

DRAWING LIST			
Discipline	Sheet Number	Sheet Name	Sheet Issue Date
0-Cover			
0-Cover	A-000	COVER SHEET	01/30/2026
1-Civil			
1-Civil	C-0	EXISTING CONDITIONS	11/10/2025
1-Civil	C-1	SITE PLAN	03/14/26
1-Civil	C-2	SITE PLAN DETAILS	03/14/26
2 -Landscape			
2 -Landscape	L-1	Green Score Plan	03/19/26
2 -Landscape	L-2	Green Score Plan Details	03/19/26
3-Architectural			
3-Architectural	A-001	GENERAL NOTES & ABBREVIATIONS	01/30/2026
3-Architectural	A-010	CODE REVIEW & EGRESS CALCULATIONS	01/30/2026
3-Architectural	A-020	ARCHITECTURAL SITE PLAN	01/30/2026
3-Architectural	A-021	AREA PLANS	01/30/2026
3-Architectural	A-100	FOUNDATION PLAN AND DETAILS	01/30/2026
3-Architectural	A-101	BACKYARD COTTAGE FLOOR PLANS	01/30/2026
3-Architectural	A-200	BACKYARD COTTAGE REFLECTED CEILING PLAN	01/30/2026
3-Architectural	A-300	BACKYARD COTTAGE ELEVATIONS	01/30/2026
3-Architectural	A-301	PERSPECTIVES	01/30/2026
3-Architectural	A-400	BUILDING SECTION	01/30/2026
3-Architectural	A-500	SECTION DETAILS	01/30/2026
3-Architectural	A-520	TYPICAL SLOPED ROOF DETAILS	01/30/2026
3-Architectural	A-710	STAIR DETAILS	01/30/2026
3-Architectural	A-711	STAIR PLANS AND SECTION	01/30/2026
3-Architectural	A-900	DOOR & WINDOW SCHEDULE	01/30/2026
3-Architectural	A-901	DOOR, WINDOW & FINISH FLOOR DETAILS	01/30/2026
3-Architectural	A-910	PARTITION TYPES	01/30/2026
4-Structural			
4-Structural	S1	COTTAGE FRAMING CONCEPT- BASEMENT FRAMING LAYOUT	01/08/2026
4-Structural	S2	COTTAGE FRAMING CONCEPT- 1ST FLOOR FRAMING LAYOUT	01/08/2026
4-Structural	S3	COTTAGE FRAMING CONCEPT-ATTIC FRAMING LAYOUT	01/08/2026
4-Structural	S4	COTTAGE FRAMING CONCEPT-ROOF FRAMING LAYOUT	01/08/2026
4-Structural	S5	COTTAGE FRAMING CONCEPT- FOUNDATION PLAN	01/08/2026
5-Fire Protection			
5-Fire Protection	FP-1	Piping Plan	03/15/26
5-Fire Protection	FP-2	Piping Plan Info Sheet	03/15/26



SITE LOCATION



PROJECT: 21 COLLEGE HILL ROAD BACKYARD COTTAGE

PROJECT ADDRESS:
21 COLLEGE HILL ROAD
SOMERVILLE, MA 02143

ARCHITECT
KHALSA DESIGN INC.
ADDRESS:
17 IVALOO STREET, SUITE 400
SOMERVILLE, MA 02143

OWNER
OLD NEW ENGLAND PROPERTIES
ADDRESS:
21 COLLEGE HILL ROAD
SOMERVILLE MA 02143

SURVEYOR
D & A SURVEY ASSOCIATES, INC.
ADDRESS:
P.O. BOX 80
READING, MA 01867

STRUCTURAL
CHAD SMUTZER, P.E.
ADDRESS:

PERMIT SET 03/19/2026

PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

PROJECT ADDRESS
21 COLLEGE HILL
ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

CONSULTANTS:

THIS PROJECT IS CONTROLLED
CONSTRUCTION: G.C. TO CONTACT
ARCHITECT AT COMMENCEMENT OF
WORK TO COORDINATE
CONSTRUCTION OBSERVATIONS.

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OF PROSECUTION UNDER LAW

REGISTRATION



Project number 25092
Date 01/30/2026
Drawn by MB/RR
Checked by WC
Scale

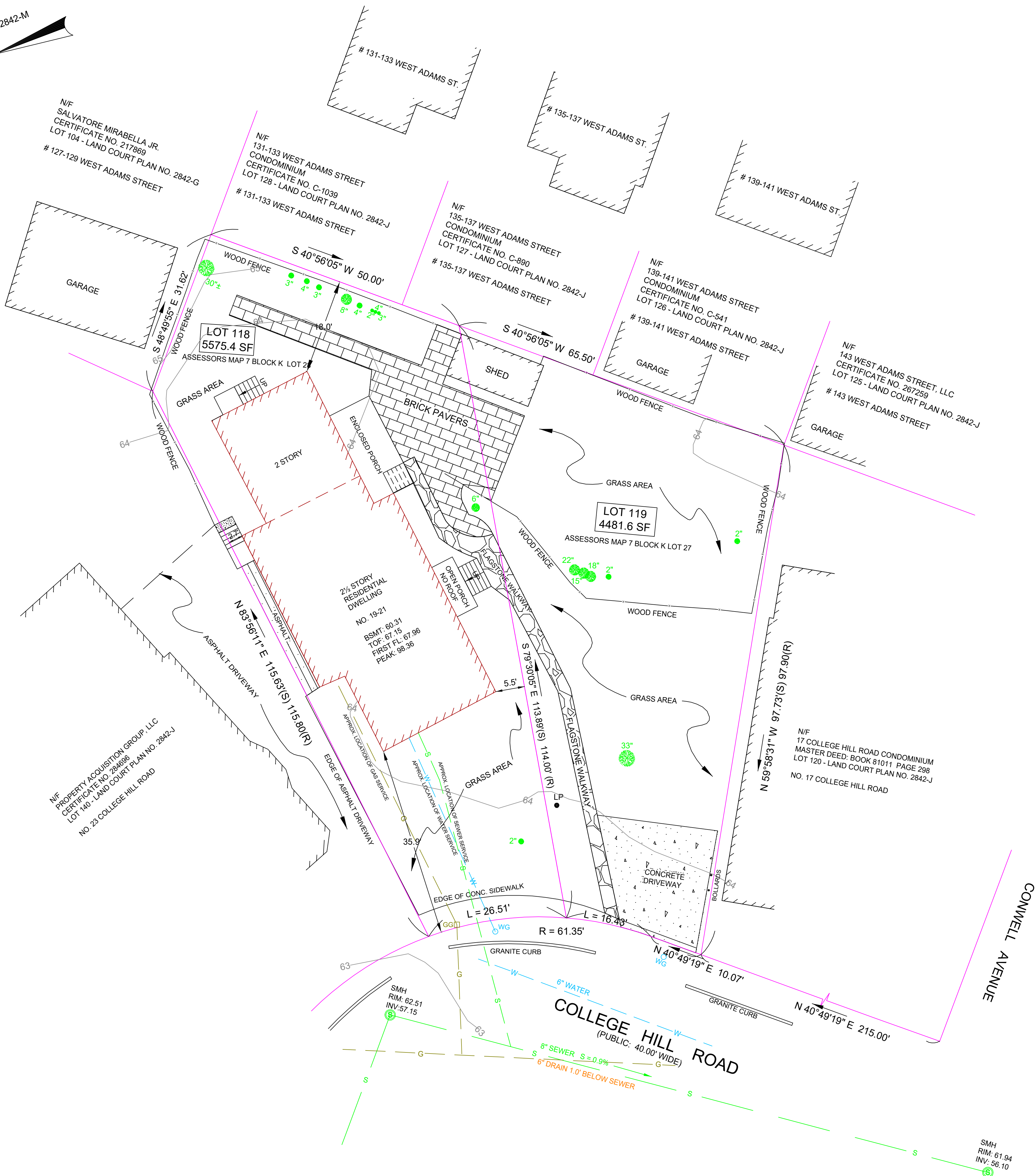
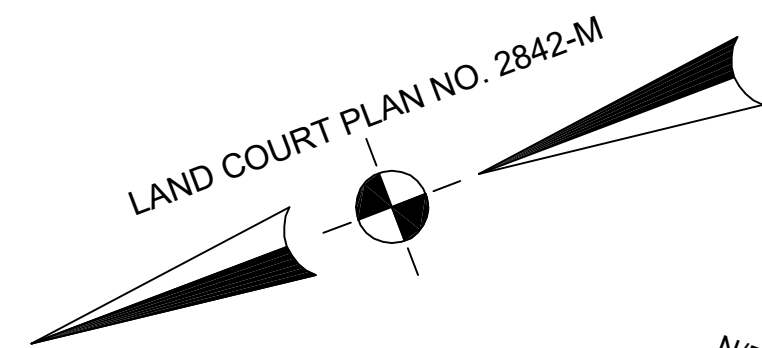
REVISIONS

No.	Description	Date

COVER SHEET

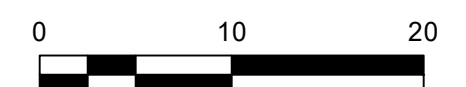
A-000

21 COLLEGE HILL ROAD
BACKYARD COTTAGE



- NOTES:
- 1.) THIS PLAN WAS PREPARED FROM AN INSTRUMENT SURVEY
 - 2.) RECORD OWNER: CJ GOOD ENERGY LLC
 - 3.) DEED REFERENCE: CERTIFICATE NO. 299219
 - 4.) PLAN REFERENCE: LOTS 118 AND 119 - LAND COURT PLAN NO. 2842-J
 - 5.) ASSESSORS MAP 7 BLOCK K LOTS 27 & 28
 - 6.) UTILITIES SHOWN TAKEN FROM EXISTING RECORDS AND PLANS. THEY HAVE NOT BEEN FIELD VERIFIED. PRIOR TO THE COMMENCEMENT OF EXCAVATION DIGSAFE AND THE CITY OF SOMERVILLE WATER & SEWER DEPT. SHALL BE CALLED AND ALL UTILITIES FIELD VERIFIED.
 - 7.) DATUM USED: SOMERVILLE SEWER BASE
 - 8.) ALL OFFSET DISTANCES TO PROPERTY LINES SHOWN ARE TO THE FOUNDATION

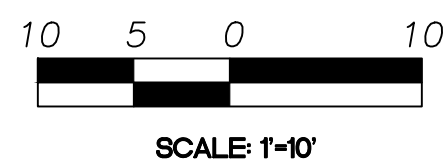
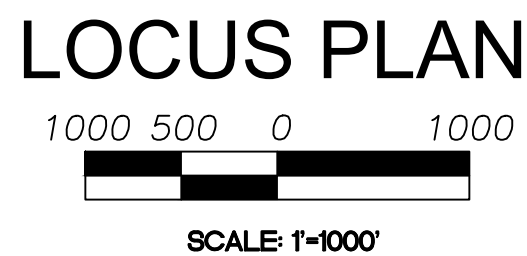
EXISTING CONDITIONS
PLAN
IN
SOMERVILLE, MA
19-21 COLLEGE HILL ROAD

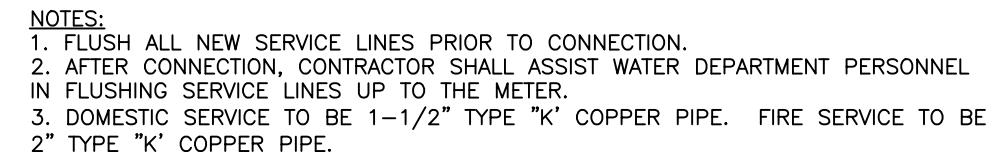


SCALE: 1" = 10'-0"
NOVEMBER 10, 2025
D & A SURVEY ASSOCIATES, INC.
P.O. BOX 80 READING, MA 01867
(781) 324 - 9566

- 1) THIS PLAN WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE EXAMINATION WHICH MAY DISCLOSE ENCUMBRANCES, EASEMENTS, RESTRICTIONS OR COVENANTS THAT ARE NOT SHOWN HEREON.
- 2) PARCEL BOUNDARIES AND SITE CONDITIONS ARE BASED ON A SURVEY PREPARED BY:
D & A SURVEY, INC., DATED; 10/2/25.
- 3) ELEVATIONS SHOWN ARE REFERENCED TO THE CITY OF SOMERVILLE SEWER DATUM
BENCHMARK 1(S.M.H.): ELEV= 62.51.
- 4) THE LOCATION OF EXISTING PIPES, CONDUITS, AND OTHER UNDERGROUND UTILITIES ARE NOT WARRANTED TO BE CORRECT AND ARE SHOWN BASED ON CONTRACTOR'S RECORDS, INFORMATION AVAILABLE AT THE MUNICIPAL ENGINEERING DEPARTMENT, AND THE BEST APPROXIMATION OF THE ACTUAL LOCATION FROM A FIELD SURVEY.
- 5) CONTRACTORS SHALL VERIFY ALL UNDERGROUND UTILITIES, CONDUITS, PIPES, ETC, AND NOTIFY DIGSAFE PRIOR TO ANY EXCAVATIONS.
- 6) ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP NO. 25017C0438F WITH AN EFFECTIVE DATE OF JULY 8, 2025, THE PROPERTY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.
- 7) THE LOCATIONS AND ELEVATIONS OF THE WATER AND SEWER SERVICES ARE UNKNOWN. THE SERVICES SHOWN HEREON ARE APPROXIMATED FROM CITY RECORDS. PRIOR TO ANY EXCAVATIONS, THESE LOCATIONS SHOULD BE VERIFIED IN THE FIELD.
- 8) THE EXISTING WATER, SEWER AND GAS SERVICES ARE TO BE CUT AND CAPPED TO THE CITY OF SOMERVILLE AND/OR UTILITY PROVIDER SPECIFICATIONS PRIOR TO ANY DEMOLITION.
- 9) WHERE A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SEWER AND WATER LINES CANNOT BE MAINTAINED AND THE INVERT OF THE WATER CANNOT BE A MINIMUM OF 18" ABOVE THE CROWN OF THE SEWER, THE SEWER SHALL BE ENCASED IN CONCRETE FOR A MINIMUM OF 10' BEYOND THE POINT WHERE THE REQUIRED SEPARATION IS ACHIEVED. SEE DETAIL SHEET FOR MORE INFORMATION.
- 10) THE EXISTING OVERHEAD WIRES ARE TO BE REMOVED AND NEW POWER AND TELECOMMUNICATIONS TO BE INSTALLED UNDER THE EXISTING UTILITY PROVIDER'S UNDERGROUND ELECTRIC INFRASTRUCTURE SHOWN IS SCHEMATIC ONLY AND SHALL BE INSTALLED PER ANY APPLICABLE SERVICE PROVIDER AND/OR BUILDING CODE REQUIREMENTS.
- 11) PERMEABLE PAVEMENTS IN THE DRIVEWAY AND PARKING AREAS ARE TO BE INSTALLED TO WITHSTAND THE APPROPRIATE VEHICLE LOAD BEARING REQUIREMENTS.
- 12) THE BUILDING AREAWAYS ARE TO BE EXCAVATED TO AN ELEVATION BELOW THE PROPOSED BASEMENT FLOOR ELEVATION AND FILLED WITH GRAVEL TO PERMIT INFILTRATION OF WATER.
- 13) WALK & DRIVEWAY SLOPES AND ELEVATIONS SHOWN HEREON ARE SHOWN FOR GRADING PURPOSES ONLY AND ARE NOT INTENDED TO REPRESENT COMPLIANCE WITH ANY ADA REGULATIONS OR REQUIREMENTS. PROJEC COMPLIANCE TO BE DETERMINED BY OTHERS.

1. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE CONSTRUCTION PERIOD EROSION AND SEDIMENTATION CONTROL MEASURES AND FOR ENSURING COMPLIANCE ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO THE PREVENTION OF STORMWATER RUNOFF CONTAMINATION.
2. SEE THE DETAIL SHEETS FOR DETAILS AND SPECIFICATIONS OF THE EROSION CONTROL MEASURE TO BE IMPLEMENTED.
3. EROSION CONTROL BARRIER (WHERE SHOWN) REPRESENTS THE LIMIT OF WORK. WHERE NO EROSION CONTROL BARRIER IS REQUIRED (SUCH AS UPSLOPE AREAS), A LIMIT OF WORK LINE HAS BEEN SHOWN.
4. STOCKPILING LOCATIONS SHALL BE FIELD DETERMINED. EROSION CONTROL BARRIERS SHALL BE INSTALLED DOWN GRADIENT OF STOCKPILES.
5. PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES MAY INCLUDE STRAW WATTLES, CRUSHED STONE, RIP RAP, LOAM/SEED, HYDROSEEDING, MULCHING AND/OR EROSION CONTROL MATTING.
6. AS A MINIMUM, STRAW WATTLES WILL BE USED FOR THE PERIMETER EROSION CONTROL BARRIER AS SHOWN ON THIS PLAN AND ELSEWHERE AS CONDITIONS WARRANT. STRAW WATTLES AND SILT SACKS WILL ALSO BE USED TO PROTECT OFF SITE CATCH BASINS AND ELSEWHERE AS CONDITIONS WARRANT. THE CONTRACTOR WILL BE REQUIRED TO KEEP A REASONABLE STOCK OF STRAW WATTLES ON SITE TO BE ABLE TO SUPPLEMENT OR MAKE REPAIRS AS NECESSARY.
7. TRACKING PADS SHALL BE USED WHERE ANY TEMPORARY CONSTRUCTION ENTRANCE IS LOCATED ADJACENT TO ANY EXISTING TRAVELED WAY OR DRIVEWAY. THE LOCATION OF THE TRACKING PADS SHALL BE FIELD DETERMINED.
8. CRUSHED STONE AND/OR RIP RAP WILL BE USED TO CONSTRUCT THE TRACKING PAD PER THE DETAILS. THE CONTRACTOR WILL BE REQUIRED TO KEEP A REASONABLE STOCK OF CRUSHED STONE AND RIP RAP ON SITE TO BE ABLE TO SUPPLEMENT OR MAKE REPAIRS AS NECESSARY.
9. LOAMING AND SEEDING WILL BE USED AS A PERMANENT STABILIZATION MEASURE FOR ALL REVEGETATED AREAS OF THE SITE. HYDROSEEDING MAY BE USED IN LIEU OF STANDARD SEEDING METHODS SHOULD CONDITIONS WARRANT.
10. MULCHING MAY BE USED TO REINFORCE SEEDED AREAS AND TO TEMPORARILY REINFORCE EXPOSED SOIL.
11. EROSION AND SEDIMENTATION CONTROLS WILL BE REQUIRED TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT TO ENSURE THAT THEY FUNCTION AS INTENDED. DEFICIENCIES WILL BE CORRECTED BY CLEANING, REPAIRING, OR REPLACING THE AFFECTED CONTROL(S) OR PORTION(S) THEREOF TO REESTABLISH PROPER FUNCTIONING AS QUICKLY AS POSSIBLE. ANY OFF-SITE ACCUMULATIONS OF SEDIMENT WILL BE REQUIRED TO BE REMOVED AS QUICKLY AS POSSIBLE IN A MANNER THAT MINIMIZES ADDITIONAL DISTURBANCE. THIS INCLUDES STREET SWEEPING OF SURROUNDING STREETS AS NECESSARY.
12. DURING DRY AND WINDY CONDITIONS DUST CONTROL MEASURES SHALL BE IMPLEMENTED AS NECESSARY TO PREVENT AIRBORNE SEDIMENT TRANSPORT FROM THE SITE. THESE MEASURES SHALL INCLUDE WETTING OF EXPOSED SOIL AND STREET SWEEPING AS OUTLINED ABOVE. ENOUGH WATER SHALL BE APPLIED TO WET THE TOP ½" OF EXPOSED SOIL. WATER SHALL ALSO BE APPLIED TO PAVED AREAS THAT HAVE NOT YET BEEN SWEEP CLEAN. A WATER TRUCK SHALL BE MADE AVAILABLE AS NECESSARY TO FACILITATE THIS PRACTICE.

[illegible]



FINISHED GRADE

WHERE PAVEMENT REPAIR IS REQUIRED SEE TRENCH PAVEMENT DETAILS

EXCAVATE AS REQUIRED

TRENCH BACKFILL PER SPECIFICATIONS AND TRENCH DETAIL

TYPE 2 CLOSURE PER PIPE CONNECTION DETAIL

PVC SERVICE LATERAL MIN SLOPE 2% TO 6%

BEDDING PER SPECIFICATIONS AND TRENCH DETAIL

EXISTING SERVICE LATERAL

SADDLE (SEE DETAIL THIS SHEET)

SEWER OR DRAIN 8" & GREATER

UNDISTURBED EARTH

SECTION

Notes:

1. REPLACE EXISTING SEWER OR DRAIN SERVICE LATERAL TO EXTENT SHOWN IN DRAWINGS.
2. INSTALL SADDLE FIRST THEN CORE HOLE.
3. SEWER AND DRAIN LATERALS SHALL BE SIZED TO FIT ANTICIPATED FLOWS BUT SHALL NOT BE LESS THAN 6" FOR SEWER AND 8" FOR DRAIN SERVICES.

SADDLE SERVICE CONNECTION DETAIL

GASKET

STAINLESS STEEL BAND CLAMP

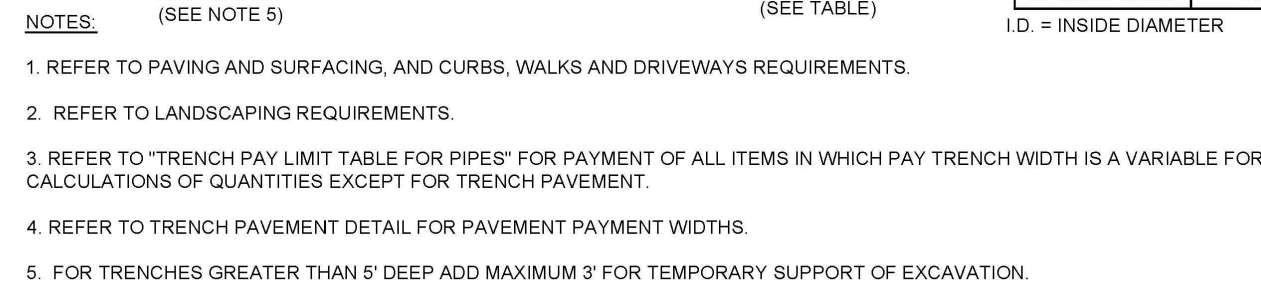
SERVICE SADDLE (ROMAC OR EQUIVALENT)

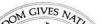
PVC SERVICE

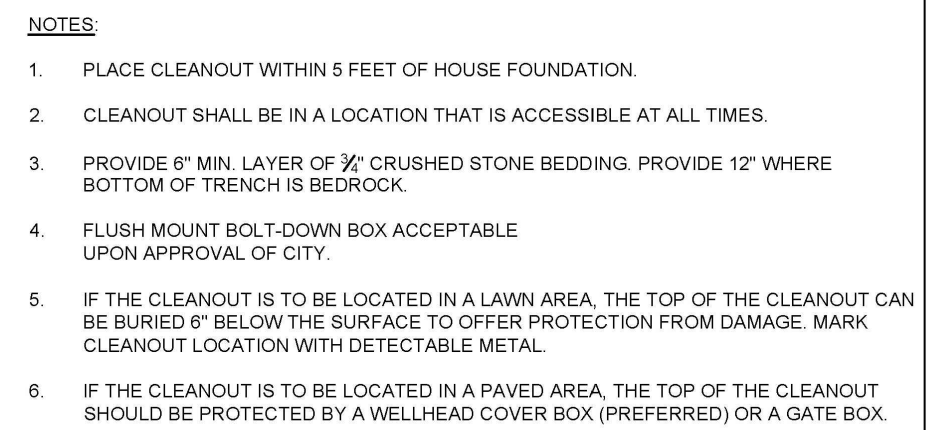
SEWER OR DRAIN 8" & GREATER

FLOW

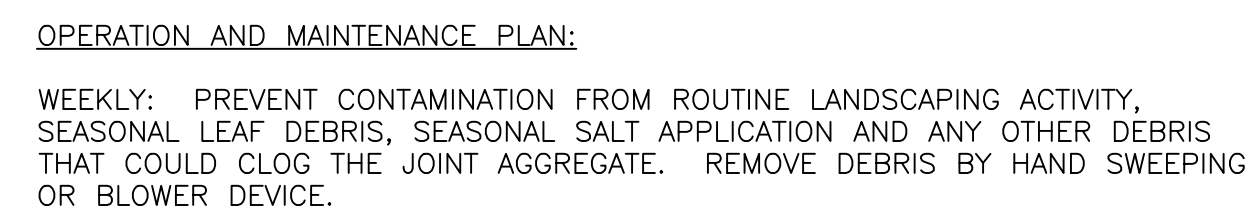
	SEWER OR DRAIN SERVICE SADDLE CONNECTION		
	CITY OF SOMERVILLE STANDARD SPECIFICATIONS AND DETAILS		
	SCALE: N.T.S.	DATE OF ISSUE: 5/18	SPEC. REF# 02622 & 02615
REVISION:			



	TRENCH DETAIL FOR SEWER AND DRAIN PIPES			
	CITY OF SOMERVILLE STANDARD SPECIFICATIONS AND DETAILS			
SCALE: N.T.S.	DATE OF ISSUE: 5/18	SPEC. REF# 02210	DETAIL NUMBER: S-11.1.0	
REVISION:				



	SERVICE CLEANOUT		
	CITY OF SOMERVILLE STANDARD SPECIFICATIONS AND DETAILS		
	SCALE: N.T.S.	DATE OF ISSUE: 5/18	SPEC. REF#: N/A
REVISION:	DETAIL NUMBER: S-7.2.0		

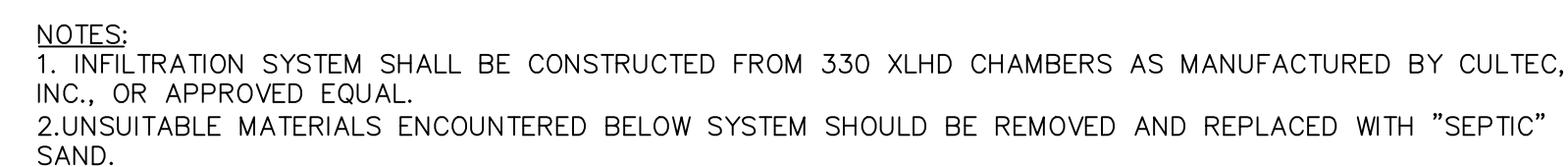


YEARLY: SWEEP OR VACUUM ENTIRE SURFACE AND REPLENISH JOINT AGGREGATE MATERIAL AS NECESSARY.

Diagram of the 10' x 10'-8" test cell components:

- 10'
- 10'-8"
- OBSERVATION PORT
- 4" HDPE INLET PIPE (TYP.)
- 1-1/2" WASHED CRUSHED STONE (Typ.)
- CULTEC CHAMBERS (Typ.)
(2) TWO 330 XLHD CHAMBERS

N.T.S.



DATE: MARCH 14, 2026

90 PINE STREET
DANVERS, MA 01923
(978) 204-2390

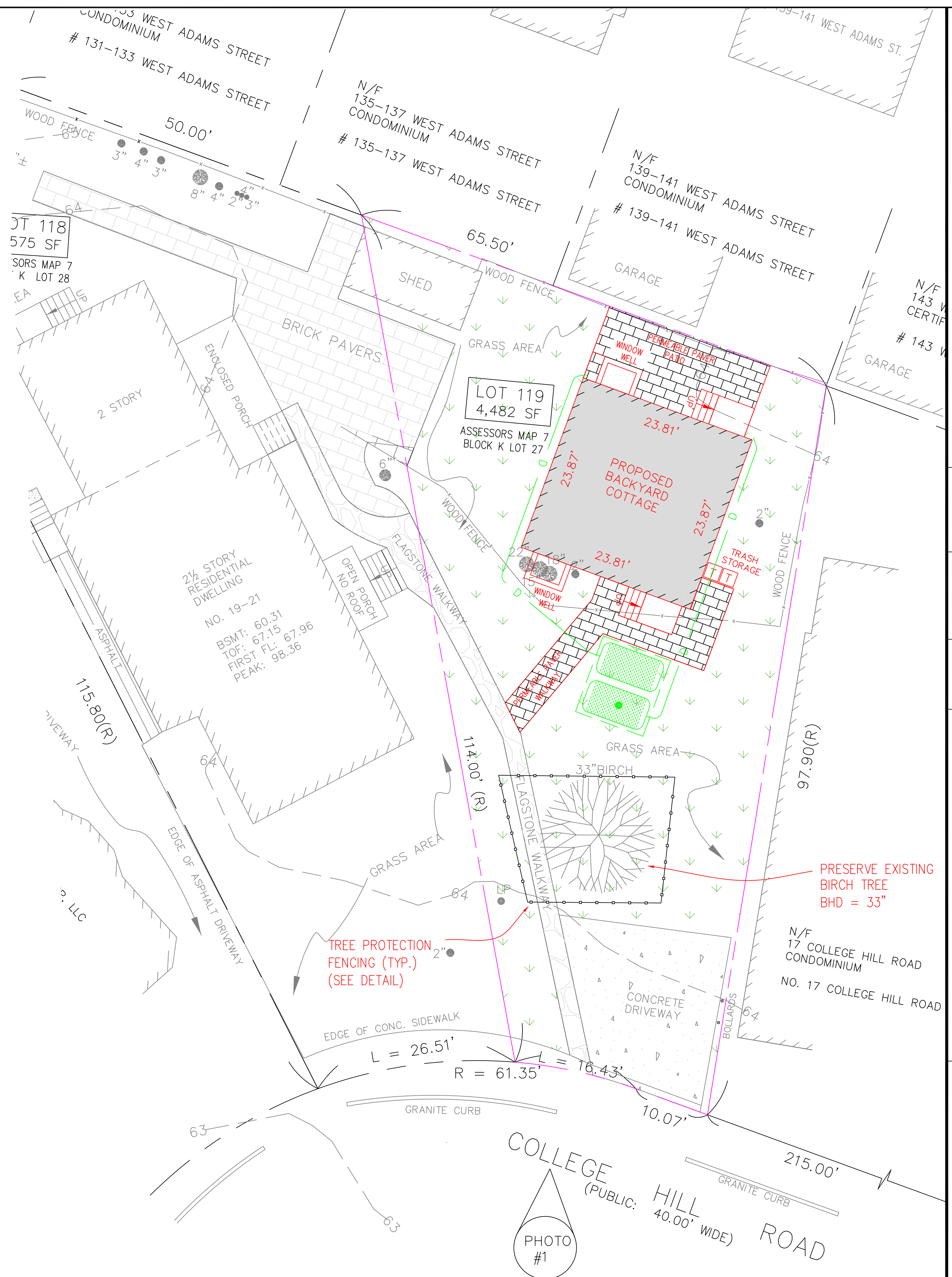
SHEET C-2

C-2



Somerville Green Score		Area or Number					
DIRECTIONS:		4,482					
1. Enter the Lot Area in square feet to the right >>> 2. Enter the area in square feet as the number of landscape elements							
Landscape area with a soil depth less than 24 inches (enter square feet)	0	actual sq ft	0.3	0	0.000		
Landscape area with a soil depth equal to or greater than 24 inches (enter square feet)	0	actual sq ft	0.6	0	0.000		
Pervious Paving with 6 to 24 inches of subsurface soil or gravel (enter square feet)	354	actual sq ft	0.2	70.8	0.016		
Pervious Paving with more than 24 inches of subsurface soil or gravel (enter square feet)	0	actual sq ft	0.5 *	0	0.000		
Groundcovers							
Turf grass, mulch, and inorganic surfacing materials (enter square feet)	2,634	actual sq ft	0.1	263.4	0.059		
Plants							
Vegetation less than two (2) feet tall at maturity (enter square feet)	0	actual sq ft	0.2	0	0.000		
Vegetation at least two (2) feet tall at maturity (enter number of individual plants)	0	12	0.3	0	0.000		
Trees							
Small Tree (enter number of trees)	0	50	0.6	0	0.000		
Large Tree (enter number of trees)	0	450	0.7 *	0	0.000		
Preserved Tree (enter DBH)	33	65	0.8	1716	0.383		
Engineered Landscape							
Vegetated Wall (enter square feet)	0	actual sq ft	0.1	0	0.000		
Rain garden, bioswale, and stormwater planter (enter square foot)	0	actual sq ft	1.0	0	0.000		
Green Roof with up to 6" of growth medium (enter square feet)	0	actual sq ft	0.1	0	0.000		
Green Roof with 6"-10" of growth medium (enter square feet)	0	actual sq ft	0.4	0	0.000		
Green Roof of 10"-24" growth medium (enter square feet)	0	actual sq ft	0.4	0	0.000		
Green Roof of over 24" growth medium	N/A	Calculate as if soil, groundcovers, plants, and trees					

Green Score District Requirements			
NR & UR	MR3 & MR4	MR5, MR6, & HR	FAB, CC, CB, CI
0.35	0.25	0.20	0.20
0.40	0.3	0.25	-
0.457	0.457	0.457	0.457

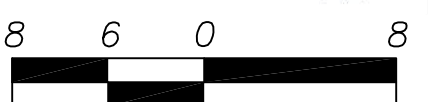
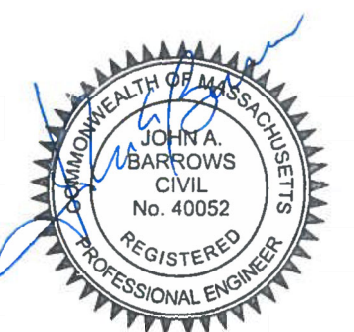


NOTE
1. PROPERTY LINE, EXISTING CONDITIONS,
UTILITY AND SITE DEVELOPMENT
INFORMATION FROM PLAN
BY: D&A SURVEY INC.,
DATED: 11/10/25

DRW:	DSG:	CHK:
総計	DESCRIPTION	DATE

19-21 COLLEGE HILL ROAD
SOMERVILLE, MASSACHUSETTS

90 PINE STREET
DANVERS, MA 01923
(978) 204-2390



DATE: FEBRUARY 19, 2026

SCALE: 1"=8'

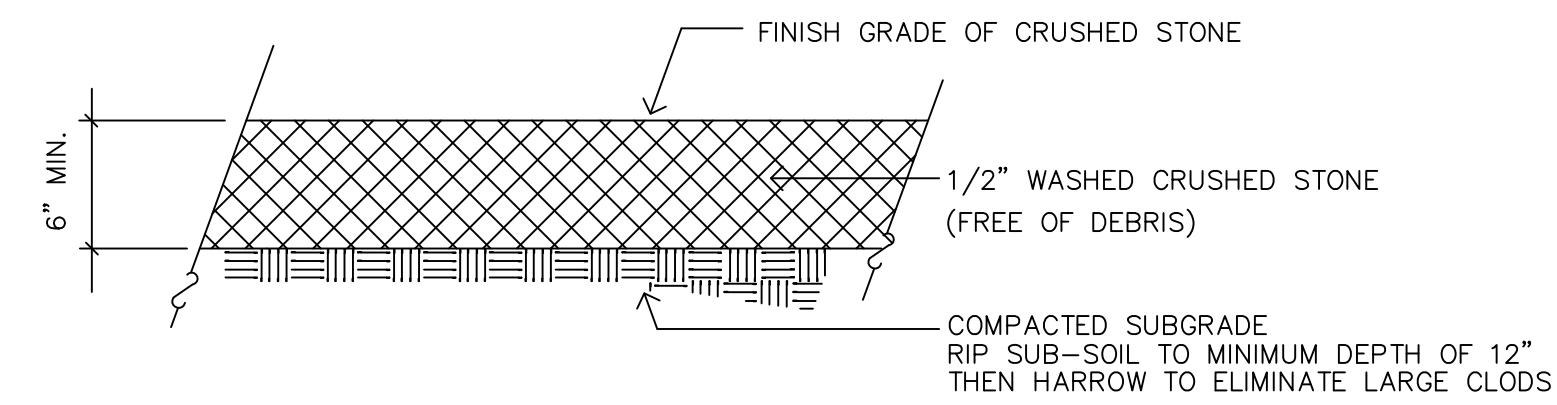
SHEET	C-1
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TREE PROTECTION DETAIL

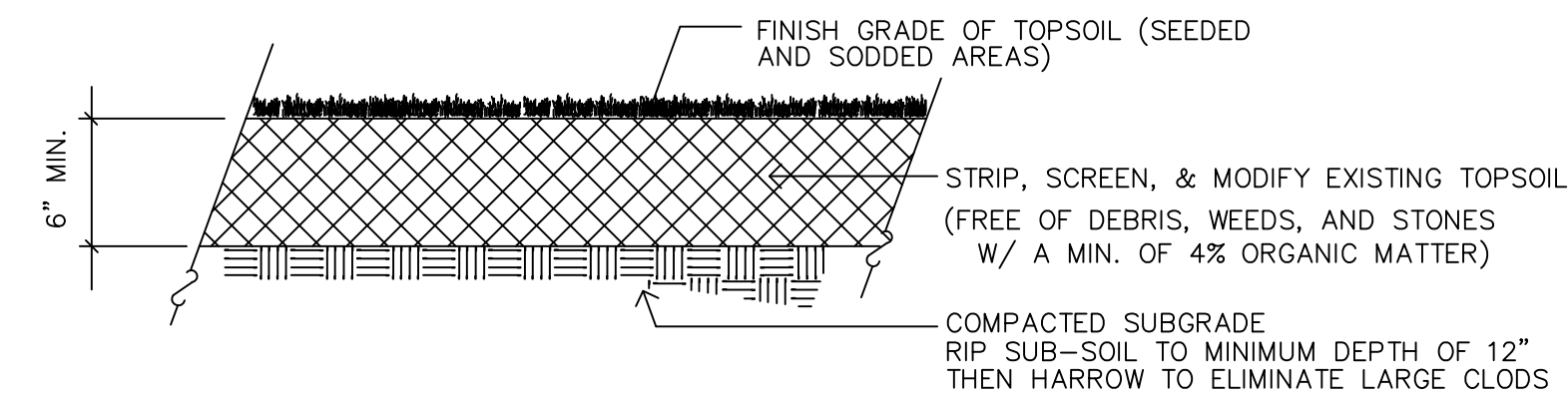
NOTE:

N.T.S.

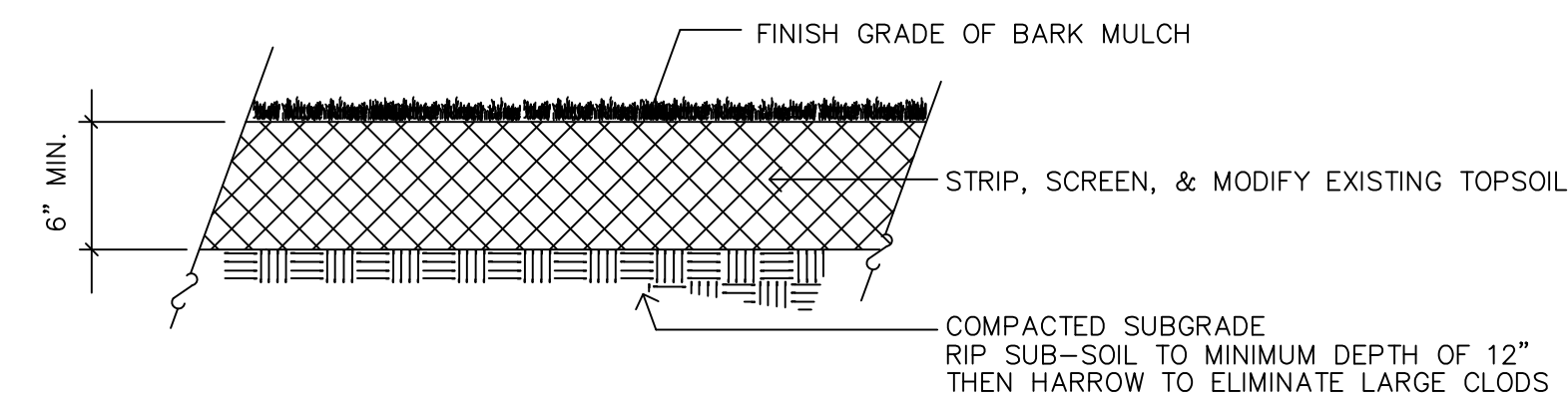
FOR ANY TREES ON ABUTTING PROPERTIES, CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING ANY TREE OR TREE PART, INCLUDING TREE STRUCTURAL ROOTS (ROOTS 2 INCHES IN DIAMETER OR GREATER). TREE ROOTS EXTEND TO AT LEAST THE DRIPLINE OF THE TREE, AND DAMAGE TO THE ROOT SYSTEM MAY RESULT IN TREE INSTABILITY AND/OR DEATH. TO PRESERVE THE STRUCTURAL INTEGRITY AND HEALTH OF ANY TREES TO REMAIN (INCLUDING TREES ON ABUTTING PROPERTIES), APPLICANT SHALL ESTABLISH A TREE PROTECTION ZONE AT THE DRIPLINE OF EACH TREE AT A MINIMUM (THE DRIPLINE IS THE OUTSIDE EDGE OF THE TREE BRANCH TIPS). THE TREE PROTECTION ZONE WILL BE ESTABLISHED USING A CHAIN-LINK, WIRE-MESH, OR WOODEN FENCE, WHICH MUST BE INSTALLED PRIOR TO ANY WORK AND MUST BE MAINTAINED THROUGHOUT CONSTRUCTION. THE FENCING WILL BE 4-6 FEET HIGH AND SOLIDLY ANCHORED TO THE GROUND. THIS FENCING SHALL BE CLEARLY MARKED WITH SIGNS STATING THAT THIS AREA IS A TREE PROTECTION ZONE AND THAT NO ONE IS ALLOWED TO ENTER OR DISTURB THIS AREA WITHOUT AUTHORIZATION FROM A SPECIFIED CERTIFIED ARBORIST. SIGNS MUST BE POSTED IN ENGLISH AND IN NATIVE LANGUAGE(S) OF THE WORKERS ON SITE. IF AT ALL POSSIBLE, NO WORK SHOULD OCCUR WITHIN THE TREE PROTECTION ZONE. IF ANY WORK MUST OCCUR WITHIN THE TREE PROTECTION ZONE, IT MUST BE DONE CAREFULLY AND BY HAND, AND SHALL BE OVERSEEN BY A MASSACHUSETTS CERTIFIED ARBORIST (MCA) OR INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST OR EQUIVALENT.



CRUSHED STONE GROUND COVER DETAIL



NATURAL GRASS DETAIL



LANDSCAPE AREA DETAIL

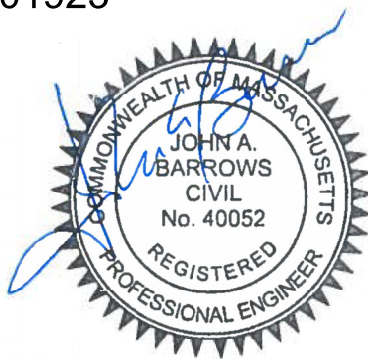
DRW:	DSG:	CHK:
REV:	DESCRIPTION	DATE

GREEN SCORE PLAN

19-21 COLLEGE HILL ROAD
SOMERVILLE, MASSACHUSETTS

Salem Village Consulting, LLC

90 PINE STREET
DANVERS, MA 01923
(978) 204-2390



DATE: FEBRUARY 19, 2026

SHEET

C-2

Individual Floor Area Review:

Basement Floor has a building area of 570 square feet.
Floor 1 has a building area of 576 square feet.
Floor 2 has a building area of 576 square feet.

Total Building Gross Area= 1,727 square feet.

BUILDING CODE REVIEW

MASSACHUSETTS IRC CODE - 10TH EDITION

Introduction

This report documents the code compliance review for the proposed new construction of 21 College Hill Road (the Building) project, located in Somerville, MA. The compliance review is limited to the fire protection, life safety and accessibility of the applicable codes.

Project Description

The proposed backyard cottage project resides in Somerville, MA. The proposed backyard cottage will be a single family residence-2-Stories..

Applicable Codes

The applicable codes and guidelines for the project include the following:

1. The Massachusetts Residential Code (780 51.00 CMR), Tenth Edition.

SECTION R310

EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 Emergency Escape and Rescue Opening Required
Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.

Exceptions:

- 1) Storm shelters and basements used only to house mechanical equipment not exceeding a total floor area of 200 square feet (18.58 m2).
2) Where the dwelling unit or townhouse unit is equipped with an automatic sprinkler system installed in accordance with NFPA 13, NFPA 13R or NFPA 13D, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following:
2.1) One means of egress complying with Section R311 and one emergency escape and rescue opening.
2.2) Two means of egress complying with Section R311.
3)A yard shall not be required to open directly into a public way where the yard opens to an unobstructed path from the yard to the public way. Such path shall have a width of not less than 36 inches (914 mm).

R310.1.1 Operational Constraints and Opening Control Devices
Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge. Window opening control devices and fall prevention devices complying with ASTM F2090 shall be permitted for use on windows serving as a required emergency escape and rescue opening and shall be not more than 70 inches (178 cm) above the finished floor.

R310.2 Emergency Escape and Rescue Openings

Emergency escape and rescue openings shall have minimum dimensions in accordance with Sections R310.2.1 through R310.2.4.

R310.2.1 Minimum Size

Emergency escape and rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m2).

Exceptions:

- 1) The minimum net clear opening for grade-floor emergency escape and rescue openings shall be 5 square feet (0.465 m2).
2) Single-hung and/or double-hung windows shall have a minimum net clear opening of 3.3 f2 (0.31 m2).

R310.2.2 Minimum Dimensions

The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

Exception:

Single-hung and/or double-hung windows shall have minimum net clear opening dimensions shall be 20 inches (508 mm) by 24 inches (610 mm) in either direction.

R310.2.3 Maximum Height From Floor

Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) above the floor.

R310.2.4 Emergency Escape and Rescue Openings Under Decks, Porches and Cantilevers

Emergency escape and rescue openings installed under decks, porches and cantilevers shall be fully openable and provide a path not less than 36 inches (914 mm) in height and 36 inches (914 mm) in width to a yard or court.

R310.3 Emergency Escape and Rescue Doors

Where a door is provided as the required emergency escape and rescue opening, it shall be a side-hinged door or a sliding door.

R310.4 Area Wells

An emergency escape and rescue opening where the bottom of the clear opening is below the adjacent grade shall be provided with an area well in accordance with Sections R310.4.1 through R310.4.4.

R310.4.1 Minimum Size

The horizontal area of the area well shall be not less than 9 square feet (0.9 m2), with a horizontal projection and width of not less than 36 inches (914 mm). The size of the area well shall allow the emergency escape and rescue opening to be fully opened.

Exception:

The ladder or steps required by Section R310.4.2 shall be permitted to encroach not more than 6 inches (152 mm) into the required dimensions of the area well.

R310.4.2 Ladder and Steps

Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with an approved, permanently affixed ladder or steps. The ladder or steps shall not be obstructed by the emergency escape and rescue opening where the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section R311.7.SECTION R311

R310.4.2.1 Ladders and rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the area well.

R310.4.3 Drainage

Area wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1.

Exception:

A drainage system for area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1.

MEANS OF EGRESS

R311.1 Means of Egress

Dwelling units shall be provided with a primary and secondary means of egress in accordance with this section. Each means of egress shall provide a continuous and unobstructed path of vertical and horizontal travel from all portions of the dwelling unit to the egress doors. The primary means of egress shall not require travel through a garage but the secondary means of egress may. The required egress doors shall open directly into a public way or to a yard or court that opens to a public way.

R311.2 Egress Doors

A primary and secondary egress door shall be provided for each dwelling unit and shall be as remote as possible from each other. The primary egress door shall be side-hinged and shall provide a clear width of not less than 32 inches (813 mm) where measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). The secondary egress door shall be side-hinged or sliding, and for side-hinged secondary egress doors shall provide a clear width of not less than 28 inches (711 mm) where measured between the face of the door and the stop with the door open 90 degrees (1.57 rad). Sliding secondary egress door clear width may be slightly less than 28 inches (711 mm) to conform to industry fabrication standards. The clear height of secondary egress door openings shall not be less than 78 inches (1,981 mm) in height measured from the top of the threshold to the bottom of the stop. Other exterior doors shall not be required to comply with these minimum dimensions. Egress doors shall be capable of being readily opened from the inside of the dwelling without the use of a key or special knowledge or effort.

R311.2.1 Interior Doors

All doors providing access to habitable rooms shall have a minimum nominal width of 30 inches (762 mm) and a minimum nominal height of 78 inches (1,981 mm).

Exceptions:

- 1) Doors providing access to bathrooms are permitted to be 28 inches (711 mm) in nominal width.
2) Doors providing access to bathrooms in existing buildings are permitted to be 24 inches (610 mm) in nominal width.

R311.3 Floors and Landings at Exterior Doors

There shall be a landing or floor on each side of each exterior door. The width of each landing shall be not less than the door served. Landings shall have a dimension of not less than 36 inches (914 mm) measured in the direction of travel. The slope at exterior landings shall not exceed 1/4 unit vertical in 12 units horizontal (2 percent).

Exception:

Exterior balconies less than 60 square feet (5.6 m2) and only accessed from a door are permitted to have a landing that is less than 36 inches (914 mm) measured in the direction of travel.

R311.3.1 Floor Elevations at the Required Egress Doors

Landings or finished floors at the required egress door shall be not more than 11/2 inches (38 mm) lower than the top of the threshold.

Exception:

The landing or floor on the exterior side shall be not more than 8 1/4 inches (210 mm) below the top of the threshold provided that the door does not swing over the landing or floor.

Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

R311.3.2 Floor Elevations

Doors other than the required egress door shall be provided with landings or floors not more than 8 1/4 inches (210 mm) below the top of the threshold.

Exception:

A top landing is not required where a stairway of not more than two risers is located on the exterior side of the door, provided that the door does not swing over the stairway.

R311.3.3 Storm and Screen Doors

Storm and screen doors shall be permitted to swing over exterior stairs and landings.

R311.4 Vertical Egress

Egress from habitable levels including habitable attics and basements that are not provided with an egress door in accordance with Section R311.2 shall be by a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

R311.5 Landing, Deck, Balcony and Stair Construction and Attachment

Exterior landings, decks, balconies, stairs and similar facilities shall be positively anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal.

R311.6 Hallways

The width of a hallway shall be not less than 3 feet (914 mm).

R311.7 Stairways

Where required by this code or provided, stairways shall comply with this section.

Exceptions:

- 1) Stairways not within or serving a building, porch or deck.
2) Stairways leading to nonhabitable attics.
3) Stairways leading to crawl spaces.

R311.7.1 Width

Stairways shall be not less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. The clear width of stairways at and below the handrail height, including treads and landings, shall be not less than 31 1/2 inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are installed on both sides.

Exception:

The width of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.2 Headroom

The headroom in stairways shall be not less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

Exceptions:

Where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall not project horizontally into the required headroom more than 43/4 inches (121 mm).
The headroom for spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.3 Vertical Rise

A flight of stairs shall not have a vertical rise greater than 12 feet 7 inches (3835 mm) between floor levels or landings.

R311.7.4 Walkline

The walkline across winder treads and landings shall be concentric to the turn and parallel to the direction of travel entering and exiting the turn. The walkline shall be located 12 inches (305 mm) from the inside of the turn. The 12-inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface. Where winders are adjacent within a flight, the point of the widest clear stair width of the adjacent winders shall be used.

R311.7.5 Stair Treads and Risers

Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

R311.7.5.1 Risers

The riser height shall be not more than 8 1/4 inches (210 mm). The riser height shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. At open risers, openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below shall not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

- 1) The opening between adjacent treads is not limited on spiral stairways.
2) The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.5.2 Treads

The tread depth shall be not less than 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

R311.7.5.2.1 Winder Treads

Winder treads shall have a tread depth of not less than 9 inches (229 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline. Winder treads shall have a tread depth of not less than 3 inches (76 mm) at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3/8 inch (9.5 mm). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and shall not be required to be within 3/8 inch (9.5 mm) of the rectangular tread depth.

Exception:

The tread depth at spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.5.3 Nosings

Nosings at treads, landings and floors of stairways shall have a radius of curvature at the nosing not greater than 9/16 inch (14 mm) or a bevel not greater than 1/2 inch (12.7 mm). A nosing projection not less than 3/4 inch (19 mm) and not more than 1 1/4 inches (32 mm) shall be provided on stairways. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5 mm) within a stairway.

Exception:

A nosing projection is not required where the tread depth is not less than 11 inches (279 mm).

R311.7.5.4 Exterior Plastic Composite Stair Treads

Plastic composite exterior stair treads shall comply with the provisions of this section and Section R507.2.2.

R311.7.6 Landings for Stairways

There shall be a floor or landing at the top and bottom of each stairway. The width perpendicular to the direction of travel shall be not less than the width of the flight served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).

Exception:

A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided that a door does not swing over the stairs.

R311.7.7 Stairway Walking Surface

The walking surface of treads and landings of stairways shall be sloped not steeper than 1 unit vertical in 48 units horizontal (2-percent slope).

Where the surface of a landing is required elsewhere in the code to drain surface water, the walking surface of the landing shall be sloped not steeper than 1 unit vertical in 20 units horizontal (5-percent slope) in the direction of travel.

R311.7.8 Handrails

Handrails shall be provided on not less than one side of each flight of stairs with four or more risers.

R311.7.8.1 Height

Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

Exceptions:

- 1) The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2) Where handrail fittings or bendings are used to provide continuous transition between flights, transitions at winder treads, the transition from handrail to guard, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed 38 inches (965 mm).

R311.7.8.2 Handrail Projection

Handrails shall not project more than 4 1/2 inches (114 mm) on either side of the stairway.

Exception:

Where nosings of landings, floors or passing flights project into the stairway reducing the clearance at passing handrails, handrails shall project not more than 6 1/2 inches (165 mm) into the stairway, provided that the stair width and handrail clearance are not reduced to less than that required.

R311.7.8.3 Handrail Clearance

Handrails adjacent to a wall shall have a space of not less than 1 1/2 inches (38 mm) between the wall and the handrails.

R311.7.8.4 Continuity

Handrails shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned toward a wall, guard walking surface continuous to itself, or terminate to a post.

Exceptions:

- 1) Handrail continuity shall be permitted to be interrupted by a newel post at a turn in a flight with winders, at a landing, or over the lowest tread.
2) A volute, turnout or starting easing shall be allowed to terminate over the lowest tread and over the top landing.

R311.7.8.5 Grip Size

Required handrails shall be of one of the following types or provide equivalent graspability.

- 1) Type I. Handrails with a circular cross section shall have an outside diameter of not less than 1 1/4 inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter of not less than 4 inches (102 mm) and not greater than 6 1/4 inches (160 mm) and a cross section of not more than 2 1/4 inches (57 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).
2) Type II. Handrails with a perimeter greater than 6 1/4 inches (160 mm) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within 3/4 inch (19 mm) measured vertically from the tallest portion of the profile and have a depth of not less than 5/16 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for not less than 3/8 inch (10 mm) to a level that is not less than 13/4 inches (45 mm) below the tallest portion of the profile. The width of the handrail above the recess shall be not less than 1 1/4 inches (32 mm) and not more than 23/4 inches (70 mm). Edges shall have a radius of not less than 0.01 inch (0.25 mm).

R311.7.8.6 Exterior Plastic Composite Handrails

Plastic composite exterior handrails shall comply with the requirements of Section R507.2.2.

Section R312 Guards and Window Fall Protection

R312.1 Guards

Guards shall be provided in accordance with Sections R312.1.1 through R312.1.4.

R312.1.1 Where Required

Guards shall be provided for those portions of open-sided walking surfaces, including floors, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

R312.1.2 Height

Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) in height as measured vertically above the adjacent walking surface or the line connecting the nosings.

Exceptions:

- 1) Guards on the open sides of stairs shall have a height of not less than 34 inches (864 mm) measured vertically from a line connecting the nosings.
2) Where the top of the guard serves as a handrail on the open sides of stairs, the top of the guard shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) as measured vertically from a line connecting the nosings.

R312.1.3 Opening Limitations

Required guards shall not have openings from the walking surface to the required guard height that allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions:

- 1) The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
2) Guards on the open side of stairs shall not have openings that allow passage of a sphere 43/8 inches (111 mm) in diameter.

R312.1.4 Exterior Plastic Composite Guards

Plastic composite exterior guards shall comply with the requirements of Section R317.4.

R312.2 Window Fall Protection

Window fall protection shall be provided in accordance with Sections R312.2.1 and R312.2.2.

R312.2.1 Window Opening Height

In dwelling units, where the bottom of the clear opening of an operable window opening is located less than 24 inches (610 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:

- 1) Operable window openings will not allow a 4-inch-diameter (102 mm) sphere to pass through where the openings are in their largest opened position.
2) Operable windows are provided with window opening control devices or fall prevention devices that comply with ASTM F2090.

R312.2.2 Emergency Escape and Rescue Openings

Where an operable window serves as an emergency escape and rescue opening, a window opening control device or fall prevention device, after operation to release the control device or fall prevention device allowing the window to fully open, shall not reduce the net clear opening area of the window unit to less than the area required by Sections R310.2.1 and R310.2.2.

FIRE PROTECTION LEGEND

	EXIT
	ESCAPE & RESCUE OPENINGS
	1HR FIRE RATED WALL/ PARTITION
	EXIT PATH

TABLE 705.8 MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION		
FIRE SEPARATION DISTANCE (feet)	DEGREE OF OPENING PROTECTION	ALLOWABLE AREA *
0 to less than 3 ^{b, c, k}	Unprotected, Nonsprinklered (UP, NS)	Not Permitted ^k
	Unprotected, Sprinklered (UP, S) ^h	Not Permitted ^k
	Protected (P)	Not Permitted ^k
3 to less than 5 ^{d, e}	Unprotected, Nonsprinklered (UP, NS)	Not Permitted
	Unprotected, Sprinklered (UP, S) ^h	15%
	Protected (P)	15%
5 to less than 10 ^{a, f, i}	Unprotected, Nonsprinklered (UP, NS)	10% ^h
	Unprotected, Sprinklered (UP, S) ^h	25%
	Protected (P)	25%

PROJECT NAME

21 COLLEGE HILL ROAD BACKYARD COTTAGE

PROJECT ADDRESS

21 COLLEGE HILL ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

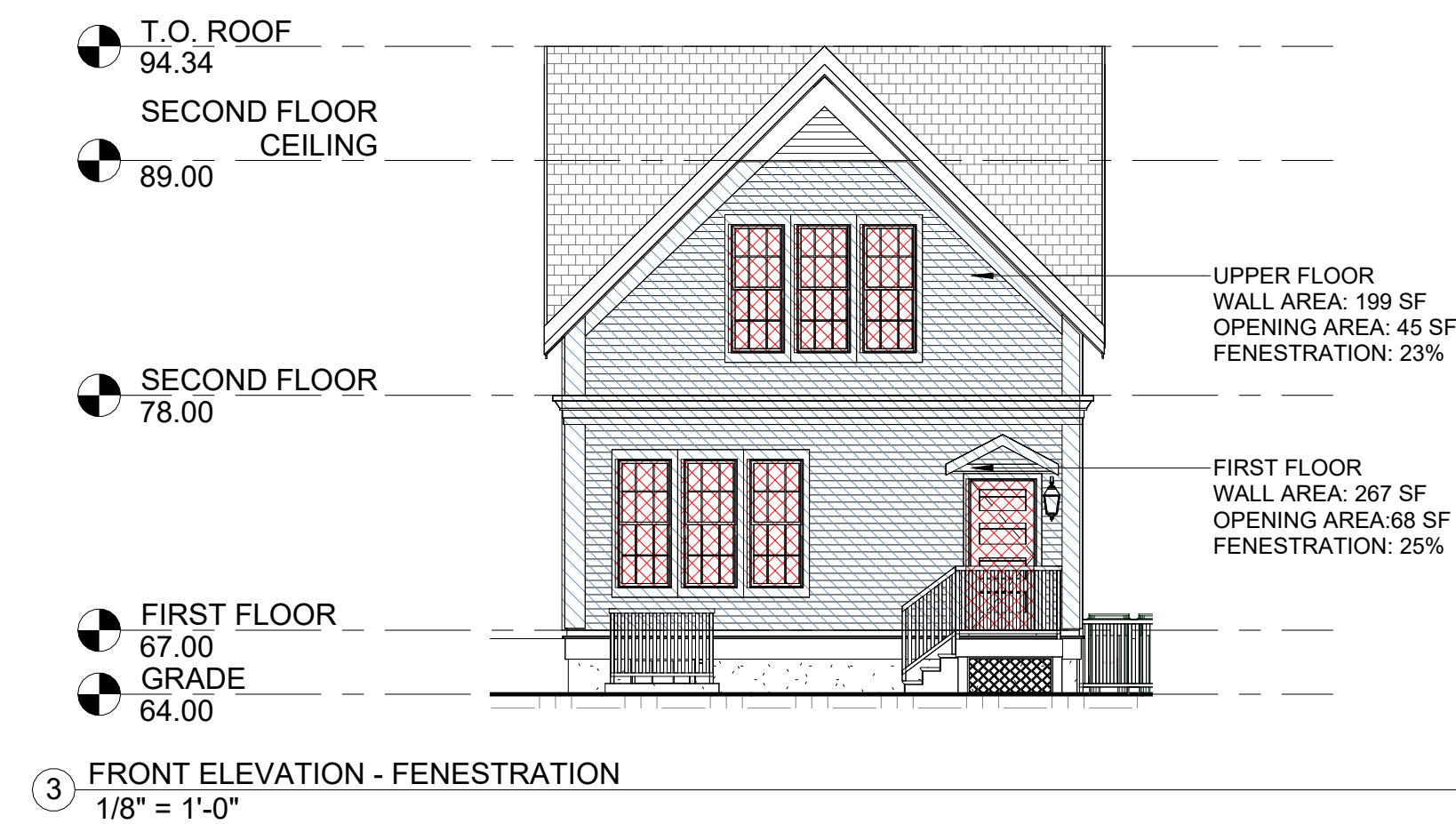
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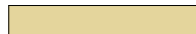
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ZONING DIMENSIONAL TABLE- BACKYARD COTTAGE				
	ALLOWED / REQUIRED	EXISTING	PROPOSED	COMPLIANCE
ZONE	NR ZONE			
BUILDING TYPE	BACKYARD COTTAGE	N/A	BACKYARD COTTAGE	COMPLIES
LOT SIZE		10,058 SF ±	10,058 SF ±	
LOT DIMENSIONS				
LOT WIDTH (MIN.)				
FRONT DRIVEWAY ACCESS	34 FT	53'-0"	53'-0"	COMPLIES
LOT DEVELOPMENT				
LOT COVERAGE (MAX.)	60% / 6,034 SF	21.5% / 2,170 SF	39% / 3,929 SF	COMPLIES
GREEN SCORE				
MINIMUM	0.35			
IDEAL	0.40			
BUILDING SETBACKS				
PRIMARY FRONT (MIN./ MAX.)	60 FT	N/A	62'-10"	COMPLIES
SECONDARY FRONT (MIN./ MAX.)	10 FT		N/A	
SIDE SETBACK (MIN.)	3 FT		8'-6" (RIGHT) 56'-2" (LEFT)	COMPLIES
BUILDING SEPARATION (MIN.)	10 FT		24'-0"	COMPLIES
PARKING SETBACKS				
PRIMARY FRONT SETBACK (MIN.)	20 FT	EXIST TO REMAIN	EXIST TO REMAIN	COMPLIES
SECONDARY FRONT SETBACK (MIN.)	10 FT		N/A	N/A
MAIN MASSING				
WIDTH (MIN./ MAX.)	24 FT		24'	COMPLIES
DEPTH (MIN./MAX.)	32 FT		24'	COMPLIES
FLOOR PLATE (MAX.)	576 SF		576 SF	COMPLIES
STORY HEIGHT (MAX.)	12 FT		11 FT	COMPLIES
ROOF TYPE	FLAT, GABLE		GABLE	COMPLIES
FACADE COMPOSITION				
GROUND STORY FENESTRATION (MIN. / MAX.)	15% / 50%		25% (1ST FL)	COMPLIES
UPPER STORY FENESTRATION (MIN. / MAX.)	15% / 50%		23% (2ND FL)	COMPLIES
USE & OCCUPANCY				
DWELLING UNITS (MAX.)	1		1	COMPLIES
PARKING REQUIREMENTS (OUTSIDE A TRANSIT ZONE)				
BICYCLE				
SHORT-TERM	NONE		NONE	COMPLIES
LONG -TERM	NONE		NONE	COMPLIES
MOTOR VEHICLE	1.0/ DU		1 SPACE	COMPLIES



SITE PLAN LEGEND		LOT COVERAGE
	EXISTING FOOTPRINT	2,040 SF
	BUILDING COMPONENT	316 SF
	PROPOSED FOOTPRINT	576 SF
	LANDSCAPE	5,277 SF
	PAVERS	1,282 SF 33% RUNOFF COEFFICIENT $1282(.33) = 423$ SF
	PAVEMENT	574 SF
	REQUIRED SETBACKS	
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PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

PROJECT ADDRESS
21 COLLEGE HILL
ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



ARCHITECTURE

KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

**THIS PROJECT IS CONTROLLED
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Checked by	WC
Scale	As indicated

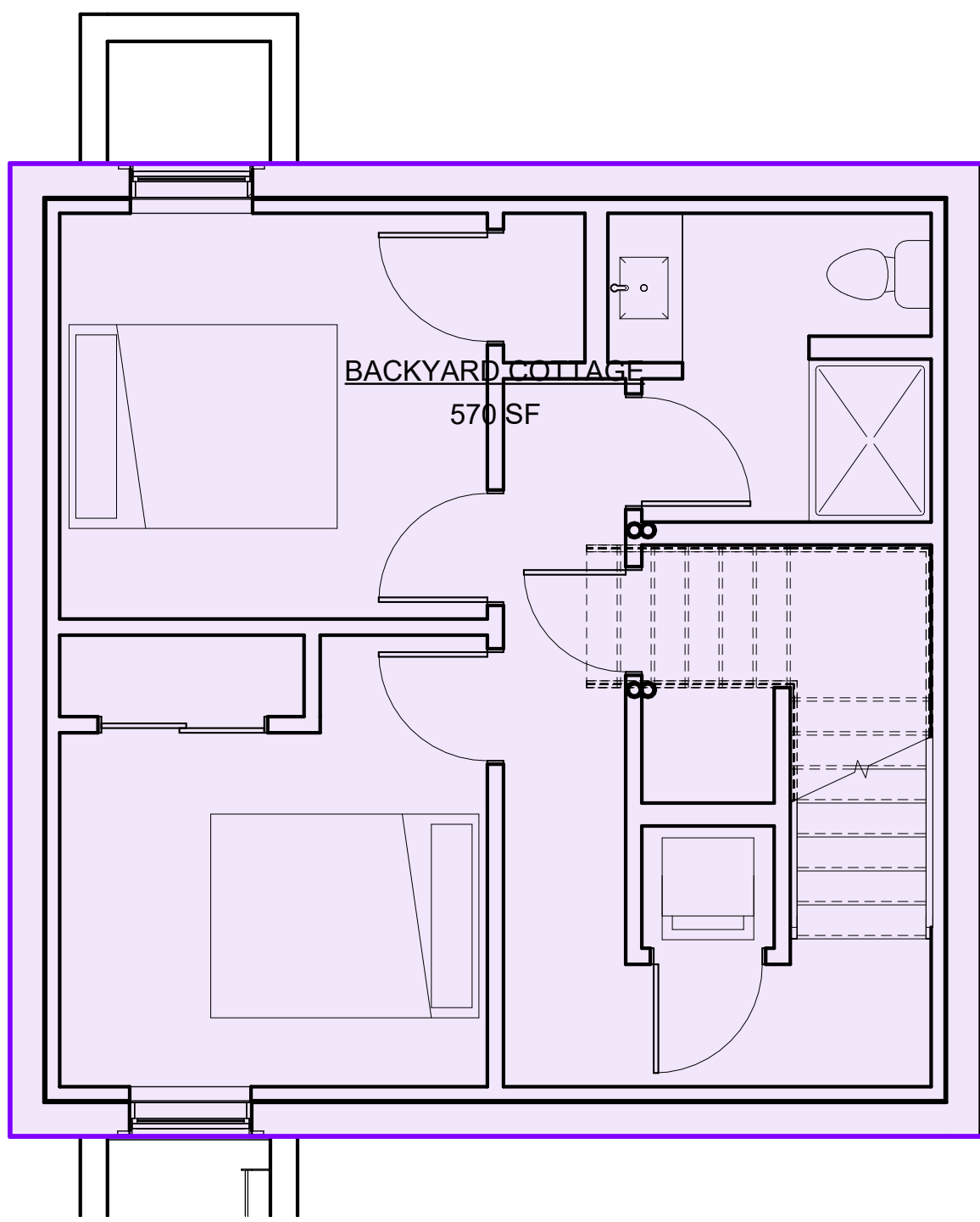
REVISIONS

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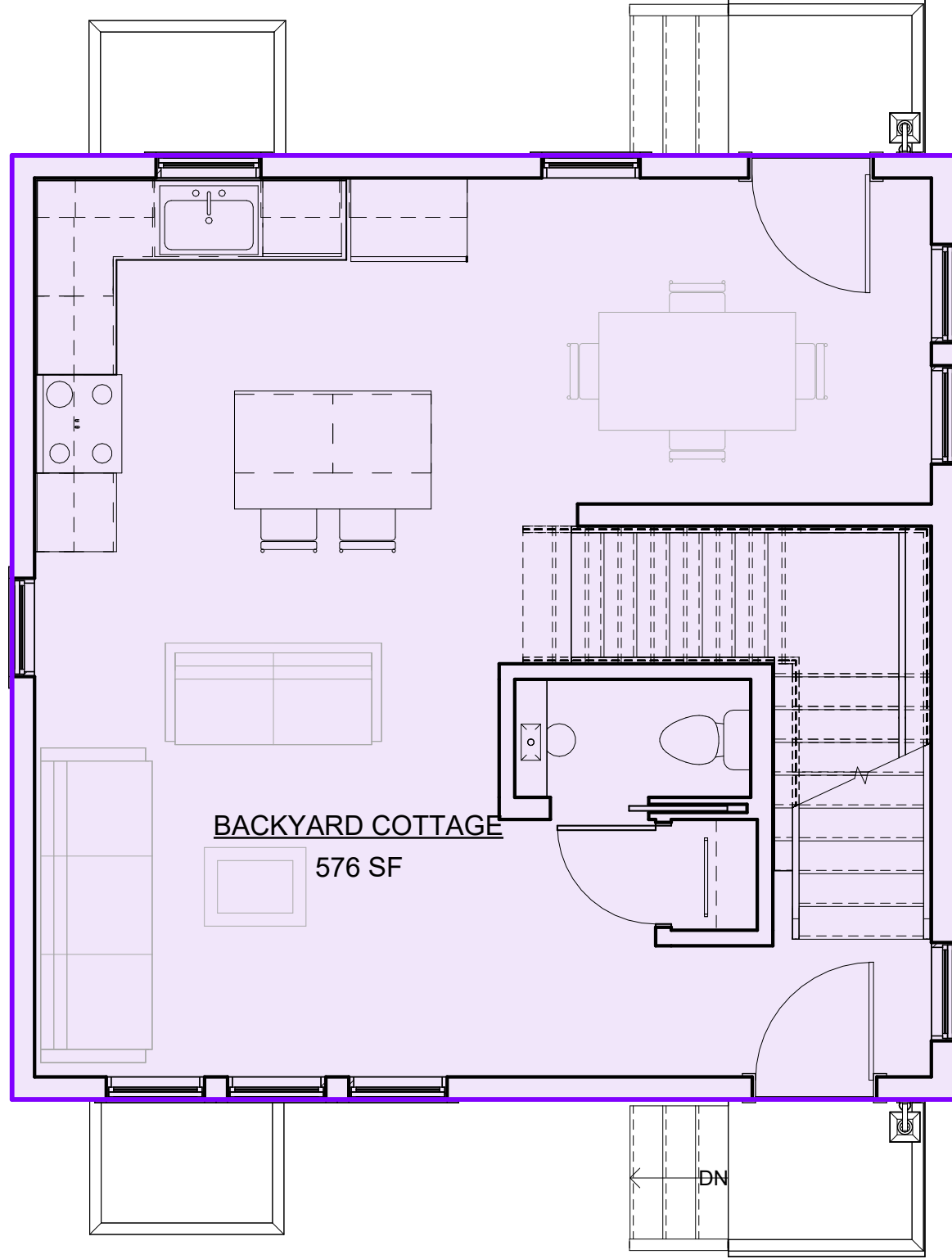
ARCHITECTURAL SITE PLAN

A-020

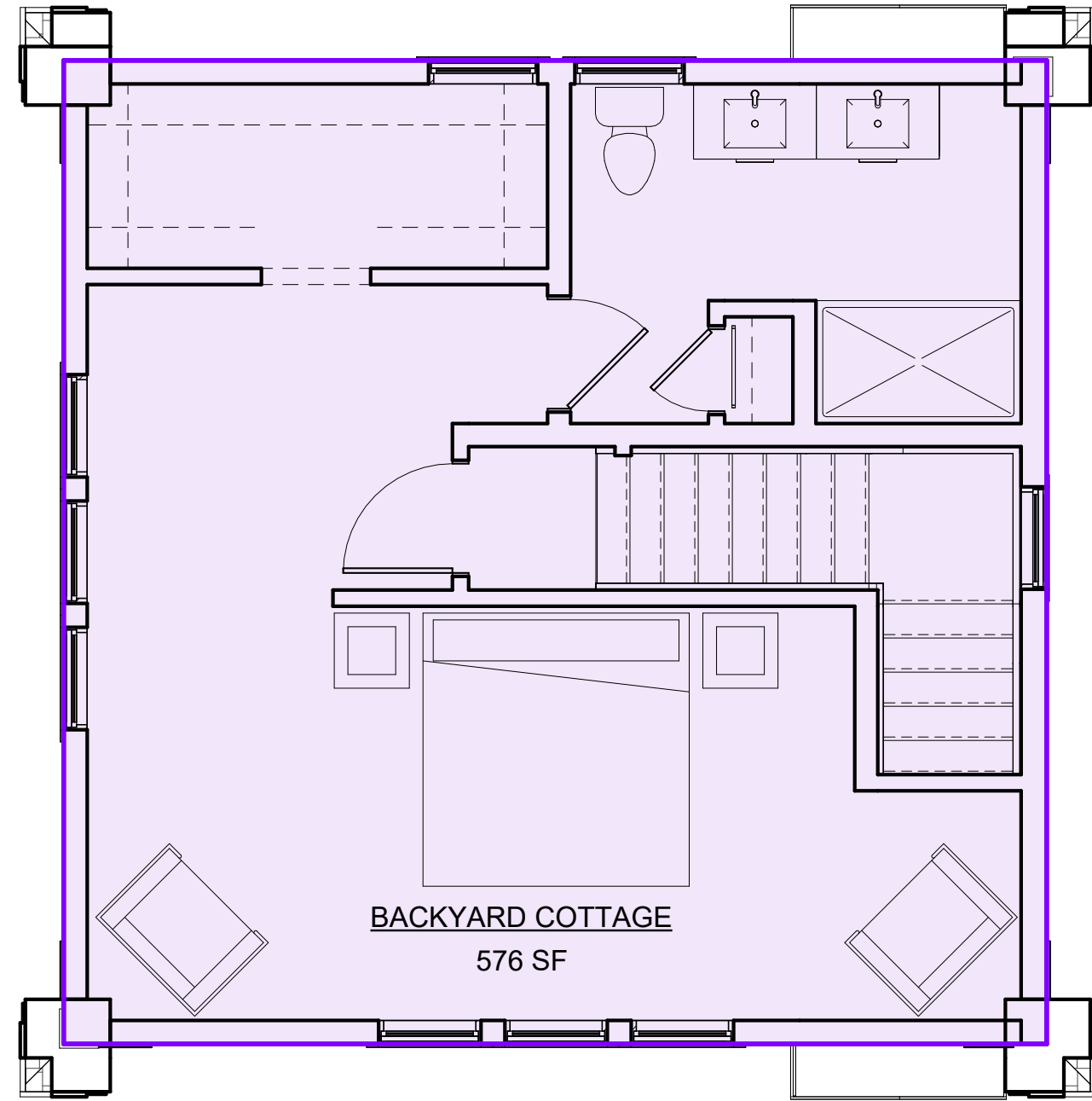
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



① BASEMENT
1/4" = 1'-0"



② FIRST FLOOR
1/4" = 1'-0"



③ SECOND FLOOR
1/4" = 1'-0"

UNIT AREAS		
Name	Area	Level

BACKYARD COTTAGE		
BACKYARD COTTAGE	570 SF	BASEMENT
BACKYARD COTTAGE	576 SF	FIRST FLOOR
BACKYARD COTTAGE	576 SF	SECOND FLOOR
BACKYARD COTTAGE	1722 SF	1722 SF

PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

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JONATHAN NYBERG

ARCHITECT



KDI
ARCHITECTURE

KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

CONSULTANTS:

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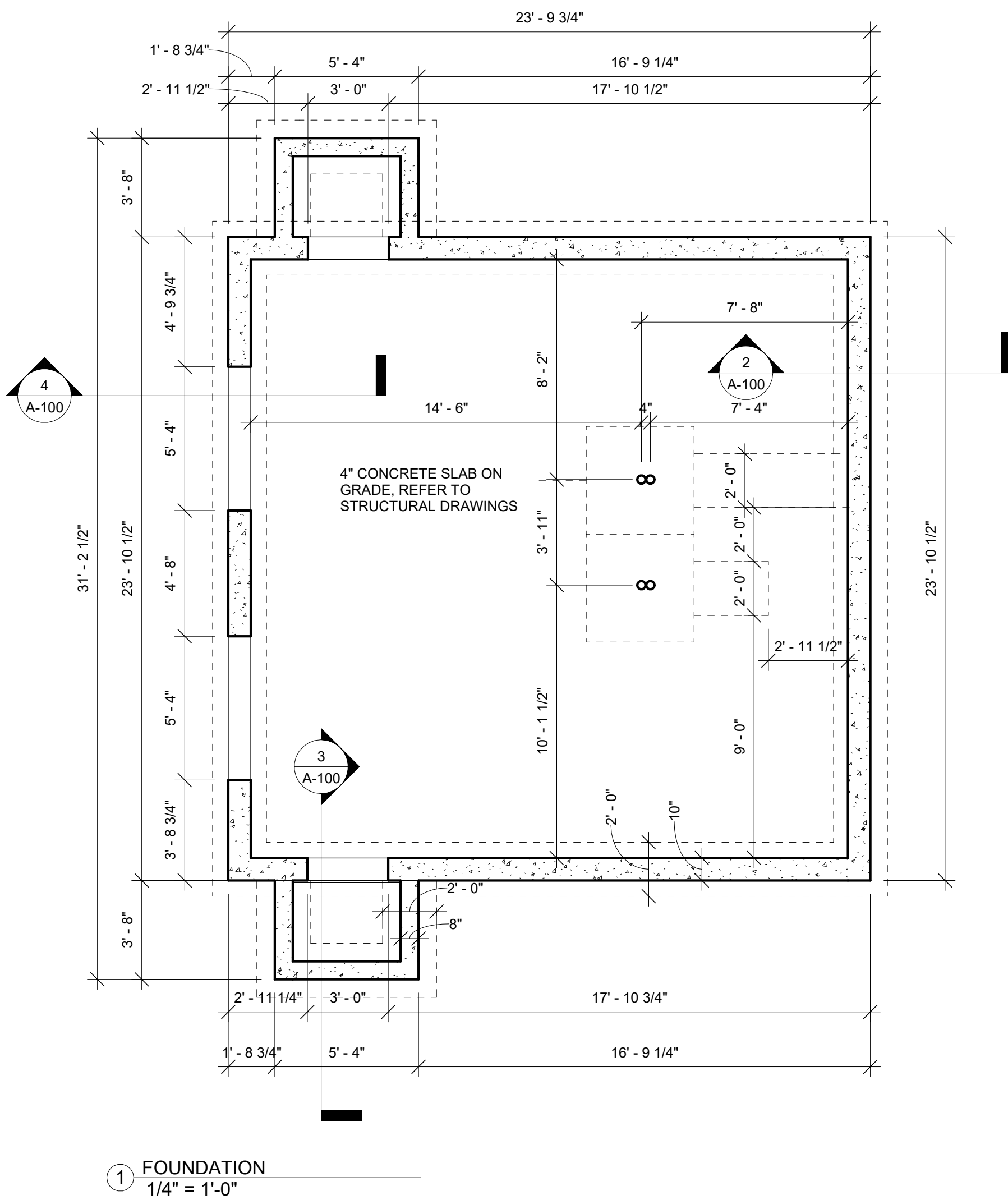
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No.	Description	Date

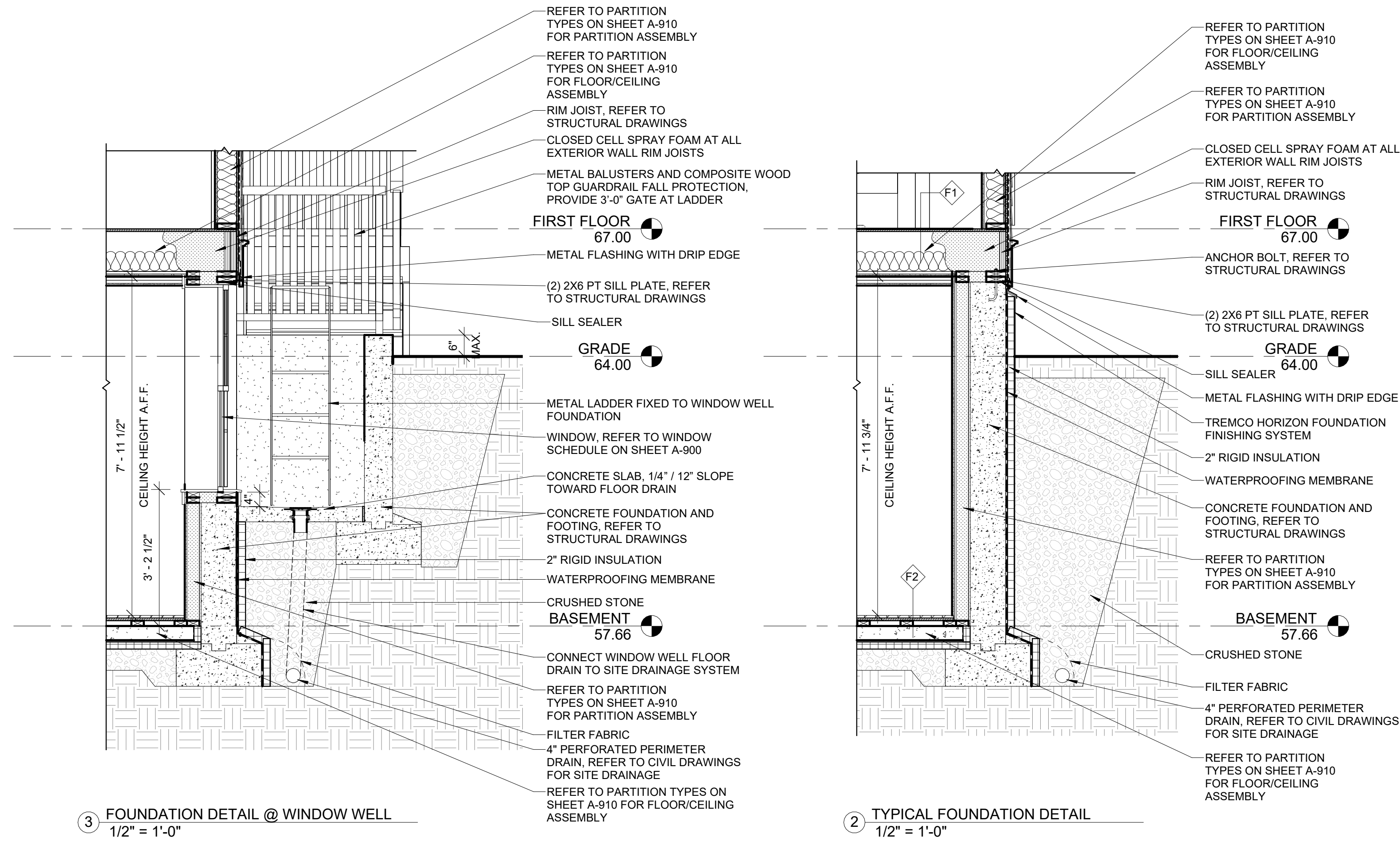
AREA PLANS

A-021

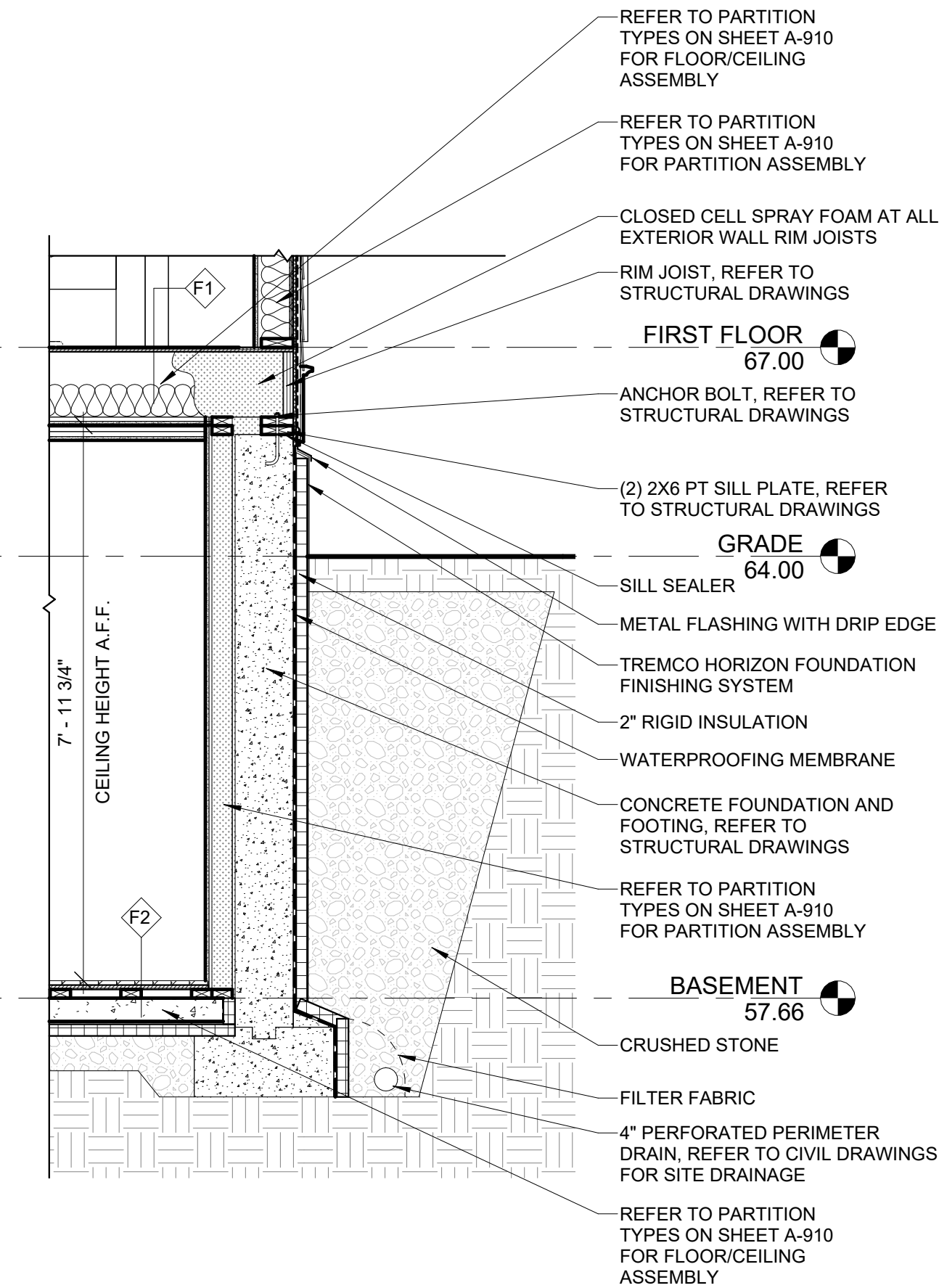
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



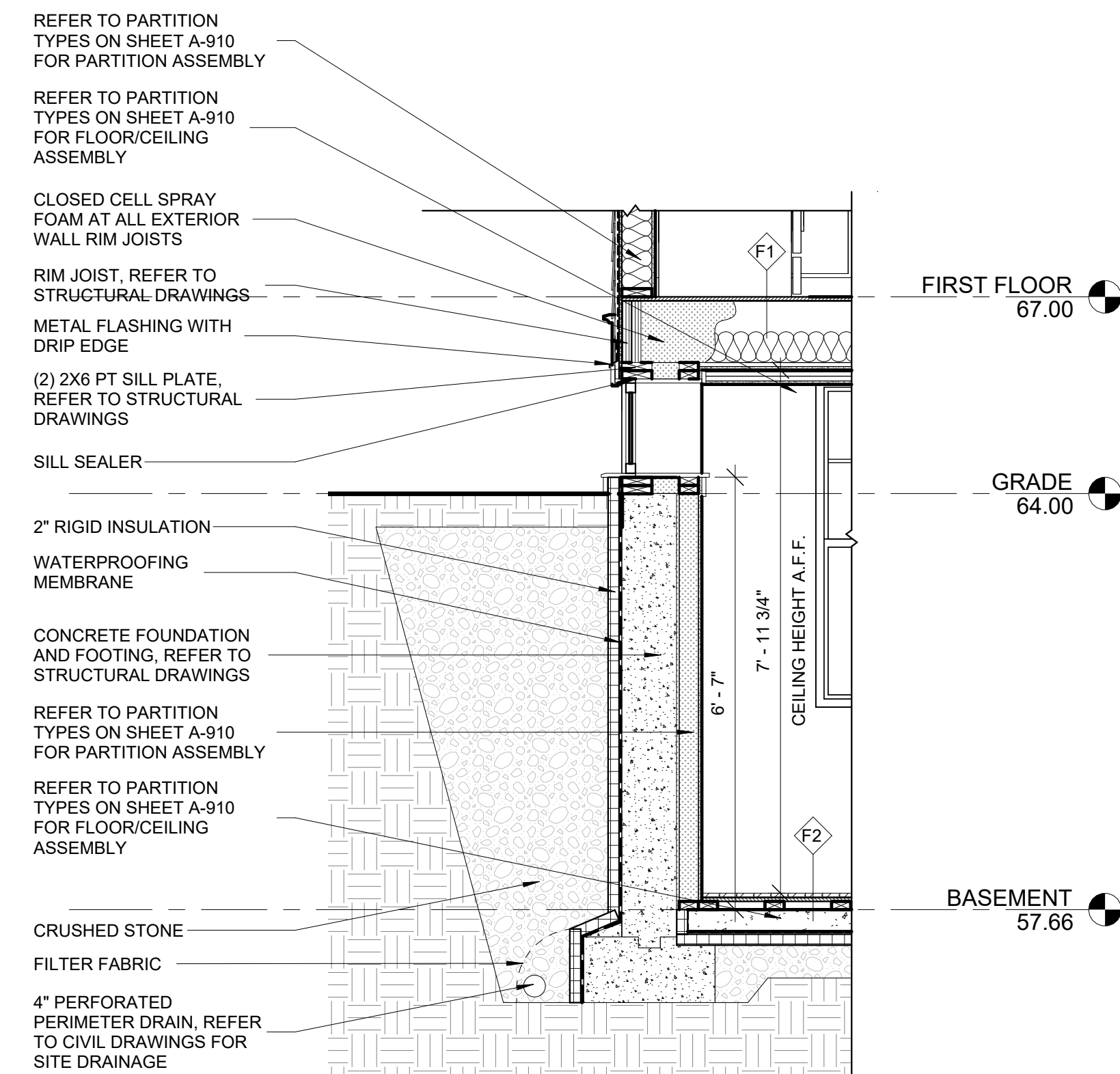
1 FOUNDATION
1/4" = 1'-0"



3 FOUNDATION DETAIL @ WINDOW WELL
1/2" = 1'-0"



2 TYPICAL FOUNDATION DETAIL
1/2" = 1'-0"



4 FOUNDATION DETAIL @ WINDOW
1/2" = 1'-0"

PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



HALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

CONSULTANTS:

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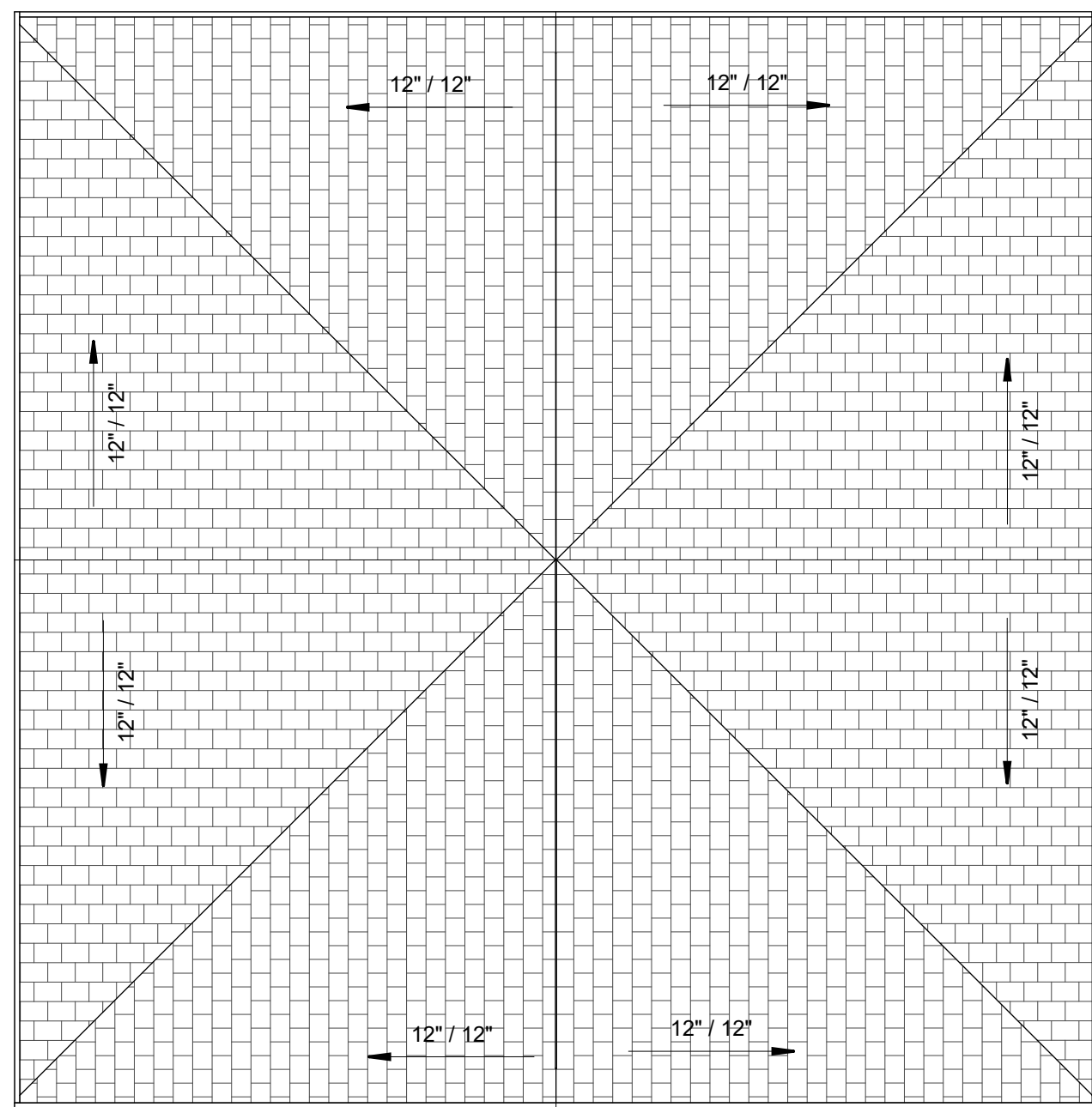
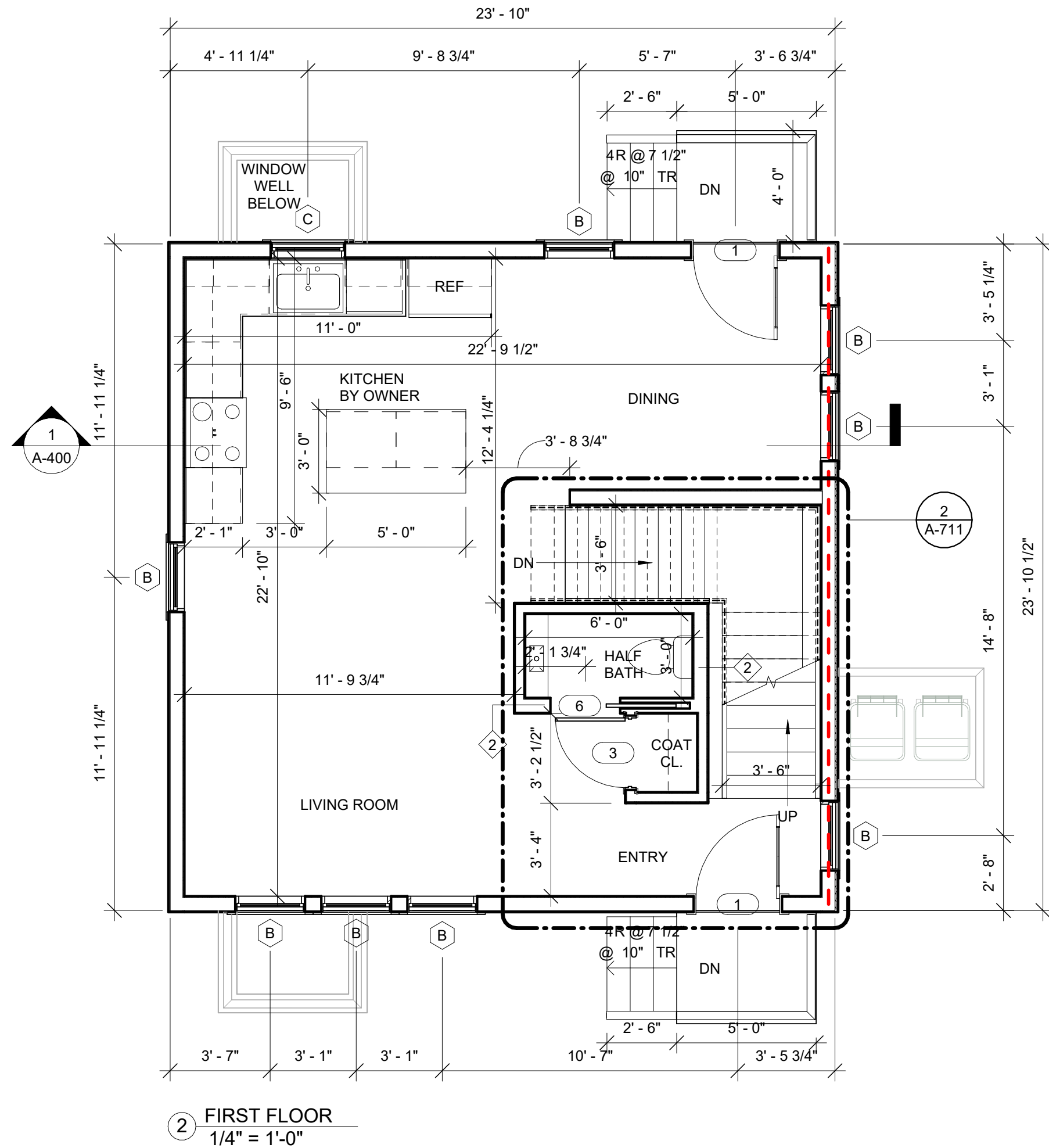
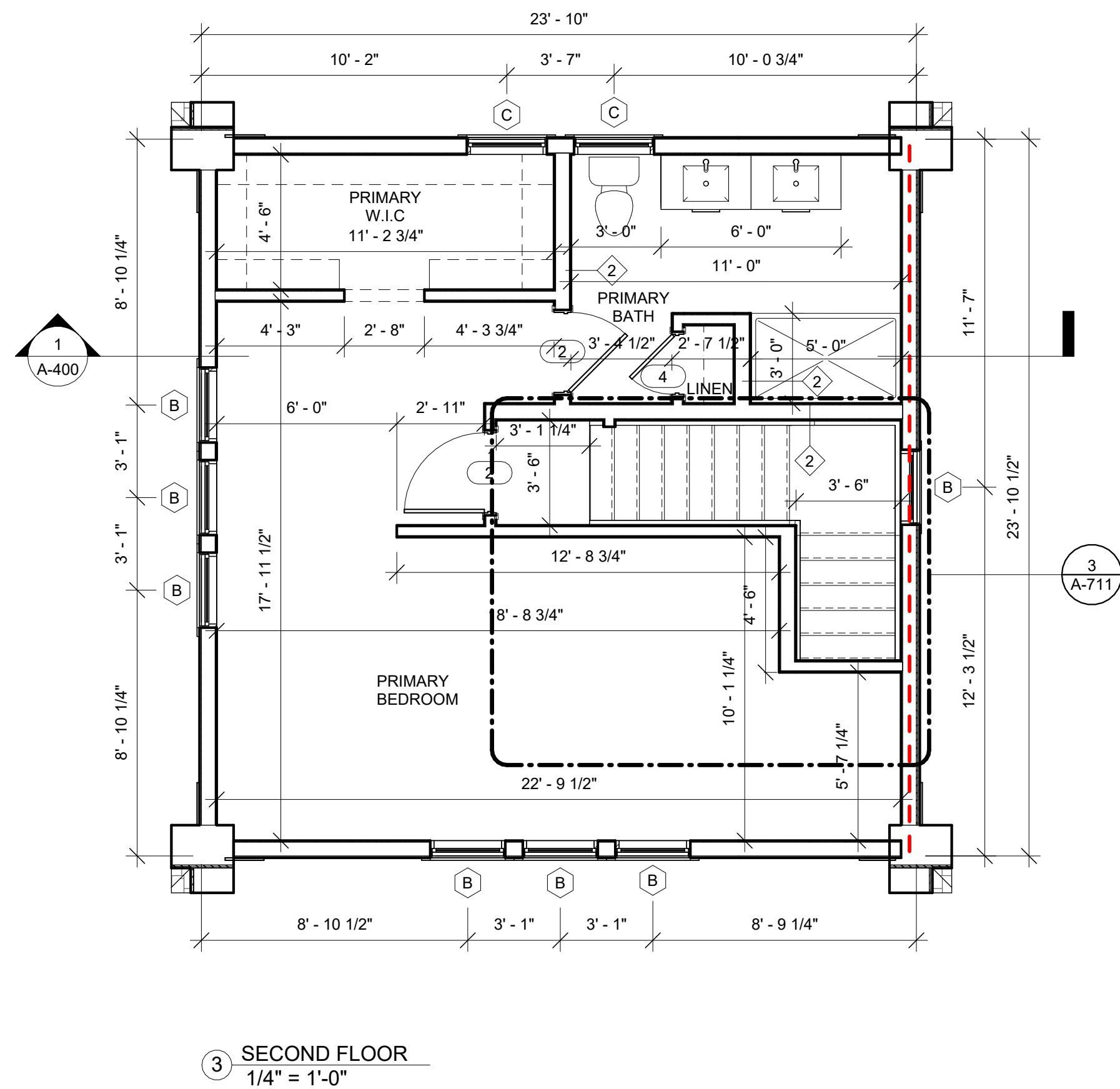
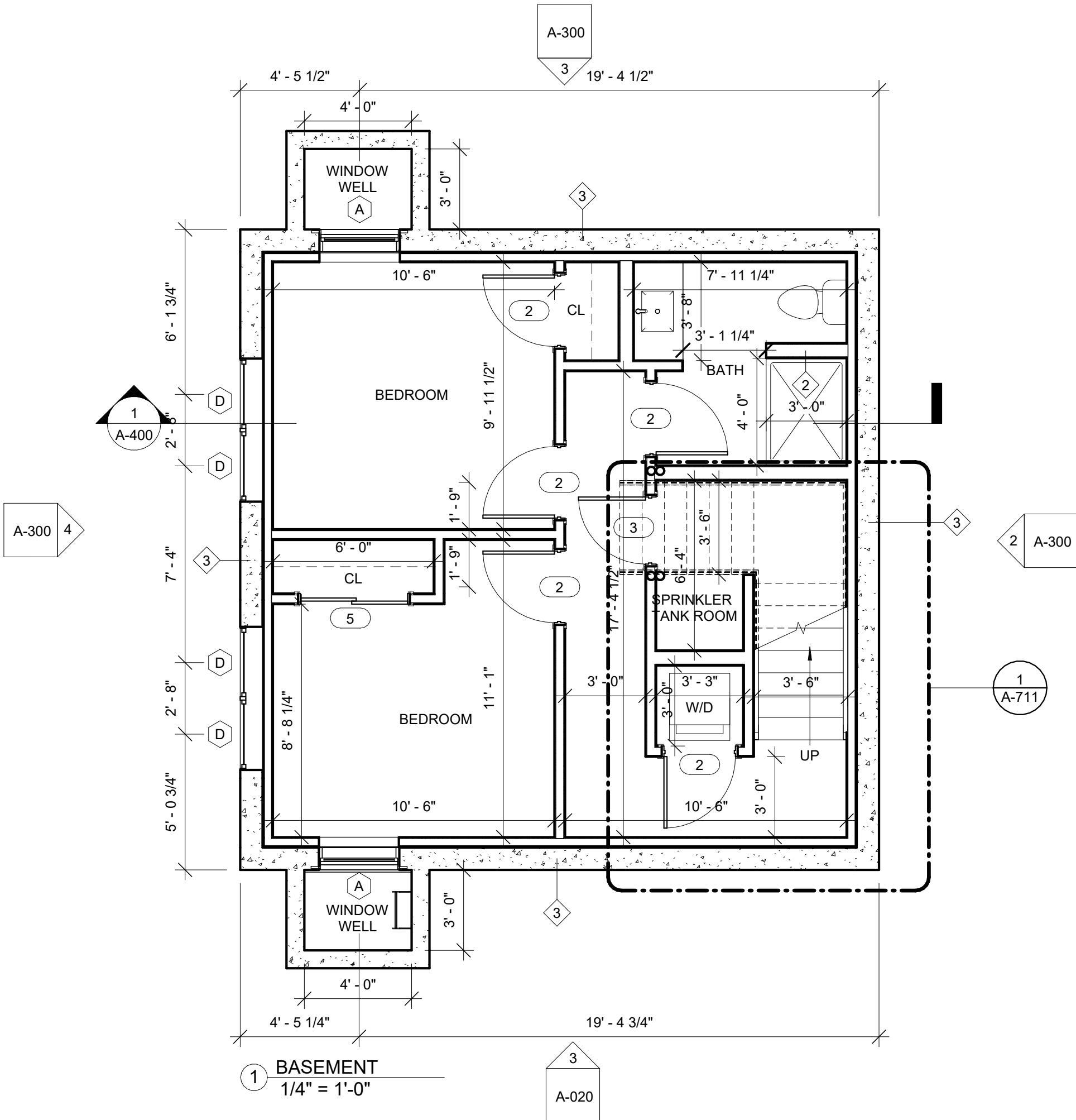
No.	Description	Date

FOUNDATION
PLAN AND
DETAILS

A-100

21 COLLEGE HILL ROAD
BACKYARD COTTAGE

NOTE:
REFER TO FOUNDATION PLANS
FOR EXTERIOR DIMENSIONS.



GENERAL FLOOR PLAN NOTES

1. ALL SMOKE ALARMS TO BE INTERCONNECTED AND HARD WIRED. SEE FLOOR PLANS FOR LOCATIONS.
2. FINAL KITCHEN LAYOUT TO BE DETERMINED BY OWNER.
3. ALL INTERIOR FINISHES TO BE DETERMINED BY OWNER.
4. UNLESS OTHERWISE NOTED ALL INTERIOR WALL SHALL BE TYPE "1"
5. UNLESS OTHERWISE NOTED ALL EXTERIOR NEW WALLS SHALL BE TYPE "4"
6. SEE A-910 FOR PARTITION TYPES.
7. MOISTURE RESISTANT GWB. TO BE USED IN ALL BATHROOMS AND KITCHENS
8. SEE EXTERIOR ELEVATIONS FOR WINDOW TYPES & CLADDING MATERIALS
9. ALL INTERIOR DIMENSIONS ARE FROM FACE OF GWB TO FACE GWB
10. ALL EXTERIOR DIMENSIONS ARE FROM EXTERIOR FACE OF STUD. TYP., U.N.O.
11. ELECTRICAL OUTLETS ON OPPOSITE SIDE OF WALL SHOULD BE INSTALLED AT LEAST 2'-0" FROM EACH OTHER.
12. CONTRACTOR TO VERIFY EXISTING CONDITIONS IN THE FIELD PRIOR TO DEMOLITION & CONSTRUCTION.
13. SEE STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION & CIVIL PLAN FOR ADDITIONAL INFORMATION
14. UNLESS OTHERWISE NOTED CENTER CLOSET DOOR ON CLOSET.

LEGEND

	NEW WALL		DOOR TYPE
	WALL TYPE		1HR FIRE RATED WALL
	WINDOW TYPE		

PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



HALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

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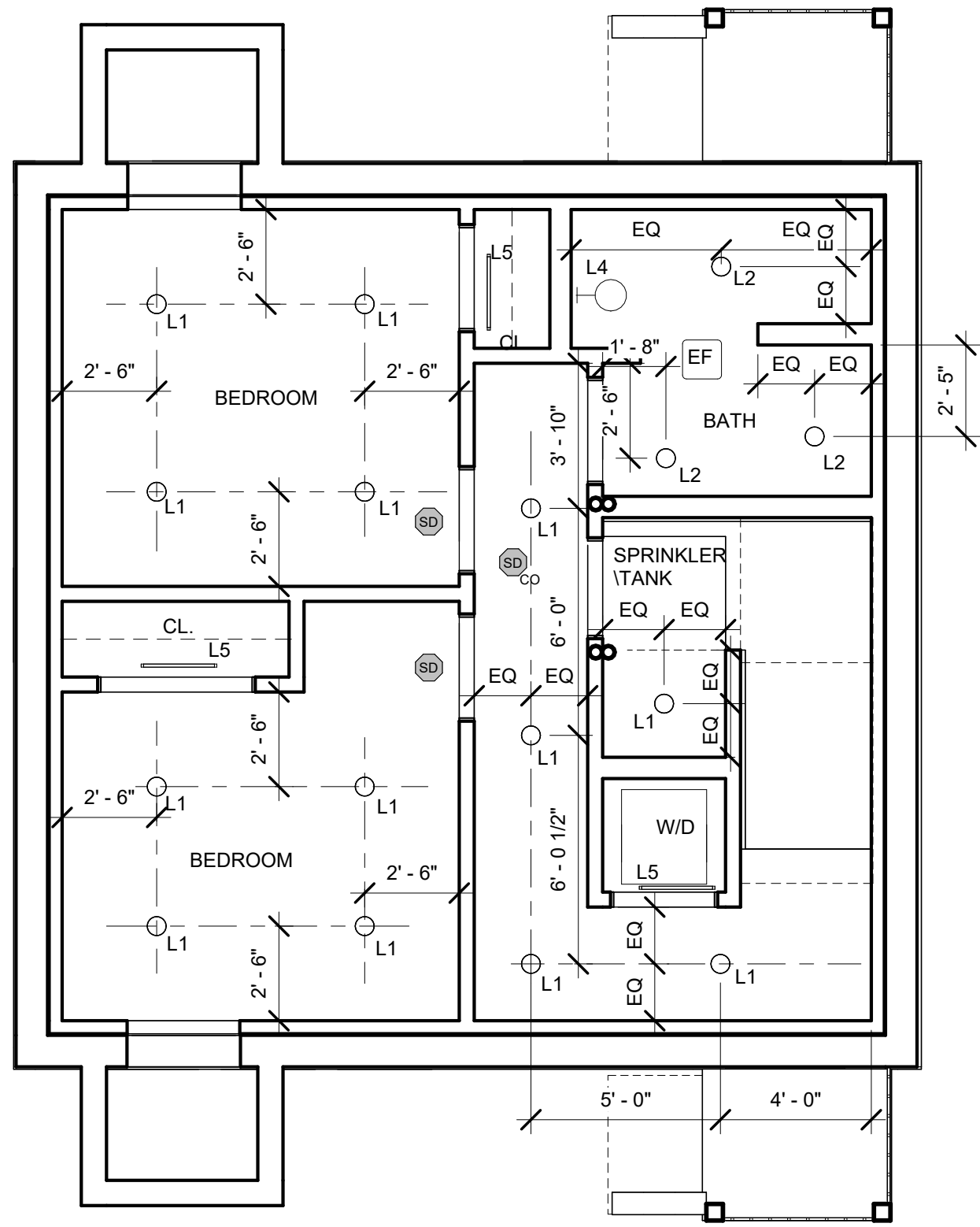
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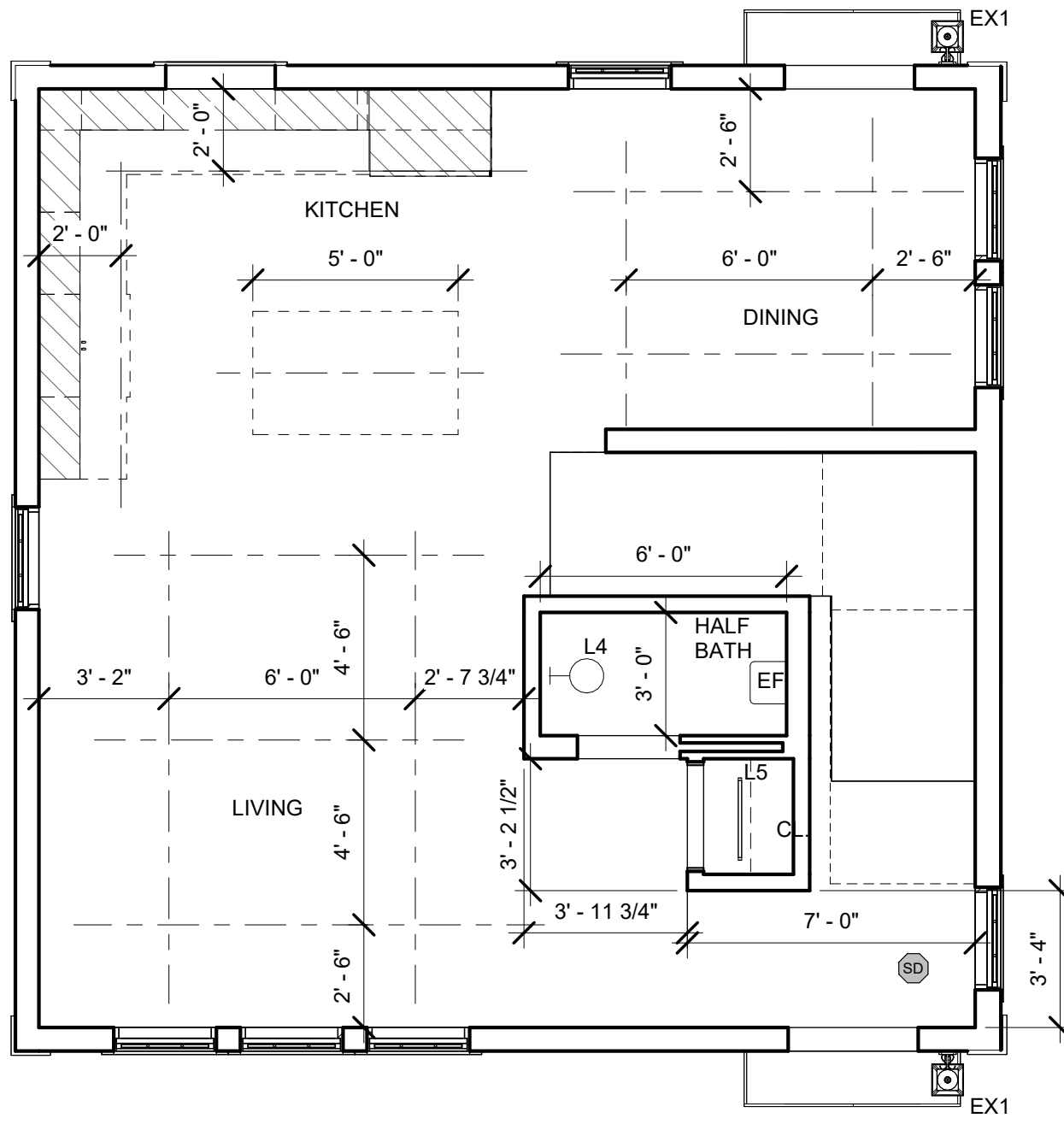
**BACKYARD
COTTAGE
FLOOR PLANS**

A-101

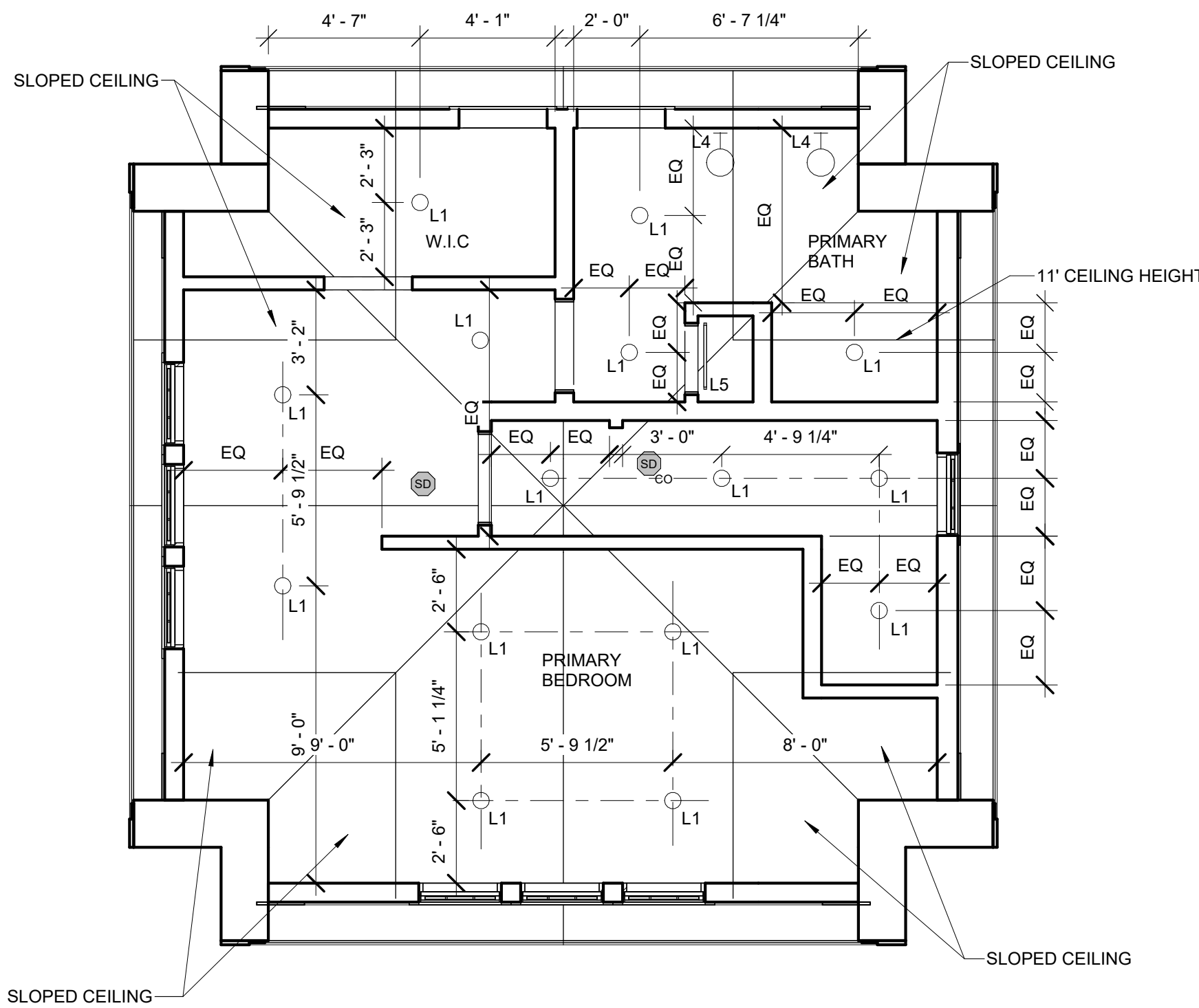
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



1 BASEMENT
1/4" = 1'-0"



2 FIRST FLOOR
1/4" = 1'-0"



3 SECOND FLOOR
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND

SOFFIT HEIGHT AS SPECIFIED AND GWB CEILING ATTACHED TO JOIST, SEE BUILDING SECTION FOR CEILING ASSEMBLY

LIGHT FIXTURE LEGEND

○	L1	6" RECESSED CAN LIGHT FIXTURE
○	L2	6" RECESSED CAN LIGHT FIXTURE - DAMP LOCATION
○	L3	PENDANT LIGHT FIXTURE AS DETERMINED BY OWNER
□	L4	BATHROOM SCONCE LIGHT FIXTURE AS DETERMINED BY OWNER
—	L5	STRIP LIGHT FIXTURE
⌚	EX1	EXTERIOR SCONCE LIGHT FIXTURE AS DETERMINED BY OWNER
□	EF	EXHAUST FAN
⊙		SMOKE ALARM
⊙		SMOKE/CO ALARM

NOTES:

SMOKE DETECTORS TO BE INTERCONNECTED & HARD WIRED.

REFER TO ELECTRICAL PLANS FOR LIGHTING

SEE BUILDING SECTIONS FOR FLOOR/ CEILING ASSEMBLY

CONTRACTOR TO COORDINATE ALL INTERIOR ACCESSORIES WITH OWNER AND TO SUPPLY ADEQUATE BLOCKING.

CONTRACTOR TO REVIEW STRUCTURAL DRAWINGS WITH ARCHITECTURAL PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPORT ERRORS TO THE ARCHITECT IMMEDIATELY PRIOR TO COMMENCING WORK.

VERIFY AND COORDINATE MECHANICAL AND MAKE FLUSH TO DUCTWORK, ETC. SPOT ELEVATION ON RCP TO BE ADJUSTED A REQUIRED. CONTRACTOR TO REVIEW AND DETERMINE HEIGHT POINT PRIOR TO CONSTRUCTION AND INSTALLATION.

CENTER ALL BATHROOM VANITY LIGHT SCONCE TO CENTER OF VANITY

PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

PROJECT ADDRESS
21 COLLEGE HILL
ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



Khalsa Design, Inc.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

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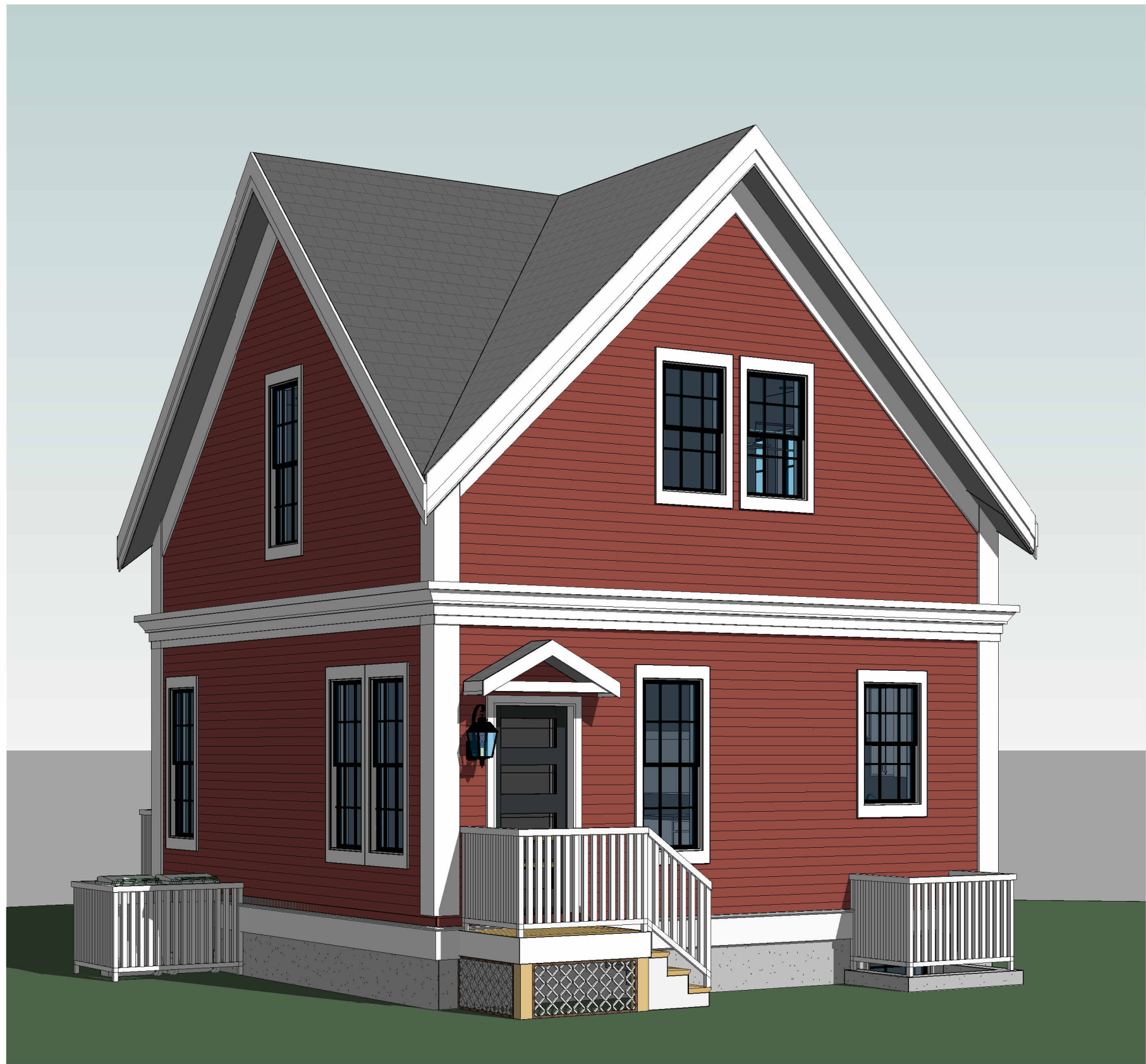
BACKYARD
COTTAGE
REFLECTED
CEILING PLAN
A-200
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



1 FRONT VIEW



2 VIEW #2



3 REAR VIEW



4 VIEW #4

PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

PROJECT ADDRESS
21 COLLEGE HILL
ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



ARCHITECTURE

KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

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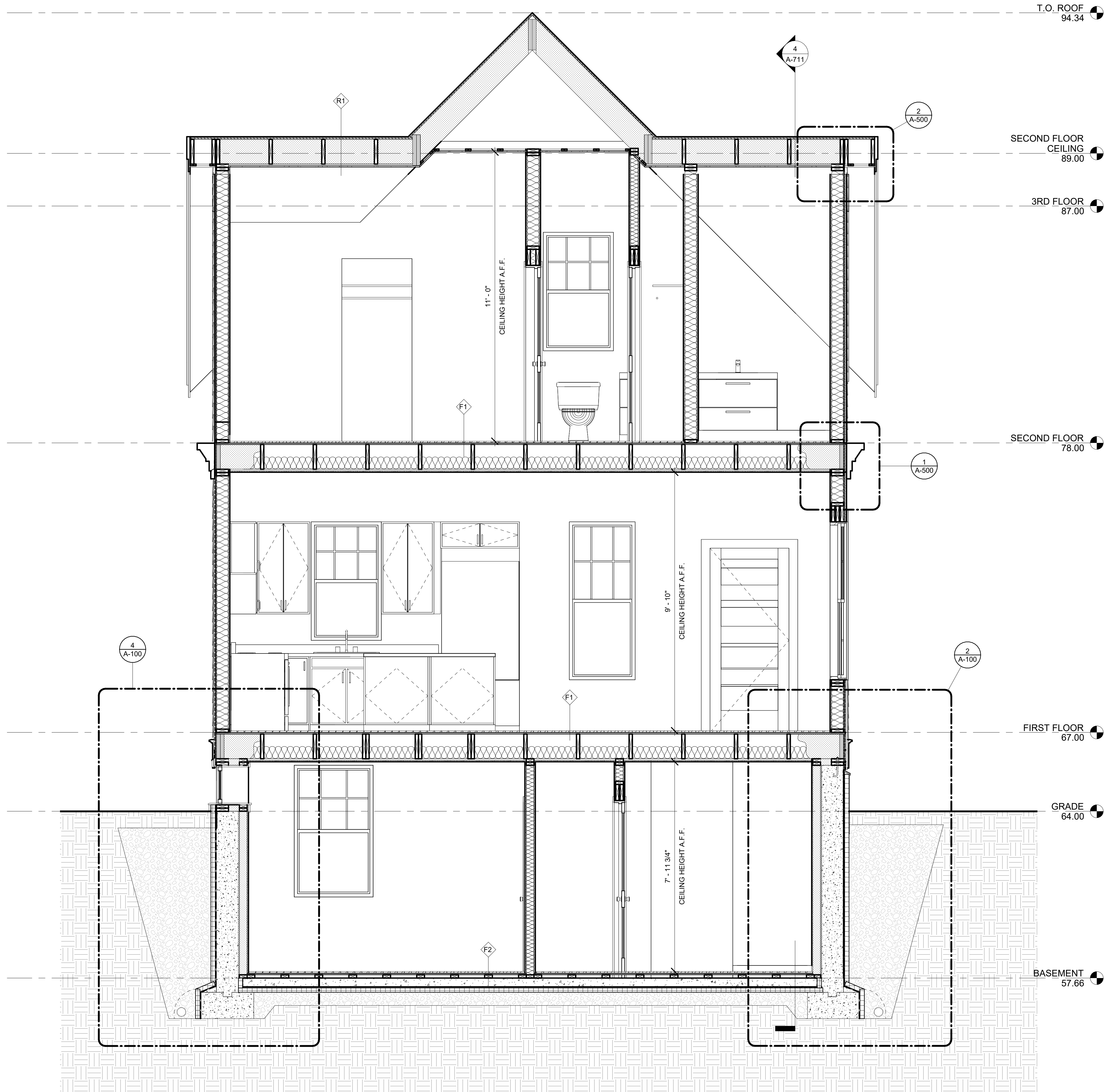
REVISIONS

No.	Description	Date

PERSPECTIVES

A-301

21 COLLEGE HILL ROAD
BACKYARD COTTAGE



1 SECTION
1/2" = 1'-0"

PROJECT NAME
21 COLLEGE HILL
ROAD BACKYARD
COTTAGE

PROJECT ADDRESS
21 COLLEGE HILL
ROAD
SOMERVILLE, MA

CLIENT

JONATHAN NYBERG

ARCHITECT



KDI
ARCHITECTURE

KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

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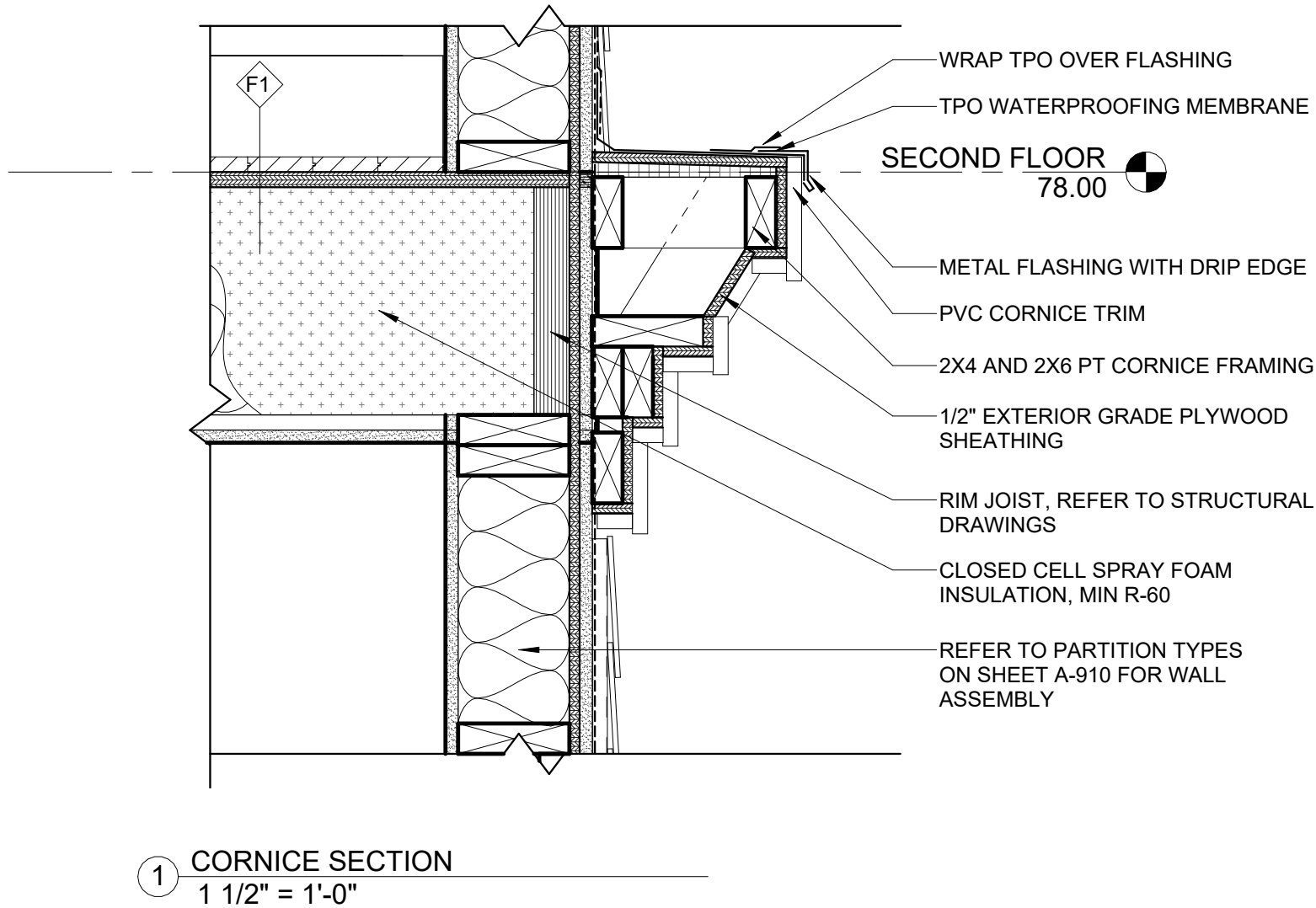
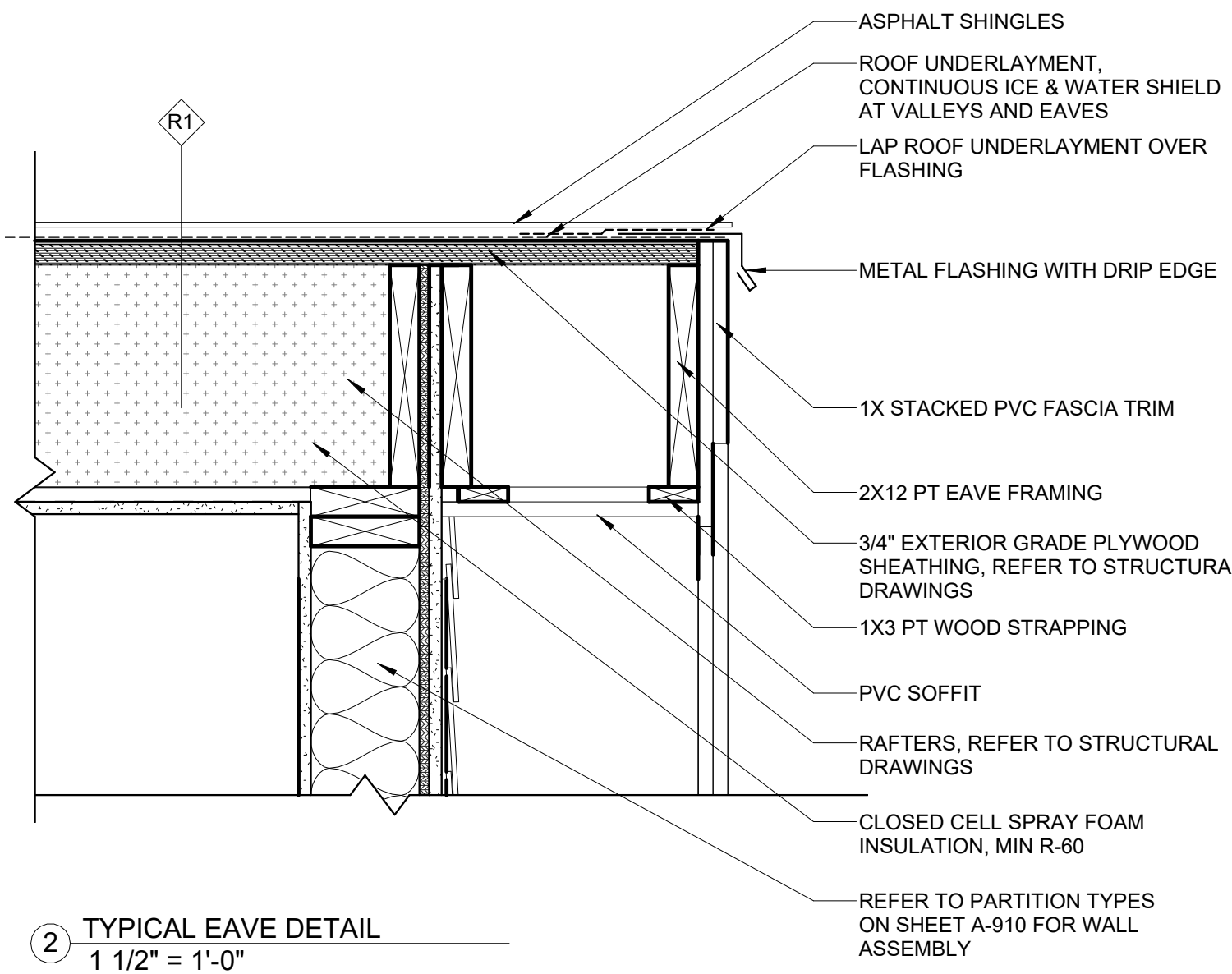
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Date 01/30/2026
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Checked by Checker
Scale 1/2" = 1'-0"

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No.	Description	Date

BUILDING
SECTION

A-400

21 COLLEGE HILL ROAD
BACKYARD COTTAGE



PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



ARCHITECTURE
KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

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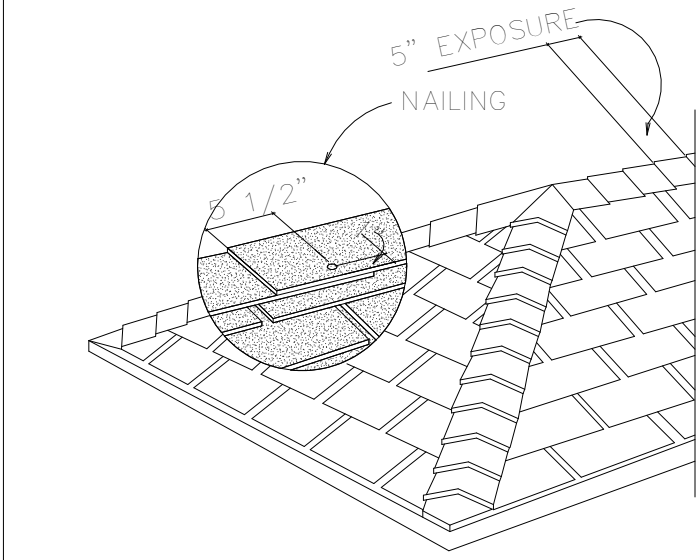
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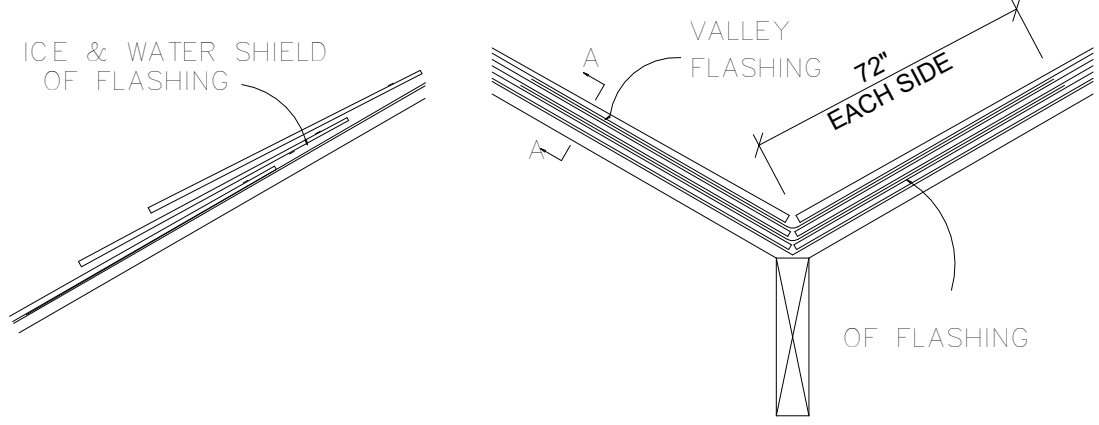
SECTION
DETAILS

A-500

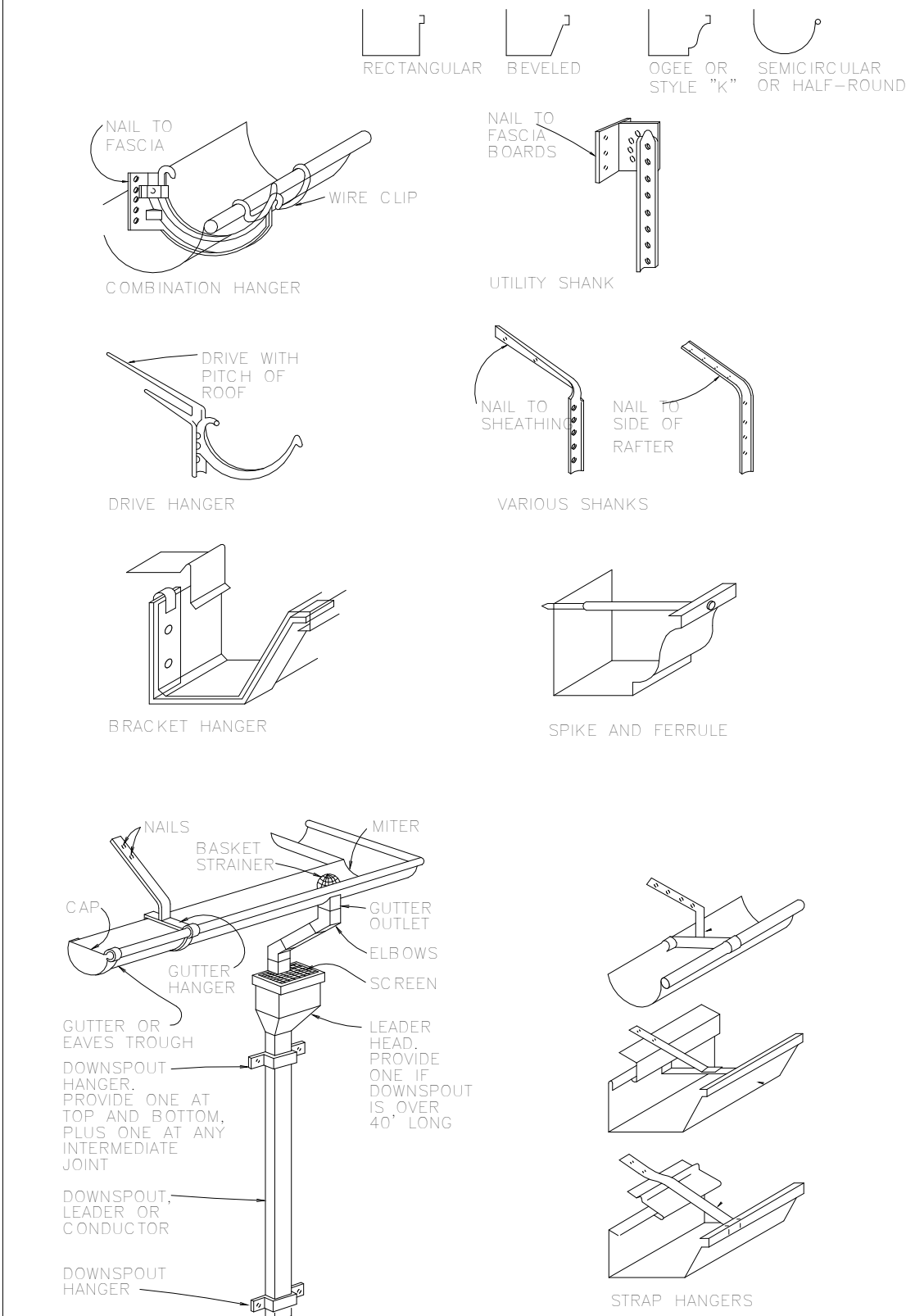
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



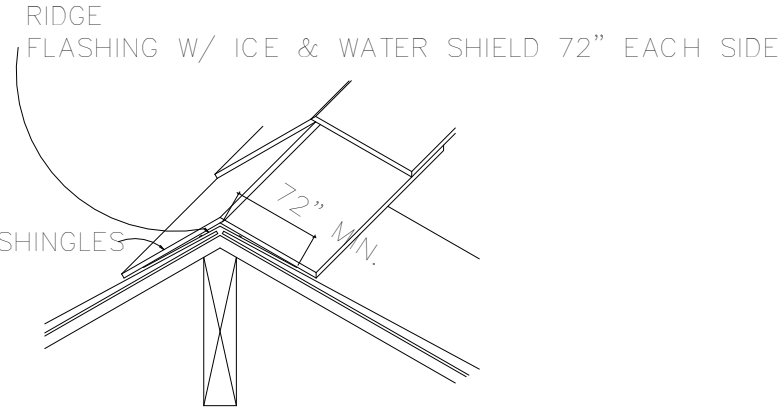
5 **HIP AND RIDGE**
Scale:N.T.S



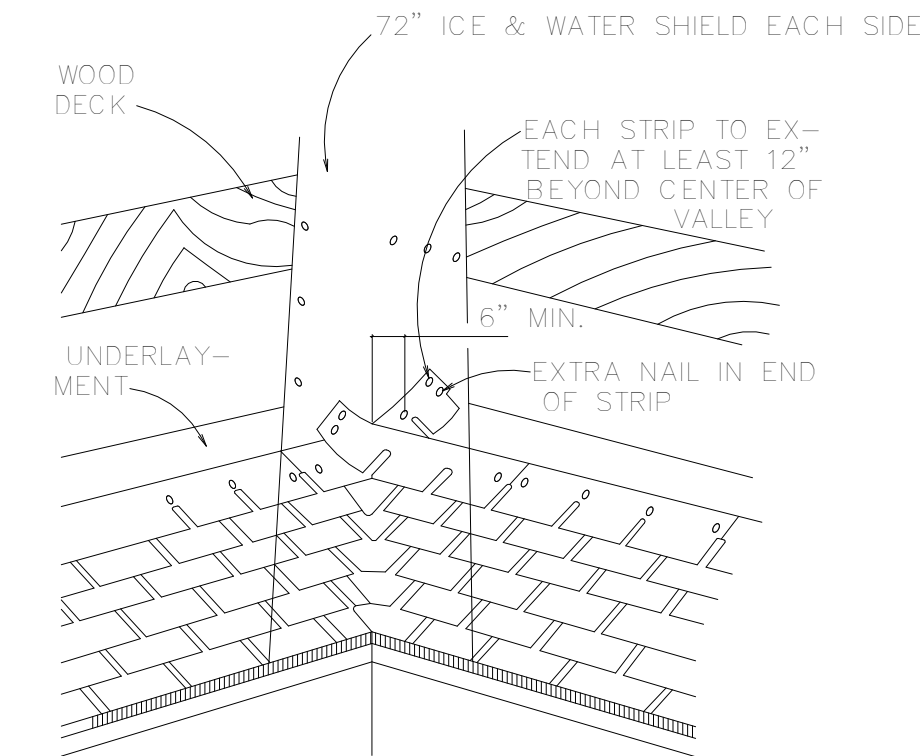
1 **VALLEY FLASHING**
Scale:N.T.S



2 **TYPICAL ROOF LAYOUT**
Scale:N.T.S



3 **CONCEALED RIDGE FLASHING**
Scale:N.T.S



4 **CLOSED VALLEY**
Scale:N.T.S

6 **GUTTER & DOWN SPOUT**
Scale:N.T.S

PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

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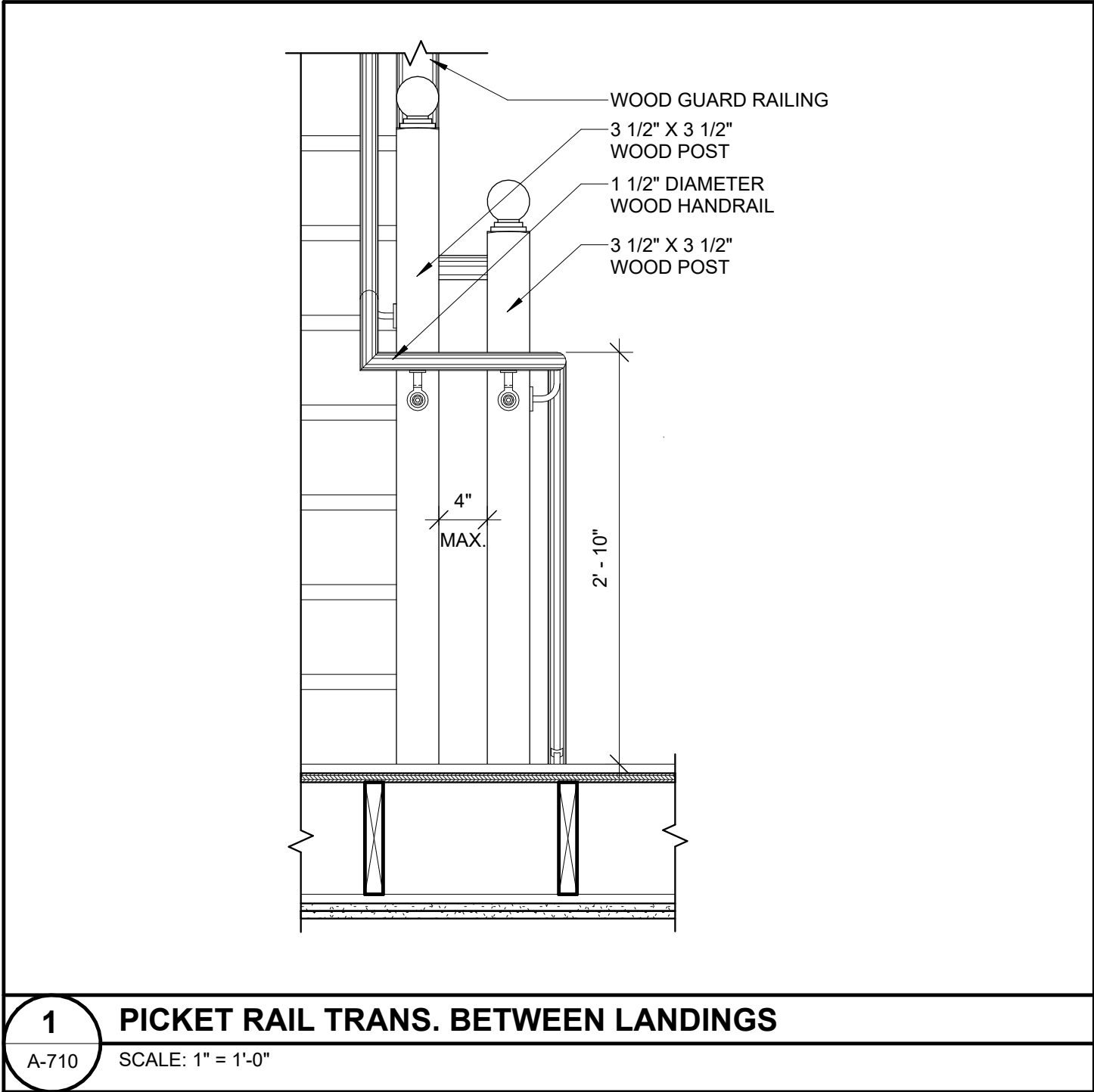
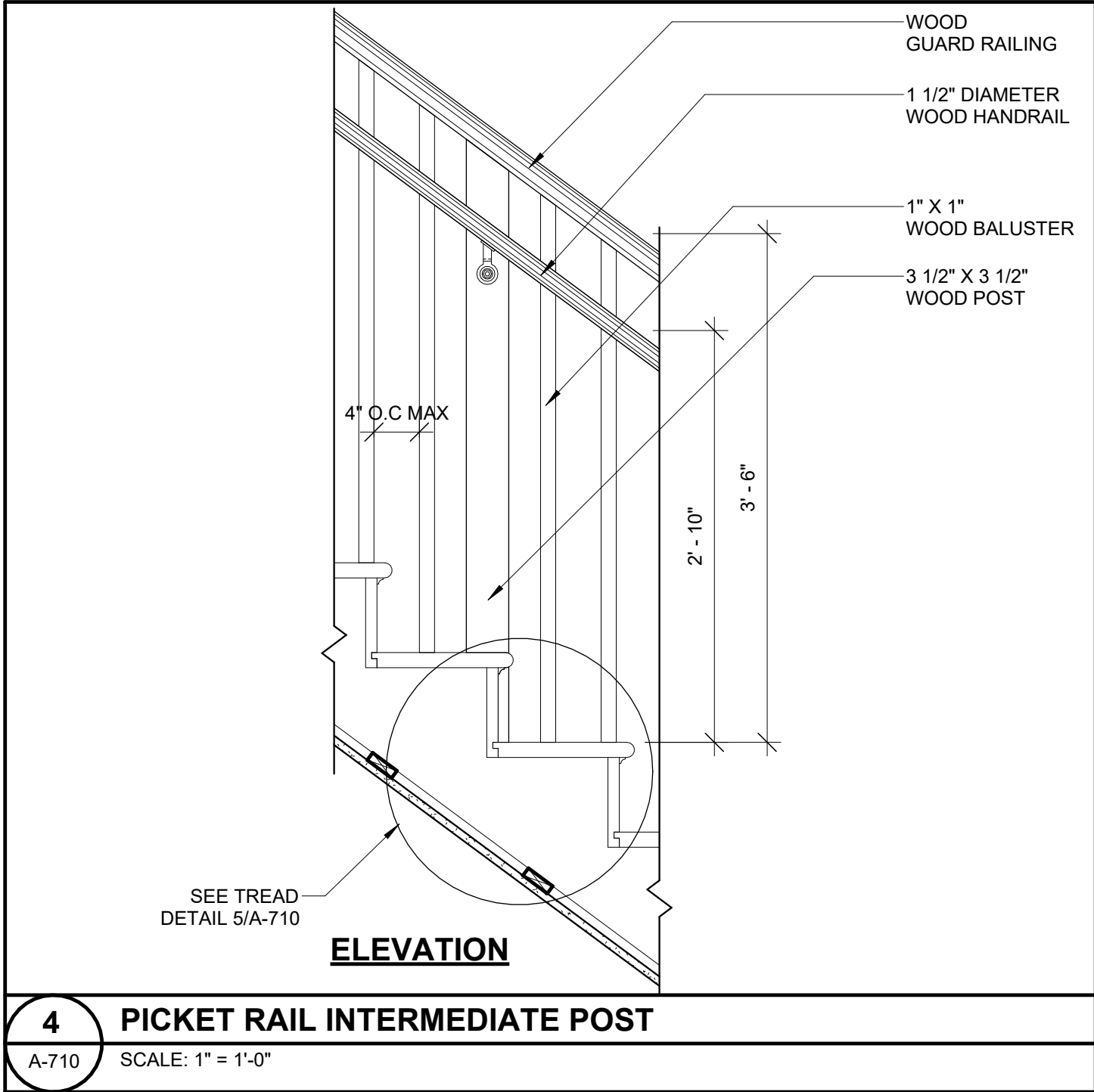
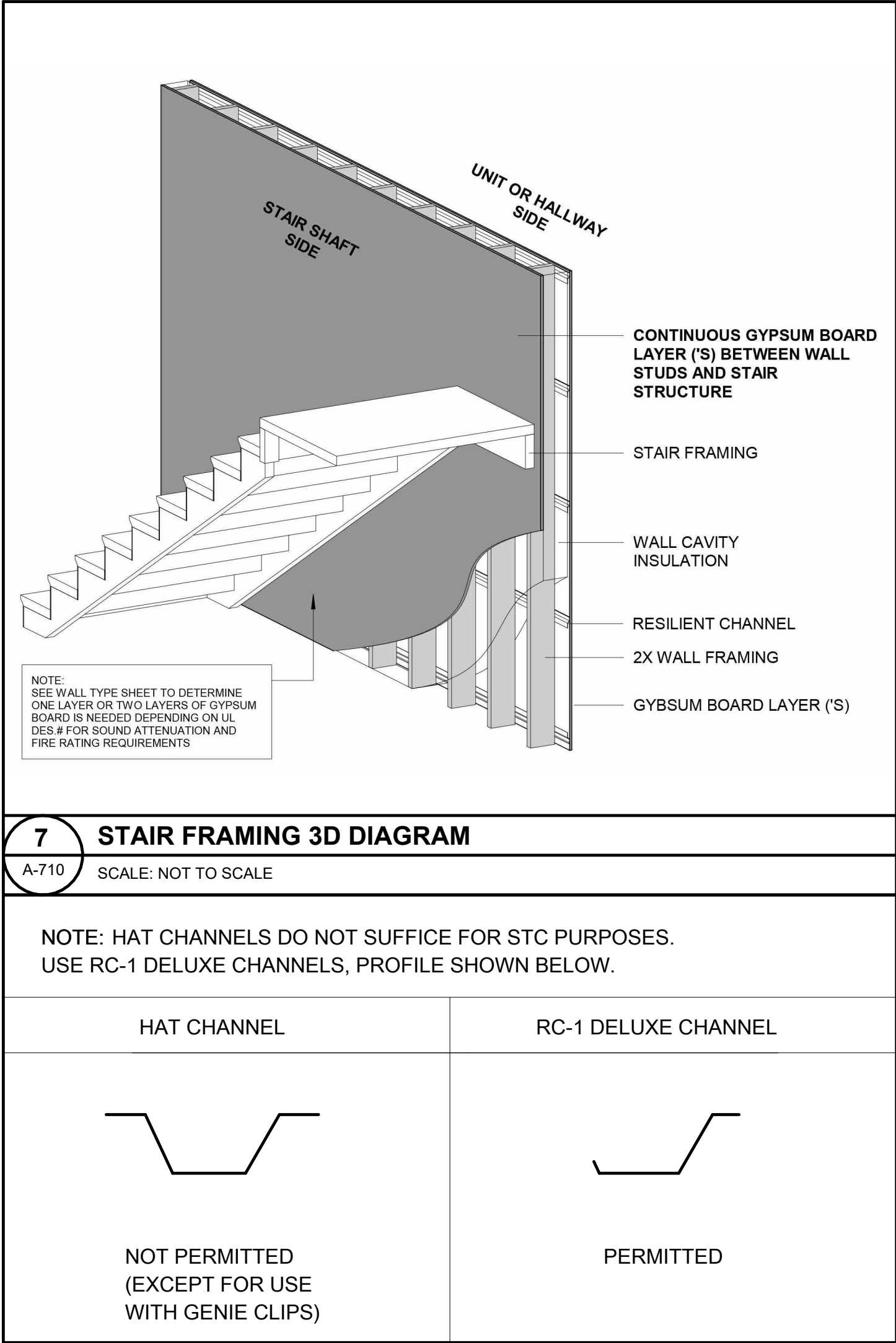
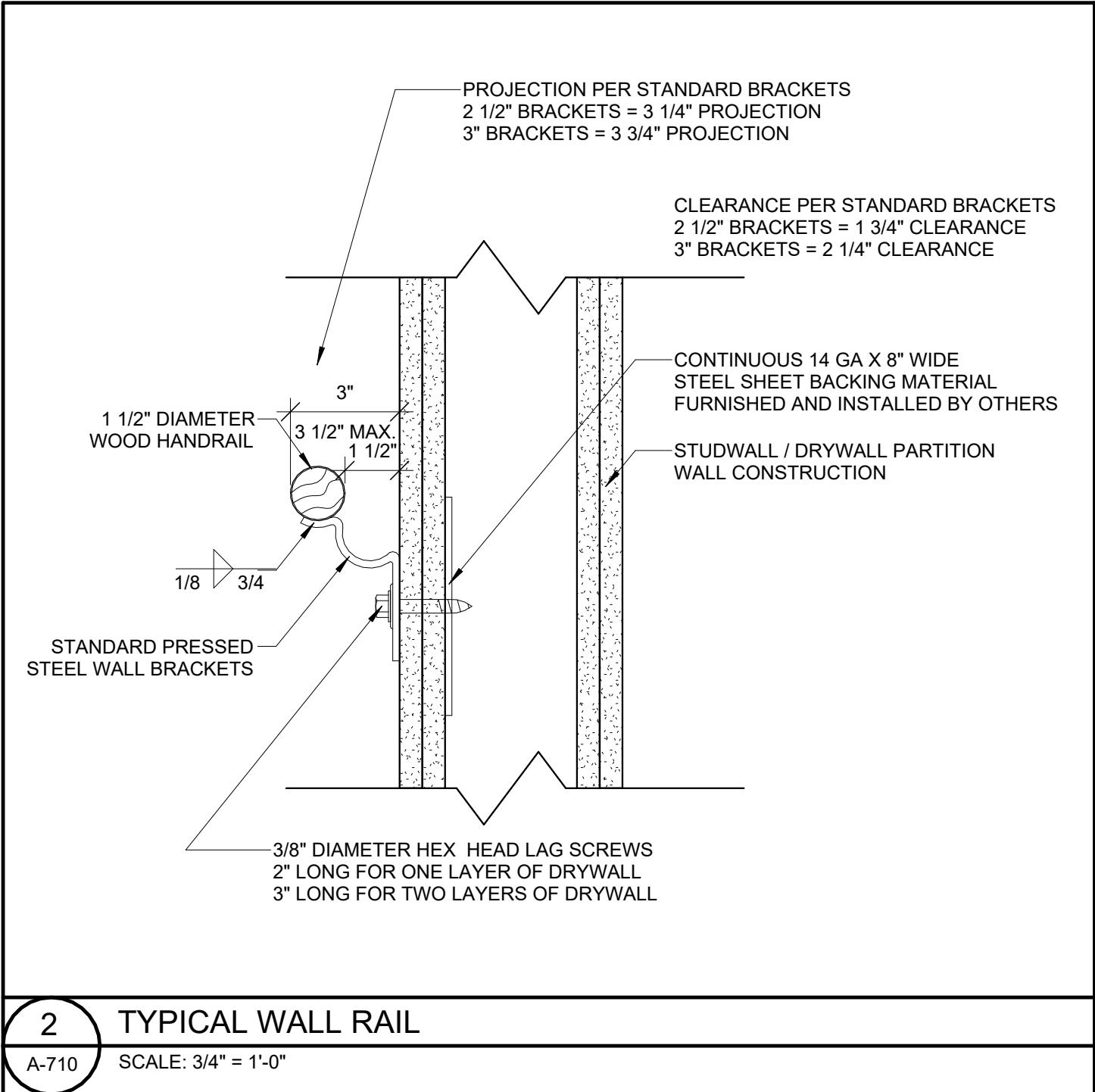
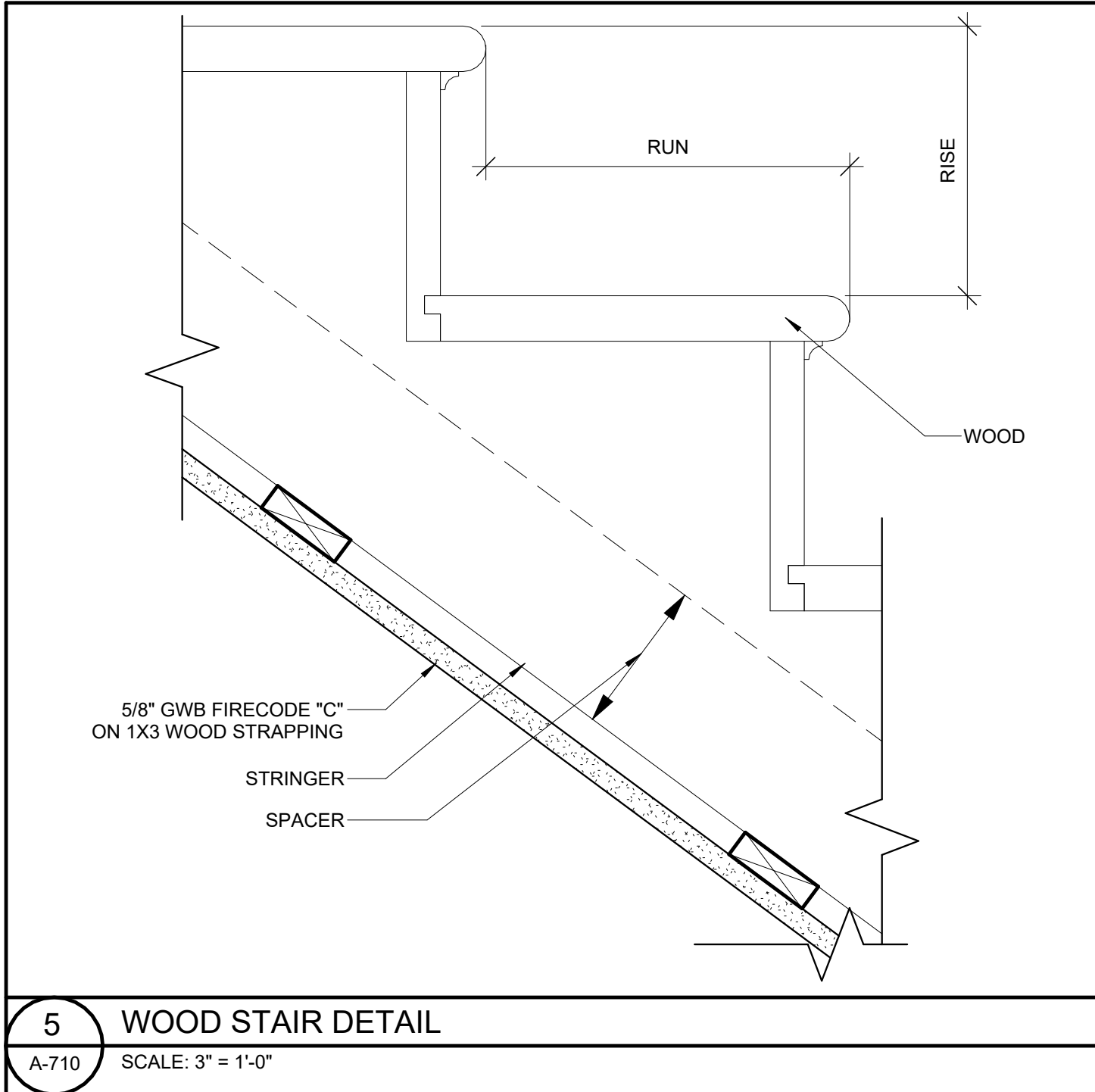
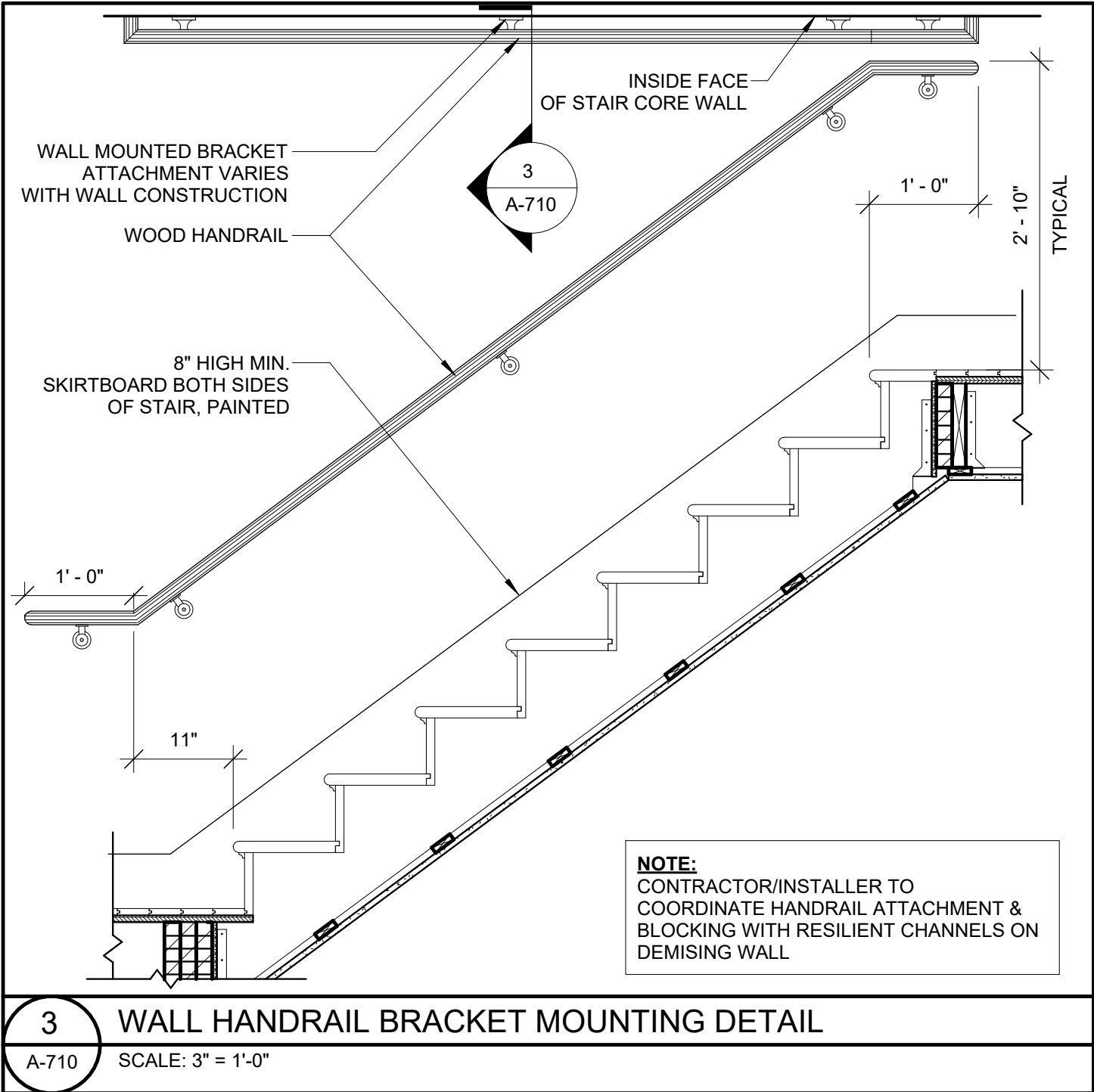
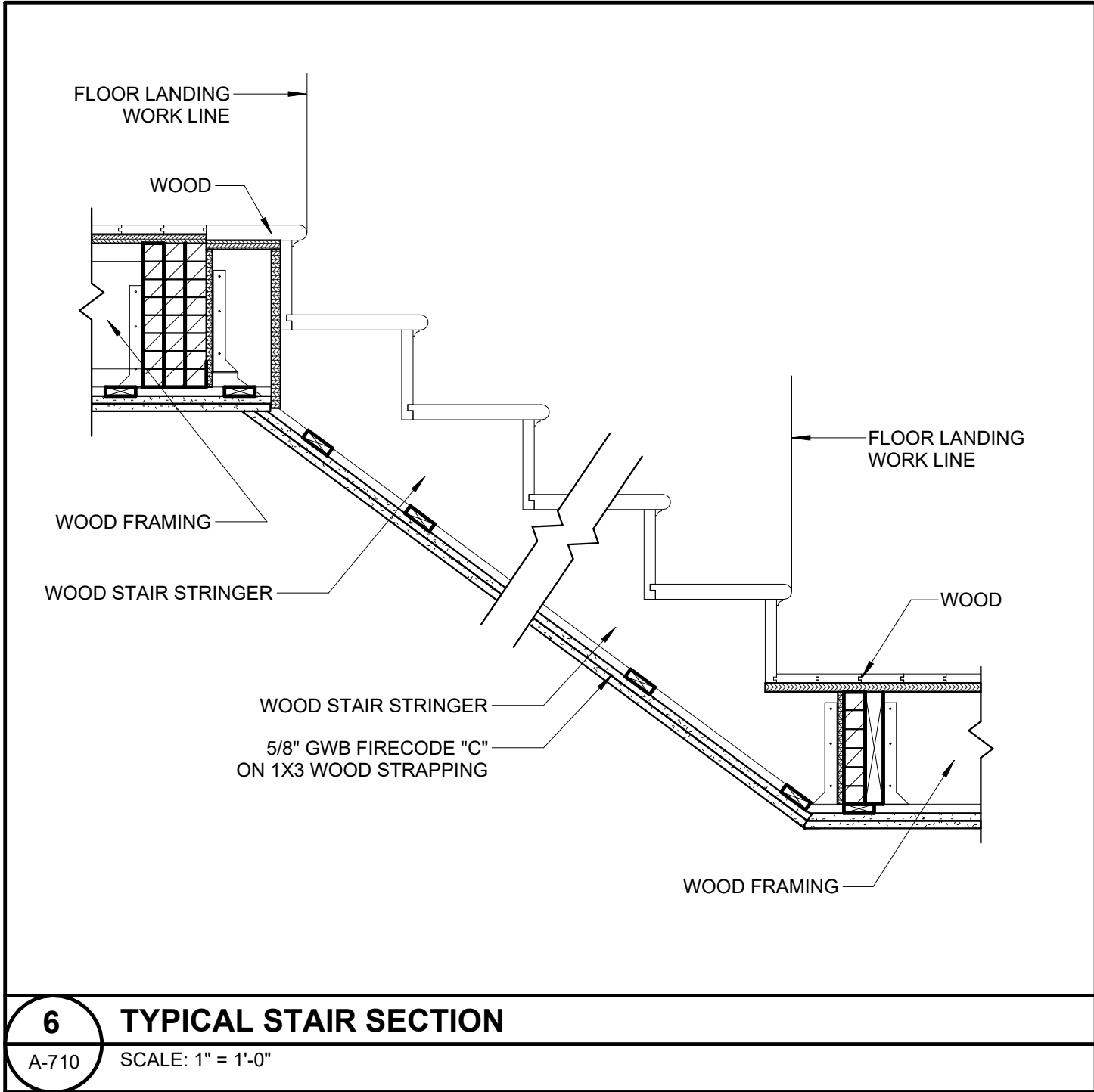
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No.	Description	Date

**TYPICAL
SLOPED ROOF
DETAILS**

A-520

21 COLLEGE HILL ROAD
BACKYARD COTTAGE



PROJECT NAME
21 COLLEGE HILL ROAD BACKYARD COTTAGE

PROJECT ADDRESS
**21 COLLEGE HILL ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



HALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

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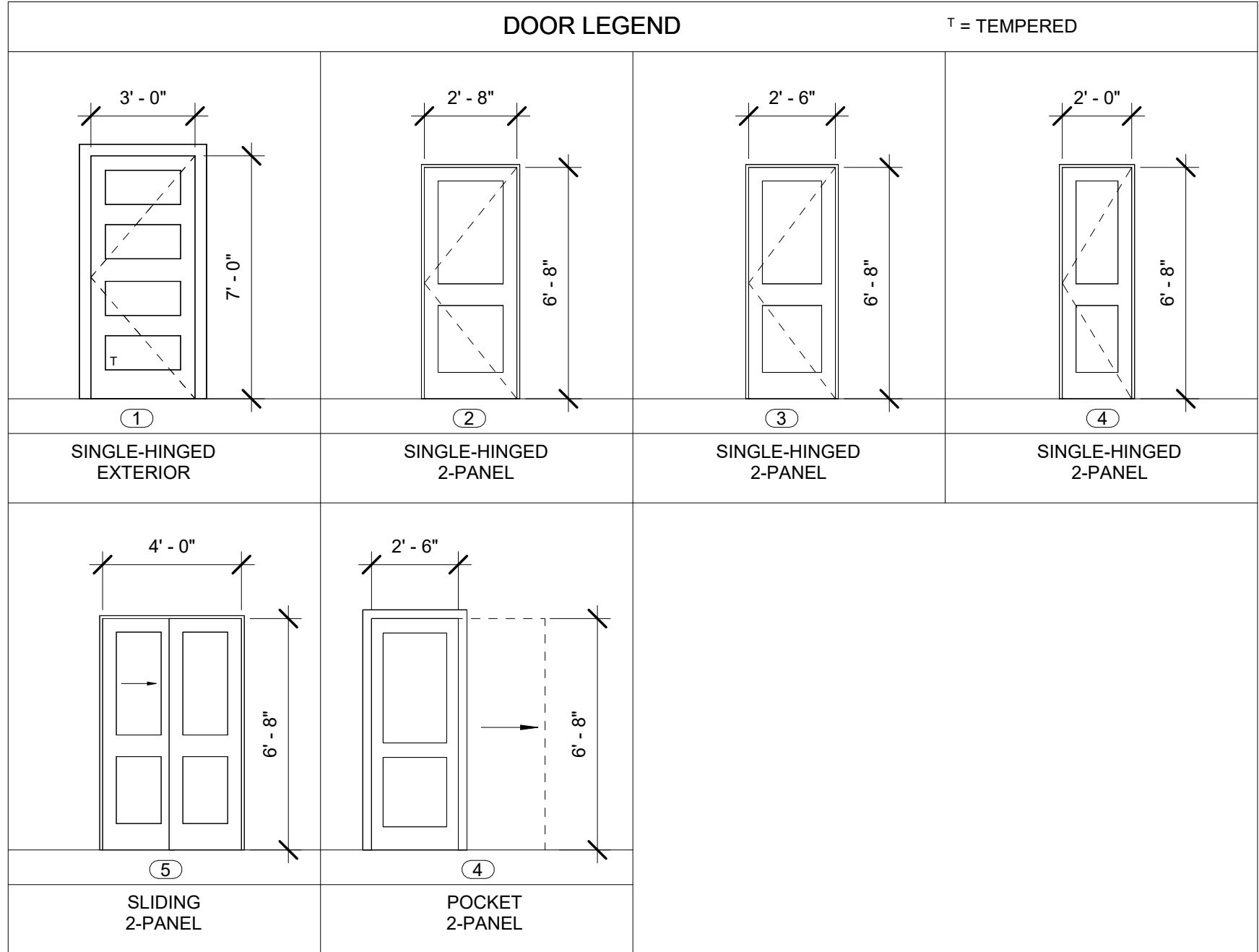
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STAIR DETAILS

A-710

21 COLLEGE HILL ROAD
BACKYARD COTTAGE

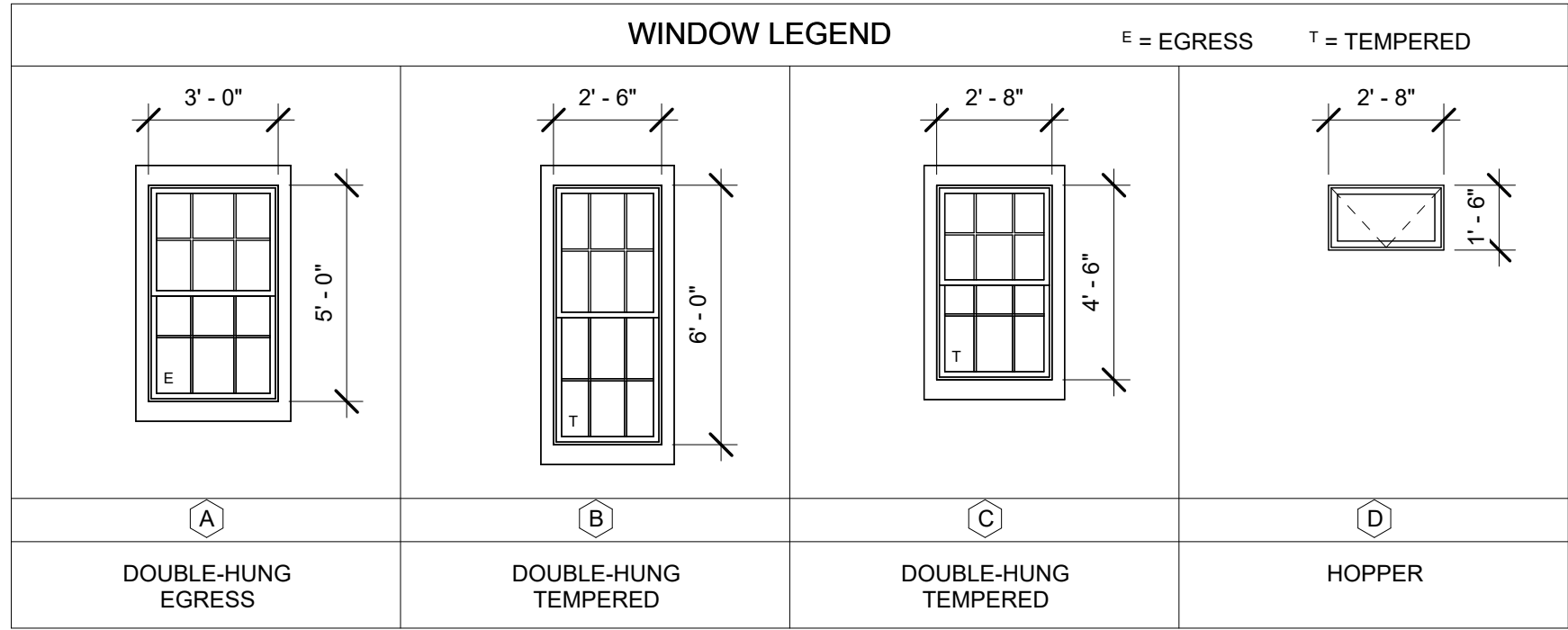
DOOR SCHEDULE									
Type Mark	LOCATION	DOOR STYLE	FRAME MATERIA L	DOOR MATERIAL	WIDTH	HEIGHT	DETAILS		
							HEAD	JAMB	SILL
1	ENTRY	SINGLE HINGED	WD	S.C.W.D. & GLASS	3' - 0"	7' - 0"	9/A-901BC	8/A-901BC	7/A-901BC
2	<varies>	<varies>	WD	S.C.W.D.	2' - 8"	6' - 8"	9/A-901BC	8/A-901BC	7/A-901BC
3	SPRINKLER ROOM	SINGLE HINGED	WD	S.C.W.D.	2' - 6"	6' - 8"	9/A-901BC	8/A-901BC	7/A-901BC
4	LINEN	SINGLE HINGED	WD	S.C.W.D.	2' - 0"	6' - 8"	9/A-901BC	8/A-901BC	7/A-901BC
5	CL.	SLIDING	WD	S.C.W.D.	4' - 0"	6' - 8"	9/A-901BC	8/A-901BC	7/A-901BC
6	HALF BATH	POCKET	WD	S.C. WD.	2' - 6"	6' - 8"	9/A-901BC	8/A-901BC	7/A-901BC



DOOR NOTES:

- 1.) DOOR FINISH & STYLE TO BE DETERMINED BY OWNER
- 2.) DOOR HARDWARE TO BE DETERMINED BY OWNER
- 3.) SEE FLOOR PLANS FOR DIRECTION OF SWING
- 4.) ALL GLASS IN DOORS TO BE TEMPERED

WINDOW SCHEDULE										
TYPE MARK	STYLE	ROUGH OPENING		MATERIAL	HEAD HEIGHT	SILL HEIGHT	DETAIL			Comments
		WIDTH	HEIGHT				HEAD	JAMB	SILL	
A	DOUBLE-HUNG	3' - 0"	5' - 0"	ALUMINUM	8' - 1"	3' - 1"	3/A-901BC	2/A-901BC	1/A-901BC	EGRESS
B	DOUBLE-HUNG	2' - 6"	6' - 0"	ALUMINUM	8' - 0"	2' - 0"	3/A-901BC	2/A-901BC	1/A-901BC	TEMPERED @ STAIR
C	DOUBLE-HUNG	2' - 8"	4' - 6"	ALUMINUM	8' - 0"	3' - 6"	3/A-901BC	2/A-901BC	1/A-901BC	
D	HOPPER	2' - 8"	1' - 6"	ALUMINUM	8' - 1"	6' - 7"	6/A-901BC	5/A-901BC	4/A-901BC	TEMPERED @ BATH



WINDOW NOTES:

- 1.) CONTRACTOR TO VERIFY SIZES OF EXISTING WINDOW OPENINGS TO REMAIN, PRIOR TO ORDERING OF WINDOWS
- 2.) BEDROOM WINDOWS TO COMPLY WITH EMERGENCY ESCAPE AND RESCUE MINIMUM OPENING AREA, HEIGHT & WIDTH AS REQUIRED BY THE IBC 2021 (MA AMENDMENTS). WINDOW TO COMPLY w/ MIN. NET CLEAR OPENING DIMENSIONS OF 20" X 24" & 5.7 NET S.F. SILL HEIGHT OF OPENING TO BE A MAXIMUM OF 3'-8" ABOVE THE FINISHED FLOOR.
- 3.) ALL WINDOWS THAT HAVE OPENINGS LESS THAN 36" ABOVE THE FINISHED FLOOR AND MORE THAN 72" ABOVE FINISHED GRADE SHALL HAVE A WINDOW OPENING CONTROL DEVICE. THE WINDOW OPENING CONTROL DEVICE, AFTER OPERATION TO RELEASE, THE CONTROL DEVICE ALLOWING THE WINDOW TO FULLY OPEN, SHALL NOT REDUCE THE MINIMUM NET CLEAR OPENING AREA OF TH WINDOW UNIT TO LESS THAN THE AREA REQUIRED FOR EMERGENCY ESCAPE AND RESCUE OPENING.
- 4.) WINDOWS SHALL HAVE EXTERIOR MUNTINS AS SHOWN ON THE ELEVATIONS & HALF SCREENS ON ALL WINDOWS.
- 5.) WINDOW SUBMITTAL TO BE SUBMITTED TO ARCHITECT PRIOR TO ORDERING OF WINDOWS.
- 6.) ALL FINISHES AND HARDWARE TO BE SELECTED BY OWNER.
- 7.) LOCATIONS REQUIRING TEMPERED GLASS TO BE VERIFIED PRIOR TO ORDERING WINDOWS.
- 8.) REFER TO HERS REPORT FOR U-VALUE AND SHGC

PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682

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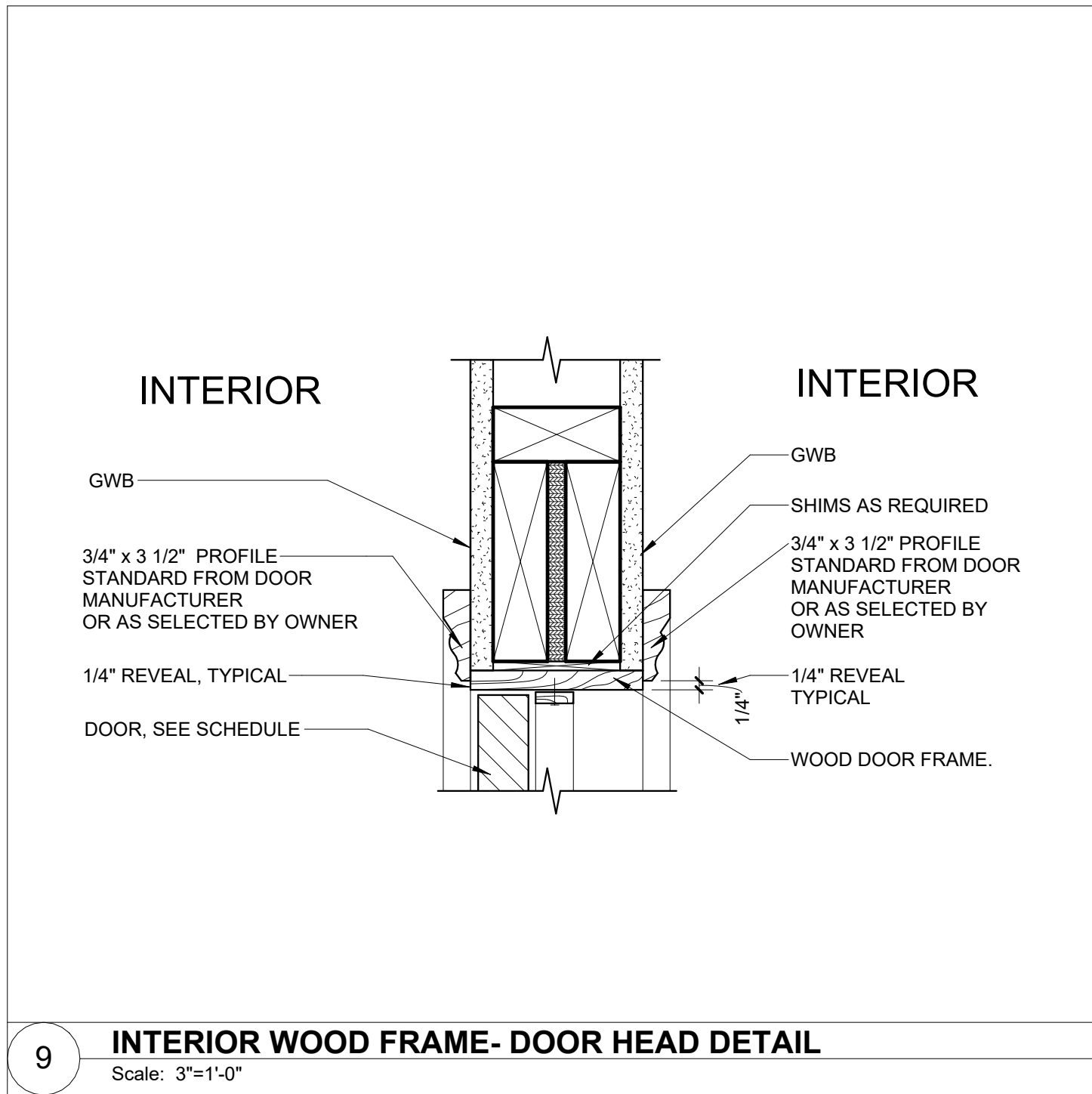
REVISIONS

No.	Description	Date

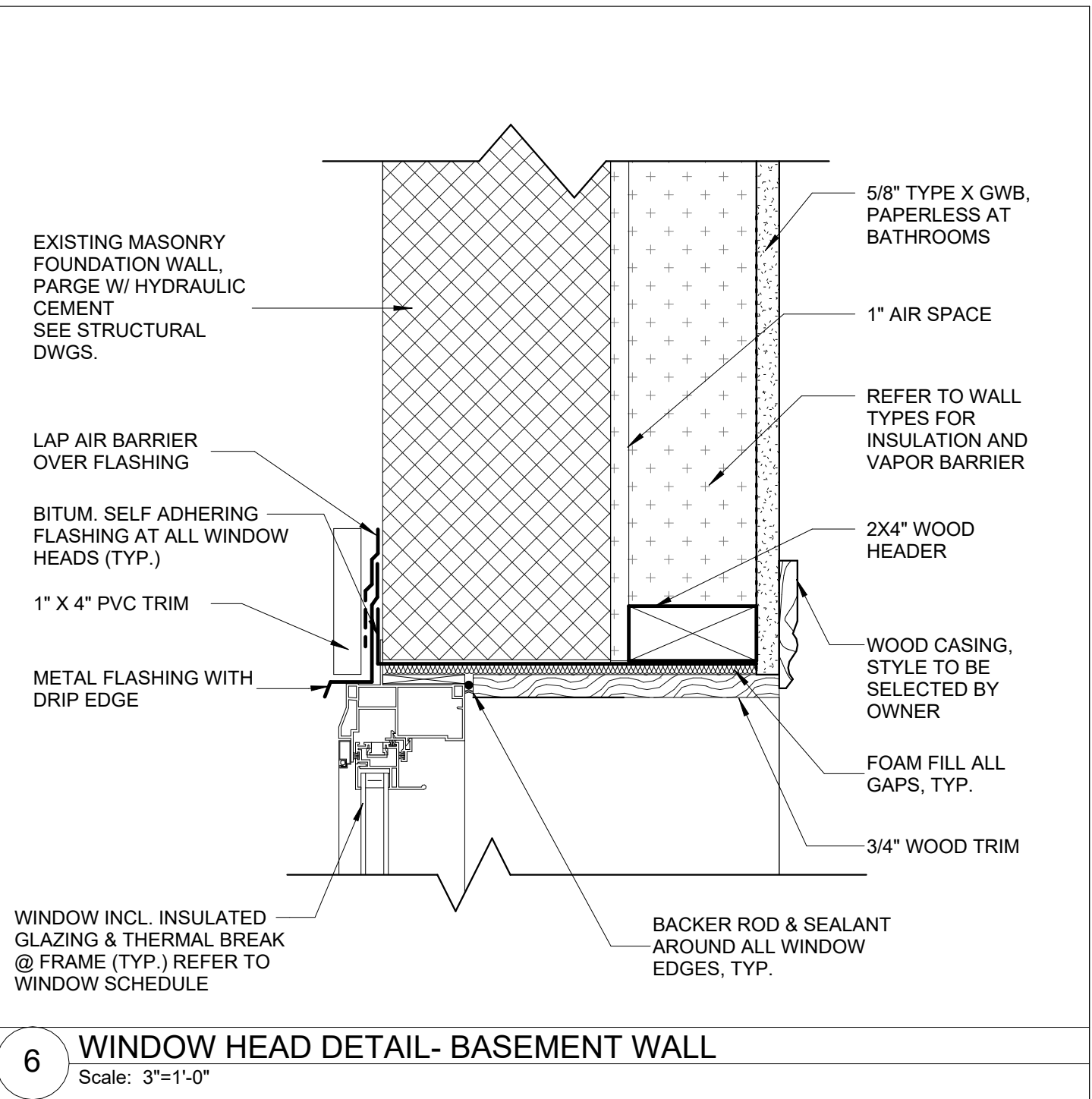
**DOOR &
WINDOW
SCHEDULE**

A-900

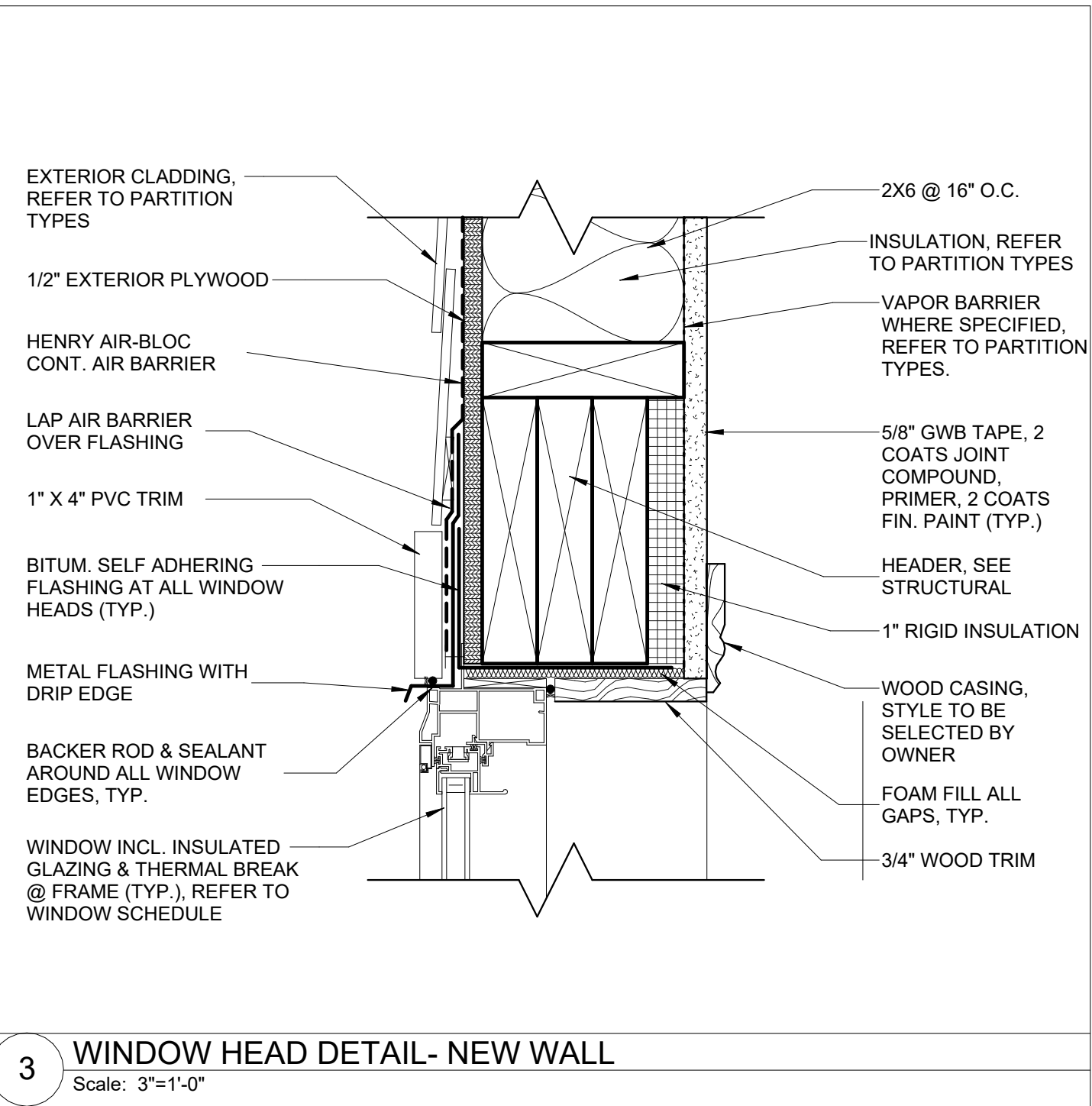
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



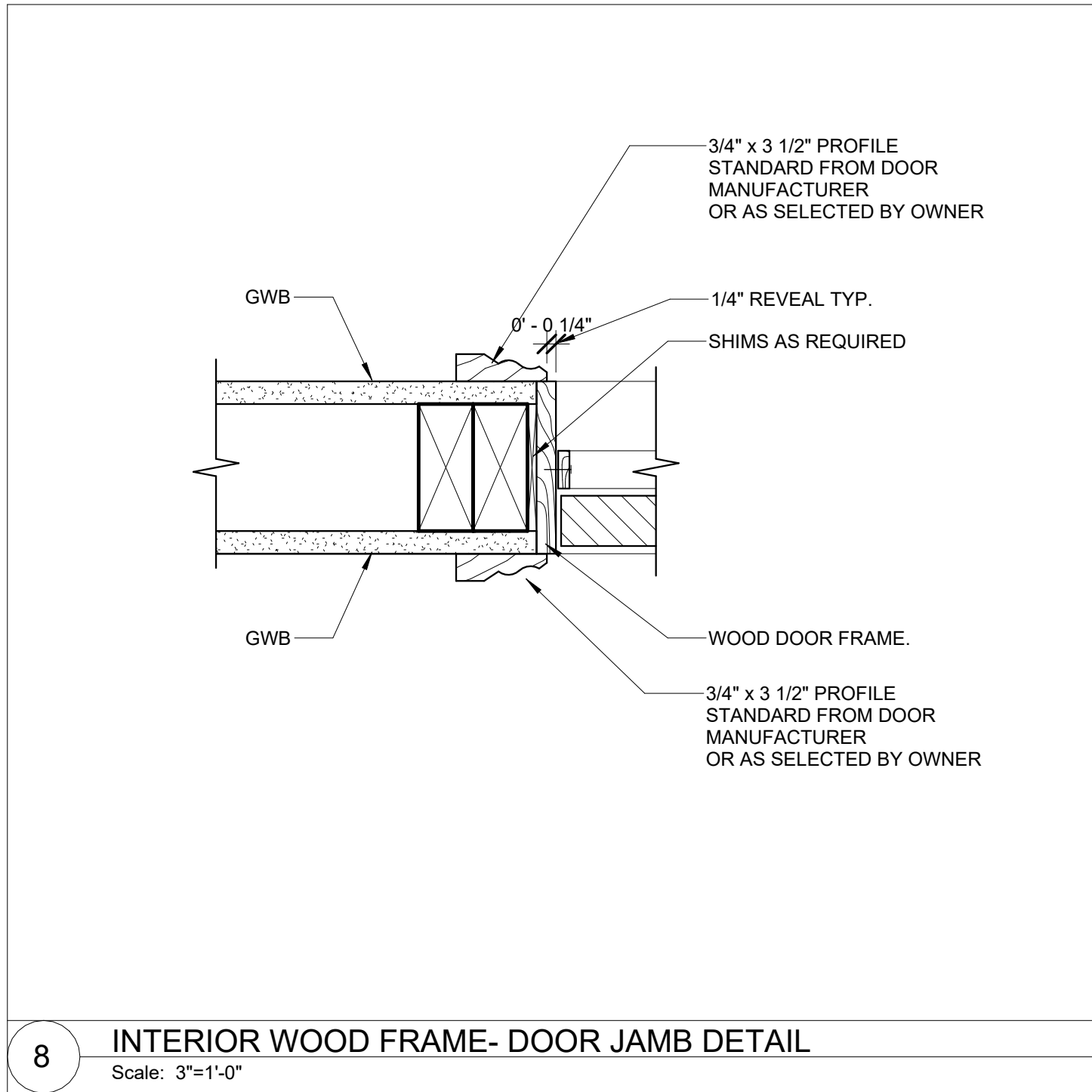
9 INTERIOR WOOD FRAME- DOOR HEAD DETAIL
Scale: 3"=1'-0"



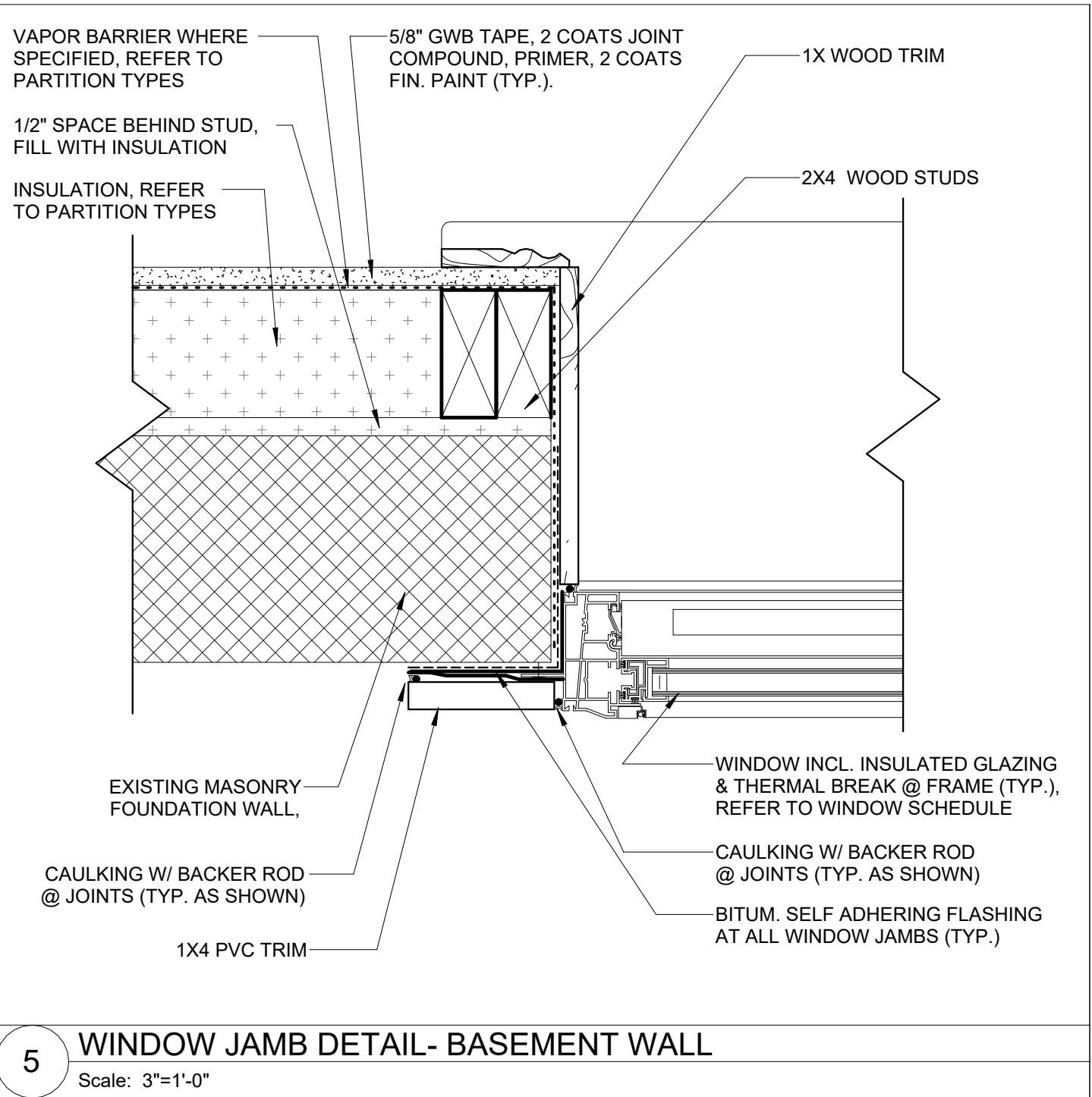
6 WINDOW HEAD DETAIL- BASEMENT WALL
Scale: 3"=1'-0"



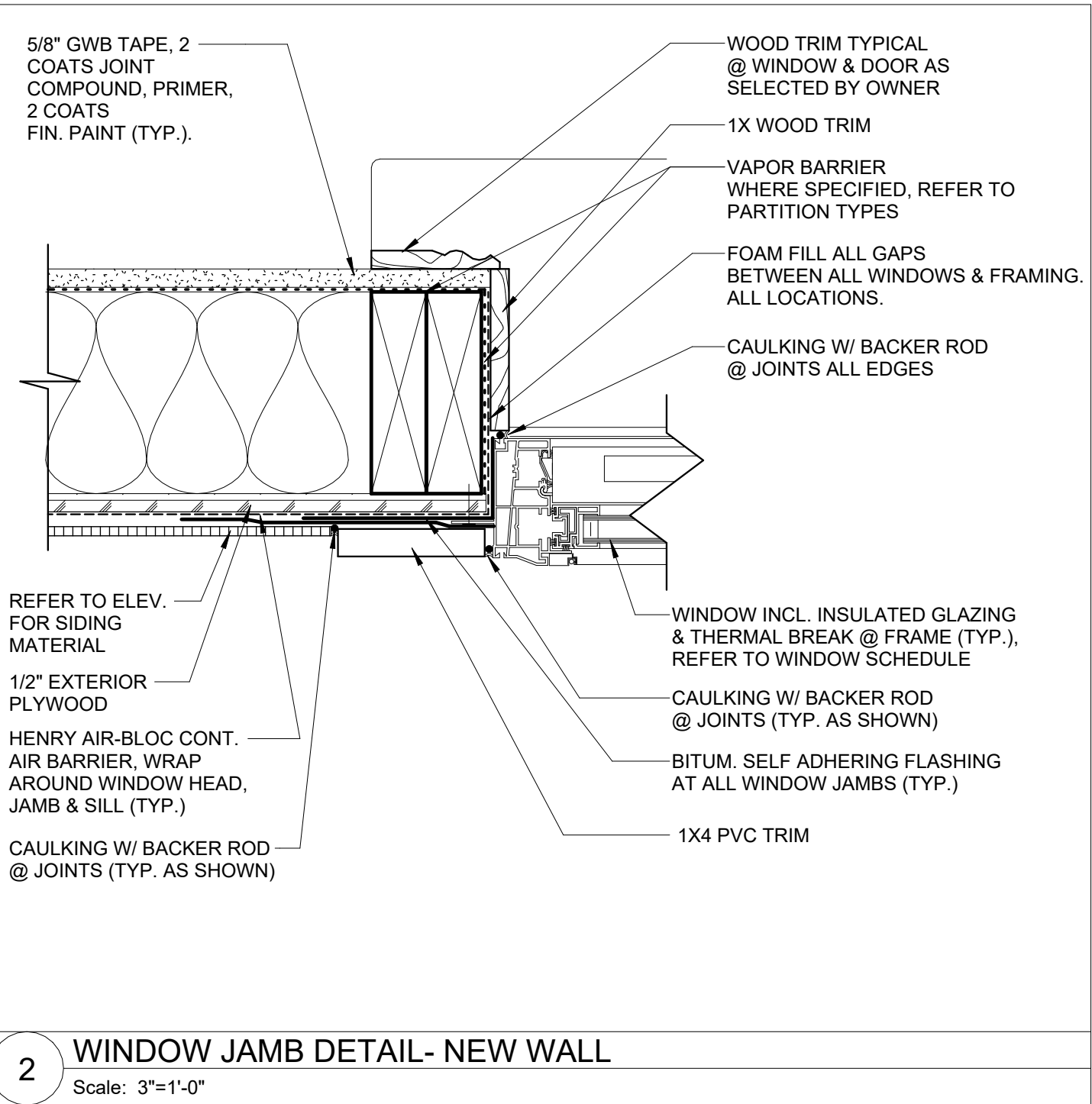
3 WINDOW HEAD DETAIL- NEW WALL
Scale: 3"=1'-0"



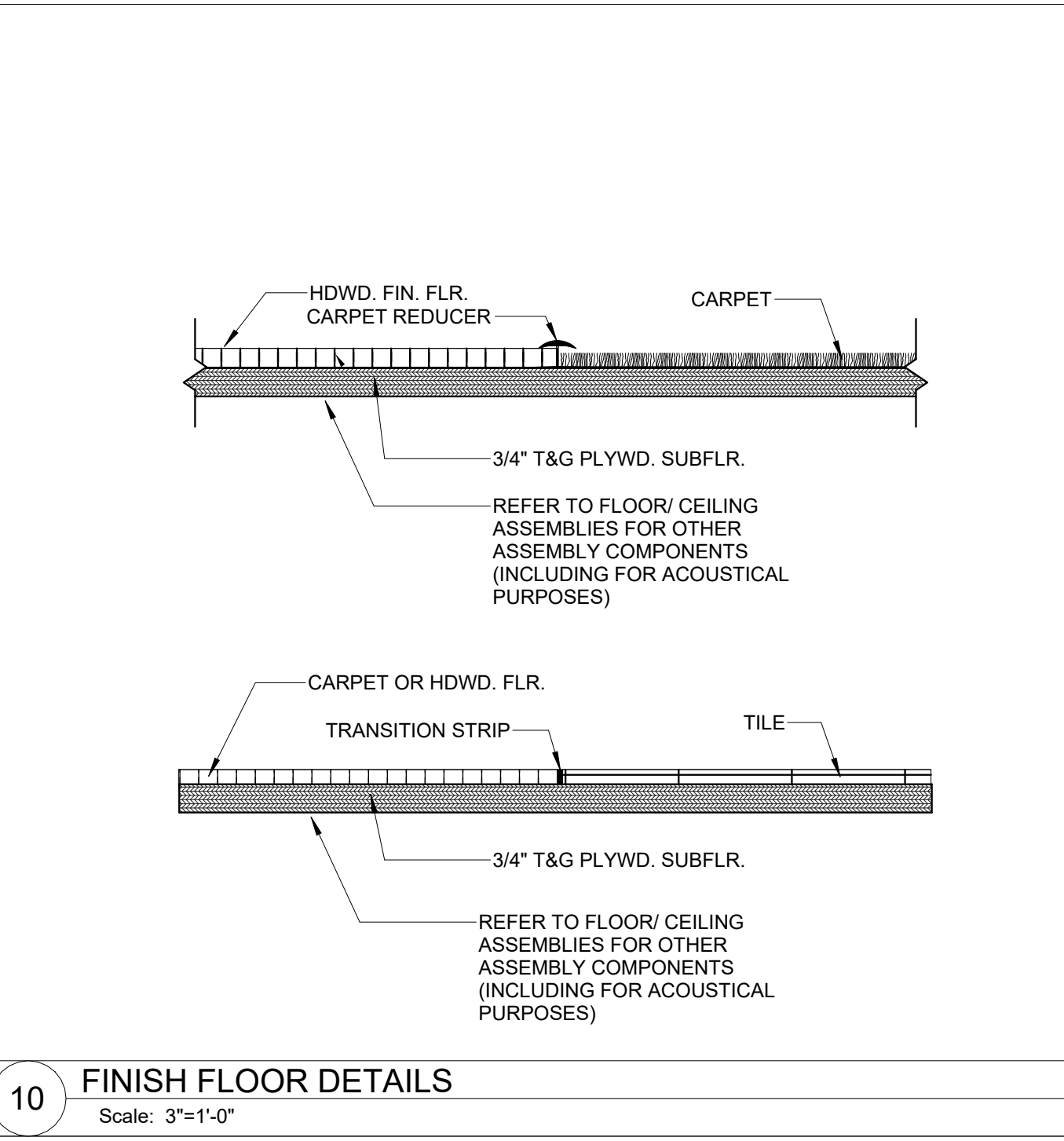
8 INTERIOR WOOD FRAME- DOOR JAMB DETAIL
Scale: 3"=1'-0"



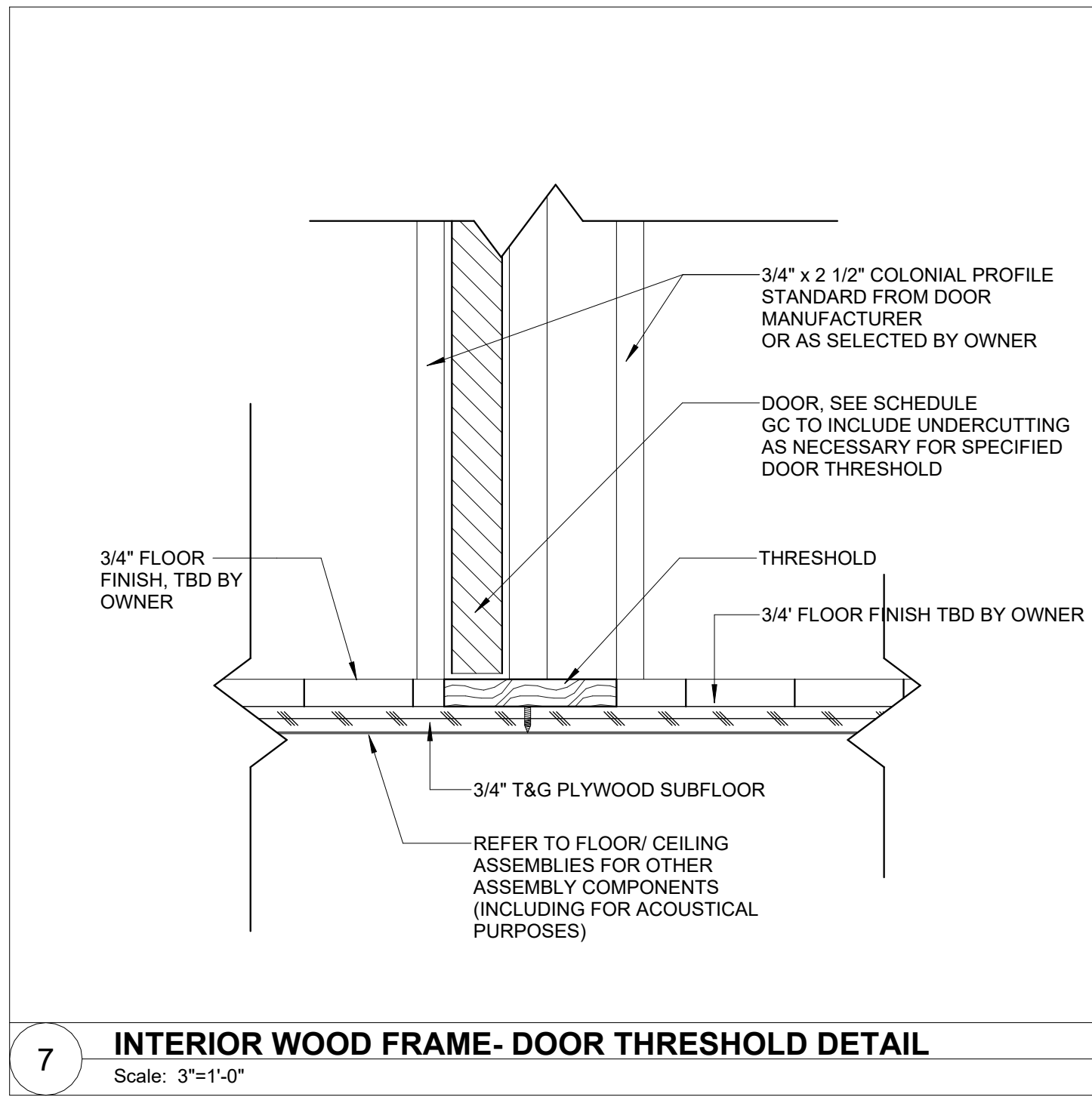
5 WINDOW JAMB DETAIL- BASEMENT WALL
Scale: 3"=1'-0"



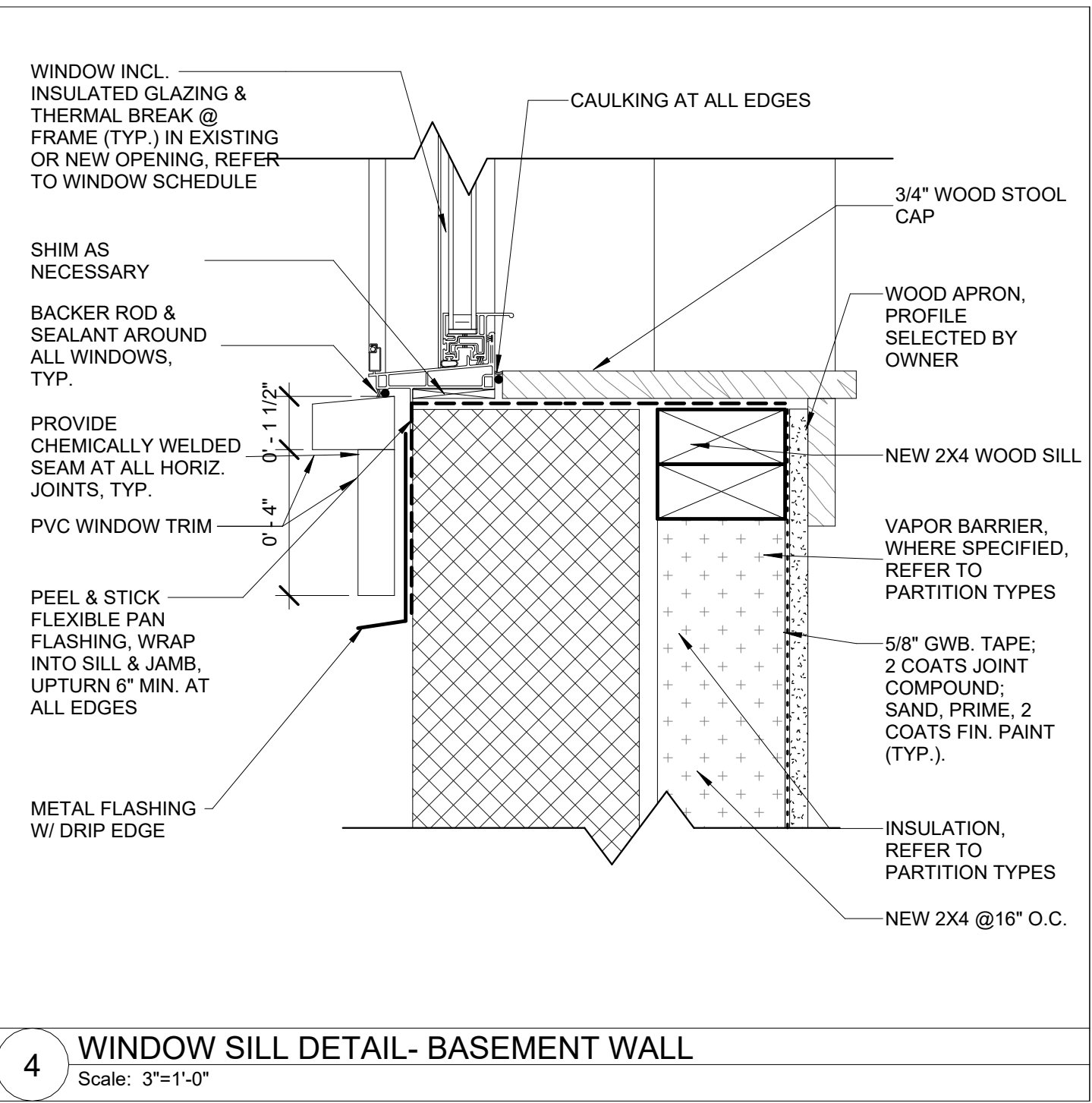
2 WINDOW JAMB DETAIL- NEW WALL
Scale: 3"=1'-0"



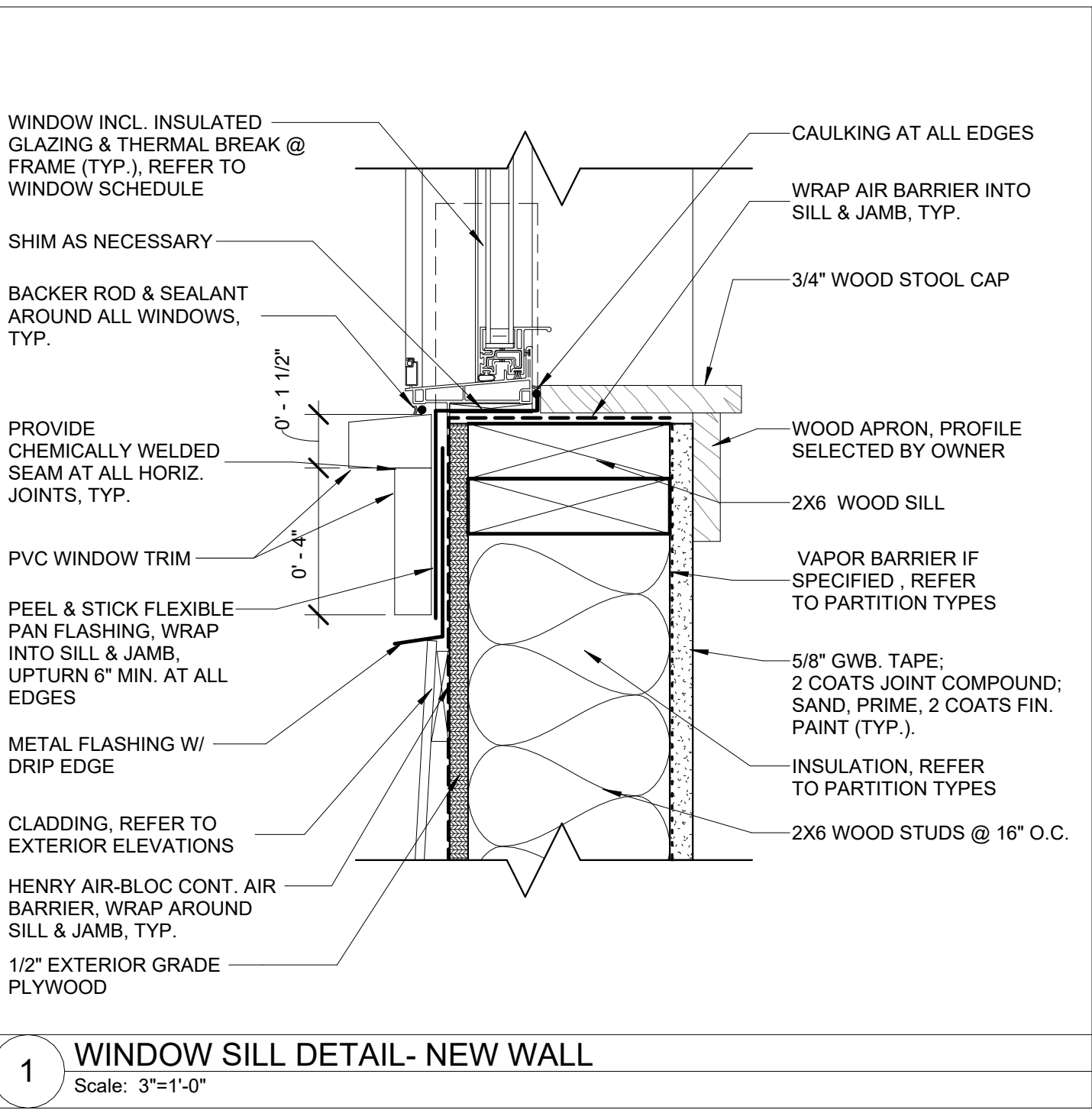
10 FINISH FLOOR DETAILS
Scale: 3"=1'-0"



7 INTERIOR WOOD FRAME- DOOR THRESHOLD DETAIL
Scale: 3"=1'-0"



4 WINDOW SILL DETAIL- BASEMENT WALL
Scale: 3"=1'-0"



1 WINDOW SILL DETAIL- NEW WALL
Scale: 3"=1'-0"

PROJECT NAME
**21 COLLEGE HILL
ROAD BACKYARD
COTTAGE**

PROJECT ADDRESS
**21 COLLEGE HILL
ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

THIS PROJECT IS CONTROLLED
CONSTRUCTION: G.C. TO CONTACT
ARCHITECT AT COMMENCEMENT OF
WORK TO COORDINATE
CONSTRUCTION OBSERVATIONS.

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REGISTRATION



Project number 25092
Date 01/30/2026
Drawn by KDI
Checked by Checker
Scale 3" = 1'-0"

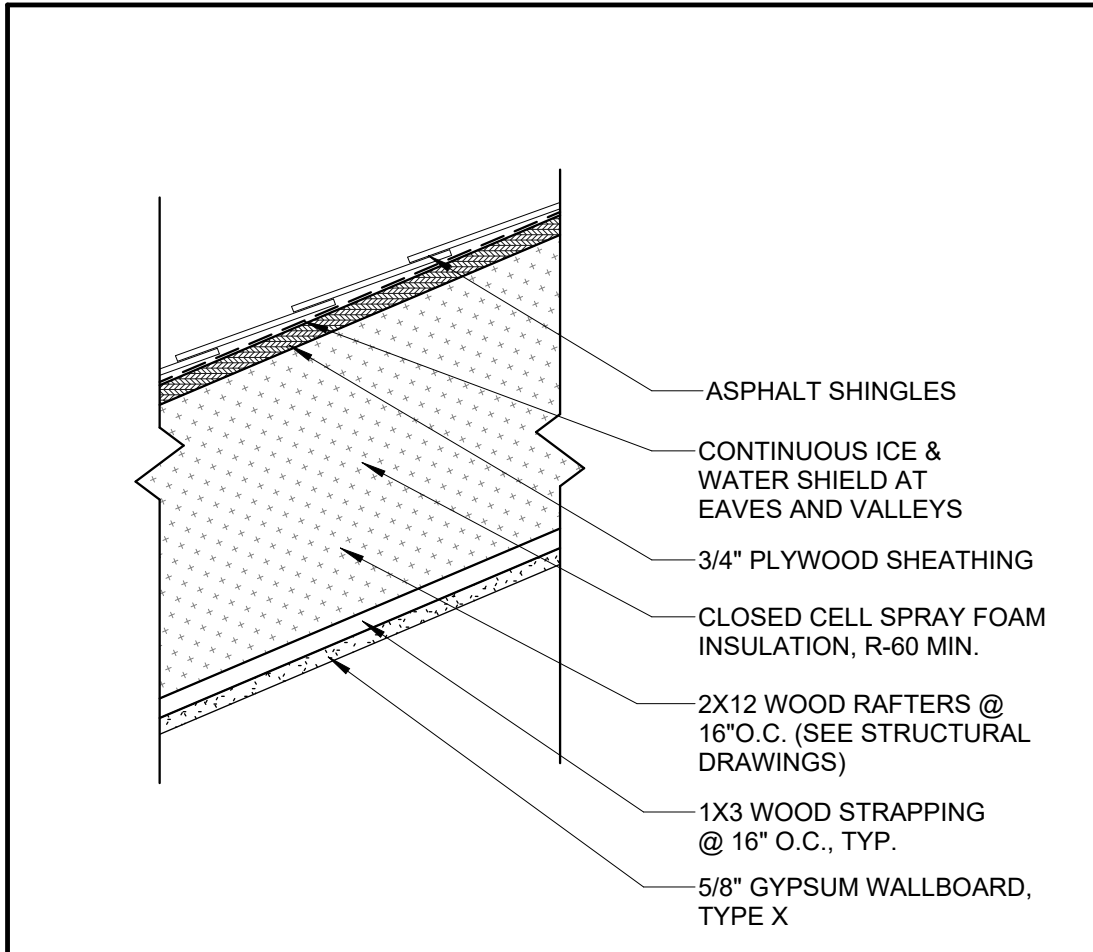
REVISIONS

No.	Description	Date

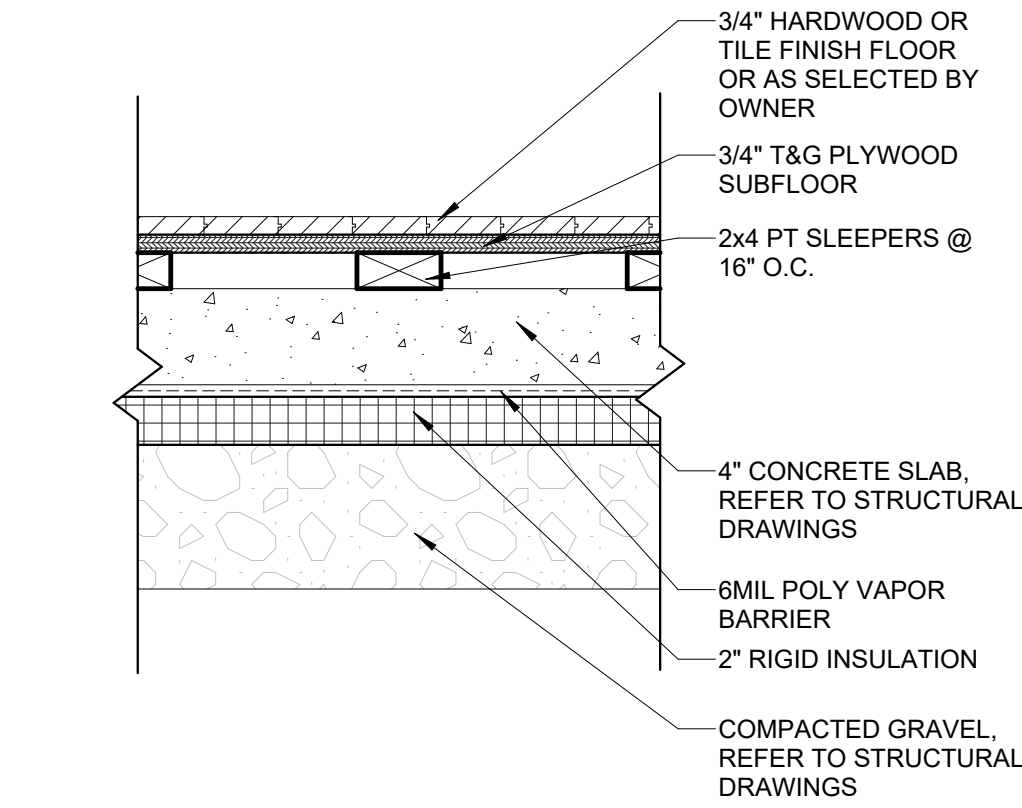
**DOOR, WINDOW
& FINISH FLOOR
DETAILS**

A-901

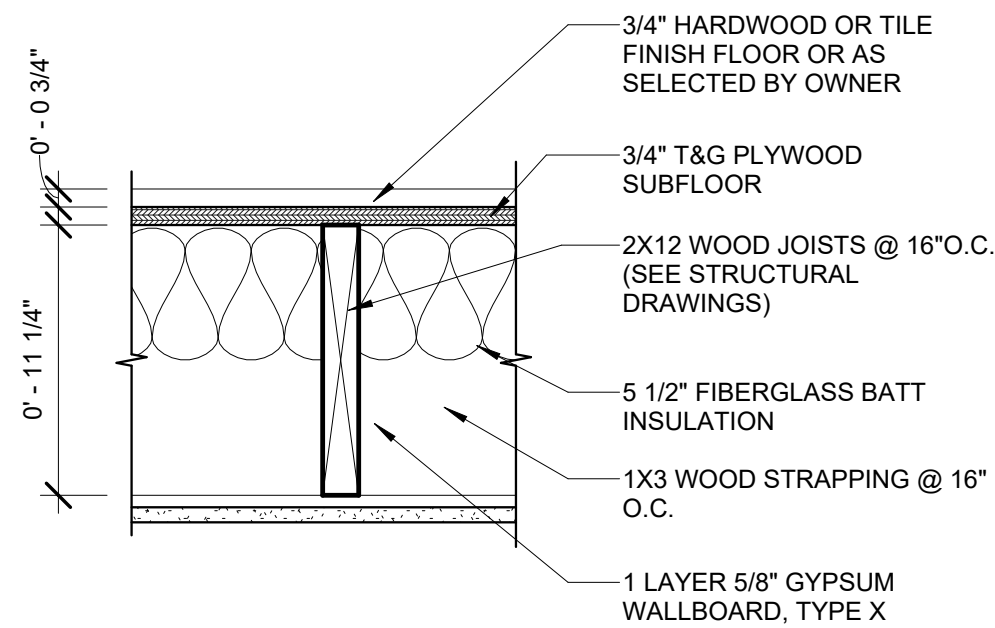
21 COLLEGE HILL ROAD
BACKYARD COTTAGE



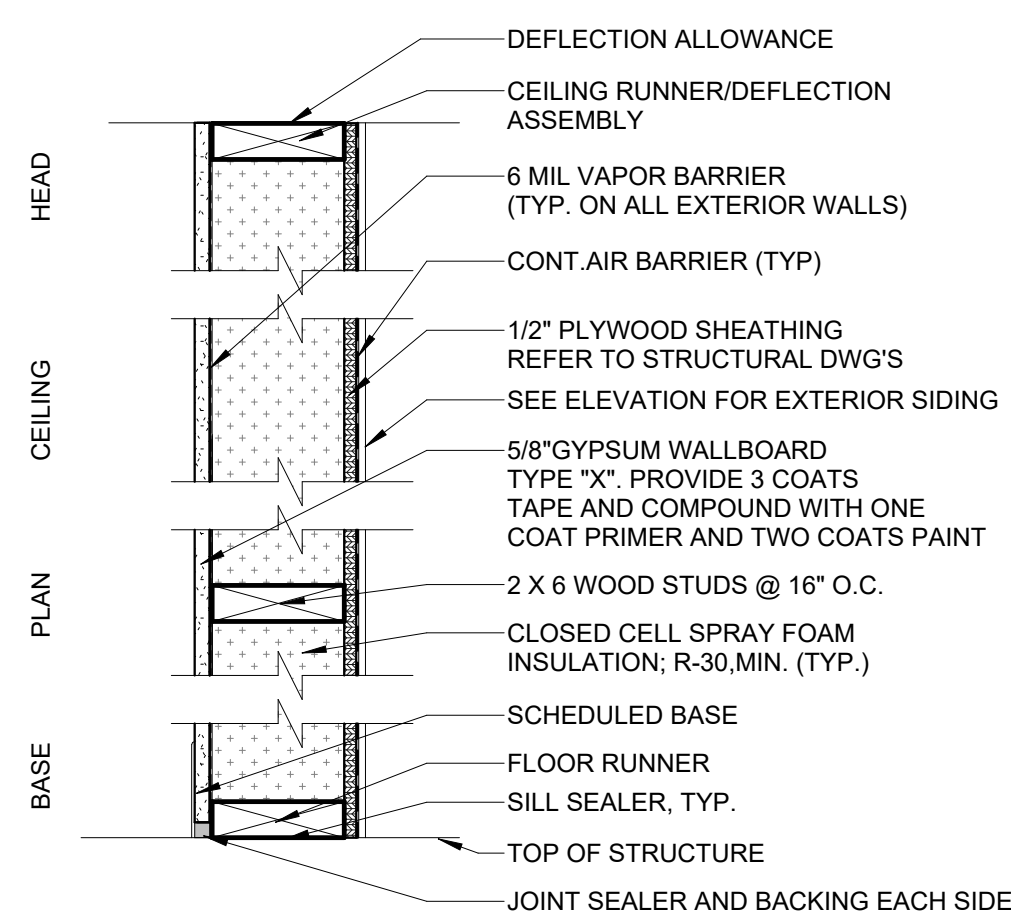
R1 ROOF/CEILING ASSEMBLY (2 X 12 JOISTS)
SCALE: 1-1/2" = 1'-0"



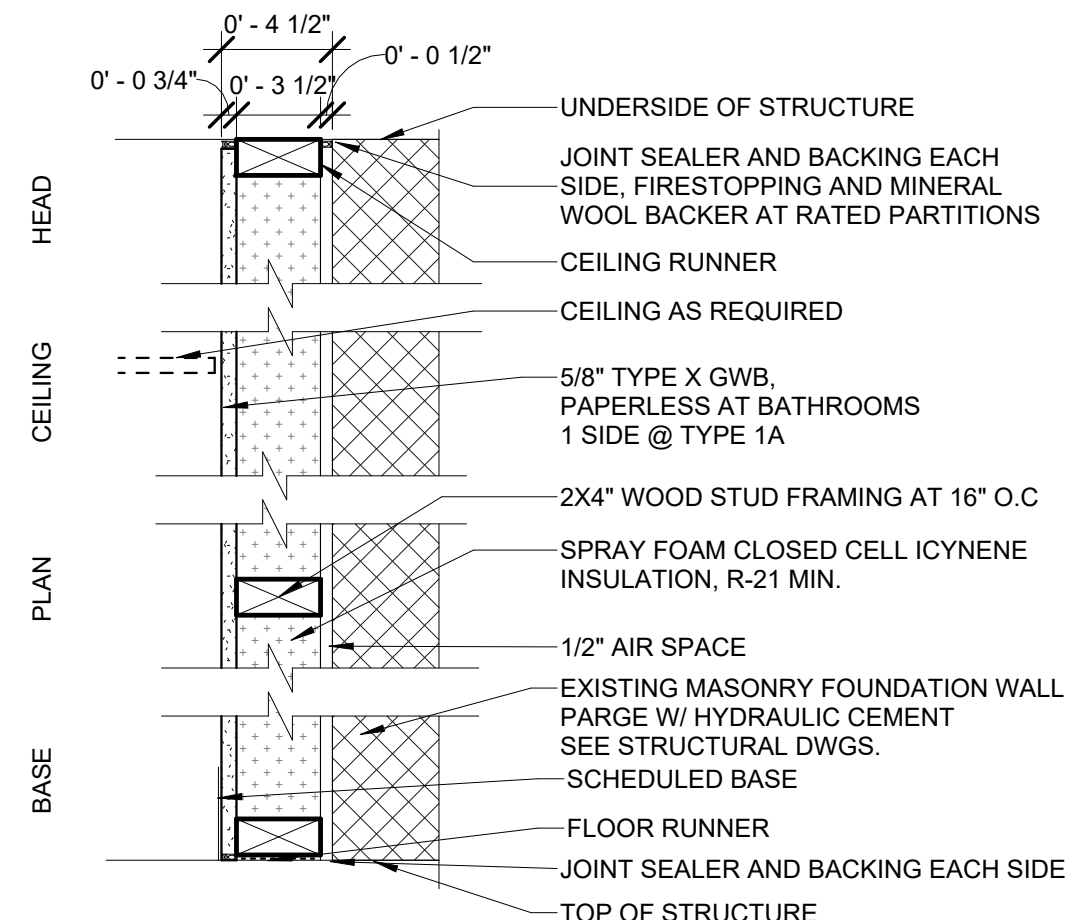
F2 NEW CONCRETE FLOOR ASSEMBLY
SCALE: 1-1/2" = 1'-0"



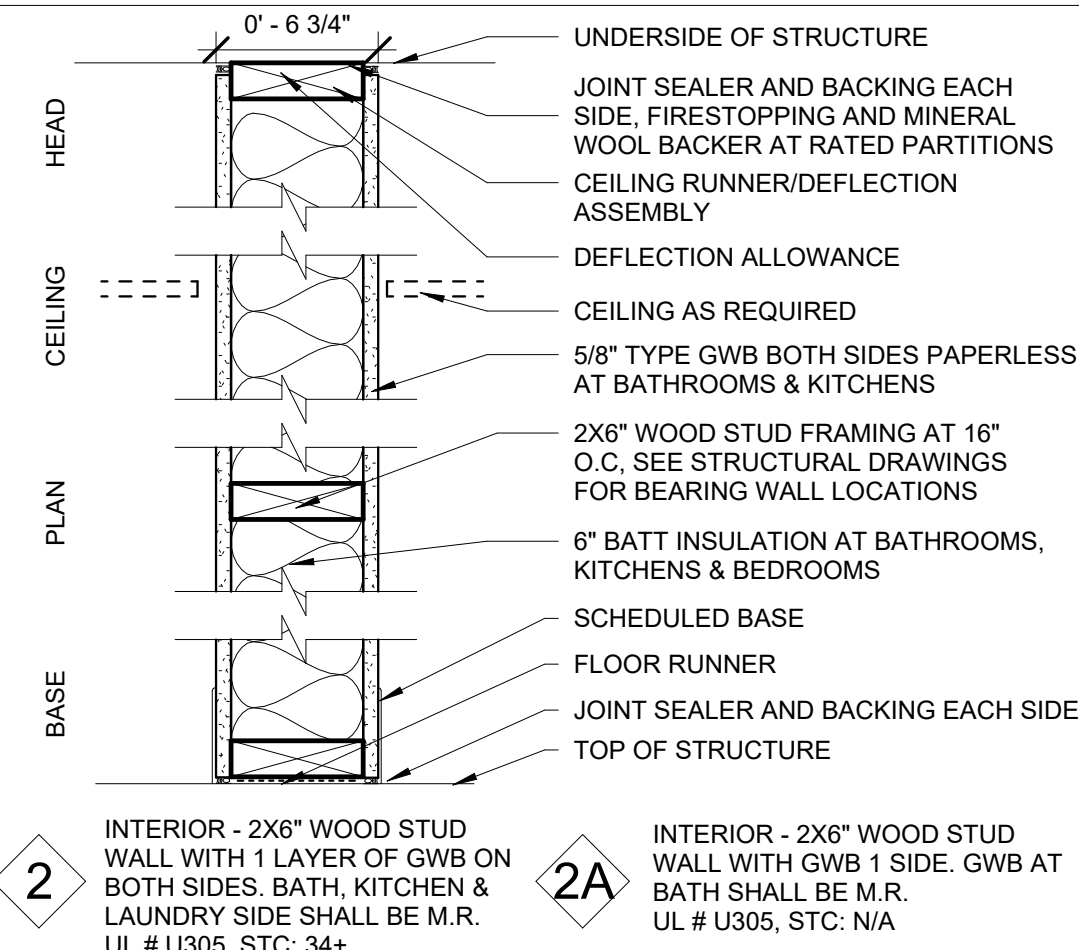
F1 NEW FLOOR/CEILING ASSEMBLY
SCALE: 1-1/2" = 1'-0"



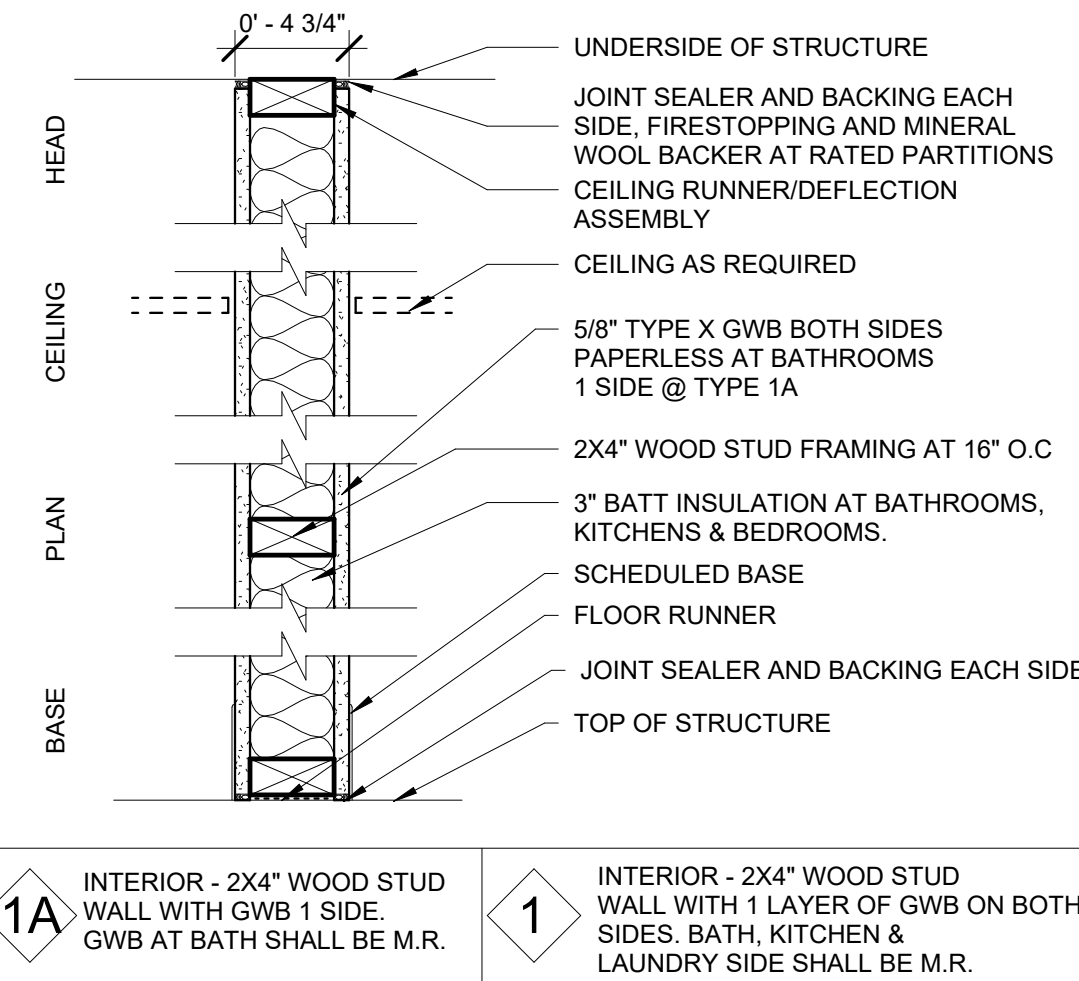
4 EXTERIOR WALL TYPE- NEW WALL
SCALE: 1-1/2" = 1'-0"



3 FURRED MASONRY WALL
SCALE: 1-1/2" = 1'-0"



2 6" STUD PARTITION TYPE
SCALE: 1-1/2" = 1'-0"



1A INTERIOR - 2X4" WOOD STUD WALL WITH 1 LAYER OF GWB ON BOTH SIDES. BATH, KITCHEN & LAUNDRY SIDE SHALL BE M.R.
1 INTERIOR - 2X4" WOOD STUD WALL WITH 1 LAYER OF GWB ON BOTH SIDES. BATH, KITCHEN & LAUNDRY SIDE SHALL BE M.R.

1 TYPICAL 2X4" STUD PARTITION TYPE
SCALE: 1-1/2" = 1'-0"

PROJECT NAME
21 COLLEGE HILL ROAD BACKYARD COTTAGE

PROJECT ADDRESS
**21 COLLEGE HILL ROAD
SOMERVILLE, MA**

CLIENT

JONATHAN NYBERG

ARCHITECT



KHALSA DESIGN, INC.
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143

TELEPHONE: 617-591-8682

CONSULTANTS:

THIS PROJECT IS CONTROLLED CONSTRUCTION: G.C. TO CONTACT ARCHITECT AT COMMENCEMENT OF WORK TO COORDINATE CONSTRUCTION OBSERVATIONS.

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REGISTRATION



Project number 25092
Date 01/30/2026
Drawn by RR
Checked by WC
Scale 1 1/2" = 1'-0"

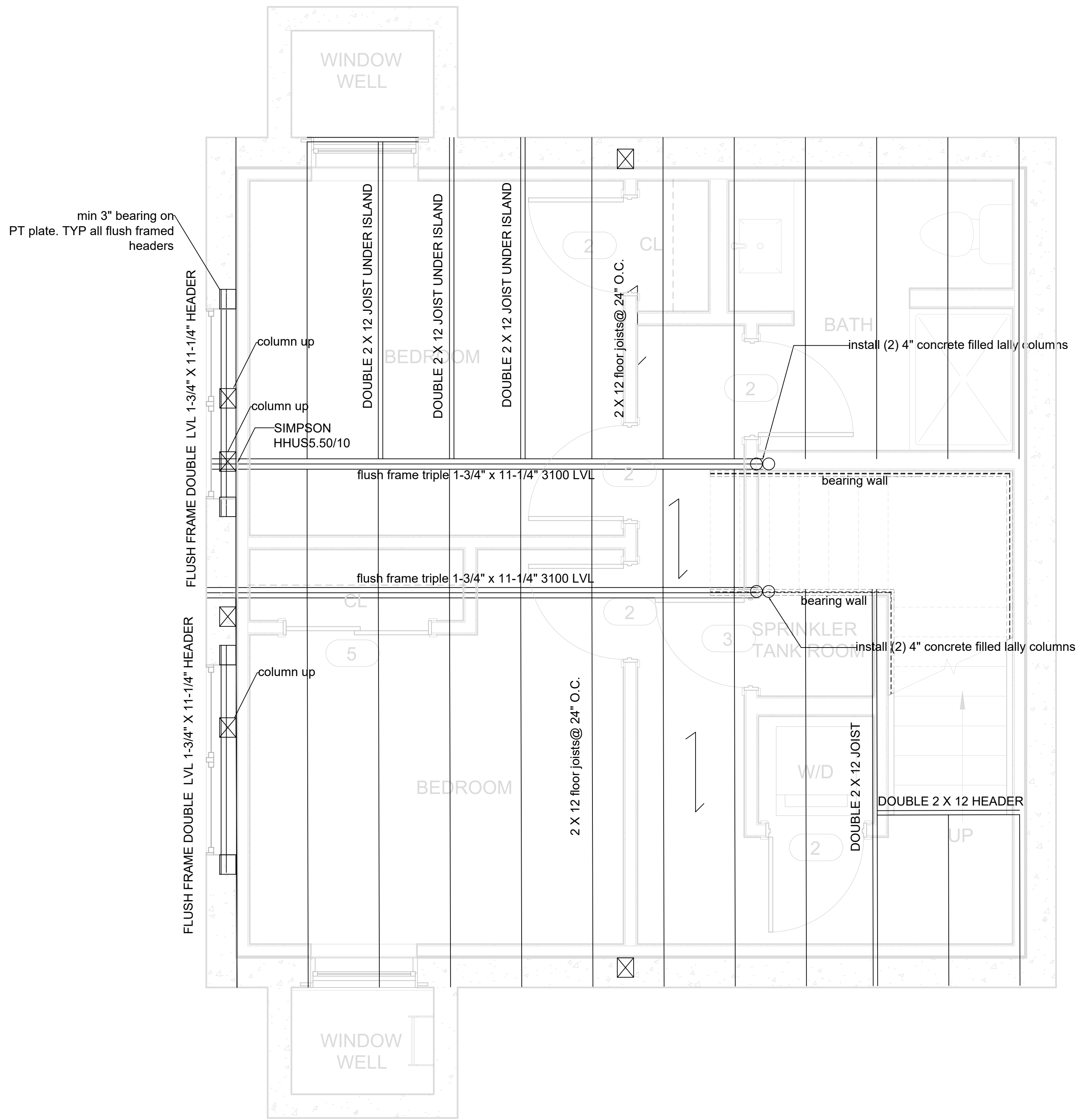
REVISIONS

No.	Description	Date

PARTITION TYPES

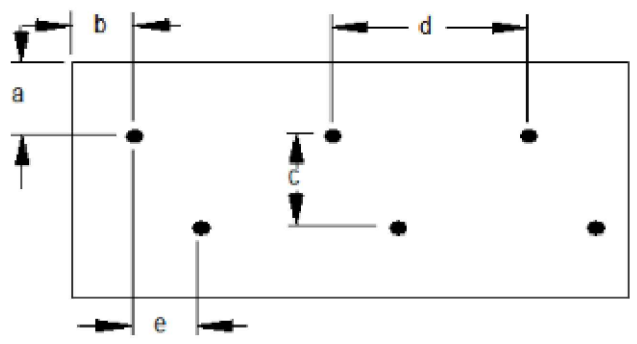
A-910

21 COLLEGE HILL ROAD
BACKYARD COTTAGE



BASEMENT FRAMING LAYOUT

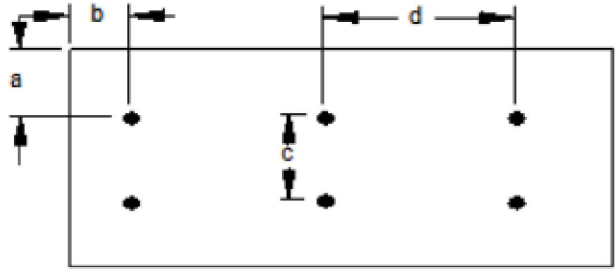
Connection Diagram: Full Length of Member



a minimum = 1-1/2"
b minimum = 4"
c = 8-1/4"
d = 24"
e minimum = 1"
Calculated Side Load = 550.0 lb/ft
Install screws from both sides, staggering screws by half of the spacing to avoid splitting.
Connectors are: SDS 1/4 x 4-1/2

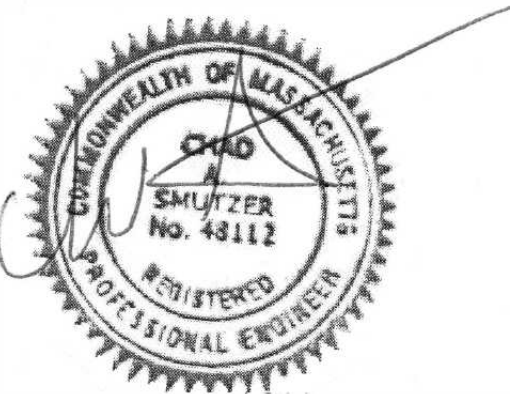
triple 1-3/4" x 11-1/4" lvl detail

Connection Diagram: Full Length of Member



a minimum = 1-1/2"
b minimum = 6"
c = 8-1/4"
d = 24"
e minimum = 1"
Calculated Side Load = 0.0 lb/ft
Connectors are: SDW22338

double 1-3/4" x 11-1/4" lvl detail



General Notes

No.	Revision/Issue	Date

Firm Name and Address

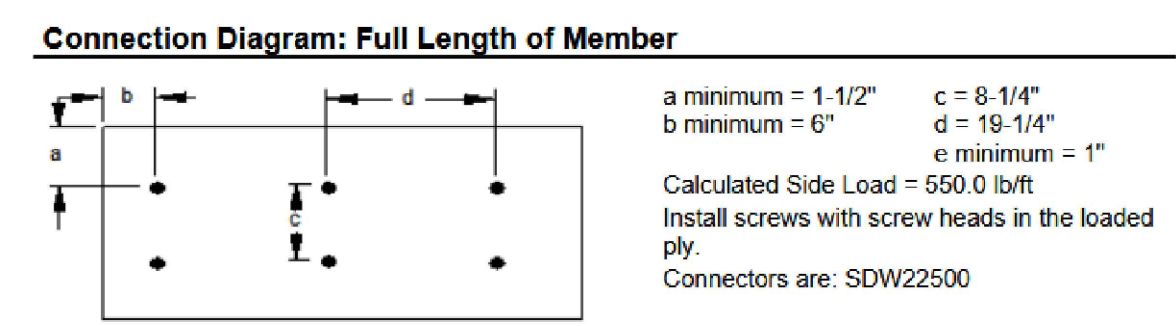
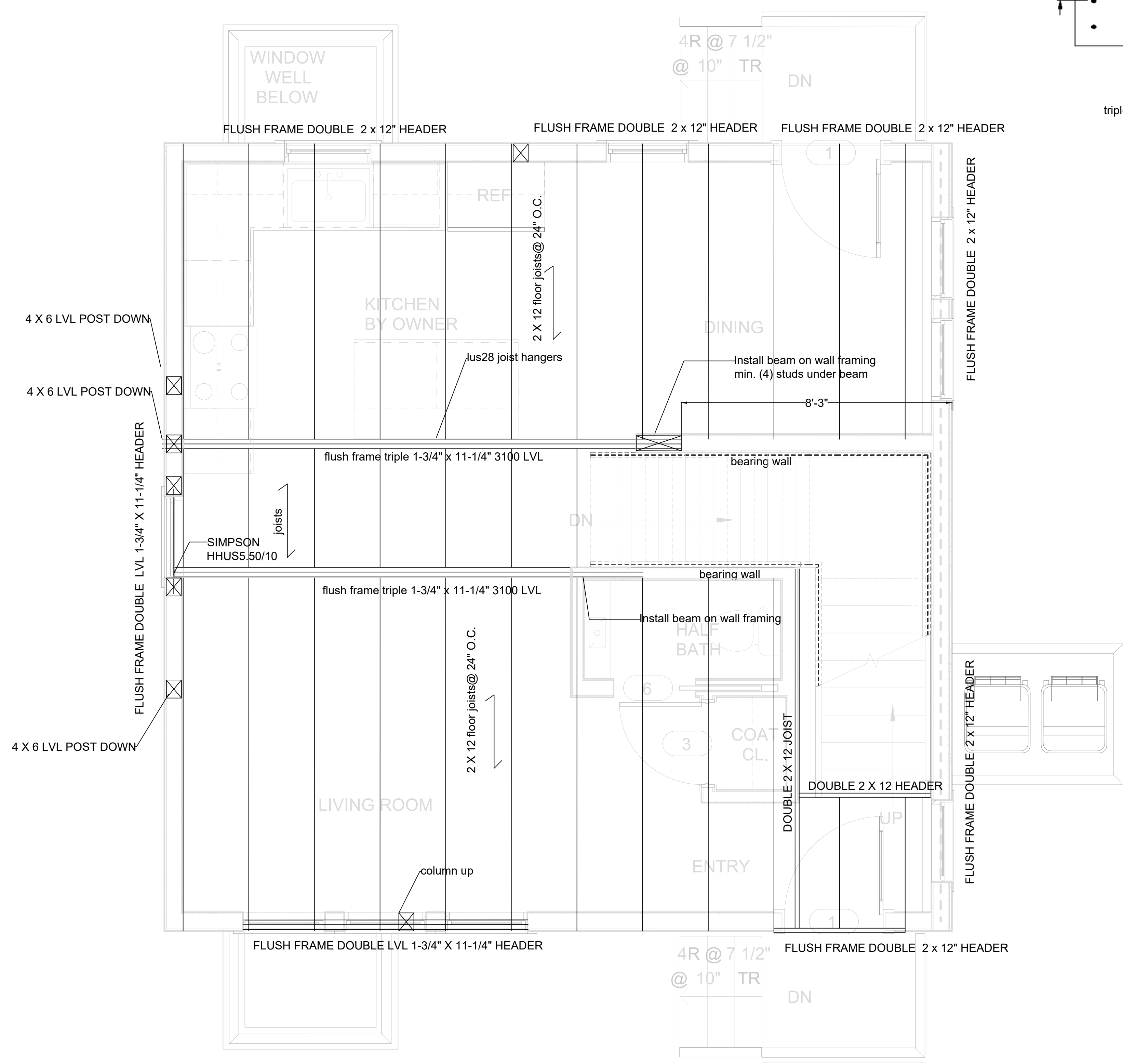
CHAD SMUTZER, PE
PO BOX 732
WESTFORD, MA 01886

Project Name and Address

COTTAGE

21 COLLEGE HILL RD
SOMERVELLE, MA

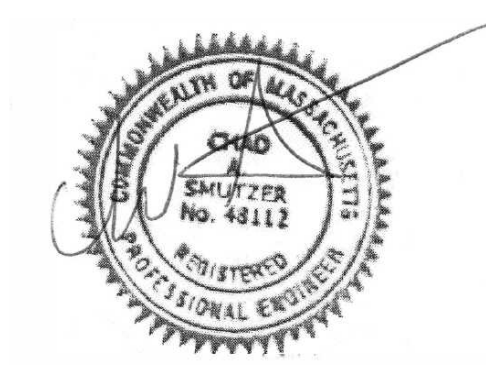
Project	Sheet
Date 1/8/2026	S1
Scale As Noted	



triple 1-3/4" x 11-1/4" lvl detail

FLOOR JOISTS
12 PSF DEAD LOAD
40 PSF LIVE LOAD

1ST FLOOR FRAMING LAYOUT



General Notes

No.	Revision/Issue	Date

Firm Name and Address

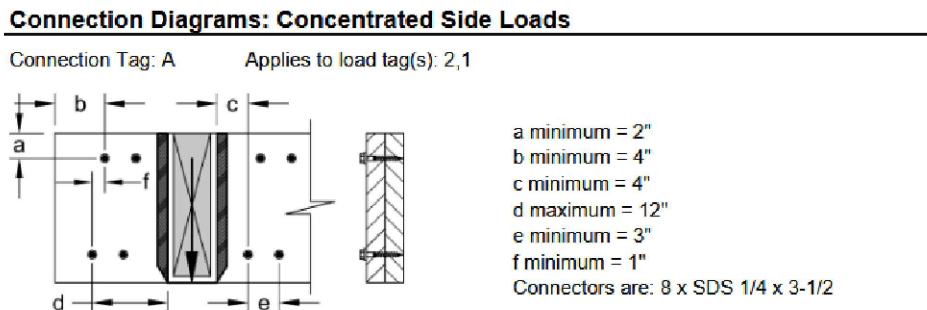
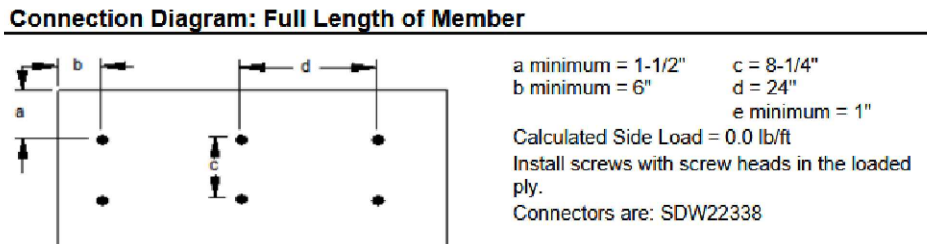
CHAD SMUTZER, PE
PO BOX 732
WESTFORD, MA 01886

Project Name and Address

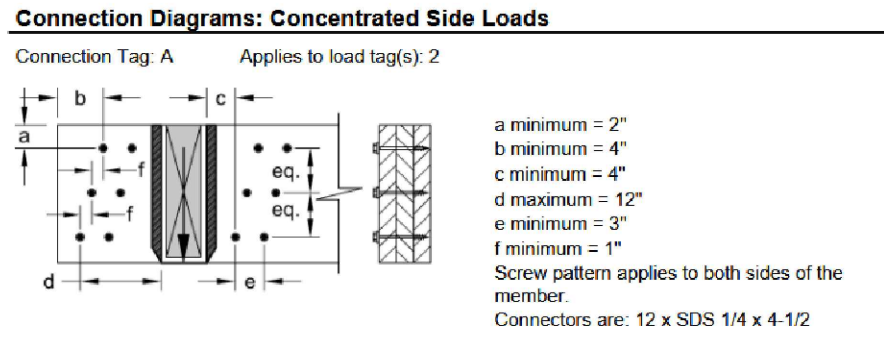
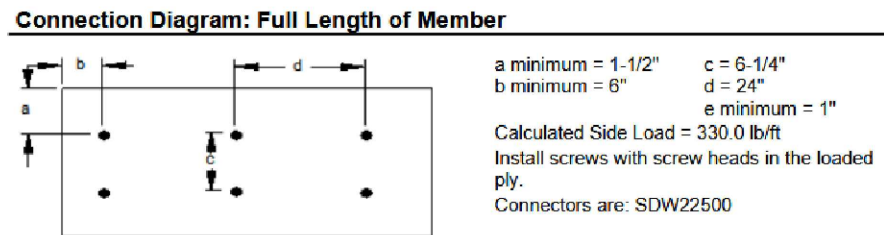
COTTAGE

21 COLLEGE HILL RD
SOMERVELLE, MA

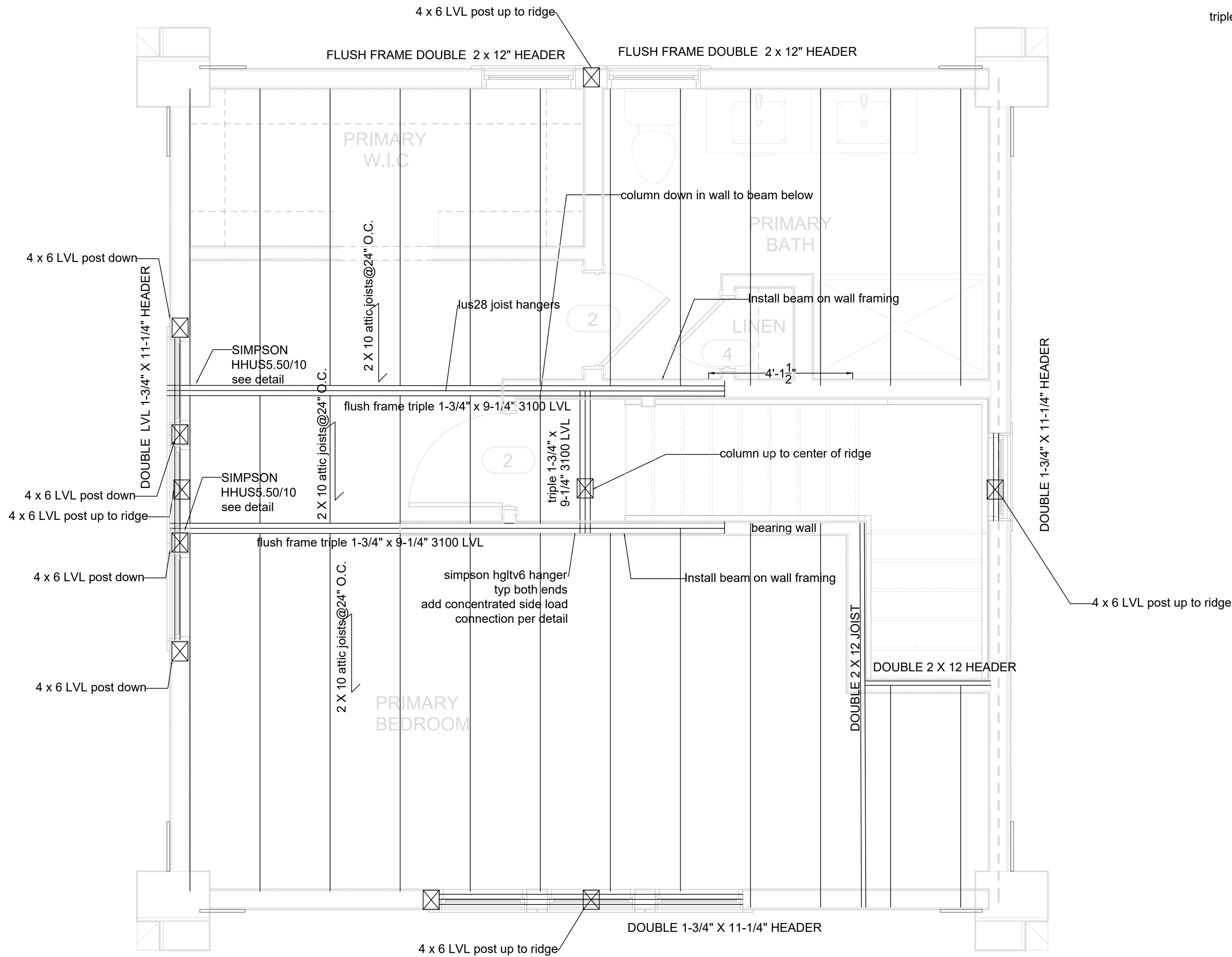
Project	Sheet
Date 1/8/2026	S2
Scale As Noted	



header connection detail

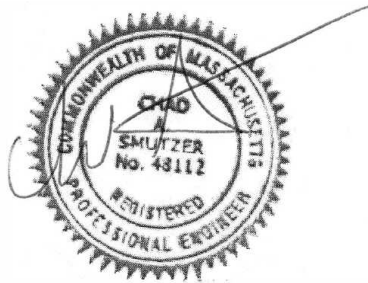


triple 1-3/4" x 9-1/4" lvl detail



ATTIC FRAMING LAYOUT

ATTIC FLOOR JOISTS
10 PSF DEAD LOAD
20 PSF LIVE LOAD



General Notes

No.	Revision/Issue	Date
-----	----------------	------

Firm Name and Address

CHAD SMUTZER, PE
PO BOX 732
WESTFORD, MA 01886

Project Name and Address

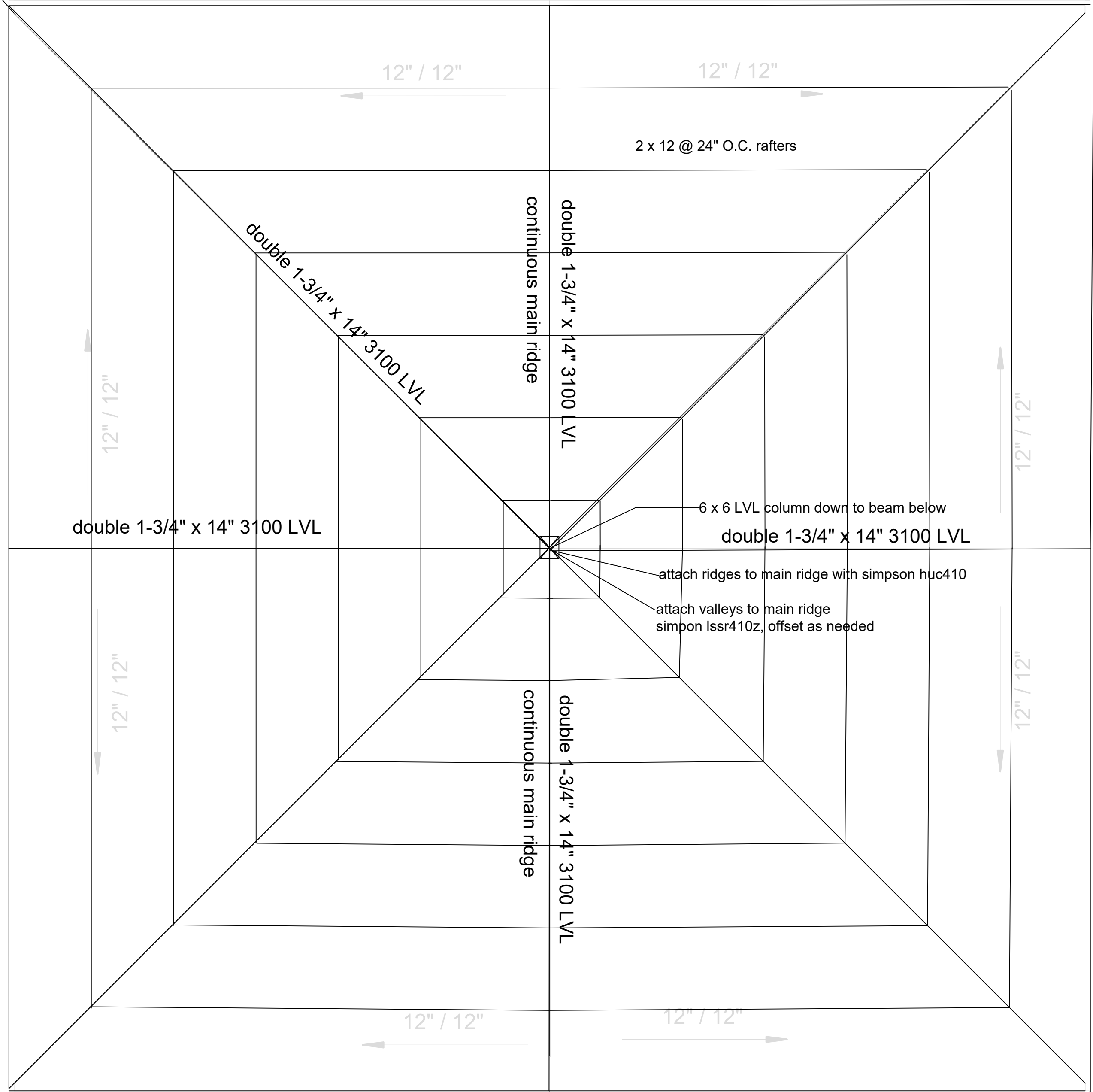
COTTAGE

21 COLLEGE HILL RD
SOMERVELLE, MA

Project	Sheet
Date	S3
1/8/2026	
Scale	As Noted

simpson HCP4Z corner plate
typ all (4) corners

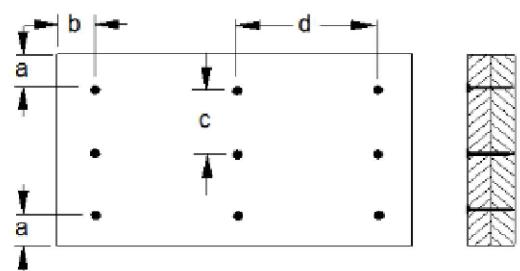
attach rafters to top plate with Simpson H2A typ.



ground snow load 40 psf
roof dead load 15 psf

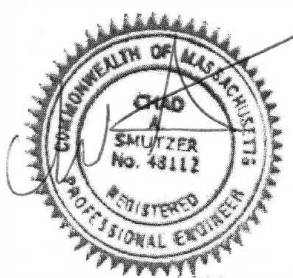
ROOF FRAMING LAYOUT

Connection Diagram: Full Length of Member



valley lvl connection details

a minimum = 2" c = 5"
b minimum = 3" d = 24"
Calculated Side Load = 0.0 lb/ft
Connectors are: 3-1/4 in. Pneumatic Gun
Nails



General Notes

No.	Revision/Issue	Date

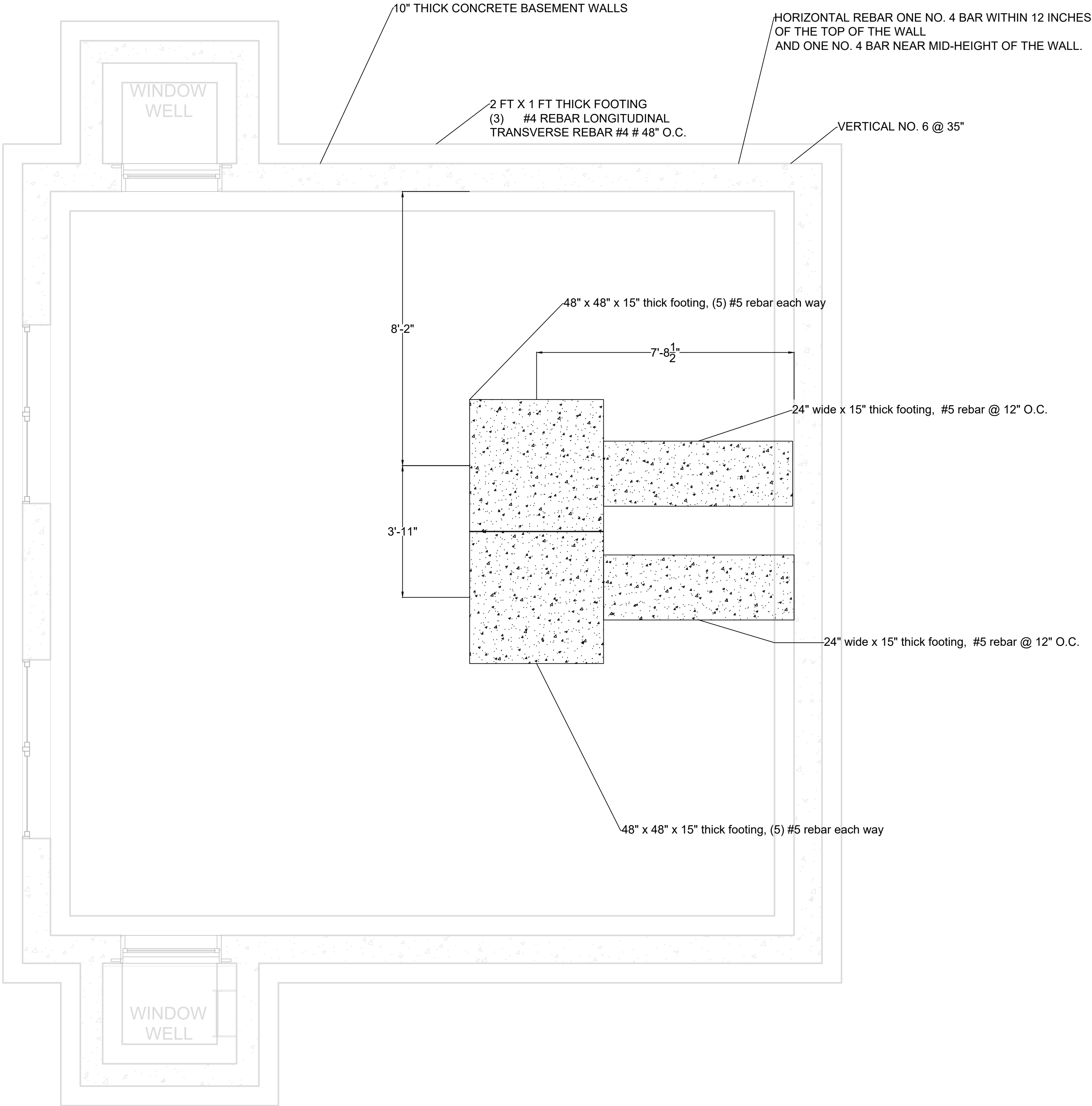
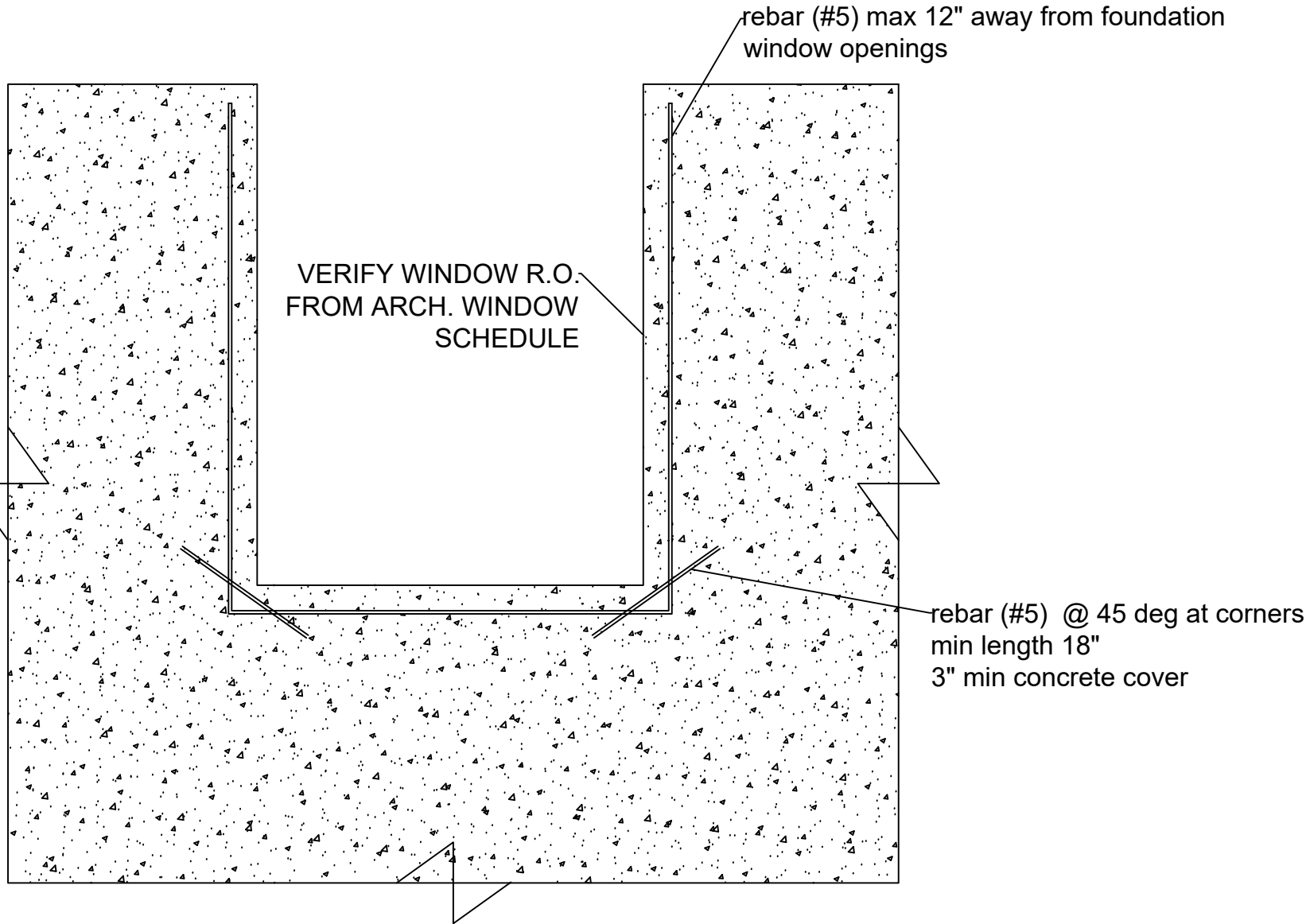
Firm Name and Address
CHAD SMUTZER, PE
PO BOX 732
WESTFORD, MA 01886

Project Name and Address
COTTAGE
21 COLLEGE HILL RD
SOMERVELLE, MA

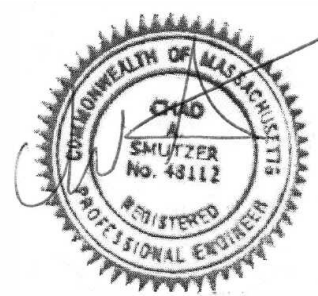
Project
Date
1/8/2026
Scale
As Noted

Sheet
S4

TYP. WINDOW ELEVATION



FOUNDATION PLAN



General Notes

No.	Revision/Issue	Date

Firm Name and Address

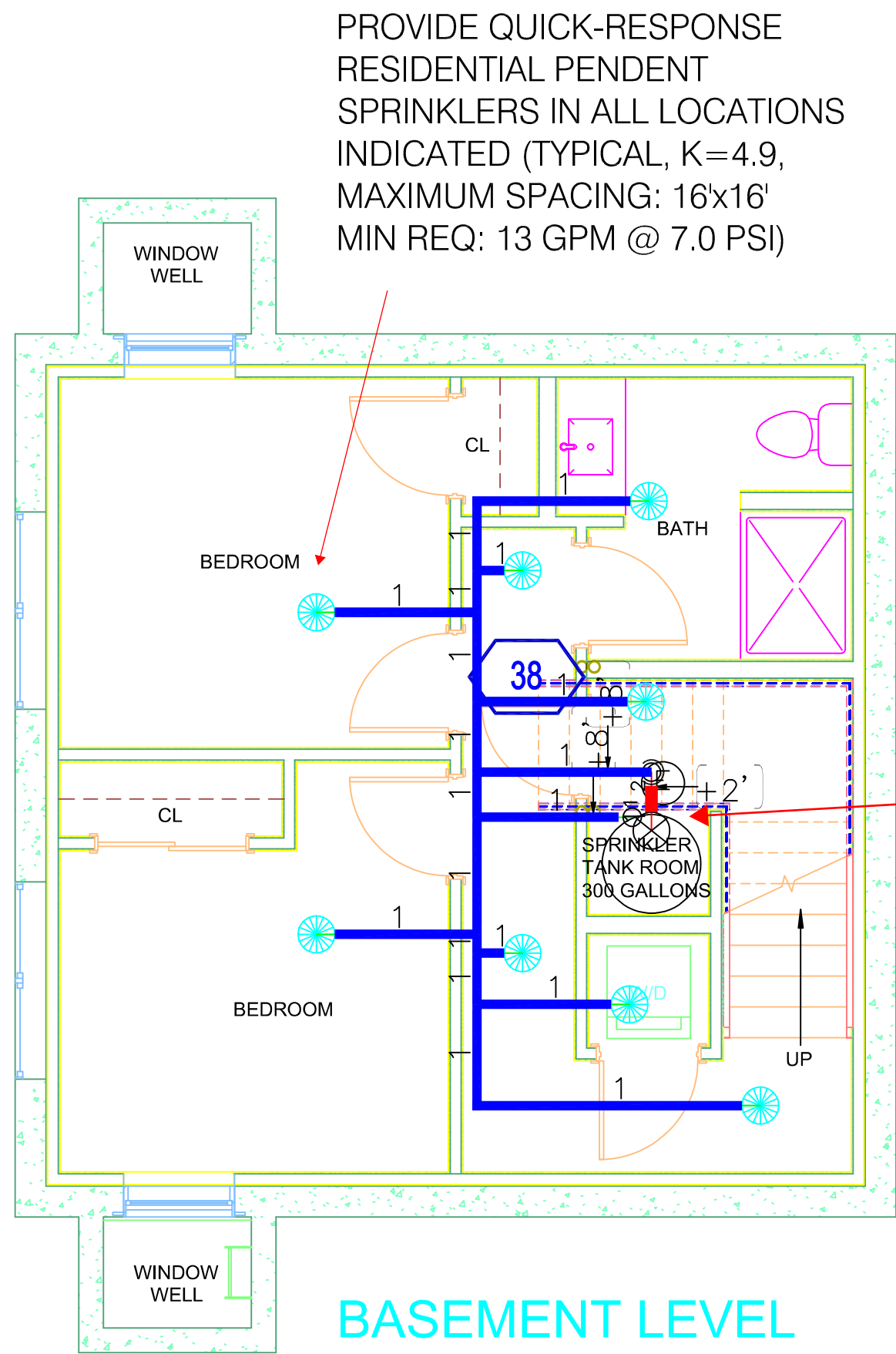
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PO BOX 732
WESTFORD, MA 01886

Project Name and Address

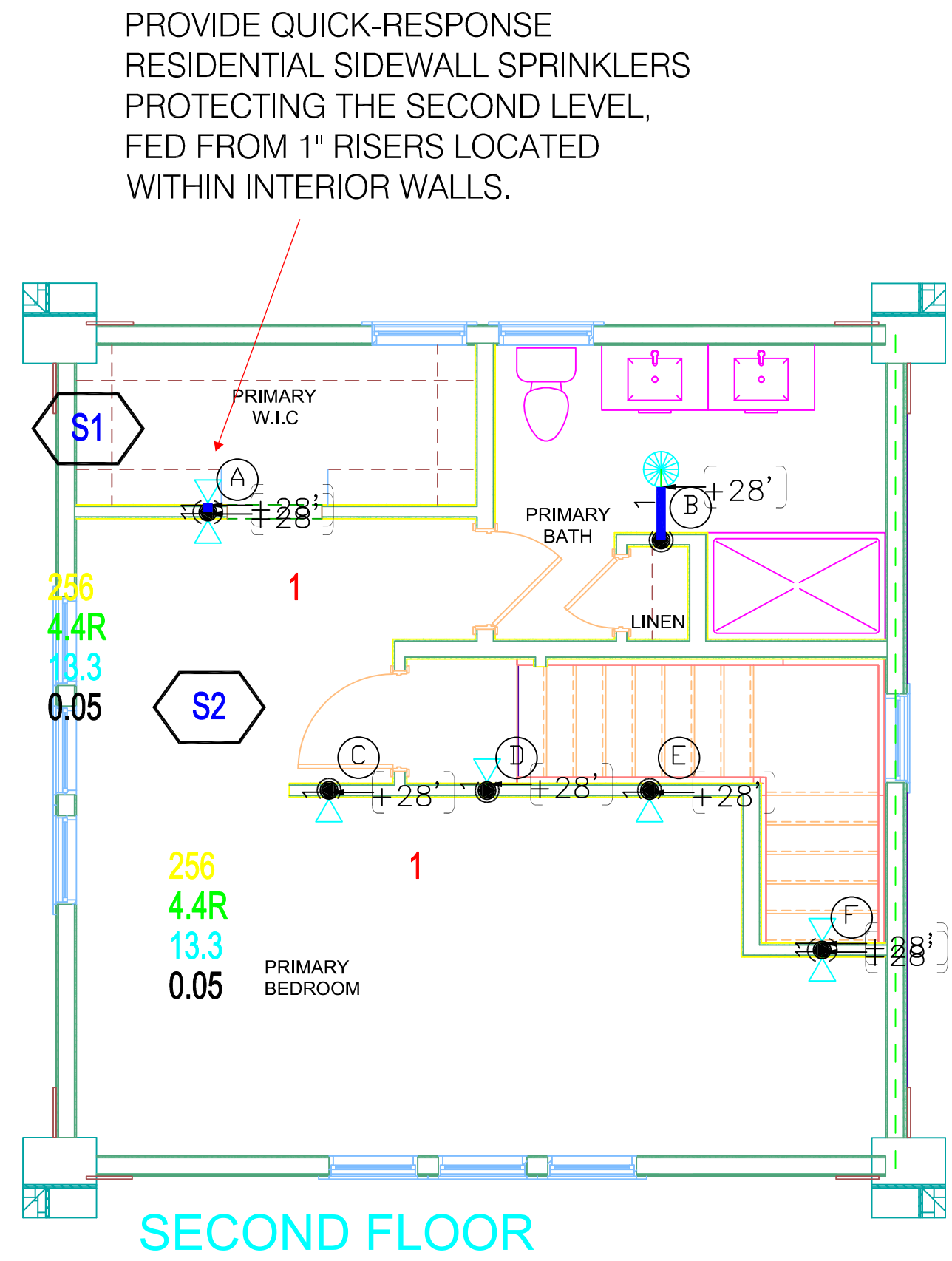
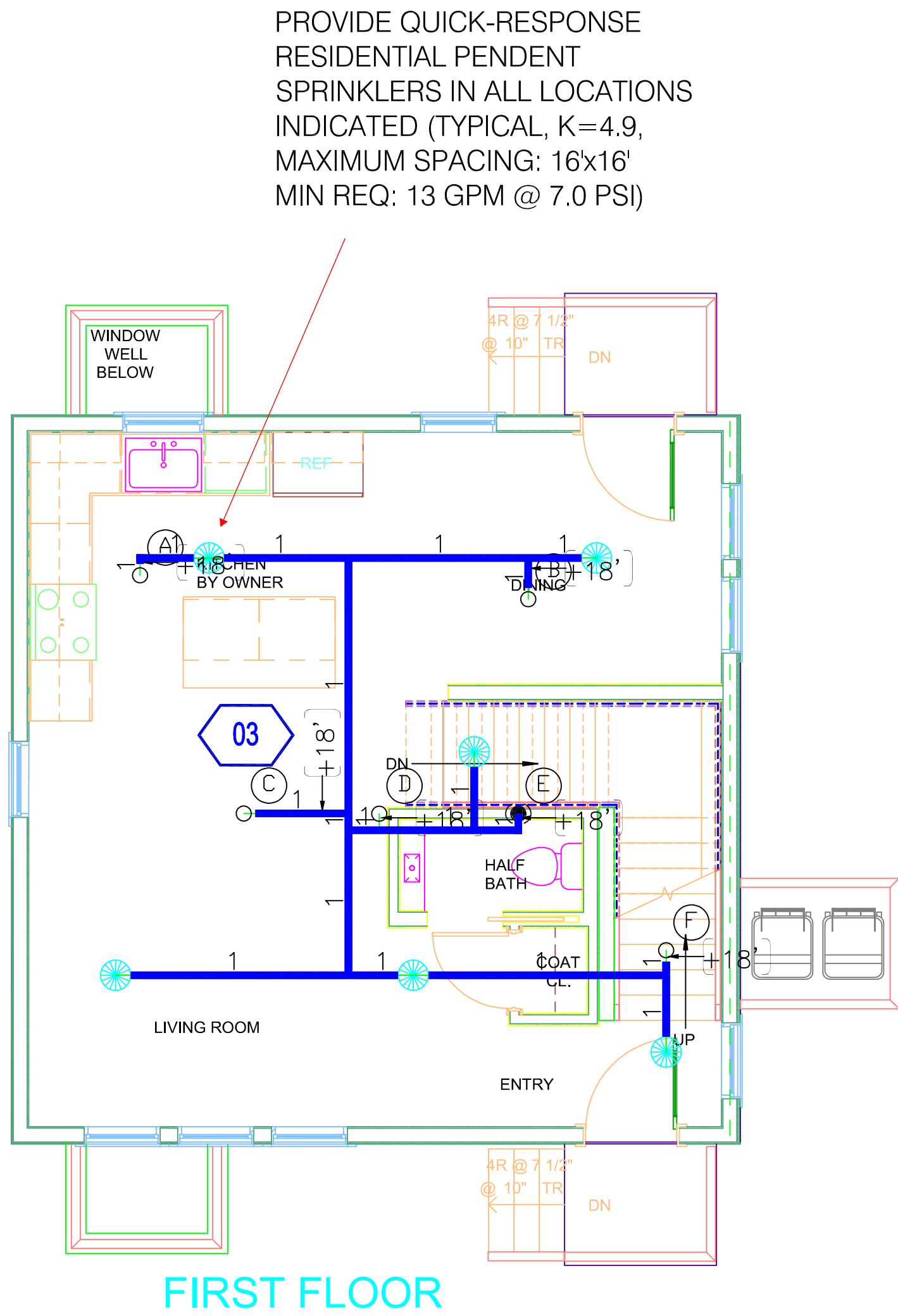
COTTAGE

21 COLLEGE HILL RD
SOMERVELLE, MA

Project	Sheet
Date 1/8/2026	S5
Scale As Noted	



RESIDENTIAL AUTOMATIC PUMP (GT-15, 1½ HP) AND TANK ARRANGEMENT (NFPA 13D, INCLUDES PRESSURE SWITCH, FLOW SWITCH AND PRESSURE GAUGE) * PUMP SHALL BE WIRED TO A NORMAL 240 V. CIRCUIT AND SHALL NOT SIT DIRECTLY ON THE FLOOR PER NFPA 13D

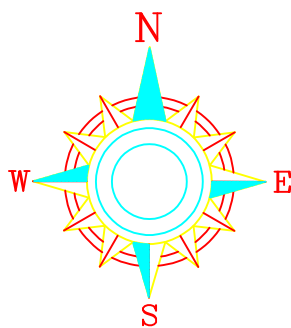


Calculation results for Design Area 1		- TOP FLOOR	
This system as shown on TRISTAR FIRE PROTECT		company print no	dated 3/15/26
for RESIDENTIAL SINGLE UNIT		at 21 COLLEGE HILL RD	
contract no		is designed to discharge at a rate of 0.05 gpm/ft² (L/min/m²) of floor area over a maximum area of 192.47 ft² when supplied with water at a rate of 32.5 gpm at 39.2 psi at the base of the riser.	
Hose stream allowance of		is included in the above.	
Occupancy classification: LH		Number of heads flowing: 2	
Commodity classification:		System Type: Wet	
Maximum storage height:		Maximum velocity: 10.97 ft/s	
Storage arrangement:			
Flow from In-Rack sprinklers:	0 gpm	Pressure Required at Source:	39.2 psi
Flow from Overhead sprinklers:	32.5 gpm	Pressure Available at Source:	47.1 psi
Flow from Inside Hoses:	0 gpm	Surplus Pressure at Source:	7.9 psi
Flow from Outside Hoses:	0 gpm		
Other fixed flows:	0 gpm		
Total flow in system piping:	32.5 gpm		
Additional flow at/beyond source:	0 gpm		
Total of all flows:	32.5 gpm		

Design Area 1 Wet System
TOP FLOOR
Demand Calculations using Hazen-Williams Method
Occupancy Classification: LH
Design Area Density: 0.05
Additional Outside Hose: 0
Design Area Size: 192.47
Notes:

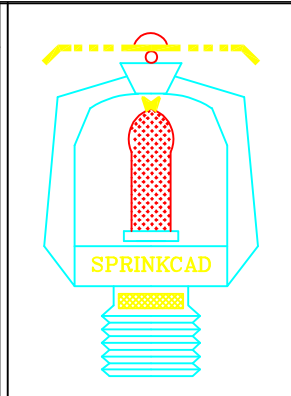


17 Mar 2026, 13:18:46, PDT



NOTES		
DATE	REVISIONS DESCRIPTION	BY

SPRINKLER SYMBOLS	

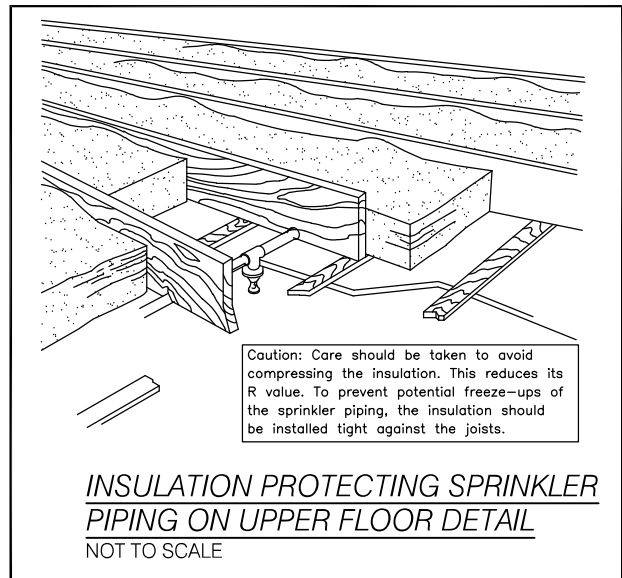


FIRE PROTECTION
RESIDENTIAL SYSTEM
NFPA 13D

RESIDENTIAL SINGLE UNIT
21 COLLEGE HILL RD
SOMERVILLE, MA 02144

CONTRACTOR: TRISTAR FIRE PROTECTION

PIPING PLAN BASE-2ND	
PERMIT NO.	
CONTRACT NO.	
APPROVAL	
DRAWN BY	NB
SCALE	1/4" = 1'-0"
DATE	3/15/26
REVISED	
PLOTTED	FP 1



Job: RESIDENTIAL SINGLE UNIT			
Address:	21 COLLEGE HILL RD	State:	MA
City:	SOMERVILLE	Zip/Postal Code:	02144
Contract #:		Date:	3/15/26
Contractor:	TRISTAR FIRE PROTECT	Designer:	NB
Address:		State:	
City:		Zip/Postal Code:	
Phone:		Fax:	
Approving Authority:			
Design Defaults:		Standards:	NFPA13
Default Sprig Size:	1	Default Drop Size:	1
Default Sprig Material:	CPVC	Default Drop Material:	CPVC
Default Sprig Elevation:	0	Default Drop Elevation:	0

FIRE PROTECTION NOTES:

THE PURPOSE OF THIS FIRE PROTECTION DRAWING AND THE ASSOCIATED FIRE PROTECTION DESIGN NARRATIVE IS TO INDICATE THE PROPOSED RESIDENTIAL SPRINKLER SYSTEM TO BE INSTALLED WITHIN THE RENOVATED RESIDENTIAL SINGLE UNIT LOCATED 21 COLLEGE HILL RD SOMERVILLE, MASSACHUSETTS.

THIS BUILDING CONSISTS OF A BASEMENT LEVEL, 1ST LEVEL, SECOND LEVEL AS INDICATED ON THE ASSOCIATED ARCHITECTURAL DRAWINGS.

THIS RESIDENTIAL SPRINKLER SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13D (2019 EDITION) FOR A RESIDENTIAL BUILDING.

THE SPRINKLER CONTRACTOR SHALL FOLLOW THE LATEST REQUIREMENTS OF NFPA 13D (2019 EDITION), MASSACHUSETTS STATE BUILDING CODE (780 CMR, 10TH EDITION) AND SOMERVILLE FIRE DEPARTMENT REQUIREMENTS.

THIS SYSTEM WILL BE SUPPLIED BY A GT-15 PUMP WITH 300 GALLONS WATER TANK.

THE SYSTEM HAS BEEN HYDRAULICALLY CALCULATED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13D, INCLUDING THE TWO HYDRAULICALLY MOST DEMANDING HEADS IN A SINGLE COMPARTMENT BASED ON THE REQUIREMENTS OF THE SPECIFIC SPRINKLER HEAD AND THE SPACING USED IN THIS DESIGN (16'x16' REQUIRING A MINIMUM OF 13 GPM @ 7 PSI).

INSTALLATION NOTES:

ALL WORK SHALL BE PERFORMED BY A MASSACHUSETTS LICENSED SPRINKLER CONTRACTOR. THE SPRINKLER CONTRACTOR SHALL FOLLOW THE LATEST REQUIREMENTS OF NFPA 13D (2019 EDITION), MASSACHUSETTS STATE BUILDING CODE (10TH EDITION) AND THE SOMERVILLE FIRE DEPARTMENTS.

THE ARCHITECTURAL BACKGROUND OF BUILDING MAY DIFFER SLIGHTLY FROM ACTUAL LAYOUT. DRAWINGS ARE NOT INTENDED TO SHOW ALL OFFSETS AND PIPING ELEVATION CHANGES. CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS PRIOR TO FABRICATION.

CONTRACTOR SHALL HYDROSTATICALLY TEST ALL SPRINKLER PIPING AT 200 PSI FOR 2 HOURS AND IS RESPONSIBLE FOR THE COMPLETION OF ALL ABOVE GROUND TEST CERTIFICATES, SUPPLIED TO THE OWNER.

ALL PIPING INSTALLED THROUGHOUT THE RESIDENTIAL AREAS OF THE BUILDING SHALL BE UL LISTED CPVC SPRINKLER PIPING. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13D (2019 EDITION) AND ALL MANUFACTURERS' INSTALLATION RECOMMENDATIONS. ALL PIPING SHALL BE PITCHED TO DRAIN WITH LOW-POINT DRAINS AT SECTIONS OF PIPING SUBJECT TO WATER TRAPPING. SPRINKLER CONTRACTOR SHALL PROVIDE PROTECTIVE PLATES WHERE CPVC PIPING IS RUN THROUGH STUDS TO PREVENT PUNCTURING OF THE SPRINKLER PIPING DURING DRYWALL INSTALLATION AS REQUIRED BY NFPA STANDARDS.

ALL SPRINKLER HEADS WITHIN RESIDENTIAL AREAS OF THE BUILDING SHALL BE RESIDENTIAL PENDENT SPRINKLERS. SPRINKLERS WITHIN THE BASEMENT LEVEL WILL BE RESIDENTIAL HEADS. ALL HEADS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND THE REQUIREMENTS OF NFPA 13D (2019 EDITION).

THE BUILDING OWNER IS RESPONSIBLE FOR MAINTAINING THIS SPRINKLER SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 25, INCLUDING THE PROVISION OF HEAT IN ALL AREAS CONTAINING SPRINKLER PIPING AND HEADS TO PREVENT PIPE FROM FREEZING. THE ENGINEER OF RECORD TAKE NO RESPONSIBILITY FOR ANY DAMAGES CAUSED BY FREEZE UPS.

TABLE 10.2.7.1.2 POSITIONING OF SPRINKLER TO AVOID OBSTRUCTION TO DISCHARGE (UPRIGHT / PENDENT)	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (INCHES) (B)
LESS THAN 1 FT	0
1'-0" TO LESS THAN 1'-6"	0'-2 1/2"
1'-6" TO LESS THAN 2'	0'-3 1/2"
2' TO LESS THAN 2'-6"	0'-5 1/2"
2'-6" TO LESS THAN 2'	0'-7 1/2"
3' TO LESS THAN 3'-6"	0'-9 1/2"
3'-6" TO LESS THAN 4'	1'-0"
4' TO LESS THAN 4'-6"	1'-2"
4'-6" TO LESS THAN 5'	1'-4 1/2"
5' TO LESS THAN 5'-6"	1'-6"
5'-6" TO LESS THAN 6'	1'-8"
6' TO LESS THAN 6'-6"	2'-0"
6'-6" TO LESS THAN 7'	2'-6"
7' TO LESS THAN 7'-6"	2'-11"

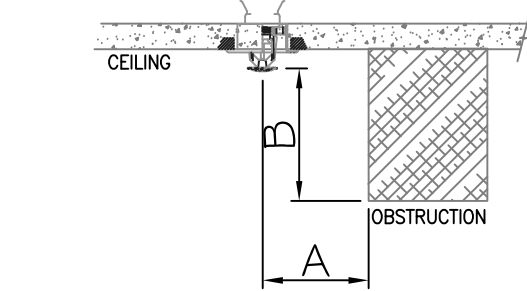


FIGURE 10.2.7.1.2
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE

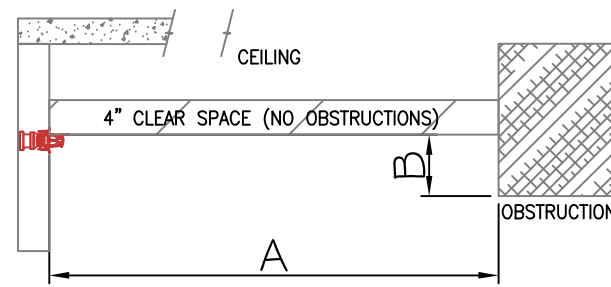


FIGURE 10.3.6.1.3
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE

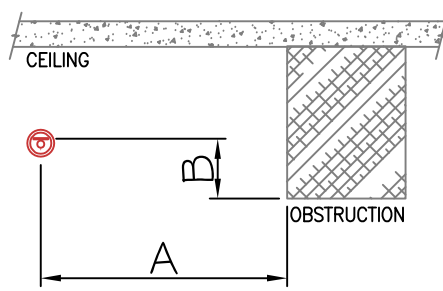


FIGURE 10.3.6.1.4
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE

TABLE 10.3.6.1.3 POSITIONING OF SPRINKLER TO AVOID OBSTRUCTION (STANDARD SIDEWALL SPRAY)	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (INCHES) (B)
4' TO LESS THAN 5'	0'-1"
5' TO LESS THAN 5'-6"	0'-2"
5'-6" TO LESS THAN 6'	0'-3"
6' TO LESS THAN 6'-6"	0'-4"
6'-6" TO LESS THAN 7'	0'-6"
7' TO LESS THAN 7'-6"	0'-7"
7'-6" TO LESS THAN 8'	0'-9"
8' TO LESS THAN 8'-6"	0'-11"
8'-6" OR GREATER	1'-2"

TABLE 10.3.6.1.4 POSITIONING OF SPRINKLER TO AVOID OBSTRUCTION ALONG WALL (STANDARD SIDEWALL SPRAY)	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (INCHES) (B)
4" TO LESS THAN 0'-6"	1"
6" TO LESS THAN 1'-0"	0'-2"
1'-0" TO LESS THAN 1'-6"	0'-3"
1'-6" TO LESS THAN 2'-0"	0'-4 1/2"
2'-0" TO LESS THAN 2'-6"	0'-5 3/4"
2'-6" TO LESS THAN 3'-0"	0'-7"
3'-0" TO LESS THAN 3'-6"	0'-8"
3'-6" TO LESS THAN 4'-0"	0'-9 1/4"
4'-0" TO LESS THAN 4'-6"	0'-10"
4'-6" TO LESS THAN 5'-0"	1'-1 1/2"
5'-0" TO LESS THAN 5'-6"	1'-3 3/4"
5'-6" TO LESS THAN 6'-0"	1'-2"
6'-0" TO LESS THAN 6'-6"	1'-3"
6'-6" TO LESS THAN 7'-0"	1'-4 1/4"
7'-0" TO LESS THAN 7'-6"	1'-5 1/2"

MAX HANGER SPACING	
PIPE TYPE	NOMINAL PIPE SIZE (IN)
SCH 10,40 STEEL	1 12-0 1 12-0 2 15-0 3 15-0 4 15-0 6 15-0 8 15-0
UL LISTED CPVC	6-0 6-6 7-0 8-0 9-0

36" MAX. FOR 1" DIA.
48" MAX. FOR 1 1/4" DIA.
60" MAX. FOR 1 1/2" DIA. OR LARGER

THEN EXTEND HERE

DISTANCE BETWEEN SHALL NOT EXCEED ABOVE TABLE

OMIT HOR. ON STARTER PIPES 6' OR LESS, NO X-MAIN HOR. OMISSIONS ALLOWED

IF GREATER THAN 36" MAX. FOR 1" DIA. -
IF GREATER THAN 48" MAX. FOR 1 1/4" DIA. -
IF GREATER THAN 60" FOR 1 1/2" DIA. OR LARGER -

CLOSETS (TYPICAL)

EXCEPT WHERE SPECIFIED IN SECTION 6.6.4 (NFPA 13D, 13R, 2013 EDITION), SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES THAT MEET ALL OF THE FOLLOWING CONDITIONS:

- 1) THE AREA OF THE SPACE DOES NOT EXCEED 24 SF
- 2) THE LEAST DIMENSION DOES NOT EXCEED 3 FT
- 3) THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED-COMBUSTIBLE MATERIALS AS DEFINED IN NFPA 220.

NOTE: WHEN MECHANICAL EQUIPMENT OR LAUNDRY MACHINES ARE PLACED IN THE CLOSET, THE CLOSET IS NO LONGER CONSIDERED A CLOTHES CLOSET, LINEN CLOSET, OR PANTRY, SO THE EXCEPTION OF 6.6.3 IS NO LONGER VALID AND SPRINKLERS MUST BE INSTALLED.

SPRINKLER HEAD LOCATIONS HAVE NOT BEEN COORDINATED WITH CEILING-MOUNTED FIXTURES. INSTALLING SPRINKLER CONTRACTOR SHALL COORDINATE WITH ELECTRICIAN AND LOCATE SPRINKLERS AT LEAST 36" FROM THE CENTER OF ANY CEILING-MOUNTED FIXTURE, IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13D WHILE MAINTAINING THE MAXIMUM DISTANCES FROM WALLS INDICATED ON THIS DESIGN (8-FT). ADDITIONAL SPRINKLERS REQUIRED DUE TO INABILITY TO MEET OBSTRUCTION CRITERIA SHALL BE AT THE OWNERS EXPENSE.

SPRINKLER CONTRACTOR SHALL TAKE PRECAUTIONS WHEN INSTALLING SPRINKLER PIPING IN JOISTS ON TOP FLOOR. GENERAL CONTRACTOR SHALL BE REQUIRED TO INSTALL SUFFICIENT INSULATION TO MAINTAIN 40-DEGREES IN ALL AREAS WHERE SPRINKLER PIPING AND HEADS ARE INSTALLED

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL #
	14	PEND	BRASS	155	4.90	1/2"	TY2234	Tyco	LFII
	7	SIDE	WHITE	155	4.40	1/2"	TY2334	Tyco	LFII

UL LISTED CPVC SPRINKLER PIPING

TABLE 7.5.6.3 TEMPERATURE RATINGS OF SPRINKLERS IN SPECIFIED RESIDENTIAL AREAS		
HEAT SOURCE	MINIMUM DISTANCE FROM EDGE OF SOURCE TO ORDINARY TEMPERATURE SPRINKLER (INCHES)	MINIMUM DISTANCE FROM EDGE OF SOURCE TO INTERMEDIATE TEMPERATURE SPRINKLER (INCHES)
SIDE OF OPEN OR RECESSED FIREPLACE	36	12
FRONT OF RECESSED FIREPLACE	60	36
KITCHEN RANGE	18	9
WALL OVEN	18	9
SIDE OF CEILING OR WALL MOUNTED HOT AIR DIFFUSER	24	12
FRONT OF WALL MOUNTED HOT AIR DIFFUSER	36	18
HOT WATER HEATER OR FURNACE	6	3
LIGHT FIXTURE: 0W-250W	6	3
LIGHT FIXTURE: 250W-499W	12	6

FREEZE PROTECTION

THE BUILDING OWNER IS RESPONSIBLE FOR PROVIDING HEAT IN ALL AREAS CONTAINING SPRINKLER PIPING AND HEADS TO PREVENT PIPE FROM FREEZING. ANY AREAS THAT RAISE CONCERN WITH REGARD TO FREEZING POTENTIAL SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION, IN WRITING, PRIOR TO INSTALLATION. THE ENGINEER OF RECORD TAKE NO RESPONSIBILITY FOR DAMAGES CAUSED BY FREEZE-UPS OF THE SPRINKLER SYSTEM.

