

DRAWING LIST	
Sheet Number	Sheet Name
S0	COVER SHEET
S1-01	FOUNDATION PLAN
S1-02	ROOF FRAMING PLAN
S2-01	FOUNDATION SECTIONS
S3-01	ROOF SECTIONS
S4-01	GENERAL NOTES
S4-02	TYPICAL DETAILS
S4-03	TYPICAL DETAILS
S4-04	TYPICAL DETAILS AND GENERAL NOTES
S4-05	TYPICAL DETAILS

# YORK REGION PRS #33 RFTC 379-21

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



2235 Sheppard Ave. E. Suite No. 1100  
Toronto, ON M2J 5B5

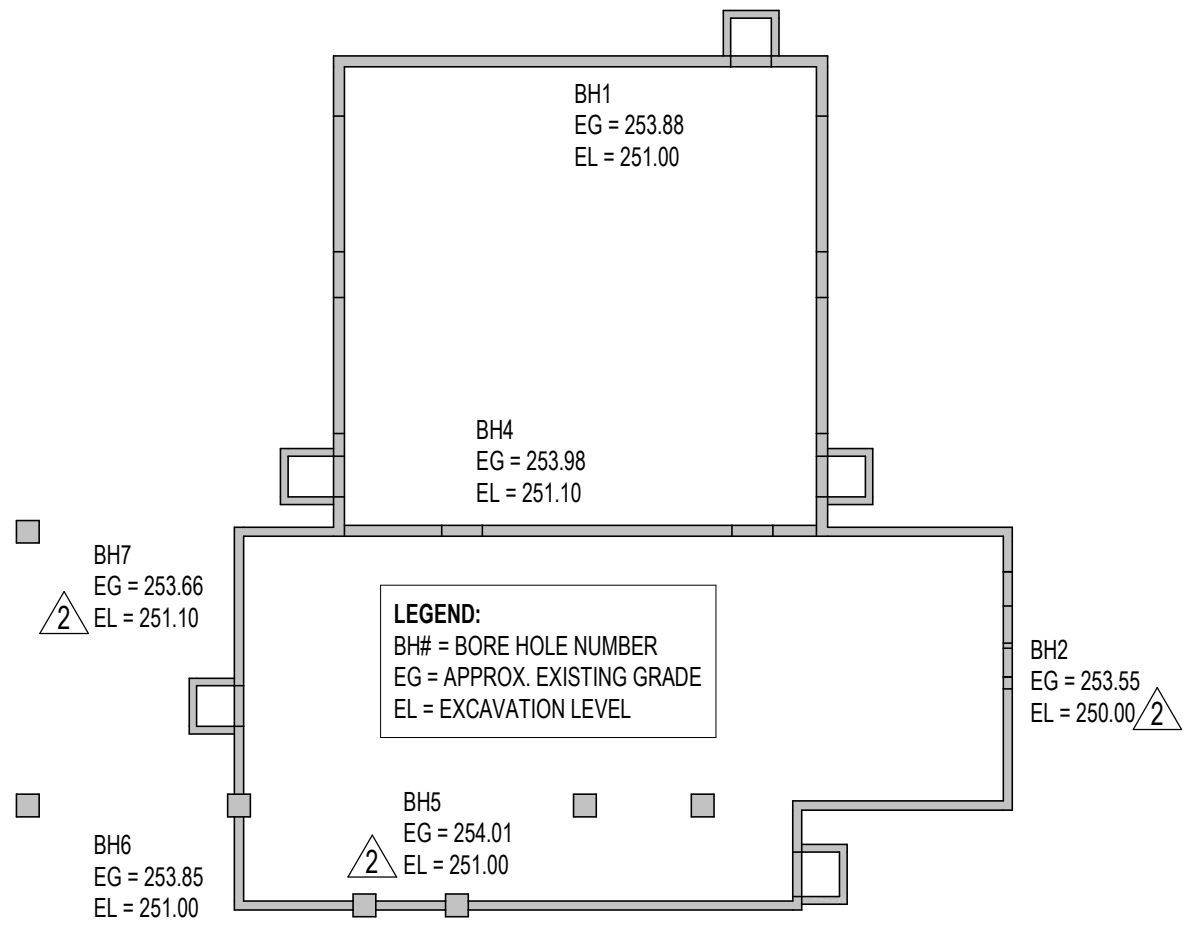
CONCRETE MIX SCHEDULE

EXPOSURE	ELEMENT	MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (MPa)	EXPOSURE CLASSIFICATION	NOTES
GENERAL NON-EXPOSED CONCRETE (i.e., NOT EXPOSED TO CHLORIDES NOR FREEZE AND THAW)	FOOTINGS	25	N	
	SLAB ON GRADE 2	25	N	
	LEAN MIX	5	N	
	HOUSEKEEPING PADS	25	N	
EXTERIOR EXPOSED CONCRETE	FOUNDATION/RETAINING WALLS	25	F-2	
	SLAB ON GRADE 2, SIDEWALKS	32	C-2	
	FROST SLABS / APRON SLABS	35	C-1	
	APPARATUS BAY SLAB ON GRADE	35	C-1	
GROUT	MASONRY FILL/BOND BEAMS	15 (FINE GROUT)		
				CONFORM TO REQUIREMENTS OF CSA A179

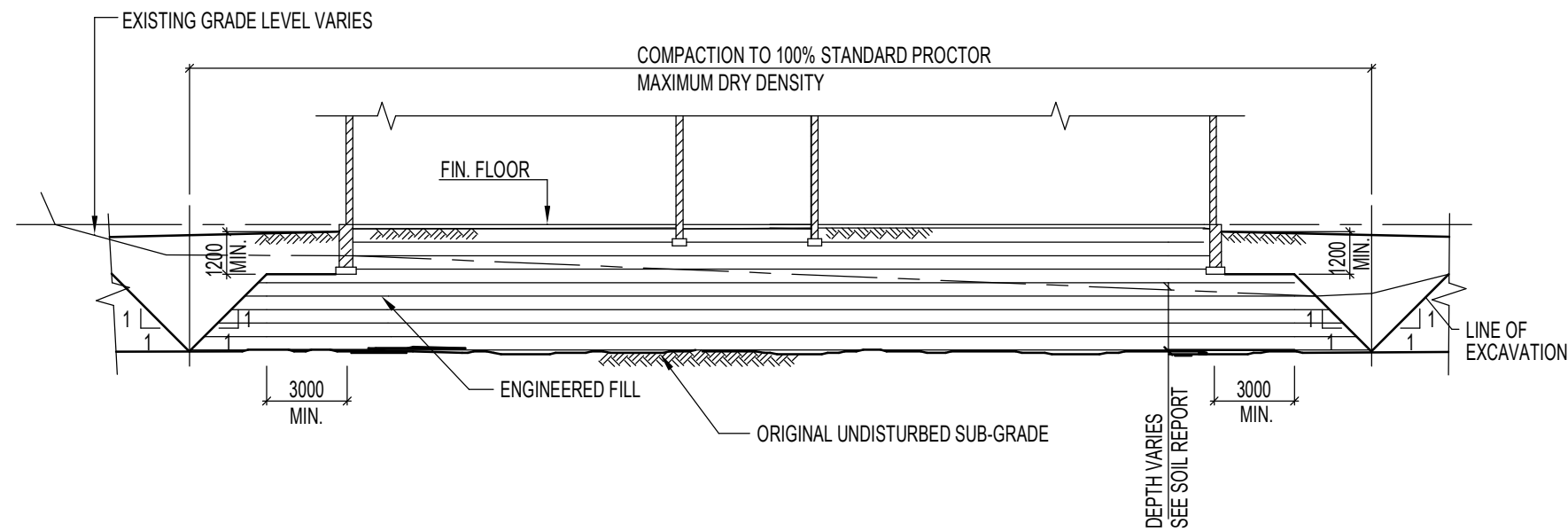
1) STRENGTH SPECIFIED AT 28 DAYS U.O IN DRAWINGS AND SCHEDULES. FOR COLUMNS AND WALLS ONLY. FOR 60MPa AND 65MPa CONCRETE ARE PERMITTED TO BE 56 DAY MIX. 70MPa AND ABOVE CONCRETE ARE PERMITTED TO BE AT 90 DAYS MIX.  
2) RIENFORCED WITH SYNTHETIC FIBERS ADDED AT BATCHING PLANT - SEE SPECIFICATIONS

WHERE MECHANICAL SERVICE PIPES PASS THROUGH LOAD BEARING FOUNDATION WALLS, PROVIDE STEEL SLEEVES (MIN.500) LARGER THAN PIPE (TYPICAL)

LOWER ELEVATIONS AT UNDERSIDE OF COLUMN AND WALL FOOTINGS, WHERE REQUIRED, BUT LIMITED TO SUIT STORM / SANITARY, WATER / FIRE LINES AND ELECTRICAL DUCT BANKS.  
THE MAXIMUM SLOPE FROM THE PIPE EXCAVATION TO THE UNDERSIDE OF ADJACENT FOOTING ELEVATIONS SHALL NOT EXCEED 7 VERTICAL TO 10 HORIZONTAL.



BULK EXCAVATION PLAN  
1 : 200



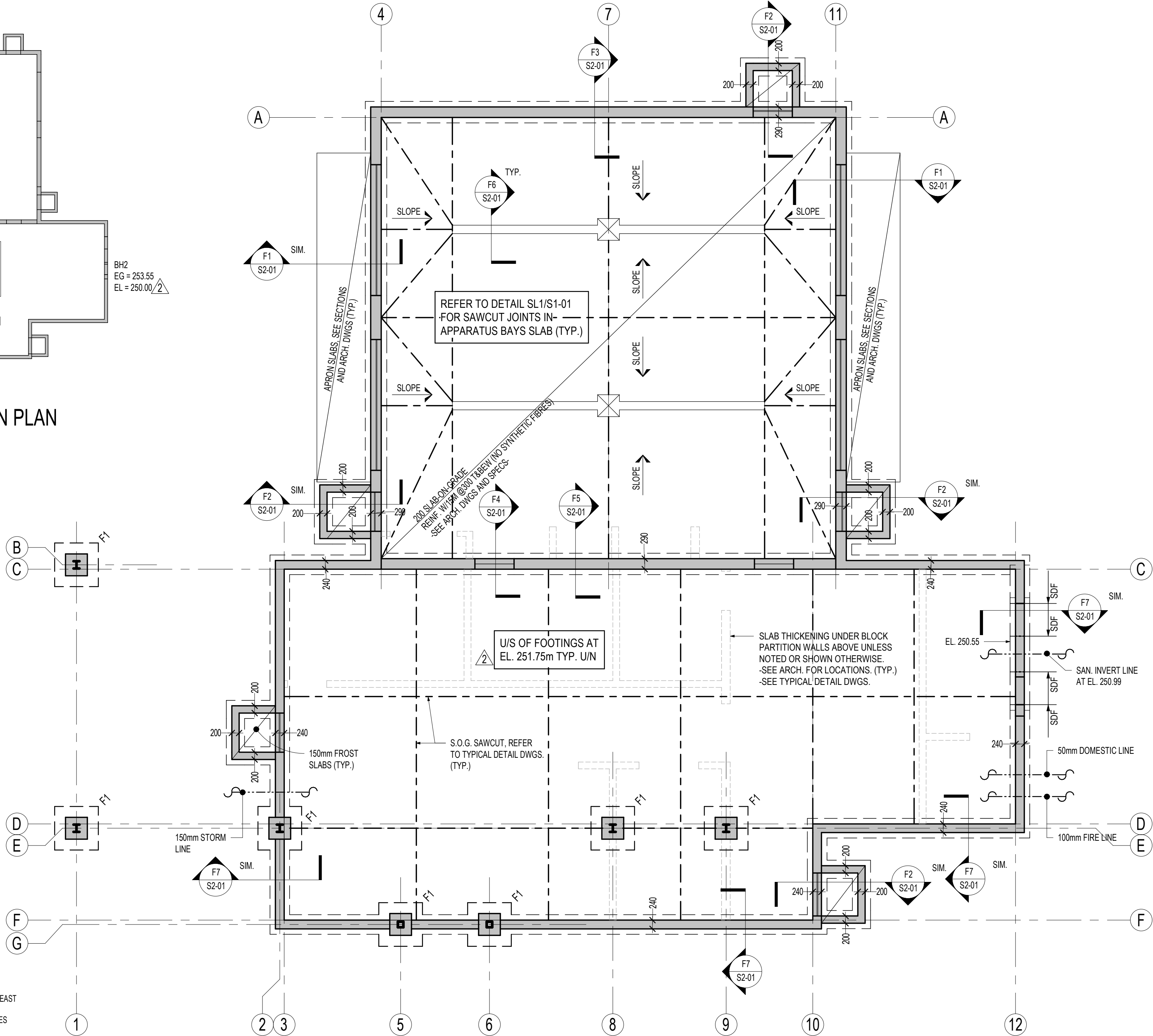
DIAGRAMMATIC SECTION THROUGH THE BUILDING  
SHOWING PROPOSED ENGINEERED FILL N.T.S.  
(REFER TO ENGINEERED FILL NOTES ON THIS DRAWING)

DESIGN CRITERIA NOTES

- GENERAL
  - 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.
  - 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.
  - BUILDING IMPORTANCE CATEGORY (SNOW, WIND, AND EARTHQUAKE) IS POST DISASTER.
  - STIFF ELEMENTS NOT PART OF SFRS SHALL BE SEPARATED FROM THE STRUCTURE AS PER OBC CLAUSE 4.1.8.3 (6a). EXAMPLES INCLUDE, BUT NOT LIMITED TO MASONRY PARTITIONS, BRICK VENEER, PRECAST CLADDING ETC. IT IS THE RESPONSIBILITY OF THE SUBCONTRACTOR TO PROVIDE SHOP DRAWINGS, STAMPED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER DEMONSTRATING COMPLIANCE. PROVIDE MINIMUM 15mm SEPARATION UNLESS NOTED OTHERWISE.
  - MISCELLANEOUS METAL, PRECAST AND STAIR FABRICATORS SHALL:
    - PROVIDE SHOP DRAWINGS TO THE ARCHITECT PRIOR TO FABRICATION; STAMPED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER.
    - DESIGN ALL GUARDS TO MEET LATERAL LOADS DESCRIBED IN OBC 4.1.5.14.
    - DESIGN ALL HANDRAILS TO MEET LOADS DESCRIBED IN OBC 3.4.6.5(2).
    - DESIGN ALL STAIRS TO SUPPORT A MINIMUM LIVE LOAD OF 4.8kPa.
  - ARCHITECTURAL PRECAST FABRICATOR SHALL:
    - PROVIDE SHOP DRAWINGS TO THE ARCHITECT PRIOR TO FABRICATION; STAMPED, SIGNED AND DATED BY A PROFESSIONAL ENGINEER.
    - WHERE PRECAST IS USED AS A GUARD DESIGN THE PRECAST AND CONNECTIONS TO MEET LATERAL LOADS DESCRIBED IN OBC 4.1.5.14.
- LATERAL LOADS ON STRUCTURE
  - WIND $q(150) = 0.44kPa$  $C_e = (h/101)^{1/15}$  NOT LESS THAN 0.9. $C_d = 2.0$  $C_p$  = AS PER FIGURE 4.1.6-A OF NBC 2015
  - EARTHQUAKE $Sa(0.2) = 0.167$  $PGA = 0.105$  $F_a = 1.24$  $Sa(0.5) = 0.096$  $SITE CLASS = D$  $\beta_a = 1.55$  $Sa(1.0) = 0.053$  $R_d = 2.0$  $\beta_a = 1.5$  $Sa(2.0) = 0.026$  $R_o = 1.5$  $I_e F_a S_a(0.2) = 0.31$  $Sa(5.0) = 0.0065$  $Sa(10.0) = 0.0027$   
SFRS CONSISTS MODERATELY DUCTILE MASONRY SHEAR WALLS AND SQUAT SHEAR WALLS.  
METHOD OF ANALYSIS - STATIC
- FOUNDATION WALLS
  - WALLS RETAINING EARTH ARE DESIGNED TO SAFELY WITHSTAND HORIZONTAL EARTH PRESSURE  
 $P = K \cdot (W \cdot h + q)$  $K = 0.4$  $W = 22kNm/m^3$  $q = 12kPa$  $h$  = DEPTH IN METRES
  - THE WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL OR THE USE OF A DRAINAGE CORE TO PREVENT THE BUILD-UP OF HYDROSTATIC PRESSURE.

ENGINEER FILL NOTES

- GENERAL
  - 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 300mm AND SLOPING DOWNWARD TO THE SUB-GRADE, IN ALL DIRECTIONS, AT 45°.
  - PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL CONVENE A MEETING TO BE ATTENDED BY AT LEAST THE ARCHITECT, STEPHENSON ENGINEERING, THE SOIL CONSULTANT, THE GENERAL CONTRACTOR, AND THE EXCAVATION AND BACKFILLING CONTRACTOR. THE PURPOSE OF THIS MEETING IS TO ENSURE THAT ALL PARTIES UNDERSTAND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO DISCUSS PROCEDURES, TIMING, MATERIALS AND TESTING, ETC.
  - REFER ALSO TO THE SPECIFICATION, THE SOIL REPORT AND DIAGRAMMATIC SECTION.
- MATERIALS
  - ALL MATERIAL TO BE USED AS FILL MUST BE APPROVED EXISTING ON-SITE MATERIAL OR IMPORTED GRANULAR 'B' MATERIAL AS APPROVED BY THE SOIL CONSULTANT.
  - THE LAYER IMMEDIATELY BELOW THE SLAB-ON-GRADE SHALL BE A MIN. OF 250mm, 19mm CLEAR CRUSHED STONE. ONLY THE EXISTING ON-SITE MATERIAL WHICH ARE FREE OF TOP SOIL AND ARE NOT WET MAY BE SUITABLE FOR REUSE, AND ALL MATERIAL SHOULD BE REVIEWED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER DURING EXCAVATION TO DETERMINE THE SUITABILITY OF THE EXISTING FILL MATERIAL. ALL IMPORTED BORROW FILL MATERIAL FROM LOCAL SOURCES SHOULD BE FREE FROM ORGANIC MATERIAL AND FOREIGN OBJECTS, AND SHOULD BE TESTED GEOTECHNICALLY BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PRIOR TO TRANSPORT TO THE SITE.
- EXECUTION
  - REMOVE AND DISPOSE OF ALL EXISTING ORGANIC MATERIAL, FILL, AND CONTAMINATED MATERIAL DOWN TO NATURAL UNDISTURBED, UN-CONTAMINATED SUB-GRADE AS INDICATED ON BULK EXCAVATION PLAN AND SOILS REPORT.
  - THE SUB-GRADE SHALL BE PROOF ROLLED WITH HEAVY ROLLER (NO VIBRATION) TO MIN. 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
  - ANY LOOSE OR SOFT SPOT SHALL BE SUB-EXCAVATED AND BACKFILLED WITH APPROVED COMPACTED MATERIAL.
  - FILL REQUIRED TO RAISE THE GRADES SHALL COMPRISE OF APPROVED ON-SITE AND IMPORTED GRANULAR 'B' MATERIAL PLACED IN SUCCESSIVE 300mm LAYERS EACH COMPACTED TO AT LEAST 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
  - THE LAYER IMMEDIATELY BELOW THE SLAB-ON-GRADE SHOULD BE A 250mm MIN. LAYER OF 19mm CLEAR STONE ROLLED AND COMPACT.
  - ALL PROCEDURES, EQUIPMENT AND MATERIALS SHALL BE APPROVED BY THE SOIL CONSULTANT WHO SHALL BE ENGAGED "FULL TIME" TO SUPERVISE THIS WORK.
  - CONDITIONS AS OUTLINED IN THE CONTRACT DOCUMENTS ARE ASSUMED AND ARE BASED UPON INFORMATION AVAILABLE AT THE TIME THAT THE DOCUMENTS WERE PREPARED.
  - THE SOIL CONSULTANT SHALL ISSUE, VIA "E-MAIL", DAILY REPORTS OF THE WORK.
  - IF ANY ASPECT OF THE ACTUAL WORK IS NOT AS ASSUMED, THEN THE SOIL CONSULTANT SHALL ADVISE THE ARCHITECT IMMEDIATELY, BY TELEPHONE, BEFORE PROCEEDING.
  - NOTE THAT ONLY THE EXISTING ON-SITE MATERIAL, AS NOTED MAY BE SUITABLE FOR REUSE FOR BACKFILLING OF TRENCHES, ETC., OR AGAINST FOUNDATION WALLS.
  - FOR AREAS UNDER DRIVEWAYS AND PARKING ETC., OUTSIDE BUILDING ENVELOPE, REFER TO SPECIFICATION AND SOIL REPORT.



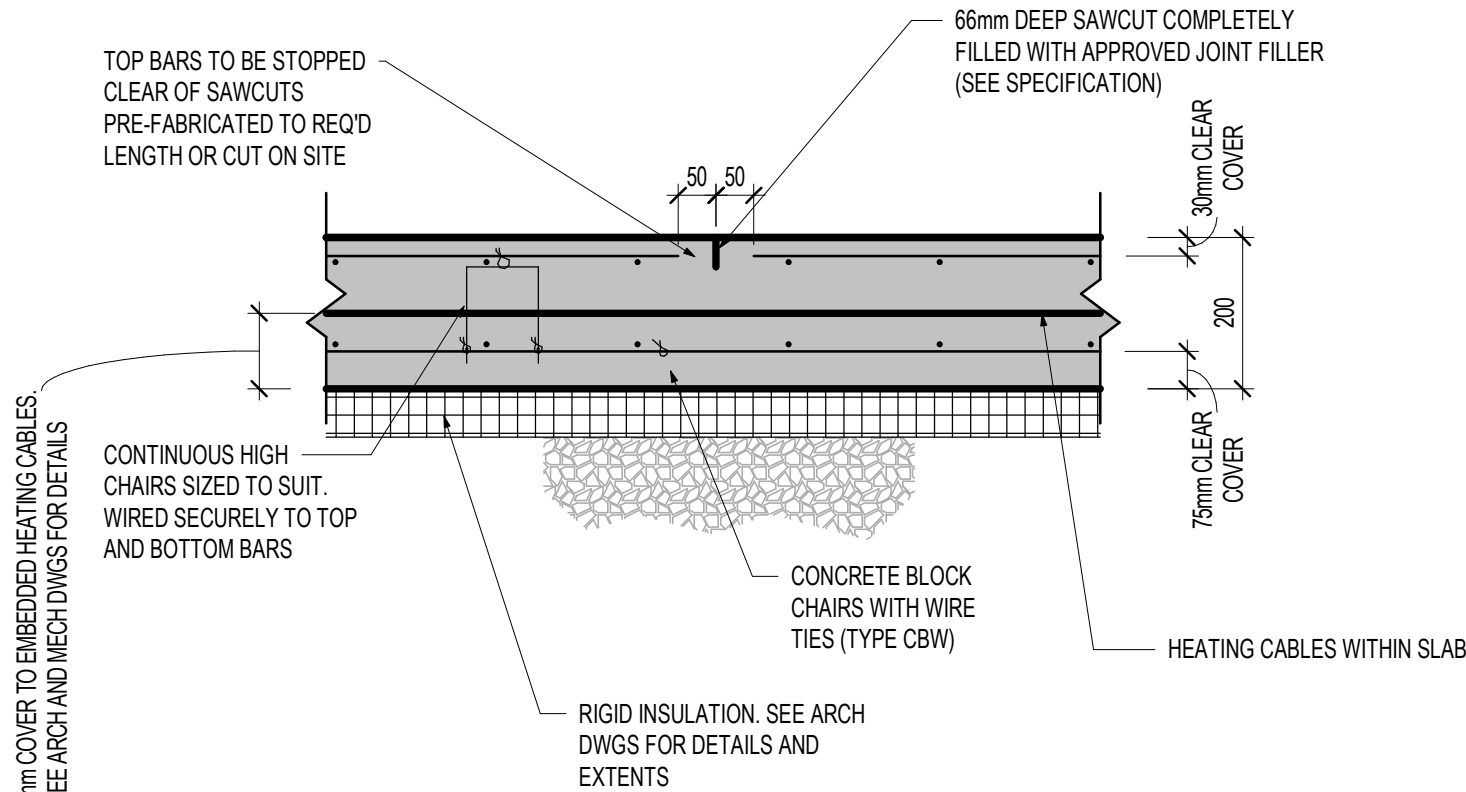
FOUNDATION PLAN

1 : 75

FOUNDATION PLAN NOTES

- TOP OF SLAB - ON - GRADE TO BE 0.0 BELOW FINISHED FLOOR DATUM ELEVATION 253.15m, EXCEPT AS NOTED. TOS = TOP OF SLAB.
- FOOTINGS SHALL BEAR ON ENGINEERED FILL DEVELOPED OVER COMPETENT NATIVE SOILS CAPABLE OF SUSTAINING A MINIMUM OF 150 kPa (SL)S AND 225 kPa (UL)S.
- REFER TO THE SOIL REPORT No. GOR-0024781-140 DATED AUG. 03, 2018 PREPARED BY EXP SERVICES INC.
- SOIL AT THE UNDERSIDE OF THE FOOTINGS IS TO BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF A SOILS CONSULTANT BEFORE PLACING CONCRETE.
- REFER ALSO TO SITE PREPARATION NOTES ON THIS DRAWING.
- CO-ORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS AND REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
- UNDERSIDE OF WALL FOOTINGS TO BE AT ELEVATIONS AS NOTED ON PLAN.
- SOF = STEP DOWN FOOTING.
- UNLESS OTHERWISE SHOWN, ALL WALL FOOTINGS TO BE 300mm DEEP WITH 150mm PROJECTIONS EACH SIDE.
- FILL REQUIRED ON BOTH SIDES OF FOUNDATION WALLS SHALL BE PLACED AND COMPACTED SIMULTANEOUSLY ON EACH SIDE TO EQUALIZE SOIL PRESSURE.
- PROVIDE SLAB DEPRESSIONS AND SLOPES, OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS, AS REQUIRED BY THE ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS.
- THE PROJECT SUPERINTENDENT MUST CONTACT THIS OFFICE 24 HOURS PRIOR TO PLACING STRUCTURAL CONCRETE INCLUDING STRIP FOOTINGS.
- GENERAL SLAB - ON - GRADE IS 100mm THICK REINFORCED WITH SYNTHETIC FIBRES (REFER TO CONCRETE SPECIFICATION), EXCEPT AS NOTED.
- CONCRETE STRENGTHS - SEE CONCRETE MIX SCHEDULE.
- SEE TYPICAL NOTES, TYPICAL DETAILS, AND ALL OTHER DRAWINGS.

FOOTING SCHEDULE				
FOOTING NUMBER	FOOTING LENGTH	FOOTING WIDTH	FOOTING THICKNESS	FOOTING REINF. B.E.W.
F1	1200	1200	300	4-15M



- NOTES:
- MAXIMUM SPACING OF BOTTOM AND TOP CHAIRS 1200 o/c.
  - FOR JOINTS IN OTHER SLABS-ON-GRADE, SEE TYPICAL DETAILS.

SL1  
S1-01  
DETAIL  
1 : 10

THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
REMAIN THE COPYRIGHT PROPERTY OF  
Salas O'Brien  
AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

ISSUE OR REVISION

NO.	ISSUED FOR	DATE
1	ISSUED FOR 90% SUBMISSION	NOV17/2020
2	ISSUED FOR ADDENDUM #1	JAN13/2026
3	RE-ISSUED FOR PERMIT	JAN13/2026
4	IFC	MAY22/2026

YORK REGION PRS #33  
RFTC 379-21

PROJECT :

CLIENT



Salas  
O'Brien

2235 Sheppard Ave. E.  
Toronto, ON

Suite No. 1100  
M2J 5B5

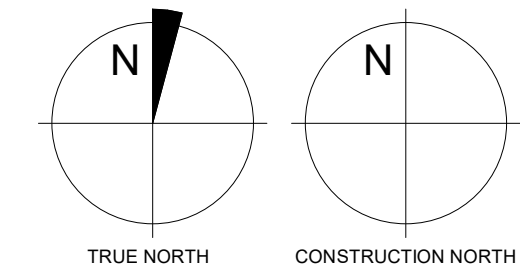
PROFESSIONAL SEAL



DWG TITLE

FOUNDATION PLAN

ORIENTATION



DATE

MAY 2026

SCALE

As indicated

DRAWN BY

AE

CHECKED BY

JG

DWG STATUS :

IFC

PROJECT NO.

20190540

DRAWING NO.

S1-01

REVISION

4

2026-05-22 10:13:22 AM





ISSUE OR REVISION

NO.	ISSUED FOR	DATE
1	ISSUED FOR 90% SUBMISSION	NOV/17/2020
2	ISSUED FOR ADDENDUM #1	JAN/13/2026
3	RE-ISSUED FOR PERMIT	JAN/13/2026
4	IFC	MAY/22/2026

YORK REGION PRS #33  
RFTC 379-21

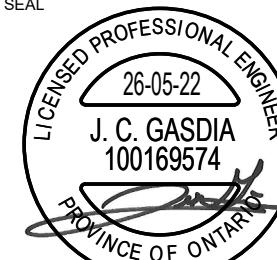
2960 TESTON ROAD, VAUGHAN

PROJECT :  
CLIENT :



**Salas O'Brien**  
2235 Sheppard Ave. E.  
Toronto, ON  
Suite No. 1100  
M2J 5B5

PROFESSIONAL SEAL



DWG TITLE

FOUNDATION  
SECTIONS

ORIENTATION

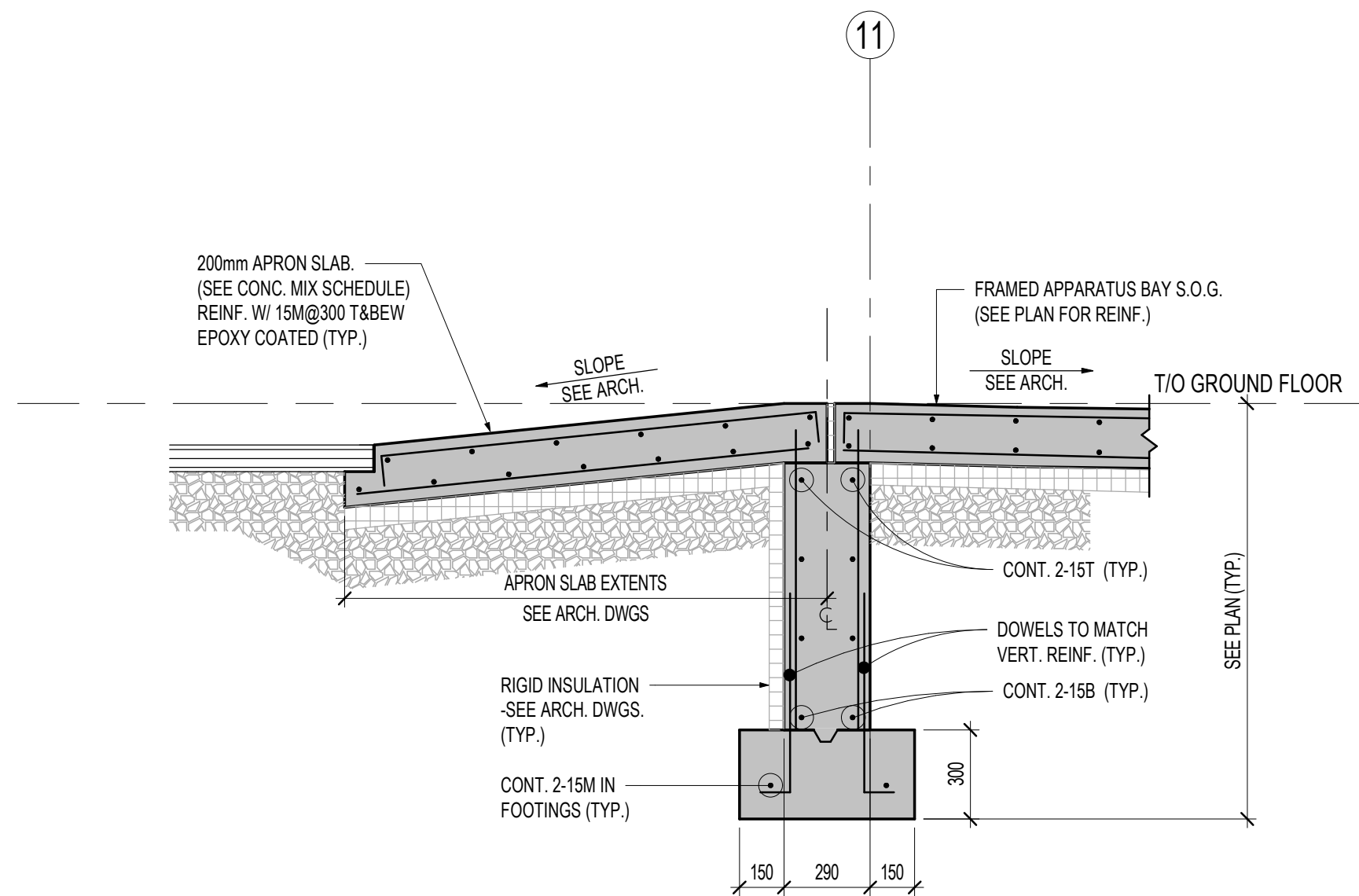
DATE MAY 2026

SCALE As indicated  
DRAWN BY AE  
CHECKED BY JG

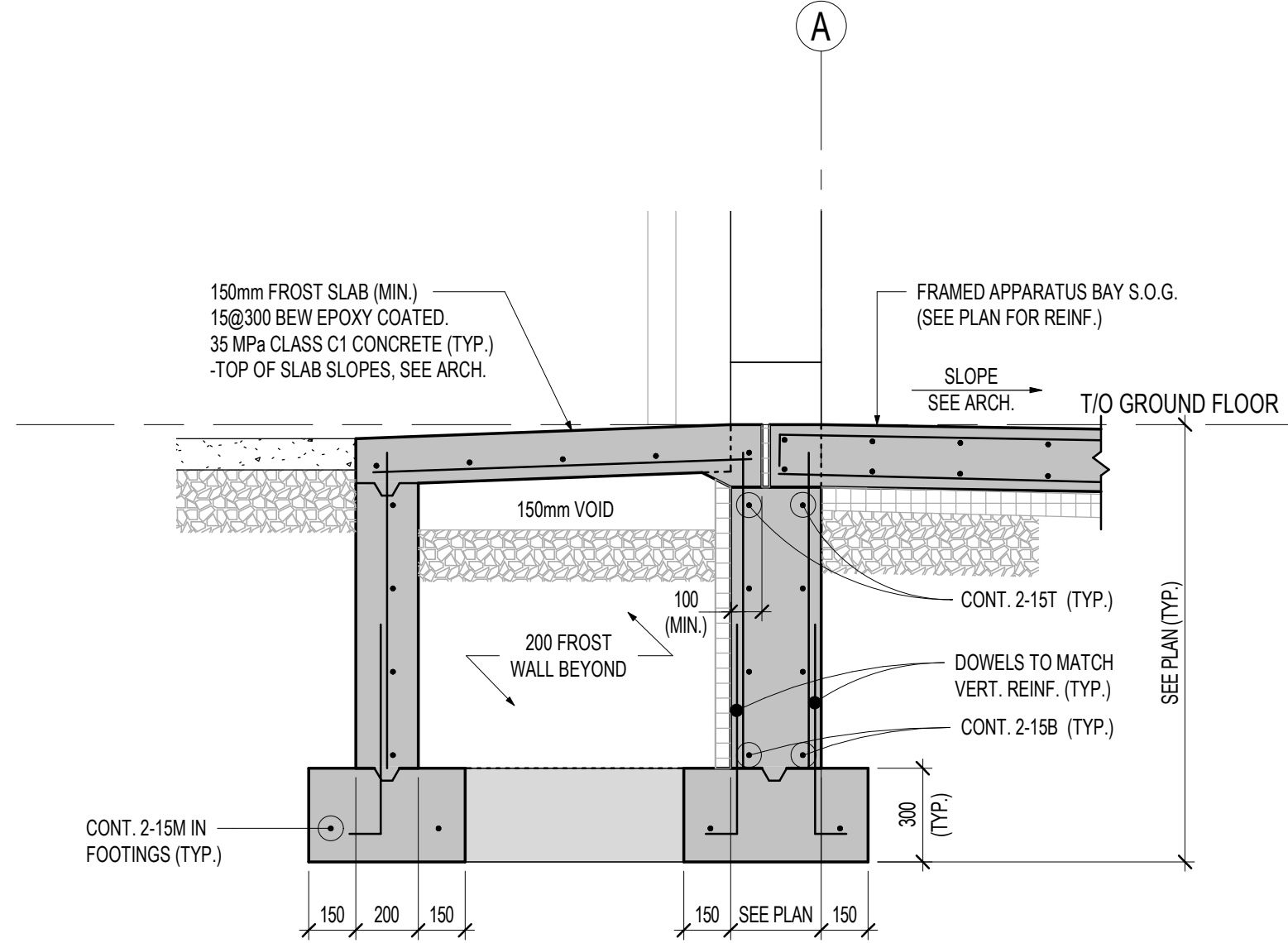
IFC

PROJECT NO. 20190540

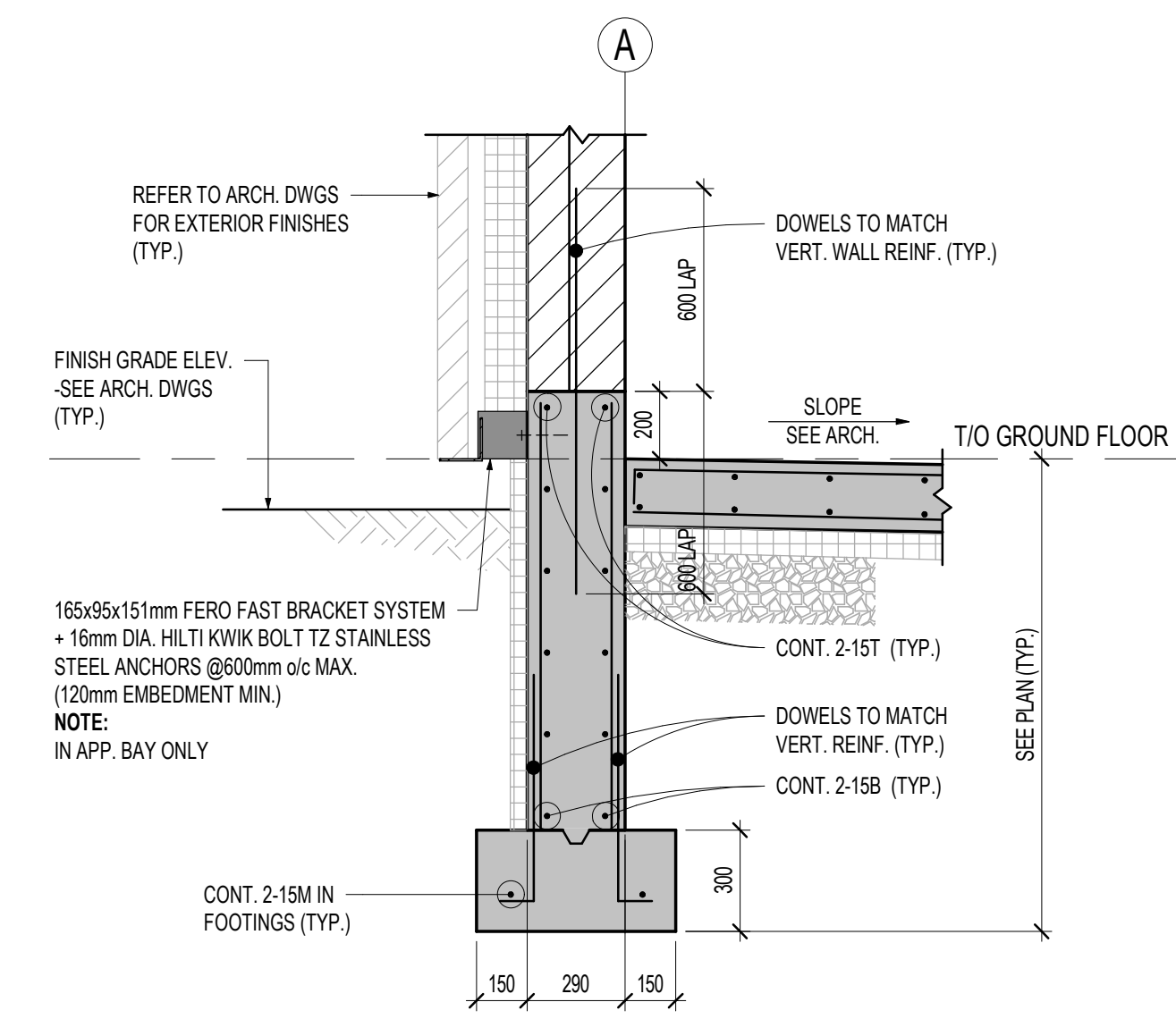
DRAWING NO. S2-01  
REVISION 4



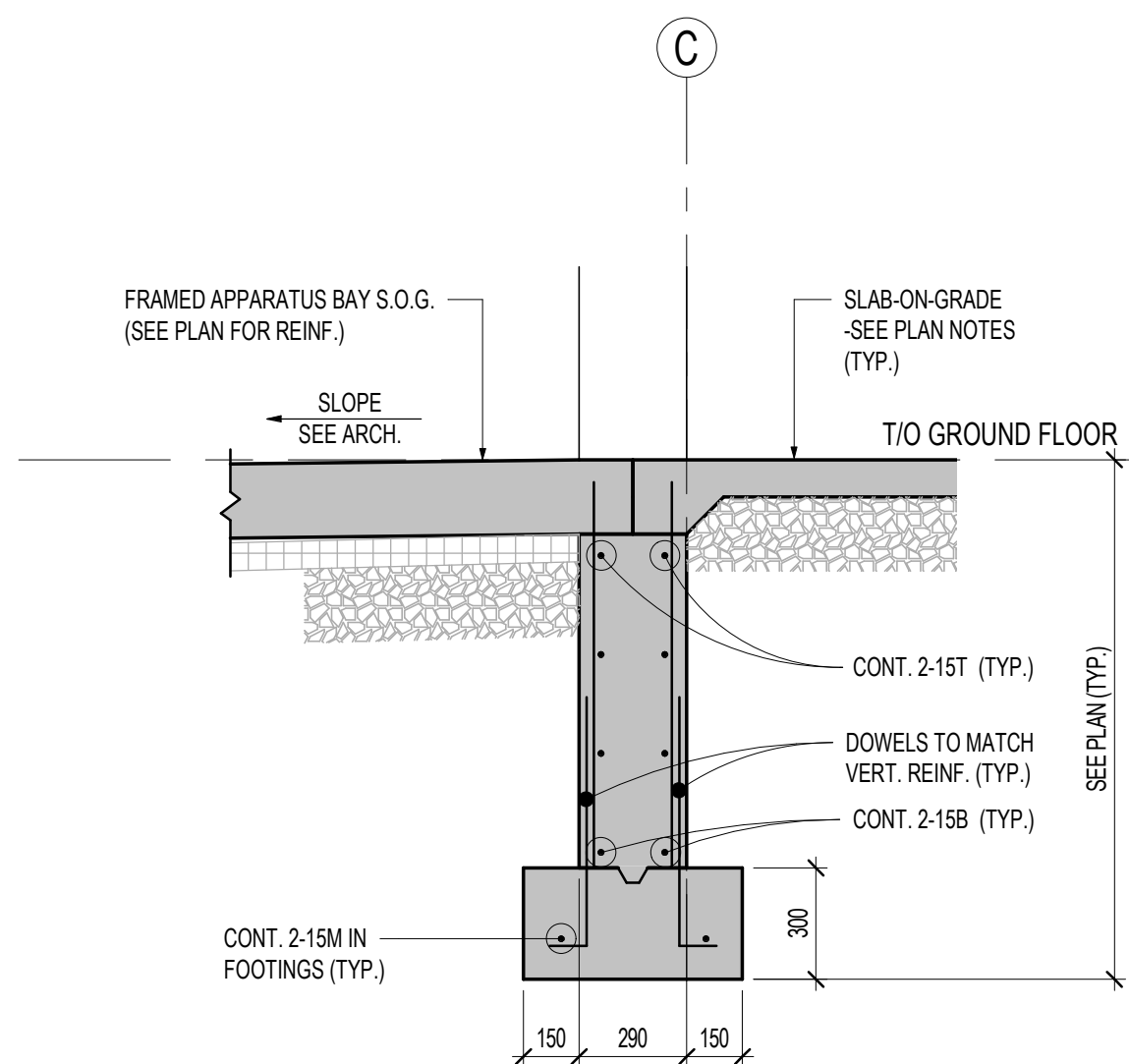
F1 SECTION  
S2-01 1:20



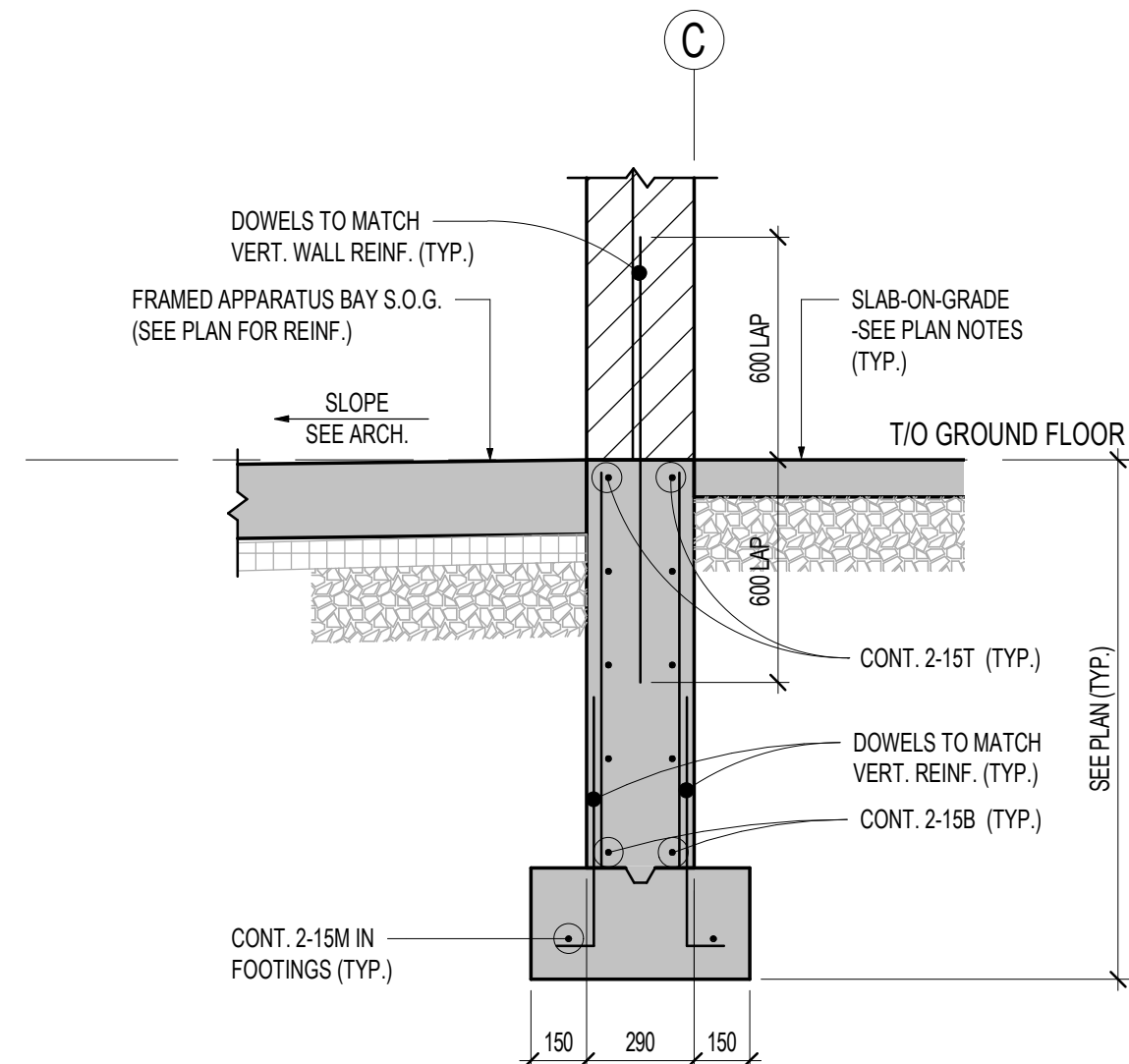
F2 SECTION  
S2-01 1:20



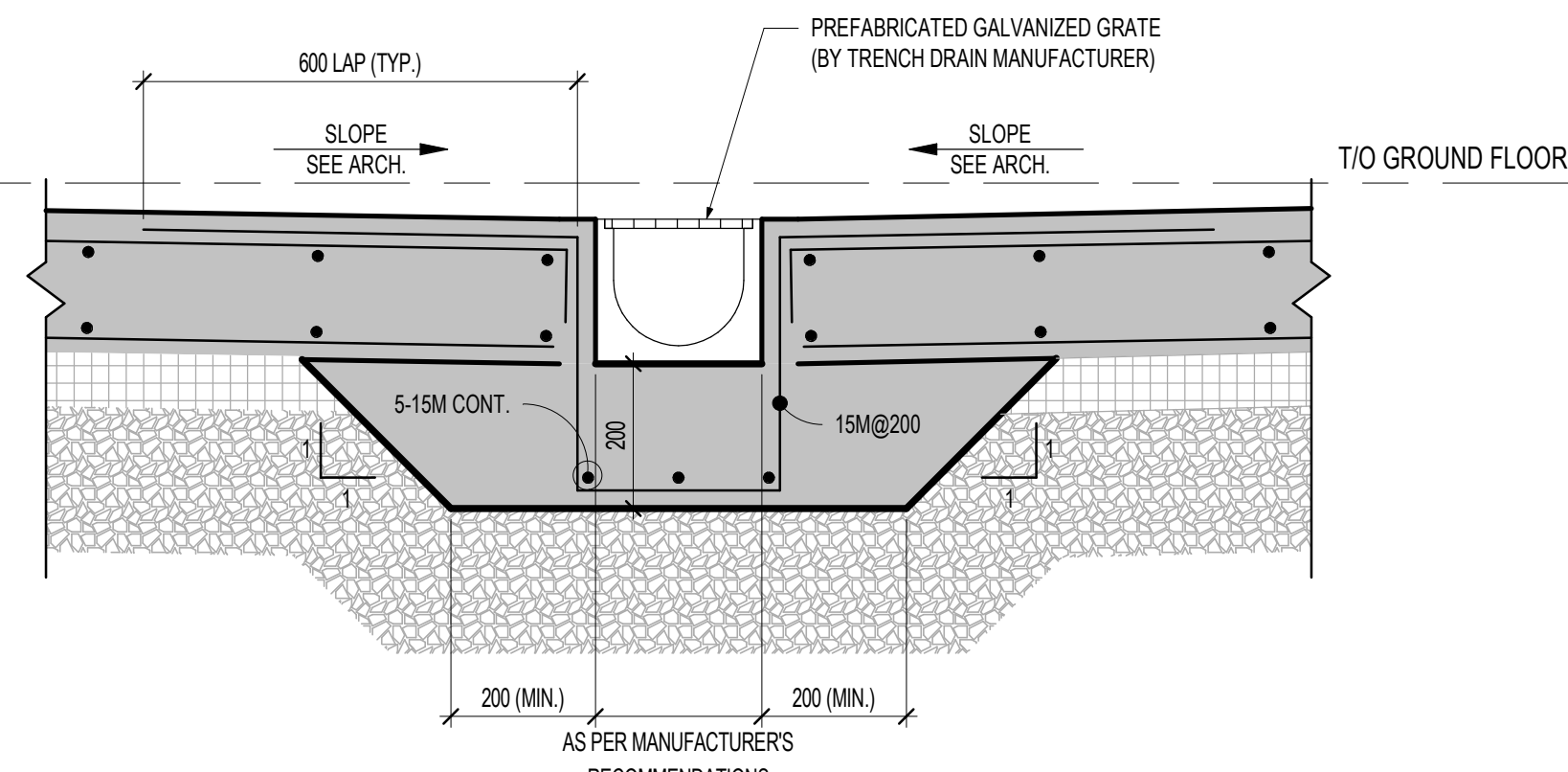
F3 SECTION  
S2-01 1:20



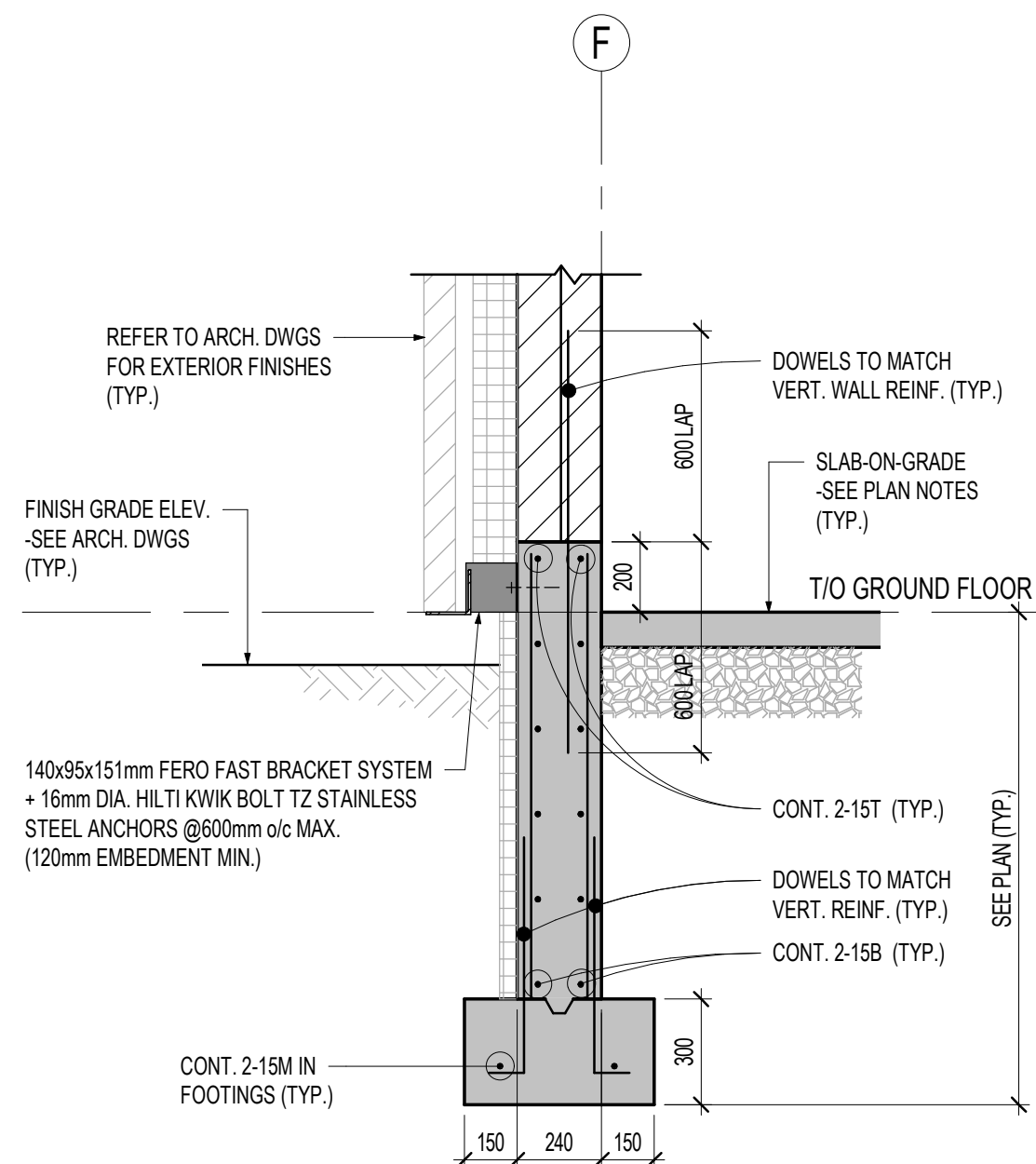
F4 SECTION  
S2-01 1:20



F5 SECTION  
S2-01 1:20



F6 SECTION  
S2-01 1:10



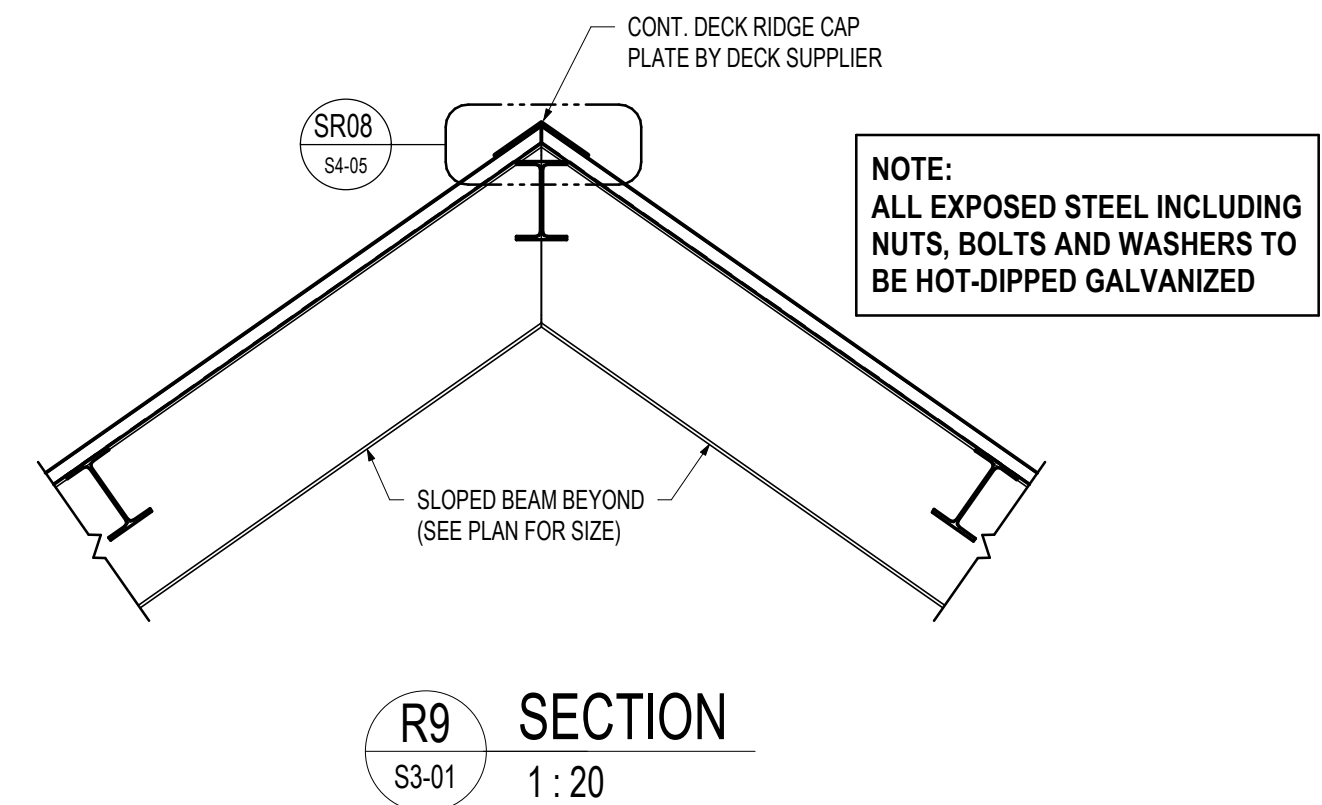
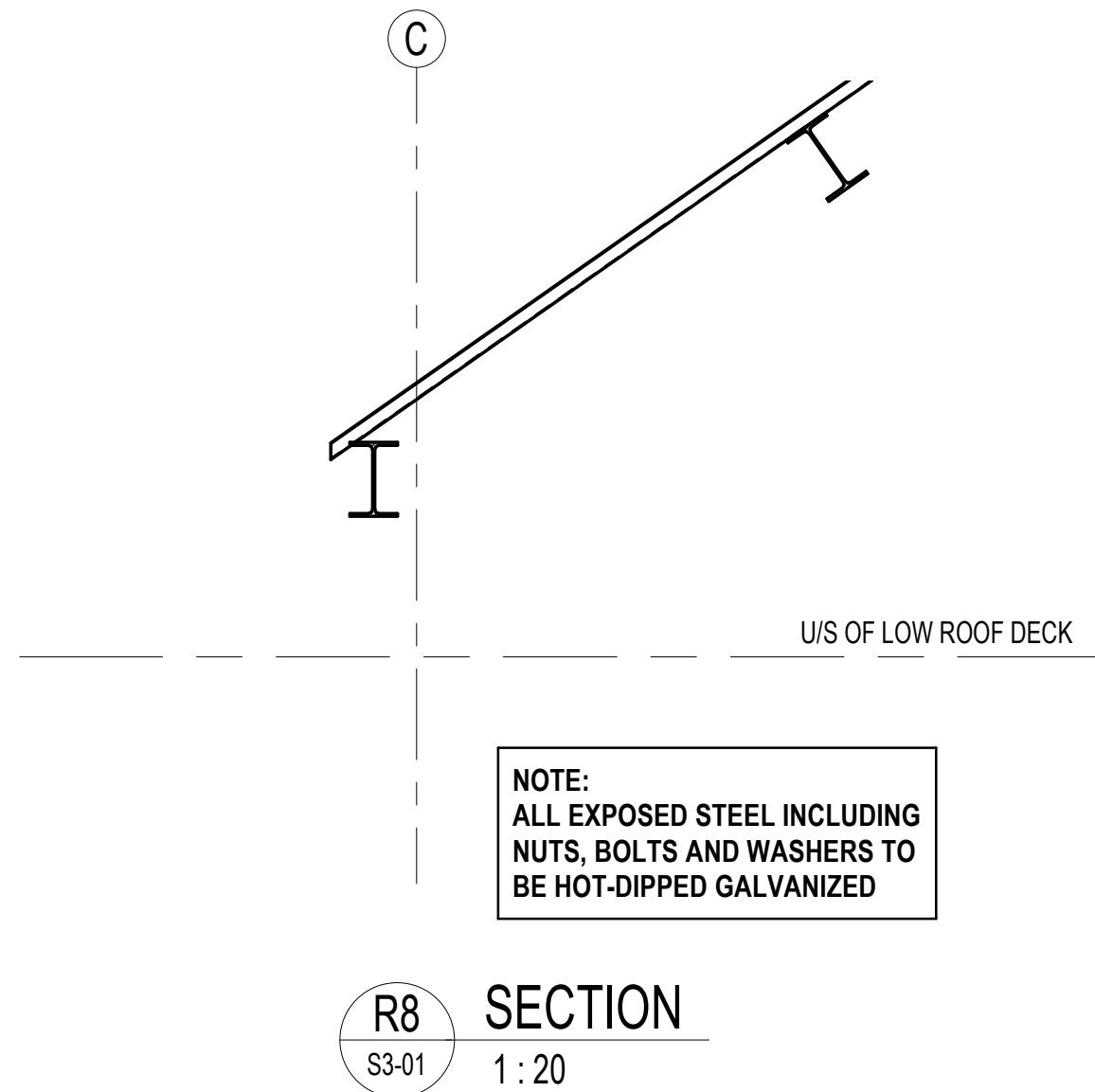
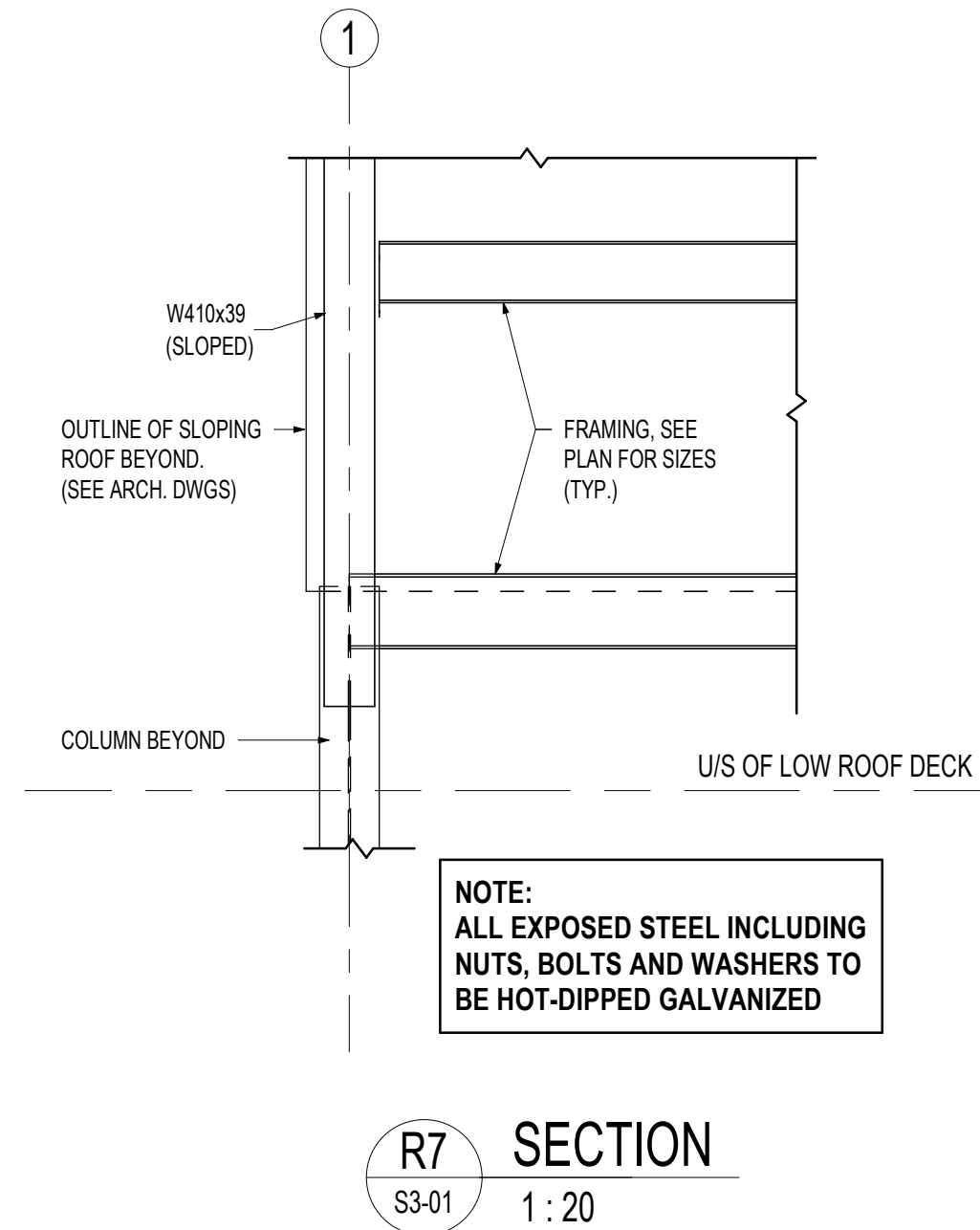
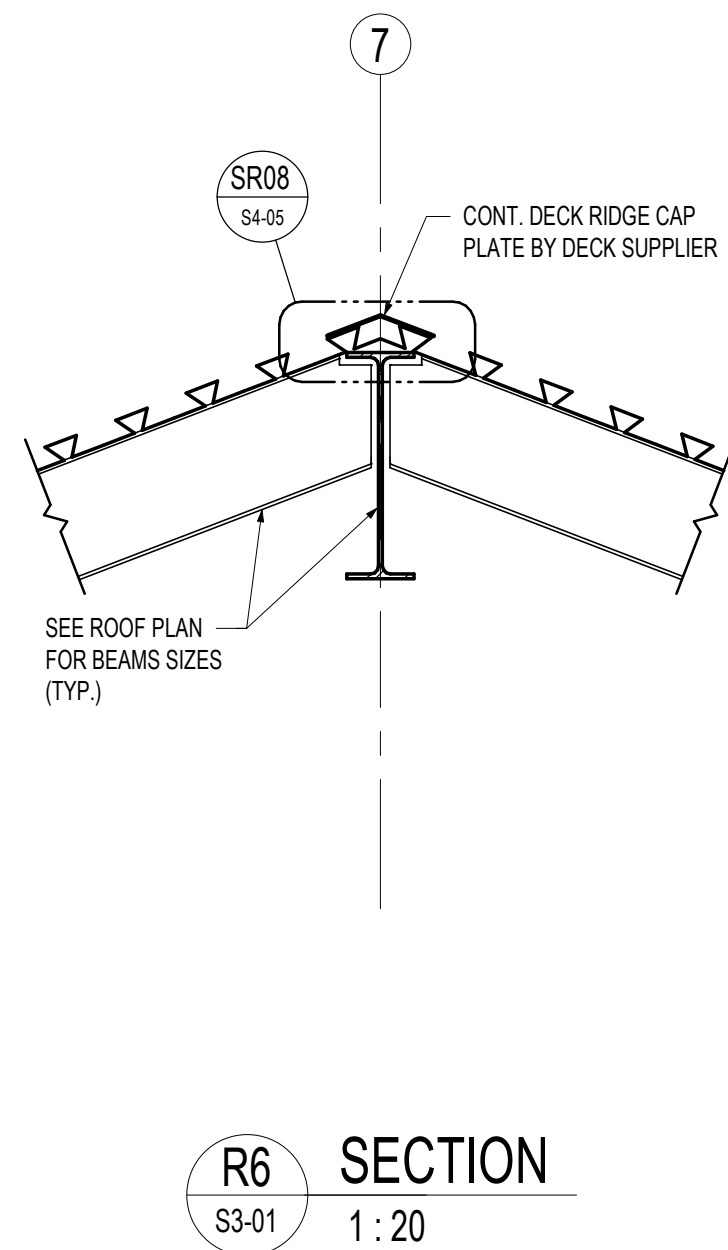
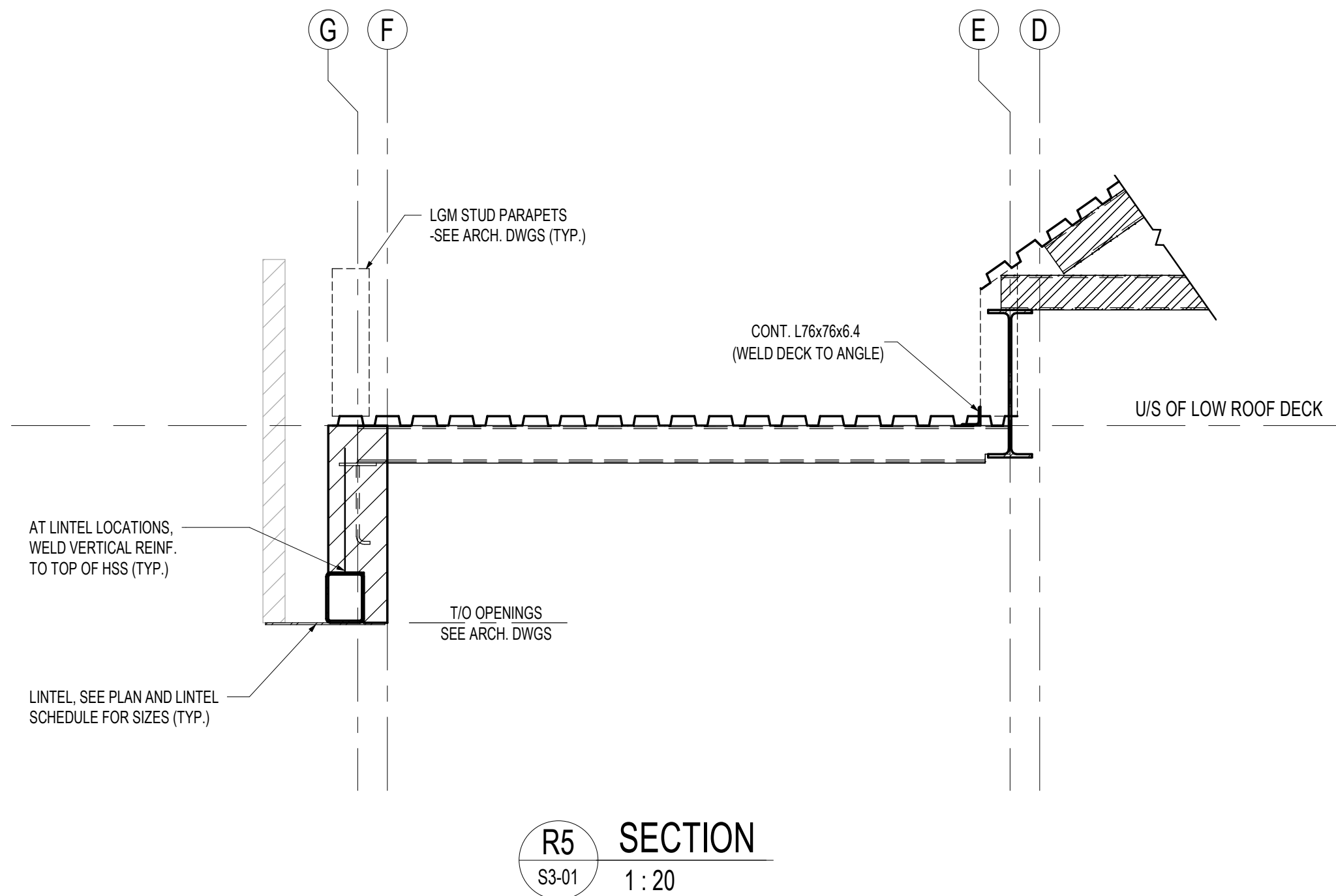
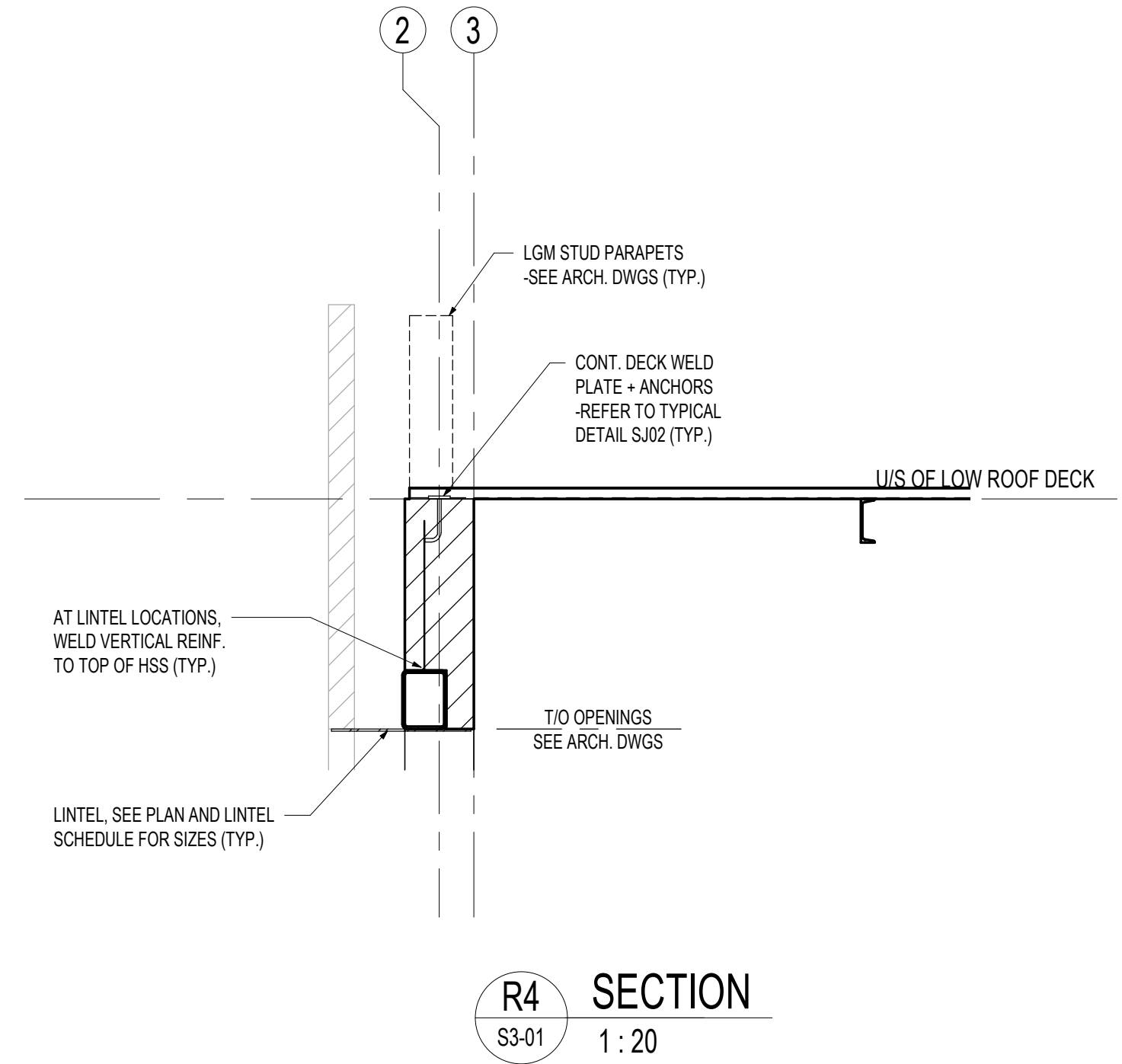
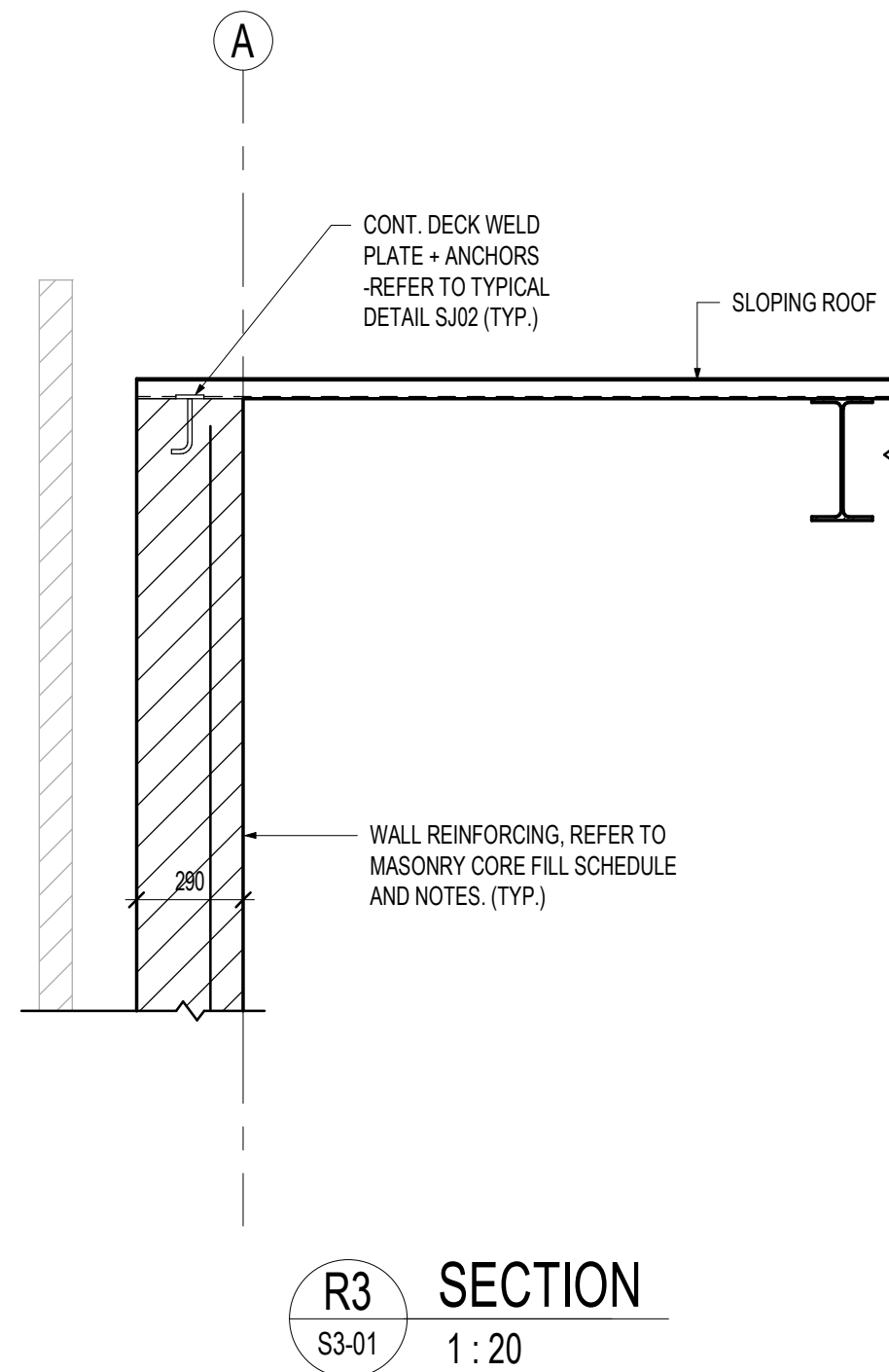
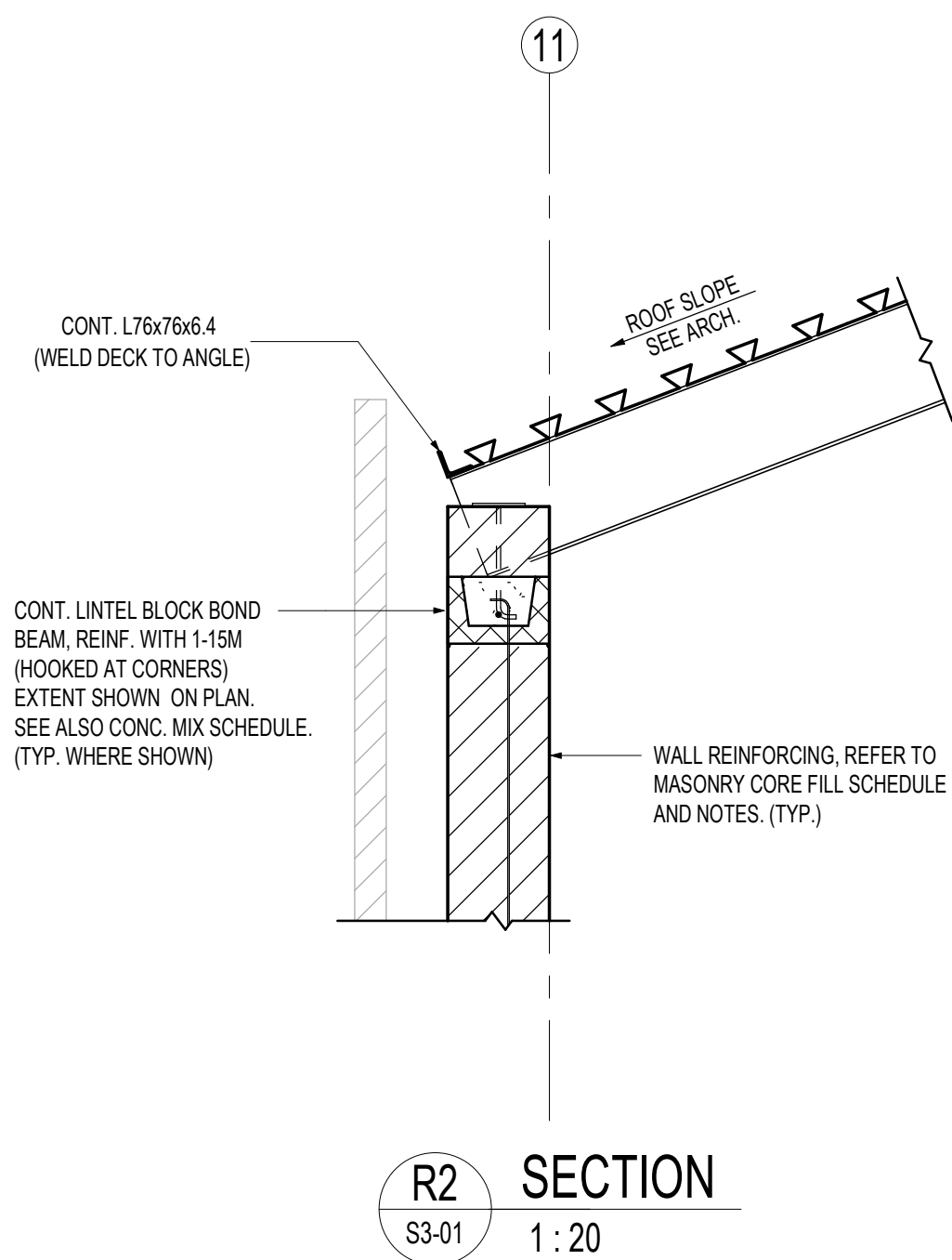
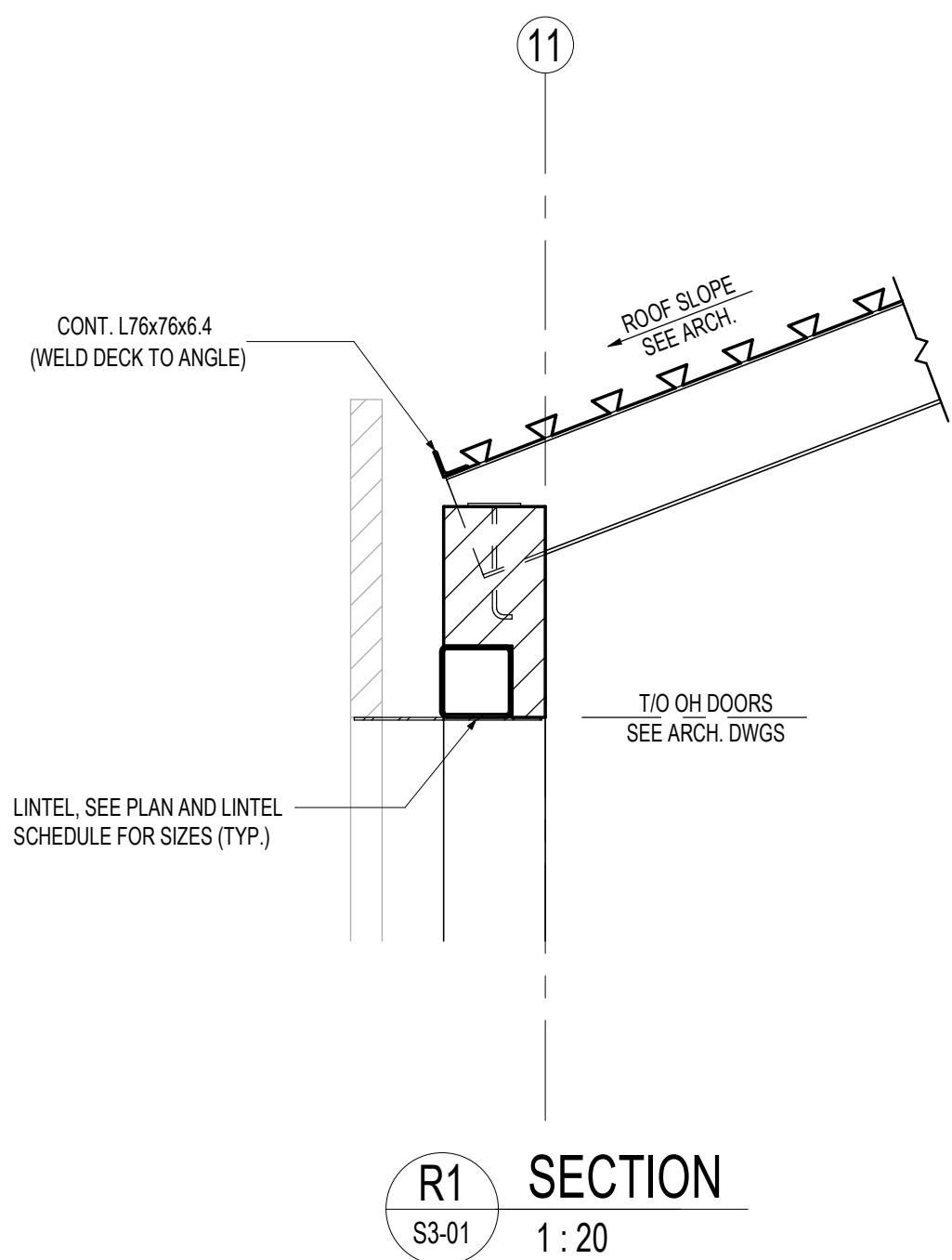
F7 SECTION  
S2-01 1:20

**NOTE:**  
TYPICAL FOUNDATION WALL REINFORCING  
(UNLESS NOTED OTHERWISE ON SECTIONS  
OR SHEAR WALL ELEVATIONS)  
10M @460 VEF  
10M @320 HEF  
  
FOR 190mm/200mm WALLS:  
10M @320 VERT. CENTRE OF WALL  
10M @200 HORIZ. CENTRE OF WALL

STEEL COLUMN SCHEDULE							
U/S LOW ROOF DECK							
	W200x36	W200x36	W200x36	W200x36	W200x36	HSS 152x152x6.4	HSS 152x152x6.4
GROUND FLOOR							
U/S B.P.L. -350 (U.N.O.)							
BASE PLATE SIZE ANCHOR RODS	375x25x375 (4)-AR1	375x25x375 (4)-AR1	375x25x375 (4)-AR1	375x25x375 (4)-AR1	375x25x375 (4)-AR1	375x25x375 (4)-AR1	375x25x375 (4)-AR1
PIER SIZE VERTICAL REINF. TIES	600x600 10-15V 10@300T	600x600 10-15V 10@300T	600x600 10-15V 10@300T	600x600 10-15V 10@300T	600x600 10-15V 10@300T	600x600 10-15V 10@300T	600x600 10-15V 10@300T
Column Locations	B-1	E-1	E-2	E-8	E-9	G-5	G-6

STEEL COLUMN SCHEDULE NOTES:

- FOR GRADE OF STRUCTURAL STEEL SEE GENERAL NOTES AND SPECIFICATION.
- LOADS FOR COLUMNS REPRESENT THE FACTORED LOAD IN KILONEWTONS APPLIED AT THE BASE OF THE COLUMN AND DO NOT INCLUDE THE WEIGHT OF THE FOUNDATION.
- BASE PLATE AND / OR CAP PLATE DIMENSION GIVEN LAST TO BE PARALLEL WITH COLUMN WEB.
- REFER ALSO TO TYPICAL NOTES AND DETAIL DRAWINGS.
- REFER TO STEEL COLUMN SCHEDULE FOR ANCHOR RODS AND FOR COLUMN BASE PLATE SIZES
- FOR ALL COLUMNS ABUTTING MASONRY, PROVIDE ADJUSTABLE MASONRY ANCHORS AS PER TYPICAL DETAIL. SEE TYPICAL DETAIL DRAWINGS.

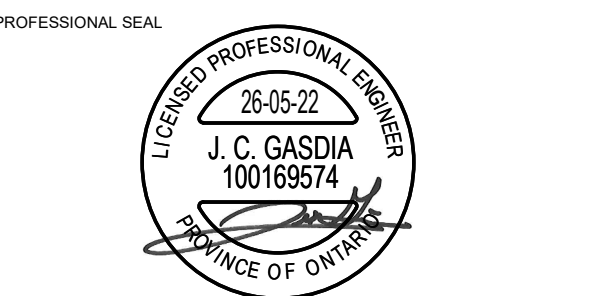


THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
REMAIN THE COPYRIGHT PROPERTY OF  
Salas O'Brien  
AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

ISSUE OR REVISION		
NO.	ISSUED FOR	DATE
1	ISSUED FOR 90% SUBMISSION	NOV/17/2020
3	RE-ISSUED FOR PERMIT	JAN/13/2026
4	IFC	MAY/22/2026

PROJECT :  
**YORK REGION PRS #33**  
**RFTC 379-21**  
CLIENT  
**York Region**  
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR  
TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES  
ARE TO BE REPORTED TO THE CONSULTANT.  
2960 TESTON ROAD, VAUGHAN

**Salas O'Brien**  
2235 Sheppard Ave. E.  
Toronto, ON  
Suite No. 1100  
M2J 5B5



DWG TITLE  
**ROOF SECTIONS**

ORIENTATION

DATE	MAY 2026		
SCALE	1 : 20	DRAWN BY	AE
DWG STATUS :	IFC		
PROJECT No.	20190540		
DRAWING No.	S3-01		
REVISION	4		



STANDARD ABBREVIATIONS		A01	STEEL DECK NOTES	A05	CAST-IN-PLACE CONCRETE NOTES	A03.1	CAST-IN-PLACE CONCRETE NOTES	A03.2
@ -At ADJ -Adjustable AIFB -Asphalt Impregnated Fibre Board ALT -Alternate ARCH -Architectural A. ROD(A.R.) -Anchor Rod ASL -Accumulated Snow Loading	H (HOR) -Horizontal HEF -Horizontal Each Face HIF -Horizontal Inside Face HOF -Horizontal Outside Face HSC -Horizontally Slotted Connection HSS -Hollow Structural Section	S -Standard Beam SD -Step Down Footing SDL -Superimposed Dead Load SECT -Section SL -Slab SQ -Square SSC -Slab on Grade S.P.F. -Spruce/Pine/Fir SPEC -Specifications ST -Steel STD -Standards STR -Straight STRCT -Structural	1. GENERAL 1.1. DESIGN, FABRICATION, HANDLING AND ERECTION SHALL CONFORM TO THE FOLLOWING STANDARDS: 1.1.a. CSA S136 1.1.b. CSSBI 10M ..... STANDARD FOR STEEL ROOF DECK 1.1.c. CSSBI 12M ..... STANDARD FOR COMPOSITE STEEL DECK 1.1.d. ASTM A653 ..... SPECIFICATIONS FOR STEEL SHEET, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY COATED (GALVANNEALED) BY THE HOT DIP PROCESS. 1.1.e. WELDING SHALL CONFORM TO CSA STANDARD W47 AND BE PERFORMED BY A FABRICATOR CERTIFIED TO CSA STANDARD W47.1. 1.2. THE STEEL DECK SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER, SHOP DRAWINGS AND CALCULATIONS BEARING THE STAMP AND SIGNATURE OF THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION AND ERECTION. 1.3. NO HANGERS OR BRACKETS SHALL BE HUNG DIRECTLY FROM THE FLOOR OR ROOF DECK. ALL POINT LOADS MUST BE APPLIED DIRECTLY TO STRUCTURAL STEEL FRAMING UNLESS OTHERWISE SHOWN OR APPROVED BY THE STRUCTURAL CONSULTANT. 1.4. WHEREVER STRUCTURAL FRAMING PERMITS, STEEL DECK SHALL BE DESIGNED AND FABRICATED TO SPAN CONTINUOUSLY OVER AT LEAST 4 SUPPORTS (3 SPANS). PROVIDE AN ADEQUATE INCREASE IN THICKNESS OF METAL TO COMPENSATE FOR CONTINUITY WHEREVER FLOOR SUPPORTS MAY OCCUR. END LAPS TO BE 50mm (2") MIN. AND BE LOCATED OVER SUPPORTS. 1.5. ROOF DECK SHALL BE FORMED WITH INTEGRAL RISBS IN ORDER TO SAFELY SUPPORT THE LOADS GIVEN ON THE DRAWINGS OVER THE SPANS REQUIRED. DECK THICKNESS GIVEN ON DRAWINGS IS MINIMUM ASSUMED ALLOWABLE THICKNESS AND MUST BE DESIGNED BY THE DECK SUPPLIER. 1.5.a. DEFLECTION OF ROOF DECK UNDER LIVE OR SNOW LOAD ONLY SHALL NOT EXCEED 1/300TH OF SPAN. 1.6. FLOOR DECK SHALL BE FORMED WITH INTEGRAL RISBS AND EMBOSMENTS FOR COMPOSITE ACTION WITH CONCRETE SLAB IN ORDER TO SAFELY SUPPORT THE LOADS GIVEN ON THE DRAWINGS OVER THE SPANS REQUIRED. IN ADDITION, THE DECK SHALL SAFELY SUPPORT ALL CONSTRUCTION LOADS WITH NO SHORING UNTIL CONCRETE IS SET. DECK THICKNESS GIVEN ON DRAWINGS IS MINIMUM ALLOWED. 1.6.a. DEFLECTION OF COMPOSITE FLOOR UNDER LIVE LOAD ONLY SHALL NOT EXCEED 1/600TH OF SPAN. 1.7. DESIGN AND DETAIL ON SHOP DRAWINGS ALL CONNECTIONS TO SUPPORTING MEMBERS FOR ALL COMBINATIONS OF DIAPHRAGM SHEAR AND UPLIFT FORCES ACTING ON THE ROOF DECK.	1. GENERAL 1.1. DESIGN, FABRICATION, HANDLING AND ERECTION SHALL CONFORM TO THE FOLLOWING STANDARDS: 1.1.a. CSA S136 1.1.b. CSSBI 10M ..... STANDARD FOR STEEL ROOF DECK 1.1.c. CSSBI 12M ..... STANDARD FOR COMPOSITE STEEL DECK 1.1.d. ASTM A653 ..... SPECIFICATIONS FOR STEEL SHEET, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY COATED (GALVANNEALED) BY THE HOT DIP PROCESS. 1.1.e. WELDING SHALL CONFORM TO CSA STANDARD W47 AND BE PERFORMED BY A FABRICATOR CERTIFIED TO CSA STANDARD W47.1. 1.2. THE STEEL DECK SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER, SHOP DRAWINGS AND CALCULATIONS BEARING THE STAMP AND SIGNATURE OF THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION AND ERECTION. 1.3. NO HANGERS OR BRACKETS SHALL BE HUNG DIRECTLY FROM THE FLOOR OR ROOF DECK. ALL POINT LOADS MUST BE APPLIED DIRECTLY TO STRUCTURAL STEEL FRAMING UNLESS OTHERWISE SHOWN OR APPROVED BY THE STRUCTURAL CONSULTANT. 1.4. WHEREVER STRUCTURAL FRAMING PERMITS, STEEL DECK SHALL BE DESIGNED AND FABRICATED TO SPAN CONTINUOUSLY OVER AT LEAST 4 SUPPORTS (3 SPANS). PROVIDE AN ADEQUATE INCREASE IN THICKNESS OF METAL TO COMPENSATE FOR CONTINUITY WHEREVER FLOOR SUPPORTS MAY OCCUR. END LAPS TO BE 50mm (2") MIN. AND BE LOCATED OVER SUPPORTS. 1.5. ROOF DECK SHALL BE FORMED WITH INTEGRAL RISBS IN ORDER TO SAFELY SUPPORT THE LOADS GIVEN ON THE DRAWINGS OVER THE SPANS REQUIRED. DECK THICKNESS GIVEN ON DRAWINGS IS MINIMUM ASSUMED ALLOWABLE THICKNESS AND MUST BE DESIGNED BY THE DECK SUPPLIER. 1.5.a. DEFLECTION OF ROOF DECK UNDER LIVE OR SNOW LOAD ONLY SHALL NOT EXCEED 1/300TH OF SPAN. 1.6. FLOOR DECK SHALL BE FORMED WITH INTEGRAL RISBS AND EMBOSMENTS FOR COMPOSITE ACTION WITH CONCRETE SLAB IN ORDER TO SAFELY SUPPORT THE LOADS GIVEN ON THE DRAWINGS OVER THE SPANS REQUIRED. IN ADDITION, THE DECK SHALL SAFELY SUPPORT ALL CONSTRUCTION LOADS WITH NO SHORING UNTIL CONCRETE IS SET. DECK THICKNESS GIVEN ON DRAWINGS IS MINIMUM ALLOWED. 1.6.a. DEFLECTION OF COMPOSITE FLOOR UNDER LIVE LOAD ONLY SHALL NOT EXCEED 1/600TH OF SPAN. 1.7. DESIGN AND DETAIL ON SHOP DRAWINGS ALL CONNECTIONS TO SUPPORTING MEMBERS FOR ALL COMBINATIONS OF DIAPHRAGM SHEAR AND UPLIFT FORCES ACTING ON THE ROOF DECK.	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 APPROPRIATE WATER REDUCING ADDITIVE TO 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 SLAB AND BEAM FORMS WITH AN UPWARD CAMBER AS INDICATED ON PLANS WITHIN 1" WHERE CAMBERS ARE NOT NOTED ON DESIGNS. CAMBER SLABS AND BEAMS FOR SPAN500 AT INTERIOR BAYS, AND CANTILEVER LENGTH250 AT CANTILEVER. CAMBER BOTH THE UNDERSIDE AND TOP OF CONCRETE IN A PARABOLIC PROFILE, WHILE MAINTAINING THE INDICATED STRUCTURAL THICKNESS OF MEMBERS. 2.6. PROVIDE STANDARD ADJUSTABLE MASONRY ANCHOR SLOTS FOR ALL MASONRY FACING OR ABUTTING CONCRETE FACES. 2.7. 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. 2.8. REINFORCING STEEL UNLESS SPECIFICALLY NOTED, SHALL BE DEFORMED BARS CONFORMING TO CAN/CSA -C30.18-M GRADE 400 (58000 PSI). 2.9. WELDED WIRE FABRIC TO BE SUPPLIED IN FLAT SHEETS ONLY. UNLESS APPROVED OTHERWISE. 2.10. REINFORCING SHALL BE DETAIL, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI DETAILING MANUAL AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA. 2.11. 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. 2.12. NON-SHRINK GROUT TO BE AN APPROVED, PRE-MIXED PROPRIETARY PRODUCT. 2.13. PROVIDE APPROVED EXTRUDED PVC WATERSTOPS AT JOINTS AND STYLE INDICATED, WITH PRE-WELDED CORNERS AND INTERSECTIONS. SEE ALSO TYPICAL DETAILS. 2.14. 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. 2.15. SHEAR REINFORCEMENT AT SLAB CONNECTIONS AS SHOWN ON DRAWINGS AND DETAILS. SHALL BE STUDBARS 50% AS MANUFACTURED BY BECOM. THE COMPLETE AND FINISHED STUDBAR SHALL BE 100% EVALUATED AND WELDED. SHALL TAKE PLACE IN A JOE AS APPROVED AND AUDITED FACILITY. STUDBAR50 SHALL CONFORM TO THE LATEST UPDATE OF ASTM A1004.	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-RAY, 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 ENGINEERING LTD. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE X-RAY OR SCAN RESULTS. (G) CORE DRILL NEW HOLES 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 FOR INSPECTION AND TESTING, SEE GENERAL NOTES AND/OR SPECIFICATION.	
D FIR -Douglas Fir DET -Dean DIAG -Diagram Ø (DIA) -Diameter DIM -Dimension DJ -Double Joint DL -Lead Load DLO -Ditto DWG -Drawing DWL -Double DT -Double Tee	I -Inside Face INT -Interior INV -Invert JT -Joint kg -Kilogram K/m -Kilo Newton Metres K/m <sup>2</sup> -Kilo Newton per Square Metre K/m KPa -Kilo Pascals	TEMP -Temperature TJ -Factored Tension Force TJ -Tie Joint TLL -Top Lower Layer TLM -Factored Torsional Moment TML -Top Middle Layer TOD, TID -Top of Deck T.O.F. -Top of Footing TOS, TIS-Top of Slab TOST -Top of Slab TSF -Tons per Square Foot TUL -Top Upper Layer TYL -Typical	2. PRODUCTS 2.1. UNLESS OTHERWISE NOTED ROOF DECK AND /OR COMPOSITE DECK SHALL BE FORMED OF METALLIC COATED SHEET STEEL CONFORMING TOASTM A653 A653M, STRUCTURAL QUALITY GRADE : 230" WITH A 275 ZINC COATING, (GALVANNEAL). 2.2. UNLESS OTHERWISE NOTED DECK SHALL BE SINGLE FLUTED ELEMENT WITH INTEGRAL RISBS OF DEPTH AND MIN. BASE NOMINAL THICKNESS (B51) AS NOTED ON THE DRAWINGS. DECK SHALL HAVE INTERLOCKING JOINTS BETWEEN PANELS ( MIN. BNT, 0.76mm (0.30"). 2.3. COVER PLATES, CELL CLOSURES, FLASHINGS AND REINFORCING STIFFENERS FOR UNSUPPORTED EDGES TO BE SUPPLIED OF SIMILAR MATERIAL AND ZINC COATING TO THAT FOR DECK, UNLESS NOTED. 2.4. PRIMER PAINT TO BE ZINC RICH, READY MIX TO CAN/CSB-1181 FOR FIELD "TOUCH-UP" OF WELD BURNS AFTER DECK IS INSTALLED. 2.5. UNLESS OTHERWISE SHOWN FOR OPENINGS THROUGH ROOF DECK FROM 150mm to 450mm (6" to 18") ACROSS THE FLUTES THE DECK SUPPLIER SHALL PROVIDE NOT LESS THAN 1/4"x16 1/8" ANGLE (2"x2x 1/4 L), REINFORCEMENT TO FRAME AROUND EACH SIDE OF THE OPENING PERPENDICULAR TO THE FLUTES, WELDED TO AT LEAST TWO FLUTES EACH SIDE OF THE OPENING. 2.6. FOR ROOF OPENINGS OVER 450mm (18") ACROSS THE FLUTES, AND FOR AREAS OF CONCENTRATED LOAD, REINFORCE IN ACCORDANCE WITH STRUCTURAL FRAMING DETAILS SHOWN ON PLANS OR TYPICAL DETAILS.	3. EXECUTION 3.1. SUPPLY AND PLACE DECK PACKING AS REQUIRED TO PRODUCE AN EVEN BEARING PRESSURE AT SUPPORTS. 3.2. FOR STEEL ROOF DECK, UNLESS OTHERWISE DETERMINED DURING THE DIAPHRAGM AND UPLIFT CONNECTION DESIGN OR SPECIFIED OTHERWISE IN THE SPECIFICATIONS OR ENGINEERING DRAWINGS, THE MINIMUM ATTACHMENT OF THE DECK TO THE BEARING SURFACES AND THE MINIMUM SIDE LAP CONNECTIONS BETWEEN DECKS SHALL BE: 3.2.A. For 30mm DEEP DECK PROFILES, CONNECT THE FIRST, THIRD, FIFTH AND SEVENTH LOW CORRUGATIONS (3/4" CONFIGURATION), AND EACH SUPPORT PARALLEL TO FLUTE DIRECTION AT 300mm [12"] MAXIMUM CENTERS. CONNECTIONS SHALL BE MADE USING EITHER AN ARC SPOT WELD WITH 20mm [3/4"] NOMINAL TOP DIAMETER, OR MECHANICALLY FASTENED USING HILTI POWDER ACTUATED FASTENERS (X-HS2K4, HILTI X-ENP19, OR EQUIVALENT). 3.2.B. For 19mm DEEP DECK PROFILES, CONNECT THE FIRST, THIRD AND FIFTH LOW CORRUGATIONS (2/3" CONFIGURATION), AND EACH SUPPORT PARALLEL TO FLUTE DIRECTION AT 300mm [12"] MAXIMUM CENTERS. CONNECTIONS SHALL BE MADE USING EITHER AN ARC SPOT WELD WITH 20mm [3/4"] NOMINAL TOP DIAMETER, OR MECHANICALLY FASTENED USING HILTI POWDER ACTUATED FASTENERS (X-HS2K4, HILTI X-ENP19, OR EQUIVALENT). 3.2.C. FOR ROOF DECKS, SIDE LAPS OF ADJACENT NESTABLE UNITS SHALL BE CRIMPED TOGETHER AT 900mm [36"] CENTRES, OR FASTENED WITH HILTI M-HMM SCREWS (SLO1, SLO2, OR EQUIVALENT). 3.3. FOR STEEL FLOOR DECK, UNLESS OTHERWISE DETERMINED DURING THE DIAPHRAGM CONNECTION DESIGN OR SPECIFIED OTHERWISE IN THE SPECIFICATIONS OR ENGINEERING DRAWINGS, THE MINIMUM ATTACHMENT OF THE DECK TO THE BEARING SURFACES AND THE MINIMUM SIDE LAP CONNECTIONS BETWEEN DECKS UNITS SHALL BE: 3.3.A. SIDE LAPS OF ADJACENT FLOOR UNITS SHALL BE CRIMPED TOGETHER AT 600mm [24"] MAXIMUM ON CENTRE, BUT NOT EXCEEDING THE SPACING REQUIRED FOR THE APPLICABLE ULC FIRE RATED ASSEMBLY. 3.3.B. DECK SUPPORTS PARALLEL AND PERPENDICULAR TO FLUTES SHALL BE WELDED WITH 20mm [3/4"] WELDS AT 300mm [12"] MAXIMUM SPACING, BUT NOT EXCEEDING THE SPACINGS REQUIRED FOR THE APPLICABLE ULC FIRE RATED ASSEMBLY. 3.3.C. THE REQUIRED RIDGE WELDS AT SUPPORTS MAY BE SUBSTITUTED WITH POWDER ACTUATED FASTENERS THAT PROVIDE EQUIVALENT DIAPHRAGM SHEAR CAPACITY PER METRE. 3.4. INSTALL ALL POWDER ACTUATED AND SCREW FASTENERS ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. 3.5. WELD STOP SHEAR CONNECTORS THROUGH DECK WHERE REQUIRED BY DRAWINGS. 3.6. "TOUCH-UP" GALVANIZED OR GALVANNEALED SURFACES WITH SPECIFIED PRIMER AT WELDS AND SCRAPES, ETC., BOTH UPPER AND LOWER SURFACES. 3.7. DO NOT SUSPEND CEILING OR MECHANICAL/ELECTRICAL SERVICES FROM US OF STEEL DECK.	3. EXECUTION 3.1. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE (≥ 28 DAYS) SHALL BE AS NOTED ON THE DRAWINGS (20MPa MINIMUM). 3.2. SLUMP AT THE POINT OF DISCHARGE SHALL BE CONSISTENT AT 80 mm ±30mm (3" ±1.18") UNLESS 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 1000mm (30'-0") UNLESS CONTROL JOINTS ARE PROVIDED AS PER DETAIL. CMV02, TWO THRESHOLD OR POUR TO BE DISCUSSED WITH ENGINEER PRIOR TO PROCEEDING. 3.5. CONSTRUCTION JOINTS FOR WALLS, SLABS, AND BEAMS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT BEFORE CONSTRUCTION. GENERAL JOINTS IN SLABS SHALL BE AT RIGHT ANGLES TO THE SPANS, AT MID-SPAN IF POSSIBLE AND BE CLEAR OF SUPPORTS AND POINT LOADS. 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 LAMP 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 FLUTED 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") DOVELS 80x600 (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.	4. QUALITY CONTROL 4.1 FOR INSPECTION AND TESTING, SEE GENERAL NOTES AND/OR SPECIFICATION.		
E-W -East-West E -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	INT -Interior INV -Invert JT -Joint kg -Kilogram K/m -Kilo Newton Metres K/m <sup>2</sup> -Kilo Newton per Square Metre K/m KPa -Kilo Pascals	TEMP -Temperature TJ -Factored Tension Force TJ -Tie Joint TLL -Top Lower Layer TLM -Factored Torsional Moment TML -Top Middle Layer TOD, TID -Top of Deck T.O.F. -Top of Footing TOS, TIS-Top of Slab TOST -Top of Slab TSF -Tons per Square Foot TUL -Top Upper Layer TYL -Typical	3.4. INSTALL ALL POWDER ACTUATED AND SCREW FASTENERS ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS. 3.5. WELD STOP SHEAR CONNECTORS THROUGH DECK WHERE REQUIRED BY DRAWINGS. 3.6. "TOUCH-UP" GALVANIZED OR GALVANNEALED SURFACES WITH SPECIFIED PRIMER AT WELDS AND SCRAPES, ETC., BOTH UPPER AND LOWER SURFACES. 3.7. DO NOT SUSPEND CEILING OR MECHANICAL/ELECTRICAL SERVICES FROM US OF STEEL DECK.	4. QUALITY CONTROL 4.1. AN INDEPENDENT INSPECTOR AND TESTING COMPANY IS TO BE ENGAGED TO CARRY OUT AND REPORT ON THE FOLLOWING INSPECTION SERVICES: 4.1.a. SECTION PROFILE, GAUGE AND STEEL GRADE. 4.1.b. ZINC COATING. 4.1.c. WELD JOINTS.	1. GENERAL 1.1. DESIGN AND CONSTRUCTION IS TO CONFORM TO THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE, AND ANY APPLICABLE REQUIREMENTS 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. 1.2. 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. 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 APPROPRIATE WATER REDUCING ADDITIVE TO 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 SLAB AND BEAM FORMS WITH AN UPWARD CAMBER AS INDICATED ON PLANS WITHIN 1" WHERE CAMBERS ARE NOT NOTED ON DESIGNS. CAMBER SLABS AND BEAMS FOR SPAN500 AT INTERIOR BAYS, AND CANTILEVER LENGTH250 AT CANTILEVER. CAMBER BOTH THE UNDERSIDE AND TOP OF CONCRETE IN A PARABOLIC PROFILE, WHILE MAINTAINING THE INDICATED STRUCTURAL THICKNESS OF MEMBERS. 2.6. PROVIDE STANDARD ADJUSTABLE MASONRY ANCHOR SLOTS FOR ALL MASONRY FACING OR ABUTTING CONCRETE FACES. 2.7. 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. 2.8. REINFORCING STEEL UNLESS SPECIFICALLY NOTED, SHALL BE DEFORMED BARS CONFORMING TO CAN/CSA -C30.18-M GRADE 400 (58000 PSI). 2.9. WELDED WIRE FABRIC TO BE SUPPLIED IN FLAT SHEETS ONLY. UNLESS APPROVED OTHERWISE. 2.10. REINFORCING SHALL BE DETAIL, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI DETAILING MANUAL AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA. 2.11. 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. 2.12. NON-SHRINK GROUT TO BE AN APPROVED, PRE-MIXED PROPRIETARY PRODUCT. 2.13. PROVIDE APPROVED EXTRUDED PVC WATERSTOPS AT JOINTS AND STYLE INDICATED, WITH PRE-WELDED CORNERS AND INTERSECTIONS. SEE ALSO TYPICAL DETAILS. 2.14. 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. 2.15. SHEAR REINFORCEMENT AT SLAB CONNECTIONS AS SHOWN ON DRAWINGS AND DETAILS. SHALL BE STUDBARS 50% AS MANUFACTURED BY BECOM. THE COMPLETE AND FINISHED STUDBAR SHALL BE 100% EVALUATED AND WELDED. SHALL TAKE PLACE IN A JOE AS APPROVED AND AUDITED FACILITY. STUDBAR50 SHALL CONFORM TO THE LATEST UPDATE OF ASTM A1004.	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-RAY, 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 ENGINEERING LTD. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE X-RAY OR SCAN RESULTS. (G) CORE DRILL NEW HOLES 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 FOR INSPECTION AND TESTING, SEE GENERAL NOTES AND/OR SPECIFICATION.
FON -Foundation FF -Far Face FIN -Finished FL -Floor FMC -Full Moment Connection FT -Foot / Feet FTG -Footing	INT -Interior INV -Invert JT -Joint kg -Kilogram K/m -Kilo Newton Metres K/m <sup>2</sup> -Kilo Newton per Square Metre K/m KPa -Kilo Pascals	TEMP -Temperature TJ -Factored Tension Force TJ -Tie Joint TLL -Top Lower Layer TLM -Factored Torsional Moment TML -Top Middle Layer TOD, TID -Top of Deck T.O.F. -Top of Footing TOS, TIS-Top of Slab TOST -Top of Slab TSF -Tons per Square Foot TUL -Top Upper Layer TYL -Typical	4.1. AN INDEPENDENT INSPECTOR AND TESTING COMPANY IS TO BE ENGAGED TO CARRY OUT AND REPORT ON THE FOLLOWING INSPECTION SERVICES: 4.1.a. SECTION PROFILE, GAUGE AND STEEL GRADE. 4.1.b. ZINC COATING. 4.1.c. WELD JOINTS.	1. GENERAL 1.1. DESIGN AND CONSTRUCTION IS TO CONFORM TO THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE, AND ANY APPLICABLE REQUIREMENTS 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. 1.2. 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. 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 APPROPRIATE WATER REDUCING ADDITIVE TO 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 SLAB AND BEAM FORMS WITH AN UPWARD CAMBER AS INDICATED ON PLANS WITHIN 1" WHERE CAMBERS ARE NOT NOTED ON DESIGNS. CAMBER SLABS AND BEAMS FOR SPAN500 AT INTERIOR BAYS, AND CANTILEVER LENGTH250 AT CANTILEVER. CAMBER BOTH THE UNDERSIDE AND TOP OF CONCRETE IN A PARABOLIC PROFILE, WHILE MAINTAINING THE INDICATED STRUCTURAL THICKNESS OF MEMBERS. 2.6. PROVIDE STANDARD ADJUSTABLE MASONRY ANCHOR SLOTS FOR ALL MASONRY FACING OR ABUTTING CONCRETE FACES. 2.7. 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. 2.8. REINFORCING STEEL UNLESS SPECIFICALLY NOTED, SHALL BE DEFORMED BARS CONFORMING TO CAN/CSA -C30.18-M GRADE 400 (58000 PSI). 2.9. WELDED WIRE FABRIC TO BE SUPPLIED IN FLAT SHEETS ONLY. UNLESS APPROVED OTHERWISE. 2.10. REINFORCING SHALL BE DETAIL, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI DETAILING MANUAL AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA. 2.11. 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. 2.12. NON-SHRINK GROUT TO BE AN APPROVED, PRE-MIXED PROPRIETARY PRODUCT. 2.13. PROVIDE APPROVED EXTRUDED PVC WATERSTOPS AT JOINTS AND STYLE INDICATED, WITH PRE-WELDED CORNERS AND INTERSECTIONS. SEE ALSO TYPICAL DETAILS. 2.14. 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. 2.15. SHEAR REINFORCEMENT AT SLAB CONNECTIONS AS SHOWN ON DRAWINGS AND DETAILS. SHALL BE STUDBARS 50% AS MANUFACTURED BY BECOM. THE COMPLETE AND FINISHED STUDBAR SHALL BE 100% EVALUATED AND WELDED. SHALL TAKE PLACE IN A JOE AS APPROVED AND AUDITED FACILITY. STUDBAR50 SHALL CONFORM TO THE LATEST UPDATE OF ASTM A1004.	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-RAY, 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 ENGINEERING LTD. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE X-RAY OR SCAN RESULTS. (G) CORE DRILL NEW HOLES 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 FOR INSPECTION AND TESTING, SEE GENERAL NOTES AND/OR SPECIFICATION.	
GA -Gauge GALV -Galvanized GEN -General	INT -Interior INV -Invert JT -Joint kg -Kilogram K/m -Kilo Newton Metres K/m <sup>2</sup> -Kilo Newton per Square Metre K/m KPa -Kilo Pascals	TEMP -Temperature TJ -Factored Tension Force TJ -Tie Joint TLL -Top Lower Layer TLM -Factored Torsional Moment TML -Top Middle Layer TOD, TID -Top of Deck T.O.F. -Top of Footing TOS, TIS-Top of Slab TOST -Top of Slab TSF -Tons per Square Foot TUL -Top Upper Layer TYL -Typical	4.1. AN INDEPENDENT INSPECTOR AND TESTING COMPANY IS TO BE ENGAGED TO CARRY OUT AND REPORT ON THE FOLLOWING INSPECTION SERVICES: 4.1.a. SECTION PROFILE, GAUGE AND STEEL GRADE. 4.1.b. ZINC COATING. 4.1.c. WELD JOINTS.	1. GENERAL 1.1. DESIGN AND CONSTRUCTION IS TO CONFORM TO THE REQUIREMENTS OF THE 2012 ONTARIO BUILDING CODE, AND ANY APPLICABLE REQUIREMENTS 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. 1.2. 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. 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 APPROPRIATE WATER REDUCING ADDITIVE TO 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 SLAB AND BEAM FORMS WITH AN UPWARD CAMBER AS INDICATED ON PLANS WITHIN 1" WHERE CAMBERS ARE NOT NOTED ON DESIGNS. CAMBER SLABS AND BEAMS FOR SPAN500 AT INTERIOR BAYS, AND CANTILEVER LENGTH250 AT CANTILEVER. CAMBER BOTH THE UNDERSIDE AND TOP OF CONCRETE IN A PARABOLIC PROFILE, WHILE MAINTAINING THE INDICATED STRUCTURAL THICKNESS OF MEMBERS. 2.6. PROVIDE STANDARD ADJUSTABLE MASONRY ANCHOR SLOTS FOR ALL MASONRY FACING OR ABUTTING CONCRETE FACES. 2.7. 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. 2.8. REINFORCING STEEL UNLESS SPECIFICALLY NOTED, SHALL BE DEFORMED BARS CONFORMING TO CAN/CSA -C30.18-M GRADE 400 (58000 PSI). 2.9. WELDED WIRE FABRIC TO BE SUPPLIED IN FLAT SHEETS ONLY. UNLESS APPROVED OTHERWISE. 2.10. REINFORCING SHALL BE DETAIL, BENT, PLACED AND SUPPORTED TO CONFORM TO ACI DETAILING MANUAL AND THE MANUAL OF STANDARD PRACTICE PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA. 2.11. 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. 2.12. NON-SHRINK GROUT TO BE AN APPROVED, PRE-MIXED PROPRIETARY PRODUCT. 2.13. PROVIDE APPROVED EXTRUDED PVC WATERSTOPS AT JOINTS AND STYLE INDICATED, WITH PRE-WELDED CORNERS AND INTERSECTIONS. SEE ALSO TYPICAL DETAILS. 2.14. 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. 2.15. SHEAR REINFORCEMENT AT SLAB CONNECTIONS AS SHOWN ON DRAWINGS AND DETAILS. SHALL BE STUDBARS 50% AS MANUFACTURED BY BECOM. THE COMPLETE AND FINISHED STUDBAR SHALL BE 100% EVALUATED AND WELDED. SHALL TAKE PLACE IN A JOE AS APPROVED AND AUDITED FACILITY. STUDBAR50 SHALL CONFORM TO THE LATEST UPDATE OF ASTM A1004.	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-RAY, 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 ENGINEERING LTD. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE X-RAY OR SCAN RESULTS. (G) CORE DRILL NEW HOLES 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 FOR INSPECTION AND TESTING, SEE GENERAL NOTES AND/OR SPECIFICATION.	
	INT -Interior INV -Invert JT -Joint kg -Kilogram K/m -Kilo Newton Metres K/m <sup>2</sup> -Kilo Newton per Square Metre K/m KPa -Kilo Pascals	TEMP -Temperature TJ -Factored Tension Force TJ -Tie Joint TLL -Top Lower Layer TLM -Factored Torsional Moment TML -Top Middle Layer TOD, TID -Top of Deck T.O.F. -Top of Footing TOS, TIS-Top of Slab TOST -Top of Slab TSF -Tons per						

LOAD BEARING MASONRY NOTES	A06	LOAD BEARING MASONRY NOTES	A06
<p><b>1. GENERAL</b></p> <p>1.1. UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS, THE FOLLOWING INDICATES THE MINIMUM REQUIREMENTS APPLICABLE TO STRUCTURAL LOAD BEARING MASONRY.</p> <p>1.2. REFER ALSO TO ARCHITECTURAL DRAWINGS AND / OR THE SPECIFICATION FOR REQUIREMENTS OTHER THAN STRUCTURAL, AND FOR NON-LOAD BEARING WALLS AND PARTITIONS.</p> <p>1.3. MASONRY CONSTRUCTION TO CONFORM TO CSA STANDARD S304.1.</p> <p><b>2. PRODUCTS</b></p> <p>2.1. CONCRETE BLOCKS TO BE MODULAR UNITS AS SHOWN ON THE ARCHITECTURAL DRAWINGS AND /OR SPECIFICATION, AND UNLESS OTHERWISE NOTED SHALL BE:</p> <p>2.1.1. FOR BELOW GRADE AND EXTERIOR EXPOSED WALLS USE NORMAL WEIGHT LOAD BEARING UNITS:</p> <p>STANDARD HOLLOW: .....TYPE H / 15 A / M</p> <p>75% SOLID: .....TYPE S / 15 A / M</p> <p>100% SOLID: .....TYPE S / 15 A / M</p> <p>2.1.2. FOR INTERIOR ABOVE GRADE WALLS USE EITHER:</p> <p>2.1.2.1. LIGHTWEIGHT LOAD BEARING BLOCKS:</p> <p>STANDARD HOLLOW: .....TYPE H / 15 C / M</p> <p>75% AND 100% SOLID: .....TYPE S / 15 C / M</p> <p>2.1.2.2. ULTRA LIGHT (OR EQUIVALENT) BLOCKS:</p> <p>STANDARD HOLLOW: .....TYPE H / 15 D / M</p> <p>(REFER TO ARCHITECTURAL DRAWINGS AND SCHEDULES FOR LOCATIONS AND TYPES).</p> <p>2.2. CLAY BRICKS:</p> <p>TO CONFORM TO ONE OR MORE OF CSA STANDARDS A82 (SERIES), SEE ARCHITECTURAL DRAWINGS AND / OR SPECIFICATIONS FOR TYPES AND STYLES OF BRICKS REQUIRED (UNLESS OTHERWISE NOTED, THE MINIMUM COMPRESSIVE STRENGTH (BRICK FLATWISE) GROSS AREA SHALL BE 20 MPa.</p> <p>2.3. MORTAR:</p> <p>TO CONFORM TO CSA A179</p> <p>FOR LAYING ALL LOAD BEARING CONCRETE BLOCKS .....USE TYPE "S" MORTAR UNLESS NOTED.</p> <p>FOR LAYING ALL CLAY BRICKS .....USE TYPE "M" MORTAR UNLESS NOTED.</p> <p>2.4. MASONRY GROUT:</p> <p>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.</p> <p>2.5. MASONRY CONNECTORS (ANCHORS, FASTENERS AND TIES):</p> <p>SHALL CONFORM TO CSA A371, AND BE INSTALLED TO COMPLY WITH CSA A371.</p> <p>SPACING, STRENGTH AND GALVANIZING OF STRAP TIES, DOVETAIL ANCHORS, BAR ANCHORS, ROD ANCHORS, STRAP ANCHORS, WALL AND PARTITION ANCHORS SHALL COMPLY WITH CSA A370.</p> <p>SHALL BE PROVIDED. SEE ARCHITECTURAL DRAWINGS AND/ OR SPECIFICATION FOR DETAILS.</p>		<p>2.6. HORIZONTAL JOINT REINFORCEMENT FOR ALL MASONRY WALLS:</p> <p>THE FOLLOWING ARE MINIMUM REQUIREMENTS:</p> <p>2.6.1. CONFORM TO CSA STANDARDS A371 AND A371.</p> <p>2.6.2. REINFORCEMENT SHALL BE AN APPROVED CONTINUOUS "LADDER" TYPE, PREFABRICATED WITH 3.66mm DIAMETER (9 GAUGE) LONGITUDINAL AND CROSS WIRES.</p> <p>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").</p> <p>2.6.4. OVERLAP SPLICES:</p> <p>SHALL BE A MIN. OF 150mm (6") FOR KNUBBED WIRE AND 300mm (12") FOR PLAIN WIRE.</p> <p>LAPS SHALL BE STAGGERED A MINIMUM OF 750mm (30") FROM COURSE TO COURSE.</p> <p>REINFORCING SHALL NOT PASS THROUGH A VERTICAL CONTROL JOINT UNLESS OTHERWISE SHOWN.</p> <p>2.6.5. CORROSION RESISTANCE:</p> <p>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 488 g/m<sup>2</sup> meter (15 oz. / sq. foot).</p> <p>2.6.6. COMPOSITE AND CAVITY WALLS:</p> <p>WHERE COURSING OF WYTHES DO NOT ALIGN OF WHERE IT IS DESIRABLE AND PERMITTED TO BUILD ONE WYTHE BEFORE THE OTHER, REINFORCING SHALL BE AN APPROVED ADJUSTABLE TYPE WITH A BOX OR EYE SECTION WHICH EXTENDS INTO THE COLLAR JOINT OR CAVITY AND RESTRAINS THE TRANSVERSE MOVEMENT OF THE TWO WYTHES. FOR CAVITY WALLS WITH RIGID INSULATION, EXTENSION SHALL BE DESIGNED TO HOLD THE INSULATION IN PLACE BY USE OF PLASTIC WEDGES OR APPROVED EQUAL. GALVANIZED HOOK STYLE "BOX TIES" OR "PH-TIES" SHALL EXTEND INTO THE FACE WYTHE TO COMPLETE THE ASSEMBLY.</p> <p>2.6.7. PROVIDE ALL PREFABRICATED CORNER AND TEE SECTIONS.</p> <p>2.7. COMPOSITE WALLS- SHALL HAVE THE VERTICAL COLLAR JOINTS BETWEEN WYTHES COMPLETELY FILLED WITH MORTAR OR GROUT.</p> <p>2.8. BOND BEAMS- MADE FROM LINTEL BLOCKS, OR HALF WEB REINFORCED, WHEN SHOWN ON STRUCTURAL DRAWING SHALL CONFORM TO CSA A371.</p> <p>2.9. GROUTING- BY FILLING VOIDS OF HOLLOW UNITS AND REINFORCED HOLLOW UNITS SHALL CONFORM TO CSA A179 (MORTAR IS NOT ACCEPTABLE).</p> <p>2.10. EXPANSION AND CONTROL JOINTS:</p> <p>SHALL BE PROVIDED. SEE ARCHITECTURAL DRAWINGS AND/ OR SPECIFICATION FOR DETAILS.</p> <p><b>3. EXECUTION</b></p> <p>3.1. BEARING ON MASONRY:</p> <p>3.1.1. MINIMUM BEARING ON MASONRY UNLESS OTHERWISE NOTED:-</p> <p>BEAMS (STEEL, CONC., WOOD) ..... 200mm (8") NOMINAL</p> <p>LINTELS (STEEL, CONC., WOOD) ..... 150mm (6") NOMINAL</p> <p>JOISTS (STEEL, WOOD) ..... 100mm (4") NOMINAL</p> <p>SLABS (CAST-IN-PLACE, PRECAST) ..... 100mm (4") NOMINAL</p> <p>STEEL DECKING (ON WELD PLATE) ..... 100mm (4") NOMINAL</p> <p>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.</p> <p>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 DEPT (16" x 8"). SYMMETRICAL UNDER BEARING POINT.</p> <p>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 TOP COURSE IMMEDIATELY BELOW ALL FLOOR AND ROOF BEARING LEVELS.</p> <p>3.2. TOLERANCES:</p> <p>UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS AND/ OR SPECIFICATION, SHALL CONFORM TO CSA A371.</p> <p>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.</p> <p><b>4. QUALITY CONTROL</b></p> <p>4.1. WHEN REQUESTED SAMPLING AND TESTING SHALL CONFORM TO CSA STANDARDS S304.1 AND ASTM C140. REFER ALSO TO GENERAL NOTES.</p>	

THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
REMAIN THE COPYRIGHT PROPERTY OF  
**Salas O'Brien**  
AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

ISSUE OR REVISION		
NO.	ISSUED FOR	DATE
1	ISSUED FOR 90% SUBMISSION	NOV/17/2020
3	RE-ISSUED FOR PERMIT	JAN/13/2026
4	IFC	MAY/22/2026

YORK REGION PRS #33  
RFTC 379-21

2960 TESTON ROAD, VAUGHAN

CLIENT


  
**York Region**

---

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT.

 **Salas  
O'Brien**  
2235 Sheppard Ave. E. Suite No. 1100  
Toronto, ON M2J 5B5

PROFESSIONAL SEAL



DWG TITLE

## GENERAL NOTES

## ORIENTATION

DATE			MAY 2026		
SCALE		DRAWN BY		CHECKED BY	
1 : 1		AE		JG	

IFC

PROJECT No.		20190540
DRAWING No.	S4-01	REVISION 4



TYPICAL CONCRETE COVER TABLE															C01				
VERTICAL ELEMENTS		PROJECT SPECIFIC COMMENTS	BAR SIZE	CONCRETE EXPOSURE															
				CHLORIDES WITH / WITHOUT FREEZE THAW				NO CHLORIDES WITH FREEZE THAW				NO CHLORIDES OR FREEZE THAW							
				COVER TO ALL FACES (mm)				COVER TO ALL FACES (mm)				COVER TO ALL FACES (mm)							
				FIRE RATING (7)				FIRE RATING (7)				FIRE RATING (7)							
				≤ 2 HR		3 HR		4 HR		≤ 2 HR		3 HR		4 HR		≤ 2 HR		3 HR	
WALLS	ANY WALLS EXPOSED TO FIRE ON ONE SIDE ONLY (FOUNDATION, ELEVATOR AND STAIRS, DEMISING WALLS, FIRE SEPARATION WALLS)	Ø ≤ 25M	40 / 60 <sup>(2)</sup>	40 / 60 <sup>(2)</sup>	60		40	40	40	25	25	25							
		30M	45 / 60 <sup>(2)</sup>	45 / 60 <sup>(2)</sup>	60		45	45	45	30	30	30							
		35M	55 / 70 <sup>(2)</sup>	55 / 70 <sup>(2)</sup>	60 / 70 <sup>(2)</sup>		55	55	55	35	35	35							
		45M	70 / 90 <sup>(2)</sup>	70 / 90 <sup>(2)</sup>	70 / 90 <sup>(2)</sup>		70	70	70	45	45	45							
		55M	85 / 110 <sup>(2)</sup>	85 / 110 <sup>(2)</sup>	85 / 110 <sup>(2)</sup>		85	85	85	55	55	55							
HORIZONTAL ELEMENTS		PROJECT SPECIFIC COMMENTS	BAR SIZE	CONCRETE EXPOSURE															
				CHLORIDES WITH / WITHOUT FREEZE THAW (6,7)				NO CHLORIDES WITH FREEZE THAW				NO CHLORIDES OR FREEZE THAW							
				TOP COVER (mm)		BOTTOM & SIDE COVER (mm)		TOP COVER (mm)		BOTTOM & SIDE COVER (mm)		TOP COVER (mm)		BOTTOM & SIDE COVER (mm)					
				FIRE RATING				FIRE RATING				FIRE RATING							
				≤ 2 HR		3 HR		4 HR		≤ 2 HR		3 HR		4 HR		≤ 2 HR		3 HR	
SLABS	Ø ≤ 20M	45	45	45	30	35	40	40	40	40	40	40	25	35	40	25	35	40	
	25M	45	45	45	40	40	40	40	40	40	40	40	25	35	40	25	35	40	
	30M	45	45	45	45	45	45	45	45	45	45	45	30	30	40	30	30	40	
	35M	55	55	55	55	55	55	55	55	55	55	55	35	35	40	35	35	40	
	45M	70	70	70	70	70	70	70	70	70	70	70	45	45	45	45	45	45	
55M	85	85	85	85	85	85	85	85	85	85	85	55	55	55	55	55	55		
ELEMENTS EXPOSED TO EARTH		PROJECT SPECIFIC COMMENTS	BAR SIZE	COVER (mm)															
PERMANENTLY EXPOSED TO SOIL				ALL SIZES				GREATER OF 60mm OR 2.0i				GREATER OF 40mm OR 1.5i							
CAST AGAINST AND PERMANENTLY EXPOSED TO SOIL				ALL SIZES				75											
TABLE NOTES																			
1. CONCRETE COVER SHALL BE MEASURED FROM THE DEEPEST POINT OF TEXTURED CONCRETE SURFACE TO THE NEAREST DEFORMATION OF REINFORCEMENT. REINFORCEMENT INCLUDES TIES, STIRRUPS AND MAIN BARS.																			
2. FOR FIRE RATING INFORMATION, REFER TO ARCHITECTURAL DRAWINGS																			
3. ALL LOAD BEARING ELEMENTS (WALLS AND COLUMNS) IMMEDIATELY BELOW A FLOOR ASSEMBLY MUST HAVE A FIRE-RESISTANCE RATING NOT LESS THAN THAT FOR THE SUPPORTED ASSEMBLY.																			

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 ( $F_y = 400 \text{ MPa}$ )

##### CLS: COMPRESSION LAP SPLICE LENGTH (mm)

UNCOATED BLACK BAR								
10M	15M	20M	25M	30M	35M	45M	55M	
300	440	590	730	880	1030	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	460	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 80° 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.

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

#### TENSION LAP SPLICE AND DEVELOPMENT LENGTHS ( $F_y = 400 \text{ MPa}$ )

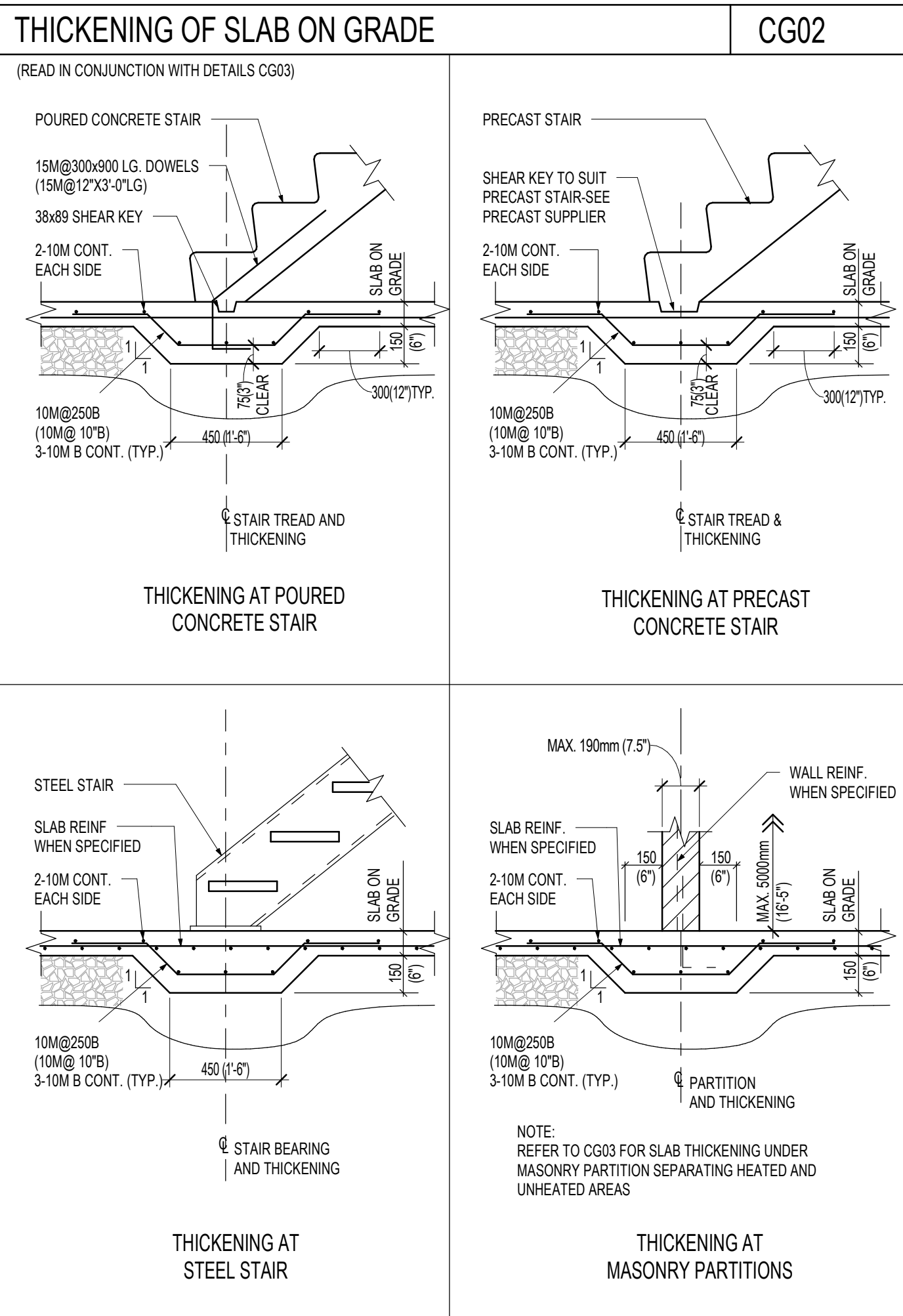
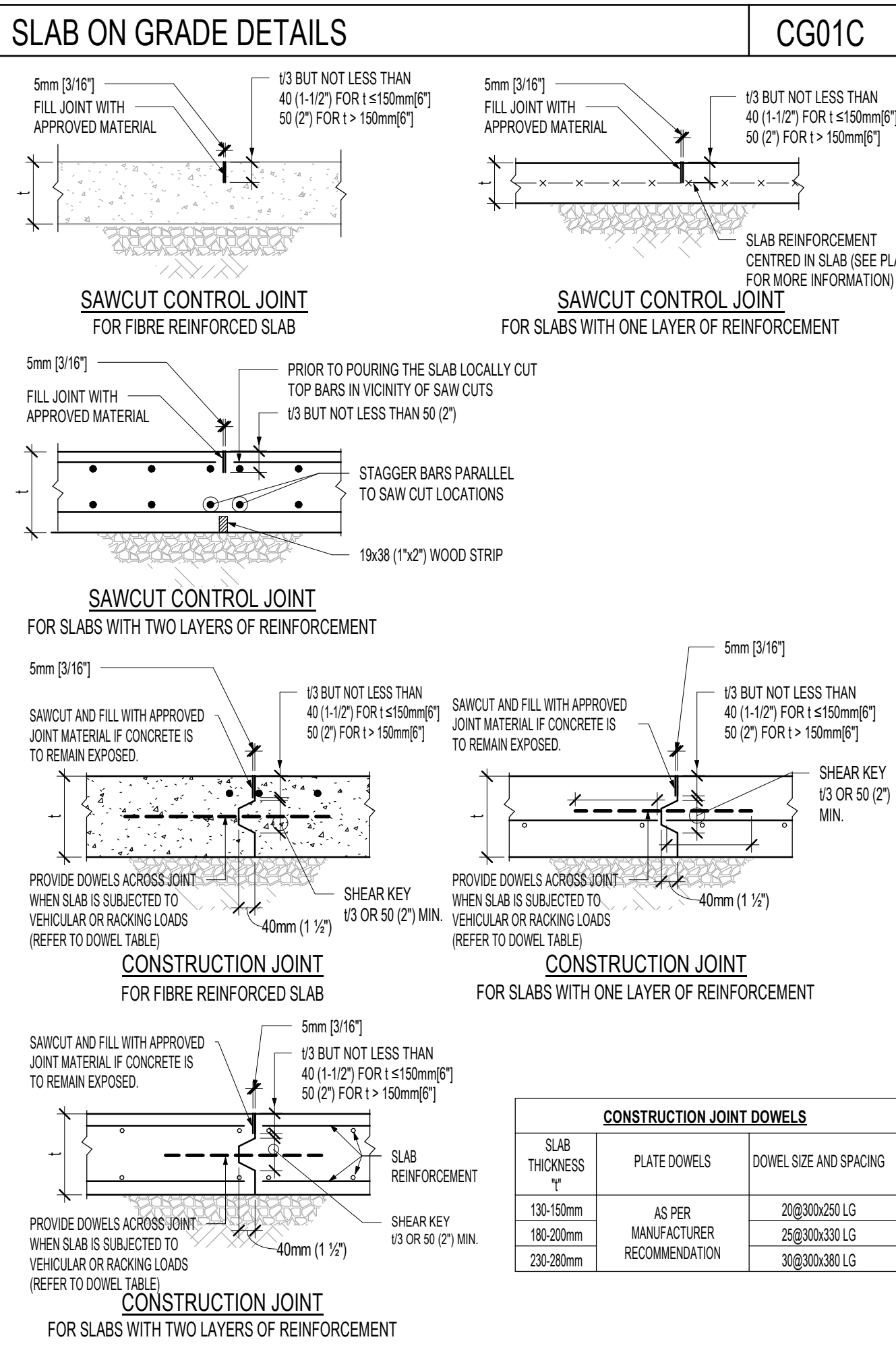
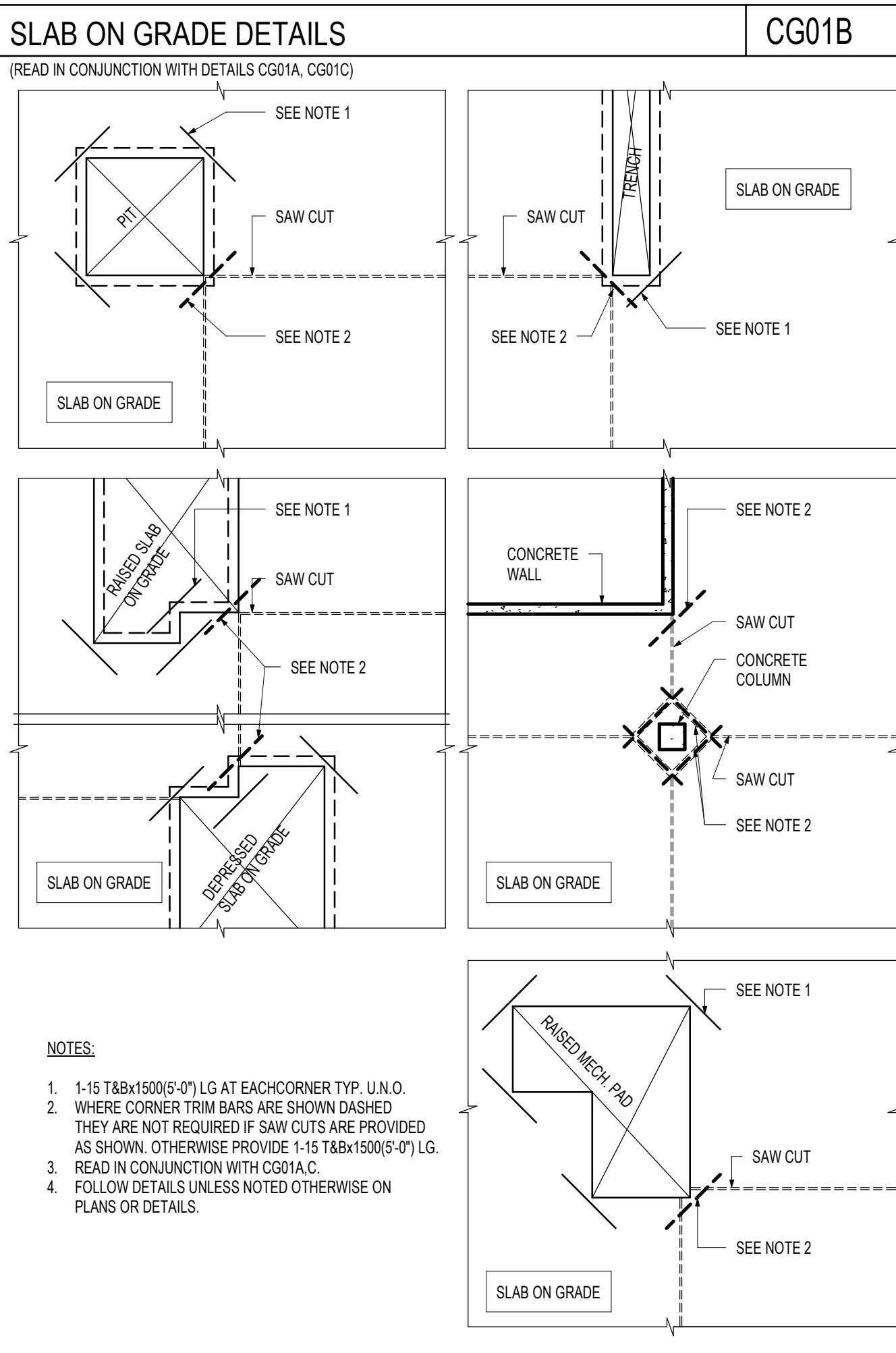
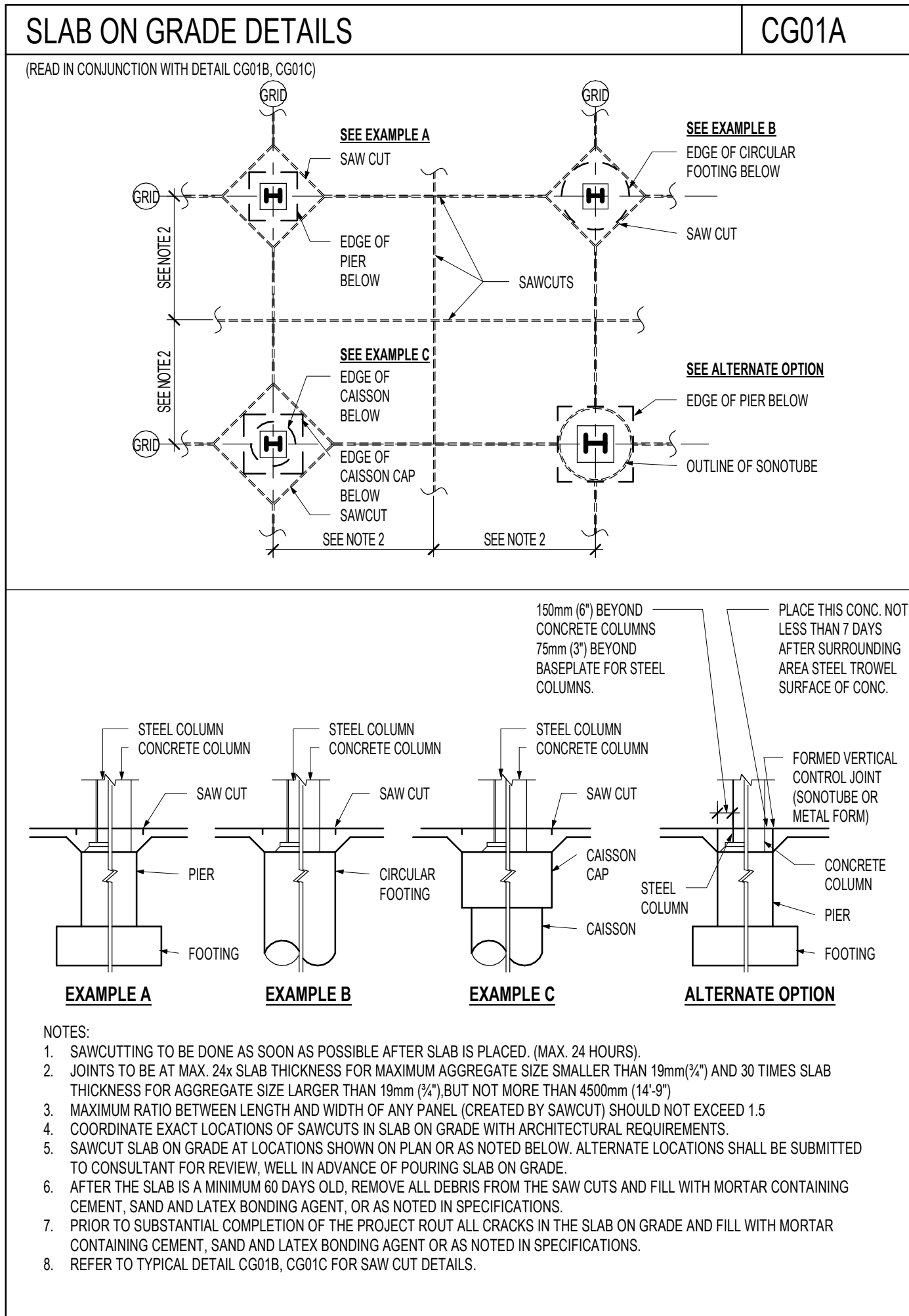
##### TLS: TENSION LAP SPLICE LENGTH (CLASS B) (mm)

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 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)

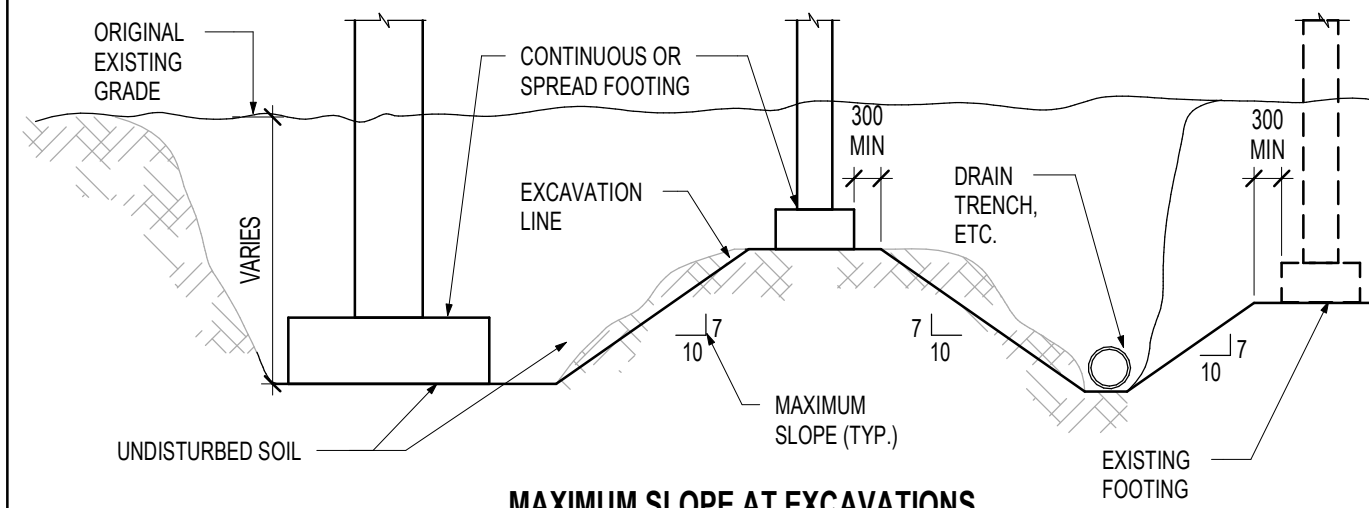


THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
 REMAIN THE COPYRIGHT PROPERTY OF  
 Salas O'Brien  
 AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

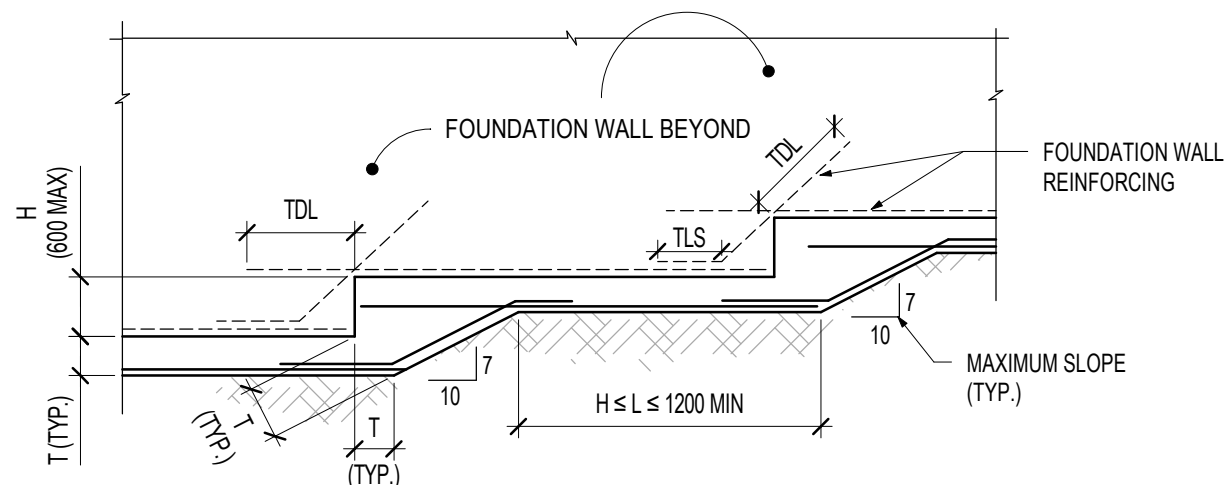
**ISSUE OR REVISION**

NO.	ISSUE	DATE
-----	-------	------

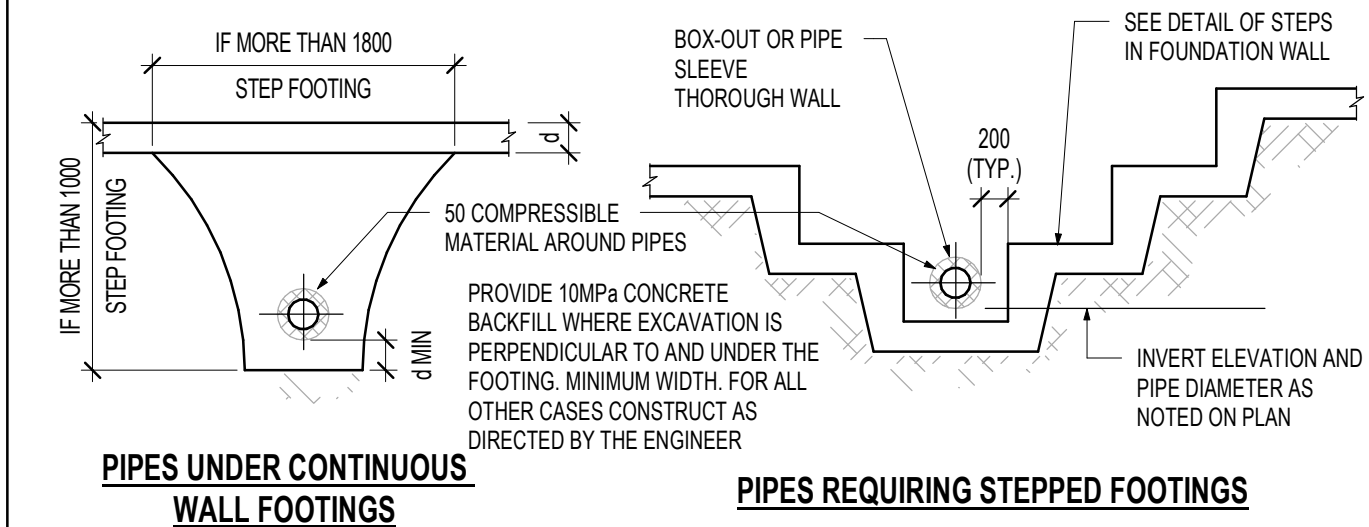
# STEPPED FOUNDATION AND CONSTRUCTION EXCAVATION F09



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



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



# NON-LOAD BEARING BLOCK WALL LINTELS

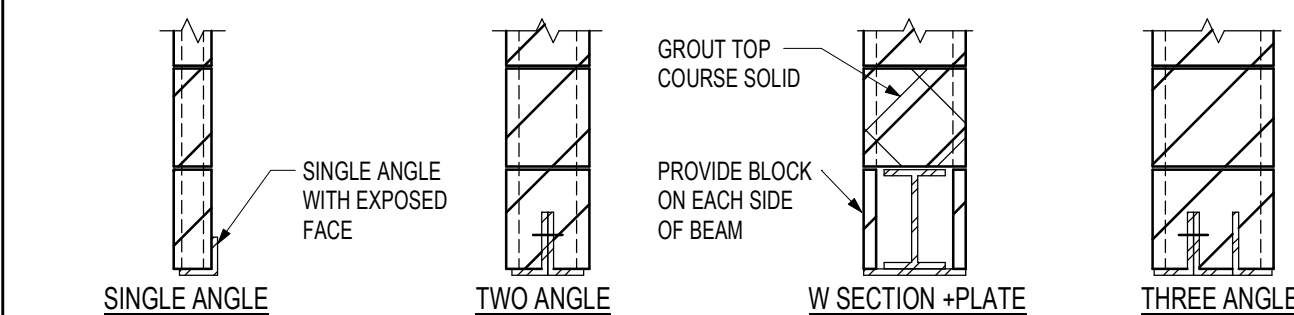
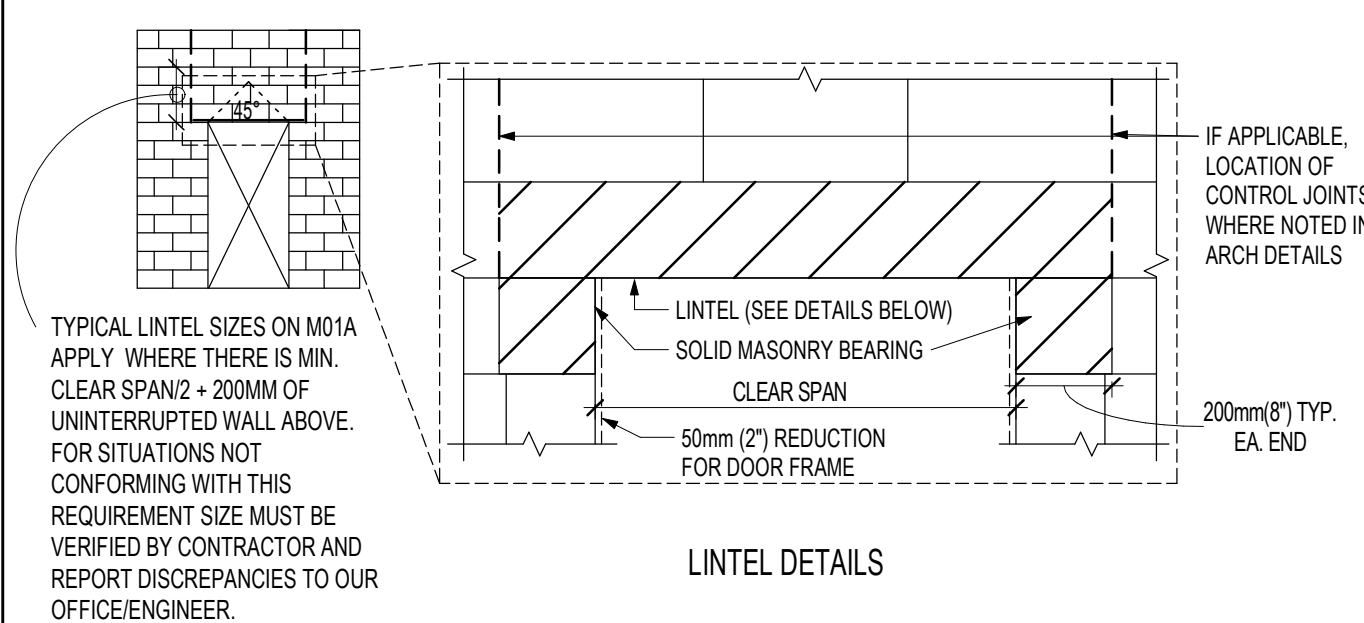
# M01A

WALL OPENING CLEAR SPAN	STRUCTURAL STEEL LINTELS				
	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-L64x44x4.8	2-L89x89x6.4	1-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	1-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)	1-L102x102x7.9 + L127x102x7.9 (LLH)	3-L127x89x6.4 (LLV)
2440mm TO 3080mm (8'-0" TO 10'-0")	1-L127x89x7.9 (LLV)	1-L127x127x7.9	2-L127x89x7.9 (LLV)	1-L152x102x7.9 (LLV) + L127x127x7.9 (LLH)	3-L127x89x7.9 (LLV)
3080mm TO 3650mm (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:
- 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.
  - SAWCUT WEBS OF BLOCK IN COURSE OF BLOCK OVER OPENING AS NECESSARY TO INSTALL ANGLES.
  - ALTERNATIVES PROVIDED FOR CASES WHERE EXPOSED FACE OF SINGLE ANGLE IS NOT ACCEPTABLE.

# NON-LOAD BEARING BLOCK WALL LINTEL DETAILS

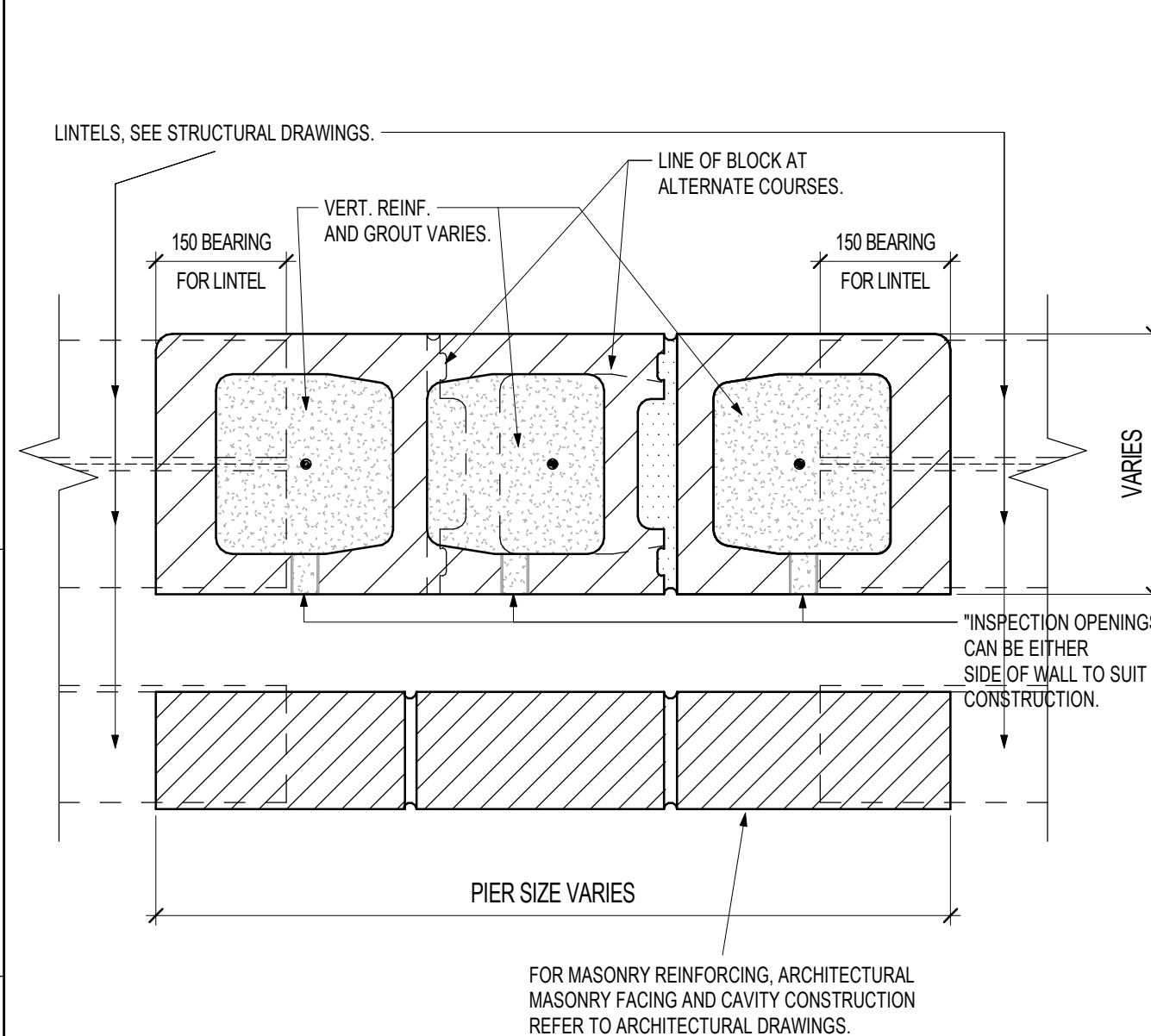
# M01B



# STRUCTURAL STEEL LINTEL DETAILS

# TYPICAL REINFORCED EXTERIOR MASONRY WALLS AND PIERS PLAN DETAIL

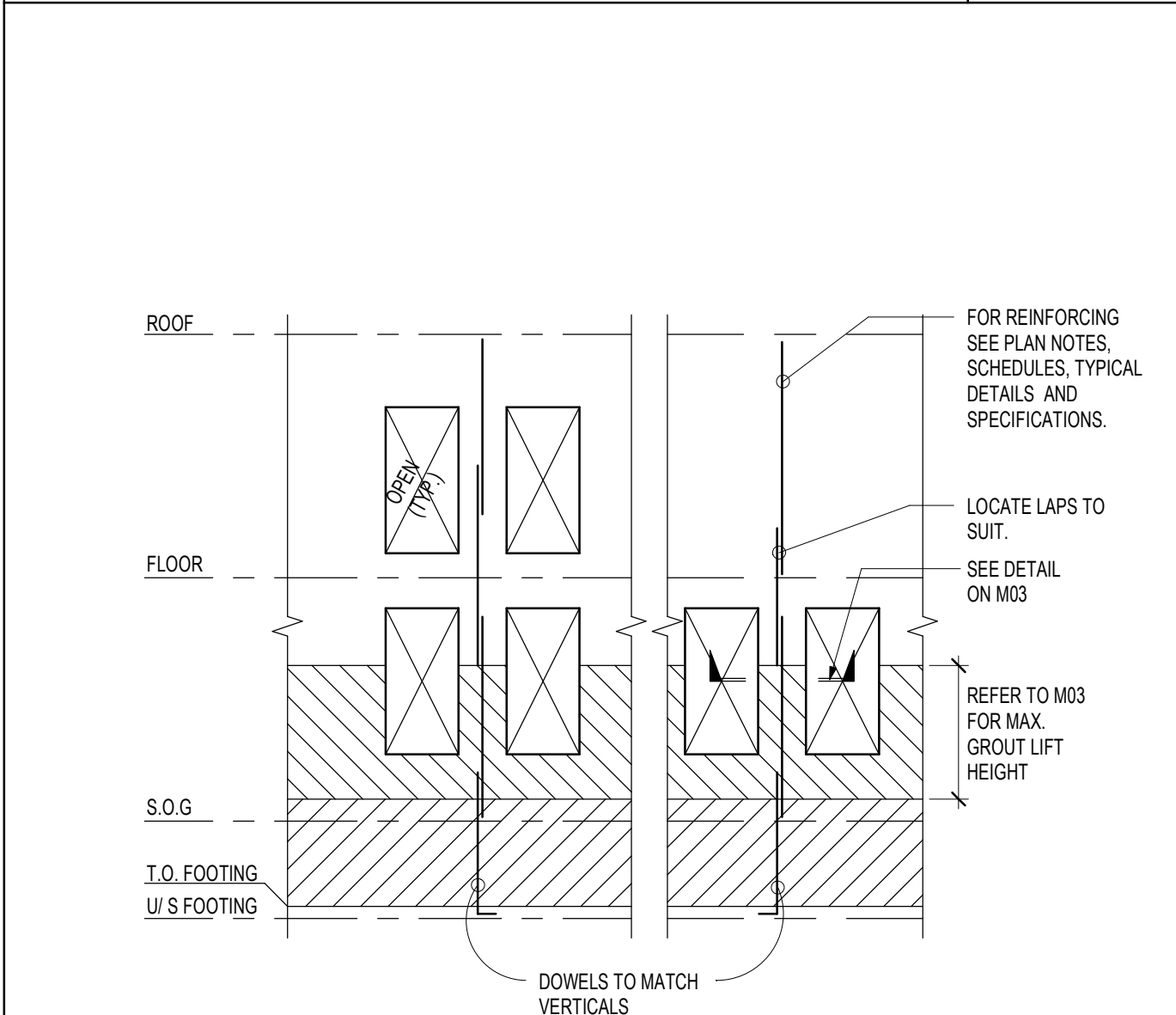
# M03



- NOTE:
- GROUT TO CONFORM TO REQUIREMENTS OF CSA STANDARD A179-M CLAUSE 8.1 TABLE 3 "FINE GROUT". SLUMP SHALL BE ±200mm AND COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 15 MPa @ 28 DAYS.
  - 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. ALL CELLS CONTAINING VERTICAL REINFORCING SHALL BE COMPLETELY FILLED WITH GROUT IN LIFTS NOT EXCEEDING 1500mm. GROUT SHALL BE CONSOLIDATED BY PUDDLING OR VIBRATING DURING POURING.
  - 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.
  - SEE TYPICAL DETAIL ELEVATION M04.

# TYPICAL ELEVATION REINFORCED MASONRY WALLS AND PIERS

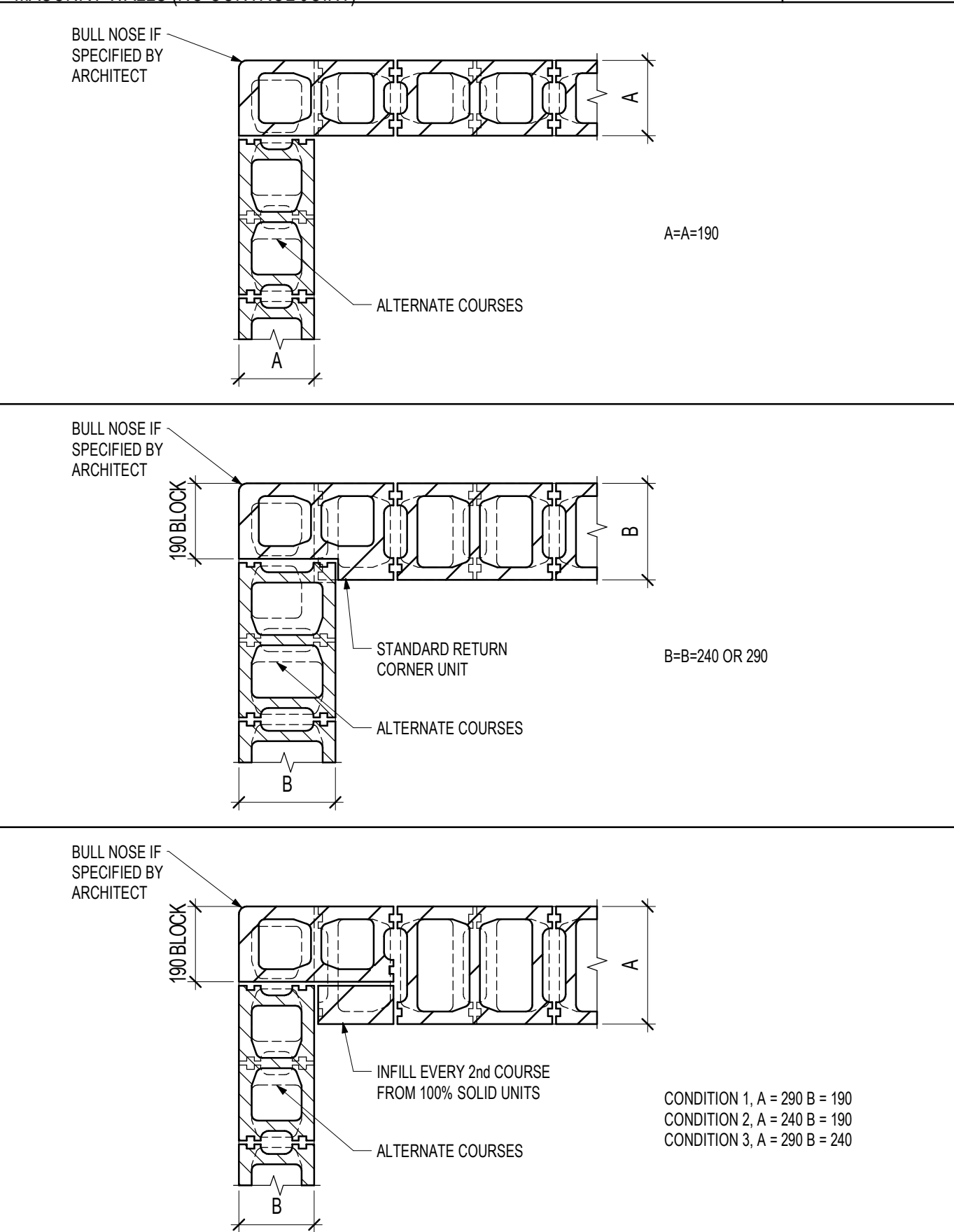
# M04



- NOTE:
- PROVIDE MINIMUM CLASS "B" TENSION LAP SPICES FOR VERTICAL REINFORCING:
    - 10M - 500mm (20")
    - 15M - 700mm (2'-4")
    - 20M - 850mm (2'-9")
  - NOTE: WHERE MORE THAN 1 BAR PER CELL INCREASE LAP LENGTH BY 33%
  - 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.

# TYPICAL DETAIL OF CONSTRUCTED CORNERS IN SINGLE WYTHE MASONRY WALLS (NO CONTROL JOINT)

# M06



- NOTE:
- PROVIDE PREFABRICATED CORNERS FOR HORIZONTAL JOINT REINFORCING (TYPICAL).
  - REFER TO TYPICAL LOAD BEARING MASONRY NOTES AND TO THE SPECIFICATION FOR MASONRY MATERIALS AND FOR HORIZONTAL JOINT REINFORCING

# NON LOAD-BEARING MASONRY PARTITION REINFORCING SCHEDULE I FaSa(0.2)<0.35

# M07A.1

### INTERIOR PARTITIONS ABOVE GRADE (DIFFERENTIAL PRESSURE **0.5kPa**)

BLOCK	MAXIMUM HEIGHT	VERTICAL REINFORCING	HORIZONTAL REINFORCEMENT
140	N/A	UNREINFORCED	9 GA @ 400mm (1'-4") o/c MAX. "LADDER" TYPE
190	3000 [10'-0"]		
240	3800 [12'-8"]		

### INTERIOR PARTITIONS ABOVE GRADE (DIFFERENTIAL PRESSURE **0.5kPa**)

BLOCK	MAXIMUM HEIGHT	VERTICAL REINFORCING	HORIZONTAL REINFORCEMENT
140	3400 [11'-4"]	15 @ 1200 [4'-0"] o/c	9 GA @ 400mm (1'-4") o/c MAX. "LADDER" TYPE
190	5200 [17'-4"]		
240	6400 [21'-4"]		

#### NOTES:

-MINIMUM 600MM WIDE PIER BETWEEN ADJACENT OPENINGS, PIER MUST BE CONTINUOUS FROM BASE OF PARTITION TO LATERAL SUPPORT POINT AT TOP OF PARTITION.

- AVERAGE OPENING SIZE ON EITHER SIDE OF PIER LIMITED TO 1400mm FOR REINFORCED PARTITIONS

-FOR UNREINFORCED PARTITIONS, MAX. OPENING WIDTH MUST NOT EXCEED PIER LENGTH.

-REINFORCING SCHEDULE APPLIES FOR PARTITIONS WALLS UP TO 100m ABOVE GRADE

-PARTITION WALL REINFORCING DOES NOT APPLY FOR SHAFTS WHERE PRESSURES EXCEED NOTED DIFFERENTIAL PRESSURES NOTED ABOVE.

-IF ANY OF THESE CONDITIONS ARE NOT MET, CONTRACTOR TO PROVIDE ENGINEER STAMPED

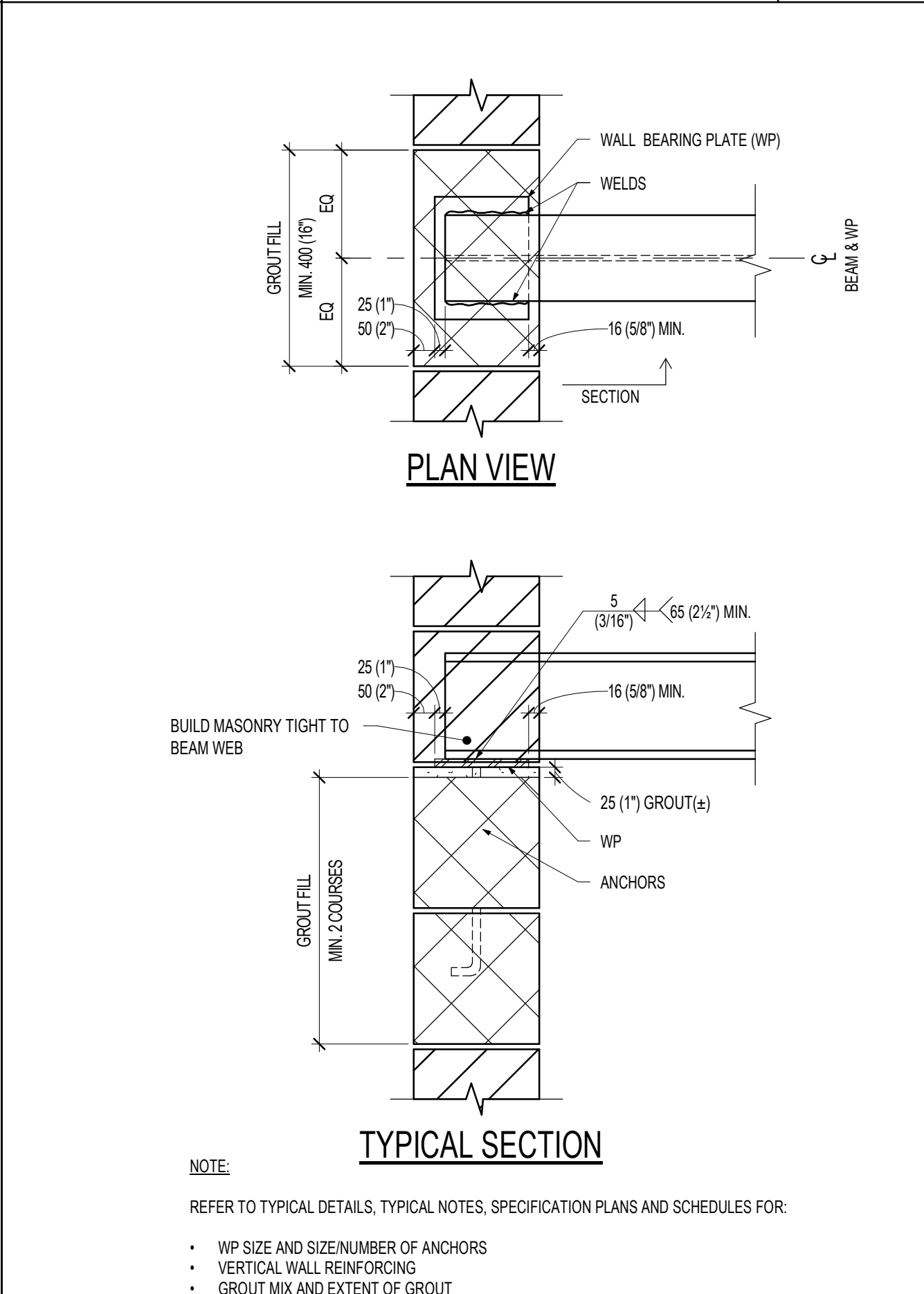
SHOP DRAWINGS OF REINFORCING FOR CONSULTANT REVIEW

-REFER TO T0 M705 FOR LATERAL SUPPORT DETAILS FOR CONCRETE CONSTRUCTION, M14 FOR STEEL CONSTRUCTION. LATERAL SUPPORTS TO BE SPACED AT 16I UNLESS NOTED OTHERWISE

- NOTES:
- MINIMUM 600MM WIDE PIER BETWEEN ADJACENT OPENINGS. PIER MUST BE CONTINUOUS FROM BASE OF PARTITION TO LATERAL SUPPORT POINT AT TOP OF PARTITION.
  - AVERAGE OPENING SIZE ON EITHER SIDE OF PIER LIMITED TO 1400mm FOR REINFORCED PARTITIONS
  - FOR UNREINFORCED PARTITIONS, MAX. OPENING WIDTH MUST NOT EXCEED PIER LENGTH.
  - REINFORCING SCHEDULE APPLIES FOR PARTITIONS WALLS UP TO 100m ABOVE GRADE
  - PARTITION WALL REINFORCING DOES NOT APPLY FOR SHAFTS WHERE PRESSURES EXCEED NOTED DIFFERENTIAL PRESSURES NOTED ABOVE.
  - IF ANY OF THESE CONDITIONS ARE NOT MET, CONTRACTOR TO PROVIDE ENGINEER STAMPED SHOP DRAWINGS OF REINFORCING FOR CONSULTANT REVIEW
  - REFER TO TD M07B FOR LATERAL SUPPORT DETAILS FOR CONCRETE CONSTRUCTION, M14 FOR STEEL CONSTRUCTION. LATERAL SUPPORTS TO BE SPACED AT 10i UNLESS NOTED OTHERWISE

# TYPICAL STEEL BEAM BEARING ON MASONRY WALL (PERPENDICULAR)

# M08



- NOTE:
- REFER TO TYPICAL DETAILS, TYPICAL NOTES, SPECIFICATION PLANS AND SCHEDULES FOR:
- WP SIZE AND SIZE/NUMBER OF ANCHORS
  - VERTICAL WALL REINFORCING
  - GROUT MIX AND EXTENT OF GROUT

THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
REMAIN THE COPYRIGHT PROPERTY OF  
Salas O'Brien  
AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

ISSUE OR REVISION		DATE
NO.	ISSUED FOR	NOV/17/2020
1	ISSUED FOR 90% SUBMISSION	JAN/13/2026
3	RE-ISSUED FOR PERMIT	MAY/22/2026
4	IFC	

PROJECT: **YORK REGION PRS #33**  
**RFTC 379-21**  
2960 TESTON ROAD, VAUGHAN



**Salas O'Brien**  
2235 Sheppard Ave. E.  
Toronto, ON  
Suite No. 1100  
M2J 5B5



# TYPICAL DETAILS

ORIENTATION

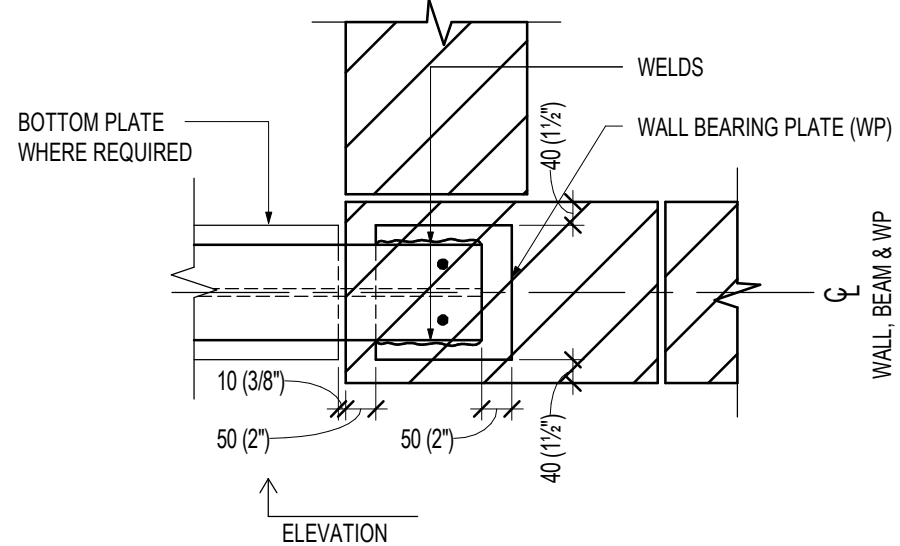
DATE	MAY 2026	
SCALE	1 : 1	CHECKED BY JG
DWG STATUS	IFC	
PROJECT NO.	20190540	
DRAWING NO.	S4-03	REVISION 4

2026-05-22 10:13:27 AM

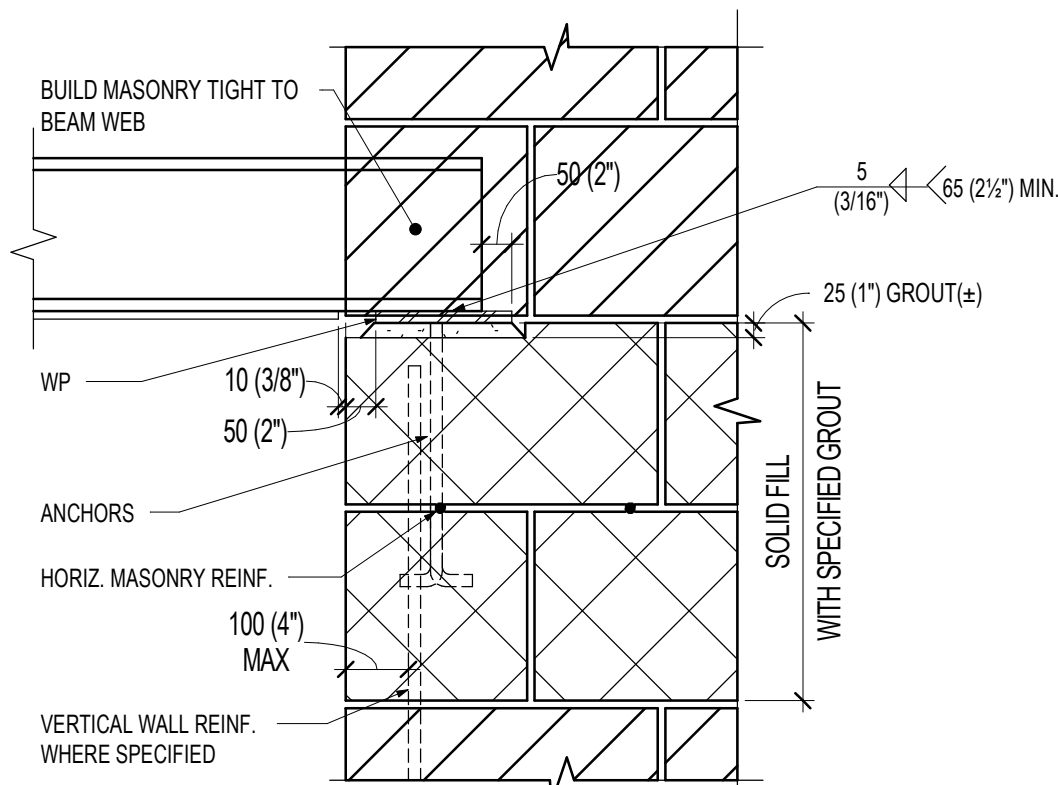


TYPICAL STEEL BEAM BEARING ON END OR CORNER OF MASONRY WALL (MINIMUM REQUIREMENTS)

M09



PLAN VIEW



ELEVATION

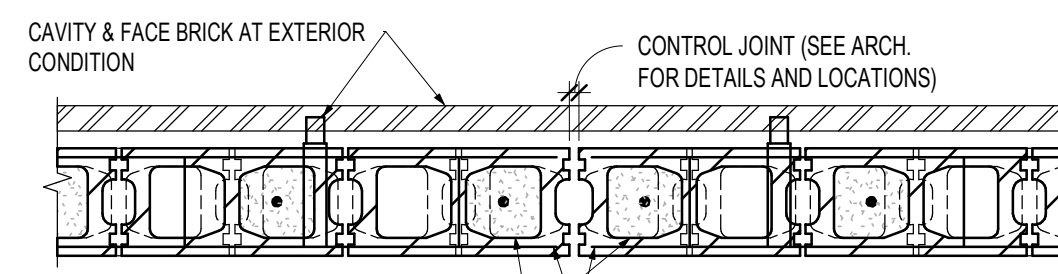
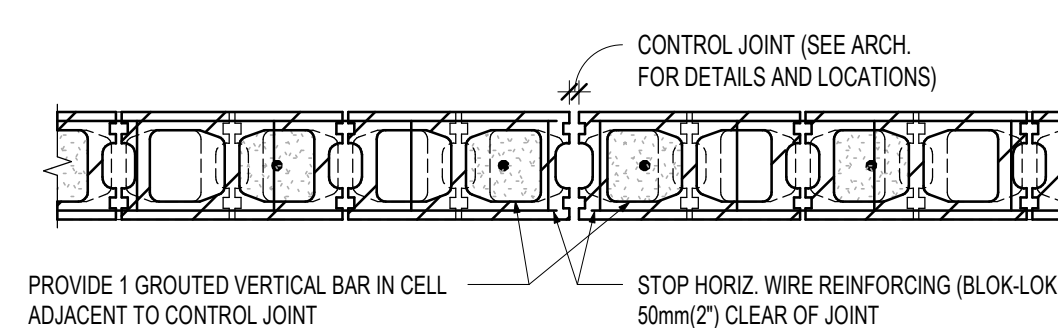
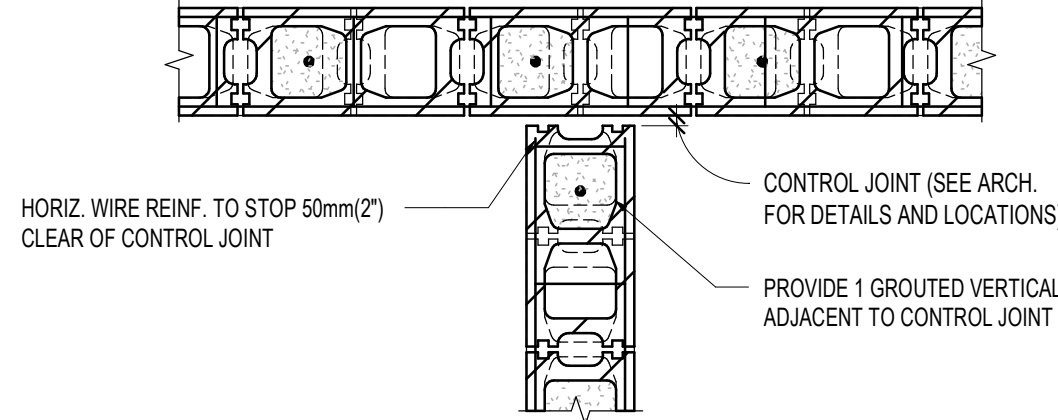
NOTE:

REFER TO TYPICAL DETAILS, TYPICAL NOTES, SPECIFICATION PLANS AND SCHEDULES FOR:

- WP SIZE AND SIZE/NUMBER OF ANCHORS
- VERTICAL WALL REINFORCING
- GROUT MIX AND EXTENT OF GROUT

TYPICAL DETAIL AT CONTROL JOINT IN REINFORCED MASONRY WALL

M10

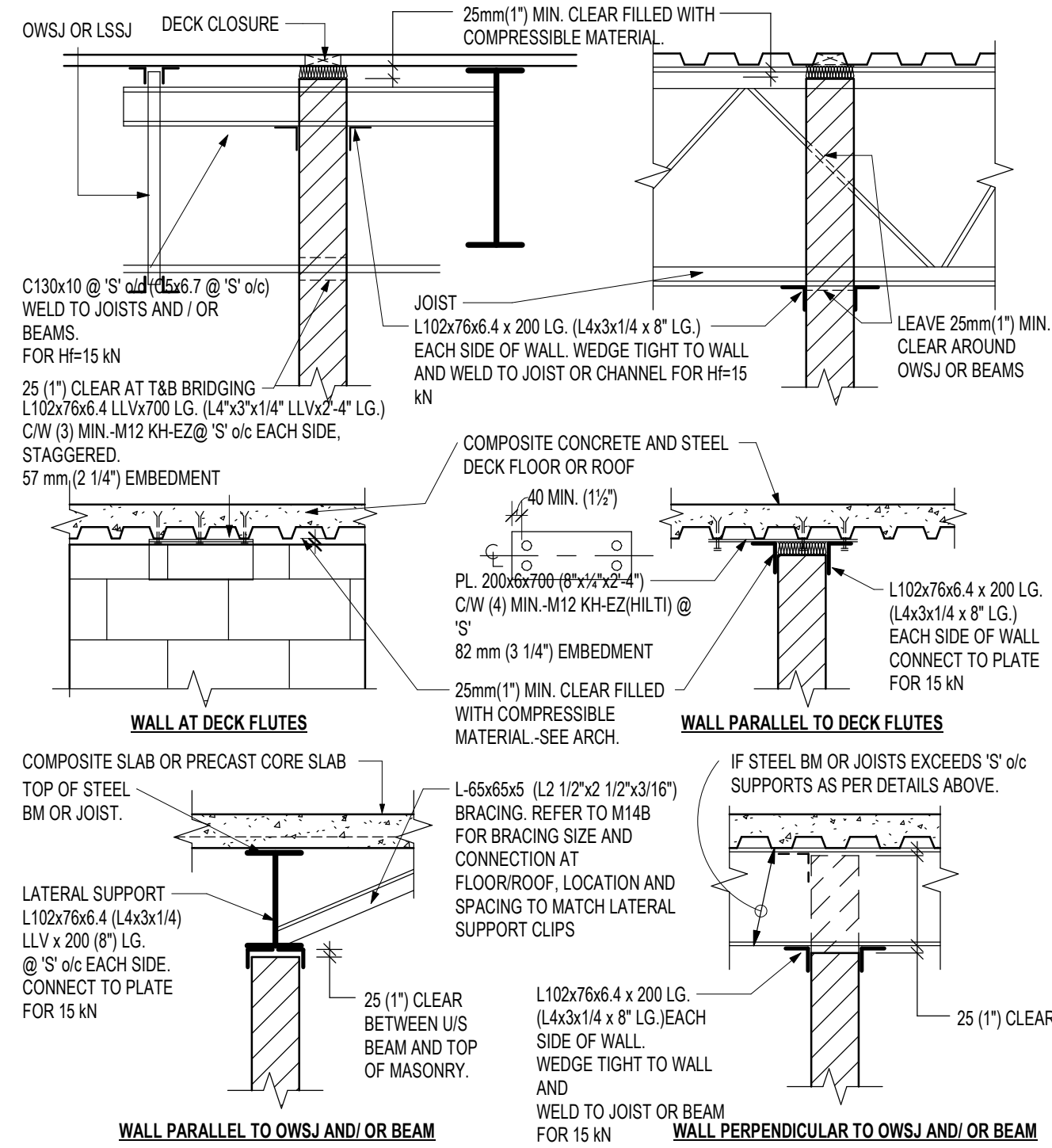


NOTE:

1. AT MASONRY LINTEL BOND BEAM STOP HORIZ. BARS 50mm (2\"/>

TYPICAL LATERAL SUPPORT AT PARTITIONS

M14A

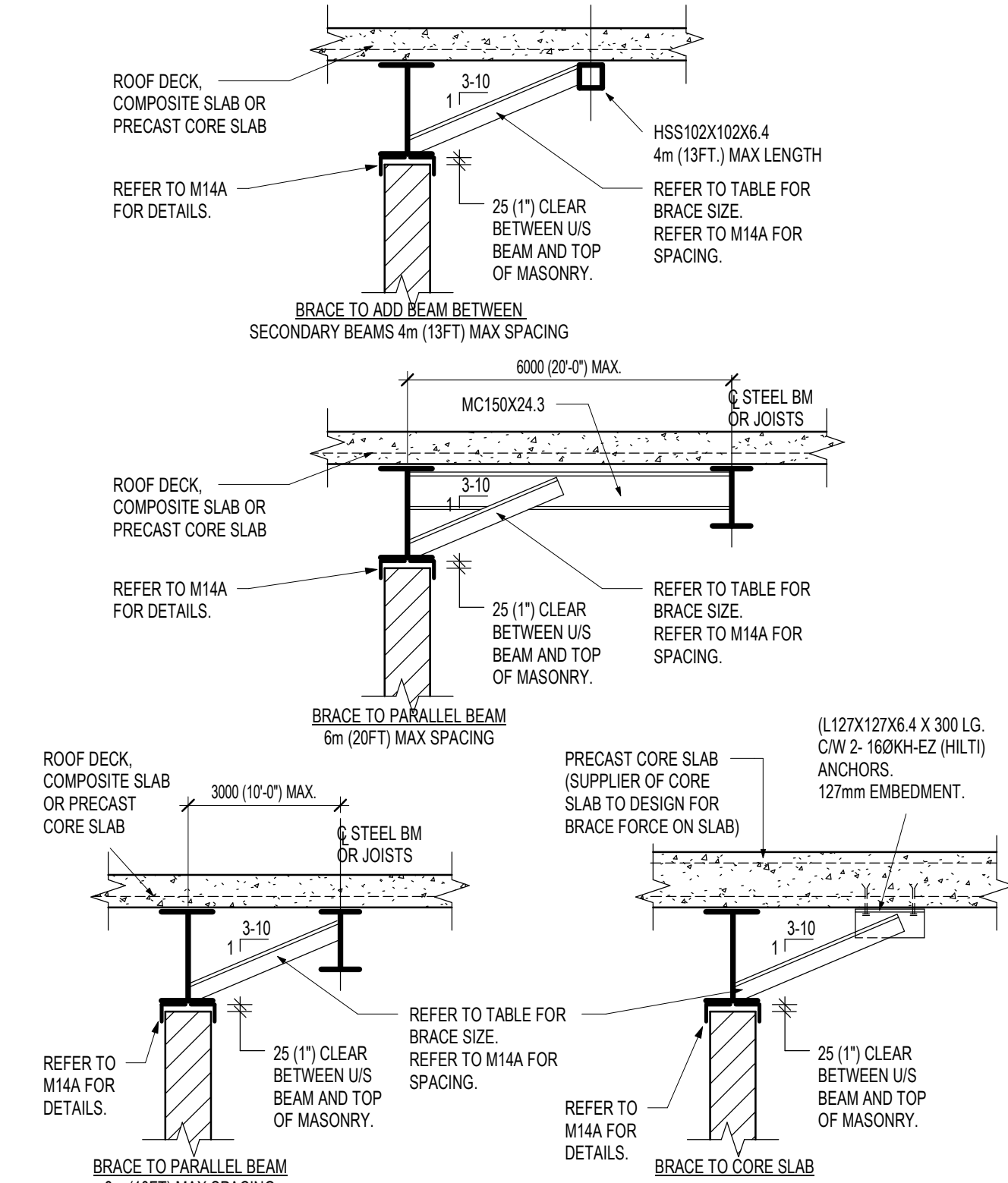


NOTES:

1. PROVIDE 25mm MIN COMPRESSIBLE MATERIAL TOP OF PARTITION AND UNDERSIDE OF STRUCTURAL. TYPICAL UNLESS NOTED
2. UNREINFORCED MASONRY WALL (SEISMIC HAZARD INDEX <0.35)
- 2.1 PROVIDE LATERAL SUPPORTS FOR ALL MASONRY WALLS WHEN SPACING BETWEEN RETURN WALLS EXCEEDS 20' FOR INTERIOR WALLS IN ACCORDANCE WITH THE SPACING NOTED ON M07A
- 2.2 MINIMUM LENGTH OF RETURN WALL IS 10'. IF RETURN WALL IS SHORTER THAN 10', PROVIDE LATERAL SUPPORT PER DETAILS SHOWN ABOVE
- 2.3 MAXIMUM DISTANCE FROM END OF ANY WALL TO THE CENTERLINE OF THE FIRST LATERAL SUPPORT IS 600mm (2'-0")
3. REINFORCED MASONRY WALL (SEISMIC HAZARD INDEX >0.35)
- 3.1 PROVIDE LATERAL SUPPORT FOR ALL MASONRY WALLS
- 3.2 SPACING OF LATERAL SUPPORTS AS NOTED ON DETAIL M07A

TYPICAL BRACE SUPPORTING PARTITIONS

M14B



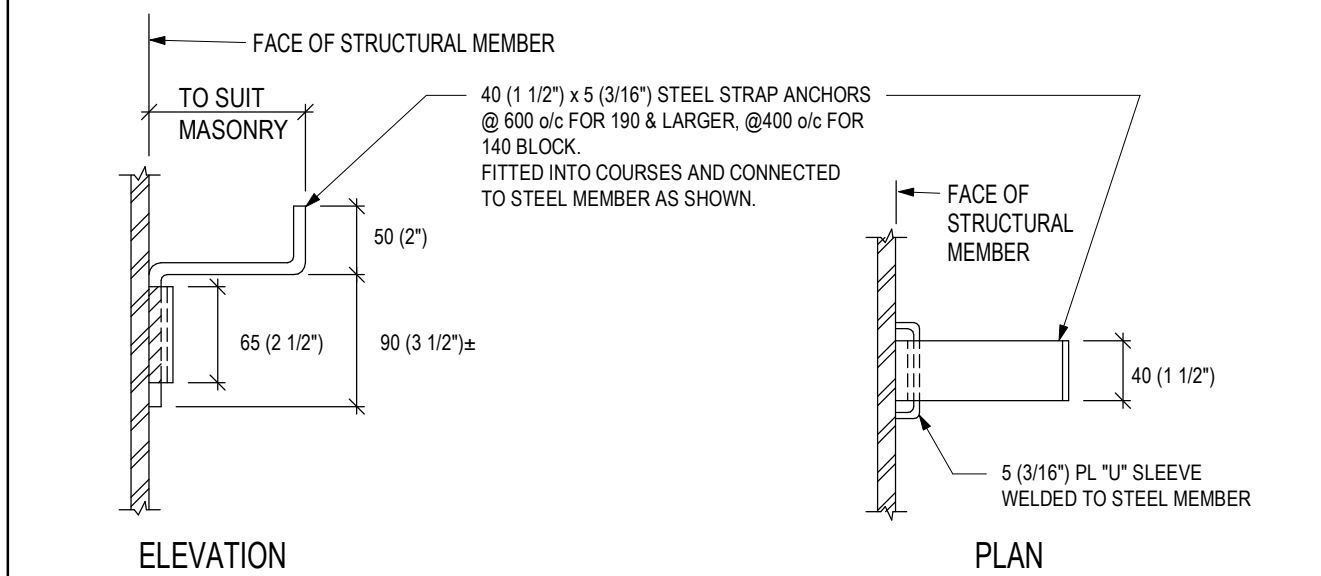
NOTES:

1. SELECT BRACE SIZES FROM TABLE BELOW ACCORDING TO BRACE LENGTH AND SECTION
- | BRACING SECTION | MAXIMUM LENGTH | FORCE C <sub>t</sub> (kN) |
|-----------------|----------------|---------------------------|
| L44x44x4.8      | 1150 (3'-9")   | 15                        |
| L51x51x4.8      | 1600 (5'-3")   | 15                        |
| L64x64x4.8      | 2000 (6'-6")   | 15                        |
| L76x76x4.8      | 2700 (8'-10")  | 15                        |
| L76x76x4.8      | 3250 (10'-8")  | 15                        |

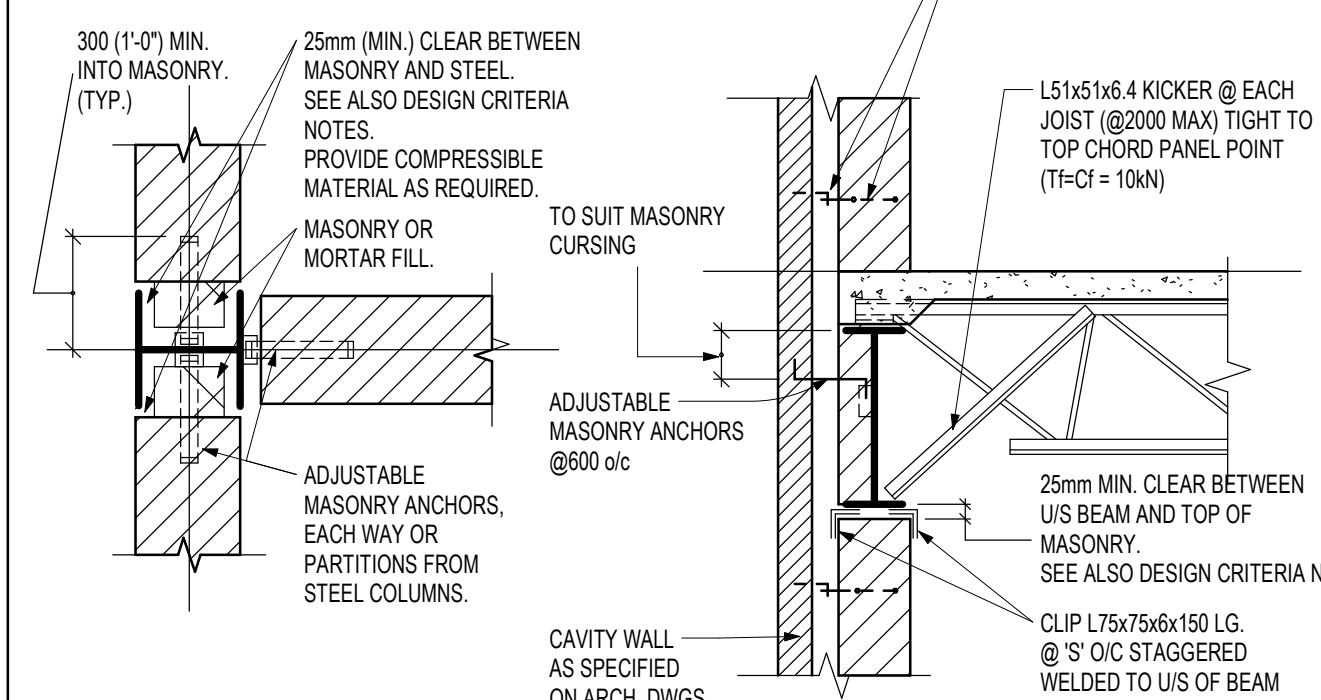
2. MAINTAIN BRACE SLOPE AS PER SKETCH.

ADJUSTABLE MASONRY ANCHORS TO STRUCTURAL STEEL

M15



MASONRY ANCHOR DETAILS



PLAN OF ANCHORS AT STEEL COLUMN

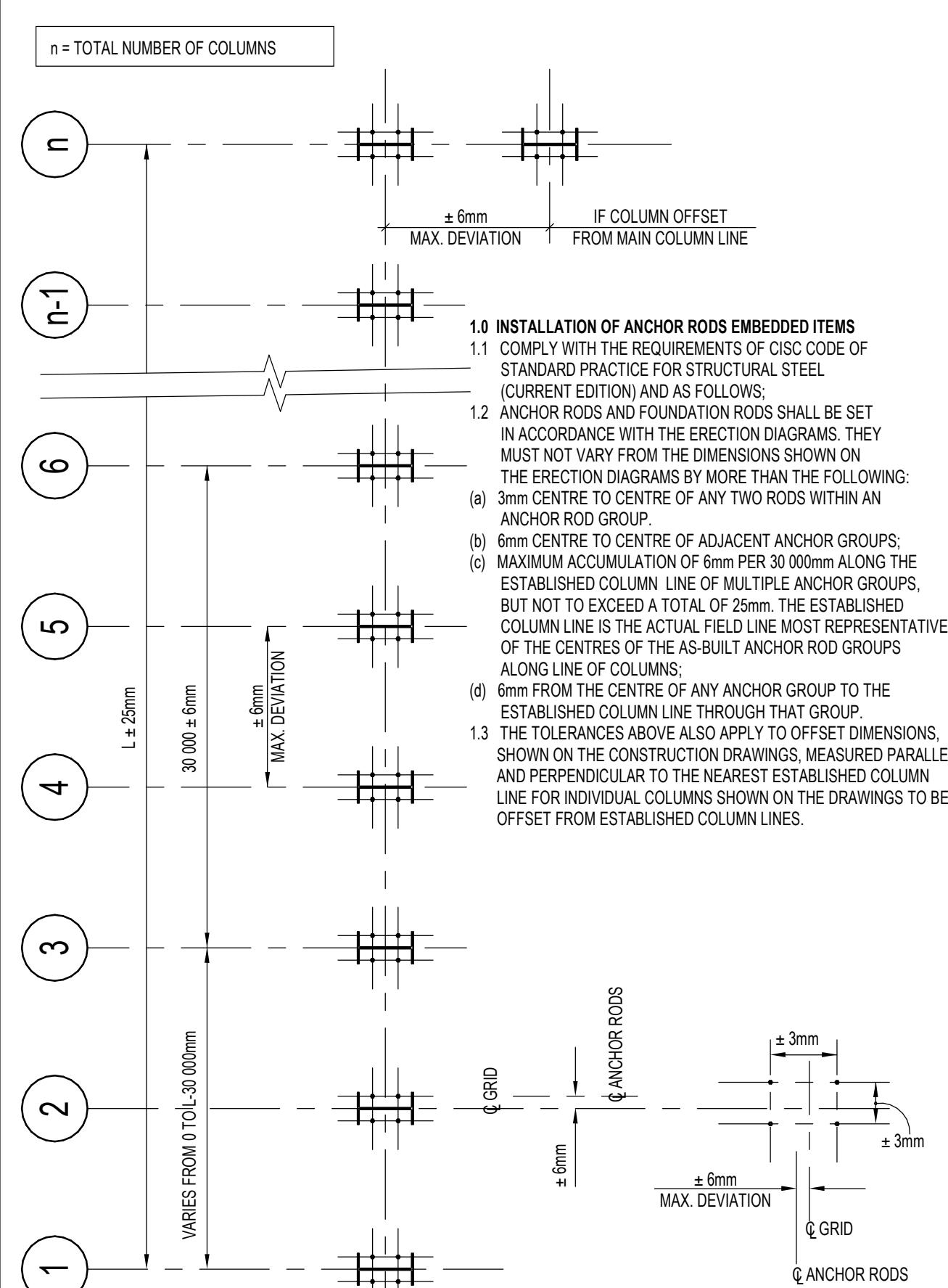
SECTION OF ANCHORS AT PERIMETER STEEL BEAM

EACH SIDE	SPACING 'S'
90 BLOCK	800 (2'-8")
140 BLOCK	1200 (4'-0")
190 AND LARGER BLOCK	1500 (5'-0")

NOTE:  
ALTERNATIVE SUITABLE PROPRIETARY BRANDS OF ADJUSTABLE MASONRY ANCHORAGE MECHANISMS MAY BE APPROVED FOR USE, SUCH AS: BLOCK-LOK COLUMN-LOK, BLOCK-LOK TYPE C WITH BL304 TIES, OR BLOCK-LOK TYPE 'B' ANCHORS WITH BL11 TIES. SUBMIT DETAILS FOR APPROVAL BEFORE PROCEEDING.

TOLERANCES ON ANCHOR ROD PLACEMENT

SAB01



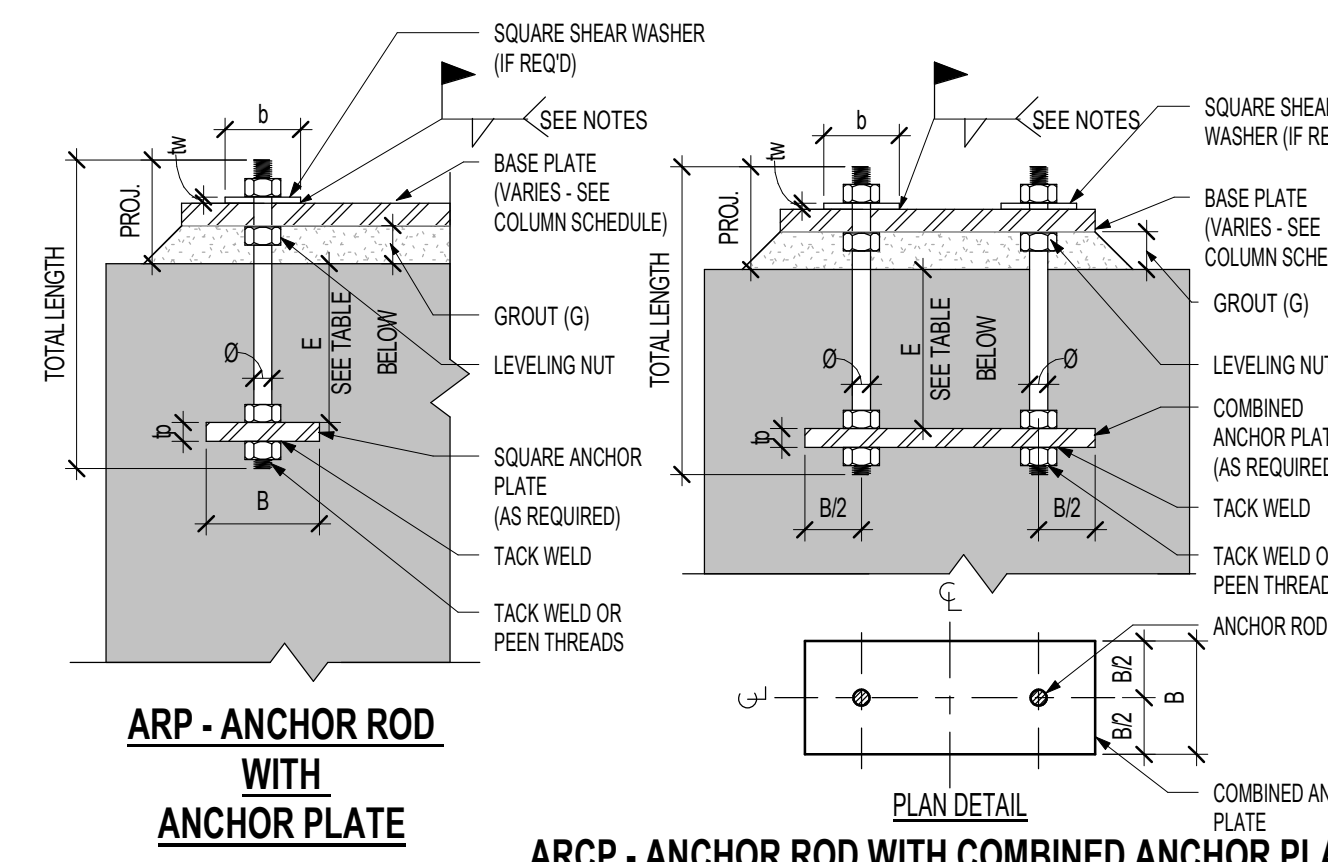
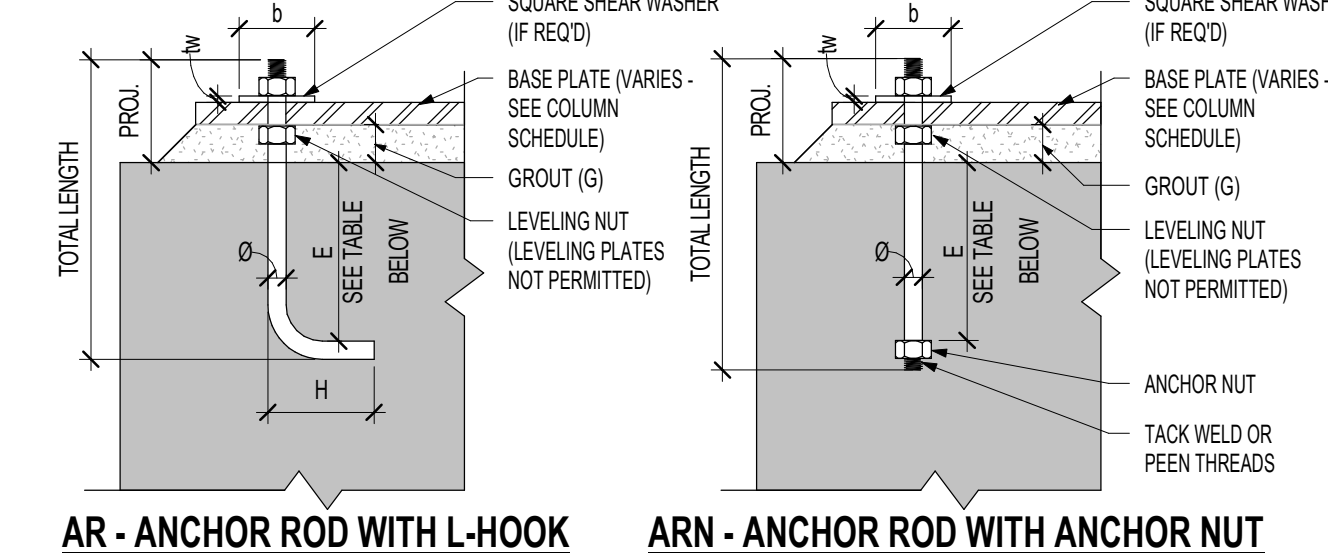
- 1.0 INSTALLATION OF ANCHOR RODS EMBEDDED ITEMS
- 1.1 COMPLY WITH THE REQUIREMENTS OF CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL (CURRENT EDITION) AND AS FOLLOWS:
- 1.2 ANCHOR RODS AND FOUNDATION RODS SHALL BE SET IN ACCORDANCE WITH THE ERECTION DIAGRAMS. THEY MUST NOT VARY FROM THE DIMENSIONS 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



ANCHOR		ANCHOR ROD					ANCHOR PLATE			SHEAR WASHER		
MARK	TYPE	DIA (Ø)	EMBED (E)	HOOK (H)	GRADE (KSI)	HI (IN)	GROUT THICKNESS (G)	WIDTH (B)	THICK (tp)	PROJ. (MIN)	WIDTH (b)	THICK (tw)
AR1	AR	20	300	75	36	---	50	---	---	185	454	9.5

NOTES:  
1. DESIGN CONNECTION OF SHEAR WASHER TO BASE PLATE FOR HI NOTED IN TABLE IN EACH PLAN DIRECTION. IF NO FORCE NOTED, CONNECT FOR FULL SHEAR CAPACITY OF ANCHOR ROD.

LIGHTWEIGHT STEEL FRAMING NOTES

A11

1. GENERAL
  - 1.1 DESIGN, FABRICATION, HANDLING AND ERECTION SHALL CONFORM TO THE FOLLOWING STANDARDS:
    - 1 CSA-S136 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
    - 2 CSA-W59 WELDED STEEL CONSTRUCTION (METAL ARC WELDING)
    - 3 CSA-W41 CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES.
    - 4 CSSBI 50M LIGHTWEIGHT STEEL FRAMING MANUAL.
  - 1.2 ERECTION DETAILS AND CONNECTIONS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN THIS TYPE OF WORK.
  - 1.3 SUBMIT SHOP DRAWINGS INDICATING ALL MEMBER SIZES, LOCATIONS, THICKNESS, COATINGS AND MATERIALS. INCLUDE CONNECTION DETAILS FOR ATTACHING FRAMING TO ITSELF AND FOR ATTACHMENT TO THE STRUCTURE. INDICATE DIMENSIONS, OPENINGS, REQUIREMENTS OF RELATED WORK AND CRITICAL INSTALLATION PROCEDURES. SHOW TEMPORARY BRACING REQUIRED FOR ERECTION PURPOSES.
2. PRODUCTS
  - 2.1 ALL MEMBERS SHALL BE MANUFACTURED BY BAILEY METAL PRODUCTS LTD., CSM CANADIAN STEEL MANUFACTURING INC., OR APPROVED EQUIVALENT.
  - 2.2 MINIMUM BASE STEEL THICKNESS SHALL BE 0.91 mm (0.036") EXCEPT JOISTS SHALL BE 1.22 mm (.048").
  - 2.3 STEEL SHALL CONFORM TO ASTM A583/A585M WITH A MINIMUM G60 HOT DIP GALVANIZED COATING.
  - 2.4 SHEET METAL SCREWS SHALL HAVE A MINIMUM COATING OF .008 mm OF ZINC OR CADMIUM.
  - 2.5 ZINC RICH PAINT FOR TOUCHING UP WELDS AND DAMAGED COATINGS SHALL CONFORM TO CGSB-1-GP-181.
  - 2.6 STEEL THICKNESS, EXCLUSIVE OF COATING, SHALL BE MARKED ON EACH MEMBER BY EMBOSING, OR BY COLOUR CODING.
3. EXECUTION
  - 3.1 FABRICATION AND ERECTION SHALL CONFORM TO THE REVIEWED SHOP DRAWINGS. MODIFICATIONS REQUIRED TO ACCOMMODATE AS-BUILT CONDITIONS SHALL BE SUBMITTED FOR APPROVAL.
  - 3.2 PROVIDE CUT-OUTS CENTRED ON WEBS OF MEMBERS TO ACCOMMODATE SERVICES. REINFORCE CUT-OUTS AS REQUIRED TO MAINTAIN STRENGTH AND STIFFNESS OF MEMBERS.
  - 3.3 PRODUCTS SHALL BE STORED AND PROTECTED FROM CONDITIONS THAT MAY CAUSE PHYSICAL DAMAGE OR CORROSION.
  - 3.4 FRAMING SHALL BE ERECTED TRUE AND PLUMB WITHIN TOLERANCES SPECIFIED IN CSSBI 50M.
  - 3.5 TEMPORARY BRACING SHALL BE PROVIDED AND LEFT IN PLACE AS LONG AS REQUIRED FOR THE SAFETY AND INTEGRITY OF THE STRUCTURE.
  - 3.6 PROVIDE ADEQUATE STEEL BRACING FOR STUDS AND JOISTS AT 1200 mm (4'-0") MAXIMUM TO PROVIDE LATERAL SUPPORT TO MEMBERS.
  - 3.7 CUTTING OF MEMBERS MAY BE BY SAW OR SHEAR. TORCH CUTTING IS NOT PERMITTED.
  - 3.8 SPLICING OF MEMBERS IS NOT PERMITTED.
  - 3.9 SCREWS AND WELDING SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND TO REVIEWED SHOP DRAWINGS.
  - 3.10 SCREWS COVERED BY SHEATHING MATERIALS SHALL HAVE LOW PROFILE HEADS.
  - 3.11 TOUCH UP WELDS AND DAMAGED COATINGS, WITH ZINC RICH PAINT.
  - 3.12 STUDS SHALL SEAT INTO TOP AND BOTTOM TRACKS. THE GAP BETWEEN THE END OF THE STUD AND THE WEB OF THE TRACK SHALL NOT EXCEED 15 mm.
  - 3.13 ALL AXIALLY LOADED MEMBERS SHALL BE ALIGNED VERTICALLY TO ALLOW FOR FULL TRANSFER OF THE LOADS DOWN TO THE FOUNDATIONS. VERTICAL ALIGNMENT SHALL BE MAINTAINED AT FLOORWALL INTERSECTIONS.
  - 3.14 JOIST AND RAFTERS OR THEIR END STIFFENERS SHALL BE LOCATED DIRECTLY OVER AXIAL LOAD BEARING STUDS. ALTERNATIVELY A LOAD DISTRIBUTION MEMBER SHALL BE PROVIDED TO TRANSFER LOADS. THE USE OF TRACK AS A LOAD DISTRIBUTION MEMBER IS NOT PERMITTED.
  - 3.15 HOLES SHALL NOT BE FIELD CUT IN MEMBERS WITHOUT APPROVAL.
4. QUALITY CONTROL
  - 4.1 AN INDEPENDENT INSPECTION AND TESTING COMPANY IS TO BE ENGAGED TO REVIEW AND REPORT ON THE MATERIALS, FABRICATION, ERECTION AND CONNECTIONS.

THE CONTENTS OF THIS DRAWING AND SPECIFICATIONS  
REMAIN THE COPYRIGHT PROPERTY OF  
Salas O'Brien  
AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

ISSUE OR REVISION

NO.	ISSUE FOR	DATE
1	ISSUED FOR 90% SUBMISSION	NOV17/2020
3	RE-ISSUED FOR PERMIT	JAN13/2026
4	IFC	MAY22/2026

YORK REGION PRS #33  
RFTC 379-21

PROJECT :

2960 TESTON ROAD, VAUGHAN



Salas  
O'Brien

2235 Sheppard Ave. E.  
Toronto, ON

Suite No. 1100  
M2J 5B5

PROFESSIONAL SEAL



DWG TITLE

TYPICAL DETAILS  
AND GENERAL  
NOTES

ORIENTATION

DATE MAY 2026

SCALE 1 : 1 DRAWN BY AE CHECKED BY JG

DWG STATUS :

IFC

PROJECT NO. 20190540

DRAWING NO. S4-04 REVISION 4

2026-05-22 10:13:27 AM

ERECTION TOLERANCES FOR STEEL BEAMS

SB02A

(READ IN CONJUNCTION WITH SB02B)

1. VERTICAL DEVIATION FROM SPECIFIED ELEVATION/SLOPE.

FLOOR BEAMS:	$\Delta V = \pm 10\text{mm}$ (3/8") OR = L/500
MEMBERS WITH ADJUSTABLE CONNECTIONS:	$\Delta V = \pm 6\text{mm}$ (1/4") OR = L/1000

2. VERTICAL DEVIATION FROM SPECIFIED ELEVATION - ADJOINING MEMBERS

FLOOR BEAMS:	$\Delta V = \pm 6\text{mm}$ (1/4")
MEMBERS WITH ADJUSTABLE CONNECTIONS:	$\Delta V = \pm 2\text{mm}$ (3/32")

3. VERTICAL DEVIATION FROM ADJACENT BEAMS

FLOOR BEAMS:	$\Delta V = L/1000$
--------------	---------------------

4. HORIZONTAL DEVIATION FROM INDICATED POSITION

FLOOR BEAMS:	$\Delta H = \pm 12\text{mm}$ (1/2") OR L/500
SPANDREL BEAMS:	$\Delta H = \pm 6\text{mm}$ (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.

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000

1001

1002

1003

1004

1005

1006

1007

1008

1009

1010

1011

1012

1013

1014

1015

1016

1017

1018

1019

1020

1021

1022

1023

1024

1025

1026

1027

1028

1029

1030

1031

1032

1033

1034

1035

1036

1037

1038

1039

1040

1041

1042

1043

1044

1045

1046

1047

1048

1049

1050

1051

1052

1053

1054

1055

1056

1057

1058

1059

1060

1061

1062

1063

1064

1065

1066

1067

1068

1069

1070

1071

1072

1073

1074

1075

1076

1077

1078

1079

1080

1081

1082

1083

1084

1085

1086

1087

1088

1089

1090

1091

1092

1093

1094

1095

1096

1097

1098

1099

1100

1101

1102

1103

1104

1105

1106

1107

1108

1109

1110

1111

1112

1113

1114

1115

1116

1117

1118

1119

1120

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1131

1132

1133

1134

1135

1136

1137

1138

1139

1140

1141

1142

1143

1144

1145

1146

1147

1148

1149

1150

1151

1152

1153

1154

1155

1156

1157

1158

1159

1160

1161

1162

1163

1164

1165

1166

1167

1168

1169

1170

1171

1172

1173

1174

1175

1176

1177

1178

1179

1180

1181

1182

1183

1184

1185

1186

1187

1188

1189

1190

1191

1192

1193

1194

1195

1196

1197

1198

1199

1200

1201

1202

1203

1204

1205

1206

1207

1208

1209

1210

1211

1212

1213

1214

1215

1216

1217

1218

1219

1220

1221

1222

1223

1224

1225

1226

1227

1228

1229

1230

1231

1232

1233

1234

1235

1236

1237

1238

1239

1240

1241

1242

1243

1244

1245

1246

1247

1248

1249

1250

1251

1252

1253

1254

1255

1256

1257

1258

1259

1260

1261

1262

1263

1264

1265

1266

1267

1268

1269

1270

1271

1272

1273

1274

1275

1276

1277

1278

1279

1280

1281

1282

1283

1284

1285

1286

1287

1288

1289

1290

1291

1292

1293

1294

1295

1296

1297

1298

1299

1300

1301

1302

1303

1304

1305

1306

1307

1308

1309

1310

1311

1312

1313

1314

1315

1316

1317

1318

1319

1320

1321

1322

1323

1324

1325

1326

1327

1328

1329

1330

1331

1332

1333

1334

1335

1336

1337

1338

1339

1340

1341

1342

1343

1344

1345

1346

1347

1348

1349

1350

1351

1352

1353

1354

1355

1356

1357

1358

1359

1360

1361

1362

1363

1364

1365

1366

1367

1368

1369

1370

1371

1372

1373

1374

1375

1376

1377

1378

1379

1380

1381

1382

1383

1384

1385

1386

1387

1388

1389

1390

1391

1392

1393

1394

1395

1396

1397

1398

1399

1400

1401

1402

1403

1404

1405

1406

1407

1408

1409

1410

1411

1412

1413

1414

1415

1416

1417

1418

1419

1420

1421

1422

1423

1424

1425

1426

1427

1428

1429

1430

1431

1432

1433

1434

1435

1436

1437

1438

1439

1440

1441

1442

1443

1444

1445

1446

1447

1448

1449

1450

1451

1452

1453

1454

1455

1456

1457

1458

1459

1460

1461

1462

1463

1464

1465

1466

1467

1468

1469

1470

1471

1472

1473

1474

1475

1476

1477

1478

1479

1480

1481

1482

1483

1484

1485

1486

1487

1488

1489

1490

1491

1492

1493

1494

1495

1496

1497

1498

1499

1500

1501

1502

1503

1504

1505

1506

1507

1508

1509

1510

1511

1512

1513

1514

1515

1516

1517

1518

1519

1520

1521

1522

1523

1524

1525

1526

1527

1528

1529

1530

1531

1532

1533

1534

1535

1536

1537

1538

1539

1540

1541

1542

1543

1544

1545

1546

1547

1548

1549

1550

1551

1552

1553

1554

1555

1556

1557

1558

1559

1560

1561

1562

1563

1564

1565

1566

1567

1568

1569

1570

1571

1572

1573

1574

1575

1576

1577

1578

1579

1580

1581

1582

1583

1584

1585

1586

1587

1588

1589

1590

1591

1592

1593

1594

1595

1596

1597

1598

1599

1600

1601

1602

1603

1604

1605

1606

1607

1608

1609

1610

1611

1612

1613

1614

1615

1616

1617

1618

1619

1620

1621

1622

1623

1624

1625

1626

1627

1628

1629

1630

1631

1632

1633

1634

1635

1636

1637

1638

1639

1640