

CONSTRUCTION NOTES

ALL CONSTRUCTION TO ADHERE TO THESE PLANS AND SPEC'S AND TO CONFORM TO THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. THESE REQUIREMENTS ARE TO BE TAKEN AS MINIMUM SPECIFICATIONS. ONT. REG. 332/12

1. ROOF CONSTRUCTION
NO.210 (10.25kg/m2) ASPHALT SHINGLES, 11.1mm (7/16") ASPENITE SHEATHING WITH "H" CLIPS. APPROVED WOOD TRUSSES @ 600mm (24") O.C. MAX. APPROVED EAVES PROTECTION TO EXTEND 900mm (3'-0") FROM EDGE OF ROOF AND MIN. 300mm (12") BEYOND INNER FACE OF EXTERIOR WALL, (EAVES PROTECTION NOT REQ'D. FOR ROOF =>8:12 / S/I ICE & WATER SHIELD OVER ENTIRE SHEATHING SURFACE WHERE PITCH IS > 2:12 & < 4:12). 38x89 (2"x4") TRUSS BRACING @ 1830mm (6'-0") O.C. AT BOTTOM CHORD. PREFIN. ALUM. FASCIA & VENTED SOFFIT. ATTIC VENTILATION 1:300 OF INSULATED CEILING AREA WITH 25% AT EAVES. AND 25% AT RIDGE (OBC 9.19.1.2)

2. FRAME WALL CONSTRUCTION (2"x6")
SIDING AS PER ELEVATION, APPROVED AIR BARRIER 11.1mm (7/16") EXTERIOR TYPE SHEATHING, 38x140 (2"x6") STUDS @ 400mm (16") O.C., RSI 3.87 (R22) INSULATION AND APPROVED VAPOUR BARRIER AND APPROVED CONT. AIR BARRIER, 13mm (1/2") INT. DRYWALL FINISH. SIDING TO BE MIN. 200mm (8") ABOVE FIN. GRADE

2A. FRAME WALL CONSTRUCTION (2"x4" GARAGE WALL)
SIDING AS PER ELEVATION, APPROVED AIR BARRIER, 38x89 (2"x4") STUDS @ 400mm (16") O.C., [FOR CLIENT UPGRADE ONLY - RSI 3.35 (R19) INSULATION AND APPROVED VAPOUR BARRIER, 13mm (1/2") INT. DRYWALL FINISH.] SIDING TO BE MIN. 200mm (8") ABOVE FIN. GRADE

3. BRICK VENEER CONSTRUCTION (2"x6")
90mm (4") FACE BRICK 25mm (1") AIR SPACE, 22x180x0.76mm (7/8"x7"x0.03") GALV. METAL TIES @ 400mm (16") O.C. HORIZONTAL 600mm (24") O.C. VERTICAL. APPROVED AIR BARRIER 11.1mm (7/16") EXTERIOR TYPE SHEATHING, 38x140 (2"x6") STUDS @ 400mm (16") O.C., RSI 3.87 (R22) INSULATION AND APPROVED VAPOUR BARRIER WITH APPROVED CONTIN. AIR BARRIER, 13mm (1/2") INT. DRYWALL FINISH. PROVIDE WEEP HOLES @ 800mm (32") O.C. BOTTOM COURSE AND OVER OPENINGS. PROVIDE THRU-WALL FLASHING UP MIN. 150mm (6") BEHIND BUILDING PAPER. BRICK TO BE MIN. 150mm (6") ABOVE FINISH GRADE.

3A. BRICK VENEER CONSTRUCTION (2"x4" GARAGE WALL)
90mm (4") FACE BRICK 25mm (1") AIR SPACE, 22x180x0.76mm (7/8"x7"x0.03") GALV. METAL TIES @ 400mm (16") O.C. HORIZONTAL 600mm (24") O.C. VERTICAL. APPROVED AIR BARRIER, 38x89 (2"x4") STUDS @ 400mm (16") O.C. [FOR CLIENT UPGRADE ONLY - RSI 3.35 (R19) INSULATION AND APPROVED VAPOUR BARRIER, 13mm (1/2") INT. DRYWALL FINISH.] PROVIDE WEEP HOLES @ 800mm (32") O.C. BOTTOM COURSE AND OVER OPENINGS. PROVIDE THRU-WALL FLASHING UP MIN. 150mm (6") BEHIND BUILDING PAPER. BRICK TO BE MIN. 150MM(6") ABOVE FINISH GRADE.

4. INTERIOR STUD PARTITIONS FOR BEARING PARTITIONS 38x89 (2"x4") @ 400mm (16") O.C. FOR 2 STOREYS AND 300mm (12") O.C. FOR 3 STOREYS, NON-BEARING PARTITIONS 38x89 (2"x4") @ 600mm (24") O.C. PROVIDE 38x89 (2"x4") BOTTOM PLATE AND 2/38x89 (2/2"x4") TOP PLATE. 13mm (1/2") INT. DRYWALL BOTH SIDES OF STUDS, PROVIDE 38x140 (2"x6") STUDS/PLATES WHERE NOTED.

5. FOUNDATION WALL/FOOTINGS: -SEE OBC 9.15.3, 9.15.4 200mm (8") POURED CONC. FDTN. WALL 20MPa (c/w 2-15M REBAR TOP & BOTTOM) WITH BITUMENOUS DAMPPROOFING AND OPT. DRAINAGE LAYER. DRAINAGE LAYER REQ. WHEN BASEMENT INSUL. EXTENDS 900 (2'-11") BELOW FIN. GRADE. MAXIMUM POUR HEIGHT 2390 (7'-10") ON 500x155 (20"x6") CONTINUOUS KEYED CONC. FTG. BRACE FDTN. WALL PRIOR TO BACKFILLING. ALL FOOTINGS SHALL REST ON NATURAL UNDISTURBED SOIL OR COMPACTED ENGINEERED FILL, WITH MIN. BEARING CAPACITY OF 100Kpa OR GREATER. IF SOIL BEARING DOES NOT MEET MIN. CAPACITY, ENGINEERED FOOTINGS ARE REQUIRED. MAX. FLOOR LIVE LOAD OF 2.4kpa(50psf) PER FLOOR, AND MAX. LENGTH OF SUPPORTED JOISTS IS 4.9m (16'-1"). REFER TO SOILS REPORT FOR SOILS CONDITIONS AND BEARING CAPACITY.

6. 100mm (4") DIA. WEEP TILE 150mm (6") CRUSHED STONE OVER AND AROUND WEEPING TILES.

7. BASEMENT SLAB OBC. 9.3.1.6.(1)(b) & 9.16.4.5.(1) 80mm (3")MIN. 25MPa (3600psi) CONC. SLAB ON 100mm (4") COARSE GRANULAR FILL, OR 15MPa. (2200psi) CONC. WITH DAMPPROOFING BELOW SLAB.

8. EXPOSED FLOOR TO EXTERIOR PROVIDE RSI 5.46 (R31) INSULATION, APPROVED VAPOUR BARRIER AND CONTINUOUS AIR BARRIER, FINISHED SOFFIT.

9. OBC. 12.3.2.1 & 12.3.3.7 ATTIC INSULATION RSI 8.81 (R60) BLOWN IN ROOF INSULATION AND APPROVED VAPOUR BARRIER, 13mm (1/2") INT. DRYWALL FINISH OR APPROVED EQUAL.

10. STAIRS, STEPS, HANDRAILS -OBC. 9.8.-
-9.8.2.1(2) STAIR WIDTH MEASURED BETWEEN WALL FACES OR GUARDS SHALL BE NOT LESS THAN 860mm (33 3/4") FOR REQUIRED EXIT STAIRS SERVING A HOUSE OR DWELLING UNIT. -9.8.2.2(3) CLEAR HEIGHT OVER STAIRS SHALL NOT BE LESS THAN 1950mm (76 3/4")
-9.8.4 STEP DIMENSIONS (TABLE 9.8.4.1)

STAIR COMPONENT	MINIMUM	MAXIMUM
RISE	125mm (4 1/8")	200mm (7 7/8")
RUN	255mm (10 1/8")	355mm (14")

-9.8.4.4 UNIFORMITY & TOLERANCES FOR RISERS & TREADS
-BETWEEN ADJACENT TREADS & LANDINGS = 5mm
-BETWEEN TALLEST & SHORTEST RISER IN FLIGHT=10mm
-9.8.4.6(1)(b) MAX. NOSING 25mm (1")
-9.8.7.5(1)(b) CLEARANCE BETWEEN HANDRAIL AND SURFACE BEHIND IT TO BE MIN. 50mm (1 7/8")
-9.8.7.6(1) HANDRAILS SHALL NOT PROJECT MORE THAN 100mm (3 7/8") INTO REQUIRED WIDTH OF STAIR <SEE 9.8.2.(1)>

11. GUARDS -OBC. 9.8.8.3-
(1) EXT. GUARDS HEIGHT: =1070mm (42 1/8") MIN.
(2) INT. GUARDS HEIGHT: =900mm (35 3/8") MIN.
(1) STAIR LANDING GUARDS: =1070mm (42 3/8") MIN.
-9.8.8.5(1) MAX. OPENINGS THROUGH GUARDS =100mm (3 7/8")

12. 38x89 (2"x4") SILL PLATE WITH 13mm (1/2") DIA. ANCHOR BOLTS 200mm (8") LONG, EMBEDDED MIN. 100mm (4") INTO CONC. @ 2400mm (7'-10") O.C. USE NON-SHRINK GROUT TO LEVEL SILL PLATE WHEN REQUIRED. (SEE OBC. 9.23.7)

13. -R12 (3/4") CONTINUOUS BATT INSULATION. 2"x4" STUD WALL PLACED 3/4" AWAY FROM WALL. FILL STUD CAVITY WITH R10 BATT INSULATION. APPROVED VB TO 8" ABOVE FLOOR LEVEL.
OR
-APPROVED BLANKET INSULATION (R20) MECHANICALLY SECURED TO CONCRETE FOUNDATION WALL WITH 100mm HILTI PINS (COMES WITH PLASTIC WASHER)

DAMPPROOF WITH BUILDING PAPER BETWEEN THE FOUNDATION WALL AND INSULATION UP TO GRADE LEVEL.

(SEE DETAIL ON "SB-12 DETAILS" PAGE)

14. BEARING STUD PARTITION
38x89 (2"x4") STUDS @ 400mm (16") O.C. 38x89 (2"x4") SILL PLATE ON DAMPPROOFING MATERIAL, 13mm (1/2") DIA. ANCHOR BOLTS 200mm (8") LONG, EMBEDDED MIN. 100mm (4") INTO CONC. @ 2400mm (7'-10") O.C. 100mm (4") HIGH CONC. CURB ON 350x155 (14"x6") CONC. FOOTING. ADD HORIZ. BLOCKING AT MID-HEIGHT IF WALL IS UNFINISHED.

15. STEEL BASEMENT COLUMN (SEE O.B.C. 9.17.3.1, 9.17.3.4)
75mm (3") DIA. ADJUSTABLE STL. COL. CONFORMING TO CAN/CSGB-7.2M, AND WITH 102x150x9.5 (4"x6"x3/8") STL. PLATE TOP & BOTTOM. 910x910x300 (36"x36"x12") CONC. FOOTING ON UNDISTURBED SOIL OR ENGINEERED FILL CAPABLE OF SUSTAINING A PRESSURE OF 100 Kpa. MINIMUM AND AS PER SOILS REPORT.

15A. STEEL BASEMENT COLUMN (SEE O.B.C. 9.17.3.1, 9.17.3.4)
3"x3"x(-188) NON-ADJUSTABLE STL. COL. WITH 150x150x9.5 (6"x6"x3/8") STL. TOP & BOTTOM PLATE ON 910x910x300 (36"x36"x12") CONC. FOOTING ON UNDISTURBED SOIL OR ENGINEERED FILL CAPABLE OF SUSTAINING A PRESSURE OF 100 Kpa. MIN. AND AS PER SOILS REPORT.

15B. STEEL COLUMN (SEE OBC. 9.17.3.1, 9.17.3.4) 3"x3"x(-188) NON-ADJUSTABLE STL. COL. TO BE ON 150x150x9.5 (6"x6"x3/8") STEEL TOP PLATE, & BOTTOM PLATE. BASE PLATE 120x250x12.5 (4-1/2"x10"x1/2") WITH 2-12mm DIA. x 300mm LONG x50mm HOOK ANCHORS (2-1/2"x12"x2") FIELD WELD COL. TO BASE PLATE.

15C. STEEL COLUMN (SEE OBC. 9.17.3.1, 9.17.3.4) 90mm(3-1/2") DIA.x4.70mm(-188) NON-ADJUSTABLE STL. COL. TO BE ON 150x150x9.5 (6"x6"x3/8") STEEL TOP PLATE, & BOTTOM PLATE. BASE PLATE 120x250x12.5 (4-1/2"x10"x1/2") WITH 2-12mm DIA. x 300mm LONG x50mm HOOK ANCHORS (2-1/2"x12"x2") FIELD WELD COL. TO BASE PLATE.

16. BEAM POCKET OR 300x150 (12"x6") POURED CONC. NIB WALLS. MIN. BEARING 90mm (3-1/2")

17. 19x64 (1"x3") CONTINUOUS WD. STRAPPING BOTH SIDES OF STEEL BEAM.

18. GARAGE SLAB: 100mm (4") 32MPa (4640psi) CONC. SLAB WITH 5-8% AIR ENTRAINMENT ON OPT. 100 (4") COARSE GRANULAR FILL WITH COMPACTED SUB-BASE OR COMPACTED NATIVE FILL. SLOPE TO FLOOR AT 1% MIN.

19. 13mm (1/2") GYPSUM BD. ON WALL AND CEILING BETWEEN HOUSE AND GARAGE, RSI 3.87 (R22) IN WALLS, RSI 5.46 (R31) IN CEILING. PROVIDE APPROVED AIR BARRIER. TAPE AND SEAL ALL JOINTS AIR TIGHT.

20. DOOR AND FRAME GASPROOFED. DOOR EQUIPPED WITH SELF CLOSING DEVICE AND WEATHERSTRIPPING. PER OBC 9.10.13.15

21. WOOD STEP, C/W HANDRAIL & LANDING IF MORE THAN 3 RISERS, MAX.RISE 200mm (7-7/8") MIN.TREAD 255mm (10-1/16") SEE OBC 9.8.9.2, 9.8.9.3 & 9.8.10

22. CAPPED DRYER EXHAUST VENTED TO EXTERIOR. (USE 100mm(4") DIA. SMOOTH WALL VENT PIPE) OBC 6.2.3.8.(7)

23. ATTIC ACCESS HATCH 545x610 (21.5"x24") WITH A MIN. AREA OF 3.44 SF WITH WEATHERSTRIPPING RSI 7.0 (R40) RIGID INSUL. BACKING OBC 9.19.2

24. FIREPLACE CHIMNEYS -OBC. 9.21.- TOP OF FIREPLACE CHIMNEY SHALL BE 915mm (3'-0") ABOVE THE HIGHEST POINT AT WHICH IT COMES IN CONTACT WITH THE ROOF AND 610mm (2'-0") ABOVE THE ROOF SURFACE WITHIN A HORIZ. DISTANCE OF 3050mm (10'-0") FROM THE CHIMNEY.

25. LINEN CLOSET, 4 SHELVES MIN. 350mm (14") DEEP.

26. MECHANICAL EXHAUST FAN, VENTED TO EXTERIOR, TO PROVIDE AT LEAST ONE AIR CHANGE PER HOUR.

27. STEEL BEARING PLATE FOR MASONRY WALLS 280x280x16 (11"x11"x5/8") STL. PLATE FOR STL BEAMS AND 280x280x12 (11"x11"x1/2") STL. PLATE FOR WOOD BEAMS BEARING ON CONC. BLOCK PARTYWALL, ANCHORED WITH 2-19mm (3/4") x 200mm (8") LONG GALV. ANCHORS WITHIN SOLID BLOCK COURSE. LEVEL WITH NON-SHRINK GROUT.

OR

SOLID WOOD BEARING FOR WOOD STUD WALLS SOLID BEARING TO BE AT LEAST AS WIDE AS THE SUPPORTED MEMBER. SOLID WOOD BEARING COMPRISED OF BUILT-UP WOOD STUDS TO BE CONSTRUCTED IN ACCORDANCE WITH OBC. 9.17.4.2 (2).

28. U.L.C. RATED CLASS "B" VENT 610mm (2'-0") ABOVE THE POINT IN CONTACT WITH THE ROOF FOR SLOPES UP TO 9/12, REFER TO THE ONTARIO GAS UTILIZATION CODE.

29. 3-2"x6" BUILT-UP-POST ON 24"x24"x10" CONCRETE FOOTING. (SEPARATE WOOD FROM CONCRETE W/ 6mil POLY AS PER OBC 9.17.4)

30. STEP FOOTINGS: MIN. HORIZ. STEP = 600mm (23-5/8"). MAX. VERT. STEP = 600mm (23-5/8") FOR FIRM SOILS.

31. PORCH SLAB/STEPS: 130 mm (5") MIN. CONC. 32 MPa SLAB AIR ENTRAINMENT MIN. 5 TO 8% AT 28 DAYS, 10 M BARS @ 250 O/C EACH WAY 10M DOWELS @400 (16") O.C. 2-15m IN THICKENED AREA FROM WALL TO SLAB ALL SIDES (SEE DETAIL)

32. DIRECT VENT FURNACE TERMINAL MIN. 900mm (36") FROM A GAS REGULATOR. MIN. 300mm (12") ABOVE FIN. GRADE, FROM ALL OPENINGS, EXHAUST AND INTAKE VENTS. HRV INTAKE TO BE A MIN. OF 1830mm (6'-0") FROM ALL EXHAUST TERMINALS. REFER TO GAS UTILIZATION CODE.

33. DIRECT VENT GAS FIREPLACE. VENT TO BE A MINIMUM 300mm (12") FROM ANY OPENING AND ABOVE FIN. GRADE. REFER TO GAS UTILIZATION CODE.

34. SUBFLOOR
-19mm (3/4") T & G SUBFLOOR GLUED AND SCREWED TO ENGINEERED FLOOR JOIST SYSTEM. SUPPLY AND INSTALL BLOCKING AND/OR BRIDGING IF INDICATED BY FLOOR JOIST DESIGNER (REFER TO MANUFACTURER'S LAYOUTS AND INSTALLATION INSTRUCTIONS)

35. EXPOSED BUILDING FACE -OBC. 9.10.14.5- EXTERIOR WALLS TO HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 45 min. WHERE LIMITING DISTANCE IS LESS THAN 1.2M (3'-11"). WHERE THE LIMITING DISTANCE IS LESS THAN 600mm (1'-11") THE EXPOSING FACE SHALL BE CLAD IN NON-COMBUSTIBLE MATERIAL.

36. LINTEL SPECIFICATION
ALL WINDOW AND DOOR LINTELS TO BE COMPRISED OF 2-2X10 BUILT-UP WOOD BEAM, EACH END BEARING ON P2s (UNLESS NOTED OTHERWISE)

37. THE FDTN. WALL SHALL NOT BE REDUCED TO LESS THAN 90mm (3 5/8") THICK TO A MAX. DEPTH OF 350mm (13 3/4") AND SHALL BE TIED TO THE FACING MATERIAL WITH METAL TIES SPACED 200mm (8") O.C. VERTICALLY AND 900mm (36") O.C. HORIZONTALLY. FILL SPACE BETWEEN WALL AND FACING SOLID WITH MORTAR. (SEE OBC 9.15.4.7)

38. CONVENTIONAL ROOF FRAMING 38x140 (2"x6") RAFTERS @ 400mm (16")O.C., FOR MAX. 11'-7" SPAN. 38x184 (2"x8") RIDGE BOARD. 38x89 (2"x4") COLLAR TIES AT MIDSPANS. CEILING JOISTS TO BE 38x89 (2"x4") @ 400mm (16") O.C. FOR MAX. 2830mm (9'-3") SPAN & 38x140 (2"x6") @ 400mm (16") O.C. FOR MAX. 4450mm (14'-7") SPAN. RAFTERS FOR BUILT-UP ROOF TO BE 38x89 (2"x4") @ 600mm (24") O.C. WITH A 38x89 (2"x4") CENTRE POST TO THE TRUSS BELOW, LATERALLY BRACED AT 1800mm (6'-0") O.C. VERTICALLY.

39. TWO STOREY VOLUME SPACES
FOR HIGH WALL UP TO 18'-0": CONSTRUCTION: 2"x6" SPACING AS INDICATED BLOCKING: 3 ROWS @ 4'-6" O/C @ SHEATHING: 7/16" ASPENITE NAILING: 2" STAPLES BET. 4" AND 6" O/C ALONG STUDS

STUD SPACING WITH VARIOUS FINISHES:

- SIDING-METAL OR VINYL- 2"x6" @12" O/C
- STUCCO -2"x6" @16" O/C
- BRICK TO 4'-0" -2"x6" @16" O/C
- BRICK FULL HEIGHT -2-2"x6" @12" O/C

40. TYPICAL 1 HOUR RATED PARTYWALL. REFER TO DETAILS FOR TYPE AND SPECIFICATIONS.

41. STRIP FOOTING SUPPORTING EXTERIOR WALLS
-SEE OBC 9.15.3.
-ASSUMING MASONRY VENEER CONSTRUCTION, MAX. FLOOR LIVE LOAD OF 2.4KPa. (50psf.) PER FLOOR, AND MAX. LENGTH OF SUPPORTED FLOOR JOISTS IS 4.9m (16'-1"). THE STRIP FOOTING SIZE IS AS FOLLOWS:
2 STOREY (STANDARD) 500x155 (20"x6")
2 STOREY (WALK-OUT BASEMENT) 545x175 (22"x7")
(UNLESS OTHERWISE NOTED ON PLAN)

42. EXTERIOR WALLS FOR WALK-OUT CONDITIONS THE EXTERIOR BASEMENT STUD WALL TO BE 38x140 (2"x6") STUDS @ 16" o.c. QR 38x89 (2"x4") STUDS @ 12"o.c.

43. FLASHING FOR EXT. WALL OPENINGS (O.B.C.9.27.3.8.(3))

44. SUMP PITS (WHERE REQ'D) SEE O.B.C. 9.14.5.2
-MUST BE SEALED AS PER 9.25.3.3.(16)

Certified Permit Document

A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20



WINDOWS:

- MINIMUM BEDROOM WINDOW -OBC. 9.9.10. AT LEAST ONE BEDROOM WINDOW ON A GIVEN FLOOR IS TO HAVE MIN. 0.35m2 UNOBSTRUCTED GLAZED OR OPENABLE AREA WITH MIN. CLEAR WIDTH OF 380 mm (1'-3").
- WINDOW GUARDS -OBC. 9.8.8.1. A GUARD IS REQUIRED WHERE THE TOP OF THE WINDOW SILL IS LOCATED LESS THAN 480mm (1'-7") ABOVE FIN. FLOOR AND THE DISTANCE FROM THE FIN. FLOOR TO THE ADJACENT GRADE IS GREATER THAN 1800mm (5'-11")
- ALL WINDOWS TO COMPLY WITH THERMAL RESISTANCE REQUIREMENTS STATED IN OBC 12.3.2.6. AND SB12 PRESCRIPTIVE COMPLIANCE PACKAGE, AND OBC 9.5, 9.6, 9.7

GENERAL

- MECHANICAL VENTILATION IS REQUIRED TO PROVIDE 0.3 AIR CHANGES PER HOUR AVERAGED OVER 24 HOURS. SEE MECHANICAL DRAWINGS.
- ALL DOWNSPOUTS TO DRAIN AWAY FROM THE BUILDINGAS PER OBC 9.26.18.2 AND MUN. STANDARDS.
- ALL WINDOW WELLS TO DRAIN TO FOOTING LEVEL PER OBC 9.14.6.3 CHECK WITH LOCAL AUTHORITY.
- PROVIDE STUD WALL REINFORCEMENT FOR FUTURE GRAB BARS IN BATHROOMS. REINF. OF STUD WALLS SHALL BE INSTALLED ADJACENT TO WATER CLOSETS AND SHOWER OR BATHTUB IN MAIN BATHROOM, SEE OBC 9.5.2.3.

LUMBER:

- ALL LUMBER SHALL BE SPRUCE NO.2 GRADE, UNLESS NOTED OTHERWISE.
- STUDS SHALL BE STUD GRADE SPRUCE, UNLESS NOTED OTHERWISE.
- LUMBER EXPOSED TO THE EXTERIOR TO BE SPRUCE No.2 GRADE PRESSURE TREATED OR CEDAR, UNLESS NOTED OTHERWISE.
- ALL LAMINATED VENEER LUMBER (L.V.L.) BEAMS, GIRDER TRUSSES, AND METAL HANGER CONNECTIONS SUPPORTING ROOF FRAMING TO BE DESIGNED & CERTIFIED BY TRUSS MANUF.
- LVL BEAMS SHALL BE 2.0E WS MICRO-LAM LVL (Fb=2800psi.MIN.) OR EQUIVALENT. NAIL EACH PLY OF LVL WITH 89mm (3 1/2") LONG COMMON WIRE NAILS @ 300mm (12") O.C. STAGGERED IN 2 ROWS FOR 184, 240 & 300mm (7 1/4",9 1/2", 11 7/8") DEPTHS AND STAGGERED IN 3 ROWS FOR GREATER DEPTHS AND FOR 4 PLY MEMBERS ADD 13mm (1/2") DIA. GALVANIZED BOLTS BOLTED AT MID-DEPTH OF BEAM @ 915mm (3'-0") O.C.
- PROVIDE TOP MOUNT BEAM HANGERS TYPE "SCL" MANUFACTURED BY MGA CONNECTOR LTD. Tel. (905) 642-3175 OR EQUAL FOR ALL LVL BEAM TO BEAM CONNECTIONS UNLESS OTHERWISE NOTED.
- JOIST HANGERS: PROVIDE METAL HANGERS FOR ALL JOISTS AND BUILT-UP WOOD MEMBERS INTERSECTING FLUSH BUILT-UP WOOD MEMBERS.
- WOOD FRAMING NOT TREATED WITH A WOOD PRESERVATIVE, IN CONTACT WITH CONCRETE, SHALL BE SEPARATED FROM THE CONCRETE BY AT LEAST 2 mil. POLYETHYLENE FILM, No. 50 (45lbs.) ROLL ROOFING OR OTHER DAMPPROOFING MATERIAL, EXCEPT WHERE THE WOOD MEMBER IS ST LEAST 150mm (6") ABOVE THE GROUND.

STEEL:

- STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA-G40-21 GRADE 300W. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO CAN/CSA-G40-21 GRADE 350W CLASS "H".
- REINFORCING STEEL SHALL CONFORM TO CSA-G30-18M GRADE 400R.

WOOD LINTELS AND BUILT-UP WOOD BEAMS

L1 2/38 x 184 (2/2" x 8") SPR.#2
B1 3/38 x 184 (3/2" x 8") SPR.#2
B2 4/38 x 184 (4/2" x 8") SPR.#2

L3 2/38 x 235 (2/2" x 10") SPR.#2
B3 3/38 x 235 (3/2" x 10") SPR.#2
B4 4/38 x 235 (4/2" x 10") SPR.#2

L5 2/38 x 286 (2/2" x 12") SPR.#2
B5 3/38 x 286 (3/2" x 12") SPR.#2
B6 4/38 x 286 (4/2" x 12") SPR.#2

LAMINATED VENEER LUMBER (LVL) BEAMS

LVL1 2-1 3/4"x7 1/4" (2-45x184)
LVL2 3-1 3/4"x7 1/4" (3-45x184)
LVL3 4-1 3/4"x7 1/4" (4-45x184)
LVL4 2-1 3/4"x9 1/2" (2-45x240)
LVL5 3-1 3/4"x9 1/2" (3-45x240)
LVL6 2-1 3/4"x11 7/8" (2-45x300)
LVL7 3-1 3/4"x11 7/8" (3-45x300)

LOOSE STEEL LINTELS

L7 90 x 90 x 6.0L (3-1/2" x 3-1/2" x 1/4"L)
L8 90 x 90 x 8.0L (3-1/2" x 3-1/2" x 5/16"L)
L9 100 x 90 x 8.0L (4" x 3-1/2" x 5/16"L)
L10 125 x 90 x 8.0L (5" x 3-1/2" x 5/16"L)
L11 125 x 90 x 10.0L (5" x 3-1/2" x 3/8"L)
L12 150 x 100 x 10.0L (6"x 4" x 3/8"L)

STEEL COLUMNS (UNLESS NOTED OTHERWISE)

TP = (1) 3" DIA. ADJ. ST. POST
2TP = (2) 3" DIA. ADJ. ST. POSTS
HSS = 3.5"x3.5" HOLLOW STRUCTURAL SECTION STEEL POST

LEGEND

EXHAUST VENT
DUPLEX OUTLET (12" HIGH)

WEATHERPROOF DUPLEX OUTLET
HEAVY DUTY OUTLET

POT LIGHT

LIGHT FIXTURE (CEILING MOUNTED)

LIGHT FIXTURE (WALL MOUNTED)

SWITCH
SWITCH (3-WAY)

FLOOR DRAIN

HOSE BIB

DOUBLE JOIST

LVL LAMINATED VENEER LUMBER

POINT LOAD FROM ABOVE

P.T. PRESSURE TREATED LUMBER

G.T. GIRDER TRUSS BY ROOF TRUSS MANUF.

F.A. FLAT ARCH

C.A. CURVED ARCH

M.C.

MEDICINE CABINET

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DOUBLE VOLUME WALL SEE NOTE 39.

W

SOLID WOOD BEARING

P2

P2 - 2 MEMBER BUILT-UP STUD

P3

P3 - 3 MEMBER BUILT-UP STUD

P4

P4 - 4 MEMBER BUILT-UP STUD

P5

P5 - 5 MEMBER BUILT-UP STUD

NOTE: SOLID BEARING TO BE AS WIDE AS SUPPORTED MEMBER. SOLID BEARING TO BE A MINIMUM OF P2 (ONE CONTINUOUS STUD AND ONE JACK STUD, UNLESS OTHERWISE NOTED ON PLAN.)

S.A.

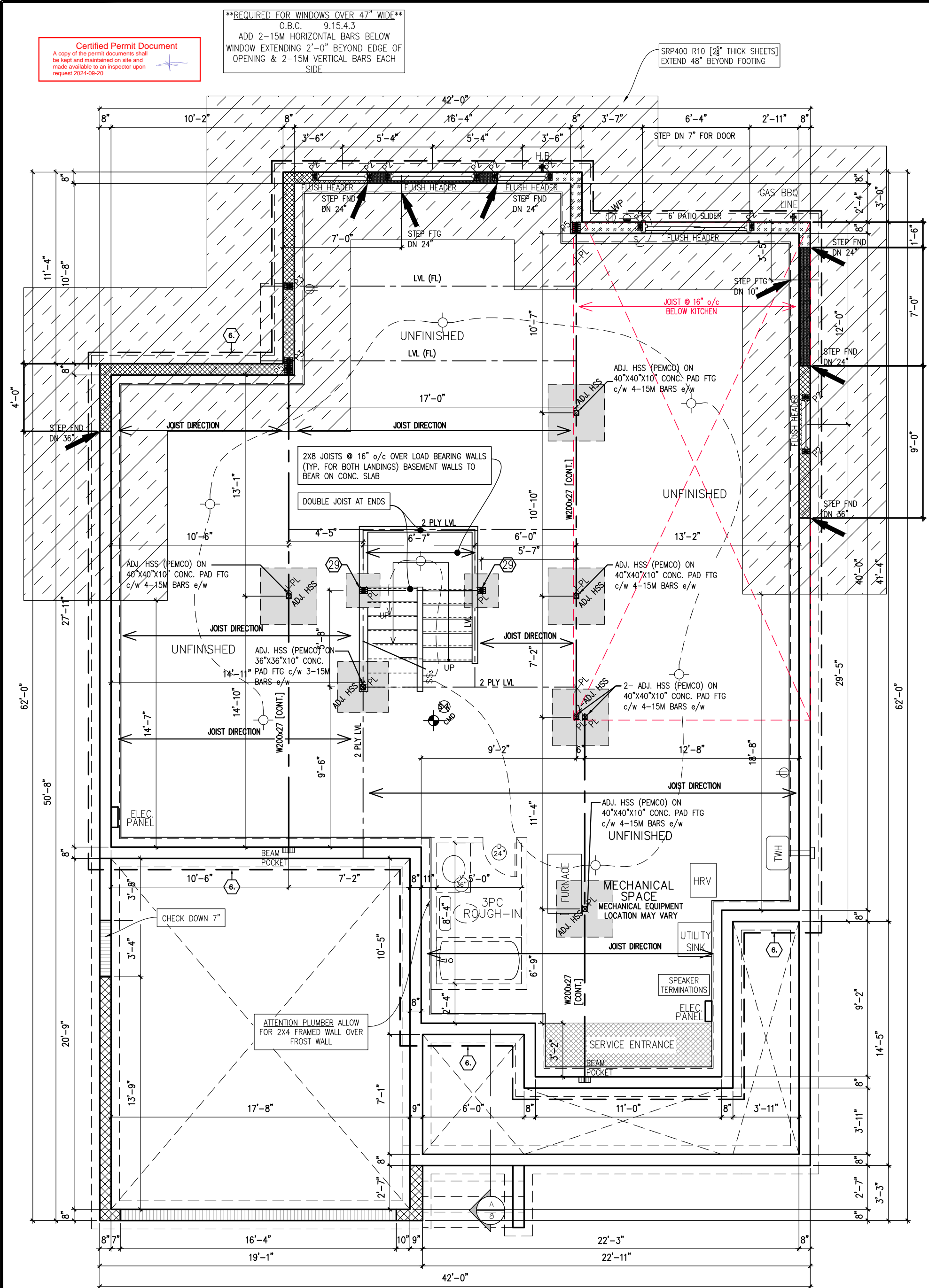
SMOKE ALARM (AUDIBLE/VISUAL)-OBC 9.10.19.
PROVIDE 1 PER FLOOR, NEAR THE STAIRS CONNECTING THE FLOOR LEVEL. ONE PER SLEEPING ROOM, INCLUDING HALLWAYS BE CONNECTED TO AN ELECTRICAL CIRCUIT AND INTERCONNECTED TO ACTIVATE ALL ALARMS WHEN ONE ALARM SOUNDS.
-9.10.19.1(2) REQUIRED SMOKE ALARMS TO HAVE A VISUAL COMPONENT

C.M.A.

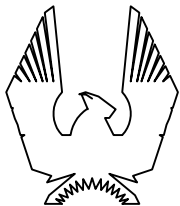
CARBON MONOXIDE ALARM (OBC 9.33.4)
WHERE A FUEL-BURNING APPLIANCE IS INSTALLED IN A DWELLING UNIT, A CARBON MONOXIDE ALARM CONFORMING TO CAN/CSA-6.19, CSA 6.19 OR UL2034 SHALL BE INSTALLED ADJACENT TO EACH SLEEPING AREA. CARBON MONOXIDE ALARM(S) SHALL BE PERMANENTLY WIRED SO THAT ITS ACTIVATION WILL ACTIVATE ALL CARBON MONOXIDE ALARMS AND BE EQUIPPED WITH AN ALARM THAT IS AUDIBLE WITHIN BEDROOMS WHEN THE INTERVENING DOORS ARE CLOSED.

SOIL GAS CONTROL (OBC 9.13.1. & 9.13.4. & SB9) PROVIDE CONSTRUCTION TO PREVENT LEAKAGE OF SOIL GAS INTO THE BUILDING WHERE REQUIRED. (SEE ALSO O.B.C. 9.1.1.7.(1))

CONTRACTOR MUST VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO THE BUILDER BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS. USE



FOUNDATION PLAN (ALL ELEVATIONS)



PHOENIX HOMES

NEWINGTON M – 2021

SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER: **146**

CIVIC ADDRESS:
169 FRANK FISHER CRESCENT

11	EXAMINER COMMENTS	26/08/24	SP
10	MAIN BATH – SECOND SINK ADDED	25/09/23	CB
9	FINAL BLACKLINES – REVISED	26/07/23	SP
8	FINAL BLACKLINES	13/07/23	CB
7	BEP BLACKLINES	30/05/23	CB
6	PRELIM BLACKLINES	30/03/23	CB
No.	Description	dd/mm/yy	By
REVISIONS			

footprint: 518

drawn by: SP

date: JUN 12/16

scale: 3/16"=1'-0"

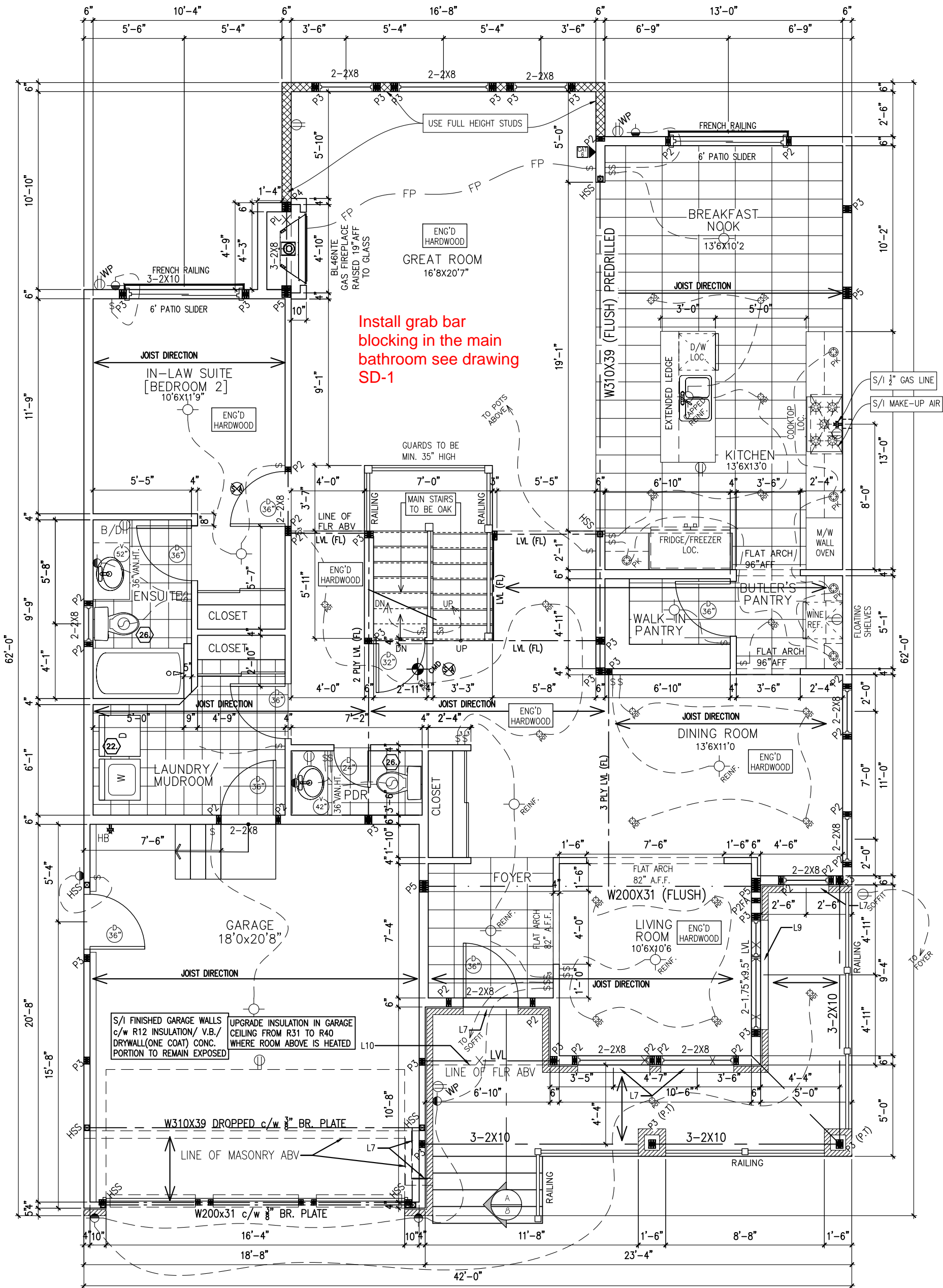
D.C.L. – A5

sheet no:

2M of 8

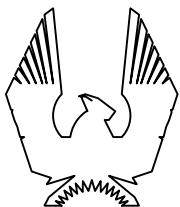
Certified Permit Document
A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20

****NOTE****
ALL WINDOW LINTELS TO BE 2-2X10
W/ P2 POSTS ON EACH SIDE U.N.O.



GROUND FLOOR PLAN (M ELEVATION)
1782 SQ. FT.

FLAT CEILINGS THROUGHOUT / NO STIPPLE
-BYPASS SLIDERS FOR ALL SLIDING CLOSET DOORS



PHOENIX HOMES

NEWINGTON M – 2021

SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER:

146

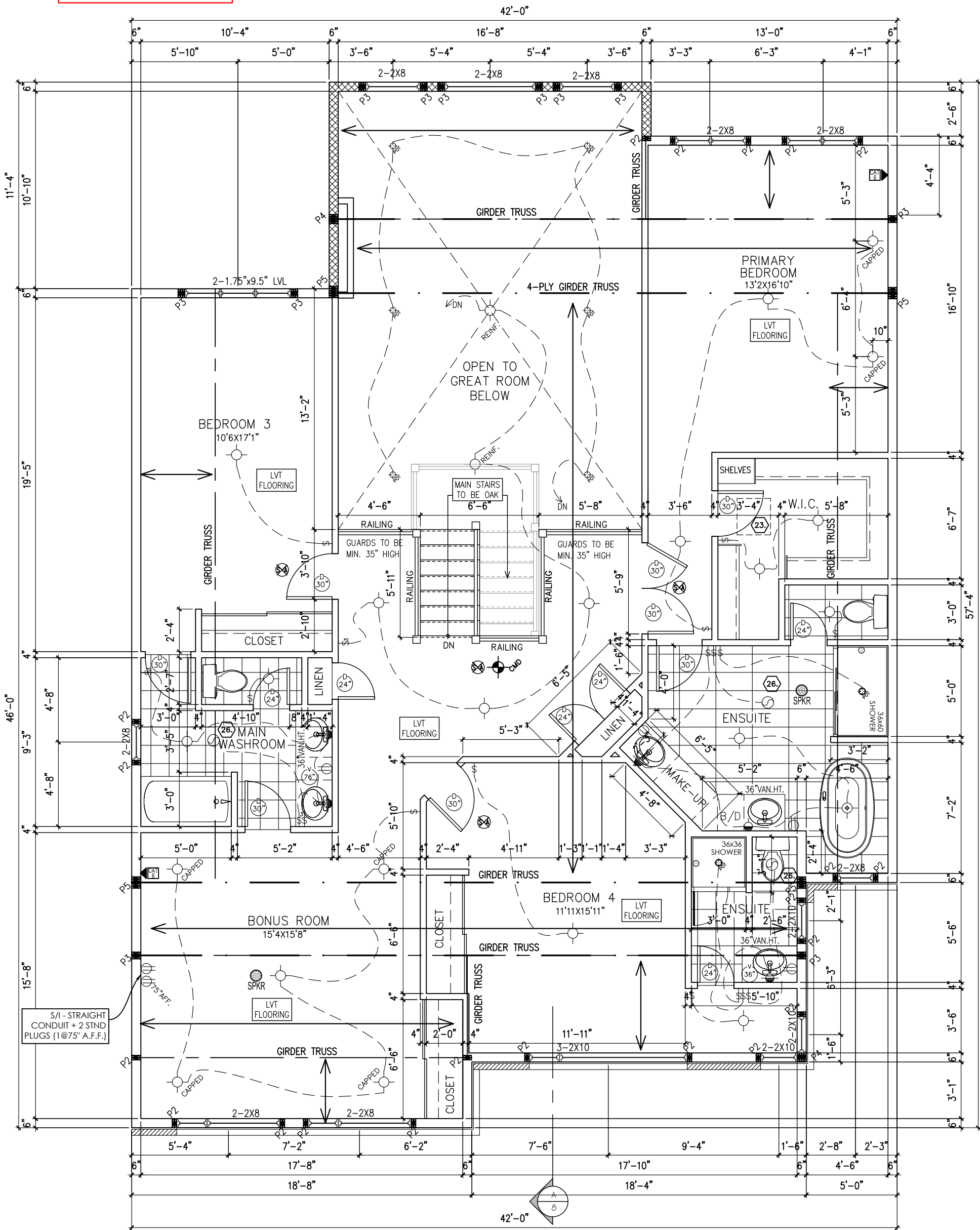
CIVIC ADDRESS:
169 FRANK FISHER CRESCENT

11	EXAMINER COMMENTS	26/08/24	SP
10	MAIN BATH – SECOND SINK ADDED	25/09/23	CB
9	FINAL BLACKLINES – REVISED	26/07/23	SP
8	FINAL BLACKLINES	13/07/23	CB
7	BEP BLACKLINES	30/05/23	CB
6	PRELIM BLACKLINES	30/03/23	CB
No. Description		dd/mm/yy	By
REVISIONS			

footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. – A5	
sheet no:	3M of 8
MM Page 4 of 39	

****NOTE****
ALL WINDOW LINTELS TO BE 2-2X10
W/ P2 POSTS ON EACH SIDE U.N.O.

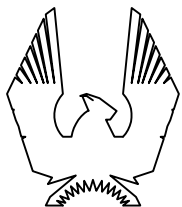
Certified Permit Document
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SECOND FLOOR PLAN (ELEVATION M)

1672 SQ. FT.

-FLAT CEILINGS THROUGHOUT / NO STIPPLE
-BYPASS SLIDERS FOR ALL SLIDING CLOSET DOORS



PHOENIX HOMES

NEWINGTON M – 2021

SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER:

146

CIVIC ADDRESS:
169 FRANK FISHER CRESCENT

11	EXAMINER COMMENTS	26/08/24	SP
10	MAIN BATH – SECOND SINK ADDED	25/09/23	CB
9	FINAL BLACKLINES – REVISED	26/07/23	SP
8	FINAL BLACKLINES	13/07/23	CB
7	BEP BLACKLINES	30/05/23	CB
6	PRELIM BLACKLINES	30/03/23	CB
No.	Description	dd/mm/yy	By
REVISIONS			

footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. – A5	
sheet no:	4M of 8

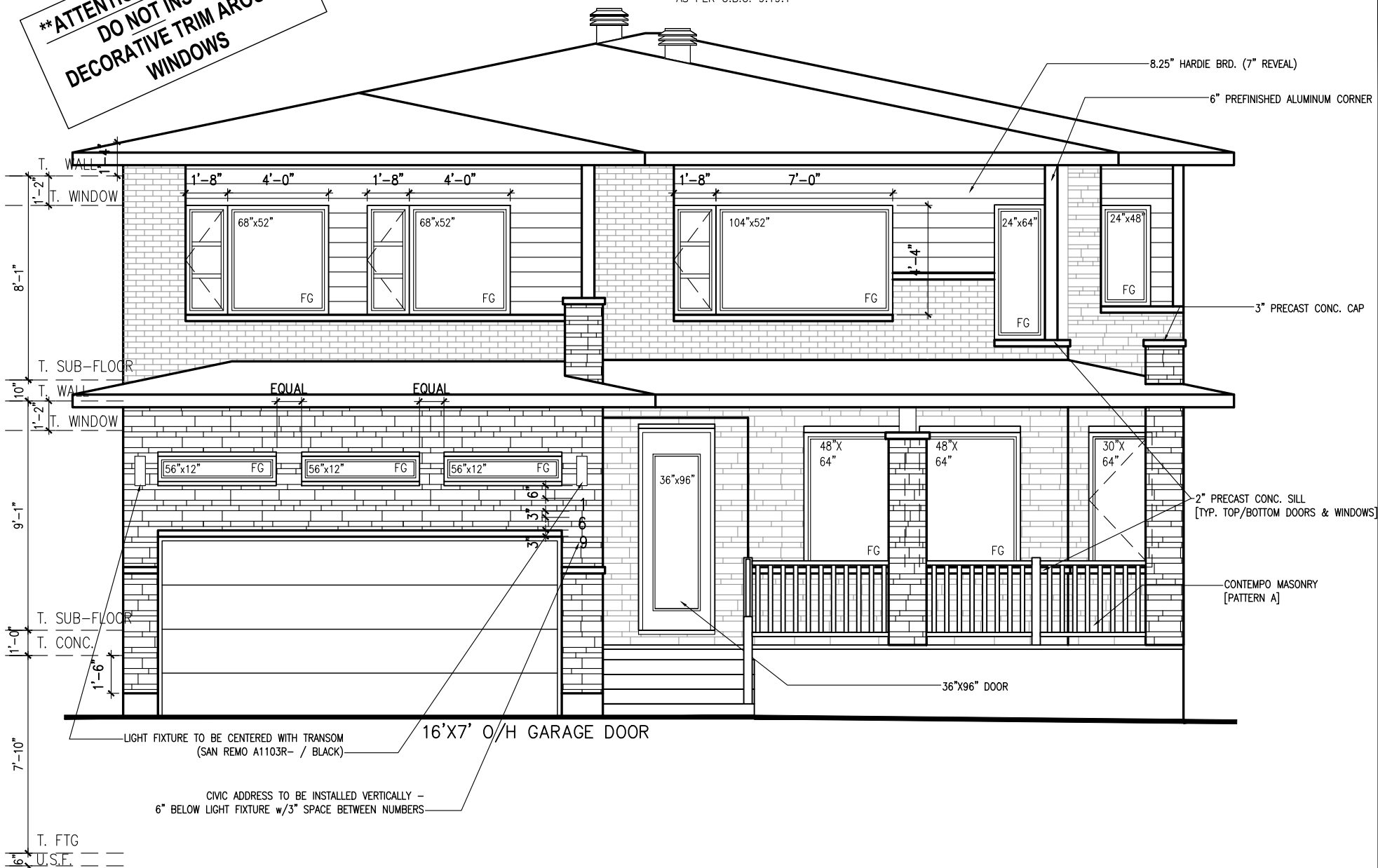
MM Page 5 of 39

****ATTENTION SIDING CREW****
DO NOT INSTALL
DECORATIVE TRIM AROUND
WINDOWS

S/I MAXI-VENT ATTIC VENTILATION
AS PER O.B.C. 9.19.1

Certified Permit Document

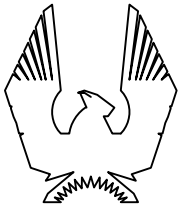
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made available to an inspector upon
request 2024-09-20



ELEVATION M

SRP400 R10 [28" THICK SHEETS]
EXTEND 48" BEYOND FOOTING

NOTE: BACKFILL HEIGHT NOT TO EXCEED
3'-11" MAX. FROM T/SLAB WHERE
FOUNDATION IS NOT LATERALLY SUPPORTED



PHOENIX HOMES

NEWINGTON M – 2021

SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER:

CIVIC ADDRESS:
169 FRANK FISHER CRESCENT

146

11	EXAMINER COMMENTS	26/08/24	SP
10	MAIN BATH – SECOND SINK ADDED	25/09/23	CB
9	FINAL BLACKLINES – REVISED	26/07/23	SP
8	FINAL BLACKLINES	13/07/23	CB
7	BEP BLACKLINES	30/05/23	CB
6	PRELIM BLACKLINES	30/03/23	CB
No.	Description	dd/mm/yy	By
REVISIONS			

footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. – A5	
sheet no:	5M of 8

MM Page 6 of 39



RIGHT SIDE ELEVATION M

****ATTENTION SIDING CREW****
DO NOT INSTALL
DECORATIVE TRIM AROUND
WINDOWS

footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. - A5	
sheet no:	

No.	Description	By
11	EXAMINER COMMENTS	
10	MAIN BATH - SECOND SINK ADDED	
9	FINAL BLACKLINES - REVISED	
8	FINAL BLACKLINES	
7	BEP BLACKLINES	
6	PRELIM BLACKLINES	
	ad/mm/yy	

NEWINGTON M - 2021

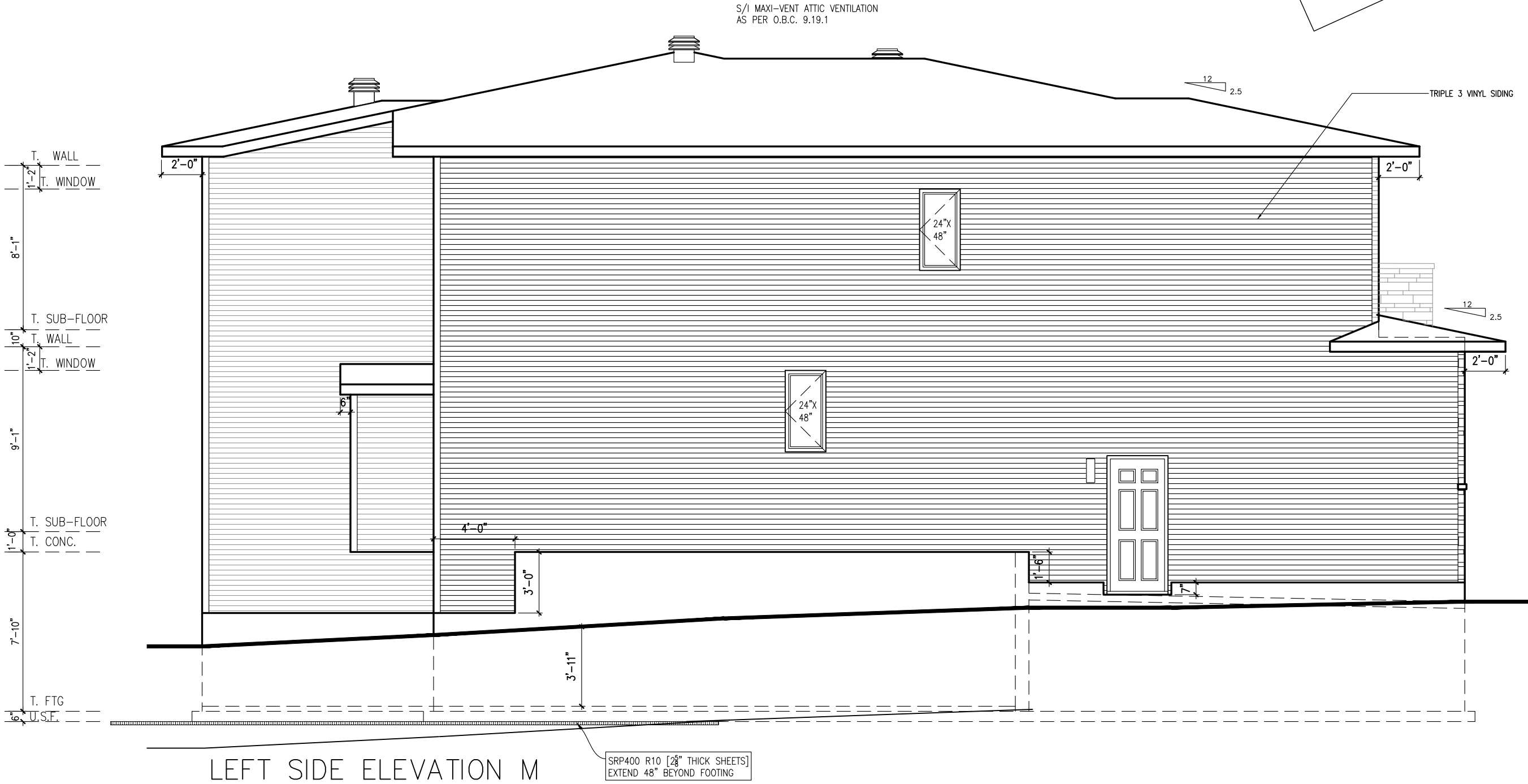
SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER: 146

CIVIC ADDRESS: 169 FRANK FISHER CRESCENT

PHOENIX HOMES

****ATTENTION SIDING CREW****
DO NOT INSTALL
DECORATIVE TRIM AROUND
WINDOWS



NOTE: BACKFILL HEIGHT NOT TO EXCEED
3'-11" MAX. FROM T/SLAB WHERE
FOUNDATION IS NOT Laterally SUPPORTED

footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. - A5	sheet no:
7M of	8

11	EXAMINER COMMENTS	26/08/24	SP
10	MAIN BATH - SECOND SINK ADDED	25/09/23	CB
9	FINAL BLACKLINES - REVISED	26/07/23	SP
8	FINAL BLACKLINES	13/07/23	CB
7	BEP BLACKLINES	30/05/23	CB
6	PRELIM BLACKLINES	30/03/23	CB
No.	Description	dd/mm/yy	By
REVISIONS			

NEWINGTON M - 2021

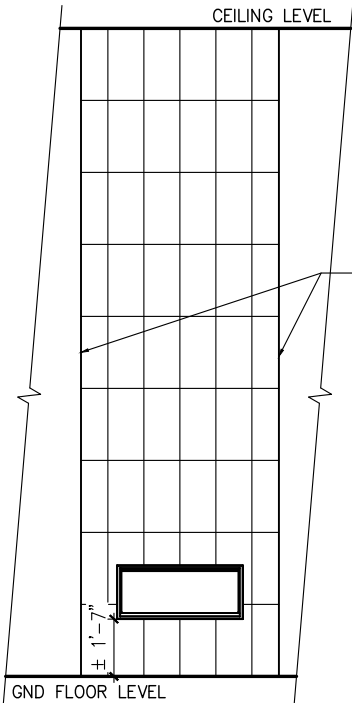
SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER: 146

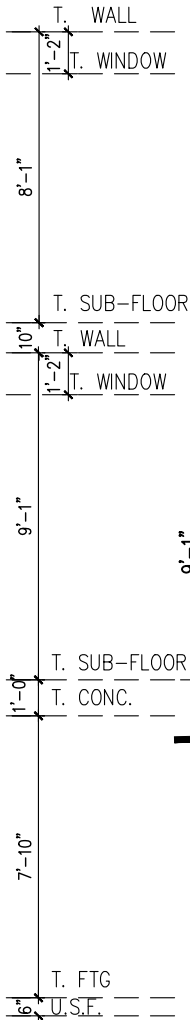
CIVIC ADDRESS: 169 FRANK FISHER CRESCENT

PHOENIX HOMES

Certified Permit Document
A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20



FIREPLACE ELEVATION
UPGRADE BL46NTE FIREPLACE SHOWN



SECTIONS ELEVATION M

SECTION A-A

ROOF PLAN

W310X39

FACE MOUNT
JOIST HANGER

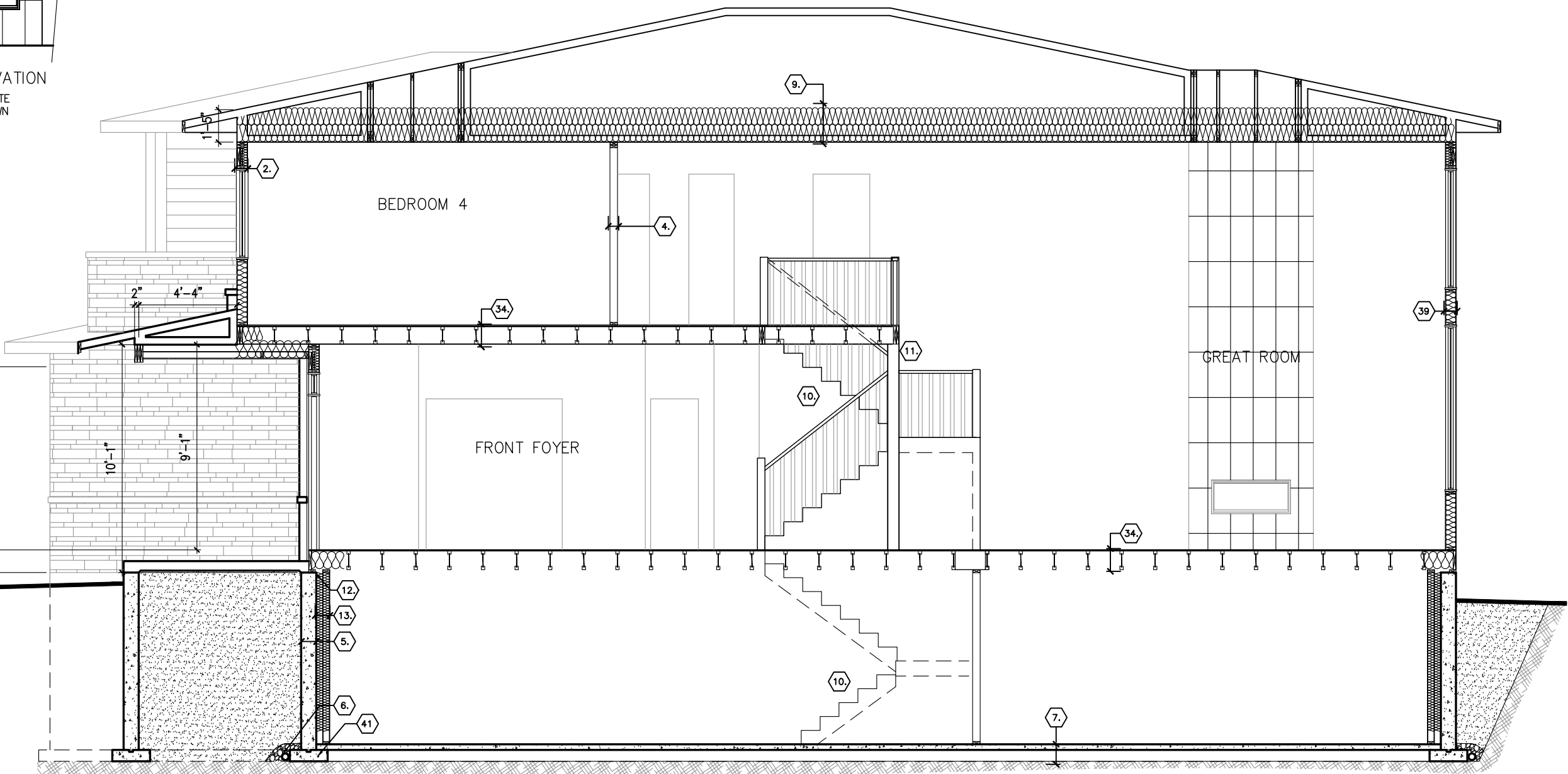
1/2" A307 GRADE
THRU BOLTS @
24" c.c. STAGGERED

SECOND FLOOR

9 1/2" TJI

SOLID BLOCKING
BETWEEN BEAM FLANGES
(SHIM TIGHT)

SECTION B-B
STEEL BEAM SECTION DETAIL



footprint:	518
drawn by:	SP
date:	JUN 12/16
scale:	3/16"=1'-0"
D.C.L. - A5	8M of 8
sheet no:	

EXAMINER COMMENTS	SP	CB	SP	CB	CB	By
11 MAIN BATH - SECOND SINK ADDED	26/08/24	25/09/23	26/07/23	13/07/23	30/05/23	ad/mm/yy
9 FINAL BLACKLINES - REVISED						
8 FINAL BLACKLINES						
7 BEP BLACKLINES						
6 PRELIM BLACKLINES						
No. Description						
REVISIONS						

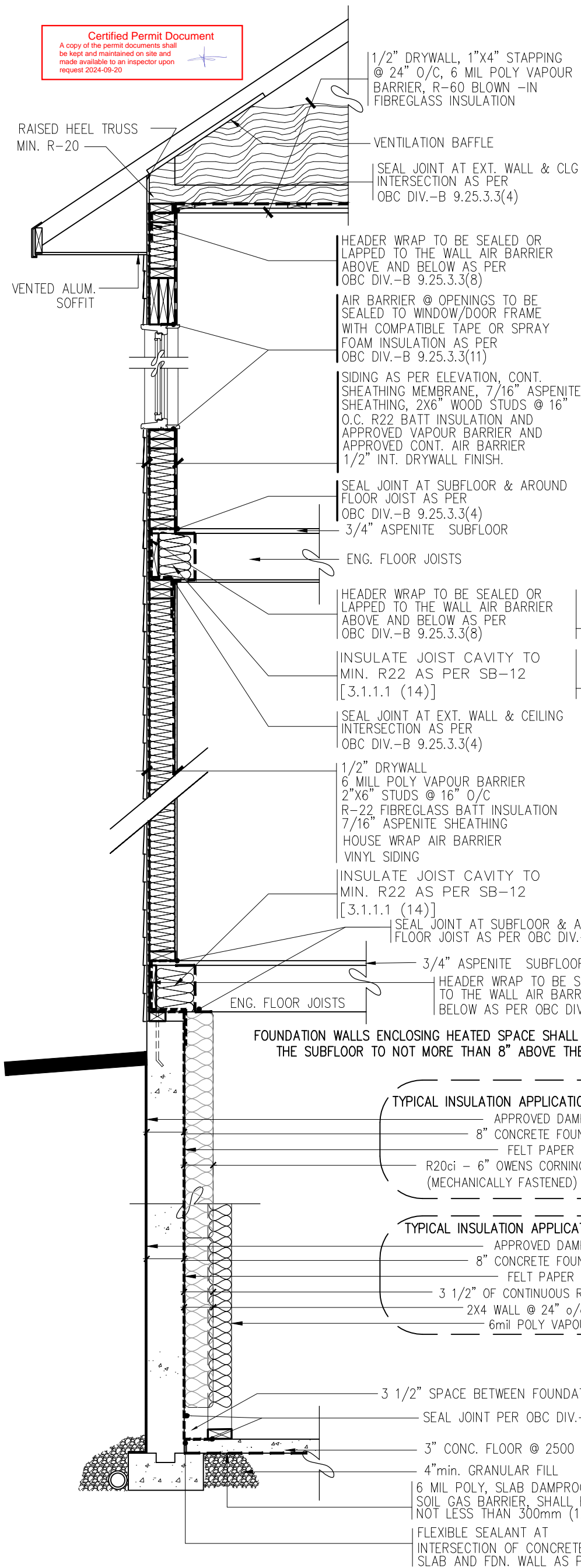
NEWINGTON M - 2021

SITE: WHITE TAIL RIDGE PH.4

LOT NUMBER: 146

CIVIC ADDRESS: 169 FRANK FISHER CRESCENT

PHOENIX HOMES



PART TYP. DETAIL SECTION
FOR SIDING APPLICATION

NOTES:

MECHANICAL
SPACE HEATING EQUIPMENT AS PER COMPLIANCE PACKAGE A1 OF SB-12 [TABLE 3.1.1.2.A(IP)]
AIR BARRIERS AS PER OBC 9.25.3
ALL JOINTS TO HAVE A MIN. OVERLAP OF 4"
ALL JOINTS TAPED TO MANUFACTURER'S SPECIFICATIONS
ALL FASTENERS AS PER MANUFACTURER'S SPECIFICATIONS
ALL PENETRATIONS SEALED TO MAINTAIN A CONTINUOUS AIR BARRIER

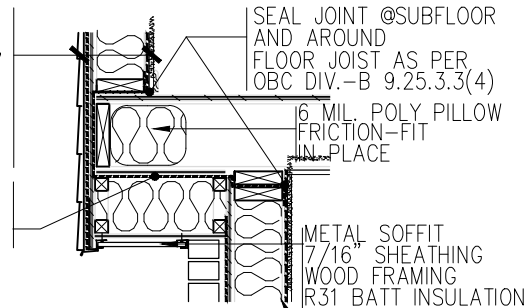
NOTES FROM OBC SB-9 SECTION 3.3 (SEALING THE PERIMETER & PENETRATIONS)

- (1) A FLOOR-ON-GROUND SHALL BE SEALED AROUND ITS PERIMETER TO THE INNER SURFACES OF ADJACENT WALL USING FLEXIBLE SEALANT.
- (2) ALL PENETRATIONS OF A FLOOR-ON-GROUND BY PIPES OR OTHER OBJECTS SHALL BE SEALED AGAINST SOIL GAS LEAKAGE.
- (3) ALL PENETRATIONS OF A FLOOR-ON-GROUND THAT ARE REQUIRED TO DRAIN WATER FROM THE FLOOR SURFACE SHALL BE SEALED IN A MANNER THAT PREVENTS THE UPWARD FLOW OF SOIL GAS WITHOUT PREVENTING THE DOWNWARD FLOW OF LIQUID WATER.

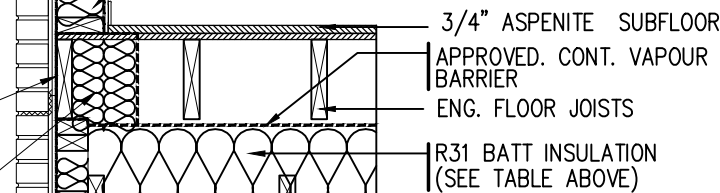
SIDING AS PER ELEVATION, CONT. SHEATHING MEMBRANE, 7/16" ASPENITE SHEATHING, 2X6" WOOD STUDS @ 16" O.C. R22 BATT INSULATION AND APPROVED VAPOUR BARRIER AND APPROVED CONT. AIR BARRIER 1/2" INT. DRYWALL FINISH.

SPUNBONDED OLEFIN AIR BARRIER SEALED & SECURED WITH WOOD BLOCKING & 1/2" PLYWOOD SHEATHING

DETAIL SECTION
(CANTILEVERED FLOOR)



(SEE BELOW FOR WALL CONST.)

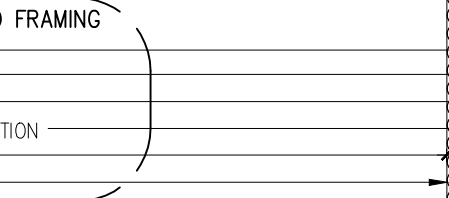
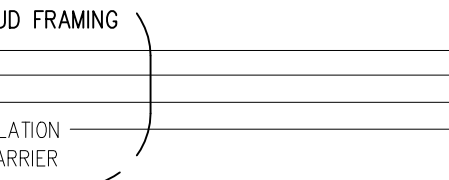


DETAIL SECTION
(BET. GARAGE & HEATED SPACE ABOVE)

TYPICAL BRICK VENEER WALL, 4" FACE BRICK 1" AIR SPACE, GALV. METAL TIES @ 16" O.C. HOR., 24" VERT. APPROVED SHEATHING PAPER EXTERIOR TYPE SHEATHING, 2X6" WOOD STUDS @ 16" O.C., R22 INSULATION AND APPROVED VAPOUR BARRIER WITH APPROVED CONT. AIR BARRIER, 1/2" INT. DRYWALL FINISH. PROVIDE WEEP HOLES @ 32" O.C. BOTTOM COURSE & OVER OPENINGS, PROVIDE BASE FLASHING UP 6" MIN. BEHIND BUILDING PAPER.

ENG. FLOOR JOISTS

FOUNDATION WALLS ENCLOSING HEATED SPACE SHALL BE INSULATED FROM THE UNDERSIDE OF THE SUBFLOOR TO NOT MORE THAN 8" ABOVE THE FINISHED FLOOR OF THE BASEMENT.



3 1/2" SPACE BETWEEN FOUNDATION WALL & 2X4 STUDS

SEAL JOINT PER OBC DIV.-B 9.25.3.3.(1)

3" CONC. FLOOR @ 2500 PSI

4"min. GRANULAR FILL

6 MIL POLY, SLAB DAMPROOFING AND SOIL GAS BARRIER, SHALL BE LAPPED NOT LESS THAN 300mm (12") AS PER SB-9

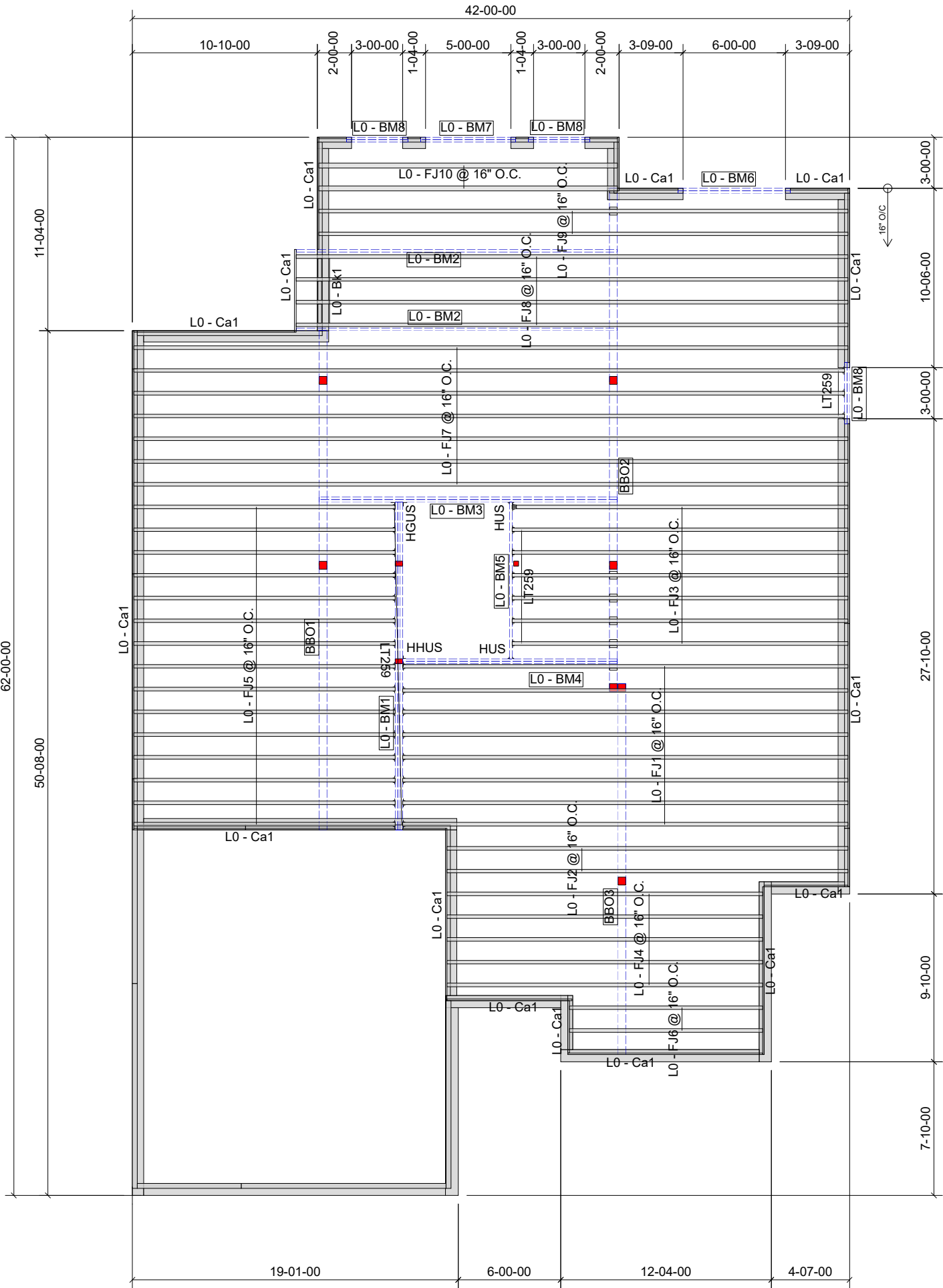
FLEXIBLE SEALANT AT INTERSECTION OF CONCRETE SLAB AND FDN. WALL AS PER SB-9

PART TYP. DETAIL SECTION
FOR BRICK VENEER APPLICATION

SB-12 COMPLIANCE PACKAGE
DETAILS (ALL MODELS)

3	SB-12 - 2017 UPDATE	JAN - 2017	SP
2	ADDED CANTILEVERED FLOOR DETAIL	MAR28-12	TL
1	OBC SB-9 & SB-12 COMPLIANCE PACKAGE	JAN22-12	TL
No.	Description	Date	By
REVISIONS			

footprint:	
drawn by:	SP
date:	
scale:	N/A
sheet no:	
	SB-12 DETAILS



GLUED AND NAILED

LEVEL AND FLOOR CONTAINER NOTES	
Current Date:	9/12/2023
File Name:	WTR4-146 Newington M.mmdl
Level Name:	1st Floor
Building Code - Design Methodology:	NBCC 2015
Floor Container:	FC1
Floor Area Loading is:	40 Live Load & 15 Dead Load
Maximum Allowed Deflection	L/480 Live Load & L/240 Total Load

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
L0 - FJ1 @ 16" O.C.	28-00-00	9 1/2" NI-20	1	8	MFD
L0 - FJ2 @ 16" O.C.	24-00-00	9 1/2" NI-20	1	2	MFD
L0 - FJ3 @ 16" O.C.	20-00-00	9 1/2" NI-20	1	7	MFD
L0 - FJ4 @ 16" O.C.	19-00-00	9 1/2" NI-20	1	5	MFD
L0 - FJ5 @ 16" O.C.	16-00-00	9 1/2" NI-20	1	15	MFD
L0 - FJ6 @ 16" O.C.	12-00-00	9 1/2" NI-20	1	2	MFD
L0 - FJ7 @ 16" O.C.	42-00-00	9 1/2" NI-40x	1	7	MFD
L0 - FJ8 @ 16" O.C.	34-00-00	9 1/2" NI-40x	1	4	MFD
L0 - FJ9 @ 16" O.C.	32-00-00	9 1/2" NI-40x	1	2	MFD
L0 - FJ10 @ 16" O.C.	18-00-00	9 1/2" NI-80	1	2	MFD
L0 - BM1	20-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3	MFD
L0 - BM2	19-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	2	MFD
L0 - BM3	18-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM4	13-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM5	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1	MFD
L0 - BM6	7-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM7	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM8	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	6	MFD
L0 - Ca1	12-00-00	1 1/8" x 9 1/2" APA Rim Board	1	14	FF
L0 - Bk1	4-00-00	9 1/2" NI-20	1	1	FF

Accessories					
PlotID	Length	Product	Plies	Net Qty	Fab Type
3/4" Plywood or OSB (23/32" APA Rated Sheathing 48/24 Exposure 1)			1	56	MFD

Connector Summary				
Qty	Manuf	Product	Skew	Supported Mtl
33	SIMPSON	LT259	-	9 1/2" NI-20
2	SIMPSON	HUS18110	-	1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HHUS410	-	2- 1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HGUS55010	-	3- 1 3/4" x 9 1/2" WF LVL

Certified Permit Document
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THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12
- NORDIC LAM CCMC: 13216-R
- NORDIC JOISTS CCMC: 13032-R
- WEST FRASER CCMC: 12904

(REFER TO INDIVIDUAL FLOOR DRAWINGS FOR SPECIFIC LOADS & SPACING)

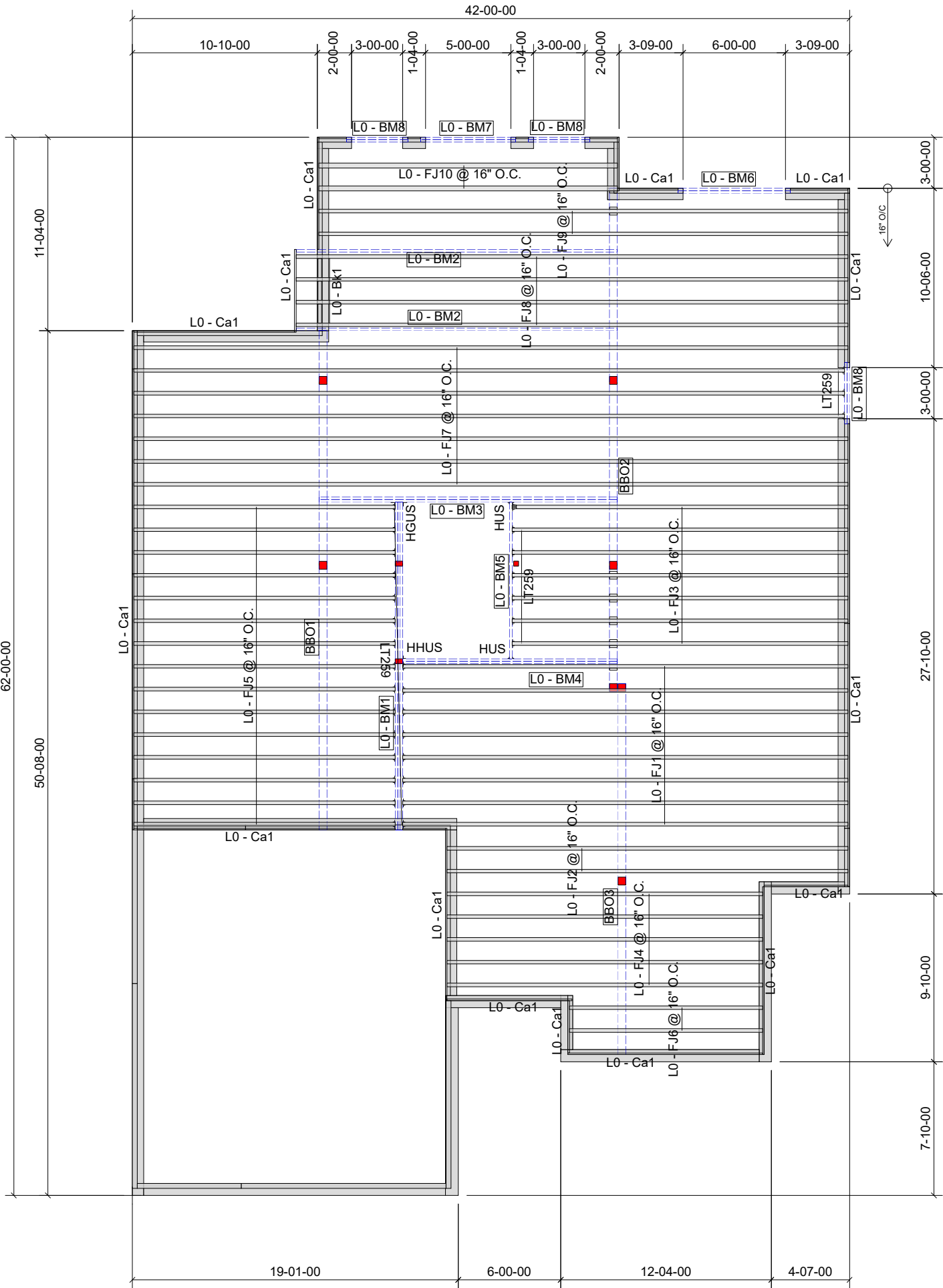
FLOOR NOTES:

- FLOOR JOIST SYSTEMS ABOVE THE GARAGE HAS BEEN DESIGNED WITHOUT A DIRECTLY APPLIED CEILING. USE APPLICABLE BLOCKING OR STRAPPING WHERE REQUIRED AS INDICATED ON THE FRAMING PLAN.
- BLOCKING MATERIAL WILL BE SUPPLIED AND INDICATED AS "BLOCKING". NO LONGER ONLY 12' LENGTHS.



JOB:
PHOENIX HOMES
WHITETAIL RIDGE
WTR4-146
NEWINGTON M
1ST FLOOR 1 OF 2

DATE: 2023-09-13



GLUED AND NAILED

LEVEL AND FLOOR CONTAINER NOTES	
Current Date:	9/12/2023
File Name:	WTR4-146 Newington M.mmdl
Level Name:	1st Floor
Building Code - Design Methodology:	NBCC 2015
Floor Container:	FC1
Floor Area Loading is:	40 Live Load & 15 Dead Load
Maximum Allowed Deflection	L/480 Live Load & L/240 Total Load

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
L0 - FJ1 @ 16" O.C.	28-00-00	9 1/2" NI-20	1	8	MFD
L0 - FJ2 @ 16" O.C.	24-00-00	9 1/2" NI-20	1	2	MFD
L0 - FJ3 @ 16" O.C.	20-00-00	9 1/2" NI-20	1	7	MFD
L0 - FJ4 @ 16" O.C.	19-00-00	9 1/2" NI-20	1	5	MFD
L0 - FJ5 @ 16" O.C.	16-00-00	9 1/2" NI-20	1	15	MFD
L0 - FJ6 @ 16" O.C.	12-00-00	9 1/2" NI-20	1	2	MFD
L0 - FJ7 @ 16" O.C.	42-00-00	9 1/2" NI-40x	1	7	MFD
L0 - FJ8 @ 16" O.C.	34-00-00	9 1/2" NI-40x	1	4	MFD
L0 - FJ9 @ 16" O.C.	32-00-00	9 1/2" NI-40x	1	2	MFD
L0 - FJ10 @ 16" O.C.	18-00-00	9 1/2" NI-80	1	2	MFD
L0 - BM1	20-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3	MFD
L0 - BM2	19-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	2	MFD
L0 - BM3	18-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM4	13-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM5	10-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1	MFD
L0 - BM6	7-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM7	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L0 - BM8	4-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	6	MFD
L0 - Ca1	12-00-00	1 1/8" x 9 1/2" APA Rim Board	1	14	FF
L0 - Bk1	4-00-00	9 1/2" NI-20	1	1	FF

Accessories					
PlotID	Length	Product	Plies	Net Qty	Fab Type
3/4" Plywood or OSB (23/32" APA Rated Sheathing 48/24 Exposure 1)			1	56	MFD

Connector Summary				
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2	SIMPSON	HUS18110	-	1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HHUS410	-	2- 1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HGUS55010	-	3- 1 3/4" x 9 1/2" WF LVL

Certified Permit Document
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THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12
- NORDIC LAM CCMC: 13216-R
- NORDIC JOISTS CCMC: 13032-R
- WEST FRASER CCMC: 12904

(REFER TO INDIVIDUAL FLOOR DRAWINGS FOR SPECIFIC LOADS & SPACING)

FLOOR NOTES:

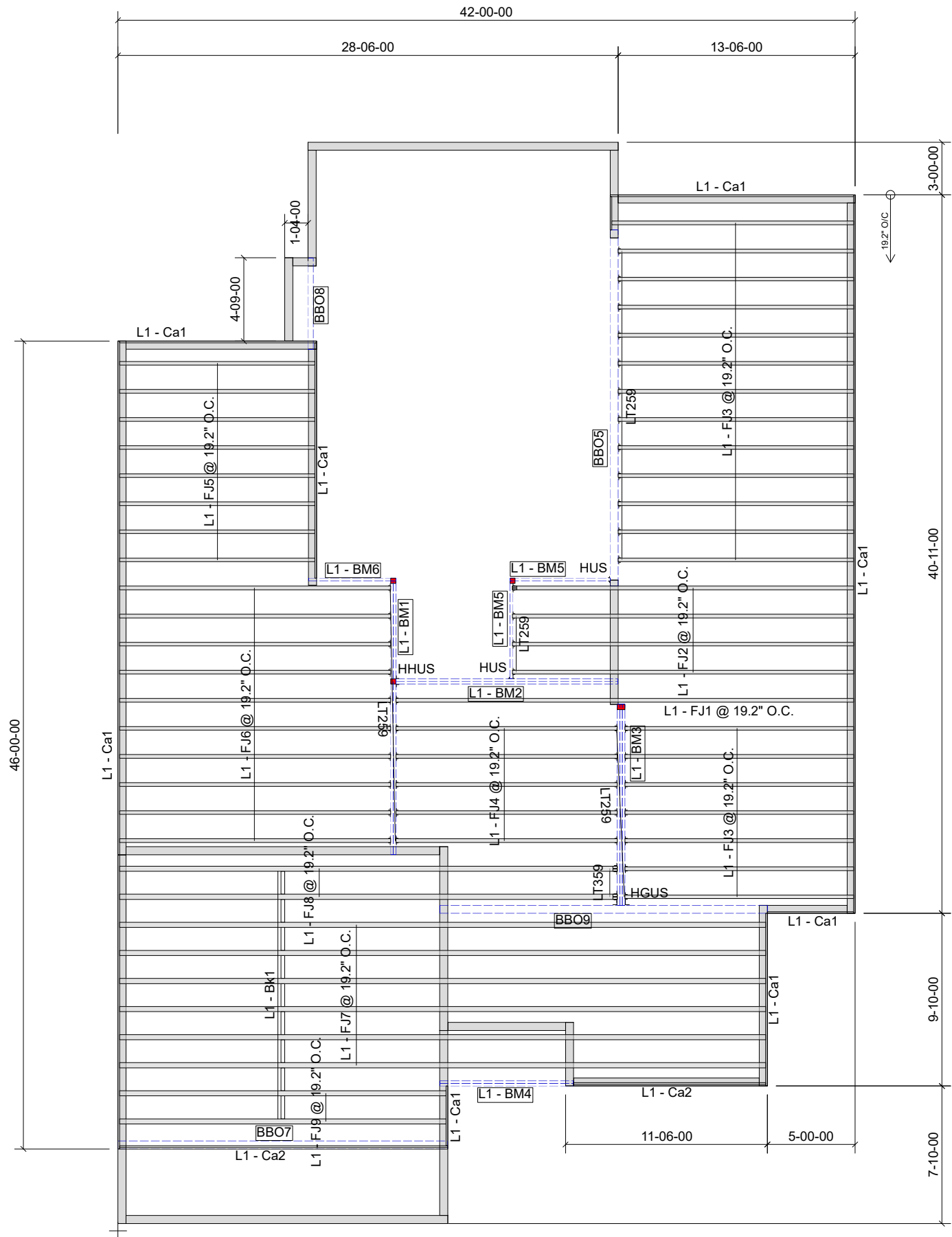
- FLOOR JOIST SYSTEMS ABOVE THE GARAGE HAS BEEN DESIGNED WITHOUT A DIRECTLY APPLIED CEILING. USE APPLICABLE BLOCKING OR STRAPPING WHERE REQUIRED AS INDICATED ON THE FRAMING PLAN.
- BLOCKING MATERIAL WILL BE SUPPLIED AND INDICATED AS "BLOCKING". NO LONGER ONLY 12' LENGTHS.



JOB:
PHOENIX HOMES
WHITETAIL RIDGE
WTR4-146
NEWINGTON M
1ST FLOOR 1 OF 2

DATE: 2023-09-13

MM Page 13 of 39
2023-09-13



GLUED AND NAILED

LEVEL AND FLOOR CONTAINER NOTES	
Current Date:	9/12/2023
File Name:	WTR4-146 Newington M.mmdl
Level Name:	2nd Floor
Building Code - Design Methodology:	NBCC 2015
Floor Container:	FC2
Floor Area Loading is:	40 Live Load & 15 Dead Load
Maximum Allowed Deflection	L/480 Live Load & L/240 Total Load

Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
L1 - FJ1 @ 19.2" O.C.	28-00-00	9 1/2" NI-20	1	1	MFD
L1 - FJ2 @ 19.2" O.C.	20-00-00	9 1/2" NI-20	1	4	MFD
L1 - FJ3 @ 19.2" O.C.	14-00-00	9 1/2" NI-20	1	20	MFD
L1 - FJ4 @ 19.2" O.C.	13-00-00	9 1/2" NI-20	1	5	MFD
L1 - FJ5 @ 19.2" O.C.	12-00-00	9 1/2" NI-20	1	8	MFD
L1 - FJ6 @ 19.2" O.C.	16-00-00	9 1/2" NI-40x	1	10	MFD
L1 - FJ7 @ 19.2" O.C.	38-00-00	9 1/2" NI-80	1	6	MFD
L1 - FJ8 @ 19.2" O.C.	30-00-00	9 1/2" NI-80	1	2	MFD
L1 - FJ9 @ 19.2" O.C.	19-00-00	9 1/2" NI-80	1	2	MFD
L1 - BM1	16-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L1 - BM2	13-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L1 - BM3	12-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	3	3	MFD
L1 - BM4	8-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	2	2	MFD
L1 - BM5	6-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	2	MFD
L1 - BM6	5-00-00	1 3/4" x 9 1/2" (2.0E 3100) WestFraser LVL	1	1	MFD
L1 - Ca1	12-00-00	1 1/8" x 9 1/2" APA Rim Board	1	11	MFD
L1 - Ca1	12-00-00	1 1/8" x 9 1/2" APA Rim Board	1	2	FF
L1 - Ca2	12-00-00	1 1/8" x 9 1/2" APA Rim Board	2	6	MFD
L1 - Bk1	12-00-00	9 1/2" NI-20	1	1	MFD

Accessories					
PlotID	Length	Product	Plies	Net Qty	Fab Type
		3/4" Plywood or OSB (23/32" APA Rated Sheathing 48/24 Exposure 1)	1	52	MFD

Connector Summary				
Qty	Manuf	Product	Skew	Supported Mtl
2	SIMPSON	HUS18110	-	1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HHUS410	-	2- 1 3/4" x 9 1/2" WF LVL
1	SIMPSON	HGUS55010	-	3- 1 3/4" x 9 1/2" WF LVL
44	SIMPSON	LT259	-	9 1/2" NI-20
2	SIMPSON	LT359	-	9 1/2" NI-80

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THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12
- NORDIC LAM CCMC: 13216-R
- NORDIC JOISTS CCMC: 13032-R
- WEST FRASER CCMC: 12904

(REFER TO INDIVIDUAL FLOOR DRAWINGS FOR SPECIFIC LOADS & SPACING)

FLOOR NOTES:

- FLOOR JOIST SYSTEMS ABOVE THE GARAGE HAS BEEN DESIGNED WITHOUT A DIRECTLY APPLIED CEILING. USE APPLICABLE BLOCKING OR STRAPPING WHERE REQUIRED AS INDICATED ON THE FRAMING PLAN.
- BLOCKING MATERIAL WILL BE SUPPLIED AND INDICATED AS "BLOCKING". NO LONGER ONLY 12' LENGTHS.




JOB:
PHOENIX HOMES
WHITETAIL RIDGE
WTR4-146
NEWINGTON M
2ND FLOOR 2 OF 2

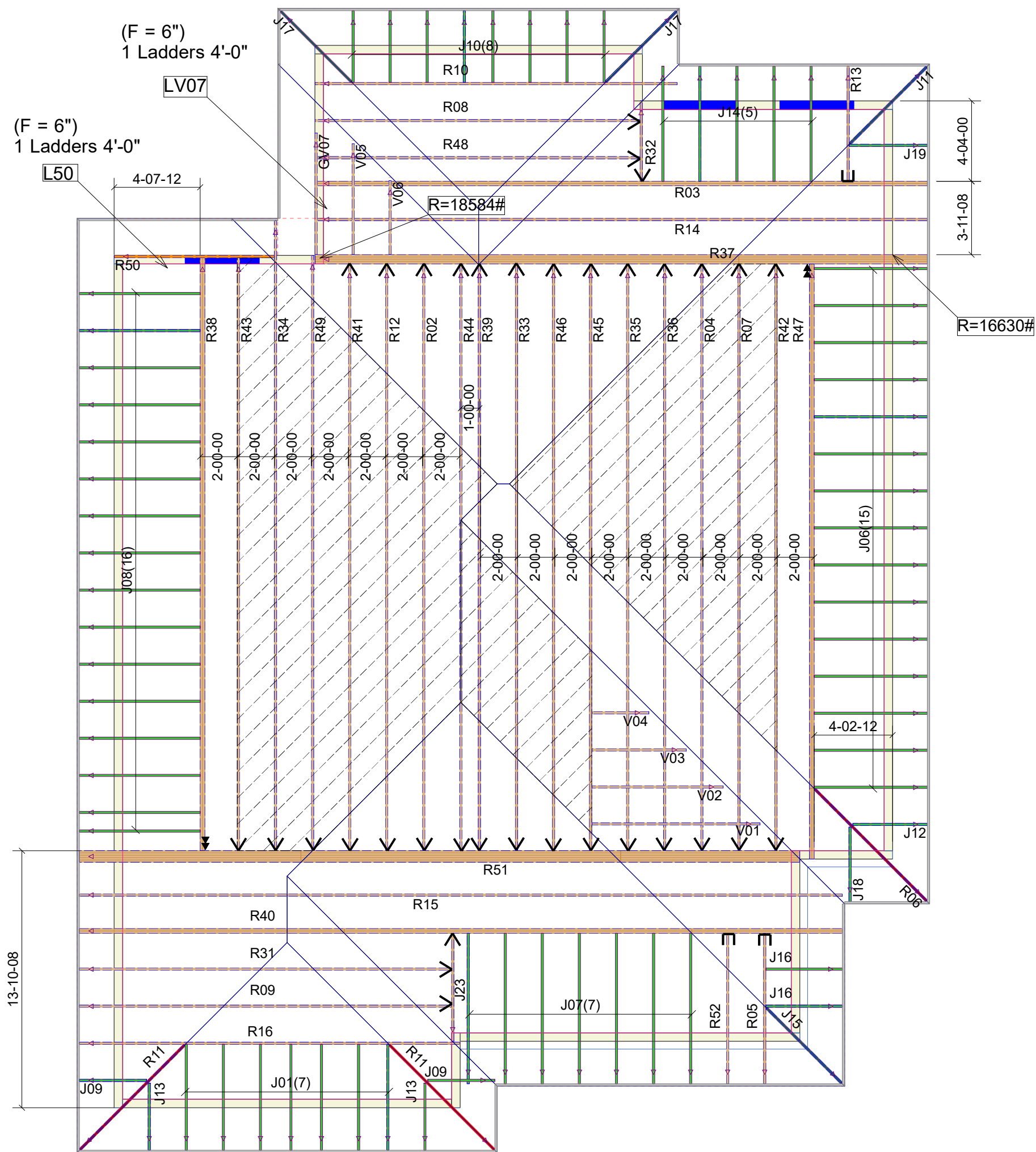
DATE: 2023-09-13

HIGH ROOF

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LEGEND	
E	LUS24 (27)
<	LJS26DS (35)
◀	HGUS26-2 (2)

Hatch Legend	
	DROP TOP CHORD



TYPICAL OTTAWA DESIGN LOADS

Member	Load Type	PT 9	PT 4
Top Chord	Snow	37.1	50
	Dead	3	5-10
Bot Chord	Live	0	10
	Dead	7	7

TYPICAL SPACING = 24.0 IN C/C

THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12
- CSA 086-09
- CCMC ACCEPTANCE 11996-L, 0319-L, 13270-L
- TPIC 2011

(REFER TO INDIVIDUAL TRUSS DRAWINGS
FOR SPECIFIC LOADS & SPACING)

HURRICANE AND SEISMIC TIES:

- ANY TIES SPECIFIED ON THIS LAYOUT FOR UPLIFT OR SEISMIC CONNECTIONS MUST BE REVIEWED AND APPROVED BY THE BUILDING DESIGNER/ ENGINEER, AS STATED IN THE TPIC 2011. THE TRANSFER OF THESE LOADS TO THE ENTIRE STRUCTURE BELOW HAS NOT BEEN ANALYZED.

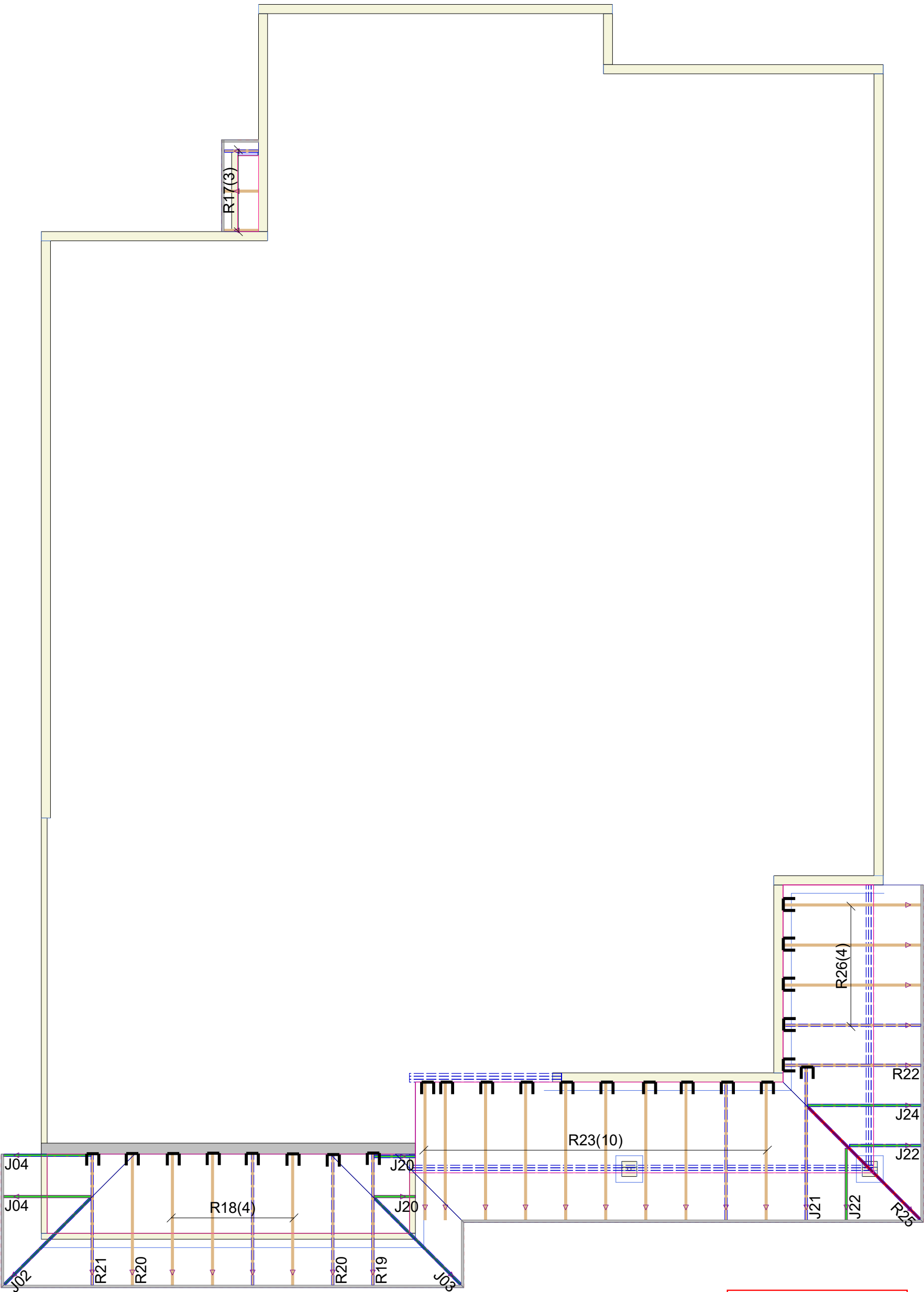


GRANDOR LUMBER INC
ALPA LUMBER GROUP

JOB:
PHOENIX HOMES
NEWINGTON 'M'
PNEWM
WTR-4 LOT 146

DATE: **MM Page 15 of 39**
6/21/2023

LOW ROOF



Certified Permit Document
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TYPICAL OTTAWA DESIGN LOADS

Member	Load Type	PT 9	PT 4
Top Chord	Snow	37.1	50
	Dead	3	5-10
Bot Chord	Live	0	10
	Dead	7	7

TYPICAL SPACING = 24.0 IN C/C

THIS DESIGN COMPLIES WITH:

- PART 4 OR 9 OF OBC 2012 Reg. 332/12
- CSA 086-09
- CCMC ACCEPTANCE 11996-L, 0319-L, 13270-L
- TPIC 2011

(REFER TO INDIVIDUAL TRUSS DRAWINGS FOR SPECIFIC LOADS & SPACING)

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GRANDOR LUMBER INC.
ALPA LUMBER GROUP

JOB:
PHOENIX HOMES
NEWINGTON 'M'
PNEWM
WTR-4 LOT 146

DATE: **MM/** **6/21/2023**



– STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.21 GRADE 300W
ALL WORK SHALL CONFORM OBC 2012
CONTRACTOR TO VERIFY ALL
DIMENSIONS ON SITE.
FOR ADDITIONAL INFORMATION, SEE
ENGINEERING DWGS.

ALL HARDWARE TO BE HOT-DIP
GALVANIZED
CONCRETE MIN. STRENGTH: 25 MPA



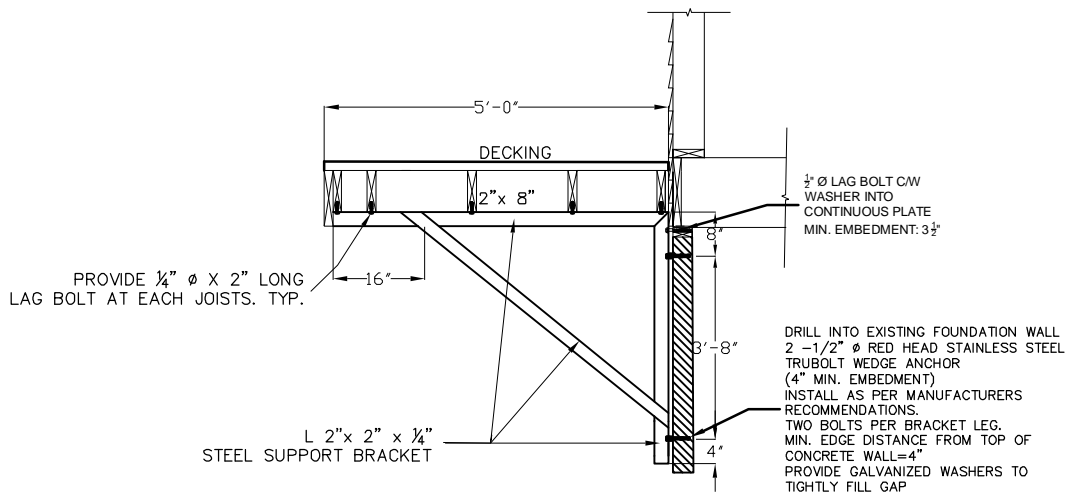
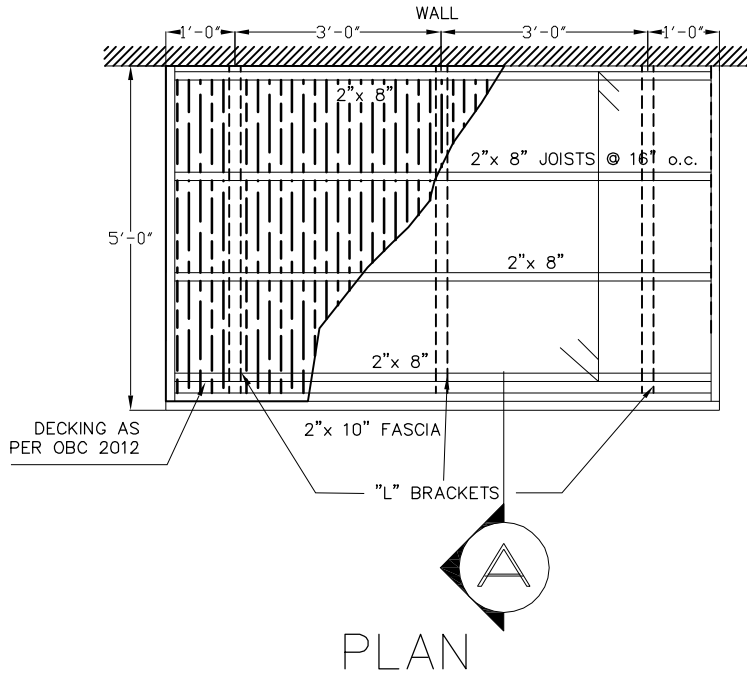
SECTION 'A'

No.	Revision	Date	By
Contractor must verify all dimensions on the job and report any discrepancy to the architect before proceeding with the work. All drawings and specifications are instruments of service and the property of the architect which must be returned at the			



Project Name	
--------------	--

N.T.S.



NOTES:

STEEL
-ALL STRUCTURAL STEEL WORK INCLUDING DESIGN OF ALL COMPONENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA-S16-09.
-HOLLOW STRUCTURAL SECTIONS TO CAN/CSA G40.20 GRADE 350, CLASS C OR H.
- STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.21 GRADE 300W ALL WORK SHALL CONFORM OBC 2012 CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE. FOR ADDITIONAL INFORMATION, SEE ENGINEERING DWGS.

ALL HARDWARE TO BE HOT-DIP GALVANIZED
CONCRETE MIN. STRENGTH: 25 MPA



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No.	Revision	Date	By

Estructura Inc.

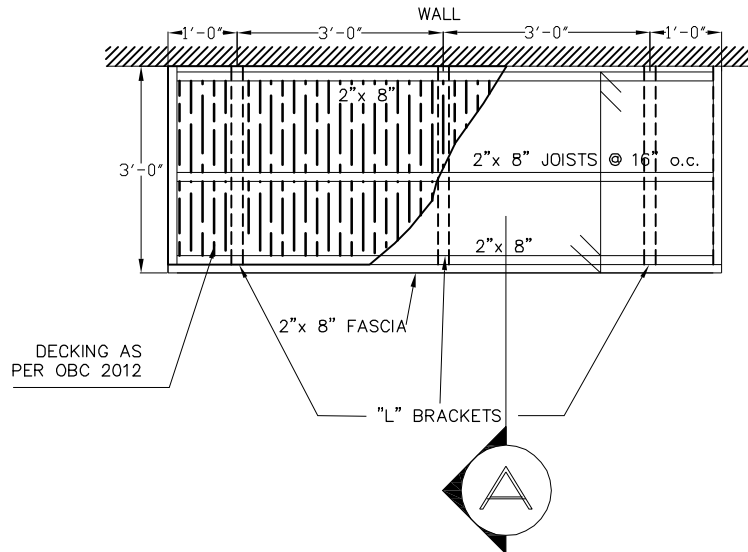
TEL: (819) 918-4382
EMAIL: estructurainc@yahoo.com



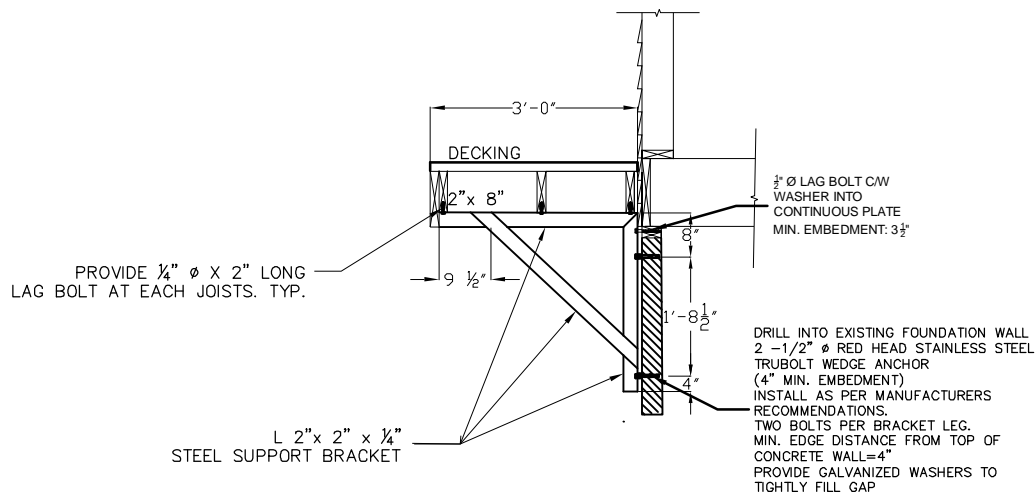
Client	CUT RITE CONSTRUCTION
Project Name	

Sheet Title	MODIFIED DECK CONNECTION 5'-0"x8'-0"
Drawn By	DS
Checked By	
Project No.	
Date	DECEMBER 2024
Drawing No.	MM Page 18 of 39
File Name	SK-1

Contractor must verify all dimensions on the job and report any discrepancy to the architect before proceeding with the work. All drawings and specifications are instruments of service and the property of the architect which must be returned at the



PLAN



SECTION 'A'

NOTES:

STEEL

-ALL STRUCTURAL STEEL WORK INCLUDING DESIGN OF ALL COMPONENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA-S16-09.
 -HOLLOW STRUCTURAL SECTIONS TO CAN/CSA G40.20 GRADE 350, CLASS C OR H.
 - STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.21 GRADE 300W
 ALL WORK SHALL CONFORM OBC 2012
 CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.
 FOR ADDITIONAL INFORMATION, SEE ENGINEERING DWGS.

ALL HARDWARE TO BE HOT-DIP GALVANIZED
 CONCRETE MIN. STRENGTH: 25 MPA



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No.	Revision	Date	By

Estructura Inc.

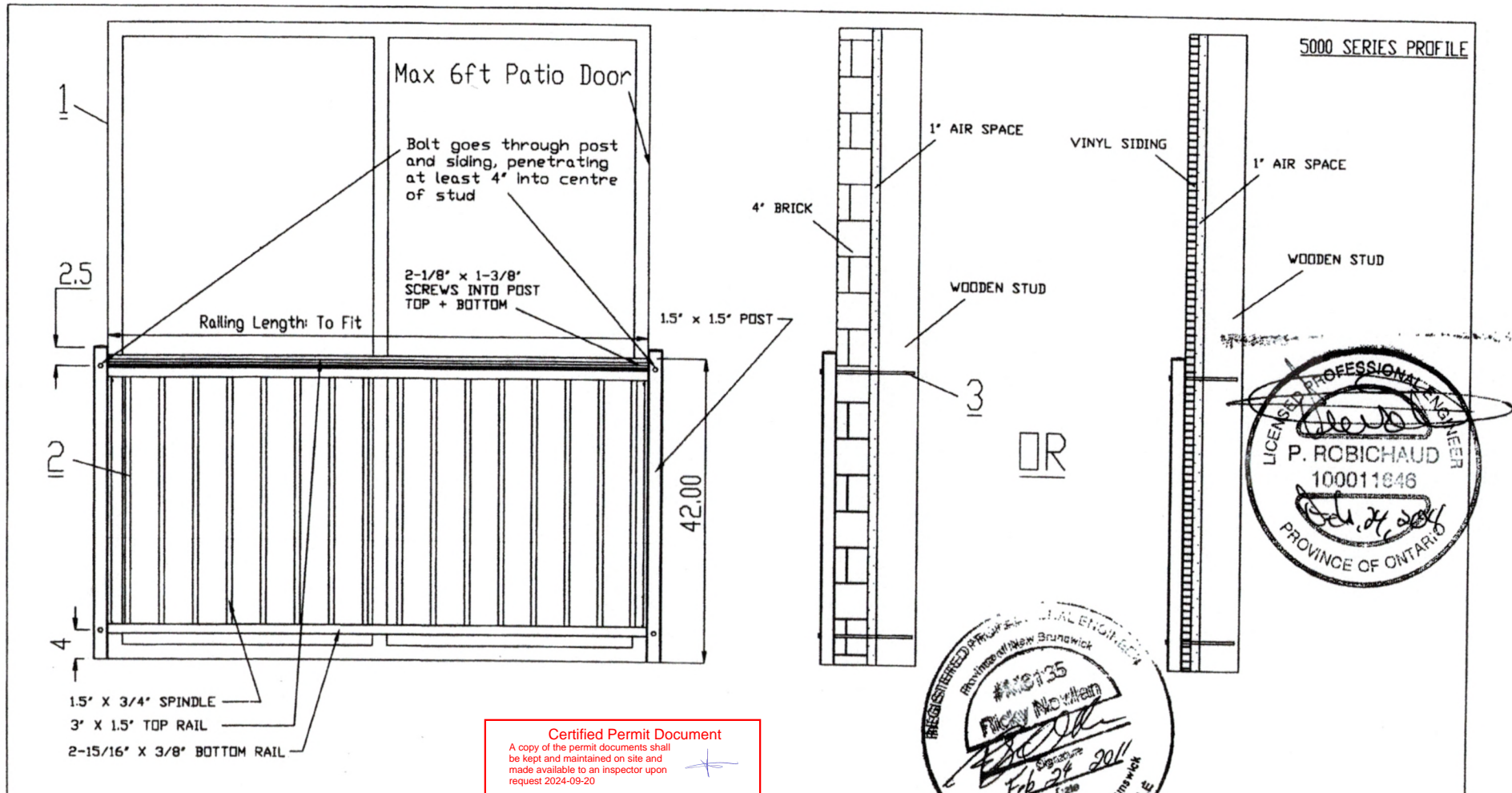
TEL: (819) 918-4382
 EMAIL: estructurainc@yahoo.com



Client	CUT RITE CONSTRUCTION
Project Name	

Sheet Title	MODIFIED DECK CONNECTION 3'-0"x8'-0"
Drawn By	DS
Checked By	
Project No.	
Scale	N.T.S.
Date	DECEMBER 2024
Drawing No.	MM Page 19 of 39
File Name	SK-1

Contractor must verify all dimensions on the job and report any discrepancy to the architect before proceeding with the work.
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Certified Permit Document
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Guard and connections comply with:

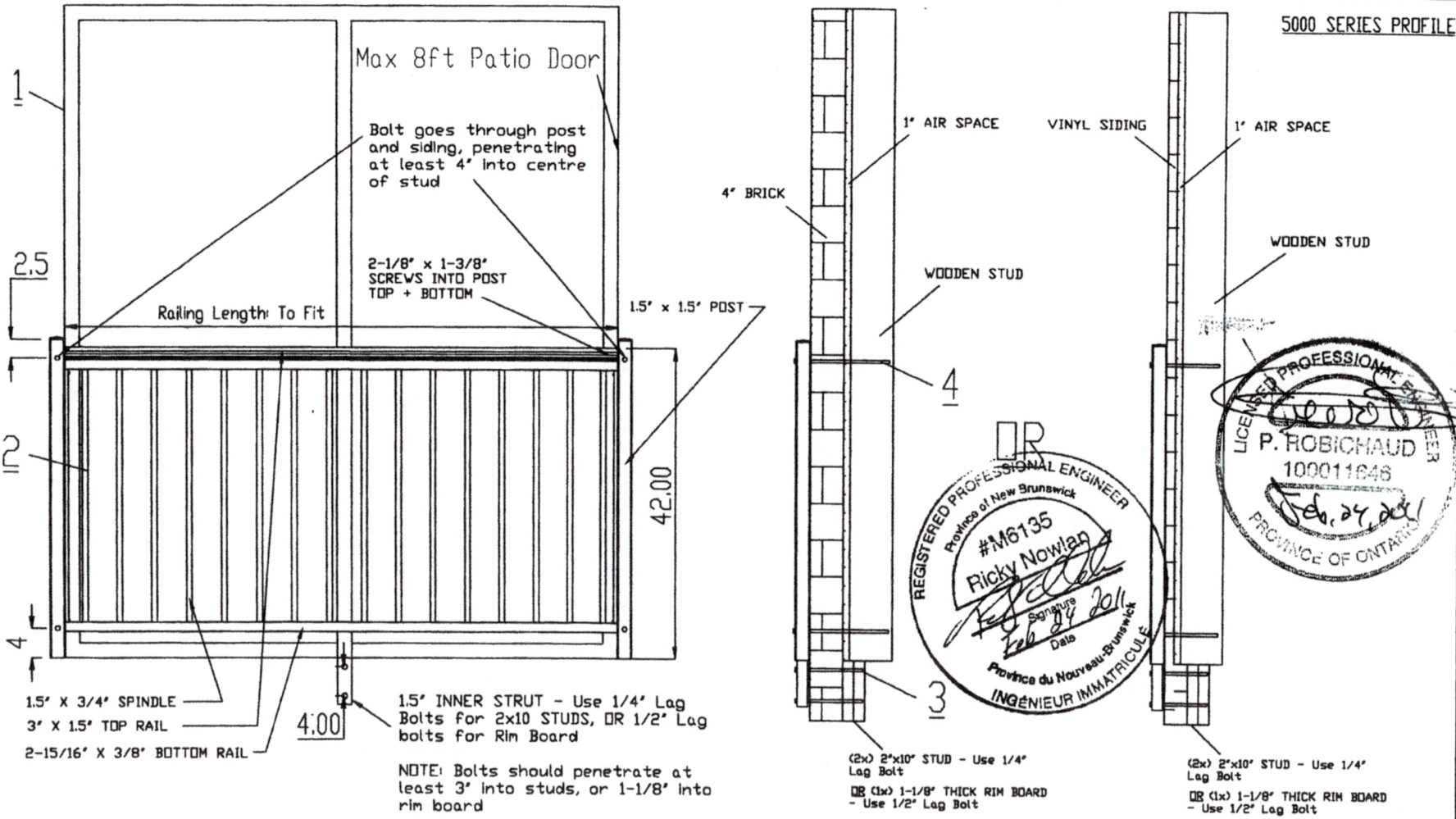
- NBCC 2005 (section 9.8.8 - Guards)
- Ontario 2006 (section 4.1.5.15 - Loads on Guards, section 9.8.8 - Guards)
- ICC 2003 (section 1607.7.1 - Handrails and Guards)

ITEM	PART DESCRIPTION	QTY
1	Patio Door - Max 6ft. wide	1
2	Juliet Railing - Long enough to bolt posts to centre of wall studs	1
3	1/2" x 10" Lag Bolt - Must penetrate stud by 4"	4

Imperial Manufacturing Group
 40 Industrial Park St
 Richibucto, NB
 E4W 4A4
 Tel: 506-523-9117 Fax: 506-523-9024

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF IMPERIAL MANUFACTURING GROUP. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF IMPERIAL MANUFACTURING GROUP IS PROHIBITED.

NAME	DATE		
DRAWN	JC	FEB 2011	
CHECKED			
ENG APPR.			
MFG APPR.			
QA			
COMMENTS:		TITLE:	
REV 4 - FEB 2011		Railing for Juliet Railing Application for 6' (Max) Patio Doors	
VINYL /BRICK APPLICATION		SIZE	DWG. NO.
		A	
DO NOT SCALE DRAWING		SCALE:	REV
			1



Guard and connections comply with:

NBCC 2005 (section 9.8.8 - Guards)
Ontario 2006 (section 4.1.5.15 - Loads on Guards, section 9.8.8 - Guards)
ICC 2003 (section 1607.7.1 - Handrails and Guards)

ITEM	PART DESCRIPTION	QTY
1	Patio Door - Max 8ft. wide	1
2	Juliet Railing - Long enough to bolt posts to centre of wall studs	1
3	1/4" Lag Bolt (For 2x10 Studs) OR 1/2" Lag Bolt (For Rim Board) - Long enough to penetrate stud by 3"	2
4	1/2" x 10" Lag Bolt - Must penetrate stud by 4"	4

Imperial Manufacturing Group
40 Industrial Park St
Richibucto, NB
E4W 4A4
Tel: 506-523-9117 Fax: 506-523-9024

PROPRIETARY AND CONFIDENTIAL

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NAME	DATE	TITLE:
DRAWN JC	FEB 2011	Railing for Juliet Railing Application for 8' (Max) Patio Doors
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		
REV 4 - FEB 2011 VINYL /BRICK APPLICATION		
DO NOT SCALE DRAWING		
SIZE A	DWG. NO.	REV
SCALE:		

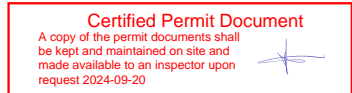


September 4, 2024 (Revised)

Kollaard File # 230020 – LOT146

Phoenix Homes
18A Bentley Avenue
Ottawa, Ontario
K2E 6T8

Attn: Sandy Pollock
Tel: 613-723-9227 x 165
Email: spollock@phoenixhomes.ca



Re: Proposed Single Family Dwelling, 169 Frank Fisher Crescent, Lot # 146 White Tail Ridge, Mississippi Mills, Kollaard Associates File # 230020

With regard to structural issues only, Kollaard Associates has reviewed the following drawings:

- Phoenix Homes, Lot # 146, White Tail Ridge, Pages # 1M to 8M, Dated 26/08/2024
- Grandor, High Roof Truss Layout, Newington 'M', WTR4 LOT146, Dated 06/21/2023
- Grandor, Low Roof Truss Layout, Newington 'M', WTR4 LOT146, Dated 06/21/2023
- Grandor, 2nd Floor Joist Layout, WTR4-146, Newington M, Dated 2023/09/13
- Grandor, 1st Floor Joist Layout, WTR4-146, Newington M, Dated 2023/09/13

Kollaard Associates offers the following comments:

Second Floor Plan – Pages # 4M:

1. It is the opinion of Kollaard Associates that the proposed lintels and supporting posts shown on Phoenix Homes Pages # 4M are adequate.
2. The proposed tall wall noted on Phoenix Homes Pages # 1 is adequate.
3. Posts supporting girders may consist of built up 2x6 posts as indicated on Phoenix Homes Pages # 4M and are laterally supported by plywood or OSB sheathing (i.e. posts form part of sheathed exterior walls unless noted).
4. Truss design is by others.

Ground Floor Plan – Pages # 3M:

5. It is the opinion of Kollaard Associates that the proposed lintels, beams and supporting posts shown on Phoenix Homes Pages # 3M are adequate



6. Ramset a 2x6 to the top flange of all steel beams to attach the above framing, floor joists and flush LVL beams.
7. The proposed web packing of the steel beam detailed on Phoenix Homes Sheet # 9M is adequate.
8. Truss design is by others.
9. Floor joist design and flush LVL beams within the floor structure are by the manufacturer.

Basement Plan – Pages # 2M:

10. It is the opinion of Kollaard Associates that the proposed steel beams and posts shown on Phoenix Homes Sheet # 2M are adequate.
11. The front porch slab reinforcement described on Phoenix Homes Sheet # 1M is adequate.
12. As noted on Phoenix Homes Sheet # 2M, the framed walls supporting the intermediate landing may be supported by the basement slab.
13. The proposed 7'-10" foundation walls conform to 2012 OBC Table 9.15.4.2.A. ensuring that the grade difference between the basement slab and the exterior grade (including the garage slab) does not exceed 7'-6½".
14. The proposed stepped down foundation walls (ie. framed knee wall above) conform to 2012 OBC Table 9.15.4.2.A. ensuring that the grade difference between the basement slab and the exterior grade (including the garage slab) does not exceed 3'-11".
15. The proposed strip footings, interior pad footings and exterior pad footings shown on Phoenix Homes Page # 2M and noted on Phoenix Homes Sheet # 1M are adequate.
16. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer. All posts supporting flush LVL lintels are to be P2 posts unless otherwise noted.

General Notes:

17. All gravity loads to be carried to foundation through solid blocking.
18. Truss design is by others.
19. Floor joist design, flush LVL beams within the floor structure and LVL lintels are by the manufacturer.
20. The self supporting stairs are to be designed by the stair manufacturer.
21. All dimension lumber, except non-load bearing 8 ft 2x6 studs to be No.2 grade SPF or better.
22. Non-load bearing 8 ft 2x6 studs to be No.3 or Stud grade SPF or better.
23. All guards to be as per OBC SB-7, unless otherwise mentioned and designed by others.
24. All brick lintels to be as per OBC Table 9.20.5.2.B.
25. Unless otherwise noted, LVL to be 1.8E 3000Fb LVL (Canadian Limit States bending strength of at least 39.5 MPa) with 1¾" nominal width or better.

26. Pemco Steel adjustable posts are designed and approved by the manufacturer. The adjustable steel posts are designed for a maximum allowable load of 106.8 kN at a maximum height of 9'-3".
27. All 3" x 3" x 3/16" HSS posts c/w 6" x 6" x 3/8" top and bottom bearing plates.
28. The assumed soil bearing resistance of 100 kPa is to be verified prior to construction.
29. Note that the truss manufacturer/floor joist supplier has sized the flush LVL beams and girder trusses shown on the building drawings. The comments provided by Kollaard Associates in this report are based in part on the design indicated in the truss and floor layouts. If a different truss and/or floor layout is used in construction, comments made in this report may no longer be valid. Provide Kollaard Associates with the full truss package prior to construction.
30. Comments provided in this report are made in consideration of Part 9 and Part 4 (where applicable) of the 2012 OBC as amended.
31. This report constitutes a review of the structural information indicated on the building plans cited in this report for the client indicated above.

We trust this letter provides sufficient information for your present purposes. If you have any questions concerning this letter please do not hesitate to contact our office.

Sincerely,
Kollaard Associates Inc.



Christopher Cogliati, P.Eng.

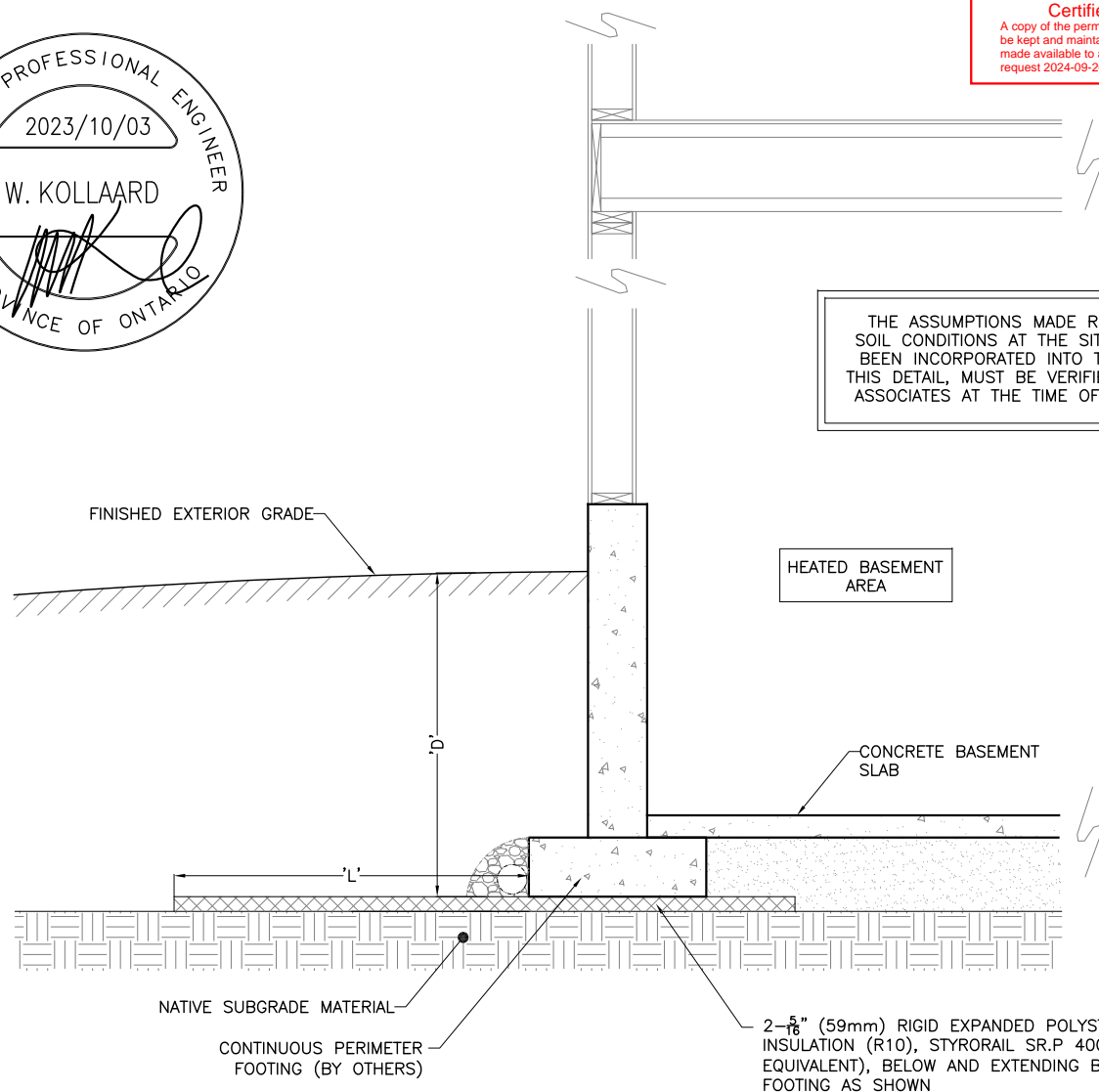
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Certified Permit Document
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THE ASSUMPTIONS MADE REGARDING THE SOIL CONDITIONS AT THE SITE, WHICH HAVE BEEN INCORPORATED INTO THE DESIGN OF THIS DETAIL, MUST BE VERIFIED BY KOLLAARD ASSOCIATES AT THE TIME OF CONSTRUCTION

D : THICKNESS OF EARTH COVER ABOVE BOTTOM OF EXCAVATION
(UNDERSIDE OF INSULATION OR GRANULAR MATERIAL)

L : REQUIRED PROJECTION OF FROST PROTECTION INSULATION
BEYOND EDGE OF FOOTING

$D + L = 5'-0''$ (MIN.)

SHALLOW FOUNDATION FOOTING INSULATION DETAIL ~ TYP. SECTION
(NOT TO SCALE)

DRAWING: 230021-A1

NOTES:

1. All dimensions are in imperial unless otherwise noted.
2. Insulation joints to be glued or lapped.
3. This detail is only permitted to be used by Phoenix Homes for Lot 92 Silver Dart Private (Kingswood Model). Do not use this drawing for any other purpose.
4. The frost protection insulation specified on this drawing assumes that the footings are designed for a soil bearing capacity of 100 kPa. At the time of construction, the assumed soil bearing capacity is to be verified by a geotechnical engineer. If the footings are to be redesigned for a higher bearing capacity, please contact Kollaard Associates Inc.
5. Kollaard Associates Inc. is to perform all footing subgrade inspections prior to footing placement.
6. Any changes to this drawing are to be verified and approved by Kollaard Associates Inc.

REV.	NAME	DATE	DESCRIPTION
------	------	------	-------------



Kollaard Associates
Engineers
P.O. BOX 189, 210 PRESCOTT ST KEMPTVILLE ONTARIO K0G 1J0 FAX (613) 258-0475 info@kollaard.ca http://www.kollaard.ca

(613) 860-0923

CLIENT: PHOENIX HOMES

DRAWING: SHALLOW FOUNDATION FOOTING INSULATION DETAIL

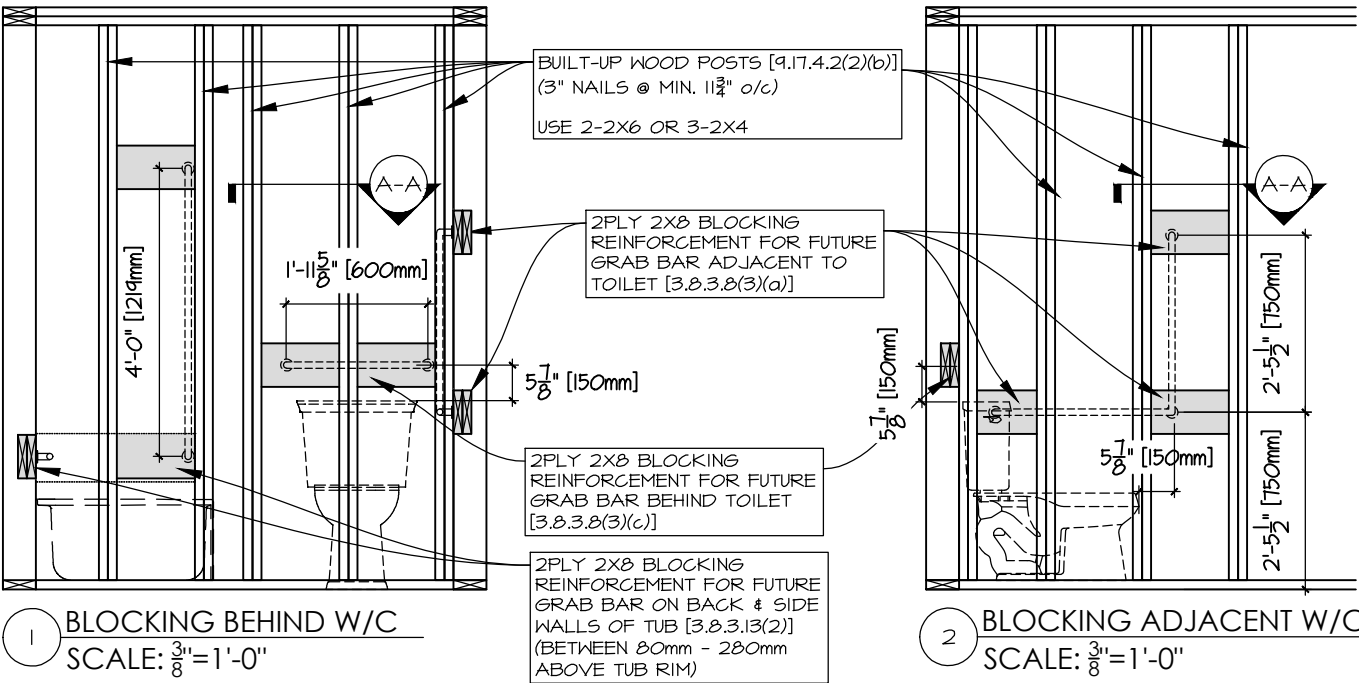
LOCATION: LOT 92 SILVER DART PRIVATE, DIAMONDDVIEW SUBDIVISION, CARP, CITY OF OTTAWA, ONTARIO

DESIGNED BY: SK DATE: OCT. 3, 2023

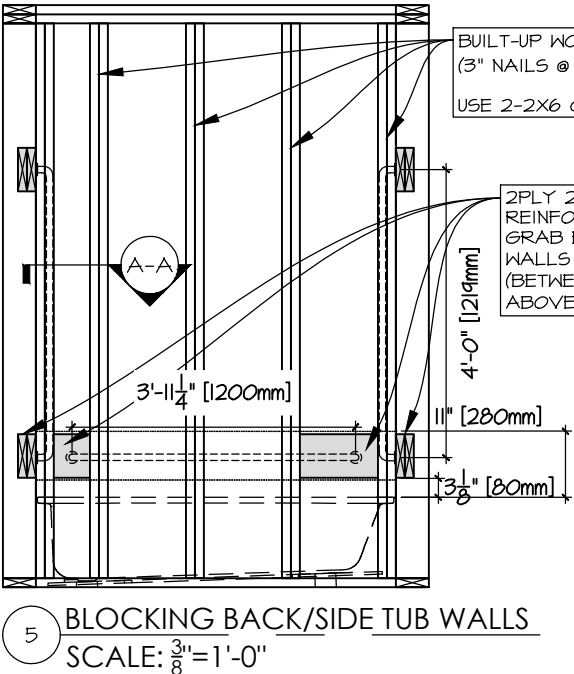
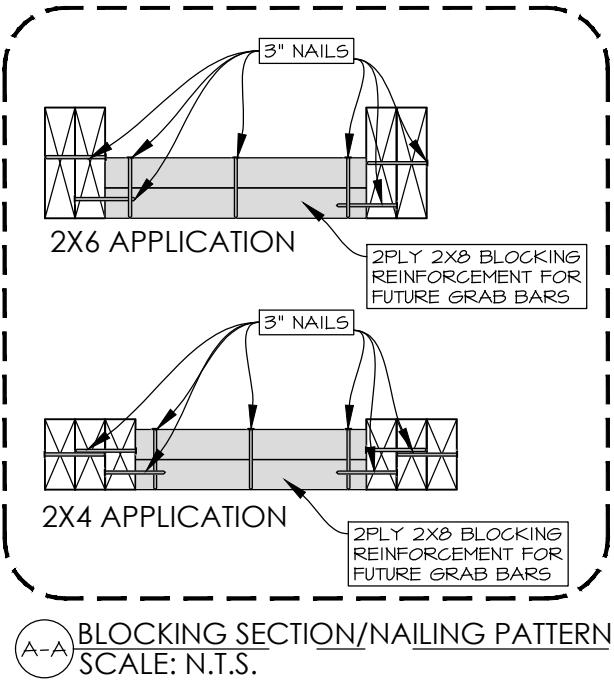
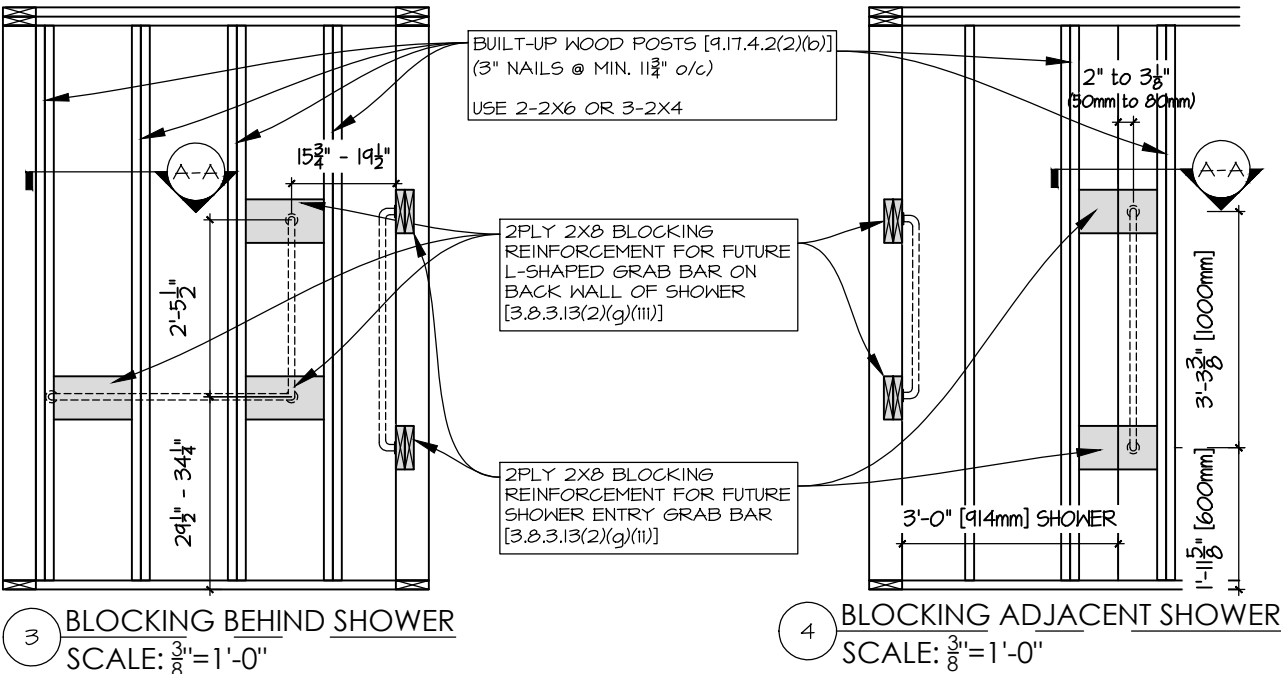
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STUD WALL REINFORCEMENT FOR FUTURE GRAB BARS IN MAIN BATHROOM

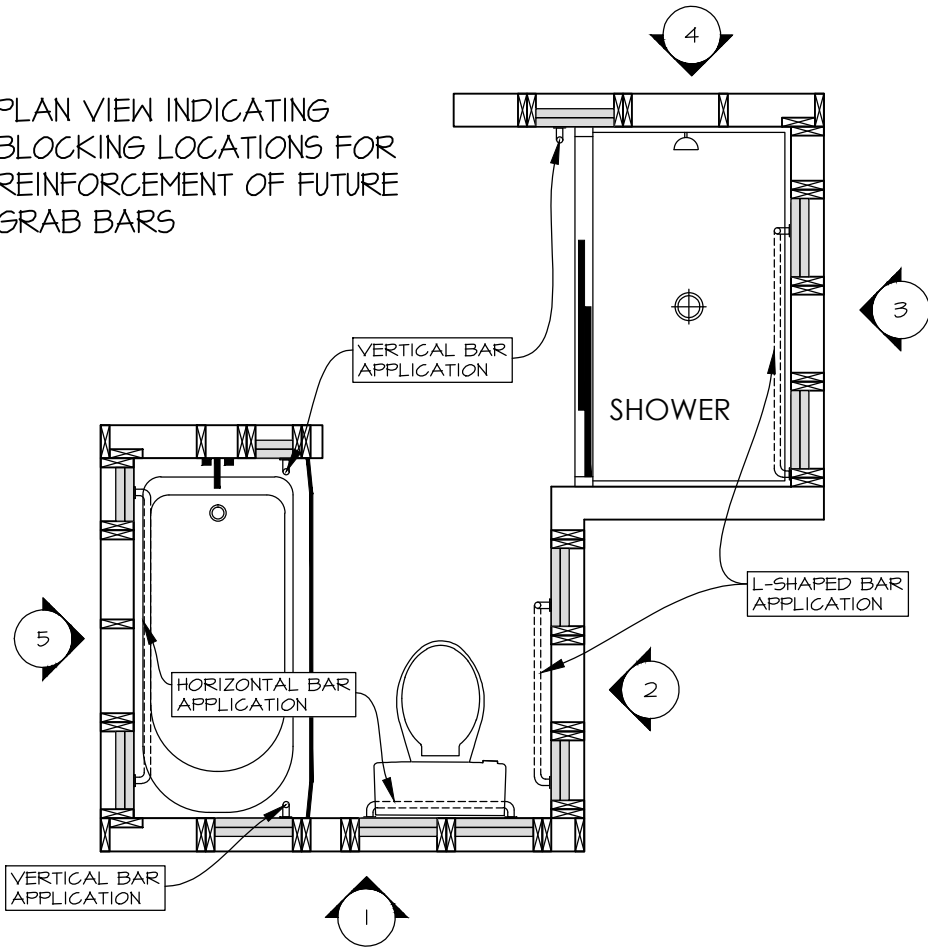
REINFORCEMENT OF STUD WALLS SHALL BE INSTALLED ADJACENT TO WATER CLOSETS AND SHOWER OR BATHTUB IN MAIN BATHROOM
FUTURE GRAB BARS TO BE MOUNTED TO RESIST HORIZONTAL AND VERTICAL LOADS OF 1.3KN (300lb)
REFER TO O.B.C. 9.5.2.3, 3.8.3.8(5), 3.8.3.8(6)



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PLAN VIEW INDICATING
BLOCKING LOCATIONS FOR
REINFORCEMENT OF FUTURE
GRAB BARS



REINFORCING DETAILS FOR
FUTURE GRAB BARS

1	OBC COMPLIANCE FOR FUTURE GRAB BAR REINFORCING	FEB2-21	SP
No.	Description	Date	By
REVISIONS			

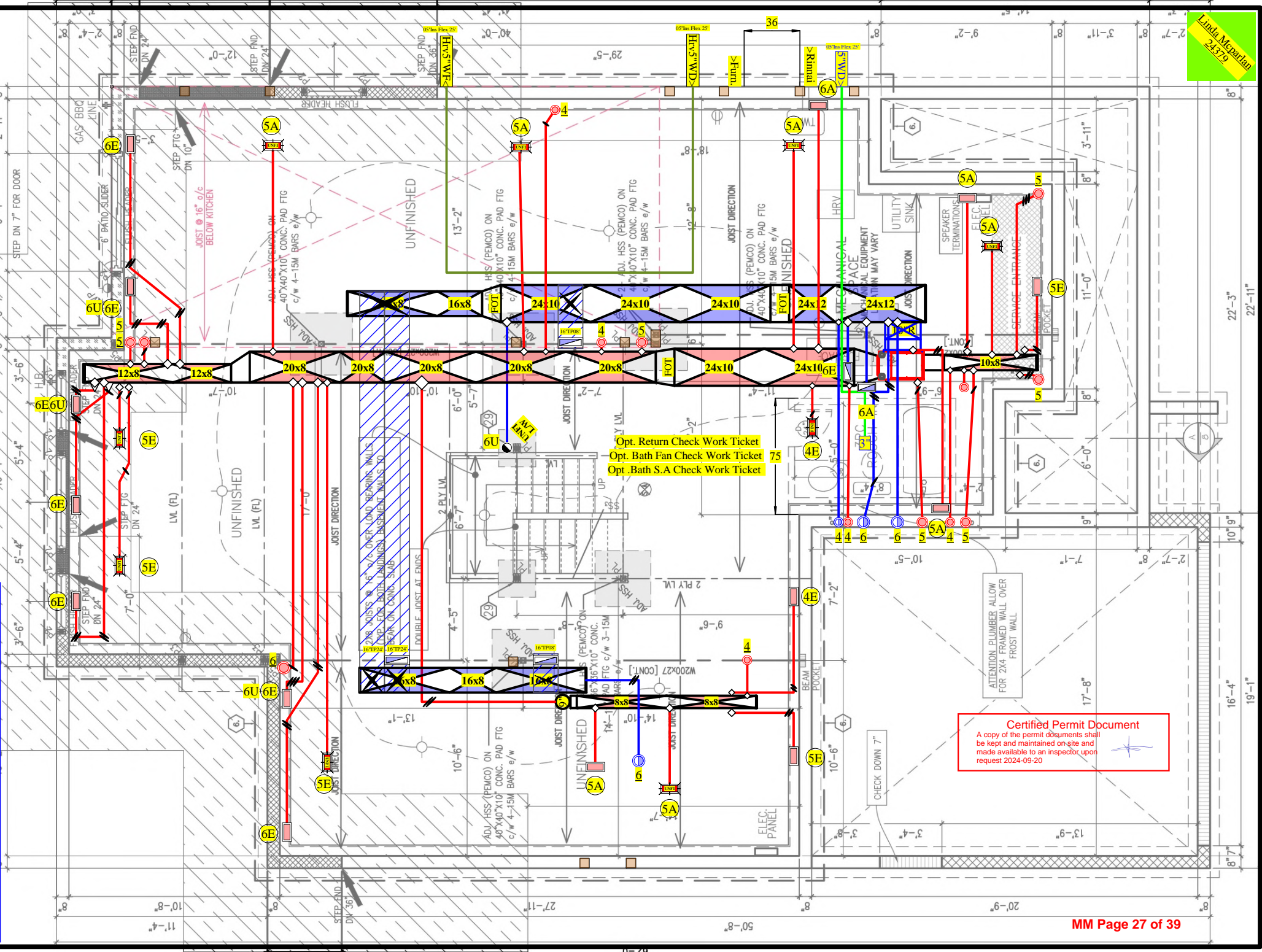
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date:	
scale:	N/A
sheet no:	
	SD-1 DETAILS

Heat Loss				
Quantity	Room Name	Htg cfm	Clg cfm	Htg btu
1	DININGROOM	48	62	2354
1	ENIUTE 1	20	26	1004
1	FOYER	34	25	1683
1	GREATROOM	305	312	15102
1	INLAW SUITE	57	93	2823
1	KITCHEN	77	90	3815
1	LAUNDRY	36	25	1764
1	LIVINGROOM	73	84	3606
1	PANTRY	10	16	517
1	PDRM	11	20	521
1	STAIRS	1	13	0
2	BATH	16	28	773
2	BATH 2	23	29	1131
2	BEDROOM 3	65	79	3220
2	BEDROOM 4	62	81	3079
2	BONUSROOM	82	88	4069
2	ENSUITE	36	35	1781
2	HALL	20	22	990
2	MASTERBEDROOM	89	105	4431
2	W.I.C.	8	16	397
1	B-BSMT	130	29	6453
1	B-W/O	204	127	10096
Totals:		1407	1405	69609

Description
221013.1AR Lot PW 364 Newington 2022 M
230131.2AK Lot 47 WT Newington 2022 M
240705.1BR Newington 2024 4B&3T-InLawSuite-WOB
240830.1AR Newington WTR4-146

SRPA00 R10 [28" THICK SHEETS]
EXTEND 48" BEYOND FOOTING

47" WIDE**
BELOW
D EDGE OF
IRS EACH

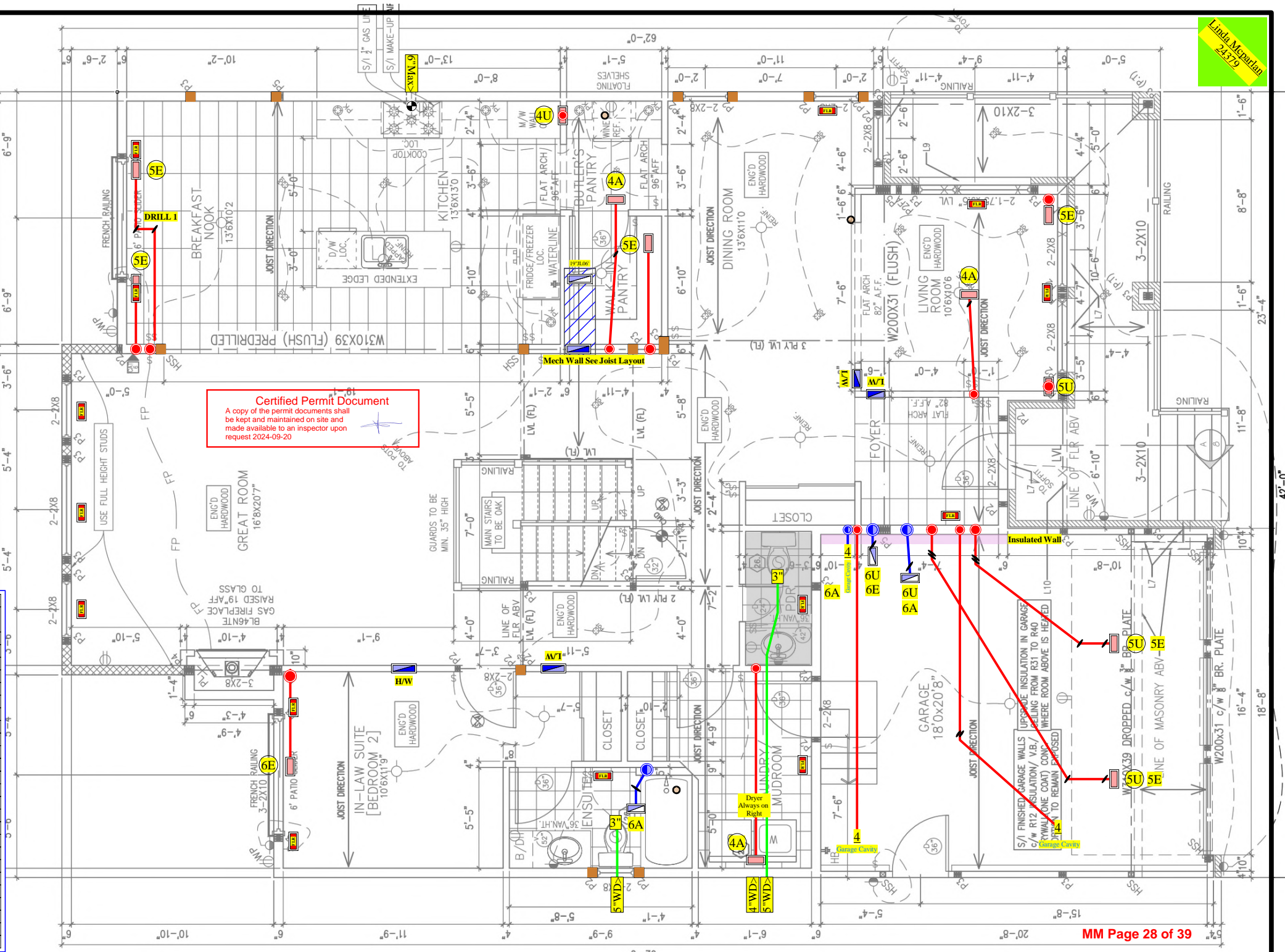


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230131.2AK Lot 47 WT Newington 2022 M
240705.1BR Newington 2024 4B&3T-InLawSuite-WOB
240830.1AR Newington WTR4-146

****NOTE****
ALL WINDOW UNITS TO BE 2-2X10
W/ P2 POSTS ON EACH SIDE UNO.

Heat Loss				
Quantity	Room Name	Htg cfm	Clg cfm	Htg btu
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1	ENIUTE 1	20	26	1004
1	FOYER	34	25	1683
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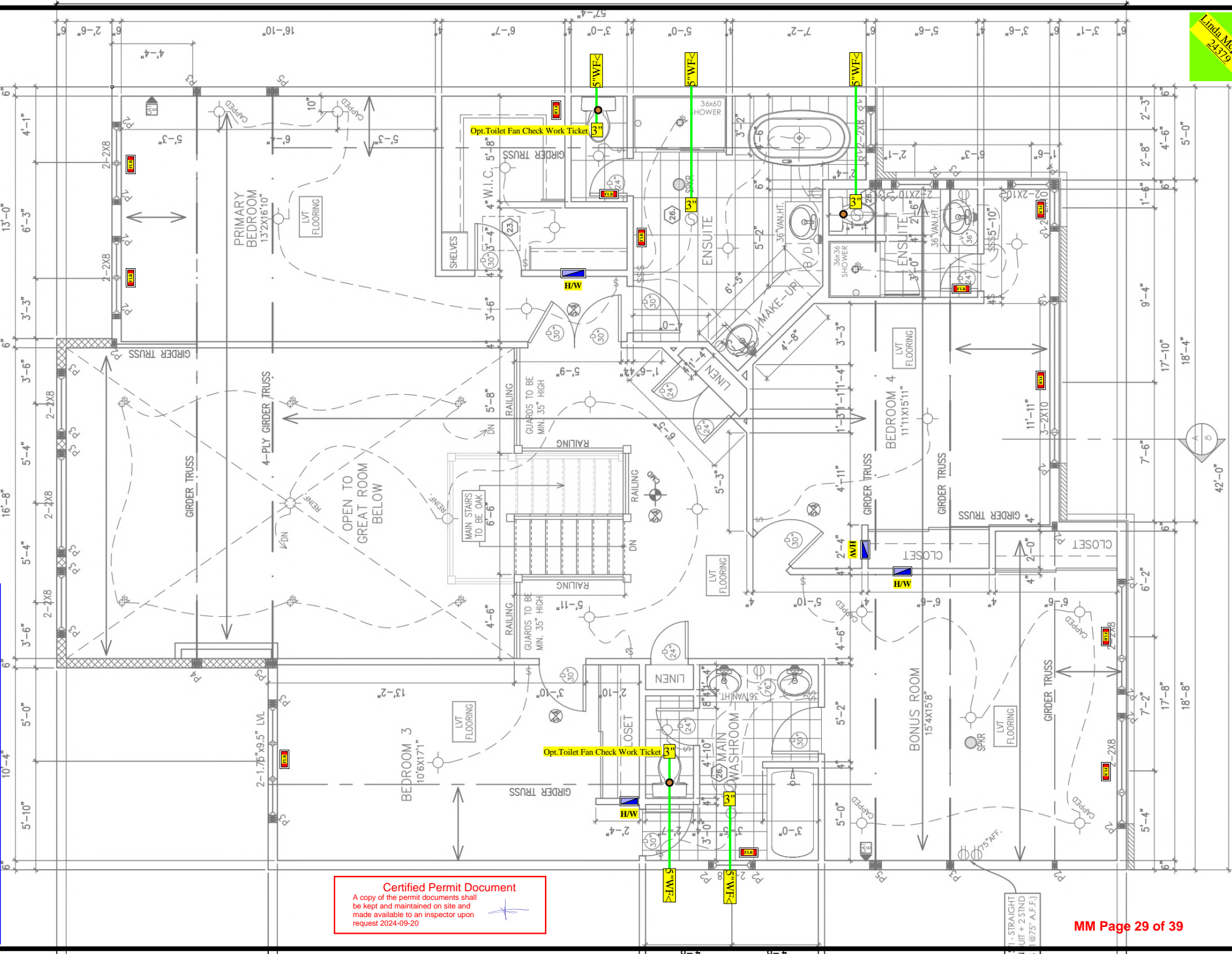
Certified Permit Document
A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20



Linda McFarlan
24379

Description
221013.1AR Lot PW 364 Newington 2022 M
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1	LAUNDRY	36	25	1764
1	LIVINGROOM	73	84	3606
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1	PDRM	11	20	521
1	STAIRS	1	13	0
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Linda McFarlan
24379



Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority

Application No:	Model/Certification Number
-----------------	----------------------------

A. Project Information

Building number, street name 169 Frank Fisher Crescent	Unit number	Lot/Con 146
Municipality Mississippi Mills	Postal code	Reg. Plan number / other description 27M-47

B. Prescriptive Compliance [indicate the building code compliance package being employed in this house design]

SB-12 Prescriptive (input design package): Package: <u>A1</u> Table: <u>3.1.1.2.A (IP)</u>

C. Project Design Conditions


Climatic Zone (SB-1): <input checked="" type="checkbox"/> Zone 1 (< 5000 degree days) <input type="checkbox"/> Zone 2 (≥ 5000 degree days)	Heating Equipment Efficiency <input checked="" type="checkbox"/> ≥ 92% AFUE <input type="checkbox"/> ≥ 84% < 92% AFUE	Space Heating Fuel Source <input checked="" type="checkbox"/> Gas <input checked="" type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel <input type="checkbox"/> Oil <input type="checkbox"/> Electric <input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics
Area of walls = _____ m ² or <u>4048</u> ft ²	W, S & G % = <u>15%</u>	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement <input type="checkbox"/> Slab-on-ground <input type="checkbox"/> Walkout Basement <input type="checkbox"/> Air Conditioning <input type="checkbox"/> Combo Unit <input type="checkbox"/> Air Sourced Heat Pump (ASHP) <input type="checkbox"/> Ground Sourced Heat Pump (GSHP)
Area of W, S & G = _____ m ² or <u>611</u> ft ²	Utilize window averaging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

Energy Efficiency Substitutions				
<input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5) & (6))				
<input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2.(7) / 3.1.1.3.(7))				
<input type="checkbox"/> Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached)	<input type="checkbox"/> Table 3.1.1.4.B Required: _____ Permitted Substitution: _____			
	<input type="checkbox"/> Table 3.1.1.4.C Required: _____ Permitted Substitution: _____			
	Required: _____ Permitted Substitution: _____			
Building Component	Minimum RSI / R values or Maximum U-Value ⁽¹⁾		Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating	
Ceiling with Attic Space	R60		Windows/Sliding Glass Doors	25
Ceiling without Attic Space	R31		Skylights/Glazed Roofs	0.49
Exposed Floor	R31		Mechanicals	
Walls Above Grade	R22		Heating Equip.(AFUE)	96%
Basement Walls		R21.12	HRV Efficiency (SRE% at 0°C)	75%
Slab (all >600mm below grade)	--		DHW Heater (EF)	0.8
Slab (edge only ≤600mm below grade)	10		DWHR (CSA B55.1 (min. 42% efficiency))	1 # Showers <u>4</u>
Slab (all ≤600mm below grade, or heated)	10		Combined Heating System	No

(1) U value to be provided in either W/(m²•K) or Btu/(h•ft²•F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets the building code]

Qualified Designer Declaration of designer to have reviewed and take responsibility for the design work.		
Name Sandy Pollock	BCIN 33536	Signature  Sandy Pollock 2021.10.14 07:08:58 -04'00'



Mechanical Design Report

Low rise residential

Location of Installation	Address	House Builder PHOENIX
	Application Number	House Model (if applicable) NEWINGTON 4BED IN-LAW SUITE
Installing Contractor	Name	
	Address	
	City	Postal Code
	Telephone Number	Fax Number

SYSTEM DESIGN PARAMETERS

Combustion Appliances 9.32.3.1.(1)

- a) ☒ Direct vent (sealed combustion) only
b) ☐ Positive venting induced draft (except fireplaces)
c) ☐ Natural draft, B-vent or induced draft fireplace
d) ☐ Solid Fuel (including fireplaces)
e) ☐ No Combustion Appliances

Heating System

- ☒ Forced Air
☐ Non Forced Air
☐ Electric Space Heat
☐ Radiant Floor Heat (attach pipe details)
☐ Geothermal (attach loop, pipe & well details)
☐ High Velocity Residential (attach duct details)
☐ Other:

Certified Permit Document

A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20



House Type 9.32.3.1.(2)

- ☒ I Type a) or b) appliances only, no solid fuel
☐ II Type I except with solid fuel (including fireplace)
☐ III Any Type c) appliance = Part 6 Design
☐ IV Electric space heat
☐ Other: No forced air = Option 4

System Design Option

- ☐ Exhaust Only/Forced Air System
☒ HRV with Exhaust Ducts/Forced Air System
☐ HRV Simplified Connection to Forced Air System
☐ HRV – Full Ducting/Not Coupled to Forced Air System
☐ Part 6 Design
☐ Other:

EQUIPMENT DESIGN REQUIREMENTS

Total Ventilation Capacity 9.32.3.3.(1)

						TOTAL
Master Bedroom	1	x	10 L/s	=	10 L/s	
Unfinished Basement	1	x	10 L/s	=	10	
Other Habitable Rooms	15	x	5 L/s	=	75	95 T.V.C.

Principal Ventilation Capacity 9.32.3.4.(1)

Master Bedroom	1	x	15 L/s	=	15 L/s	
Other Bedrooms	4	x	7.5 L/s	=	30	45 P.V.C.

Required Supplemental Ventilation Capacity (T.V.C. less P.V.C.) = 50

Furnace size: KJ or 80,000 BTU

Air conditioner size: KJ or BTU or 3.5 TON Tonnes (If provided / applicable)

Heating / Cooling Equipment sized according to heat loss/gain calculations of CAN/CSA F280-12: ☒ Yes ☐ No

Geothermal Equipment designed according to CAN/CSA-C448.2: ☐ Yes ☒ No

Hydronic Equipment designed according to CAN/CSA-B214: ☐ Yes ☒ No

Duct (and pipe) schematic attached including sizes, runs and material used: ☒ Yes ☐ No

VENTILATION EQUIPMENT**Heat Recovery Ventilator**Model: CLEAN COMFORT VH30100RNC HRV95 L/s High 47.5 L/s Low 60 % Sensible Efficiency @ -25°C**Proposed Exhaust Fans**

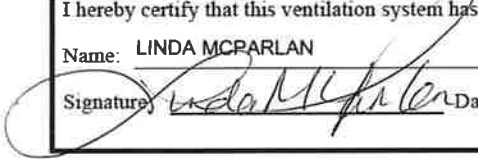
	Location	Model	L/s	Sones	Principal or Supplemental
1	PDRM	DX90	45	2.5	PRINCIPAL
2	ENSUITE	EC50	25	3.	SUPPLEMENTAL
3	BATH	EC50	25	3.	SUPPLEMENTAL
4	BATH 2/BATH 3	EC50/EC50	25/25	3./3.	SUPPLEMENTAL

EQUIPMENT EFFICIENCIES (Please also refer to Energy Efficiency Design Summary)Heating system: GOODMAN GM9C960804CNACooling system (if applicable): GOODMAN GSXN3042

Water heater:

HRV: % sensible efficiency at 0 degrees: 75% sensible efficiency at -25 degrees: 60**DESIGNER CERTIFICATION**

I hereby certify that this ventilation system has been designed in accordance with the 2012 Ontario Building Code.

Name: LINDA MCPARLANCompany Name: HARDING MECHANICALSignature:  Date: AUG 30/24 BCIN 24379 HRAI # 6080**Certified Permit Document**

A copy of the permit documents shall be kept and maintained on site and made available to an inspector upon request 2024-09-20



2024-08-28

Project #: 24-041

Municipality of Mississippi Mills
Chief Building Inspector
14 Bridge St, PO Box 400
Almonte, ON
K0A 1A0



Attn: Chief Building Official

**Re: Analysis and Report of proposed ¾-in water service to 169 Frank Fisher,
Almonte**

Dear Chief Building Official,

QM&E Engineering has been retained to address the proposed ¾-in domestic water service to the single family home to be located at 169 Frank Fisher (Newington M Model) at White Tail Ridge in Almonte, and to determine whether a ¾-in domestic water service is adequate for the proposed building. The following forms the results of our review and analysis of the Ontario Building Code (OBC) 2012 as amended, providing the rational for the conclusion provided herein.

REVIEW OF APPLICABLE OBC CLAUSES:

OBC 7.6. Potable Water Systems:

- This section stipulates the requirements for building domestic water services to buildings.

OBC 7.6.3. Size and Capacity of Pipes:

OBC 7.6.3.1. Design, Construction and Installation

- OBC 7.6.3.1.(1):

- This clause states that *water distribution systems* must be designed for peak demand flows with flow pressures conforming to the manufacturer's specifications.
- In considering OBC 7.6.3.1.(1), it does not mention that the system must be designed to provide peak demand flow when all plumbing fixtures or devices are flowing. It merely states that for designing the systems, the peak demand flow is when flow pressures conform to manufacturer's specifications.

- **OBC 7.6.3.1.(2):**
 - This clause states that *potable water systems* shall be designed, constructed and installed to conform to good engineering practice appropriate to the circumstances.
 - As written, this clause provides the designer with the latitude to use good engineering practice and for the design to be appropriate to the circumstances. As such, this clause understands that various solutions or designs may be appropriate for situations.
- **OBC 7.6.3.1.(3):**
 - This clause requires that the flows to fixtures be sufficient to flush the fixture and keep it in a sanitary condition. The water supply must be that of the manufacturer's specification in order for it to function as designed and remain sanitary.
 - This clause reinforces the requirement for fixtures to receive their required flows and pressures.

OBC 7.6.3.2. Hydraulic Load

- **OBC 7.6.3.2.(1):**
 - This clause allocates a hydraulic load in terms of *fixture units* for specific plumbing *fixtures* as provided for in Table 7.6.3.2.A.
 - The clause does not specify whether all fixtures together, or a combination thereof, make up the *peak demand flow*.
 - This clause provides for values to be used in design which don't necessarily take into account flows or pressures of specific manufacturer's specifications. As such, this clause allows for a design which may, or may not, be in line with the manufacturer's specifications as noted in OBC 7.6.3.1.(1).
- **OBC 7.6.3.2.(3):**
 - In designing using fixture units as in OBC 7.6.3.2.(1), this clause allows the designer to reduce the hydraulic load of the *fixture units* in Table 7.6.3.2.A. to 75% of the value when a *fixture* is supplied with both hot and cold water.
 - As many *fixtures* within a home are supplied with both hot and cold water, this clause allows for an overall smaller service entrance.

Table 7.6.3.2.A. Sizing of Water Distribution Systems:

- The *fixture unit* values of this table are those used in the scenario analysis below as they represent the fixtures used in the single family home to be located at 169 Frank Fisher in Almonte.

OBC 7.6.3.4. Size

- **OBC 7.6.3.4.(1):**
 - This clause states that *water service piping* must be sized according to the peak demand flow. The pipe also cannot be smaller than $\frac{3}{4}$ -in in size.
 - As defined in clause 7.6.3.1.(1), peak demand flows are not necessarily when all *fixtures* are flowing, but rather the flows when the flow pressures conform to manufacturer's specifications.
 - Therefore, it can be gleaned that the sizing of *water service piping* must be sized on a peak demand flow which can be when the maximum/peak *fixtures* are flowing. And that pipe can be as small as $\frac{3}{4}$ -in if appropriate, but no smaller.
- **OBC 7.6.3.4.(4):**
 - This clause speaks to the size of pipe within the building between the point of connection with the *water service pipe* (or the water meter) and the first branch pipe. This therefore provides further design stipulations for the plumbing within the building.
 - As the review and analysis concerns the incoming water service, the piping after the *water service pipe*, although important, falls outside the scope of this review.
- **OBC 7.6.3.4.(6):**
 - This clause deals specifically with *houses* with only 1 *dwelling unit* as is the case for the single family home at 169 Frank Fisher in Almonte. As such, this clause applies.
 - This clause specifies that the *water service piping* is permitted to be a minimum of $\frac{3}{4}$ -in as long as 2 conditions are met. These conditions being:
 - That the piping within the *house* meet specific sizing requirements from the water entry to *risers* and the last water supply branch for basement supply; and
 - The total hydraulic load is not more than 26 *fixture units*, using the values given in Table 7.6.3.2.A.

ANALYSIS:

- **OBC 7.6.3.1.(1)&(2):**
 - *Water distribution system* (such as the potable domestic water service to a house), must be designed for peak demand flows.
 - The clause does not state that peak demand flows occur when all *fixtures* are flowing.
 - Good engineering practice must be used in designing *potable water systems*.

- **OBC 7.6.3.2.(1) & Table 7.6.3.2.A.:**
 - In order to determine the peak demand flow of the single family home to be located at 169 Frank Fisher in Almonte, sums of *fixture units* for combinations of *fixtures* in the Table can be considered, through good engineering practice, in order to determine the peak demand flow.
 - It is not necessary to consider the sum of all fixtures of the home if it is unreasonable that all fixtures would flow at the same time.
 - In other words, determining the worst case combination of *fixtures* which might flow at any given time, and utilizing their combined hydraulic loads (in terms of fixture units), can provide for the peak demand flow of the *house*.
- **OBC 7.6.3.4.(6):**
 - If the peak demand flows calculated as the sum of the fixture units for the worst case scenario fixtures flowing at any given time are less than 26 fixture units, then it is feasible to use a ¾-in domestic water service line to the buildings.

SCENARIO ANALYSIS:

Appendix A contains a scenario analysis depicting various combinations of plumbing fixture uses within the home. The intent is to determine the peak demand flows that a family or a fully occupied house could use at any given time. The various scenarios evaluated are:

Scenario 1:

In the morning if everyone wakes up and uses the washrooms at the same time. The following fixtures could potentially be used simultaneously:

- Primary Ensuite washroom (In Primary Bedroom) with 1 bath/shower being used at a time.
- Jack & Jill Main washroom with 1 sink being used at a time.
- Ensuite washroom (In bedroom 4)
- In-law suite ensuite washroom (In bedroom 2)
- Basement rough-in washroom
- Washing machine
- 2 x ½" hose bib (if sprinkler system is on in front and back yards)
- Dishwasher

With the above fixtures being used simultaneously, it is unlikely the following fixtures would be used at the same time:

- Extra tub or shower in the Primary Ensuite washroom:

- The extra tub or shower in the primary ensuite washroom is unlikely to be used if it is assumed that all fixtures of the primary ensuite washroom will be used, namely:
 - water closet,
 - 2 x Lavatories,
 - Tub or shower
- 1 Lavatory (powder room):
 - If all house occupants are in the bathrooms using all bathroom fixtures, it is unlikely that the main floor powder room lavatory would be used.
- 1 water closet (powder room):
 - If all house occupants are in the bathrooms using all bathroom fixtures, it is unlikely that the main floor powder room water closet would be used.
- Kitchen sink:
 - If all house occupants are in the bathrooms using all bathroom fixtures, it is unlikely that the kitchen sink would be used.
- Utility sink:
 - If all house occupants are in the bathrooms using all bathroom fixtures, it is unlikely that the basement utility sink would be used.
- Fridge with water/ice:
 - If all house occupants are in the bathrooms using all bathroom fixtures, it is unlikely that someone is in the kitchen using the water from the fridge.

Scenario 2:

In the morning if the main occupants are downstairs while everyone else wakes up and uses the washrooms at the same time. On the main floor, using the powder room (lavatory + water closet) has more fixture units than the kitchen (kitchen sink + fridge water/ice) and therefore the sum of the powder room fixture units were used. The following fixtures could potentially be used simultaneously:

- Jack & Jill Main washroom with 1 sink being used at a time.
- Ensuite washroom (In bedroom 4)
- In-law suite ensuite washroom (In bedroom 2)
- Basement Rough-in bathroom
- Washing machine
- 2 x 1/2" hose bib (if sprinkler system is on in front and back yards)
- Dishwasher
- Main floor powder room lavatory
- Main floor powder room water closet

With the above fixtures being used, it is unlikely the following fixtures would be used at the same time:

- Primary Ensuite bathroom:

- With main occupants on main floor, it is unlikely that the primary ensuite bathroom is used.
 - water closet,
 - 2 x Lavatories,
 - Shower,
 - Extra Tub or shower
- Kitchen fixtures (kitchen sink + fridge water/ice):
 - On the main floor, using the powder room (lavatory + water closet) has more fixture units than the kitchen (kitchen sink + fridge water) and therefore the sum of the powder room fixture units were used.
- Utility sink:
 - If all house occupants are on the main floor or in the bathrooms using all bathroom fixtures, it is unlikely that the basement utility sink would be used.

Through performing the worst case scenario analysis, as shown in Appendix A, the peak demand flows in terms of fixture units for the home is:

169 Frank Fisher: 25.975 fixture units

CONCLUSION:

The Ontario Building Code (OBC) 2012 as amended, requires that water service piping to houses be designed, in line with good engineering practice, for peak demand flows.

The peak demand flows determined for the single family home to be located at 169 Frank Fisher in Almonte is 25.975 fixture units.

As the peak demand flow is less than 26 fixture units, as permitted by clause OBC 7.6.3.4.(6), the water service pipe to the home can be $\frac{3}{4}$ -in.

In addition to these numbers supporting the adequacy of a $\frac{3}{4}$ -in water service pipe, our experience is such that it is of our professional opinion that a $\frac{3}{4}$ -in water service pipe is adequate for the proposed home.

Yours truly,



Luc van der Leeden, P.Eng.
QM&E Engineering



Appendix A

BASELINE - 169 FRANK FISHER (NEWINGTON M) - ALL FIXTURES TOTAL

Fixture or Device	FUs per 7.6.3.2.	Qty	Total FUs	Location
Bathroom group	3.6	5	18	Bsmt rough in, Primary Ensuite, J&J Main Ensuite, Ensuite 4, J&J bath, In-law Ensuite
Extra tub or shower	1.4	1	1.4	Primary Ensuite
Washing machine	1.4	1	1.4	Main floor
1/2" hose bib	2.5	2	5	Garage, Rear yard
Lavatory	0.7	3	2.1	Main floor powder rm, Primary Ensuite, J&J Main Ensuite
Bar sink	1	0	0	
Kitchen sink	1.4	1	1.4	Kitchen
Dishwasher	1.4	1	1.4	Kitchen
Laundry/utility sink	1.4	1	1.4	Bsmt
Water closet	2.2	1	2.2	Main floor powder rm
Fridge with water/ice (3/8" supply line)	1	1	1	Kitchen

35.3 FIXTURE UNITS TOTAL

SCENARIO 1 - 169 FRANK FISHER (NEWINGTON M)

Fixture or Device		FUs per 7.6.3.2.	Qty	Total FUs	Location
Bathroom group		3.6	5	18	Bsmt rough in, Primary Ensuite, J&J Main Ensuite, Ensuite 4, J&J bath, In-law Ensuite
Extra tub or shower	75%	1.4	0	0	Primary Ensuite
Washing machine	75%	1.4	1	1.05	Main floor
1/2" hose bib		2.5	2	5	Garage, Rear yard
Lavatory	75%	0.7	1	0.525	Main floor powder rm, Primary Ensuite, J&J Main Ensuite
Bar sink	75%	1	0	0	
Kitchen sink	75%	1.4	0	0	Kitchen
Dishwasher		1.4	1	1.4	Kitchen
Laundry/utility sink	75%	1.4	0	0	Bsmt
Water closet		2.2	0	0	Main floor powder rm
Fridge with water/ice (3/8" supply line)		1	0	0	Kitchen

25.975 FIXTURE UNITS TOTAL

SCENARIO 2 - 169 FRANK FISHER (NEWINGTON M)

Fixture or Device		FUs per 7.6.3.2.	Qty	Total FUs	Location
Bathroom group		3.6	4	14.4	Bsmt rough in, Primary Ensuite, J&J Main Ensuite, Ensuite 4, J&J bath, In-law Ensuite
Extra tub or shower	75%	1.4	0	0	Primary Ensuite
Washing machine	75%	1.4	1	1.05	Main floor
1/2" hose bib		2.5	2	5	Garage, Rear yard
Lavatory	75%	0.7	1	0.525	Main floor powder rm, Primary Ensuite, J&J Main Ensuite
Bar sink	75%	1	0	0	
Kitchen sink	75%	1.4	0	0	Kitchen
Dishwasher		1.4	1	1.4	Kitchen
Laundry/utility sink	75%	1.4	0	0	Bsmt
Water closet		2.2	1	2.2	Main floor powder rm
Fridge with water/ice (3/8" supply line)		1	0	0	Kitchen

24.575 FIXTURE UNITS TOTAL