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12181 C Street S. • TACOMA, WA 98444 • (253) 537-8128 • FAX 531-1285

PRCNC20241019

PROJECT: SBS-ELC			SHEET NO. 1/10
BY: CF	DATE: 6/21/24	JOB NO. 24090	

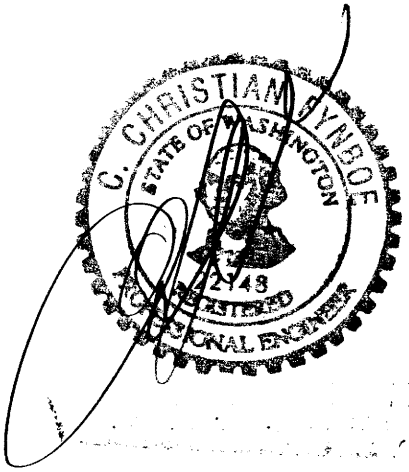
City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

STRUCTURAL CALCULATIONS FOR THE STEP BY STEP - ELC (3308 - 8th SE BLDG E)

- JEFF BROWN ARCHITECTURE

DESIGN PARAMETERS: 2021 IBC
SEE NOTES ON "S1.0"



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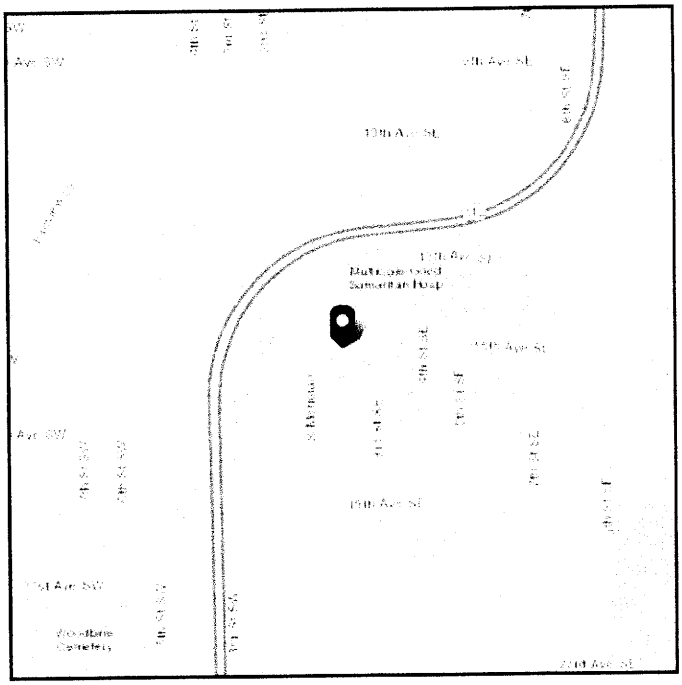
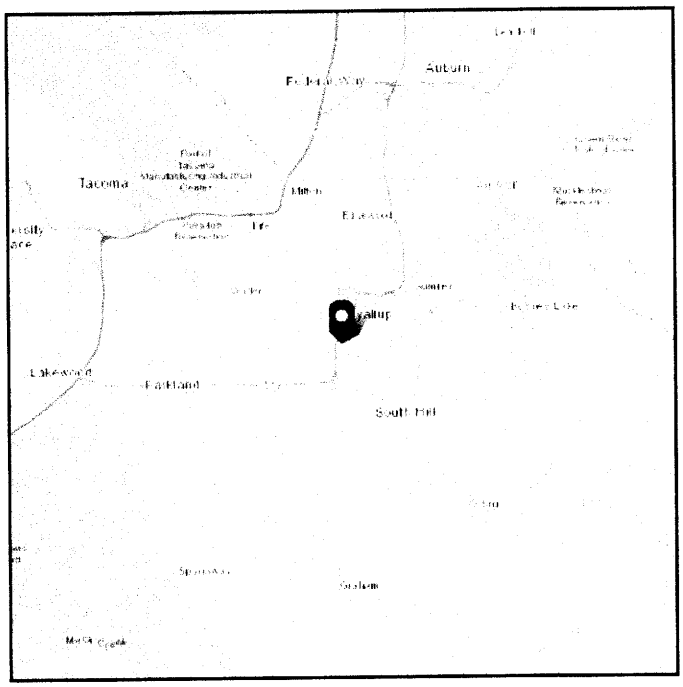
ASCE Hazards Report

Address:
Puyallup
Washington,

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: Default

Latitude: 47.177438
Longitude: -122.292318
Elevation: 114.73208016092777 ft (NAVD 88)





Wind

Results:

Wind Speed	97 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph
300-year MRI	92 Vmph
700-year MRI	97 Vmph
1,700-year MRI	104 Vmph
3,000-year MRI	108 Vmph
10,000-year MRI	118 Vmph
100,000-year MRI	136 Vmph
1,000,000-year MRI	154 Vmph

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Data Source: ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Apr 15 2024

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ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

#24090

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Seismic

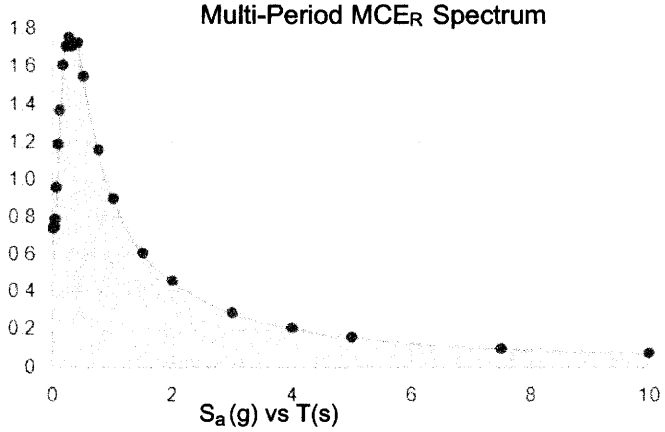
Site Soil Class: Default

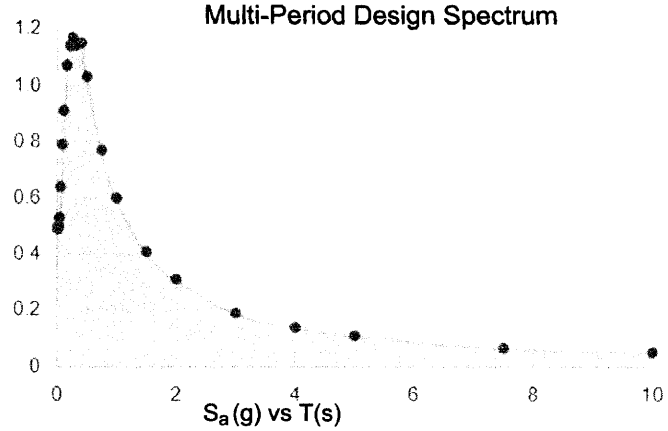
Results:

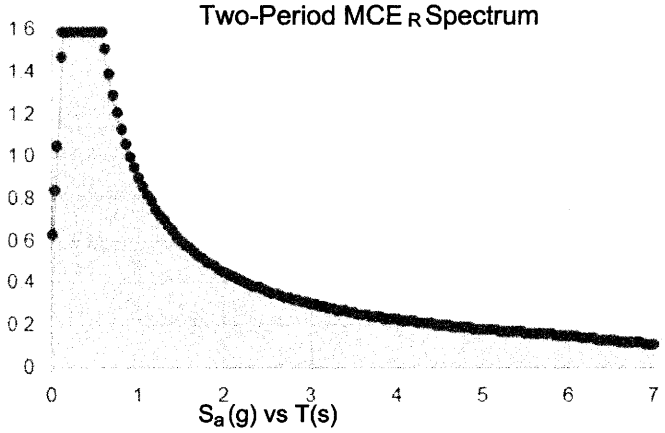
PGA_M :	0.56	T_L :	6
S_{MS} :	1.59	S_S :	1.44
S_{M1} :	0.9	S_1 :	0.42
S_{DS} :	1.06	V_{S30} :	260
S_{D1} :	0.6		

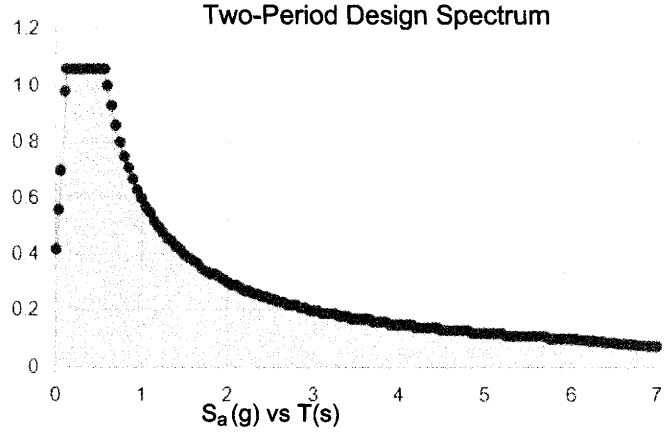
V = 1.06/6.5 = 0.16 (ULT)

Seismic Design Category: D







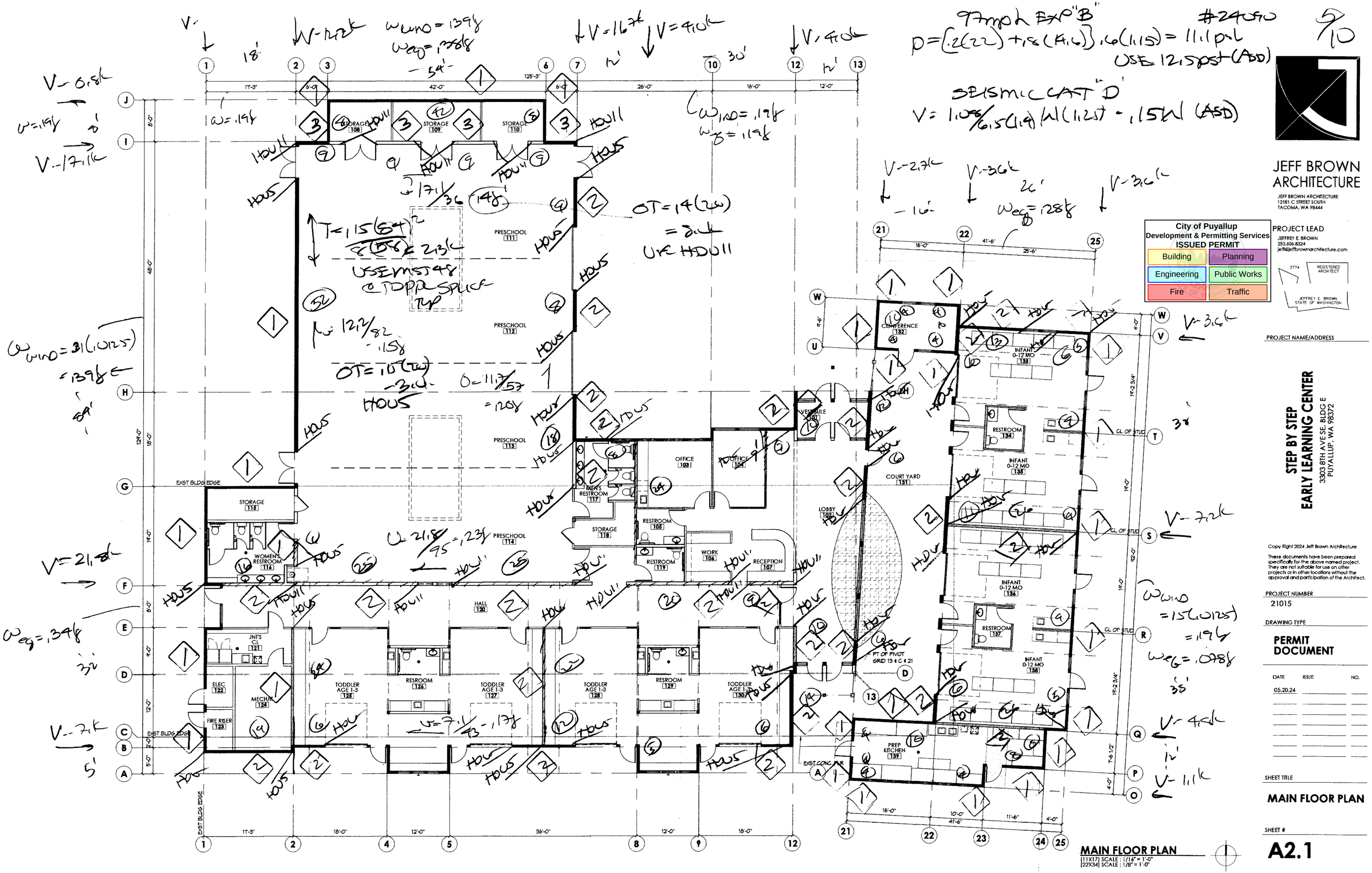


MCER Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.



MAIN FLOOR PLAN

(11X17) SCALE : 1/16" = 1'-0"
(22X34) SCALE : 1/8" = 1'-0"

JEFF BROWN ARCHITECTURE

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12181 C STREET SOUTH
TACOMA, WA 98444

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com

3774 REGISTERED ARCHITECT
JEFFREY E. BROWN
STATE OF WASHINGTON

PROJECT NAME/ADDRESS

STEP BY STEP
EARLY LEARNING CENTER
3303 8TH AVE SE, BLDG E
PUYALLUP, WA 98372

PROJECT NUMBER
21015

DRAWING TYPE
PERMIT DOCUMENT

DATE	ISSUE	NO.
05.20.24		

SHEET TITLE
MAIN FLOOR PLAN

SHEET #
A2.1

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PROJECT:			SHEET NO.
BY:	DATE:	JOB NO. 2A09U	10/10

Mark (shear capacity)	Wall Type (3)	Panel Edge Nailing (1), (2)	Intermediate Nailing (2)	Bottom Plate Anchor Bolting or Nailing (5)
1 (200 lb/ft.)	½" CDX Plywood or OSB, one side	8d @ 6" o.c.	8d @ 12" o.c.	½" A.B. @ 4'-0" o.c. or 16d @ 7½" o.c.
2 (350 lb/ft.)	½" CDX Plywood or OSB, one side	8d @ 4" o.c.	8d @ 12" o.c.	5/8" A.B. @ 3'-4" o.c. or 16d @ 4" o.c.
3 (870 lb/ft.)	½" CDX Plywood (ONE SIDE)	10d @ 2" o.c. (4)	10d @ 12" o.c.	3/4" A.B. @ 18" o.c. OR SDS2514 @ 4½"
4 (1200 lb/ft.)	½" CDX PLYWOOD (BOTH SIDES)	10d @ 3" o.c. (4)	10d @ 12" o.c.	3/4" A.B. @ 12" o.c. OR SDS2514 @ 2½"

Notes:
1. Block all panel edges.
2. Common or box nails.
3. 2x studs shall be H.F. #2 or better, kiln-dried.
4. Use 3x studs and plates @ panel edges, wall type 3 only.
5. Anchor bolts shall have minimum 3" by 3" by ¼" thick plate washers.

CHRISTIAN FUNDOC PC
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PROJECT:			SHEET NO.
BY:	DATE:	JOB NO. 2409	7/10

SHEAR WALL (HEM FIR VALUES)

(1) $15/32$" STRUCT I 8d @ 6" o/c $280(.82) = 230$ lb/ft

$1/2$" ϕ AB @ 4'0" o/c $600(1.6/4) = 240$ lb/ft

16d @ 4" o/c $91(1.6)12/7.5 = 233$ lb/ft

200 lb/ft

(2) $5/32$ STRUCT I 8d @ 4" o/c $430(.82) = 353$ lb

5/8" ϕ AB @ 3'4" $860(1.6)/3.33 = 413$ lb/ft

16d @ 4" o/c $91(1.6)12/4 = 437$ lb/ft

350 lb/ft

(3) $15/32$ STRUCT I 10d @ 2" o/c $870 = 870$ lb/ft

3/4" ϕ AB @ 1'6" $1460(1.6)/1.5 = 1557$ lb/ft

1/4" ϕ SDS @ 4" o/c $250(1.6)12/4 = 1200$ lb/ft

870 lb/ft

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PROJECT:			SHEET NO.
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ROOF FRAMING

L = 22'

W = .045(13) = .59k/f R = 6.5k

M = .59(22)²/8 = 42.8k'

S REQ = 428/24(.45) = 155 in³

5½" x 24" GLB

L = 25'

W = .045(10) = .45k/f R = 5.6k

M = .45(25)²/8 = 42k'

S REQ = 422/24(.45) = 180 in³

5½" x 24" GLB

L = 12'

W = .045(4) = .63k/f

M = .63(12)²/8 = 13.6k'

S REQ = 136/24(.45) = 49.3 in³

5½" x 12" GLB

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PROJECT:			SHEET NO.
BY:	DATE:	JOB NO. 2709	9/10

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L=12' HDR

W=.095(29) = 1.3k

M = 1.3(12)²/8 = 23.4k"

SREQD = 23.4/24(1.5) = 1.02 in.

5½"x12" GLULAM

L=6' HDR

W=1.3k

M = 1.3(6)²/8 = 7.02k"

SREQD = 7.02/1.65(1.5) = .63 in.

4x12 DF#2

L=16'

W=.04(2) = .08k

M = .08(16)²/8 = 2.56k"

SREQD = 2.56/1.005(1.5) = .26 in.

2x12 DF#2
@ 24" o.c.

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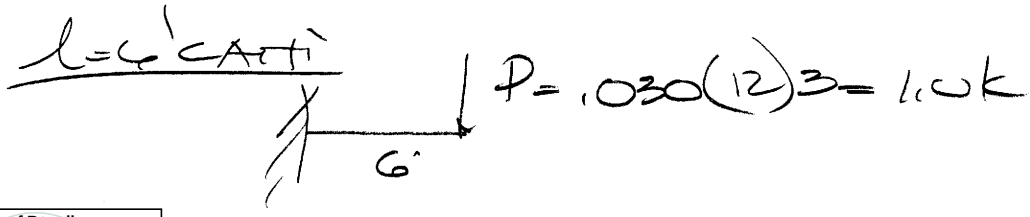

$M = 1(6)12 = 72\ k''$

$S_{req} = 72/46(.6) = 2.61\ in^3$

~~HSS 5x5x1/4~~
OK

HSS 8x4x1/4 OK