1121 North 25th Street

Building Permit Plans

Owner

Garrett Augustine
1111 North 36th Street
Richmond, VA 23223

Engineer

Obsidian, Inc.
Charles R. Field, P.E.
515 North 22nd Street
Richmond, VA 23223
804.647.1589
crfield@obsidian.pro

Table of Contents

Property Information

Parcel ID	E0000519028
Zoning	UB-PE3
Use	Residential & Business
Setbacks	Front Yard = None
	Side Yard = None
	Rear Yard = 20 feet
Height	28 feet maximum

Floor Space Table

Second Floor	1740 SF
First Floor	1740 SF
Gross Building Area	3480 SF

Scope of Work

Scope of work will generally consist of the renovation of an existing structure in accordance with these plans and the IBC, 2012.

General Notes

1. The structure will be constructed in accordance with the 2012 edition of the "International Building Code", the Statewide Uniform Building Code and the applicable City of Richmond ordinances.
2. The contractor is responsible for compliance with City, State and Federal job site safety requirements.
3. 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.
4. Glazing in windows shall be tempered if the bottom edge is less than 18" above floor, in walls enclosing bathtub or showers, or less than 36" above the plane of stairways or landings.
5. There will be a fire sprinkler system.
6. There is a proposed fire detection system or alarm.
7. The construction type is V-B.
8. There are 2 stories.
9. The occupancy class is R-3. The first floor commercial occupancy shall be determined by tenant under separate permit plans.
10. IRC 2012 minimum insulation and fenestration requirements:
    Fenestration U-factor : 0.35
    Ceiling R-value : 38
    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
8. 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.

Window Schedule

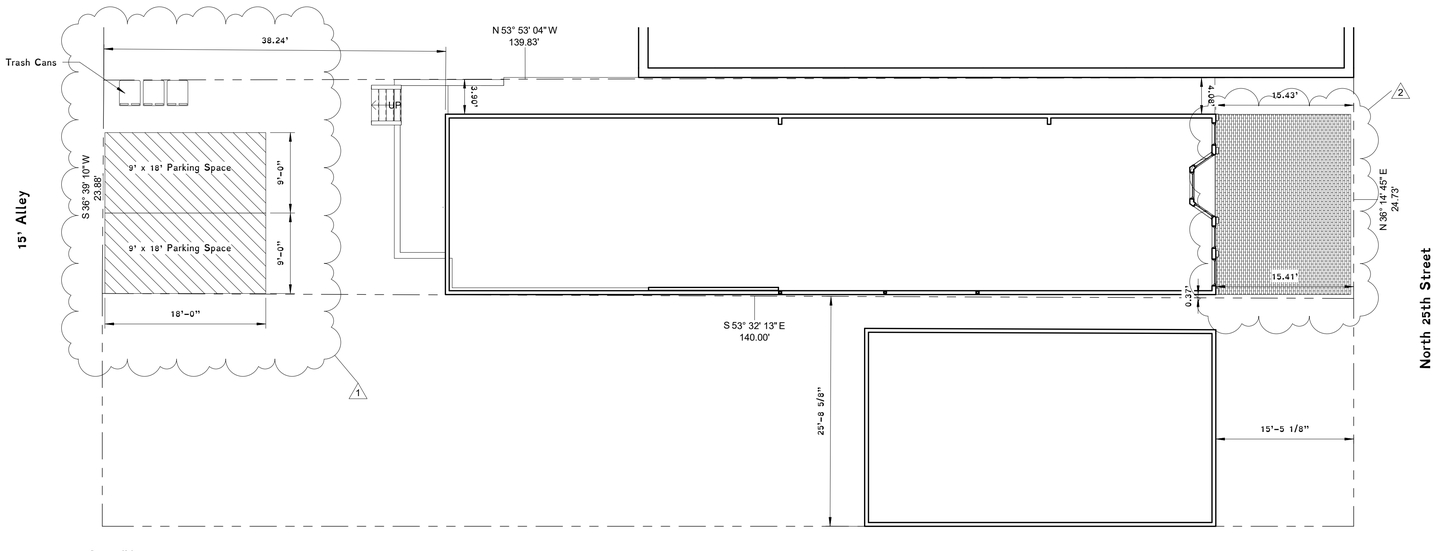
Type Mark	Count	Family	Width	Height
First Floor				
45	7	Double Hung with Trim	3'-0"	6'-0"
53	1	Fixed with Trim	3'-0"	2'-0"
132	2	Fixed with Trim	3'-0"	2'-6"
155	4	Fixed with Trim	2'-6"	6'-0"
157	4	Fixed with Trim	2'-6"	2'-6"
Second Floor				
37	2	Double Hung with Trim	3'-0"	4'-0"
45	3	Double Hung with Trim	3'-0"	6'-0"
119	2	Double Hung with Trim	3'-0"	5'-0"
145	6	Double Hung with Trim	3'-0"	5'-6"

Door Schedule

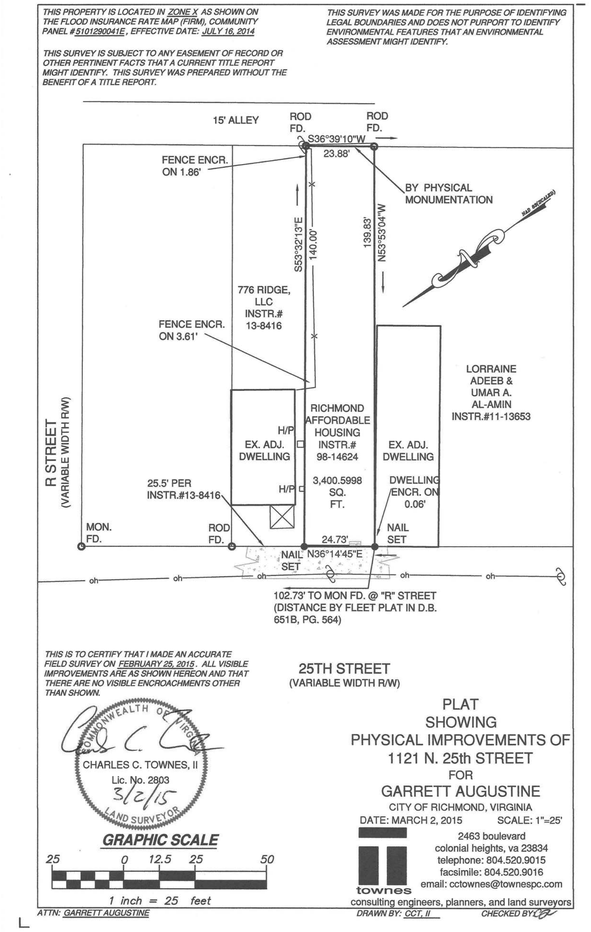
Type Mark	Count	Family	Width	Height
First Floor				
174	5	Single-Panel 4	3'-0"	6'-8"
192	2	Single-Glass 1	3'-0"	7'-0"
rear ground level				
96	1	Single-Glass 1	3'-0"	6'-8"
Second Floor				
151	4	Sliding-Closet	5'-0"	6'-8"
173	2	Single-Panel 4	2'-6"	6'-8"
174	4	Single-Panel 4	3'-0"	6'-8"

Room Area Table

Name	Area
First Floor	
Commercial Space	1017 SF
Storage / Multipurpose	334 SF
ADA Bathroom	46 SF
ADA Bathroom	46 SF
Outdoor Seating/Patio	95 SF
	1538 SF
Second Floor	
Living Room / Kitchen	413 SF
Bathroom	64 SF
Bedroom	169 SF
Kitchen/ Living Room	540 SF
Hallway	124 SF
Closet	14 SF
Closet	14 SF
Closet	14 SF
Closet	14 SF
Bedroom	170 SF
Closet	63 SF
	1599 SF
Grand total	3137 SF



2 Site Plan
1/8" = 1'-0"



A1

Rev.	Date	Description
2	8/29/2017	Increased front yard setback
1	8/29/2017	Added parking & trash location

Title Sheet
1121 N 25th St – Building Permit Plans
Garrett Augustine
City of Richmond, VA

rev. 8/29/2017
November 3, 2016

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Lic. No. 21973
8/29/2017
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PROFESSIONAL ENGINEER

Charles R. Field, P.E.
2017.08.30 12:18:17 -04'00'

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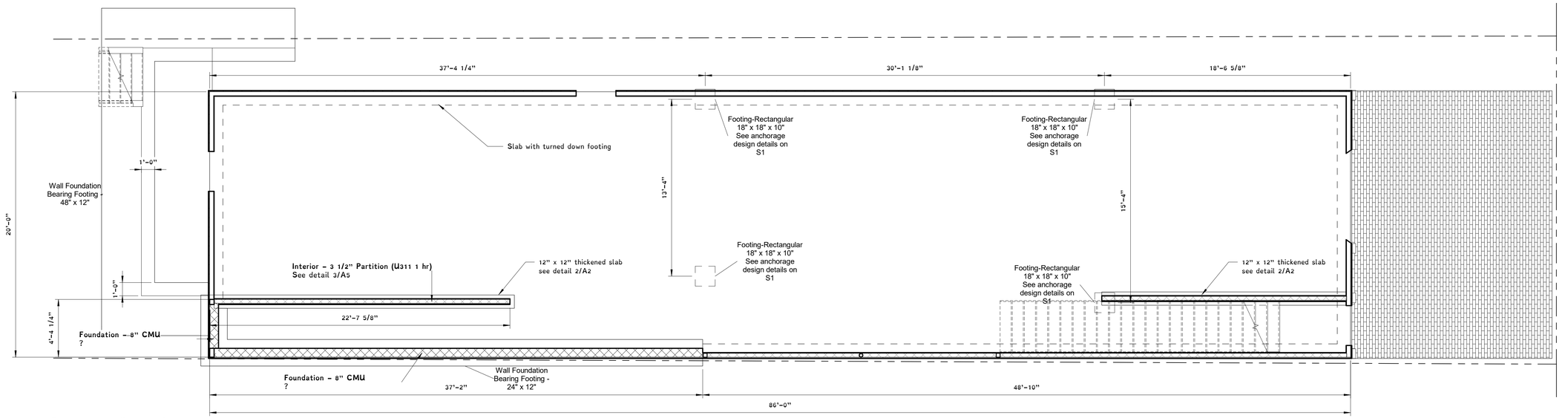
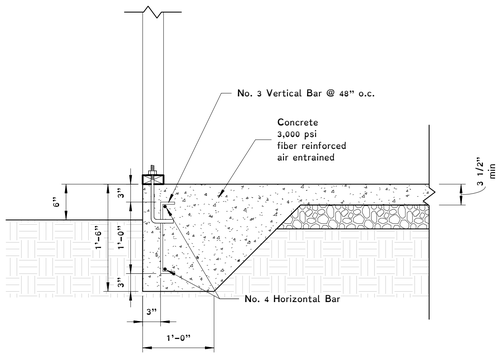
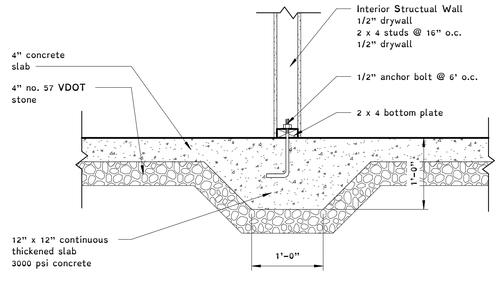


1 Foundation - Proposed
1/4" = 1'-0"



2 Turned-Down Footing Detail
1" = 1'-0"



3 Thickened Slab Detail
1" = 1'-0"

A2

Rev.	Date	Description

Foundation Plan

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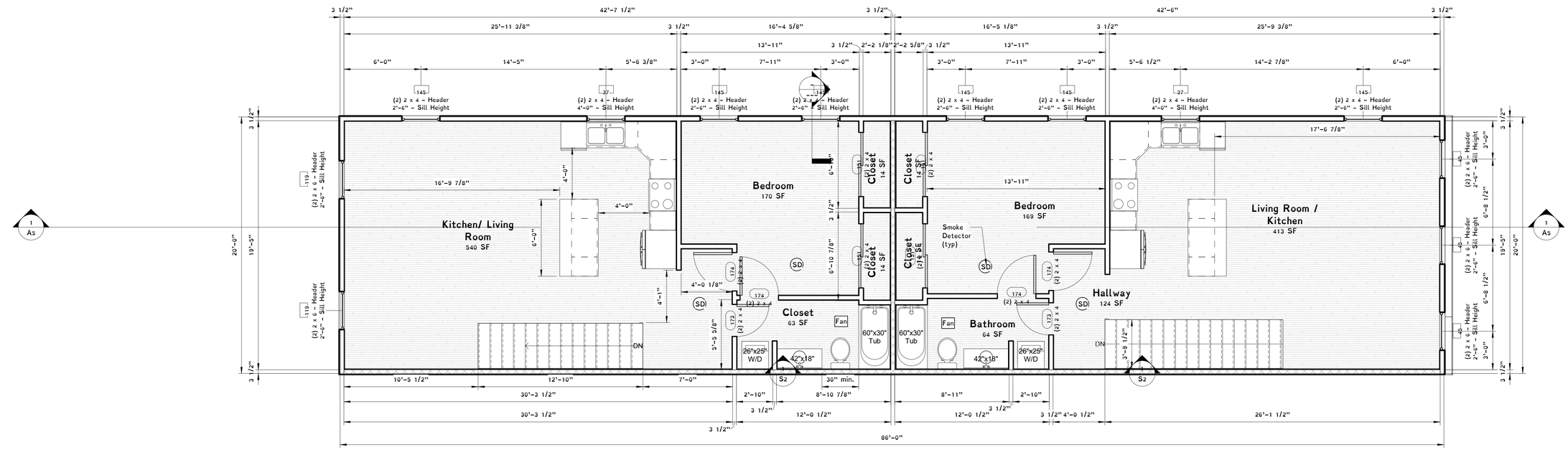
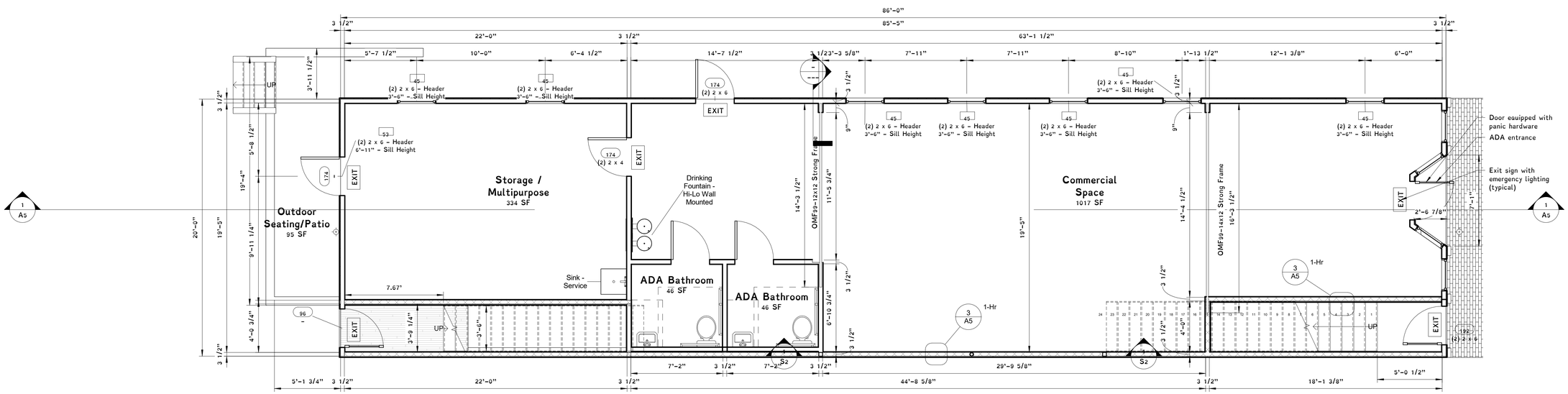


2 2nd Floor – Proposed
1/4" = 1'-0"



1 1st Floor – Proposed
1/4" = 1'-0"

A3

Rev.	Date	Description

Proposed Floor Layout

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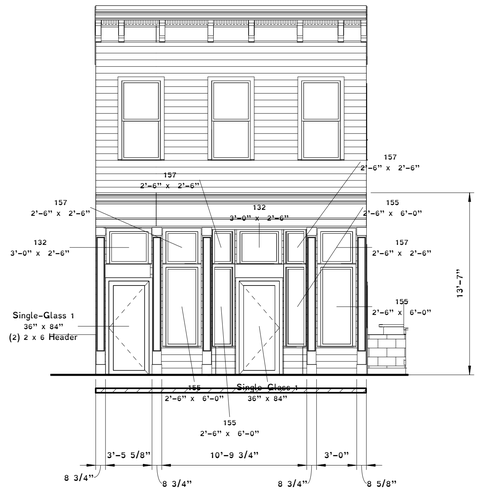
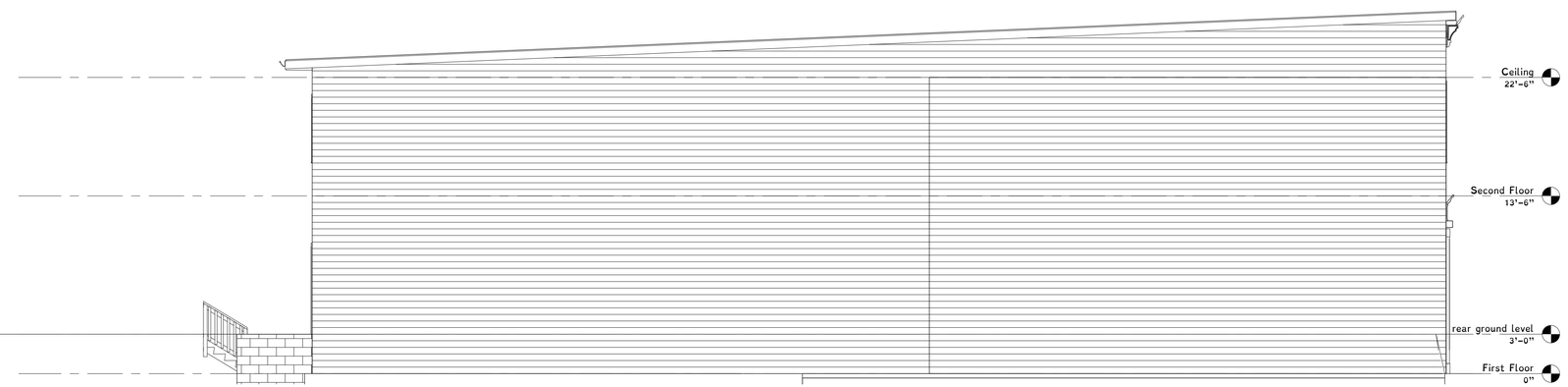


1 Proposed East
3/16" = 1'-0"

2 Proposed North
3/16" = 1'-0"

3 Proposed West
3/16" = 1'-0"



4 Proposed South
3/16" = 1'-0"

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Rev.	Date	Description

Elevations

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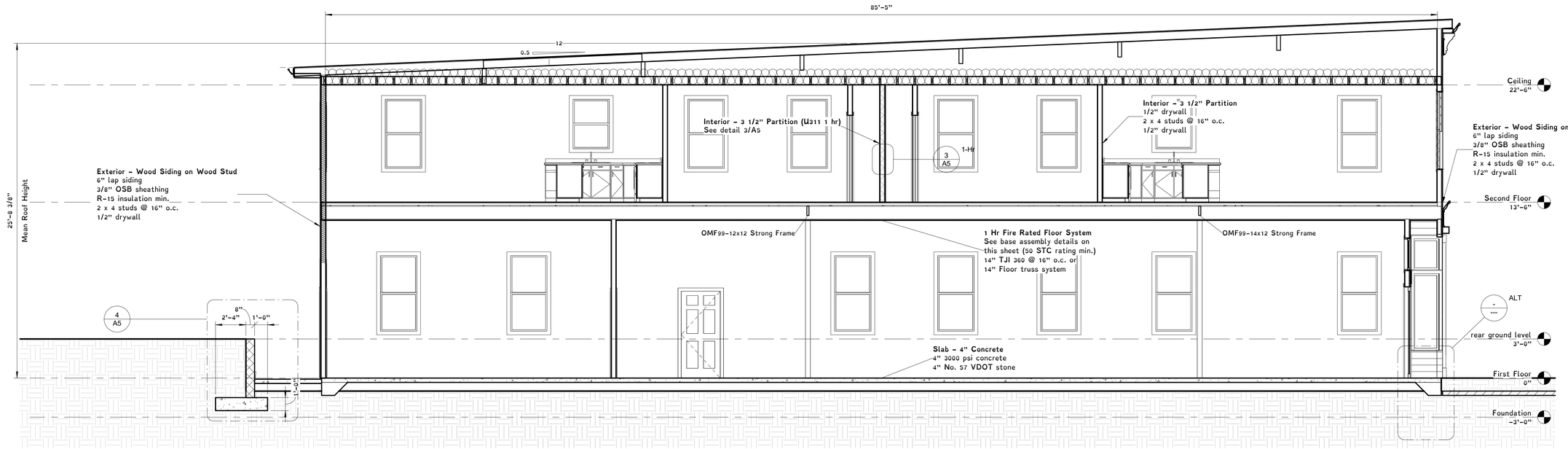
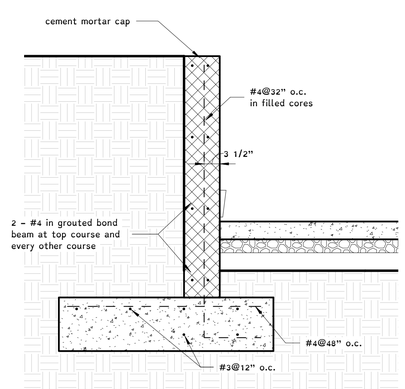
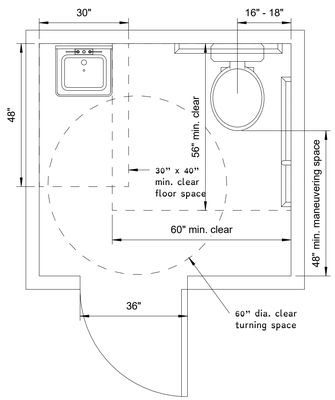
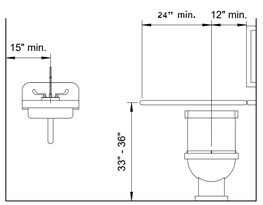


1 Cross Section
1/4" = 1'-0"



4 Retaining Wall Detail
3/4" = 1'-0"





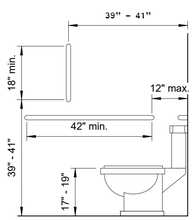
2 ADA Bathroom Detail
1/2" = 1'-0"

Notes:

The diameter or width of the gripping surfaces of a handrail or grab bar shall be 1-1/4 in to 1-1/2 in (32 mm to 38 mm), or the shape shall provide an equivalent gripping surface. If handrails or grab bars are mounted adjacent to a wall, the space between the wall and the grab bar shall be 1-1/2 in. Handrails may be located in a recess if the recess is a maximum of 3 in (75 mm) deep and extends at least 18 in (455 mm) above the top of the rail.

The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

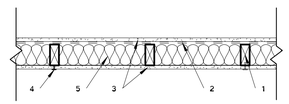
1. Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (1112N) shall be less than the allowable stress for the material of the grab bar or seat.
2. Shear stress induced in a grab bar or seat by the application of 250 lbf (1112N) shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
3. Shear force induced in a fastener or mounting device from the application of 250 lbf (1112N) shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
4. Tensile force induced in a fastener by a direct tension force of 250 lbf (1112N) plus the maximum moment from the application of 250 lbf (1112N) shall be less than the allowable withdrawal load between the fastener and the supporting structure.
5. Grab bars shall not rotate within their fittings.
6. Toilet paper dispenser must be at least 1 1/2" below or 12" above the grab bar.



3 1 Hr Wall - Stud, U311
1" = 1'-0"

Design No. U311

Bearing Wall Rating - 1 Hr.
STC Rating - 52



1. Wood Studs - Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. Resilient Channel - 25 MSG galv steel. Resilient Channels spaced vertically 24 in. o.c., flange portion screw attached to one side of studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws.

3. Gypsum Board* - 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 12 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 12 in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced 12 in. OC. Vertical joints shall be located over studs on this side of the wall.

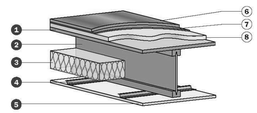
4. Joints and Screw Heads - Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

5. Batts and Blankets - 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4-in. face of the studs with staples placed 24 in. OC. or fiberglass insulation.

Exterior grade drywall to be used on exterior walls.

BASE ASSEMBLY H

Assembly H Single Layer Ceiling, One-Hour Rated[1]
ICC-ES ESR-1153, PFS FJ-1



Base Components:

1. Single layer of 48/24 minimum, span-rated tongue-and-groove sheathing (such as Weyerhaeuser's Edge™ or Edge Gold™ OSB, or equivalent), nailed and glued with a subfloor adhesive.
2. Fiak Jacket™ protected TJI® 210, 230, 360, or 560 joist, with on-center spacing of 16" or less. For wider spacing, up to 24" on-center maximum, use 11⅞" deep or greater TJI® 230, 360, or 560 joists.
3. Glass fiber insulation[2] placed between the TJI® joists and above the bottom flange. See tables for specifications.
4. RC1 resilient channels at 16" on-center
5. One layer ⅝" thick Type C gypsum board

Flooring Components, see tables below:

6. Finish flooring
7. Acoustic mat[3]
8. Underlayment[3]

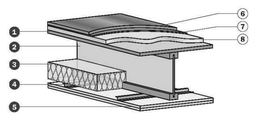
(1) For more information about design, installation and fire performance of this assembly, see the *Weyerhaeuser Fire-Rated Assemblies and Sprinkler Systems Guide* 1500, ICC-ES ESR-1153, and PFS Listings.
(2) Insulation is optional for the fire resistance rating.
(3) In some assemblies, placement of acoustic mat is below underlayment. See tables.

Assembly H **Hardwood Options**

Finish Flooring	IIC	STC	Acoustic Mat	Underlayment	Insulation
Engineered hardwood, ¾" thick, floating	**50**	**58**	ECORE 5mm QTacu® installed over gypsum concrete	1" gypsum concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**51**(E)	**57**	Profiles™ RCU 250 installed over gypsum concrete	1" gypsum concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**53**(E)	**55**	ECORE 5mm QTacu® installed over lightweight concrete	1½" lightweight concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**55**(E)	**55**	Profiles™ RCU 250 installed over lightweight concrete	1½" lightweight concrete	3½" (R-11) fiberglass
Engineered hardwood, ½" thick, floating	**55**	**61**(E)	Acousti-mat® II HP installed under gypsum concrete	1" Maxxon® gypsum concrete underlayment	3½" (R-11) fiberglass

(E) Value estimated by engineering analysis
(1) Value from the same assembly tested with quarry tile

Assembly B Two Layer Ceiling, One-Hour Rated[1]
ICC-ES ESR-1153, PFS FA-1,
Intertek WNR FCA 60-01, WNR FCA 60-03



Base Components:

1. Single layer of 48/24 minimum, span-rated tongue-and-groove sheathing (such as Weyerhaeuser's Edge™ or Edge Gold™ OSB, or equivalent), nailed and glued with a subfloor adhesive.
2. TJI® joists with on-center spacing of 24" maximum
3. Glass fiber insulation[2], above resilient channels and between bottom flanges. Maximum R-30 rating. See tables for specifications.
4. RC1 resilient channels[2] at 16" on-center. Spacing can be increased to 24" on-center for joists spaced 16" on-center.
5. Two layers of ⅝" thick Type X gypsum board complying with ASTM C36 or two layers of ½" thick Type C gypsum board.

Flooring Components, see tables below:

6. Finish flooring
7. Acoustic mat
8. Underlayment

(1) For more information on design, installation and fire performance of this assembly, see the *Weyerhaeuser Fire-Rated Assemblies and Sprinkler Systems Guide* 1500, ICC-ES ESR-1153, PFS and Intertek Listings.
(2) Insulation and resilient channels are optional for the fire resistance rating.

Assembly B **Hardwood Options**

Finish Flooring	IIC	STC	Acoustic Mat	Underlayment	Insulation
Engineered hardwood, ¾" thick, floating	**54**(E)	**55**	ECORE 5mm QTacu® installed over lightweight concrete	1½" lightweight concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**55**(E)	**58**(E)	ECORE 5mm QTacu® installed over gypsum concrete	1" gypsum concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**56**(E)	**55**	Profiles™ RCU 250 installed over lightweight concrete	1½" lightweight concrete	3½" (R-11) fiberglass
Engineered hardwood, ¾" thick, floating	**57**(E)	**57**	Profiles™ RCU 250 installed over gypsum concrete	1" gypsum concrete	3½" (R-11) fiberglass
Engineered hardwood, ½" thick, floating	**57**(E)	**61**(E)	Acousti-mat® II HP installed under gypsum concrete	1" Maxxon® gypsum concrete underlayment	3½" (R-11) fiberglass

(E) Value estimated by engineering analysis
(1) Value from assembly tested with single-layer ceiling (Assembly H)

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Rev.	Date	Description

Details

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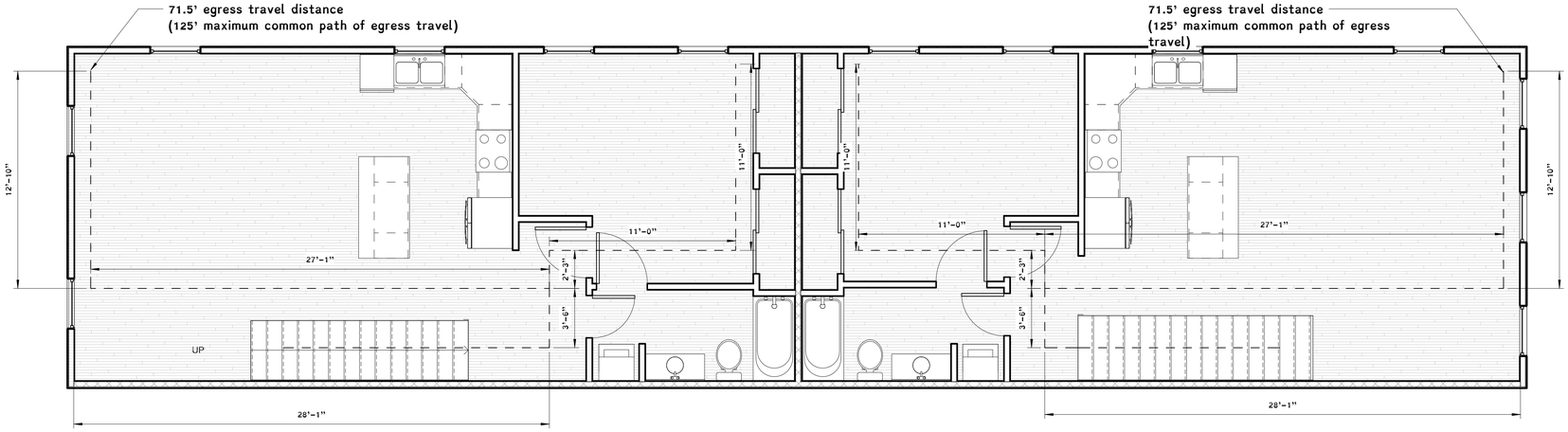
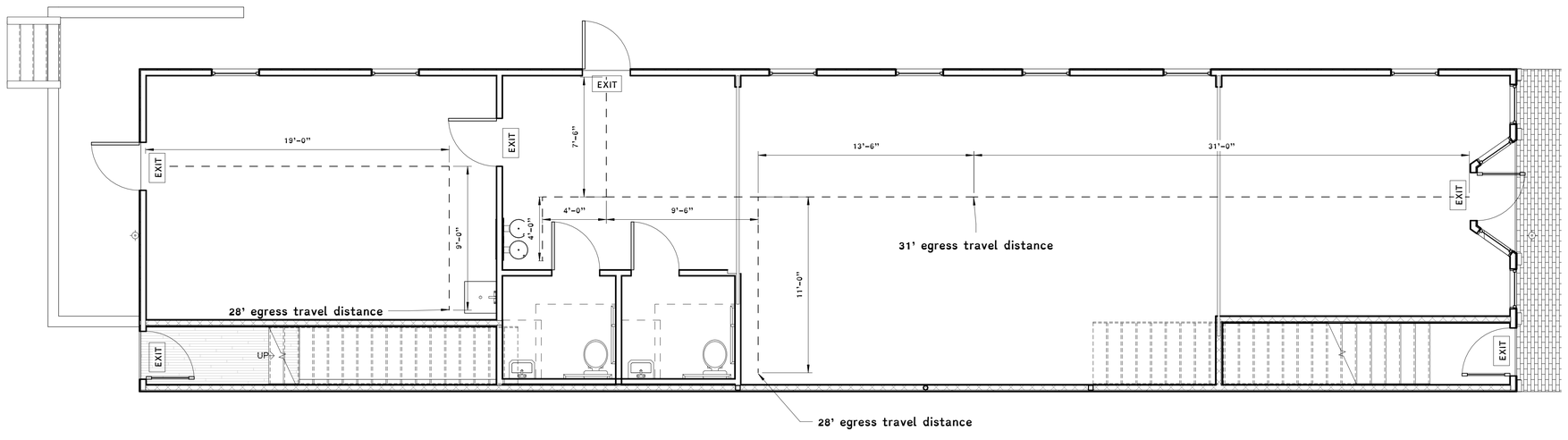


2 2nd Floor – Egress Plan
1/4" = 1'-0"



1 1st Floor – Egress Plan
1/4" = 1'-0"

A6

Rev.	Date	Description

Egress Plan

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Effective Seismic Weight

1121 North 25th Street
Prepared by: CRF

2nd Floor

Dead Load

Floor Width	20	feet
Floor Length	86	feet
Floor Area	1720	sf
Floor Dead Load	10	psf
Dead Load	17,200	lbs

Live Load

Residential Area	1741	sf
Code Live load	50	psf
Live Load	25%	12.7.2
Live Load	21,763	lbs
Total Floor Load	**38,963**	**lbs**

Roof

Dead Load

Width	20	feet
Length	86	feet
Area	1720	sf
Dead Load	11.9	psf
Dead Load	20,468	lbs

Snow Load

Flat Roof

$$P_f = 0.7 C_e C_t I p_g$$ Eq. 7-1

Importance Factor, I	1.0	Table 7.4
Exposure Factor, C_e	1.0	Table 7.2
Thermal Factor, C_t	1.0	Table 7.3
Snow Load, P_g	20.0	psf Figure 7-1
Snow Load Flat Roof, P_f	14	psf
Flat Area	0.0	ft
Flat Roof Load	-	lbs

Sloped Roof

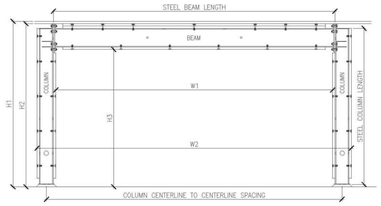
$$P_s = C_s P_f$$ Eq. 7.2

Roof Slope Factor, C_s	1	Figure 7-2a and b
Snow Load Slope, P_f	14	psf
Sloped Area	1720	sf
Sloped Roof Load	24,080	lbs
Total Roof Snow Load	24,080	lbs
Total Snow Load	**44,548**	**lbs**

11/1/2016

SIMPSON STRONG-TIE COMPANY INC.
5956 W. Las Positas Blvd., Pleasanton, CA 94588
(800) 999-5099
www.strongtie.com

OMF Frame Summary:



Model: OMF99-12x12

Custom Size	No
Beam Size	B9, Steel Beam Depth: 8.5" (See Note 4 below)
Column Size	C9, Steel Column Depth: 9" (See Note 4 below)
W1 Dimension	12'-4" (See Note 3 below)
W2 Dimension	14'-4" (See Note 3 below)
Column C.C. Spacing	13'-4"
H1 Dimension	12'-0 3/4" (See Note 1 and 2 below)
H2 Dimension	11'-11 1/4" (See Note 1 and 2 below)
H3 Dimension	10'-10 1/4" (See Note 1 below)
Steel Beam Length	12'-7" (Stock Length, see note 5 below)
Steel Column Length	11'-6 3/4" (Stock Length, see note 5 below)
End Plate Bolting	Pre-Tensioned
Min. Beam Top Nailer Bolt	2

Notes

1. H1, H2, and H3 dimensions assume 1-1/2" thick non-shrink grout.
2. H1 and H2 dimensions assume 1-1/2" thick field installed top plate.
3. Anchorage solution may require additional studs on side of columns, see anchorage design output for final W1 and W2 dimensions. For C18H and C21H, W2 assume (2) 2x6 for each column interior nailer.
4. Column and beam sizes shown are as depth of steel only and do not include nailers.
5. If custom beam or column is within 0.5" of stock length, stock beam or column will be used.
6. (1) 4x6 beam top nailer for frames with C18H and C21H columns.
   (2) 2x6 beam top nailer for frames with C6, C9, C12 and C15 columns.
7. Simpson Strong-Tie® Strong Frame® and the Yield-Link™ structural fuseare protected under US patent number 8,001,734, B2 and must be supplied or licensed through Simpson Strong-Tie.

SIMPSON STRONG-TIE COMPANY INC.
5956 W. Las Positas Blvd., Pleasanton, CA 94588
(800) 999-5099
www.strongtie.com

Anchorage Design For:

Job Name: New Commercial Building
Date: 11/1/2016
Strong Frame® Selector 4.5.1.0

Engineer: Charles R. Field, P.E.
Frame ID: 1
Frame Model: OMF99-12x12

Foundation Type:Slab-on-Grade

Anchorage Model: MFSL-18-HS5-KT
Anchorage Grade: A449, Diameter: 0.625"
Extension Kit: Not Required
Step Height: 6"
Min. Edge Distance: 1.25" , Embedment,de: 6.00"
Left Column:
End Distance: 4.500" (Additional studs are not required)

Anchorage Design Details:MFSL

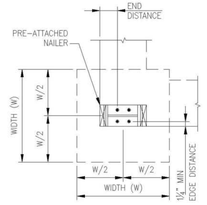
Anchorage SQ Footing Width, W: 18.00"
Anchorage Footing Depth, D: 10.00"
Concrete Code: ACI 318-11 Concrete fc': 3000 psi
Concrete: Cracked SDC: D

Right Column:
End Distance: 4.500" (Additional studs are not required)

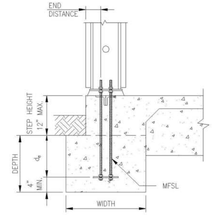
Final Frame W1 and W2 Dimensions (Including Additional End Distance where required for Anchorages):

W1: 12'-4" W1 Final: 12'-4" W2: 14'-4" W2 Final: 14'-4"

Plan View:



Section View:



Notes:

1. Actual footing/grade beam size and reinforcing must be determined by Designer based on project specific geometry and allowable soil bearing pressures.
2. The following end distance corresponds to pre-installed wood nailer flush with end of concrete: C6-4½", C9-4½", C12-6", C15-7½", C18H-9", C21H-10.5", W8A-4¼", W10-5¼", W12-6¼",W14-7",W16-8.25", W18B-8 5/8".
3. End distance is measured from centerline of nearest anchor bolt to edge of concrete.

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www.strongtie.com

Anchorage Design For:

Job Name: New Commercial Building
Date: 11/1/2016
Strong Frame® Selector 4.5.1.0

Engineer: Charles R. Field, P.E.
Frame ID: 1
Frame Model: OMF99-14x12

Foundation Type:Slab-on-Grade

Anchorage Model: MFSL-18-HS5-KT
Anchorage Grade: A449, Diameter: 0.625"
Extension Kit: Not Required
Step Height: 6"
Min. Edge Distance: 1.25" , Embedment,de: 6.00"
Left Column:
End Distance: 4.500" (Additional studs are not required)

Anchorage Design Details:MFSL

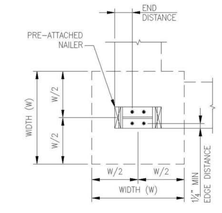
Anchorage SQ Footing Width, W: 16.00"
Anchorage Footing Depth, D: 10.00"
Concrete Code: ACI 318-11 Concrete fc': 3000 psi
Concrete: Cracked SDC: D

Right Column:
End Distance: 4.500" (Additional studs are not required)

Final Frame W1 and W2 Dimensions (Including Additional End Distance where required for Anchorages):

W1: 14'-4" W1 Final: 14'-4" W2: 16'-4" W2 Final: 16'-4"

Plan View:



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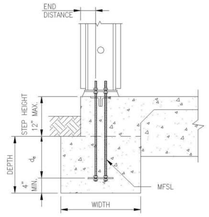

Notes:

1. Actual footing/grade beam size and reinforcing must be determined by Designer based on project specific geometry and allowable soil bearing pressures.
2. The following end distance corresponds to pre-installed wood nailer flush with end of concrete: C6-4½", C9-4½", C12-6", C15-7½", C18H-9", C21H-10.5", W8A-4¼", W10-5¼", W12-6¼",W14-7",W16-8.25", W18B-8 5/8".
3. End distance is measured from centerline of nearest anchor bolt to edge of concrete.

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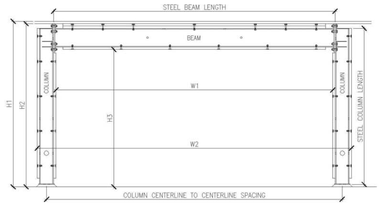
OMF Frame Summary:



Model: OMF99-14x12

Custom Size	No
Beam Size	B9, Steel Beam Depth: 8.5" (See Note 4 below)
Column Size	C9, Steel Column Depth: 9" (See Note 4 below)
W1 Dimension	14'-4" (See Note 3 below)
W2 Dimension	16'-4" (See Note 3 below)
Column C.C. Spacing	15'-4"
H1 Dimension	12'-0 3/4" (See Note 1 and 2 below)
H2 Dimension	11'-11 1/4" (See Note 1 and 2 below)
H3 Dimension	10'-10 1/4" (See Note 1 below)
Steel Beam Length	14'-7" (Stock Length, see note 5 below)
Steel Column Length	11'-6 3/4" (Stock Length, see note 5 below)
End Plate Bolting	Pre-Tensioned
Min. Beam Top Nailer Bolt	2

Notes

1. H1, H2, and H3 dimensions assume 1-1/2" thick non-shrink grout.
2. H1 and H2 dimensions assume 1-1/2" thick field installed top plate.
3. Anchorage solution may require additional studs on side of columns, see anchorage design output for final W1 and W2 dimensions. For C18H and C21H, W2 assume (2) 2x6 for each column interior nailer.
4. Column and beam sizes shown are as depth of steel only and do not include nailers.
5. If custom beam or column is within 0.5" of stock length, stock beam or column will be used.
6. (1) 4x6 beam top nailer for frames with C18H and C21H columns.
   (2) 2x6 beam top nailer for frames with C6, C9, C12 and C15 columns.
7. Simpson Strong-Tie® Strong Frame® and the Yield-Link™ structural fuseare protected under US patent number 8,001,734, B2 and must be supplied or licensed through Simpson Strong-Tie.

S1

Rev.	Date	Description

rev. 8/29/2017
November 3, 2016

Calculations

1121 N 25th St – Building Permit Plans
Garrett Augustine

City of Richmond, VA

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A Professional Engineering Practice
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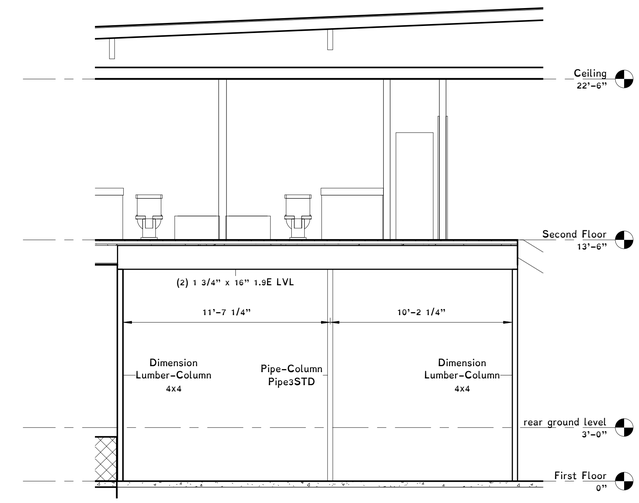
Richmond, VA 23223
804.647.1589

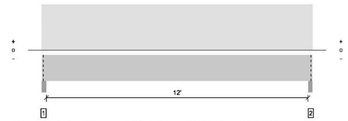


1 Wall @ Property Line Section
1/4" = 1'-0"

FORTE® MEMBER REPORT *2nd Floor, Floor support between properties* **PASSED**

2 piece(s) 1 3/4" x 16" 1.9E Microllam® LVL

Overall Length: 12' 7"



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	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	6788 @ 2"	9188 (3.50")	Passed (74%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	5035 @ 1' 7 1/2"	10640	Passed (47%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	20237 @ 6' 3 1/2"	31114	Passed (65%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.224 @ 6' 3 1/2"	0.306	Passed (L/655)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.285 @ 6' 3 1/2"	0.613	Passed (L/516)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2012
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Top Edge Bracing (Lu): Top compression edge must be braced at 7' 8" o/c unless detailed otherwise.
- Bottom Edge Bracing (Lu): Bottom compression edge must be braced at 12' 7" o/c unless detailed otherwise.

Supports	Bearing Length			Loads to Supports (lbs)			
	Total	Available	Required	Dead	Floor Live	Total	Accessories
1 - Column - SYP	3.50"	3.50"	2.59"	1440	5348	6788	Blocking
2 - Column - SYP	3.50"	3.50"	2.59"	1440	5348	6788	Blocking

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

Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 12' 7"	N/A	16.3		
1 - Uniform (PSF)	0 to 12' 7" (Top)	21' 3"	10.0	40.0	Second Floor - 1121 & 1123 Residential

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by Obsidian Inc

SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
Kerianm Steinnuck Obsidian (804) 301-7305 keristeinnuck@gmail.com	1121 North 25th Street Building Permit Plans

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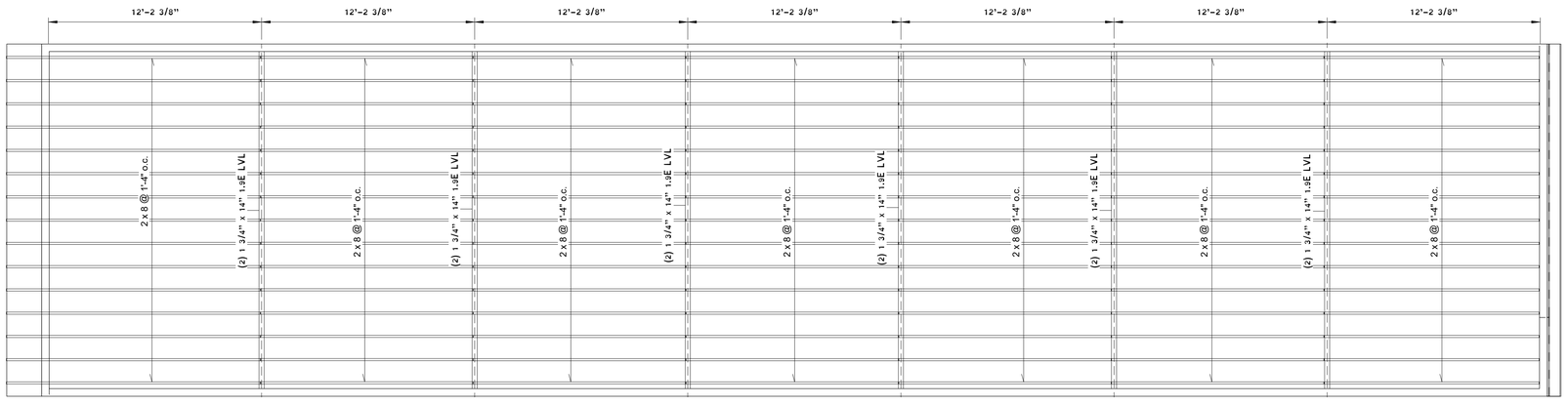
1121 North 25th Street - Beam Calc.4te

Page 1 of 1

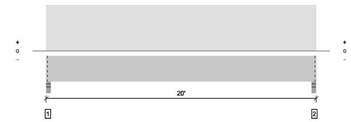


2 Roof - Framing
1/4" = 1'-0"

FORTE® MEMBER REPORT *Roof, Roof Support Beams* **PASSED**

2 piece(s) 1 3/4" x 14" 1.9E Microllam® LVL

Overall Length: 20'



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	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3803 @ 2"	6921 (3.50")	Passed (55%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	3249 @ 1' 5 1/2"	11638	Passed (28%)	1.25	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	18388 @ 10'	30323	Passed (61%)	1.25	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.569 @ 10'	0.656	Passed (L/415)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.887 @ 10'	0.983	Passed (L/266)	--	1.0 D + 1.0 Lr (All Spans)

System : Floor
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2012
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Bracing (Lu): All compression edges (top and bottom) must be braced at 8' 5 15/16" o/c unless detailed otherwise. Proper attachment and positioning of lateral bracing is required to achieve member stability.

Supports	Bearing Length			Loads to Supports (lbs)			
	Total	Available	Required	Dead	Roof Live	Total	Accessories
1 - Stud wall - SYP	3.50"	3.50"	1.92"	1364	2440	3804	Blocking
2 - Stud wall - SYP	3.50"	3.50"	1.92"	1364	2440	3804	Blocking

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

Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (use-snow: 1.25)	Comments
0 - Self Weight (PLF)	0 to 20'	N/A	14.3		
1 - Uniform (PSF)	0 to 20' (Top)	12' 2 3/8"	10.0	20.0	Roof

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The product application, input design loads, dimensions and support information have been provided by Obsidian Inc

SUSTAINABLE FORESTRY INITIATIVE

Forte Software Operator	Job Notes
Kerianm Steinnuck Obsidian (804) 301-7305 keristeinnuck@gmail.com	1121 North 25th Street Building Permit Plans

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S2

Rev.	Date	Description

Calculations

1121 N 25th St - Building Permit Plans

Garrett Augustine

City of Richmond, VA

rev. 8/29/2017
November 3, 2016

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