GENERAL REQUIREMENTS

1 GENERAL NOTES

.1 THE STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SITE SERVICING DRAWINGS. CHECK ALL DIMENSIONS ON THESE DRAWINGS WITH ARCHITECTURAL DRAWINGS. REPORT ANY INCONSISTENCIES TO ARCHITECT OR ENGINEER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THESE DRAWINGS.

.2 BUILDING FROM THESE DRAWINGS SHALL PROCEED ONLY WHEN MARKED "ISSUED FOR CONSTRUCTION".

.3 PROTECT ALL FOOTINGS, WALLS, SLABS ON GRADE AND ADJACENT SOIL AGAINST FROST ACTION AND FREEZING AT ALL TIMES DURING CONSTRUCTION.

.4 ALL EXTERIOR WALLS AND FOOTINGS SUBJECT TO FREEZING WHEN THE CONSTRUCTION IS COMPLETED SHALL BE FOUNDED AT STRATA SAFELY SUPPORTING THE DESIGN BEARING PRESSURE BUT NOT LESS THAN 1220mm (4'–0") (OR DEPTH OTHERWISE PRESCRIBED BY LOCAL AUTHORITIES) BELOW FINISHED GRADE OR AS OTHERWISE INDICATED ON PLANS OR SECTIONS. ALL OTHER FOOTINGS SHOULD BE FOUNDED ON SOIL AS DESCRIBED ABOVE BUT NOT LESS THAN 610mm (2'–0") BELOW THE ORIGINAL GRADE.

.5 THE LINE OF SLOPE BETWEEN ADJACENT EXCAVATIONS FOR FOOTINGS OR ALONG STEPPED FOOTINGS OR TRENCHES SHALL NOT EXCEED A RISE OF 7 IN A RUN OF 10, MAXIMUM STEP TO BE 610mm (2'–0").

.6 KEEP EXCAVATIONS CONTINUOUSLY DRY BEFORE CONCRETE IS PLACED. REMOVE ANY LOOSE MATERIAL OR SOIL SOFTENED BY WATER PRIOR TO PLACING CONCRETE.

.7 CENTRE FOOTINGS AND PIERS UNDER CENTROID OF COLUMNS UNLESS OTHERWISE NOTED.

.8 DO NOT BACKFILL AGAINST WALLS RETAINING EARTH UNTIL ELEMENTS PROVIDING LATERAL SUPPORT ARE COMPLETE. PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF OTHER WALLS BELOW GRADE.

.9 THESE DRAWINGS SHOW THE COMPLETED STRUCTURE. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY BRACING AND SHORING REQUIRED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER TEMPORARY SUPPORT TO PROTECT ALL EXISTING AND ADJACENT STRUCTURES AFFECTED BY THIS WORK. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL SUCH MEASURES.

.10 PROVIDE CONTINUOUS GALVANIZED VERTICAL DOVETAIL ANCHOR SLOTS AT 610mm (2'–0") IN ALL CONCRETE SURFACES WITH VENEER AND ABUTTING CONCRETE BLOCK WALLS.

.11 ALL BEAMS BEARING ON WALLS SHALL HAVE A MINIMUM BEARING OF 203mm (8") UNLESS OTHERWISE NOTED. CONCRETE SLABS SHALL HAVE A MINIMUM BEARING OF 102mm (4"). VOIDS IN MASONRY UNITS UNDER BEAMS AND JOISTS SHALL BE PREFILLED WITH 20MPa CONCRETE OR GROUT TO A MINIMUM DEPTH OF 203mm (8") AND A MINIMUM LENGTH OF 203mm (8") BEYOND THE BEARING SURFACE UNLESS OTHERWISE NOTED. LEAVE CHASES AND POCKETS IN WALLS FOR SEATING OF SLABS AND BEAMS.

.12 BARS MARKED CONTINUOUS SHALL BE DEVELOPED BY A CLASS C TENSION LAP WHERE SPLICED.

.13 T.D. SECTIONS REFER TO TYPICAL DETAILS. THEY SHOW STRUCTURAL INTENT RATHER THAN ACTUAL CONDITIONS FOR THIS PROJECT.

.14 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE LOOSE LINTELS OVER ALL OPENINGS IN NON–BEARING CONCRETE BLOCK WALLS OR VENEER AS FOLLOWS: FOR OPENINGS UP TO 1200mm (3'–11") WIDE, USE L89x89x6 (L3.5x3.5x1/4) FOR EACH 102mm (4") OF MASONRY. FOR OPENINGS BETWEEN 1200mm (3'–11") AND 1800mm (5'–11"), USE L102x89x8 (L4x3.5x5/16) LLV FOR EACH 102mm (4") OF MASONRY. FOR OPENINGS BETWEEN 1800mm (5'–11") AND 2400mm (7'–10"), USE L127x89x8 (L5x3.5x5/16) LLV FOR EACH 102mm(4") OF MASONRY. AND FOR OPENINGS BETWEEN 2400mm (7'–10") AND 3000mm (9'–10") PROVIDE L152x102x10 (L6x4x3/8) LLV FOR EACH 102mm (4") OF MASONRY. PROVIDE MINIMUM OF 102mm (4") BEARING OF EACH END FOR OPENINGS UP TO 1200mm (3'–11"), 152mm (6") FOR OPENINGS BETWEEN 1200mm (3'–11") AND 1800mm (5'–11") AND 203mm (8") FOR OPENINGS BETWEEN 1800mm (5'–11") AND 3000mm (9'–10"). LINTELS IN EXTERIOR MASONRY WALLS ARE TO BE HOT DIPPED GALVANIZED.

2 SHOP DRAWINGS, INSPECTION AND TESTING

.1 FOR ALL STRUCTURAL COMPONENTS SHOWN ON THESE DRAWINGS SUBMIT COPIES OF SHOP DRAWINGS AS DIRECTED BY THE ENGINEER. SHOP DRAWINGS ARE TO SHOW COMPLETE INFORMATION FOR THE FABRICATION AND ERECTION OF THE STRUCTURAL COMPONENTS. THE SUBSEQUENT REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS.

.2 AN INDEPENDENT INSPECTION AND TESTING COMPANY OR A SOILS CONSULTANT ARE TO BE ENGAGED TO CARRY OUT THE FOLLOWING SERVICES:
a) SOIL: PREPARATION OF A SOIL REPORT BY THE SELECTED SOILS CONSULTANT AND INSPECTION OF BEARING SOILS PRIOR TO INSTALLATION OF FOUNDATIONS.
b) SUB–BASE FOR SLAB ON GRADE: INSPECTION FOR ADEQUACY OF COMPACTION AND QUALITY OF FILL USED.
c) STRUCTURAL STEEL, STEEL DECK AND OWSJ: ROUTINE SHOP AND FIELD INSPECTION AS DIRECTED BY CSA S16–09.
d) CAST IN PLACE AND PRECAST CONCRETE: ROUTINE INSPECTION OF MATERIALS, COMPRESSIVE STRENGTH, AIR ENTRAINMENT, SLUMP AND REINFORCING STEEL TEST WHEN REQUIRED AND AS DIRECTED BY CSA A23.1–09 AND CSA A23.2–09.
e) MASONRY: AS DIRECTED, CONCRETE BLOCKS AND BRICKS ARE TO BE TESTED BY APPROPRIATE STANDARDS (SEE ALSO MASONRY MATERIAL GUIDELINES). MORTAR AND GROUT IN ACCORDANCE WITH CAN/CSA–A179–04.

.3 ALL INSPECTION AND TESTING SERVICES ARE TO BE PERFORMED BY COMPANIES CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION AND FOR WELDING, THE WELDING BUREAU.

3 MATERIAL DATA

.1 STRUCTURAL LUMBER TO BE GRADE MARKED TO CONFORM TO CSA O141–05.

.2 CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS: 30MPa UNLESS, NOTED. CONFORM TO CSA A23.1–09 AND CAN/CSA–A23.3–04 (R2010), AND THE RSIO MANUAL OF STANDARD PRACTICE. (CONCRETE SHALL BE READY MIXED USING PORTLAND GU CEMENT (FORMERLY TYPE 10). AIR–ENTRAINING AGENTS AND CHEMICAL ADMIXTURES SHALL CONFORM TO CSA A23.1–09. ALL CONCRETE SHALL CONTAIN A WATER REDUCING AGENT. ALL CONCRETE EXPOSED TO THE EXTERIOR SHALL HAVE AN AIR CONTENT CONFORMING TO A23.1–09. USE VIBRATORS FOR THE PLACEMENT OF CONCRETE. DO NOT PLACE CONCRETE IN THE RAIN.

.3 REINFORCING STEEL: CSA G30.18–09, GRADE 400. USE PLASTIC OR CONCRETE BAR SUPPORTS IN EXPOSED LOCATIONS.

.4 STRUCTURAL STEEL: CSA G40.20–13/G40.21–13.
a) ROLLED SHAPES AND PLATES: GRADE 350W
b) HOLLOW STRUCTURAL SECTIONS: CLASS H GRADE 350W
c) ANGLES: GRADE 300W
d) WELDING ELECTRODES: E49XX
e) FASTENERS: A325/A325M
f) ANCHOR RODS: CSA G40.21–13 GRADE 300W

.5 MASONRY MATERIALS:
a) LOAD BEARING CONCRETE BLOCK: TO CAN/CSA STANDARD A165 SERIES–04. (R2009).
WEIGHT: NORMAL WEIGHT
HOLLOW: H/15/A/M
SOLID: S/15/A/M
b) LOAD BEARING BRICK: TO CAN/CSA–A82–06 (R2011)
c) BELOW GRADE MORTAR: TYPE S UNLESS NOTED.

4 CODES AND STANDARDS

.1 CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE BUILDING CODE OF THE GOVERNING PROVINCE AND THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.

.2 CONCRETE MATERIALS AND DESIGN: TO CSA STANDARD A23.1–09 AND CAN/CSA A23.3–04 (R2010) RESPECTIVELY.

.3 CONCRETE CONSTRUCTION: TO CSA STANDARD A23.1–09.

.4 MASONRY DESIGN AND CONSTRUCTION: TO CSA S304.1–04 (R2010) AND CAN/CSA–A371–04 (R2009) RESPECTIVELY.

.5 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION: TO CSA S16–09.

.6 WELDING: TO CSA W59–03 (R2008), CSA S16–09 AND CSA W47.1–09.

.7 PAINT AND PRIMER: TO CISC/CPMA STANDARDS 1–73A, 1975 AND CISC/CPMA STANDARDS 2–75, 1975 RESPECTIVELY.

5 DESIGN DATA FOR EAST NEWMARKET

.1 ALL LOADS SHOWN ON DRAWINGS ARE UNFACTORED SERVICE LOADS IN kN (kips) AND kPa (psf) UNLESS OTHERWISE NOTED.

.2 THE WIND, EARTHQUAKE & SNOW LOADS MUST BE MULTIPLIED BY AN IMPORTANCE FACTOR WHICH IS BASED UPON THE BUILDING IMPORTANCE CATEGORY. THE IMPORTANCE CATEGORY OF THIS BUILDING IS NORMAL.

IMPORTANCE CATEGORY	IMPORTANCE FACTORS					
	WIND, Iw		SNOW, Is		EARTHQUAKE, Ie	
	ULS	SLS	ULS	SLS	ULS	SLS
LOW	0.8	0.75	0.8	0.9	0.8	REFER TO COMMENTARY J OF NBC 2015 USERS GUIDE
NORMAL	1.0	0.75	1.0	0.9	1.0	
HIGH	1.15	0.75	1.15	0.9	1.3	
POST–DISASTER	1.25	0.75	1.25	0.9	1.5	

.3 FOR FACTORED SOIL BEARING CAPACITY FOR FOOTING DESIGN, SEE FOUNDATION PLAN.

.4 LATERAL LOADS ON STRUCTURAL FRAME
THE STRUCTURE HAS BEEN DESIGNED TO RESIST THE HORIZONTAL 1/50 AVERAGE HOURLY WIND PRESSURE AND THE LIVE LOADS DUE TO EARTHQUAKE IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE, WHICHEVER PRODUCES THE MORE UNFAVOURABLE EFFECT. THE DESIGN PARAMETERS FOR WIND AND EARTHQUAKE ARE AS NOTED BELOW:
a) WIND LOADS
q1/50 = 0.38kPa. Ce, Cg & Cp HAVE BEEN CALCULATED IN ACCORDANCE WITH THE STATIC PROCEDURE DESCRIBED IN THE USER'S GUIDE TO THE NBC 2010 STRUCTURAL COMMENTARIES.
b) EARTHQUAKE LOADS:
SITE CLASS: D
TYPE OF SFRS: STEEL: CONVENTIONAL CONSTRUCTION OF MOMENT–RESISTING FRAMES. WOOD: SCREWED CONNECTED SHEAR WALLS/NAILED SHEAR WALLS

ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE (STATIC)

Sa(0.2)=0.160, Sa(0.5)=0.110, Sa(1.0)=0.065, Sa(2.0)=0.021, PGA=0.051.

.5 LATERAL LOADS ON FOUNDATION WALLS
a) WALLS RETAINING EARTH ARE DESIGNED TO SAFELY WITHSTAND A HORIZONTAL PRESSURE (P IN kPa) AT ANY DEPTH (H IN m) GIVEN BY THE EXPRESSION (VALUES AS NOTED UNLESS OTHERWISE STATED IN A SOILS REPORT):
$P = Ka(\gamma h + q)$
WHERE THE SOIL PRESSURE COEFFICIENT, Ka = 0.4
UNIT FORCE OF SOIL, γ = 21.0kN/cu.m (133pcf)
SURCHARGE q = 5kPa (105psf) FOR NON VEHICULAR TRAFFIC AREAS.
q = 12kPa (250psf) FOR VEHICULAR TRAFFIC AREAS (INCLUDING CONSTRUCTION VEHICLES)

b) THE WALLS HAVE BEEN DESIGNED ASSUMING FREE DRAINING BACKFILL, WHICH DOES NOT PERMIT THE BUILD–UP OF HYDROSTATIC PRESSURE.

.6 LIVE LOADS ON ROOFS
a) THE ROOF AREAS HAVE BEEN DESIGNED TO RESIST SNOW, RAIN AND WIND LOADS IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE, WHICHEVER PRODUCES THE MORE UNFAVOURABLE EFFECT. THE DESIGN PARAMETERS FOR THESE LOADS ARE AS NOTED BELOW.
b) SNOW LOADS WITH A 1 IN 50 PROBABILITY OF EXCEEDANCE PER YEAR.
i) THE GROUND SNOW LOAD OF 2.0kPa AND THE ASSOCIATED RAIN LOAD OF 0.4kPa, MODIFIED AS REQUIRED OR PERMITTED BY CODE, HAVE BEEN CONSIDERED IN THE DESIGN OF THE ROOF AREAS.
ii) ADDITIONAL SNOW ACCUMULATION ADJACENT TO HIGHER WALLS, ROOFS AND MECHANICAL UNITS IS INDICATED ON THE PLANS.
c) RAIN LOADS WITH A 1 IN 50 PROBABILITY OF EXCEEDANCE PER YEAR.
i) THE TOTAL LOAD ASSOCIATED WITH THE 24–HOUR RAINFALL, IN ACCORDANCE WITH THE BUILDING CODE OF THE GOVERNING PROVINCE IS EQUIVALENT TO 108mm OF WATER OVER THE ENTIRE ROOF AREA.
ii) THE ACTUAL DISTRIBUTION OF THIS LOAD HAS BEEN ADJUSTED TO ACCOUNT FOR THE ACTUAL ROOF SLOPES AND PROFILE.

END OF SECTION

CAST–IN–PLACE CONCRETE

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS ON THE DRAWINGS.

.2 INCLUDE IN THE WORK OF THIS SECTION ALL CONCRETE INCORPORATED IN THE PROJECT.

.3 CONFORM TO CSA STANDARDS A23.1–09/A23.2–09 AND A23.3–04 (R2010), AND THE RSIC MANUAL OF STANDARD PRACTICE (4TH ED. 2004).

.4 INSTALL, OR SUPPLY AND INSTALL, ANCHORAGE, FASTENINGS AND BLOCKING AS REQUIRED, FOR WORK OF OTHER SECTIONS.

.5 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM SHALL BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.6 TOLERANCES: CONFORM TO CSA STANDARD A23.1–09.

.7 SUBMIT FOUR (4) WHITE PRINTS OF BAR LISTS AND PLACING DIAGRAMS TO ENGINEER TO REVIEW PRIOR TO FABRICATION OF REINFORCING STEEL. DRAW DIAGRAMS TO A SCALE OF NOT LESS THAN 1 : 50 (1/4"=1'–0"). REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

2 PRODUCTS

.1 MATERIALS:

a) CEMENT: PORTLAND GU CEMENT (FORMERLY TYPE 10) TO CAN/CSA–A3000–08.
b) WATER, FINE AGGREGATES, COARSE AGGREGATES: TO A23.1–09.
c) AIR–ENTRAINING ADMIXTURE: TO ASTM C260/C260M–10a.
d) CHEMICAL ADMIXTURES: TO ASTM C494/C494M–13.
e) CURING–SEALING COMPOUND: CLEAR LIQUID TO ASTM C309–11, TYPE 1. USE SEALTIGHT CR–26 BY W.R. MEADOWS OF CANADA LTD.
f) WATERSTOP: DURAJOINT P.V.C. WATERSTOP, TYPE 3.
g) REINFORCING STEEL: NEW, DEFORMED, BILLET–STEEL BARS TO CAN/CSA–G30.18–09, GRADE 400.
h) WELDED WIRE REINFORCEMENT: TO ASTM A1064/A1064M–13, SIZE AS INDICATED. SUPPLY IN FLAT SHEETS ONLY.
i) FORMWORK: CAN/CSA–S269.3–M92 (R2013)
j) PLYWOOD FOR FORMWORK: COFI EXTERIOR GRADE, TO CSA O121–08 (R2013). DO NOT USE INSERT PATCHES ON CONTACT FACE.
k) SAW–CUT JOINT FILLER: USE CEMENT GROUT. USE GRAY POLYSULPHIDE CAULKING IN EXPOSED LOCATIONS.
l) PREMOULDED JOINT FILLER: USE 6mm (1/4") THICK "KONOBOARD" FROM GOODCO.
m) NON–METALLIC FLOOR SURFACE HARDENER: COLOURCRON BY MASTER BUILDERS' COMPANY LIMITED

.2 USE READY–MIXED CONCRETE TO GIVE 28 DAY COMPRESSIVE STRENGTH AS SPECIFIED IN "CONCRETE REQUIREMENTS" TABLE BELOW. MINIMUM CEMENT CONTENT FOR SLABS IS 285 kg/cu.m, EXCEPT FOR SIDEWALKS AND PARKING AREAS THE MINIMUM CEMENT CONTENT IS 320 kg/cu.m.

3 EXECUTION

.1 NOTIFY THE ARCHITECT AND THE ENGINEER 48 HOURS IN ADVANCE OF PLACING CONCRETE TO PERMIT VIEWING REINFORCEMENT AND PLACING OF CONCRETE. DO NOT CLOSE FORMS UNTIL THE REINFORCEMENT HAS BEEN REVIEWED.

.2 USE VIBRATORS FOR PLACEMENT OF CONCRETE. DO NOT PLACE CONCRETE IN THE RAIN.

.3 USE PLASTIC OR CONCRETE BAR SUPPORTS IN EXPOSED LOCATIONS AND PARKING AREAS.

.4 EXPOSED CONCRETE SHALL BE FREE FROM HONEYCOMBING, VOIDS, LOSS OF FINES, VISIBLE FLOW LINES AND COLD JOINTS, CHIPS AND SPALLS. EXPOSED CONCRETE SHALL BE RUBBED SMOOTH USING WATER AND CARBORUNDUM BRICK. PATCH DEFECTS AND TIE HOLES. REMOVE FINS.

.5 PROVIDE MINIMUM CONCRETE COVER FOR REINFORCING BARS AS INDICATED IN TABLE BELOW. IF FIRE RATING IS NOT AVAILABLE PROVIDE MIN. COVER FOR 2 HOURS UNLESS NOTED.

.6 ALL ADDITIVES REQUIRED IN THE CONCRETE MIX TO MEET THE FINISHING SPECIFICATION, SHOWN IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND THE TECHNICAL SPECIFICATIONS SHOWN IN THE TABLES BELOW ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

MIN CONCRETE COVER FOR REINFORCING

STRUCTURAL MEMBER/ LOCATION	EXPOSED TO WEATHER, EARTH, DEICING, CHEMICALS	NOT EXPOSED FIRE RATING (H)			
		0	1.5	2.0	3.0
MEMBERS CAST AGAINST EARTH (i.e. FOOTINGS, GRADE BEAMS, CAISSON CAPS – ALL BARS)	75	–	–	–	–
BEAMS, GIRDERS LONGITUDINAL BARS, < 35M ≥ 45M	 50 60	 40 45	 40 45	 40 45	 40 45
COLUMNS, (LONGITUDINAL BARS) ≤ 35M ≥ 45M	 50 60	 40 45	 40 45	 50 50	 50 50
SLABS AND WALLS ≤ 20M 25M 30M 35M 40M	 30 40 45 55 60	 20 25 30 35 45	 20 25 30 35 45	 25 25 30 35 45	 35 35 35 35 45
TIES AND STIRRUPS	40	30	–	–	–

.7 PLACE 19mm (3/4") CHAMFER STRIPS AT ALL EXPOSED CORNERS.

.8 MAXIMUM DISTANCE BETWEEN CONSTRUCTION JOINTS ARE:
a) WALLS AND FRAMED SLABS: 9.0m (29'–6"), OR 18.0m (59'–0") ALTERNATING WITH CONTROL JOINTS AT SAME SPACING.
b) SLABS–ON–GRADE: 4.5m (15'–0"), OR 13.5m (44'–3") WITH 5mm x 19mm (3/16" x 3/4") SAW CUT JOINTS AT 4.5m (15'–0") CENTRES.
c) PROVIDE WATERSTOPS IN ALL CONSTRUCTION JOINTS IN WALLS BELOW GRADE, AND SLABS WHERE INDICATED.

.9 SURFACE FINISHING – PROVIDE FINAL FINISH IN ACCORDANCE WITH PROPOSED USE. REFER TO ROOM SCHEDULE:
a) SKIM COATS, PITS: SCREEDED AND BULL FLOATED.
b) BASE SLAB FOR TERRAZZO, TILE OR BONDED TOPPING: SCREEDED, BULL FLOATED AND SCORED WITH WIRE BRUSH.
c) FLOORS WHICH RECEIVE RESILIENT FLOOR OR CARPET, FUTURE FLOORS: POWERED STEEL TROWEL FINISH.
d) INTERIOR EXPOSED SLABS: POWERED STEEL TROWEL FINISH WITH NON–SLIP SWIRLS.
e) EXTERIOR EXPOSED SLABS: WOOD FLAT FINISH WITH BROOMING.

.10 PROTECT FRESH CONCRETE FROM PREMATURE DRYING, SUNSHINE, EXCESSIVELY HOT OR COLD TEMPERATURES AND MECHANICAL INJURY. MAINTAIN AT A RELATIVELY CONSTANT TEMPERATURE FOR AS LONG AS IS REQUIRED FOR HYDRATION OF THE CEMENT AND CURING OF THE CONCRETE.

.11 APPLY CURING–SEALING COMPOUND OR FLOOR SURFACE HARDENER AS PER MANUFACTURERS INSTRUCTIONS.

.12 INDEPENDENT INSPECTION AND TESTING: THE GENERAL CONTRACTOR WILL APPOINT AN INDEPENDENT INSPECTION AND TESTING AGENCY TO UNDERTAKE CONCRETE STRENGTH TESTS. THE COST OF TESTING SHALL BE PAID BY THE OWNER. LABORATORY CURING AND TESTING OF SAMPLES WILL BE CARRIED OUT IN ACCORDANCE WITH CSA STANDARDS A23.1–09 AND A23.2–09 EXCEPT THAT STRENGTH TESTS, INCLUDING AIR ENTRAINMENT AND SLUMP TESTS, WILL BE REQUIRED FOR EACH 40 cu.m, BUT NOT LESS THAN ONE TEST, FOR EACH CLASS OF CONCRETE PLACED EACH DAY. PROVIDE A GROUP OF THREE CYLINDERS FOR EACH STANDARD STRENGTH TEST. ONE SPECIMEN WILL BE TESTED AT 7 DAYS AND TWO AT 28 DAYS. PROVIDE ONE ADDITIONAL FIELD CURED CYLINDER FOR TESTING AT 7 DAYS WHEN CONCRETE IS PLACED UNDER COLD WEATHER CONDITIONS. RESULTS WILL BE ON THE FORM APPROVED BY R.M.C.A.O. AND WILL BE REPORTED TO THE ARCHITECT WITH COPIES TO THE STRUCTURAL ENGINEER, THE CONTRACTOR AND THE MUNICIPAL AUTHORITIES.

END OF SECTION

CONCRETE REQUIREMENTS				
STRUCTURAL MEMBER	EXPOSURE CLASS	MIN. 28 DAY STRENGTH (MPa)	MAX. WATER/CEMENT RATIO	% AIR ENTRAINMENT
INTERIOR/EXTERIOR FOOTINGS	N	25	0.55	N/A
EXTERIOR SLAB ON GRADE (ie. UN–HEATED GARAGE FLOORS, STEPS)	C–2	32	0.45	5 TO 8
INTERIOR SLAB ON GRADE	N	25	0.55	N/A
HEATED PARKING GARAGE SLAB ON GRADE	C–4	25	0.55	4 TO 7
EXTERIOR STRUCT. SLAB	C–1	35 (AT 56 DAYS)	0.40	5 TO 8
INTERIOR STRUCT. SLAB	N	30	0.55	N/A
PARKING DECKS/RAMPS	C–1	35 (AT 56 DAYS)	0.40	5 TO 8
EXTERIOR CONC. ON STEEL DECK	F–1	30	0.50	5 TO 8
INTERIOR CONC. ON STEEL DECK	N	30	0.55	N/A
EXTERIOR BASEMENT/FOUND. WALLS	F–2	30	0.55	4 TO 7
EXTERIOR WALLS	C–1	35 (AT 56 DAYS)	0.40	5 TO 8
EXTERIOR PIERS/COLUMNS	F–2	30	0.55	4 TO 7
INTERIOR WALLS	N	30	0.55	N/A
INTERIOR PIERS/COLUMNS	N	30	0.55	N/A
CAISSONS	N	25	0.55	N/A
EXTERIOR CAISSON CAP	F–2	25	0.55	4 TO 7
INTERIOR CAISSON CAP	N	30	0.55	N/A
EXTERIOR GRADE BEAM	F–2	30	0.55	4 TO 7
INTERIOR GRADE BEAM	N	30	0.55	N/A

TIMBER

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS AND SPECIAL CONDITIONS CONTAINED IN DIVISION 1.

.2 CONFORM TO THE REQUIREMENTS OF CAN/CSA–O86–09, AND THE GOVERNING PROVINCIAL BUILDING CODE.

.3 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT ALL PROPOSALS FOR SUBSTITUTION TO THE ENGINEER IN WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM MUST BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.4 SUBMIT FOUR (4) WHITE PRINTS OF ERECTION DIAGRAMS AND SHOP DETAILS FOR STRUCTURAL COMPOSITE LUMBER (LVL, PSL, ETC.), GLULAM, PREFABRICATED WOOD I–JOISTS AND PRE–ENGINEERED TRUSSES FOR REVIEW PRIOR TO FABRICATION. REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND MUST NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

.5 SHOP DRAWINGS SHALL BEAR THE STAMP OF A PROFESSIONAL ENGINEER LICENSED IN THE GOVERNING PROVINCE, AND SHALL SHOW COMPLETE DETAILS OF CONNECTIONS, HANGERS, BRACING, BEARINGS, AND BRIDGING.

2 PRODUCTS

.1 MATERIALS
a) STRUCTURAL LUMBER TO BE GRADE MARKED TO CONFORM TO CSA STANDARD CSA–O141–05. ALL TIMBER STUDS, JOISTS AND BRIDGING SHALL BE SPF NO. 2 MINIMUM UNLESS OTHERWISE NOTED ON THE DRAWINGS. LUMBER TO BE GRADE STAMPED ACCORDING TO NLGA GRADING RULES AND SHALL BE KILN DRIED.
b) FASTENINGS: NAILS, BOLTS, STEEL STRAPS AND WELDED CONNECTIONS TO CONFORM TO CSA–O86–09. USE HOT–DIP GALVANIZED FASTENERS FOR EXTERIOR WORK AND FOR CONNECTIONS IN EXTERIOR WALLS.
c) JOIST HANGERS AND FRAMING ANCHORS: USE JOIST HANGERS AND FRAMING ANCHORS MANUFACTURED BY SIMPSON STRONG–TIE OR APPROVED EQUIVALENT.
d) STRUCTURAL COMPOSITE LUMBER: USE LAMINATED VENEER LUMBER (LVL) 2.0x10e6 psi, PARALLEL STRAND LUMBER (PSL) 2.0x10e6 psi BY WEYERHAEUSER OR APPROVED EQUIVALENT.
e) WOOD I–JOIST: USE PRODUCTS BY WEYERHAEUSER OR APPROVED EQUIVALENT.

3 EXECUTION

.1 SET AND SECURE WOOD BEAMS AND JOISTS LEVEL, PLUMB AND TO CORRECT LOCATIONS INDICATED ON DRAWINGS. ENSURE HORIZONTAL BOWING IS KEPT TO A MINIMUM.

.2 PROVIDE TEMPORARY BRACING AND ANCHORAGE REQUIRED TO HOLD WOOD STRUCTURE IN PLACE UNTIL PERMANENTLY SECURED. ENSURE BEAMS AND JOISTS ENDS HAVE SUFFICIENT BEARING AREA.

.3 INSTALL PERMANENT BRACING AND BRIDGING PRIOR TO APPLICATION OF ANY LOADS.

.4 CUTTING AND ALTERING OF MEMBERS IS NOT PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.

.5 ALL FLOOR JOISTS SHALL HAVE SOLID BRIDGING 2100mm (7'–0") CENTRES UNLESS NOTED OTHERWISE.

.6 TIMBER TO TIMBER CONNECTIONS IN SAME PLANE SHALL BE MADE WITH JOIST HANGERS OR FRAMING ANCHORS.

.7 ALL DETAILS NOT OTHERWISE REQUIRED IN PART 4 OR SHOWN ON DRAWINGS OR IN SPECIFICATIONS SHALL CONFORM TO PART 9 OF THE NATIONAL BUILDING CODE OF CANADA.

END OF SECTION

STRUCTURAL STEEL AND STEEL JOISTS

1 GENERAL

.1 CONFORM TO THE GENERAL REQUIREMENTS AND SPECIAL CONDITIONS CONTAINED IN GENERAL REQUIREMENTS.

.2 SUPPLY AND DELIVER THE FOLLOWING TO OTHER TRADES TOGETHER WITH LAYOUT DRAWINGS: ANCHOR RODS, CONNECTION ASSEMBLES FOR SETTING IN CONCRETE, LOOSE LINTELS, SHELF ANGLES AND BEARING PLATES.

.3 CONFORM TO CSA STANDARDS CSA S16–09, CSA S136–12 PACKAGE, CSA W47.1–09, CSA W48–06(R2011), CSA W55.3–08, CSA W59–03 (R2008) AND CSA G40.20–13/G40.21–13.

.4 MATERIALS SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION ARE TO ESTABLISH THE REQUIRED DEGREE OF QUALITY OR PERFORMANCE. SUBSTITUTION MAY BE PERMITTED UPON PROOF OF EQUIVALENCE. SUBMIT ALL PROPOSALS FOR SUBSTITUTION TO THE ENGINEER IN WRITING IN ADVANCE OF SHOP DRAWINGS. EACH ITEM WILL BE CLEARLY IDENTIFIED. DO NOT PROCEED WITH PROPOSAL UNLESS IT IS ACCEPTED IN WRITING BY THE ENGINEER.

.5 TOLERANCES: FABRICATION AND ERECTION TOLERANCES SHALL MEET THE REQUIREMENTS OF CSA S16–09.

.6 WORK SHALL BE CARRIED OUT BY A MEMBER OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION. WELDING SHALL BE PERFORMED BY FIRMS FULLY APPROVED BY THE CANADIAN WELDING BUREAU UNDER THE REQUIREMENTS OF CSA W47.1–09.

.7 DESIGN CONNECTIONS TO CONFORM TO CSA S16–09 AND THE CISC HANDBOOK OF STEEL CONSTRUCTION FOR A MINIMUM OF 50% OF THE BEAM SHEAR CAPACITY UNLESS A GREATER REACTION IS NOTED ON THE DRAWINGS. DESIGN ALL SPLICES AND CONNECTIONS OF TENSION OR COMPRESSION MEMBERS FOR THEIR FULL CAPACITY. ARRANGE AND PAY FOR NONDESTRUCTIVE TESTING OF ALL UNSPECIFIED SPLICES IN COLUMNS, BEAMS AND JOIST COMPONENTS. ALL CONNECTIONS AND DETAILS SHALL BE DESIGNED BY A SUITABLE QUALIFIED REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE GOVERNING PROVINCE, WHOSE STAMP AND SIGNATURE SHALL BE AFFIXED TO THE SHOP DRAWINGS.

.8 DESIGN AND PROVIDE BEARING PLATES FOR A MAXIMUM PRESSURE OF 3.8MPa (550psi) ON MASONRY AND 7.7MPa (1100 psi) ON CONCRETE.

.9 PROVIDE PRIMER PAINT ON STEEL EXCEPT THOSE MEMBERS WHICH ARE TO RECEIVE SPRAY PROTECTION.

.10 SUBMIT FOR REVIEW, PRIOR TO FABRICATION, SHOP DRAWINGS CONSISTING OF ERECTION DIAGRAMS AND SHOP DETAILS. REVIEW OF SHOP DRAWINGS IS A PRECAUTION AGAINST OVERSIGHT OR ERROR. IT IS NOT A DETAILED CHECK AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF RESPONSIBILITY FOR MAKING THE WORK ACCURATE AND IN CONFORMITY WITH THE CONTRACT DOCUMENTS. MAINTAIN A SET OF REVIEWED DRAWINGS ON SITE.

2 PRODUCTS

.1 MATERIALS:
a) W, WWF AND C (CHANNELS): GRADE 350W
b) S SHAPES: TO ASTM A572 GR.50
c) L (ANGLES) AND PLATES: GRADE 300W
d) HSS SHAPES: GRADE 350W (CLASS H)
e) FASTENERS/BOLTS: ASTM 325M
f) ANCHOR RODS: 300W OR ASTM 307
g) WELDING ELECTRODES: E49XX
h) PRIMER PAINT:
ONE–COAT SYSTEM: CISC/CPMA STANDARD 1–73a, 1975
PRIME COAT FOR TOP COATS: CISC/CPMA STANDARD 2–75, 1975
i) ZINC–RICH SHOP PRIMER PAINT: CAN/CGSB–1.181–99
j) HOT DIP GALVANIZING: CAN/CSA–G164–M92(R2003)

.2 FABRICATION SHALL CONFORM TO CSA STANDARDS CSA S16–09, CSA W59–03(R2008) AND CSA W55.3–08.

.3 SHELF ANGLES, HANGERS AND LINTELS IN EXTERIOR WALLS AND EXPOSED EXTERIOR STEEL MEMBERS SHALL BE CLEANED TO SP6 AND RECEIVE TWO COATS OF ZINC RICH PRIMER PAINT.

3 EXECUTION

.1 ERECTION SHALL BE CARRIED OUT BY FORCES OF THE STEEL FABRICATOR. PROVIDE ALL TEMPORARY BRACING TO KEEP THE STRUCTURE STABLE UNTIL THE ENTIRE STRUCTURE IS COMPLETE.

.2 PROVIDE CONTINUOUS WELDING AT EXPOSED JOINTS SUCH AS DOOR JAMBS AND HEADS, AND GRIND SMOOTH.

.3 INDEPENDENT INSPECTION AND TESTING: THE GENERAL CONTRACTOR WILL APPOINT AN INDEPENDENT INSPECTION AND TESTING AGENCY, CERTIFIED BY THE CANADIAN WELDING BUREAU TO CSA W178.1–08(R2013) AND W178.2–08(R2013). THE COST OF INSPECTION SHALL BE PAID BY THE OWNER. WORK WILL BE INSPECTED IN THE SHOP AND WHEN ERECTED TO DETERMINE CONFORMANCE TO THE DRAWINGS AND SPECIFICATIONS.

END OF SECTION

CONTRACTOR MUST CHECK AND VERIFY ALL SITE CONDITIONS BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS SHOWN ON STRUCTURAL DRAWINGS MUST BE CHECKED WITH THE LATEST ISSUE OF ARCHITECTURAL DRAWINGS. ALL DISCREPANCIES MUST BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

FOR CONSTRUCTION PURPOSES, USE ONLY THE LATEST APPROVED DRAWINGS LABELED 'ISSUED FOR CONSTRUCTION'.

DO NOT SCALE THE DRAWINGS.

NO.	REVISIONS	DATE

TO	ISSUED	DATE
5	FOR PERMIT REVISIONS	NOV. 04/20
3	FOR PERMIT	JUN. 24/20
2	FOR REVIEW	APR. 17/20
1	FOR REVIEW	MAR. 25/20

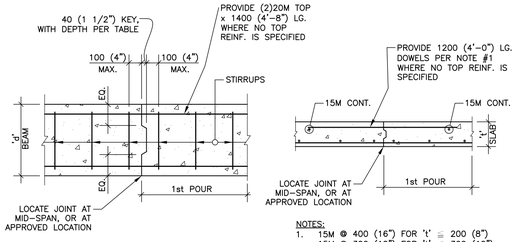
PROFESSIONAL ENGINEER
LICENSED
R.J. VAN GROLL
NOV. 04/20
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
130 Bridgeland Avenue, Suite 101
Toronto, Ontario M6A 1Z4
416 489 7888 atkinsvangroll.com

PROJECT
DENISON CHILD CARE CENTRE
900 MULOCK DRIVE/
605 FERNBANK ROAD,
NEWMARKET, ONTARIO

DRAWING
GENERAL REQUIREMENTS AND SPECIFICATIONS

DRAWN	PROJECT NO
NW	20–4262A
CHECKED	DRAWING NO
EK	S0.1
SCALE	
N.T.S.	
PLOTTED DATE	
NOVEMBER, 2020	1 OF 7



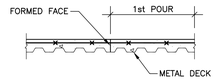
KEY SIZE	BEAM DEPTH 'd'
40 x 90 (2x4)	'd' ≦ 400 (16")
40 x 140 (2x6)	400 (16") < 'd' ≦ 600 (24")
40 x 180 (2x8)	600 (24") < 'd' ≦ 800 (32")
40 x 230 (2x10)	'd' > 800 (32")

CONSTRUCTION JOINT IN CONCRETE BEAM

KEY SIZE	SLAB THICKNESS 't'
20 x 40 (1x2)	100 (4") ≦ 't' < 150 (6")
20 x 60 (1x3)	150 (6") ≦ 't' < 230 (9")
40 x 90 (2x4)	230 (9") ≦ 't'

NOTES:
1. 15M @ 400 (16") FOR 't' ≦ 200 (8")
   15M @ 300 (12") FOR 't' ≦ 300 (12")

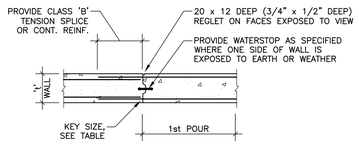
CONSTRUCTION JOINT IN FRAMED SLAB



CONSTRUCTION JOINT IN SLAB OVER METAL DECK

TYPICAL DETAIL OF CONCRETE JOINTS

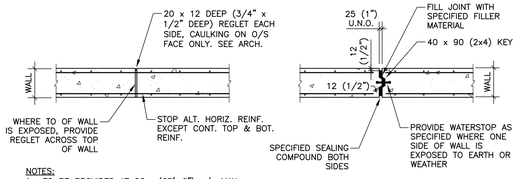
ATKINS + VAN GROLL INC. — TD C.1



KEY SIZE	WALL THICKNESS 't'
20 x 40 (1x2)	100 (4") ≦ 't' < 150 (6")
20 x 60 (1x3)	150 (6") ≦ 't' < 230 (9")
40 x 90 (2x4)	230 (9") ≦ 't'

NOTES:
1. TO BE PROVIDED AT 10m (32'-6") c/c MAX. OR AT 20m (65'-6") c/c MAX. ALT. WITH CONTROL JOINTS.
2. LOCATIONS TO BE APPROVED BY ARCHITECT WHERE EXPOSED TO VIEW.

VERTICAL CONSTRUCTION JOINT IN CONCRETE WALL



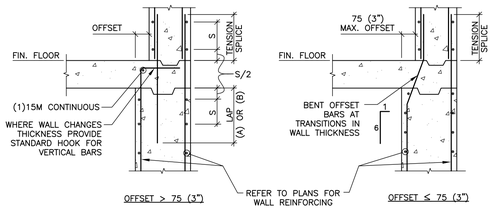
NOTES:
1. TO BE PROVIDED AT 20m (65'-6") c/c MAX. ALT. WITH CONTROL JOINTS.
2. LOCATIONS TO BE APPROVED BY ARCHITECT WHERE EXPOSED TO VIEW.

KEYED EXPANSION JOINT IN CONCRETE WALL

VERTICAL CONTROL JOINT IN CONCRETE WALL

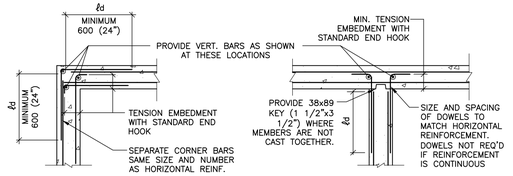
TYPICAL DETAIL OF CONCRETE JOINTS

ATKINS + VAN GROLL INC. — TD C.2



NOTES:
1. 'S' DENOTES BAR SPACING
2. LAP (A) = CLASS 'B' (TOP) TENSION SPLICE WHERE OFFSET IS ≦ 150 (6")
   LAP (B) = 1.5 x CLASS 'B' (TOP) TENSION SPLICE WHERE OFFSET IS > 150 (6")

TYPICAL REINFORCING AT WALL THICKNESS TRANSITIONS



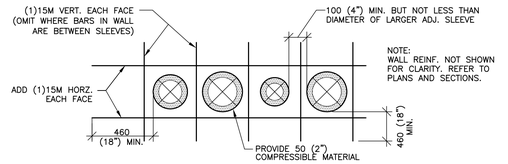
WALL REINFORCING AT CORNERS/INTERSECTIONS

NOTES:
1. 'ℓd' DENOTES TENSION DEVELOPMENT LENGTH.
2. ALL TENSION LAPS ARE CLASS 'B' TENSION LAP SPLICES.
3. PROVIDE (1)15M BAR x NO. OF SHEETS OF REINFORCING AT ALL WALL EDGES AND OPENINGS. EXTEND MIN. 2 x DEVELOPMENT LENGTH BEYOND EDGE OF OPENING.
4. PROVIDE CLEAR COVER TO BARS AS PER CONCRETE SPECIFICATIONS.
5. UNLESS NOTED OTHERWISE, MINIMUM REINFORCING FOR ANY WALL IS TO BE AS FOLLOWS:

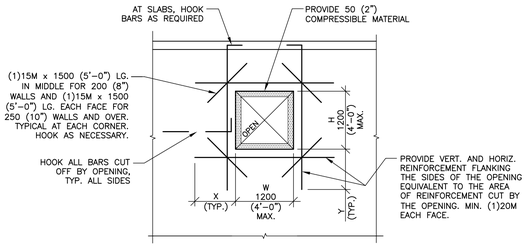
WALL THICKNESS	REINFORCING
150(6")	10M @ 300(12") HORIZ. + VERT.
200(8") OR	15M @ 400(16") H. + V.E.F.
250(10") 300(12")	15M @ 300(12") H. + V.E.F.

TYPICAL CONCRETE WALL DETAILS

ATKINS + VAN GROLL INC. — TD C.3



REINFORCING AT SLEEVES

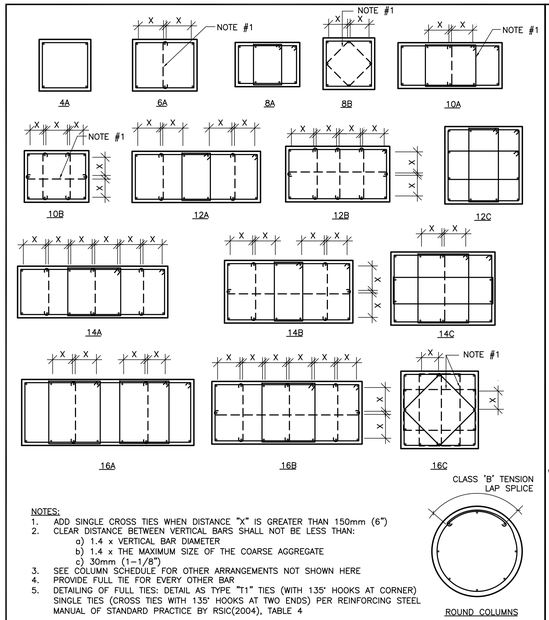


'X' = CLASS 'B' TENSION LAP SPLICE + H/2, BUT NOT LESS THAN 600 (2'-0")
'Y' = CLASS 'B' TENSION LAP SPLICE + W/2, BUT NOT LESS THAN 600 (2'-0")

REINFORCING AROUND BASEMENT/FOUNDATION WALL OPENING

TYPICAL DETAIL OF OPENINGS IN CONCRETE WALLS

ATKINS + VAN GROLL INC.
UNLESS NOTED OTHERWISE, ALL DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. — TD C.6

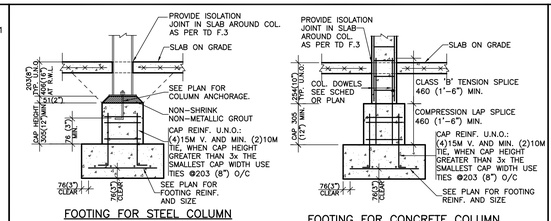


NOTES:
1. ADD SINGLE CROSS TIES WHEN DISTANCE "X" IS GREATER THAN 150mm (6")
2. CLEAR DISTANCE BETWEEN VERTICAL BARS SHALL NOT BE LESS THAN:
   a) 1.4 x VERTICAL BAR DIAMETER
   b) 1.4 x THE MAXIMUM SIZE OF THE COARSE AGGREGATE
   c) 30mm (1-1/8")
3. SEE COLUMN SCHEDULE FOR OTHER ARRANGEMENTS NOT SHOWN HERE
4. PROVIDE FULL TIE FOR EVERY OTHER BAR
5. DETAILING OF FULL TIES: DETAIL AS TYPE "T1" TIES (WITH 135° HOOKS AT CORNER) SINGLE TIES (CROSS TIES WITH 135° HOOKS AT TWO ENDS) PER REINFORCING STEEL MANUAL OF STANDARD PRACTICE BY RSIC(2004), TABLE 4

ROUND COLUMNS

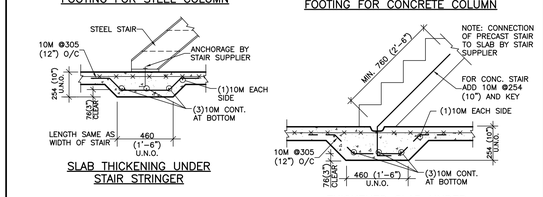
ARRANGEMENT OF VERTICALS AND TIES IN COLUMNS & PIERS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. — TD C.29



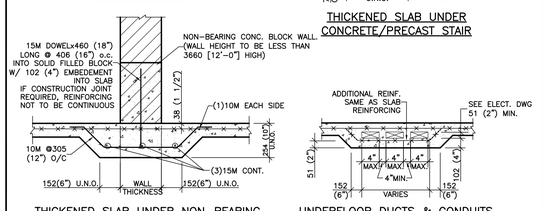
FOOTING FOR STEEL COLUMN

FOOTING FOR CONCRETE COLUMN



SLAB THICKENING UNDER STAIR STRINGER

THICKENED SLAB UNDER CONCRETE/PRECAST STAIR

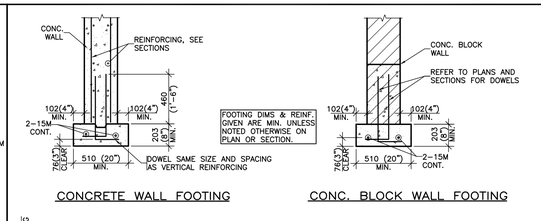


THICKENED SLAB UNDER NON-BEARING CONCRETE BLOCK WALL

UNDERFLOOR DUCTS & CONDUITS GREATER THAN 25mm (1")

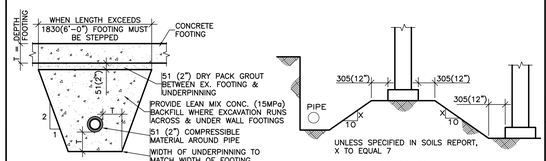
TYPICAL FOUNDATION DETAILS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. — TD F.1



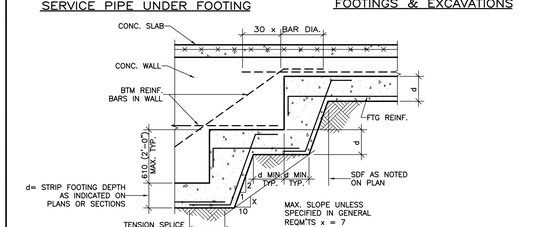
CONCRETE WALL FOOTING

CONC. BLOCK WALL FOOTING



SERVICE PIPE UNDER FOOTING

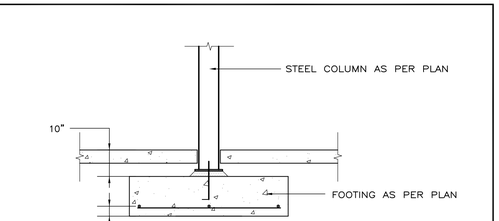
ELEVATIONS OF ADJACENT FOOTINGS & EXCAVATIONS



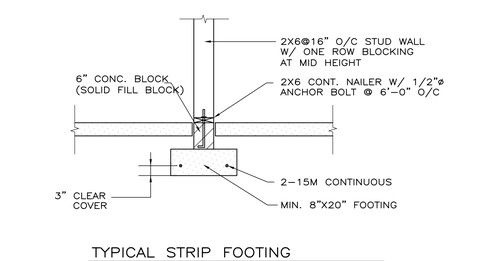
STEPPED WALL FOOTING

TYPICAL FOUNDATION DETAILS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN — TD F.2



TYPICAL COLUMN FOOTING
SCALE 1/2" = 1'-0"



TYPICAL STRIP FOOTING
SCALE 1/2" = 1'-0"

TYPICAL DETAIL OF STRIP AND COLUMNS FOOTING

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. — TD F.7

CONTRACTOR MUST CHECK AND VERIFY ALL SITE CONDITIONS BEFORE PROCEEDING WITH THE WORK.

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FOR CONSTRUCTION PURPOSES, USE ONLY THE LATEST APPROVED DRAWINGS LABELED 'ISSUED FOR CONSTRUCTION'.

DO NOT SCALE THE DRAWINGS.

NO.	REVISIONS	DATE
5	FOR PERMIT REVISIONS	NOV. 04/20
3	FOR PERMIT	JUN. 24/20
2	FOR REVIEW	APR. 17/20
1	FOR REVIEW	MAR. 25/20
TO	ISSUED	DATE

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
NOV. 04/20
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
130 Bridgeland Avenue, Suite 101
Toronto, Ontario M6A 1Z4
416 489 7888 atkinsvangroll.com

PROJECT

DENISON CHILD CARE CENTRE

900 MULOCK DRIVE/
605 FERNBANK ROAD,
NEWMARKET, ONTARIO

DRAWING

TYPICAL DETAILS

DRAWN	PROJECT NO
NW	20-4262A
CHECKED	DRAWING NO
EK	S0.2
SCALE	
N.T.S.	
PLOTTED DATE	2 OF 7
NOVEMBER, 2020	

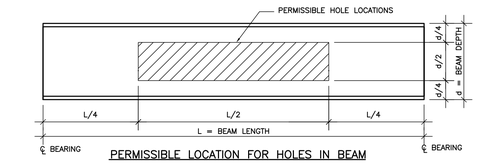
@	AT
ø	DIAMETER
A. BOLT	ANCHOR BOLT
A. ROD	ANCHOR ROD
ABV.	ABOVE
ADJ.	ADJUSTABLE
ALT.	ALTERNATE
ARCH.	ARCHITECTURAL OR ARCHITECT
ASL	ACCUMULATED SNOW LOAD
B.PL.	BASE PLATE
BR.PL.	BEARING PLATE
B.C.E.	BOTTOM CHORD EXTENSION
B.L.L.	BOTTOM LOWER LAYER
B.U.L.	BOTTOM UPPER LAYER
BLDG	BUILDING
BLW.	BELOW
BM.	BEAM
BOT., B.	BOTTOM
BSMT.	BASEMENT
C. JT.	CONSTRUCTION JOINT
C/C, O/C	CENTRE TO CENTRE
C/W	COMPLETE WITH
CANT., CANT'L	CANTILEVER
Cf	FACTORED DESIGN FORCE (COMPRESSION)
CL OR ℄	CENTERLINE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECT OR CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
DET.	DETAIL
DEMO.	DEMOLISH OR DEMOLISHED
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DO	REPEAT
DP.	DEEP
DWG.	DRAWING
DWL(S)	DOWEL(S)
D.J.	DOUBLE JOIST
EA.	EACH
E.E.	EACH END
E.F.	EACH FACE
EL., ELEV.	ELEVATION OR ELEVATOR
ELECT.	ELECTRICAL
E.O.S	EDGE OF SLAB
EQ.	EQUAL
E.S.	EACH SIDE
E.W.	EACH WAY
EXIST., EX.	EXISTING
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
ft	FOOT OR FEET
FAC.	FACTORED
FDN	FOUNDATION
F.F.	FAR FACE
F.F.E.	FINISHED FLOOR ELEVATION
FIN.	FINISH OR FINISHED
FLG.	FLANGE
FLR.	FLOOR
FTG.	FOOTING
F.S.	FAR SIDE
ft. KIPS	FOOT KIPS
ft. lbs	FOOT POUNDS
Fy	YIELD STRESS
GA.	GAUGE
GALV.	GALVINIZED
G.B.	GRADE BEAM
G.T.	GIRDER TRUSS
GR.	GRADE

H., HORIZ.	HORIZONTAL
H.E.F.	HOOKED EACH END
H.E.F.	HORIZONTAL EACH FACE
H.I.F.	HORIZONTAL INSIDE FACE
HK.	HOOK
H.O.F.	HORIZONTAL OUTSIDE FACE
H.P.	HIGH POINT
H.S.C	HORIZONTALLY SLOTTED CONNECTION
H.S.S.	HOLLOW STEEL SECTION
HT.	HEIGHT
I.D.	INSIDE DIAMETER
INT	INTERIOR
J.T.	JACK TRUSS
kg	KILOGRAM
klf	KIPS PER LINEAR FOOT
kN	KILONEWTON
kN/m	KILONEWTON PER METRE
kNm	KILONEWTON METRE
kPa	KILOPASCAL
ksf	KIPS PER SQUARE FOOT
lbs	POUNDS
L.E.	LEFT END
L.P.	LOW POINT
L.W.	LONG WAY
LG.	LONG
LL	LIVE LOAD
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.S.H.	LONG SIDE HORIZONTAL
L.S.V.	LONG SIDE VERTICAL
m	METRE
M.C.	MOMENT CONNECTION
MAX.	MAXIMUM
MECH.	MECHANICAL
MEZZ.	MEZZANINE
Mf	FACTORED DESIGN MOMENT
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.L.	MIDDLE LAYER
mm	MILLIMETRE
MOM.	MOMENT
MPa	MEGAPASCAL
N	NEWTON
N.I.C.	NOT IN CONTRACT
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
N.F.	NEAR FACE
No.	NUMBER
O.C., O/C	ON CENTRE
O.D.	OUTSIDE DIAMETER
OPNG.	OPENING
OPP.	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
Pa	PASCAL
PL.	PLATE
plf	POUNDS PER LINEAR FOOT
PROJ.	PROJECTION
psf	POUNDS PER SQUARE FOOT
R	REACTION OR RADIUS
R.C.	REINFORCED CONCRETE
R.D.	ROOF DRAIN
R.E.	RIGHT END
R/W	REINFORCE WITH
REF.	REFERENCE
REINF.	REINFORCING OR REINFORCE
REQ'D	REQUIRED
REV	REVISION OR REVISED
RTU	ROOF TOP UNIT

S.C.	SHEAR CONNECTION, SAWCUT
S.O.G.	SLAB ON GRADE
S.W.	SHORT WAY
S.D.F	STEP DOWN FOOTING
SD.	SUPERIMPOSED DEAD LOAD
SEC., SECT.	SECTION
SL	SNOW LOAD
SIM.	SIMILAR
SPEC'S	SPECIFICATIONS
SQ.	SQUARE
SS	STAINLESS STEEL
STD.	STANDARD
STIFF.	STIFFENER
STRUCT.	STRUCTURE OR STRUCUTRAL
SYMM.	SYMMETRICAL
T.	TOP
T.C.E.	TOP CHORD EXTENSION
T.B.C.	TO BE CONFIRMED
Tf	FACTORED DESIGN FORCE (TENSION)
T.J.	TIE JOIST OR TRIPLE JOIST
T.L.L.	TOP LOWER LAYER
T.U.L.	TOP UPPER LAYER
THK., THKNS.	THICK OR THICKNESS
THRU'OUT	THROUGH OUT
T/O	TOP OF
T./O.F.	TOP OF FOOTING
T./O.S.	TOP OF STEEL
T.S.	TOP OF SLAB
TD	TYPICAL DETAIL
TEMP.	TEMPERATURE
TYP.	TYPICAL
U.N.O., U/N	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE
UNFAC.	UNFACTORED
V.E.F.	VERTICAL EACH FACE
V.I.F.	VERTICAL INSIDE FACE
V.O.F.	VERTICAL OUTSIDE FACE
VA.	VARIES
VERT., V.	VERTICAL
V.S.C.	VERTICALLY SLOTTED CONNECTION
W.PL.	WALL PLATE
W.P.	WORK POINT
W.W.F.	WELDED WIRE FABRIC
W/	WITH

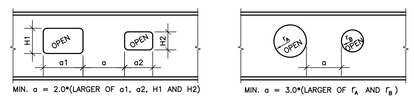
ABBREVIATIONS

ATKINS + VAN GROLL INC.
ALL TYPICAL DETAILS DIMENSIONS SHOWN ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. | TD G.1

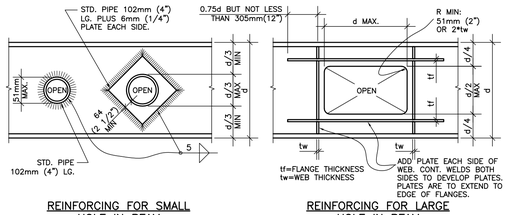


PERMISSIBLE LOCATION FOR HOLES IN BEAM

—FOR UNIFORMLY DISTRIBUTED LOADS ONLY. DOES NOT APPLY FOR BEAMS WITH POINT LOADING



MINIMUM DISTANCE BETWEEN ADJACENT HOLES

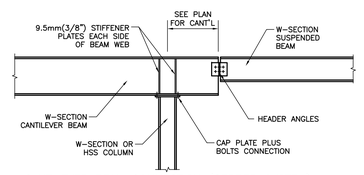


REINFORCING FOR SMALL HOLE IN BEAM

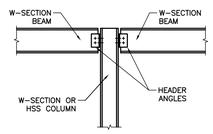
REINFORCING FOR LARGE HOLE IN BEAM

TYPICAL DETAIL FOR HOLES IN BEAMS

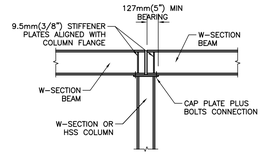
ATKINS + VAN GROLL INC. | TD S.7



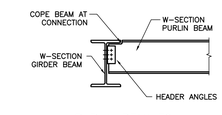
CANTILEVER BEAM CONNECTION (GERBER SYSTEM)



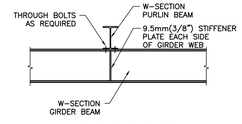
BEAM TO COLUMN CONNECTION



BEAM ON COLUMN CONNECTION



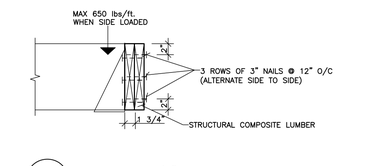
PURLIN BEAM TO GIRDER BEAM CONNECTION



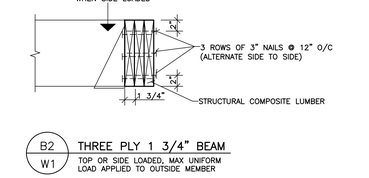
PURLIN BEAM ON GIRDER BEAM CONNECTION

TYPICAL STRUCTURAL STEEL TO STEEL DETAILS

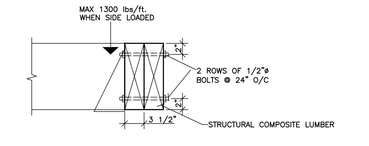
ATKINS + VAN GROLL INC. | TD S.10



B1 / W1 TWO PLY 1 3/4" BEAM
TOP OR SIDE LOADED, MAX UNIFORM LOAD APPLIED TO OUTSIDE MEMBER



B2 / W1 THREE PLY 1 3/4" BEAM
TOP OR SIDE LOADED, MAX UNIFORM LOAD APPLIED TO OUTSIDE MEMBER

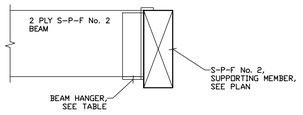


B3 / W1 TWO PLY 3 1/2" BEAM
TOP OR SIDE LOADED, MAX UNIFORM LOAD APPLIED TO OUTSIDE MEMBER

TYPICAL MULTIPLE MEMBER CONNECTION FOR BUILT UP STRUCTURAL COMPOSITE LUMBER BEAMS

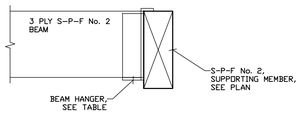
ATKINS + VAN GROLL INC.
ALL DIMENSIONS SHOWN IN TYPICAL DETAILS ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. | TD W.1

2 PLY BEAM	SIMPSON STRONG-TIE HANGER DESIGNATION	MAX. FACTORED LOAD (KN)
2x6	U26-2	9.62
2x8	HGUS28-2	11.4
2x10	U210-2	13.9
2x12	HUS210-2	19.2



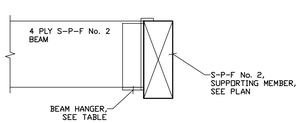
C1 / W3 TWO PLY BEAM

3 PLY BEAM	SIMPSON STRONG-TIE HANGER DESIGNATION	MAX. FACTORED LOAD (KN)
2x6	HU26-3 (MAX.)	13.9
2x8	HU68 (MAX.)	18.7
2x10	HU210-3 (MAX.)	20.8
2x12	WPU	28.5



C2 / W3 THREE PLY BEAM

4 PLY BEAM	SIMPSON STRONG-TIE HANGER DESIGNATION	MAX. FACTORED LOAD (KN)
2x6	HW	23.5
2x8	HW	23.5
2x10	HWU	37.8
2x12	HWU	37.8



C3 / W3 FOUR PLY BEAM

TYPICAL DETAIL OF WOOD/WOOD CONNECTIONS FOR S-P-F No. 2 BUILT UP BEAMS

ATKINS + VAN GROLL INC.
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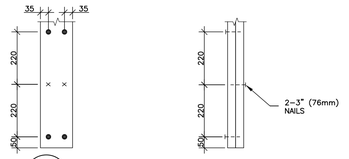
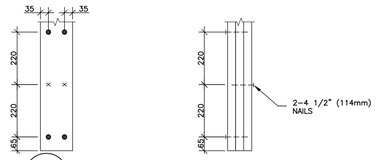
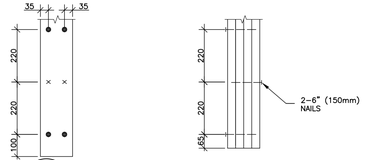


C1 / W4B TWO-PLY, 38x140 (2x6) S-P-F



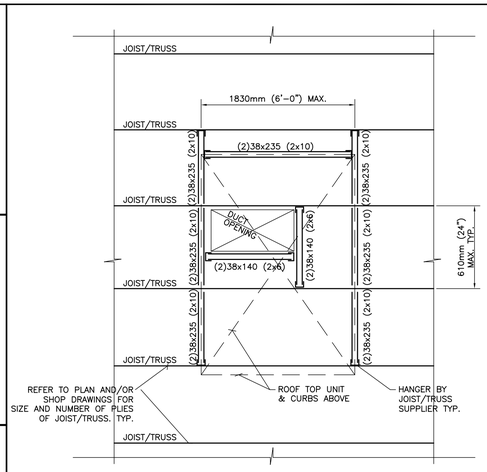
C2 / W4B THREE-PLY, 38x140 (2x6) S-P-F



C3 / W4B FOUR-PLY, 38x140 (2x6) S-P-F

NAILING PATTERN FOR BUILT-UP WOOD POSTS 38x140 (2x6) MEMBERS, S-P-F NO. 2

ATKINS + VAN GROLL INC.
ALL DIMENSIONS SHOWN IN TYPICAL DETAILS ARE MIN. FOR USE WHEN PLAN OR SECTION DIMENSIONS ARE NOT GIVEN. | TD W.4B

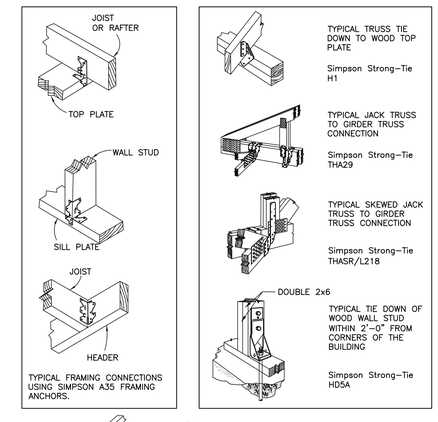


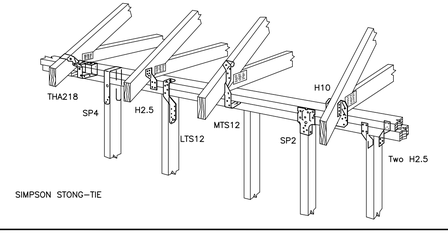
NOTES:

1. SEE PLANS FOR UNIT WEIGHTS & SNOW ACCUMULATION.
2. ASSUME "WORST CASE LOADING" OF JOISTS/TRUSSES IF MECHANICAL UNIT LAYOUT NOT AVAILABLE.
3. SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR CURB DETAILS.
4. ORIENT UNITS TO SPREAD LOAD OVER MAXIMUM NUMBER OF JOISTS.
5. JOIST/TRUSS HANGERS TO BE BY JOIST/TRUSS SUPPLIER.

TYPICAL DETAIL OF FRAMING AT ROOF TOP UNIT

ATKINS + VAN GROLL INC. | TD W.5





TYP. DETAILS BETWEEN WOOD STUD WALL AND TRUSSES

ATKINS + VAN GROLL INC. | TD W.6

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FOR CONSTRUCTION PURPOSES, USE ONLY THE LATEST APPROVED DRAWINGS LABELED 'ISSUED FOR CONSTRUCTION'.

DO NOT SCALE THE DRAWINGS.

NO.	REVISIONS	DATE
5	FOR PERMIT REVISIONS	NOV. 04/20
3	FOR PERMIT	JUN. 24/20
2	FOR REVIEW	APR. 17/20
1	FOR REVIEW	MAR. 25/20
TO	ISSUED	DATE

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
NOV. 04/20
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
130 Bridgeland Avenue, Suite 101
Toronto, Ontario M6A 1Z4
416 489 7888 atkinsvangroll.com

PROJECT

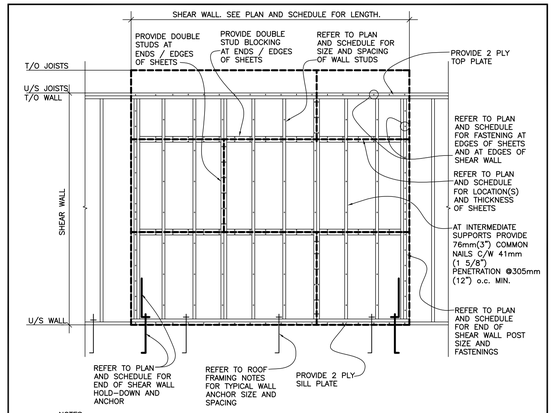
DENISON CHILD CARE CENTRE

900 MULOCK DRIVE/
605 FERNBANK ROAD,
NEWMARKET, ONTARIO

DRAWING

TYPICAL DETAILS

DRAWN: NW	PROJECT NO: 20-4262A
CHECKED: EK	DRAWING NO: S0.3
SCALE: N.T.S.	
PLOTTED DATE: NOVEMBER, 2020	3 OF 7



NOTES:

1. PLYWOOD, OSB OR WAFERBOARD CAN BE USED FOR SHEATHING / SHEETS. PLYWOOD IS TO CONFORM TO CSA 0121, DOUGLAS FIR PLYWOOD OR CSA 0151 CANADIAN SOFTWOOD PLYWOOD. OSB AND WAFERBOARD IS TO CONFORM TO CSA STANDARD 0452.0. DESIGN RATED OSB, CSA 0325, CONSTRUCTION SHEATHING OR CSA 0437.0, OSB AND WAFERBOARD

IF USING CSA 0325 OSB	
SHEATHING THICKNESS	MINIMUM SHEATHING MARK
7.5mm	2R20
9.5mm	2R24
11.0mm	1R24 / 2F16
12.5mm	2R32 / 2F16 OR 1F16
15.5mm	2R40 / 2F20

2. SHEETS CAN BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY.
3. WHERE SHEATHING IS APPLIED ON BOTH FACES OF WALL AND NAILING AT EDGES OF SHEAR WALL IS LESS THAN 150mm o.c., SHEET JOINTS ARE TO BE OFFSET AND TO FALL ON DIFFERENT MEMBERS.
4. PROVIDE 2mm MINIMUM GAP BETWEEN SHEETS TO ACCOMMODATE SWELLING.
5. SHEETS TO BE 1220mmx2440mm (4'-0"x8'-0") MINIMUM. SMALLER SHEETS CAN BE USED AT BOUNDARIES.
6. NAILS NOT TO BE CLOSER THAN 12mm (1/2") FROM EACH INDIVIDUAL SHEET OR EDGE OF SHEAR WALL EDGES. NAILS ARE NOT TO BE OVER DRIVEN MORE THAN 15% OF SHEET THICKNESS.

TYPICAL DETAIL OF WOOD SHEAR WALL

ATKINS + VAN GROLL INC.
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TD W.13

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1	FOR REVIEW	MAR. 25/20

TO	ISSUED	DATE

LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
NOV. 04/20
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PROJECT

DENISON CHILD CARE CENTRE

900 MULOCK DRIVE/
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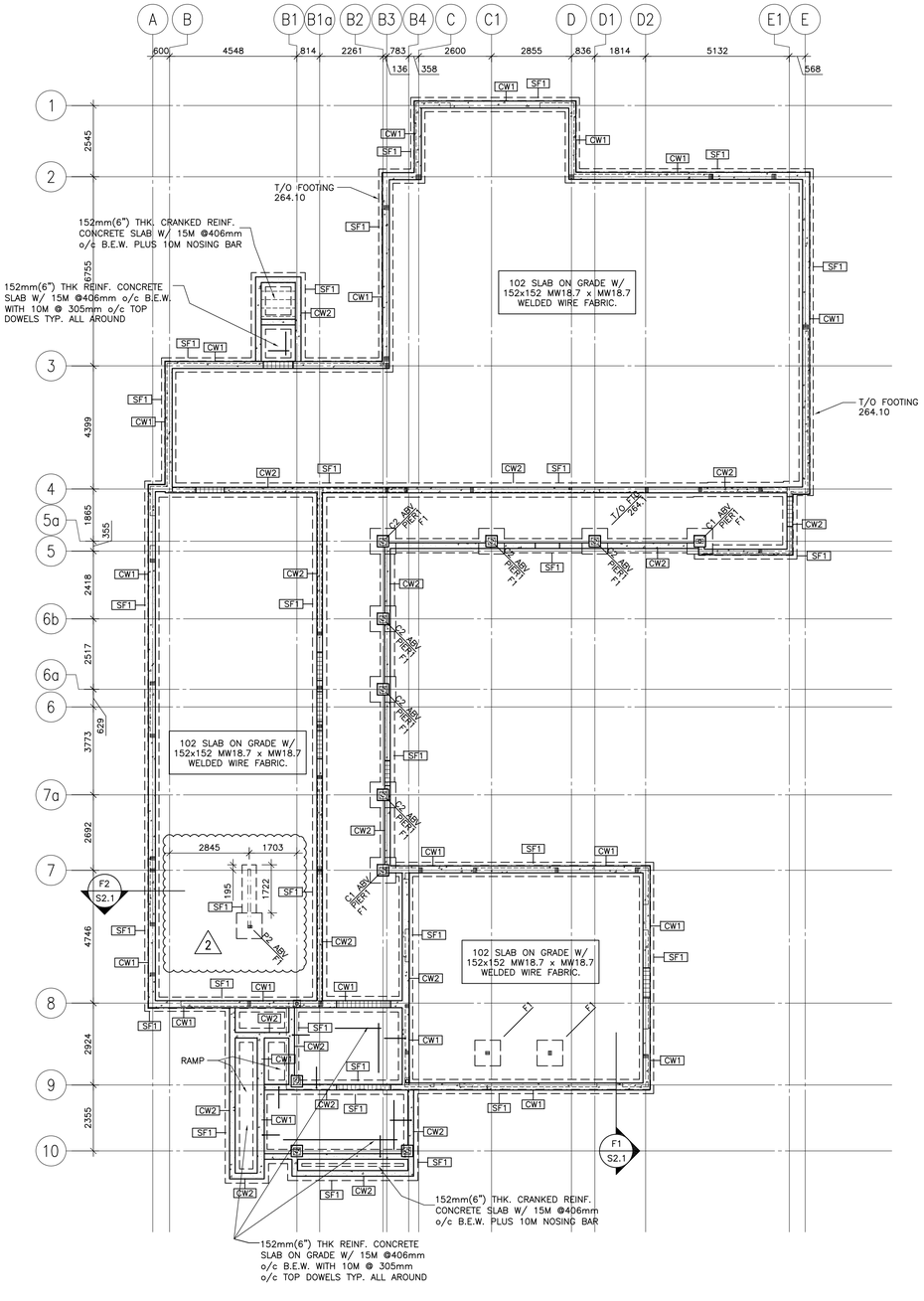
DRAWING

TYPICAL DETAILS

DRAWN	PROJECT NO
NW	20-4262A
CHECKED	DRAWING NO
EK	S0.4
SCALE	
N.T.S.	
PLOTTED DATE	4 OF 7
NOVEMBER, 2020	



FOUNDATION PLAN 1 : 100

1 SEE ALSO GENERAL REQUIREMENTS, TYPICAL DETAILS AND SPECIFICATIONS.

2 GROUND FLOOR DATUM ELEVATION IS TOP OF FINISHED SLAB ON GRADE WHICH IS SET AT 0.0 FROM GROUND FLOOR DATUM 266.10m UNLESS CROSSED AND NOTED.

3 FOR CONCRETE REQUIREMENTS, REFER TO CAST-IN-PLACE CONCRETE SPECIFICATION.

4 PROVIDE 1220mm (4'-0") MINIMUM FROST COVER FOR ALL EXTERIOR FOOTINGS.

5 FOOTINGS SHALL BE CARRIED DOWN TO NATURAL UNDISTURBED SOIL FREE OF ORGANIC MATTER AND CAPABLE OF SUSTAINING 150 kPa (3000 psf) UNDER SLS (SERVICEABILITY LIMIT STATES) AND 225 kPa (4600 psf) UNDER ULS (ULTIMATE LIMIT STATES). THESE VALUES ARE ASSUMED AND ARE TO BE CONFIRMED BY A CERTIFIED GEOTECHNICAL ENGINEER.

6 REFER TO GEOTECHNICAL REPORT #19-190-100 PREPARED BY DS CONSULTANTS LTD. AND DATED OCTOBER 29, 2019.

7 SOIL AT THE UNDERSIDE OF THE FOOTINGS IS TO BE INSPECTED AND APPROVED BY A REPRESENTATIVE OF A GEOTECHINICAL CONSULTANT BEFORE PLACING CONCRETE FOUNDATIONS.

8 TOP OF PIERS TO BE -254mm (-10") FROM TOP OF SLAB AND UNDERSIDE OF COLUMN BASE PLATES TO BE -203mm (-8"), UNLESS OTHERWISE NOTED ON PLAN ADJACENT TO PIER.

9 AT ALL RAIN WATER LEADER LOCATIONS TOP OF PIERS TO BE -457mm (-18") FROM TOP OF SLAB AND UNDERSIDE OF COLUMN BASE PLATES TO BE -406mm (-16"), UNLESS NOTED OTHERWISE.

10 PIERS OF INTERIOR PAD FOOTINGS MAY NOT BE REQUIRED IF ELEVATION OF TOP OF FOOTING IS WITHIN 457mm (18") FROM FINISHED SLAB. ELEVATION OF TOP OF FOOTING IS DEPENDENT ON ATTAINING SOIL BEARING CAPACITY IN NOTE #5.

11 ALL FOOTING ELEVATIONS SHOWN ON PLAN OR SECTIONS ARE THOSE FOR THE ASSUMED SOIL AND DESIGN CONDITION. ANY VARIATIONS SHOULD BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

12 WHERE DRAINAGE PIPE INVERT ELEVATIONS ARE BELOW SPREAD FOOTING ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS, THE FOOTING SHOULD BE LOWERED SO THAT IN NO CASE DRAINAGE PIPES PASS UNDER FOOTING. FOR INVERT ELEVATIONS SEE MECHANICAL DRAWINGS. SEE TYPICAL DETAILS.

13 BACKFILLING OF FOUNDATION WALLS IS TO BE DONE SIMULTANEOUSLY ON BOTH SIDES UP TO SLAB ON GRADE LEVEL.

14 BACKFILLING OF ALL EXTERIOR BASEMENT WALLS ABOVE SLAB ON GRADE SHALL NOT COMMENCE UNTIL BOTH SLAB ON GRADE AND TOP SUPPORT OF THE WALL HAVE BEEN INSTALLED.

15 PROVIDE LATERAL BRACING FOR FOUNDATION WALLS AS REQUIRED FOR ALL CONSTRUCTION LOADS.

16 ALL BACKFILL MATERIALS AND INSTALLATION SHALL BE REVIEWED BY A CERTIFIED GEOTECHINICAL ENGINEER TO ENSURE COMPLIANCE TO THE RECOMMENDATIONS AS NOTED IN THE SOILS REPORT.

17 DUE CARE AND PRECAUTION SHOULD BE TAKEN FOR THE PROTECTION OF FOOTINGS AGAINST FROST ACTION DURING WINTER CONSTRUCTION AND IS TO BE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.

18 SLAB ON GRADE TO BE 102mm (4") THICK REINFORCED WITH 152x152 MW18.7 x MW18.7 (6x6 6x6) WELDED WIRE FABRIC, PLACED 38mm (1 1/2") FROM TOP OF SLAB, EXCEPT AS CROSSED AND NOTED.

19 AS A MINIMUM, SUB-GRADE CONSTRUCTION TO BE AS FOLLOWS, UNLESS OTHERWISE DESCRIBED IN A SOILS REPORT;
- a) SLAB ON GRADE SHALL BE CONSTRUCTED ON A CUSHION OF 203mm (8") GRANULAR "A" COMPACTED TO AT LEAST 98% SPDD.
- b) PRIOR TO PLACING GRANULAR FILL, ALL TOP SOIL MUST BE STRIPPED OFF AND THE EXPOSED SUB-GRADE SHALL BE PROOF ROLLED, SEEKING SOFT OR HEAVING AREAS WHICH IF THEY OCCUR SHALL BE SUB-EXCAVATED AND REPLACED WITH COMPACTED GRANULAR FILL.
- c) IN AREAS WHERE FILL IS ENCOUNTERED, ALL FILL MUST BE SUB-EXCAVATED AND REPLACED WITH APPROVED FILL WHICH SHOULD BE PLACED IN SHALLOW LIFTS AND COMPACTED TO A MINIMUM OF 98% OF ITS MAXIMUM STANDARD PROCTOR DENSITY.

20 EQUIPMENT PADS AND FOUNDATIONS ARE NOT TO BE LOCATED ABOVE NEW OR EXISTING FOOTINGS, WITHOUT REVIEW BY THE STRUCTURAL ENGINEER.

21 PROVIDE SLAB THICKENING FOR NON-LOAD BEARING CONCRETE BLOCK WALLS AS PER TYPICAL DETAILS.

22 SHORING DRAWINGS TO BE PREPARED BY AN ENGINEER AND SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.

23 EXCAVATION IS NOT TO UNDERMINE ADJACENT PROPERTY OR ADJACENT BUILDINGS. PROVIDE SHORING IF REQUIRED.

24 THE STEPPED DOWN FOOTING NOTATION "SDF" ON PLAN INDICATES ONLY THE LIKELY REQUIREMENT OF STEPPED DOWN FOOTINGS, AND DOES NOT SPECIFY AN EXACT STEP LOCATION, NOR DOES IT SPECIFY A NUMBER OF STEPS, THE EXACT LOCATION AND NUMBER OF STEPS WILL BE BASED UPON THE ELEVATION OF BEARING SOILS, SLAB ELEVATION, FROST PROTECTION REQUIREMENTS, ETC.

END OF SECTION

COLUMN/POST SCHEDULE		
MARK	SIZE	BASE PLATE
C1	HSS 102x102x6.4	152x16x254 W/ (2)16mmø A.RODS 305 EMBED. + 51 HK.
C2	HSS 141øx6.4	254x16x254 W/ (4)15M A.RODS 406 EMBED. + 51 HK.
P1	(3)38x89	
P2	(4)38x89	
P3	(3)38x140	
P4	(4)38x140	
P5	(3)38x184	
P6	(4)38x184	

PIER SCHEDULE		
MARK	SIZE	REINFORCING
PIER1	406 x 406	(4) 15M VERT. TIES 10M @ 254 o/c DOUBLE TIE AT TOP

FOOTING SCHEDULE	BASED ON 150kPa (3000psf) SLS 225kPa (4600psf) ULS	
MARK	SIZE	REINFORCING
F1	915x915x305	(3) 15M B.E.W.
SF1	508x203	(2) 15M CONT.

WALL SCHEDULE		
MARK	SIZE	REINFORCING
CW1	250	15M @ 406 o/c V.&H.
CW2	200	15M @ 406 o/c V.&H.
W1	2x6 @ 406mm o/c	12.5mm PLYWOOD SHEATHING
W2	2x8 @ 406mm o/c	12.5mm PLYWOOD SHEATHING
W3	2x4 @ 305mm o/c	

2 NOTE:
12.5mm PLYWOOD SHEATHING TO EXTERIOR FACE, NAILING AT 152mm (6") o.c. ALONG ALL SHEET EDGES AND 305mm (12") o.c. ON INTERMEDIATE FRAMING MEMBERS, U.N.O.

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3	FOR PERMIT	JUN. 24/20
2	FOR REVIEW	APR. 17/20
1	FOR REVIEW	MAR. 25/20
TO	ISSUED	DATE

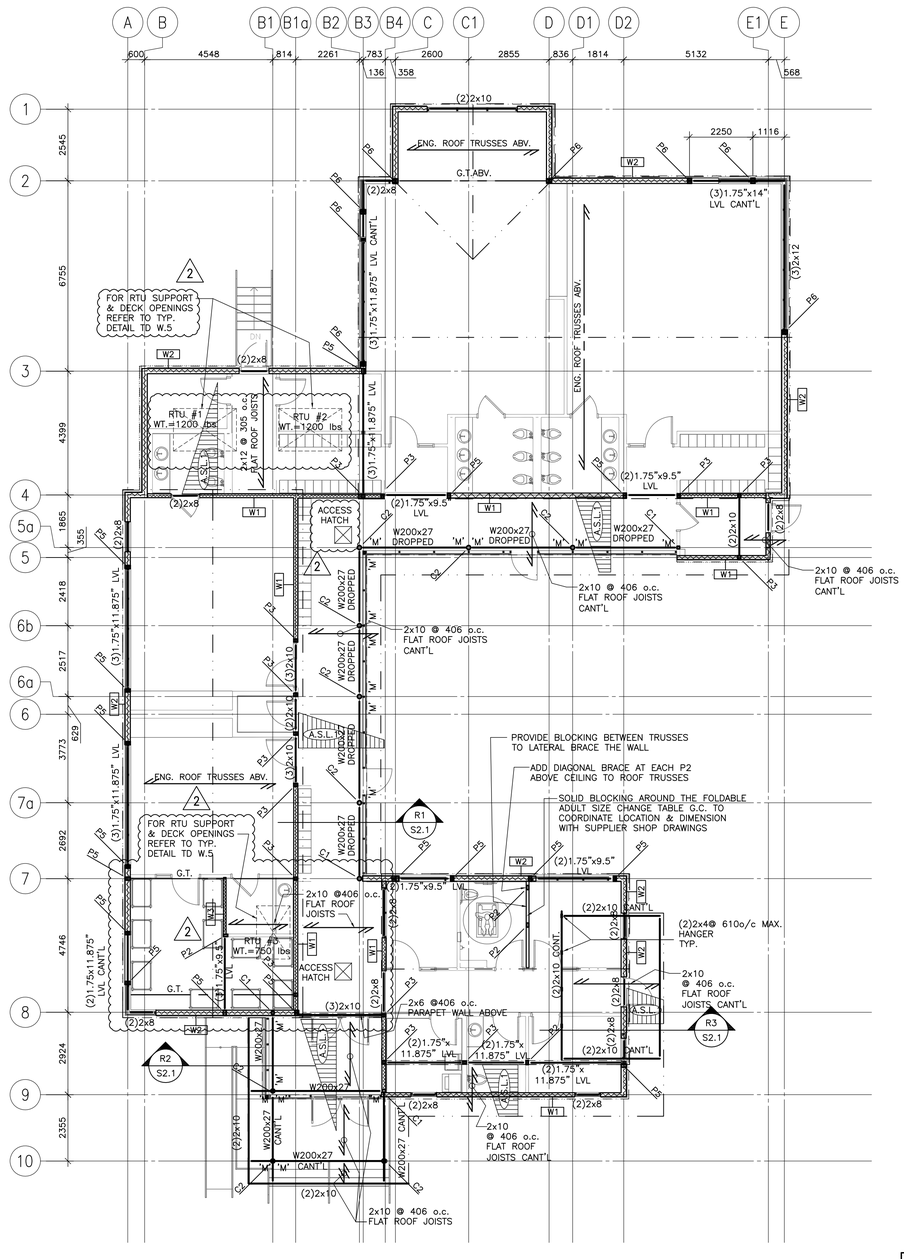
LICENSED PROFESSIONAL ENGINEER
R.J. VAN GROLL
NOV. 04/20
PROVINCE OF ONTARIO

ATKINS + VAN GROLL INC.
CONSULTING ENGINEERS
130 Bridgeland Avenue, Suite 101
Toronto, Ontario M6A 1Z4
416 489 7888 atkinsvangroll.com

PROJECT
DENISON CHILD CARE CENTRE
900 MULOCK DRIVE/
605 FERNBANK ROAD,
NEWMARKET, ONTARIO

DRAWING
FOUNDATION PLAN

DRAWN: NW	PROJECT NO: 20-4262A
CHECKED: EK	DRAWING NO: S1.1
SCALE: 1:100	
PLOTTED DATE: NOVEMBER, 2020	5 OF 7



ROOF FRAMING PLAN 1 : 100

1 SEE ALSO GENERAL REQUIREMENTS, TYPICAL DETAILS AND SPECIFICATIONS.

2 BASED ON A NORMAL BUILDING IMPORTANCE CATEGORY, THE ROOF SNOW LOAD AND SNOW ACCUMULATION MUST BE FACTORED BY THE IMPORTANCE FACTOR, Is OF 1.0 FOR ULS (ULTIMATE LIMIT STATES) AND 0.9 FOR SLS (SERVICEABILITY LIMIT STATES). DESIGN ROOF SNOW LOAD IS 2.0 kPa (41.8.0 psf) + SNOW ACCUMULATION. NET UPLIFT IS 0.72 kPa (15.0 psf). LIVE & SNOW LOAD DEFLECTION IS TO BE LIMITED TO L/360.

3 DESIGN SUPERIMPOSED DEAD LOAD IS 0.72 kPa (15.0 psf) PLUS MECHANICAL UNITS WHERE APPLICABLE. FOR LOCATION, SIZE AND WEIGHT OF MECHANICAL UNITS SEE PLAN AND MECHANICAL DRAWINGS. TOTAL LOAD DEFLECTION IS TO BE LIMITED TO L/240.

4 ROOF TRUSS LOADS:
TOP CHORD SNOW LOAD = 2.0 kPa (41.8 psf).
TOP CHORD DEAD LOAD = 0.72 kPa (15.0 psf).
BOTTOM CHORD LIVE LOAD = 0.48 kPa (10.0 psf).
BOTTOM CHORD DEAD LOAD = 0.48 kPa (10.0 psf).

5 ROOF DATUM ELEVATION IS TOP OF DOUBLE TOP PLATE WHICH IS SET AT +4.50m ABOVE FIN. GROUND FLOOR DATUM, UNLESS CROSSED AND NOTED.

6 ARCHITECT TO CONFIRM FLUSH AND DROPPED BEAMS (ALL BEAMS ASSUMED TO BE FLUSH UNLESS OTHERWISE NOTED). PROVIDE STEEL SADDLE FOR WOOD BEAMS WHICH BEAR ONTO OR INTO STEEL COLUMNS COMPLETE WITH (2)1/2"ø THROUGH BOLTS. SEE TYPICAL DETAIL TD W.9.

7 SET TOPS OF STEEL BEAMS –38mm (–1.5") FROM DATUM ELEVATION UNLESS OTHERWISE SHOWN THUS ±0

8 CONNECT (2) 38mmx140mm (2x6) WOOD PLATE TO TOP OF ALL STEEL BEAMS WHICH SUPPORT WOOD TRUSSES OR JOISTS WITH 1/2"ø THROUGH BOLT @ 610mm (2'–0") O/C STAGGERED ON EACH SIDE OF WEB. IF USING SIDE MOUNTED HANGERS, FILL WEB WITH 2xX MEMBERS TO CLEAR FLANGE USING 1/2"ø THROUGH BOLT @ 610mm (2'–0") O/C, STAGGERED TOP AND BOTTOM.

9a ROOF DRAINAGE IS ACHIEVED WITH A COMBINATION OF SLOPED TOPS OF WALLS AND BEAMS AND TAPERED INSULATION. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ROOF SLOPES AND DRAIN LOCATIONS.

9b SEE ARCH. DWG FOR ROOF SLOPE AND DRAIN.

10 ALL STEEL EXPOSED TO THE EXTERIOR IS TO BE HOT DIPPED GALVANIZED.

11 ALL TIMBER EXPOSED TO THE EXTERIOR IS TO BE PRESSURE TREATED.

12 ALL CONVENTIONAL WOOD FRAMING MEMBERS TO BE S.P.F. #2 MIN, UNLESS NOTED OTHERWISE.

13 ALL LVL AND PSL LUMBER TO BE 2.0x10e6 psi.

14 DESIGN TRUSSES IN ACCORDANCE WITH PART 4 OF OBC, LIMIT STATES DESIGN.

15 PROVIDE TO ENGINEER FOR REVIEW, WOOD ROOF TRUSS, ENGINEERED JOIST AND BEAM SHOP DRAWINGS (STAMPED BY P. ENG.) WHICH INCLUDE SPECS FOR ALL REQUIRED JOIST AND BEAM HANGERS.

16 PROVIDE STEEL SADDLE FOR WOOD BEAMS AND GIRDER TRUSSES WHICH BEAR ONTO OR INTO STEEL COLUMNS COMPLETE WITH (2)1/2"ø THROUGH BOLTS. SEE TYPICAL DETAIL TD W.9 AND TD W.10.

17 AT ALL GIRDER TRUSSES, PROVIDE MIN. (4) 38mmx140mm (2x6) POST, U.N.O.

18 HORIZONTAL DEFLECTION OF SCISSOR TRUSSES IS TO BE LIMITED TO L/500 OF HEIGHT OF SUPPORTING WALL TO A MAXIMUM OF 13mm(1/2").

19 ROOF TRUSS DESIGNER TO PROVIDE HURRICANE CLIPS AT ALL ROOF TRUSSES FOR UPLIFT AT TOP PLATE.

20 CONNECT INTERIOR NON–LOAD BEARING WALLS TO TRUSSES USING A SLIDING CONNECTION.

21 TYPICAL EXTERIOR WALL 38mmx140mm (2x6) @ 406mm (16") O/C, U.N.O., WITH DOUBLE WOOD TOP PLATE. ANCHOR BOTTOM PLATE TO CONCRETE WALL WITH 1/2"ø A.BOLT WITH 203mm (8") EMBED. + 51mm (2") HOOK @ 1220mm (4'–0") O/C MAX.

22 TYPICAL INTERIOR WALL 38mmx140mm (2x6) @ 305mm (12") O/C, U.N.O., WITH DOUBLE WOOD TOP PLATE. ANCHOR BOTTOM PLATE TO CONCRETE WALL WITH 1/2"ø A.BOLT WITH 203mm (8") EMBED. + 51mm (2") HOOK @ 1220mm (4'–0") O/C MAX.

23 TYPICAL EXTERIOR SHEATHING 13mm (1/2") PLYWOOD. PROVIDE NAILING AT 152mm (6") O/C ALONG ALL SHEET EDGES AND 305mm (12") O/C ON INTERMEDIATE FRAMING MEMBERS, U.N.O.

24 PROVIDE MIN. 16mm (5/8") EXTERIOR GRADE PLYWOOD ROOF SHEATHING COMPLETE WITH H–CLIPS. PROVIDE NAILING AT 152mm (6") c/c ALONG ALL SHEET EDGES AND 305mm (12") c/c ON INTERMEDIATE FRAMING MEMBERS. PROVIDE 3mm (1/8") GAP BETWEEN SHEATHING PIECES.

25 TRIM ALL SIDES OF FRAMED OPENINGS WITH (2) 38mmx140mm (2x6) UNLESS OTHERWISE NOTED ON PLAN. REFER ALSO TO TD W.5.

26 PROVIDE MIN. (2) 38mmx235mm (2x10) FOR ALL LINTELS ON MIN. (3) 38mmx140mm (2x6) POSTS, U.N.O.

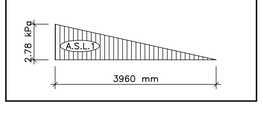
27 FOR SUPPORT FRAMING OF ROOF TOP UNITS AND OPENINGS, REFER TO TYPICAL DETAIL TDW.5. REFER TO MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF UNITS AND OPENINGS.

28 'M1' DENOTES FACTORED MOMENT CONNECTION WITH Mf = 20 kNm.

29 ALL FIREWALLS ARE TO BE DESIGNED TO MEET CLAUSE 4.1.5.17. OF THE MOST CURRENT OBC. FOR FIREWALL LOCATIONS, REFER TO ARCHITECTURAL DRAWINGS. PROVIDE SHOP DRAWINGS, COMPLETE WITH P.ENG STAMP FOR REVIEW.

END OF SECTION

ACCUMULATED SNOW LOAD #1



WALL SCHEDULE

MARK	SIZE	REINFORCING
CW1	250	15M @ 406 o/c V.&H.
CW2	200	15M @ 406 o/c V.&H.
W1	2x6 @ 406mm o/c	12.5mm PLYWOOD SHEATHING
W2	2x8 @ 406mm o/c	12.5mm PLYWOOD SHEATHING
W3	2x4 @ 305mm o/c	

2 NOTE:
12.5mm PLYWOOD SHEATHING TO EXTERIOR FACE, NAILING AT 152mm (6") o.c. ALONG ALL SHEET EDGES AND 305mm (12") o.c. ON INTERMEDIATE FRAMING MEMBERS, U.N.O.

COLUMN/POST SCHEDULE

MARK	SIZE	BASE PLATE
C1	HSS 102x102x6.4	152x16x254 W/ (2)16mmø A.RODS 305 EMBED. + 51 HK.
C2	HSS 141øx6.4	254x16x254 W/ (4)15M A.RODS 406 EMBED. + 51 HK.
P1	(3)38x89	
P2	(4)38x89	
P3	(3)38x140	
P4	(4)38x140	
P5	(3)38x184	
P6	(4)38x184	

CONTRACTOR MUST CHECK AND VERIFY ALL SITE CONDITIONS BEFORE PROCEEDING WITH THE WORK.

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DO NOT SCALE THE DRAWINGS.

NO.	REVISIONS	DATE
1	REVISED FOR PERMIT	AUG. 27/20
2	REVISED FOR PERMIT	NOV. 04/20
5	FOR PERMIT REVISIONS	NOV. 04/20
4	RE–ISSUED FOR PERMIT	AUG. 27/20
3	FOR PERMIT	JUN. 24/20
2	FOR REVIEW	APR. 17/20
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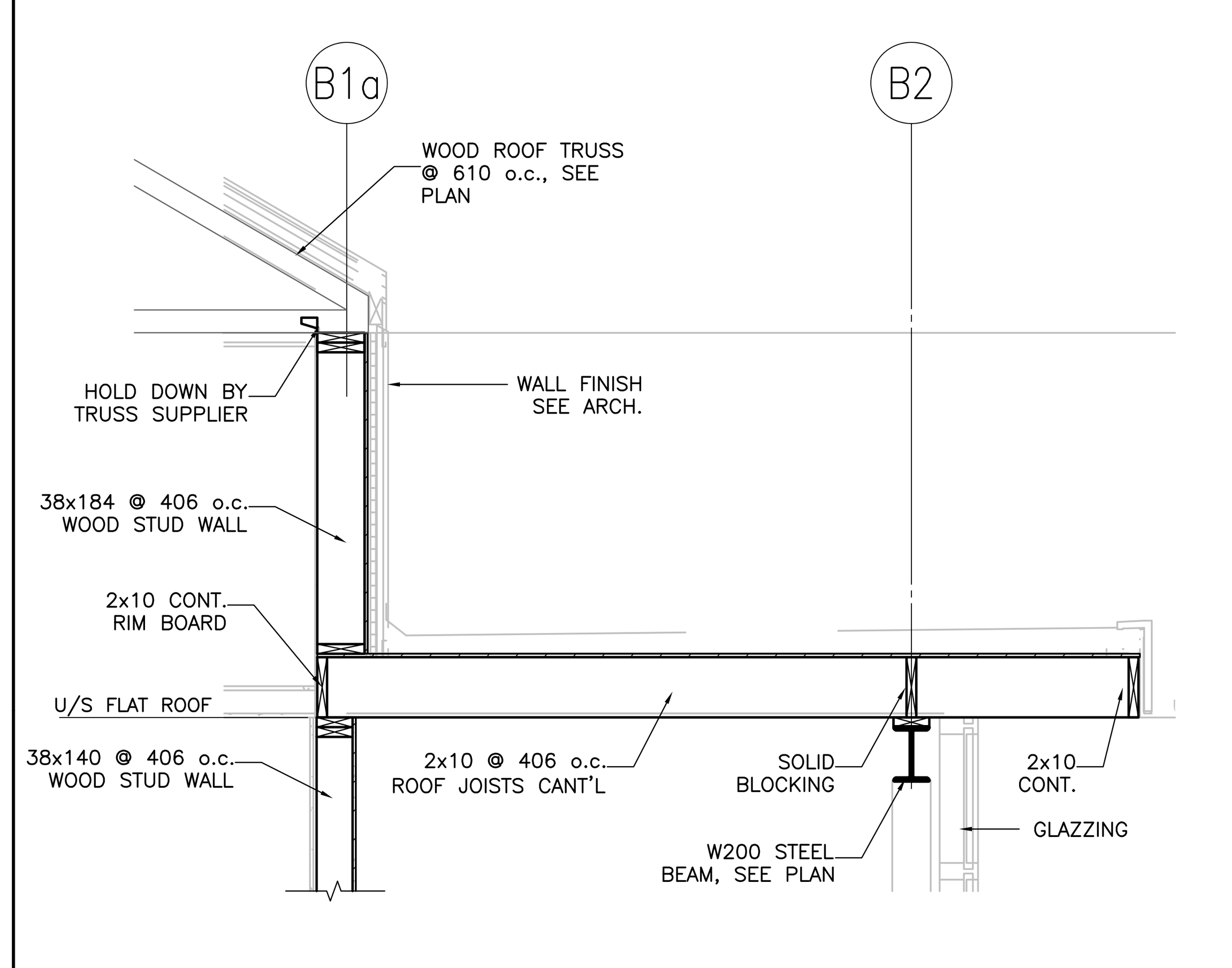
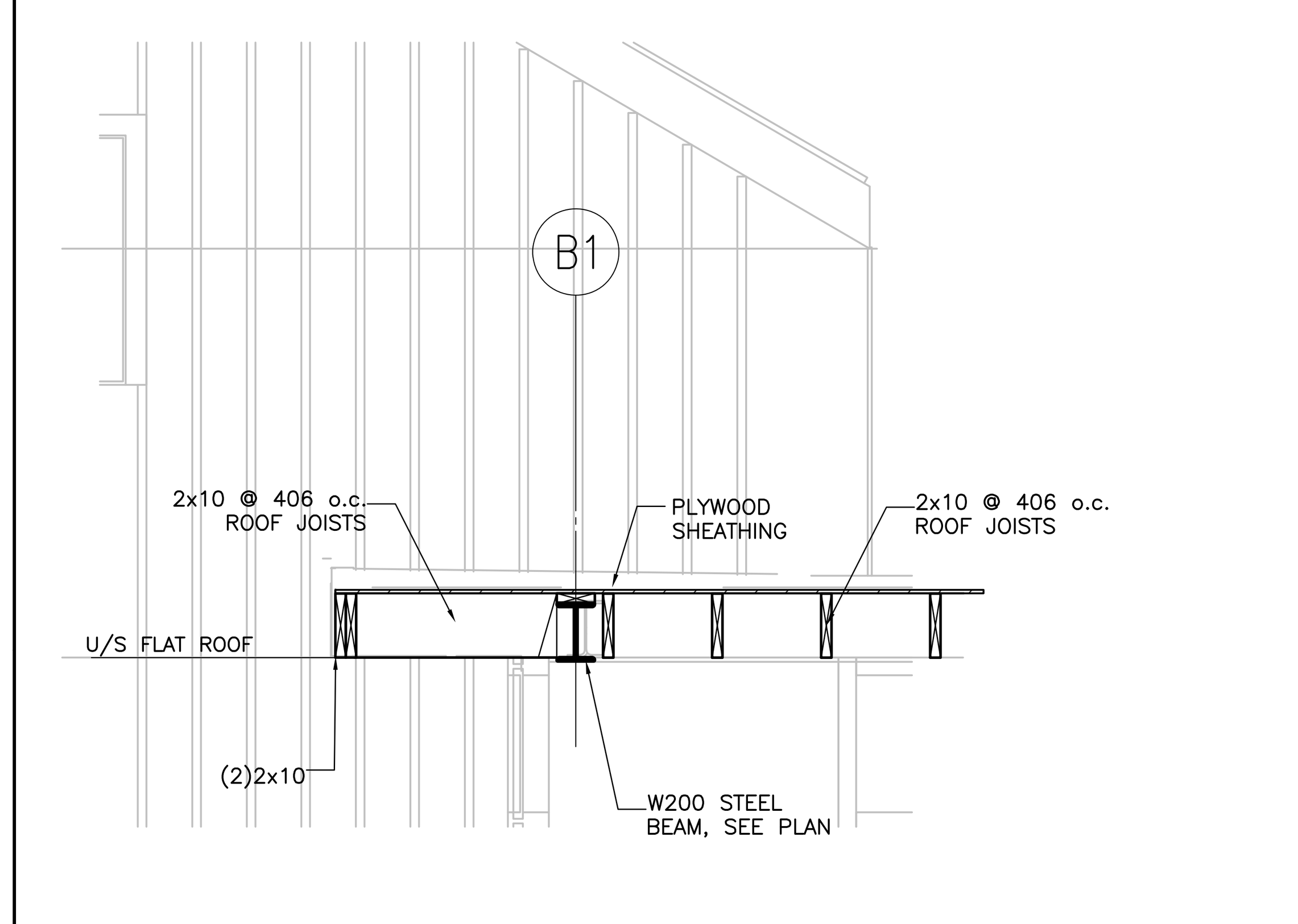
DRAWING
ROOF FRAMING PLAN

DRAWN NW	PROJECT NO 20–4262A
CHECKED EK	DRAWING NO S1.2
SCALE 1:100	
PLOTTED DATE NOVEMBER, 2020	6 OF 7



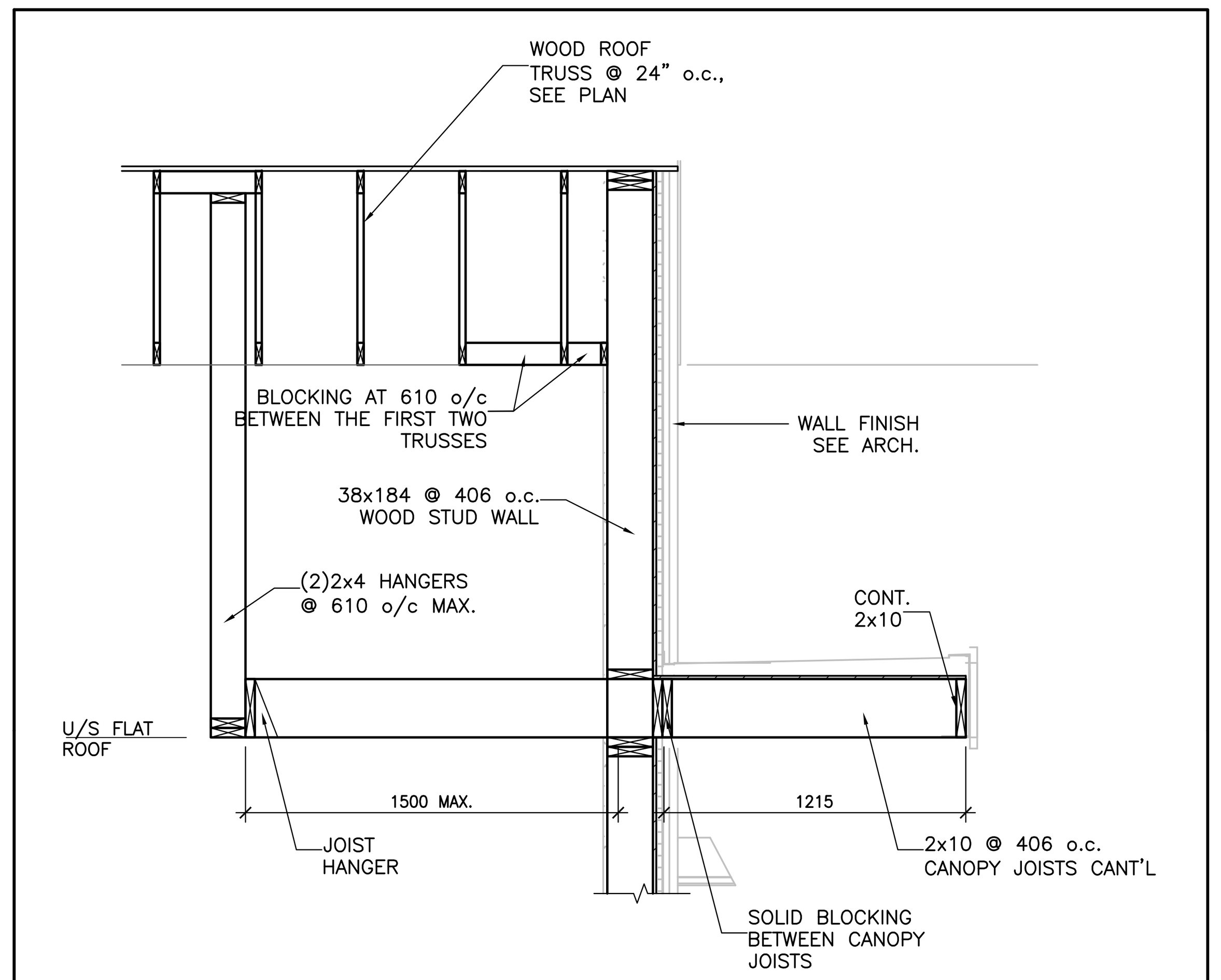
R1 / S3.1 **ROOF SECTION**

SCALE = 1:25



R2 / S3.1 **ROOF SECTION**

SCALE = 1:25



R3 / S3.1 **ROOF SECTION**

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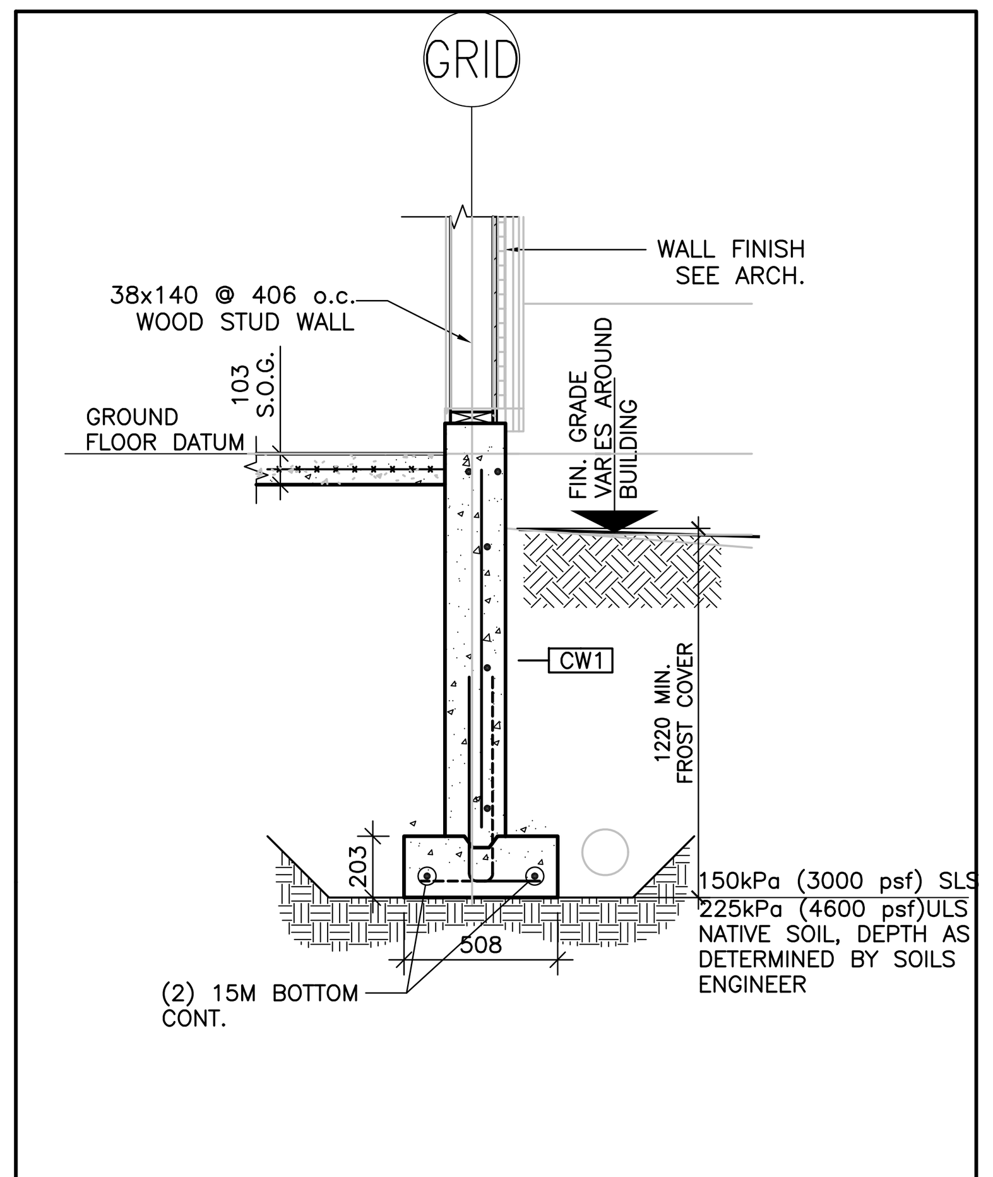
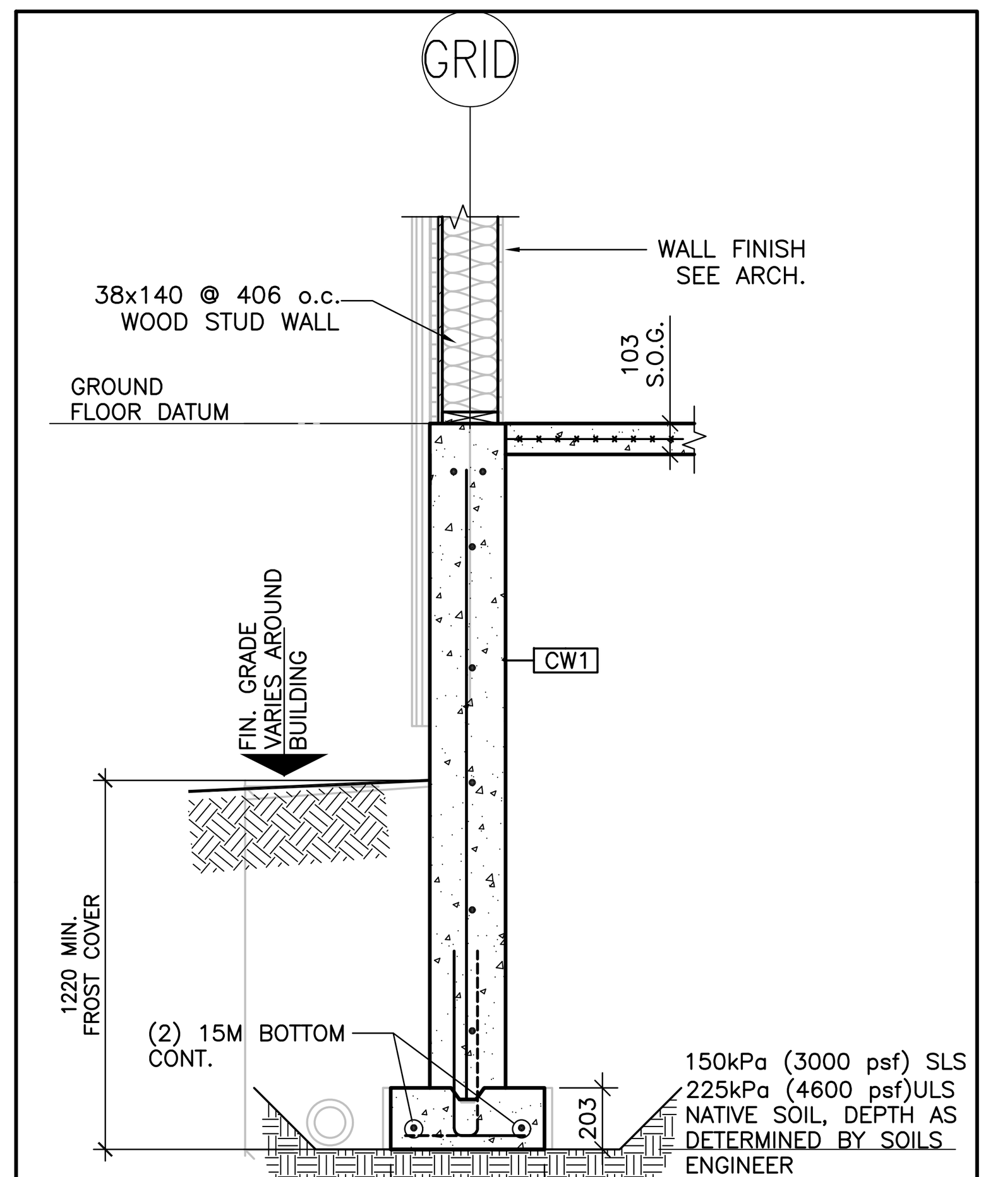


F1 / S3.1 **FOUNDATION SECTION**

SCALE = 1:25



F2 / S3.1 **FOUNDATION SECTION**

SCALE = 1:25

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DRAWING

WALL SECTIONS

DRAWN: TL	PROJECT NO: 20–4262A
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PLOTTED DATE: NOVEMBER, 2020	7 OF 7