34.

PROVIDE GROUNDING AND BONDING SYSTEM (SUCH AS GROUNDING ELECTRODE, GROUND CONDUCTOR, BONDING CONDUCTOR, TIE CONNECTIONS, GROUND AND BONDING CONNECTIONS, PROTECTION AGAINST DAMAGE AND CORROSION ETC.) AS PER ONTARIO ELECTRICAL SAFETY CODES AND OTHER ASSOCIATED CODES UNLESS OTHERWISE NOTED ON DRAWINGS AND SPECIFICATIONS AND INCLUDE ALL ASSOCIATED SYSTEM COMPONENTS FOR A COMPLETE INSTALLATION AS PER CODES.
35.

BE RESPONSIBLE FOR PROVIDING ALL CONNECTIONS INCLUDING SUPERVISION CONNECTIONS, ALARM CONNECTIONS, AUXILIARY CONTACT CONNECTION, ETC. AS INDICATED IN FIRE ALARM ZONE SCHEDULE. PRIOR TO START OF WORK, COORDINATE WITH MANUFACTURER, SITE CONDITIONS AND OTHER ASSOCIATED DISCIPLINES/TRADES.
36.

PROVIDE 100mm HIGH CONCRETE HOUSE KEEPING PAD FOR ALL THE FLOOR MOUNTED ELECTRICAL DISTRIBUTION EQUIPMENT. BE RESPONSIBLE FOR PROVIDING LAYOUT DRAWINGS OF DETAILED EQUIPMENT LAYOUT.
37.

PROVIDE PROVISIONS FOR PENETRATIONS, OPENINGS, AND SEAL AS PER CODES. ENSURE ALL CABLE/CONDUIT/DUCT ENTRY AND PENETRATIONS TO EQUIPMENT/STRUCTURE/ROOM/ENCLOSURES INCLUDING GAP AMONG CABLES, CONDUITS, SLEEVES, PULL STRINGS, ETC. ARE PROPERLY SEALED AS PER CODES AND MANUFACTURE RECOMMENDATION TO PREVENT WATER OR GAS ENTRY. MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES. PROVIDE AND INSTALL ULC APPROVED FIRE STOP AND/OR SMOKE SEALS TO MATCH THE WALL/FLOOR FIRE RATINGS.
38.

COORDINATE WITH STRUCTURE/ARCHITECT FOR CONDUIT/CABLE PENETRATION THROUGH BUILDING SUCH AS WALL, ROOF, ETC. PRIOR TO START OF WORK. MAKE ALL PROVISIONS INCLUDING OPENING, SEAL, PENETRATIONS, ETC. FOR COMPLETE INSTALLATION AS PER CODES.
39.

EQUIPMENT LAYOUT SHOWN WITHIN ELECTRICAL ROOM AND UPS ROOM IS NOTIONAL TO SHOW DESIGN INTENT. PRIOR TO START OF WORK, COORDINATE /VERIFY EXACT EQUIPMENT LAYOUT INSIDE ELECTRICAL ROOM AND UPS ROOM WITH SITE CONDITION, EQUIPMENTS SHOP DRAWINGS, SERVICE PROVIDERS AND ETC. AND PROVIDE DETAILED EQUIPMENT LAYOUT. MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES AND MANUFACTURER RECOMMENDATIONS.
40.

PRIOR TO START OF WORK, COORDINATE EQUIPMENT SHOP DRAWING INCLUDING EQUIPMENT WEIGHT, DIMENSIONS, MOUNTING DETAILS, ETC. WITH ARCHITECT, STRUCTURE, SITE CONDITION, ETC. FOR A COMPLETE INSTALLATION AS PER CODE AND REQUIREMENTS OF STRUCTURE AND ARCHITECT.
41.

MAKE ALL PROVISIONS TO ENSURE THAT UNDERGROUND TRENCH DETAIL CONFIGURATIONS INCLUDING CONFIGURATION OF DUCT BANK AND DIRECT BURIED CONDUIT/DUCT, DEPTH OF COVER, ETC. ARE IN COMPLIANCE WITH OESC.
42.

MAKE ALL PROVISIONS TO ENSURE THAT ALL DIGITAL METERS HAVE THE CAPABILITIES OF RECORDING ENERGY USAGE OF EACH LOAD A MINIMUM OF EVERY 15 MINUTES AND REPORTING ENERGY USAGE OF EACH LOAD AT LEAST HOURLY, DAILY, MONTHLY, AND ANNUALLY. PRIOR TO START OF WORK, COORDINATE WITH EQUIPMENT MANUFACTURERS INCLUDING SWITCHBOARD MANUFACTURERS, DISTRIBUTION PANEL MANUFACTURERS, METERING MANUFACTURER, ETC. FOR THE INSTALLATION DETAILS INCLUDING COMMUNICATION INPUT/OUTPUT INTERFACE AND PROTOCOLS, SETUPS AND PROGRAMMINGS, ITS ASSOCIATED WIRING IN CONDUIT CONNECTIONS, ETC, AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER REQUIREMENT OF CODES AND MANUFACTURERS.
43.

REFER TO SECURITY CONSULTANT DOCUMENTS INCLUDING DRAWINGS, SPECIFICATIONS, ETC. FOR ROUGH-IN PROVISIONS REQUIREMENTS FOR SECURITY SYSTEM, INTERCOMS SYSTEM, DURESS ALARM SYSTEM, ACCESS CONTROL SYSTEM, INTRUSION SYSTEM, GATE SYSTEM, CCTV SYSTEM AND OTHER SYSTEMS THAT ARE SHOWN IN SECURITY DESIGN DOCUMENTS. THE ROUGH-IN PROVISIONS REQUIREMENTS ABOVE INCLUDE FIRE RATED BACKBOARDS, CONDUITS, BACKBOXES, ENCLOSURES AND CABINETS, ASSOCIATED DUCTS AND TRENCHING AND BACKFILLS, CABLE TRAY, J-HOOK, SECURITY GROUNDING SYSTEM AND FIRE ALARM SYSTEM INTERFACE CONNECTIONS. MAKE ALL ROUGH-IN PROVISIONS ABOVE. MAKE ALL ASSOCIATED SYSTEM COMPONENTS INCLUDING OFFSETS, PULL BOX/VAULTS, PULLING STRINGS, TRANSITION KITS, MOUNTING SYSTEM COMPONENTS, ETC., CONNECT AND COMMISSION COMPLETELY TO FACILITATE THE INSTALLATION COMPLETELY AS PER THE REQUIREMENTS FROM CLIENT AND SECURITY. PRIOR TO START OF WORK, CAREFULLY READ AND COORDINATE WITH SECURITY DESIGN DOCUMENTS ABOVE AND COORDINATE WITH SECURITY AND OTHER ASSOCIATED DISCIPLINES/TRADES AND SITE CONDITIONS FOR INSTALLATION DETAILS AND MAKE ALL PROVISIONS TO SUIT FOR A COMPLETE INSTALLATION.
44.

COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION LUGS/CONNECTORS TO SUIT INCOMING AND OUTGOING CABLE CONNECTION AND PROVIDE ALL ASSOCIATED SYSTEM COMPONENTS SUCH AS CABLE REDUCER, SPLITTER, JUNCTION BOX, ADDITIONAL LUG/CONNECTOR, ETC. TO FACILITATE THE INCOMING AND OUTGOING CABLE CONNECTION AS PER OESC REQUIREMENT.
45.

FOR ALL ENTRY OF SINGLE CONDUCTORS TO METAL ENCLOSURES, INCLUDE ALL PROVISIONS SUCH AS ONE COMMON NON-FERROUS INSULATING PLATE, ETC. TO MEET THE REQUIREMENTS OF RULE 4-008 AND BULLETIN 12-7-14 OF ONTARIO ELECTRICAL SAFETY CODE AND INCLUDE ALL PROVISIONS TO ENSURE CABLE SHEATH IS BONDED TO GROUND AS PER OSEC AND OTHER ASSOCIATED CODE.
46.

MAKE ALL PROVISIONS TO ENSURE THAT EQUIPMENT ARE BONDED TO GROUND PROPERLY AS PER OESC REQUIREMENT.
47.

REGARDING DIRECT BURIED CONDUIT/DUCT, REFER TO DETAILS xxx OF DRAWING Exxx, UNLESS OTHERWISE NOTED.
48.

WHERE PACK POLE IS SHOWN, COORDINATE/CONFIRM WITH PACK POLE VENDOR/CONTRACTOR, SYSTEM FURNITURE VENDOR/CONTRACTOR, INTERIOR DESIGNER, AND ARCHITECT AND ENSURE PACK POLE HAS SEPARATE COMPARTMENTS FOR POWER CONNECTIONS THAT ARE FED FROM DIFFERENT POWER PANELS AND HAS SEPARATE COMPARTMENT FOR DATA.
49.

COORDINATE AND CONFIRM WITH ARCHITECT DESIGN DOCUMENTS FOR ROOF PENETRATION REQUIREMENTS FOR CABLE/CONDUCTORS, CONDUITS, ETC. AND MAKE ALL PROVISIONS TO ENSURE ROOF PENETRATION IS SEALED PROPERLY AND MEETS ROOF PENETRATION REQUIREMENT FROM ARCHITECT DESIGN DOCUMENTS FOR A COMPLETE INSTALLATION AS PER CODES.
50.

PRIOR TO START OF WORK, COORDINATE AND CONFIRM WITH EQUIPMENT SHOP DRAWING AND ASSOCIATED CONTRACTOR INCLUDING MECHANICAL CONTRACTOR, SECURITY CONTRACTOR, CONTROL CONTRACTOR, ETC. FOR EQUIPMENT CONNECTION DETAILS INCLUDING TYPE OF CONNECTION, TERMINATION LOCATIONS, ETC. AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES.
51.

PRIOR TO START OF WORK, COORDINATE WITH ASSOCIATED CONTRACTORS/TRADES TO ENSURE THAT EQUIPMENT CONCRETE HOUSEKEEPING PAD AND EQUIPMENT MOUNTING ACCESSORIES/KITS ARE COORDINATED AND COMPATIBLE WITH EQUIPMENT SHOP DRAWING AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION AS PER CODES AND MANUFACTURER RECOMMENDATIONS.
52.

CONTRACTOR TO COORDINATE WITH DESIGN DOCUMENTS OF ASSOCIATED DISCIPLINES/TRADES, EQUIPMENT MANUFACTURERS, AND SITE CONDITIONS AND MAKE ALL PROVISIONS TO PROVIDE SEISMIC RESTRAINTS/CONTROLS AND VIBRATION ISOLATION FOR ELECTRICAL SYSTEM AND EQUIPMENT AS PER LOCAL GOVERNING AUTHORITY HAVING JURISDICTION AND CODE SEISMIC REQUIREMENTS AND ADDITIONAL REQUIREMENTS FOR VIBRATION ISOLATION TO SUIT THE REQUIREMENTS OF POST-DISASTER BUILDING. PROVIDE LABOUR, MATERIALS, AND EQUIPMENT REQUIRED AND NECESSARY TO SEISMICALLY RESTRAIN ELECTRICAL EQUIPMENT AND EQUIPMENT BASES INCLUDING CONCRETE PADS, AND GUARANTEE FUNCTION OF MATERIALS AND EQUIPMENT SUPPLIED.

DRAWING LIST	
SHEET NUMBER	SHEET NAME
E001	ELECTRICAL LEGEND & ABBREVIATIONS 1 of 3
E002	ELECTRICAL LEGEND & ABBREVIATIONS 2 of 3
E003	ELECTRICAL LEGEND & ABBREVIATIONS 3 of 3
E004	LUMINAIRE SCHEDULE 1 OF 2
E005	LUMINAIRE SCHEDULE 2 OF 2
E101	ELECTRICAL SITE PLAN
E102	ELECTRICAL DETAILS
E201	GROUND FLOOR LIGHTING PLAN
E202	ROOF LIGHTING PLAN
E203	LIGHTING CONTROL DEVICE SCHEDULE AND LIGHTING CONTROL SEQUENCE OF OPERATION
E204	LIGHTING CONTROL DETAILS
E301	GROUND FLOOR POWER PLAN
E302	ROOF POWER PLAN
E401	GROUND FLOOR FIRE ALARM PLAN
E502	FIRE ALARM RISER DIAGRAM
E701	GROUND FLOOR COMMUNICATIONS PLAN
E702	ENLARGED IT ROOM LAYOUT
E703	COMMUNICATIONS RISER DIAGRAMS
E704	COMMUNICATIONS DETAILS 1/2
E705	COMMUNICATIONS DETAILS 2/2
E801	GROUND FLOOR SECURITY PLAN
E802	CCTV RISER DIAGRAM AND SCHEDULE
E803	ACCESS CONTROL RISER DIAGRAM AND SCHEDULE
E804	INTRUSION ALARM RISER DIAGRAM AND SCHEDULE
E805	CCTV VIDEO SURVEILLANCE DETAILS
E806	ACCESS CONTROL DETAILS
E807	INTRUSION ALARM DETAILS
E901	SINGLE LINE DIAGRAM
E910	PANEL SCHEDULES
E911	PANEL SCHEDULES 2
E912	PANEL SCHEDULES 3
E913	PANEL SCHEDULES 4
E914	PANEL SCHEDULES 5



**AECOM Canada Ltd.**  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario N2P 0A4

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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
**5 LINCOLN STREET**  
**WELLAND, ONTARIO**

Owner's Project Number -	Owner's Contract Number -
<b>60686829</b>	<b>987654321</b>

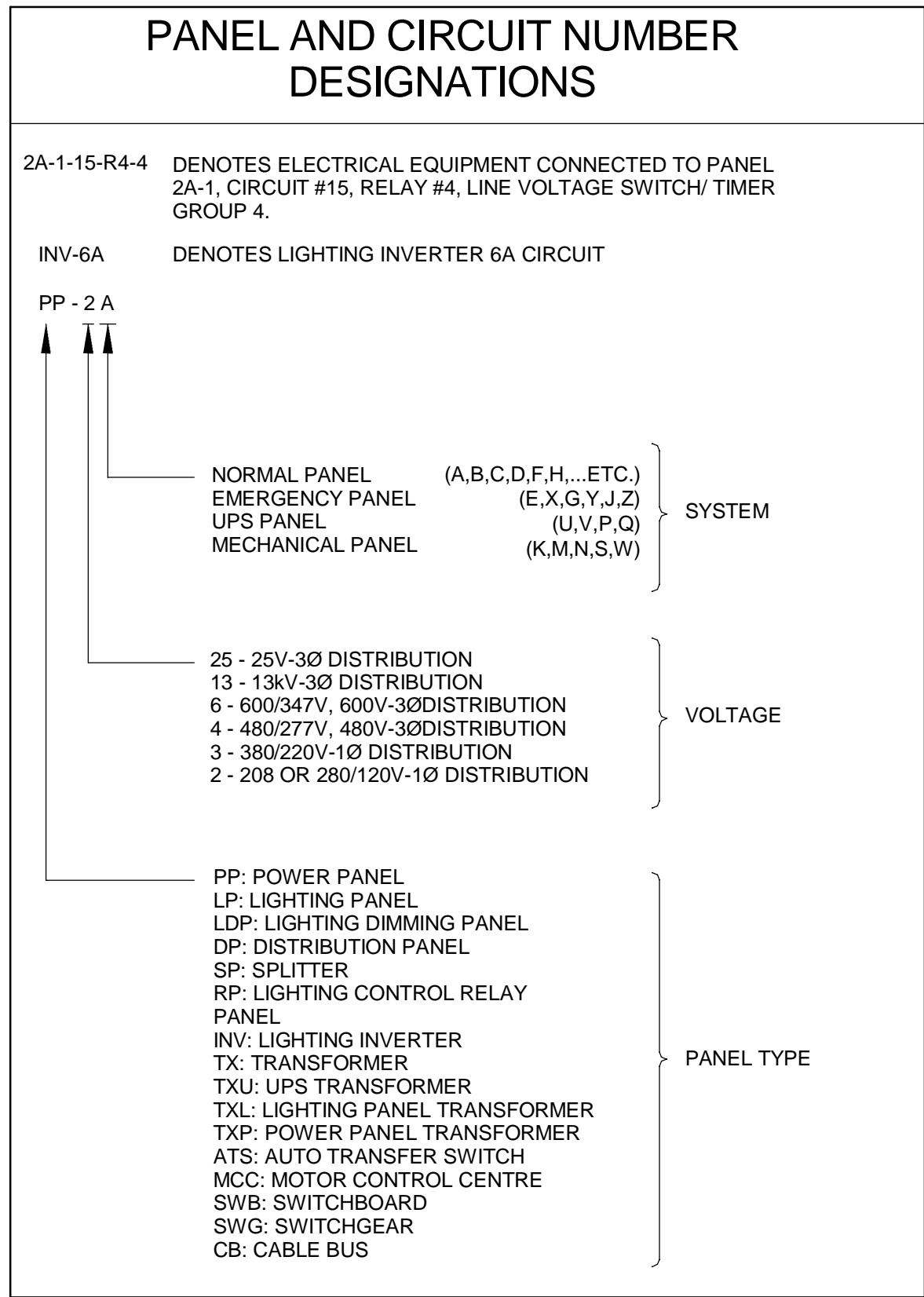
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6	2024-12-13	IFP RE-SUBMISSION
5	2024-11-29	ISSUED FOR OWNER REVIEW
4	2024-11-29	90% DOCUMENTS
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

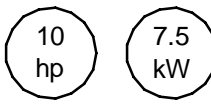





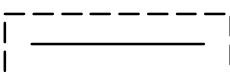

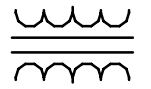

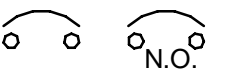

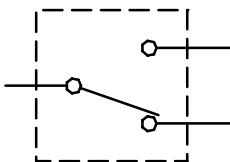



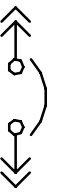




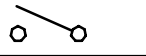
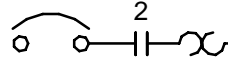
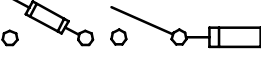



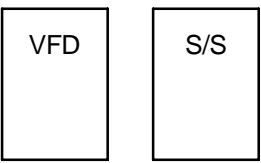
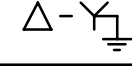

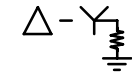
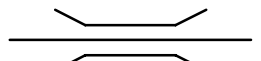

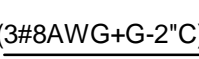


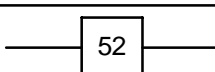
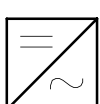
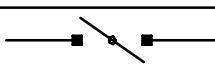

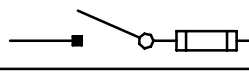

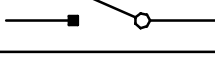
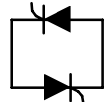




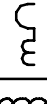


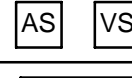




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Project Administrator :		BMV/DC Manager :
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed : <b>Designer</b>	Date (yyyy-mm-dd) :	
Drawn : <b>Author</b>	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked : <b>Checker</b>	Date (yyyy-mm-dd) :	
Approved : <b>Approver</b>	Date (yyyy-mm-dd) :	
Title :		

**ELECTRICAL LEGEND & ABBREVIATIONS 1 of 3**

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























































































































STANDARD ELECTRICAL SYMBOLS			
SINGLE LINE DIAGRAMS			
	MOTOR		GENERATOR
	PANEL BOARD		GROUND CONNECTION
(LSIG)	LONG. SHORT, INSTANTANEOUS, GROUND FAULT INTERRUPTED		NORMALLY OPEN CONTACT
			NORMALLY CLOSED CONTACT
	SPLITTER		OVERLOAD
	TRANSFORMER, RATED PER DWGS		CAPACITOR
	BREAKER, RATED PER DWGS N.O. = NORMALLY OPEN		REVERSE CONTACTOR
	DOUBLE THROW SAFETY SWITCH		INDUCTOR
	DRAW-OUT OR PLUG TYPE CONTACTS		LIGHTNING ARRESTER
	DRAW-OUT CIRCUIT BREAKER		SURGE PROTECTION
	INTERLOCK: E = ELECTRIC INTERLOCK K = KIRK KEY INTERLOCK M = MECHANICAL INTERLOCK		SURGE CAPACITOR
			CAPACITOR OR REACTOR
	DISCONNECT		COMBINATION MAGNETIC STARTER '2' INDICATES CONTACTOR SIZE
	FUSED DISCONNECT		DELTA CONNECTION
	FUSE		WYE CONNECTION
	VARIABLE FREQUENCY DRIVE OR SOFT STARTER		DELTA-WYE TRANSFORMER WITH SOLIDLY GROUND NEUTRAL
	MAGNETIC STARTER		DELTA-WYE TRANSFORMER WITH RESISTANCE GROUND NEUTRAL
	CABLE BUS OR BUS DUCT		LIGHTNING/SURGE ARRESTOR
	FEEDER (CABLE SIZE - GROUNDING - CONDUIT SIZE)		STRESS CONE
	RECTIFIER		MEDIUM AND HIGH VOLTAGE BREAKER
	INVERTER		HIGH VOLTAGE LOAD BREAK SWITCH
	BATTERY		HIGH VOLTAGE FUSED INTERRUPTER SWITCH
	UTILITY METER		HIGH VOLTAGE INTERRUPTER SWITCH
	BY PASS TRANSFER SWITCH		ELECTRICALLY OPERATED BREAKER
			CT - CURRENT TRANSFORMER
			PT - POTENTIAL TRANSFORMER
			ZERO SEQUENCE TRANSFORMER
			BUSHING CURRENT TRANSFORMER
			COIL / FILTER (AS DEFINED ON DWGS)
			AMMETER & VOLTMETER (ANALOG)
			AMMETER & VOLTMETER SWITCHES
			DIGITAL METERING
			BREAKER STATUS MONITORING MODULE
			POWER MONITORING GATEWAY
			POWER MONITORING NETWORK SWITCH

ABBREVIATION		ABBREVIATION (CONT'D)	
A	AMPERE	PB	PUSH BUTTON
AC	ALTERNATING CURRENT	PD	DEVICE(S) TO BE PEDESTAL MOUNTED
A/C	AIR CONDITIONING	PDP	POWER DISTRIBUTION PANEL
ACT	ACTUATOR	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
AF	AMPERE FRAME	PIR	PASSIVE INFRA-RED
AFCI	ARC FAULT CIRCUIT INTERRUPTER	PLC	PROGRAMMABLE LOGIC CONTROLLER
AFF	ABOVE FINISHED FLOOR	PM	POWER METERING
AFG	ABOVE FINISHED GRADE	PMS	POWER MONITORING SYSTEM
ANN	ANNUNCIATOR	PNL	PANEL
AT	AMPERE TRIP	PNLB	PANELBOARD
ATS	AUTOMATIC TRANSFER SWITCH	PS	POWER SUPPLY
AV	DEVICE(S) FOR AUDIO/VIDEO EQUIPMENT(S)	PT	POTENTIAL TRANSFORMER
AWG	AMERICAN WIRE GAUGE	PTZ	PAN-TILT-ZOOM
BAT	BATTERY		
BAS	BUILDING AUTOMATION SYSTEM	R	EXISTING ELECTRICAL ITEM C/W ASSOCIATED CONTROLS TO BE REMOVED AND OUTLET BOX, CONDUIT AND WIRES REMOVED, CUT BACK TO SOURCE AND MADE SAFE.
BKR	BREAKER		
C	CEILING MOUNTED		
CAP	CAPACITOR	RL	EXISTING ELECTRICAL ITEM SHOWN IN RELOCATED POSITION. RELOCATE AND RECONNECT COMPLETE TO EXISTING CIRCUITS PRESENTLY SERVING THAT ITEM.
CB	CIRCUIT BREAKER		
CCT	CIRCUIT	RPU	REMOTE PROCESSING UNIT
cd	CANDELAS	RTD	RESISTANCE TEMPERATURE DETECTOR
CEC	CANADIAN ELECTRICAL CODE	RTU	REMOTE TERMINAL UNIT
CH	DEVICE MOUNTED COUNTER TOP, REFER TO ARCHITECT'S DETAILS	SC	SEPARATE CIRCUIT
CM	CEILING MOUNTED	SEN	SENSOR
CP	CONTROL PANEL	SHLD	SHIELDED
CPT	CONTROL POWER TRANSFORMER	SM	SYSTEMS FURNITURE MOUNTED
CR	CONTROL RELAY	SN	SOLID NEUTRAL
CT	CURRENT TRANSFORMER	SOL	SOLENOID
D	DEDICATED CIRCUIT	SPD	SURGE PROTECTION DEVICE
DC	DIRECT CURRENT	SR	SHUNT RELAY
DG	DIESEL GENERATOR	S/S	SUBSTATION
DM	DIGITAL METERING	STP	SHIELDED TWISTED PAIR
DS	DISCONNECT SWITCH	SW	SWITCH
EF	EXHAUST FAN	SWGR	SWITCHGEAR
ELU	EMERGENCY LIGHTING UNIT	TB	TIE BREAKER
EM	EMERGENCY	TDR	TIME DELAY RELAY
EM(N)	EXISTING LIGHT FIXTURE ON EMERGENCY TO BE RE-CIRCUITED TO NORMAL POWER.	TL	TWISTLOCK
EP	EXPLOSION PROOF	TR	TRANSFORMER
EPP	EMERGENCY POWER PACK	TS	TRANSFER SWITCH
ER	EXISTING ELECTRICAL ITEM TO BE RELOCATED TO NEW POSITION AS SHOWN. EXTEND OR CUT BACK EXISTING CONDUIT AND WIRES AS REQUIRED AND RECONNECT COMPLETE.	TSH	TEMPERATURE SWITCH HIGH
		TSL	TEMPERATURE SWITCH LOW
		TYP	TYPICAL
ESTOP	EMERGENCY STOP	UC	OUTLET MOUNTED UNDER COUNTER TOP
ETM	ELAPSED TIME METER	UPS	UNINTERRUPTIBLE POWER SUPPLY
Ex	EXISTING TO REMAIN, UNLESS OTHERWISE NOTED.	US	ULTRASONIC
		UTP	UNSHIELDED TWISTED PAIR
F	FUSE	V	VOLTS
FA	FIRE ALARM	VFD	VARIABLE FREQUENCY DRIVE
FM	FLOOR MOUNTED	VT	VOLTAGE TRANSFORMER
FPR	FEDER PROTECTION RELAY	WAP	WIRELESS ACCESS POINT
FVNR	FULL VOLTAGE NON REVERSING	WG	WIRE GUARD
FVR	FULL VOLTAGE REVERSING	WP	WEATHER PROOF. WATERTIGHT & CORROSION RESISTANT.
GEN	GENERATOR		
GF	GROUND FAULT PROTECTION	WT	WATERTIGHT (CSA ENCLOSURE 4)
GFI	GROUND FAULT INTERRUPTING TYPE		
GND	GROUND	XFMR	TRANSFORMER
GPR	GENERATOR PROTECTION RELAY		
HL	HIGH LEVEL		
H-O-A	HAND OFF AUTOMATIC		
HTR	HEATER		
HVAC	HEATING, VENTILATION, AIR CONDITIONING		
Hz	HERTZ		
IG	ISOLATED GROUND		
JB	JUNCTION BOX		
K	KEY OPERATED		
kA	KILO AMPERE		
KAIC	KILO AMPERE INTERRUPTING CAPACITY		
kcmil	THOUSAND CIRCULAR MILS		
kV	KILO VOLTS		
kVA	KILOVOLT-AMPERES		
kVAR	KILOVOLT-AMPERES REACTIVE		
LA	LIGHTNING ARRESTOR		
LB	LOAD BREAK		
LED	LIGHT EMITTING DIODE		
LIT	LEVEL INDICATOR TRANSMITTER		
LP	LIGHTING PANEL		
L/R	LOCAL/REMOTE		
LSG	LONG, SHORT AND GROUND FAULT PROTECTION		
LSIG	LONG, SHORT, INSTANTANEOUS AND GROUND FAULT PROTECTION		
LTG	LIGHTING		
M	MOTOR		
m	METER		
MCC	MOTOR CONTROL CENTRE		
MH	MOUNTING HEIGHT		
M-O-A	MANUAL-OFF-AUTOMATIC		
MPR	MOTOR PROTECTION RELAY		
MTR	METER		
MTS	MANUAL TRANSFER SWITCH		
N	NEUTRAL		
NC	NORMALLY CLOSED		
N(EM)	EXISTING LIGHT FIXTURE ON NORMAL TO BE RE-CIRCUITED TO EMERGENCY POWER.		
NL	NIGHTLIGHT		
NO	NORMALLY OPENED		
OC	OUTLET MOUNTED OVER COUNTER TOP. SEE ARCHITECTURAL MILLWORK DETAIL DRAWING.		
OESC	ONTARIO ELECTRICAL SAFETY CODE		
O/L	OVERLOAD		
ONAF	OIL NATURAL AIR FORCE		
ONAN	OIL NATURAL AIR NATURAL		
P	PUMP		



POWER SYSTEM				LIGHTNING PROTECTION & GROUNDING				COMMUNICATIONS				SECURITY							
SYMBOL	DESCRIPTION			SYMBOL	DESCRIPTION														
	15A, 120V, DUPLEX RECEPTACLE (CSA 5-15R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.				MAKE PROVISIONS ON CONNECTIONS TO ELEVATOR SYSTEM INCLUDING FOLLOWING (WHERE APPLICABLE): 1. POWER CONNECTION TO CONTROLLER; 2. LIGHTING CONNECTION AND MISCELLANEOUS POWER CONNECTIONS TO CONTROLLER; 3. TELEPHONE CONNECTION TO CONTROLLER; 4. FIRE ALARM SIGNAL CONNECTIONS TO CONTROLLER FOR AUTOMATIC RECALL OF ELEVATORS, ETC; 5. EMERGENCY POWER SIGNAL CONNECTIONS FOR BOTH EMERGENCY/NORMAL MODE TO CONTROLLER; 6. MACHINE ROOM SMOKE DETECTOR INTERCONNECTION SIGNALING ALARM CONDITION TO ELEVATOR CONTROLS VIA AUXILIARY CONTACTS IN DETECTOR; 7. ELEVATOR RECALL AND INTERCOM CONNECTIONS TO CONTROLLER; 8. SIGNAL CONNECTION FROM SMOKE DETECTORS AT EACH ELEVATOR LOBBY, IN ELEVATOR MACHINE/CONTROLLER ROOM, HOISTWAYS AND PITTS. COORDINATE WITH ELEVATOR MANUFACTURER PRIOR TO START OF WORK FOR EXACT CONNECTION DETAILS AND REQUIREMENTS AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION; 9. PROVIDE WIRING IN CONDUIT FROM DISCONNECT SWITCHES TO THE ELEVATOR CONTROLLER; 10. SIGNAL CONNECTION (TRANSFER AND PRE-TRANSFER) FROM TRANSFER SWITCH TO ELEVATOR CONTROLLERS. COORDINATE EXACT CONNECTION REQUIREMENTS WITH ELEVATOR AND TRANSFER SWITCH CONSULTANT/MANUFACTURER PRIOR TO START OF WORK AND MAKE ALL PROVISIONS FOR A COMPLETE INSTALLATION.				GROUND ROD				DATA OUTLET - WALL MOUNTED 300mm A.F.F C/W DOUBLE GANG BOX AND WALL PLATE.  "X": QUANTITY OF CAT6A CABLES (NO SUBSCRIPT) = (1) CAT6A CABLE  "F": FURNITURE MOUNT OUTLET. COORDINATE INSTALLATION WITH FURNITURE VENDOR.				CCTV CAMERA, WALL MOUNTED. 1xCAT6A CABLE "180": 180" COVERAGE PANORAMIC CAMERA, APPLY TO OTHERS		
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.								GROUND ROD C/W INSPECTION WELL										
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA5-20R) MOUNTED ABOVE COUNTER APPROXIMATELY 1100mm ABOVE FINISHED FLOOR LEVEL.								DOWNLEAD CONDUCTOR										
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.								LIGHTNING TERMINAL										
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R), MOUNTED ABOVE COUNTER APPROXIMATELY 1100mm ABOVE FINISHED FLOOR LEVEL.								CONNECTION POINT										
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE (CSA 5-20R) MOUNTED APPROXIMATELY 1000mm ABOVE FINISHED FLOOR LEVEL.								GROUNDING BAR										
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) FOR DISPLAY MONITOR(DSP), MOUNTED APPROXIMATELY 2000MM ABOVE FINISHED FLOOR LEVEL.							FIRE ALARM					DATA OUTLET - WALL MOUNTED ABOVE COUNTER 1100mm A.F.F C/W DOUBLE GANG BOX AND FACEPLATE.  "X": QUANTITY OF CAT6A CABLES (NO SUBSCRIPT) = (1) CAT6A CABLE						
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) FOR SECURITY DISPLAY MONITOR(DSP), MOUNTED APPROXIMATELY 1675MM ABOVE FINISHED FLOOR LEVEL.								MANUAL, FIRE ALARM PULL STATION, "V" DENOTES VANDAL RESISTANT										
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.								FIRE ALARM BELL										
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.								FIRE ALARM HORN, "V" DENOTES VANDAL RESISTANT										
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM COMBINATION HORN / STROBE, "V" DENOTES VANDAL RESISTANT														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM STROBE, "V" DENOTES VANDAL RESISTANT														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM SPEAKER														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM COMBINATION SPEAKER / STROBE, "V" DENOTES VANDAL RESISTANT														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				AUTOMATIC HEAT DETECTOR - 135° RATE OF RISE TEMPERATURE TYPE - CEILING, WALL MOUNTED														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				AUTOMATIC HEAT DETECTOR - FIXED TEMPERATURE TYPE 200°F (93.3°C) RATED FT(58m²) COVERAGE- CEILING, WALL MOUNTED														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FLAME DETECTOR TYPE - CEILING MOUNTED														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SMOKE DETECTOR, "V" DENOTES VANDAL RESISTANT														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				COMBINATION SMOKE ALARM, STROBE AND CARBON MONOXIDE (CO) DETECTOR														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				DUCT TYPE SMOKE DETECTOR														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				DUCT TYPE SMOKE DETECTOR WITH RELAY BASE														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SMOKE DETECTOR WITH RELAY BASE														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				DUCT TYPE SMOKE DETECTOR W/REMOTE INDICATION														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM CONTROL PANEL														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				REMOTE FIRE ALARM ANNUNCIATOR PANEL														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM PASSIVE GRAPHIC MOUNTED ON WALL ADJACENT TO FIRE ALARM ANNUNCIATOR PANEL														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				DOOR HOLD-OPEN DEVICE														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				FIRE ALARM MODULE INCLUDING CONTROLLING MODULE, MONITORING MODULE, ETC.														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SPRINKLER SYSTEM WATER FLOW SWITCH														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SPRINKLER SYSTEM WATER PRESSURE SWITCH														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SPRINKLER SYSTEM AIR PRESSURE SWITCH														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SPRINKLER SYSTEM LOW WATER PRESSURE SWITCH														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				SPRINKLER SYSTEM SUPERVISED VALVE														
				SITE															
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				DUCKBANK														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				CABLE BUS														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				MANHOLE														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				ELECTRICAL HAND HOLE														
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.				COMMUNICATION HAND HOLE														

	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.		
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.		
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA5-20R) MOUNTED ABOVE COUNTER APPROXIMATELY 1100mm ABOVE FINISHED FLOOR LEVEL.		
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.		
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R), MOUNTED ABOVE COUNTER APPROXIMATELY 1100mm ABOVE FINISHED FLOOR LEVEL.		
	15A/20A, 120V, GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE (CSA 5-20R) MOUNTED APPROXIMATELY 1000mm ABOVE FINISHED FLOOR LEVEL.		
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) FOR DISPLAY MONITOR(DSP), MOUNTED APPROXIMATELY 2000MM ABOVE FINISHED FLOOR LEVEL.		
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.		
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.		
	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.		
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	15A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-15R) MOUNTED WITHIN CEILING.		
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE (CSA 5-20R) APPROXIMATELY 300mm ABOVE FINISHED FLOOR LEVEL.		
	15A/20A, 120V, HEAVY DUTY DUPLEX RECEPTACLE		



**AECOM Canada Ltd.**  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario N2P 0A4

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LUMINAIRE SCHEDULE						
TYPE	DESCRIPTION	LIGHT SOURCE SPECIFICATIONS	INPUT VOLTAGE	MOUNTING	MANUFACTURER	LOCATION
LA1	CEILING RECESSED 6" DIAMETER APERTURE LENSED DOWNLIGHT. WHITE SELF FLANGED ALUMINUM SEMI-SPECULAR REFLECTOR. 20 GAGE GALVANIZED STEEL CONSTRUCTION WITH ROLLED EDGE APERTURE. REGRESSED ACRYLIC LENS AND WIDE BEAM DISTRIBUTION. FULLY SERVICEABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE, ACCESSIBLE THROUGH APERTURE. MOUNTING FRAME TO ACCOMMODATE CEILING THICKNESS, COORDINATE WITH ARCHITECTURE. PROVIDE SHALLOW TRIM HOUSING. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 10" WIDE X 13" LONG X MAX 5" HIGH HOUSING. CSA AND /OR cUL WET LOCATION LISTED.	15W WHITE LED, NOMINAL DELIVERED 1500 LUMENS, 3500K CCT, 85+ CRI	120V	RECESSED IN CEILING	1. SIGNIFY / LIGHTOLIER LYTEPROFILE: P6R SERIES 2. OMNILUMEN 3. ACUITY BRANDS	GENERAL
LA2	CEILING RECESSED 6" DIAMETER APERTURE LENSED DOWNLIGHT. WHITE SELF FLANGED ALUMINUM SEMI-SPECULAR REFLECTOR. 20 GAGE GALVANIZED STEEL CONSTRUCTION WITH ROLLED EDGE APERTURE. REGRESSED ACRYLIC LENS AND WIDE BEAM DISTRIBUTION. FULLY SERVICEABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE, ACCESSIBLE THROUGH APERTURE. MOUNTING FRAME TO ACCOMMODATE CEILING THICKNESS, COORDINATE WITH ARCHITECTURE. PROVIDE SHALLOW TRIM HOUSING. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 10" WIDE X 13" LONG X MAX 5" HIGH HOUSING. CSA AND /OR cUL WET LOCATION LISTED.	25W WHITE LED, NOMINAL DELIVERED 2000 LUMENS, 3500K CCT, 85+ CRI	120V	RECESSED IN CEILING	1. SIGNIFY / LIGHTOLIER LYTEPROFILE: P6R SERIES 2. OMNILUMEN 3. ACUITY BRANDS	WASHROOMS
LA3	CEILING RECESSED 3" X 3" APERTURE LENSED SQUARE DOWNLIGHT. THERMALLY CONDUCTIVE POLYMER BODY WITH STAINLESS STEEL TRIM. SERIGRAPHEd GLASS LENS AND 23DEG X 64DEG OPTICS. FULLY SERVICEABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE, ACCESSIBLE THROUGH APERTURE. MOUNTING FRAME TO ACCOMMODATE CEILING THICKNESS, COORDINATE WITH ARCHITECTURE. ARCHITECT TO CONFIRM FINISH. PROVIDE WITH REMOTE POWER SUPPLY TO BE LOCATED IN AN ACCESSIBLE LOCATION IN THE PLENUM OF CALL/DISPATCH AREA. NOMINAL 4" x 4" x 3.50" HIGH HOUSING. CSA AND /OR cUL WET LOCATION LISTED. IP66 AND IK10 RATED.	8W WHITE LED, NOMINAL DELIVERED 500 LUMENS, 4000K CCT, 70+ CRI	24VDC/ 120VAC	RECESSED IN EXTERIOR WINDOW FRAME	1. DESIGNPLAN / ALTOPIANO AP1110 SERIES 2. OMNILUMEN 3. ACUITY BRANDS	EXTERIOR
LC1	SUSPENDED 4' LONG LENSED LED STRIP LIGHT. PRECISION FORMED STEEL HOUSING. FROSTED EXTRUDED ROUND ACRYLIC LENS. RIGID STEM MOUNTING TO STRUCTURE ABOVE. PROVIDE UNISTRUT BRACING AROUND INTERFERING SERVICES AS REQUIRED, AND INSTALL LIGHTING IN LOCATIONS AS PER ELECTRICAL DRAWING. COORDINATE OTHER SERVICES IN THE SPACE. LUMINAIRES TO BE INSTALLED AFTER ALL ROOM EQUIPMENT ARE SET IN PLACE. CONTRACTOR TO COORDINATE EXACT LOCATIONS ON SITE DURING CONSTRUCTION. PROVIDE ALL NECESSARY MOUNTING ACCESSORIES FOR PROPER MOUNTING AS PER MANUFACTURER INSTRUCTION. STANDARD FINISH. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 3" WIDE X MAX 3.5" HIGH PROFILE. CSA AND /OR cUL DAMP LOCATION LISTED.	29W WHITE LED, NOMINAL DELIVERED 4400 LUMENS, 3500K CCT, 85+ CRI	120V	SUSPENDED FROM STRUCTURE	1. VISCOR / VISIONEERING: LCOM SERIES 2. OMNILUMEN 3. ACUITY BRANDS	SERVICE AREAS
LJ2	8' LONG SUSPENDED 3" WIDE LINEAR DIRECT/ INDIRECT LED LUMINAIRE. EXTRUDED ALUMINUM HOUSING WITH ALUMINUM ENDCAPS. EXTRUDED ACRYLIC LENS ON UPPER AND LOWER LIGHT ENGINES TO MINIMIZE DIRECT-VIEW BRIGHTNESS. 60% UPLIGHT AND 40% DOWNLIGHT DISTRIBUTION RATIO. BAT-WING LENS FOR UPLIGHT. DIRECT AND INDIRECT LIGHTING TO BE CONTROL ON SEPERATE CIRCUIT. AIRCRAFT CABLE SUSPENSION. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE MOUNTING WITH CEILING. SEAMLESS CONTINUOUS ILLUMINATION ALONG THE ENTIRE SPECIFIED ROW LENGTH AS SHOWN IN LIGHTING DRAWINGS. ARCHITECT TO CONFIRM FINISH AT THE SHOP DRAWING STAGE. 0-10V ELECTRONIC DRIVER. NOMINAL 3.5" WIDE X MAX 4.5" HIGH PROFILE. CSA AND /OR cUL DAMP LOCATION LISTED.	DIRECT NOMINAL 5W PER LINEAR FOOT, WHITE LED, NOMINAL DELIVERED 600 LUMENS PER LINEAR FOOT, 3500K CCT, 85+ CRI  INDIRECT NOMINAL 7W PER LINEAR FOOT, WHITE LED, NOMINAL DELIVERED 800 LUMENS PER LINEAR FOOT, 3500K CCT, 85+ CRI	120V	SUSPENDED FROM STRUCTURE	1. AXIS / BEAM 3 SERIES 2. OMNILUMEN 3. ACUITY BRANDS	CALL / DISPATCH
LL1	4' LONG CEILING RECESSED 3" WIDE, LINEAR LED LUMINAIRE. EXTRUDED ALUMINUM HOUSING WITH EXTRUDED ALUMINUM ENDCAPS. FLUSH SNAP IN FROSTED ACRYLIC LENS. LENSES TO HAVE ZERO GAPS TO PREVENT LIGHT LEAKS. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. ALL INTERNAL LIGHTING COMPONENTS, SUCH AS LED BOARDS, DRIVERS, CONTROLLERS AND TRANSFORMERS TO BE ACCESSIBLE FROM BELOW THE CEILING. FLANGED FIXTURE. COORDINATE MOUNTING TYPE WITH CEILING. STANDARD FINISH. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 3" WIDE X MAX 4" HIGH PROFILE. CSA AND /OR cUL DAMP LOCATION LISTED.	NOMINAL 8W PER LINEAR FOOT, WHITE LED, NOMINAL DELIVERED 1000 LUMENS PER LINEAR FOOT, 3500K CCT, 85+ CRI	120V	RECESSED IN DRYWALL CEILING	1. AXIS / BEAM 3 SERIES 2. OMNILUMEN 3. ACUITY BRANDS	CORRIDORS

- GENERAL NOTES :
1. ALL LUMINAIRES TO BE CSA AND/OR CUL LISTED.
  2. ALL EXTERIOR LUMINAIRES TO BE RATED FOR OUTDOOR USE, WITH FULL CUTOFF OPTICS AND DARK SKY COMPLAINT.
  3. REFER TO LIGHTING CONTROL SCHEMATIC AND LIGHTING DRAWINGS FOR CONTROL SPECIFICATIONS.
  4. LUMINAIRE FINISHES TO BE CONFIRMED BY ARCHITECT AT SHOP DRAWING STAGE.
  5. SUPPLY WITH ALL REQUIRED MOUNTING HARDWARE ACCORDING TO RECOMMENDEd MANUFACTURER INSTALLATION INSTRUCTIONS FOR EACH APPLICATION.

LUMINAIRE SCHEDULE						
TYPE	DESCRIPTION	LIGHT SOURCE SPECIFICATIONS	INPUT VOLTAGE	MOUNTING	MANUFACTURER	LOCATION
LL2	CEILING RECESSED 2X2' LED LENSED TROFFER. OPAL ACRYLIC SMOOTH DIFFUSER, ROUND SHAPED. FULLY SERVICEABLE AND UPGRADEABLE LENSED LED LIGHT ENGINE, ACCESSIBLE FROM BELOW CEILING. PROVIDE ALL NECESSARY MOUNTING ACCESSORIES FOR PROPER MOUNTING AS PER MANUFACTURER INSTRUCTION. STANDARD FINISH. INTEGRAL 0-10V ELECTRONIC DRIVER. CSA AND /OR cUL LISTED.	30W WHITE LED, NOMINAL DELIVERED 4200 LUMENS, 3500K CCT, 85+ CRI	120V	RECESSED IN GRID CEILING	1. SIGNIFY / DAY-BRITE CFI: FLUXGRID GEN 2 SERIES 2. OMNILUMEN 3. ACUITY BRANDS	GENERAL OFFICES
LL5	RECESSED IN EXTERIOR SOFFIT 4" WIDE LINEAR LUMINAIRE, 5' (1500mm) LONG. EXTRUDED ALUMINUM HOUSING WITH GASKETED END CAPS. SATIN EXTRUDED POLYCARBONATE LENS. LENSES TO HAVE ZERO GAPS TO PREVENT LIGHT LEAKS. NOMINAL 4" WIDE x 3.5" HIGH x 5' (1500mm) LONG HOUSING. STANDARD FINISH. SEAMLESS CONTINUOUS ILLUMINATION ALONG THE ENTIRE SPECIFIED ROW LENGTH AS SHOWN IN LIGHTING DRAWINGS. COORDINATE MOUNTING TYPE WITH CEILING. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. ALL INTERNAL LIGHTING COMPONENTS, SUCH AS LED BOARDS, DRIVERS, CONTROLLERS AND TRANSFORMERS TO BE ACCESSIBLE FROM BELOW THE CEILING. INTEGRAL 0—10V ELECTRONIC DIMMABLE DRIVER (100%—1%). IP65 RATED. CSA and/or cUL WET LOCATION LISTED.	NOMINAL 7W PER LINEAR FOOT WHITE LED NOMINAL 600 LUMENS PER LINEAR FOOT. 4000K CCT, 80 + CRI	120V	RECESSED IN EXTERIOR CEILING SOFFIT	1. AXIS/ WET BEAM 4 LED OR APPROVED EQUAL	EXTERIOR SOFFIT
LL6	RECESSED IN EXTERIOR WALL 4" WIDE LINEAR LUMINAIRE, IN VERTICAL POSITION, 5' (1500mm) LONG. EXTRUDED ALUMINUM HOUSING WITH GASKETED END CAPS. SATIN EXTRUDED POLYCARBONATE LENS. LENSES TO HAVE ZERO GAPS TO PREVENT LIGHT LEAKS. NOMINAL 4" WIDE x 3.5" HIGH x 5' (1500mm) LONG HOUSING. STANDARD FINISH. SEAMLESS CONTINUOUS ILLUMINATION ALONG THE ENTIRE SPECIFIED ROW LENGTH AS SHOWN IN LIGHTING DRAWINGS. COORDINATE MOUNTING TYPE WITH CEILING. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. ALL INTERNAL LIGHTING COMPONENTS, SUCH AS LED BOARDS, DRIVERS, CONTROLLERS AND TRANSFORMERS TO BE ACCESSIBLE FROM BELOW THE CEILING. INTEGRAL 0—10V ELECTRONIC DIMMABLE DRIVER (100%—1%). IP65 RATED. CSA and/or cUL WET LOCATION LISTED.	NOMINAL 5W PER LINEAR FOOT WHITE LED NOMINAL 400 LUMENS PER LINEAR FOOT. 4000K CCT, 80+ CRI	120V	RECESSED IN EXTERIOR WALL	1. AXIS/ WET BEAM 4 LED VERTICAL OR APPROVED EQUAL	EXTERIOR WALL
LL7	RECESSED LINEAR LENSED LUMINAIRE. IN EXTERIOR CEILING SOFFIT AND WALL, IN HORIZONTAL AND VERTICAL POSITION. CONTINUOUS SYSTEM PROVIDING AN UNINTERRUPTED LINE OF LIGHT INCLUDING ILLUMINATED INSIDE CORNERS. EXTRUDED ALUMINUM HOUSING WITH ALUMINUM END CAPS. FLANGED TRIM. OPAL ENCAPSULATION WITH HOMOGENEOUS LIGHT SURFACE. NOMINAL 1.6" WIDE x 2.6" HIGH x CONTINUOUS LENGTH AS SHOWN ON LIGHTING DRAWINGS. STANDARD SILVER FINISH. REMOTE 0—10V ELECTRONIC DIMMABLE DRIVER (100%—1%). REMOTE POWER SUPPLY ENCLOSURES TO BE SUPPLIED BY MANUFACTURER. DRIVERS TO BE SIZED BY CONTRACTOR BASED ON LINEAR RUNS, AND LOCATED ABOVE CEILING IN AN ADJACENT ACCESSIBLE LOCATION. IP67 RATED. CSA and/or cUL DAMP LOCATION LISTED.	NOMINAL 4.6W PER LINEAR FOOT WHITE LED NOMINAL 371 LUMENS PER LINEAR FOOT. 4000K CCT, 80+ CRI	120V	RECESSED IN EXTERIOR CEILING SOFFIT AND WALL	1. LED LINEAR/ XOOLIGHT IP67 OR APPROVED EQUAL	EXTERIOR SOFFIT AND WALL
LL10	4' LONG CEILING RECESSED 3" WIDE, LINEAR LED LUMINAIRE. EXTRUDED ALUMINUM HOUSING WITH EXTRUDED ALUMINUM ENDCAPS. FLUSH SNAP IN FROSTED ACRYLIC LENS. LENSES TO HAVE ZERO GAPS TO PREVENT LIGHT LEAKS. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. ALL INTERNAL LIGHTING COMPONENTS, SUCH AS LED BOARDS, DRIVERS, CONTROLLERS AND TRANSFORMERS TO BE ACCESSIBLE FROM BELOW THE CEILING. FLANGED FIXTURE. COORDINATE MOUNTING TYPE WITH CEILING. SEAMLESS CONTINUOUS ILLUMINATION ALONG THE ENTIRE SPECIFIED ROW LENGTH AS SHOWN IN LIGHTING DRAWINGS. STANDARD WHITE FINISH. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 3" WIDE X MAX 4" HIGH PROFILE. CSA AND /OR cUL DAMP LOCATION LISTED.	NOMINAL 8W PER LINEAR FOOT, WHITE LED, NOMINAL DELIVERED 1000 LUMENS PER LINEAR FOOT, 3500K CCT, 85+ CRI	120V	RECESSED IN GRID CEILING	1. AXIS / BEAM 3 SERIES 2. OMNILUMEN 3. ACUITY BRANDS	MULTIPURPOSE ROOM
LK1	SURFACE MOUNTED LED UNDERCABINET LUMINAIRE. DIE-FORMED CODE GAUGE STEEL HOUSING. ONE PIECE FOLDED CONSTRUCTION. CLEAR PRISMATIC PATTERN ACRYLIC LENS. CONTINUOUS RUNS AS SHOWN ON ELECTRICAL DRAWINGS. SUPPLY WITH ALL NECESSARY ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. BUILT-IN PIR MOTION SENSOR CONFIGURATION. ARCHITECT TO CONFIRM FINISH AT THE SHOP DRAWING STAGE. INTEGRAL 0-10V ELECTRONIC DRIVER. NOMINAL 7" WIDE X MAX 2" HIGH PROFILE. CSA AND /OR cUL DAMP LOCATION LISTED.	NOMINAL 13W PER LINEAR FOOT, WHITE LED, NOMINAL DELIVERED 800 LUMENS PER LINEAR FOOT, 3500K CCT, 85+ CRI	120V	SURFACE MOUNTED TO MILLWORK	1. VISCOR / VISIONEERING: LTL SERIES 2. OMNILUMEN 3. ACUITY BRANDS	KITCHEN



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History		
Filename :	Version: 2020.2.5.	
Project Number : 60686829	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed : GO	Date (yyyy-mm-dd) :	
Drawn : IV	Date (yyyy-mm-dd) :	
Reviewed : RF	Date (yyyy-mm-dd) :	
Checked : RF	Date (yyyy-mm-dd) :	
Approved : Approver	Date (yyyy-mm-dd) :	
Title :		
LUMINAIRE SCHEDULE 1 OF 2		
Page Size : ANSI D	Sheet :	Rev : 6
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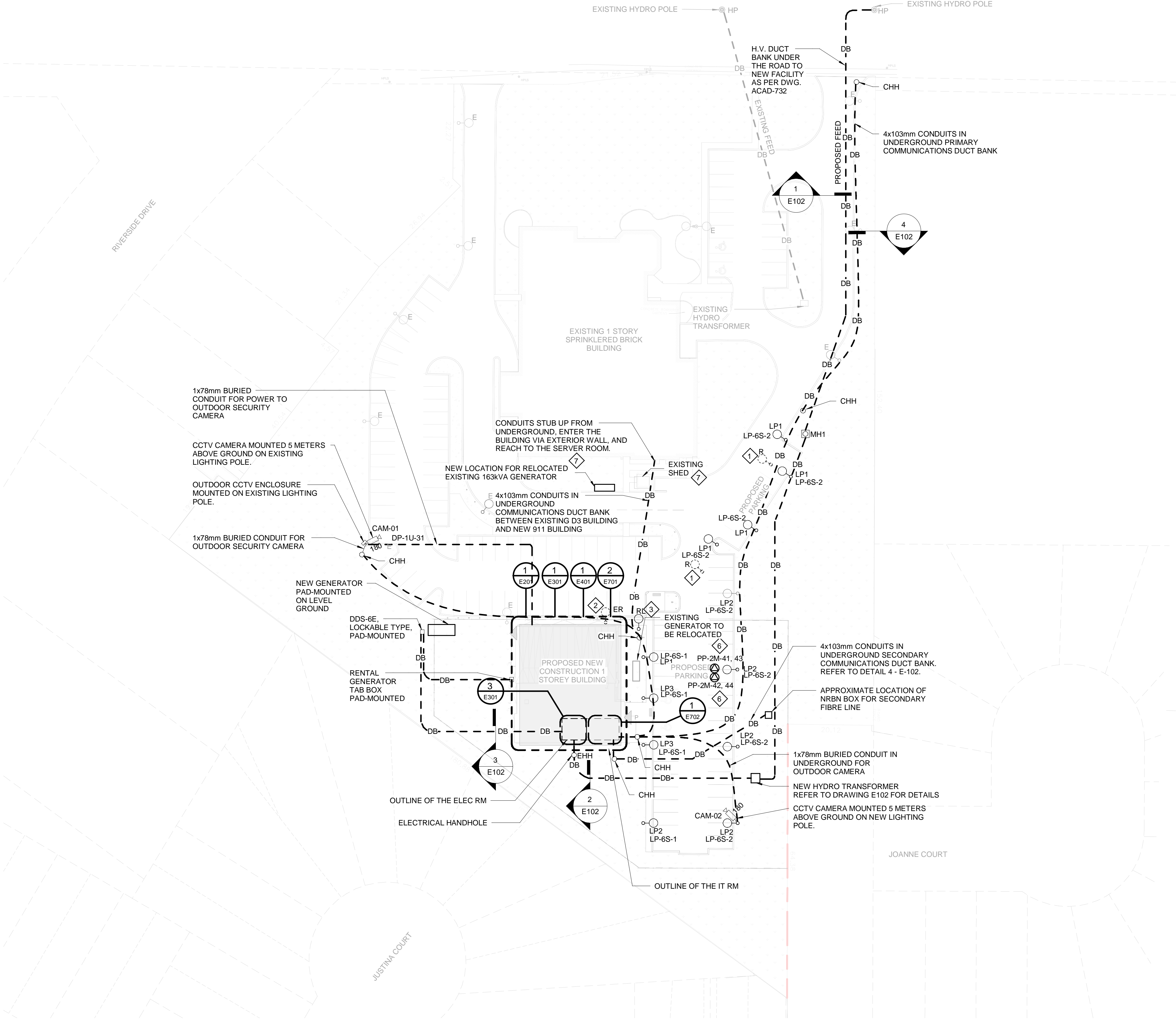


**GENERAL NOTES :**

1. ALL LUMINAIRES TO BE CSA AND/OR CUL LISTED.
2. ALL EXTERIOR LUMINAIRES TO BE RATED FOR OUTDOOR USE, WITH FULL CUTOFF OPTICS AND DARK SKY COMPLAINT.
3. REFER TO LIGHTING CONTROL SCHEMATIC AND LIGHTING DRAWINGS FOR CONTROL SPECIFICATIONS.
4. LUMINAIRE FINISHES TO BE CONFIRMED BY ARCHITECT AT SHOP DRAWING STAGE.
5. SUPPLY WITH ALL REQUIRED MOUNTING HARDWARE ACCORDING TO RECOMMENDED MANUFACTURER INSTALLATION INSTRUCTIONS FOR EACH APPLICATION.

Page Size : <b>ANSI D</b>	Sheet : <b>E005</b>	Rev : <b>6</b>
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DRAWING NOTES:

- 1 REMOVED EXISTING LIGHTING POLES. EXTEND EXISTING UNDERGROUND CONDUITS AND WIRING AND PROVIDE NEW CONDUITS AND WIRING TO MATCH EXISTING TO FEED EXISTING LIGHTING POLES TO REMAIN.
- 2 THE EXISTING LIGHT POLE AND LUMINAIRE TO BE RELOCATED TO NEW POSITION AS SHOWN, AS PER CLIENT REQUEST. EXTEND OR CUT BACK EXISTING CONDUIT AND WIRES AS REQUIRED AND RECONNECT COMPLETE.
- 3 THE EXISTING LIGHT POLE AND LUMINAIRE SHOWN IN RELOCATED POSITION. RELOCATE AND RECONNECT COMPLETE TO EXISTING CIRCUITS PRESENTLY SERVING THAT LIGHT POLE. PROVIDE NEW CONCRETE POLE BASE.
4. ELECTRICAL CONTRACTOR TO ENSURE HAND HOLES AND MAN HOLES ARE SUFFICIENT SIZE FOR THE QUANTITY OF DUCTS.
5. COORDINATE RESTORATION WITH CIVIL CONTRACTOR FOR INSTALLATION OF NEW DUCT BANKS ON EXISTING PARKING LOT.
- 6 PROVIDE 208V, 1PH, 40A DIRECT CONNECTION FOR EV CAR CHARGERS.
- 7 SEPARATE PRICE #1 - EXISTING EMERGENCY GENERATOR RELOCATION  
GC TO ENGAGE SERVICES OF A DEDICATED EMERGENCY GENERATOR CONTRACTOR AND THIRD-PARTY ENGINEER TO COMPLETE THE PERMITTING, RELOCATION, COMMISSIONING AND ENGINEERING OF THE RELOCATION OF THE 135KVA GENERATOR. THE FOLLOWING SCOPE AND PHASING PROVIDES AN OUTLINE SUMMARY OF THE WORK AND STEPS INVOLVED BUT IS NOT INTENDED TO ENCOMPASS ALL ITEMS.  
1. RELOCATE EXISTING DISCONNECTS, SPLITTER BOX, TAP BOX TO THE SHED ADJACENT TO THE D3 BUILDING.  
2. PULL BACK FEEDER TO 200A SPLITTER AND TERMINATE AT NEW LOCATION IN EXISTING D3 SHED.  
3. PROVIDE PORTABLE GENERATOR AND CONNECT TO TAP BOX.  
4. ADD 5" CONCRETE PAD IN NEW GENERATOR LOCATION.  
5. RELOCATE EXISTING 163KVA GENERATOR AND CURB TO NEW LOCATION.  
6. ADD NEW 2-4" CONCRETE DUCTBANK BETWEEN NEW LOCATION OF EXISTING 163KVA GENERATOR AND THE EXISTING RELOCATED DISCONNECT SWITCH IN EXISTING D3 SHED.  
7. EXCAVATE AND CUT-OFF EXISTING UNDERGROUND CONDUIT LEADING TO THE CURRENT LOCATION AND ADD NEW CONDUIT AND CABLE TO THE NEW GENERATOR LOCATION.  
8. COMMISSION RELOCATED 163KVA GENERATOR AND ELECTRICAL COMPONENTS. OBTAIN ANY NECESSARY PERMITS AND CERTIFICATIONS INCLUDING TSSA DIESEL SUPPLY.  
9. MOVE THE EMERGENCY LOADS FOR THE EXISTING D3 BUILDING TO THE 163KVA GENERATOR (REFER TO PHASING) AND COMMISSION  
10. DE-COMMISSION AND REMOVE THE EXISTING 80KVA GENERATOR LOCATED WITHIN THE EXISTING D3 BUILDING.  
11. RESTORE ALL CONCRETE AND GRASS EXCAVATED AS PART OF THIS SCOPE OF WORK.

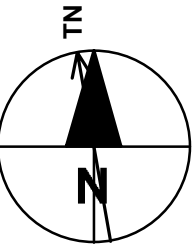
EMERGENCY GENERATOR PHASING  
1. RELOCATE AND COMMISSION EXISTING 163KVA GENERATOR (DEDICATED FOR EXISTING NG911 BACK-UP SYSTEMS LOCATED IN EXISTING D3 BUILDING).  
2. INSTALL AND COMMISSION NEW 500KVA GENERATOR FOR THE NG911 BACK-UP BUILDING.  
3. RELOCATE NG911 BACK-UP SERVICES TO THE NEW NG911 BACK-UP BUILDING.  
4. DECOMMISSION AND REMOVE EXISTING ELECTRICAL EQUIPMENT DOWNSTREAM OF THE EXISTING 163KVA GENERATOR AND 200A ATS INCLUDING DISTRIBUTION PANELBOARDS, TRANSFORMERS, UPS, AND ASSOCIATED CABLING AND CONDUITS.  
5. MOVE EXISTING D3 BUILDING EMERGENCY LOADS TO THE 163KVA GENERATOR. PROVIDE NEW FEEDER FROM EXISTING 200A ATS IN EXISTING D3 BUILDING TO ESSENTIAL DISTRIBUTION PANELBOARD DP-E1. THIRD-PARTY ENGINEER TO CONFIRM EQUIPMENT SIZING AND LOADS ARE SUFFICIENT FOR THIS NEW CONNECTION.  
6. DE-COMMISSION AND REMOVE EXISTING 80KVA GENERATOR, 225A ATS AND ASSOCIATED CABLING AND CONDUITS WITHIN THE D3 BUILDING.



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

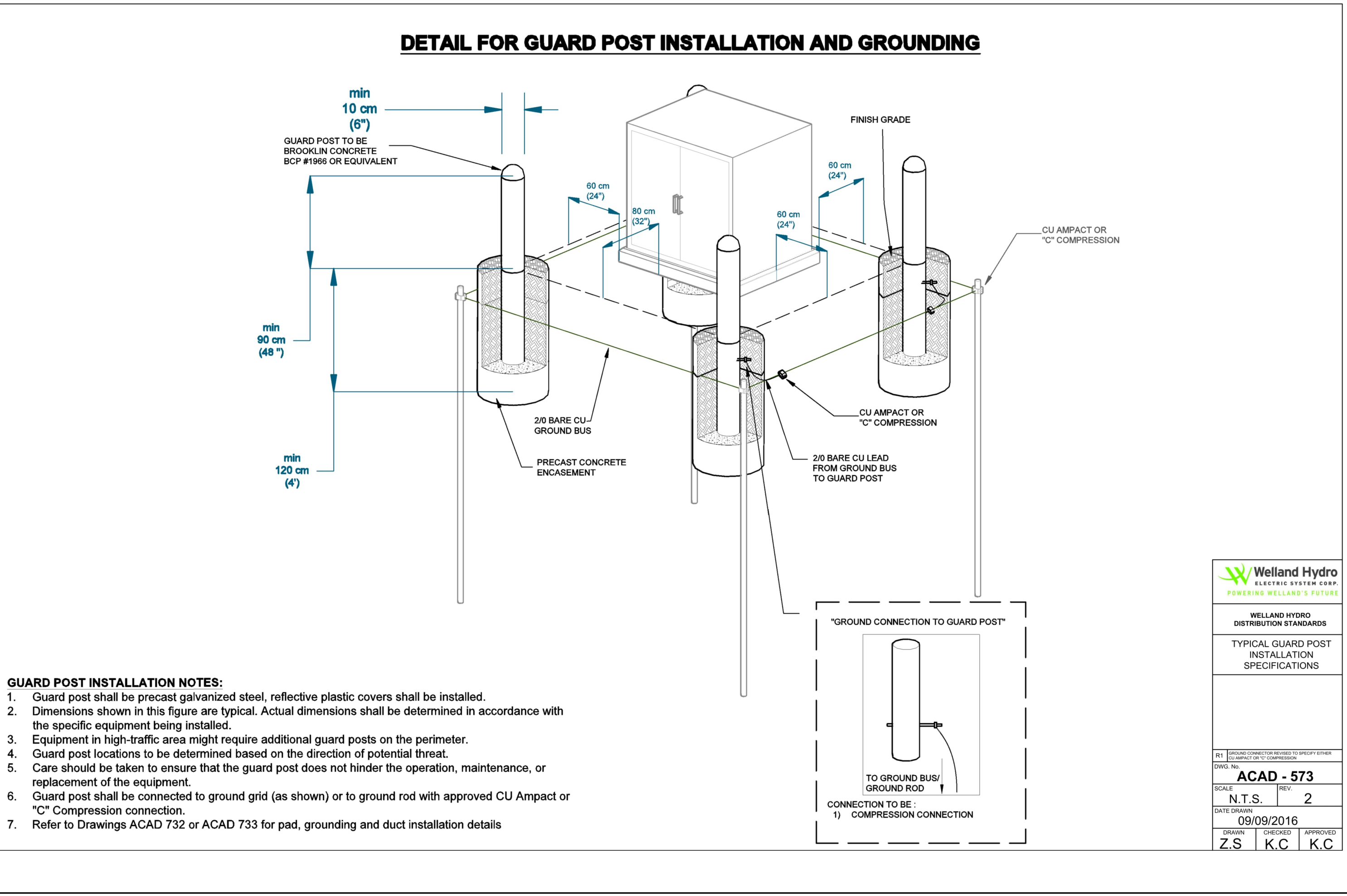
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6	2024-12-13	IFP RE-SUBMISSION
5	2024-11-29	ISSUED FOR OWNER REVIEW
4	2024-11-29	90% DOCUMENTS
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History		Version
Filename :		2020.2.5.
Project Number : <b>60686829</b>	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>GOINT/HB</b>	Date (yyyy-mm-dd) :	
Drawn : <b>IV</b>	Date (yyyy-mm-dd) :	
Reviewed : <b>WH/RF/TM</b>	Date (yyyy-mm-dd) :	
Checked : <b>WH/RF/TM</b>	Date (yyyy-mm-dd) :	
Approved : <b>Approver</b>	Date (yyyy-mm-dd) :	

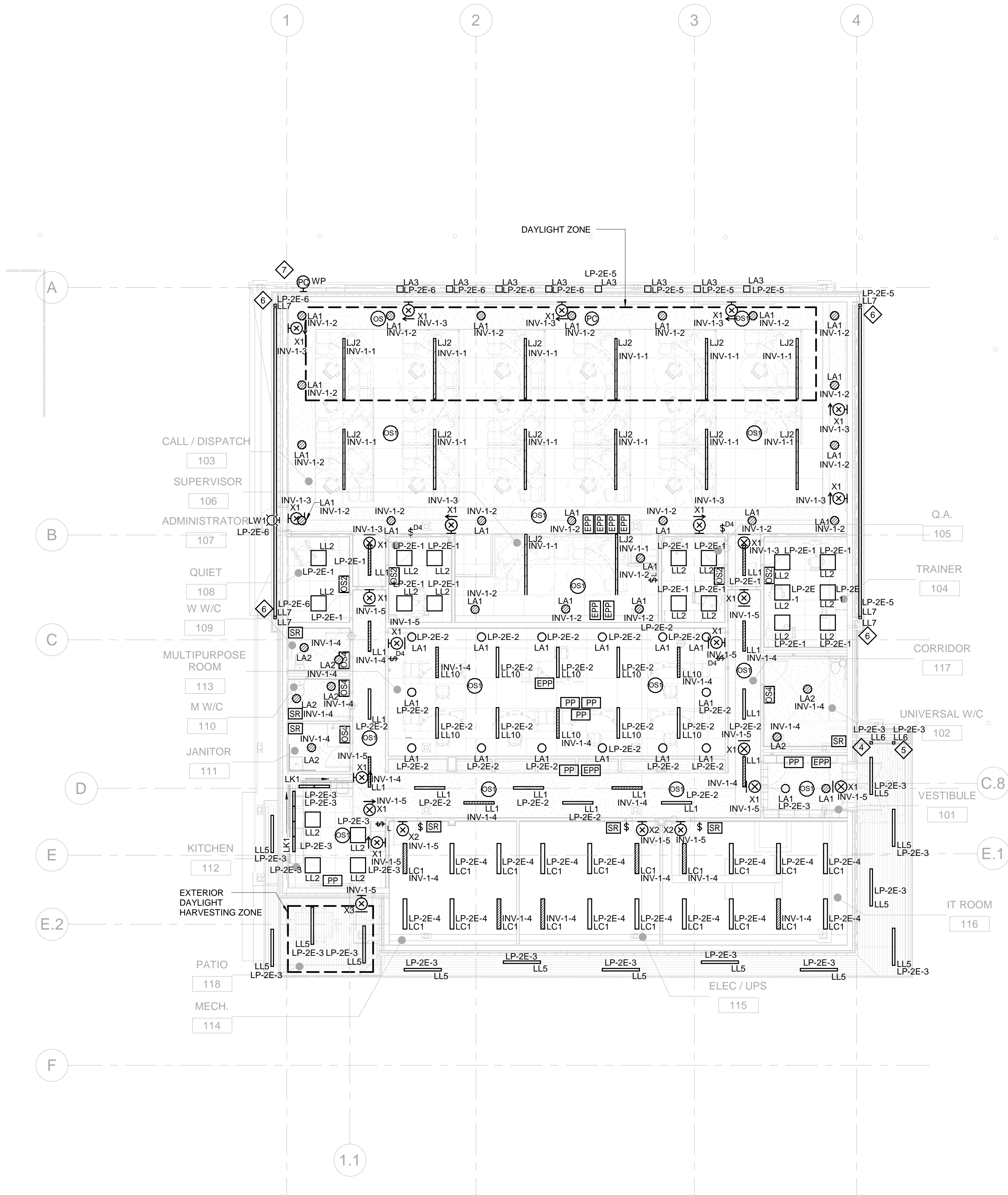
ELECTRICAL SITE PLAN

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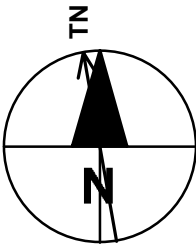
1 GROUND FLOOR LIGHTING PLAN  
1 : 100



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**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number :  
60686829

Owner's Contract Number :  
987654321

6	2025-01-27	ISSUED FOR TENDER
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4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

## Revision History

Filename :	Version : 2020.2.5
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Project Number : 60686829	Project Manager :
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Project Administrator :	BIM/VDC Manager :
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Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
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Designed : <b>GO</b>	Date (yyyy-mm-dd) :
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Drawn : IV	Date (yyyy-mm-dd) :
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Reviewed : RF	Date (yyyy-mm-dd) :
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Checked : RF	Date (yyyy-mm-dd) :
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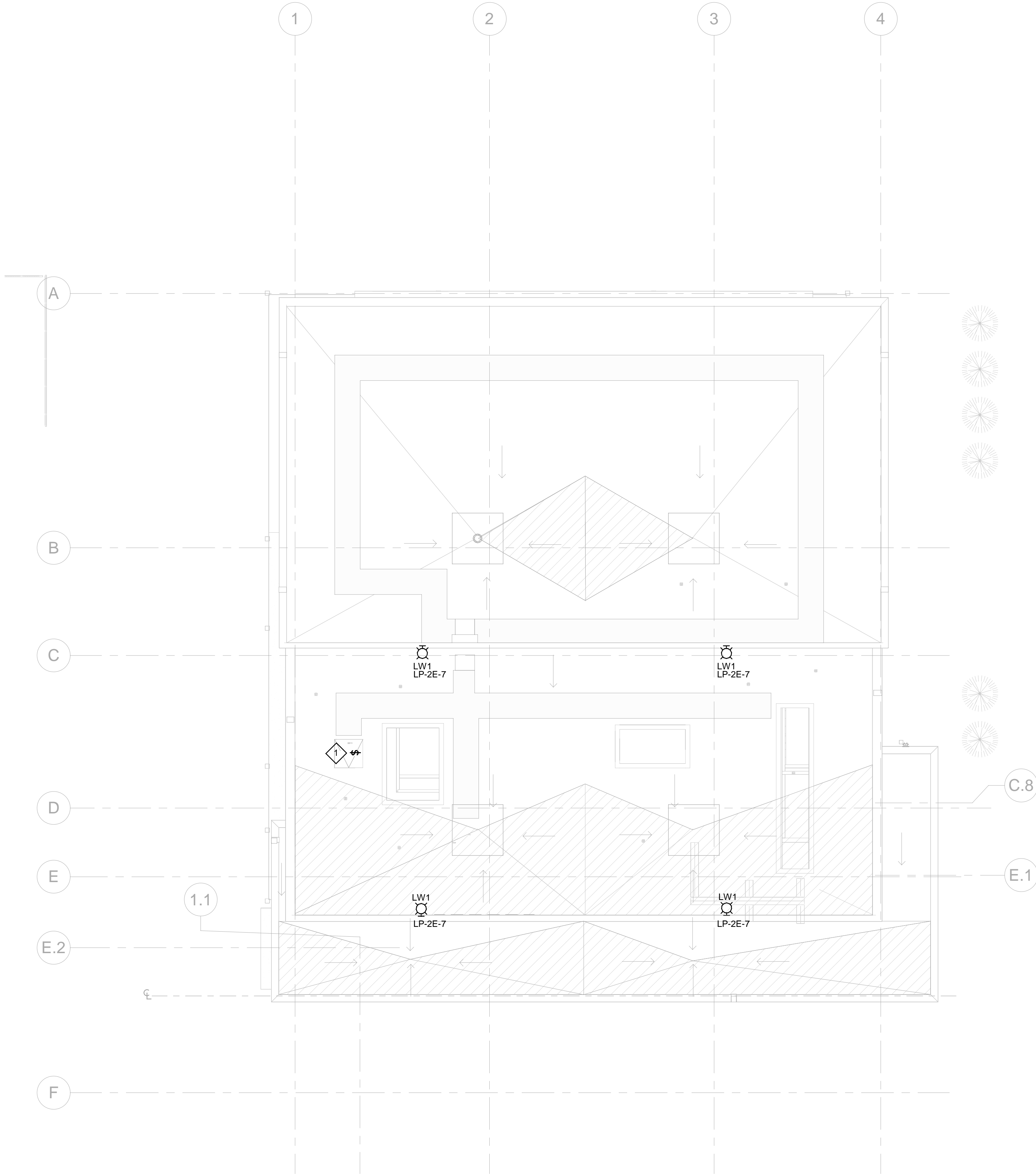
Approved : RF	Date (yyyy-mm-dd) :
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## GROUND FLOOR LIGHTING PLAN

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Print Date: 12/23/2025 1:14:43 PM  
ANSI D Title Block Revision 0.0. Designed by Eric Leiner. ©2022 AECOM Canada. All Rights Reserved.



1 ROOF LIGHTING PLAN  
1 : 100

DRAWING NOTES :

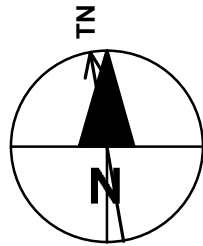
- 1 TYPE LW1 FIXTURES LOCATED ON THE ROOF TO BE CONTROLLED BY TOGGLE ON/OFF SWITCH LOCATED AT THE TOP OF THE LADDER INSIDE THE HATCH.



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number : 60686829  
Owner's Contract Number : 987654321

6	2025-01-27	ISSUED FOR TENDER
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2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
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Revision History

Filename : Version : 2020.2.5.

Project Number : 60686829	Project Manager :
Project Administrator :	BIM/VDC Manager :
Sustainability Target :	IPMS 1 (m²) : IPMS 2 (m²) :
Designed : GO	Date (yyyy-mm-dd) :
Drawn : IV	Date (yyyy-mm-dd) :
Reviewed : RF	Date (yyyy-mm-dd) :
Checked : RF	Date (yyyy-mm-dd) :
Approved : Approver	Date (yyyy-mm-dd) :
Title :	

ROOF LIGHTING PLAN

Page Size : ANSI D	Sheet : 6	Rev : 6
Scale : 1 : 100	Sheet : of	of



GENERAL NOTES:

1. ALL ELECTRICAL DEVICES TO BE cUL/CSA COMPLIANT.
2. ALL LIGHTING CONTROL DEVICES, SUCH AS UL924 SHUNT RELAY TYPE SR, AND EMERGENCY POWER PACK CONTROLLER TYPE EPP TO BE LOCATED IN A REMOTE AND ACCESSIBLE LOCATION IN CEILING PLENUM, UNLESS OTHERWISE NOTED.  
IF DEVICES TO BE INSTALLED IN DRYWALL, CONTRACTOR TO COORDINATE WITH OTHER TRADES TO RESERVE ACCESSIBLE PANEL.
3. CONTRACTOR TO COORDINATE AND CONFIRM THAT ALL LIGHTING CONTROL SYSTEMS ARE SUITABLE TO OPERATE THE LUMINAIRES, AND PROVIDE A COMPLETE WORKING LIGHTING CONTROL SYSTEM AS RECOMMENDED BY THE MANUFACTURER.
4. CONTRACTOR TO COORDINATE A SYSTEM SETUP SESSION BETWEEN LIGHTING CONTROL REPRESENTATIVE, OWNER AND CONSULTANTS TO REVIEW AND CONFIRM ALL CONTROL SEQUENCES.
5. REFER TO LIGHTING LAYOUTS AND CONTROL DRAWINGS.
6. LIGHTING CONTROLS SUPPLIER TO REVIEW SENSOR LAYOUTS TO ENSURE THEIR PROPOSED DEVICES CAN MEET THE DESIGN INTENT AND MAXIMIZES THE COVERAGE.  
CONTRACTOR AND CONTROLS SUPPLIER TO MAKE ADJUSTMENTS ON PROPOSED DEVICES AND DEVICE LOCATIONS ACCORDINGLY.

[illegible]





6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

## Revision History

Filename :	Version:
60686829	2020.2.5.
Project Number :	Project Manager :
Project Administrator :	BIM/VDC Manager :
Sustainability Target :	IPMS 1 (m²) :
	IPMS 2 (m²) :
Designed :	Date (yyyy-mm-dd) :
GO	
Drawn :	Date (yyyy-mm-dd) :
KH	
Reviewed :	Date (yyyy-mm-dd) :
RF	
Checked :	Date (yyyy-mm-dd) :
RF	
Approved :	Date (yyyy-mm-dd) :
Approver	
Tale :	

## LIGHTING CONTROL DETAILS

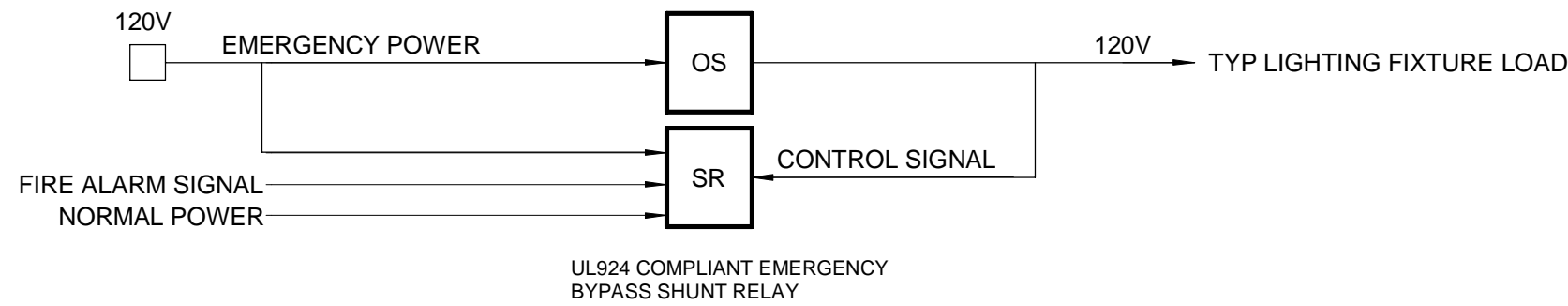
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**TYPE OS2**WALL MOUNT DIMMING SENSOR.  
OCCUPANCY CONTROL WITH OVERRIDE ON/OFF, RAISE/LOWER AND AUTO OFF.CONTROL SEQUENCE:

- SENSOR TURNS ON LIGHTS IN THE SPACE AUTOMATICALLY AT 50% LIGHT OUTPUT.
  - SWITCH TURNS LIGHT ON/OFF AND DIMS RAISE/LOWER MANUALLY WHEN NEEDED.
  - SENSOR TURNS OFF LIGHTS AT 20 MINS VACANCY.
  - IN CASE OF FIRE ALARM, ALL THE LIGHTING WILL DEFAULT TO FULL ON.
- CONTRACTOR TO PROVIDE ALL NECESSARY DEVICES FOR A COMPLETE LIGHTING CONTROL SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS. ALL THE CONTROLLERS AND DEVICES TO BE COMPATIBLE WITH THE LIGHTING SYSTEM AND CONTROL SYSTEM.

**1 TYPICAL FOR PRIVATE OFFICES**

N.T.S.

**TYPE OS4**

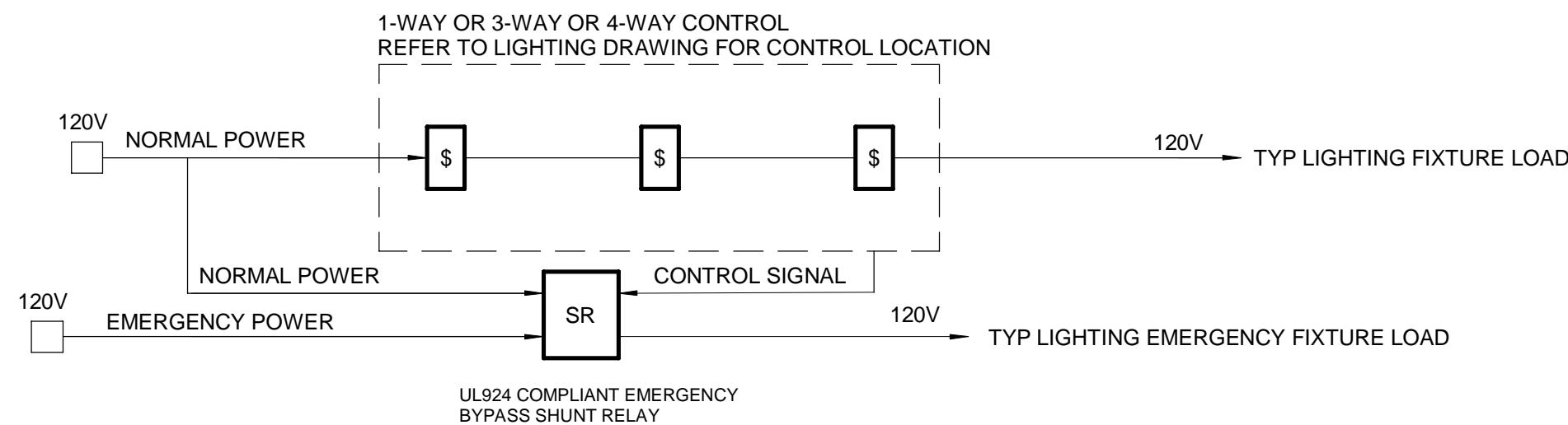
(TYPICAL FOR WASHROOMS)

WALL MOUNT SENSOR.  
OCCUPANCY CONTROL WITH OVERRIDE ON/OFF AND AUTO OFF.CONTROL SEQUENCE:

- SENSOR TURNS ON LIGHTS AUTOMATICALLY AT 100% LIGHT OUTPUT.
  - SWITCH TURNS LIGHT ON/OFF MANUALLY WHEN NEEDED.
  - SENSOR TURNS OFF LIGHTS AT 20 MINS VACANCY.
  - UPON LOSS OF POWER ALL THE EMERGENCY LIGHTING TO DEFAULT FULL ON.
  - IN CASE OF FIRE ALARM, ALL THE LIGHTING WILL DEFAULT TO FULL ON.
- CONTRACTOR TO PROVIDE ALL NECESSARY DEVICES FOR A COMPLETE LIGHTING CONTROL SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS. ALL THE CONTROLLERS AND DEVICES TO BE COMPATIBLE WITH THE LIGHTING SYSTEM AND CONTROL SYSTEM.

**2 TYPICAL FOR WASHROOMS**

N.T.S.

**TYPE SWITCH TOGGLE ON/OFF**

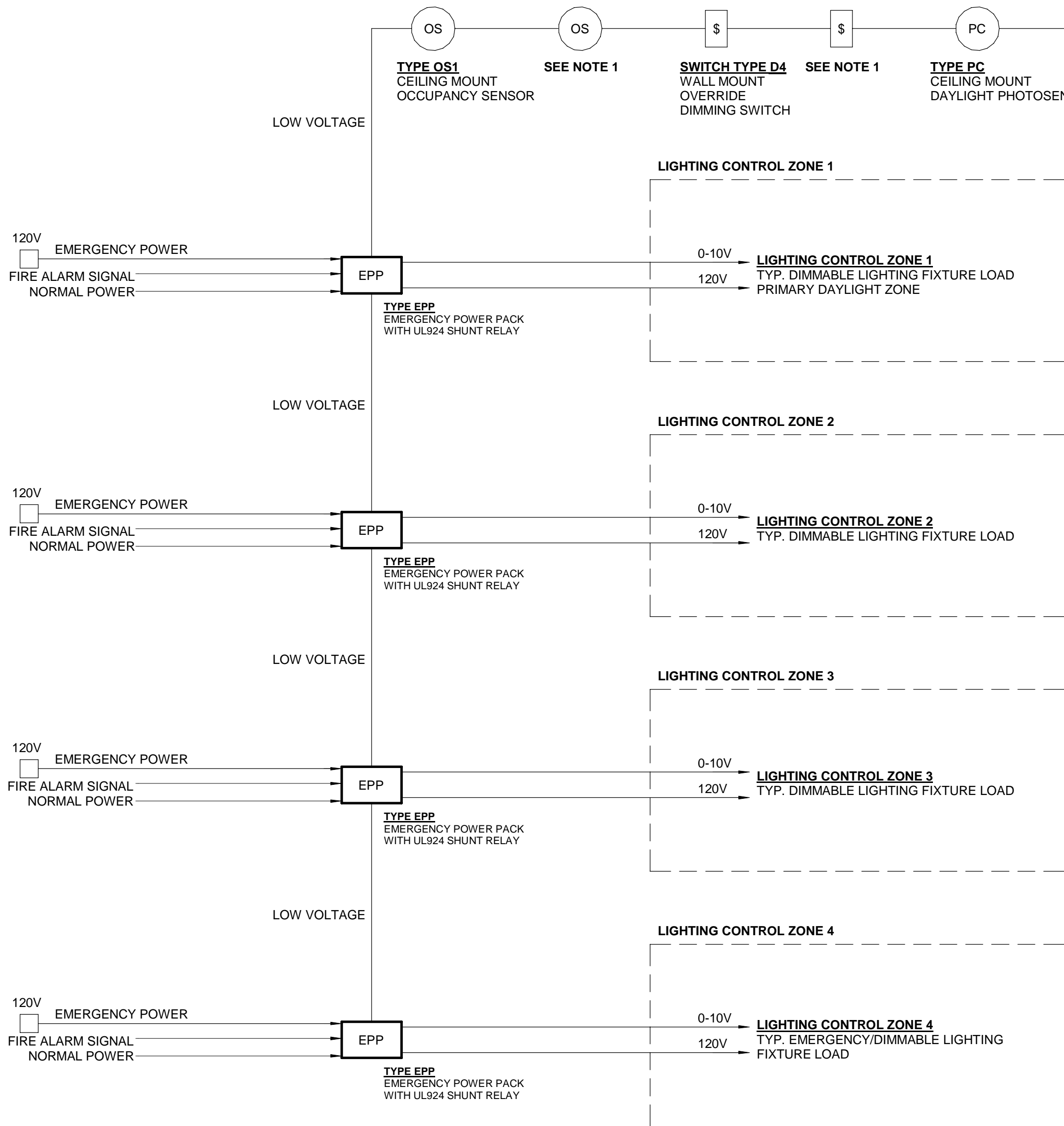
WITH UL924 EMERGENCY BYPASS RELAY

CONTROL SEQUENCE:

- USER TURNS ON ALL LIGHTS IN THE SPACE AUTOMATICALLY AT 100% LIGHT OUTPUT
  - USER TURNS LIGHT ON/OFF MANUALLY WHEN NEEDED.
  - UPON LOSS OF POWER ALL THE EMERGENCY LIGHTING TO DEFAULT FULL ON.
  - IN CASE OF FIRE ALARM, ALL THE LIGHTING WILL DEFAULT TO FULL ON.
- CONTRACTOR TO PROVIDE ALL NECESSARY DEVICES FOR A COMPLETE LIGHTING CONTROL SYSTEM AS PER MANUFACTURER'S RECOMMENDATIONS. ALL THE CONTROLLERS AND DEVICES TO BE COMPATIBLE WITH THE LIGHTING SYSTEM AND CONTROL SYSTEM.

**3 TYPICAL FOR ELECTRICAL AND MECHANICAL SERVICE ROOMS**

N.T.S.

CONTROL SEQUENCE:

- SENSOR TURNS ON ALL LIGHTS IN THE SPACE AUTOMATICALLY AT 50% LIGHT OUTPUT.
- USER TURNS THE LIGHT ON/OFF AND DIMS UP/DOWN MANUALLY WHEN NEEDED.
- CONTROL ZONES AS INDICATED ON THE LIGHTING DRAWINGS TO BE DIMMED OR ON/OFF SEPARATELY.
- SENSOR TURNS OFF ALL LIGHTS IN THE SPACE AUTOMATICALLY AT 20 MINUTES VACANCY.

- THE ENTIRE LIGHTING TO BE BACKED UP BY THE GENERATOR. LIGHTING IN THE DISPATCH CALL CENTER SHALL BE FED FROM THE LIGHTING INVERTER.
- IN CASE OF NORMAL POWER LOSS THE LIGHTING WILL OPERATE AS NORMAL.
- IN CASE OF FIRE ALARM, ALL THE LIGHTING WILL DEFAULT TO FULL ON. CONTRACTOR TO PROVIDE ALL NECESSARY DEVICES FOR A COMPLETE INSTALLATION AS PER MANUFACTURER'S RECOMMENDATIONS. ALL THE CONTROLLERS AND DEVICES TO BE COMPATIBLE WITH THE LIGHTING SYSTEM AND CONTROL SYSTEM.

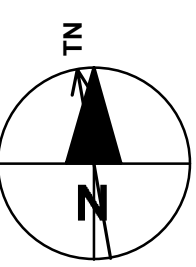
**4 TYPICAL FOR SPACES WITH THREE CONTROL ZONES WITH DAYLIGHT HARVESTING (CALL/DISPATCH)**

N.T.S.

GENERAL NOTES:

- REFER TO LIGHTING DRAWINGS FOR EXACT CONTROL DEVICE QUANTITIES PER SPACE.





6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-08-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History

Filename :		Version : <b>2020.2.5.</b>	
Project Number : <b>60686829</b>		Project Manager :	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target :		IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>NT</b>		Date (yyyy-mm-dd) :	
Drawn : <b>IV</b>		Date (yyyy-mm-dd) :	
Reviewed : <b>WH</b>		Date (yyyy-mm-dd) :	
Checked : <b>WH</b>		Date (yyyy-mm-dd) :	
Approved : <b>Approver</b>		Date (yyyy-mm-dd) :	

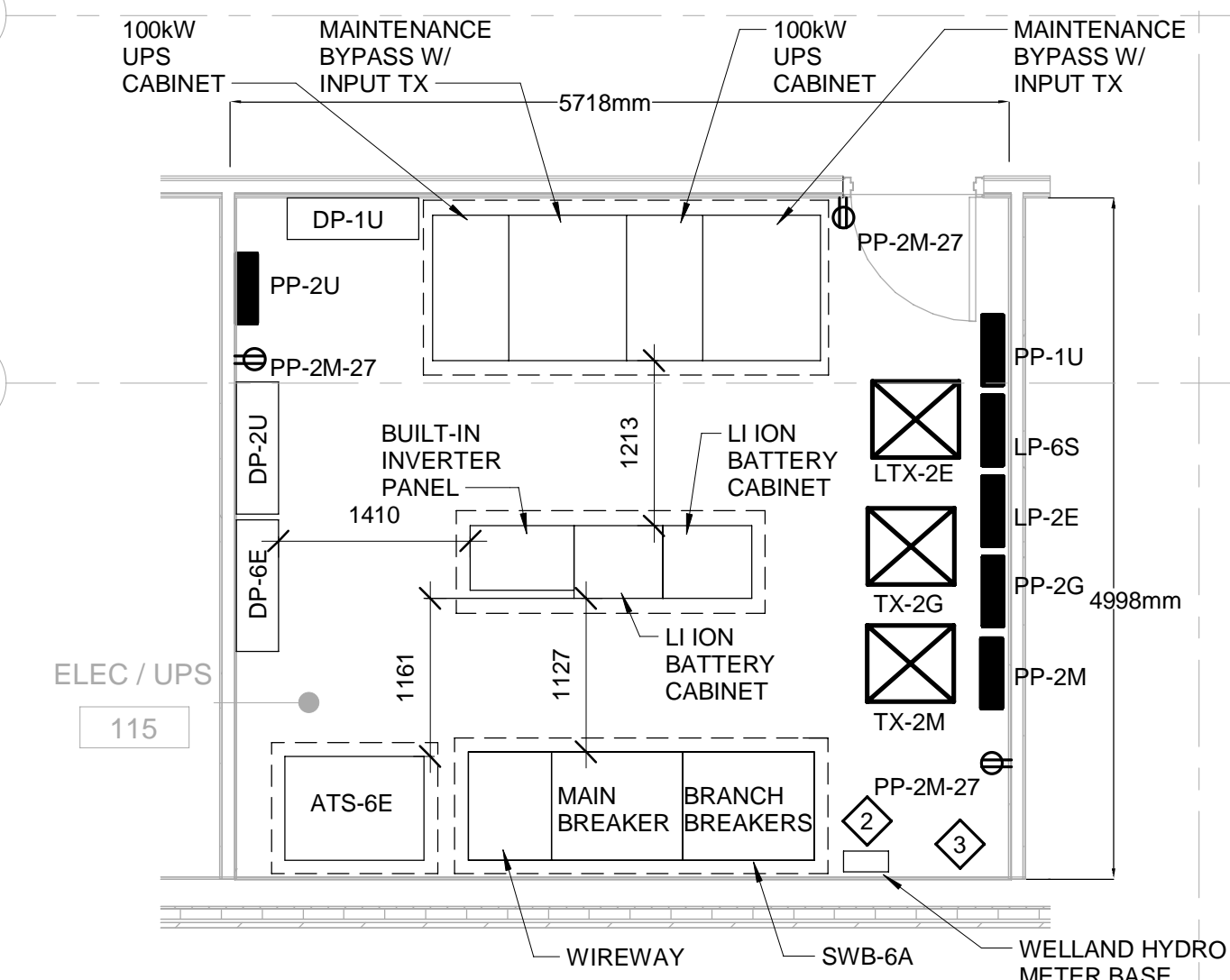
GROUND FLOOR POWER PLAN

1 GROUND FLOOR POWER PLAN  
1 : 100

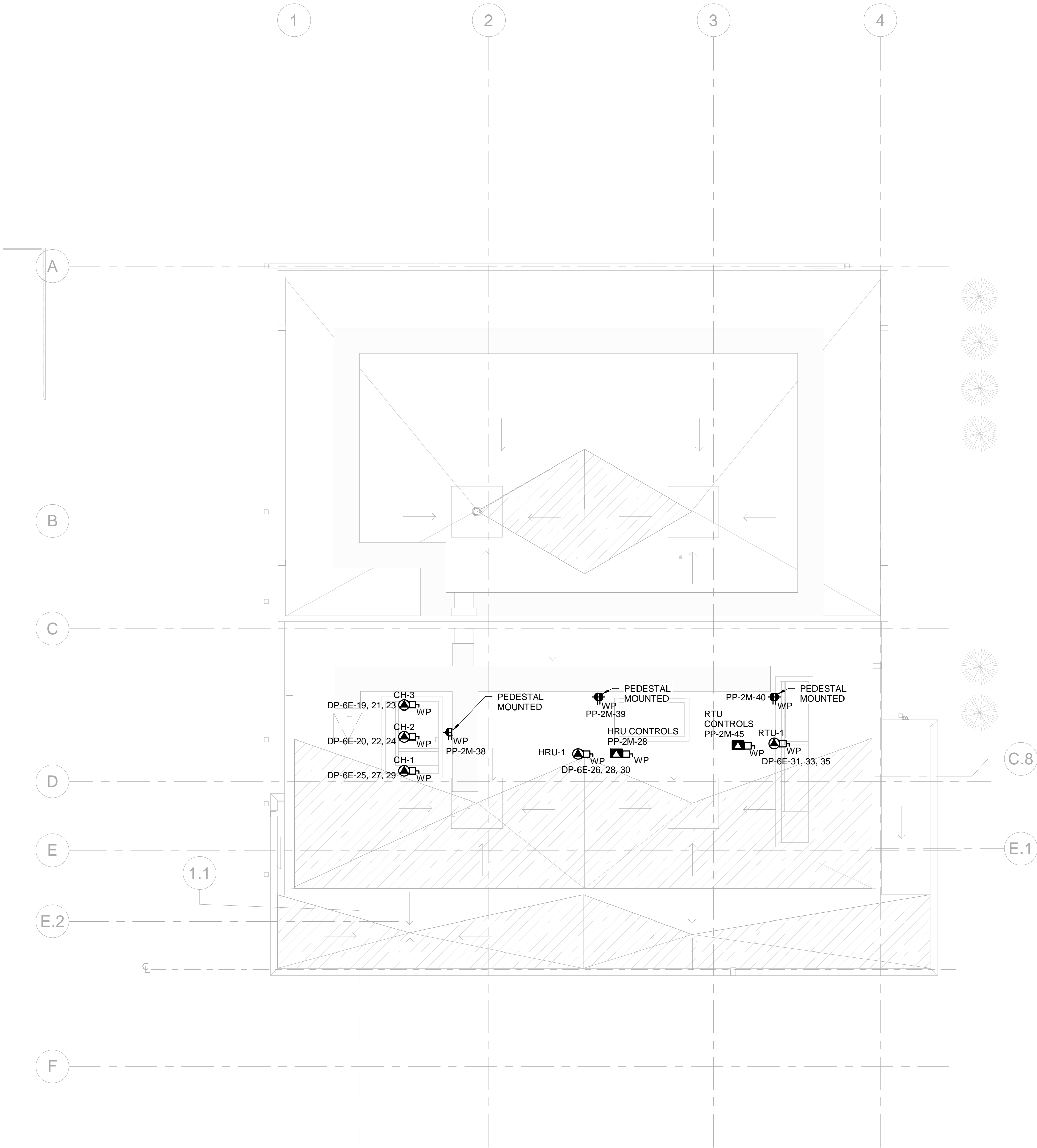
DRAWING NOTES :

- RECEPTACLES TO BE TWISTLOCK TYPE AND MOUNTED ON THE UNDERSIDE OF CABLE TRAY IN IT ROOM.
- COORDINATE METER BASE REQUIREMENTS WITH WELLAND HYDRO. CONDUIT TO BE INSTALLED BETWEEN THE METER BASE AND THE UTILITY METER COMPARTMENT OF THE SWITCHBOARD SWB-6A.
- APPROXIMATE LOCATION OF DISCONNECT SWITCH FOR PV SOLAR SYSTEM. REFER TO PV SOLAR DRAWINGS FOR DETAILS.

2 MECH ROOM  
1 : 50







1 ROOF POWER PLAN  
1 : 100



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number :	Owner's Contract Number :
60686829	987654321

Mark	Date	Description
6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-10-30	ISSUED FOR PERMIT
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1	2024-07-26	ISSUED FOR 100% DD

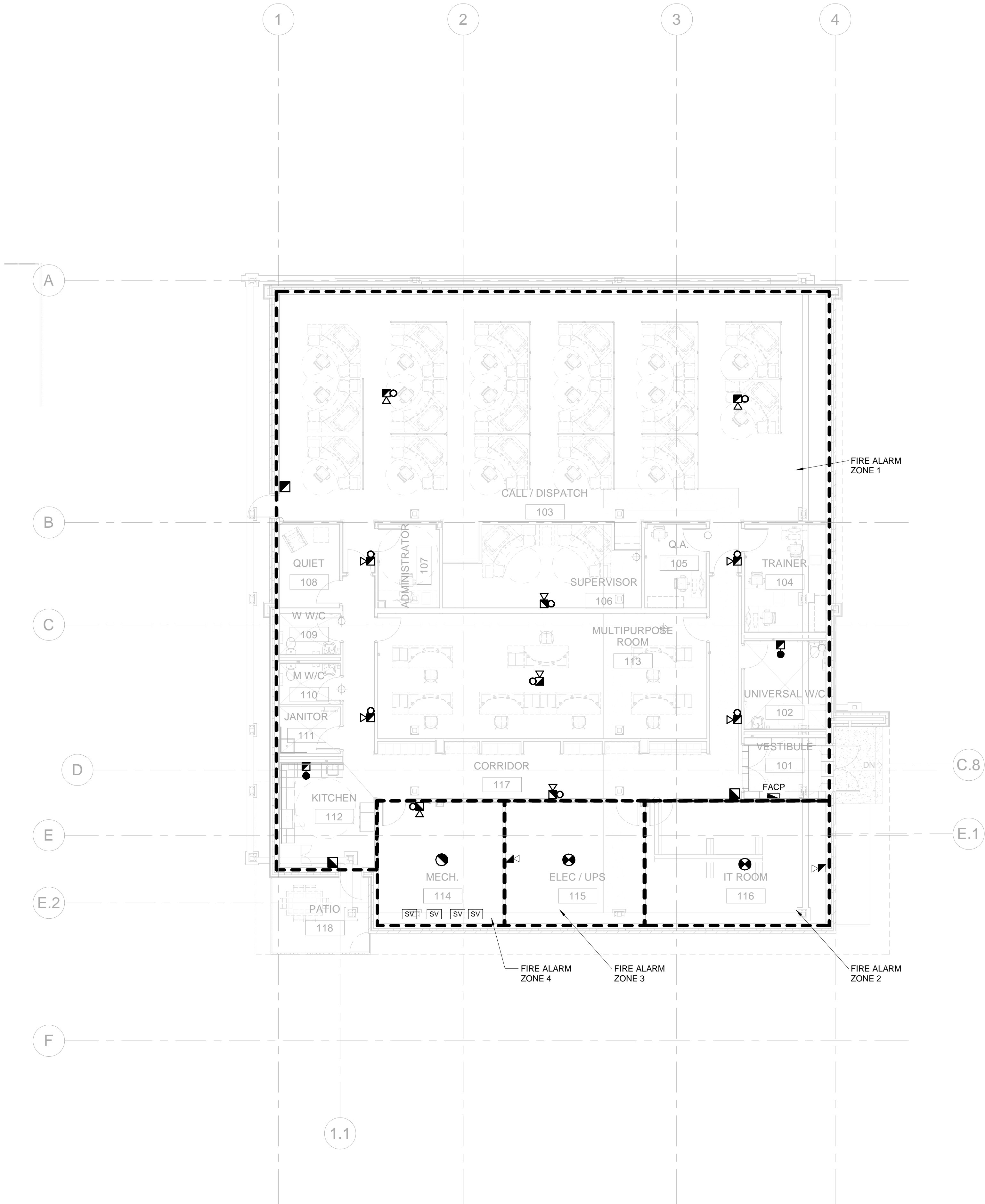
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Filename :		Version : 2020.2.5.
Project Number : 60686829	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 ( m <sup>2</sup> ) :	IPMS 2 ( m <sup>2</sup> ) :
Designed : NT	Date (yyyy-mm-dd) :	
Drawn : IV	Date (yyyy-mm-dd) :	
Reviewed : WH	Date (yyyy-mm-dd) :	
Checked : WH	Date (yyyy-mm-dd) :	
Approved : Approver	Date (yyyy-mm-dd) :	

ROOF POWER PLAN

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Scale : 1 : 100	Sheet : of :	



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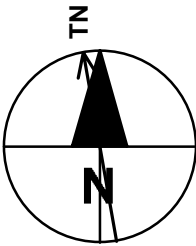
1 GROUND FLOOR FIRE ALARM PLAN  
1 : 100



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number : 60686829  
Owner's Contract Number : 987654321

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1	2024-07-26	ISSUED FOR 100% DD

Mark Date Description

Revision History

Filename : Version : 2020.2.5.

Project Number : 60686829 Project Manager :

Project Administrator : BIM/VDC Manager :

Sustainability Target : IPMS 1 (m²) : IPMS 2 (m²) :

Designed : NT Date (yyyy-mm-dd) :

Drawn : IV Date (yyyy-mm-dd) :

Reviewed : WH Date (yyyy-mm-dd) :

Checked : WH Date (yyyy-mm-dd) :

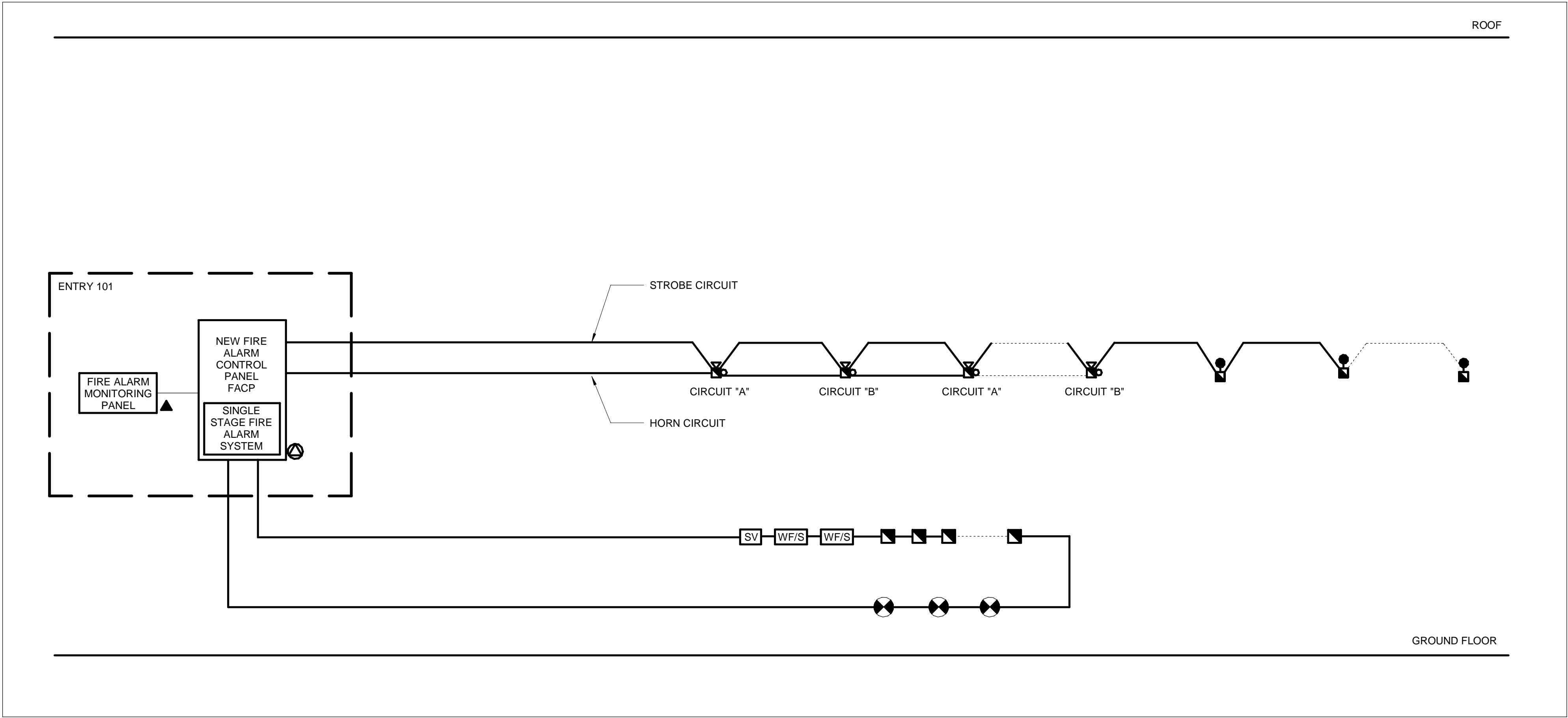
Approved : Approver Date (yyyy-mm-dd) :

Title :

GROUND FLOOR FIRE ALARM  
PLAN

Page Size : ANSI D Sheet : 6  
Scale : 1 : 100 Sheet : of :  
E401





1 FIRE ALARM RISER DIAGRAM  
N.T.S.

GENERAL NOTES:

- a. THIS DRAWING IS DIAGRAMMATIC ONLY AND DOES NOT SHOW EXACT QUANTITY OF ALL DEVICES. FOR EXACT QUANTITIES AND LOCATION OF DEVICES REFER TO FIRE ALARM LAYOUT DRAWINGS.
- b. THE ELECTRICAL CONTRACTOR SHALL RETAIN THE SERVICES OF THE EXISTING FIRE ALARM SYSTEM MANUFACTURER TO CARRY OUT INSPECTION WORK OF THE EXISTING BASE BUILDING FIRE ALARM SYSTEM TO BE ALTERED OR RELOCATED IN THE RENOVATED AREA.
- c. PROVIDE ALL NECESSARY MATERIALS AND EQUIPMENT REQUIRED BY THE SYSTEM MANUFACTURER TO CARRY OUT THE INSPECTION.
- d. REPAIR, REPLACE OR ADJUST ALL OF THE COMPONENTS AS REQUIRED BY THE SYSTEM MANUFACTURER TO ENSURE A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
- e. A CERTIFICATE SHALL BE PROVIDED BY THE SYSTEM MANUFACTURER UPON COMPLETION OF THE INSPECTION, OR AFTER NECESSARY REVISIONS ARE COMPLETED, VERIFYING THAT THE SYSTEM IS INSTALLED, SUPERVISED AND OPERATES ACCORDING TO ALL CODES AND AUTHORITIES HAVING JURISDICTION.
- f. ALL NEW FIRE ALARM PULL STATIONS TO BE MOUNTED AT 1200mm A.F.F. AND MAXIMUM 600mm FROM THE DOOR LATCH (CENTERED TO THE DEVICE).
- g. FIRE ALARM HORN/STROBE HEIGHT TO BE AS PER LATEST CAN/ULC-S524.
- h. STROBE TO HAVE MULT-CANDELA OUTPUT SETTING 15,30,75,95,100 CD.
- i. PROVIDE FIRE ALARM SYSTEM VERIFICATION FOR THE ENTIRE BUILDING ALARM, TROUBLE AND SIGNAL DEVICES/CIRCUITS. SUBMIT VERIFICATION REPORT FOR CONSULTANT'S REVIEW.
- j. PROVIDE COMPLETE AUDIBILITY TEST TO SHOW THAT NBC ARTICLE 3.2.4.18 (6) HAS BEEN MET. SUBMIT TEST RESULTS FOR CONSULTANT'S REVIEW.
- k. ALL WIRING TO BE IN CONDUIT, MINIMUM 21mmC (3/4").
- l. PROVIDE FAULT ISOLATOR MODULES WHEN ENTERING AND LEAVING EACH FIRE ALARM ZONE. FAULT ISOLATOR MODULES TO BE LOCATED AS PER CAN\_ULC-S524 REQUIREMENT.

FIRE ALARM ZONE SCHEDULE										
FIRE ALARM ZONE DESCRIPTION	FIRE ALARM ZONE NO.	PULL STATION	SMOKE/HEAT DETECTOR	FLOW SWITCH	PRESSURE SWITCH	SUPERVISORY VALVE	TROUBLE SIGNAL	AUXILIARY SUPERVISORY	AUXILIARY CONTACT	REMARKS
CALL/DISPATCH AREA	ZONE 1	●								
IT ROOM	ZONE 2		●							CLEAN AGENT SYSTEM
ELECTRICAL ROOM	ZONE 3		●							PRE-ACTION SYSTEM
MECHANICAL ROOM	ZONE 4		●	●	●	●				
LIGHTING CONTROLS	ZONE 5							●		
BAS SYSTEM	ZONE 6							●		
SIGNAL TO FIRE DEPARTMENT	ZONE 7							●		

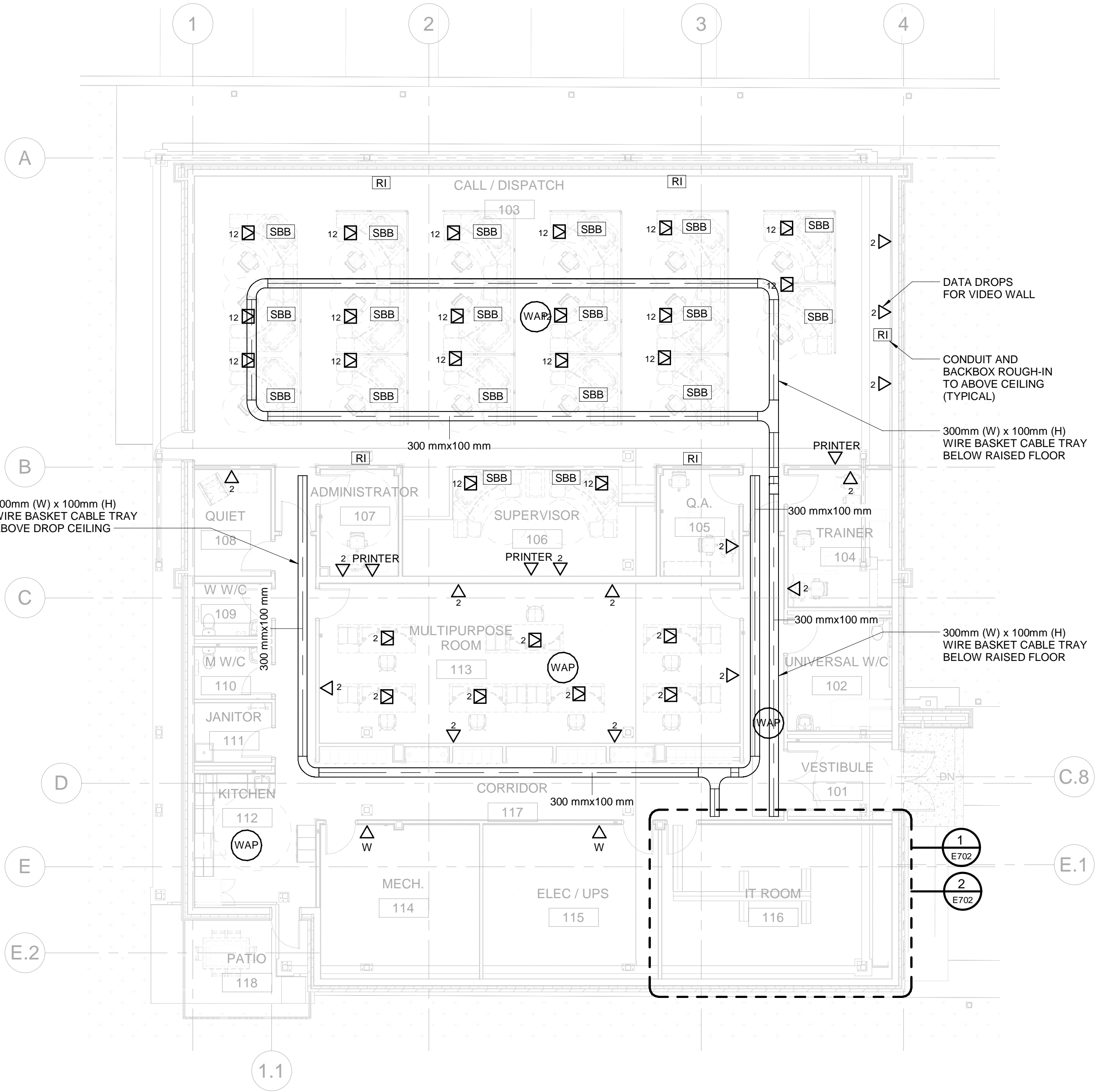


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5:	2024-12-13	IFP RE-SUBMISSION
4:	2024-11-29	ISSUED FOR OWNER REVIEW
3:	2024-10-30	ISSUED FOR PERMIT
2:	2024-08-30	ISSUED FOR 30% CD
1:	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description

Project Number : <b>60686829</b>		Project Manager :	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target :		IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>NT</b>	Date (yyyy-mm-dd) :		
Drawn : <b>IV</b>	Date (yyyy-mm-dd) :		
Reviewed : <b>WH</b>	Date (yyyy-mm-dd) :		
Checked : <b>WH</b>	Date (yyyy-mm-dd) :		
Approved : <b>WH</b>	Date (yyyy-mm-dd) :		





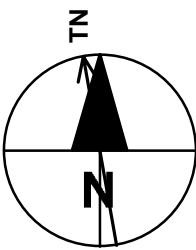
2 GROUND FLOOR COMMUNICATIONS PLAN  
1 : 100



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-11-29	90% DOCUMENTS
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
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Revision History

Filename:	Version:
60686829	2020.2.5.

Project Number:	Project Manager:
60686829	

Project Administrator:	BIM/VDC Manager:

Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):

Designed:	Date (yyyy-mm-dd):
HB	

Drawn:	Date (yyyy-mm-dd):
HB	

Reviewed:	Date (yyyy-mm-dd):
TM	

Checked:	Date (yyyy-mm-dd):
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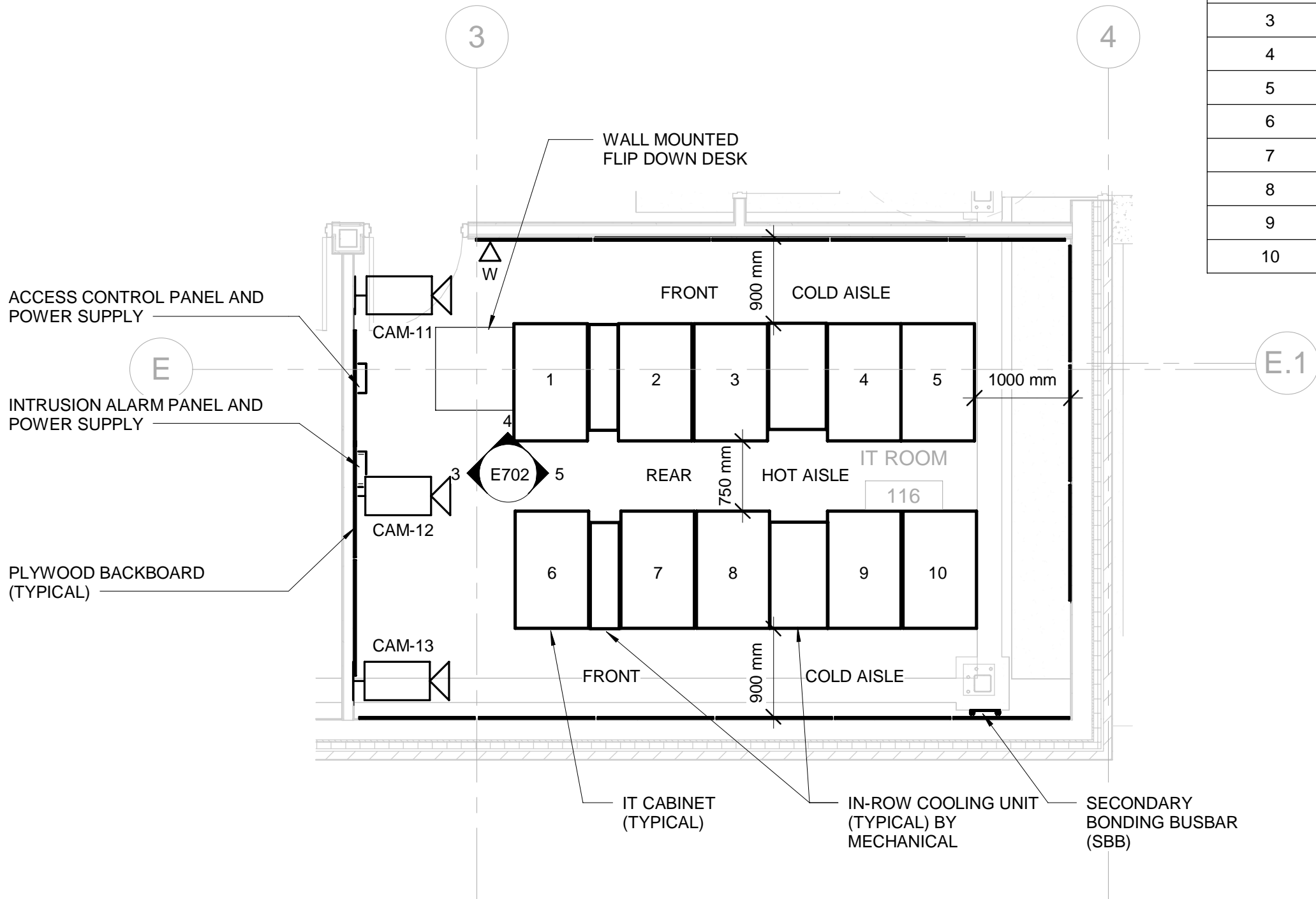
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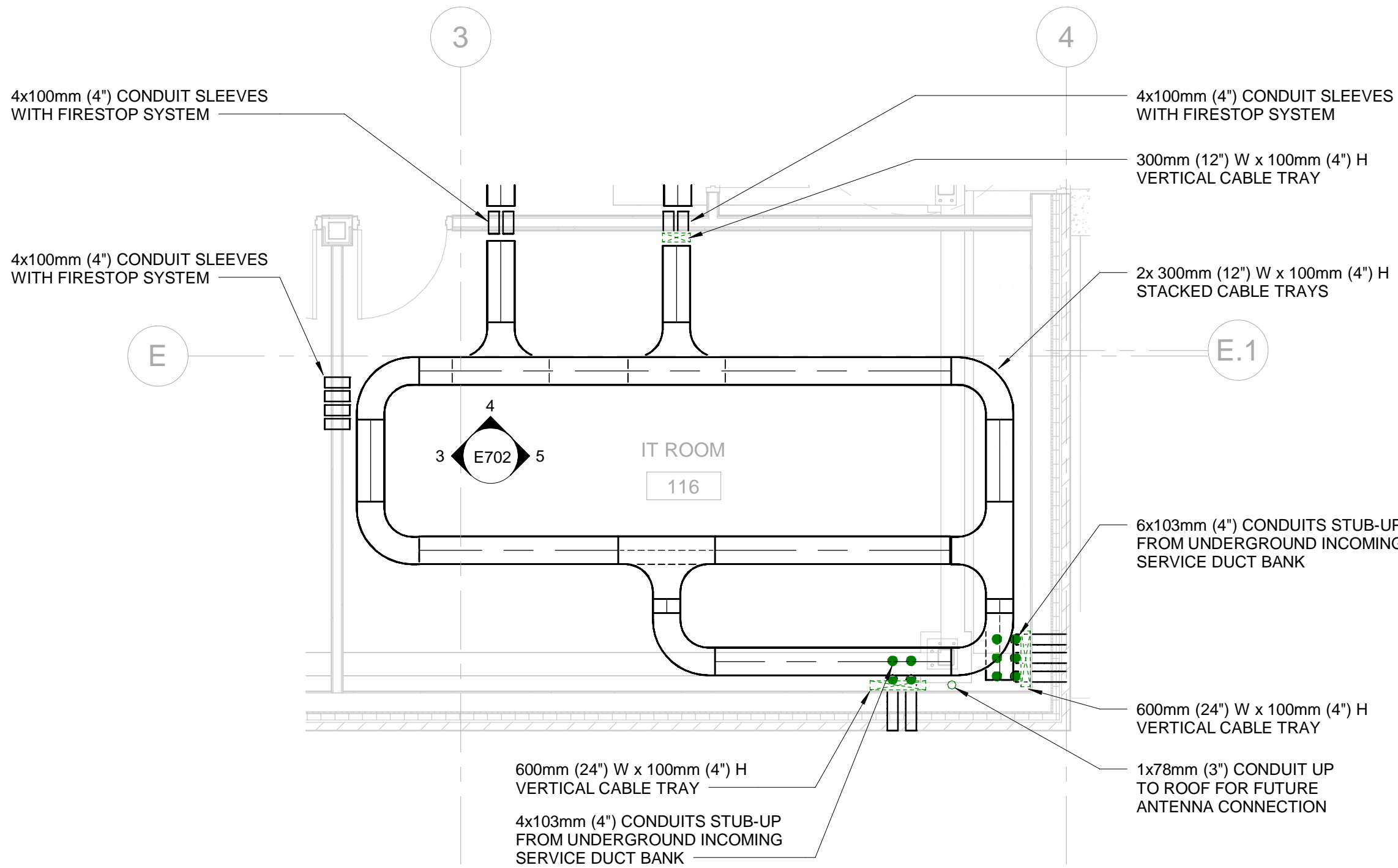
GROUND FLOOR  
COMMUNICATIONS PLAN

Page Size:	Sheet:	Rev:
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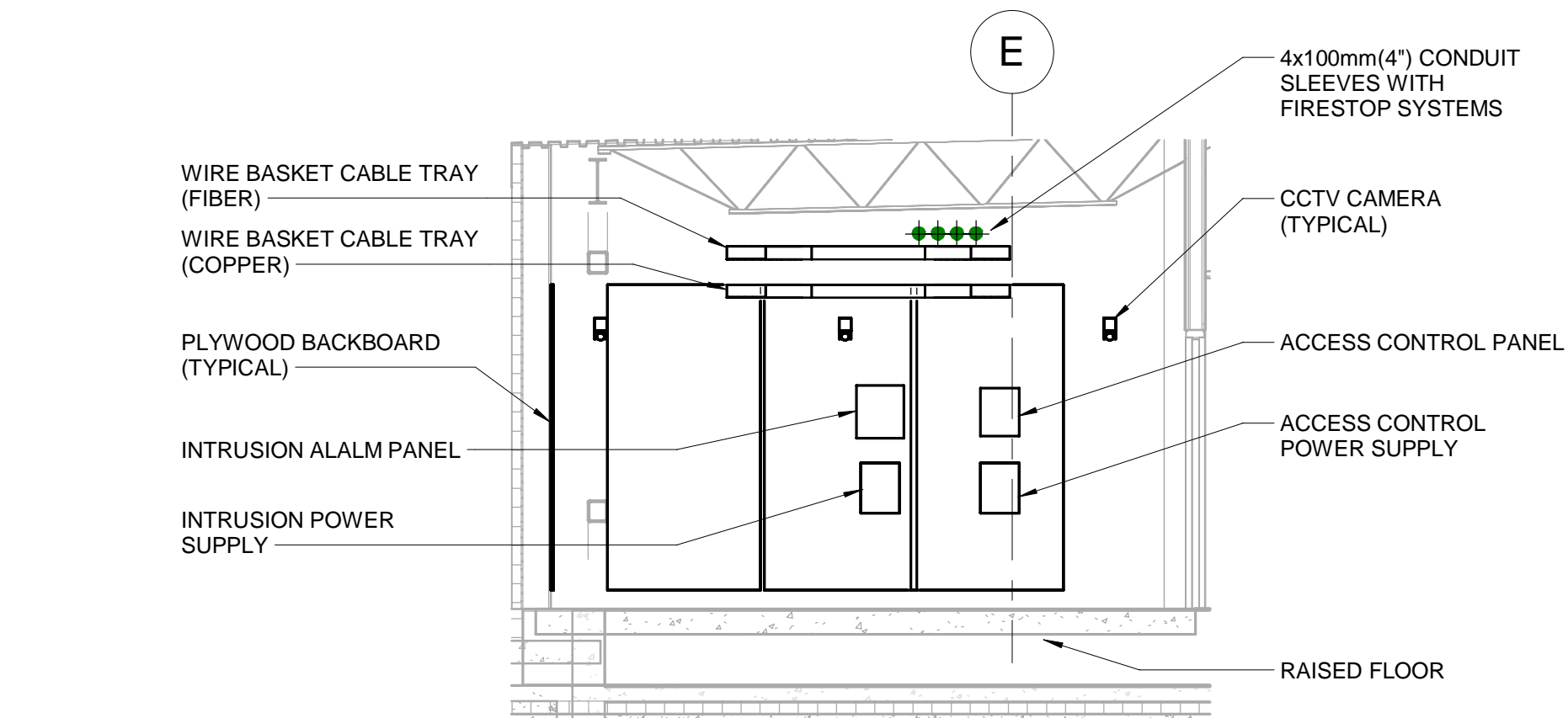


1 ENLARGED IT ROOM (116) LAYOUT  
1 : 50

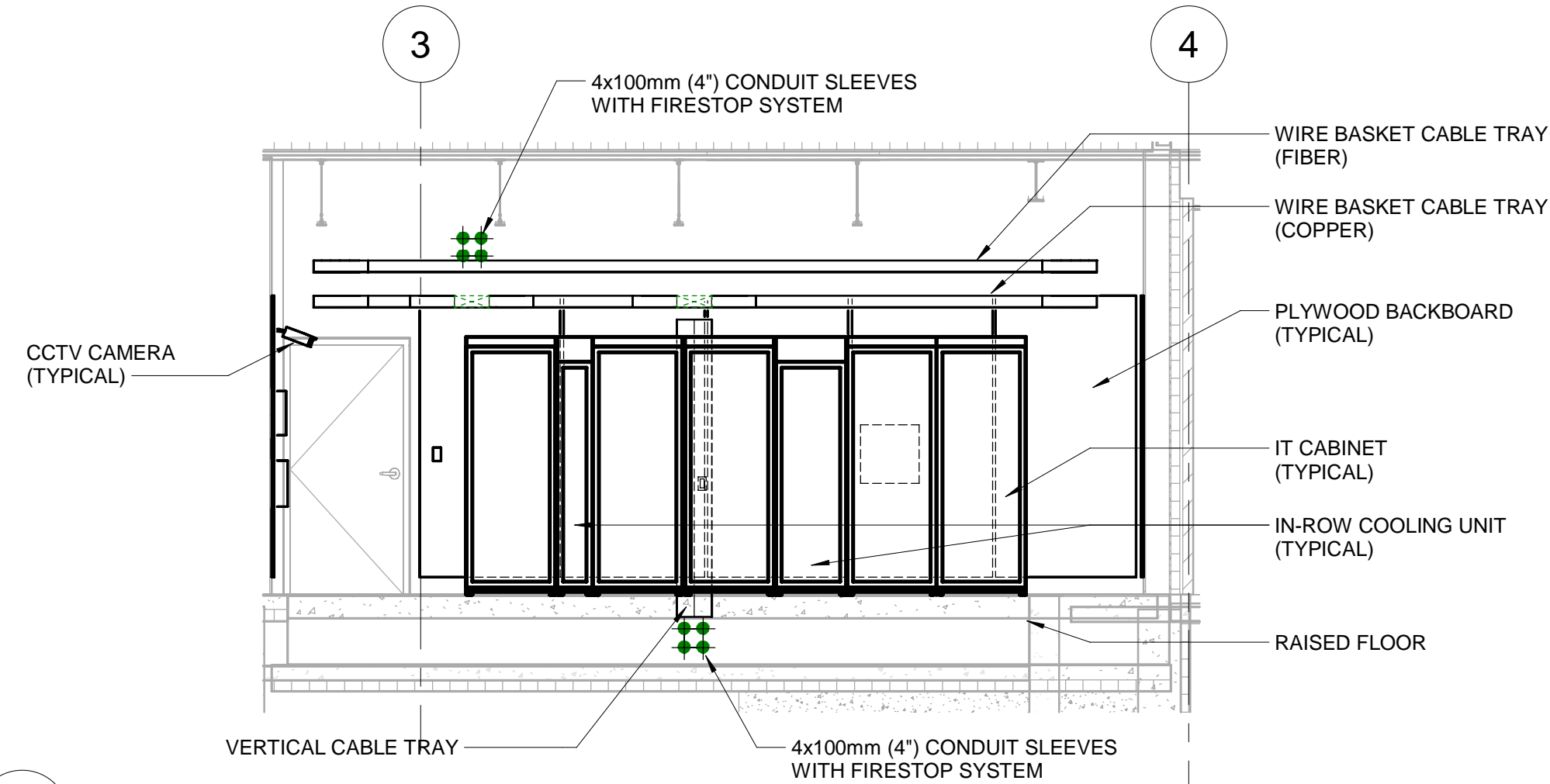


2 ENLARGED IT ROOM (116) PATHWAYS LAYOUT  
1 : 50

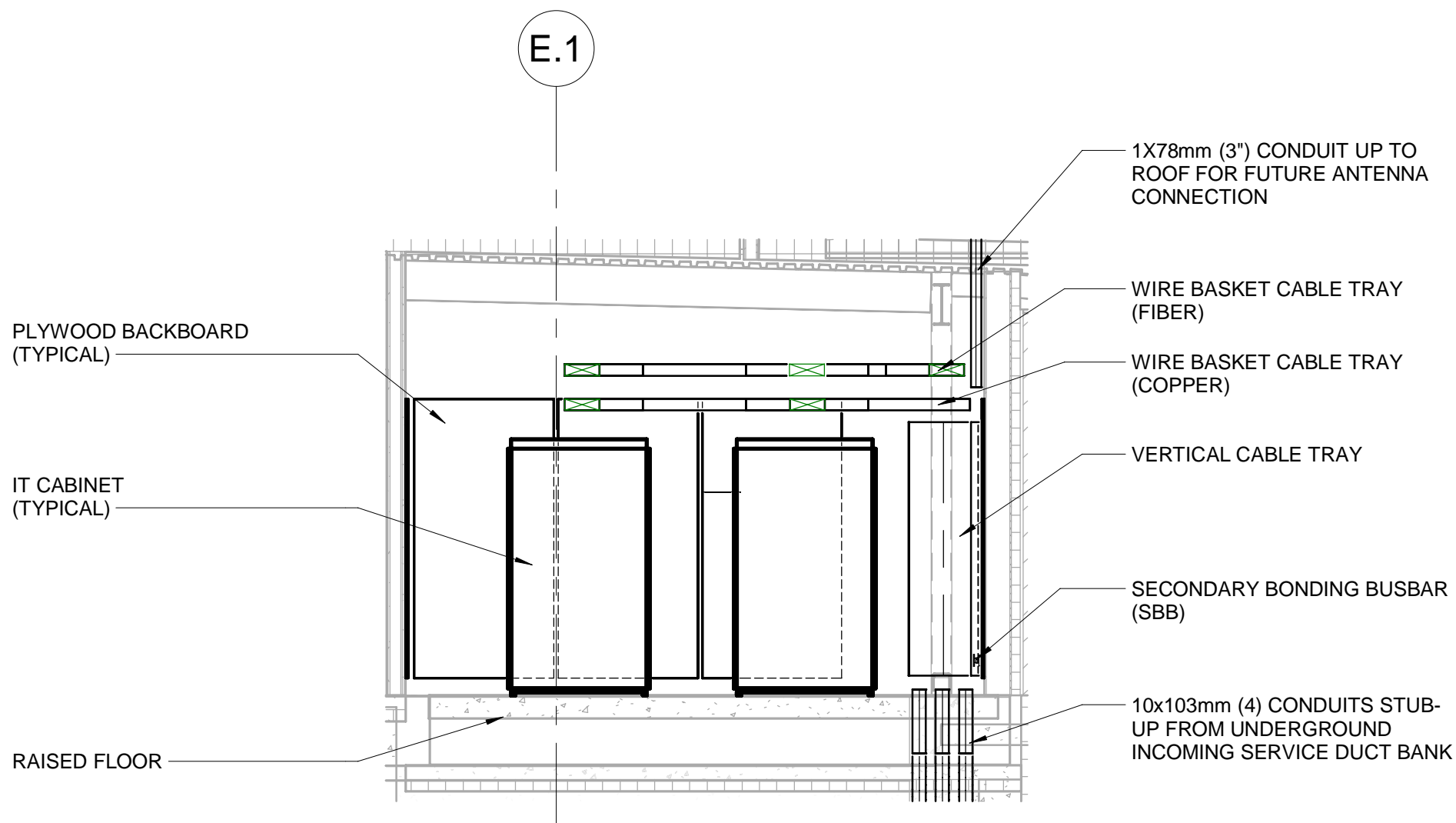
CABINET #	CABINET NAME	MAX CONNECT LOAD (kW)	POWER RECEPTACLES (UPS #1)	POWER RECEPTACLES (UPS #2)
1	SWITCHING	14	2 x L21-30R	2 x L21-30R
2	SERVERS	6.4	1 x L21-30R	1 x L21-30R
3	NG911	3.5	2 x L5-20R	2 x L5-20R
4	RADIO 1	2.7	2 x L5-20R	2 x L5-20R
5	RADIO 2	1.3	1 x L5-20R	1 x L5-20R
6	VERSATERM	4.8	1 x L21-30R	1 x L21-30R
7	FUTURE	7	1 x L21-30R	1 x L21-30R
8	FUTURE	7	1 x L21-30R	1 x L21-30R
9	FUTURE	7	1 x L21-30R	1 x L21-30R
10	FUTURE	7	1 x L21-30R	1 x L21-30R



3 IT ROOM ELEVATION VIEW 1  
1 : 50



4 IT ROOM ELEVATION VIEW 2  
1 : 50



5 IT ROOM ELEVATION VIEW 3  
1 : 50



Mark	Date	Description
4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS

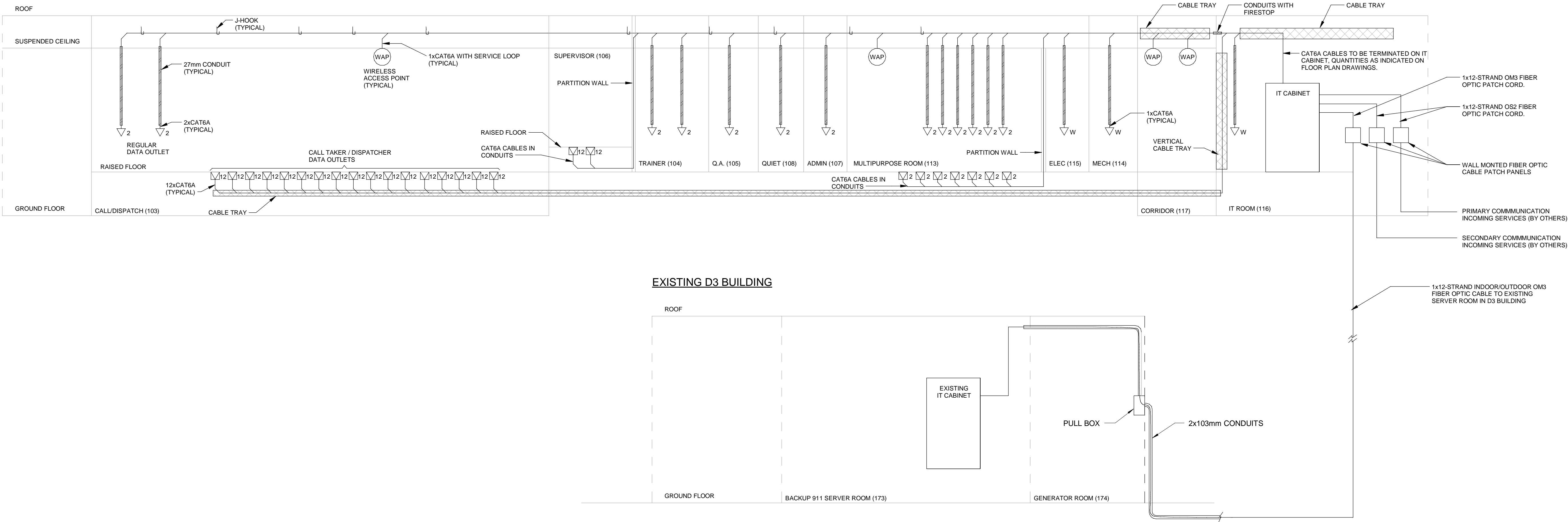
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60686829	2020.2.5.
Project Number	Project Manager
Project Administrator	BIM/VDC Manager
Sustainability Target	IPMS 1 (m²) : IPMS 2 (m²) :
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Approved	Date (yyyy-mm-dd) :
TM	



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NEW 911 BACKUP DISPATCH BUILDING



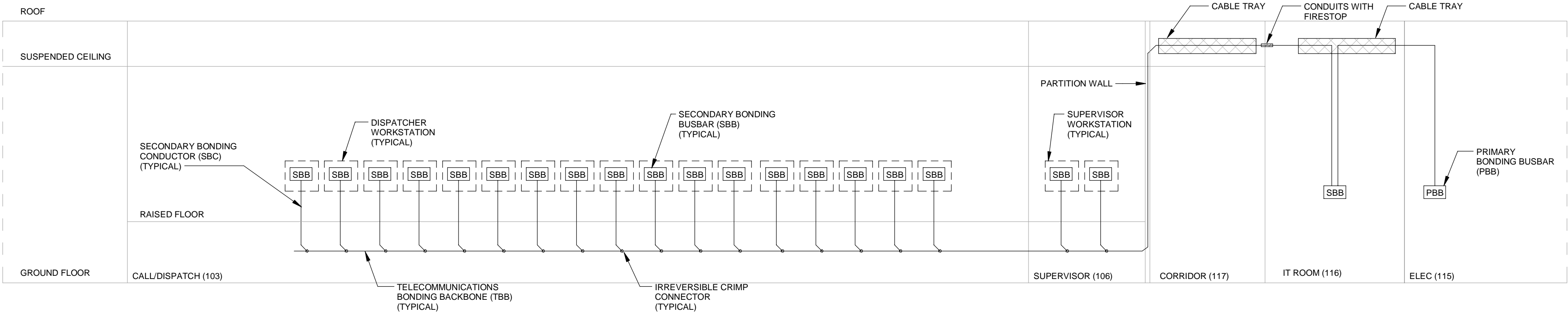
1 NETWORK COMMUNICATION RISER DIAGRAM  
N.T.S.

LEGEND AND NOTES:

PBB: PRIMARY BONDING BUSBAR  
SBB: SECONDARY BONDING BUSBAR  
SBC: SECONDARY BONDING CONDUCTOR  
TBB: TELECOMMUNICATIONS BONDING BACKBONE  
TBC: TELECOMMUNICATIONS BONDING CONDUCTOR  
BBC: BACKBONE BONDING CONDUCTOR

TABLE: TELECOMMUNICATIONS BONDING BACKBONE (TBB) / BACKBONE BONDING CONDUCTOR (BBC) - CONDUCTOR SIZE VS. LENGTH

TBB/BCC LINEAR LENGTH - M (FT.)	CONDUCTOR SIZE (AWG)
LESS THAN 4 (13)	6
4 - 6 (14 - 20)	4
6 - 8 (21 - 26)	3
8 - 10 (27 - 33)	2
10 - 13 (34 - 41)	1
13 - 16 (42 - 52)	1/0
16 - 20 (53 - 66)	2/0
20 - 26 (67 - 84)	3/0
26 - 32 (85 - 105)	4/0 KCML
32 - 38 (106 - 125)	250 KCML
38 - 46 (126 - 150)	300 KCML
46 - 53 (151 - 175)	350 KCML
53 - 76 (176 - 250)	500 KCML
76 - 91 (251 - 300)	600 KCML
GREATER THAN 91 (301)	750 KCML



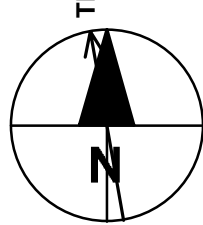
2 COMMUNICATION GROUNDING DIAGRAM  
N.T.S.

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NORTH:



Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

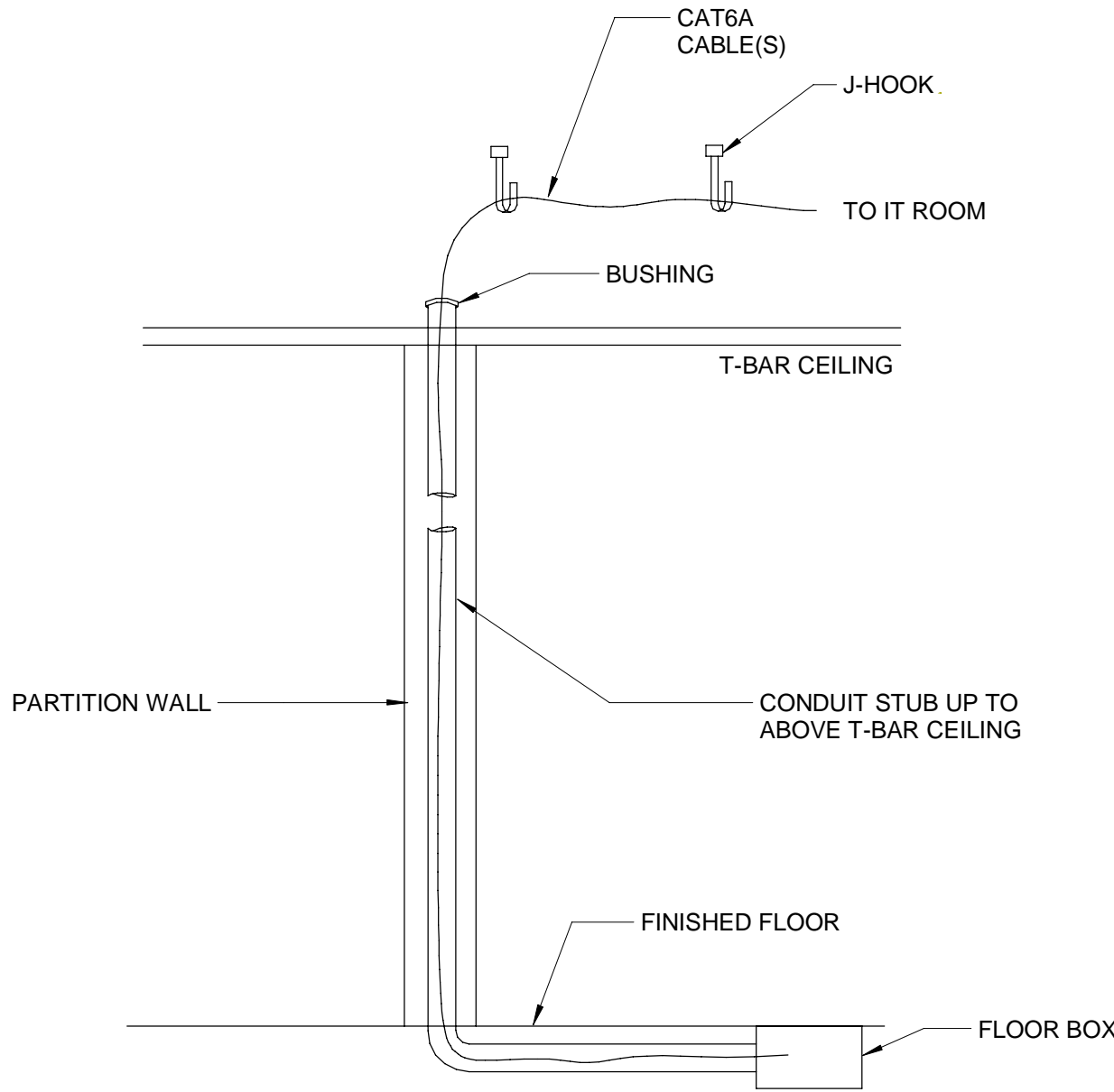
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Owner's Contract Number: 987654321

6	2025-01-27	ISSUED FOR TENDER
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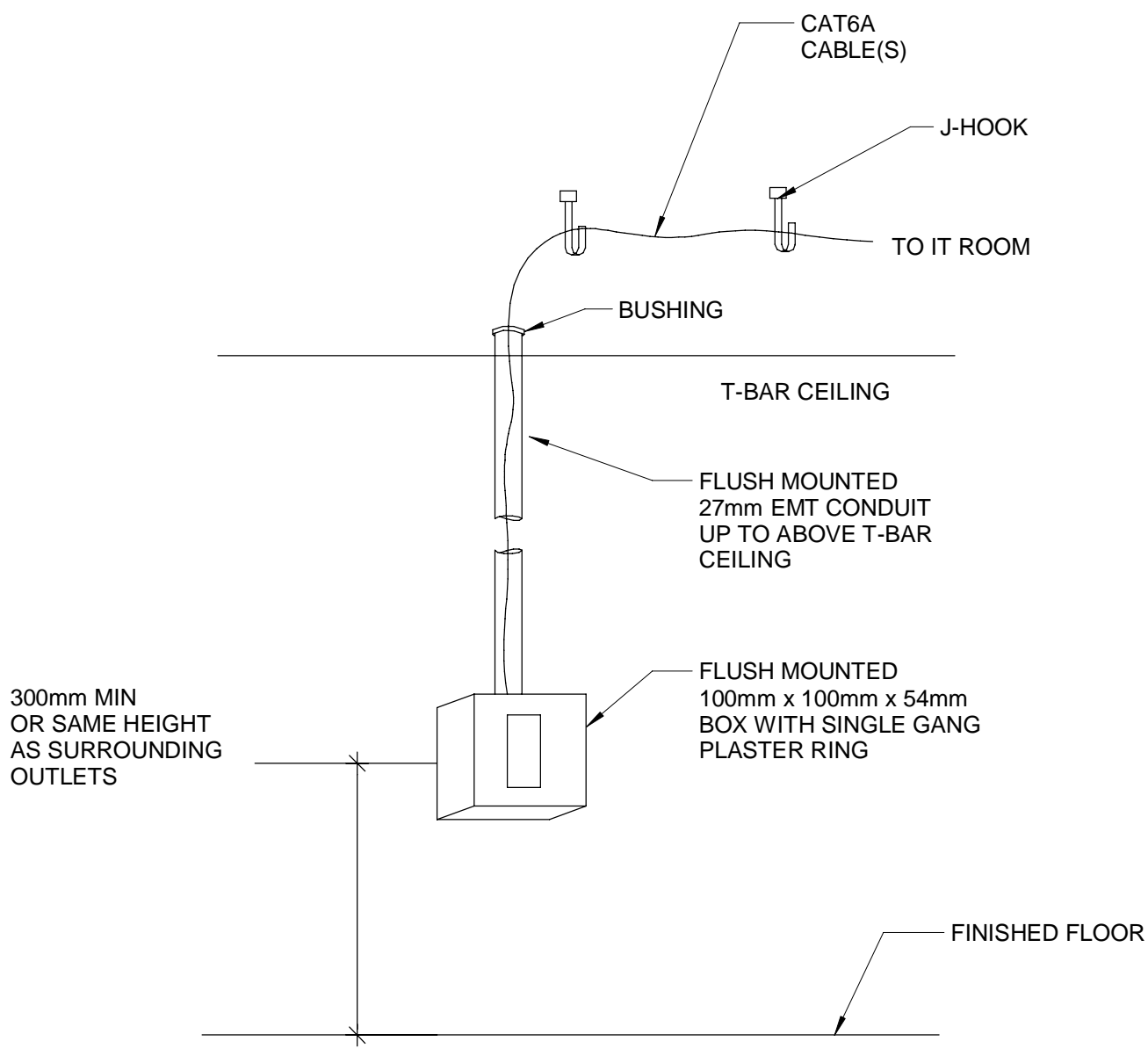
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Project Number:	60686829	Project Manager:
Project Administrator:		BIM/VDC Manager:
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	HB	Date (yyyy-mm-dd):
Drawn:	HB	Date (yyyy-mm-dd):
Reviewed:	TM	Date (yyyy-mm-dd):
Checked:	TM	Date (yyyy-mm-dd):
Approved:	TM	Date (yyyy-mm-dd):
Title:	COMMUNICATIONS RISER DIAGRAMS	

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Sheet: 6  
Rev: 6  
of: 6

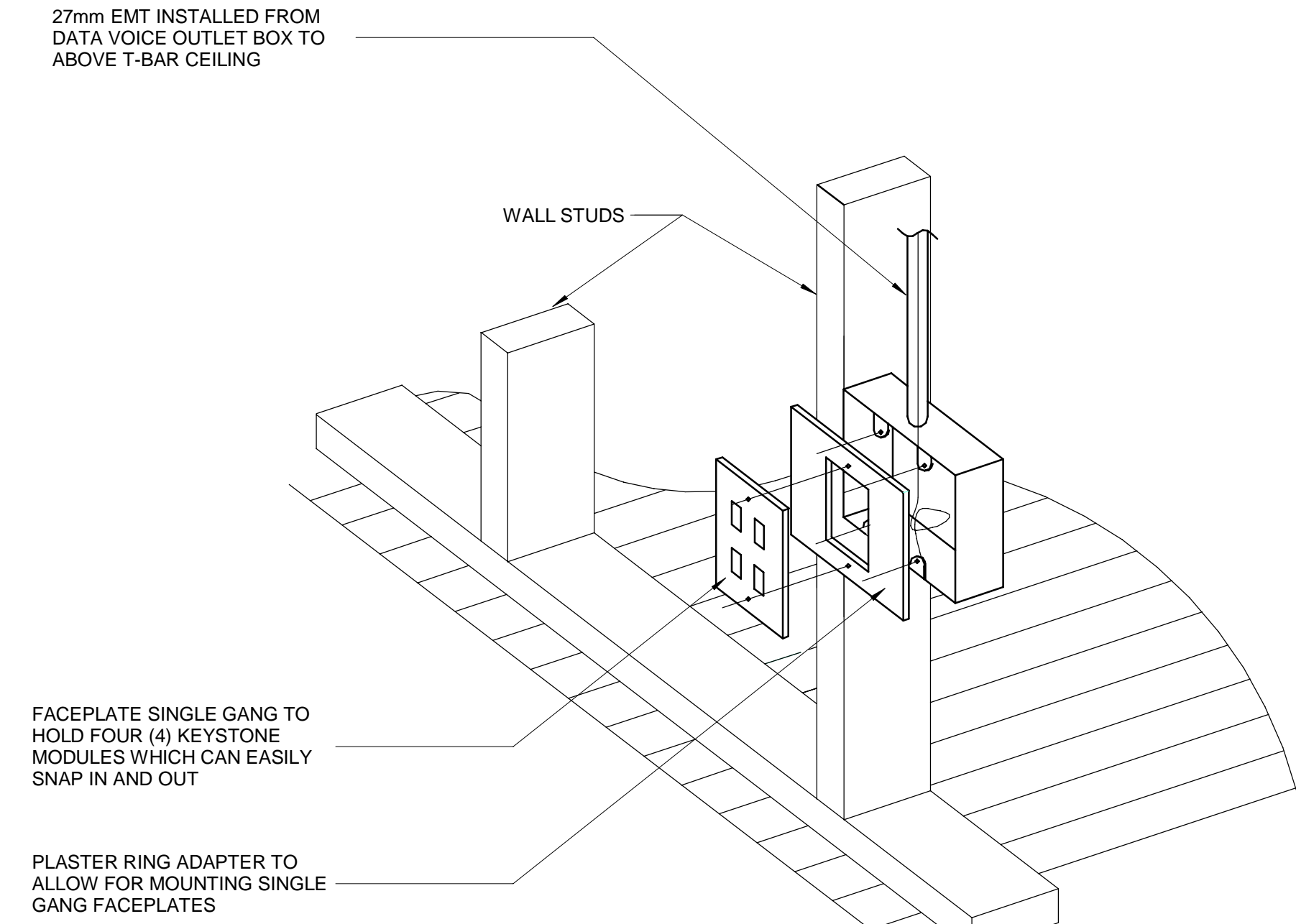




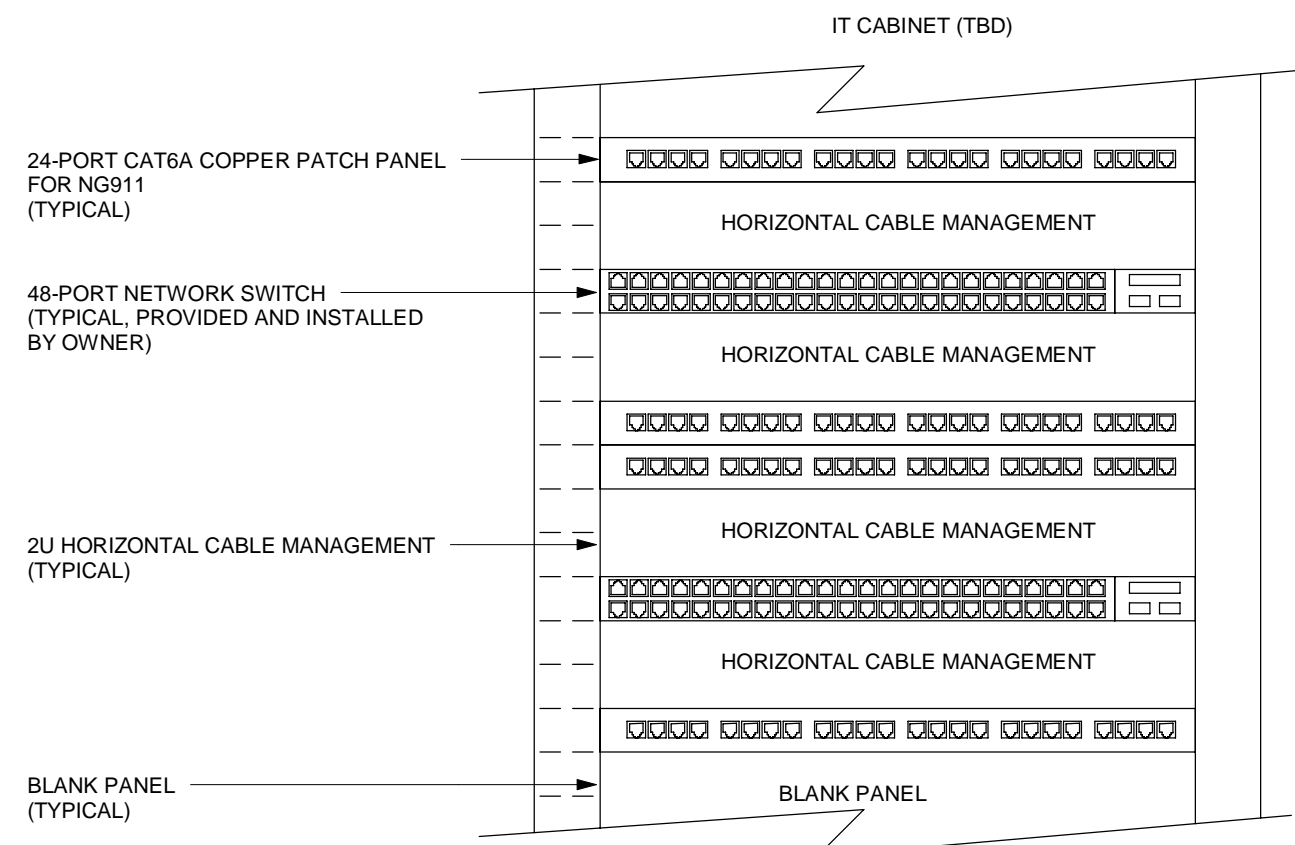
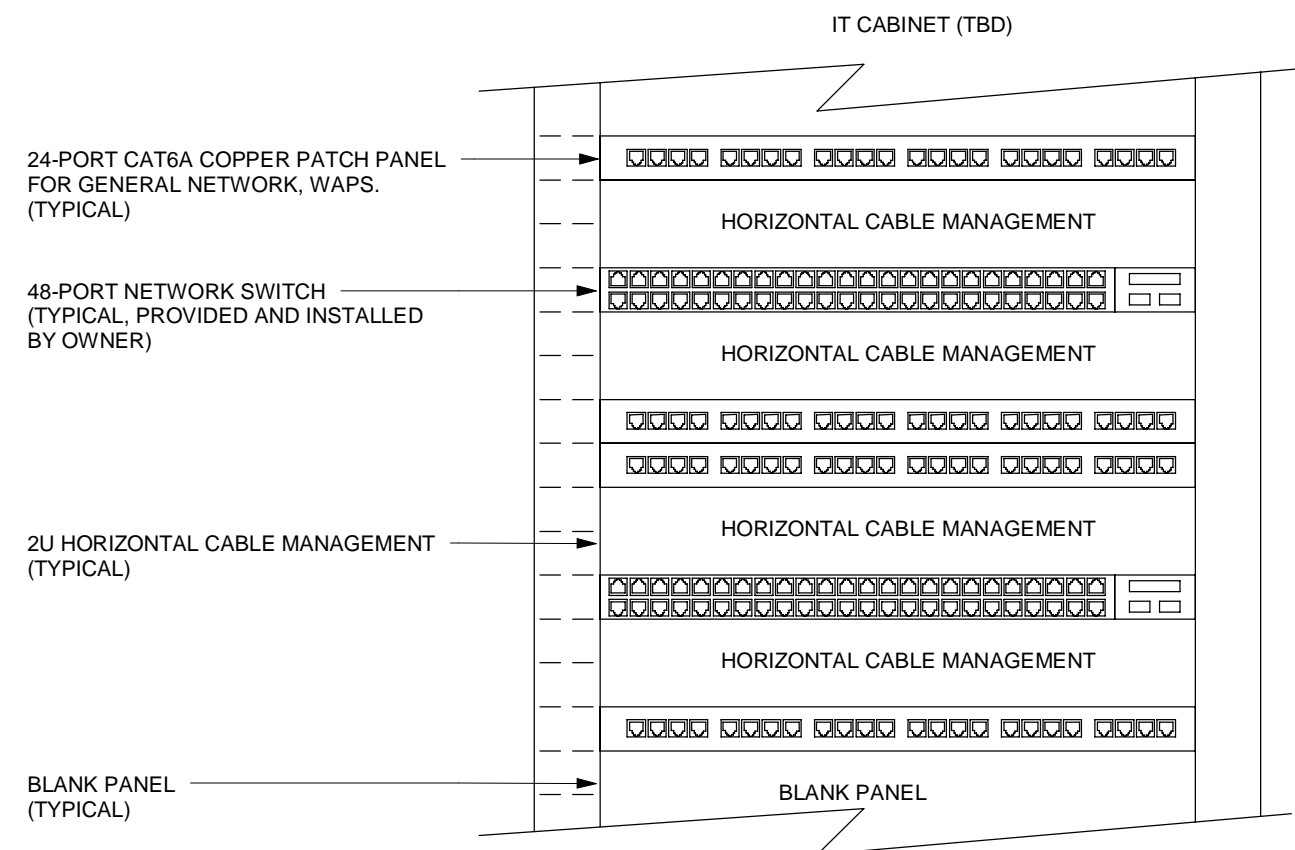
1 TYPICAL FLOOR BOX DETAIL  
N.T.S.



2 TYPICAL FLUSH MOUNTED OUTLET BOX DETAIL  
N.T.S.

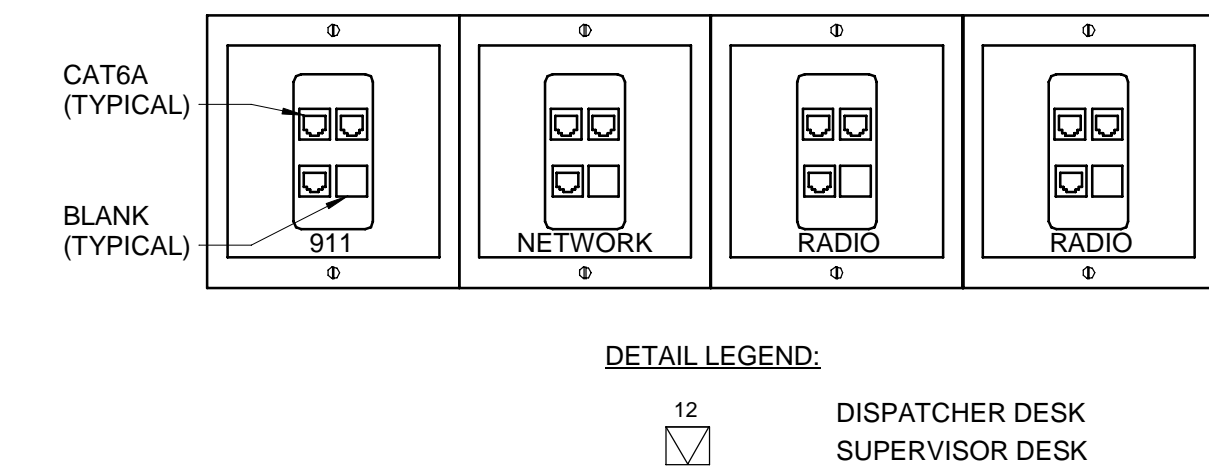
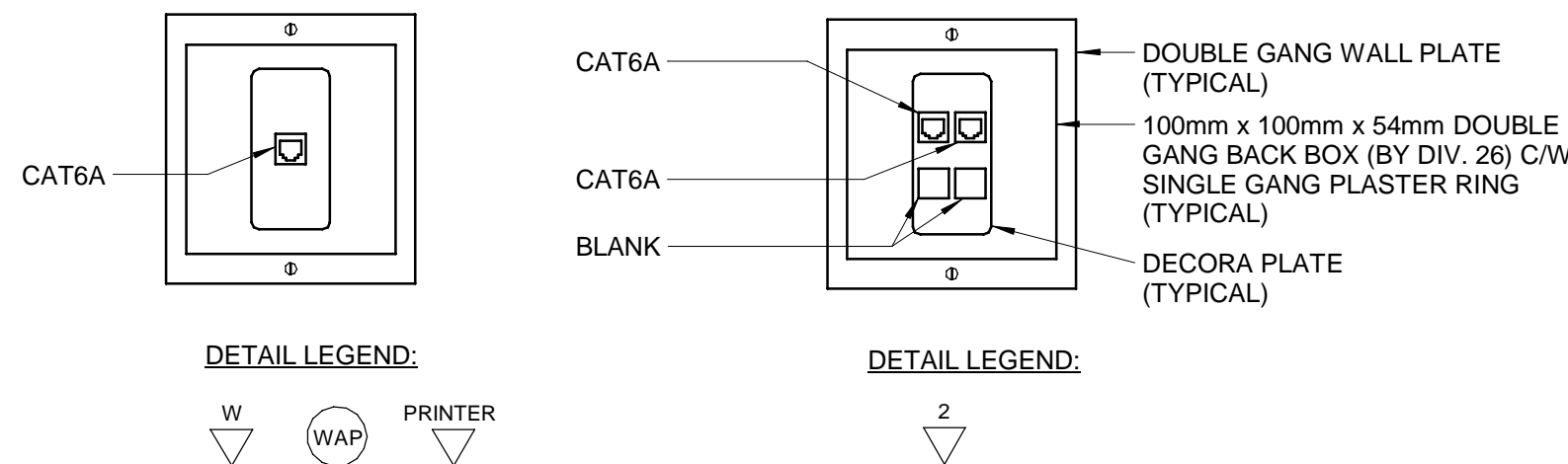
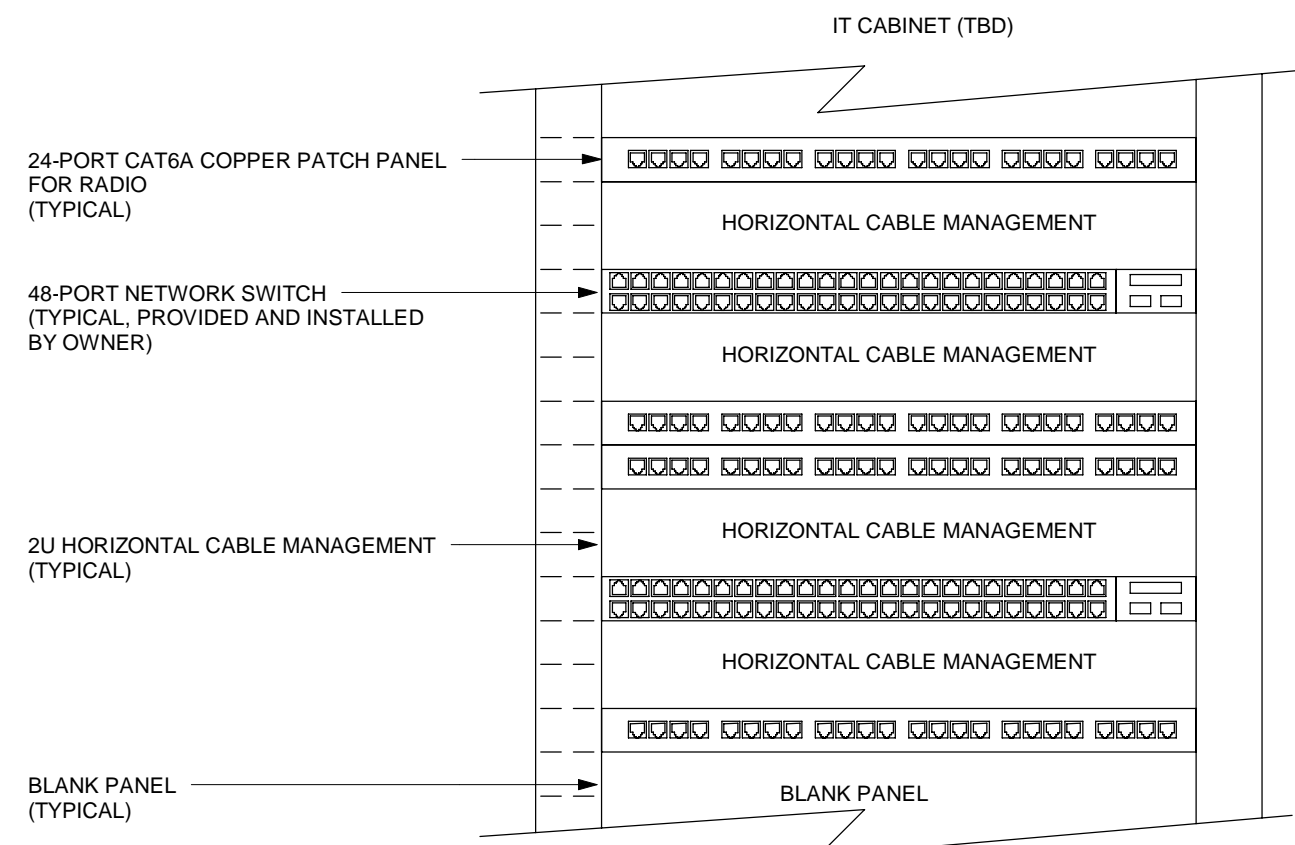


3 TYPICAL FLUSH MOUNTED OUTLET DETAIL  
N.T.S.



4 IT ROOM IT CABINETS ELEVATION VIEW  
N.T.S.

- GENERAL NOTES:**
- CONTRACTOR TO PROVIDE AND INSTALL NEW COPPER PATCH PANELS, AND TERMINATE NEW CAT6A CABLES WITH ASSOCIATED ACCESSORIES IN COMMUNICATIONS RACK. COORDINATE LOCATION/SPACE WITH OWNER ON SITE.
  - PROVIDE SUFFICIENT PATCH PANELS TO ALLOW FOR ALL TERMINATIONS PLUS 20% UNUSED SPARE PORTS FOR FUTURE GROWTH.



- NOTES:**
- THESE OUTLET DETAILS REGARDING SUPERVISOR DESKS, DISPATCHER DESKS AND CALL TAKER DESKS ARE FOR DIAGRAMMATIC PURPOSES AND FOR INDICATING THE CABLE NUMBERS GOING TO EACH RACK. THESE OUTLETS WILL BE INTEGRATED WITH THE FURNITURE PANELS.

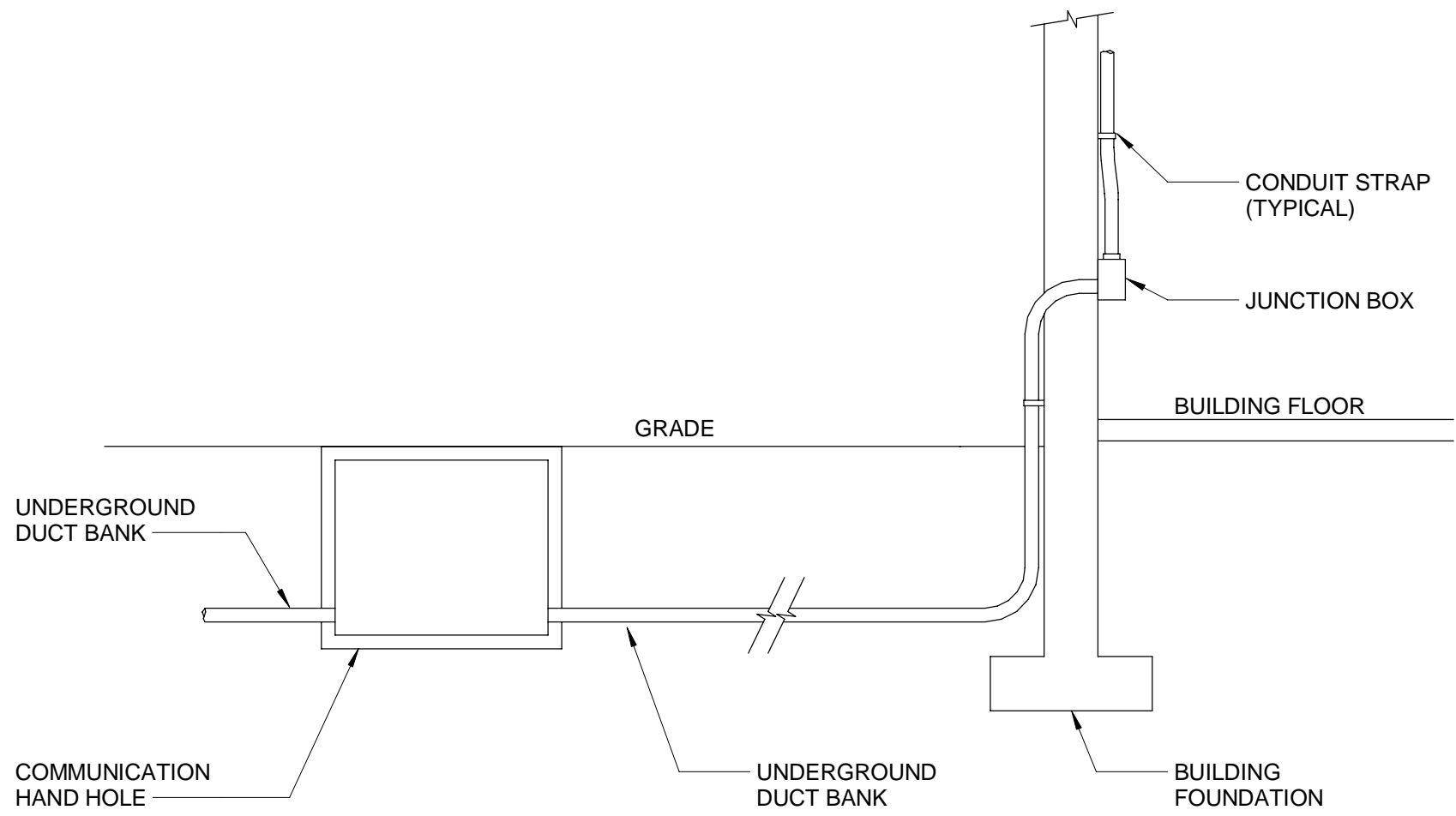
5 TYPICAL COMMUNICATIONS OUTLET DETAIL  
N.T.S.



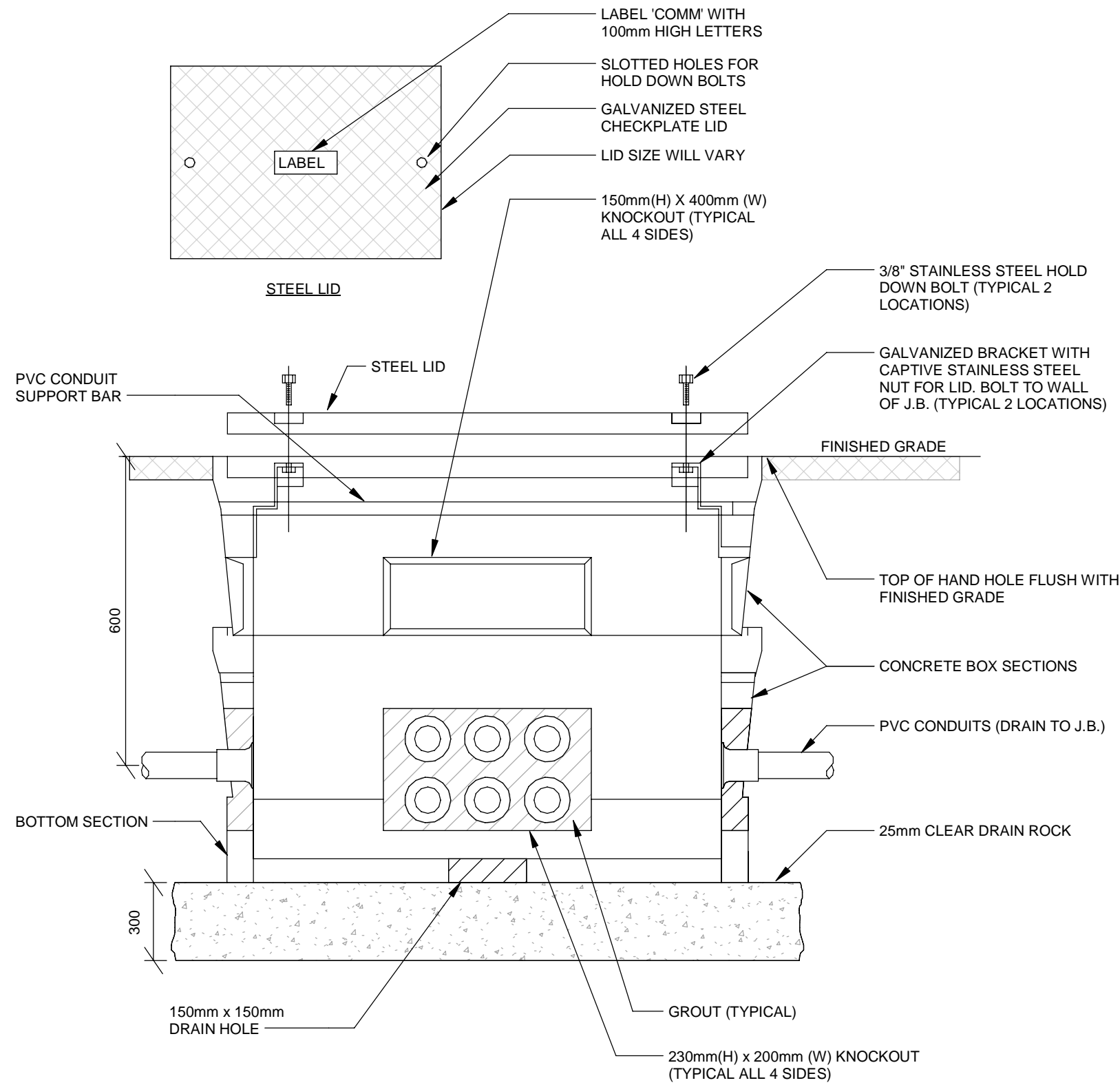
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Reviewed :	TM	Date (yyyy-mm-dd) :
Checked :	TM	Date (yyyy-mm-dd) :
Approved :	TM	Date (yyyy-mm-dd) :
Title :		





1 TYPICAL CONDUIT BUILDING ENTRY DETAIL  
N.T.S.



2 TYPICAL CONCRETE HAND HOLE DETAIL  
N.T.S.



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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-11-29	90% DOCUMENTS
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD

Mark	Date	Description
------	------	-------------

Revision History

Filename:	Version:
60686829	2020.2.5.

Project Number	Project Manager :	
60686829		
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed :	Date (yyyy-mm-dd) :	
Designer		
Drawn :	Date (yyyy-mm-dd) :	
Author		
Reviewed :	Date (yyyy-mm-dd) :	
Checked :	Date (yyyy-mm-dd) :	
Checker		
Approved :	Date (yyyy-mm-dd) :	
Approver		
Title :		

COMMUNICATIONS DETAILS 2/2

Page Size:	Sheet:	Rev:
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Scale:		Sheet:
N.T.S.		of:









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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: **60686829** Owner's Contract Number: **987654321**

4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS
Mark	Date	Description

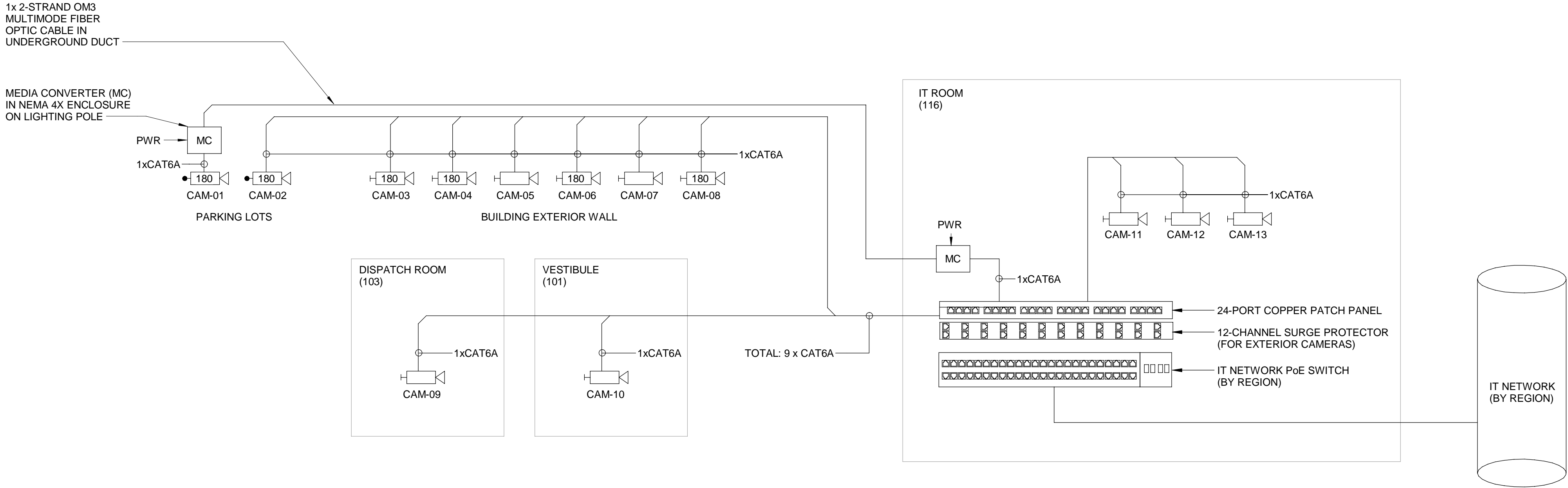
Revision History		
Filename:		Version: <b>2020.2.5.</b>
Project Number : <b>60686829</b>		Project Manager :
Project Administrator :		BIM/VDC Manager :
Sustainability Target :	IPMS 1 ( m <sup>2</sup> ) :	IPMS 2 ( m <sup>2</sup> ) :
Designed : <b>HB</b>	Date (yyyy-mm-dd) :	
Drawn: <b>HB</b>	Date (yyyy-mm-dd) :	
Reviewed : <b>TM</b>	Date (yyyy-mm-dd) :	
Checked : <b>TM</b>	Date (yyyy-mm-dd) :	
Approved : <b>TM</b>	Date (yyyy-mm-dd) :	

**CCTV RISER DIAGRAM AND SCHEDULE**

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Scale:		Sheet:
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**GENERAL NOTES:**

1. ALL DEVICES CABLING SHALL BE WIRED IN CONDUIT OR CABLE TRAY SYSTEMS.
2. ALL CONDUITS, BACKBOXES AND JUNCTION BOXES, FIRE STOPS SHALL BE PROVIDED AND INSTALLED BY DIV.26 ELECTRICAL CONTRACTOR.
3. ALL CONDUITS SHALL BE FILLED AT 40% MAXIMUM OF USABLE SECTIONAL AREA, MINIMUM CONDUIT SIZE WHERE NOT INDICATED SHALL BE 27mm.
4. PULL BOXES SHALL BE PROVIDED A MINIMUM OF EVERY 30 METERS WITH NO MORE THAN TWO 90 DEGREE BENDS.
5. THE MAXIMUM CABLE TRAY FILL RATIO SHALL BE 50%.
6. FIRE STOP SYSTEMS SHALL BE INSTALLED IN FIRE RATED WALLS WHERE CABLE TRAY MUST PENETRATE FIRE RATED WALLS.



**1 CCTV CAMERA RISER DIAGRAM**  
N.T.S.

**CCTV CAMERA SCHEDULE:**

CCTV CAMERA ID	CAMERA TYPE	ROOM NUMBER /LOCATION	CAMERA MANUFACTURER	CAMERA MODEL NUMBER	CAMERA LENS TYPE	CAMERA RESOLUTION	CAMERA MOUNTING HEIGHT	CAMERA MOUNTING	LAN ROOM	CABLES	CABLE RATED	SURGE PROTECTOR
CAM-01	OUTDOOR DOME FIXED	PARKING LOT	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	5000mm	POLE	IT ROOM	OM3 FIBER + CAT6A	INDOOR/OUTDOOR	YES
CAM-02	OUTDOOR DOME FIXED	PARKING LOT	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	5000mm	POLE	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-03	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	3000mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-04	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	3000mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-05	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3267-LVE	VARIFOICAL, 3 - 8mm	2592 x 1944 (5MP)	2500mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-06	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	3000mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-07	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3267-LVE	VARIFOICAL, 3 - 8mm	2592 x 1944 (5MP)	2500mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-08	OUTDOOR DOME FIXED	EXTERIOR WALL	AXIS	AXIS P3818-PVE (180°)	3.2mm	5120 x 2560 (13.1MP)	3000mm	EXTERIOR WALL	IT ROOM	CAT6A	INDOOR/OUTDOOR	YES
CAM-09	INDOOR DOME FIXED	DISPATCH ROOM (103)	AXIS	AXIS M4216-LV	VARIFOICAL, 3 - 6mm	2304 x 1728 (4MP)	2500mm	INTERIOR WALL	IT ROOM	CAT6A	PLENUM (CMP)	NO
CAM-10	INDOOR DOME FIXED	VESTIBULE (101)	AXIS	AXIS M4216-LV	VARIFOICAL, 3 - 6mm	2304 x 1728 (4MP)	2500mm	INTERIOR WALL	IT ROOM	CAT6A	PLENUM (CMP)	NO
CAM-11	INDOOR DOME FIXED	IT ROOM (116)	AXIS	AXIS M4216-LV	VARIFOICAL, 3 - 6mm	2304 x 1728 (4MP)	2500mm	INTERIOR WALL	IT ROOM	CAT6A	PLENUM (CMP)	NO
CAM-12	INDOOR DOME FIXED	IT ROOM (116)	AXIS	AXIS M4216-LV	VARIFOICAL, 3 - 6mm	2304 x 1728 (4MP)	2500mm	INTERIOR WALL	IT ROOM	CAT6A	PLENUM (CMP)	NO
CAM-13	INDOOR DOME FIXED	IT ROOM (116)	AXIS	AXIS M4216-LV	VARIFOICAL, 3 - 6mm	2304 x 1728 (4MP)	2500mm	INTERIOR WALL	IT ROOM	CAT6A	PLENUM (CMP)	NO

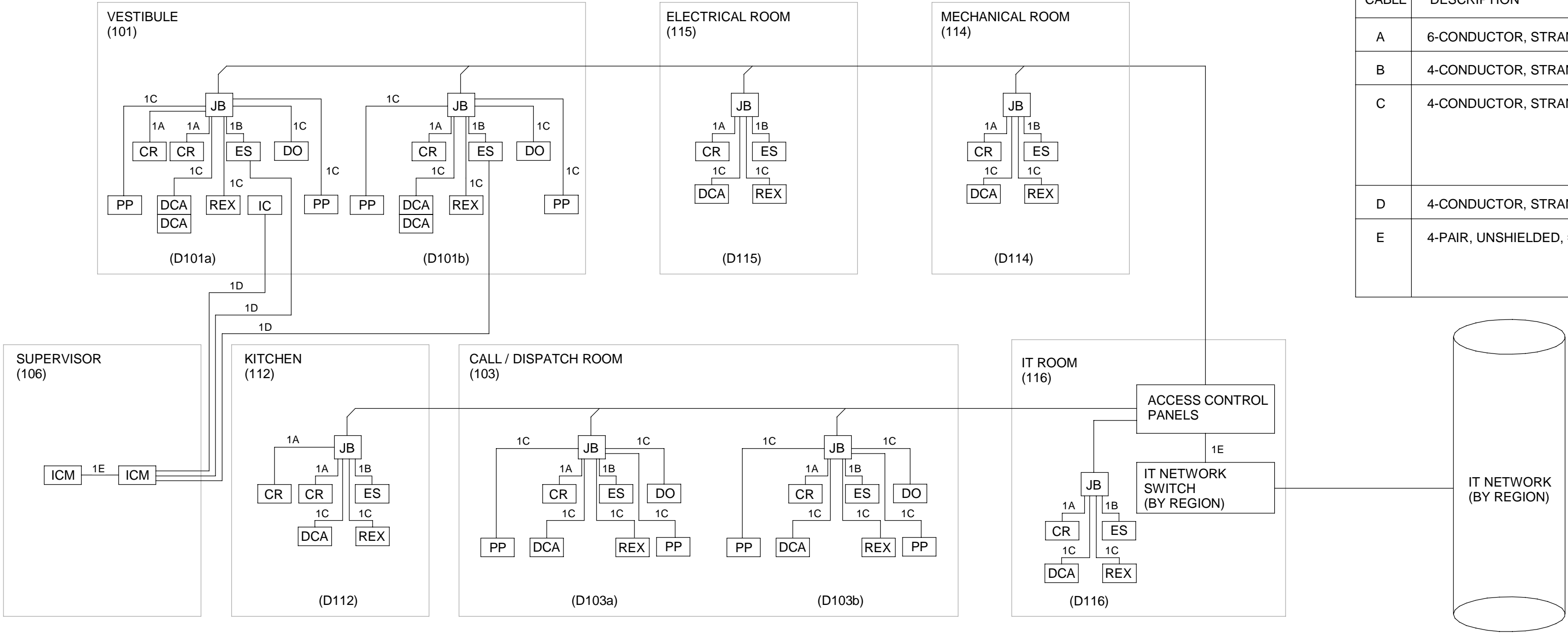
**2 CCTV CAMERA SCHEDULE**  
N.T.S.



- GENERAL NOTES:
1. ALL DEVICES CABLING SHALL BE WIRED IN CONDUIT OR CABLE TRAY SYSTEMS.
  2. ALL CONDUITS, BACKBOXES AND JUNCTION BOXES, FIRE STOPS SHALL BE PROVIDED AND INSTALLED BY DIV.16 ELECTRICAL CONTRACTOR.
  3. ALL CONDUITS SHALL BE FILLED AT 40% MAXIMUM OF USABLE SECTIONAL AREA. MINIMUM CONDUIT SIZE WHERE NOT INDICATED SHALL BE 27mm.
  4. PULL BOXES SHALL BE PROVIDED A MINIMUM OF EVERY 30 METERS WITH NO MORE THAN TWO 90 DEGREE BENDS.
  5. THE MAXIMUM CABLE TRAY FILL RATIO SHALL BE 50%.
  6. FIRE STOP SYSTEMS SHALL BE INSTALLED IN FIRE RATED WALLS WHERE CABLE TRAY MUST PENETRATE FIRE RATED WALLS.

WIRE & CABLES LEGEND:

CABLE	DESCRIPTION	APPLICATION
A	6-CONDUCTOR, STRANDED, SHIELDED, #22 AWG	CARD READER (CR)
B	4-CONDUCTOR, STRANDED, SHIELDED, #18 AWG	ELECTRIC STRIKE (ES)
C	4-CONDUCTOR, STRANDED, SHIELDED, #22 AWG	DOOR OPERATOR (DO), REQUEST-TO-EXIT SENSOR (REX), DOOR CONTACT (DCA, DCB), MOTION SENSOR (MS), ALARM KEYPAD (KP), DOOR PUSH PLATE (PP)
D	4-CONDUCTOR, STRANDED, SHIELDED, #18 AWG	INTERCOM (IC)
E	4-PAIR, UNSHIELDED, #23 AWG CAT6A	NETWORK CABLE, IP-CAMERA (CAM), WIFI (WAP) INTERCOM MASTER STATION (ICM)



1 ACCESS CONTROL & INTERCOM RISER DIAGRAM  
N.T.S.

ACCESS CONTROL SCHEDULE:

ROOM NUMBER	ROOM NAME	DOOR NUMBER	DOOR TYPE	CARD READER (CR)	ELECTRIC STRIKE (ES)	DOOR CONTACT (DCA)	REQUEST TO EXIT SENSOR (REX)	DOOR OPERATOR (DO)	PUSH-PLATE (PP)	INTERCOM (IC)	CONTROL PANEL
101	VESTIBULE	D101a	DOUBLE DOOR	2	1	2	1	1	2	1	IT ROOM
101	VESTIBULE	D101b	DOUBLE DOOR	1	1	2	1	1	2		IT ROOM
103	CALL / DISPATCH ROOM	D103a	SINGLE DOOR	1	1	1	1	1	2		IT ROOM
103	CALL / DISPATCH ROOM	D103b	SINGLE DOOR	1	1	1	1	1	2		IT ROOM
112	KITCHEN	D112	SINGLE DOOR	2	1	1	1				IT ROOM
114	MECHANICAL ROOM	D114	SINGLE DOOR	1	1	1	1				IT ROOM
115	ELECTRICAL / UPS ROOM	D115	SINGLE DOOR	1	1	1	1				IT ROOM
116	IT ROOM	D116	SINGLE DOOR	1	1	1	1				IT ROOM

2 ACCESS CONTROL SCHEDULE  
N.T.S.



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS

Mark	Date	Description
------	------	-------------

Revision History

Filename: 60686829  
Version: 2020.2.5.

Project Number: 60686829  
Project Manager:

Project Administrator: BIM/VDC Manager:

Sustainability Target: IPMS 1 (m²): IPMS 2 (m²):

Designed: HB  
Date (yyyy-mm-dd):

Drawn: HB  
Date (yyyy-mm-dd):

Reviewed: TM  
Date (yyyy-mm-dd):

Checked: TM  
Date (yyyy-mm-dd):

Approved: TM  
Date (yyyy-mm-dd):

Title:

ACCESS CONTROL RISER  
DIAGRAM AND SCHEDULE





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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS
Mark	Date	Description

Revision History		
Filename :	Version: 2020.2.5.	
Project Number :	Project Manager :	
60686829	BIM/VDC Manager :	
Project Administrator :		
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed :	Date (yyyy-mm-dd) :	
HB		
Drawn :	Date (yyyy-mm-dd) :	
HB		
Reviewed :	Date (yyyy-mm-dd) :	
TM		
Checked :	Date (yyyy-mm-dd) :	
TM		
Approved :	Date (yyyy-mm-dd) :	
TM		
Title :		

INTRUSION ALARM RISER  
DIAGRAM AND SCHEDULE

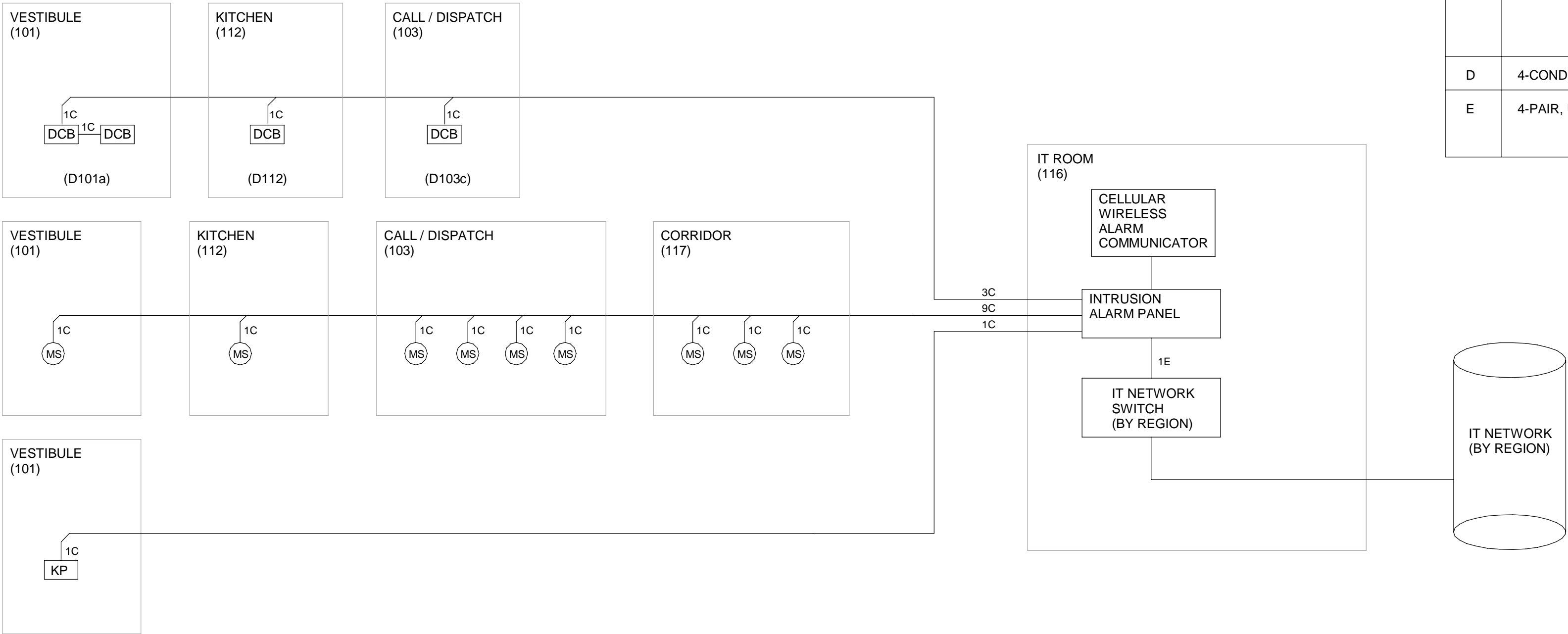
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ANSI D	E804	4
Scale:		Sheet:
N.T.S.		of:

GENERAL NOTES:

1. ALL DEVICES CABLING SHALL BE WIRED IN CONDUIT OR CABLE TRAY SYSTEMS.
2. ALL CONDUITS, BACKBOXES AND JUNCTION BOXES, FIRE STOPS SHALL BE PROVIDED AND INSTALLED BY DIV.16 ELECTRICAL CONTRACTOR.
3. ALL CONDUITS SHALL BE FILLED AT 40% MAXIMUM OF USABLE SECTIONAL AREA. MINIMUM CONDUIT SIZE WHERE NOT INDICATED SHALL BE 27mm.
4. PULL BOXES SHALL BE PROVIDED A MINIMUM OF EVERY 30 METERS WITH NO MORE THAN TWO 90 DEGREE BENDS.
5. THE MAXIMUM CABLE TRAY FILL RATIO SHALL BE 50%.
6. FIRE STOP SYSTEMS SHALL BE INSTALLED IN FIRE RATED WALLS WHERE CABLE TRAY MUST PENETRATE FIRE RATED WALLS.

WIRE & CABLES LEGEND:

CABLE	DESCRIPTION	APPLICATION
A	6-CONDUCTOR, STRANDED, SHIELDED, #22 AWG	CARD READER (CR)
B	4-CONDUCTOR, STRANDED, SHIELDED, #18 AWG	ELECTRIC STRIKE (ES)
C	4-CONDUCTOR, STRANDED, SHIELDED, #22 AWG	DOOR OPERATOR (DO), REQUEST-TO-EXIT SENSOR (REX), DOOR CONTACT (DCA, DCB), MOTION SENSOR (MS), ALARM KEYPAD (KP), DOOR PUSH PLATE (PP)
D	4-CONDUCTOR, STRANDED, SHIELDED, #18 AWG	INTERCOM (IC)
E	4-PAIR, UNSHIELDED, #23 AWG CAT6A	NETWORK CABLE, IP-CAMERA (CAM), WIFI (WAP)



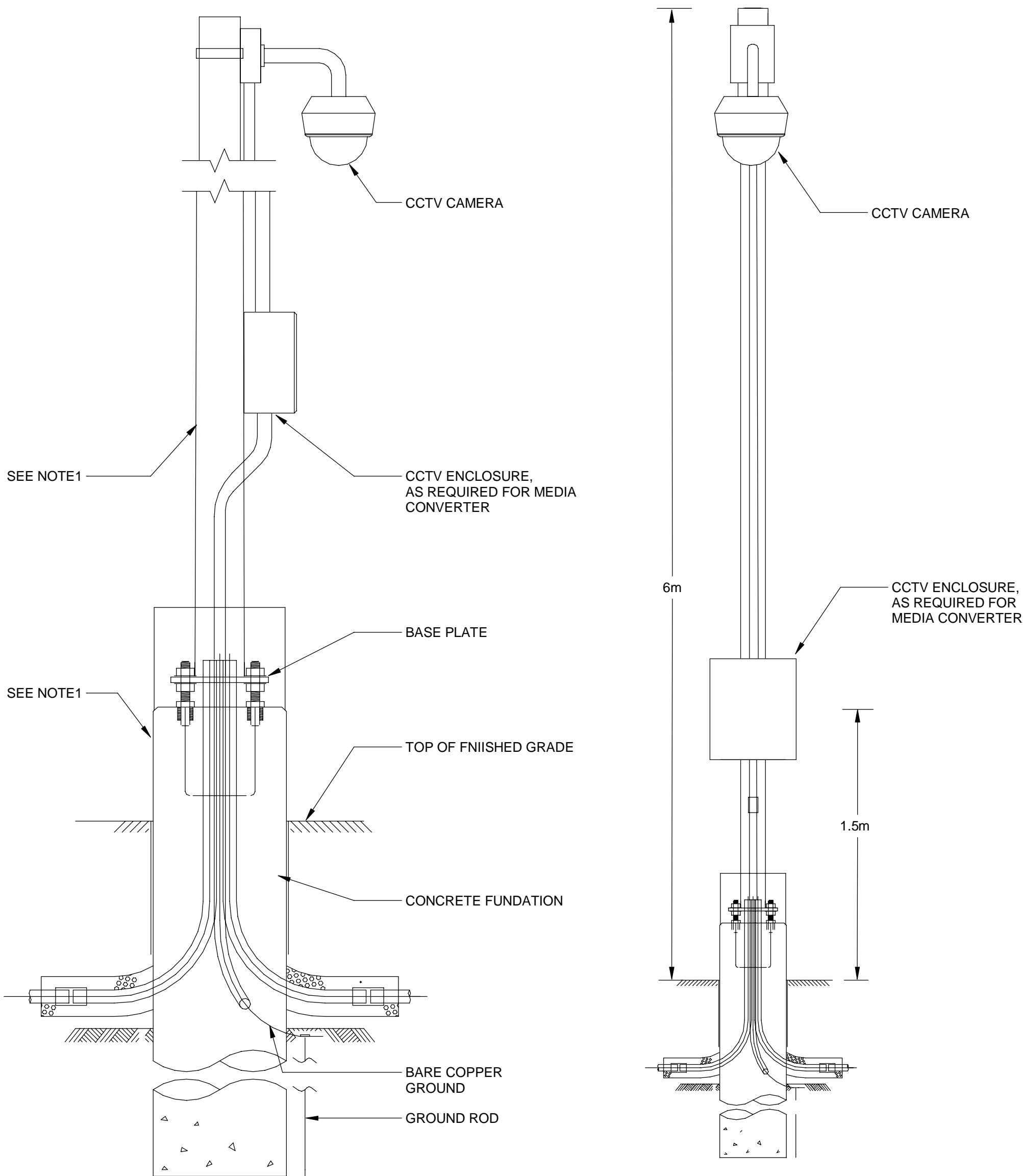
1 INTRUSION ALARM RISER DIAGRAM  
N.T.S.

INTRUSION ALARM SCHEDULE:

ROOM NUMBER	ROOM NAME	DOOR NUMBER	DOOR TYPE	DOOR CONTACT (DCB)	MOTION SENSOR (MS)	KEYPAD (KP)	LOCATION OF CONTROL PANEL
101	VESTIBULE	D101a	DOUBLE DOOR	2	1	1	IT ROOM
103	CALL DISPATCH	D103c	SINGLE DOOR	1	4		IT ROOM
112	KITCHEN	D112	SINGLE DOOR	1	1		IT ROOM
117	CORRIDOR				3		IT ROOM

2 INTRUSION ALARM SCHEDULE  
N.T.S.

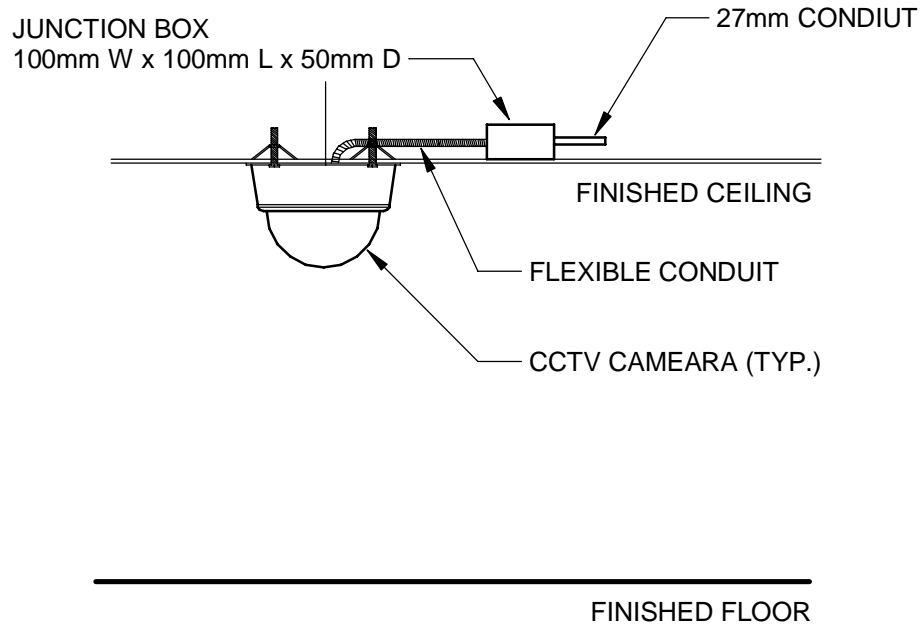




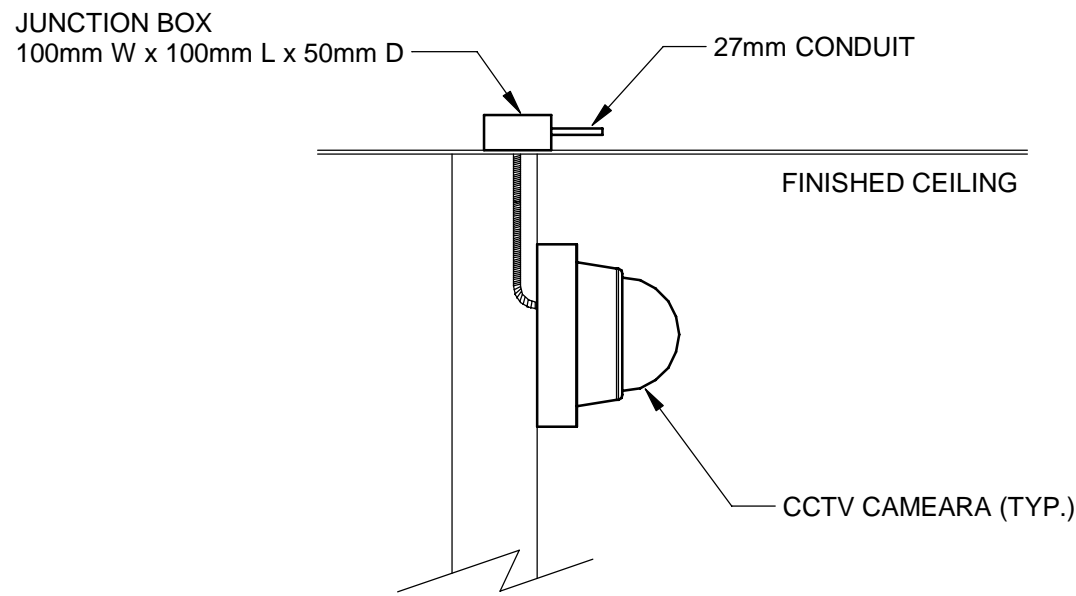
6 CCTV CAMERA POLE MOUNT DETAILS  
N.T.S.

NOTES:

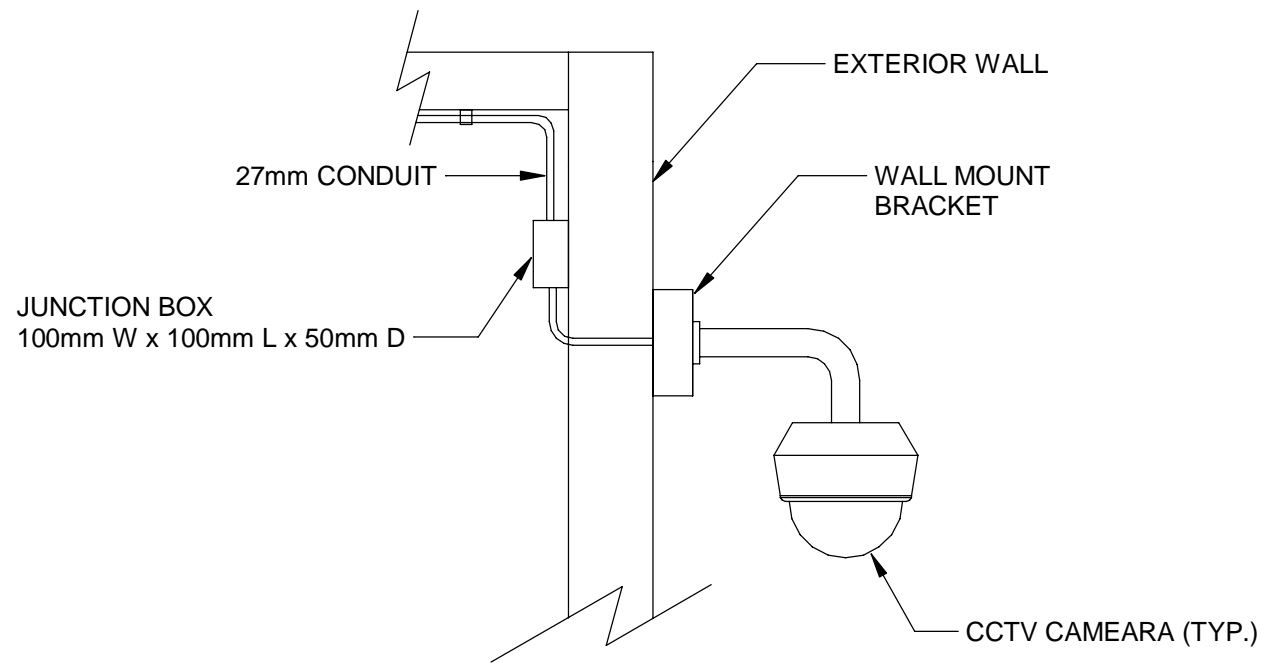
1. POLE FOR OUTDOOR CAMERAS, DARK BRONZE FINISH, 6m HEIGHT, 100mm SQUARE, MOUNTED ON CONCRETE FOOTING, SEE SITE PLAN FOR LOCATIONS.



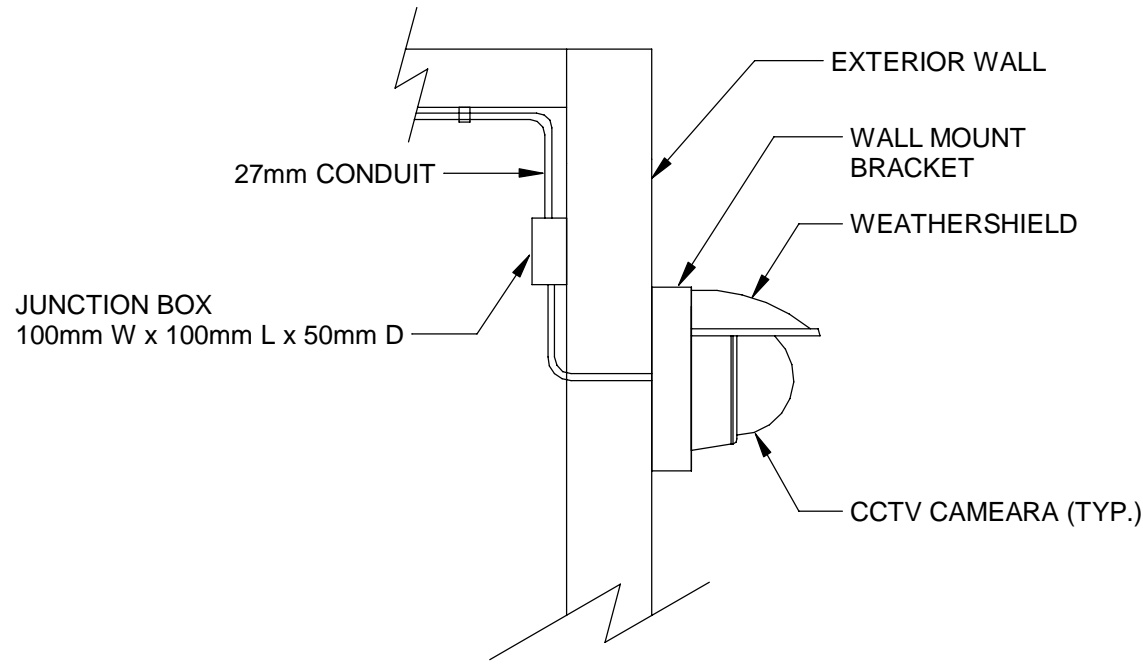
1 CCTV CAMERA CEILING MOUNT DETAIL (INDOOR)  
N.T.S.



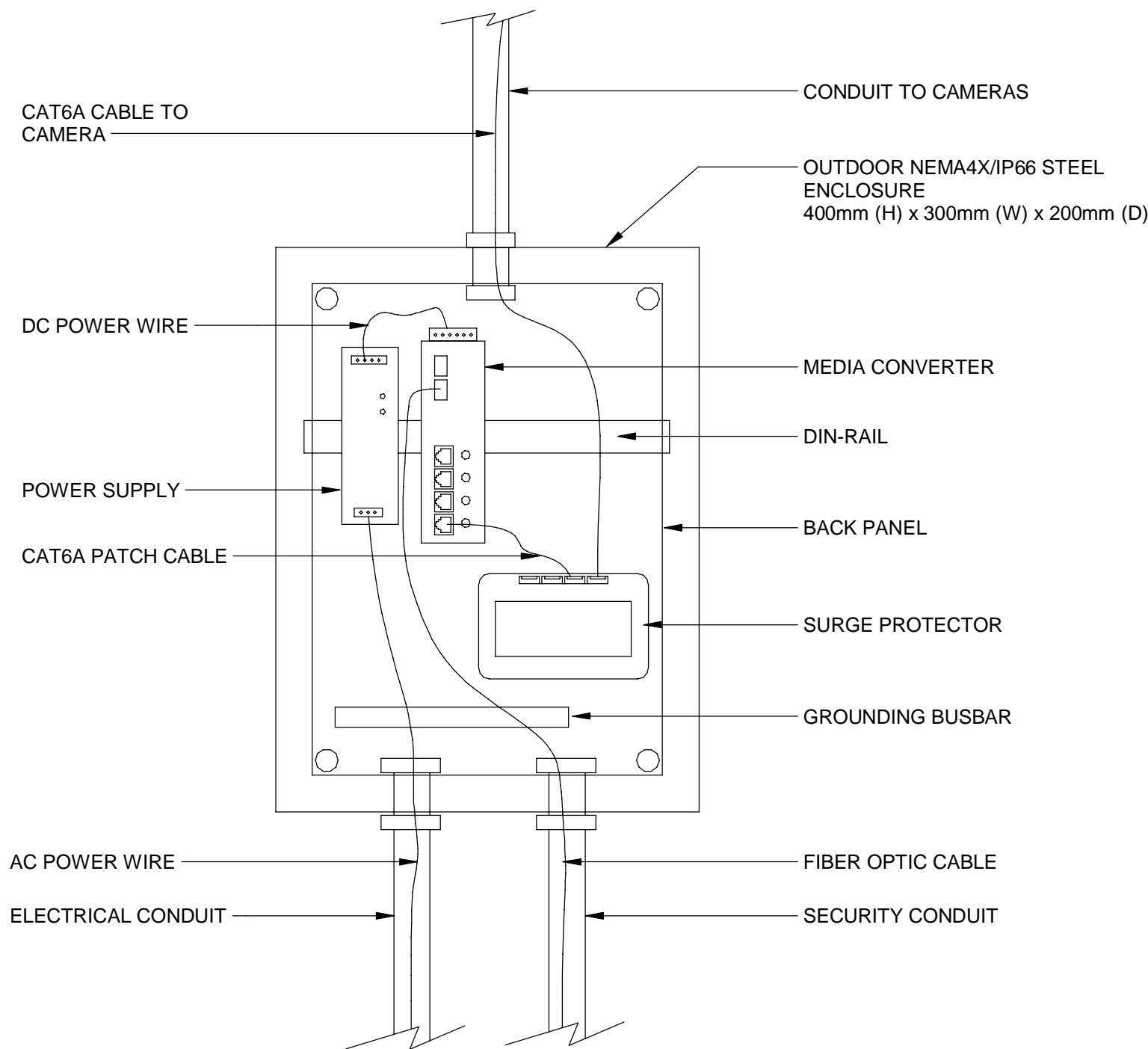
2 CCTV CAMERA WALL MOUNT DETAIL (INDOOR)  
N.T.S.



4 CCTV CAMERA WALL MOUNT DETAIL 1 (OUTDOOR)  
N.T.S.



5 CCTV CAMERA WALL MOUNT DETAIL 2 (OUTDOOR)  
N.T.S.



3 OUTDOOR CCTV ENCLOSURE DETAILS  
N.T.S.

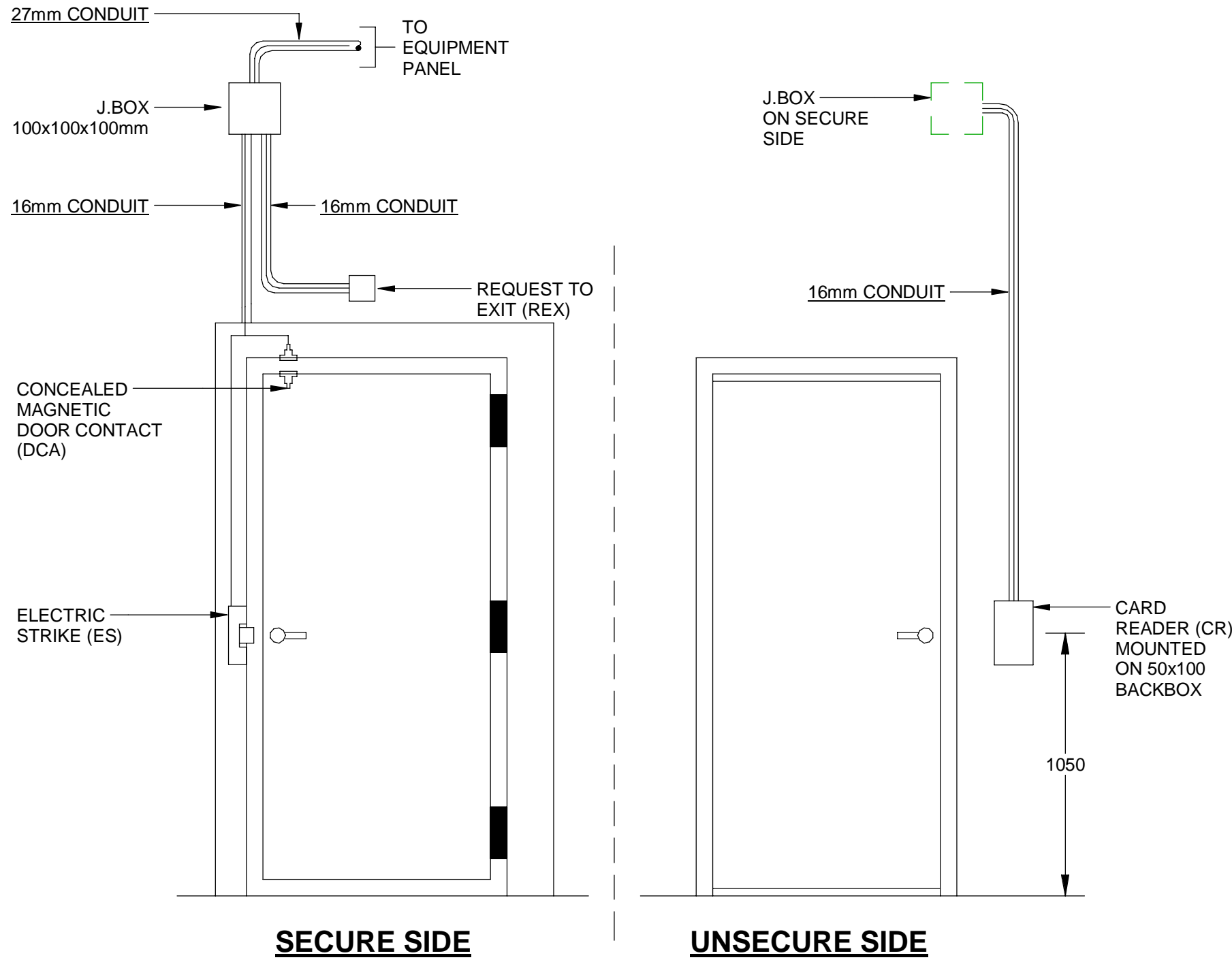


4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS

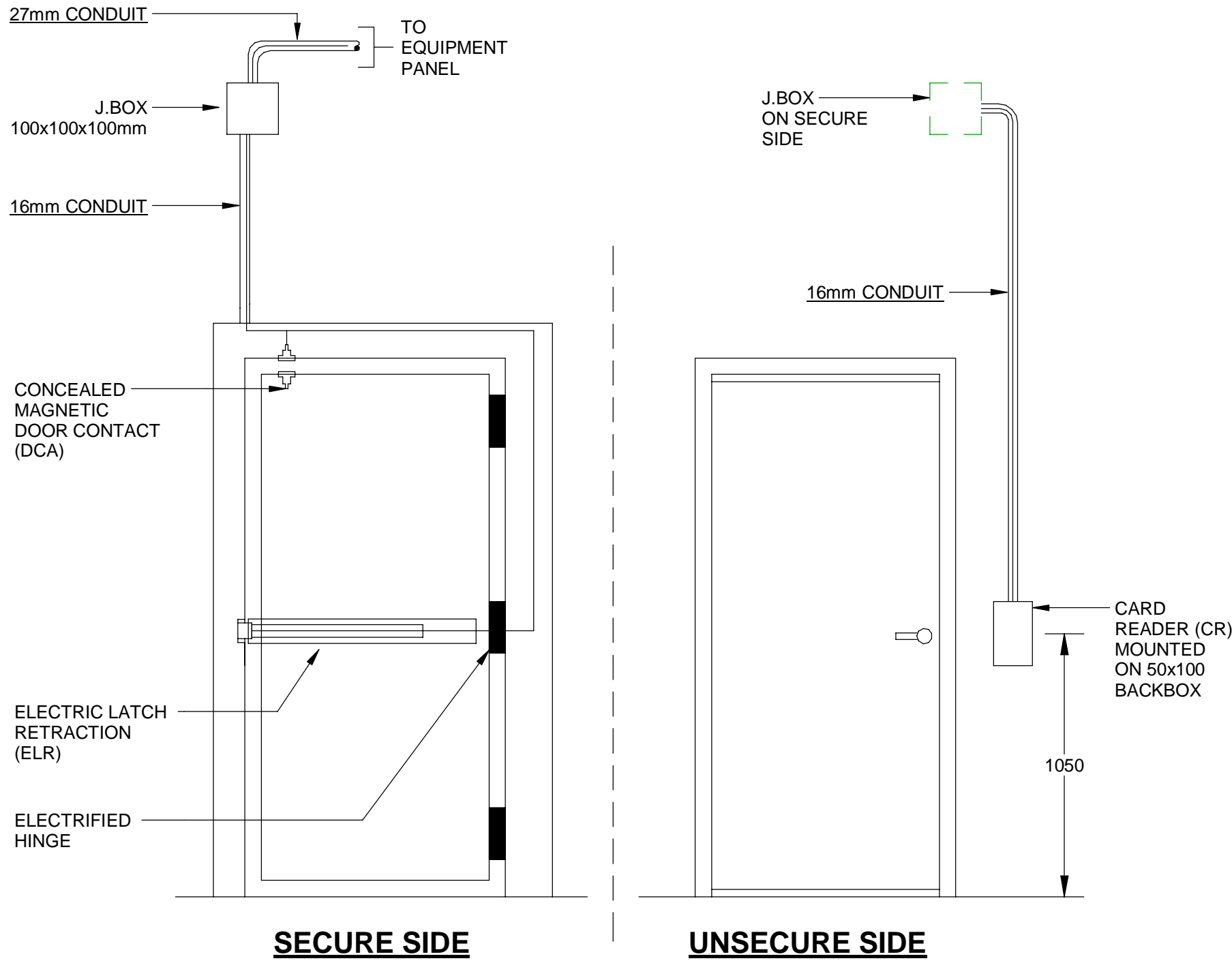
Mark	Date	Description

Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	60686829	
Project Administrator:	BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
Drawn:	Date (yyyy-mm-dd):	
Reviewed:	Date (yyyy-mm-dd):	
Checked:	Date (yyyy-mm-dd):	
Approved:	Date (yyyy-mm-dd):	

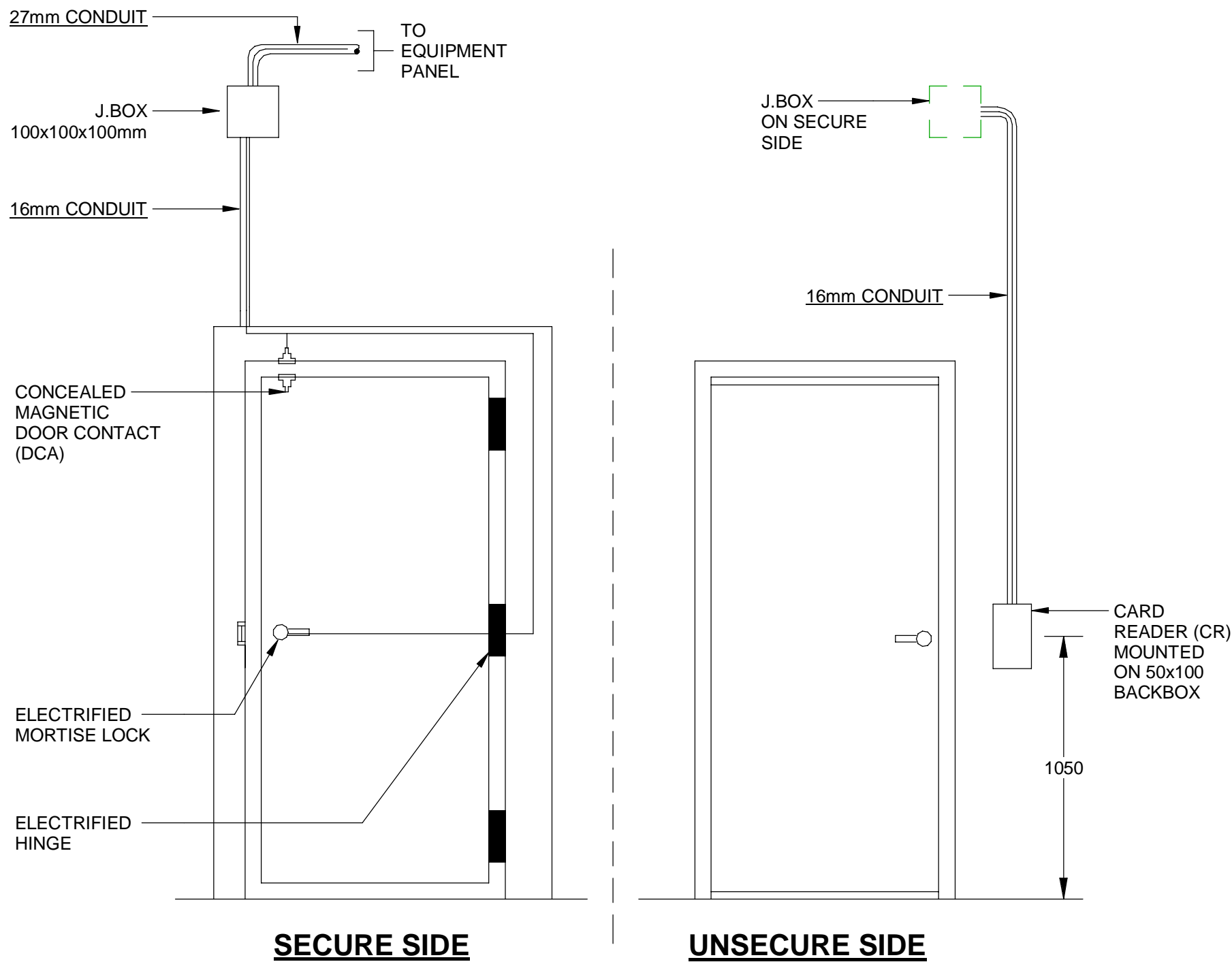




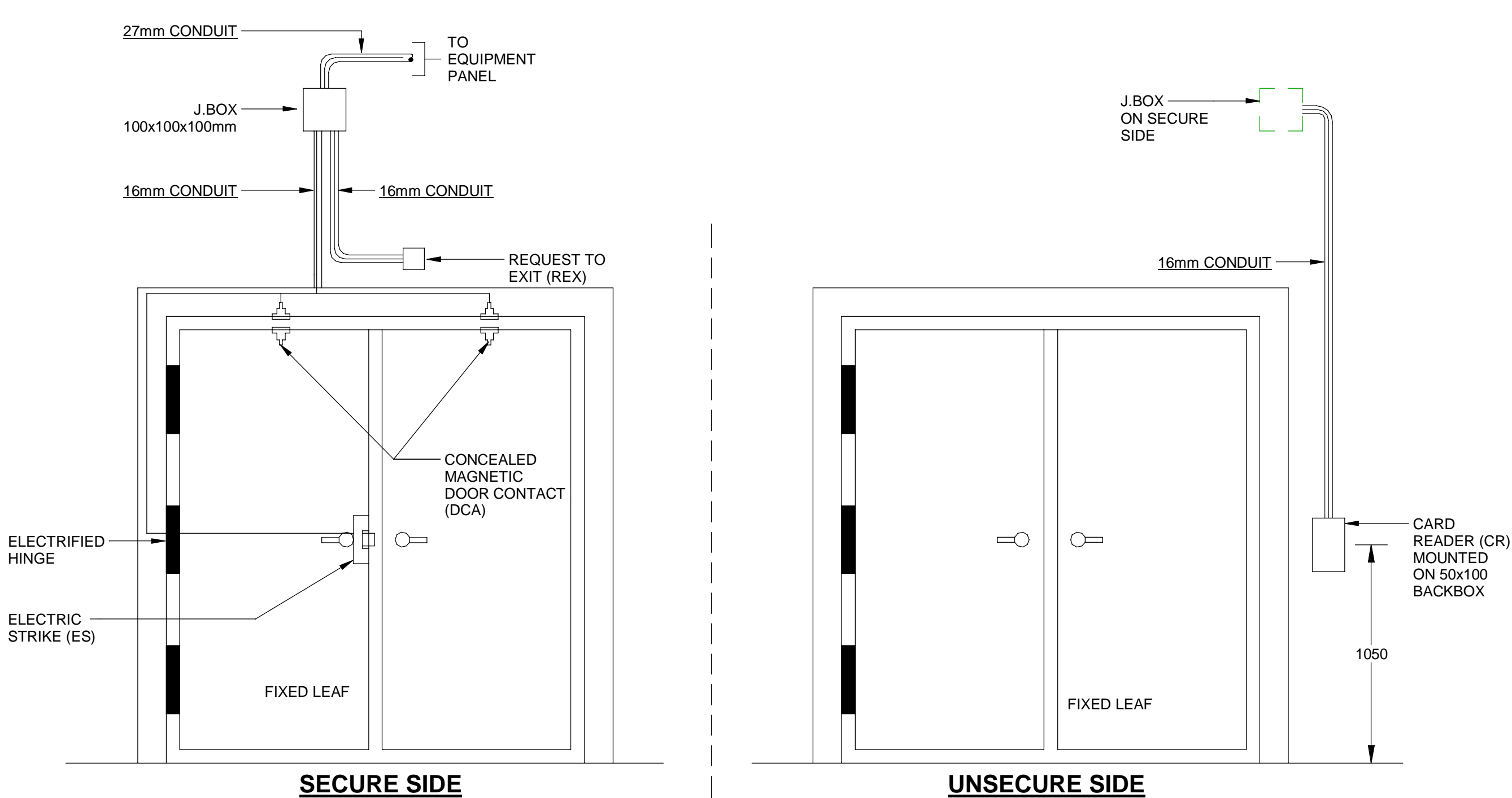
3 ACCESS CONTROL DETAILS - SINGLE DOOR - ELECTRIC STRIKE (ES)  
N.T.S



4 ACCESS CONTROL DETAILS - SINGLE DOOR - ELECTRIC LATCH RETRACTION (ELR)  
N.T.S



5 ACCESS CONTROL DETAILS - SINGLE DOOR - ELECTRIFIED MORTISE LOCK  
N.T.S



1 ACCESS CONTROL DETAILS - DOUBLE DOOR  
N.T.S

GENERAL NOTES (ACCESS CONTROL DETAIL) :

1. ALL WIRING SHALL BE IN SUITABLE CONDUIT ACCORDING TO CODES.
2. ALL CONDUIT FROM DRAWBOX TO DEVICES SHALL BE 16mm UNLESS OTHERWISE NOTED.
3. SECURITY DOOR ELEVATIONS SHALL BE READ IN CONJUNCTION WITH THE SECURITY DRAWINGS AND THE ARCHITECTURAL DOOR HARDWARE SCHEDULE.
4. LOCATE ALL THE PULL BOXES IN CEILING SPACES TO ALLOW FULL ACCESSIBILITY TO SUIT SITE CONDITIONS.
5. COORDINATE THE EXACT LOCATION OF INSTALLATION REQUIREMENTS INCLUDING PULL BOXES, BACK BOXES, CONDUIT ETC. WITH SECURITY SYSTEM, ACCESS CONTROL SYSTEM CONTRACTOR AND DOOR HARDWARE DEVICES SCHEDULE WITH DOOR HARDWARE CONTRACTOR.
6. ALL CONDUIT SIZES INDICATED ARE MINIMUM SIZES.
7. REFER TO PLANS FOR THE DEVICES SHOWN.

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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number : 60686829  
Owner's Contract Number : 987654321

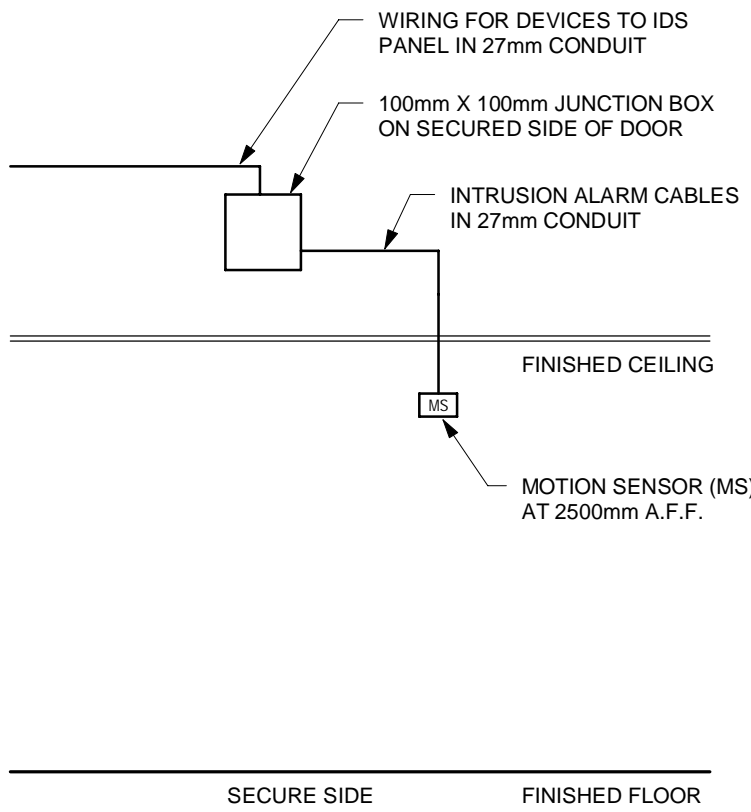
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3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS

Revision History		Version
Filename :		2020.2.5
Project Number : 60686829	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : HB	Date (yyyy-mm-dd) :	
Drawn : HB	Date (yyyy-mm-dd) :	
Reviewed : TM	Date (yyyy-mm-dd) :	
Checked : TM	Date (yyyy-mm-dd) :	
Approved : TM	Date (yyyy-mm-dd) :	

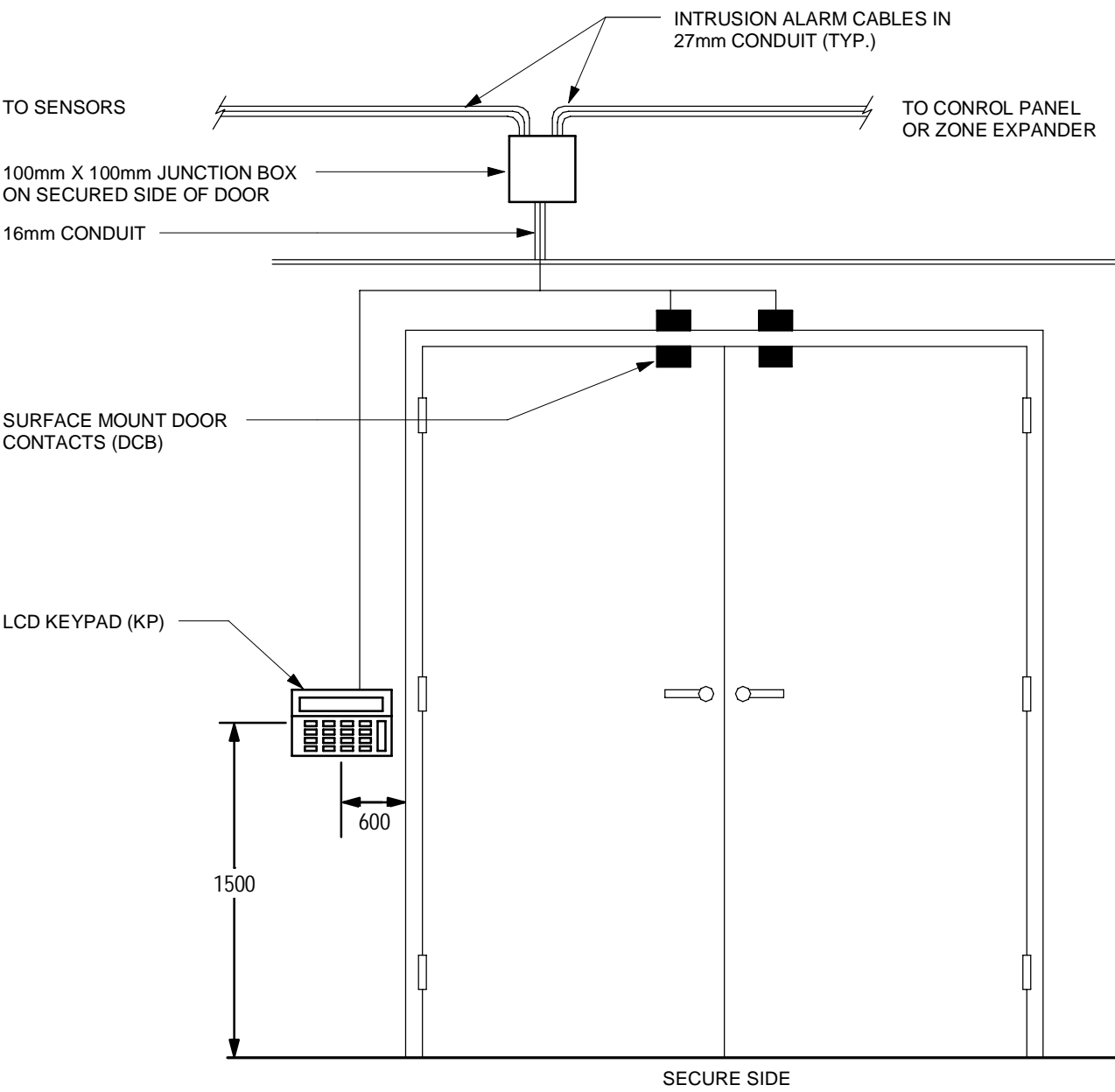
ACCESS CONTROL DETAILS

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of : 4

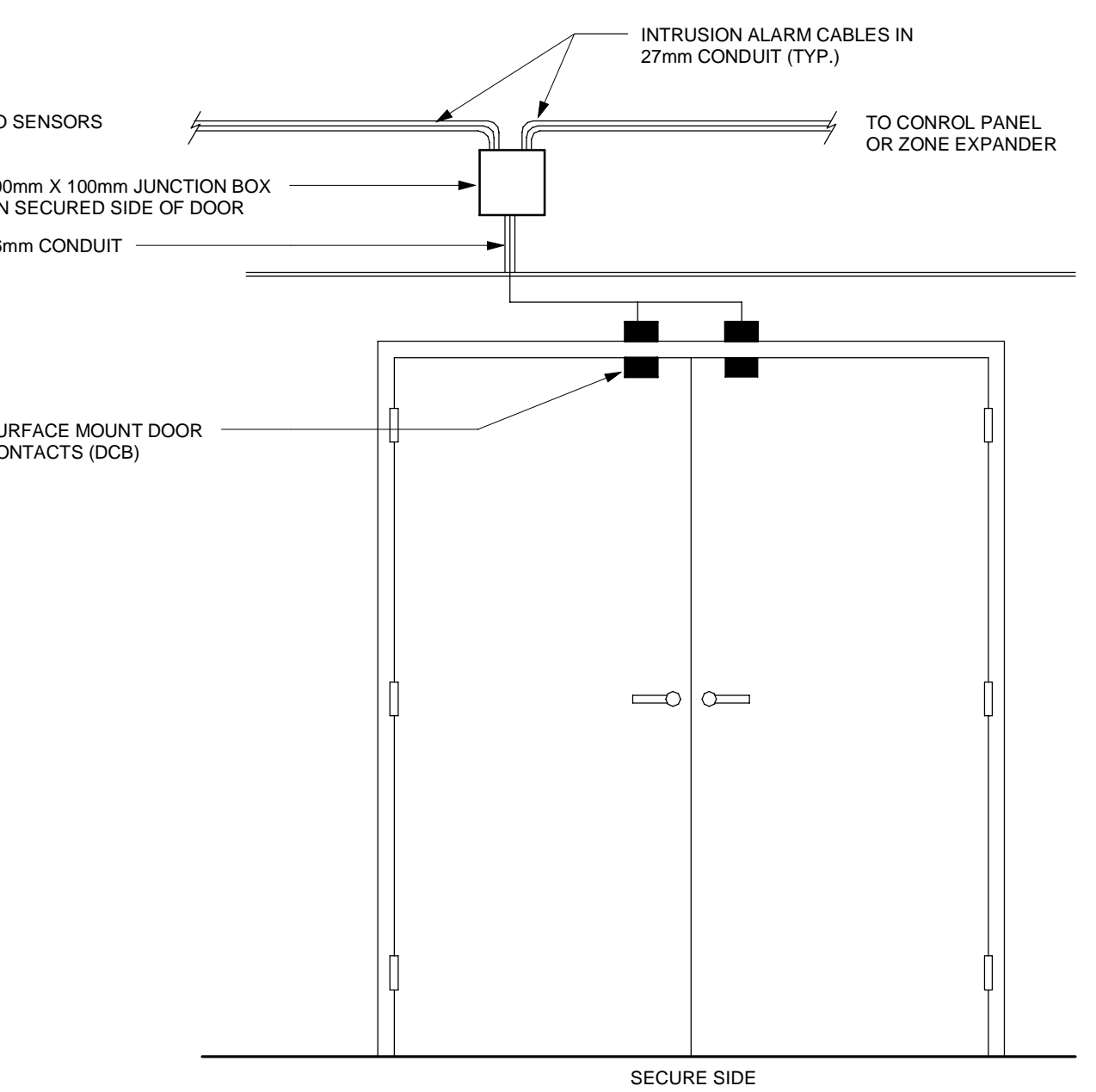




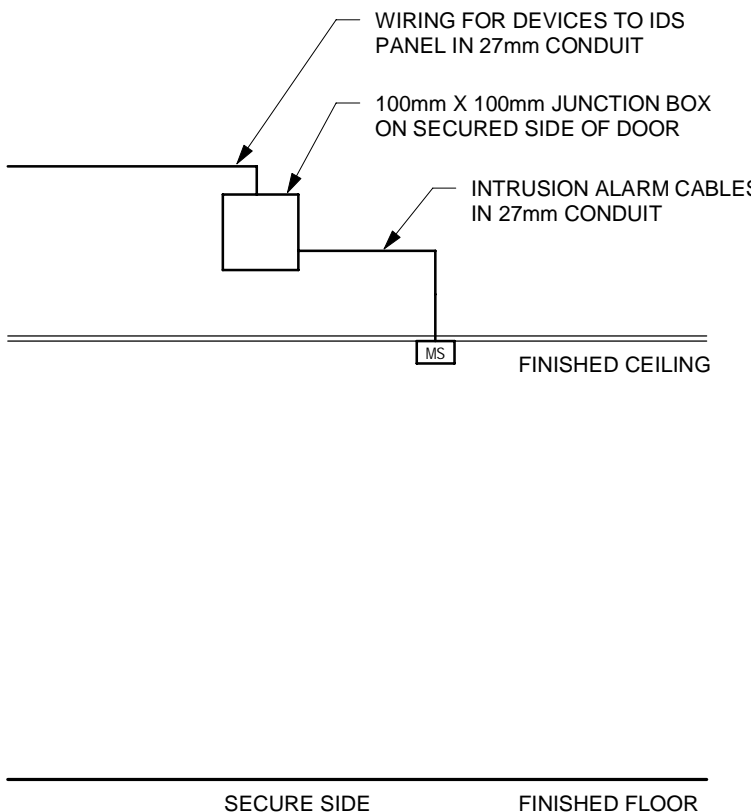
1 MOTION SENSOR WALL MOUNT DETAILS  
N.T.S.



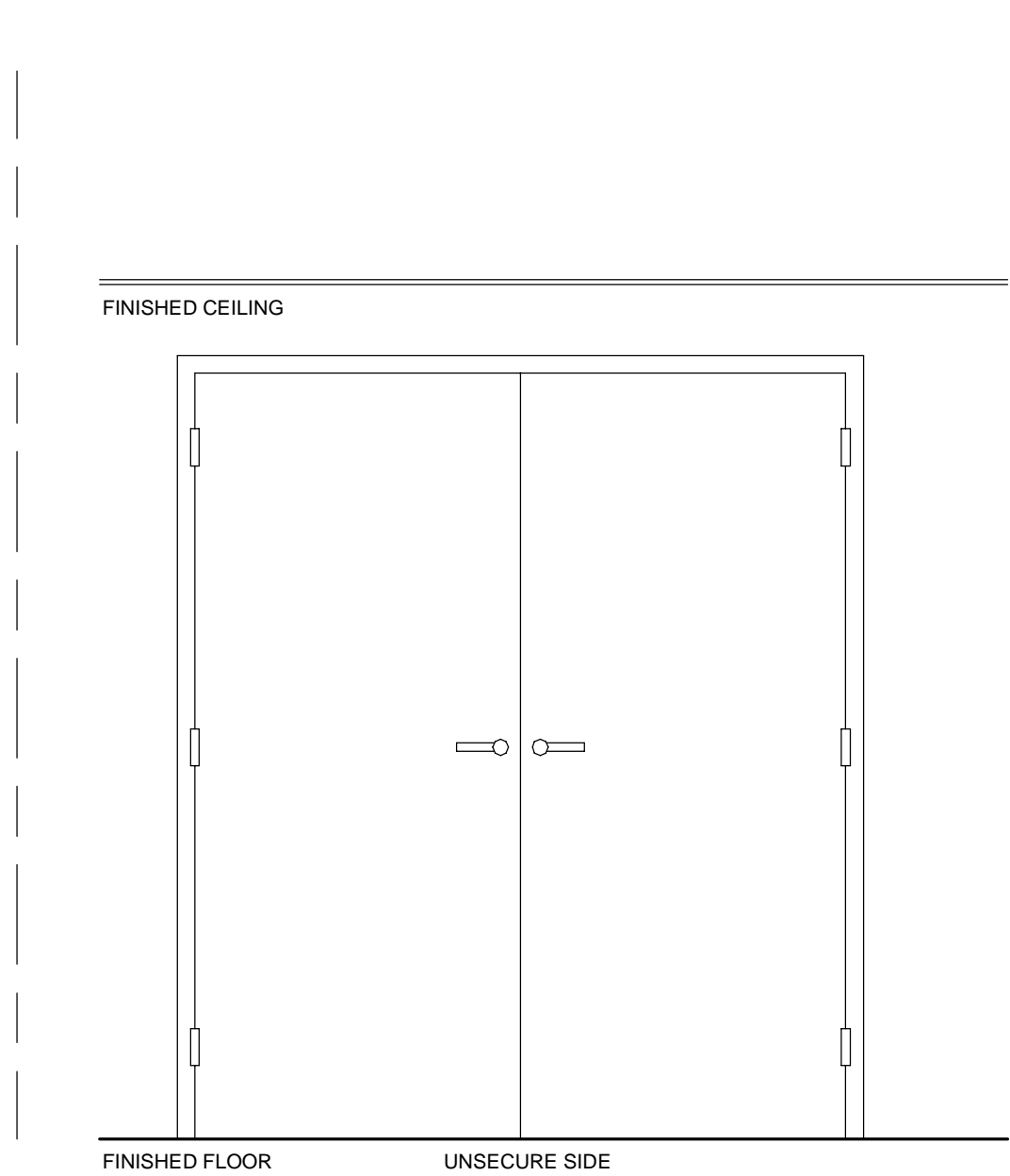
3 INTRUSION ALARM DETAILS - DOUBLE DOOR WITH KEYPAD  
N.T.S.



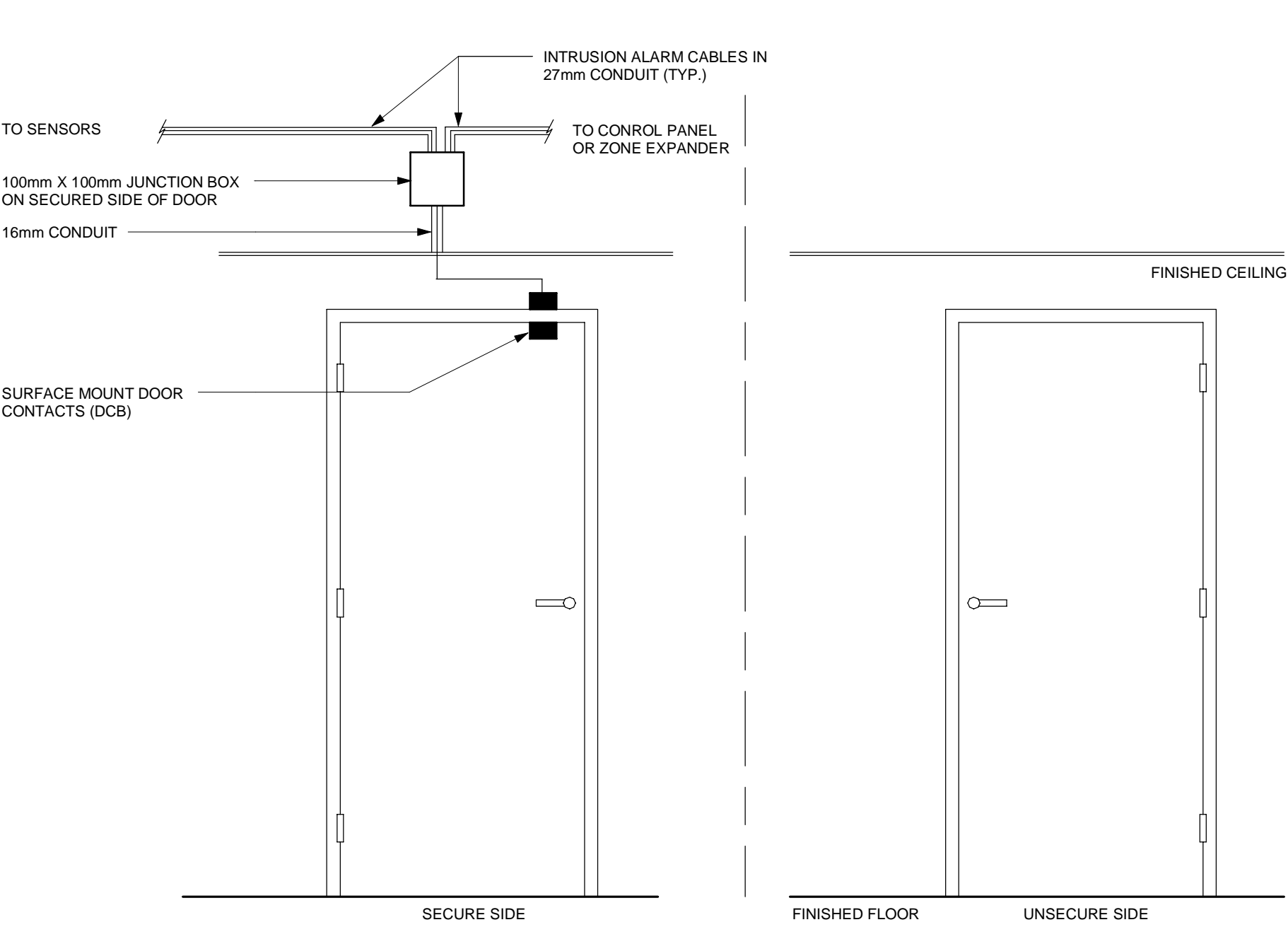
5 INTRUSION ALARM DETAILS - DOUBLE DOOR  
N.T.S.



2 MOTION SENSOR CEILING MOUNT DETAILS  
N.T.S.



4 INTRUSION ALARM DETAILS - SINGLE DOOR WITH KEYPAD  
N.T.S.



6 INTRUSION ALARM DETAILS - SINGLE DOOR  
N.T.S.

- GENERAL NOTES:
- ALL CONDUITS ARE TO BE FILLED AT 40% MAXIMUM OF USABLE SECTIONAL AREA.
  - ALL INTRUSION DETECTION SYSTEM (IDS) DEVICES ARE TO WIRED END-TO-END CONDUIT SYSTEM. MINIMUM CONDUIT SIZE WHERE NOT INDICATED SHALL BE 27mm.

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Kitchener, Ontario N2P 0A4

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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

Mark	Date	Description
4	2025-01-27	ISSUED FOR TENDER
3	2024-12-13	IFP RE-SUBMISSION
2	2024-11-29	ISSUED FOR OWNER REVIEW
1	2024-11-29	90% DOCUMENTS

Revision History		
Filename:	Version: 2020.2.5.	
Project Number:	Project Manager:	
60686829	BIM/VDC Manager:	
Project Administrator:		
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):
Designed:	Date (yyyy-mm-dd):	
HB		
Drawn:	Date (yyyy-mm-dd):	
HB		
Reviewed:	Date (yyyy-mm-dd):	
TM		
Checked:	Date (yyyy-mm-dd):	
TM		
Approved:	Date (yyyy-mm-dd):	
TM		

INTRUSION ALARM DETAILS

Page Size: ANSI D  
Scale: As indicated  
Sheet: E807  
Rev: 4  
of: 1

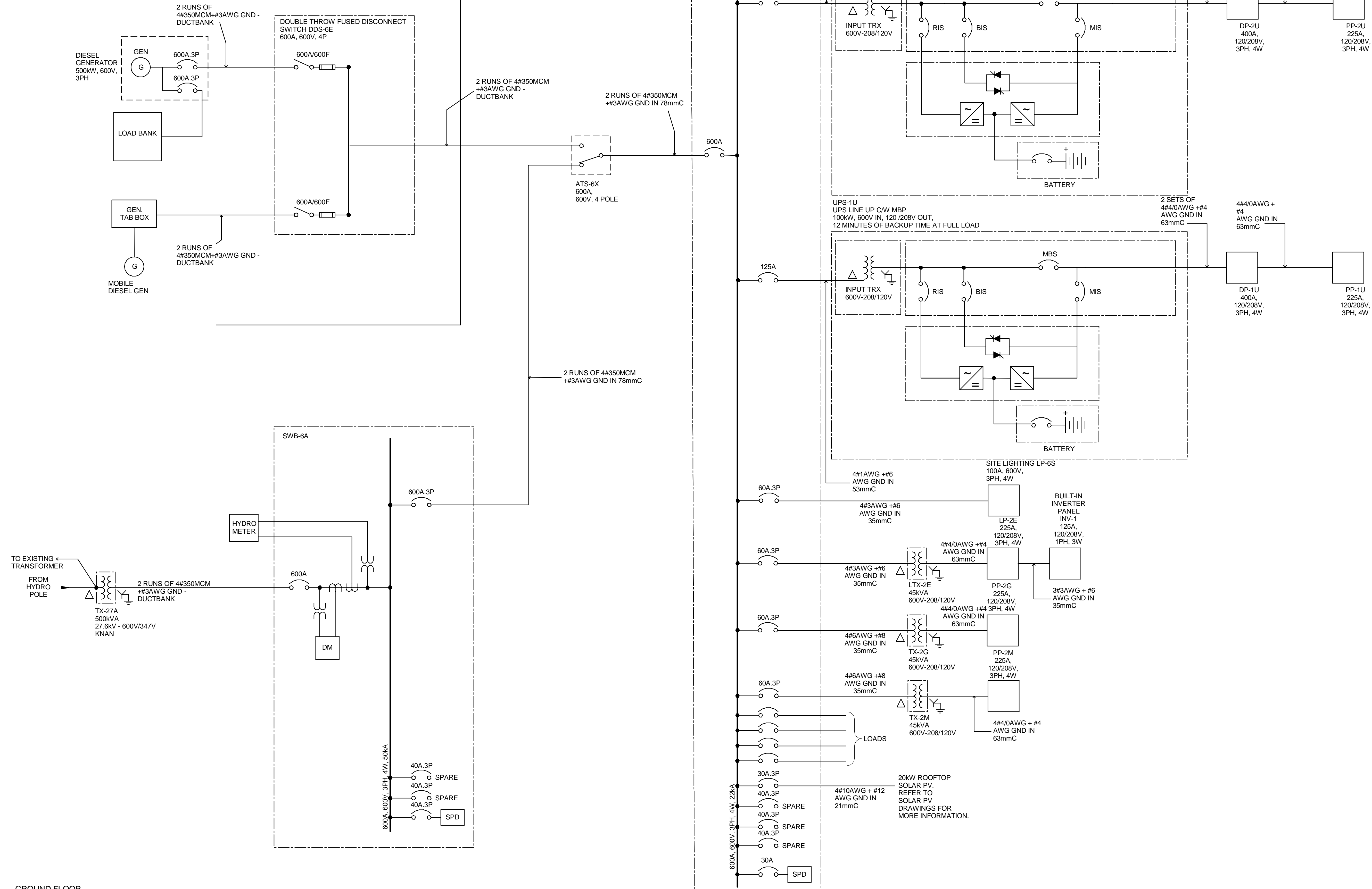


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ROOF

OUTDOOR

INDOOR



GROUND FLOOR

OUTDOOR

INDOOR

AECOM

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50 Sportsworld Crossing Road, Suite 290  
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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

6	2025-01-27	ISSUED FOR TENDER
5	2024-12-13	IFP RE-SUBMISSION
4	2024-11-29	ISSUED FOR OWNER REVIEW
3	2024-10-30	ISSUED FOR PERMIT
2	2024-08-30	ISSUED FOR 30% CD
1	2024-07-26	ISSUED FOR 100% DD
Mark	Date	Description

Revision History

Filename: Version: 2020.2.5.

Project Number:	60686829	Project Manager:	
Project Administrator:		BIM/VDC Manager:	
Sustainability Target:	IPMS 1 (m²):	IPMS 2 (m²):	
Designed:	NT	Date (yyyy-mm-dd):	
Drawn:	IV	Date (yyyy-mm-dd):	
Reviewed:	WH	Date (yyyy-mm-dd):	
Checked:	WH	Date (yyyy-mm-dd):	
Approved:	WH	Date (yyyy-mm-dd):	
Title:			

SINGLE LINE DIAGRAM

Page Size: ANSI D  
Scale: 1" = 100'

Sheet: 6  
of: 6



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Branch Panel: DP-6E													
Location: ELECTRICAL ROOM							Volts: 600 V			A.I.C. Rating: 50 kA			
Supply From: ATS-6X							Phases: 3PH			Mains Type: MAIN BREAKER			
Mounting: WALL SURFACE MOUNTED							Wires: 4W			Mains Rating: 600 A			
Enclosure: TYPE 1										MCB Rating: 600 A			
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	UPS-2U (REDUNDANT)	125 A	3	0 VA	3255...					3	125 A	UPS-1U	2
3	--	--	--			0 VA	3255...			--	--	--	4
5	--	--	--					0 VA	3255...	--	--	--	6
7	SITE LIGHTING LP-6S	100 A	3	188 VA	860 VA					3	60 A	LTX-2E	8
9	--	--	--			188 VA	860 VA			--	--	--	10
11	--	--	--					188 VA	860 VA	--	--	--	12
13	TX-2G	60 A	3	1232...	1774...					3	60 A	TX-2M	14
15	--	--	--			1232...	1774...			--	--	--	16
17	--	--	--					1232...	1774...	--	--	--	18
19	CH-3 (STANDBY)	70 A	3	0 VA	1591...					3	70 A	CH-2 (DUTY)	20
21	--	--	--			0 VA	1591...			--	--	--	22
23	--	--	--					0 VA	1591...	--	--	--	24
25	CH-1 (DUTY)	70 A	3	1591...	2078...					3	15 A	HRU-1	26
27	--	--	--			1591...	2078...			--	--	--	28
29	--	--	--					1591...	2078...	--	--	--	30
31	RTU-1	15 A	3	3062...	1593...					3	15 A	FCU-1	32
33	--	--	--			3062...	1593...			--	--	--	34
35	--	--	--					3062...	1593...	--	--	--	36
37	P-1A	15 A	3	1039...	0 VA					3	15 A	P-1B	38
39	--	--	--			1039...	0 VA			--	--	--	40
41	--	--	--					1039...	0 VA	--	--	--	42
43	P-2A	20 A	3	3897...	0 VA					3	20 A	P-2B	44
45	--	--	--			3897...	0 VA			--	--	--	46
47	--	--	--					3897...	0 VA	--	--	--	48
49	IWH-2	25 A	3	6639...	2888...					3	125 A	IWH-3	50
51	--	--	--			6639...	2888...			--	--	--	52
53	--	--	--					6639...	2888...	--	--	--	54
55	IWH-1	50 A	3	1385...	0 VA					3	30 A	20kW ROOFTOP SOLAR PV	56
57	--	--	--			1385...	0 VA			--	--	--	58
59	--	--	--					1385...	0 VA	--	--	--	60
61	SPD	30 A	3	0 VA	0 VA					3	40 A	Spare	62
63	--	--	--			0 VA	0 VA			--	--	--	64
65	--	--	--					0 VA	0 VA	--	--	--	66
67	Spare	40 A	3	0 VA	0 VA					3	40 A	Spare	68
69	--	--	--			0 VA	0 VA			--	--	--	70
71	--	--	--					0 VA	0 VA	--	--	--	72
73	Space	--	1	--	--					1	--	Space	74
75	Space	--	1			--	--			1	--	Space	76
77	Space	--	1					--	--	1	--	Space	78
79	Space	--	1	--	--					1	--	Space	80
81	Space	--	1			--	--			1	--	Space	82
83	Space	--	1					--	--	1	--	Space	84
Total Load:				156547 VA		156547 VA		156547 VA					
Total Amps:													
Legend:													
Load Type		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
RECEPTACLES		138905 VA		80.00%		111124 VA							
MOTOR		301088 VA		70.00%		210762 VA							
LIGHTING		4246 VA		100.00%		4246 VA		Total Conn. Load: 464289 VA					
CAR CHARGER		19200 VA		90.00%		17280 VA		Total Est. Demand: 344092 VA					
OTHER		850 VA		80.00%		680 VA		Total Conn.: 447 A					
								Total Est. Demand: 331 A					
Notes:													

Branch Panel: DP-1U													
Location: ELECTRICAL ROOM							Volts: 120/208V				A.I.C. Rating: 22 KA		
Supply From: UPS-1U							Phases: 3PH				Mains Type: MAIN BREAKER		
Mounting: WALL SURFACE MOUNTED							Wires: 4W				Mains Rating: 400 A		
Enclosure: TYPE 1											MCB Rating: 400 A		
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	PP-1U	200 A	3	2333...	2333...	2333...	2333...			3	30 A	IT CABINET RECEPTACLE	2
3	--	--	--							--	--	--	4
5	--	--	--					2333...	2333...	--	--	--	6
7	IT CABINET RECEPTACLE	30 A	3	2333...	2333...					3	30 A	IT CABINET RECEPTACLE	8
9	--	--	--			2333...	2333...			--	--	--	10
11	--	--	--					2333...	2333...	--	--	--	12
13	IT CABINET RECEPTACLE	30 A	3	2333...	2333...					3	30 A	IT CABINET RECEPTACLE	14
15	--	--	--			2333...	2333...			--	--	--	16
17	--	--	--					2333...	2333...	--	--	--	18
19	IT CABINET RECEPTACLE	30 A	3	2333...	2133...					3	30 A	IT CABINET RECEPTACLE	20
21	--	--	--			2333...	2133...			--	--	--	22
23	--	--	--					2333...	2133...	--	--	--	24
25	IT CABINET RECEPTACLE	20 A	1	1750...	1750...					1	20 A	IT CABINET RECEPTACLE	26
27	IT CABINET RECEPTACLE	20 A	1			1350...	1350...			1	20 A	IT CABINET RECEPTACLE	28
29	IT CABINET RECEPTACLE	20 A	1					1300...	1600...	3	30 A	IT CABINET RECEPTACLE	30
31	SITE SECURITY CAMERA	15 A	1	200 VA	1600...					--	--	--	32
33	SPARE	15 A	1			0 VA	1600...			--	--	--	34
35	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	36
37	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	38
39	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	40
41	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	42
43	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	44
45	SPARE	15 A	1			0 VA	--			1	--	SPACE	46
47	SPACE	--	1					--	--	1	--	SPACE	48
49	SPACE	--	1	--	--					1	--	SPACE	50
51	SPACE	--	1			--	--			1	--	SPACE	52
53	SPACE	--	1					--	--	1	--	SPACE	54
55	SPACE	--	1	--	--					1	--	SPACE	56
57	SPACE	--	1			--	--			1	--	SPACE	58
59	SPACE	--	1					--	--	1	--	SPACE	60
61	SPACE	--	1	--	--					1	--	SPACE	62
63	SPACE	--	1			--	--			1	--	SPACE	64
65	SPACE	--	1					--	--	1	--	SPACE	66
67	SPACE	--	1	--	--					1	--	SPACE	68
69	SPACE	--	1			--	--			1	--	SPACE	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
Total Load:				23764 VA		22764 VA		21364 VA					
Total Amps:													
Legend:													
Load Type		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
RECEPTACLES		94449 VA		80.00%		75559 VA							
								Total Conn. Load: 94449 VA					
								Total Est. Demand: 75559 VA					
								Total Conn.: 262 A					
								Total Est. Demand: 210 A					
Notes:													



Branch Panel: DP-2U													
Location: ELECTRICAL ROOM						Volts: 120/208V				A.I.C. Rating: 22 kA			
Supply From: UPS-2U						Phases: 2PH				Mains Type: MAIN BREAKER			
Mounting: WALL SURFACE MOUNTED						Wires: 4W				Mains Rating: 400 A			
Enclosure: TYPE 1										MCB Rating: 400 A			
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	PP-2U	200 A	3	0 VA	2333...	0 VA	2333...			3	30 A	IT CABINET RECEPTACLE	2
3	--	--	--							--	--	--	4
5	--	--	--					0 VA	2333...	--	--	--	6
7	IT CABINET RECEPTACLE	30 A	3	2333...	2333...					3	30 A	IT CABINET RECEPTACLE	8
9	--	--	--			2333...	2333...			--	--	--	10
11	--	--	--					2333...	2333...	--	--	--	12
13	IT CABINET RECEPTACLE	30 A	3	2333...	2333...					3	30 A	IT CABINET RECEPTACLE	14
15	--	--	--			2333...	2333...			--	--	--	16
17	--	--	--					2333...	2333...	--	--	--	18
19	IT CABINET RECEPTACLE	30 A	3	2333...	2133...	2333...	2133...			3	30 A	IT CABINET RECEPTACLE	20
21	--	--	--			2333...	2133...			--	--	--	22
23	--	--	--					2333...	2133...	--	--	--	24
25	IT CABINET RECEPTACLE	20 A	1	1750...	1750...					1	20 A	IT CABINET RECEPTACLE	26
27	IT CABINET RECEPTACLE	20 A	1			1350...	1350...			1	20 A	IT CABINET RECEPTACLE	28
29	IT CABINET RECEPTACLE	20 A	1					1300...	1600...	3	30 A	IT CABINET RECEPTACLE	30
31	SPARE	15 A	1	0 VA	1600...					--	--	--	32
33	SPARE	15 A	1			0 VA	1600...			--	--	--	34
35	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	36
37	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	38
39	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	40
41	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	42
43	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	44
45	SPACE	--	1			--	--			1	--	SPACE	46
47	SPACE	--	1					--	--	1	--	SPACE	48
49	SPACE	--	1	--	--					1	--	SPACE	50
51	SPACE	--	1			--	--			1	--	SPACE	52
53	SPACE	--	1					--	--	1	--	SPACE	54
55	SPACE	--	1	--	--					1	--	SPACE	56
57	SPACE	--	1			--	--			1	--	SPACE	58
59	SPACE	--	1					--	--	1	--	SPACE	60
61	SPACE	--	1	--	--					1	--	SPACE	62
63	SPACE	--	1			--	--			1	--	SPACE	64
65	SPACE	--	1					--	--	1	--	SPACE	66
67	SPACE	--	1	--	--					1	--	SPACE	68
69	SPACE	--	1			--	--			1	--	SPACE	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
				Total Load:		21231 VA		20431 VA		19031 VA			
				Total Amps:									
Legend:													
Load Type		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
RECEPTACLES		94449 VA		80.00%		75559 VA							
								Total Conn. Load: 94449 VA					
								Total Est. Demand: 75559 VA					
								Total Conn.: 262 A					
								Total Est. Demand: 210 A					
Notes:													



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Kitchener, Ontario N2P 0A4

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NORTH:



SEAL:

**NRPS - 911 BACKUP DISPATCH**  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:	Owner's Contract Number:
60686829	987654321

3	2025-01-27	ISSUED FOR TENDER
2	2024-12-13	IFP RE-SUBMISSION
1	2024-11-29	ISSUED FOR OWNER REVIEW

Mark	Date	Description
------	------	-------------

Revision History

Filename :	Version:
60686829	2020.2.5.

Project Number : <b>60686829</b>		Project Manager :	
Project Administrator :		BIM/VDC Manager :	
Sustainability Target :		IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : <b>MA</b>		Date (yyyy-mm-dd) :	
Drawn : <b>GG</b>		Date (yyyy-mm-dd) :	
Reviewed : <b>WH</b>		Date (yyyy-mm-dd) :	
Checked : <b>WH</b>		Date (yyyy-mm-dd) :	
Approved :		Date (yyyy-mm-dd) :	
<b>Approver</b>			

PANEL SCHEDULES 2

Page Size:	Sheet:	Rev:
ANSI D	E911	3
Scale:		Sheet of:



Branch Panel: PP-1U											
Location: ELECTRICAL ROOM				Volts: 120/208V				A.I.C. Rating: 18 kA			
Supply From: DP-1U				Phases: 3PH				Mains Type: MAIN BREAKER			
Mounting: WALL SURFACE MOUNTED				Wires: 4W				Mains Rating: 225 A			
Enclosure: TYPE 1								MCB Rating: 200 A			
Notes:											
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	2	
3	CALL/DISPATCH RECEPTACLE	15 A	1		927 VA 927 VA		1	15 A	CALL/DISPATCH RECEPTACLE	4	
5	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA 927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	6	
7	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	8	
9	CALL/DISPATCH RECEPTACLE	15 A	1		927 VA 927 VA		1	15 A	CALL/DISPATCH RECEPTACLE	10	
11	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA 927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	12	
13	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	14	
15	CALL/DISPATCH RECEPTACLE	15 A	1		927 VA 927 VA		1	15 A	CALL/DISPATCH RECEPTACLE	16	
17	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA 927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	18	
19	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	20	
21	CALL/DISPATCH RECEPTACLE	15 A	1		927 VA 927 VA		1	15 A	CALL/DISPATCH RECEPTACLE	22	
23	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA 927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	24	
25	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	26	
27	CALL/DISPATCH RECEPTACLE	15 A	1		927 VA 927 VA		1	15 A	CALL/DISPATCH RECEPTACLE	28	
29	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA 927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	30	
31	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA 927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	32	
33	CALL/DISPATCH RECEPTACLE	15 A	1		682 VA 682 VA		1	15 A	CALL/DISPATCH RECEPTACLE	34	
35	CALL/DISPATCH RECEPTACLE	15 A	1			682 VA 682 VA	1	15 A	CALL/DISPATCH RECEPTACLE	36	
37	CALL/DISPATCH RECEPTACLE	15 A	1	682 VA 682 VA			1	15 A	CALL/DISPATCH RECEPTACLE	38	
39	SPARE	15 A	1		0 VA 0 VA		1	15 A	SPARE	40	
41	SPARE	15 A	1			0 VA 0 VA	1	15 A	SPARE	42	
43	SPARE	15 A	1	0 VA 0 VA			1	15 A	SPARE	44	
45	SPARE	15 A	1		0 VA 0 VA		1	15 A	SPARE	46	
47	SPARE	15 A	1			0 VA 0 VA	1	15 A	SPARE	48	
49	SPARE	15 A	1	0 VA 0 VA			1	15 A	SPARE	50	
51	SPACE	--	1		-- --		1	--	SPACE	52	
53	SPACE	--	1			-- --	1	--	SPACE	54	
55	SPACE	--	1	-- --			1	--	SPACE	56	
57	SPACE	--	1		-- --		1	--	SPACE	58	
59	SPACE	--	1			-- --	1	--	SPACE	60	
61	SPACE	--	1	-- --			1	--	SPACE	62	
63	SPACE	--	1		-- --		1	--	SPACE	64	
65	SPACE	--	1			-- --	1	--	SPACE	66	
67	SPACE	--	1	-- --			1	--	SPACE	68	
69	SPACE	--	1		-- --		1	--	SPACE	70	
71	SPACE	--	1			-- --	1	--	SPACE	72	
73	SPACE	--	1	-- --			1	--	SPACE	74	
75	SPACE	--	1		-- --		1	--	SPACE	76	
77	SPACE	--	1			-- --	1	--	SPACE	78	
79	SPACE	--	1	-- --			1	--	SPACE	80	
81	SPACE	--	1		-- --	-- --	1	--	SPACE	82	
83	SPACE	--	1			-- --	1	--	SPACE	84	
Total Load:				12488 VA	10634 VA	10634 VA					
Total Amps:											
Legend:											
Load Type	Connected Load	Demand Factor	Estimated Demand	Panel Totals							
RECEPTACLE	33756 VA	80.00%	27005 VA								
				Total Conn. Load: 33756 VA							
				Total Est. Demand: 27005 VA							
				Total Conn.: 94 A							
				Total Est. Demand: 75 A							
Notes:											

Branch Panel: PP-2U													
Location: ELECTRICAL ROOM				Volts: 120/208V				A.I.C. Rating: 18 kA					
Supply From: DP-2U				Phases: 3PH				Mains Type: MAIN BREAKER					
Mounting: WALL SURFACE MOUNTED				Wires: 4W				Mains Rating: 225 A					
Enclosure: TYPE 1								MCB Rating: 200 A					
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	2
3	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	4
5	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	6
7	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	8
9	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	10
11	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	12
13	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	14
15	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	16
17	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	18
19	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	20
21	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	22
23	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	24
25	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	26
27	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	28
29	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	30
31	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	32
33	CALL/DISPATCH RECEPTACLE	15 A	1			682 VA	682 VA			1	15 A	CALL/DISPATCH RECEPTACLE	34
35	CALL/DISPATCH RECEPTACLE	15 A	1					682 VA	682 VA	1	15 A	CALL/DISPATCH RECEPTACLE	36
37	CALL/DISPATCH RECEPTACLE	15 A	1	682 VA	682 VA					1	15 A	CALL/DISPATCH RECEPTACLE	38
39	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	40
41	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	42
43	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	44
45	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	46
47	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	48
49	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	50
51	SPACE	--	1			--	--			1	--	SPACE	52
53	SPACE	--	1					--	--	1	--	SPACE	54
55	SPACE	--	1	--	--					1	--	SPACE	56
57	SPACE	--	1			--	--			1	--	SPACE	58
59	SPACE	--	1					--	--	1	--	SPACE	60
61	SPACE	--	1	--	--					1	--	SPACE	62
63	SPACE	--	1			--	--			1	--	SPACE	64
65	SPACE	--	1					--	--	1	--	SPACE	66
67	SPACE	--	1	--	--					1	--	SPACE	68
69	SPACE	--	1			--	--			1	--	SPACE	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
Total Load:				12488 VA		10634 VA		10634 VA					
Total Amps:													
Legend:													
Load Type		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
RECEPTACLE		33756 VA		80.00%		27005 VA							
								Total Conn. Load: 33756 VA					
								Total Est. Demand: 27005 VA					
								Total Conn.: 94 A					
								Total Est. Demand: 75 A					
Notes:													



AECOM Canada Ltd.  
50 Sportsworld Crossing Road, Suite 290  
Kitchener, Ontario N2P 0A4

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Branch Panel: LP-6S

Location: ELECTRICAL ROOM

Supply From: DP-6E

Mounting: WALL SURFACE MOUNTED

Enclosure: TYPE 1

Volts: 600V

Phases: 3PH

Wires: 4W

A.I.C. Rating: 22 kA

Mains Type: MAIN BREAKER

Mains Rating: 100 A

MCB Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	SITE LIGHTING	20 A	1	320 VA	243 VA			1	20 A	SITE LIGHTING	2
3	SPARE	20 A	1		0 VA	0 VA		1	20 A	SPARE	4
5	SPARE	20 A	1			0 VA	0 VA	1	20 A	SPARE	6
7	SPARE	20 A	1	0 VA	0 VA			1	20 A	SPARE	8
9	SPARE	20 A	1		0 VA	0 VA		1	20 A	SPARE	10
11	SPARE	20 A	1			0 VA	0 VA	1	20 A	SPARE	12
13	SPACE	--	1	--	--			1	--	SPACE	14
15	SPACE	--	1		--	--		1	--	SPACE	16
17	SPACE	--	1			--	--	1	--	SPACE	18
19	SPACE	--	1	--	--			1	--	SPACE	20
21	SPACE	--	1		--	--		1	--	SPACE	22
23	SPACE	--	1			--	--	1	--	SPACE	24
25	SPACE	--	1	--	--			1	--	SPACE	26
27	SPACE	--	1			--	--	1	--	SPACE	28
29	SPACE	--	1			--	--	1	--	SPACE	30
31	SPACE	--	1	--	--			1	--	SPACE	32
33	SPACE	--	1		--	--		1	--	SPACE	34
35	SPACE	--	1			--	--	1	--	SPACE	36
37	SPACE	--	1	--	--			1	--	SPACE	38
39	SPACE	--	1		--	--		1	--	SPACE	40
41	SPACE	--	1			--	--	1	--	SPACE	42
Total Load:				563 VA	0 VA	0 VA					
Total Amps:											

Legend:

Load Type	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LIGHTING	563 VA	100.00%	563 VA	
				Total Conn. Load: 563 VA
				Total Est. Demand: 563 VA
				Total Conn.: 1 A
				Total Est. Demand: 1 A

Notes:

Branch Panel: LP-2E

Location: ELECTRICAL ROOM

Supply From: LTX-2E

Mounting: WALL SURFACE MOUNTED

Enclosure: TYPE 1

Volts: 120/208V

Phases: 3PH

Wires: 4W

A.I.C. Rating: 18 kA

Mains Type: MAIN BREAKER

Mains Rating: 225 A

MCB Rating: 150 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	LIGHTING- ADMIN, QA, TRAINER	20 A	1	544 VA	611 VA			1	20 A	LIGHTING- MULTIPURPOSE, CORRIDOR	2
3	LIGHTING- KITCHEN, PATIO	20 A	1		549 VA	435 VA		1	20 A	LIGHTING- SERVICE ROOMS	4
5	LIGHTING- EXTERIOR	20 A	1			221 VA	221 VA	1	20 A	LIGHTING- EXTERIOR	6
7	SPARE	20 A	1	0 VA	641 VA			2	60 A	BUILT-IN INVERTER INV-1	8
9	SPARE	20 A	1		0 VA	641 VA		--	--	--	10
11	SPARE	20 A	1			0 VA	0 VA	1	20 A	SPARE	12
13	SPARE	20 A	1	0 VA	0 VA			1	20 A	SPARE	14
15	SPARE	20 A	1		0 VA	0 VA		1	20 A	SPARE	16
17	SPACE	--	1			--	--	1	--	SPACE	18
19	SPACE	--	1	--	--			1	--	SPACE	20
21	SPACE	--	1		--	--		1	--	SPACE	22
23	SPACE	--	1			--	--	1	--	SPACE	24
25	SPACE	--	1	--	--			1	--	SPACE	26
27	SPACE	--	1			--	--	1	--	SPACE	28
29	SPACE	--	1			--	--	1	--	SPACE	30
31	SPACE	--	1	--	--			1	--	SPACE	32
33	SPACE	--	1		--	--		1	--	SPACE	34
35	SPACE	--	1			--	--	1	--	SPACE	36
37	SPACE	--	1	--	--			1	--	SPACE	38
39	SPACE	--	1		--	--		1	--	SPACE	40
41	SPACE	--	1			--	--	1	--	SPACE	42
Total Load:				1796 VA	1625 VA	442 VA					
Total Amps:											

Legend:

Load Type	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LIGHTING	3863 VA	100.00%	3863 VA	
				Total Conn. Load: 3683 VA
				Total Est. Demand: 3683 VA
				Total Conn.: 10 A
				Total Est. Demand: 10 A

Notes:

Branch Panel: INV-1

Location: ELECTRICAL ROOM

Supply From: LP-2E

Mounting: WALL SURFACE MOUNTED

Enclosure: TYPE 1

Volts: 120V

Phases: 1PH

Wires: 3W

A.I.C. Rating: 18 kA

Mains Type: MAIN BREAKER

Mains Rating: 125 A

MCB Rating: 60 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	LIGHTING- CALL/DISPATCH	20 A	1	480 VA	285 VA			1	20 A	LIGHTING- CALL/DISPATCH	2
3	EXIT SIGNS- CALL/DISPATCH	20 A	1		30 VA	456 VA		1	20 A	EMERGENCY LIGHTING	4
5	EXIT SIGNS	20 A	1			30 VA	0 VA	1	20 A	SPARE	6
7	SPARE	20 A	1	0 VA	0 VA			1	20 A	SPARE	8
9	SPARE	20 A	1		0 VA	0 VA		1	20 A	SPARE	10
11	SPARE	20 A	1			0 VA	--	1	--	SPACE	12
13	SPACE	--	1	--	--			1	--	SPACE	14
15	SPACE	--	1		--	--		1	--	SPACE	16
17	SPACE	--	1			--	--	1	--	SPACE	18
19	SPACE	--	1	--	--			1	--	SPACE	20
Total Load:				765 VA	486 VA	30 VA					
Total Amps:											

Legend:

Load Type	Connected Load	Demand Factor	Estimated Demand	Panel Totals
LIGHTING	1281 VA	100.00%	1281 VA	
				Total Conn. Load: 1281 VA
				Total Est. Demand: 1281 VA
				Total Conn.: 11 A
				Total Est. Demand: 11 A

Notes:

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NORTH:

Niagara Region



SEAL:

NRPS - 911 BACKUP DISPATCH

5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number:  
60686829

Owner's Contract Number:  
987654321

3	2025-01-27	ISSUED FOR TENDER
2	2024-12-13	IFP RE-SUBMISSION
1	2024-11-29	ISSUED FOR OWNER REVIEW
Mark	Date	Description

Revision History

Filename :	Version:	
60686829	2020.2.5.	
Project Number :	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m²) :	IPMS 2 (m²) :
Designed :	Date (yyyy-mm-dd) :	
Drawn:	Date (yyyy-mm-dd) :	
Reviewed :	Date (yyyy-mm-dd) :	
Checked :	Date (yyyy-mm-dd) :	
Approved :	Date (yyyy-mm-dd) :	
Approver		
Title :		
PANEL SCHEDULES 4		

Page Size:	Sheet:	Rev:
ANSI D	E913	3
Scale :		Sheet : of :



Branch Panel: PP-2G													
Location: ELECTRICAL ROOM				Volts: 120/208V				A.I.C. Rating: 18 kA					
Supply From: TX-2G				Phases: 3PH				Mains Type: MAIN BREAKER					
Mounting: WALL SURFACE MOUNTED				Wires: 4W				Mains Rating: 225 A					
Enclosure: TYPE 1								MCB Rating: 150 A					
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	2
3	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	4
5	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	6
7	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	8
9	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	10
11	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	12
13	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	14
15	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	16
17	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	18
19	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	20
21	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	22
23	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	24
25	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	26
27	CALL/DISPATCH RECEPTACLE	15 A	1			927 VA	927 VA			1	15 A	CALL/DISPATCH RECEPTACLE	28
29	CALL/DISPATCH RECEPTACLE	15 A	1					927 VA	927 VA	1	15 A	CALL/DISPATCH RECEPTACLE	30
31	CALL/DISPATCH RECEPTACLE	15 A	1	927 VA	927 VA					1	15 A	CALL/DISPATCH RECEPTACLE	32
33	CALL/DISPATCH RECEPTACLE	15 A	1			682 VA	682 VA			1	15 A	CALL/DISPATCH RECEPTACLE	34
35	CALL/DISPATCH RECEPTACLE	15 A	1					682 VA	682 VA	1	15 A	CALL/DISPATCH RECEPTACLE	36
37	CALL/DISPATCH RECEPTACLE	15 A	1	682 VA	682 VA					1	15 A	CALL/DISPATCH RECEPTACLE	38
39	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	40
41	SPARE	15 A	1					0 VA	0 VA	1	15 A	SPARE	42
43	SPARE	15 A	1	0 VA	0 VA					1	15 A	SPARE	44
45	SPARE	15 A	1			0 VA	0 VA			1	15 A	SPARE	46
47	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	48
49	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	50
51	SPACE	--	1			--	--			1	--	SPACE	52
53	SPACE	--	1					--	--	1	--	SPACE	54
55	SPACE	--	1	--	--					1	--	SPACE	56
57	SPACE	--	1			--	--			1	--	SPACE	58
59	SPACE	--	1					--	--	1	--	SPACE	60
61	SPACE	--	1	--	--					1	--	SPACE	62
63	SPACE	--	1			--	--			1	--	SPACE	64
65	SPACE	--	1					--	--	1	--	SPACE	66
67	SPACE	--	1	--	--					1	--	SPACE	68
69	SPACE	--	1			--	--			1	--	SPACE	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
Total Load:				12488 VA		10634 VA		10634 VA					
Total Amps:													
Legend:													
Load Type		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
RECEPTACLE		33756 VA		80.00%		27005 VA							
								Total Conn. Load: 33756 VA					
								Total Est. Demand: 27005 VA					
								Total Conn.: 94 A					
								Total Est. Demand: 75 A					
Notes:													

Branch Panel: PP-2M													
Location: ELECTRICAL ROOM				Volts: 120/208V				A.I.C. Rating: 18 kA					
Supply From: TX-2M				Phases: 3PH				Mains Type: MAIN BREAKER					
Mounting: WALL SURFACE MOUNTED				Wires: 4W				Mains Rating: 225 A					
Enclosure: TYPE 1								MCB Rating: 150 A					
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEPTACLE- CALL/DISPATCH	15 A	1	800 VA	800 VA					1	15 A	RECEPTACLE- CALL/DISPATCH	2
3	RECEPTACLE- SUPERVISOR	15 A	1			800 VA	100 VA			1	15 A	FFH-1- CALL/DISPATCH	4
5	RECEPTACLE- QA	15 A	1					600 VA	800 VA	1	15 A	RECEPTACLE- TRAINER	6
7	RECEPTACLE- CORRIDOR, QUIET	15 A	1	600 VA	600 VA					1	15 A	RECEPTACLE- CORRIDOR	8
9	RECEPTACLE- MULTIPURPOSE	15 A	1			600 VA	800 VA			1	15 A	RECEPTACLE- MULTIPURPOSE	10
11	RECEPTACLE- MULTIPURPOSE	15 A	1					600 VA	200 VA	1	20 A	RECEPTACLE- MICROWAVE	12
13	RECEPTACLE- MICROWAVE	20 A	1	200 VA	200 VA					1	20 A	RECEPTACLE- MICROWAVE	14
15	RECEPTACLE- REFRIGERATOR	20 A	1			500 VA	400 VA			1	20 A	RECEPTACLE- KITCHEN	16
17	FCU-5	15 A	1					100 VA	100 VA	1	15 A	FFH-1- KITCHEN	18
19	RECEPTACLE- PATIO	20 A	1	200 VA	100 VA					1	15 A	FCU-4	20
21	FFH-1-VESTIBULE	15 A	1			100 VA	50 VA			1	15 A	AUTO FIXTURES - WASHROOM	22
23	AUTO FIXTURES- WASHROOM	15 A	1					100 VA	100 VA	1	15 A	FCU-2	24
25	FCU-6	15 A	1	100 VA	100 VA					1	15 A	FCU-3	26
27	RECEPTACLES- ELEC ROOM	15 A	1			600 VA	100 VA			1	15 A	HRU CONTROLS	28
29	BAS PANEL 1 - MECH ROOM	15 A	1					100 VA	100 VA	1	15 A	GFU-2	30
31	GFU-1	15 A	1	100 VA	400 VA					1	15 A	B-1	32
33	B-2	15 A	1			400 VA	100 VA			1	15 A	PRE-ACTION SYSTEM	34
35	PRE-ACTION SYSTEM	15 A	1					100 VA	200 VA	1	15 A	RECEPTACLE- MECH ROOM	36
37	RECEPTACLE- IT ROOM	15 A	1	600 VA	200 VA					1	20 A	RECEPTACLE- ROOFTOP MAINT.	38
39	RECEPTACLE- ROOFTOP MAINT.	15 A	1			200 VA	200 VA			1	20 A	RECEPTACLE- ROOFTOP MAINT.	40
41	EV CAR CHARGER- PARKING LOT	50 A	2					4800...	4800...	2	50 A	EV CAR CHARGER- PARKING LOT	42
43	--	--	--	4800...	4800...					--	--	--	44
45	RTU CONTROLS	15 A	1			100 VA	2990...			3	35 A	CRAC-1A - IT ROOM	46
47	CRAC-1B - IT ROOM	35 A	3					2990...	2990...	--	--	--	48
49	--	--	--	2990...	2990...					--	--	--	50
51	--	--	--			2990...	0 VA			3	15 A	CRAC-2B - IT ROOM	52
53	CRAC-2A - IT ROOM	15 A	3					901 VA	0 VA	--	--	--	54
55	--	--	--	901 VA	0 VA					--	--	--	56
57	--	--	--			901 VA	50 VA			1	15 A	TRAP PRIMER, CONDENSATE PUMP - MECH...	58
59	BAS PANEL 2 - MECH ROOM	15 A	1					100 VA	100 VA	1	15 A	BAS PANEL 3 - MECH ROOM	60
61	Spare	15 A	1	0 VA	0 VA					1	15 A	Spare	62
63	Spare	15 A	1			0 VA	0 VA			1	15 A	Spare	64
65	Spare	15 A	1					0 VA	0 VA	1	15 A	Spare	66
67	Spare	20 A	1	0 VA	0 VA					1	20 A	Spare	68
69	Spare	20 A	1			0 VA	0 VA			1	20 A	Spare	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	SPACE	--	1			--	--			1	--	SPACE	82
83	SPACE	--	1					--	--	1	--	SPACE	84
Total Load:				21481 VA		11981 VA		19781 VA					
Total Amps:													
Legend:													
Load Type	Connected Load	Demand Factor	Estimated Demand	Panel Totals									
RECEPTACLE	10700 VA	80.00%	8560 VA										
MOTOR	22493 VA	70.00%	15745 VA	Total Conn. Load: 53243 VA									
CAR CHARGER	19200 VA	90.00%	17280 VA	Total Est. Demand: 42265 VA									
OTHER	850 VA	80.00%	680 VA	Total Conn.: 148 A									
				Total Est. Demand: 117 A									
Notes:													



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NORTH:



SEAL:

NRPS - 911 BACKUP DISPATCH  
5 LINCOLN STREET  
WELLAND, ONTARIO

Owner's Project Number: 60686829  
Owner's Contract Number: 987654321

3	2025-01-27	ISSUED FOR TENDER
2	2024-12-13	IFP RE-SUBMISSION
1	2024-11-29	ISSUED FOR OWNER REVIEW
Mark	Date	Description

Revision History		
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Project Number : 60686829	Project Manager :	
Project Administrator :	BIM/VDC Manager :	
Sustainability Target :	IPMS 1 (m <sup>2</sup> ) :	IPMS 2 (m <sup>2</sup> ) :
Designed : MA	Date (yyyy-mm-dd) :	
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