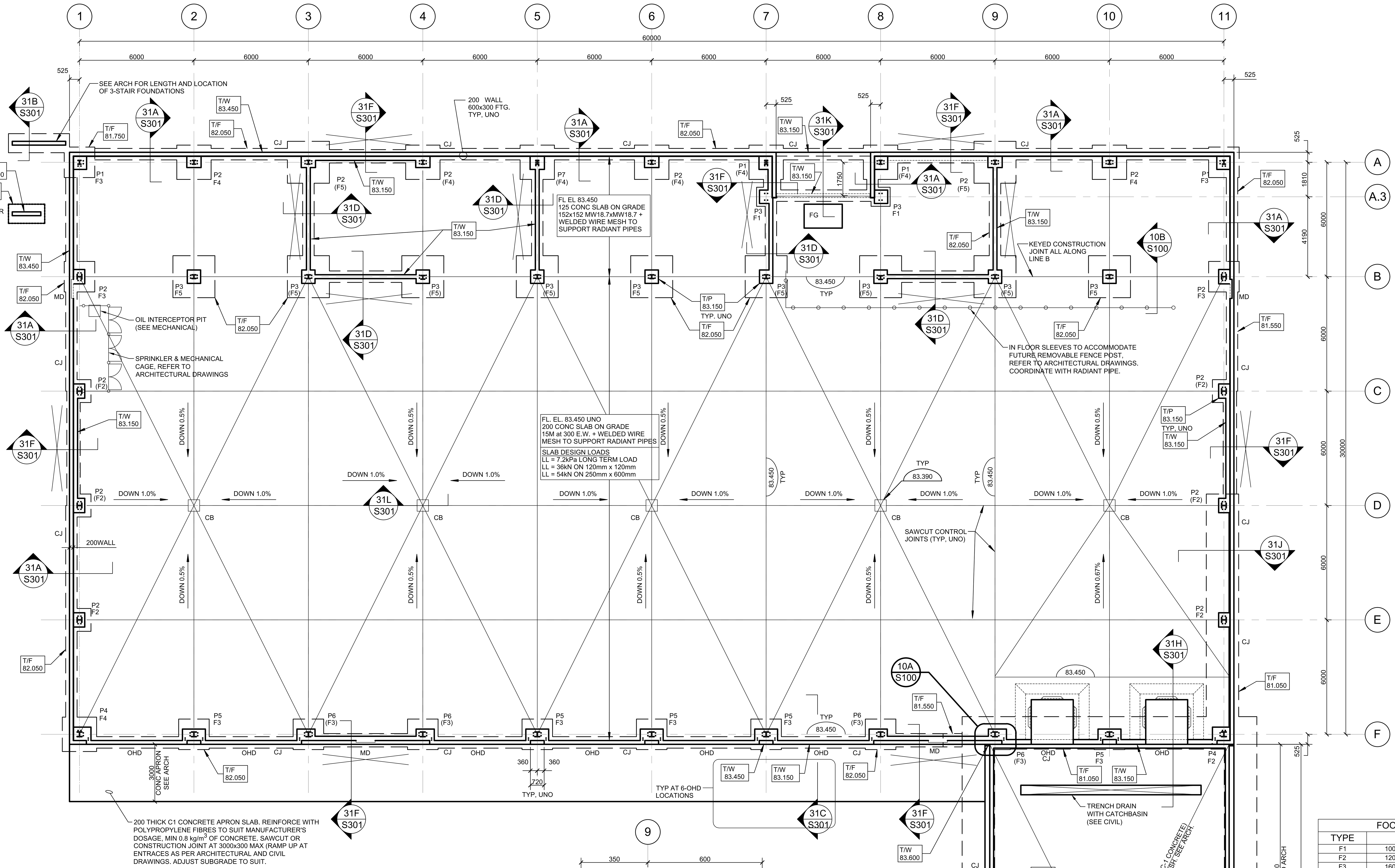
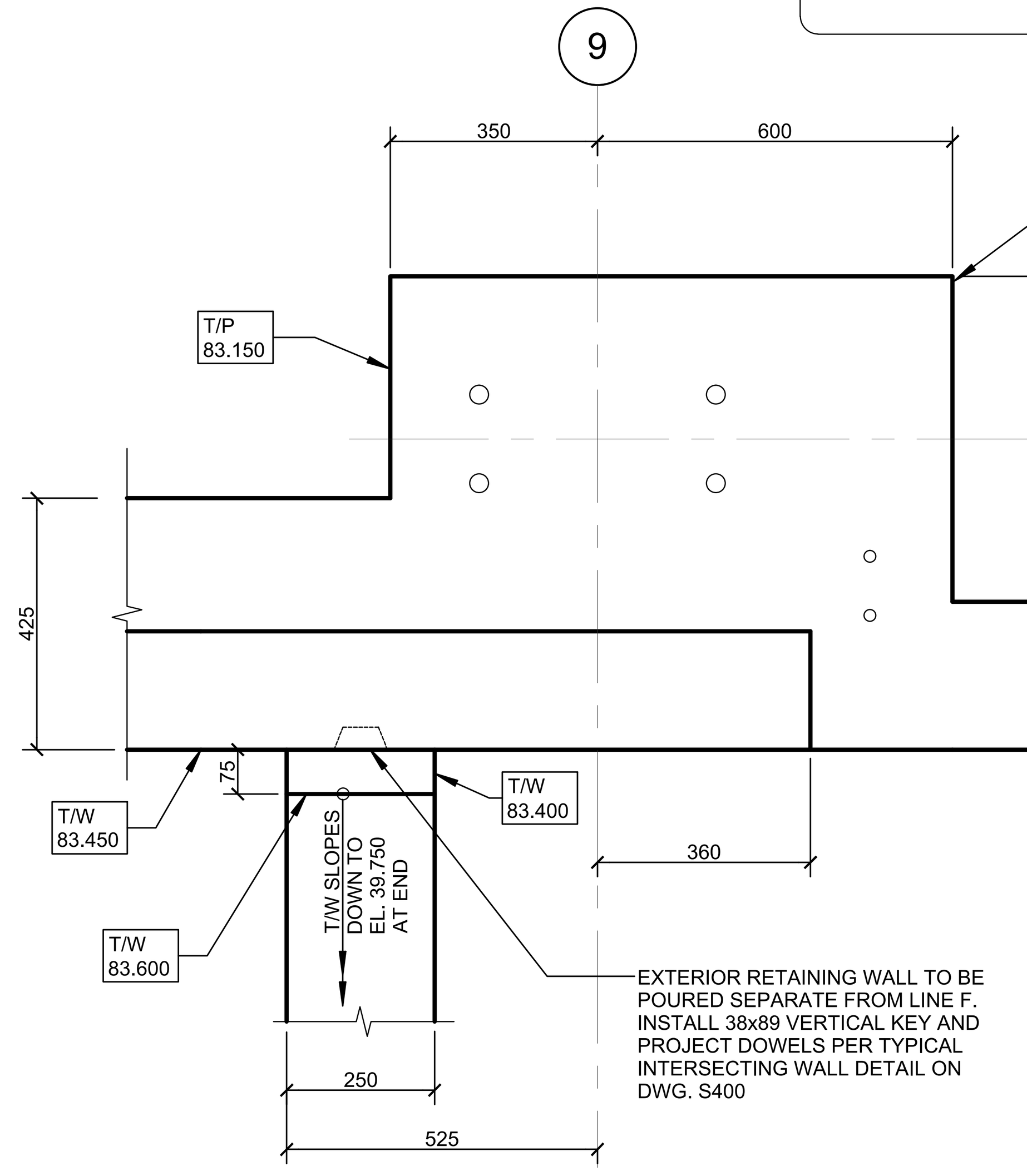
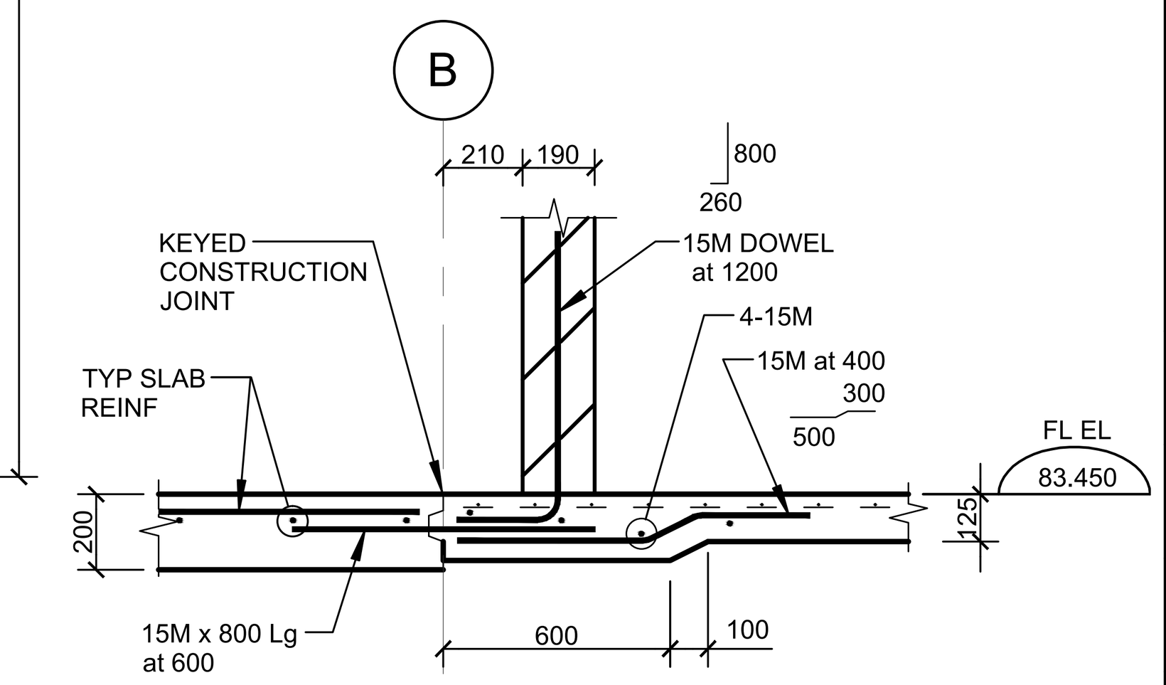




10A
S100
PLAN DETAIL
SCALE : 1:10



10B
S100
SECTION
SCALE : 1:20

FOUNDATION AND GROUND FLOOR PLAN

1. SEE GENERAL REQUIREMENTS AND TYPICAL DETAILS ON DRAWINGS S400, S401, & S402.
2. SEE THIS DRAWING FOR FOOTING SCHEDULE.
3. SEE DRAWING S300 FOR PIER SCHEDULE.
4. GROUND FLOOR DATUM ELEVATION IS 83.450.
5. UNLESS OTHERWISE NOTED ON PLAN OR DETAILS, THE FOLLOWING DATA APPLIES:
   - 5.1. TOP OF SLAB IS 0 FROM DATUM ELEVATION EXCEPT AS CROSSED AND NOTED +/-X ON PLAN.
   - 5.2. DESIGN LOADS IN kN/m² ARE AS NOTED ON PLAN.
   - 5.3. SET TOPS OF COLUMN AND WALL FOOTINGS (TOF) AT ELEVATION -1500 RELATIVE TO FLOOR DATUM.
6. PROVIDE CONCRETE SLAB-ON-GRADE AS NOTED ON PLAN.
7. GROUT BASE PLATES AND BEARING PLATES PRIOR TO PLACING LOADS ON STEELWORK.

FOOTING SCHEDULE

TYPE	SIZE	REINF.
F1	1000x1000x300	4-15M EW
F2	1200x1200x300	4-15M EW
F3	1600x1600x300	5-15M EW
F4	1800x1800x350	7-15M EW
F5	2200x2200x400	10-15M EW

(F4) INDICATES THAT ALL FOOTINGS IN "BRACKETS" SHALL HAVE REINFORCING AS NOTED ABOVE PLACED IN THE TOP AND BOTTOM OF THE FOOTING

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14Y160-049A

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key plan | plan-clé

stamp | sceau

I.J. FULLER
14Y160-049A

revision	description	date
01	ISSUED FOR TENDER	15/03/26

A detail no. / no. du detail
B location drawing no. / sur dessin no.
C drawing no. / dessin no.

project | projet

CSC MULTI-PURPOSE BUILDING
CBI MINIMUM INSTITUTION (FRONTENAC)
KINGSTON, ONTARIO

drawing | dessin

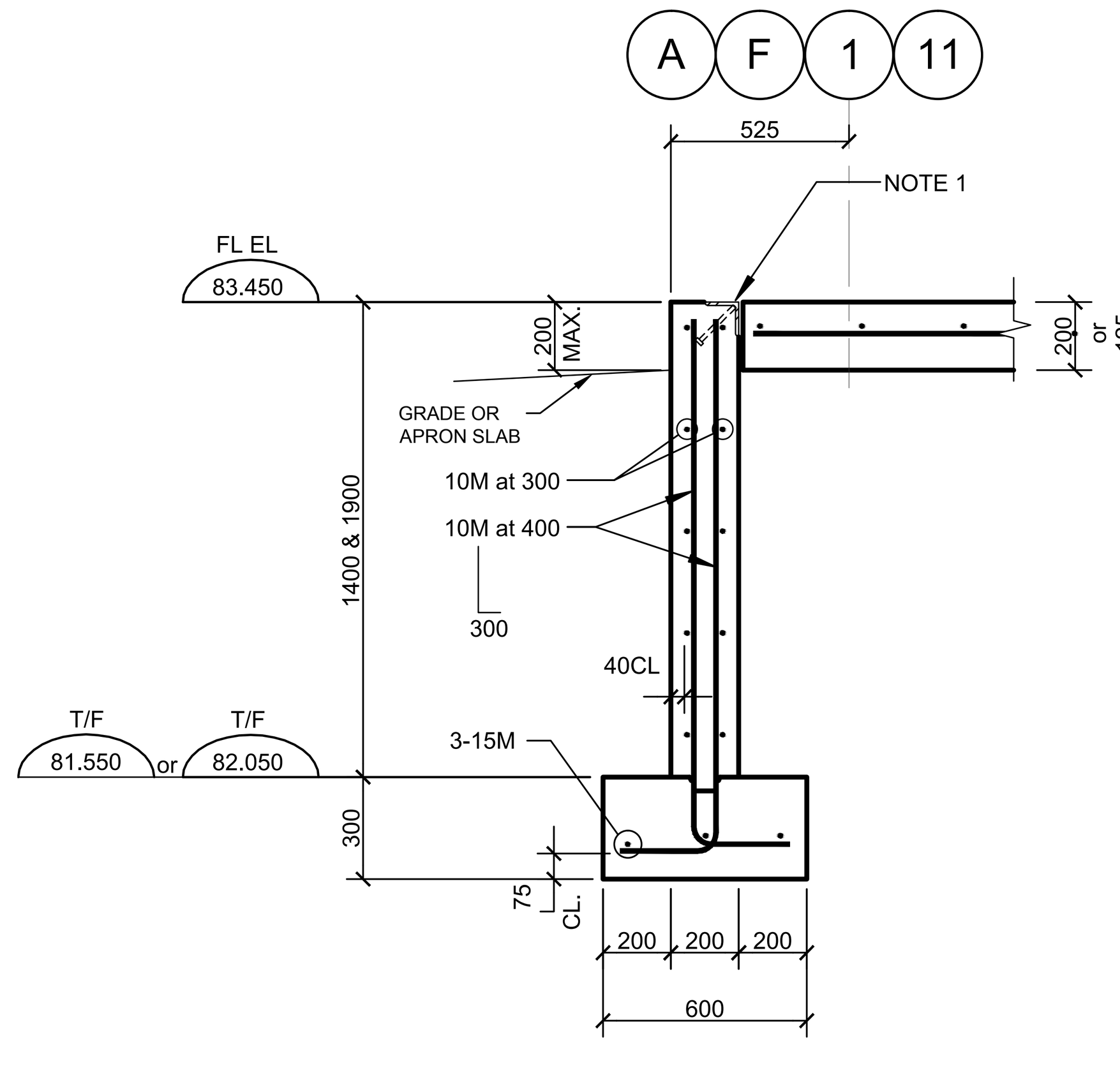
FOUNDATION PLAN

designed	IJF	conçu
date	2014/04/22	(yyyy/mm/dd)
drawn	PDM	dessiné
date	2014/04/22	(yyyy/mm/dd)
reviewed	IJF	examiné
date	2015/03/11	(yyyy/mm/dd)
approved	IJF	approuvé
date	2015/03/11	(yyyy/mm/dd)
Tender	DUNCAN PARKER	Soumission
Project Manager		Administrateur de projets

project no. | no. du projet
R.055776.001

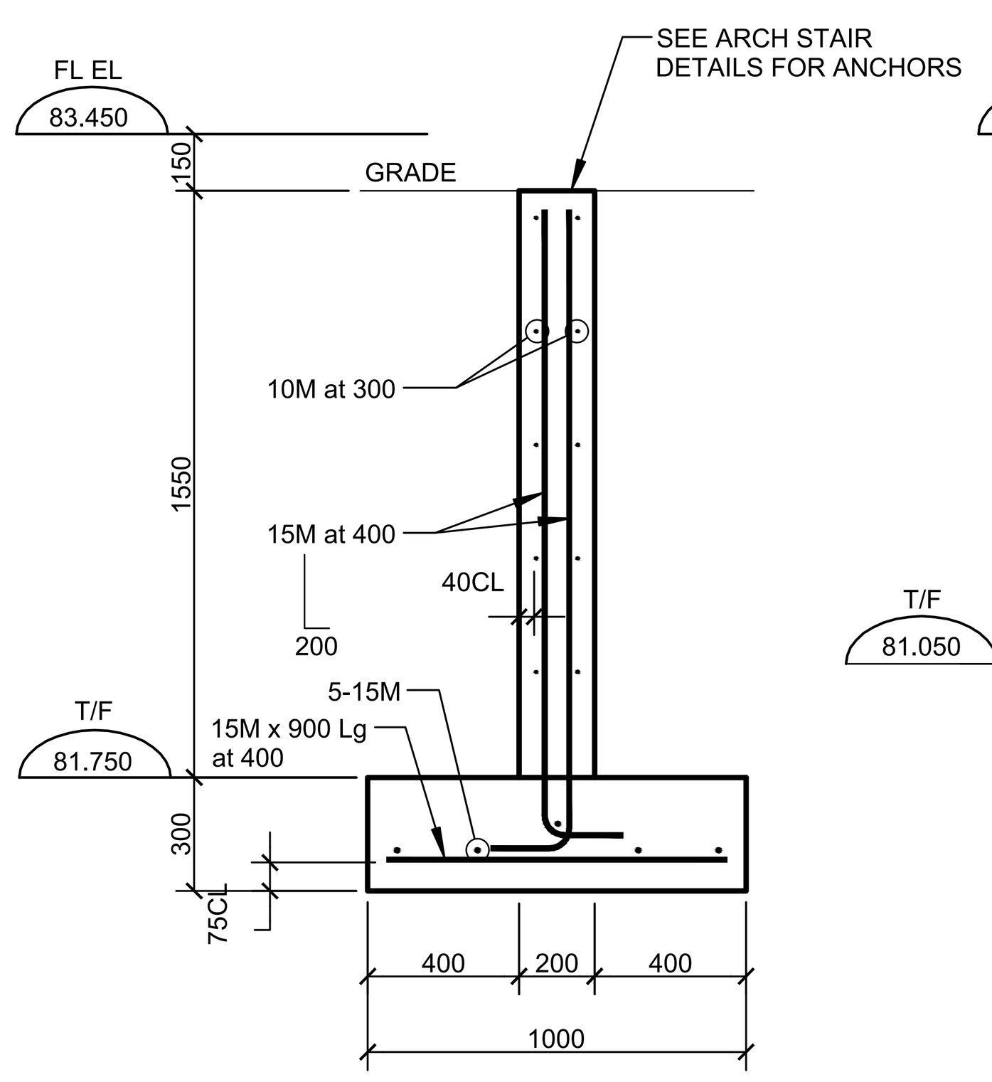
drawing no. | no. du dessin
S100

PWGSC B1 (1000x707)



31A S100 SECTION

SCALE : 1:20



31B S100 SECTION

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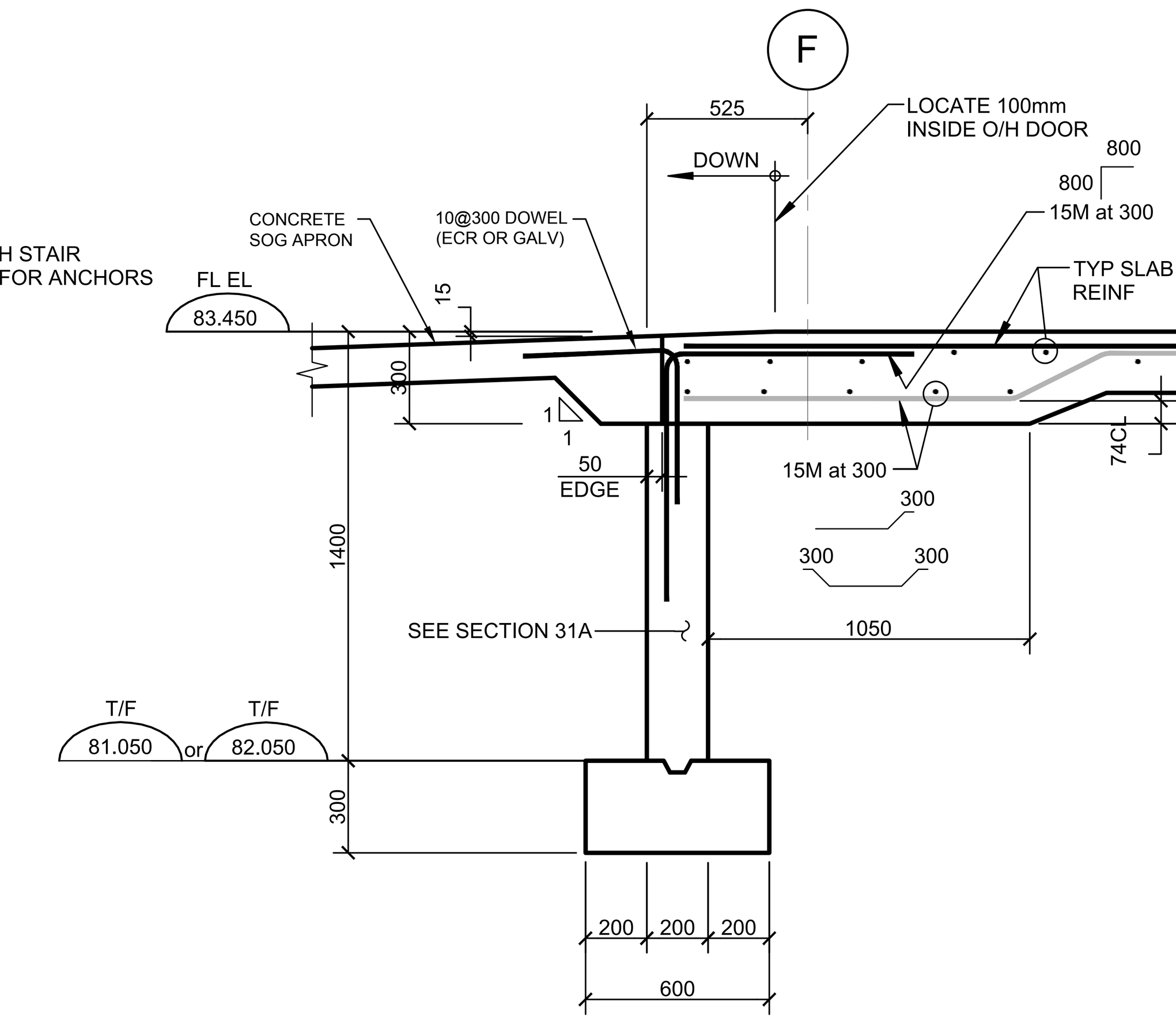

31C S100 SECTION

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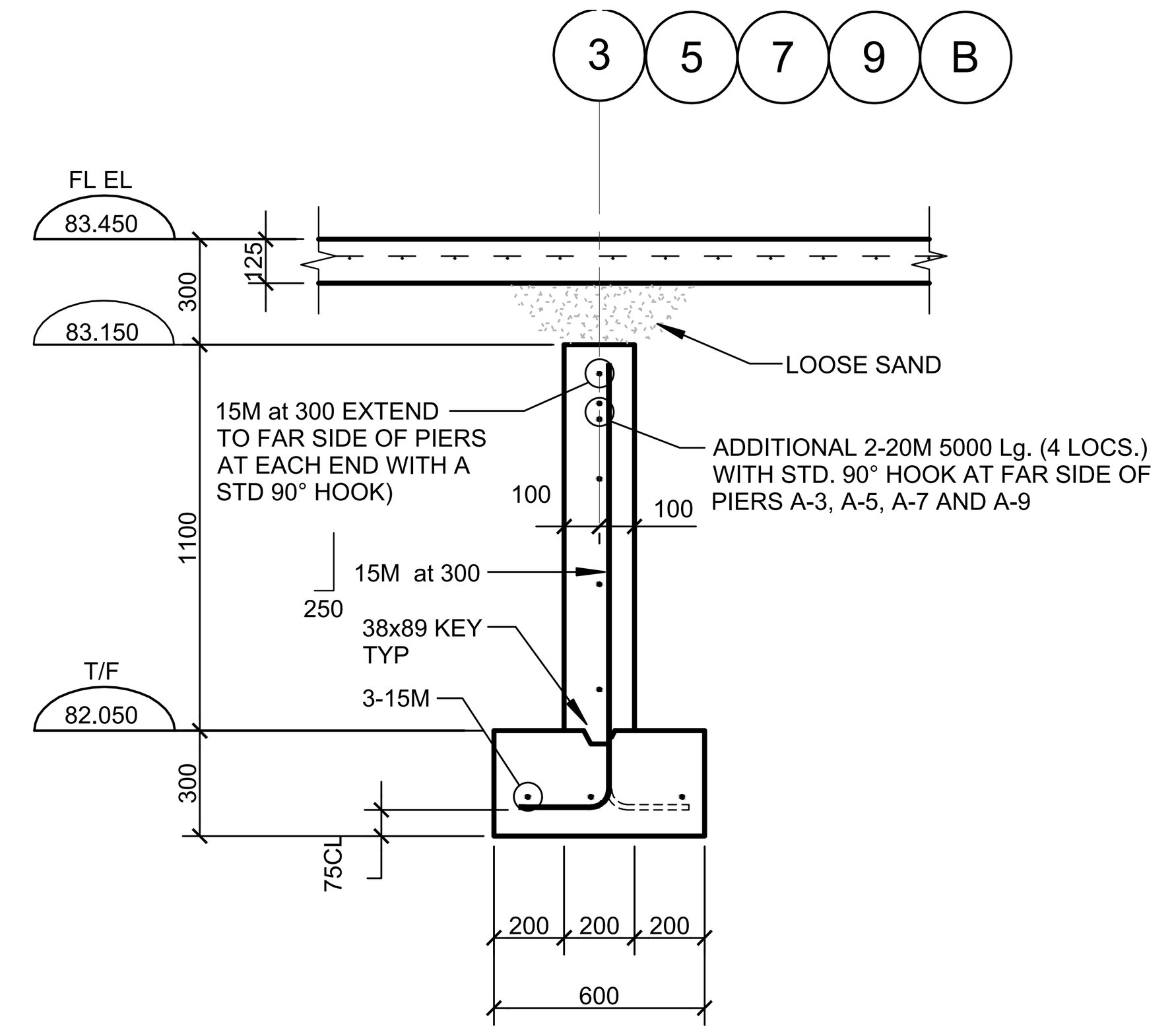

31D S100 SECTION

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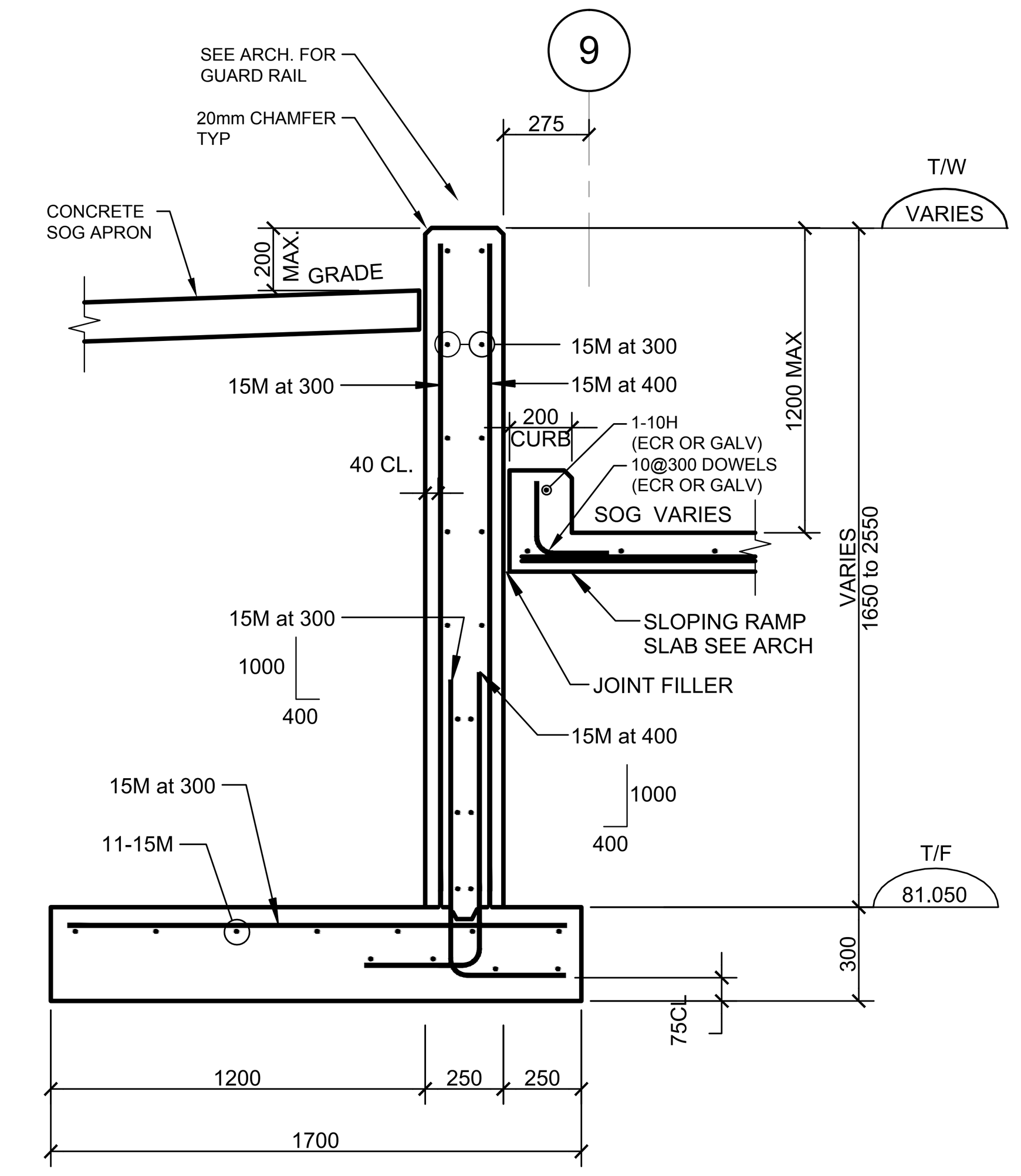
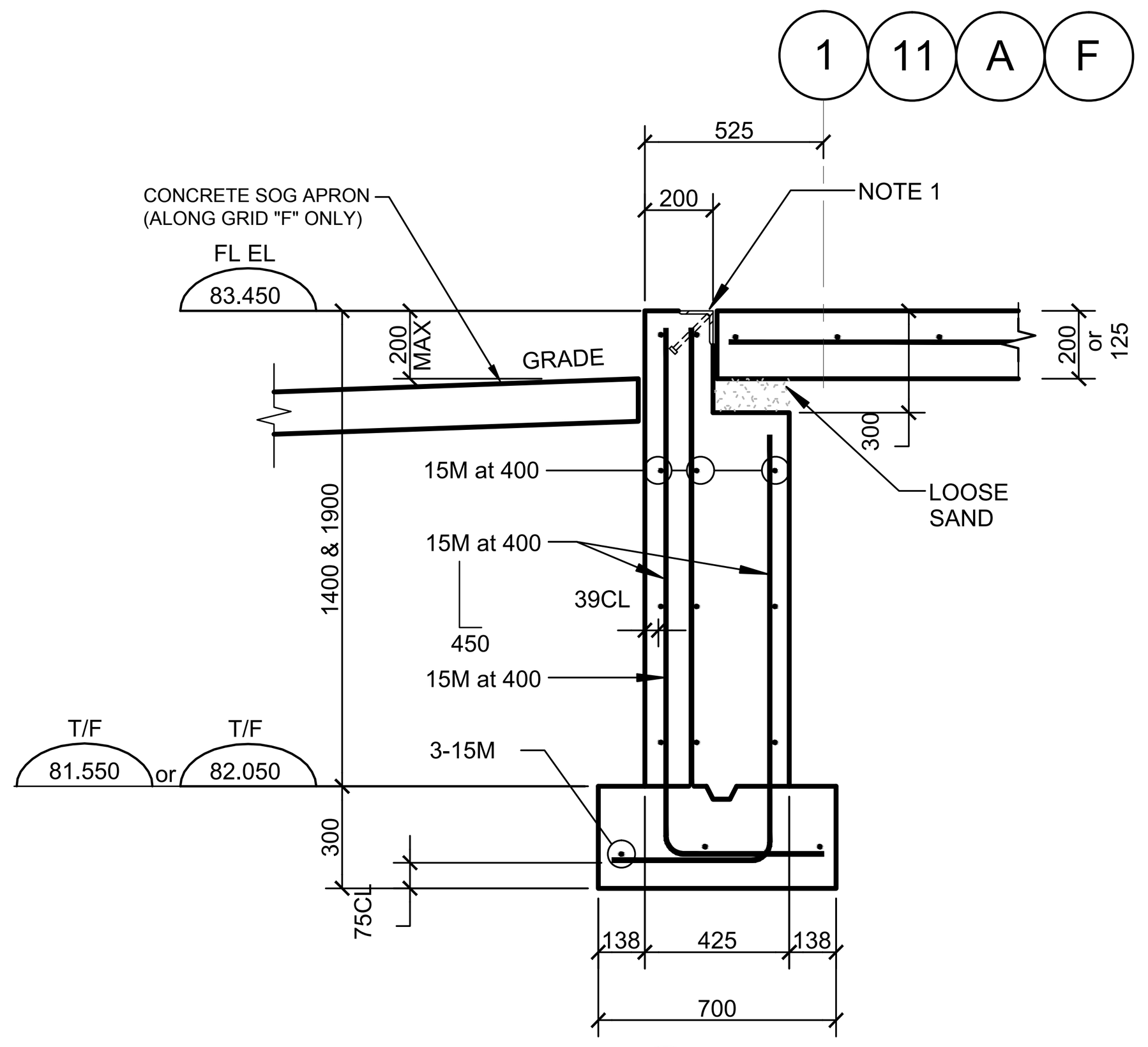


31E S100 SECTION

SCALE : 1:20



31F S100 SECTION

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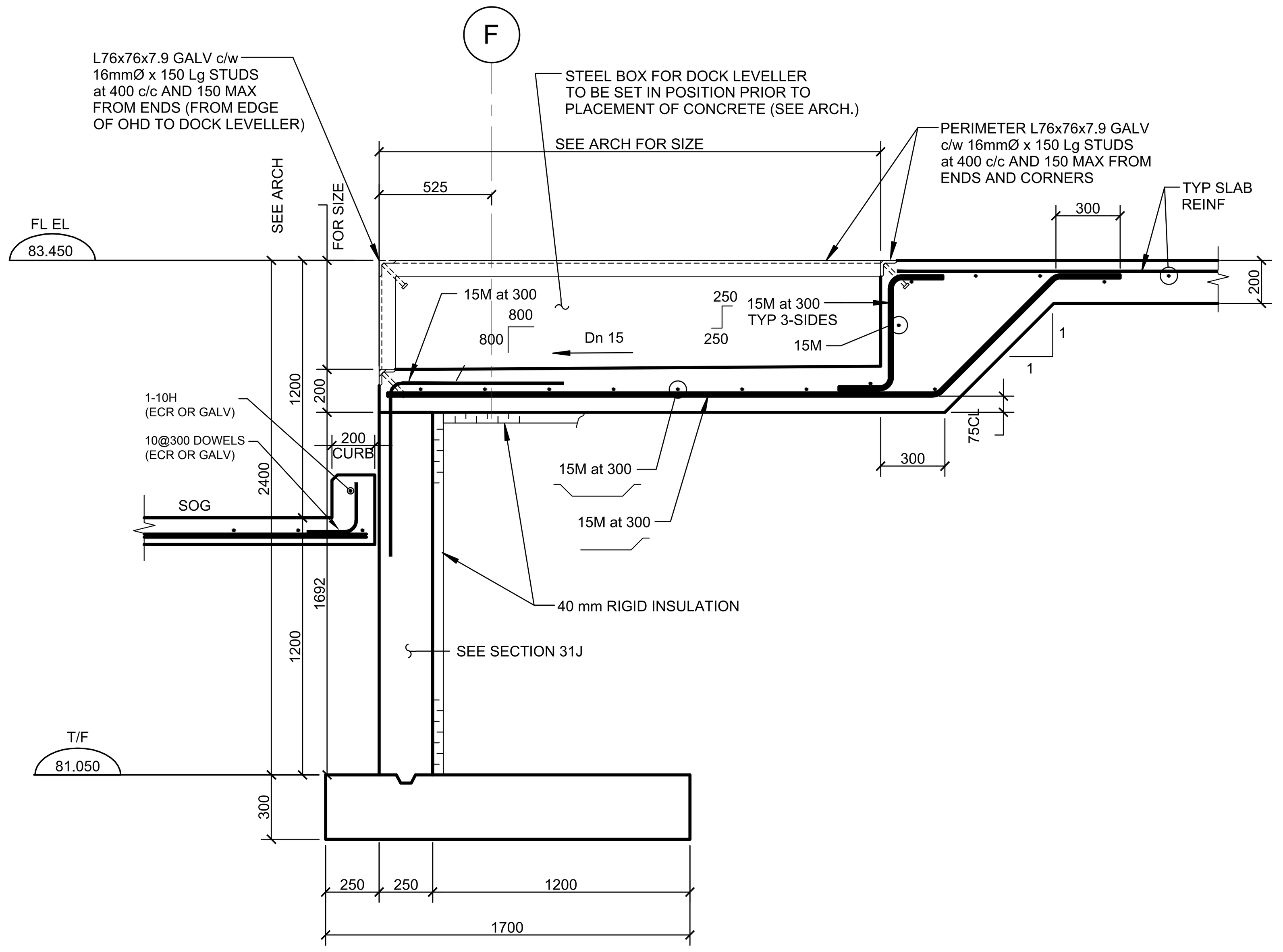
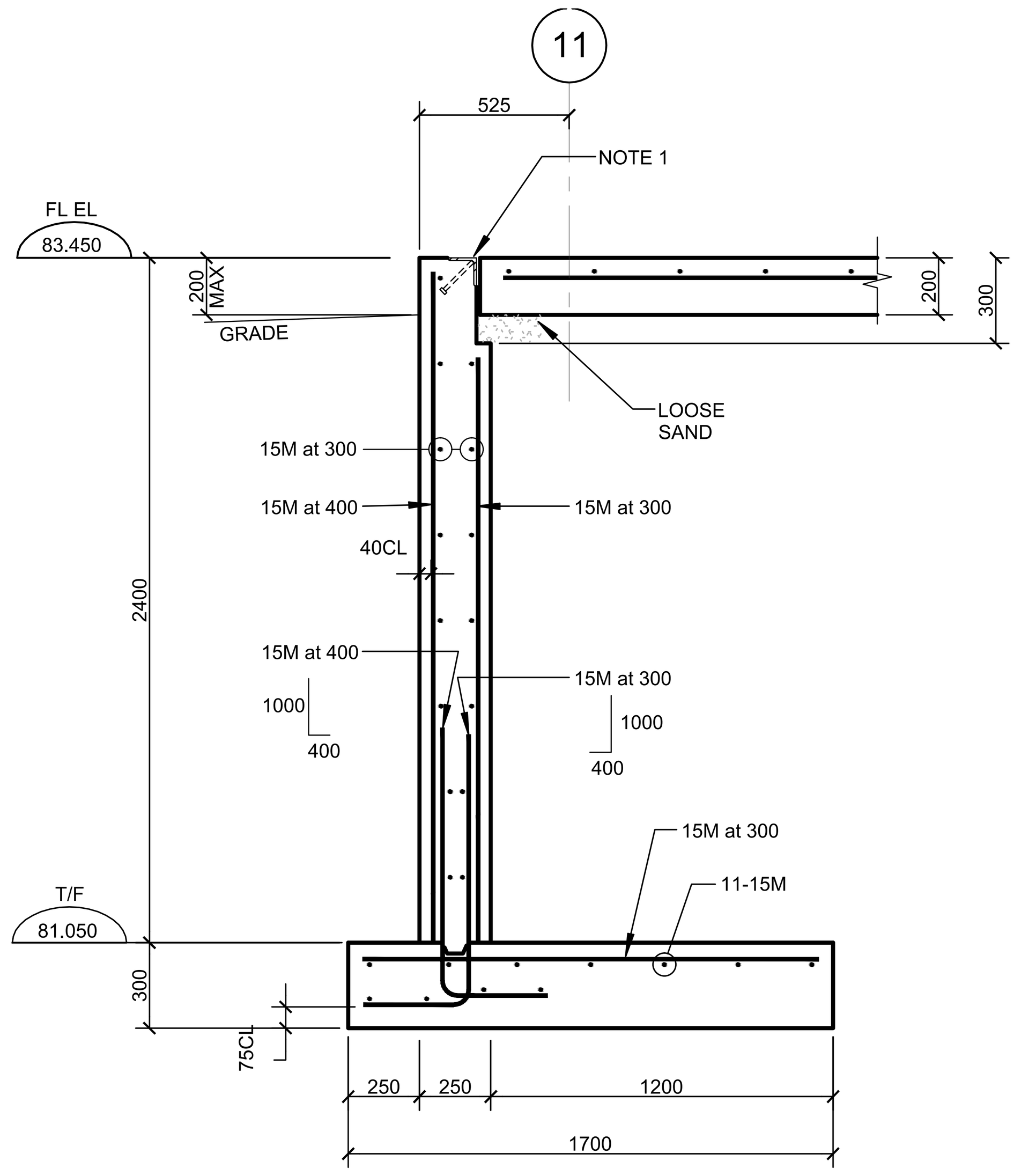


31H S100 SECTION

SCALE : 1:20



31J S100 SECTION

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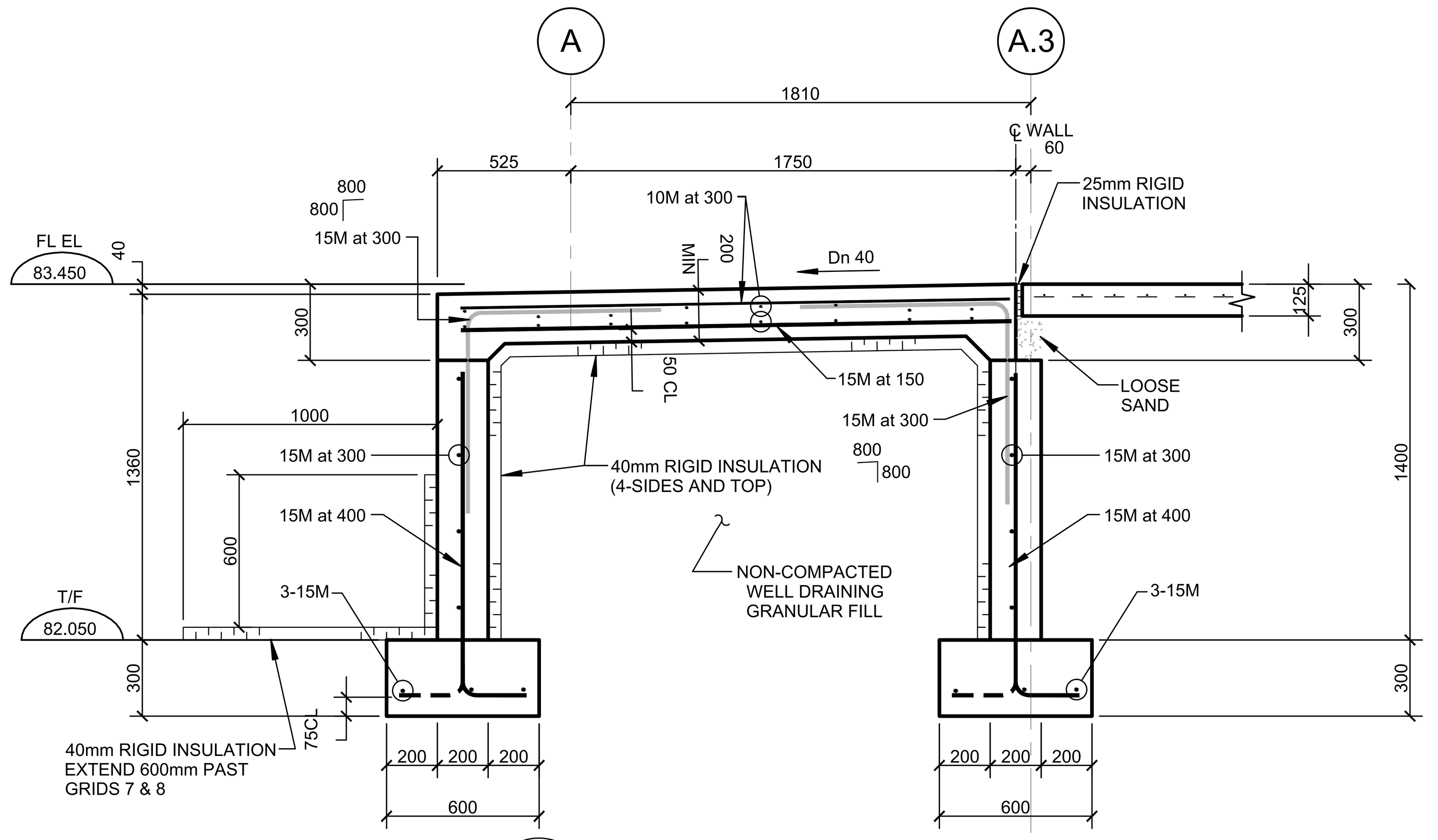
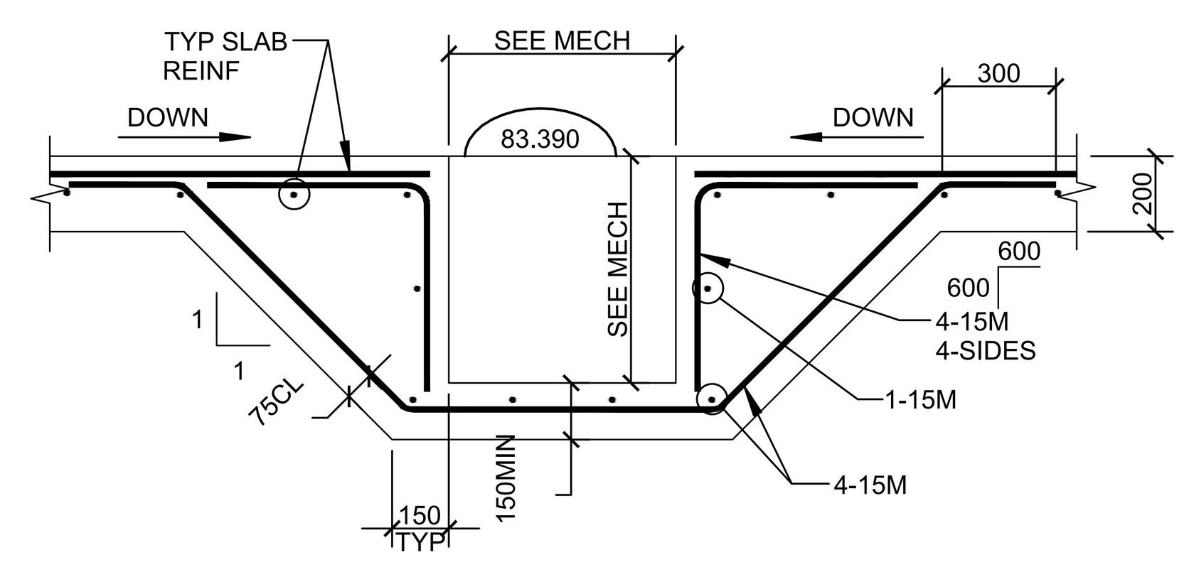


31K S100 SECTION

SCALE : 1:20



31L S100 SECTION

SCALE : 1:20

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key plan — plan-clé

stamp — sceau

REGISTERED PROFESSIONAL ENGINEER — MAR. 26/15 — I.J. FULLER — PROVINCE OF ONTARIO — 14Y160-049A

revision	description	date
01	ISSUED FOR TENDER	15/03/26

A detail no. / no. du detail
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C drawing no. / dessin no.

project — projet

CSC MULTI-PURPOSE BUILDING
CBI MINIMUM INSTITUTION (FRONTENAC)
KINGSTON, ONTARIO

drawing — dessin

SECTIONS

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approved	IJF	approuvé
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Tender	DUNCAN PARKER	Soumission
Project Manager		Administrateur de projets

project no. — no. du projet: R.055776.001

drawing no. — no. du dessin: S301

GENERAL NOTES

1. STRUCTURAL DESIGN IS IN ACCORDANCE WITH 2010 NATIONAL BUILDING CODE OF CANADA DATED (NBCC2010) INCLUDING AMENDMENTS.
2. CHECK ALL DIMENSIONS ON STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS. REPORT ANY INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THESE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETERS.
3. STRUCTURAL PLANS SHOW BEARING WALLS AND COLUMNS BELOW THE FLOOR OR ROOF STRUCTURE WITH DASHED LINES. WALLS AND COLUMNS ABOVE THE FLOOR ARE SHOWN WITH CONTINUOUS LINES.
4. TYPICAL DETAILS I.E. T3001 ON DRAWINGS S400, S401, & S402 SHOW STRUCTURAL INTENT RATHER THAN ACTUAL CONDITIONS FOR THIS PROJECT.
5. CARRY ALL FOOTINGS DOWN TO STRATA CAPABLE OF SUPPORTING THE DESIGN BEARING PRESSURES NOTED AND FOR EXTERIOR FOOTINGS NOT LESS THAN REQUIRED TO PROVIDE A MINIMUM OF 1500 FROST PROTECTION.
6. PROTECT FOOTINGS, WALLS, SLABS-ON-GRADE AND ADJACENT SOIL AGAINST FREEZING AND FROST ACTION AT ALL TIMES DURING CONSTRUCTION.
7. THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATIONS FOR FOOTINGS OR TRENCHES SHALL NOT EXCEED A RISE OF 7 IN A RUN OF 10.
8. FOOTING STEPS SHALL BE A MINIMUM OF 1200 APART. MAXIMUM STEP APPROXIMATELY 600.
9. CENTRE FOOTINGS AND PIERS UNDER CENTROID OF COLUMNS, UNLESS OTHERWISE NOTED.
10. DO NOT BACKFILL AGAINST WALLS RETAINING EARTH UNTIL ELEMENTS PROVIDING LATERAL SUPPORT, INCLUDING SLAB ON GRADE, ARE COMPLETED. PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF OTHER WALLS BELOW GRADE.
11. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE WALLS ARE NOT PERMITTED, EXCEPT WHERE SHOWN ON THESE DRAWINGS. LEAVE CHASES AND POCKETS IN WALLS FOR SEATING OF SLABS AND BEAMS.
12. REINFORCEMENT FOR CONCRETE WALLS NOT COVERED BY SECTION, PLAN OR SCHEDULE SHALL BE AS FOLLOWS:

150 MAXIMUM WALL:	10 @ 300 H + 10 @ 400 V IN CENTRE
200 MAXIMUM WALL:	10 @ 500 HEF + 10 @ 500 VEF
250 MAXIMUM WALL:	10 @ 400 HEF + 10 @ 500 VEF
300 MAXIMUM WALL:	10 @ 300 HEF + 10 @ 400 VEF
THICKER WALL:	15 @ 300 HEF + 15 @ 400 VEF

13. REINFORCEMENT FOR CONCRETE CURBS NOT COVERED BY SECTION OR PLAN SHALL BE 10@400 DOWELS + 2-10H.
14. REINFORCEMENT FOR CONCRETE BASES UNDER EQUIPMENT NOT COVERED BY SECTION OR PLAN SHALL BE 10@300 EA. WAY PLACED 50mm BELOW TOP OF CONCRETE.
15. BARS MARKED CONTINUOUS SHALL BE TERMINATED IN STANDARD HOOKS AT ENDS AND SPLICED USING CLASS B LAPS.
16. ALL REBAR HOOKS TO BE STANDARD LENGTH 90° OR 180° HOOKS.
17. PROVIDE CONTINUOUS GALVANIZED VERTICAL DOVETAIL ANCHOR SLOTS AT 600 CENTRES IN ALL CONCRETE SURFACES WITH MASONRY VENEER.
18. STANDARD LINTELS:

    PROVIDE STANDARD LINTELS OVER ALL OPENINGS IN MASONRY WALLS AND PARTITIONS AS SHOWN ON TYPICAL DETAILS. CHECK ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS REQUIRING STANDARD LINTELS WHICH ARE NOT NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS.

    SPECIAL LINTELS:

    PROVIDE SPECIAL LINTELS AS PER LINTEL SCHEDULE AT LOCATIONS GIVEN ON PLAN.
19. UNLESS OTHERWISE NOTED, PROVIDE A CONTINUOUS BOND BEAM AT TOPS OF ALL WALLS. FILL ALL CHANNEL BLOCK BOND BEAMS WITH 20 MPa CONCRETE REINFORCED WITH 1-10 TOP AND BOTTOM CONTINUOUS.
20. UNLESS OTHERWISE NOTED, ALL BEARING BEAMS SHALL HAVE A MINIMUM BEARING OF 200, AND ALL CONCRETE SLABS SHALL HAVE A MINIMUM BEARING OF 100. VOIDS IN MASONRY UNITS UNDER BEAMS AND JOISTS SHALL BE PREFILLED WITH GROUT FOR A MINIMUM VERTICAL DEPTH OF 600 AND A LENGTH OF 400, UNLESS OTHERWISE NOTED. USE 75% SOLID BLOCKS FOR FILLING. DO NOT USE MORTAR TO FILL MASONRY UNITS.
21. MINIMUM CONCRETE COVER TO REINFORCING BARS, CLOSEST TO THE CONCRETE SURFACE, IN mm, UNLESS OTHERWISE NOTED:

    FOR CONCRETE EXPOSURE CLASSES N, F1 AND F2:

FOOTINGS -----	75 TO BOTTOM BARS, 50 TO TOP BARS
PIERS -------	50
COLUMNS -----	40
WALLS -------	40 TO SURFACES EXPOSED TO GROUND OR OUTSIDE, 20 TO PROTECTED SURFACES (ENTIRELY WITHIN THE VAPOUR BARRIER OF THE BUILDING ENVELOPE)
SLABS -------	25 TO PROTECTED SURFACES (ENTIRELY WITHIN THE VAPOUR BARRIER OF THE BUILDING ENVELOPE)
BEAMS -------	40

    FOR CONCRETE EXPOSURE CLASSES C1 AND C3:
    ALL STRUCTURAL ELEMENTS (INCLUDING SLABS AND WALLS) - 60.

    INCREASE COVER WHERE REQUIRED TO MAINTAIN MINIMUM RATIO OF COVER TO NOMINAL BAR DIAMETER OF 1 FOR CLASS N, 1.5 FOR CLASSES F1 AND F2 AND 2 FOR CLASSES C1 AND C3.

SHOP DRAWING REVIEW

1. REVIEW OF SHOP DRAWINGS IS ONLY FOR GENERAL CONFORMITY WITH STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS. COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS, NOR DO THEY AUTHORIZE ANY CHANGES TO THE CONTRACT. REVIEW OF A SPECIFIC ITEM SHALL NOT INCLUDE REVIEW OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE CONTRACTOR'S RESPONSIBILITIES INCLUDE ALL QUANTITIES, DETAIL DIMENSIONS, FIELD MEASUREMENTS, FABRICATION PROCESS, MEANS, METHODS, SEQUENCES AND PROCEDURES OF CONSTRUCTION, COORDINATION OF WORK WITH ALL TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER. THE REVIEW OF SHOP DRAWINGS DOES NOT IMPLY ANY CHANGE IN ANY OTHER CONSULTANTS' OR PROFESSIONALS' RESPONSIBILITIES RELATED TO DESIGN OF SPECIFIC ITEMS AS OUTLINED BY THE SPECIFICATIONS (SUCH AS STRUCTURAL STEEL CONNECTIONS, STEEL JOISTS, PRECAST ELEMENTS, ETC.).
2. AFTER REVIEW, THE DRAWINGS WILL BE STAMPED AND RETURNED TO SHOW ONE OF THE FOLLOWING:

NOT REVIEWED	- SHOWS WORK WHICH IS NOT WITHIN THE SCOPE OF STRUCTURAL CONSULTING SERVICES.
REVIEWED	- RELEASED FOR FABRICATION.
NOTED	- RELEASED FOR FABRICATION AFTER REVISIONS NOTED ARE MADE. SUBMIT FINAL RECORD PRINT.
RESUBMIT	- CORRECT AND RESUBMIT FOR REVIEW PRIOR TO FABRICATION.

MATERIAL AND DESIGN DATA

1. FOOTING BEARING RESISTANCE:
   ________ kPa AT ULS (ULTIMATE LIMIT STATES DESIGN)
   150 kPa AT SLS (SERVICEABILITY LIMIT STATES DESIGN)

   MODULUS OF SUBGRADE REACTIONS (ASSUMED FOR DESIGN OF SLABS ON GRADE) 24,000 kN/m^3

   SEE SOILS REPORT PREPARED BY: DBA ENGINEERING LTD.
   REPORT NUMBER: 12-2334-01 DATED: NOVEMBER 8, 2012
2. CONCRETE SPECIFIED COMPRESSIVE STRENGTH, f'c, IS 25 MPa EXCEPT FOR:
   DOCKING AREA - 35 MPa
   SLAB ON GRADE - 30 MPa
   AND WHERE SHOWN ON PLANS AND SCHEDULES.
   INCREASE STRENGTH AS REQUIRED FOR REQUIRED CLASS OF EXPOSURE, REFER TO SPECIFICATIONS.
3. REINFORCING STEEL: CAN/CSA G30.18M - GRADE 400R
   400W
4. STRUCTURAL STEEL (EXCEPT HSS): CAN/CSA G40.21M
   - WIDE FLANGES: 350 W
   - ANCHOR RODS: 300 W
   - ALL OTHER STEEL: 300 W
6. STRUCTURAL STEEL (HSS ONLY):
   - ASTM A500 GRADE C (345 MPa FOR SQUARE/RECTANGULAR AND 317 MPa FOR ROUND) OR
   - G40.21 GRADE 350W CLASS C OR H
   - HSS MEMBERS REQUIRED TO BE GALVANIZED SHALL BE CLASS H, OR STRESS RELIEVED PRIOR TO GALVANIZING
7. STRUCTURAL MASONRY:
   - HOLLOW BLOCK: CSA A165.1 - H/15/A/M
   - SOLID BLOCK: CSA A165.1 - S/15/A/M
   - MORTAR: CSA A179M - TYPE S
   - GROUT FOR BLOCK CORES: CSA A179M - COARSE GROUT
     1:3:2 CEMENT:SAND:PEA-STONE
     BY VOLUME WITH 200 SLUMP
   - SPECIFIED COMPRESSIVE STRENGTH, f'm, IS:
     HOLLOW BLOCK - 9.8 MPa
     SOLID AND GROUTED HOLLOW BLOCK - 7.5 MPa
   - SPECIFIED FLEXURAL TENSILE STRENGTH ft (NORMAL TO BED JOINTS) IS:
     SOLID AND HOLLOW BLOCK - 0.4 MPa
     GROUTED HOLLOW BLOCK - 0.65 MPa
8. DESIGN LOADS FOR BUILDING STRUCTURE:

   DESIGN LOADS PRESENTED BELOW HAVE BEEN DEVELOPED FOR THE REFERENCED BUILDING TO BE LOCATED IN THE FOLLOWING MUNICIPALITY: KINGSTON, ON

   THE VALUES FOR CLIMATIC DATA USED IN THE DETERMINATION OF DESIGN LOADS HAVE BEEN OBTAINED FROM:THE SUPPLEMENTARY STANDARD SB-1 TABLE 1.2

   .1 GRAVITY LOADS AS SHOWN ON PLANS

   .2 GROUND SNOW LOAD AND ASSOCIATED RAIN LOAD:
   Ss = 2.1 kN/m^2
   Sr = 0.4 kN/m^2

   SPECIFIED SNOW LOAD
   S = Is [Ss x Cb x Cw x Cs x Ca + Sr] = Is x [2.1x0.8x1.0x1.0x1.0+0.4] = Is x 2.08 kN/m^2

ULS	SLS:
Is = 1.0	Is = 0.9
S = 2.08 kN/m^2	S = 1.87 kN/m^2

   .3 24 HOUR RAINFALL: 108 mm

   .4 WIND:

   IMPORTANCE CATEGORY = NORMAL

   IMPORTANCE FACTOR:
   Iw = 1.00 (ULS)
   Iw = 0.75 (SLS)

   1/50 Yr HOURLY WIND PRESSURE:
   q = 0.47 kPa

   TERRAIN TYPE: OPEN ■ ROUGH □

   H = MAX HEIGHT ABOVE GRADE = 8.64 m

   Ds = SMALLER PLAN DIMENSION = 30.0 m

   H/D_s = 8.64/30.0 = 0.288

   CONCLUSION: BUILDING IS: LOW RISE ■ HIGH RISE □

   EXTERNAL PRESSURE CO-EFFICIENT, GUST EFFECT FACTOR & EXPOSURE FACTOR

LOW RISE			NOT APPLICABLE
C_E	= 0.97	(AT H)	□
ROOF SLOPE	= 50		□
NS WIND			
Cp $C_{g\ WINDWARD}$	= 0.75		□
Cp $C_{g\ LEEWARD}$	= -0.55		□
EW WIND			
Cp $C_{g\ WINDWARD}$	= 0.75		□
Cp $C_{g\ LEEWARD}$	= -0.55		□
HIGH RISE			
$C_{E\ WINDWARD}$	=___→___	(VARIES WITH HEIGHT)	■
$C_{E\ LEEWARD}$	=	(AT H/2)	■
Cg = 2.0			■
NS WIND			
D	= m		■
H/D	=		■
$C_{p\ WINDWARD}$	=		■
$C_{p\ LEEWARD}$	=		■
EW WIND			
D	= m		■
H/D	=		■
$C_{p\ WINDWARD}$	=		■
$C_{p\ LEEWARD}$	=		■

   FACTORED DESIGN LOADS (1.4W)

NS WIND		
BASE SHEAR	(ULS)	= 280 kN
BASE OVERTURNING MOMENT	(ULS)	= 2520 kN.m
EW WIND		
BASE SHEAR	(ULS)	= 140 kN
BASE OVERTURNING MOMENT	(ULS)	= 1185 kN.m

   .5 SEISMIC:

   SEISMIC FORCE RESISTING SYSTEM (SFRS)
   SFRS: SYSTEM & CONNECTIONS: (CLAUSE 4.1.8.9/4.1.8.10)
   LATERAL LOAD RESISTING SYSTEM: CONVENTIONAL CONSTRUCTION OF BRACED FRAME
   Rd = 1.5
   Ro = 1.3
   CSA STANDARD: CAN CSA-S16-09
   APPLICABLE CLAUSE(S): 27.10
   SFRS: DIAPHRAGMS & CONNECTIONS: (CLAUSE 4.1.8.15)
   CSA STANDARD: CAN CSA-S16-09
   APPLICABLE CLAUSE(S): 27.10
   SFRS: SYSTEM FOUNDATIONS: (CLAUSE 4.1.8.16)
   CSA STANDARD: CSA A23.3-04
   APPLICABLE CLAUSE(S): 21.11 □ FOR ANCHORED FOOTINGS
   □ FOR UNANCHORED FOOTINGS

   IMPORTANCE FACTOR: [CLAUSE 4.1.8.5]
   IE = 1.0

   PROJECT LOCATION: KINGSTON,ON

   5% DAMPED SPECTRAL RESPONSE ACCELERATION VALUES

   PGA = 0.12
   Sa(0.2) = 0.29
   Sa(0.5) = 0.18
   Sa(1.0) = 0.099
   Sa(2.0) = 0.031

   SITE CLASS: THE NOTED SITE CLASSIFICATION FOR SEISMIC SITE RESPONSE AND SHEAR WAVE VELOCITY PARAMETERS INDICATED ARE AS REPORTED IN THE GEOTECHNICAL REPORT DBA ENGINEERING LTD. BY 12-2334-01
   □A □B ■C □D □E □F (SITE SPECIFIC SPECTRUM:)
   HORIZONTAL SHEAR WAVE VELOCITY: □ ____ m/s
   ■ NOT PERFORMED

   Fa = 1.0
   Fv = 1.0

   DESIGN SPECTRAL RESPONSE ACCELERATION VALUES

   S(0.2) = 0.29
   S(0.5) = 0.18
   S(1.0) = 0.099
   S(2.0) = 0.031
   S(4.0) = 0.0155

   IeFaSa (0.2) = 0.29

   FUNDAMENTAL PERIOD DATA

   EMPIRICAL FORMULA [CLAUSE 4.1.8.11(3)]
   Ta = 0.185 sec

MATERIAL AND DESIGN DATA (CONT'D)

ALTERNATE METHOD OF MECHANICS [CLAUSE 4.1.8.11(3)(d)]

NOT USED
Ta(NS) = _________ sec ■
Ta(EW) = _________ sec ■

DESIGN PERIOD
Ta(NS) = 0.185 sec
Ta(EW) = 0.185 sec

DESIGN SPECTRAL RESPONSE ACCELERATION AT FUNDAMENTAL PERIOD
S(Ta)NS = 0.29
Mv(NS) = 1.0
J(NS) = 1.0

S(Ta)EW = 0.29
Mv(EW) = 1.0
J(EW) = 1.0

IRREGULARITY REVIEW: [CLAUSE 4.1.8.6]

1. VERTICAL STIFFNESS:	□ YES	■ NO
2. WEIGHT:	□ YES	■ NO
3. VERTICAL GEOMETRIC:	□ YES	■ NO
4. IN-PLANE DISCONTINUITY:	□ YES	■ NO
5. OUT-OF-PLANE:	□ YES	■ NO
6. WEAK STOREY:	□ YES	■ NO
7. TORSIONAL:	□ YES	■ NO
B(NS) = 1.306		
B(EW) = 1.149		
8. NON-ORTHOGONAL:	□ YES	■ NO
CONCLUSION: BUILDING IS:	■ REGULAR	□ IRREGULAR
DYNAMIC ANALYSIS:	□ REQUIRED	■ NOT REQUIRED
DYNAMIC PROCEDURE METHOD:		□ MODAL RESPONSE SPECTRUM
		□ NUMERICAL INTEGRATION TIME HISTORY
		■ N/A

TORSIONAL ECCENTRICITY: ■ ± 0.10 Dnx (CLAUSE 4.1.8.11 (10)(a)), B < 1.7 (EQUIV. STATIC FORCE PROCEDURE)
□ ± 0.10 Dnx (CLAUSE 4.1.8.12 (4)(a)), B > 1.7 (3-D DYNAMIC ANALYSIS)
□ ± 0.05 Dnx (CLAUSE 4.1.8.12 (4)(b)), B < 1.7, (3-D DYNAMIC ANALYSIS)

BASE SHEARS / OVERTURNING MOMENTS

EQUIVALENT STATIC FORCE PROCEDURE:

BASE SHEARS

NS DIRECTIONS
VMIN = S(2.0) Mv Ie W/(Rd Ro) = 0.0238 W
VMAX = (2/3) S(0.2) Ie W/(Rd Ro) = 0.0991 W

EW DIRECTIONS
VMIN = S(2.0) Mv Ie W/(Rd Ro) = 0.0238 W
VMAX = (2/3) S(0.2) Ie W/(Rd Ro) = 0.0991 W

DESIGN BASE SHEARS & OVERTURNING MOMENTS

V(NS)	= 0.0991 W	= 0.0991 x 5275	= 523 kN
M(NS)	= M x J	= 3690x 1.0	= 3690 kN.m
V(EW)	= 0.0991 W	= 0.0991 x 5275	= 523 kN
M(EW)	= M x J	= 3690 x 1.0	= 3690 kN.m

DRAWING LEGEND AND ABBREVIATIONS

UNLESS OTHERWISE NOTED, DESIGN LOADS SHOWN ARE SPECIFIED (UNFACTORED) LOADS, TO BE USED FOR ULS DESIGN. FOR POINT LOADS, IF ONLY ONE LOAD IS GIVEN, CONSIDER IT LIVE LOAD. FOR WIND AND SNOW LOADS TO BE USED FOR SLS DESIGN, REFER TO MATERIAL AND DESIGN DATA NOTES.

A.ROD	ANCHOR ROD
AEC	ARCHITECTURALLY EXPOSED CONCRETE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
Af	FACTORED AXIAL LOAD IN kN (+ INDICATES TENSION, - INDICATES COMPRESSION)
ALT.	ALTERNATE
ARCH.	ARCHITECTURAL
B, BOT.	BOTTOM
BCP	BORED CONCRETE PILE
BEW	BOTTOM EACH WAY
BLL	BOTTOM LOWER LAYER
BM.	BEAM
BOF	ELEV BOTTOM OF FOOTING
BOP	ELEV BOTTOM OF PILE
BP	BEARING/BASE PLATE
BSMT.	BASEMENT
BUL	BOTTOM UPPER LAYER
BUP	BOTTOM OF UNDERPINNING
CA	COLUMN ABOVE ONLY (NO COLUMN BELOW)
CAM.	CAMBER
CANT.	CANTILEVER
CB	COLUMN BELOW
C/C	CENTRE TO CENTRE
CEL	CUT OFF ELEVATION FOR PILES
CF	CONCRETE FIREPROOFED
CJ	CONTROL JOINT
CL	CLEAR
℄	CENTRELINE
CNT	STEEL DECK CORE NOMINAL THICKNESS
COMP.	COMPOSITE
CONSTR. JT.	CONSTRUCTION JOINT
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
CP	CONNECTION PLATE
CWS, CLS, CSS	SEE GENERAL NOTES
DCA	DRILLED CONCRETE ANCHOR
DET.	DETAIL
D.F-L	DOUGLAS FIR-LARCH
DIA.	DIAMETER
DIM.	DIMENSION
DL	DEAD LOAD IN kN/m^2
DMA	DRILLED MASONRY ANCHOR
DN.	DOWN
DO.	DITTO
DP.	DEEP
DWG.	DRAWING
DWL.	DOWEL
EA.	EACH
ECR	EPOXY COATED REINFORCEMENT
EE	EACH END
EF	EACH FACE
EJ, EXP.JT.	EXPANSION JOINT
EL., ELEV.	ELEVATION
EMBED.	EMBEDMENT
EQ.	EQUAL
EX., EXIST.	EXISTING
FD	FLOOR DRAIN
FF	FAR FACE
FIN.	FINISHED
FL.	FLOOR
FMC	FULL MOMENT CONNECTION
FTG.	FOOTING
f'c	COMPRESSIVE STRENGTH OF CONC IN MPa
fy	YIELD STRENGTH IN MPa
GALV.	GALVANIZED STEEL
GB	GRADE BEAM
GL	GRIDLINE
h	TOTAL THICKNESS
H, HOR.	HORIZONTAL
HDG	HOT DIPPED GALVANIZED
HEF	HORIZONTAL EACH FACE
HH	HOOK-HOOK (HOOK EACH END)
(symbol)	HOLE THROUGH CONCRETE BEAM
(symbol)	HOLE THROUGH STEEL BEAM
HIC	HORIZONTAL IN CENTRE
HK.	HOOK
HP	HIGH POINT
IBA	INTEGRITY BARS ADDED
IBE	INTEGRITY BARS EXTERIOR
IBI	INTEGRITY BARS INTERIOR
JG	JOIST GIRDER
ld	TENSION DEVELOPMENT LENGTH OF REBAR
ldc	COMPRESSION DEVELOPMENT LENGTH OF REBAR
L	SINGLE ANGLE
⅃L	DOUBLE ANGLES

LE	LEFT END
LG.	LONG/LENGTH
UL / LL	UPPER LEVEL BM/JOIST / LOWER LEVEL BM/JOIST
LL	LIVE LOAD IN kN/m^2
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSV	LONG SIDE VERTICAL
LSH	LONG SIDE HORIZONTAL
LP	LOW POINT
MAX.	MAXIMUM
Mf	FACTORED MOMENT IN kN.m
MJ	MOVEMENT JOINT
MIN.	MINIMUM
(symbol)	MOMENT CONNECTION
MTf	FACTORED TORSION IN kN.m
NF	NEAR FACE
NTS	NOT TO SCALE
O/C	ON CENTRE
O/O	OUT TO OUT
OPEN, OPG.	OPENING
P	POINT LOAD IN kN
Pf	FACTORED POINT LOAD IN kN
PL	PLATE
RA	ROCK ANCHOR
RD	ROOF DRAIN
REINF.	REINFORCEMENT
RE	RIGHT END
RF	RIGID FRAME
Rf	FACTORED VERTICAL REACTION IN kN
RHf	FACTORED HORIZONTAL REACTION IN kN
SCA	STEEL COLUMN ABOVE (NO STEEL COLUMN BELOW)
SDF (symbol)	STEP DOWN FOOTING IN DIRECTION OF ARROW
SDL	SUPERIMPOSED DL (EXCLUDING SELF-WEIGHT) IN kN/m^2
SECT.	SECTION
SIM.	SIMILAR
SJ	STEEL JOIST
SLS	SERVICEABILITY LIMIT STATE
SL.	SLAB
SL1, SL2	SHELF ANGLE 1, ETC
SOG	SLAB ON GRADE
SPF	SPRUCE PINE FIR
STIR.	STIRRUP
STIFF.	STIFFENER
t	THICKNESS
T	TOP
TEW	TOP EACH WAY
THK.	THICK
TJ	TIE JOIST
TLE	TOP LEFT END
TLL	TOP LOWER LAYER
TOF	TOP OF FOOTING
TOP	TOP OF PILE
TPC	TOP OF PILE CAP
TRE	TOP RIGHT END
TUL	TOP UPPER LAYER
TYP.	TYPICAL
ULS	ULTIMATE LIMIT STATE
U/S	UNDERSIDE
U/N	UNLESS NOTED
UPT.	UPTURNED
VB	VERTICAL BRACING
V, VEF	VERTICAL, VERTICAL EACH FACE
Vf	FACTORED SHEAR IN kN
VIC	VERTICAL IN CENTRE
V, VERT., VERTS.	VERTICAL, VERTICALS
VSC	VERTICALLY SLOTTED CONNECTION TO ALLOW FOR DEFLECTION
VXB	VERTICAL 'X' BRACING
WC	WIND COLUMN
WWA	WINDOW WASHING ANCHORS
WWF	WELDED WIRE FABRIC
ZRP	ZINC RICH PAINT
00 / SXXX SIM. (symbol)	SECTION NUMBER SECTION DRAWING REFERENCE
(hatch)	MASONRY WALL
(cross-hatch)	FULLY GROUTED MASONRY WALL
(stipple)	STRUCTURAL PRECAST CONCRETE

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key plan | plan-clé

stamp | sceau

REGISTERED PROFESSIONAL ENGINEER
MAR. 26/15
I.J. FULLER
PROVINCE OF ONTARIO
14Y160—049A

revision	description	date
01	ISSUED FOR TENDER	15/03/26

A detail no. / no. du detail
B location drawing no. / sur dessin no.
C drawing no. / dessin no.

project | projet

CSC MULTI-PURPOSE BUILDING
CBI MINIMUM INSTITUTION (FRONTENAC)
KINGSTON, ONTARIO

drawing | dessin

GENERAL NOTES

designed / date	IJF 2014/04/22	conçu (yyyy/mm/dd)
drawn / date	PDM 2014/04/22	dessiné (yyyy/mm/dd)
reviewed / date	IJF 2015/01/30	examiné (yyyy/mm/dd)
approved / date	IJF 2015/01/30	approuvé (yyyy/mm/dd)
Tender / Project Manager	DUNCAN PARKER	Soumission / Administrateur de projets

project no. | no. du projet
R.055776.001

drawing no. | no. du dessin
S400

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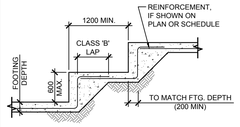
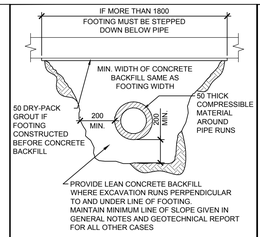


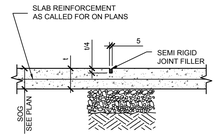
TYPICAL STEPPING OF STRIP FOOTING

T3009
OCT 10



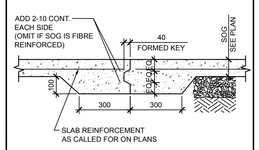
TYPICAL BACKFILL AROUND PIPE UNDER STRIP FOOTING

T3103
OCT 10



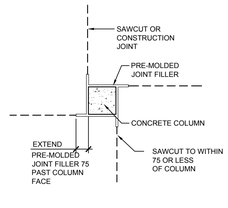
TYPICAL SAWCUT CONTROL JOINT IN SLAB ON GRADE

T3201
OCT 10



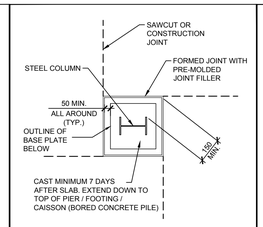
TYPICAL CONSTRUCTION JOINT IN SLAB ON GRADE

T3202
OCT 10



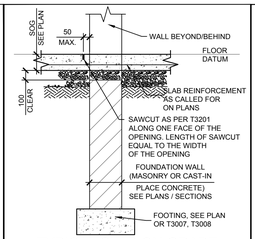
TYPICAL SLAB ON GRADE JOINTS AROUND CONCRETE COLUMN

T3203
OCT 10



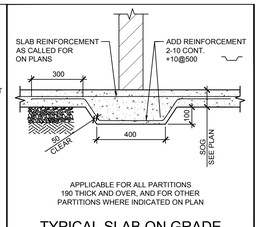
TYPICAL SLAB ON GRADE JOINTS AROUND STEEL COLUMN

T3204
OCT 10



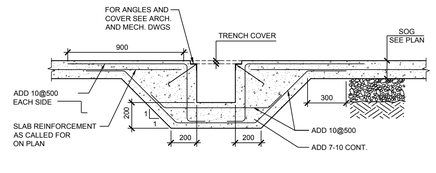
TYPICAL SLAB ON GRADE CONTROL JOINT AT INTERIOR DOORWAY

T3205
OCT 10



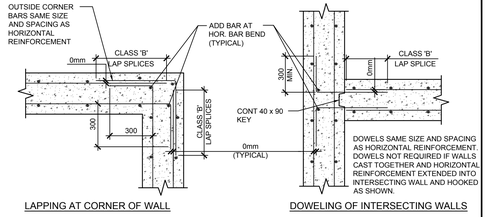
TYPICAL SLAB ON GRADE THICKENING UNDER MASONRY PARTITIONS

T3206
OCT 10



TYPICAL TRENCH DRAIN IN SLAB ON GRADE

T3210
DEC 12



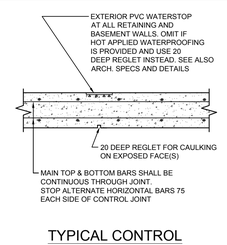
LAPPING AT CORNER OF WALL

DOWELING OF INTERSECTING WALLS

TYPICAL CONCRETE WALL DETAILS

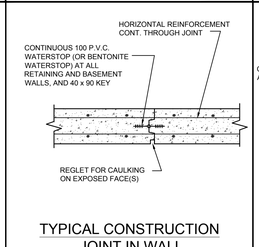
ALL WALL REINFORCEMENT TO BE SPLICED WITH CLASS 'B' LAPS

T3305
OCT 10



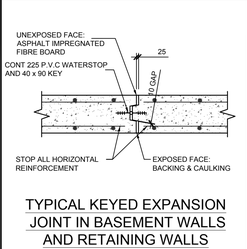
TYPICAL CONTROL JOINT IN WALL

T3307
OCT 10



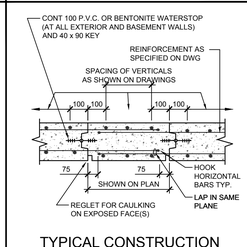
TYPICAL CONSTRUCTION JOINT IN WALL

T3308
OCT 10



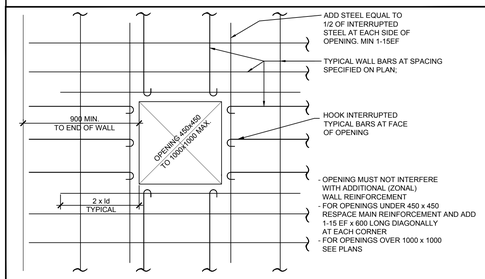
TYPICAL KEYED EXPANSION JOINT IN BASEMENT WALLS AND RETAINING WALLS

T3309
OCT 10



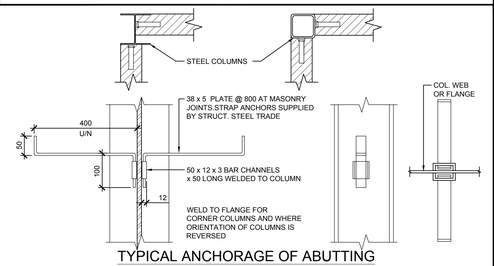
TYPICAL CONSTRUCTION GAP IN WALL

T3310
OCT 10



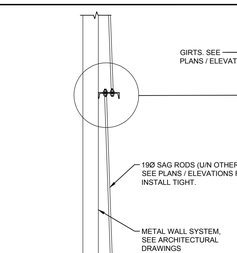
TYPICAL ADDED REINFORCEMENT AROUND OPENING IN WALL

T3311
OCT 10



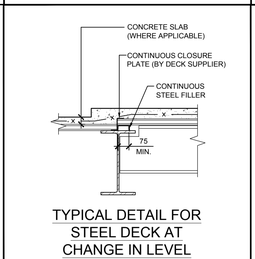
TYPICAL ANCHORAGE OF ABUTTING MASONRY WALLS TO STEEL COLUMNS

T5001
OCT 10



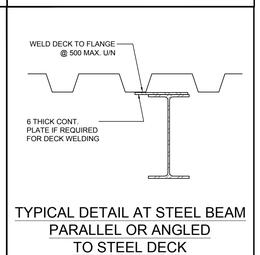
TYPICAL SAG ROD

T5004
DEC. 12



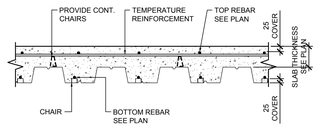
TYPICAL DETAIL FOR STEEL DECK AT CHANGE IN LEVEL

T5103
OCT 10



TYPICAL DETAIL AT STEEL BEAM PARALLEL OR ANGLED TO STEEL DECK

T5105
OCT 10

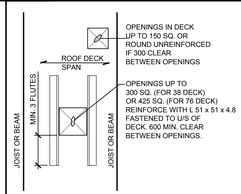


NOTES:

1. PLACE BOTTOM BARS IN FLUTES.
2. DESIGN LOAD FOR STEEL DECK FORM TO BE WEIGHT OF WET CONCRETE PLUS 1.0 kPa CONSTRUCTION ALLOWANCE.
3. FOR CONSTRUCTION JOINTS IN CONCRETE SEE SPECIFICATIONS, SECTION 03100.
4. FOR TEMPORARY SHORING SEE PLAN.
5. FOR TEMPERATURE REINFORCEMENT SEE TYPICAL DETAILS FOR ONE-WAY SLAB.

TYPICAL CONCRETE SLAB ON STEEL DECK FORM

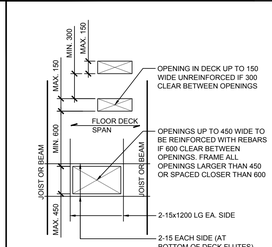
T5302
OCT 10



- ALL LARGER OPENINGS AND OPENINGS SPACED CLOSER THAN SPECIFIED ABOVE TO BE FRAMED BY STRUCTURAL STEEL, SEE DRAWING NOTES.

TYPICAL ROOF DECK OPENINGS

T5303
OCT 10



1. ALL LARGER OPENINGS AND OPENINGS SPACED CLOSER THAN SPECIFIED IN DIAGRAM TO BE FRAMED BY STRUCTURAL STEEL, SEE DRAWING NOTES.
2. CUT STEEL DECK FOR THE OPENINGS AFTER CONCRETE REACHES MINIMUM 75% OF SPECIFIED CONCRETE STRENGTH

TYPICAL FLOOR DECK OPENINGS

T5304 MODIFIED
OCT 10

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key plan / plan-clé

stamp / sceau

REGISTERED PROFESSIONAL ENGINEER
MAR. 26/15
I.J. FULLER
PROVINCE OF ONTARIO
14Y160-049A

01	ISSUED FOR TENDER	15/03/26
revision	description	date

A detail no. / no. du détail
B location drawing no. / sur dessin no.
C drawing no. / dessin no.

project / projet

CSC MULTI-PURPOSE BUILDING
CBI MINIMUM INSTITUTION (FRONTENAC)
KINGSTON, ONTARIO

drawing / dessin

TYPICAL DETAILS

designed	IJF	conçu
date	2014/04/22	(yyyy/mm/dd)
drawn	PDM	dessiné
date	2014/04/22	(yyyy/mm/dd)
reviewed	IJF	examiné
date	2015/01/30	(yyyy/mm/dd)
approved	IJF	approuvé
date	2015/01/30	(yyyy/mm/dd)
Tender	DUNCAN PARKER	Soumission
Project Manager		Administrateur de projets

project no. / no. du projet: R.055776.001

drawing no. / no. du dessin: S401

SCALE: N.T.S.

PWGSC B1 (1000x707)

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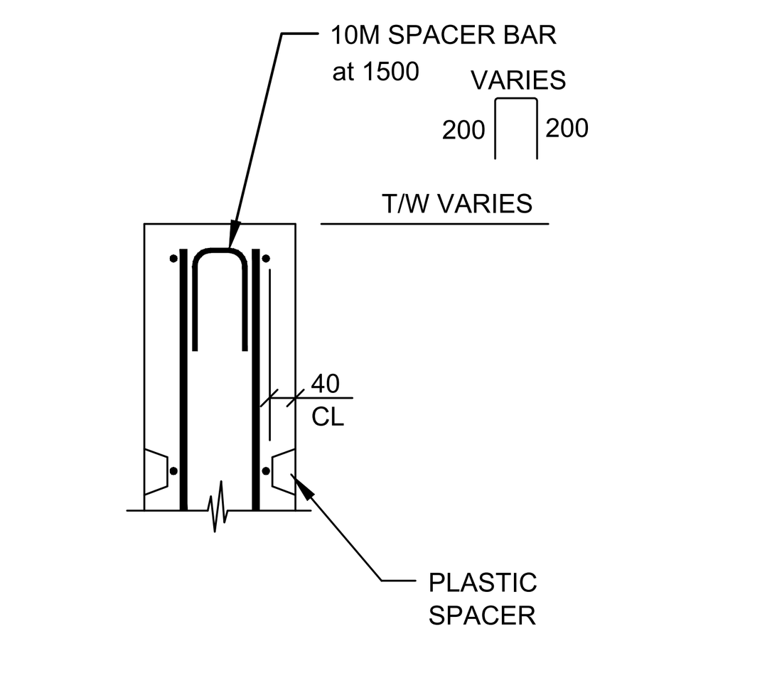
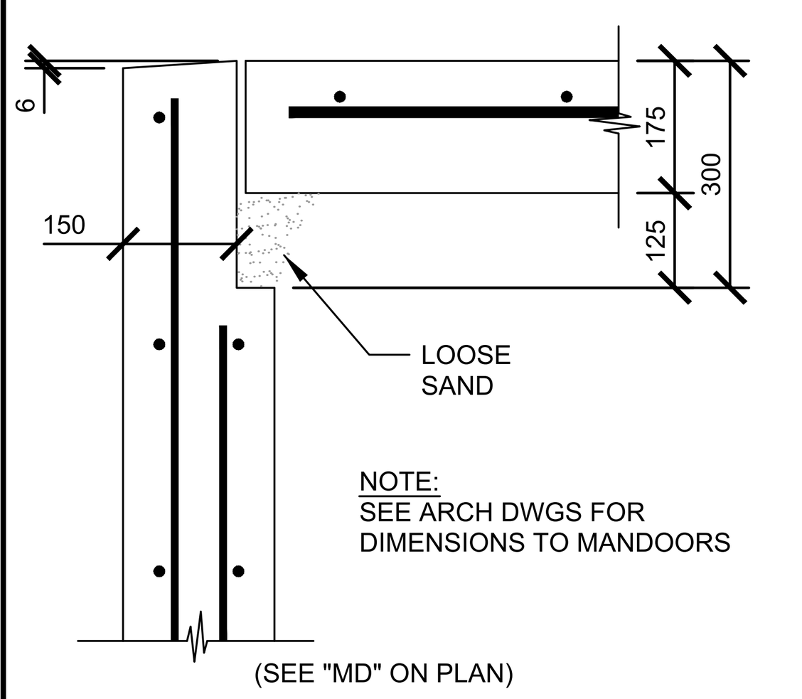


TYPICAL REBAR SUPPORT DETAIL FOR WALLS

PD01

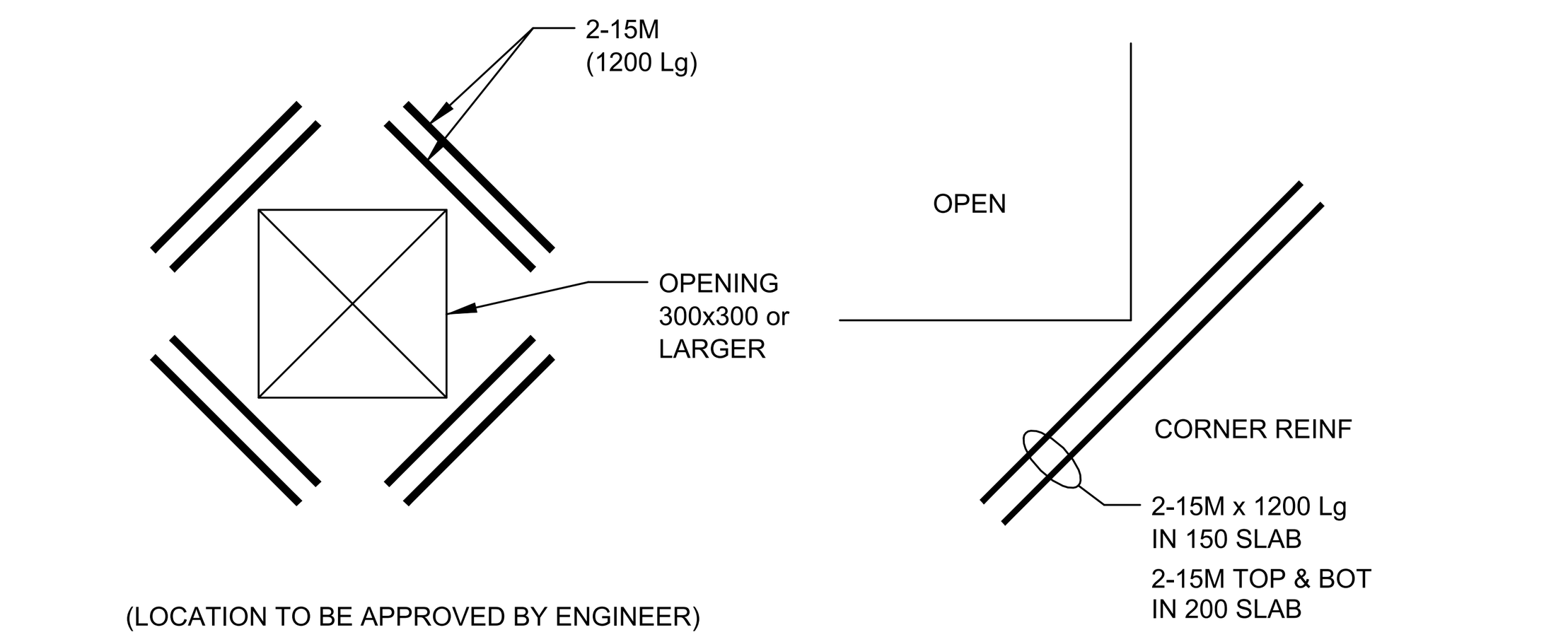
MAY 14



TYP DETAIL @ MAN DOORS IN PERIMETER FOUNDATION WALLS

PD02

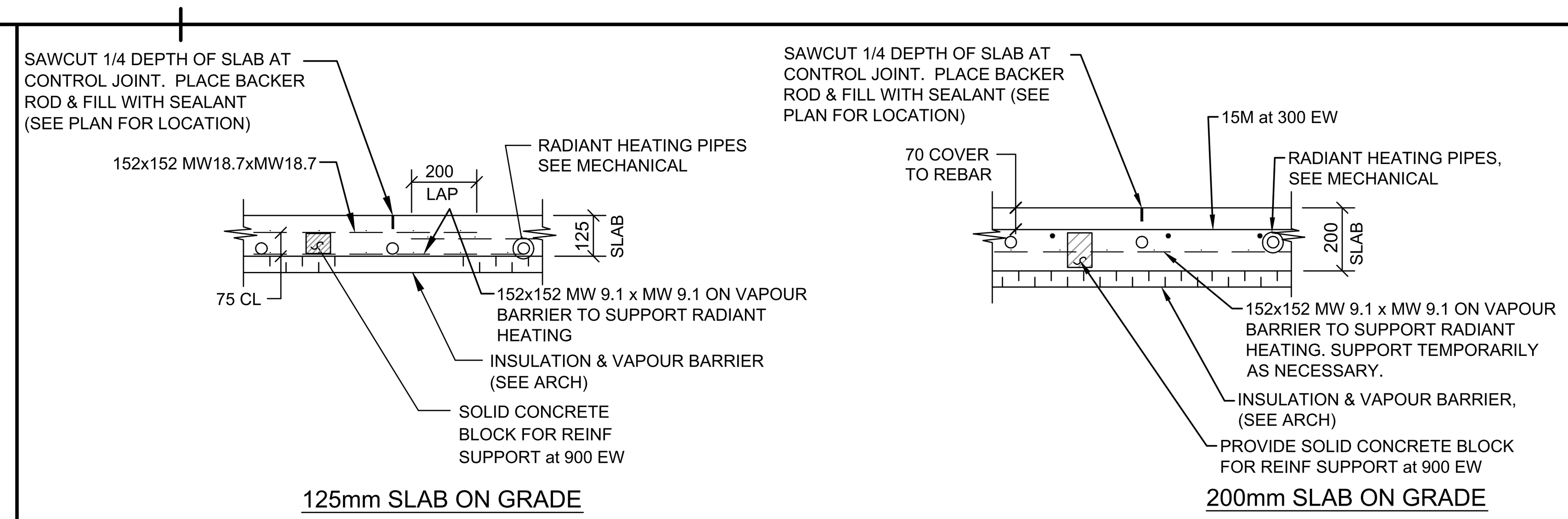
MAY 14



DETAILS AT OPENINGS AND RECESSES IN SLABS ON GRADE

PD04

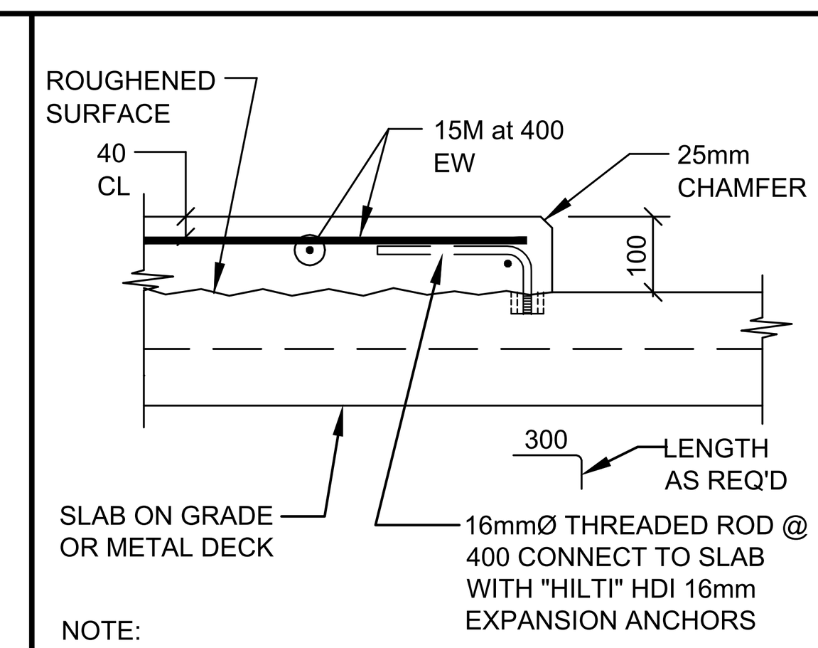
MAY 14



TYPICAL SLAB DETAILS

PD04

MAY 14

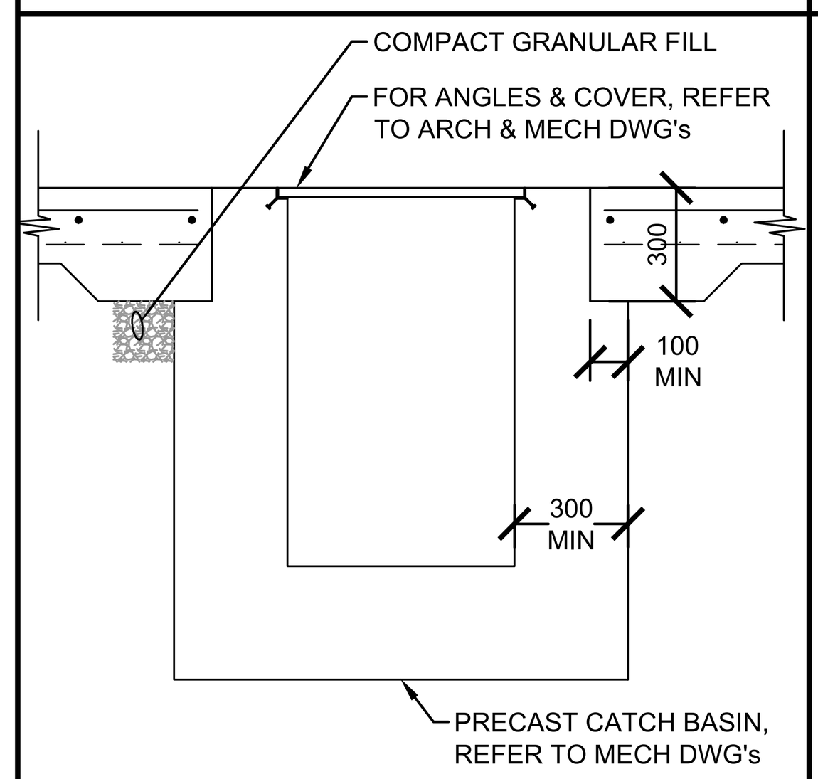


NOTE:
- SEE MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF HOUSEKEEPING PADS.
- ALL PADS ARE NOT SHOWN ON STRUCTURAL DWGS.

TYPICAL HOUSEKEEPING PAD

PD05

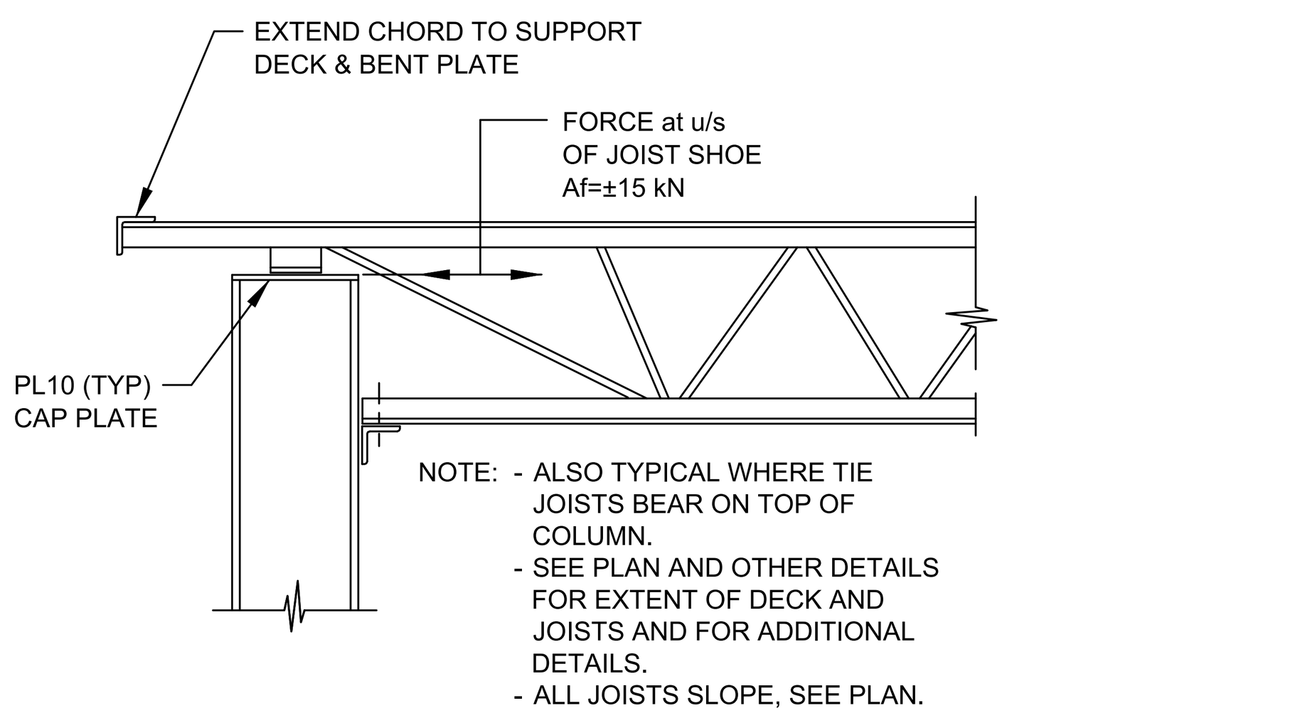
MAY 14



TYPICAL CATCH BASIN AND BACK WATER VALVE CHAMBER DETAIL

PD06

JAN 15



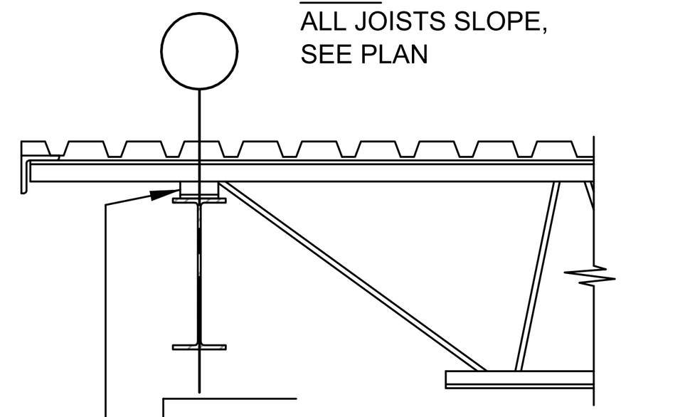
NOTE: - ALSO TYPICAL WHERE TIE JOISTS BEAR ON TOP OF COLUMN.
- SEE PLAN AND OTHER DETAILS FOR EXTENT OF DECK AND JOISTS AND FOR ADDITIONAL DETAILS.
- ALL JOISTS SLOPE, SEE PLAN.

TYPICAL TIE JOIST COLUMN CONNECTION DESIGN

PD07

MAY 14

NOTE:
ALL JOISTS SLOPE, SEE PLAN

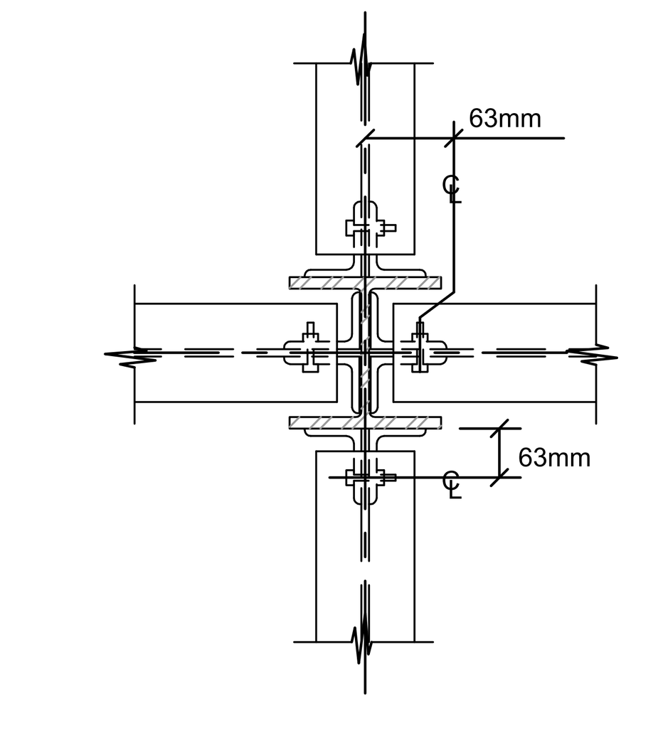


- ALL JOIST SHOES TO BE CENTERED ON BEAM AT PERIMETER
- WHERE JOIST IS SLOPING, SLOPE THE SHOE TO ALLOW EVEN BEARING ON BEAM

TYPICAL JOIST TO BEAM DETAIL

PD08

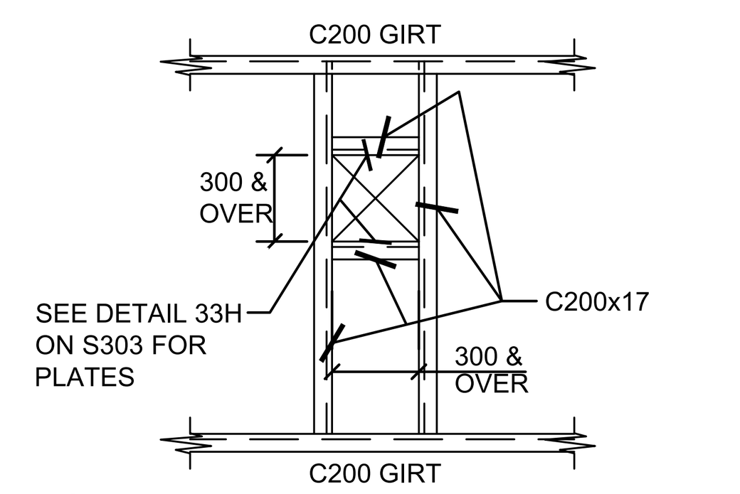
MAY 14



TYPICAL BEAM TO COLUMN MAXIMUM ECCENTRICITIES

PD09

MAY 14

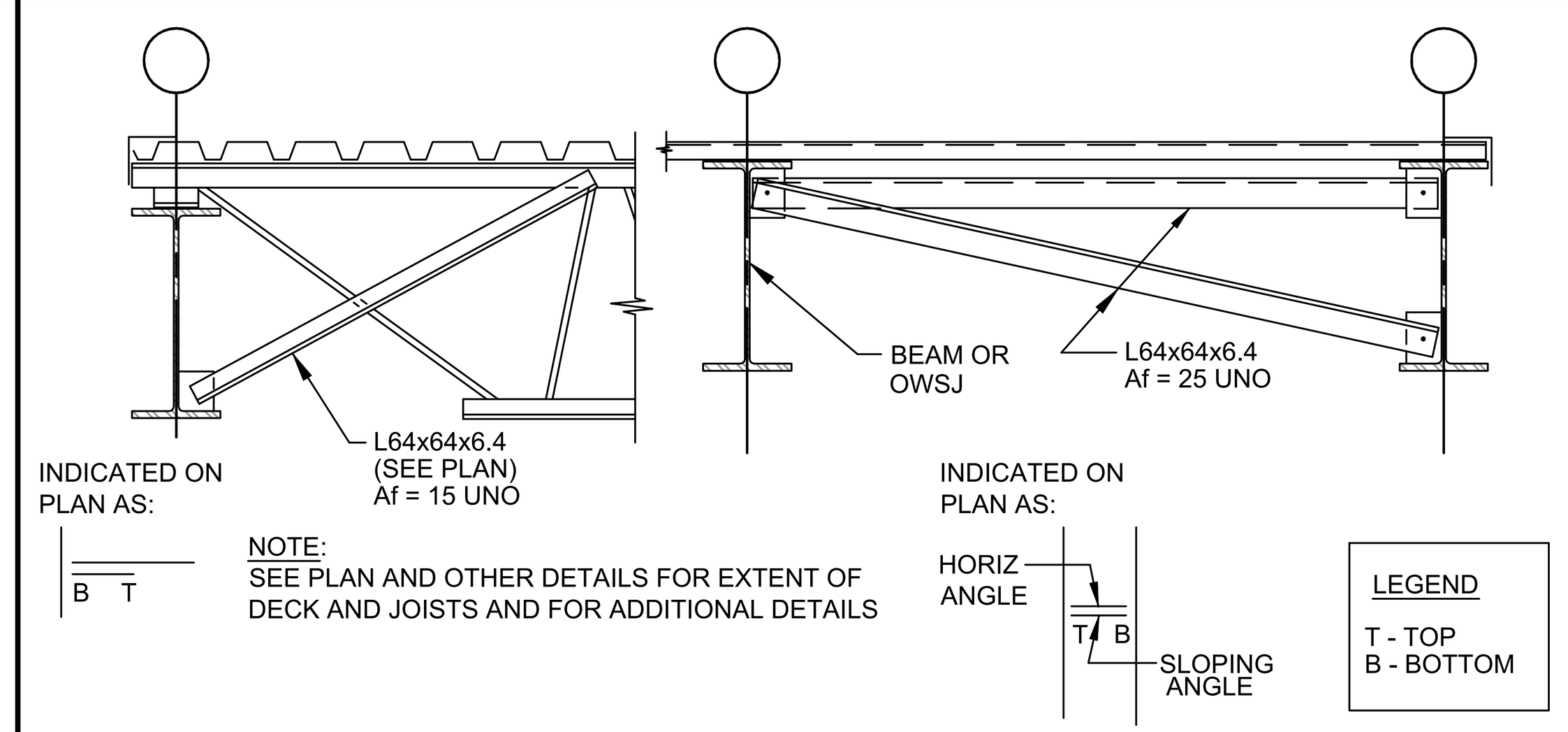


NOTE:
1. NOT ALL OPENINGS ARE NECESSARILY SHOWN ON THE ELEVATIONS. SEE ARCHITECTURAL, ELECTRICAL & MECHANICAL DWGS FOR SIZE & LOCATION OF ALL OPENINGS.

FRAMING AT EXTERIOR WALL OPENINGS UNO

PD10

MAY 14

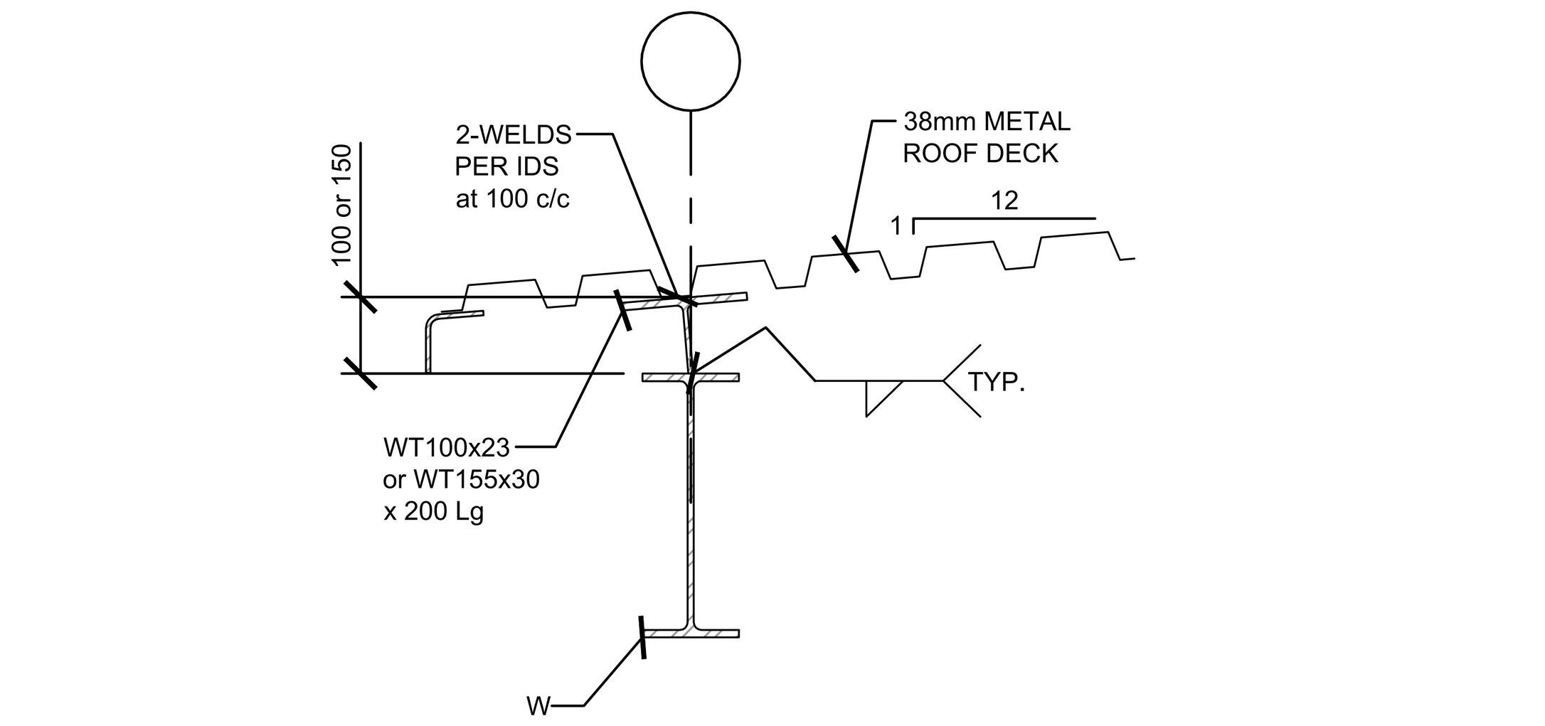


NOTE:
SEE PLAN AND OTHER DETAILS FOR EXTENT OF DECK AND JOISTS AND FOR ADDITIONAL DETAILS

TYPICAL DETAIL FOR BEAM LATERAL SUPPORT

PD11

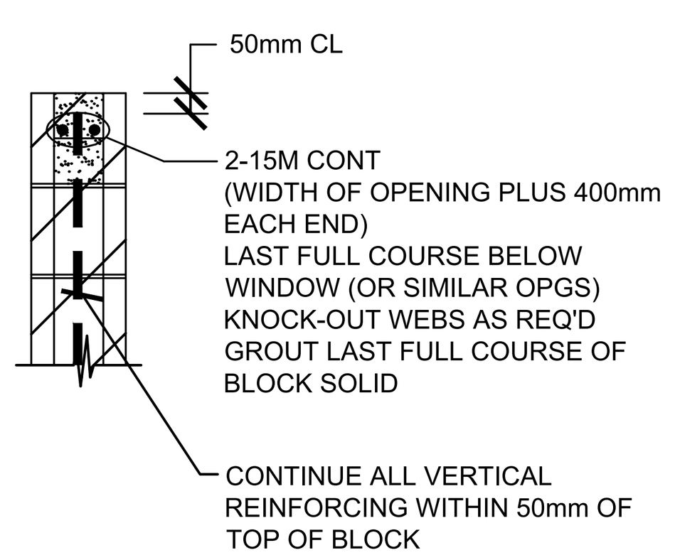
MAY 14



TYPICAL INTERMEDIATE DECK SUPPORT (IDS) BETWEEN ROOF JOISTS AS SHOWN ON PLAN

PD12

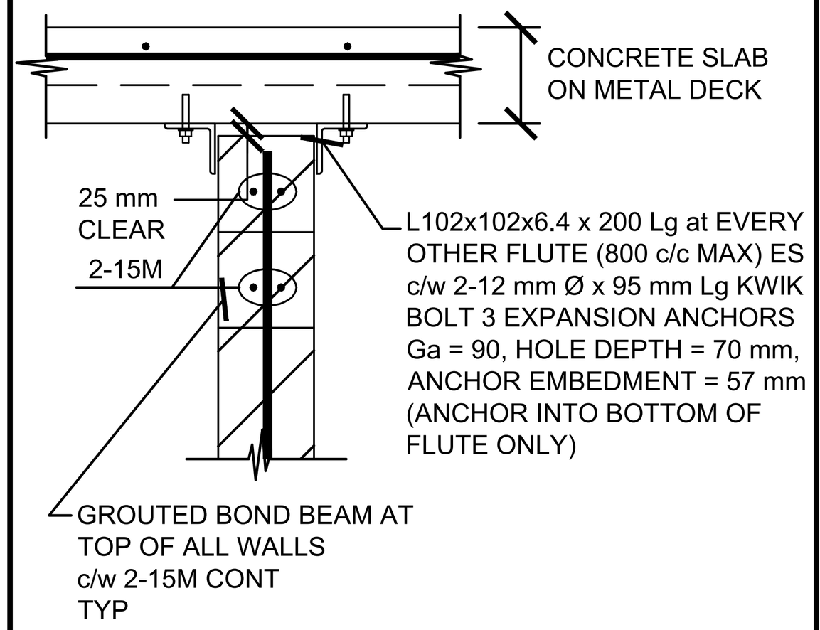
MAY 14



TYPICAL SILL DETAIL

PD14

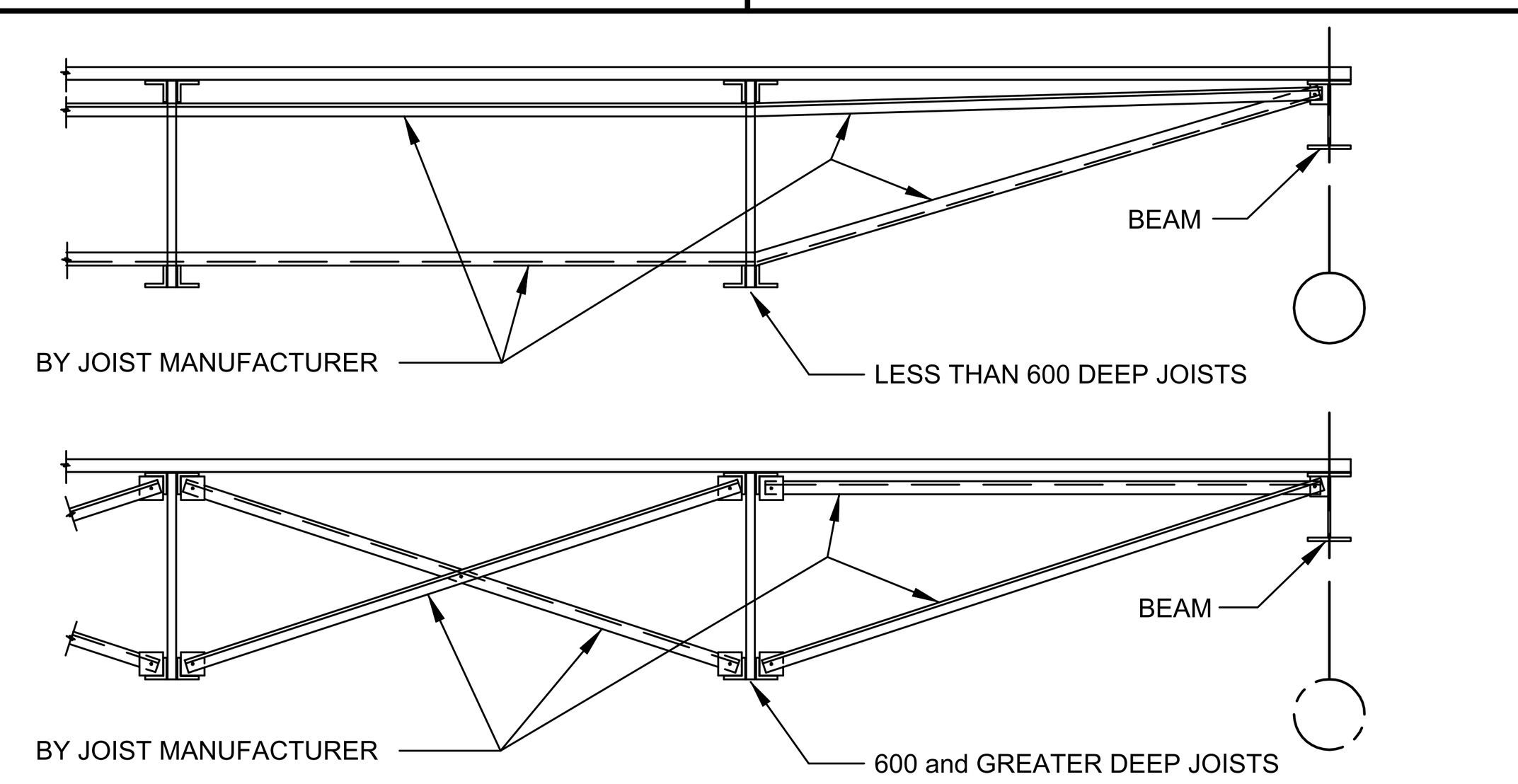
MAY 14



MASONRY ANCHORAGE @ U/S OF CONCRETE SLAB ON METAL DECK

PD15

MAY 14



TYPICAL JOIST BRIDGING DETAIL

PD16

MAY 14

MASONRY WALL REINFORCING SCHEDULE

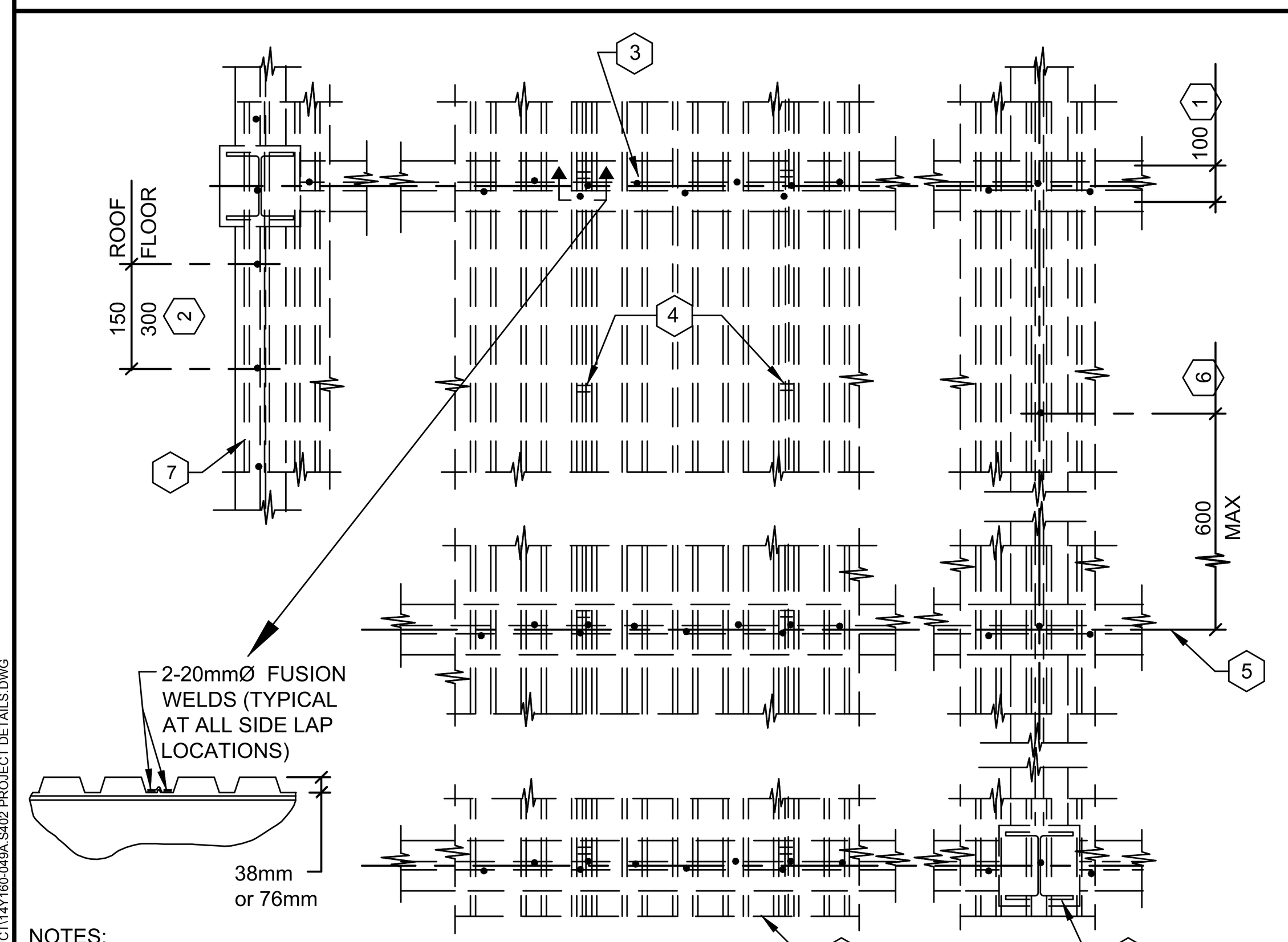
WALL DESCRIPTION (mm)	HORIZONTAL JOINT REINFORCING		VERTICAL REINFORCING	
	SPACING	TYPE	SPACING	BAR
190 BLOCKWALL PARTITION	400 c/c	2-4.76 mm SIDE RODS WITH 3.66 mm CONTINUOUS DIAGONAL CROSS RODS (TRUSS PATTERN)	1200	15M

1. SEE ARCH FOR LOCATION OF ALL MASONRY WALLS.

NOTE:
1. VERTICAL REINFORCING IS MINIMUM.
2. PROVIDE VERTICAL REINFORCING AT ENDS OF WALLS AND CORNERS.
3. ADDITIONAL VERTICAL REINFORCING IS REQ'D AT EACH SIDE OF OPENINGS, ETC.
4. DOWELS FOR MASONRY ARE TO MATCH ALL VERTICAL REINFORCING PER THIS SCHEDULE.

PD17

MAY 14



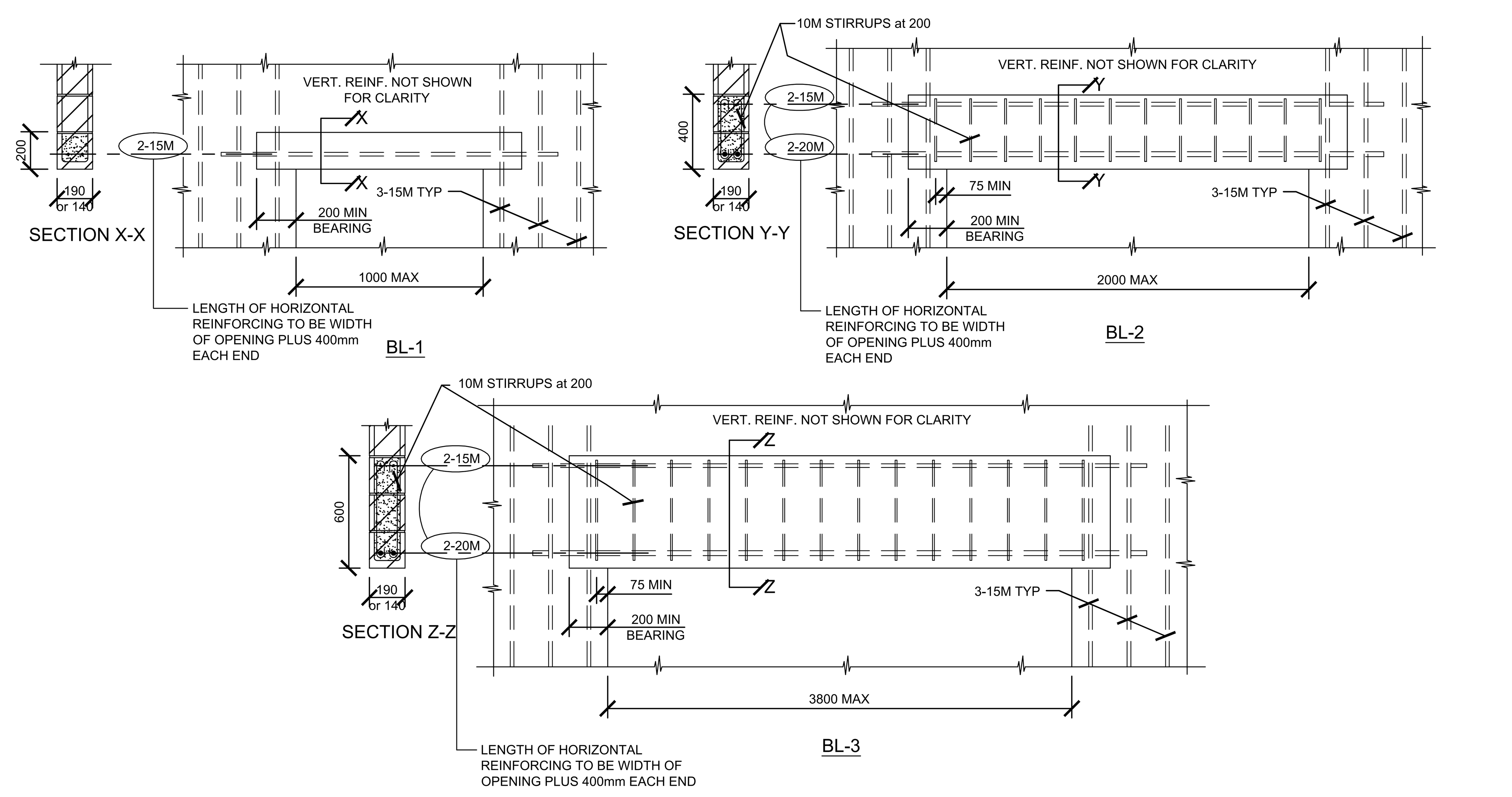
NOTES:
1. MINIMUM LAP
2. ALTERNATE NOTE: SEE WELD REQUIREMENTS AT INTERMEDIATE DECK SUPPORTS, ETC.
3. 20mm DIA FUSION WELDS. LOCATE AS SHOWN AND SEE NOTES AND SPEC.
4. MECHANICAL CLINCHING. SEE NOTES AND SPEC.
5. CENTERLINE OF BEAM OR JOIST.
6. ON INTERIOR LONGITUDINAL BEAMS.
7. SEE PLANS FOR EXTENT OF METAL DECK.
8. CAP TOP OF ALL COLUMNS AT u/s OF DECK FOR DECK SUPPORT.

NOTE:
STRUCTURAL STEEL CONTRACTOR SHALL INSTALL ADDITIONAL METAL DECK SUPPORTS AS REQUIRED WHERE NOT DETAILED.

TYPICAL FASTENING DETAIL FOR ALL METAL DECKING U.N.O.

PD20

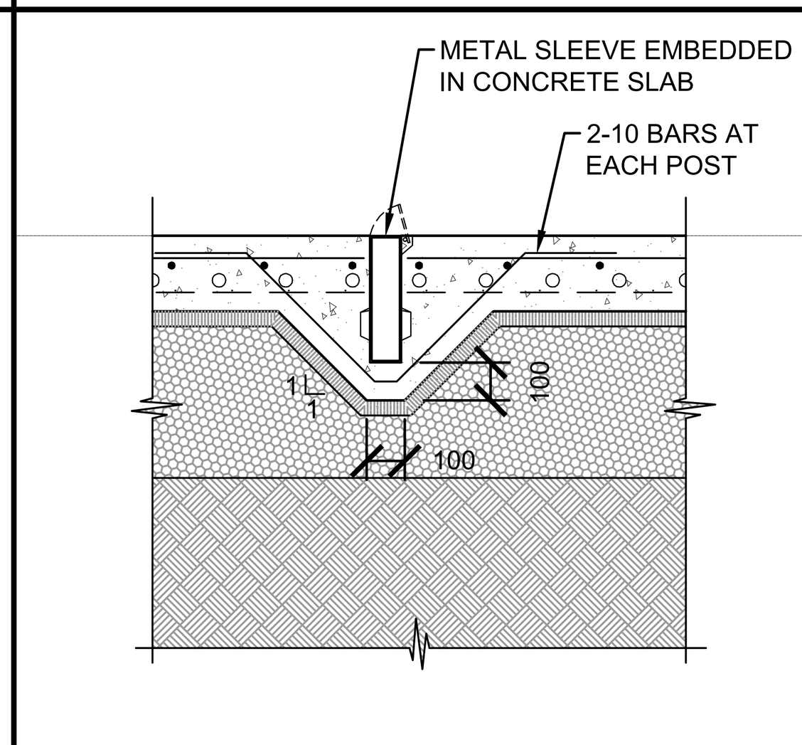
MAY 14



TYPICAL MASONRY LINTEL DETAILS

PD21

MAY 14



TYPICAL IN-FLOOR POST DETAIL

PD22

JAN 15

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Real Property Operations Branch
Real Property Operations Solutions
Direction générale des opérations immobilières
Solutions - Opérations immobilières
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key plan | plan-clé

stamp | sceau

REGISTERED PROFESSIONAL ENGINEER
MAR. 26/15
I.J.FULLER
PROVINCE OF ONTARIO
14Y160-049A

revision	description	date
01	ISSUED FOR TENDER	15/03/26

A detail no. / no. du detail
B location drawing no. / sur dessin no.
C drawing no. / dessin no.

project | projet

CSC MULTI-PURPOSE BUILDING
CBI MINIMUM INSTITUTION (FRONTENAC)
KINGSTON, ONTARIO

drawing | dessin

PROJECT DETAILS

designed	IJF	conçu
date	2014/04/22	(yyyy/mm/dd)
drawn	PDM	dessiné
date	2014/04/22	(yyyy/mm/dd)
reviewed	IJF	examiné
date	2015/01/30	(yyyy/mm/dd)
approved	IJF	approuvé
date	2015/01/30	(yyyy/mm/dd)
Tender	DUNCAN PARKER	Soumission
Project Manager		Administrateur de projets
project no.	R.055776.001	no. du projet
drawing no.	S402	no. du dessin

SCALE: N.T.S.

PWGSC B1 (1000x707)