

GENERAL NOTES

- STRUCTURAL DESIGN BASED ON THE MANITOBA BUILDING CODE 2011 EDITION.
 - IMPORTANCE CATEGORY: NORMAL
 - WIND LOAD: $w_0 = 0.45 \text{ kPa}$
 - GROUND SNOW LOAD: $S_g = 1.5 \text{ kPa}$
 - ASSOCIATED RAIN LOAD: $S_r = 0.2 \text{ kPa}$
- SEISMIC SITE CLASSIFICATION: NOT APPLICABLE
- DO NOT SCALE DRAWINGS
- ALL DIMENSIONS ARE TO BE VERIFIED WITH THE SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THESE STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE ALL COMPONENTS NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON AND AROUND THE JOISTS DURING CONSTRUCTION.

FOUNDATIONS

- A COPY OF THE GEOTECHNICAL REPORT COMMISSIONED BY THE CITY OF WINNIPEG IS AVAILABLE FOR REVIEW FROM THE CITY OF WINNIPEG WEBSITE. NOTWITHSTANDING THE INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT, THE FOUNDATION CONTRACTOR AND CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE PREVAILING CONDITIONS AT THE SITE AS NO EXTRAS SHALL BE GRANTED SHOULD CONDITIONS DIFFER FROM THOSE INDICATED.
- PRECAST CONCRETE PILES TO BE DRIVEN TO CAPACITIES AS SHOWN BELOW:

ALLOWABLE CAPACITY	FACTORED CAPACITY
300 mm HEX - 445 kN	300 mm HEX - 660 kN
350 mm HEX - 625 kN	350 mm HEX - 936 kN
400 mm HEX - 800 kN	400 mm HEX - 1200 kN
- NOTE THE FACTORED CAPACITY IS TO BE USED ONLY IF DYNAMIC LOAD TESTING WITH CAPWAP ANALYSIS IS PERFORMED DURING FOUNDATION INSTALLATION. IF THIS IS NOT PERFORMED FOUNDATION RE-DESIGN WILL BE REQUIRED.

- DRIVEN PILING SHALL BE COMPLETED BEFORE ANY FRICTION PILING OPERATIONS COMMENCE.

CAST-IN-PLACE CONCRETE

- CONCRETE
 - ALL CONCRETE IS TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CSA-A23.1-14 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CSA-A23.2-14 "METHOD OF TEST FOR CONCRETE".
 - PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY, YIELD AND STRENGTH AS SPECIFIED IN CONCRETE MIXES, AND WILL COMPLY WITH CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
 - PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH REQUIREMENTS OF CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
 - CONCRETE PROPERTIES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

- PRECAST DRIVEN PILES:
 - 35 MPa MIN. AT 28 DAYS
 - CEMENT TYPE: HS
 - SUMP AND AGGREGATES TO MANUFACTURERS REQUIREMENTS

- PILE CAPS:
 - 35 MPa MIN. AT 56 DAYS
 - CLASS OF EXPOSURE: S-1
 - ENTRAINED AIR CATEGORY: 2 (4% TO 7%)
 - CEMENT TYPE: HS
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- EXTERIOR WALLS AND GRADE BEAMS:
 - 25 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: F-2
 - ENTRAINED AIR CATEGORY: 2 (4% TO 7%)
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- INTERIOR WALLS AND BEAMS:
 - 25 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: N
 - ENTRAINED AIR CATEGORY: NONE (LESS THAN 3%)
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- INTERIOR SLABS ON GRADE:
 - 32 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: C-4
 - ENTRAINED AIR CATEGORY: NONE (LESS THAN 3%)
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- INTERIOR STRUCTURAL SLABS:
 - 25 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: N
 - ENTRAINED AIR CATEGORY: NONE (LESS THAN 3%)
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- EXTERIOR SLABS ON GRADE:
 - 32 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: C2
 - ENTRAINED AIR CATEGORY: 1 (5%-8%)
 - AGGREGATE: MAX. 20 mm
 - CURING TYPE: TYPE 2 - ADDITIONAL

- MASONRY FILL:
 - 20 MPa MIN. AT 28 DAYS
 - CLASS OF EXPOSURE: N
 - ENTRAINED AIR CATEGORY: 2
 - AIR CONTENT: 4% TO 7%
 - AGGREGATE: MAX. 20 mm
 - SUMP: 200 mm \pm 40 mm

UNLESS INDICATED OTHERWISE THE CONTRACTOR SHALL SPECIFY CONCRETE SUMP APPROPRIATE WITH PLACEMENT METHODS AND SITE CONDITIONS. THE CONTRACTOR SPECIFIED SUMP MUST BE SHOWN ON THE CERTIFICATION LETTER AND CONCRETE DELIVERY TICKET.

- UNLESS NOTED OTHERWISE CONCRETE CURING TO CONFORM TO THE LATEST EDITION OF CSA-A23.1-14 AS FOLLOWS:
 - TYPE 1 - BASIC: 7 DAYS \geq 10°C AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH.
 - TYPE 2 - ADDITIONAL: 7 DAYS \geq 10°C AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
 - TYPE 3 - EXTENDED: 7 DAYS WET CURING \geq 10°C.

- AIR ENTRAINING ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C260/C260M-10a "STANDARD SPECIFICATION FOR AIR ENTRAINING ADMIXTURES FOR CONCRETE". SUPERPLASTICIZING ADMIXTURES SHALL CONFORM TO ASTM C494/C494M "STANDARD SPECIFICATION FOR CHEMICAL ADJUSTERS FOR CONCRETE" WHEN FLOWING CONCRETE IS APPLICABLE. AIR ENTRAINING ADMIXTURES TO HAVE A DURABILITY FACTOR GREATER THAN 75, WHEN TESTED TO ASTM STANDARD C666/C666M PROCEDURE A. SPACING FACTOR FOR ANY AIR ENTRAINING ADMIXTURE MUST BE 0.17mm OR LESS WHEN TESTED IN ACCORDANCE WITH ASTM C457 "STANDARD TEST METHOD FOR MICROSCOPICAL DETERMINATION OF PARAMETERS OF THE AIR-VOID SYSTEM IN HARDENED CONCRETE".

- CONCRETE TOPPING INDICATED AS BONDED SHALL HAVE A TENSILE BOND STRENGTH BETWEEN THE TOPPING AND BASE COURSE CONCRETE OF NOT LESS THAN 0.9 MPa AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH CSA A23.2-08 AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 100 M² PRIOR TO CONSTRUCTION. SUBMIT DOCUMENTATION DEMONSTRATING MINIMUM PERFORMANCE REQUIREMENT WILL BE MET.

- CONCRETE TO RECEIVE BONDED TOPPING SHALL BE INTENTIONALLY REQUIRED TO ACHIEVE A SURFACE PROFILE OF 100-300-6 OR GREATER.

- CONCRETE TOPPING INDICATED AS BONDED SHALL BE WET CURED FOR A MINIMUM OF 7 DAYS.

REINFORCING STEEL

- ALL REINFORCING STEEL TO BE CSA-G30.18M-09 GRADE 400R DEFORMED BARS EXCEPT COLUMN TIES AND BEAM STIRRUPS WHICH SHALL BE CANADIAN 400W STEEL. ALL REINFORCING IS TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL INSTITUTE OF CANADA - MANUAL OF STANDARD PRACTICE, EXCEPT OTHERWISE NOTED.

- WELDED STEEL WIRE MESH SHALL BE TO ASTM A185/A185M-07, 400 MPa YIELD, FLAT SHEETS ONLY.

- REINFORCING STEEL COVER IS TO CONFORM TO CAN/CSA A23.3-14 "DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS" AND AS FOLLOWS:

- INTERIOR STRUCTURAL SLABS:

EXPOSURE CLASS: N	20 mm TOP	20 mm BOTTOM
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- GRADE BEAMS:

EXPOSURE CLASS: F-2	50 mm BOTTOM TO TIES	40 mm SIDES AND TOP TO TIES
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- PILES & PILE CAPS:

EXPOSURE CLASS: S-2	75 mm TO TIES	
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- INTERIOR SLABS ON GRADE:

EXPOSURE CLASS: C-4	40 mm TOP	20 mm BOTTOM
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- EXTERIOR SLABS ON GRADE:

EXPOSURE CLASS: C-2	40 mm TOP	40 mm BOTTOM
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- IN WALLS AND GRADE BEAMS, BEND ALL TOP AND INTERMEDIATE HORIZONTAL STEEL 600 mm AROUND CORNERS, OR USE EXTRA L BARS 1200 mm LONG. ALL OPENINGS IN WALLS TO HAVE 2-15M EACH SIDE AND 2-25M OVER, EXCEPT AS NOTED.

- TOP STEEL IN BEAMS TO BE LAPPED AT CENTRE SPAN. BOTTOM STEEL TO BE BUTTED AT SUPPORT.

- ALL REINFORCING TO BE HELD IN PLACE, AND TIED BY THE USE OF PROPER ACCESSORIES, SUCH AS HI-CHAIRS, SPACERS, ETC. TO BE SUPPLIED BY THE REINFORCING STEEL FABRICATOR. HI-CHAIRS TO HAVE 4 LEGS AND TO BE STAPLED OR NAILED TO THE FORMWORK.

- ALL OPENINGS IN CAST-IN-PLACE CONCRETE FLATWORK TO BE TIED WITH 2-15M ALL AROUND ON BOTH SIDES, EXCEPT AS NOTED.

- FOR ALL STRUCTURAL SLABS A MINIMUM OF 50% OF THE BOTTOM STEEL SHALL BE CONTINUED A MINIMUM DISTANCE OF 150 mm INTO ALL SUPPORTING WALLS AND BEAMS. IF KEYS ARE USED AT JOINTS BETWEEN SLABS AND WALLS OR BEAMS, BOTTOM DOWELS EQUAL TO BOTTOM REINFORCEMENT OR 100 mm O/C SHALL BE PROVIDED WHICHEVER IS GREATER.

- ALL MISCELLANEOUS CONCRETE PADS AND CURBS ARE TO BE REINFORCED WITH A MINIMUM OF 10M AT 400 mm O/C EACH WAY, UNLESS NOTED.

- WHEN CONCRETE BEAMS ARE CAST INTO A WALL CHASE, DOWELS SIZE AND NUMBER SAME AS BEAM REINFORCING ARE TO BE PROVIDED FROM WALL, UNLESS OTHERWISE SHOWN ON PLAN.

- PROVIDE MINIMUM 2-10M TOP INTEGRITY BARS THROUGHOUT STRUCTURES IN ACCORDANCE WITH CSA A23.3-14, CLAUSE 13.10.6.

FORMWORK

- SEAMANT APPROVED CARDBOARD VOIDFORM WITH A MIN. DEPTH OF 150 mm SHALL BE USED AS THE BOTTOM FORM FOR STRUCTURAL SLABS AT GRADE. GRADE BEAMS, AND WALLS IN CONTACT WITH SOIL. SELECT AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC. SHALL BE SUPPORTED BY PADS OF PLYWOOD OR TEMPERED HARDBOARD TO PREVENT PUNCTURING THE VOIDFORM.

- UNLESS NOTED OTHERWISE PROVIDE SLP JOINT ALL PAVING OR CONCRETE SLABS ON GRADE AGAINST STRUCTURAL MEMBERS WITH 12 mm ASPHALT IMPREGNATED FIREBOARD.

- ALL CONSTRUCTION JOINT KEYS ARE TO BE A MINIMUM OF 40 mm DEEP.

- PLACE 10 MIL POLYETHYLENE UNDER ALL SLABS ON FILL AND OVER TOP OF VOIDFORM.

- PROVIDE 150 mm WIDE, RIBBED, PVC WATERSTOPS IN ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ALL EXTERIOR WALLS BELOW GRADE AND FT WALLS.

STEEL JOISTS

- JOIST FABRICATOR TO CONSULT THE SUPPLEMENTS TO THE NATIONAL BUILDING CODE OF CANADA ON NON-UNIFORM SNOW LOADS.
- JOISTS ARE TO BE CAMBERED FOR THE GREATER OF: FULL DEAD LOAD DEFLECTION OR FOR NOMINAL CAMBER AS SPECIFIED IN CSA S16-14.
- ALL JOIST BRIDGING TO CONFORM WITH THE LATEST BUILDING CODE REQUIREMENTS, EXCEPT AS NOTED.
- JOISTS BEARING ON BEAMS TO REST ON THE MIDDLE THIRD OF THE FLANGE. JOISTS IN LINE TO BEAR END ON THE SUPPORTING BEAMS WITH A MAXIMUM GAP OF 12 mm 1/2 IN.
- JOIST SUPPLIER TO REFER TO MECHANICAL DRAWINGS FOR LOCATION AND WEIGHTS OF EQUIPMENT SUPPORTED BY JOISTS. JOISTS TO HAVE INTERNAL MEMBERS IN LINE WHERE REQUIRED BY MECHANICAL DETAILS.
- ALL STEEL JOISTS TO RECEIVE ONE COAT OF SHOP PRIMER OSC/CPMA 1-73a QUICK DRYING. JOISTS IN CRAWLSPACE TO HAVE 2 COATS. JOISTS TO BE CLEANED IN CONFORMANCE WITH SSPC-SP2. JOISTS RECEIVING FINISH PAINTING TO HAVE ONE COAT OF OSC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SF.
- JOIST SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- JOISTS WHICH ARE RESISTANCE WELDED SHALL CONFORM TO CSA W55.2, "RESISTANCE WELDING PRACTICE" AND CSA-W55.3, "RESISTANCE WELDING QUALIFICATION CODE FOR FABRICATORS OF STRUCTURAL MEMBERS USED IN BUILDINGS".
- ALL COLLARS TO BE STITTED BY JOISTS OR BEAMS, WHERE JOISTS DO NOT LINE UP WITH COLLUMS USE L76 x 7.6 x 4 ANGLE FROM COLLUM AT BOTTOM OF BEAM FLANGE TO ADJUCENT JOIST TOP CHORD AT PANEL POINTS.
- ALL JOISTS LINING UP WITH COLLUMS ARE TO BE STRUT JOISTS, DESIGNED TO RESIST END MOMENTS AS INDICATED ON THE DRAWINGS.
- LIVE LOAD DEFLECTION CRITERIA SHALL BE 1/500 UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL REPORT TO ENGINEER ANY EQUIPMENT LOADS TO BE SUPPORTED BY JOISTS NOT SHOWN ON DRAWINGS.

METAL DECK

- ROOF DECK SHALL BE 38 mm DEEP PROFILE, 0.76mm, WITH RIB SPACING OF 150 mm
- DECK SHALL BE MINIMUM GRADE A WITH A MINIMUM GALVANIZE GALVANIZED ZINC COATING TO Z75.
- DECK SHALL BE ARC SPOT WELDED TO BEARING SUPPORTS AT 300 mm O/C. WELDS SHALL BE 20 mm DIAMETER.
- SIDE LAPS SHALL BE MECHANICALLY FASTENED (BUTTED/PUNCHED) AT 600 mm ON-CENTRE.
- DECK SUPPLIER SHALL REINFORCE OPENINGS OVER 150 mm TO 300 mm ACROSS THE FLUTES WITH MINIMUM L65 x 6.5 x 4 EACH SIDE OF OPENING PERPENDICULAR TO FLUTES. ANGLE SHALL BE WELDED TO AT LEAST TWO FLUTES ON EACH SIDE OF OPENING.
- DECK SUPPLIER SHALL REINFORCE OPENINGS OVER 300 mm TO 450 mm ACROSS THE FLUTES WITH SUITABLE REINFORCEMENT BASED ON A STRUCTURAL ANALYSIS OF THE LOADS INVOLVED.
- TOUCH UP DECK WITH ZINC RICH PAINT WHERE ZINC COATING HAS BEEN BURNED BY WELDING.

MASONRY

- CONCRETE BLOCKS TO CONFORM TO THE STANDARDS FOR CONCRETE MASONRY UNITS.
 - STANDARD HOLLOW MASONRY UNITS SHALL BE H/15/A/M. (COMPRESSIVE STRENGTH IS BASED ON NET AREA)
 - HIGH STRENGTH HOLLOW MASONRY UNITS SHALL BE H/30/A/M. (COMPRESSIVE STRENGTH IS BASED ON NET AREA)

- EXTERIOR AND LOAD BEARING WALLS ARE TO BE BUILT WITH TYPE 'S' MORTAR HAVING A MINIMUM STRENGTH OF 12 MPa AT 28 DAYS. INTERIOR MASONRY NON-LOAD BEARING WALLS MAY BE BUILT WITH TYPE 'N' MORTAR HAVING A COMPRESSIVE STRENGTH OF 5 MPa AT 28 DAYS. MORTAR SHALL CONFORM TO CSA A179-14, "MORTAR AND GROUT FOR UNIT MASONRY".

- USE DTP-O-WAL OR EQUAL EVERY SECOND COURSE, EVERY COURSE FOR STACK BOND.

- THE TOP COURSE OF ALL BLOCK WALLS IS TO BE A 'U' BLOCK WITH 2-10M CONTINUOUS CENTERED AND FILLED WITH 20 MPa CONCRETE UNLESS NOTED OTHERWISE.

- ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS CLOSED IN AND WALL PERMANENTLY SUPPORTED.

- ALL BLOCK WALLS RECEIVING BEAMS TO HAVE 2 COURSES HIGH, 400 mm LONG FILLED WITH 20 MPa CONCRETE UNLESS NOTED ON DRAWINGS.

- MASONRY TIES AND ANCHORS SHALL BE DESIGNED IN CONFORMANCE WITH CSA-A370-14, "CONNECTORS FOR MASONRY". DESIGN WIND PRESSURES FOR TIES IN EXTERIOR WALLS SHALL BE 1.4 kPa.

- DOOR AND WINDOW LINTELS IN BLOCK WALLS SHALL BE AS FOLLOWS UNLESS NOTED ON DRAWINGS:

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|--------------------|-----------------------|
| UP TO 1200 mm | 200 mm HIGH 'U' BLOCK |
| | 20 MPa CONCRETE FILL |
| | 2-10M BOTTOM |
| 1200 mm TO 2400 mm | 400 mm HIGH 'U' BLOCK |
| | 20 MPa CONCRETE FILL |
| | 2-15M BOTTOM |

STRUCTURAL STEEL

- THE STRUCTURAL STEEL FABRICATOR'S ENGINEER SHALL BE RESPONSIBLE FOR LOCATING AND DESIGNING PROVISIONS FOR ALL TEMPORARY FALL PROTECTION SYSTEMS REQUIRED DURING CONSTRUCTION TO MEET MANITOBA WORKPLACE HEALTH AND SAFETY REGULATIONS.

- STRUCTURAL STEEL TO CONFORM TO CSA-G40.21, "STRUCTURAL QUALITY STEELS" AND CSA-G40.20 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL".

- ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE G40.21-350W. ALL HOLLOW STRUCTURAL SECTIONS TO BE G40.21-350W CLASS C. ALL ANGLES, CHANNELS AND PLATES SHALL BE G40.21-300W.

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CSA S16-14, "DESIGN OF STEEL STRUCTURES".

- ALL WELDING SHALL CONFORM TO THE LATEST EDITION OF CSA W59, "WELDED STEEL CONSTRUCTION". FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CSA W47.1, "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES".

- ALL BOLTED CONNECTIONS TO USE A325 HIGH STRENGTH BOLTS. MINIMUM CONNECTION SHALL CONSIST OF 2 BOLTS.

- ALL STRUCTURAL STEEL IS TO RECEIVE ONE COAT OF OSC/CPMA 1-73a QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP2. STEEL RECEIVING FINISH PAINTING TO HAVE ONE COAT OF OSC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SF.

- ALL BEAMS CONTINUOUS OVER COLUMNS ARE TO HAVE WEB STIFFENERS THE SAME SIZE AND ORIENTATION AS THE COLUMN BELOW, UNLESS OTHERWISE NOTED.

- FABRICATOR TO NOTIFY ENGINEER OF ANY PROPOSED MEMBER SUBSTITUTIONS AND CHANGED CONNECTION DETAILS.

- THE STRUCTURAL STEEL SUPPLIER SHALL PROVIDE AND BE RESPONSIBLE FOR ALL HOLLS IN STEEL SECTIONS REQUIRED BY OTHER TRADES. SECTION SHALL BE STRENGTHENED WHERE REQUIRED TO GUARANTEE THE ORIGINAL STRENGTH OF THE BEAM. ANY CUTTING OF STEEL AT THE JOB SITE SHALL BE DONE ONLY AS DIRECTED AND APPROVED BY THE ENGINEER.

- THE STRUCTURAL STEEL ERECTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND ERECTING ALL TEMPORARY GUYING AND BRACING OF THE STEEL FRAMING TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL ALL STEEL DECKING IS ERECTED, WELDED IN PLACE AND ALL MASONRY/CONCRETE WALLS CONSTRUCTED.

- ALL DUCTS LARGER THAN 450x450, THROUGH ROOF DECK TO BE FRAMED WITH L76x76x6.4 ANGLES ALL AROUND, EXCEPT AS NOTED. SMALLER OPENINGS THROUGH STEEL DECK TO BE STIFFENED BY STEEL DECK SUPPLIER, WHERE STEEL DECK REVERSES ITS FRAMING DIRECTION, USE L51x51x6.4 ANGLE TO SUPPORT EDGE.

- STRUCTURAL STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA COVERING THE DESIGN OF CONNECTIONS, TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION, CONNECTION DESIGN TO INCLUDE FOR ALL ADJUSTABLE CONNECTIONS REQUIRED TO SUITE FABRICATION AND ERECTION PROCEDURES AND TOLERANCES.

- UNLESS NOTED OTHERWISE PROVIDE L76x76x4 DAPPAH CHORD ANGLE AROUND ENTIRE PERIMETER OF BUILDING.

- STRUCTURAL STEEL WHICH SUPPORTS ARCHITECTURAL FINISHES MUST BE DESIGNED TO SUFFICIENTLY ADJUSTABLE TO MEET REQUIRED INSTALLATION TOLERANCES. SEE ARCHITECTURAL DRAWINGS FOR REQUIRED TOLERANCES.

WOOD

- ALL TRELLIS JOISTS AND BEAMS TO BE DOUGLAS FIR-L, ALL WOOD TO BE KILN DRIED AND PRESERVATIVE TREATED FOR EXTERIOR EXPOSURE.

- TRUSS TO BE ADEQUATELY BRACED UNTIL SHEATHING INSTALLED AND JOISTS AND DIAGONAL BRACES ARE INSTALLED.

- NAILING PATTERNS AND NAIL LENGTHS SHALL CONFORM TO TABLE S.23.5.4, AND 9.23.5.5, OF THE NATIONAL BUILDING CODE RESIDENTIAL STANDARDS.

- PLYWOOD SHEATHING SHALL BE EXTERIOR DOUGLAS FIR PLYWOOD CONFORMING TO CSA 0121-08(B2013) "DOUGLAS FIR PLYWOOD" UNLESS OTHERWISE NOTED.

- ALL WOOD TRUSSES ARE TO BE DESIGNED IN ACCORDANCE WITH:
 - CSA 08-14 "ENGINEERING DESIGN IN WOOD".
 - THE NATIONAL BUILDING CODE OF CANADA.
 - THE MANITOBA BUILDING CODE, AND FOR ANY ANTICIPATED SNOW BUILD-UP LOADS.

- TRUSSES FRAMING INTO BEAMS OR OTHER TRUSSES SHALL BE CONNECTED WITH PROPER METAL FRAMING ACCESSORIES APPROVED BY THE PROJECT ENGINEER.

- THE TRUSS SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF AN ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO FABRICATION. ENGINEERING SHOP DRAWINGS SHALL INCLUDE A LAYOUT PLAN SHOWING ALL TRUSSES.

- PERMANENT WEB AND CHORD BRACING REQUIRED BY TRUSS DESIGN, AND TEMPORARY BRACING, ALL MISCELLANEOUS METAL FRAMING CONNECTORS AND BRACING NOTED ABOVE SHALL BE SPECIFIED BY TRUSS SUPPLIER UNLESS NOTED OTHERWISE ON THE DRAWINGS, AND SUPPLIED AND INSTALLED BY CONTRACTOR.

- NOTE: TRUSS SUPPLIER SHALL INCLUDE IN CONTRACT PRICE ALLOWANCE FOR FINAL INSPECTION AND A LETTER SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA CERTIFYING THAT TRUSSES ARE CONSTRUCTED AND ERECTED AS PER TRUSS SUPPLIER'S DESIGN ASSUMPTIONS AND INSTALLATION REQUIREMENTS.

- NOTE: IN PREPARATION OF TRUSS DESIGNS, THE WEB ORIENTATIONS, LUMBER GRADE AND MEMBER SIZES EMPLOYED ARE TO MINIMIZE THE REQUIREMENT FOR WEB BRACING.

- ALL JOISTS OR BEAMS FLUSH FRAMED INTO OTHER BEAMS SHALL BE CONNECTED USING METAL JOIST OR BEAM HANGERS.

- ALL EXTERIOR TRELLIS METALWORK, SUCH AS HANGERS, BOLTS, NUTS, WASHERS, PLATES AND ANGLES TO BE GALVANIZED.

- UNFACTORED DESIGN LOADS FOR TRUSSES ARE AS FOLLOWS:
 - TOP CHORD LIVE LOAD 0.30 kN/m
 - TOP CHORD DEAD LOAD 0.15 kN/m PLUS TRUSS SELF-WEIGHT
 - BOTTOM CHORD DEAD LOAD 0.50 kN/m PLUS TRUSS SELF-WEIGHT

COLUMN SCHEDULE	
MARK	DESCRIPTION
C1	HSS 152x152x6.4

CONCRETE SLAB SCHEDULE			
MARK	THICKNESS	REINFORCING/DESCRIPTION	
S1	150	15M @ 300 O/C TOP EACH WAY	15M x 1500 LONG @ 450 O/C BOTTOM LOWER LAYER
		15M @ 450 O/C BOTTOM UPPER LAYER	ON 150 CARDBOARD VOID FORM & COMPACTED GRANULAR FILL
S2	150	150 CONCRETE SLAB ON GRADE	R/W 10M @ 300 O/C EACH WAY TOP
		10M @ 300 O/C TOP DOWELS @ DOORWAYS	ON 150 MIN COMPACTED GRANULAR FILL AS PER GEOTECHNICAL REPORT + 10 MILL POLY
S3	175	15M @ 225 O/C EACH WAY BOTTOM	15M @ 300 O/C TOP DOWELS FROM CONCRETE BEAM
		12-15M CONTINUOUS @ 150 O/C EACH WAY TOP CENTRED OVER DROP PANEL	ON 150 CARDBOARD VOID FORM

CONCRETE BEAM SCHEDULE			
MARK	WIDTH	HEIGHT	REINFORCING
B1	300	900	2-30M TOP & BOTTOM CONTINUOUS
			1-10M HORIZONTAL EACH FACE
			10M TIES @ 300 O/C
B2	350	900	2-30M TOP & BOTTOM CONTINUOUS
			10M DOWELS @ 300 O/C AT DOOR OPENINGS
			1-10M HORIZONTAL EACH FACE
			10M TIES @ 300 O/C

MASONRY WALL SCHEDULE		
MARK	WIDTH	DESCRIPTION
MW1	190	15MPa BLOCKS
		R/W 15M @ 600 O/C IN GROUTED CORES
		2-25M AT EACH END/CORNER
		STANDARD HORIZONTAL REINFORCING @ 400 O/C
MW2	190	15MPa BLOCKS
		R/W 15M @ 400 O/C IN GROUTED CORES
		2-25M AT EACH END/CORNER
		STANDARD HORIZONTAL REINFORCING @ 400 O/C
MW3	290	30MPa BLOCKS
		R/W 15M @ 400 O/C IN GROUTED CORES
		2-25M AT EACH END/CORNER
		STANDARD HORIZONTAL REINFORCING @ 400 O/C

1000 LONG DOWELS FROM WALL TO CONCRETE BEAM TO MATCH WALL VERTICAL REINFORCING TYPICAL

