GENERAL NOTES 1. STRUCTURAL DESIGN BASED ON THE MANITOBA BUILDING CODE 2024. ALL CODES AND STANDARDS SHALL BE THE CAST-IN-PLACE CONCRETE EDITIONS DESIGNATED IN DIVISION B TABLE 1.3.1.2. I CONCRETE A) IMPORTANCE CATEGORY: NORMAL DO NOT SCALE DRAWINGS. DO NOT BACKFILL UNTIL GROUND FLOOR STRUCTURE IS IN PLACE AND BASEMENT SLABS HAVE BEEN POURED AND ALL CONCRETE TO BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH CSA-A23.1-19 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" AND CSA-A23.2-19 "TEST METHODS AND STANDARD PRACTICES FOR CURED. ALL DIMENSIONS ARE TO BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS AND EXISTING SITE CONDITIONS PRIOR CONCRETE" 2. PROVIDE CERTIFICATION THAT MIX PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF QUALITY, YIELD AND TO CONSTRUCTION. THESE STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE ALL COMPONENTS STRENGTH AS SPECIFIED IN CONCRETE MIXES, AND WILL COMPLY WITH CSA-A23.1. CERTIFICATION LETTER TO BE NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SAFETY ON SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA. 3. PROVIDE CERTIFICATION THAT PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH AND AROUND THE JOBSITE DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO ALL TEMPORARY REQUIREMENTS OF CSA-A23.1. CERTIFICATION LETTER TO BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN SHORING/BRACING THE EXISTING BUILDING SUPERSTRUCTURE AND FOUNDATIONS HAVE BEEN REVIEWED AND CAN SUPPORT ALL NEW THE PROVINCE OF MANITOBA. 4. CONCRETE PROPERTIES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS. LOADING CONDITIONS SHOWN ON THESE DRAWINGS IN ACCORDANCE WITH PART 4 OF THE 2020 NATIONAL BUILDING CODE OF CANADA, UNLESS NOTED OTHERWISE 35 MPa MIN. AT 56 DAYS PILES: PORTIONS OF THE BASEMENT GROUND FLOOR STRUCTURE CONSIST OF A GRADE-SUPPORTED CONCRETE FLOOR SLAB. CLASS OF EXPOSURE: S-1 DUE TO THE NATURE OF SLABS ON GRADE, DIFFERENTIAL MOVEMENT MAY OCCUR WITH FREEZING AND THAWING OR CHANGES IN MOISTURE CONTENT OF THE UNDERLYING SOILS. POTENTIAL FOR MOVEMENT HAS BEEN IDENTIFIED IN AIR CONTENT CATEGORY: 2 (4% TO 7%) THE GEOTECHNICAL REPORT AND IS A RISK FOR THIS TYPE OF CONSTRUCTION. SUCH MOVEMENT MAY CAUSE DAMAGE CEMENT TYPE: HS, HSb OR HSe - SEE NOTE BELOW TO FINISHES AND MIGHT AFFECT OPERATION OF DOORS AND WINDOWS. BY REVIEWING THESE PLANS, THE OWNER AGGREGATE: MAX. 20 mm ACCEPTS THE RISK RELATED TO SLAB-ON-GRADE MOVEMENTS AND RESULTING DAMAGE THAT OCCURS. CURING TYPE: TYPE 2 - ADDITIONAL SLUMP: MIN. 120 mm 25 MPa MIN. AT 28 DAYS DESIGN NOTES GRADE BEAMS, EXTERIOR BEAMS AND LINTELS: CLASS OF EXPOSURE: F-2 AIR CONTENT CATEGORY: 2 (4% TO 7%) LIVE LOADS A) SEE NOTES ON PLANS. ALL LOADS ARE UNFACTORED UNLESS NOTED. AGGREGATE MAX. 20 mm CURING TYPE: TYPE 2 - ADDITIONAL SNOW LOADS A) GROUND SNOW LOAD: Ss = 39.6 P.S.F. EXTERIOR SLABS-ON-GRADE: 32 MPa MIN. AT 28 DAYS CLASS OF EXPOSURE: C-2 B) ASSOCIATED RAIN LOAD: Sr = 4.2 P.S.F AIR CONTENT CATEGORY: 1 (5% TO 8%) C) SNOW IMPORTANCE FACTOR, $I_S = 1.0$ (ULS) 0.9 (SLS) AGGREGATE MAX. 20 mm CURING TYPE: TYPE 2 - ADDITIONAL WIND LOADS A) WIND LOADS HAVE BEEN CALCULATED IN ACCORDANCE WITH THE STATIC PROCEDURE OUTLINED IN NBCC 2020 INTERIOR BEAMS AND LINTELS: 25 MPa MIN. AT 28 DAYS CLAUSE 4.1.7.3. CLASS OF EXPOSURE: N B) HOURLY WIND PRESSURE, q50 = 9.4 P.S.F. AIR CONTENT CATEGORY: NONE (LESS THAN 3%) C) WIND IMPORTANCE FACTOR, $I_W = 1.0$ (ULS) 0.75 (SLS) D) EXPOSURE FACTOR, Ce, BASED ON ROUGH TERRAIN AGGREGATE MAX. 20 mm CURING TYPE: TYPE 2 - ADDITIONAL EARTHQUAKE LOADS INTERIOR SLABS-ON-GRADE 25 MPa MIN. AT 28 DAYS A) EARTHQUAKE IMPORTANCE FACTOR, $I_{r} = 1.0$ CLASS OF EXPOSURE: N B) SITE CLASS: C BASED ON GEOTECHNICAL REPORT BY WSP. DATED MARCH 26, 2024. AIR CONTENT CATEGORY: NONE C) PARAMETERS USED TO REPRESENT SEISMIC HAZARD ARE THE 5% DAMPED HORIZONTAL SPECTRAL ACCELERATIONS THAT HAVE A 10% PROBABILITY OF EXCEEDANCE IN 50 YEARS. AGGREGATE MAX. 20 mm D) SEISMIC HAZARD PARAMETERS (FOR ANALYSIS OF EXISTING STRUCTURES - 10% PROBABILITY): CURING TYPE: TYPE 1 - BASIC = 0.0244q Sa (0.2) INTERIOR STRUCTURAL SLABS: 25 MPa MIN. AT 28 DAYS Sa (0.5) = 0.0151g CLASS OF EXPOSURE: N Sa (1.0) = 0.0065gAIR CONTENT CATEGORY: NONE = 0.00225gSa (2.0) AGGREGATE MAX. 20 mm = 0.000388qSa (5.0) CURING TYPE: TYPE 1 - BASIC Sa (10.0) = 0.000121qE) SEISMIC HAZARD PARAMETERS (FOR NEW STRUCTURES AND NON-STRUCTURAL ELEMENTS - 2% PROBABILITY): TOPPING SLABS ON METAL DECK: 25 MPa MIN. AT 28 DAYS Sa (0.2) = 0.0822g CLASS OF EXPOSURE: N Sa (0.5) = 0.0504g AIR CONTENT CATEGORY: NONE (LESS THAN 3%) = 0.024g Sa (1.0) AGGREGATE MAX. 20 mm = 0.00944g Sa (2.0) CURING TYPE: TYPE 1 - BASIC = 0.00192qSa (5.0) Sa (10.0) = 0.000636qHSe CEMENT ONLY PERMITTED IF TESTING RESULTS ARE SUBMITTED PRIOR TO CASTING PILES AND CONFIRM THE STRUCTURE IS DESIGNED USING CLAUSE 4.1.8.1. 2) TO 15) CONFORMANCE TO MAXIMUM EXPANSION LIMITS NOTED IN CSA A23.1-19 TABLE 3 FOR TYPE S-2 EXPOSURE WHEN) SEISMIC CATEGORY = SC1 TESTING IN ACCORDANCE WITH CSA A3004-18. H) FUNDAMENTAL LATERAL PERIOD, Ta = 0.358s I) THE SEISMIC FORCE RESISTING SYSTEM FOR THIS STRUCTURE IS: UNREINFORCED BRICK SHEAR WALLS Rs =1.0 UNLESS INDICATED OTHERWISE THE CONTRACTOR SHALL SPECIFY CONCRETE SLUMP APPROPRIATE WITH PLACEMENT METHODS AND SITE CONDITIONS. THE CONTRACTOR SPECIFIED SLUMP MUST BE SHOWN ON THE CERTIFICATION LETTER AND CONCRETE DELIVERY TICKET. LOADS ON FOUNDATION / RETAINING WALLS A) WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL WHICH DOES NOT PERMIT THE BUILD-UP OF UNLESS NOTED OTHERWISE CONCRETE CURING TO CONFORM TO THE LATEST EDITION OF CSA-A23.1-19 AS FOLLOWS: HYDROSTATIC PRESSURE A) TYPE 1 - BASIC: 3 DAYS \geq 10°C AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH. B) WALLS HAVE BEEN DESIGNED FOR A HORIZONTAL PRESSURE, P (psf), AT DEPTH, H (ft), GIVEN BY THE B) TYPE 2 - ADDITIONAL: 7 DAYS ≥ 10°C AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED EXPRESSION, P = K (GH + Q) WHERE: STRENGTH SOIL PRESSURE COEFFICIENT K = 0.53C) TYPE 3 - EXTENDED: 7 DAYS WET CURING ≥ 10°C AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE UNIT WEIGHT OF SOIL $G = 102 \text{ lb/ft}^{3}$ SPECIFIED STRENGTH. SURCHARGE Q = 250 psf 6. CONTRACTOR TO SUBMIT TEMPERATURE MONITORING PROCEDURE FOR CONCRETE POURS CONSIDERED MASS CONCRETE IN ACCORDANCE WITH A23.1-19. STRUCTURAL MOVEMENTS A) TYPICAL HORIZONTAL ELEMENTS HAVE BEEN DESIGNED SO THAT THE THEORETICAL VERTICAL DEFLECTIONS WILL NOT EXCEED L/360. II REINFORCING STEEL B) INTERIOR NON-LOAD BEARING WALLS AND PARTITIONS, INCLUDING MASONRY WALLS AND DRYWALL PARTITIONS ARE TO BE DETAILED TO ACCOMMODATE A MINIMUM OF 1 INCH OF VERTICAL MOVEMENT AT THE TOP OF THE ALL REINFORCING STEEL TO CONFORM TO CSA G30.18-09, "CARBON STEEL BARS FOR CONCRETE REINFORCEMENT. PARTITION, UNLESS NOTED OTHERWISE. ALL REINFORCING STEEL TO BE CSA-G30.18M-M92 GRADE 400R DEFORMED BARS EXCEPT COLUMN TIES AND BEAM C) THE STRUCTURE HAS BEEN DESIGNED TO LIMIT THE MAXIMUM INTERSTORY DRIFT AT THE SERVICEABILITY LIMIT STIRRUPS WHICH SHALL BE GRADE 400W STEEL STATE TO H/500 FOR WIND LOADS WHERE 'H' IS THE FLOOR-TO-FLOOR HEIGHT BETWEEN ADJACENT FLOORS. ALL REINFORCING IS TO BE DETAILED IN ACCORDANCE WITH THE LATEST EDITION OF THE REINFORCING STEEL D) THE STRUCTURE HAS BEEN DESIGNED TO LIMIT THE MAXIMUM INTERSTORY DRIFT AT THE SERVICEABILITY LIMIT INSTITUTE OF CANADA - MANUAL OF STANDARD PRACTICE, EXCEPT OTHERWISE NOTED. ALL LAPPED SPLICES TO BE STATE TO H/40 FOR EARTHQUAKE LOADS WHERE 'H' IS THE FLOOR-TO-FLOOR HEIGHT BETWEEN ADJACENT CLASS B SPLICES, UNLESS NOTED. FLOORS. 4. WELDED STEEL WIRE MESH SHALL BE TO ASTM A1064/A1064M, 400 MPa YIELD, FLAT SHEETS ONLY. E) NON-STRUCTURAL ELEMENTS SUCH AS THE BUILDING ENCLOSURE, MECHANICAL AND ELECTRICAL SERVICES AND REINFORCING STEEL COVER TO CONFORM TO CSA A23.3-19 "DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS" SUPPORTS MUST BE DESIGNED AND DETAILED TO ACCOMMODATE THE ANTICIPATED MOVEMENTS NOTED ABOVE. AND AS FOLLOWS: PTI ES: FOUNDATIONS EXPOSURE CLASS: S-1 3 IN. TO TIES FOUNDATION DESIGN BASED ON GEOTECHNICAL REPORT BY WSP. DATED MARCH 26, 2024 GRADE BEAMS: NOTWITHSTANDING THE INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT, THE FOUNDATION AND GENERAL EXPOSURE CLASS: F-2 2 IN. BOTTOM TO TIES 1 1/2 IN. SIDES AND TOP TO TIES CONTRACTORS SHALL SATISFY THEMSELVES AS TO THE PREVAILING CONDITIONS AT THE SITE AS NO EXTRAS SHALL BE GRANTED SHOULD CONDITIONS DIFFER FROM THOSE INDICATED. EXTERIOR BEAMS AND LINTELS: ALL FRICTION PILES ARE DESIGNED BASED ON THE FOLLOWING: 1 1/2 IN. BOTTOM TO TIES 1 1/2 IN. SIDES AND TOP TO TIES EXPOSURE CLASS: F-2 A) COMPRESSIVE DEPTH (FT) ULS P.S.F. SLS P.S.F. 0 - X EXTERIOR SLABS-ON-GRADE X - 31'-6" 309 309 EXPOSURE CLASS: C-2 1 1/2 IN. TOP 1 1/2 IN. BOTTOM 31'-6″ - 46'-6″ 209 209 ULS SKIN FRICTION VALUES HAVE BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.4. INTERIOR BEAMS AND LINTELS 1 1/4 IN. BOTTOM TO TIES 1 1/4 IN. SIDES AND TOP TO TIES EXPOSURE CLASS: N ULS P.S.F. SLS P.S.F. DEPTH (FT 3) UPLIFT - X INTERIOR SLABS-ON-GRADE X - 31'-6″ 232 232 EXPOSURE CLASS: N 1 1/2 IN. TOP 3/4 IN. BOTTOM 31'-6″ - 46'-6″ 157 157

ULS SKIN FRICTION VALUES HAVE BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.3.

C) ULS BEARING CAPACITY OF 1,881 P.S.F. WITHIN 31'-6" TO 46'-6" AND 22,572 P.S.F. WITHIN 46'-6" TO 53'-4" SOIL DEPTHS, THIS BEARING CAPACITY HAS BEEN MULTIPLIED BY A GEOTECHNICAL RESISTANCE FACTOR OF 0.4 D) SLS BEARING CAPACITY OF 1,881 P.S.F.

- E) EFFECTIVE LENGTH OF FRICTION PILES IS TOTAL LENGTH AS SHOWN ON PLAN MINUS A DEPTH OF 'X', WHERE 'X' IS 10'-0" FOR PERIMETER AND EXTERIOR PILES AND MINUS 5'-0" FOR INTERIOR PILES BELOW BASEMENT. FRICTION PILE REINFORCING TO BE 20'-0" LONG UNLESS NOTED IN PLANS; 10M RINGS AT 48 IN. ON-CENTRE AND
- 3-10M RINGS AT 6 IN. ON-CENTRE AT TOP. EXTEND VERTICAL PILE REINFORCING 1'-6" INTO BEAMS OR WALLS. PILE REINFORCING TO BE 5-10M FOR 16 IN. DIAMETER PILES, 6-10M FOR 18 IN., 5-15M FOR 20 IN., 5-15M FOR 22 IN., 6-15M FOR 24 IN.
- ALL FOUNDATION INSTALLATIONS SHALL BE REVIEWED BY QUALIFIED GEOTECHNICAL PERSONNEL REPORTING TO THE GEOTECHNICAL ENGINEER THAT ISSUED THE SITE-SPECIFIC GEOTECHNICAL REPORT IN ACCORDANCE WITH THE REQUIREMENTS OF PART 4 OF THE NATIONAL BUILDING CODE OF CANADA / THE MANITOBA BUILDING CODE.
- REMOVAL OF UNSUITABLE MATERIALS, SUBGRADE PREPARATIONS AND COMPACTED GRANULAR FILL FOR ALL SLABS SUPPORTED ON GRADE AS PER SITE-SPECIFIC GEOTECHNICAL REPORT. PROVIDE 2 LAYERS 10 MIL POLYETHYLENE WRAPPED SONOTUBE, GREASED COMPLETELY ON INSIDE FOR TOP 6'-0" OF
- PILES INDICATED ON PLAN.

INTERIOR STRUCTURAL SLABS:

WITH CLASS B TENSION SPLICES, EXCEPT AS NOTED

STAPLED OR NAILED TO THE FORMWORK.

3/4 IN. TOP

EXPOSURE CLASS: N

EXCEPT AS NOTED.

EXCEPT AS NOTED

SUPPORT

3/4 IN. BOTTOM

IN WALLS AND GRADE BEAMS, BEND ALL TOP, INTERMEDIATE, AND BOTTOM HORIZONTAL STEEL 2'-0" AROUND CORNERS, OR USE EXTRA L BARS 4'-0" LONG. ALL OPENINGS IN WALLS TO HAVE 2-15M EACH SIDE AND 2-25M OVER,

7. TOP STEEL IN BEAMS TO BE LAPPED AT CENTRE SPAN, WITH CLASS B SPLICES, BOTTOM STEEL CAN BE BUTTED AT

8. IN WALLS, TOP STEEL TO BE LAPPED AT CENTRE SPAN WITH CLASS A TENSION SPLICES, BOTTOM STEEL TO BE BUTTED AT SUPPORT, HORIZONTAL STEEL TO BE LAPPED WITH CLASS A TENSION SPLICES, VERTICAL STEEL TO BE LAPPED

IN SLABS ON GRADE, BARS TO BE LAPPED WITH CLASS A TENSION SPLICES, EXCEPT AS NOTED. 10. 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

11. ALL OPENINGS IN CAST-IN-PLACE CONCRETE FLATWORK TO BE TRIMMED WITH 2-15M ALL AROUND ON BOTH FACES,

- 12. FOR ALL STRUCTURAL SLABS A MINIMUM OF 50% OF THE BOTTOM STEEL SHALL BE CONTINUED A MINIMUM DISTANCE OF 6 IN. 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 10M AT 12 IN. O/C SHALL BE PROVIDED WHICHEVER IS GREATER.
- 13. ALL MISCELLANEOUS CONCRETE PADS AND CURBS ARE TO BE REINFORCED WITH A MINIMUM OF 10M AT 16 IN. O/C EACH WAY, UNLESS NOTED 14. WHEN CONCRETE BEAMS ARE CAST INTO A WALL / BEAM CHASE, DOWELS SIZE AND NUMBER SAME AS BEAM
- REINFORCING ARE TO BE PROVIDED FROM WALL, UNLESS OTHERWISE SHOWN ON PLAN.

III FORMWORK

- 1. SHEARMAT OR APPROVED CARDBOARD VOID FORM WITH A MIN. DEPTH OF 6 IN. 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 REQUIREMENTS. ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC. SHALL BE SUPPORTED BY PADS OF PLYWOOD OR TEMPERED
- HARDBOARD TO PREVENT PUNCTURING VOID FORM. UNLESS NOTED OTHERWISE PROVIDE SLIP JOINT ALONG PAVING OR CONCRETE SLABS ON GRADE AGAINST
- STRUCTURAL MEMBERS WITH 1/2 IN. ASPHALT IMPREGNATED FIBREBOARD. 4. ALL CONSTRUCTION JOINT KEYS ARE TO BE A MINIMUM OF 1 1/2 IN. DEEP.
- 5. ALL STRUCTURAL SLABS FRAMING INTO BEAMS AND WALLS ARE TO HAVE A MINIMUM KEY OF 1 1/2 IN. 6. ALL CONCRETE BEAMS FRAMING INTO CONCRETE WALLS / BEAMS ARE TO BE SUPPORTED BY A CHASE OF MINIMUM 4 IN. DEPTH AND THE HEIGHT AND WIDTH OF THE BEAM.
- PLACE 10 MIL POLYETHYLENE UNDER ALL INTERIOR SLABS ON FILL AND OVER TOP OF VOID FORM. PROVIDE 6 IN. WIDE, RIBBED, PVC WATERSTOPS IN ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ALL EXTERIOR WALLS BELOW GRADE AND PIT WALLS.

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.
- 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, ALL MASONRY/CONCRETE WALLS CONSTRUCTED, AND ALL HOLLOWCORE HAS BEEN ERECTED, JOINTS GROUTED, AND BEARING ENDS HAVE BEEN GROUTED AND CURED.
- STRUCTURAL STEEL TO CONFORM TO CSA-G40.21-13, "STRUCTURAL QUALITY STEELS" AND CSA-G40.20-13 "GENERAL REQUIREMENTS FOR ROLLED OR WELDED STRUCTURAL QUALITY STEEL", ASTM A572/A572M "STANDARD SPECIFICATION FOR HIGH-STRENGTH LOW-ALLOY COLUMBIUM-VANADIUM STRUCTURAL STEEL" OR ASTM A992/A992M "STANDARD SPECIFICATION FOR STRUCTURAL STEEL SHAPES".
- ALL ROLLED OR STEEL STRUCTURAL SECTIONS SHALL BE G40.21-350W, ASTM A992 OR ASTM A572 GRADE 50. ALL HOLLOW STRUCTURAL SECTIONS TO BE G40.21-350W CLASS C OR ASTM A500-C. ALL ANGLES, CHANNELS AND PLATES SHALL BE G40.21-300W.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH CSA S16-19, "DESIGN OF STEEL STRUCTURES". 6. 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" STRUCTURAL STEEL SUPPLIER 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 SUIT FABRICATION AND ERECTION PROCEDURES AND TOLERANCES.
- ALL BOLTED CONNECTIONS TO USE A325 HIGH STRENGTH BOLTS. MINIMUM CONNECTION SHALL CONSIST OF 2 BOLTS. 9. ALL STRUCTURAL STEEL TO RECEIVE ONE COAT OF CISC/CPMA 1-73a QUICK DRYING SHOP PRIMER. STEEL IN CRAWLSPACES SHALL RECEIVE 2 COATS. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP2. STEEL RECEIVING FINISH PAINTING TO HAVE ONE COAT OF CISC/CPMA 2-75 QUICK DRYING SHOP PRIMER. STEEL TO BE CLEANED IN CONFORMANCE WITH SSPC-SP7.
- 10. ALL STRUCTURAL STEEL INDICATED AS GALVANIZED TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH CAN/CSA-G164 "HOT DIP GALVANIZING OF IRREGULARLY SHAPED ARTICLES" WITH A MINIMUM GALVANIZED COATING OF 610 GRAMS PER SQUARE METRE OF SURFACE AREA. ALL FIELD WELDING TO BE TOUCHED UP WITH BRUSH APPLIED ZINC RICH PAINT CONTAINING MORE THAN 92% METALLIC ZINC BY WEIGHT.
- 11. NO HOLES PERMITTED IN TOP FLANGE OF BEAMS AT COLUMNS WHERE BEAMS ARE CONTINUOUS OVER COLUMNS. 12. ALL BEAMS CONTINUOUS OVER COLUMNS TO HAVE WEB STIFFENERS THE SAME SIZE AND ORIENTATION AS THE COLUMN BELOW, UNLESS OTHERWISE NOTED.
- 13. ANCHOR BOLTS TO BE ASTM A307 GRADE C OR ASTM F1554 GRADE 36, WELDABLE, PROVIDED BY STEEL SUPPLIER AND SET BY THE GENERAL CONTRACTOR. WHERE ASTM F1554 GRADE 55 ANCHOR BOLTS ARE USED, BOLTS TO BE WELDABLE GRADE STEEL
- 14. FABRICATOR TO NOTIFY CONTRACT ADMINISTRATOR OF ANY PROPOSED MEMBER SUBSTITUTIONS AND CHANGED CONNECTION DETAILS.
- 15. THE STRUCTURAL STEEL SUPPLIER SHALL PROVIDE AND BE RESPONSIBLE FOR ALL HOLES 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.
- 16. ALL OPENINGS LARGER THAN 18 IN. x 18 IN. THROUGH STEEL DECK TO BE FRAMED WITH L3 x 3 x 1/4 ANGLES ALL AROUND, EXCEPT AS NOTED. SMALLER OPENINGS THROUGH STEEL DECK TO BE STIFFENED BY STEEL DECK SUPPLIER. WHEN STEEL DECK CHANGES ITS FRAMING DIRECTION, USE L 2 1/2 x 2 1/2 x 1/4 ANGLE TO SUPPORT EDGE.
- 17. STRUCTURAL STEEL WHICH SUPPORTS ARCHITECTURAL FINISHES MUST BE DESIGNED TO BE SUFFICIENTLY ADJUSTABLE TO MEET REQUIRED INSTALLATION TOLERANCES. SEE ARCHITECTURAL FOR REQUIRED FINISH TOLERANCES

METAL DECK

- FLOOR DECK SHALL BE 1 1/2 IN. DEEP PROFILE, 0.030 IN., HI-BOND COMPOSITE, WITH RIB SPACING OF 6 IN.
- DECK SHALL BE MINIMUM GRADE A WITH A MINIMUM GALVANIZED ZINC COATING TO Z275 DECK SHALL BE ARC SPOT WELDED TO BEARING SUPPORTS AT 12 IN. O/C. WELDS SHALL BE 3/4 IN. DIAMETER.
- SIDE LAPS SHALL BE MECHANICALLY FASTENED (BUTTON-PUNCHED) AT 24 IN. ON-CENTRE.
- DECK FASTENING USING POWDER-ACTUATED DRIVE PINS AND SIDELAP SCREWS IS NOT AN ACCEPTABLE ALTERNATE TO PUDDLE WELDS AND BUTTON-PUNCHING. DECK SUPPLIER SHALL REINFORCE OPENINGS OVER 6 IN. TO 12 IN. ACROSS THE FLUTES WITH MINIMUM L2 1/2 x 2 1/2
- x 1/4 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 UP TO 18 IN. ACROSS FLUTES WITH SUITABLE REINFORCEMENT BASED ON A STRUCTURAL ANALYSIS OF LOADS INVOLVED. TOUCH UP DECK WITH ZINC RICH PAINT WHERE ZINC COATING HAS BEEN BURNED BY WELDING.

STAIRS AND GUARDRAILS

- FOR ALL STEEL STAIRS AND GUARDRAILS, SUPPLIERS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA FOR REVIEW BY PROJECT ENGINEER, PRIOR TO FABRICATION. ENGINEERING SHOP DRAWINGS SHALL INCLUDE DESIGN LOADS, LAYOUT PLAN, CONNECTION DETAILS, AND ALL OTHER PERTINENT INFORMATION.
- FOR ALL STEEL STAIRS AND GUARDRAILS, SUPPLIERS/DESIGNERS SHALL PROVIDE A FINAL INSPECTION AND A LETTER SEALED BY THE ENGINEERS RESPONSIBLE FOR STAIR AND GUARDRAIL DESIGNS, CERTIFYING THAT STAIRS AND GUARDRAILS ARE CONSTRUCTED AND INSTALLED AS PER DESIGN ASSUMPTIONS AND INSTALLATION REQUIREMENTS.



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MASONRY

WOOD

1. CONCRETE BLOCKS TO CONFORM TO CSA-A165.1-14 "CONCRETE BLOCK MASONRY UNITS"

A) STANDARD HOLLOW MASONRY UNITS SHALL BE H/15/A/M. B) STANDARD SOLID MASONRY UNITS SHALL BE SF/15/A/M.

C) LIGHTWEIGHT HOLLOW MASONRY UNITS SHALL BE H/15/C/M.

D) LIGHTWEIGHT SOLID MASONRY UNITS SHALL BE SF/15/C/M. (COMPRESSIVE STRENGTH IS BASED ON NET AREA).

2. EXTERIOR AND LOAD BEARING WALLS 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 DUR-O-WAL OR EQUAL EVERY SECOND COURSE UNLESS NOTED OTHERWISE. EVERY COURSE FOR STACK BOND. 4. TOP COURSE OF ALL BLOCK WALLS TO BE 'U' BLOCK WITH 2-10M CONTINUOUS CENTERED AND FILLED WITH 20 MPa CONCRETE UNLESS NOTED ON PLAN. 5. ALL MASONRY WALLS TO BE PROPERLY BRACED UNTIL STRUCTURE IS CLOSED IN AND WALL PERMANENTLY SUPPORTED

6. ALL BLOCK WALLS RECEIVING BEAMS TO HAVE 2 COURSES HIGH, 16 IN LONG FILLED WITH 20 MPa CONCRETE UNLESS NOTED ON DRAWINGS 7. MASONRY TIES AND ANCHORS SHALL BE DESIGNED IN CONFORMANCE WITH CSA-A370, "CONNECTORS FOR MASONRY" DESIGN WIND PRESSURE FOR TIES IN EXTERIOR WALLS SHALL BE 18.4 P.S.F. 8. LINTELS IN NON-LOADBEARING BLOCK WALLS SHALL BE AS FOLLOWS UNLESS NOTED ON DRAWINGS:

UP TO 4'-0"	8 IN. HIGH `U' BLOCK 20 MPa CONCRETE FILL 2-10M BOTTOM
4'-4" TO 8'-0"	16 IN. HIGH `U' BLOCK 20 MPa CONCRETE FILL 2-15M BOTTOM

AND BELOW JOIST/BEAM BEARING POINTS.

9. MASONRY TIES AND CONNECTORS TO BE STAINLESS STEEL 10. VERTICAL WALL REINFORCING SHALL BE CENTERED WITHIN WALL, UNLESS OTHERWISE NOTED. 11. CONTRACTOR TO SUBMIT FOR REVIEW ALL CONTROL JOINT LOCATIONS IN BEARING WALLS. CONTROL JOINTS CANNOT BE LOCATED IN COLUMNS, AT EDGE OF OPENINGS OR WITHIN TWO FULL BLOCK CORES NEXT TO OPENINGS,

1. ALL FLOOR JOISTS AND LINTELS TO BE NO.1/NO.2 SPF, WALL STUDS AND PLATES TO BE NO.1/NO.2 SPF. ALL WOOD TO BE KILN DRIED.

2. ALL WALLS TO BE ADEQUATELY BRACED UNTIL SHEATHING INSTALLED ON WALLS, FLOOR BELOW AND STRUCTURES ABOVE 3. MAIN FLOOR BOTTOM PLATE TO CONSIST OF PWF GRADE MATERIAL AND TO BE BOLTED TO FOUNDATION WITH MINIMUM 1/2 IN. DIAMETER ANCHOR BOLTS x 8 IN. LONG AT 48 IN. O/C.

4. USE 0.145 IN. DIAMETER X 2 IN. LONG POWDER ACTUATED FASTENERS AT 16 IN. ON CENTER UNLESS NOTED OTHERWISE FOR WOOD STUDS IN CONTACT WITH STEEL COLUMNS, GIRTS AND BEAMS.

5. NAILING PATTERNS AND NAIL LENGTHS SHALL CONFORM TO TABLE 9.23.3.4. AND 9.23.3.5. OF THE NATIONAL BUILDING CODE RESIDENTIAL STANDARDS, STAPLE FASTENERS WILL NOT BE ACCEPTED 6. PLYWOOD SUB-FLOORING AND SHEATHING SHALL BE EXTERIOR DOUGLAS FIR PLYWOOD CONFORMING TO CSA 0121

DFFP

"DOUGLAS FIR PLYWOOD" UNLESS OTHERWISE NOTED. 7. ALL JOISTS OR BEAMS FLUSH FRAMED INTO OTHER BEAMS SHALL BE CONNECTED USING METAL JOIST OR BEAM HANGERS.

KO

kPa

KSF

KSI

LG

LLV

LLH

LP

mm

MAS

MAX

MEZZ

Mf

MIN

MISC

MK

MO

MOM

MPa

NIC

NO.

NOM

NTS

N-S

O/C

OD

0/0

O/F

OH

Ра

PC

PERF

PL, PL

PLF

PRO1

PSF

PSI

REF

ABBREVIATIONS

AT (SPACING)	DP
ANCHOR BOLT	DR
ADJUSTABLE	DFIR
ABOVE FINISHED FLOOR	DWG
ARCHITECT ARCHITECTURAL	DWI
BOTTOM	FA
BUARD	EJ
BEIWEEN	
BUILDING	ELEV
BLOCK	ELEC
BOTTOM LOWER LAYER	ENG
BEAM	EQ
BRIDGING	EQUIP
BEARING	ES
BEARING PLATE	E-W
BOTH SIDES	EW
BASEMENT	EXIST
BOTTOM UPPER LAYER	FXP
COMPRESSION	FXT
	FDN
	EE
CANTILEVER	FS
CAPACITY	FI
CEMENI	FIG
COMPRESSIVE FORCE	GA
(FACTORED)	GALV
CHANNEL	GEN
CAST IRON	GR
CAST-IN-PLACE	GRAN
CONTROL JOINT	Н
CLEAR	Н
CONCRETE MASONRY UNIT	
COLUMN	HC
COMPOSITE	HFX
CONCRETE	HORIZ
	Hf
CONSTRUCTION	111
	ЦМ
	HP
DOUBLE	HI
DEFLECTION	IC
DEMOLISH, DEMOLITION	ID
DEPRESSION	I/F
DETAIL	INSUL
DEVELOP, DEVELOPMENT	INT
DIAMETER	JST
DIAGONAL	JT
DIMENSION	kg
DIRECTION	КІ́Р. К
DEAD LOAD	KLF
DOWN	

DOOR DOUGLAS FIR DRAWING(S) DOWEL(S) FACH FACH FND EACH FACE EXPANSION JOINT ELEVATION ELEVATOR ELECTRICAL ENGINEER =OUAI EQUIPMEN EACH SIDE EAST-WEST EACH WAY EXISTING EXPANSION EXTERIOR FOUNDATION FAR FACE FINISHED FLOOR FAR SIDE FOOT/FEET FOOTING GAUGE GALVANIZED GENERAL GRADE GRANULAR HIGH HORIZONTAL FORCE (UNFACTORED) HOLLOWCORE HEXAGON HORIZONTAL HORIZONTAL FORCE (FACTORED) HOLLOW METAL HIGH POINT HEIGHT IN CENTRE INSIDE DIAMETER INSIDE FACE INSULATION INTERIOR JOIST JOINT KILOGRAM 1000 LB kip(s) PER LINEAL FOOT

KILONEWTON KNOCKOUT KILOPASCAL kip(s) PER SQUARE FOOT kip(s) PER SQUARE INCH LOW POUND(S) LB.# LONG LIVE LOAD LOWER LAYER LONG LEG VERTICAL LONG LEG HORIZONTAL LONG LONGITUDINAL LOW POINT METRE MILLIMETRE MASONRY MAXIMUM MECH MECHANICAL MEZZANINE FACTORED MOMENT MINIMUM MISCELLANEOUS MARK MASONRY OPENING MOMENT MEGAPASCAL NOT IN CONTRACT NEAR FACE NUMBER NOMINAL NOT TO SCALE NORTH-SOUTH NELSON STUD ON CENTRE OUTSIDE DIAMETER OUT TO OUT OUTSIDE FACE OVERHEAD OPENING OPNG OWSJ OPEN WEB STEEL JOIST PASCAL PRECAST PERPENDICULAR PLATE POUNDS PER LINEAL FOOT PLYWOOD PLYWD PREFABRICATED PREFAB PROJECTION POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH PRESSURE TREATED RADIUS, REACTION REFERENCE REINF REINFORCE, REINFORCEMENT

RFM REMAINDER REQUIRED REO RFV **REVISION**, **REVISED** RO ROUGH OPENING R/W REINFORCE WITH SCHED SCHEDULE SECT SECTION SIM SIMILAR STRUT JOIST S1 S1E STRUT ONE END SLAB SLAB ON GRADE SOG SPEC SPECIFICATIONS SPF SPRUCE-PINE-FIR SQUARE SO STANDARD STD STR STAIR STIFF STIFFENER STIRRUP STIR STL STEEL STRUCT STRUCTURAL SYMMETRICAL SYM TENSION (UNFACTORED) TOP T/O TOP OF **TOP & BOTTOM** T&B TEMP TEMPORARY TENSION FORCE (FACTORED) THRU THROUGH TOP LOWER LAYER TLL TRANS TRANSVERSE TEMPERATURE STEEL TS TUL TOP UPPER LAYER TYP TYPICAL UHMW ULTRA HIGH MOLECULAR WEIGHT UPPER LAYER UNLESS OTHERWISE NOTED U/N UNDERSIDE U/S VERTICAL SHEAR (UNFACTORED) VERTICAL VFRT VERTICAL SHEAR (FACTORED) WIDE, WIDTH WITH W/O WITHOUT WOOD WD WORK POINT WEIGHT WТ WWM WELDED WIRE MESH X-BRACE CROSS BRACING

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CITY ARCHIVES BUILDING REDEVELOPMENT

380 WILLIAM AVENUE - WINNIPEG, MANITOBA

oroject 2624 sheet no. S0.1



FOR UNDERPINNING PILES, PROVIDE 4-20M DOWELS DRILLED AND GROUTED WITH 14" MIN EMBEDMENT INTO UNDERSIDE OF EXISTING STRUCTURE

TOP OF PILE ELEVATION

TYPICAL SHAFT REINFORCING 30"Ø - 7-15M x 20'-0" LG

- TYPICAL ALL CAISSONS 10M RINGS: 3 @ 6" O/C TOP, Remainder @ 48" O/C

- CAISSON BEARING ON HAND CLEANED UNDISTURBED ROCK

(SEE GEOTECHNICAL REPORT)

– DRILL 1"Ø x 6'-0" DEEP HOLE AT BOTTOM OF EACH CAISSON & VERIFY SOUNDNESS OF ROCK





- SAWCUT PERIMETER PRIOR TO EXISTING CONCRETE REMOVAL - EXISTING CONCRETE SLAB ON COMPACTED GRANULAR FILL

- ENSURE SLAB EDGE AT BOTTOM IS TAPERED INWARD AS SHOWN TYPICAL

LAP AND CONTINUOUSLY SEAL NEW 10 MIL POLY TO EXISTING UNDAMAGED POLY EACH SIDE (IF PRESENT)



COORDINATE EXACT SIZE AND LOCATION OF SLAB WITH ARCHITECTURAL AND MECHANICAL REQUIREMENTS.

- 3/4"Ø HAS THREADED RODS @ 16" O/C



PILE SCHEDULE	
MARK	DESCRIPTION
P1	16"Ø x 25'-0" CIP PILE
P2	24"Ø CIP END BEARING UNDERPINNING PILE ON VERY DENSE TILL. APPROX 45'-0"
P3	16"Ø CIP END BEARING UNDERPINNING PILE ON VERY DENSE TILL. APPROX 45'-0"
P4	30"Ø CIP END BEARING UNDERPINNING PILE ON VERY DENSE TILL. APPROX 45'-0"

- EXISTING BRICK WALL

- L5x3 1/2x1/4 (LLV) BEARING MIN 6 INTO EXISTING BRICK (ONE ANGLE PER BRICK WYTHE)

ANGLE LINTEL 'L1' SECTION A-A

> - 8" CONCRETE SLAB-ON-GRADE R/W 15M @ 12" O/C EACH WAY TOP C/W 18"x18" THICKENED EDGE ALL AROUND R/W 3-20M TOP AND BOTTOM 10M TIES @ 12" O/C



CONCRETE SLAB SCHEDULE

MARK	DESCRIPTION
S1	12" CONCRETE SLAB 20M @ 12" O/C BOTTOM EACH WAY 15M TOP & BOTTOM DOWELS @ 12" O/C ALL AROUND 6" CARDBOARD VOID FORM
S2	6" CONCRETE SLAB ON GRADE 15M @ 16" O/C TOP & BOTTOM EACH WAY
S3	2 1/2" CONCRETE TOPPING 1 1/2"x0.030" COMPOSITE STEEL DECK 6x6 W2.9/2.9 WWM IN FLAT SHEETS ONLY
S4	6" CONCRETE SLAB 15M @ 16" O/C EACH WAY TOP MIN 6" COMPACTED GRANULAR FILL 2'-0" OF 6" CARDBOARD VOID FORM AT BUILDING T/O CONCRETE TO BE CONFIRM WITH ARCH

C	ONCRETE BEAM SCHEDULE
RK	DESCRIPTION

MA

B1	16" x 45" DEEP CONCRETE BEAM 4-20M TOP & BOTTOM CONTINUOUS 15M @ 12" O/C HORIZONTAL EACH FACE 10M STIRRUPS @ 16" O/C 6" CARDBOARD VOID FORM
B2	32" x 26 1/4"± DEEP CONCRETE BEAM C/W 13" x 13" CORBEL 3-20M TOP & BOTTOM CONTINUOUS 1-10M HORIZONTAL EACH FACE MID-HEIGHT 10M TIES @ 12" O/C 15M HORIZONTAL TIE AT CORNERS IN CORBEL C/W HOOKS EACH END 10M TIES @ 8" O/C LONGITUDINAL SEE PLAN AND SECTION FOR DOWELS

LINTEL SCHEDULE

MARK	DESCRIPTION
L1	L5x3 1/2 x1/4 (LLV) PER BRICK WYTHE MIN 6" BEARING ONTO EXISTING BRICK
L2	W16x26 SEE NOTES FOR NEW STEEL BEAMS BEARING ON EXISTING BRICK WALLS
L3	17"±x24" CONCRETE BEAM (WIDTH TO MATCH EXISTING WALL THICKNESS, SITE VERIFY) 2 - 20M TOP 3 - 20M BOTTOM 10M STIRRUPS @ 12" O/C MIN 12" BEARING ONTO EXISTING BLOCK
L4	24"±x16" CONCRETE BEAM (WIDTH TO MATCH EXISTING WALL THICKNESS, SITE VERIFY) 3 - 25M TOP & BOTTOM 10M STIRRUPS @ 8" O/C MIN 12" BEARING ONTO EXISTING BLOCK

CONCRETE WALL SCHEDULE

MARK	DESCRIPTION
CW1	8" WIDE CONCRETE WALL 15M @ 6" O/C EACH FACE

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SECOND FLOOR CEILING PLAN

1/8" = 1'-0" DESIGN LOADS:

LIVE LOAD = 20 PSF
DEAD LOAD = 15.7 PSF

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drawn by CJM mcm SMEALL approved by MANITOBA Member Certificate of Authorization architects inc. TWS 22988 Crosier Kilgour & Partners Ltd 141 ST. ANNE'S ROAD, WINNIPEG, MANITOBA R2M 2Z3 260 - 8th STREET, BRANDON, MANITOBA R7A 3X3 PROFESSIONAL No. 235 date 30 JAN 2025 2025-01-30

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S4.2









S4.3