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AR 0007907

# Wind Load Design

**Date** 16 Oct 2023

**Job Name** Hawkins Addition

**Location** 198 SW Oak Glen
FT. WHITE FL

**The Wind Load Design for this structure is in compliance with the 2020 Florida Building Code 7th Edition Section 1609**

Method of Design **ASCE7- 16 Chapter 28 and 30 Parts 2**

**Criteria:**

Building Risk Category II

Basic Wind Speed (3 second Gust) Wind map Figure 1609A FBC 130 MPH
Normal Wind Speed

Topographic Factor N/A

Wind Exposure Category D

Internal Pressure Coefficients:

| | |
|---|---|
| Partially Enclosed Buildings | +0.55<br>-0.55 |
| Enclosed Buildings | +0.18<br>-0.18 |
| Open Buildings | 0.00 |

Maximum lateral load transferred through roof diagram 2154#

Design Wind pressure for Components and Cladding:
(maximum values)

Roof -39.4psf

Wall -40.7psf

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## Summary of Requirements

**Roof Sheathing:** 7/16" OSB _____ Plywood

Fasteners: @Edges 8d Type Common or Ring Shank spacing 4" o c

@Interior 8d Type " spacing 6" o c

Truss Anchors: **Manufacturer** Simpson or equal

Truss #1 Length _____ Model # H2.5A No. Req. _____ Uplift 535 Horiz. 110
Truss #2 Length _____ Model # H10A No. Req. _____ Uplift 1050 Horiz. 285
Truss #3 Length _____ Model # LSTA2 No. Req. _____ Uplift 1120 Horiz. _____
Truss #4 Length _____ Model # _____ No. Req. _____ Uplift _____ Horiz. _____

**Verify uplift and horizontal forces with truss manufacturer**

**Wall Construction:**
Frame Construction ✓
Masonry Construction _____

**Wall Bracing:**
Balloon Framing _____

Ceiling Diaphragm See gable T-bracing detail

Hip Roof _____

Gable End on Masonry Wall _____

**Wood Studs:**
Stud#1: Type SPF No1-No2 Height 9' Spacing 16" o c
Stud#2: Type _____ Height _____ Spacing _____
Stud#3: Type _____ Height _____ Spacing _____
Stud#4: Type _____ Height _____ Spacing _____
Stud#5: Type _____ Height _____ Spacing _____

**Masonry:**
Description: —

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**Shearwalls and Exterior Sheathing**

Wall Sheathing 7/16" OSB

Transverse: Shearwalls (accumulated length) 34'

Fasteners: @edges 8 d Nails ____ Staples ____ Screws 4 "o.c.

@interior 8 d Nails ____ Staples ____ Screws 8 "o.c.

Longitudinal Shearwalls (accumulated length) 21'

Fasteners: @edges 8 d Nails ____ Staples ____ Screws 4 "o.c.

@interior 8 d Nails ____ Staples ____ Screws 8 "o.c.

Drag Strut: 10 d Nails @ 12 "o.c. all top plates

**Vertical Tension Resistance:**

Wall Straps ____

Sheathing Fasteners 8d Common @ 4"oc top & bottom

Tie Columns ____

**Anchorage to Concrete Slabs:**

Anchor Bolts 1/2" ϕ x 10" Spacing 48" OC Washer 2" x 2"

Corner Hold-down 1/2" ϕ AB w/ 3" x 3" Location 8" eq. way @ indicated corners

Distance to first anchor bolt from corner 24"

Corner Hold-down at wood floor system ____ Location ____

**Foundations:** 12" x 20" deep monolithic slab ftg. w/ 2 #5 ϕ cont.

**Porch Column Anchors:**

Column to Beam –

Column to Slab –

**Anchorage @ Wall Openings**

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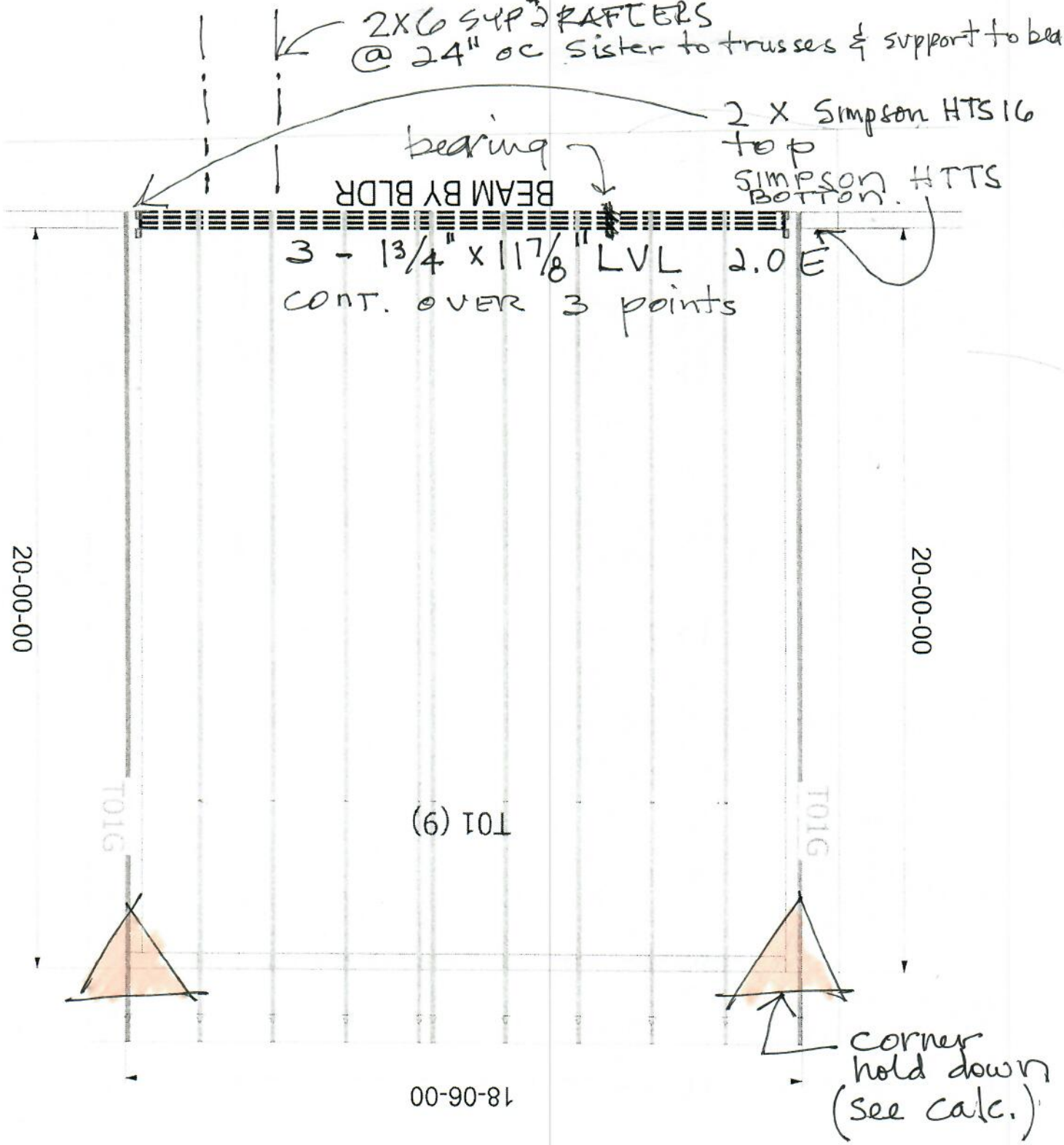


ALL BEAMS & HEADERS
2-2X12 SYP#2 UNLESS
OTHERWISE INDICATED

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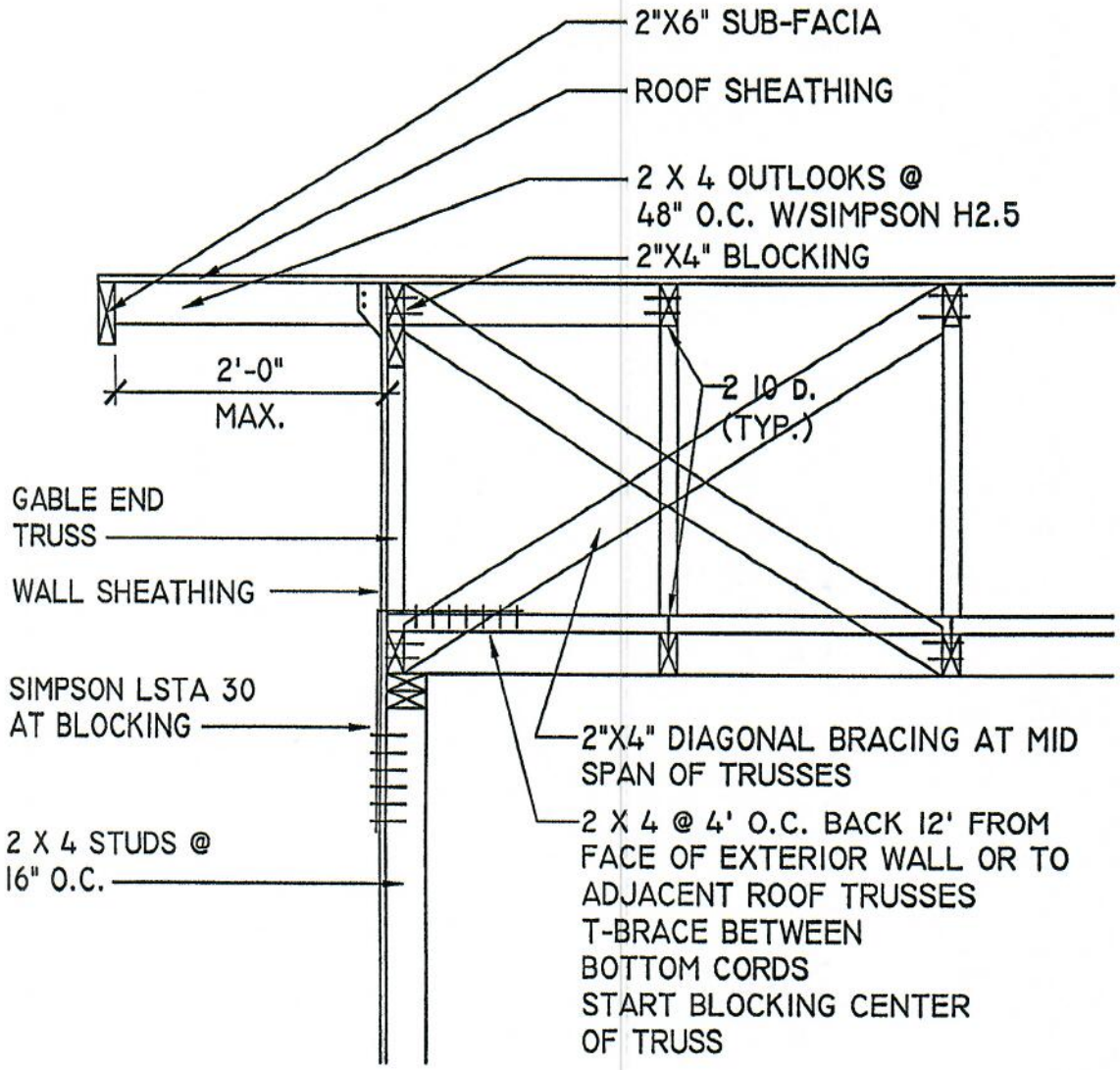


# GABLE END ROOF DETAIL

3/4" = 1' - 0" FOR GABLE END W/ GABLE TRUSSES

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# Wind Design and Analysis

Method of design – Compliance w/ ASCE 7-16 Chapter 28 Part 2 And Chapter 30 Part 2 and Chapter 16 Section 1609 Florida Building Code 2020 7th Edition

Job – Hawkins Addition

Location – 198 SW. Oak Glen FT. WHITE FL

Building size – 20' x 21'

Height of exterior wall – 9'-1"

Overhang – 2'-0"

Roof cross slope – 3 12 14.04°

Mean roof height – 13'-7"

End zone – 4'

Wind velocity – 130 MPH (3 sec. gust)

Importance factor – 1.0

Wind exposure category – B

Degree of enclosure – Enclosed

Maximum lateral loads on building – 5020#

## Deadloads

Roof 11 psf
Walls 66 plf
Foundation 250 plf

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March 19, 2022

**Construction**

Studs SPF

Trusses SYP

Sheathing 7/16" OSB

**MWFRS**

Wall Design Wind Pressure ASCE 7-16 Figure 28.6-1

end 33.7 psf
int 22.4 psf

Components and Cladding ASCE 7-16 Figure 30.5-1

-40.7psf

Roof Design Wind Pressure ASCE 7-16 Table 28.6-1

end 0
int 0

Components and Cladding ASCE 7-16 Figure 30.5-1

-39.4 psf

**Roof Diaphragm** AF&PA SDPWS Table 4.2C
Nailing 8d Common or Ring Shank @ 4" oc edges 6" oc int.

**Shearwalls** AF&PA SDPWS Table 4.3A (Case A ) Transverse 34'
Nailing 8d Common @ 4" oc edges 8" oc int. (Case B ) Longitudinal 21'

**Drag Strut**
10d @ 12" oc

2510/21 = 119

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**Roof uplift at top of wall** (ASCE 7-16 Figure 28.6-1

(ASCE 7-16 Figure 28.6-1 Overhangs)

20 x 24 = 480
4 x 27.8 = 111
591
-264
327
@ beam 327 x 2 = 654

Roof - 24 psf

Overhang - 27.8 psf
24 x 11 = 264

| Truss anchors | Capacity | Lateral |
|---|---|---|
| Simpson H10A | 1050 | 285 |
| Simpson H2.5A | 535 | 110 |
| Simpson LSTA12 | 1120 | — |

See Truss Engineering for specific truss layout, uplift and lateral load values

@ ext. wall 327/2 = 164 #/ft.

@ beam 654/2 = 327 #/ft.

**Header tie-downs**

Span 3'
Simpson SP4 ea. side top & bottom

**Sheathing nailing** AF&PA SDPWS Table 4.4.1
8d common @ 4" OC top & bottom

**Uplift at top of footing**

Uplift 164 #/ft.

Weight of footing 250 #/ft.

Anchor bolts 1/2" Φ x 10" @ 48" o c

Corner Hold down 1/2" AB w/ 3"x3" 8" ea. way @ corners

Porch columns —

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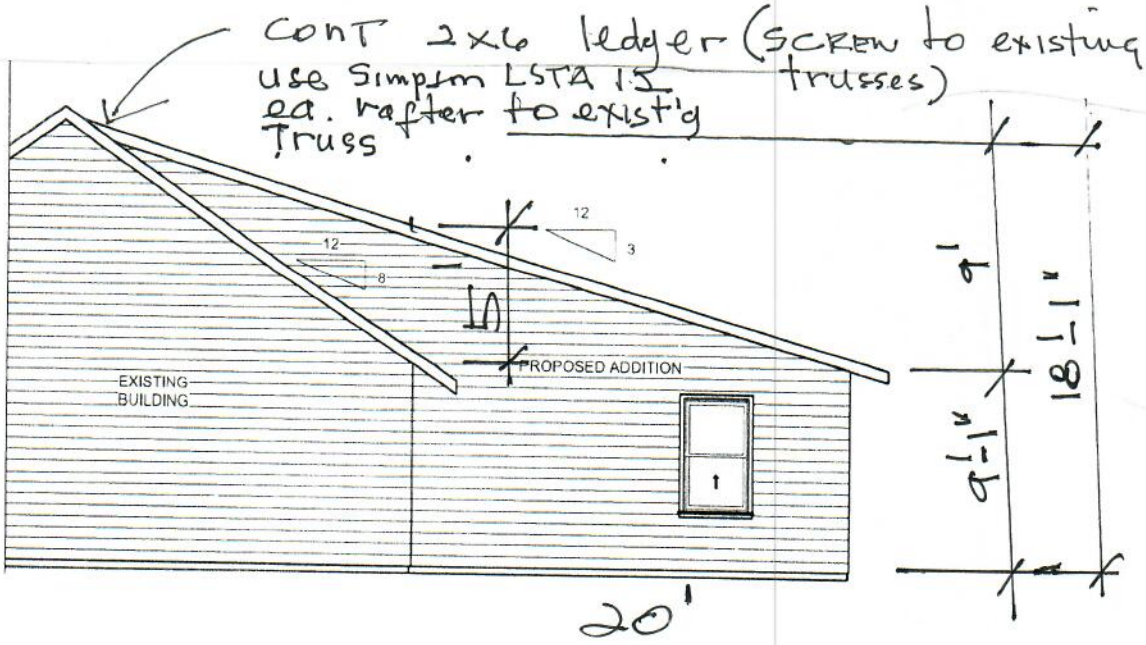


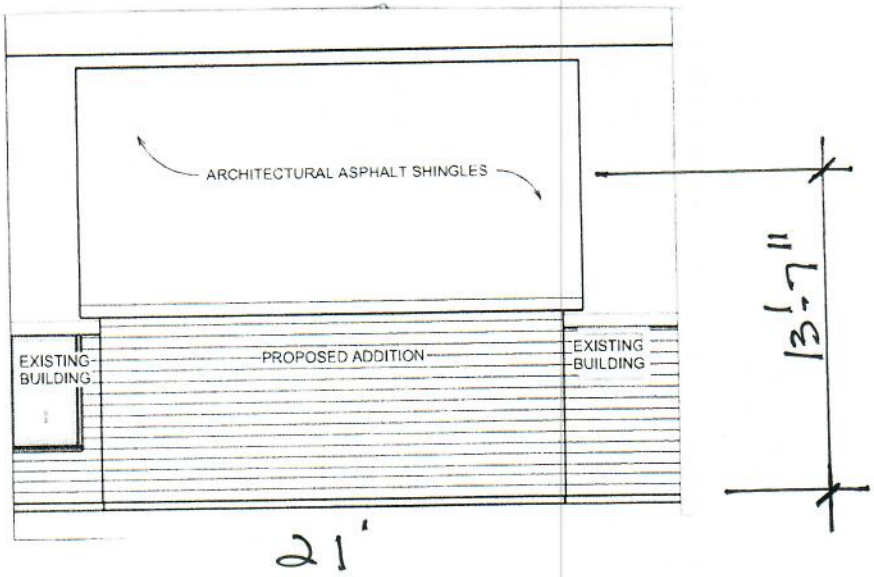


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Case A transverse

Wall

8 x 8 = 64 64 x 33.7 = 2157 1079

12 x 8 = 96 96 x 22.4 = 2150 1075

Roof

0 0

4307 2154

Cash B longitudinal

Wall

10'-6" x 20' = 210

4 x 8 x 33.7 = 1078 1078 539

176 x 22.4 = 3942 1971

5020 2510

Case A shearwalls

2154/34 = 63#/ft.

Case B shearwalls

2510/21 = 120#/ft.

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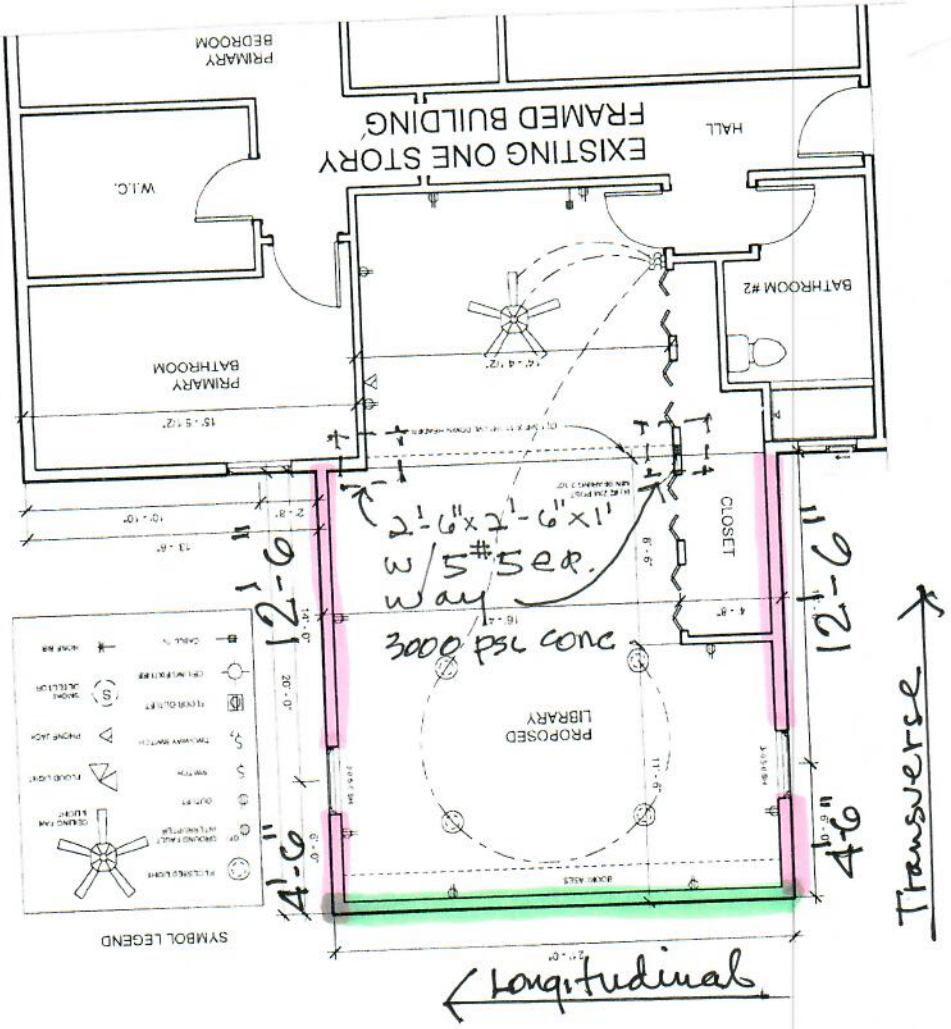
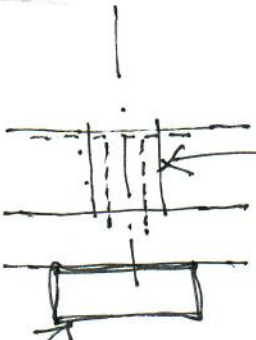



Shearwalls

Transverse 34'

Longitudinal 21'



Remove stemwall 16" centered on pad. pour concrete pier. w/#5's doweled & epoxied

2'-6"x2'-6"x1' pad ftg. under existing ftg. (see above)

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