

1429 Mechanicsville Turnpike

Building Permit Plans

Owner

Skyy Realty Group, LLC
 c/o John Dantzer
 4900 Oakleys Lane
 Henrico, VA 23231
 804-647-9803
 dantzer12@yahoo.com

Scope of Work

Scope of work will generally consist of the renovation of an existing structure from a single family home into a duplex in accordance with these plans and the Virginia Residential Code, 2015.

Engineer

Obsidian, Inc.
 Charles R. Field, P.E.
 515 North 22nd Street
 Richmond, VA 23223
 804.647.1589
 obsidianrva@gmail.com

Property Information

Parcel ID N0000573021
 Zoning R-53
 Use Residential
 Setbacks Front Yard = 15 feet
 Side Yard = 3 feet
 Rear Yard = 5 feet
 Lot Coverage 60%

General Notes

- The structure will be constructed in accordance with the 2015 edition of the "Virginia Residential Code", the Statewide Uniform Building Code and the applicable City of Richmond ordinances.
- The contractor is responsible for compliance with City, State and Federal job site safety requirements.
- The contractor shall verify all dimensions and conditions prior to start of work, and any discrepancies will immediately be brought to the attention of the engineer.
- Glazing in windows shall be tempered if the bottom edge is less than 18" above floor, in walls enclosing bathtub or showers, within 24" of arc of either vertical edge of a door, or less than 36" above the plane of stairways or landings. Glazing in all fixed and operable panels of swinging, sliding and bifold doors shall be tempered.
- Carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages. The carbon monoxide detector shall comply with NFPA 720 and UL 2075.
- Enclosed accessible space under stairs shall have walls, under-stair surface, and any soffits protected on the enclosed side with 1/2" gypsum board.
- The structure shall be protected from subterranean termites by one of the following methods or a combination of these methods:
 - Chemical termiticide treatment, as provided in Section R318.2.
 - Termite baiting system installed and maintained according to the label.
 - Pressure-preservative-treated wood in accordance with the provisions of Section R317.1.
 - Naturally durable termite-resistant wood.
 - Physical barriers as provided in Section R318.3 and used in locations as specified in Section R317.1.
- All lumber unless otherwise noted is to be Southern Pine No. 2.
- There will not be a fire sprinkler system.
- There is no proposed fire detection system or alarm.
- The construction type is V-B.
- There are X stories.
- The occupancy class is X-#.
- The occupancy is XXX people.
- IRC 2012 minimum insulation and fenestration requirements:
 - Fenestration U-factor : 0.35
 - Ceiling R-value : 30
 - Wood frame wall R-value : 15
 - Mass wall R-value : 8/13
 - Floor R-value : 19
 - Basement wall R-value : 10/13
 - Slab R-value & depth: 10, 2ft
 - Crawlspace wall R-value : 10/13
- Load criteria:
 - Bearing soil capacity = 2000 psf
 - Floor live load = 40 psf
 - Floor dead load = 10 psf
 - Roof live load = 20 psf
 - Roof dead load = 10 psf
 - Snow loads = 20 psf
 - Basic Wind speed = 90 mph
 - Seismic Category: B.
 - Exposure: B.

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- A3.1 Deck Details
- S1.2 Structure
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Window Schedule

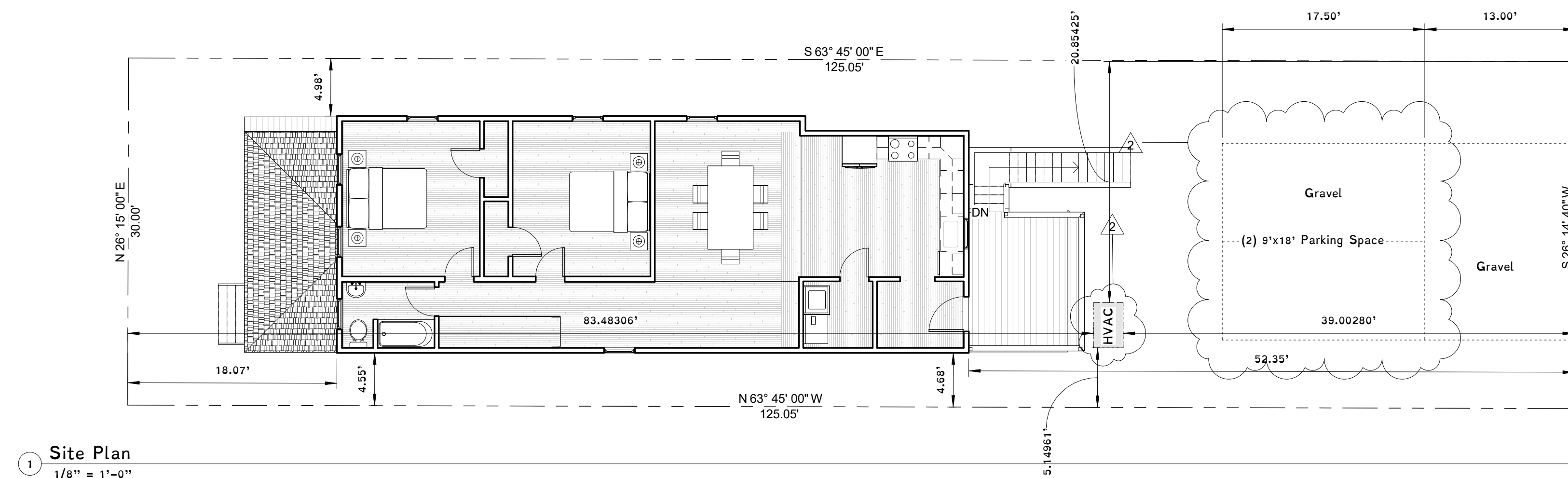
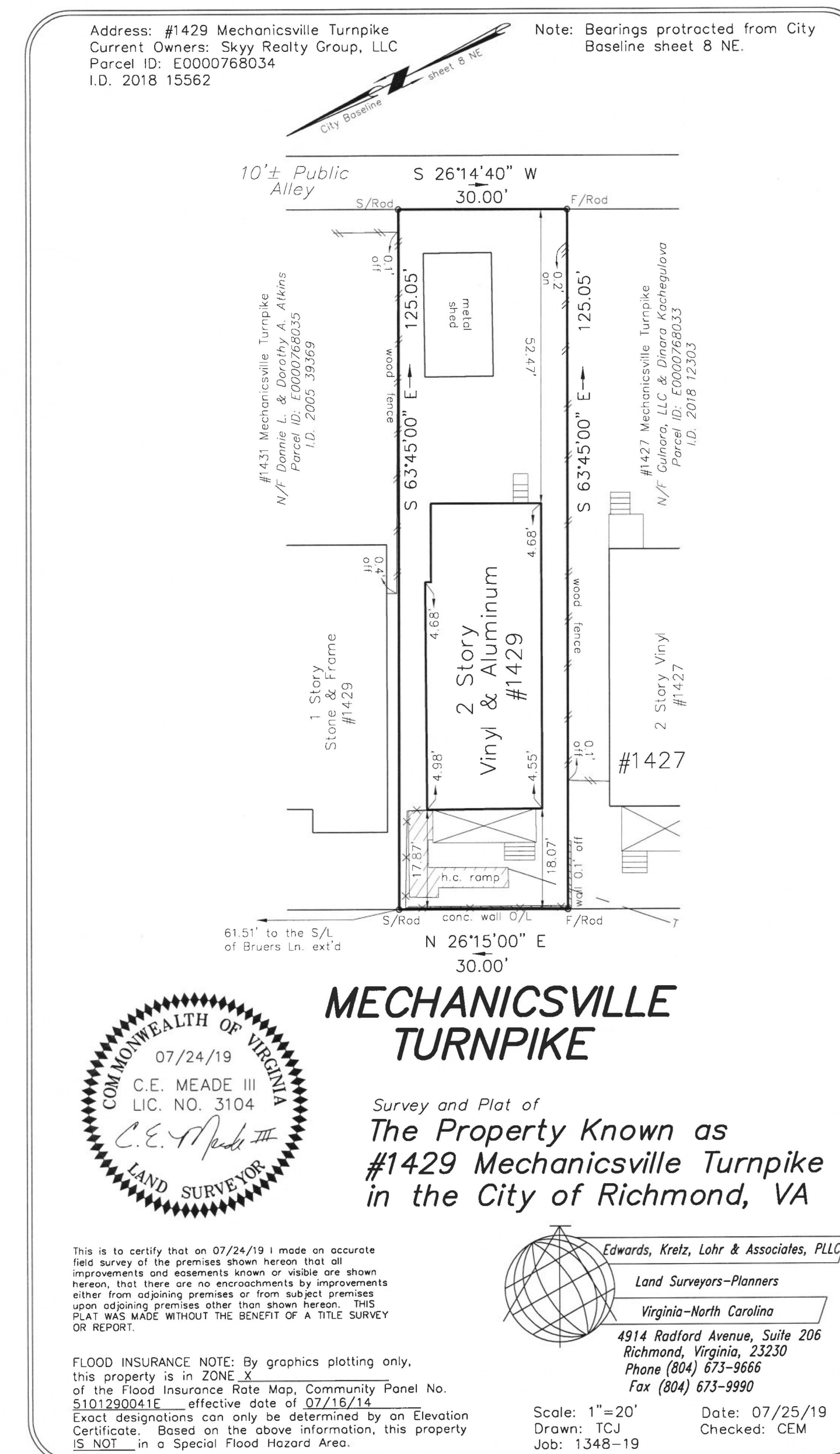
Type Mark	Family	Count	Width	Height	Sill Height	Casing Quantity	Sill Quantity
199	Window-Double-Hung	1	2'-8"	4'-4"	4'-0"	11'-4"	3'-4"
200	Window-Fixed	1	3'-0"	1'-0"	7'-4 1/4"	5'-0"	3'-8"

Door Schedule

Type Mark	Count	Family	Width	Height	Casing Quantity	Cost
193	1	Single-Panel 6	3'-0"	6'-8"	32'-8"	\$0.00
196	1	Single-Panel 6	2'-0"	6'-8"	30'-8"	\$0.00
197	5	Single-Panel 6	2'-8"	6'-8"	160'-0"	\$0.00
126	1	Cased Opening	3'-0"	6'-8"	32'-8"	\$0.00
192	6	Single-Panel 6	2'-6"	6'-8"	190'-0"	\$0.00
193	1	Single-Panel 6	3'-0"	6'-8"	32'-8"	\$0.00

Room Area Table

Name	Area	Perimeter
First Floor		
Bedroom 1	159 SF	50'-6 7/8"
Closet	12 SF	14'-11 7/8"
Closet	12 SF	14'-9 7/8"
Bedroom 2	160 SF	50'-8 7/8"
Dining	155 SF	50'-4 7/8"
Kitchen	150 SF	48'-11"
Laundry	76 SF	38'-5"
Hall	219 SF	115'-0 3/4"
Bathroom	39 SF	25'-7 1/2"
Bathroom	982 SF	409'-6 3/8"
Second Floor		
Bedroom 1	160 SF	50'-8 3/8"
Closet	14 SF	17'-2"
Closet	14 SF	17'-3 3/8"
Bathroom	45 SF	32'-4"
Bedroom 2	160 SF	50'-8 3/8"
Entry	43 SF	26'-4"
Dining	175 SF	52'-11 7/8"
Kitchen	171 SF	52'-4 1/2"
Hall	178 SF	73'-9"
Laundry	35 SF	23'-5"
Deck	103 SF	41'-3 1/2"
Deck	1097 SF	438'-4 3/4"
Grand total	2078 SF	847'-11 1/8"

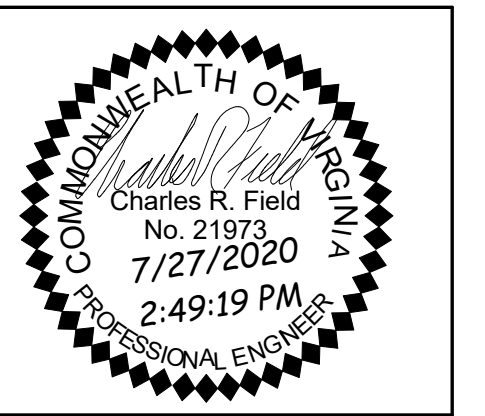


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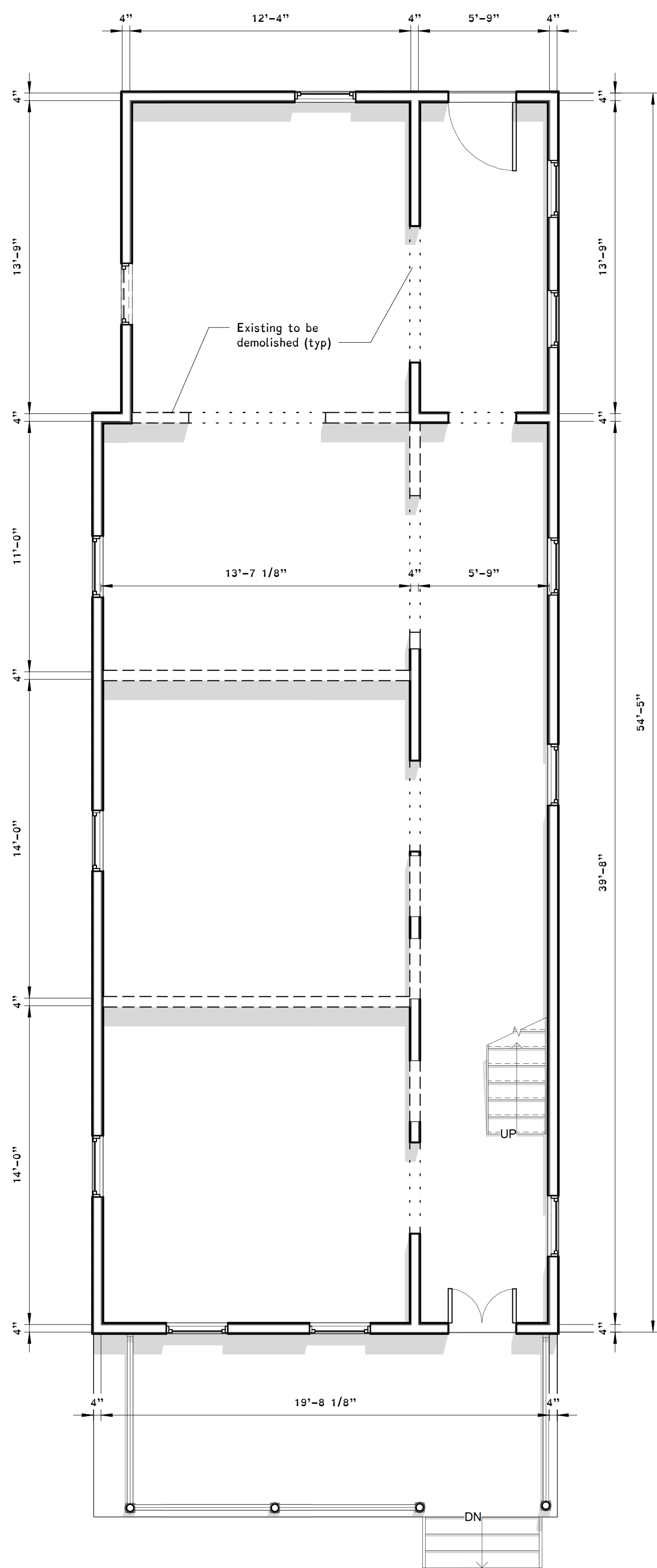
Rev.	Date	Description
1	10/11/2019	Structural framing plan & calculations added
2	04/06/2020	Parking Spaces & HVAC

rev. 4/16/2020
 September 4, 2019

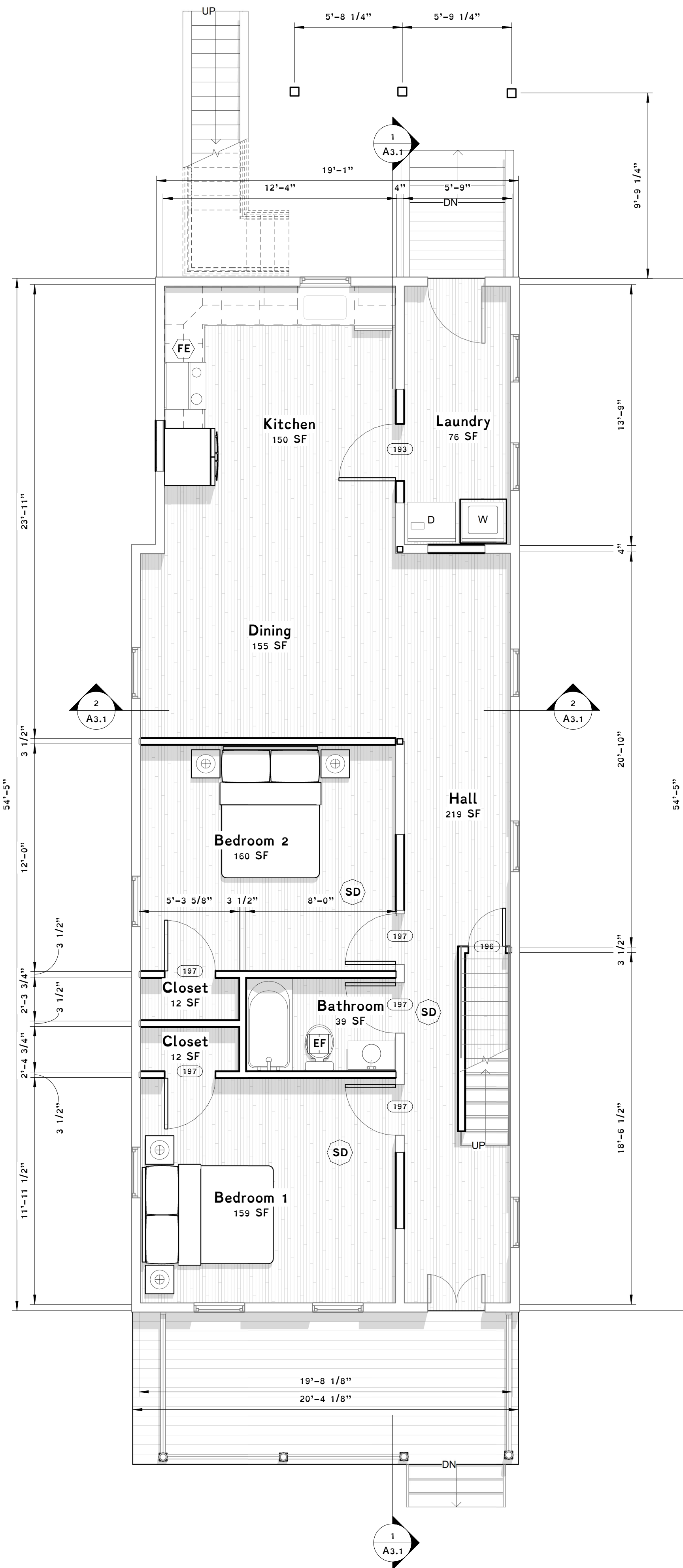
Cover Sheet
 1429 Mechanicsville Turnpike
 Skyy Realty Group, LLC
 City of Richmond, VA



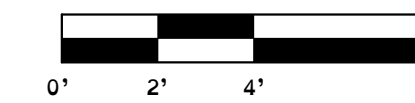
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1 1st Floor - Existing
1/4" = 1'-0"



2 1st Floor - Proposed
1/4" = 1'-0"



A1.1

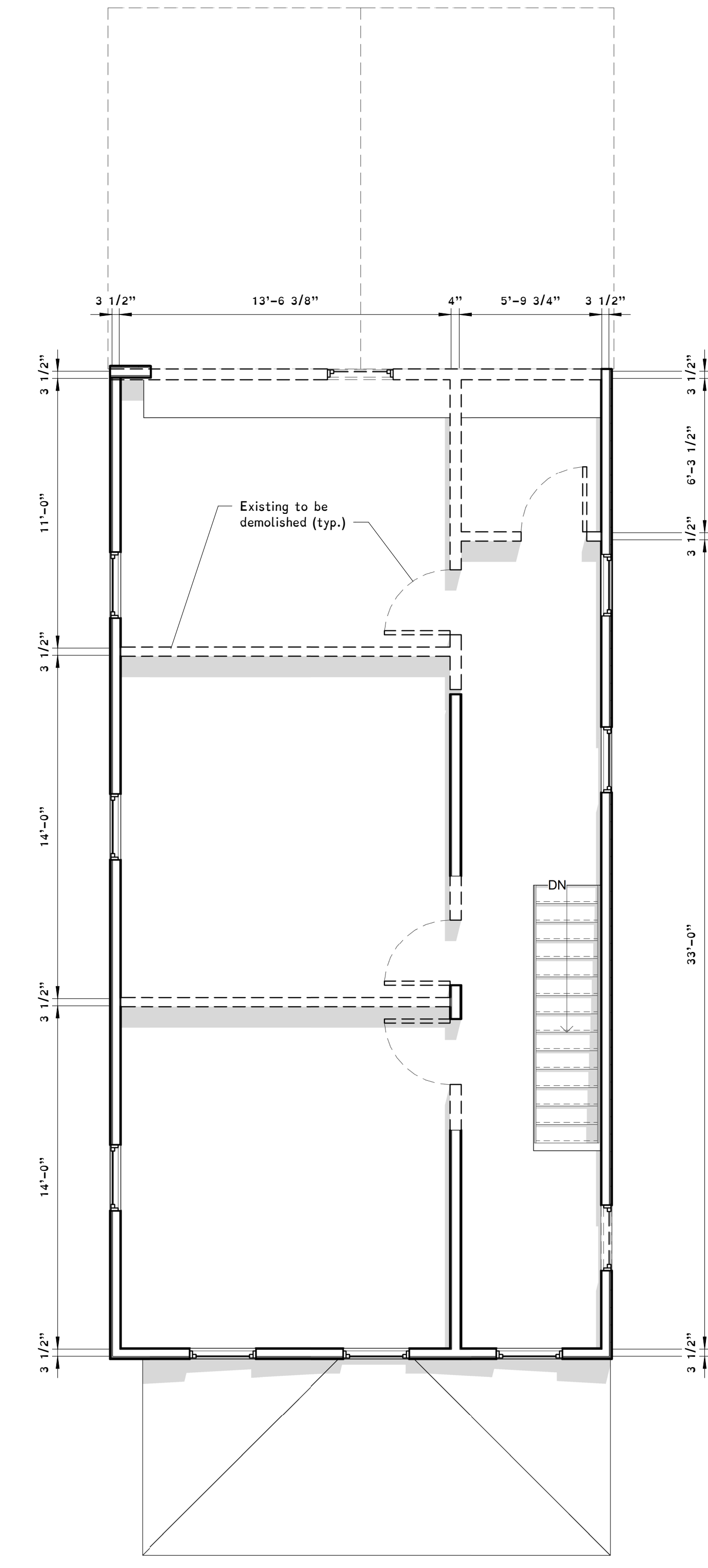
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First Floor Plans
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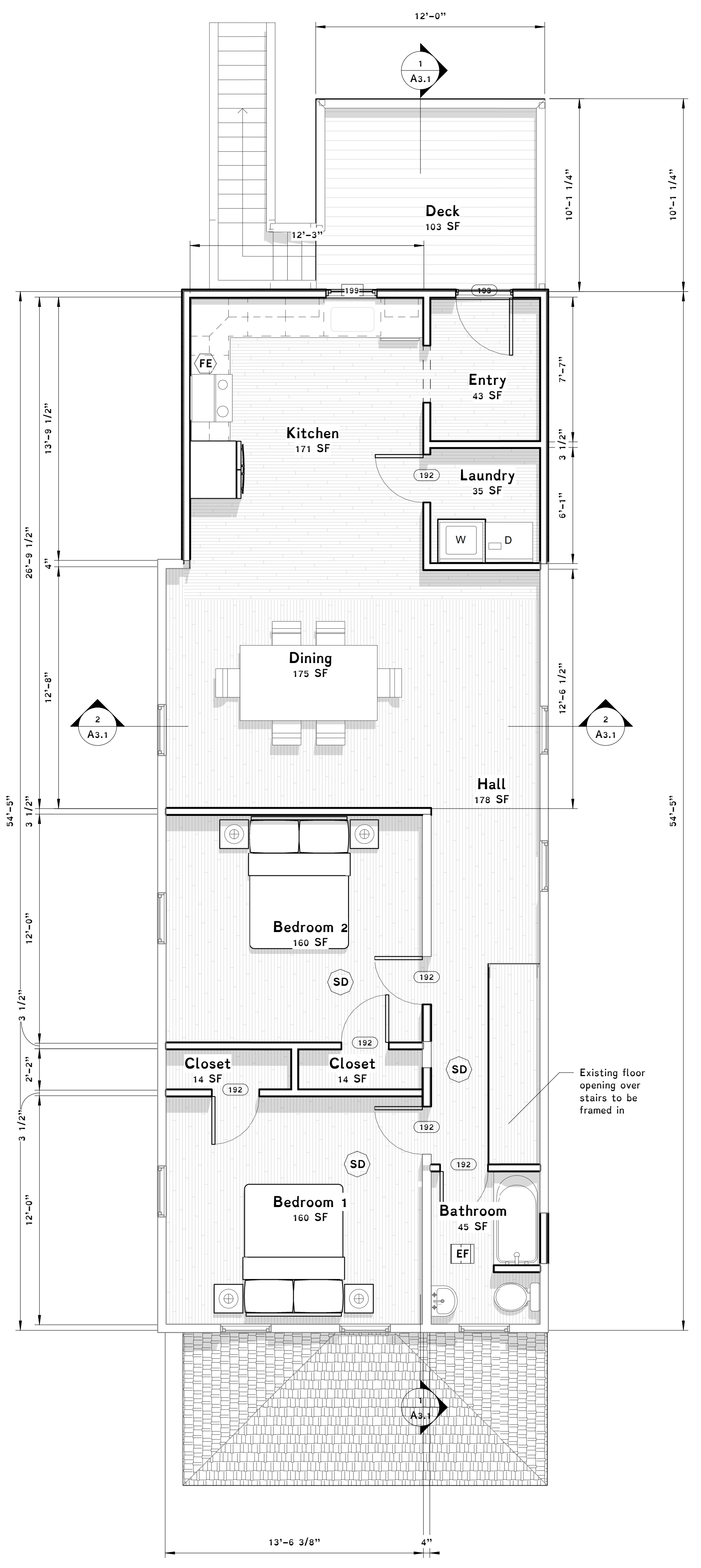
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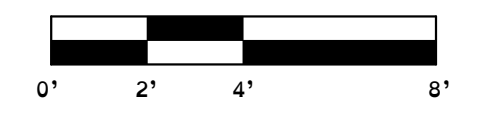
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1 2nd Floor - Existing
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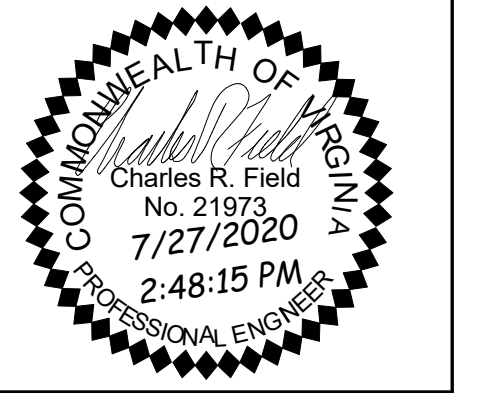


3 2nd Floor - Proposed
1/4" = 1'-0"



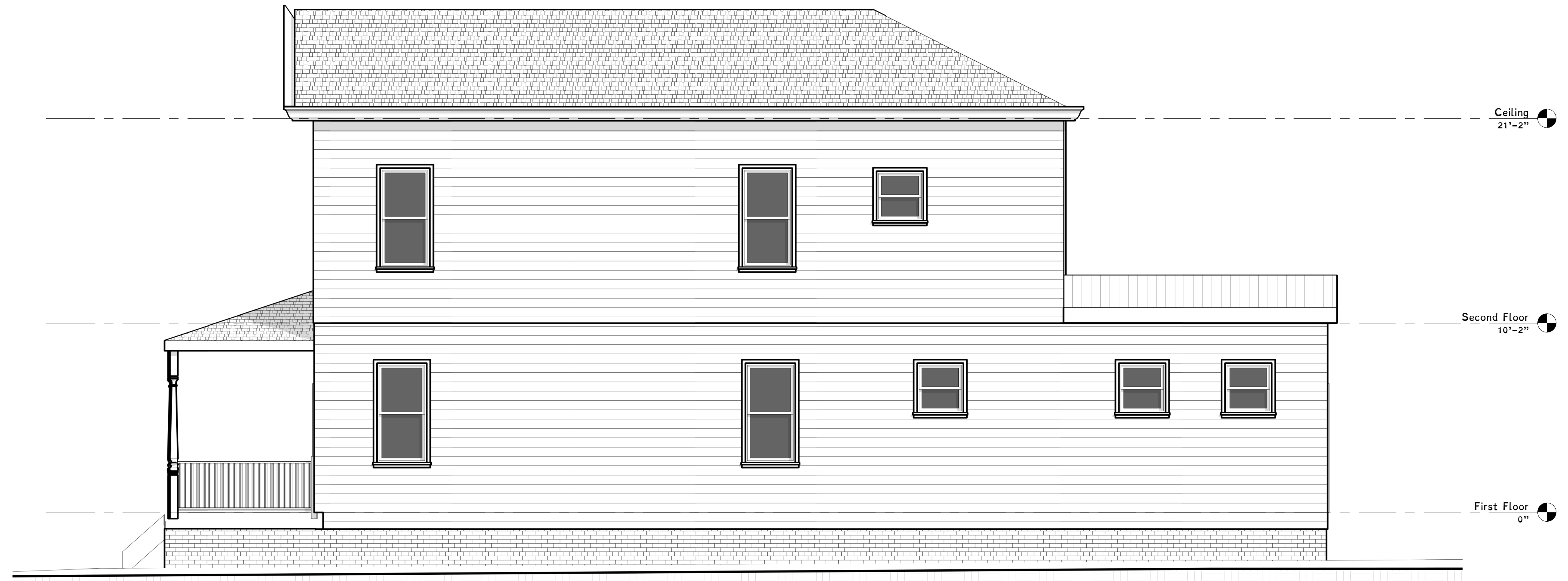
Second Floor Plans
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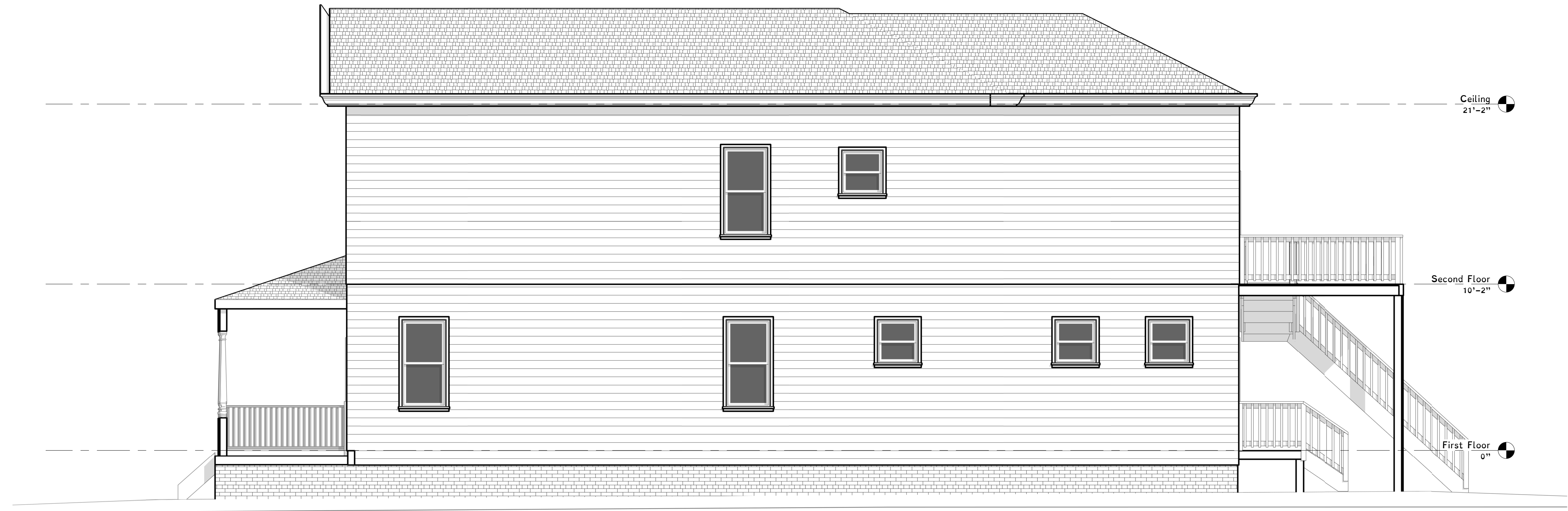


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1 Existing South
1/4" = 1'-0"



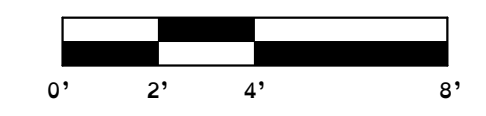
2 Proposed South
1/4" = 1'-0"

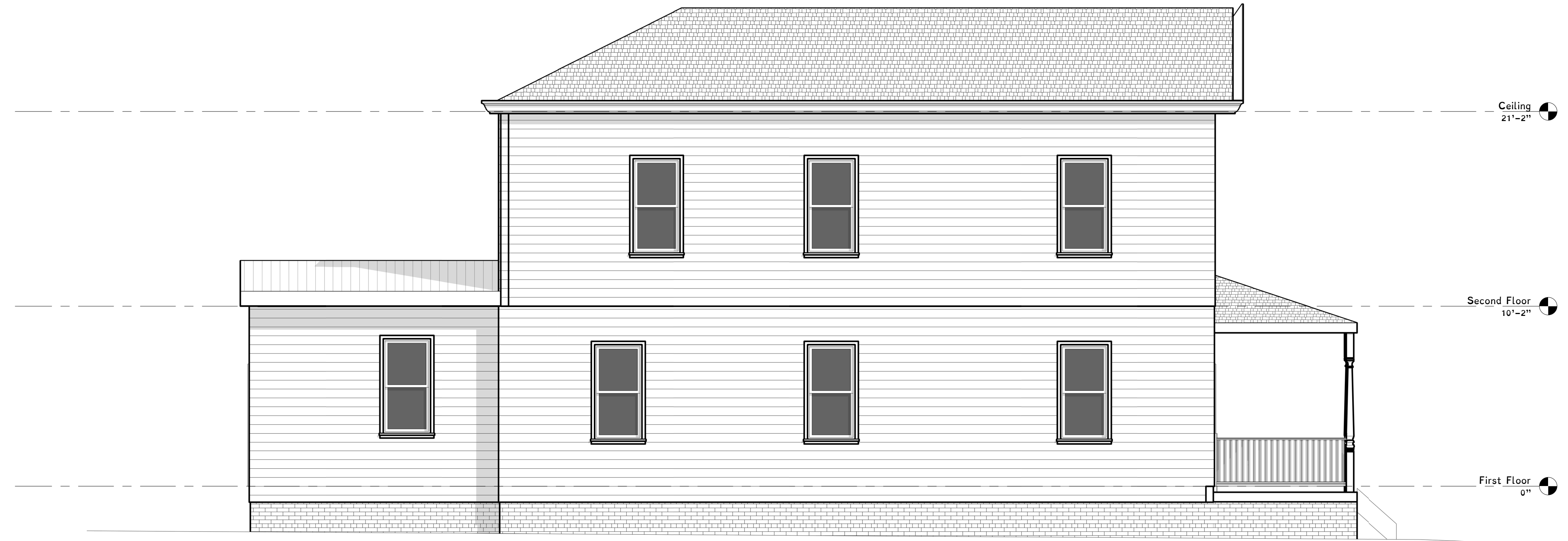
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Elevations
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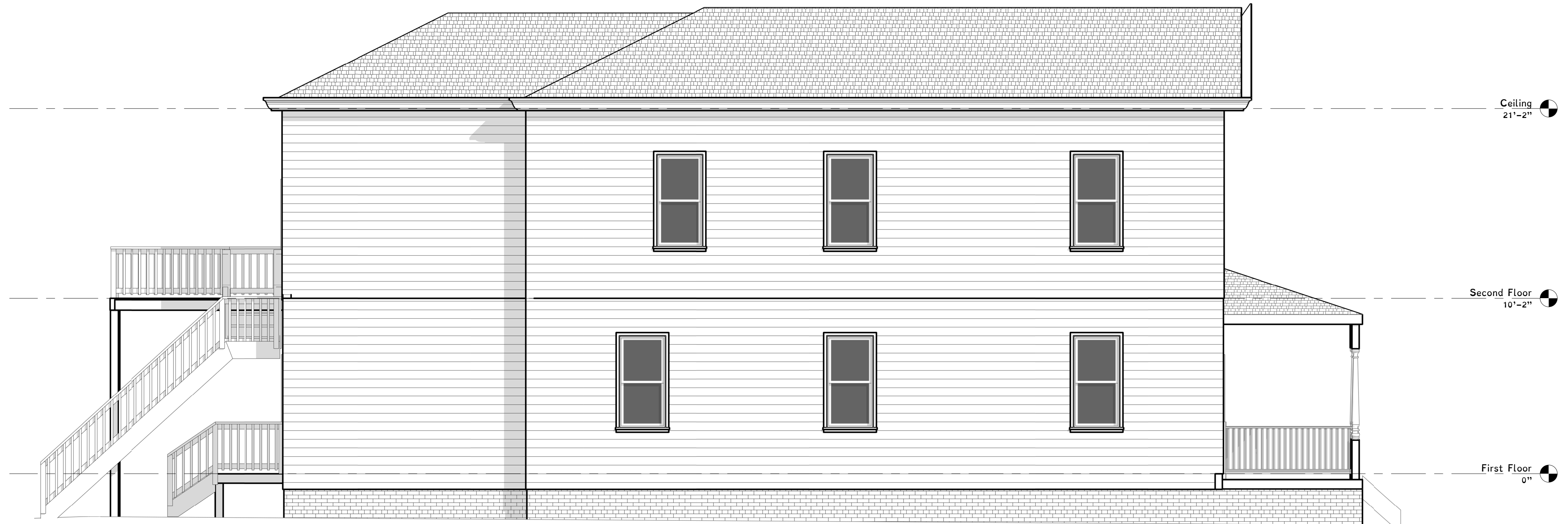


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1 Existing North
1/4" = 1'-0"

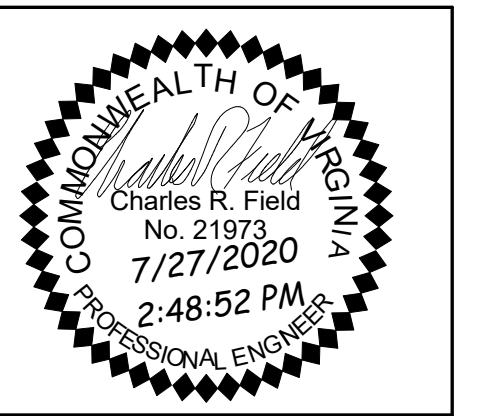


2 Proposed North
1/4" = 1'-0"



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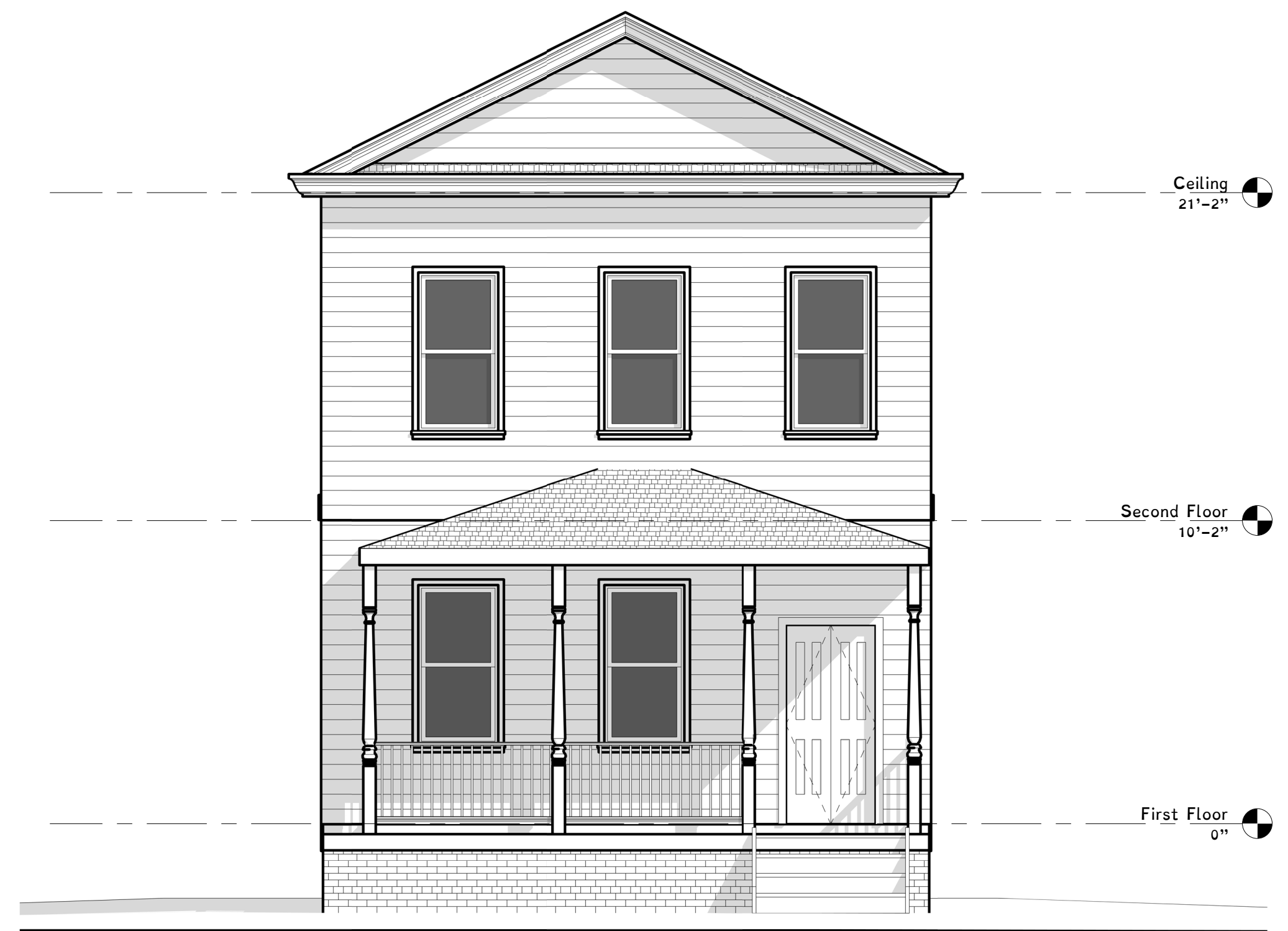
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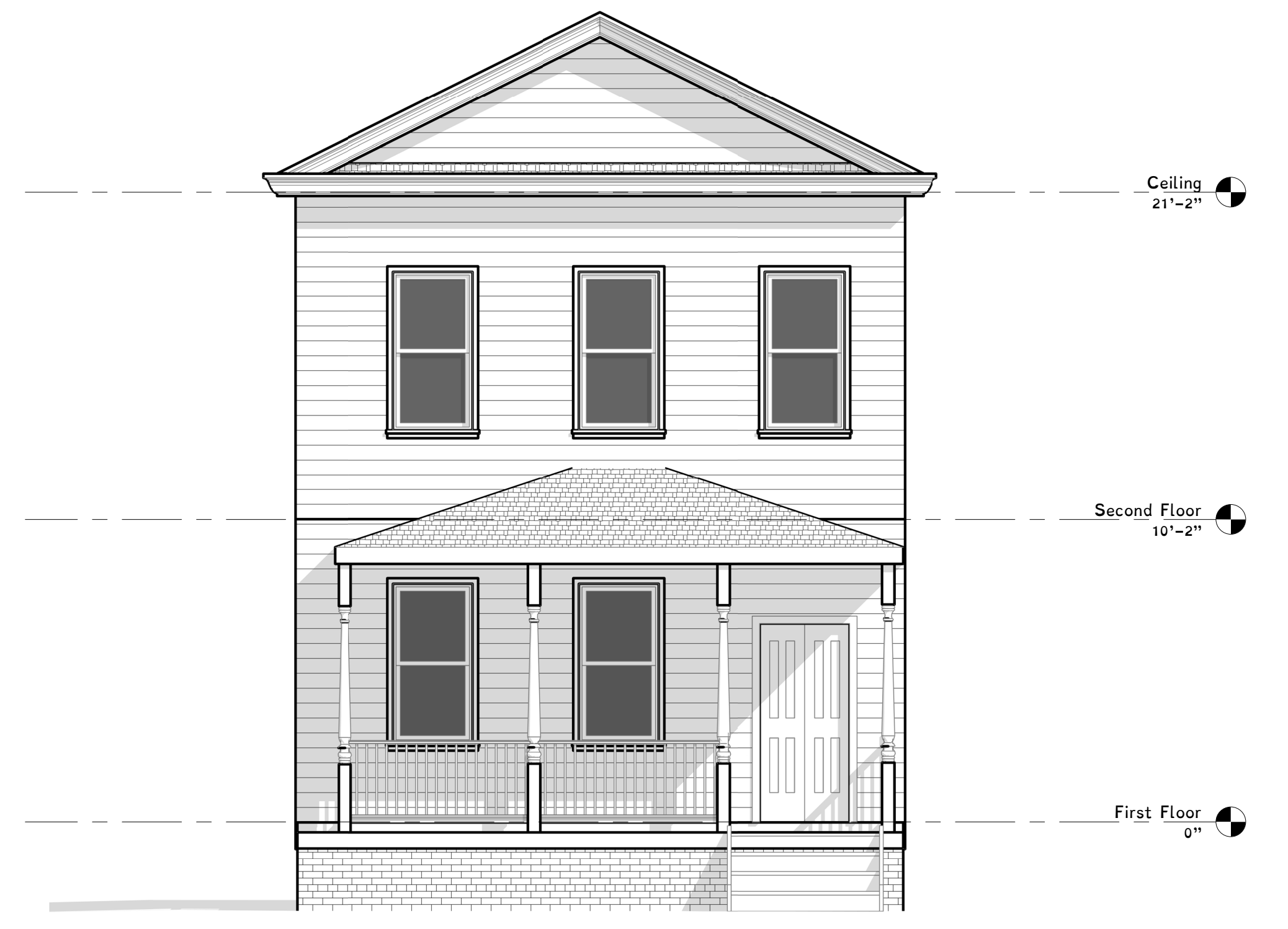
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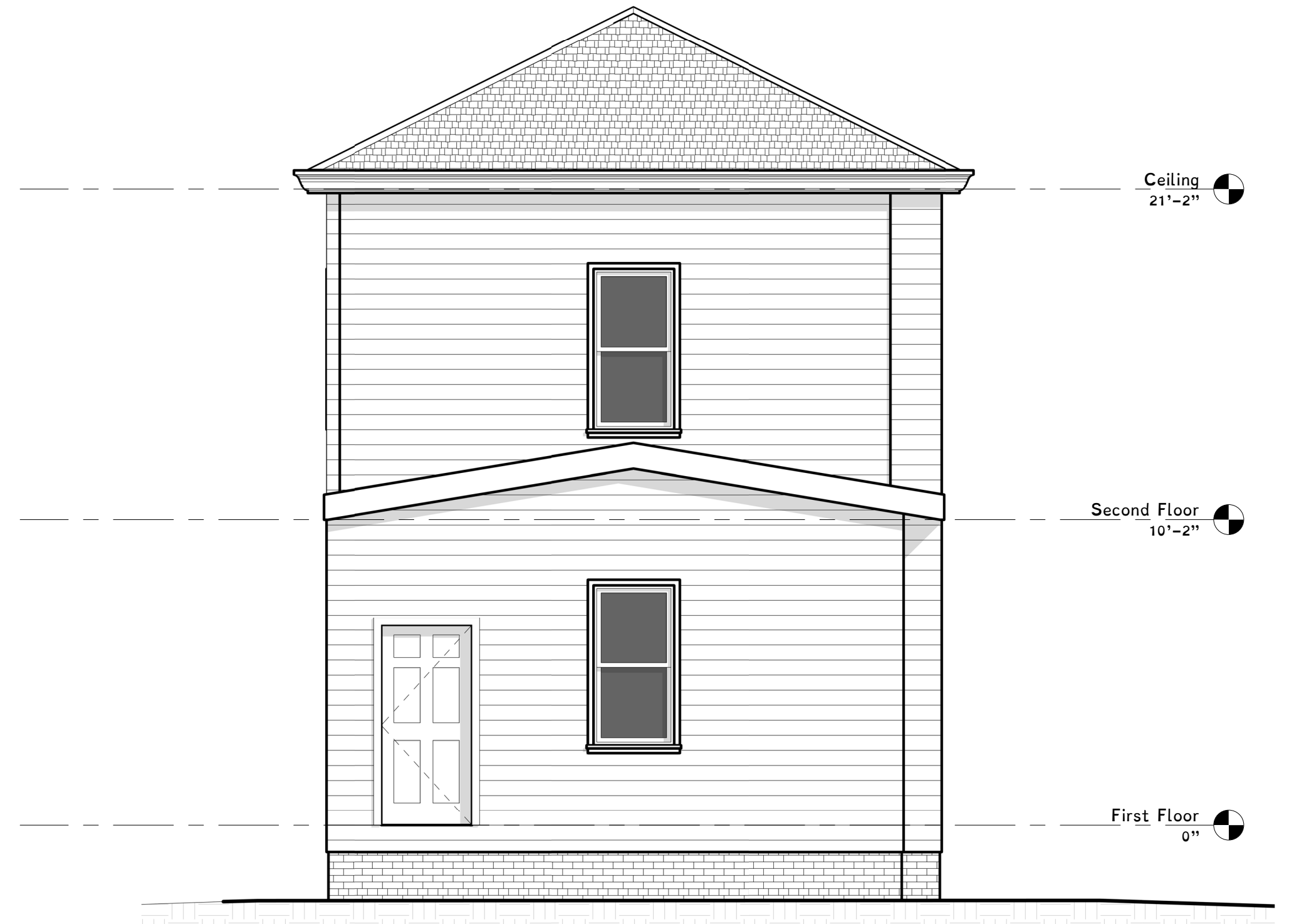
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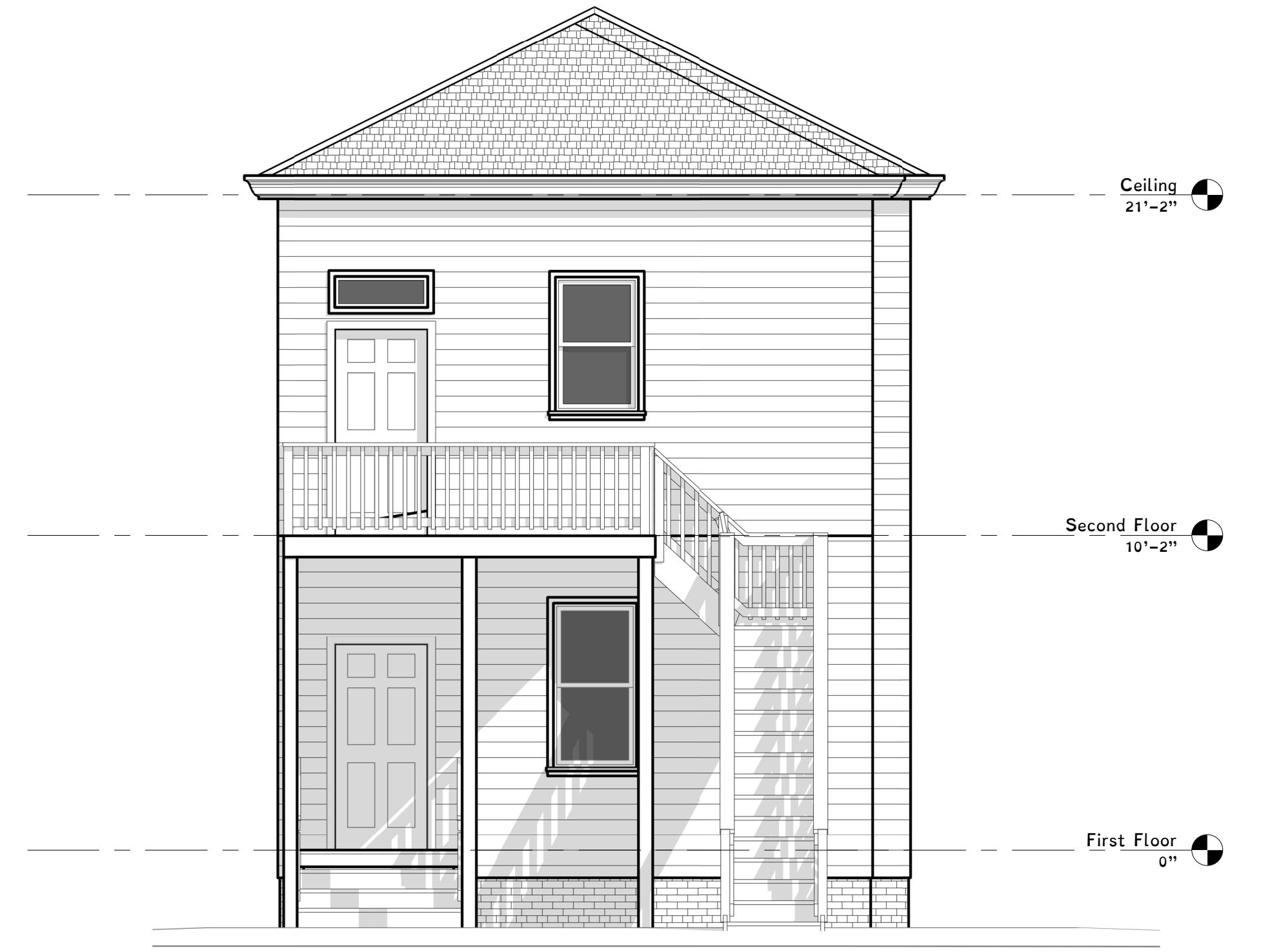
3 Existing West
 1/4" = 1'-0"



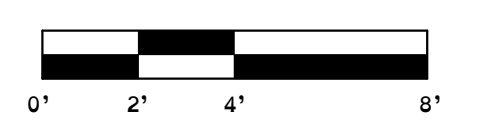
4 Proposed West
 1/4" = 1'-0"

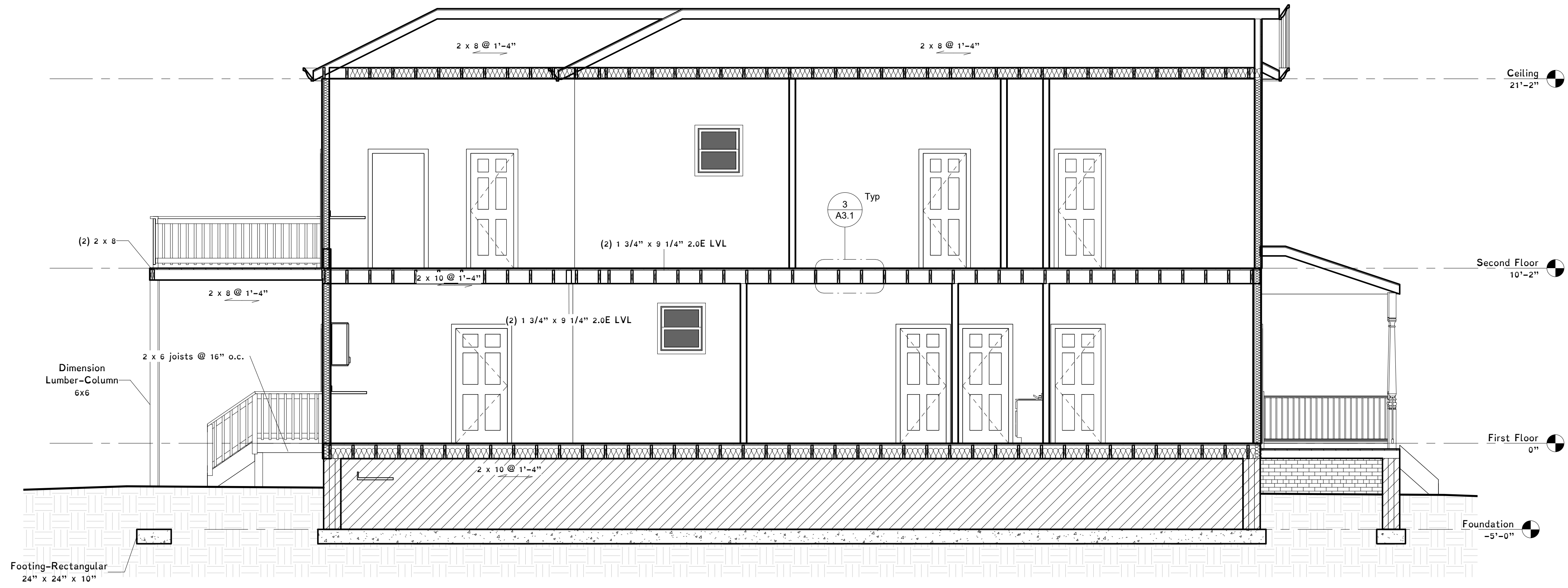


1 Existing East
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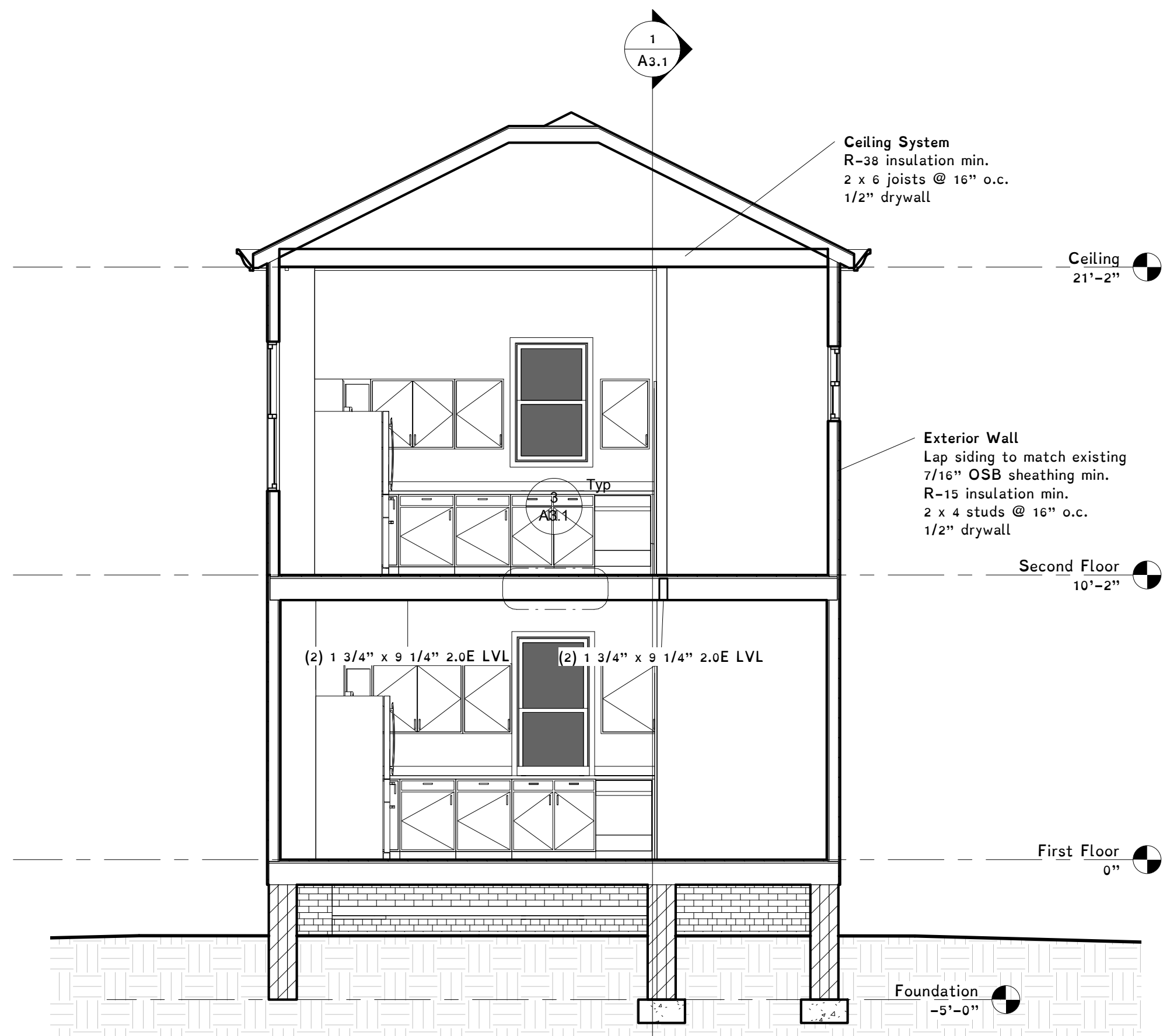


2 Proposed East
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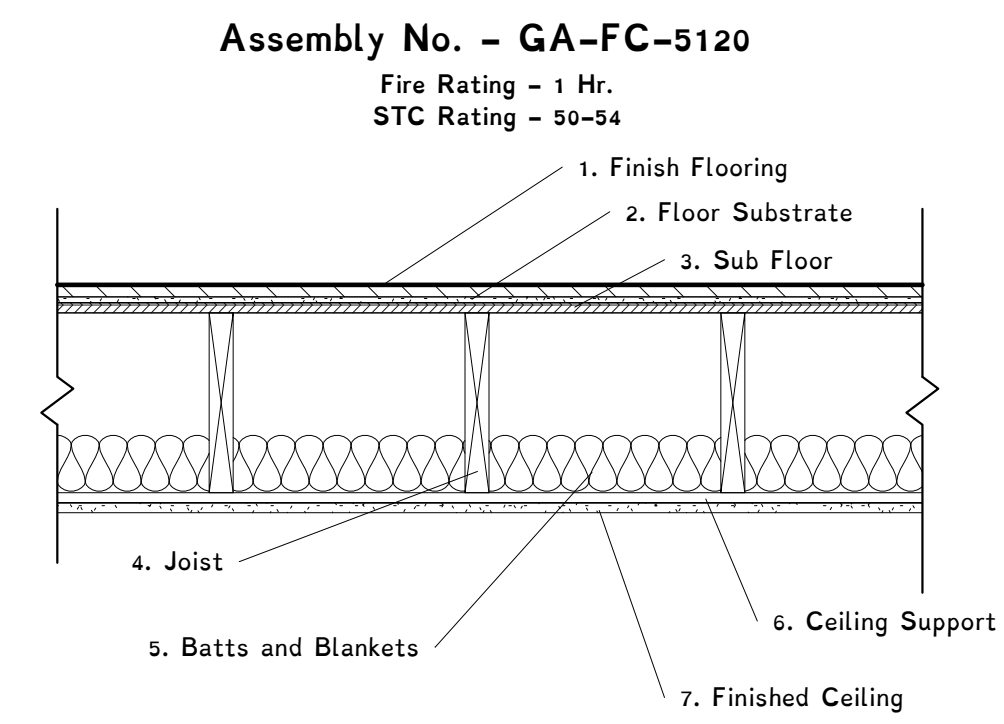




1 Section 1
1/4" = 1'-0"

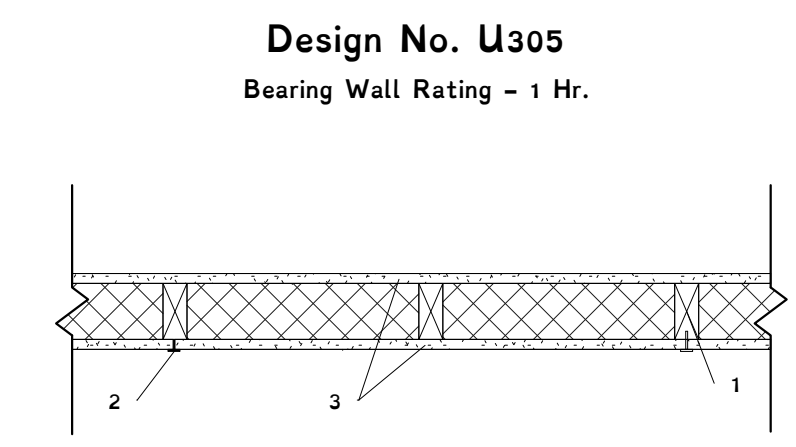


2 Section 2
1/4" = 1'-0"



1. Finish Flooring - 1 by 4 in. T&G, laid perpendicular to joists; or 19/32 in. thick wood structural panels, min grade "underlayment" or "single floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.
2. Floor Substrate - 3/8 in. (9 mm) particle board
3. Sub Floor - 5/8 in. (16 mm) plywood underlayment
4. Structural Members - Nom. 2 in. (51 mm) by 10 in. (254 mm) 16 in. (406 mm) OC min.
5. Batts and Blankets - 3-1/2 in. (89 mm) fiberglass insulation
6. Ceiling Support - Furring channels spaced 24 in. (609 mm) OC
7. Finished Ceiling - 1/2 in. (12 mm) thick gypsum board

3 1 Hr Floor - Wood Joist, GA-FC-5120
1" = 1'-0"

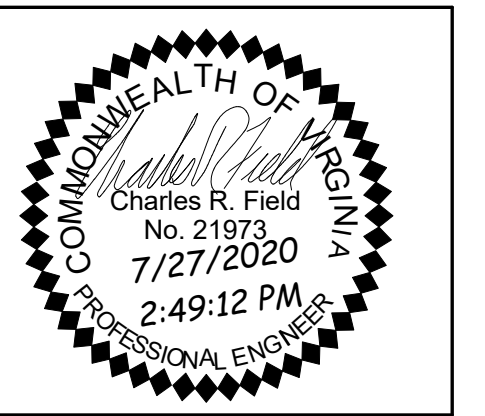


1. Wood Studs - Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.
2. Joints and Nail-Heads - Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.
3. Gypsum Board - 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
- Exterior grade drywall to be used on exterior walls.

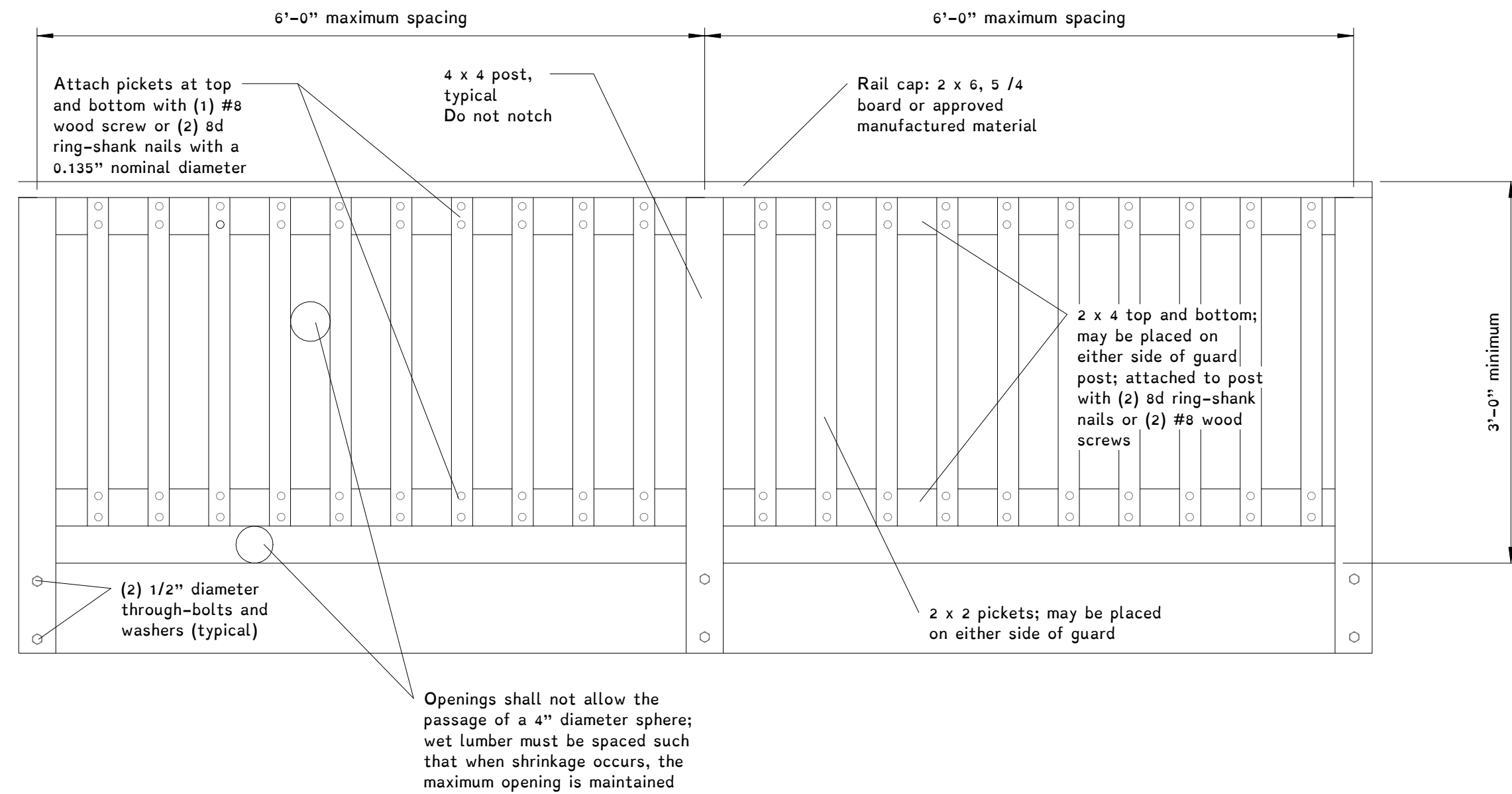
4 1 Hr Wall - Stud, U305
1" = 1'-0"

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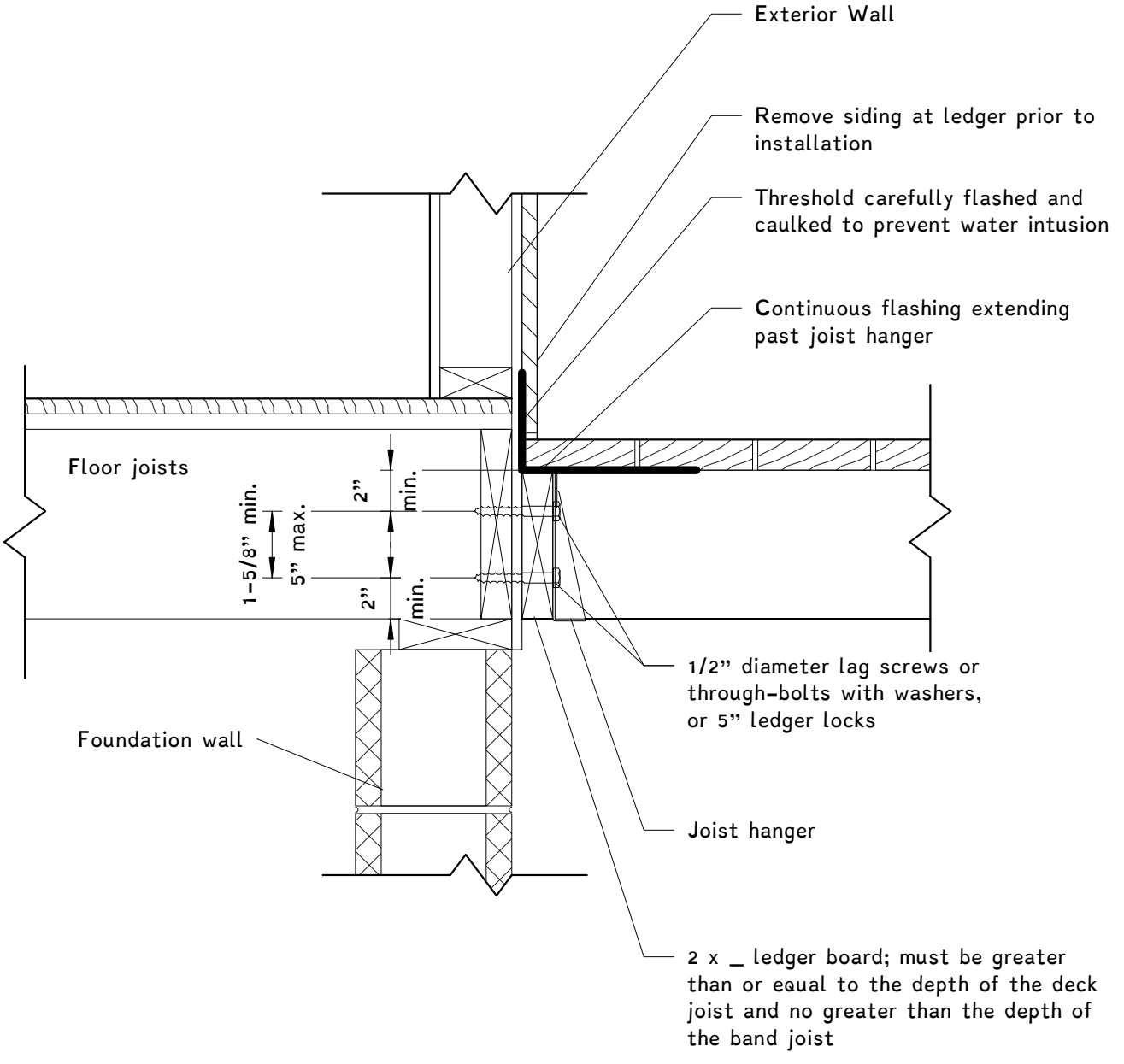
Sections
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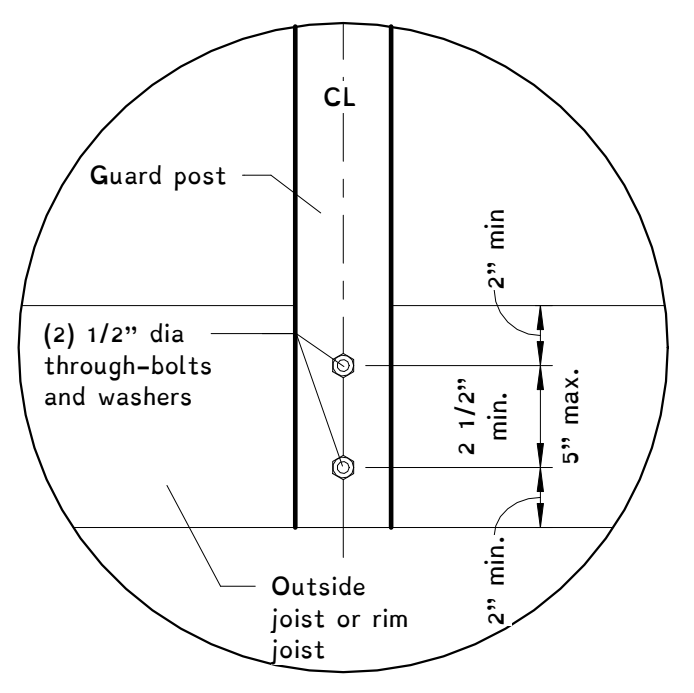


1 Deck Railing Detail
1" = 1'-0"

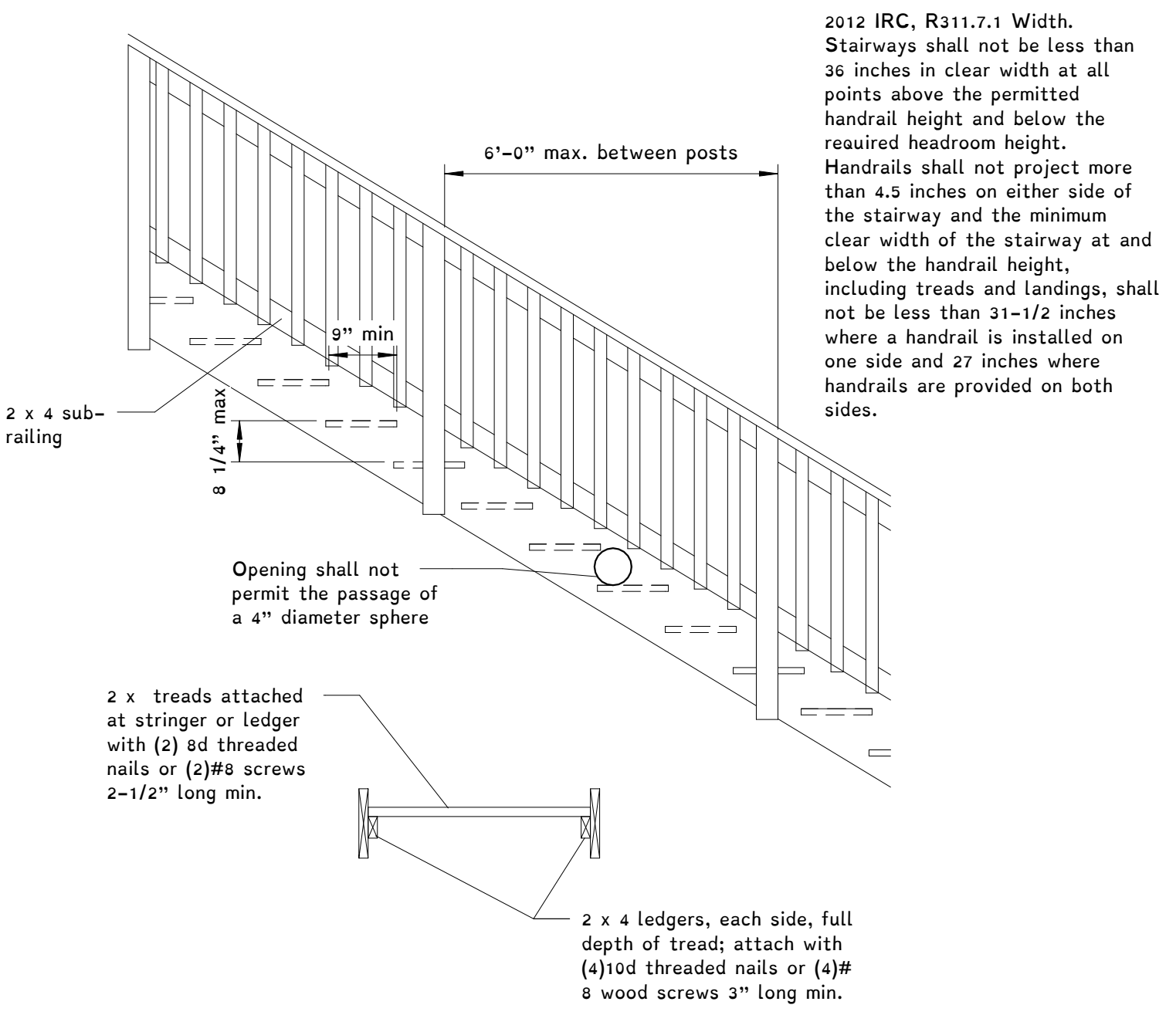


Note:
Ledger attachments to exterior veneers (brick, masonry, stone), hollow masonry, and to cantilevered floor overhangs or bay windows are prohibited.

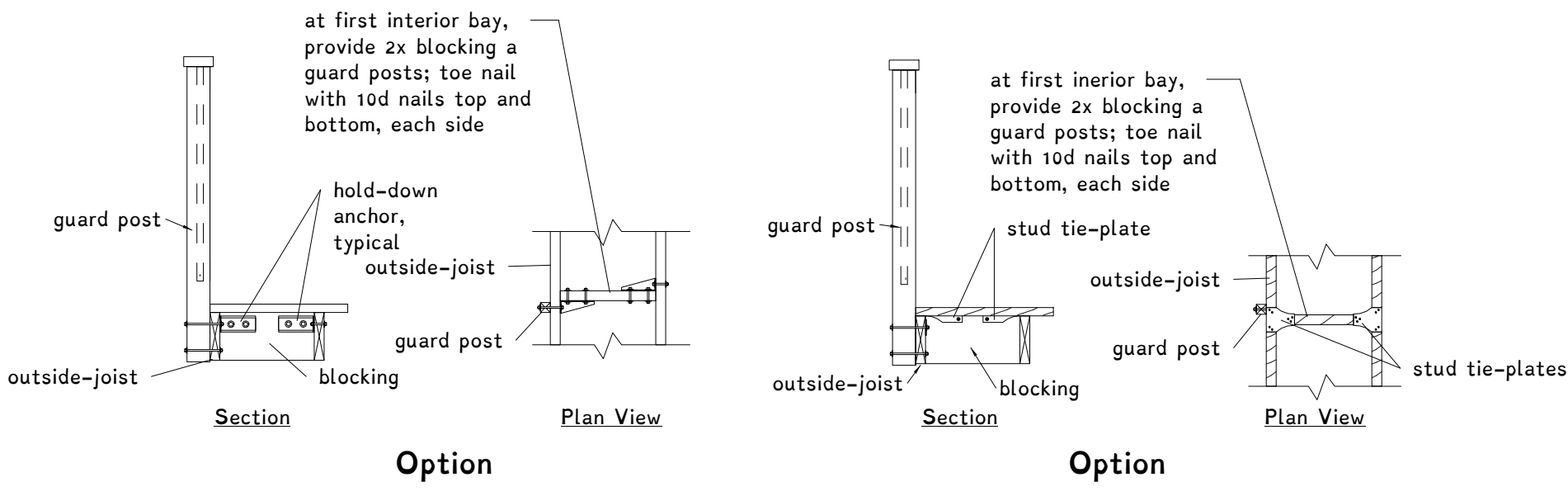
5 Ledger Attachment - deck to rim board
1 1/2" = 1'-0"



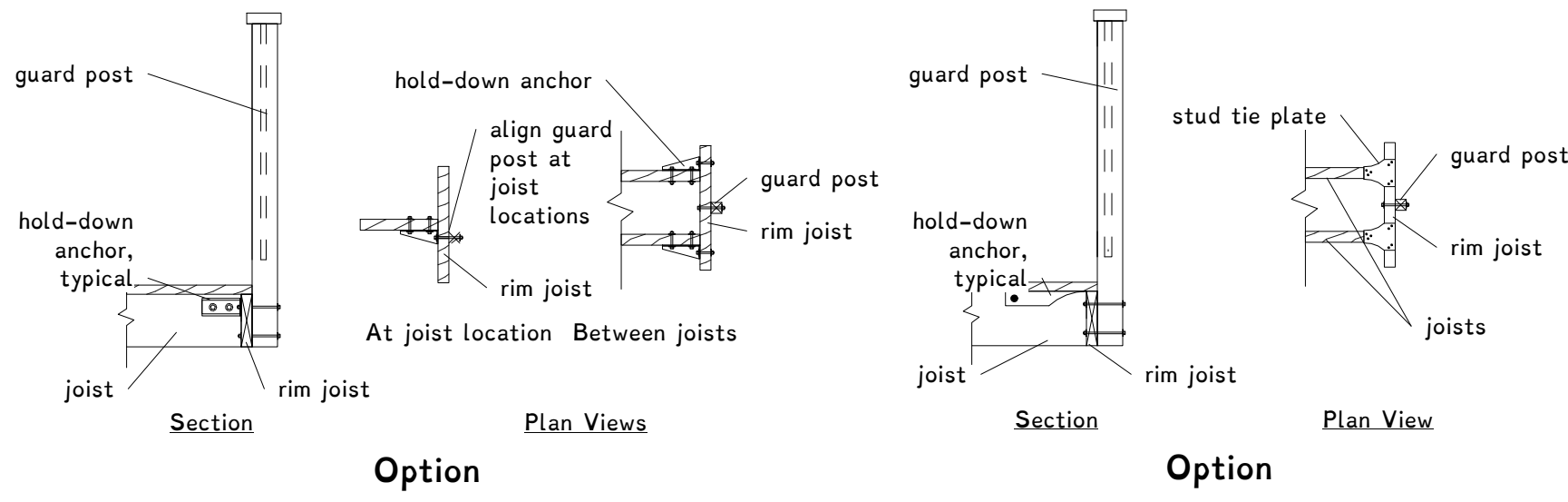
2 Guard Post Attachment
1 1/2" = 1'-0"



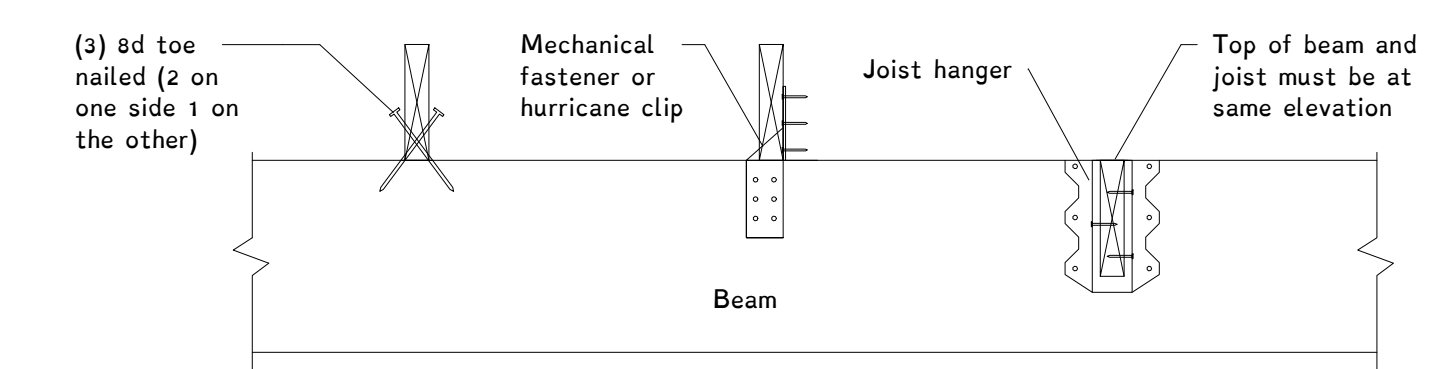
6 Stair Detail
1/2" = 1'-0"



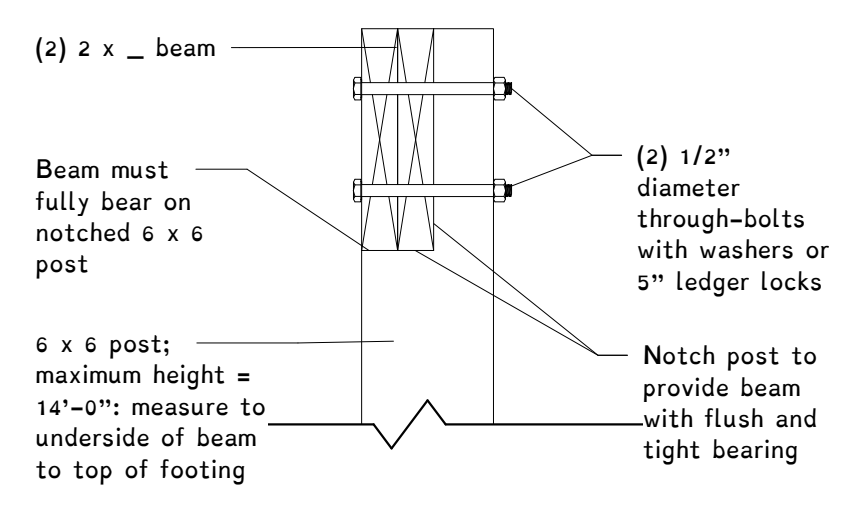
3 Guard Post to Outside Joist
1/2" = 1'-0"



4 Guard Post to Rim Joist Detail
1/2" = 1'-0"



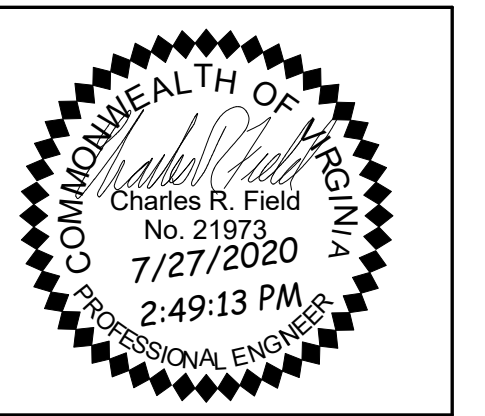
7 Joist to Beam Connection
1" = 1'-0"



8 Post to Beam Connection Detail
1 1/2" = 1'-0"

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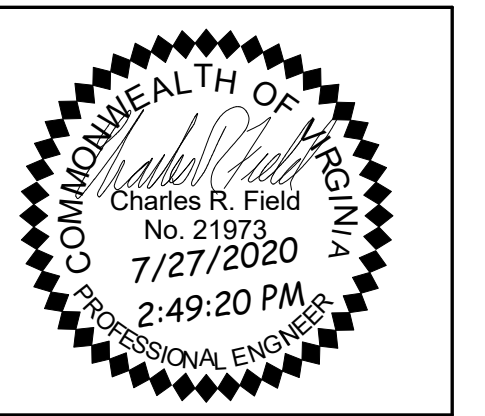


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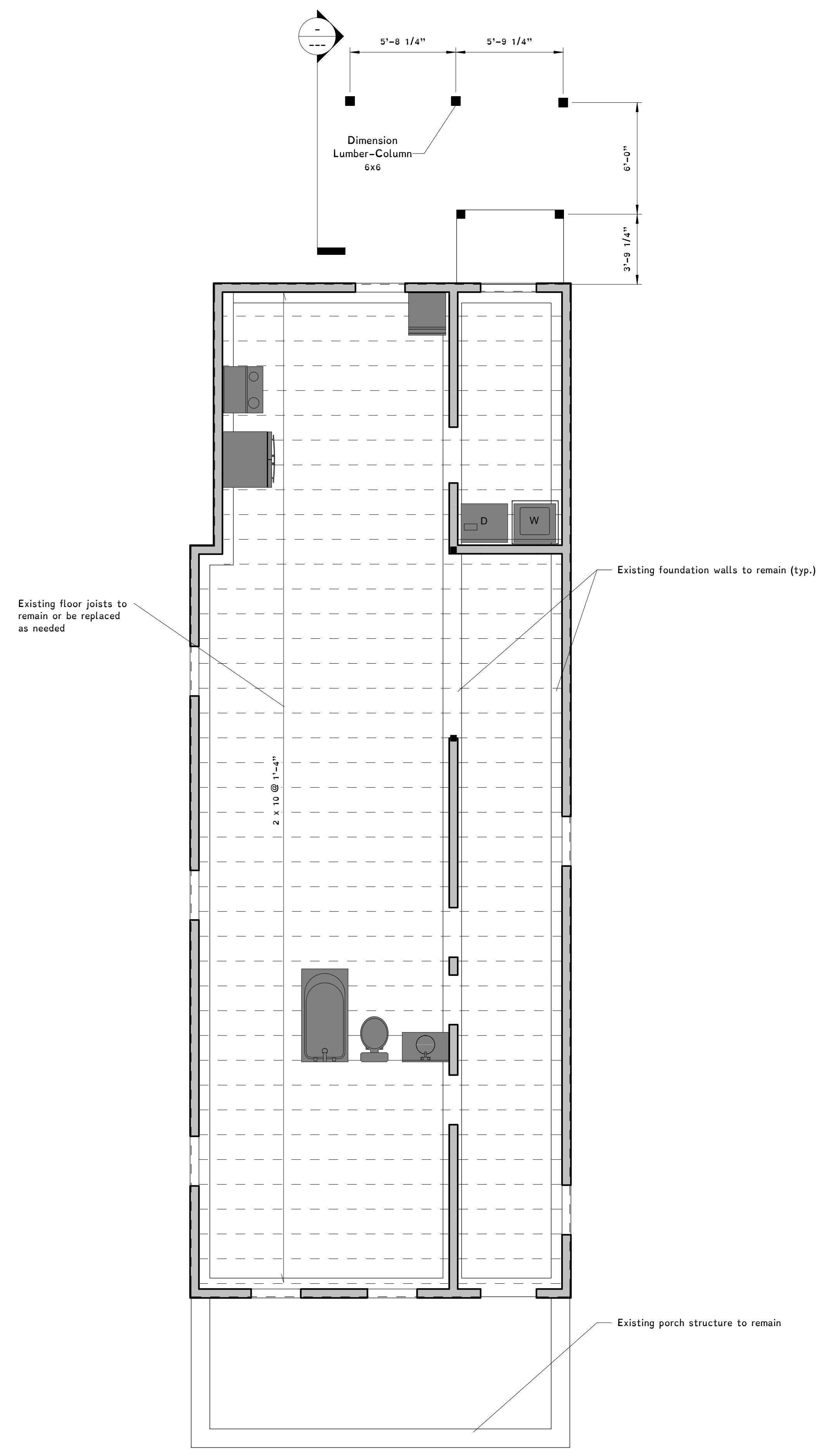
Rev.	Date	Description
1	10/11/2019	Structural framing plan & calculations added

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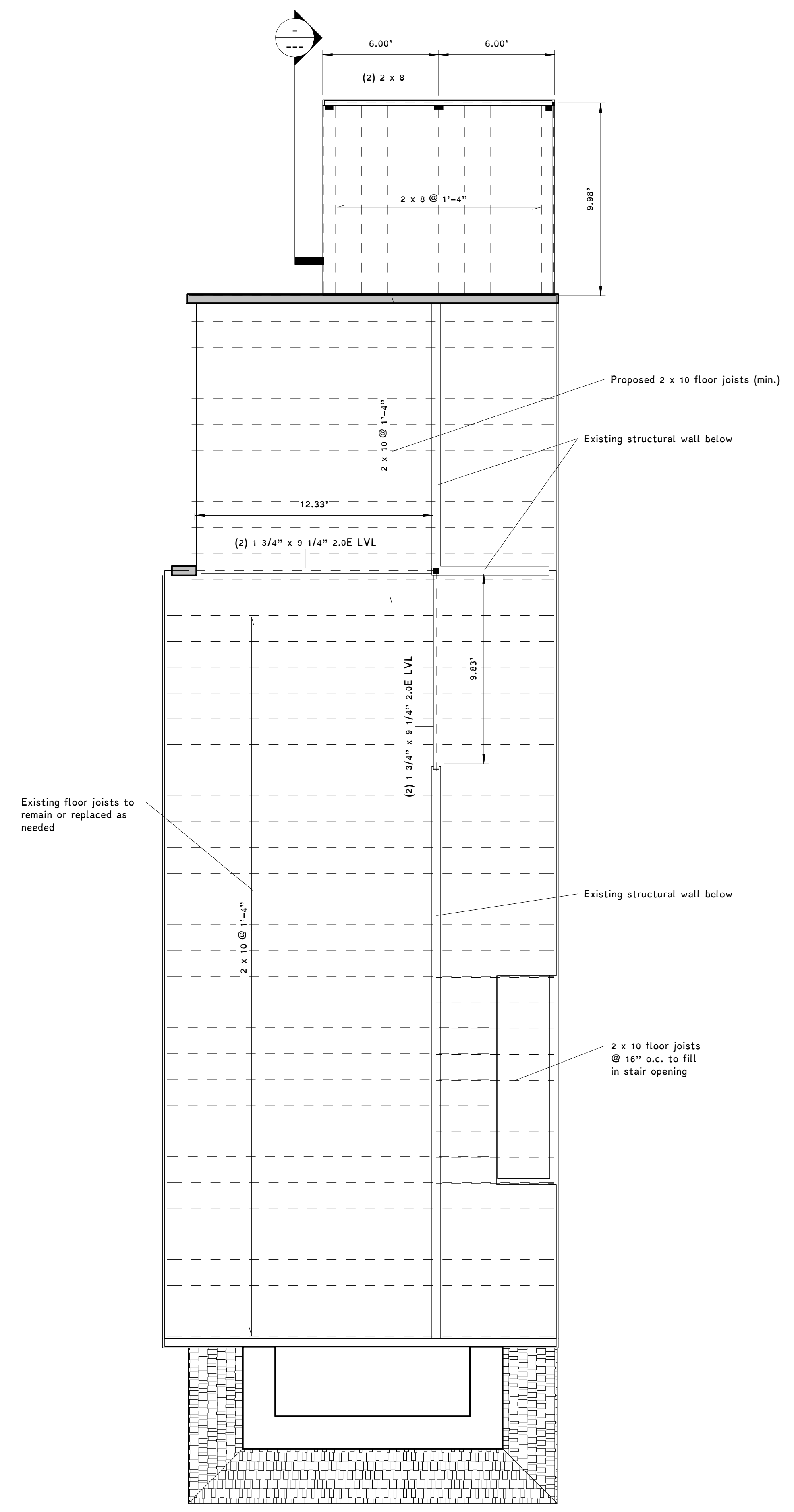
Structure
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2 1st Floor - Proposed
 1/4" = 1'-0"



1 2nd Floor - Framing Plan
 1/4" = 1'-0"

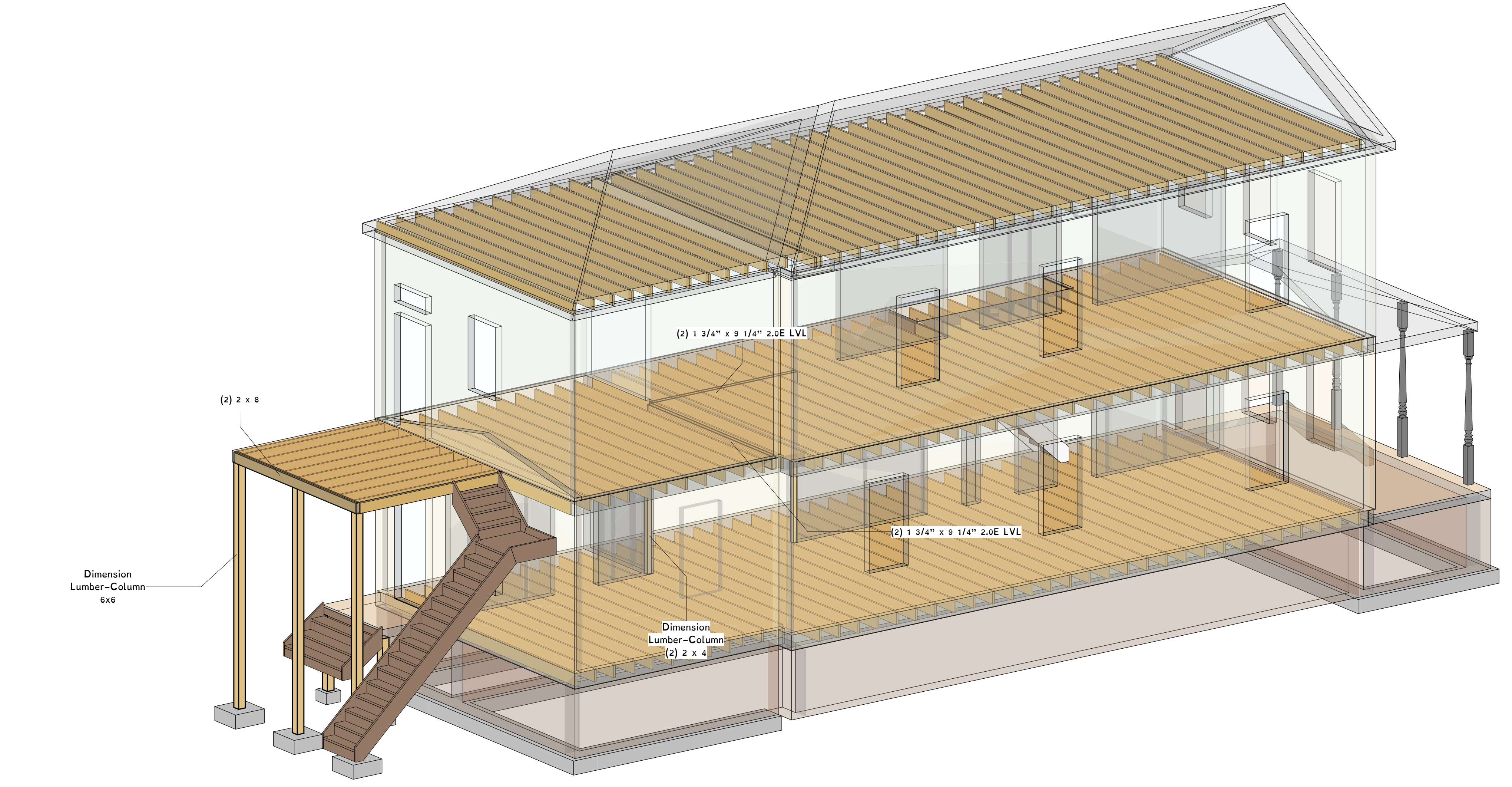
Rev.	Date	Description
1	10/11/2019	Structural framing plan & calculations added

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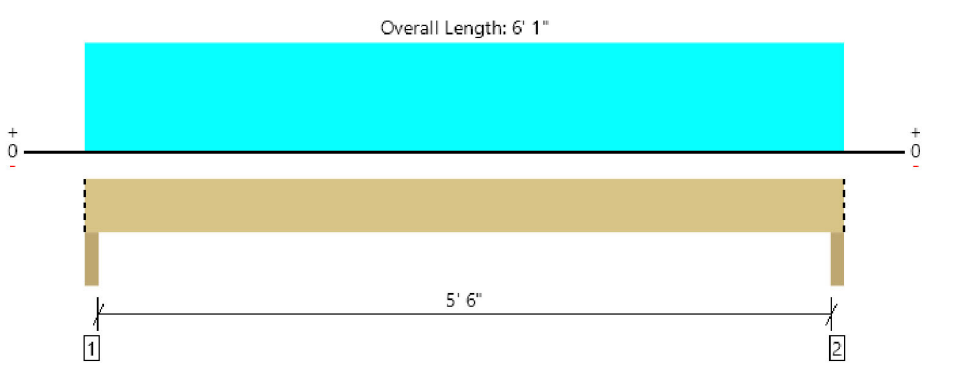


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FORTE WEB MEMBER REPORT PASSED

Second Floor, Deck Beam
 2 piece(s) 2 x 8 Southern Pine No. 2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDI	Load: Combination (Pattern)
Member Reaction (lbs)	777 @ 2"	5933 (3.50")	Passed (13%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	548 @ 3 1/2"	2538	Passed (22%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1056 @ 3 1/2"	2025	Passed (52%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.037 @ 3 1/2"	0.192	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.047 @ 3 1/2"	0.287	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System: Floor
 Member Type: Drop Beam
 Building Use: Residential
 Building Code: IRC 2015
 Design Methodology: ASD

- Deflection criteria: LL (L/240) and TL (L/240)
- Top Edge Bracing (Lu): Top compression edge must be braced at 6' 1" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lb): Bottom compression edge must be braced at 6' 1" o/c unless detailed otherwise.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1- Column - SYP	3.50"	3.50"	1.50"	169	608	777	Blocking
2- Column - SYP	3.50"	3.50"	1.50"	169	608	777	Blocking

Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

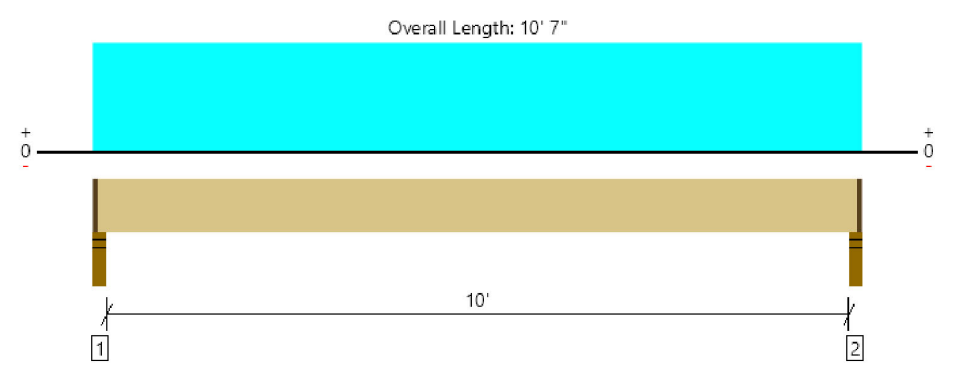
Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0- Self Weight (PLF)	0 to 6' 1"	N/A	5.5	--	
1- Uniform (PSF)	0 to 6' 1" (Front)	5'	10.0	40.0	Rear Deck Load

Weyerhaeuser Notes
 Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to ensure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator.

FORTE WEB MEMBER REPORT PASSED

Second Floor, Floor Beam 1 - Above Dining Room
 2 piece(s) 1 3/4" x 9 1/4" 2.0E Microllam® LVL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDI	Load: Combination (Pattern)
Member Reaction (lbs)	2643 @ 2"	4449 (2.25")	Passed (59%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	2155 @ 1' 3/4"	6151	Passed (25%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	6690 @ 5' 3 1/2"	11204	Passed (60%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.234 @ 5' 3 1/2"	0.256	Passed (L/526)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.298 @ 5' 3 1/2"	0.512	Passed (L/413)	--	1.0 D + 1.0 L (All Spans)

System: Floor
 Member Type: Flush Beam
 Building Use: Residential
 Building Code: IRC 2015
 Design Methodology: ASD

- Deflection criteria: LL (L/480) and TL (L/240)
- Top Edge Bracing (Lu): Top compression edge must be braced at 10' 5" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lb): Bottom compression edge must be braced at 10' 5" o/c unless detailed otherwise.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1- Stud wall - SYP	3.50"	2.25"	1.50"	578	2117	2695	1 1/4" Rim Board
2- Stud wall - SYP	3.50"	2.25"	1.50"	578	2117	2695	1 1/4" Rim Board

Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

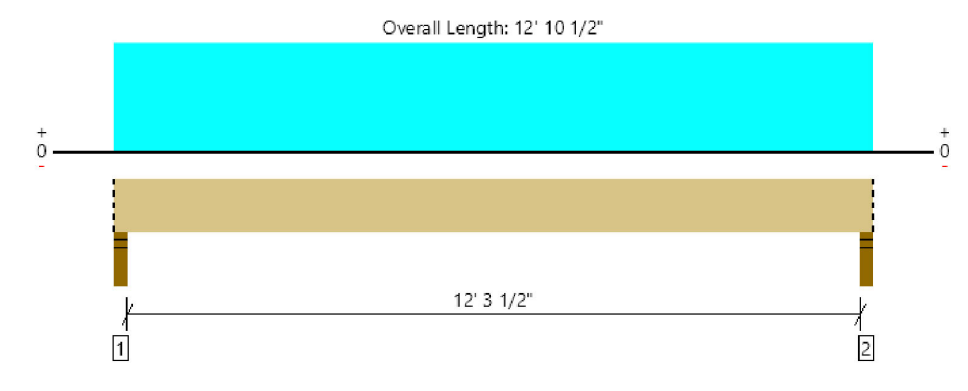
Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0- Self Weight (PLF)	1.14' to 10' 3 1/4"	N/A	9.4	--	
1- Uniform (PSF)	0 to 10' 7" (Top)	10'	10.0	40.0	Second Floor Joists

Weyerhaeuser Notes
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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator.

FORTE WEB MEMBER REPORT PASSED

Second Floor, Roof: Drop Beam
 2 piece(s) 1 3/4" x 9 1/4" 2.0E Microllam® LVL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDI	Load: Combination (Pattern)
Member Reaction (lbs)	1165 @ 2"	6921 (3.50")	Passed (17%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	972 @ 1' 3/4"	7689	Passed (13%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	3557 @ 6' 5 1/4"	14005	Passed (25%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.140 @ 6' 5 1/4"	0.418	Passed (L/999+)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.231 @ 6' 5 1/4"	0.627	Passed (L/652)	--	1.0 D + 1.0 Lr (All Spans)

System: Roof
 Member Type: Drop Beam
 Building Use: Residential
 Building Code: IRC 2015
 Design Methodology: ASD
 Member Pitch: 0/12

- Deflection criteria: LL (L/240) and TL (L/240)
- Top Edge Bracing (Lu): Top compression edge must be braced at 12' 10" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lb): Bottom compression edge must be braced at 12' 10" o/c unless detailed otherwise.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1- Stud wall - SYP	3.50"	3.50"	1.50"	457	708	1165	Blocking
2- Stud wall - SYP	3.50"	3.50"	1.50"	457	708	1165	Blocking

Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.25)	Comments
0- Self Weight (PLF)	0 to 12' 10 1/2"	N/A	9.4	--	
1- Uniform (PSF)	0 to 12' 10 1/2" (Top)	5' 6"	11.2	20.0	Existing Roof

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