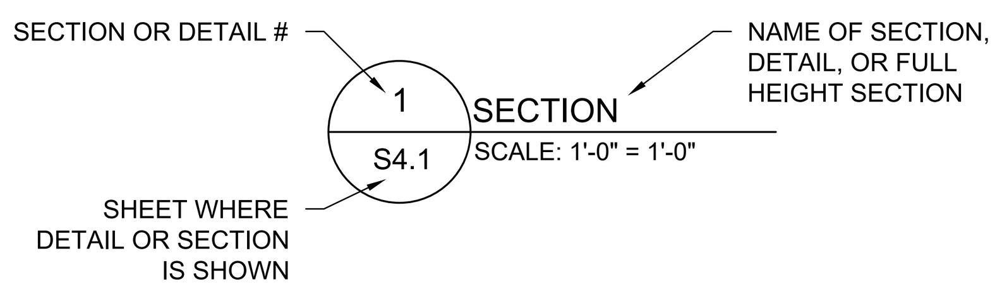
DRAWING LIST
S1.1 NOTES
S2.1 FOUNDATION, MAIN FLOOR, AND ROOF FRAMING PLAN
S3.1 DETAILS AND SECTIONS
S4.1 FULL HEIGHT SECTIONS

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 (36 psf)
- WIND q(1/50) = 0.45 kPa (9.4 psf)
- 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 CONTRACT ADMINISTRATOR OF ANY DISCREPANCY. DO NOT SCALE DRAWINGS.
4. MODIFICATIONS, ALTERATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED IN WRITING BY THE CONTRACT ADMINISTRATOR. 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 CONTRACT ADMINISTRATOR.
5. THE CONTRACTOR SHALL LOCATE ALL EXISTING SITE SERVICES PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL FORWARD A COMPLETE POUR SCHEDULE TO THE CONTRACT ADMINISTRATOR 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 CONTRACT ADMINISTRATOR.
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 OPERATE TOLERANCES OF FLOOR ELEVATIONS.
10. THE CONTRACTOR SHALL ENSURE ALL MATERIALS 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 STRUCTURAL ENGINEER PRIOR TO TENDER CLOSING.

EXCAVATION AND BACKFILL

1. EXCAVATION, SUB-GRADE PREPARATION AND BACKFILL FOR SLABS ON GRADE SHALL BE PROVIDED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FILE # 0015-032-00 ENTITLED "WAVERLEY WEST GARAGE" WRITTEN BY RYAN BELBAS, P.ENG. DATED MAY 30, 2019.
2. GRADE BEAMS OR WALLS SHALL BE BACKFILLED WITH GRANULAR MATERIAL. WHERE SURFACES ADJACENT TO STRUCTURE ARE NOT CONCRETED/ASPHALTED, A MIN. 12" CLAY CAP IS TO BE PROVIDED WHERE POSSIBLE U/N (SEE ARCH). ALL PROPOSED GRANULAR BACKFILL SHALL BE TESTED FOR GRADATION. TEST RESULTS SHOULD BE FORWARDED TO THE CONTRACT ADMINISTRATOR.
3. FOR EXCAVATION, BACKFILL AND COMPACTION, REFER TO GEOTECHNICAL ENGINEER'S RECOMMENDATION IN REPORT NOTED ABOVE.
4. EXCAVATION, BACKFILL AND COMPACTION IS TO BE SUPERVISED BY A GEOTECHNICAL ENGINEER.
5. ALL COMPACTION TEST RESULTS ARE TO BE FORWARDED TO CONTRACT ADMINISTRATOR.
6. EXCAVATION NEAR ADJACENT PROPERTIES AND EXISTING STRUCTURES INCLUDING UTILITIES SHALL BE PROTECTED FROM CAVE-IN OR MOVEMENT BY SHORING IF NECESSARY.
7. REMOVAL AND DISPOSAL OF ALL EXCAVATED MATERIAL, INCLUDING ANY REQUIRED CLEANING SHALL BE THE RESPONSIBILITY OF THIS SUBCONTRACTOR.

CAST IN PLACE FRICTION PILES

1. CAST-IN-PLACE PILES SHALL BE PROVIDED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FILE # 0015-032-00 ENTITLED "WAVERLEY WEST GARAGE" WRITTEN BY RYAN BELBAS, P.ENG. DATED MAY 30, 2019. THE CONTRACTOR IS TO CONTACT THE GEOTECHNICAL ENGINEER TO INSPECT AND APPROVE THE INSTALLATION OF ALL PILES AND SUBMIT A FINAL INSPECTION REPORT TO OUR OFFICE.
2. PILES HAVE BEEN DESIGNED ON THE BASIS OF SLS AND FACTORED ULS SHAFT ADHESION VALUE OF 15.0 kPa (313 psf). THE UPPER 8'-0" (2,400mm) FROM EXISTING GRADE OF SHAFT SUPPORT HAS BEEN DISCOUNTED DUE TO FREEZE-THAW AND SOIL SHRINKAGE AWAY FROM PILES. VARIANCE IN SOIL CONDITIONS FROM THE ABOVE SHALL BE REPORTED TO THE GEOTECHNICAL ENGINEER BEFORE PROCEEDING.
3. PILE REINFORCING FOR PILES LOCATED IN UNHEATED AREAS SHALL EXTEND THE FULL LENGTH OF THE PILE.
4. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF SUBGRADE SERVICE PRIOR TO COMMENCING DRILLING FOR PILES.
5. THE UPPER 10'-0" (3000mm) OF ALL PILES SHALL BE CONSOLIDATED WITH A MECHANICAL VIBRATOR.
6. PILE INSTALLATION SHALL BE PROVIDED UNDER THE FULL TIME INSPECTION OF A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER FROM THE FIRM THAT PROVIDED THE GEOTECHNICAL REPORT.
7. MAINTAIN ACCURATE RECORD OF EACH PILE. SUBMIT A COPY OF THIS RECORD TO THE CONTRACT ADMINISTRATOR.
8. FULL-LENGTH STEEL SLEEVES SHOULD BE MAINTAINED ON SITE AND UTILIZED AS REQUIRED DURING CONSTRUCTION TO MAINTAIN PILE HOLES IN A CLEAN DRY STATE.

PILE LENGTH (m)	SLS (kPa)	FACTORED ULS (kPa)
0 TO 2.4	0	0
2.4 TO 11.0	15.0	15.0

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 ZERO DEGREES CELSIUS, AND ADVERSE WEATHER CONDITIONS INCLUDING WINDS AND PRECIPITATION. MECHANICALLY VIBRATE ALL CONCRETE.
2. PROVIDE 6" (150mm) PLASTIC WRAPPED CARDBOARD VOID FORM BELOW ALL SLABS AND GRADE BEAMS.
3. 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 CONTRACT ADMINISTRATOR.
4. CONSTRUCTION JOINTS SHALL BE FIRST APPROVED BY THE CONTRACT ADMINISTRATOR 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 CONTRACT ADMINSTRATOR.
5. CONCRETE SHALL BE PLACED IN FORMS FREE OF STANDING OR FROZEN WATER.
6. 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 CONTRACT ADMINISTRATOR.
7. REINFORCING STEEL MUST BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO PLACING CONCRETE.
8. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS (72 HOURS FOR OUT-OF-TOWN PROJECTS) PRIOR TO ALL CONCRETE POURS.
9. 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 ENGINEER.
10. 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). ONLY PRE-APPROVED HEATERS ARE TO BE USED. REFER TO CSA-A23.1 INCLUDING BUT NOT LIMITED TO CLAUSE 7.4, TABLES 2, 14, 20 AND 21, AND FIGURE D.2
11. 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.
12. SEE WRITTEN SPECIFICATIONS AND/OR ADDENDA FOR REQUIREMENTS FOR CYLINDER TESTING OF CONCRETE. GENERAL CONTRACTOR TO TEST CONCRETE FOR EACH DAY'S CONCRETING AND/OR EVERY 40 CUBIC METERS EACH DAY CONCRETING. FORWARD TEST RESULTS TO THE CONTRACT ADMINISTRATOR.
13. CONCRETE AS PER SCHEDULE BELOW:

CONCRETE SCHEDULE						
ITEM	CLASS OF EXPOSURE	STRENGTH (MPa)	CEMENT TYPE	MAXIMUM AGGREGATE SIZE (mm)	SLUMP (mm)	AIR ENTRAINMENT (%)
PILES	S-2	32	HS*	20	90	4-7
GRADE BEAMS	F-2	25	GU	20	90	4-7
SLABS ON GRADE (EXTERIOR)	C-2	32	GU	20	90	5-8
STRUCTURAL SLABS (INTERIOR)	F-1	35	GU	20	90	5-8
*: "HSb" IS ACCEPTABLE TO BE USED IN PLACE OF "HS" CEMENT WHERE SPECIFIED. PRIOR TO APPROVING THIS CHANGE THE GENERAL CONTRACTOR SHALL FORWARD TO THE CONTRACT ADMINISTRATOR ALL NECESSARY BATCH & MIX INFORMATION FOR THE "HSb" CEMENT FROM THE SUPPLIER FOR REVIEW AND APPROVAL.						

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 AND BOTTOM BARS OVER SUPPORTS.
4. 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.
5. REINFORCING IN CONCRETE BEAMS/WALLS AND MASONRY BOND BEAMS TO BE BENT 24" (600mm) AROUND CORNERS OR USE 3'-0" x 3'-0" (900mm x 900mm) CORNER BARS.
6. FRAME ALL OPENINGS IN CONCRETE BEAMS, WALLS AND/OR SLABS WITH ADDITIONAL 2-20M BARS ALL FOUR SIDES. ADDITIONAL HORIZONTAL BARS TO EXTEND 24" (600mm) BEYOND EDGES OF OPENINGS EXCEPT AS NOTED. ADDITIONAL VERTICAL BARS TO EXTEND FULL HEIGHT OF GRADE BEAM OR WALL.
7. 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.
8. HEATING, QUENCHING AND BENDING OF REINFORCING STEEL ON THE SITE IS NOT ALLOWED.
9. SPLICES AT POINTS OF MAXIMUM TENSILE STRESS SHALL BE AVOIDED WHEREVER POSSIBLE. SUCH SPLICES, WHERE USED, SHALL BE APPROVED BY THE STRUCTURAL ENGINEER, THE MINIMUM LAP SHALL BE 48 BAR DIAMETERS.
10. 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.
11. SUBMIT SHOP DRAWINGS INDICATING BAR SIZES, STEEL GRADE, BAR SPACING, HOOKS, BENDS, ACCESSORIES, ETC. FOR REVIEW PRIOR TO FABRICATION OF THE REINFORCING STEEL.
12. 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) 1 3/16" (30mm) MINIMUM.
15. MINIMUM CONCRETE COVER TO REINFORCING:

EXPOSURE CONDITION	EXPOSURE CLASS		
	N	F-1, F-2, S-1, S-2	C-1, C-3, C-4, A-1, A-2, A-3
PILES, FOOTING, RETAINING WALL, AND CONCRETE CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH.	--	3" (75mm)	3" (75mm)
BEAMS & COLUMNS	1 1/4" (30mm)	1 1/2" (40mm)	2 3/8" (60mm)
SLABS, WALLS & JOISTS	3/4" (20mm)	1 1/2" (40mm)	2 3/8" (60mm)

THICKENED EDGE SLAB ON GRADE

1. BASE PREPARATION FOR THE THICKENED EDGE SLAB ON GRADE FOUNDATION SHALL BE PROVIDED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FILE # 0015-032-00 ENTITLED "WAVERLEY WEST GARAGE" WRITTEN BY RYAN BELBAS, P.ENG. DATED MAY 30, 2019.
2. REMOVE ALL TOPSOIL AND SOILS CONTAINING ORGANICS. CONTRACTOR IS TO REFER TO GEOTECHNICAL REPORT FOR INDICATION OF DEPTHS OF UNSUITABLE SOIL AND IS TO REMOVE SOFT OR WEAK AREAS TO COMPENTENT MATERIAL. ALL OF THIS WORK IS TO BE CARRIED OUT UNDER THE DIRECT INSTRUCTIONS OF THE GEOTECHNICAL ENGINEER. PROOF ROLL SUB-GRADE AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
3. THE THICKENED EDGE SLAB-ON-GRADE SHALL BE CONSTRUCTED ON 12" (300 mm) MINIMUM COMPACTED GRANULAR BASE OVER UNDISTURBED, STIFF, SILTY CLAY AS PER GEOTECHNICAL REPORT.
4. POUR JOINTS IN THE FOUNDATION SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR.
5. THICKENED EDGE SLAB HAS BEEN DESIGNED ON THE BASIS OF 1000 psf (47.8 kPa).
6. SLAB MOVEMENT/CRACKING: SINCE THE STABILITY OF A SLAB-ON-GRADE IS ENTIRELY DEPENDENT ON THE NATURE OF THE SOIL UPON WHICH IT IS SUPPORTED, SOME MOVEMENT RESULTING IN DISPLACEMENT AND CRACKING OF THE SLAB SHOULD BE EXPECTED. ACCURATE LIMITS DEFINING THE AMOUNT AND FREQUENCY OF MOVEMENT CANNOT BE GIVEN DUE TO UNKNOWN AND/OR UNCONTROLLABLE FACTORS SUCH AS SOIL MOISTURE CONTENT, WATER TABLE, SILT POCKETS, ETC. THE CITY SHALL ASSUME ALL RISKS ASSOCIATED WITH THIS SYSTEM.

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 STANDARD O86-09 (LATEST REVISION).
3. ALL JOIST HANGERS 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 0121-M 1978 STANDARD.
5. TRUSS SUPPLIER SHALL SUBMIT ENGINEERED SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER IN THE PROJECT'S PROVINCE COVERING THE DESIGN OF THE JOISTS AND TRUSSES PRIOR TO FABRICATION.
6. 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.
7. TRUSSES SHALL NOT BE CUT OR MODIFIED ON SITE WITHOUT WRITTEN APPROVAL BY THE CONTRACT ADMINISTRATOR.
8. THE CONTRACTOR SHALL CO-ORDINATE OPENING SIZES AND LOAD REQUIREMENTS FOR ANY AND ALL MECHANICAL AND ELECTRICAL EQUIPMENT ON ALL PRE-ENGINEERED FRAMING SYSTEMS.
9. DO NOT PILE ROOF SHEATHING ON ROOF DURING CONSTRUCTION.
10. TRUSS SHOP DRAWINGS SHALL INDICATE ALL METAL HANGERS, SQUASH BLOCKING, BRIDGING/BLOCKING, WEB STIFFENERS, AND GENERAL BRACING.
11. ALL THROUGH BOLTS TO BE A307.
12. COMPOSITE BEAMS OR LINTELS SHALL BE MICROLLAM LVL (OR APPROVED ALTERNATIVE). MATERIALS SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND APPROPRIATE CCMC EVALUATION. THE APPLICABLE DESIGN VALUES FOR MICROLLAM LVL IN THIS PROJECT SHALL MEET OR EXCEED THE FOLLOWING:
    - f_b = 4,805 psi (33.1 MPa)
    - f_v = 530 psi (3.65 MPa)
    - E = 200 000 psi (1378.95 MPa)

SHEATHING/PLYWOOD

1. SHEATHING SHALL BE DOUGLAS FIR PLYWOOD TO CSA O21-08(R2013), SPRUCE PLYWOOD TO CSA STANDARD O151-09, OR OSB PANEL TO CSA 0438-93.
2. WALL SHEATHING SHALL BE $\frac{7}{16}$" (11mm) OSB PANEL.
3. ROOF SHEATHING SHALL BE $\frac{1}{2}$" (13mm) PLYWOOD 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 JOISTS.
6. ROOF SHEATHING TO BE FASTENED TO SUPPORTING STRUCTURE WITH 2$\frac{1}{2}$" (65mm COMMON WIRE NAILS @ 6" (150mm) O.C. AT PANEL EDGES AND @ 9 $\frac{1}{2}$" (240mm) O.C. AT INTERMEDIATE SUPPORT.

NAILS AND LAG SCREWS

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

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 CONTRACT ADMINISTRATOR 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.

THE GENERAL 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 STRUCTURAL ENGINEER FOR ADJUSTMENTS

THIS DRAWING SHALL NOT BE SCALED.

APEGM
Certificate of Authorization
KNH Sawatzky & Associates Ltd.
No. 1193 Date: Feb. 12, 2020

NO.	REVISIONS	DATE	APP'D
1	RE-ISSUED FOR CONSTRUCTION	20.02.12	M.I.
0	ISSUED FOR CONSTRUCTION	19.11.27	M.I.

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

SEAL
PROVINCE OF MANITOBA
Feb. 12, 2020
M.D. ISAAK
Member 30986
REGISTERED PROFESSIONAL ENGINEER

SEAL
- STRUCTURAL ONLY
- CONTACT ENGINEER FOR INSPECTIONS

Project:
CITY OF WINNIPEG
BRIDGWATER STORAGE GARAGE
200 NORTH TOWN ROAD
WINNIPEG, MANITOBA

drawing title: NOTES
approved by: MI
drawn by: BC
date: FEBRUARY 2020
project no.: 19.236
designed by: ZL
sheet: S1.1
REV. 1