

ISSUED FOR CONSTRUCTION 27 Rutherford Rd. S., Brampton, ON. L6W 3J3

BFES Station 201 TOR.127511.0001

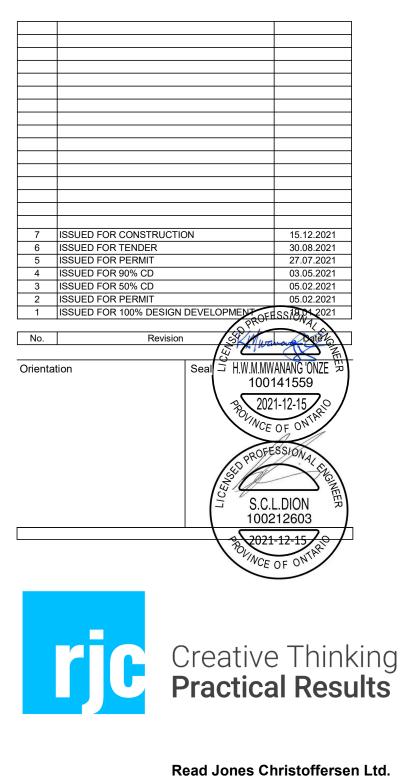
STRUCTURAL DRAWING LIST

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Project Information **BFES Station 201**

27 Rutherford Rd. S., Brampton, ON. L6W 3J3

City of Brampton Fire & Emergency Services

Drawing Title COVER

For

Date Drawing No 15.12.2021 Drawn by ŃN Scale 1:1 Project No

3D MODEL NOTE

STRUCTURAL ELEMENTS AND THEIR CONFIGURATION DETAILS ARE NOT PRESENTED IN THE 3D MODEL VIEW FOR TENDERING OR CONSTRUCTION PURPOSES AND ARE FOR INFORMATION ONLY.

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SIGN LOADS	11. <u>ABBREVIATIONS:</u>
FLOOR PLAN LOADING IS SHOWN ON PLANS.	75 MOMENT CONNECTION L.L.B.B LONG LEGS BACK TO PASS THROUGH FORCE [kN] BACK
TRUCK LOADS: AREAS ACCESSIBLE TO FIRE TRUCKS INDICATED ON THE PLANS.	A.B ANCHOR BOLT A.E.S.S ARCHITECTURALLY EXPOSED STRUCTURAL STEEL L.L.H LONG LEG HORIZONTAL L.L.V LONG SIDE HORIZONTAL L.S.V LONG SIDE VERTICAL
THESE AREAS HAVE BEEN DESIGNED FOR THE LOADING SHOWN BELOW, OR LL=12.0 kPa UNIFORM LOAD U.N.O.:	ALT ALTERNATE L.W LONG VAY ARCH ARCHITECTURAL LP LOW POINT B.C.E BOTTOM CHORD MAX MAXIMUM
NOTE: USE 1.3 FACTOR FOR IMPACT LOAD EFFECT. Ps=SERVICE LOAD, Ac=CONTACT AREA, AL=AXLE LOAD	EXTENSION MECH MECHANICAL BEW BOTTOM EACH WAY Mf FACTORED BENDING
EACH FRONT WHEEL BKN, Ac=0.075m ² - Ac=0.11m ²	B.L.L.BOTTOM LOWER LAYERMOMENTBLWBOTTOM LONG WAYMfxSTRONG AXIS BENDINGBSWBOTTOM SHORT WAYMOMENTB, BOT.BOTTOMMfyWEAK AXIS BENDINGB.U.L.BOTTOM UPPER LAYERMOMENTCACOLUMN ABOVEMIN.MINIMUMCANT.CANTILEVERMtfFACTORED TORSIONCBCOLUMN BELOWN.I.C.NOT IN CONTRACT
$\begin{array}{c} & & & & & \\ & & & & & \\ & & & & & \\ & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & &$	CBMCOUPLING BEAMN.SNEAR SIDECfFACTORED AXIAL FORCE COMPRESSIONN.T.SNOT TO SCALEC.I.PCAST IN PLACEO.CON CENTREC.JCONTROL JOINTOPPOPPOSITECLCENTER LINEO.W.S.JOPEN WEB STEEL JOISTCLRCLEARP.PPARTIAL PENETRATIONCONCCONCRETEP/TPOST-TENSIONING
	CONTCONTINUOUSR.DROOF DRAINC.PCOMPLETERTNRETURNPENETRATIONR/WREINFORCED WITH
SPECIFIED CONCENTRATED LOADS ARE AS FOLLOWS U.N.O. ON PLAN: A. ROOFS1.3 kN	CTRS CENTRESS.D.L SUPERIMPOSED DEADC/W COMPLETE WITHLOADDBM DIVIDER BEAMS.D.F STEP DOWN FOOTING
 B. FLOORS - PARKING 18 kN C. LOADING DOCKS AND SUSPENDED PLAZAS WITH FIRE TRUCK ACCESS (TANDEM AXLE LOADS) 256 kN 	DET. DETAIL SIM. SIMLAR D.L. DEAD LOAD S.L. SNOW LOAD D.O. DO OVER - (DITTO) S.L.B.B. SHORT LEGS BACK TO DP. DEEP (I.E. DEPTH OF BACK
SEISMIC AND WIND DESIGN: THE LATERAL SYSTEM FOR THIS PROJECT CONSISTS OF SHEAR WALLS	DF DEEF (I.E. DEFTH OF BACK BEAM) S.O.G SLAB ON GRADE D.T.S DEPTH TO SUIT SPEC SPECIFICATIONS DWG DRAWING SR STUD RAIL
AND IS DESIGNED FOR THE FOLLOWING EARTHQUAKE FACTORS: EARTHQUAKE DESIGN PARAMETERS	DWLSDOWELSSTSTAGGERE.EEACH ENDSTIRSTIRRUPE.FEACH FACES.WSHORT WAY
Sa $(0.2) = 0.168$ SITE CLASSIFICATION: SITE CLASS CSa $(0.5) = 0.096$ Ie = 1.5 Fa = 1.0 Sa $(1.0) = 0.052$ Rd = 2.0 Fv = 1.0	ELELEVATIONSYMSYMMETRICALELEVELEVATIONTEWTOP EACH WAYELECELECTRICALTfFACTORED AXIALE.SEACH SIDETENSION FORCE
Sa $(1.0) = 0.052$ Rd = 2.0 $FV = 1.0$ Sa $(2.0) = 0.026$ Ro = 1.5 Ta = 0.311 Sa (0.2) Fale = 0.252 Sa (0.2) Fale = 0.252 Sa (0.2) Fale = 0.252	E.S EACH SIDETENSION FORCEE.WAY EACH WAYTHK THICKE.W EACH WAYTHRU THROUGHEXIST EXISTINGT.L.L TOP LOWER LAYER
WIND DESIGN PARAMETERS:	EXTEXTERIORT & BTOP AND BOTTOMEXP. JTEXPANSION JOINTT & CTENSION ANDF.DFLOOR DRAINCOMPRESSION
Ce, Cg, and Cp ARE BASED ON OBC CL. 4.1.7. q50 = .0.44 kPa, Iw = 1.25 ULS, 0.75 SLS OR	F.SFAR SIDET & GTONGUE AND GROOVEGALVGALVANIZEDT.JTIE JOISTG.LGRID LINET.OTOP OF
WIND UPLIFT LOADS ON STEEL OR WOOD ROOFS SHALL BE 1 kPa NET UNLESS NOTED OTHERWISE ON PLAN.	H.1.EHOOK ONE ENDT.O.CTOP OF CONCRETEH.2.EHOOK 2 ENDST.O.S.STOP OF STRUCT. STEELH & VHORIZONTAL ANDT.O.STOP OF SLABVERTICALT.U.LTOP UPPER LAYER
FACTORED BASE FORCES. MAXIMUM BASE SHEARS AND OVERTURNING MOMENT FOR THE	H, HOR HORIZONTAL TYP TYPICAL HSC HORIZONTALLY SLOTTED U.N.O UNLESS NOTED CONNECTION OTHERWISE
STRUCTURE THROUGH STATIC ANALYSIS ARE:	Hf FACTORED HORIZONTAL ULS ULTIMATE LIMIT STATE SHEAR FORCE SLS SERVICEABILITY LIMIT HORZ HORIZONTAL STATE
WIND - NORTH/SOUTH DIRECTION - SHEAR MOMENT - EAST/WEST DIRECTION - 105 kN 590 kNm 95 kN 635 kNm SEISMIC - NORTH/SOUTH DIRECTION -	HORIZHORIZONTALU/SHPHIGH POINTV., VERT VERTICALINTINTERIORVfFACTORED SHEARINTERIORFACTORED SHEAR
LATERAL LOADS ON FOUNDATION WALLS.	JT JOINT FORCE LG LONG VXB VERTICAL BRACING, L.L LIVE LOAD VERTICAL CROSS BRACING
A. FOUNDATION WALLS RETAINING EARTH ARE DESIGNED TO RESIST A HORIZONTAL PRESSURE AT ANY DEPTH PER THE GEOTECHNICAL	W.P WORK POINT 12. <u>DEFINITIONS</u> :
REPORT BASED ON FOLLOWING: EARTHQUAKE SOIL PRESSURE: PE = N/A	 A. <u>RJC</u>: READ JONES CHRISTOFFERSEN OR ITS REPRESENTATIVE. B. SPECIALTY STRUCTURAL ENGINEER: A STRUCTURAL ENGINEER
SOIL PRESSURE COEFFICIENT: K = 0.56 DEPTH BELOW GROUND WATER LEVEL: Hw = 0 (Free draining) DRY UNIT WEIGHT OF SOIL: q = 19.0 kN/m3 SURFACE SURCHARGE: q = 12 kPa	REGISTERED AND LICENSED TO PRACTICE BY THE PROFESSIONAL ENGINEERING ASSOCIATION HAVING JURISDICTION IN THE AREA WHERE THE STRUCTURE IS TO BE BUILT AND WHO IS RESPONSIBLE FOR THE DESIGN AND FIELD REVIEW OF:
B. DO NOT BACKFILL WALLS UNTIL LATERALLY SUPPORTED BY COMPLETED FLOOR AND/ OR ROOF STRUCTURE.	- STRUCTURAL ELEMENTS DESIGNED BY THE CONTRACTOR OR SUBCONTRACTORS, SUCH AS OPEN WEB STEEL JOISTS,
WATER TABLE: THIS BUILDING IS NOT DESIGNED AS A TANKED STRUCTURE.	PRECAST DOUBLE TEES, PRECAST PLANKS, STRUCTURAL STEEL CONNECTIONS, LIGHT WOOD FRAME ROOF TRUSSES, ETC.
_OADS TO EXISTING STRUCTURES:	- SECONDARY STRUCTURAL ELEMENTS AND NON-STRUCTURAL ELEMENTS. SEE ALSO "NON-STRUCTURAL ELEMENTS"
B. SNOW DRIFTING	GENERAL NOTES. C. <u>CONTINUOUS</u> : FULL TENSION SPLICE AND TENSION DEVELOPMENT
N-STRUCTURAL ELEMENTS	LENGTH. D. <u>EMBEDMENT</u> : UNLESS NOTED OTHERWISE COMPRESSION EMBEDMENT MEANS A COMPRESSION DEVELOPMENT LENGTH AND
"NON-STRUCTURAL" OR "SECONDARY STRUCTURAL" ELEMENTS ARE NOT PART OF THE STRUCTURAL DESIGN SHOWN ON THESE DRAWINGS. SUCH	TENSION EMBEDMENT MEANS A COMPRESSION DEVELOPMENT LENGTH AND TENSION EMBEDMENT MEANS A TENSION DEVELOPMENT LENGTH AS PER CAN/CSA-A23.3 AND AS SHOWN ON THESE GENERAL NOTES DRAWINGS.
ELEMENTS ARE DESIGNED, DETAILED AND REVIEWED IN THE FIELD BY OTHERS. THEY APPEAR ON DRAWINGS OTHER THAN THESE DRAWINGS OF READ JONES CHRISTOFFERSEN LTD., WHERE STRUCTURAL ENGINEERING RESPONSIBILITY IS REQUIRED FOR THESE ELEMENTS, THIS SHALL BE PROVIDED BY SPECIALTY STRUCTURAL ENGINEERS, WHO SHALL ALSO PROVIDE ANY LETTERS REQUIRED BY BUILDING PERMIT AUTHORITIES.	E. <u>GENERAL CONTRACTOR</u> : FOR THE PURPOSES OF THESE DRAWINGS, THE USE OF THE TERM "CONTRACTOR" OR "GENERAL CONTRACTOR" SHALL REFER TO THE PRIME PERSON OR COMPANY RESPONSIBLE FOR CONSTRUCTION OF THE PROJECT AND THE COORDINATION OF TRADES AND SUBCONTRACTORS. THIS MAY BE THE GENERAL CONTRACTOR, OR A CONSTRUCTION MANAGER.
EXAMPLES OF NON-STRUCTURAL ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:	
 A. ARCHITECTURAL COMPONENTS SUCH AS GUARDRAILS, HANDRAILS, FLAG POSTS, CANOPIES, CEILINGS, MILLWORK, ETC. B. LANDSCAPE ELEMENTS SUCH AS BENCHES, LIGHT POSTS, PLANTERS, 	DRAWINGS
 ETC. C. CLADDING, GLAZING, WINDOW MULLIONS, INTERIOR STUD WALLS AND EXTERIOR STUD WALLS. D. ARCHITECTURAL PRECAST, PRECAST CLADDING. 	1. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" IN THE REVISIONS COLUMN, BY READ JONES CHRISTOFFERSEN LTD. THE DRAWINGS SHALL NOT BE USED FOR PRICING, COSTING, OR TENDER UNLESS SO
 E. SKYLIGHTS. F. MECHANICAL AND ELECTRICAL EQUIPMENT, COMPONENTS, AND THEIR ATTACHMENT DETAILS. 	INDICATED IN THE REVISION COLUMN. PRICING OR COSTING DRAWINGS ARE NOT COMPLETE AND ANY PRICES BASED ON PRICING OR COSTING DRAWINGS MUST INCLUDE ALLOWANCES FOR THIS.
 G. WINDOW WASHING EQUIPMENT AND ITS ATTACHMENTS. H. ESCALATORS, ELEVATORS, AND CONVEYING SYSTEMS. I. GLASS BLOCK AND ITS ATTACHMENTS. J. BRICK OR BLOCK VENEERS AND THEIR ATTACHMENTS. 	2. THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.
K. NON-LOAD BEARING MASONRY.L. NON-STRUCTURAL CONCRETE TOPPINGS.	 THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS
SHOP DRAWINGS FOR NON-STRUCTURAL ELEMENTS WHICH MAY AFFECT THE PRIMARY STRUCTURAL SYSTEM SHALL BE SUBMITTED TO READ JONES CHRISTOFFERSEN LTD. THESE DRAWINGS WILL BE REVIEWED ONLY FOR	RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.

DESIGN CODE

THE COMPLETED BASE BUILDING STRUCTURE SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED IN SUBSTANTIAL ACCORDANCE WITH THE ONTARIO BUILDING CODE 2012 O.REG 88/19 WHICH IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2015.

FIELD REVIEW BY READ JONES CHRISTOFFERSEN (RJC)

READ JONES CHRISTOFFERSEN PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS NOT A "FULL TIME" REVIEW BUT IS CONDUCTED WITH SUCH FREQUENCY AS RJC DEEMS APPROPRIATE TO OBSERVE VARIOUS STAGES OF THE WORK AND TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY READ JONES CHRISTOFFERSEN. FIELD REVIEW BY READ JONES CHRISTOFFERSEN IS NOT CARRIED OUT FOR THE CONTRACTOR'S BENEFIT, NOR DOES IT MAKE READ JONES CHRISTOFFERSEN GUARANTORS OF THE CONTRACTOR'S WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. RJC SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

RJC WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON RJC'S DRAWINGS. THE EXTENT OF THIS REVIEW IS AT THE SOLE DISCRETION OF RJC'S ENGINEER AND IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE STRUCTURAL DESIGN CONCEPT. THE REVIEW IS NOT AN APPROVAL OF THE DESIGN, DETAILS, AND DIMENSIONS INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR OR SUBCONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OR SUBCONTRACTOR OF HIS OR HER RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

PROVIDE 24 HOURS ADVANCE NOTICE OF EACH REQUIRED FIELD REVIEW. FIELD REVIEWS SHALL BE SCHEDULED TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH RJC.

3. THE WORK TO BE REVIEWED SHALL BE GENERALLY COMPLETE.

TEMPORARY WORKS

2.

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THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN, REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.

IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT AND FREE FROM EXCESSIVE DEFLECTION.

ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS ON THE FLOORS ARE NOT PERMITTED, UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S TEMPORARY WORK DESIGN TO THE SATISFACTION OF THE ARCHITECT & ENGINEER.

COSTS OF ALL TEMPORARY WORKS ARE DEEMED TO HAVE BEEN INCLUDED IN THE CONTRACT PRICE.

SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY WORKS FOR REVIEW BEFORE FABRICATION COMMENCES. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED AND LICENSED TO PRACTICE BY THE PROFESSIONAL ENGINEERING ASSOCIATION HAVING JURISDICTION IN THE AREA WHERE THE STRUCTURE IS TO BE BUILT.

ANY CONSTRUCTION SEQUENCES SHOWN ON THE DRAWINGS SHALL BE PART OF TEMPORARY WORKS AND ARE FOR THE CONTRACTOR'S CONSIDERATION ONLY. THE CONTRACTOR IS AT LIBERTY TO USE ANY OTHER SEQUENCE AS HE DEEMS APPROPRIATE, BUT AT NO TIME SHALL THE SAFETY AND INTEGRITY OF THE WORKS AND THE STRUCTURE BE COMPROMISED. IF THE CONTRACTOR ADAPTS THE SUGGESTED SEQUENCE, SUCH SEQUENCE SHALL BE DEEMED AS THE CONTRACTOR'S OWN SELECTION OF METHOD, AND THE CONTRACTOR SHALL ASSUME FULL AND SOLE RESPONSIBILITY FOR IT, AS STATED IN (1) ABOVE. THE CONTRACTOR SHALL INFORM THE ARCHITECT IF HE WISHES TO DEVIATE FROM ANY SUGGESTED SEQUENCE.

7. SEE ALSO CONCRETE FORMWORK STRIPPING AND SHORING NOTES.

GENERAL

1.

2.

3.

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8.

SECTION MARK SHOWN THUS

SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, NAILERS, INSERTS, ETC., TO BE ENCASED IN CONCRETE.

- MEANS SECTION #4 ON

SEE ARCHITECTURAL DRAWINGS FOR FLOOR AND ROOF ELEVATIONS, RECESSES, DRAINAGE SLOPES, ETC.

4. THE GENERAL CONTRACTOR SHALL REVIEW ALL THE DRAWINGS AND CHECK DIMENSIONS BEFORE CONSTRUCTION. REPORT DISCREPANCIES BETWEEN STRUCTURAL AND OTHER DISCIPLINES DRAWINGS FOR CLARIFICATION.

DESIGN FORCES INDICATED ON DRAWINGS FOR STRUCTURAL STEEL WORK ARE FACTORED FORCES UNLESS NOTED OTHERWISE. FORCES ARE VERTICAL SHEAR FORCES U.N.O.

- A.
 FORCES
 kN

 B.
 MOMENTS
 kN-m

 C.
 LINE LOADS
 kN/m
- D. DISTRIBUTED LOADS ----- kPa

SEE "GENERAL NOTES - LOADS" FOR DEFINITIONS AND VALUES OF LIVE LOAD, DEAD LOAD AND SUPERIMPOSED DEAD LOAD. SEE ALSO PLANS FOR OTHER LOAD/FORCE REQUIREMENTS.

CONCRETE WORK

SHALL CONFORM TO CAN/CSA-A23.1, CAN/CSA-A23.2, CAN/CSA-A23.3 AND REFERENCED DOCUMENTS.

STRUCTURAL STEEL WORK SHALL CONFORM TO CAN/CSA-S16 AND REFERENCED DOCUMENTS

FIRE RESISTANCE RATINGS SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR PRECISE LOCATION OF REQUIRED FIRE RESISTANCE RATINGS.

9. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION OF RJC.

10. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR LOCATIONS, CONFIGURATIONS, EXTENT, AND SIZES OF ALL CURBS, UPSTANDS, DOWNTURNS; AND FOR OPENINGS THROUGH FLOORS AND WALLS FOR DUCTS, CONDUIT AND PIPING. PROVIDE FOR SAME.

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- shown in them (the "Work") and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project.
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Creative Thinking **Practical Results**

S.C.L.DION 100212603

2021-12-15

Read Jones Christoffersen Ltd. Engineers rjc.ca

100 University Avenue, North Tower, Suite 400 Toronto, ON M5J 2X4 Canada tel 416-977-5335 fax 416-977-1427

Project Information BFES Station 201

27 Rutherford Rd. S., Brampton, ON. L6W 3J3

City of Brampton Fire & Emergency Services

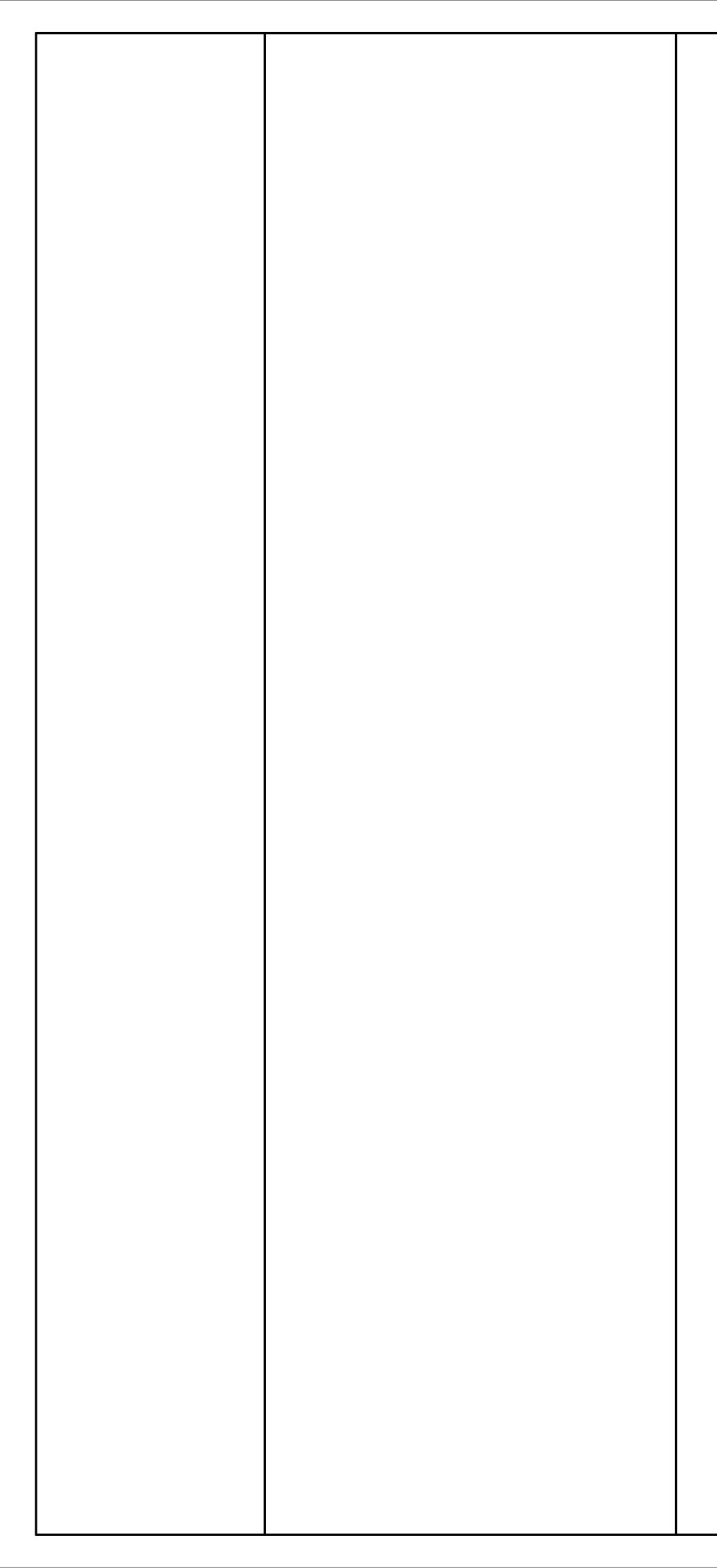
Drawing Title

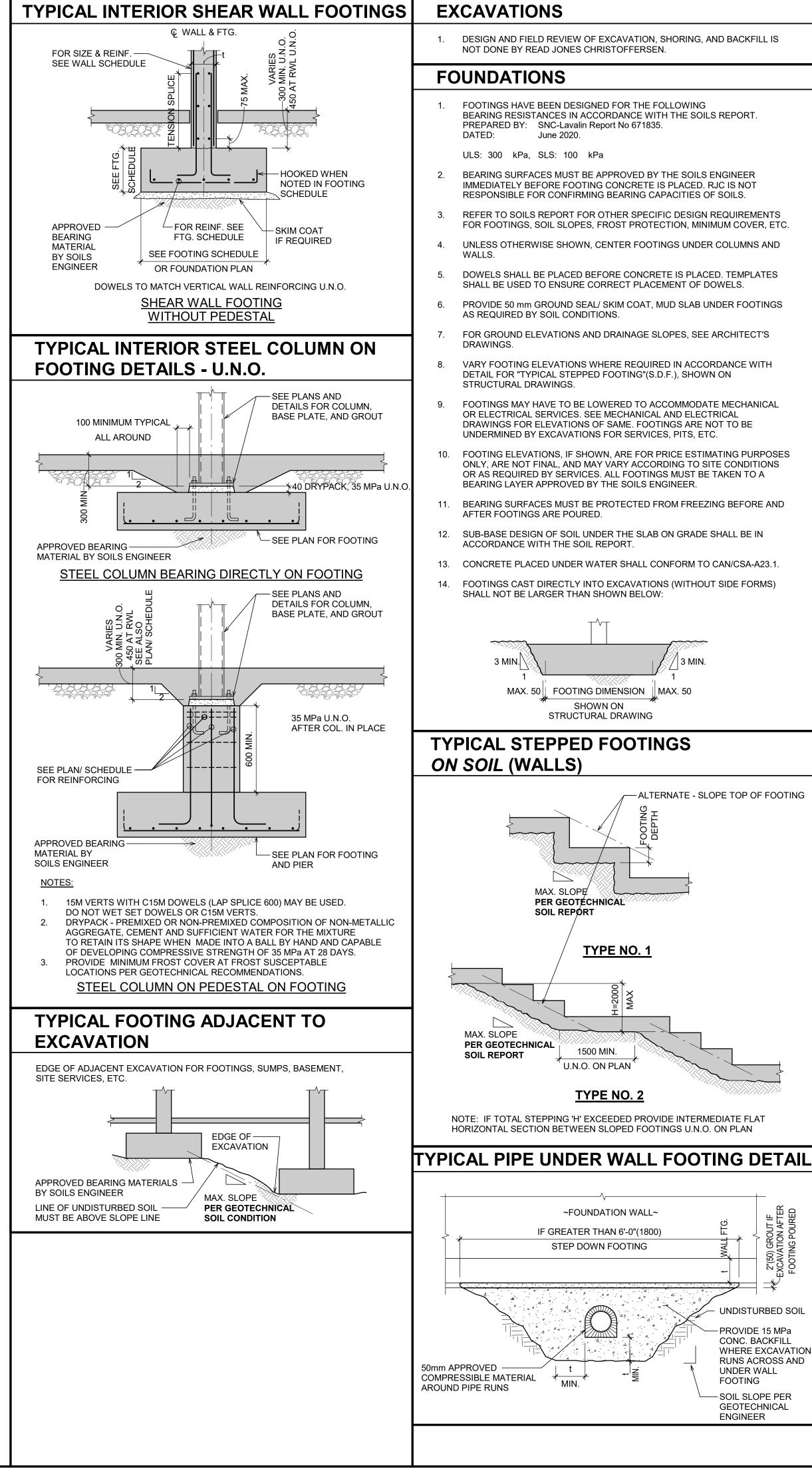
GENERAL NOTES

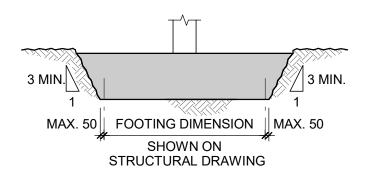
Date 15.12.2021 Drawing No
Drawn by BK
Scale As indicated

Project No

S101







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City of Brampton Fire & Emergency Services

Drawing Title

TYPICAL DETAILS

Date 15.12.2021	Drawing No
Drawn by BK	S103
Scale As indicated	
Project No	TOR.127511.0001

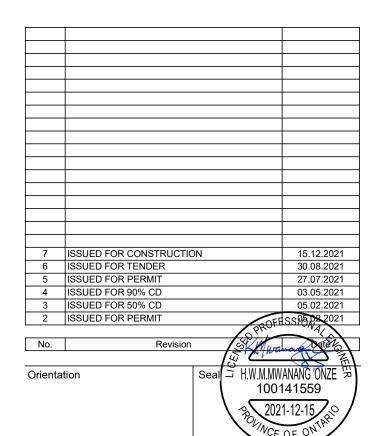
 CONCENTER FORMWORK STRIPPING BUILDING STRIPPING THE PROBABILITY OF THE CONTERATOR REPROBABILITY PROBABILITY OF THE PROBABILITY OF THE CONTERATOR REPROBABILITY BUILDING STRIPPING THE PORT OF THE PROBABILITY OF THE CONTERATOR REPROBABILITY OF THE COLLINE OF VILLI BUILDING STRUPPING OF VILLI BUILDING ST

	RCEME	NT		18.	AT THE REQU	EST OF THE	OWNER.	THE SUPPL	LIER WILL	FURNISH	TEST		ONCRETE			
REINFORCEMENT SHALL CONFORM	_		IDARDS:		DATA RESULT DESIGN DEMO AND SHRINKA	S (LESS THANNESTRATING	AN 3 MONT G THAT TH	THS OLD) F EY MEET T	OR EACH	PROPOSE	ED MIX	CONCRETE PLACEMENT				
B. CSA STANDARD G30.5 -C. CAN/CSA-G30.18W -	GRADE 400 MI REINFORCEM	Pa - WELDED ENT Pa - ALL REIN DED OR IS PA STING ELEME FOR SHEAR	FORCING THAT RT OF THE :NTS: WALLS,	19.	FOR 56 DAY S THE OWNER V PROPOSED M THE OWNER, S MIX AS PLACE PLACEMENT.	TRENGTH S WITH ACCEL IX DESIGN, (SUCH THAT D ON SITE (PECIFICAT ERATED S OR OTHER THE ANTIO CAN BE EV	TIONS, THE TRENGTH DOCUMEI CIPATED 5 ALUATED V	TEST DAT NTATION A 6 DAY STR WITHIN 14	A FOR EA CCEPTAB ENGTH O DAYS OF	ACH BLE TO DF THE	1. 2. 3.	UNLESS NOTED OTHERWI CONCRETE PLACEMENT B PERMITTED FOR ELEMENT NOTE ON DRAWING THE USE OF SHOTCRETE I	Y THE WET-MIX SI IS LISTED IN THE ' REQUIRES APPRO	HOTCRETE ME 'STRUCTURAL VAL BY THE S'	THOD IS SHOTCRETE" TRUCTURAL
	TIES AND HEA MOMENT FRA (INCLUDING C STIRRUPS). PRESTRESSIN	ADER TIES/STI ME COLUMNS COLUMN TIES /	RRUPS) AND AND BEAMS	20.	CURING OF CO EXPOSURE CL NOT PERMITT C-XL CONCRE PARKING ARE	LASS AS OU ED FOR SUS TE. PARKIN	TLINED IN SPENDED F G SLABS A	CSA A23.1 PARKING S ND REINF(. CURING SLABS OR ORCED SL	COMPOUN EXPOSUR AB ON GR	RE CLASS		ENGINEER. ANY COSTS AS CONTRACT DOCUMENTS A ADMINISTRATION COSTS T FOR BY THE CONTRACTOR	AND ANY ADDITION	NAL TESTING A	AND CONTRACT
	ASTM A775M A	AND ASTM D3	963	21.	CORROSION I ON THE STRU LANDINGS WI CONSTRUCTIO	CTURAL DR THIN PARKA ON PRODUC	AWINGS, A DES. USE TS OR "MA	AS WELL A 10 L/m³ OF ASTERLIFE	S IN STAIF "DCI S" B' CI 30" BY	RS AND ST Y GRACE BASF	AIR	<u>CO</u> 4.	CONCRETE IS SPECIFIED A OUTLINED IN CSA A23.1.		FORMANCE" AL	TERNATE AS
UNLESS OTHERWISE NOTED CONC SHALL BE: A. FOR FIRE RATINGS:			CEMENT	22.	CONSTRUCTIO CURING TYPE ALL BOTTOM F OF WALLS AN EDGES OF EX	3 (EXTENDI EDGES OF E D COLUMNS	ED) PER C: EXPOSED S 3, TO BE CH	SA A23.1. SLABS AND HAMFERED) BEAMS, A) 20 mm X	AS WELL A 20 mm. AL	AS EDGES LL TOP	5.	THE GENERAL CONTRACT CONCRETE SUPPLIER TO PROPERTIES MEET SITE R THE OWNERS' SPECIFIED	ENSURE THAT THE REQUIREMENTS FO PERFORMANCE R	E PLASTIC AND DR PLACING, F EQUIREMENTS	D HARDENED MIX INISHING, AND S. THE GENERAL
GENERAL (AREAS NOT		FIRE RATING			TOOLED UNLE DRAWINGS AN	SS NOTED	OTHERWIS	E. SEE AL	SO ARCHI	TECTURA	L		CONTRACTOR SHALL MEE CONTROL REQUIREMENTS ALTERNATE OF CSA A23.1	S OUTLINED UNDE		
DLUMNS AND FORMED LES (TO TIES)	0-2 HOURS 40 mm	3 HOURS 40 mm	4 HOURS 55 mm	23.	NO CALCIUM (MIX WITHOUT CHRISTOFFEF	THE EXPRE						6.	THE SUPPLIER SHALL MEE REQUIREMENTS AS OUTLI OF CSA A23.1.			
ETAINING/FOUNDATION ALLS (F-2 EXPOSURE) GROUND OR EARTH SIDE		N/A N/A	N/A	24.	CURING AND F WEATHER IS T "CONCRETE C DRAWINGS.	ΓΟ BE AS PE	ER CSA A23	3.1 AS A MI	NIMUM. SE	EE ALSO		7.	THE CONCRETE SUPPLIER CONCRETE ASSOCIATION		FIED BY THE R	EADY MIXED
1 - SEE NOTE B FOR BAR DIA ≥ 30M 2 - SEE NOTE E FOR BAR DIA ≥ 30M $a = 1000 \text{ M}^{-1}$					Dickwindo.							8.	CONCRETE PROPERTIES:			
B. UNLESS NOTED OTHERWISE MINIMUM CONCRETE COVERC. CONCRETE CAST AGAINST E.												-	ELEMENT	GENERAI COMPRESSIVE STRENGTH (MPa)	EXPOSURE	COMMENTS
D. CONCRETE WITH NO MEMBR AND EXPOSED TO CHLORIDE - EXPOSURE CLASS C-XL, C	S	RKING)	60 mm OR 2d (WHICHEVER IS GREATER)	ÌF AI	NSTRUCTION JC	DRAWINGS	AND —						FOOTINGS	28 DAY U.N.O. 30 MPa (56 DAY)	N	
E. FORMED FINISHED CONCRET WEATHER, - EXPOSURE CLASS F1, F2, S	TE EXPOSED T	-0	,	FOR X 25 CAU	CIFICATIONS DO WALLS BELOW mm DEEP NOTO ILKING OR DAMP UIREMENTS.	GRADE, PR CH AND FILL	OVIDE A 2 NOTCH W	0 mm WIDE /ITH					SLAB ON GRADE (EXTERIOR) RETAINING WALLS / FOUNDATION WALLS	32 MPa 25 MPa	C-2 F-2	· · ·
<u>NOTES:</u> LARGEST COVER REQUIRED GOVE					TERSTOP IF REG ARCHITECTURA				K K	EY FROM	38x89		MECHANICAL HOUSEKEEPING PADS SLAB ON GRADE AT	20 MPa 35 MPa	N C-1	
SEE ARCHITECTURAL DRAWINGS A AREAS WHICH MAY REQUIRE 3 HO	AND STRUCTU UR RATINGS C	OR GREATER.		CON	HORIZONTAL BA		OR	• •		• • • • • • • • • • • • • • • • • • •	> CE OF		APPARATUS BAY			
SEE STRUCTURAL DRAWINGS FOR FOR WEATHER EXPOSURE.		SIFIED AS (C)	or (D) ABOVE	IEN	SION SPLICED.		<u>PL</u>	<u>AN</u>					1. WHERE EXPOSURE	CLASS LISTED AS	N/F-1/F-2:	
A. BARS SHOWN THUS	IN	I BOTTOM OF	BEAMS OR	W	ALL COI	NTROI	L JOII	NT				-	A. USE N EXPOSURE AN INSULATED BU SUBJECTED TO F	JILDING ENVELOP	E (E.G. DRY AN	
SLABS OR IN FAR FACE OF W BARS SHOWN THUS OR IN FAR FACE OF WALL	IN	I TOP OF BEAN	MS OR SLABS	EXT	ESS NOTED OTH ERIOR WALLS E	XPOSED TO) WEATHEF	R ABOVE G	GRADE.				B. USE F-1 EXPOSU MEMBERS EXTER PROTECTED BY A SUBJECT TO FRE	NOR TO THE BUILD	DING INSULATION DRIP EDGE (E.	ON AND NOT
 B. STRAIGHT BARS: E.G. 6-10M4200 MI E.G. 20M4000 @ 3 FOR EACH 20M400 IF STAGGER NOT 	00 ST 600 MEA 00 BAR SPACE	ANS 600 END (ED AT 300mm (SPA	CE AT 6000 mm	VENTERS M		FC FII DA	OR WALLS LL NOTCH AMP-PROC	BELOW G WITH CAU FING TO			C. USE F-2 EXPOSU MEMBERS EXTER PROTECTED BY A SUBJECT TO FRE	RE FOR HORIZONT NOR TO THE BUILE MEMBRANE AND	AL AND SLOPE NING INSULATION DRIP EDGE (E.	ON AND
TYP. DETAILS. BENT BARS:													D. USE F-2 FOR VER THE BUILDING INS		MEMBERS EX	TERIOR TO
E.G. 6-C15M4000 (INCLUDING HOOK 300mm c/c	LENGTH H.1.I	E. 90° AND SP	ACED AT	NOT	DE FACE OF WA				L HORIZO				2. CONCRETE STRENG RAMPS SHALL MEET ADJOINING SLABS A	THE MOST STRIN	GENT CRITERI	IA OF THE
E.G. 6-A15M3000 (INCLUDING HOOK E.G. 15M @300 H2	LENGTH H.1.	E. 180° AND S	PACED AT 300mm	ON	EACH FACE		<u>PLA</u>	<u>N</u>				9. 10.	PORTLAND CEMENT SHAL REQUESTS BY THE CONTE			
WITH H.1.Ē. 90° A	T EACH END.		$\overline{\qquad}$		EVELOP TENSIO		OF S	TANE	DARD	НОС	OKS		STRUCTURAL ELEMENTS S ENGINEER FOR REVIEW A A SIGNED AND SEALED LE ENGINEER TO ATTEST TH CEMENT ACHIEVES SIMILA	SHALL BE SUBMIT ND APPROVAL. TH TTER PREPARED AT THE CONCRET	TED TO THE S IE SUBMISSION BY A MATERIA E PRODUCED	TRUCTURAL N SHALL INCLUDE LS SPECIALTY WITH TYPE GUL
PRIOR APPROVAL OF THE RJC. SUPPORT REINFORCING WITH CHA BARS AS REQUIRED. BARS USED A CONSIDERED AS ACCESSORIES.				BAS	ED ON CSA A23.	.3.				1			THE CONCRETE PRODUCE DRAWINGS AND SPECIFIC CLASS, ETC. AND THAT TH INTENDED LOCATION AND	ED WITH TYPE GU ATIONS, INCLUDIN IE PROPOSED MIX PLACEMENT MET	CEMENT NOTE IG STRENGTH, IS SUITABLE F HOD. FOR COM	ED IN THE , EXPOSURE FOR THE NCRETE WITH
PROVIDE SUFFICIENT SUPPORTS T SPECIFIED. ALL SUPPORTS AND BA MAINTAIN REINFORCING STEEL SE	ARS MUST BE	TIED TOGETH	ER TO		CONCRETE STRENGTH	10M	EBAR DES	20M	25M	30M	35M		TYPE GUL CEMENT TO BE ADDITIONAL SUBSURFACE UNDER THE DIRECTION OF DETERMINE SOLUABLE SU REPORT SHALL BE PROVID	E SOIL INVESTIGAT F THE MATERIALS JLPHATE LEVELS <i>F</i>	TION SHALL BE SPECIALTY EN AND A COPY O	E COMPLETED NGINEER TO F THE SEALED
PLACEMENT. TESTING OF REINFORCING STEEL	SHALL CONFO	ORM TO THE S	PECIFICATIONS.		20 MPa 25 MPa 30 MPa	225 200 185	340 300 275	450 400 370	560 500 460	675 600 550	785 700 640		REPORT SHALL BE PROVID TESTING AND OTHER SER RELATED TO USE OF TYPE CONTRACTOR.	VICES BY THE MA	TERIALS SPEC	IALTY ENGINEER
					35 MPa 40 MPa	170	255 240	340 320	425 400	510 475	595 555	11.	CEMENT TYPE FOR EXPOS OUTLINED IN CSA A23.1.	SURE CLASSES S-	1, S-2, AND S-3	SHALL BE AS
					45 MPa 50 MPa	150 150	225 215	300 285	375 355	450 425	525 495	12.	CONCRETE SHALL HAVE A UNLESS NOTED OTHERWI		23±1 kN/m³ (14	45±5 PCF)
				65				270 260 250	340 325 315	405 390 375	475 455 440	13.	THE CONCRETE PROPERT COARSE AGGREGATE SIZI OTHERWISE. ALL LOCATIC OF CONCRETE MIX DESIGI SMALLER THAN 19 mm SH, ENGINEER FOR REVIEW A CONCRETE STRENGTH OF	E OF NOT LESS TH DNS PROPOSED B' NS WITH A MAXIMI ALL BE SUBMITTEI ND APPROVAL. AN R INCREASE IN QU	IAN 19 mm, UN Y THE CONTRA JM COARSE AO D TO THE STRI IY INCREASE II ANTITY OF RE	ILESS NOTED ACTOR FOR USE GGREGATE SIZE UCTURAL N REQUIRED INFORCEMENT
				1. 2.	TABLE SHOWS INCREASE TAI	BLE LENGTH	HS BY 1.25	FOR GRAE	DE 500 REI	NFORCEM	MENT.		DUE TO PROPOSED USE C AGGREGATE SIZE SMALLE CONTRACTOR.	ER THAN 19 mm TC	BE PAID FOR	BY THE
													RECYCLED AGGREGATE IS APPROVAL BY THE ENGIN	EER.		
													CONTRACTOR AND SUPPL REQUIREMENTS WITHOUT SPECIFICATIONS.	LIER TO MEET PLA SEGREGATION W	CEMENT, AND /HILE MEETINC	FINISHING G ALL OWNER
												16.	MAXIMUM WATER/CEMEN	T RATIO AND AIR C	ONTENT TO M	IEET THE

MAXIMUM WATER/CEMENT RATIO AND AIR CONTENT TO MEET THE REQUIREMENTS FOR THE EXPOSURE CLASS AS OUTLINED IN CSA A23.1. REQUIRED AIR CONTENT FOR EXPOSURE CLASSES F-1, F-2, C-1, C-2, AND C-XL SHALL BE BASED ON CONCRETE EXPOSED TO FREEZE-THAW CYCLES UNLESS NOTED OTHERWISE.

17. CHLORIDE ION PENETRABILITY FOR EXPOSURE CLASS C-1 AND C-XL SHALL MEET THE REQUIREMENTS OF CSA A23.1.

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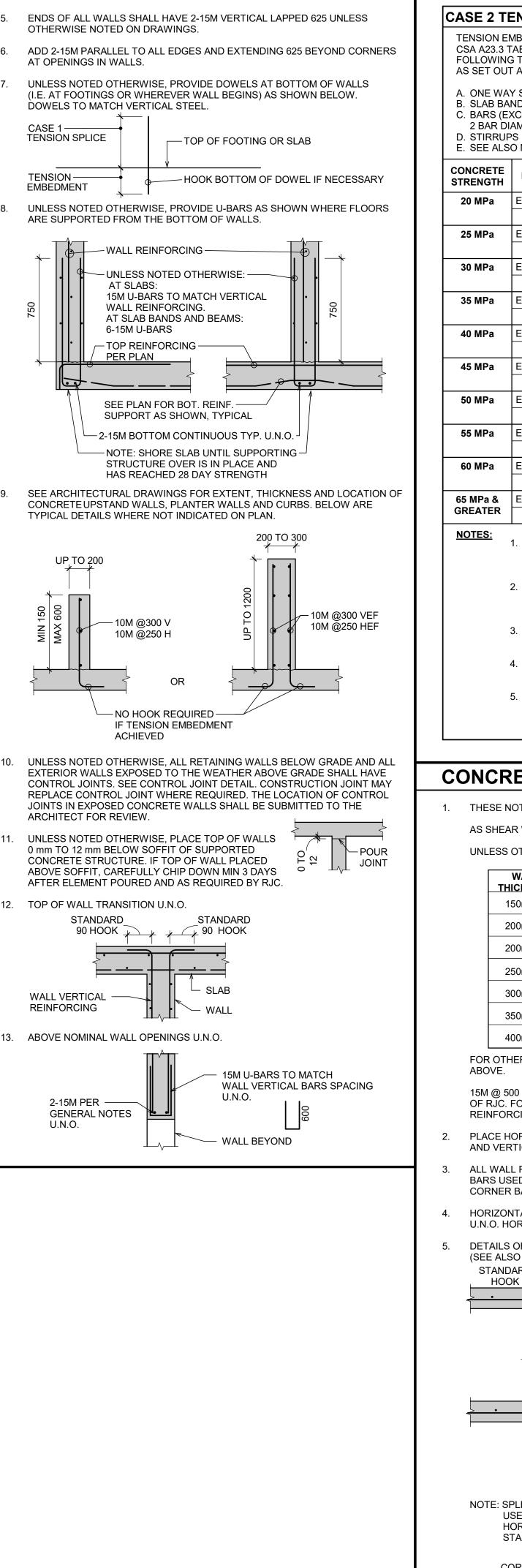
Drawing Title

TYPICAL DETAILS

Date Drawing No 15.12.2021 Drawn by ВК Scale As indicated Project No

S104

	CRETE COLD WEATHER REQUIREMENTS T-IN-PLACE AND SHOTCRETE)	5.
· ·	ALSO CSA A23.1, EXCEPT THE FOLLOWING MINIMUM REQUIREMENTS MUST BE MET)	6.
	FORECASTED AIR TEMPERATURE AT OR BELOW 5°C	7.
	A. THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO MAINTAIN A MINIMUM CONCRETE TEMPERATURE OF 10°C.	
	 B. CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE WHICH IS AT A TEMPERATURE LESS THAN 5°C. 	
	C. CONTRACTOR SHALL BE PREPARED TO COVER SLABS IF	
	UNEXPECTED DROP IN AIR TEMPERATURE SHOULD OCCUR.D. CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR	8
	AT LEAST 7 DAYS OR UNTIL THE CONCRETE REACHES 70% OF SPECIFIED STRENGTH.	
	FORECASTED AIR TEMPERATURE BELOW 2°C BUT NOT BELOW -4°C	
	 (NOTE - FOR THESE CONDITIONS STRUCTURAL CONCRETE TOPPINGS ON METAL DECK SHALL SATISFY THE REQUIREMENTS OF NOTE 3). A. FORMS AND STEEL SHALL BE FREE FROM ICE AND SNOW. 	
	B. THE AGGREGATE OR MIXING WATER SHALL BE HEATED TO GIVE A	
	 MINIMUM CONCRETE TEMPERATURE OF 10°C AT POINT OF POUR. C. CONCRETE SHALL NOT BE PLACED ON OR AGAINST ANY SURFACE 	
	WHICH IS AT A TEMPERATURE OF LESS THAN 5°C.D. SLABS SHALL BE COVERED WITH CANVAS OR SIMILAR, KEPT A FEW	
	INCHES CLEAR OF SURFACE. E. PROTECTION SHALL BE MAINTAINED FOR AT LEAST THE SPECIFIED	
	CURING PERIOD.	
	F. CONCRETE TEMPERATURE SHALL BE MAINTAINED ABOVE 10°C FOR AT LEAST THE SPECIFIED CURING PERIOD.	9
3.	FORECASTED AIR TEMPERATURE BELOW -4°C	
	A, B, C, D, AS UNDER NOTE 2.	
	E. STOREY BELOW SHALL BE ENCLOSED AND ARTIFICIAL HEAT PROVIDED. HEATING TO BE STARTED AT LEAST ONE HOUR AHEAD OF POURING AND MAINTAINED FOR A MINIMUM OF THE SPECIFIED CURING PERIOD.	
	F. TEMPERATURE OF THE CONCRETE AT ALL SURFACES SHALL BE KEPT AT A MINIMUM OF 20°C FOR 3 DAYS, OR 10°C FOR 7 DAYS. CONCRETE SHALL BE KEPT ABOVE FREEZING TEMPERATURES UNTIL IT REACHES 70% OF ITS SPECIFIED STRENGTH.	
	G. ENCLOSURE MUST BE CONSTRUCTED SO THAT AIR CAN CIRCULATE OUTSIDE THE OUTER EDGES AND MEMBERS.	
	H. REINFORCING TO BE COVERED AND WARMED TO MAINTAIN ITS TEMPERATURE AT 0°C OR HIGHER AT THE TIME OF CONCRETE	
<u>~</u> ~	PLACEMENT.	1
(TOLE	PNCRETE CONSTRUCTION TOLERANCES	
OR OT	ER TOLERANCES SHALL BE MAINTAINED WHERE ARCHITECTURAL DETAILS THERS REQUIRE.	
AND A OTHE FOR F	RE ANY DEVIATION OCCURS, AND IT IS ACCEPTABLE TO THE ENGINEER ARCHITECT, THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF RE BUILDING ELEMENTS TO ACCOMMODATE SUCH DEVIATION. COSTS REMEDIAL WORK FOR DEVIATIONS NOT ACCEPTED SHALL BE BORNE HE CONTRACTOR.	
1.	VARIATION FROM THE PLUMB.	1
	A. IN THE LINES AND SURFACES OF COLUMNS, PIERS, WALLS AND IN ARRISES: 0.25% OF HEIGHT (1 IN 400), MAXIMUM 40 mm OVER THE ENTIRE HEIGHT OF THE STRUCTURE.	
	ONLY ONE CURVATURE ALLOWED PER 3000 mm.	
	THE TOLERANCE GIVEN IS THE MAXIMUM VARIATION FROM A PLUMB LINE.	
	ALL MEASUREMENTS SHALL BE TO THE SAME SIDE OF THE PLUMB LINE.	
	B. UNLESS SPECIFIED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS - THE TOLERANCES FOR EXPOSED CORNER COLUMNS, CONTROL JOINT GROOVES, AND OTHER CONSPICUOUS LINES SHALL BE: (SEE ALSO ELEVATOR SHOP DRAWINGS, ETC.)	
	0.125% OF HEIGHT (1 IN 800), MAXIMUM 20 mm.	
	ONLY ONE CURVATURE ALLOWED PER 6000 mm. MAXIMUM VARIATION IN WINDOW BAYS 0.2% OF OPENING.	
	UNLESS SPECIFIED ELSEWHERE, FLOOR FINISHES SHALL BE CLASS A "INSTITUTIONAL AND COMMERCIAL FLOOR" ± 8 mm PER 3000 mm.	
	ONLY ONE CURVATURE ALLOWED IN 3000 mm.	
	CLOSER TOLERANCES MAY BE REQUIRED TO GIVE THE QUALITY OF FINISH FLOOR SURFACES CALLED FOR ELSEWHERE IN THE CONTRACT DOCUMENTS.	
3.	VARIATIONS OF STRUCTURAL CONCRETE ELEMENTS RELATED TO EACH OTHER AND RELATIVE TO A REFERENCED GRID SYSTEM FOR PLAN DIMENSIONS TO MEET CSA A23.1.	
	VARIATION IN CROSS-SECTIONAL DIMENSIONS OF COLUMNS AND BEAMS AND IN THE THICKNESS OF SLABS AND WALLS: AS IN CSA A23.1.	
	ONLY ONE CURVATURE ALLOWED PER 3000 mm. FOOTINGS:	
	A. VARIATION IN DIMENSIONS IN PLAN: MINUS 10 mm	
	 PLUS 50 mm B. MISPLACEMENT OR ECCENTRICITY: TWO (2) PERCENT OF THE FOOTING WIDTH IN THE DIRECTION OF MISPLACEMENT BUT NOT MORE THAN 50 mm 	
	OF MISPLACEMENT BUT NOT MORE THAN 50 mm C. REDUCTION IN THICKNESS: MINUS 5% OF SPECIFIED THICKNESS	
6.	MINUS	



CASE 2 TENSION EMBEDMENT AND SPLICE CONDITIONS

TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 (0.6 $k_1k_2k_3k_4f_yd_b / \sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR MEMBERS NOT SATISFYING CASE 1 CONDITIONS AS SET OUT ABOVE. FOR EXAMPLE:

- A. ONE WAY SLAB TOP BARS (SEE TOP BAR NOTE).
- B. SLAB BAND BOTTOM BARS.C. BARS (EXCLUDING THE SPLICE) SPACED CLOSER TOGETHER THAN
- 2 BAR DIAMETERS IN SAME LAYER AND BETWEEN LAYERS. D. STIRRUPS IN BEAMS AND GIRDERS.
- E. SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.

CONCRETE	FUNCTION	REBA	AR DESIG	NATION	(GRADE	400 LENG	THS)
STRENGTH	FUNCTION	10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	430	645	860	1345	1610	1880
	(SPLICE)	(560)	(840)	(1120)	(1745)	(2095)	(2445)
25 MPa	EMBEDMENT	385	580	770	1200	1440	1680
	(SPLICE)	(500)	(750)	(1000)	(1560)	(1875)	(2185)
30 MPa	EMBEDMENT	355	530	705	1100	1315	1535
	(SPLICE)	(460)	(685)	(915)	(1425)	(1710)	(1995)
35 MPa	EMBEDMENT	325	490	650	1015	1220	1420
	(SPLICE)	(425)	(635)	(845)	(1320)	(1585)	(1850)
40 MPa	EMBEDMENT	305	460	610	950	1140	1330
	(SPLICE)	(395)	(595)	(790)	(1235)	(1480)	(1730)
45 MPa	EMBEDMENT	300	430	575	895	1075	1255
	(SPLICE)	(390)	(560)	(745)	(1165)	(1400)	(1630)
50 MPa	EMBEDMENT	300	410	545	850	1020	1190
	(SPLICE)	(390)	(530)	(710)	(1105)	(1325)	(1545)
55 MPa	EMBEDMENT	300	390	520	810	975	1135
	(SPLICE)	(390)	(505)	(675)	(1055)	(1265)	(1475)
60 MPa	EMBEDMENT	300	375	500	775	930	1085
	(SPLICE)	(390)	(485)	(645)	(1010)	(1210)	(1410)
65 MPa &	EMBEDMENT	300	360	480	750	900	1050
GREATER	(SPLICE)	(390)	(470)	(625)	(975)	(1170)	(1365)

1. "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.

2. INCREASE THESE TABLE LENGTHS BY 1.5 TIMES FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 TIMES FOR EPOXY COATED TOP REINFORCEMENT.

- 3. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.25 FOR GRADE 500 REINFORCEMENT.
- 4. INCREASE THESE TABLE LENGTHS BY 1.15 TIMES WHEN SPACING BETWEEN LAYERS OF REBAR IS 1.0db.

5. WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE LESSER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

CONCRETE WALLS

1. THESE NOTES APPLY SPECIFICALLY TO CONCRETE WALLS NOT CLASSIFIED AS SHEAR WALLS. SEE ALSO CONC. SHEAR WALL NOTES.

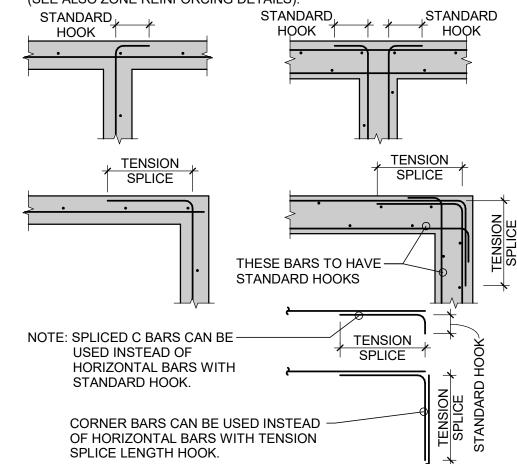
UNLESS OTHERWISE NOTED, WALLS SHALL BE REINFORCED AS FOLLOWS:

WALL THICKNESS	REIN	FORCING
150mm	10M @450 V	10M @330 H
200mm	10M @330 V	10M @250 H OR 15M @500 H
200mm	10M @500 VEF	10M @500 HEF
250mm	10M @500 VEF	10M @400 HEF
300mm	10M @440 VEF	10M @330 HEF
350mm	10M @380 VEF	10M @280 HEF
400mm	10M @330 VEF	10M @250 HEF OR 15M @500 HEF

FOR OTHER THICKNESSES, REINFORCEMENT TO BE PROPORTIONAL TO ABOVE.

15M @ 500 MAY BE SUBSTITUTED FOR 10M @ 330 ONLY WITH THE APPROVAL OF RJC. FOR WALLS WITH A SINGLE LAYER OF STEEL, THE WALL REINFORCING SHALL BE PLACED IN THE CENTRE OF THE WALL U.N.O.

- 2. PLACE HORIZONTAL REINFORCEMENT IN OUTTER LAYERS OF THE CURTAINS AND VERTICALS AS 2ND INSIDE LAYER (BEHIND HORIZONTALS).
- ALL WALL REINFORCING SHALL BE CONTINUOUS, WITH HOOKS OR CORNER BARS USED AT ALL WALL JUNCTIONS. EXTEND HOOKS TO FAR FACE OF WALL. CORNER BARS TO BE LOCATED ON OUTSIDE FACE OR CENTRE OF WALL.
- 4. HORIZONTAL AND VERTICAL SPLICES SHALL BE CASE 1 TENSION SPLICES. U.N.O. HORIZONTAL BARS NEED NOT BE CONSIDERED TOP BARS.
- 5. DETAILS OF HORIZONTAL REINFORCEMENT AT CORNERS (SEE ALSO ZONE REINFORCING DETAILS):



EMBEDMENT / DEVELOPMENT LENGTHS AND SPLICE LENGTHS

BASED ON CSA A23.3

8.

10.

11.

- WHERE EMBEDMENT OR SPLICES ARE DIMENSIONED ON THE DRAWINGS, SUCH DIMENSION SHALL APPLY.
- WHERE THE DRAWINGS INDICATE A COMPRESSION EMBEDMENT, IT IS A COMPRESSION EMBEDMENT LENGTH AND IT SHALL BE AS NOTED BELOW.
- WHERE THE DRAWINGS INDICATE A TENSION EMBEDMENT, IT IS A TENSION EMBEDMENT LENGTH AND SHALL BE AS NOTED BELOW.
- WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
- WHERE NO SPLICE OR SPLICE TYPE IS CALLED FOR ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE, EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
- IN TABLES BELOW, EMBEDMENT LENGTHS ARE SHOWN WITHOUT BRACKETS, AND SPLICE LENGTHS ARE SHOWN IN BRACKETS.
- ALL TENSION SPLICE LENGTHS ARE CLASS "B" (1.3 ld).
- WHERE MORE THAN ONE FACTOR APPLIES FOR INCREASING THE LENGTHS IN THESE TABLES, MULTIPLY ALL FACTORS TOGETHER.

COMPRESSION EMBEDMENT AND SPLICE LENGTHS

- COMPRESSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE THE "COMPRESSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.3.2.
- SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A COMPRESSION SPLICE AS DEFINED IN CSA A23.3 CLAUSE 12.16.1.

CONCRETE	FUNCTION	REBA	REBAR DESIGNATION (GRADE 400 LENGTHS)						
STRENGTH	FUNCTION	10M	15M	20M	25M	30M	35M		
20 MPa	EMBEDMENT	215	325	430	540	645	755		
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)		
25 MPa	EMBEDMENT	200	290	385	480	580	675		
	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)		
30 MPa &	EMBEDMENT	200	265	355	440	530	620		
GREATER	(SPLICE)	(300)	(440)	(585)	(730)	(880)	(1025)		

- **NOTES:** 1. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.46 FOR GRADE 500 REINFORCEMENT.
 - 2. WHERE A COMPRESSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE LESSER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

TENSION EMBEDMENT AND SPLICE LENGTHS

TENSION EMBEDMENT REFERS TO THE LENGTH REQUIRED TO PROVIDE A "TENSION DEVELOPMENT LENGTH" AS DEFINED IN CSA A23.3 CLAUSE 12.2.

SPLICE LENGTH REFERS TO THE MINIMUM LAP LENGTH REQUIRED FOR A CLASS 'B' TENSION SPLICE (1.3^ld) AS PER CSA A23.3 CLAUSE 12.15.

CASE 1 TENSION EMBEDMENT AND SPLICE CONDITIONS

- TENSION EMBEDMENT AND SPLICE LENGTHS CONFORMING TO CSA A23.3 TABLE 12.1 (0.45 $k_1k_2k_3k_4f_yd_b \ \sqrt{f'_c}$) ARE TO BE AS PER THE FOLLOWING TABLE FOR:

NOTES:

- A. COLUMNS. B. BEAM AND GIRDER TOP AND BOTTOM BARS.
- C. SLAB BAND TOP BARS.
- D. TWO WAY SLAB TOP AND BOTTOM BARS. E. ONE WAY SLAB BOTTOM BARS.
- F. WALL HORIZONTAL AND VERTICAL DISTRIBUTED REINFORCING.
- G. SEE ALSO NOTES ON TOP BARS AND EPOXY COATED REINFORCEMENT.H. MEMBERS WHICH DO NOT SATISFY THE ABOVE CONDITIONS SHALL HAVE TENSION EMBEDMENTS AND SPLICES AS PER CASE 2 TABLE BELOW.

TENSION EMBEDIMENTS AND STEICES AS TEN OASE 2 TABLE BELOW.							
ONCRETE	FUNCTION	REBA	AR DESIG	NATION	(GRADE	400 LENG	STHS)
TRENGTH	FUNCTION	10M	15M	20M	25M	30M	35M
20 MPa	EMBEDMENT	325	485	645	1010	1210	1410
	(SPLICE)	(420)	(630)	(840)	(1310)	(1570)	(1835)
25 MPa	EMBEDMENT	300	435	580	900	1080	1260
	(SPLICE)	(390)	(565)	(750)	(1170)	(1405)	(1640)
30 MPa	EMBEDMENT	300	395	530	825	990	1155
	(SPLICE)	(390)	(515)	(685)	(1070)	(1285)	(1500)
35 MPa	EMBEDMENT	300	370	490	765	915	1065
	(SPLICE)	(390)	(475)	(635)	(990)	(1190)	(1385)
40 MPa	EMBEDMENT	300	345	460	715	855	1000
	(SPLICE)	(390)	(445)	(595)	(925)	(1110)	(1295)
45 MPa	EMBEDMENT	300	325	430	675	805	940
	(SPLICE)	(390)	(420)	(560)	(875)	(1050)	(1225)
50 MPa	EMBEDMENT	300	310	410	640	765	895
	(SPLICE)	(390)	(400)	(530)	(830)	(995)	(1160)
55 MPa	EMBEDMENT	300	300	390	610	730	850
	(SPLICE)	(390)	(390)	(505)	(790)	(950)	(1105)
60 MPa	EMBEDMENT	300	300	375	585	700	815
	(SPLICE)	(390)	(390)	(485)	(760)	(910)	(1060)
65 MPa &	EMBEDMENT	300	300	360	565	675	790
GREATER	(SPLICE)	(390)	(390)	(470)	(735)	(880)	(1025)

- 1. "TOP BAR" VALUES ARE 1.3 TIMES THE ABOVE LENGTHS. "TOP BAR" APPLIES TO HORIZONTAL REINFORCEMENT CAST WITH 300 mm OR MORE OF CONCRETE BELOW THE BAR.
- 2. "TOP BAR" FACTOR DOES NOT APPLY TO HORIZONTAL WALL REINFORCEMENT IN WALLS THAT ARE NOT VIBRATED.
- 3. INCREASE THESE TABLE LENGTHS BY 1.5 TIMES FOR EPOXY COATED REINFORCEMENT. INCREASE THESE TABLE LENGTHS BY 1.7 TIMES FOR EPOXY COATED TOP REINFORCEMENT.
- 4. TABLE SHOWS LENGTHS FOR GRADE 400 REINFORCEMENT. MULTIPLY VALUES BY 1.25 FOR GRADE 500 REINFORCEMENT.
- 5. WHERE A TENSION SPLICE IS SPECIFIED BETWEEN TWO BARS OF DIFFERENT DIAMETERS, THE MINIMUM SPLICE LENGTH SHALL BE THE LESSER OF THE SPLICE LENGTH FOR THE SMALLER DIAMETER BAR AND THE EMBEDMENT LENGTH OF THE LARGER DIAMETER BAR.

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Creative Thinking Practical Results

S.C.L.DION 100212603

2021-12-15

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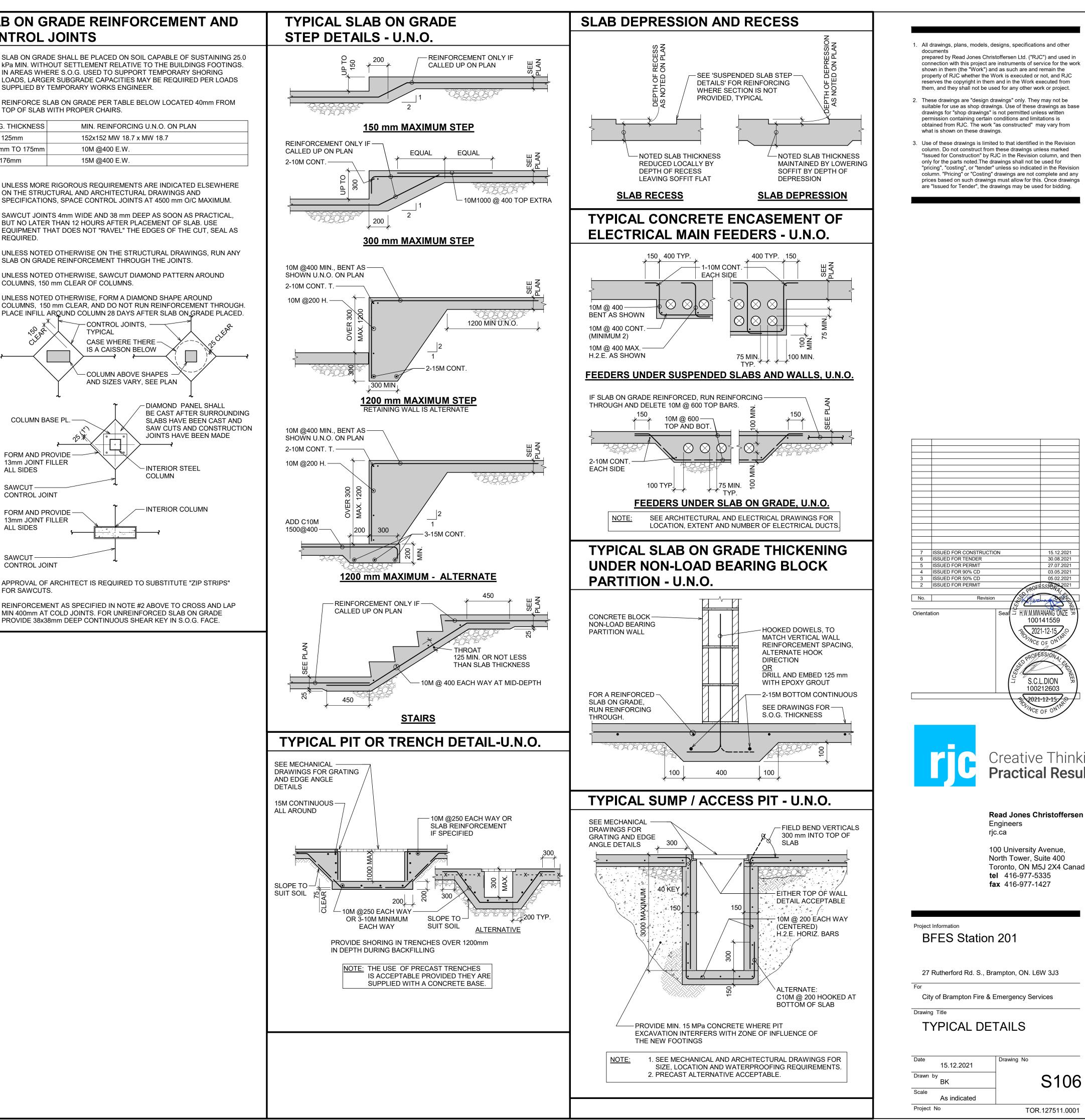
Drawing Title

TYPICAL DETAILS

Date 15.12.2021 Drawing No S105

	NG SLAB ON GRADE STAIRS	SLAB CON
ANCHORS BY OTHER SLAB ON - GRADE, SEE PLAN	STEEL STAIR STRINGER BY OTHERS S CONTINUOUS SLAB ON GRADE REINFORCEMENT	1. SL kP IN LO SU 2. RE TC S.O.G. T ≤ 125 126mm >176
	UCTURAL CONCRETE TOPPING RETE SLABS	3. UN ON SF
1. SEE ARCHITE	ECTURAL DRAWINGS AND SPECIFICATIONS FOR EXTENT, AND DETAILS.	- 4. SA BL EQ
2. REINFORCE	AS SHOWN ON STRUCTURAL OR ARCHITECTURAL PLANS AND ONS, EXCEPT MINIMUM REINFORCING TO BE:	S. UN
	REINFORCING (TO BE PLACED AT MID-DEPTH)1 SHEET OF WWR 152 X 152 - MW9.1 X MW9.1 LAP 3001 SHEET OF WWR 152 X 152 - MW9.1 X MW9.1 LAP 300 OR2 SHEETS OF WWR 152 X 152 - MW9.1 X MW9.1 LAP 3002 SHEETS OF WWR 152 X 152 - MW9.1 X MW9.1 LAP 3000 R 10M @ 500 EACH WAY AT MID-DEPTH OF TOPPINGTEMPERATURE REINFORCING EACH WAY, SEE "SLAB NOTES".THICKNESSES, REINFORCEMENT TO BE PROPORTIONAL TO	6. UN CC 7. UN CC PL
SEE ARCHITE JOINTS AND UNLESS NOT JOINTS. MINI IF SAWCUTS	ECTURAL DRAWINGS AND SPECIFICATIONS FOR CONTROL EXPANSION JOINTS, DETAILS, JOINT SPACING AND PATTERN. ED OTHERWISE, PROVIDE 25 mm DEEP SAWCUTS OR TOOLED MUM SPACING OF JOINTS IN EACH DIRECTION IS 3000 mm. ARE USED, DO NOT CUT REINFORCING AND MAKE THE ITHIN 12 HOURS OF POURING.	
EDGES TO AI	mm GAP (MIN.) AT	F(13
5. SEE ARCHITE	ECTURAL DRAWINGS AND SPECIFICATIONS FOR JOINT SLIP SHEETS, IF REQUIRED.	Al S/ C
6. FIELD REVIE REINFORCIN	W OF ARCHITECTURAL TOPPING DETAILS SUCH AS G, JOINTS, JOINT SPACING, JOINT FILLER, SLIP SHEETS ETC., NOT BY RJC. CALL ARCHITECT TO SCHEDULE FIELD REVIEW	F(13 Al
		S/ Cu 8. AP FC 9. RE MII
		PR
		PF

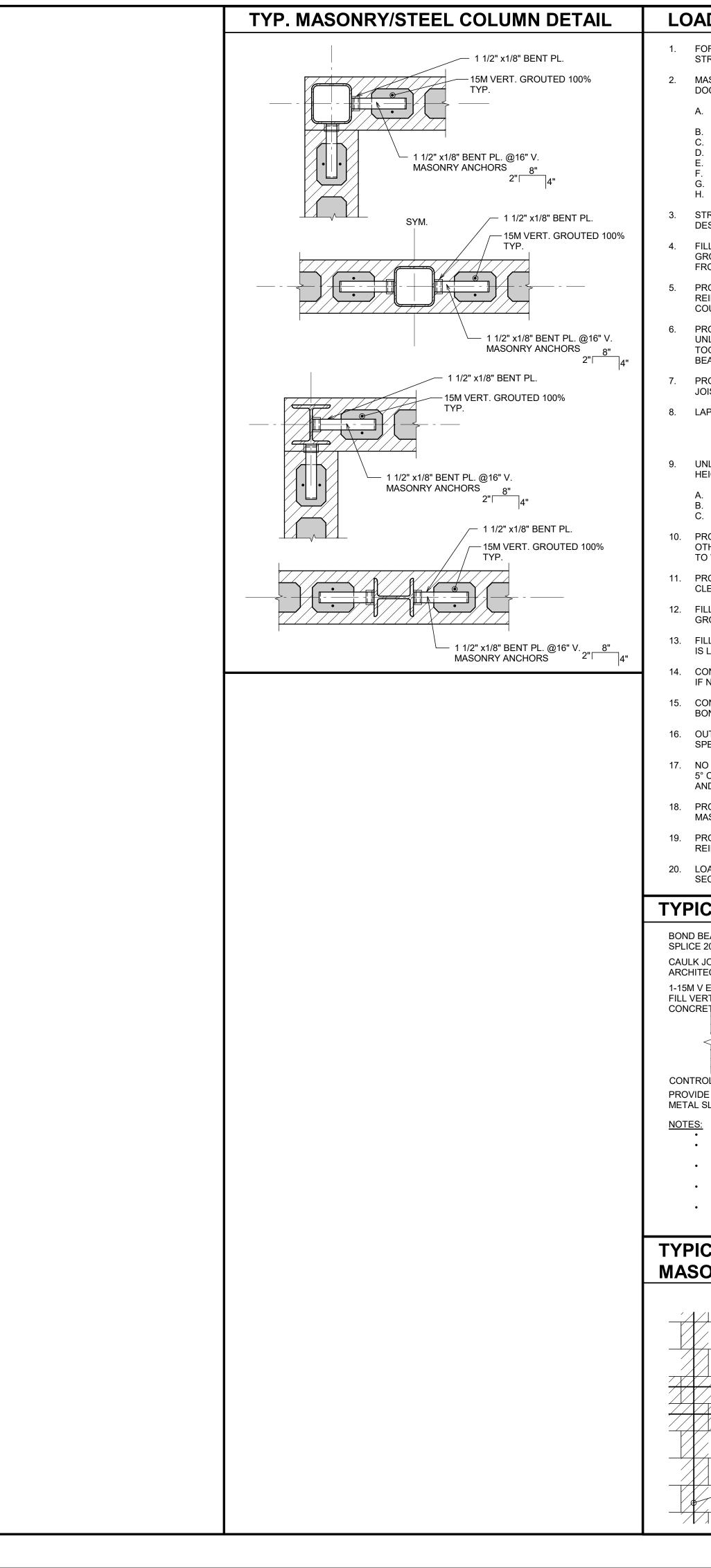
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Practical Result

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Toronto, ON M5J 2X4 Canada



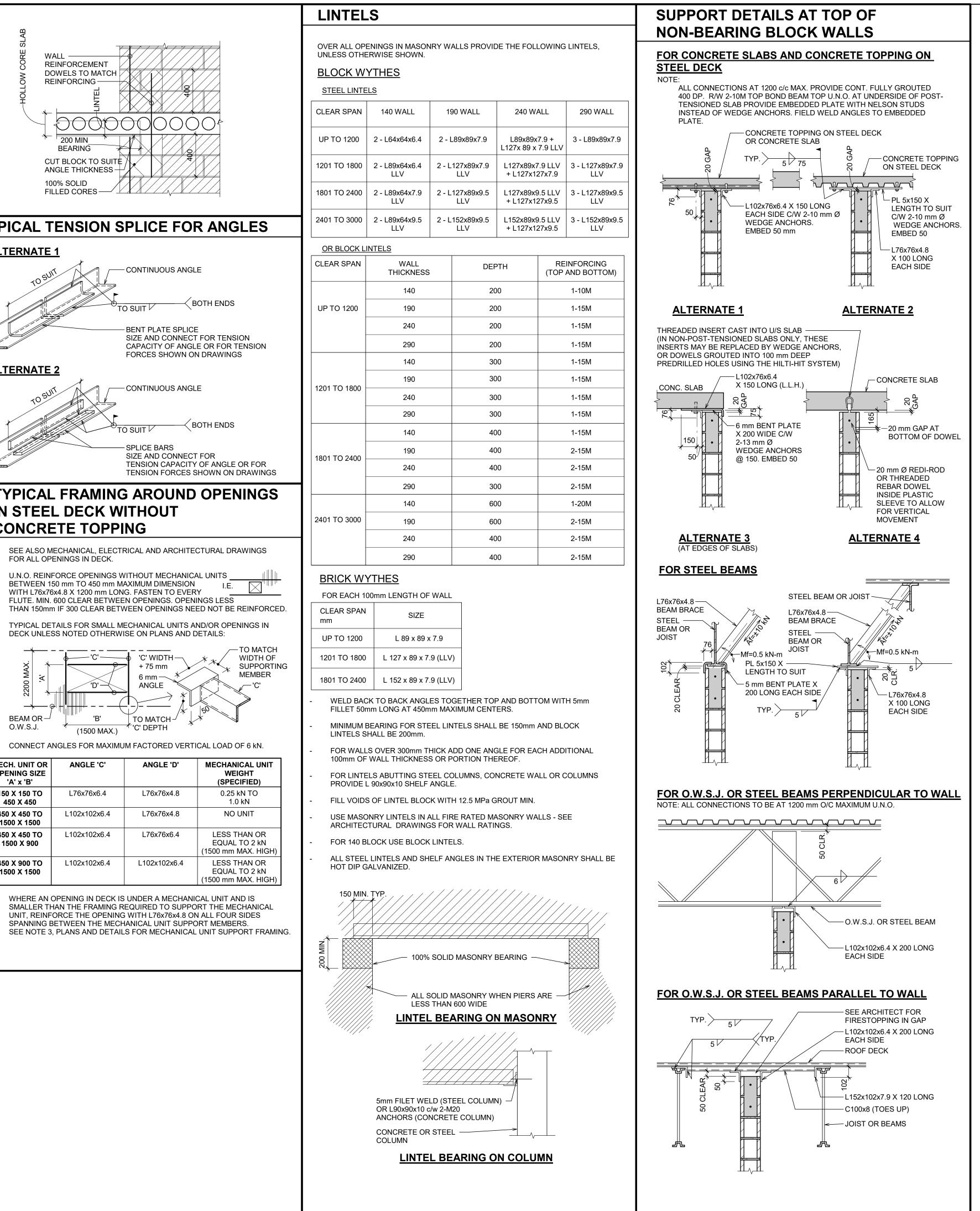
AD BEARING MASONRY	NON LOAD BEARING MASONRY	TY
FOR ADDITIONAL REQUIREMENTS SEE MASONRY SPECIFICATION AND STRUCTURAL DRAWINGS.	1. NON-LOAD BEARING MASONRY WALLS ARE THOSE THAT DO NOT SUPPORT FLOORS OR ROOFS, WHETHER THEY ARE INTERIOR OR EXTERIOR WALLS. NON- LOAD BEARING MASONRY IS NOT PART OF THE PRIMARY	HC
 MASONRY WORK SHALL CONFORM TO CSA S304.1 AND ITS REFERENCED DOCUMENTS, INCLUDING: A. CONCRETE BLOCK TO CAN/CSA-A165.1, TYPE H15/A, UNLESS NOTED OTHERWISE ON SCHEDULE (BASED ON NET AREA). B. MORTAR TO CAN/CSA-A179, TYPE 'S' FOR ALL WALLS. C. GROUT TO CAN/CSA-A179. D. MASONRY WIRE REINFORCING TO CSA G30.5. E. REINFORCING BARS TO CAN/CSA-G30.18 - 400 MPa. F. WELDED REINFORCING BARS TO CAN/CSA-G30.18 - 400 MPa. G. CONNECTIONS TO CAN/CSA-A370. H. PRACTICE TO CAN/CSA-A371. 	 THE FOLLOWING NOTES FOR NON-LOAD BEARING MASONRY ARE PROVIDED ON THESE STRUCTURAL DRAWINGS ONLY FOR INITIAL PRICE ESTIMATING PURPOSES AND AS AN OUTLINE SPECIFICATION FOR TENDERING OF THE MASONRY PACKAGE. THESE NOTES SHALL NOT BE CONSIDERED PART OF THE CONSTRUCTION DOCUMENTS. UNDER AWARD OF THE MASONRY CONTRACT, THE SUCCESSFUL CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE ENGINEERING DESIGN OF NON-LOAD BEARING MASONRY AS DEPICTED ON THE ARCHITECTURAL DRAWINGS AND SHALL ALSO COORDINATE DESIGN OF THE MASONRY WITH MECHANICAL AND ELECTRICAL TRADES FOR WALL OPENINGS. THE SPECIALTY ENGINEER SHALL ALSO ENSURE QUALITY ASSURANCE OF THE WORK ON SITE BY 	2.
STRUCTURAL DRAWINGS INDICATE ONLY LOAD-BEARING WALLS. DESIGN IS BASED ON ENGINEERING ANALYSIS ACCORDING TO CSA S304.1. FILL BLOCK CORES UNDER ALL CONCENTRATED LOADS WITH 12.5 MPa MIN.	PERFORMING FIELD REVIEW. FIELD REVIEW OF NON-LOAD BEARING MASONRY IS NOT PART OF RJC'S SCOPE AS REVIEWER OF THE PRIMARY STRUCTURAL SYSTEM.	
GROUT TO A DEPTH OF AT LEAST 400 mm MEASURED DOWN FROM THE BEARING UNLESS NOTED OTHERWISE. PROVIDE HEAVY DUTY LADDER TYPE OR TRUSS TYPE MASONRY	 STRUCTURAL DRAWINGS INDICATE ONLY LOAD-BEARING WALLS. DESIGN IS BASED ON ENGINEERING ANALYSIS ACCORDING TO CSA S304.1. FOR ADDITIONAL REQUIREMENTS SEE MASONRY SPECIFICATION. 	
REINFORCING (4.76 mm DIAMETER) IN HORIZONTAL JOINTS EVERY SECOND COURSE (400 mm) UNLESS NOTED OTHERWISE IN SCHEDULE. PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE,	5. MASONRY WORK SHALL CONFORM TO CSA S304.1 AND ITS REFERENCED DOCUMENTS, INCLUDING:	
UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK TO BACK ANGLES TOGETHER AT 500 mm O/C MAXIMUM. PROVIDE 150 mm MINIMUM END BEARING FOR LINTELS.	 A. CONCRETE BLOCK TO CAN/CSA-A165.1, TYPE H15/A, UNLESS NOTED OTHERWISE ON SCHEDULE (BASED ON NET AREA). B. MORTAR SHALL BE TYPE S PREPARED BY PROPORTION SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179. 	, .
PROVIDE 1-15M CONTINUOUS IN TOP COURSE OF WALL UNDER BEAM OR JOIST BEARING AND FILL CELLS SOLID WITH 12.5 MPa GROUT MIN. LAPS: WIRE REINFORCEMENT 200 mm 10M BARS 400 mm 15M BARS 700 mm 20M BARS 1000 mm	 PORTLAND CEMENT-LIME MIX FORMULATION TYPE 10 PORTLAND CEMENT TYPE S HYDRATED LIME. GROUT PREPARED OFF SITE SHALL BE COURSE PREPARED BY PROPERTY SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179. 	
 UNLESS NOTED OTHERWISE, PROVIDE 2-15M VERTICAL BARS FULL HEIGHT AT: A. UNSUPPORTED ENDS OF WALLS. B. EACH CORNER AND AT INTERSECTIONS. C. EACH SIDE OF DOORS AND OTHER OPENINGS. PROVIDE 1-15M IN EACH CELL OF ALL PIERS AND PILASTERS UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING SHALL BE CONTINUED TO WITHIN 50 mm OF TOP OF THE WALL. 	 MINIMUM 28 DAY COMPRESSIVE STRENGTH - 12.5 MPa SLUMP 200 mm MINIMUM TO 250 mm MAXIMUM. GROUT SHALL BE FINE WHERE MAXIMUM GROUT SPACE IS LESS THAN 50 mm IN ANY DIRECTION. TESTING SHALL BE IN ACCORDANCE WITH CAN/CSA-A179 AND ITS APPENDIX. GROUT PREPARED ON SITE SHALL BE PREPARED BY PROPORTION SPECIFICATION IN ACCORDANCE WITH CAN/CSA-A179. MASONRY WIRE REINFORCING TO CSA G30.5. REINFORCING BARS TO CAN/CSA-G30.18 - 400 MPa. WELDED REINFORCING BARS TO CAN/CSA-G30.18 - 400 MPa. 	-
PROVIDE CLEANOUTS FOR ALL CELLS TO BE REINFORCED, REPEAT CLEANOUTS ABOVE BOND BEAMS. FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH 12.5 MPa GROUT MIN. VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY.	 G. CONNECTIONS TO CAN/CSA-A370. H. PRACTICE TO CAN/CSA-A371. 6. FILL BLOCK CORES UNDER ALL CONCENTRATED LOADS WITH 12.5 MPa MIN. CROUT TO A DEPTH OF AT LEAST 400 mm MEASURED DOWN. 	L
FILL CELLS IN 1200 mm LIFTS OR BETWEEN BOND BEAMS, WHICHEVER IS LESS.	 GROUT TO A DEPTH OF AT LEAST 400 mm MEASURED DOWN FROM THE BEARING UNLESS NOTED OTHERWISE. 7. PROVIDE HEAVY DUTY LADDER TYPE OR TRUSS TYPE MASONRY REINFORCING (4.76 mm DIAMETER) IN HORIZONTAL JOINTS EVERY SECOND 	
CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 9000 mm, IF NOT OTHERWISE SHOWN ON DRAWINGS. CONTROL JOINTS AND EXPANSION JOINTS SHALL BE CONTINUED THROUGH BOND BEAMS IF NOT OTHERWISE SHOWN.	 COURSE (400 mm) UNLESS NOTED OTHERWISE IN SCHEDULE. 8. PROVIDE LINTELS OVER ALL OPENINGS IN WALLS. SEE LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON PLAN. CONNECT BACK TO BACK ANGLES 	REFE DETA
OUTSIDE FACE OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW	TOGETHER AT 500 mm O/C MAXIMUM. PROVIDE 150 mm MINIMUM END BEARING FOR LINTELS. 9. LAPS: WIRE REINFORCEMENT 200 mm 10M BARS	
5° CELSIUS, UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK. PROVIDE 15M @ 1200 mm O/C FULL HEIGHT FOR ALL LOAD BEARING	20M BARS 1000 mm 10. UNLESS NOTED OTHERWISE, PROVIDE 1-15M VERTICAL BARS FULL	
MASONRY WALLS, UNLESS NOTED OTHERWISE ON SCHEDULE. PROVIDE 1200 mm STARTER DOWELS TO MATCH ALL VERTICAL REINFORCING, UNLESS NOTED OTHERWISE.	HEIGHT AT: A. UNSUPPORTED ENDS OF WALLS. B. EACH CORNER AND AT INTERSECTIONS.	
LOAD BEARING MASONRY IS SHOWN THUS ON PLAN/SCHEDULE/ SECTION.	 C. EACH SIDE OF DOORS AND OTHER OPENINGS. 11. PROVIDE 1-15M IN EACH CELL OF ALL PIERS AND PILASTERS UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING SHALL BE CONTINUED 	
PICAL MASONRY WALL CONTROL JOINT	TO WITHIN 50 mm OF TOP OF THE WALL. 12. PROVIDE CLEANOUTS FOR ALL CELLS TO BE REINFORCED, REPEAT CLEANOUTS ABOVE BOND BEAMS.	
D BEAM HORIZONTAL REINFORCING CE 200 mm AT JOINT LK JOINT AS PER HITECTS REQUIREMENTS M V EACH SIDE OF JOINT VERTICAL CELL WITH CRETE	 FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH 12.5 MPa GROUT MIN. VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY. FILL CELLS IN 1200 mm LIFTS OR BETWEEN BOND BEAMS, WHICHEVER IS LESS. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 9000 mm, 	
	IF NOT OTHERWISE SHOWN ON DRAWINGS.16. CONTROL JOINTS AND EXPANSION JOINTS SHALL BE CONTINUED THROUGH BOND BEAMS IF NOT OTHERWISE SHOWN.	
TROL JOINT	 OUTSIDE FACE OF EXTERIOR WALLS SHALL BE WATERPROOFED AS PER SPECIFICATIONS AND ARCHITECTURAL DRAWINGS. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW 5° CELSIUS, UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS 	
 ES: PLAN SECTION TAKEN THROUGH BOND BEAM. DISCONTINUE HORIZONTAL LADDER REINFORCEMENT EVERY SECOND LAYER. SPACE CONTROL JOINTS AT 9000 mm O/C MAXIMUM UNLESS NOTED OTHERWISE ON PLAN. COORDINATE LOCATIONS WITH ARCHITECT AND READ JONES CHRISTOFFERSEN LTD. CONTROL JOINTS SHALL NOT BE LOCATED UNDER OWSJ OR STEEL BEAMS. 	 AND PROTECTING THE WORK. 19. PROVIDE 15M STARTER DOWELS TO MATCH ALL VERTICAL REINFORCING, UNLESS NOTED OTHERWISE. 20. U.N.O. FOR TOP CONNECTION DETAILS, SEE STANDARD DETAILS ON STRUCTURAL DRAWINGS. 21. TIE MASONRY UNITS TO ADJACENT CONCRETE WALLS OR COLUMNS WITH DOVETAIL ANCHORS AND EMBEDDED SLOTS. ANCHORS TO BE "STANDARD" DOVETAIL - t = 1.5 mm @ 600 O/C. 	
PICAL REINFORCING AT LOAD BEARING SONRY CONNECTIONS FOR O.W.S.J.	22. REINFORCING IN NON-LOAD BEARING WALL FOR PRICING ONLY. - IN ADDITION TO THAT NOTED IN POINT 10.	
	WALL INTERIOR EXTERIOR WALL (PARTITION WALL) (WIND BEARING WALL) THICKNESS MAXIMUM HEIGHT mm (Inches) & MIN. REINFORCING MAXIMUM HEIGHT REINFORCED & MIN. REINFORCING	
GROUT POCKET AFTER INSTALLING O.W.S.J. 400 mm DEEP CONTINUOUS BOND BEAM R/W 1-15M TOP AND BOTTOM CONTINUOUS	140 4200 4200 (6") 15M @800 V. 15M @600 V. 190 5600 5600 (8") 15M @1000 V. 15M @600 V. 240 7200 7200 (10") 15M @600 V. 20M @600 V.	
O.W.S.J. FOR OTHER FILLED CELLS, BOND BEAMS AND REINFORCEMENT	(10") 15M @600 V. 20M @600 V. 290 8400 8400 (12") 20M @600 V. 20M @400 V.	
SEE PLANS, DETAILS AND GENERAL NOTES HATCHED AREAS INDICATE		

- HATCHED AREAS INDICATE CELLS TO BE FILLED WITH CONCRETE.

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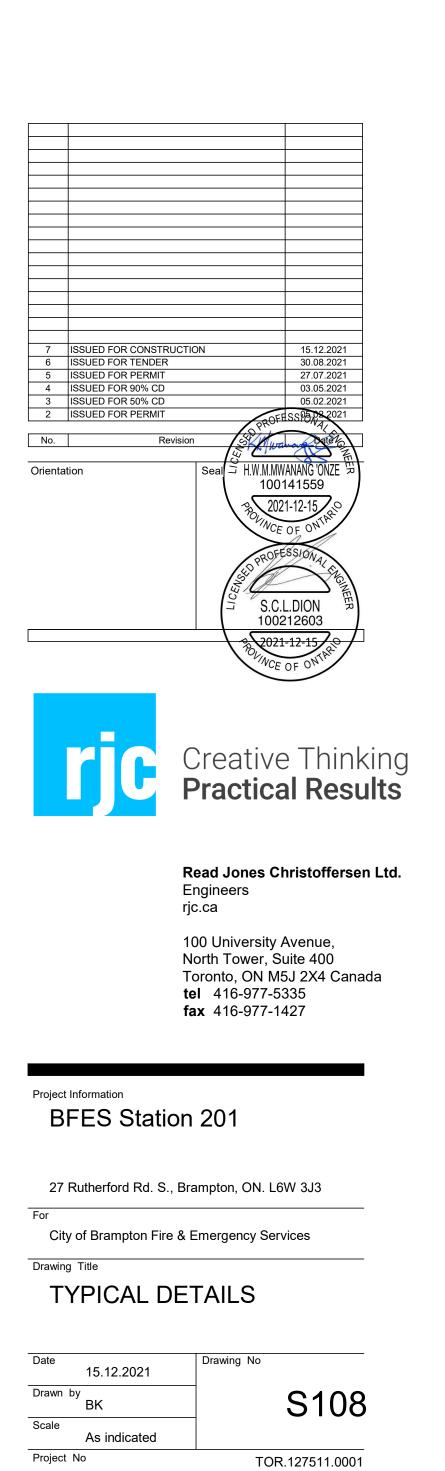
TYPICAL MECHANICAL / ELECTRICAL HOUSEKEEPING PAD & FLOATING SLAB	
1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION, EXTENT, AND THICKNESS OF HOUSEKEEPING PADS.	 All drawings, plans, models, designs, specifications and other documents prepared by Read Jones Christoffersen Ltd. ("RJC") and used in connection with this project are instruments of service for the work shown in them (the "Work") and as such are and remain the
2. THIS DETAIL PROVIDES RESISTANCE TO HORIZONTAL (SLIDING) FORCES ONLY FROM EARTHQUAKE LOADING ON PAD AND EQUIPMENT. ADDITIONAL CONNECTIONS FOR UPLIFT FORCES FROM EQUIPMENT TO BE DESIGNED AND DETAILED BY SPECIALTY ENGINEER AND WILL REQUIRE ANCHORING THROUGH THE PAD AND INTO OR THROUGH THE STRUCTURAL SLAB. IN POST-TENSIONED FLOORS, LOCATE TENDONS BEFORE DRILLING HOLES.	 shown in them (the Work) and as such are and remain the property of RJC whether the Work is executed or not, and RJC reserves the copyright in them and in the Work executed from them, and they shall not be used for any other work or project. 2. These drawings are "design drawings" only. They may not be suitable for use as shop drawings. Use of these drawings as base drawings for "shop drawings" is not permitted unless written permission containing certain conditions and limitations is obtained from RJC. The work "as constructed" may vary from what is shown on these drawings. 3. Use of these drawings is limited to that identified in the Revision column. Do not construct from these drawings unless marked "Issued for Construction" by RJC in the Revision column, and then only for the parts noted. The drawings shall not be used for
MECHANICAL/ELECTRICAL HOUSE KEEPING PAD REINFORCED AS PER TABLE BELOW, CHAIRED AT MID-DEPTH OF PAD. USE 4-C10M IN CORNERS MINIMUM DRILLED & EPOXIED INTO SLAB	"pricing", "costing", or "tender" unless so indicated in the Revision column. "Pricing" or "Costing" drawings are not complete and any prices based on such drawings must allow for this. Once drawings are "Issued for Tender", the drawings may be used for bidding.
PAD THICKNESS 't' <= 100 100 < PAD THICKNESS 't' <= 200 STRUCTURAL SLAB OR COMPOSITE DECK. IF STEEL DECK AND TOPPING, REPLACE C10M WITH 10mm Ø HILTI HDI EMBEDDED 50mm INTO TOPPING C/W 10M HOOKED THREADED BAR.	
PAD THICKNESS 't' REINFORCEMENT 50 152x152MW18.7xMW18.7WWF 1 LAYER 100 152x152MW18.7xMW18.7WWF 1 LAYER 150 10M @300 EW AT CENTRE 200 10M @400 T&BEW	
REFER TO TYPICAL DETAIL FOR CURB BASE BUILDING STRUCTURE ELOATING SLAB DETAIL	Image: Second
	S.C.L.DION 100212603 BOLOGICONTRE TO CONTRE
	Creative Thinking Practical Results Read Jones Christoffersen Ltd. Engineers
	rjc.ca 100 University Avenue, North Tower, Suite 400 Toronto, ON M5J 2X4 Canada tel 416-977-5335 fax 416-977-1427
	Project Information BFES Station 201
	27 Rutherford Rd. S., Brampton, ON. L6W 3J3 For City of Brampton Fire & Emergency Services Drawing Title TYPICAL DETAILS
	DateDrawing NoDrawn by BKBKScale As indicatedProject NoTOR.127511.0001

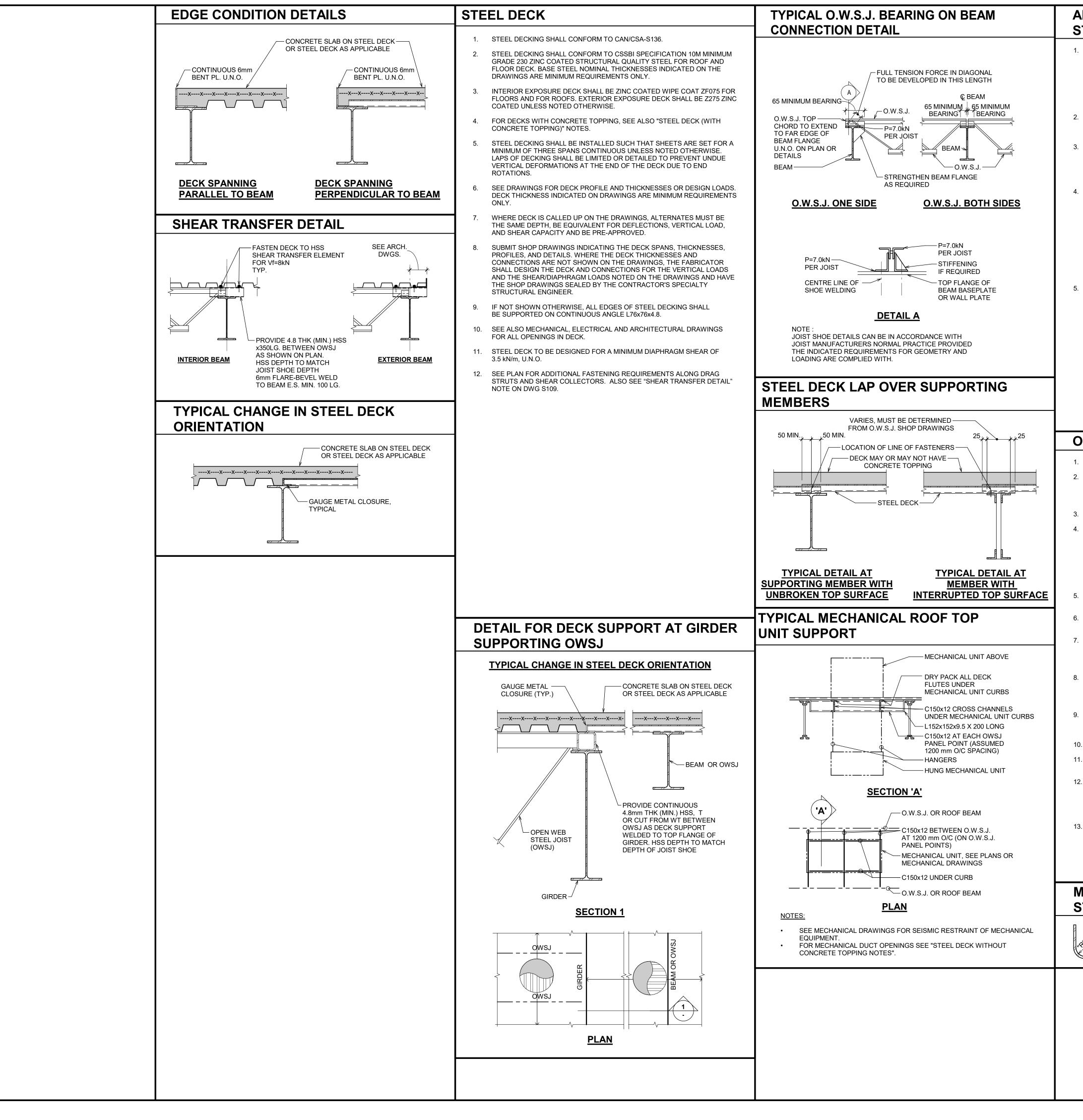
STRUCTURAL STEEL	
STRUCTURAL STEEL SECTIONS SHALL BE NEW AND CONFORM TO THE FOLLOWING:	
A. FABRICATION, ERECTION, STRUCTURAL DESIGN, AND DETAILING OF ALL STEEL SHALL BE IN ACCORDANCE WITH CAN/CSA-S16.	
 B. WIDE FLANGE BEAMS AND WWF SECTIONS CSA G40.21 350W C. MISCELLANEOUS ROLLED SECTIONS (EXCEPT WIDE FLANGES) CSA G40.21 300W D. HOLLOW STRUCTURAL SECTIONS ASTM A500 GRADE C 	
 E. ROLLED PLATES CSA G40.21 300W F. BOLTS (SEE PLANS AND DETAILS) ASTM A325 OR 	
ASTM A490 G. STRUCTURAL STEEL ANCHOR RODS (U.N.O.) ASTM F1554 GRADE 36 MINIMUM	
 H. REINFORCING BAR ANCHOR BOLTSCAN/CSA-G30.18R, GRADE 400 2. FILLET WELDS SHALL BE 5 mm MINIMUM U.N.O. 	
3. BOLTS SHALL BE A325 19 mm Ø MINIMUM U.N.O.	
4. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTED PIECE AND BE DESIGNED AS BEARING CONNECTIONS, U.N.O.	ΥP
5. ALL WELDED HEADED STUDS AND WELDED DEFORMED BAR ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS OR SHOP FILLET WELDED. ANY FIELD FILLET WELDED DEFORMED BARS OR STUDS WILL BE REJECTED. SEE PLANS, SECTIONS, DETAILS, AND SCHEDULES FOR LOCATIONS ETC., THE CONTRACTOR SHALL CO-ORDINATE THE DESIGN, SUPPLY, AND INSTALLATION OF ALL STUDS AND ANCHORS, INCLUDING, BUT NOT LIMITED TO STUDS AND DEFORMED BAR ANCHORS ON COMPOSITE BEAMS, DRAG STRUTS, EMBEDDED PLATES, ETC.	ALT
6. STEEL IN THE SEISMIC ENERGY DISSIPATION SYSTEM SHALL SATISFY THE LIMITS OF Fy, Fu, AND CHARPY V-NOTCH IMPACT REQUIREMENTS AS NOTED IN CAN/CSA S16 CLAUSE 27.	
 ALL WELDS AND WELD MATERIAL IN THE SEISMIC ENERGY DISSIPATION SYSTEM SHALL SATISFY THE CHARPY REQUIREMENTS AS NOTED IN CAN/CSA S16 CLAUSE 27. 	<u>ALT</u>
8. UNLESS NOTED OTHERWISE, COLUMN CAP PLATES SHALL BE 16 mm THICK AND COLUMN BASE PLATES SHALL BE 20 mm MINIMUM THICK.	
 PROVIDE 6 mm CAP PLATES FOR ALL HSS MEMBERS U.N.O. 10. CONNECTION DETAILS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE ALTERED BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL 	- 4
 11. FRAME ALL ROOF AND FLOOR OPENINGS IN ACCORDANCE WITH THE DETAILS IN THE GENERAL NOTES UNLESS NOTED OTHERWISE ON THE PLANS. 	
12. UNLESS NOTED OTHERWISE ON THE PLANS, REFER TO THE DETAILS IN THE GENERAL NOTES FOR FRAMING FOR SUPPORT OF ROOF TOP MECHANICAL EQUIPMENT.	T Y IN
13. STEEL SHALL BE PREPARED AND FINISHED IN ACCORDANCE WITH THE CSA STANDARD S16 AND THE ARCHITECTURAL DRAWINGS AND SPECIFICATION. MAY INCLUDE ADDITIONAL CLEANING AND PRIMING REQUIREMENTS.	C (
14. ALL STRUCTURAL STEEL OUTSIDE OF THE BUILDING ENVELOPE TO BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE	2.
15. DESIGN DRAWINGS INCLUDE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. SEE ALSO ARCHITECTURAL DRAWINGS FOR ROOF AND FLOOR ELEVATIONS, ROOF SLOPES, EDGE DETAILS, AND ADDITIONAL DIMENSIONS AND DETAILS. WHERE ELEVATIONS, ROOF SLOPES, ETC., ARE SHOWN ON THE STRUCTURAL DRAWINGS, THEY MUST BE CONFIRMED WITH THE ARCHITECTURAL DRAWINGS.	3.
 16. UNLESS NOTED OTHERWISE, DO NOT OVERSIZE HOLES IN STEEL TO FIT ANY ANCHOR LOCATIONS. FOR COLUMN BASE PLATE HOLES, UNLESS NOTED OTHERWISE ON DRAWINGS, FOLLOW STANDARD PRACTICE WHICH IS TO USE SLIGHTLY OVERSIZED HOLES. USE 6 mm OVERSIZED HOLE DIAMETER FOR COLUMN ANCHOR RODS UP TO AND INCLUDING 27 mm DIAMETER, AND 12 mm OVERSIZED HOLE DIAMETER FOR COLUMN ANCHOR RODS GREATER THAN 27 mm DIAMETER. 16. THIS SYMBOL: MEANS BEAM IS MOMENT CONNECTED THROUGH SUPPORTING BEAM OR COLUMN. PROVIDE FULL CAPACITY MOMENT CONNECTION U.N.O. 	
17. BEAMS - PLAN PRESENTATION TOP OF BEAM ELEVATION C.L. MOMENT	MEC
RELATIVE TO DATUM ELEVATION [mm] NOMINAL BEAM SIZE CANT. 75 -150 (20) W410x (25) CANT. 75 +150 (20) W410x (25) CANT. 75 kN	OPE 150 4 450 15 450 15
NUMBER OF SHEAR CONNECTORS DISTRIBUTED EVENLY ALONG	450 15
LENGTH OF BEAM FACTORED // SPECIAL CONNECTION FOR COMPOSITE AXIAL LOAD (SEE ABBREVIATION LIST) BEAMS DECK TYPE // // SPECIAL CONNECTION	4.
AND DIRECTION / FACTORED SHEAR FORCE DENOTES BEAM RUNS CONTINUOUSLY AT END OF BEAM	
OVER COLUMN TYPICAL DECK SUPPORT AT COLUMNS	
STEEL DECK ORIENTATION	
HSS OR W-COLUMN. ORIENTATION OF W-COLUMN MAY BE AS SHOWN OR ROTATED 90°	





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ARCHITECTURALLY EXPOSED STRUCTURAL STEEL NOTES

DRAWINGS

- A. WORK SHALL BE IN ACCORDANCE WITH THE "CISC GUIDE FOR SPECIFYING ARCHITECTURALLY EXPOSED STRUCTURAL STEEL".
- B. SEE ARCHITECTURAL AND STRUCTURAL PLANS, DETAILS, AND SPECIFICATIONS, FOR LOCATION AND CATEGORY OF ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS.)

FABRICATION

A. SEE SPECIFICATIONS, TYPICAL

WELDING

A. FOR WELDING CRITERIA SEE PLANS AND SPECIFICATIONS FOR CATEGORY AND LOCATION OF AESS. AND USE APPLICABLE LEVEL AS PER CISC GUIDE FOR A.E.SS AND SPECIFICATIONS.

<u>PAINTING</u>

- A. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS
- B. SURFACES WITHIN 50 mm OF ANY FIELD WELD LOCATION SHALL BE FREE OF MATERIALS THAT WOULD PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES WHILE WELDING IS BEING DONE. IF SHOP PAINTED, SURFACES TO BE WELDED SHALL BE WIRE BRUSHED IN THE FIELD BEFORE WELDING TO REDUCE THE PAINT FILM TO A MINIMUM. LEVEL OF WORKMANSHIP AND QUALITY CONTROL AS PER SPECIFICATION AND CISC GUIDE FOR AESS.

ERECTION

- A. THE ERECTOR SHALL USE SPECIAL CARE IN UNLOADING, HANDLING, AND ERECTING THE STEEL TO AVOID BENDING, TWISTING, OR OTHERWISE DISTORTING THE STEEL MEMBERS. THE ERECTOR SHALL HANDLE THE MATERIAL IN SUCH A WAY AS TO MINIMIZE THE DAMAGE TO SHOP COAT OF PAINT. LEVEL OF CARE AS OUTLINED IN CISC GUIDE FOR AESS. FOR SPECIFIED CATEGORY OF AESS.
- B. IF TEMPORARY BRACES OR ERECTION CLIPS ARE EMPLOYED, CARE SHALL BE TAKEN TO AVOID UNSIGHTLINESS UPON REMOVAL. TACK WELDS SHALL BE GROUND SMOOTH AND HOLES SHALL BE FILLED WITH WELD METAL OR BODY SOLDER AND SMOOTHED BY GRINDING OR FILING.
- C. PAINT ALL AREAS SCRATCHED, MARRED, OR LEFT UNPAINTED FOR ERECTION PURPOSES.

OPEN WEB STEEL JOISTS

OPEN WEB STEEL JOISTS (O.W.S.J.) SHALL CONFORM TO CAN/CSA-S16.

DESIGN OF O.W.S.J. SHALL CONFORM TO CLAUSE 16 OF CAN/CSA-S16 (LIMIT STATES DESIGN OF STEEL STRUCTURES) AND CAN/CSA-S136 (DESIGN OF LIGHT GAUGE STEEL STRUCTURAL MEMBERS), BASED ON THE LOADINGS INDICATED ON THE DRAWINGS AND LISTED BELOW.

O.W.S.J. SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE DRAWINGS.

IN ADDITION TO THE POINT LOADS CALLED FOR ON THE DRAWINGS AND IN THE GOVERNING BUILDING CODE, DESIGN O.W.S.J. FOR A 1.8 kN FACTORED ADDITIONAL POINT LOAD AT ANY LOCATION ON TOP CHORD AND BOTTOM CHORD (INCLUDING THE EFFECTS OF LOCAL BENDING) CONCURRENT WITH OTHER DESIGN LOADS. OVER MECHANICAL AREAS THE ADDITIONAL POINT LOAD SHALL BE 4.5 kN FACTORED. THE ADDITIONAL POINT LOADS ON EACH CHORD NEED NOT BE APPLIED CONCURRENTLY WITH EACH OTHER.

UNLESS NOTED OTHERWISE, SEE SPECIFICATIONS, PLAN NOTES FOR DEFLECTION CRITERIA.

CAMBER ALL O.W.S.J. FOR DEAD LOAD PLUS 1/2 LIVE LOAD UNLESS OTHERWISE NOTED. PROVIDE A MINIMUM CAMBER OF 12 mm.

DESIGN AND PROVIDE O.W.S.J. BRIDGING IN ACCORDANCE WITH CAN/CSA-S16 UNLESS OTHERWISE INDICATED ON THE DRAWINGS. REFER TO THE DRAWINGS FOR AREAS OF NON-TYPICAL O.W.S.J. BRIDGING AND BRACING.

SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO START OF O.W.S.J. FABRICATION. SHOP DRAWINGS SHALL BEAR THE SEAL OF THE SPECIALTY STRUCTURAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN OF THE O.W.S.J. REFER TO THE SPECIFICATIONS.

ALL O.W.S.J. TO HAVE BUILDING SERVICES PASS THROUGH THEM. WEB MEMBERS OF ADJACENT O.W.S.J. TO LINE UP TO ACCOMMODATE CONTINUOUS PENETRATION OF SERVICES.

10. WELDING SHALL CONFORM TO CSA W59.

O.W.S.J. TO BE PAINTED SHALL BE CLEANED AND SHALL RECEIVE ONE COAT OF SHOP PRIMER IN ACCORDANCE WITH CAN/CSA-S16.

12. O.W.S.J. TO BE EXPOSED IN FINISHED WORK SHALL BE PAINTED WITH SHOP PRIMER MEETING THE REQUIREMENTS OF CAN/CSA-S16. CLEANING, PREPARATION OF STEEL AND THE PAINT PRODUCT SHALL BE COMPATIBLE WITH REQUIREMENTS OF FINISHED PAINTING AS SPECIFIED IN ARCHITECTURAL FINISHES. REFER TO THE SPECIFICATIONS.

BOTTOM CHORD EXTENSIONS (B.C.E.) ARE EXTENSIONS OF THE BOTTOM CHORD WHICH TRANSMIT AN AXIAL FORCE TO EITHER A COLUMN, BEAM BOTTOM FLANGE, JOIST GIRDER BOTTOM CHORD OR WALL. THE EXTENSION MAY BE EITHER FLAT OR SLOPED. SEE PLANS, SCHEDULES, AND DETAILS FOR AXIAL FORCES.

MINIMUM BEND RADIUS FOR STEEL PLATES

	"T" (PLATE THICKNESS)	"R" (MINIMUM INSIDE RADIUS)
¢-	0 mm TO 6 mm	3 x "T"
	6 mm TO 12 mm	4 x "T"

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Creative Thinking Practical Results

S.C.L.DION 100212603

2021-12-15

Read Jones Christoffersen Ltd. Engineers rjc.ca

100 University Avenue, North Tower, Suite 400 Toronto, ON M5J 2X4 Canada tel 416-977-5335 fax 416-977-1427

Project Information BFES Station 201

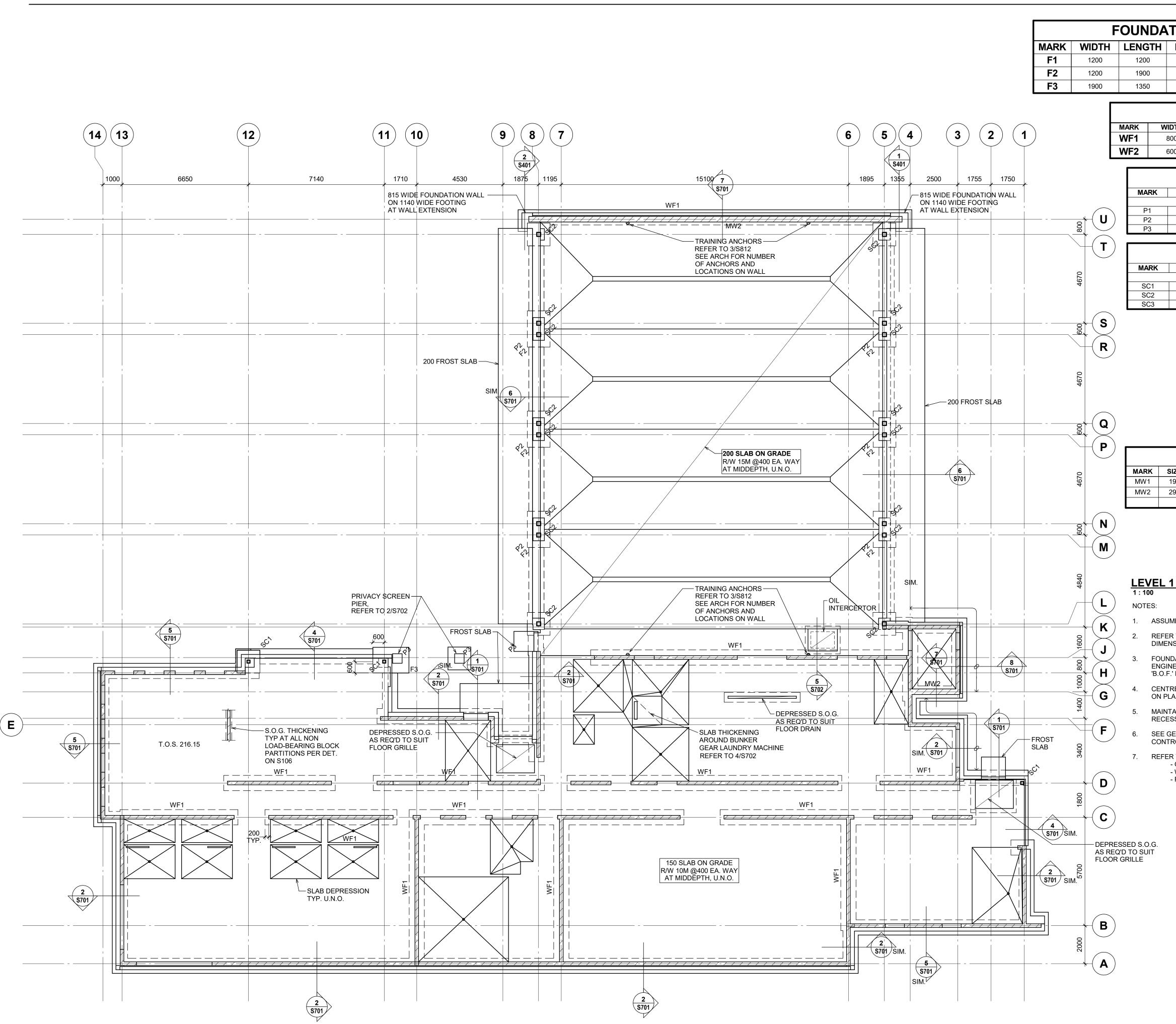
27 Rutherford Rd. S., Brampton, ON. L6W 3J3

City of Brampton Fire & Emergency Services

Drawing Title

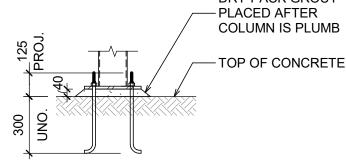
TYPICAL DETAILS

Date15.12.2021Drawing NoDrawn by
BKBKS109Scale
As indicatedTOR.127511.0001



JN	JNDATION SCHEDULE - ISOLATED							
NGTH DEPTH REINFORCING COMMENTS				COMMENTS				
1200)	300		6-15M B.E.W.	TYP., U.N.O.			
1900)	300		6-15M BLW + 9-15M BSW				
1350)	300		6-15M B.E.W.				
			FOUND	TION SCHEDULE - WAL	.L			
K	W	/IDTH	DEPTH	REINFORCING	COMMENTS			
1		800 300		2-20M BOT.CONT.	TYP., U.N.O.			
2		600	250	2-20M BOT.CONT.				
				PIER SCHEDULE				
MA	RK		SIZE	REINFORCING	COMMENTS			
P1		P1 600 x		8-20M V. +10M @320 TIES	TYP. U.N.O.			
	2	60	600 x 1200 12-20M V. +10M @320 TIES					
Р	P3 500 x 500			8-20M V. +10M @320 TIES				

MARK	SIZE	BASE PLATE
SC1	HSS152x152x6.4	PL.300x20x300 C/W 4-19ø ANCHOR RODS
SC2	HSS203x203x7.9	PL.350x20x350 C/W 4-19ø ANCHOR RODS
SC3	HSS102X102X6.4	PL.610x20x190 C/W 4-19ø ANCHOR RODS SEE 1/S802
		DRY-PACK GROUT



TYPICAL COLUMN BASEPPLATE DETAIL

	LOAD-BEARING CMU WALL SCHEDULE				
ARK	SIZE	REINFORCING	NOTES		
/W1	190	20M@400 V + HEAVY DUTY LADDER HORZ. REINF. @ 400o/c	TYP., U.N.O.		
/W2	290	20M@400 V + HEAVY DUTY LADDER HORZ. REINF. @ 400o/c			

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- ASSUME ALL FOOTINGS FOUNDED AT 2300 BELOW GROUND FLOOR (B.O.F. 213.85)
- REFER TO ARCHITECTURAL DRAWINGS FOR TOP OF SLAB ELEVATIONS, SLOPES AND DIMENSIONS.
- FOUNDATION ELEVATIONS AND BEARING STRATA TO BE VERIFIED BY GEOTECHNICAL ENGINEER ON SITE AND MAY HAVE TO BE ADJUSTED FURTHER TO GENERAL NOTES. 'B.O.F.' DENOTES BOTTOM OF FOOTING ELEVATION TO BE USED FOR PRICING ONLY.
- CENTRE ALL CAPS, PILASTERS, AND FOOTINGS UNDER COLUMNS EXCEPT AS NOTED ON PLAN.
- MAINTAIN SLAB-ON-GRADE THICKNESS SHOWN AT ALL LOCATIONS UNLESS NOTED AS RECESS ON PLAN.
- SEE GENERAL NOTES FOR CONTROL JOINT REQUIREMENTS U.N.O. ON PLAN. CONTROL JOINTS MAY BE REPLACED WITH CONSTRUCTION JOINTS U.N.O.
- REFER TO THE FOLLOWING DRAWINGS:
- GENERAL NOTES S100 SERIES. - WALL ELEVATIONS - S400 SERIES
- FOUNDATION WALL SECTIONS S700 SERIES



PROJECT NORTH

Creative Thinking **Practical Results**

S.C.L.DION 100212603

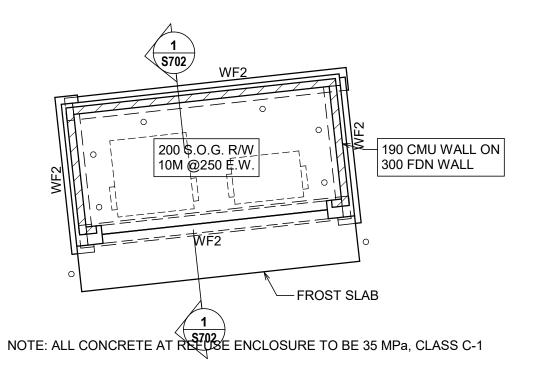
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Project Information **BFES Station 201**

27 Rutherford Rd. S., Bra	ampton, ON. L6W 3J3				
For					
City of Brampton Fire & Emergency Services					
Drawing Title					
LEVEL 1 / FOUNDATION PLAN					
Date 15.12.2021	Drawing No				



REFUSE ENCLOSURE

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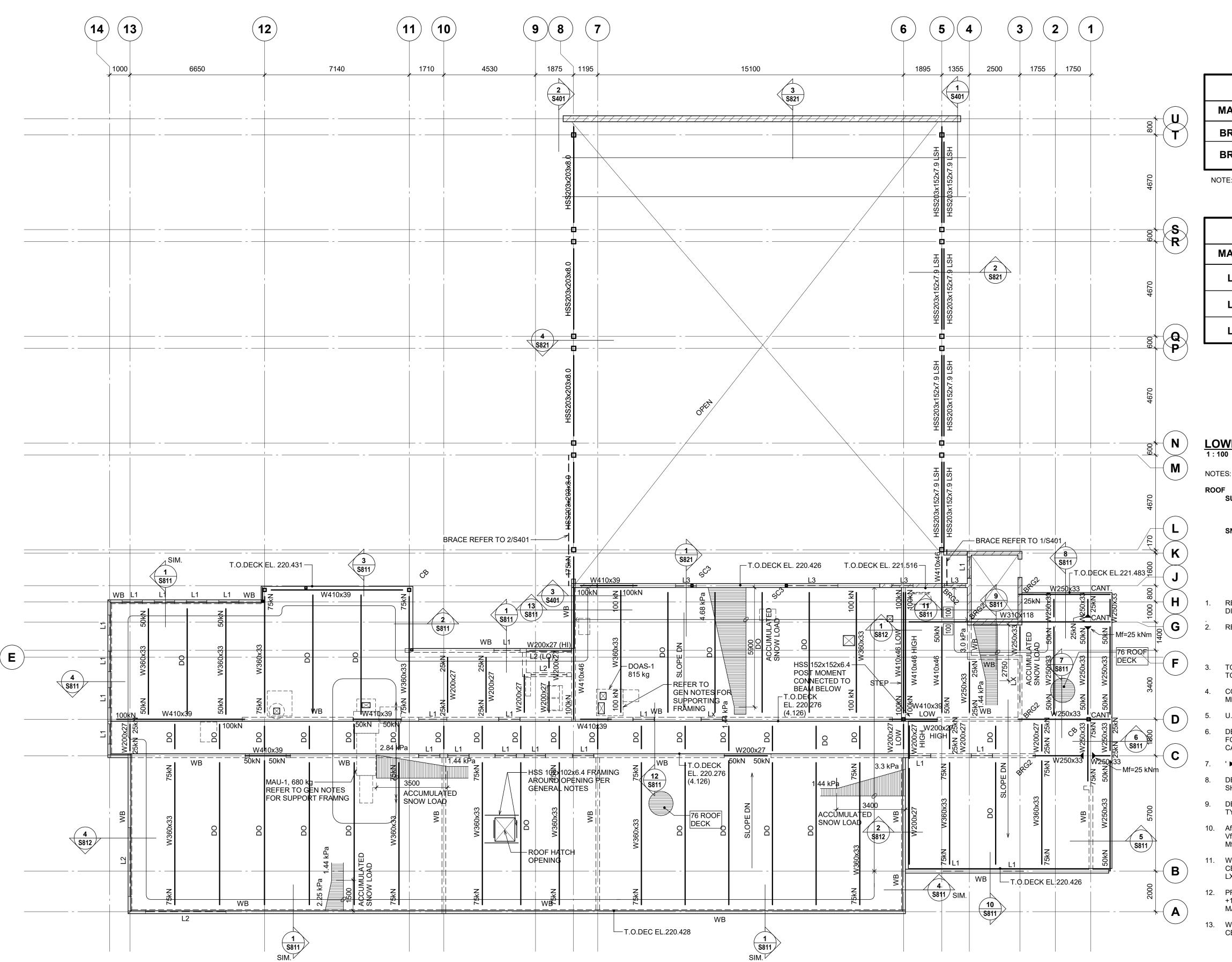
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BEARING PLATE SCHEDULE MARK NOTES SIZE ANCHORS 2-16ø HEADED STUDS EMBED 150 TYP., U.N.O. PL.150x12x300 BRG1 WELDED TO U/S OF PLATE 2-15M1000 BARS WELDED TO PLATE PL.150x20x300 BRG2 WITH FULL TENSION SPLICE TO VERTICAL WALL REBAR

PROVIDE BEARING PLATE AT ALL LOCATIONS WHERE STEEL BEAM FRAMES NOTE: INTO LOAD-BEARING MASONRY WALL, U.N.O.

	LINTEL SCHEDULE		
MARK	SIZE		
L1	2-L89x89x7.9 STEEL DOUBLE ANGLE		
L2	HSS203x203x7.9 LINTEL + PL.10 SPACER PLATES @1200 c/c. + L102x102x7.9 ANGLE FOR BRICK VENEER SUPPORT		
L3	2-L152x102x9.5 STEEL DOUBLE ANGLE		

LOWER ROOF

- SUPERIMPOSED DEAD LOAD (kPa): ROOFING ALLOWANCE CEILING, MECH + ELEC. 0.5
- TOTAL: SNOW LOAD (kPa):
- 1.44 kPa OR DRIFT NOTED ON PLAN SNOW IMPORTANCE FACTOR: SLS=0.9, ULS=1.25 (NOT INCLUDED IN VALUE SHOWN IN LOADING TABLE, NOR ON DRIFT DIAGRAMS ON PLAN)
- NOTE: CONTRACTOR'S ENGINEER TO APPLY IMPORTANCE FACTOR TO THE LOADS SHOWN ON THESE DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR T/STEEL ELEVATIONS, SLOPES AND DIMENSIONS

REFER TO THE FOLLOWING DRAWINGS: - GENERAL NOTES - S100 SERIES. - WALL ELEVATIONS - S400 SERIES - SECTIONS AND DETAILS - S800 SERIES

TOP OF DECK ELEVATION VARIES, SEE PLAN. T/STEEL ELEVATION SHOWN RELATIVE TO U/S DECK NOTED THUS ON PLAN.

CO-ORDINATE LOCATION OF MECHANICAL EQUIPMENT & ROOF OPENINGS WITH MECHANICAL AND ELECTRICAL DRAWINGS.

U.N.O., ALL BEAMS AND BRACES ARE CENTERED ON COLUMNS.

DESIGN BEAM CONNECTIONS FOR FORCES NOTED ON PLAN. WHERE NO SHEAR FORCE NOTED, DESIGN FOR Vf = 4 x Mu / L, WHERE Mu = FULLY BRACED MOMENT CAPACITY OF BEAM AND L = BEAM SPAN.

'►' DENOTES FULL MOMENT CONNECTION, U.N.O.

DESIGN STEEL DECK AND CONNECTIONS FOR MINIMUM FACTORED DIAPHRAGM SHEAR OF 10 kN/m, TYP, U.N.O.

DESIGN STEEL DECK AND CONNECTIONS FOR UNFACTORED WIND UPLIFT OF 1.0 kPa TYPICAL AND 2.0 kPa AT CORNERS.

10. Af = FACTORED AXIAL FORCE (kN) Vf = FACTORED VERTICAL SHEAR FORCE (kN)

Mf = FACTORED MOMENT (kN*m)

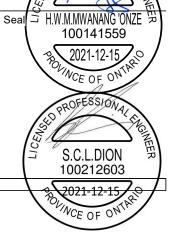
11. WB -DENOTES WALL BELOW CB -DENOTES COLUMN BELOW

LX -DENOTES LINTEL (REINF. MASONRY, OR BACK TO BACK STEEL ANGLES PROVIDE PL.200x12x300 PLATE c/w 2-16 DIA. ANCHORS 300 LG (100 PROJECTION +150+50 HOOK) AT ALL LOCATIONS WHERE STEEL BEAM FRAMES INTO LOAD-BRG MASONRY WALL.

WB - DENOTES WALL BELOW CB - DENOTES COLUMN BELOW



7 ISSUED FOR CONSTRUCTION



15 12 202



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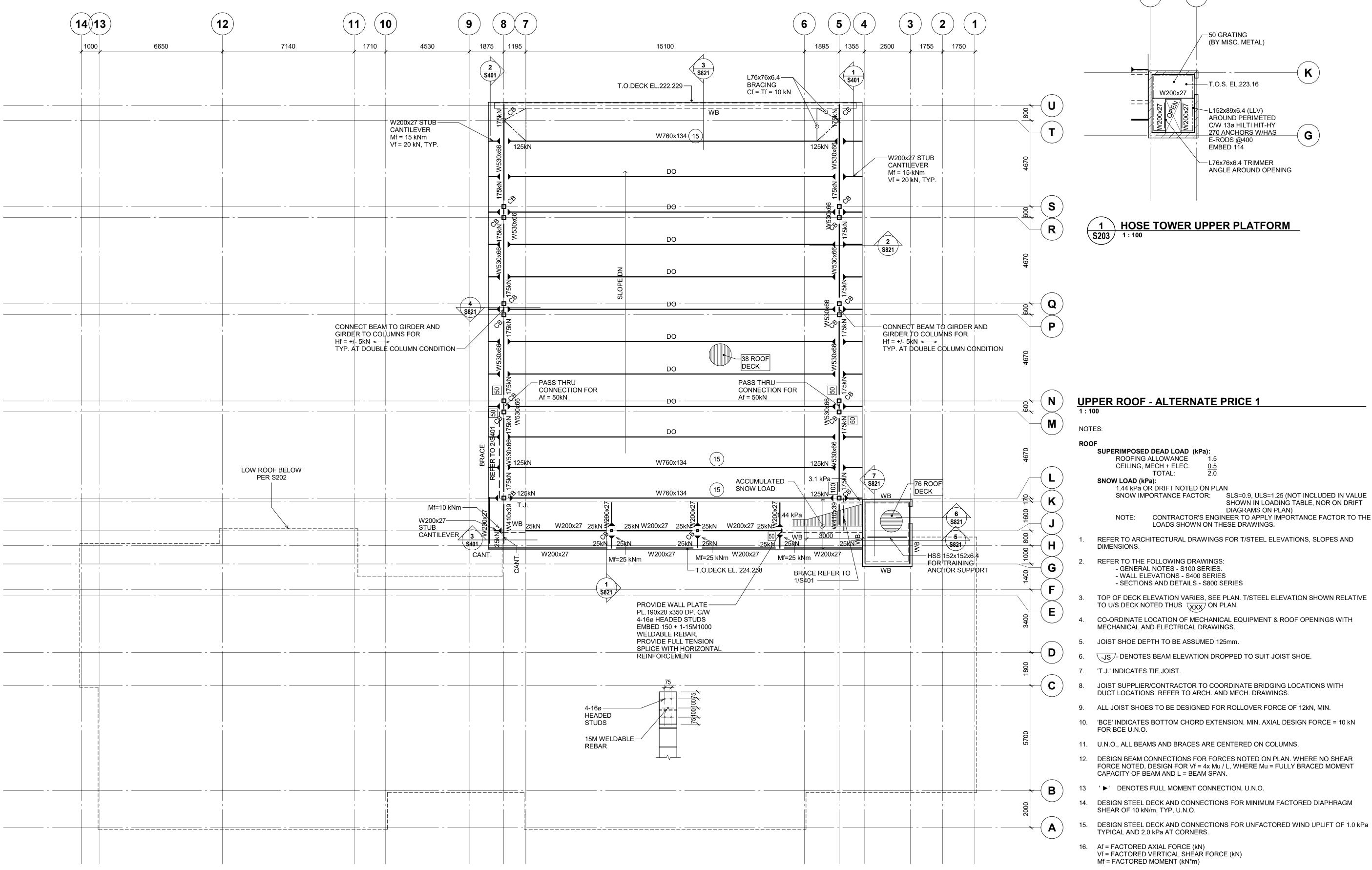
Drawing Title

LOWER ROOF FRAMING PLAN

Date Drawing No 15.12.2021 Drawn by ŃN Scale

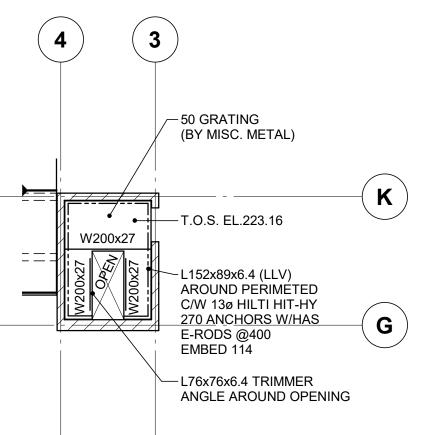


As indicated Project No

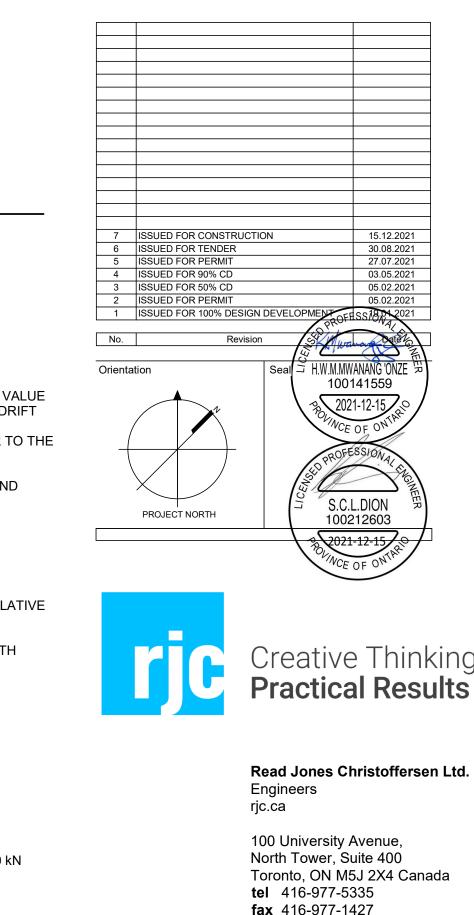


19. WB -DENOTES WALL BELOW

CB -DENOTES COLUMN BELOW



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fax 416-977-1427

BFES Station 201

Project Information

For

27 Rutherford Rd. S., Brampton, ON. L6W 3J3

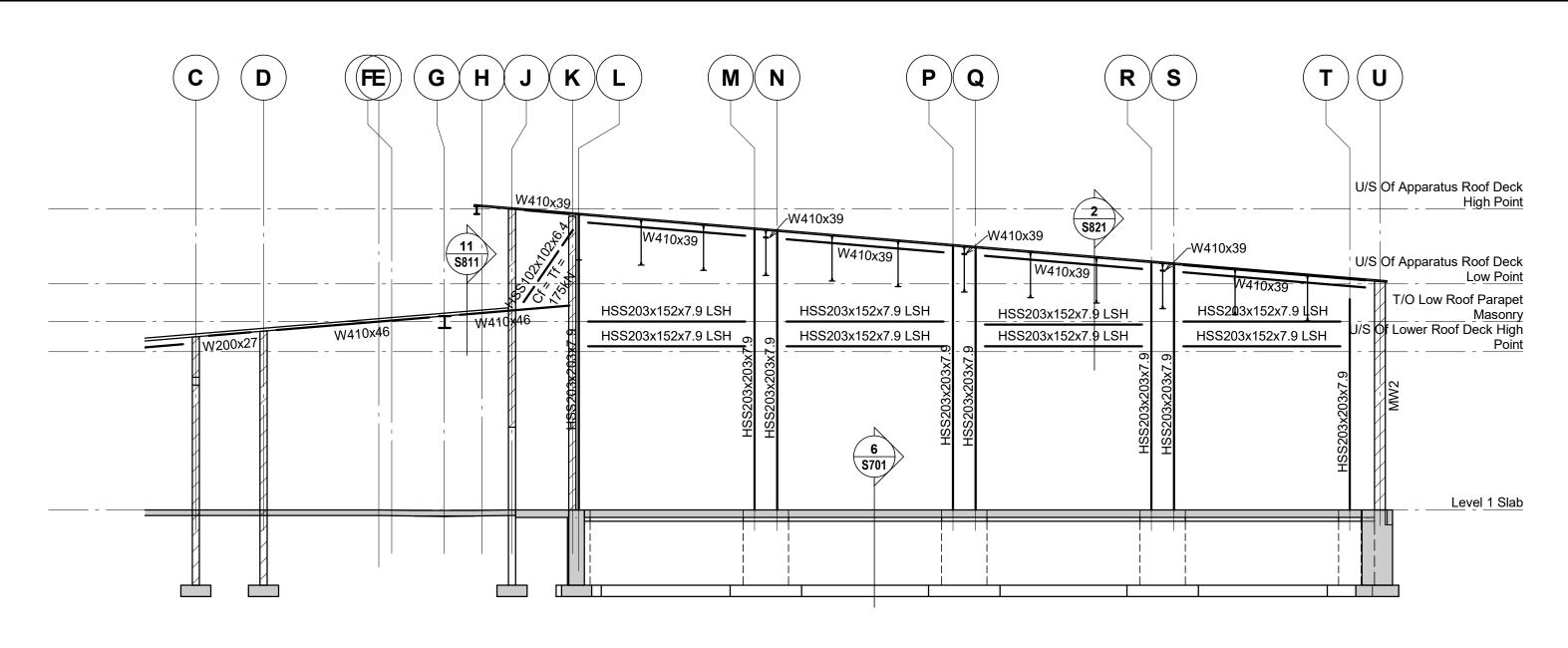
City of Brampton Fire & Emergency Services

Drawing Title UPPER ROOF FRAMING PLAN

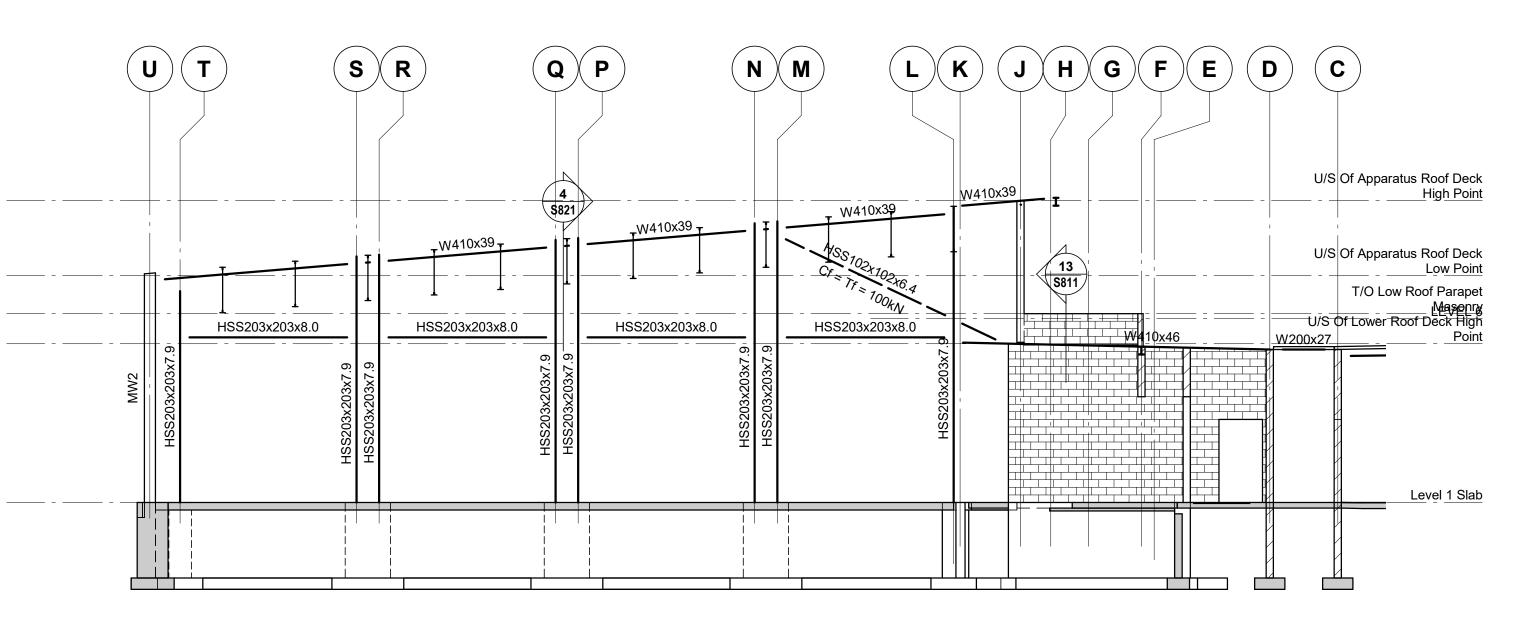
Date Drawing No 15.12.2021 Drawn by Author Scale 1 : 100 Project No

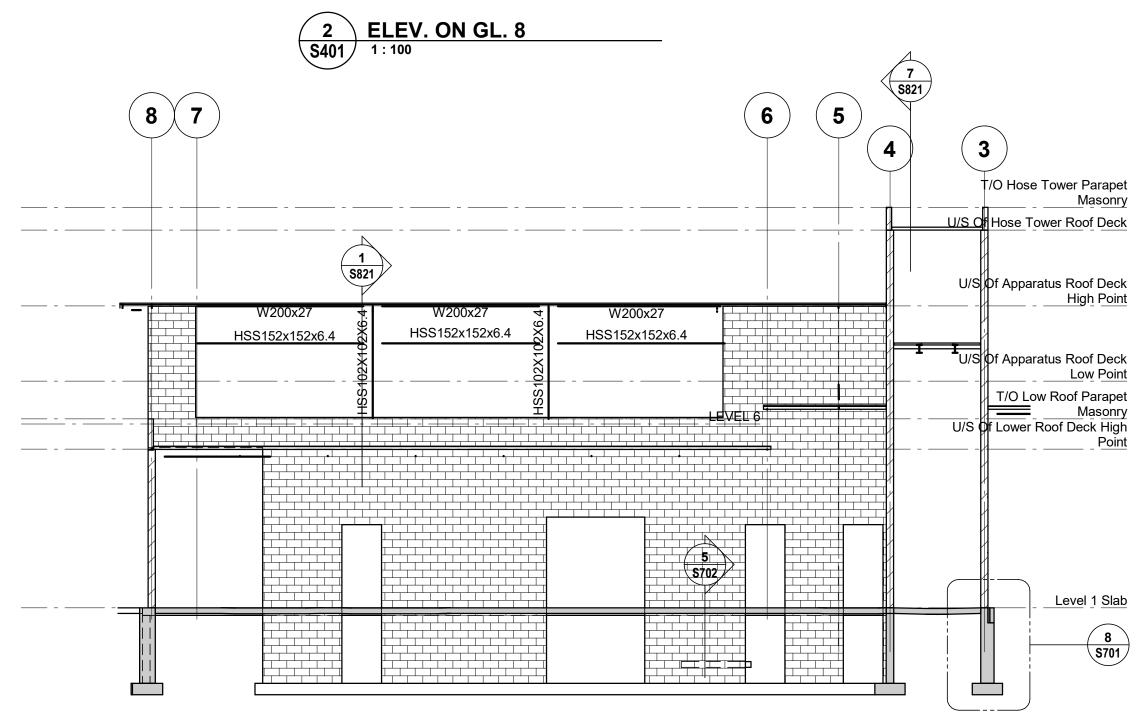


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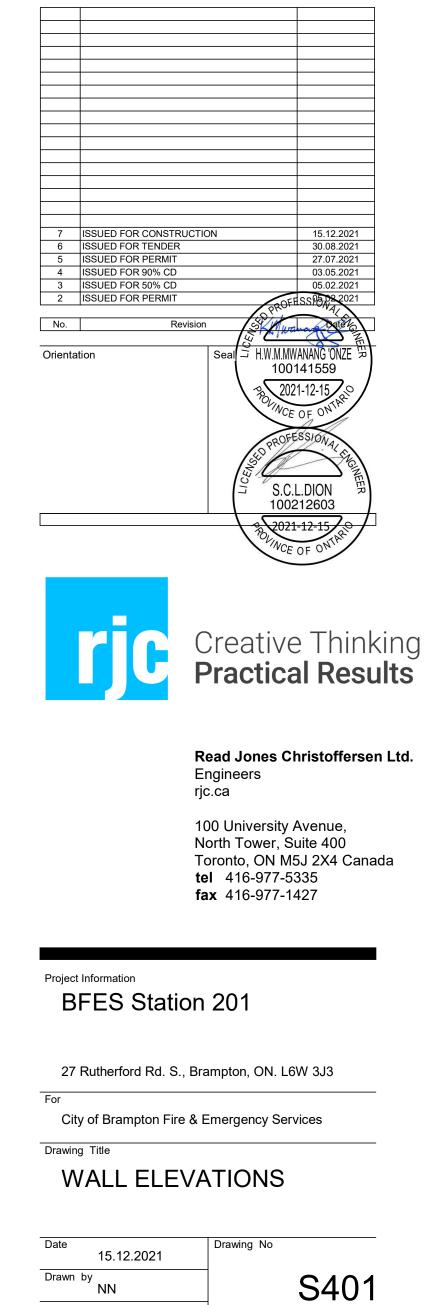
1 ELEV. ON GL. 5 S401 1 : 100





3 ELEV. ON GL. H S401 1:100

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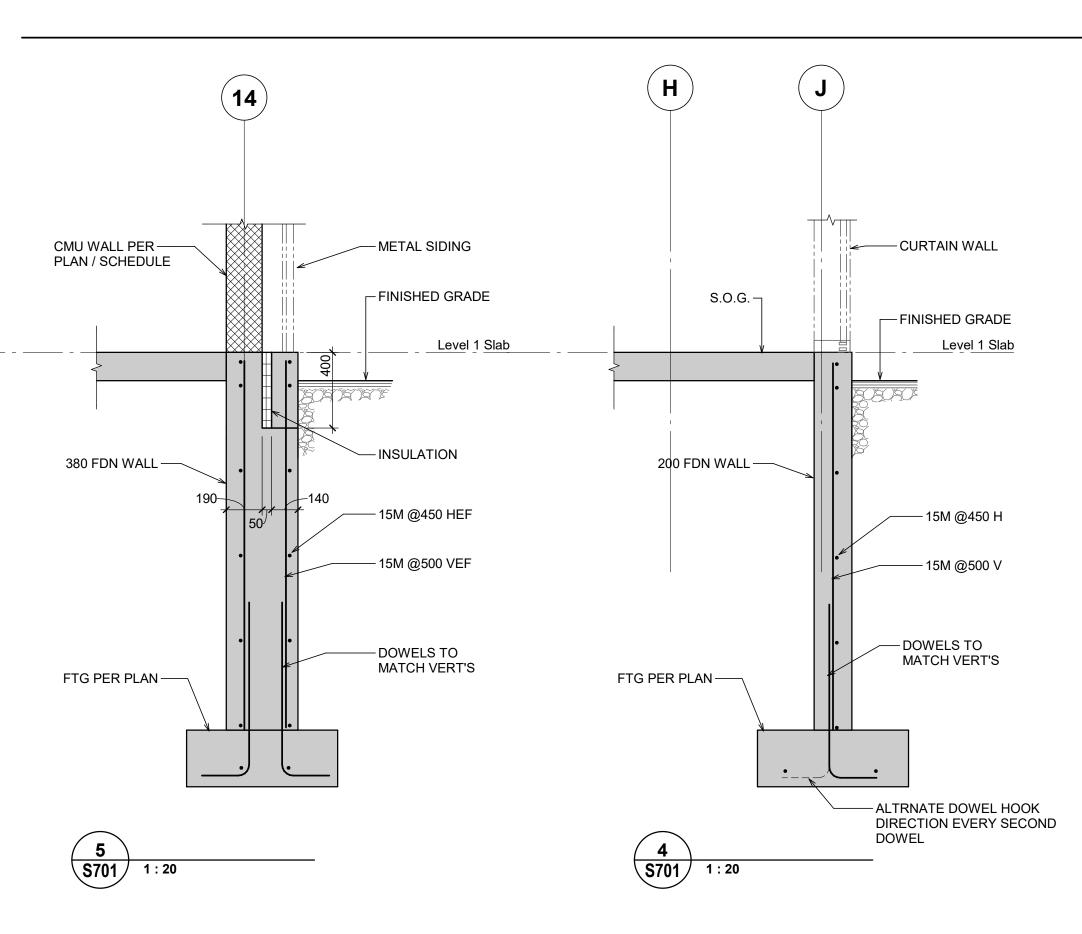


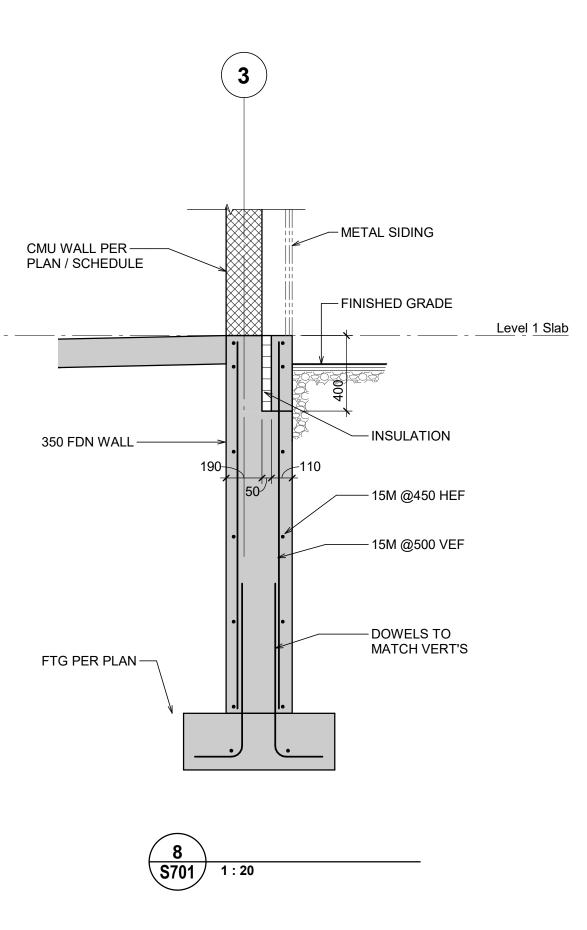
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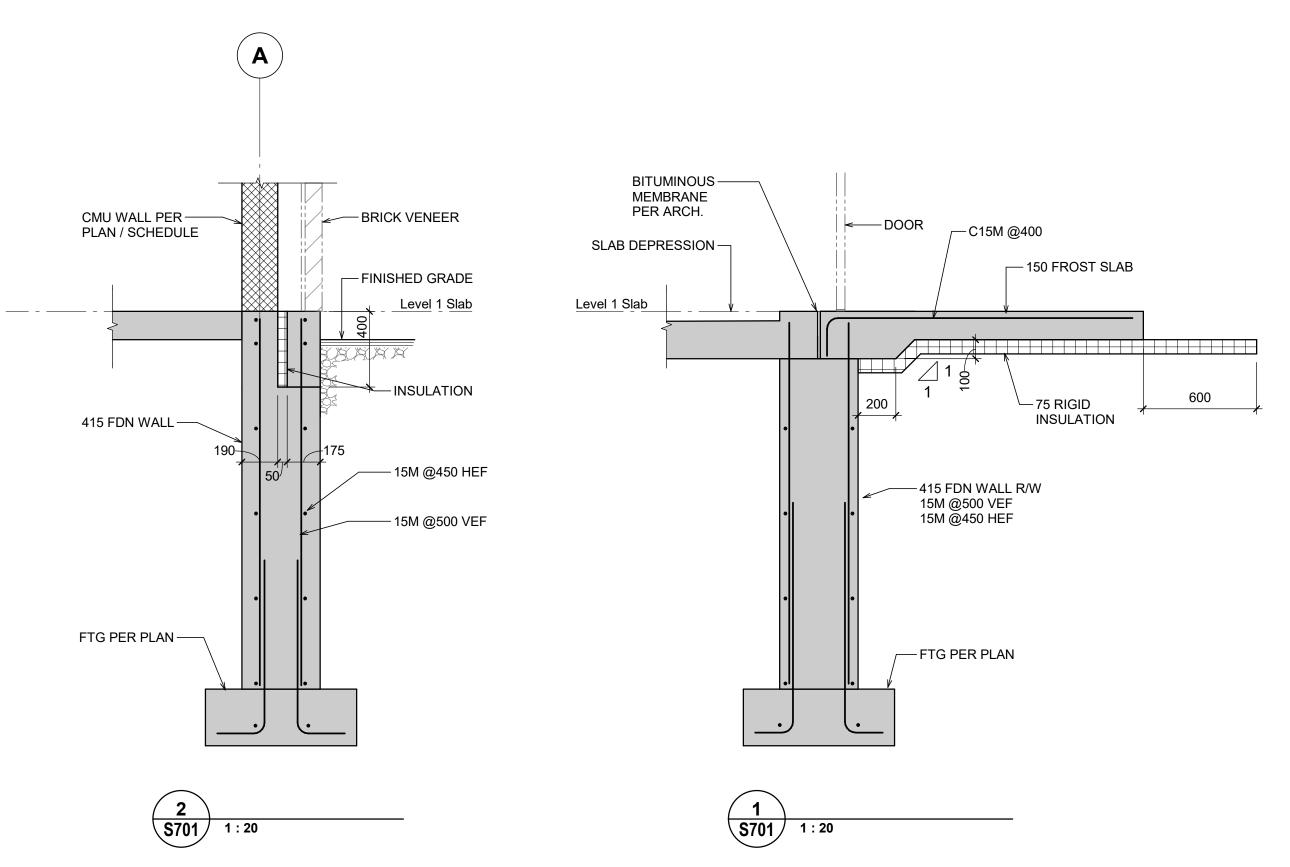
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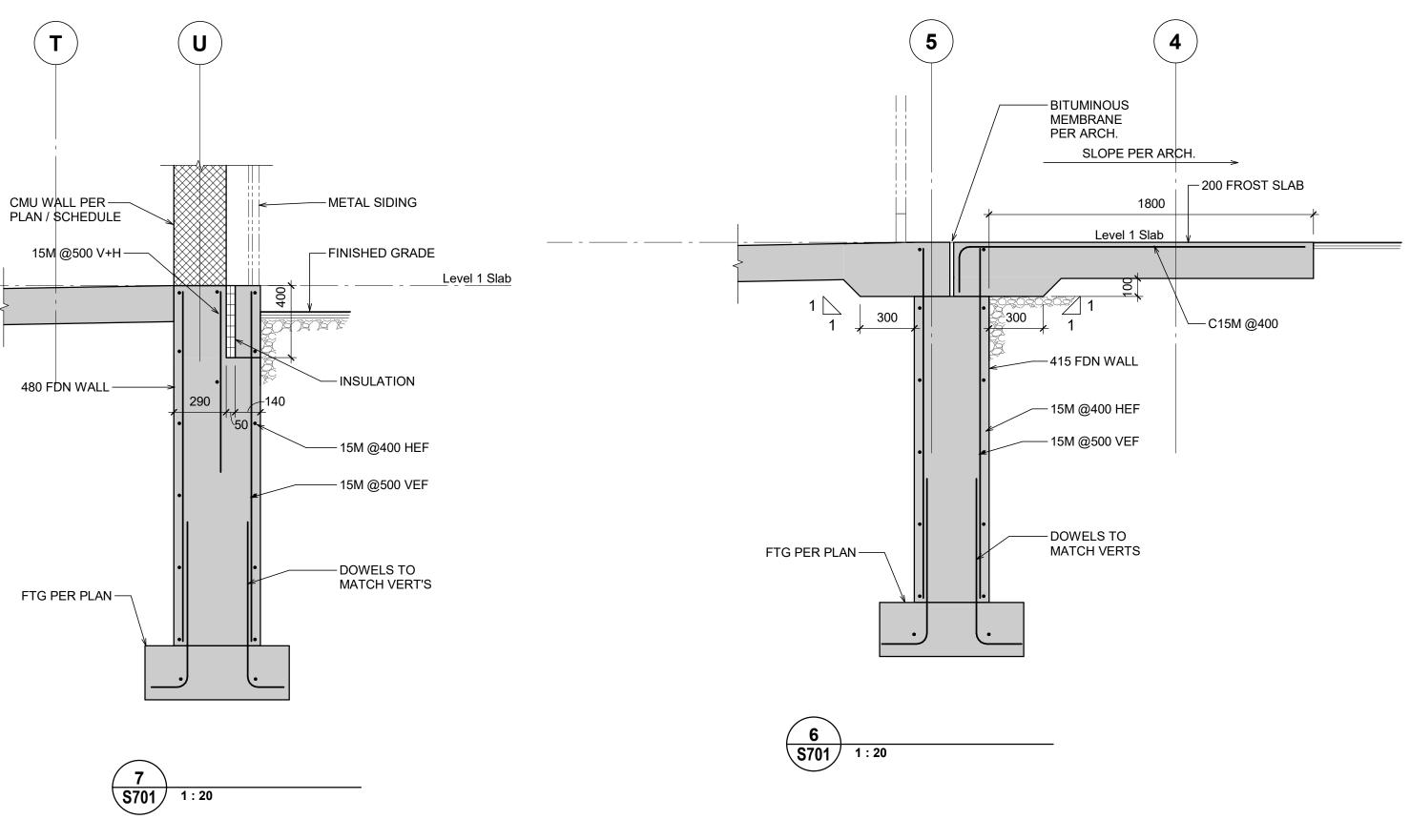
Project No

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Creative Thinking Practical Results

Read Jones Christoffersen Ltd. Engineers rjc.ca

100 University Avenue, North Tower, Suite 400 Toronto, ON M5J 2X4 Canada **tel** 416-977-5335 fax 416-977-1427

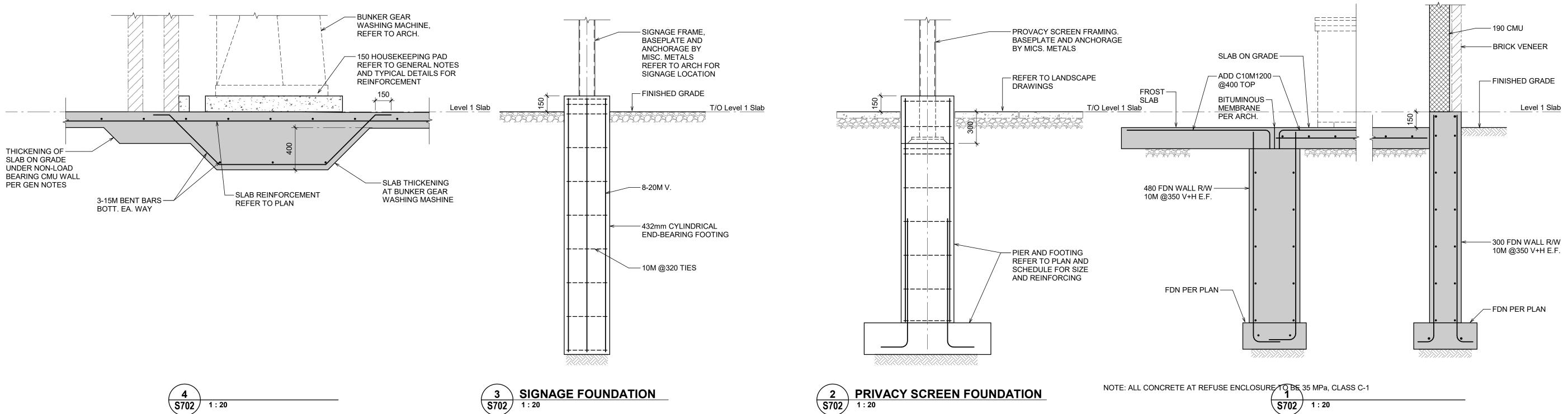
Project Information **BFES Station 201**

27 Rutherford Rd. S., Brampton, ON. L6W 3J3

For City of Brampton Fire & Emergency Services

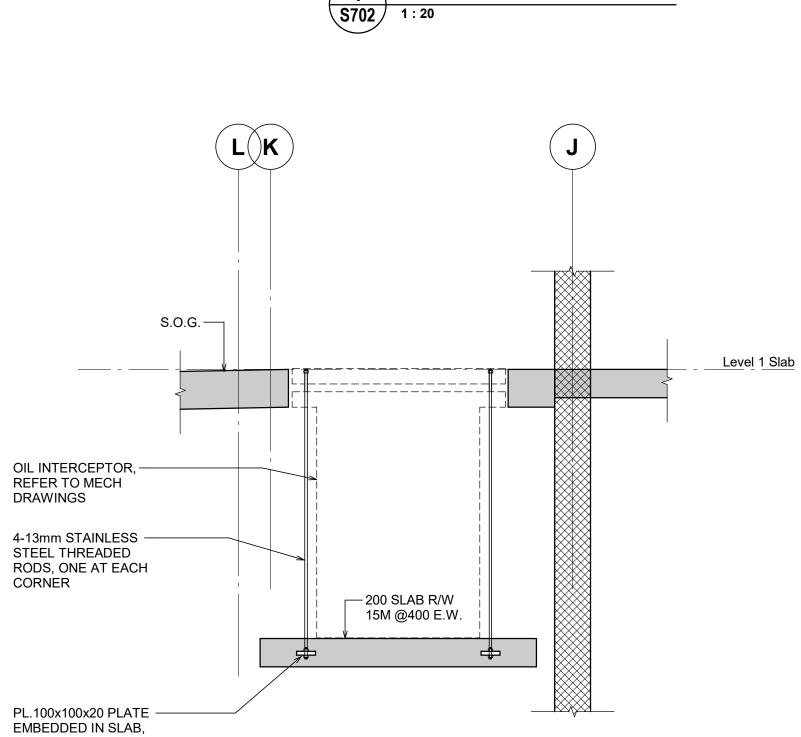
Drawing Title FDN WALLS SECTIONS

Date Drawing No 15.12.2021 Drawn by NN S701 Scale 1:20 Project No TOR.127511.0001

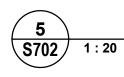








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Creative Thinking **Practical Results**

2021-12-15

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100 University Avenue, North Tower, Suite 400 Toronto, ON M5J 2X4 Canada tel 416-977-5335 fax 416-977-1427

Project Information BFES Station 201

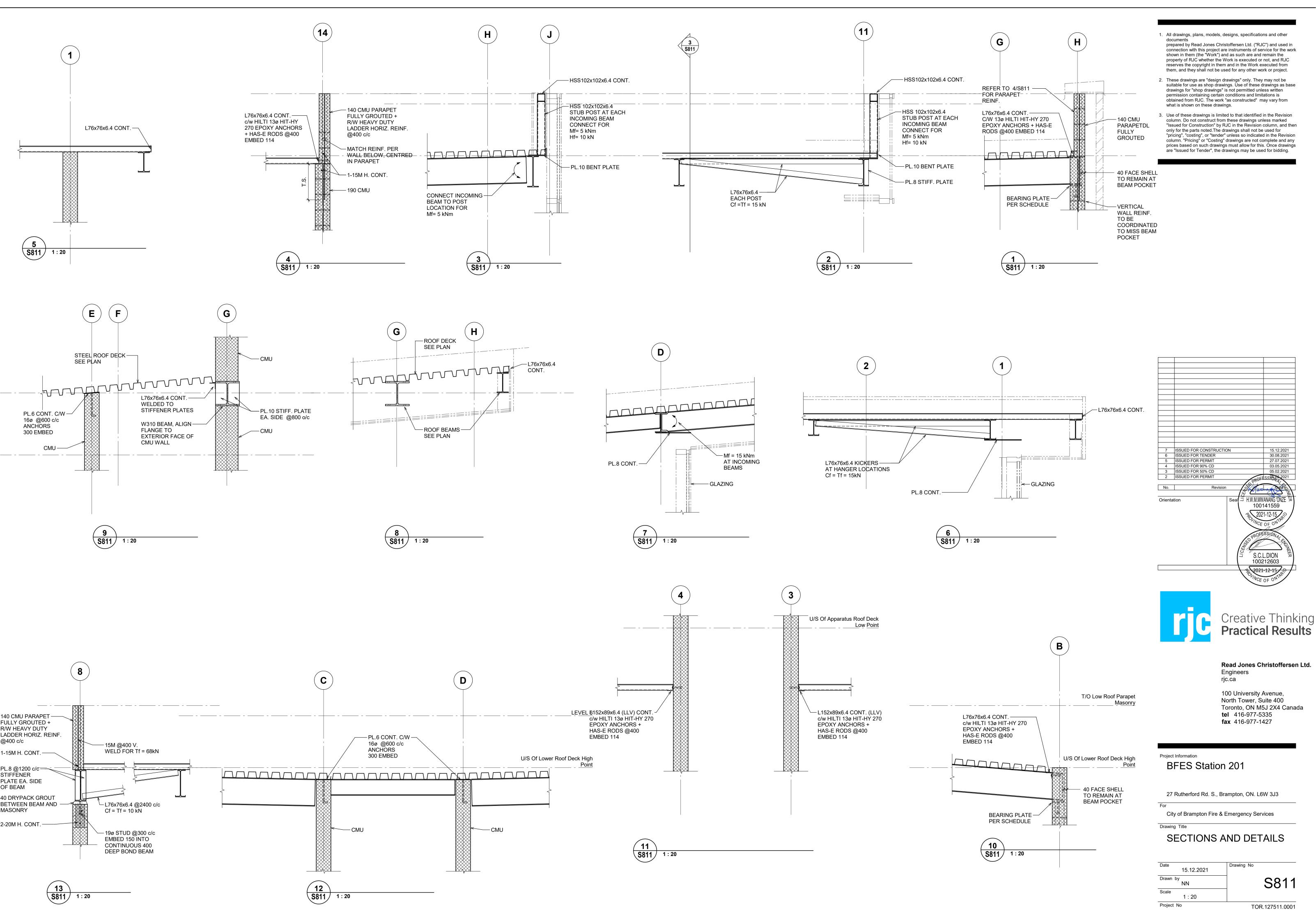
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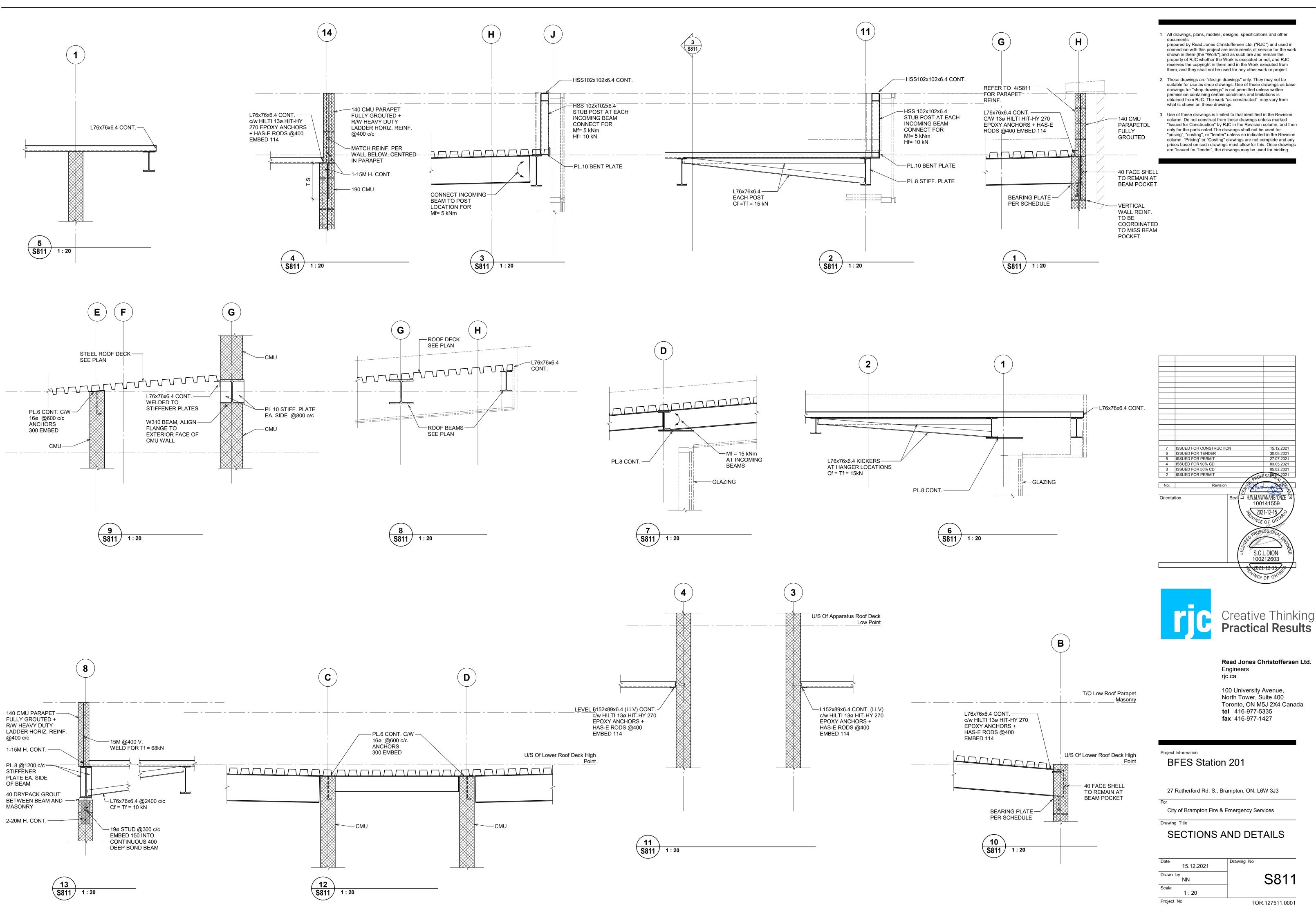
27 Rutherford Rd. S., Brampton, ON. L6W 3J3

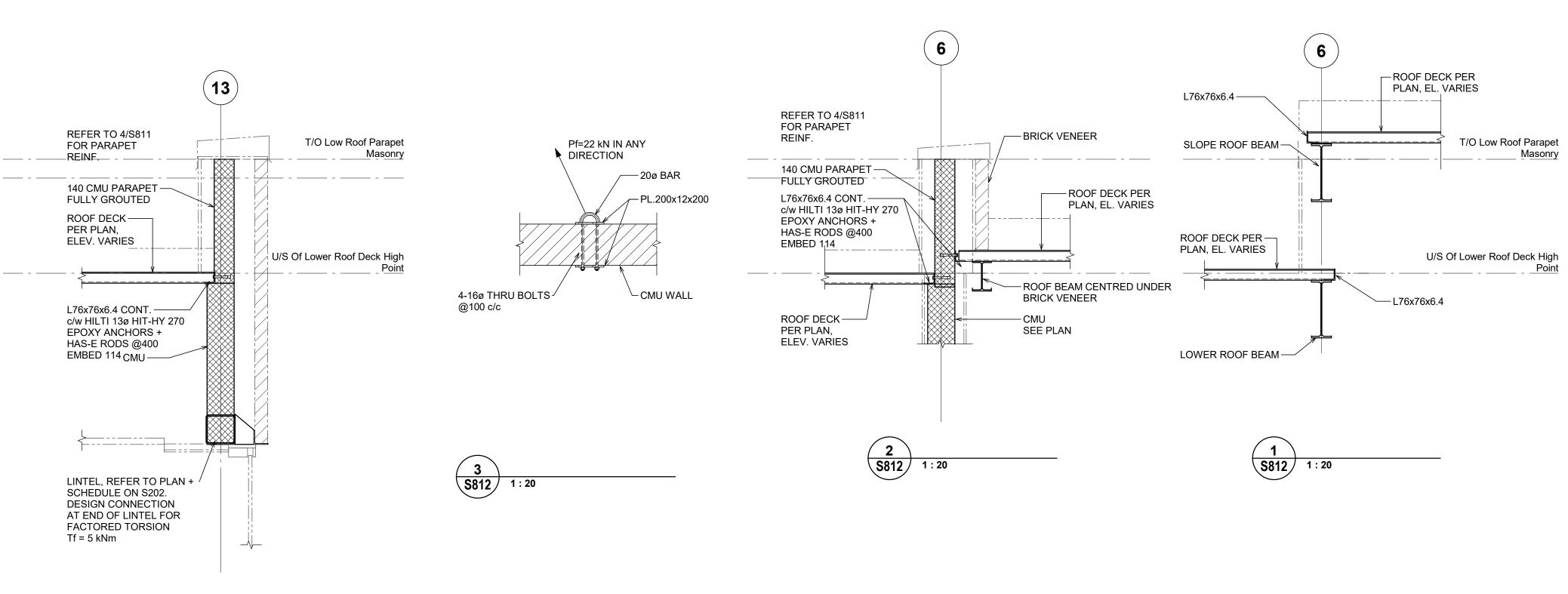
For City of Brampton Fire & Emergency Services

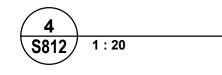
FDN WALLS SECTIONS

Date Drawing No 15.12.2021 Drawn by NN S702 Scale 1:20 Project No TOR.127511.0001









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Project Information BFES Station 201

Drawing Title

27 Rutherford Rd. S., Brampton, ON. L6W 3J3

For City of Brampton Fire & Emergency Services

SECTIONS AND DETAILS

Date Drawing No 15.12.2021 Drawn by Author Scale 1:20 Project No

S812

