A GENERAL NOTES

1 THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH, AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH, THE NATIONAL BUILDING CODE OF CANADA 2010 (NBCC 2010) AND THE MANITOBA BUILDING CODE 2011 (MBC 2011).
2 DESIGN LIVE LOADS SHALL NOT BE EXCEEDED AT ANY TIME DURING CONSTRUCTION.
3 DO NOT SCALE DRAWINGS.
4 VERIFY ALL DIMENSIONS, ELEVATIONS, SLOPES, DETAILS, CONDITIONS, ETC., SHOWN ON THE DRAWINGS AND VERIFIED WITH SITE CONDITIONS, PRIOR TO CONSTRUCTION OR PREFABRICATION OF ANY BUILDING COMPONENT.
5 MODIFICATIONS, ALTERNATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED IN WRITING BY THE CONTRACT ADMINISTRATOR.
6 LOCATE ALL EXISTING SUBGRADE SERVICES PRIOR TO CONSTRUCTION.
7 DESIGN AND INSTALL ALL NECESSARY SHORING, BRACING AND FORMWORK. FORMWORK FOR CONSTRUCTION SHALL BE BRIDGED OVER EXISTING SERVICES. PROCEDURE MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.
8 FOR OPENINGS IN SLAB, FLOOR, WALLS ROOF, ETC. REFER TO MECHANICAL, AND/OR OTHER PERTINENT DRAWINGS.
9 REVIEW LOCATION OF INTENDED AND PROPOSED CONSTRUCTION JOINTS WITH ENGINEER PRIOR TO PROCEEDING.
10 CONSTRUCTION SAFETY REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11 DEFECTIVE OR UNACCEPTABLE WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AT NO ADDITIONAL COST TO THE PROJECT.
12 WHERE THERE IS A DISCREPANCY BETWEEN DRAWINGS, SUBMIT A FORMAL RFI TO THE CONTRACT ADMINISTRATOR PRIOR TO MANUFACTURING OR INSTALLATION.
13 WHERE THERE IS A DISCREPANCY BETWEEN PROJECT SPECIFICATIONS AND GENERAL NOTES, INFORMATION SHOWN IN SPECIFICATIONS SHALL GOVERN.
14 ALL SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE CONTRACT ADMINISTRATOR.
15 ALL SHOP DRAWINGS REQUIRED TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA SHALL BE ACCOMPANIED BY A CERTIFICATE OF AUTHORIZATION FROM 'EGM'.

B DESIGN LOAD PARAMETERS

1 MAIN FLOOR LOADS
– REFER TO PARTIAL MAIN FLOOR FRAMING DRAWING S–102

C CAST–IN–PLACE CONCRETE

1 ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH CSA A23.1–14/A23.2–14 CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION / METHODS OF TEST AND STANDARD PRACTICES FOR CONCRETE.
2 SUPPLEMENTARY CEMENTITIOUS MATERIAL TO CAN/CSA–A3000–13 CEMENTITIOUS MATERIALS COMPENDIUM.
3 CHEMICAL ADMIXTURES TO ASTM C494/C494M–17 AND ASTM C1017/C1017M–13e1.
4 GENERAL CONTRACTOR TO PROVIDE PROPRIETARY MIX DESIGN PERFORMANCE RECORD AS REQUIRED BY 'CONCRETE MANITOBA'.
5 SUBMIT CONCRETE MIX DESIGN STATEMENTS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA, TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONSTRUCTION.
6 CONCRETE SPECIFICATIONS:
– REFER TO TABLE D.1
7 CONSTRUCT FORMWORK, SHORING AND BRACING TO MEET DESIGN, CODE AND CSA A23.1–14 REQUIREMENTS. CONSTRUCT ACCURATELY, SO THAT RESULTING FINISHED CONCRETE CONFORMS TO SHAPES, LINES, AND DIMENSIONS INDICATED ON THE DRAWINGS.
8 VIBRATE ALL CONCRETE WORK WITH APPROPRIATE INTERNAL VIBRATORS.
9 CONCRETE WORKING TIME, FROM BATCHING TO PLACEMENT AND CONSOLIDATION, SHALL NOT EXCEED 2 HOURS.
10 CONTRACTOR SHALL ACCURATELY PLACE AND SECURE ALL COMPONENTS TO BE EMBEDDED IN THE CONCRETE (ie. WELD PLATES, DOWELS FOR CONCRETE AND/OR MASONRY, ANCHOR BOLTS, INSERTS, WATER STOP BARS, SLEEVING, ETC.). SEE STRUCTURAL, MECHANICAL, ELECTRICAL, AND ANY OTHER PERTINENT DRAWINGS.
11 CLEAR CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:
– REFER TO TABLE D.2
12 WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION EMBEDMENT:
– REFER TO TABLE D.3
13 WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE (UNLESS DETAILED OTHERWISE):
REFER TO TABLE D.4
14 CONCRETE TESTING SHALL BE PERFORMED BY A CSA APPROVED TESTING COMPANY. A MINIMUM OF THREE (3) CONCRETE TEST CYLINDERS AND ONE (1) SLUMP TEST SHALL BE TAKEN FOR EVERY 75 (OR LESS) CUBIC METERS OF EACH CLASS OF CONCRETE PLACED, OR FOR EACH DAY CONCRETE IS PLACED, WHICHEVER IS GREATER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CSA A23.2–14, AND THE RESULTS SHALL BE FORWARDED TO THE CONTRACT ADMINISTRATOR.
15 VOID FORMS UNDER SLABS, BEAMS AND WALLS SHALL BE HONEYCOMB TYPE \BIODEGRADABLE CARDBOARD, THICKNESS AS INDICATED, CAPABLE OF PROVIDING SUFFICIENT STRUCTURAL SUPPORT FOR CONCRETE UNTIL CONCRETE IS CURED.
16 AS AN ALTERNATE VOID FORM, CONTRACTOR MAY USE STYROFOAM TYPE VOID FILLER WHICH MUST MAINTAIN VOID SPACE NOTED ABOVE WHEN COLLAPSED / COMPRESSED. STYROFOAM VOID FILLER SHALL BE SELECTED AND DESIGNED BY MANUFACTURER. VOID FORM SELECTED TO BE FORWARDED TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONSTRUCTION.
17 ALL FORMWORK INCLUDING CARDBOARD "SONO–TUBES" TO BE REMOVED UPON COMPLETION.
18 UNDER IDEAL WEATHER CONDITIONS, ALLOW MINIMUM CURING TIME AS SCHEDULED BELOW BEFORE REMOVING FORMWORK:
– GRADE BEAM SIDES 3 DAYS
– BEAM SIDES 7 DAYS
– BEAM & SLAB BOTTOMS 14 DAYS
19 ALL HOLES NOT SHOWN ON THE DRAWINGS TO BE CORED THROUGH REINFORCED CONCRETE TO BE REVIEWED AND APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO CORING.
20 CONSTRUCTION JOINTS, CONCRETE PLACEMENT SCHEDULING, AND WORK PROCEDURES SHALL BE DISCUSSED WITH THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCING CONSTRUCTION.
21 TYPICAL HOUSEKEEPING PADS UNDER ALL EQUIPMENT AND STORAGE AREAS TO BE 150mm (6") THICK CONCRETE UNLESS NOTED OTHERWISE.
22 FOR COLD WEATHER CONCRETE WORK, ALL ICE, SNOW, AND FROST SHALL BE REMOVED FROM FORMWORK AND THE TEMPERATURE OF ALL CONTACT SURFACES SHALL BE RAISED ABOVE 10C FOR 24 HOURS PRIOR TO PLACING CONCRETE. CONCRETE SHALL BE NOT LESS THAN 20 DEGREES CELSIUS NOR MORE THAN 30 DEGREES CELSIUS WHEN DEPOSITED. CONCRETE SHALL BE ENCLOSED AND THE SPACE SHALL HAVE A TEMPERATURE OF NOT LESS THAN 20 DEGREES CELSIUS FOR THREE (3) DAYS AND NOT LESS THAN 5C FOR AN ADDITIONAL FOUR (4) DAYS.
23 NOTIFY THE CONTRACT ADMINISTRATOR AT LEAST 48 HOURS PRIOR TO ALL CONCRETE PLACEMENT TO ALLOW FOR SITE OBSERVATIONS.

D CONCRETE SLAB–ON–GRADE

1 SUB–BASE PREPARATION – PREPARE SUB–BASE IN STRICT ACCORDANCE WITH THE GEOTECHNICAL REPORT.
– REMOVE ALL TOPSOIL, SILT, LOOSE FILL, DEBRIS, ORGANIC MATERIAL (INCLUDING TREE ROOTS), EXISTING FOUNDATION ELEMENTS, TANKS, ETC.
– FILL ALL VOIDS AND LOW AREAS WITH CLEAN WELL GRADED GRANULAR FILL COMPACTED TO A MINIMUM 100% STANDARD PROCTOR DENSITY. INSTALL AND COMPACT IN 150mm (6") HIGH LIFTS.
2 GRANULAR BASE – INSTALL A BASE OF CLEAN WELL GRADED GRANULAR FILL COMPACTED TO MINIMUM 100% STANDARD PROCTOR DENSITY. INSTALL AND COMPACT IN 150mm (6") HIGH LIFTS TO THE THICKNESS SPECIFIED ON THE DRAWINGS.
3 IF REQUESTED BY THE CONTRACT ADMINISTRATOR, SAMPLES OF PROPOSED GRANULAR BASE AND SUB–BASE MATERIAL SHALL BE SUBMITTED TO GEOTECHNICAL CONSULTANT FOR REVIEW AND APPROVAL.
4 THAW ALL FROZEN AREAS PRIOR TO INSTALLING GRANULAR MATERIAL.
5 COMPACTION TESTS SHALL BE PERFORMED BY A TESTING COMPANY DURING THE INSTALLATION OF ALL GRANULAR MATERIAL. THE RESULTS SHALL BE FORWARDED TO THE CONTRACT ADMINISTRATOR.
6 PROVIDE 15 MIL POLY MOISTURE BARRIER (WELL LAPPED AND SEALED) BETWEEN COMPACTED GRANULAR BASE AND CONCRETE SLAB UNLESS NOTED OTHERWISE.
7 PROVIDE A FULL AND CONTINUOUS 12mm (1/2") WIDE FLEXCELL JOINT BETWEEN THE EDGE OF SLAB AND ALL OTHER STRUCTURAL ELEMENTS (I.E., GRADE BEAMS, FOUNDATIONS, RETAINING WALLS, COLUMNS, ETC.) UNLESS NOTED OTHERWISE.
8 REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICES INSTALLED BELOW THE SLAB AND FOR SERVICES PENETRATING THE SLAB REQUIRING SLEEVING.
9 REFER TO DRAWINGS FOR SURFACE LEVEL TOLERANCES, SLOPES, FINISHES, SURFACE SEALERS OR HARDENERS, ETC.
10 INSTALL SAWCUTS AS INDICATED ON STRUCTURAL PLANS. SAWCUTS TO BE 1/4 OF THE SLAB THICKNESS IN DEPTH AND 3mm (1/8") WIDE. DO NOT CUT THROUGH REINFORCING IN THE SLAB. CUT NO SOONER THAN 24 HOURS BUT NOT LATER THAN 48 HOURS AFTER SLAB IS POURED. FILL SAWCUTS WITH APPROVED BITUMINOUS COMPOUND OR CAULKING.
11 PROVIDE CONSTRUCTION JOINTS C/W 12mm (1/2") ASPHALT IMPREGNATED FIBREBOARD AND GREASED DOWELS TO MATCH SLAB REINFORCING.
12 ALL STUD WALLS LOCATED ON A SLAB–ON–GRADE SHALL BE CONSTRUCTED WITH A MINIMUM 25mm (1") GAP AT THE TOP, OR OTHER APPROVED SLIP JOINT.

E FOUNDATION – CAST–IN–PLACE CONCRETE FRICTION PILES

1 ALL PILES TO BE CAST–IN–PLACE FRICTION PILES, SIZES AS SHOWN ON THE DRAWINGS. PILE LENGTH TO BE MEASURED FROM FINISHED CONTOURS OF EXCAVATION AS SHOWN ON THE DRAWINGS AND DETAILS UNLESS NOTED OTHERWISE.
2 PILE REINFORCING TO BE AS SHOWN ON THE DRAWINGS.
3 FRICTION PILES ARE DESIGNED FOR FRICTION VALUES IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY ENG–TECH CONSULTING – FILE NO. 19–217–03 DATED AUGUST, 2019. NOTIFY THE CONTRACT ADMINISTRATOR SHOULD SITE CONDITION VARY FROM GEOTECHNICAL REPORT.
4 INSTALLATION OF ALL CONCRETE PILES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER (RETAINED BY THE CONTRACTOR), REGISTERED IN THE PROVINCE OF MANITOBA, PRIOR TO PLACEMENT OF CONCRETE. A LETTER OF CERTIFICATION SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF THE PILE INSTALLATION.
5 INSTALL PILES VERTICALLY, NOT OUT OF PLUMB BY MORE THAN 2%; NOR OUT OF POSITION AS SHOWN IN THE FOUNDATION PLAN BY MORE THAN 50mm (2").
6 OUT OF PLACE, DEFECTIVE, OR PILES THAT ARE DAMAGED IN HANDLING OR DRIVING WILL NOT BE ACCEPTED. ADDITIONAL PILES SHALL BE SUBSTITUTED AT NO EXTRA COST OR SCHEDULE DELAY TO THE CONTRACT.
7 EXTEND VERTICAL PILE REINFORCING STEEL 450mm (18") INTO STRUCTURAL CONCRETE MEMBERS SUPPORTED UNLESS NOTED OTHERWISE.
8 MECHANICALLY VIBRATE TOP 3.0 METERS (9'–10") OF PILE.
9 SLEEVE PILE HOLES AS REQUIRED DURING INSTALLATION OF CONCRETE FOR PILES.

F REINFORCING STEEL

1 REINFORCING STEEL SHALL BE NEW BILLET, DEFORMED BARS WITH A MINIMUM SPECIFIED YIELD STRENGTH OF 400MPa IN ACCORDANCE WITH CSA G30.18–09 (R2014).
2 REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST RSIC REINFORCING STEEL MANUAL OF STANDARD PRACTICE.
3 LAP TOP BARS AT CENTER SPAN AND BOTTOM BARS OVER SUPPORTS.
4 ALL REINFORCING TO BE HELD IN PLACE AND TIED BY THE USE OF PROPER ACCESSORIES SUCH AS HI–CHAIRS, SPACERS, ETC.
5 REINFORCING IN CONCRETE BEAMS TO BE BENT 600mm (24") AROUND CORNERS OR USE 900mm x 900mm (36" X 36") CORNER BARS UNLESS NOTED OTHERWISE.
6 FRAME ALL OPENINGS IN CONCRETE BEAMS, AND/OR SLABS WITH (2) 20M BARS (EXTRA) EACH LAYER, ALL FOUR (4) SIDES UNLESS NOTED OTHERWISE. EXTEND BARS 600mm (24") BEYOND EDGES OF OPENING EXCEPT AS NOTED. PROVIDE (1) 20M x1200mm (47") LONG DIAGONAL TOP AND BOTTOM AT EACH CORNER.
7 SUBMIT SHOP DRAWINGS WHICH CLEARLY INDICATE BAR SIZES, GRADE, SPACING, HOOKS, BENDS, SUPPORTING/SPACE DEVICES, ETC. FOR REVIEW TO THE CONTRACT ADMINISTRATOR PRIOR TO FABRICATION.
8 REINFORCE HOUSEKEEPING PADS WITH WITH 10M @ 300mm (12") o/c EACH WAY AT CENTER UNLESS OTHERWISE NOTED. PROVIDE MATCHING DOWELS ALONG THE PERIMETER, EMBED MIN 125mm (5") INTO CONCRETE.
9 PRIOR TO PLACING CONCRETE, ENSURE THAT ALL REINFORCING STEEL IS CLEAN, FREE OF LOOSE SCALE, RUST, MUD, OIL, OR OTHER FOREIGN MATERIAL THAT WOULD REDUCE BOND.
10 HEATING, QUENCHING, AND BENDING OF REINFORCING STEEL ON THE SITE IS NOT ALLOWED.

G STRUCTURAL STEEL

1 STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20–13/G40.21–13.
2 WIDE FLANGE SECTIONS TO BE TO CSA G40.21–13, 350MPa.
3 HOLLOW STRUCTURAL SECTIONS TO BE TO CSA G40.21–13, 350MPa CLASS C.
4 ALL OTHER ROLLED OR WELDED STRUCTURAL SECTIONS AND PLATES TO BE TO CSA G40.21–13, 300MPa.
5 FABRICATION AND ERECTION SHALL CONFORM TO CSA S16–14.
6 ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS FULLY APPROVED FOR STRUCTURAL WELDING BY THE CANADIAN WELDING BUREAU IN ACCORDANCE WITH CSA W47.1–09 (R2014), CSA 47.2–11 (R2015), AND CSA W59–13.
7 SPLICING OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED, WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS, NO HOLES PERMITTED IN TOP FLANGE.
8 STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA, SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS, TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR FABRICATION.
9 PAINTING OF STRUCTURAL STEEL SHALL BE AS SHOWN IN PROJECT SPECIFICATIONS.
10 SUPPLY ALL COMPONENTS WITH ONE (1) COAT OF SHOP PRIMER CONFORMING TO CISC/CPMA 2–75 OR EQUIVALENT UNLESS NOTED OTHERWISE.
11 GALVANIZING AS INDICATED SHALL BE HOT DIPPED GALVANIZED TO ASTM A123/A123M–15 FOR SHAPES AND ASTM A153/A153M–16 FOR HARDWARE.
12 PROVIDE MINIMUM 6.4mm (1/4") WELD UNLESS NOTED OTHERWISE.
13 DESIGN FOR MINIMUM 50% OF SHEAR CAPACITY UNLESS NOTED OTHERWISE.

V MISCELLANEOUS METALS

1 GRATING SHALL BE DESIGNED AND DETAILED BY STRUCTURAL STEEL SUPPLIER. REFER TO DRAWINGS FOR REQUIREMENTS.
2 GRATING SHALL BE DESIGNED IN ACCORDANCE WITH NBCC 2010.
3 GRATING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4 SUBMIT SHOP DRAWINGS, SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA, TO THE CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO FABRICATION.
5 ALL MISCELLANEOUS STEEL SHALL BE GALVANIZED UNLESS NOTED OTHERWISE.

STRUCTURAL ABBREVIATION SCHEDULE

1E	1 END	O/C OR o/c	ON CENTRE
1S	1 SIDE	O/O	OUT TO OUT
AB	ANCHOR BOLTS	OF OR O/F	OUTSIDE FACE
B OR BOT	BOTTOM	Pf	POINT LOAD (FACTORED)
BRG	BEARING	PL	PLATE
BLL	BOTTOM LOWER LAYER	Ps	POINT LOAD (SERVICE)
BUL	BOTTOM UPPER LAYER	REINF	REINFORCMENT BARS
C/W OR c/w	COMPLETE WITH	REQ'D	REQUIRED
CANT	CANTILEVER	S/S	STAINLESS STEEL
CIP	CAST–IN–PLACE	SCHD	SCHEDULE
CONC	CONCRETE	SHT NOTES	SHEET NOTES
CONT	CONTINUOUS	SIM	SIMILAR
Cf	COMPRESSION (FACTORED)	STD HKS OR HKS	STANDARD HOOKS
CL	CENTRE LINE	STIR	STIRRUPS
Cs	COMPRESSION (SERVICE)	T OR TOP	TOP
DIA	DIAMETER	T&B	TOP AND BOTTOM
DP	DEEP	T/O	TOP OF
DWG	DRAWINGS	Tf	TENSION (FACTORED)
DWL	DOWEL	THK	THICK
EE	EACH END	TJ	STRUT JOIST
EF	EACH FACE	TJ 1E	STRUT JOIST ONE END
EL OR ELEV	ELEVATION	TLL	TOP LOWER LAYER
ES	EACH SIDE	TOC	TOP OF CONCRETE
EW	EACH WAY	TOS	TOP OF STEEL
H1E	HOOK 1 END	Ts	TENSION (SERVICE)
H2E	HOOK 2 ENDS	TUL	TOP UPPER LAYER
HC	HOLLOW CORE	TYP	TYPICAL
HD GALV	HOT DIPPED GALVANIZED	U/N	UNLESS NOTED
HI	HIGH	U/S	UNDERSIDE
H OR HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
H IF	HORIZONTAL INSIDE FACE	V IF	VERTICAL INSIDE FACE
H OF	HORIZONTAL OUTSIDE FACE	V OF	VERTICAL OUTSIDE FACE
IC	IN CENTER	V EF	VERTICAL EACH FACE
IF OR I/F	INSIDE FACE	V OR VERTS	VERTICAL
LG	LONG	Vf	SHEAR (FACTORED)
LLH	LONG LEG HORIZONTAL	Vs	SHEAR (SERVICE)
LLV	LONG LEG VERTICAL	W/	WITH
LO	LOW		
Mf	MOMENT (FACTORED)		
Ms	MOMENT (SERVICE)		
NSA	NELSON STUD ANCHORS		

TABLE D.1
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST–IN–PLACE CONCRETE
CONTROLLED CONCRETE

CONCRETE LOCATION	MAX. AGG. SIZE	28 DAY STRENGTH	EXPOSURE CLASS	AIR CONTENT	CEMENT TYPE
PILES & PILECAPS	20 mm	35 MPa @56 DAYS	S–1	4–7%	HS/HSb
GRADE BEAMS / PIT WALLS & BASE SLAB	20 mm	35 MPa @56 DAYS	S–1	4–7%	HS/HSb
SLABS ON GRADE	20 mm	30 MPa	C–2	4–7%	GU/GUb
STRUCTURAL SLABS	20 mm	35 MPa	C–1	4–7%	GU/GUb

TABLE D.2
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST–IN–PLACE CONCRETE
CONCRETE COVER TO REINFORCEMENT

PILES / PILE CAPS	75 mm
WALLS	50 mm
STRUCTURAL SLABS – TOP	60 mm
STRUCTURAL SLABS – BOTTOM	50 mm
SLABS ON GRADE	50 mm
BEAMS TO STIRRUPS	50 mm

TABLE D.3
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST–IN–PLACE CONCRETE
EMBEDMENT OF DOWELS

BAR DESIGNATION	REINFORCEMENT GRADE (MPa)	COMPRESSION EMBEDMENT (BASED ON CONCRETE STRENGTH MPa)			REGULAR TENSION EMBEDMENT (BASED ON CONCRETE STRENGTH MPa) (SEE NOTE 1)				
		20 MPa	25 MPa	30 MPa AND OVER	20 MPa	25 MPa	30 MPa	35 MPa	40 MPa
10M	400	250	225	200	325	300	300	300	300
15M	400	350	300	275	490	440	400	380	380
20M	400	430	385	350	650	580	530	490	450
25M	400	540	480	440	1010	900	825	760	710
30M	400	645	580	530	1210	1080	990	910	840
35M	400	760	680	620	1690	1520	1400	1270	1200

NOTE 1: TOP EMBEDMENT VALUES ARE 1.3 TIMES REGULAR EMBEDMENT VALUES. TOP EMBEDMENT APPLIES TO HORIZONTAL REINFORCEMENT CAST WITHIN 300 mm OR MORE OF CONCRETE BELOW THE BAR.
NOTE 2: FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5. INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

TABLE D.4
READ IN CONJUNCTION WITH DESIGN NOTES SECTION C. CAST–IN–PLACE CONCRETE
REINFORCEMENT SPLICES
(UNLESS NOTED OTHERWISE)

BAR SIZE	FULL TENSION SPLICE	FULL TENSION SPLICE FOR TOP BARS
10M	400	500
15M	550	750
20M	700	900
25M	1100	1400
30M	1300	1700
35M	1550	2000

NOTE 1: TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 300 OF CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCMENT.
NOTE 2: APPLIES TO REINFORCEMENT SPLICES NOT OTHERWISE DETAILED.
NOTE 3: LAP SPLICE SCHEDULE IS FOR CLASS B SPLICE UNO.
NOTE 4: FOR STANDARD EMBEDMENT DEPTH INTO CONCRETE DIVIDE TENSION LAP SPLICE NUMBERS BY 1.3.
NOTE 5: FOR EPOXY REINFORCEMENT INCREASE THESE LENGTHS BY 1.5. INCREASE THESE LENGTHS BY 1.7 FOR EPOXY COATED TOP REINFORCEMENT.

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Consultants

Legend

Notes

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Revision	By	Appd.	YY.MM.DD
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Permit-Seal

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
Stantec Consulting Ltd.
No. 1301

PROVINCE OF MANITOBA
S.F. BENNY
Member 33042
2021-07-13
REGISTERED PROFESSIONAL ENGINEER

Client/Project
WINNIPEG TRANSIT
GARAGE BUILDING

HOIST REPLACEMENT PROGRAM
PHASE 2 - HOISTS 8 - 12
421 Osborne Street, Winnipeg Manitoba

Title
GENERAL NOTES

Project No. 115420037
Scale
Drawing No. 439-2021 S-001
Sheet of
Revision 0

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