



**NORR**

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**NORR ARCHITECTS ENGINEERS PLANNERS**  
A Partnership of Limited Companies

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## GOVERNMENT OF CANADA ADDITION

INNISFAIL, ALBERTA, CANADA

NORR JOB NO: NCCA-17-0228

ISSUED FOR TENDER - MARCH 29, 2018

ARCHITECTURAL	STRUCTURAL	MECHANICAL	ELECTRICAL
<p><b>NORR ARCHITECTS ENGINEERS PLANNERS</b> SUITE 2300, 411 - 1st STREET S.E. CALGARY, ALBERTA T2G 4Y5</p> <p>PHONE: 403.264.4000 FAX: 403.269.7215</p>	<p><b>NORR ARCHITECTS ENGINEERS PLANNERS</b> SUITE 2300, 411 - 1st STREET S.E. CALGARY, ALBERTA T2G 4Y5</p> <p>PHONE: 403.264.4000 FAX: 403.269.7215</p>	<p><b>NORR ARCHITECTS ENGINEERS PLANNERS</b> SUITE 2300, 411 - 1st STREET S.E. CALGARY, ALBERTA T2G 4Y5</p> <p>PHONE: 403.264.4000 FAX: 403.269.7215</p>	<p><b>NORR ARCHITECTS ENGINEERS PLANNERS</b> SUITE 2300, 411 - 1st STREET S.E. CALGARY, ALBERTA T2G 4Y5</p> <p>PHONE: 403.264.4000 FAX: 403.269.7215</p>
<p>ARCHITECTURAL DRAWINGS</p> <p>A00-00-01 COVER SHEET/DRAWING LIST</p> <p>A00-01-02 GENERAL NOTES, BUILDING CONSTRUCTION TYPES &amp; WINDOW SCHEDULE</p> <p>A01-00-01 BUILDING CODE REVIEW &amp; LIFE SAFETY PLAN</p> <p>A10-00-00 SITE PLAN</p> <p>A20-00-01 PLANS FLOOR PLANS REFLECTED</p> <p>CEILING PLANS</p> <p>A20-01-01 ROOF PLANS - EXISTING &amp; PROPOSED</p> <p>A30-00-01 BUILDING ELEVATIONS</p> <p>A31-00-01 BUILDING SECTIONS</p> <p>A33-00-01 INTERIOR ELEVATIONS</p> <p>A40-00-01 ENLARGED PLAN</p> <p>A51-00-01 SECTION DETAILS</p>	<p>STRUCTURAL DRAWINGS</p> <p>S-01 GENERAL NOTES</p> <p>S-02 GENERAL NOTES</p> <p>S-03 TYPICAL DETAILS</p> <p>S-04 TYPICAL DETAILS</p> <p>S-05 TYPICAL DETAILS</p> <p>S-06 PLANS AND SECTIONS FOUNDATION PLAN, FRAMING PLAN AND SECTIONS</p>	<p>MECHANICAL DRAWINGS</p> <p>M-00-01 MECHANICAL LEGEND, SCHEDULE, DRAWING LIST, SPECIFICATIONS</p> <p>M-20-01 PIPING DEMOLITION AND CONSTRUCTION PLANS</p> <p>M-50-01 VENTILATION DEMOLITION AND CONSTRUCTION PLANS</p>	<p>ELECTRICAL DRAWINGS</p> <p>E00-00 ELECTRICAL COVER SHEET</p> <p>E00-01 DEMOLITION AND NEW POWER &amp; SYSTEM PLANS</p> <p>E10-00 LIGHTING PLANS, SCHEDULES AND SINGLE LINE DIAGRAM</p> <p>E20-00 ELECTRICAL SPECIFICATIONS</p> <p>E20-01 ELECTRICAL SPECIFICATIONS</p>







PLOT DATE: March 28, 2018 TIME: 12:51 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\00-DELIVARCH\_PROD\SHEETS\A01-00-01.DWG PLOTSTYLE TABLE: PMA-STD-100.ctb



01 LIFE SAFETY PLAN - MAIN FLOOR  
A01-00-01 1:200

BUILDING CODE REVIEW:		SPECIFIC CODE ARTICLE	
<b>REVIEW BASED ON 2015 NATIONAL BUILDING CODE</b> - THE FOLLOWING NOTES PROVIDE INFORMATION HIGHLIGHTING BUILDING DESIGN CRITERIA. IT IS NOT INTENDED TO DESCRIBE ALL DESIGN & CONSTRUCTION REQUIREMENT. ALL CONSTRUCTION SHALL CONFIRM TO ALL APPLICABLE SECTIONS OF THE BUILDING CODE. - CONSTRUCTED UNDER PART "3" OF BUILDING CODE			
<b>GENERAL INFORMATION</b>			
BUILDING AREA:	746.01 sq.m		
BUILDING HEIGHT:	1 STOREYS ABOVE GRADE 0 LEVEL OF PARKADE BELOW GRADE		
<b>MEZZANINE AND OPENINGS THROUGH FLOOR ASSEMBLIES</b>			
- APPLICATION FOR SPECIAL PROTECTION FOR MEZZANINE AND INTERCONNECTED FLOOR SPACE CONFIRMING TO ARTICLE ABC 3.2.8.2.		3.2.8	
<b>MAJOR OCCUPANCY</b>			
A) GROUP/DIV.	D BUSINESS AND PERSONAL SERVICES	1 STOREY	
<b>SIZE AND CONSTRUCTION RELATIVE TO OCCUPANCY</b>			
A) GROUP D		3.2.2.62	
1) a) NOT MORE THAN 2 STOREYS		1 STOREY	
b) BUILDING AREA NOT MORE THAN 1000 sq. m		746.01 sq.m	
<b>LOCATION OF ACCESS ROUTE &amp; PROVISION FOR FIRE FIGHTING</b>			
- PRINCIPAL ENTRANCE AND EVERY ACCESS OPENING ARE LOCATED MIN. 3m, & MAX. 15m FROM CLOSEST PORTION OF THE ACCESS ROUTE		3.2.5.5.(1)	
- IF FIRE DEPARTMENT CONNECTION IS PROVIDED, MAX. 45m FROM FIRE DEPARTMENT CONNECTION TO HYDRANT		3.2.5.15.	
- IF FIRE DEPARTMENT CONNECTION IS NOT PROVIDED, MAX. 90m FROM HYDRANT TO VEHICLE PLUS UNOBSTRUCTED PATH OF TRAVEL		3.2.5.5.(2) (b)	
- ACCESS ROUTE DESIGN CONFIRMING TO ARTICLE ABC 3.2.5.6.		3.2.5.6.	
<b>OCCUPANCY LOAD BY LEVEL / ROOM</b>			
- LEVEL 1 OFFICES	746.01 sq.m, @ 9.30 sq.m. / PERSON = 81 PERSONS	3.1.17.1	
- POSTED MAXIMUM OCCUPANCY AS STATED BY OWNER = 25 PERSONS			
<b>ACCESS TO EXIT AND LOCATION</b>			
LEVEL / ROOM	MIN. 2 EGRESS DOORWAY 3.2.1.5	CORRIDOR WIDTH (mm) 3.3.1.9 / 3.3.1.17	MAX. TRAVEL DIST. (m) 3.4.2.5
	REQUIRED	PROVIDED	REQUIRED
MAIN FLR	2	3	40m / 37.3m
		(MIN. 1100)	1500mm
<b>EXIT WIDTH</b>			3.4.3.2
FLOOR	OCCUPANT LOAD	REQUIRED (mm)	PROVIDED (mm)
		EXIT CORR.	STAIRS
MAIN FLR.	25	(MIN. 1100)	(MIN. 900)
		(MIN. 800)	1500mm
			N/A
			900mm
<b>HEADROOM CLEARANCE</b>			
- EXITS (STAIRS & LANDING)	2050mm (MIN. 2050mm)		3.4.3.4 (1)
- DOORWAYS	2030mm (MIN. 2030mm)		3.4.3.4 (4)
<b>FIRE SEPARATION</b>			
- PUBLIC CORRIDOR	45min F.R.R.		3.3.1.4 (2)
- SERVICE ROOM	1 hr F.R.R.		3.6.2.1 (1)
- STORAGE ROOM	45min F.R.R.		3.3.4.3 (3)
- JANITOR'S ROOM	45min F.R.R.		3.3.1.21 (2)
<b>FIRE CLOSURES</b>			3.1.8.4.
F.R.R. OF FIRE SEPARATION	RATING OF CLOSURE		
45 min. (0.75 hr)	45 min. (0.75 hr)		
60 min. (1.00 hr)	45 min. (0.75 hr)		
90 min. (1.50 hr)	60 min. (1.00 hr)		
120 min. (2.00 hr)	90 min. (1.50 hr)		
20 MINUTE DOOR A DOOR ASSEMBLY HAVING A FIRE-PROTECTION RATING OF NOT LESS THAN 20 min. IS PERMITTED TO BE USED AS A CLOSURE IN A FIRE SEPARATION NOT REQUIRED TO HAVE A FIRE RESISTANCE RATING MORE THAN 1 hr LOCATED BETWEEN A CORRIDOR AND A SUITE.			3.1.8.10.(1)
<b>TEMPERATURE RISE LIMIT FOR DOORS</b>			3.1.8.15.
- ALL STAIRWELL DOORS AND ELEVATOR ACCESS AREAS SHALL BE INSTALLED WITH A TRANSPARENT PANEL FOR VISIBILITY BY CITY BYLAW. DESIGN OF RESTRICTED GLAZING AREA FOR FIRE CLOSURES CONFIRMING TO ARTICLE 3.1.8.15.			
<b>BARRIER-FREE DESIGN REQUIREMENTS</b>			
- BARRIER-FREE PARKING STALLS REQUIRED ## STALLS			3.8.2.2.
- DOORWAYS THAT IS LOCATED IN A BARRIER-FREE PATH OF TRAVEL SHALL HAVE A CLEAR WIDTH NOT LESS THAN 850mm IN OPEN POSITION			3.8.3.3.
- COMPLY WITH THE BARRIER FREE RAMP DESIGN TO ARTICLE 3.8.3.4.			3.8.3.4.
<b>FIRE ALARM &amp; DETECTION SYSTEM</b>			
- REQUIRE FIRE ALARM SYSTEM IN AN AUTOMATIC SPRINKLER SYSTEM			3.2.4.1.
- FIRE ALARM SYSTEM TO BE A SINGLE- OR 2-STAGE SYSTEM			3.2.4.3.
- REQUIRE FIRE DETECTOR TO BE CONNECTED TO THE FIRE ALARM SYSTEM			3.2.4.1.1.
- REQUIRE TO SIGNAL TO FIRE DEPARTMENT			3.2.4.8.
- REQUIRE ANNUNCIATOR TO AND ZONE INDICATION			3.2.4.9.
- REQUIRED SMOKE DETECTOR IN PUBLIC CORRIDOR FOR GROUP C			3.2.4.12.
- REQUIRED SMOKE ALARM IN SUITE			3.2.4.22.(7)
- NOT REQUIRED VOICE COMMUNICATION SYSTEMS			3.2.4.22.(7)
<b>FLAME SPREAD RATING AND SMOKE DEVELOPED CLASSIFICATION</b>			3.1.12.1
<b>WASHROOM FACILITIES</b>			
- MINIMUM NUMBER OF WATER CLOSETS FOR EACH SEX - 1			3.7.2.2.12

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Chris P. P. Eng., A.P.E.G.A.

Project Manager	Drawn
D. HIDER	Initial.LastName
Project Leader	Checked
D. HIDER	Initial.LastName

Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**BUILDING CODE REVIEW & LIFE SAFETY PLAN**

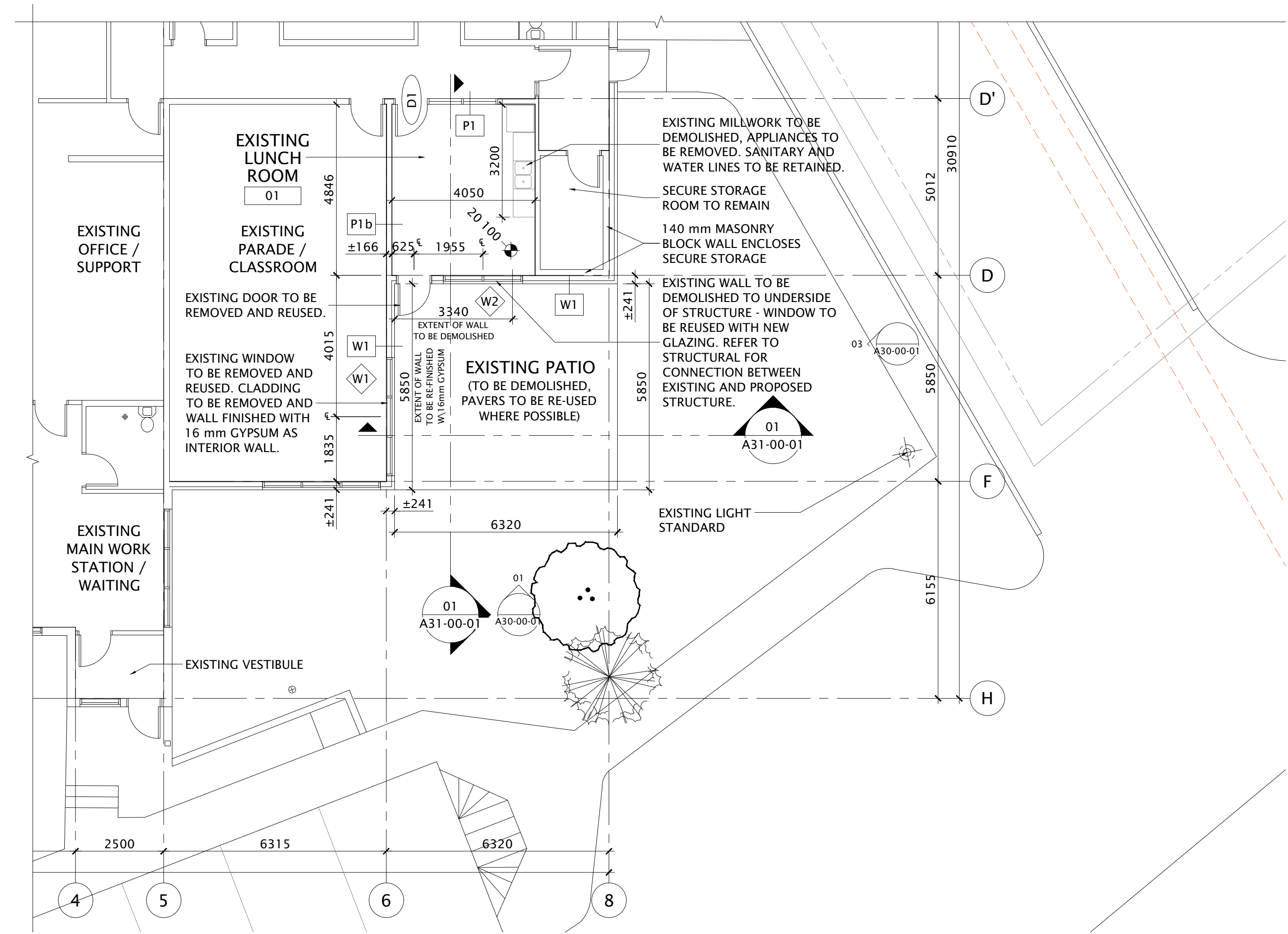
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Project No. **NCCA17-0228**  
Drawing No. **A01-00-01**

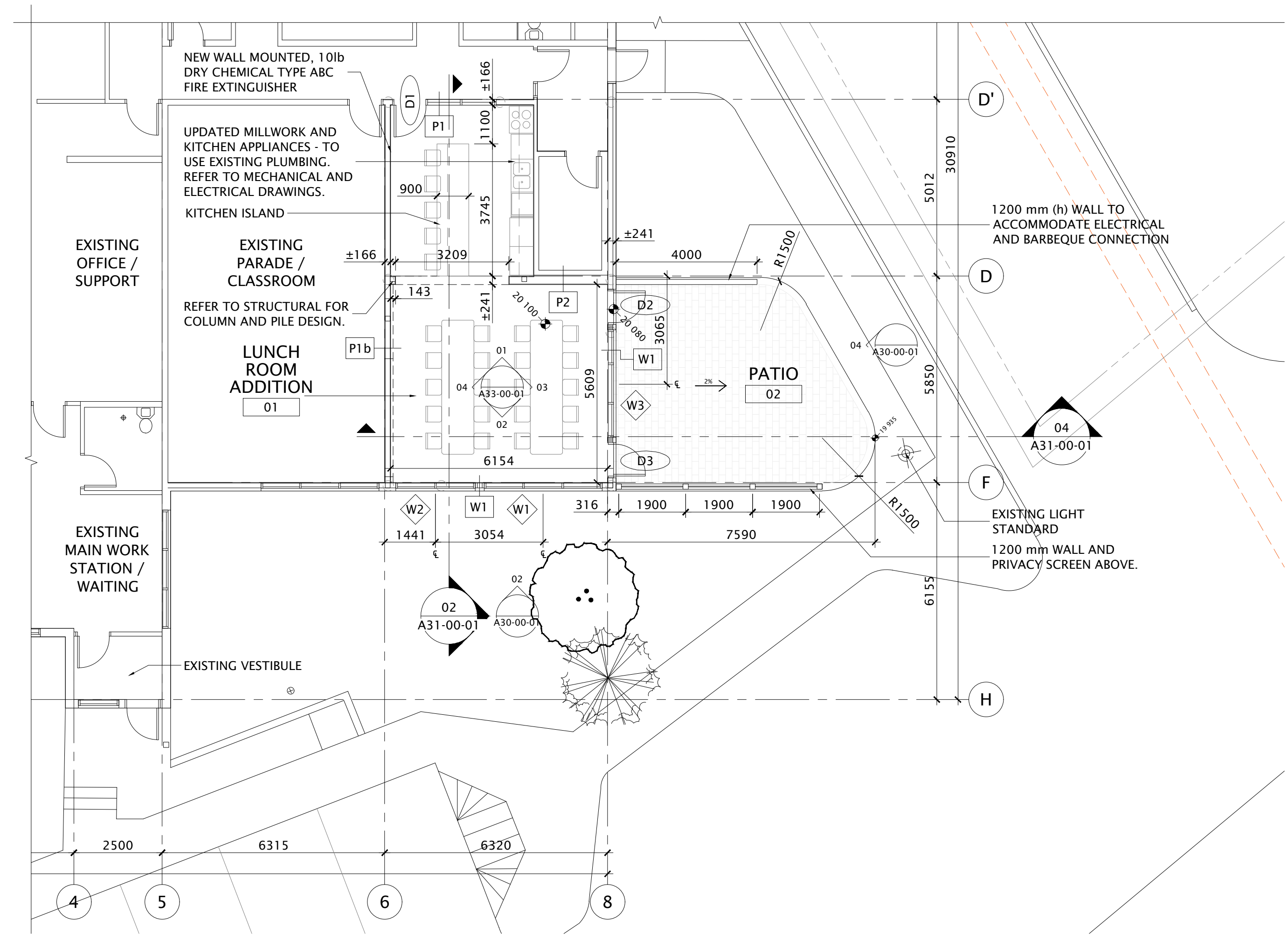




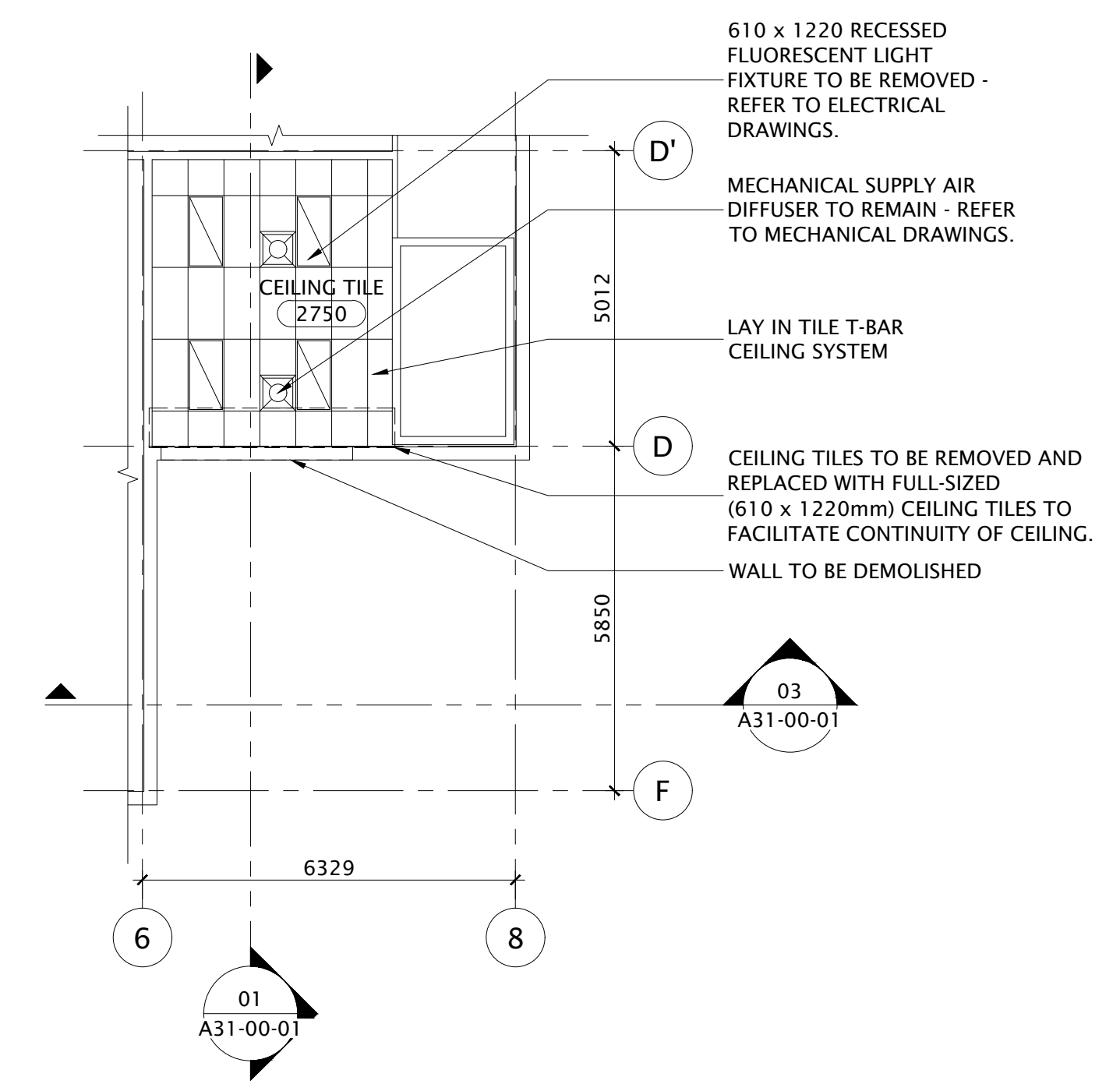
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2018-03-29	ISSUED FOR TENDER	



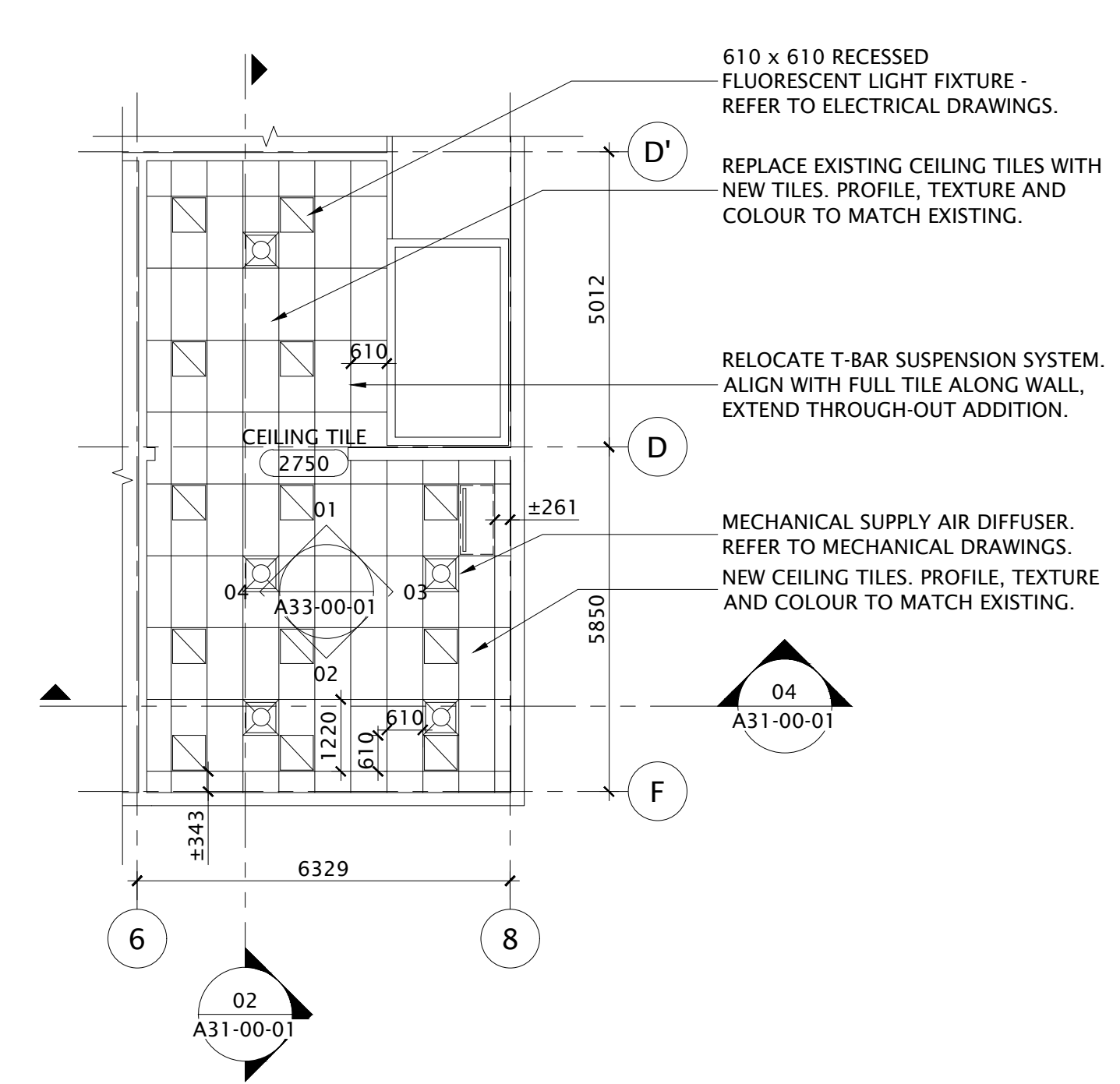
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**EXISTING FLOOR PLAN**  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**  
 1:100  
 A20-00-01



**02**  
**PROPOSED FLOOR PLAN**  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**  
 1:100  
 A20-00-01



**03**  
**EXISTING REFLECTED CEILING PLAN**  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**  
 1:100  
 A20-00-01



**04**  
**PROPOSED REFLECTED PLAN**  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**  
 1:100  
 A20-00-01

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**LUNCHROOM EXPANSION**  
 Keyplan

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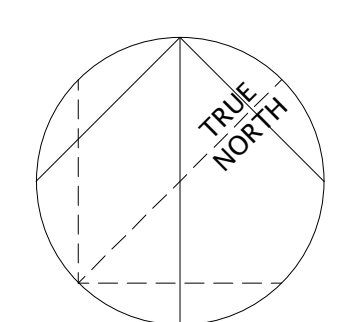
Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	
Client	<b>RCMP</b>

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**PLANS**  
**FLOOR PLANS**  
**REFLECTED CEILING PLANS**

Check Scale (may be photo reduced)  
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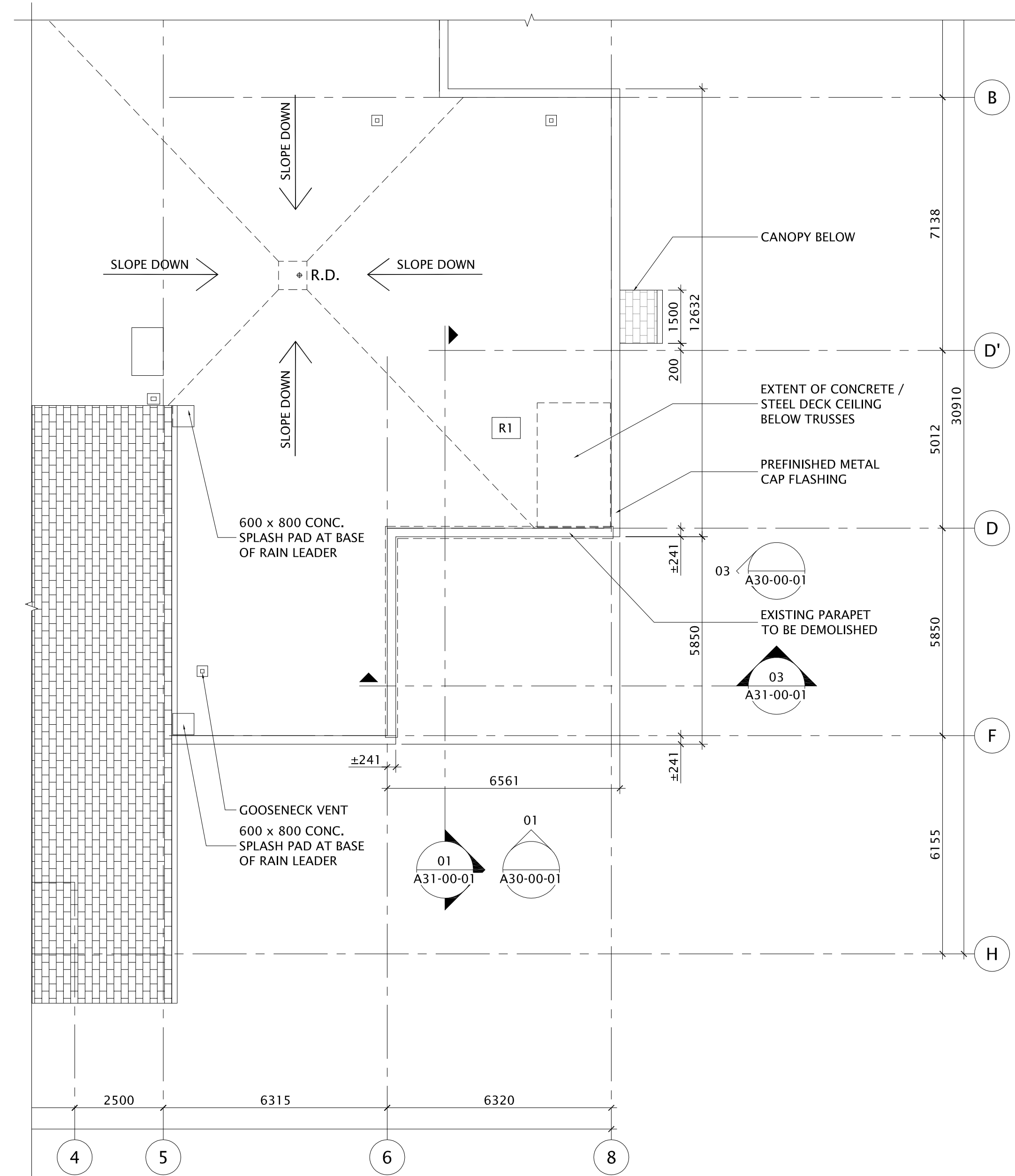
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 Drawing No. **A20-00-01**



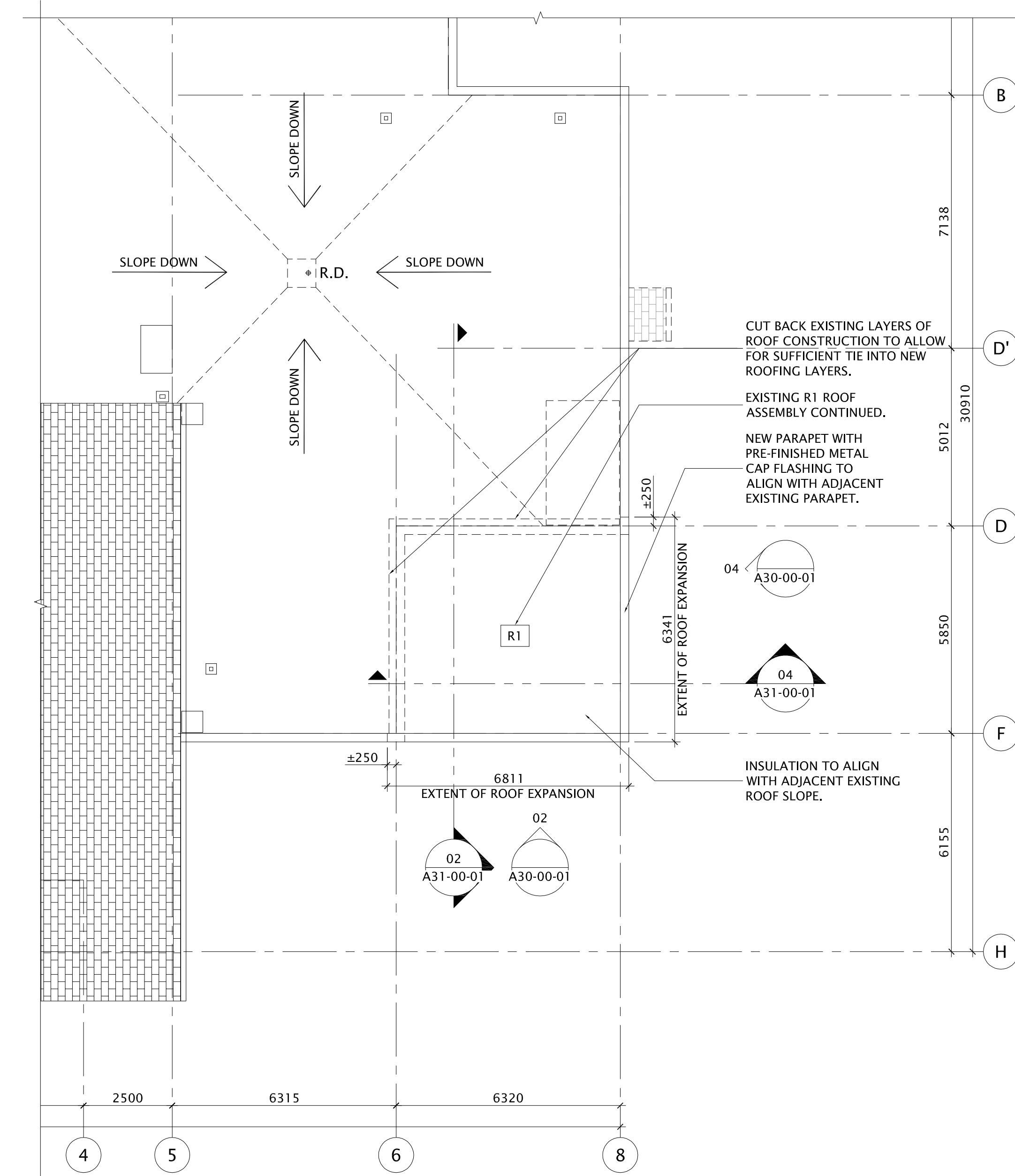
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01  
A20-01-01 1:100  
**EXISTING ROOF PLAN  
INNISFAIL PDSTC LUNCHROOM EXPANSION**



02  
A20-01-01 1:100  
**PROPOSED ROOF PLAN  
INNISFAIL PDSTC LUNCHROOM EXPANSION**

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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Project Component  
**LUNCHROOM EXPANSION**  
Keyplan

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Seal(s)

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Bruce D. Macdonald, Architect, A.A.A., M.A.S.C., M.A.S.T.P.  
A. Shaik, Structural Engineer, A.A.A., B.Arch, M.A.S.C.  
Ajayn Trivedi, P.Eng., A.P.E.C.A.  
Chris P. P. Eng., A.P.E.C.A.

Project Manager D. HIDER	Drawn
Project Leader D. HIDER	Checked

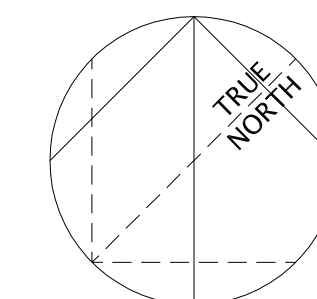
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Project  
**INNISFAIL PDSTC  
LUNCHROOM EXPANSION**

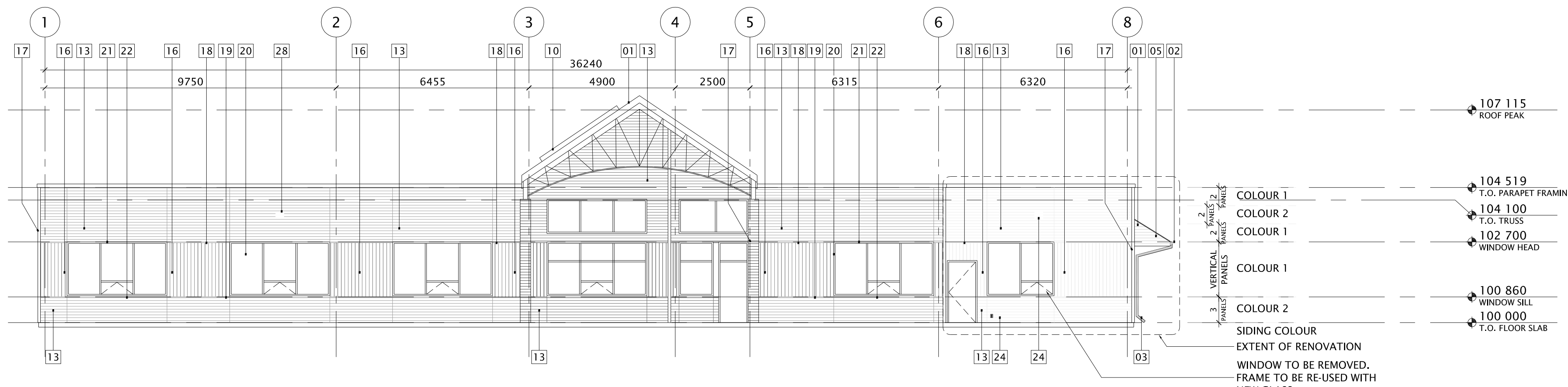
Drawing Title  
**ROOF PLANS  
EXISTING & PROPOSED**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

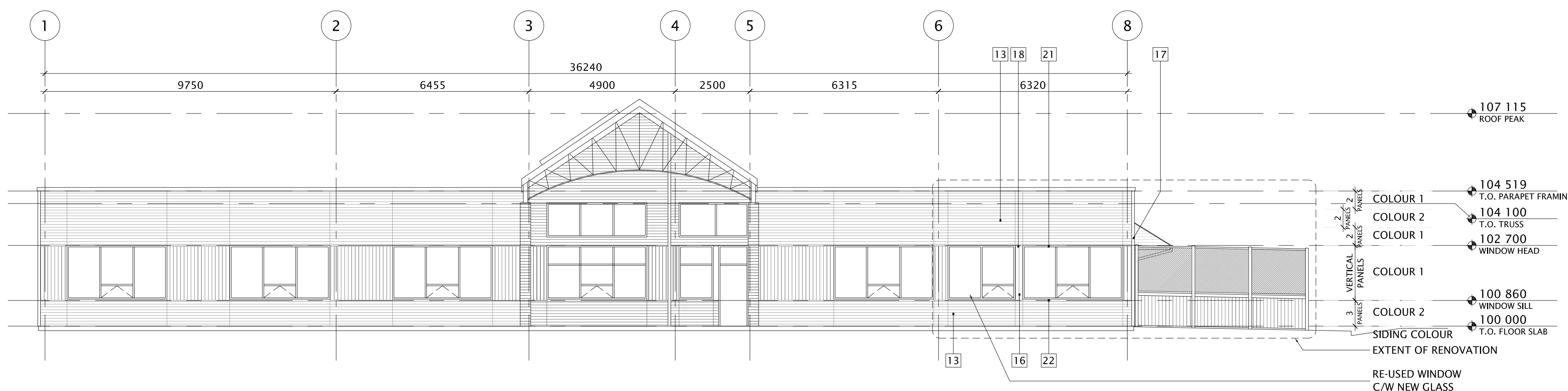
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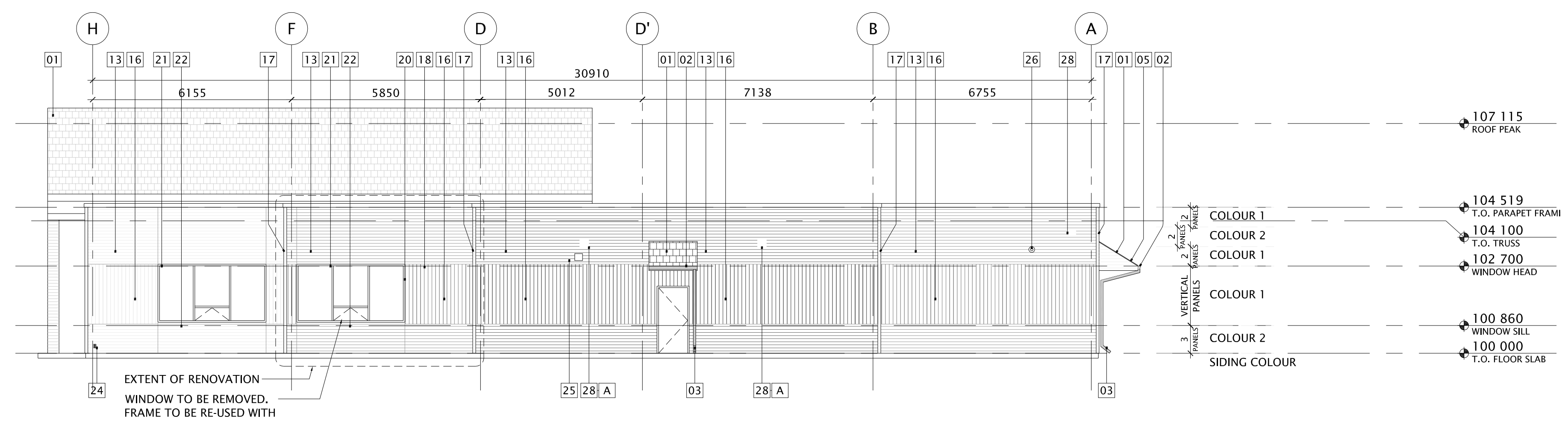




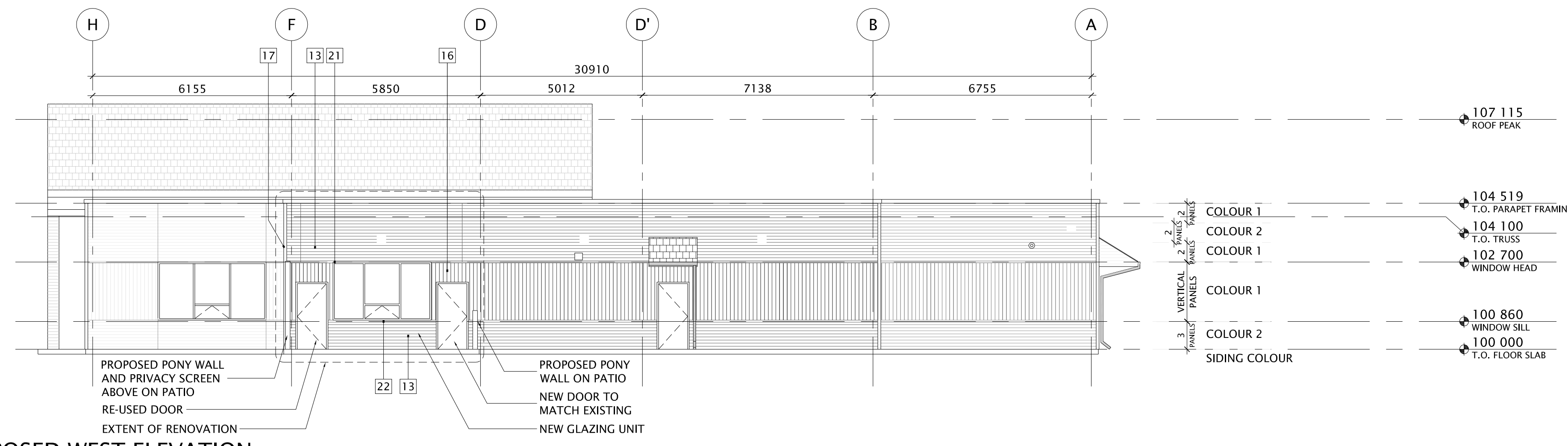
01  
A30-00-01  
EXISTING NORTH ELEVATION  
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1:100



02  
A30-00-01  
PROPOSED NORTH ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION  
1:100



03  
A30-00-01  
EXISTING WEST ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION  
1:100



04  
A30-00-01  
PROPOSED WEST ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION  
1:100

MATERIAL LEGEND	COLOUR	REMARKS
01 ASPHALT SHINGLES	BURGUNDY	
02 PRE-FINISHED METAL GUTTER	BURGUNDY	
03 PRE-FINISHED METAL DOWNSPOUT	BURGUNDY	LEADING TO CONCRETE SPLASH PAD.
04 PRE-FINISHED METAL TRIM	BURGUNDY	UNDER SIDING OVER SHINGLES.
05 PRE-FINISHED METAL CABLE WALL TRIM	BURGUNDY	UNDER SHINGLES OVER SIDING.
06 PRE-FINISHED METAL CABLE END TRIM	BURGUNDY	WRAPPED AROUND END OF METAL DECK.
07 STRUCTURAL BEAM		ENCASED WITHIN PLYWOOD.
08 PRE-FINISHED OWSJ		AS ARCHITECTURAL ACCENT.
09 EXPOSED TO EXTERIOR STRUCTURAL BEAM.		PAINT TO MATCH METAL DECK ABOVE.
10 SKYLIGHT		
11 STRUCTURAL COLUMN	BURGUNDY	SUPPORTING CANOPY
12 PRE-FINISHED HORIZONTAL WOOD FIBRE SIDING	SEE ELEV. FOR COLOUR	TO BACK OF CANOPY. ALTERNATE JOINTS UNTIL FULL PIECE CAN SPAN.
13 PRE-FINISHED HORIZONTAL WOOD FIBRE SIDING	SEE ELEV. FOR COLOUR	ALL JOINTS TO LINE UP VERTICALLY.
14 PRE-FINISHED HORIZONTAL WOOD FIBRE SIDING	SEE ELEV. FOR COLOUR	TO SIDE OF CANOPY.
15 PRE-FINISHED HORIZONTAL WOOD FIBRE SIDING	SEE ELEV. FOR COLOUR	ALL JOINTS STAGGERED.
16 PRE-FINISHED VERTICAL WOOD FIBRE SIDING	SEE ELEV. FOR COLOUR	ABSOLUTELY NO JOINTS. TYPICAL.
17 PRE-FINISHED OUTSIDE CORNER POST	BURGUNDY	CONTINUOUS THROUGH HORIZONTAL AND VERTICAL TRANSITIONS. INSIDE CORNER POSTS AS WELL. TYPICAL.
18 PRE-FINISHED BELT LINE	BEIGE	TO TRANSITION FROM HORIZONTAL TO VERTICAL. TRANSITION PORTION TO LINE UP WITH WINDOW HEAD DRIP CAP.
19 PRE-FINISHED BELT LINE	BEIGE	TO TRANSITION FROM VERTICAL TO HORIZONTAL. BOTTOM OF BELT LINE TO BE 840mm ABOVE START OF SIDING.
20 PRE-FINISHED J-MOULDING	BURGUNDY	TO JAMBS OF ALL WINDOWS AND DOORS.
21 PRE-FINISHED DRIP CAP	BURGUNDY	OVER OPENING. TYPICAL OF ALL WINDOWS.
22 PRE-FINISHED WINDOW SILL FLASHING	BURGUNDY	ALWAYS SLOPING AWAY FROM WINDOW. TYP. ALL WINDOWS.
23 PRE-FINISHED J-MOULDING	BURGUNDY	TO HEAD OF DOOR OPENING, AS WELL AS JAMBS.
24 ELECTRICAL RECEPTACLE	BURGUNDY	MOUNTS 300mm A.F.F. APPLY J-MOULDING TRIM TO ALL 4 SIDES AND SEAL WITH CAULKING.
25 EXHAUST DUCT	BRUSHED ALUMINIUM	THROUGH WALL TO HOOD WITH SCREEN. APPLY J-MOULDING TRIM TO ALL 4 SIDES AND SEAL WITH CAULKING.
26 'B' VENT		THROUGH WALL C/W WALL CAP. CUT SIDING TO FIT TIGHT AND CAULK
27 PRE-FINISHED METAL LOUVRE		TO COLD AIR TRAP. APPLY J-MOULDING TRIM TO ALL 4 SIDES AND SEAL WITH CAULKING.
28 WALL MOUNTED LUMINAIRE	BURGUNDY	SEAL ANY PENETRATIONS THROUGH SIDING USING CAULKING. REFER TO ELECTRICAL.
28 A WALL MOUNTED LUMINAIRE	BURGUNDY	SEAL ANY PENETRATIONS THROUGH SIDING USING CAULKING. BOTTOM OF FIXTURE TO ALIGN WITH BOTTOM OF SIDING COLOUR BAND. REFER TO ELECTRICAL.
29 OUTLINE OF DECK FENCING		ENCASING ENTIRE CORNER.
30 CEMENTITIOUS BOARD	BURGUNDY (TBC)	HORIZONTAL ORIENTED TO A MINIMUM OF 300mm BELOW GRADE, ALONG ALL GRADE BEAMS. TYPICAL & CAULK ALL JOINTS.
31 DECK FRAMING CEMENTITIOUS BOARD		HORIZONTAL TO COVER BOTH LEVELS OF JOISTS.
32 CONCRETE PAD		ARCHITECTURALLY FINISHED.
33 PAINTED TUBULAR STEEL HANDRAIL		
34 RAIN WATER LEADER		
35 ALL TRIM AT BOTTOM OF LOWER WINDOWS TO MATCH 'COLOUR 1'	(TBC)	
36 'COLOUR 1' = BEIGE (PROPOSED TO MATCH EXISTING) 'COLOUR 2' = BURGUNDY (PROPOSED TO MATCH EXISTING)		

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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

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Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Calgary, AB Canada T2G 4Y5  
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A Partnership of Limited Companies

Victor Smith, Architect, AIA, EAIA, MABIC  
Bruce G. MacKinnon, Architect, AIA, EAIA, MABIC  
A. Brian Robertson, Architect, AIA, EAIA, MABIC  
Ardian Trumbo, P. Eng., APEGA  
Chris Pitt, P. Eng., APEGA

Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	

Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**BUILDING ELEVATIONS**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

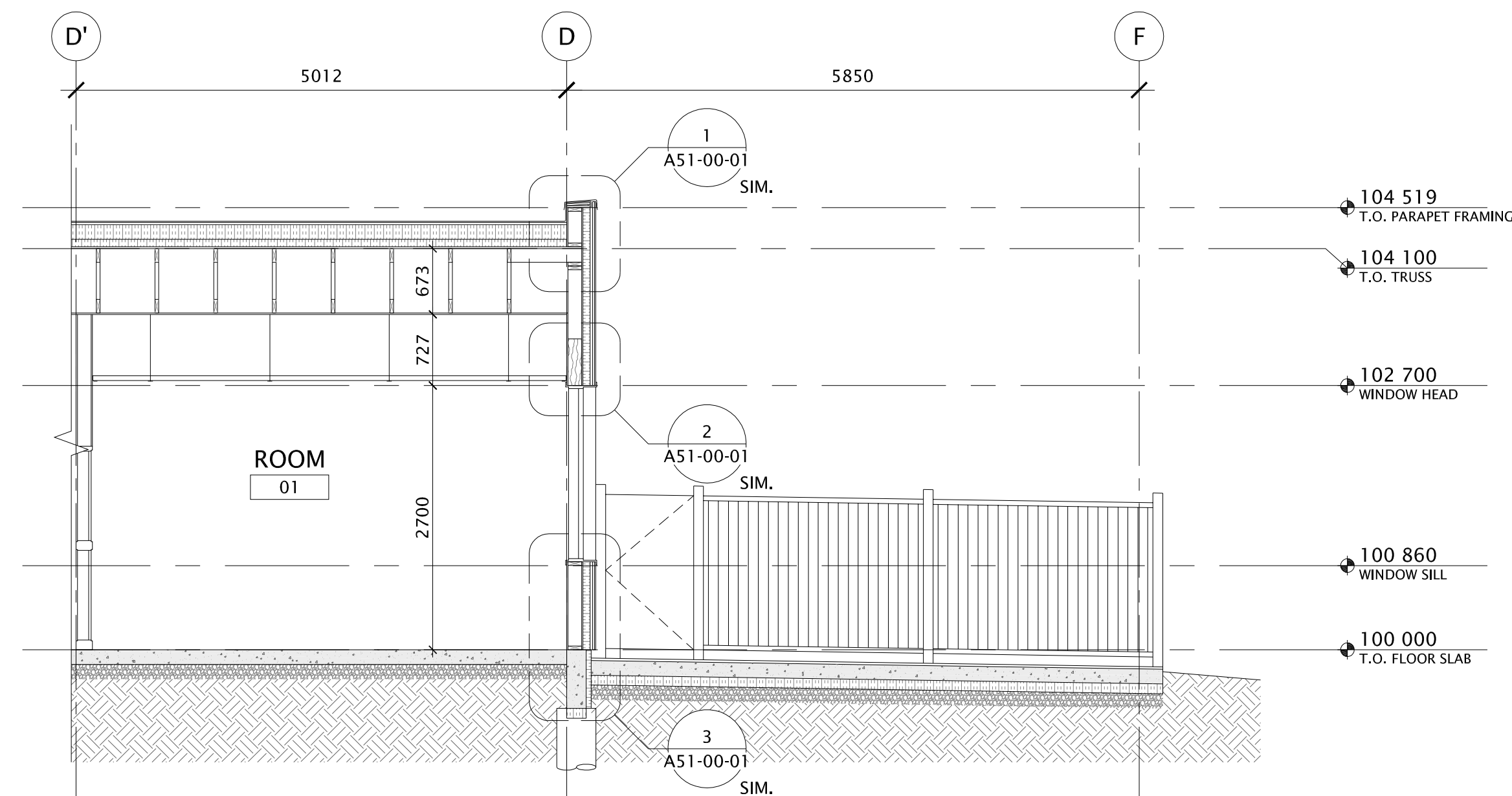
Project No. **NCCA17-0228**

Drawing No. **A30-00-01**

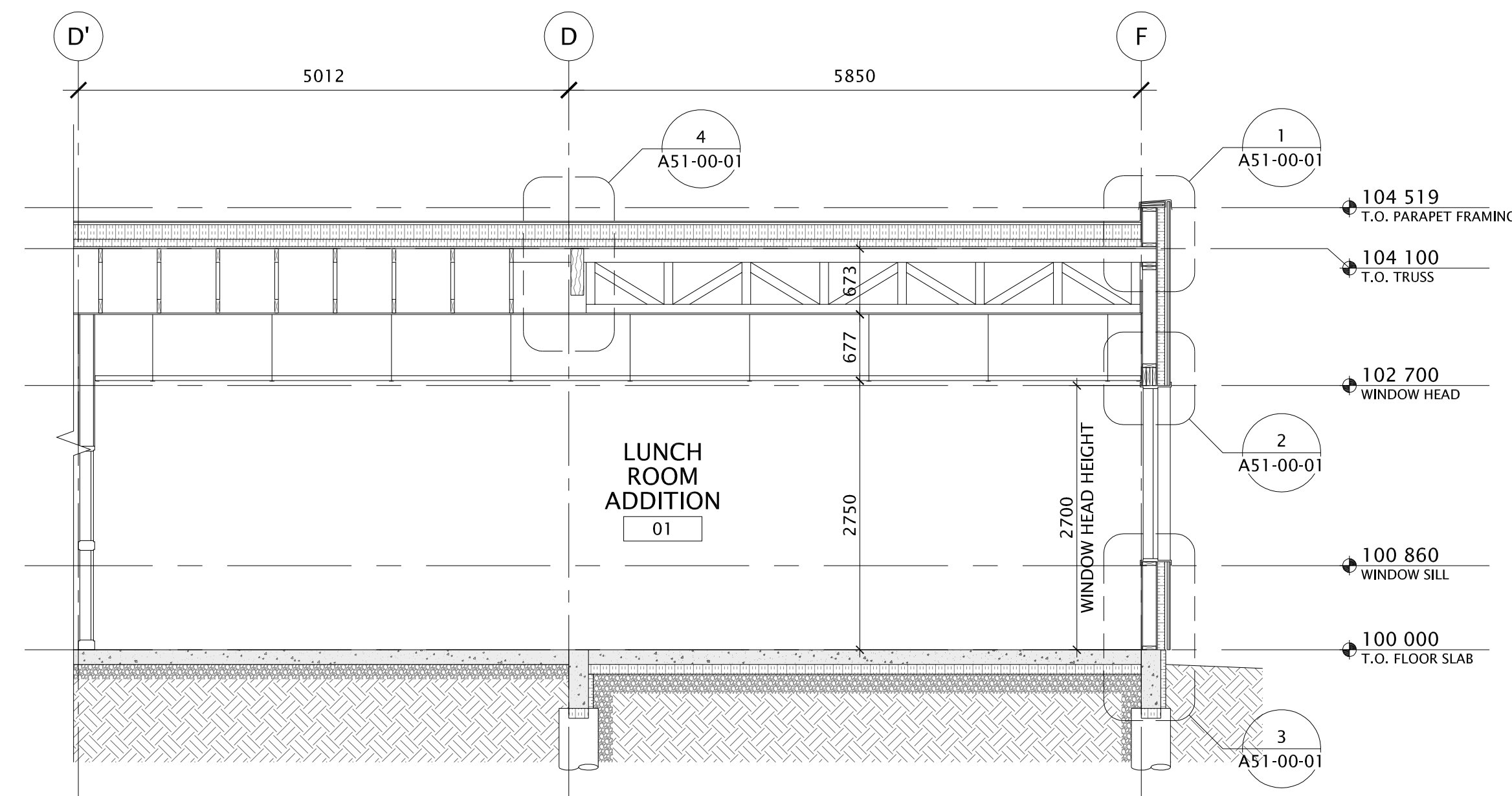
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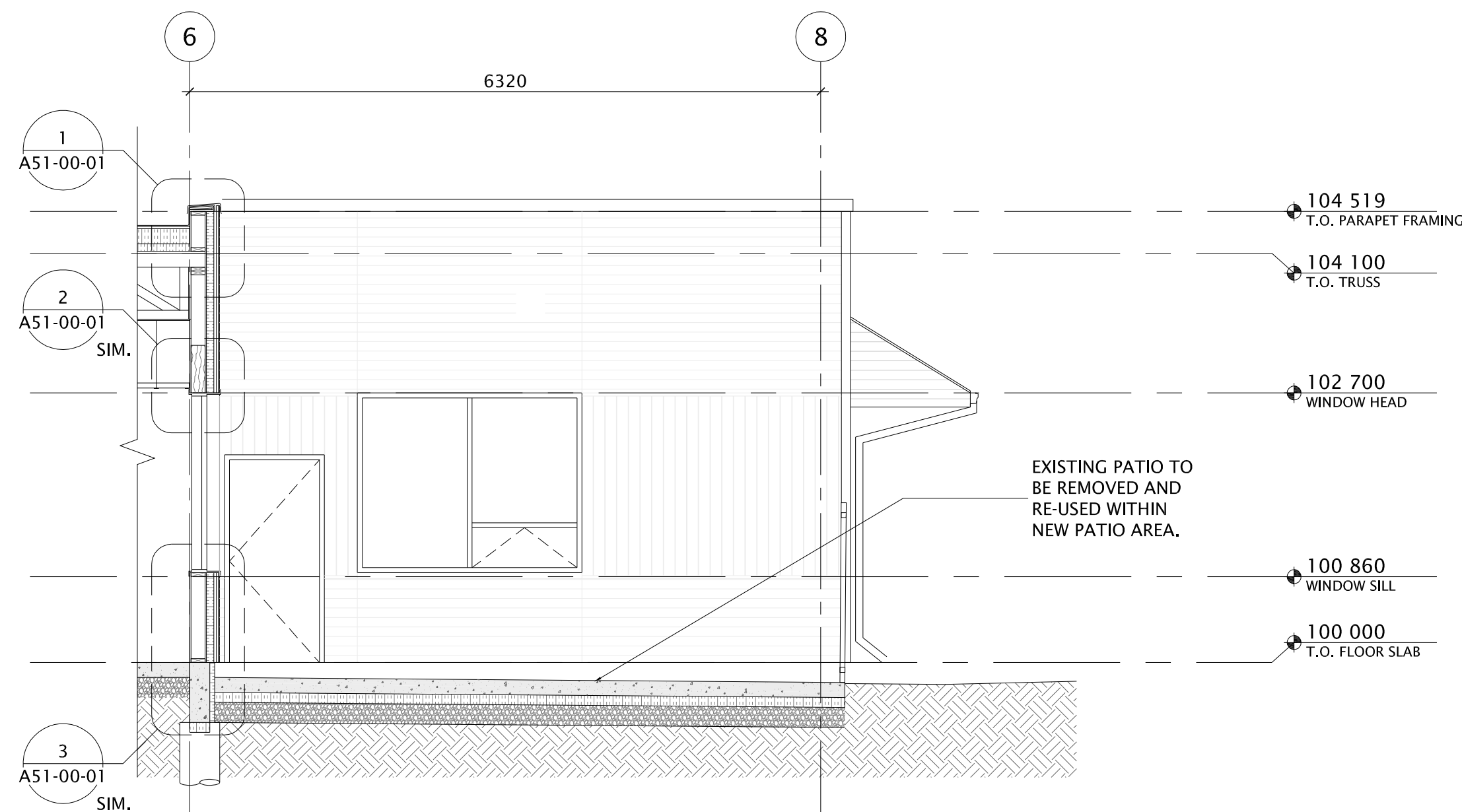
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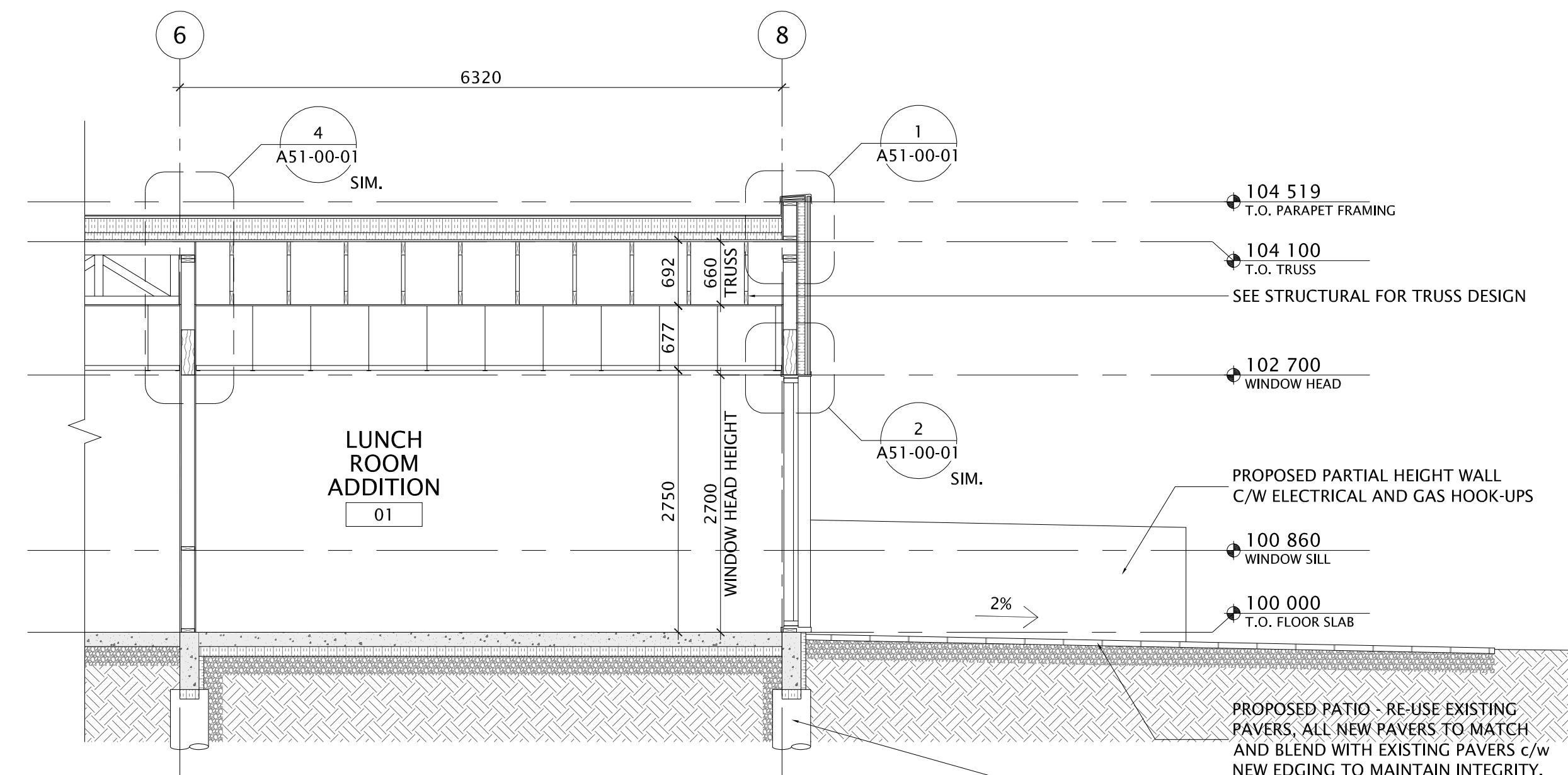
01  
A31-00-01 1:50  
EXISTING BUILDING SECTION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



02  
A31-00-01 1:50  
PROPOSED BUILDING SECTION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



03  
A31-00-01 1:50  
EXISTING BUILDING SECTION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



04  
A31-00-01 1:50  
PROPOSED BUILDING SECTION  
INNISFAIL PDSTC LUNCHROOM EXPANSION

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Bruce G. Macdonald, Architect, A.A.A., M.A.S.C., M.A.S.T.P.  
A. Sara Babine, Architect, A.A.A., B.Arch, M.A.S.C.  
Arlene Trudell, P.Eng., A.P.E.G.A.  
Chris Hill, P.Eng., A.P.E.G.A.

Project Manager D. HIDER	Drawn
Project Leader D. HIDER	Checked

Client  
**RCMP**

Project  
**INNISFAIL PDSTC  
LUNCHROOM EXPANSION**

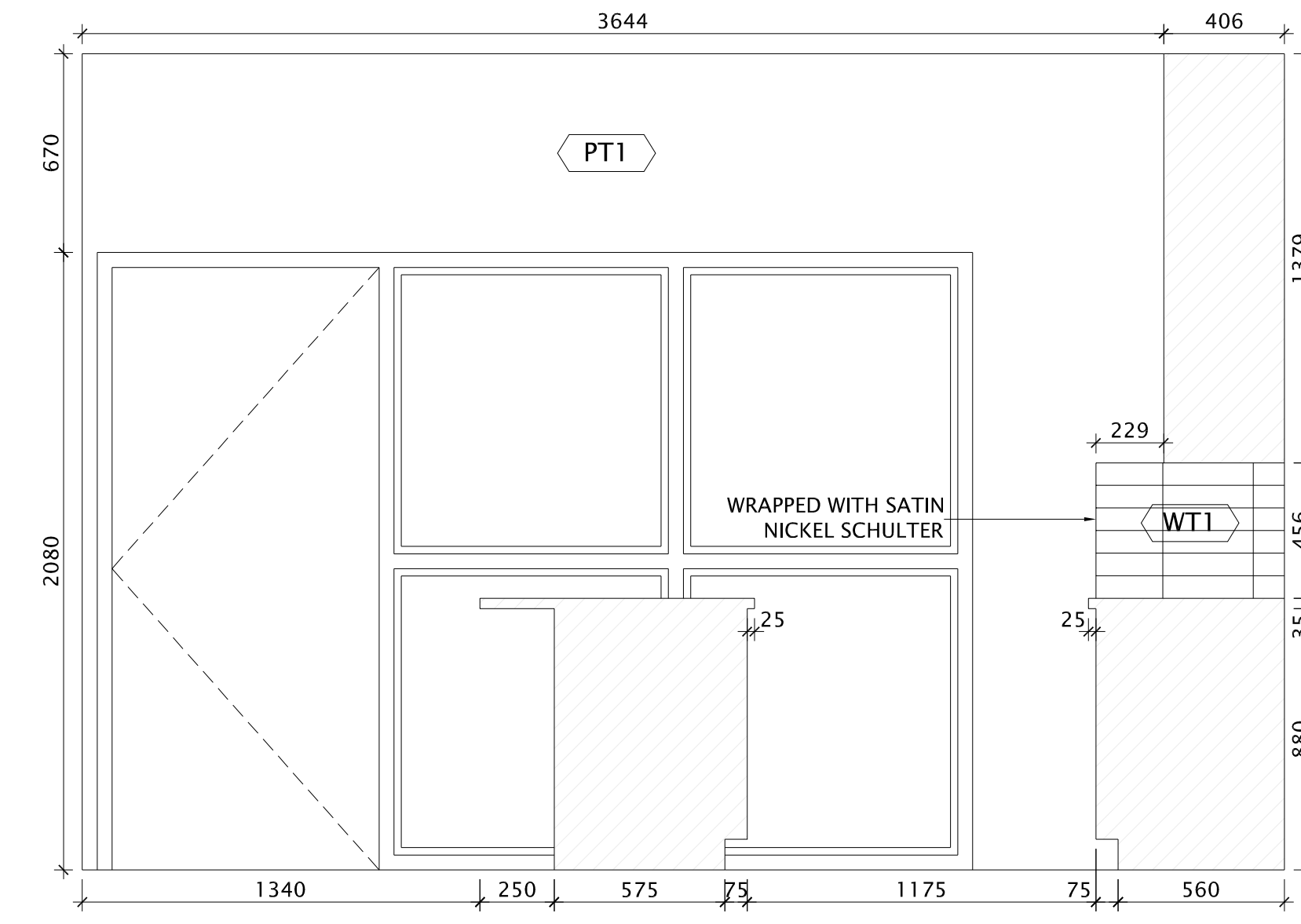
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**BUILDING SECTIONS**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

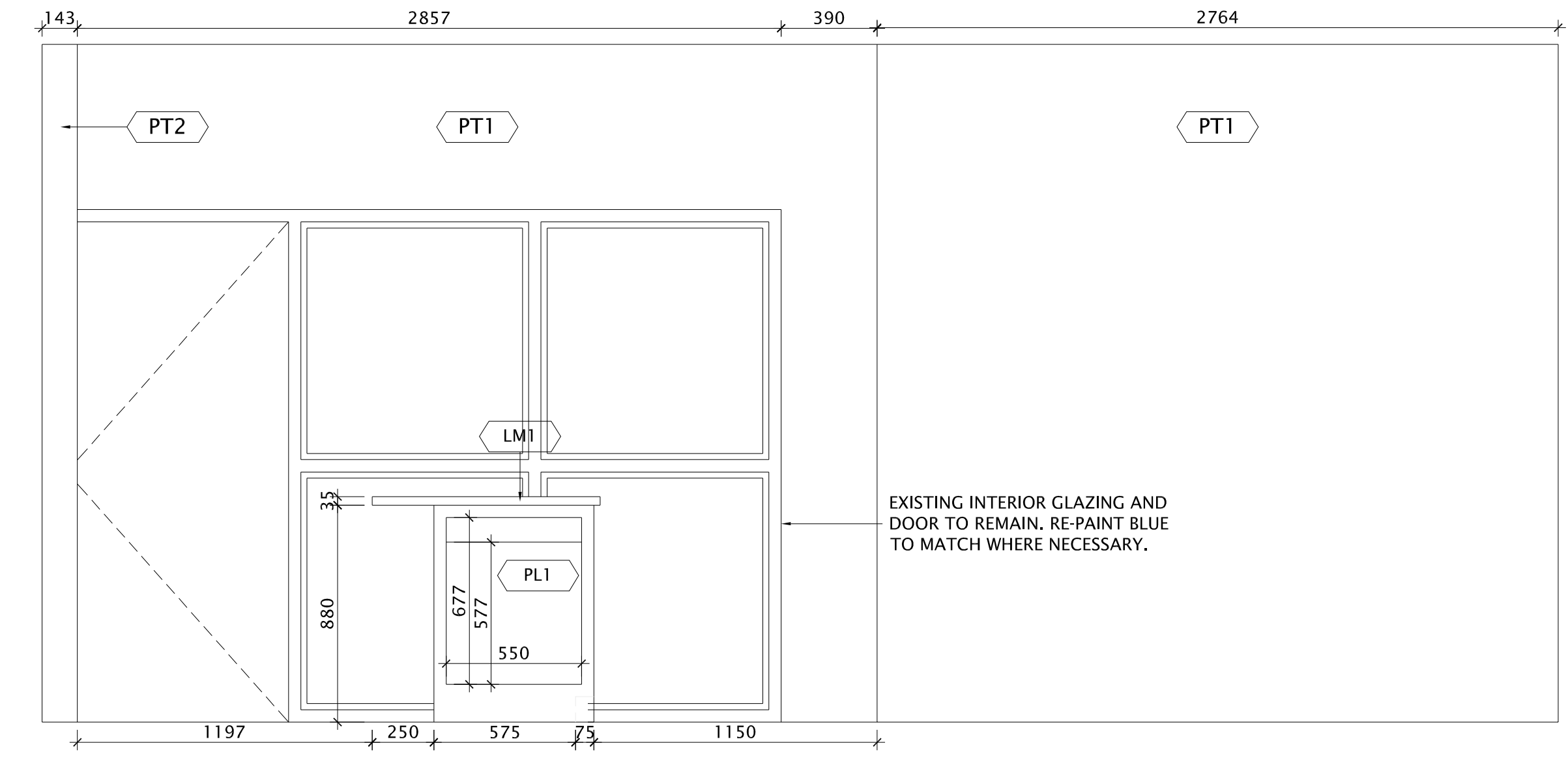
Project No. **NCCA17-0228**  
Drawing No. **A31-00-01**



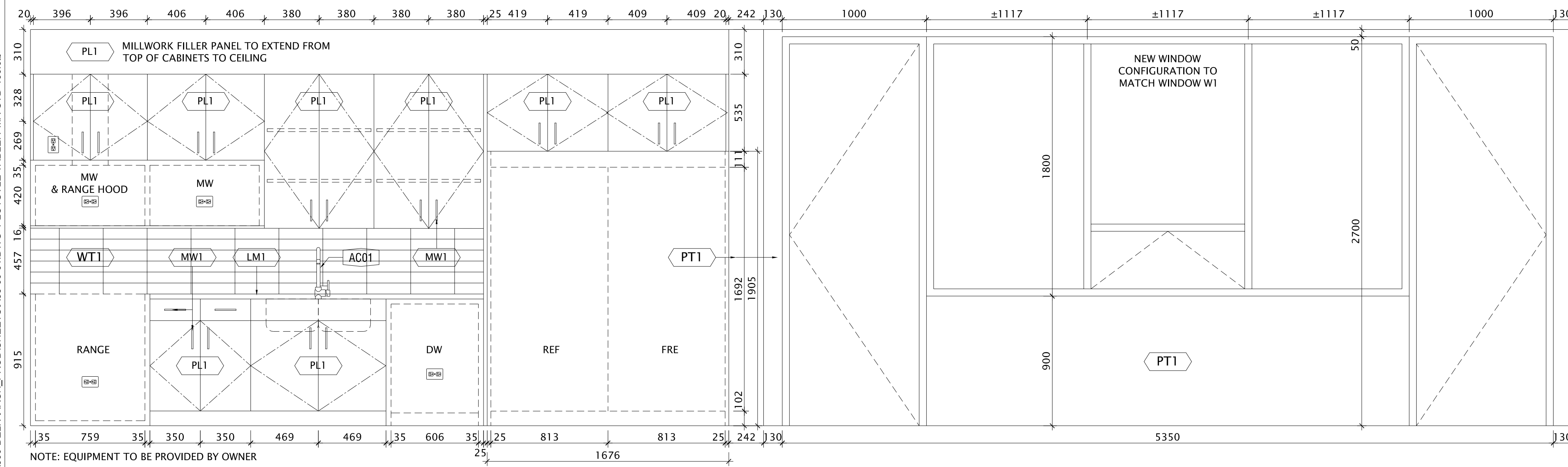
- PL1 CUTLER KITCHEN - SILHOUETTE SERIES - WHITE CHOCOLATE (OR EQUAL)
- MW1 RICHELIEU CONTEMPORARY METAL HAND PULL - SATIN NICKEL (OR EQUAL)
- LM1 LAMINATE COUNTERTOP AND EXISTING SINK - TO MATCH LAGOON (OR EQUAL)
- WT1 SASSI GLASS TILE - NORDIC ICE - (OR EQUAL)
- PT1 TO MATCH EXISTING
- PT2 TO MATCH EXISTING
- AC01 KRAUS SINGLE LEVER PULLOUT KITCHEN FAUCET - SATIN NICKEL (OR EQUAL)



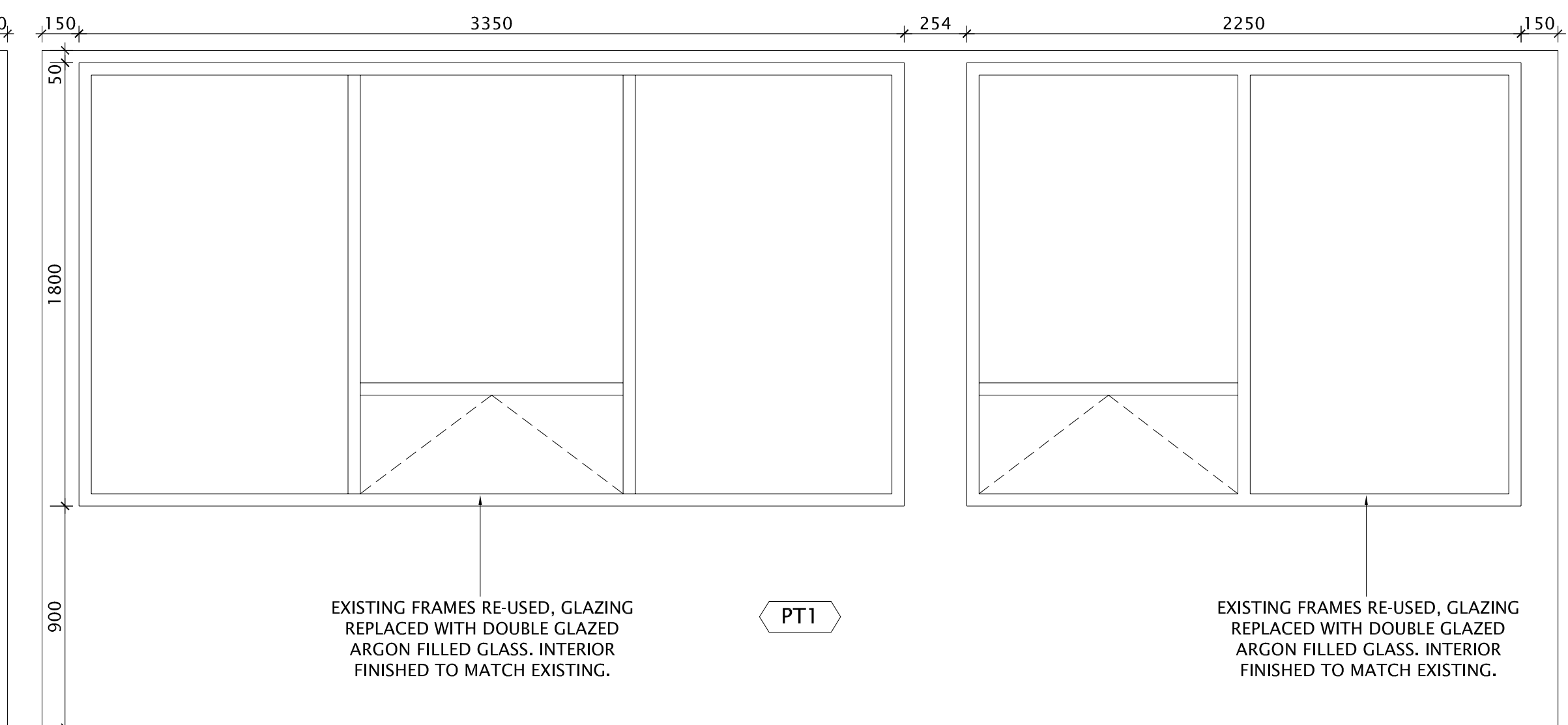
01  
A33-00-01 1:20  
INTERIOR ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



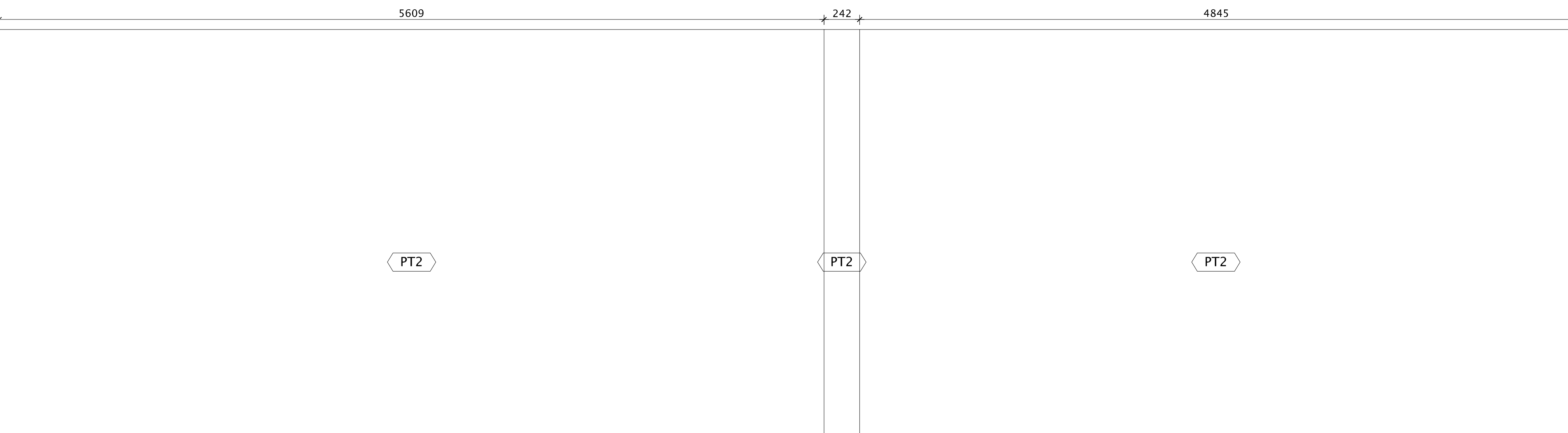
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A33-00-01 1:20  
INTERIOR ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



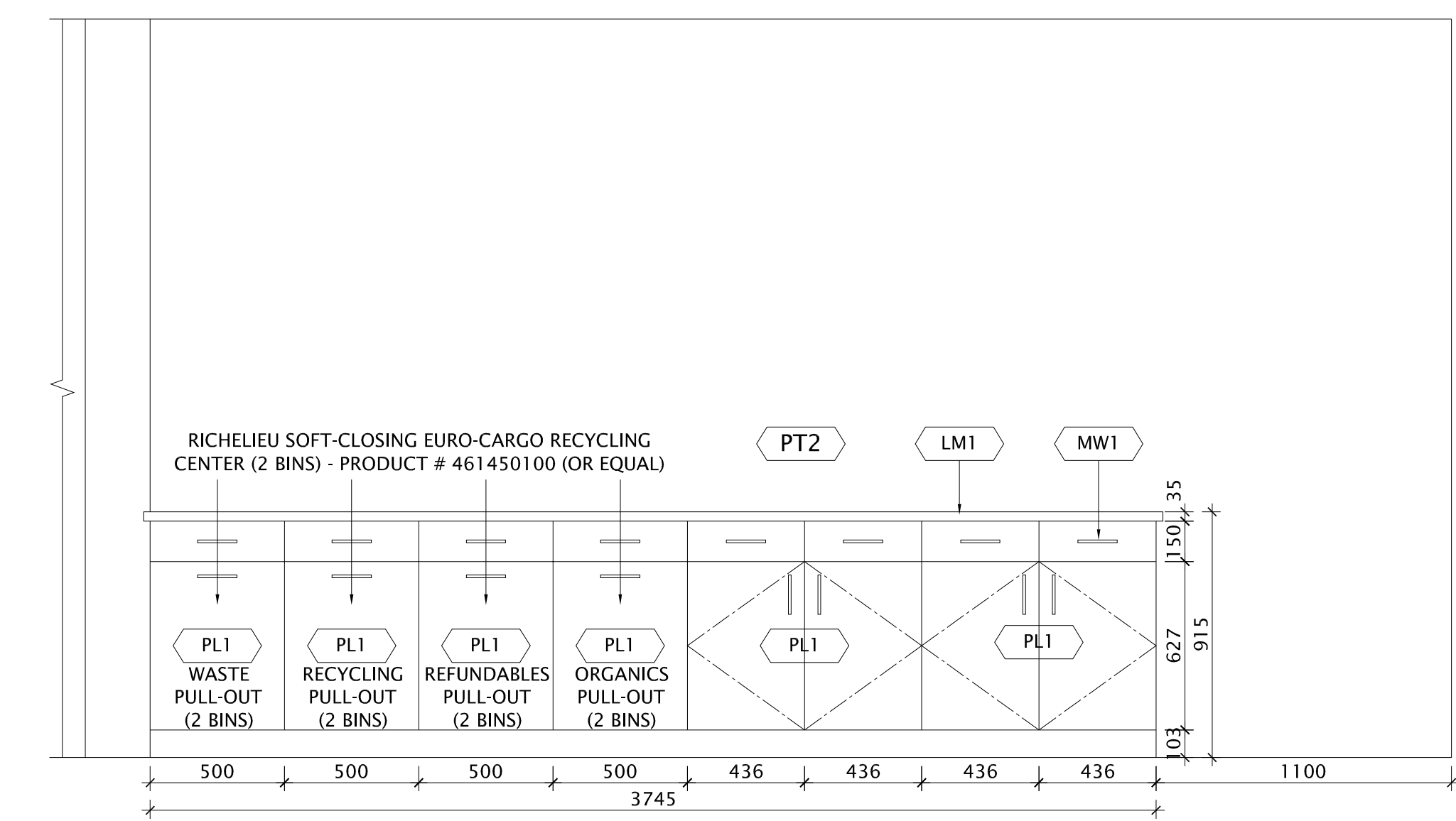
03  
A33-00-01 1:20  
INTERIOR ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



02  
A33-00-01 1:20  
INTERIOR ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



04  
A33-00-01 1:20  
INTERIOR ELEVATION  
INNISFAIL PDSTC LUNCHROOM EXPANSION



04  
A33-00-01 1:20  
INTERIOR ELEVATION - KITCHEN ISLAND  
INNISFAIL PDSTC LUNCHROOM EXPANSION

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants  
Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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For International: Australia, Austria, Belgium, Canada, China, Denmark, France, Germany, Greece, Hong Kong, India, Ireland, Italy, Japan, Korea, Kuwait, Lebanon, Malaysia, Mexico, Middle East, Netherlands, Norway, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, Vietnam

Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	

Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

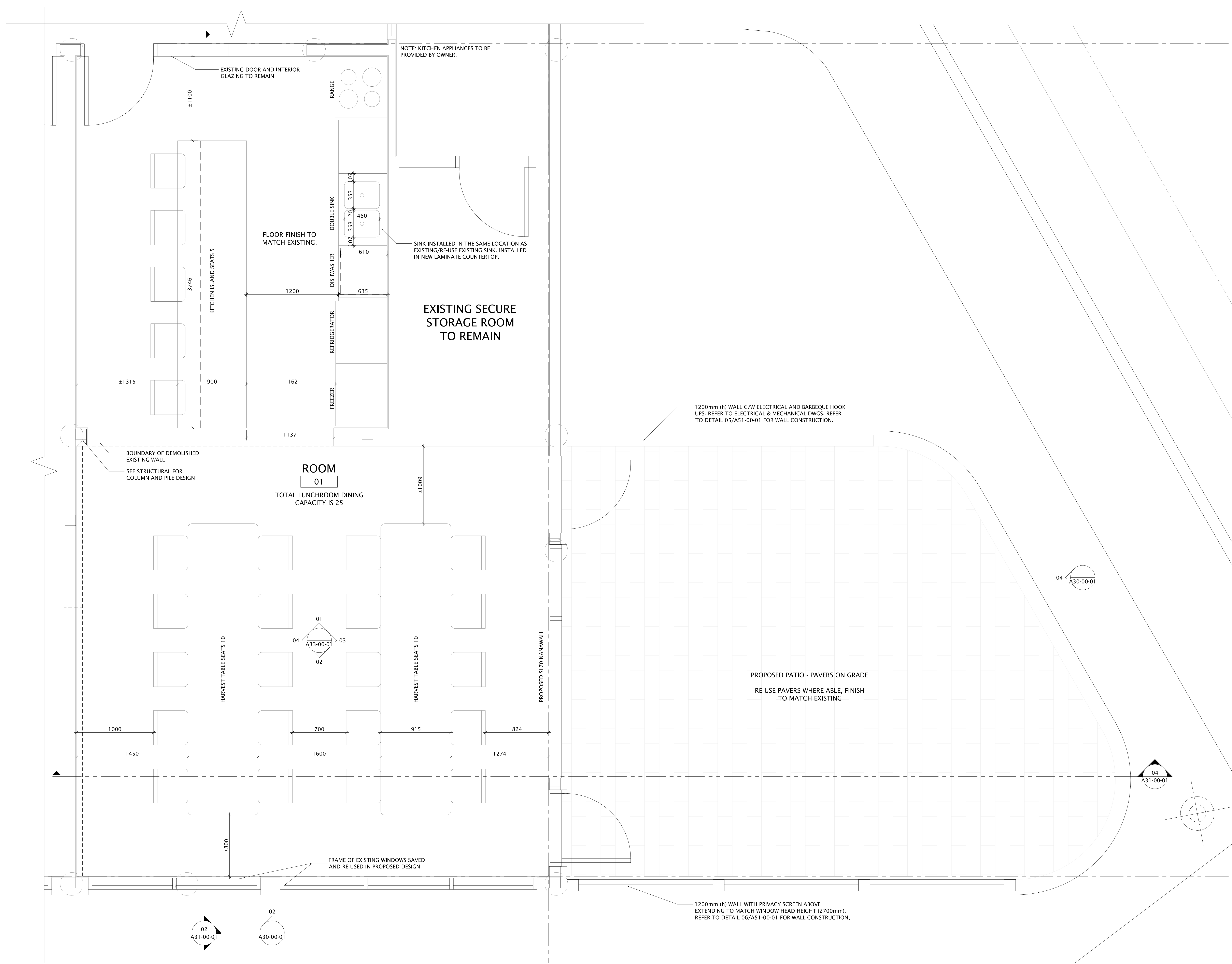
Drawing Title  
**INTERIOR ELEVATIONS**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

Project No.  
NCCA17-0228

Drawing No.  
A33-00-01

PLOT DATE: March 28, 2018 TIME: 12:51 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500-DELIVARCH\_PROD\SHEETS\A40-00-01.DWG PLOTSYLE TABLE: PMA-STD-100.cbr



01 ENLARGED LUNCHROOM PLAN  
A40-00-01 1:20

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Bruce G. Macdonald, Architect, AIA, MAIA, MAIBC  
A. Shaik, Structural Engineer, AIA, EAIA, MAIBC  
Adrian Trudell, P.Eng., APEGA  
Chris Hill, P.Eng., APEGA

Project Manager D. HIDER	Drawn
Project Leader D. HIDER	Checked
Client <b>RCMP</b>	

Project  
**INNISFAIL PDSTC  
LUNCHROOM EXPANSION**

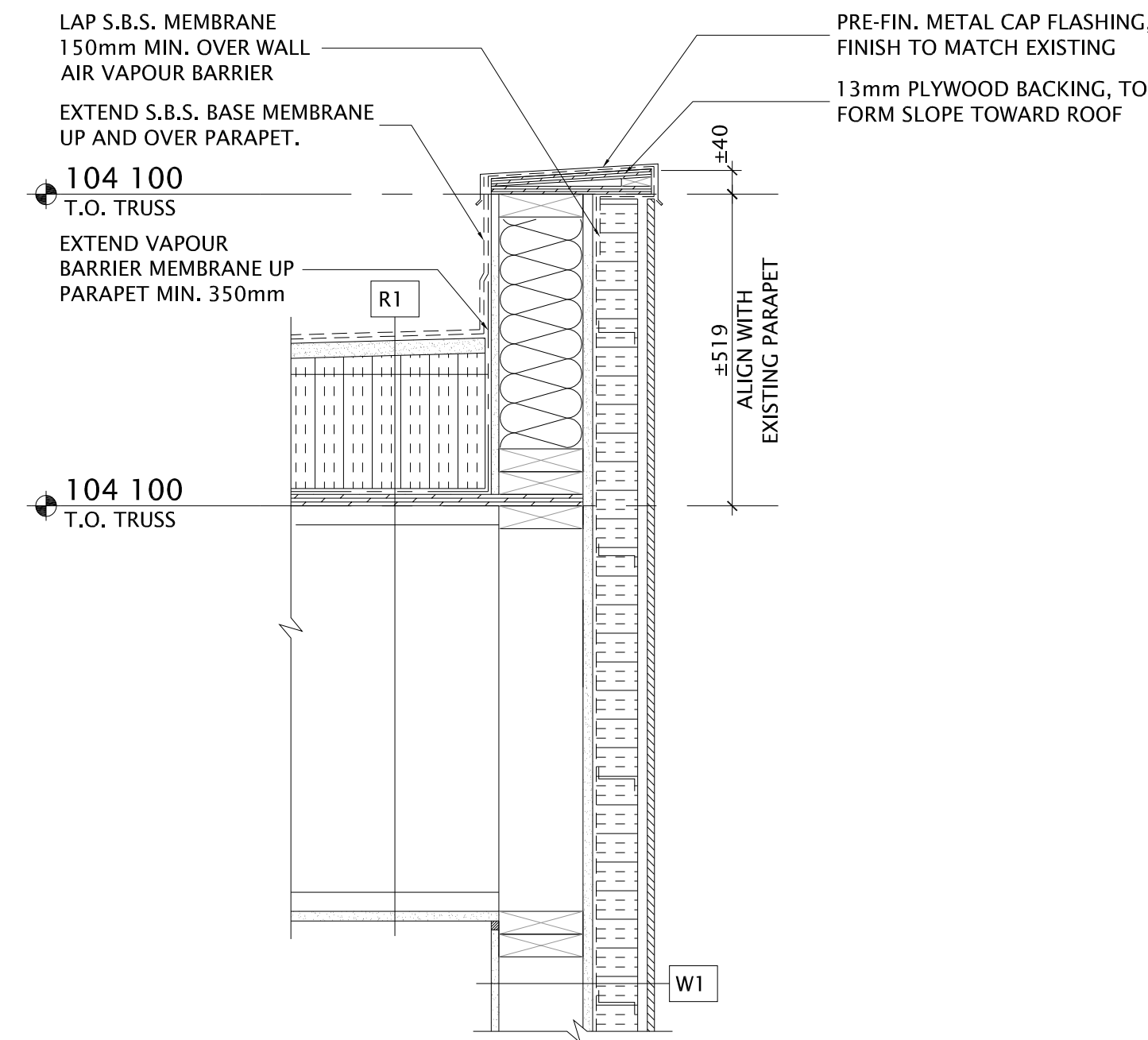
Drawing Title  
**ENLARGED PLAN**

Check Scale (may be photo reduced)  
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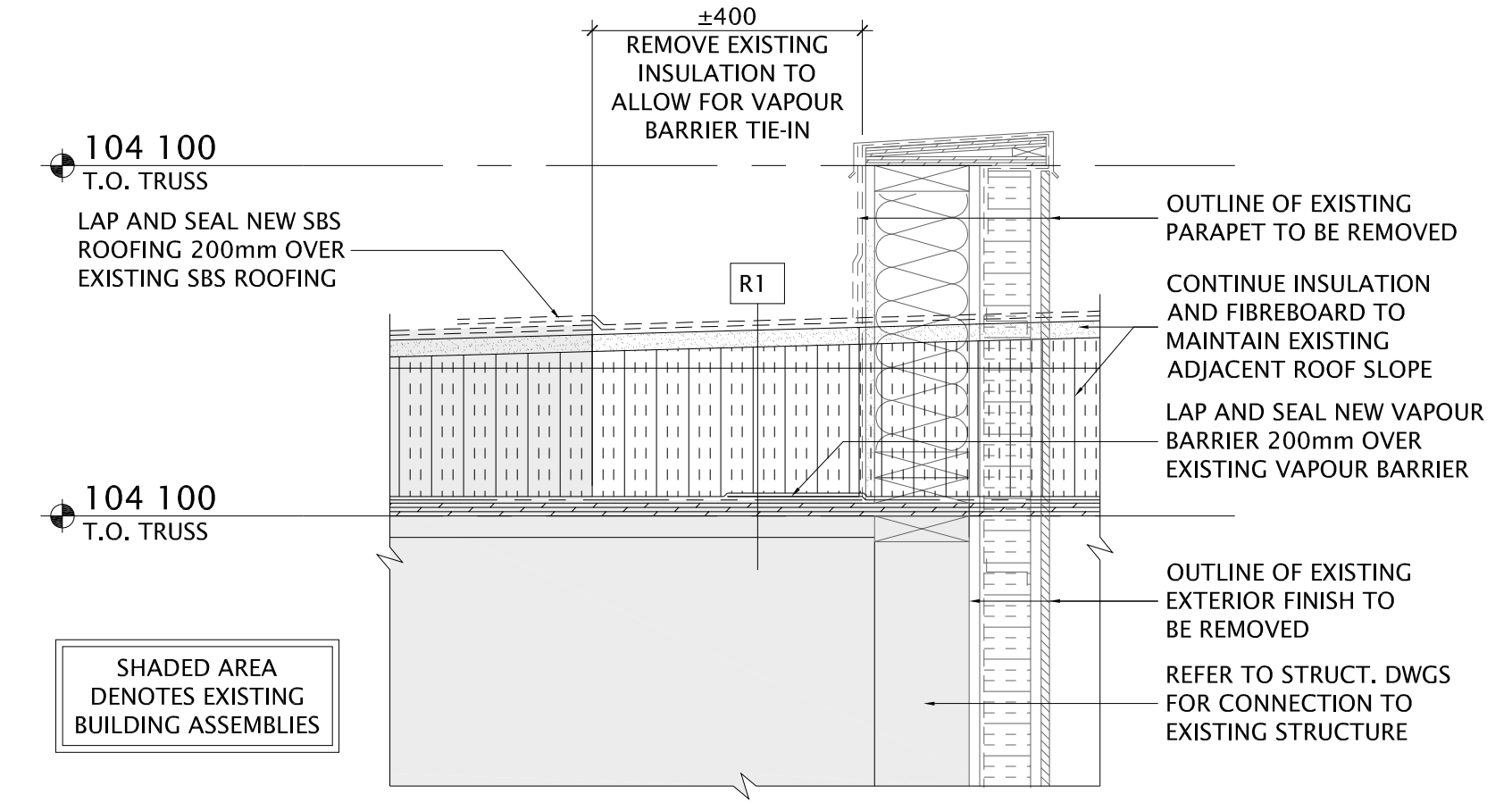
Project No.	NCCA17-0228
Drawing No.	A40-00-01



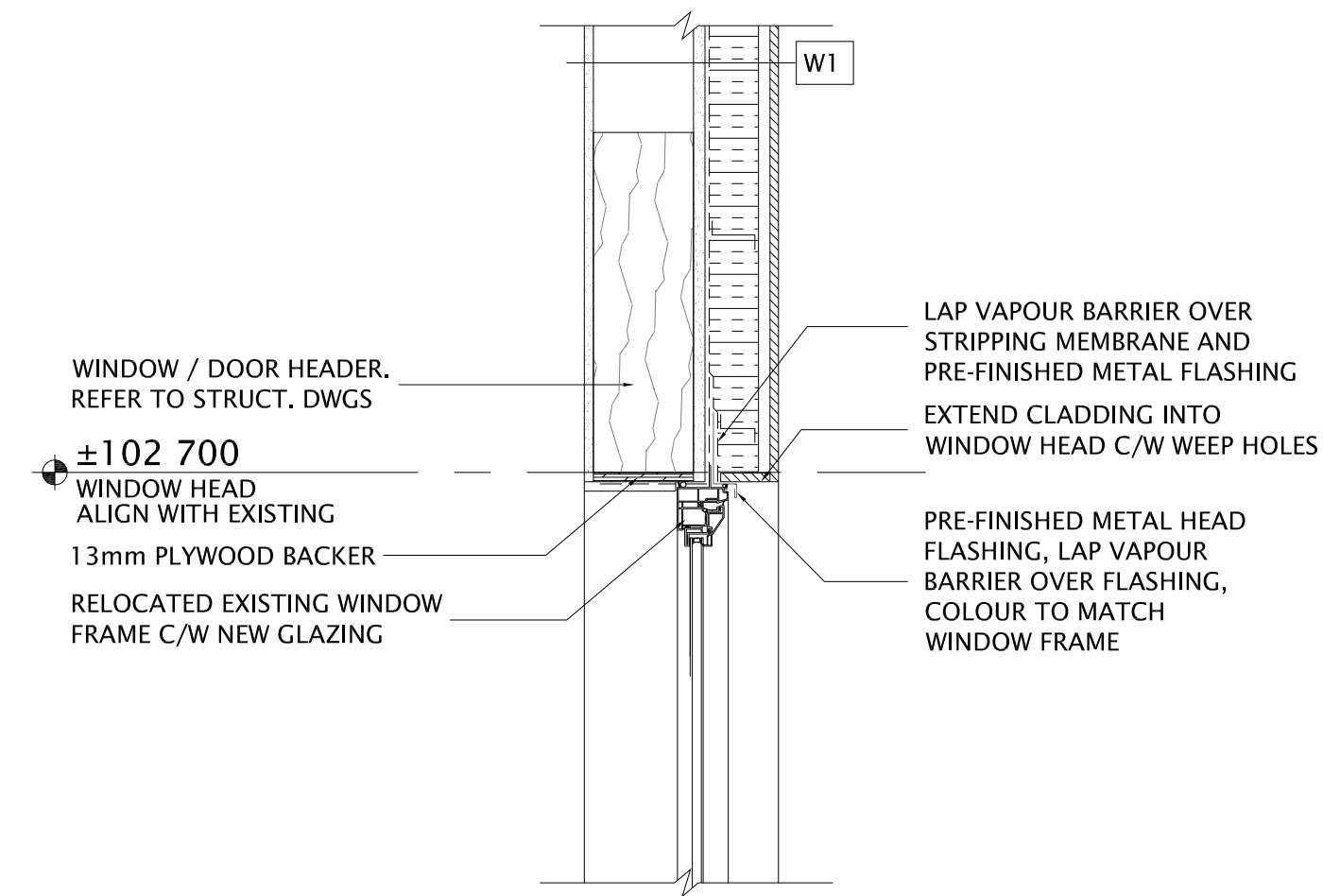
PLOT DATE: March 28, 2018 TIME: 12:51 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500-DELIVARCH\_PROD\SHEETS\A51-00-01.DWG PLOTSTYLE TABLE: PMA-STD-100.ctb



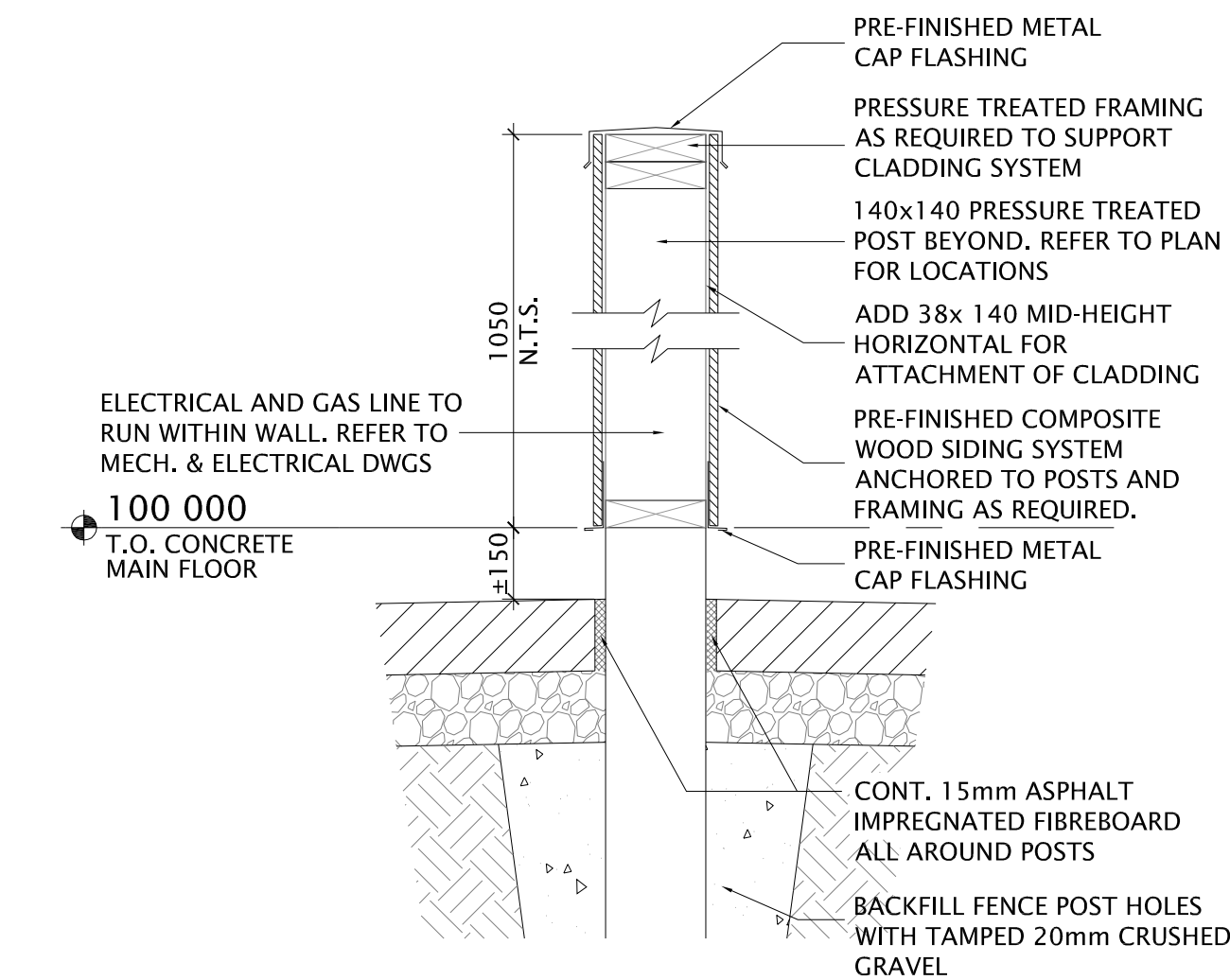
01 SECTION DETAIL - PARAPET  
A51-00-01 1:10



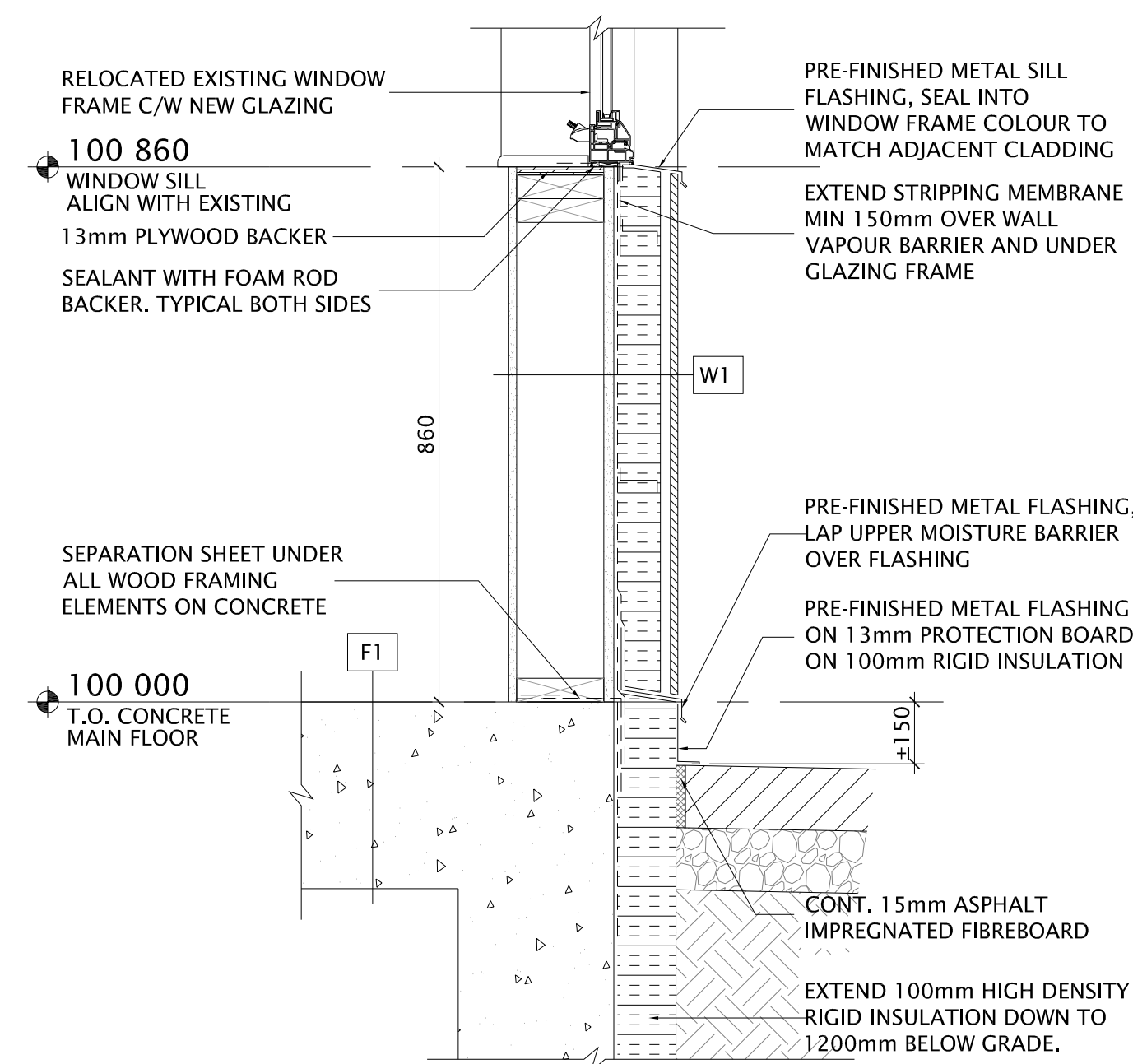
04 SECTION DETAIL - ROOF CONNECTION  
A51-00-01 1:10



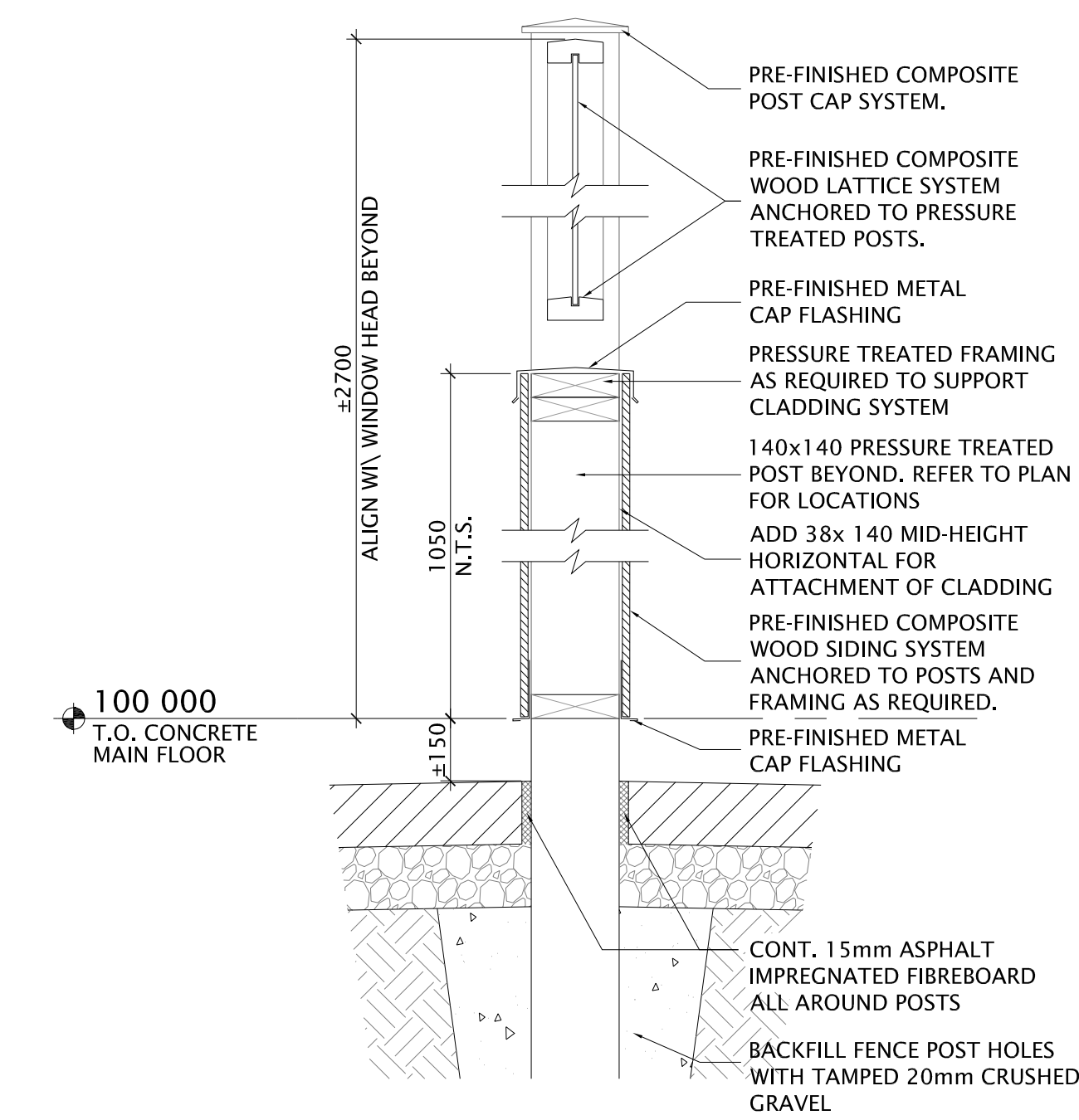
02 SECTION DETAIL - WINDOW HEAD  
A51-00-01 1:10



05 SECTION DETAIL EXTERIOR PARTIAL HEIGHT WALL  
A51-00-01 1:10



03 SECTION DETAIL - WALL BASE  
A51-00-01 1:10



06 SECTION DETAIL EXTERIOR PARTIAL HEIGHT LATTICE WALL  
A51-00-01 1:10

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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Project Component  
**LUNCHROOM EXPANSION**  
Keyplan

Consultants  
Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Bruce G. Macdonald, Architect, AIA, M.Arch, M.A.S.P.  
A. Shaik-Babji, Architect, AIA, B.Arch, M.Arch.  
Ariana Trudell, P.Eng., A.P.E.C.A.  
Chris Hill, P.Eng., A.P.E.C.A.

Project Manager  
D. HIDER  
Project Leader  
D. HIDER  
Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**SECTIONS DETAILS**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

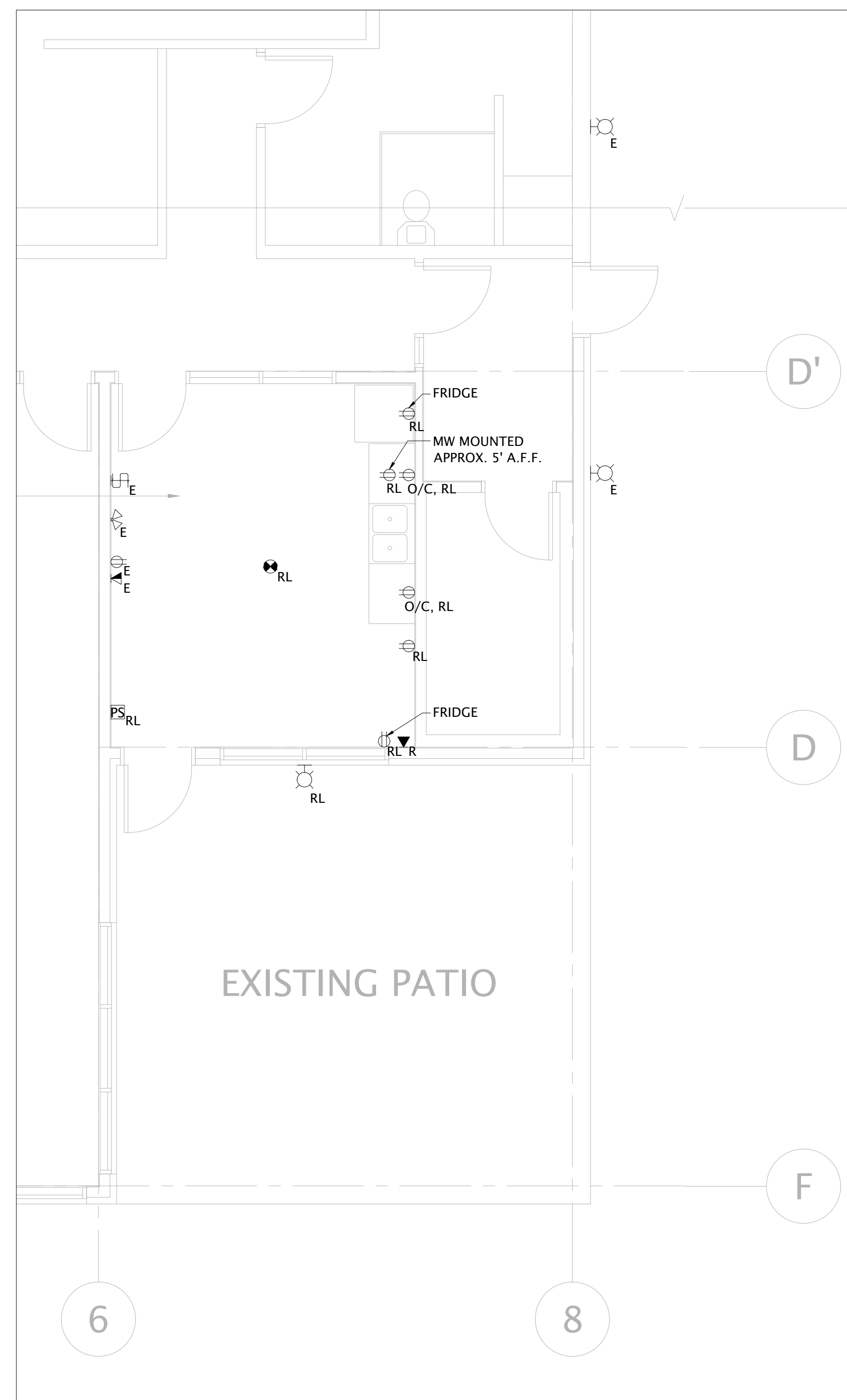
Project No.  
NCCA17-0228  
Drawing No.  
A51-00-01



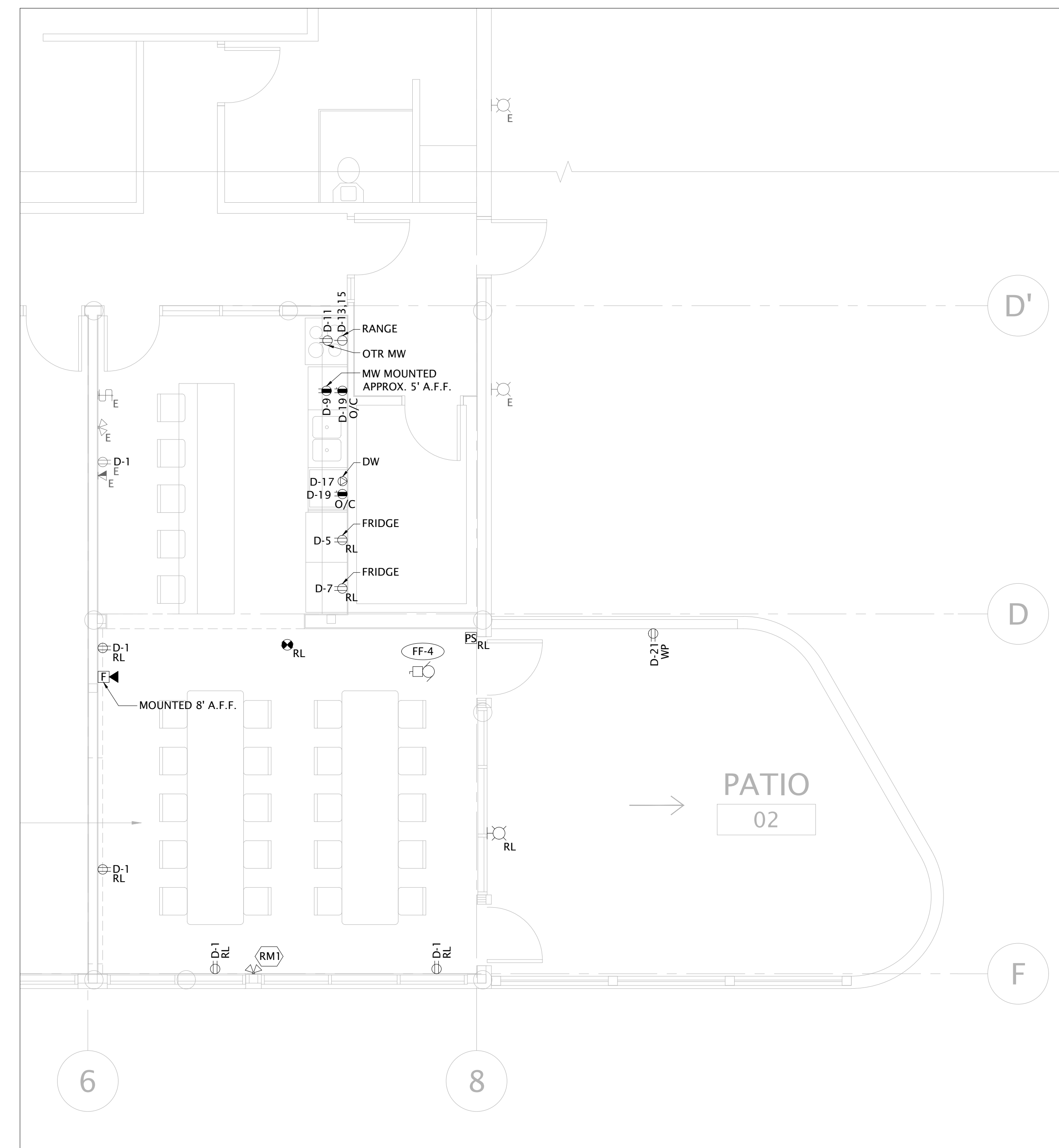




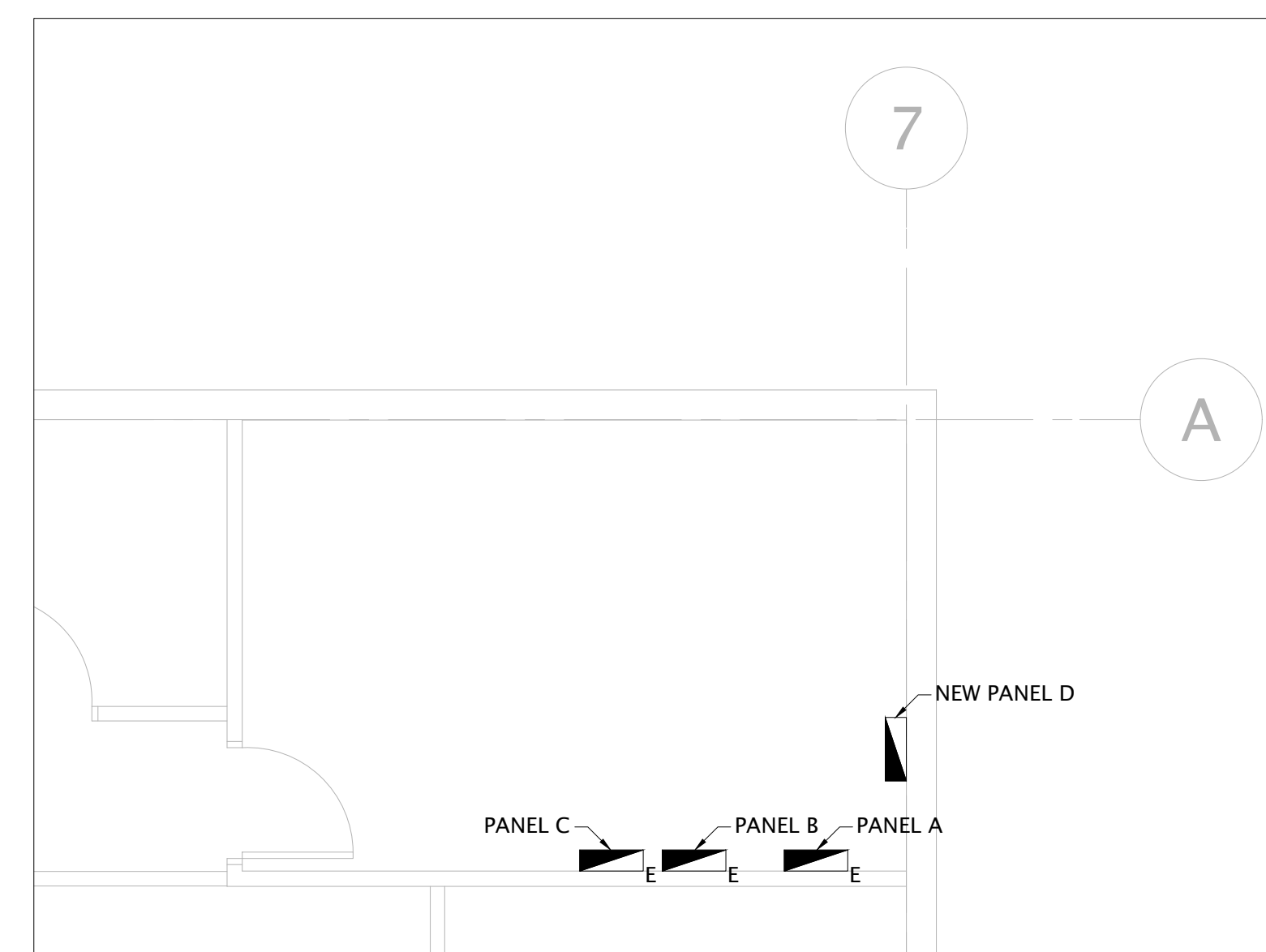
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01 DEMOLITION POWER & SYSTEMS PLAN  
E00-00-01 1:50



02 NEW POWER & SYSTEMS PLAN  
E00-00-01 1:50



03 ELECTRICAL ROOM  
E00-00-01 1:50

GENERAL NOTES:

- A. ELECTRICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS.
- B. NEW AND RELOCATED FIRE ALARM DEVICES TO BE CONNECTED TO EXISTING FIRE ALARM SYSTEM AND VERIFIED.
- C. ALL EXISTING LIGHTING TO BE REMOVED SHALL BE CLEANED AND RETURNED TO THE OWNER.
- D. EXISTING LIGHT SWITCH TO BE USED TO CONTROL NEW LIGHTING. REFER TO DRAWING E10-00-00 FOR NEW LIGHTING PLAN.
- E. ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL PANEL D TO BE FED OFF OF PANEL A. PANEL D TO FEED ALL NEW ELECTRICAL DEVICES IN LUNCH ROOM. REFER TO DRAWING E10-00-00 FOR PANEL SCHEDULE.
- F. ALL ASSOCIATED CONDUIT AND CABLE FROM RELOCATED AND EXISTING TO REMAIN ELECTRICAL DEVICES SHALL BE REMOVED BACK TO THE SOURCE. CIRCUIT BREAKERS IN EXISTING PANELS THAT NO LONGER SERVICE EQUIPMENT SHALL BE MARKED AS SPARE. THE HEAD END DEVICE SHALL BE REUSED, RELOCATED AND CIRCUITED AS INDICATED.
- G. ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL BACK BOXES CONDUIT, AND CABLING INCLUDING TERMINATIONS FOR POWER AND COMMUNICATION RECEPTACLES. ELECTRICAL CONTRACTOR RESPONSIBLE TO LABEL AND TEST ALL NEW LINES TO ENSURE OPERATIONAL READINESS.
- H. NEW EMERGENCY LIGHTING TO BE FED OFF OF NEAREST EXISTING BATTERY PACK. ELECTRICAL CONTRACTOR TO VERIFY EXISTING BATTERY PACK HAS ENOUGH CAPACITY TO HOLD NEW AND EXISTING DEVICES FOR 30 MINUTES. CONSULT WITH ELECTRICAL ENGINEER IF EXISTING BATTERY PACK IS LOADED TO FULL CAPACITY.
- I. MOUNTING HEIGHT OF RELOCATED EXTERIOR LIGHT TO MATCH EXISTING.

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	A
2018-03-02	ISSUED FOR 95% REVIEW	B
2018-03-29	ISSUED FOR TENDER	C

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Project Component	LUNCHROOM EXPANSION
Keyplan	

Consultants	Architectural: NORR Architects Engineers Planners Structural: NORR Architects Engineers Planners Mechanical: NORR Architects Engineers Planners Electrical: NORR Architects Engineers Planners
-------------	---



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A. Brian Baskinowski, Architect, A.A.A., B.Arch., M.A.S.C.  
Arlene Tordella, P. Eng., P.E.C.E.A.  
Chris Hill, P. Eng., P.E.C.E.A.

Project Manager	Drawn
D. HIDER	D. LAM
Project Leader	Checked
D. HIDER	D. HIDER
Client	
RCMP	

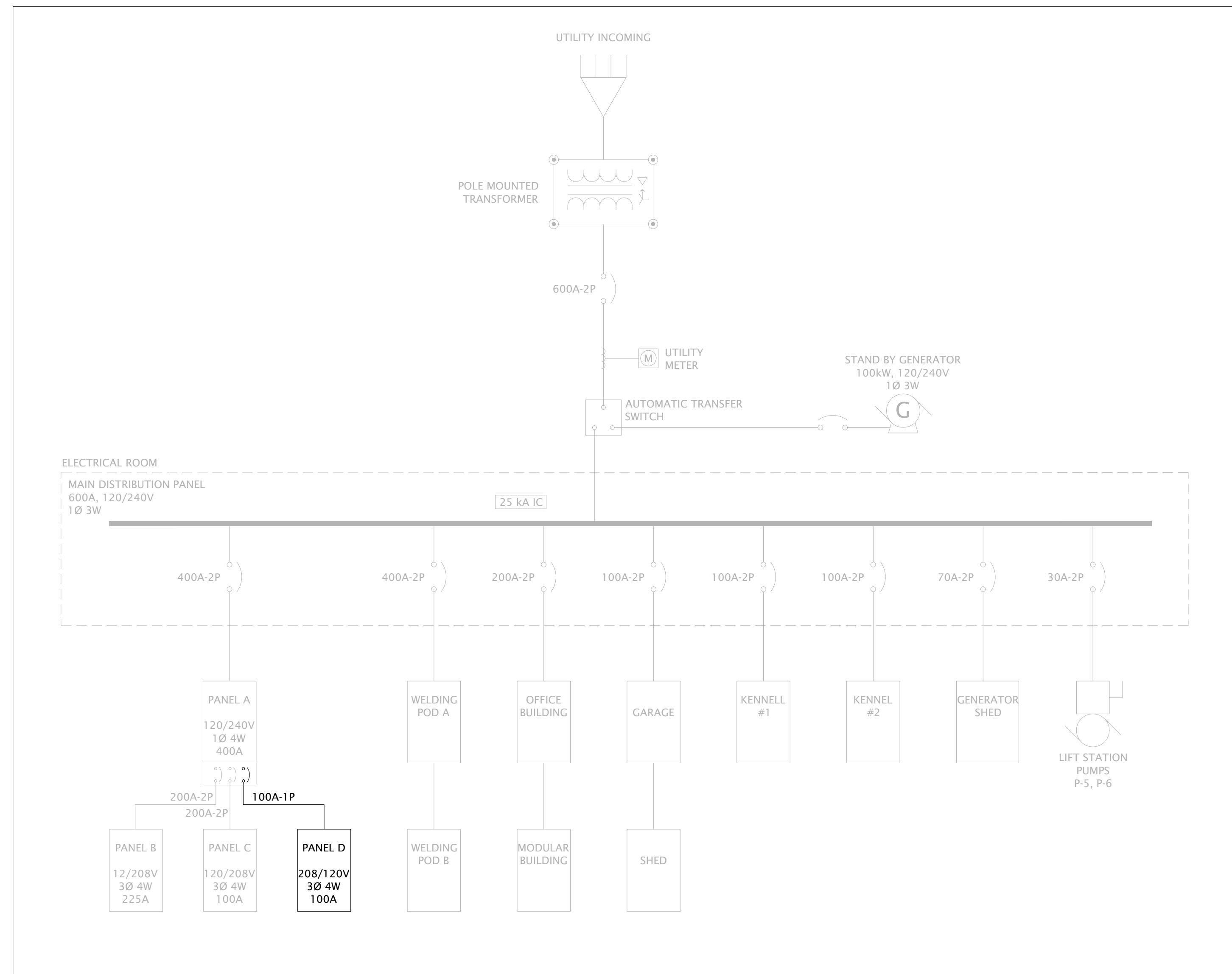
Project  
INNISFAIL PDSTC  
LUNCHROOM EXPANSION

Drawing Title  
DEMOLITION AND NEW  
POWER & SYSTEM PLANS

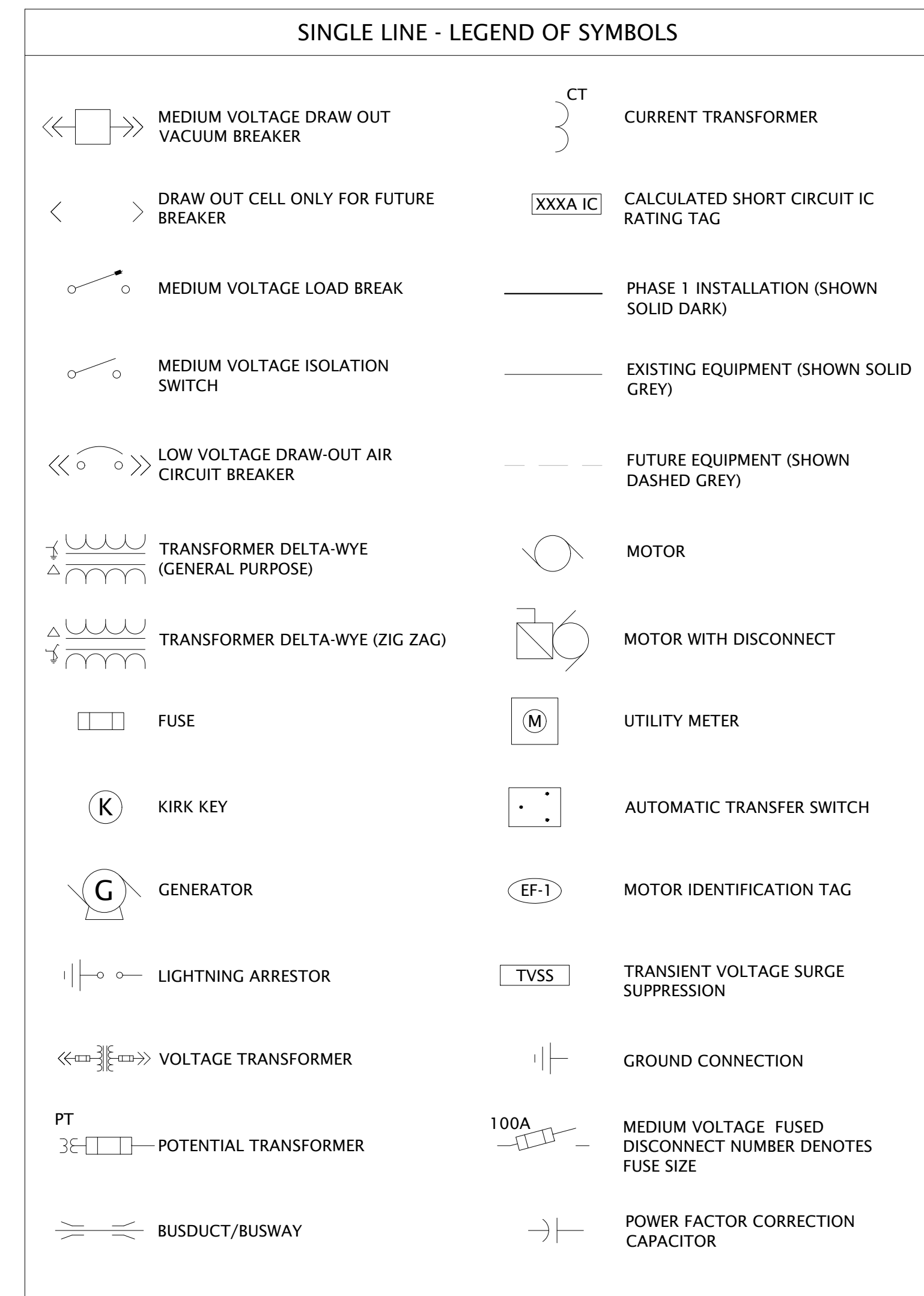
Check Scale (may be photo reduced)	0 1inch 0 10mm
Project No.	NCCA17-0228
Drawing No.	E00-00-01



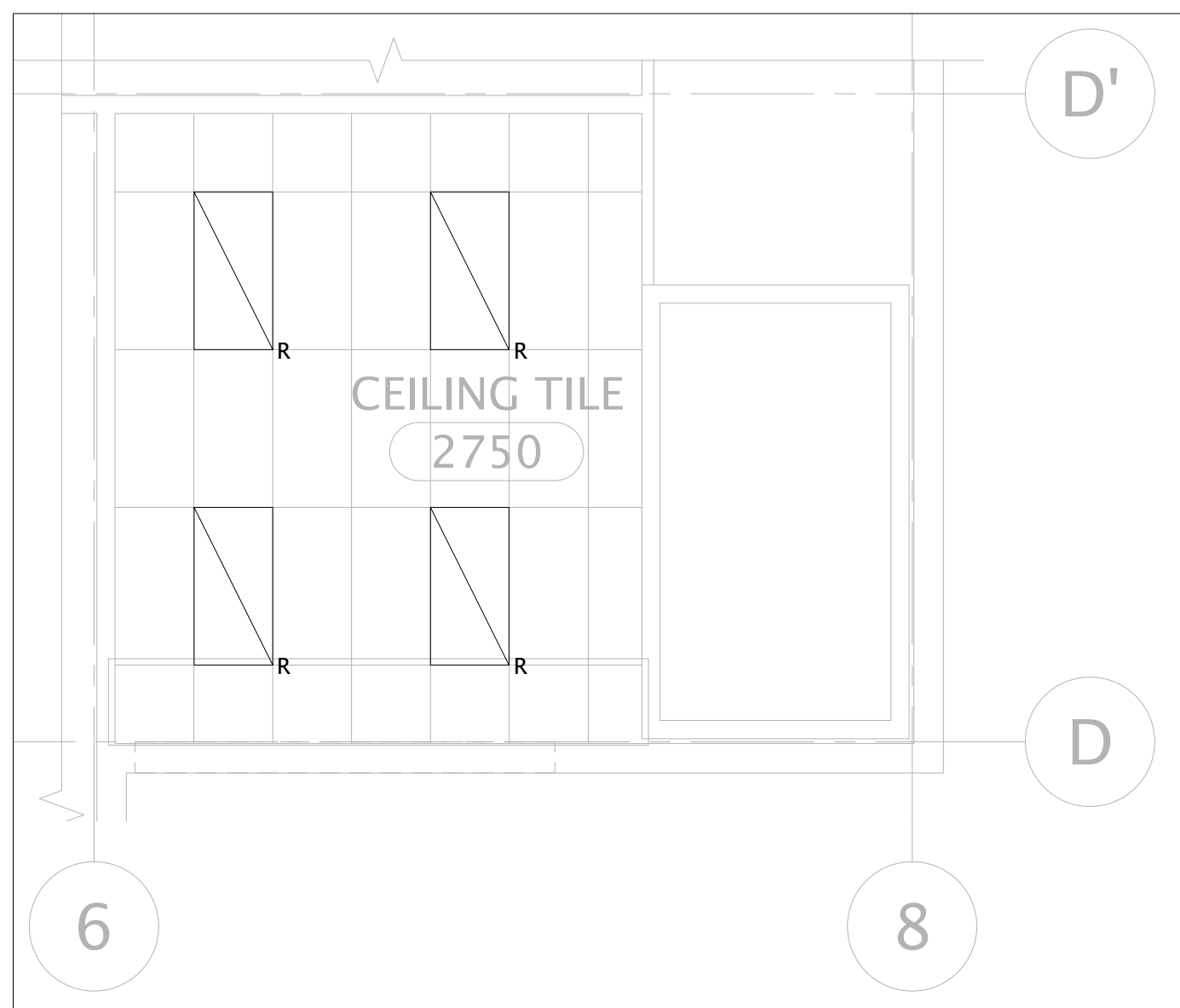
PLOT DATE: March 28, 2018 TIME: 2:27 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500-DEL\ELECTRICAL\01-00-00.DWG PLOTSYCLE TABLE: Ingenium\SmallFormat\Design.dwg



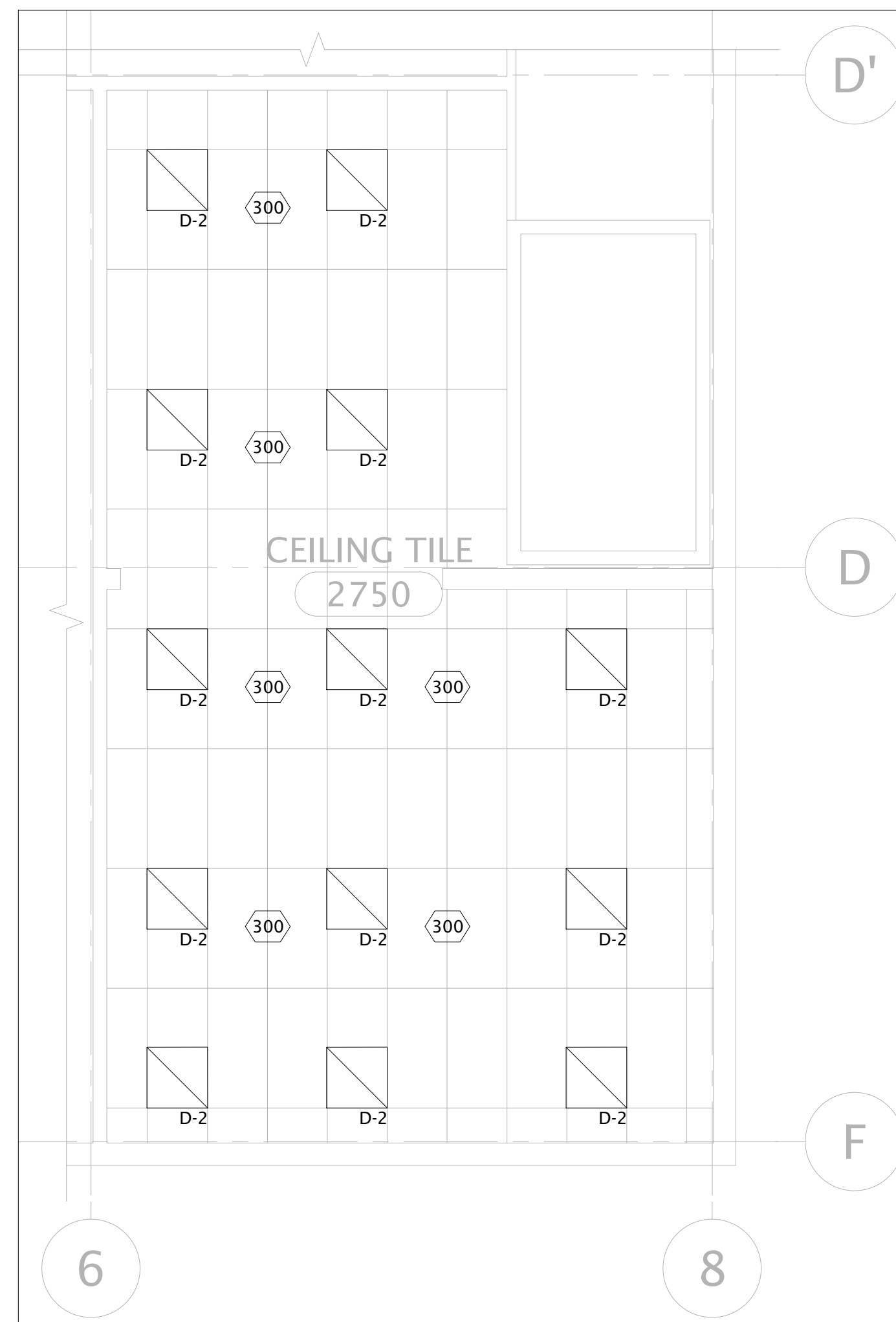
01 SINGLE LINE DIAGRAM  
E10-00-00 N.T.S.



- GENERAL NOTES:**
- ELECTRICAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS.
  - NEW AND RELOCATED FIRE ALARM DEVICES TO BE CONNECTED TO EXISTING FIRE ALARM SYSTEM AND VERIFIED.
  - ALL EXISTING LIGHTING TO BE REMOVED SHALL BE CLEANED AND RETURNED TO THE OWNER.
  - EXISTING LIGHT SWITCH TO BE USED TO CONTROL NEW LIGHTING. REFER TO DRAWING E10-00-00 FOR NEW LIGHTING PLAN.
  - ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL PANEL D TO BE FED OFF OF PANEL A. PANEL D TO FEED ALL NEW ELECTRICAL DEVICES IN LUNCH ROOM. REFER TO DRAWING E10-00-00 FOR PANEL SCHEDULE.
  - ALL ASSOCIATED CONDUIT AND CABLE FROM RELOCATED AND EXISTING TO REMAIN ELECTRICAL DEVICES SHALL BE REMOVED BACK TO THE SOURCE. CIRCUIT BREAKERS IN EXISTING PANELS THAT NO LONGER SERVICE EQUIPMENT SHALL BE MARKED AS SPARE. THE HEAD END DEVICE SHALL BE REUSED, RELOCATED AND CIRCUITED AS INDICATED.
  - ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL BACK BOXES CONDUIT, AND CABLING INCLUDING TERMINATIONS FOR POWER AND COMMUNICATION RECEPTACLES. ELECTRICAL CONTRACTOR RESPONSIBLE TO LABEL AND TEST ALL NEW LINES TO ENSURE OPERATIONAL READINESS.
  - NEW EMERGENCY LIGHTING TO BE FED OFF OF NEAREST EXISTING BATTERY PACK. ELECTRICAL CONTRACTOR TO VERIFY EXISTING BATTERY PACK HAS ENOUGH CAPACITY TO HOLD NEW AND EXISTING DEVICES FOR 30 MINUTES. CONSULT WITH ELECTRICAL ENGINEER IF EXISTING BATTERY PACK IS LOADED TO FULL CAPACITY.
  - MOUNTING HEIGHT OF RELOCATED EXTERIOR LIGHT TO MATCH EXISTING.



02 DEMOLITION LIGHTING PLAN  
E10-00-00 1:50



03 NEW LIGHTING PLAN  
E10-00-00 1:50

Ckt No.	Load Description	Volt-Amperes			Breaker Pole	Wire Size	Breaker A Pole	Volt-Amperes			Load Description	Ckt No.
		A	B	C				A	B	C		
1	RECEPTACLES	1200			1	15	15	1	400			2
3	RECEPTACLES	800			1	15	30	2	3000			4
5	FRIDGE		1400		1	15				3000		6
7	FRIDGE	1400			1	15	15	1	1400			8
9	MICROWAVE		1000		1	15	20	1		800		10
11	MICROWAVE		1000		1	15	15	1		400		12
13							15	1	100			14
15												16
17												18
19												20
21												22
23												24

Odd Circuit Number Subtotals		2600	1800	2400	Features:	1900	3800	3400
Bus and Lugs Rating (A):	SLD	Total Phase A Load:	4.5 kVA		Remarks:			
Main Circuit Breaker Rating (A):	SLD	Total Phase B Load:	5.6 kVA		Project Title: South Calgary Orthodontics & Pediatric Dentistry			
Circuit Breaker IC Rating (kA):	SLD	Total Phase C Load:	5.8 kVA		Project Number: NCCA15-0145			
Phase:	3	Total Connected Load:	15.9 kVA		Plan Drawing Number:			
Wires:	4	Demand Factor:	100 %		Date: 2017-02-28			
Line to Line Voltage (V):	208	Demand Load:	15.9 kVA		Revision: 1			
Line to Neutral Voltage (V):	120	Future Load:	0.0 kVA		Panelboard			
Number of Poles:	42	Total Demand Load:	15.9 kVA		PANEL D			
Mounting:		Total Demand Current:	44.1 A		NORR			

### LUMINAIRE SCHEDULE

TYPE	PHOTO	DESCRIPTION	TYPE	WATTS	NO.	VOLTS	MANUFACTURER	MOUNTING	REMARKS
300		2' x 2' FIXTURE	LED	29		120	CORELITE MODEL# EIK-WL-2L35-1D-LNV-22-T1-STD	RECESSED	
RM1		REMOTE HEADS	LED	6		12	STANPRO MODEL# 32-32-4W-LA-WH	WALL	MOUNTING HEIGHT TO MATCH EXISTING

NOTES:

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	A
2018-03-02	ISSUED FOR 95% REVIEW	B
2018-03-29	ISSUED FOR TENDER	C

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

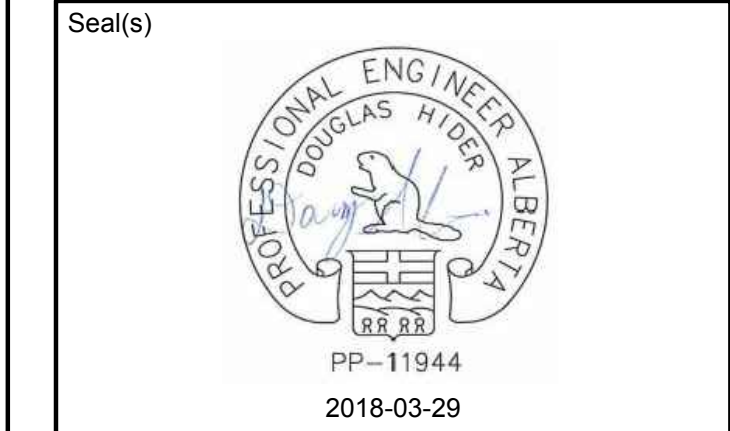
This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners



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Project Leader	Checked
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Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**LIGHTING PLANS, SCHEDULES AND SINGLE LINE DIAGRAM**

Check Scale (may be photo reduced)  
0 10mm

Project No.  
**NCCA17-0228**

Drawing No.  
**E10-00-00**



PLOT DATE: March 28, 2018 TIME: 2:27 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCAT-0228 - RCMP - DTE LUNCHROOM EXPANSION\509-DEVELOPMENTS\E20-00-00.DWG PLOTSYLE TABLE: Ingenium\_SmallFormat.Dgn;rcb

1. GENERAL
2. THE GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS UNLESS SPECIFICALLY NOTED OTHERWISE TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
- 2.1. THE SCOPE OF WORK IS AS DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS.
3. STANDARD OF MATERIAL AND WORKMANSHIP
- 3.1. ALL MATERIALS SHALL BE NEW UNLESS SPECIFICALLY NOTED ON DRAWINGS AND BE OF THE QUALITY SPECIFIED AND SHALL CONFORM TO THE STANDARDS OF THE CANADIAN STANDARDS ASSOCIATION. WHERE EQUIPMENT OR MATERIALS ARE SPECIFIED BY TECHNICAL DESCRIPTION ONLY, THEY SHALL BE OF THE BEST COMMERCIAL QUALITY OBTAINABLE FOR THE PURPOSE.
- 3.2. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESMEN. ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS, ALL SATISFACTORY TO THE ENGINEER, ON THE JOB DURING THE PROGRESS OF THE WORK.
- 3.3. WORKMANSHIP SHALL BE OF THE HIGHEST STANDARDS THROUGHOUT AND SHALL BE MINIMUM OF THE CURRENT TRADE PRACTICES FOR ELECTRICAL INSTALLATIONS IN THIS BUILDING.
4. UNIFORMITY OF EQUIPMENT
- 4.1. UNLESS OTHERWISE SPECIFICALLY CALLED FOR IN THE SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
- 4.2. SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
- 4.2.1. SPECIFICATIONS, UNIFORMITY OF MANUFACTURE SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT THE BUILDING.
5. DRAWINGS AND SPECIFICATIONS
- 5.1. THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. EACH TO THE OTHER, AND WHAT IS CALLED FOR BY ONE, SHALL BE BINDING AS IF CALLED FOR BY BOTH. WHERE INFORMATION IS CONFLICTING THE SPECIFICATIONS TRUMP THE DRAWINGS.
- 5.2. SHOULD ANY DISCREPANCY APPEAR BETWEEN THE DRAWINGS AND SPECIFICATIONS WHICH LEAVES THE ELECTRICAL CONTRACTOR IN DOUBT AS TO THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER. IF THIS IS NOT DONE, IT WILL BE ASSUMED THAT THE MOST EXPENSIVE ALTERNATE HAS BEEN ALLOWED FOR.
6. CODES, PERMITS AND INSPECTION
- 6.1. THE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE.
- 6.2. THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AT THEIR EXPENSE AND DISPLAY THEM IN THE ELECTRICAL ROOM, AND COORDINATE INSPECTIONS AS REQUIRED AND OBTAIN A FINAL INSPECTION CERTIFICATE.
7. EXAMINATION OF THE SITE
- 7.1. PRIOR TO SUBMITTING THEIR TENDER, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS, WHICH SHALL AFFECT HIS TRADE. NO EXTRAS WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT WOULD HAVE BEEN EVIDENT UPON A THOROUGH EXAMINATION OF THE SITE.
8. CLEAN UP
- 8.1. THE ELECTRICAL CONTRACTOR AND THEIR SUB-TRADES SHALL AT ALL TIMES DURING CONSTRUCTION, KEEP THE SITE FREE OF ALL DEBRIS, BOXES, PACKING, ETC. RESULTING FROM WORK OF THIS TRADE.
- 8.2. AT THE COMPLETION OF THE WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.
- 8.3. ALL LUMINAIRES AND ELECTRICAL DEVICES SHALL BE WASHED, CLEANED OF GREASE, DIRT AND LINT AS REQUIRED.
- 8.4. ALL HANDLING OF LUMINAIRES AND LAMPS SHALL BE DONE WITH CLEAN GLOVES. TO ENSURE CLEANLINESS AND LAMP LIFE.
- 8.5. RECYCLE PACKING MATERIAL AND OTHER SUCH ITEMS THAT CAN BE DIVERTED FROM LANDFILL.
9. SETTING OUT OF THE WORK
- 9.1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS FOR SAME. WHERE THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, HE SHALL OBTAIN THE CLARIFICATION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- 9.2. THE ELECTRICAL CONTRACTOR SHALL GIVE THE WORK THEIR PERSONAL SUPERVISION, LAY OUT HIS OWN WORK, DO ALL NECESSARY LEVELLINGS AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS SHALL TAKE PRECEDENCE OVER SCALE MEASUREMENTS.
- 9.3. WHERE ANY EQUIPMENT SUPPLIED BY THE ELECTRICAL CONTRACTOR MUST BE BUILT IN WITH THE WORK OF OTHER CONTRACTORS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLYING OF THE EQUIPMENT TO BE BUILT IN OR MEASUREMENTS TO ALLOW NECESSARY OPENINGS TO BE LEFT SO AS NOT TO HOLD UP THE WORK.
- 9.4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OF THE OTHER TRADES BY IMPROPER LOCATION OR CARRYING OUT OF HIS WORK.
10. LOCATION OF OUTLETS
- 10.1. ENGINEER RESERVES THE RIGHT TO CHANGE LOCATION OF OUTLETS TO WITHIN 3.0 METRES OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE PROVIDING ELECTRICAL CONTRACTOR IS ADVISED PRIOR TO INSTALLATION.
11. CORING, CUTTING AND PATCHING
- 11.1. THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT THE CONSENT OF THE STRUCTURAL ENGINEER.
- 11.2. WHERE WORK BY THE ELECTRICAL CONTRACTOR DAMAGES WORK OF OTHER TRADES, THE ELECTRICAL CONTRACTOR SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF THE TRADES CONCERNED AND THE ENGINEER.
- 11.3. WHERE THE FLOOR SLAB IS DRILLED FOR CONDUIT INSTALLATION TO WALL JUNCTION BOXES OR TO FLOOR FITTINGS THE FLOOR SHALL BE DRY CORE DRILLED. AFTER CONDUIT INSTALLATION, THE OPENING SHALL BE FIRE STOPPED. (SEE SECTION "FIRE STOPPING") ELECTRICAL CONTRACTOR TO PAY FOR ALL ASSOCIATED X-RAY COSTS. STRUCTURAL ENGINEER REVIEW, ETC.
12. ACCESS DOORS
- 12.1. NUMBER OF ACCESS DOORS TO BE KEPT TO AN ABSOLUTE MINIMUM. DOOR LOCATIONS WILL BE COORDINATED WITH THE ENGINEER PRIOR TO INSTALLATION.
- 12.2. WHERE ACCESS IS REQUIRED TO PULLBOXES AND JUNCTION BOXES, THESE BOXES ARE TO BE LOCATED IN REMOVABLE TYPE CEILING AREAS WHERE POSSIBLE OR ADJACENT TO RECESSED LUMINAIRES.
- 12.3. WHERE IT IS ABSOLUTELY IMPOSSIBLE TO SERVICE CERTAIN EQUIPMENT THROUGH REMOVABLE TYPE CEILING OR RECESSED LUMINAIRES AND WHERE SPECIAL PERMISSION HAS BEEN OBTAINED FROM THE ENGINEER, ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ACCESS DOORS REQUIRED FOR SERVICING OF SUCH WORK.
- 12.4. ACCESS DOORS TO BE HELD CLOSED WITH CAPTIVE TYPE STUDS. ACCESS PANELS TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COATED AND PAINTED ON THE JOB TO MATCH THE WALL OR CEILING FINISH AS REQUESTED BY THE ARCHITECT.
- 12.5. WHERE ACCESS PANELS WILL BE USED, PROPER SHOP DRAWINGS ARE TO BE SUBMITTED FOR APPROVAL, PRIOR TO INSTALLATION.
13. PAINTING AND FINISHES
- 13.1. ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, CLAMPS, ETC., SHALL HAVE GALVANIZED FINISH OR PAINT FINISH OVER CORROSION-RESISTANT PRIMER.
- 13.2. ALL PANELS OR SIMILAR FACTORY FINISHED UNITS THAT ARE SCRATCHED OR MARKED DURING INSTALLATIONS SHALL BE TOUCHED UP WITH MATCHING SPRAY OR DRY LACQUER AND IF REQUIRED TO PROVIDE SATISFACTORY JOB SHALL BE COMPLETELY REFINISHED.
14. MOUNTING HEIGHTS
- 34.1. INSTALL ELECTRICAL EQUIPMENT AT THE FOLLOWING HEIGHTS UNLESS OTHERWISE INDICATED (MEASUREMENTS ARE TO CENTER OF DEVICE BOX):
- LOCAL LIGHT SWITCHES, DIMMERS; 1200MM
- GENERAL WALL RECEPTACLES; 300MM
- RECEPTACLES ABOVE COUNTERS AND BACK SPLASH; 175MM
- (REFER TO DETAILS ON ARCHITECTURAL)
- RECEPTACLES IN MECHANICAL JANITOR ROOMS; 1000MM
- DOORBELL PUSHBUTTON; 1300MM
- HANDICAP DOOR PUSHBUTTON; 1067MM
- CARD READER; 1150MM
- SECURITY KEYPAD; 1400MM
- 34.2. CONFIRM ALL OTHER EQUIPMENT HEIGHTS IN WRITING.
- 34.3. ARCHITECTURAL DRAWINGS SUPERSEDE HEIGHTS AND LOCATIONS INDICATED ON ELECTRICAL DRAWINGS AND SPECIFICATIONS.
35. SHOP DRAWINGS
- 35.1. THE ELECTRICAL CONTRACTOR MUST REVIEW AND STAMP ACCEPTABLE ALL SHOP DRAWINGS PRIOR TO SUBMITTING TO THE ENGINEER.
- 35.2. ELECTRICAL CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW, ONE (1) SET OF ELECTRONIC SHOP DRAWINGS IN PDF FORMAT INCLUDING BUT NOT LIMITED TO DISTRIBUTION LUMINAIRES, EXIT SIGNS, OCCUPANCY SENSORS, BATTERY PACKS, FIRE ALARM EQUIPMENT AND TELECOMMUNICATIONS EQUIPMENT AND CABLING.
- 35.3. ENGINEER SHALL BE ALLOWED MINIMUM 5 BUSINESS DAYS TO RETURN REVIEWED SHOP DRAWINGS.
- 35.4. SCANNED SHOP DRAWINGS MUST BE LEGIBLE. SHOP DRAWINGS WHICH ARE UNCLEAR WILL BE REJECTED AND RETURNED FOR RESUBMISSION.
- 35.5. SHOP DRAWING SHALL BE SPECIFIC TO THIS PROJECT ONLY. GENERIC DRAWINGS WILL NOT BE ACCEPTED. INDICATING ARROWS SHALL HIGHLIGHT THE PRODUCT FOR REVIEW. GENERIC DRAWINGS, DRAWINGS WITHOUT INDICATING ARROWS AND DRAWINGS WITHOUT CONTRACTOR REVIEWED STAMP WILL BE RETURNED REJECTED FOR RESUBMISSION.
- 35.6. THE ENGINEER'S REVIEW OF SHOP DRAWINGS SHALL BE FOR GENERAL DESIGN ONLY AND SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR OR SUPPLIER FROM THEIR RESPONSIBILITY FOR ERRORS, PROPER FITTING, AND CONSTRUCTION OF THE WORK AND FURNISHING OF MATERIALS. THE REVIEW SHALL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM THE CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED IN A COVERING LETTER ACCOMPANYING SUCH DRAWINGS.
- 35.7. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.
- 35.8. ANY WORK PERFORMED PRIOR TO THE RETURN OF REVIEWED SHOP DRAWINGS IS DONE AT THE RISK OF THE CONTRACTOR.
36. RECORDS PLANS
- 36.1. THE ENGINEER WILL FURNISH TO THE ELECTRICAL CONTRACTOR ONE SET OF WHITE PRINTS TO BE USED FOR RECORD WORK AS ACTUALLY INSTALLED. ELECTRICAL CONTRACTOR SHALL ACCURATELY RECORD ON THIS SET OF PLANS, DAY BY DAY, ALL OUTLETS, CONDUIT, LUMINAIRES EQUIPMENT BREAKER CHANGES IN PANELS, ETC. AS ACTUALLY INSTALLED ON THE JOB. ANY CHANGES TO THE CONTRACT WORK SHALL BE SIMILARLY RECORDED.
- 36.2. AS-BUILT DRAWINGS SHALL BE CLEARLY MARKED IN RED INCLUDING ALL CHANGES TO THE ORIGINAL TENDER DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, FIELD CHANGES, JOB CONDITIONS, ETC.
- 36.3. FINAL PAYMENT TO THE CONTRACTOR WILL NOT BE RELEASED UNTIL AS-BUILT DRAWINGS ARE RECEIVED BY THE ENGINEER. AS-BUILT DRAWINGS ARE TO BE TURNED OVER TO THE ENGINEER AT TIME OF FINAL INSPECTION.
37. EQUIPMENT IDENTIFICATION
- 37.1. CLEARLY IDENTIFY ALL ELECTRICAL EQUIPMENT USING PRINTED P-TOUCH LABELS OR LAMACOIDS. HAND-WRITTEN LABELS ARE UNACCEPTABLE.
- 37.2. ALL ELECTRICAL DISTRIBUTION EQUIPMENT SHALL HAVE A LAMACOID NAMEPLATE FASTENED TO THE OUTSIDE FRONT OF THE EQUIPMENT.
- 37.3. EQUIPMENT TAG NUMBER SHALL CONTAIN A MINIMUM OF: THE EQUIPMENT NAME, VOLTAGE, PHASE, WIRE (3 OR 4), AMPERAGE, SOURCE: XXXX, LOAD: XXXX. SUBMIT PROPOSED TAGGING FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.
- 37.4. PROVIDE TYPEWRITTEN CIRCUIT INDEXES FOR ALL PANELS.
- 37.5. JUNCTION BOXES SHALL ALL BE LABELED INDICATING THE SYSTEM AND OR CIRCUITS CONTAINED WITHIN.
- 37.6. ALL RECEPTACLES SHALL BE LABELED WITH THE CIRCUIT NUMBERS AND PANEL IDENTIFICATION. UTILIZE P-TOUCH ADHESIVE LABELS COMPLETE WITH A MINIMUM OF 5 LETTERING, I.E. "P-NL-CCT".
- 37.7. ALL COMMUNICATIONS AND OTHER SYSTEMS CABLES AND DEVICES ARE TO BE IDENTIFIED AS PER THE EIA/TIA 606 STANDARDS. CONFIRM PROTOCOL WITH OWNER OR ENGINEER PRIOR TO COMMENCEMENT OF LABELS.
- 37.8. ALL LUMINAIRES CONNECTED TO EMERGENCY CIRCUITS TO BE LABELED WITH P-TOUCH LABEL INDICATING PANEL AND CIRCUIT DESIGNATION. LABEL TO BE VISIBLE FROM BELOW AFTER INSTALLATION.
38. TESTS
- 38.1. ALL PORTIONS OF THE ELECTRICAL WORK SHALL BE TESTED AND CHECKED FOR SATISFACTORY OPERATION.
- 38.2. BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, PERFORM MEGGER TESTS ON ALL FEEDERS, AND RESULTS OF SUCH TESTS SHALL CONFORM TO THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE AND SHALL BE TO THE SATISFACTION OF THE AUTHORIZED INSPECTION AGENCY AND THE ENGINEER.
- 38.3. SUBMIT ALL TEST RESULTS TO THE ENGINEER FOR APPROVAL.
- 38.4. ANY TEST RESULTS THAT DO NOT MEET THE MINIMUM REQUIREMENTS OF THE MANUFACTURER, CANADIAN ELECTRICAL CODE, AUTHORIZED INSPECTION AGENCY AND THE ENGINEER SHALL BE REPAIRED IN A METHOD APPROVED BY THE ENGINEER AND RETESTED AT THE EXPENSE OF THE CONTRACTOR.
- 38.5. UPON COMPLETION OF THE WORK AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, CHECK THE LOAD BALANCE OF ALL FEEDERS AND AT DISTRIBUTION CENTER, PANELS, ETC. THE TESTS SHALL BE CARRIED OUT BY TURNING ON ALL POSSIBLE LOADS IN THE TENANT AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15 PERCENT, RECONNECT CIRCUITS TO BALANCE THE LOAD.
39. GUARANTEE WARRANTY
- 39.1. THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE FROM ENGINEER (C2 SCHEDULE) FOR THIS WORK.
- 39.2. THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK AND OTHER WORK DAMAGED THEREBY WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.
- 39.3. THE PERIOD OF THE GUARANTEE SPECIFIED SHALL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT SHALL BE BINDING ON WORK NOT OTHERWISE COVERED.
- 39.4. ELECTRICAL CONTRACTOR TO ISSUE LETTER STIPULATING WARRANTY PERIOD DATES FOR ALL EQUIPMENT.
20. BUILDING WIRING
- 20.1. ALL WIRING SHALL BE COPPER WITH RW90 X-LINK INSULATION IN ELECTRICAL METALLIC TUBING UNLESS INDICATED OTHERWISE ON DRAWINGS.
- 20.2. NO WIRE SMALLER THAN NO. 12 AWG GAUGE SHALL BE USED FOR BRANCH CIRCUIT WIRING.
- 20.3. BX CABLE MAY BE USED ONLY AS FOLLOWS:
- 20.3.1. WITHIN NEW DRYWALL PARTITIONS WITHIN ONE ROOM TO INTERCONNECT ELECTRICAL DEVICES, EXCEPT THAT THE CONNECTION FROM THE JUNCTION BOX ABOVE THE SUSPENDED CEILING DOWN TO THE FIRST ELECTRICAL DEVICE IN THE DRYWALL SHALL BE WIRED IN THE EMT CONDUIT.
- 20.3.2. INDIVIDUAL DROPS FROM JUNCTION BOXES IN CEILING SPACES TO LUMINAIRES TO A MAXIMUM OF THREE (3) METRES. "DANYS-CHAINING" OF LUMINAIRES IS NOT PERMITTED.
- 20.3.3. WITH THE ABOVE EXCEPTIONS, ALL 120V-VOLT BRANCH CIRCUIT WIRING MUST BE INSTALLED IN EMT CONDUIT.
- 20.3.4. WIRING SHALL BE COLOUR CODED TO MATCH EXISTING INSTALLATION.
- 20.4. CONDUIT TO BE SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
- 20.5. WIRING SHALL BE COLOUR CODED AS FOLLOWS:
- 120/208V 277/480V 347/600V
- A PHASE RED ORANGE ORANGE
- B PHASE BLACK BROWN BROWN
- C PHASE BLUE YELLOW YELLOW
- NEUTRAL WHITE WHITEWHITE
- GROUND GREEN GREEN GREEN
- 20.6. ALL LINE VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT.
- 20.7. ALUMINUM CONDUCTORS MAY ONLY BE USED WHERE INDICATED ON DRAWINGS. APPLY ZINC JOINT COMPOUND ON ALL ALUMINUM CONDUCTORS PRIOR TO INSTALLATION OF CONNECTORS OR TERMINATING CONDUCTORS.
- 20.8. COMPUTER RECEPTACLES SHALL BE COMPLETE WITH A DEDICATED NEUTRAL CONDUCTOR PER PHASE.
- 20.9. VOLTAGE DROP FOR WIRING SHALL MEET REQUIREMENTS AS LAID OUT IN THE CANADIAN ELECTRICAL CODE. GENERALLY MAXIMUM BRANCH CIRCUIT CONDUCTOR DISTANCES (120VAC) TO MAINTAIN MAX. 3% VOLTAGE DROP ARE AS FOLLOWS:
- 20.9.1. 15A-1P BREAKER - 12AWG WIRING - 80 FEET (24 METRES)
- 20.9.2. 15A-1P BREAKER - 10AWG WIRING - 125 FEET (39 METRES)
- 20.9.3. 20A-1P BREAKER - 12AWG WIRING - 60 FEET (18 METRES)
- 20.9.4. 20A-1P BREAKER - 10AWG WIRING - 95 FEET (29 METRES)
21. DEMOLITION
- 21.1. GENERAL
- 21.1.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
- 21.1.2. ABANDONED BREAKERS IN PANEL BOARDS SHALL BE MARKED AS SPARE IF THEY NO LONGER SERVICE ANY LOAD.
- 21.1.3. AS NOTED ON DRAWINGS THE CONTRACTOR SHALL TURN OVER EQUIPMENT BEING REMOVED TO BUILDING MANAGEMENT. EQUIPMENT NOT REQUIRED BY BUILDING MANAGEMENT SHALL BE REMOVED FROM SITE BY THE CONTRACTOR.
- 21.1.4. THE CONTRACTOR SHALL SEAL ALL UNUSED OPENINGS DUE TO ELECTRICAL DEMOLITION TO ENSURE THAT FIRE-RESISTANCE RATING IS MAINTAINED. REFER TO "FIRE STOPPING" SECTION OF THIS SPEC.
- 21.1.5. IF INDICATED ON DRAWINGS, PROVIDE BLANK COVER PLATE MATCHING WALL FINISH FOR BOXES TO REMAIN.
- 21.2. LIGHTING
- 21.2.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
- 21.2.2. EXISTING BUILDING LUMINAIRES SHALL BE REMOVED AS NOTED ON DRAWINGS AND RESPONSIBLY DISPOSED OF.
- 21.3. POWER
- 21.3.1. ALL CIRCUITS ORIGINATING FROM PANELBOARDS LOCATED IN ELECTRICAL ROOM WHICH ARE NOT BEING RE-USED SHALL BE PULLED BACK TO THE PANEL.
- 21.3.2. THE ELECTRICAL CONTRACTOR SHALL INFORM THE ENGINEER OF ANY DEFICIENCIES THAT ARE ENCOUNTERED DURING THE DEMOLITION.
- 21.3.3. ALL ELECTRICAL DEVICES ON EXISTING WALLS BEING DEMOLISHED ARE TO BE REMOVED.
- 21.3.4. ENSURE THAT ALL EXISTING RECEPTACLES LEFT ISOLATED BY THE REMOVAL OF OUTLETS IN THE SAME RUN SHALL BE RE-FED TO BECOME FULLY FUNCTIONAL TO THE SATISFACTION OF THE ENGINEER.
- 21.4. COMMUNICATIONS
- 21.4.1. ALL UNUSED AND ABANDONED CONDUIT, WIRE, HANGERS, ETC. SHALL BE REMOVED FROM THE CEILING SPACE.
- 21.4.2. EXISTING COMMUNICATIONS CABLING AND CONNECTORS SHOWN ON EXISTING WALLS BEING DEMOLISHED ARE TO BE REMOVED. COMMUNICATION OUTLETS THAT ARE NOT BEING REUSED SHALL BE BLANKED OFF WITH BLANK COVER PLATES, IF INDICATED ON DRAWINGS.
- 21.5. SYSTEMS
- 21.5.1. SECURITY DEVICES AND ASSOCIATED WIRING NOT BEING REUSED SHALL BE REMOVED AND RETURNED TO OWNER
22. WIRING DEVICES
- 22.1. BOXES, EXCEPT WHERE OTHERWISE NOTED, SHALL BE PRESSED SHEET STEEL GALVANIZED TO CSA STANDARDS.
- 22.2. ALL OUTLETS FOR FLUSH WALL-MOUNTING SWITCHES, RECEPTACLES, TELEPHONE AND LV OUTLETS SHALL BE NO.52151 BOX WITH APPROPRIATE PLASTER COVER FOR SINGLE OR 2-GANG OUTLETS OR 4-GANG OUTLETS.
- 22.3. FLUSH MOUNTING VOICE DATA WALL OUTLETS SHALL BE NO. 52151 SERIES 4-INCH SQUARE, 1.5 INCHES DEEP WITH APPROPRIATE PLASTER OR EXTENSION RING).
- 22.4. USE A SINGLE COVER PLATE FOR RECEPTACLE OUTLET BOXED WHERE SHOWN GANGED.
- 22.5. GANG BOXES AND WIRING DEVICES ARE GROUPED. ELECTRO-GALVANIZED STEEL MULTI GANG BOXED SHALL BE USED WHERE MORE THAN 2 DEVICES ARE GANGED TOGETHER.
- 22.6. SECTIONAL TYPE BOXES OR HANDY BOXES SHALL NOT BE USED.
- 22.7. RECEPTACLES SHALL BE WHITE DECORA TO MATCH EXISTING. COMPUTER RECEPTACLES SHALL BE GREY DECORA.
- 22.8. SPECIAL RECEPTACLES WILL BE AS SHOWN ON THE DRAWINGS.
- 22.9. RECEPTACLES TO BE OF SPECIFICATION GRADE AND OF ONE MANUFACTURER. ACCEPTABLE MANUFACTURERS ARE LEVITON, THOMAS AND BETTS, COOPER WIRING DEVICES.
- 22.10. PLATES FOR ALL FLUSH MOUNTING DEVICES SHALL BE WHITE DECORA. EXISTING DAMAGED FACELATES ARE TO BE REPLACED WITH NEW.
- 22.11. P-TOUCH ADHESIVE LABEL COMPLETE WITH A MINIMUM 5MM LETTERS TO BE PROVIDED ON ALL EXISTING AND NEW RECEPTACLES INDICATING CIRCUIT AND PANEL DESIGNATION.
- 22.12. TRACE CIRCUITS FOR EXISTING RECEPTACLES AND ENSURE EXISTING RECEPTACLES ARE LABELLED.
23. SUPPORTING DEVICES
- 23.1. CONDUIT SUPPORTS
- 23.1.1. SINGLE RUNS - TO BE GALVANIZED CONDUIT STRAPS OR RING BOLT RANGE 1 TYPE HANGERS
- 23.1.2. MULTIPLE RUNS (THREE OR MORE) - CONDUIT RACK
- 23.1.3. VERTICAL RUNS - CHANNEL SUPPORT WITH CONDUIT FITTINGS.
- 23.2. INSTALL TO MAINTAIN HEADROOM, NEAT MECHANICAL APPEARANCE AND TO SUPPORT EQUIPMENT LOADS REQUIRED.
- 23.3. WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD INSERTS OR PLASTIC INSERTS MAY BE USED IN DRILLED HOLES. WOOD OR FIBRE PLUGS NOT PERMITTED.
- 23.4. ALL ELECTRICAL DISTRIBUTION INCLUDING CABLE TRAY AND CONDUIT, WHICH IS MOUNTED ABOVE THE SUSPENDED CEILING, SHALL BE SUPPORTED DIRECTLY AND INDEPENDENTLY FROM THE CONCRETE SLAB.
- 23.5. THE USE OF ANY PART OF THE CEILING SUSPENSION SYSTEM AS A SUPPORT OR FOUNDATION FOR THE SUSPENSION OF CABLE TRAY, CONDUIT OR FLEXIBLE CONDUIT IS FORBIDDEN.
- 23.6. THE USE OF ANY DRYWALL OR WALL PARTITION AS A SUPPORT OR FOUNDATION FOR CABLE TRAY OR CONDUIT ROUTED HORIZONTALLY THROUGH THE CEILING SPACE IS FORBIDDEN.
- 23.7. SUPPORT HANGERS AND OTHER TRADES TO SUPPORT NON-ELECTRICAL SERVICES OR DEVICES SHALL NOT USE TRAYS INSTALLED BY THE ELECTRICAL CONTRACTOR.
- 23.8. ALL EQUIPMENT THAT MAY TRANSMIT VIBRATION TO THE BUILDING STRUCTURES IS TO BE INSTALLED USING SUITABLE METHODS TO PREVENT THE TRANSMISSION OF THE VIBRATIONS TO THE BUILDING STRUCTURE.
24. GROUNDING
- 24.1. SUPPLY AND INSTALL COMPLETE GROUNDING SYSTEM AS INDICATED AND AS REQUIRED BY CANADIAN ELECTRICAL CODE AND ELECTRICAL INSPECTION DEPARTMENT.
- 24.2. ALL COMPONENTS SHALL BE SECURELY AND ADEQUATELY GROUNDED AND WHERE REQUIRED TO ACCOMPLISH THE GROUNDING STUDS AND BUSHINGS SHALL BE USED. ENSURE THAT ALL RACEWAYS, TERMINAL PANELS, ETC. FOR TELEPHONE, LOW VOLTAGE, FIRE ALARM, CABLE TRAY, SOUND, ETC., ARE SECURELY AND ADEQUATELY GROUNDED.
- 24.3. PROVIDE 1:6 INSULATED GROUND TO EACH DATA RACK AND TELEPHONE SWITCH.
25. FIRE ALARM AND EMERGENCY VOICE COMMUNICATION SYSTEM
- 25.1. ELECTRICAL CONTRACTOR SHALL EXTEND AND MODIFY EXISTING FIRE ALARM SYSTEM AS INDICATED ON DRAWINGS AND SPECIFIED HEREIN.
- 25.2. ALL NEW EQUIPMENT AND COMPONENTS SHALL MATCH EXISTING BASE BUILDING EQUIPMENT AND SHALL BE BY SAME MANUFACTURER.
- 25.3. ELECTRICAL CONTRACTOR SHALL INSTALL AND OR MODIFY FIRE ALARM SYSTEM IN ACCORDANCE WITH CAN ULC-554-06.
- 25.4. ALL SIGNALING WIRING SHALL BE MIN. 14 AWG WITH CHARACTERISTICS AS PER MANUFACTURERS RECOMMENDATIONS.
- 25.5. ALL WIRE TO BE INSTALLED IN EMT CONDUIT.
- 25.6. ALL EXISTING AND NEW FIRE ALARM DEVICES AND ZONE WIRING WITHIN THE LEASEHOLD SPACE UNDER CONSTRUCTION SHALL BE VERIFIED IN ACCORDANCE WITH CAN ULC-5537-04 STANDARD FOR THE VERIFICATION OF FIRE ALARM SYSTEM INSTALLATIONS.
- 25.7. VERIFYING ENGINEER SHALL ENSURE THAT FIRE ALARM SIGNALS ARE AT THE REQUIRED SOUND LEVELS THROUGHOUT THIS SPACE.
- 25.8. ELECTRICAL CONTRACTOR TO PROVIDE MANUFACTURER WITH ASSISTANCE DURING THE CERTIFICATION PROCEDURE AND TO ENSURE THAT THE MANUFACTURER IS INVOLVED IN, AND APPROVES ALL ALTERATIONS TO THE SYSTEM.
- 25.9. THE ELECTRICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A PROFESSIONAL ENGINEER TO WITNESS THE VERIFICATION AND SHALL PROVIDE ALL REQUIRED ASSISTANCE AND EQUIPMENT FOR THE VERIFICATION.
- 25.10. A COMPLETE TEST OF THE FIRE ALARM SYSTEM WILL BE COMPLETED PRIOR TO ENGAGING THE VERIFICATION ENGINEER. INABILITY TO COMPLETE THE FIRE ALARM VERIFICATION DUE TO WIRING OR PROGRAMMING ISSUES MAY RESULT IN ADDITIONAL FEES FOR FIRE ALARM VERIFICATION BEING REQUIRED.
- 25.11. IF THE ELECTRICAL CONTRACTOR CHOOSES TO HIRE THE PROFESSIONAL SERVICES OF NORR ARCHITECTS ENGINEERS PLANNERS TO COMPLETE THE FIRE ALARM VERIFICATION, THE ELECTRICAL CONTRACTOR SHALL CALL A P.C. SUM OF SIXTYDOLLAR PLUS O.S.T. FOR PAYMENT TO NORR ENGINEERING. REQUIRES A MINIMUM OF FIVE (5) WORKING DAYS NOTICE PRIOR TO FIRE ALARM VERIFICATION. THE ELECTRICAL CONTRACTOR IS NOT OBLIGATED TO HIRE NORR ARCHITECTS ENGINEERS PLANNERS FOR THE WITNESS OF THE FIRE ALARM VERIFICATION AND MAY CHOOSE TO HIRE AN ALTERNATE PROFESSIONAL ENGINEER IF SO DESIRED.
26. COMMUNICATION CABLEING RACEWAY SYSTEM
- 26.1. SUPPLY AND INSTALL CABLE TRAY, CONDUIT, JUNCTION AND OUTLET BOXES TO FORM A COMPLETE EMPTY RACEWAY SYSTEM AS DESCRIBED HEREIN AND INDICATED ON THE DRAWINGS. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH PULL WIRE.
- 26.2. AT EACH COMMUNICATIONS DATA, TELEPHONE OR COMBINATION DATA TELEPHONE OUTLET PROVIDE AN APPROPRIATELY SIZED BOX WITH PLASTER RING FOR SINGLE GANG FACELATE AND ASSOCIATED COMMUNICATIONS CONNECTORS. FROM EACH OUTLET BOX, STUB A CONDUIT INTO THE ABOVE CEILING SPACE TO A HEIGHT OF 150 MM ABOVE THE CEILING; PROVIDE A CONNECTOR COMPLETE WITH PLASTIC BUSHING IN EACH CONDUIT TO PREVENT CABLE DAMAGE. REFER TO INSTALLATION DETAILS ON DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEALING AND FIRE PROTECTION
- 27.1. WHERE CABLES OR CONDUITS PASS THROUGH FIRE RATED ASSEMBLIES SUCH AS FLOORS, WALLS, CEILINGS, ETC., THE FIRE RATING OF THESE ASSEMBLIES SHALL BE MAINTAINED.
- 27.2. USE APPROVED AND ULC LISTED FIRE STOP MATERIAL AND METHODS.
- 27.3. SUBMIT ULC LISTED DETAILS AS REQUIRED TO THE AUTHORITY HAVING JURISDICTION.
- 27.4. CARRY ALL COST ASSOCIATED WITH SUBMISSION OF DETAILS AND INSTALLATIONS OF SUCH PRODUCTS AND ASSEMBLIES.
28. COMMUNICATION CABLE SYSTEM
- 28.1. A COMPLETE AND FUNCTIONING TELECOMMUNICATIONS SYSTEM WILL BE PROVIDED UNDER THIS CONTRACT. THE SYSTEM WILL CONSIST OF:
- 28.1.1. All raceways, back boxes and cover plates and associated hardware;
- 28.1.2. horizontal cabling from I.T. room to data jacks. cabling will be fully terminated and tested.
- 28.1.3. service loop for all horizontal cabling in I.T. room of 2m for final connection to patch e-quipment.
- 28.1.4. telecom rack, patching e-quipment and servers will be by others.
- 28.2. SYSTEM DESCRIPTION
- HORIZONTAL COPPER CABLING SYSTEM CONSISTS OF CATEGORY 6 CABLES WITH FOUR UNSHIELDED TWISTED PAIRS OF SOLID ANNEALED COPPER WRAPPED IN PLENUM RATED INSULATION WITH AN OVERALL PLENUM RATED JACKET. CONNECTORS ARE PLACED INTO NEMA RATED FACELATES AT THE WORK AREA AND PLACED INTO RACK MOUNTED PATCHING PANELS IN THE EQUIPMENT NETWORKING ROOMS.
- HORIZONTAL CABLE AND ITS CONNECTING HARDWARE PROVIDE THE MEANS OF TRANSPORTING SIGNALS BETWEEN THE TELECOMMUNICATIONS OUTLET CONNECTOR AND THE HORIZONTAL CROSS-CONNECT LOCATED IN THE COMMUNICATIONS EQUIPMENT ROOM.
- 1) HORIZONTAL CABLING WILL CONTAIN NO MORE THAN ONE TRANSITION POINT OR CONSOLIDATION POINT BETWEEN THE HORIZONTAL CROSS-CONNECT AND THE TELECOMMUNICATIONS OUTLET CONNECTOR.
- 2) BRIDGED TAPS AND SPLICES WILL NOT BE INSTALLED IN THE HORIZONTAL CABLING.
- THE MAXIMUM ALLOWABLE HORIZONTAL CABLE LENGTH IS 295 FEET (90 M). THIS MAXIMUM ALLOWABLE LENGTH DOES NOT INCLUDE AN ALLOWANCE FOR THE LENGTH OF 16 FEET (4.9 M) TO THE WORKSTATION EQUIPMENT. THE MAXIMUM ALLOWABLE LENGTH DOES NOT INCLUDE AN ALLOWANCE FOR THE LENGTH OF 16 FEET (4.9 M) IN THE HORIZONTAL CROSS-CONNECT.
- 28.3. MANUFACTURER QUALIFICATIONS
- 1) THE CONTRACTOR SHALL BE A BELDEN CERTIFIED SYSTEM VENDOR (CSV) EXPERIENCED AND TRAINED BY THE MANUFACTURING COMPANY, IN ALL ASPECTS OF THE PLACEMENT, TERMINATING, CONNECTING AND TESTING OF PRODUCTS DESCRIBED HEREIN AND PROVIDE A CERTIFICATE OF PROOF PRIOR TO START OF WORK.
- 2) THE CONTRACTOR SHALL HAVE A MINIMUM OF ONE (1) RCDD REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER RECOGNIZED BY BICSI BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL ON STAFF AT LOCAL OFFICES (THE TERM "LOCAL OFFICES" AS APPLIED TO RCDD, REGISTERED COMMUNICATIONS DISTRIBUTIONS DESIGNERS, REFER TO ANYWHERE IN THE PROVINCE OF ALBERTA) AND PROVIDE CERTIFICATE OF PROOF PRIOR TO START OF WORK.
- 3) COMMUNICATIONS CONTRACTOR SHALL SUPPLY A COMPLETE SYSTEM FOR VOICE AND DATA.
- 4) THE CONTRACTOR SHALL BE EXPERIENCED IN ALL ASPECTS OF THIS WORK AND SHALL BE REQUIRED TO DEMONSTRATE DIRECT EXPERIENCE ON RECENT SYSTEMS OF SIMILAR TYPE AND SIZE. THE CONTRACTOR SHALL DEMONSTRATE PROVEN EXPERTISE IN THE IMPLEMENTATION OF NETWORK CABLING. EXPERTISE CAN BE ILLUSTRATED THROUGH THE INCLUSION OF DETAILS OF AT LEAST THREE PROJECTS INVOLVING THE DESIGN AND INSTALLATION OF A CAT 5e, CAT 6, OR AUGMENTED CAT 6 (CAT 6A) BALANCED TWISTED-PAIR CABLING SYSTEM WITHIN THE PAST TWO YEAR PERIOD. NAMES AND CONTACT INFORMATION FOR EACH OF THE THREE PROJECTS SHALL BE INCLUDED. THE CONTRACTOR SHALL OWN AND MAINTAIN TOOLS AND EQUIPMENT NECESSARY FOR SUCCESSFUL INSTALLATION AND TESTING OF OPTICAL AND PROPOSED AUGMENTED CAT 6A METALLIC PREMISE DISTRIBUTION SYSTEMS AND HAVE PERSONNEL WHO ARE ADEQUATELY TRAINED IN THE USES OF SUCH TOOLS AND EQUIPMENT.
- 5) THE COMMUNICATIONS INSTALLER SHALL BE A COMMUNICATION CABLING SPECIALIST CERTIFIED BY THE DEPARTMENT OF LABOUR AND OBTAIN ALL REQUIRED PERMITS.
- 28.4. WARRANTY
- 1) THE WARRANTY PERIOD WITH REGARD TO THE PROJECT IS FOR 25 YEARS FROM THE DATE OF SUBSTANTIAL PERFORMANCE OF THE WORK OR THOSE PERIODS SPECIFIED IN THE CONTRACT DOCUMENTS FOR CERTAIN PORTIONS OF THE WORK OR PRODUCTS.
- 2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PERFORMANCE OF THE WORK.
- 3) THE CONTRACTOR SHALL CORRECT PROMPTLY, AT THE CONTRACTORS EXPENSE, DEFECTS OR DEFICIENCIES IN THE WORK WHICH APPEAR PRIOR TO AND DURING THE WARRANTY PERIODS SPECIFIED IN THE CONTRACT DOCUMENTS.

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	A
2018-03-02	ISSUED FOR 95% REVIEW	B
2018-03-29	ISSUED FOR TENDER	C

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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)



2018-03-29

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Project Leader	Checked
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Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**ELECTRICAL SPECIFICATIONS**

Check Scale (may be photo reduced)  
0 1 inch 0 10mm

Project No.  
**NCCA17-0228**

Drawing No.  
**E20-00-00**



PLOT DATE: March 28, 2018 TIME: 2:27 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\509-DELVELOSHEET\2018-03-01.DWG PLOTSYCLE TABLE: Ingenium-SmaifFormat.Dgn.ctb

- 4) THE OWNER SHALL PROMPTLY GIVE THE CONTRACTOR NOTICE IN WRITING OF OBSERVED DEFECTS AND DEFICIENCIES THAT OCCUR DURING THE WARRANTY PERIOD.
  - 5) THE CONTRACTOR SHALL CORRECT OR PAY FOR DAMAGES RESULTING FROM CORRECTIONS MADE UNDER THE REQUIREMENTS OF PARAGRAPH 1.8.3.
  - 6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PRODUCT WARRANTIES IN EXCESS OF ONE YEAR ON BEHALF OF THE OWNER FROM THE MANUFACTURER. THESE PRODUCT WARRANTIES SHALL BE ISSUED BY THE MANUFACTURER TO THE BENEFIT OF THE OWNER.
  - 7) THE CONTRACTOR SHALL PROVIDE A TWENTY FIVE (25) YEAR EXTENDED PRODUCT WARRANTY OF LIFETIME APPLICATION ASSURANCE WARRANTY FOR THE COMMUNICATIONS NETWORK. THE WARRANTY SHALL BE BACKED UP BY THE MANUFACTURER AND TAKEN OVER BY THE MANUFACTURER OR HIS REPRESENTATIVE IF THE CONTRACTOR FAILS TO FOLLOW THROUGH WITH THE REQUIREMENTS OF THE WARRANTY.
  - 8) THE COMMUNICATIONS NETWORK IS DEFINED AS ALL REQUIRED PASSIVE EQUIPMENT AND CABLING, INCLUDING HARDWARE, TERMINATIONS, AND JACKS, CONFIGURED TO PROVIDE DATA AND VOICE CONNECTIVITY FROM EACH DATA OR VOICE OUTLET PROVIDED BY THE CONTRACTOR IN THIS CONTRACT.
  - 9) THE SYSTEM ASSURANCE SHALL COVER THE APPLICATIONS THAT THE INSTALLED SYSTEM IS DESIGNED TO SUPPORT FOR A TWENTY FIVE (25) YEAR PERIOD.
  - 10) THE COPPER SYSTEM SHALL BE CONSTRUCTED TO CONFORM TO ANSITIA-568-B.2-10-2008 - TRANSMISSION PERFORMANCE SPECIFICATIONS FOR 4 PAIR 1000 AUGMENTED CAT 6 CABLING COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARDS.
  - 11) THE FIBER SYSTEM SHALL BE CONSTRUCTED TO CONFORM TO ANSI EIA-568-B.3-2000 - OPTICAL FIBER CABLING COMPONENTS STANDARD AND ANSITIA EIA-568-B.3-1-2009 - OPTICAL FIBER CABLING COMPONENTS STANDARD ADDENDUM 1 - ADDITIONAL TRANSMISSION PERFORMANCE SPECIFICATIONS FOR 50 125 (m OPTICAL FIBER CABLES)
  - 12) THE EXTENDED PRODUCT WARRANTY AND THE SYSTEMS ASSURANCE TOGETHER COMPRISE THE STRUCTURED CABLING SYSTEM QUALITY ASSURANCE PROGRAM.
  - 13) UPON SUCCESSFUL COMPLETION OF THE STRUCTURED CABLING INSTALLATION AND SUBSEQUENT TESTING BY CERTIFIED TECHNICAL PERSONNEL THE CONTRACTOR SHALL PROVIDE TO THE OWNER A NUMBERED CERTIFICATE REGISTERING THE INSTALLATION.
- 29.0. COMMUNICATION WIRING SYSTEM
- 29.1. GENERAL
- THE ELECTRICAL CODE REFERRED TO IN THESE SPECIFICATIONS IS THE NATIONAL ELECTRICAL CODE AS CURRENTLY ADOPTED BY THE PROVINCE OF ALBERTA. ALL WORK WILL BE PROVIDED IN STRICT COMPLIANCE WITH THE ELECTRICAL CODE AND ALL REGULATIONS THAT MAY APPLY.
- WHERE STANDARDS EXIST, FOR A PARTICULAR CATEGORY, PRODUCTS USED ON THIS PROJECT WILL BE LISTED BY AN APPROVED NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), AND BE APPROVED OR LISTED FOR THE INTENDED SERVICE AND APPLICATION.
- THESE SPECIFICATIONS DO NOT UNDERTAKE TO REPEAT THE REQUIREMENTS OF CODES, REGULATIONS OR NRTL LISTING OR LABELING INSTRUCTIONS. THE SPECIFICATIONS OR DRAWINGS MAY REQUIRE ITEMS OR WORK BEYOND THE REQUIREMENTS OF APPLICABLE CODES OR REGULATIONS. THE STRICTER, HIGHER QUALITY, GREATER QUANTITY OR HIGHER COST WILL BE PROVIDED. IT IS INCUMBENT ON THE INSTALLER, MATERIAL AND EQUIPMENT SUPPLIERS TO MEET THESE SPECIFICATIONS, APPLICABLE CODES, REGULATIONS, AND NRTL LISTING AGENCY RESTRICTIONS.
- 29.2. MANUFACTURER
- THE COPPER CABLING SYSTEM AND OPTICAL FIBER CABLING SYSTEM DESIGN USES LEVITON CONNECTORS AND SUPERIOR ESSEX CABLES.
- THE WORD "MANUFACTURER" WILL INCLUDE THE MANUFACTURER, THE MANUFACTURER'S REPRESENTATIVE, THE DISTRIBUTOR, THE FABRICATOR, AND THE SUPPLIER OF THE PARTICULAR CLASSIFICATION OF EQUIPMENT, SYSTEM, PRODUCT, AND MATERIAL.
- ALL WORK, EQUIPMENT, AND SYSTEMS WILL BE MANUFACTURED, PROVIDED, REPAIRED, INSTALLED, AND TESTED IN ACCORDANCE WITH THE LATEST EDITION AND ALL CURRENT AMENDMENTS OF THE APPLICABLE PUBLICATIONS AND STANDARDS OF THE CANADIAN ELECTRICAL CODE AND THE LATEST VERSION OF THE ANSI EIA/TIA 568 SERIES AS OF THE DATE OF THE CONTRACT DOCUMENTS. WHEN THE SPECIFICATION REQUIREMENTS EXCEED THE REQUIREMENTS OF THESE PUBLICATIONS AND STANDARDS THE SPECIFICATIONS WILL GOVERN.
- THE ABOVE REQUIREMENTS WILL NOT IN ANY WAY LIMIT RESPONSIBILITY OR REQUIREMENTS TO COMPLY WITH ALL OTHER CODES, STANDARDS AND LAWS.
- 29.3. PERFORMANCE
- SYSTEM SHALL PROVIDE "FUTURE PROOF" CHANNEL PERFORMANCE AND GUARANTEED MARGINS AS NOTED IN THIS DOCUMENT AND IS GUARANTEED TO EXCEED ANSITIA EIA-568-B.2 CATEGORY 6 SPECIFICATIONS FOR INSERTION LOSS, NEXT, PSNEXT, ACR, PSACR, ELFEXT, PSELFEXT AND RETURN LOSS TO 250 MHZ. THE SYSTEM IS ALSO GUARANTEED 12 DB PSACR HEADROOM AT 250 MHZ.
- 29.4. SOURCE QUALITY CONTROL
- ALL MATERIALS SHALL BE PURCHASED FROM DISTRIBUTORS AUTHORIZED BY SYSTEM MANUFACTURERS TO SELL NEW AND UNUSED COMPONENTS.
- 29.5. WALLPLATES
- MANUFACTURER - PROVIDE WALLPLATES AS SPECIFIED BELOW:
- 1) LEVITON QUICKPORT SINGLE GANG 2-PORT WALLPLATES WITH ID WINDOWS
    - a. PART - 42080-2(W/S)
  - 2) LEVITON QUICKPORT SINGLE GANG 4-PORT WALLPLATES WITH ID WINDOWS
    - b. PART - 42080-4(W/S)
  - 3) OR PRE-APPROVED EQUAL
  - 4) WALL PLATES TO BE WHITE.
- 29.6. JACKS
- MANUFACTURER - PROVIDE DATA CONNECTORS AS SPECIFIED BELOW:
- 1) LEVITON EXTREME® 6+ CAT 6 CONNECTOR WITH / RETENTION FORCE TECHNOLOGY
    - a. PART - 6111D-R(W/S)
  - 2) OR PRE-APPROVED EQUAL
- 3) PROVIDE BLANK MODULES FOR UNUSED PORTS
- 4) JACKS TO BE WHITE
- 29.7. PATCH CABLES
- 1) PATCH CABLES SHALL BE PROVIDED FOR ALL TERMINATED VOICE AND DATA PORTS, FOR BOTH ENDS OF EACH LINE. THE CORDAGE SHALL USE 23 AWG SOLID COPPER CONDUCTORS IN A BONDED PAIR CONFIGURATION FOR RELIABLE LONG TERM CHANNEL PERFORMANCE TO 625 MHZ. THE TRANSMISSION CHARACTERISTICS OF THE CORDAGE WILL BE GUARANTEED TO BE 625 MHZ. THAT PATCH CABLES SHALL SUPPORT 10Gb/s, FT-4, 23 AWG COPPER, BELDEN 10G4 OR APPROVED EQUAL.
  - 2) THE QUANTITY OF THE PATCH CABLES FOR CONNECTION BETWEEN SWITCHES AND PATCH PANELS IN THE LAN ROOMS IS TO BE AT LEAST THE SAME AMOUNT AS THE NUMBER OF PORTS ON THE HORIZONTAL PATCH PANELS. LENGTH OF PATCH CABLES TO BE 7ft OR 2m.
  - 3) THE QUANTITY OF PATCH CABLES FOR CONNECTION AT THE WORKSTATION END IS TO BE AT LEAST THE SAME AMOUNT AS THE NUMBER OF PORTS ON THE HORIZONTAL PATCH PANELS. LENGTH OF PATCH CABLES SHOULD BE 15ft OR 4.5m.
30. COPPER PATCH CORDS
- 30.0.1. PROVIDE 2 METRE SERVICE LOOP AT THE PATCH PANEL END.
  - 30.0.2. PROVIDE 1.5 METRES OF SLACK COILED NEATLY IN WORKSTATION TO ENSURE PATCH CABLES REACH INDICATED COMPUTER DEVICE LOCATION.
  - 30.0.3. LEAVE 3.0 METRES SLACK FROM EACH WALL OUTLET NEATLY COILED TO ENSURE PATCH CABLES REACH INDICATED COMPUTER DEVICE.
31. ALL PRODUCT ALTERNATES MUST BE APPROVED ONE WEEK PRIOR TO TENDER CLOSING.
- 32.1. INSTALLATION
- 32.1.1. HORIZONTAL CABLING WILL BE RUN IN CONDUIT AND CABLE TRAY PROVIDED UNDER THIS CONTRACT.
  - 32.1.2. THE INSTALLATION OF EXPOSED CABLES SHALL BE MANAGED TO PROVIDE A NEAT INSTALLATION AND SHALL BE RUN PARALLEL TO BUILDING LINES.
  - 32.1.3. EXPOSED CABLE IN RETURN AIR PLENUM ARE TO BE ATTACHED TO THE CEILING EVERY 3 FEET BY J-HOOKS OR HILTI HOOKS. BUNDLES OF MULTIPLE CABLES ARE TO BE NEATLY SECURED WITH VELCRO STRIPS.
  - 32.1.4. ALL CABLES BETWEEN WALL OR FURNITURE OUTLETS AND TERMINATION ROOMS SHALL BE CONTINUOUS WITHOUT ANY BREAKS OR SPLICES TO MINIMIZE POTENTIAL FAULT LOCATIONS.
  - 32.1.5. PLENUM RATED FT4 FT6 CABLES MAY BE ROUTED EXPOSED ABOVE THE SUSPENDED CEILING IN THE RETURN AIR PLENUM. PLENUM RATED CABLES SHALL BE LABELLED FT4 OR FT6 ALONG THE LENGTH OF THE CABLE JACKET. CABLES NOT CARRYING ONE OF THESE DESIGNATIONS MUST BE ROUTED IN ENCLOSED RACEWAYS.
  - 32.1.6. PROVIDE IDENTIFICATION TAGS AT ALL OUTLETS BLOCKS AND TERMINATION CABINETS. IDENTIFICATION TAGS TO BE KROY TYPE 200 LABELS. PROVIDE CIRCULAR CABLE IDENTIFICATION TAGS AT EACH END OF EACH CABLE. IDENTIFICATION CODES ARE TO BE SPECIFIED BY JOB NAME.
  - 32.1.7. INSTALL ALL PATCH CORDS IN ACCORDANCE WITH THE OWNERS I.T. DEPARTMENT OR THE PERSON IN CHARGE OF THE TELECOMMUNICATIONS INFRASTRUCTURE.
  - 32.1.8. BEND RADIUS OF CABLES SHALL BE MAINTAINED AS RECOMMENDED BY THE MANUFACTURER AND PER TIA AND BICSI STANDARDS.
  - 32.1.9. LOCATIONS AND QUANTITY OF OUTLETS AS SHOWN ON DRAWINGS.
  - 32.1.10. RACK LOCATION AND PANEL INSTALLATION AS SHOWN IN DETAIL DRAWINGS.
- 33.0. TESTING PROCEDURES
- 33.0.1. CABLING SYSTEMS SHALL MEET OR EXCEED THE ELECTRICAL AND TRANSMISSION CHARACTERISTICS OF THE SYSTEMS SPECIFIED.
  - 33.0.2. CABLE SEGMENTS AND LINKS SHALL BE TESTED FROM BOTH ENDS OF THE CABLE FOR EACH OF THE CONSTRUCTION PHASES. (VERIFY THAT CABLE LABELING MATCHES AT BOTH ENDS).
  - 33.0.3. THE SYSTEM SHALL NOT BE CONSIDERED CERTIFIED UNTIL THE TESTER HAS ACKNOWLEDGED THAT THE PERFORMANCE OF THE PHYSICAL LAYER OF THE SYSTEM HAS BEEN FULLY TESTED AND IS OPERATIONAL AT THE COMPLETION OF THE INSTALLATION PHASE.
  - 33.0.4. FIELD TESTING EQUIPMENT: SUBMIT DURING SHOP DRAWING REVIEW ON THE TESTING EQUIPMENT TO BE UTILIZED ON THIS PROJECT. THE INSTALLER SHALL TEST ALL CABLES INSTALLED UNDER THIS SECTION.
    - 1) UNSHIELDED TWISTED PAIR TESTING EQUIPMENT:
      - a.) THE CABLE TESTER SHALL HAVE A WIDE VARIETY OF PREPROGRAMMED CABLE TYPES AS AN INTEGRAL PART OF ITS TESTING SYSTEM AND HAVE THE ABILITY TO TEST CABLES LESS THAN 6 FEET (6FT.) FROM THE TEST POINT.
      - b.) TESTING SHALL BE ACCOMPLISHED USING LEVEL III OR HIGHER FIELD TESTER THAT IS LOADED WITH THE MOST CURRENT VERSION OF TEST SOFTWARE BY THE MANUFACTURER OF THE TEST EQUIPMENT.
      - c.) PROVIDE FACTORY CALIBRATION REPORT OF FIELD TEST EQUIPMENT.
  - 33.0.1. TEST RESULTS:
    - 1) THE TEST RESULTS INFORMATION FOR EACH LINK SHALL BE RECORDED IN THE MEMORY OF THE FIELD TESTER UPON COMPLETION OF THE TEST. THE TESTER SHALL BE CAPABLE OF STORING TEST DATA IN EITHER INTERNAL OR EXTERNAL MEMORY. THE EXTERNAL MEDIA USED SHALL BE LEFT TO THE DISCRETION OF THE USER.
    - 2) THREE (3) PRINTED COPIES OF THE TEST RESULTS SHALL BE PROVIDED UPON COMPLETION OF THE PROJECT TO THE OWNER.
    - 3) TEST RESULTS SHALL INCLUDE THE FOLLOWING:
      - a.) APPLICABLE ROOM NUMBER OF JACK LOCATION (ROOM NUMBER PER CONTRACT DOCUMENTS).
      - b.) APPLICABLE TELECOMMUNICATIONS ROOM NUMBER.
      - c.) CIRCUIT I.D. NUMBER WITH CORRESPONDING JACK IDENTIFIER.
      - d.) WIRE MAP.
      - e.) LENGTH.
      - f.) INSERTION LOSS.
      - g.) NEAR-END CROSSTALK (NEXT) LOSS.
      - h.) PS-NEXT (POWER SUM NEAR END CROSS TALK).
      - i.) ELFEXT (EQUAL LEVEL FAR END CROSS TALK).
      - j.) PS-ELFEXT (POWER SUM EQUAL LEVEL FAR END CROSS TALK).
      - k.) PROPAGATION DELAY.
      - l.) DELAY SKEW.
      - m.) RETURN LOSS.
- 34.0. POWER DISTRIBUTION
- 34.1. PROVIDE NEW EQUIPMENT AS INDICATED ON THE DRAWINGS.
  - 34.2. ALL EQUIPMENT TO BE CSA APPROVED.
  - 34.3. NEW BRANCH CIRCUIT BREAKERS AND WIRING TO BE INSTALLED UNDER THIS CONTRACT.
  - 34.4. PROVIDE TYPEWRITTEN DIRECTORY OF PANEL LOADS AND AFFIX TO PANELBOARD DOORS.
  - 34.5. PANELBOARDS SHALL BE COMPOSED OF THE NUMBER OF CIRCUIT BREAKERS WITH POLES AND TRIP RATINGS AS LISTED IN THE SCHEDULES. WHERE SPACE ONLY IS CALLED FOR, PROVIDE ALL MOUNTING BRACKETS, BUSBAR DRILLINGS, FILLER PLATES, ETC., TO FACILITATE INSTALLATION OF FUTURE BREAKERS.
  - 34.6. WHERE EXISTING PANELBOARDS ARE SHOWN TO BE REPLACED WITH NEW, CONTRACTOR SHALL RELOCATE ALL EXISTING BRANCH CIRCUITS TO NEW PANELBOARD AND PROVIDE NEW BREAKERS FOR EXISTING AND NEW CIRCUITS.
  - 34.7. WHERE PANELBOARDS ARE SHOWN TO BE DOUBLE-LUGGED, CONTRACTOR SHALL PROVIDE NEW DOUBLE LUG KITS IN EXISTING AND NEW PANELBOARDS.
  - 34.8. WHERE CALLED FOR, PROVIDE AN ISOLATED STANDOFF GROUND BUS FOR NEW OR EXISTING PANELBOARDS AND CONNECT BACK TO THE BUILDING GROUND WITH INSULATED - 2 AWG.
  - 34.9. PANELBOARDS SHALL BE 120/208V OR 347/600V 3Ø 4W (FCN) 225A RATED AND COMPOSED OF THE NUMBER OF CIRCUIT BREAKERS WITH POLES AND TRIP RATINGS AS LISTED IN THE SCHEDULES. PANELS SHALL BE TIN-PLATED ALUMINUM BUSSING. PANELBOARD ENCLOSURE TO BE SPRINKLER-PROOF WITH FULL 3" DRIP-HOOD.
  - 34.10. BREAKERS TO BE BOLT-ON TYPE AND MEET OR EXCEED THE AVAILABLE FAULT CURRENT INDICATED ON THE SINGLE LINE DIAGRAM. BREAKERS OF MULTIPLE POLE CONFIGURATIONS SHALL BE COMMON-TRIP SINGLE HANDLE. BREAKERS TO BE 3-POSITION (OPEN, TRIPPED, CLOSED).
  - 34.11. ALL ELECTRICAL EQUIPMENT SHALL BE GREY ANSI 49 PAINTED.
  - 34.12. INTERRUPTING CAPACITY WITHSTAND RATINGS FOR DISTRIBUTION EQUIPMENT SHALL MEET OR EXCEED LEVELS INDICATED ON SINGLE LINE DRAWINGS.
- 35.0. LUMINAIRES
- 35.1. SUPPLY AND INSTALLATION OF ALL LUMINAIRES SHALL FORM PART OF THIS CONTRACT.
  - 35.2. SUPPLY AND INSTALLATION OF LIGHTING CONTROLS WILL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
  - 35.3. LUMINAIRES SHALL BE ADDED, RELOCATED OR REMOVED AS INDICATED.
  - 35.4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND REPLACING ALL DAMAGED LENSES, FAULTY BALLASTS AND PROVIDE TOUCH-UP PAINT WHERE REQUIRED.
- 35.5. REPLACE BURNT-OUT LAMPS FOR FLUORESCENT, INCANDESCENT, AND LOW VOLTAGE LUMINAIRES WHERE REQUIRED.
- 35.6. ALL FLUORESCENT LUMINAIRES TO BE SUPPLIED COMPLETE WITH LAMPS AND ELECTRONIC BALLAST :10% THD, RAPID START OR PROGRAMMED START.
- 35.7. UNLESS OTHERWISE NOTED, ALL FLUORESCENT LAMPS SHALL BE STANDARD 3500K, T8 LOW MERCURY, CRI 85.
- 35.8. INCANDESCENT LAMPS TO BE 5,000 HOURS, 130 VOLT EXTENDED SERVICE TYPE.
- 35.9. SPECIAL LAMPS TO BE USED WHERE INDICATED WITH THE LONGEST LIFE AVAILABLE IN EACH CATEGORY.
- 35.10. ACCEPTABLE LAMP MANUFACTURERS: SYLVANIA, GE, PHILLIPS.
- 35.11. ACCEPTABLE BALLAST MANUFACTURERS: GE, PHILLIPS, LUTRON.
- 35.12. LUMINAIRE SCHEDULE - REFER TO DRAWINGS.
- 36.0. MECHANICAL EQUIPMENT WIRING
- 36.1. ELECTRICAL CONTRACTOR TO PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECT, ETC., REQUIRED FOR MECHANICAL EQUIPMENT.
  - 36.2. ALL LOW VOLTAGE CONTROLS AND CONTROL WIRING WILL BE THE RESPONSIBILITY OF THE MECHANICAL TRADE AND OR HIS CONTROL SUB-TRADE. 120V CONNECTION FOR CONTROLS CONTRACTOR SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR, COORDINATE WITH CONTROLS CONTRACTOR FOR LOCATION.
  - 36.3. ELECTRICAL CONTRACTOR SHALL CONFIRM WITH THE MECHANICAL TRADE, THE SIZE, CHARACTERISTICS, AND LOCATIONS OF ALL MECHANICAL EQUIPMENT BEFORE INSTALLATION OF CONDUITS, OUTLETS, HEATERS ETC.
  - 37.0. ENGINEER'S INSPECTIONS
  - 37.1. AT MINIMUM, AN INSPECTION WILL BE CARRIED OUT BY THE ENGINEER AT ROUGH-IN STAGE AND AT COMPLETION.
  - 37.2. THE ELECTRICAL CONTRACTOR SHALL ADVISE THE ENGINEER WHEN ALL WORK HAS BEEN COMPLETED ABOVE THE SUSPENDED CEILING, EITHER DRYWALL OR T-BAR.
  - 37.3. FAILURE TO NOTIFY THE ENGINEER IN TIME WILL NECESSITATE THE REMOVAL OF ALL CEILING FOR INSPECTION PURPOSES.
  - 37.4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL ALLOW AT LEAST 3 WORKING DAYS NOTICE OF THE INSTALLATION OF CEILING.

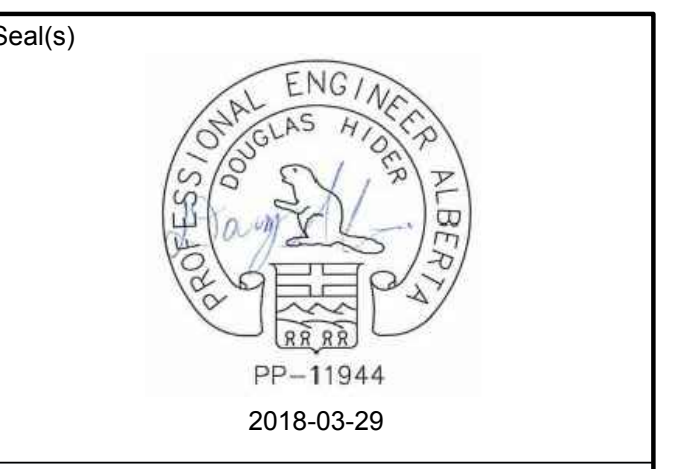
DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	A
2018-03-02	ISSUED FOR 95% REVIEW	B
2018-03-29	ISSUED FOR TENDER	C

This drawing has been prepared solely for the use of the CLIENT and there are no representations of any kind made by NORR Architects Engineers Planners to any party with whom NORR Architects Engineers Planners has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer.

Project Component
<b>LUNCHROOM EXPANSION</b>
Keyplan

Consultants
Architectural: NORR Architects Engineers Planners Structural: NORR Architects Engineers Planners Mechanical: NORR Architects Engineers Planners Electrical: NORR Architects Engineers Planners



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Client	
<b>RCMP</b>	

Project  
**INNISFAIL PDSTC  
LUNCHROOM EXPANSION**

Drawing Title  
**ELECTRICAL  
SPECIFICATIONS**

Check Scale (may be photo reduced)  
0 1inch 0 10mm

Project No. **NCCA17-0228**  
Drawing No. **E20-00-01**



PLOT DATE: March 29, 2018 TIME: 2:27 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228-RCMP-DIT LUNCHROOM EXPANSION\650 DELMECHSHEETS\M00-00-01.DWG PLOTTABLE TABLE: TMA.MS.DTD-100.csh

MECHANICAL SPECIFICATIONS

- GENERAL
  - ALL WORK SHOWN OR IMPLIED ON THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH:
    - NATIONAL BUILDING CODE, NBC 2015.
    - PLUMBING CODE OF CANADA 2010
    - CAN/CSA-B149.1-15 NATURAL GAS AND PROPANE INSTALLATION CODE.
    - LOCAL AUTHORITY HAVING JURISDICTION.
    - NFPA 10-2002 PORTABLE FIRE EXTINGUISHERS.
    - ULC STANDARDS.
  - PRIOR TO SUBMITTING TENDERS, EACH TRADE SHALL EXAMINE THE SITE TO DETERMINE THE CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK. NO CLAIM FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO FULFILL THIS CONDITION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH, EXISTING CONDITIONS.
  - THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES AND SUPPORTS REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION. THESE MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
  - THE MECHANICAL CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES AND THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SAFETY REQUIREMENTS TO ITS EMPLOYEES AND COMPLY WITH OCCUPATIONAL HEALTH AND SAFETY ACT.
  - ARRANGE, COORDINATE AND PAY ALL REQUIRED FEES AND PERMITS. SUBMIT DRAWINGS AND SPECIFICATIONS TO ALL AUTHORITIES AND OBTAIN APPROVAL BEFORE COMMENCING ANY WORK. PAY FOR FEES AND CHARGES LEVIED BY THE MUNICIPALITY, UTILITIES AND OTHER GOVERNING AUTHORITY FOR PERMITS, INSPECTIONS AND CERTIFICATES, AND WORK PERFORMED BY THE MUNICIPALITY OR UTILITIES IN CONNECTION WITH THE MECHANICAL WORK. ARRANGE AND COORDINATE SUCH WORK AND OBTAIN PERMITS. KEEP A COPY OF ALL SUCH PERMITS AND CERTIFICATES ON THE JOB SITE DURING THE PROJECT DURATION.
  - WORKMANSHIP AND MATERIALS SHALL MATCH OR EXCEED THAT OF THE EXISTING.
  - ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE PROJECT MANAGER. NO DISRUPTION TO BUILDING OPERATIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE OWNER. ALL CHANGES AND CONNECTIONS TO EXISTING SERVICES, REQUIRING THE SHUTDOWN OF THAT SERVICE SHALL BE DONE AT A TIME DESIGNATED BY THE PROJECT MANAGER. ALLOW FOR PREMIUM TIME NEEDED.
  - CAREFULLY REMOVE EQUIPMENT TO BE REUSED OR HANDED OVER TO THE OWNER. STORE EQUIPMENT FOR RE-INSTALLATION. RELOCATE ANY PIPING, DUCTWORK, OR EQUIPMENT INTERFERING WITH NEW CONSTRUCTION.
  - THE CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL TO THE SATISFACTION OF THE PROJECT MANAGER. THE CLEANING OF THE AFFECTED AREA SHALL BE CONTINUOUS. PLACE DUST PROTECTION IN THE FORM OF COVER SHEETS OVER EQUIPMENT AND FURNITURE TO ENSURE NO DUST INFILTRATION.
  - MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF EQUIPMENT SPECIFIED HEREIN SHALL BE CONSIDERED PART OF THIS SPECIFICATION.
  - SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE.
  - MECHANICAL CONTRACTOR SHALL OBTAIN AND PAY FOR HOISTING OF MECHANICAL EQUIPMENT. COORDINATE HOISTING SCHEDULE WITH PROJECT MANAGER. ARRANGE AND PAY FOR ANY REQUIRED PERMITS.
  - INSPECT ALL EQUIPMENT UPON DELIVERY AND NOTIFY PROJECT ENGINEER OF ANY DAMAGE OR DEFICIENCIES.
  - SUBMIT ONE (1) COPY OF SHOP DRAWINGS AND PRODUCT DATA IN ELECTRONIC PDF FORMAT OF ALL SPECIFIED EQUIPMENT & SYSTEMS. HARD COPY SHOP DRAWINGS WILL NOT BE ACCEPTED. CERTIFY THAT SHOP DRAWINGS HAVE BEEN REVIEWED BY GENERAL CONTRACTOR PRIOR TO SUBMITTING TO CONSULTANT FOR REVIEW. REVIEWED ELECTRONIC SHOP DRAWINGS WILL BE RE-DISTRIBUTED AS PER PROJECT MANAGER'S INSTRUCTIONS.
  - ALL EQUIPMENT, PIPING, DUCTWORK AND WIRING SHALL BE RUN AT RIGHT ANGLES TO AND BE SUSPENDED FROM THE BUILDING STRUCTURE.
  - PROVIDE BLACK WITH WHITE WRITING LAMACOID PLATE ON ALL NEW EQUIPMENT. LABEL UNIT AS SHOWN ON DRAWINGS. LETTERING SIZE TO BE MINIMUM 25MM HIGH. MOUNT NEAR CONTROL SECTION OF THE UNIT.
  - PROVIDE CUTTING, PATCHING AND CORING OF ALL WALLS, CEILING AND OTHER SURFACES AS REQUIRED FOR MECHANICAL WORK. OBTAIN WRITTEN VERIFICATION OF LOCATIONS FROM THE ENGINEER PRIOR TO CUTTING. ALL ROOFING WORK FOR MECHANICAL EQUIPMENT TO BE UNDERTAKEN BY QUALIFIED ROOFING CONTRACTORS UNDER THIS SECTION.
  - INSTALL ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS WITH ADEQUATE ACCESS.
  - PIPING LAYOUT ILLUSTRATED ON DRAWINGS INDICATES GENERAL ROUTING OF PIPE WORK AND DOES NOT SHOW ALL FITTINGS AND OFFSETS REQUIRED FOR COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPING FITTINGS & OFFSETS REQUIRED FOR COORDINATED INSTALLATION WITH OTHER SYSTEMS (DUCTWORK, PIPING, CONDUITS, LIGHTS, ETC.).
  - CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATION, DRAINING, REFILLING AND REACTIVATING OF OPERATIONAL SYSTEMS. COORDINATE WITH OWNER AND ENSURE THAT NO UNDUCE DISRUPTION OF BUILDING OPERATIONS OCCUR.
  - MAINTAIN A SET OF WHITE PRINTS MARKED UP TO "AS BUILT" CONDITION ON SITE, UPDATED ON AN ONGOING BASIS THROUGHOUT THE COURSE OF THE PROJECT. PURCHASE, FROM THE CONSULTANT, SET OF CADD FILES OF THE MECHANICAL CONTRACT DRAWINGS AND TRANSFER ALL INFORMATION ONTO THE CAD DRAWINGS. HAND OVER 2 SETS OF WHITE PRINTS AND CD WITH CADD FILES SHOWING THE "AS BUILT" CONDITION TO THE CONSULTANT FOR FINAL REVIEW PRIOR TO FINAL INSPECTIONS.
  - SUBMIT THREE (3) COPIES OF OPERATION AND MAINTENANCE MANUALS FOR ENGINEER'S APPROVAL.
  - WARRANTY PERIOD SHALL BE FOR TWELVE (12) MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY ENGINEER.

- INSULATION
  - INSULATE DUCTWORK, PIPING, AND EQUIPMENT IN ACCORDANCE WITH NECB 2011.
  - ALL COMPONENTS OF INSULATION SYSTEM TO BE SUITABLE FOR PLENUM INSTALLATION, HAVING MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 IN ACCORDANCE WITH CAN4-S102
  - INSULATE DOMESTIC COLD WATER AND DOMESTIC HOT WATER PIPING WITH 1" FIBER GLASS INSULATION WITH FACTORY APPLIED VAPOUR BARRIER JACKED, MOLDED TO CONFORM TO PIPING K VALUE AT 24 C.
    - PROVIDE ISOLATING VALVES ON MAIN AND/OR BRANCH LINES AND AT ALL EQUIPMENT OR FIXTURES OR WHERE SHOWN. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM.
    - ALL THE INDOOR SUPPLY DUCT WORK TO BE INSULATED WITH 25mm THICK FIBERGLASS INSULATION.
    - OUTDOOR & COMBUSTION AIR DUCT WORKS ARE TO BE INSULATED WITH 50mm OF INSULATION.
    - INSULATE EXHAUST DUCTS WITH 25mm INSULATION FOR 3000mm FROM OUTSIDE WALL.

- PLUMBING
  - PROVIDE DIELECTRIC COUPLINGS/UNION UNIONS WHERE DISSIMILAR METALS ARE JOINED.
  - PROVIDE ISOLATING VALVES ON MAIN AND/OR BRANCH LINES AND AT ALL EQUIPMENT OR FIXTURES OR WHERE SHOWN. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED. MAKE AND MODEL SHALL BE AS PER BASE BUILDING STANDARDS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
  - INSTALL ALL ABOVE GRADE PIPING TO ALLOW COMPLETE DRAINAGE.
  - BALL VALVES NPS 2 AND UNDER, SCREWED, CLASS 150, BRONZE BODY, STAINLESS STEEL BALL, PTFE TEFLON ADJUSTABLE PACKING, BRASS GLAND AND PTFE TEFLON SEAT, STEEL LEVER HANDLE, CRANE OR APPROVED EQUAL.
  - HANGERS AND SUPPORTS SHALL BE OF MANUFACTURED TYPE AND ASSEMBLED AS PER MANUFACTURER'S INSTRUCTIONS. DESIGN HANGERS AND SUPPORTS TO OPERATE UNDER ALL OPERATING CONDITIONS. ALLOW FOR FREE EXPANSION AND CONTRACTION AND PREVENT THE TRANSMISSION OF EXCESSIVE STRESSES INTO PIPE WORK OR CONNECTED EQUIPMENT. PROVIDE FOR VERTICAL ADJUSTMENT AFTER INSTALLATION. DESIGN SHALL BE IN ACCORDANCE WITH ANSI B31.1 AND MSS-SP58. SUPPORT FROM TOP OR BOTTOM OF STRUCTURAL MEMBERS. WHERE STRUCTURAL BEARING DOES NOT EXIST OR INSERTS ARE NOT IN SUITABLE LOCATIONS, PROVIDE SUPPLEMENTARY STRUCTURAL STEEL MEMBERS. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN PIPE DIRECTION AND FOR CONCENTRATION OF LOADS DUE TO WEIGHT OF VALVES, STRAINERS, ETC.. HANGER SPACING: COPPER PIPING UP TO NPS 1/2 EVERY 5 FT. STEEL PIPING EVERY 10'. HANGERS SHALL BE WITHIN 12" OF EACH ELBOW.
  - PROVIDE PIPE IDENTIFICATION TO MATCH EXISTING BASE BUILDING STANDARD; IDENTIFY PIPE ON EITHER SIDE OF WALL / SLAB / ROOF PENETRATIONS, AND AT NOT LESS THAN 30' INTERVALS THROUGH LARGE ROOMS.
  - SHUT-OFF VALVE: BALL TYPE FOR NPS 2 ID AND SMALLER. BUTTERFLY TYPE FOR 65 MM (2-1/2") AND LARGER.
  - PLUMBING FIXTURES TO BE AS DWG M20-01.
  - DOMESTIC WATER PIPING SHALL BE TYPE "L" COPPER WITH CAST BRASS OR WROUGHT COPPER FITTINGS. ALL JOINTS SHALL BE MADE USING LEAD-FREE 95/5 TIN-ANTIMONY SOLDER. PRESSURE TEST ALL PIPES IN ACCORDANCE WITH CANADIAN CODE REQUIREMENTS BEFORE APPLYING INSULATION, AT A MINIMUM PRESSURE OF 150% OF THE MAXIMUM OPERATING PRESSURE, FOR 6 HOURS WITHOUT THE LOSS OF PRESSURE. SUBMIT TEST REPORT TO THE OWNER AND TO THE CONSULTANT.
  - SANITARY DRAIN LINES AND MAIN VENT STACKS SHALL BE CAST IRON COMPLETE WITH MJ JOINTS, BRANCH VENTS, SANITARY DRAINS UNDER 75MM (3") DIAMETER. BALL TEST ALL DRAIN LINES. PERFORM WATER TEST ON ALL NEW DRAIN AND VENT PIPES WHEN ROUGH-IN OF THE SYSTEM OR SECTION THEREFORE INCLUDING FITTINGS, BRANCHES, CLEANOUTS AND TRAPS EXCEPT FIXTURE TRAPS IN COMPLETE, FOR ONE HOUR. THERE SHALL BE NO LOSS OF WATER DUE TO LEAKAGE DURING THIS TIME.
  - NATURAL GAS STEEL, SCHEDULE 40: ASTM A53/A53M, GRADE B
  - FITTINGS: NATURAL GAS EITHER MALLEABLE IRON OR STEEL IN COMPLIANCE WITH ANSI/ASME B16.3, 1035 KPA. FOR SIZED 40MM AND UNDER SCREWED. STEEL, SAME SCHEDULE AS PIPE, FOR SIZES 50MM AND LARGER, AND FOR HIGH PRESSURE (OVER 1.4 KPA) - ALL SIZES WELDED.

- HEATING, VENTILATION, AND AIR CONDITIONING
  - GALVANIZED STEEL DUCT LOCK FORMING QUALITY: TO ASTM A 525M, Z90 ZINC COATING. THICKNESS, FABRICATION, JOINTS AND REINFORCEMENT: TO ASHRAE AND SMACNA. ALL TRANSVERSE JOINTS AND CONNECTIONS SHALL BE SEALED WITH WATER BASED DUCT SEALANT AND TAPE.
  - HANGERS: ALL DUCTWORK AND HANGERS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST ASHRAE AND SMACNA RECOMMENDATIONS AND STANDARDS.
  - IDENTIFICATION DUCTWORK SYSTEMS STENCILLED LETTERS 50 MM (2") HIGH. DIRECTIONAL ARROWS 150 MM (6") LONG X 50 MM (2") HIGH. COLORS: BLACK, OR CO-ORDINATED WITH BASE COLOR TO ENSURE STRONG CONTRAST.
  - TESTING, ADJUSTING AND BALANCING
    - TEST NEW HEATING PIPING AND DUCTWORK, ADJUST AND BALANCE THE ENTIRE HEATING SYSTEM AND AIR SYSTEM.
    - REPORT: PROVIDE REPORT INDICATING AIR FLOW RATES AND LOCATION OF TESTING ON A COPY OF CONSTRUCTION DRAWINGS. SUBMIT 3 BOUND COPIES OF TAB REPORTS, COMPLETE WITH INDEX TABS FOR VERIFICATION AND APPROVAL OF ENGINEER.
- FIRE PROTECTION
  - MULTI PURPOSE ABC TYPE DRY CHEMICAL, PRESSURIZED WITH HOSE AND SHUT OFF NOZZLE OR INTEGRAL SHUTOFF NOZZLE AND MOUNTING BRACKET. 1.0 LB CAPACITY.
- CONTROLS
  - PROVIDE ALL CONTROLS AND WIRING INCLUDING APPURTENANCES NECESSARY FOR COMPLETE AND OPERATING SYSTEM.
- LIST OF APPROVED MANUFACTURERS
  - AIR TERMINALS - GRILLES, REGISTERS, DIFFUSERS: E.H PRICE, TITUS, NAILOR.
  - ACCESS DOORS: MAXAM, MILCOR, MIFAB, ACUDOR.
  - AIR VENTS: HOFFMAN, MAID-O-MIST, TACO.
  - BALANCING AGENTS: KD ENGINEERING, MDT SYSTEMS, WESTERN MECHANICAL SYSTEMS
  - DRAINS-FLOOR, CLEANOUTS, PRIMERS: ZURN, ANCON, PPP, J.R-SMITH.
  - FANS: BROAN, GREENHECK, ACME, NUTONE, COOK.
  - FIRE EXTINGUISHERS: FLAG, NFE, WILSON & COUSINS.
  - ELECTRIC HEATERS: OULET, CHROMALOX, STELPRO, QMARK.

MECHANICAL DRAWING LEGEND					
DESIGNATION	SERVICE	DESIGNATION	SERVICE	DESIGNATION	SERVICE
-----	DOMESTIC COLD WATER	---CHWS---	CHILLED WATER SUPPLY	(S)	SLAB SENSOR
-----	DOMESTIC HOT WATER	---CHWR---	CHILLED WATER RETURN	(RC)	ROOM CONTROLLER
-----	DOMESTIC HOT WATER RETURN	---HWS---	HOT WATER SUPPLY	(WS)	WALL SWITCH
--- V ---	VENT	---HWR---	HOT WATER RETURN	(P)	PUMP
--- SAN ---	SANITARY ABOVE GRADE	---CD---	CONDENSATE	(FD)	FIRE DAMPER
--- SAN ---	SANITARY BELOW GRADE	---H---	CLEANOUT ABOVE / BELOW GRADE	(B)	BALANCING DAMPER
--- PSAN ---	PUMPED SANITARY	(V)	BALANCING VALVE	(D)	DIFFUSER/GRILLE TYPE
--- ST ---	STORM ABOVE GRADE	(R)	PRESSURE REDUCING VALVE	(L/S)	SIZE AIRFLOW
--- ST ---	STORM BELOW GRADE	(C)	CONTROL VALVE	(T)	TYPE
--- PST ---	PUMPED STORM	(I)	ISOLATION VALVE	(K)	CAPACITY (kW)
--- WT ---	WEeping TILE ABOVE GRADE	(V)	PLUG VALVE	(L)	LENGTH (mm)
--- WT ---	WEeping TILE BELOW GRADE	(BFP)	BACKFLOW PREVENTER	PR-XX	PLUMBING RISER
--- PWT ---	PUMPED WEeping TILE	(FD) (RD)	FLOOR / ROOF DRAIN	SR-XX	SANITARY RISER
--- P ---	PROPANE	(E)	FIRE EXTINGUISHER	GR-XX	GAS RISER
		(T)	THERMOSTAT	HC-XX	HEATING/COOLING RISER
				S/A	SUPPLY AIR
				R/A	RETURN AIR
				E/A	EXHAUST AIR
				T/A	TRANSFER AIR
				CLY/S	CLYCOL SUPPLY
				CLY/R	CLYCOL RETURN

DRAWING LIST	
DRAWING NO.	DRAWING NAME
M00-00-01	MECHANICAL LEGEND, SCHEDULE, DRAWING LIST, SPECIFICATIONS
M20-00-01	PIPING DEMOLITION AND CONSTRUCTION PLANS
M50-00-01	VENTILATION DEMOLITION AND CONSTRUCTION PLANS

FORCE FLOW SCHEDULE												
TAG	MANUFACTURER	MODEL	ARRANGEMENT	SERVICE	AIR FLOW (L/S)	E.W.T. (°C)	L.W.T. (°C)	WATER FLOW (L/S)	HEATING OUTPUT (KW)	MOTOR (KW)	VOLTAGE (V/PH/Hz)	NOTES
FF-1	ROSEMEX	RECESSED	CRW-6	VEST	142	87.8	76.7	0.19	8.4	0.05	1050	120/160 EXISTING
FF-2	ROSEMEX	EXPOSED	RW-4	VEST	142	87.8	76.7	0.19	8.4	0.05	1075	120/160 EXISTING
FF-3	ROSEMEX	RECESSED	CRW-6	VEST	142	87.8	76.7	0.19	8.4	0.05	1075	120/160 EXISTING
FF-4	ROSEMEX	RECESSED	CRW-6	126	142	87.8	76.7	0.19	8.4	0.05	1050	120/160 NEW, 1

NOTE  
1 LINE VOLTAGE ROOM THERMOSTAT CW LOOKING COVER

REHEAT COIL SCHEDULE																	
TAG	MANUFACTURER	MODEL	SERVICE	AIR FLOW (L/S)	APD	HTG CAP (KW)	EWT (°C)	LWT (°C)	FLOW RATE (L/S)	ROWS	CIRCUITS	WPD (KPA)	EAT DB (°C)	LAT DB (°C)	W (MM)	H (MM)	NOTES
RH-1	ROSEMEX	WBH	Room 109	180	37.5	4	87.8	76.7	0.09	1	1	1.4	26.7	46.9	305	229	1
RH-2	ROSEMEX	WBH	Room 107	900	42.5	19.6	87.8	76.7	0.42	1	1	0.5	26.7	46.1	711	457	1
RH-3	ROSEMEX	WBH	Room 111	140	20	3	87.8	76.7	0.07	2	0.5	0.8	26.7	46.1	381	229	1
RH-4	ROSEMEX	WBH	Room 114	230	35	5.5	87.8	76.7	0.12	1	1	3	26.7	48.3	305	305	1
RH-5	ROSEMEX	WBH	Room 15, 106	320	45	9.3	87.8	76.7	0.2	1	1	9.9	26.7	47.8	457	305	1
RH-6	ROSEMEX	WBH	Room 121	100	-	2	87.8	76.7	0.043	1	1	-	26.7	48.3	381	305	2
RH-7	ROSEMEX	WBH	Room 122	190	-	3.8	87.8	76.7	0.082	1	1	-	26.7	48.3	381	305	2
RH-8	ROSEMEX	WBH	Room 102	240	32.5	3.8	87.8	76.7	0.08	1	1	1.3	26.7	47.8	305	229	1
RH-9	ROSEMEX	WBH	Room 126	165	32.5	3.8	87.8	76.7	0.08	1	1	1.3	26.7	47.2	305	229	1
RH-10	ROSEMEX	WBH	Room 119	110	27.5	2	87.8	76.7	0.06	1	1	0.4	26.7	46.1	305	152	1
RH-11	ROSEMEX	WBH	Room 120, 123	135	35	2.5	87.8	76.7	0.06	1	1	0.4	26.7	46.1	305	152	1
RH-12	ROSEMEX	WBH	Room 115	445	37.5	15	87.8	76.7	0.33	1	1	0.3	26.7	46.1	610	457	1
RH-13	ROSEMEX	WBH	Room 110	120	37.5	2.6	87.8	76.7	0.06	1	1	0.4	26.7	46.1	305	152	1
RH-14	ROSEMEX	WBH	Room 110a	120	37.5	2.6	87.8	76.7	0.06	1	1	0.4	26.7	46.1	305	152	1
RH-15	ROSEMEX	WBH	Room 112	122	27.5	2.2	87.8	76.7	0.05	1	1	0.3	26.7	46.7	305	152	1
RH-16	ROSEMEX	WBH	Room 126	300	37.5	7.20	87.8	76.7	0.16	1	1	5.70	26.7	48.3	381	305	3

NOTE  
1 EXISTING REHEAT COIL TO REMAIN  
2 EXISTING REHEAT COIL TO BE REBALANCED TO THE AIR FLOW AS INDICATED  
3 NEW REHEAT COIL

FIRE EXTINGUISHER SCHEDULE					
TAG	MANUFACTURER	FIRE EXTINGUISHER TYPE	MOUNTING	NOM CAP (KG)	TYPE
FE-1	NATIONAL FIRE EQUIPMENT LTD.	ALL PURPOSE	WALL HUNG	4.5	WALL HOOK MOUNTING

GRILLE & DIFFUSER SCHEDULE					
TAG	MANUFACTURER	MODEL	MOUNTING	TYPE	NOTES
S1	PRICE	SCD	CEILING MOUNT	B12	SCD 600x600 STEEL CONSTRUCTION GRILLE
R1	PRICE	80 SERIES	SIDEWALL, DRYWALL, WALL MOUNTED	B12	1/2"x1/2"x1/2" ALUMINUM GRID CORE

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	1
2018-03-02	ISSUED FOR 95% REVIEW	2
2018-03-29	ISSUED FOR TENDER	3

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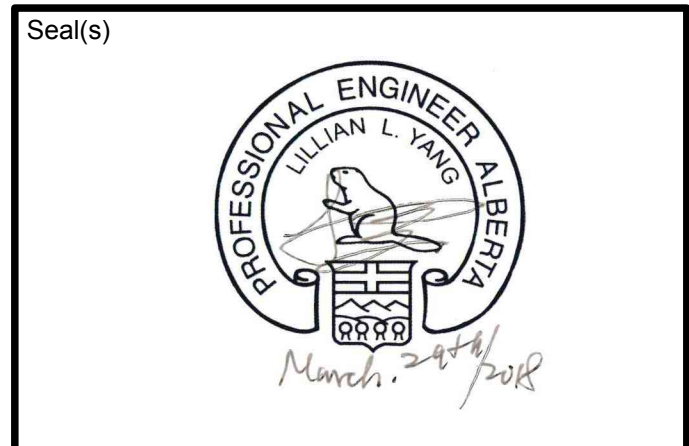
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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners



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From the Architects, Engineers, Planners and Environmental Engineers Division of the Professional Engineers, Geoscientists and Geotechnical Engineers Association of Alberta (PEGA) and the Professional Engineers, Geoscientists and Geotechnical Engineers Association of Saskatchewan (PESG).  
Member: William L. Yang, License No. 10000, dated March 29, 2018.

Project Manager D. HIDER	Drawn N. ALY
Project Leader D. HIDER	Checked L. YANG

Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title

**MECHANICAL LEGEND, SCHEDULE, DRAWING LIST, SPECIFICATIONS**

Check Scale (may be photo reduced)  
0 10mm

Project No.  
**NCCA17-0228**

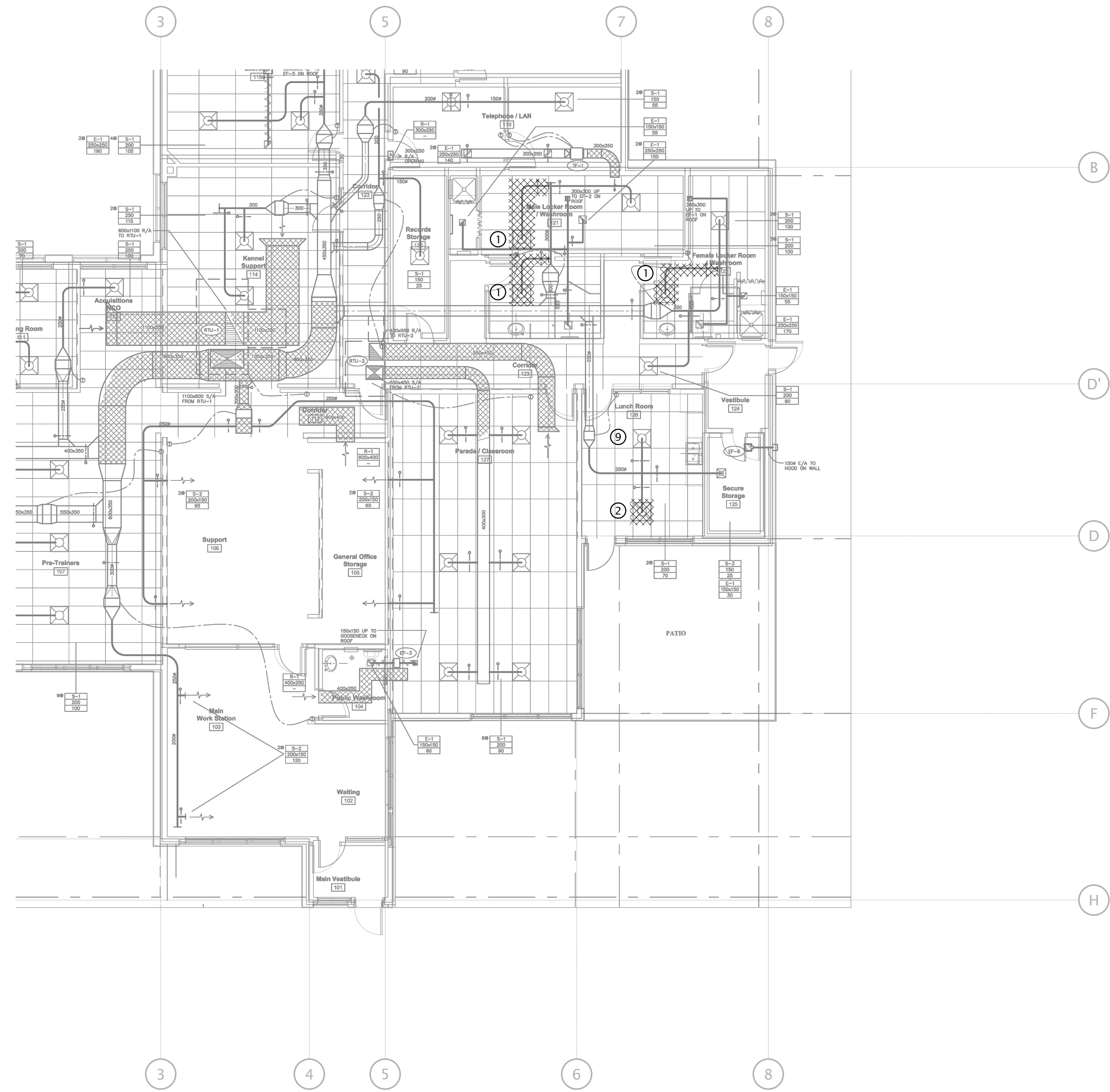
Drawing No.  
**M00-00-01**



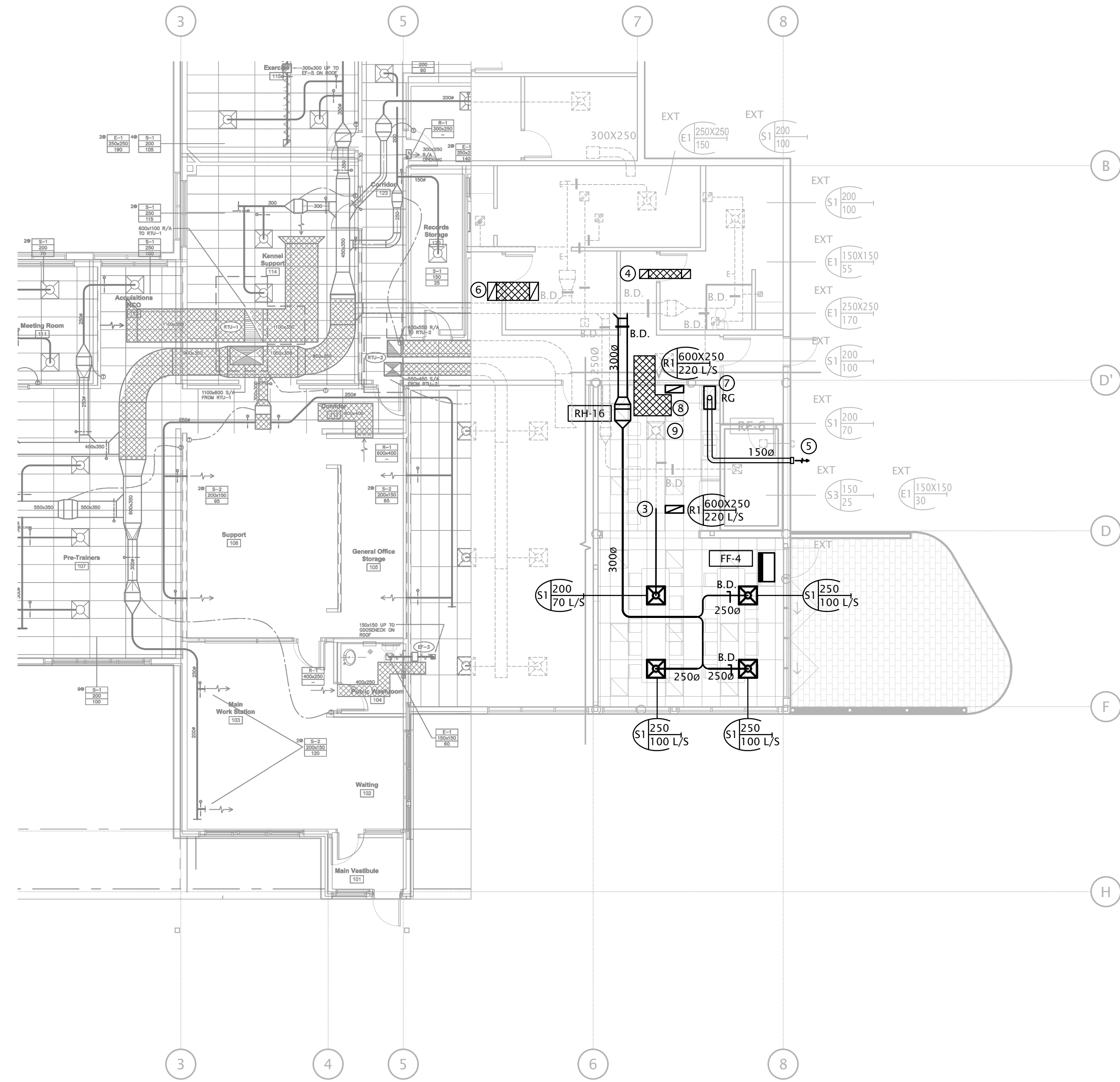




PLOT DATE: March 29, 2018 TIME: 2:28 PM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500-DEL\MECHSHEETS\M50-00-01.DWG PLOT STYLE: TABLE.ctb



01 VENTILATION DEMOLITION PLAN  
M50-00-01 1:100



02 VENTILATION CONSTRUCTION PLAN  
M50-00-01 1:100

**MECHANICAL GENERAL NOTES:**

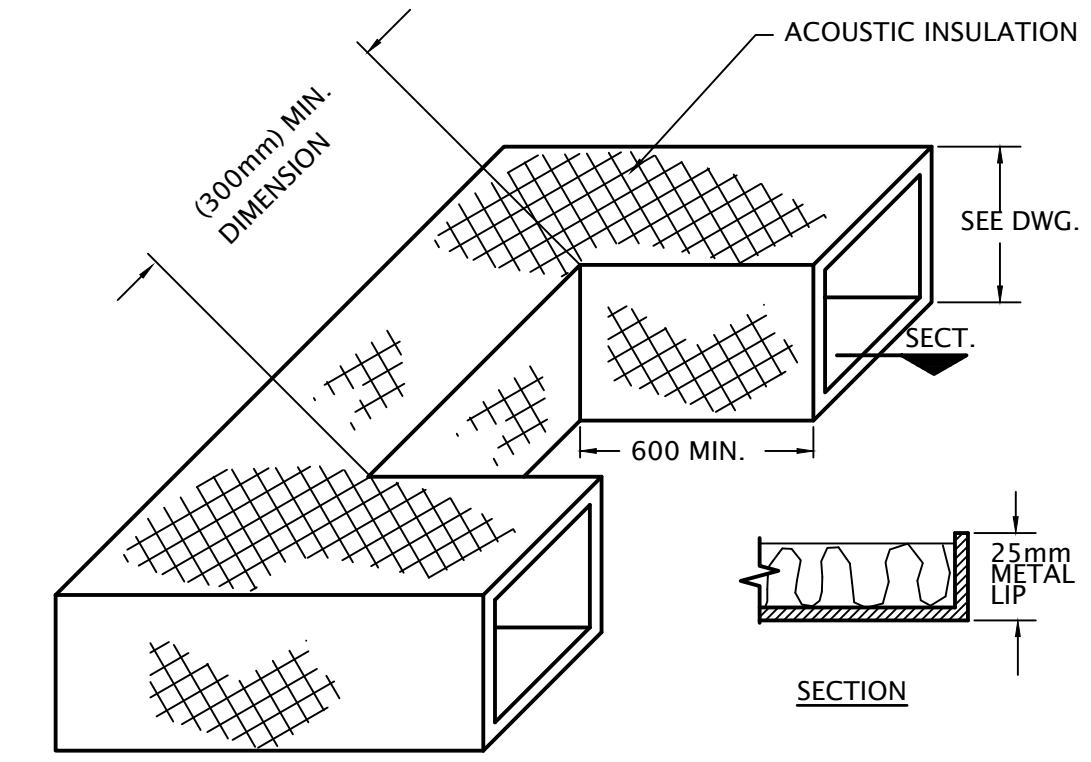
- CONTRACTOR TO VERIFY THE EXISTING CONDITION BEFORE COMMENCEMENT OF DEMOLITION.
- SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY THE ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
- MECHANICAL SYSTEMS AND THEIR SUPPORTS, AND THE LIKE, MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED UNDER 'SERVICEABILITY CRITERIA' ON THE STRUCTURAL DRAWINGS.
- DESIGN AND DETAIL ALL NECESSARY SEISMIC RESTRAINTS FOR MECHANICAL SYSTEMS SHOWN ON THE CONTRACT DOCUMENTS. SUBMIT SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF ALBERTA, FOR REVIEW BY THE CONSULTANT.
- PROVIDE COLLAR CONNECTION: LENGTH TO SUIT SITE CONDITION.

**MECHANICAL LEGEND:**

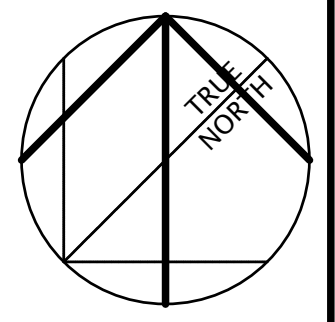
- XXXXX EXISTING TO BE REMOVED
- EXISTING TO REMAIN
- NEW

**MECHANICAL KEY NOTES:**

- REMOVE S/A DUCT AND DIFFUSER, CAP-OFF AT MAIN.
- REMOVE DIFFUSER AND ASSOCIATED DIFFUSER NECK, CAP-OFF AT MAIN FOR EXTENSION.
- EXTEND EXISTING 200Ø S/A DUCT AND RELOCATE THE EXISTING DIFFUSER AS INDICATED.
- PROVIDE 300X300 TRANSFER AIR DUCT C/W ACOUSTIC LINER, AND TRANSFER AIR GRILLE ON CORRIDOR AND WASHROOM CEILING. T/A GRILLE TO BE 300X300.
- 150Ø KITCHEN RANGE HOOD EXHAUST C/W WALL CAP.
- PROVIDE 600X300 TRANSFER AIR DUCT C/W ACOUSTIC LINER, AND TRANSFER AIR GRILLE ON CORRIDOR AND WASHROOM CEILING. T/A GRILLE TO BE 600X300.
- RANGE EXHAUST FAN WILL BE PROVIDED BY RCMP.
- PROVIDE 700X450 TRANSFER AIR DUCT C/W ACOUSTIC LINER.
- RELOCATE EXISTING DIFFUSER TO MATCH NEW CEILING GRID.



01 CROSS TALK SILENCER  
M50-00-01 N.T.S.

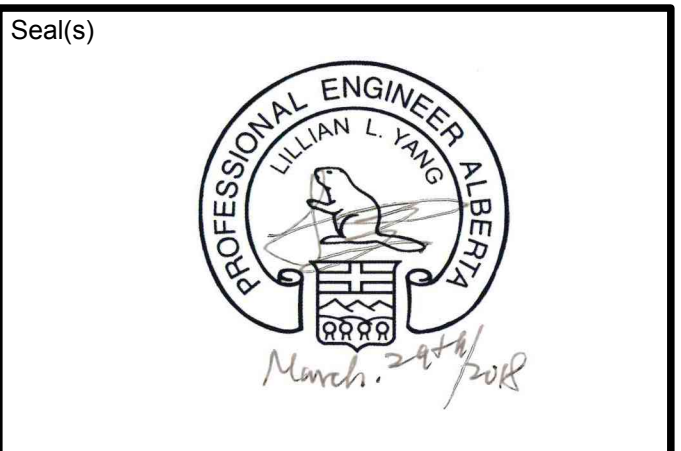


DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	1
2018-03-02	ISSUED FOR 95% REVIEW	2
2018-03-29	ISSUED FOR TENDER	3

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**Project Component**  
LUNCHROOM EXPANSION  
**Keyplan**

**Consultants**  
Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners



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Bruce G. MacKenzie, Architect, A.A.A., M. Arch, M.A.S.C.  
A. Bruce Stephenson, Architect, A.A.A., B. Arch, M.A.S.C.  
Andrew Tisdale, P. Eng., M.P.E.G.A.  
Chris P. Pilling, M.P.E.G.A.

Project Manager	Drawn
D. HIDER	N. ALY
Project Leader	Checked
D. HIDER	L. YANG

Client  
**RCMP**

Project  
**INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title  
**VENTILATION DEMOLITION AND CONSTRUCTION PLANS**  
Check Scale (may be photo reduced)  
0 1inch 0 10mm  
Project No. **NCCA17-0228**  
Drawing No. **M50-00-01**







PLOT DATE: March 29, 2018 TIME: 9:09 AM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500-DELIVERY\STRUC29\_FRAMING\_PLANS\02-DWG\_PLOTS\STYLE TABLE\_PMA-STD-100.cdw

**DESIGN NOTES**

- DESIGN**
  - THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE:
    - ALBERTA BUILDING CODE (2014)
    - NATIONAL BUILDING CODE OF CANADA (2010)
    - CSA - A438-00 "CONCRETE CONSTRUCTION FOR HOUSING AND SMALL BUILDINGS"
  - ALL REINFORCED CONCRETE ELEMENTS HAVE BEEN DESIGNED AND OR SHALL BE CONSTRUCTED IN ACCORDANCE WITH:
    - CSA - A23.3-14 "DESIGN OF CONCRETE STRUCTURES"
    - CSA - A23.1-14 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION"
    - CSA - A23.2-14 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE"
  - ALL CONCRETE FORMWORK AND OR FALSEWORK SHALL CONFORM WITH:
    - CSA - 269.1 "FALSEWORK FOR CONSTRUCTION PURPOSES"
    - CSA - S269.2-M "ACCESS SCAFFOLDING FOR CONSTRUCTION PURPOSES"
    - CSA - S269.3-M "CONCRETE FORMWORK"
  - ALL STRUCTURAL WOOD ELEMENTS HAVE BEEN DESIGNED AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH:
    - CSA - O86-14 "ENGINEERING DESIGN IN WOOD"
    - CSA - O325-07 (R2012) "CONSTRUCTION SHEATHING"
    - CSA - O122-06 (R2015) "STRUCTURAL GLUED-LAMINATED TIMBER"
    - CSA - O80.1-08 (R2012) "PRESERVATIVE TREATMENT OF WOOD"
    - CSA - S406-14 "SPECIFICATION OF PERMANENT WOOD FOUNDATIONS FOR HOUSING AND SMALL BUILDINGS"
  - SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE AND RATINGS.
  - UNIT FLOOR AND ROOF LOADINGS, SOIL BEARING PRESSURES AND FOUNDATION LOADS GIVEN ON DRAWINGS ARE UNFACTORED. MEMBER FORCES GIVEN ON DRAWINGS ARE FACTORED.

- LATERAL LOADS ON STRUCTURAL FRAME**  
 THE STRUCTURE HAS BEEN DESIGNED TO RESIST THE EFFECTS OF THE WIND LOADS. THE DESIGN PARAMETERS FOR THIS LOADS ARE AS NOTED BELOW:
  - LOCATION: INNISFAIL, AB
  - DESIGN LIFESPAN: 50 YEARS

1. WIND LOADS:

WIND LOAD				FACTORS	
$Q = lw [q (C_e \times C_p \times C_g)]$				$lw = 1.25$	$q = 0.41$
	$C_e, C_g$	ULS Q (kPa)	SLS Q (kPa)	$C_e = 0.9$	
1	0.7500	0.3625	0.2200		
1E	1.1500	0.5625	0.3300		
4	-0.5500	-0.2625	-0.1600		
4E	-0.8000	-0.3875	-0.2300		

- SEISMIC DATA:**  
 INNISFAIL, AB  
 $S_v(0.2) = 0.10$   
 $S_v(0.5) = 0.06$   
 $S_v(1.0) = 0.03$   
 $S_v(2.0) = 0.02$   
 PGA = 0.06

- DEAD LOADS (SERVICE)**
  - DEAD LOADS ARE LOADS GENERATED BY THE SELF-WEIGHT OF THE STRUCTURE.
  - SUPERIMPOSED DEAD LOADS ARE LOADS GENERATED BY THE WEIGHT OF MECHANICAL SYSTEMS, ELECTRICAL SYSTEMS, TOPPINGS, PARTITIONS, AND MISCELLANEOUS LOADINGS.
  - REFER TO NOTES ON PLANS FOR ALL LOADS APPLIED TO THE STRUCTURE.
- ROOF LIVE LOADS**
  - THE ROOF AREAS HAVE BEEN DESIGNED TO RESIST THE LEAST FAVOURABLE EFFECTS OF THE SNOW, RAIN, AND WIND LOADINGS. THE DESIGN PARAMETERS FOR THESE LOADS ARE NOTED BELOW.

- SNOW LOAD:**
  - THE FOLLOWING SNOW LOAD HAS BEEN CONSIDERED IN THE DESIGN OF THE ROOF AREAS.
 

SNOW LOAD		FACTORS	
$S = Is [S_s (C_b \times C_w \times C_s \times C_a) + S_r]$		$Is = 1.25$	$S_s = 1.7 \text{ kPa}$
$S = 1.825 \text{ kPa}$		$S_r = 0.1 \text{ kPa}$	$C_b = 0.8$
		$C_w = 1.0$	$C_s = 1.0$
		$Ca = 1.0$	
b. ADDITIONAL SNOW ACCUMULATION ADJACENT TO HIGHER WALLS, ROOFS, AND MECHANICAL UNITS IS INDICATED ON PLANS.			

- RAIN LOAD:**
  - THE DESIGN OF THE ROOF STRUCTURE IS BASED ON THE ASSUMPTION THAT THE FLOOR CONTROL ROOF DRAINS SATISFY ALL REQUIREMENTS OF THE NATIONAL PLUMBING CODE OF CANADA, 2010 EDITION.
  - THE TOTAL RAIN LOAD APPLIED OVER THE HORIZONTAL PROJECTION OF THE SURFACE SHALL BE THE LESSER OF EITHER THE ONE-DAY RAINFALL OR A DEPTH OF RAINWATER EQUAL TO 30 mm ABOVE THE LEVEL OF THE SCUPPERS
    - ONE-DAY RAINFALL = 95 mm ( $\theta_{50}$  yr)
    - DESIGN RAIN LOAD = 95 mm

- WIND UPLIFT ON ROOFS:**
  - ROOF ELEMENTS (TRUSSES, JOISTS, DECK, BEAMS, ETC) AND THEIR CONNECTIONS TO THE STRUCTURE ARE TO BE DESIGNED FOR THE UPWARD SUCTION OF 0.9 KPA DUE TO WIND.
- LIVE AND OTHER LOADS:**
  - SEE NOTES ON FLOOR PLANS. ALL VALUES GIVEN ARE UNFACTORED LOADS UNLESS OTHERWISE SHOWN ON PLAN.

- GEOTECHNICAL INFORMATION**
  - A GEOTECHNICAL REPORT WAS NOT AVAILABLE AT THE TIME OF DESIGN. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER WHO SHALL BE RESPONSIBLE FOR CONDUCTING ALL NECESSARY INVESTIGATIONS AND DESIGN TO SUIT THE PROJECT REQUIREMENTS.
- PROVISIONS FOR FUTURE EXTENSIONS**
  - THE STRUCTURE HAS NOT BEEN DESIGNED FOR ANY FUTURE EXTENSIONS.

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
2018-03-29	ISSUED FOR TENDER	

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Project Component
<b>LUNCHROOM EXPANSION</b>
Keyplan

Consultants
Architectural: NORR Architects Engineers Planners Structural: NORR Architects Engineers Planners Mechanical: NORR Architects Engineers Planners Electrical: NORR Architects Engineers Planners

Seal(s)
---------



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 Andrew Taylor, P.Eng., M.P.E.G.A.  
 Chris Ho, P.Eng., M.P.E.G.A.

Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	A. TODDILA
Client	
<b>RCMP</b>	

Project  
**INNISFAIL PDSTC  
 LUNCHROOM EXPANSION**

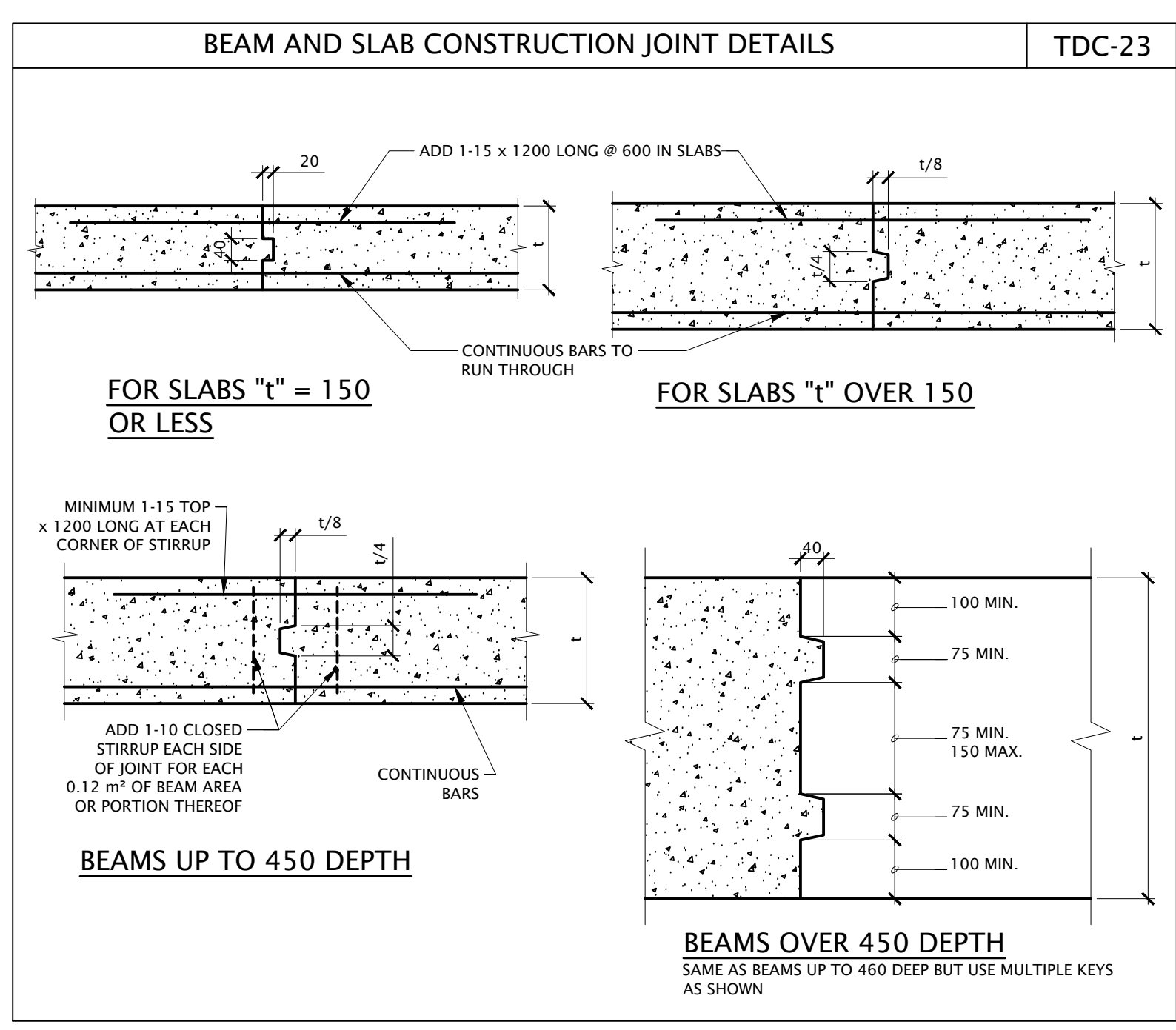
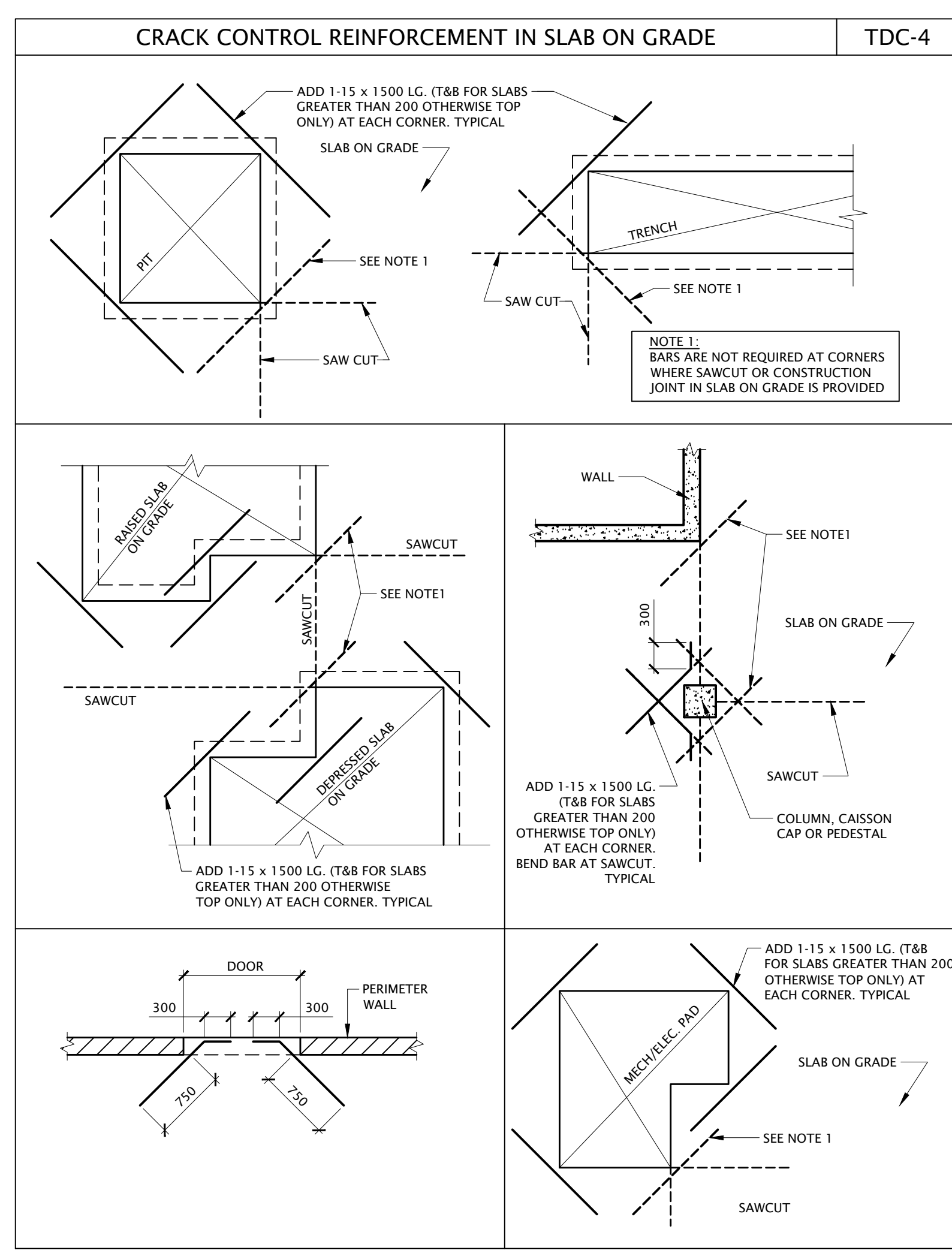
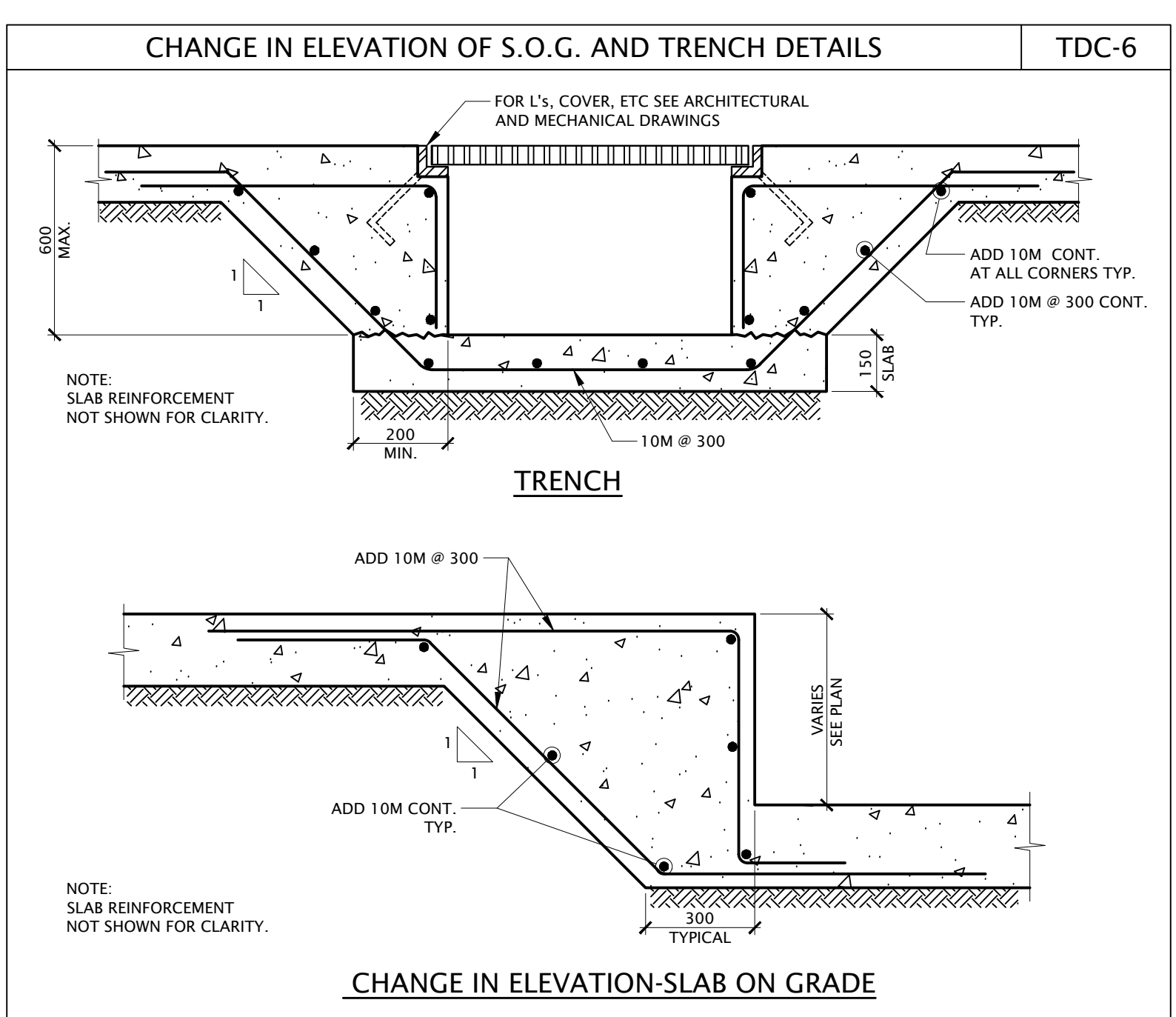
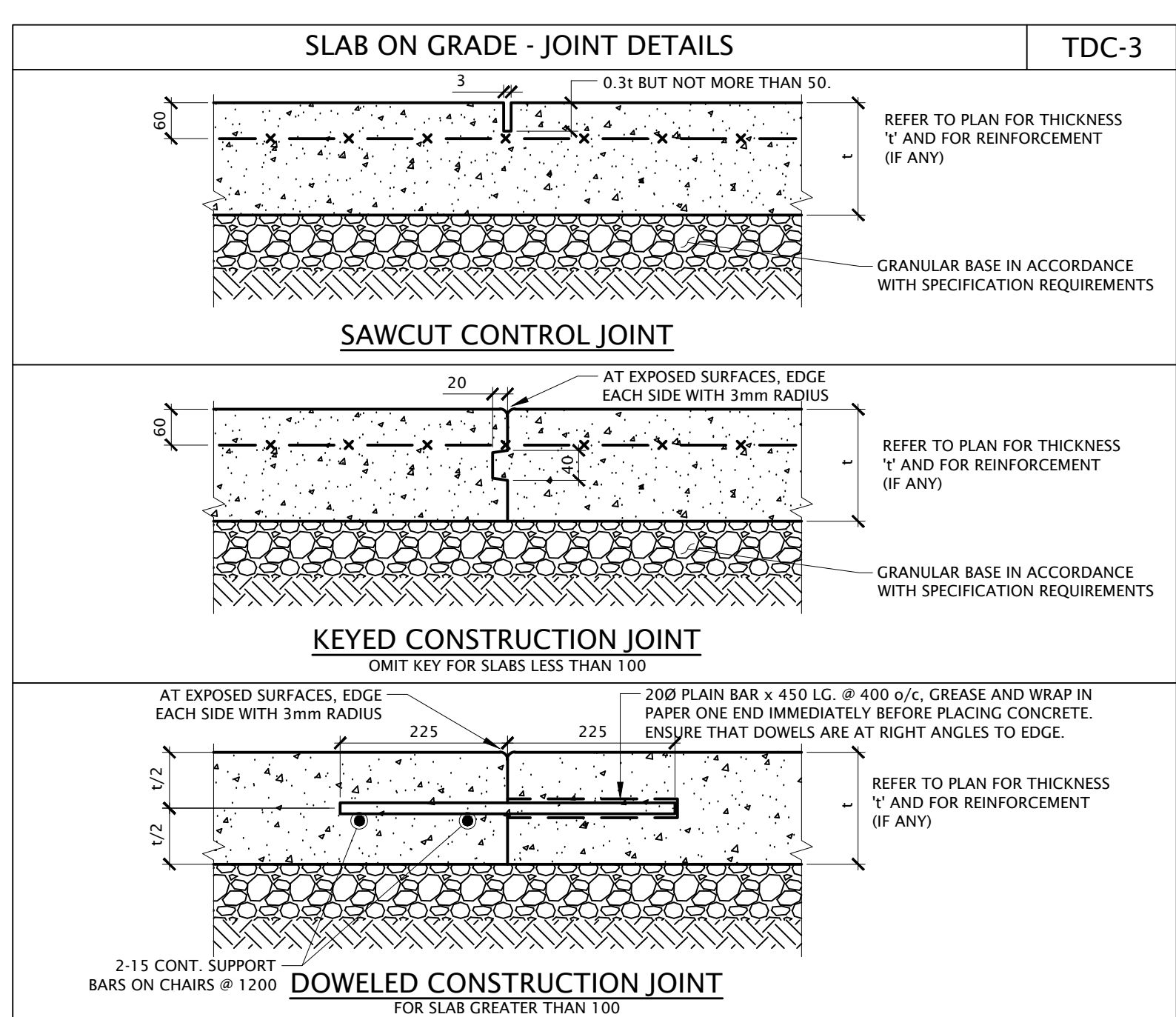
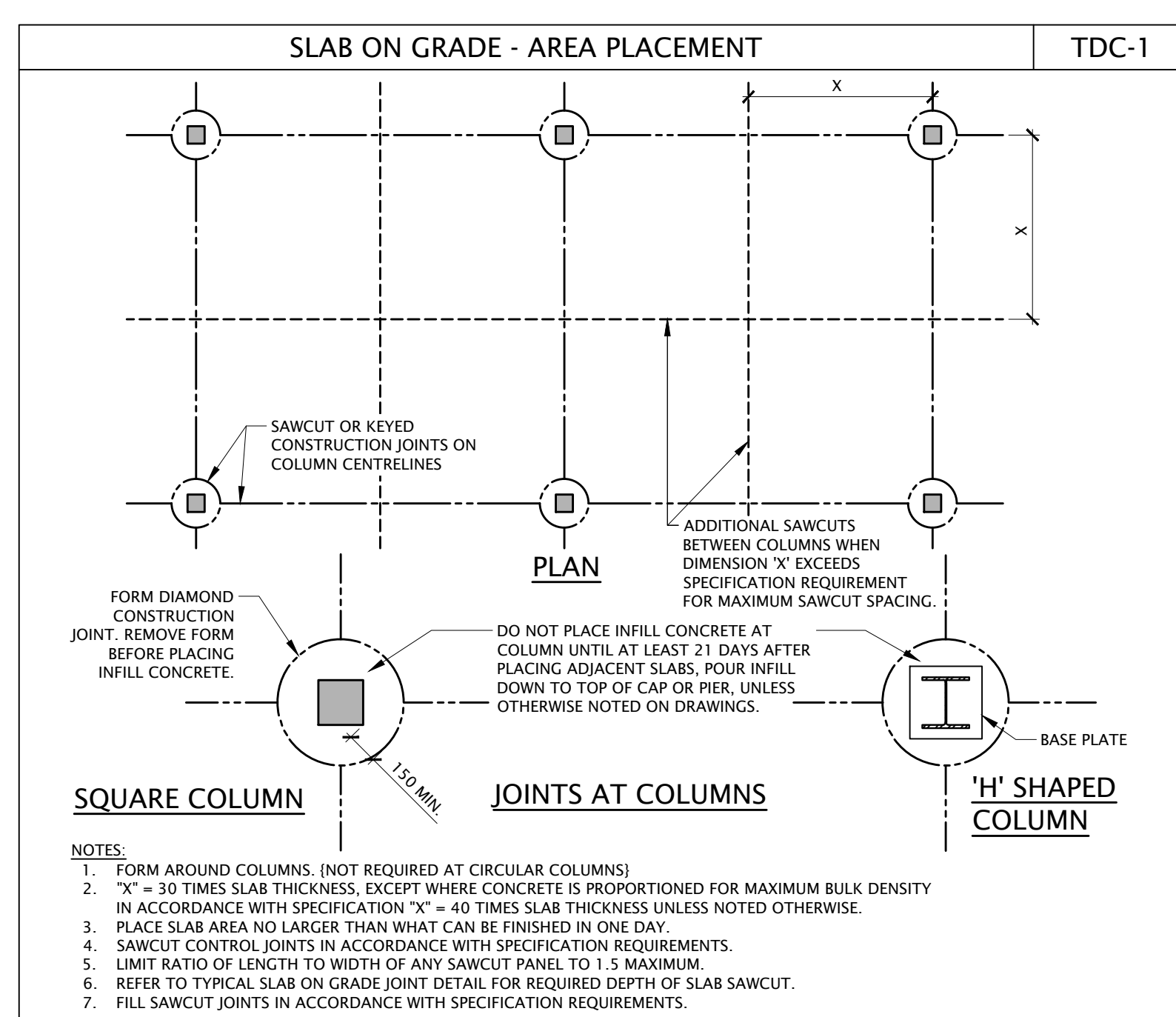
Drawing Title  
**GENERAL NOTES**

Check Scale (may be photo reduced)	0 1inch 0 10mm
Project No.	NCCA17-0228
Drawing No.	S-02



PLOT DATE: March 29, 2018 TIME: 9:31 AM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228-RCMP-DTF LUNCHROOM EXPANSION\650-DEVELOPMENT FRAMING PLANS\03-DWG\_PLOTS\STYLE TABLE (RMA-STD-100).dwg

STRUCTURAL ABBREVIATIONS		TD-1	
AB	ANCHOR BOLT	MAX	MAXIMUM
ABC	ALBERTA BUILDING CODE	MC	MOMENT CONNECTION
ADJ	ADJUSTABLE	MECH	MECHANICAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	MEW	MIDDLE EACH WAY
ALT	ALTERNATE	MEZZ	MEZZANINE
ARCH	ARCHITECTURAL	MID	MIDDLE
AIFB	ASPHALT IMPREGNATED FIBREBOARD	MISC	MISCELLANEOUS
B, BOT	BOTTOM	MIN	MINIMUM
BLL	BOTTOM LOWER LAYER	ML	MIDDLE LAYER
BET	BETWEEN	m	METRE
BW	BOTTOM EACH WAY	mm	MILLIMETRE
BLDG	BUILDING	mm <sup>2</sup>	SQUARE MILLIMETRE
BLM	BOTTOM LOWER LAYER	Mpa	MEGAPASCAL
BM	BENDING MOMENT BAR	NBC	NATIONAL BUILDING CODE OF CANADA
BPL	BEARING/BASE PLATE	NCB	NO COLUMN BELOW
BRG	BEARING	NCF	NEAR FACE
BSMT	BASEMENT	NCS	NOT IN CONTACT
BUL	BOTTOM UPPER LAYER	NIS	NOT TO SCALE
C	CHANNEL	o/c	ON CENTRE
C/C	CENTRE TO CENTRE	o/p	OUT TO OUT
C/W	COMPLETE/CONNECT WITH	OPP	OPPOSITE
CB	COLUMN ABOVE	OSB	ORIENTED STRAND BOARD
CB	COLUMN BELOW	OWSJ	OPEN WEB STEEL JOIST
CANT	CANTILEVER	PC	PRECAST
CF	CONCRETE FIREPROOFED CONTROL JOINT	PF, CF, TF, MF, VF	FACTORED LOADS
CJ	CONCRETE JOINT	P, C, T, M, V	UNFACTORED LOADS
CL	CLEAR	PL	PLATE
CL	CENTRE LINE	PROJ	PROJECTION
COMP	COMPOSITE	P/T	POST TENSIONED, PRESSURE TREATED
COL	COLUMN	PVC	POLYVINYL CHLORIDE
CONC	CONCRETE	R	REACTION, RADIUS
CONST JT	CONSTRUCTION JOINT	REF	REFERENCE
CONT	CONTINUOUS	REM	REMAINDER
DET	DETAIL	REQD	REQUIRED
D, FIR	DOUGLAS FIR	REV	REVISION
DIA, Ø	DIAMETER	RE	RIGHT END
DIM	DIMENSION	REINF	REINFORCEMENT
DIAG	DIAGONAL	R/W	REINFORCE WITH
DL	DEAD LOAD	S	STANDARD BEAM
DO, *	DITTO	SS	SINGLE STIRRUP
DP	DEEP	STDF	STEP DOWN FOOTING
DWG	DRAWING	SECT	SECTION
DWL	DOWEL	SF	SPRAY FIREPROOFED
DN	DOWN	SIM	SIMILAR
DS	DOUBLE STIRRUPS	SLA	SNOW LOAD ACCUMULATION
EA	EACH	SOG	SLAB ON GRADE
ELC	ELECTRICAL	SP	SPADREL, SPRUCE
EE	EPOXY COATED	SPEC	SPECIFICATION
EF	EACH FACE	SPP	SPRUCE-PINE-FIR
EJ, EXP JT	EXPANSION JOINT	STD	STANDARD
EL, ELEV	ELEVATION	STRUCT	STRUCTURAL
ELEC, ELEC	ELECTRICAL	STIFF	STIFFENER
EMBED	EMBEDMENT	SQ	SQUARE
EQ	EQUAL	ST	STRAIGHT
ES	EACH SIDE	STIR	STIRRUP
EW	EACH WAY	t, THK	THICKNESS
EX, EXIST	EXISTING	T&B	TOP AND BOTTOM
EXT	EXTERIOR	TC	ELEV TOP OF CAISSON
FIN	FINISHED	TEMP	TEMPERATURE
FL	FLOOR	TEW	TEMPERATURE
FTG	FOOTING	TF	TEMPERATURE
FMC	FULL MOMENT CONNECTION	TJ	TIE JOINT
Fy	YIELD STRENGTH	TLE	TOP LEFT END
Fc	COMPRESSIVE STRENGTH OF CONC	TRE	TOP RIGHT END
FF	FAR FACE	TUL	TOP UPPER LAYER
GALV	GALVANIZED	TYP	TYPICAL
GA	GAUGE	T/O	TOP OF
GL	GRIDLINE	TOS	TOP OF SLAB
HE	HOOK EACH END	TSB	TENSION SPLICE CLASS 'B'
HH	HOOK - HOOK (HOOK EACH END)	USF	UNDERSIDE OF FOOTING
HIF	HORIZONTAL INSIDE FACE	U/S	UNDERSIDE
HOF	HORIZONTAL OUTSIDE FACE	U/N	UNLESS NOTED
HOR, HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HEF	HORIZONTAL EACH FACE	UL	UPPER LAYER
HSS	HOLLOW STRUCTURAL SECTION	UPT	UPTURNED
HP	HIGH POINT	VBF	VERTICAL BRACED FRAME
INT	INTERIOR	VEF	VERTICAL EACH FACE
ID	INSIDE DIAMETER	VOP	VERTICAL OUTSIDE FACE
K	KILO	VIF	VERTICAL INSIDE FACE
KN	KILONEWTON	VSC	VERTICALLY SLOTTED CONNECTION
kPa	KILOPASCAL	W	WIDE FLANGE BEAM
Ld	DEVELOPMENT LENGTH	WP	WALL PLATE, WORKING POINT
LE	LEFT END	WT	STRUCTURAL TEE
LG	LONG LENGTH	WWF	WELDED WIRE FABRIC
LL	LIVE LOAD	WWF	WELDED WIRE FABRIC
LLH	LONG LEG HORIZONTAL	L	LOW POINT
LLV	LONG LEG VERTICAL	LP	LOW POINT
L	LONG LENGTH		
LA	LONG LEG ANGLE		
LP	LOW POINT		



### MINIMUM DEVELOPMENT AND LAP SPICE LENGTHS IN COMPRESSION TDC-35

BAR SIZE	Fy MPa	DEVELOPMENT LENGTHS (ld)			LAP SPICE
		Fc = 20 MPa	Fc = 25 MPa	Fc = 30 MPa	Fc = 30 MPa
10	400	240	220	200	300
10	500	300	270	250	430
15	400	340	310	280	440
15	500	430	380	350	640
20	400	420	370	340	590
20	500	520	470	430	850
25	400	540	480	440	730
25	500	680	600	550	1070
30	400	640	570	530	880
30	500	800	720	660	1280
35	400	770	690	630	1030
35	500	960	860	790	1490
45	400	940	840	770	
45	500	1170	1050	960	
55	400	1210	1080	990	
55	500	1510	1350	1240	

**NOTES:**

- VALUES GIVEN ARE FOR NORMAL WEIGHT CONCRETE AND DEFORMED BARS ONLY AND ARE TO BE MODIFIED ACCORDING TO THE FOLLOWING APPLICABLE FACTORS.
- LAP SPLICES ARE NOT PERMITTED FOR BAR SIZES 45 AND 55.
- ldc DENOTES MINIMUM DEVELOPMENT LENGTH FOR EMBEDMENT OF DOWELS IN COMPRESSION.
- INCREASE LAP SPICE LENGTHS FOR Fc LESS THAN 20 MPa BY A FACTOR OF 1.33.
- MINIMUM LAP SPICE AND DEVELOPMENT LENGTHS MAY BE REDUCED UNDER THE FOLLOWING SPECIAL CONDITIONS BY THE FACTORS SHOWN:
  - a) EXCESS AREA OF STEEL (AS REQUIRED/AS PROVIDED)
  - USE 1.0 UNLESS NOTED OTHERWISE
  - b) BARS ENCLOSED WITH A SPIRAL WHICH HAS A MINIMUM WIRE DIA. OF 6 AND 100 MAXIMUM PITCH ..... 0.75
- AFTER APPLYING ALL APPLICABLE FACTORS OF NOTES 4 AND 5, THE LAP SPICE LENGTHS SHALL NOT BE MADE LESS THAN 300 AND THE DEVELOPMENT LENGTHS SHALL NOT BE MADE LESS THAN 200.

### CONCRETE COVER TO REINFORCING STEEL TDC-34

	MINIMUM COVER CSA-A23.1	MINIMUM COVER CSA-S413 (SEE NOTE #4)	MINIMUM COVER FOR FIRE-RESISTANCE RATING			
			1.5 h	2 h	3 h	4 h
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:	75		75	75	75	75
CONCRETE CAST AGAINST FORMS, BUT EXPOSED TO WEATHER:	40		40	40	40	40
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO WEATHER:	15 BARS, 160 WIRE, AND SMALLER, STIRRUPS, TIES, AND SPIRAL.....		40	40	40	40
COLUMN PRINCIPAL REINFORCEMENT.....	50		50	50	65	75
20 TO 55 BARS, AND ALL OTHER BARS.....	50		50	50	50	50
CONCRETE NOT EXPOSED TO WEATHER, OR NOT IN CONTACT WITH GROUND:						
35 BARS AND SMALLER FOR SLABS AND WALLS SEE NOTE #3.....	20	TOP 40 BOT. 30	20	25	35	40
FOR JOISTS.....	20		25	25	40	50
BEAM PRINCIPAL REINFORCEMENT.....	40		40	40	40	50
COLUMN PRINCIPAL REINFORCEMENT.....	40		50	50	65	75
STIRRUPS, TIES, SPIRALS, AND ALL OTHER BARS.....	40		40	40	40	40

**NOTES:**

- FOR CAST-IN-PLACE (NON-PRESTRESSED) CONCRETE, PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-A23.1 UNLESS OTHERWISE NOTED ON DRAWINGS.
- WHERE THE FIRE-RESISTANCE RATING OF A COLUMN EXCEEDS 2 HOURS, ADD WELDED WIRE MESH, MINIMUM 102 x 102 - MW3.2 x MW3.2, MIDWAY IN CONCRETE COVER.
- FOR SHORT WALLS WHERE INDICATED ON THE DRAWING, PROVIDE COVER SAME AS FOR COLUMNS.
- FOR PARKING STRUCTURES PROVIDE MINIMUM CONCRETE COVER TO REINFORCEMENT ACCORDING TO CSA-S413. COVER TO BOTTOM REINFORCEMENT IN THE MAIN FLOOR SLAB EXPOSED TO DEICING MUST MEET REQUIREMENTS OF CSA-S413.

### TENSION DEVELOPMENT LENGTH AND TENSION LAP SPLICES (Fy = 400 MPa) TDC-36

CONCRETE CLASS	25 MPa		30 MPa		35 MPa		40 MPa		45 MPa		50 MPa		CONCRETE CLASS
	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B	
10	300	380	300	350	300	320	300	300	300	280	300	300	10
15	440	570	400	520	370	480	350	450	330	420	310	400	15
20	580	750	530	690	490	640	460	600	430	560	410	530	20
25	900	1170	830	1070	760	990	720	930	670	880	640	830	25
30	1080	1410	990	1290	920	1190	860	1110	810	1050	770	1000	30
35	1260	1640	1150	1500	1070	1390	1000	1300	940	1220	890	1160	35

**TABLE 1: UNCOATED, OTHER THAN TOP BARS**

**TABLE 2: UNCOATED, TOP BARS**

**TABLE 3: EPOXY-COATED BARS, OTHER THAN TOP BARS**

**TABLE 4: EPOXY-COATED TOP BARS**

**NOTES:**

- USE FOLLOWING TENSION LAP SPICE LENGTHS UNLESS NOTED OTHERWISE ON DRAWINGS.
- TENSION DEVELOPMENT LENGTHS, ld, DENOTED AS TENSION LAP SPICE CLASS A.
- FOR COLUMNS, USE COLUMN TENSION SPICE TYPICAL DETAIL.
- TOP BARS ARE BARS WITH MORE THAN 300 OF CONCRETE CAST BELOW SPICE.
- CLEAR COVER NOT LESS THAN 40, CLEAR SPACING NOT LESS THAN 2d.
- FOR STRUCTURAL LOW-DENSITY CONCRETE, INCREASE SPICE LENGTHS BY 30%.
- FOR STRUCTURAL SEMI-LOW-DENSITY CONCRETE, INCREASE SPICE LENGTHS BY 20%.

DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
2018-02-14	ISSUED FOR DP	
2018-03-02	ISSUED FOR 95% REVIEW	
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Project Component  
**LUNCHROOM EXPANSION**

Keyplan

Consultants

Architectural: NORR Architects Engineers Planners  
Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

Seal(s)

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Project Manager: D. HIDER  
Checked: A. TODILA

Project Leader: D. HIDER  
Checked: A. TODILA

Client: **RCMP**

Project: **INNISFAIL PDSTC LUNCHROOM EXPANSION**

Drawing Title: **TYPICAL DETAILS**

Check Scale (may be photo reduced)  
0 10mm

Project No.: **NCCA17-0228**

Drawing No.: **S-03**



**MINIMUM EMBEDMENT LENGTHS FOR DEFORMED BARS (Fy = 460 MPa) TDC-37**

BAR SIZE	TENSION, Ld (CLASS A)										COMPRESSION			
	F <sub>c</sub> =35MPa		F <sub>c</sub> =40MPa		F <sub>c</sub> =45MPa		F <sub>c</sub> =50MPa		F <sub>c</sub> =55MPa		F <sub>c</sub> =35MPa	F <sub>c</sub> =40MPa	F <sub>c</sub> =45MPa	F <sub>c</sub> =50MPa & 55MPa
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS				
T8	420	320	390	300	360	300	350	300	330	300	200	200	200	200
T10	530	410	490	380	460	350	430	330	410	310	200	200	200	200
T12	630	490	580	450	550	420	520	400	490	380	250	250	250	250
T16	840	650	780	600	730	560	690	530	650	500	330	320	320	320
T20	1050	810	970	750	910	700	860	660	820	630	410	400	400	400
T25	1640	1260	1520	1170	1420	1100	1340	1030	1270	980	510	500	500	500
T32	2100	1620	1950	1500	1820	1400	1720	1320	1630	1250	650	640	640	640
T40	2630	2020	2440	1870	2280	1750	2150	1650	2040	1570	810	800	800	800

**NOTES:**  
 1. TOP BARS ARE HORIZONTAL BARS LOCATED SUCH THAT MORE THAN 300mm OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR (EQ. TOP BARS OF BEAMS AND SLABS DEEPER THAN 300mm AND HORIZONTAL WALL REINFORCING).  
 2. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, COMPRESSION EMBEDMENT SHALL BE PROVIDED FOR COLUMN BARS ONLY AND TENSION EMBEDMENT FOR ALL OTHER REINFORCEMENT.  
 3. BAR SPLICE (LAP) LENGTHS SHOWN ARE BASED ON ACI-318-02 CL.12.2.2 AND 12.3 RESPECTIVELY.

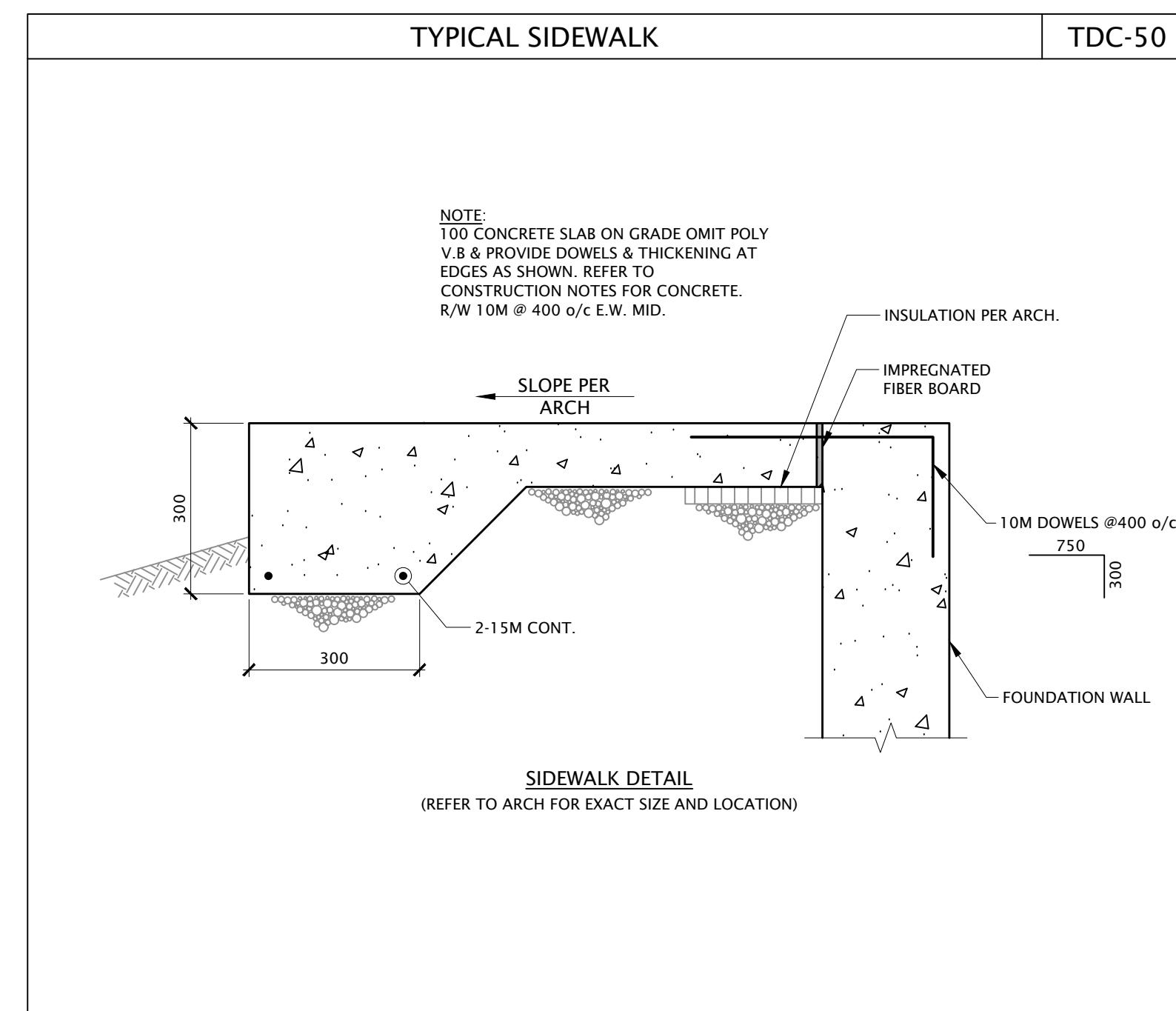
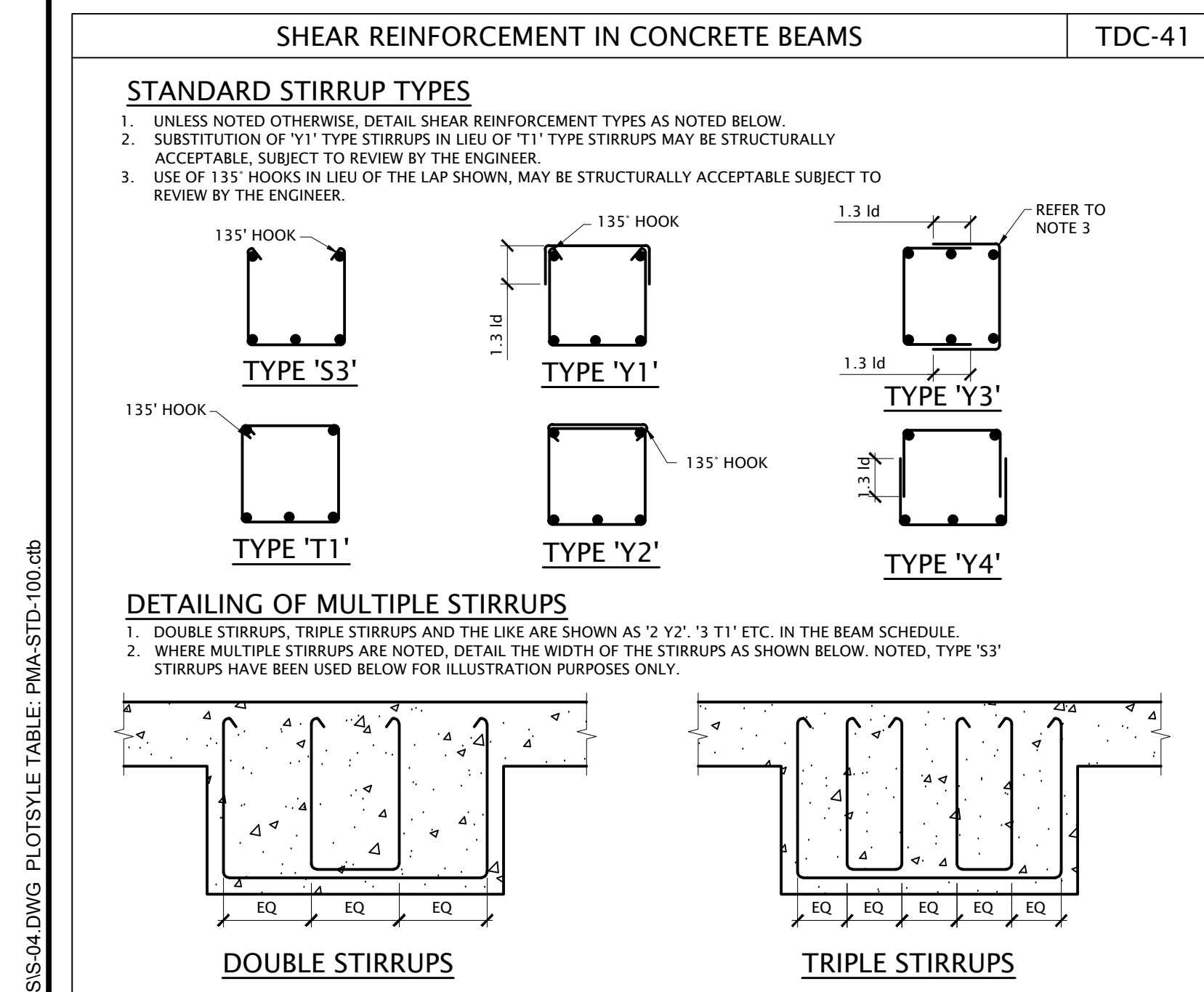
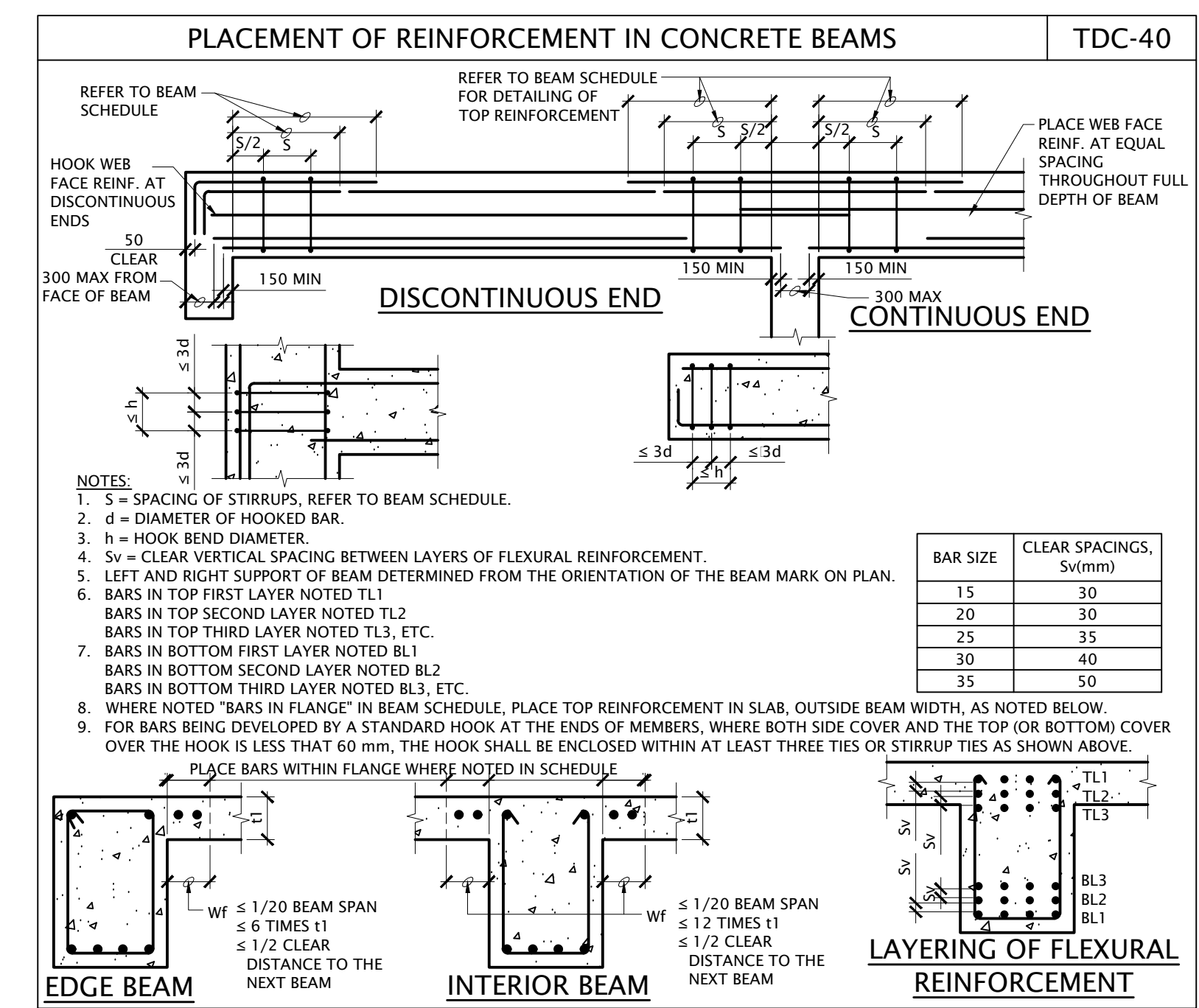
**MINIMUM LAP LENGTHS FOR DEFORMED BARS (Fy = 400 MPa) TDC-38**

BAR SIZE	TENSION (CLASS B)										COMPRESSION		
	F <sub>c</sub> =35MPa		F <sub>c</sub> =40MPa		F <sub>c</sub> =45MPa		F <sub>c</sub> =50MPa		F <sub>c</sub> =55MPa		F <sub>c</sub> ≥25MPa		
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	REGULAR LAPS	COLUMN W/TIES	COLUMN W/SPIRALS
T8	550	420	510	390	470	360	450	350	420	330	300	300	300
T10	680	530	630	490	590	460	560	430	530	410	370	300	300
T12	820	630	760	580	710	550	670	520	640	490	440	360	330
T16	1090	840	1010	780	950	730	890	690	850	650	580	480	440
T20	1370	1050	1270	970	1180	910	1120	860	1060	820	730	600	550
T25	2140	1640	1980	1520	1850	1420	1750	1340	1660	1270	910	750	680
T32	2740	2100	2530	1950	2370	1820	2230	1720	2120	1630	1160	960	870
T40	-	-	-	-	-	-	-	-	-	-	1450	1200	1090

**NOTES:**  
 1. TOP BARS ARE HORIZONTAL BARS LOCATED SUCH THAT MORE THAN 300 mm OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR (EQ. TOP BARS OF BEAMS AND SLABS DEEPER THAN 300 mm AND HORIZONTAL WALL REINFORCING).  
 2. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, COMPRESSION EMBEDMENT SHALL BE PROVIDED FOR COLUMN BARS ONLY AND TENSION EMBEDMENT FOR ALL OTHER REINFORCEMENT.  
 3. BAR SPLICE (LAP) LENGTHS SHOWN ARE BASED ON ACI-318-02 CL.12.15 AND 12.16 RESPECTIVELY.

**REINFORCING STEEL BAR AND STANDARD HOOK DIMENSIONS FOR DEFORMED BARS (Fy = 460 MPa) TDC-39**

BAR SIZE	MASS kg/m	DIA. d	AREA mm <sup>2</sup>	STANDARD HOOK BEND D	STIRRUP AND TIE HOOKS (90°)			
					A			
					90°	180°		
T8	0.395	8	50	50	130	120	30	85
T10	0.617	10	79	60	160	130	40	90
T12	0.888	12	113	70	190	150	50	110
T16	1.580	16	201	95	260	180	65	145
T20	2.47	20	314	120	320	220	-	-
T25	3.86	25	491	150	400	280	-	-
T32	6.31	32	804	260	550	420	-	-
T40	9.87	40	1257	400	720	640	-	-

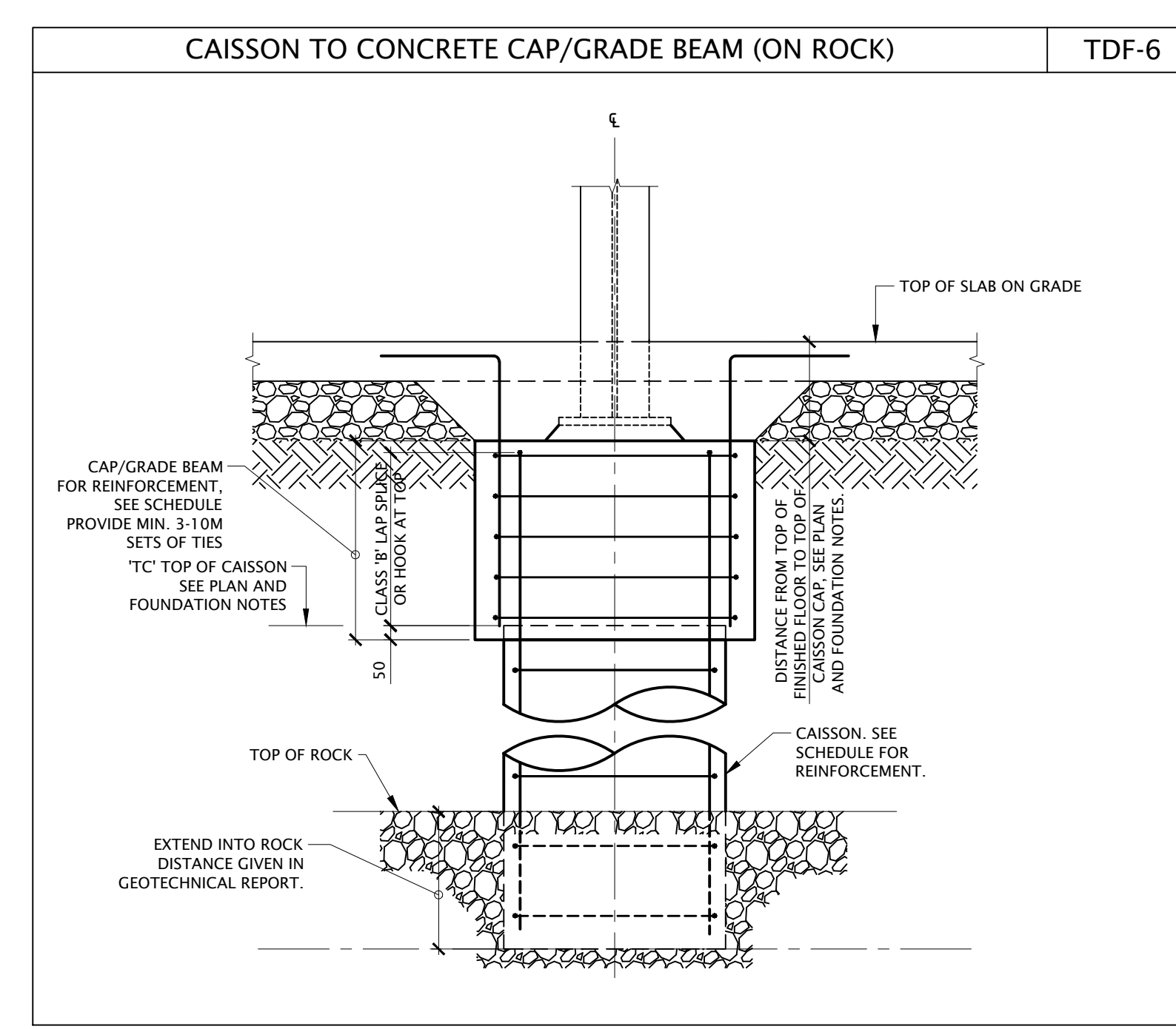
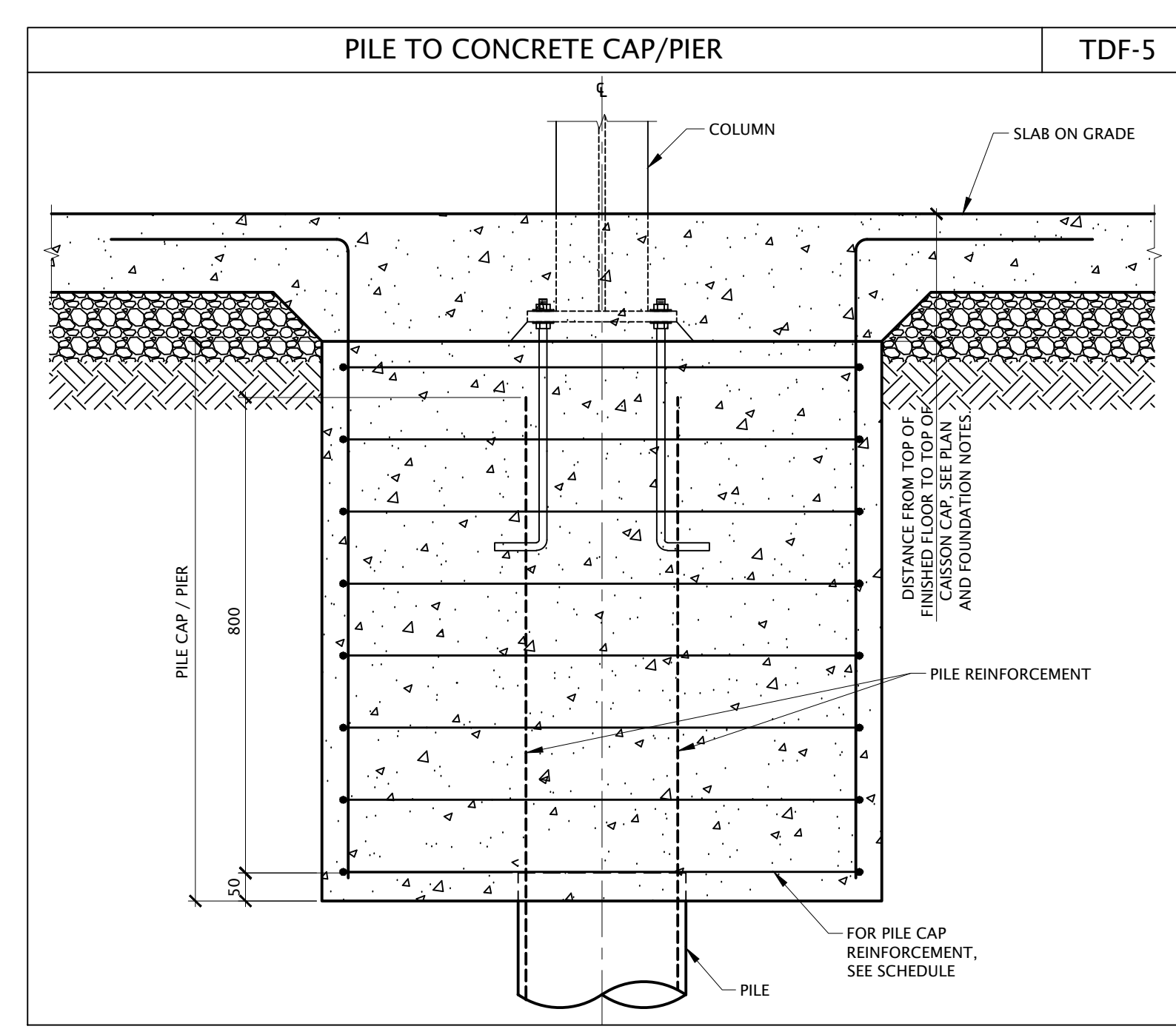
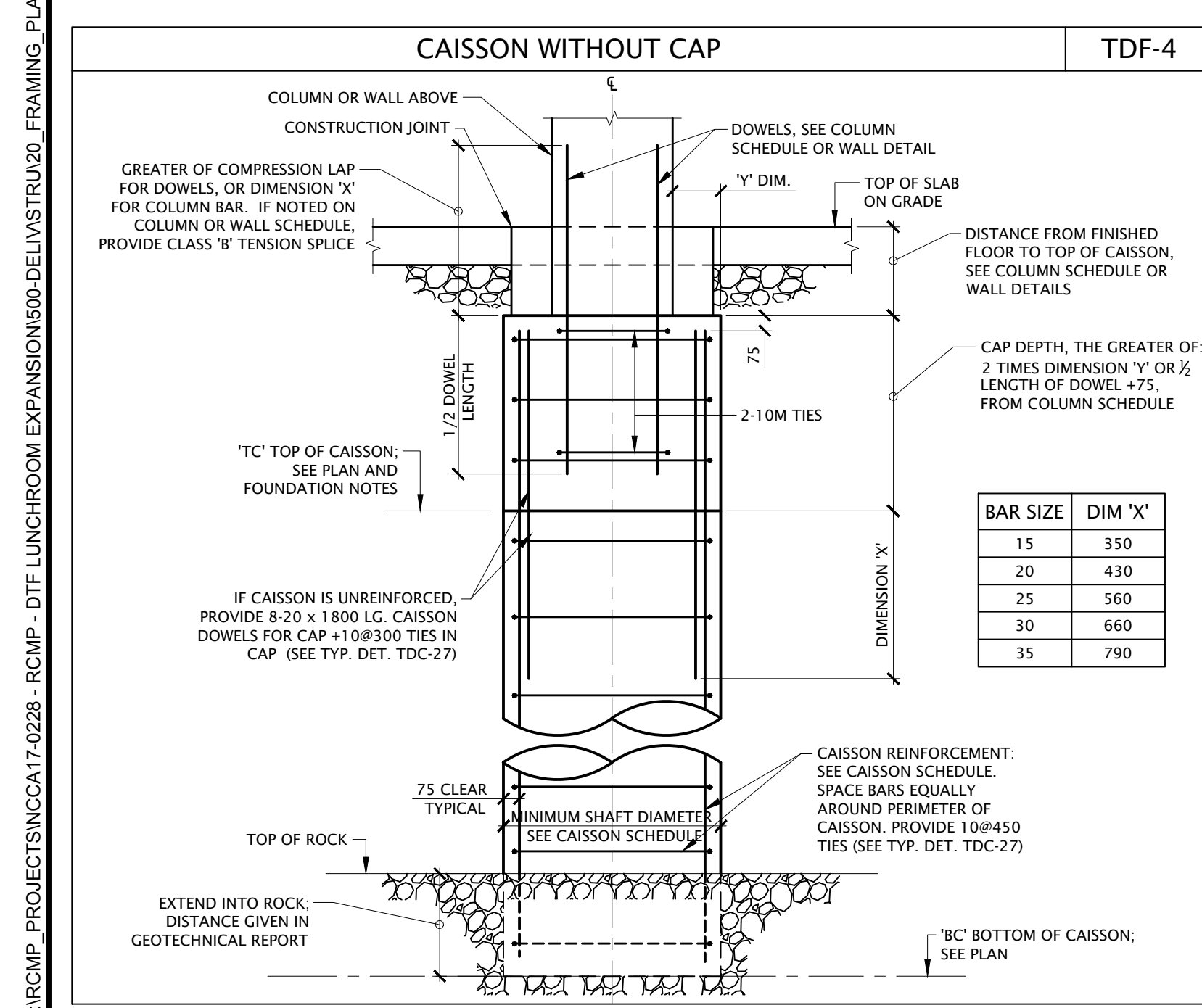


**HOOK DEVELOPMENT LENGTH TDC-58**

**VALUES OF HOOK BASIC DEVELOPMENT LENGTH FOR GRADE 400 BARS**

BAR NO.	x' (mm)	h <sub>hb</sub> (mm)				
		20	25	30	35	40
10M	45	253	226	206	191	179
15M	65	358	320	292	270	253
20M	80	436	390	356	330	308
25M	100	563	504	460	426	398
30M	155	669	598	546	505	473
35M	185	798	714	652	603	565
45M	270	977	874	798	739	691
55M	355	1261	1128	1030	953	892

\* x = BEND RADIUS + d<sub>b</sub> (VALUES GIVEN ARE FOR BEND RADI FOR GRADE 400 R STEEL)



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**Project Component**  
LUNCHROOM EXPANSION

**Keyplan**

**Consultants**  
 Architectural: NORR Architects Engineers Planners  
 Structural: NORR Architects Engineers Planners  
 Mechanical: NORR Architects Engineers Planners  
 Electrical: NORR Architects Engineers Planners

**Seal(s)**

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**Project Manager**  
D. HIDER

**Project Leader**  
D. HIDER

**Client**  
RCMP

**Project**  
INNISFAIL PDSTC LUNCHROOM EXPANSION

**Drawing Title**  
TYPICAL DETAILS

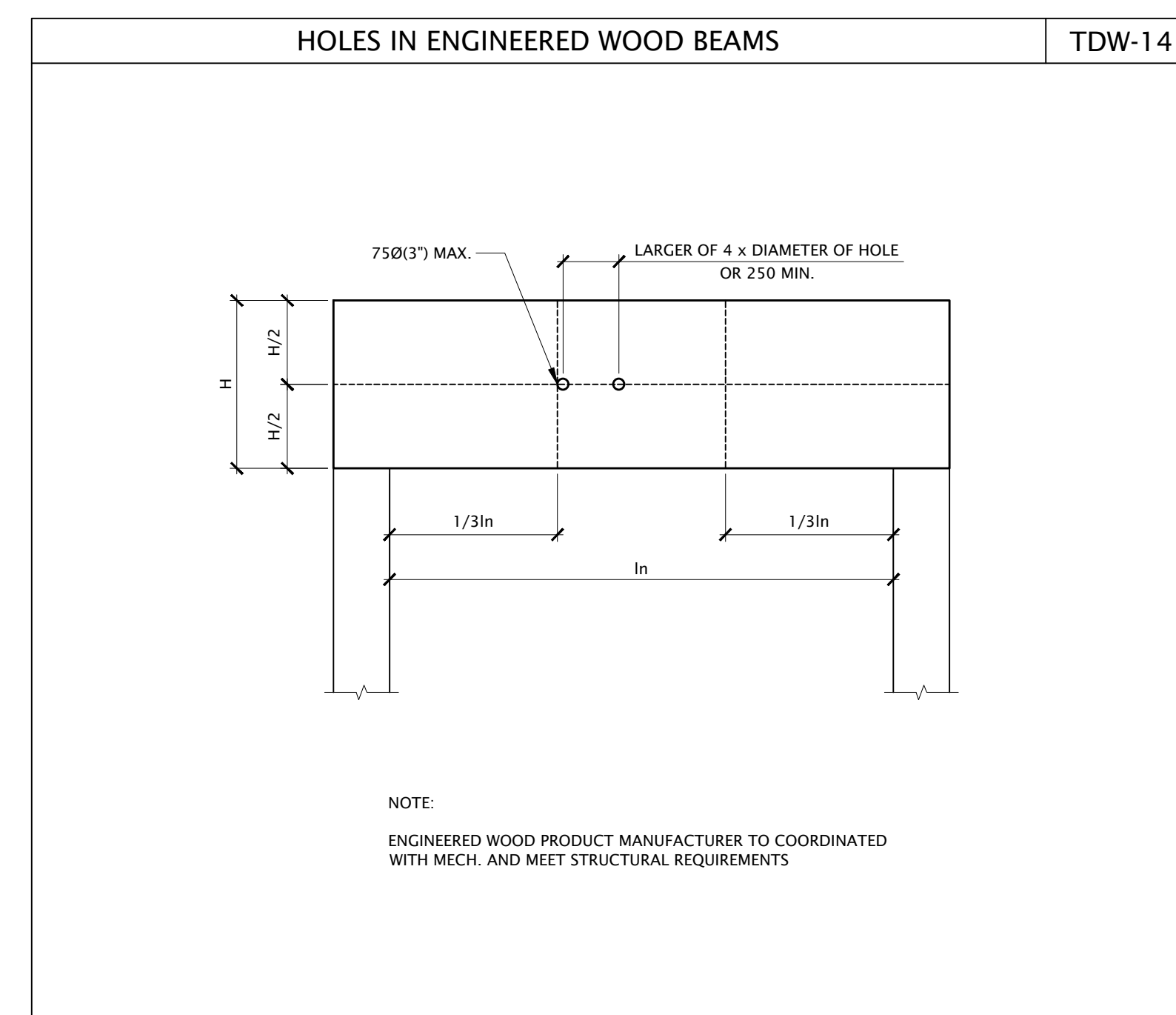
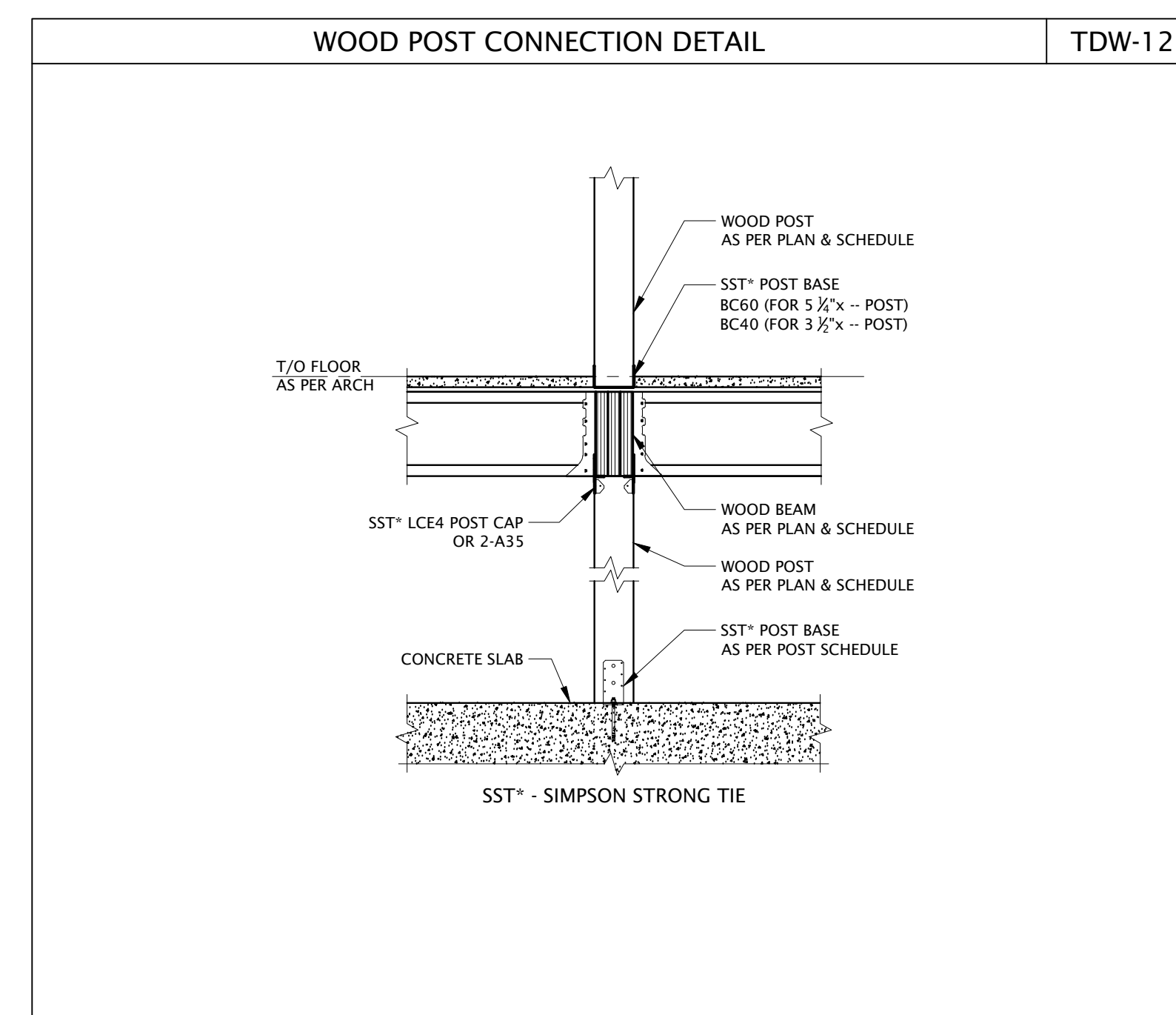
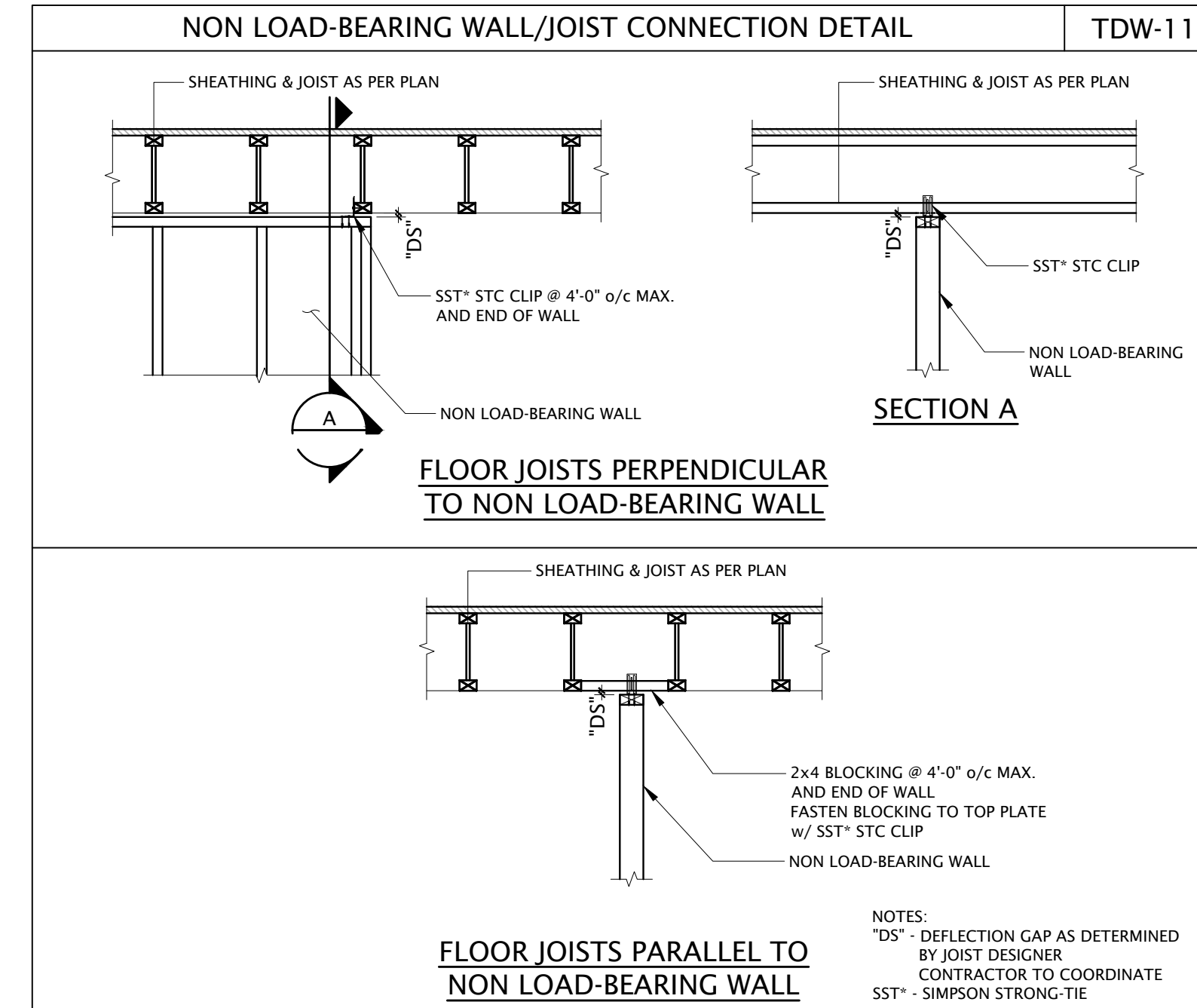
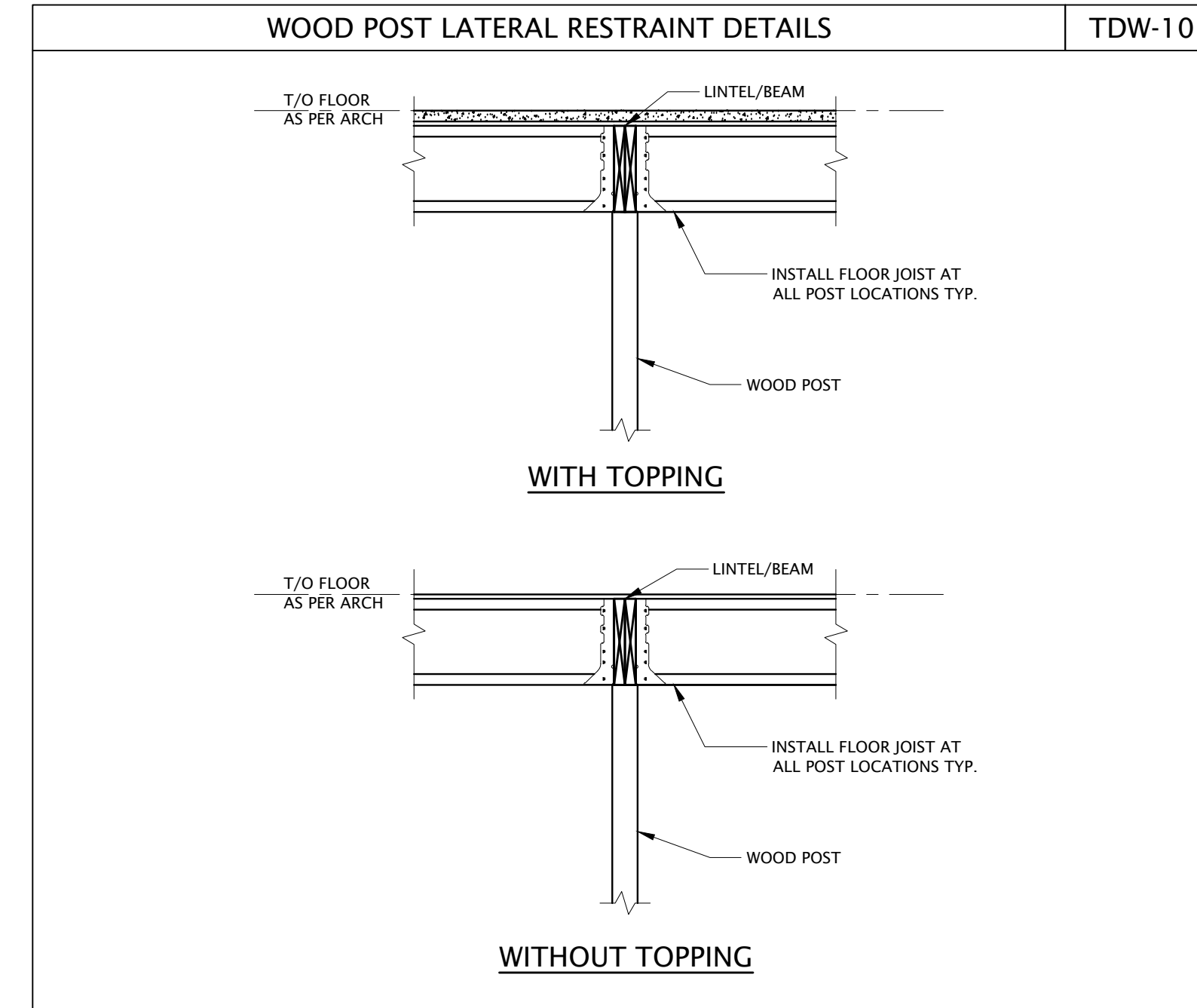
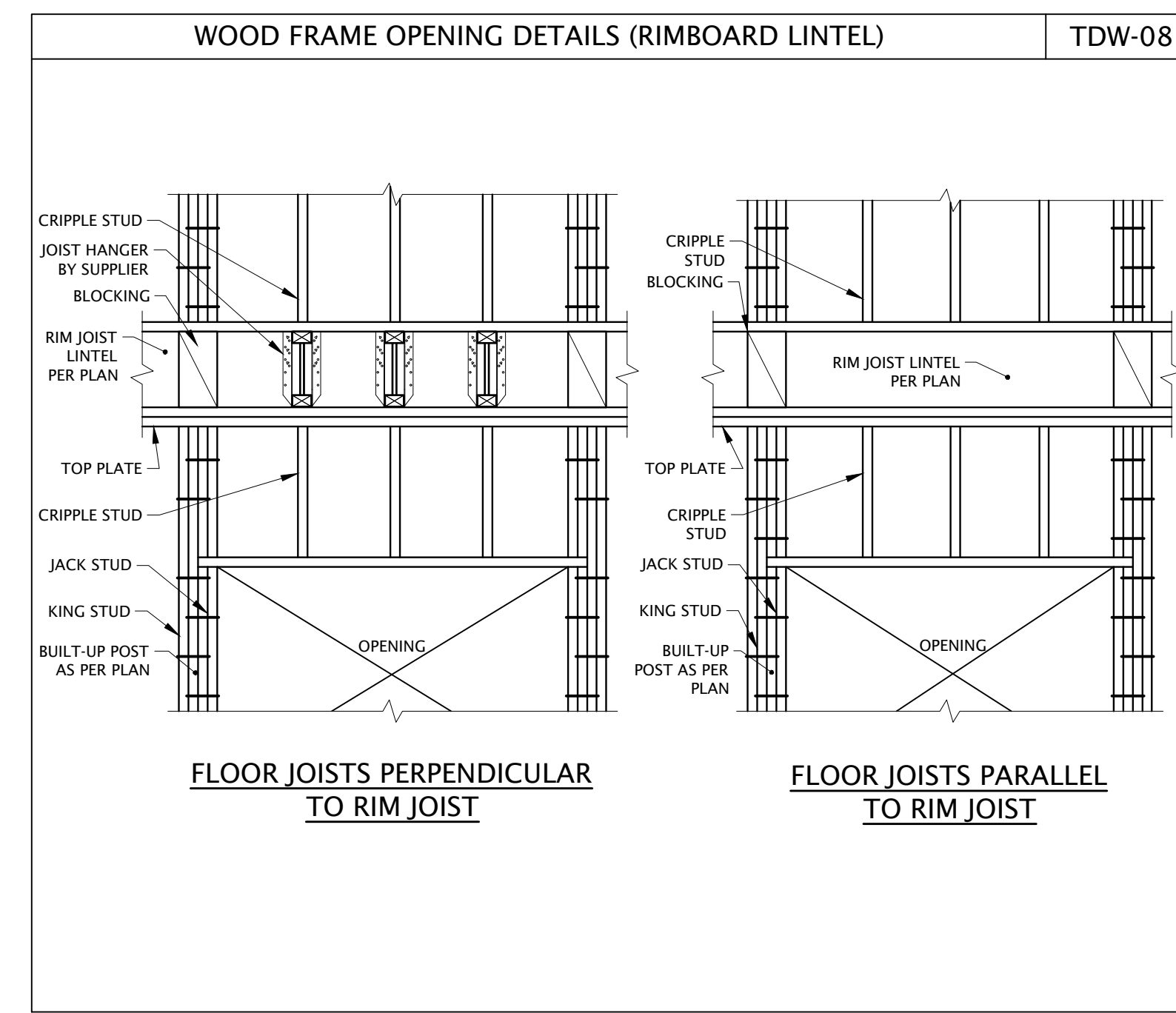
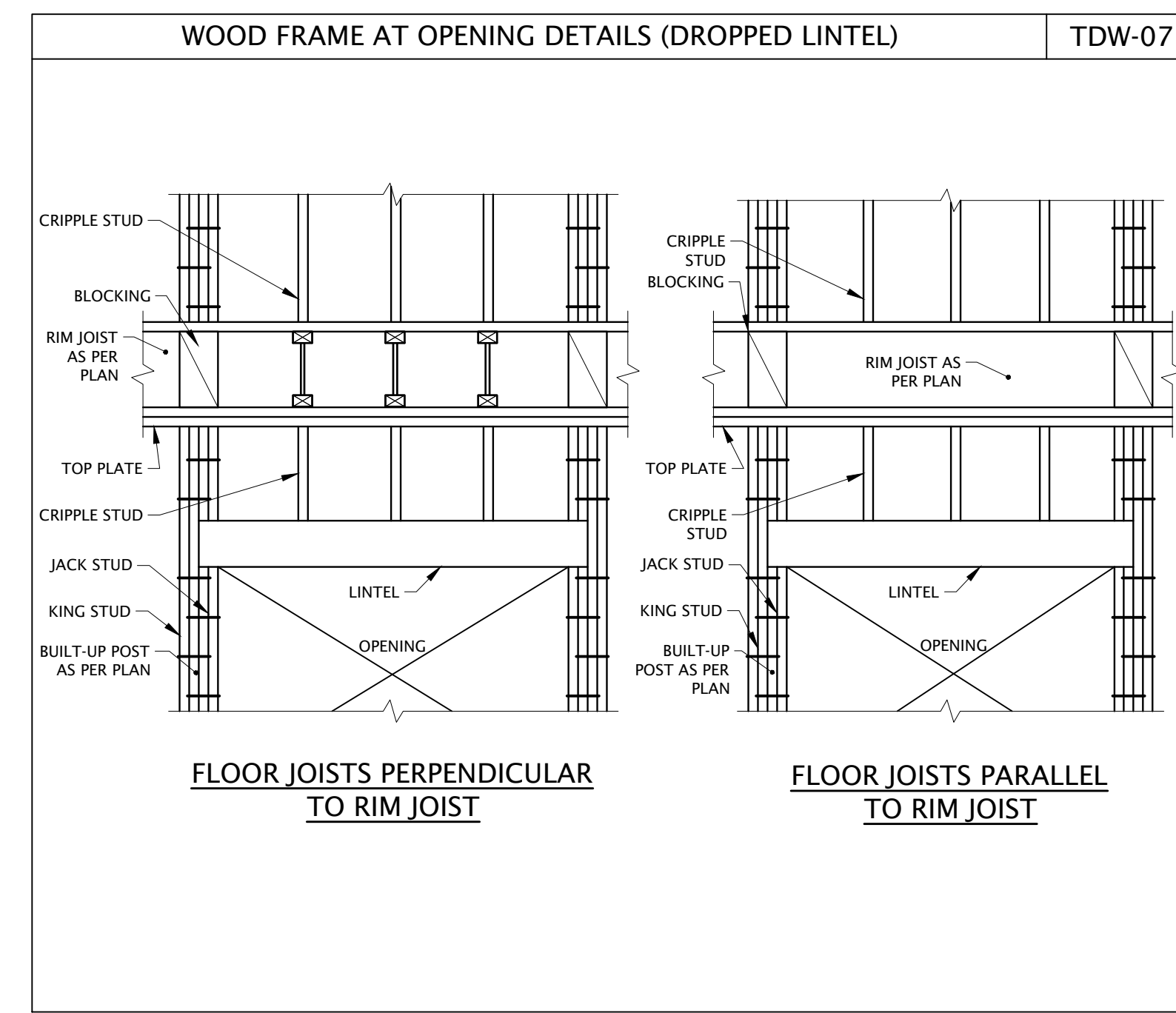
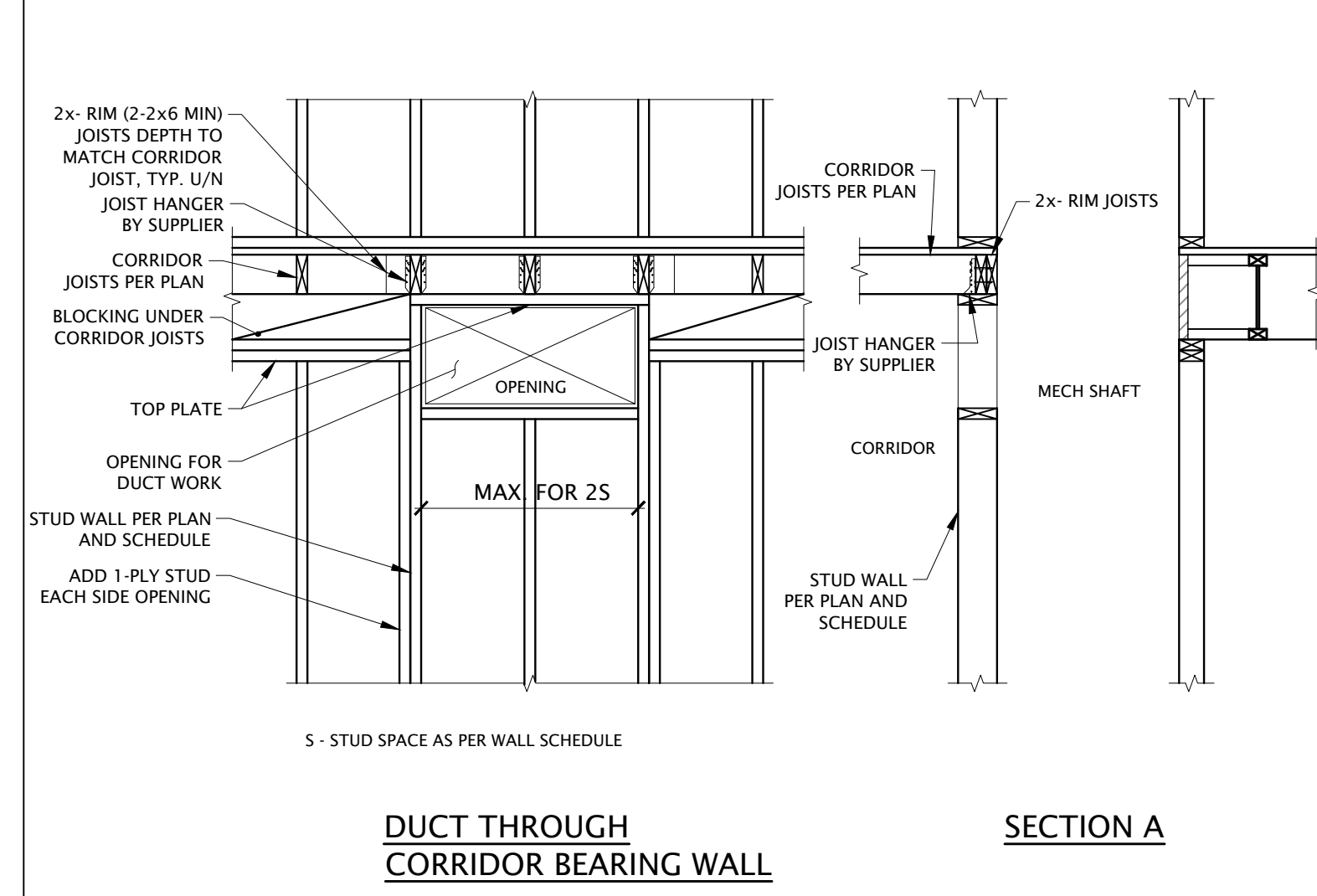
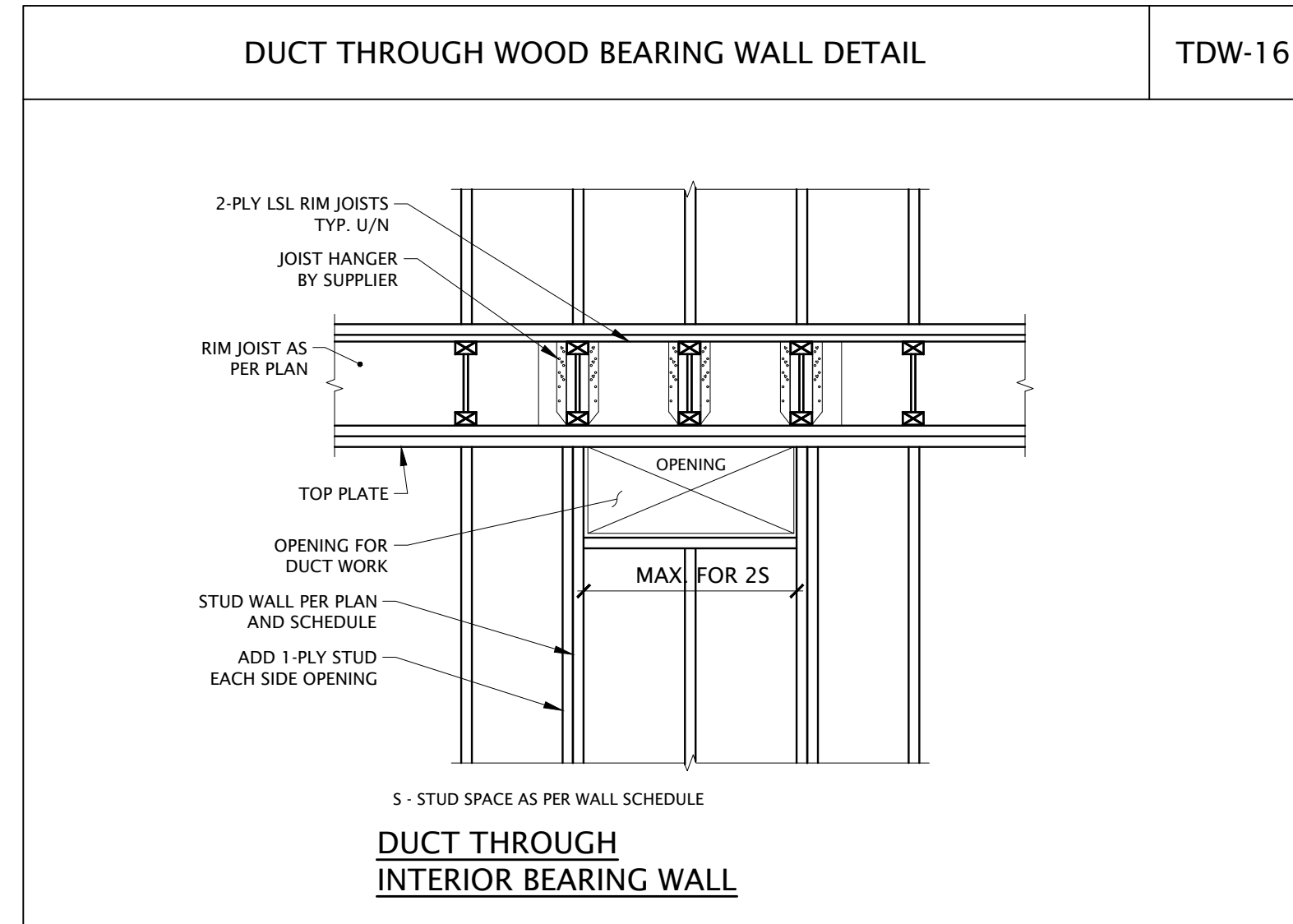
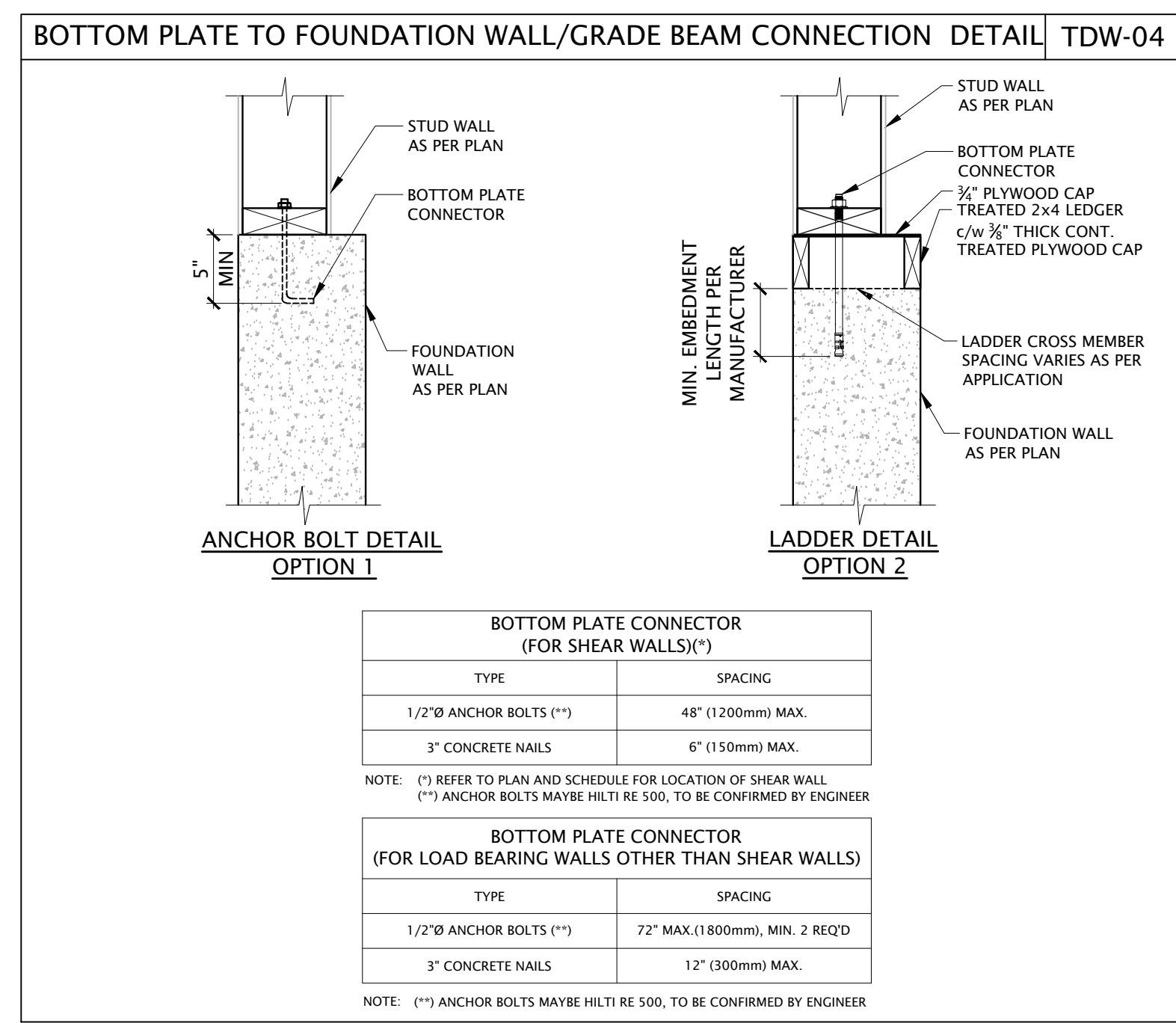
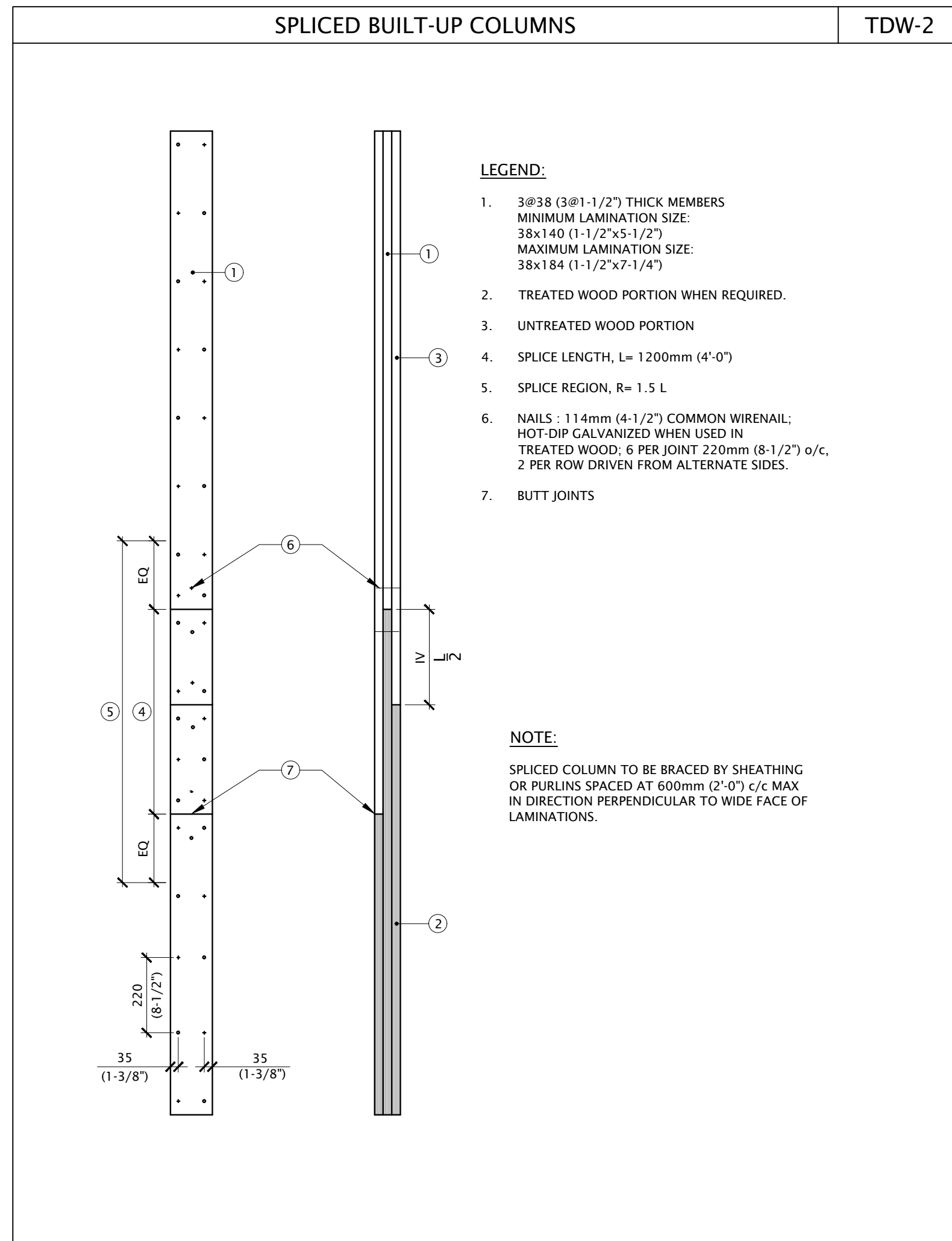
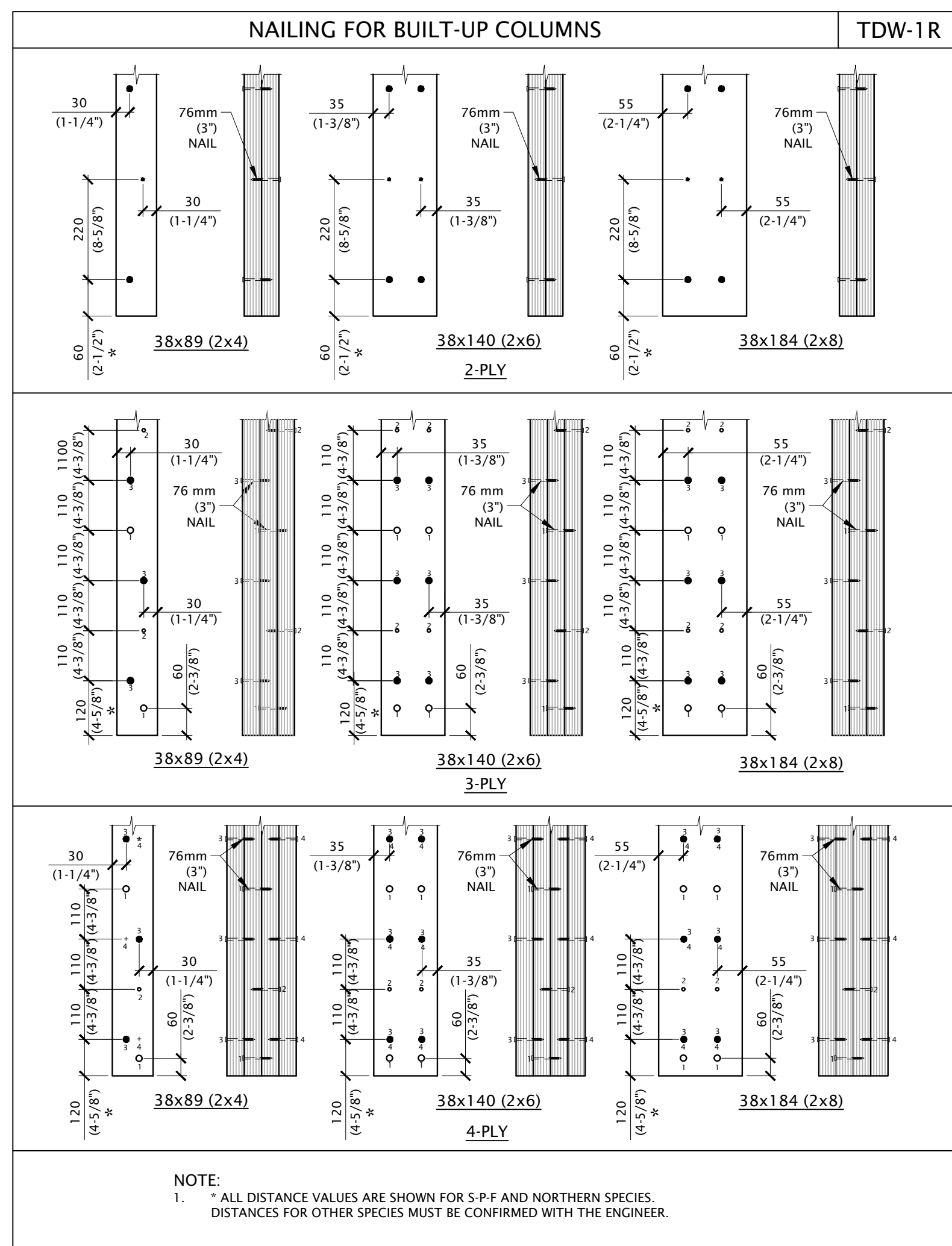
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**Project No.** NCCA17-0228  
**Drawing No.** S-04

PLOT DATE: March 29, 2018 TIME: 9:36 AM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228\_RCMP\_DTIF\_LUNCHROOM\_EXPANSION\500\_DELS\STRUC29\_FRAMING\_PLANS\504\_DWG\_PLOTS\STYLE TABLE\_PMA STD-100.cbr



PLOT DATE: March 29, 2018 TIME: 9:38 AM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\500 DELIVERY\STRUC20\_FRAMING\_PLANS\505.DWG PLOTS\STYLE TABLE: PMA-STD-100.cbr



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2018-02-07	ISSUED FOR 60% REVIEW	
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2018-03-02	ISSUED FOR 95% REVIEW	
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**Project Component**  
LUNCHROOM EXPANSION

**Keyplan**

**Consultants**

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Structural: NORR Architects Engineers Planners  
Mechanical: NORR Architects Engineers Planners  
Electrical: NORR Architects Engineers Planners

**Seal(s)**

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Victor Smith, Architect, AIA, B. Arch, M.Arch.  
Thane G. McKeown, Architect, AIA, M. Arch, M.Arch.  
G. Brian Stephenson, Architect, AIA, B. Arch, M.Arch.  
Michael Taylor, P. Eng., P.E.P.E.C.  
Chris The P. Eng., P.E.P.E.C.

Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	A. TODILA
Client	
RCMP	

**Project**  
INNISFAIL PDSTC  
LUNCHROOM EXPANSION

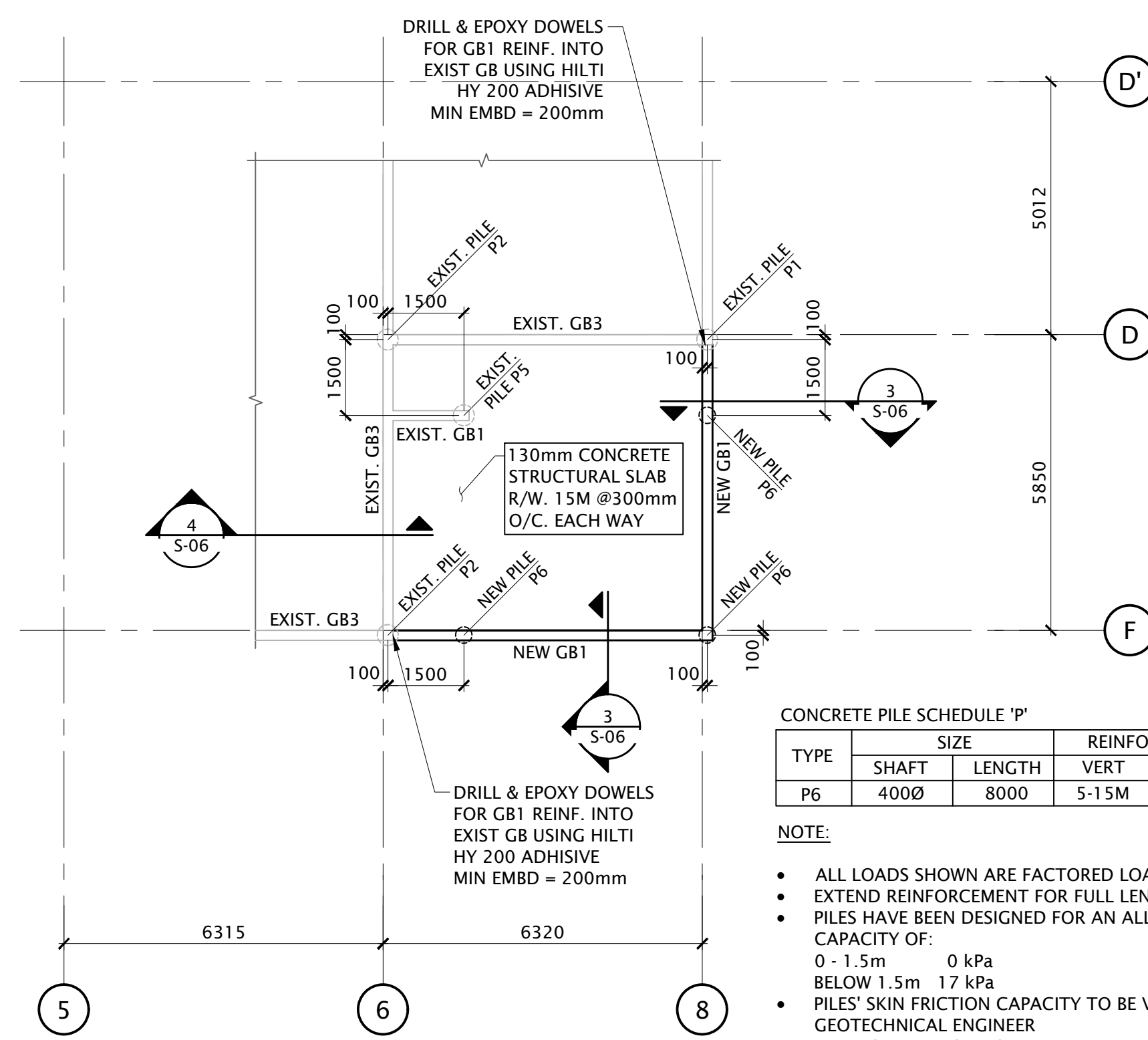
**Drawing Title**  
TYPICAL DETAILS

Check Scale (may be photo reduced)  
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Project No. NCCA17-0228  
Drawing No. S-05



PLOT DATE: March 29, 2018 TIME: 10:24 AM FULL PATH AND FILENAME: P:\RCMP\_PROJECTS\NCCA17-0228 - RCMP - DTF LUNCHROOM EXPANSION\900-DELIV\STRUC02 - FRAMING\_PLANS-06.DWG PLOTTABLE TABLE: PMA STD - 100.dwg



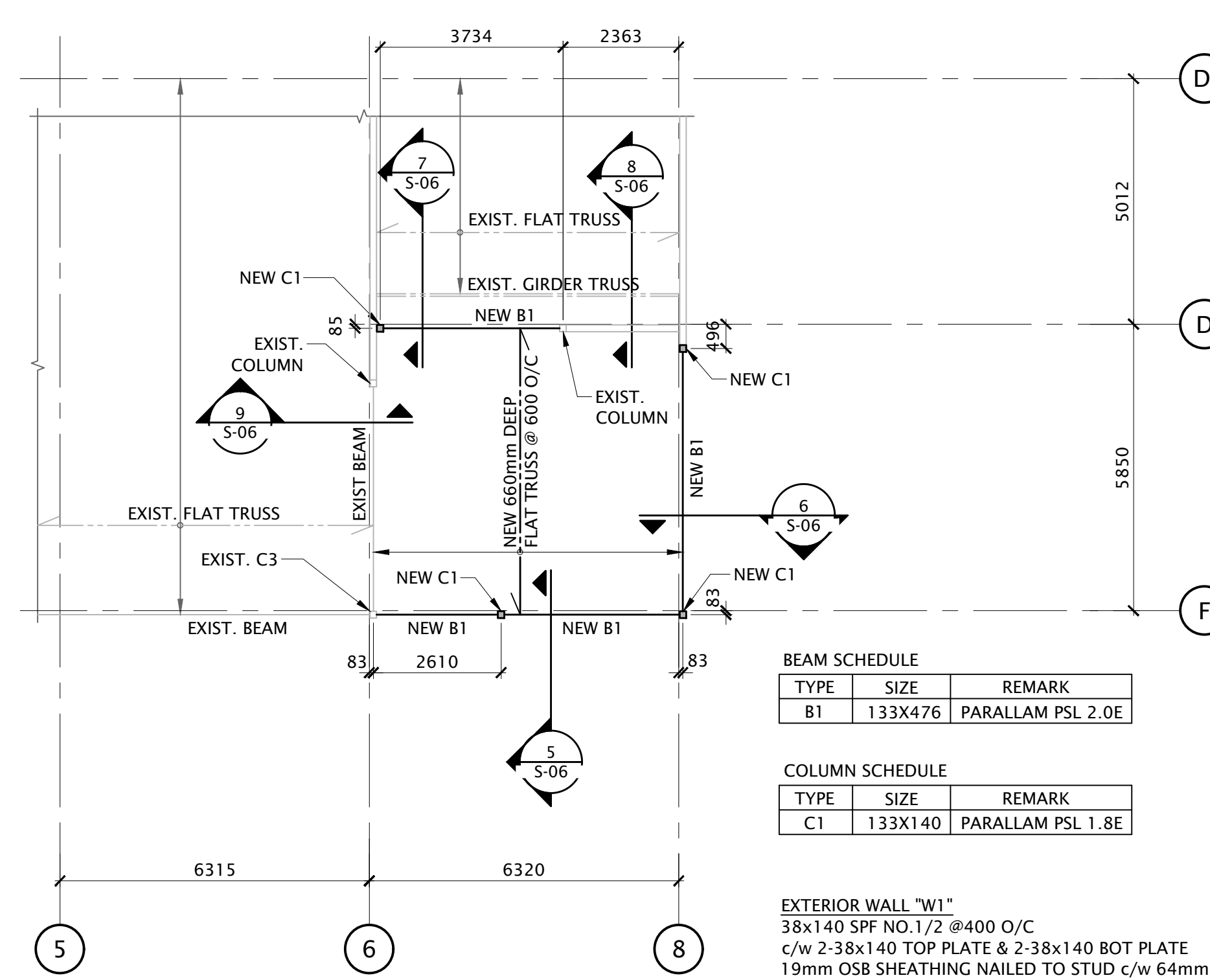
CONCRETE PILE SCHEDULE 'P'						
TYPE	SIZE	LENGTH	REINFORCEMENT	PILE LOADING	VERT LOAD	HORZ LOAD
P6	400Ø	8000	5-15M 10M@200		100 kN	20 kN

**NOTE:**

- ALL LOADS SHOWN ARE FACTORED LOADS
- EXTEND REINFORCEMENT FOR FULL LENGTH OF PILE
- PILES HAVE BEEN DESIGNED FOR AN ALLOWABLE SKIN FRICTION CAPACITY OF:
  - 0 - 1.5m 0 kPa
  - BELOW 1.5m 17 kPa
- PILES' SKIN FRICTION CAPACITY TO BE VERIFIED ON SITE BY A GEOTECHNICAL ENGINEER
- PILE INSTALLATION TO BE UNDER THE DIRECT SUPERVISION OF A GEOTECHNICAL ENGINEER
- CONCRETE PILE DESIGN PARAMETERS HAVE BEEN BASED ON INFORMATION SHOWN ON EXISTING DRAWINGS AVAILABLE FROM THE DEPARTMENTAL REPRESENTATIVE. THE CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER WHO SHALL BE RESPONSIBLE FOR THE FINAL DESIGN AND INSTALLATION OF PILES.

CONCRETE GRADE BEAM SCHEDULE 'GB'		
TYPE	SIZE	REINFORCEMENT
GB1	200X600	2-20M T&B C/W 10M@200 STIRRUPS

01 FOUNDATION PLAN  
S-06 1:100



BEAM SCHEDULE		
TYPE	SIZE	REMARK
B1	133X476	PARALLAM PSL 2.0E

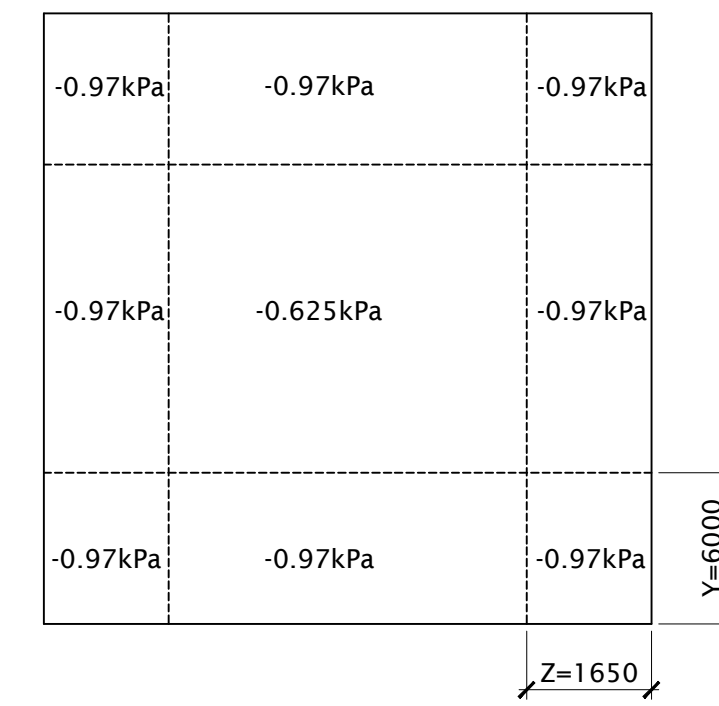
COLUMN SCHEDULE		
TYPE	SIZE	REMARK
C1	133X140	PARALLAM PSL 1.8E

**EXTERIOR WALL 'W1'**  
 38x140 SPF NO.1/2 @400 O/C  
 c/w 2-38x140 TOP PLATE & 2-38x140 BOT PLATE  
 19mm OSB SHEATHING NAILED TO STUD c/w 64mm x 3.25Ø COMMON WIRE NAILS:  
 @100 ALONG ALL PANEL EDGES  
 @300 ALONG INTERMEDIATE SUPPORTS

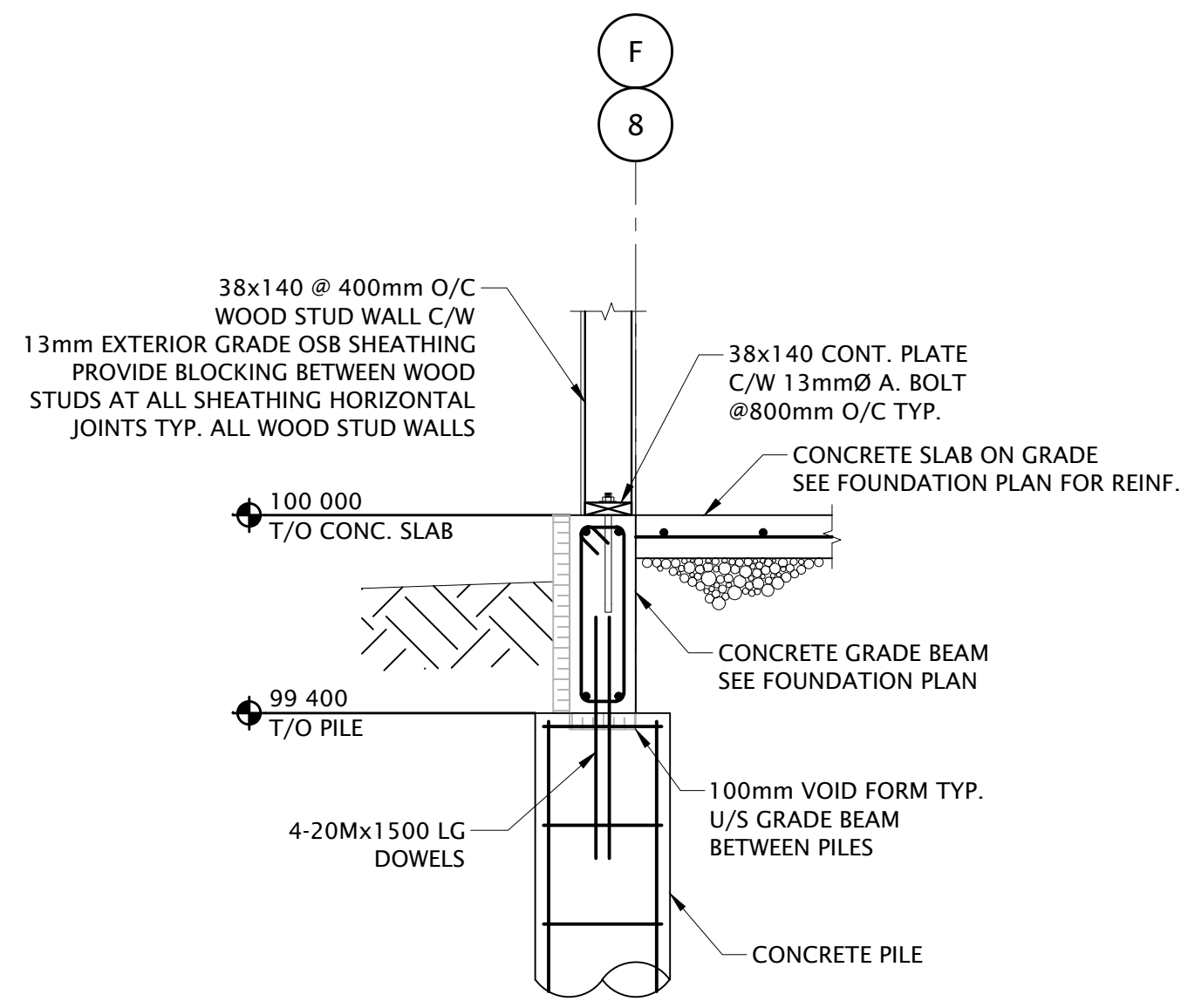
**NOTE**  
 PROVIDE ALL NECESSARY TEMPORARY SHORING TO ALLOW INSTALLATION OF NEW STRUCTURES.

02 ROOF FRAMING PLAN  
S-06 1:100

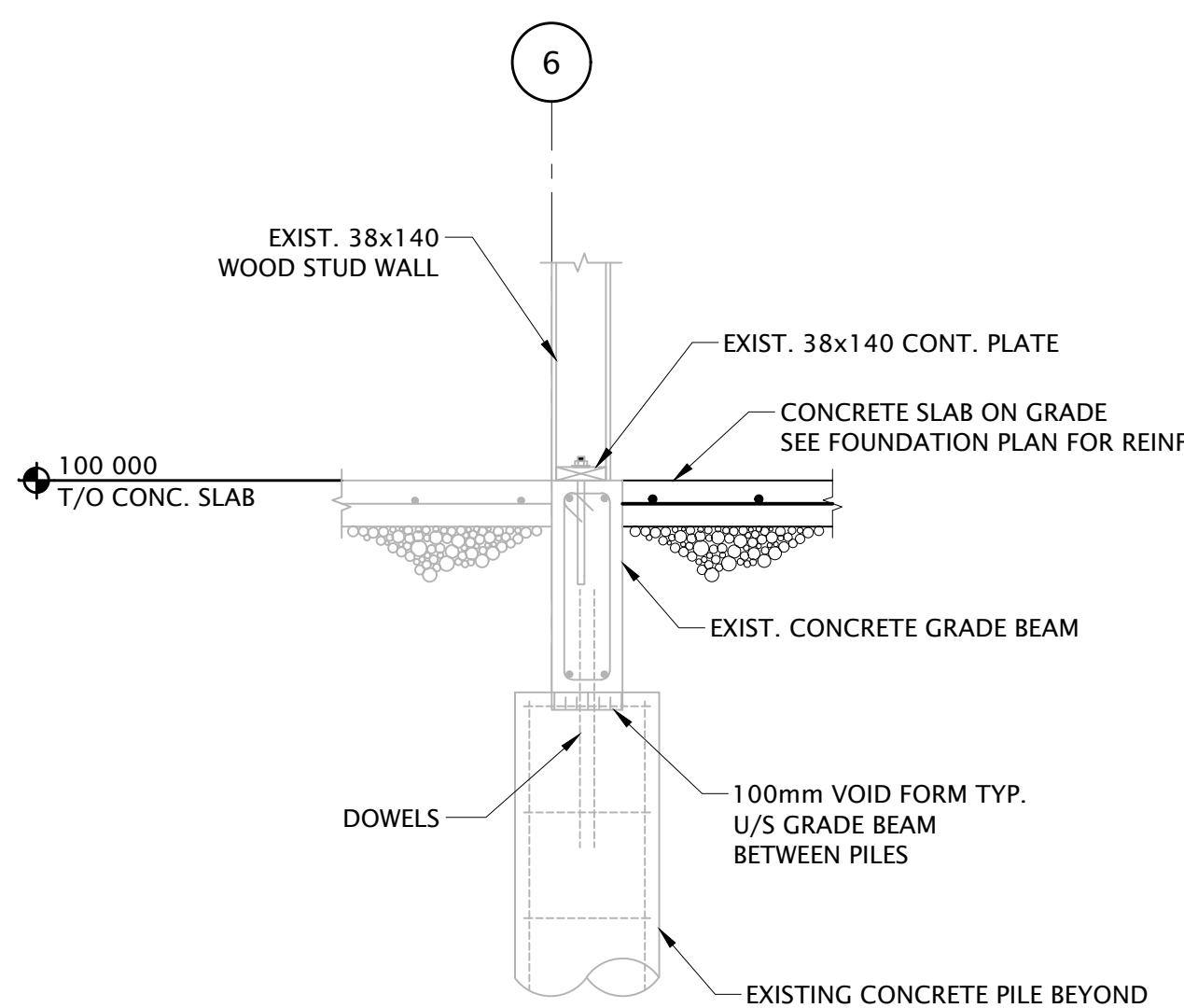
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 SDL1: 0.5 kPa (E & M)  
 SDL2: 0.8 kPa (ROOFING & INSULATION)  
 SNOW LOAD: 1.825 kPa



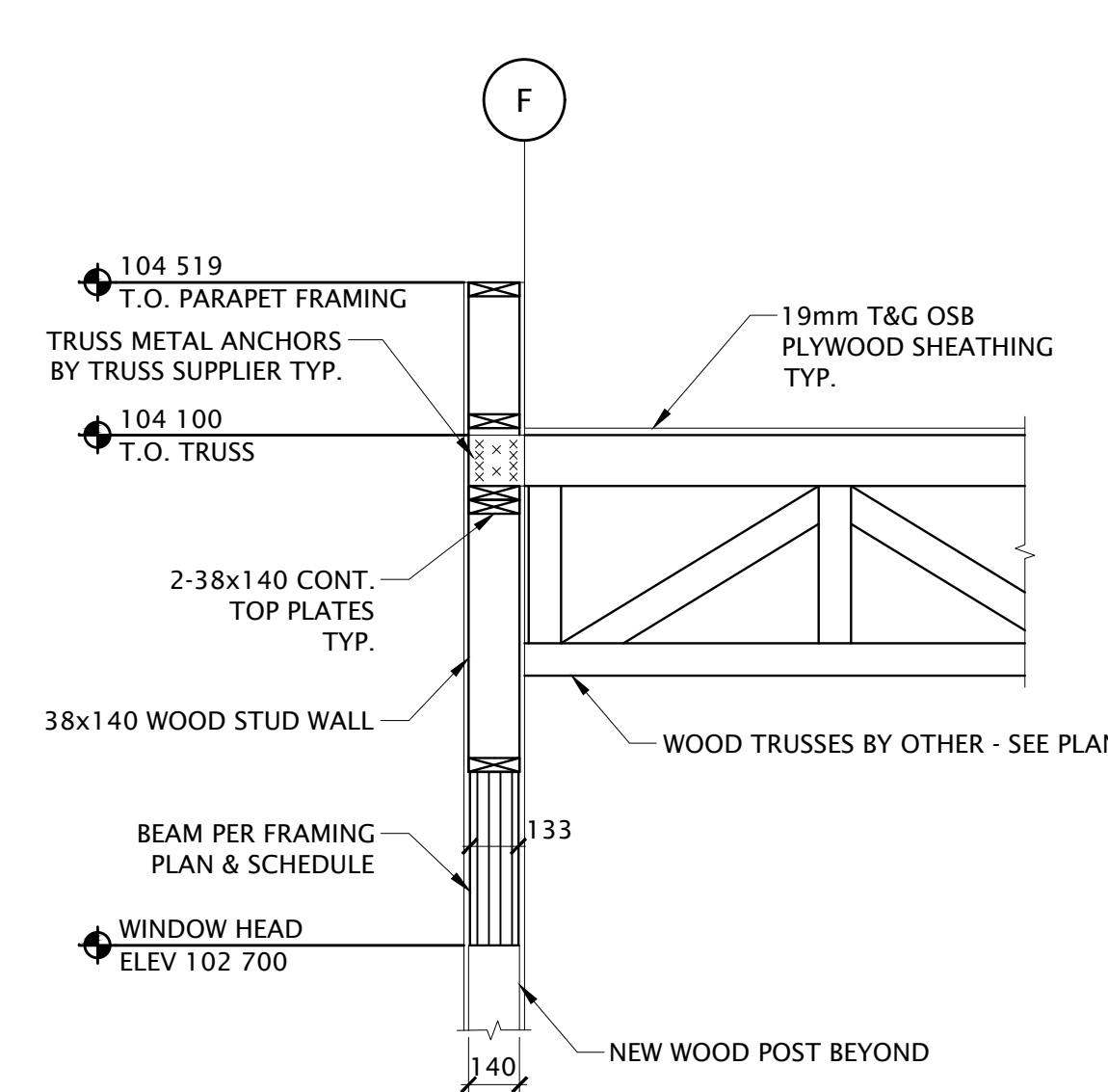
ROOF UPLIFT DIAGRAM



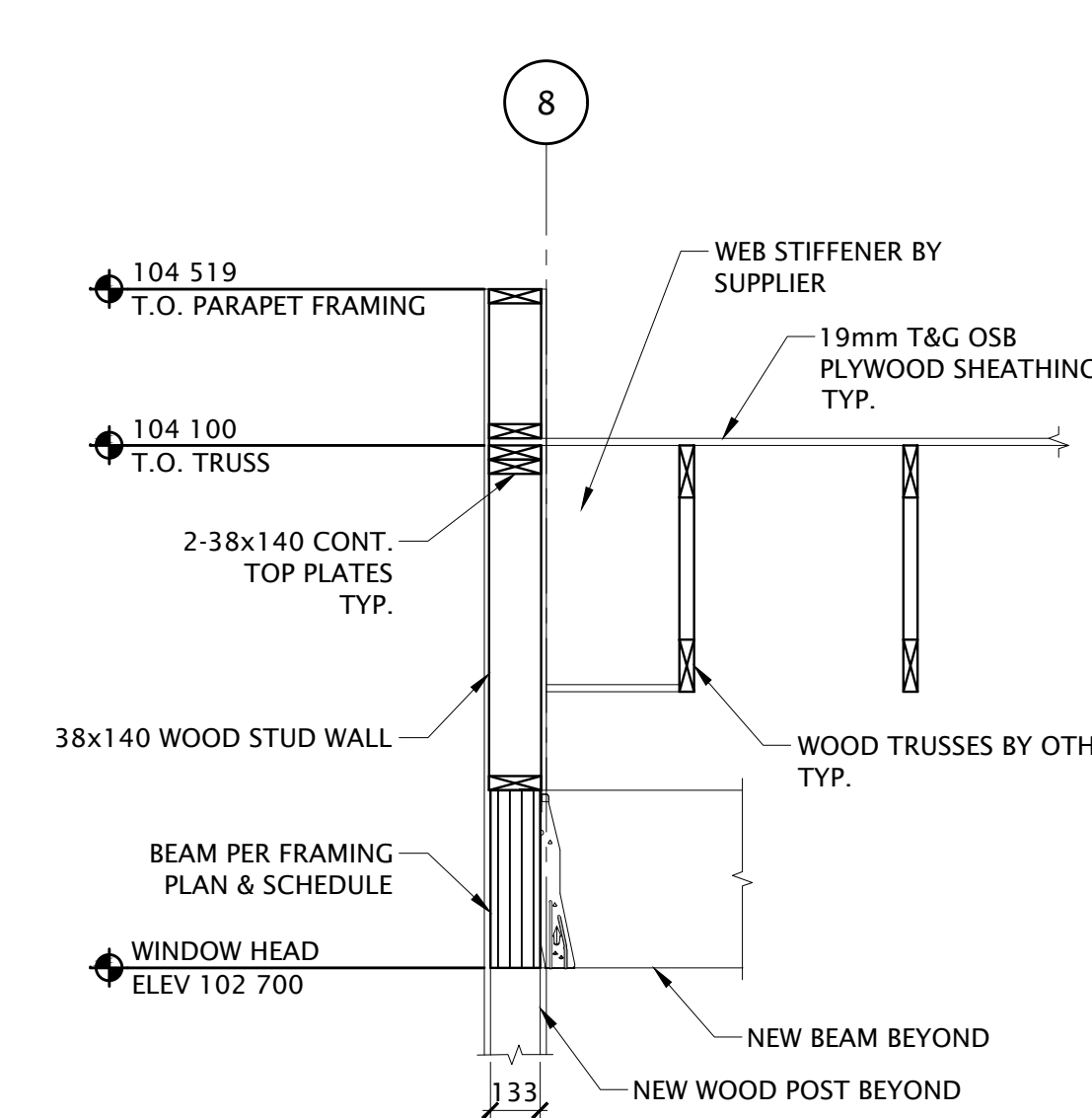
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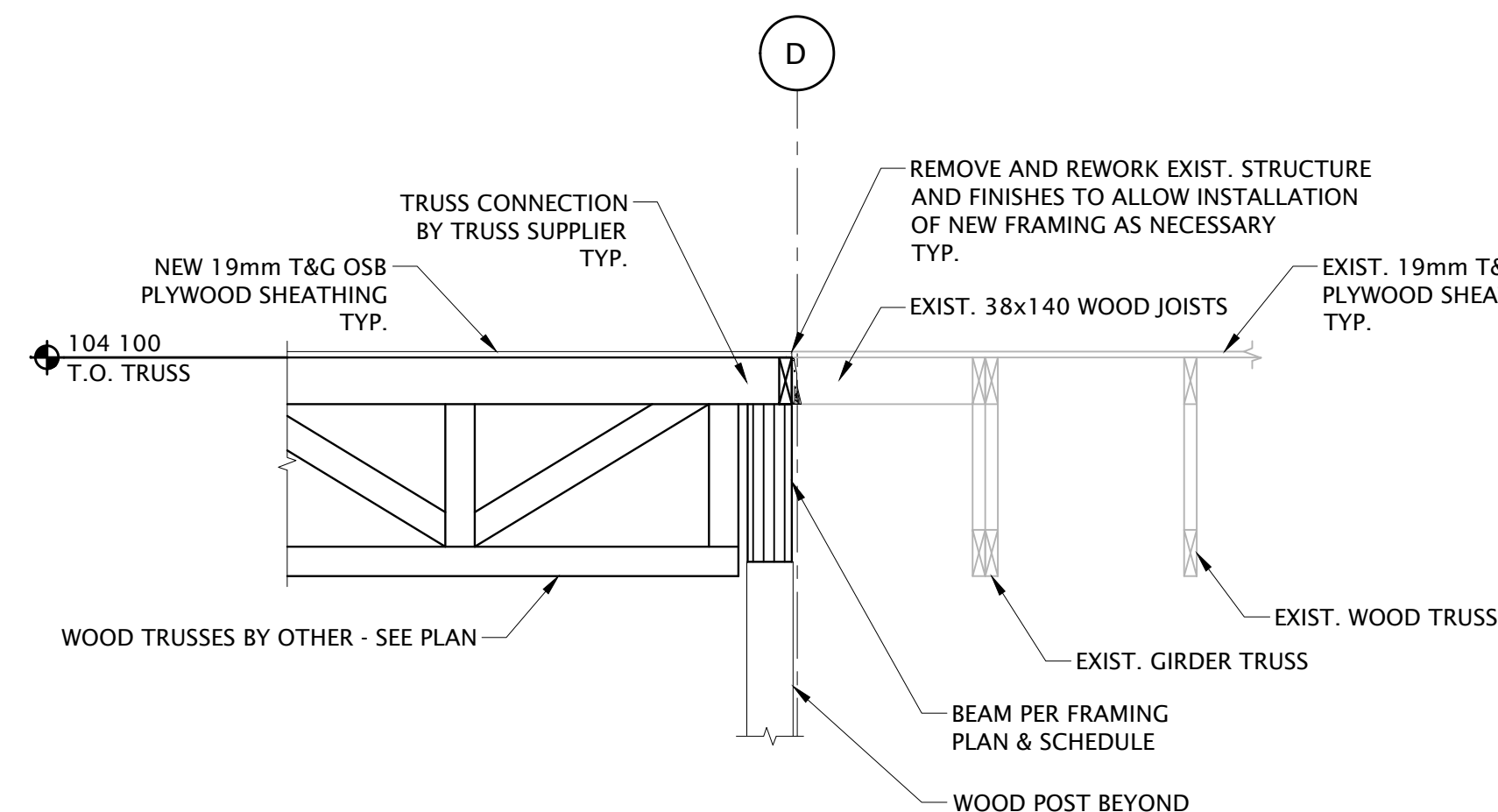
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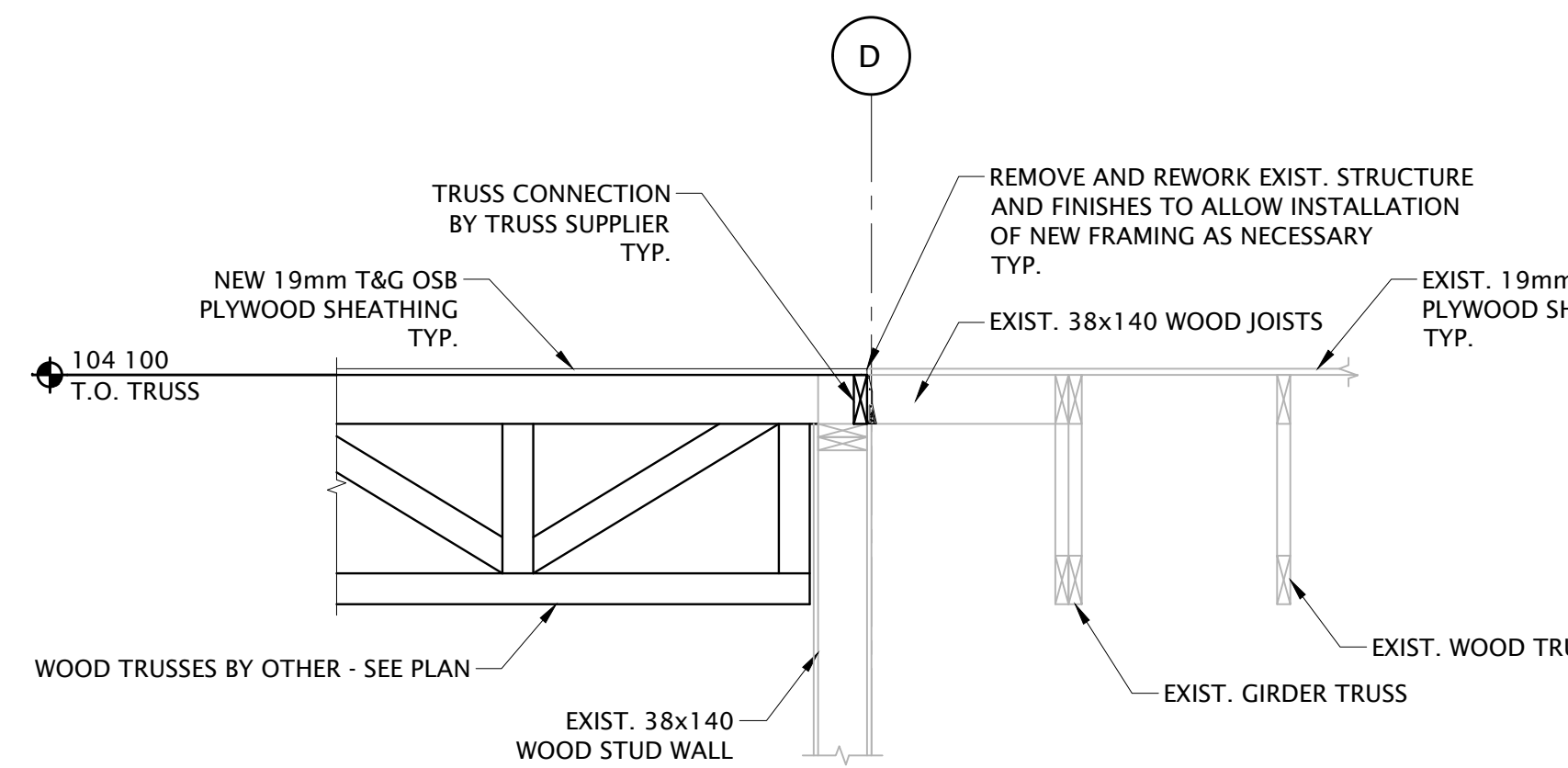
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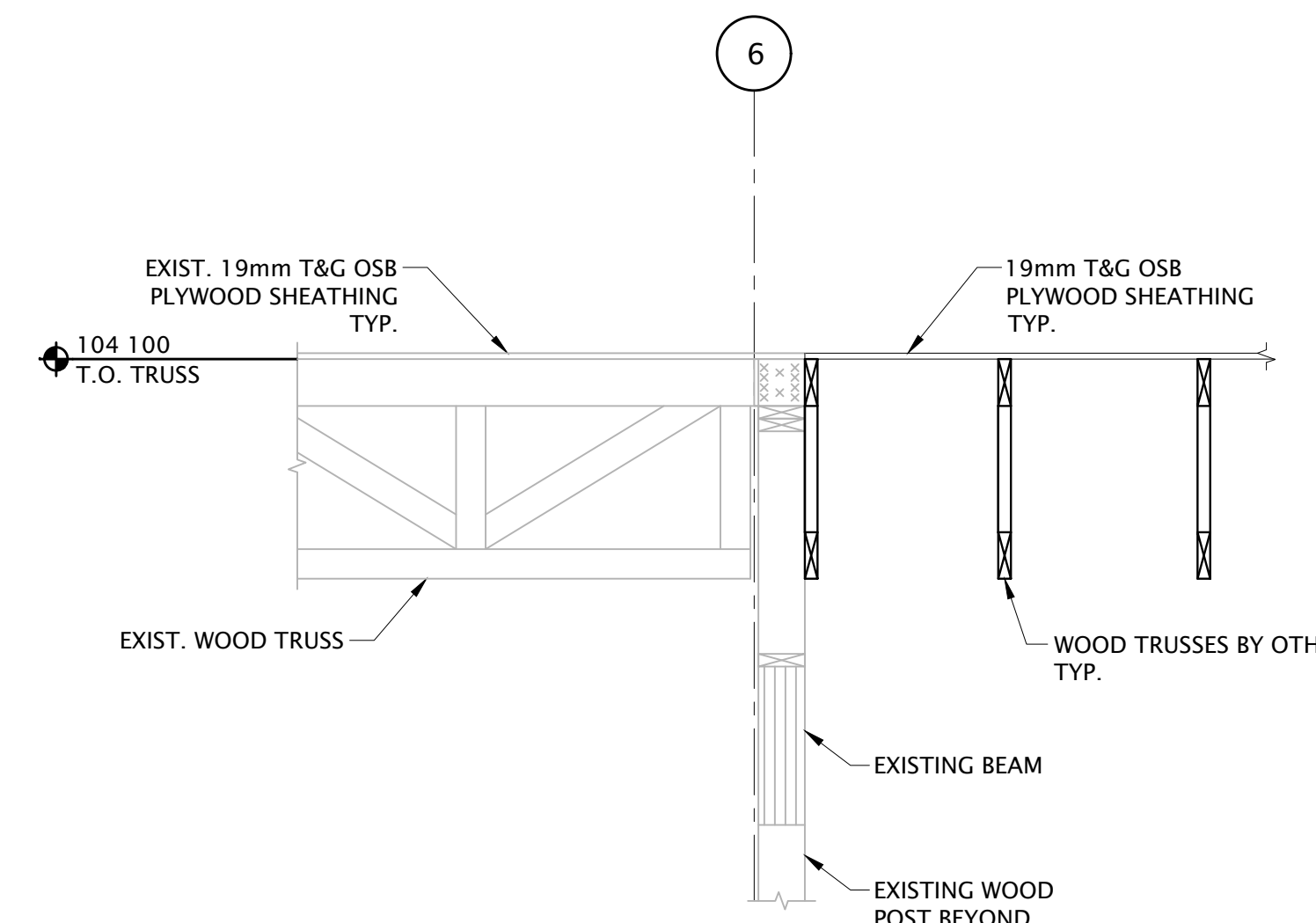
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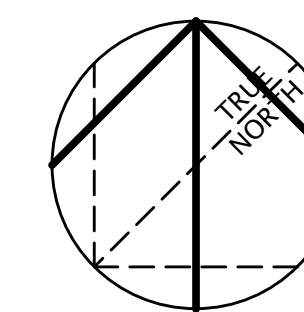
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08 S-06 1:20



09 S-06 1:20



DATE	ISSUED FOR	REV
2018-02-07	ISSUED FOR 60% REVIEW	
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2018-03-02	ISSUED FOR 95% REVIEW	
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 Bruce G. McKeown, Architect, A.A.A. & Arch. M.A.B.C.  
 Andrew Taylor, P.Eng., A.P.E.G.A. & Arch. M.A.B.C.  
 Chris The, P.Eng., A.P.E.G.A.

Project Manager	Drawn
D. HIDER	
Project Leader	Checked
D. HIDER	A. TODEILA

**Client**  
 RCMP

**Project**  
 INNISFAIL PDSTC  
 LUNCHROOM EXPANSION

**Drawing Title**  
 PLANS AND SECTIONS  
 FOUNDATION PLAN,  
 FRAMING PLAN AND SECTIONS

Check Scale (may be photo reduced)  
 0 10m  
 Project No. NCCA17-0228  
 Drawing No. S-06