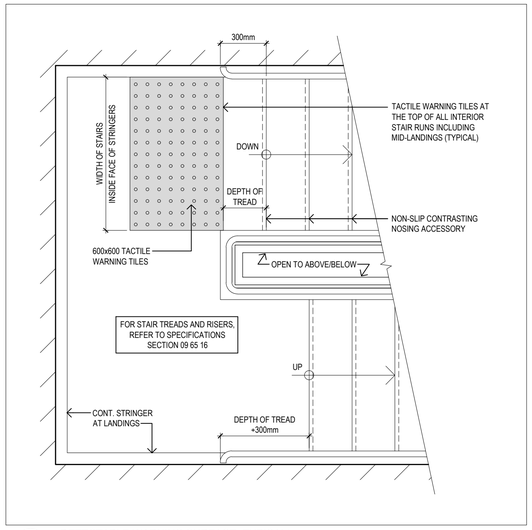
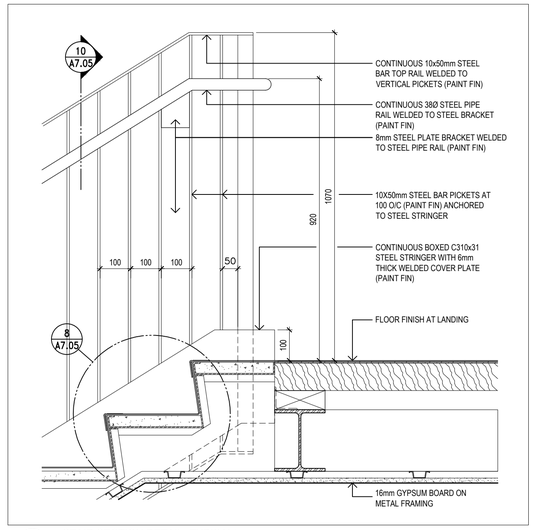
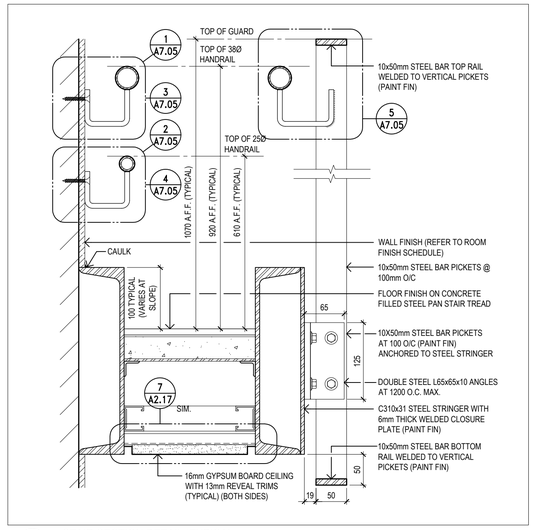


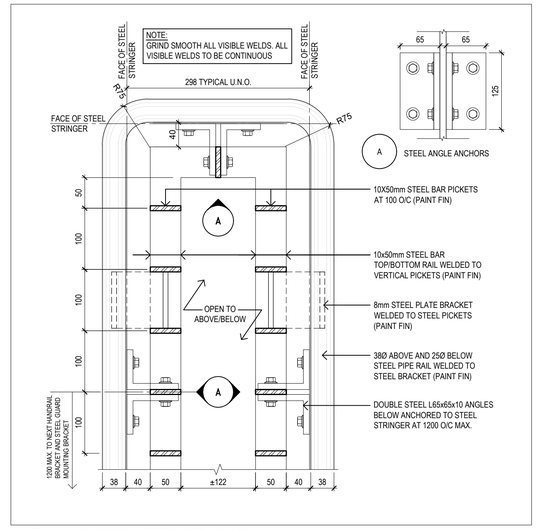
12 DETECTABLE WARNING SURFACE (TYPICAL)
N.T.S.



11 STAIR SECTION DETAIL (TYPICAL)
1 : 10



10 STAIR SECTION DETAIL (TYPICAL)
1:10



9 PLAN DETAIL AT STAIR MID LANDING
1 : 5

8 STAIR TREAD & NOSING DETAIL
1:5

7 HANDRAIL TERMINATION AT WALL
1 : 2

6 RESERVED
1 : 2

5 SLOPED HANDRAIL BETWEEN STEEL PICKETS
1 : 2

4 HORIZONTAL HANDRAIL ON WALL (CHILD HEIGHT)
1 : 2

3 HORIZONTAL HANDRAIL ON WALL
1 : 2

2 SLOPED HANDRAIL ON WALL (CHILD HEIGHT)
1 : 2

1 SLOPED HANDRAIL ON WALL
1 : 2

Key to Detail Location

NO. / NO. — Detail Number / Drawing Number

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1	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
2	18-09-11	ISSUED FOR 95% COMPLETION
3	18-10-03	ISSUED FOR PERMIT
4	19-03-20	ISSUED FOR COSTING
5	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
6	20-01-17	ISSUED FOR TENDER
7	20-01-29	ISSUED FOR ADDENDUM

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MOUNT DENNIS CHILDCARE CENTRE

1234 WESTON ROAD, TORONTO, ON M6M 4P8

STAIR DETAILS

scale:
date: 07/23/18
drawn: JK / CS&P
checked by: SL / CS&P
project number: 17026
drawing number: A7.05
Revision: 7

FILENAME: BIM 360://Mount Dennis Childcare Centre/A_17026_R18_MDCC.rvt

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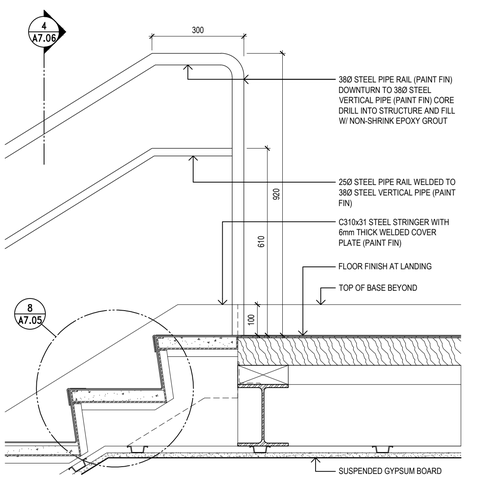
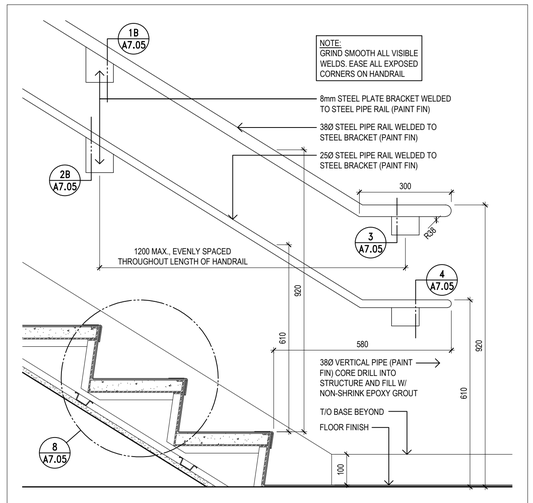
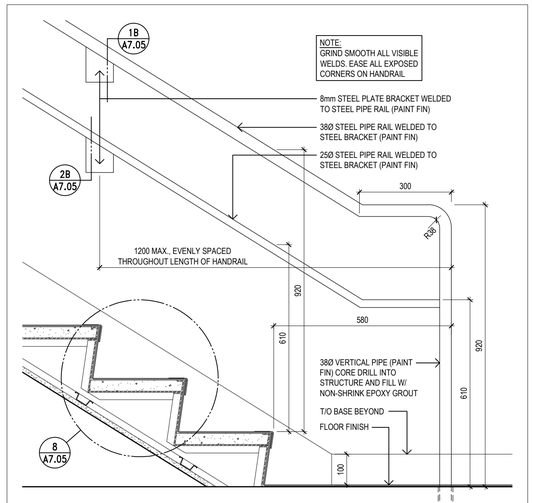


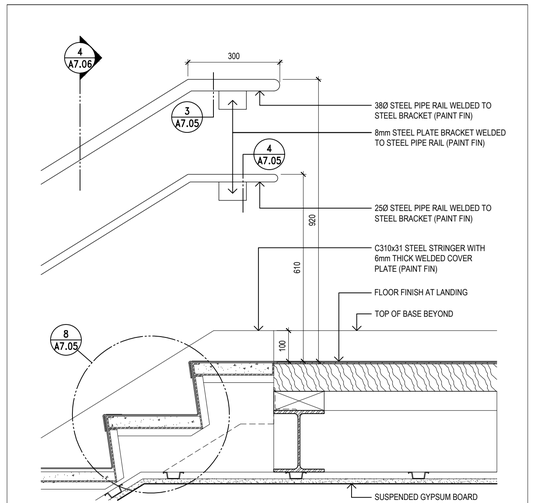
8 HANDRAIL DETAIL AT TOP OF STAIR
1 : 10



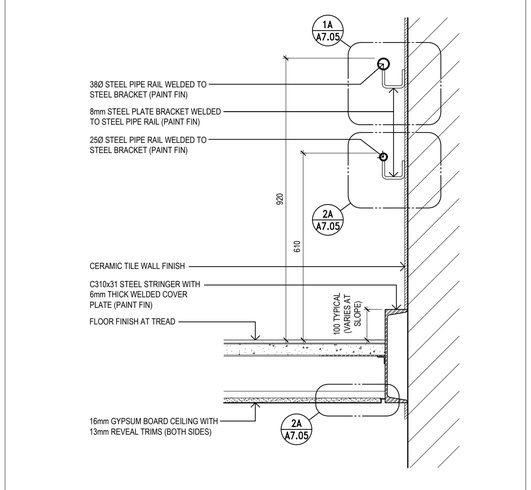
7 HANDRAIL DETAIL AT BOTTOM OF STAIR (WALL MOUNTED)
1 : 10



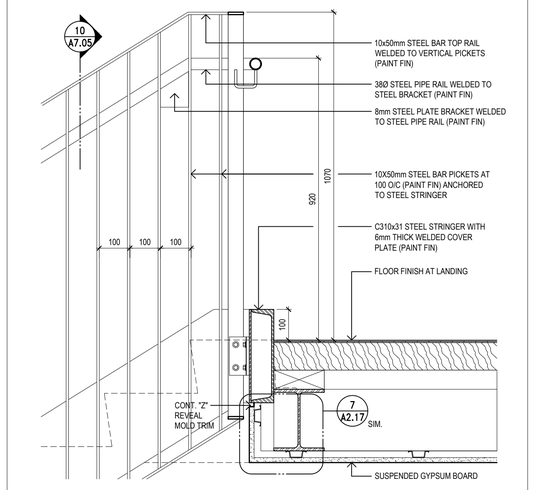
6 HANDRAIL DETAIL AT BOTTOM OF STAIR
1 : 10



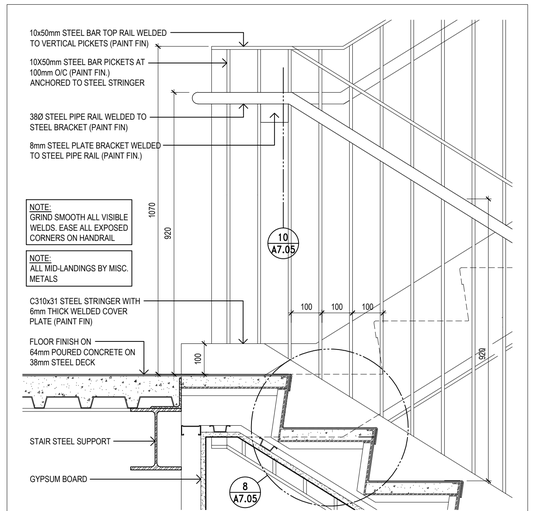
5 HANDRAIL DETAIL AT TOP OF STAIR (WALL MOUNTED)
1 : 10



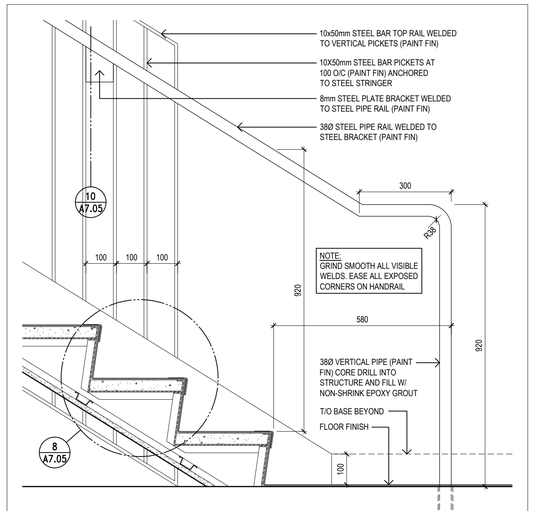
4 HANDRAIL DETAIL (WALL MOUNTED)
1 : 10



3 GUARD RAIL DETAIL AT TOP OF STAIR
1 : 10



2 GUARD RAIL DETAIL AT MID-LANDING
1 : 10



1 GUARD RAIL DETAIL AT BOTTOM OF STAIR
1 : 10

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NO. (Drawing Number)

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STAIR DETAILS

scale:
date: 07/26/18
drawn: JK / CS&P
checked by: SL / CS&P
project number: 17026
drawing number: A7.06
Revision: 7

FILENAME: BIM 360://Mount Dennis Childcare Centre/A_17026_R18_MDCC.rvt

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GENERAL NOTES - DOOR SCHEDULE

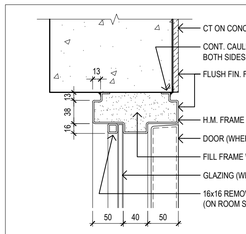
1. DOOR SCHEDULE TO BE READ IN CONJUNCTION WITH ROOM FINISH SCHEDULE, DRAWINGS, AND SPECIFICATIONS.
2. DOOR NUMBER: THE PREFIX "X" IN FRONT OF THE DOOR NUMBER DESIGNATES AN EXTERIOR DOOR. THE DOOR NUMBER IS THE ROOM NUMBER. WHERE TWO DOORS EXIST IN THE SAME ROOM, THE SUFFIX '.1' OR '.2' DIFFERENTIATES THE TWO DOORS (eg. '201.1' AND '201.2'.
3. DOOR TYPE AND SIZE: ALL DOORS IN WOOD AND HM FRAMES ARE 45mm THICK, WIDTH AND HEIGHT AS NOTED ON SCHEDULE. A LETTER (eg. 'A') IN THE DOOR TYPE COLUMN REFERS TO THE DOOR TYPES DRAWING. THE NOTE '2x' INDICATES A PAIR OF DOORS OF EQUAL WIDTH.
4. DOOR GRILLES CANNOT BE INSTALLED IN FIRE DOORS. WHERE 2 NUMBERS ARE INDICATED, THEY REFER TO THE SIZES OF THE DOOR GRILLE REQUIRED (IN mm, HEIGHT FIRST). FOR A PAIR OF DOORS, A GRILLE IS REQUIRED IN EACH LEAF.
5. A 1 HOUR RATING "HR", INDICATES THE REQUIRED FIRE LABEL ON THE DOOR AND FRAME.
6. FOR DETAILS OF HARDWARE, SEE SPECIFICATIONS SECTION 08 70 00.
7. AN ASTERISK (*) IN ANY COLUMN INDICATES A REFERENCE TO A NOTE IN THE REMARKS COLUMN TO THE RIGHT.
8. REFER TO ROOM FINISH SCHEDULE - LIST OF MATERIALS FOR P (PAINT), ST (STAIN), AND COLOURS INDICATED IN THE DOOR AND FRAME FINISH COLUMNS.
9. THE GENERAL CONTRACTOR IS RESPONSIBILE TO SITE VERIFY AND MEASURE OPENINGS ON SITE AND VERIFY DOOR SIZES INDICATED IN DOOR SCHEDULE PRIOR TO FABRICATION. NOTIFY CONSULTANT OF ANY DISCREPANCIES.
10. FRAMES FLUSH TO WALL FACE ON CORRIDOR SIDE OF WALL. GLAZING AND REMOVABLE STOPS ON ROOM SIDE OF SCREEN.
11. REFER TO DETAIL 16 ON DRAWING A10.01 FOR WOOD STOP DETAIL FOR ALL WOOD DOORS WITH GLASS LITE.
12. REFER TO DETAIL 8/A8.05 FOR GYPSUM BOARD REVEALS AROUND DOOR AND SCREEN FRAMES.
13. PROVIDE DOOR CONTACTS AT ALL EXTERIOR DOORS.
14. REFER TO DETAIL 5/A10.01 FOR DOOR TRANSOM (WHERE APPLICABLE)
15. PROVIDE 25mm UNDERCUT AT ALL DOORS EXCEPT FOR STAIR A & B DOORS AND MECHANICAL & ELECTRICAL ROOM DOORS.
16. ALL WOOD SCREENS AND DOOR FRAMES TO BE CLEAR FINISHED HARDWOOD. REFER TO SPECIFICATIONS 06 20 00.

ABBREVIATIONS - DOOR SCHEDULE

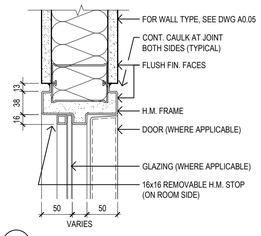
ADO	AUTO DOOR OPERATOR	GL-XX	GLASS TYPE (SPEC SECTION 08 80 00)
ALUM	ALUMINUM	HM	HOLLOW METAL
ANOD	ANODIZED	P	PAINT
CW	CURTAIN WALL	ST	CLEAR FINISHED
EX	EXISTING	WD	WOOD

DOOR SCHEDULE

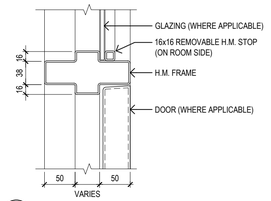
DOOR #	ROOM	ROOM #	DOOR TYPE	DOOR HEIGHT	DOOR WIDTH	DOOR MATERIAL	DOOR FINISH	DOOR GLASS TYPE	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FIRE RATING	REMARKS
BASEMENT FLOOR													
B01	OFFICE 3	B01	B	2350	1025	HM	PT	GL-8	F2	HM	PT		
B02	KITCHEN	B02	C	2350	1025	HM	PT	GL-8	F2	HM	PT		PART OF SCREEN SB0
B02A	KITCHEN STOR	B02A	A	2350	1025	HM	PT	-	F2	HM	PT		
B04.1	MECHANICAL	B04	A	2650	1025	HM	PT	-	F2	HM	PT		
B04.2	MECHANICAL	B04	A	2650	1025	HM	PT	-	F2	HM	PT		
B04.3	MECHANICAL	B04	A	2650	1025	HM	PT	-	F2	HM	PT		
B05	ELECTRICAL	B05	A	2350	1025	HM	PT	-	F2	HM	PT	3/4 HR	
B06	IT	B06	A	2350	1025	HM	PT	-	F2	HM	PT		
B07	WC	B07	A	2350	1025	HM	PT	-	F2	HM	PT		ADO
B08	FEMALE WC	B08	A	2350	1025	HM	PT	-	F2	HM	PT		ADO
B09	STROLLER STOR	B09	C	2350	1025	HM	PT	GL-8	F2	HM	PT		
B10	STORAGE	B10	A	2650	1025	HM	PT	-	F2	HM	PT		
B10A	BICYCLE STOR	B10A	A	2650	1025	HM	PT	-	F2	HM	PT		
B10B	CUST. STOR	B10B	A	2650	1025	HM	PT	-	F2	HM	PT	0 HR	
B10C	BATTERIES	B10C	A	2650	1025	HM	PT	-	F2	HM	PT	0 HR	
STA-00	STAIR A	STA-B	D	2350	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	PART OF SCREEN SSTA-00, FIRE EXIT DEVICE, ADO, ACCESS CONTROL
STB-00	STAIR B	STB-B	D	2350	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	PART OF SCREEN SSTB-00, FIRE EXIT DEVICE, ACCESS CONTROL
GROUND FLOOR													
100.1	VEST	100	C 2x	2650	2135	ALUM	ANOD	GL-6	F4	ALUM	ANOD		PART OF CW5.3, ACCESS CONTROL, REMOVABLE CENTRE MULLION, ADO
100.2	VEST	100	C 2x	2650	2150	ALUM	ANOD	GL-12	F6	ALUM	ANOD		PART OF SCREEN S100.2, ACCESS CONTROL, REMOVABLE CENTRE MULLION, ADO
102	STROLLER 1	102	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S102 WITH TRANSOM
103	INFANT CUBBIES	103	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S103 WITH TRANSOM
103A	STOR	103A	A 2x	2135	950	WD	ST	-	F1	WD	ST		
104.1	INFANT 1	104	C	2200	1026	ALUM	ANOD	GL-7	F4	ALUM	ANOD		PART OF CW8.1, ADO, ACCESS CONTROL
104.2	INFANT 1	104	C	2350	1025	WD	ST	GL-8		WD	ST		ADD SLIDER LOCK
104A	INFANT 1 WC	104A	A	900	982	WD	PT	-		WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
104B	MECH	104B	A	2350	1025	WD	PT	-	F1	WD	ST		
104C	SLEEP ROOM 1	104C	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S104C.1 WITH TRANSOM
105.1	INFANT 2	105	C	2200	1025	ALUM	ANOD	GL-7	F4	ALUM	ANOD		PART OF CW8.1, ADO, ACCESS CONTROL
105.2	INFANT 2	105	C	2350	1025	WD	ST	GL-8		WD	ST		ADD SLIDER LOCK
105A	INFANT 2 WC	105A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
105B	MECH	105B	A	2350	1025	WD	PT	-	F1	WD	ST		
105C	SLEEP ROOM 2	105C	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S105C.1 WITH TRANSOM
105D	INFANT STOR	105D	A	2350	1025	WD	PT	-	F1	WD	ST		
106	OFFICE 1	106	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S106.1 WITH TRANSOM, ADD SLIDER LOCK
108	UNIV. WC	108	A	2350	1025	WD	PT	-	F1	WD	ST		ADO, PUSH TO LOCK, EMERGENCY CALL SYSTEM, WITH TRANSOM
109	TODDLER 1	109	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S109.1 WITH TRANSOM, ADD SLIDER LOCK
109A	TODDLER 1 WC	109A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
109B	STORAGE	109B	A 2x	2350	1785	WD	PT	-	F1	WD	ST		WITH TRANSOM
109C	STORAGE	109C	A 2x	2350	1785	WD	PT	-	F1	WD	ST		WITH TRANSOM
110.1	TODDLER VEST	110	C	2200	1025	ALUM	ANOD	GL-7	F4	ALUM	ANOD		PART OF CW8.3, ADO, ACCESS CONTROL
110.2	TODDLER VEST	110	C	2350	1025	ALUM	ANOD	GL-12a	F4	ALUM	ANOD		PART OF SCREEN S110.2 WITH TRANSOM, ADO, ACCESS CONTROL
111	TODDLER 2	111	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S111 WITH TRANSOM, ADD SLIDER LOCK
112	TODDLER 3	112	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S112 WITH TRANSOM, ADD SLIDER LOCK
112A.1	TODDLER WC	112A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
112A.2	TODDLER WC	112A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
112B.1	TODDLER STOR 2	112B	A	2350	1025	WD	PT	-	F1	WD	ST		WITH TRANSOM
112B.2	TODDLER STOR 2	112B	A	2350	1025	WD	PT	-	F1	WD	ST		WITH TRANSOM
113	STROLLER 2	113	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S113 WITH TRANSOM
115	CORRIDOR	115	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S115, ADO, ACCESS CONTROL, WITH TRANSOM
116	CUST	116	A	2350	855	HM	PT	-	F2	HM	PT	0 HR	WITH TRANSOM
EXT-1	RECYCLING/REFUSE STOR	EXT-1	A 2x	2150	1760	HM	PT	-	F5	HM	PT		ONE LEAF 180 DEGREE SWING, REFER TO PLANS
EXT-2.1	INFANT OUTDOOR STORAGE	EXT-2	A 2x	2150	1760	HM	PT	-	F5	HM	PT		
EXT-2.2	INFANT OUTDOOR STORAGE	EXT-2	A 2x	2150	1760	HM	PT	-	F5	HM	PT		
EXT-3.1	TODDLER OUTDOOR STORAGE	EXT-3	A 2x	2150	1760	HM	PT	-	F5	HM	PT		
EXT-3.2	TODDLER OUTDOOR STORAGE	EXT-3	A 2x	2150	1760	HM	PT	-	F5	HM	PT		
STA-1.1	STAIR A	STA-1	A	2375	1125	HM	PT	-	F5	HM	PT	3/4 HR	FIRE EXIT DEVICE
STA-1.2	STAIR A	STA-1	D	2450	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	FIRE EXIT DEVICE, PART OF SCREEN SSTA-1.2, ADO, ACCESS CONTROL
STB-1.1	STAIR B	STB-1	A	2150	1125	HM	PT	-	F5	HM	PT	3/4 HR	FIRE EXIT DEVICE, DOOR ALARM
STB-1.2	STAIR B CORR	STB-1C	D	2350	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	FIRE EXIT DEVICE, PART OF SCREEN SSTB-1.2, ACCESS CONTROL, DOOR ALARM
SECOND FLOOR													
200	PRESCHOOL OUTDOOR PLAY	200	C	2350	1125	ALUM	ANOD	GL-7	F4	ALUM	ANOD		PART OF CW6.2 WITH TRANSOM, ADO
200A.1	PRESCHOOL STORAGE SHED	200A	A 2x	2150	1830	HM	PT	-	F5	HM	PT		
201	PRESCHOOL PLAY 1	201	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S201 WITH TRANSOM, ADD SLIDER LOCK
201A	PRESCHOOL 1 WC	201A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
201B	STOR	201B	A 2x	2350	1470	WD	PT	-	F1	WD	ST		WITH TRANSOM
201C	CLOSET	201C	A 2x	2350	800	HM	PT	-	F1	HM	PT		
202	CHILDREN WC	202	A	2350	1025	WD	PT	-	F1	WD	ST		WITH TRANSOM, ADO
203	STAFF WC	203	A	2350	1025	WD	PT	-	F1	WD	ST		WITH TRANSOM, ADO
203A	STAFF LOCKERS	203A	A	2350	1025	WD	PT	-	F1	WD	ST		WITH TRANSOM
204.1	JAN/STOR	204	A	2350	1025	HM	PT	-	F2	HM	PT	0 HR	
205	PRESCHOOL PLAY 2	205	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S205 WITH TRANSOM, ADD SLIDER LOCK
205A	PRESCHOOL 2 WC	205A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
205B	STOR	205B	A 2x	2350	1470	WD	PT	-	F1	WD	ST		WITH TRANSOM
205C	CLOSET	205C	A 2x	2350	800	HM	PT	-	F1	HM	PT		
206	PRESCHOOL PLAY 3	206	C	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S206 WITH TRANSOM, ADD SLIDER LOCK
206A	PRESCHOOL 3 WC	206A	A	900	982	WD	PT	-	F1*	WD	ST		*NO HEAD AT FRAME, SIDE JAMBS ONLY
206B	STORAGE	206B	A 2x	2350	1470	WD	PT	-	F1	WD	ST		WITH TRANSOM
206C	CLOSET	206C	A 2x	2350	800	HM	PT	-	F1	HM	PT		
207	STAFF	207	B	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S207 WITH TRANSOM, ADD SLIDER LOCK
208	LAUNDRY	208	C	2350	1025	WD	ST	GL-8	F1	WD	ST		WITH TRANSOM
210	OFFICE 2	210	B	2350	1025	WD	ST	GL-8	F1	WD	ST		PART OF SCREEN S210 WITH TRANSOM, ADD SLIDER LOCK
STA-2	STAIR A	STA-2	D	2650	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	PART OF SCREEN SSTA-2, FIRE EXIT DEVICE, ADO, ACCESS CONTROL
STB-2.1	STAIR B	STB-2	D	2650	1125	HM	PT	GL-9	F3	HM	PT	3/4 HR	PART OF SCREEN SSTB-2, FIRE EXIT DEVICE, ACCESS CONTROL, DOOR ALARM
ROOF LOW POINT													
R100	ROOF SERVICE SPACE	R100	A	2135	850	HM	PT	-		HM	PT		REFER TO DETAIL 1/A2.11, GATE BY MISC. METALS SPEC SECTION 05 50 00



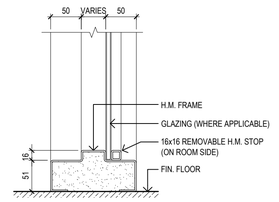
1 **JAMB/HEAD (TYPE F3)**
HOLLOW METAL FRAME AT CONCRETE WALL



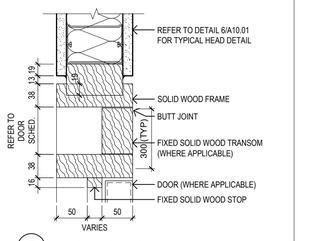
2 **JAMB/HEAD (TYPE F2)**
HOLLOW METAL FRAME AT GWB PARTITION



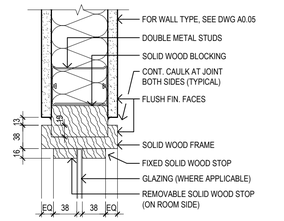
3 **JAMB**
HOLLOW METAL INTERMEDIATE FRAME AT DOOR/SCREEN



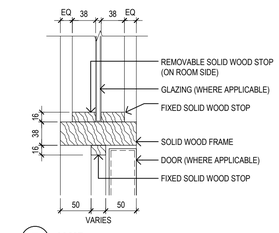
4 **BASE/SILL**
HOLLOW METAL FRAME AT FLOOR/SILL



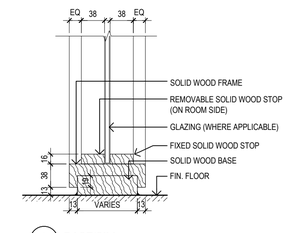
5 **JAMB/HEAD (TYPE F1)**
WOOD FRAME AT DOOR



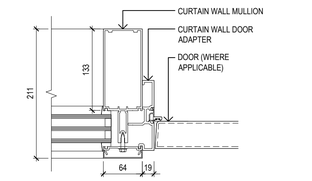
6 **JAMB/HEAD**
WOOD FRAME AT SCREEN



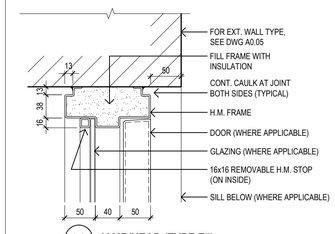
7 **JAMB**
WOOD FRAME AT DOOR/SCREEN



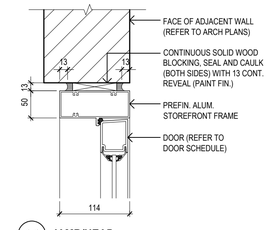
8 **BASE/SILL**
WOOD FRAME AT SCREEN



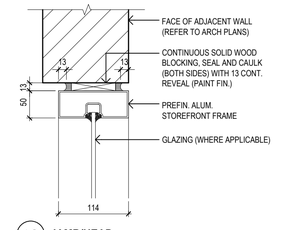
9 **CURTAIN WALL DOOR (TYPE F4)**
ALUMINUM CURTAIN WALL WITH DOOR ADAPTER



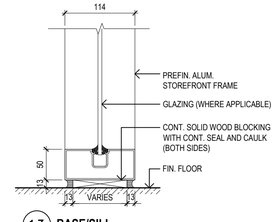
10 **JAMB/HEAD (TYPE F5)**
HOLLOW METAL FRAME AT EXTERIOR WALL



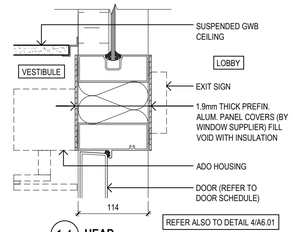
11 **JAMB/HEAD**
STOREFRONT FRAME AT DOOR



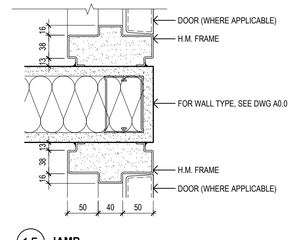
12 **JAMB/HEAD**
STOREFRONT FRAME AT SCREEN



13 **BASE/SILL**
STOREFRONT FRAME AT SCREEN

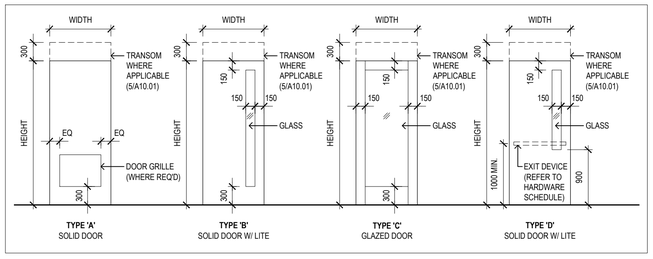


14 **HEAD**
ALUM. CLOSURE PANEL AT SCREEN

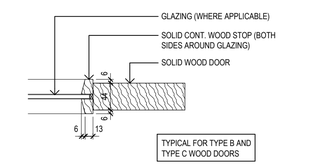


15 **JAMB**
HOLLOW METAL FRAMES AT GWB PARTITION

1 **DOOR FRAME/SCREEN DETAILS**
1 : 5



2 **DOOR TYPES**
1 : 50



16 **WOOD STOP DETAIL**
WOOD DOOR WITH GLASS LITE

Key to Detail Location

NO. / NO. — Detail Number / Drawing Number

If this sheet is not 33 1/8" x 23 3/8" (841 x 594 mm) It is a reduced print - Read dwg. accordingly.

Contractors must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

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Drawings should not be scaled.

#	Date	Revision/Issued:
1	18-05-11	ISSSUED FOR DESIGN DEVELOPMENT
2	18-06-29	ISSUED FOR 50% CONTRACT DOCUMENTS
3	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-03-20	ISSUED FOR COSTING
7	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
8	20-01-17	ISSUED FOR TENDER
9	20-01-29	ISSUED FOR ADDENDUM

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MOUNT DENNIS CHILDCARE CENTRE

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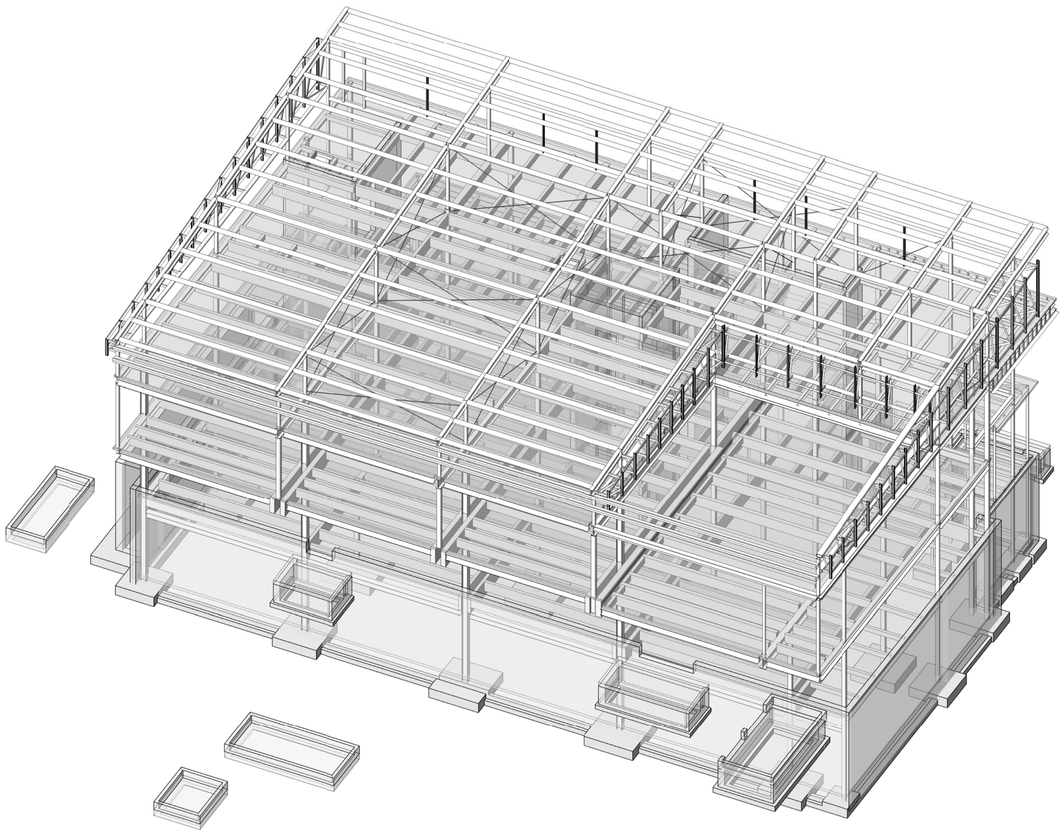
DOOR SCHEDULE & DOOR, SCREEN DETAILS

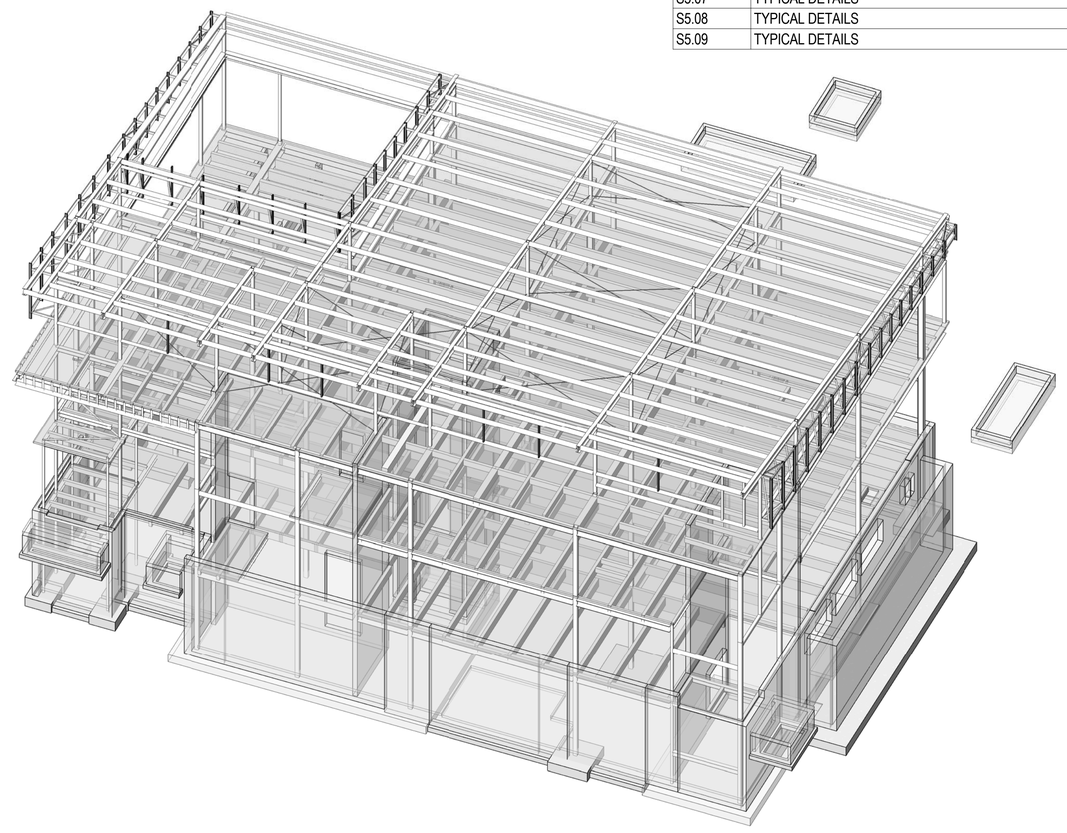
scale:	As indicated
date:	05/09/18
drawn:	JK / CS&P
checked by:	SL / CS&P
project number:	17026
drawing number:	A10.01
Revision:	9

FILENAME: BIM 360://Mount Dennis Childcare Centre/A_17026_R18_MDCC.rvt

DRAWING LAST EDITED 2020-01-29 2:40:16 PM

DRAWING LIST	
Sheet Number	Sheet Name
S0.00	COVER PAGE
S0.01	GENERAL NOTES
S1.01	FOUNDATION PLAN
S1.02	GROUND FLOOR FRAMING PLAN
S1.03	SECOND FLOOR FRAMING PLAN
S1.04	ROOF FRAMING PLAN
S1.05	PV SUPPORT FRAMING PLAN
S2.02	COLUMN SCHEDULE
S3.01	FOUNDATION SECTIONS
S3.02	FOUNDATION SECTIONS
S3.03	FOUNDATION SECTIONS
S3.04	WALL SECTIONS
S3.05	WALL SECTIONS
S3.06	WALL SECTIONS
S3.07	WALL SECTIONS
S3.08	FLOOR SECTIONS
S3.09	ROOF & PV SUPPORT FRAMING SECTIONS
S4.01	WALL ELEVATIONS
S4.02	SHEAR WALL DETAILS
S5.01	GENERAL NOTES
S5.02	GENERAL NOTES
S5.03	GENERAL NOTES
S5.04	TYPICAL DETAILS
S5.05	TYPICAL DETAILS
S5.06	TYPICAL DETAILS
S5.07	TYPICAL DETAILS
S5.08	TYPICAL DETAILS
S5.09	TYPICAL DETAILS





MOUNT DENNIS CHILDCARE CENTRE

THIS COVER SHEET IS A DIAGRAMATIC 3D VIEW AND DOES NOT FORM PART OF THE DOCUMENTS

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CONCRETE MIX SCHEDULE

	STRENGTH AT 28 DAYS (Mpa)	SLUMP AT DELIVERY (mm)	AIR ENTRAINMENT	MAXIMUM W/C RATIO	EXPOSURE CLASSIFICATION
FOOTINGS & INTERIOR FOUNDATION WALLS	25	80 ± 20	- - - -	TO SUIT	N
EXTERIOR CONCRETE SLABS, SIDEWALKS, CURBS AND GUTTERS	32	80 ± 20	5 - 8 %	0.45	C - 2
(2) INTERIOR SLAB-ON-GRADE AND SLAB-ON-DECK	SUPERPLASTICIZED 25	BEFORE ADDITION OF SUPERPLASTICIZER 50 ± 20 AFTER ADDITION OF SUPERPLASTICIZER 150 ± 20	- - - -	0.50	N
LEAN MIX	5	150 MIX	- - - -	NO SUIT	N
EXPOSED EXTERIOR WALLS, FOUNDATION WALLS AND COLUMNS	25	80 ± 20	4 - 7 %	0.55	F - 2
FROST SLABS	35	80 ± 20	5 - 8 %	0.40	C - 1
(1) GROUT FOR MASONRY FILL/ BOND BEAMS	15 MIN. (FINE GROUT)	TO SUIT CONFORMING TO CSA A179 SUPERPLASTICIZER MAY BE USED	- - - -	- - - -	- - - -

1) FINE GROUT TO CONSIST OF (BY VOLUME)
   1. PART PORTLAND CEMENT (MASONRY CEMENT IS NOT ACCEPTABLE)
   2. 1/2 TO 3 PARTS FINE AGGREGATE (SEND) AND NO COARSE AGGREGATE.
2) SYNTHETIC FIBRES ADDED AT BATCHING PLANT. REFER TO SPECIFICATION.
   NOTE. IF CONCRETE IS TO BE "PUMPED" INCLUDE DETAILS IN MIX DESIGN SUBMISSION.

DESIGN CRITERIA NOTES

1. GENERAL
   1.1. THE PROJECT HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2012 OBC (O. REG. 332/12 AS AMENDED) INCLUDING CLAUSES 4.1.6.1(1), 4.1.6.4(3), 4.1.7 AND 4.1.8.
   1.2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR WHO IS SUPPLYING AND INSTALLING EQUIPMENT, THAT ALL ELEMENTS OF STRUCTURES LISTED IN TABLE 4.1.8.18 OF THE OBC 2012 ARE DESIGNED IN ACCORDANCE WITH CLAUSE 4.1.8.18.
   1.3. BUILDING IMPORTANCE CATEGORY (SNOW, WIND, AND EARTHQUAKE) IS NORMAL.
   1.4. MISCELLANEOUS METAL AND STAIR FABRICATORS SHALL:
      1.4.1. PROVIDE SHOP DRAWINGS TO THE ARCHITECT AND PROJECT ENGINEER PRIOR TO FABRICATION; STAMPED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER.
      1.4.2. DESIGN ALL GUARDS TO MEET LATERAL LOADS DESCRIBED IN OBC 4.1.5.14.
      1.4.3. DESIGN ALL HANDRAILS TO MEET LOADS DESCRIBED IN OBC 3.4.6.5(12).
      1.4.4. DESIGN ALL STAIRS TO SUPPORT A MINIMUM LIVE LOAD OF 4.8kPa.

2. LATERAL LOADS ON STRUCTURE
   2.1. WIND
      q(1/50) = 0.44kPa Ie = 1.0

   2.2. EARTHQUAKE
      Sa(0.2) = 0.21 PGA = 0.12 Fa =1.3
      Sa(0.5) = 0.12 SITE CLASS =D Fv = 1.4
      Sa(1.0) = 0.065 Rd = 1.5 Ie = 1.0
      Sa(2.0) = 0.021 Ro = 1.3 IeFaSa(0.2) = 0.273
      SFRS CONSISTS OFCONVENTIONAL CONCRETE SHEAR WALLS.
      CONVENTIONAL MOMENT:- RESISTING FRAMES
      METHOD OF ANALYSIS :- STATIC

3. FOUNDATION WALLS AND RETAINING WALL
   3.1. WALLS RETAINING EARTH ARE DESIGNED TO SAFELY WITHSTAND HORIZONTAL EARTH PRESSURE
      (P=K (Wt.h+q)
      K = 0.45
      Wt = 20kN/m^3
      q = 12kPa
      h = 4.2 m
   3.2. THE WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL OR THE USE OF A DRAINAGE CORE TO PREVENT THE BUILD-UP OF HYDROSTATIC PRESSURE.

ENGINEERED FILL NOTES

1. GENERAL

   1.1. THE FOLLOWING ARE MINIMUM REQUIREMENTS FOR PLACING ENGINEERED FILL WITHIN THE BOUNDARIES OF THE BUILDING ENVELOPE AND EXTENDING BEYOND PERIMETER OF THE BUILDING FOUNDATIONS BY A MIN. OF 1200mm AND SLOPING DOWNWARD TO THE SUB-GRADE, IN ALL DIRECTIONS, AT 45° WHERE APPLICABLE.

2. MATERIALS

   2.1. ALL MATERIAL TO BE USED AS FILL MUST BE IMPORTED GRANULAR 'B' MATERIAL AS APPROVED BY THE SOIL CONSULTANT. REFER TO THE GEOTECHNICAL REPORT PREPARED BY "GEOPRO CONSULTING LIMITED" DATED JULY 09, 2018.

3. EXECUTION

   3.1. REMOVE AND DISPOSE OF ALL EXISTING ORGANIC MATERIAL, FILL, AND CONTAMINATED MATERIAL DOWN TO NATURAL UNDISTURBED, UN-CONTAMINATED SUB-GRADE.
   3.2. THE SUB-GRADE SHALL BE PROOF ROLLED WITH HEAVY VIBRATORY EQUIPMENT TO MIN. 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
   3.3. ANY LOOSE OR SOFT SPOT SHALL BE SUB-EXCAVATED AND BACKFILLED WITH APPROVED COMPACTED MATERIAL.
   3.4. FILL REQUIRED TO RAISE THE GRADES SHALL BE PER GEOTECHNICAL REPORT RECOMMENDATIONS.
   3.5. ALL PROCEDURES, EQUIPMENT AND MATERIALS SHALL BE APPROVED BY THE SOIL CONSULTANT WHO SHALL BE ENGAGED "FULL TIME" TO SUPERVISE THIS WORK.
   3.6. CONDITIONS AS OUTLINED IN THE CONTRACT DOCUMENTS ARE ASSUMED AND ARE BASED UPON INFORMATION AVAILABLE AT THE TIME THAT THE DOCUMENTS WERE PREPARED.
   3.7. NOTE THAT THE EXISTING ON-SITE MATERIAL IS NOT SUITABLE FOR BACKFILLING OF TRENCHES, ETC., OR AGAINST FOUNDATION WALLS. SEE GEOETCHNICAL REPORT FOR MORE DETAIL.

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

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1	18-06-29	ISSUED FOR 50% CONTRACT DOCUMENTS
2	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
3	18-09-11	ISSUED FOR 95% COMPLETION
4	18-10-03	ISSUED FOR PERMIT
5	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
6	19-05-07	ISSUED FOR TENDER
7	20-01-17	REISSUED FOR TENDER

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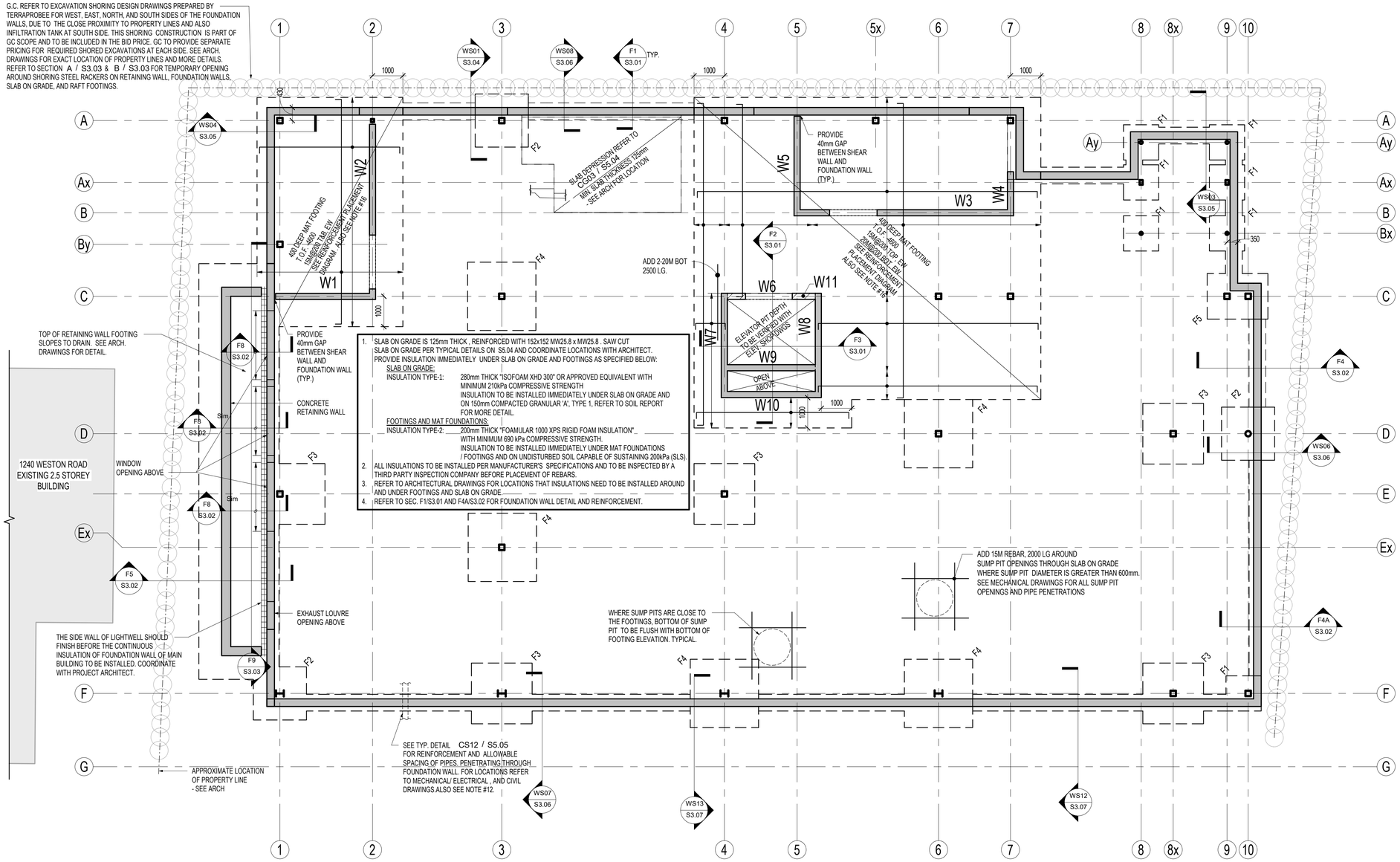
GENERAL NOTES

scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S0.01



FOUNDATION PLAN

1 : 75

FOOTING SCHEDULE							
FOOTING NUMBER	FOOTING LENGTH	FOOTING WIDTH	FOOTING THICKNESS	FOOTING BOTTOM REINF. E.W.	U/S FOOTING ELEVATION	FACTORED MAXIMUM LOAD (kN)	UNFACTORED MAXIMUM LOAD (kN)
F1	1160	1160	475	15M@200	-5000	230.00 kN	190.00 kN
F2	1750	1750	475	15M@225	-5000	510.00 kN	400.00 kN
F3	2000	2000	475	15M@225	-5000	760.00 kN	610.00 kN
F4	2250	2250	475	15M@200	-5000	1000.00 kN	760.00 kN
F5	2000	1500	475	15M@225	-5000	400.00 kN	320.00 kN

NOTE:
FOR FOOTING, BASEPLATE AND ANCHOR DETAILS, REFER TO DRAWING NUMBER S5.09 AND COLUMN SCHEDULE ON S2.02.

DRAWING LEGEND:

T	=	TRANSVERSE REINFORCING
L	=	LONGITUDINAL REINFORCING
TEW	=	TOP EACH WAY
BEW	=	BOTTOM EACH WAY
H.E.E.	=	HOOKED EACH END
T.O.F.	=	TOP OF FOUNDATION ELEVATION

TUL = TOP UPPER LAYER
TLL = TOP LOWER LAYER
BUL = BOTTOM UPPER LAYER
BLL = BOTTOM LOWER LAYER

REINFORCEMENT PLACEMENT DIAGRAM FOR MAT FOUNDATION EXCEPT AS NOTED

FOUNDATION PLAN NOTES:

1. WHERE FOOTINGS ARE NOT BEING FOUNDED IMMEDIATELY ON INSULATION TYPE-2 AS SPECIFIED IN PLAN, THEY SHALL BE FOUNDED ON UNDISTURBED SOIL CAPABLE OF SUSTAINING 200 kPa (SLS).
2. REFER TO GEOTECHNICAL REPORT NO. 17-2118GH DATED JULY 09, 2018. PREPARED BY GEOPRO CONSULTING LTD FOR FOUNDING SOIL DETAILS.
3. SOIL AT THE UNDERSIDE OF THE FOOTINGS AND INSULATION TYPE-2 IS TO BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF A SOILS CONSULTANT BEFORE PLACING CONCRETE.
4. REFER TO TYPICAL DETAILS ON S5.04 FOR SLAB ON GRADE CONSTRUCTION DETAILS.
5. CENTERLINES OF COLUMNS AND FOOTINGS ARE COINCIDENT UNLESS OTHERWISE NOTED.
6. PROVIDE SLAB DEPRESSIONS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, AS REQUIRED BY THE ARCHITECTURAL AND MECHANICAL DRAWINGS, AND SPECIFICATIONS REFER TO TYPICAL DETAIL CG03 / S5.04 FOR DETAILS.
7. UNLESS OTHERWISE NOTED, ALL FOUNDATION WALL FOOTINGS TO BE 250 mm DEEP WITH 150 mm PROJECTIONS EACH SIDE.
8. THE PROJECT SUPERINTENDENT MUST NOTIFY THIS OFFICE 24 HOURS PRIOR TO PLACING STRUCTURAL CONCRETE, INCLUDING STRIP FOOTINGS.
9. SEE ALSO TYPICAL NOTES AND DETAILS INCLUDED IN STRUCTURAL SET.
10. SEE COLUMN SCHEDULE FOR COLUMN SIZE AND DETAILS.
11. SEE CONCRETE SCHEDULE ON S0.01 FOR CONCRETE SPECIFICATIONS.
12. WHERE MECHANICAL SERVICE PIPES NOT LARGER THAN 305mm DIA. PASS THROUGH FOUNDATION WALL, PROVIDE STEEL SLEEVES, MIN. 50mm DIA. LARGER THAN PIPE. REFER TO TYPICAL DETAIL CS12 / S5.05 FOR REINFORCEMENT AROUND LARGER OPENINGS AND THEIR SPACING. ALSO REFER TO MECHANICAL / ELECTRICAL DRAWINGS FOR QUANTITY AND EXACT LOCATION OF WALL PENETRATIONS.
13. CONTRACTOR TO PROVIDE SHORED EXCAVATION AS REQUIRED. SEE ARCHITECTURAL PLANS FOR LOCATION OF PROPERTY LINE. SEE PLAN NOTE FOR MORE DETAILS.
14. FOR EXCAVATION SHORING NOTES REFER TO DRAWING S5.02.
15. FOR LOCATION, SIZE, AND DEPTH OF HOUSEKEEPING PADS REFER TO MECHANICAL DRAWINGS (IF REQUIRED).
16. SLAB ON GRADE LOCATED ABOVE MAT FOOTING AREAS WILL BE POURED ON ± 275mm THICK LEAN CONCRETE. REFER TO FOOTING SECTIONS FOR DETAILS.

SITE PREPARATION NOTES FOR SLAB-ON-GRADE (WITHIN BUILDING ENVELOPE)

1. THE AREA WITHIN THE BUILDING SHALL BE STRIPPED OF THE UPPER LAYER SOIL, FILL, ORGANICALLY CONTAMINATED MATERIAL AND RUBBLE AND TO A MINIMUM OF 200mm (8") BELOW THE UNDERSIDE OF THE SLAB ON GRADE.
2. THE EXPOSED SUB-GRADE SHALL BE EXAMINED AND APPROVED BY THE SOIL CONSULTANT.
3. THE ACCEPTABLE ENGINEERED FILL TO BE USED ON THE SLAB ON GRADE SHOULD BE GRANULAR 'B' TYPE 1. REFER TO SOIL REPORT FOR MORE DETAILS.
4. ANY LOOSE OR SOFT SPOTS ENCOUNTERED SHALL BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED APPROVED MATERIAL.
5. THE LAYER IMMEDIATELY BELOW THE SLAB-ON-GRADE'S INSULATION SHALL BE 150mm OF GRANULAR 'A' COMPACTED TO MIN. 100% AS SPECIFIED IN THE SOIL REPORT
6. ALL PROCEDURES, EQUIPMENT AND MATERIALS SHALL BE APPROVED BY THE SOIL CONSULTANT WHO SHALL CONDUCT SUFFICIENT TESTS TO ENSURE THAT THE SPECIFIED MATERIALS AND DENSITIES ARE ACHIEVED.
7. THE CONTRACTOR SHALL CO-ORDINATE WITH THE SOIL CONSULTANT AND ARRANGE A SUITABLE PROGRAM FOR SAMPLING AND INSPECTIONS, ETC. AND NOTIFY THE ARCHITECT ACCORDINGLY.
8. EXISTING ON-SITE MATERIAL SHALL NOT BE USED WITHIN THE BUILDING AREA FOR BACKFILLING IN TRENCHES AGAINST FOUNDATION WALLS OR UNDER SLABS-ON-GRADE UNLESS APPROVED BY GEOTECHNICAL ENGINEER.
9. REMOVAL OF EXISTING FILL AND SAND PLACEMENT OF COMPACTED FILLS MUST BE CARRIED OUT UNDER FULL TIME MONITORING BY THE GEOTECHNICAL ENGINEER FROM "GEOPRO".
10. REFER TO THE SPECIFICATION AND THE SOIL REPORT FOR PREPARATION OF AREAS OUTSIDE THE BUILDING ENVELOPE.

Key to Detail Location

NO. Detail Number
NO. Drawing Number

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4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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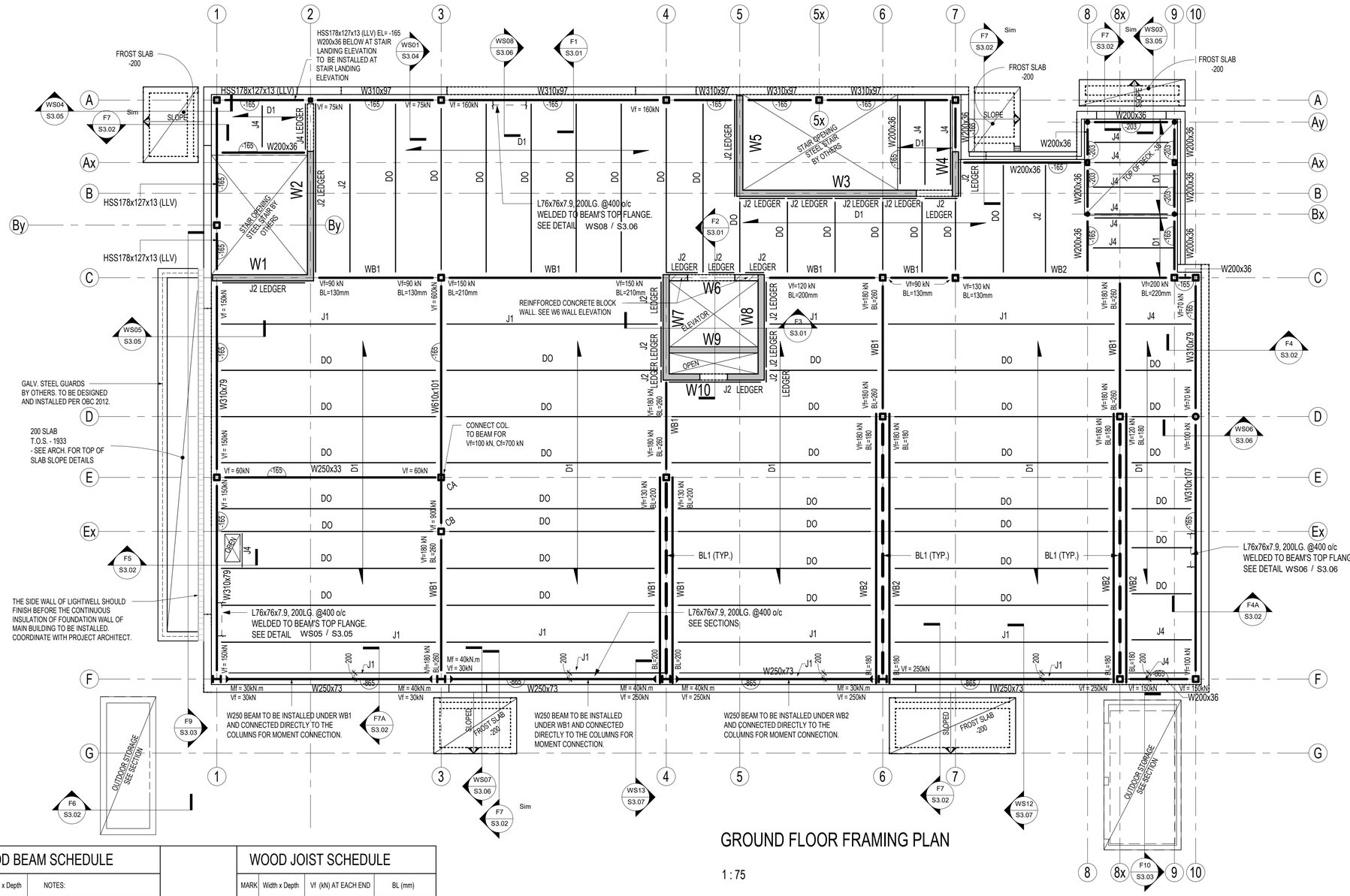
FOUNDATION PLAN

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S1.01



GROUND FLOOR FRAMING PLAN

1 : 75

WOOD BEAM SCHEDULE

MARK	Width x Depth	NOTES:
WB1	130x760	1. REFER TO PLAN FOR FACTORED SHEAR FORCE (Vf)& BEARING LENGTH (BL) OF WOOD BEAMS AT SUPPORTS. 2. CONTRACTOR TO SUBMIT STAMPED SHOP DRAWINGS FOR WOOD BEAM STEEL SEATS FOR CONSULTANT'S REVIEW. 3. SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED FOR THIS BUILDING. SEE ARCH. FOR FIRE RATING DETAILS.
WB2	175x760	
WB3	130x608	
WB4	130x570	
WB5	215x760	
WB6	265x836	
WB7	175x646	
WB8	215x836	
BL1	80x608 + 175x608 300 LG.	WOOD BLOCKING BETWEEN DOUBLE BEAMS @1000 O/C. CONNECT TO BEAMS WITH 3-19mm DIA. THROUGH BLOTS SPACED 180mm VERTICALLY C/W WASHERS AND NUTS.

WOOD JOIST SCHEDULE

MARK	Width x Depth	Vf (kN) AT EACH END	BL (mm)
J1	130x494	60	90
J2	130x418	45	70
J3	175x494	75	90
J4	130x228	40	70
J5	130x304	25	70
J6	265x418	SEE ROOF PLAN	SEE ROOF PLAN

NOTE:
1. JOIST MAXIMUM SPACING IS 1500mm.
2. HANGERS SHOULD BE SIMPSON STRONG-TIE HIGH-CAPACITY GIRDER HANGERS OR APPROVED EQUIVALENT. HEADER, WOOD NAILERS, AND JOISTS TO BE FLUSHED AT TOP.
3. SUBMIT HANGER'S SHOP DRAWINGS FOR CONSULTANT'S REVIEW.

WOOD BEAM /JOIST NOTE:
1. ALL WOOD MEMBERS ARE "GLULAM-E, SPRUCE-PINE, 20f-E" UNLESS NOTED OTHERWISE.
2. ALL WOOD MEMBERS SHALL BE INSTALLED INDOOR AND TO BE KEPT IN DRY CONDITION.
3. PENETRATION THROUGH BEAMS AND JOIST IS NOT PERMITTED.
4. WOOD MEMBERS SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

DECK SCHEDULE

MARK	DESCRIPTION
D1	89mm S-P-F COMMERCIAL GRADE DECKING. 1- D1 SHOULD BE CONNECTED TO BEAMS/JOISTS PER DETAIL W02 / S5.08 2- SEE DRAWING NOTE FOR CONNECTION BETWEEN D1 AND LEDGER BEAMS. 3- CONTRACTOR TO SUBMIT A FLOOR PLAN SHOWING LOCATION AND SIZE OF MECHANICAL AND ELECTRICAL PENETRATIONS THROUGH DECK FOR STRUCTURAL CONSULTANT'S REVIEW BEFORE PROCEEDING WITH WORK.

LEGEND

CA:	COLUMN ABOVE	ASL:	ACCUMULATED SNOW LOAD
CB:	COLUMN BELOW	SDL:	SUPERIMPOSED DEAD LOAD
WB:	WOOD BEAM	BL:	BEARING LENGTH (mm)
CANT:	CANTILEVER	-165	TOP OF JOIST/BEAM ELEVATION FROM FLOOR DATUM ELEVATION IN (mm).
CONT:	CONTINUOUS	T.O.S. :	TOP OF SLAB
RA:	ROOF ANCHOR		

GROUND FLOOR FRAMING PLAN NOTES:

1. TOP OF STRUCTURAL DECK IS +/-0.00 FROM DATUM ELEVATION 0.00m UNLESS NOTED ON PLAN. FINISHED GROUND FLOOR DATUM ELEVATION IS 0.00m
2. DESIGN LOADS:
   -LIVE LOAD: 4.8 kPa
   -PARTITIONS: 1.0 kPa
   -FINISHES & MEP ITEMS: 1.0 kPa
3. SUBMIT DETAILS FOR ALL OPENINGS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, TO THE STRUCTURAL CONSULTANT FOR REVIEW.
4. LOCATION OF MECHANICAL EQUIPMENT LOADS ARE TO BE CONFIRMED BY THE MECHANICAL CONTRACTOR AND SUBMITTED TO STRUCTURAL CONSULTANT FOR REVIEW BEFORE PROCEEDING WITH INSTALLATION.
5. NON - LOAD BEARING PARTITIONS BY CONTRACTOR'S FORCES. ALLOW FOR 25mm FLOOR DEFLECTION ABOVE ALL PARTITIONS.
6. REFER TO TYPICAL DETAILS FOR STEEL BEAM AND GIRDER DESIGNATIONS DETAIL.
7. DESIGN ALL STEEL BEAM CONNECTIONS FOR THE FACTORED VERTICAL SHEAR FORCES AND MOMENTS NOTED ON PLAN. WHERE NO FORCE IS INDICATED, DESIGN THE CONNECTION FOR A MINIMUM FACTORED VERTICAL SHEAR FORCE OF 100kN. WHERE BOLTED CONNECTION ARE EMPLOYED, A MINIMUM OF 2 BOLTS MUST BE PROVIDED AT ALL STEEL BEAM CONNECTIONS. 'M' DENOTES MOMENT CONNECTION, AND THE CORRESPONDING FACTORED MOMENT IS IN kN-m.
8. SEE TYPICAL NOTES, TYPICAL DETAILS, COLUMN SCHEDULE AND ALL OTHER DRAWINGS BEFORE PROCEEDING WITH WORK.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE PROOFING REQUIREMENTS.
10. LIGHT AND DUCT HANGERS WITH MAX. 60 kg TENSION LOAD CAN BE HUNG FROM FLOOR DECK. LARGER POINT LOADS MUST BE APPLIED TO STRUCTURAL FRAMING UNLESS OTHERWISE SHOWN OR APPROVED BY THE STRUCTURAL CONSULTANT. COORDINATE LOCATIONS WITH MECHANICAL CONSULTANTS.
11. MAXIMUM WEIGHT OF MECHANICAL EQUIPMENT TO BE HUNG FROM FLOOR JOISTS/ BEAMS IS LIMITED TO 300 KG (TOTAL). MINIMUM FOUR HANGERS CONNECTED TO TWO ADJACENT JOISTS SHOULD BE USED TO SUSPEND ANY PIECE OF EQUIPMENT WEIGHING GREATER THAN 150 KG (TOTAL). INSTALL ADDITIONAL SECONDARY MEMBER BETWEEN JOISTS IF UNIT CAN NOT BE INSTALLED DIRECTLY UNDER FLOOR JOISTS/ BEAMS. LOCATION OF SUSPENDED EQUIPMENT TO BE COORDINATED WITH MECHANICAL/ ELECTRICAL DRAWINGS.
12. ALL STEEL BEAMS SHOULD BE CONNECTED TO D1 & JOIST HANGERS USING WOOD NAILER AS SPECIFIED IN TYPICAL DETAIL W05 / S5.08 , U.N.O.
13. INSTALL L76x76x7.9, 200 LONG @ 400 O/C ON TOP FLANGE OF ALL PERIMETER STEEL BEAMS OF GROUND FLOOR. SEE SECTION F4A / S3.02 FOR DETAIL.
14. CONNECT LEDGER BEAM TO CONCRETE WALL WITH 20mm DIA HILTI HAS-E THREADED ROD , 120mm EMBEDMENT USING HILTI HIT-HY 200 SYSTEM. INSTALL RODS @260mm o/c, c/w WASHERS AND NUTS. ANCHOR RODS TO BE INSTALLED AT 200mm FROM TOP OF LEADGER BEAMS AND BETWEEN DECK TO LEDGE BEAMS LAG SCREWS.
15. TOP OF FOUNDATION WALL ELEVATION VARIES AROUND BUILDING. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND LOCATIONS. REFER TO DETAIL CW02 / S5.05 FOR REINFORCEMENT DETAIL AT STEPPED AREAS.
16. ALL WOOD BEAM CONNECTIONS TO COLUMNS AND CONCRETE WALL BY CONTRACTOR'S FORCES. SUBMIT SEALED SHOP DRAWINGS FOR CONSULTANT REVIEW. SEE ALSO WOOD BEAM AND JOIST SCHEDULE NOTES.
17. CONNECT D1 TO LEDGER BEAMS AS FOLLOWS:
   - WHERE DECK PLANKS ARE PARALLEL TO LEDGER BEAMS, CONNECT PLANKS WITH 19mm DIA. LAG SCREW, 252mm LONG AND @ 150mm o/c
   - WHERE DECK PLANKS ARE PERPENDICULAR TO LEDGER BEAMS, CONNECT EACH PLANK WITH 19mm DIA. LAG SCREW, 252mm LONG.
   - LAG SCREWS TO BE INSTALLED AT MID WIDTH OF LEDGER BEAMS AND MIDDLE OF EACH PLANK.
18. CONNECT DOUBLE WOOD BEAMS ON GRID LINE "F" TO COLUMNS USING MINIMUM 3-19MM DIA. THROUGH BOLTS SPACED 180MM VERTICALLY C/W WASHERS AND NUTS. INSTALL WOOD BLOCKING BETWEEN DOUBLE BEAMS AND STEEL COLUMNS FOR A FIT-TIGHT CONNECTION AT ANCHOR LOCATIONS.
19. BEAMS, JOISTS, DECK, AND TIMBER FRAMING IS NOT TO BE CUT, NOTCHED, OR DRILLED THROUGH WITHOUT PRIOR REVIEW BY PROJECT STRUCTURAL CONSULTANT.

Key to Detail Location

NO. / NO. — Detail Number / Drawing Number

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4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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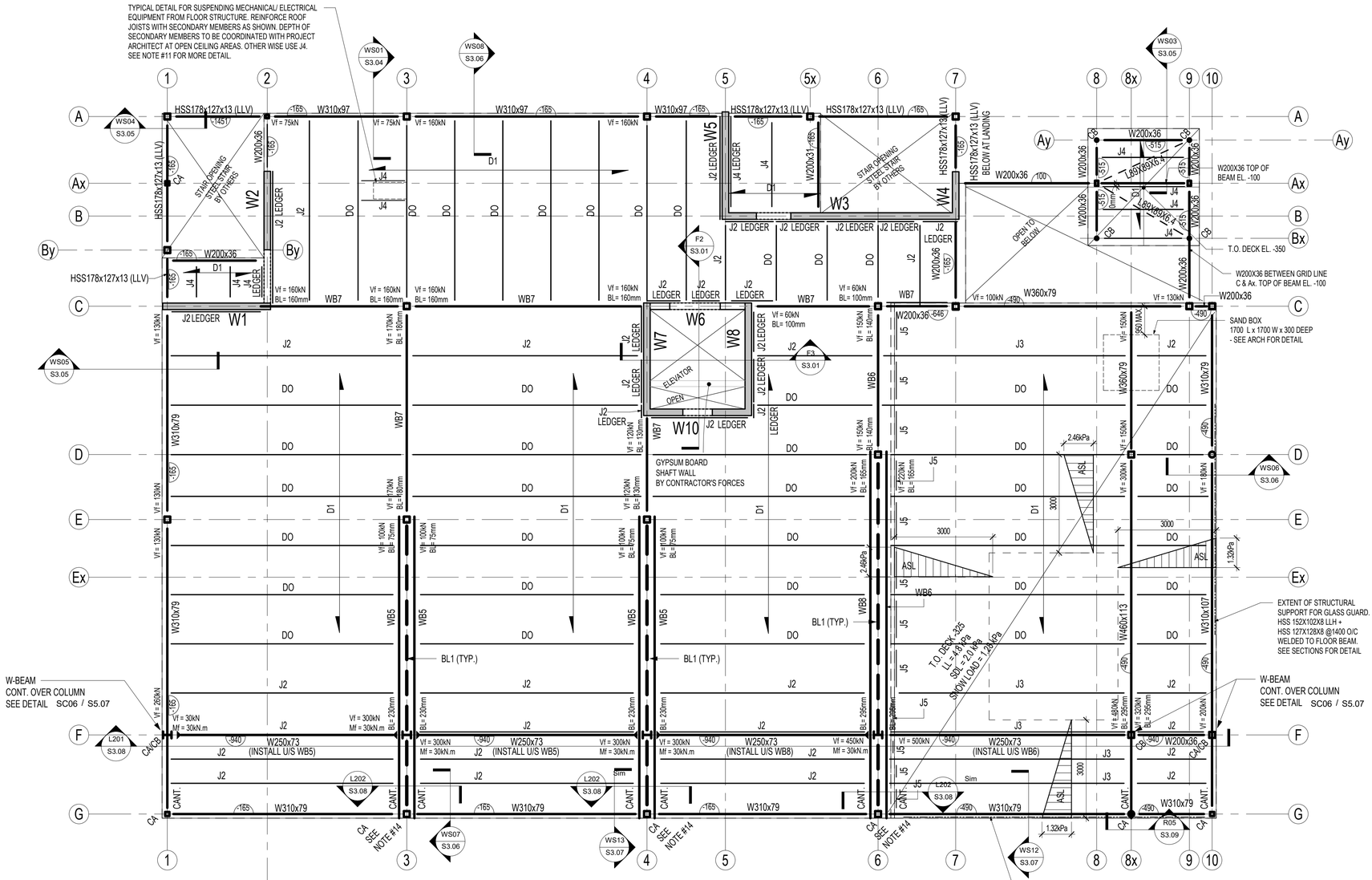
GROUND FLOOR FRAMING PLAN

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S1.02



WOOD BEAM SCHEDULE

MARK	Width x Depth	NOTES:
WB1	130x760	1. REFER TO PLAN FOR FACTORED SHEAR FORCE (Vf)& BEARING LENGTH (BL) OF WOOD BEAMS AT SUPPORTS. 2. CONTRACTOR TO SUBMIT STAMPED SHOP DRAWINGS FOR WOOD BEAM STEEL SEATS FOR CONSULTANT'S REVIEW. 3. SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED FOR THIS BUILDING. SEE ARCH. FOR FIRE RATING DETAILS.
WB2	175x760	
WB3	130x608	
WB4	130x570	
WB5	215x760	
WB6	265x836	
WB7	175x646	
WB8	215x836	
BL1	80x608 + 175x608 300 LG.	WOOD BLOCKING BETWEEN DOUBLE BEAMS @1000 O/C. CONNECT TO BEAMS WITH 3-19mm DIA. THROUGH BLOTS SPACED 180mm VERTICALLY C/W WASHERS AND NUTS.

WOOD JOIST SCHEDULE

MARK	Width x Depth	Vf (kN) AT EACH END	BL (mm)
J1	130x494	60	90
J2	130x418	45	70
J3	175x494	75	90
J4	130x228	40	70
J5	130x304	25	70
J6	265x418	SEE ROOF PLAN	SEE ROOF PLAN

NOTE:
1. JOIST MAXIMUM SPACING IS 1500mm.
2. HANGERS SHOULD BE SIMPSON STRONG-TIE HIGH-CAPACITY GIRDER HANGERS OR APPROVED EQUIVALENT. HEADER, WOOD NAILERS, AND JOISTS TO BE FLUSHED AT TOP.
3. SUBMIT HANGER'S SHOP DRAWINGS FOR CONSULTANT'S REVIEW.

WOOD BEAM /JOIST NOTE:
1. ALL WOOD MEMBERS ARE "GLULAM-E, SPRUCE-PINE, 20f-E" UNLESS NOTED OTHERWISE.
2. ALL WOOD MEMBERS SHALL BE INSTALLED INDOOR AND TO BE KEPT IN DRY CONDITION.
3. PENETRATION THROUGH BEAMS AND JOIST IS NOT PERMITTED.
4. WOOD MEMBERS SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

DECK SCHEDULE

MARK	DESCRIPTION
D1	89mm S-P-F COMMERCIAL GRADE DECKING. 1- D1 SHOULD BE CONNECTED TO BEAMS/JOISTS PER DETAIL W02 / S5.08 2- SEE DRAWING NOTE FOR CONNECTION BETWEEN D1 AND LEDGER BEAMS. 3- CONTRACTOR TO SUBMIT A FLOOR PLAN SHOWING LOCATION AND SIZE OF MECHANICAL AND ELECTRICAL PENETRATIONS THROUGH DECK FOR STRUCTURAL CONSULTANT'S REVIEW BEFORE PROCEEDING WITH WORK.

LEGEND

CA:	COLUMN ABOVE	ASL:	ACCUMULATED SNOW LOAD
CB:	COLUMN BELOW	SDL:	SUPERIMPOSED DEAD LOAD
WB:	WOOD BEAM	BL:	BEARING LENGTH (mm)
CANT:	CANTILEVER	-165	TOP OF JOIST/BEAM ELEVATION FROM FLOOR DATUM ELEVATION IN (mm).
CONT:	CONTINUOUS	T.O.S. :	TOP OF SLAB
RA:	ROOF ANCHOR		

SECOND FLOOR FRAMING PLAN

1 : 75

EXTENT OF STRUCTURAL SUPPORT FOR GLASS GUARD. HSS 152X102X8 LLH + HSS 127X128X8 @1400 O/C WELDED TO FLOOR BEAM. SEE SECTIONS FOR DETAIL

SECOND FLOOR FRAMING PLAN NOTES:

1. TOP OF STRUCTURAL DECK IS +/-0.00 FROM DATUM ELEVATION 4.20m UNLESS NOTED ON PLAN. FINISHED SECOND FLOOR DATUM ELEVATION IS 4.20m
2. DESIGN LOADS:
   - LIVE LOAD: 2.4 kPa EXCEPT AT CORRIDORS & PLAY AREA WHERE IT IS 4.8 kPa.
   - PARTITIONS: 1.0 kPa
   - FINISHES & MEP ITEMS: 1.0 kPa
   - SDL AT PLAY AREA: 2.0 kPa
   - SNOW LOAD: 1.28 kPa
3. SUBMIT DETAILS FOR ALL OPENINGS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, TO THE STRUCTURAL CONSULTANT FOR REVIEW.
4. LOCATION OF MECHANICAL EQUIPMENT LOADS ARE TO BE CONFIRMED BY THE MECHANICAL CONTRACTOR AND SUBMITTED TO STRUCTURAL CONSULTANT FOR REVIEW BEFORE PROCEEDING WITH INSTALLATION.
5. NON - LOAD BEARING PARTITIONS BY CONTRACTOR'S FORCES. ALLOW FOR 25mm FLOOR DEFLECTION ABOVE ALL PARTITIONS.
6. REFER TO TYPICAL DETAILS FOR STEEL BEAM AND GIRDER DESIGNATIONS DETAIL.
7. DESIGN ALL BEAM CONNECTIONS FOR THE FACTORED VERTICAL SHEAR FORCES AND MOMENTS NOTED ON PLAN. WHERE NO FORCE IS INDICATED, DESIGN THE CONNECTION FOR A MINIMUM FACTORED VERTICAL SHEAR FORCE OF 100kN. WHERE BOLTED CONNECTION ARE EMPLOYED, A MINIMUM OF 2 BOLTS MUST BE PROVIDED AT ALL STEEL BEAM CONNECTIONS. 'M' DENOTES MOMENT CONNECTION, AND THE CORRESPONDING FACTORED MOMENT IS IN kN-m.
8. SEE TYPICAL NOTES, TYPICAL DETAILS, COLUMN SCHEDULE AND ALL OTHER DRAWINGS BEFORE PROCEEDING WITH WORK.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE PROOFING OF STEEL BEAMS AND COLUMNS.
10. LIGHT AND DUCT HANGERS WITH MAX. 60 kg TENSION LOAD CAN BE HUNG FROM FLOOR DECK. LARGER POINT LOADS MUST BE APPLIED TO STRUCTURAL FRAMING UNLESS OTHERWISE SHOWN OR APPROVED BY THE STRUCTURAL CONSULTANT. COORDINATE LOCATIONS WITH MECHANICAL CONSULTANTS. INSTALL ADDITIONAL SECONDARY MEMBER BETWEEN JOISTS IF UNIT CAN NOT BE INSTALLED DIRECTLY UNDER FLOOR JOISTS/ BEAMS.
11. MAXIMUM WEIGHT OF MECHANICAL EQUIPMENT TO BE HUNG FROM FLOOR JOISTS/ BEAMS IS LIMITED TO 300 KG (TOTAL). MINIMUM FOUR HANGERS CONNECTED TO TWO ADJACENT JOISTS SHOULD BE USED TO SUSPEND ANY PIECE OF EQUIPMENT WEIGHING GREATER THAN150 KG (TOTAL). INSTALL ADDITIONAL BLOCKING BETWEEN JOISTS IF UNIT CAN NOT BE INSTALLED DIRECTLY UNDER FLOOR JOISTS/ BEAMS LOCATION OF SUSPENDED EQUIPMENT TO BE COORDINATED WITH MECHANICAL/ ELECTRICAL DRAWINGS.
12. ALL STEEL BEAMS SHOULD BE CONNECTED TO D1 & JOIST HANGERS USING WOOD NAILER AS SPECIFIED IN TYPICAL DETAIL W05 / S5.08 , U.N.O.
13. CONNECT LEDGER BEAM TO CONCRETE WALL WITH 20mm DIA HILTI HAS-E THREADED ROD , 120mm EMBEDMENT USING HILTI HIT-HY 200 SYSTEM. INSTALL RODS @260mm o/c, c/w WASHERS AND NUTS. ANCHOR RODS TO BE INSTALLED AT ALL SIDES 200mm FROM TOP OF LEADGER BEAMS AND BETWEEN DECK TO LEDGE BEAMS LAG SCREWS.
14. REFER TO SECTION L202 / S3.08 AND WS13 / S3.07 FOR CONNECTION OF STEEL BEAMS AND POSTS TO FLOOR WOOD BEAMS ON GRID LINE G
15. ALL WOOD BEAM CONNECTIONS TO COLUMNS AND CONCRETE WALLS BY CONTRACTOR'S FORCES. SUBMIT SEALED SHOP DRAWINGS FOR CONSULTANT REVIEW. SEE ALSO WOOD BEAM AND JOIST SCHEDULE NOTES.
16. CONNECT D1 TO LEDGER BEAMS AS FOLLOWS:
   - WHERE DECK PLANKS ARE PARALLEL TO LEDGER BEAMS, CONNECT PLANKS WITH 19mm DIA. LAG SCREW, 252mm LONG AND @ 150mm o/c
   - WHERE DECK PLANKS ARE PERPENDICULAR TO LEDGER BEAMS, CONNECT EACH PLANK WITH 19mm DIA. LAG SCREW, 252mm LONG.
   - LAG SCREWS TO BE INSTALLED AT MID WIDTH OF LEDGER BEAMS AND MIDDLE OF EACH PLANK.
17. BEAMS, JOISTS, DECK, AND TIMBER FRAMING IS NOT TO BE CUT, NOTCHED, OR DRILLED THROUGH WITHOUT PRIOR REVIEW BY PROJECT STRUCTURAL CONSULTANT.

IMPORTANT NOTE:

REFER TO SECTIONS FOR ADDITIONAL STEEL/ WOOD MEMBERS TO BE CONNECTED TO THE PERIMETER STEEL BEAMS TO LATERALLY SUPPORT EXTERIOR WALLS AND CURTAIN WALLS.
EXTERIOR WALL ASSEMBLY AND CURTAIN WALL DESIGN BY CONTRACTOR'S FORCES.

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

If this sheet is not 33 1/8" x 23 3/8" (841 x 594 mm) It is a reduced print - Read dwg. accordingly.

Contractors must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

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4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

CONSTRUCTION NORTH

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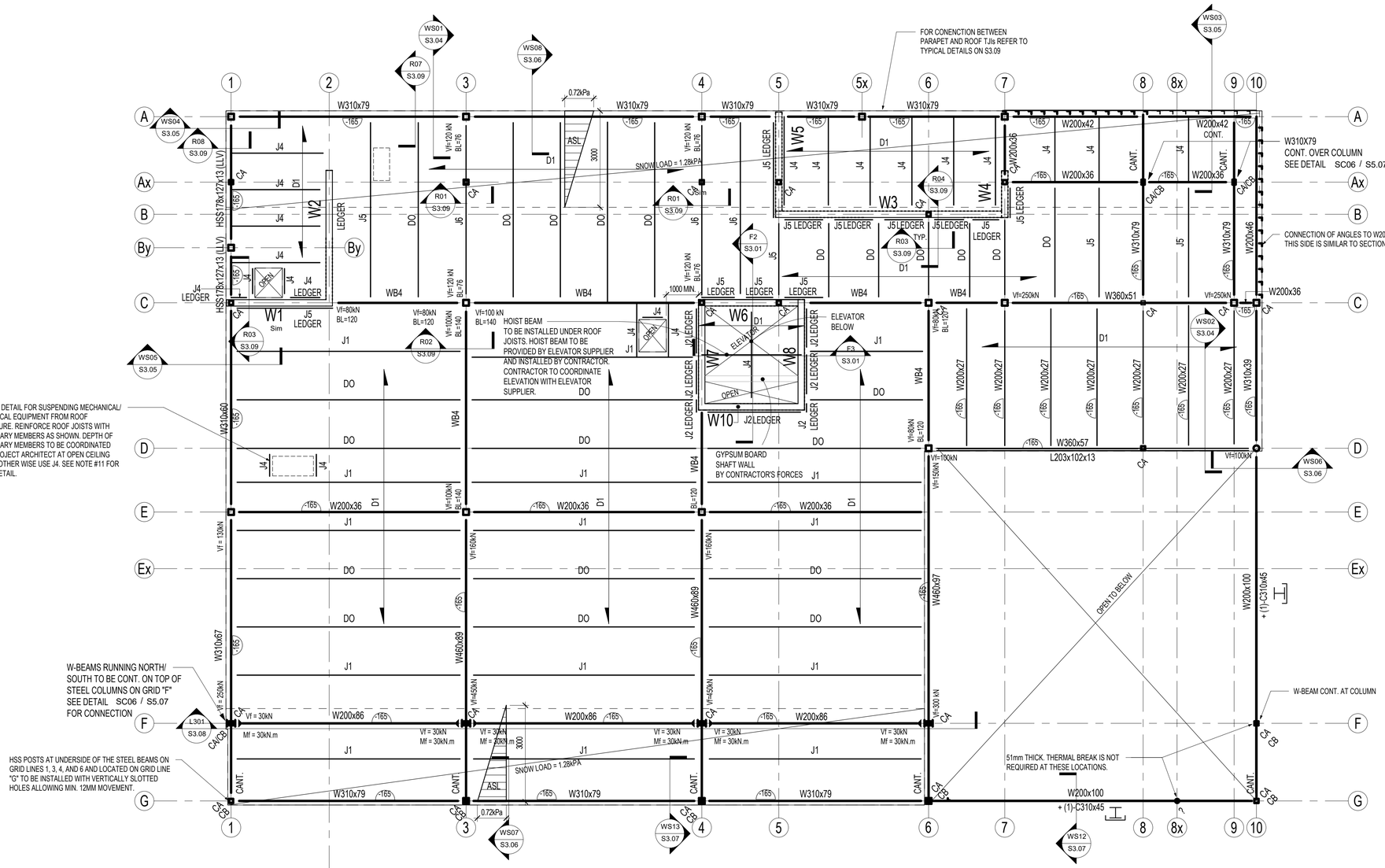
SECOND FLOOR FRAMING PLAN

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S1.03



WOOD BEAM SCHEDULE

MARK	Width x Depth	NOTES:
WB1	130x760	1. REFER TO PLAN FOR FACTORED SHEAR FORCE (Vf)& BEARING LENGTH (BL) OF WOOD BEAMS AT SUPPORTS. 2. CONTRACTOR TO SUBMIT STAMPED SHOP DRAWINGS FOR WOOD BEAM STEEL SEATS FOR CONSULTANT'S REVIEW. 3. SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED FOR THIS BUILDING. SEE ARCH. FOR FIRE RATING DETAILS.
WB2	175x760	
WB3	130x608	
WB4	130x570	
WB5	215x760	
WB6	265x836	
WB7	175x646	
WB8	215x836	
BL1	80x608 + 175x608 300 LG.	WOOD BLOCKING BETWEEN DOUBLE BEAMS @1000 O/C. CONNECT TO BEAMS WITH 3-19mm DIA. THROUGH BLOTS SPACED 180mm VERTICALLY C/W WASHERS AND NUTS.

WOOD JOIST SCHEDULE

MARK	Width x Depth	Vf (kN) AT EACH END	BL (mm)
J1	130x494	60	90
J2	130x418	45	70
J3	175x494	75	90
J4	130x228	40	70
J5	130x304	25	70
J6	265x418	SEE ROOF PLAN	SEE ROOF PLAN

NOTE:
1. JOIST MAXIMUM SPACING IS 1500mm.
2. HANGERS SHOULD BE SIMPSON STRONG-TIE HIGH-CAPACITY GIRDER HANGERS OR APPROVED EQUIVALENT. HEADER, WOOD NAILERS, AND JOISTS TO BE FLUSHED AT TOP.
3. SUBMIT HANGER'S SHOP DRAWINGS FOR CONSULTANT'S REVIEW.

WOOD BEAM /JOIST NOTE:
1. ALL WOOD MEMBERS ARE "GLULAM-E, SPRUCE-PINE, 20f-E" UNLESS NOTED OTHERWISE.
2. ALL WOOD MEMBERS SHALL BE INSTALLED INDOOR AND TO BE KEPT IN DRY CONDITION.
3. PENETRATION THROUGH BEAMS AND JOIST IS NOT PERMITTED.
4. WOOD MEMBERS SUPPORTING STEEL CONNECTORS AND FASTENERS MUST BE PROTECTED TO ACHIEVE FIRE RATING REQUIRED PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

DECK SCHEDULE

MARK	DESCRIPTION
D1	89mm S-P-F COMMERCIAL GRADE DECKING. 1- D1 SHOULD BE CONNECTED TO BEAMS/JOISTS PER DETAIL W02 / S5.08 2- SEE DRAWING NOTE FOR CONNECTION BETWEEN D1 AND LEDGER BEAMS. 3- CONTRACTOR TO SUBMIT A FLOOR PLAN SHOWING LOCATION AND SIZE OF MECHANICAL AND ELECTRICAL PENETRATIONS THROUGH DECK FOR STRUCTURAL CONSULTANT'S REVIEW BEFORE PROCEEDING WITH WORK.

LEGEND

CA:	COLUMN ABOVE	ASL:	ACCUMULATED SNOW LOAD
CB:	COLUMN BELOW	SDL:	SUPERIMPOSED DEAD LOAD
WB:	WOOD BEAM	BL:	BEARING LENGTH (mm)
CANT:	CANTILEVER	(165)	TOP OF JOIST/BEAM ELEVATION FROM FLOOR DATUM ELEVATION IN (mm).
CONT:	CONTINUOUS	T.O.S. :	TOP OF SLAB
RA:	ROOF ANCHOR		

ROOF FRAMING PLAN

1 : 75

ROOF FRAMING PLAN NOTES:

1. TOP OF STRUCTURAL DECK IS +/-0.00 FROM DATUM ELEVATION 7.99m UNLESS NOTED ON PLAN. FINISHED ROOF DATUM ELEVATION IS 8.40m .
2. DESIGN LOADS:
   - LIVE LOAD: 1.0 kPa
   - FINISHES, ROOFING SYSTEM & MEP ITEMS: 2.0 kPa
   - FOR ASL SEE PLAN.
   - SNOW LOAD: 1.28 kPa
3. SUBMIT DETAILS FOR ALL OPENINGS, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, TO THE STRUCTURAL CONSULTANT FOR REVIEW.
4. LOCATION OF MECHANICAL EQUIPMENT LOADS ARE TO BE CONFIRMED BY THE MECHANICAL CONTRACTOR AND SUBMITTED TO STRUCTURAL CONSULTANT FOR REVIEW BEFORE PROCEEDING WITH INSTALLATION.
5. NON - LOAD BEARING PARTITIONS BY CONTRACTOR'S FORCES. ALLOW FOR 25mm FLOOR DEFLECTION ABOVE ALL PARTITIONS.
6. REFER TO TYPICAL DETAILS FOR STEEL BEAM AND GIRDER DESIGNATIONS DETAIL.
7. DESIGN ALL BEAM CONNECTIONS FOR THE FACTORED VERTICAL SHEAR FORCES AND MOMENTS NOTED ON PLAN. WHERE NO FORCE IS INDICATED, DESIGN THE CONNECTION FOR A MINIMUM FACTORED VERTICAL SHEAR FORCE OF 100kN. WHERE BOLTED CONNECTION ARE EMPLOYED, A MINIMUM OF 2 BOLTS MUST BE PROVIDED AT ALL STEEL BEAM CONNECTIONS. 'M' DENOTES MOMENT CONNECTION, AND THE CORRESPONDING FACTORED MOMENT IS IN kN-m.
8. SEE TYPICAL NOTES, TYPICAL DETAILS, COLUMN SCHEDULE AND ALL OTHER DRAWINGS BEFORE PROCEEDING WITH WORK.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE PROOFING OF STEEL BEAMS AND COLUMNS.
10. LIGHT AND DUCT HANGERS WITH MAX. 60 kg TENSION LOAD CAN BE HUNG FROM FLOOR DECK. LARGER POINT LOADS MUST BE APPLIED TO STRUCTURAL FRAMING UNLESS OTHERWISE SHOWN OR APPROVED BY THE STRUCTURAL CONSULTANT. COORDINATE LOCATIONS WITH MECHANICAL CONSULTANTS. INSTALL ADDITIONAL BLOCKING BETWEEN JOISTS IF UNIT CAN NOT BE INSTALLED DIRECTLY UNDER FLOOR JOISTS/ BEAMS.
11. MAXIMUM WEIGHT OF MECHANICAL EQUIPMENT TO BE HUNG FROM FLOOR JOISTS/ BEAMS IS LIMITED TO 300 KG (TOTAL). MINIMUM FOUR HANGERS CONNECTED TO TWO ADJACENT JOISTS SHOULD BE USED TO SUSPEND ANY PIECE OF EQUIPMENT WEIGHING GREATER THAN150 KG (TOTAL).INSTALL ADDITIONAL SECONDARY MEMBER BETWEEN JOISTS IF UNIT CAN NOT BE INSTALLED DIRECTLY UNDER FLOOR JOISTS/ BEAMS. LOCATION OF SUSPENDED EQUIPMENT TO BE COORDINATED WITH MECHANICAL/ ELECTRICAL DRAWINGS.
12. ALL STEEL BEAMS SHOULD BE CONNECTED TO D1 & JOIST HANGERS USING WOOD NAILER AS SPECIFIED IN TYPICAL DETAIL W05/S5.07, U.N.O.
13. CONNECT LEDGER BEAM TO CONCRETE WALL WITH 20mm DIA HILTI HAS-E THREADED ROD , 120mm EMBEDMENT USING HILTI HIT-HY 200 SYSTEM . INSTALL RODS @260mm o/c, c/w WASHERS AND NUTS. ANCHOR RODS TO BE INSTALLED AT 200mm FROM TOP OF LEADGER BEAMS AND BETWEEN DECK TO LEDGE BEAMS LAG SCREWS.
14. TOP OF ALL STEEL BEAMS ELEVATION TO BE AT -165mm FROM FLOOR DATUM ELEVATION. UNO.
15. ALL STEEL MEMBERS AND CONNECTIONS EXPOSED TO WEATHER SHOULD BE GALVANIZED.
16. SEE PLAN FOR ROOF ANCHOR LOCATIONS AT GRID LINE Ax. WELDED TO THE BOTTOM OF HSS COLUMNS. ROOF ANCHOR LOCATIONS SHOWN IN THIS DRAWING ARE NOTIONAL. FALL ARREST SYSTEM AND ANCHOR POINT LOCATIONS TO BE DESIGNED BY QUALIFIED P.ENG. CONTRACTOR SUBMIT SHOP DRAWING FOR OUR REVIEW.
17. ALL WOOD BEAM CONNECTIONS TO COLUMNS AND CONCRETE WALLS BY CONTRACTOR'S FORCES. SUBMIT SEALED SHOP DRAWINGS FOR CONSULTANT REVIEW.
18. CONNECT D1 TO LEDGER BEAMS AS FOLLOWS:
   - WHERE DECK PLANKS ARE PARALLEL TO LEDGER BEAMS. CONNECT PLANKS WITH 19mm DIA. LAG SCREW, 252mm LONG AND @ 150mm o/c
   - WHERE DECK PLANKS ARE PERPENDICULAR TO LEDGER BEAMS, CONNECT EACH PLANK WITH 19mm DIA. LAG SCREW, 252mm LONG.
   - LAG SCREWS TO BE INSTALLED AT MID WIDTH OF LEDGER BEAMS AND MIDDLE OF EACH PLANK.
19. BEAMS, JOISTS, DECK, AND TIMBER FRAMING IS NOT TO BE CUT, NOTCHED, OR DRILLED THROUGH WITHOUT PRIOR REVIEW BY PROJECT STRUCTURAL CONSULTANT.

IMPORTANT NOTE (ROOF PLAN):

1. REFER TO TYPICAL SECTION S3.09 FOR CONNECTION BETWEEN BUILDING STEEL COLUMNS AND PV SUPPORT STEEL COLUMNS.
2. REFER TO SECTIONS FOR ADDITIONAL STEEL/ WOOD MEMBERS TO BE CONNECTED TO THE PERIMETER STEEL BEAMS TO LATERALLY SUPPORT EXTERIOR WALLS AND CURTAIN WALLS. EXTERIOR WALL ASSEMBLY AND CURTAIN WALL DESIGN BY CONTRACTOR'S FORCES.

Key to Detail Location

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3	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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ROOF FRAMING PLAN

scale:	As indicated
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drawn:	MY
checked by:	RA&PM
project number:	20171238
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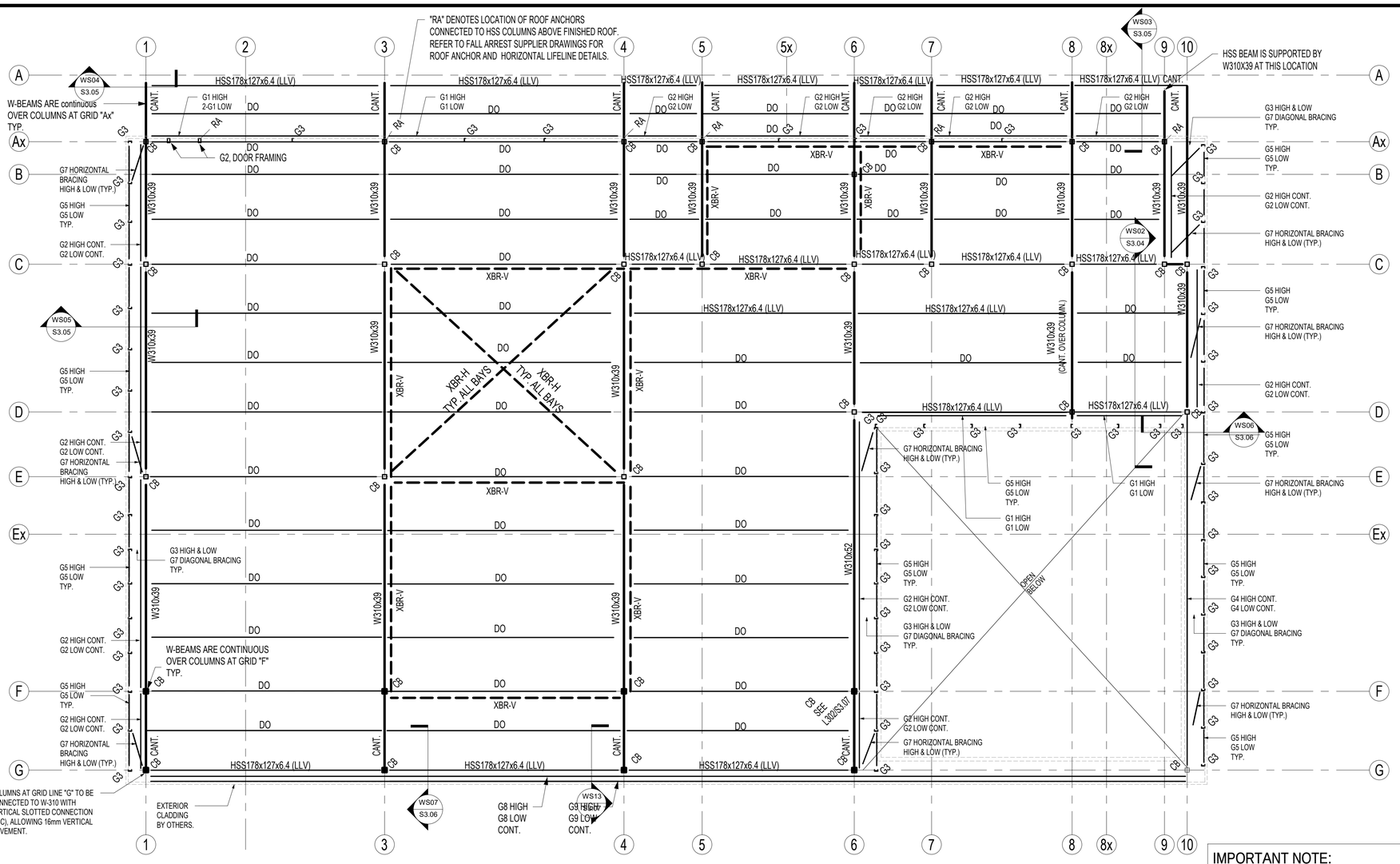
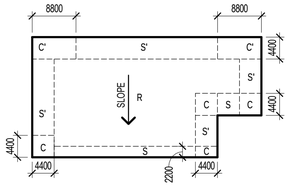


WIND UPLIFT LOAD FOR PV PANELS AND ROOF		
	ROOF DECK & PV PANELS	PERGOLA JOISTS & BEAM
R	1.5	1.5
S & S'	1.8	1.6
C & C'	3.0	1.8



LEGEND

CA: COLUMN ABOVE
CB: COLUMN BELOW
WB: WOOD BEAM
CANT: CANTILEVER
CONT: CONTINUOUS
RA: ROOF ANCHOR

BRACING SCHEDULE
XBR-V 19mm Ø STEEL ROD VERTICAL X-BRACING. SEE PLAN FOR LOCATIONS. CONNECT FOR Cf=Tf=50 kN BRACING CONNECTIONS TO C1 TO BE ABOVE FINISHED ROOF. REFER TO R06 / S3.09 FOR DETAILS.
XBR-H FLAT BAR 6mmX25mm HORIZONTAL X-BRACING. CONNECT FOR Cf=Tf=50 kN TO BE INSTALLED AT ALL BAYS OF THE PV SUPPORT FRAMING. WELD FLAT BAR TO THE UNDERSIDE OF ALL HSS JOISTS.

GIRT & BRACING SCHEDULE

MARK	SIZE	DESCRIPTION
G1	HSS 102x152x9.5	LLH
G2	HSS 76x127x6.4	LLH
G3	C100x9 @ 1500 O/C	
G4	HSS 254x152x13	LLH
G5	L89X89X7.9	
G6	C150x12 @ 1500 O/C	
G7	L64x64x6.4 @ 1500 O/C	VERTICAL/ HORIZONTAL BRACING
G8	HSS 254x152x13	LLH
G9	L152x102x9.5	

PV SUPPORT FRAMING PLAN

1 : 75

NOTES:

1. FOR TOP OF CANOPY ELEVATION, SLOPE, AND EXTENT, SEE ARCH. DRAWINGS.
2. DESIGN LOADS:
   -SNOW LOAD: 1.28 kPa
   -PV PANELS DEAD LOAD: 0.25 kPa
3. AN INDEPENDENT INSPECTION AND TESTING COMPANY IS TO INSPECT STRUCTURAL MEMBERS IN THE SHOP FOR CONNECTIONS, BOLT TORQUES, AND GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
4. SEE TYPICAL NOTES, TYPICAL DETAILS, COLUMN SCHEDULE AND ALL OTHER DRAWINGS.
5. ALL STEEL MEMBERS AND CONNECTIONS ABOVE ROOF LEVEL ARE TO BE HOT DIP GALVANIZED.
6. REFER TO TYPICAL DETAILS FOR STEEL BEAM AND GIRDER DESIGNATIONS DETAIL.
7. DESIGN ALL BEAM CONNECTIONS FOR THE FACTORED VERTICAL SHEAR FORCES AND MOMENTS NOTED ON PLAN. WHERE NO FORCE IS INDICATED, DESIGN THE CONNECTION FOR A MINIMUM FACTORED VERTICAL SHEAR FORCEOF 100kN WHERE BOLTED CONNECTION ARE EMPLOYED. A MINIMUM OF 2 BOLTS MUST BE PROVIDED AT ALL STEEL BEAM CONNECTIONS.
8. PROPRIETARY RACKING SYSTEM FOR PV PANELS BY CONTRACTORS' FORCES. RACKING SYSTEM CONNECTION TO PERGOLA STEEL FRAMING BY CONTRACTORS' FORCES.
9. FOR THERMAL BREAK CONNECTION DETAILS UNDER PV SUPPORT COLUMNS REFER TO DRAWING S3.09
10. ALL HSS COLUMNS EXPOSED TO THE EXTERIOR TO BE CAPPED AT TOP

IMPORTANT NOTE:

REFER TO SECTIONS FOR ADDITIONAL STEEL/ WOOD MEMBERS TO BE CONNECTED TO THE PERIMETER STEEL BEAMS TO LATERALLY SUPPORT EXTERIOR WALLS AND CURTAIN WALLS.
EXTERIOR WALL ASSEMBLY AND CURTAIN WALL DESIGN BY CONTRACTOR'S FORCES.

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8	20-01-17	REISSUED FOR TENDER

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PV SUPPORT FRAMING PLAN

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drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S1.05

STEEL COLUMN SCHEDULE

	A-1	A-2	A-3	A-4	A-5x	A-7	B-6	C-1	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	D-6	D-8	D-8x	D-10	E-1	E-3	E-4	F-1	F-3	
PV SUPPORT																										PV SUPPORT
ROOF T.O. ROOF DECK							HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4		HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	ROOF T.O. ROOF DECK
SECOND FLOOR	HSS178x178x8.0		HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0			HSS178x178x8.0			HSS178x178x8.0	HSS178x178x8.0		HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0			HSS178x6.4 ROUND	HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0	W250x67	W250x67	SECOND FLOOR
GROUND FLOOR	HSS178x178x8.0	HSS102x102x6.4	HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0			HSS178x178x8.0			HSS178x178x8.0	HSS178x178x8.0		HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0		HSS178x178x8.0	HSS178x6.4 ROUND	HSS178x178x8.0	HSS178x178x8.0		W250x67	W250x67	GROUND FLOOR
BASEMENT FLOOR	HSS178x178x8.0		HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0			HSS178x178x8.0			HSS178x178x8.0	HSS178x178x8.0		HSS178x178x8.0	HSS178x178x8.0	HSS178x178x8.0		HSS178x178x8.0	HSS178x6.4 ROUND	HSS178x178x8.0		HSS178x178x8.0	W250x67	W250x67	BASEMENT FLOOR
Column Locations	A-1	A-2	A-3	A-4	A-5x	A-7	B-6	C-1	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	D-6	D-8	D-8x	D-10	E-1	E-3	E-4	F-1	F-3	

SEE BASE PLATE SCHEDULE ON S5.08 FOR BASE PLATE & ANCHOR BOLT DETAILS
SEE FOOTING SCHEDULE FOR COLUMN AXIAL LOADS

STEEL COLUMN SCHEDULE

	F-4	F-6	F-8x	F-10	G-1	G-3	G-4	G-6	G-8x	G-10	Ax-1	Ax-3	Ax-4	Ax-5	Ax-7	Ax-8	Ax-9	Ay-8	Ay-9	Bx-8	Bx-9	By-1	Ex-3	
PV SUPPORT																								PV SUPPORT
ROOF T.O. ROOF DECK	HSS127x127x6.4	HSS127x127x6.4			HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4		HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4	HSS127x127x6.4							ROOF T.O. ROOF DECK
SECOND FLOOR	W250x67	W250x67		HSS127x127x6.4	HSS127x127x6.4	HSS178x178x6.4	HSS178x178x6.4	HSS178x178x6.4	HSS127x6.4 ROUND	HSS127x127x6.4	HSS127x127x6.4					HSS152x102x8.0	HSS152x102x8.0					HSS178x178x8.0		SECOND FLOOR
GROUND FLOOR	W250x67	W250x67	HSS178x178x13	HSS178x178x13												HSS152x102x8.0	HSS152x102x8.0	HSS102x8.0	HSS102x8.0	HSS102x8.0	HSS102x8.0	HSS178x178x8.0		GROUND FLOOR
BASEMENT FLOOR	W250x67	W250x67	HSS178x178x13	HSS178x178x13												HSS152x102x8.0	HSS152x102x8.0	HSS102x8.0	HSS102x8.0	HSS102x8.0	HSS102x8.0	HSS178x178x8.0	HSS178x178x8.0	BASEMENT FLOOR
Column Locations	F-4	F-6	F-8x	F-10	G-1	G-3	G-4	G-6	G-8x	G-10	Ax-1	Ax-3	Ax-4	Ax-5	Ax-7	Ax-8	Ax-9	Ay-8	Ay-9	Bx-8	Bx-9	By-1	Ex-3	

SEE BASE PLATE SCHEDULE ON S5.08 FOR BASE PLATE & ANCHOR BOLT DETAILS
SEE FOOTING SCHEDULE FOR COLUMN AXIAL LOADS

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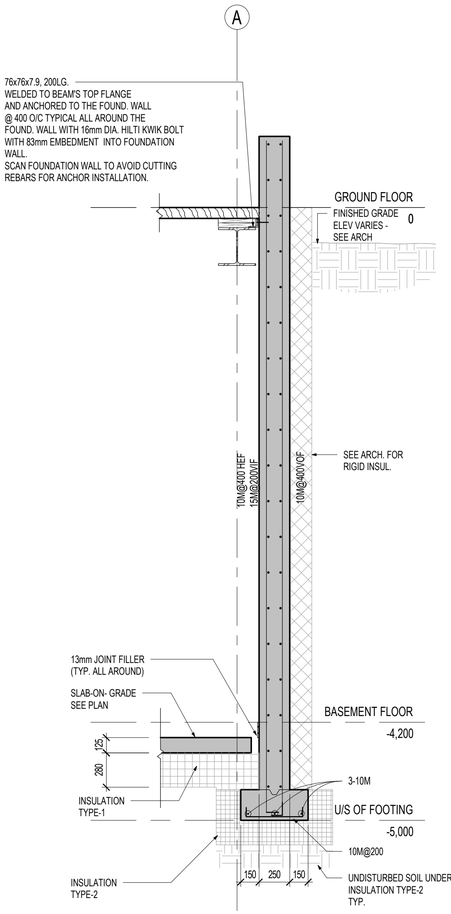
COLUMN SCHEDULE

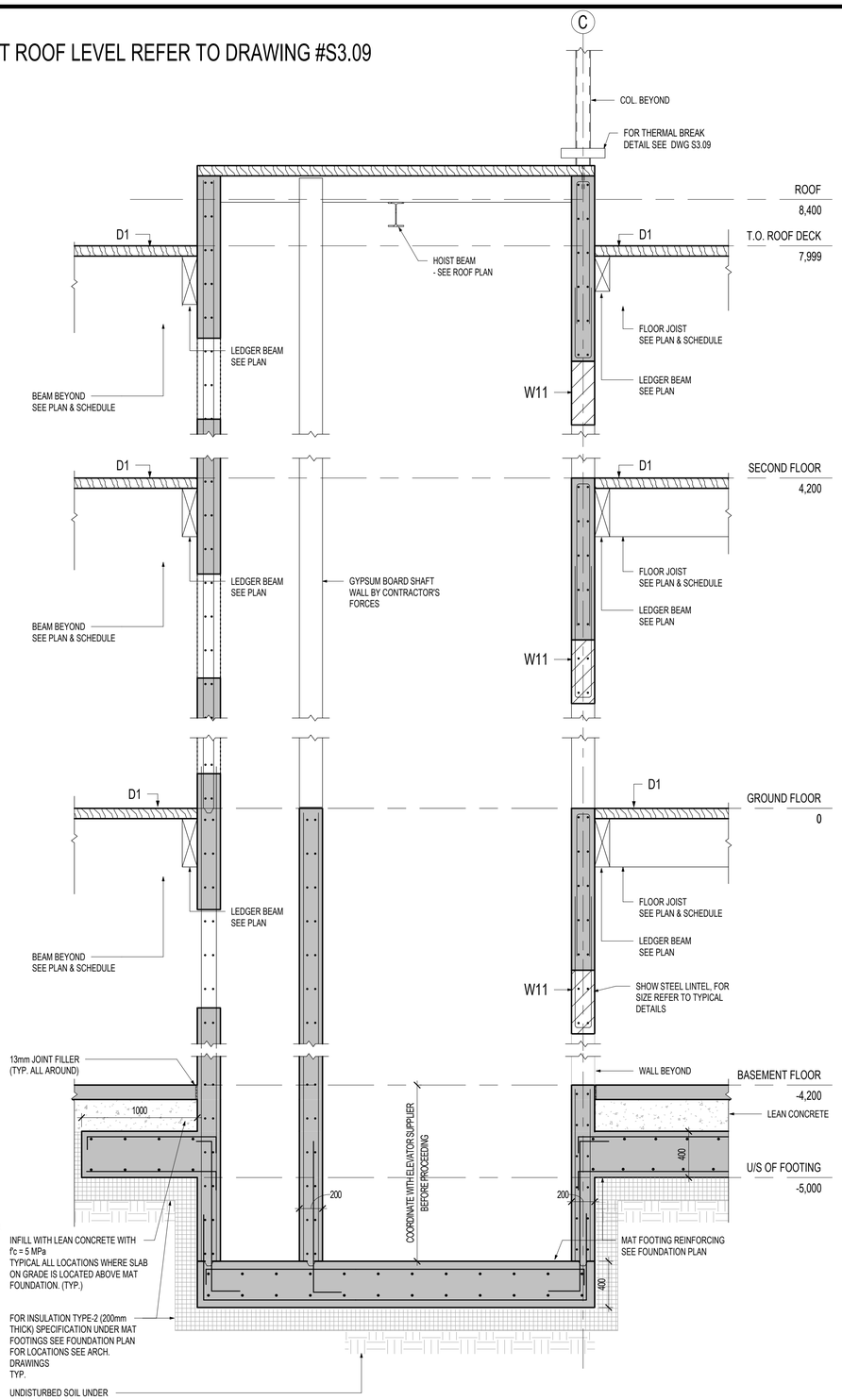
scale:	1 : 100
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S2.02

NOTE: FOR THERMAL BREAK DETAILS AT ROOF LEVEL REFER TO DRAWING #S3.09



TYPICAL EXTERIOR FOUNDATION
WALL REINFORCING U.N.O

F1 S3.01 SECTION
1 : 25



F2 S3.01 SECTION
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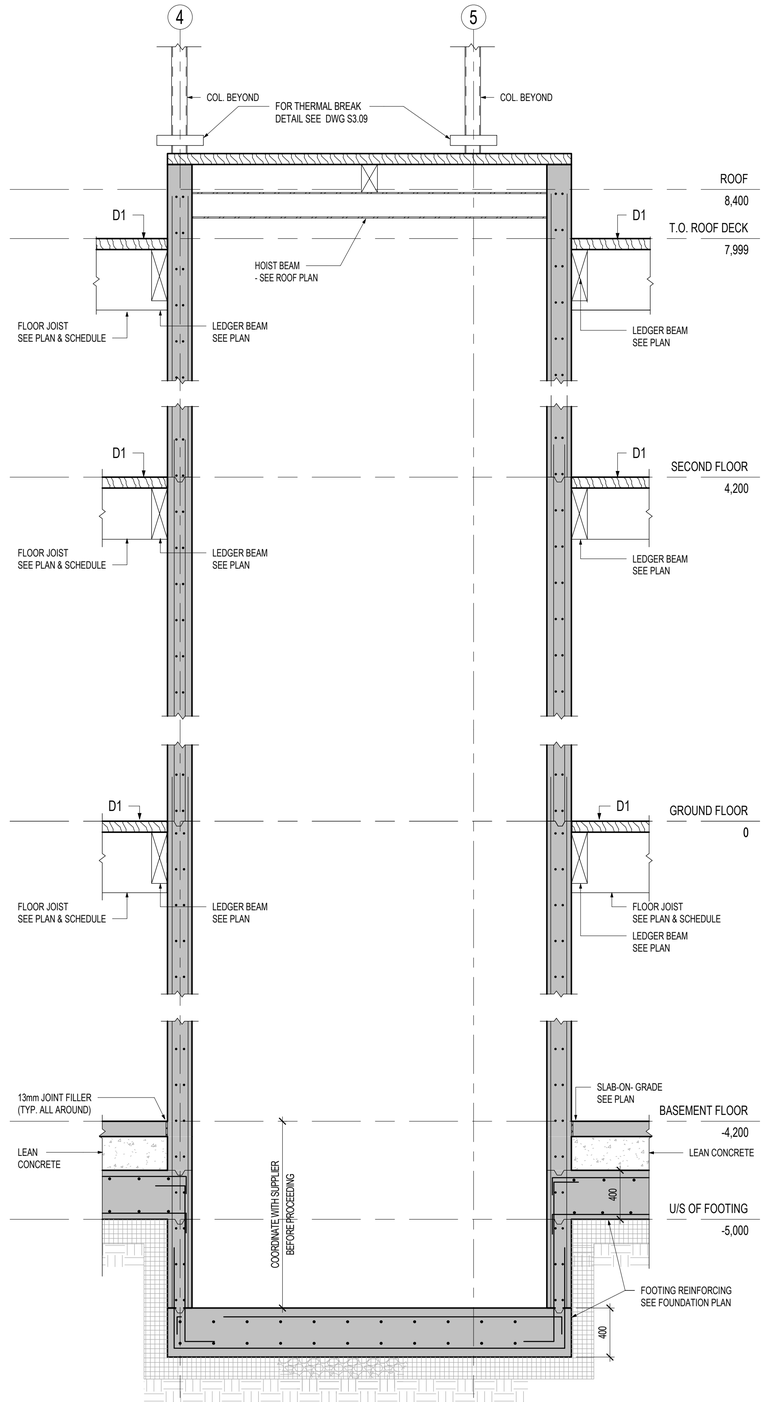

F3 S3.01 SECTION
1 : 25

280mm THICK TYPE-1 INSULATION.

200mm THICK TYPE-2 INSULATION.

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

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4	18-09-11	ISSUED FOR 95% COMPLETION
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6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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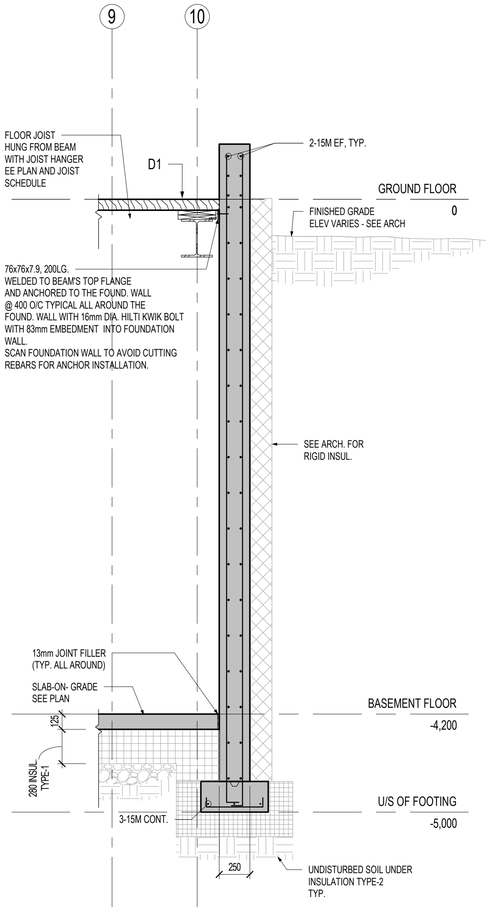
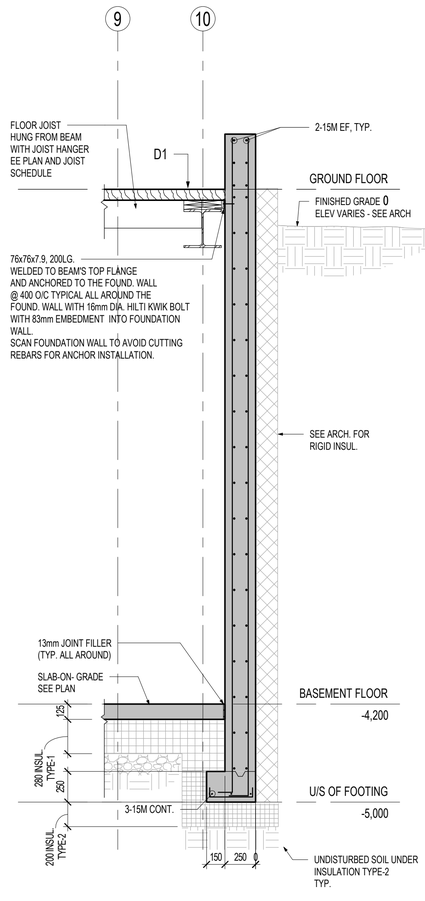
FOUNDATION SECTIONS

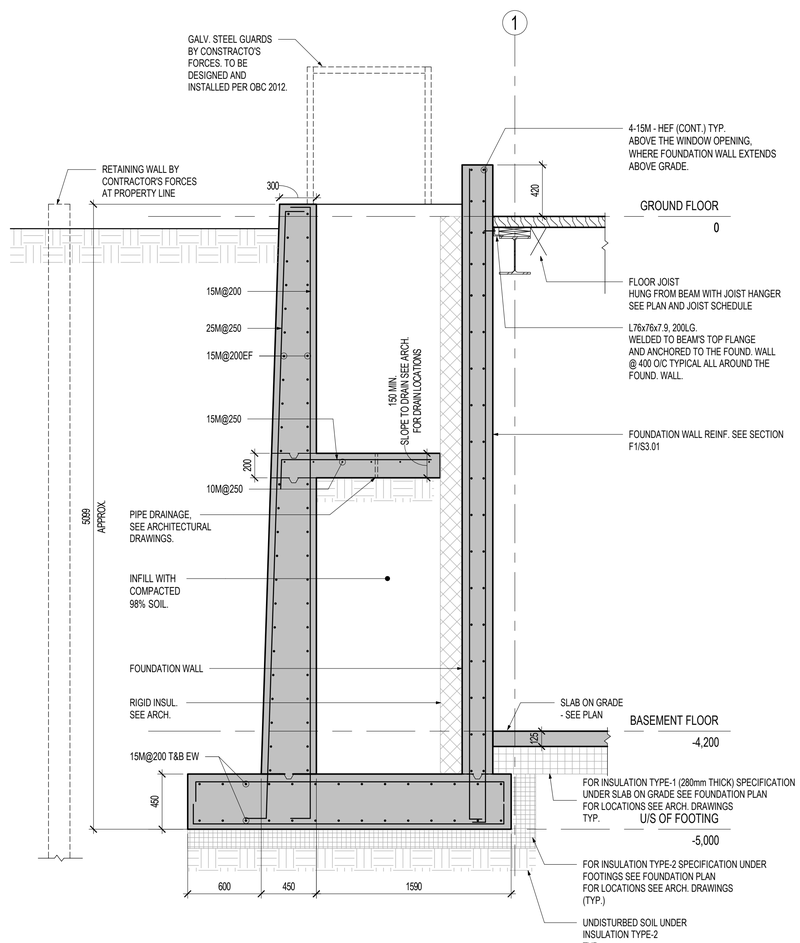
scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S3.01



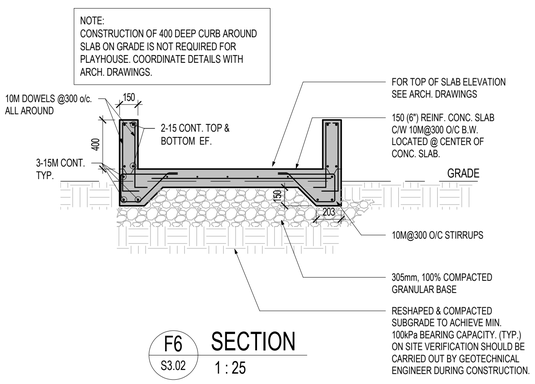
F4 S3.02 SECTION 1 : 25



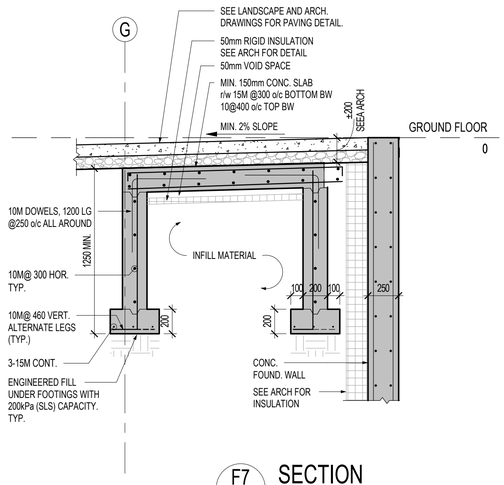
F4A S3.02 SECTION 1 : 25



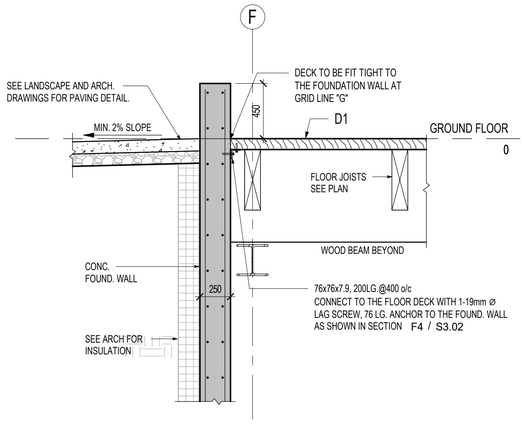
F5 S3.02 SECTION 1 : 25



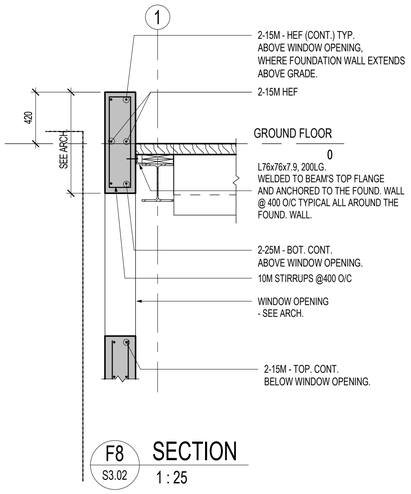
F6 S3.02 SECTION 1 : 25



F7 S3.02 SECTION 1 : 25



F7A S3.02 SECTION (ONLY APPLIES TO GRID LINE "F") 1 : 25



F8 S3.02 SECTION 1 : 25

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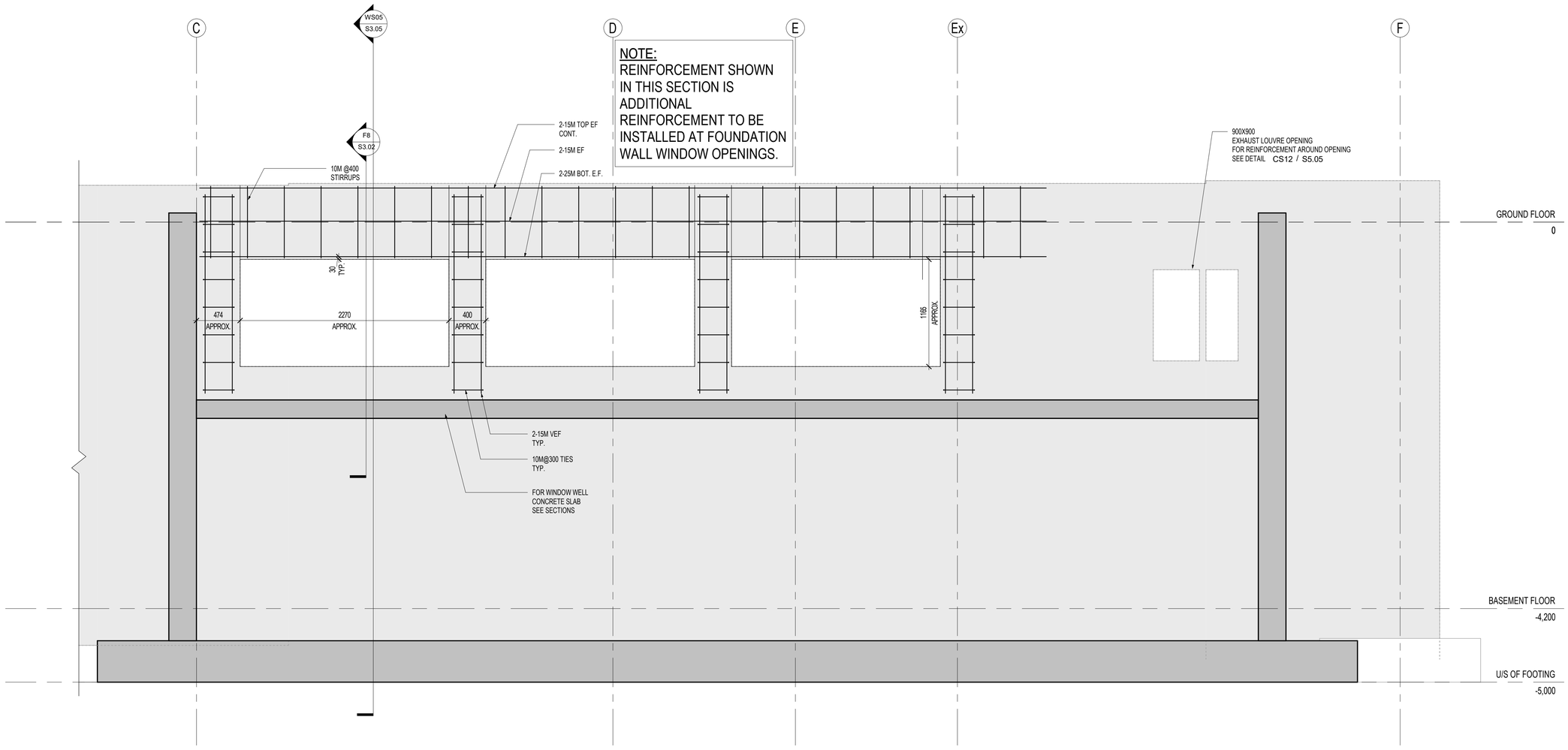
FOUNDATION SECTIONS

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S3.02



F9 S3.03 SECTION
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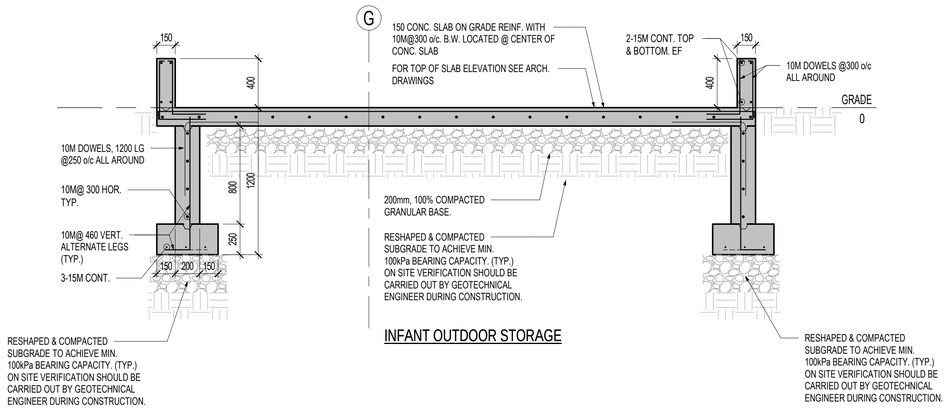
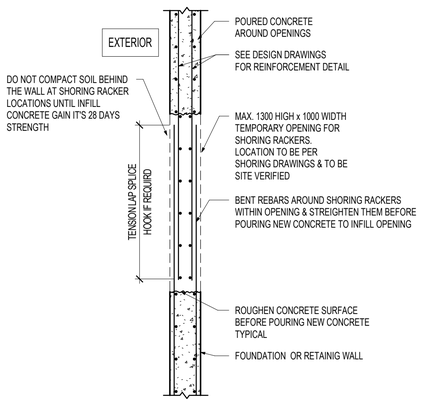
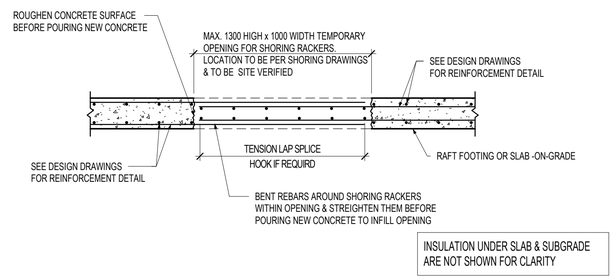


F10 S3.03 SECTION
1 : 25



A S3.03 TYPICAL DETAIL - TEMPORARY OPENING IN CONCRETE WALLS FOR SHORING RACKERS
1 : 25



B S3.03 TYPICAL DETAIL - TEMPORARY OPENING IN CONCRETE SLAB AND RAFT FOOTINGS FOR SHORING RACKERS
1 : 25

Key to Detail Location

NO. (Detail Number) / NO. (Drawing Number)

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date:	18-10-03
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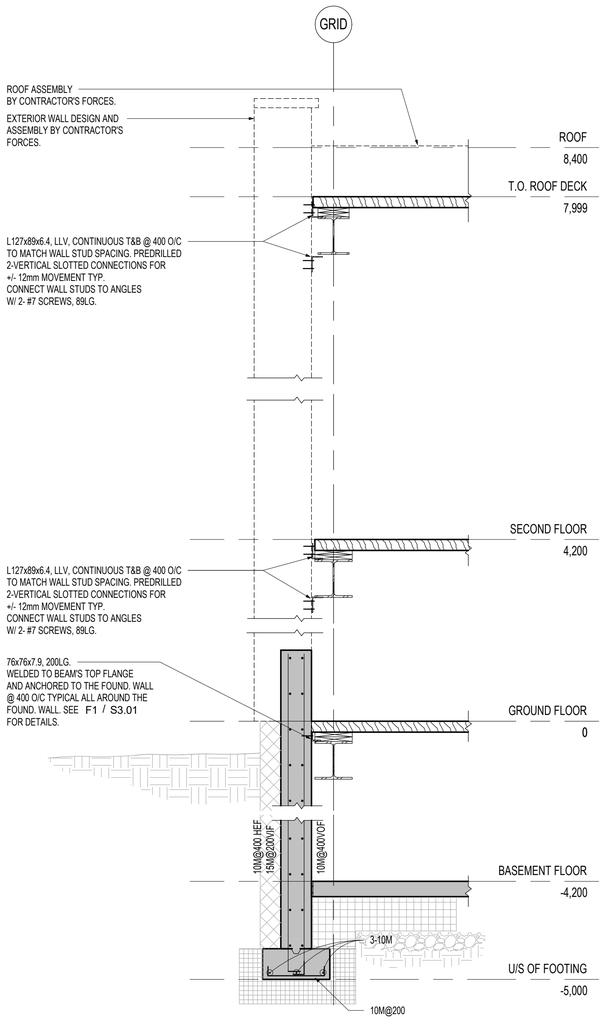
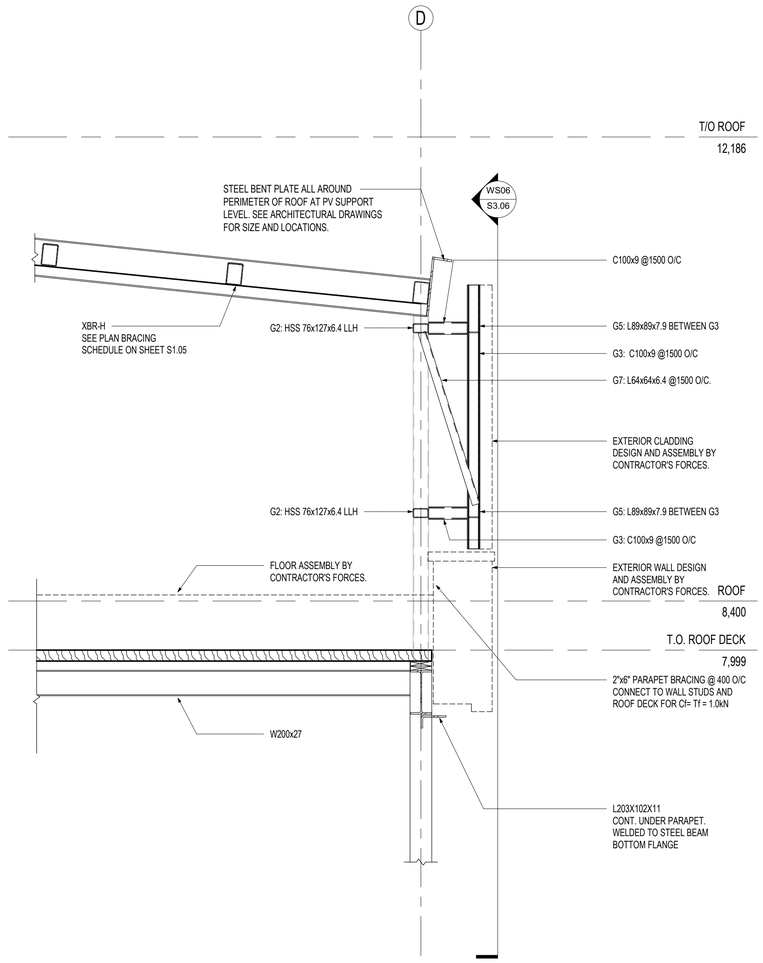
checked by:	RA&PM
project number:	20171238
drawing number:	S3.03



WS01 SECTION
S3.04 1 : 25



WS02 SECTION
S3.04 1 : 25

(TYPICAL FOR FULL HEIGHT
EXTERIOR WALL)

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WALL SECTIONS

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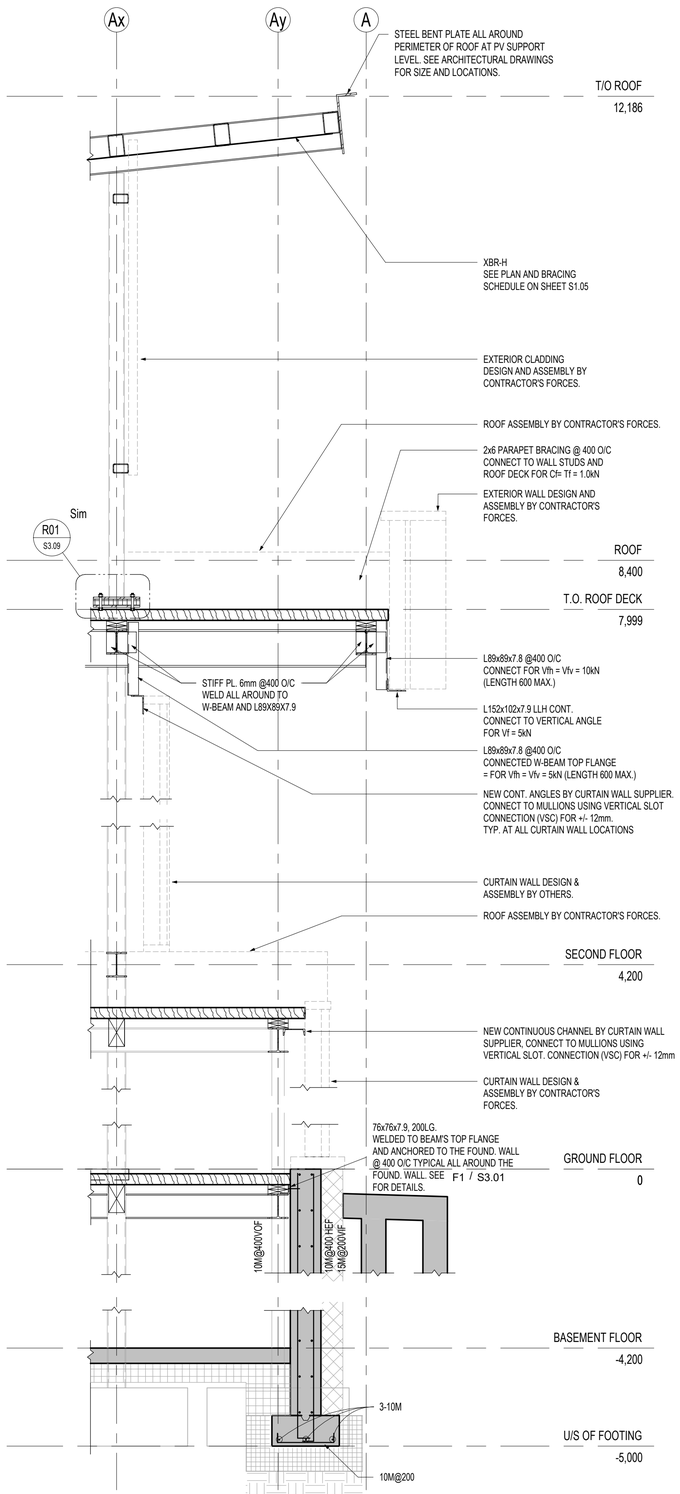
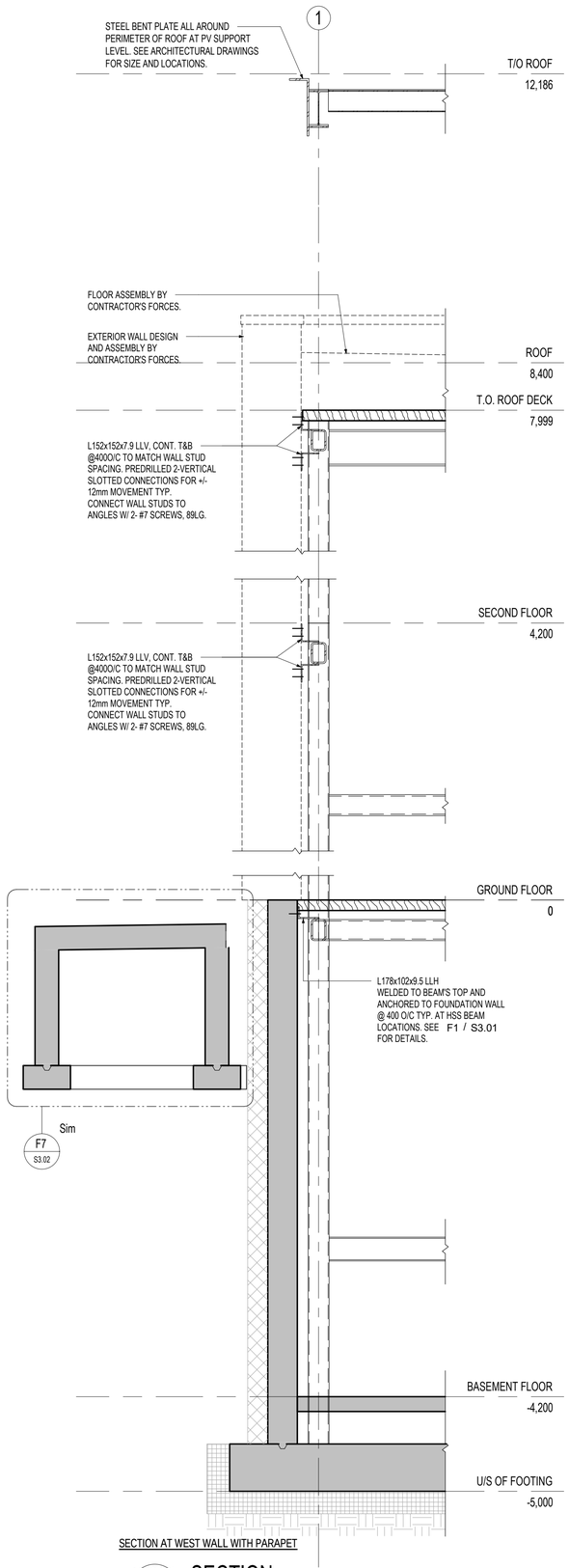
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S3.04



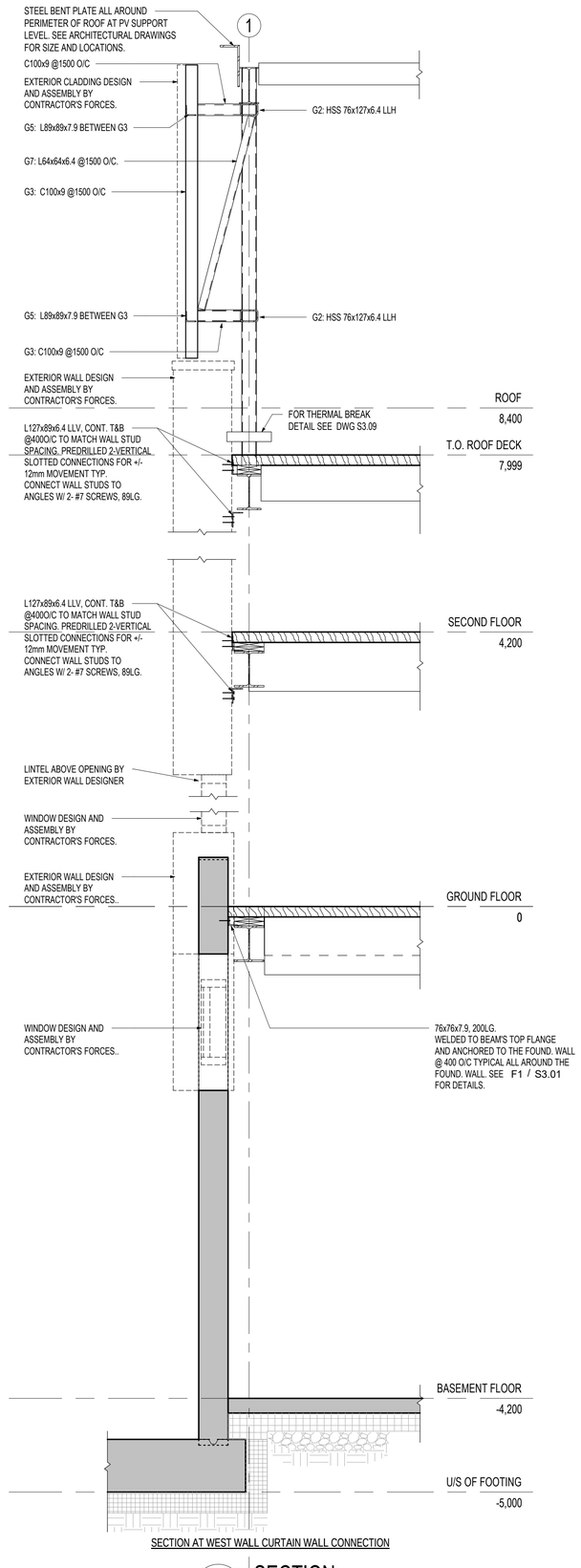
SECTION BY VESTIBULE AREA

WS03 SECTION
S3.05 1 : 25



SECTION AT WEST WALL WITH PARAPET

WS04 SECTION
S3.05 1 : 25



SECTION AT WEST WALL CURTAIN WALL CONNECTION

WS05 SECTION
S3.05 1 : 25

Key to Detail Location

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NO. Drawing Number

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WALL SECTIONS

scale:	1 : 25
date:	18-10-03
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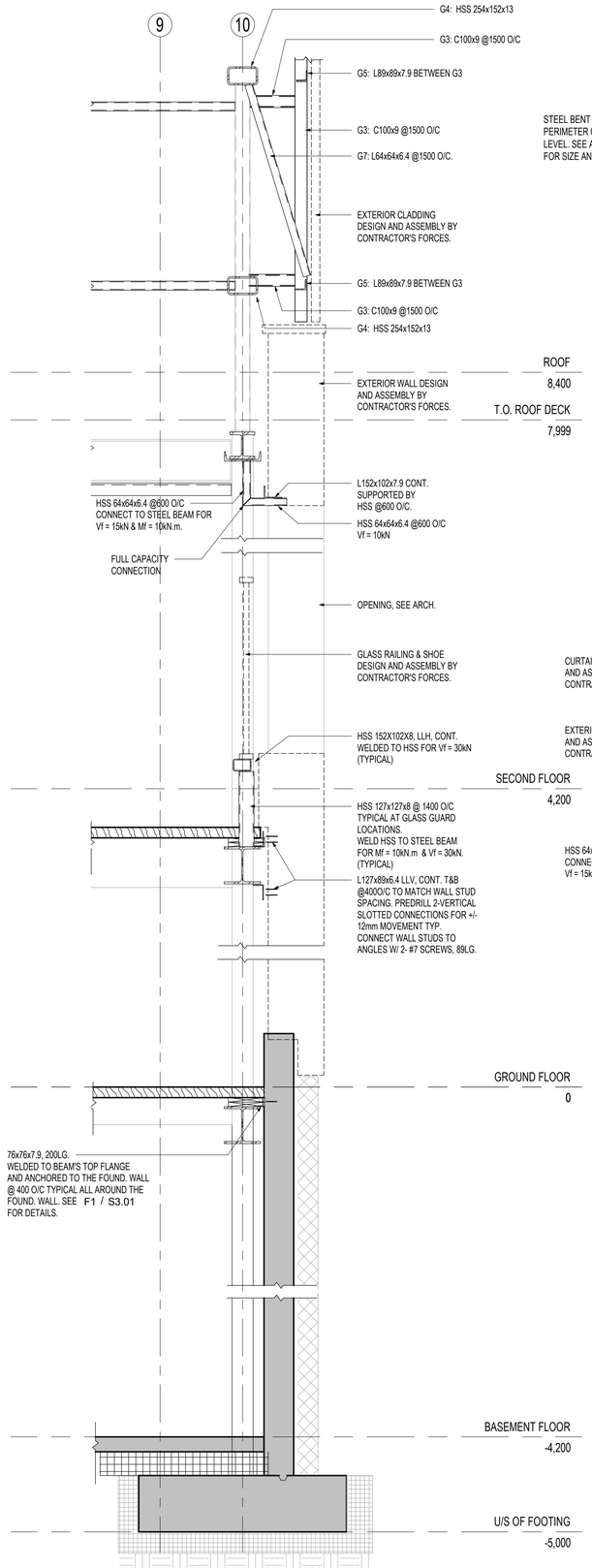
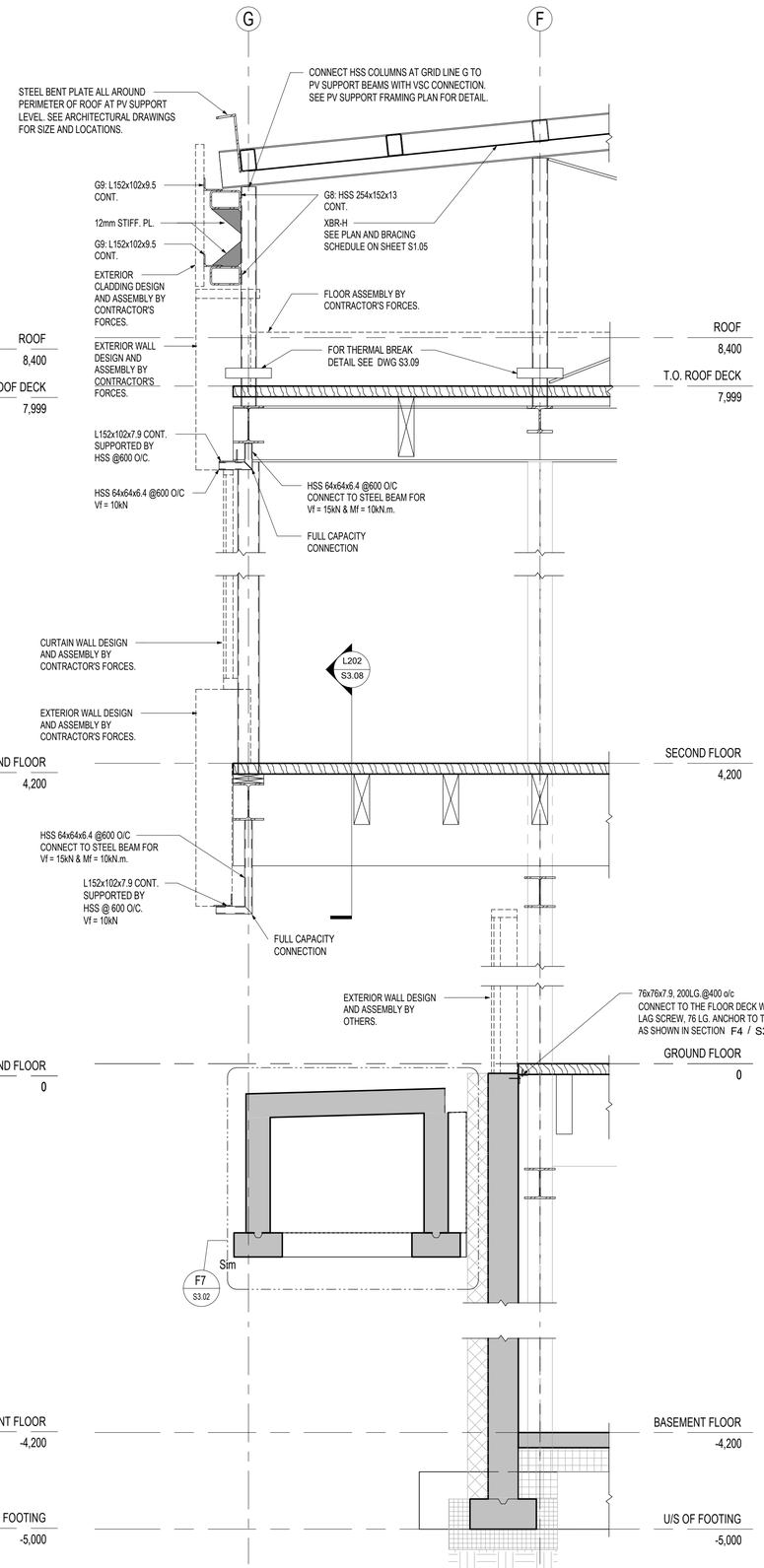
checked by:	RA&PM
project number:	20171238
drawing number:	S3.05



SECTION AT EAST WALL

WS06 / S3.06 SECTION

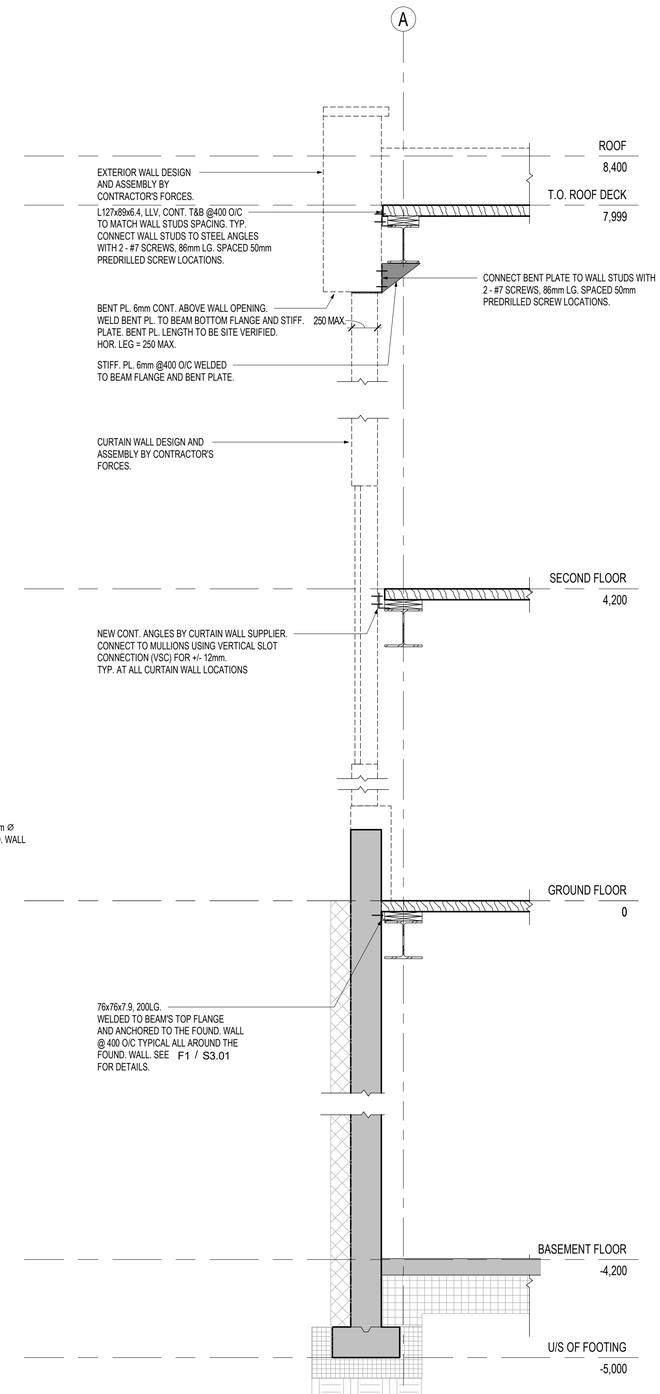
1 : 25



SECTION AT SOUTH WALL WITH OVERHANG

WS07 / S3.06 SECTION

1 : 25



SECTION AT NORTH WALL WITH PARAPET

WS08 / S3.06 SECTION

1 : 25

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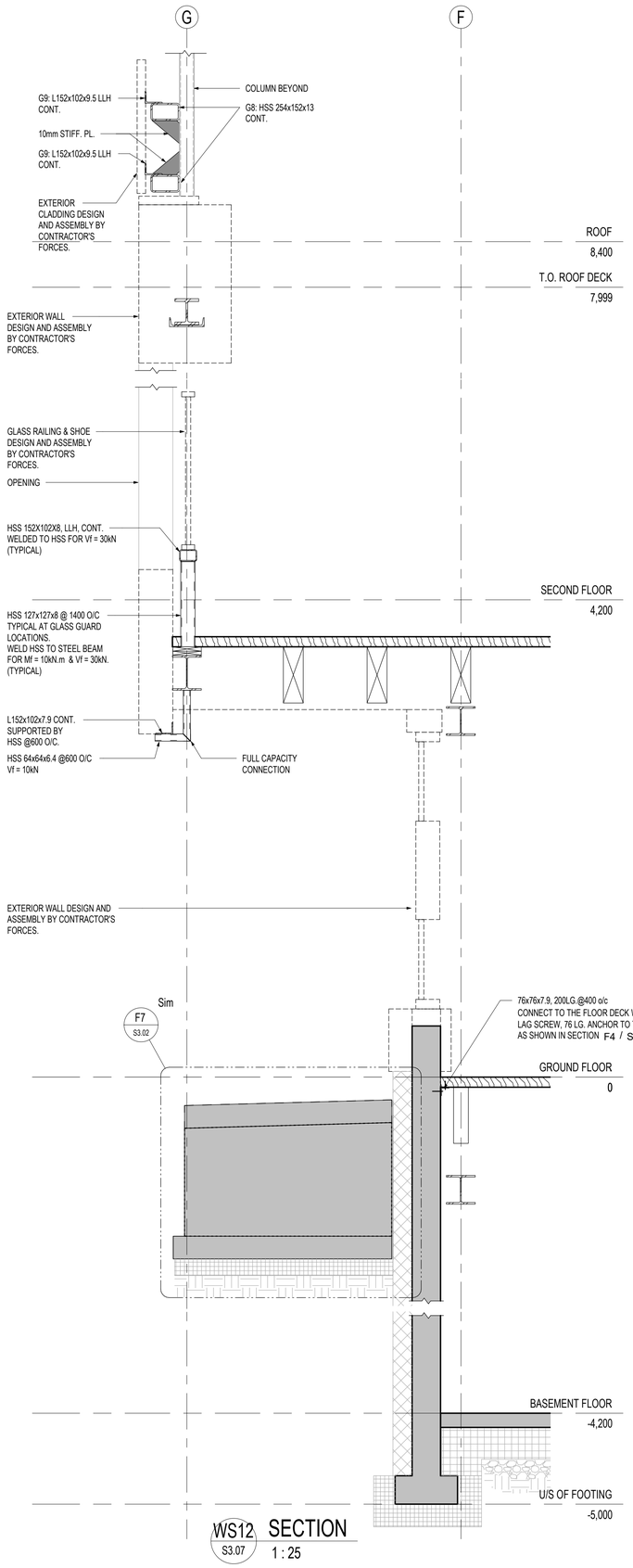
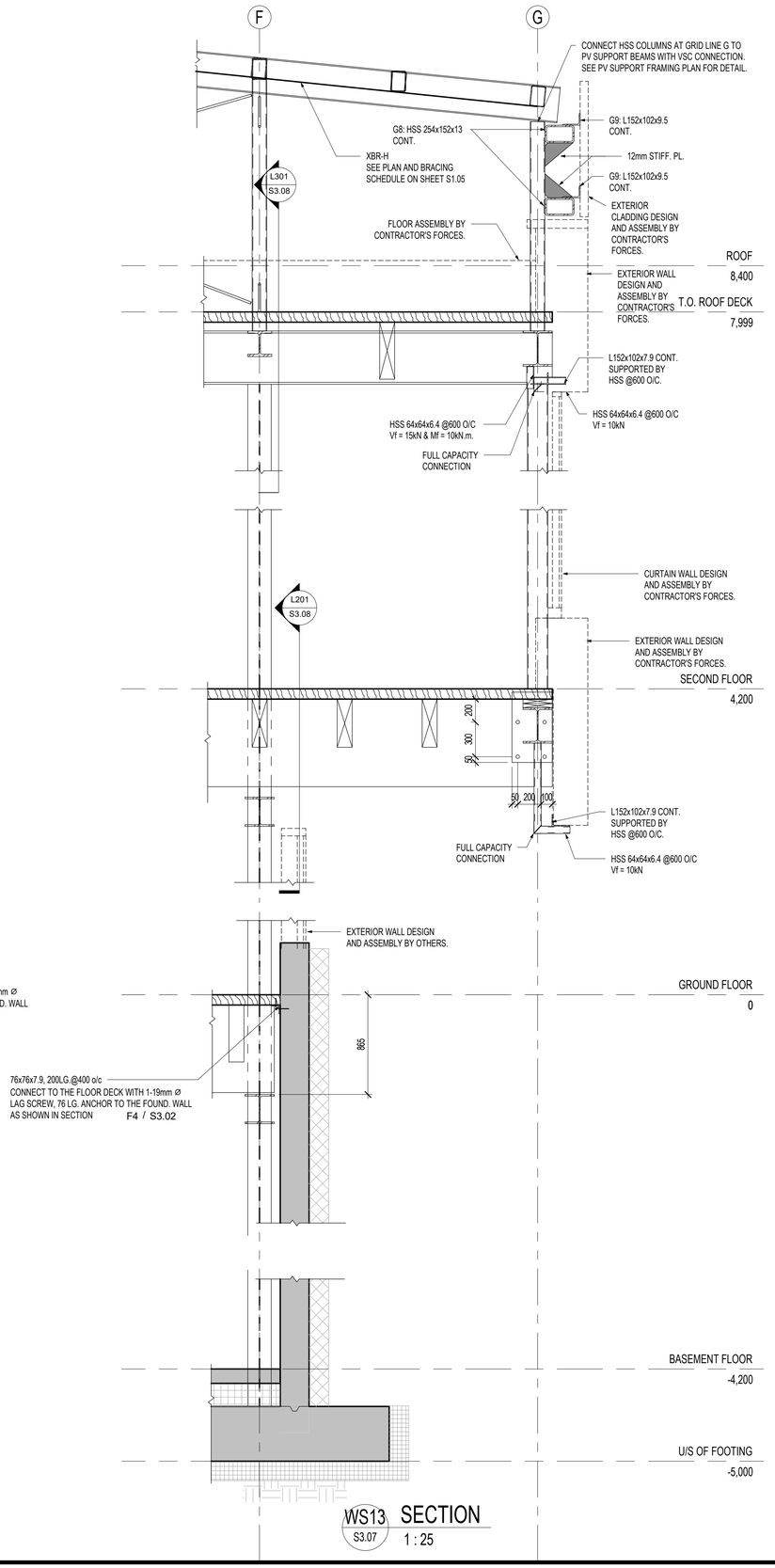
drawing number:	S3.06



WS12 SECTION
S3.07 1 : 25



WS13 SECTION
S3.07 1 : 25

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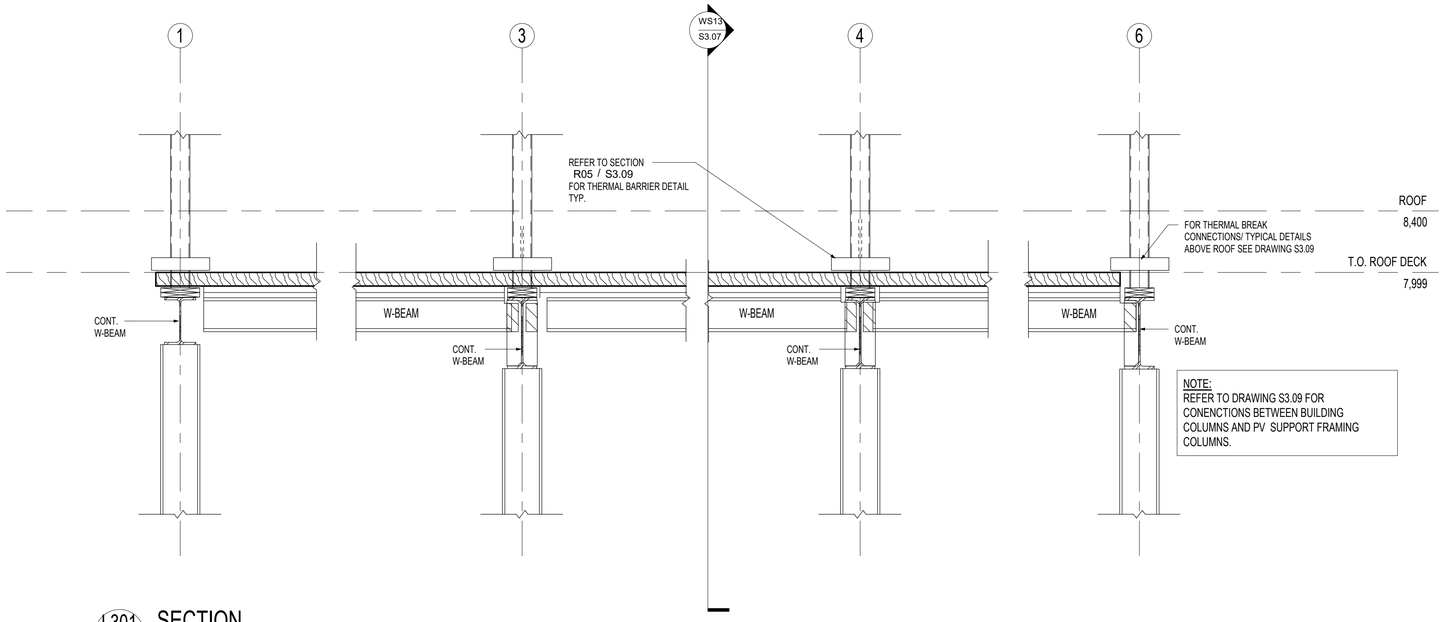
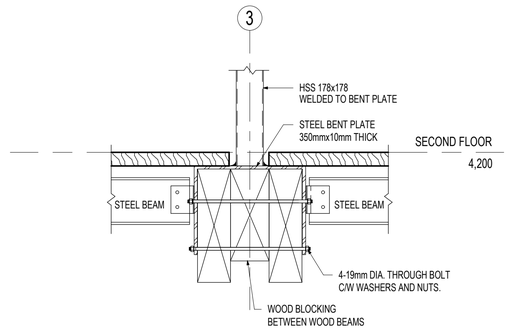
checked by:	RA&PM
project number:	20171238
drawing number:	S3.07

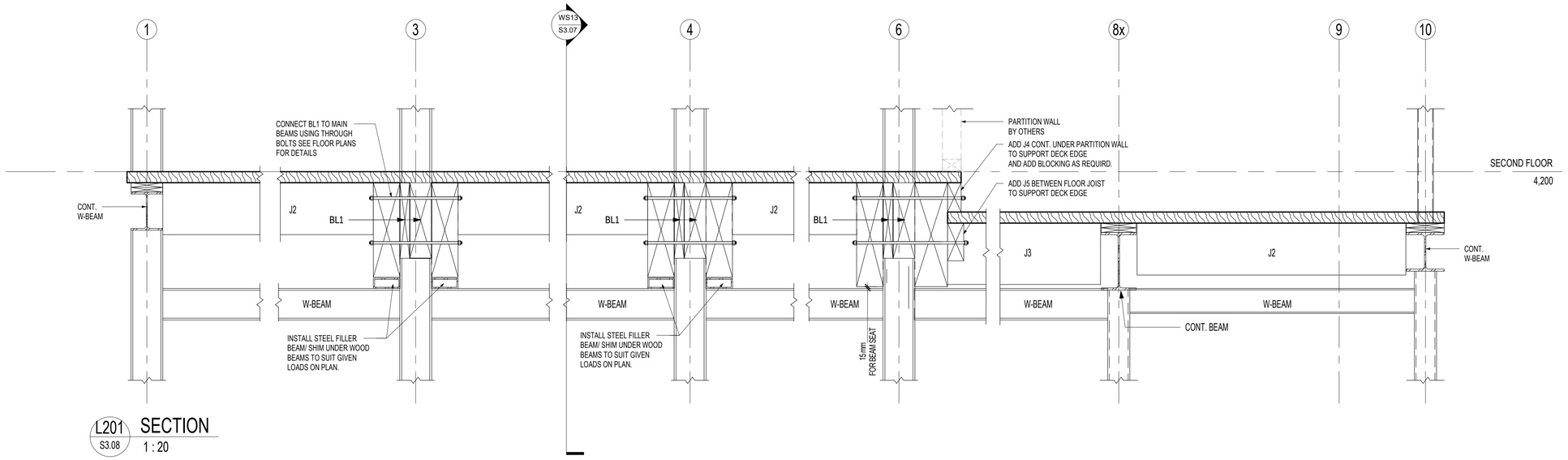


L301 / S3.08 SECTION
1 : 20



FOR SIDE VIEW OF THIS SECTION
REFER TO WS13 /S3.07

L202 / S3.08 SECTION
1 : 20



L201 / S3.08 SECTION
1 : 20

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NO. — Drawing Number

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4	19-05-07	ISSUED FOR TENDER
5	20-01-17	REISSUED FOR TENDER

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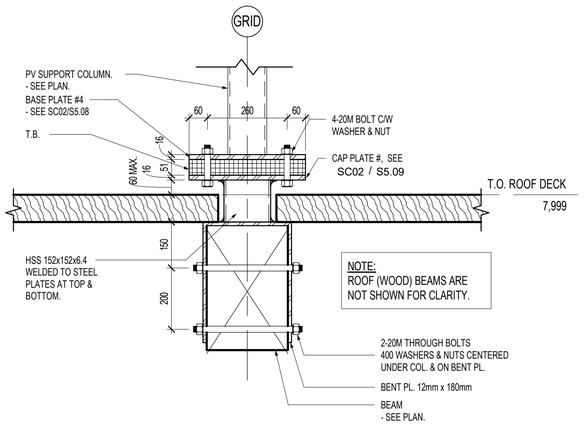
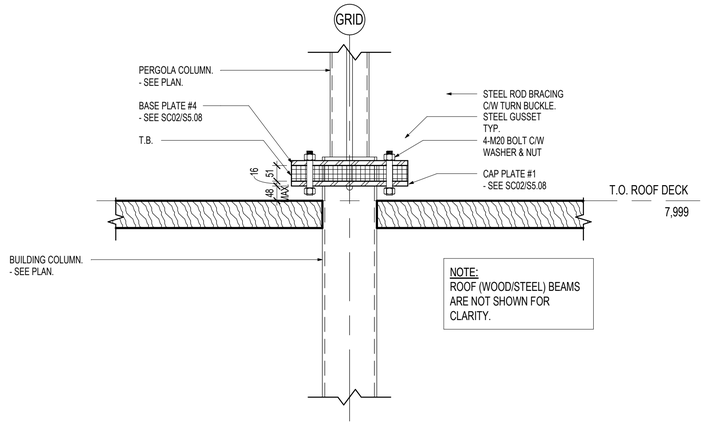
FLOOR SECTIONS

scale:	1 : 20
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S3.08



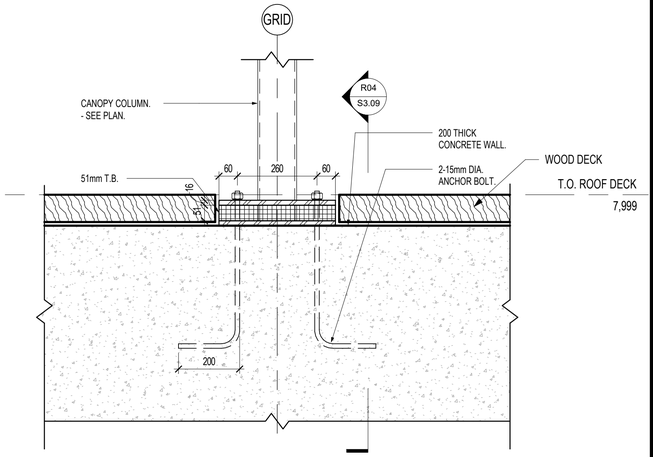
TYPICAL COLUMN BASE SUPPORTED BY ROOF JOIST
REFER TO ROOF PLAN FOR LOCATIONS

R01 / S3.09 SECTION 1 : 10



TYPICAL COLUMN BASE SUPPORTED BY STEEL COLUMN
REFER TO ROOF PLAN FOR LOCATIONS

R02 / S3.09 SECTION 1 : 10



TYPICAL COLUMN BASE SUPPORTED ON TOP OF CONCRETE WALL
REFER TO ROOF PLAN FOR LOCATIONS

R03 / S3.09 SECTION 1 : 10

TYPICAL COLUMN BASE SUPPORTED ON CONCRETE WALL
REFER TO ROOF PLAN FOR LOCATIONS

R04 / S3.09 SECTION 1 : 10

COLUMN BASE SUPPORTED BY STEEL BEAM
REFER TO ROOF PLAN FOR LOCATIONS

R05 / S3.09 SECTION 1 : 10

TYPICAL VERTICAL BRACING DETAIL
REFER TO ROOF PLAN FOR LOCATIONS

R06 / S3.09 SECTION 1 : 10

TYPICAL EXTERIOR WALL CONNECTION TO ROOF TJI'S.
(PERPENDICULAR CONDITION)
REFER TO ROOF PLAN FOR LOCATIONS

R08 / S3.09 SECTION 1 : 20

TYPICAL EXTERIOR WALL CONNECTION TO ROOF TJI'S.
(PARALLEL CONDITIONS)
REFER TO ROOF PLAN FOR LOCATIONS

R07 / S3.09 SECTION 1 : 20

LEGEND:

T.B. = 51mm ARMATHERM GRADE FRR FOR STRUCTURAL STEEL CONNECTION WITH 110MPa SHEAR STRENGTH AND 310MPa MAX. LOADING PRESSURE. USE MANUFACTURERS RECOMMENDED HARDWARE,WASHERS, NUTS AND INSTALLATION METHOD. SUBSTITUTION OF THIS MATERIAL IS NOT PERMITTED. CONTRACTOR TO INCLUDE THIS MATERIAL IN THE PV SUPPORT FRAMING SHOP DRAWING FOR CONSULTANT'S REVIEW. THIRD PARTY INSPECTION IS REQUIRED FOR ALL INSTALLED COLUMN'S BASES BEFORE THE AREAS ARE CLOSED BY FINISHES.

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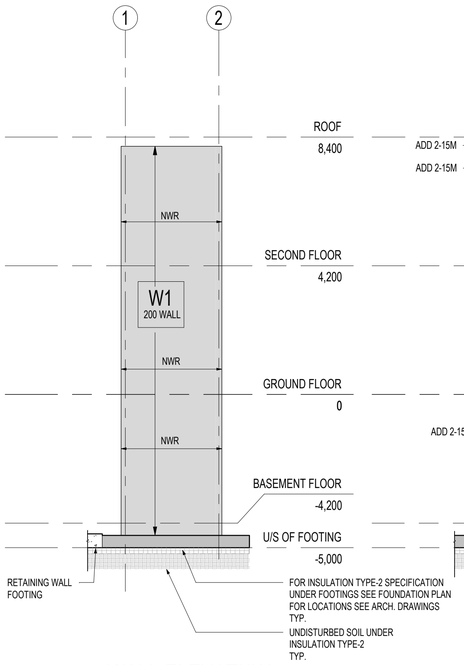
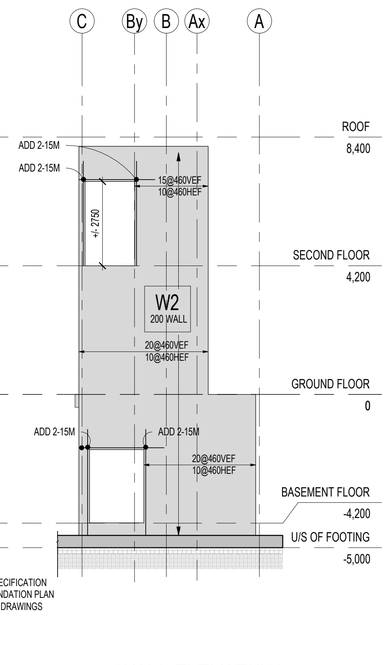
ROOF & PV SUPPORT FRAMING SECTIONS

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S3.09



W1 WALL ELEVATION

S4.01 1 : 100



W2 WALL ELEVATION

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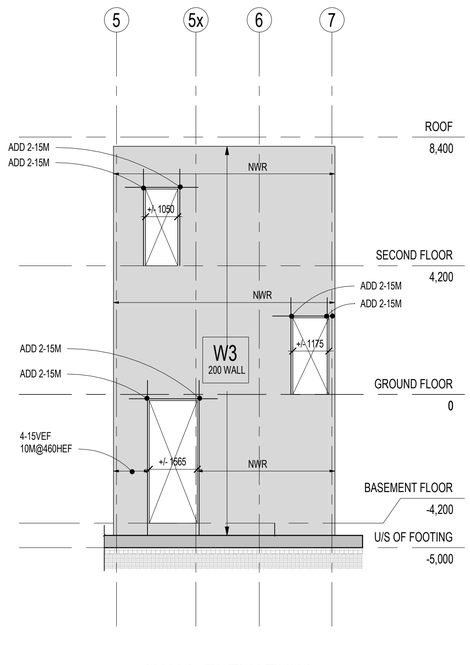

W3 WALL ELEVATION

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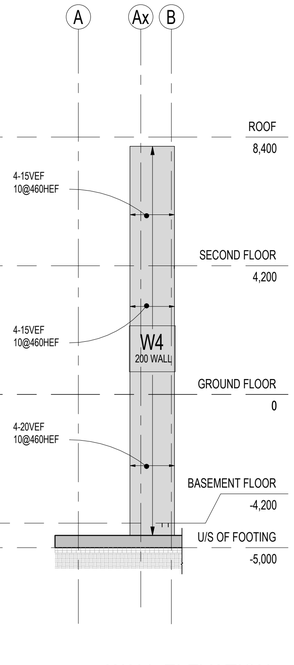

W4 WALL ELEVATION

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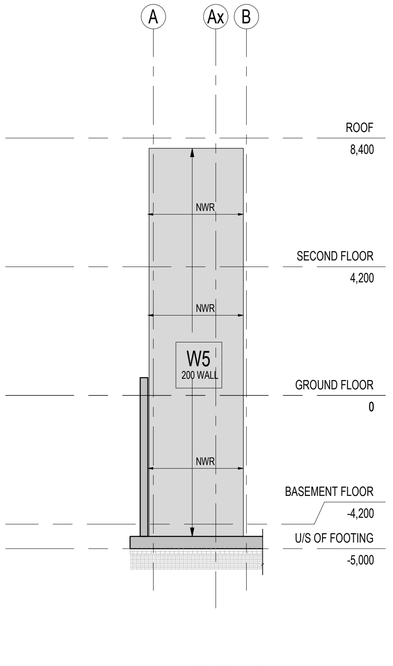

W5 WALL ELEVATION

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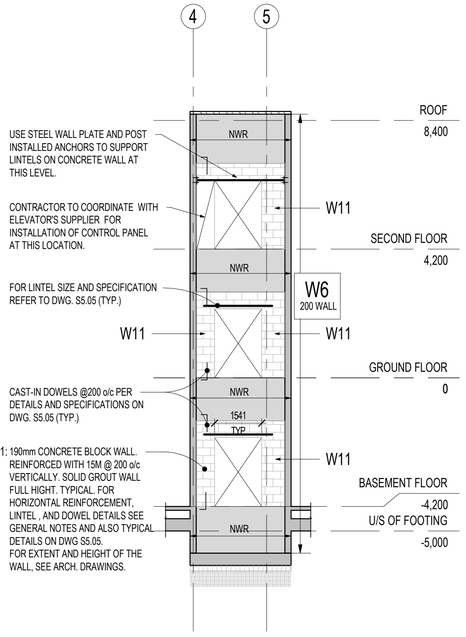

W6 WALL ELEVATION

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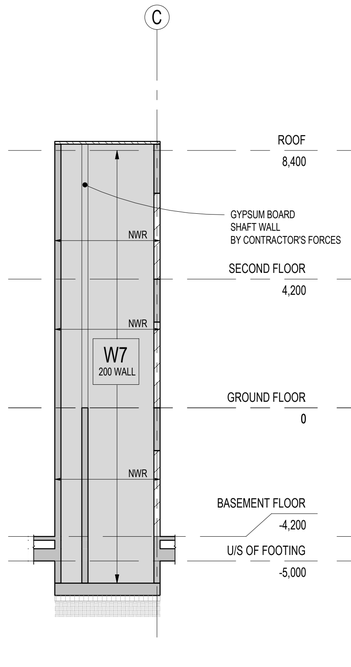

W7 WALL ELEVATION

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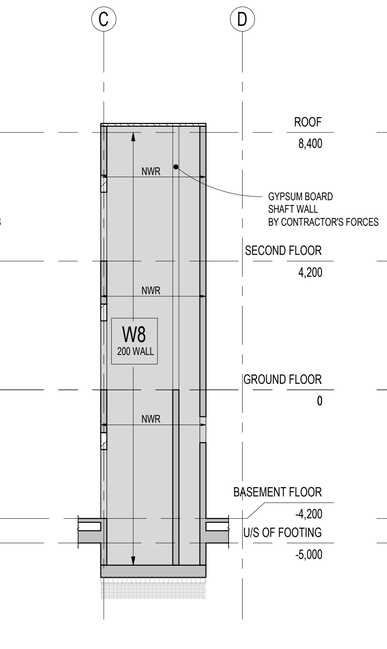
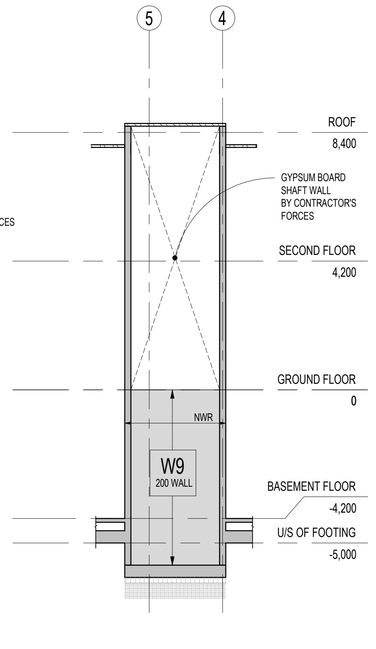


W8 WALL ELEVATION

S4.01 1 : 100



W9 WALL ELEVATION

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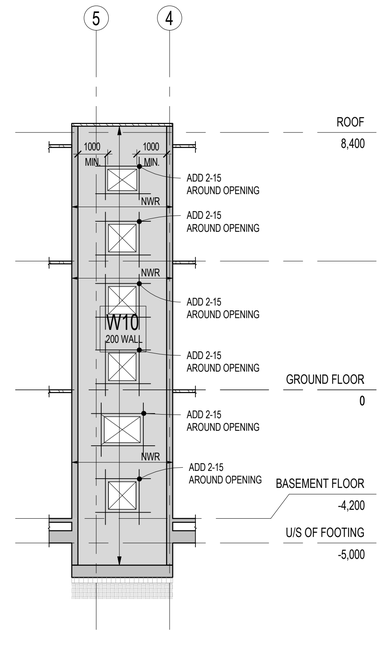

W10 WALL ELEVATION

S4.01 1 : 100

NOTE:
FOR EXACT WALL OPENING SIZE SEE ARCH. DRAWINGS

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NO. — Drawing Number

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WALL ELEVATIONS

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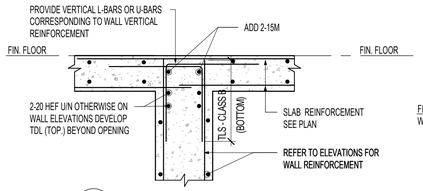
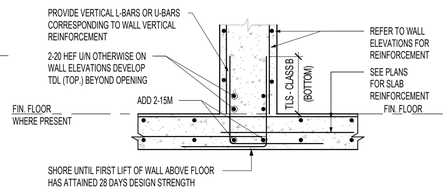
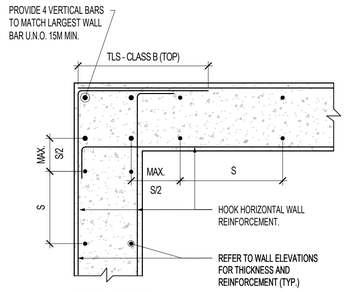
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S4.01



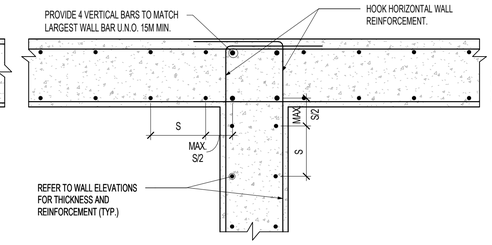
2 TYPICAL DETAIL AT TOP OF WALLS AND BELOW OPENINGS WHERE COUPLING BEAM IS NOT PROVIDED



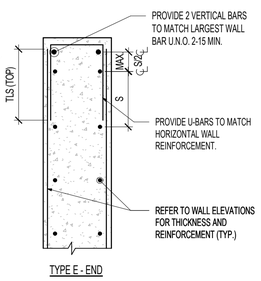
3 TYPICAL DETAIL AT BOTTOM OF WALLS AND ABOVE OPENINGS WHERE COUPLING BEAM IS NOT PROVIDED



TYPE C - CORNER



TYPE T - INTERSECTION



TYPE E - END

NOTE:
S - SPACING OF VERTICAL DISTRIBUTED REINFORCEMENT. SEE WALL ELEVATIONS.

1. REFER TO TABLE 2 TO DETERMINE IF TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT ARE REQUIRED. SEE DETAIL 7 WHEN TIES ARE REQUIRED

4 TYPICAL WALL DETAILS WITHOUT ZONE REINFORCEMENT

SHEAR WALL NOTES:

1. SHEAR WALL ELEVATIONS SHOW THE LOCATION OF ZONES. COUPLING BEAMS, CONCRETE STRENGTH, AND THE WALL THICKNESS. THE GRAVITY ELEMENTS (COLUMNS, SLABS, BEAMS, FOUNDATION SYSTEM, ETC.) ARE SHOWN CONCEPTUALLY FOR CLARIFICATION ONLY. FOR SIZE, GEOMETRY, STEPS, ETC. OF THE GRAVITY ELEMENTS REFER TO THE APPROPRIATE PLANS, DETAILS AND SCHEDULES.
2. SHEAR WALL ELEVATIONS SHOULD BE READ IN CONJUNCTION WITH SCHEDULES AND TYPICAL SHEAR WALL DETAILS.
3. PROVIDE DISTRIBUTED WALL REINFORCEMENT IN ACCORDANCE WITH THE VALUES SHOWN ON THE WALL ELEVATIONS. IF NO DISTRIBUTED WALL REINFORCEMENT IS INDICATED, PROVIDE NOMINAL WALL REINFORCEMENT (NWR) AS PER TABLE 1.

TABLE 1: NOMINAL SHEAR WALL REINFORCEMENT (NWR)

WALL THICKNESS (mm)	NOMINAL WALL REINFORCEMENT	
	HORIZONTAL	VERTICAL
150	10@320H (CENTERED)	10@440V (CENTERED)
200	10@460 HEF	10@460 VEF
250	10@400 HEF	10@460 VEF
300	10@320 HEF	10@440 VEF
350	10@280 HEF	10@380 VEF
400	10@240 HEF	10@320 VEF

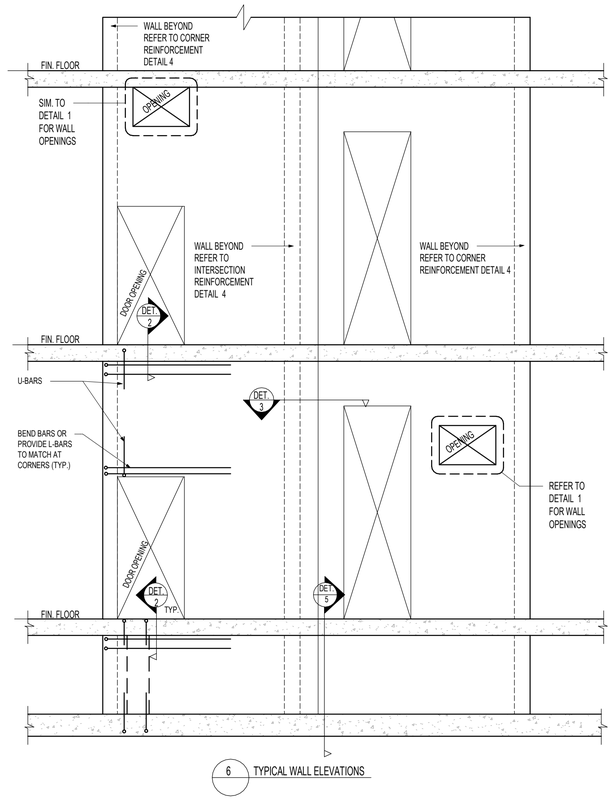
WALL THICKNESS (mm)	NOMINAL WALL REINFORCEMENT	
	HORIZONTAL	VERTICAL
450	15@440 HEF	10@280 VEF
500	15@400 HEF	15@460 VEF
600	15@320 HEF	15@440 VEF

4. WALL REINFORCEMENT IS VERTICAL AND HORIZONTAL EACH FACE (H&VEF) UNLESS NOTED OTHERWISE.
5. PROVIDE TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT IF THE BAR SIZE IS LARGER THAN 20M OR IF BAR SPACING IS LESS THAN THAT OUTLINED IN TABLE 2. REFER TO DETAIL 7 FOR ADDITIONAL INFORMATION.
6. UNLESS OTHERWISE SHOWN PROVIDE DOWELS FROM SHEAR WALL, CAPS, OR FOOTINGS INTO SHEAR WALLS TO MATCH VERTICALS IN FIRST LIFT OF WALLS. SEE DETAIL 13.
7. PROVIDE TLS CLASS B (BOTTOM) FOR ALL VERTICAL BARS (REFER TO DETAIL C02B)
8. PROVIDE TLS CLASS B (TOP) FOR ALL HORIZONTAL BARS FOR CLAUSE A23.3 R.2.4 (REFER TO DETAIL C02B).
9. MINIMUM DOWEL LENGTH SHALL BE 2xTLS (BOTTOM).
10. PLACE HORIZONTAL REINFORCING ON OUTSIDE FACE OF WALL UNLESS NOTED OTHERWISE.
11. FOR WALLS THAT ARE UNBRACED FOR TWO STORIES OR MORE PROVIDE EITHER CONTINUOUS VERTICAL REINFORCEMENT FOR THE ENTIRE UNSUPPORTED HEIGHT OR USE MECHANICAL COUPLER AT THE LOCATION OF THE INTERMEDIATE SPLICE. PROVIDE TENSION LAP SPLICE (TOP) FOR ALL HORIZONTAL WALL REINFORCEMENT. IF BARS OF DIFFERENT DIAMETER ARE SPLICED, USE THE SPLICE LENGTH OF THE LARGER BAR.
12. UNLESS NOTED OTHERWISE, REFER TO THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF WALL OPENINGS. THE CONTRACTOR SHALL PROVIDE, FOR THE ENGINEERS REVIEW, SLEEVING DRAWINGS SHOWING THE PROPOSED LOCATION AND INVERT (DIMENSIONED FROM THE SLAB DATUMS AND GRIDS) FOR ALL SLEEVES 75mm DIAMETER AND LARGER. NO OPENINGS OTHER THAN THOSE WHICH ARE INDICATED ON PLAN OR ELEVATION SHALL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
13. WHERE MASONRY VENEER FACES A WALL, PROVIDE STANDARD DOVETAIL ANCHOR SLOTS. REFER TO TYPICAL DETAILS.
14. CLEAR CONCRETE COVER SHALL BE 25mm FOR WALLS ABOVE GRADE AND 40mm FOR WALLS BELOW GRADE UNLESS NOTED OTHERWISE.

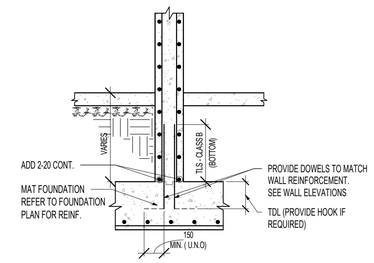
TABLE 2: TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT

WALL THICKNESS (mm)	TIE SPACING FOR DISTRIBUTED VERTICAL REINFORCEMENT $f'_c \leq 50MPa$								
	10M		15M		20M		25M	30M	35M
	VERTICAL BAR SPACING (mm)	TIE VERTICAL SPACING (mm)	VERTICAL BAR SPACING (mm)	TIE VERTICAL SPACING (mm)	VERTICAL BAR SPACING (mm)	TIE VERTICAL SPACING (mm)	TIE VERTICAL SPACING (mm)	TIE VERTICAL SPACING (mm)	TIE VERTICAL SPACING (mm)
200	< 200	160	< 400	200	< 600	200	-	-	-
250	< 160	160	< 320	240	< 480	250	250	-	-
300	< 140	160	< 270	240	< 400	300	300	300	-
350	< 120	160	< 230	240	< 350	320	350	350	350
400	< 100	160	< 200	240	< 300	320	400	400	400
450	-	-	< 180	240	< 270	320	400	450	450
500	-	-	< 160	240	< 240	320	400	480	480
600	-	-	< 140	240	< 200	320	400	480	480

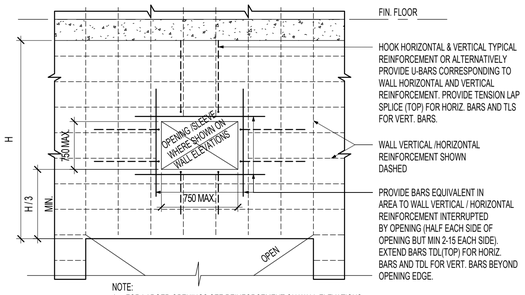
NOTES:
1. TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT ARE 10M.
2. THIS TABLE IS BASED ON $f'_c \leq 50MPa$. FOR $f'_c > 50MPa$ REDUCE TIE VERTICAL SPACING IN TABLE BY MULTIPLYING BY 0.75.
3. DISTRIBUTED VERTICAL REINFORCEMENT WITH BAR SPACING LESS THAN THAT INDICATED FOR 10M, 15M AND 20M BARS SHALL BE TIED WITH MINIMUM TIE VERTICAL SPACING AS INDICATED.
4. DISTRIBUTED VERTICAL REINFORCEMENT WITH BAR SIZE LARGER THAN 20M SHALL BE TIED AT MINIMUM TIE VERTICAL SPACING INDICATED.



6 TYPICAL WALL ELEVATIONS



5 TYPICAL SHEAR WALL DOWELS AT FOUNDATION



NOTE:
1. FOR LARGER OPENINGS SEE REINFORCEMENT ON WALL ELEVATIONS

1 TYPICAL ADDITIONAL REINFORCEMENT FOR WALL OPENINGS UP TO 750mmX750mm SIZE

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4	18-10-03	ISSUED FOR PERMIT
5	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
6	19-05-07	ISSUED FOR TENDER
7	20-01-17	REISSUED FOR TENDER

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SHEAR WALL DETAILS

scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
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STANDARD ABBREVIATIONS A01

@	-At
ADJ	-Adjustable
AIFB	-Asphalt Impregnated Fibre Board
ALT	-Alternate
ARCH	-Architectural
A. ROD(A.R.)	-Anchor Rod
ASL	-Accumulated Snow Loading
B (BOT)	-Bottom
BEW	-Bottom Each Way
BLDG	-Building
BLL	-Bottom Lower Layer
BM	-Beam
BML	-Bottom Middle Layer
BNT	-Base NominalThickness
B.O.F.	-Bottom of Footing
BP	-Baseplate
BSMT	-Basement
BUL	-Bottom Upper Layer
C	-Standard Channel
CA	-Column Above
CANT	-Cantilever
C/C (o/c)	-Centre to Centre
CJ	-Control Joint
CL	-Centreline
COL	-Column
COMP	-Compressible
CONC	-Concrete
CONST	-Construction
CONST JT (CJT)	-Construction Joint
CONT (CONTIN)	-Continuous
C/W	-Complete With
D.FIR	-Douglas Fir
DET	-Detail
DIAG	-Diagonal
Ø (DIA)	-Diameter
DIM	-Dimension
DJ	-Double Joist
DL	-Dead Load
DO	-Ditto
DWG	-Drawing
DWL	-Dowel
DT	-Double Tee
E-W	-East-West
EW	-Every Where
EA	-Each
EE	-Each End
EF	-Each Face
ELECT	-Electrical
ELEV (EL)	-Elevation / Elevator
EQ	-Equal
ES	-Each Side
EW	-Each Way
EXIST	-Existing
EXP. JT.	-Expansion Joint
EXT	-Exterior
FDN	-Foundation
FF	-Far Face
FIN	-Finished
FL	-Floor
FMC	-Full Moment Connection
FT	-Foot / Feet
FTG	-Footing
GA	-Gauge
GALV	-Galvanized
GEN	-General

H (HOR)	-Horizontal
HEF	-Horizontal Each Face
HIF	-Horizontal Inside Face
HOF	-Horizontal Outside Face
HSC	-Horizontally Slotted Connection
HSS	-Hollow Structural Section
IF	-Inside Face
INT	-Interior
INV	-Invert
JT	-Joint
kg	-Kilogram
kN.m	-Kilo Newton Metres
kN/m²	-Kilo Newton per Square Metre
kN/m	-Kilo Newton per Metre
kPa	-Kilo Pascals
L	-Angle
LB.	-Pounds
LG	-Long
LL	-Live Load / Lower Layer
LLH	-Long Leg Horizontal
LLV	-Long Leg Vertical
LSSJ	-Long Span Steel Joists
LVL	-Laminated Veneer Lumber
m	-Metre
MAX	-Maximum
MECH	-Mechanical
MEZZ	-Mezzanine
MIN	-Minimum
MISC	-Miscellaneous
ML	-Middle Layer
MLL	-Middle Lower Layer
mm	-Millimetre
MOM, (M)	-Moment
MPa	-Mega Pascals
MUL	-Middle Upper Layer
N	-Newton
N-S	-North-South
NF	-Near Face
NIC	-Not in Contract
No.(#)	-Number
NTS	-Not to Scale
OWSJ	-Open Web Steel Joist
Pa	-Pascal
PC	-Precast
PL	-Plate
PLF	-Pounds per Lineal Foot
PREL	-Preliminary
PROJ	-Projection
PSF	-Pounds per Square Foot
PSI	-Pounds per Square Inch
PSL	-Parallel Strand Lumber
PT	-Pressure Treated
R	-Reaction
RAD	-Radius
REF	-Reference
REINF	-Reinforcing
REQ'D	-Required
REV	-Revision/Revised
Rf	-Factored Vertical Reaction
R/W	-Reinforced With

S	-Standard Beam
SDF	-Step Down Footing
SDL	-Superimposed Dead Load
SECT	-Section
SL	-Slab
SQ	-Square
SOG	-Slab on Grade
S.P.F.	-Spruce/Pine/Fir
SPEC	-Specifications
ST	-Steel
STD	-Standard
STR	-Straight
STRUCT	-Structural
T	-Top
TEMP	-Temperature
Tf	-Factored Tension Force
TJ	-Tie Joist
TLL	-Top Lower Layer
TMf	-Factored Torsional Moment
TML	-Top Middle Layer
TOD, T/D	-Top of Deck
T.O.F.	-Top of Footing
TOS, T/S	-Top of Slab
TOST	-Top of Steel
TSF	-Tons per Square Foot
TUL	-Top Upper Layer
TYP	-Typical
UL	-Upper Layer
U/N	-Unless Noted
U.N.O.	-Unless Noted Otherwise
U/S	-Underside
USD	-Underside of Deck
V (VERT)	-Vertical
VBF	-Vertically Braced Framing
VEF	-Vertical Each Face
VIF	-Vertical Inside Face
VOF	-Vertical Outside Face
VSC	-Vertically Slotted Connection
W	-Wide Flange Beam
WP	-Wall Plate
WWF	-Welded WideFlange Beam
WWF (WWM)	-Welded Wire Fabric/ Mesh

STANDARD LAP ABBREVIATIONS

CLS	-Compression Lap Splice
CDL	-Compression Development Length
HEL	-Hook Embedment Length
TLS	-Tension Lap Splice
TDL	-Tension Development Length

GENERAL NOTES A02

1. GENERAL
   - 1.1. DESIGN AND CONSTRUCTION IS TO CONFORM TO THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE, AND ANY APPLICABLE REQUREMENTS OR BY-LAW OF THE AUTHORITY HAVING JURISDICTION. REFER ALSO TO TYPICAL DETAILS, NOTES UNDER PLANS AND SCHEDULES ON THE STRUCTURAL DRAWINGS, AND TO THE SPECIFICATION. ALL CODES, MANUALS, STANDARDS AND SPECIFICATIONS REFERRED TO SHALL BE THE SPECIFIC EDITION REFERENCED IN APPLICABLE BUILDING CODE INCLUDING ALL REVISIONS AND ADDENDA.
     ALL DIMENSIONS, OTHER THAN PURELY STRUCTURAL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE CHECKED AGAINST THE ARCHITECTURAL DRAWINGS AND ANY INCONSISTENCIES REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. STRUCTURAL DRAWINGS MUST NOT BE SCALED.
   - 1.2. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS, TRENCHES, PITS, SUMPS, EQUIPMENT, SLEEVES, DEPRESSIONS, GROOVES AND CHAMFERS NOT INDICATED ON THE STRUCTURAL DRAWINGS. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ABOVE ITEMS WHERE SHOWN ON THE STRUCTURAL DRAWINGS ARE INDICATED ONLY APPROXIMATELY AS TO SIZE AND LOCATION.
   - 1.3. REFER TO PROJECT SPECIFICATIONS FOR ARCHITECTURAL CONCRETE REQUIREMENTS IN AREAS NOTED IN ARCHITECTURAL DRAWINGS.
   - 1.4. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, NO PROVISION HAS BEEN MADE IN THE DESIGN FOR CONDITIONS OCCURRING DURING CONSTRUCTION. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED FOR STRESSES AND INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT FULL RESPONSIBILTY FOR ALL SUCH MEASURES. IT SHALL ALSO BE THE RESPONSIBLITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY BRACING, SHORING, SHEET PILING OR OTHER TEMPORARY SUPPORTS OF SAFEGUARD ALL EXISTING OR ADJACENT STRUCTURES AFFECTED BY THIS WORK. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR CONSULTANTS REVIEW.
   - 1.5. IT IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE CONTRACTOR TO NOTIFY THE ENGINEER OF CONSTRUCTION PROGRESS SO THE ENGINEER CAN COMPLETE GENERAL REVIEWS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CONSTRUCTION SCHEDULE PRIOR TO STARTING THE WORK. GENERALLY, REVIEWS BY THE ENGINEER WILL BE REQUIRED FOR REBAR PRIOR TO CONCRETE PLACEMENT, FOOTING, FOUNDATIONS PRIOR TO BACKFILLING, AND STEEL / WOOD FRAMING INSTALLATION. THE ENGINEER WILL ALSO NEED TO INSPECT ALL ABOVE GRADE FRAMING PRIOR TO INSTALLATION OF INTERIOR FINISHES.
2. SHOP DRAWINGS, PLACING DRAWINGS AND BAR LISTS
   - 2.1. FOR ALL STRUCTURAL COMPONENTS SHOWN ON THE STRUCTURAL DRAWINGS, SUBMIT COPIES OF SHOP DRAWINGS AS DIRECTED FOR REVIEW BY THE STRUCTURAL CONSULTANT.SHOP DRAWINGS TO SHOW COMPLETE INFORMATION FOR THE FABRICATION AND ERECTION OF THE STRUCTURAL COMPONENTS.
     - 2.1.1 IT IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE CONTRACTOR TO NOTIFY THE ENGINEER OF CONSTRUCTION PROGRESS SO THE ENGINEER CAN COMPLETE GENERAL REVIEWS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CONSTRUCTION SCHEDULE PRIOR TO STARTING THE WORK. GENERALLY, REVIEWS BY THE ENGINEER WILL BE REQUIRED FOR REBAR PRIOR TO CONCRETE PLACEMENT, FOOTING, AND FOUNDATIONS PRIOR TO BACKFILLING. THE ENGINEER WILL ALSO NEED TO INSPECT ALL ABOVE GRADE FRAMING PRIOR TO INSTALLATION OF INTERIOR FINISHES.
   - 2.2. REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL CONSULTANT IS ONLY TO ASSESS THAT THE SUBMITTED SHOP DRAWINGS REFLECT THE INTENT OF THE STRUCTURAL DESIGN.
   - 2.3. REVIEW BY THE STRUCTURAL CONSULTANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR SEEING THAT THE WORK IS COMPLETE, ACCURATE AND IN CONFORMITY WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
3. INSPECTION AND TESTING
   - 3.1. A SOILS CONSULTANT AND AN INDEPENDENT INSPECTION AND TESTING COMPANY ARE TO BE ENGAGED TO CARRY OUT THE FOLLOWING SERVICES:
     - 3.1.1. BEARING SOIL - REFER TO NOTES ON STRUCTURAL DRAWINGS AND ALSO TO THE SOIL REPORT.
     - 3.1.2. FILL UNDER SLAB-ON-GRADE - CONFORM THAT FILL MATERIAL USED IS SATISFACTORY AND THAT THE REQUIRED DEGREE OF COMPACTION HAS BEEN ATTAINED.
     - 3.1.3. CAST-IN-PLACE CONCRETE - ROUTINE INSPECTION OF MATERIALS, INCLUDING SLUMP, CYLINDER AND AIR ENTRAINMENT TESTS AND REINFORCING ROD TESTS WHEN REQUIRED OR DIRECTED IN ACCORDANCE WITH CSA STANDARD A23.2.
     - 3.1.4. THE PROJECT SUPERINTENDENT IS TO ADVISE THE STRUCTURAL CONSULTANT A MINIMUM OF 24 HOURS IN ADVANCE OF A CONCRETE POUR FOR A REVIEW OF PREPARATIONS.
     - 3.1.5. STRUCTURAL STEEL - ROUTINE SHOP AND FIELD INSPECTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS CSA S16. INCLUDE FOR AN INDEPDENT THIRD PARTY WELDING INSPECTION AND TESTING COMPANY TO REVIEW ALL CONNECTIONS AND PROVIDE A WRITTEN REPORT WITH COMMENTS. THE WORK WILL BE CONSIDERED DEFICIENT UNTIL THE INSPECTION COMPANY HAS CONFIRMED IN WRITING THAT ALL NEWLY INSTALLED CONNECTIONS ARE ACCEPTABLE.
     - 3.1.6. STRUCTURAL WOOD BEAMS, JOISTS, DECKING ,CONENCTIONS, ROUTINE INSPECTION FOR MATERIALS AND INSTALLATION IN ACCORDANCE WITH REQUIREMENTS OF CSA-086 AND ONTARIO BUILDING CODE.
     - 3.1.7. MASONRY - WHEN REQUIRED OR DIRECTED, CONCRETE BLOCKS SHALL BE TESTED IN ACCORDANCE WITH ASTM C140 BRICKS IN ACCORDANCE WITH CAN/CSA A82: AND MORTAR AND/OR GROUT IN ACCORDANCE WITH CSA A179.
   - 3.2. ALL INSPECTION AND TESTING SERVICES ARE TO BE PERFORMED BY COMPANIES CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION AND FOR WELDING, INSPECTORS ARE TO BE CERTIFIED BY THE CANADIAN WELDING BUREAU.
4. FOUNDATIONS
   - 4.1. REFER TO NOTES UNDER FOUNDATION PLANS. ALL EXTERIOR FOOTINGS OR OTHER FOOTINGS EXPOSED TO FREEZING IN THE FINISHED BUILDING SHALL BE FOUNDED AT A MINIMUM OF 1200mm (4'-0") BELOW FINISHED GRADE, UNLESS OTHERWISE NOTED. FOOTINGS EXPOSED TO FROST ACTION DURING CONSTRUCTION SHALL BE PROTECTED BY A MINIMUM OF 1200mm (4'-0") OF EARTH OR ITS EQUIVALENT SUFFICIENT TO PREVENT FREEZING.
   - 4.2. THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATIONS FOR FOOTINGS OR ALONG STEPPED FOOTINGS SHALL NOT EXCEED A RISE OF 7 IN A RUN OF 10, MAXIMUM STEP APPROX. 600mm (2'-0").
   - 4.3. PIER DEPTHS AND FOOTING ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE BASED UPON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THE STRUCTURAL DRAWINGS.
   - 4.4. IF ACTUAL JOB SITE OR SOIL CONDITIONS VARY FROM THOSE ASSUMED, THEN WRITTEN DIRECTIONS MUST BE OBTAINED FROM THE STRUCTURAL CONSULTANT BEFORE PROCEEDING WITH THE WORK.
   - 4.5. KEEP EXCAVATIONS CONTINUOUSLY DRY BEFORE CONCRETE IS PLACED. IF THE SOIL IS SOFTENED BY WATER, THE EXCAVATION SHALL BE EXTENDED BELOW THE SOFTENED MATERIAL AND THE BOTTOM OF THE FOOTINGS LOWERED TO SUIT.
5. BACKFILLING AND COMPACTION
   - 5.1. SLABS-ON-GRADE AND ALL STRUCTURAL ELEMENTS FRAMING INTO WALLS WHICH RETAIN EARTH MUST BE IN PLACE BEFORE BACKFILLING.
   - 5.2. AT FOUNDATION WALLS WITH GRADE BOTH SIDES, UNLESS ADEQUATELY SHORED, BACKFILL AND COMPACT EACH SIDE OF WALL SIMULTANEOUSLY.
   - 5.3. UNDER SLAB-ON-GRADE, REMOVE SOFT SPOTS, ORGANIC AND FOREIGN MATTER IN THE SUB-GRADE. (WHERE SUB-GRADE CONSISTS OF COMPACTED FILL, REFER TO SPECIFIC NOTES ON THE DRAWINGS).
   - 5.4. BACKFILL UNDER SLAB-ON-GRADE, IN FOOTING EXCAVATIONS AND IN TRENCHES ONLY WITH APPROVED MATERIAL. UNLESS SPECIFICALLY NOTED OTHERWISE, BACKFILLING SHALL BE CARRIED OUT IN MAXIMUM OF 200mm (8")THICK LIFTS OF LOOSE FILL EACH COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
   - 5.5. UNLESS OTHERWISE NOTED IN GEOTECHNICAL REPORT, PROVIDE IMMEDIATELY UNDER SLABS-ON-GRADE A MINIMUM OF 200mm (8") OF COMPACTED (MTC) GRANULAR 'B' MATERIAL.COMPACTION TO ACHIEVE A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.

DEFECTIVE MATERIALS AND WORK

1. WHERE EVIDENCE EXISTS THAT DEFECTIVE WORK HAS OCCURRED OR THAT WORK HAS BEEN CARRIED OUT INCORPORATING DEFECTIVE MATERIALS, THE CONSULTANT MAY HAVE TESTS, INSPECTIONS OR SURVEYS PERFORMED, ANALYTICAL CALCULATIONS OF STRUCTURAL STRENGTH MADE, AND THE LIKE, IN ORDER TO HELP DETERMINE WHETHER THE WORK MUST BE CORRECTED OR REPLACED. TESTS, INSPECTIONS OR SURVEYS OR CALCULATIONS CARRIED OUT UNDER THESE CIRCUMSTANCES WILL BE MADE AT THE CONTRACTOR'S EXPENSE, REGARDLESS OF THEIR RESULTS, WHICH MAY BE SUCH THAT, IN THE CONSULTANT'S OPINION, THE WORK MAY BE ACCEPTABLE.
2. ALL TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, EXCEPT WHERE THIS WOULD, IN THE CONSULTANT'S OPINION, CAUSE UNDUE DELAY OR GIVE RESULTS NOT REPRESENTATIVE OF THE REJECTED MATERIAL IN PLACE. IN THIS CASE, THE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS GIVEN BY THE CONSULTANT.
3. MATERIALS OR WORK, WHICH FAIL TO MEET SPECIFIED REQUIREMENTS, MAY BE REJECTED BY THE CONSULTANT WHENEVER FOUND AT ANY TIME PRIOR TO FINAL ACCEPTANCE OF THE WORK REGARDLESS OF PREVIOUS INSPECTION. IF REJECTED, DEFECTIVE MATERIALS OR WORK SHALL BE PROMPTLY REMOVED AND REPLACED OR REPAIRED TO THE SATISFACTION OF THE CONSULTANT, AT NO EXPENSE TO THE OWNER.

QUALITY CONTROL

1. IMPLEMENT A SYSTEM OF QUALITY CONTROL TO ENSURE THAT THE MINIMUM STANDARDS SPECIFIED HEREIN ARE ATTAINED.
2. BRING TO THE ATTENTION OF THE CONSULTANT ANY DEFECTS IN THE WORK OR DEPARTURES FROM THE CONTRACT DOCUMENTS, WHICH MAY OCCUR DURING CONSTRUCTION. THE CONSULTANT WILL DECIDE UPON CORRECTIVE ACTION AND GIVE RECOMMENDATIONS IN WRITING.
3. THE CONSULTANT'S GENERAL REVIEW DURING CONSTRUCTION AND INSPECTION AND TESTING BY INDEPENDENT INSPECTION AND TESTING AGENCIES REPORTING TO THE CONSULTANT ARE BOTH UNDERTAKEN TO INFORM THE OWNER/CLIENT OF THE CONTRACTOR'S PERFORMANCE AND SHALL IN NO WAY AUGMENT THE CONTRACTOR'S QUALITY CONTROL OR RELIEVE THE CONTRACTOR OF CONTRACTUAL RESPONSIBILITY.

CAST-IN-PLACE CONCRETE NOTES A03

1. GENERAL
   - 1.1. PROVIDE ALL LABOUR, MATERIALS, TOOLS AND EQUIPMENT REQUIRED TO CARRY OUT THE WORK.
   - 1.2. REFER ALSO TO GENERAL NOTES, NOTES UNDER PLANS AND SCHEDULES, TYPICAL DETAILS AND SPECIFICATION.
2. PRODUCTS
   - 2.1. PORTLAND CEMENT, WATER AND AGGREGATES SHALL CONFORM TO CSA STANDARD A23.1.
   - 2.2. PROVIDE AN APPROVED WATER REDUCING ADDITIVE IN ALL CONCRETE. PROVIDE AN APPROVED AIR ENTRAINING ADDITIVE IN ALL CONCRETE WHICH WILL BE EXPOSED TO A FREEZE/THAW CYCLE AND/OR THE ACTION OF DE-ICING SALT. ADMIXTURES SHALL CONFORM TO CSA STANDARD A23.1.
   - 2.3. FORMWORK SHALL CONFORM TO CSA STANDARD A23.1 AND CSA STANDARD S269.1 AND FALSEWORK SHALL CONFORM TO CSA S269.1.
   - 2.4. IF SO INSTRUCTED, THE DESIGNS FOR THE FORMWORK SHALL BE SUBMITTED FOR REVIEW BEFORE CONSTRUCTION. FORMWORK DRAWINGS AND DESIGN SHALL BEAR THE STAMP OF A LICENSED PROFESSIONAL ENGINEER.
   - 2.5. PROVIDE AND/OR INSTALL STANDARD ADJUSTABLE INSERTS AND ALL OTHER CAST-IN INSERTS AS REQUIRED BY THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATION.
   - 2.6. REINFORCING STEEL UNLESS SPECIFICALLY NOTED, SHALL BE DEFORMED BARS CONFORMING TO CAN/CSA -G30.18-M GRADE 400 (58000 PSI).
   - 2.7. WELDED WIRE FABRIC TO BE SUPPLIED IN FLAT SHEETS ONLY, UNLESS APPROVED OTHERWISE.
   - 2.8. REINFORCING SHALL BE DETAILED, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI DETAILING MANUAL AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA.
   - 2.9. DRY-PACK GROUT TO BE 1 PART PORTLAND CEMENT TO 1 1/2 PARTS SAND TO 2 PARTS OF 8 mm PEA GRAVEL WITH ONLY SUFFICIENT WATER TO DAMPEN MIXTURE. COMPRESSIVE STRENGTH 50MPa AT 28 DAYS.
   - 2.10. NON-SHRINK GROUT TO BE AN APPROVED PRE-MIXED PROPRIETARY PRODUCT.
   - 2.11. CURING AND SEALING COMPOUNDS WHERE APPROVED FOR USE TO CONFORM TO ASTM STANDARD C309. GENERALLY ALL CONCRETE SURFACES ARE TO BE SEALED UNLESS NOTED OTHERWISE. COMPOUNDS ARE TO BE COMPATIBLE WITH APPLIED FINISHES.
3. EXECUTION
   - 3.1. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE @ 28 DAYS SHALL BE AS NOTED ON THE DRAWING S0.01 (20MPa MINIMUM).
   - 3.2. SLUMP AT THE POINT OF DISCHARGE SHALL BE CONSISTENT AT 80 mm ±30mm (3" ±1 1/8") UNLESS NOTED OTHERWISE.GREATER SLUMPS ARE NOT ACCEPTABLE.
   - 3.3. CONCRETE MIXING, TRANSPORTATION, HANDLING AND PLACING SHALL CONFORM TO CSA STANDARD A23.1.
   - 3.4. CONSTRUCTION JOINTS FOR WALLS ARE BASED UPON VERTICAL JOINTS AT A MAXIMUM SPACING OF 10000mm (30'-0") .UNLESS CONTROL JOINTS ARE PROVIDED AS PER DETAIL CFW02. TOTAL LENGTH OF POUR TO BE DISCUSSED WITH ENGINEER PRIOR TO PROCEEDING.
   - 3.5. CONSTRUCTION JOINTS FOR SLABS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE CONSTRUCTION.
   - 3.6. INSERTS, FRAME-OUTS, SLEEVES, BRACKETS, CONDUITS AND FASTENING DEVICES, SHALL BE INSTALLED AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS IN A MANNER THAT SHALL NOT IMPAIR THE STRUCTURAL STRENGTH OF THE SYSTEM, BE SO INSTALLED THAT THEY SHALL NOT REQUIRE THE CUTTING, BENDING, OR DISPLACEMENT OF THE REINFORCING OTHER THAN AS SHOWN ON THE TYPICAL DETAILS.
   - 3.7. ELECTRICAL CONDUIT SHALL NOT PASS THROUGH A COLUMN, SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN 1/3 SLAB THICKNESS OR WALL OR BEAM IN WHICH IT IS EMBEDDED, SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTRE UNLESS APPROVED AND HAVE A MINIMUM CONCRETE COVER OF 25 mm (1") AND UNLESS SPECIFICALLY PERMITTED OTHERWISE, SHALL NOT RUN HORIZONTALLY IN A CONCRETE WALL.
   - 3.8. OPENINGS AND DRIVEN FASTENERS REQUIRED IN THE CONCRETE AFTER THE CONCRETE IS PLACED SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE PROCEEDING.
   - 3.9. FINISHING, REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR REQUIRED FINISH TO EXPOSED CONCRETE. ALL HONEYCOMBING SHALL BE CUT OUT AND FILLED. FLOOR FINISHES SHALL BE AS REQUIRED BY THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND SHALL CONFORM TO CSA STANDARD A23.1.
   - 3.10. TOLERANCES FOR PLACING STRUCTURAL CONCRETE, REINFORCING STEEL, CAST-IN HARDWARE AND FOR FLOOR AND ROOF FINISHES SHALL BE AS SPECIFIED IN CSA STANDARD A23.1.
   - 3.11. MINIMUM REINFORCING FOR ANY CONCRETE WALL TO BE AS SHOWN ON TYPICAL DETAIL FOR CONCRETE WALLS.
   - 3.12. MINIMUM REINFORCING FOR ANY SUSPENDED SLAB SHALL BE TEMPERATURE BARS BOTTOM EACH WAY PLUS 10M @ 400 (16") DOWELS 600x600 (2'-0" x 2'-0") TOP AROUND PERIMETER. REFER TO TYPICAL DETAIL OF ONE WAY SLABS.
   - 3.13 PERFORM SURVEYS OF SLABS AS INDICATED IN SPECIFICATIONS.
   - 3.14 GENERAL REQUIREMENTS FOR CUTTING AND DRILLING INTO CONCRETE
     - (A) DO NOT DRILL INTO, CORE THROUGH, SAW-CUT OR CHIP THE CONCRETE STRUCTURE WITHOUT WRITTEN AUTHORIZATION BY THE STRUCTURAL CONSULTANT.
     - (B) UNLESS NOTED OTHERWISE, PRIOR TO CUTTING, CORING OR DRILLING INTO THE CONCRETE STRUCTURE, LOCATE EXISTING CONCRETE REINFORCEMENT AND EMBEDDED SERVICES AT THAT LOCATION USING SUITABLE SCANNING DEVICE (I.E. X-RAYS, GROUND PENETRATION RADAR (GPR), LOCAL CHIPPING OF SLAB - ONLY WHERE APPROVED BY THE STRUCTURAL CONSULTANT, ETC), AS AUTHORIZED BY PROPERTY MANAGER IF APPLICABLE
     - (C) GPR SCANNING MUST BE DONE BY TRAINED TECHNICIANS WITH AT LEAST 5 YEARS OF EXPERIENCE AS SUCH.
     - (D) GPR SCANNING DEVICES MUST BE CAPABLE OF ACCURATELY LOCATING REBAR IN A CONCRETE SLAB TO A MINIMUM DEPTH OF 300 mm, WITHIN A HORIZONTAL TOLERANCE OF +- 25 mm AND A VERTICAL (DEPTH) TOLERANCE OF THE LARGER OF +-25 mm OR +- 15% OF THE REBAR DEPTH.
     - (E) AFTER ALL THE EXISTING REINFORCEMENT AND SERVICES HAVE BEEN LOCATED, NOTIFY THE STRUCTURAL CONSULTANT, WHO WILL REVIEW AND APPROVE THE PROPOSED LOCATION OF OPENINGS, CORES OR DRILLED HOLES. MAKE ANY NECESSARY ADJUSTMENTS TO THE HOLE LOCATIONS AS DIRECTED BY THE STRUCTURAL CONSULTANT.
     - (F) THE REVIEW BY THE STRUCTURAL CONSULTANT IS LIMITED ONLY TO THE LOCATION OF THE PROPOSED CORES OR DRILLED HOLES THROUGH THE EXISTING STRUCTURE AND IT IS BASED ON THE ASSUMPTION THAT THE X-RAY OR SCAN RESULTS LOCATING SLAB REINFORCEMENT AND EMBEDDED SERVICES ARE COMPLETE AND ACCURATE. STEPHENSON EGINEERING LTD. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE X-RAY OR SCAN RESULTS.
     - (G) CORE DRILL NEW HOLES FOR PIPES TO A DIAMETER NOT LARGER THAN THE OUTSIDE PIPE DIAMETER PLUS 25MM. DO NOT CUT EXISTING REINFORCEMENT OR SERVICES WITHOUT PRIOR APPROVAL OF THE CONSULTANT.
     - (H) WHERE RECTANGULAR OPENINGS ARE TO BE CUT, PRE-DRILL THE CORNERS USING A 100 MM DIAMETER CORE DRILL OR DRILL A SERIES OF HOLES TO PREVENT OVER CUTTING OF THE CORNERS.

4. QUALITY CONTROL

- 4.1. CONCRETE MIXING, TRANSPORTATION, HANDLING AND PLACING SHALL CONFORM TO CSA STANDARD A23.1
- 4.2. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FINISH TO EXPOSED CONCRETE. ALL HONEYCOMBING SHALL BE CUT OUT AND REPAIRED WITH APPROVED REPAIR MATERIAL. FLOOR FINISHES SHALL BE AS REQUIRED BY THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS, AND SHALL CONFORM TO CSA STANDARD A23.1
- 4.3. TOLERANCES FOR PLACING STRUCTURAL CONCRETE, REINFORCING STEEL, CAST-IN HARDWARE SHALL BE AS SPECIFIED IN CSA STANDARD A23.1
- 4.4. PROVIDE A VAPOUR RETARDER MEMBRANE COVER OVER THE PREPARED BASE MATERIAL BELOW SLABS-ON-GRADE, WHERE NOTED ON THE DRAWINGS.
- 4.5.THE CONTRACTOR SHALL ENSURE THAT REINFORCING STEEL IS ADEQUATELY BRACED AGAINST MOVEMENT DURING CONCRETE PLACING.
- 4.6.FOLLOW MANUFACTURER'S INSTRUCTIONS REGARDING INSTALLATION PROCEDURES AND MINIMUM EMBEDMENT OF POST-INSTALLED ANCHORS.
- 4.7.COMPLETELY FILL VOIDS BENEATH STEEL BASES ON CONCRETE WITH AN APPROVED NON-SHRINK 36MPa (5ksi) GROUT.
- 4.8.AN INDEPENDENT INSPECTION AND TESTING COMPANY SHALL DO THE FOLLOWING TASKS:
  - 4.8.1. REVIEW AND COMMENT ON THE SUITABILITY OF THE CONTRACTOR'S PROPOSED MATERIALS AND CONCRETE MIX DESIGNS AND THEIR CONFORMANCE WITH THE REQUIREMENTS OF CSA A23.1 AND THE CONTRACT DOCUMENTS.
  - 4.8.2. MAKE AT LEAST ONE STRENGTH TEST FOR EACH 100 m3 (3500 FT3) OF EACH CLASS OF CONCRETE (OR FRACTION THEREOF). IN NO CASE SHALL THERE BE LESS THAN ONE STRENGTH TEST FOR EACH CLASS OF CONCRETE PLACED ON ANY ONE DAY. FOR SMALL POURS, THE STRUCTURAL CONSULTANT MAY DIRECT THAT ADDITIONAL STRENGTH TESTS BE MADE. PROVIDE A STORAGE FOX TO STORE CYLINDER SPECIMENS AT THE SITE IN ACCORDANCE WITH CSA A23.1. COORDINATE STORAGE LOCATIONS WITH THE CONTRACTOR TO PREVENT LOSS OR DAMAGE TO TEST SPECIMENS. THE NUMBERS OF COMPANION LABORATORY CURED SPECIMENS (100 X 200 mm CYLINDERS) THAT CONSTITUTE A STRENGTH TEST ARE AS FOLLOWS:
    - THREE SPECIMENS FOR A CONCRETE MIX SPECIFIED FOR 28 DAY STRENGTH; TEST ONE SPECIMEN
    - FOUR (4) SPECIMENTS FOR A CONCRETE MIX SPECIFIED AT 56 DAY STRENGTH; TEST ONE SPECIMENT AT 7 DAYS, ONE AT 28 DAYS AND TWO AT 56 DAYS.
    - DURING PLACING OF CONCRETE IN COLD WEATHER, MAKE ONE ADDITIONAL SPECIMEN AND STORE AT THE JOBSITE UNDER CONDITIONS SIMILAR TO THE CONCRETE IT REPRESENTS. THIS SPECIMEN IS INTENDED AS A FIELD CONTROL TEST, SHALL BE FIELD CURED TO CONFORM TO CSA-A23.2 AND TESTED AT 7 DAYS.
  - 4.8.3. MAKE AT LEAST ONE SLUMP TEST, ONE CONCRETE TEMPERATURE TEST AND ONE AIR ENTRAINMENT TEST FOR EVERY COMPRESSIVE STRENGTH TEST AS APPLICABLE.
  - 4.8.4. WHEN DCI CORROSION INHIBITOR OR OTHER ADMIXTURES ARE SPECIFIED, TEST IN ACCORDANCE WITH CSA A23.1, MANUFACTURER'S RECOMMENDATIONS AND STANDARD INDUSTRY PROCEDURES.
  - 4.8.5. MAKE AT LEAST ONE RAPID CHLORIDE PERMEABILITY TEST FOR EACH CONCRETE POUR CONSISTING OF CONCRETE EXPOSURE CLASS C-1, A-1 OR C-XL. EACH TEST SHALL CONSIST OF 4 CYLINDER SPECIMENS, TO BE FIELD CURED IN CONDITIONS SIMILAR TO THE IN-SITU CONCRETE. TEST ONE SPECIMEN AT 7 DAYS, ONE AT 28 DAYS AND TWO AT 56 DAYS.
  - 4.8.6. OBTAIN FROM THE CONTRACTOR MILL TEST REPORTS FROM CANADIAN MILLS FOR ALL REINFORCEMENT. CHECK THESE REPORTS AGAINST THE SPECIFIED GRADES OF REINFORCMENT AND FOR COMPLIANCE WITH THE REQUIREMENTS OF CSA G30.18.

Key to Detail Location

NO. / NO. — Detail Number / Drawing Number

If this sheet is not 33 1/8" x 23 3/8" (841 x 594 mm) It is a reduced print - Read dwg. accordingly.

Contractors must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

Drawings should not be scaled.

#	Date	Revision/Issued:
1	18-05-11	ISSUED FOR DESIGN DEVELOPMENT
2	18-06-29	ISSUED FOR 50% CONTRACT DOCUMENTS
3	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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GENERAL NOTES

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STRUCTURAL STEEL — A04

1. GENERAL
   1.1. STRUCTURAL STEEL DESIGN DETAILS AND CONNECTIONS SHALL CONFORM TO CSA STANDARD S16 AND SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN THIS TYPE OF WORK.
   1.2. REFER ALSO TO GENERAL NOTES, NOTES UNDER PLANS AND TO THE SPECIFICATION.
   1.3. WELDING SHALL CONFORM TO CSA STANDARD W59 AND BE PERFORMED BY A FABRICATOR CERTIFIED TO CSA W47.1.
   1.4. BEAM CONNECTIONS SHALL BE DESIGNED FOR A MINIMUM OF FACTORED VERTICAL SHEAR FORCE OF 50% OF THE BEAM SHEAR CAPACITY. UNLESS OTHERWISE NOTED, AND IN NO CASE BE LESS THAN THE LOADS SHOWN ON OR IMPLIED BY THE DRAWINGS. WHERE BOLTED CONNECTIONS ARE UTILIZED, A MINIMUM OF TWO BOLTS PER CONNECTION SHALL BE USED.
   1.5. MEMBER CONNECTIONS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER FOR FORCES AND MOMENTS INDICATED. SHOP DRAWINGS AND CALCULATIONS BEARING THE STAMP AND SIGNATURE OF THE REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION AND ERECTION.
2. PRODUCTS
   2.1. STRUCTURAL STEEL SECTIONS SHALL CONFORM TO CSA-G40.20/G40.21 (UNLESS NOTED OTHERWISE ON PLANS OR SECTIONS).
      2.1.1. S SHAPES, CHANNELS, ANGLES, PLATES AND RODS: - GRADE 300 W
      2.1.2. HSS SECTIONS: - GRADE 350W (CLASS C U/N)
      2.1.3. W SHAPES: - GRADE 350W
   2.3. BOLTS FOR CONNECTIONS TO CONFORM TO ASTM F3125/3125M, GRADE A325 OR A325M, UNLESS NOTED.
   2.4. ANCHOR RODS FOR BASE PLATES, BEARING PLATES AND WELD PLATES TO CONFORM TO ASTM F1554, GRADE 36, UNLESS NOTED.
   2.5. NUTS AND WASHERS TO CONFORM TO ASTM A563 AND ASTM F436.
   2.7. WELDING MATERIALS TO CONFORM TO CSA W48. ALL WELDS SHALL CONFORM TO CSA STANDARD W59.
   2.8. SURFACE PREPARATION AND PRIMER PAINT FOR STRUCTURAL STEEL MEMBERS AND JOISTS INSIDE VAPOUR BARRIER TO CONFORM TO CISC/CPMA 1.73a OR CISC/CPMA 2.75 (IF EXPOSED TO VIEW), UNLESS NOTED ON DRAWINGS OR PROJECT SPECIFICATIONS AND ARCHITECTURAL DRAWINGS.
   2.9. HOT DIP GALVANIZING SHALL PROVIDE A MINIMUM ZINC COATING OF 600g/sq.m UNLESS OTHERWISE SPECIFIED.

3. EXECUTION
   3.1. FABRICATION, HANDLING AND ERECTION SHALL CONFORM TO CAN/ CSA - S16.
   3.2. TOLERANCES: VARIATION FROM PLUMB AND LEVELNESS OF STRUCTURAL FRAMING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND TYPICAL DETAILS.
   3.5. FIELD " TOUCH-UP " BOLTS, WELDS, BURNED OR SCRAPED SURFACES AFTER ERECTION.
   3.6. NO HOLES OTHER THAN THOSE SHOWN ON REVIEWED SHOP DRAWINGS SHALL BE MADE IN ANY STEEL MEMBER WITHOUT WRITTEN PERMISSION OF THE STRUCTURAL CONSULTANT.
   3.7. CO-ORDINATE WITH MECHANICAL AND ELECTRICAL CONSULTANTS AND SUB-TRADES WHOSE WORK MAY EFFECT DETAILING, FABRICATION AND ERECTION OF THE STEEL STRUCTURE.
   3.8. CLEAN, PREPARE SURFACES AND SHOP PRIME STRUCTURAL STEEL WITH ONE COAT OF SPECIFIED PRIMER PAINT IN ACCORDANCE WITH CAN/CSA - S16, EXCEPT WHERE MEMBERS ARE TO BE ENCASED IN CONCRETE, OR TO RECEIVE SPRAY APPLIED FIRE PROOFING. FIELD " TOUCH-UP BOLTS", WELDS, BURNED OR SCRAPED SURFACES AFTER ERECTION.

4. QUALITY CONTROL
   4.1. AN INDEPENDENT INSPECTION AND TESTING COMPANY IS TO INSPECT STRUCTURAL STEEL AND STEEL DECK IN THE SHOP AND IN THE FIELD FOR WELDING, CONNECTIONS, BOLT TORQUES, AND GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.
   4.2. THE FOLLOWING TYPES OF CONNECTIONS ARE TO BE DESIGNED AS SLIP-CRITICAL CONNECTIONS:
      4.2.1. MOMENT CONNECTIONS (UNLESS END PLATE TYPE MOMENT-CONNECTIONS ARE USED).
      4.2.2. CONNECTIONS WHERE WELDS AND BOLTS SHARE IN TRANSMITTING SHEAR FORCES AT A COMMON FAYING SURFACE.
      4.2.3. CONNECTIONS THAT UTILISE OVERSIZED HOLES.
      4.2.4 .CONNECTIONS SUBJECT TO FATIGUE OR FREQUENT LOAD REVERSALS.
   4.3. CONFORM TO THE FIRE RATED ASSEMBLY DESIGN SPECIFIED TO THE PROJECT.

LOAD BEARING MASONRY NOTES — A06

1. GENERAL
   1.1. UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS, THE FOLLOWING INDICATES THE MINIMUM REQUIREMENTS APPLICABLE TO STRUCTURAL LOAD BEARING MASONRY.
   1.2. REFER ALSO TO ARCHITECTURAL DRAWINGS AND / OR THE SPECIFICATION FOR REQUIREMENTS OTHER THAN STRUCTURAL, AND FOR NON-LOAD BEARING WALLS AND PARTITIONS.
   1.3. MASONRY CONSTRUCTION TO CONFORM TO CSA STANDARD S304.1.
2. PRODUCTS
   2.1. CONCRETE BLOCKS TO BE MODULAR UNITS AS SHOWN ON THE ARCHITECTURAL DRAWINGS AND /OR SPECIFICATION, AND UNLESS OTHERWISE NOTED SHALL BE:
      2.1.1. NORMAL WEIGHT LOAD BEARING UNITS:
      STANDARD HOLLOW: ....TYPE H / 15 / A / M.
      75% SOLID: ....TYPE S / 15 / A / M.
      100% SOLID: ....TYPE S / 15 / A / M.
      (REFER TO ARCHITECTURAL DRAWINGS AND SCHEDULES FOR LOCATIONS AND TYPES).
   2.3. MORTAR:
   TO CONFORM TO CSA A179
   FOR LAYING ALL LOAD BEARING CONCRETE BLOCKS ....USE TYPE "S" MORTAR UNLESS NOTED.
   2.4. MASONRY GROUT:
   TO CONFORM TO CSA A179. THE SLUMP SHALL BE 200mm TO 250mm (8"TO10") AND THE MINIMUM 28 DAY COMPRESSIVE STRENGTH FOR "FINE" GROUT SHALL BE 15MPa.
   2.5. MASONRY CONNECTORS (ANCHORS, FASTENERS AND TIES):
   SHALL CONFORM TO CSA A370, AND BE INSTALLED TO COMPLY WITH CSA A371.
   SPACING, STRENGTH AND GALVANIZING OF STRIP TIES, DOVETAIL ANCHORS, BAR ANCHORS, ROD ANCHORS, STRAP ANCHORS, WALL AND PARTITION ANCHORS SHALL COMPLY WITH CSA A370.
   2.6. HORIZONTAL JOINT REINFORCEMENT FOR ALL MASONRY WALLS:
   THE FOLLOWING ARE MINIMUM REQUIREMENTS:
      2.6.1. CONFORM TO CSA STANDARDS A370 AND A371.
      2.6.2. REINFORCEMENT SHALL BE AN APPROVED CONTINUOUS "LADDER" TYPE, PREFABRICATED WITH 3.66mm DIAMETER (9 GAUGE) LONGITUDINAL AND CROSS WIRES.
      2.6.3. SPACING:- PROVIDE REINFORCING IN THE TOP COURSE IMMEDIATELY BELOW FLOOR AND ROOF BEARING LEVELS AND THE FIRST TWO COURSES ABOVE AND BELOW EVERY WALL OPENING.THE REINFORCING SHALL EXTEND 600mm (24") BEYOND SUCH OPENINGS. FOR THE REMAINDER OF WALLS, THE VERTICAL SPACING SHALL NOT EXCEED 400mm (16").
      2.6.4. OVERLAP SPLICES:
      SHALL BE A MIN. OF 150mm (6") FOR KNURLED WIRE AND 300mm (12") FOR PLAIN WIRE.
      LAPS SHALL BE STAGGERED A MINIMUM OF 750mm (30") FROM COURSE TO COURSE.
      REINFORCING SHALL NOT PASS THROUGH A VERTICAL CONTROL JOINT UNLESS OTHERWISE SHOWN.
      2.6.5. CORROSION RESISTANCE:
      JOINT REINFORCING FOR ALL WALLS IN CONTACT WITH SOIL, EXTERIOR WALLS AND WALLS IN A MOIST ENVIRONMENT SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION TO ASTM A153,458 gm/sq.meter (1.5 oz. / sq. foot).
   2.8. BOND BEAMS:- MADE FROM LINTEL BLOCKS, OR HALF WEB BLOCKS, WHERE SHOWN ON STRUCTURAL DRAWING SHALL CONFORM TO CSA A371.
   2.9. GROUTING:- BY FILLING VOIDS OF HOLLOW UNITS AND REINFORCED HOLLOW UNITS SHALL CONFORM TO CSA A179 (MORTAR IS NOT ACCEPTABLE).

3. EXECUTION
   3.1. BEARING ON MASONRY:
      3.1.1. MINIMUM BEARING ON MASONRY UNLESS OTHERWISE NOTED:-
      BEAMS (STEEL, CONC., WOOD)...................... 200mm (8") NOMINAL
      LINTELS (STEEL, CONC., WOOD) .... 150mm (6") NOMINAL
      3.1.2. MASONRY BEARINGS SHALL BE OF SOLID BLOCKS (OR GROUTED SOLID) OR BRICKS LAID IN MORTAR. ALL JOINTS ARE TO BE FULLY FILLED WITH TYPE 'S' MORTAR.
      3.1.3. MIN. SIZE OF SOLID BEARINGS AT BEAMS AND LINTELS UNLESS NOTED SHALL BE EQUAL TO TWICE THE BEARING / WALL PLATE (WP) LENGTH AND FOR A DEPTH EQUAL TO THE BEARING / WALL PLATE (WP) LENGTH, AND IN NO CASE LESS THAN 400 LONG x 200 DEEP (16" x 8"), SYMMETRICAL UNDER BEARING POINT.
      3.1.4. PROVIDE A MINIMUM OF ONE CONTINUOUS COURSE 200mm (8") OF SOLID OR GROUTED VOID BLOCKS OR BRICKS LAID IN MORTAR AT THE OP COURSE IMMEDIATELY BELOW ALL FLOOR AND ROOF BEARING LEVELS.
   3.2. TOLERANCES:
   UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS AND / OR SPECIFICATION, SHALL CONFORM TO CSA A371.
   3.3. COLD WEATHER CONSTRUCTION:- REQUIREMENTS AND PROTECTION SHALL CONFORM TO CSA A371 AND UNDER NO CIRCUMSTANCES SHALL MASONRY CONSTRUCTION BE PERMITTED WHEN THE AIR TEMPERATURE FALLS BELOW -12°C.

4. QUALITY CONTROL
   4.1. WHEN REQUESTED SAMPLING AND TESTING SHALL CONFORM TO CSA STANDARDS S304.1 AND ASTM C140. REFER ALSO TO GENERAL NOTES.

LINTEL NOTES — A07

UNLESS OTHERWISE SHOWN OR NOTED ON THE STRUCTURAL DRAWINGS, PROVIDE LINTELS OVER ALL OPENINGS IN MASONRY WALLS, AS FOLLOWS:
1. FOR OPENINGS UP TO 1200 mm (4'-0") CLEAR;
   1.1. ONE ANGLE 90 x 90 x 6 (3 1/2" x 3 1/2" x 1/4") FOR EACH 100mm (4") OF WALL THICKNESS OR PORTION THEREOF.
   OR
   1.2. 200mm (8") DEEP MASONRY LINTEL BLOCK REINFORCED WITH 1-10M BOTTOM FOR EACH 100mm (4") OF WALL THICKNESS OR PORTION THEREOF.
2. FOR OPENINGS FROM 1200mm (4'-0") CLEAR TO 1800mm (6'-0") CLEAR;
   2.1. ONE ANGLE 125 x 90 x 8 LONG LEG VERTICAL (5"x 3 1/2" x 5/16") FOR EACH 100mm (4") OF WALL THICKNESS OR PORTION THEREOF.
   OR
   2.2. 200mm (8") DEEP MASONRY LINTEL BLOCK REINFORCED WITH 1-15M BOTTOM FOR EACH 100mm (4") OF WALL THICKNESS OR PORTION THEREOF.
3. ALL LINTELS TO BEAR 150mm (6") MINIMUM AT EACH END ON SOLID MASONRY, UNLESS SHOWN OTHERWISE.
4. PAIRS OF LINTEL ANGLES ARE TO BE BOLTED OR WELDED TOGETHER, PRIOR TO SHIPMENT, AT MAXIMUM 450mm (18") CENTRES.
5. MASONRY LINTEL BLOCKS MAY ONLY BE USED IN LOAD-BEARING WALLS WITH PERMISSION AND MUST BE FILLED WITH 20 MPa CONCRETE. MORTAR IS NOT ACCEPTABLE AND WILL BE REJECTED.
6. STEEL LINTELS ARE TO BE SUPPLIED BY STEEL CONTRACTOR BUT PLACED BY GENERAL CONTRACTOR OR MASONRY SUB-CONTRACTOR.
7. STEEL CONTRACTOR TO SUPPLY ALL NECESSARY DIRECTIONS REQUIRED FOR PLACING STEEL LINTELS.
8. WHILE EVERY EFFORT HAS BEEN MADE TO SHOW ON THE STRUCTURAL DRAWINGS EACH AND EVERY LINTEL OVER DOORS, MECHANICAL AND ELECTRICAL SERVICES, RECESSES AND POCKETS ETC., THROUGH LOAD-BEARING MASONRY WALLS, IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CO-ORDINATE AND SUPPLY ALL LINTELS REQUIRED THROUGH ALL WALLS (INCLUDING NON-LOAD BEARING WALLS) THROUGHOUT THE PROJECT. UNLESS OTHERWISE DIRECTED, LINTELS SHALL CONFORM TO THE ABOVE REQUIREMENTS.
9. REFER ALSO TO TYPICAL DETAILS.

WOOD FRAMING NOTES — A08

1. GENERAL
   1.1. THE FOLLOWING NOTES INDICATE ONLY THE MINIMUM REQUIREMENTS APPLICABLE TO STRUCTURAL WOOD CONSTRUCTION.SEE ALSO ARCHITECTURAL DRAWINGS AND THE SPECIFICATION (IF APPLICABLE) FOR REQUIREMENTS FOR NON-STRUCTURAL WOOD FRAMING.
   1.2. WOOD CONSTRUCTION SHALL CONFORM TO CSA-086 & AND TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE.
   1.3. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS OF AIR SPACES, INSULATION, ROOFING, FLOOR AND WALL FINISHES.

2. MATERIALS
   2.1. LUMBER:- UNLESS OTHERWISE NOTED TO BE SPRUCE-PINE-FIR (SPF) SPECIES, GRADE NO. 2, CONFORMING TO CSA-0141 WITH A MAXIMUM MOISTURE CONTENT OF 19% AT THE TIME OF INSTALLATION. LUMBER SHALL BEAR THE GRADING STAMP OF AN AGENCY APPROVED BY THE CANADIAN LUMBER STANDARDS ADMINISTRATION BOARD.
   2.2. COMPLY WITH THE REQUIREMENTS OF ONTARIO BUILDING CODE FOR:-
   SUB-FLOORING IN ARTICLE 9.23.14
   ROOF SHEATHING IN ARTICLE 9.23.15
   *WALL SHEATHING IN ARTICLE 9.23.16
   (* REFER ALSO TO NOTES & DETAILS ON DRAWINGS AND TO ALL OTHER TYPICAL NOTES.)
   2.3. NAILS, SPIKES, AND STAPLES:
   TO CSA STANDARD B111; GALVANIZED FOR EXTERIOR WORK, OR HIGHLY HUMID AREAS AND FOR TREATED LUMBER; PLAIN ELSEWHERE. NAILING OF FRAMING UNLESS OTHERWISE NOTED, SHALL CONFORM TO ARTICLE 9.23.3 IN THE ONTARIO BUILDING CODE.
   2.4. ROUGH HARDWARE:
   BOLTS, NUTS, WASHERS, LAGS, PINS, SCREWS, ALL TO BE HOT DIP GALVANIZED.
   2.5. WOOD PRESERVATIVES (PRESSURE TREATED):
   WHERE REQUIRED TO CONFORM TO CSA-080 SERIES
   2.6. FRAMING ANCHORS:
   FRAMING ANCHORS, JOIST HANGERS, BEAM HANGERS, POST CAPS, POST ANCHORS, BACK-UP CLIPS AND ANGLES, UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DRAWINGS, ARE ALL TO BE AS MANUFACTURED BY AN APPROVED EQUAL, SIZED TO THE JOB AT HAND. ALL ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS UTILIZING "SPECIAL" NAILS WHERE REQUIRED.
   2.7. SHEATHING - PLYWOOD TO CONFORM TO CSA STANDARD 0121, OR 0151.

3. EXECUTION
   3.1. FLOOR AND ROOF JOISTS:-
      .1 PROVIDE JOISTS OF SIZE, SPACING AND SPAN AS NOTED ON THE STRUCTURAL DRAWINGS. UNLESS OTHERWISE NOTED, JOISTS SHALL BE CONTINUOUS IN ANY 1 SPAN WITH NO SPLICE.
   3.2. BEAMS SHALL BE INSTALLED CONFORMING TO THE MANUFACTURER'S INSTRUCTION FOR INSTALLATION.
   3.3. ALL BEAMS SHALL BE PROPERLY STORED ON SITE AND SHALL BE PROTECTED AGAINST EXTENDED EXPOSURE TO SUN AND WATER BY USING STOCKERS ADEQUATE TO KEEP PRODUCTS ABOVE GROUND AND OUT OF MUD AND WATER (APPROXIMATELY 3000 mm (10'-0") O.C.) AND BY COVERING THE PRODUCTS WITH POLY SHEETS.
   3.4. WIND LOADS SHALL BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE. PROVIDE FRAMING ANCHORS TO RESIST UPLIFT AT EACH END OF EACH ROOF JOIST. ANCHORS TO HAVE A WORKING CAPACITY OF 0.5 kN (100 lbs), UNLESS NOTED OTHERWISE.
   3.5. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, THE CONTRACTOR SHALL PROVIDE STANDARD SIMPSON STRONGTIE HARDWARE OR APPROVED EQUIVALENT FOR ALL JOIST HANGERS, BEAM HANGERS, BEAM SEATS, POST ANCHORS, ETC.
   3.6. FRAME AROUND ALL OPENINGS WITH DOUBLE HEADERS AND TRIMMERS NAILED TOGETHER WITH TWO ROWS OF 89 mm (3½") SPIRAL NAILS AT 200 mm c/c (8" c/c) STAGGERED UNLESS NOTED OTHERWISE. DO NOT SPLICE MEMBERS BETWEEN SUPPORTS.
   3.7. MEMBERS SHALL BE ALIGNED LEVEL AND PLUMB, WITHIN A TOLERANCE OF 1 IN 500.
   3.8. PROVIDE SOLID BLOCKING BETWEEN JOISTS OVER SUPPORT AT ALL CANTILEVERED CONDITIONS UNLESS NOTED OTHERWISE.
   3.9. PROVIDE SOLID BLOCKING, MATCHING JOIST MEMBER SIZE, UNDER ALL LOADBEARING WALLS OFFSET FROM THE SUPPORTS BELOW FOR FLOOR JOISTS SPANNING PERPENDICULAR TO THE WALL.
   3.10. WOOD IS NOT PERMITTED TO BEAR DIRECTLY ON MASONRY OR CONCRETE WITHOUT PROTECTION. PROVIDE EITHER PRESSURE TREATED WOOD OR A POLYETHELENE SHEET BETWEEN THE WOOD AND MASONRY/CONCRETE.
   3.11. ALL NAILERS TO BE ANCHORED WITH 12 mm (1/2") DIAMETER ANCHOR BOLTS X 300 mm (12") LONG AT 1200 mm (4'-0") ON CENTRES. STAGGER ANCHOR BOLTS UNLESS NOTED OTHERWISE.

4. GLUED-LAMINATED TIMBER (GLULAM)
   4.1. BEAMS, LINTELS AND JOISTS SHALL BE AS SUPPLIED BY AN APPROVED MANUFACTURER.
   4.2. WOOD VENEERS & ADHESIVES:
   SHALL BE IN ACCORDANCE WITH APPROVED MANUFACTURER'S STANDARDS AND APPLICABLE CSA STANDARDS.
   4.3. ALL MEMBERS SHALL BEAR IDENTIFICATION MARKS OF THE MANUFACTURER.
   4.4. EXECUTION:
      .1 MINIMUM END BEARING SHALL BE 75mm (3") UNLESS NOTED.
      .2 FOR SINGLE SPANS BEAMS/JOISTS SHALL NOT BE SPLICED BUT SHALL BE CONTINUOUS BETWEEN SUPPORTS.
      .3 WHERE INDIVIDUAL MEMBERS ARE BUTTED TOGETHER, JOINTS SHALL OCCUR OVER SUPPORTS, EXCEPT THAT WHERE BEAMS ARE CONTINUOUS OVER MORE THAN ONE SUPPORT, JOINTS MAY BE LOCATED WITHIN 150mm (6") OF THE QUARTER POINTS OF THE CLEAR SPANS. SUCH JOINTS SHALL BE STAGGERED END FOR END.
      .4 NAILING AND/OR BOLTING:
      OF MULTI-PLYS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND IN NO CASE LESS THAN 2 ROWS OF 16d (3 1/2") NAILS AT 300mm (12") CENTRES, EACH ROW.
      .5 NOTCHING & DRILLING:
      PERMITTED ONLY WITH APPROVAL. GLULAM BEAMS & JOISTS MAY NOT BE NOTCHED, PENETRATED, OR DRILLED THRU WITHOUT PRIOR REVIEW AND APPROVAL BY THE STRUCTURAL CONSULTANT.
   4.5. GLULAM TIMBER PRODUCTS SHALL CONFORM TO CSA-086, CSA-0122 AND BE MANUFACTURED IN ACCORDANCE WITH CSA-0177.
   4.6. CONNECTIONS TO CONFORM TO CSA-G40.20/G40.21, PRIMED OR GALVANIZED AS NOTED TO CGSB-1.40 OR CSA-G164. WELDING TO CSA-W59 AND W47.1.
   4.7. SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL BEAMS, JOISTS, AND COLUMNS.

EXCAVATION SHORING NOTES — A10

1.0 GENERAL
   1.1 GENERAL INSTRUCTIONS
      1.1.1 FOR EXCAVATION SHORING DETAILS, REFER TO EXCAVATION SHORING DESIGN DRAWINGS PREPARED BY TERRAPROBE INC.
   1.2 REFERENCES
      1. ALL CODES, STANDARD SPECIFICATIONS AND BY-LAWS REFERRED TO IN THESE NOTES SHALL BE CURRENT EDITIONS INCLUDING ALL REVISIONS, SUPPLEMENTS AND ADDENDA.
      2. CONFORM TO THE ONTARIO BUILDING CODE.
      3. CONCRETE WORK TO CONFORM TO CSA A23.1, CSA A23.3.
      4. STRUCTURAL STEEL TO CONFORM TO CSA STANDARD CSA S16.
      5. WELDING TO CONFORM TO CSA STANDARD W59.
      6. REFER TO THE SOIL REPORTS.
   1.3 PREPARATION
      1. EXAMINE ALL DOCUMENTS TO ASCERTAIN ANY EFFECT UPON THE PROPOSED SHORING.
      2. VISIT THE SITE AND KNOW ABOUT ALL EXISTING STRUCTURES, BUILDINGS, SERVICES, OVERHEAD OBSTRUCTIONS OR OTHER ITEMS WHICH MAY AFFECT THE PROPOSED SHORING SYSTEM. NO CLAIM FOR EXTRA PAYMENT WILL BE CONSIDERED DUE TO SUCH CONDITIONS.
   1.4 SOURCE QUALITY ASSURANCE
      1. THE CONTRACTOR SHALL PROVIDE EVIDENCE THAT ALL STRUCTURAL STEEL USED ON THIS PROJECT MEETS OR EXCEEDS THE DESIGN SPECIFICATIONS FOR MATERIAL USED IN THE SHORING DESIGN AS SHOWN ON REVIEWED SHORING DRAWINGS.
      2. EVIDENCE SHALL CONSIST OF CERTIFIED MILL CERTIFICATES, OR WHERE NECESSARY, TEST REPORTS OF COUPONS AS SAMPLED AND TESTED BY AN INDEPENDENT TESTING LABORATORY.
      3. COSTS OF SUCH TESTS TO BE BORNE BY THE CONTRACTOR.
2.0 EXECUTION
   2.1 PREPARATION
   2.1.1 ENSURE THAT ALL NECESSARY SURVEYS FOR PROPERTY LINES, EXISTING GRADES, UTILITIES AND ADJACENT STRUCTURES ARE CARRIED OUT.
   2.1.2 CONFIRM LOCATIONS OF BURIED SERVICES AND STRUCTURES BEFORE COMMENCING WORK.
   2.1.3 PLOT ON A DRAWING AND REPORT TO THE CONSULTANT ALL UNCHARTED BURIED SERVICES AND STRUCTURES, IF DISCOVERED DURING THIS WORK.
3.0 QUALITY CONTROL
3.1 THE ENGINEER RESPONSIBLE FOR THE SHORING DESIGN SHALL UNDERTAKE THE GENERAL REVIEW OF THE SHORING INSTALLATION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO TO DETERMINE THAT THE CONSTRUCTION IS IN GENERAL CONFORMITY WITH SHORING DRAWINGS AND SHALL PROVIDE REPORTS AS DIRECTED. COST OF THIS WORK TO BE INCLUDED IN THE CONTRACT SUM.
   1. THE SOILS CONSULTANT IS TO PROVIDE INSPECTION AND TESTING SERVICES FOR THE SHORING SYSTEM.
   2. THE SOILS CONSULTANT IS TO REVIEW SOIL AT PILE TOES.
   3. ROUTINE INSPECTION AND TESTING OF STRUCTURAL STEEL SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA S16 INCLUDING: FIELD INSPECTION OF ERECTION AND FIT-UP (PROPER PLACING, PLUMBING, LEVELLING) AND INSPECTION OF BOLTED CONNECTIONS USING HIGH TENSILE BOLTS. FIELD INSPECTION OF WELDED JOINTS. THIS INSPECTION IS TO BE CARRIED OUT BY AN INDEPENDENT INSPECTION AND TESTING COMPANY CERTIFIED TO CSA W178. THE INSPECTION AND TESTING COMPANY SHALL BE APPOINTED BY THE OWNER.
   4. ANY TESTING OR INSPECTION OR ENGINEERING SERVICES REQUIRED BECAUSE OF AN ERROR OR DUE TO A DEPARTURE FROM THE CONTRACT DOCUMENTS SHALL BE AT NO EXTRA COST TO THE CONTRACT SUM.
   5. REPORTS INSPECTION COMPANY REPORTS, SHORING ENGINEER'S REPORTS AND SOIL CONSULTANT'S REPORTS SHALL BE ISSUED EXPEDITIOUSLY AND SHALL BE DISTRIBUTED AS DIRECTED.

2.0 EXECUTION
   2.1 PREPARATION
   2.1.1 ENSURE THAT ALL NECESSARY SURVEYS FOR PROPERTY LINES, EXISTING GRADES, UTILITIES AND ADJACENT STRUCTURES ARE CARRIED OUT.
   2.1.2 CONFIRM LOCATIONS OF BURIED SERVICES AND STRUCTURES BEFORE COMMENCING WORK.
   2.1.3 PLOT ON A DRAWING AND REPORT TO THE CONSULTANT ALL UNCHARTED BURIED SERVICES AND STRUCTURES, IF DISCOVERED DURING THIS WORK.
   2.1.4 THE PLAN LOCATION OF EACH PILE SHALL BE DEFINED RELATIVE TO THE BUILDING GRID SYSTEM TO AVOID INTERFERENCE WITH BASE BUILDING ELEMENTS.
   2.2 FABRICATION
   2.2.1 FABRICATE STRUCTURAL STEEL IN ACCORDANCE WITH CSA-S16.
   2.2.2 WELDING TO CONFORM TO CSA W59 AND BE PERFORMED BY A COMPANY CERTIFIED TO CSA W47.1.
   2.3 INSTALLATION
   2.3.1 INSTALL SHORING SYSTEM IN ACCORDANCE WITH REVIEWED SHORING DRAWINGS.
   2.3.2 OBSTRUCTIONS:
   2.3.3 EXTRA TIME EXPENDED DUE TO BOULDERS AND/OR OTHER OBSTRUCTIONS ENCOUNTERED DURING THE INSTALLATION OF SOLDIER PILES IS TO BE COMPENSATED FOR BY APPLYING THE UNIT RATES AS REQUESTED BY THESE NOTES.
   2.3.4 NO EXTRA CLAIM IS TO BE SUBMITTED FOR TIME EXPENDED LESS THAN 15 MINUTES IN DURATION.
   2.3.5 EXTRA CLAIMS FOR SUCH WORK ARE TO BE ACCOMPANIED BY TIME SHEETS WHICH HAVE BEEN VERIFIED AND SIGNED BY A REPRESENTATIVE OF THE OWNER OR THE SOIL CONSULTANT.
   2.3.6 TOLERANCES:
   2.3.7 NO ASPECT OF THE SHORING INSTALLATION SHALL HAVE AN ADVERSE EFFECT UPON THE BASE BUILDING STRUCTURAL ELEMENTS.
   2.3.8 SOLDIER PILES ARE TO BE INSTALLED WITHIN THE FOLLOWING TOLERANCES VARIATION FROM DESIGNATED PLAN LOCATION
   AT ANY GEODETIC LEVEL .... ±2"(50mm)
   VARIATION FROM PLUMB .... 1% WITH A MAX. OF 3"(75mm)
   2.3.9 THE WOOD LAGGING MUST BE "BLOCKED-BACK" TO MAINTAIN THE BASE BUILDING WALL THICKNESS AS A MINIMUM, WHEN THE SOLDIER PILE LOCATION ENCROACHES INTO THE WALL. THIS TO BE COORDINATED WITH AND APPROVED BY THE STRUCTURAL CONSULTANT.
   2.3.10 CUTTING DOWN TOPS OF PILES: THE TOPS OF ALL PILES ARE TO BE CUT DOWN TO SUIT REQUIREMENTS OF THE MUNICIPAL AUTHORITIES HAVING JURISDICTION, SERVICES, STAIRS, LANDSCAPING, WATERPROOFING DETAILS, AND ADJACENT PROPERTY OWNERS.
   2.3.11 UNIT PRICES:
      1. INCLUDE IN THE TENDER SUBMISSION:
      2. UNIT PRICES FOR ADDITIONS AND DELETIONS COVERING ALL ASPECTS OF THE PROPOSED SHORING SYSTEM.
      3. FOR OBSTRUCTIONS ENCOUNTERED DURING INSTALLATION OF SOLDIER PILES, INCLUDE LIST OF LABOUR AND EQUIPMENT RATES AS REQUIRED.
3.0 QUALITY CONTROL
3.1 THE ENGINEER RESPONSIBLE FOR THE SHORING DESIGN SHALL UNDERTAKE THE GENERAL REVIEW OF THE SHORING INSTALLATION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO TO DETERMINE THAT THE CONSTRUCTION IS IN GENERAL CONFORMITY WITH SHORING DRAWINGS AND SHALL PROVIDE REPORTS AS DIRECTED. COST OF THIS WORK TO BE INCLUDED IN THE CONTRACT SUM.
   1. THE SOILS CONSULTANT IS TO PROVIDE INSPECTION AND TESTING SERVICES FOR THE SHORING SYSTEM.
   2. THE SOILS CONSULTANT IS TO REVIEW SOIL AT PILE TOES.
   3. ROUTINE INSPECTION AND TESTING OF STRUCTURAL STEEL SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA S16 INCLUDING: FIELD INSPECTION OF ERECTION AND FIT-UP (PROPER PLACING, PLUMBING, LEVELLING) AND INSPECTION OF BOLTED CONNECTIONS USING HIGH TENSILE BOLTS. FIELD INSPECTION OF WELDED JOINTS. THIS INSPECTION IS TO BE CARRIED OUT BY AN INDEPENDENT INSPECTION AND TESTING COMPANY CERTIFIED TO CSA W178. THE INSPECTION AND TESTING COMPANY SHALL BE APPOINTED BY THE OWNER.
   4. ANY TESTING OR INSPECTION OR ENGINEERING SERVICES REQUIRED BECAUSE OF AN ERROR OR DUE TO A DEPARTURE FROM THE CONTRACT DOCUMENTS SHALL BE AT NO EXTRA COST TO THE CONTRACT SUM.
   5. REPORTS INSPECTION COMPANY REPORTS, SHORING ENGINEER'S REPORTS AND SOIL CONSULTANT'S REPORTS SHALL BE ISSUED EXPEDITIOUSLY AND SHALL BE DISTRIBUTED AS DIRECTED.

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1	18-05-11	ISSUED FOR DESIGN DEVELOPMENT
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5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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GENERAL NOTES

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COLD WEATHER CONCRETING — A13

FOR FORECASTED AIR TEMPERATURES AT OR BELOW 5°C

1. ALL MATERIALS AND EQUIPMENT NEEDED FOR HEATED ENCLOSURE AND CONCRETE CURING PROTECTION SHALL BE ON HAND AND READY FOR USE BEFORE CONCRETE PLACEMENT IS STARTED.
2. FORMS AND/OR STEEL DECK IS TO BE HEATED TO A MINIMUM OF 5°C. CONCRETE SHALL NOT BE PLACED ON ANY SURFACE BELOW 5°C.
3. FORMS AND/OR STEEL DECK MUST BE FREE OF SNOW AND ICE PRIOR TO POURING CONCRETE. THE USE OF ANY DE-ICING CHEMICAL IS NOT PERMITTED ON THE FORMWORK OR STEEL DECK.
4. FOR SLABS LESS THAN 1000mm THICK THE MINIMUM CONCRETE TEMPERATURE AT TIME OF POURING IS TO BE 10°C. FOR SLABS GREATER THAN 1000mm THICK THE MINIMUM CONCRETE TEMPERATURE AT TIME OF POURING IS TO BE 5°C.
5. CONCRETE TEMPERATURE SHALL BE KEPT AT A MINIMUM OF 10°C FOR AT LEAST 3 DAYS OR UNTIL THE CONCRETE REACHES 40% OF THE SPECIFIED STRENGTH. ADDITIONAL CURING MAY BE REQUIRED IN WHICH CONCRETE SHALL BE KEPT AT A MINIMUM OF 10°C FOR AT LEAST 7 DAYS OR UNTIL THE CONCRETE REACHES 70% OF THE SPECIFIED STRENGTH.
6. IF THE FORECASTED AIR TEMPERATURE IS TO FALL BELOW 0°C, THE TOP OF SLAB SHALL BE PROTECTED FROM FREEZING. TOP OF SLAB PROTECTION SHALL BE PLACED AS TO NOT AFFECT THE FINISH OF THE SLAB.
7. IF THE FORECASTED AIR TEMPERATURE IS TO FALL BELOW 0°C WITH REASONABLY HIGH WINDS THE CONCRETE MUST BE PROTECTED FROM FLASH FREEZING DURING PLACEMENT AND FINISHING. THIS PROTECTION MUST REMAIN IN PLACE UNTIL TOP OF SLAB PROTECTION HAS BEEN INSTALLED AS PER NOTE #6.

* SEE ALSO CSA A23.1-09/A23.2-09 CLAUSES 7.4.1.5 AND 7.4.2 FOR ADDITIONAL INFORMATION WITH RESPECT TO COLD WEATHER CONCRETING AND CURING.

POST-INSTALLED ANCHORS — A16

1. GENERAL
   1.1 PROVIDE ALL LABOUR, MATERIALS AND EQUIPMENT TO COMPLETE THE FASTENING INTO CAST-IN-PLACE CONCRETE INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.

2. QUALITY ASSURANCE
   2.1 FOR POST-INSTALLED CONCRETE OR MASONRY ANCHORS, PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ARRANGE FOR A MANUFACTURER'S FIELD REPRESENTATIVE TO PROVIDE INSTALLATION TRAINING FOR ALL PRODUCTS TO BE USED. ONLY TRAINED INSTALLERS SHALL PERFORM POST-INSTALLED ANCHOR INSTALLATIONS. A RECORD OF TRAINING SHALL BE KEPT ON SITE AND BE MADE AVAILABLE TO THE STRUCTURAL CONSULTANT OR INDEPENDENT INSPECTION AND TESTING COMPANY REPRESENTATIVE AS REQUESTED. TRAINING TO CONSIST OF A REVIEW OF THE COMPLETE INSTALLATION PROCESS FOR THE SPECIFIC POST-INSTALLED ANCHORS, AND MUST INCLUDE BUT NOT BE LIMITED TO:

   (A) HOLE DRILLING PROCEDURE.
   (B) HOLE PREPARATION AND CLEANING TECHNIQUE.
   (C) ADHESIVE INJECTION TECHNIQUE AND DISPENSER TRAINING/MAINTENANCE.
   (D) REBAR DOWEL PREPARATION AND INSTALLATION.
   (E) PROOF LOADING/TORQUING.

   2.2 ADHESIVE ANCHORS SUPPORTING SUSTAINED TENSION LOADS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED BY ACI/CRSI. PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE STRUCTURAL CONSULTANT PRIOR TO COMMENCEMENT OF INSTALLATION.

3. PRODUCTS
   3.1 POST-INSTALLED CONCRETE ANCHORS
      3.1.1 MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED AND UNCRACKED CONCRETE, AND SEISMIC APPLICATIONS, UNLESS NOTED OTHERWISE.
      3.1.2 ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED AND UNCRACKED CONCRETE, AND SEISMIC APPLICATIONS, UNLESS NOTED OTHERWISE.
   3.2 POST-INSTALLED MASONRY ANCHORS
      3.2.1 MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC01 OR AC106.
      3.2.2 ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58.
   3.3 POWER DRIVEN FASTENERS
      3.3.1 POWER DRIVEN FASTENERS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC70.

4. EXECUTION
   4.1 POST INSTALLED ANCHORS SHALL BE USED ONLY WHERE SPECIFIED ON STRUCTURAL DRAWINGS.
   4.2 THE INSTALLATION OF POST INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST IN-PLACE ANCHORS IS NOT ALLOWED UNLESS APPROVED BY THE STRUCTURAL CONSULTANT.
   4.3 ANCHOR CAPACITY USED IN THE DESIGN HAS BEEN BASED ON THE TECHNICAL DATA PUBLISHED BY THE MANUFACTURER. SUBSTITUTION REQUESTS FOR ALTERNATE ANCHORS MUST BE APPROVED IN WRITING BY THE STRUCTURAL CONSULTANT PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS STAMPED BY LICENSED PROFESSIONAL ENGINEER DEMONSTRATING THAT THE ALTERNATIVE ANCHOR IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED FOR COMPLIANCE WITH THE RELEVANT BUILDING CODE AND CSA A23.3 STANDARD. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
   4.4 THE EXISTING REINFORCEMENT IN THE CONCRETE STRUCTURE OR EMBEDDED CONDUITS MAY CONFLICT WITH THE SPECIFIED ANCHOR LOCATIONS. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE SHALL NOT BE CUT UNLESS APPROVED BY THE STRUCTURAL CONSULTANT. THE CONTRACTOR SHALL LOCATE THE EXISTING REINFORCEMENT AND CONDUITS AT THE PROPOSED LOCATIONS OF THE ANCHORS BY AN APPROVED NON-DESTRUCTIVE METHODS SUCH AS GROUND PENETRATING RADAR (GPR) OR X-RAYS. MODIFY THE STRUCTURAL ANCHOR DETAILS AS REQUIRED TO AVOID CUTTING REBAR OR CONDUITS, AND SUBMIT THE REVISED DETAILS FOR REVIEW BY STRUCTURAL CONSULTANT PRIOR TO PROCEEDING WITH THE WORK.
   4.5 ALL ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) IN ONJUNCTION WITH EDGE DISTANCE, SPACING AND EMBEDMENT DEPTH AS INDICATED ON THE DRAWINGS.
   4.6 ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS.
   4.7 SPECIAL INSPECTION OF THE INSTALLATION OF ADHESIVE ANCHORS SHALL BE CARRIED OUT BY AN INDEPENDENT INSPECTION AND TESTING COMPANY, IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE, CSA A23.3 (ANNEX D) AND THE CURRENT ICC-ES REPORT. SPECIAL INSPECTORS REVIEWING THE INSTALLATION OF ADHESIVE ANCHORS MUST BE ACI CERTIFIED ADHESIVE ANCHOR INSTALLATION INSPECTORS. THE SCOPE OF REVIEW BY THE INDEPENDENT INSPECTION AND TESTING COMPANY IS AS FOLLOWS:

POST-INSTALLED ANCHORS — A16

   4.7.1 ALL ADHESIVE ANCHORS, EXCEPT THOSE RESISTING SUSTAINED TENSION LOADS, SHALL BE PERIODICALLY INSPECTED DURING INSTALLATION IN ACCORDANCE WITH ACI 355.4. AS A MINIMUM, THE INSPECTOR SHALL VERIFY THE INITIAL INSTALLATION OF EACH TYPE AND SIZE OF ADHESIVE ANCHORS. SUBSEQUENT INSTALLATIONS OF THE SAME ANCHOR TYPE AND SIZE BY THE SAME CONSTRUCTION PERSONNEL CAN BE PERFORMED WITHOUT ADDITIONAL INSPECTIONS. ANY CHANGE OF ANCHOR PRODUCT BEING INSTALLED OR THE CONSTRUCTION PERSONNEL PERFORMING THE INSTALLATION SHALL REQUIRE AN INITIAL INSPECTION.
   4.7.2 ADHESIVE ANCHORS INSTALLED TO RESIST SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION IN ACCORDANCE WITH ACI 355.4. IN ADDITION, ALL OF THESE ANCHORS MUST BE PROOF LOADED BY THE INSPECTION AND TESTING COMPANY. THE CONTRACTOR SHALL COORDINATE WITH THE INSPECTION AND TESTING COMPANY AND FACILITATE THE REQUIRED PROOF LOAD TESTING. A REPORT SUMMARIZING THE PROOF LOADING TESTING RESULTS MUST BE SUBMITTED TO STRUCTURAL CONSULTANT.
   4.7.3 AS A MINIMUM, THE INSPECTOR OF ADHESIVE ANCHORS SHALL VERIFY THE FOLLOWING ITEMS:
      (A) HOLE DRILLING METHOD IN ACCORDANCE WITH MPII.
      (B) ANCHOR EDGE DISTANCE AND SPACING
      (C) HOLE DIAMETER AND DEPTH
      (D) HOLE CLEANING IN ACCORDANCE WITH MPII
      (E) ANCHOR ELEMENT TYPE, MATERIAL, DIAMETER AND LENGTH.
      (F) ADHESIVE MATERIAL IDENTIFICATION AND EXPIRATION DATE
      (G) ADHESIVE INSTALLATION IN ACCORDANCE WITH THE MPII
   4.7.4 PROOF LOADING TESTING OF ADHESIVE ANCHORS SHALL BE AS FOLLOWS:
      4.7.4.1 WHERE PROOF LOAD VALUES ARE NOT INDICATED ON DRAWINGS, INSPECTION AND TESTING COMPANY TO SUBMIT COMPLETE DETAILS OF INTENDED PROOF LOAD PROGRAM FOR REVIEW BY STRUCTURAL CONSULTANT, PRIOR TO PERFORMING THE TESTING. IN SUCH CASE, PROOF LOADS SHALL BE THE LESSER OF:-
         (A) T1 = 0.67*π*d*hef* τ cr WHERE d = DIAMETER OF ANCHOR, hef = EFFECTIVE EMBEDMENT, cr = CHARACTERISTIC BOND STRENGTH (MPa) FOR UNCRACKED CONCRETE FROM ICC-ES REPORT FOR SAME STEEL ANCHOR TYPE, HOLE DRILLING AND HOLE CLEANING METHOD, BASED ON MAXIMUM SHORT TERM TEMPERATURE = 55 °C AND MAXIMUM LONG TERM TEMPERATURE = 43 °C AND DRY HOLE CONDITIONS. REVIEW WITH STRUCTURAL CONSULTANT THE APPROPRIATE VALUE OF 'T1' TO USE FOR ANCHORS IN CLOSE PROXIMITY TO AN EDGE.
         (B) T2 = 0.80*Ase*Fy WHERE Ase = EFFECTIVE AREA OF ANCHOR AND Fy = YIELD STRENGTH.
      4.7.4.2 ADHESIVE ANCHORS SHALL BE TESTED USING HYDRAULIC JACK. FOR SUCCESFUL TEST PERFORMANCE, THE TEST LOAD SHALL BE MAINTAINED FOR A MINIMUM OF 10 SECONDS WITH NO DISCERNIBLE MOVEMENT.
      4.7.4.3 ANCHORS THAT FAIL PROOF LOAD TEST MUST BE REINSTALLED AND RE-TESTED AT THE CONTRACTOR'S EXPENSE. NOTE: RE-DRILLING THE ORIGINAL ANCHOR HOLE IS NOT ALLOWED UNLESS APPROVED BY THE STRUCTURAL CONSULTANT.

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COMPRESSION-TENSION DEVELOPMENT AND LAP LENGTHS Fy = 400 MPa — C02A

NOTES
1. STANDARD ABBREVIATIONS ON PLANS AND SCHEDULES SHOULD BE AS FOLLOWS
   CLS - COMPRESSION LAP SPLICE
   CDL - COMPRESSION DEVELOPMENT LENGTH
   HEL - HOOK EMBEDMENT LENGTH

COMPRESSION LAP SPLICE AND DEVELOPMENT LENGTHS (Fy = 400 MPa)

CLS: COMPRESSION LAP SPLICE LENGTH (mm)

UNCOATED BLACK BAR							
10M	15M	20M	25M	30M	35M	45M	55M
300	440	590	730	880	1030	NOT PERMITTED	

CDL: COMPRESSION DEVELOPMENT LENGTH (mm)

f'c	UNCOATED BLACK BAR							
	10M	15M	20M	25M	30M	35M	45M	55M
20MPa	250	340	420	540	640	770	940	1210
25MPa	220	310	370	600	570	690	840	1080
30MPa	200	280	340	440	530	630	770	990
35MPa	200	280	340	440	530	630	770	990
40MPa	200	280	340	440	530	630	770	990
> 40 MPa	SEE MINIMUM VALUES FOR f'c = 40 MPa							

NOTES:
1. IF BUNDLED BARS ARE USED THE VALUES IN THE TABLES MUST BE INCREASED:
   a. MULTIPLY BY 1.1 (TWO BAR BUNDLES) b. MULTIPLY BY 1.2 (THREE BAR BUNDLES) c. MULTIPLY BY 1.33 (FOUR BAR BUNDLES)

2. FOR EMBEDMENTS ENCLOSED IN SPIRALS, MULTIPLY BY 0.75, BUT NOT LESS THAN 200mm.

HEL: MINIMUM TENSION EMBEDMENT LENGTH WITH STANDARD HOOK (mm)

f'c	UNCOATED BLACK BAR							
	10M	15M	20M	25M	30M	35M	45M	55M
20MPa	220	340	450	560	670	780	1010	1230
25MPa	200	300	400	500	600	700	900	1100
30MPa	180	270	370	460	550	640	830	1010
35MPa	170	250	340	420	510	590	770	930
40MPa	160	240	320	400	470	550	720	870
45MPa	150	220	300	370	450	520	680	820
50MPa	150	210	280	350	420	490	640	780
55MPa	150	200	270	340	400	470	610	750

NOTES:
1. FOR EPOXY COATED BARS THE VALUES IN THE TABLES MUST BE INCREASED:
   a. MULTIPLY BY 1.2 (WHEN CLEAR COVER GREATER THAN 3 X BAR DIAMETER AND CLEAR SPACING GREATER THAN 6 X BAR DIAMETER)
   b. MULTIPLY BY 1.5 (WHEN COVER OR SPACING ARE LESS THAN ABOVE)
2. VALUES PROVIDED ARE BASED ON NORMAL WEIGHT CONCRETE AND MUST BE INCREASED FOR LIGHTWEIGHT CONCRETES:
   a. MULTIPLY BY 1.2 (FOR SEMI-LOW DENSITY CONCRETE)
   b. MULTIPLY BY 1.3 (FOR LOW-DENSITY CONCRETE)
3. FOR 35M AND SMALLER BARS MULTIPLY THE VALUES IN THE TABLE BY 0.7 (BUT NOT LESS THAN 150mm) WHERE THE SIDE COVER (NORMAL TO THE PLANE OF THE HOOK) IS AT LEAST 60mm, AND FOR 90° HOOKS WHERE COVER ON THE BAR EXTENSION BEYOND THE HOOK IS AT LEAST 50mm.
4. FOR 35M AND SMALLER BARS MULTIPLY THE VALUES IN THE TABLE BY 0.8 (BUT NOT LESS THAN 150mm) WHERE THE HOOK IS ENCLOSED WITHIN AT LEAST THREE(3) TIES OR STIRRUPS SPACED ALONG A LENGTH EQUAL TO THE INSIDE DIAMETER OF THE HOOK AT A SPACING NOT MORE THAN 3 TIMES THE BAR DIAMETER.

TENSION DEVELOPMENT AND LAP SPLICE LENGTHS Fy = 400 MPa — C02B

NOTES
1. STANDARD ABBREVIATIONS ON PLANS AND SCHEDULES SHOULD BE AS FOLLOW
   TLS - TENSION LAP SPLICE
   TDL - TENSION DEVELOPMENT LENGTH

TENSION LAP SPLICE AND DEVELOPMENT LENGTHS (Fy = 400 MPa)

TLS: TENSION LAP SPLICE LENGTH (CLASS B) (mm)

f'c	UNCOATED BLACK BAR											
	10M		15M		20M		25M		30M		35M	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
20MPa	550	420	820	630	1090	840	1710	1310	2050	1570	2390	1840
25MPa	490	380	740	570	980	750	1530	1170	1830	1410	2130	1640
30MPa	450	350	670	520	890	690	1390	1070	1670	1290	1950	1500
35MPa	420	320	620	480	830	640	1290	990	1550	1190	1800	1390
40MPa	390	300	580	450	770	600	1210	930	1450	1110	1690	1300
45MPa	370	300	550	420	730	560	1140	880	1370	1050	1590	1230
50MPa	350	300	520	400	690	530	1080	830	1300	1000	1510	1160
55MPa	330	300	500	380	660	510	1030	790	1240	950	1440	1110
60MPa	320	300	480	370	630	490	990	760	1180	910	1380	1060
64MPa	310	300	460	360	610	470	960	740	1150	880	1340	1030

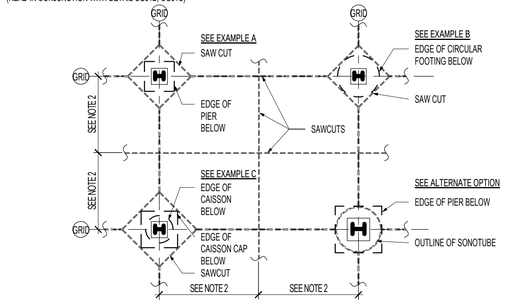
TDL: TENSION DEVELOPMENT LENGTH (mm) CLASS "A" LAP SPLICE

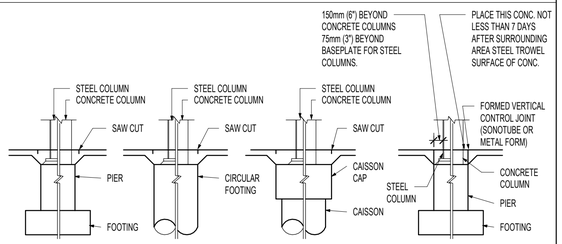
f'c	UNCOATED BLACK BAR											
	10M		15M		20M		25M		30M		35M	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
20MPa	420	330	630	490	840	650	1310	1010	1570	1210	1840	1410
25MPa	380	300	570	440	750	580	1170	900	1410	1080	1640	1260
30MPa	350	300	520	400	690	530	1070	830	1290	990	1500	1160
35MPa	320	300	480	370	640	490	990	770	1190	920	1390	1070
40MPa	300	300	450	350	600	460	930	720	1110	860	1300	1000
45MPa	300	300	420	330	560	430	880	680	1050	810	1230	940
50MPa	300	300	400	310	530	410	830	640	1000	770	1160	900
55MPa	300	300	380	300	510	390	790	610	950	730	1110	850
60MPa	300	300	370	300	490	380	760	590	910	700	1060	820
64MPa	300	300	360	300	470	360	740	570	880	680	1030	790

NOTES:
1. FOR EPOXY COATED BARS THE VALUES IN THE TABLES MUST BE INCREASED:
   a. MULTIPLY BY 1.2 (WHEN CLEAR COVER GREATER THAN 3 X BAR DIAMETER AND CLEAR SPACING GREATER THAN 6 X BAR DIAMETER)
   b. MULTIPLY BY 1.5 (WHEN COVER OR SPACING ARE LESS THAN ABOVE)
2. VALUES PROVIDED ARE BASED ON NORMAL WEIGHT CONCRETE AND MUST BE INCREASED FOR LIGHTWEIGHT CONCRETES:
   a. MULTIPLY BY 1.2 (FOR SEMI-LOW DENSITY CONCRETE)
   b. MULTIPLY BY 1.3 (FOR LOW-DENSITY CONCRETE)
3. IF BUNDLED BARS ARE USED THE VAULES IN THE TABLES MUST BE INCREASED:
   a. MULTIPLY BY 1.1 (TWO BAR BUNDLES)
   b. MULTIPLY BY 1.2 (THREE BAR BUNDLES)
   c. MULTIPLY BY 1.33 (FOUR BAR BUNDLES)

SLAB ON GRADE DETAILS — CG01A

(READ IN CONJUNCTION WITH DETAIL CG01B, CG01C)

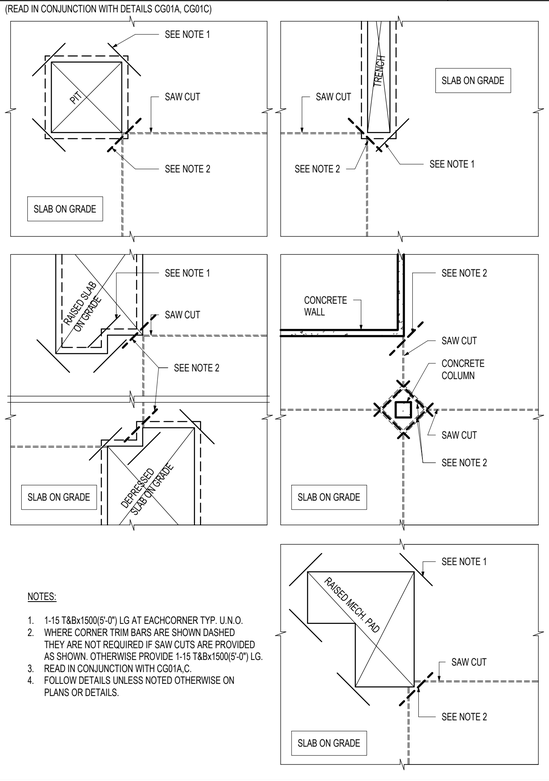




NOTES:
1. SAWCUTTING TO BE DONE AS SOON AS POSSIBLE AFTER SLAB IS PLACED. (MAX. 24 HOURS).
2. JOINTS TO BE AT MAX. 24x SLAB THICKNESS FOR MAXIMUM AGGREGATE SIZE SMALLER THAN 19mm(¾") AND 30 TIMES SLAB THICKNESS FOR AGGREGATE SIZE LARGER THAN 19mm (¾"),BUT NOT MORE THAN 4500mm (14'-9")
3. MAXIMUM RATIO BETWEEN LENGTH AND WIDTH OF ANY PANEL (CREATED BY SAWCUT) SHOULD NOT EXCEED 1.5
4. COORDINATE EXACT LOCATIONS OF SAWCUTS IN SLAB ON GRADE WITH ARCHITECTURAL REQUIREMENTS.
5. SAWCUT SLAB ON GRADE AT LOCATIONS SHOWN ON PLAN OR AS NOTED BELOW. ALTERNATE LOCATIONS SHALL BE SUBMITTED TO CONSULTANT FOR REVIEW, WELL IN ADVANCE OF POURING SLAB ON GRADE.
6. AFTER THE SLAB IS A MINIMUM 60 DAYS OLD, REMOVE ALL DEBRIS FROM THE SAW CUTS AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT, OR AS NOTED IN SPECIFICATIONS.
7. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT ROUT ALL CRACKS IN THE SLAB ON GRADE AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT OR AS NOTED IN SPECIFICATIONS.
8. REFER TO TYPICAL DETAIL CG01B, CG01C FOR SAW CUT DETAILS.

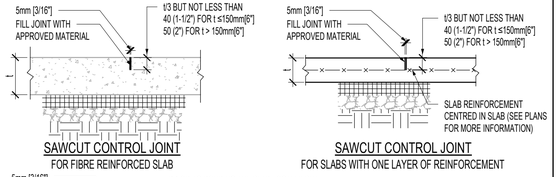
SLAB ON GRADE DETAILS — CG01B

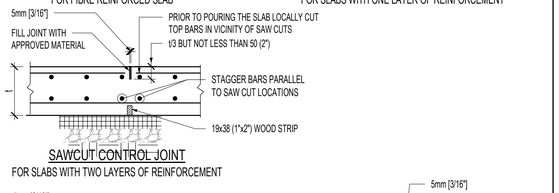
(READ IN CONJUNCTION WITH DETAILS CG01A, CG01C)

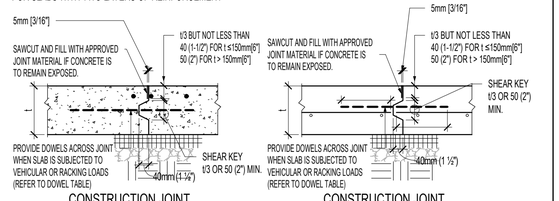


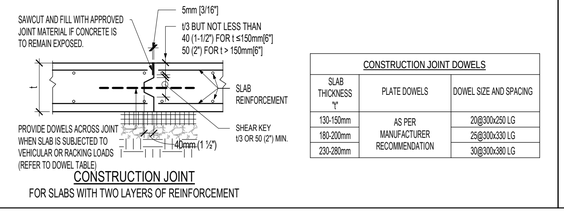
NOTES:
1. 1-15 T&Bx1500(5'-0") LG AT EACHCORNER TYP. U.N.O.
2. WHERE CORNER TRIM BARS ARE SHOWN DASHED THEY ARE NOT REQUIRED IF SAW CUTS ARE PROVIDED AS SHOWN. OTHERWISE PROVIDE 1-15 T&Bx1500(5'-0") LG.
3. READ IN CONJUNCTION WITH CG01A,C.
4. FOLLOW DETAILS UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.

SLAB ON GRADE DETAILS — CG01C



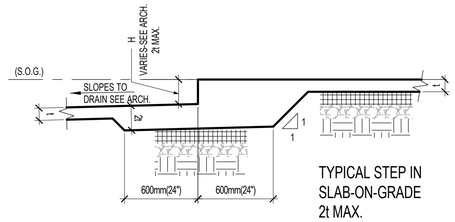






CONSTRUCTION JOINT DOWELS		
SLAB THICKNESS 't'	PLATE DOWELS	DOWEL SIZE AND SPACING
130-150mm	AS PER MANUFACTURER RECOMMENDATION	20@300x250 LG
180-200mm		25@300x330 LG
230-280mm		30@300x380 LG

TYPICAL STEP IN SLAB-ON GRADE — CG03



TYPICAL STEP IN SLAB-ON-GRADE 2t MAX.

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

If this sheet is not 33 1/8" x 23 3/8" (841 x 594 mm) It is a reduced print - Read dwg. accordingly.

Contractors must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

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Drawings should not be scaled.

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1	18-05-11	ISSUED FOR DESIGN DEVELOPMENT
2	18-06-29	ISSUED FOR 50% CONTRACT DOCUMENTS
3	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
4	18-09-11	ISSUED FOR 95% COMPLETION
5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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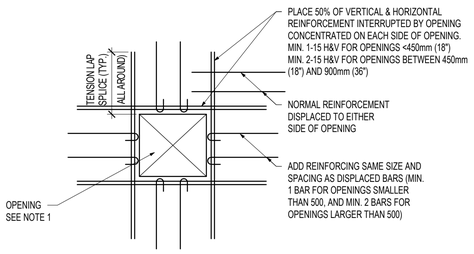
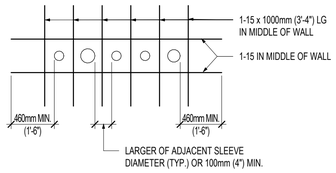
TYPICAL DETAILS

scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S5.04

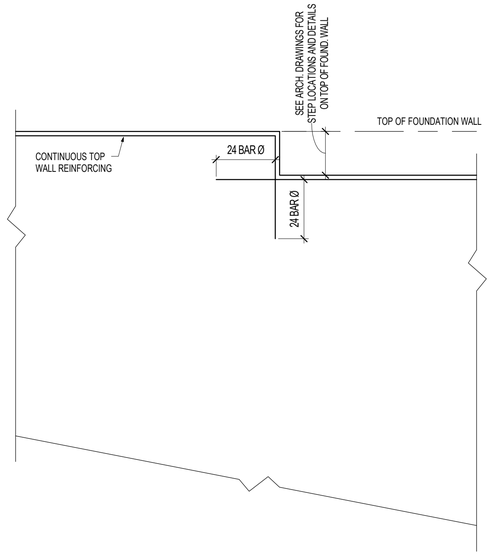
TYPICAL TRIMMING TO OPENINGS IN FOUNDATION WALL — CS12



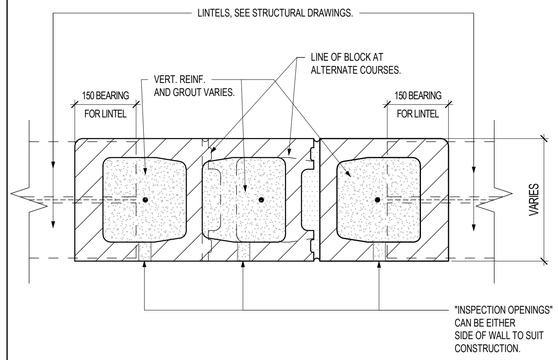
NOTES:
1. RESTRICTIONS ON OPENING SIZE AND LOCATION:
   1.1 MAXIMUM OPENING SIZE IS 900mm (36") SQUARE.
2. SEE STRUCTURAL FOR APPROX. SIZE AND LOCATION OF OPENINGS AND ARCH. AND / OR MECH. AND ELECT. DRAWINGS FOR EXACT DIMENSIONS AND LOCATION.
3. IF OPENINGS LARGER THAN 305mm WIDE ARE REQUIRED AND ARE NOT SPECIFICALLY NOTED ON THE DRAWINGS THE ENGINEER MUST BE INFORMED SO PROPER DETAILS CAN BE SUPPLIED.
4. UNLESS OTHERWISE NOTED, OPENINGS SMALLER THAN 305x305 DO NOT REQUIRE TRIMMER BARS.
5. CONSULT STRUCTURAL ENGINEER FOR OPENINGS AND SLEEVES NOT COVERED BY THIS TYPICAL DETAIL FOR SPECIFIED ON STRUCTURAL DRAWINGS



TYPICAL DETAIL FOR STEPS ON FOUNDATION WALL — CW02

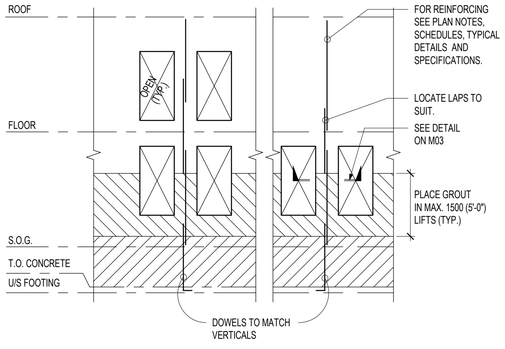


TYPICAL REINFORCED EXTERIOR MASONRY WALLS AND PIERS PLAN DETAIL — M03



NOTE:
1. GROUT TO CONFORM TO REQUIREMENTS OF CSA STANDARD A179-M CLAUSE 8.1 TABLE 3 "FINE GROUT". SLUMP SHALL BE ± 200mm A AND COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 15 MPa @ 28 DAYS.
2. COMPRESSIVE TESTING OF GROUT SHALL BE CARRIED OUT BY THE APPROVED INSPECTION AND TESTING COMPANY IN ACCORDANCE WITH CSA STANDARD A179-M. PREPARE A MINIMUM 3 TESTS FOR EACH STOREY OF CONSTRUCTION. 1 TEST SHALL COMPRISE OF 3 CUBES FOR TESTING, 1 AT 7 DAYS AND 2 AT 28 DAYS.
   NOTE: - MORTAR IS NOT ACCEPTABLE FOR USE AS GROUT , AND IF USED PIERS SHALL BE REJECTED AND RE-CONSTRUCTED.
3. ALL CELLS CONTAINING VERTICAL REINFORCING SHALL BE COMPLETELY FILLED WITH GROUT IN LIFTS NOT EXCEEDING 2400mm.GROUT SHALL BE CONSOLIDATED BY PUDDLING OR VIBRATING DURING POURING.
4. AT EACH LIFT "INSPECTION" OPENINGS SHALL BE PROVIDED AT THE BOTTOMS OF CELLS TO BE FILLED. THE CLEANOUTS SHALL BE INSPECTED BY THE ENGINEER BEFORE BEING SEALED.
5. SEE TYPICAL DETAIL ELEVATION M04.

TYPICAL ELEVATION REINFORCED MASONRY WALLS AND PIERS — M04



NOTE:
- PROVIDE MINIMUM LAP SPLICES FOR VERTICAL REINFORCING (BASED ON 15MPa GROUT):
  - 15M - 700mm (2'-4")
- LAP ALL HORIZONTAL LADDER TYPE REINFORCING 500mm.
  - ANY CROSSWIRES WITHIN LAP LENGTH SHALL BE REMOVED.
  - LAPS SHALL BE STAGGERED A MINIMUM OF 750mm FROM COURSE TO COURSE.

MASONRY CORE FILL NOTES: — M20

MASONRY CORE FILLS NOTES:
1. PROVIDE CORE FILLS AS NOTED ON PLAN AND SECTIONS AND PROVIDE REINFORCEMENT AS SHOWN.
2. CORE FILLS EXTEND FULL HEIGHT OF WALL, FLOOR TO FLOOR UNLESS NOTED.
3. INSTALL ALL REINFORCEMENT FULL HEIGHT BETWEEN FLOORS AND GROUT CORE SOLID FULL HEIGHT BETWEEN FLOORS U/N/O
4. WHERE CORE FILL CONTINUES TO NEXT FLOOR ABOVE, EXTEND INDICATED VERTICAL REINFORCEMENT TO PROVIDE SPECIFIED LA SPLICE WITH REINFORCEMENT OF CORE ABOVE.
5. PROVIDE 15M DOWELS IN CONCRETE WALLS FOR ALL WALL REINFORCEMENT UNLESS NOTED OTHERWISE.
6. PROVIDE LAP SPLICE FOR: 15M 650 LAP
10. PROVIDE TITEWALL BL-A CONTROL JOINT BY BLOK-LOK OR EQUIVALENT FOR ALL VERTICAL CONTROL JOINTS IN EXTERIOR MASONRY WALLS EXCEEDING 4m IN HEIGHT.
12. REINFORCE ALL MASONRY SILLS, INTERIOR AND EXTERIOR, AS PER THE REINFORCING INDICATED IN THIS SCHEDULE. GROUT TOP COURSE OF ALL SILLS SOLID

TYPICAL MASONRY WALL REINFORCING SCHEDULE
VERTICAL BLOCK WALL REINFORCING SCHEDULE:(TYP. U/N NOTED)
190mm 15M @ 200 o/c MAX.
HORIZONTAL WALL REINFORCING FOR MASONRY BLOCK WALLS - EXTERIOR WALLS:
190mm - EXTRA HEAVY BLOK-LOK BL10 OR EQUIV. @ 200 o/c MAX.

NON-LOAD BEARING BLOCK WALL LINTELS — M01A

STRUCTURAL STEEL LINTELS

WALL OPENING CLEAR SPAN	MASONRY BLOCK THICKNESS				
	90 (4")	140 (6")	190 (8")	240 (10")	290 (12")
300mm TO 500mm (12" TO 22")	75mm X 8mm PL (3"x5/16" PL)	125mm X 8mm PL (5"x5/16" PL)	175mm X 8mm PL (7"x5/16" PL)	225mm X 8mm PL (9"x5/16" PL)	275mm X 8mm PL (11"x5/16" PL)
550mm TO 1200mm (22" TO 4'-0")	1-L89x89x6.4 OR 2-L44x44x4.8	1-L127x89x6.4 (LLH) OR 2-L64x44x6.4	2-L89x89x6.4	L102x89x6.4 (LLH) + L127x89x6.4 (LLH)	3-L89x89x6.4
1200mm TO 1830mm (4'-0" TO 6'-0")	1-L127x89x7.9 (LLV) OR 2-L51x38x6.4(LLV)	1-L127x127x7.9 OR 2-L89x64x6.4 (LLV)	2-L89x89x6.4	L102x89x6.4 (LLH) + L127x89x6.4 (LLH)	3-L89x89x6.4
1830mm TO 2440mm (6'-0" TO 8'-0")	1-L127x89x7.9 (LLV)	1-L127x127x7.9 OR 2-L89x64x7.9 (LLV)	2-L127x89x6.4 (LLV)	L102x102x7.9 + L127x102x7.9 (LLH)	3-L127x89x6.4 (LLV)
2440mm TO 3080mm (8'-0" TO 10'-0")	1-L127x89x9.5 (LLV)	1-L127x127x7.9	2-L127x89x7.9 (LLV)	L152x102x7.9 (LLV)+ L127x127x7.9	3-L127x89x7.9 (LLV)
3080mm TO 3660mm (10'-0" TO 12'-0")	N/A	N/A	W200x27 + 175x6.4 PL. BOTTOM	W200x27 + 225x6.4 PL. BOTTOM	N/A

STRUCTURAL STEEL LINTEL NOTES:
1. WHEN PROVIDING MULTIPLE ANGLES SEE DIAGRAMS FOR ORIENTATION. BOLT DOUBLE ANGLES BACK TO BACK USING 16mmØ BOLTS OR PROVIDE 6mmX50mm (1/4"x2") LONG WELDS @450mm (18") O/C STARTING AT 100mm (4") MAX FROM THE EACH END OF THE LINTEL.
2. SAWCUT WEBS OF BLOCK IN COURSE OF BLOCK OVER OPENING AS NECESSARY TO INSTALL ANGLES.
3. ALTERNATIVES PROVIDED FOR CASES WHERE EXPOSED FACE OF SINGLE ANGLE IS NOT ACCEPTABLE.

GENERAL LINTEL NOTES:
1. REFER TO PLANS AND LINTEL SCHEDULE FOR LOCATION.
2. MINIMUM BEARING AT EACH END OF LINTEL TO BE 200mm (8").

Key to Detail Location

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NO. — Drawing Number

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Drawings should not be scaled.

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5	18-10-03	ISSUED FOR PERMIT
6	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
7	19-05-07	ISSUED FOR TENDER
8	20-01-17	REISSUED FOR TENDER

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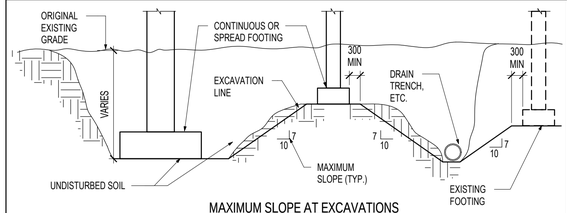
TYPICAL DETAILS

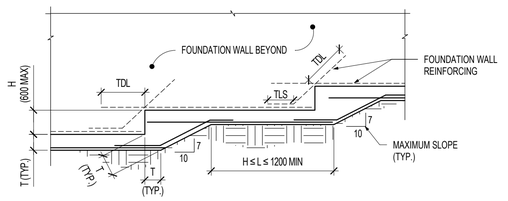
scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S5.05

STEPPED FOUNDATION AND CONSTRUCTION EXCAVATION F09



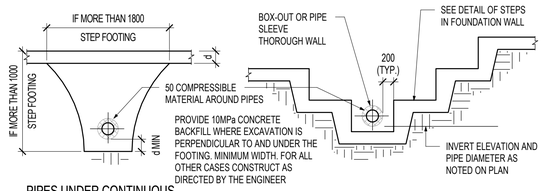
MAXIMUM SLOPE AT EXCAVATIONS

NOTES:
1. WHERE TRENCHING OR EXCAVATING AT ADJACENT FOOTING SATISFY THE MAXIMUM SLOPE REQUIREMENT SHOWN ABOVE.
2. IF EXCAVATION REQUIREMENTS VIOLATE SLOPE REQUIREMENTS PROVIDE PLANS FOR REMEDIAL MEASURES (BRACING OR UNDERPINNING) TO THE CONSULTANT PRIOR TO PROCEEDING



STEPS IN FOUNDATION WALL

NOTES:
1. STEPS IN FOUNDATION WALLS TO FOLLOW THE GEOMETRY SHOWN ABOVE UNLESS NOTED OTHERWISE ON PLANS

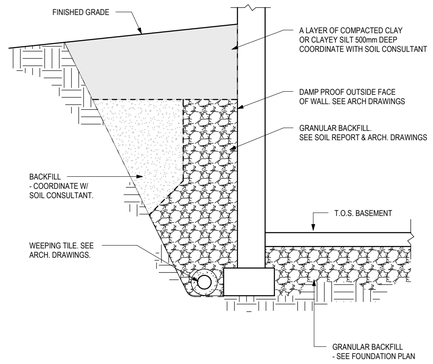


PIPES UNDER CONTINUOUS WALL FOOTINGS

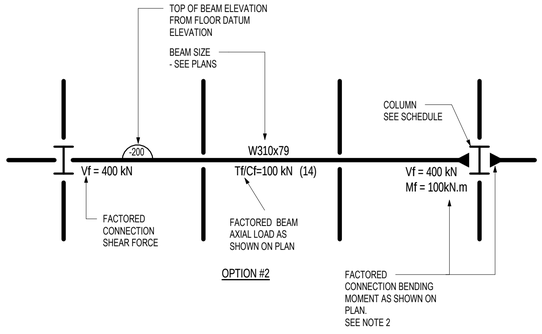
PIPES REQUIRING STEPPED FOOTINGS

TYPICAL EXTERIOR WALL & RETAINING WALL DRAINAGE SYSTEM F22

1. REFER TO SOILS REPORT, ARCH DWGS, AND MECH. DWGS FOR MORE DETAILS.
2. CONTRACTOR TO COORDINATE WITH ARCHITECT FOR WEEPING TILES, DRAINAGE, WATERPROOFING AND PROTECTION BOARD.



STEEL BEAM AND GIRDER DESIGNATIONS SB01



OPTION #2

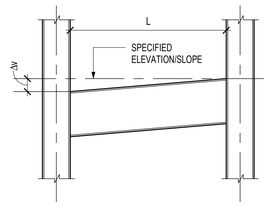
STEEL BEAM LEGEND

ERECTION TOLERANCES FOR STEEL BEAMS SB02A

(READ IN CONJUNCTION WITH SB02B)

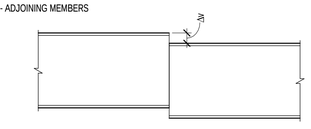
1. VERTICAL DEVIATION FROM SPECIFIED ELEVATION/SLOPE.

FLOOR BEAMS:	Δv = ± 10mm (3/8") OR = L/500
MEMBERS WITH ADJUSTABLE CONNECTIONS:	Δv =± 6mm (1/4") OR = L/1000



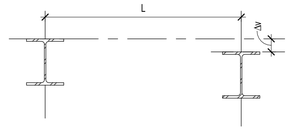
2. VERTICAL DEVIATION FROM SPECIFIED ELEVATION - ADJOINING MEMBERS

FLOOR BEAMS:	Δv = ±6mm (1/4")
MEMBERS WITH ADJUSTABLE CONNECTIONS:	Δv = ±2mm (3/32")



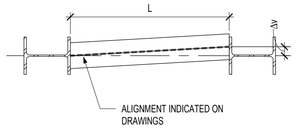
3. VERTICAL DEVIATION FROM ADJACENT BEAMS

FLOOR BEAMS:	Δv = L/1000



4. HORIZONTAL DEVIATION FROM INDICATED POSITION

FLOOR BEAMS:	ΔH = ±12mm (1/2") OR L/500
SPANDREL BEAMS:	ΔH = ±6mm (1/4") OR L/1000



NOTES

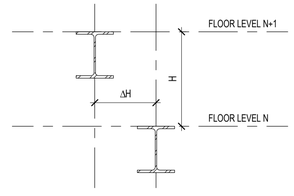
1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.

ERECTION TOLERANCES FOR STEEL BEAMS SB02B

(READ IN CONJUNCTION WITH SBB02A)

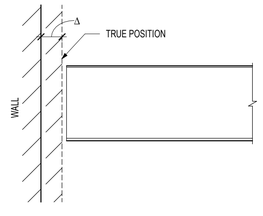
5. HORIZONTAL DEVIATION FROM ADJACENT BEAMS

FOR H < 3000mm (10'-0"):	ΔH = ±5mm (3/16")
FOR H > 3000mm (10'-0"):	ΔH = H/600



6. HORIZONTAL DEVIATION FROM SUPPORT POINT AT VERTICAL WALL

Δ = ±25mm (1")



NOTES

1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.
2. FOR ERECTION TOLERANCES OF SPECIAL MEMBERS SUCH AS CRANE GIRDERS, CRANE RAILS AND MONORAIL BEAMS, SEE THE APPROPRIATE CODE RECOMMENDATIONS.
3. DEVIATIONS SHOWN FOR W-SHAPES ALSO APPLY TO BUILT-UP SECTIONS, HOLLOW STRUCTURAL SECTIONS, CHANNEL AND ANGLE SHAPES.
4. ERECTION TOLERANCES ARE TO BE MEASURED IN CALM WEATHER. RECORD AMBIENT TEMPERATURE AT TIME TOLERANCES ARE VERIFIED.

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

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info@stephenson-eng.com

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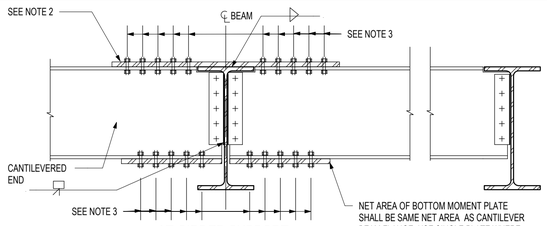
1234 WESTON ROAD, TORONTO, ON M6M 4P8

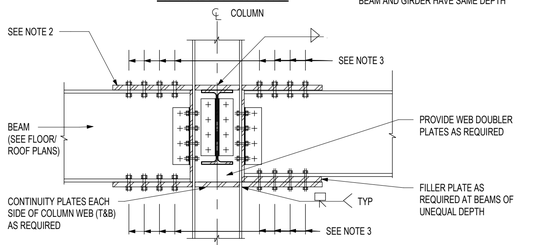
TYPICAL DETAILS

scale: 1 : 1
date: 18-10-03
drawn: MY
checked by: RA&PM
project number: 20171238
drawing number: S5.06

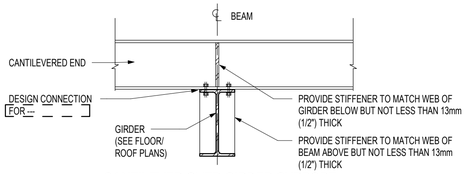
STEEL BEAM AND GIRDER MOMENT CONNECTIONS — SB03



AT GIRDER SUPPORT



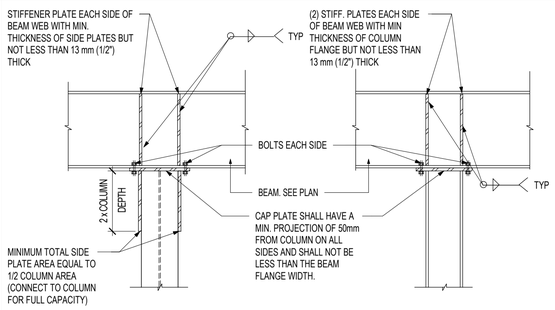
AT COLUMN SUPPORT



CANTILEVER OVER GIRDER SUPPORT

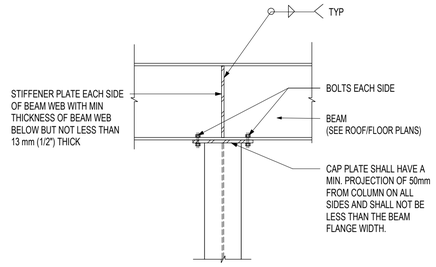
NOTE:
1. THE STRUCTURAL STEEL CONTRACTOR IS SOLELY RESPONSIBLE FOR THE FINAL SPLICE CONFIGURATION, DESIGN AND DETAILING OF THE CONNECTION DETAILED DESIGN CALCULATIONS SHALL BE SUBMITTED FOR REVIEW WITH THE SUBMISSION OF THE SHOP DRAWINGS.
2. PROVIDE DECK SUPPORT IN AREA OF MOMENT CONNECTION AS REQUIRED
3. SLIP CRITICAL BOLTS TO DEVELOP FULL MOMENT CAPACITY OF BEAM, UNLESS NOTED OTHERWISE

STEEL BEAM BEARING ON STEEL COLUMN — SB04



COLUMN WEB PERPENDICULAR TO BEAM WEB

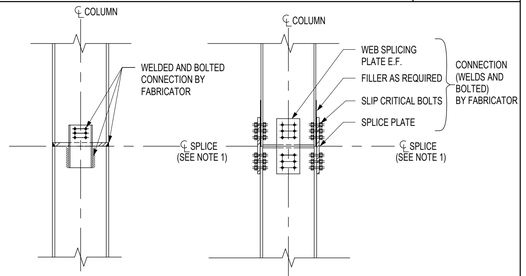
COLUMN WEB PARALLEL TO BEAM WEB



COLUMN WEB PERPENDICULAR TO BEAM WEB

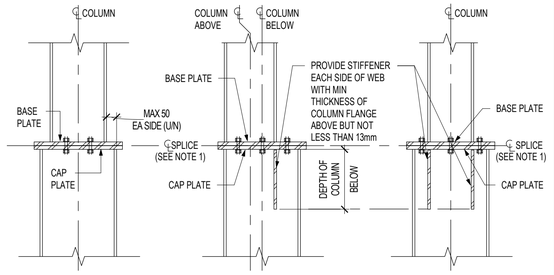
NOTES:
1. THE DESIGN OF THE STRUCTURAL STEEL CONNECTIONS ARE THE RESPONSIBILITY OF THE STEEL CONTRACTOR. DESIGN CALCULATIONS SHALL BE SUBMITTED ALONG WITH THE SHOP DRAWINGS FOR REVIEW. ANY ALTERATIONS TO THE BASIC CONFIGURATIONS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL CONSULTANT.
2. PROVIDE SQUARED MILL END OF COLUMNS MEETING CODE REQUIREMENTS FOR TOLERANCE LIMIT.

STEEL COLUMN SPLICE (W SHAPES) — SC05A



WELDED COLUMN SPLICE
SIMILAR SECTIONS (WIDTH AND DEPTH)

BOLTED COLUMN SPLICE
SIMILAR SECTIONS (WIDTH AND DEPTH)

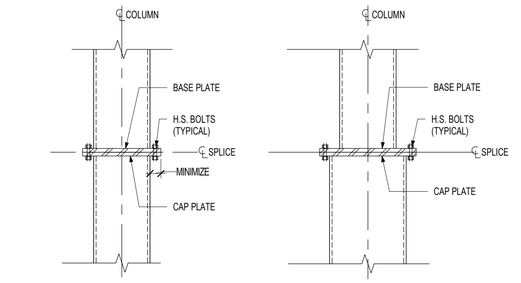


BOLTED COLUMN SPLICE
DISSIMILAR SECTIONS (WIDTH OR DEPTH)

FLANGE ALIGNED BOLTED COLUMN SPLICE
DISSIMILAR SECTIONS (WIDTH OR DEPTH)

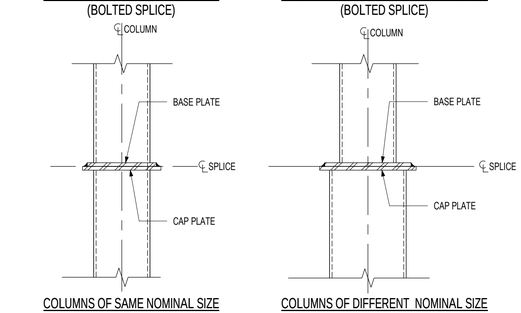
NOTES:
1. SPLICES TO BE LOCATED 1200mm ABOVE FLOOR FRAMING UNLESS NOTED OTHERWISE.
2. PROVIDE SQUARED MILL END FOR THE INTERFACING COLUMN ENDS MEETING THE CODE REQUIRED TOLERANCE LIMITATION.
3. ENSURE PROJECTION OF PLATES DOES NOT INTERFERE WITH ARCHITECTURAL FINISHES.
4. THE DESIGN OF THE STRUCTURAL STEEL CONNECTIONS ARE THE RESPONSIBILITY OF THE STEEL CONTRACTOR. DESIGN CALCULATIONS SHALL BE SUBMITTED ALONG WITH THE SHOP DRAWINGS FOR REVIEW. ANY ALTERATIONS TO THE BASIC CONFIGURATIONS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL CONSULTANT.

STEEL COLUMN SPLICE (HSS SHAPES) — SC05B



COLUMNS OF SAME NOMINAL SIZE (BOLTED SPLICE)

COLUMNS OF DIFFERENT NOMINAL SIZE (BOLTED SPLICE)



COLUMNS OF SAME NOMINAL SIZE (WELDED SPLICE)

COLUMNS OF DIFFERENT NOMINAL SIZE (WELDED SPLICE)

NOTES:
1. SPLICES TO BE LOCATED 1200mm ABOVE FLOOR FRAMING UNLESS NOTED OTHERWISE.
2. PROVIDE SQUARED MILL END FOR THE INTERFACING COLUMN ENDS MEETING THE CODE REQUIRED TOLERANCE LIMITATION.
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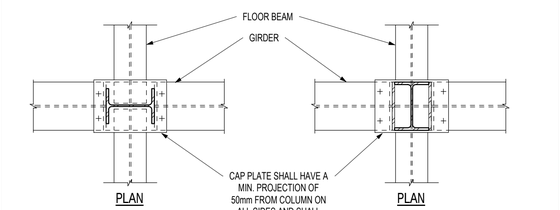
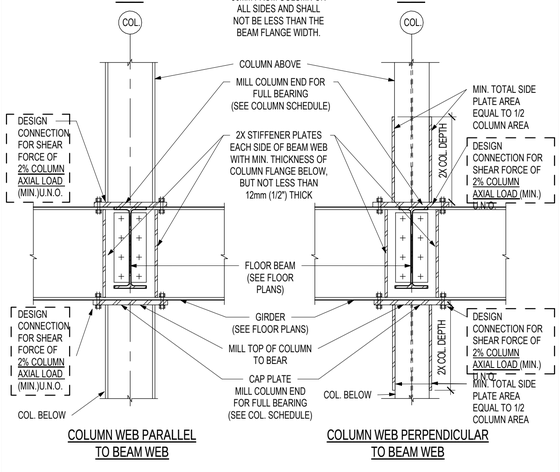
STEEL COLUMN BEARING THROUGH BEAM — SC06





COLUMN WEB PARALLEL TO BEAM WEB

COLUMN WEB PERPENDICULAR TO BEAM WEB

NOTES:
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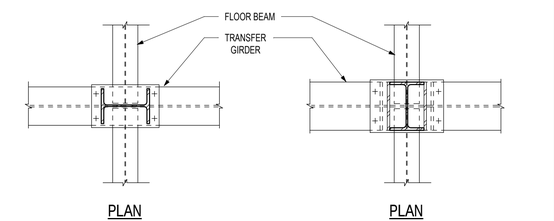
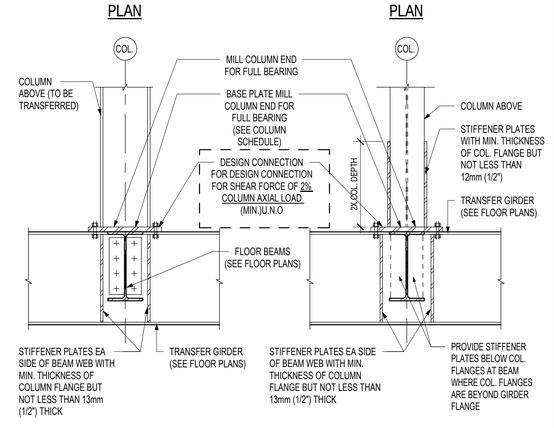
STEEL COLUMN BEARING ON STEEL BEAM — SC07





COLUMN WEB PARALLEL TO BEAM WEB

COLUMN WEB PERPENDICULAR TO BEAM WEB

NOTES:
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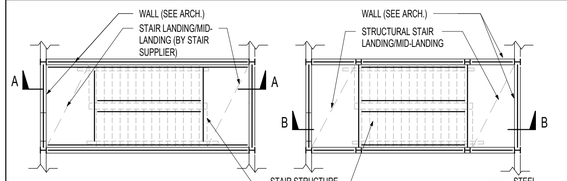
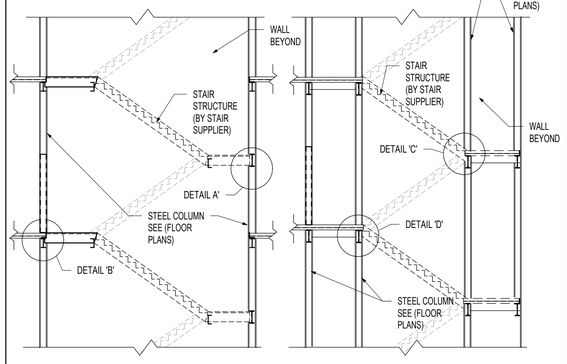
TYPICAL DETAILS

scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S5.07

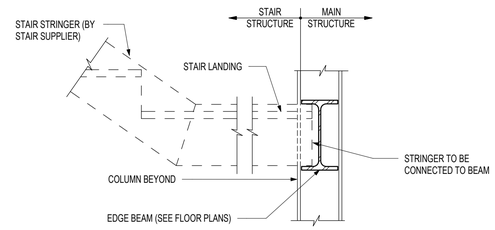
STRUCTURAL STEEL STAIR DETAILS — SG04A

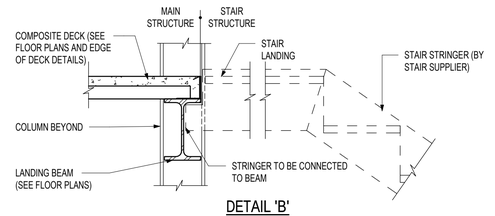


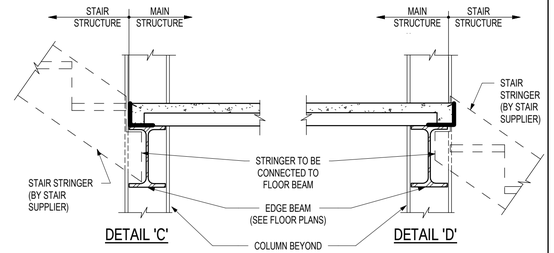


NOTES:
1. DETAIL IS ONLY INTENDED TO SHOW TYPICAL EXPECTED STAIR FRAMING. FULL STAIR DESIGN IS THE RESPONSIBILITY OF THE STEEL STAIR SUPPLIER INCLUDING STRINGERS, LANDINGS AND CONNECTIONS.
2. CONTRACTOR TO COORDINATE STAIR DESIGN WITH PROJECT ARCHITECT. STAIR TO BE DESIGNED PER ONTARIO BUILDING CODE REQUIREMENTS.

STRUCTURAL STEEL STAIR DETAILS — SG04B

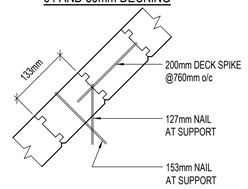






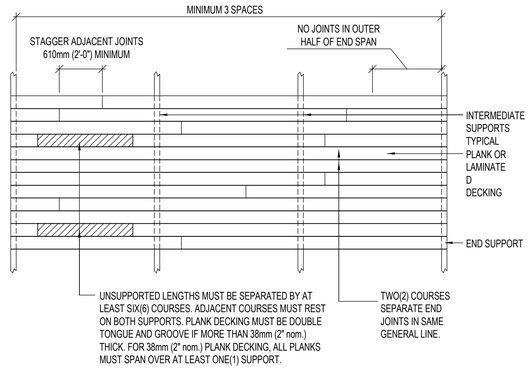
TYPICAL DETAIL OF WOOD DECKING PATTERN LAYOUT — W02

64 AND 89mm DECKING



NAILING ARRANGEMENT DETAILS

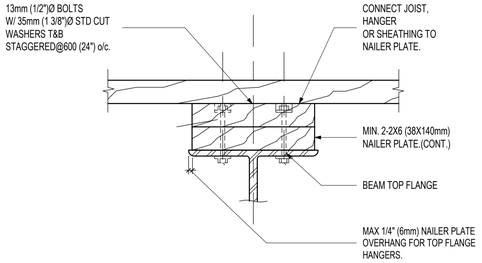
NOTES:
1. PLANKS 140mm OR LESS IN WIDTH SHALL BE NAILED WITH 2 NAILS TO EACH SUPPORT. PLANKS MORE THAN 140mm IN WIDTH SHALL BE NAILED WITH 3 NAILS TO EACH SUPPORT.



CONTROLLED RANDOM PATTERN LAYOUT

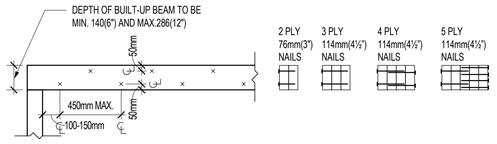
NOTES:
1. THE OTHERS METHODS, SIMPLE SPAN AND TWO SPAN CONTINUOUS INSTALLATION PATTERNS, CREQUIRE THAT ALL BUTT JOINTS OCCUR OVER A SUPPORT.

CONNECTION OF WOOD NAILER TO STEEL JOISTS AND BEAMS — W05

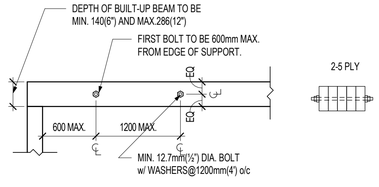


CONNECTION OF WOOD NAILER TO STEEL BEAMS

NAILING FOR BUILT-UP DIMENSIONAL LUMBER BEAMS — W10

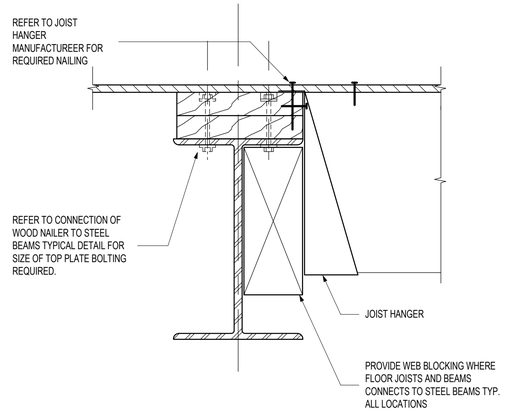


BOLTING FOR BUILT - UP DIMENSIONAL LUMBER BEAMS



NOTE:
1. ONLY APPLIES TO DIMENSIONAL LUMBER BEAMS WITH DEPTHS BETWEEN 140(6") AND 286(12").
2. BOLT HOLES TO BE 9/16" MAXIMUM.
3. APPLIES FOR PART 9 STRUCTURES ONLY.

STEEL BEAM WITH TOP MOUNTED JOIST HANGER — W17



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civil engineer — MASONGSONG ASSOCIATES ENGINEERING LTD., 7800 Kennedy Road, S. 201, Markham, ON, L3R 2C7, Phone: 905-944-0162

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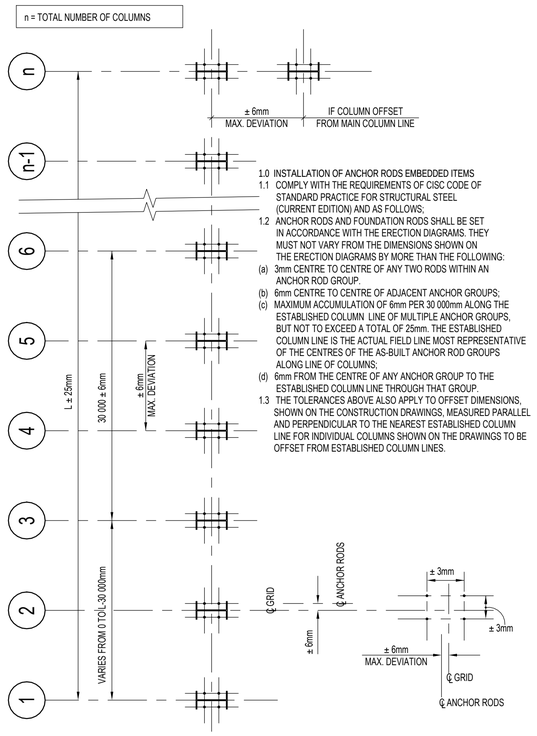
MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

TYPICAL DETAILS

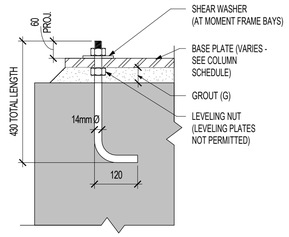
scale:	1 : 1
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S5.08

TOLERANCES ON ANCHOR ROD PLACEMENT — SAB01



1.0 INSTALLATION OF ANCHOR RODS EMBEDDED ITEMS
1.1 COMPLY WITH THE REQUIREMENTS OF CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL (CURRENT EDITION) AND AS FOLLOWS;
1.2 ANCHOR RODS AND FOUNDATION RODS SHALL BE SET IN ACCORDANCE WITH THE ERECTION DIAGRAMS. THEY MUST NOT VARY FROM THE DIMENSIONS SHOWN ON THE ERECTION DIAGRAMS BY MORE THAN THE FOLLOWING:
(a) 3mm CENTRE TO CENTRE OF ANY TWO RODS WITHIN AN ANCHOR ROD GROUP.
(b) 6mm CENTRE TO CENTRE OF ADJACENT ANCHOR GROUPS;
(c) MAXIMUM ACCUMULATION OF 6mm PER 30 000mm ALONG THE ESTABLISHED COLUMN LINE OF MULTIPLE ANCHOR GROUPS, BUT NOT TO EXCEED A TOTAL OF 25mm. THE ESTABLISHED COLUMN LINE IS THE ACTUAL FIELD LINE MOST REPRESENTATIVE OF THE CENTRES OF THE AS-BUILT ANCHOR ROD GROUPS ALONG LINE OF COLUMNS;
(d) 6mm FROM THE CENTRE OF ANY ANCHOR GROUP TO THE ESTABLISHED COLUMN LINE THROUGH THAT GROUP.
1.3 THE TOLERANCES ABOVE ALSO APPLY TO OFFSET DIMENSIONS, SHOWN ON THE CONSTRUCTION DRAWINGS, MEASURED PARALLEL AND PERPENDICULAR TO THE NEAREST ESTABLISHED COLUMN LINE FOR INDIVIDUAL COLUMNS SHOWN ON THE DRAWINGS TO BE OFFSET FROM ESTABLISHED COLUMN LINES.

ANCHOR ROD DETAILS — SAB02



AR #1 - ANCHOR ROD WITH L-HOOK

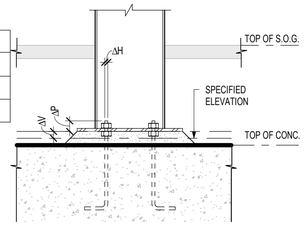
ERECTION TOLERANCES FOR STEEL COLUMNS — SC01A

(READ IN CONJUNCTION WITH SC01B, SAB02)

1. VERTICAL DEVIATION FROM SPECIFIED ELEVATION.

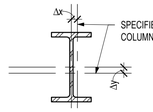
ANCHOR BOLTS:	ΔP = + 30mm (1-3/16") = - 5mm (3/16")
	ΔH = 3mm (1/8")
BASE PLATE:	ΔV = ± 5mm (3/16") 'SIMPLE CONSTRUCTION
	= ± 3mm (1/8") 'CONTINUOUS CONSTRUCTION

NOTE:
1. SEE TYPICAL DETAIL SAB02 FOR ADDITIONAL INFORMATION.



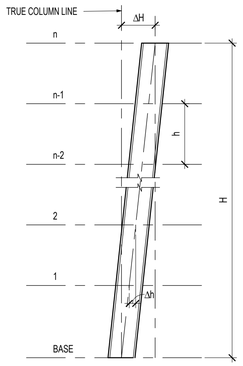
2. HORIZONTAL DEVIATION FROM SPECIFIED POSITION.

AT COLUMN BASE:	Δx/Δy = ± 5mm (3/16")



ABOVE COLUMN BASE:

EXTERIOR COLUMN/	ΔH < H/1000 TOTAL
COLUMN ADJACENT TO ELEVATOR SHAFTS:	ΔH < ± 25mm (1") TOTAL, Δh < 2mm (3/32") STOREY
ALL OTHER COLUMNS:	ΔH < H/500 AND, ΔH < ± 50mm (2") TOTAL, Δh < 4mm (3/16") STOREY



NOTES

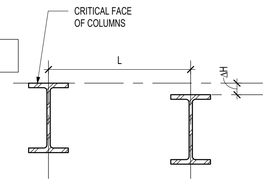
1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.

ERECTION TOLERANCES FOR STEEL COLUMNS — SC01B

(READ IN CONJUNCTION WITH SC01A)

3. HORIZONTAL DEVIATION FROM ADJACENT COLUMNS.

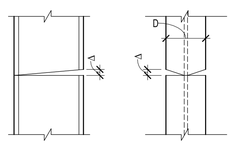
BASE LEVEL OR SPLICE LEVEL: OR = L/1000	ΔH = 10mm (3/8")



4. GAP BETWEEN BEARING SURFACES.

ΔMAX = 6mm (1/4)*

* PACK GAP WITH NON TAPERED STEEL SHIMS UNTIL AT LEAST 85% OF THE CROSS SECTIONAL AREA IS BEARING.

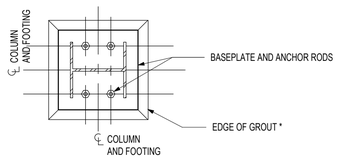


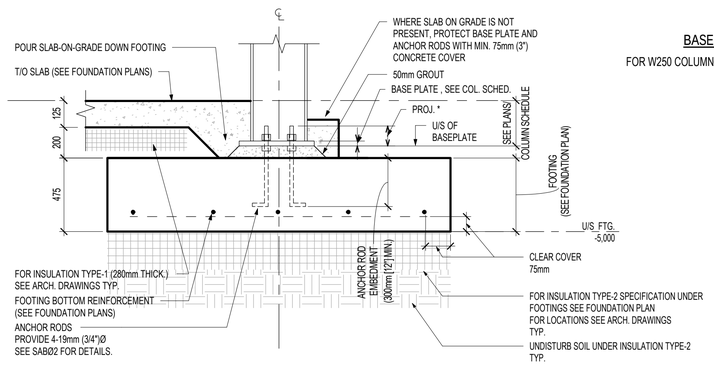
NOTES

1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.
2. FOR ERECTION TOLERANCES OF SPECIAL MEMBERS SUCH AS CRANE GIRDERS, CRANE RAILS AND MONORAIL BEAMS, SEE THE APPROPRIATE CODE RECOMMENDATIONS.
3. DEVIATIONS SHOWN FOR W-SHAPES ALSO APPLY TO BUILT-UP SECTIONS, HOLLOW STRUCTURAL SECTIONS, CHANNEL AND ANGLE SHAPES.
4. ERECTION TOLERANCES ARE TO BE MEASURED IN CALM WEATHER. RECORD AMBIENT TEMPERATURE AT TIME TOLERANCES ARE VERIFIED.

STEEL COLUMN BASE DETAIL — SC02

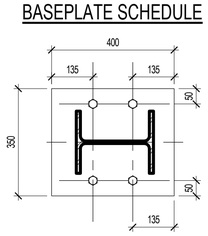
(READ IN CONJUNCTION WITH ANCHOR ROD SCHEDULE IN TYPICAL DETAIL SAB02)





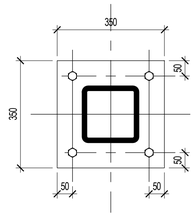
NOTES:
1. GROUT UNDER BASE PLATES SHALL BE AN APPROVED PROPRIETARY BRAND PRE-MIXED, NON-METALLIC, NON-SHRINK GROUT UNLESS OTHERWISE APPROVED.
2. LEVELING PLATES ARE NOT PERMITTED.
3. REFER TO COLUMN SCHEDULE/FOUNDATION PLAN FOR BASE PLATES, ANCHOR ROD, PIER, FOOTING DIMENSIONS AND REINFORCEMENT.
4. ANCHOR RODS (265 MPa U.N.O.) TYPICAL
5. REFER ALSO TO GENERAL NOTES, STEEL NOTES AND CAST-IN-PLACE CONCRETE NOTES.
6. REFER TO SPLICE AND DEVELOPMENT TABLES IN C02A, C02B, C03A AND C03B

BASEPLATE SCHEDULE



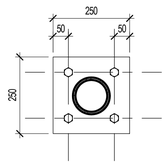
BASE PLATE - B.PL. #1

FOR W250 COLUMNS 25mm THICK + (4) 19Ø A.BOLTS



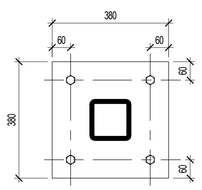
BASE PLATE - B.PL. #2

FOR HSS COLUMNS 25mm THICK + (4) 19Ø A.BOLTS



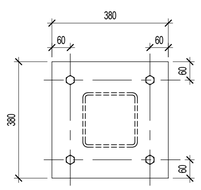
BASE PLATE - B.PL. #3

FOR ROUND COLUMNS 16mm THICK + (4) 19Ø A.BOLTS



BASE PLATE - B.PL. #4

FOR PV SUPPORT COLUMNS
16mm THICK + (4) 20M BOLTS



CAP PLATE - C.PL. #1

FOR BUILDING COLUMNS
16mm THICK + (4) 20M BOLTS

Key to Detail Location

NO. — Detail Number
NO. — Drawing Number

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#	Date	Revision/Issued:
1	18-08-03	ISSUED FOR 75% CONTRACT DOCUMENTS
2	18-09-11	ISSUED FOR 95% COMPLETION
3	18-10-03	ISSUED FOR PERMIT
4	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
5	19-05-07	ISSUED FOR TENDER
6	20-01-17	REISSUED FOR TENDER

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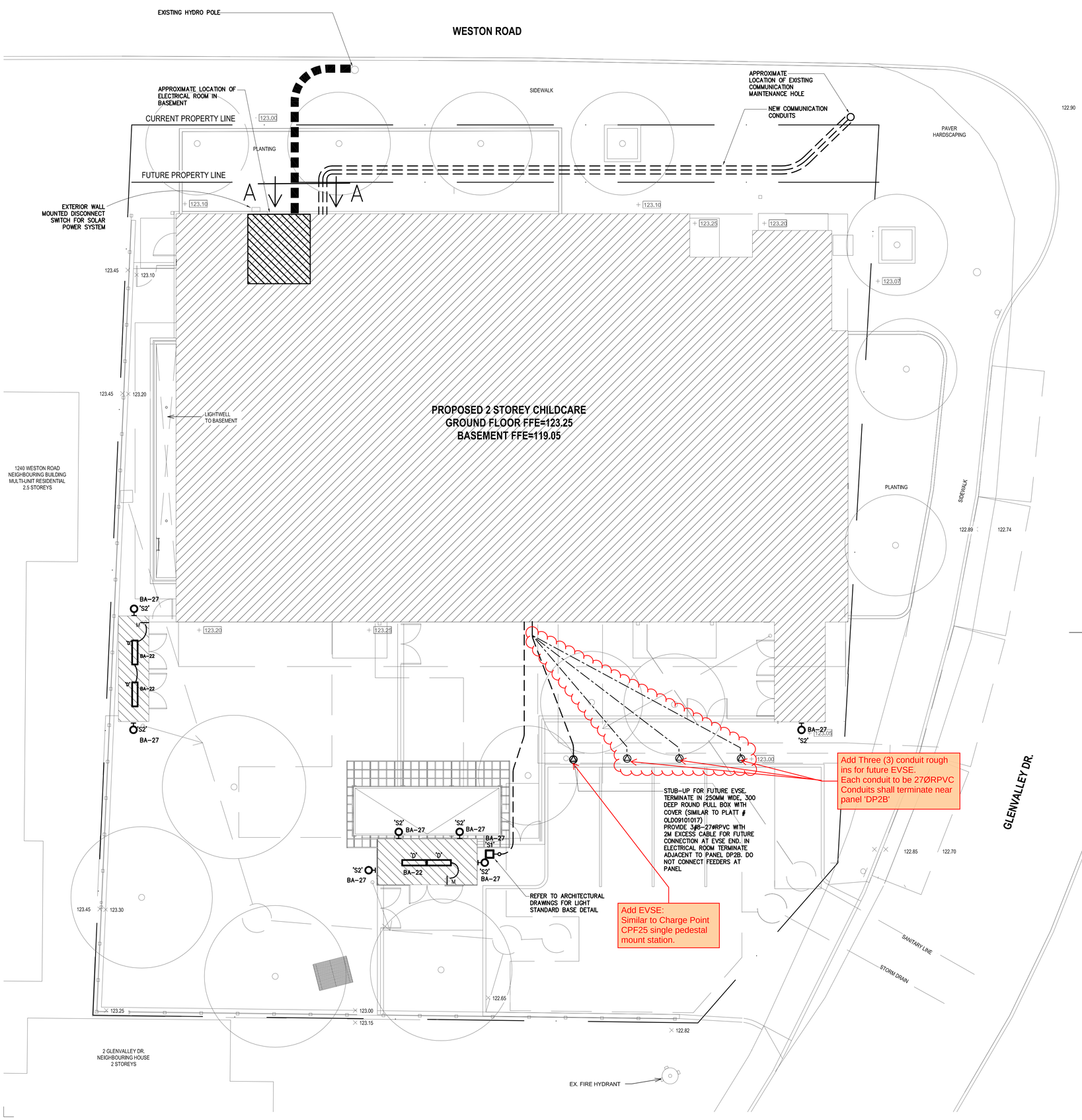
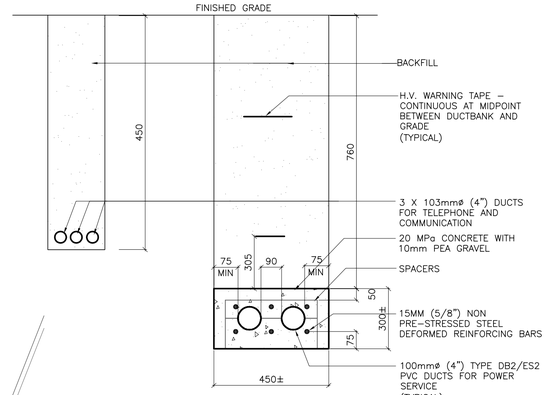
MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

TYPICAL DETAILS

scale:	As indicated
date:	18-10-03
drawn:	MY
checked by:	RA&PM
project number:	20171238
drawing number:	S5.09



NOTE:
ALL EXTERIOR LIGHT FIXTURES SHALL BE DARK–SKY COMPLIANT WITH A ZERO UPLIGHT COMPONENT.



DUCTBANK SECTION A–A

DUCTBANK NOTES

1. OBTAIN ALL UTILITY LOCATES PRIOR TO CONSTRUCTION.
2. ALL DIMENSIONS ARE THE MINIMUM DISTANCES REQUIRED.
3. PRIMARY DUCTBANK SHALL AS PER LATEST LOCAL HYDRO STANDARDS AND SHALL BE INSPECTED AND APPROVED BY LOCAL HYDRO
4. THE REINFORCING BARS ALONG THE SIDES AND BOTTOM OF THE DUCT BANK SHALL BE CONCEALED WITH A MINIMUM OF 75mm OF CONCRETE COVER.
5. BACKFILL IN LAYERS NOT EXCEEDING 300mm. COMPACTION TO BE TO 95% PROCTOR DENSITY MINIMUM (AS PER CSA C22.3 – 3.5.3.2).
6. ALL DUCTS TO BE PVC TYPE DB2/ES2 AS PER CSA–C22.2 #211.1 SPECIFICATION.
7. ALL PVC DUCTS AND JOINTS TO BE GLUED WITH APPROVED ADHESIVE.

Key to Detail Location

NO. (Detail Number)
NO. (Drawing Number)

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2	2018 08 03	70% CONTRACT DOCUMENTS
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4	2018 09 11	COORDINATION
5	18-09-11	ISSUED FOR 95% COMPLETION
6	18-10-03	ISSUED FOR PERMIT
7	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
8	19-05-07	ISSUED FOR TENDER

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PROJECT N

LICENCED PROFESSIONAL ENGINEER — RMA 17-05 — R. MANCINI — 19/05/07 — PROVINCE OF ONTARIO

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30 Martha St., Suite 203, Bolton, Ontario L7E 5V1
Tell: (416) 236-2626, (905) 951-6292 Fax: (905) 951-0305
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MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

SITE PLAN ELECTRICAL

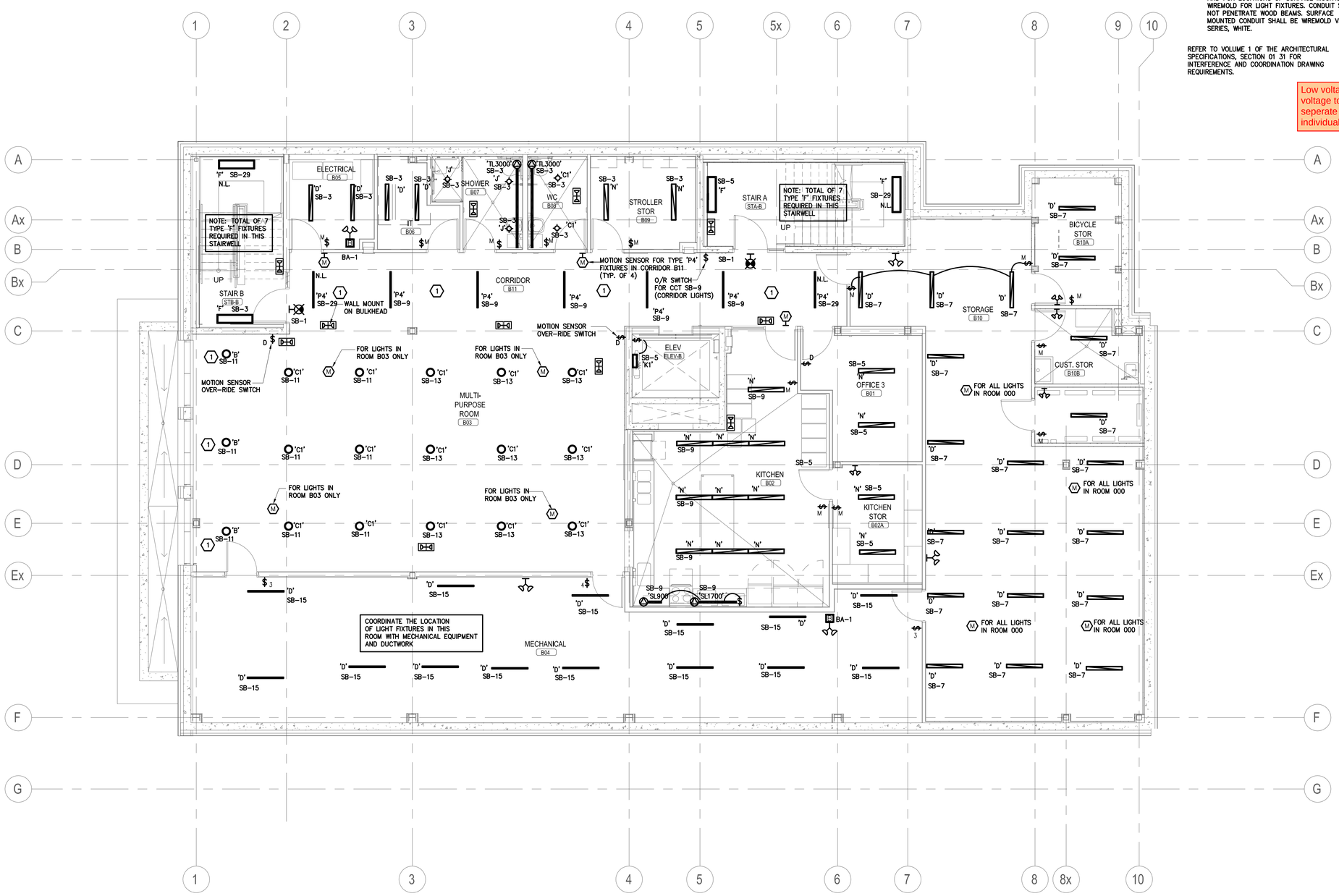
scale:	1:100
date:	03/02/18
drawn:	P.R.
checked by:	R.M.
CS&P project number:	17026
RMA project number:	RMA-17-05
drawing number:	E-2
Revision:	

NOTES:

1. EXPOSED WOOD CEILING IN THIS AREA. FEEDERS SHALL NOT BE RUN ON THE EXPOSED WOOD AREAS. REFER TO ARCHITECTURAL CEILING PLANS FOR EXACT LAYOUT AND DIMENSIONS AND FOR LOCATIONS OF SURFACE MOUNTED WIREMOLD FOR LIGHT FIXTURES. CONDUIT SHALL NOT PENETRATE WOOD BEAMS. SURFACE MOUNTED CONDUIT SHALL BE WIREMOLD V500 SERIES, WHITE.

REFER TO VOLUME 1 OF THE ARCHITECTURAL SPECIFICATIONS, SECTION 01 31 FOR INTERFERENCE AND COORDINATION DRAWING REQUIREMENTS.

Low voltage and high voltage to have seperate raceways or individual wiremould.



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6	18-10-03	ISSUED FOR PERMIT
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8	19-05-07	ISSUED FOR TENDER

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PROJECT N

REGISTERED PROFESSIONAL ENGINEER — RMA 17-05 — R. MANCINI — 19/05/07 — PROVINCE OF ONTARIO

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Tel: (416) 236-2626, (905) 951-6292 Fax: (905) 951-6305
Website: www.geothermax.com E-mail rmancini@geothermax.com

MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

LIGHTING LAYOUT BASEMENT FLOOR PLAN

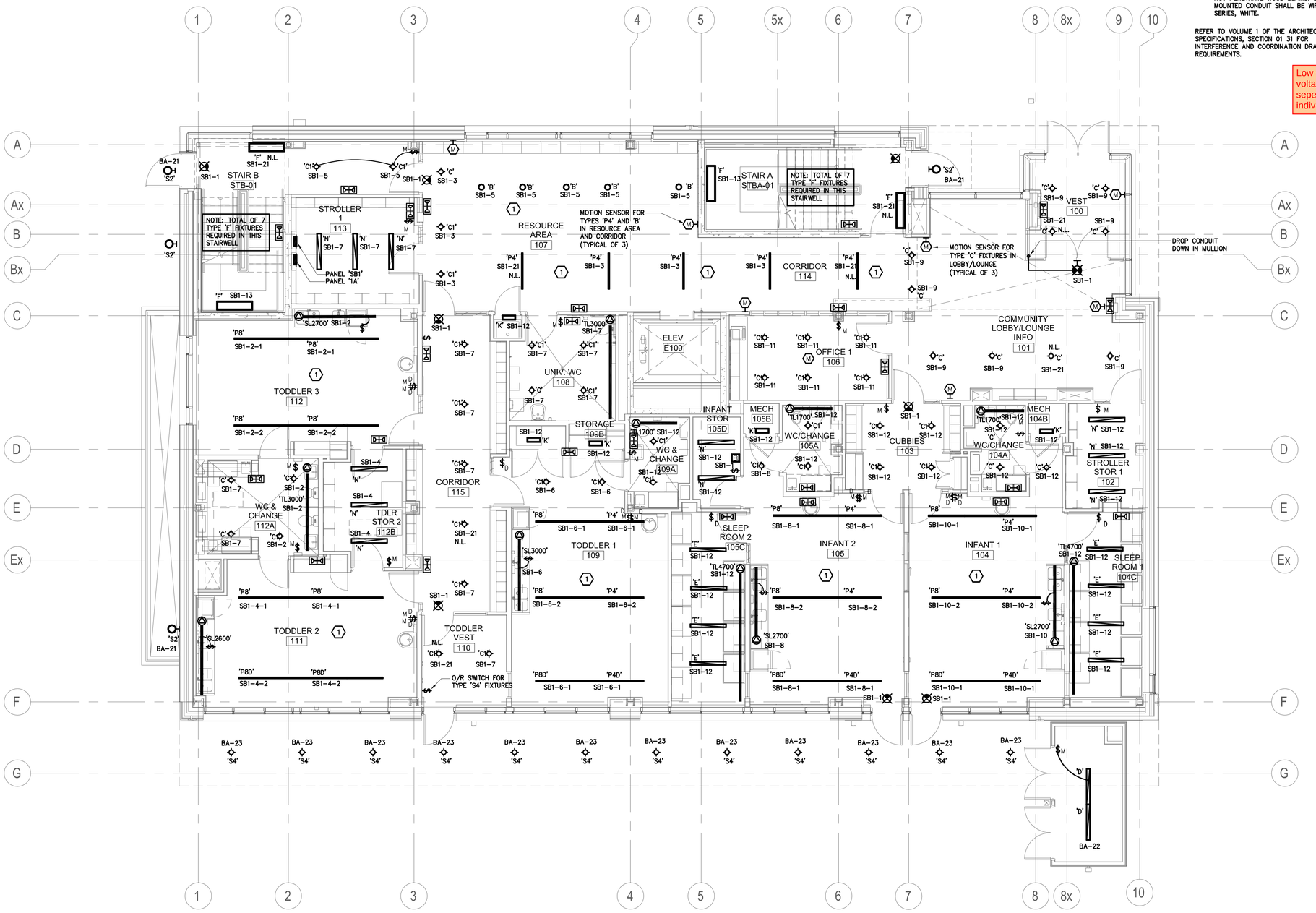
scale:	1:75
date:	03/02/18
drawn:	P.R.
checked by:	R.M.
CS&P project number:	17026
RMA project number:	RMBA-17-05
drawing number:	E-3
Revision:	

NOTES:

1. EXPOSED WOOD CEILING IN THIS AREA. FEEDERS SHALL NOT BE RUN ON THE EXPOSED WOOD AREAS. REFER TO ARCHITECTURAL CEILING PLANS FOR EXACT LAYOUT AND DIMENSIONS AND FOR LOCATIONS OF SURFACE MOUNTED WIREMOLD FOR LIGHT FIXTURES. CONDUIT SHALL NOT PENETRATE WOOD BEAMS. SURFACE MOUNTED CONDUIT SHALL BE WIREMOLD V500 SERIES, WHITE.

REFER TO VOLUME 1 OF THE ARCHITECTURAL SPECIFICATIONS, SECTION 01 31 FOR INTERFERENCE AND COORDINATION DRAWNG REQUIREMENTS.

Low voltage and high voltage to have seperate raceways or individual wiremould.



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PROJECT N

RMA 17-05 — R. MANCINI — 19/05/07 — PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

R.Mancini and Associates Ltd.
Geothermal / Energy Consultants
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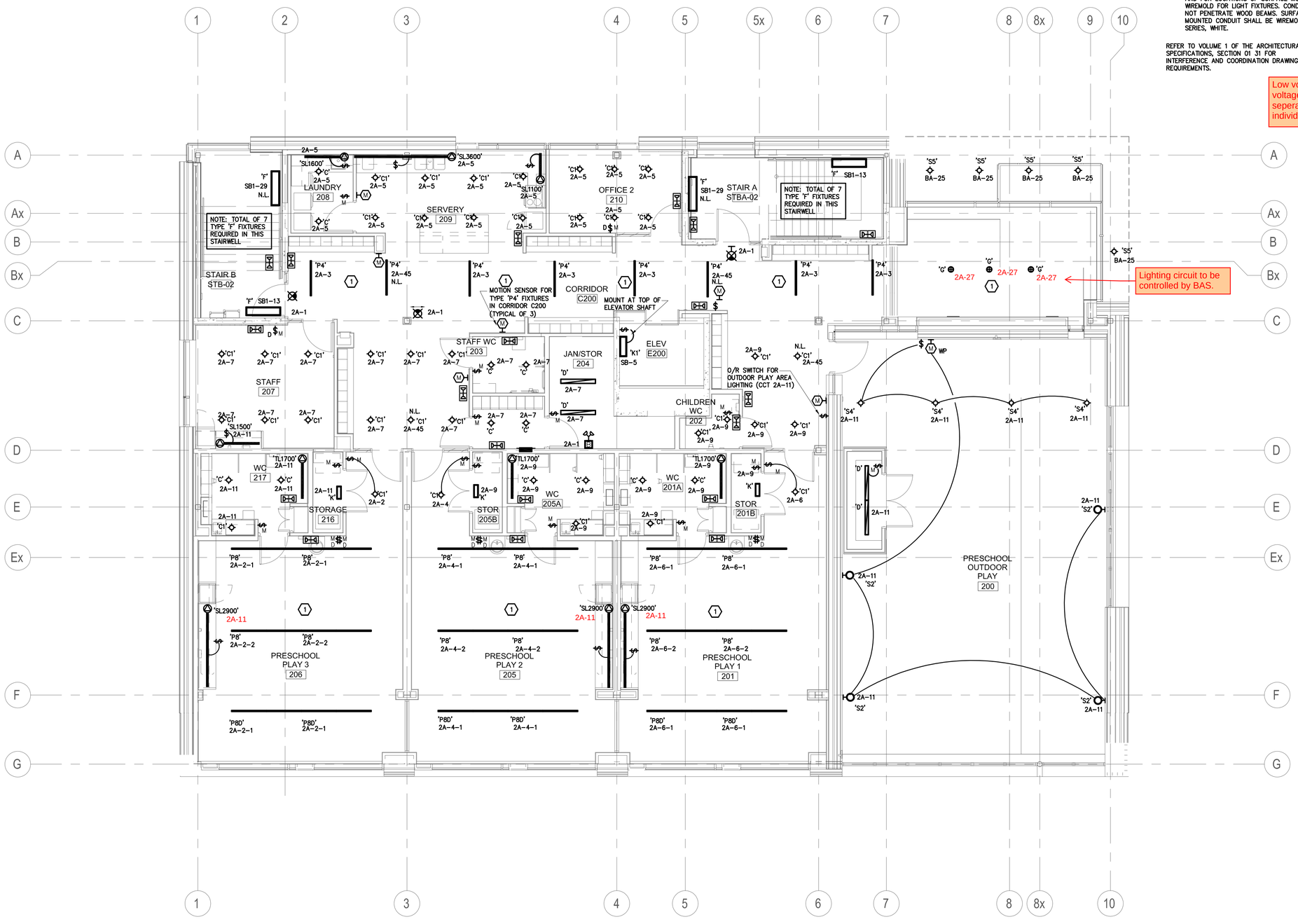
Tell: (416) 236-2626, (905) 951-6292 Fax: (905) 951-0305
Website: www.geothermax.com E-mail rmancini@geothermax.com

MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

LIGHTING LAYOUT GROUND FLOOR PLAN

scale:	1:75
date:	03/02/18
drawn:	P.R.
checked by:	R.M.
CS&P project number:	17026
RMA project number:	RMBA-17-05
drawing number:	E-4
Revision:	



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7	19-04-05	ISSUED FOR TENDER CLIENT REVIEW
8	19-05-07	ISSUED FOR TENDER

consultants

architects — COOLEARTH ARCHITECTURE INC., 386 Pacific Ave., Toronto, ON, M6P 2R1, Phone: 416-868-9774; CS&P ARCHITECTS INC., 2345 Yonge St., Suite 200, Toronto, ON, M4P 2E5, Phone: 416-482-5002

structural engineer — STEPHENSON ENGINEERING, 2550 Victoria Park Ave., Suite 602, Toronto, ON M2J 5A9, Phone: 416-635-0970

mechanical & electrical engineer — R MANCINI AND ASSOCIATES, 30 Martha St Suite 203, Bolton, ON L7E 5V1, Phone: 905-951-6292

landscape architect — PMA LANDSCAPE ARCHITECTS LTD., 359 Keele Street, Toronto, ON, M6P 2K6, Phone: 416-239-9818

civil engineer — MASONGSONG ASSOCIATES ENGINEERING LTD., 7800 Kennedy Road, S. 201, Markham, ON, L3R 2C7, Phone: 905-944-0162

PROJECT N

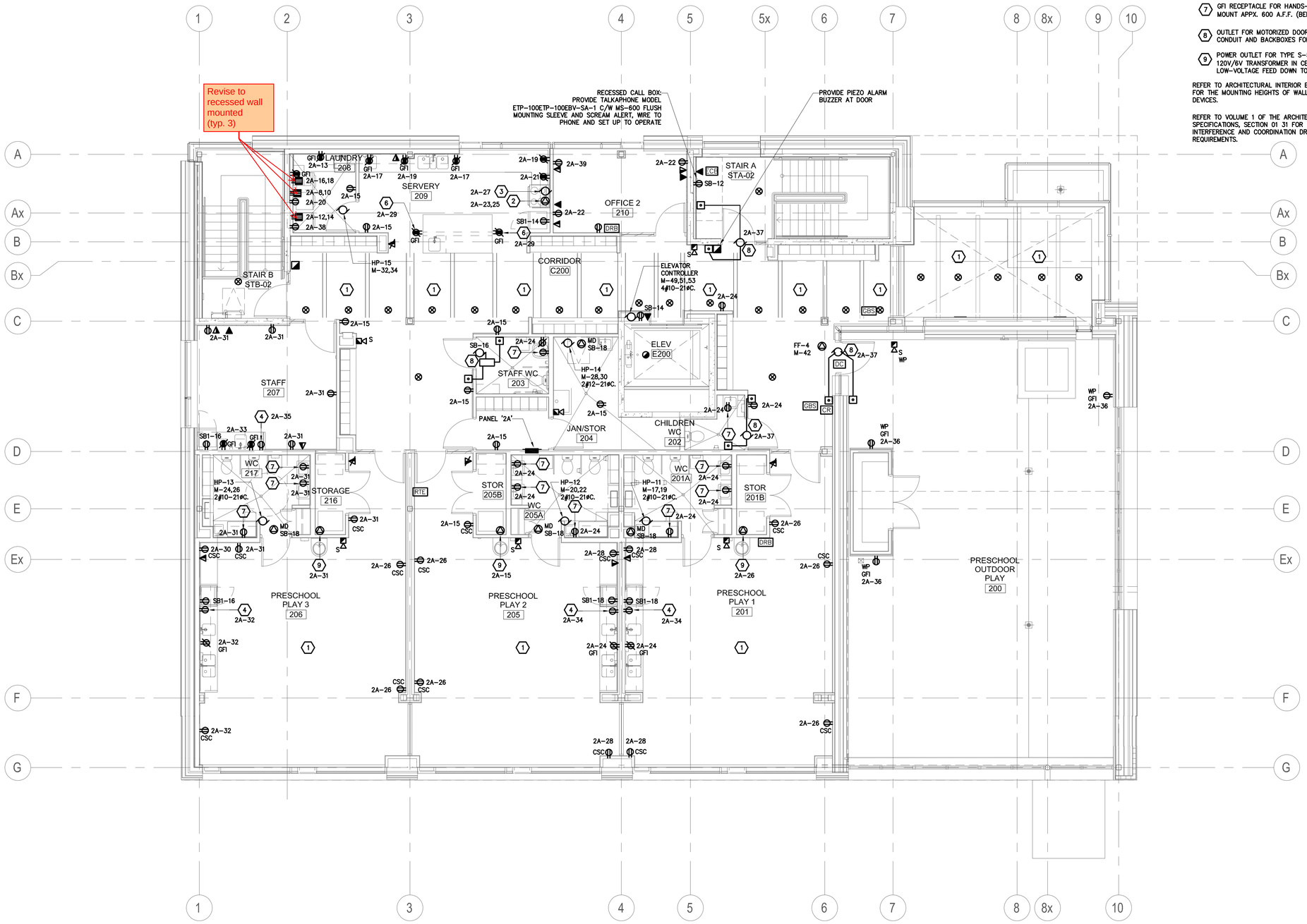
REGISTERED PROFESSIONAL ENGINEER — RMA 17-05 — R. MANCINI — 19/05/07 — PROVINCE OF ONTARIO

R.Mancini and Associates Ltd.
Geothermal / Energy Consultants
30 Martha St., Suite 203, Bolton, Ontario L7E 5V1
Tel: (416) 236-2626, (905) 951-6292 Fax: (905) 951-0305
Website: www.geothermax.com E-mail: rmancini@geothermax.com

MOUNT DENNIS CHILDCARE CENTRE
1234 WESTON ROAD, TORONTO, ON M6M 4P8

LIGHTING LAYOUT SECOND FLOOR PLAN

scale:	1:75
date:	03/02/18
drawn:	P.R.
checked by:	R.M.
CS&P project number:	17026
RMA project number:	RMBA-17-05
drawing number:	E-5
Revision:	



DRAWING NOTES

1. EXPOSED WOOD CEILING IN THIS AREA. FEEDERS SHALL NOT BE RUN ON THE EXPOSED WOOD AREAS. REFER TO ARCHITECTURAL CEILING PLANS FOR EXACT LAYOUT AND DIMENSIONS AND FOR LOCATIONS OF SURFACE MOUNTED WIREMOLD FOR LIGHT FIXTURES. CONDUITS SHALL NOT PENETRATE WOOD BEAMS.
2. OVEN OUTLET
3. EXHAUST HOOD
4. MICROWAVE OVEN. MOUNT RECEPTACLE IN CUPBOARD ABOVE
5. DISHWASHER OUTLET
6. RECEPTACLES MOUNTED ON VERTICAL FACE OF ISLAND
7. GFI RECEPTACLE FOR HANDS-FREE SINK. MOUNT APPX. 600 A.F.F. (BELOW SINK)
8. OUTLET FOR MOTORIZED DOOR. PROVIDE EMPTY CONDUIT AND BACKBOXES FOR PUSHBUTTONS.
9. POWER OUTLET FOR TYPE S-5 SINK. PROVIDE 120V/6V TRANSFORMER IN CEILING SPACE WITH LOW-VOLTAGE FEED DOWN TO SINK

REFER TO ARCHITECTURAL INTERIOR ELEVATIONS FOR THE MOUNTING HEIGHTS OF WALL MOUNTED DEVICES.

REFER TO VOLUME 1 OF THE ARCHITECTURAL SPECIFICATIONS, SECTION 01 31 FOR INTERFERENCE AND COORDINATION DRAWING REQUIREMENTS.

Key to Detail Location

NO. (Detail Number) / NO. (Drawing Number)

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PROJECT N

LICENCED PROFESSIONAL ENGINEER R. MANCINI 19/05/07 PROVINCE OF ONTARIO RMA 17-05

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Geothermal / Energy Consultants

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POWER LAYOUT SECOND FLOOR PLAN

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drawing number:	E-9
Revision:	

ESTIMATED DEMAND LOAD CALCULATION

OESC: 8-204

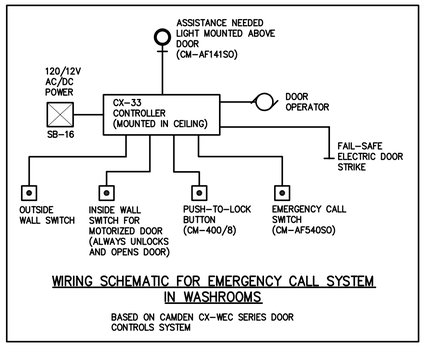
34.0 KW	50W/M2 FOR CLASSROOM AREAS (680M2 X 50)	(OESC: 8-204 (1)(a))
11.5 KW	10W/M2 FOR REMAINDER (1145M2 X 10W)	(OESC: 8-204 (1)(b))
64.0 KW	MECHANICAL EQUIPMENT	(OESC: 8-204 (1)(c))
6.0 KW	OVEN	(OESC: 8-204 (1)(d))
10.0 KW	ELEVATOR	(OESC: 8-204 (1)(d))
125.5 KW	TOTAL CONNECTED LOAD	

DEMAND FACTOR (OESC 8-204(2)(b))
AVERAGE LOAD PER SQUARE METER: (OESC: 8-204 (2)(b))

$$\frac{125.5\text{KW}}{1825\ \text{M2}} = 69\ \text{W/M2}$$

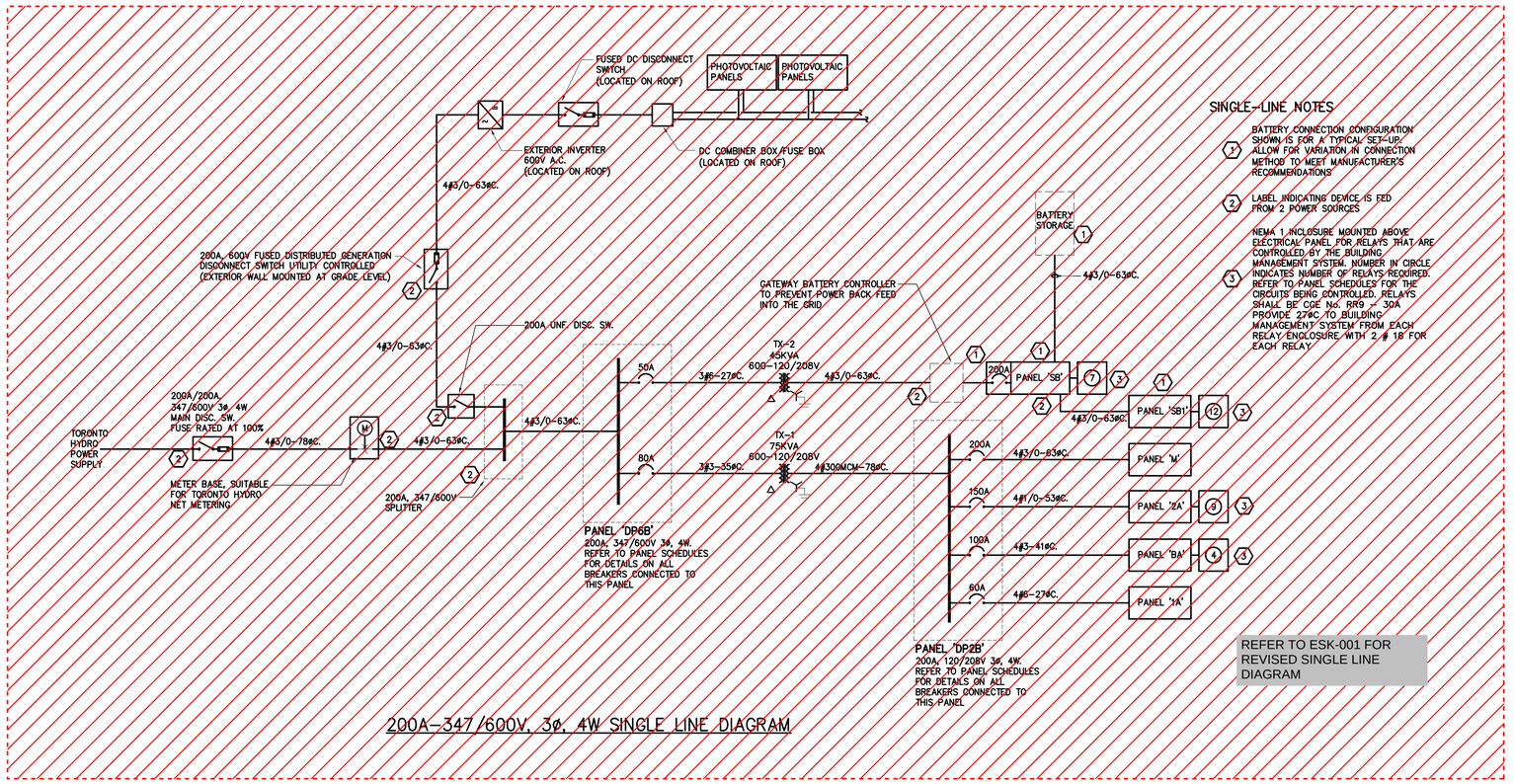
46.5 KW	900M2 X 69W X 75%	(OESC: 8-204 (2)(b)(ii)(A))
32.0 KW	925M2 X 69W X 50%	(OESC: 8-204 (2)(b)(ii)(B))
78.5 KW	TOTAL DEMAND LOAD	

$$\frac{78{,}500\ \text{(TOTAL WATTS)}}{1038\ (600\text{V},\ 3\text{ø})} = 76\ \text{AMPS ESTIMATED DEMAND LOAD}$$



WIRING SCHEMATIC FOR EMERGENCY CALL SYSTEM IN WASHROOMS

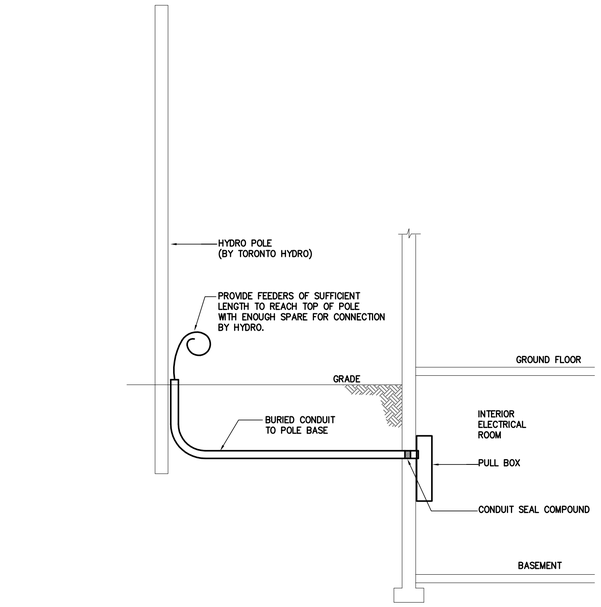
BASED ON CAMDEN CX-WEC SERIES DOOR CONTROLS SYSTEM



200A-347/600V, 3ø, 4W SINGLE LINE DIAGRAM

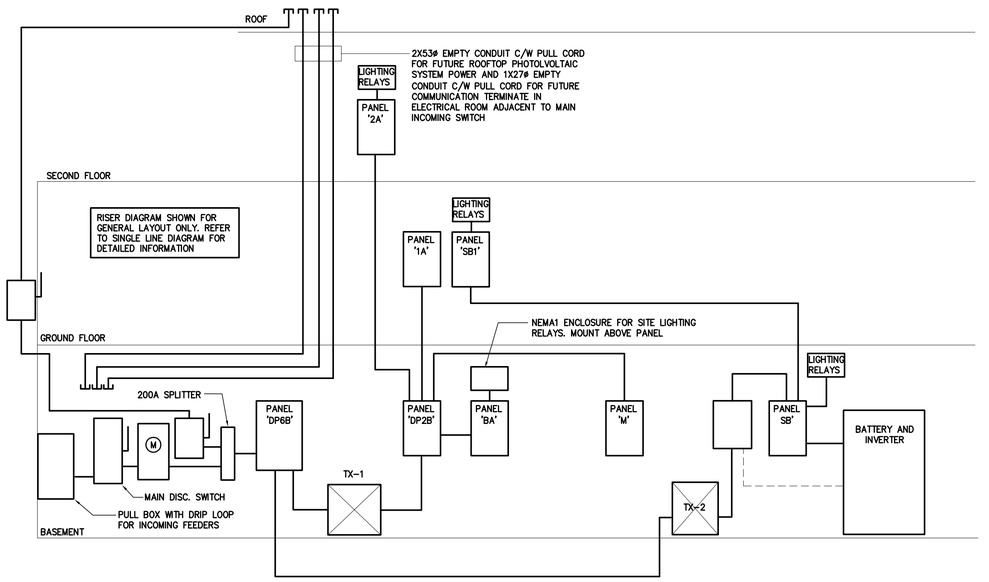
SINGLE-LINE NOTES

1. BATTERY CONNECTION CONFIGURATION SHOWN IS FOR A TYPICAL SET-UP. ALLOW FOR VARIATION IN CONNECTION METHOD TO MEET MANUFACTURER'S RECOMMENDATIONS
2. LABEL INDICATING DEVICE IS FED FROM 2 POWER SOURCES
3. NEMA 1 ENCLOSURE MOUNTED ABOVE ELECTRICAL PANEL FOR RELAYS THAT ARE CONTROLLED BY THE BUILDING MANAGEMENT SYSTEM. NUMBER IN CIRCLE INDICATES NUMBER OF RELAYS REQUIRED. REFER TO PANEL SCHEDULES FOR THE CIRCUITS BEING CONTROLLED. RELAYS SHALL BE CGE No. RR9 , 30A PROVIDE 27øC TO BUILDING MANAGEMENT SYSTEM FROM EACH RELAY ENCLOSURE WITH 2 # 18 FOR EACH RELAY



BUILDING SECTION AT ELECTRICAL ROOM SHOWING BURIED CONNECTION TO HYDRO POLE

N.T.S.



200A-347/600V, 3ø, 4W RISER DIAGRAM

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DETAILS, RISER DIAGRAM AND SINGLE LINE ELECTRICAL

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checked by:	R.M.
CS&P project number:	17026
RMA project number:	RMA-17-05
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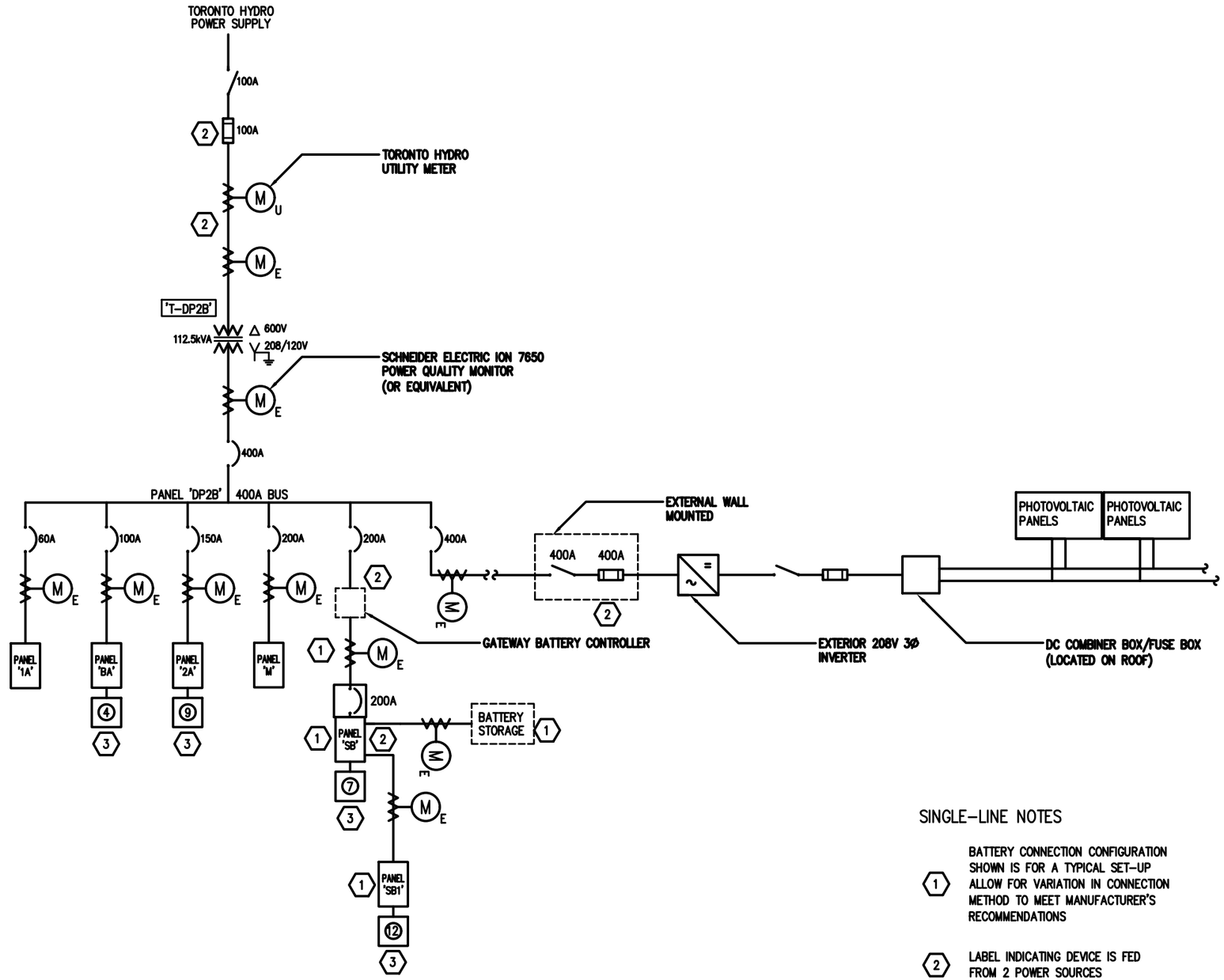

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DRAWING:
ESK-001