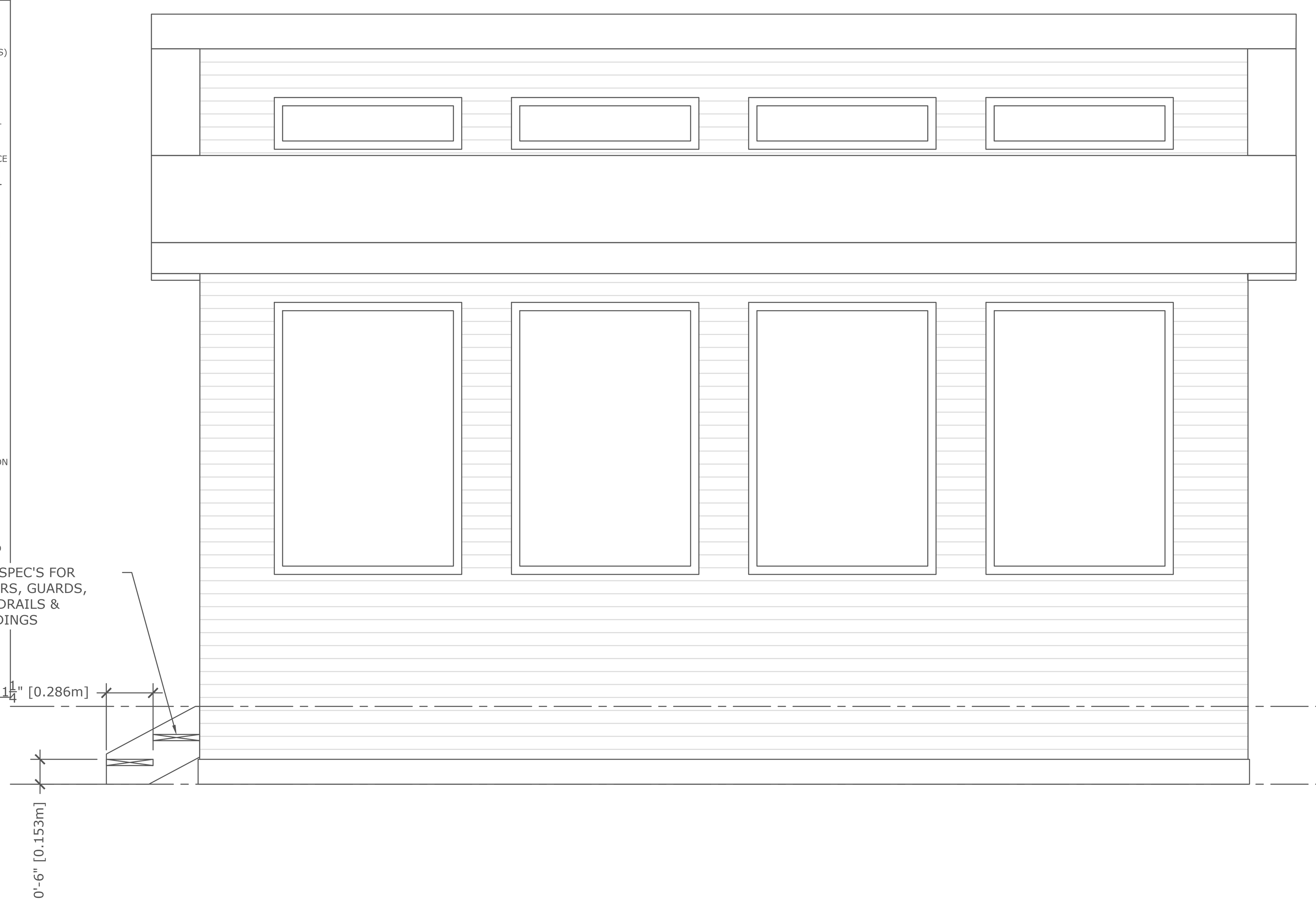
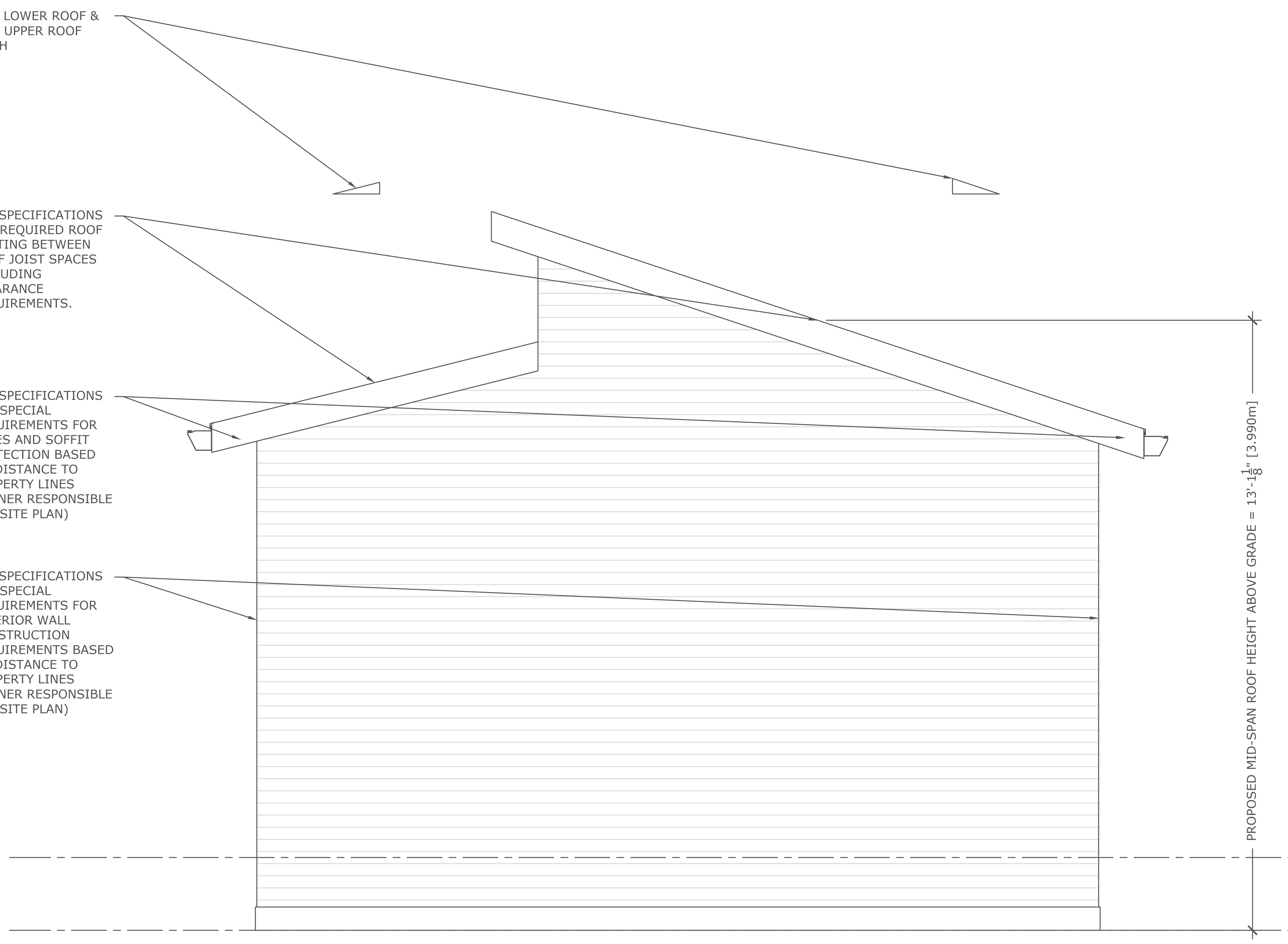
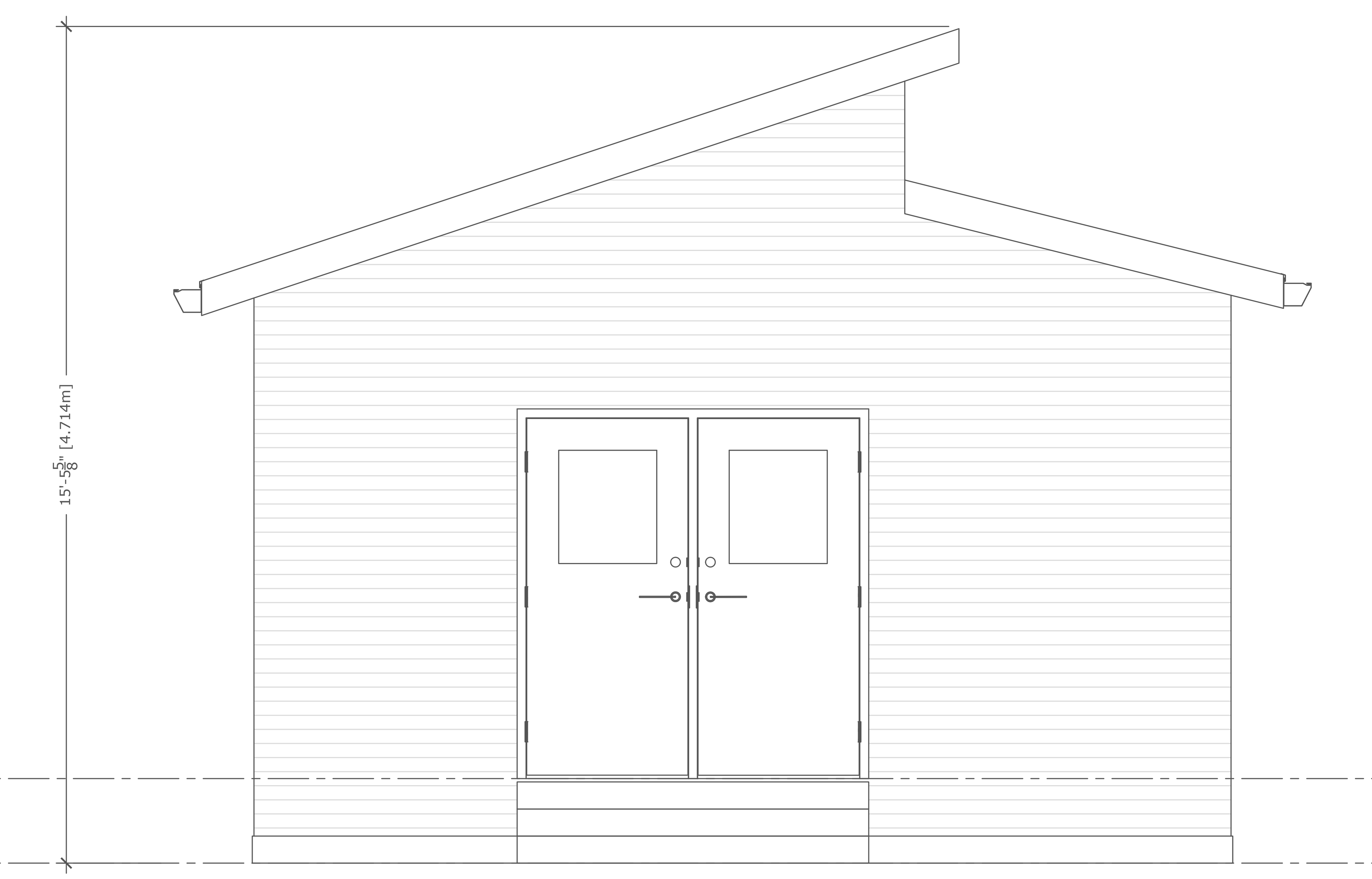
BUILDING ASSEMBLY LEGEND:

FND-1	TYPICAL PERMANENT WOOD FOUNDATION NOT EXTENDING TO BELOW FROST LINE (OVERBUILT FOR 4.8kPa FLOOR LIVE LOAD): - FOUNDATION DRAINAGE LAYER (SEE SPEC'S FOR CAN-S406 REQUIREMENTS) - 2-PLY 2X12 SPF NO. 2 OR BTR. PTW FOOTINGS (SEE SPEC'S FOR CAN-S406 REQUIREMENTS) - 2X8 SPF NO. 2 OR BTR. @ 24" O.C. FROST WALL (SEE SPEC'S FOR CAN-S406 REQUIREMENTS) - EXTERIOR WATERPROOFING MEMBRANE (SEE SPEC'S FOR CSA-S406 REQUIREMENTS) - 3/4" PTW PLYWOOD SHEATHING (SEE SPEC'S FOR CAN-S406 REQUIREMENTS) - (OPTIONAL IF HEATED STRUCTURE) FULL CAVITY DEPTH FIBERGLASS BATT. OR MINERAL WOOL INSULATION B/W STUDS - 2" RIGID PERIMETER INSULATION WITH MIN. 4.8kPa (100psf) COMPRESSIVE STRENGTH AT 10% MODULUS OF SUBGRADE REACTION) - 6 MIL POLY VAPOUR BARRIER INSTALLED OVER INSULATION (REQUIRED IF HEATED) - PERMALON PLY X-200 FR CRAWLSPACE GROUND COVER THROUGHOUT ENTIRE CRAWLSPACE
E-1	TYPICAL EXT. WALL (SEE EXTERIOR WALL SPECIAL CONSTRUCTION REQUIREMENTS BELOW): - SIDING AS PER OWNER - HENRY BAKOR PEEL N' STICK "SA AIR BARRIER" OR TYVEK "HOUSE WRAP" - 1 LAYER $\frac{3}{8}$" EXT. GRADE PLYWOOD OR OSB SHEATHING TO EXT. FACE - 2X4 STAGGERED SPF. NO. 2 STUDS ON 2X8 SPF NO. 2 T&B WALL PLATES (SINGLE BOTTOM WALL PLATE AND DOUBLE TOP WALL PLATES. - (OPTIONAL IF HEATED STRUCTURE) FULL CAVITY DEPTH FIBERGLASS BATT. OR MINERAL WOOL INSULATION B/W STUDS - 6MIL CGSB POLY VAPOUR-BARRIER (REQUIRED IF INSULATED) - 1 LAYER $\frac{1}{2}$" GYPSUM WALLBOARD SHEATHING (REQUIRED IF INSULATED)
E-2	EXT. WALL LOCATED LESS THAN 1.2m (4'-0") FROM PROPERTY LINE: SEE SPECIAL CONSTRUCTION REQUIREMENTS IN SPECIFICATIONS FOR ANY WALL LOCATED LESS THAN 1.2m FROM PROPERTY LINE (SEE OWNER SITE PLAN)
R-1	TYPICAL ROOF: - 30 YEAR ASPHALT LOW SLOPE ROOF SHINGLES (COLOR & MATERIAL AS PER OWNER) - ROLE ROOFING EAVE PROTECTION FIRST 3'-0" FROM EAVE - 1 LAYER OF $\frac{7}{16}$" EXTERIOR GRADE PLYWOOD OR OSB ROOF SHEATHING C/W H-CLIPS & BLOCKING EDGE SUPPORT - 2X8 SPF NO.2 OR BTR. ROOF JOISTS @ 24" O.C. W/ EITHER $\frac{3}{12}$ OR $\frac{4}{12}$ ROOF PITCH WITH BIRDS-MOUTH CUTS AND TOE-NAIL FASTENING TO WALL ASSEMBLIES - ROOF / ATTIC SPACE VENTILATION (LOW LEVEL & HIGH LEVEL ROOF VENTS AND VENTED SOFFIT WITH 2.5" SPACE FOR AIRFLOR) - MIN. 7.25" DEPTH ROXUL BATT. MINERAL WOOL INSULATION AND STRAP OUT INTERIOR SIDE OF ROOF JOISTS TO ACCOMODATE MIN. 2.5" AIRSPACE PLUST 7.25" ROXUL INSULATION (REQUIRED IF HEATED) - 6MIL CGSB POLY VAPOUR-BARRIER (REQUIRED IF INSULATED) - 1 LAYER $\frac{1}{2}$" GYPSUM WALLBOARD SHEATHING (REQUIRED IF INSULATED)
F-1	TYPICAL FLOOR (OVERBUILT FOR 4.8kPA FLOOR LIVE LOAD): - 2 LAYERS 3/4" T&G PLYWOOD SHEATHING GLUED & SCREWED - 2X12 SPF NO. 2 OR BTR. FL0OR JOISTS @ 12" O.C. - CRAWLSPACE ACCESS HATCHES ON EACH SIDE OF THE BUILDING TO ALLOW ACCESS INTO EACH HALF OF THE CRAWLSPACE - ASSEMBLY OVERBUILT TO ACCOMMODATE OWNER'S WOODWORKING HOBBY SHO ANTICIPATED FLOOR LOADING







Association of Professional Engineers & Geoscientists of Saskatchewan

CERTIFICATE OF AUTHORIZATION
49North Engineering Corp.
Number 44830

Permission to Consult held by:

Discipline	Sk. Reg. No.	Signature
Structural	13705	

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SEAL:

PROFESSIONAL ENGINEER
T.D. TWEIDT
MEMBER 13705
2021/02/25
YR. MN. DAY
SASKATCHEWAN

DO NOT SCALE FROM THESE DRAWINGS. U.N.O. ALL DIMENSIONS SHOWN IN THESE DRAWINGS ARE MEASURED TO THE OUTSIDE FACE OF EXTERIOR WALLS AND TO THE CENTERLINE OF INTERIOR WALLS. ALL DIMENSIONS MUST BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO SUBMITTING ANY ESTIMATE, PROPOSAL AND/OR CONTRACT TO THE OWNER; AND BY THE CONTRACTOR AGAIN PRIOR TO THE EXECUTION OF ANY WORK REFERENCED BY THESE DRAWINGS AND/OR SPECIFICATIONS.

49NORTH ENGINEERING CORP. PROJECT NUMBER:
2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

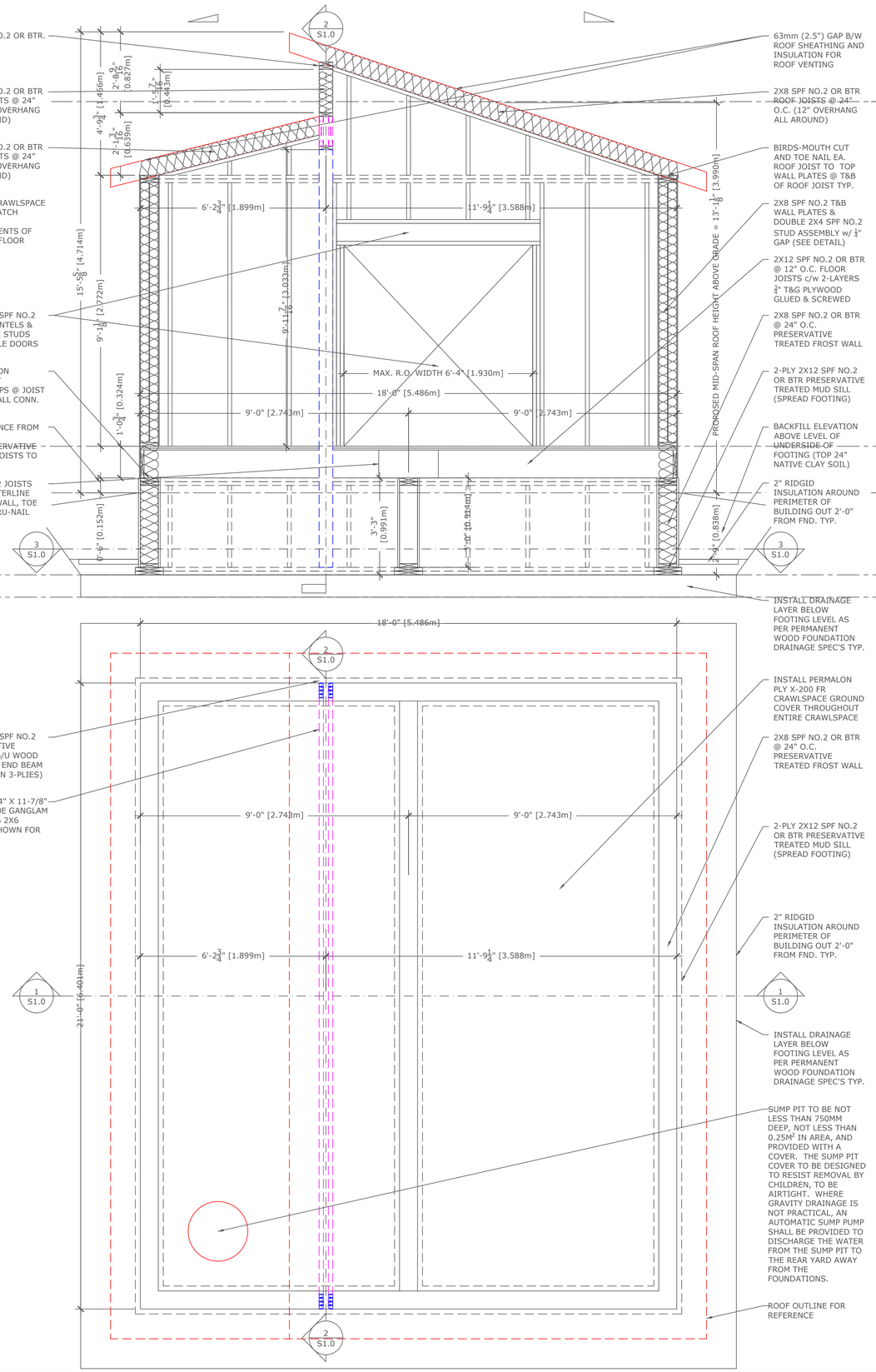
ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1-1/2" = 1'-0"
DATE	FEBRUARY 25, 2021

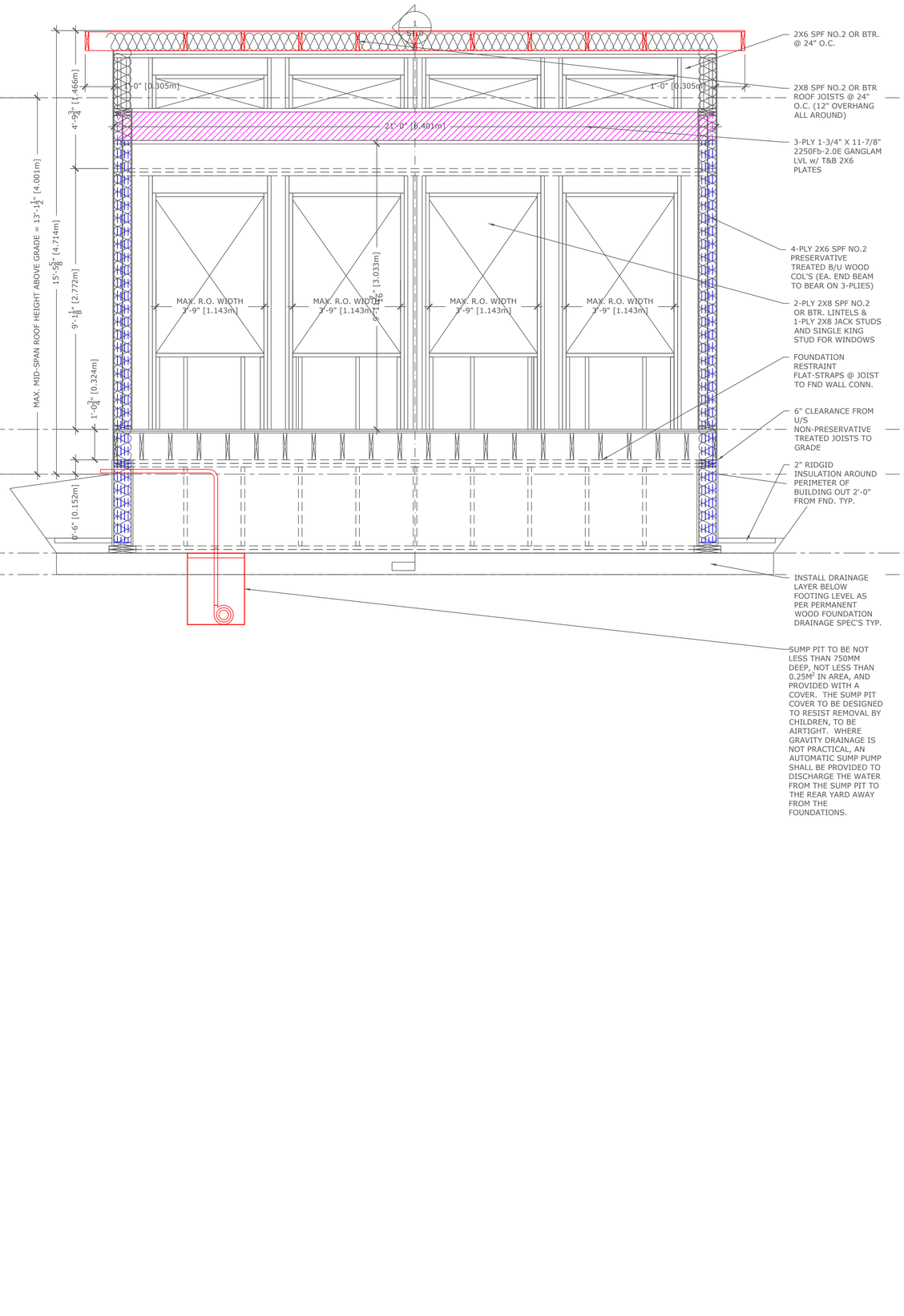
DRAWING TITLE:

EXTERIOR ELEVATIONS

SHEET NUMBER: S1.0

REVISION NUMBER:





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SEAL:

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49NORTH ENGINEERING CORP. PROJECT NUMBER: 2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1-1/2" = 1'-0"
DATE	FEBRUARY 25, 2021

DRAWING TITLE:

STRUCTURAL SECTIONS & FOUNDATION LAYOUT

SHEET NUMBER: S1.0

REVISION NUMBER:

RESIDENTIAL - EXTERIOR WALLS - SPECIAL CONSTRUCTION REQUIREMENTS - 2015 NBC:

1. WHERE A WALL (AND/OR GABLE END WALL THAT ENCLOSE AN ATTIC OR ROOF SPACE) IS LOCATED LESS THAN 1.2m (APPROX. 4'-0") FROM A PROPERTY LINE, THE WALL IS TO HAVE NO OPENINGS AND BE PROTECTED BY A ¾-HOUR FIRE RESISTANCE RATING IN ACCORDANCE WITH SUBSECTION 9.10.15 OF THE 2015 NBC. WHERE THE BUILDING IS LOCATED LESS THAN 1.2m (APPROX. 4'-0") FROM A PROPERTY LINE:
1.1. THE ENTIRE INTERIOR FACE OF THE AFFECTED WALL IS TO BE CLAD WITH ONE LAYER OF ½" TYPE X OR TYPE C GYPSUM WALLBOARD SHEATHING, AND
1.2. NO DOORS AND/OR WINDOWS MAY BE INSTALLED IN THE WALL.
2. ARTICLE 9.10.15.5 OF THE 2015 NBC ALSO INDICATES THAT WHERE A WALL IS LOCATED LESS THAN 1.2m (APPROX. 4'-0") BUT MORE THAN 0.60m (APPROX. 2'-0') FROM THE PROPERTY LINE, THE WALL IS TO BE PROVIDED WITH A NON-COMBUSTIBLE EXTERIOR CLADDING ON THE EXTERIOR FACE. THIS REQUIREMENT CAN BE ACHIEVED BY USING A CLADDING MATERIAL SUCH AS:
2.1. METAL SIDING, OR NON-COMBUSTIBLE FIBRE-CEMENT BOARD SIDING MEETING THE REQUIREMENTS OF SECTION 9.27;
2.2. CEMENT BASED STUCCO MEETING THE REQUIREMENTS OF SECTION 9.28; OR,
2.3. MASONRY MEETING THE REQUIREMENTS OF SECTION 9.20.
3. VINYL SIDING (OR OTHER SUCH COMBUSTIBLE SIDING SUCH AS "WOOD BASED" SIDING) FALLING WITHIN THE SCOPE OF SECTION 9.27, MAY NOT BE USED ON THE EXTERIOR FACE OF A WALL LOCATED LESS THAN 1.2m BUT MORE THAN 0.60m FROM THE PROPERTY LINE UNLESS IT IS:
3.1. INSTALLED OVER A LAYER OF ½" GYPSUM BASED SHEATHING (SUCH AS 1 LAYER OF ½" EXTERIOR GRADE GP DENSGLASS FIREGUARD SHEATHING TO EXTERIOR FACE IN PLACE OF EXTERIOR GRADE PLYWOOD OR OSB SHEATHING IN TYPICAL WALL ASSEMBLY;
3.2. HAS A FLAME SPREAD RATING OF NOT GREATER THAN 25 WHEN TESTED IN ACCORDANCE WITH SENTENCE 3.1.12.1.(2); AND,
3.3. THE VINYL SIDING MUST BE LESS THAN 2mm IN OVERALL MATERIAL THICKNESS.

RESIDENTIAL - EAVES & SOFFITS - SPECIAL CONSTRUCTION REQUIREMENTS - 2015 NBC:

1. A COMBUSTIBLE ROOF SOFFIT PROJECTION IS NOT PERMITTED TO BE LOCATED WITHIN 45mm (18") OF A PROPERTY LINE.
2. NO WOOD FRAMING MEMBER INCLUDING WOOD ROOF TRUSSES, ROOF RAFTERS AND/OR ROOF JOISTS MUST BE CUT TO ENSURE THEY ARE NOT LOCATED WITHIN 18" OF A PROPERTY LINE.
3. A COMBUSTIBLE ROOF SOFFIT PROJECTION LOCATED LESS THAN 1.2m (4'-0"), BUT MORE THAN 0.45m (1'-6"), FROM A PROPERTY LINE MUST HAVE NO OPENINGS AND BE PROTECTED BY ONE OF THE SIX (6) ITEMS LISTED IN CLAUSE 9.10.15.5.(10)(B), WHICH INCLUDE:
3.1. 0.38mm THICK SHEET STEEL,
3.2. UNVENTED ALUMINUM CONFORMING TO CAN/CGSB-93.2-M,
3.3. 12.7mm (1/2") THICK GYPSUM WALLBOARD MEETING CSA A82.31-M,
3.4. 11mm THICK PLYWOOD,
3.5. 12.5mm THICK OSB, OR
3.6. 11mm THICK SOLID LUMBER.
4. IN ACCORDANCE WITH SENTENCE 9.10.15.5.(11) ANY AND/OR ALL OF THE ABOVE ITEMS LISTED IN 3.1 TO 3.6 MAY BE COVERED WITH SOFFIT MATCHING THE BALANCE OF THE BUILDING SO THAT THE PROJECTION LOOKS THE SAME AS THE BALANCE OF THE PROJECTIONS ON THE BUILDING.

GENERAL THERMAL & MOISTURE PROTECTION SPEC'S:

1. REFER TO DRAWINGS FOR LOCATIONS OF ALL THERMAL & MOSTURE PROTECTION ELEMENTS IN BUILDING ASSEMBLIES.

AIR, MOISTURE & VAPOUR-BARRIERS GENERAL:

1. WHEN SPECIFIED IN THE DRAWINGS, MATERIALS USED FOR EXTERIOR DAMPPROOFING SHALL CONFORM TO:
2. 0.15MM (6 MIL) POLY CONFORMING TO CAN/CGSB-51.34-M, "VAPOUR BARRIER, POLYETHYLENE SHEET FOR USE IN BUILDING CONSTRUCTION",
3. MATERIAL IS TO BE INSTALLED DIRECTLY BENEATH ALL CONCRETE FLOORS (BOTH FLOOR-ON-GROUND AND STRUCTURAL SLABS), AND BE LAPPED NOT LESS THAN 300MM (12"), AND THE POLY IS TO EXTEND UP THE FOUNDATION WALL/GRADE BEAM AT LEAST 150MM (6") BEYOND HE THICKNESS OF THE SLAB, SO THAT T MAY BE TIED INTO THE MOISTURE BARRIER FOR THE EXTERIOR ALL..
4. ALL PENETRATIONS THROUGH, AND THE PERIMETER OF, THE POLY ARE TO BE SEALED USING A FLEXIBLE ACOUSTICAL SEALANT AND 3M CONTRACTORS TAPE. ONCE THE CONCRETE SLAB HAS BEEN CAST, USE ACOUSTICAL SEALANT TO CAULK THE SLAB PERIMETER TO THE FOUNDATION WALL, PRIOR TO COMPLETING ANY INTERIOR WORK IN THE ROOM.
5. IS TO BE INSTALLED ON THE WARM SIDE OF ALL INSULATED WALL, CEILING AND FLOOR ASSEMBLIES, WHERE THE ASSEMBLY SEPARATES A HEATED/CONDITIONED SPACE FROM THE EXTERIOR OF THE BUILDING OR AN UNHEATED/UNCONDITIONED SPACE WITHIN THE BUILDING.
6. JOINTS ARE TO BE LAPPED NOT LESS THAN 150MM (6") AND BE SEALED USING A FLEXIBLE ACOUSTICAL SEALANT AND 3M CONTRACTORS TAPE. ALL JOINTS ARE TO BE AT WALL STUDS, OR CEILING FRAMING MEMBERS FOR SOLID BACKING. PROVIDE A CONTINUOUS BEAD OF SEALANT AT THE INTERSECTION OF TOP WALL PLATES WITH ROOF/CEILING FRAMING, AND BOTTOM WALL PLATES WITH SUBFLOOR SHEATHING FOR CONTINUITY.

THERMAL INSULATION:

1. WHEN SPECIFIED IN THE DRAWINGS, THERMAL INSULATION SHALL CONFORM TO THE REQUIREMENTS OF:
2. CAN/CGSB-51.25-M, "THERMAL INSULATION, PHENOLIC, FACED,"
3. CGSB 51-GP-27M, "THERMAL INSULATION, POLYSTYRENE, LOOSE FILL,"
4. CAN/ULC-S701, "THERMAL INSULATION, POLYSTYRENE, BOARDS AND PIPE COVERING,"
5. CAN/ULC-S702, "MINERAL FIBRE THERMAL INSULATION FOR BUILDINGS,"
6. CAN/ULC-S703, "CELLULOSE FIBRE INSULATION (CFI) FOR BUILDINGS,"
7. CAN/ULC-S704, "THERMAL INSULATION, POLYURETHANE AND POLYISOCYANURATE,
8. BOARDS, FACED,"
9. CAN/ULC-S705.1, "THERMAL INSULATION – SPRAY APPLIED RIGID POLYURETHANE
10. FOAM, MEDIUM DENSITY – MATERIAL - SPECIFICATION," OR
11. CAN/ULC-S706, "WOOD FIBRE THERMAL INSULATION FOR BUILDINGS."
12. FOR THICKNESS, LOCATION, TYPE AND RSI VALUE REFER TO DRAWINGS.
13. CUT AND TRIM BATTS NEATLY TO FIT SPACES.
14. DO NOT OVER COMPRESS FRICTION FIT BATT MATERIALS.
15. SPRAY APPLIED FOAM INSULATION MUST BE PROTECTED FROM HEAT EXPOSURE IN ACCORDANCE WITH PART 9 OF THE NBC. SPRAY-APPLIED PRODUCTS, SUCH AS "MONOKOTE Z-3306 THERMAL BARRIER", THAT HAVE BEEN TESTED TO THE CAN/ULC-S124, "TEST FOR THE EVALUATION OF PROTECTIVE COVERINGS FOR FOAMED PLASTIC" STANDARD, AND HAVE BEEN FOUND TO MEET THE "B CLASSIFICATION" REQUIREMENTS ARE PERMISSIBLE. MINIMUM REQUIRED THICKNESS IN ORDER TO ACHIEVE THE "B CLASSIFICATION".
16. UNDERSLAB INSULATION TO BE OF EPS OR XPS TYPE 4 RIGID INSULATION RATED AT 2,500 KPA (363PSI) @ 2% DEFORMATION WHEN TESTED AS PER ASTM D1621

EXTERIOR FOUNDATION DAMPPROOFING:

1. WHEN SPECIFIED IN THE DRAWINGS, MATERIALS USED FOR EXTERIOR DAMPPROOFING SHALL CONFORM TO:
2. CAN/CGSB-37.1-M, "CHEMICAL EMULSIFIER TYPE, EMULSIFIED ASPHALT FOR DAMPPROOFING,"
3. CAN/CGSB-37.2-M, "EMULSIFIED ASPHALT, MINERAL-COLLOID TYPE, UNFILLED, FOR DAMPPROOFING AND WATERPROOFING AND FOR ROOF COATINGS,"
4. CGSB 37-GP-6MA, "ASPHALT, CUTBACK, UNFILLED, FOR DAMPPROOFING,"
5. CAN/CGSB-37.16-M, "FILLED, CUTBACK ASPHALT FOR DAMPPROOFING AND WATERPROOFING,"
6. CGSB 37-GP-18MA, "TAR, CUTBACK, UNFILLED, FOR DAMPPROOFING,"
7. CAN/CGSB-51.34-M, "VAPOUR BARRIER, POLYETHYLENE SHEET FOR USE IN BUILDING CONSTRUCTION," OR
8. CAN/CSA-A123.4, "ASPHALT FOR CONSTRUCTING BUILT-UP ROOF COVERINGS AND WATERPROOFING SYSTEMS."
9. WHEN SPECIFIED IN THE DRAWINGS, THE METHOD OF APPLICATION OF ALL BITUMINOUS DAMPPROOFING MATERIALS SHALL CONFORM TO:
10. CAN/CGSB-37.3-M, "APPLICATION OF EMULSIFIED ASPHALTS FOR DAMPPROOFING OR WATERPROOFING,"
11. CGSB 37-GP-12MA, "APPLICATION OF UNFILLED CUTBACK ASPHALT FOR DAMPPROOFING," OR
12. CAN/CGSB-37.22-M, "APPLICATION OF UNFILLED, CUTBACK TAR FOUNDATION COATING FOR DAMPPROOFING."

EXTERIOR FOUNDATION WATERPROOFING:

1. WHEN SPECIFIED IN THE DRAWINGS, MATERIALS USED FOR EXTERIOR WATERPROOFING SHALL CONFORM TO:
2. CAN/CGSB-37.2-M, "EMULSIFIED ASPHALT, MINERAL-COLLOID TYPE, UNFILLED, FOR DAMPPROOFING AND WATERPROOFING AND FOR ROOF COATINGS,"
3. CAN/CGSB-37.16-M, "FILLED, CUTBACK ASPHALT FOR DAMPPROOFING AND WATERPROOFING,"
4. CAN/CSA-A123.4, "ASPHALT FOR CONSTRUCTING BUILT-UP ROOF COVERINGS AND WATERPROOFING SYSTEMS."OR
5. WP-3B98 BLUESKIN WP 200 AS MANUFACTURED BY HENRY/BAKOR.
6. WHEN SPECIFIED IN THE DRAWINGS, THE METHOD OF APPLICATION OF ALL BITUMINOUS WATERPROOFING MATERIALS SHALL CONFORM TO:
7. THE METHOD OF APPLICATION OF ALL BITUMINOUS WATERPROOFING MATERIALS SHALL CONFORM TO CAN/CGSB-37.3-M, "APPLICATION OF EMULSIFIED ASPHALTS FOR DAMPPROOFING OR WATERPROOFING."
8. WHEN SPECIFIED IN THE DRAWINGS, THE METHOD OF APPLICATION OF ALL BLUESKIN WP 200 AS MANUFACTURED BY HENRY/BAKOR MATERIALS SHALL CONFORM TO:
9. THE METHOD OF APPLICATION AS PER THE LATEST MANUFACTURER'S TECHNICAL INSTALLATION INSTRUCTIONS FOR THE APPLICATION FOR WHICH THE MATERIAL IS BEING USED.

SEALANTS AND CAULKING:

1. CLEAN ALL SURFACES THAT ARE TO RECEIVE SEALANT.
2. INSTALL SEALANT AND BACKING RODS AT ALL LOCATIONS INDICATED ON THE DRAWINGS AND AS REQUIRED BY BEST PRACTICES BUILDING TECHNIQUES WHERE NOT SHOWN ON DRAWINGS.
3. BACKING RODS ARE TO BE POLYETHYLENE URETHANE, NEOPRENE OR VINYL.
4. APPLY ALL SEALANTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
5. CLEAN ADJACENT SURFACES IMMEDIATELY AND LEAVE WORK NEAT AND CLEAN.

RESIDENTIAL - PROTECTION OF FOAMED PLASTICS - 2015 NBC:

1. PROTECTION OF FOAMED PLASTICS,
1.1. THE PROTECTION OF FOAMED PLASTICS IS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2015 NBC ARTICLE 9.10.17.10. AND NOTE A-3.1.4.2.AND THE REQUIREMENTS BELOW.
1.2. EXCEPT AS PROVIDED BELOW, FOAMED PLASTICS THAT FORM PART OF A WALL OR CEILING ASSEMBLY SHALL BE PROTECTED FROM ADJACENT SPACE IN THE BUILDING, OTHER THAN ADJACENT CONCEALED SPACES WITHIN ATTIC OR ROOF SPACES, CRAWL SPACES, WALL ASSEMBLIES AND CEILING ASSEMBLIES
1.2.1. BY ONE OF THE INTERIOR FINISHES DESCRIBED IN SUBSECTIONS 2015 NBC 9.29.4. TO 9.29.9.,
1.2.2. PROVIDED THE BUILDING DOES NOT CONTAIN A GROUP C MAJOR OCCUPANCY, BY SHEET METAL THAT
1.2.2.1. IS MECHANICALLY FASTENED TO THE SUPPORTING ASSEMBLY INDEPENDENT OF THE INSULATION,
1.2.2.2. IS NOT LESS THAN 0.38 MM THICK, AND
1.2.2.3. HAS A MELTING POINT NOT LESS THAN 650°C, OR
1.2.3. BY ANY THERMAL BARRIER THAT MEETS THE REQUIREMENTS OF 2015 NBC SENTENCE 3.1.5.15.(2).(ALSO SEE 2015 NBC NOTE A-3.1.4.2.(1)(c).)
1.3. A WALK-IN COOLER OR FREEZER CONSISTING OF FACTORY-ASSEMBLED WALL, FLOOR OR CEILING PANELS CONTAINING FOAMED PLASTICS IS PERMITTED TO BE USED, PROVIDED THE PANELS
1.3.1. ARE PROTECTED ON BOTH SIDES BY SHEET METAL NOT LESS THAN 0.38 MM THICK HAVING A MELTING POINT NOT LESS THAN 650°C,
1.3.2. DO NOT CONTAIN AN AIR SPACE, AND
1.3.3. HAVE AFLAME-SPREAD RATING, DETERMINED BY SUBJECTING A SAMPLE PANEL WITH AN ASSEMBLED JOINT TYPICAL OF FIELD INSTALLATION TO THE APPLICABLE TEST DESCRIBED IN 2015 NBC SUBSECTION 3.1.12., THAT IS NOT MORE THAN THAT PERMITTED FOR THE ROOM OR SPACE IN WHICH THEY ARE LOCATED OR THAT THEY BOUND.
1.4. THERMOSETTING FOAMED PLASTIC INSULATION HAVING AFLAME-SPREAD RATING OF NOT MORE THAN 200 IS PERMITTED TO BE USED IN FACTORY-ASSEMBLED DOORS PROVIDED THAT
1.4.1. THE INSULATION IS COVERED ON THE INTERIOR WITH A METALLIC FOIL,
1.4.2. THE ASSEMBLY HAS A FLAME-SPREAD RATING OF NOT MORE THAN 200, AND
1.4.3. THE ASSEMBLY INCORPORATES NO AIR SPACES.

RESIDENTIAL - MOISTURE PROTECTION FOR INTERIOR FINISHES - 2015 NBC:

1. MOISTURE PROTECTION
1.1. THE REQUIREMENTS FOR MOISTURE PROTECTION FOR INTERIOR FINISHES IS TO BE IN ACCORDANCE WITH THE 2015 NBC ARTICLE 9.13.2.5. AND NOTE A-9.13.2.5.
1.2. THE INTERIOR SURFACE OF FOUNDATION WALLS BELOW GROUND LEVEL SHALL BE PROTECTED BY MEANS THAT MINIMIZE THE INGRESS OF MOISTURE FROM THE FOUNDATION WALL INTO INTERIOR SPACES, WHERE
1.2.1. A SEPARATE INTERIOR FINISH IS APPLIED TO A CONCRETE OR UNIT MASONRY WALL THAT IS IN CONTACT WITH THE SOIL, OR
1.2.2. WOOD MEMBERS ARE PLACED IN CONTACT WITH SUCH WALLS FOR THE INSTALLATION OF INSULATION OR FINISH.
1.3. EXCEPT AS PROVIDED IN 1.4 BELOW, WHERE THE PROTECTION OF INTERIOR FINISHES REQUIRED IN 1.2, ABOVE, CONSISTS OF MEMBRANES OR COATINGS,
1.3.1. THE MEMBRANE OR COATING SHALL EXTEND FROM THE SLAB-ON-GRADE FLOOR SURFACE, LOCATED BLEW GRADE LEVEL, UP TO THE HIGHEST EXTENT OF THE INTERIOR INSULATION OR FINISH, BUT NOT HIGHER THAN THE EXTERIOR FINISHED GROUND LEVEL, AND
1.3.2. NO MEMBRANE OR COATING WITH A PERMEANCE LESS THAN 170 NG/(PA·S·M2) SHALL BE APPLIED TO THE INTERIOR SURFACE OF THE FOUNDATION WALL ABOVE GROUND LEVEL BETWEEN THE INSULATION AND THE FOUNDATION WALL.
1.4. WHERE INSULATION FUNCTIONS AS BOTH MOISTURE PROTECTION FOR INTERIOR FINISHES AND AS A VAPOUR-BARRIER IN ACCORDANCE WITH 2015 NBC SUBSECTION 9.25.4., IT SHALL BE APPLIED OVER THE ENTIRE INTERIOR SURFACE OF THE FOUNDATION WALL.
1.5. NOTE 1: PROTECTION OF INTERIOR FINISHES AGAINST MOISTURE. EXCESS WATER FROM CAST-IN-PLACE CONCRETE AND GROUND MOISTURE TENDS TO MIGRATE TOWARD INTERIOR SPACES, PARTICULARLY IN THE SPRING AND SUMMER. WHERE MOISTURE-SUSCEPTIBLE MATERIALS, SUCH AS FINISHES OR WOOD MEMBERS, ARE IN CONTACT WITH THE FOUNDATION WALL, THE MOISTURE NEEDS TO BE CONTROLLED BY INSTALLING A MOISTURE BARRIER ON THE INTERIOR SURFACE OF THE FOUNDATION WALL THAT EXTENDS FROM THE UNDERSIDE OF THE INTERIOR FINISH UP THE FACE OF THE WALL TO A POINT JUST ABOVE THE LEVEL OF THE GROUND OUTSIDE.
1.6. NOTE 2: THE REASON THE MOISTURE BARRIER ON THE INTERIOR SURFACE OF THE FOUNDATION WALL MUST BE STOPPED NEAR GROUND LEVEL IS TO ALLOW ANY MOISTURE THAT FINDS ITS WAY INTO THE FINISHED WALL CAVITY FROM THE INTERIOR SPACE (THROUGH LEAKS IN THE AIR OR VAPOUR BARRIER) TO DIFFUSE TO THE EXTERIOR. IF THE VAPOUR PERMEANCE OF DAMPPROOFING MEMBRANES OR COATINGS EXCEEDS 170 NG/(PA·S·M 2), SUCH MOISTURE BARRIERS MAY BE CARRIED FULL HEIGHT; IF THEIR VAPOUR PERMEANCE IS LESS THAN THAT, THIS MOISTURE RISKS BEING TRAPPED ON THE INTERIOR SURFACE OF THE MOISTURE BARRIERS. THE PERMEANCE LIMIT CORRESPONDS TO THE LOWER LIMIT FOR BREATHER-TYPE MEMBRANES, SUCH AS ASPHALT-IMPREGNATED SHEATHING PAPER.
1.7. NOTE 3: SOME INSULATION PRODUCTS CAN ALSO BE USED TO PROTECT INTERIOR FINISHES FROM THE EFFECTS OF MOISTURE. THEY HAVE SHOWN ACCEPTABLE PERFORMANCE WHEN APPLIED OVER THE ENTIRE FOUNDATION WALL BECAUSE, IN THIS CASE, THEY ALSO PROVIDE VAPOUR BARRIER AND MOISTURE BARRIER FUNCTIONS AND POSSIBLY ALSO THE AIR BARRIER FUNCTION. WHERE A SINGLE PRODUCT PROVIDES ALL THESE FUNCTIONS, THERE IS NO RISK OF TRAPPING MOISTURE BETWEEN TWO FUNCTIONAL BARRIERS WITH LOW WATER VAPOUR PERMEANCE.

RESIDENTIAL - SUPPORT FOR CLADDING, SHEATHING & FINISH MATERIALS - 2015 NBC:

1. SUPPORT FOR SUPPORT FOR CLADDING, SHEATHING AND FINISHING MATERIALS,
1.1. SUPPORT FOR SUPPORT FOR CLADDING, SHEATHING AND FINISHING MATERIALS IS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2015 NBC ARTICLE 9.23.10.6.
1.2. CORNERS AND INTERSECTIONS SHALL BE CONSTRUCTED TO PROVIDE ADEQUATE SUPPORT FOR THE VERTICAL EDGES OF INTERIOR FINISHES, SHEATHING AND CLADDING MATERIALS, AND IN NO INSTANCE SHALL EXTERIOR CORNERS BE FRAMED WITH LESS THAN THE EQUIVALENT OF 2 STUDS.
1.3. WHERE THE VERTICAL EDGES OF INTERIOR FINISHES AT WALL INTERSECTIONS ARE SUPPORTED AT VERTICAL INTERVALS BY BLOCKING OR FURRING, THE VERTICAL DISTANCE BETWEEN SUCH SUPPORTS SHALL NOT EXCEED THE MAXIMUM DISTANCE BETWEEN SUPPORTS SPECIFIED IN 2015 NBC SECTION 9.29.

RESIDENTIAL - INTERIOR WALL & CEILING FINISHES FIRE PROTECTION & SOUND CONTROL - 2015 NBC:

1. INTERIOR WALL AND CEILING FINISHES, FIRE PROTECTION AND SOUND CONTROL, SEE 2015 NBC ARTICLE 9.29.1.1.
2. A WALL OR CEILING FINISH SHALL ALSO CONFORM TO THE APPROPRIATE REQUIREMENTS IN 2015 NBC SECTIONS 9.10. AND 9.11., IN ADDITION TO THE REQUIREMENTS IN THESE SPECIFICIATIONS.

RESIDENTIAL - WATERPROOF WALL FINISH - 2015 NBC:

1. WATERPROOF WALL FINISH
1.1. WATERPROOF WALL FINISH IS TO CONFORM TO THE REQUIREMENTS OF THE 2015 NBC ARTICLE 9.29.2.1.
1.2. WHERE REQUIRED, WATERPROOF FINISH SHALL BE PROVIDED TO A HEIGHT OF NOT LESS THAN
1.2.1. 1.8m (6'-0") ABOVE THE FLOOR IN SHOWER STALLS,
1.2.2. 1.2m (4'-0") ABOVE THE RIMS OF BATHTUBS EQUIPPED WITH SHOWERS, AND
1.2.3. 400mm (16") ABOVE THE RIMS OF BATHTUBS NOT EQUIPPED WITH SHOWERS, AND
1.2.4. 400mm (16") ABOVE THE RIMS OF SINKS, WASH BASINS, AND JANITOR SINKS AGAINST THE WALL.
1.3. WATERPROOF WALL FINISH MATERIALS SHALL CONSIST OF EITHER:
1.3.1. CERAMIC,
1.3.2. PLASTIC OR METAL TILE,
1.3.3. SHEET VINYL,
1.3.4. TEMPERED HARDBOARD,
1.3.5. LAMINATED THERMOSETTING DECORATIVE SHEETS, OR
1.3.6. LINOLEUM.

RESIDENTIAL - WOOD FURRING FOR INTERIOR FINISHES - SIZES, SPACING & FASTENING - 2015 NBC:

1. SIZE AND SPACING OF WOOD FURRING
1.1. THE SIZE AND SPACING OF WOOD FURRING, SHALL CONFORM TO 2015 NBC ARTICLES 9.29.3.1 & 9.29.3.2.
1.1.1. WOOD FURRING FOR THE ATTACHMENT OF WALL AND CEILING FINISHES SHALL CONFORM TO 2015 NBC TABLE 9.29.3.1. AND THE SPECIFICATIONS FOR THIS PROJECT.
1.1.2. FURRING SHALL BE FASTENED TO THE FRAMING OR TO WOOD BLOCKS WITH NOT LESS THAN 51mm (2") LONG NAILS.
1.1.3. SIZE AND SPACING OF FURRING SHALL CONFORM TO FOLLOWING TABLE:

MAX. SPACING OF FURRING mm (inches)	MIN. SIZE OF FURRING mm (inches)		
	MAX. SPACING OF FURRING SUPPORTS mm (inches)		
	CONTINUOUS SUPPORTS	400mm (16") O.C.	600mm (24") O.C.
300mm (12")	19mm x 38mm ($\frac{3}{4}$" x 1-$\frac{1}{2}$")	19mm x 38mm ($\frac{3}{4}$" x 1-$\frac{1}{2}$")	19mm x 64mm ($\frac{3}{4}$" x 2-$\frac{1}{2}$")
400mm (16")	19mm x 38mm ($\frac{3}{4}$" x 1-$\frac{1}{2}$")	19mm x 38mm ($\frac{3}{4}$" x 1-$\frac{1}{2}$")	19mm x 64mm ($\frac{3}{4}$" x 2-$\frac{1}{2}$")
600mm (24")	19mm x 38mm ($\frac{3}{4}$" x 1-$\frac{1}{2}$")	19mm x 64mm ($\frac{3}{4}$" x 2-$\frac{1}{2}$")	19mm x 89mm ($\frac{3}{4}$" x 3-$\frac{1}{2}$")

RESIDENTIAL - GYPSUM BOARD INTERIOR FINISHES (WITH TAPED JOINTS) - 2015 NBC:

1.1. UNLESS NOTED OTHERWISE IN THE MORE STRINGENT REQUIREMENTS FOR A LISTED ASSEMBLY (i.e. FOR FIRE SEPARATIONS HAVING A FIRE-RESISTANCE RATING BASED ON A TESTED ASSEMBLY IN ACCORDANCE WITH CAN/ULC-S101) GYPSUM BOARD FINISH (WITH TAPED JOINTS) SHALL CONFORM TO THE SPECIFICATIONS NOTED BELOW.
1.2. APPLICATION OF GYPSUM BOARD INTERIOR FINISHES.
1.2.1. GYPSUM BOARD ASSEMBLIES SHALL CONFORM TO CSA-A82.31-M, "GYPSUM BOARD APPLICATION." FOR BOTH SINGLE-LAYER AND MULTI-LAYER INSTALLATIONS.
1.3. MATERIALS ACCEPTABLE AS GYPSUM BOARD INTERIOR FINISHES SHALL CONFORM TO:
1.3.1. ASTM-C1178/C1178M, "COATED GLASS MAT WATER-RESISTANT GYPSUM BACKING PANEL," OR
1.3.2. ASTM-C1396/C1396M, "GYPSUM BOARD,"
1.3.3. EXCEPT THAT THE FLAME-SPREAD RATING OF GYPSUM BOARD SHALL BE DETERMINED IN ACCORDANCE WITH CAN/ULC-SI02, "TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS AND ASSEMBLIES."
1.4. MAXIMUM SPACING OF SUPPORTS FOR GYPSUM BOARD INTERIOR FINISHES
1.4.1. MAXIMUM SPACING OF SUPPORTS FOR GYPSUM BOARD APPLIED, AS EITHER A SINGLE LAYER, DOUBLE LAYER AND/OR TRIPPLE LAYER, SHALL CONFORM TO THE TABLE BELOW:

MAX. SPACING OF SUPPORTS FOR GYPSUM BOARD FOR SINGLE-LAYER AND MULTI-LAYER APPLICATIONS (SEE 1.4 ABOVE)

NUMBER OF LAYERS @ THICKNESS, mm (inches)	ORIENTATION OF FRAMING	MAX. SPACING OF SUPPORTS, mm (inches)		
		WALLS	CEILINGS	
			PAINTED FINISH	WATER-BASED TEXTURE FINISH
GYPSUM BOARD CONFORMING TO ALL SECTIONS (EXCEPT SECTIONS 9 AND 12) OF ASTM-C1396 / C-1396M				
1 @ 9.5mm (3/8")	PARALLEL	N/A	N/A	N/A
1 @ 9.5mm (3/8")	PERPENDICULAR	400mm (16")	400mm (16")	N/A
1 @ 12.7mm (1/2")	PARALLEL	600mm (24")	400mm (16")	N/A
1 @ 12.7mm (1/2")	PERPENDICULAR	600mm (24")	600mm (24")	400mm (16")
1 @ 15.9mm (5/8")	PARALLEL	600mm (24")	400mm (16")	N/A
1 @ 15.9mm (5/8")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")
>1 @ 9.5mm (3/8")	PARALLEL	600mm (24")	600mm (24")	600mm (24")
>1 @ 9.5mm (3/8")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")
>1 @ 12.7mm (1/2")	PARALLEL	600mm (24")	600mm (24")	600mm (24")
>1 @ 12.7mm (1/2")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")
>1 @ 15.9mm (5/8")	PARALLEL	600mm (24")	600mm (24")	600mm (24")
>1 @ 15.9mm (5/8")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")
GYPSUM BOARD CONFORMING TO ONLY SECTION 12 OF ASTM-C1396 / C-1396M				
1 @ 12.7mm (1/2")	PARALLEL	600mm (24")	400mm (16")	N/A
1 @ 12.7mm (1/2")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")
>1 @ 12.7mm (1/2")	PARALLEL	600mm (24")	600mm (24")	600mm (24")
>1 @ 12.7mm (1/2")	PERPENDICULAR	600mm (24")	600mm (24")	600mm (24")

1.5. SUPPORT OF INSULATION BEHIND GYPSUM BOARD INTERIOR FINISHES
1.5.1. GYPSUM BOARD SUPPORTING INSULATION SHALL BE NOT LESS THAN 12.7mm (1/2") THICK
1.6. LENGTH OF FASTENERS FOR SINGLE-LAYER, AND MULTI-LAYER, GYPSUM BOARD INTERIOR FINISHES
1.6.1. THE LENGTH OF FASTENERS FOR GYPSUM BOARD SHALL CONFORM TO 2015 NBC TABLE 9.29.5.5.,
1.6.2. EXCEPT THAT LESSER DEPTHS OF PENETRATION ARE PERMITTED FOR ASSEMBLIES REQUIRED TO HAVE A FIRE-RESISTANCE RATING, SOLELY ON THE BASIS OF FIRE TESTS, THAT SUCH DEPTHS ARE ADEQUATE FOR THE REQUIRED RATING.

REQUIRED FIRE-RESISTAINCE RATING OF ASSEMBLY	MINIMUM FASTENER LENGTH (DRIVEN INTO WOOD ONLY SUPPORTS), mm (inches) **FASTENER MUST BE THE LENGTH BELOW + THICKNESS OF MATERIAL SUPPORTED**			
	WALLS (WOOD FRAMED WITH STUDS @ MAX. 400mm (16" O.C.)		CEILINGS (WOOD FRAMED WITH SUPPORTS @ MAX. 600mm (24" O.C.)	
	NAILS	SCREWS	NAILS	SCREWS
NO RATING REQUIRED	20mm (0.787")	15mm (0.591")	20mm (0.787")	15mm (0.591")
45-MINUTES	20mm (0.787") + 12.7mm (0.500")GWB = 32.7mm (1.287")	20mm (0.787")	30mm (1.181")	30mm (1.181")
1-HOUR	20mm (0.787")	20mm (0.787")	45mm (1.772")	45mm (1.772")
1.5-HOURS	20mm (0.787")	20mm (0.787")	60mm (2.362")	60mm (2.362")
2.0-HOURS	45mm (1.772")	45mm (1.772")	90mm (3.543")	90mm (3.543")

1.7. NAILS FOR FASTENING GYPSUM BOARD TO WOOD SUPPORTS SHALL CONFORM TO:
1.7.1. ASTM-F1667, "DRIVEN FASTENERS: NAILS, SPIKES, AND STAPLES," OR
1.7.2. CSA-B111, "WIRE NAILS, SPIKES AND STAPLES."
1.8. SCREWS FOR FASTENING GYPSUM BOARD TO WOOD SUPPORTS SHALL CONFORM TO:
1.8.1. ASTM-C1002, "STEEL SELF-PIERCING TAPPING SCREWS FOR THE APPLICATION OF GYPSUM PANEL PRODUCTS, OR METAL PLASTER BASES TO WOOD STUDS OR STEEL STUDS."
1.9. SPACING OF NAILS IN EACH LAYER OF GYPSUM BOARD SUPPORTED
1.9.1. FOR EACH LAYER APPLIED ON A CEILING, NAILS SHALL BE SPACED
1.9.1.1. NOT MORE THAN 180mm (6") O.C. ON CEILING SUPPORTS, OR
1.9.1.2. EVERY 300mm (12") O.C. ALONG CEILING SUPPORTS, IN PAIRS ABOUT 50mm (2") APART.
1.9.2. WHERE THE CEILING SHEETS ARE SUPPORTED BY THE WALL SHEETS AROUND THE PERIMETER OF THE CEILING, THIS SUPPORT MAY BE CONSIDERED AS EQUIVALENT TO NAILING AT THIS LOCATION FOR SINGLE LAYER APPLICATIONS ONLY.
1.9.3. EXCEPT AS REQUIRED IN 1.9.4 BELOW, FOR EACH LAYER APPLIED ON A WALL, NAILS SHALL BE SPACED
1.9.3.1. NOT MORE THAN 200mm (8") O.C. ON VERTICAL WALL SUPPORTS, OR
1.9.3.2. EVERY 300mm (12") O.C. ALONG VERTICAL WALL SUPPORTS, IN PAIRS ABOUT 50mm (2") APART.
1.9.4. WHERE GYPSUM BOARD PROVIDES REQUIRED BRACING IN BRACED WALL PANELS, LATERAL SUPPORT FOR STUDS, OR FIRE PROTECTION, NAILS SHALL BE SPACED NOT MORE THAN 200mm (8") O.C. ON
1.9.4.1. VERTICAL WALL SUPPORTS, AND
1.9.4.2. TOP AND BOTTOM PLATES.
1.9.5. THE UPPERMOST NAILS ON VERTICAL WALL SUPPORTS SHALL BE NOT MORE THAN 200mm (8") BELOW THE CEILING.
1.9.6. NAILS SHALL BE LOCATED NOT LESS THAN 10mm (1/2") FROM THE SIDE OR EDGE OF THE BOARD.
1.9.7. NAILS SHALL BE DRIVEN SO THAT THE HEADS DO NOT PUNCTURE THE PAPER.
1.10. SPACING OF SCREWS IN EACH LAYER OF GYPSUM BOARD SUPPORTED
1.10.1. FOR EACH LAYER APPLIED ON A CEILING, SCREWS SHALL BE SPACED NOT MORE THAN 300mm (12") O.C. ON CEILING SUPPORTS.
1.10.2. WHERE THE CEILING SHEETS ARE SUPPORTED BY THE WALL SHEETS AROUND THE PERIMETER OF THE CEILING, THIS SUPPORT MAY BE CONSIDERED AS EQUIVALENT TO SCREWING AT THIS LOCATION FOR SINGLE LAYER APPLICATIONS ONLY.
1.10.3. SCREWS SHALL BE SPACED
1.10.3.1. NOT MORE THAN 300mm (12") O.C. ON VERTICAL WALL SUPPORTS WHERE THE SUPPORTS ARE MORE THAN 400mm (16") O.C., OR
1.10.3.2. NOT MORE THAN 400mm (16") O.C. ON VERTICAL WALL SUPPORTS WHERE THE SUPPORTS ARE NOT MORE THAN 600mm (24") O.C.
1.10.4. WHERE GYPSUM BOARD PROVIDES REQUIRED BRACING IN BRACED WALL PANELS, LATERAL SUPPORT FOR STUDS, OR FIRE PROTECTION, SCREWS SHALL BE SPACED NOT MORE THAN 300mm (12") O.C. ON
1.10.4.1. VERTICAL WALL SUPPORTS, AND
1.10.4.2. TOP AND BOTTOM PLATES.
1.10.5. SCREW HEADS ARE COVERED WITH JOINT COMPOUND.
1.10.6. SCREWS SHALL BE LOCATED NOT LESS THAN 10mm (1/2") FROM THE EDGE OF THE BOARD.
1.10.7. SCREWS SHALL BE DRIVEN SO THAT THE HEADS DO NOT PUNCTURE THE PAPER.
1.11. JOINT STAGGERING IN MULTI-LAYER GYPSUM BOARD INSTALLATIONS, UP TO 3-LAYERS TOTAL:
1.11.1. UNLESS SPECIFICALLY STATED OTHERWISE IN THE LISTED ASSEMBLY FASTENING REQUIREMENT SPECIFICATION; FOR UP TO THREE LAYERS OF 12.7mm (1/2") AND/OR 15.9mm (5/8") THICK, 1.2m (4'-0") WIDE GYPSUM BOARD APPLIED ON THE INTERIOR SIDE:
1.11.1.1. THE FIRST (BASE) LAYER IS TO BE APPLIED HORIZONTALLY TO THE STUDS WITH BUTT JOINTS OCCURRING IN THE CENTER OF A STUD,
1.11.1.2. THE SECOND (MIDDLE) LAYER IS TO BE APPLIED APPLIED HORIZONTALLY WITH THE HORIZONTAL JOINTS OFFSET 600mm (24") FROM THE HORIZONTAL JOINTS IN THE FIRST (BASE) LAYER AND WITH ANY VERTICAL BUTT JOINTS CENTERED BETWEEN STUDS. VERTICAL BUTT JOINTS ARE TO BE STAGGERED BETWEEN SUCCEEDING COURSES.
1.11.1.3. THE THIRD (FACE) LAYER IS APPLIED VERTICALLY TO THE STUDS AND ANY HORIZONTAL BUTT JOINTS IN THE FACE LAYER ARE STAGGERED MIN. 600mm (24") BETWEEN ADJOINING PANELS AT STUD LOCATIONS.
1.12. ONLY THE FACE LAYER JOINTS IN GYPSUM BOARD ARE REQUIRED TO BE COVERED WITH PAPER TAPE AND JOINT COMPOUND. EXPOSED SCREW HEADS AND NAIL HEADS ARE TO BE COVERED WITH JOINT COMPOUND ALSO.
1.13. LOW TEMPERATURE CONDITIONS
1.13.1. IN COLD WEATHER, HEAT SHALL BE PROVIDED TO MAINTAIN A TEMPERATURE NOT BELOW 10°C FOR 48-HOURS PRIOR TO TAPING AND FINISHING AND MAINTAINED FOR NOT LESS THAN 48-HOURS THEREAFTER.

RESIDENTIAL - ROOF VENTING - 2015 NBC:

1. VENTING
1.1. ALL ROOF VENTING SHALL CONFORM TO THE REQUIREMENTS OF THE 2015 NBC AND AS DETAILED IN THE SPECIFICATIONS BELOW.
1.2. REQUIRED VENTING
1.2.1. WHERE INSULATION IS INSTALLED BETWEEN A CEILING AND THE UNDERSIDE OF THE ROOF SHEATHING, A SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE SHEATHING, AND VENTS SHALL BE INSTALLED TO PERMIT THE TRANSFER OF MOISTURE FROM THE SPACE TO THE EXTERIOR. (SEE NOTE A-9.19.1.1.(1).)
1.3. VENT REQUIREMENTS
1.3.1. EXCEPT AS PROVIDED BELOW, THE UNOBSTRUCTED VENT AREA SHALL BE NOT LESS THAN 1/300 OF THE INSULATED CEILING AREA.
1.3.2. WHERE THE ROOF SLOPE IS LESS THAN 1 IN 6 OR IN ROOFS THAT ARE CONSTRUCTED WITH ROOF JOISTS, THE UNOBSTRUCTED VENT AREA SHALL BE NOT LESS THAN 1/150 OF THE INSULATED CEILING AREA.
1.3.3. REQUIRED VENTS MAY BE ROOF TYPE, EAVE TYPE, GABLE-END TYPE OR ANY COMBINATION THEREOF, AND SHALL BE DISTRIBUTED
1.3.3.1. UNIFORMLY ON OPPOSITE SIDES OF THE BUILDING,
1.3.3.2. WITH NOT LESS THAN 25% OF THE REQUIRED OPENINGS LOCATED AT THE TOP OF THE SPACE, AND
1.3.3.3. WITH NOT LESS THAN 25% OF THE REQUIRED OPENINGS LOCATED AT THE BOTTOM O THE SPACE.
1.3.4. EXCEPT WHERE EACH JOIST SPACE IS SEPARATELY VENTED, ROOF JOIST SPACES SHALL BE INTERCONNECTED BY INSTALLING PURLINS NOT LESS THAN 38 MM BY 38 MM ON THE TOP OF THE ROOF JOISTS.
1.3.5. VENTS SHALL COMPLY WITH CAN3-A93-M, "NATURAL AIRFLOW VENTILATORS FOR BUILDINGS."
1.4. CLEARANCES
1.4.1. EXCEPT AS PROVIDED IN SENTENCE (2), NOT LESS THAN 63 MM OF SPACE SHALL BE PROVIDED BETWEEN THE TOP OF THE INSULATION AND THE UNDERSIDE OF THE ROOF SHEATHING.
1.4.2. AT THE JUNCTION OF SLOPED ROOFS AND EXTERIOR WALLS, WHERE PREFORMED BAFFLES ARE USED TO CONTAIN THE INSULATION, THE BAFFLES SHALL
1.4.2.1. PROVIDE AN UNOBSTRUCTED AIR SPACE, BETWEEN THE INSULATION AND THE UNDERSIDE OF THE ROOF SHEATHING, THAT IS
1.4.2.1.1. NOT LESS THAN 25 MM IN DIMENSION, AND
1.4.2.1.2. OF SUFFICIENT CROSS AREA TO MEET THE ATTIC OR ROOF SPACE VENTING REQUIREMENTS OF ARTICLE 9.19.1.2., AND
1.4.2.2. EXTEND VERTICALLY NOT LESS THAN 50 MM ABOVE THE TOP OF THE INSULATION.
1.4.3. CEILING INSULATION SHALL BE INSTALLED IN A MANNER THAT WILL NOT RESTRICT THE FREE FLOW OF AIR THROUGH ROOF VENTS OR THROUGH ANY PORTION OF THE ATTIC OR ROOF SPACE.
1.5. MANSARD OR GAMBREL ROOF
1.5.1. THE LOWER PORTION OF A MANSARD OR GAMBREL STYLE ROOF NEED NOT BE VENTILATED.
1.5.2. THE UPPER PORTION OF ROOFS DESCRIBED IN SENTENCE (1) SHALL BE VENTILATED IN CONFORMANCE WITH ARTICLES 9.19.1.1. TO 9.19.1.3.

STAIRS, RAMPS, LANDINGS, HANDRAILS & GUARDS - PART 9 - 2015 NBC:

1. SHOP DRAWINGS FOR STAIRS, RAMPS, LANDINGS, HANDRAILS & GUARDS:
1.1. (IF NOT PART OF THIS DRAWING PACKAGE ALREADY) THE STAIRS, RAMPS, LANDINGS, HANDRAILS & GUARDS CONTRACTOR SHALL:
1.1.1. PROVIDED SHOP DRAWINGS TO THE OWNER AND GENERAL CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO ORDERING THE PRODUCT(S).
1.1.2. PROVIDE SHOP DRAWINGS TO SHOW ALL STRUCTURAL DETAILS, MEMBER SIZES, CONNECTION DETAILS AND GALVANIC (OR OTHER) ELEMENT PROTECTION DETAILS.
1.1.3. SHOULD THIS BE REQUESTED BY THE OWNER AND/OR GENERAL CONTRACTOR, ENGAGE A P.ENG. WHO SHALL BE RESPONSIBLE FOR SUPERVISION OF FABRICATION AND INSTALLATION AND WILL ISSUE A LETTER OF CERTIFICATION CONFIRMING ON-SITE CONSTRUCTION HAS BEEN DONE IN ACCORDANCE WITH HIS/HER DESIGN FOR ANY STAIRS, RAMPS, LANDINGS, HANDRAILS & GUARDS THAT ARE NOT PRE-ENGINEERED.
1.1.4. ALL STAIRS, RAMPS, LANDINGS, HANDRAILS OR GUARDS CONSTRUCTION IS TO CONFORM TO SECTION 9.8. OF THE 2015 NBC, IN ADDITION TO ITEMS NOTED IN THE SPECIFICATIONS CONTAINED WITHIN THESE PLANS AND SPECIFICATIONS FOR THIS PROJECT.
1.1.5. STAIRS, RAMPS, LANDINGS, HANDRAILS AND GUARDS IN GARAGES
1.1.5.1. WHERE STAIRS, RAMPS, LANDINGS, HANDRAILS OR GUARDS ARE INSTALLED IN GARAGES THAT SERVE A SINGLE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, THE GARAGE SHALL BE CONSIDERED TO BE PART OF THE DWELLING UNIT AND THE REQUIREMENTS FOR STAIRS, RAMPS, LANDINGS, HANDRAILS AND GUARDS WITHIN DWELLING UNITS SHALL APPLY.

HANDRAILS - PART 9 - 2015 NBC:

1. SHOP DRAWINGS FOR HANDRAILS:
1.1. (IF NOT PART OF THIS DRAWING PACKAGE ALREADY) THE HANDRAIL CONTRACTOR SHALL:
1.1.1. PROVIDED SHOP DRAWINGS TO THE OWNER AND GENERAL CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO ORDERING THE PRODUCT(S).
1.1.2. PROVIDE SHOP DRAWINGS TO SHOW ALL STRUCTURAL DETAILS, MEMBER SIZES, CONNECTION DETAILS AND GALVANIC (OR OTHER) ELEMENT PROTECTION DETAILS.
1.1.3. SHOULD THIS BE REQUESTED BY THE OWNER AND/OR GENERAL CONTRACTOR, ENGAGE A P.ENG. WHO SHALL BE RESPONSIBLE FOR SUPERVISION OF FABRICATION AND INSTALLATION AND WILL ISSUE A LETTER OF CERTIFICATION CONFIRMING ON-SITE CONSTRUCTION HAS BEEN DONE IN ACCORDANCE WITH HIS/HER DESIGN FOR HANDRAILS THAT ARE NOT PRE-ENGINEERED.
1.1.4. ALL HANDRAILS INSTALLED IN ONE-UNIT DWELLINGS AND TWO-UNIT DWELLINGS ARE TO MEET SUBSECTION 9.8.7 OF THE 2015 NBC, IN ADDITION TO ITEMS NOTED IN THIS SPECIFICATION.
2. HANDRAILS:
2.1. REQUIRED HANDRAILS
2.1.1. EXCEPT AS PROVIDED BELOW IN THESE SPECIFICATIONS, HANDRAILS SHALL BE INSTALLED ON STAIRS AND RAMPS IN ACCORDANCE WITH THE TABLE BELOW (SEE ALSO TABLE 9.8.7.1. OF 2015 NBC).
2.1.2. WHERE A STAIR OR A RAMP IS REQUIRED TO BE AT LEAST 2,200mm WIDE DUE TO THE OCCUPANT LOAD, A HANDRAIL SHALL BE INSTALLED SUCH THAT NO POSITION ON THE STAIR OR RAMP IS MORE THAN 825mm FROM A HANDRAIL.
2.1.3. HANDRAILS ARE NOT REQUIRED FOR STAIRS AND RAMPS SERVING A SINGLE DWELLING UNIT, WHERE
2.1.3.1. INTERIOR STAIRS HAVE NOT MORE THAN 2 RISERS,
2.1.3.2. EXTERIOR STAIRS HAVE NOT MORE THAN 3 RISERS, OR
2.1.3.3. RAMPS RISE NOT MORE THAN 400mm.
2.1.4. ONLY ONE HANDRAIL IS REQUIRED ON EXTERIOR STAIRS HAVING MORE THAN 3 RISERS PROVIDED SUCH STAIRS SERVE NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE.
2.2. CONTINUITY OF HANDRAILS
2.2.1. EXCEPT AS PROVIDED BELOW, AT LEAST ONE REQUIRED HANDRAIL SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE STAIR OR RAMP, INCLUDING LANDINGS, EXCEPT WHERE INTERRUPTED BY
2.2.1.1. DOORWAYS, OR
2.2.1.2. NEWEL POSTS AT CHANGES IN DIRECTION.
2.2.2. FOR STAIRS OR RAMPS SERVING A SINGLE DWELLING UNIT OR A HOUSE WITH A SECONDARY; SUITE INCLUDING THEIR COMMON SPACES, AT LEAST ONE REQUIRED HANDRAIL SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE STAIR OR RAMP, EXCEPT WHERE INTERRUPTED BY
2.2.2.1. DOORWAYS,
2.2.2.2. LANDINGS, OR
2.2.2.3. NEWEL POSTS AT CHANGES IN DIRECTION
2.3. TERMINATION OF HANDRAILS
2.3.1. HANDRAILS SHALL BE TERMINATED IN A MANNER THAT WILL NOT OBSTRUCT PEDESTRIAN TRAVEL OR CREATE A HAZARD.
2.3.2. EXCEPT FOR STAIRS AND RAMPS SERVING ONLY ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, AT LEAST ONE HANDRAIL AT THE SIDES OF A STAIR OR RAMP SHALL EXTEND HORIZONTALLY NOT LESS THAN 300mm BEYOND THE TOP AND BOTTOM OF EACH FLIGHT OR RAMP.
2.4. HEIGHT OF HANDRAILS
2.4.1. THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE MEASURED VERTICALLY FROM THE TOP OF THE HANDRAIL TO
2.4.1.1. A STRAIGHT LINE DRAWN TANGENT TO THE TREAD NOSINGS OF THE STAIR SERVED BY THE HANDRAIL, OR
2.4.1.2. THE SURFACE OF THE RAMP, FLOOR OR LANDING SERVED BY THE HANDRAIL.
2.4.2. EXCEPT AS PROVIDED BELOW, THE HEIGHT OF HANDRAILS ON STAIRS AND RAMPS SHALL BE
2.4.2.1. NOT LESS THAN 865mm, AND
2.4.2.2. NOT MORE THAN 965mm.
2.4.3. WHERE GUARDS ARE REQUIRED, HANDRAILS REQUIRED ON LANDINGS SHALL BE NOT MORE THAN 1,070mm IN HEIGHT.
2.5. ERGONOMIC DESIGN
2.5.1. A CLEARANCE OF NOT LESS THAN 50mm SHALL BE PROVIDED BETWEEN A HANDRAIL AND ANY SURFACE BEHIND IT.
2.5.2. ALL HANDRAILS SHALL BE CONSTRUCTED SO AS TO BE CONTINUALLY GRASPABLE ALONG THEIR ENTIRE LENGTH WITH NO OBSTRUCTION ON OR ABOVE THEM TO BREAK A HANDHOLD, EXCEPT WHERE THE HANDRAIL IS INTERRUPTED BY NEWELS AT CHANGES IN DIRECTION.
2.6. DESIGN AND ATTACHMENT OF HANDRAILS
2.6.1. HANDRAILS AND ANY BUILDING ELEMENT THAT COULD BE USED AS A HANDRAIL SHALL BE DESIGNED AND ATTACHED IN SUCH A MANNER AS TO RESIST
2.6.1.1. A CONCENTRATED LOAD AT ANY POINT OF NOT LESS THAN 0.9 KN, AND
2.6.1.2. FOR HANDRAILS OTHER THAN THOSE SERVING A SINGLE DWELLING UNIT, A UNIFORMLY DISTRIBUTED LOAD OF 0.7 KN/M.
2.6.2. WHERE A HANDRAIL SERVING A SINGLE DWELLING UNIT IS ATTACHED TO WOOD STUDS OR BLOCKING, THE ATTACHMENT SHALL BE DEEMED TO COMPLY WITH SENTENCE (1) WHERE
2.6.2.1. THE ATTACHMENT POINTS ARE SPACED NOT MORE THAN 1.2 M APART,
2.6.2.2. THE FIRST ATTACHMENT POINT AT EITHER END IS LOCATED NO MORE THAN 300 MM FROM THE END OF THE HANDRAIL, AND
2.6.2.3. THE FASTENERS CONSIST OF NOT LESS THAN 2 WOOD SCREWS AT EACH POINT, PENETRATING NOT LESS THAN 32 MM INTO SOLID WOOD.

NUMBER OF SIDES OF STAIR OR RAMP REQUIRED TO HAVE A HANDRAIL

LOCATION OF STAIR OR RAMP	HANDRAILS SERVING STAIRS			HANDRAILS SERVING RAMPS	
	STAIRS < 1,100mm WIDE		STAIRS ≥ 1,100mm WIDE	RAMPS < 1,100mm WIDE	RAMPS ≥ 1,100mm WIDE
	STRAIGHT	CURVED	ALL	ALL	ALL
WITHIN A DWELLING UNIT	ONE (1)	ONE (1)	ONE (1)	ONE (1)	TWO (2)
ALL OTHER LOCATIONS	ONE (1)	TWO (2)	TWO (2)	TWO (2)	TWO (2)

GUARDS - PART 9 - 2015 NBC:

1. SHOP DRAWINGS FOR GUARDS:
1.1. (IF NOT PART OF THIS DRAWING PACKAGE ALREADY) THE GUARD CONTRACTOR SHALL:
1.1.1. PROVIDED SHOP DRAWINGS TO THE OWNER AND GENERAL CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO ORDERING THE PRODUCT(S).
1.1.2. PROVIDE SHOP DRAWINGS TO SHOW ALL STRUCTURAL DETAILS, MEMBER SIZES, CONNECTION DETAILS AND GALVANIC (OR OTHER) ELEMENT PROTECTION DETAILS.
1.1.3. SHOULD THIS BE REQUESTED BY THE OWNER AND/OR GENERAL CONTRACTOR, ENGAGE A P.ENG. WHO SHALL BE RESPONSIBLE FOR SUPERVISION OF FABRICATION AND INSTALLATION AND WILL ISSUE A LETTER OF CERTIFICATION CONFIRMING ON-SITE CONSTRUCTION HAS BEEN DONE IN ACCORDANCE WITH HIS/HER DESIGN FOR GUARDS THAT ARE NOT PRE-ENGINEERED.
1.1.4. ALL GUARDS INSTALLED IN ONE-UNIT DWELLINGS AND TWO-UNIT DWELLINGS ARE TO MEET SUBSECTION 9.8.8 OF THE 2015 NBC, IN ADDITION TO ITEMS NOTED IN THIS SPECIFICATION.
2. GUARDS:
2.1. REQUIRED GUARDS
2.1.1. EXCEPT AS PROVIDED BELOW, EVERY SURFACE TO WHICH ACCESS IS PROVIDED FOR OTHER THAN MAINTENANCE PURPOSES, INCLUDING BUT NOT LIMITED TO FLIGHTS OF STEPS AND RAMPS, EXTERIOR LANDINGS, PORCHES, BALCONIES, MEZZANINES, GALLERIES AND RAISED WALKWAYS, SHALL BE PROTECTED BY A GUARD ON EACH SIDE THAT IS NOT PROTECTED BY A WALL FOR THE LENGTH WHERE
2.1.1.1. THERE IS A DIFFERENCE IN ELEVATION OF MORE THAN 600mmM BETWEEN THE WALKING SURFACE AND THE ADJACENT SURFACE, OR
2.1.1.2. THE ADJACENT SURFACE WITHIN 1,200mm OF THE WALKING SURFACE HAS A SLOPE OF MORE THAN 1 IN 2.
2.1.1. GUARDS ARE NOT REQUIRED
2.1.1.1. AT LOADING DOCKS,
2.1.1.2. AT FLOOR PITS IN REPAIR GARAGES, OR
2.1.1.3. WHERE ACCESS IS PROVIDED FOR MAINTENANCE PURPOSES ONLY.
2.1.2. WHERE AN INTERIOR STAIR HAS MORE THAN 2 RISERS OR AN INTERIOR RAMP RISES MORE THAN 400mm, THE SIDES OF THE STAIR OR RAMP AND THE LANDING OR FLOOR LEVEL AROUND THE STAIRWELL OR RAMP SHALL BE PROTECTED BY A GUARD ON EACH SIDE THAT IS NOT PROTECTED BY A WALL.
2.1.3. DOORS IN BUILDINGS OF RESIDENTIAL OCCUPANCY, WHERE THE FINISHED FLOOR ON ONE SIDE OF THE DOOR IS MORE THAN 600mm ABOVE THE FLOOR OR OTHER CONSTRUCTED SURFACE OR GROUND LEVEL ON THE OTHER SIDE OF THE DOOR, SHALL BE PROTECTED BY
2.1.3.1. A GUARD, OR
2.1.3.2. A MECHANISM CAPABLE OF CONTROLLING THE FREE SWINGING OR SLIDING OF THE DOOR SO AS TO LIMIT ANY DEAR UNOBSTRUCTED OPENING TO NOT MORE THAN 100mm.
2.1.4. EXCEPT AS PROVIDED BELOW, OPENABLE WINDOWS IN BUILDINGS OF RESIDENTIAL OCCUPANCY SHALL BE PROTECTED BY
2.1.4.1. A GUARD, OR
2.1.4.2. A MECHANISM CAPABLE OF CONTROLLING THE FREE SWINGING OR SLIDING OF THE OPENABLE PART OF THE WINDOW SO AS TO LIMIT ANY DEAR UNOBSTRUCTED OPENING TO NOT MORE THAN 100mm MEASURED EITHER VERTICALLY OR HORIZONTALLY WHERE THE OTHER DIMENSION IS GREATER THAN 380mm.
2.1.5. WINDOWS NEED NOT BE PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS ABOVE, WHERE
2.1.5.1. THE WINDOW SERVES A DWELLING UNIT THAT IS NOT LOCATED ABOVE ANOTHER SUITE,
2.1.5.2. THE WINDOW SERVES A HOUSE WITH A SECONDARY SUITE,
2.1.5.3. THE ONLY OPENING GREATER THAN 100mm BY 380mm IS A HORIZONTAL OPENING AT THE TOP OF THE WINDOW,
2.1.5.4. THE WINDOW SILL IS LOCATED MORE THAN 450mm ABOVE THE FINISHED FLOOR ON ONE SIDE OF THE WINDOW, OR
2.1.5.5. THE WINDOW IS LOCATED IN A ROOM OR SPACE WITH THE FINISHED FLOOR DESCRIBED IN ABOVE LOCATED LESS THAN 1,800mm ABOVE THE FLOOR OR GROUND ON THE OTHER SIDE OF THE WINDOW.
2.1.6. EXCEPT AS PROVIDED BELOW, GLAZING INSTALLED OVER STAIRS, RAMPS AND LANDINGS THAT EXTENDS TO LESS THAN 1,070mm ABOVE THE SURFACE OF THE TREADS, RAMP OR LANDING SHALL BE
2.1.6.1. PROTECTED BY GUARDS, IN ACCORDANCE WITH THIS SUBSECTION, OR
2.1.6.2. NON-OPENABLE AND DESIGNED TO WITHSTAND THE SPECIFIED LATERAL LOADS FOR BALCONY GUARDS AS PROVIDED IN ARTICLE 4.1.5.14 IN PART 4 OF THE 2015 NBC.
2.1.7. IN DWELLING UNITS, GLAZING INSTALLED OVER STAIRS, RAMPS AND LANDINGS THAT EXTENDS TO LESS THAN 900mm ABOVE THE SURFACE OF THE TREADS, RAMP OR LANDING SHALL BE
2.1.7.1. PROTECTED BY GUARDS, IN ACCORDANCE WITH THIS SUBSECTION, OR
2.1.7.2. NON-OPENABLE AND DESIGNED TO WITHSTAND THE SPECIFIED LATERAL LOADS FOR BALCONY GUARDS AS PROVIDED IN ARTICLE 4.1.5.14 OF THE NBC.
2.1.8. GLAZING INSTALLED IN PUBLIC AREAS THAT EXTENDS TO LESS THAN 1,000mm FROM THE FLOOR AND IS LOCATED ABOVE THE SECOND STOREY IN BUILDINGS OF RESIDENTIAL OCCUPANCY SHALL BE
2.1.8.1. PROTECTED BY GUARDS IN ACCORDANCE WITH THIS SUBSECTION, OR
2.1.8.2. NON-OPENABLE AND DESIGNED TO WITHSTAND THE SPECIFIED LATERAL LOADS FOR BALCONY GUARDS AS PROVIDED IN ARTICLE 4.1.5.14.
2.2. LOADS ON GUARDS
2.2.1. GUARDS SHALL BE DESIGNED TO RESIST THE SPECIFIED LOADS PRESCRIBED IN THE TABLE BELOW (SEE ALSO TABLE 9.8.8.2 OF THE 2015 NBC).
2.2.2. WHERE THE WIDTH AND SPACING OF BALUSTERS IN GUARDS WITHIN DWELLING UNITS AND IN EXTERIOR GUARDS SERVING NOT MORE THAN 2 DWELLING UNITS IS SUCH THAT 3 BALUSTERS CAN BE ENGAGED BY A LOAD IMPOSED OVER A 300mm WIDTH, THE LOAD SHALL BE IMPOSED SO AS TO ENGAGE 3 BALUSTERS.
2.2.3. NONE OF THE LOADS SPECIFIED IN THE TABLE BELOW NEED BE CONSIDERED TO ACT SIMULTANEOUSLY.
2.2.4. FOR GUARDS WITHIN DWELLING UNITS AND FOR EXTERIOR GUARDS SERVING NOT MORE THAN 2 DWELLING UNITS, THE TABLE BELOW NEED NOT APPLY WHERE THE GUARD CONSTRUCTION USED HAS BEEN DEMONSTRATED TO THE OWNER AND GENERAL CONTRACTOR TO PROVIDE EFFECTIVE PERFORMANCE.
2.3. HEIGHT OF GUARDS
2.3.1. EXCEPT AS PROVIDED IN SENTENCES BELOW, ALL GUARDS SHALL BE NOT LESS THAN 1,070mm HIGH.
2.3.2. ALL GUARDS WITHIN DWELLING UNITS OR WITHIN HOUSES WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES SHALL BE NOT LESS THAN 900mm HIGH.
2.3.3. EXTERIOR GUARDS SERVING NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES SHALL BE NOT LESS THAN 900mm HIGH WHERE THE WALKING SURFACE SERVED BY THE GUARD IS NOT MORE THAN 1,800mm ABOVE THE FINISHED GROUND LEVEL.
2.3.4. GUARDS FOR FLIGHTS OF STEPS, EXCEPT IN REQUIRED EXIT STAIRS, SHALL BE NOT LESS THAN 900mm HIGH.
2.3.5. THE HEIGHT OF GUARDS FOR FLIGHTS OF STEPS SHALL BE MEASURED VERTICALLY FROM THE TOP OF THE GUARD TO A LINE DRAWN THROUGH THE LEADING EDGE OF THE TREADS SERVED BY THE GUARD.
2.4. GUARDS FOR FLOORS AND RAMPS IN GARAGES
2.4.1. 1) EXCEPT FOR FLOORS OF GARAGES REFERRED TO IN SECTION 9.35. OF THE 2015 NBC, WHERE GARAGE FLOORS OR RAMPS ARE 600mm OR MORE ABOVE THE ADJACENT GROUND OR FLOOR LEVEL, EVERY OPENING THROUGH A GARAGE FLOOR AND THE PERIMETER OF FLOORS AND RAMPS THAT HAVE NO EXTERIOR WALLS SHALL BE PROVIDED WITH
2.4.1.1. A CONTINUOUS CURB NOT LESS THAN 150mm IN HEIGHT, AND
2.4.1.2. A GUARD NOT LESS THAN 1,070 MM ABOVE THE FLOOR LEVEL.
2.4.2. VEHICLE GUARDRAILS SHALL BE DESIGNED FOR A CONCENTRATED HORIZONTAL LOAD OF 22kN APPLIED OUTWARD AT ANY POINT 500mm ABOVE THE FLOOR SURFACE.
2.5. OPENINGS IN GUARDS
2.5.1. OPENINGS THROUGH ANY GUARD REQUIRED BY THESE SPECIFICATIONS SHALL BE OF A SIZE THAT WILL PREVENT THE PASSAGE OF A SPHERICAL OBJECT HAVING A DIAMETER OF 100mm.
2.6. DESIGN OF GUARDS TO NOT FACILITATE CLIMBING
2.6.1. GUARDS REQUIRED BY THESE SPECIFICATIONS SHALL BE DESIGNED SO THAT NO MEMBER, ATTACHMENT OR OPENING FACILITATES CLIMBING.
2.6.2. GUARDS SHALL BE DEEMED TO COMPLY WITH THE ABOVE REQUIREMENT WHERE ALL ELEMENTS PROTRUDING FROM THE VERTICAL AND LOCATED WITHIN THE AREA BETWEEN 140mm AND 900mm ABOVE THE FLOOR OR WALKING SURFACE PROTECTED BY THE GUARD CONFORM TO AT LEAST ONE OF THE FOLLOWING FOUR ITEMS:
2.6.2.1. THEY ARE LOCATED MORE THAN 450mm HORIZONTALLY AND VERTICALLY FROM EACH OTHER,
2.6.2.2. THEY PROVIDE NOT MORE THAN 15mm HORIZONTAL OFFSET,
2.6.2.3. THEY DO NOT PROVIDE A TOE-SPACE MORE THAN 45mm HORIZONTALLY AND 20mm VERTICALLY, OR
2.6.2.4. THEY PRESENT MORE THAN A 2-IN-1 SLOPE ON THE OFFSET.
2.7. GLASS IN GUARDS
2.7.1. GLASS IN GUARDS SHALL BE
2.7.1.1. SAFETY GLASS OF THE LAMINATED OR TEMPERED TYPE CONFORMING TO CAN/CGSB-12.1-M, "TEMPERED OR LAMINATED SAFETY GLASS," OR
2.7.1.2. WIRED GLASS CONFORMING TO CAN/CGSB-12.11-M, "WIRED SAFETY GLASS."

GUARDS SHALL BE DESIGNED TO RESIST THE FOLLOWING SPECIFIED LOADS

LOCATION OF GUARD	HORIZONTAL LOAD APPLIED INWARD OR OUTWARD AT ANY POINT AT THE MINIMUM REQUIRED HEIGHT OF THE GUARD	HORIZONTAL LOAD APPLIED INWARD OR OUTWARD ON ELEMENTS WITHIN THE GUARD, INCLUDING SOLID PANELS AND PICKETS	EVENLY DISTRIBUTED VERTICAL LOAD APPLIED AT TOP OF THE GUARD
GUARDS WITHIN DWELLING UNITS & EXT. GUARDS SERVING NOT MORE THAN 2 DWELLING UNITS	0.5kN/m OR CONCENTRATED LOAD OF 1.0kN APPLIED AT ANY POINT (MOST CRITICAL LOAD SCENARIO GOVERNS)	0.5kN APPLIED OVER A MAXIMUM WIDTH OF 300mm AND A HEIGHT OF 300mm (SEE SENTENCE 9.8.8.2.(2) OF THE 2015 NBC)	1.5kN/m
GUARDS SERVING ACCESS WALKWAYS TO EQUIPMENT PLATFORMS, CONTIGUOUS STAIRS AND SIMILAR AREAS	CONCENTRATED LOAD OF 1.0kN APPLIED AT ANY POINT	CONCENTRATED LOAD OF 0.5kN APPLIED AT ANY POINT ON INDIVIDUAL ELEMENTS	1.5kN/m
ALL OTHER GUARDS	0.75kN/m OR CONCENTRATED LOAD OFR 1.0kN APPLIED AT ANY POINT (MOST CRITICAL LOAD SCENARIO GOVERNS)	CONCENTRATED LOAD OF 0.5kN APPLIED AT ANY POINT ON INDIVIDUAL ELEMENTS	1.5kN/m

STAIRS - PART 9 - 2015 NBC:

1. SHOP DRAWINGS FOR STAIRS:
1.1. (IF NOT PART OF THIS DRAWING PACKAGE ALREADY) THE STAIR CONTRACTOR SHALL:
1.1.1. PROVIDED SHOP DRAWINGS TO THE OWNER AND GENERAL CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO ORDERING THE PRODUCT(S).
1.1.2. PROVIDE SHOP DRAWINGS TO SHOW ALL STRUCTURAL DETAILS, MEMBER SIZES, CONNECTION DETAILS AND GALVANIC (OR OTHER) ELEMENT PROTECTION DETAILS.
1.1.3. SHOULD THIS BE REQUESTED BY THE OWNER AND/OR GENERAL CONTRACTOR, ENGAGE A P.ENG. WHO SHALL BE RESPONSIBLE FOR SUPERVISION OF FABRICATION AND INSTALLATION AND WILL ISSUE A LETTER OF CERTIFICATION CONFIRMING ON-SITE CONSTRUCTION HAS BEEN DONE IN ACCORDANCE WITH HIS/HER DESIGN FOR STAIRS THAT ARE NOT PRE-ENGINEERED.
1.1.4. ALL STAIRS INSTALLED IN ONE-UNIT DWELLINGS AND TWO-UNIT DWELLINGS ARE TO MEET SUBSECTION 9.8.1., SUBSECTION 9.8.2., SUBSECTION 9.8.3., SUBSECTION 9.8.4., SUBSECTION 9.8.9. AND SUBSECTION 9.8.10. OF THE 2015 NBC AS APPLICABLE, IN ADDITION TO ITEMS NOTED IN THIS SPECIFICATION.
1.1.5. STAIRS, RAMPS, LANDINGS, HANDRAILS AND GUARDS IN GARAGES
1.1.5.1. WHERE STAIRS, RAMPS, LANDINGS, HANDRAILS OR GUARDS ARE INSTALLED IN GARAGES THAT SERVE A SINGLE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, THE GARAGE SHALL BE CONSIDERED TO BE PART OF THE DWELLING UNIT AND THE REQUIREMENTS FOR STAIRS, RAMPS, LANDINGS, HANDRAILS AND GUARDS WITHIN DWELLING UNITS SHALL APPLY.
2. STAIR DIMENSIONS:
2.1. STAIR WIDTH
2.1.1. EXCEPT AS PROVIDED BELOW, REQUIRED EXIT STAIRS AND PUBLIC STAIRS SERVING BUILDINGS OF RESIDENTIAL OCCUPANCY SHALL HAVE A WIDTH OF NOT LESS THAN 900mm.
2.1.2. EXIT STAIRS SERVING A SINGLE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES SHALL HAVE A WIDTH OF NOT LESS THAN 860mm.
2.1.3. REQUIRED EXIT STAIRS AND PUBLIC STAIRS SERVING BUILDINGS OF OTHER THAN RESIDENTIAL OCCUPANCY SHALL HAVE A WIDTH OF NOT LESS THAN THE GREATER OF
2.1.3.1. 900mm, OR
2.1.3.2. 8mm PER PERSON BASED ON THE OCCUPANT LOAD LIMITS SPECIFIED IN TABLE 3.1.17.1. OF THE 2015 NBC.
2.1.4. AT LEAST ONE STAIR BETWEEN EACH FLOOR LEVEL WITHIN A DWELLING UNIT, AND EXTERIOR STAIRS SERVING A SINGLE DWELLING UNIT EXCEPT REQUIRED EXIT STAIRS, SHALL HAVE A WIDTH OF NOT LESS THAN 860mm.
2.2. HEIGHT OVER STAIRS
2.2.1. THE CLEAR HEIGHT OVER STAIRS SHALL BE MEASURED VERTICALLY, OVER THE CLEAR WIDTH OF THE STAIR, FROM A STRAIGHT LINE TANGENT TO THE TREAD AND LANDING NOSINGS TO THE LOWEST POINT ABOVE.
2.2.2. EXCEPT AS PERMITTED BELOW, THE CLEAR HEIGHT OVER STAIRS SHALL NOT BE LESS THAN 2,050mm.
2.2.3. THE CLEAR HEIGHT OVER STAIRS SERVING A SINGLE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES SHALL NOT BE LESS THAN 1,950mm.
2.2.4. THE CLEAR HEIGHT OVER STAIRS THAT ARE LOCATED UNDER BEAMS AND DUCTING IN SECONDARY SUITES SHALL NOT BE LESS THAN 1,850mm.
3. STAIR CONFIGURATIONS
3.1. STRAIGHT AND CURVED RUNS IN STAIRS
3.1.1. EXCEPT AS PROVIDED BELOW, STAIRS SHALL CONSIST OF
3.1.1.1. STRAIGHT-RUN FLIGHTS, OR
3.1.1.2. CURVED FLIGHTS.
3.1.2. STAIRS WITHIN DWELLING UNITS SHALL CONSIST OF
3.1.2.1. STRAIGHT-RUN FLIGHTS,
3.1.2.2. CURVED FLIGHTS, OR
3.1.2.3. STRAIGHT RUNS WITH WINDERS.
3.1.3. ONLY ONE SET OF WINDERS DESCRIBED ABOVE SHALL BE PERMITTED BETWEEN FLOOR LEVELS.
3.2. MINIMUM NUMBER OF RISERS
3.2.1. EXCEPT FOR STAIRS WITHIN A DWELLING UNIT, AT LEAST 3 RISERS SHALL BE PROVIDED IN INTERIOR FLIGHTS.
3.3. MAXIMUM HEIGHT OF STAIRS
3.3.1. THE VERTICAL HEIGHT OF ANY FLIGHT OF STAIRS SHALL NOT EXCEED 3,700mm.
4. STEP DIMENSIONS
4.1. DIMENSIONS FOR RISERS
4.1.1. THE RISE, WHICH IS MEASURED AS THE VERTICAL NOSING-TO-NOSING DISTANCE, SHALL COMPLY WITH THE TABLE BELOW (SEE ALSO TABLE 9.8.4.1. OF THE 2015 NBC).
4.2. DIMENSIONS FOR RECTANGULAR TREADS
4.2.1. EXCEPT FOR STAIRS SERVING AREAS ONLY USED AS SERVICE ROOMS OR SERVICE SPACES, THE RUN, WHICH IS MEASURED AS THE HORIZONTAL NOSING-TO-NOSING DISTANCE, AND THE TREAD DEPTH OF RECTANGULAR TREADS SHALL COMPLY WITH THE TABLE BELOW (SEE ALSO TABLE 9.8.4.2. OF THE 2015 NBC).
4.2.2. THE DEPTH OF A RECTANGULAR TREAD SHALL BE NOT LESS THAN ITS RUN AND NOT MORE THAN ITS RUN PLUS 25mm.
4.3. DIMENSIONS FOR ANGLED TREADS
4.3.1. ANGLED TREADS IN REQUIRED EXIT STAIRS SHALL CONFORM TO THE REQUIREMENTS IN ARTICLE 3.4.6.9. OF THE 2015 NBC.
4.3.2. EXCEPT AS PROVIDED IN BELOW FOR "WINDERS", ANGLED TREADS IN OTHER THAN REQUIRED EXIT STAIRS SHALL HAVE AN AVERAGE RUN, WHICH IS MEASURED AS THE HORIZONTAL NOSING-TO-NOSING DISTANCE, OF NOT LESS THAN 200mm AND A MINIMUM RUN OF 150mm.
4.3.3. THE DEPTH OF AN ANGLED TREAD SHALL BE NOT LESS THAN ITS RUN, MEASURED AS THE HORIZONTAL NOSING-TO-NOSING DISTANCE, AT ANY POINT AND NOT MORE THAN ITS RUN AT ANY POINT PLUS 25mm.
4.4. UNIFORMITY AND TOLERANCES FOR RISERS AND TREADS
4.4.1. EXCEPT AS PROVIDED BELOW, RISERS SHALL BE OF UNIFORM HEIGHT IN ANY ONE FLIGHT, WITH A MAXIMUM TOLERANCE OF
4.4.1.1. 5mm BETWEEN ADJACENT TREADS OR LANDINGS, AND
4.4.1.2. 10mm BETWEEN THE TALLEST AND SHORTEST RISERS IN A FLIGHT.
4.4.2. EXCEPT FOR REQUIRED EXIT STAIRS, WHERE THE TOP OR BOTTOM RISER IN A STAIR ADJOINS A SLOPING FINISHED WALKING SURFACE, SUCH AS A GARAGE FLOOR, DRIVEWAY OR SIDEWALK, THE HEIGHT OF THE RISER ACROSS THE STAIR SHALL VARY BY NOT MORE THAN 1 IN 12.
4.4.3. TREADS SHALL HAVE A UNIFORM RUN WITH A MAXIMUM TOLERANCE OF
4.4.3.1. 5mm BETWEEN ADJACENT TREADS, AND
4.4.3.2. 10mm BETWEEN THE DEEPEST AND SHALLOWEST TREADS IN A FLIGHT.
4.4.4. WHERE ANGLED TREADS OR WINDERS ARE INCORPORATED INTO A STAIR, THE TREADS IN ALL SETS OF ANGLED TREADS OR WINDERS WITHIN A FLIGHT SHALL TURN IN THE SAME DIRECTION.
4.4.5. THE SLOPE OF TREADS SHALL NOT EXCEED 1 IN 50.
4.5. WINDERS
4.5.1. INDIVIDUAL TREADS IN WINDERS THAT CONVERGE ON A CENTER POINT SHALL TURN THROUGH AN ANGLE OF
4.5.1.1. 30° WITH NO DEVIATION ABOVE OR BELOW 30°, OR
4.5.1.2. 45° WITH NO DEVIATION ABOVE OR BELOW 45°.
4.5.2. WHERE WINDERS ARE INCORPORATED INTO A STAIR, EACH SET SHALL NOT TURN THROUGH MORE THAN 90°.
4.6. TREAD NOSINGS
4.6.1. EXCEPT AS PERMITTED BELOW, THE TOP OF THE NOSINGS OF STAIR TREADS SHALL HAVE A ROUNDED OR BEVELLED EDGE EXTENDING NOT LESS THAN 6mm AND NOT MORE THAN 14mm MEASURED HORIZONTALLY FROM THE FRONT OF THE NOSING.
4.6.2. IF RESILIENT MATERIAL IS USED TO COVER THE NOSING OF A STAIR TREAD, THE MINIMUM EXTENSION OF THE ROUNDED OR BEVELLED EDGE REQUIRED ABOVE IS PERMITTED TO BE REDUCED TO 3mm.
5. CONSTRUCTION
5.1. LOADS ON STAIRS
5.1.1. EXCEPT AS SPECIFIED IN "WOODEN STAIR STRINGERS" AND "TREADS" BELOW, STAIRSSHALL BE DESIGNED FOR STRENGTH AND RIGIDITY UNDER UNIFORM LOADING CRITERIA TO SUPPORT SPECIFIED LOADS OF
5.1.1.1. 1.9 KPA FOR STAIRS SERVING NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, AND
5.1.1.2. 4.8 KPA FOR OTHER STAIRS.
5.2. EXTERIOR CONCRETE STAIRS
5.2.1. EXTERIOR CONCRETE STAIRS WITH MORE THAN 2 RISERS AND 2 TREADS SHALL BE
5.2.1.1. SUPPORTED ON UNIT MASONRY OR CONCRETE WALLS OR PIERS NOT LESS THAN 150mm IN CROSS SECTION, OR
5.2.1.2. CANTILEVERED FROM THE MAIN FOUNDATION WALL.
5.2.2. STAIRS DESCRIBED ABOVE, WHEN CANTILEVERED FROM THE FOUNDATION WALL, SHALL BE CONSTRUCTED AND INSTALLED IN CONFORMANCE WITH "CANTILEVERED PRECAST CONCRETE STEPS" BELOW.
5.2.3. THE DEPTH BELOW GROUND LEVEL FOR FOUNDATIONS FOR EXTERIOR STEPS SHALL CONFORM TO THE REQUIREMENTS IN THE STRUCTURAL FOUNDATION PLANS.
5.3. EXTERIOR WOOD STEPS
5.3.1. EXTERIOR WOOD STEPS SHALL NOT BE IN DIRECT CONTACT WITH THE GROUND UNLESS SUITABLY TREATED WITH A WOOD PRESERVATIVE.
5.4. WOODEN STAIR STRINGERS
5.4.1. WOODEN STAIR STRINGERS SHALL
5.4.1.1. HAVE A MINIMUM EFFECTIVE DEPTH OF 90mm, MEASURED PERPENDICULARLY TO THE BOTTOM OF THE STRINGER AT THE POINT OF MINIMUM CROSS-SECTION, AND AN OVERALL DEPTH OF NOT LESS THAN 235mm. 2X12 SPF NO. 2 OR BTR STRINGERS ARE THE MINIMUM PERMITTED STRINGER SIZE. 1-3/4" X 11-7/8" 2250Fb-1.6E IS ALSO ACCEPTABLE FOR STAIR STRINGERS
5.4.1.2. BE SUPPORTED AND SECURED TOP WITH A 3/4" PLYWOOD HANGER AND BOTTOM,
5.4.1.3. BE NOT LESS THAN 25mm ACTUAL THICKNESS IF SUPPORTED ALONG THEIR LENGTH AND 38mm ACTUAL THICKNESS IF UNSUPPORTED ALONG THEIR LENGTH, AND
5.4.1.4. FOR OPEN RISERS, EXCEPT AS PERMITTED BELOW, BE SPACED NOT MORE THAN 900mm O.C. IN STAIRS SERVING NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, AND NOT MORE THAN 600mm O.C., REGARDLESS AS TO OPEN OR CLOSED RISERS ARE USED, IN OTHER STAIRS.
5.4.2. FOR STAIRS SERVING NOT MORE THAN ONE DWELLING UNIT OR A HOUSE WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, FOR CLOSED RISERS, WHERE RISERS SUPPORT THE FRONT PORTION OF THE TREAD, THE SPACE BETWEEN STRINGERS SHALL BE NOT MORE THAN 1,200mm.
5.5. TREADS
5.5.1. STAIR TREADS OF LUMBER, PLYWOOD OR O-2 GRADE OSB WITHIN DWELLING UNITS SHALL BE NOT LESS THAN 25mm ACTUAL THICKNESS, EXCEPT THAT IF OPEN RISERS ARE USED AND THE DISTANCE BETWEEN STRINGERS EXCEEDS 750mm, THE TREADS SHALL BE NOT LESS THAN 38mm ACTUAL THICKNESS. 2X12 SPF NO. 2 OR BTR TREADS ARE ACCEPTABLE.
5.5.2. STAIR TREADS OF PLYWOOD OR OSB THAT ARE NOT CONTINUOUSLY SUPPORTED BY THE RISER SHALL HAVE THEIR FACE GRAIN OR DIRECTION OF FACE ORIENTATION AT RIGHT ANGLES TO THE STRINGERS.
5.6. FINISH FOR TREADS AND LANDINGS
5.6.1. THE FINISH FOR TREADS AND LANDINGS OF INTERIOR STAIRS IN DWELLING UNITS, OTHER THAN STAIRS TO UNFINISHED BASEMENTS, SHALL CONSIST OF HARDWOOD, VERTICAL GRAIN SOFTWOOD, RESILIENT FLOORING OR OTHER MATERIAL PROVIDING EQUIVALENT PERFORMANCE.
5.6.2. TREADS AND LANDINGS OF INTERIOR AND EXTERIOR STAIRS AND RAMPS, OTHER THAN THOSE WITHIN DWELLING UNITS OR WITHIN HOUSES WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES, SHALL HAVE A SLIP-RESISTANT FINISH OR BE PROVIDED WITH SLIP-RESISTANT STRIPS THAT EXTEND NOT MORE THAN 1 MM ABOVE THE SURFACE.

DIMENSIONS FOR RISERS: PERMITTED RISE FOR RECTANGULAR TREADS

STAIR TYPE	ALL STEPS RISE [mm]	
	MAXIMUM	MINIMUM
PRIVATE STAIR (INTERIOR AND EXTERIOR STAIRS THAT SERVE: SINGLE DWELLING UNITS; HOUSES WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES; OR, GARAGES THAT SERVE EITHER OF THE AFOREMENTIONED).	200mm	125mm
PUBLIC STAIR (INTERIOR AND EXTERIOR STAIRS THAT SERVE: AREAS NOT MENTIONED ABOVE; OR, SERVICE AREAS).	180mm	125mm

DIMENSIONS FOR RECTANGULAR TREADS: PERMITTED RUN AND TREAD DEPTH

STAIR TYPE	RECTANGULAR TREADS			
	RUN [mm]		TREAD DEPTH [mm]	
	MAX.	MIN.	MAX.	MIN.
PRIVATE STAIR (INTERIOR AND EXTERIOR STAIRS THAT SERVE: SINGLE DWELLING UNITS; HOUSES WITH A SECONDARY SUITE INCLUDING THEIR COMMON SPACES; OR, GARAGES THAT SERVE EITHER OF THE AFOREMENTIONED).	355mm	210mm	355mm	235mm
PUBLIC STAIR (INTERIOR AND EXTERIOR STAIRS THAT SERVE: AREAS NOT MENTIONED ABOVE; OR, SERVICE AREAS).	NO LIMIT	280mm	NO LIMIT	280mm

STRUCTURAL ENGINEERING CONSULTANT:

49NORTH
ENGINEERING CORP.
CONSULTING ENGINEERS

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SEAL:

T.D. TWEIDT
MEMBER 13705
2021/02/25

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DO NOT SCALE FROM THESE DRAWINGS. U.N.O. ALL DIMENSIONS SHOWN IN THESE DRAWINGS ARE MEASURED TO THE OUTSIDE FACE OF EXTERIOR WALLS AND TO THE CENTERLINE OF INTERIOR WALLS. ALL DIMENSIONS MUST BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO SUBMITTING ANY ESTIMATE, PROPOSAL AND/OR CONTRACT TO THE OWNER; AND BY THE CONTRACTOR AGAIN PRIOR TO THE EXECUTION OF ANY WORK REFERENCED BY THESE DRAWINGS AND/OR SPECIFICATIONS.

49NORTH ENGINEERING CORP. PROJECT NUMBER:
2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY
WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1/8" = 1'-0"
DATE	FEBRUARY 25, 2021

DRAWING TITLE:

SPECIFICATIONS

SHEET NUMBER: S2.0

REVISION NUMBER:

RESIDENTIAL - STRUCTURAL DESIGN - 2015 NBC:

1. THE STRUCTURAL ENGINEERING ANALYSIS AND DESIGN EMPLOYED BY THE CONSULTANT IN THIS PROJECT HAS BEEN COMPLETED ACCORDING TO THE MINIMUM STRUCTURAL REQUIREMENTS CONTAINED IN THE 2015 NATIONAL BUILDING CODE OF CANADA (2015 NBC AND/OR NBC); AS AMENDED BY THE UNIFORM BUILDING AND ACCESSIBILITY STANDARDS (U.B.A.S.) ACT & U.B.A.S. REGULATIONS (LATEST EDITION) FOR THE PROVINCE OF SASKATCHEWAN.
2. SPECIFIED LOADS
2.1. U.N.O. THE LOADS SHOWN IN THE PLANS AND SPECIFICATIONS ARE "SPECIFIED LOADS", THAT MUST BE APPROPRIATELY FACTORED AND COMBINED TO BE USED FOR U.L.S. AND S.L.S. DESIGN CONDITIONS.
3. CLIMATIC LOADS
3.1. CLIMATIC LOADS (I.E. WIND LOADS, SNOW LOADS, & RAIN LOADS) USED IN THE DESIGN FOR THIS PROJECT HAVE BEEN OBTAINED FROM APPENDIX C OF THE 2015 NBC FOR THE PROJECT LOCATION.
4. DEAD LOADS:
4.1. INCLUDE THE SELF WEIGHT OF THE STRUCTURAL ELEMENT PLUS THE SUPERIMPOSED DEAD LOAD FOR ANY NON-STRUCTURAL ELEMENT AS APPLICABLE.
4.2. DEAD LOADS HAVE BEEN OBTAINED FROM THE TABLES PROVIDED IN THESE SPECIFICATIONS FOR THE APPLICABLE STRUCTURAL ELEMENT(S) UTILIZED IN THE DESIGN.
5. LIVE LOADS
5.1. LIVE LOADS HAVE BEEN OBTAINED FROM PART 4 OF THE NBC FOR EACH SPECIFIC ROOM AND/OR AREA AS APPLICABLE.
5.2. LIVE LOAD REDUCTION FACTORS HAVE NOT BEEN APPLIED IN THIS DESIGN IN ORDER TO ACCOUNT FOR WORST CASE LOADING.
6. APPLICABLE DESIGN STANDARDS
6.1. CONCRETE ELEMENTS ARE DESIGNED PER CAN/CSA-A23.3-2014 - DESIGN OF CONCRETE STRUCTURES.
6.2. THE CONTRACTOR AND OWNER ARE TO USE CONCRETE MATERIALS AND INSTALLATION METHODS IN CONFORMANCE WITH THE REQUIREMENTS OF CAN/CSA-A23.1-2014 & CAN/CSA-A23.2-2014 - CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION.
6.3. STEEL ELEMENTS ARE DESIGNED PER CAN/CSA-S16-2014 - LIMIT STATE DESIGN OF STEEL STRUCTURES.
6.4. COLD FORMED STEEL STRUCTURAL ELEMENTS ARE DESIGNED PER CAN/CSA-S136-2012 - NORTH AMERICAN SPECIFICATION FOR DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS (INCLUDING DESIGN PROVISIONS OF APPENDIX B AS APPLICABLE TO CANADA).
6.5. ALUMINUM STRUCTURAL ELEMENTS ARE DESIGNED PER CAN/CSA S157-2005 - STRENGTH DESIGN IN ALUMINUM.
6.6. MASONRY STRUCTURAL ELEMENTS ARE DESIGNED PER CAN/CSA-S304-2014 - DESIGN OF MASONRY STRUCTURES.
6.7. SAWN LUMBER AND GLUE LAMINATED LUMBER STRUCTURAL ELEMENTS ARE DESIGNED PER CAN/CSA-O86-2014 - ENGINEERING DESIGN IN WOOD.

RESIDENTIAL - GENERAL PROJECT REQUIREMENTS:

1. GENERAL:
1.1. U.N.O. THIS IS A COMBINED IMPERIAL & METRIC PROJECT AND ALL LENGTHS ARE IN FEET-INCHES & METERS-MILLIMETERS.
1.2. REFER TO BUILDING DRAWINGS (I.E., ARCHITECTURAL DRAWINGS) FOR REQUIRED FIRE RATING(S), SPRAYED FIREPROOFING, INTUMESCENT PAINT AND ALL OTHER MEASURES REQUIRED TO ACHIEVE INTENDED FIRE SEPARATION RATINGS FOR ALL FIRE SEPARATIONS AND ALL FLAME SPREAD LIMITATION RUDIMENTS FOR THE PROJECT. THESE STRUCTURAL DRAWINGS DO NOT INCLUDE THIS INFORMATION.
1.3. U.N.O. STRUCTURAL DESIGN ASSUMES NON-LOAD RESTRICTED U.L.C. FIRE RATED ASSEMBLIES, AND THE EXACT U.L.C. LISTING MATERIALS MUST BE USED - SUBSTITUTIONS ARE NOT PERMITTED EXCEPT AS EXPLICITLY ALLOWED IN THE U.L.C. LISTED ASSEMBLY.
1.4. USE THESE DRAWINGS ONLY FOR THE PURPOSE IDENTIFIED.
1.5. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION."
1.6. DO NOT USE INFORMATION ON THESE DRAWINGS FOR ANY OTHER PROJECT.
1.7. DO NOT SCALE THESE DRAWINGS.
1.8. FOLLOW TYPICAL DETAILS. TYPICAL DETAILS SHOW STRUCTURAL INTENT.
1.9. DO NOT CUT OR DRILL ANY OPENINGS IN STRUCTURAL MEMBERS WITHOUT WRITTEN PERMISSION FROM THE CONSULTANT.
1.10. ALL SECTIONS, DETAILS, AND STATEMENTS NOTED AS "TYPICAL" APPLY TO LIKE/SIMILAR CONDITIONS IN THE STRUCTURE.
2. CONTRACTOR RESPONSIBILITIES:
2.1. ALWAYS REVIEW THESE STRUCTURAL DRAWINGS AND SPECIFICATIONS IN CONJUNCTION WITH THE BUILDING (I.E., ARCHITECTURAL), MECHANICAL, ELECTRICAL, SITE GRADING, SITE DRAINAGE, AND LANDSCAPING DRAWINGS AND SPECIFICATIONS PRIOR TO BOTH PROVIDING THE OWNER WITH AN ESTIMATE/PROPOSAL FOR THE WORK AND AGAIN PRIOR TO CONSTRUCTION.
2.2. IF ERRORS AND/OR OMISSIONS AND/OR DISCREPANCIES ARE FOUND, THE CONTRACTOR IS TO REPORT ANY AND ALL SUCH ERRORS, OMISSIONS AND/OR DISCREPANCIES TO THE CONSULTANT IMMEDIATELY AND BEFORE PROCEEDING WITH ANY WORK.
2.3. COORDINATE ALL OPENINGS, SLEEVES AND EMBEDDED ITEMS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND LANDSCAPE DRAWINGS. REPORT ANY ITEMS THAT ARE IN CONFLICT BEFORE PROCEEDING WITH THE WORK.
2.4. IT IS EACH CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING DIMENSIONS AND CONDITIONS ON SITE PRIOR TO PROVIDING A PRICE TO THE OWNER AND AGAIN PRIOR TO ANY AND ALL PROJECT RELATED DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
2.5. THESE STRUCTURAL DRAWINGS AND SPECIFICATIONS SHOW THE FINAL & COMPLETED STRUCTURE ONLY AND DO NOT SHOW TEMPORARY WORKS. ANY AND ALL TEMPORARY WORKS WHICH MAY BE REQUIRED FOR EXECUTION OF THE PROJECT, INCLUDING TEMPORARY SHORING, BRACING, FORMS, SCAFFOLDING, GUY WIRES, TIE DOWNS, ETC. ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH. ANY AND ALL CONSTRUCTION PROCEDURES AND SEQUENCES TO ENSURE SAFETY OF ALL PERSONNEL, THE WHOLE STRUCTURE AND ALL OF ITS COMPONENTS DURING ERECTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2.6. STRUCTURAL ENGINEERING DESIGN OF ALL SHOP DRAWINGS FOR TEMPORARY WORKS ARE TO BE CARRIED OUT BY A PROFESSIONAL ENGINEER RETAINED AND PAID FOR BY THE CONTRACTOR, WHOM IS LICENSED IN THE PROVINCE OF SASKATCHEWAN, WHERE THE PROJECT IS LOCATED.
2.7. IMPOSED AND/OR APPLIED SPECIFIED LOADS ARE NOT TO EXCEED THE SPECIFIED DESIGN LOADS INDICATED ON DRAWINGS AND IN THESE SPECIFICATIONS. IN ADDITION, THE FINAL SPECIFIED DESIGN LOADS MAY ONLY BE APPLIED AFTER ALL CONCRETE REACHES ITS MINIMUM DESIGN STRENGTH AND AFTER THE STRUCTURAL ELEMENTS ARE ALL IN PLACE AND AFTER THE CONSTRUCTION IS COMPLETE. DO NOT LOAD THE STRUCTURE TO THE SPECIFIED DESIGN LOAD CAPACITIES UNTIL AFTER THE MINIMUM 28 DAY CONCRETE CURING / HYDRATION PROCESS IS COMPLETE.
2.8. STRUCTURAL ELEMENTS, ASSEMBLIES, WELDS, ATTACHMENTS, FASTENERS, ANCHOR BOLTS AND/OR EMBEDDED ITEMS HAVE BEEN DESIGNED BY THE CONSULTANT FOR LOADS OF THE COMPLETED STRUCTURE ONLY AND ARE NOT TO BE USED, RELIED UPON AND/OR INCLUDED FOR TEMPORARY SUPPORT AND/OR STABILITY DURING ERECTION UNLESS REVIEWED AND APPROVED BY THE CONTRACTOR'S ENGINEER RESPONSIBLE FOR THE ERECTION PROCEDURES.
2.9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING NOTIFICATION TO THE CONSULTANT AT EACH STAGE OF CONSTRUCTION THAT REQUIRES A FIELD REVIEW BY THE CONSULTANT. THE CONTRACTOR MUST PROVIDE REASONABLE NOTICE (NOT LESS THAN 48 HOURS) PRIOR TO CONCEALING ANY WORK THAT REQUIRES INSPECTION, REVIEW, OR TESTING. SCHEDULE THIS WORK TO OCCUR DURING NORMAL BUSINESS HOURS. WORK TO BE GENERALLY COMPLETE AT THE TIME OF THE REVIEW.
2.10. ALL MATERIALS TESTING, FOR ITEMS SUCH AS CONCRETE COMPRESSIVE STRENGTH TESTING AT 7 AND 28 DAYS, ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL TEST RESULTS AND TEST REPORTS ARE TO BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL. FAILURE BY THE CONTRACTOR TO SUBMIT THE REQUIRED TEST RESULTS AND REPORTS CALLED FOR IN THESE SPECIFICATIONS FOR THIS PROJECT MAY RESULT IN THE WORK BEING REJECTED BY THE CONSULTANT DUE TO INADEQUATE AND/OR IMPROPER PROOF THROUGH DOCUMENTATION THAT THE MATERIAL(S) SUPPLIED ARE AS REQUIRED BY THE CONSULTANT'S SPECIFICATIONS.
3. SHOP DRAWINGS:
3.1. SUBMIT ALL SHOP DRAWINGS FOR REVIEW BY THE CONSULTANT FOR APPROVAL FROM THE CONSULTANT PRIOR TO FABRICATION AND PRIOR TO ORDERING ANY AND ALL PRODUCTS AND PRIOR TO CARRYING OUT ANY TEMPORARY WORKS.
3.2. SHOP DRAWINGS MUST BE REVIEWED BY THE CONSULTANT FOR IMPACT ON BASE BUILDING STRUCTURE AND FOR COMPLIANCE WITH THE CONSULTANT'S DESIGN INTENT.
3.3. ALL SHOP DRAWINGS MUST BE SIGNED AND SEALED BY THE STRUCTURAL P.ENG. RESPONSIBLE FOR THE SHOP DRAWING ELEMENTS PROPOSED TO BE USED IN THIS PROJECT.
4. FIELD REVIEW BY THE CONSULTANT:
4.1. ALL PARTIES MUST COOPERATE WITH CONSULTANT TO ACCOMMODATE FIELD REVIEWS AND INSPECTIONS BY THE CONSULTANT, AND WITH ALL FIELD REVIEWS, INSPECTIONS AND TESTING BY THIRD PARTY AGENCIES.
4.2. ALL PARTIES MUST ACCOMMODATE AND PROVIDE SAFE ACCESS FOR THE CONSULTANT TO WORK AREAS AS REQUIRED.
4.3. THE CONSULTANT WILL PROVIDE PERIODIC FIELD REVIEW OF A REPRESENTATIVE SAMPLE OF THE STRUCTURAL WORKS DETAILED ON THESE DRAWINGS (AS EXPLICITLY STATED IN THE CONTRACT BETWEEN THE CONSULTANT AND THE OWNER AND/OR CONTRACTOR ONLY) FOR GENERAL CONFORMANCE WITH CONTRACT DOCUMENTS. THESE REVIEWS DO NOT REPLACE THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT AND MAINTAIN A QUALITY CONTROL PROGRAM, NOR THE REQUIREMENT TO INFORM THE CONSULTANT IN WRITING AT EACH STAGE OF CONSTRUCTION.
4.4. SEPARATE FIELD REVIEWS ARE TO BE PROVIDED FOR ALL STRUCTURAL WORK (I.E., TEMPORARY WORKS AND SHOP DRAWING COMPONENTS) DESIGNED BY A SEPARATE STRUCTURAL PROFESSIONAL ENGINEER ENGAGED BY THE CONTRACTOR, AND THE CONTRACTOR MUST SUBMIT THAT STRUCTURAL PROFESSIONAL ENGINEER'S FIELD REVIEW REPORTS TO THE CONSULTANT.
5. QUALITY CONTROL PLAN BY THE CONTRACTOR:
5.1. THE CONTRACTOR MUST MAINTAIN A QUALITY CONTROL PLAN FOR STRUCTURAL WORK, AND MAKE IT AVAILABLE TO THE CONSULTANT UPON REQUEST. AT A MINIMUM, THE PLAN IS TO INCLUDE:
5.1.1. NAMES OF PERSONNEL RESPONSIBLE FOR EXECUTION OF THE PLAN.
5.1.2. MEANS AND METHODS FOR CONFIRMING MATERIAL COMPLIANCE WITH SPECIFICATIONS AND ASSOCIATED DOCUMENTATION PROCEDURES.
5.1.3. PROGRAM FOR CONFIRMING AND DOCUMENTING COMPLIANCE OF SUB-TRADE QUALIFICATIONS AND QUALIFICATION THEIR INDIVIDUAL EMPLOYEES AND SUB-CONTRACTORS.
5.1.4. PROCEDURES FOR REVIEWING FIELD COMPLIANCE WITH CONSTRUCTION DOCUMENTS INCLUDING DOCUMENTATION OF LOCATIONS REVIEWED, PHOTOGRAPHS TAKEN, AND TIMING OF REVIEW. THE CONTRACTOR'S REVIEW TO BE COMPLETED PRIOR TO REVIEW BY THE CONSULTANT.
5.1.5. PROCEDURES FOR RECTIFYING DEFICIENCIES NOTED BY THE CONTRACTOR, CONSULTANTS AND INDEPENDENT INSPECTION AGENCIES.

RESIDENTIAL - LOAD FACTORS & LOAD COMB'S 2015 NBC:

1. THE LOAD COMBINATIONS & FACTORS APPLIED IN THE "LIMIT STATES DESIGN" FOR THIS PROJECT ARE BASED ON THE 2015 NBC ARTICLE 4.1.3.2 AND STRUCTURAL COMMENTARIES TO THE 2015 NBC:
2. ULTIMATE LIMIT STATES PRINCIPAL LOADS (WITHOUT CRANE LOADS):
2.1. CASE 1 — 1.4D
2.2. CASE 2 — (1.25D OR 0.9D) + 1.5L
2.3. CASE 3 — (1.25D OR 0.9D) + 1.5S
2.4. CASE 4 — (1.25D OR 0.9D) + 1.4W
2.5. CASE 5 — 1.0D + 1.0E
3. ULTIMATE LIMIT STATES COMPANION LOADS (WITHOUT CRANE LOADS):
3.1. CASE 1 — NIL
3.2. CASE 2 — 1.0S OR 0.4W
3.3. CASE 3 — 1.0L OR 0.4W
3.4. CASE 4 — 0.5L OR 0.5S
3.5. CASE 5 — 0.5L OR 0.25S
4. SERVICEABILITY LIMIT STATES PRINCIPAL LOADS (WITHOUT CRANE LOADS):
4.1. CASE 1 — 1.0D
4.2. CASE 2 — (1.0D OR 0.9D) + 1.0L
4.3. CASE 3 — (1.0D OR 0.9D) + 1.0S
4.4. CASE 4 — (1.0D OR 0.9D) + 1.0W
4.5. CASE 5 — 1.0D + 1.0E
5. SERVICEABILITY LIMIT STATES COMPANION LOADS (WITHOUT CRANE LOADS):
5.1. CASE 1 — NIL
5.2. CASE 2 — 1.0S OR 0.4W
5.3. CASE 3 — 1.0L OR 0.4W
5.4. CASE 4 — 0.5L OR 0.5S
5.5. CASE 5 — 0.5L OR 0.25S
6. U.N.O. SEE THE "SPECIFIED LOADS" TABLES FOR SPECIFIED DEAD, LIVE, WIND, SNOW, RAIN & SEISMIC LOADS USED IN THIS DESIGN.
7. U.N.O. IN THE PROJECT DRAWINGS; SPECIFIED UNIFORM DISTRIBUTED LIVE LOADS ARE TO BE APPLIED AS PER TABLE 4.1.5.3 OF THE 2015 NBC BASED ON USE AND OCCUPANCY OF EACH AREA.
9. U.N.O. IN THE PROJECT DRAWINGS; SPECIFIED CONCENTRATED LIVE LOADS ARE TO BE APPLIED AS PER TABLE 4.1.5.9 OF THE 2015 NBC BASED ON USE AND OCCUPANCY.
10. A MIN. SPECIFIED UNIFORM DISTRIBUTED LIVE LOAD OF 1.0 kPa (20.9 psf) IS TO BE USED IN COMBINATION FACTORS INVOLVING ANALYSIS OF THE SUPERSTRUCTURE ROOF AREA(S).
11. FULL AND PARTIAL LOADING MUST ALSO BE EXPLORED IN THE DESIGN AS PER ARTICLE 4.1.5.3.

RESIDENTIAL - IMPORTANCE FACTORS 2015 NBC:

DESCRIPTION	DEAD LOADS		LIVE LOADS		SNOW & RAIN		WIND		SEISMIC	
	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS	ULS	SLS
LOW	1.00	1.00	1.00	1.00	0.80	0.90	0.80	0.75	0.80	SEE TABLE A-4.1.8.5 APP. A
NORMAL	1.00	1.00	1.00	1.00	1.00	0.90	1.00	0.75	1.00	
HIGH	1.00	1.00	1.00	1.00	1.15	0.90	1.15	0.75	1.30	
POST DISASTER	1.00	1.00	1.00	1.00	1.25	0.90	1.25	0.75	1.50	

ENVIRONMENTAL LOADS - REGINA - 2015 NBC:

DESCRIPTION	SPECIFIED [kPa]	SPECIFIED [psf]	LOAD INFORMATION
GROUND SNOW LOAD Ss	1.4	29.2	1/50 RETURN PERIOD - APPENDIX C - 2015 NBC
GROUND RAIN LOAD Sr	0.1	2.1	1/50 RETURN PERIOD - APPENDIX C - 2015 NBC
WIND LOAD q1/50	0.49	10.2	1/50 RETURN PERIOD - APPENDIX C - 2015 NBC

SPECIFIED SEISMIC LOADS - REGINA - 2015 NBC:

DESCRIPTION	SPECIFIED [kPa]	LOAD INFORMATION
Sa (0.2)	0.101	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
Sa (0.5)	0.060	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
Sa (1.0)	0.030	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
Sa (2.0)	0.013	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
Sa (5.0)	0.0027	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
Sa (10.0)	0.0013	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
PGA PGV	0.061 0.043	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC
SITE CLASS	ASSUMED "D"	1/2475 RETURN PERIOD - APPENDIX C - 2015 NBC

RESIDENTIAL DEAD LOADS:

DESCRIPTION	SPECIFIED [kPa]	SPECIFIED [psf]	LOAD DESCRIPTION
ROOF DEAD LOAD (W/ ASPHALT SHINGLES)	0.85	17.8	'2014 TPIC - TRUSS DESIGN PROCEDURES AND SPEC'S FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES (REPRINTED JUNE 2016)'
ROOF DEAD LOAD (W/ CLAY OR CONC. TILE)	0.85 + 0.5 = 1.35	28.2	BASE TPIC LOAD PLUS 0.5kPa ADDITIONAL LOAD AS RECOMMENDED BY CANADIAN WOOD COUNCIL SPAN TABLE DEVELOPMENT GUIDELINES
FLOOR DEAD LOAD (WOOD FRAMED W/ LAMINATE OR CARPET)	0.28	5.9	ASSEMBLY LOAD ASSUMED FOR DESIGN
FLOOR DEAD LOAD (WOOD FRAMED W/ TILED FLOORING)	0.66	13.7	ASSEMBLY LOAD ASSUMED FOR DESIGN
FLOOR DEAD LOAD (WOOD FRAMED W/ UNSPEC'D FLOORING)	0.50	10.4	ASSEMBLY LOAD RECOMMENDED FOR DESIGN BY CANADIAN WOOD COUNCIL USED TO DEVELOP SPAN TABLES INCLUDED IN THE 2015 NBC
FLOOR DEAD LOAD (FLOOR W/ 2" NORMAL WT. CONC. TOPPING)	1.30	27.2	ASSEMBLY LOAD RECOMMENDED FOR DESIGN BY CANADIAN WOOD COUNCIL USED TO DEVELOP SPAN TABLES INCLUDED IN THE 2015 NBC
EXTERIOR WALL DEAD LOAD (2X6 W/ VINYL)	0.24	5.0	ASSEMBLY LOAD ASSUMED FOR DESIGN
EXTERIOR WALL DEAD LOAD (2X6 W/ CEMENT BOARD SIDING)	0.59	12.3	ASSEMBLY LOAD ASSUMED FOR DESIGN
EXTERIOR WALL DEAD LOAD (2X6 W/ 7/8" CEMENT STUCCO)	0.74	15.5	ASSEMBLY LOAD ASSUMED FOR DESIGN
EXTERIOR WALL DEAD LOAD (2X6 W/ 4" BRICK VENEER)	2.61	54.5	ASSEMBLY LOAD ASSUMED FOR DESIGN
EXTERIOR WALL DEAD LOAD (2X6 W/ 2" STONE VENEER)	1.94	40.4	ASSEMBLY LOAD ASSUMED FOR DESIGN
EXTERIOR WALL DEAD LOAD (W/ UNSPEC'D CLADDING)	0.5	10.4	ASSEMBLY LOAD RECOMMENDED FOR DESIGN BY CANADIAN WOOD COUNCIL USED TO DEVELOP SPAN TABLES INCLUDED IN THE 2015 NBC
FOUNDATION DEAD LOAD (8" CONC. WALL)	4.80	100	ASSEMBLY LOAD ASSUMED FOR DESIGN

RESIDENTIAL LIVE LOADS:

DESCRIPTION	SPECIFIED [kPa]	SPECIFIED [psf]	LOAD DESCRIPTION
ROOF LIVE LOAD	1.0	20.9	MIN. LIVE LOAD TO BE APPLIED IN LOAD COMBINATIONS WITHOUT SNOW LOADS
RESIDENTIAL AREA BEDROOMS	1.9	30.7	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.2 & 1.3.3.3.
RESIDENTIAL AREA OTHER	1.9	30.7	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.2 & 1.3.3.3.
RESIDENTIAL AREA STAIRS SERVING SINGLE DWELLING	1.9	30.7	
RESIDENTIAL AREA BALCONIES SERVING SINGLE DWELLING	1.9	30.7	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.2.
RESIDENTIAL ATTIC AREA W/ STAIR ACCESS	1.4	29.2	FOR ALL RESIDENTIAL AREAS
RESIDENTIAL ATTIC AREA W/ LIMITED ACCESS	0.5	10.4	FOR ALL RESIDENTIAL AREAS
VEHICLE AREAS ≤ 4000kg	4.8	100	FOR ALL RESIDENTIAL AREA PASSENGER VEHICLE PARKING
RESIDENTIAL AREA STAIRS SERVING MULTIPLE DWELLINGS	4.8	100	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
RESIDENTIAL AREA BALCONIES SERVING MULTIPLE DWELLINGS	4.8	100	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
STORAGE AREAS SERVING MULTIPLE DWELLINGS	4.8	100	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
1ST STOREY OFFICE AREAS	4.8	100	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
OFFICE AREAS ABOVE THE 1ST STOREY	2.4	50.1	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
EQUIPMENT AREAS	4.8	100	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.
SERVICE ROOMS	3.6	75.2	FOR RESIDENTIAL AREAS WITHIN SCOPE OF DIV. A 1.3.3.3.

RESIDENTIAL ROOF LOADS:

DESCRIPTION	SPECIFIED LOAD [kPa]	SPECIFIED LOAD [psf]	LOAD DESCRIPTION
MIN. TOP CHORD DEAD	0.5	10	
MIN. TOP CHORD LIVE	1.0	21	
MIN. TOP CHORD SNOW	1.0	21	
MIN. BOTT. CHORD DEAD	0.35	7	
MIN. BOTT. CHORD LIVE	0	0	

STRUCTURAL ENGINEERING CONSULTANT:
49NORTH
ENGINEERING CORP.
CONSULTING ENGINEERS

16 CRESTVIEW BAY
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WEBSITE: www.weare49north.ca

CLIENT:

BLAIR PATTERSON
1624 GRANT ROAD
REGINA, SASKATCHEWAN S4S 4N2
PHONE: 1 (306) 591-2319
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OWNER:

BLAIR PATTERSON
1624 GRANT ROAD
REGINA, SASKATCHEWAN S4S 4N2
PHONE: 1 (306) 591-2319
EMAIL: hello@blairpatterson.ca

SEAL:

PROFESSIONAL ENGINEER
T.D. TWEIDT
MEMBER 13705
2021/02/25
YR. MN. DAY
SASKATCHEWAN

DO NOT SCALE FROM THESE DRAWINGS. U.N.O. ALL DIMENSIONS SHOWN IN THESE DRAWINGS ARE MEASURED TO THE OUTSIDE FACE OF EXTERIOR WALLS AND TO THE CENTERLINE OF INTERIOR WALLS. ALL DIMENSIONS MUST BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO SUBMITTING ANY ESTIMATE, PROPOSAL AND/OR CONTRACT TO THE OWNER; AND BY THE CONTRACTOR AGAIN PRIOR TO THE EXECUTION OF ANY WORK REFERENCED BY THESE DRAWINGS AND/OR SPECIFICATIONS.

49NORTH ENGINEERING CORP. PROJECT NUMBER:
2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1/8" = 1'-0"
DATE	FEBRUARY 25, 2021

DRAWING TITLE:

SPECIFICATIONS

SHEET NUMBER: S2.1

REVISION NUMBER:

WOOD FRAMED CONSTRUCTION GENERAL - 2015 NBC:

1. APPLICABLE CODE:
1.1. U.N.O. ELSEWHERE IN THE PLANS AND SPECIFICATIONS GENERAL PROVISIONS FOR WOOD FRAME CONSTRUCTION IS TO COMPLY WITH THE 2015 NATIONAL BUILDING CODE OF CANADA (NBC) INCLUDING CAN/CSA-O86, "ENGINEERING DESIGN IN WOOD" AS APPLICABLE.

WOOD FRAMED CONSTRUCTION - APPLICATION - NBC 2015:

1. APPLICATION
1.1. LIMITATIONS
1.1.1. THIS SPECIFICATION APPLIES TO CONSTRUCTIONS WHERE WALL, FLOOR AND ROOF PLANES ARE GENERALLY COMPRISED OF LUMBER FRAMES OF SMALL REPETITIVE STRUCTURAL MEMBERS, OR ENGINEERED COMPONENTS, AND WHERE
1.1.1.1. ROOF AND WALL PLANES ARE CLAD, SHEATHED OR BRACED ON AT LEAST ONE SIDE,
1.1.1.2. THE SMALL REPETITIVE STRUCTURAL MEMBERS ARE SPACED NOT MORE THAN 600mm (24") O.C.,
1.1.1.3. THE CONSTRUCTIONS DO NOT SERVE AS FOUNDATIONS (SEE PRESERVATIVE TREATED WOOD FOUNDATION SPECIFICATIONS),
1.1.1.4. THE SPECIFIED LIVE LOAD ON SUPPORTED SUBFLOORS AND FLOOR FRAMING DOES NOT EXCEED 2.4 kPa, AND
1.1.2. E) THE SPAN OF ANY STRUCTURAL MEMBER DOES NOT EXCEED 12.20m (40'-0").

WOOD FRAMED CONSTRUCTION - GENERAL - NBC 2015:

1. GENERAL
1.1. STRENGTH AND RIGIDITY
1.1.1. ALL MEMBERS SHALL BE SO FRAMED, ANCHORED, FASTENED, TIED AND BRACED TO PROVIDE THE NECESSARY STRENGTH AND RIGIDITY.
1.2. PROTECTION FROM DECAY
1.2.1. ENDS OF WOOD JOISTS, BEAMS AND OTHER MEMBERS FRAMING INTO MASONRY OR CONCRETE SHALL BE TREATED TO PREVENT DECAY WHERE THE BOTTOM OF THE MEMBER IS AT OR BELOW GROUND LEVEL, OR A 12mm AIR SPACE SHALL BE PROVIDED AT THE END AND SIDES OF THE MEMBER.
1.2.2. AIR SPACES REQUIRED ABOVE SHALL NOT BE BLOCKED BY INSULATION, VAPOUR-BARRIERS OR AIRTIGHT MATERIALS.
1.3. PROTECTION FROM DAMPNESS
1.3.1. EXCEPT AS PERMITTED BELOW, WOOD FRAMING MEMBERS THAT ARE NOT PRESSURE-TREATED WITH A WOOD PRESERVATIVE AND THAT ARE SUPPORTED ON CONCRETE IN CONTACT WITH THE GROUND OR FILL SHALL BE SEPARATED FROM THE CONCRETE BY NOT LESS THAN 0.05mm (6mil) POLYETHYLENE FILM OR TYPE S ROLL ROOFING.
1.3.2. DAMPPROOFING MATERIAL REFERRED TO ABOVE IS NOT REQUIRED WHERE THE WOOD MEMBER IS AT LEAST 150mm ABOVE THE GROUND.
1.4. LUMBER
1.4.1. LUMBER SHALL CONFORM TO THE 'LUMBER AND WOOD PRODUCTS' SECTION OF THESE SPECIFICATIONS.

WOOD FRAMED CONSTRUCTION - LUMBER & WOOD PRODUCTS - NBC 2015:

1. LUMBER AND WOOD PRODUCTS
1.1. GRADE MARKING
1.1.1. LUMBER FOR JOISTS, RAFTERS, TRUSSES AND BEAMS SHALL BE IDENTIFIED BY A GRADE STAMP TO INDICATE ITS GRADE AS DETERMINED BY NLGA 2014, "STANDARD GRADING RULES FOR CANADIAN LUMBER."
1.2. LUMBER GRADES
1.2.1. EXCEPT FOR JOISTS, RAFTERS, TRUSSES AND BEAMS, VISUALLY GRADED LUMBER SHALL CONFORM TO THE GRADES SPECIFIED IN THESE PLANS AND SPECIFICATIONS, OR IN THE LISTED ASSEMBLIES CALLED OUT IN THE DESIGN.
1.3. MACHINE STRESS RATED LUMBER
1.3.1. MACHINE STRESS RATED LUMBER SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION TO CSA-086, "ENGINEERING DESIGN IN WOOD.".
1.4. OSB, WAFERBOARD AND PLYWOOD MARKING
1.4.1. OSB, WAFERBOARD AND PLYWOOD USED FOR ROOF SHEATHING, WALL SHEATHING AND SUBFLOORING SHALL BE LEGIBLY IDENTIFIED ON THE FACE OF THE MATERIAL INDICATING
1.4.1.1. THE MANUFACTURER OF THE MATERIAL,
1.4.1.2. THE STANDARD TO WHICH IT IS PRODUCED, AND
1.4.1.3. THAT THE MATERIAL IS OF AN EXTERIOR TYPE.
1.5. MOISTURE CONTENT
1.5.1. MOISTURE CONTENT OF LUMBER SHALL BE NOT MORE THAN 19% AT THE TIME OF INSTALLATION.
1.6. LUMBER DIMENSIONS
1.6.1. LUMBER DIMENSIONS REFERRED TO IN THESE PLANS AND SPECIFICATIONS ARE ACTUAL DIMENSIONS DETERMINED IN CONFORMANCE WITH CSA 0141, "SOFTWOOD LUMBER."
1.7. PANEL THICKNESS TOLERANCES
1.7.1. THE THICKNESSES SPECIFIED IN THIS PART FOR PLYWOOD, HARDBOARD, PARTICLEBOARD, OSB AND WAFERBOARD SHALL BE SUBJECT TO THE TOLERANCES PERMITTED IN THE STANDARDS REFERENCED FOR THESE PRODUCTS UNLESS SPECIFICALLY INDICATED HEREIN.
1.8. UNDERSIZED LUMBER
1.8.1. UNDERSIZED LUMBER MAY NOT BE USED IN CONSTRUCTION.

ENGINEERED WOOD PRODUCTS:

1. ENGINEERED WOOD PRODUCTS
2. THIS SECTION APPLIES TO ALL CONSTRUCTION UTILIZING ENGINEERED WOOD PRODUCTS, INCLUDING BUT NOT LIMITED TO TRUSSES, JOISTS, STUDS, PLATES, BEAMS, COLUMNS, AND POSTS, BOTH SOLID AND BUILT-UP TYPES:
3. MATERIALS:
3.1. STRUCTURAL MEMBERS MADE OF WOOD SHALL CONFORM TO CSA-O86, "ENGINEERING DESIGN IN WOOD."
3.2. GLUED-LAMINATED MEMBERS SHALL BE FABRICATED IN PLANTS CONFORMING TO CSA-O177, "QUALIFICATION CODE FOR MANUFACTURERS OF STRUCTURAL GLUED-LAMINATED TIMBER."
3.2.1. LAMINATED VENEER LUMBER (LVL) SHALL BE MIN. 2,950Fb-2.0E OR BETTER IN GRADE.
3.2.2. MACHINE STRESS RATED LUMBER (MSR) SHALL BE MIN. 1,650Fb-1.5E OR BETTER GRADE.
3.3. SHOP DRAWINGS
3.3.1. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PLACE WHERE THE PROJECT IS LOCATED PRIOR TO FABRICATION.
3.3.2. SHOP DRAWINGS ARE TO INCLUDE PROPOSED: DIMENSIONS, MATERIALS, GRADES, CALCULATIONS, LAYOUT DRAWINGS, BRACING AND BRIDGING DETAILS, BEARING AND ANCHORAGE DETAILS, AND CONNECTION DETAILS BETWEEN MEMBERS AND THEIR SUPPORTS.
3.3.3. PROVIDE A STAMPED LETTER FROM THE ENGINEER RESPONSIBLE FOR JOIST DESIGN CONFIRMING THAT THE CALCULATIONS (INCLUDING LOAD INPUTS INTO THE SOFTWARE USED FOR THE JOIST AND BEAM DESIGN) HAVE BEEN REVIEWED.
3.4. TRUSSES
3.4.1. ROOF AND FLOOR TRUSSES TO BE DESIGNED AND FABRICATED IN ACCORDANCE WITH CAN/CSA-O86 PREFABRICATED TRUSSES TO PROFILES, DIMENSIONS AND LOADS SHOWN ON THE DRAWINGS. TRUSS SUPPLIER IS TO DESIGN TRUSSES INCLUDING ALL INDIVIDUAL MEMBERS AND CONNECTORS IN ACCORDANCE WITH PART 4 OF NBC.
3.4.2. PROVIDE SHOP DRAWINGS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF SASKATCHEWAN.
3.4.3. TRUSS SUPPLIER TO SIZE AND PROVIDE ALL REQUIRED CONNECTIONS, INCLUDING HOLD DOWNS, TIES, CLIPS AND HANGERS (SUCH AS "HURRICANE CLIPS").
3.4.4. ALL OPEN WEB WOOD TRUSSES AND JOISTS (O.W.W.T. & O.W.W.J.) TO BE MANUFACTURED WITH MSR LUMBER ONLY.

ENGINEERED WOOD CONNECTORS:

1. ENGINEERED WOOD CONNECTORS:
1.1. ENGINEERED WOOD CONNECTORS SUCH AS BUT NOT LIMITED TO: HANGERS, TIE-DOWNS, HOLD-DOWNS, STRAPS, CLIPS, ETC. MUST BE SELECTED ONLY FROM THOSE MANUFACTURED BY:
1.1.1. THE SIMPSON STRONG-TIE COMPANY (OR CONSULTANT APPROVED EQUIVALENT) UTILIZING CANADIAN DATA.
1.2. ALL WOOD CONNECTORS MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND INSTRUCTIONS ONLY.
1.3. ALL FASTENER HOLES IN THE WOOD CONNECTORS MUST BE FILLED WITH MANUFACTURER RECOMMENDED AND APPROVED FASTENERS.
1.4. WOOD CONNECTORS ARE NOT PERMITTED TO BE MODIFIED IN ANY WAY OTHER THAN THOSE PERMITTED EXPLICITLY BY THE MANUFACTURER.

WOOD FRAMED CONSTRUCTION - MAXIMUM SPANS - NBC 2015:

1. MAXIMUM SPANS
1.1. ALL REFERENCED ARTICLES, TABLES, ETC. BELOW ARE AS FOUND IN SUBSECTION 9.23.4. OF THE 2015 NBC.
1.2. APPLICATION
1.2.1. SPANS PROVIDED IN THIS SUBSECTION FOR JOISTS, BEAMS AND LINTELS SUPPORTING FLOORS SHALL APPLY ONLY WHERE
1.2.1.1. THE FLOORS SERVE RESIDENTIAL AREAS AS DESCRIBED IN TABLE 4.1.5.3., OR
1.2.1.2. THE UNIFORMLY DISTRIBUTED LIVE LOAD ON THE FLOORS DOES NOT EXCEED THAT SPECIFIED FOR RESIDENTIAL AREAS AS DESCRIBED IN TABLE 4.1.5.3.
1.2.2. SPANS FOR JOISTS, BEAMS AND LINTELS SUPPORTING FLOORS SHALL BE DETERMINED ACCORDING TO SUBSECTION 4.1.3. WHERE THE SUPPORTED FLOORS
1.2.2.1. SERVE OTHER THAN RESIDENTIAL AREAS, OR
1.2.2.2. SUPPORT A UNIFORM LIVE LOAD IN EXCESS OF THAT SPECIFIED FOR RESIDENTIAL AREAS.
1.3. SPANS FOR JOISTS, RAFTERS AND BEAMS (SEE NOTE A-9.23.4.2.)
1.3.1. EXCEPT AS REQUIRED IN SENTENCE (2) AND ARTICLE 9.23.14.10., SPANS FOR WOOD JOISTS AND RAFTERS SHALL CONFORM TO THE SPANS SHOWN IN SPAN TABLES 9.23.4.2.-A TO 9.23.4.2.-G FOR THE UNIFORM LIVE LOADS SHOWN IN THE TABLES. (SEE ARTICLE 9.4.2.2.)
1.3.2. SPANS FOR FLOOR JOISTS THAT ARE NOT SELECTED FROM SPAN TABLES 9.23.4.2.-A AND 9.23.4.2.-B AND THAT ARE REQUIRED TO BE DESIGNED FOR THE SAME LOADING CONDITIONS, SHALL NOT EXCEED THE DESIGN REQUIREMENTS FOR UNIFORM LOADING AND VIBRATION CRITERIA. (SEE NOTE A-9.23.4.2.(2).)
1.3.3. SPANS FOR BUILT-UP WOOD AND GLUED-LAMINATED TIMBER FLOOR BEAMS SHALL CONFORM TO THE SPANS IN SPAN TABLES 9.23.4.2.-H TO 9.23.4.2.-K. (SEE ARTICLE 9.4.2.2.)
1.3.4. SPANS FOR ROOF RIDGE BEAMS SHALL CONFORM TO THE SPANS IN SPAN TABLE 9.23.4.2.-L FOR THE UNIFORM SNOW LOAD SHOWN. (SEE ARTICLES 9.4.2.2. AND 9.23.14.8.)
1.4. STEEL BEAMS
1.4.1. THE SPANS FOR STEEL FLOOR BEAMS WITH LATERALLY SUPPORTED TOP FLANGES SHALL CONFORM ONLY TO THOSE SHOWN IN THESE PROJECT DRAWINGS AND SPECIFICATIONS.
1.4.2. BEAMS SHALL AT LEAST MEET THE REQUIREMENTS FOR GRADE 350W STEEL CONTAINED IN CSA-G40.21, "STRUCTURAL QUALITY STEEL."

WOOD FRAMED CONSTRUCTION - SILL PLATES - NBC 2015:

1. SILL PLATES
1.1. SIZE OF SILL PLATES
1.1.1. WHERE SILL PLATES PROVIDE BEARING FOR THE FLOOR SYSTEM, THEY SHALL BE NOT LESS THAN 38mm BY 89mm MATERIAL.
1.2. LEVELLING AND SEALING OF SILL PLATES
1.2.1. SILL PLATES SHALL BE
1.2.1.1. LEVELLED BY SETTING THEM ON A FULL BED OF MORTAR, OR
1.2.1.2. LAID DIRECTLY ON THE FOUNDATION IF THE TOP OF THE FOUNDATION IS LEVEL.
1.2.2. THE JOINT BETWEEN THE SILL PLATE FOR EXTERIOR WALLS AND THE FOUNDATION SHALL BE SEALED IN ACCORDANCE WITH SUBSECTION 9.25.3. OF THE 2015 NBC.

WOOD FRAMED CONSTRUCTION - FASTENERS - NBC 2015:

1. FASTENERS
1.1. STANDARDS FOR NAILS AND SCREWS
1.1.1. EXCEPT AS PROVIDED BELOW, AND UNLESS OTHERWISE INDICATED, NAILS SPECIFIED IN THIS SECTION SHALL BE COMMON STEEL WIRE NAILS OR COMMON SPIRAL NAILS CONFORMING TO
1.1.1.1. ASTM F 1667, "DRIVEN FASTENERS: NAILS, SPIKES, AND STAPLES," OR
1.1.1.2. CSA B111, "WIRE NAILS, SPIKES AND STAPLES."
1.1.2. NAILS USED IN CONSTRUCTION MUST HAVE THE MINIMUM LENGTHS, DIAMETERS AND PROPERTIES CALLED FOR IN THESE PLANS AND SPECIFICATIONS.
1.1.3. WOOD SCREWS SPECIFIED IN THIS SECTION SHALL CONFORM TO ASME B18.6.1, "WOOD SCREWS (INCH SERIES)."
1.2. LENGTH OF NAILS
1.2.1. ALL NAILS SHALL BE LONG ENOUGH SO THAT NOT LESS THAN HALF THEIR REQUIRED LENGTH PENETRATES INTO THE SECOND MEMBER.
1.3. PREVENTION OF SPLITTING
1.3.1. SPLITTING OF WOOD MEMBERS SHALL BE MINIMIZED BY STAGGERING THE NAILS IN THE DIRECTION OF THE GRAIN AND BY KEEPING NAILS WELL IN FROM THE EDGES.
1.4. NAILING OF FRAMING
1.4.1. EXCEPT AS PROVIDED IN THESE SPECIFICATIONS, NAILING OF FRAMING SHALL CONFORM TO THE TABLES PROVIDED.
1.4.2. WHERE THE BOTTOM WALL PLATE OR SOLE PLATE OF AN EXTERIOR WALL IS NOT NAILED TO FLOOR JOISTS, RIM JOISTS OR BLOCKING IN CONFORMANCE WITH THE PROVIDED TABLES, THE EXTERIOR WALL IS PERMITTED TO BE FASTENED TO THE FLOOR FRAMING BY
1.4.2.1. HAVING PLYWOOD, OSB OR WAFERBOARD SHEATHING EXTEND DOWN OVER FLOOR FRAMING AND FASTENED TO THE FLOOR FRAMING BY NAILS OR STAPLES CONFORMING TO THE APPROPRIATE TABLES, OR
1.4.2.2. TYING THE WALL FRAMING TO THE FLOOR FRAMING BY GALVANIZED-METAL STRIPS
1.4.2.2.1. 50mm WIDE,
1.4.2.2.2. NOT LESS THAN 0.41mm THICK,
1.4.2.2.3. SPACED NOT MORE THAN 1.2m APART, AND
1.4.2.2.4. FASTENED AT EACH END WITH AT LEAST TWO (2) 63mm NAILS.
1.4.3. WHERE THE 1-IN-50 HOURLY WIND PRESSURE IS EQUAL TO OR GREATER THAN 0.8kPa, ROOF RAFTERS, JOISTS OR TRUSSES SHALL BE TIED TO THE WALL FRAMING WITH CONNECTORS THAT WILL RESIST A FACTORED UPLIFT LOAD OF 3kN. (DOES NOT APPLY TO SASKATCHEWAN TYPICALLY).
1.4.4. GALVANIZED-STEEL STRAPS ARE DEEMED TO COMPLY WITH THE ABOVE, PROVIDED THEY ARE
1.4.4.1. 50mm WIDE,
1.4.4.2. NOT LESS THAN 0.91mm THICK, AND
1.4.4.3. FASTENED AT EACH END WITH AT LEAST FOUR (4) 63mm NAILS.
1.5. FASTENERS FOR SHEATHING OR SUBFLOORING
1.5.1. EXCEPT AS PROVIDED BELOW, FASTENING OF SHEATHING AND SUBFLOORING SHALL CONFORM TO THE TABLES CONTAINED IN THESE SPECIFICATIONS.
1.5.2. FASTENING OF ROOF SHEATHING AND SHEATHING IN REQUIRED BRACED WALL PANELS SHALL CONFORM TO TABLE 9.23.3.5.-B OF THE 2015 NBC, WHERE
1.5.2.1. A) THE 1-IN-50 HOURLY WIND PRESSURE (HWP) IS EQUAL TO OR GREATER THAN 0.8kPa AND LESS THAN 1.2kPa AND THE SEISMIC SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS NOT MORE THAN 0.90, OR
1.5.2.2. THE SEISMIC SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS GREATER THAN 0.70 AND NOT MORE THAN 0.90.
1.5.3. FASTENING OF ROOF SHEATHING AND SHEATHING IN REQUIRED BRACED WALL PANELS SHALL CONFORM TO TABLE 9.23.3.5.-C OF THE 2015 NBC, WHERE
1.5.3.1. THE 1-IN-50 HOURLY WIND PRESSURE (HWP) IS EQUAL TO OR GREATER THAN 0.8kPa AND LESS THAN 1.2kPa AND THE SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS NOT MORE THAN 1.8, OR
1.5.3.2. THE SEISMIC SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS GREATER THAN 0.90 AND NOT MORE THAN 1.8.
1.5.4. FASTENING OF SHEATHING SHALL CONFORM TO PART 4,
1.5.4.1. WHERE THE 1-IN-50 HOURLY WIND PRESSURE IS EQUAL TO OR GREATER THAN 1.2kPa, OR
1.5.4.2. FOR REQUIRED BRACED WALL PANELS, WHERE THE SEISMIC SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS GREATER THAN 1.8.
1.5.5. STAPLES SHALL NOT BE LESS THAN 1.6mm IN DIAMETER OR THICKNESS, WITH NOT LESS THAN A 9.5mm CROWN DRIVEN WITH THE CROWN PARALLEL TO FRAMING.
1.5.6. ROOFING NAILS FOR THE ATTACHMENT OF FIBREBOARD OR GYPSUM SHEATHING SHALL NOT BE LESS THAN 3.2mm IN DIAMETER WITH A MINIMUM HEAD DIAMETER OF 11.1mm.
1.5.7. FLOORING SCREWS SHALL NOT BE LESS THAN 3.2mm IN DIAMETER.
1.5.8. THE EDGES OF SHEATHING IN A BRACED WALL PANEL SHALL BE SUPPORTED AND FASTENED TO WOOD BLOCKING WHERE
1.5.8.1. THE SEISMIC SPECTRAL RESPONSE ACCELERATION, $S_a(0.2)$, IS GREATER THAN 1.2, OR
1.5.9. THE BRACED WALL PANEL SUPPORTS MORE THAN A ROOF OF LIGHTWEIGHT CONSTRUCTION.

CAN/CSA-B111, "WIRE NAILS, SPIKES AND STAPLES" - 2015 NBC:

MINIMUM LENGTH OF NAILS		MINIMUM DIAMETER OF NAILS	
INCHES	mm (1" = 25.4mm)	INCHES	mm (1" = 25.4mm)
2-1/4"	57mm	0.113"	2.87mm
2-1/2"	63mm	0.128"	3.25mm
3"	76mm	0.144"	3.66mm
3-1/4"	82mm	0.144"	3.66mm
4" OR GREATER	101mm OR GREATER	0.192"	4.88 OR GREATER

1. NAILS ARE TO BE COMMON WIRE NAILS AND SHALL CONFORM TO CAN/CSA-B111, WIRE NAILS, SPIKES AND STAPLES" WITH A MINIMUM YIELD STRENGTH OF 90,000 psi.
2. NAILS INSTALLED USING PNEUMATIC DRIVERS (I.E. AIR NAIL GUNS) MUST MEET THE ABOVE FASTENER MINIMUM DIAMETER AND MINIMUM LENGTH REQUIREMENTS.
3. ALTERNATIVE NAILS MAY BE SUBSTITUTED PROVIDED THAT THEY HAVE THE SAME OR LARGER MINIMUM DIAMETER AND THE SAME OR LARGER SHANK LENGTH AND THE SAME OR LARGER HEAD DIAMETER.

ASTM-F1667, "DRIVEN FASTENERS: NAILS, SPIKES, AND STAPLES" SCHEDULE:

NAIL SIZE ("C" = COMMON)		SHANK DIAMETER (UNCOATED)		SHANK LENGTH (UNCOATED)		HEAD DIAMETER
PENNY SIZE	GAUGE	INCHES	mm (1" = 25.4mm)	INCHES	mm (1" = 25.4mm)	INCHES
2d "C"	15	0.072"	1.83 mm	1"	25 mm	3/16"
2d	14	0.083"	2.11 mm	1"	25 mm	13/64"
3d "C"	14	0.083"	2.11 mm	1-1/4"	32 mm	13/64"
4d "C"	12	0.109"	2.77 mm	1-1/2"	38 mm	1/4"
5d "C"	12	0.109"	2.77 mm	1-3/4"	45 mm	1/4"
6d "C"	11	0.120"	3.05 mm	2"	51 mm	17/64"
8d "C"	10	0.134"	3.40 mm	2-1/2"	64 mm	9/32"
10d "C"	9	0.148"	3.76 mm	3"	76 mm	5/16"
12d "C"	9	0.148"	3.76 mm	3-1/4"	83 mm	5/16"
16d "C"	8	0.165"	4.19 mm	3-1/2"	89 mm	11/32"
20d "C"	6	0.203"	5.16 mm	4"	102 mm	13/32"
30d "C"	5	0.220"	5.59 mm	4-1/2"	108 mm	7/16"
40d "C"	4	0.238"	6.05 mm	5"	127 mm	15/32"
60d "C"	4	0.238"	6.05 mm	6"	152 mm	17/32"
60d	2	0.284"	7.21 mm	6"	152 mm	17/32"

1. NAILS ARE TO BE COMMON WIRE NAILS AND SHALL CONFORM TO ASTM-F1667, DRIVEN FASTENERS: NAILS, SPIKES, AND STAPLES" WITH A MINIMUM YIELD STRENGTH OF 90,000 psi.
2. NAILS INSTALLED USING PNEUMATIC DRIVERS (I.E. AIR NAIL GUNS) MUST MEET THE ABOVE FASTENER MINIMUM DIAMETER AND MINIMUM LENGTH REQUIREMENTS.
3. ALTERNATIVE NAILS MAY BE SUBSTITUTED PROVIDED THAT THEY HAVE THE SAME OR LARGER MINIMUM DIAMETER AND THE SAME OR LARGER SHANK LENGTH AND THE SAME OR LARGER HEAD DIAMETER.

WOOD FRAMED CONSTR. FRAMING FASTENER SCHEDULE - 2015 NBC:

WHERE FLOOR LIVE LOADING DOES NOT EXCEED 2.4kPa (50psf) & U.N.O. OTHERWISE IN THE PLANS AND SPECIFICATIONS: NAILING OF FRAMING MEMBERS IS TO CONFORM TO THE FOLLOWING CONSTRUCTION DETAIL:	MINIMUM LENGTH OF NAILS		MINIMUM NUMBER OR MAXIMUM SPACING OF NAILS	
	INCHES	mm (1" = 25.4mm)	INCHES	mm (1" = 25.4mm)
FLOOR JOIST OR BLOCKING PERPENDICULAR TO SILL PLATE OR TOP WALL PLATE BELOW- TOE NAIL	3-1/4"	82 mm	2 PER FLOOR JOIST OR BLOCKING	2 PER FLOOR JOIST OR BLOCKING
RIM JOIST, TRIMMER JOIST OR BLOCKING- SUPPORTING WALLS WITH REQUIRED BRACED WALL PANELS - TO SILL PLATE OR TOP WALL PLATE - TOE NAIL	3-1/4"	82 mm	6" O.C.	150mm O.C.
WOOD OR METAL STRAPPING TO UNDERSIDE OF FLOOR JOIST	2-1/4"	57 mm	2	2
CROSS BRIDGING TO JOIST	2-1/4"	57 mm	2 @ EA. END	2 @ EA. END
DOUBLE HEADER OR TRIMMER JOIST	3"	76 mm	12" O.C.	300mm O.C.
FLOOR JOIST TO STUD (BALLOON CONSTRUCTION)	3"	76 mm	2	2
LEDGER STRIP TO WOOD BEAM	3-1/4"	82 mm	2 PER JOIST	2 PER JOIST
JOIST TO JOIST SPLICE (SEE ALSO TABLE 9.23.14.8.)	3"	76 mm	2 @ EA. END	2 @ EA. END
TAIL JOIST TO ADJACENT HEADER JOIST	3-1/4"	82 mm	5	5
TAIL JOIST (END NAILED AROUND OPENINGS)	4"	101 mm	3	3
EACH HEADER JOIST TO ADJACENT TRIMMER JOIST	3-1/4"	82 mm	5	5
HEADER JOIST (END NAILED AROUND OPENINGS)	4"	101 mm	3	3
STUD TO WALL PLATE (EACH END) TOE NAILED	2-1/2"	63 mm	4	4
STUD TO WALL PLATE (EACH END) END NAILED	3-1/4"	82 mm	2	2
DOUBLED TOP WALL PLATES	3"	76 mm	24" O.C.	600mm O.C.
BOTTOM WALL PLATE OR SOLE PLATE TO FLOOR JOISTS, RIM JOISTS OR BLOCKING @ EXT. WALLS	3-1/4"	82 mm	16" O.C.	400mm O.C.
BOTTOM WALL PLATE OR SOLE PLATE - IN REQUIRED BRACED WALL PANELS - TO FLOOR JOISTS, RIM JOISTS OR BLOCKING @ EXT. WALLS	3-1/4"	82 mm	6" O.C.	150mm O.C.
INTERIOR WALLS TO FRAMING OR SUBFLOORING	3-1/4"	82 mm	24" O.C.	600mm O.C.
REQUIRED BRACED WALL PANELS - IN INTERIOR WALLS - TO FRAMING ABOVE AND BELOW	3-1/4"	82 mm	6" O.C.	150mm O.C.
HORIZONTAL MEMBER OVER OPENINGS IN NON-LOADBEARING WALLS - EACH END	3-1/4"	82 mm	2	2
LINTELS TO STUDS	3-1/4"	82 mm	2 @ EA. END	2 @ EA. END
CEILING JOIST TO PLATE - TOE NAIL EACH END	3-1/4"	82 mm	2	2
ROOF RAFTER, ROOF TRUSS OR ROOF JOIST TO PLATE - TOE NAIL(3)	3-1/4"	82 mm	3	3
RAFTER PLATE TO EACH CEILING JOIST	4"	101 mm	2	2
RAFTER TO JOIST (WITH RIDGE SUPPORTED)	3"	76 mm	3	3
RAFTER TO JOIST (WITH RIDGE UNSUPPORTED)	3"	76 mm	SEE TABLE 9.23.14.	
GUSSET PLATE TO EACH RAFTER PEAK	2-1/4"	57 mm	4	4
RAFTER TO RIDGE BOARD - TOE NAIL OR END NAIL	3-1/4"	82 mm	3	3
COLLAR TIE TO RAFTER- EACH END	3"	76 mm	3	3
COLLAR TIE LATERAL SUPPORT TO EACH COLLAR TIE	2-1/4"	57 mm	2	2
JACK RAFTER TO HIP OR VALLEY RAFTER	3-1/4"	82 mm	2	2
ROOF STRUT TO RAFTER	3"	76 mm	3	3
ROOF STRUT TO LOADBEARING WALL - TOE NAIL	3-1/4"	82 mm	2	2
38mmx140mm OR LESS PLANK DECKING TO SUPPORT	3-1/4"	82 mm	2	2
38mmx140mm OR WIDER PLANK DECKING TO SUPPORT	3-1/4"	82 mm	3	3
38mm EDGE LAID PLANK DECKING TO SUPPORT TOE NAIL	3"	76 mm	1	1
38mm EDGE PLANK TO EACH OTHER	3"	76 mm	18" O.C.	450mm O.C.

NOTES:
1. (1) SEE ARTICLE 9.23.11.4 FOR REQUIREMENTS ON THE NAILING OF TOP PLATES IN BRACED WALL BANDS.
2. (2) SEE SENTENCE 9.23.3.4.(2).
3. (3) SEE SENTENCE 9.23.3.4.(3).

RESIDENTIAL SUBFLOOR SHEATHING:

1. SUBFLOOR SHEATHING:
1.1. TO BE PLYWOOD, O.S.B., WAFERBOARD, OR LUMBER CONFORMING TO:
1.1.1. CAN/CSA-O121, "DOUGLAS FIR PLYWOOD";
1.1.2. CAN/CSA-O151, "CANADIAN SOFTWOOD PLYWOOD";
1.1.3. CAN/CSA-O153, "POPLAR PLYWOOD";
1.1.4. CAN/CSA-O325.0, "CONSTRUCTION SHEATHING"; OR,
1.1.5. CAN/CSA-O141, "SOFTWOOD LUMBER"
1.2. ALL SUBFLOOR SHEATHING IS TO BE FASTENED TO ITS SUPPORTING FRAMING WITH:
1.2.1. PL-PREMIUM CONSTRUCTION ADHESIVE; AND,
1.2.2. FASTENERS AS PER THE SUBFLOOR SHEATHING FASTENER SCHEDULE BELOW.

RESIDENTIAL SUBFLOOR SHEATHING MINIMUM THICKNESS SCHEDULE:

MAXIMUM SPACING OF SUPPORTS	PLYWOOD AND GRADE O-2 O.S.B.	GRADE O-1 & R-1 O.S.B. OR GRADE R-1 & O-1 WAFERBOARD	LUMBER SHEATHING	CAN/CSA-O325.0 SHEATHING
16" (400mm)	5/8" (15.5mm)	15.9mm	17mm	1F16
19.2" (488mm)	5/8" (15.5mm)	15.9mm	19.0mm	1F20
24" (600mm)	3/4" (18.5mm)	19.0mm	19.0mm	1F24

SUBFLOOR SHEATHING FASTENER SCHEDULE (1-IN-50 HWP<0.8kPa AND $S_a(0.2)\leq0.7$ i.e. SASKATCHEWAN) - 2015 NBC:

ELEMENT:	MINIMUM LENGTH OF FASTENERS				MIN. NUMBER OR MAX. SPACING OF NAILS
	COMMON OR SPIRAL NAILS	RING THREAD NAILS OR SCREWS	ROOFING NAILS	STAPLES	
	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)
BOARD LUMBER 184mm OR LESS WIDE	51mm	45mm	N/A	51mm	2 PER SUP'T
BOARD LUMBER 184mm OR MORE WIDE	51mm	45mm	N/A	51mm	3 PER SUP'T
PLYWOOD, OSB OR WAFERBOARD UP TO 10mm THICK	51mm	45mm	N/A	38mm	150mm O.C. ALONG EDGES AND 300mm O.C. ALONG INTER-MEDIATE SUPPORTS
PLYWOOD, OSB OR WAFERBOARD OVER 10mm THICK UP TO 20mm THICK	51mm	45mm	N/A	51mm	
PLYWOOD, OSB OR WAFERBOARD OVER 20mm THICK UP TO 25mm THICK	57mm	51mm	N/A	N/A	

RESIDENTIAL WALL SHEATHING:

1. WALL SHEATHING:
1.1. TO BE PLYWOOD, O.S.B., WAFERBOARD, OR LUMBER CONFORMING TO:
1.1.1. CAN/CSA-O121, "DOUGLAS FIR PLYWOOD";
1.1.2. CAN/CSA-O151, "CANADIAN SOFTWOOD PLYWOOD";
1.1.3. CAN/CSA-O153, "POPLAR PLYWOOD";
1.1.4. CAN/CSA-O325.0, "CONSTRUCTION SHEATHING"; OR,
1.1.5. CAN/CSA-O141, "SOFTWOOD LUMBER"
1.2. ALL WALL SHEATHING IS TO BE FASTENED TO ITS SUPPORTING FRAMING WITH FASTENERS AS PER THE WALL SHEATHING FASTENER SCHEDULE BELOW.

RESIDENTIAL WALL SHEATHING MINIMUM THICKNESS SCHEDULE:

PANEL TYPE CLADDING, SHEATHING & INTERIOR FINISHES	WHERE Sa(0.2) ≤ 0.90 WITH SUPPORTS AT 16" (400mm) O.C.	WHERE Sa(0.2) ≤ 0.90 WITH SUPPORTS AT 24" (600mm) O.C.
GYPSUM BOARD INTERIOR FINISHES	1/2 " (12.7mm)	5/8" (15.9mm)
SHEATHING COMPLYING WITH CAN/CSA-O325	W16	W24
O-1 & O-2 GRADE O.S.B.	7/16 " (11mm)	1/2 " (12.7mm)
R-1 GRADE WAFERBOARD	3/8 " (9.5mm)	1/2 " (12.7mm)
PLYWOOD	7/16 " (11mm)	1/2 " (12.7mm)
DIAGONAL LUMBER	21/32 " (17mm)	21/32 " (17mm)

WALL SHEATHING FASTENER SCHEDULE (1-IN-50 HWP<0.8kPa AND $S_a(0.2)\leq0.7$ i.e. SASKATCHEWAN) - 2015 NBC:

ELEMENT:	MINIMUM LENGTH OF FASTENERS				MIN. NUMBER OR MAX. SPACING OF NAILS
	COMMON OR SPIRAL NAILS	RING THREAD NAILS OR SCREWS	ROOFING NAILS	STAPLES	
	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)
BOARD LUMBER 184mm OR LESS WIDE	51mm	45mm	N/A	51mm	2 PER SUP'T
BOARD LUMBER 184mm OR MORE WIDE	51mm	45mm	N/A	51mm	3 PER SUP'T
PLYWOOD, OSB OR WAFERBOARD UP TO 10mm THICK	51mm	45mm	N/A	38mm	150mm O.C. ALONG EDGES AND 300mm O.C. ALONG INTER-MEDIATE SUPPORTS
PLYWOOD, OSB OR WAFERBOARD OVER 10mm THICK UP TO 20mm THICK	51mm	45mm	N/A	51mm	
PLYWOOD, OSB OR WAFERBOARD OVER 20mm THICK UP TO 25mm THICK	57mm	51mm	N/A	N/A	

RESIDENTIAL ROOF SHEATHING:

1. ROOF SHEATHING:
1.1. TO BE PLYWOOD, O.S.B., WAFERBOARD, OR LUMBER CONFORMING TO:
1.1.1. CAN/CSA-O121, "DOUGLAS FIR PLYWOOD";
1.1.2. CAN/CSA-O151, "CANADIAN SOFTWOOD PLYWOOD";
1.1.3. CAN/CSA-O153, "POPLAR PLYWOOD";
1.1.4. CAN/CSA-O325.0, "CONSTRUCTION SHEATHING"; OR,
1.1.5. CAN/CSA-O141, "SOFTWOOD LUMBER"
1.2. ALL ROOF SHEATHING IS TO BE FASTENED TO ITS SUPPORTING FRAMING WITH FASTENERS AS PER THE ROOF SHEATHING FASTENER SCHEDULE BELOW.

RESIDENTIAL ROOF SHEATHING MINIMUM THICKNESS SCHEDULE:

EDGE CONDITION	MAX. SPACING	CAN/CSA-O325.0 SHEATHING	PLYWOOD	R-1 GRADE O.S.B. & WAFERBOARD	0-1 GRADE O.S.B. & WAFERBOARD	O-2 GRADE O.S.B. & WAFERBOARD	LUMBER
UNSUPPORTED	12" (300mm)	2R12	7.5mm	9.5mm	9.5mm		17.0mm
UNSUPPORTED	16" (400mm)	2R20	9.5mm			9.5mm	17.0mm
UNSUPPORTED	24" (600mm)	2R24	1/2"(12.5mm)				19.0mm
SUPPORTED	12" (300mm)	2R12	7.5mm	9.5mm	9.5mm		
SUPPORTED	16" (400mm)	2R20	7.5mm	9.5mm	9.5mm		
SUPPORTED	24" (600mm)	2R24	9.5mm			9.5mm	

ROOF SHEATHING FASTENER SCHEDULE (1-IN-50 HWP<0.8kPa AND $S_a(0.2)\leq0.7$ i.e. SASKATCHEWAN) - 2015 NBC:

ELEMENT:	MINIMUM LENGTH OF FASTENERS				MIN. NUMBER OR MAX. SPACING OF NAILS
	COMMON OR SPIRAL NAILS	RING THREAD NAILS OR SCREWS	ROOFING NAILS	STAPLES	
	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)	INCH (mm)
BOARD LUMBER 184mm OR LESS WIDE	51mm	45mm	N/A	51mm	2 PER SUP'T
BOARD LUMBER 184mm OR MORE WIDE	51mm	45mm	N/A	51mm	3 PER SUP'T
PLYWOOD, OSB OR WAFERBOARD UP TO 10mm THICK	51mm	45mm	N/A	38mm	150mm O.C. ALONG EDGES AND 300mm O.C. ALONG INTER-MEDIATE SUPPORTS
PLYWOOD, OSB OR WAFERBOARDOVER 10mm THICK UP TO 20mm THICK	51mm	45mm	N/A	51mm	
PLYWOOD, OSB OR WAFERBOARDOVER 20mm THICK UP TO 25mm THICK	57mm	51mm	N/A	N/A	

WOOD FRAMED CONSTRUCTION - CONCRETE TOPPING - 2015 NBC:

1. CONCRETE TOPPING (SEE NOTE A-9.23.4.4.)
1.1. EXCEPT AS PERMITTED IN SENTENCE (2), WHERE A FLOOR IS REQUIRED TO SUPPORT A CONCRETE TOPPING, THE JOIST SPANS SHOWN IN SPAN TABLE 9.23.4.2.-A OR THE SPACING OF THE MEMBERS SHALL BE REDUCED TO ALLOW FOR THE LOADS DUE TO THE TOPPING.
1.2. 2) WHERE A FLOOR IS REQUIRED TO SUPPORT A CONCRETE TOPPING, JOIST SPANS ARE PERMITTED TO BE SELECTED FROM SPAN TABLE 9.23.4.2.-B PROVIDED THE CONCRETE
1.2.1. A) IS 38 TO 51 MM THICK,
1.2.2. B) IS NORMAL WEIGHT,
1.2.3. C) IS PLACED DIRECTLY ON THE SUBFLOORING, AND
1.2.4. D) HAS NOT LESS THAN 20 MPA COMPRESSIVE STRENGTH AFTER 28 DAYS.
1.1. 3) WHERE A FLOOR IS REQUIRED TO SUPPORT A CONCRETE TOPPING NOT MORE THAN 51 MM THICK, THE ALLOWABLE BEAM SPANS SHOWN IN SPAN TABLES 9.23.4.2.-H TO 9.23.4.2.-K SHALL BE MULTIPLIED BY 0.8 OR THE SUPPORTED LENGTH OF THE FLOOR JOISTS SHALL BE REDUCED TO ALLOW FOR THE LOADS DUE TO THE TOPPING.

WOOD FRAMED CONSTRUCTION - ANCHORAGE OF SUPERSTRUCTURES TO FOUNDATIONS - NBC 2015:

1. ANCHORAGE OF PART 9 BUILDINGS
1.1. ANCHOR PLACEMENT AND TOLERANCE
1.1.1.1. ANCHORS MUST NOT VARY FROM THE SIZES AND DIMENSIONS REQUIRED BELOW AND MUST BE PLACED AS FOLLOWS:
1.1.1.2. WITHIN 1/8" (3MM) CENTRE TO CENTRE OF ANY TWO RODS WITHIN AN ANCHOR ROD GROUP, WHERE AN ANCHOR ROD GROUP IS DEFINED AS THE SET OF ANCHOR RODS WHICH RECEIVES A SINGLE FABRICATED STEEL SHIPPING PIECE;
1.1.1.3. WITHIN 1/4" (6MM) CENTRE TO CENTRE OF ADJACENT ANCHOR ROD GROUPS;
1.1.1.4. WITH A MAXIMUM ACCUMULATION OF 1/4" (6MM) PER 100' (30.480M) ALONG THE ESTABLISHED COLUMN LINE OF MULTIPLE ANCHOR ROD GROUPS, BUT NOT TO EXCEED A TOTAL OF 1" (25MM). THE ESTABLISHED COLUMN LINE IS THE ACTUAL FIELD LINE MOST REPRESENTATIVE OF THE CENTRES OF THE AS-BUILT ANCHOR ROD GROUPS ALONG A LINE OF COLUMNS;
1.1.1.5. WITHIN 1/4" (6MM) FROM THE CENTRE OF ANY ANCHOR ROD GROUP TO THE ESTABLISHED COLUMN LINE THROUGH THAT GROUP. THE TOLERANCES OF PARAGRAPHS B, C AND D ALSO APPLY TO OFFSET DIMENSIONS, SHOWN ON THE CONSTRUCTION DRAWINGS, MEASURED PARALLEL ND PERPENDICULAR TO HE NEAREST ESTABLISHED COLUMN LINE OR INDIVIDUAL COLUMNS SHOWN ON THE DRAWINGS TO BE OFFSET ROM ESTABLISHED COLUMN LINE.
1.1.1.6. ANCHOR SHALL BE SET PERPENDICULAR TO THE THEORETICAL BEARING SURFACE AND ALL THREADS SHALL BE PROTECTED AND FREE OF CONCRETE AND NUTS SHALL RUN FREELY ON THE THREADS. SHEAR POCKETS SHALL BE CLEANED OF DEBRIS, FORMWORK, ICE AND SNOW PRIOR INSTALLING ANCHORS.
1.2. ALL PART 9 BUILDING FRAMES SHALL BE ANCHORED TO THEIR RESPECTIVE SUPPORTING FOUNDATIONS IN ACCORDANCE WITH THE BALANCE OF THIS SPECIFICATION.
1.2.1. FOR BUILDINGS WITH LESS THAN TWO (2) OR MORE FLOORS SUPPORTED BY FRAME WALLS, ANCHORAGE SHALL BE PROVIDED BY FASTENING THE SILL PLATE TO THE FOUNDATION WITH NOT LESS THAN TWO ANCHORS PER BRACED WALL PANEL, WHERE ALL ANCHORS USED ARE:
1.2.1.1. NOT LESS THAN 12.7mm (1/2") DIAMETER ANCHOR RODS SPACED NOT MORE THAN 2.4m (8'-0") O.C.;
1.2.1.2. NOT LESS THAN 12.7mm (1/2") DIAMETER SIMPSON STRONG-TIE WEDGE-ALL WEDGE ANCHORS SPACED NOT MORE THAN 2.4M (8'-0") O.C.; OR
1.2.1.3. NOT LESS THAN 12.7mm (1/2") DIAMETER SIMPSON STRONG-TIE TITEN HD ANCHORS SPACED NOT MORE THAN 2.4M (8'-0") O.C..
1.2.2. FOR BUILDINGS WITH TWO (2) OR MORE FLOORS SUPPORTED BY FRAME WALLS, ANCHORAGE SHALL BE PROVIDED BY FASTENING THE SILL PLATE TO THE FOUNDATION WITH NOT LESS THAN TWO ANCHORS PER BRACED WALL PANEL, WHERE ALL ANCHORS USED ARE:
1.2.2.1. NOT LESS THAN 15.9mm IN DIAMETER ANCHOR RODS, LOCATED WITHIN 0.5m OF THE END OF THE FOUNDATION, AND SPACED NOT MORE THAN 2.4m O.C., OR
1.2.2.2. NOT LESS THAN 12.7mm IN DIAMETER ANCHOR RODS, LOCATED WITHIN 0.5 M OF THE END OF THE FOUNDATION, AND SPACED NOT MORE THAN 1.7m O.C.
1.2.3. ANCHORS NOTED ABOVE SHALL CONFORM TO

1.2.3.1.	ANCHOR RODS	ASTM F1554, GRADE 36 (248MPa)
1.2.3.2.	SIMPSON STRONG-TIE WEDGE-ALL WEDGE ANCHORS	MANUF. SPECIFICATIONS
1.2.3.3.	SIMPSON STRONG-TIE TITEN HD ANCHORS	MANUF. SPECIFICATIONS

1.2.4. ALL ANCHOR RODS, SIMPSON STRONG-TIE WEDGE-ALL WEDGE ANCHORS AND SIMPSON STRONG-TIE TITEN HD ANCHORS SHALL BE:
1.2.4.1. FASTENED TO THE SILL PLATE WITH NUTS AND WASHERS,
1.2.4.2. EMBEDDED NOT LESS THAN 100mm (4") IN THE CONCRETE FOUNDATION, AND
1.2.4.3. SO DESIGNED THAT THEY MAY BE TIGHTENED WITHOUT WITHDRAWING THEM FROM THE FOUNDATION.
1.3. ANCHORAGE OF COLUMNS AND POSTS IN PART 9 BUILDINGS
1.3.1. EXCEPT AS PERMITTED BELOW, ALL EXTERIOR COLUMNS AND POSTS SHALL BE ANCHORED TO RESIST UPLIFT AND LATERAL MOVEMENT WITH SIMPSON STRONG-TIE COLUMN AND POST ANCHORS.
1.3.2. WHERE COLUMNS OR POSTS SUPPORT BALCONIES, DECKS, VERANDAS OR OTHER EXTERIOR PLATFORMS, AND THE DISTANCE FROM FINISHED GROUND TO THE UNDERSIDE OF THE JOISTS IS NOT MORE THAN 600mm (2'-0"),
1.3.2.1. THE COLUMNS OR POSTS SHALL BE ANCHORED TO THE FOUNDATION TO RESIST UPLIFT AND LATERAL MOVEMENT, OR
1.3.2.2. THE SUPPORTED JOISTS OR BEAMS SHALL BE DIRECTLY ANCHORED TO THE GROUND TO RESIST UPLIFT.
1.3.3. ANCHORAGE IS NOT REQUIRED FOR PLATFORMS DESCRIBED ABOVE THAT
1.3.3.1. ARE NOT MORE THAN 1 STOREY IN HEIGHT,
1.3.3.2. ARE NOT MORE THAN $55m^2$ ($592ft^2$) IN AREA,
1.3.3.3. DO NOT SUPPORT A ROOF, AND
1.3.3.4. ARE NOT ATTACHED TO ANOTHER STRUCTURE.
1.4. ANCHORAGE OF SMALL PART 9 BUILDINGS
1.4.1. BUILDINGS NOT MORE THAN 4.3m (14'-1¼") WIDE AND NOT MORE THAN 1 STOREY IN BUILDING HEIGHT SHALL BE EITHER ANCHORED AS REQUIRED ABOVE, OR ANCHORED IN CONFORMANCE WITH THE REQUIREMENTS OF CSA-Z240.10.1, "SITE PREPARATION, FOUNDATION, AND ANCHORAGE OF MANUFACTURED HOMES."

ANCHORAGE OF OTHER ELEMENTS:

1. ANCHORAGE FOR OTHER THAN BUILDING STRUCTURES TO FOUNDATIONS IS TO MEET THE REQUIREMENTS OF THIS SECTION.
2. DRILLED CONCRETE ANCHORS (DCA)
2.1. WHERE DRILLED CONCRETE ANCHORS ARE NOTED ON DRAWINGS, PROVIDE:
2.1.1. HILTI KWIK BOLT - TZ EXPANSION ANCHORS.
3. ADHESIVE CONCRETE ANCHORS
3.1. WHERE ADHESIVE CONCRETE ANCHORS (ACA) ARE NOTED ON DRAWINGS, PROVIDE:
3.1.1. HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM WITH
3.1.2. HILTI HIT-Z ANCHOR RODS.
4. REBAR DOWELS
4.1. WHERE REBAR DOWELS ARE NOTED ON DRAWINGS, IT IS ACCEPTABLE TO PROVIDE:
4.1.1. REINFORCING STEEL BARS OF THE THE DIMENSION SHOWN MEETING 400MPa SET WITH
4.1.2. HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM INSTALLED USING
4.1.3. HILTI SAFESET HOLLOW DRILL BIT TECHNOLOGY.
5. ANCHORAGE TO MASONRY
5.1. UNLESS OTHERWISE NOTED ON DRAWINGS, ANCHORAGE TO MASONRY TO BE:
5.1.1. FOR SOLID OR GROUTED MASONRY, WHERE DRILLED MASONRY ANCHORS (DMA) ARE NOTED ON DRAWINGS, PROVIDE HILTI KB-3 EXPANSION ANCHORS. LOCATE MIN. 35 (1-3/8"") FROM ANY VERTICAL MORTAR JOINT.
5.1.2. FOR SOLID OR GROUTED MASONRY, WHERE ADHESIVE MASONRY ANCHORS ARE NOTED ON DRAWINGS, PROVIDE HILTI HIT-HY 70 ADHESIVE ANCHORING SYSTEM WITH HAS-E THREADED RODS.
5.1.3. FOR HOLLOW MASONRY, PROVIDE HILTI HIT-HY 70 ADHESIVE ANCHORING SYSTEM WITH HIT-SC MESH SLEEVE AND HAS-E THREADED RODS.
6. WHERE GALVANIZED ANCHORS ARE SPECIFIED, PROVIDE HOT DIPPED GALVANIZED (RATHER THAN ZINC PLATED) ANCHORS.
7. CONCRETE, MASONRY AND MORTAR IS TO BE A MINIMUM 28 DAYS OLD AT THE TIME OF ANCHOR INSTALLATION.
8. USE DRILLING AND INSTALLATION TOOLS AND PROCEDURES PER MANUFACTURERS' RECOMMENDATIONS.
9. HOLE DIAMETERS ARE NOT TO EXCEED THOSE REQUIRED BY MANUFACTURER.
10. ARRANGE FOR A MANUFACTURER'S TECHNICAL REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL THE PRODUCTS SPECIFIED, AND CONDITIONS ENCOUNTERED (E.G. HORIZONTAL, INCLINED, OVERHEAD).
11. SUBMIT RECORD OF TRAINING LISTING ALL TRAINED PERSONNEL.
12. IF THE CONTRACTOR IS NEW TO THE ANCHOR TYPE BEING INSTALLED AND HAS JUST RECEIVED TRAINING FOR THE ANCHORAGE SYSTEM, ARRANGE FOR A MANUFACTURER'S TECHNICAL REPRESENTATIVE TO BE PRESENT DURING INSTALLATION OF FIRST FEW ANCHORS OF EACH SIZE AND TYPE.
13. SUBMIT SITE REPORTS BY MANUFACTURER TO CONSULTANT WITHIN ONE WEEK OF EACH VISIT. REPORTS TO INDICATE ANCHOR TYPES AND SIZES INSTALLED, LOCATIONS AND INSTALLERS' NAMES.
14. DO NOT CUT REINFORCEMENT TO ACCOMMODATE DRILLED ANCHORS AND DOWELS. SCAN THE STRUCTURE TO LOCATE REINFORCEMENT PRIOR TO ANCHORAGE INSTALLATIONS.
15. WHEN OBSTRUCTIONS PREVENT DRILLING HOLES IN SPECIFIED LOCATIONS TO THE REQUIRED DEPTH, RELOCATE AT NO EXTRA COST TO THE CONTRACT. OBTAIN CONSULTANT'S APPROVAL OF NEW LOCATIONS BEFORE DRILLING HOLES. FILL ALL ABANDONED HOLES WITH MIN. 50MPa GROUT. DO NOT TIGHTEN ANCHORS UNTIL GROUT IN ADJACENT ABANDONED HOLES REACHES 75% f'c.
16. STANDARD EMBEDMENT LENGTHS FOR POST-INSTALLED ANCHORS TO BE IN ACCORDANCE WITH 'MINIMUM EMBEDMENT LENGTHS FOR POST-INSTALLED ANCHORS & DOWELS SCHEDULE' CONTAINED IN THESE PLANS & SPECIFICATIONS.
16.1. ALL EMBEDMENT LENGTHS SHOWN ARE EFFECTIVE EMBEDMENT LENGTHS; FOR REQUIRED HOLE DEPTHS FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ALL MANUFACTURER RECOMMENDATIONS.
16.2. SEE DRAWINGS FOR EMBEDMENT LENGTHS OF REBAR DOWELS.
17. DO NOT BEND AND/OR MODIFY ANCHORS IN ANY CAPACITY.
18. DO NOT WELD TO PLATES FASTENED WITH ADHESIVE ANCHORS AFTER THE ADHESIVE IS PLACED.

MINIMUM EMBEDMENT LENGTHS FOR POST-INSTALLED ANCHORS & DOWELS:

ANCHOR SIZE	EXPANSION ANCHOR INTO CONC. (HILTI KB-TZ AND KB-3)	ADHESIVE ANCHORS INTO CONC. AND SOLID OR GROUTED CONC. MASONRY (HILTI HIT HY-200 AND HIT HY-70)	ADHESIVE ANCHORS INTO HOLLOW CONC. MASONRY (HILTI HIT HY-70)	ADHESIVE ANCHORS INTO HOLLOW BRICK MASONRY (HILTI HIT HY-70)
12mm (½")	83mm (3-¼")	114mm (4-½")	50mm (2")	80mm (3-⅛")
16mm (⅝")	102mm (4")	143mm (5-⅝")	NIL	NIL
19mm (¾")	121mm (4-¾")	171mm (6-¾")	NIL	NIL

PRESERVED WOOD - TREATMENT - NBC 2015:

1. PRESERVATIVE WOOD TREATMENT
1.1. TERMITE AND DECAY PROTECTION
1.1.1. IN LOCALITIES WHERE TERMITES ARE KNOWN TO OCCUR,
1.1.1.1. CLEARANCE BETWEEN STRUCTURAL WOOD ELEMENTS AND THE FINISHED GROUND LEVEL DIRECTLY BELOW THEM SHALL BE NOT LESS THAN 450mm AND, EXCEPT AS PROVIDED BELOW, ALL SIDES OF THE SUPPORTING ELEMENTS SHALL BE VISIBLE TO PERMIT INSPECTION, OR
1.1.1.2. STRUCTURAL WOOD ELEMENTS, SUPPORTED BY ELEMENTS IN CONTACT WITH THE GROUND OR EXPOSED OVER BARE SOIL, SHALL BE PRESSURE-TREATED WITH A CHEMICAL THAT IS TOXIC TO TERMITES.
1.1.2. IN LOCALITIES WHERE TERMITES ARE KNOWN TO OCCUR AND FOUNDATIONS ARE INSULATED OR OTHERWISE FINISHED IN A MANNER THAT COULD CONCEAL A TERMITE INFESTATION,
1.1.2.1. A METAL OR PLASTIC BARRIER SHALL BE INSTALLED THROUGH THE INSULATION AND ANY OTHER SEPARATION OR FINISH MATERIALS ABOVE FINISHED GROUND LEVEL TO CONTROL THE PASSAGE OF TERMITES BEHIND OR THROUGH THE INSULATION, SEPARATION OR FINISH MATERIALS, AND
1.1.2.2. ALL SIDES OF THE FINISHED SUPPORTING ASSEMBLY SHALL BE VISIBLE TO PERMIT INSPECTION.
1.1.3. STRUCTURAL WOOD ELEMENTS SHALL BE PRESSURE-TREATED WITH A PRESERVATIVE TO RESIST DECAY,
1.1.3.1. WHERE THE VERTICAL CLEARANCE BETWEEN STRUCTURAL WOOD ELEMENTS AND THE FINISHED GROUND LEVEL IS LESS THAN 150mm (6"), OR
1.1.3.2. WHERE
1.1.3.2.1. THE WOOD ELEMENTS ARE NOT PROTECTED FROM EXPOSURE TO PRECIPITATION,
1.1.3.2.2. THE CONFIGURATION IS CONDUCIVE TO MOISTURE ACCUMULATION, AND
1.1.3.2.3. THE MOISTURE INDEX IS GREATER THAN 1.00.
1.1.4. STRUCTURAL WOOD ELEMENTS USED IN RETAINING WALLS AND CRIBBING SHALL BE PRESSURE-TREATED WITH A PRESERVATIVE TO RESIST DECAY, WHERE
1.1.4.1. THE RETAINING WALL OR CRIBBING SUPPORTS GROUND THAT IS CRITICAL TO THE STABILITY OF BUILDING FOUNDATIONS, OR
1.1.4.2. THE RETAINING WALL OR CRIBBING IS GREATER THAN 1.2m IN HEIGHT.
1.1.5. WHERE WOOD IS REQUIRED BY THIS ARTICLE TO BE TREATED TO RESIST TERMITES OR DECAY, SUCH TREATMENT SHALL BE IN ACCORDANCE WITH TABLE 2, USE CATEGORIES FOR SPECIFIC PRODUCTS, USES, AND EXPOSURES, OF CAN/CSA-080.1, "SPECIFICATION OF TREATED WOOD," AS FOLLOWS:
1.1.5.1. USE CATEGORY 1 (UC1), WHERE THE WOOD MEMBER IS USED IN
1.1.5.1.1. INTERIOR CONSTRUCTION,
1.1.5.1.2. ABOVE-GROUND APPLICATIONS, AND
1.1.5.1.3. APPLICATIONS WHERE THE WOOD MEMBER REMAINS DRY,
1.1.5.2. USE CATEGORY 2 (UC2), WHERE THE WOOD MEMBER IS USED IN
1.1.5.2.1. INTERIOR CONSTRUCTION,
1.1.5.2.2. ABOVE-GROUND APPLICATIONS, AND

WOOD FRAMED CONSTR. - NOTCHING & DRILLING - NBC 2015:

5. NOTCHING AND DRILLING
5.1. HOLES DRILLED IN FRAMING MEMBERS
5.1.1. HOLES DRILLED IN ROOF, FLOOR OR CEILING FRAMING MEMBERS SHALL BE NOT LARGER THAN ONE-QUARTER THE DEPTH OF THE MEMBER AND SHALL BE LOCATED NOT LESS THAN 50mm FROM THE EDGES, UNLESS THE DEPTH OF THE MEMBER IS INCREASED BY THE SIZE OF THE HOLE.
5.2. NOTCHING OF FRAMING MEMBERS
5.2.1. FLOOR, ROOF AND CEILING FRAMING MEMBERS ARE PERMITTED TO BE NOTCHED PROVIDED THE NOTCH IS LOCATED ON THE TOP OF THE MEMBER WITHIN HALF THE JOIST DEPTH FROM THE EDGE OF BEARING AND IS NOT DEEPER THAN ONE-THIRD THE JOIST DEPTH, UNLESS THE DEPTH OF THE MEMBER IS INCREASED BY THE SIZE OF THE NOTCH.
5.3. WALL STUDS
5.3.1. WALL STUDS SHALL NOT BE NOTCHED, DRILLED OR OTHERWISE DAMAGED SO THAT THE UNDAMAGED PORTION OF THE STUD IS LESS THAN TWO-THIRDS THE DEPTH OF THE STUD IF THE STUD IS LOADBEARING OR 40mm IF THE STUD IS NON-LOADBEARING, UNLESS THE WEAKENED STUDS ARE SUITABLY REINFORCED.
5.4. TOP PLATES
5.4.1. TOP PLATES IN WALLS SHALL NOT BE NOTCHED, DRILLED OR OTHERWISE WEAKENED TO REDUCE THE UNDAMAGED WIDTH TO LESS THAN 50mm UNLESS THE WEAKENED PLATES ARE SUITABLY REINFORCED.
5.5. ROOF & FLOOR TRUSSES & ENGINEERED WOOD PRODUCTS
5.5.1. ROOF & FLOOR TRUSS MEMBERS SHALL NOT BE NOTCHED, DRILLED OR OTHERWISE WEAKENED UNLESS SUCH NOTCHING OR DRILLING IS ALLOWED FOR IN THE DESIGN OF THE TRUSS.

WOOD FRAMED CONSTRUCTION - FLOOR JOISTS - NBC 2015:

1. FLOOR JOISTS
1.1. END BEARING FOR JOISTS
1.1.1. EXCEPT WHEN SUPPORTED ON RIBBON BOARDS, FLOOR JOISTS SHALL HAVE NOT LESS THAN 38mm (1-1/2") LENGTH OF END BEARING.
1.1.2. RIBBON BOARDS REFERRED TO IN THE SENTENCE ABOVE SHALL BE NOT LESS THAN 19mm (3/4") BY 89mm (1-1/2") LUMBER LET INTO THE STUDS.
1.2. JOISTS SUPPORTED BY BEAMS
1.2.1. FLOOR JOISTS MAY BE SUPPORTED ON THE TOPS OF BEAMS OR MAY BE FRAMED INTO THE SIDES OF BEAMS.
1.2.2. WHEN FRAMED INTO THE SIDE OF A WOOD BEAM, JOISTS SHALL BE SUPPORTED ON
1.2.2.1. SIMPSON STRONG-TIE JOIST HANGERS OR OTHER MECHANICAL CONNECTORS APPROVED BY THE CONSULTANT, OR
1.2.2.2. NOT LESS THAN 38mm (1-1/2") BY 64mm (2-1/2") LEDGER STRIPS NAILED TO THE SIDE OF THE BEAM, EXCEPT THAT 38mm (1-1/2") BY 38mm (1-1/2") LEDGER STRIPS MAY BE USED PROVIDED EACH JOIST IS NAILED TO THE BEAM BY NOT LESS THAN FOUR 89mm (3-1/2") NAILS, IN ADDITION TO THE NAILING FOR THE LEDGER STRIP REQUIRED IN TABLE 9.23.3.4. OF THE 2015 NBC.
1.2.3. WHEN FRAMED INTO THE SIDE OF A STEEL BEAM, JOISTS SHALL BE SUPPORTED ON THE BOTTOM FLANGE OF THE THE STEEL BEAM OR ON A SOLID WOOD STRIP NOT LESS THAN 38mm (1-1/2") BY 38mm (1-1/2") LUMBER BOLTED TO THE WEB OF THE STEEL BEAM WITH NOT LESS THAN 6.3mm (1/4") DIAMETER BOLTS SPACED NOT MORE THAN 600mm (2'-0") APART.
1.2.4. JOISTS SUPPORTED ON THE SIDE OF A STEEL BEAM SHALL BE SPLICED ABOVE THE BEAM WITH NOT LESS THAN 38mm (1-1/2") BY 38mm (1-1/2") LUMBER AT LEAST 600mm (2'-0") LONG TO SUPPORT THE FLOORING.
1.2.5. NOT LESS THAN A 12mm (1/2") SPACE SHALL BE PROVIDED BETWEEN THE SPLICE REQUIRED ABOVE AND THE BEAM TO ALLOW FOR SHRINKAGE OF THE WOOD JOISTS.
1.3. RESTRAINT OF JOIST BOTTOMS
1.3.1. BOTTOMS OF FLOOR JOISTS SHALL BE RESTRAINED FROM TWISTING AT EACH END BY
1.3.1.1. TOE-NAILING TO THE SUPPORTS,
1.3.1.2. END-NAILING TO THE HEADER JOISTS OR BY
1.3.1.3. PROVIDING CONTINUOUS STRAPPING, BLOCKING BETWEEN THE JOISTS OR CROSS-BRIDGING NEAR THE SUPPORTS.
1.4. HEADER JOISTS
1.4.1. HEADER JOISTS AROUND FLOOR OPENINGS SHALL BE DOUBLED WHEN THEY EXCEED 1.2m (4'-0") IN LENGTH.
1.4.2. THE SIZE OF HEADER JOISTS EXCEEDING 3.2m (10'-6") IN LENGTH SHALL ONLY BE INSTALLED AS PER THE DETAILS IN THE CONSULTANT'S DRAWINGS.
1.5. TRIMMER JOISTS
1.5.1. TRIMMER JOISTS AROUND FLOOR OPENINGS SHALL BE DOUBLED WHEN THE LENGTH OF THE HEADER JOIST EXCEEDS 800mm (31-1/2").
1.5.2. WHEN THE HEADER JOIST EXCEEDS 2m (6'-6") IN LENGTH THE SIZE OF THE TRIMMER JOISTS SHALL ONLY BE INSTALLED AS PER THE DETAILS IN THE CONSULTANT'S DRAWINGS.
1.6. SUPPORT OF TAIL AND HEADER JOISTS
1.6.1. WHEN TAIL JOISTS AND/OR HEADER JOISTS ARE SUPPORTED BY THE FLOOR FRAMING, THEY SHALL BE SUPPORTED BY SIMPSON STRONG-TIE JOIST HANGERS OR NAILING IN ACCORDANCE WITH THE 2015 NBC TABLE 9.23.3.4.
1.7. SUPPORT OF WALLS
1.7.1. NON-LOADBEARING WALLS RUNNING PARALLEL TO THE FLOOR JOISTS SHALL BE SUPPORTED BY JOISTS BENEATH THE WALL OR ON PERPENDICULAR BLOCKING BETWEEN THE JOISTS.
1.7.2. BLOCKING BETWEEN THE JOISTS FOR THE SUPPORT OF NON-LOADBEARING WALLS RUNNING PARALLEL TO THE JOISTS SHALL BE
1.7.2.1. NOT LESS THAN 38mm (1-1/2") BY 89mm (3-1/2") LUMBER, AND
1.7.2.2. BE SPACED NOT MORE THAN 600mm (2'-0") APART.
1.7.3. NON-LOADBEARING INTERIOR WALLS AT RIGHT ANGLES TO THE FLOOR JOISTS, THAT ARE NOT PART OF THE LATERAL LOAD RESISTING SYSTEM FOR THE STRUCTURE, ARE NOT RESTRICTED AS TO LOCATION.
1.7.4. LOADBEARING INTERIOR WALLS PARALLEL TO FLOOR JOISTS SHALL BE SUPPORTED BY BEAMS OR WALLS OF SUFFICIENT STRENGTH TO SAFELY TRANSFER THE SPECIFIED LIVE LOADS TO THE VERTICAL SUPPORTS AT ALL TIMES.
1.7.5. LOADBEARING INTERIOR WALLS AT RIGHT ANGLES TO FLOOR JOISTS SHALL BE LOCATED
1.7.5.1. NOT MORE THAN 900mm (3'-0") FROM THE JOIST SUPPORT WHERE THE WALL DOES NOT SUPPORT A FLOOR, AND
1.7.5.2. NOT MORE THAN 600mm (2'-0") FROM THE JOIST SUPPORT WHERE THE WALL SUPPORTS ONE OR MORE FLOORS ABOVE.
1.7.6. LOADBEARING AND NON-LOADBEARING WALLS, DESIGNED TO BE PART OF THE LATERAL LOAD RESISTING SYSTEM FOR THE STRUCTURE, SHALL BE CONTINUOUSLY SUPPORTED BY FLOOR JOISTS, BLOCKING OR RIM JOISTS TO ALLOW FOR THE REQUIRED FASTENING (SEE 2015 NBC TABLE 9.23.3.4.).
1.8. CANTILEVERED FLOOR JOISTS
1.8.1. FLOOR JOISTS SUPPORTING ROOF LOADS SHALL NOT BE CANTILEVERED MORE THAN 400mm (16") BEYOND THEIR SUPPORTS WHERE 38mm (1-1/2") BY 184mm (7-1/4") JOISTS ARE USED AND NOT MORE THAN 600mm (2'-0") BEYOND THEIR SUPPORTS WHERE 38mm (1-1/2") BY 235mm (9-1/4") OR LARGER JOISTS ARE USED.
1.8.2. THE CANTILEVERED PORTIONS REFERRED TO IN THE PRECEDING POINT SHALL NOT SUPPORT FLOOR LOADS FROM OTHER STOREYS, UNLESS EXPLICITLY SHOWN IN THE CONSULTANT'S PLANS.
1.8.3. WHERE CANTILEVERED FLOOR JOISTS DESCRIBED THE PRECEDING TWO POINTS ARE AT RIGHT ANGLES TO THE MAIN FLOOR JOISTS, THE TAIL JOISTS IN THE CANTILEVERED PORTION SHALL EXTEND INWARD AWAY FROM THE CANTILEVER SUPPORT A DISTANCE EQUAL TO NOT LESS THAN 6 TIMES THE LENGTH OF THE CANTILEVER (EX. 12'-0" FOR A 2'-0" CANTILEVER), AND SHALL BE END NAILED TO AN INTERIOR DOUBLED HEADER JOIST IN CONFORMANCE WITH THE 2015 NBC TABLE 9.23.3.4.

WOOD FRAMED CONSTRUCTION - WALL STUDS - STANDARD HEIGHT - NBC 2015 (MAX. 3.6m (11'-9¾"):

1. WALL STUDS
1.1. STUD SIZE AND SPACING
1.1.1. THE SIZE AND SPACING OF WALL STUDS SHALL CONFORM TO THE 2015 NBC TABLE 9.23.10.1.
1.2. BRACING AND LATERAL SUPPORT
1.2.1. WHERE LOADBEARING INTERIOR WALLS ARE NOT FINISHED IN ACCORDANCE WITH THE 2015 NBC SECTION 9.29., WALL BLOCKING SHALL BE FASTENED TO THE STUDS AT 1.2m (4'-0") SPACING INTERVALS TO PREVENT SIDEWAYS BUCKLING.
1.3. ORIENTATION OF STUDS
1.3.1. EXCEPT AS PERMITTED IN THE NEXT TWO POINTS, ALL STUDS SHALL BE PLACED AT RIGHT ANGLES TO THE WALL FACE.
1.3.2. STUDS ON THE FLAT ARE PERMITTED TO BE USED IN GABLE ENDS OF ROOFS THAT CONTAIN ONLY UNFINISHED SPACE OR IN NON-LOADBEARING INTERIOR WALLS WITHIN THE LIMITS DESCRIBED IN THE 2015 NBC ARTICLE 9.23.10.1.
1.3.3. WALL STUDS THAT SUPPORT ONLY A LOAD FROM AN ATTIC NOT ACCESSIBLE BY A STAIRWAY ARE PERMITTED TO BE PLACED ON THE FLAT WITHIN THE LIMITS PERMITTED IN THE 2015 NBC ARTICLE 9.23.10.1. PROVIDED THAT
1.3.3.1. THE STUDS ARE CLAD ON NOT LESS THAN ONE SIDE WITH PLYWOOD, OSB OR WAFERBOARD SHEATHING FASTENED TO THE FACE OF THE STUDS WITH A STRUCTURAL ADHESIVE, AND
1.3.3.2. THE PORTION OF THE ROOF SUPPORTED BY THE STUDS DOES NOT EXCEED 2.0m (6'-6") IN WIDTH.
1.4. CONTINUITY OF STUDS
1.4.1. WALL STUDS SHALL BE CONTINUOUS FOR THE FULL STOREY HEIGHT EXCEPT AT OPENINGS AND SHALL NOT BE SPLICED.
1.5. SUPPORT FOR CLADDING, SHEATHING AND FINISHING MATERIALS
1.5.1. CORNERS AND INTERSECTIONS SHALL BE DESIGNED TO PROVIDE ADEQUATE SUPPORT FOR THE VERTICAL EDGES OF INTERIOR FINISHES, SHEATHING AND CLADDING MATERIALS, AND IN NO INSTANCE SHALL EXTERIOR CORNERS BE FRAMED WITH LESS THAN THE EQUIVALENT OF 2 STUDS. BEST PRACTICE FRAMING IS TO BE EMPLOYED THAT TAKES INTO ACCOUNT STRUCTURAL MINIMUM REQUIREMENTS AND ENERGY LOSS MITIGATION.
1.5.2. WHERE THE VERTICAL EDGES OF INTERIOR FINISHES AT WALL INTERSECTIONS ARE SUPPORTED AT VERTICAL INTERVALS BY BLOCKING OR FURRING, THE VERTICAL DISTANCE BETWEEN SUCH SUPPORTS SHALL NOT EXCEED THE MAXIMUM DISTANCE BETWEEN SUPPORTS SPECIFIED IN THE 2015 NBC SECTION 9.29.
1.6. STUDS AT SIDES OF OPENINGS
1.6.1. WHERE THE LINTEL SPANNING THE OPENING IS MORE THAN 3m (9'-10") LONG, STUDS SHALL BE TRIPLED ON EACH SIDE OF THE OPENING SO THAT
1.6.1.1. THE TWO INNER STUDS (I.E., JACK STUDS) ON EACH SIDE EXTEND FROM THE BOTTOM OF THE SUPPORTED LINTEL TO THE TOP OF THE BOTTOM WALL PLATE, AND
1.6.1.2. THE OUTER STUD (I.E., KING STUD) ON EACH SIDE EXTENDS FROM THE BOTTOM OF THE TOP WALL PLATE TO THE BOTTOM WALL PLATE.
1.6.2. EXCEPT AS PROVIDED BELOW, WHERE THE LINTEL SPANNING THE OPENING IS LESS THAN 3m (9'-10") LONG, STUDS SHALL BE DOUBLED ON EACH SIDE OF THE OPENING SO THAT
1.6.2.1. THE INNER STUD (I.E., JACK STUD) ON EACH SIDE EXTENDS FROM THE BOTTOM OF THE SUPPORTED LINTEL TO THE TOP OF THE BOTTOM WALL PLATE, AND
1.6.2.2. THE OUTER STUD (I.E., KING STUD) ON EACH SIDE EXTENDS FROM THE BOTTOM OF THE TOP WALL PLATE TO THE BOTTOM WALL PLATE.
1.6.3. SINGLE STUDS ARE PERMITTED TO BE USED ON EITHER SIDE OF OPENINGS
1.6.3.1. IN NON-LOADBEARING INTERIOR WALLS NOT REQUIRED TO HAVE FIRE-RESISTANCE RATINGS, PROVIDED THE STUDS EXTEND FROM THE TOP WALL PLATE TO THE BOTTOM WALL PLATE, OR
1.6.3.2. IN LOADBEARING OR NON-LOADBEARING INTERIOR OR EXTERIOR WALLS, PROVIDED
1.6.3.2.1. THE OPENING IS LESS THAN THE REQUIRED STUD SPACING, AND
1.6.3.2.2. NO TWO SUCH OPENINGS OF FULL STUD-SPACE WIDTH ARE LOCATED IN ADJACENT STUD SPACES. (SEE 2015 NBC NOTE A-9.23.10.6.(3).)

WOOD FRAMED CONSTRUCTION - WALL PLATES - NBC 2015:

1. WALL PLATES
1.1. SIZE OF WALL PLATES
1.1.1. EXCEPT AS PROVIDED BELOW, WALL PLATES SHALL BE
1.1.1.1. NOT LESS THAN 38mm (1-1/2") THICK, AND
1.1.1.2. NOT LESS THAN THE REQUIRED WIDTH OF THE WALL STUDS.
1.1.2. IN NON-LOADBEARING WALLS AND IN LOADBEARING WALLS WHERE THE STUDS ARE LOCATED DIRECTLY OVER FRAMING MEMBERS, THE BOTTOM WALL PLATE IS PERMITTED TO BE 38mm (1-1/2") THICK AS WELL.
1.2. BOTTOM WALL PLATES
1.2.1. A BOTTOM WALL PLATE SHALL BE PROVIDED IN ALL CASES.
1.2.2. THE BOTTOM PLATE IN EXTERIOR WALLS SHALL NOT PROJECT MORE THAN ONE-THIRD THE PLATE WIDTH OVER THE SUPPORT (I.E., TWO THIRDS OF THE PLATE MUST BE LOCATED DIRECTLY OVER THE SUPPORT PATH TO THE FOUNDATIONS).
1.3. TOP PLATES
1.3.1. AT LEAST 2 TOP PLATES SHALL BE PROVIDED IN ALL LOADBEARING WALLS WITHOUT EXCEPTIONS.
1.3.2. A SINGLE TOP PLATE IS NOT PERMITTED IN NON-LOADBEARING WALLS.
1.3.3. A SINGLE TOP PLATE IS NOT PERMITTED IN LOADBEARING WALLS.
1.4. JOINTS IN TOP PLATES
1.4.1. JOINTS IN THE TOP PLATES OF LOADBEARING WALLS SHALL BE STAGGERED NOT LESS THAN ONE STUD SPACING.
1.4.2. THE TOP PLATES IN LOADBEARING WALLS SHALL BE LAPPED OR OTHERWISE TIED AT CORNERS AND INTERSECTING WALLS IN ACCORDANCE WITH THE REQUIREMENTS BELOW.
1.4.3. TIES REFERRED TO ABOVE SHALL BE THE EQUIVALENT OF NOT LESS THAN 75mm (3") BY 150 (6") MM BY 0.91mm THICK GALVANIZED STEEL NAILED TO EACH WALL WITH AT LEAST THREE 63mm LONG NAILS.
1.4.4. WHERE THE SEISMIC SPECTRAL RESPONSE ACCELERATION, SA(0.2), IS GREATER THAN 0.70 BUT NOT MORE THAN 1.8, DOUBLED TOP PLATES IN BRACED WALL BANDS SHALL BE FASTENED ON EACH SIDE OF A SPLICE WITH 76mm (3") LONG COMMON STEEL WIRE NAILS OR SPIRAL NAILS IN ACCORDANCE WITH THE 2015 NBC TABLE 9.23.11.4.

WOOD FRAMED CONSTRUCTION - LINTELS & HEADERS - NBC 2015:

1. FRAMING OVER OPENINGS (I.E., LINTELS & HEADERS)
1.1. OPENINGS IN NON-LOADBEARING WALLS
1.1.1. EXCEPT AS PROVIDED IN THE NEXT POINT BELOW, OPENINGS IN NON-LOADBEARING WALLS SHALL BE FRAMED WITH NOT LESS THAN 38mm (1-1/2") MATERIAL THE SAME WIDTH AS THE STUDS, SECURELY NAILED TO ADJACENT STUDS.
1.1.2. OPENINGS FOR DOORS IN NON-LOADBEARING WALLS REQUIRED TO BE FIRE SEPARATIONS WITH A FIRE-RESISTANCE RATING SHALL BE FRAMED WITH THE EQUIVALENT OF AT LEAST TWO 38mm (1-1/2") THICK MEMBERS THAT ARE THE SAME WIDTH AS THE WALL PLATES.
1.2. OPENINGS IN LOADBEARING WALLS
1.2.1. OPENINGS IN LOADBEARING WALLS GREATER THAN THE MIN. REQUIRED STUD SPACING SHALL BE FRAMED WITH LINTELS DESIGNED TO CARRY THE SUPERIMPOSED LOADS TO ADJACENT STUDS. (SEE 2015 NBC NOTE A-9.23.10.6.(3). AND THE TABLE BELOW IN THESE SPECIFICATIONS).
1.2.2. EXCEPT AS PROVIDED IN THE 2015 NBC SENTENCE 9.23.12.3.(2), WHERE 2 OR MORE MEMBERS ARE USED IN LINTELS, THEY SHALL BE FASTENED TOGETHER WITH NOT LESS THAN 82mm (3-1/4") NAILS IN A DOUBLE ROW, WITH NAILS NOT MORE THAN 450mm (18") APART IN EACH ROW.
1.2.3. LINTEL MEMBERS ARE PERMITTED TO BE SEPARATED BY SOLID WOOD FILLER PIECES THAT ARE LOCATED AT THE NAILING LOCATIONS PROVIDED THEY ARE NOT LESS THAN 38mm (1-1/2") BY 89mm (3-1/2") SPF NO 2 OR BETTER SOLID WOOD FILLER PIECES CENTERED AT THE NAILING LOCATIONS.
1.3. LINTEL SPANS AND SIZES
1.3.1. SPANS AND SIZES OF WOOD LINTELS SHALL CONFORM TO THE SPANS SHOWN IN SPAN THE 2015 NBC SPAN TABLES 9.23.4.2.-L AND 9.23.12.3.-A TO 9.23.12.3.-D.
1.3.1.1. A) FOR BUILDINGS OF RESIDENTIAL OCCUPANCY,
1.3.1.2. B) WHERE THE WALL STUDS EXCEED 38mm (1-1/2") BY 64mm (2-1/2") IN SIZE,
1.3.1.3. C) WHERE THE SPANS OF SUPPORTED JOISTS DO NOT EXCEED 4.9m (16'-0"), AND
1.3.1.4. D) WHERE THE SPANS OF TRUSSES DO NOT EXCEED 9.8m (32'-0").
1.3.2. SPANS AND SIZES OF WOOD LINTELS SHALL CONFORM TO THE SPANS SHOWN IN THE TABLE BELOW.
1.3.2.1. A) FOR PART 9 BUILDINGS THAT DO NOT MEET THE ABOVE REQUIREMENTS, INCLUDING RESIDENTIAL BUILDINGS,
1.3.2.2. B) WHERE THE WALL STUDS EXCEED 38mm (1-1/2") BY 64mm (2-1/2") IN SIZE,
1.3.2.3. C) WHERE THE SPANS OF SUPPORTED JOISTS EXCEED 4.9m (16'-0"), AND
1.3.2.4. D) WHERE THE SPANS OF TRUSSES EXCEED 9.8m (32'-0").

LINTEL & HEADER SPAN TABLE (REGINA & MOOSE JAW, SK): 2-PLY 2X10 SPF NO. 2 MAXIMUM SPANS PERMITTED

SUPPORTED LENGTH (1/2 ROOF SPAN)	2-PLY LINTEL 1.4kPa ROOF LOAD ONLY	2-PLY LINTEL 1.4kPa ROOF LOAD + 1 FLOOR @ 1.9kPa	2-PLY LINTEL 1.4kPa ROOF LOAD + 2 FLOORS @ 1.9kPa EA.	2-PLY LINTEL 1.4kPa ROOF LOAD + 3 FLOORS @ 1.9kPa EA.
5.4m (17'-9")	2.74m	2.24m	1.98m	1.83m
6.1m (20'-0")	2.31m	2.07m	1.84m	1.71m

BEAMS - NBC 2015:

1. BEAMS
1.1. ALL REFERENCED ARTICLES AND TABLES ARE AS SPECIFIED IN THE 2015 NBC SUBSECTION 9.23.8.
1.2. BEARING FOR BEAMS
1.2.1. BEAMS SHALL HAVE EVEN AND LEVEL BEARING AND THE BEARING AT END SUPPORTS SHALL BE NOT LESS THAN 89mm (3-1/2") LONG BY THE WIDTH OF THE BEAM.
1.3. PRIMING OF STEEL BEAMS
1.3.1. EXTERIOR STEEL BEAMS SHALL BE SHOP PRIMED.
1.4. BUILT-UP DIMENSIONAL LUMBER WOOD BEAMS (SEE 2015 NBC NOTE A-9.23.8.3.)
1.4.1. WHERE A BEAM IS MADE UP OF INDIVIDUAL PIECES OF LUMBER THAT ARE NAILED TOGETHER, THE INDIVIDUAL MEMBERS SHALL BE 38mm (1-1/2") OR GREATER IN THICKNESS AND INSTALLED ON EDGE.
1.4.2. EXCEPT AS PERMITTED IN THE NEXT POINT BELOW, WHERE INDIVIDUAL MEMBERS OF A BUILT-UP BEAM ARE BUTTED TOGETHER TO FORM A JOINT, THE JOINT SHALL OCCUR OVER A SUPPORT.
1.4.3. WHERE A BEAM IS CONTINUOUS OVER MORE THAN ONE SPAN, INDIVIDUAL MEMBERS ARE PERMITTED TO BE BUTTED TOGETHER TO FORM A JOINT AT OR WITHIN 150mm (6") OF THE END QUARTER POINTS OF THE CLEAR SPANS, PROVIDED THE QUARTER POINTS ARE NOT THOSE CLOSEST TO THE ENDS OF THE BEAM.
1.4.4. MEMBERS JOINED AT QUARTER POINTS SHALL BE CONTINUOUS OVER ADJACENT SUPPORTS.
1.4.5. JOINTS IN INDIVIDUAL MEMBERS OF A BEAM THAT ARE LOCATED AT OR NEAR THE END QUARTER POINTS SHALL NOT OCCUR IN ADJACENT MEMBERS AT THE SAME QUARTER POINT AND SHALL NOT REDUCE THE EFFECTIVE BEAM WIDTH BY MORE THAN HALF.
1.4.6. NOT MORE THAN ONE BUTT JOINT SHALL OCCUR IN ANY INDIVIDUAL MEMBER OF A BUILT-UP BEAM WITHIN ANY ONE SPAN.
1.4.7. EXCEPT AS PROVIDED IN IN THE NEXT POINT BELOW, WHERE 38mm (1-1/2") MEMBERS ARE LAID ON EDGE TO FORM A BUILT-UP BEAM, INDIVIDUAL MEMBERS SHALL BE NAILED TOGETHER WITH A DOUBLE ROW OF NAILS NOT LESS THAN 89mm (3-1/2") IN LENGTH, SPACED NOT MORE THAN 450mm (18") APART IN EACH ROW WITH THE END NAILS LOCATED 100mm (4") TO 150mm (6") FROM THE END OF EACH PIECE.
1.4.8. WHERE 38mm (1-1/2") MEMBERS IN BUILT-UP WOOD BEAMS ARE NOT NAILED TOGETHER AS PROVIDED IN THE PREVIOUS POINT, THEY SHALL BE BOLTED TOGETHER WITH NOT LESS THAN 12.7mm (1/2") DIAMETER BOLTS EQUIPPED WITH WASHERS AND SPACED NOT MORE THAN 1,200mm (4'-0") O.C., WITH THE END BOLTS LOCATED NOT MORE THAN 600mm (2'-0") FROM THE ENDS OF THE MEMBERS.
1.5. SOLID AND BUILT-UP ENGINEERED LUMBER BEAMS
1.5.1. U.N.O. ALL ENGINEERED LUMBER WOOD BEAMS ARE TO HAVE A MINIMUM BEARING LENGTH EQUIVALENT TO
1.5.1.1. THAT STATED IN "THE SPAN BOOK" 2004 EDITION (OR NEWER) PUBLISHED BY THE CANADIAN WOOD COUNCIL, OR
1.5.1.2. OR SHALL BE NOT LESS THAN 114mm (4-1/2") LONG BY THE WIDTH OF THE BEAM.
1.5.2. WHERE A BEAM IS MADE UP OF INDIVIDUAL PIECES OF ENGINEERED WOOD LUMBER THAT ARE NAILED TOGETHER, THE INDIVIDUAL MEMBERS SHALL BE 45mm (1-3/4") IN THICKNESS AND INSTALLED ON EDGE.
1.5.3. EXCEPT AS PERMITTED BELOW, WHERE INDIVIDUAL MEMBERS OF AN ENGINEERED WOOD LUMBER BUILT-UP BEAM ARE BUTTED TOGETHER TO FORM A JOINT, THE JOINT SHALL OCCUR OVER A SUPPORT.
1.5.4. WHERE AN ENGINEERED WOOD LUMBER BUILT-UP BEAM IS CONTINUOUS OVER MORE THAN ONE SPAN, INDIVIDUAL MEMBERS ARE PERMITTED TO BE BUTTED TOGETHER TO FORM A JOINT AT OR WITHIN 150mm (6") OF THE END QUARTER POINTS OF THE CLEAR SPANS, PROVIDED THE QUARTER POINTS ARE NOT THOSE CLOSEST TO THE ENDS OF THE BEAM.
1.5.5. MEMBERS OF AN ENGINEERED WOOD LUMBER BUILT-UP WOOD BEAM THAT ARE JOINED AT QUARTER POINTS SHALL BE CONTINUOUS OVER ADJACENT SUPPORTS.
1.5.6. JOINTS IN INDIVIDUAL MEMBERS OF AN ENGINEERED WOOD LUMBER BUILT-UP WOOD BEAM THAT ARE LOCATED AT OR NEAR THE END QUARTER POINTS SHALL NOT OCCUR IN ADJACENT MEMBERS AT THE SAME QUARTER POINT AND SHALL NOT REDUCE THE EFFECTIVE BEAM WIDTH BY MORE THAN HALF.
1.5.7. NOT MORE THAN ONE BUTT JOINT SHALL OCCUR IN ANY INDIVIDUAL MEMBER OF AN ENGINEERED WOOD LUMBER BUILT-UP BEAM WITHIN ANY ONE SPAN.
1.5.8. EXCEPT AS PROVIDED BELOW, WHERE 45mm (1-3/4") MEMBERS ARE LAID ON EDGE TO FORM AN ENGINEERED WOOD LUMBER BUILT-UP BEAM, INDIVIDUAL MEMBERS SHALL BE NAILED TOGETHER WITH A DOUBLE ROW OF NAILS NOT LESS THAN 102mm (4") IN LENGTH, SPACED NOT MORE THAN 450mm (18") APART IN EACH ROW WITH THE END NAILS LOCATED 100mm (4") TO 150mm (6") FROM THE END OF EACH PIECE.
1.5.9. WHERE 45mm (1-3/4") MEMBERS IN BUILT-UP ENGINEERED WOOD LUMBER WOOD BEAMS ARE NOT NAILED TOGETHER AS PROVIDED ABOVE, THEY SHALL BE BOLTED TOGETHER WITH NOT LESS THAN 12.7mm (1-1/2") DIAMETER BOLTS EQUIPPED WITH NUTS AND WASHERS AND BE SPACED NOT MORE THAN 1.2m (48") O.C., WITH THE END BOLTS LOCATED NOT MORE THAN 600mm (24") FROM THE ENDS OF THE BEAM.

BUILT-UP WOOD COLUMNS:

1. BUILT-UP COLUMNS
2. U.N.O. ALL WOOD TO CONFORM TO THE GENERAL REQUIREMENTS OF THIS SECTION.
3. ALL WOOD MEMBERS IN BUILT-UP COLUMNS AND BEAMS ARE TO CONFORM TO CAN/CSA 086.1 AND NLGA RULES FOR VISUALLY GRADED LUMBER, AND BE NOT LESS THAN SPF NO. 2 OR BETTER GRADE.
4. LUMBER USED SHALL BE IDENTIFIED BY THE GRADE STAMP OF AN ASSOCIATION OR INDEPENDENT GRADING AGENCY IN ACCORDANCE WITH "NLGA SPECIAL STANDARD SPS 1".
5. ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED TOGETHER AS TO PROVIDE THE STRENGTH AND RIGIDITY NECESSARY FOR THE PURPOSE FOR WHICH THEY WERE INTENDED.
6. ALL COMPONENTS OF BUILT UP MEMBERS TO BE CONTINUOUS FOR FULL SPAN. DO NOT SPLICE OR USE BUTT JOINTS, EXCEPT AS (AND ONLY AS) EXPLICITLY SHOWN IN THESE PLANS, DETAILS AND SPECIFICATIONS.
7. COLUMNS
7.1. IN THE CASE OF NAILED BUILT-UP COMPRESSION MEMBERS (COLUMNS) ALL NAILS SHALL PENETRATE THROUGH THE ENTIRE THICKNESS OF ALL INDIVIDUAL PIECES BEING ATTACHED; AND, NAILS SHALL BE DRIVEN ALTERNATELY FROM EITHER FACE OF THE BUILT-UP MEMBER ALONG THE LENGTH.
7.2. FOR BUILT-UP COMPRESSION MEMBERS (COLUMNS) FABRICATED OUT OF 2"X4" (38MMX89MM) PLIES, THE NAILS SHALL START NOT CLOSER THAN 2.5" (60MM) FROM THE END OF THE PLIES, AND SHALL CONTINUE (ONLY A SINGLE ROW OF NAILS REQUIRED) AT 8 2/3" (220MM) ON CENTRE ALONG THE LENGTH OF THE PLIES STAGGERED IN THE DIRECTION OF THE GRAIN, WITH NO NAIL CLOSER THAN 1-5/32" (30MM) TO THE OUTSIDE EDGE OF THE PLIES.
7.3. FOR BUILT-UP COMPRESSION MEMBERS (COLUMNS) FABRICATED OUT OF 2"X6" (38MMX140MM) PLIES, THE NAILS SHALL START NOT CLOSER THAN 2.5" (60MM) FROM THE END OF THE PLIES, AND SHALL CONTINUE (DOUBLE ROW OF NAILS REQUIRED) AT 8 2/3" (220MM) ON CENTRE ALONG THE LENGTH OF THE PLIES STAGGERED IN THE DIRECTION OF THE GRAIN, WITH NO NAIL CLOSER THAN 2-5/32" (55MM) TO THE OUTSIDE EDGE OF THE PLIES.
7.4. FOR BUILT-UP COMPRESSION MEMBERS (COLUMNS) FABRICATED OUT OF 2"X8" (38MMX184MM) PLIES, THE NAILS SHALL START NOT CLOSER THAN 2.5" (60MM) FROM THE END OF THE PLIES, AND SHALL CONTINUE (DOUBLE ROW OF NAILS REQUIRED) AT 8 2/3" (220MM) ON CENTRE ALONG THE LENGTH OF THE PLIES STAGGERED IN THE DIRECTION OF THE GRAIN, WITH NO NAIL CLOSER THAN 1-3/8" (35MM) TO THE OUTSIDE EDGE OF THE PLIES.
7.5. FOR BUILT-UP COMPRESSION MEMBERS (COLUMNS) FABRICATED OUT F 2"X10" OR 2"X12" (38MMX234MM) OR (38MMX286MM) PLIES, NAILS SHALL START NOT CLOSER THAN 2.5" (60MM) FROM THE END OF THE PLIES, AND SHALL CONTINUE (DOUBLE ROW OF NAILS REQUIRED) AT 8 2/3" (220MM) ON CENTRE ALONG THE LENGTH OF THE PLIES STAGGERED IN THE DIRECTION OF THE GRAIN, WITH NO NAIL CLOSER THAN 1-3/8" (35MM) TO THE OUTSIDE EDGE OF THE PLIES.
7.6. IN THE CASE OF BUILT-UP COMPRESSION MEMBERS (COLUMNS) WITH MORE THAN 4 PLIES OF MATERIAL, AT LEAST 1 ROW OF 1/2" Ø BOLTS SHALL BE INSTALLED AT 48" (1,219MM) ON CENTRE - CENTERED ACROSS THE MEMBER WIDTH IN ADDITION TO THE NAILING REQUIRED ABOVE.
7.7. WHERE ANY SPLICE OCCURS IN A BUILT-UP COMPRESSION MEMBER (COLUMNS), NOT MORE THAN ONE PLY SHALL BE PERMITTED TO BE SPLICED IN ANY ONE LOCATION; AND, NO TWO SPLICES SHALL BE PERMITTED WITHIN 48" (1,219MM) OF ANOTHER SPLICE LOCATION. (I.E. ALL SPLICE LOCATIONS MUST CONSIST OF A MINIMUM OF 3 CONTINUOUS MEMBERS THROUGH THE SPLICE, WIDTH NAILS PENETRATING ALL 4 MEMBERS).
7.8. IN THE CASE OF BUILT-UP COMPRESSION MEMBERS (COLUMNS) FOR POLE BUILDING CONSTRUCTION, NO SPLICE MAY NOT OCCUR CLOSER THAN 4'-0" (1,219MM) EITHER ABOVE OR BELOW FINISHED GRADE. (I.E.
7.9. IN THE CASE OF BUILT-UP COMPRESSION MEMBERS (COLUMNS) FOR POLE BUILDING CONSTRUCTION,THE MINIMUM OVERALL DISTANCE BETWEEN ANY TWO SPLICES SHALL BE 1200MM (4'-0"). SPLICED COLUMNS SHALL BE BRACED BY SHEATHING, GIRTS OR PURLINS SPACED AT A MAXIMUM OF 600MM (2'-0") O/C IN THE DIRECTION PERPENDICULAR TO THE WIDE FACE OF THE LAMINATIONS.
7.10. IN THE CASE OF BUILT-UP COMPRESSION MEMBERS (COLUMNS) FOR POLE BUILDING CONSTRUCTION,THE MINIMUM LAMINATION SIZE SHALL BE 38MM X 184MM (2 X 8) AND THE MAXIMUM SHALL BE 38MM X 286MM (2 X 12). SEE DRAWINGS FOR SPECIFICS RELATED TO THIS BUILDING.

WOOD BLOCKING:

1. WOOD BLOCKING
1.1. U.N.O. BLOCKING FOR WOOD FRAME CONSTRUCTION IS TO COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS U.N.O. IN THE PLANS AND/OR SPECIFICATIONS FOR SPECIFIC ELEMENTS.
1.1.1. CO-ORDINATE BLOCKING REQUIREMENTS WITH OTHER TRADES.
1.1.2. PROVIDE BLOCKING AT 1.2m (4'-0") O.C. IN ALL LOADBEARING SHEAR WALLS OVER 2.4m (8'-0" IN HEIGHT).
1.1.3. PROVIDE BLOCKING AT 2.4m (8'-0") O.C. IN ALL NON-LOADBEARING NON-SHEAR WALLS OVER 2.4M (8'-0" IN HEIGHT).
1.2. MISCELLANEOUS FRAMING, BLOCKING, NAILING STRIPS (NON-LOADBEARING) TO BE MINIMUM CONSTRUCTION SPF NO. 2 OR BETTER.
1.3. PROVIDE BLOCKING, NAILING STRIPS AS REQUIRED FOR SUPPORT OF WALL HUNG ITEMS, ETC.
1.4. ALL CONNECTIONS, MINIMUM BEARING LENGTHS, AND MAXIMUM SPANS TO BE IN ACCORDANCE WITH PART 9 OF THE NBC (EDITION IN FORCE) U.N.O.
1.5. PROVIDE SOLID BLOCKING BETWEEN JOISTS AT INTERIOR SUPPORTS, AND PROVIDE CROSS-BRIDGING BETWEEN JOISTS AT MAX. 2.1m (7'-0") ON CENTER ALONG LENGTH OF SPAN.

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T.D. TWEIDT
MEMBER 13705
2021/02/25

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49NORTH ENGINEERING CORP. PROJECT NUMBER:
2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY
WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1/8" = 1'-0"
DATE	FEBRUARY 25, 2021

DRAWING TITLE:

SPECIFICATIONS

SHEET NUMBER: S2.2

REVISION NUMBER:

PERMANENT WOOD FOUNDATIONS - GENERAL - S406-2014:

1. GENERAL
1.1. PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE THE 2015 NATIONAL BUILDING CODE OF CANADA (NBC), CAN/CSA-S406-2014, "PERMANENT WOOD FOUNDATIONS", AND ALL ASSOCIATED DESIGN STANDARDS AND REFERENCE PUBLICATIONS.
2. DESIGN STANDARDS AND REFERENCE PUBLICATIONS
2.1. THIS STANDARD REFERS TO THE FOLLOWING PUBLICATIONS AND WHERE SUCH REFERENCE IS MADE IT SHALL BE TO THE LATEST EDITION, INCLUDING ALL AMENDMENTS PUBLISHED THERETO:
2.1.1. CSA GROUP
2.1.1.1. CAN/CSA-A123.4-04 (R2013), "ASPHALT FOR CONSTRUCTING BUILT-UP ROOF COVERINGS AND WATERPROOFING SYSTEMS"
2.1.1.2. B111 (WITHDRAWN), "WIRE NAILS, SPIKES AND STAPLES"
2.1.1.3. CAN/CSA-O80 SERIES-08 (R2012), "WOOD PRESERVATION"
2.1.1.4. CAN/CSA-O86-14, "ENGINEERING DESIGN IN WOOD"
2.1.1.5. CAN/CSA-O121-08 (R2013), "DOUGLAS FIR PLYWOOD"
2.1.1.6. CAN/CSA-O141-05 (R2009), "SOFTWOOD LUMBER"
2.1.1.7. CAN/CSA-O151-09, "CANADIAN SOFTWOOD PLYWOOD"
2.1.1.8. CAN/CSA-O153-13, "POPLAR PLYWOOD"
2.1.1.9. CAN/CSA-O322-02 (R2012), "PROCEDURE FOR CERTIFICATION OF PRESSURE-TREATED WOOD MATERIALS FOR USE IN PRESERVED WOOD FOUNDATIONS"
2.1.1.10. CAN/CSA-O325-07 (R2012), "CONSTRUCTION SHEATHING"
2.1.2. ASTM INTERNATIONAL (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
2.1.2.1. ASTM A653/A653M-13, "STANDARD SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS"
2.1.2.2. ASTM C834-10, "STANDARD SPECIFICATION FOR LATEX SEALANTS"
2.1.2.3. ASTM C920-14, "STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS"
2.1.2.4. ASTM C1184-13, "STANDARD SPECIFICATION FOR STRUCTURAL SILICONE SEALANTS"
2.1.2.5. ASTM C1311-10, "STANDARD SPECIFICATION FOR SOLVENT RELEASE SEALANTS"
2.1.2.6. ASTM C1330-02(2013), "STANDARD SPECIFICATION FOR CYLINDRICAL SEALANT BACKING FOR USE WITH COLD LIQUID-APPLIED SEALANTS"
2.1.2.7. ASTM D1227-13, "STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR ROOFING"
2.1.2.8. ASTM D2487-11, "STANDARD PRACTICE FOR CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES (UNIFIED SOIL CLASSIFICATION SYSTEM)"
2.1.2.9. ASTM D4479/D4479M-07(2012)E1, "STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS — ASBESTOS-FREE"
2.1.2.10. ASTM E96/E96M-13, "STANDARD TEST METHODS FOR WATER VAPOR TRANSMISSION OF MATERIALS"
2.1.3. (CGSB) CANADIAN GENERAL STANDARDS BOARD
2.1.3.1. CAN/CGSB-37.2-M88, "EMULSIFIED ASPHALT, MINERAL COLLOID TYPE, UNFILLED, FOR DAMPPROOFING AND WATERPROOFING AND FOR ROOF COATINGS"
2.1.3.2. CAN/CGSB-37.16-M89, "FILLED CUTBACK ASPHALT FOR DAMPPROOFING AND WATERPROOFING"
2.1.3.3. CAN/CGSB-37.3-M, "APPLICATION OF EMULSIFIED ASPHALTS FOR DAMPPROOFING OR WATERPROOFING"
2.1.3.4. CAN/CGSB-51.34-M, "VAPOUR BARRIER, POLYETHYLENE SHEET FOR USE IN BUILDING CONSTRUCTION"
2.1.3.5. CAN/CGSB-51.34-M86, "VAPOUR BARRIER, POLYETHYLENE SHEET, FOR USE IN BUILDING CONSTRUCTION"
2.1.4. NLGA (NATIONAL LUMBER GRADES AUTHORITY)
2.1.4.1. STANDARD GRADING RULES FOR CANADIAN LUMBER, 2010

PERMANENT WOOD FOUNDATIONS - MATERIALS - S406-2014:

1. MATERIALS
1.1. ALL MATERIALS FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. TREATED MATERIALS
1.2.1. EXCEPT AS SET FORTH BELOW, ALL LUMBER AND PLYWOOD USED IN A PRESERVED WOOD FOUNDATION SHALL BE TREATED WITH PRESERVATIVE IN ACCORDANCE WITH THE CAN/CSA-O80 SERIES, USE CATEGORY 4.2.
1.2.2. THE PROVISIONS IN THIS STANDARD FOR CONSTRUCTION OF PRESERVED WOOD FOUNDATIONS ARE PREDICATED ON THE ASSUMPTION THAT ALL LUMBER AND PLYWOOD THAT IS REQUIRED TO BE TREATED WHEN INCORPORATED IN A PRESERVED WOOD FOUNDATION WILL BE IDENTIFIED AS SUCH BY A CERTIFICATION MARK STAMPED ON THE MATERIAL THAT CONFIRMS THAT IT HAS BEEN TREATED IN CONFORMANCE WITH CSA O322. NOTE: SOME PRESERVATIVE-TREATED WOOD IS TREATED TO REQUIREMENTS LESS STRINGENT THAN THOSE SPECIFIED ABOVE SUCH MATERIALS ARE NOT ACCEPTABLE FOR USE IN THE CONSTRUCTION OF PRESERVED WOOD FOUNDATIONS.
1.2.3. END CUT PRESERVATIVE
1.2.3.1. THE PRESERVATIVE USED FOR FIELD TREATING CUT ENDS OF LUMBER SHALL BE IN ACCORDANCE WITH CSA O80.3.
1.3. UNTREATED MATERIALS
1.3.1. LUMBER, PLYWOOD, AND OTHER WOOD BASED MATERIALS USED IN THE FOLLOWING LOCATIONS NEED NOT BE TREATED:
1.3.1.1. THOSE PORTIONS OF EXTERIOR WALLS WHICH WILL BE MORE THAN 200mm (8") ABOVE THE ADJACENT EXTERIOR FINISHED GRADE AFTER LANDSCAPING;
1.3.1.2. FLOOR STRUCTURES MORE THAN 300mm (12") ABOVE THE GRANULAR DRAINAGE LAYER OR INTERIOR GROUND LEVEL OF A VENTILATED CRAWL SPACE; AND
1.3.1.3. INTERIOR COLUMNS AND PARTITIONS ABOVE A WOOD SLEEPER OR SUSPENDED WOOD FLOOR OR ABOVE A CONCRETE SLAB FLOOR WHEN SEPARATED FROM THE CONCRETE BY A DAMPPROOFING MATERIAL.
1.4. LUMBER
1.4.1. SOFTWOOD LUMBER USED IN THE EXTERIOR WALL AS STUDS OR AS HORIZONTAL STRUCTURAL FRAMING RESISTING LATERAL SOIL LOADS SHALL BE NO. 2 GRADE OR BETTER, GRADED IN ACCORDANCE WITH NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER; SHALL BE GRADE STAMPED, AND SHALL CONFORM TO CSA O141. THE SPECIES SHOWN IN TABLE 1 SHALL BE USED WHERE TREATMENT IS REQUIRED IN ACCORDANCE WITH "TREATED MATERIALS" ABOVE. NOTE: BLOCKING MEMBERS CUT FROM FULL LENGTH TREATED MATERIAL REQUIRE END CUT TREATMENT BUT DO NOT REQUIRE A GRADE STAMP.
1.5. PLYWOOD SHEATHING
1.5.1. EXTERIOR WALL SHEATHING AND PRESERVATIVE TREATED SUBFLOOR SHALL BE UNSANDED EXTERIOR TYPE PLYWOOD HAVING AT LEAST FOUR PLIES AND SHALL BE LIMITED TO THE FOLLOWING SPECIES: WESTERN HEMLOCK, AMABILIS FIR, GRAND FIR, AND COAST DOUGLAS FIR. ALL SUCH PLYWOOD SHALL BEAR MARKINGS IDENTIFYING IT AS "HEM-FIR" PLYWOOD, AND SHALL BE
1.5.1.1. PLYWOOD MANUFACTURED IN ACCORDANCE WITH CSA O121; OR
1.5.1.2. PLYWOOD MANUFACTURED IN ACCORDANCE WITH CSA O151.
1.6. FASTENERS
1.6.1. NAILS
1.6.1.1. NAILS FOR FASTENING TREATED MATERIAL WHICH IS USED EITHER ABOVE OR BELOW GRADE SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL CONFORMING TO CSA B111. NAIL SIZES AND DIMENSIONS SHALL CONFORM TO CSA B111 FOR COMMON ROUND WIRE NAILS AND FOR SPIRAL NAILS.
1.6.2. STAPLES
1.6.2.1. STAPLES SHALL BE STAINLESS STEEL CONFORMING TO AMERICAN IRON AND STEEL INSTITUTE TYPE 304 OR 316 AND HAVE A MINIMUM DIAMETER OR THICKNESS OF 1.6 MM (1/16 IN) WITH A 9.5 MM (3/8 IN) CROWN.
1.6.3. FRAMING ANCHORS AND STRAPS
1.6.3.1. FRAMING ANCHORS AND STRAPS IN CONTACT WITH TREATED MATERIALS SHALL BE GALVANIZED TO CONFORM TO ASTM A653/A653M. NAILS FOR USE WITH FRAMING ANCHORS AND STRAPS SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS AND TO THE ABOVE REQUIREMENTS FOR "NAILS".
1.7. SEALANTS AND DAMPPROOFING
1.7.1. SEALANTS
1.7.1.1. SEALANTS SHALL BE
1.7.1.1.1. A NON-HARDENING TYPE SUITABLE FOR EXTERIOR USE;
1.7.1.1.2. SELECTED FOR THEIR ABILITY TO RESIST THE EFFECTS OF WEATHERING; AND
1.7.1.1.3. COMPATIBLE WITH AND ADHERE TO THE SUBSTRATE TO WHICH THEY ARE APPLIED.
1.7.1.2. SEALANTS SHALL CONFORM TO
1.7.1.2.1. ASTM C834;
1.7.1.2.2. ASTM C920;
1.7.1.2.3. ASTM C1184; OR
1.7.1.2.4. ASTM C1311.
1.7.1.3. BACKER ROD SHALL CONFORM TO ASTM C1330.
1.7.2. DAMPPROOFING
1.7.2.1. MATERIALS INSTALLED TO PROVIDE THE REQUIRED DAMPPROOFING SHALL
1.7.2.1.1. POSSESS THE CHARACTERISTICS NECESSARY TO PROVIDE PROTECTION FROM MOISTURE TRANSFER FROM THE GROUND;
1.7.2.1.2. BE COMPATIBLE WITH ADJACENT MATERIALS; AND
1.7.2.1.3. BE RESISTANT TO DAMAGE AND DETERIORATION IN THEIR SERVICE ENVIRONMENT.
1.7.2.2. MATERIALS USED FOR EXTERIOR DAMPPROOFING SHALL
1.7.2.2.1. BE A VAPOUR-RESISTANT COATING HAVING A WATER VAPOUR PERMEANCE OF NOT MORE THAN 43 NG/PASM2, WHEN TESTED ACCORDING TO PROCEDURE A OF ASTM E96/E96M;
1.7.2.2.2. BE A COLD-FLUID APPLIED OR HOT RUBBERIZED BITUMINOUS DAMPPROOFING MEMBRANES;
1.7.2.2.3. BE A LIQUID APPLIED OR SPRAY-APPLIED ASPHALT BASED EMULSION DAMPPROOFING;
1.7.2.2.4. BE A TYPE III HOT APPLIED ASPHALT; OR
1.7.2.2.5. CONFORM TO
1.7.2.2.5.1. ASTM D1227 TYPE III, CLASS I;
1.7.2.2.5.2. ASTM D4479/D4479M TYPE III;
1.7.2.2.5.3. CAN/CGSB-51.34-M; OR
1.7.2.2.5.4. CAN/CSA-A123.4.
1.7.3. OTHER COMPOUNDS
1.7.3.1. OTHER SEALANTS OR DAMPPROOFING MAY BE USED PROVIDED THEY ARE COMPATIBLE WITH THE PRESERVATIVE-TREATED LUMBER AND SHEATHING, AS WELL AS THE MOISTURE BARRIER USED ON THE EXTERIOR OF THE PRESERVED WOOD FOUNDATION.
1.8. MOISTURE AND VAPOUR BARRIERS
1.8.1. MOISTURE AND VAPOUR BARRIERS SHALL CONFORM TO PART 9 OF THE NATIONAL BUILDING CODE.
1.9. MANUFACTURED DRAINAGE LAYERS
1.9.1. WHEN USED IN COMBINATION WITH THE SHEET MOISTURE BARRIER, THE MANUFACTURED DRAINAGE LAYER SHALL PROVIDE A CAPILLARY BREAK BETWEEN THE SOIL AND THE PLYWOOD. NOTE: MANUFACTURED DRAINAGE LAYERS SHOULD BE CERTIFIED BY AN APPROPRIATE CERTIFICATION ORGANIZATION.
1.10. SUBFLOORING
1.10.1. SUBFLOORING SHALL CONFORM TO ONE OF THE FOLLOWING STANDARDS:
1.10.1.1. CAN/CSA O121;
1.10.1.2. CAN/CSA O141;
1.10.1.3. CAN/CSA O151;
1.10.1.4. CAN/CSA O153; OR
1.10.1.5. CAN/CSA O325
1.11. GRANULAR DRAINAGE LAYER
1.11.1. NEW MATERIAL
1.11.1.1. GRANULAR MATERIAL FOR USE IN THE GRANULAR DRAINAGE LAYER BENEATH A PRESERVED WOOD FOUNDATION SHALL CONSIST OF CLEAN CRUSHED STONE OR CLEAN GRAVEL WHICH WILL PASS THROUGH A 40mm (1-1/2") SIEVE AND CONTAIN NOT MORE THAN 10% OF FINE MATERIAL THAT WILL PASS A 4mm (0.15") SIEVE.
1.11.2. NATIVE SOIL
1.11.2.1. WHERE THE EXISTING NATIVE SOIL IS AS PERMEABLE AS THE GRANULAR DRAINAGE MATERIAL SPECIFIED ABOVE, SUCH SOIL MAY BE DEEMED TO SATISFY THE REQUIREMENTS OF CAN/CSA-S406-2015 CLAUSES 5.10.1 AND 7.2.1. SUCH SOIL SHALL ALSO MEET THE REQUIREMENT OF CAN/CSA-S406-2015 CLAUSE 4.3(B) OR THE FOOTINGS SHALL BE DESIGNED TO ACCOUNT FOR THE APPROPRIATE LOWER SOIL BEARING CAPACITY.
1.12. BACKFILL
1.12.1. NATIVE SOILS AS PERMEABLE AS THE GRANULAR DRAINAGE MATERIAL SPECIFIED IN CAN/CSA-S406-2015 CLAUSE 5.9.1 MAY BE USED AS BACKFILL MATERIAL WHEN THE BACKFILL MUST BE DRAINED. ALL BACKFILL MATERIAL PLACED WITHIN 600mm (24") OF THE FOUNDATION WALLS SHALL BE FREE OF DELETERIOUS DEBRIS, FROZEN CLUMPS, AND BOULDERS LARGER THAN 150mm (6") IN DIAMETER. NOTE: SEE ALSO CAN/CSA-S406-2015 CLAUSE 15.
1.13. MANUFACTURED DRAINAGE LAYERS
1.13.1. A MANUFACTURED DRAINAGE LAYER SHALL BE A DURABLE COMPOSITE BOARD OR MAT WITH A VERTICAL WATER PERMEABILITY AT LEAST EQUAL TO COARSE, CLEAN SAND AND SHALL BE PROTECTED FROM INFILTRATION OF SOIL PARTICLES FINER THAN FINE SAND.
1.14. SOIL GAS PROTECTION
1.14.1. CONSTRUCTION SHALL CONFORM TO SOIL GAS CONTROL PROVISIONS OF THE APPLICABLE BUILDING CODE. NOTE: IN THE ABSENCE OF LOCAL REQUIREMENTS, REFER TO PART 9 OF THE NATIONAL BUILDING CODE OF CANADA.

PERMANENT WOOD FOUNDATIONS - CUTTING & MACHINING - S406-2014:

1. CUTTING AND MACHINING
1.1. ALL CUTTING & CORING FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. TREATMENT OF CUT LUMBER AND PLYWOOD
1.2.1. CUTTING AND MACHINING OF LUMBER AND PLYWOOD SHOULD BE DONE PRIOR TO TREATMENT. TREATED LUMBER SHALL NOT BE CUT LENGTHWISE OR NOTCHED. IN CASES WHERE CUTTING OR BORING AFTER TREATMENT IS UNAVOIDABLE, ALL CUTS, HOLES, AND INJURIES TO THE SURFACE OF TREATED MATERIALS SHALL BE PROTECTED BY TWO APPLICATIONS OF PRESERVATIVE IN ACCORDANCE WITH CLAUSE 5.1.1. THIS APPLICATION SHALL BE IN ACCORDANCE WITH THE PMRA LABEL.
1.3. FOUNDATION WALL STUDS
1.3.1. TREATED FOUNDATION WALL STUDS SHALL NOT BE CUT, NOTCHED, OR BORED TO ACCOMMODATE THE INSTALLATION OF PLUMBING, HEATING SERVICES AND OTHER UTILITIES, OR FOR ANY OTHER REASON. WHEN STUDS ARE CROSSCUT TO LENGTH AFTER INITIAL TREATMENT END CUTS SHALL BE TREATED IN ACCORDANCE WITH CSA O80.3.
1.4. INSTALLATION OF ELECTRICAL SERVICES
1.4.1. INSTALLATION OF ELECTRICAL FACILITIES SHOULD BE MINIMIZED IN THE EXTERIOR WALLS OF PRESERVED WOOD FOUNDATIONS. WHERE DUPLEX OUTLETS AND OTHER WIRING MUST BE PLACED IN EXTERIOR WALLS, THE WIRING TO SERVICE EACH OUTLET BOX SHALL BE RUN VERTICALLY WITHIN A SINGLE STUD SPACE AND SHALL PASS THROUGH A HOLE DRILLED IN THE TOP PLATES. IN ADDITION TO THE REMEDIAL TREATMENT REQUIRED IN CLAUSE 6.1, THE HOLE IN THE TOP PLATE SHALL BE SEALED AGAINST AIR CIRCULATION.
1.5. FLOOR JOISTS, BLOCKING, AND SERVICES
1.5.1. STRUCTURAL BLOCKING OR OTHER FLOOR MEMBERS REQUIRED UNDER CLAUSES 9.7.3, 10.7.3, AND 12.3 SHALL NOT BE CUT, REMOVED, OR OTHERWISE INTERFERED WITH FOR THE PURPOSE OF INSTALLING PLUMBING, HEATING AND/OR AIR CONDITIONING DUCTS AND PIPES, OR FOR ANY OTHER REASON. WHERE DUCTS OR PIPES ARE REQUIRED TO SERVICE REGISTERS AT WALLS SITTING PARALLEL TO FLOOR JOISTS AND WHERE THEY CANNOT BE INSTALLED BETWEEN THE JOISTS WITHOUT CUTTING, REMOVING, OR REDUCING THE EFFECTIVENESS OF THE BLOCKING, SUCH DUCTS OR PIPES SHALL BE LOCATED BENEATH THE LEVEL OF THE BOTTOM OF THE FLOOR JOISTS.

PERMANENT WOOD FOUNDATIONS - SITE PREPARATION - S406-2014:

1. SITE PREPARATION
1.1. ALL SITE PREPARATION FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. EXCAVATION
1.2.1. EXCAVATION REQUIREMENTS SHALL BE AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. THE FOUNDATION EXCAVATION SHALL DRAIN TOWARD THE SUMP LOCATION.
1.3. FOUNDATION DRAINAGE
1.3.1. CONTINUOUS GRANULAR DRAINAGE LAYER
1.3.1.1. FOR FULLY EXCAVATED FOUNDATIONS ENCLOSING HABITABLE SPACE, A CONTINUOUS GRANULAR DRAINAGE LAYER OF CRUSHED STONE OR GRAVEL CONFORMING TO CLAUSE 5.10 SHALL BE INSTALLED UNDER ALL WOOD FOOTINGS AND UNDER FLOORS OF PRESERVED WOOD FOUNDATIONS. THIS LAYER THICKNESS SHALL BE IN ACCORDANCE WITH TABLES 3A AND 3B, AND SHALL EXTEND BEYOND THE FOOTING PLATE BY AT LEAST 300 MM (12 IN) (SEE FIGURES A.2 AND A.3). WHERE THE LAYER EXCEEDS 200 MM (8 IN) IN THICKNESS UNDER THE FOOTING PLATE, IT SHALL BE COMPACTED.
1.3.2. SUMP
1.3.2.1. THE GRANULAR DRAINAGE LAYER SHALL DRAIN TO A SUMP (SEE FIGURES A.2, A.3, AND A.4), WHICH IN TURN SHALL BE PROVIDED WITH POSITIVE DRAINAGE, BY GRAVITY OR MECHANICAL MEANS, TO A POINT OF FINAL DISPOSAL OUTSIDE THE BUILDING.
1.3.3. TILE NOT PERMITTED
1.3.3.1. PERIMETER DRAINAGE TILE OR PIPE SHALL NOT BE USED WITH PRESERVED WOOD FOUNDATIONS.
1.3.3.2. NOTES:
1.3.3.2.1. WEEPING TILE IS NOT PERMITTED DUE TO THE RISK OF SUBSOIL EROSION, BLOCKAGE, AND FAILURE.
1.3.3.2.2. SOME SPECIAL CONDITIONS (E.G., BASEMENT WALKOUTS) MAY REQUIRE ALLOWANCE FOR PERIMETER DRAINAGE TILE, BUT ONLY WHEN SPECIFICALLY DESIGNED.
1.3.4. DRAINAGE THROUGH CONCRETE FOOTINGS
1.3.4.1. WHEN CONCRETE FOOTINGS ARE PLACED ON UNDISTURBED SOIL, WATER PASSAGES CONFORMING TO CLAUSE 8.4.2 SHALL BE INCORPORATED IN THE FOOTING AND SHALL BE PLACED TO ENSURE DRAINAGE FROM THE GRANULAR DRAINAGE LAYER OUTSIDE THE FOOTING, THROUGH THE FOOTING, AND INTO THE GRANULAR DRAINAGE LAYER BELOW THE FLOOR (SEE FIGURE A.5). ALTERNATIVELY, ALL THROUGH-FOOTING DRAINAGE PASSAGES MAY BE CONNECTED BY PIPING TO THE SUMP.
1.3.5. DRAINAGE OF TRENCHED FOOTINGS
1.3.5.1. THE GRANULAR DRAINAGE LAYER IN TRENCHED FOOTINGS (SEE FIGURE A.6) SHALL BE DRAINED WHEN ACCUMULATION OF WATER IN THE TRENCH MAY RESULT IN FROST DAMAGE (LIFTING) OF THE SUPPORTED STRUCTURE, IN UNACCEPTABLE WETTING OF DRY EXPANSIVE SOILS (SEE TABLE 2), OR IN EXCESSIVE HUMIDITY IN ENCLOSED CRAWL SPACES AND BELOW FLOORS.

PERMANENT WOOD FOUNDATIONS - FOOTINGS - S406-2014:

1. FOOTINGS
1.1. ALL FOOTINGS FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. GENERAL
1.2.1. ALL FOUNDATION WALLS AND LOAD BEARING COLUMNS SHALL BE SUPPORTED ON FOOTINGS. EXCEPT AS PERMITTED IN CLAUSE 8.3 FOR WOOD COLUMN FOOTINGS AND CLAUSE 8.4 FOR CONCRETE FOOTINGS, ALL FOOTINGS SHALL BE PLACED ON A CONTINUOUS GRANULAR DRAINAGE LAYER HAVING A MINIMUM DEPTH BELOW THE FOOTING IN ACCORDANCE WITH TABLES 3A AND 3B. NOTE: SEE ALSO CLAUSE 7 AND THE FIGURES IN ANNEX A.
1.2.2. WHERE EXCAVATION DETAILS REQUIRE THE FOUNDATION FOOTING TO BE DISCONTINUOUS, A BEAM MEETING THE REQUIREMENTS OF THE APPROPRIATE BUILDING CODE SHALL BE USED TO DISTRIBUTE VERTICAL STRUCTURE LOADS TO FOOTINGS AT EITHER SIDE OF ANY HORIZONTAL GAP EXCEEDING 1200 MM (4 FT) IN LENGTH. NOTE: THE BEAM SPANNING THE GAP MAY BE A BUILT-UP LINTEL, A PLYWOOD WEB BEAM, OR OTHER (SEE FIGURES A.7 AND A.8).
1.3. WOOD FOOTING PLATES FOR WALLS
1.3.1. WOOD FOOTING PLATE SIZES SHOWN IN TABLES 3A AND 3B MAY BE USED WHERE THE DESIGN ASSUMPTIONS OF CLAUSE 4.3 APPLY.
1.3.2. FOOTING PLATES CONSISTING OF A SINGLE WOOD MEMBER SHALL EXTEND BEYOND THE WIDTH OF THE BOTTOM WALL PLATE TO PROVIDE A SEAT FOR THE SHEATHING BUT SHALL PROJECT NO MORE THAN 50mm (2") ON EITHER SIDE. NOTE: COMPOSITE FOOTING PLATES CONSISTING OF ONE WOOD FOOTING PLATE, OR TWO WOOD FOOTING PLATES PLACED EDGE TO EDGE, REINFORCED ON THE BOTTOM FACE BY PLYWOOD AT LEAST 12.5mm (1/2") THICK AND PLACED WITH THE FACE GRAIN PERPENDICULAR TO THE WALL MAY BE USED IN LIEU OF SINGLE FOOTING PLATES. ALL FOOTING PLATES SHALL EXTEND BEYOND THE WIDTH OF THE BOTTOM WALL PLATE TO PROVIDE A SEAT FOR THE SHEATHING.
1.3.3. WHEN A KNEE WALL IS USED TO SUPPORT MASONRY VENEER, THE KNEE WALL AND MAIN FOUNDATION WALL SHALL BOTH BE SUPPORTED ON A FOOTING OR FOOTINGS.
1.3.4. EXCEPT AS REQUIRED IN CLAUSE 8.2.4, WOOD FOOTING PLATES SHALL BE BUTTED TOGETHER AT THE ENDS AND PLACED DIRECTLY ON THE GRANULAR DRAINAGE LAYER. THEY MAY EXTEND BEYOND THE LINE OF THE WALL AT CORNERS AS SHOWN IN FIGURE A.2, BUT IF PLATES MUST BE CUT TO LENGTH ON THE JOB SITE, THEY SHALL BE TREATED IN ACCORDANCE WITH THE REQUIREMENTS OF CLAUSE 6.1.
1.3.5. WHERE FOOTINGS ARE REQUIRED TO BE STEPPED (DISCONTINUOUS) DUE TO ELEVATION CHANGES IN THE FOUNDATION, ANY ADDITIONAL CONCENTRATED VERTICAL LOADS (SEE CLAUSE 8.1.1) SHALL BE SUPPORTED BY COLUMN FOOTINGS SIZED TO CARRY THE ADDITIONAL LOADS.
1.3.6. BOTTOM WALL PLATES SHALL BE NAILED TO WOOD FOOTING PLATES IN ACCORDANCE WITH THE PROVISIONS OF TABLE 7. JOINTS IN THE BOTTOM WALL PLATE SHALL BE OFFSET A MINIMUM OF 600mm (24") FROM ADJACENT JOINTS IN THE FOOTING PLATE.
1.4. WOOD FOOTINGS FOR COLUMNS
1.4.1. FOUNDATION COLUMNS MAY BE SUPPORTED ON WOOD FOOTINGS. THE WOOD MEMBERS SHALL BE NAIL LAMINATED TOGETHER BY NOT LESS THAN 76mm (3") NAILS SPACED AT MAXIMUM 225mm (9") ON CENTRE AND WITH NAILS AT MEMBER ENDS LOCATED BETWEEN 100mm AND 150mm (4" AND 6") FROM THE ENDS. THE APPROPRIATE TYPE OF WOOD FOOTING MAY BE SELECTED IN ACCORDANCE WITH TABLE 4 AND FIGURE A.9.
1.4.1.1. NOTES:
1.4.1.1.1. FULL BEARING TRANSFER IS NECESSARY ACROSS THE WIDTH OF THE FOOTING AT THE BASE OF THE COLUMN (SEE FIGURE A.9).
1.4.1.1.2. WOOD COLUMN FOOTINGS MAY BEAR ON UNDISTURBED SOIL, OR THEY MAY REST ON A GRANULAR DRAINAGE LAYER OR A THIN LAYER OF SAND OR GRAVEL AS SHOWN IN FIGURES A.9 AND A.10.
1.5. CONCRETE FOOTINGS
1.5.1. CONCRETE FOOTINGS SUPPORTING WALLS OR COLUMNS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE BUILDING CODE.
1.5.2. EXCEPT AS PROVIDED IN CLAUSES 7.2.4 AND 8.4.3, CONCRETE FOOTINGS SHALL BE PLACED ON A GRANULAR DRAINAGE LAYER.
1.5.3. WHERE A CONCRETE FOOTING IS NOT PLACED ON A GRANULAR DRAINAGE LAYER, DRAINAGE THROUGH THE FOOTINGS SHALL BE PROVIDED BY MEANS OF WATER PASSAGES HAVING A MINIMAL SECTIONAL AREA OF 2500mm^2 (4inch^2) AT A MAXIMUM SPACING OF 1200mm (4'-0") AS SHOWN IN FIGURE A.5.
1.5.4. THE BOTTOM WALL PLATE OF EXTERIOR WALLS NEED NOT BE FASTENED TO THE CONCRETE FOOTING. IF THE WALL PLATE IS TO BE FASTENED TO THE CONCRETE, HOLES SHALL NOT BE DRILLED IN THE PLATE TO ACCOMMODATE THE FASTENER. LATERAL RESISTANCE TO INWARD SOIL PRESSURE AT THE BOTTOM OF THE EXTERIOR WALL SHALL BE PROVIDED IN ACCORDANCE WITH CLAUSES 4.5.2, 9.7.2, 9.7.3, 9.8.1, AND 9.8.2.

PERMANENT WOOD FOUNDATIONS - EXTERIOR WALLS WITH WOOD SLEEPER OR CONCRETE SLAB FLOOR - S406-2014:

1. EXTERIOR WALLS WITH WOOD SLEEPER OR CONCRETE SLAB FLOOR
1.1. ALL EXTERIOR WALLS WITH WOOD SLEEPER OR CONCRETE SLAB FLOOR FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. WALL STUDS
1.2.1. BACKFILL HEIGHTS FOR STUDS IN EXTERIOR WALLS OF FOUNDATIONS WITH WOOD SLEEPER OR CONCRETE SLAB FLOORS SHALL NOT EXCEED THE VALUES IN TABLES 5A TO 5L.
1.3. FRAMING AROUND WALL OPENINGS (SEE FIGURE A.11)
1.3.1. WHERE THE HEIGHT OF BACKFILL IS 1200 MM (4 FT) OR LESS, FRAMING AND FASTENING AROUND WALL OPENINGS MAY CONFORM TO THE APPROPRIATE BUILDING CODE. WHERE THE HEIGHT OF BACKFILL IS GREATER THAN 1200 MM (4 FT), SUCH FRAMING AND FASTENING SHALL CONFORM TO CLAUSES 9.2.2 TO 9.2.8.
1.3.2. WHERE LINTELS ARE LOCATED BELOW THE WALL TOP PLATE THEY SHALL BE NAILED TO ADJACENT MEMBERS WITH A DOUBLE ROW OF 76 MM (3 IN) NAILS, SPACED NOT MORE THAN 450 MM (18 IN) APART IN EACH ROW WITH THE END NAILS LOCATED 100 MM TO 150 MM (4 TO 6 IN) FROM THE END OF THE MEMBER.
1.3.2.1. NOTE: BUILT-UP FLOOR HEADER JOISTS MAY ACT AS REQUIRED LINTELS PROVIDED ALL MEMBERS COMPLETELY SPAN THE OPENING.
1.3.3. EACH MEMBER OF LINTELS SHALL BE FASTENED TO THE ADJACENT WALL TOP PLATE WITH 76 MM (3 IN) NAILS SPACED 150 MM (6 IN) OC. DOUBLE TOP PLATES SHALL BE USED OVER ALL WALL OPENINGS.
1.3.4. JACK STUDS AND ADJACENT WALL STUDS SHALL BE FASTENED TOGETHER BY TWO ROWS OF 76 MM (3 IN) NAILS SPACED 300 MM (12 IN) OC.
1.3.5. FRAMING STRAPS OR FRAMING ANCHORS SHALL BE PROVIDED AT THE CONNECTION BETWEEN THE SILLS, JACK STUDS, LINTELS, AND CRIPPLE STUDS.
1.3.6. THE SIZE AND SPACING OF CRIPPLES LOCATED BELOW THE SILL IN A WALL OPENING SHALL BE THE SAME AS SPECIFIED FOR THE WALL STUDS FOR THE BACKFILL ANTICIPATED. FOR OPENINGS OF 1200 MM (4 FT) OR LESS IN WIDTH, THERE SHALL BE A MINIMUM OF TWO STUDS AT BOTH SIDES OF THE OPENING. WHERE REQUIRED TO SUPPORT THE END OF A LINTEL, ON ONLY OF THE TWO STUDS MAY BE A JACK STUD. FOR OPENINGS, BETWEEN 1200 AND 2400 MM (4 AND 8 FT) IN WIDTH, STUD REQUIREMENTS SHALL BE AS SPECIFIED IN FIGURE A.11.
1.3.7. NAIL LAMINATED WOOD SILLS SHALL CONFORM TO FIGURE A.11.
1.3.8. FOR OPENINGS WIDER THAN 2400 MM (8 FT), THE DESIGN SHALL BE DETERMINED IN ACCORDANCE WITH CLAUSE 4.4.
1.4. WALL SHEATHING
1.4.1. MINIMUM THICKNESS OF PLYWOOD SHEATHING SHALL CONFORM TO TABLE 6.
1.4.2. ALL EDGES OF FOUNDATION SHEATHING PANELS THAT OCCUR BELOW THE EXTERIOR FINISHED GRADE LEVEL SHALL BE SUPPORTED EITHER BY FRAMING MEMBERS, BY 38 × 89 MM (2 × 4 IN) WOOD BLOCKING SECURELY FASTENED TO SHALL BE EMBEDDED IN A SEALANT.
1.4.3. A SEPARATION OF 2 TO 3 MM (ABOUT 1/10 IN) SHALL BE MAINTAINED BETWEEN ADJACENT SHEETS OF PLYWOOD (SEE CLAUSE 15).
1.4.4. ALL GAPS AROUND EDGES OF ALL FOUNDATION SHEATHING PANELS THAT OCCUR BELOW THE EXTERIOR FINISHED GRADE LEVEL SHALL BE SEALED WITH A SEALANT CONFORMING TO CLAUSE 5.6.
1.5. FASTENINGS
1.5.1. NAILING
1.5.1.1. EXCEPT AS PROVIDED IN CLAUSE 9.4.4, NAILING SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF TABLE 7, IN ADDITION TO THE SPECIFIC REQUIREMENTS OF CLAUSES 9.4.3, 9.7, 12.3, 12.4, AND OF THE APPROPRIATE BUILDING CODE.
1.5.2. STAPLING
1.5.2.1. WHERE BACKFILL HEIGHT IS UNIFORM, STAPLES MAY BE USED IN CONFORMANCE TO TABLE 7.
1.5.3. FRAMING ANCHORS AND STRAPS
1.5.3.1. WHEN REQUIRED BY CLAUSE 12 TO PROVIDE POSITIVE LOAD TRANSFER TO THE MAIN FLOOR JOIST SYSTEM FROM THE WALL STUDS AND BY CLAUSE 9.2 FOR FRAMING AROUND WALL OPENINGS, FRAMING STRAPS SHALL BE 35 MM (1-3/8 IN) BY MINIMUM 0.9 MM (24 GAUGE) THICKNESS GALVANIZED STEEL OF APPROPRIATE LENGTH, AND FRAMING ANCHORS SHALL HAVE A MINIMUM SPECIFIED LOAD CAPACITY OF 2 KN (450 LB). NOTE: STRAPS USED TO CONNECT THE WALL STUD TO THE MAIN FLOOR SHOULD BE AT LEAST 600 MM (24 IN) IN LENGTH. SEE TABLE 7, AND FIGURES A.19 AND A.20 FOR ILLUSTRATIONS.
1.5.4. NAILING WHEN BACKFILL HEIGHT IS NOT UNIFORM
1.5.4.1. FOR RECTANGULAR PRESERVED WOOD FOUNDATIONS HAVING A DIFFERENCE IN BACKFILL HEIGHT ON OPPOSITE WALLS, THE WALLS THAT ARE PERPENDICULAR TO THESE OPPOSITE WALLS SHALL HAVE SHEATHING-TO-FRAMING NAIL SPACING CONFORMING TO TABLES 8A TO 8E, OR THE FOUNDATION SHALL BE DESIGNED TO PROVIDE THE REQUIRED RACKING RESISTANCE. NOTES:
1.5.4.1.1. WHERE STAIRWAY OPENINGS OCCUR IN CRITICAL LOCATIONS, FLOORS SHOULD BE CHECKED FOR DIAPHRAGM DEFLECTION. FLOORS HAVING LENGTHS GREATER THAN 15 M (50 FT), OR LENGTH-TO-WIDTH RATIOS EXCEEDING 4:1 SHOULD ALSO BE CHECKED FOR DIAPHRAGM DEFLECTION BY A QUALIFIED STRUCTURAL ENGINEER. WHERE JOISTS RUN PARALLEL TO THE LONG DIRECTION, SPECIAL CARE MAY BE NECESSARY TO AVOID DIAPHRAGM DEFLECTION.
1.5.4.1.2. LATERAL DEFLECTION OF THE FLOOR GENERALLY IS SIGNIFICANT ONLY WITH "WALKOUT" BASEMENTS. WHERE EXCESSIVE DEFLECTION MAY OCCUR, INTERIOR BASEMENT PARTITIONS SHOULD BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER AS SHEAR WALLS.
1.5.4.1.3. ALL WALL SHEATHING PANEL EDGES ARE REQUIRED TO BE BACKED WITH 38 MM (2 IN) OR WIDER FRAMING. SHEATHING MAY BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY. SPACE NAILS AT 300 MM (12 IN) ON THE CENTRE ALONG INTERMEDIATE FRAMING MEMBERS.
1.5.4.1.4. STAPLES ARE NOT CONSIDERED TO BE ADEQUATE FOR THE PURPOSES OF THIS CLAUSE.
1.5.4.1.5. OPENINGS ARE NOT PERMITTED IN RACKING WALLS CONFORMING TO TABLES 8A TO 8E.
1.6. FOUNDATION COLUMNS
1.6.1. COLUMNS SUPPORTING FLOOR BEAMS IN THE INTERIOR OF THE STRUCTURE, OR FORMING PART OF THE EXTERIOR FOUNDATION WALL (SEE FIGURE A.10), SHALL BE CONSTRUCTED IN CONFORMANCE WITH COLUMN REQUIREMENTS IN THE APPROPRIATE BUILDING CODE. COLUMN FOOTINGS SHALL CONFORM TO CLAUSE 8.3 OR TO CLAUSE 8.4, AS APPLICABLE.
1.7. INTERIOR LOADBEARING WALLS
1.7.1. IN ADDITION TO THE REQUIREMENTS FOR INTERIOR LOADBEARING WOOD FRAME WALLS IN THE APPROPRIATE BUILDING CODE, SUCH WALLS SHALL BE SUPPORTED BY WOOD FOOTING PLATES (SEE FIGURE A.13) CONFORMING TO CLAUSE 8.2 OR BY CONCRETE FOOTINGS CONFORMING TO CLAUSE 8.4.
1.8. WOOD SLEEPER FLOORS
1.8.1. GENERAL
1.8.1.1. WOOD SLEEPER FLOORS (SEE FIGURE A.14) SHALL BE CONSTRUCTED TO PREVENT THE INWARD MOVEMENT OF EXTERIOR WALLS DUE TO LATERAL PRESSURE. CONSTRUCTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS FOR WOOD FRAME CONSTRUCTION IN THE APPROPRIATE BUILDING CODE AND THE ADDITIONAL REQUIREMENTS OF CLAUSES 9.7.2 AND 9.7.3. THE CLEAR DISTANCE BETWEEN WOOD SLEEPERS SUPPORTING THE FLOOR JOISTS MAY BE USED AS THE SPAN IN DETERMINING THE SIZE REQUIREMENTS FOR THE JOISTS.
1.8.2. SUPPORT FOR SIDE WALL
1.8.2.1. EXCEPT AS PERMITTED BY CLAUSE 9.7.2.2, JOISTS PERPENDICULAR TO THE EXTERIOR FOUNDATION WALLS SHALL BE PLACED DIRECTLY IN LINE WITH THE FOUNDATION WALL STUDS AND BE BUTTED TOGETHER IN LINE OVER THE WOOD SLEEPERS. JOISTS SHALL BE TOE-NAILED TO EACH SUPPORTING SLEEPER USING TWO 76 MM (3 IN) NAILS. RIM JOISTS OR FULL DEPTH BLOCKING BETWEEN STUDS SHALL BE USED TO PROVIDE FIRE STOPPING BETWEEN FLOOR AND WALL CAVITIES.
1.8.2.2. JOISTS PERPENDICULAR TO THE EXTERIOR FOUNDATION WALL MAY BE LOCATED BETWEEN STUDS PROVIDED THAT A RIM JOIST OF EQUIVALENT DEPTH NAILED TO BOTH STUDS AND JOIST ENDS IS USED TO TRANSFER LATERAL WALL LOADS TO THE FLOOR SYSTEM.
1.8.2.3. SUPPORT FOR END WALL
1.8.2.3.1. WHEN JOISTS ARE PARALLEL TO THE EXTERIOR FOUNDATION WALL, THE WALL SHALL BE PROVIDED WITH SPECIAL SUPPORT (SEE FIGURE A.14, DETAIL B) AS REQUIRED IN TABLE 9.
1.9. CONCRETE SLAB FLOORS
1.9.1. GENERAL
1.9.1.1. CONCRETE SLAB FLOORS (SEE FIGURE A.15) SHALL BE NOT LESS THAN 75 MM (3 IN) THICK EXCLUSIVE OF CONCRETE TOPPING. THEY SHALL BE INSTALLED TO MEET THE REQUIREMENTS OF THE APPROPRIATE BUILDING CODE AND OF CLAUSES 9.8.2 AND 9.8.3.
1.9.2. SUPPORT FOR SIDE AND END WALLS
1.9.2.1. CONCRETE SLAB FLOORS SHALL EXTEND AT LEAST 25 MM (1 IN) ABOVE THE TOP OF THE BOTTOM PLATE (SEE FIGURE A.15).

PERMANENT WOOD FOUNDATIONS - EXTERIOR WALLS WITH SUSPENDED WOOD FLOOR - S406-2014:

1. EXTERIOR WALLS WITH SUSPENDED WOOD FLOOR
1.1. ALL EXTERIOR WALLS WITH SUSPENDED WOOD FLOORS FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. WALL STUDS
1.2.1. BACKFILL HEIGHTS
1.2.1.1. BACKFILL HEIGHTS FOR STUDS IN EXTERIOR WALLS WITH SUSPENDED WOOD FLOORS (SEE FIGURES A.16, A.17, AND A.18) SHALL NOT EXCEED THE VALUES IN TABLES 10A TO 10L.
1.2.2. DRAFT AND FIRESTOPPING
1.2.2.1. WHERE THE SUSPENDED WOOD FLOOR MEETS THE EXTERIOR WALL, OPENINGS WITHIN STUD SPACES SHALL BE FIRE STOPPED BY MEANS OF 38 MM (2 IN) THICK WOOD BLOCKING OF FULL STUD WIDTH AT THE LEVEL OF THE SUBFLOOR AS SHOWN IN FIGURES A.16, A.17, AND A.18.
1.3. FRAMING AROUND WALL OPENINGS
1.3.1. WHERE THE HEIGHT OF BACKFILL IS 2000 MM (6 FT 8 IN) OR LESS, FRAMING AND FASTENINGS AROUND WALL OPENINGS MAY CONFORM TO THE APPROPRIATE BUILDING CODE. WHERE THE HEIGHT OF BACKFILL IS GREATER THAN 2000 MM (6 FT 8 IN), SUCH FRAMING AND FASTENING SHALL CONFORM TO CLAUSES 10.2.1 TO 10.2.4.
1.3.2. LINTELS SHALL BE NAILED TO ADJACENT MEMBERS WITH A DOUBLE ROW OF 76 MM (3 IN) NAILS, SPACED NOT MORE THAN 450 MM (18 IN) APART IN EACH ROW WITH THE END NAILS LOCATED 100 MM TO 150 MM (4 TO 6 IN) FROM THE END OF THE MEMBER STUDS. NOTE: BUILT-UP FLOOR HEADER JOISTS MAY ACT AS REQUIRED LINTELS PROVIDED ALL MEMBERS COMPLETELY SPAN THE OPENING.
1.3.3. EACH LINTEL MEMBER SHALL BE FASTENED TO THE ADJACENT WALL TOP PLATE WITH 76 MM (3 IN) NAILS SPACED 150 MM (6 IN) OC. DOUBLE TOP PLATES SHALL BE USED OVER ALL WALL OPENINGS.
1.3.4. JACK STUDS AND ADJACENT WALL STUDS SHALL BE FASTENED TOGETHER BY TWO ROWS OF 76 MM (3 IN) NAILS SPACED 300 MM (12 IN) OC.
1.3.5. FRAMING STRAPS OR FRAMING ANCHORS SHALL BE PROVIDED AT THE CONNECTION BETWEEN THE SILLS, JACK STUDS, LINTELS, AND CRIPPLE STUDS.
1.3.6. THE SIZE AND SPACING OF CRIPPLES LOCATED BELOW THE SILL IN A WALL OPENING SHALL BE THE SAME AS SPECIFIED FOR THE WALL STUDS FOR THE BACKFILL ANTICIPATED. FOR OPENINGS OF 1200 MM (4 FT) OR LESS IN WIDTH, THERE SHALL BE A MINIMUM OF TWO STUDS AT BOTH SIDES OF THE OPENING. WHERE REQUIRED TO SUPPORT THE END OF A LINTEL, ON ONLY OF THE TWO STUDS MAY BE A JACK STUD. FOR OPENINGS, BETWEEN 1200 AND 2400 MM (4 AND 8 FT) IN WIDTH STUD REQUIREMENTS SHALL BE AS SPECIFIED IN FIGURE A.11.
1.3.7. NAIL LAMINATED WOOD SILLS SHALL CONFORM TO FIGURE A.11.
1.3.8. FOR OPENINGS WIDER THAN 2400 MM (8 FT), THE DESIGN SHALL BE DETERMINED IN ACCORDANCE WITH CLAUSE 4.4.
1.4. WALL SHEATHING
1.4.1. MINIMUM THICKNESS OF PLYWOOD SHEATHING SHALL CONFORM TO TABLE 6.
1.4.2. ALL EDGES OF FOUNDATION SHEATHING PANELS THAT OCCUR BELOW THE EXTERIOR FINISHED GRADE LEVEL SHALL BE SUPPORTED EITHER BY FRAMING MEMBERS, BY FIRESTOPPING, BY 38 × 89 MM (2 × 4 IN) WOOD BLOCKING SECURELY FASTENED TO ADJACENT FRAMING MEMBERS (SEE FIGURE A.12), OR BY BOTTOM WALL PLATES. EDGES OF SHEATHIN PANELS SHALL BE EMBEDDED IN A SEALANT.
1.4.3. A SEPARATION OF FROM 2 TO 3 MM (ABOUT 1/10 IN) SHALL BE MAINTAINED BETWEEN ADJACENT SHEETS OF PLYWOOD (SEE CLAUSE 15).
1.4.4. ALL GAPS AROUND EDGES OF ALL FOUNDATION SHEATHING PANELS THAT OCCUR BELOW THE EXTERIOR FINISHED GRADE LEVEL SHALL BE SEALED WITH A SEALANT CONFORMING TO CLAUSE 5.6.
1.5. FASTENINGS
1.5.1. NAILING
1.5.1.1. EXCEPT AS PROVIDED IN CLAUSE 10.4.4, NAILING SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF TABLE 7, IN ADDITION TO THE SPECIFIC REQUIREMENTS OF CLAUSES 10.4.3, 10.7, 12.3, 12.4, AND OF THE APPROPRIATE BUILDING CODE.
1.5.2. STAPLING
1.5.2.1. WHERE THE BACKFILL HEIGHT IS UNIFORM, STAPLES MAY BE USED IN CONFORMANCE TO TABLE 7.
1.5.3. FRAMING ANCHORS AND STRAPS
1.5.3.1. WHEN REQUIRED BY CLAUSE 12 TO PROVIDE POSITIVE LOAD TRANSFER TO THE MAIN FLOOR JOIST SYSTEM FROM THE WALL STUDS, OR BY CLAUSE 9.2 FOR FRAMING AROUND WALL OPENINGS, FRAMING STRAPS SHALL BE 35 MM (1-3/8 IN) BY MINIMUM 0.9 MM (24 GAUGE) THICKNESS GALVANIZED STEEL OF APPROPRIATE LENGTH, AND FRAMING ANCHORS SHALL HAVE A MINIMUM LOAD CAPACITY OF 2 KN (450 LB). NOTE: STRAPS USED TO CONNECT THE WALL STUD TO THE MAIN FLOOR SHOULD BE AT LEAST 600 MM (24 IN) IN LENGTH. SEE TABLE 7 AND FIGURES A.19 AND A.20 FOR ILLUSTRATIONS.
1.5.4. NAILING WHEN BACKFILL HEIGHT IS NOT UNIFORM
1.5.4.1. FOR RECTANGULAR PRESERVED WOOD FOUNDATIONS HAVING A DIFFERENCE IN BACKFILL HEIGHT ON OPPOSITE WALLS, THE WALLS THAT ARE PERPENDICULAR TO THESE OPPOSITE WALLS SHALL HAVE SHEATHING-TO-FRAMING NAIL SPACING CONFORMING TO TABLES 8A TO 8E, OR THE FOUNDATION SHALL BE DESIGNED TO PROVIDE THE REQUIRED RACKING RESISTANCE. NOTES:
1.5.4.1.1. WHERE STAIRWAY OPENINGS OCCUR IN CRITICAL LOCATIONS, FLOORS SHOULD BE CHECKED FOR DIAPHRAGM DEFLECTION. FLOORS HAVING LENGTHS GREATER THAN 15 M (50 FT), OR LENGTH-TO-WIDTH RATIOS EXCEEDING 4:1 SHOULD ALSO BE CHECKED FOR DIAPHRAGM DEFLECTION BY A QUALIFIED STRUCTURAL ENGINEER. WHERE JOISTS RUN PARALLEL TO THE LONG DIRECTION, SPECIAL CARE MAY BE NECESSARY TO AVOID DIAPHRAGM DEFLECTION.
1.5.4.1.2. LATERAL DEFLECTION OF THE FLOOR GENERALLY IS SIGNIFICANT ONLY WITH "WALKOUT" BASEMENTS. WHERE EXCESSIVE DEFLECTION MAY OCCUR, INTERIOR BASEMENT PARTITIONS SHOULD BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER AS SHEAR WALLS.
1.5.4.1.3. ALL WALL SHEATHING PANEL EDGES ARE REQUIRED TO BE BACKED WITH 38 MM (2 IN) OR WIDER FRAMING. SHEATHING CAN BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY. SPACE NAILS AT 300 MM (12 IN) ON CENTRE ALONG INTERMEDIATE FRAMING MEMBERS.
1.5.4.1.4. STAPLES ARE NOT CONSIDERED TO BE ADEQUATE FOR THE PURPOSES OF THIS CLAUSE.
1.5.4.1.5. OPENINGS ARE NOT PERMITTED IN RACKING WALLS CONFORMING TO TABLES 8A TO 8E.
1.6. FOUNDATION COLUMNS
1.6.1. COLUMNS SUPPORTING FLOOR BEAMS IN THE INTERIOR OF THE STRUCTURE, OR FORMING PART OF THE EXTERIOR FOUNDATION WALL, SHALL BE CONSTRUCTED IN CONFORMANCE WITH COLUMN REQUIREMENTS IN THE APPROPRIATE BUILDING CODE. COLUMN FOOTINGS SHALL CONFORM TO EITHER CLAUSE 8.3 OR 8.4, AS APPLICABLE.
1.7. INTERIOR LOADBEARING WALLS
1.7.1. WHERE INTERIOR LOADBEARING WALLS ARE SUPPORTED ON TOP OF SUSPENDED WOOD FLOORS (SEE FIGURE A.16) THEY MAY BE CONSTRUCTED OF UNTREATED LUMBER.
1.8. SUSPENDED WOOD FLOORS
1.8.1. GENERAL
1.8.1.1. SUSPENDED WOOD FLOORS SHALL BE CONSTRUCTED TO PREVENT THE INWARD MOVEMENT OF EXTERIOR WALLS DUE TO LATERAL PRESSURE. CONSTRUCTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS FOR WOOD FRAME CONSTRUCTION IN THE APPROPRIATE BUILDING CODE AND THE ADDITIONAL REQUIREMENTS OF CLAUSES 10.7.2 AND 10.7.3.
1.8.1.2. USE OF APPROVED PARALLEL CHORD WOOD FLOOR TRUSSES OR I-JOISTS MAY BE USED IN PLACE OF SOLID SAWN WOOD JOISTS PROVIDED THE TRUSSES OR I-JOISTS ARE INSTALLED WITH ADEQUATE LATERAL BRACING AND BLOCKING TO RESTRAIN THE MEMBERS FROM TWISTING. THE PROVISIONS OF CLAUSES 10.7.2 AND 10.7.3, AND TABLE 9 SHALL APPLY.
1.8.2. SUPPORT FOR SIDE WALL
1.8.2.1. EXCEPT AS PERMITTED BY CLAUSE 10.7.2.2, JOISTS PERPENDICULAR TO THE EXTERIOR FOUNDATION WALLS SHALL BE PLACED DIRECTLY IN LINE WITH THE FOUNDATION WALL STUDS AND BE BUTTED TOGETHER IN LINE OVER THE INTERIOR SUPPORT BEARING WALL. JOISTS SHALL BE NAILED DIRECTLY TO THE INTERIOR SUPPORT BEARING WALL, AND SHALL BE SUPPORTED AT THE EXTERIOR WALL BY A MINIMUM 38 × 140 MM (2 × 6 IN) LEDGER NAILED IN ACCORDANCE WITH TABLE 7.
1.8.2.2. JOISTS PERPENDICULAR TO THE EXTERIOR FOUNDATION WALL MAY BE LOCATED BETWEEN STUDS PROVIDED THAT A MINIMUM 38 × 140 MM (2 × 6 IN) RIM JOIST NAILED TO BOTH STUDS AND JOIST ENDS IS USED TO TRANSFER LATERAL WALL LOADS TO THE FLOOR SYSTEM.
1.8.3. SUPPORT FOR END WALL
1.8.3.1. WHEN JOISTS ARE PARALLEL TO THE EXTERIOR FOUNDATION WALL, THE WALL SHALL BE PROVIDED WITH SPECIAL SUPPORT (SEE FIGURES A.17 AND A.18) AS REQUIRED IN TABLE 9.

PERMANENT WOOD FOUNDATIONS - EXTERIOR WALLS FOR CRAWLSPACE FOUNDATIONS - S406-2014:

1. EXTERIOR WALLS FOR CRAWL SPACE FOUNDATIONS (SEE FIGURE A.6)
1.1. ALL EXTERIOR WALLS WITH SUSPENDED WOOD FLOORS FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.1.1. THE PROVISIONS OF CLAUSE 9 SHALL APPLY TO CRAWL SPACE FOUNDATION WALLS.
1.1.2. WHERE NO FLOOR SYSTEM IS PROVIDED AT OR NEAR THE BASE OF THE CRAWL SPACE FOUNDATION WALL, THE WALL SHALL BE PLACED IN A TRENCH AND BACKFILLED ON THE INSIDE TO RESIST LATERAL PRESSURE. THE INSIDE BACKFILL SHALL BE COMPACTED TO A DEPTH OF NO LESS THAN 2/5 OF THE EXTERIOR BACKFILL HEIGHT.

PERMANENT WOOD FOUNDATIONS - FLOORS AT TOP OF FOUNDATION - S406-2014:

1. FLOORS AT TOP OF FOUNDATION
1.1. ALL FLOORS AT TOP OF FOUNDATION FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. GENERAL
1.2.1. FLOORS AT TOP OF THE FOUNDATION SHALL BE CONSTRUCTED TO PREVENT THE INWARD MOVEMENT OF EXTERIOR WALLS DUE TO LATERAL PRESSURE. CONSTRUCTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS FOR WOOD FRAME CONSTRUCTION IN THE APPROPRIATE BUILDING CODE AND THE ADDITIONAL REQUIREMENTS OF CLAUSES 5.8, 12.2, 12.3, AND 12.4.
1.2.2. USE OF APPROVED PARALLEL CHORD WOOD FLOOR TRUSSES OR I-JOISTS SHALL BE PERMITTED IN PLACE OF SOLID SAWN WOOD JOISTS PROVIDED THE TRUSSES OR I-JOISTS ARE INSTALLED WITH ADEQUATE LATERAL BRACING AND BLOCKING TO PREVENT THE MEMBERS FROM TWISTING. WOOD FLOOR TRUSSES OR I-JOISTS MAY BE INSTALLED AT THE TOP OF FOUNDATION WALLS AS EITHER TOP CHORD BEARING OR BOTTOM CHORD BEARING MEMBERS PROVIDED THEY ARE DESIGNED FOR THE PARTICULAR APPLICATION AND ADEQUATE MEANS OF VERTICAL SUPPORT ARE PROVIDED. THE ADDITIONAL PROVISIONS OF CLAUSES 12.2.2 OR 12.2.3, AND 12.3.2 OR 12.3.3 SHALL APPLY.
1.3. SUPPORT FOR SIDE WALLS
1.3.1. SOLID SAWN WOOD JOISTS
1.3.1.1. JOISTS AND BLOCKING SHALL BE NAILED AS REQUIRED BY TABLE 7, INCLUDING THE NAILING OF BOTH TO THE TOP PLATE OF THE FOUNDATION WALL.
1.3.1.2. WHEN THE BACKFILL HEIGHT IS GREATER THAN 1500 MM (5 FT) WITH A WOOD SLEEPER OR CONCRETE SLAB FLOOR, OR GREATER THAN 2000 MM (6 FT 8 IN) WITH A SUSPENDED WOOD FLOOR, FRAMING STRAPS (SEE FIGURE A.19) SHALL BE INSTALLED TO ATTACH THE FLOOR TO THE FOUNDATION WALL IN ACCORDANCE WITH THE REQUIREMENTS OF TABLE 7.
1.3.2. TOP CHORD BEARING TRUSSES AND I-JOISTS
1.3.2.1. TOP CHORD BEARING UNITS SHALL BE CONNECTED TO THE TOP OF THE WALL TO PREVENT INWARD MOVEMENT OF THE WALL BY MEANS OF
1.3.2.1.1. FRAMING STRAPS NAILED TO THE ENDS OF THE TOP CHORD AND THE INNER FACE OF THE WALL STUDS;
1.3.2.1.2. STEEL HANGERS OR A WOOD LEDGER SO LOCATED AS TO PROVIDE POSITIVE BEARING OF THE CHORD END AGAINST THE WALL STUD ENDS; OR
1.3.2.1.3. OTHER MEANS OR PROVIDING SUPPORT AND POSITIVE TRANSFER OF LATERAL LOADS FROM THE WALL STUDS INTO THE TOP CHORD AND FLOOR SHEATHING.
1.3.3. BOTTOM CHORD BEARING TRUSSES AND I-JOISTS
1.3.3.1. BOTTOM CHORD BEARING UNITS SHALL BE CONNECTED TO THE TOP OF THE WALL TO PREVENT INWARD MOVEMENT OF THE WALL BY MEANS OF
1.3.3.1.1. STEEL HANGERS OR A WOOD LEDGER SO LOCATED AS TO PROVIDE POSITIVE BEARING OF THE CHORD END AGAINST THE WALL STUDS; OR
1.3.3.1.2. OTHER MEANS OF PROVIDING SUPPORT AND POSITIVE TRANSFER OF LATERAL SOIL LOADS FROM THE WALL STUDS INTO THE BOTTOM CHORD. THE LINE OF LATERAL LOAD TRANSFER MAY BE DESIGNED AND CONSTRUCTED TO MOVE DIAGONALLY FROM THE END OF THE CHORD TO THE TOP CHORD TO THE FLOOR SHEATHING, OR IN A DIRECT LINE THROUGH THE BOTTOM CHORD, TO THE OPPOSITE FOUNDATION WALL.
1.4. SUPPORT FOR END WALLS
1.4.1. LATERAL LOADING OF SOLID SAWN WOOD JOISTS
1.4.1.1. FULL-DEPTH BLOCKING SHALL BE INSTALLED, IN LINE WITH FOUNDATION STUDS, BETWEEN THE RIM JOIST OR WALL STUDS AND THE FIRST JOIST FROM THE WALL (SEE FIGURES A.20 AND A.21).THE REQUIREMENTS OF CLAUSE 6 SHALL BE ADHERED TO.
1.4.1.2. WHEN THE BACKFILL HEIGHT IS GREATER THAN 1500 MM (5 FT) WITH A WOOD SLEEPER OR CONCRETE SLAB FLOOR, OR GREATER THAN 2000 MM (6 FT 8 IN) WITH A SUSPENDED WOOD FLOOR, THE FIRST JOISTS AWAY FROM THE WALL SHALL BE REINFORCED WITH ONE ADDITIONAL JOIST OF 38 × 89 MM (2 × 4 IN) SIZE OR LARGER. IN THESE CASES, THE SUBFLOORING SHALL BE NAILED TO EACH OF THE FLOOR JOISTS WITH ONE ROW OF 51 MM (2 IN) NAILS AT 100 MM (4 IN) CENTRES. FRAMING STRAPS SHALL ALSO BE INSTALLED IN ACCORDANCE WITH TABLE 7.
1.4.2. LATERAL LOADING OF TRUSS OR I-JOIST AT TOP CHORD
1.4.2.1. WHEN THE TOP CHORDS OF FLOOR TRUSSES OR I-JOISTS ARE LOCATED AT THE LEVEL OF THE FOUNDATION TOP PLATES (SEE FIGURES A.20 AND A.21), LATERAL INWARD MOVEMENT OF THE WALL SHALL BE RESISTED BY BLOCKING, INSTALLED TO ENSURE THE DIRECT TRANSFER OF LATERAL LOADS FROM THE STUDS TO THE TOP CHORD OF THE FIRST UNIT FROM THE END WALL, AND BY INCREASED NAILING OF THE SUBFLOOR TO THE TOP CHORD IN ACCORDANCE WITH TABLE 7. WHEN THE NAILING FACE OF THE TOP CHORD OF THE UNIT IS MINIMUM 89 MM (4 IN) WIDE, REINFORCEMENT OF THE CHORD PER CLAUSE 12.3.1.1 IS NOT REQUIRED.
1.4.3. LATERAL LOADING OF TRUSS OR I-JOIST AT BOTTOM CHORD
1.4.3.1. WHEN THE BOTTOM CHORDS OF FLOOR TRUSSES OR I-JOISTS ARE LOCATED AT THE LEVEL OF THE FOUNDATION TOP PLATES, LATERAL INWARD MOVEMENT OF THE WALL SHALL BE RESISTED BY
1.4.3.1.1. BLOCKING OR DIAGONAL BRACING DESIGNED AND INSTALLED SO THAT LATERAL LOADS ARE TRANSFERRED UPWARD INTO THE FLOOR SHEATHING AT A TOP CHORD LOCATED AT A DISTANCE FROM THE WALL AT LEAST TWICE THE DEPTH OF THE TRUSS OR I-JOIST; OR
1.4.3.1.2. IF THE BACKFILL HEIGHT ON OPPOSITE FOUNDATION WALLS IS UNIFORM, BY BLOCKING INSTALLED IN A CONTINUOUS LINE TO TRANSFER LATERAL LOADS ACROSS THE FULL FOUNDATION TO OPPOSING EXTERIOR WALLS.
1.4.3.1.3. IN BOTH CASES, CONNECTIONS AT THE TOP OF THE WALL SHALL BE ADEQUATE TO PROVIDE TRANSFER OF LATERAL LOADS FROM THE WALL STUDS INTO THE BLOCKING OR BRACING.
1.5. STAIRWELL OPENINGS
1.5.1. GENERAL
1.5.1.1. STAIRWELL OPENINGS ADJACENT TO FOUNDATION WALLS REQUIRE SPECIAL FRAMING AND INCREASED NAILING TO PROVIDE LATERAL RESISTANCE AGAINST SOIL LOADS AT THE TOP OF THE FOUNDATION WALL (SEE FIGURES A.22, A.23, AND A.24). CONSTRUCTION SHALL CONFORM TO THE MINIMUM REQUIREMENTS FOR WOOD FRAME CONSTRUCTION IN THE APPROPRIATE BUILDING CODE WHEN THE OPENING IS 1200 MM (4 FT) OR MORE FROM A FOUNDATION SIDE WALL AND 1800 MM (6 FT) OR MORE FROM A FOUNDATION END WALL. OTHERWISE THE REQUIREMENTS OF CLAUSES 12.4.2 THROUGH 12.4.4 SHALL APPLY.
1.5.2. DIMENSIONS
1.5.2.1. THE MAXIMUM DIMENSIONS OF A STAIRWELL OPENING SHALL BE 4300 MM (14 FT) WHEN LOCATED WITHIN 1200 MM (4 FT) OF THE SIDE WALL OR WITHIN 1800 MM (6 FT) OF THE END WALL.
1.5.3. FRAMING AT SIDE WALL
1.5.3.1. OPENINGS LESS THAN 1200 MM (4 FT) FROM A SIDE WALL SHALL BE FRAMED WITH A MULTIPLY HORIZONTAL MEMBER (SEE FIGURES A.22 AND A.24), THE SIZE AND NAILING OF WHICH SHALL CONFORM TO TABLE 11.
1.5.4. FRAMING AT END WALL
1.5.4.1. OPENINGS LESS THAN 1800 MM (6 FT) FROM AN END WALL SHALL BE FRAMED WITH A MULTIPLY HORIZONTAL MEMBER (SEE FIGURES A.23 AND A.24), THE SIZES AND NAILING OF WHICH SHALL CONFORM TO TABLE 11.

PERMANENT WOOD FOUNDATIONS - SUPPORT FOR ACCESSORY MATERIALS AND STRUCTURES - S406-2014:

1. SUPPORT FOR ACCESSORY MATERIALS AND STRUCTURES
1.1. ALL SUPPORTED ACCESSORY MATERIALS AND STRUCTURES FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. SUPPORT FOR MASONRY VENEER
1.2.1. GENERAL
1.2.1.1. MASONRY VENEER EXTERIOR CLADDING CONFORMING TO THE APPROPRIATE BUILDING CODE FOR ABOVE-GRADE MASONRY MAY BE SUPPORTED ON A PRESERVED WOOD FOUNDATION EITHER
1.2.1.1.1. A) ON A KNEE WALL ATTACHED TO THE EXTERIOR OF THE MAIN FOUNDATION WALL, AS SHOWN IN FIGURE A.25; OR
1.2.1.1.2. B) ON TOP OF THE MAIN FOUNDATION WALL, AS SHOWN IN FIGURE A.26.
1.2.1.1.3. IN EITHER CASE, THE MAIN FOUNDATION WALL SHALL BE CONSTRUCTED AS REQUIRED IN CLAUSES 9, 10, OR 11, AS APPLICABLE.
1.2.2. MASONRY VENEER ON KNEE WALL
1.2.2.1. THE KNEE WALL SUPPORTING MASONRY VENEER CLADDING (SEE FIGURE A.25) SHALL BE IN ACCORDANCE WITH CLAUSES 14.1.2.1 THROUGH 14.1.2.4.
1.2.2.2. FOOTINGS SHALL CONFORM TO CLAUSE 8. COMPOSITE-TYPE WOOD FOOTING PLATES MAY BE USED.
1.2.2.3. KNEE-WALL STUDS SHALL BE 38 × 89 MM (2 × 4 IN) AT 300 MM (12 IN) OC FOR SUPPORTING A SINGLE WYTHE OF MASONRY OF A MAXIMUM 5200 MM (17 FT) IN HEIGHT. THE KNEE WALL SHALL BE INSTALLED OUTSIDE THE EXTERIOR MOISTURE BARRIER AND NAILED AT TOP AND BOTTOM OF EACH STUD TO THE MAIN FOUNDATION WALL. WHERE KNEEWALL STUDS EXCEED 1500 MM (5 FT) IN HEIGHT, THEY SHALL ALSO BE TOE-NAILED AT MID-HEIGHT TO THE WALL. TO PLATES OF KNEE WALLS SHALL BE DOUBLED TO SUPPORT THE MASONRY VENEER. JOINTS IN THE TWO TOP PLATES SHALL BE SPACED A MINIMUM OF TWO STUD SPACES APART AND SHALL OCCUR DIRECTLY ABOVE THE CENTRE OF A SUPPORTING STUD.
1.2.2.4. KNEE-WALL SHEATHING SHALL CONFORM TO CLAUSE 5.4 AND AT ANY POINT SHALL EXTEND BELOW THE EXTERIOR FINISHED GRADE A MINIMUM OF 300 MM (12 IN). NOTE: SHEATHING NEED NOT BE INSTALLED BETWEEN THIS POINT AND THE FOOTING; BACKFILL MATERIAL IS PERMITTED BETWEEN THE EXPOSED KNEE-WALL STUDS.
1.2.2.5. NO EXTERIOR MOISTURE BARRIER IS REQUIRED OVER THE KNEE-WALL SHEATHING.
1.2.3. MASONRY VENEER ON MAIN FOUNDATION WALL
1.2.3.1. WHERE MASONRY VENEER IS SUPPORTED ON THE MAIN FOUNDATION WALL (SEE FIGURE A.27), THE FOUNDATION FRAMING SHALL HAVE A WIDTH SUFFICIENT TO PROVIDE REQUIRED SUPPORT FOR THE MASONRY VENEER AS WELL AS ACCOMMODATING THE FLOOR FRAMING. TOP PLATES SHALL BE DOUBLED AND PRESSURE TREATED.
1.3. SUPPORT FOR EXTERIOR CONCRETE SLABS
1.3.1. WHERE DRIVEWAY OR GARAGE FLOOR SLABS SUPPORTING CARS OR LIGHT TRUCKS ABUT THE FOUNDATION WALL, APPROPRIATE STEPS SHALL BE TAKEN TO ENSURE THAT THE EFFECTS OF ADDITIONAL LOADING ARE CONSIDERED.
1.3.2. NOTE: TWO POSSIBLE APPROACHES TO ACCOUNT FOR THIS ADDITIONAL LOADING ARE
1.3.2.1. SELECTING THE STUD SIZE AND SPACING FOR THE WALL USING AN EFFECTIVE BACKFILL HEIGHT 500 MM (20 IN) GREATER THAN THE ACTUAL BACKFILL HEIGHT; OR
1.3.2.2. WHERE THE SLAB IS REINFORCED ON THE BOTTOM SIDE, SUPPORTING THE SLAB ON A PRESERVED-WOOD KNEE WALL PLACED ADJACENT TO THE FOUNDATION WALL (SEE FIGURE A.27).
1.4. SUPPORT FOR EXTERIOR STEPS AND LANDINGS
1.4.1. EXTERIOR STEPS AND LANDINGS MAY BE SUPPORTED ON A PRESERVED WOOD FOUNDATION. SUPPORTED STEPS AND LANDINGS SHALL NOT BE HUNG SO AS TO BE CANTILEVERED FROM A FOUNDATION WALL.
1.5. GARAGE FROST WALLS
1.5.1. THE FROST WALL SHALL BE PLACED IN A TRENCH AND BACKFILLED ON BOTH SIDES. FOOTING PLATES SHALL BE LOCATED BELOW THE FROST PENETRATION LEVEL AS SPECIFIED BY THE LOCAL BUILDING CODE, EXCEPT, WHERE THE GARAGE IS HEATED AND EXTERNAL THERMAL INSULATION OF THE FROST WALL IS PROPERLY AND CONTINUOUSLY INSTALLED TO DIRECT HEAT LOSS TO THE SOIL BELOW THE FOOTING, THE DEPTH OF THE FOOTING MAY BE REDUCED.
1.5.2. 14.4.2 WHERE THE WALL IS SUBJECT TO BALANCED SOIL LOADS, THE STUDS MAY BE 38 × 89 MM (2 × 4 IN) IN SIZE, AND THE PLYWOOD SHEATHING MAY BE 12.5 MM IN THICKNESS AND EXTEND A MINIMUM OF 600 MM (24 IN) BELOW FINISHED GRADE.
1.6. WALK-OUT BASEMENT FROST WALL (FIGURE A.29)
1.6.1. THE ABOVE GRADE EXPOSED WALL WITH THE DOORWAY TO THE EXTERIOR SHOULD REST ON A FROST WALL EXTENDING BELOW THE FROST PENETRATION, MINIMUM OF 1200 MM (4 FT) DEPTH OR AS SPECIFIED BY THE LOCAL BUILDING CODE.

PERMANENT WOOD FOUNDATIONS - EXTERIOR MOISTURE BARRIER - S406-2014:

1. 15 EXTERIOR MOISTURE BARRIER
1.1. ALL EXTERIOR MOISTURE BARRIERS FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14.
1.2. GENERAL
1.2.1. EXCEPT FOR THE CASE OF KNEE WALLS, OR CRAWL SPACES WITH TRENCHED FOOTINGS, THE BELOW-GRADE PORTION OF THE EXTERIOR FACE OF THE WALL SHEATHING ON A PRESERVED WOOD FOUNDATION ENCLOSING HABITABLE SPACE SHALL BE PROTECTED BY THE MOISTURE BARRIER SPECIFIED IN CLAUSE 15.2.
1.3. ATTACHMENT OF POLYETHYLENE SHEET
1.3.1. A POLYETHYLENE SHEET MOISTURE BARRIER SHALL BE APPLIED TO THE PLYWOOD BY MEANS OF EMBEDMENT INTO VERTICAL BEADS OF SEALANT, OR INTO DAMPPROOFING APPLIED UNIFORMLY OVER THE PLYWOOD. JOINTS BETWEEN POLYETHYLENE SHEETS SHALL BE VERTICAL, LAPPED A MINIMUM OF 600 MM (2 FT), AND SEALED. WHEN ATTACHED WITH VERTICAL SEALANT BEADS, THE POLYETHYLENE SHALL NOT BE SEALED ALONG THE BOTTOM OF THE WALL. THE UPPER EDGE OF THE POLYETHYLENE SHALL BE LOOPED A MINIMUM OF 150 MM (6 IN) AND SECURED IN PLACE BY NAILING OF THE COVER PLATE (SEE FIGURE A.28).
1.4. PROTECTION BY COVER PLATE
1.4.1. THE MOISTURE BARRIER SHALL BE PROTECTED AT ITS UPPER EDGE BY COVERING IT WITH A COVER PLATE CONSISTING OF A TREATED STRIP OF PLYWOOD HAVING A MINIMUM THICKNESS OF 12.5 MM AND A MINIMUM WIDTH OF 300 MM (12 IN). THE TOP EDGE OF THIS CONTINUOUS STRIP SHALL BE EMBEDDED IN SEALANT OR DAMPPROOFING ALONG ITS FULL LENGTH. THE PLYWOOD STRIP MAY FOLLOW THE CONTOUR OF THE FINISHED OUTSIDE GRADE BUT IT SHALL EXTEND ABOVE THE GRADE AT ANY POINT BY A MINIMUM OF 75 MM (3 IN).
1.5. PROTECTION OF CORNERS
1.5.1. THE MOISTURE BARRIER SHALL BE PROTECTED AT INTERIOR AND EXTERIOR CORNERS FROM MECHANICAL DAMAGE BY TREATED PLYWOOD STRIPS OR OTHER DURABLE CORNER PROTECTION.
1.6. EXTENT OF COVERAGE
1.6.1. THE MOISTURE BARRIER SHALL COVER THE ENTIRE SURFACE OF THE WALL BELOW FINISHED GRADE AND EXTEND TO THE BOTTOM EDGE OF THE WOOD FOOTING. IT SHALL NOT EXTEND OUT OVER THE GRANULAR DRAINAGE LAYER OR UNDER THE WOOD FOOTING PLATE. IN THE CASE OF A CONCRETE FOOTING, THE MOISTURE BARRIER SHALL NOT OBSTRUCT THE REQUIRED DRAINAGE PASSAGES (SEE FIGURE A.5).

PERMANENT WOOD FOUNDATIONS - BACKFILL & SITE GRADING - S406-2014:

1. 16 BACKFILLING AND SITE GRADING
1.1. ALL BACKFILLING AND SITE GRADING FOR PERMANENT WOOD FOUNDATIONS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S406-2014 AND AS DETAILED IN THE SPECIFICATIONS BELOW. ALL REFERENCED CLAUSE(S) AND TABLE(S) BELOW ARE AS FOUND IN CSA-S406-14
1.2. TIMING
1.2.1. PRESERVED WOOD FOUNDATIONS SHALL NOT BE BACKFILLED UNTIL THE BASEMENT FLOOR OR SUSPENDED FLOOR AND THE FLOOR AT THE TOP OF THE FOUNDATION WALLS ARE BOTH FULLY INSTALLED INCLUDING SUBFLOOR SHEATHING AND ALL FASTENINGS, OR IN THE CASE OF CRAWL SPACES, ADEQUATE INTERIOR RESISTANCE TO EXTERIOR LOAD IS INSTALLED.
1.3. SAFE PLACEMENT OF BACKFILL
1.3.1. HEAVY EQUIPMENT AND LOADS SHALL BE KEPT A SAFE DISTANCE AWAY FROM FOUNDATIONS DURING BACKFILLING. BACKFILL SHALL BE PLACED IN UNIFORM LIFTS NOT EXCEEDING 600 MM (2 FT) AROUND THE FOUNDATION.
1.3.2. NOTE: IN MOST SOILS, A SAFE DISTANCE FOR THE USE OF BACKFILLING EQUIPMENT IS A DISTANCE EQUAL TO THE DEPTH OF THE TRENCH FROM THE EDGE OF THE TRENCH. BACKFILL SHOULD NOT BE MECHANICALLY COMPACTED.
1.4. BACKFILL MATERIAL
1.4.1. EXCEPT AS PERMITTED IN CLAUSES 16.4 OR 16.5, AND EXCEPT AS REQUIRED IN CLAUSE 16.6, NATIVE SOILS CONFORMING TO CLAUSE 5.10 MAY BE USED AS THE BACKFILL MATERIAL AROUND FOUNDATIONS ENCLOSING HEATED SPACE AND FROST WALLS EXTENDING BELOW THE FROSTLINE. OTHERWISE NATIVE SOIL SHALL BE REPLACED BY SAND AND/ OR GRAVEL AS THE BACKFILL MATERIAL TO PROVIDE SUBGRADE DRAINAGE AROUND THE FOUNDATION. THE TOP 300 M (1 FT) OF BACKFILL MATERIAL SHALL HAVE NO GREATER POROSITY THAN THAT OF THE SURROUNDING SOIL.
1.5. USE OF MANUFACTURED DRAINAGE LAYERS
1.5.1. WHERE A MANUFACTURED DRAINAGE LAYER IS APPLIED TO THE VERTICAL FACE OF THE FOUNDATION WALL FROM GRADE LEVEL TO THE GRANULAR DRAINAGE LAYER, THE BACKFILL NEED NOT CONFORM TO CLAUSE 16.3.
1.6. FOUNDATIONS NOT REQUIRING DRAINAGE
1.6.1. FOR BACKFILLING FOUNDATIONS ENCLOSING UNHEATED SPACE, NATIVE SOILS IN THE COARSE GRAINED (COHESIONLESS) GROUP IN TABLE 2 MAY BE USED FULL HEIGHT AS THE BACKFILL MATERIAL.
1.7. PROBLEM SOILS
1.7.1. THE BACKFILL AND DRAINAGE SYSTEM SHALL BE DESIGNED BY A QUALIFIED ENGINEER WHEN THE FOUNDATION IS TO BE INSTALLED IN A SOIL HAVING A HIGH VOLUME CHANGE POTENTIAL OR WHERE SOILS SUSCEPTIBLE TO FROST HEAVE ARE PRESENT AROUND UNHEATED PORTIONS OF FOUNDATION WALLS.
1.8. SITE GRADING
1.8.1. BACKFILL SHALL BE PLACED SUCH THAT THE FINAL GRADE AFTER THE FILL SETTLES SHALL FALL AWAY FROM THE WALLS AT A MINIMUM SLOPE OF 1 IN 12 (SEE FIGURE A.3).

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MEMBER 13705
2021/02/25

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49NORTH ENGINEERING CORP. PROJECT NUMBER: 2021 - 2062

CLIENT PROJECT NUMBER:

ISSUED FOR:	YYYY.MM.DD
SCHEMATIC DESIGN REVIEW	
DESIGN DEVELOPMENT REVIEW	
CONSTRUCTION DOCUMENT REVIEW	
TENDER PACKAGE REVIEW	
ISSUED FOR DEVELOPMENT PERMIT	2021.02.25
ISSUED FOR BUILDING PERMIT	2021.02.25
ISSUED FOR CONSTRUCTION (IFC)	2021.02.25

PROJECT:

DETACHED ACCESSORY
WORKSHOP BUILDING

1624 GRANT ROAD
REGINA, SASKATCHEWAN

LOT 12, BLOCK 35, PLAN 59R04305

ENGINEER	TWEIDT
TECHNICIAN	TWEIDT
DRAWING SCALE	1/8" = 1'-0"
DATE	FEBRUARY 25, 2021

DRAWING TITLE:

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SHEET NUMBER: S2.3
REVISION NUMBER: