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| DRAWN BY: | DRAWING NAME: GENERAL NOTES |
|-----------|-----------------------------|

WINDOWS -
CANADA ZONE C

(1) MINIMUM BEDROOM WINDOW (*OBC 9.9.10.1.)

AT LEAST ONE BEDROOM WINDOW ON A GIVEN FLOOR IS TO HAVE MIN. 0.35m2 (3.8 SQ.FT.) UNOBSTRUCTED GLAZED OPENABLE AREA WITH MIN. CLEAR WIDTH OF 380mm (1'-3")

GLASS AREA NOT MORE THAN 17% OF GROSS PERIPHERAL WALL AREA. MAXIMUM U-VALUE 0.28

(2) WINDOW GUARDS (*OBC 9.8.8.1(6))

A GUARD IS REQUIRED WHERE THE TOP OF THE WINDOW SILL IS LOCATED LESS THAN 480mm (1'-6") ABOVE FIN. FLOOR AND THE DISTANCE FROM THE FIN. FLOOR TO THE ADJACENT GRADE IS GREATER THAN 1800mm (5'-11")

PROTECTION OF WINDOWS ONLY REQUIRED AT STAIR/LANDINGS PER 9.8.8.1.(8). REMAINDER OF UNIT EXEMPT PER 9.8.8.1.(6)(a)

GENERAL:

(1) MECHANICAL VENTILATION

MECHANICAL VENTILATION IS REQUIRED TO PROVIDE 0.3 AIR CHANGES PER HOUR AVERAGED OVER 24 HOURS. SEE MECHANICAL DRAWINGS.

(2) OUTDOOR AIR INTAKE ●

ALL OUTDOOR AIR INTAKES SHALL BE LOCATED SO THAT THEY ARE SEPARATED FROM SOURCES OF CONTAMINATION (EXHAUST VENTS) IN COMPLIANCE WITH O.B.C. DIV.-B 6.2.3.12. AND TABLE 6.2.3.12.

(3) REINFORCEMENT FOR GRAB BARS (*OBC 9.5.2.3.) ●

REINFORCEMENT OF STUD WALLS SHALL BE INSTALLED ADJACENT TO WATER CLOSETS AND SHOWER OR BATHTUB IN MAIN BATHROOM. REFER TO O.B.C. 9.5.2.3, 3.8.3.8.(3)(a), 3.8.3.8.(3)(c), 3.8.3.13.(2)(g) & 3.8.3.13.(4)(e). SEE DETAIL ON PAGE 11.

LUMBER:

- 1.)ALL LUMBER SHALL BE SPRUCE-PINE-FIR No.1&2 GRADE, UNLESS NOTED OTHERWISE.
2.)LUMBER EXPOSED TO THE EXTERIOR TO BE SPRUCE-PINE-FIR No.1&2 GRADE PRESSURE TREATED OR CEDAR, UNLESS NOTED OTHERWISE.

ALL BEAMS, GIRDER TRUSSES, AND METAL HANGER CONNECTIONS SUPPORTING ROOF FRAMING TO BE DESIGNED & CERTIFIED BY TRUSS MANUFACTURER.

- LVL BEAMS SHALL BE 2.OE (Fb=2800psi MIN.). NAIL EACH PLY OF LVL WITH 89mm (3-1/2") LONG COMMON WIRE NAILS @300mm (12") o.c.
4.)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 1/2" (13mm) DIA. GALVANIZED BOLTS BOLTED AT MID-DEPTH OF BEAM @ 915mm (3'-0")o.c.

- 5.)PROVIDE TOP MOUNT BEAM HANGERS FOR ALL LVL BEAM TO BEAM CONNECTIONS UNLESS NOTED OTHERWISE.
6.)PROVIDE METAL JOIST HANGERS FOR ALL JOISTS AND BUILT-UP WOOD MEMBERS INTERSECTING FLUSH BUILT-UP WOOD MEMBERS.

- 7.)WOOD FRAMING NOT TREATED WITH A WOOD PRESERVATIVE, IN CONTACT WITH CONCRETE, SHALL BE SEPARATED FROM THE CONC. BY AT LEAST 2mil. POLYETHYLENE FILM, No.50 (45lbs) ROLL ROOFING OR OTHER DAMPROOFING MATERIAL, EXCEPT WHERE THE WOOD MEMBER IS AT LEAST 150mm (6") ABOVE THE GROUND.

STEEL:

STRUCTURAL STEEL AND HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO CAN/CSA-G40-21 GRADE 350W.

REINFORCING STEEL SHALL CONFORM TO CSA-G30-18M GRADE 400R.

REVISION:

- ONT. REG. 332/12-2012 OBC AMENDMENT O. REG. 88/19 JAN. 01, 2020

STABILITY OF NARROW (20'-25')
& TALL (±30') HOUSES

BUILDER TO PROVIDE SUFFICIENT TEMPORARY BRACING TO RESIST WIND LOADING WHEN UNDER CONSTRUCTION. FURTHER RECOMMENDATIONS:

- 1.)REDUCE THE FOUNDATION WALL SILL PLATE ANCHOR BOLT SPACING FROM 2400mm o.c. (7'-10") TO 1220mm o.c. (4'-0") FOR STANDARD CONDITIONS.
2.)USE 9.5mm (3/8") THICK PLYWOOD OR WAFERBOARD FOR THE EXTERIOR WALL SHEATHING.
3.)TO STIFFEN THE STRUCTURE IN TRANSVERSE DIRECTION USE 9.5mm (3/8") THICK PLYWOOD NAILED TO THE INTERIOR PARTITIONS ON EACH FLOOR FOR A MINIMUM 2 INTERIOR PARTITION WALLS ON BOTH SIDES AND PERPENDICULAR TO THE LONG WALLS.

BRICK VENEER LINTELS

WL1 = 3-1/2"x3-1/2"x1/4"L (90x90x6.0L) + 2-2"x8" SPR. No.2
WL2 = 4"x3-1/2"x5/16"L (100x90x8.0L) + 2-2"x8" SPR. No.2
WL3 = 5"x3-1/2"x5/16"L (125x90x8.0L) + 2-2"x10" SPR. No.2
WL4 = 6"x3-1/2"x3/8"L (150x90x10.0L) + 2-2"x12" SPR. No.2
WL5 = 6"x4"x3/8"L (150x100x10.0L) + 2-2"x12" SPR. No.2
WL6 = 5"x3-1/2"x5/16"L (125x90x8.0L) + 2-2"x12" SPR. No.2
WL7 = 5"x3-1/2"x5/16"L (125x90x8.0L) + 3-2"x10" SPR. No.2
WL8 = 5"x3-1/2"x5/16"L (125x90x8.0L) + 3-2"x12" SPR. No.2
WL9 = 6"x4"x3/8"L (150x100x10.0L) + 3-2"x12" SPR. No.2

WOOD LINTELS AND BEAMS

WB1 = 2-2"x8" SPR. No.2 (2-38x184 SPR. No.2)
WB2 = 3-2"x8" SPR. No.2 (3-38x184 SPR. No.2)
WB3 = 2-2"x10" SPR. No.2 (2-38x235 SPR. No.2)
WB4 = 3-2"x10" SPR. No.2 (3-38x235 SPR. No.2)
WB5 = 2-2"x12" SPR. No.2 (2-38x286 SPR. No.2)
WB6 = 3-2"x12" SPR. No.2 (3-38x286 SPR. No.2)
WB7 = 5-2"x12" SPR. No.2 (5-38x286 SPR. No.2)
WB11 = 4-2"x10" SPR. No.2 (4-38x235 SPR. No.2)
WB12= 4-2"x12" SPR. No.2 (4-38x286 SPR. No.2)

LOOSE STEEL LINTELS

L1 = 3-1/2"x3-1/2"x1/4"L (90x90x6.0L)
L2 = 4"x3-1/2"x5/16"L (100x90x8.0L)
L3 = 5"x3-1/2"x5/16"L (125x90x8.0L)
L4 = 6"x3-1/2"x3/8"L (150x90x10.0L)
L5 = 6"x4"x3/8"L (150x100x10.0L)
L6 = 7"x4"x3/8"L (175x100x10.0L)

LAMINATED VENEER LUMBER (LVL) BEAMS

LVL1A = 1-1 3/4" x 7 1/4" (1-45x184)
LVL1 = 2-1 3/4" x 7 1/4" (2-45x184)
LVL2 = 3-1 3/4" x 7 1/4" (3-45x184)
LVL3 = 4-1 3/4" x 7 1/4" (4-45x184)
LVL4A = 1-1 3/4" x 9 1/2" (1-45x240)
LVL4 = 2-1 3/4" x 9 1/2" (2-45x240)
LVL5 = 3-1 3/4" x 9 1/2" (3-45x240)
LVL5A = 4-1 3/4" x 9 1/2" (4-45x240)
LVL6A = 1-1 3/4" x 11 7/8" (1-45x300)
LVL6 = 2-1 3/4" x 11 7/8" (2-45x300)
LVL7 = 3-1 3/4" x 11 7/8" (3-45x300)
LVL7A = 4-1 3/4" x 11 7/8" (4-45x300)
LVL8 = 2-1 3/4" x 14" (2-45x356)
LVL9 = 3-1 3/4" x 14" (3-45x356)
LVL10 = 2-1 3/4" x 18" (2-45x456)

LEGEND

| | |
|---------------|--|
| DJ | DOUBLE JOIST |
| TJ | TRIPLE JOIST |
| GT | GIRDER TRUSS |
| | POINT LOAD |
| | SOLID WOOD BEARING. SOLID BEARING TO BE WIDE AT LEAST AS SUPPORTED MEMBER. MIN. 3 PIECES. |
| | LOAD-BEARING WALL |
| | TWO-STOREY WALL. SEE NOTE |
| | RAISED WOOD PLATE |
| | FLAT ARCH |
| F.D. | FLOOR DRAIN |
| SA | SMOKE ALARM. SEE NOTE |
| SA OMA | SMOKE ALARM & CARBON MONOXIDE ALARM. SEE NOTE |

EXTERIOR LIGHTING OUTLET WITH A FIXTURE CONTROLLED BY A WALL SWITCH LOCATED WITHIN THE BUILDING SHALL BE PROVIDED AT EVERY ENTRANCE TO THE BUILDING OF RESIDENTIAL OCCUPANCY AS PER 9.34.2.1.(1)

Door Schedule

| NO. | WIDTH | HEIGHT 8' TO 9' CEILINGS | HEIGHT 10' OR MORE CEILINGS | TYPE |
|-----|--------|--------------------------------|-----------------------------------|-------------------------|
| 1 | 2'-10" | 6'-8" (865x2033) | 8'-0" (865x2439) | INSULATED ENTRANCE DOOR |
| 1a | 2'-8" | 6'-8" (815x2033) | 8'-0" (815x2439) | INSULATED FRONT DOORS |
| 2 | 2'-8" | 6'-8" (815x2033) | 8'-0" (815x2439) | WOOD & GLASS DOOR |
| 3 | 2'-8" | 6'-8 x 1-3/4" (815x2033x45) | 8'-0" x 1-3/4" (815x2439x45) | EXTERIOR SLAB DOOR |
| 4 | 2'-8" | 6'-8" x 1-3/8" (815x2033x35) | 8'-0" x 1-3/8" (815x2439x35) | INTERIOR SLAB DOOR |
| 5 | 2'-6" | 6'-8" x 1-3/8" (760x2033x35) | 8'-0" x 1-3/8" (760x2439x35) | INTERIOR SLAB DOOR |
| 6 | 2'-2" | 6'-8" x 1-3/8" (660x2033x35) | 8'-0" x 1-3/8" (660x2439x35) | INTERIOR SLAB DOOR |
| 7 | 1'-6" | 6'-8" x 1-3/8" (460x2033x35) | 8'-0" x 1-3/8" (460x2439x35) | INTERIOR SLAB DOOR |
| 8 | 3'-0" | 6'-8" x 1-3/8" (915x2033x35) | 8'-0" x 1-3/8" (915x2439x35) | INTERIOR SLAB DOOR |

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NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS & DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING CODE AND ANY OTHER REFERENCED REQUIREMENTS.

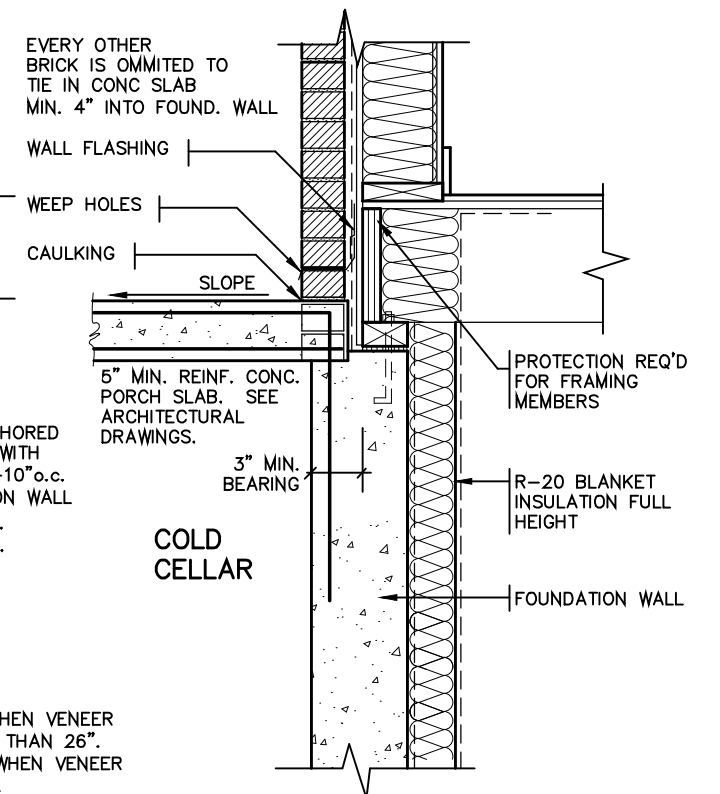
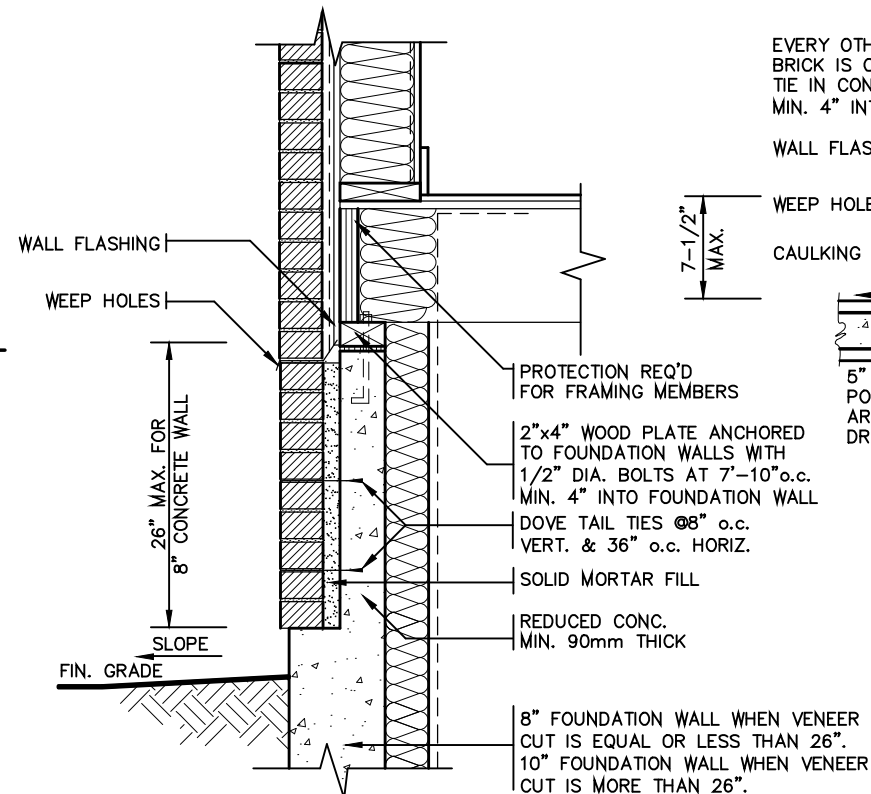
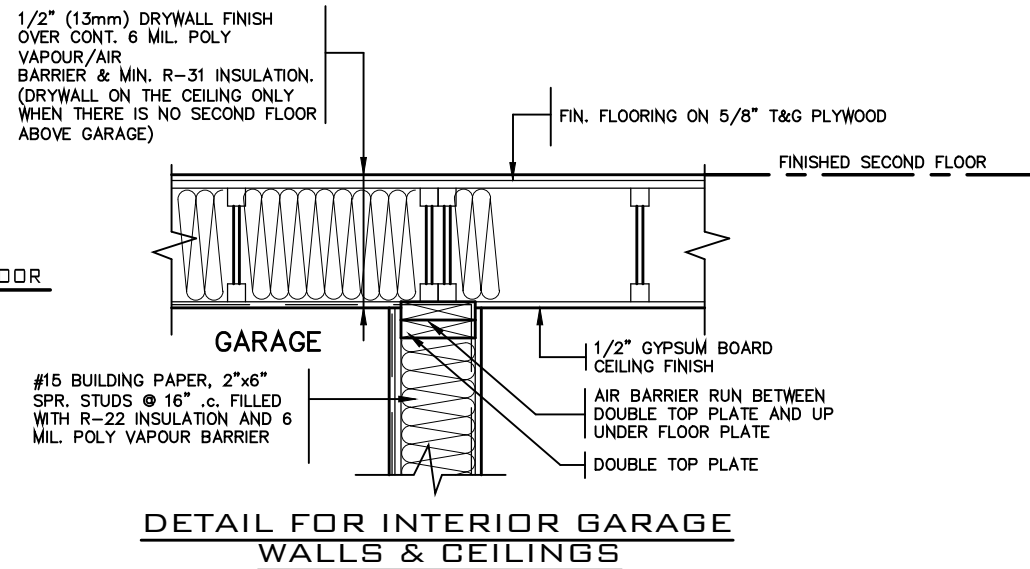
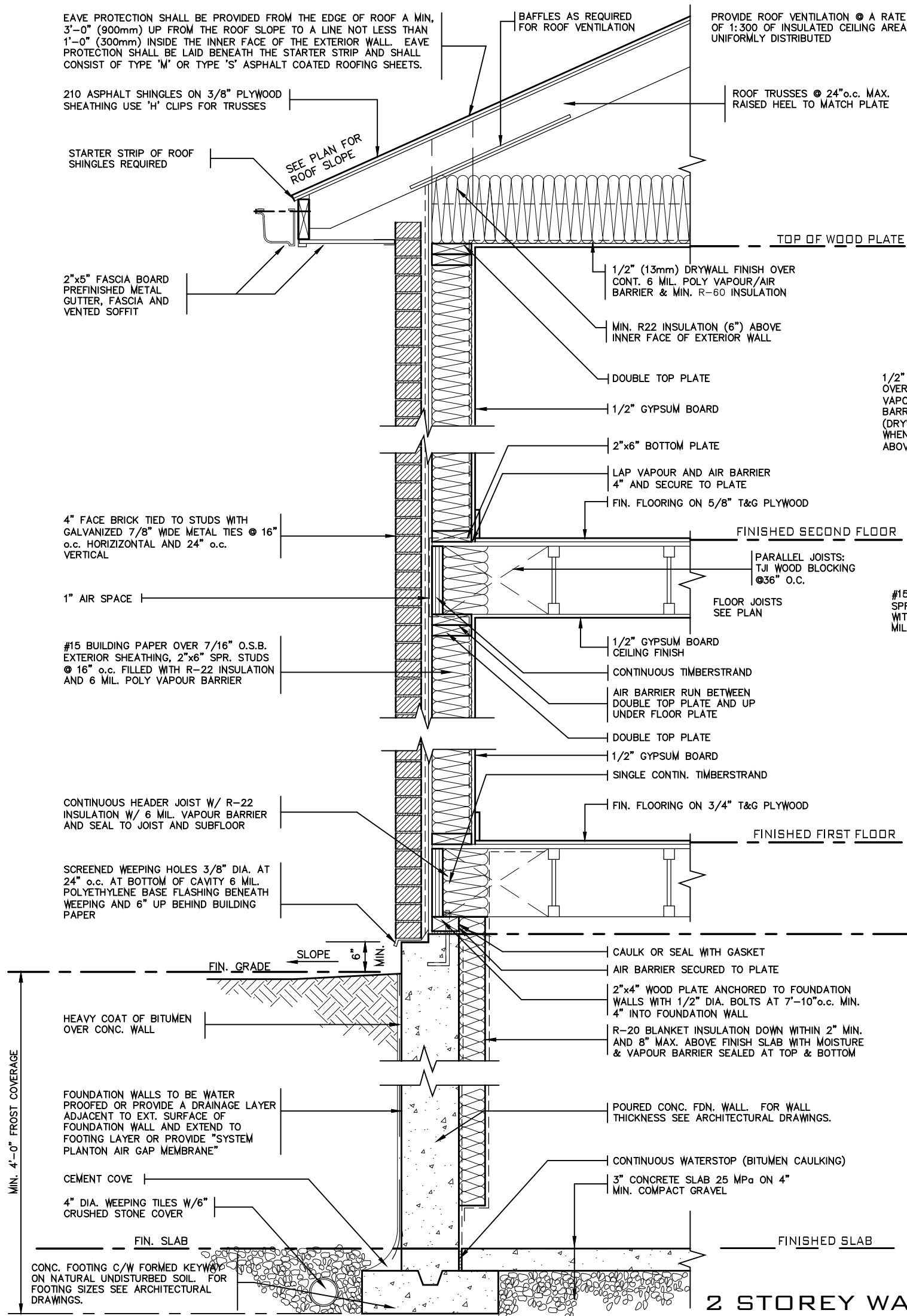
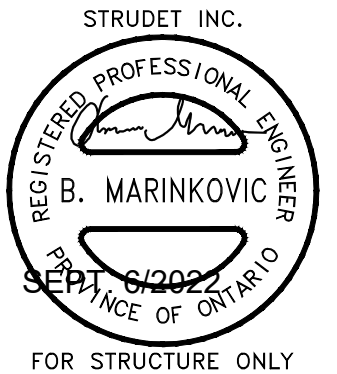
2012 CODE

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|--|-------|-------------------|---|
| THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE BEFORE PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO JARDIN DESIGN GROUP INC. PRIOR TO COMMENCEMENT OF WORK. | 7 | | |
| JARDIN DESIGN GROUP INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, STRUCTURAL OR ENGINEERING INFORMATION SHOWN ON THESE DRAWINGS OR FOR CONSTRUCTION STARTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. REFER TO THE APPROPRIATE ENGINEERING DRAWINGS BEFORE PROCEEDING WITH WORK. | 6 | | |
| AS CONSTRUCTED INVERTS MUST BE VERIFIED PRIOR TO POURING FOOTINGS. | 5 | | |
| JARDIN DESIGN GROUP INC. HAS NOT BEEN RETAINED TO CARRY OUT GENERAL REVIEW OF THE WORK AND ASSUMES NO RESPONSIBILITY FOR THE FAILURE OF THE CONTRACTOR OR SUB CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. | 4 | | |
| THIS DRAWING IS AN INSTRUMENT OF SERVICE. IS PROVIDED BY AND IS THE PROPERTY OF JARDIN DESIGN GROUP INC. THIS DRAWING IS NOT TO BE SCALED. | 3 | | |
| | 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| | 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |
| No: | DATE: | WORK DESCRIPTION: | |

| | |
|---|----------------|
| The undersigned has reviewed and takes responsibility for this design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer | |
| QUALIFICATION INFORMATION Required unless design is exempt under Division C, Subsection 3.2.5 of the building code | |
| Walter Botter | 21031 |
| NAME | SIGNATURE BCIN |
| REGISTRATION INFORMATION Required unless design is exempt under Division C, Subsection 3.2.4 of the building code | |
| jardin design group inc. | 27763 |
| FIRM NAME | BCIN |

| |
|--|
| jardin |
| DESIGN GROUP INC |
| 64 JARDIN DR, SUITE 3A VAUGHAN ONT, L4K 3P3 TEL: 905 660-3377 FAX: 905 660-3713 EMAIL: info@jardindesign.ca |

| | |
|--|----------------------|
| GENERAL NOTES | |
| BARLASSINA CONSTRUCTION CITY OF CAMBRIDGE | |
| | MODEL NAME T ---- |
| | SCALE: N.T.S. |
| PROJ. No. 21-35 | DWG. No. 1A |



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| 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |

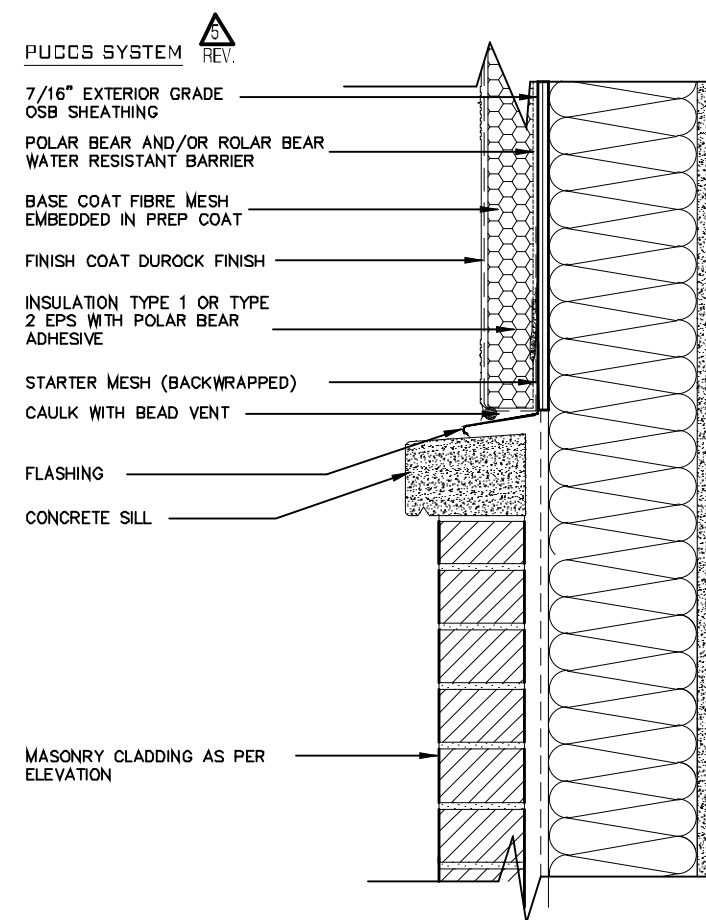
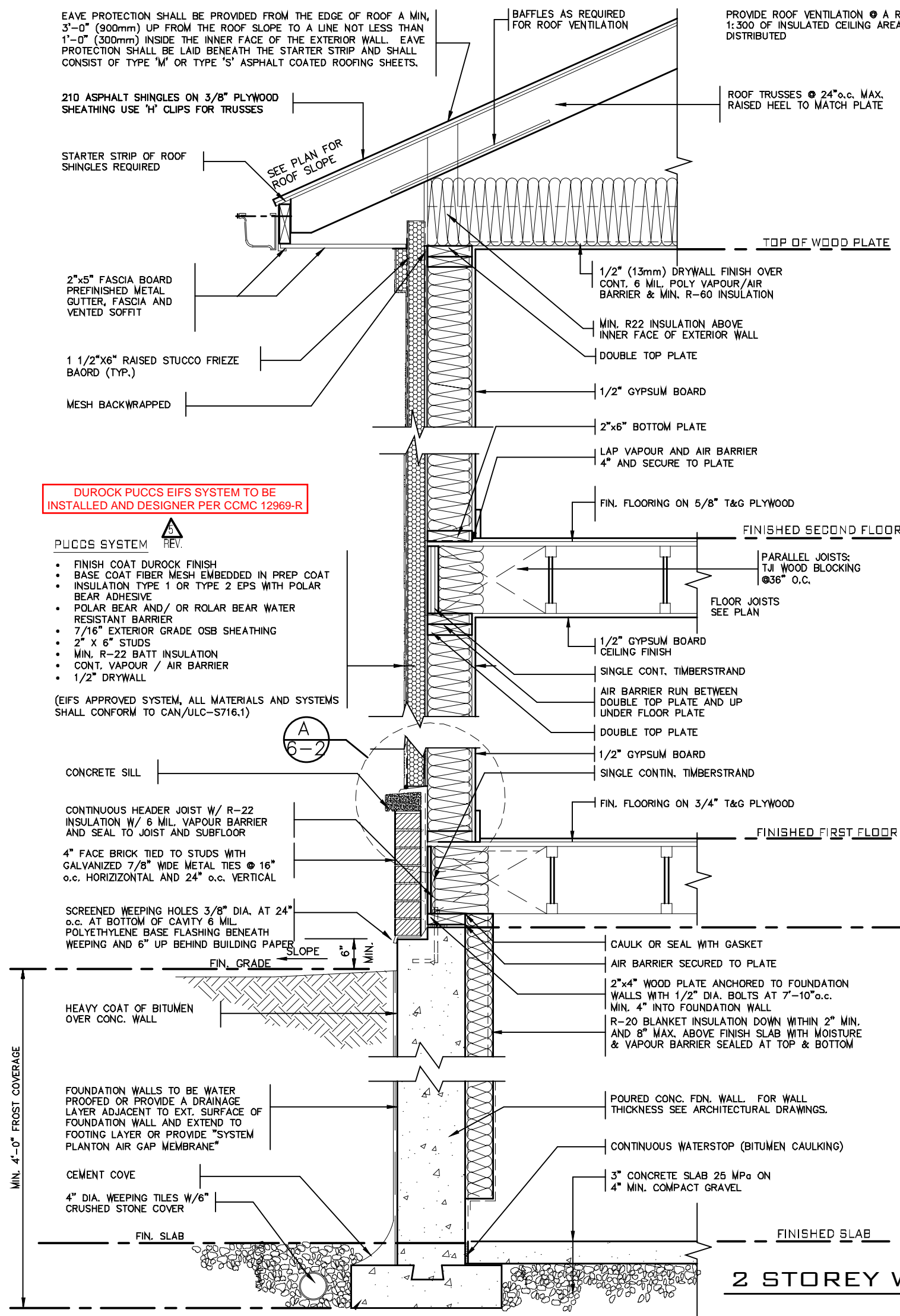
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| No. | DATE | WORK DESCRIPTION |
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| 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
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| jardin design group inc. | 27763 |
| FIRM NAME | BCIN |

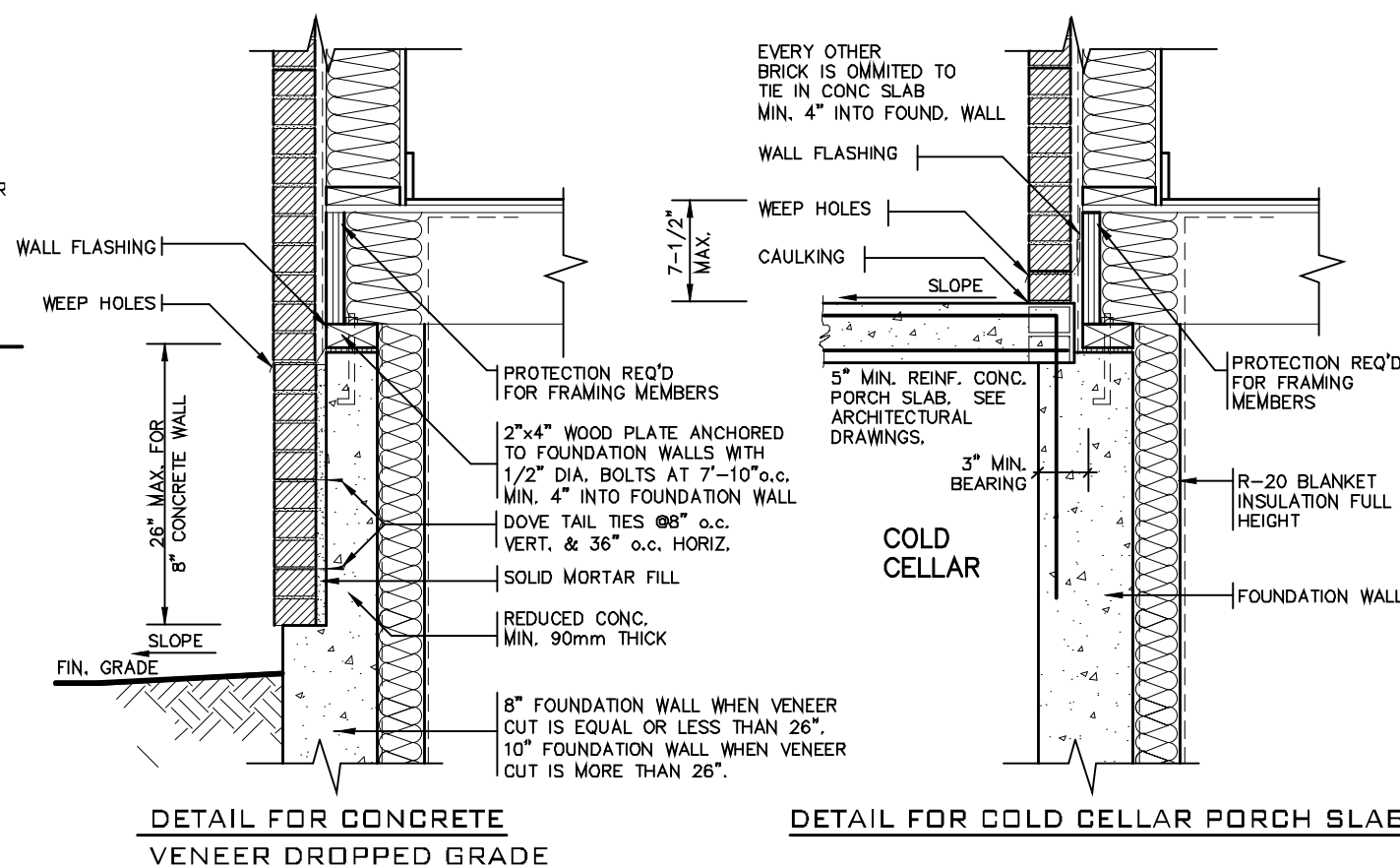
jardin
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EMAIL: info@jardindesign.ca

| | |
|--|--------------------|
| 2 STOREY WALL SECTION 2"x6" BRICK VENEER | MODEL NAME T |
| BARLASSINA CONSTRUCTION CITY OF CAMBRIDGE | SCALE: AS NOTED |
| | PROJ. No. 21-35 |
| | DWG. No. 2 |



A. TERMINATION AT MASONRY
CLADDING WITH SEALANT

1 1/2" = 1'0"



DETAIL FOR CONCRETE
VENEER DROPPED GRADE

DETAIL FOR COLD CELLAR PORCH SLAB

STRUDET INC.



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2012 CODE

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|-----|---------------|---|
| 7 | | |
| 6 | | |
| 5 | MAR. 8, 2023 | REV. STUCCO NOTE AS PER CITY COMMENT, REISSUED FOR PERMIT |
| 4 | | |
| 3 | | |
| 2 | AUG. 31, 2022 | ADDED TO JOB, ISSUED FOR PERMIT |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |
| No. | DATE: | WORK DESCRIPTION: |

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| | |
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| Walter Botter | 21031 |
| NAME | SIGNATURE |
| BCIN | |
| REGISTRATION INFORMATION Required unless design is exempt under Division C, Subsection 3.2.4 of the building code. | |
| jardin design group inc. | 27763 |
| FIRM NAME | BCIN |

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EMAIL: info@jardindesign.ca

2 STOREY WALL SECTION
2"x6" STUCCO WALL
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE



| | |
|------------|----------|
| MODEL NAME | T |
| SCALE: | AS NOTED |
| PROJ. No. | 21-35 |
| DWG. No. | 3 |

TIGHTLY SEAL ANY GAPS WITH MINERAL WOOL OR NON-COMBUSTABLE MATERIAL AS PER O.B.C. 9.10.11.2(3)

PROVIDE BEARING FOR GIRDER TRUSSES AS PER TRUSS DRAWING SPECIFICATION

PRE-ENGINEERED ROOF TRUSSES AS PER TRUSS MANUFACTURERS DRAWINGS

TOP OF PLATE

2 LAYERS OF 1/2" GYPSUM WALL BOARD FOR FIRE-STOPPING CONTINUOUS

3 ROWS (TOP, MIDDLE AND BOTTOM) OF 1"x4" STRAPPING TO RESTRAIN INSULATION FROM FALLING OUT.

5/8" TYPE "X" GYPSUM WALL BOARD

FIN. SECOND FLOOR

ABSORPTIVE MATERIAL

2 LAYERS OF 1/2" GYPSUM WALL BOARD FOR FIRE-STOPPING CONTINUOUS

3 ROWS (TOP, MIDDLE AND BOTTOM) OF 1"x4" STRAPPING TO RESTRAIN INSULATION FROM FALLING OUT.

5/8" TYPE "X" GYPSUM WALL BOARD

FIN. FIRST FLOOR

JOISTS FRAMING INTO PARTY WALL
ABSORPTIVE MATERIAL

SOLID BLOCKING BETWEEN JOISTS
CONTINUOUS RIM BOARD

1/2" DIA. ANCHOR BOLTS EMBEDDED IN POURED CONC. WALL

8" POURED CONC. WALL

CONTINUOUS BOND BREAKING MATERIAL

3" CONC. SLAB ON 5" COMPACTED GRAVEL

FIN. BASEMENT SLAB

CONC. FTG. C/W 2"x4" KEYWAY ON NATURAL UNDISTURBED SOIL FOR SIZES SEE ARCHITECTURAL DRAWINGS

WOOD FRAME PARTY WALL

TRUSSES PERPENDICULAR TO PARTY WALL

38x89 (2"x4") STUDS @ 400 O.C. WITH 15.9mm (5/8") TYPE 'X' GYPSUM BOARD ONE LAYER ON EACH SIDE. SUPPLEMENTARY STANDARDS SB3, TABLE 1, W1d WALL ASSEMBLY.

SOUND ABSORPTIVE MATERIAL REQUIREMENTS
SOUND ABSORPTIVE MATERIAL INCLUDES FIBRE PROCESSED FROM ROCK, SLAG, GLASS OR CELLULOSE FIBRE. IT MUST FILL AT LEAST 90% OF THE CAVITY THICKNESS FOR THE WALL TO PROVIDE THE LISTED STC VALUE.

SOUND TRANSMISSION RATING
MINIMUM REQUIRED S.T.C. RATING OF 50 (O.B.C. DIV. B 9.11.2.1(1))

WALL TYPE
SEE SUPPLEMENTARY STANDARDS SB3 TABLE 1, W13A BEARING WALL WITH 2 ROWS OF 2X4 SPR. @ 16" O.C. ON SEPARATE 2X4 PLATES SET 1" APART WITH 4" ABSORPTIVE MATERIAL AND 1 LAYER 5/8" TYPE 'X' GYPSUM WALL BOARD ON EACH SIDE (SEE NOTES 5 TO TABLE 1)

FIRE RESISTANCE RATING
FIRE RESISTANCE RATING REQUIRED IS 1 HR. MIN. (AS PER SENTENCE DIV. B 9.10.11.2.1 [1] O.B.C.)

2 LAYERS OF 1/2" GYPSUM WALL BOARD FOR FIRE-STOPPING CONTINUOUS

1" AIR SPACE

3/4" SUBFLOOR

ENGINEERED FLOOR JOISTS W/HEADER

2 LAYERS OF 1/2" GYPSUM WALL BOARD FOR FIRE-STOPPING CONTINUOUS

2"x4" SILL PLATE (MAX. 2 725 P/F)

8" POURED CONC. FOUNDATION WALL

FIN. SLAB

FLOOR JOISTS PARALLEL

3.5" DIA. STEEL COLUMN
2"x4" SPR. STUDS @ 16" O.C. STAGGERED

CENTRE LINE OF PARTY WALL

1/2" DRYWALL @ STUD CONCEALING STL. COL.
ONLY 1 LAYER PERMITTED. 2 LAYERS WILL REMOVE STC RATING FROM ASSEMBLY. SEE TABLE 1 NOTE 10, SB-3

PLAN OF PARTY WALL IN GARAGE

ALL GYPSUM BOARD TO BE TIGHT FIR AGAINST ROOF SHEATHING AND ROOF TRUSSES. MIDDLE GYPSUM BOARD BETWEEN TWO TRUSSES TO BE TIGHTLY SCREWED TO BOTH TRUSSES.

PER- ENGINEERED ROOF TRUSSES BY TRUSS MFG. @ 24" O.C.

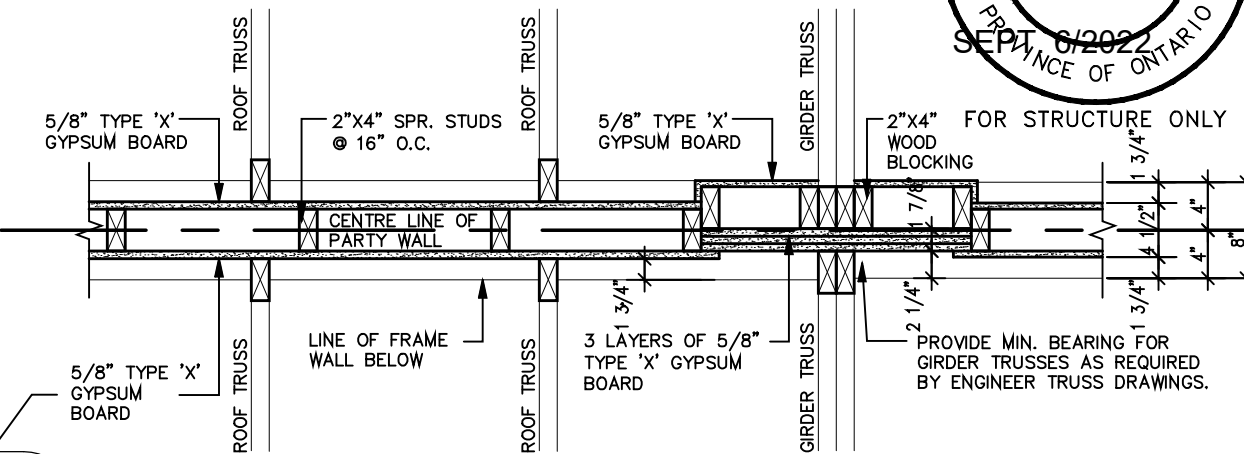
5/8" TYPE 'X' GYPSUM WALL BOARD

TOP OF PLATE

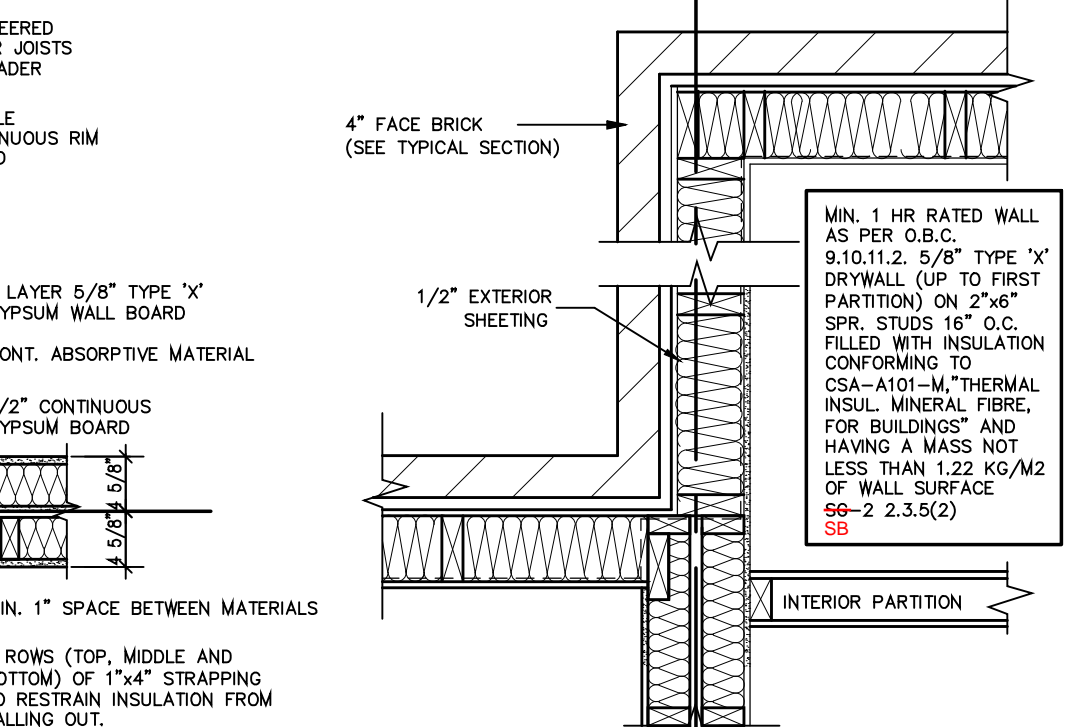
2 LAYERS OF 1/2" GYPSUM WALL BOARD FOR FIRE-STOPPING CONTINUOUS

3 ROWS (TOP, MIDDLE AND BOTTOM) OF 1"x4" STRAPPING TO RESTRAIN INSULATION FROM FALLING OUT.

SECTION @ FIRE SEPARATION IN ROOF SPACE
TRUSSES PARALLEL TO PARTY WALL



PLAN OF FIRE SEPARATION IN ROOF SPACE
TRUSSES PERPENDICULAR TO PARTY WALL



2012
PACKAGE 'A1'

38x89 (2"x4") STUDS @ 400 O.C. WITH 15.9mm (5/8") TYPE 'X' GYPSUM BOARD ONE LAYER ON EACH SIDE. (~~SB-3, SECTION 8-1, W1d WALL ASSEMBLY~~) SB-3

5/8" TYPE 'X' GYPSUM WALL BOARD

~~FIRE RESISTANCE RATING PROVIDED FOR FRAMED ASSEMBLY IS 1.5 HR. AS PER SUPPLEMENTARY STANDARD SB-2 3.4. METHOD OF CALCULATION FIRE RESISTANCE RATING REQ'D IS 1 HR. (AS PER SENTENCE 9.10.11.2.(1) O.B.C.)~~

T.12.3.2.1. INSULATION IN ROOF SPACE W/ 6-MIL POLY VAPOUR BARRIER ON INTERIOR SIDE FINISHED WITH 5/8" GYPSUM WALL BOARD OR APPROVED EQUAL.

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| | | | |
|--|---|---------------|---|
| THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE BEFORE PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO JARDIN DESIGN GROUP INC. PRIOR TO COMMENCEMENT OF WORK. | 7 | | |
| JARDIN DESIGN GROUP INC. IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, STRUCTURAL OR ENGINEERING INFORMATION SHOWN ON THESE DRAWINGS OR FOR CONSTRUCTION STARTED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. REFER TO THE APPROPRIATE ENGINEERING DRAWINGS BEFORE PROCEEDING WITH WORK. | 6 | | |
| AS CONSTRUCTED INVERTS MUST BE VERIFIED PRIOR TO POURING FOOTINGS. | 5 | | |
| JARDIN DESIGN GROUP INC. HAS NOT BEEN RETAINED TO CARRY OUT GENERAL REVIEW OF THE WORK AND ASSUMES NO RESPONSIBILITY FOR THE FAILURE OF THE CONTRACTOR OR SUB CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. | 4 | | |
| THIS DRAWING IS AN INSTRUMENT OF SERVICE. IS PROVIDED BY AND IS THE PROPERTY OF JARDIN DESIGN GROUP INC. THIS DRAWING IS NOT TO BE SCALED. | 3 | | |
| | 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| | 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |

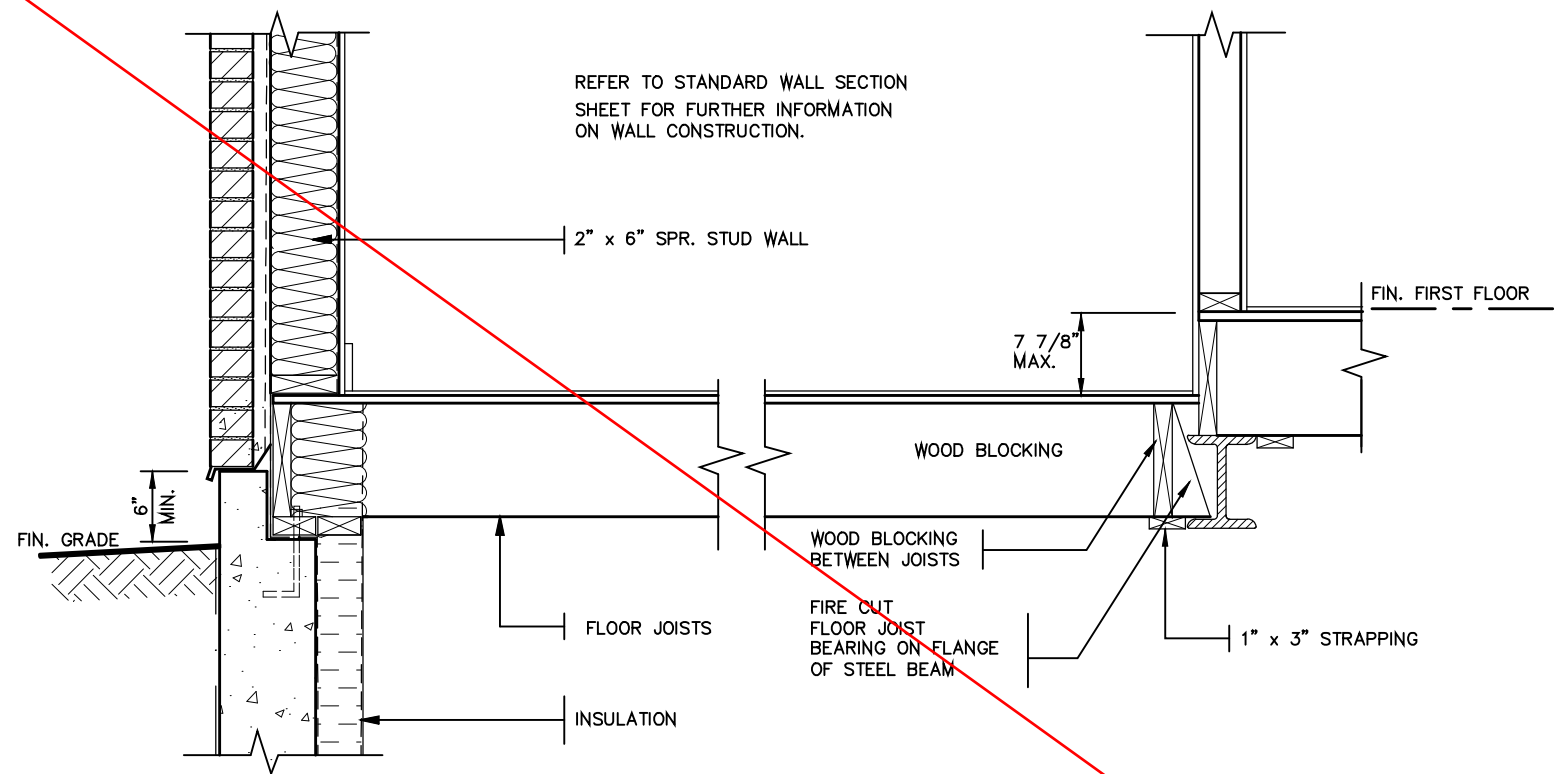
| | | |
|-----|-------|-------------------|
| No: | DATE: | WORK DESCRIPTION: |
| | | |

NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS & DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING CODE AND ANY OTHER REFERENCED REQUIREMENTS.

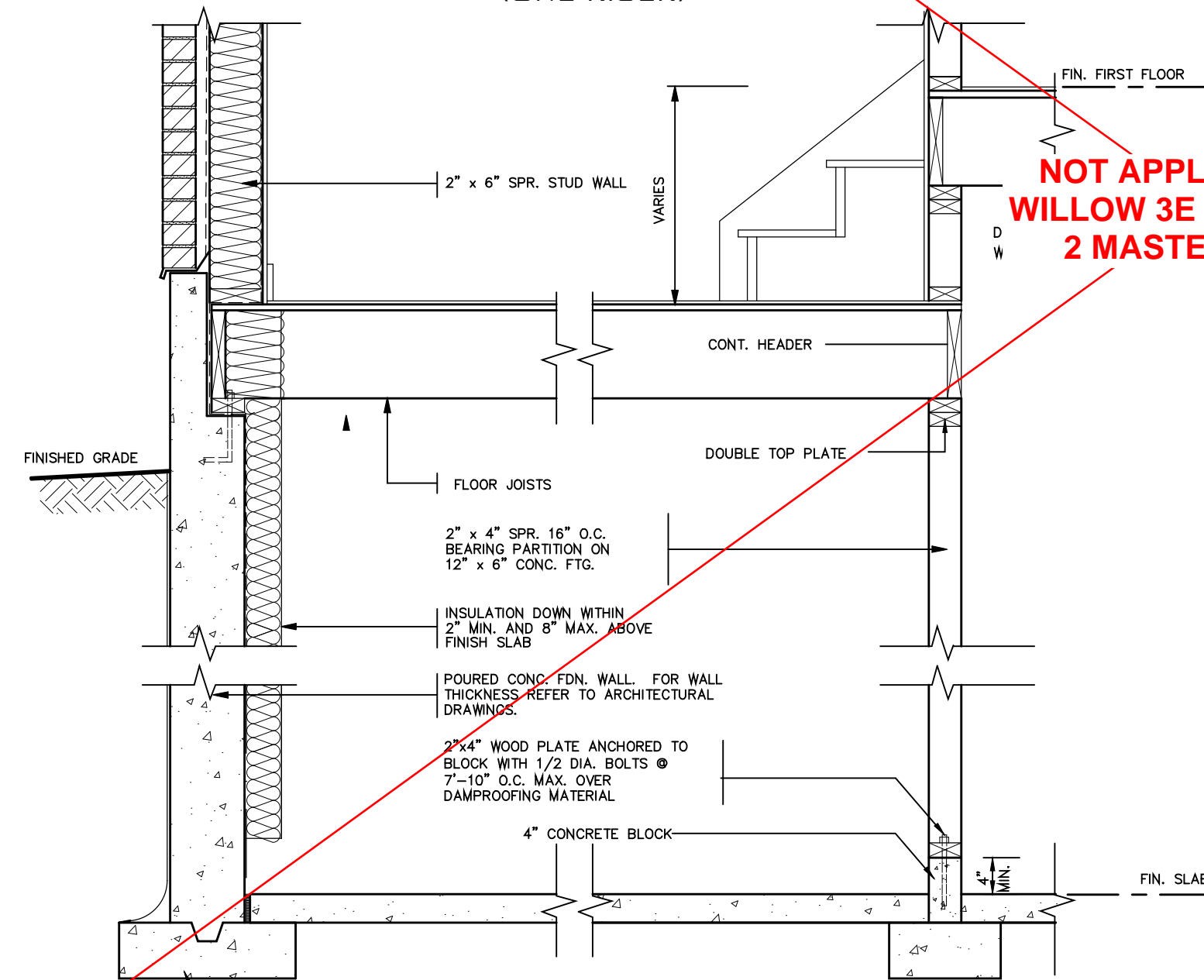
| | |
|---|-----------|
| The undersigned has reviewed and takes responsibility for this design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer | 21031 |
| Walter Botter | SIGNATURE |
| NAME | BCIN |
| Required unless design is exempt under Division C, Subsection 3.2.5 of the building code | |
| REGISTRATION INFORMATION | |
| Required unless design is exempt under Division C, Subsection 3.2.4 of the building code | |
| jardin design group inc. | 27763 |
| FIRM NAME | BCIN |

jardin
DESIGN GROUP INC
64 JARDIN DR. SUITE 3A
VAUGHAN ONT. L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

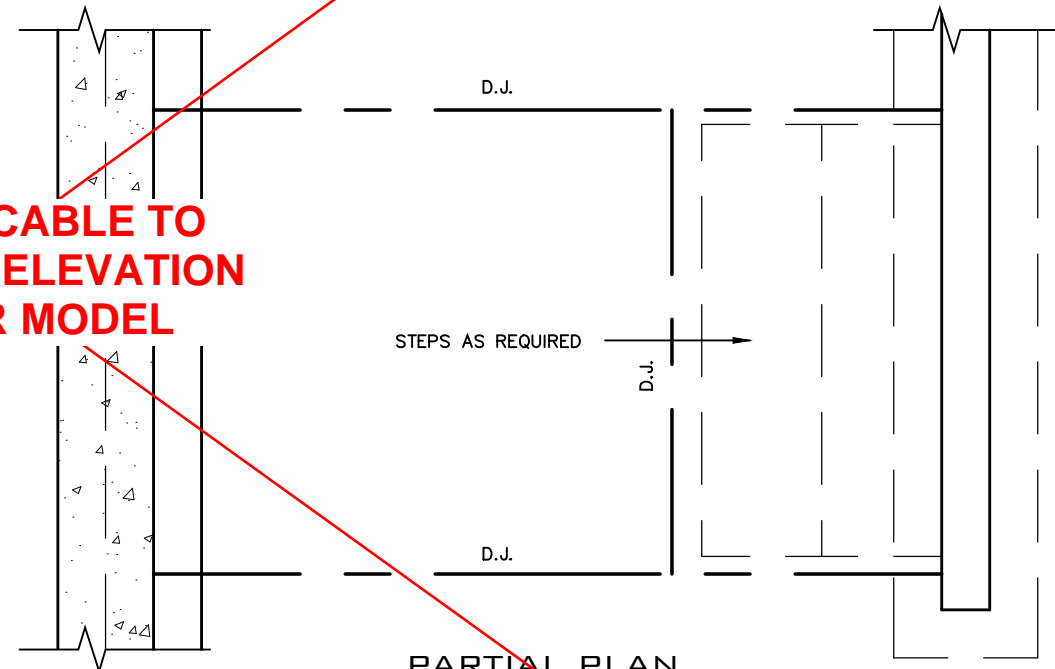
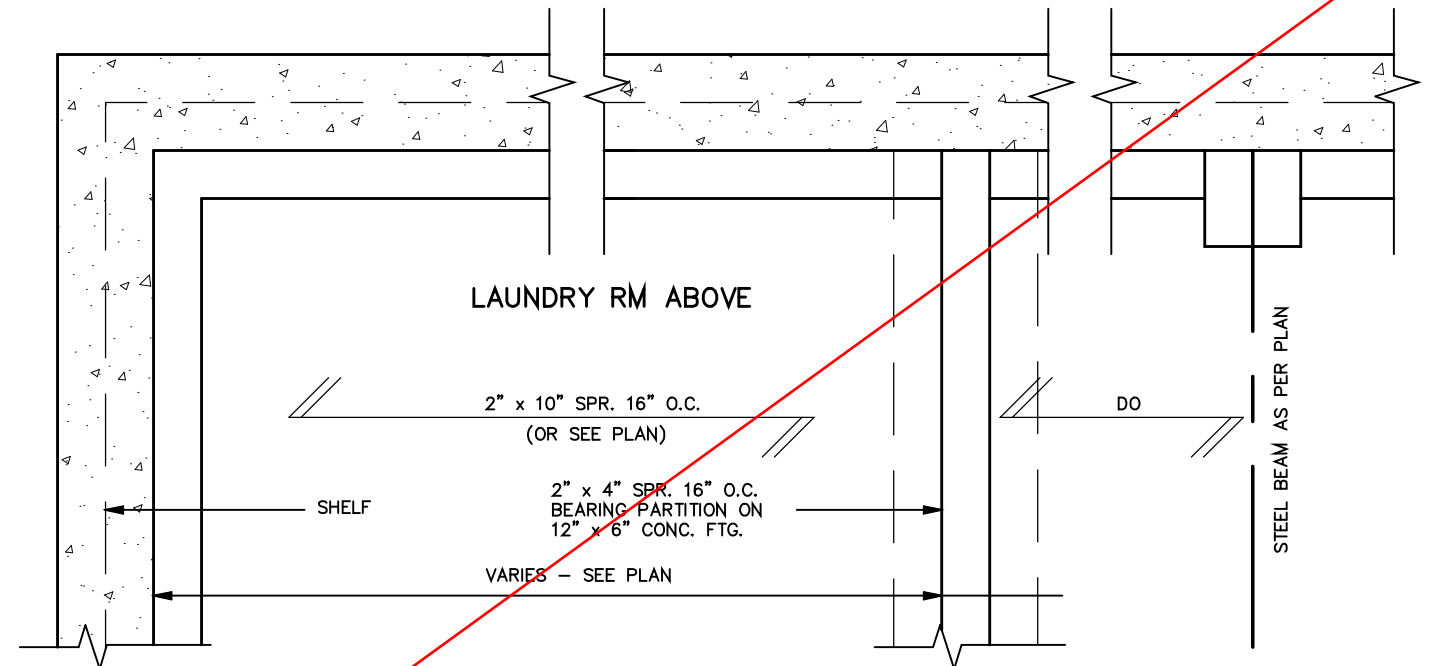
| | | |
|--|------------|--------------|
| WOOD PARTY WALL | MODEL NAME | T |
| BARLASSINA CONSTRUCTION CITY OF CAMBRIDGE | SCALE: | 3/4" = 1'-0" |
| | PROJ. No. | 21-35 |
| | DWG. No. | 4 |



DETAIL OF SUNKEN LAUNDRY
(ONE RISER)



DETAIL OF SUNKEN LAUNDRY
(MORE THAN ONE RISER)



PARTIAL PLAN

NOT APPLICABLE TO
WILLOW 3E - ELEVATION
2 MASTER MODEL



FOR STRUCTURE ONLY

2012 CODE

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QUALIFICATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.5 of the building code.

Walter Botter *Walter Botter* 21031
NAME SIGNATURE BCIN

REGISTRATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.4 of the building code.

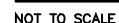
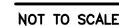
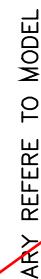
jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
64 JARDIN DR, SUITE 3A
VAUGHAN ONT, L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

SUNKEN LAUNDRY
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE



| | | |
|------------|--------------|----------|
| MODEL NAME | T | --- |
| SCALE: | 3/4" = 1'-0" | |
| PROJ. No. | 21-35 | DWG. No. |
| | | 5 |




- 1.0 UNIT INSTALLATION TO STRICTLY CONFORM TO MANUFACTURERS' INSTALLATION MANUAL AND ALL APPLICABLE CODES OF LOCAL AUTHORITIES HAVING JURISDICTION INCLUDING CAN/CGA-B149.1 & 2.
- 2.0 INSTALL WITH THE FOLLOWING MINIMUM CLEARANCES TO COMBUSTIBLES:
 - FROM TOP OF UNIT 0"
 - FROM BACK OF UNIT 1/2"
 - FROM SIDES OF UNIT 1/2"
 - FROM TOP OF HORIZ. VENT 3"
 - FROM SIDES TO VENT 1"
- 3.0 THE DIRECT VENT UNIT ILLUSTRATED IS THE GC150 MODEL AS MANUFACTURED BY HEATILATOR.
- 4.0 THE MANTEL ILLUSTRATED IS THE S-2 GB AS SUPPLIED BY GREATER TORONTO FIREPLACE.

[illegible]

| | |
|-----------|-----|
| FIRM NAME | BCI |
|-----------|-----|

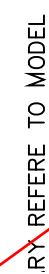
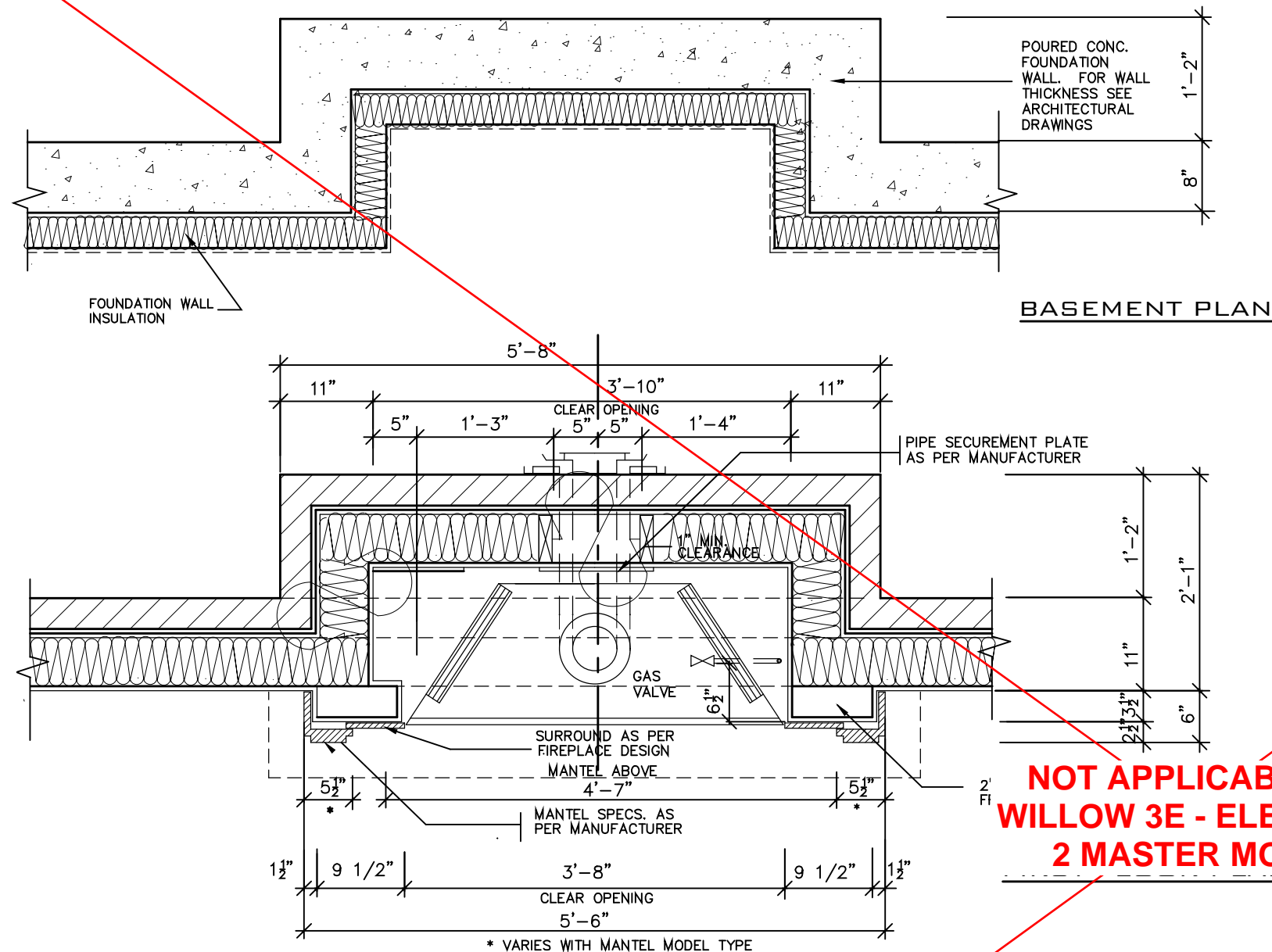
64 JARDIN DR, SUITE 3A
VAUGHAN ONT, L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@iartindesign.ca

DIRECT VENT FIREPLACE
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

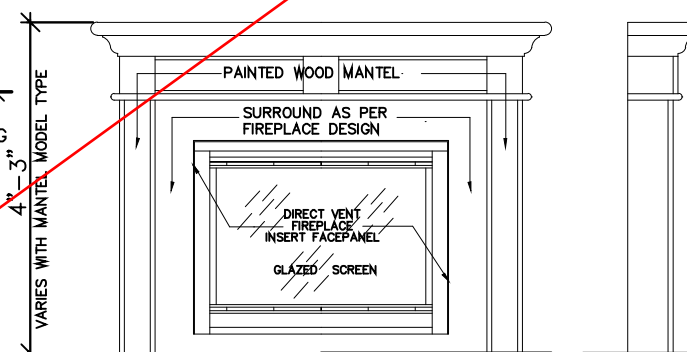
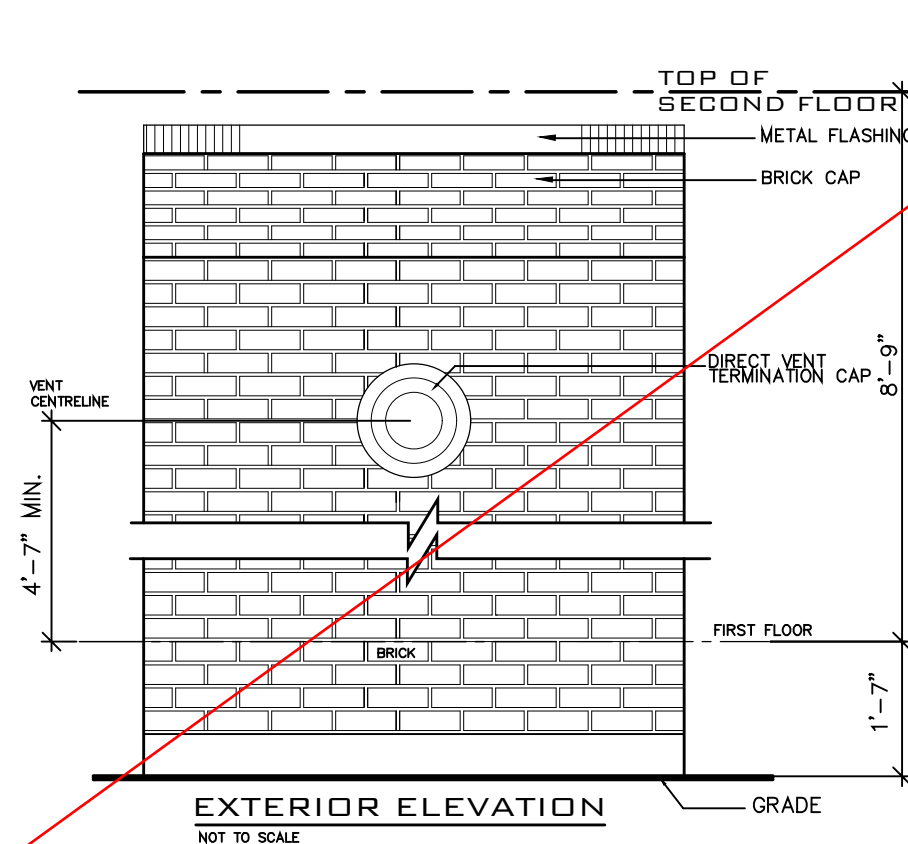
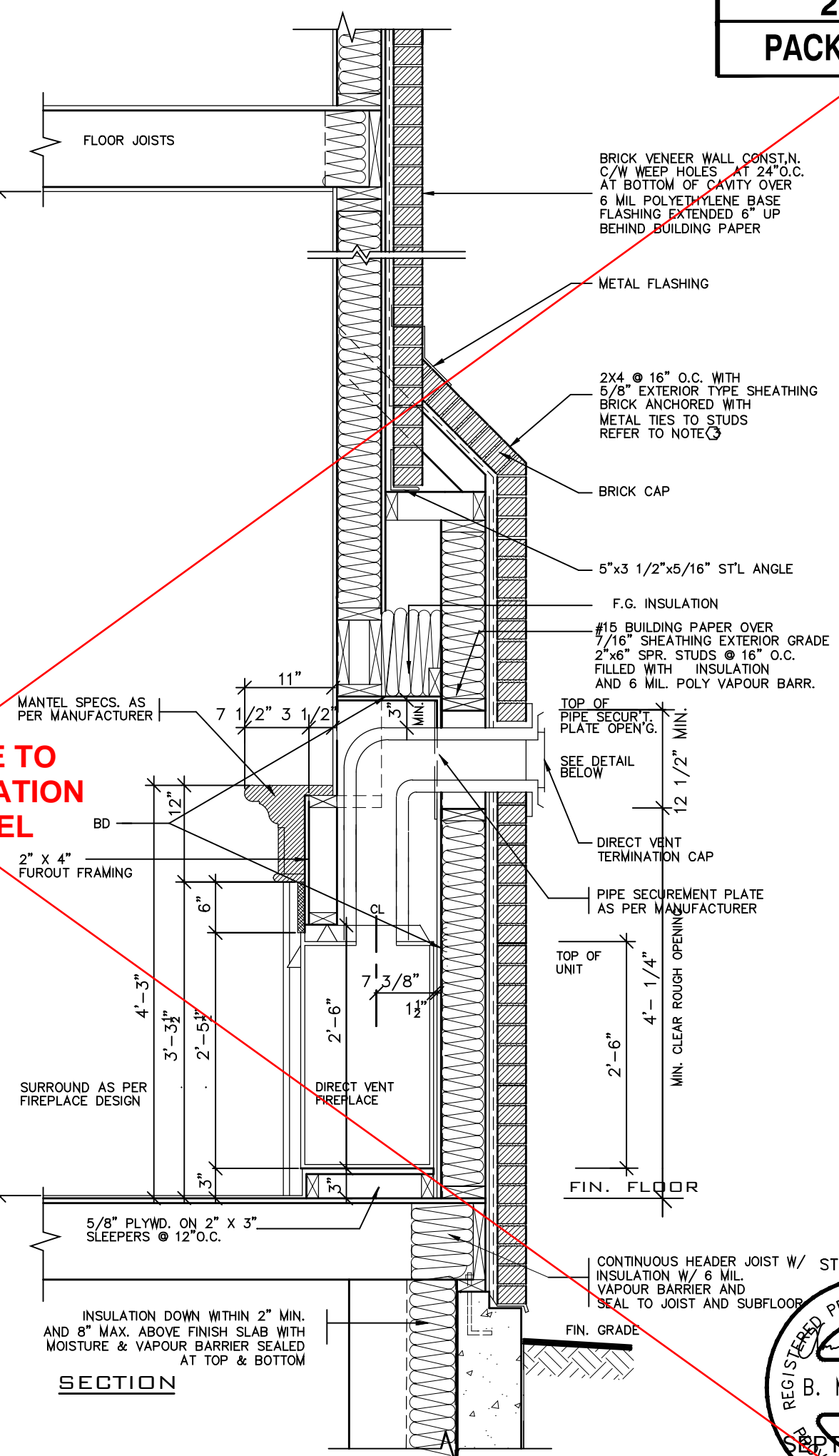
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|  BILD® | MODEL NAME | |
| | T | |
| | SCALE: | |
| | 3/4" = 1'-0" | |
| | PROJ. No. | DWG. No. |
| | 21-35 | 6 |

FOR STRUCTURE ONLY

2012 CODE



**NOT APPLICABLE TO
WILLOW 3E - ELEVATION
2 MASTER MODEL**



FRONT/SIDE ELEVATION

NOT TO SCALE

GENERAL INSTALLATION NOTES

- 1.0 UNIT INSTALLATION TO STRICTLY CONFORM TO MANUFACTURERS INSTALLATION MANUAL AND ALL APPLICABLE CODES OF LOCAL AUTHORITIES HAVING JURISDICTION INCLUDING CAN/OGA-B149.1 & 2.
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 - FROM TOP OF UNIT 0"
 - FROM BACK OF UNIT 1/2"
 - FROM SIDES OF UNIT 1/2"
 - FROM TOP OF HORIZ. VENT 3"
 - FROM SIDES OF VENT 1"
- 3.0 THE DIRECT VENT UNIT ILLUSTRATED IS THE GC150 MODEL AS MANUFACTURED BY HEATILATOR.
- 4.0 THE MANTEL ILLUSTRATED IS THE S-2 GB AS SUPPLIED BY GREATER TORONTO FIREPLACE.

SECTION

ST W/ STRUDET INC.
FLOOR PROFESSIONAL



FOR STRUCTURE ONLY

~~2012 CODE~~

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| 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE: A1* ISSUED TO CLIENT |
| No. | DATE: | WORK DESCRIPTION: |

DRAWN BY:

DRAWING NAME: GENERAL NOTES

The undersigned has reviewed and takes responsibility for this design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer

QUALIFICATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.5 of the building code.

| | | |
|---------------|----------------|------|
| Walter Botter | <i>WBotter</i> | 2103 |
| NAME | SIGNATURE | BCIN |

REGISTRATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.4 of the building code

| | | |
|-----------|--------------------------|-------|
| FIRM NAME | jardin design group inc. | 27763 |
| BCIN | | |

jardin
DESIGN GROUP INC
64 JARDIN DR., SUITE 3A
VAUGHAN ONT. L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

DIRECT VENT FIREPLACE WITH BRICK CAP

BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

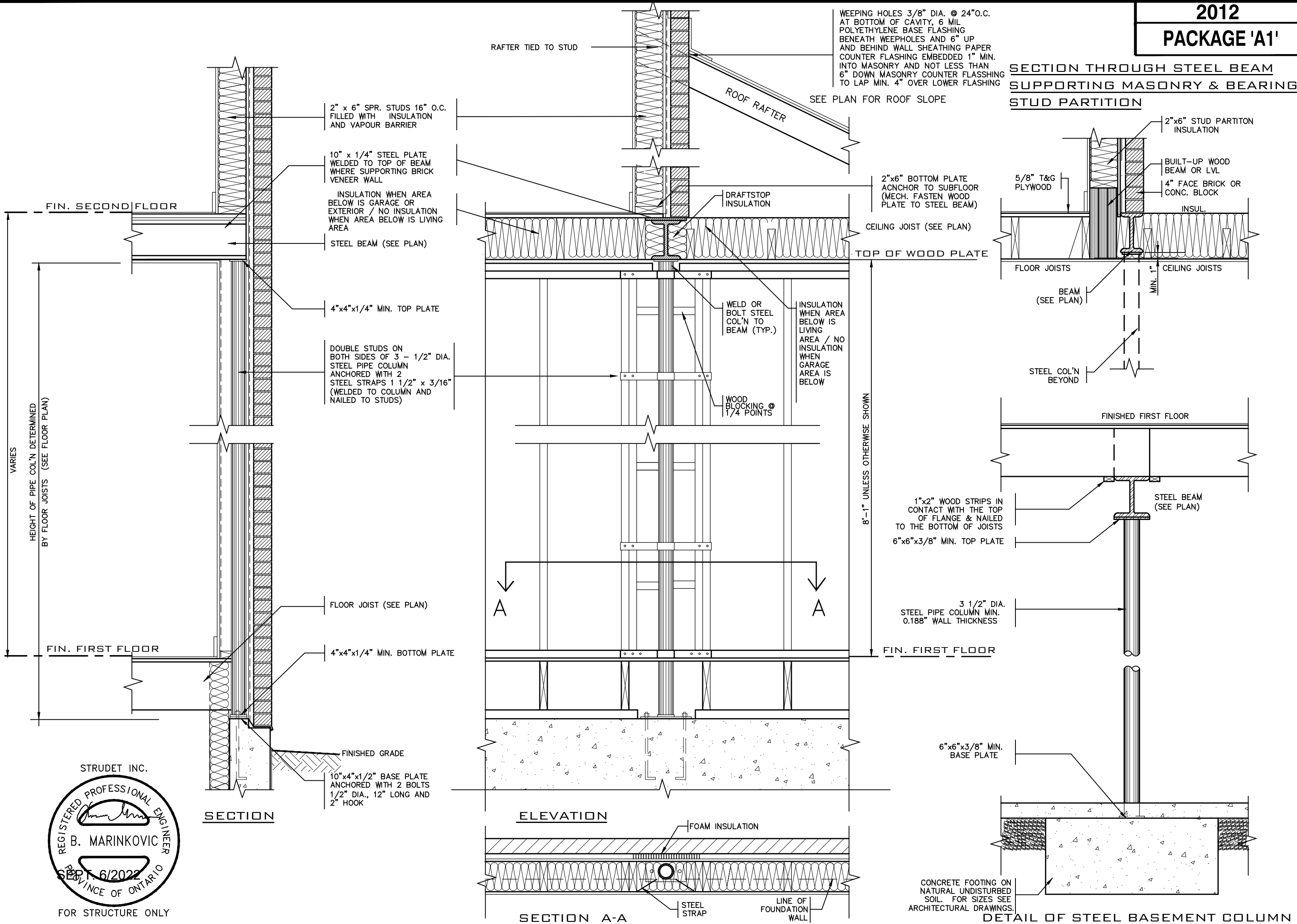


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| MODEL NAME | T | ----- |
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SCALE: $3/4" = 1'-0"$

| | |
|-----------|----------|
| PROJ. No. | DWG. No. |
| 21-35 | 6-1 |

SECTION THROUGH STEEL BEAM
SUPPORTING MASONRY & BEARING
STUD PARTITION



STRUDET INC.
REGISTERED PROFESSIONAL ENGINEER
B. MARINKOVIC
SEP 6/2022
PROVINCE OF ONTARIO
FOR STRUCTURE ONLY

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| 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |
| No: | DATE: | WORK DESCRIPTION: |

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QUALIFICATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.5 of the building code.

Walter Botter 21031
NAME SIGNATURE BCIN

REGISTRATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.4 of the building code.

jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
64 JARDIN DR. SUITE 3A
VAUGHAN ONT. L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

ST. COLUMN DETAILS
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

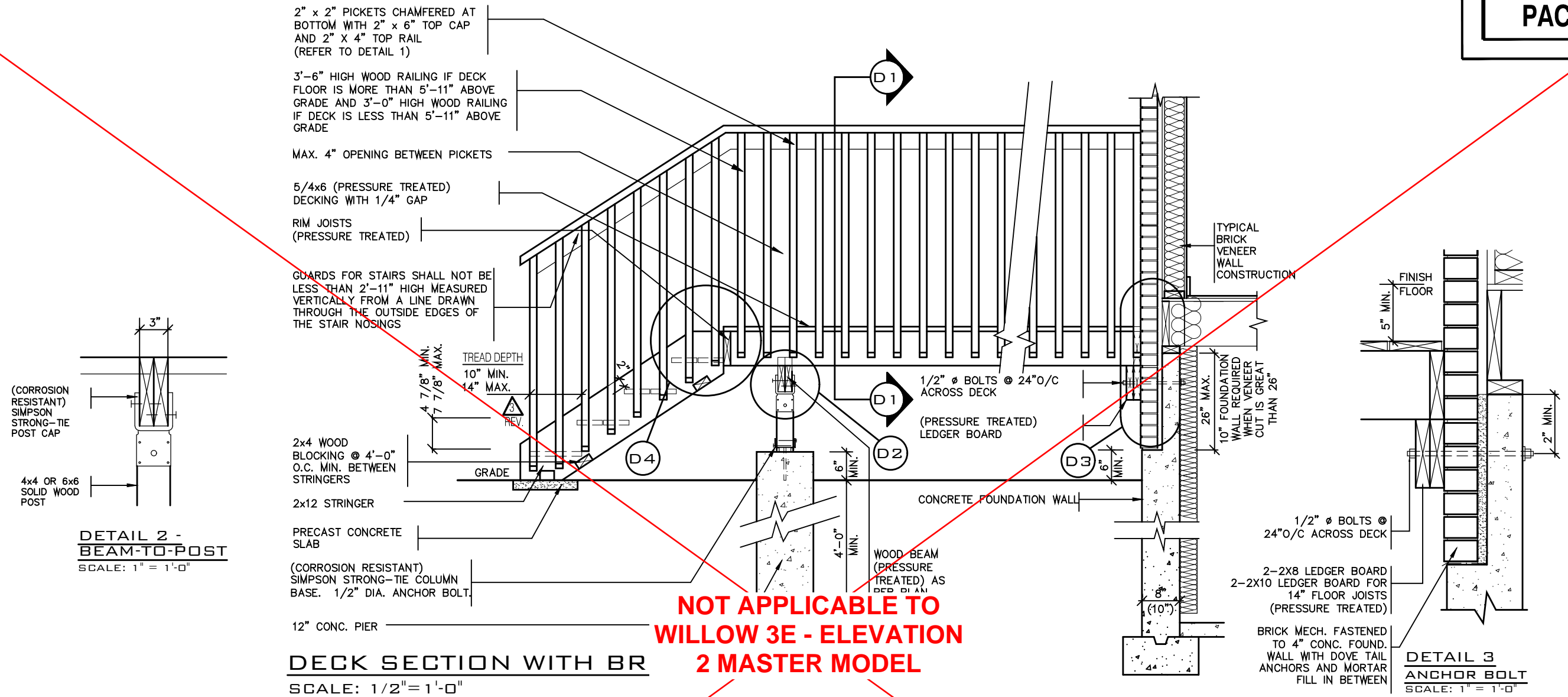
MODEL NAME
T

SCALE:
3/4" = 1'-0"

PROJ. No.
21-35

DWG. No.
7

BILD

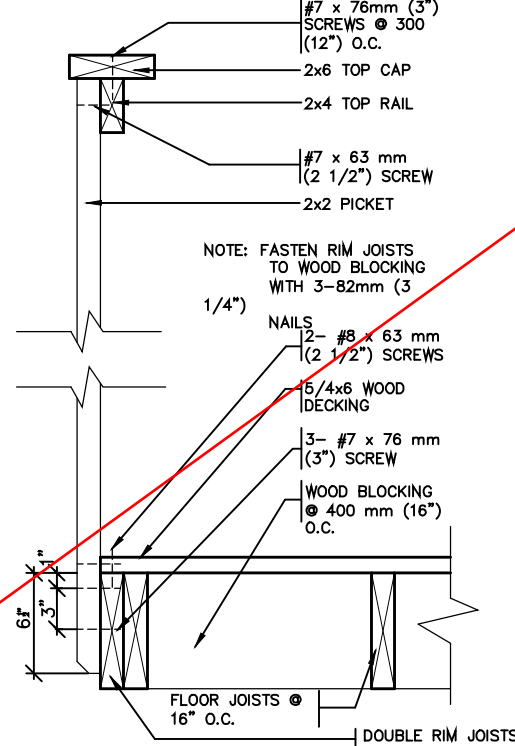


DETAIL 1

CANTILEVERED PICKET SCREWED TO RIM JOIST AND DECK

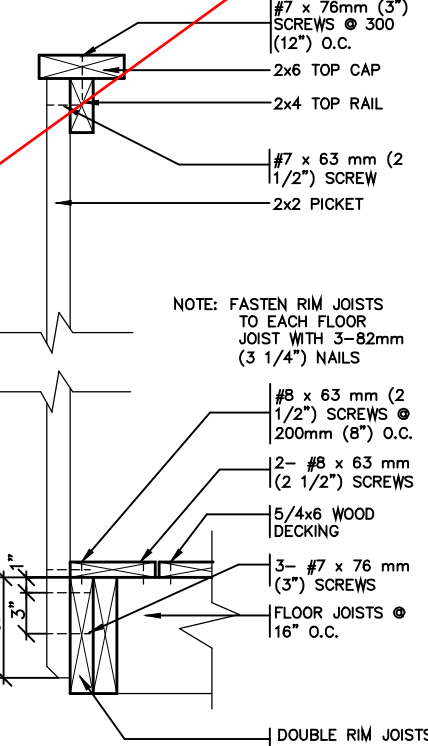
GUARD PARALLEL TO FLOOR JOISTS

SCALE: 1" = 1'-0"



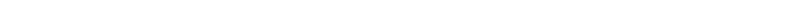
GUARD PERPENDICULAR TO FLOOR JOISTS

SCALE: 1" = 1'-0"



DETAIL 5
SECTION THROUGH
STAIR STRINGER

SCALE: 1" = 1'-0"



DETAIL 4
SECTION @ TREAD AND
STRINGER SECUREMENT

SCALE: 1" = 1'-0"



GENERAL NOTES

- BRICK TO BE COMPRESSIVE STRENGTH OF 15MPa (2200 p.s.i.) MIN. UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
- MORTAR TO BE TYPE S WITH JOINT THICKNESS OF 10mm (3/8") MIN. AND 20mm (3/4") MAX.
- ALL NAILS AND SCREWS TO BE GALVANIZED.
- WOOD FOR CANTILEVERED PICKETS SHALL BE DOUGLAS FIR-LARCH, SPRUCE-PINE-FIR, OR HEM-FIR SPECIES.
- THE DECK HAS BEEN DESIGNED TO SAFELY SUPPORT A SUPERIMPOSED LOAD OF 1.9kPa [40psf].
- CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 20MPa AT 28 DAYS AND 5-8% AIR ENTRAINED.
- FOOTING TO BE PLACED ON UNDISTURBED SOIL WITH MIN. BEARING PRESSURE OF 150kPa [3130psf].

STRUDET INC.



FOR STRUCTURE ONLY

2012 CODE

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| 7 | | |
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| 3 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
| 2 | MAR. 14, 2022 | O.B.C. UPDATE FOR STAIRS (JAN. 1/2022) |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |

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Walter Botter 21031
NAME SIGNATURE BCIN

REGISTRATION INFORMATION
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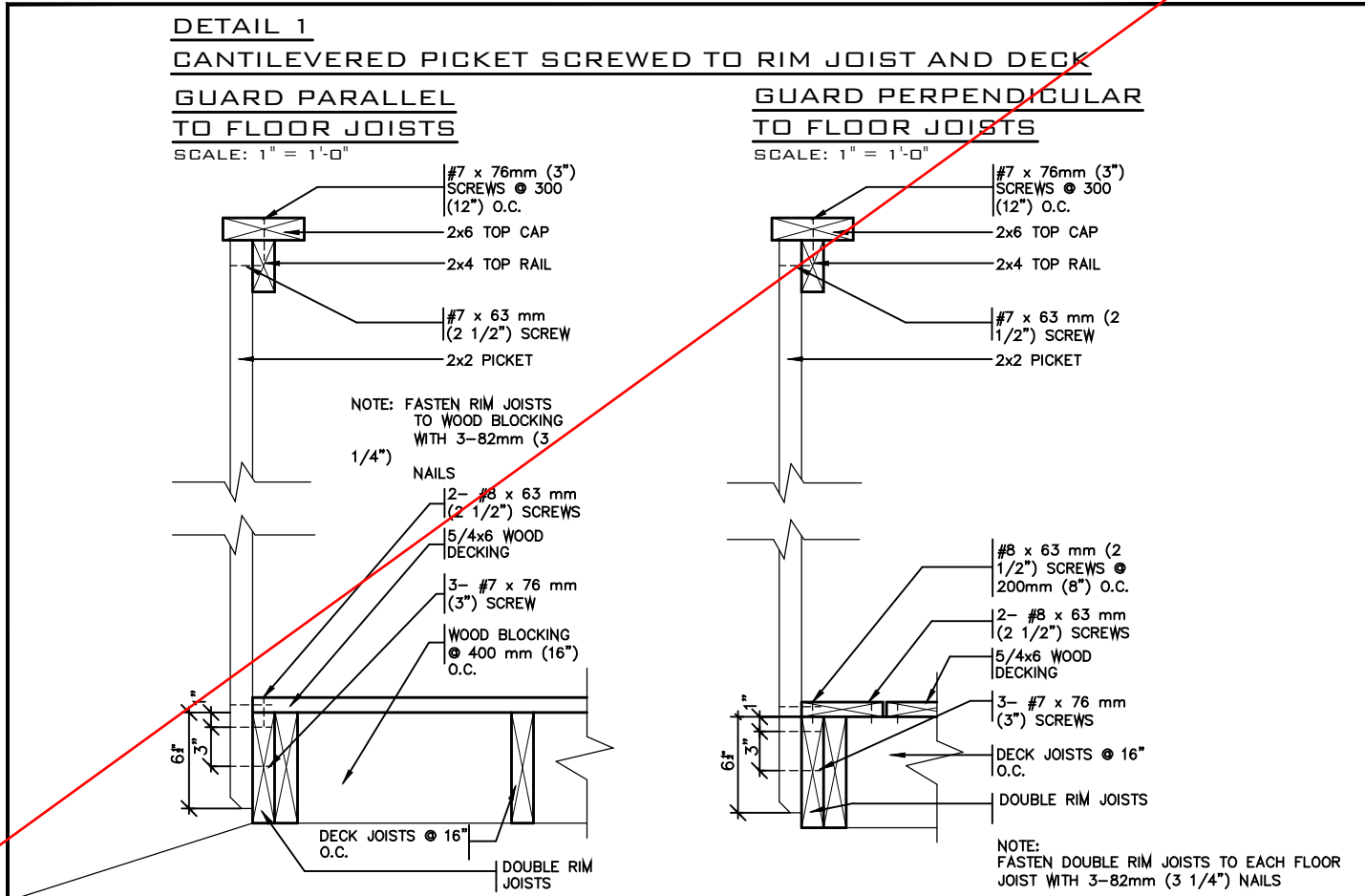
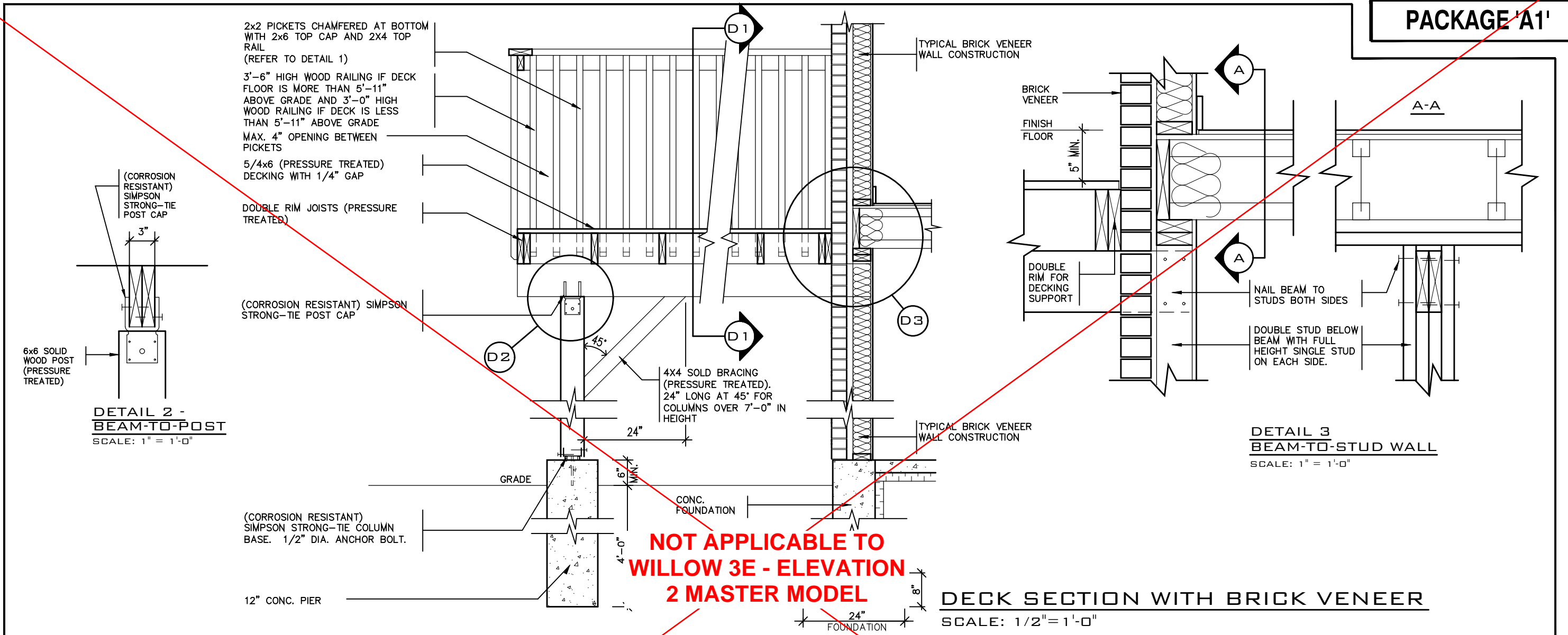
jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
64 JARDIN DR. SUITE 3A
VAUGHAN ONT. L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

WOOD DECK DETAIL
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

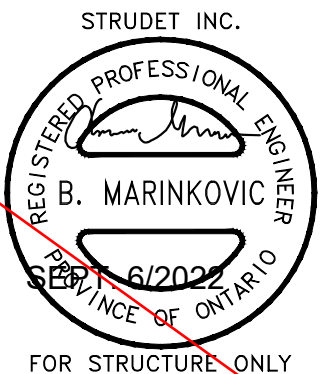


| | |
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| MODEL NAME | T |
| SCALE: | AS SHOWN |
| PROJ. No. | 21-35 |
| DWG. No. | 8 |



GENERAL NOTES

- THE DECK HAS BEEN DESIGNED TO SAFELY SUPPORT A SUPERIMPOSED LOAD OF 1.9kPa [40psf].
- ALL NAILS AND SCREWS TO BE GALVANIZED.
- WOOD FOR CANTILEVERED PICKETS SHALL BE DOUGLAS FIR-LARCH, SPRUCE-PINE-FIR, OR HEM-FIR SPECIES.
- CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 20MPa AT 28 DAYS AND 5-8% AIR ENTRAINMENT.
- FOOTING TO BE PLACED ON UNDISTURBED SOIL WITH MIN. BEARING PRESSURE OF 150kPa [3130psf].



2012 CODE

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Walter Botter 21031
NAME SIGNATURE BCIN

REGISTRATION INFORMATION
Required unless design is exempt under Division C, Subsection 3.2.4 of the building code.

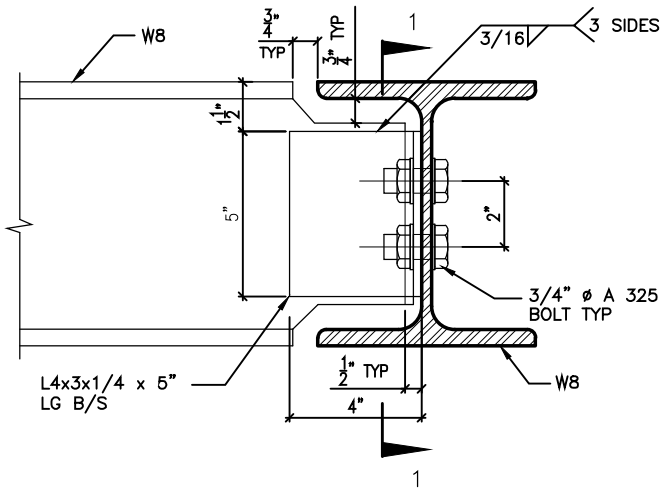
jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
64 JARDIN DR, SUITE 3A
VAUGHAN ONT, L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

WALK-OUT DECK DETAIL
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

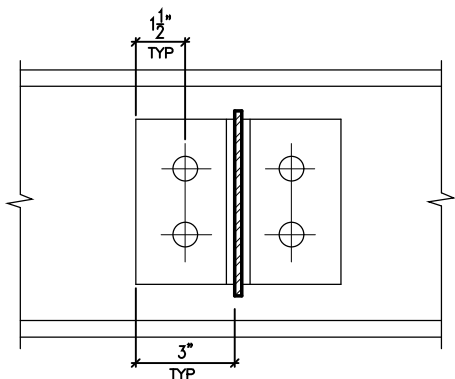


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| MODEL NAME T | --- |
| SCALE: AS SHOWN | |
| PROJ. No. 21-35 | DWG. No. 8-1 |

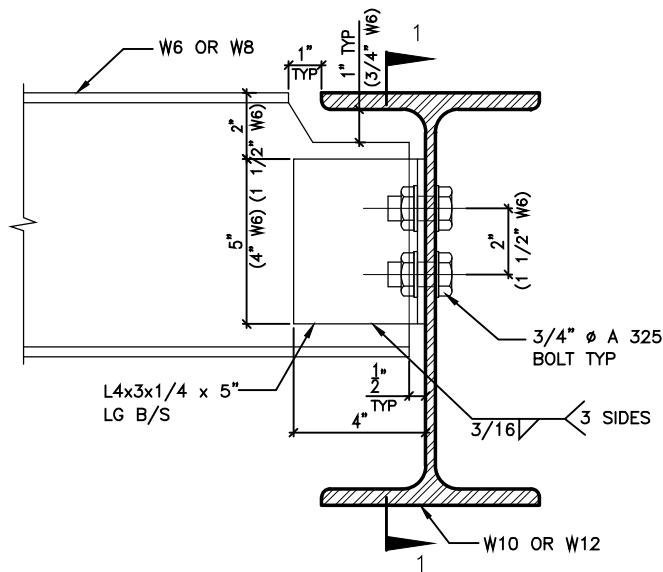


DETAIL 1.

W8
TO
W8
CONNECTION

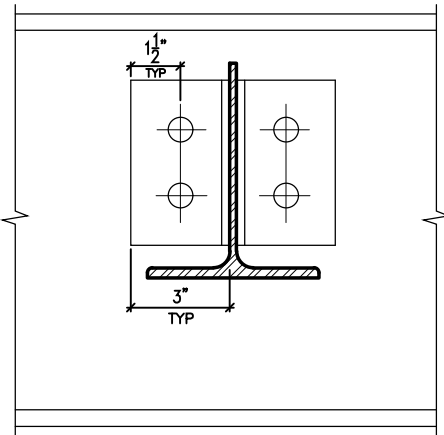


SECTION 1-1

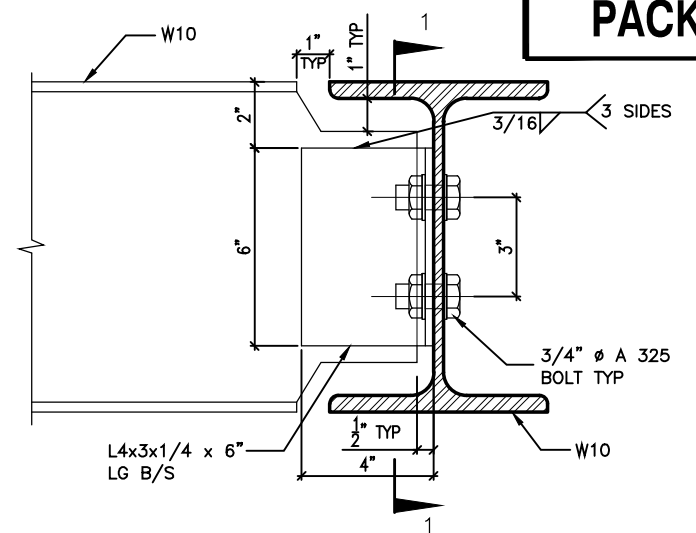


DETAIL 2.

W6(W8)
TO
W10(W12)
CONNECTION

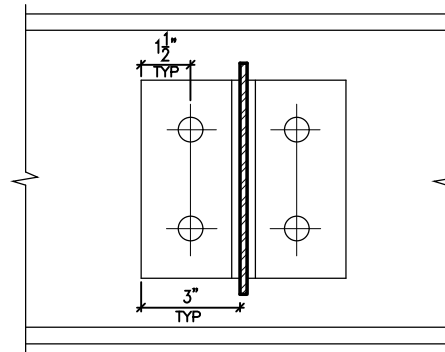


SECTION 1-1

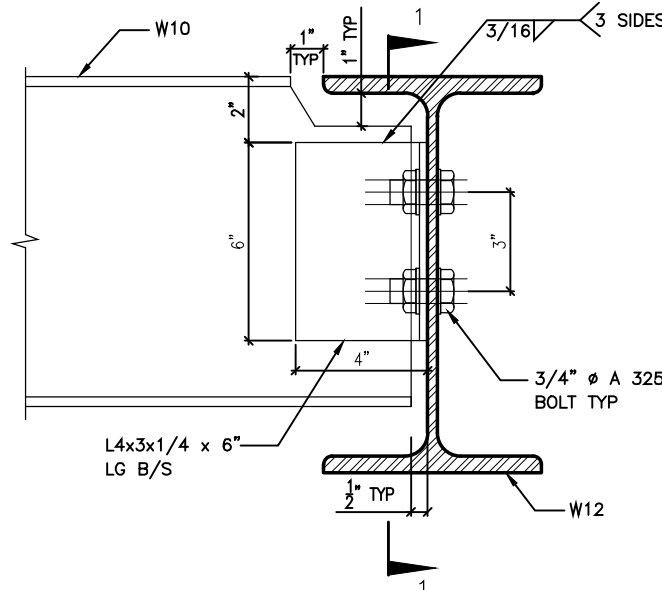


DETAIL 3.

W10
TO
W10
CONNECTION

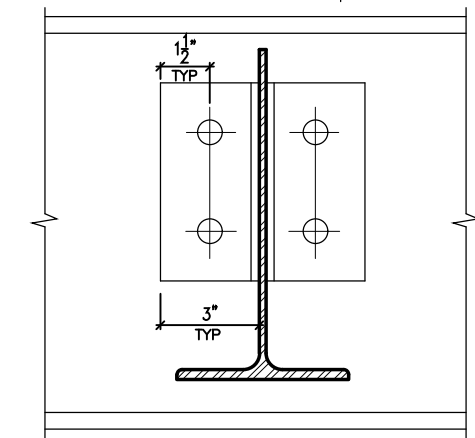


SECTION 1-1

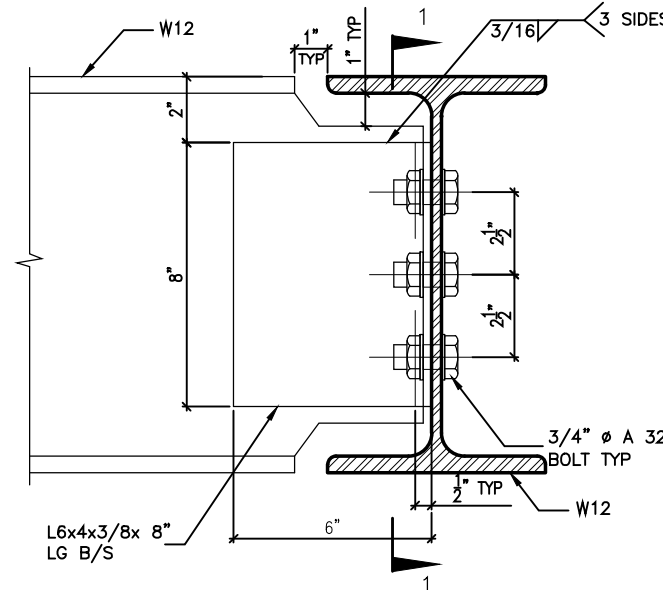


DETAIL 4.

W10
TO
W12
CONNECTION

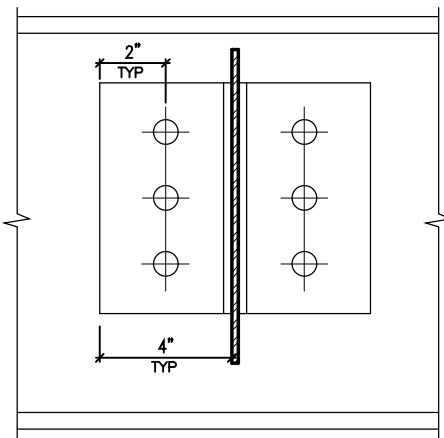


SECTION 1-1

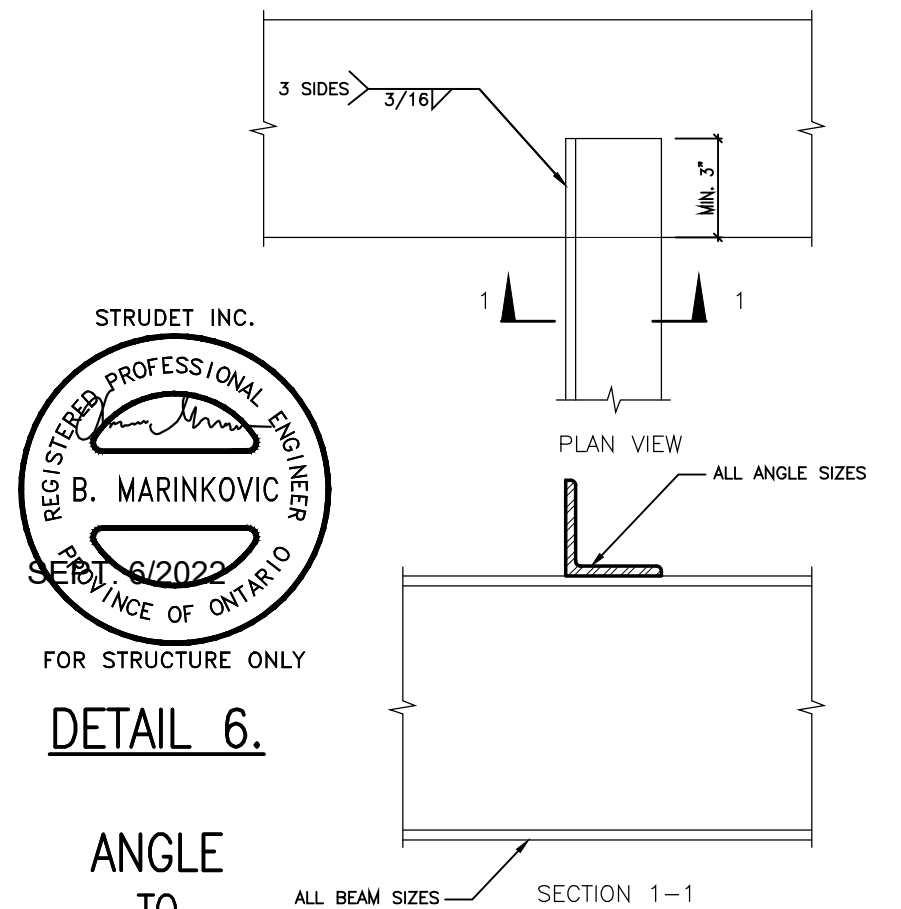


DETAIL 5.

W12
TO
W12
CONNECTION



SECTION 1-1



STRUDET INC.



FOR STRUCTURE ONLY

DETAIL 6.

ANGLE
TO
BEAM
CONNECTION

2012 CODE

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| 2 | AUG. 31, 2022 | ADDED TO JOB; ISSUED FOR PERMIT |
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No: DATE: WORK DESCRIPTION:

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Walter Botter 21037
NAME SIGNATURE BCIN

REGISTRATION INFORMATION
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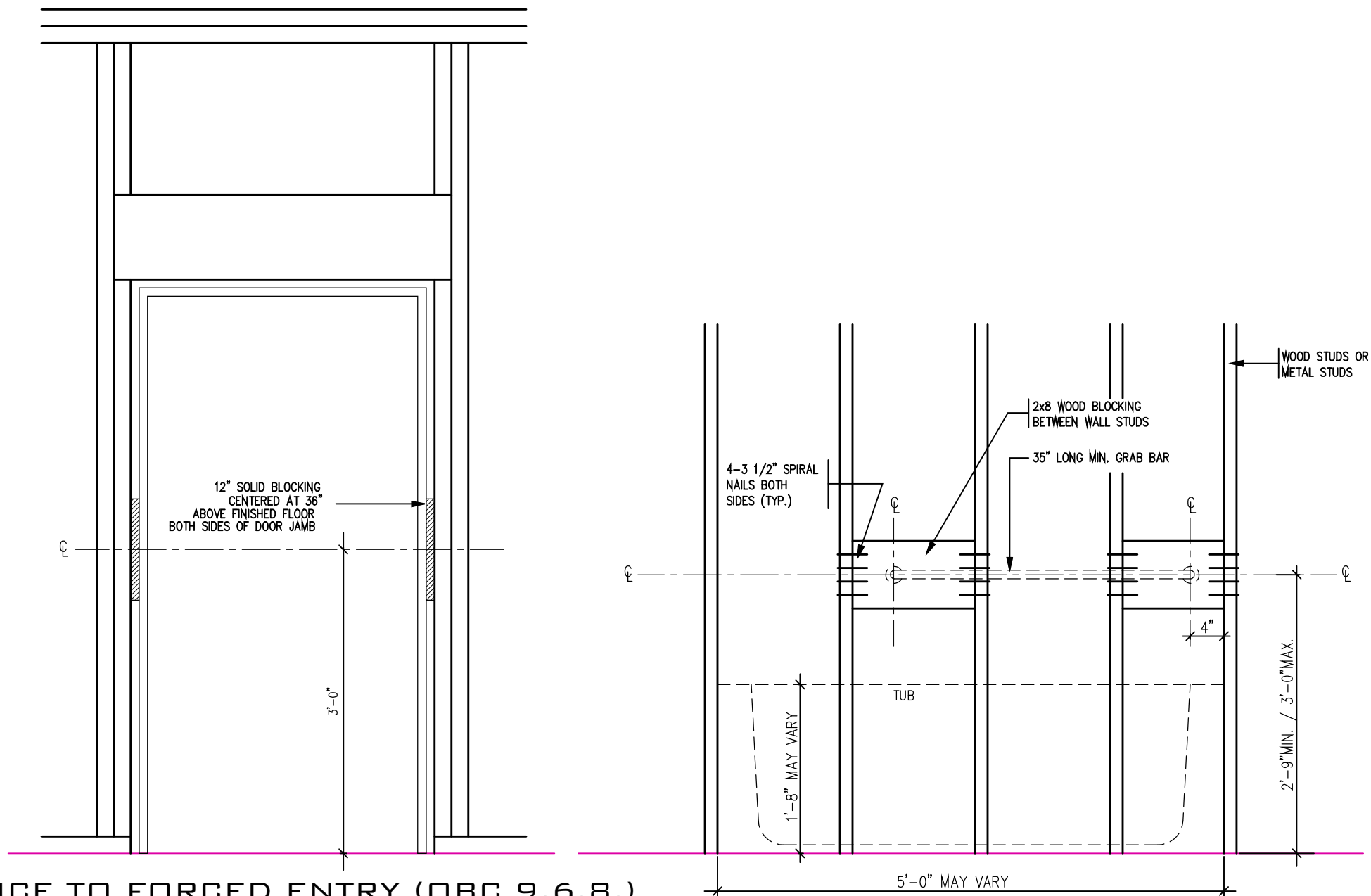
jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
64 JARDIN DR. SUITE 3A
VAUGHAN ONT. L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

STEEL BEAM DETAILS
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

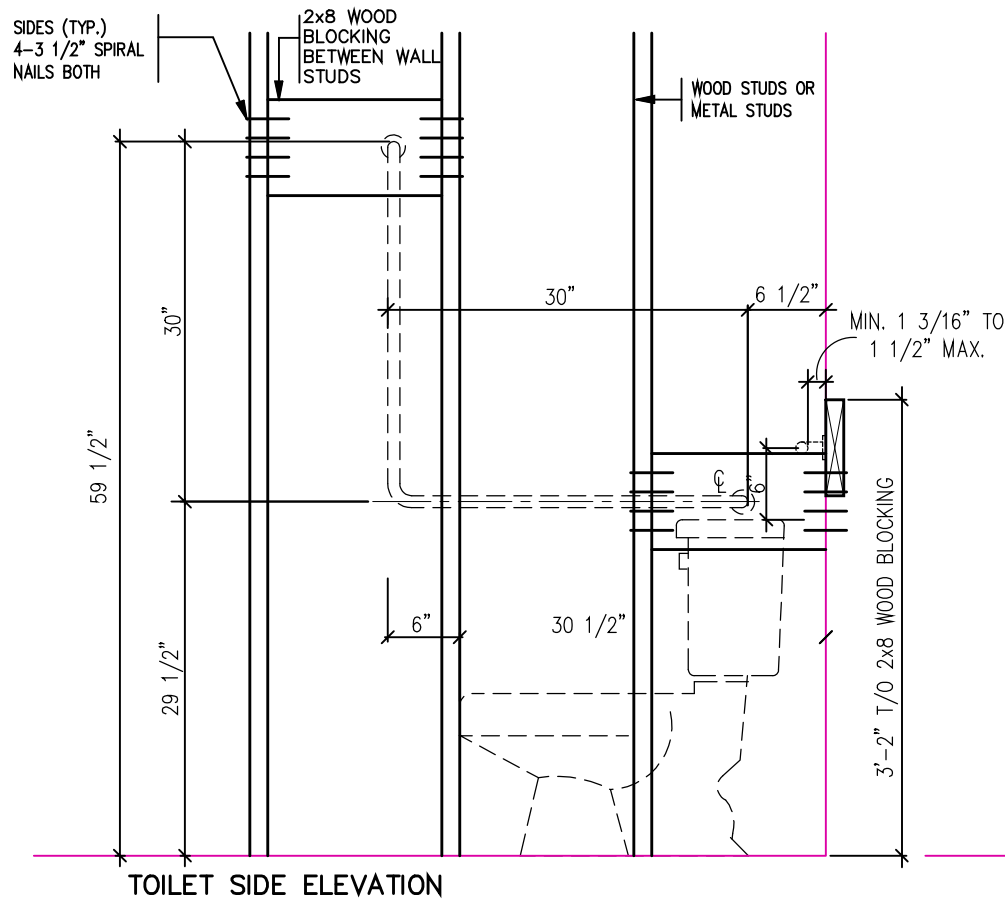


MODEL NAME
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SCALE: N.T.S.
PROJ. No. 21-35
DWG. No. 9

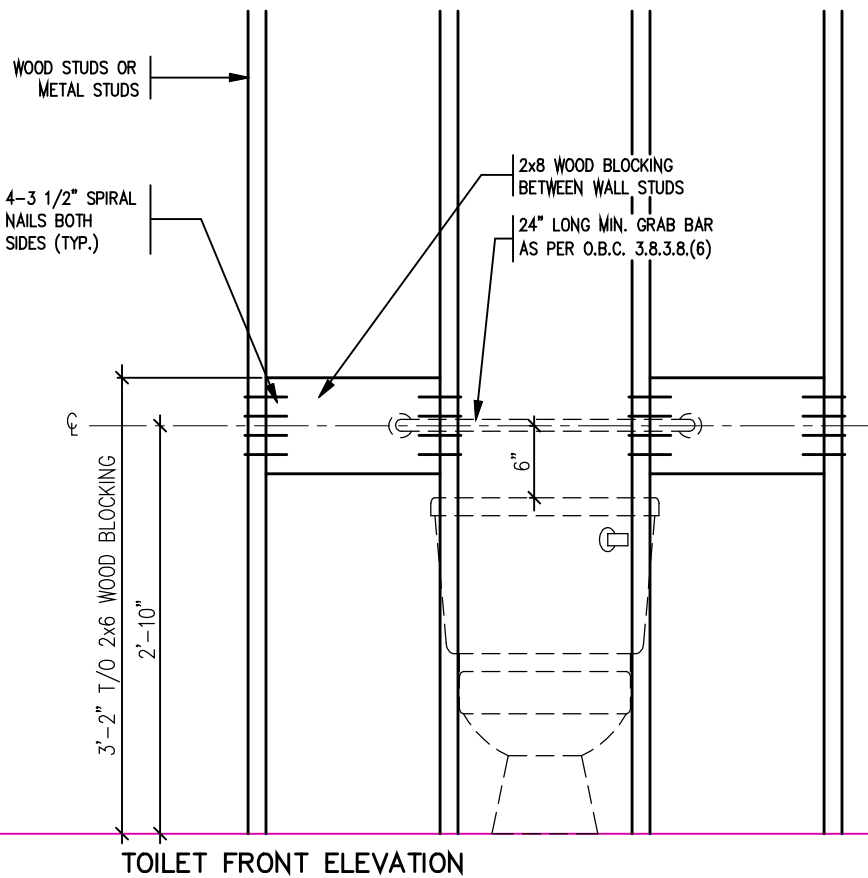


RESISTANCE TO FORCED ENTRY (OBC 9.6.8.)

BATH TUB FRONT ELEVATION



TOILET SIDE ELEVATION



TOILET FRONT ELEVATION

STRUCTURAL
REINFORCEMENT FOR
GRAB BAR (OBC
9.5.2.3.)



2012 CODE

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jardin design group inc. 27763
FIRM NAME BCIN

jardin
DESIGN GROUP INC
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VAUGHAN ONT, L4K 3P3
TEL: 905 660-3377 FAX: 905 660-3713
EMAIL: info@jardindesign.ca

BLOCKING
FORCED ENTRY & GRAB BAR

BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

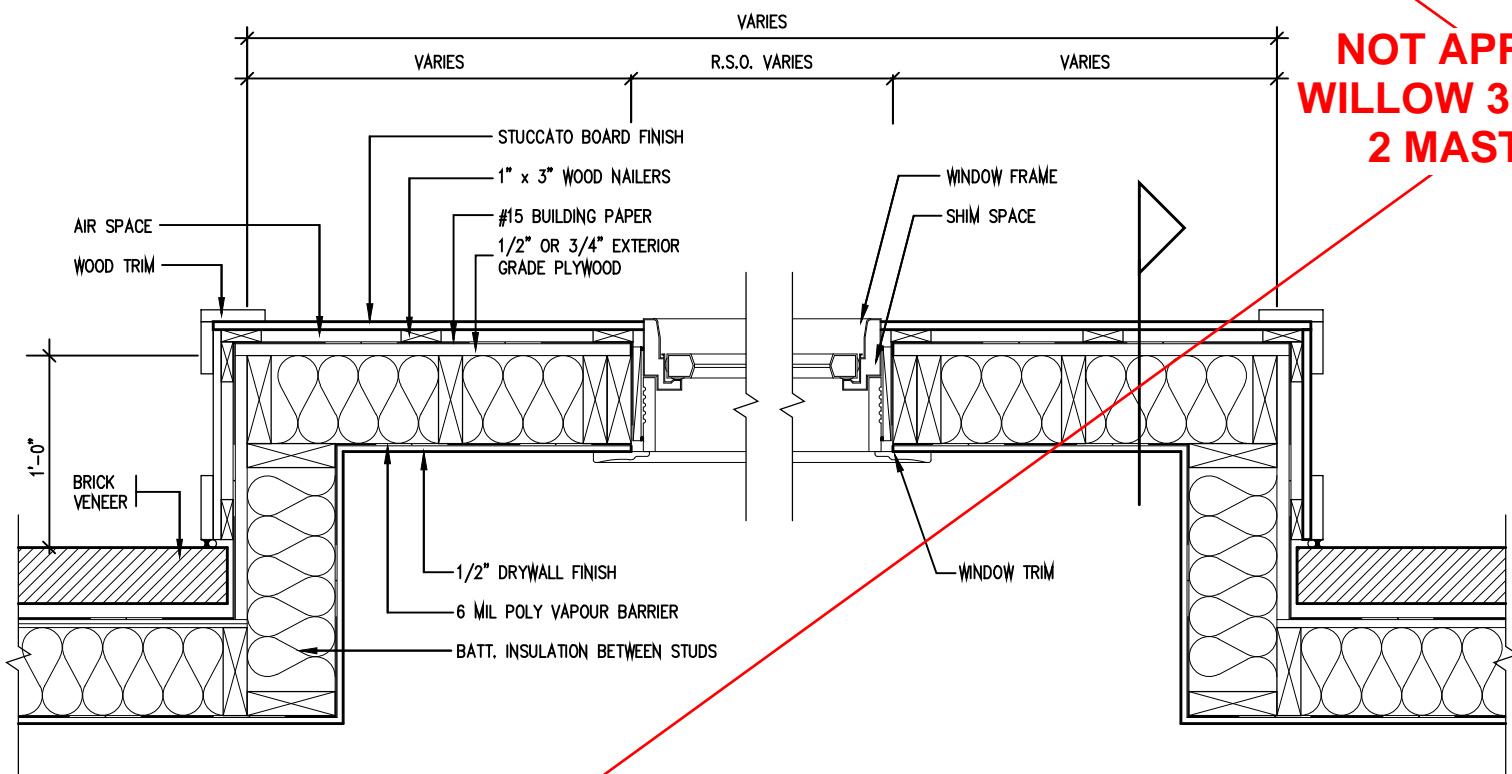
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SCALE:
3/4"=1'-0"

PROJ. No.
21-35

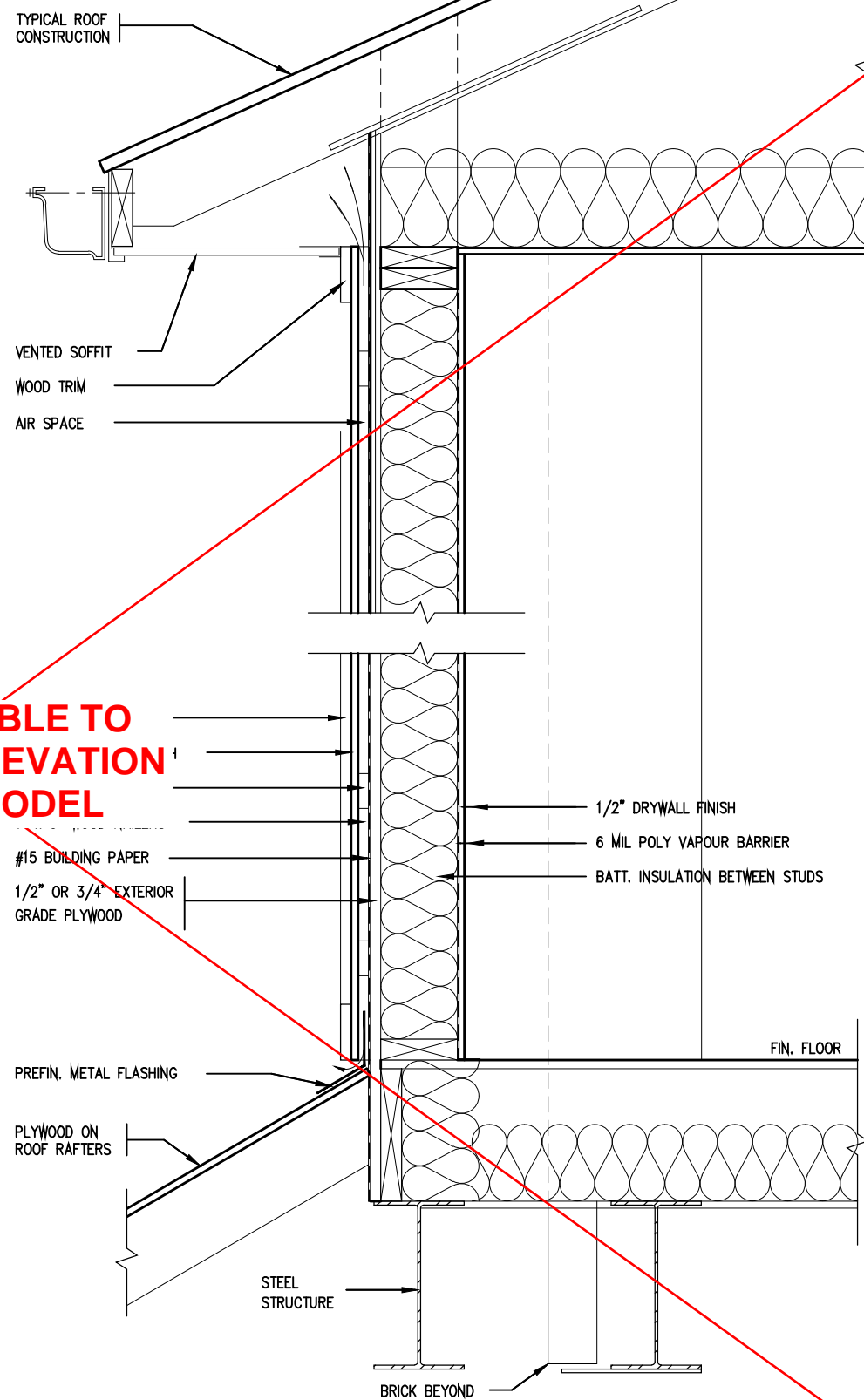
DWG. No.
10

BILD

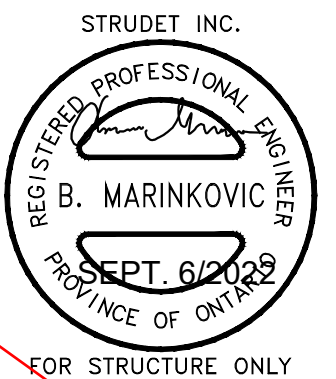


PLAN VIEW

STUCCATO BOARD FINISH CLADDING (OBC 9.27.)



CROSS SECTION



2012 CODE

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FIRM NAME BCIN

jardin
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EMAIL: info@jardindesign.ca

STUCCATO BOARD
FINISH CLADDING

BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

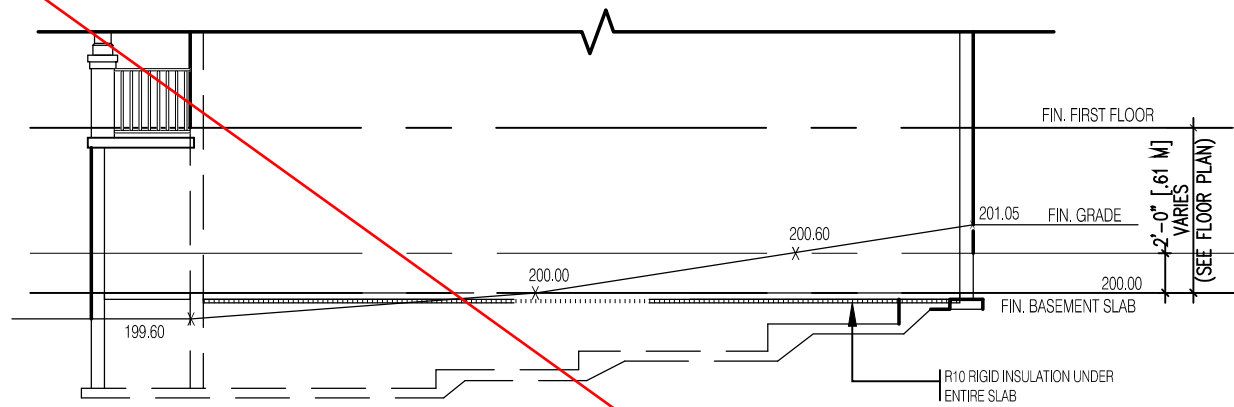
MODEL NAME
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SCALE: 1"=1'-0"

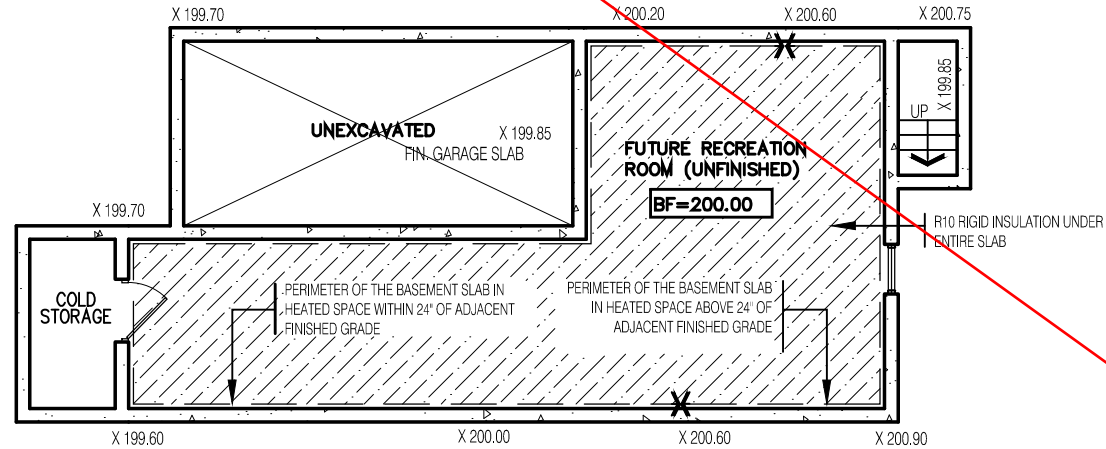
PROJ. No. 21-35

DWG. No. 11

BILD



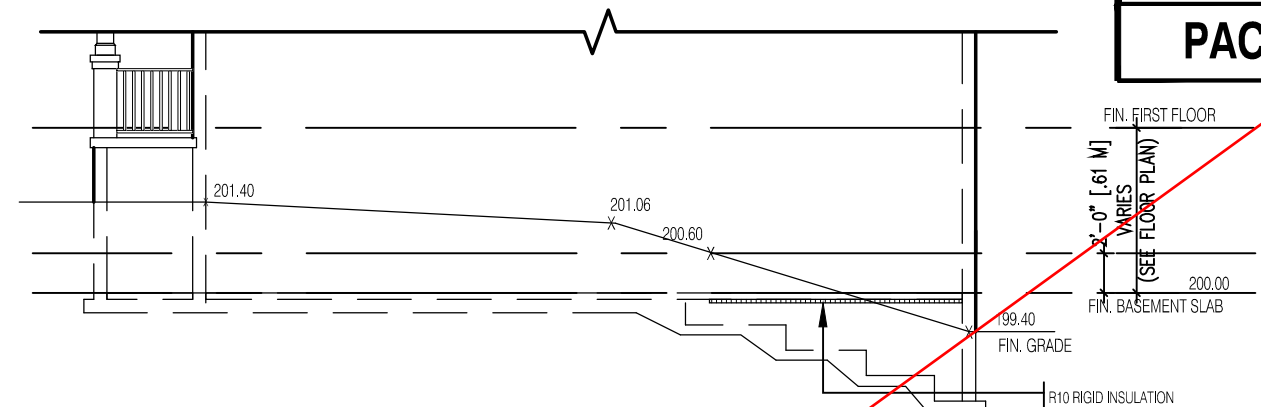
TYPICAL RIGHT SIDE ELEVATION



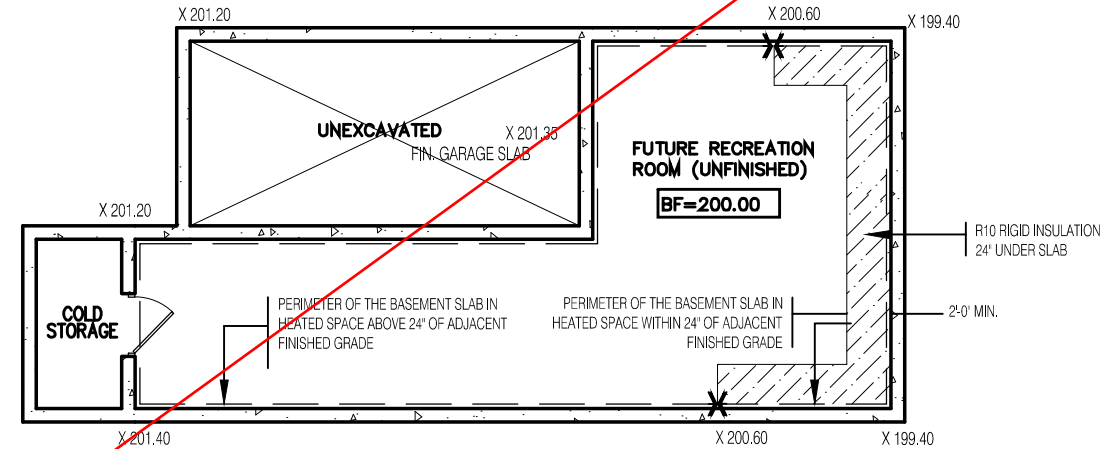
TYPICAL BASEMENT PLAN

SLAB ON GRADE CONDITION

NOTES:
1. LEVELS SHOWN ON THE PLANS ARE FOR ILLUSTRATION PURPOSE ONLY. SEE FINAL GRADING PLAN FOR ACTUAL LEVELS.
2. ALL LEVELS ARE SHOWN IN METRIC.



TYPICAL RIGHT SIDE ELEVATION

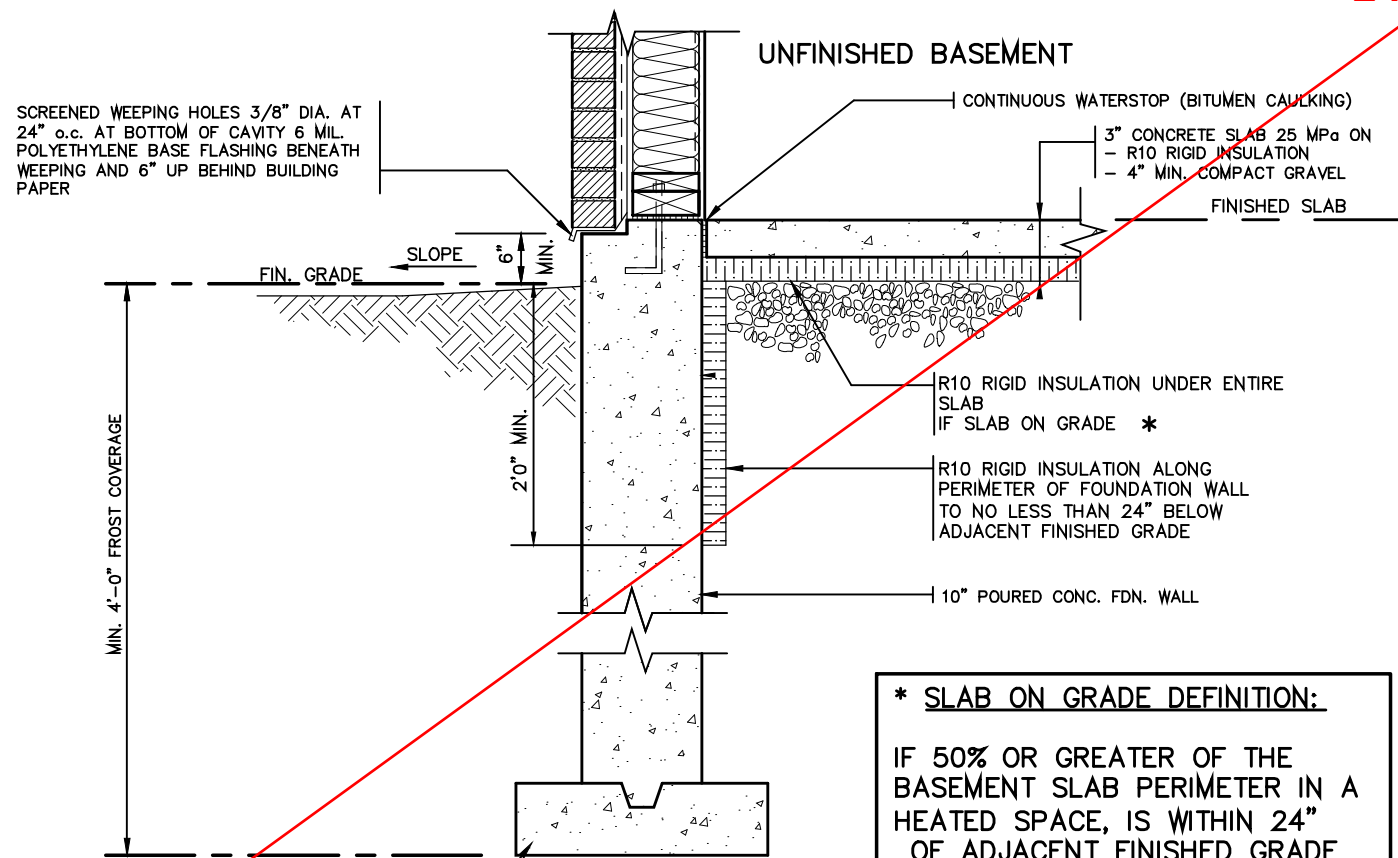


TYPICAL BASEMENT PLAN

WALK OUT BASEMENT CONDITION

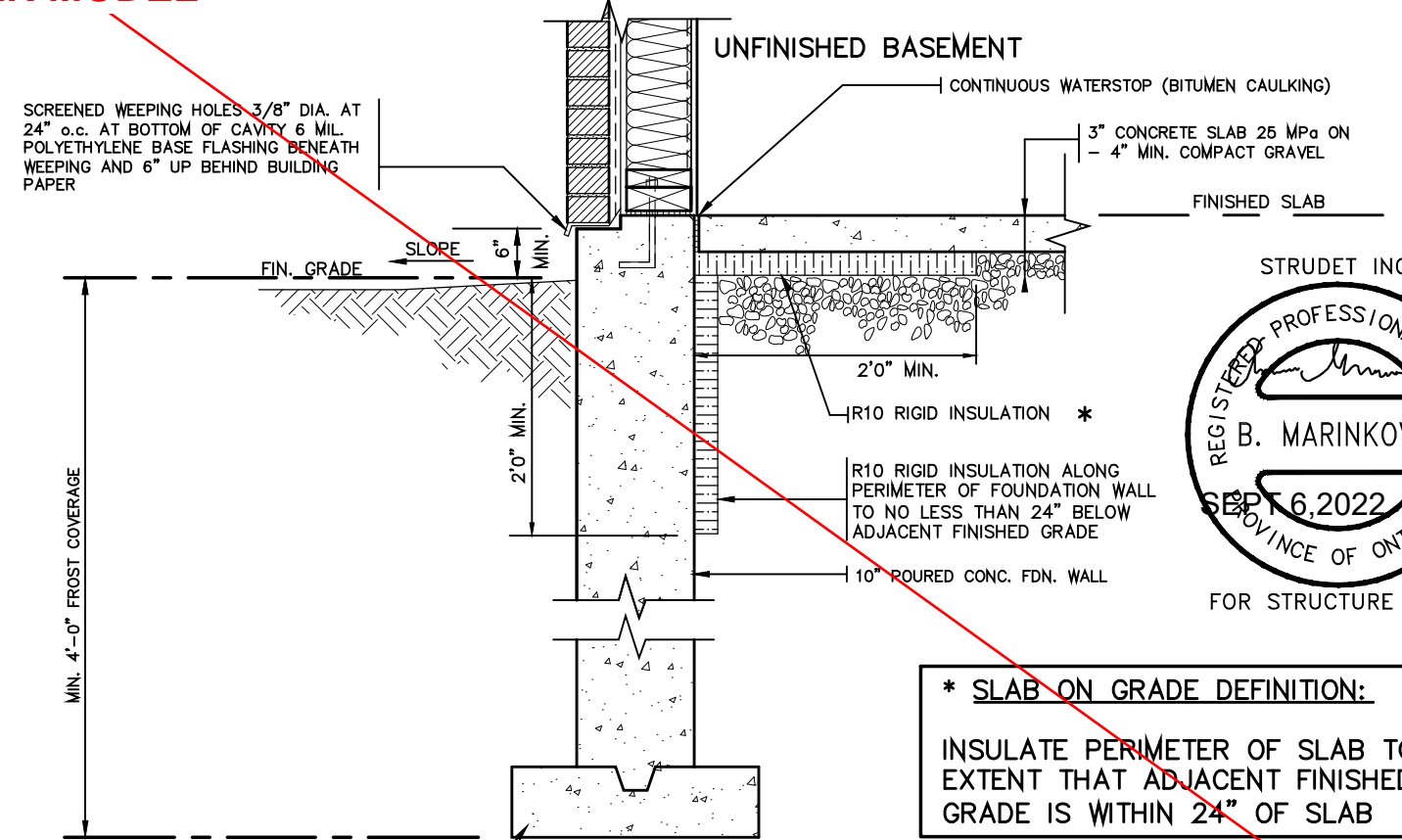
NOTES:
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2. ALL LEVELS ARE SHOWN IN METRIC.

NOT APPLICABLE TO
WILLOW 3E - ELEVATION
2 MASTER MODEL



SLAB ON GRADE

* **SLAB ON GRADE DEFINITION:**
IF 50% OR GREATER OF THE BASEMENT SLAB PERIMETER IN A HEATED SPACE, IS WITHIN 24" OF ADJACENT FINISHED GRADE



WALK OUT BASEMENT

* **SLAB ON GRADE DEFINITION:**
INSULATE PERIMETER OF SLAB TO EXTENT THAT ADJACENT FINISHED GRADE IS WITHIN 24" OF SLAB



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jardin design group inc. 27763
FIRM NAME BCIN

jardin
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64 JARDIN DR, SUITE 3A
VAUGHAN ONT, L4K 3P3
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EMAIL: info@jardindesign.ca

SLAB ON GRADE
WALKOUT BASEMENT

BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE

MODEL NAME
T

SCALE: N.T.S.

PROJ. No. 21-35
DWG. No. 12

GENERAL NOTES

- EXTERIOR STAIRS
7 7/8" RISE MAXIMUM
10" RUN MINIMUM
1'-2" RUN MAXIMUM
REV.
- MASONRY TIES
WHEN BRICK FACING IS USED ABOVE GROUND LEVEL, PROVIDE 3/16" DIA. CORROSION RESISTANT METAL TIES @ 36" HORIZONTAL & 8" VERTICAL
- GUARDS
ARE REQUIRED AROUND CONCRETE SLAB IF MORE THAN 2'-0" ABOVE GRADE & ON BOTH SIDES OF STAIRS CONTAINING MORE THAN 6 RISERS. MINIMUM 31" HIGH FOR STAIRS MINIMUM 35" HIGH FOR PORCHES UP TO 5'-11" ABOVE GRADE. MINIMUM 42" HIGH FOR GREATER HTS.
- HANDRAIL
ARE REQUIRED WHERE STEPS HAVE MORE THAN 3 RISERS. HANDRAIL HEIGHT 31" - 38".
- FOUNDATION WALLS
THICKNESS OF FOUNDATION WALLS IS DEPENDANT UPON VENEER CUT 8" FOR UP TO 26" VENEER CUT HEIGHT 10" FOR VENEER CUT OVER 26" HIGH
- CONCRETE
MINIMUM CONCRETE STRENGTH SHALL BE 4650 PSI [32MPa] W/ 5%-8% AIR ENTRAINMENT MINIMUM CONCRETE SLAB THICKNESS 5"
- CONCRETE COVER
PROVIDE MINIMUM 3/4" CLEAR CONCRETE COVER TO REINFORCING BARS

FOUNDATION
PLAN

FOR POURED CONCRETE
SLAB STRUCTURE REFER
TO ARCHITECTURAL
DRAWINGS

GROUND FLOOR
PLAN

NOT APPLICABLE TO
WILLOW 3E - ELEVATION
2 MASTER MODEL

SECTION
A

SECTION
B

NOTE: FOR MORE
THAN 8 RISERS



2012 CODE

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| 2 | MAR. 14, 2022 | O.B.C. UPDATE FOR STAIRS (JAN. 1/2022) |
| 1 | AUG. 17, 2018 | PREPARED TO PACKAGE 'A1' ISSUED TO CLIENT |
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EMAIL: info@jardindesign.ca

POURED CONCRETE STAIRS
BARLASSINA CONSTRUCTION
CITY OF CAMBRIDGE



| | |
|------------------------|----------------|
| MODEL NAME T | --- |
| SCALE: 3/8" = 1'-0" | |
| PROJ. No. 21-35 | DWG. No. 13 |



CANADIAN CODE
COMPLIANCE EVALUATION



CCMC 12969-R

NOT THE GRANTING OF A PERMIT NOR REVIEWING OF SPECS
& DRAWINGS NOR INSPECTIONS MADE DURING INSTALLATION
BY THE OFFICIAL HAVING JURISDICTION SHALL RELIEVE THE
OWNER FROM REQUIREMENTS OF THE ONTARIO BUILDING
CODE AND ANY OTHER REFERENCED REQUIREMENTS.

CCMC Canadian code compliance evaluation

| | |
|--------------------------|--|
| CCMC number: | 12969-R |
| Status: | Active |
| Issue date: | 2000-05-24 |
| Modified date: | 2023-02-07 |
| Evaluation holder: | DuROCK Alfacing International Limited 101-B Roytec Road Woodbridge ON L4L 8A9 Canada Website: www.durock.com Telephone: 905-856-0133 Email: dolores@durock.com |
| Product names: | <ul style="list-style-type: none">• InsulROCK• PUCCS• PUCCS NC |
| Code compliance: | NBC 2010, NBC 2015, OBC |
| Evaluation requirements: | CCMC-TG-072413.05-10A "CCMC Technical Guide for "Exterior Insulation and Finish Systems (EIFS) Class PB (Adhered or Mechanically Fastened with Liquid Applied Water Resistive Barrier (LA-WRB))"" CCMC-TG-072413.05-15A "CCMC Technical Guide for "Exterior Insulation and Finish Systems (EIFS) Class PB (Adhered or Mechanically Fastened with Liquid Applied Water Resistive Barrier (LA-WRB))"" |



National Research
Council Canada

Conseil national de
recherches Canada

Canada

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.

[Learn more about CCMC recognition](#) [Look for the trusted CCMC mark on products to verify compliance.](#)

Code compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated products, when used as an exterior wall cladding designed to be a weather barrier and to provide thermal insulation in accordance with the conditions and limitations stated in this evaluation, comply with the following codes:

National Building Code of Canada 2015

| Code provision | Solution type |
|---|-------------------|
| 3.1.5.5. Combustible Cladding on Exterior Walls | <u>Acceptable</u> |
| 3.1.5.12. Combustible Interior Finishes | <u>Acceptable</u> |
| 3.2.3.8.(1)(b) Protection of Exterior Building Face | <u>Acceptable</u> |
| 5.6.1.1.(1) Except as provided in Sentence 5.6.1.1.(... | <u>Acceptable</u> |
| 5.9.4. Exterior Insulation Finish Systems | <u>Acceptable</u> |
| 9.25.2.2.(1)(d) Insulation Materials | <u>Acceptable</u> |
| 9.27.1.1.(5) Where an exterior insulation finish syst ... | <u>Acceptable</u> |
| 9.27.2.1. Minimizing and Preventing Ingress and Damage | <u>Acceptable</u> |
| 9.27.2.2.(1)(e) Minimum Protection from Precipitation Ingress | <u>Acceptable</u> |
| 9.27.2.3.(1) Where walls required to provide protecti ... | <u>Acceptable</u> |
| 9.27.3.1. Elements of the Second Plane of Protection | <u>Acceptable</u> |
| 9.27.13. Exterior Insulation Finish Systems | <u>Acceptable</u> |

National Building Code of Canada 2010

| Code provision | Solution type |
|---|-------------------|
| 3.1.5.5. Combustible Components for Exterior Walls | <u>Acceptable</u> |
| 3.1.5.15.(3) In a building required to be of noncomb ... | <u>Acceptable</u> |
| 3.2.3.8.(1)(b) Protection of Exterior Building Face | <u>Acceptable</u> |
| 5.6.1.1.(1) Except as provided in , where a building ... | <u>Acceptable</u> |
| 9.25.2.2.(1)(d) Insulation Materials | <u>Acceptable</u> |
| 9.27.1.1.(5) Where cladding materials other than thos ... | <u>Acceptable</u> |
| 9.27.2.1. Minimizing and Preventing Ingress and Damage | <u>Acceptable</u> |
| 9.27.2.3.(1) Where walls required to provide protecti ... | <u>Acceptable</u> |
| 9.27.3.1. Elements of the Second Plane of Protection | <u>Acceptable</u> |

Ontario Building Code

Ruling No. 00-13-84 (12969-R) authorizing the use of this product in Ontario, subject to the terms and conditions contained in the Ruling, was made by the Minister of Municipal Affairs and Housing on 2006-11-01 pursuant to s.29 of the Building Code Act, 1992 (see Ruling for terms and conditions). This Ruling is subject to periodic revisions and updates.

The above opinion is based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

Product information

Product names

- InsulROCK
- PUCCS
- PUCCS NC

Product description

The products are non-loadbearing exterior insulation and finish systems (EIFS) that can be assembled in panels under factory-controlled conditions, or field-applied. The systems are composed of the following key components:

- a water-resistive barrier (WRB),
- an adhesive or mechanical fastener attachment,
- an insulation board, and
- a coating system (lamina).

NOTE: *The lamina refers to all coats (base and finish) applied to the outer face of the insulation board together with the glass-fibre mesh reinforcement.*

The following describes the different components of the systems.

Substrates

For applications falling under the scope of this evaluation, the substrate can be brick, masonry, monolithic concrete walls, and/or cementitious panels, glass mat-surfaced gypsum boards, plywood or oriented strandboard (OSB) over wood or steel framing. Gaps between the sheathing boards installed horizontally over framed walls must not exceed 3.0 mm.

Water-resistive barrier (WRB)

The water-resistive barrier (WRB) is a coating or self-adhered modified bituminous membrane installed to provide, along with other built-in features, the second line of defence against water infiltration reaching the structure. The WRB must be applied in accordance with the products' installation manuals.

When the WRB is a coating, the continuity of the second plane of protection across joints and junctions at openings, penetrations and expansion joints must be maintained through the use of accessories such as self-adhering membranes, tapes, etc., as specified by the manufacturer, prior to the installation of these systems. Furthermore, in order to provide the intended level of protection against water infiltration, the coating must be installed in two coats with sufficient time between applications to allow the first coat to cure before the second coat is applied.

When the WRB is a single layer of self-adhered modified bituminous membrane installed over the substrate and around penetrations and openings, the insulation boards must be attached via mechanical fasteners to the studs or to the substrate that supports the cladding.

The products use the following coatings as WRBs:

Trowel-applied coatings

- Cement Bear is a polymer-based, fibre-reinforced, wet paste coating supplied in 19-L/27-kg pails and mixed on-site with Type 10 Portland cement (1:1 by weight). It is intended for use on glass-fibre-faced gypsum sheathing, cement board, concrete or masonry substrates. It is trowel-applied in a continuous layer over the substrate to achieve a minimum wet thickness of 1.25 mm per coat. Cement Bear is also used to pre-coat gaps between sheathing boards prior to the application of the WRB to the field surface of the sheathing boards. This is required for the application of Roller Bear and FRI Bear.
- FRI Bear is a factory-blended, ready-to-use, non-cementitious polymeric wet mix coating supplied in 19-L/25-kg pails. It is intended for use exclusively over wood substrates. It is applied in a continuous layer to achieve a minimum thickness of 0.28 mm per coat. FRI Bear is applied in a single layer in conjunction with a second layer of Polar Bear.
- Polar Bear is a factory-blended, ready-to-use, non-cementitious polymeric wet mix coating supplied in 19-L/26-kg pails. It is intended for use on all substrates, including wood. It is applied with a flat stainless steel trowel in a continuous layer to achieve a minimum wet thickness of 1.5 mm per coat. Polar Bear is also used to pre-coat gaps between sheathing boards prior to the application of the WRB to the field surface of the sheathing boards. This is required for the application of Roller Bear and FRI Bear. Polar Bear may also be used to wrap rough openings and penetrations.
- Vapour Block is a polymer-based, elastomeric, wet paste coating supplied in 19-L/26-kg pails. It is intended for use on glass-fibre-faced gypsum sheathing, cement board, concrete, or masonry substrates. It is trowel-applied in a continuous layer over the substrate to achieve a minimum dry thickness of 0.8 mm per coat.

Spray-, brush- or roller-applied coatings

Roller Bear is a factory-blended, ready-to-use, non-cementitious polymeric wet mix coating supplied in 19-L/28-kg pails. It is intended for use over all acceptable substrates identified in the [Water-Resistive Barrier](#) section. It is applied in a continuous layer to achieve a minimum thickness of 0.28 mm per coat. Roller Bear is applied in a single coat when used in conjunction with a single coat of Polar Bear, Cement Bear and/or Vapour Block. When used over wood substrates, Roller Bear is applied in conjunction with one coat of Polar Bear. Roller Bear can be used in two coats over all non-wood substrates.

Roller Bear is applied over the entire surface of the intended substrate by spray, brush, or roller. The first layer must be allowed to dry prior to the application of the second coat WRB.

Note: Some WRB products such as Polar Bear, Cement Bear and Vapour Block can be used as an adhesive and/or base coat.

Self-adhered modified bituminous membrane

SOPRASEAL STICK 1100 T is a self-adhered modified bituminous membrane consisting of a styrene-butadiene-styrene (SBS) rubberized asphalt compound, which is integrally laminated to a woven polyethylene film on one side and has a silicone-treated release backing on the reverse side. The membrane has a minimum thickness of 1 mm. SOPRASEAL STICK 1100 T or equivalent must meet the waterproof characteristics of CGSB 37-GP-56M-85, “Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.”

Adhesive

- Polar Bear – see description in [Trowel-Applied Coatings](#)
- Cement Bear – see description in [Trowel-Applied Coatings](#)
- Prep Coat is a ready-to-use, polymer-based, wet paste adhesive supplied in 19-L/30-kg pails and mixed on-site with Type 10 Portland cement (1:1 cement by weight). Workability may be adjusted by the addition of clean, potable water as specified by the manufacturer.
- Prep Coat D is a ready-to-use, polymer-based adhesive supplied in 22.7-kg powder bags. The material is mixed on-site with clean, potable water (3.8:1 by weight of dry mix to water).

When used as an adhesive in the InsulROCK EIFS, Cement Bear, Prep Coat or Prep Coat D are applied with a 9.5-mm, stainless steel, notched trowel, held at a 30° angle and rendered in such a way as to align the adhesive in vertical ribbons.

When used as an adhesive in the PUCCS System, Cement Bear, Prep Coat or Prep Coat D can be applied either in a continuous layer over the substrate to achieve a minimum thickness of 1.0 mm or applied with a 9.5-mm, stainless steel, notched trowel, held at a 30° angle, and rendered in such a way as to align the adhesive in vertical ribbons.

Note: *Adhesives are used for bonding the insulation to the substrate coated with the WRB. They are, in general, available in the following forms: a dry powder mix requiring the addition of water and/or cement on site, or a wet paste that does not require any additives. Certain adhesives are also used as base coats, as in the case of Prep Coat and Prep Coat D. Consequently, the description of Prep Coat and Prep Coat D has been placed in this section.*

Mechanical fasteners

DuROCK Mechanical Fasteners, to be used with self-adhered modified bituminous membrane as the WRB, consist of a corrosion-resistant anchoring screw and low-profile, high-density polypropylene washers (Wind-Lock/Wind-Devil 2) that are used to secure the insulation. The spacing and frequency of the fasteners will vary depending on the type of substrate. The outside face of the low-profile plastic washer should always be flush with the outside face of the tongue of the expanded polystyrene (EPS) insulation board. Fastening of the insulation boards to the substrate should precede the application of the reinforcing mesh.

PUCCS NC Mechanical Fasteners consist of a corrosion-resistant anchoring screw and low-profile, high-density polypropylene washers (Windlock ULP-302) that are used to secure the DuROCK PUCS-ROCK geometrically defined drainage cavity (GDDC) mineral fibre insulation. Please see “DuROCK PUCCS NC, Non-Combustible Cladding Exterior Insulation Finish System (EIFS),” Manufacturer’s Specification 07 24 40, September 2019, for the installation instructions for DuROCK PUCCS N Fasteners.

Insulation

EPS insulation

- DuROCK Insulation Board and DuROCK PUCCS Insulation Board are Type 1 or Type 2 polystyrene-foam insulation boards made of 100% virgin materials and manufactured and packaged by a DuROCK-approved and -licensed manufacturer/moulder. The insulation boards are aged in ambient air for a minimum of five weeks or kiln-dried.

- DuROCK Insulation Board is a typical flat EPS board.
- DuROCK PUCCS Insulation Board has drainage pathways cut into the insulation in a series of circles, 86 mm in diameter, 10 mm deep and 16 mm apart (see Figure 1).

The two polystyrene insulation boards must conform to the following:

- CAN/ULC-S701-11, “Thermal Insulation, Polystyrene, Boards and Pipe Covering,” Type 1 or Type 2,
- minimum board thickness: 25 mm when using DuROCK Insulation Board,
- minimum board thickness: 38 mm when using DuROCK PUCCS Insulation Board or the Uni-Track starter strip in conjunction with DuROCK Insulation Board,
- maximum board thickness:
 - as designed when used in combustible construction, and
 - 127 mm when used in noncombustible construction,
- maximum board size: 600 mm × 1 219 mm,
- average density: 16 kg/m³ for Type 1 and 24 kg/m³ for Type 2, and
- flame-spread rating: 25 - 500, per CAN/ULC-S102.2-10, “Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.”

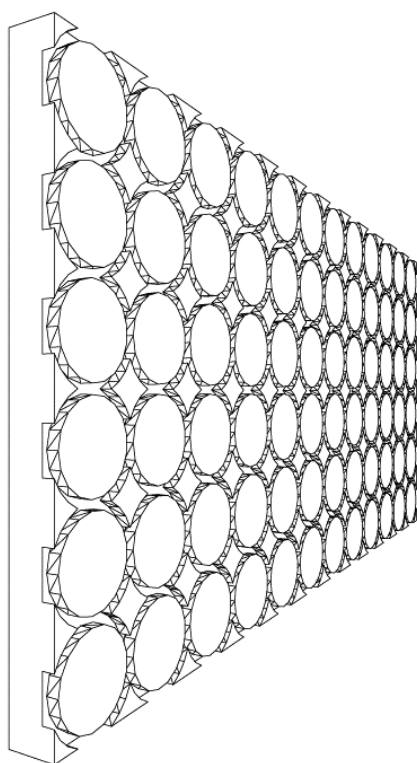


Figure 1. DuROCK PUCCS Insulation Board

Mineral fibre insulation

DuROCK PUCC-ROCK is a Type 1 mineral fibre insulation board manufactured and packaged for DuROCK Alfacing International Limited by an approved manufacturer. DuROCK PUCC-ROCK Insulation Board is available in 51 mm, 76 mm, 102 mm, 127 mm, and 152 mm thicknesses. DuROCK PUCC-ROCK Insulation Board incorporates a GDDC on the

back side that is 10 mm deep and 37% open. DuROCK Pucc-Rock Insulation Board includes an integral alkali-resistant fibreglass mesh on the front side.

Mineral fibre insulation boards shall conform to the following:

- CAN/ULC-S702.1-14;
- having a minimum flat board thickness of 51 mm;
- having a maximum board thickness of 152 mm;
- having a maximum board size of 610 mm × 1 219 mm; and
- having an average density of 131 kg/m³.

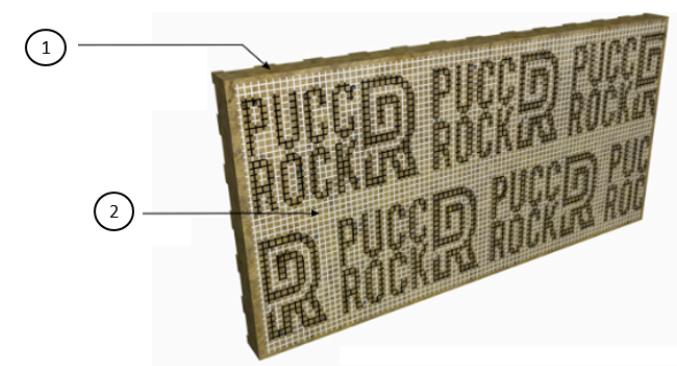


Figure 2. DuROCK Pucc-Rock Insulation Board - 48'' x 24'' Pucc-Rock Standard Board

1. 48'' x 24'' DuROCK Pucc-Rock Mineral Fibre Insulation board with 10mm Geometrically Defined Drainage Cavity (GDDC)
2. DuROCK Fibre Mesh pre-adhered to Pucc-Rock Mineral Fibre Insulation

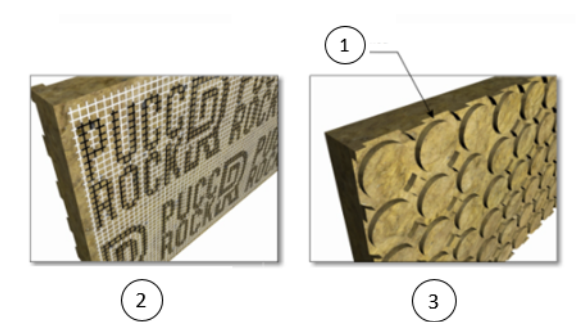


Figure 3. Front and back views of DuROCK Pucc-Rock Insulation Board

1. Moisture drainage through 10mm Geometrically Defined Drainage Cavity (GDDC)
2. PUCC-ROCK FRONT VIEW
3. PUCC-ROCK BACK VIEW

Synthetic coating system (lamina)

The synthetic coating system (lamina) consists of the base coat, reinforcing mesh (embedded within the base coat), a primer and a finish coat.

Base coat

- Prep Coat – see description in [Adhesive](#)

- Prep Coat D – see description in [Adhesive](#)
- Jewel Stone is a two-component base coat consisting of a dry-mix cementitious powder supplied in 22.7-kg bags and a wet mix polymeric admixture supplied in 19-L/19-kg pails. The material is mixed in a ratio of 4.5:1 (dry mix to wet mix) by weight.

When used as a base coat, Prep Coat, Prep Coat D and Jewel Stone are applied with a stainless steel trowel to the entire surface of the insulation to a uniform dry thickness of not less than 2.0 mm.

Note: *The thickness of the base coat required depends on the number of layers and the type of reinforcing mesh used. The base coat needs to be thicker when more than one layer of reinforcing mesh is incorporated into the lamina. Ultimately, the base coat must be sufficiently thick to fully embed the DuROCK Fibre Mesh so that no mesh is visible.*

Reinforcing mesh

DuROCK Fibre Mesh is an alkali-resistant, glass-fibre reinforcing fabric that has a minimum nominal weight of:

- 165 g/m² (4.9 oz./yd²) when using reinforcing fabric manufactured by Gavazzi S.A., and
- 140 g/m² (4.2 oz./yd²) or greater when using products manufactured by Saint-Gobain ADFORS.

The mesh is white and available in rolls 1 m wide × 44 m long in the case of Gavazzi S.A. rolls, and 965 mm, 241 mm, or 318 mm wide × 45.7 m long in the case of the Saint-Gobain ADFORS rolls.

The reinforcing mesh is available in five different grades, represented in descending order of strength:

1. 15 oz Impact Mesh: minimum 522 g/m²,
2. 11 oz Reinforcing Mesh: minimum 370 g/m²,
3. 5.2 oz Reinforcing Mesh: minimum: 174 g/m²,
4. 5.0 oz Reinforcing Mesh: minimum: 165 g/m², and
5. 4.2 oz Reinforcing Mesh: minimum 140 g/m².

Note: *Higher-grade meshes are intended to be used in areas requiring high impact resistance. All five grades of DuROCK Fibre Mesh may be used in conjunction with the two proposed systems.*

Primer

Base Primer is a water-based pigmented acrylic primer that provides a uniformly absorbent surface for selected DuROCK exterior finishes. The primer is supplied in 19-L/30-kg ready-mix pails. It is applied using a roller/brush or sprayed uniformly over the base coats.

Note: Primer is required for spray- or roller-applied finishes.

Finish coat

- DuROCK Finish is a ready-mix polymer-based finish coat that is supplied in 19-L/30-kg pails. It is factory-tinted to the desired colour.
- The finish coats provide a texture that is governed by the aggregate size as well as the trowel motion used to render the wall surface. The following represents the different textures offered and their respective coating thickness:
 - Airless (0.25 mm),
 - Coarse Coat (2.0 mm),

- Desert Sand (0.75 mm),
- Fine Coat (0.75 mm),
- Grain (2.0 mm),
- Marble Coat (1.25 mm),
- Max Coat (1.5 mm),
- Pebble Coat (0.75 mm),
- Pebble Rock (1.5 mm),
- Roll On (0.50 mm),
- Sand Coat (1.0 mm),
- Spacco (2.0 mm),
- Spray (2.0 mm),
- Tricol (0.75 mm), and
- Venetian (1.25 mm).

Grain, Pebble Rock, Max Coat and Venetian produce an open-textured pattern in a regular or random style. Marble Coat, Sand Coat, Pebble Coat, Fine Coat, Desert Sand and Tricol produce a rough, pebbly texture, while Coarse Coat and Spacco are used to achieve any desired trowel texture. The texture of the Spray finish is governed by the spray-gun orifice and air compressor settings. Airless and Roll On are either roller- or spray-applied and finished to a flat coarse surface.

- Gemstone is a ready-mix polymer-based finish coat that consists of coloured quartz aggregates in a clear polymeric resin that can include metallic flakes for architectural purposes. Gemstone is supplied in 19-L/27-kg pails and available in an array of factory-tinted colours.

Table 1. InsulROCK EIFS

| System | Distinctive system components | | | | | |
|-----------|-------------------------------|---|--|---|-------------------------------------|-------------------------|
| | Insulation (flat EPS) | Intended substrate | Water-resistive barrier | Adhesive | Base coat | Finish coat |
| InsulROCK | Type 1 or Type 2 | cement board, concrete masonry, glass mat gypsum | Cement Bear, Polar Bear, Roller Bear, Vapour Block | Cement Bear, Polar Bear, Prep Coat, Prep Coat D | Jewel Stone, Prep Coat, Prep Coat D | DuROCK Finish, Gemstone |
| | | cement board, concrete masonry, glass mat gypsum, plywood/OSB | modified bituminous membrane | DuROCK Mechanical Fasteners | Jewel Stone, Prep Coat, Prep Coat D | DuROCK Finish, Gemstone |

Table 2. PUCCS EIFS

| System | Distinctive system components | | | | | |
|----------------------------|--|---|---|---|--|----------------------------|
| | Insulation (geometrically defined) | Intended substrate | Water-resistive barrier | Adhesive | Base coat | Finish coat |
| PUCCS | Type 1 or Type 2 EPS | cement board, concrete masonry, glass mat gypsum | Polar Bear, Roller Bear | Polar Bear ⁽¹⁾ | Jewel Stone, Prep Coat Prep Coat D | DuROCK finish, Gemstone |
| | | | Cement Bear, Polar Bear, Roller Bear, Vapour Block | Cement Bear Prep Coat Prep Coat D | | |
| | | | modified bituminous membrane | DuROCK mechanical fasteners | | |
| | | plywood/ OSB | Polar Bear | Polar Bear ⁽¹⁾ | | |
| | | | Roller Bear | Polar Bear ⁽¹⁾ | | |
| | | | FRI Bear | Polar Bear ⁽¹⁾ | | |
| | | | modified bituminous membrane | DuROCK mechanical fasteners | | |
| | | | | | | |
| PUCCS NC ⁽²⁾ | PUC-ROCK | cement board, concrete masonry, glass mat gypsum | Cement Bear | PUCCS NC Mechanical Fasteners | Prep Coat Prep Coat D | DuROCK Finish |

Notes:

- 1 When Polar Bear is applied as an adhesive, it must be applied continuously with a flat trowel.
- 2 Minimum reinforcing mesh grade used in the PUCCS NC system shall be 165 g/m².



Figure 4. InsulROCK EIFS with moisture barrier over masonry, concrete, and brick

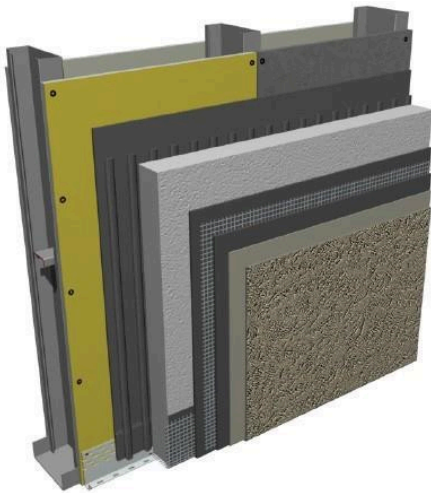


Figure 5. InsulROCK EIFS with moisture barrier over glass-fibre-faced gypsum sheathing and cement board

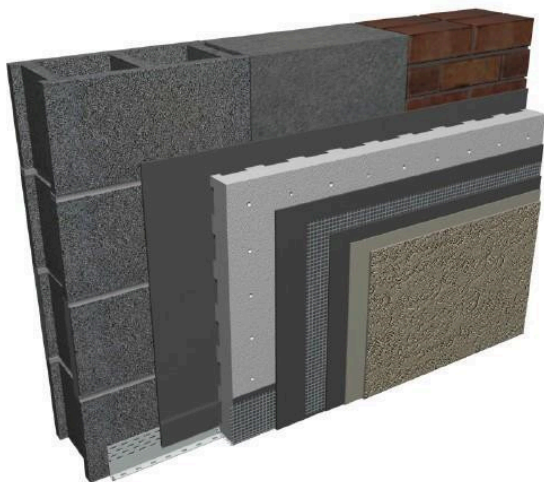


Figure 6. InsulROCK EIFS over modified bituminous membrane on masonry, concrete, and brick

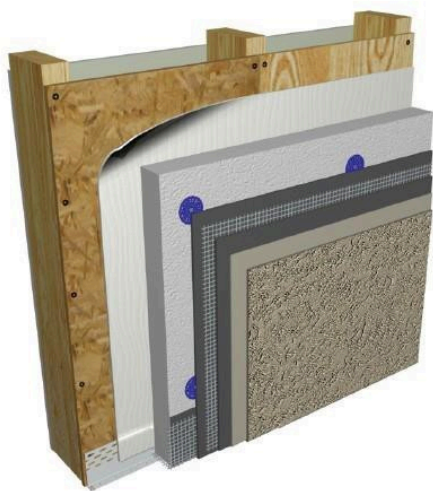


Figure 7. InsulROCK EIFS over modified bituminous membrane on OSB and plywood

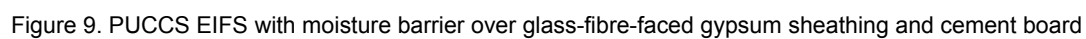
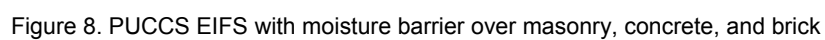




Figure 10. Puccs EIFS with moisture barrier over OSB and plywood

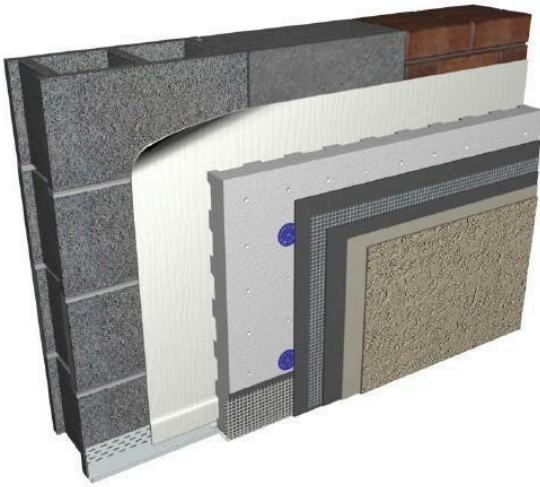


Figure 11. Puccs EIFS over modified bituminous membrane on masonry, concrete, and brick

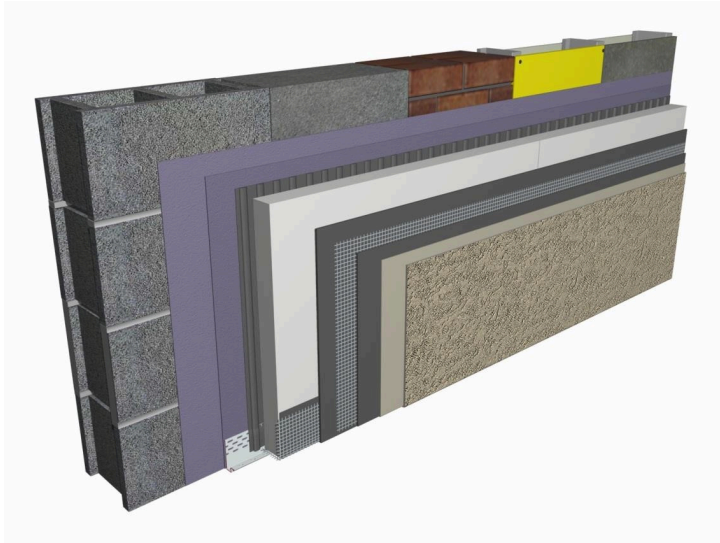


Figure 12. InsulROCK EIFS with Roller Bear and Prep Coat (or Prep Coat D) over masonry, concrete, brick, glass-fibre faced-gypsum board and cement board

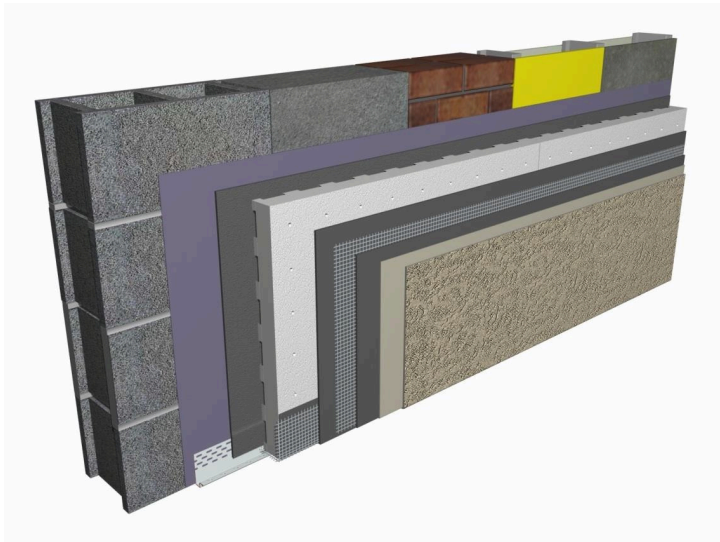


Figure 13. PUCCS EIFS with Roller Bear and Cement Bear over masonry, concrete, brick, glass-fibre-faced-gypsum board and cement board

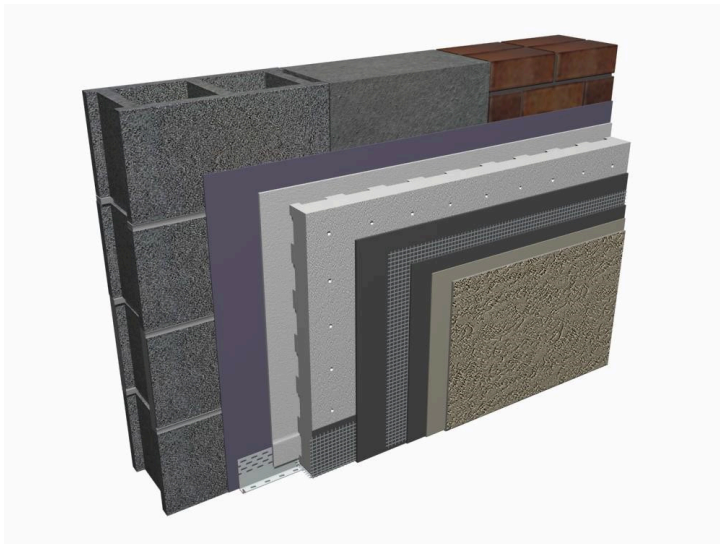


Figure 14. Puccs EIFS with Roller Bear and Polar Bear over masonry, concrete, and brick

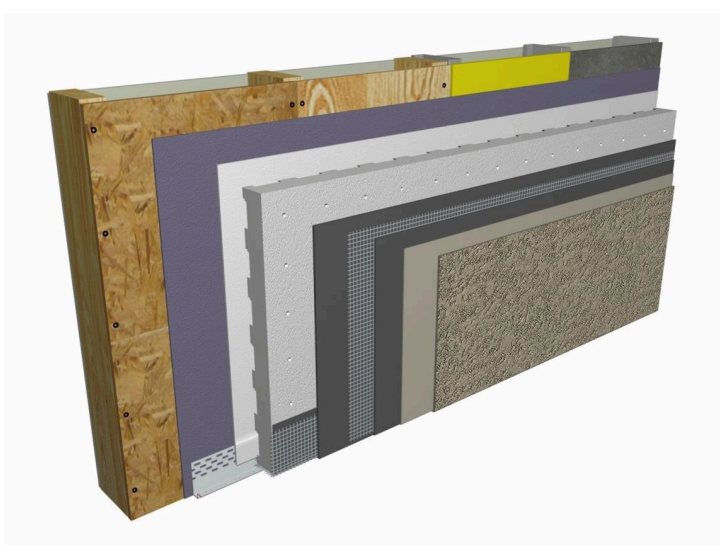


Figure 15. Puccs EIFS with Roller Bear and Polar Bear over OSB, plywood, glass-fibre-faced-gypsum board and cement board

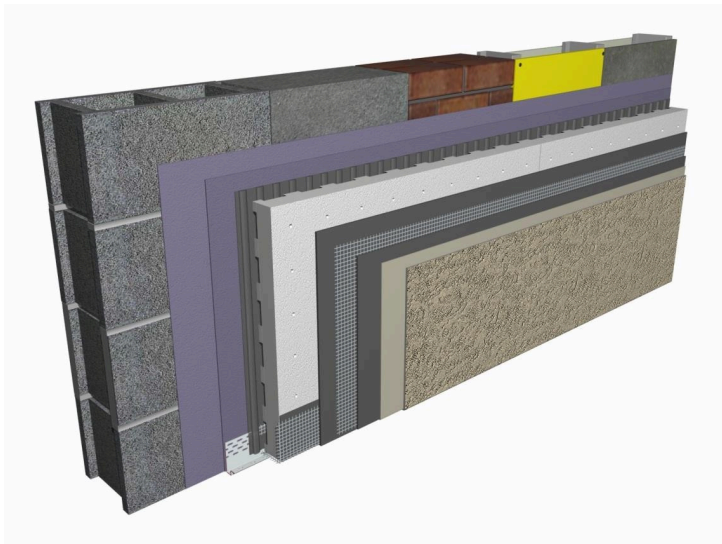


Figure 16. Puccs EIFS with Roller Bear and Prep Coat (or Prep Coat D) over masonry, concrete, brick, glass-fibre-faced gypsum board and cement board.

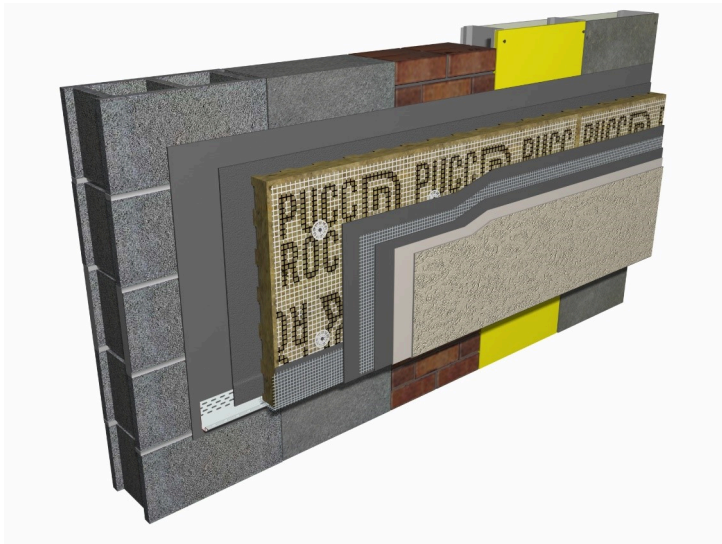


Figure 17. Puccs NC EIFS with Cement Bear and Prep Coat (or Prep Coat D) over masonry, concrete, brick, glass-fibre faced-gypsum board and cement board.

Manufacturing plants

This evaluation is limited to products produced at the following plants:

| Product names | Manufacturing plants | |
|---------------|----------------------|--------------------|
| | Vaughan, ON, CA | Woodbridge, ON, CA |
| InsulROCK | ☑ | ☑ |
| Puccs | ☑ | ☑ |
| Puccs NC | ☑ | ☑ |

☑ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

This PDF is an alternative version. This document was published on 2023-02-07 and may not be the latest version of this evaluation. Users should consult the latest [published assessment](#) on the [CCMC Registry of Product Assessments](#), which contains the most up to date information. This PDF is intended for use as a record, not the latest information available.

Conditions and limitations

The CCMC's compliance opinion is bound by this product being used in accordance with the conditions and limitations set out below.

- The product is intended for use as an exterior wall cladding on buildings falling under the scope of Parts 5 and 9 of the NBC 2015.
- When used in existing buildings, the applicable or the relevant elements of the existing buildings must comply with the requirements of the NBC 2015.
- The products are intended for use as exterior insulation and finish systems (EIFS) applied directly to vertical walls of brick, masonry, monolithic concrete walls, and/or cementitious, glass-mat-surfaced gypsum, plywood or OSB sheathing boards installed over wood or steel framing.
- The product must be installed according to the manufacturer's installation manuals or specifications listed below ⁽¹⁾ by a trained applicator authorized by the manufacturer.
- Gaps between the sheathing boards installed horizontally over on framed walls must not exceed 3.0 mm.
- The products are acceptable for use on vertical walls. The systems are not acceptable for use on horizontal surfaces. (Note: The present limitation doesn't include protected soffit applications.)
- When the systems are part of a prefabricated panel system that incorporates structural components, the prefabricated panel system must be designed and plant-inspected by a professional engineer or architect in accordance with the manufacturer's criteria and the requirements of the NBC 2010 and 2015.
- The products are not suitable for use as a structural sheathing for bracing purposes.
- The products are not intended for use as below-grade insulation and should terminate at least 200 mm above grade level.
- When used in coastal areas on residential occupancies that fall under the scope of Part 9 of Division B of the NBC 2015, the products must be installed in conjunction with a capillary break conforming to Clause 9.27.2.2.(1)(e), Minimum Protection from Precipitation Ingress, of Division B of the NBC 2015. Coastal areas are defined in Sentence 9.27.2.2.(5) of Division B of the NBC 2015.
- WRBs that are coatings must be applied in two coats.
- The use of the systems with the adhesives indicated in the "InsulROCK EIFS" table and the "PUCCS EIFS" table are limited to geographical areas where the wind design value is $Q_{50} \leq 1.00$ kPa.
- The PUCCS NC EIFS indicated in the "PUCCS EIFS" table is limited to geographical areas where the wind design value is $Q_{50} \leq 1.00$ kPa (maximum PUCCS NC mechanical fastener spacing is 406 mm horizontally and 305 mm vertically).
- When the products have a self-adhered modified bituminous membrane, their use is limited to geographical areas where the wind design value is $Q_{50} < 0.75$ kPa. ⁽²⁾ When used in locations where wind load resistance is required, the wind load resistance must be calculated based on test results that would have been conducted in accordance with CCMC's Technical Guide MasterFormat No. 07 24 13.01. (See the Results of Testing of Impact Resistance (PUCCS NC) table of this Report.)
- When used on existing walls of sprinklered buildings or existing walls of the buildings with not more than 3 storeys, the possibility of moisture accumulation within the wall construction is mainly a function of 1) the ability of the wall assembly to deflect bulk water entry, and 2) the physical properties of the cladding being installed and its impact on the thermal, air leakage and vapour diffusion characteristics of the existing wall. The potential for moisture accumulation as a result of the addition of materials is very specific to the existing wall construction. Therefore, the installation must be in accordance with Appendix Note A-5.1.2.1(1), Application (Environmental Separation), of Division B of the NBC 2015.

- The continuity of the second plane of protection across joints and junctions at openings, penetrations and expansion joints must be maintained through accessories such as self-adhering membranes, tapes, etc., as specified by the manufacturer, prior to the installation of these systems.
- The design of the inboard/outboard insulation of the products must be in accordance with the requirements of Section 9.25., Heat Transfer, Air Leakage and Condensation Control, of Division B of the NBC 2015.
- When the systems are used on existing walls, adding thermal insulation to existing exterior walls will increase the thermal efficiency and airtightness of the wall. Deficiencies in flashing and other elements in the building assembly, including mechanical systems, may result in the detrimental effects of moisture accumulation highlighted in Appendix Note A-9.25.2.4.(3), Loose-Fill Insulation in Existing Wood-Frame Walls, of Division B of the NBC 2015. As a result, once the EIFS (the product evaluated in this report) is installed, the existing exterior walls must meet the requirements of the NBC 2015 for heat transfer, air leakage and condensation control.
- The products can provide additional thermal insulation to the wall assembly with no detrimental effects if properly installed with knowledge of the existing wall configuration and performance.
- The products alone may not provide the full amount of the required wall insulation. The thermal resistance of the wall system must conform to the energy requirements of the applicable building code. The wall system may have to conform to the National Energy Code of Canada for Buildings 2015 as a minimum to meet Canada Mortgage and Housing Corporation (CMHC) technical requirements.
- The polystyrene thermal insulation must be in conformance with the requirements of CAN/ULC-S701-11.
- The polystyrene thermal insulation must be aged for a minimum of five weeks or kiln-dried before installation.
- The mineral fibre thermal insulation must be in conformance with the requirements of CAN/ULC-S702.1-14.
- Where allowed by the Code through conformance to Article 3.1.5.5., Combustible Cladding on Exterior Walls, of Division B of the NBC 2015, the two systems having Polar Bear, Cement Bear and Vapour Block as the WRB, Polar Bear, Cement Bear, Prep Coat and Prep Coat D as the adhesive, DuROCK Insulation Board and DuROCK PUCCS Insulation Board as the Type 1 or Type 2 EPS, up to 127 mm thick, Prep Coat, Prep Coat D as the base coat, DuROCK Finish as the finish coat, DuROCK Fibre Mesh having a minimum weight of 150 g/m² and 100-mm mesh overlap, are acceptable for use in buildings required to be of noncombustible construction that are not more than three storeys in height if not sprinklered, and to an unlimited number of storeys in height if sprinklered. For a detailed description of the compliance of the related systems to the requirements of Article 3.1.5.5. of Division B of the NBC 2015, please refer to Intertek Listing Information of DuROCK PUCCS and InsulROCK EIFS, SPEC ID: 18050 and Design No. DAI/WDEIFS 30-01.
- Where allowed by the Code through conformance to Clause 3.2.3.8.(1)(b) of Division B of the NBC 2015, the two systems having Polar Bear, Cement Bear and Vapour Block as the WRB, Polar Bear, Cement Bear, and Prep Coat as the adhesives, Prep Coat and Prep Coat D as the base coat, DuROCK Insulation Board and DuROCK PUCCS Insulation Board as the Type 1 or Type 2 EPS, up to 152 mm thick, DuROCK Fibre Mesh having a minimum weight of 150 g/m² and a 100-mm mesh overlap, and DuROCK Finish as the finish coat are acceptable for use in the exposed face of buildings required to be of noncombustible construction. For a detailed description of the compliance of the related systems to the requirements of Clause 3.2.3.8.(1)(b) of Division B of the NBC 2015, please refer to Intertek Listing Information of “DuROCK PUCCS and InsulROCK EIFS,” SPEC ID: 18050 and Design No. DAI/WDEIFS 15-01.
- When used in noncombustible construction, the polystyrene insulation must be protected from the inside of the building in accordance with the applicable sentences of Article 3.1.5.15., Foamed Plastic Insulation, of Division B of the NBC 2015.
- When used in combustible construction, the polystyrene insulation must be protected from the inside of the building in accordance with Clauses 3.1.4.2.(1)(c), Protection of Foamed Plastics, and 9.10.17.10.(1)(c), Protection of Foamed Plastics, of Division B of the NBC 2015.

- The systems should be kept at least 50 mm, or as required in building regulations and safety codes, from heat-emitting devices, such as recessed light fixtures and chimneys.
- The requirements of the NBC 2015 regarding fire stops must be implemented.
- The polystyrene thermal insulation must have a flame-spread rating of not more than 500 when tested in accordance with the requirements of CAN/ULC-S102.2-10.
- Expansion/movement joints must be carried through the cladding. The joints are required to accommodate expansion and contraction of building materials due to thermal changes, moisture, wind, gravity, vibration and seismic activity. Expansion/movement joints must be used in the following situations:
 - at joints that occur in the substrate,
 - at any abutment of the system with other materials,
 - where the substrate changes,
 - where significant structural movement occurs,
 - where deflections in excess of L/240 are expected, and
 - at the floor line in wood-frame construction (may not be required when using engineered wood beams).
- Closed-cell backer rods should be used at expansion/movement joints so that the low-modulus sealant may be installed as per the sealant manufacturer's instructions.
- The products must be installed according to DuROCK Alfacing International Limited's installation manuals referenced in this Report ⁽¹⁾ by applicators authorized by the manufacturer.
- Wet materials must be applied at temperatures above 4°C and maintained above 4°C for a period not less than 24 hours. The substrate must be maintained above 4°C for a period not less than 24 hours. Cool and humid climatic conditions may extend drying time beyond 24 hours. Temporary protection and heat must be provided during colder conditions. Materials must be stored at temperatures between 4°C and 40°C. Previously frozen materials must not be used.
- Wet, finished surfaces must be protected from rain and wind-driven moisture until the materials have set and hardened.
- The products must be installed with suitable flashing to drain any incidental water from the drainage cavity to the exterior and to protect the exposed top edge of the cladding. Cap flashing must be installed immediately after completion of the finish coat or temporary protection must be provided.
- Glass mat gypsum sheathing must be in compliance with the requirements of ASTM C 1177/C 1177M-13, "Glass Mat Gypsum Substrate for Use as Sheathing," or must have been evaluated by the CCMC.
- Specification of surface sealers must be provided by the manufacturer.
- When Roller Bear and FRI Bear are used in conjunction with panel type substrates, the joints between the different panels must be treated with Polar Bear or Cement Bear prior to the installation of the said WRBs.
- Roller Bear and FRI Bear are intended to be used in conjunction with one coat of Polar Bear when used over wood substrates and in conjunction with Polar Bear or Cement Bear when used on all other substrates. Roller Bear and FRI Bear are not intended to be used in conjunction with each other. Roller Bear used in two coats could be used on all substrate applications other than wood.
- For wood substrate applications, Polar Bear is trowel-applied into panel joints prior to the application over the field of the wall and/or prior to the application of Roller Bear or FRI Bear.
- OSB and/or plywood sheathing boards used in conjunction with the products must comply with the requirements of CSA O86-14, "Engineering Design in Wood." In addition, the OSB must comply with CSA O325-07 (R2012), "Construction Sheathing," while plywood must comply with CSA O121-08, "Douglas Fir Plywood," CSA O151-09, "Canadian Softwood Plywood" and CSA O153-13, "Poplar Plywood."

- The OSB and/or plywood sheathing boards must have a minimum thickness of 11.1 mm and 12.7 mm, respectively. The boards must have their principal strength-direction across the studs, must be continuously supported by framing, and must be gapped at least 2.0 mm and not more than 3.0 mm.
- OSB and/or plywood sheathing boards used in conjunction with the products must be fastened to the framing in conformance with Article 9.23.3.5., Fasteners for Sheathing or Subflooring, of Division B of the NBC 2015.
- The products intended for use over wood shall have the moisture content of lumber and/or wood sheathing not greater than 19% at the time of the application of the water-resistive barrier.
- The drained airspace behind the insulation board shall remain unobstructed so as to form a clear drainage cavity behind the insulation boards and it shall terminate in such a way as not to obstruct the dissipation of incidental rainwater to the exterior.

Notes:

- 1 DuROCK Alfacing International Limited's installation manuals and specification include:
 - InsulROCK EIFS for Commercial and High Rise Construction, 2012,
 - InsulROCK EIFS for Use Over Modified Bituminous Membranes, 2012,
 - PUCCS EIFS for Commercial and High Rise Construction, 2012,
 - PUCCS EIFS for Low Rise Residential Construction, 2012,
 - PUCCS EIFS for Use Over Modified Bituminous Membranes, 2012, and
 - DuROCK PUCCS NC, Non-Combustible Cladding Exterior Insulation Finish System (EIFS), Manufacturer's Specification 07 24 40, September 2019.
 - 2 The wind load testing of the products having a self-adhered modified bituminous membrane was conducted based on ASTM E 330- 02, "Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference." The obtained test pressure result of 2.80 kPa roughly corresponds to the "one in fifty" (Q_{50}) wind pressure loadings that are less than 0.75, $Q_{50} < 0.75$ kPa. The "one in fifty" (Q_{50}) wind pressure loadings that are less than 0.75, $Q_{50} < 0.75$ kPa, correspond to a sustained wind pressure load P_1 , P_1' of 750 Pa, a cyclic load P_2 , P_2' of 1 090 Pa and a gust load P_3 , P_3' of 1 630 Pa.
-

Technical information

This evaluation is based on demonstrated conformance with the following criteria:

| Criteria number | Criteria name |
|-----------------------|---|
| CCMC-TG-072413.05-10A | CCMC Technical Guide for “Exterior Insulation and Finish Systems (EIFS) Class PB (Adhered or Mechanically Fastened with Liquid Applied Water Resistive Barrier (LA-WRB))” |
| CCMC-TG-072413.05-15A | CCMC Technical Guide for “Exterior Insulation and Finish Systems (EIFS) Class PB (Adhered or Mechanically Fastened with Liquid Applied Water Resistive Barrier (LA-WRB))” |

Table 3. Results of testing of ash content of the products

| Property | Unit | Requirement | Result |
|-------------------------|------|--------------|--------|
| WRB (Polar Bear) | % | Report value | 57.38 |
| WRB (Cement Bear) | | | 32.77 |
| WRB (Vapour Block) | | | 39.35 |
| WRB (Roller Bear) | | | 33.67 |
| Base coat (Prep Coat) | | | 93.36 |
| Base coat (Prep Coat D) | | | 85.34 |
| Base coat (Jewel Stone) | | | 4.08 |
| Finish coat (Venetian) | | | 87.49 |
| Finish coat (Gemstone) | | | 90.14 |

Table 4. Results of infrared analysis for documenting chemical formulation of the products

| Property | Requirement | Result |
|-------------------------|--------------|----------------|
| WRB (Polar Bear) | Report value | Report on file |
| WRB (Cement Bear) | | |
| WRB (Vapour Block) | | |
| WRB (FRI Bear)) | | |
| Base coat (Prep Coat) | | |
| Base coat (Prep Coat D) | | |
| Base coat (Jewel Stone) | | |
| Finish coat (Venetian) | | |
| Finish coat (Gemstone) | | |

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Table 5. Results of testing of adhesion of WRB to substrates other than plywood/OSB

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|---------------|----------------------------------|------------|------|--|--------|
| Adhesion bond | Vapour Block to cement board | dry state | MPa | 0.25 | 0.55 |
| | | 2-h drying | | 0.08 | 0.20 |
| | | 7-d drying | | 0.25 | 0.30 |
| | Vapour Block to glass mat gypsum | dry state | | 0.25 | 0.39 |
| | | 2-h drying | | 0.08 | 0.20 |
| | | 7-d drying | | 0.25 | 0.33 |
| | Cement Bear to concrete | dry state | | 0.25 | 0.69 |
| | | 2-h drying | | 0.08 | 0.45 |
| | | 7-d drying | | 0.25 | 0.55 |
| | Cement Bear to cement board | dry state | | 0.25 | 0.52 |
| | | 2-h drying | | 0.08 | 0.28 |
| | | 7-d drying | | 0.25 | 0.48 |
| | Cement Bear to brick | dry state | | 0.25 | 0.58 |
| | | 2-h drying | | 0.08 | 0.27 |
| | | 7-d drying | | 0.25 | 0.44 |
| | Cement Bear to glass mat gypsum | dry state | | 0.25 | 0.30 |
| | | 2-h drying | | 0.08 | 0.26 |
| | | 7-d drying | | 0.25 | 0.40 |
| | Polar Bear to cement board | dry state | | 0.25 | 0.78 |
| | | 2-h drying | | 0.08 | 0.36 |

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|----------|---------------------------------|------------|------|--|-------------|
| | Polar Bear to glass mat gypsum | 7-d drying | | 0.25 | 0.38 |
| | | dry state | | 0.25 | 0.45 |
| | | 2-h drying | | 0.08 | 0.19 |
| | | 7-d drying | | 0.25 | 0.32 |
| | Roller Bear to concrete | dry state | | 0.25 | 0.50 |
| | | 2-h drying | | 0.08 | 0.37 |
| | | 7-d drying | | 0.25 | 0.58 |
| | Roller Bear to glass mat gypsum | dry state | | 0.25 | 0.16 (1) |
| | | 2-h drying | | 0.08 | 0.02 (1) |
| | | 7-d drying | | 0.25 | 0.05 (1) |

Notes:

- 1 Cohesive failure of the substrate. Meeting the minimum requirements on concrete substrates would indicate the product met the established minimum requirements

Table 6. Results of testing of adhesion/cohesion bond of WRB to substrates other than plywood/OSB

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|-------------------------|--|------------|------|--|--------|
| Adhesion/ cohesion bond | Roller Bear to Polar Bear to concrete | dry state | MPa | 0.25 | 0.67 |
| | | 2-h drying | | 0.08 | 0.59 |
| | | 7-d drying | | 0.25 | 0.58 |
| | Roller Bear to Cement Bear to concrete | dry state | | 0.25 | 0.58 |

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|---------------|--|------------|------|--|--------|
| Adhesion bond | | 2-h drying | | 0.08 | 0.63 |
| | | 7-d drying | | 0.25 | 0.64 |
| | | dry state | | 0.25 | 0.55 |
| | Roller Bear to Prep Coat to concrete | 2-h drying | | 0.08 | 0.44 |
| | | 7-d drying | | 0.25 | 0.49 |
| | | dry state | | 0.25 | 0.42 |
| | Roller Bear to Prep Coat D to concrete | 2-h drying | | 0.08 | 0.29 |
| | | 7-d drying | | 0.25 | 0.49 |
| | | dry state | | | |

Table 7. Results of testing of adhesion bond of adhesive to WRB

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|---------------|-----------------------------|------------|------|--|--------|
| Adhesion bond | Prep Coat to Vapour Block | dry state | MPa | 0.25 | 0.66 |
| | | 2-h drying | | 0.08 | 0.35 |
| | | 7-d drying | | 0.25 | 0.37 |
| | Prep Coat D to Vapour Block | dry state | | 0.25 | 0.45 |
| | | 2-h drying | | 0.08 | 0.43 |
| | | 7-d drying | | 0.25 | 0.35 |
| | Cement Bear to Vapour Block | dry state | | 0.25 | 0.74 |
| | | 2-h drying | | 0.08 | 0.40 |
| | | 7-d drying | | 0.25 | 0.52 |
| | Prep Coat to Cement Bear | dry state | | 0.25 | 0.55 |
| | | 2-h drying | | 0.08 | 0.37 |
| | | 7-d drying | | 0.25 | 0.59 |
| | Prep Coat D to Cement Bear | dry state | | 0.25 | 0.37 |

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|----------|---------------------------|------------|------|--|--------|
| | | 2-h drying | | 0.08 | 0.25 |
| | | 7-d drying | | 0.25 | 0.31 |
| | Prep Coat to Polar Bear | dry state | | 0.25 | 0.64 |
| | | 2-h drying | | 0.08 | 0.34 |
| | | 7-d drying | | 0.25 | 0.63 |
| | Prep Coat D to Polar Bear | dry state | | 0.25 | 0.41 |
| | | 2-h drying | | 0.08 | 0.22 |
| | | 7-d drying | | 0.25 | 0.49 |

Table 8. Results of testing of adhesion bond of adhesive to insulation

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|---------------|--------------------|------------|------|--|--------|
| Adhesion bond | Cement Bear to EPS | dry state | MPa | 0.08 | 0.27 |
| | | 2-h drying | | 0.08 | 0.25 |
| | | 7-d drying | | 0.08 | 0.27 |
| | Prep Coat to EPS | dry state | | 0.08 | 0.31 |
| | | 2-h drying | | 0.08 | 0.20 |
| | | 7-d drying | | 0.08 | 0.30 |
| | Prep Coat D to EPS | dry state | | 0.08 | 0.14 |
| | | 2-h drying | | 0.08 | 0.12 |
| | | 7-d drying | | 0.08 | 0.22 |

Table 9. Results of testing of lamina bond strength (base coat/finish coat/insulation)

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|---------------|------------------------------|------------|------|--|--------|
| Adhesion bond | Prep Coat/Sand Coat to EPS | dry state | MPa | 0.08 | 0.35 |
| | | 2-h drying | | 0.08 | 0.24 |
| | | 7-d drying | | 0.08 | 0.39 |
| | Prep Coat D/Sand Coat to EPS | dry state | | 0.08 | 0.35 |
| | | 2-h drying | | 0.08 | 0.25 |
| | | 7-d drying | | 0.08 | 0.40 |

| Property | | | Unit | Requirement no detachment at bonding plane @ | Result |
|----------|-----------------------------|------------|------|--|--------|
| | Jewel Stone to EPS | dry state | | 0.08 | 0.22 |
| | | 2-h drying | | 0.08 | 0.16 |
| | | 7-d drying | | 0.08 | 0.29 |
| | Jewel Stone/Gemstone to EPS | dry state | | 0.08 | 0.34 |
| | | 2-h drying | | 0.08 | 0.14 |
| | | 7-d drying | | 0.08 | 0.32 |

Table 10. Results of testing of water vapour transmission (WVT) rate of WRB

| Property | | Unit | Requirement | Result |
|----------|--------------|--------------|--------------|----------------------|
| WVT | Vapour Block | ng/(Pa·s·m²) | Report value | 76 ⁽¹⁾ |
| | Cement Bear | | | 543 ⁽²⁾ |
| | Polar Bear | | | 115 ⁽³⁾ |
| | | | | 65 ⁽⁴⁾ |
| | Roller Bear | | | 99 ⁽⁵⁾ |
| | Roller Bear | | | 146.3 ⁽⁶⁾ |

Notes:

- 1 WVT rate measured at an average WRB thickness of 1.04 mm
- 2 WVT rate measured at an average WRB thickness of 0.93 mm
- 3 WVT rate measured on the composite DensGlass/Polar Bear at an average thickness of 1.49 mm
- 4 WVT rate measured on the composite OSB/Polar Bear at an average thickness of 1.41 mm.
- 5 WVT rate measured on the composite of two-coat Roller Bear on DensGlass.
- 6 WVT rate measured on the composite Roller Bear/Cement Bear on DensGlass.

Table 11. Results of testing of water vapour transmission (WVT) of lamina

| Property | | Unit | Requirement | Result |
|----------|------------------------------------|---------------------------|--------------|--------|
| WVT | Prep Coat/Sand Coat ⁽¹⁾ | ng/(Pa·s·m ²) | Report value | 565 |

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| Property | | Unit | Requirement | Result |
|----------|--------------------------------------|------|-------------|--------|
| | Prep Coat D/Sand Coat ⁽²⁾ | | | 761 |
| | Jewel Stone/Gemstone ⁽³⁾ | | | 170 |

Notes:

- 1 WVT rate measured at an average lamina thickness of 2.35 mm
- 2 WVT rate measured at an average lamina thickness of 2.33 mm.
- 3 WVT rate measured at an average lamina thickness of 5.89 mm.

Table 12. Results of testing of water absorption of the base coat

| Property | | Unit | Requirement | Result |
|-------------------------------|-------------|------|-------------------------|--------|
| Water absorption of base coat | Prep Coat | % | ≤ 20% of the dry weight | 12.6 |
| | Prep Coat D | | | 18.75 |
| | Jewel Stone | | | 8.0 |

Table 13. Results of testing of water absorption coefficient of WRB at 72 h

| Property | | Unit | Requirement | Result |
|--|--------------|---|-------------|---------|
| Water absorption coefficient of WRB @ 72 h | Vapour Block | kg/(m ² 2·s ^{1/2}) | ≤ 0.004 | 0.00035 |
| | Cement Bear | | | 0.0012 |
| | Roller Bear | | | 0.0012 |

Table 14. Results of testing of impermeability to water of the base coat

| Property | | Unit | Requirement | Result |
|--------------------------------------|-------------|------|---------------------------------------|--------|
| Impermeability to water of base coat | Prep Coat | h | No water penetration in less than 2 h | Pass |
| | Prep Coat D | | | Pass |
| | Jewel Stone | | | Pass |

Table 15. Results of testing of mildew and fungus resistance

| Property | | Requirement | Result |
|---|----------|-------------|--------|
| Mildew and fungus resistance of finish coat | Venetian | No growth | Pass |
| | Gemstone | | Pass |

Table 16. Results of testing of accelerated weathering resistance

| Property | | Requirement | Result |
|--|----------------------|---|--------|
| Accelerated weathering resistance of Lamina @ 2000 h | Prep Coat/Venetian | No cracking, flaking or deleterious effects | Pass |
| | Prep Coat D/Venetian | | Pass |
| | Jewel Stone/Gemstone | | Pass |

Table 17. Results of testing of salt spray resistance

| Property | | Requirement | Result |
|-------------------------------|----------------------|---|--------|
| Salt spray resistance @ 300 h | Prep Coat/Venetian | No cracking, flaking or deleterious effects | Pass |
| | Prep Coat D/Venetian | | Pass |
| | Jewel Stone/Gemstone | | Pass |

Table 18. Results of testing of durability under environmental cyclic conditions (Prep Coat D/Venetian)

| Property | Unit | Requirement | Result |
|--|------|---|--------|
| Pre-conditioning | L | Report water quantity introduced | 13.5 |
| Pre-conditioning (drainage evaluation) | L | Report water quantity drained | 12.4 |
| Environmental cycling (60 cycles) | – | No cracking, blistering or sagging of base coat and no detachment or crazing of finish coat | Pass |
| Adhesion bond strength after environmental cycling | MPa | 0.08 | 0.35 |

Table 19. Results of testing of durability under environmental cyclic conditions (Jewel Stone/Gemstone)

| Property | Unit | Requirement | Result |
|------------------|------|----------------------------------|--------|
| Pre-conditioning | L | Report water quantity introduced | 13.5 |

| Property | Unit | Requirement | Result |
|--|------|---|--------|
| Environmental cycling (60 cycles) | – | No cracking, blistering or sagging of base coat and no detachment or crazing of finish coat | Pass |
| Adhesion bond strength after environmental cycling | MPa | 0.08 | 0.25 |

Table 20. Results of testing of durability under environmental cyclic conditions (PUCCS NC)

| Property | Unit | Requirement | Result |
|--|------|---|-------------|
| Pre-conditioning | L | Report water quantity introduced | 13.5 |
| Pre-conditioning (drainage evaluation) | L | Report water quantity drained | 10.4 |
| Environmental cycling (60 cycles) | – | No cracking, blistering or sagging of base coat and no detachment or crazing of finish coat | Pass |
| Adhesion bond strength after environmental cycling | MPa | 0.08 | 0.09 (1) |
| | | | 0.10 (2) |

Notes:

1 Adhesion strength of base coat

2 Adhesion strength of finish coat

**Table 21. Results of testing of breaking strength resistance of reinforcement mesh (165.0 g/m² (4.5 oz) – (Gavazzi S.A.)
(1)**

| Property | | Unit | Requirement | Result | |
|-------------------------|-------------|------|--|--------|------|
| | | | | Weft | Warp |
| Initial strength | | N/mm | 35 | 68 | 50 |
| Loss of strength after | 30-day soak | % | ≤ 60% for adhered EIFS | 29 | 28 |
| | 60-day soak | | ≤ 50% for mechanically-fastened EIFS | 38 | 28 |
| | 90-day soak | | | 46 | 26 |
| Residual strength after | 30-day soak | N/mm | ≥ 15 N/mm for adhered EIFS | 48 | 36 |
| | 60-day soak | | ≥ 25 N/mm for mechanically-fastened EIFS | 42 | 36 |
| | 90-day soak | | | 37 | 37 |

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Notes:

- 1 Gavazzi S.A. Conformance with the balance of the mesh tests is based on their Centre Scientifique et Technique du Bâtiment (CSTB) CSTB at certification.

Table 22. Results of testing of breaking strength resistance of reinforcement mesh (140.0 g/m² (4.1 oz) – (Saint-Gobain ADFORS)

| Property | | Unit | Requirement | Result | |
|---------------------------------|-------------------------|------------------|--------------|--------|------|
| Ash content | | % | Report value | 14.7 | |
| Mass per unit area | | g/m ² | Report value | 140 | |
| Tensile strength | | N/mm | | Weft | Warp |
| Initial tensile strength | | | ≥ 35 | 37.2 | 40.3 |
| Loss of tensile strength after | 28-day 3 ion soak | % | ≤ 50 | 17.7 | 7.3 |
| Residual tensile strength after | 28-day 3 ion soak | N/mm | ≥ 20 | 30.6 | 37.3 |
| Elongation @ break | initial | % | Report value | 3.3 | 4.1 |
| | after 28-day 3 ion soak | | | 2.8 | 3.8 |

Table 23. Results of testing of impact resistance

| Property | | | Requirement | Result |
|-------------------|--|-----------|---|--------|
| Impact resistance | Prep Coat D (mesh 155 g/m ² mesh / Sand Coat) | 10 joules | 6/10 free-fall drops must show no perforation (broken mesh) | Pass |
| | | 3 joules | 6/10 free-fall drops must show no cracks | Pass |
| | Jewel Stone/(174 g/m ² mesh) / Gemstone (1) | 10 joules | 6/10 free-fall drops must show no perforation (broken mesh) | Pass |
| | | 3 joules | 6/10 free-fall drops must show no cracks | Pass |

Notes:

- 1 When Jewel Stone is used in conjunction with Gemstone, the mesh shall have a minimum weight of 174 g/m²

Table 24. Results of testing of impact resistance (PUCCS NC)

| Property | | | Requirement | Result |
|-------------------|--|-----------|---|--------|
| Impact resistance | Prep Coat D (mesh 165 g/m ² mesh/Sand Coat) | 10 joules | 8/10 free-fall drops must show no perforation (broken mesh) | Pass |
| | | 3 joules | 7/10 free-fall drops must show no cracks | Pass |

Table 25. Results of testing of wind load resistance (PUCCS EIFS)

| Reference wind pressure (kPa) | Sustained | | Cycling | | Gust | | Deflection test | | |
|--|--|------|--|------|--|------|--|---|--------------------------|
| | P ₁ , P ₁ ' (Pa) | | P ₂ , P ₂ ' (Pa) | | P ₃ , P ₃ ' (Pa) | | Test pressure (Pa) 2.18 P ₁ ,P ₁ ' | Measured maximum net midspan deflections (mm) | |
| | | | | | | | | Stud span 3 050 mm | Sheathing span 406 mm |
| Q ₅₀ ≤ 0.45 | ±450 | Pass | ±660 | Pass | ±980 | Pass | +980 | 6.8 | 1.1 |
| | | | | | | | -980 | -6.4 | -1.6 |
| Q ₅₀ ≤ 0.55 | ±550 | Pass | ±800 | Pass | ±1200 | Pass | +1 200 | 8.4 | 1.3 |
| | | | | | | | -1 200 | -7.8 | -1.9 |
| Q ₅₀ ≤ 0.60 | ±650 | Pass | ±950 | Pass | ±1410 | Pass | +1 410 | 9.8 | 1.5 |
| | | | | | | | -1 410 | -9.2 | -2.2 |
| Q ₅₀ ≤ 0.75 | ±750 | Pass | ±1090 | Pass | ±1630 | Pass | +1 630 | 11.4 | 1.8 |
| | | | | | | | -1 630 | -10.70 | -2.6 |
| Q ₅₀ ≤ 0.85 | ±850 | Pass | ±1240 | Pass | ±1850 | Pass | +1 850 | 12.9 | 2.0 |
| | | | | | | | -1 850 | -12.1 | -2.9 |
| Q ₅₀ ≤ 1.00 | ±1000 | Pass | ±1460 | Pass | ±2180 | Pass | +2 180 | 15.2 | 2.4 |
| | | | | | | | -2 180 | -14.2 | -3.5 |
| Maximum test pressure @ L/180 Deflection | | | | | | | +2 424 | 16.9 | — |
| | | | | | | | -2 586 | | |
| Ultimate structural test pressure | | | | | | | +2 939 | Passed | |
| | | | | | | | -2 939 | Sheathing separation from steel studs occurred | |

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Table 26. Results of testing of wind load resistance (PUCCS NC EIFS)

| Reference wind pressure (kPa) | Sustained | | Cycling | | Gust | | Deflection test | | |
|--|--|------|--|------|--|------|---|---|--------------------------|
| | P ₁ , P ₁ ' (Pa) | | P ₂ , P ₂ ' (Pa) | | P ₃ , P ₃ ' (Pa) | | Test pressure (Pa) 2.18 P ₁ , P ₁ ' | Measured maximum net midspan deflections (mm) | |
| | | | | | | | | Stud span 3 050 mm | Sheathing span 406 mm |
| Q ₅₀ ≤ 0.45 | ±450 | Pass | ±660 | Pass | ±980 | Pass | +980 | 6.1 | 0.1 |
| | | | | | | | -980 | -5.0 | -0.1 |
| Q ₅₀ ≤ 0.55 | ±550 | Pass | ±800 | Pass | ±1200 | Pass | +1 200 | 7.5 | 0.1 |
| | | | | | | | -1 200 | -6.1 | -0.1 |
| Q ₅₀ ≤ 0.60 | ±650 | Pass | ±950 | Pass | ±1410 | Pass | +1 410 | 8.8 | 0.1 |
| | | | | | | | -1 410 | -7.2 | -0.1 |
| Q ₅₀ ≤ 0.75 | ±750 | Pass | ±1090 | Pass | ±1630 | Pass | +1 630 | 10.2 | 0.1 |
| | | | | | | | -1 630 | -8.3 | -0.1 |
| Q ₅₀ ≤ 0.85 | ±850 | Pass | ±1240 | Pass | ±1850 | Pass | +1 850 | 11.6 | 0.1 |
| | | | | | | | -1 850 | -9.4 | -0.1 |
| Q ₅₀ ≤ 1.00 | ±1 000 | Pass | ±1460 | Pass | ±2180 | Pass | +2 180 | 13.6 | 0.1 |
| | | | | | | | -2 180 | -11.1 | -0.1 |
| Maximum test pressure @ L/180 Deflection | | | | | | | +2 712 | 16.9 | — |
| | | | | | | | -3 325 | | |
| Ultimate structural test pressure | | | | | | | +4 550 | Passed ⁽¹⁾ | |
| | | | | | | | -4 479 | Steel studs buckled under pressure ⁽¹⁾ | |

Notes:

- ¹ Specimen configuration for wind-load resistance test: 18 gauge steel stud framing (41 mm × 92 mm) at 406-mm-spacing; 12.7 mm thick glass-mat gypsum board, sheathing fastened to framing with 31.6-mm No. 6 Type S self-drilling screws spaced at 406 mm in the field and 203 mm along the edges; maximum PUCCS NC mechanical fastener spacing is 406 mm horizontally and 305 mm vertically

Applications over wood substrates (Plywood/OSB)

Table 27. Results of testing of adhesion of WRB to plywood/OSB substrates

| Property | | | Unit | Requirement | Result |
|----------------------|-------------|-----------|------|-------------|--------|
| Adhesion bond to OSB | Polar Bear | dry state | MPa | 0.3 | 0.94 |
| | | 1-h soak | | | 0.88 |
| | | 24-h soak | | | 1.04 |
| | Roller Bear | dry state | | | 0.33 |
| | | 1-h soak | | | 0.32 |
| | | 24-h soak | | | 0.43 |

Table 28. Results of testing of joint disruption resistance

| Property | Unit | Requirement ⁽¹⁾ | Result | |
|--|------|---|-------------|------|
| | | | Joint width | |
| | | | 2-mm | 4-mm |
| Joint disruption resistance | – | The WRB at joints on two assemblies must show no cracking, delaminating or any other deleterious effects at a transverse bending of L/180 | Pass | Pass |
| Joint extension ⁽¹⁾ @ L/170 | mm | Report value | 0.59 | 0.45 |

Notes:

1 The system’s joint disruption resistance was measured at L/170, which is considered more stringent than the L/180 required in this Report.

Table 29. Results of testing of joint relaxation resistance

| Property | Unit | Requirement | Sample | Result |
|-----------------------------|-----------------------|--|--------|-------------------------|
| Joint relaxation resistance | kg/m ² · s | Five WRB-coated OSB specimens subject to 1.3 mm extension following exposure to 15 24-h environmental cycles must have a maximum average Water Transmission Rate (WTR) of 2 × 10 ⁻⁷ kg/m ² · s | 1 | 1.10 × 10 ⁻⁷ |
| | | | 2 | 1.30 × 10 ⁻⁷ |
| | | | 3 | 1.39 × 10 ⁻⁷ |

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| Property | Unit | Requirement | Sample | Result |
|----------|------|-------------|--------|-----------------------|
| | | | 4 | 1.09×10^{-7} |
| | | | 5 | 1.08×10^{-7} |

Table 30. Results of testing of water transmission resistance (WTR)

| Property | Unit | Requirement | Sample | Result |
|------------|-----------------------|---|---------|-----------------------|
| WTR | kg/m ² · s | Five WRB-coated OSB specimens subjected to a 25 mm head of water must have a maximum average WTR rate of 2×10^{-7} kg/m ² · s measured at 10 days | 1 | 0.93×10^{-7} |
| | | | 2 | 0.53×10^{-7} |
| | | | 3 | 0.91×10^{-7} |
| | | | 4 | 0.88×10^{-7} |
| | | | 5 | 0.85×10^{-7} |
| | | | Average | 0.91×10^{-7} |

Table 31. Results of testing of water vapour transmission (WVT) ⁽¹⁾

| Property | | Unit | Requirement | Result | | |
|----------|-------------------------|---------------------------|--|------------|--------|----------|
| | | | | Sample No. | Coated | Uncoated |
| WVT | Polar Bear | ng/(Pa·s·m ²) | Report value of the WVT rate of the WRB in combination with the OSB applied at the maximum thickness and the OSB alone | 1 | 62 | 65 |
| | | | | 2 | 93 | 58 |
| | | | | 3 | 40 | 78 |
| | | | | Average | 65 | 67 |
| | FRI Bear/ Polar Bear | | | 1 | 19 | 90 |
| | | | | 2 | 68 | 118 |
| | | | | 3 | 41 | 99 |
| | | | | Average | 42.7 | 102.3 |

Notes:

- 1 The tested WVT rate of the OSB is specific to the product and thickness used in the test. For typical values of WVT rates of OSB, see Table A-9.25.5.1.(1), Air and Vapour Permeance Values, of Division B of the NBC 2010.

Table 32. Results of testing of accelerated weathering of WRB

| Property | | Requirement | Result |
|-----------------------------------|-------------|--|--------|
| Accelerated weathering resistance | Polar Bear | The WRB applied over OSB must show no cracking, delamination, flaking or any deleterious effects following 250 hours exposure to Xenon arc | Pass |
| | Roller Bear | | Pass |
| | FRI Bear | | Pass |

Table 33. Results of testing of drainage capacity of the products

| Property | | Requirement | Result | | |
|-------------------|----------------------------------|--|--|------|---------------------------------|
| | | | Retained water (g) Per unit area (g/m ²) | | Drainage capacity (%) After 1 h |
| | | | 1 h | 48 h | |
| Drainage capacity | Panel 1 total (g) ⁽¹⁾ | The unit-retained water (based on the projected drainage area) following one hour and 48 hours of drainage period must not be greater than 30 g/m ² and 15 g/m ² , respectively, for any single test specimen. | 28.4 | 14.3 | 99.5 Pass |
| | Panel 2 total (g) ⁽¹⁾ | The drainage capacity must not be less than 98% of the water mass delivered into the EIFS wall specimen. | 15.2 | 3.3 | 99.7 Pass |

Notes:

- 1 Panels 1 and 2 consisted of the PUCCS EIFS applied on Polar Bear.

Table 34. Results of testing of nail popping resistance of the products

| Property | Requirement | Sample no. | Result |
|-------------------------|--|------------|--------|
| Nail popping resistance | There must be no cracking or delamination of the WRB following 1 mm nail protrusion from the nail's original preset of 1 mm below the surface of the OSB substrate | 1 | Pass |
| | | 2 | Pass |
| | | 3 | Pass |
| | | 4 | Pass |
| | | 5 | Pass |
| | | 6 | Pass |

Table 35. Results from testing the product for water entry at fastener locations (PUCCS NC) ⁽¹⁾ ⁽²⁾

| Property | Requirement | Evaluation specimen ⁽³⁾ | | Benchmark specimen ⁽⁴⁾ | |
|---------------------------|--|------------------------------------|---------------------------|-----------------------------------|---------------------------|
| | | Specimen no. | Water entry rate (mL/min) | Specimen no. | Water entry rate (mL/min) |
| Fastener self-sealability | Specimens under evaluation to have equal to or less water entry than code-accepted solution specimens, and evaluation WRB has higher WVT rates than the code-accepted WRB. | A1 | 0.0 | B1 | 0.0 |
| | | A2 | 0.0 | B2 | 0.0 |
| | | A3 | 0.0 | B3 | 0.0 |
| | | A4 | 0.0 | B4 | 0.0 |
| | | A5 | 0.0 | B5 | 0.0 |
| | | A6 | 0.0 | B6 | 0.0 |
| | | A7 | 0.0 | B7 | 0.0 |
| | | A8 | 0.0 | B8 | 0.0 |
| | | A9 | 0.4 ⁽⁵⁾ | B9 | 0.0 |
| | | A10 | 0.0 | B10 | 0.0 |

Notes:

¹ Water entry tests were conducted on the wind-load aged specimens. Wind load aging was performed per the protocol given in CAN/ULC-S742-11 and at P₁ = 1.00 kPa, P₂ = 1.46 kPa, P₃ = 2.18 kPa.

-
- 2 Water entry tests were performed on the specimens in a vertical orientation and completed in NRC's Dynamic Wind and Wall Test Facility (DWTF). Water entry tests consisted of spraying the specimens with water at a deposition rate of 3.4 L/min-m² at pressure differences of 0, 50, 75, 150, 300, 700, 1 250, 1 500 and 2 200 Pa. The deposition rate was administered using solenoid actuated hydraulic nozzles which allow for low flow rates to be evenly spread across the entire specimen surface.
- 3 Evaluation specimen consists of 18-regular gauge 41 mm × 92 mm × 1.12 mm steel stud, 12.7-mm-thick glass-mat gypsum board, Cement Bear WRB, 50-mm-thick PUCC-ROCK GDDC insulation and DuRock Mechanical Fasteners.
- 4 Benchmark specimen consists of 18-regular gauge 41 mm × 92 mm × 1.12 mm steel stud, 12.7-mm-thick glass-mat gypsum board, SOPRASEAL STICK 1100 T self-adhering membrane, 50-mm-thick mineral fibre insulation and PUCCS NC Mechanical Fasteners.
- 5 On this specific specimen, it was decided to conduct two further replications of the test protocol were completed with elevated water deposition rates. The first increased deposition rate was 7.5 L/min/m², and the second was 20.5 L/min/m². In both of these increased tests, this specimen showed no water entry rates, and not until pressures of 1 500 Pa. However, the resulting water entry at these extreme water deposition rates and applied pressures were less than 6 grams. This result is considered insignificant.
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Code compliance as an acceptable solution

Code Compliance via Acceptable Solutions

If a building design (e.g. material, component, assembly or system) can be shown to meet all provisions of the applicable **acceptable solutions** in Division B (e.g. it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the Code.

— National Building Code of Canada, Sentence A-1.2.1.1.(1)(a)

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Acceptable Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

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Code compliance as an alternative solution

Code Compliance via Alternative Solutions

Where a design differs from the acceptable solutions in Division B, then it should be treated as an **"alternative solution."** A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions [...] Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B—not “well enough” but “as well as.”

— National Building Code of Canada, Sentence A-1.2.1.1.(1)(b)

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Alternative Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

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