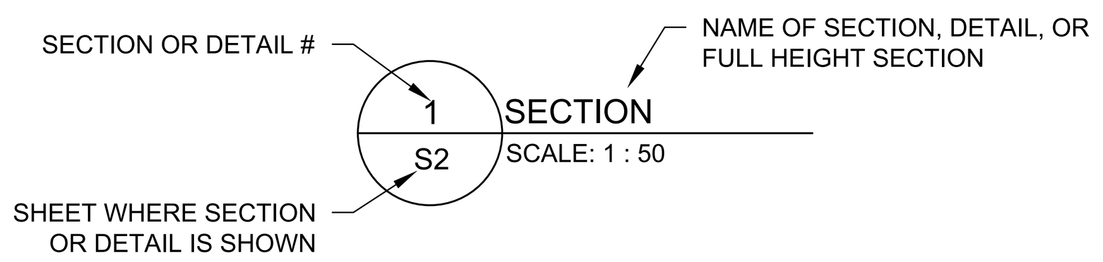
DRAWING LIST:
S1 - NOTES & SCHEDULES
S2 - FOUNDATION, MAIN FLOOR & ROOF DEMOLITION PLANS & FULL HEIGHT SECTIONS
S3 - FOUNDATION, MAIN FLOOR & ROOF CONSTRUCTION PLANS & SECTIONS / DETAILS

SECTION SYMBOL



DESIGN LOADING

THE BUILDING IS DESIGNED IN ACCORDANCE WITH THE 2011 EDITION OF THE MANITOBA BUILDING CODE OF CANADA,

- SNOW (ROOF) = Is[0.8(Ss) + (Sr)] = 1.72 kPa
- WIND q(1/50) = 0.45 kPa
- Is & Iw = 1.0 (NORMAL IMPORTANCE)

GENERAL NOTES

1. ALL RELEVANT CSA CODES, PROVINCIAL BUILDING CODE, WORKMAN'S COMPENSATION BOARD, WORKPLACE HEALTH & SAFETY BOARD, AND LOCAL BY-LAWS SHALL APPLY TO ALL WORK ON THIS PROJECT.
2. DESIGN LIVE LOADS SHOULD NOT BE EXCEEDED AT ANY TIME DURING CONSTRUCTION. FOR CONCRETE STRUCTURES, DESIGN LIVE LOADS MAY ONLY BE APPLIED AFTER CONCRETE REACHES ITS DESIGN STRENGTH.
3. THE CONTRACTOR IS TO VERIFY DIMENSIONS, ELEVATIONS, SLOPES, AND DETAILS NOTED ON THE STRUCTURAL DRAWINGS WITH CONDITIONS ON SITE AND ARCHITECTURAL DRAWINGS AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCY. DO NOT SCALE DRAWINGS.
4. MODIFICATIONS, ALTERATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED IN WRITING BY THE DESIGN ENGINEER. FOR OPENINGS IN SLABS, FLOORS, WALLS, ROOFS, ETC. REFER TO ARCHITECTURAL, MECHANICAL, STRUCTURAL AND OR OTHER PERTINENT DRAWINGS. DO NOT CUT OR DRILL ANY OPENINGS INTO STRUCTURAL MEMBERS WITHOUT OBTAINING WRITTEN PERMISSION FROM THE STRUCTURAL CONSULTANT.
5. THE GENERAL CONTRACTOR SHALL LOCATE ALL EXISTING SITE SERVICES PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL FORWARD A COMPLETE POUR SCHEDULE TO THE ENGINEER IDENTIFYING ALL CONSTRUCTION JOINT LOCATIONS, ETC. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND DETAILING AND SUBMITTING REBAR SHOP DRAWINGS. CONSTRUCTION JOINTS FOR SLABS AND BEAMS SHALL BE LOCATED SO AS NOT TO SIGNIFICANTLY IMPAIR THE STRENGTH OF THE STRUCTURE. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL CONSULTANT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND SAFETY OF ALL NECESSARY SHORING, BRACING, FORMWORK, AND SCAFFOLDING DURING WORK IN THIS PROJECT.
8. THE STRUCTURE AND GRADE BEAMS SHALL BE BRACED IN ALL DIRECTIONS TO SAFELY WITHSTAND ALL LATERAL FORCES WHICH MAY BE ENCOUNTERED DURING ERECTION. THE BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT BRACING, FRAMING, CLADDING AND BACKFILL ARE IN PLACE.
9. THE CONTRACTOR SHALL VERIFY AND PAY SPECIAL ATTENTION TO THE VERTICAL ALIGNMENT AND CONCRETE TOLERANCES OF FLOOR ELEVATIONS.
10. THE CONTRACTOR SHALL ENSURE ALL MATERIALS AND PRE-ENGINEERED COMPONENTS ARE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS.
11. ALL BEAMS, ANGLES AND MISCELLANEOUS METALS INDICATED ON ARCHITECTURAL DRAWINGS BUT NOT SHOWN ON STRUCTURAL DRAWINGS, SHALL BE INCLUDED IN THE TENDER PRICE. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING SIZES AND LOCATIONS OF THESE MEMBERS WITH BOTH THE ARCHITECT AND THE ENGINEER PRIOR TO TENDER CLOSING.
12. THE EXISTING BUILDING SUPERSTRUCTURE & FOUNDATION HAVE BEEN REVIEWED AND CAN SUPPORT ALL NEW LOADING CONDITIONS SHOWN ON THESE DRAWINGS IN ACCORDANCE WITH PART 4 OF THE 2011 MANITOBA BUILDING CODE, UNLESS NOTED.

EXCAVATION AND BACKFILL

1. REMOVE ALL ORGANIC TOPSOIL FROM THE SITE MINIMUM 6" FOR THE EXTENT OF THE BUILDING.
2. COMPACTED GRANULAR BASE SHALL BE PLACED IN 6" MAXIMUM LIFTS AND COMPACTED TO 98% STANDARD PROCTOR DENSITY. TEST RESULTS TO BE FORWARDED TO ARCHITECT, STRUCTURAL CONSULTANT, OWNER AND CONTRACTOR.
3. GRANULAR FILL SHALL BE WELL GRADED PIT RUN GRAVEL FREE FROM CLAY, SHALE, FRIABLE AND ORGANIC MATERIALS UNLESS NOTED OTHERWISE IN SPECIFICATIONS.
4. REMOVAL AND DISPOSAL OF ALL EXCAVATED MATERIAL, INCLUDING ANY REQUIRED CLEANING SHALL BE THE RESPONSIBILITY OF THIS SUBTRADE.

SHEATHING/PLYWOOD

1. SHEATHING SHALL BE DOUGLAS FIR PLYWOOD TO CSA O121 (LATEST REVISION), SPRUCE PLYWOOD TO CSA STANDARD O151 (LATEST REVISION), OR OSB PANEL TO CSA 0325 (LATEST REVISION).
2. WALL SHEATHING SHALL BE 11mm OSB PANEL.
3. ROOF SHEATHING SHALL BE 13mm WITH H-CLIPS
4. ASPENITE OR WAFERBOARD IS NOT PERMITTED TO BE USED FOR ANY STRUCTURAL APPLICATION ON THIS PROJECT.
5. SHEATHING FOR FLOOR AND ROOF SHALL BE INSTALLED WITH FACE GRAIN AT RIGHT ANGLES TO STUDS, TRUSSES, AND JOISTS.
6. ROOF SHEATHING TO BE FASTENED TO SUPPORTING STRUCTURE WITH 3.33mm Ø x 76mm COMMON WIRE NAILS @ 150mm O.C. AT PANEL EDGES AND @ 300mm O.C. IN THE INTERMEDIATE SUPPORTS.

POST-INSTALLED ANCHORS

1. ALL ANCHORS ARE TO BE HILTI PRODUCTS OR APPROVED ALTERNATE.
2. ALL PRE-ENGINEERED FASTENERS INSTALLED INTO CONCRETE OR MASONRY AFTER CASTING ARE TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS INCLUDING HOLE CLEANING, HOLE PREPARATION, ADHESIVE INSTALLATION (IF APPLICABLE), AND ANCHOR INSTALLATION.
3. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
4. IT IS RECOMMENDED THAT THE HILTI SAFESET SYSTEM WITH HILTI HOLLOW DRILL BIT IS USED FOR DRILLING. OTHERWISE, THE USE OF COMPRESSED AIR AND WIRE BRUSHING FOR CLEANING OF DRILLED HOLES IS TO BE AS PER MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS.

NAILS AND LAG SCREWS

1. NAILS SHALL BE IN ACCORDANCE WITH CSA STANDARD B111, WIRE NAILS, SPIKES, AND STAPLES. MATERIAL FOR LAG SCREW SHALL BE IN ACCORDANCE WITH ANSI/ASTM STANDARD A307, CARBON STEEL EXTERNALLY THREADED STANDARD FASTENERS.

WOOD FRAMING

1. DIMENSIONAL LUMBER FOR STUD WALLS, LINTELS, BACKING, BLOCKING, AND BRACING SHALL BE SPECIES GROUP D, SPRUCE PINE FIR GRADE NO.1/NO.2 OR BETTER UNLESS OTHERWISE NOTED.
2. ALL STRUCTURAL SAWN LUMBER, NAILING, AND CONNECTIONS SHALL BE IN ACCORDANCE WITH CSA O86 STANDARD (LATEST REVISION).
3. ALL METAL STRAPS, JOIST HANGERS, TRUSS ANCHORS ETC. SHALL BE MINIMUM 18 GAUGE HOT-DIPPED GALVANIZED MATERIAL INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED IN ACCORDANCE WITH CSA O80.1 STANDARD (LATEST REVISION).
5. COMPOSITE BEAMS OR LINTELS SHALL BE MICROLLAM LVL (OR APPROVED ALTERNATE). MATERIALS SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND APPROPRIATE CCMC EVALUATION REPORT.
6. PRE-ENGINEERED JOIST AND TRUSS SUPPLIER SHALL SUBMIT ENGINEERED SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER IN THE PROJECTS PROVINCE COVERING THE DESIGN OF THE JOISTS AND TRUSSES PRIOR TO FABRICATION.
7. JOIST AND TRUSS SUPPLIER TO ENGINEER AND PROVIDE GALVANIZED METAL TIE DOWNS (18ga. MIN) AT ALL TRUSS TO WALL CONNECTIONS. CONNECTION DETAIL TO BE INDICATED ON SHOP DRAWINGS.
8. MICROLLAM LVL SUPPLIER SHALL SUBMIT SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT PROVINCE COVERING THE DESIGN OF THE BEAMS AND ASSOCIATED CONNECTIONS PRIOR TO FABRICATION.
9. TRUSSES AND PRE-ENGINEERED FLOOR JOISTS SHALL NOT BE CUT OR MODIFIED ON SITE WITHOUT WRITTEN APPROVAL BY ENGINEER.
10. THE GENERAL CONTRACTOR SHALL CO-ORDINATE OPENING SIZES AND LOAD REQUIREMENTS FOR ANY AND ALL MECHANICAL AND ELECTRICAL EQUIPMENT ON ALL PRE-ENGINEERED FRAMING SYSTEMS.
11. DO NOT PILE ROOF SHEATHING ON ROOF DURING CONSTRUCTION.
12. TRUSS AND JOISTS SHOP DRAWINGS SHALL INDICATE ALL METAL HANGERS, SQUASH BLOCKING, BRIDGING/BLOCKING, WEB STIFFENERS, AND GENERAL BRACING.
13. ALL THROUGH BOLTS TO BE A307. ALL NUTS OR BOLT HEADS ARE TO BE PROVIDED WITH OVERSIZED WASHERS AGAINST WOOD.
14. PROVIDE BLOCKING FOR ALL GRAB-BARS, RAILINGS, ETC. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND REQUIREMENTS.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW BILLET, DEFORMED BARS IN ACCORDANCE WITH CSA STANDARD CAN/CSA-G30.18-09 MINIMUM YIELD STRENGTH TO BE 400 MPa, EXCEPT 10M BARS FOR STIRRUPS AND COLUMN TIES MAY BE 300 MPa.
2. ALL REINFORCING STEEL SHALL BE DETAILED AND INSTALLED IN ACCORDANCE WITH CSA-A23.1, CSA-A23.3, AND RSIC REINFORCING STEEL MANUAL OF STANDARD PRACTICE.
3. LAP TOP BARS AT CENTER SPAN WITH CLASS B SPLICES AND BOTTOM BARS OVER SUPPORTS.
4. 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 WITH CLASS B TENSION SPLICES, UNLESS NOTED.
5. ALL REINFORCING TO BE RIGIDLY 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. ALL REINFORCING SUPPORTS AND ACCESSORIES SHALL BE COMMERCIAL GRADE AND SHALL SECURE ALL BARS IN POSITIONS SHOWN ON THE DRAWINGS.
6. REINFORCING IN CONCRETE BEAMS/WALLS AND MASONRY BOND BEAMS TO BE BENT 600mm AROUND CORNERS OR USE 900mm x 900mm CORNER BARS.
7. FRAME ALL OPENINGS IN CONCRETE BEAMS, WALLS AND/OR SLABS WITH ADDITIONAL 2-20M BARS ALL FOUR SIDES. ADDITIONAL HORIZONTAL BARS TO EXTEND 600mm BEYOND EDGES OF OPENINGS EXCEPT AS NOTED. ADDITIONAL VERTICAL BARS TO EXTEND FULL HEIGHT OF GRADE BEAM OR WALL.
8. PIT WALLS/SLABS SHALL BE 200mm THICK REINFORCED WITH 15M @ 300mm O.C. EACH WAY AT CENTER UNLESS OTHERWISE SHOWN. PROVIDE PVC WATERSTOP AT ALL CONCRETE JOINTS OR WATERPROOF AS PER ARCH.
9. HOUSEKEEPING PADS SHALL BE A MINIMUM OF 90mm THICK AND REINFORCED WITH 10M @ 300mm O.C. EACH WAY AT CENTRE UNLESS OTHERWISE SHOWN. COORDINATE HOUSEKEEPING PAD SIZE AND LOCATION WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
10. ALL REINFORCING STEEL SHALL BE PROPERLY CLEANED AND FREE OF ALL DIRT, GREASE, AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING CONCRETE AND TO BE STORED ABOVE GROUND IN DRY CONDITIONS.
11. HEATING, QUENCHING AND BENDING OF REINFORCING STEEL ON THE SITE IS NOT ALLOWED.
12. SPLICES AT POINTS OF MAXIMUM TENSILE STRESS SHALL BE AVOIDED WHEREVER POSSIBLE. SUCH SPLICES, WHERE USED, SHALL BE APPROVED BY THE CONSULTANT, THE MINIMUM LAP SHALL BE 48 BAR DIAMETERS.
13. CONTINUOUS AND TEMPERATURE REINFORCING BARS SHALL BE LAPPED 24 BAR DIAMETERS, OR 18" (450mm) MINIMUM AT SPLICE OR AT CORNERS. TERMINATE CONTINUOUS BAR AT NON-CONTINUOUS ENDS WITH STANDARD HOOK.
14. SUBMIT SHOP DRAWINGS INDICATING BAR SIZES, STEEL GRADE, BAR SPACING, HOOKS, BENDS, ACCESSORIES, ETC. FOR REVIEW PRIOR TO FABRICATION OF THE REINFORCING STEEL.
15. MINIMUM CLEAR DISTANCE BETWEEN PARALLEL BARS SHALL BE GREATER THAN THE LARGEST OF THE FOLLOWING:
    a) 1.4 TIMES BAR DIAMETER.
    b) 1.4 TIMES MAXIMUM SIZE OF AGGREGATES.
    c) 30mm MINIMUM.
15. MINIMUM CONCRETE COVER TO REINFORCING:

EXPOSURE CONDITION	EXPOSURE CLASS		
	N	F-1, F-2, S-1, S-2	C-1, C-2, C-3, A-1, A-2, A-3
SLABS, WALLS & JOISTS	20mm	40mm	60mm

STRUCTURAL STEEL

1. FABRICATE & ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CSA-S16.1 (LATEST EDITION).
2. STRUCTURAL STEEL SHAPES, PLATES, AND HSS (CLASS C) SHALL CONFORM TO CSA-G40.21; GRADE 350W.
3. ALL WELDING OF STRUCTURAL STEEL SHALL CONFORM TO W59. THE STEEL FABRICATOR IS TO BE CERTIFIED IN ACCORDANCE WITH W47.1. PROVIDE WRITTEN PROOF OF WELDER'S CERTIFICATION UPON REQUEST.
4. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, CONNECT ALL FLEXURAL MEMBERS (BEAMS, CHANNELS, ETC...) AT EACH END FOR ONE HALF OF THE TOTAL UNIFORMLY DISTRIBUTED FACTORED LOAD OF THE LATERALLY SUPPORTED BEAM, IN ADDITION TO THE TRANSFER OF FACTORED MOMENTS, WHERE SHOWN ON THE DRAWINGS.
5. SPLICING OF MEMBERS NOT PERMITTED UNLESS OTHERWISE NOTED.
6. WHERE BEAMS ARE CONTINUOUS OVER SUPPORTS, NO HOLES PERMITTED IN TOP FLANGE. PROVIDE 2-3/8" (10mm) WELDED WEB STIFFENER PLATES EACH SIDE OF BEAM, ALIGNED WITH COLUMN WALLS.
7. BOLTS, NUTS, AND WASHERS TO ASTM A325, MINIMUM BOLT DIAMETER 20mm.
8. ANCHOR BOLTS TO ASTM A307 U/N.
9. PRIMER TO CONFORM TO THE REQUIREMENTS OF CGSB OR CISC/CPMA STANDARDS. ALL STEEL SHALL RECEIVE A SHOP COAT OF PRIMER EXCEPT SURFACES TO BE CONCRETED, WELDED, LIGHT ZINC COATED OR GALVANIZED. CLEAN ALL FIELD WELDS AFTER ERECTION AND TOUCH UP ALL UNPAINTED SURFACES WITH ONE COAT OF PRIMER PAINT TO MATCH SHOP COAT.
10. GROUT BED UNDER BASE PLATES TO BE 35 MPa NON SHRINK GROUT.
11. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTED PIECE AND BE DESIGNED WITH BEARING-TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE, UNLESS NOTED OTHERWISE. THE STEEL SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF ALL STRUCTURAL STEEL CONNECTIONS NOT EXPLICITLY SHOWN ON THE DRAWINGS.
12. UNLESS NOTED OTHERWISE ON PLANS PROVIDE 76mmx76mmx9.5mm ANGLE FRAME FROM JOIST TO JOIST ON EACH SIDE OF ALL STEEL DECK OPENINGS OVER 450mm, AND C150x12 FRAME AT ALL MECHANICAL AND ELECTRICAL UNITS THAT SIT ON OR HANG FROM THE ROOF OR FLOORS.
13. PROVIDE 150mmx150mmx13mm CLIP ANGLES x 300mm LONG AT HOLLOWCORE COLUMN OPENINGS. CO-ORDINATE WITH HOLLOWCORE SUPPLIER TO ENSURE ADEQUATE BEARING.
14. THERE SHALL BE NO CUTTING OF THE STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL CONSULTANT.
15. ALL EXPOSED STEEL TO BE GALVANIZED UNLESS NOTED AS POWDER COATED (SEE ARCH). ALL STEEL TO BE GALVANIZED IS 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.
16. STRUCTURAL STEEL ERECTOR SHALL SUPPLY AND INSTALL ALL TEMPORARY GUYING AND BRACING NECESSARY TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE. THESE SHALL REMAIN IN PLACE UNTIL FLOOR SLABS ARE WELL CURED, STEEL ROOF DECK IS FULLY WELDED AND/OR PERMANENT BRACING IS INSTALLED.
17. STEEL STAIRS, HANDRAILS, GUARDRAILS SHALL BE DESIGNED BY OTHERS. FABRICATOR SHALL SUBMIT SHOP DRAWINGS UNDER THE SEAL OF A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT PROVINCE, TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION.
18. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER IN THE PROJECT PROVINCE SHOWING ALL DESIGN AND FABRICATION DETAILS OF CONNECTIONS TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
19. CROSS BRACING TENSION LOADS ARE TO BE CALCULATED BASED ON THE WIND HORIZONTAL POINT LOAD INDICATED IN CHART BELOW AND THE ANGLE OF THE BRACE.

MASONRY

1. MASONRY WORK SHALL CONFORM TO CSA STANDARDS S304.1, CSA-A370 & CSA-A371 (LATEST EDITIONS).
2. MASONRY DESIGN SHALL COMPLY WITH S304.1 MASONRY DESIGN FOR BUILDINGS (LATEST EDITION).
3. ALL CONCRETE BLOCKS TO COMPLY TO CSA-A165 (LATEST EDITION). ALL CONCRETE MASONRY SHALL BE STANDARD BLOCK FOR ALL WALLS, U/N ON DRAWINGS. UNIT COMPRESSIVE STRENGTH TO BE 15 MPa U/N ON DRAWINGS (DESIGN VALUE FOR GROUTED MASONRY IS 7.5 MPa).
4. MORTAR SHALL BE IN CONFORM TO CSA-A179 (LATEST EDITION). MORTAR SHALL BE TYPE S WITH A MINIMUM STRENGTH OF 13 MPa AT 28 DAYS.
5. PROVIDE DURAWALL OR EQUAL HORIZONTAL LADDER REINFORCEMENT EVERY SECOND COURSE UNLESS NOTED OTHERWISE.
6. PROVIDE 40mmx200mmx3mm MASONRY STRAP ANCHORS @ 400mm O.C. VERTICAL AT ALL COLUMNS THAT ARE WITHIN MASONRY WALLS U/N ON DRAWINGS.
7. PROVIDE BLOCK WALL CONTROL JOINT WITH MAXIMUM SPACING TO BE AT 8000mm. REINFORCE ONE CELL ON EITHER SIDE OF JOINT WITH 2-15M VERTICAL AND FILL WITH CONCRETE. CONFIRM JOINT LOCATIONS WITH ARCHITECTURAL DRAWINGS.
8. VERTICAL CORE FILLS TO BE CAST IN LIFTS OF 3000mm MAXIMUM. REINFORCING LAP SPLICE 10M BARS: 18" (450mm), 15M BARS: 650mm, 20M BARS: 900mm.
9. INSPECTION HOLES SHALL BE PROVIDED AT ALL FILLED CORES. HOLES CANNOT BE ON VISIBLE INTERIOR SIDE.
10. CONTRACTOR TO BE RESPONSIBLE FOR INSTALLING ALL REQUIRED TEMPORARY BRACING OF ALL MASONRY COMPONENTS UNTIL RELATED STRUCTURAL FRAMING IS HAS BEEN ERECTED AND COMPLETELY INSTALLED AND THE MASONRY GROUT AND CORE FILL HAVE ATTAINED SUFFICIENT STRUCTURAL STRENGTH.
11. FOR MASONRY WALL CORE FILLS AND REINFORCEMENT SEE PLANS. UNLESS OTHERWISE NOTED ON PLANS PROVIDE 1 VOID CORE FILL COMPLETE WITH 1-15M VERTICAL @ 800mm O/C. PROVIDE MINIMUM OF 2 VOID CORE FILL WITH 1-15M EACH VOID AT ALL ENDS OF WALL, EACH SIDE OF WALL OPENINGS AND EVERY CORNER OF WALLS. PROVIDE MATCHING DOWELS x 900mm LONG AT FOUNDATION AND PROJECT 450mm ABOVE THE CONCRETE.
12. FOR MASONRY COLUMN REINFORCEMENT SEE PLANS. UNLESS OTHERWISE NOTED ON PLANS PROVIDE MINIMUM OF 2 VOID CORE FILL AT W360 OR SMALLER BEAM, 3 VOID CORE FILL AT W410 AND W460 BEAMS, 4 VOID CORE FILLS AT W530 BEAMS AND 5 VOID CORE FILL AT W610 BEAMS AND U.N.O. PROVIDE 2-15M VERTICAL EACH VOID. PROVIDE MATCHING DOWELS x 900mm LONG AT FOUNDATION AND PROJECT 450mm ABOVE THE CONCRETE.
13. FOR MASONRY OPENINGS END REINFORCEMENT SEE PLANS. UNLESS OTHERWISE NOTED ON PLANS PROVIDE 3 VOID CORE FILLS, 2-15M EACH VOID AT WALL OPENINGS OF 800mm TO 2400mm AND PROVIDE 4 CORE FILLS, 2-15M EACH VOID AT WALL OPENINGS OF 2400mm TO 3000mm U.N.O. ON THE DRAWINGS. PROVIDE MATCHING DOWELS x 900mm LONG AT FOUNDATION AND PROJECT 450mm ABOVE CONCRETE.
14. FULLY GROUT BOTTOM THREE COURSES UNLESS NOTED OTHERWISE.
15. PROVIDE 1 COURSE BOND BEAM WITH 2-15M HORIZONTAL C/W KNOCKOUT BLOCKS AT TOP OF ALL WALLS AND AT ROOFS AND FLOORS. FILL WITH CONCRETE.
16. MASONRY REINFORCED BLOCK LINTEL SCHEDULE U.N.O. ON THE DRAWINGS:
    SPAN UP TO 915mm, 1 COURSE 200mm HIGH, 1-10M TOP & BOTTOM
    SPAN 36" (915mm) TO 1830mm, 2 COURSE 400mm HIGH, 1-15M TOP & BOTTOM, EXTEND REINFORCING CAGE AT LEAST 400mm (2 VOIDS) PAST OPENINGS. PROVIDE MINIMUM 20mm COVER TO REINFORCEMENT. PROVIDE MINIMUM 200mm BEARING EACH SIDE OF OPENING.

CONCRETE

1. ALL CONCRETE WORK INCLUDING CURING SHALL BE PERFORMED IN ACCORDANCE WITH CSA-A23.1, CSA-A23.2, AND CSA-A23.3 (LATEST EDITIONS) INCLUDING COLD WEATHER PROTECTION REQUIREMENTS WHEN THE AMBIENT AIR TEMPERATURE FALLS BELOW 5 DEGREES CELSIUS, AND ADVERSE WEATHER CONDITIONS INCLUDING WINDS AND PRECIPITATION. MECHANICALLY VIBRATE ALL CONCRETE. UPON REQUEST, PROVIDE COLD WEATHER CONCRETING PROCEDURES TO ENGINEER FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
2. 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.
3. PROVIDE 6" (150mm) PLASTIC WRAPPED CARDBOARD VOID FORM BELOW ALL BEAMS, WALLS, AND PILE CAPS.
4. THE USE OF CALCIUM CHLORIDE IS NOT PERMITTED ON THIS PROJECT. PRIOR TO THE USAGE OF ANY ADMIXTURES TO THE CONCRETE IT SHALL BE APPROVED IN WRITING BY THE ENGINEER.
5. CONSTRUCTION JOINTS SHALL BE FIRST APPROVED BY THE STRUCTURAL ENGINEER BEFORE CONSTRUCTION BEGINS ON AFFECTED STRUCTURAL ELEMENTS. PLACE CONCRETE AS A CONTINUOUS OPERATION STOPPING ONLY AT CONSTRUCTION JOINTS. CONSTRUCTION JOINTS SHALL BE ADEQUATELY DOWELED AND KEYED. IF NOT PROVIDED AS PART OF THIS DRAWING SET, DETAILS AND LOCATIONS OF CONSTRUCTION JOINTS SHALL BE PROVIDED BY THE CONTRACTOR AND REVIEWED BY THE STRUCTURAL CONSULTANT.
6. CONCRETE SHALL BE PLACED IN FORMS FREE OF STANDING OR FROZEN WATER.
7. SAWCUTS ARE TO BE PROVIDED IN SLABS ON GRADE AS INDICATED ON PLAN AND DETAILS AS A PART OF THIS DRAWING SET OR IF NOT SHOWN ON DRAWINGS AS COORDINATED WITH THE ENGINEER.
8. REINFORCING STEEL MUST BE REVIEWED BY THE STRUCTURAL CONSULTANT PRIOR TO PLACING CONCRETE.
9. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS (72 HOURS FOR OUT-OF-TOWN PROJECTS) PRIOR TO ALL CONCRETE POURS.
10. FINS ON CONCRETE SURFACES SHALL BE REMOVED. HONEYCOMBED OR OTHERWISE DEFECTIVE CONCRETE SHALL BE REMOVED SUFFICIENTLY TO EXPOSE SOUND CONCRETE AND SHALL BE REPAIRED AS DIRECTED BY THE STRUCTURAL CONSULTANT.
11. CONCRETE POURED IN WINTER TEMPERATURES IS TO BE PROPERLY INSULATED/PROTECTED AND BE HEATED DURING CURE PERIOD UNTIL CONCRETE IS 2/3 MINIMUM STRENGTH (4 DAY MINIMUM). REFER TO CSA-A23.1 INCLUDING BUT NOT LIMITED TO CLAUSE 7.4, TABLES 2, 14, 20 AND 21, AND FIGURE D.2
12. TIMING FOR REMOVAL OF FORM WORK TO BE BASED ON STRENGTH OF CONCRETE, AS DETERMINED BY THE TESTING OF FIELD CURED CONCRETE CYLINDERS. DO NOT REMOVE FORM WORK FROM FOOTINGS BEFORE CONCRETE HAS REACHED 50% OF ITS DESIGN STRENGTH. FOR WALLS AND COLUMNS NOT SUPPORTING LOAD, REMOVE AT 60% OF DESIGN STRENGTH. FOR SUSPENDED STRUCTURAL SLABS, FORM WORK MAY BE REMOVED AT 80% OF DESIGN STRENGTH, PROVIDED THE SLAB IS RE-SHORED UNTIL FULL STRENGTH IS REACHED.
13. SEE WRITTEN SPECIFICATIONS AND/OR ADDENDA FOR REQUIREMENTS FOR CYLINDER TESTING OF CONCRETE. CONTRACTOR TO TEST CONCRETE FOR EACH DAY'S CONCRETING AND/OR EVERY 40 CUBIC METERS EACH DAY CONCRETING. FORWARD TEST RESULTS TO THE STRUCTURAL CONSULTANT.
14. CONCRETE AS PER SCHEDULE BELOW:

ITEM	CLASS OF EXPOSURE	STRENGTH (MPa)	CEMENT TYPE	MAXIMUM AGGREGATE SIZE (mm)	SLUMP (mm)	AIR ENTRAINMENT (%)	CURING TYPE
SLABS ON GRADE (EXTERIOR)	C-2	32	GU	20		5-8	2
SLABS (INTERIOR)	N	25	GU	20			2
CONCRETE FILL (MASONRY)	N	20	GU	14	200 (+/- 40)		1
*: "HSb" IS ACCEPTABLE TO BE USED IN PLACE OF "HS" CEMENT WHERE SPECIFIED. PRIOR TO APPROVING THIS CHANGE THE CONTRACTOR SHALL FORWARD TO THE ENGINEER ALL NECESSARY BATCH & MIX INFORMATION FOR THE "HSb" CEMENT FROM THE SUPPLIER FOR REVIEW AND APPROVAL.							

15. 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.
16. UNLESS NOTED OTHERWISE CONCRETE CURING TO CONFORM TO THE LATEST EDITION OF CSA-A23.1-14 AS FOLLOWS:
    TYPE 1 - BASIC: 3 DAYS ≥ 10°C AND FOR A TIME NECESSARY TO ATTAIN 40% OF THE SPECIFIED STRENGTH.
    TYPE 2 - ADDITIONAL: 7 DAYS ≥ 10°C AND FOR A TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
    TYPE 3 - EXTENDED: 7 DAYS WET CURING ≥ 10°C.
17. 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 ADMIXTURES FOR CONCRETE" OR ASTM C1017/C1017M "STANDARD SPECIFICATION FOR CHEMICAL ADMIXTURES FOR USE IN PRODUCING FLOWING CONCRETE" WHEN FLOWING CONCRETE IS APPLICABLE. AIR ENTRAINED ADMIXTURES TO HAVE A DURABILITY FACTOR GREATER THAN 75, WHEN TESTED TO ASTM STANDARDS 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".

LINTEL SCHEDULE

MARK	DESCRIPTION
L-1	EXISTING LINTEL TO REMAIN
L-2	NEW DBL. 89 mm x 89 mm x 9.5 mm GALVANIZED LOOSE ANGLE LINTEL C/W MIN. 200 mm OF BEARING ON EACH END (SEE 1/S2) AFFIX VERTICAL LEG OF ANGLE TO CONCRETE C/W 3, EVENLY SPACED 6.4mm Ø GALV. HEX HEAD CONCRETE SCREWS W/ 32mm EMBED.

COLUMN SCHEDULE

MARK	DESCRIPTION
C-1	NEW PRE-MANUF. ADJUSTABLE STEEL TELEPOSTS DESIGNED TO RESIST 4000 KG (FACTORED) CAPS & GALV. BASE PLATE & RELATED CONNECTIONS AS PER SUPPLIER

BEAM SCHEDULE

MARK	DESCRIPTION
B-1	EXISTING FLUSH FRAME 5 PLY 38x184 BEAM TO REMAIN R/W NEW CONT. W200 x 36 STEEL BEAM (DROPPED) INSTALLED TIGHT TO U/S OF EXISTING BEAM AFFIX TOP FLANGE OF BEAM TO U/S EXIST BEAM C/W 6.4mm Ø x 100mm LG. LAG SCREWS @ 600 O.C. MAX.

WALL SCHEDULE

MARK	DESCRIPTION
W-1	EXISTING 190mm CONCRETE MASONRY BLOCK WALL TO REMAIN UNLESS NOTED
W-2	NEW 190mm CONCRETE MASONRY BLOCK WALL HEIGHT TO MATCH EXISTING BLOCK WALL (COORD. W/ ARCH.) C/W A TOP U-BLOCK BOND COURSE FULLY GROUT ALL CORES REINF. W/ TWO 10M CONT. HORIZONTAL BARS (SEE DRAWING S3 FOR ADDITIONAL VERTICAL REINFORCING) PROVIDE STANDARD HORIZONTAL LADDER REINF. EVERY 2ND COURSE (PUR-O-WALL OR EQUIVALENT)
W-3	NEW 140mm CONCRETE MASONRY BLOCK WALL HEIGHT TO MATCH EXISTING BLOCK WALL (COORD. W/ ARCH.) C/W A TOP U-BLOCK BOND COURSE FULLY GROUT ALL CORES REINF. W/ TWO 10M CONT. HORIZONTAL BARS (SEE DRAWING S3 FOR ADDITIONAL VERTICAL REINFORCING) PROVIDE STANDARD HORIZONTAL LADDER REINF. EVERY 2ND COURSE (PUR-O-WALL OR EQUIVALENT)
W-4	NEW 38x89 @ 405mm O.C. LOAD BEARING STUD WALL C/W 38x89 P.T BOTTOM PLATE & 38x89 DOUBLE TOP PLATE C/W CONT. MID HEIGHT 38x89 BLOCKING

RAFTER SCHEDULE

MARK	DESCRIPTION
R-1	50mm T&G WOOD DECKING ON EXISTING 38x184 RAFTERS @ +/- 750mm O.C. TO REMAIN UNLESS NOTED OTHERWISE
R-2	13mm PLYWOOD SHEATHING C/W GALV. H-CLIPS ON NEW PRE-ENG. TRUSSES @ MAX. 600mm O.C.
R-3	EXISTING R-1 ROOF RAFTER TO BE REINFORCED WITH AN ADDITIONAL 38x184 PLY

SPREAD BORE PILE SCHEDULE

MARK	PILE SHAFT / SPREAD BORE Ø (mm)
P-1	EXISTING 406 mm / 914 mm
P-2	EXISTING 406 mm / 1067 mm
NOTE: EXISTING PILES BEAR ON MECHANICALLY CLEANED SUBGRADE +/- 6.7m BELOW EXISTING GRADE.	

GRADE BEAM SCHEDULE

MARK	PILE SHAFT / SPREAD BORE Ø (mm)
GB-1	EXISTING 254mm x 610mm CONCRETE GRADE BEAM TO REMAIN

SLAB SCHEDULE

MARK	DESCRIPTION
S-1	NEW 150mm THICK CONCRETE SLAB R/W 10M @ 300mm O.C. BOTH WAYS TOP 15M @ 300 O.C. BOTTOM (REFER TO 4/S3) C/W 300 x 300 CONT. THICKENED EDGE AROUND PERIMETER R/W 2-15M CONT. HORIZONTAL TOP & BOTTOM W/ 10M STIRRUPS @ 300 O.C. MAX. ON MIN. 150mm COMPACTED GRANULAR BASE ON UNDISTURBED SOIL (REFER TO SECTION 4/S3)
S-2	EXISTING 125mm THICK CONCRETE STRUCTURAL SLAB TO REMAIN U/N ON 4" CARBOARD VOID ON 6" OF GRAVEL R/W 15M BOTTOM @ 8" O.C. & 10M @ 16" O.C. TOP (TEMP. STEEL)

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS AND LEVELS NOTED ON THE DRAWINGS WITH THE CONDITIONS ON SITE AND SHALL BE RESPONSIBLE FOR REPORTING ANY ERRORS OR OMISSIONS TO THE ENGINEER FOR ADJUSTMENTS.
THIS DRAWING SHALL NOT BE SCALED.

Revisions

Date	Revision
October 2021	Issued for Construction

Northern Sky Architecture Inc.
100–128 James Avenue
Winnipeg, Manitoba, Canada
R3B 0N8
contact@nsal.ca
Fax 204.956.7979
204.943.6767

Structural Consultant:
KNH
K.N.H. SAWATZKY & ASSOCIATES STRUCTURAL ENGINEERING CONSULTANTS
103-120 FORT STREET WINNIPEG, MANITOBA R3C 1C7 (204) 947-2550 956-7979 (FAX)

Stamp
PROVINCE OF MANITOBA
Oct. 8, 2021
A. J. GIES
Member 23243
REGISTERED PROFESSIONAL ENGINEER

Stamp
- structural only
- contact engineer when ready for inspections

Project
City of Winnipeg
Churchill Park Maintenance Building Renovation
430 Churchill Drive
Winnipeg, Manitoba

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
KNH Sawatzky & Associates Ltd.
No. 1193

drawing title	NOTES & SCHEDULES		
scale	as noted	designed by	ajg
date	2021–10–08	drawn by	lf
project no.	21.245	reviewed by	ajg
reference no.	578–2021	sheet	S1 of 3
		REV.	