

Apple Tree Point

Lot 7

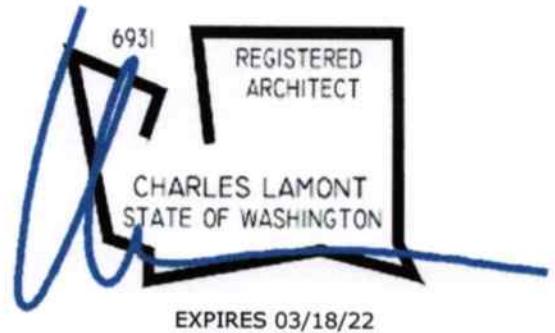
8/20/20

Reviewed for code compliance
with IRC 2015
Kitsap County Building Department
PQuiriar@co.kitsap.wa.us
09/18/2020

Structural Calculations

Gravity Calculations: LaMont Design

Lateral Calculations: giraf design



DATE: 8/12/2020
VITRUVIUS BUILD: StruCalc
CUSTOMER:
PROJECT LOCATION:

COMPANY: LaMont Design Inc
DESIGNED BY: Wayne LaMont
REVIEWED BY: Wayne LaMont

LEVEL: Roof
LOCATION: Garage Header 1
TYPE: ROOF BEAM
MATERIAL: GLULAMS

LOADING: ASD
CODE: 2018 International Building Code
NDS: 2018 NDS

Stress Class Rated 24F-1.7E 24F-V4 SP/SP (1) 5.5 X 9 DRY

Garage Header 1 DIAGRAM



BEAM PROPERTIES

Start (ft): 0 End (ft): 16.5 Member Slope: 0/12 Actual Length (ft): 16.5 Roof Pitch: 0/12

Area (in ²)	Ix (in ⁴)	Iy (in ⁴)	BSW (lb/ft)	Lams	G	Kcr Creep Factor
49.5	334.12	124.78	9.77	1	0.43	1

STRENGTH PROPERTIES

	Fbx+ (psi)	Fbx- (psi)	Fby (psi)	Ft (psi)	Fvx (psi)	Fvy (psi)	Fc (psi)	Fc⊥ (psi)	Ex (psi)	Exmin (psi)	Ey (psi)	Eymin (psi)
Base Values	2400	1650	1350	975	210	230	1350	740	1700000	900000	1500000	790000
Adjusted Values	2400	1650	1394	975	210	230	1350	740	1700000	900000	1500000	790000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1

Bending Adjustment Factors C_{vr} = 1

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
		Top	Bottom					
1	16.5	0	16.5	0	1.00	0.99	1.00	1.00

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	PASS (84.6%)	32.4	210.0	0	D+L	1
Bending Stress Y (psi)	PASS (70.3%)	713.7	2400.0	8.25	D+L	1
Deflection (in)	PASS (65.4%)	0.381 (=L/520)	1.100 (=L/180)	8.25	D+L	
Bearing Stress (psi)	PASS (92.5%)	55.6	740.0	0	D+L	1

REACTIONS

	V-(lb/ft)	M-(lb-ft)									
Y axis	DEAD	LIVE	LIVE ROOF	SNOW	WIND +	WIND -	SEISMIC +	SEISMIC -	ICE	RAIN	EARTH
A	328	742	0	0	0	0	0	0	0	0	0
B	328	742	0	0	0	0	0	0	0	0	0

Reaction Location

A

B

LOAD LIST

Type	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	90	90	0	16.5	Live	Y
Uniform (lb/ft)	30	30	0	16.5	Dead	Y
Self Weight (lb/ft)	9.77	9.77	0	16.5	Dead	Y

DATE: 8/12/2020
 VITRUVIUS BUILD: StruCalc
 CUSTOMER:
 PROJECT LOCATION:

COMPANY: LaMont Design Inc
 DESIGNED BY: Wayne LaMont
 REVIEWED BY: Wayne LaMont

LEVEL: Roof
 LOCATION: Garage Header 2
 TYPE: ROOF BEAM
 MATERIAL: GLULAMS

LOADING: ASD
 CODE: 2018 International Building Code
 NDS: 2018 NDS

Stress Class Rated 24F-1.7E 24F-V4 SP/SP (1) 3.5 X 9 DRY

Garage Header 2 DIAGRAM



BEAM PROPERTIES

Start (ft): 0 End (ft): 8.5 Member Slope: 0/12 Actual Length (ft): 8.5 Roof Pitch: 0/12

Area (in ²)	Ix (in ⁴)	Iy (in ⁴)	BSW (lbf/ft)	Lams	G	Kcr Creep Factor
31.5	212.62	32.16	6.22	1	0.43	1

STRENGTH PROPERTIES

	Fbx+ (psi)	Fbx- (psi)	Fby (psi)	Ft (psi)	Fvx (psi)	Fvy (psi)	Fc (psi)	Fc⊥ (psi)	Ex (psi)	Exmin (psi)	Ey (psi)	Eymin (psi)
Base Values	2400	1650	1350	975	210	230	1350	740	1700000	900000	1500000	790000
Adjusted Values	2400	1650	1394	975	210	230	1350	740	1700000	900000	1500000	790000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1

Bending Adjustment Factors C_{vr} = 1

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	8.5	0	8.5	0	1.00	0.99	1.00	1.00

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	PASS (53.1%)	98.4	210.0	0	D+L	1
Bending Stress Y (psi)	PASS (53.5%)	1115.2	2400.0	4.25	D+L	1
Deflection (in)	PASS (72.1%)	0.158 (=L/646)	0.567 (=L/180)	4.25	D+L	
Bearing Stress (psi)	PASS (77.2%)	168.7	740.0	0	D+L	1

REACTIONS

	V-(lbf)	M-(lbf-ft)									
Y axis	DEAD	LIVE	LIVE ROOF	SNOW	WIND +	WIND -	SEISMIC +	SEISMIC -	ICE	RAIN	EARTH
A	536	1530	0	0	0	0	0	0	0	0	0
B	536	1530	0	0	0	0	0	0	0	0	0

Reaction Location

A

B

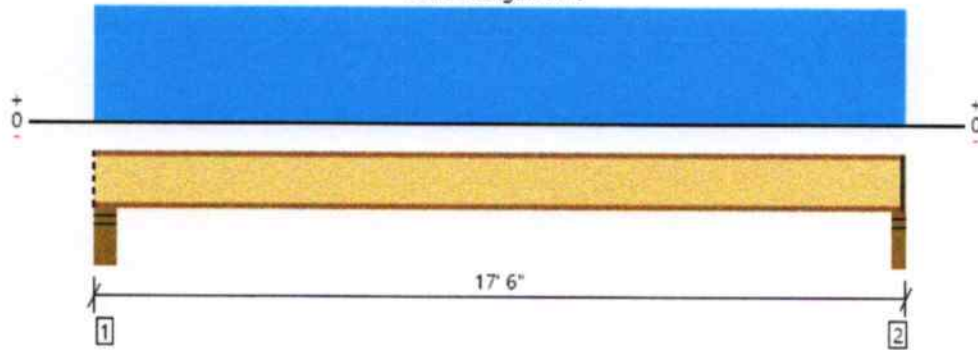
LOAD LIST

Type	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	360	360	0	8.5	Live	Y
Uniform (lbf/ft)	120	120	0	8.5	Dead	Y
Self Weight (lbf/ft)	6.22	6.22	0	8.5	Dead	Y

Level, Floor: Joist

1 piece(s) 11 7/8" TJI® 210 @ 16" OC

Overall Length: 17' 6"



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)	594 @ 17' 3 1/2"	1134 (2.25")	Passed (52%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	581 @ 5 1/2"	1655	Passed (35%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2480 @ 8' 10"	3795	Passed (65%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.288 @ 8' 10"	0.423	Passed (L/705)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.374 @ 8' 10"	0.846	Passed (L/542)	--	1.0 D + 1.0 L (All Spans)
TJI-Pro™ Rating	43	40	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2015
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge Gold™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJI-Pro™ Rating include: None.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Stud wall - SPF	5.50"	5.50"	1.75"	141	471	612	Blocking
2 - Stud wall - SPF	3.50"	2.25"	1.75"	139	462	601	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 7" o/c	
Bottom Edge (Lu)	17' 5" o/c	

- TJI Joists are only analyzed using Maximum Allowable bracing solutions.
- Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 17' 6"	16"	12.0	40.0	Default Load

Member Notes

Floor Joist 1

Weyerhaeuser Notes

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

ForteWEB Software Operator	Job Notes
Wayne LaMont LaMont Design Inc (360) 779-7227 wayne@lamontdesigninc.com	



Permit Number: 20-03859

8/20/2020 9:52:02 PM UTC
ForteWEB v3.0, Engine: V8.1.3.1, Data: V8.0.0.0

File Name: Apple Tree Point

Page 1 / 1

- General Notes:**
1. ALL DIMENSIONS ARE TO THE FACE OF STUD OR CENTER OF STRUCTURAL MEMBERS UNLESS NOTED OTHERWISE ON THE DRAWING.
 2. TRADE SYMBOLS, DIMENSIONS AND FINISHES TO BE USED IN CONNECTION WITH THE NOTES AND SPECIFICATIONS ON SHEETS ALL AND ALL.
 3. SEE ARCHITECTURAL DRAWINGS FOR ALL SIZES AND DIMENSIONS NOT SHOWN.
 4. SEE GENERAL NOTES "ROUGH FRAMING" FOR HEADER SIZES NOT CALLED OUT ON PLANS.
 5. WHERE HEADERS INTERSECT TOP PLATE STRAP HEADERS EACH SIDE TO TOP PLATE WITH GIPSON CR6214 TO PLATE.

Sheet Notes:

REVISIONS	DATE	DESCRIPTION

Apple Tree Point
Lot 4
Kingston, Washington



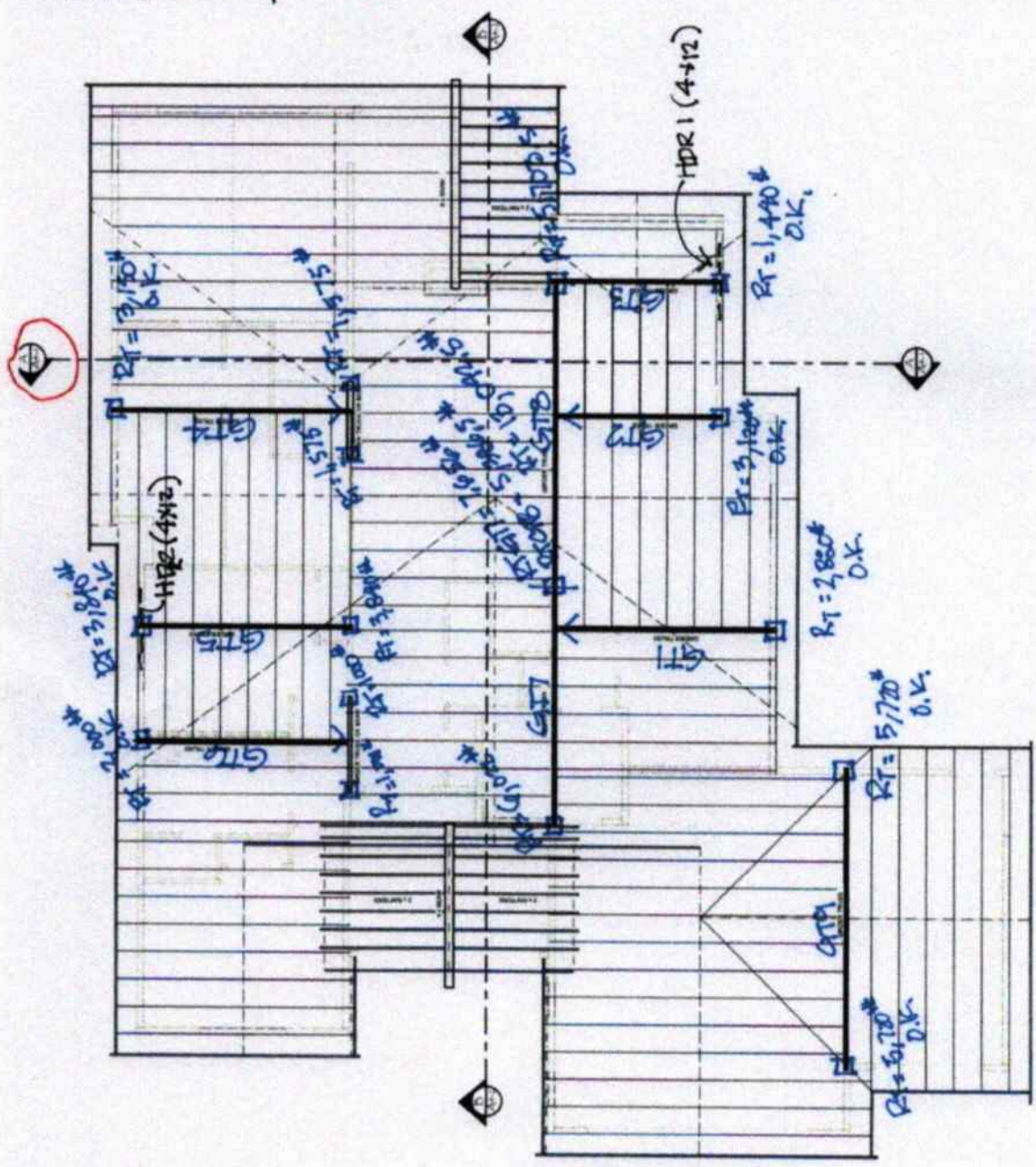
Roof Framing

DATE: 01.13.15	PROJECT: 20-03859
REVISION: 1.0	DESCRIPTION: ROOF FRAMING

S2-3
Sheet 2 of 3

Roof Framing Plan

1/4" = 1'-0"





LaMont Design, Inc

Professional Service Corporation
2120 NE Sowdust Hill Road
Poulsbo, Washington 98370

(360) 779-7227
www.lamontdesigninc.com

job title

Apple Tree Point

sheet

Foundation Loading

GT3



$$A_T = 6 \times 12 = 72 \text{ ft}^2$$

$$LL = 30 = 2,160 \text{ #}$$

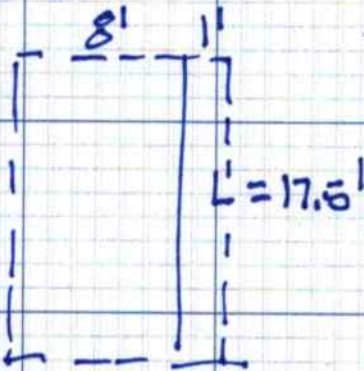
$$DL = 10 = 720 \text{ #}$$

R_I

$$LL = 1,080 \text{ #}$$

$$DL = 360 \text{ #}$$

GT4



$$A_T = 9 \times 17.5 = 157.5 \text{ ft}^2$$

$$LL = 30 = 4,725 \text{ #}$$

$$DL = 10 = 1,575 \text{ #}$$

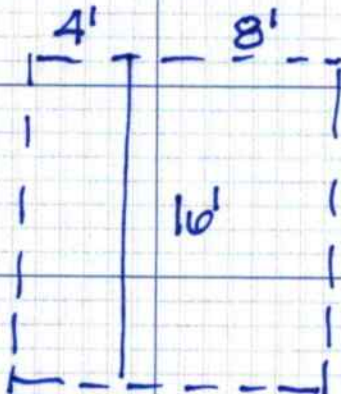
R_I

$$LL = 2,362.5 \text{ #}$$

$$DL = 787.5 \text{ #}$$

$$R_T = 3,150 \text{ #}$$

GT5



$$A_T = 12' \times 16' = 192 \text{ ft}^2$$

$$LL = 30 = 5,760 \text{ #}$$

$$DL = 10 = 1,920 \text{ #}$$

R_I

$$LL = 2,880 \text{ #}$$

$$DL = 960 \text{ #}$$

$$R_T = 3,840 \text{ #}$$

job title _____

sheet _____

GT6



$$A_T = 5 \times 16 = 80 \text{ ft}^2$$

$$LL = 30 = 2,400 \text{ #}$$

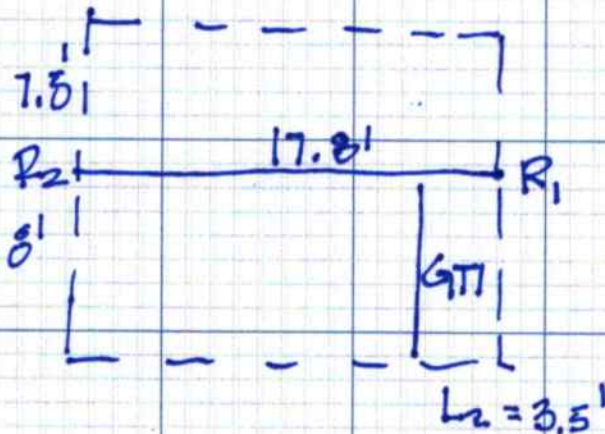
$$DL = 10 = 800 \text{ #}$$

$$LL = 1,200 \text{ #}$$

$$DL = 800 \text{ #}$$

$$R_T = 2,000 \text{ #}$$

GT7



$$A_T = 15.5 \times 17.8 = 275.9 \text{ ft}^2$$

$$LL = 30 = 8,277 \text{ #}$$

$$DL = 10 = 2,759 \text{ #}$$

$$R_2 = LL \text{ GTI} = 432 \text{ #}$$

$$DL \text{ GTI} = 141 \text{ #}$$

$$R_1 = LL \text{ GTI} = 2,160 \times 0.8 = 1,728 \text{ #}$$

$$DL \text{ GTI} = \frac{720}{1,728} \times 0.8 = 360 \text{ #}$$

$$LL = 4,138.5$$

$$+ 432.0$$

$$\boxed{4,570.5 \text{ #}}$$

$$DL = 1,379.5$$

$$+ 720$$

$$\boxed{1,451.5 \text{ #}}$$

$$R_{2T} = 6,022 \text{ #}$$

$$LL = 4,138.5$$

$$+ 1,778$$

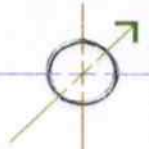
$$\boxed{5,916.5}$$

$$R_{1T} = 7,656 \text{ #}$$

$$DL = 1,379.5$$

$$+ 360$$

$$\boxed{1,739.5}$$



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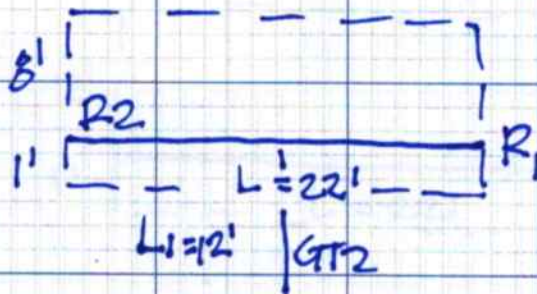
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2120 NE Sawdust Hill Road
Poulsbo, Washington 98370

(360) 779-7227
www.lamontdesigninc.com

job title _____

sheet _____

GT8



$$A_T = 9 \times 22' = 198 \#1$$

$$DL = 30$$

$$5940 \#$$

$$LL = 10$$

$$1,980 \#$$

R1

$$LL_{GT2} = 2,390 \# \times 0.55$$

$$1,314.5 \#$$

$$DL_{GT2} = 780 \# \times 0.55$$

$$429 \#$$

R2

$$LL_{GT2} = 2,390 \times .45$$

$$1,075.5$$

$$DL_{GT2} = 429 \times .45$$

$$351$$

$$LL_T = 2,970$$

$$1,314.5$$

$$\boxed{4,284.5 \#}$$

$$DL_T = 990 \#$$

$$429 \#$$

$$\boxed{1,419 \#}$$

$$LL_T = 2,970$$

$$1,075.5$$

$$\boxed{4,045.5}$$

$$DL_T = \cancel{780 \#}$$

$$\cancel{429 \#}$$

$$990$$

$$351$$

$$\boxed{1,341}$$

$$R_{2T} = 5,386.5 \#$$

$$R_{1T} = 5,703.5 \#$$



LaMont Design, Inc

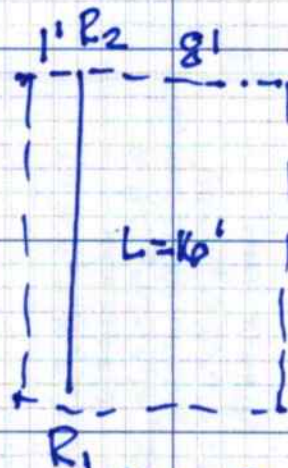
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2120 NE Sawdust Hill Road
Poulsbo, Washington 98370

(360) 779-7227
www.lamontdesigninc.com

job title _____

sheet _____

GT1

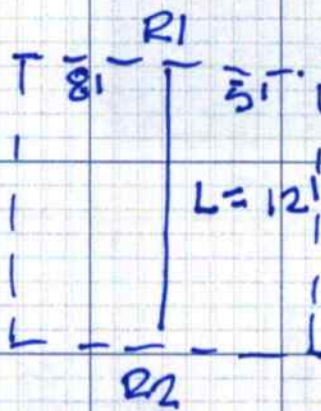


$$A_1 = 9 \times 16 = 144 \text{ ft}^2$$
$$U = 30 = 4,320 \text{ ft}$$
$$D = 10 = 1,440 \text{ ft}$$

$$U = 2,160 \text{ ft}$$
$$D = 720 \text{ ft}$$

$$R_{\text{TOTAL}} = 2,880 \text{ ft}$$

GT2



$$A_1 = 12' \times 13' = 156 \text{ ft}^2$$
$$U = 30 \times = 4,680 \text{ ft}$$
$$D = 10 \times = 1,560 \text{ ft}$$

$$U = 2,340 \text{ ft}$$
$$D = 780 \text{ ft}$$

$$R_T = 3,120 \text{ ft}$$

Cont. Footing w/ Point load.

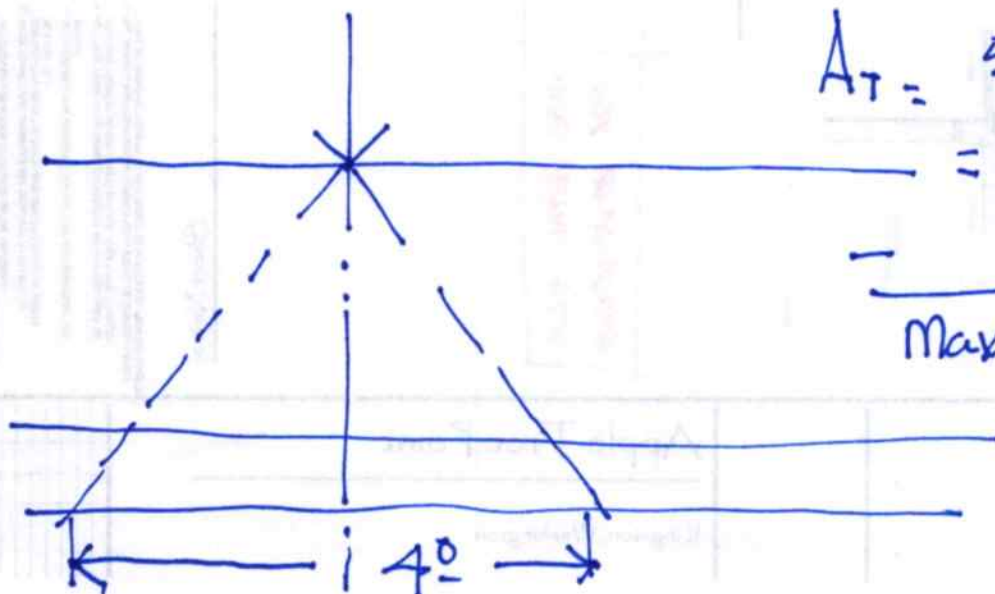
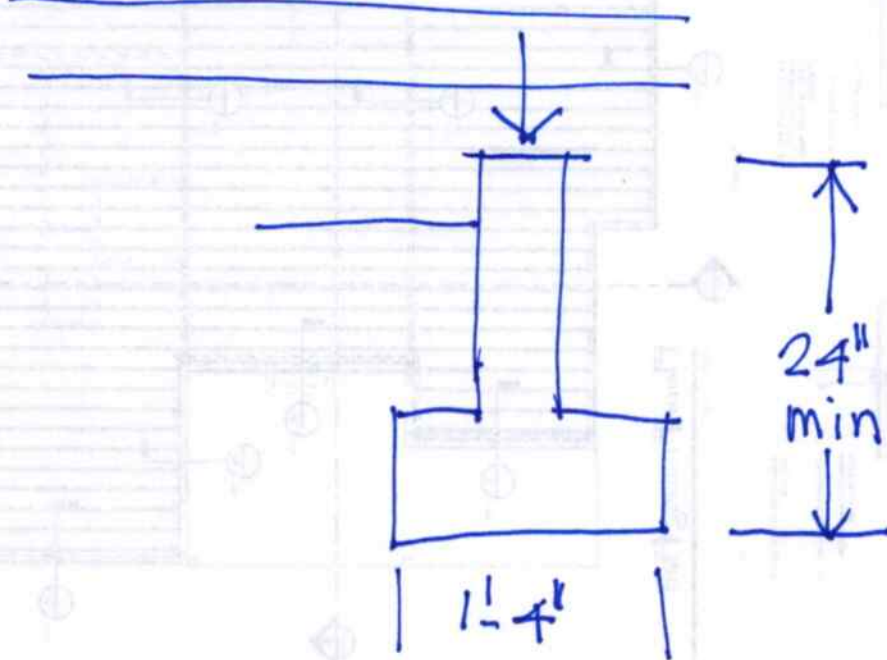
Max uniform load

Floor
Wall
Roof

$$\begin{array}{rcl}
 LL & = & 320 \# / 1 \\
 PL & = & 120 \# / 1 \\
 DL & = & 100 \\
 LL & = & 420 \# / 1 \\
 140'' & & \\
 \hline
 & & 1,080 \# / 1
 \end{array}
 \quad
 \begin{array}{rcl}
 LL & = & 720 \\
 DL & = & 360
 \end{array}$$

17.8 x

Max Point load



$$\begin{array}{rcl}
 A_T & = & 5.2 \# / 1 \\
 & = & 7,800 \# \text{ max} \\
 & - & 1,000 \text{ max uniform} \\
 \hline
 \text{Max R} & = & 6,800 \#
 \end{array}$$



LaMont Design, Inc

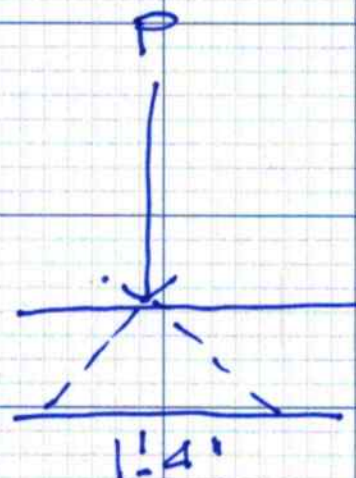
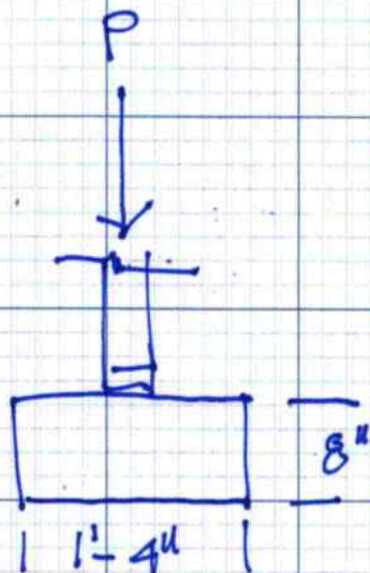
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www.lamontdesigninc.com

job title _____

sheet _____

Continuous Internal Fastening



$$1'-4'' \times 1'-4'' = 1.69 \times 1500 = 2,535 \text{ lb}$$

max point load

$$2,535 - 967 = 1,628 \text{ max point load}$$

DATE: 8/12/2020
VITRUVIUS BUILD: StruCalc
CUSTOMER:
PROJECT LOCATION:

COMPANY: LaMont Design Inc
DESIGNED BY: Wayne LaMont
REVIEWED BY: Wayne LaMont

LEVEL: Basement
LOCATION: FT1
TYPE: ISOLATED FOOTING
MATERIAL: CONCRETE

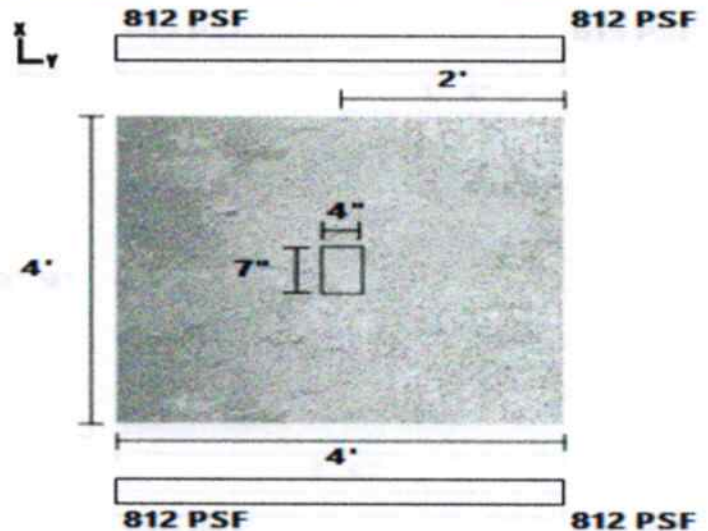
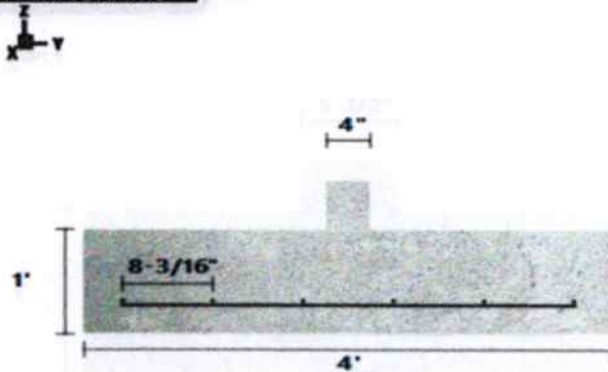
LOADING: CODE: 2018 International Building Code
ACI: ACI 318-14

4 (ft) X 4 (ft) X 12 (in)

Soil Depth TOF: 0 (ft)

(6) #4 Long, (6) #4 Short

FT1 DIAGRAMS



MATERIAL PROPERTIES

FOOTING

fc' (psi)	Ec (psi)	Density (lb/ft ³)	Width (ft)	Length (ft)	Depth (in)	Volume (ft ³)
2500	2880952	145	4	4	12	16

CALCULATION VARIABLES

Bo (in)	Φ-X	Φ-Y
56	0.9	0.9

COLUMN

Width (in)	Length (in)	Material	Offset (in)
4	7	Concrete	0

SOIL

Bearing Strength (lb/ft ²)	Density (lb/ft ³)	Cohesion	Friction Angle	Depth (ft)	Rankine Coefficient (Kp)
1000	140	0	30	0	3

REBAR

Bar Size #	# Bars Long	# Bars Short	fy (psi)	Es (psi)
4	6	6	40000	2.9E+07

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO
Soil Bearing Pressure (lb/ft ²)	PASS (18.8%)	811.6	1000.0	D+L
Two-Way Shear (Punching) (lb/ft ²)	PASS (72.7%)	19466.8	71400.0	1.2D+1.6L+0.5Lr
One-Way Shear X (lb/ft ²)	PASS (84.1%)	4866.7	30600.0	1.2D+1.6L+0.5Lr
Moment X (lb/ft)	PASS (76.1%)	7101.5	29752.9	1.2D+1.6L+0.5Lr
One-Way Shear Y (lb/ft ²)	PASS (82.1%)	5475.0	30600.0	1.2D+1.6L+0.5Lr
Moment Y (lb/ft)	PASS (72.5%)	8178.8	29752.9	1.2D+1.6L+0.5Lr
Crushing (lb/ft ²)	PASS (49.7%)	695.2	1381.3	1.2D+1.6L+0.5Lr

LOAD LIST

Type	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	9712	-	0	-	Live	Z
Point (lb/ft)	3273	-	0	-	Dead	Z

Structural Calculations for:

Apple Tree Point House Lot 7

**Apple Tree Point
Kingston Washington**

Client: Lamont Design

10 August 2020

Index:

DC-	Design Criteria
KP-	Key Plans
LT-	Lateral Analysis
DP-	Diaphragm Analysis
SW-	Shear Wall Analysis



giraf design

9220 Roosevelt Way NE Seattle WA 98115-2842
(206) 621-0060 Office (206) 898-4229 Cell
girafdesign@gmail.com <http://girafdesign.net>

LOCATION

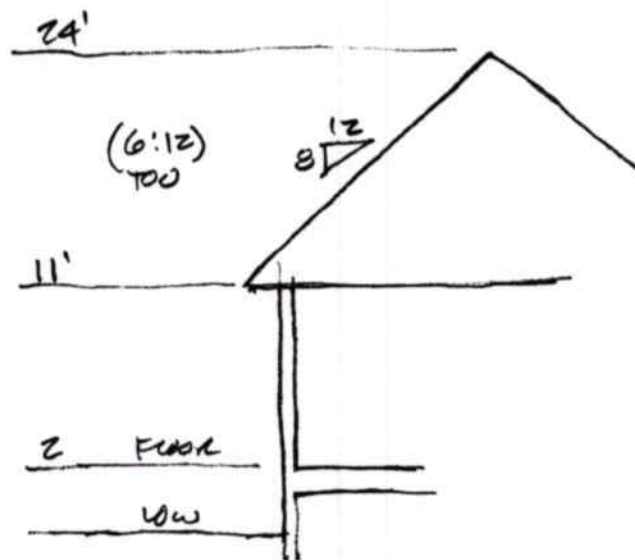
APPLE TREE POINT ROAD
KINGSTON WASHINGTON

SEISMIC (SEAC)

SEE DC-2

WIND

85 MPH (ASD)
EXPOSURE C
 $Kz = 1.0$



APPROXIMATE SECTION

giraf design

9220 roosevelt way ne
seattle wa 98115-2842
(206) 621-0060 office
(206) 898-4229 cell
girafdesign@gmail.com
<http://girafdesign.net>

project: APPLE TREE POINT
LOT 7

client: LAMONT DESIGN

date: 8-5-20

proj #: 2020-079

sheet: DC-1



OSHDPD

Latitude, Longitude: 47.815075, -122.483961

NE Apple Cove Ln

Apple
Cove Point

Google

Map data ©2020

Date

8/5/2020, 8:29:28 PM

Design Code Reference Document

ASCE7-10

Risk Category

II

Site Class

D - Stiff Soil

Type	Value	Description
S_S	1.266	MCE_R ground motion. (for 0.2 second period)
S_1	0.501	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.266	Site-modified spectral acceleration value
S_{M1}	0.752	Site-modified spectral acceleration value
S_{DS}	0.844	Numeric seismic design value at 0.2 second SA
S_{D1}	0.501	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.5	MCE_G peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.5	Site modified peak ground acceleration
T_L	6	Long-period transition period in seconds
S_{sRT}	1.266	Probabilistic risk-targeted ground motion. (0.2 second)
S_{sUH}	1.274	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S_{sD}	1.5	Factored deterministic acceleration value. (0.2 second)
S_{1RT}	0.501	Probabilistic risk-targeted ground motion. (1.0 second)
S_{1UH}	0.524	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S_{1D}	0.6	Factored deterministic acceleration value. (1.0 second)
PGA_d	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.994	Mapped value of the risk coefficient at short periods
C_{R1}	0.956	Mapped value of the risk coefficient at a period of 1 s

PC-2

seismic loads (asce 7-10)

equiv lateral force procedure

risk factor II 1.5-1
I
imp. factor 1 table 1.5-2
site class D table 20.3-1
R = 6.5 table 12.2-1

$S_s = 1.266$
 $S_1 = 0.501$
 $F_a = 1$ table 11.4-1
 $F_v = 1.5$ table 11.4-2
 $S_{DS} = 0.844$
 $S_{D1} = 0.501$

usgs maps

usgs maps

$C_s = 0.12985$ eqn 12.8-2
 $C_{sASD} = 0.0909$

vertical design loads

criteria

asce 7-10

ibc 2015

dead loads

roofing	3 psf	flooring	3 psf
1/2" plywood	1.5 psf	3/4" plywood	2.3 psf
trusses	6 psf	joists/beams	4 psf
insulation	1 psf	misc/mech	1 psf
misc/mech	1 psf		
5/8" gwb	3.1 psf		10.3 psf
	15.6 psf		
use	20 psf	use	15 psf

live loads

roof (snow)	25 psf		
floor (residential)	40 psf	deck (residential)	60 psf

soil bearing

2000 psf assumed

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date:

05/08/2020

project #:

2020-079

design:

nic

sheet:

dc-3

wind loads (asce 7-10)

MWFRS part 1

exposure C

V= 85

mph

 $K_d = 0.85$

risk factor 1

G= 0.85

table 26.6-1

table 1.5-1

26.9.1

8:12 roof

roof angle 33.69 degrees

ground to top of roof 24 ft

bottom of roof to top of roof 13 ft

(mean roof height) h= 17.5 ft

6:12 roof

roof angle 26.57 degrees

ground to top of roof 24 ft

bottom of roof to top of roof 13 ft

(mean roof height) h= 17.5 ft

$$K_{zt} = (1 + K_1 K_2 K_3)^2 = 1.00$$

pressure coefficients
from figure 6-6:

bldg. face	C_p
windward wall	0.8
leeward wall	-0.5
6:12 ROOF { windward roof	0.3
leeward roof	-0.6

*note: C_p values are conservative

worst case values

pressure coefficients
from figure 6-6:

bldg. face	C_p
windward wall	0.8
leeward wall	-0.5
8:12 ROOF { windward roof	0.4
leeward roof	-0.6

*note: C_p values are conservative

worst case values

pressures

Ht	K_z	q_z	$P_{ww \text{ walls}}$	$P_{lw \text{ walls}}$	$P_{\text{walls}} \text{ (psf)}$
0-15	0.85	13.36	9.09	6.01	15.10
15-20	0.9	14.15	9.62	6.01	15.64
20-25	0.94	14.78	10.05	6.01	16.06
25-30	0.98	15.41	10.48	6.01	16.49
30-40	1.04	16.35	11.12	6.01	17.13

 $P_{\text{roof}} \text{ (psf)}$

12.03

8:12 roof

 $P_{\text{roof}} \text{ (psf)}$

10.82

6:12 roof

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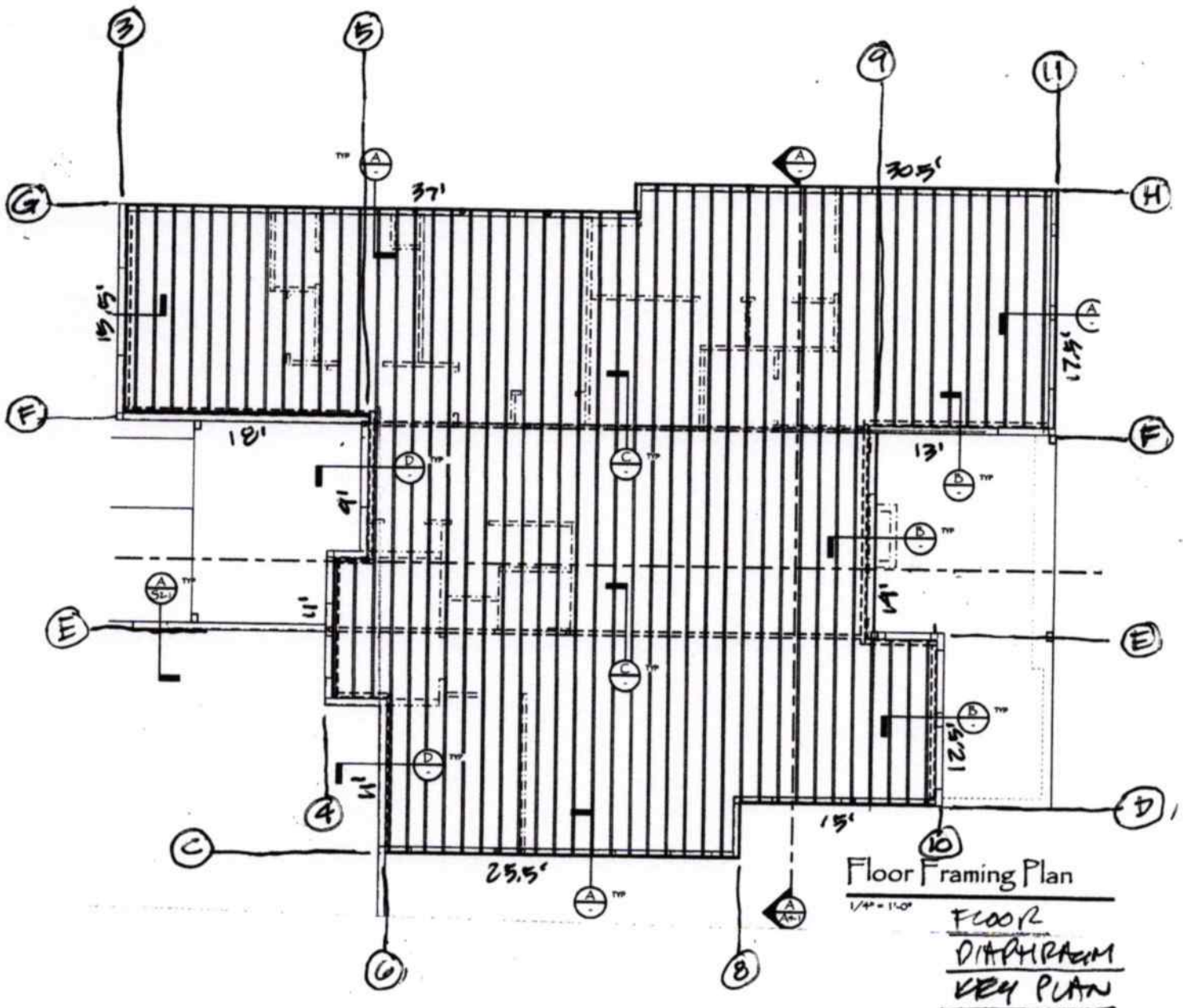
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 LOT 7

client: LAMONT DESIGN

date: 11-8-20
 proj #: 2020-079
 sheet: KP-2

SEISMIC

ROOF

$$A = 4131 \text{ ft}^2 \quad DL = 20 + 8 = 28 \text{ psf}$$

$$\therefore W_{\text{ROOF}} = 115.7 \rightarrow \underline{116 \text{ k}}$$

FLOOR

$$A = 2290 \text{ ft}^2 \quad DL = 15 + 16 = 31 \text{ psf}$$

$$\therefore W_{\text{FLOOR}} = 70.99 \rightarrow \underline{71 \text{ k}}$$

$$\therefore EW = 187 \text{ k}$$

$$\therefore E_{\text{ASD}} = \underline{17.0 \text{ k}}$$

REDISTRIBUTION

LEV (X)	Hx (FT)	Wx (K)	Hx.Wx (FT.K)	Yx (ASD) (K)
R	16	116	1856	15.79
F	2	71	142	1.21
		187	1998	17.0

WIND

(ASD LOADS)

X-X DIRECTION

Y-Y DIRECTION

ROOF

$$W_{10HG} = 110 \text{ psf}$$

$$W_{20HG} = 80 \text{ psf}$$

$$W_{1-5} = 130 \text{ psf}$$

$$W_{5-8} = 227 \text{ psf}$$

$$W_{8-11} = 179 \text{ psf}$$

$$W_{11HG} = 109 \text{ psf}$$

$$W_{11-12} = 66 \text{ psf}$$

$$W_{\text{ROOF}} = \underline{14.26 \text{ k}}$$

$$W_{A-0HG} = 80 \text{ psf}$$

$$W_{A-5.5} = 130 \text{ psf}$$

$$W_{5.5-11} = 220 \text{ psf}$$

$$W_{11HG} = 148 \text{ psf}$$

$$W_{\text{ROOF}} = \underline{13.51 \text{ k}}$$

FLOOR

$$W = 91 \text{ psf}$$

$$W_{\text{FLOOR}} = \underline{6.14 \text{ k}}$$

$$EW_{XX} = \underline{20.40 \text{ k}}$$

$$W = 91 \text{ psf}$$

$$W_{\text{FLOOR}} = \underline{4.41 \text{ k}}$$

$$EW_{YY} = \underline{17.92 \text{ k}}$$

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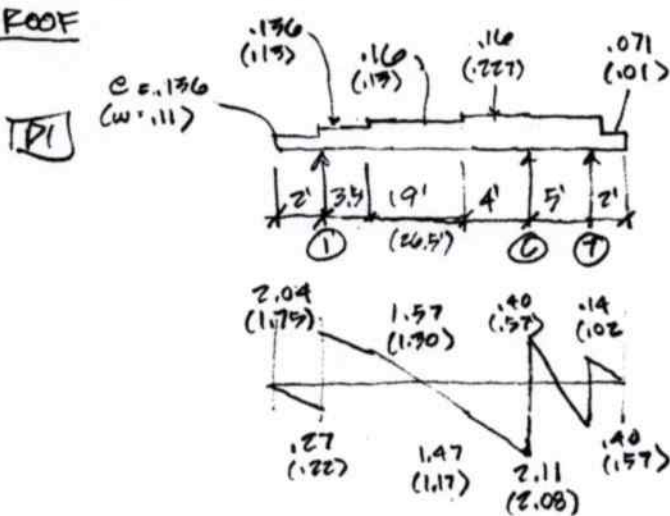
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proj #: 2020-079

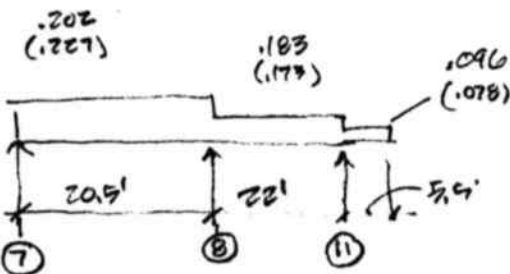
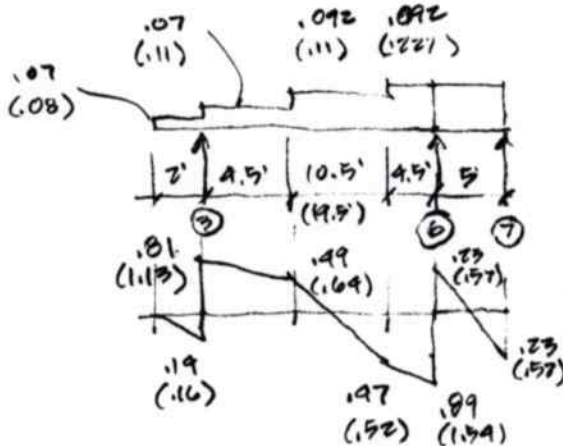
sheet: LT-1

DIAPHRAGMS

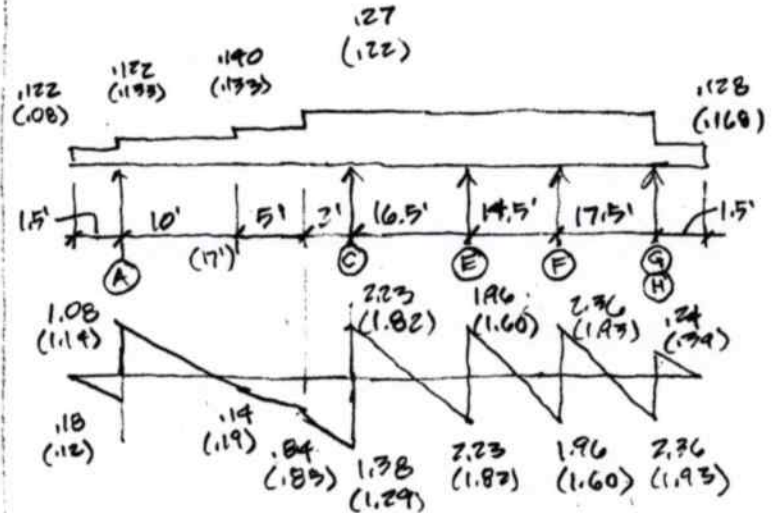
ROOF



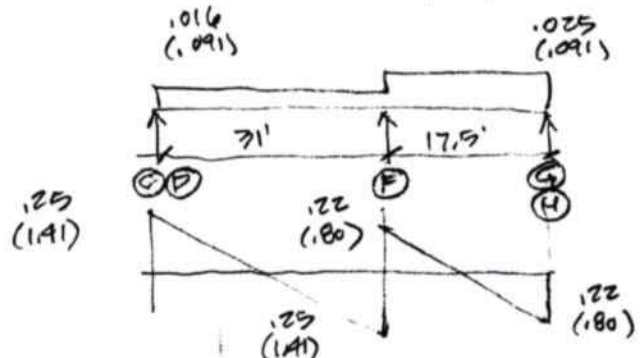
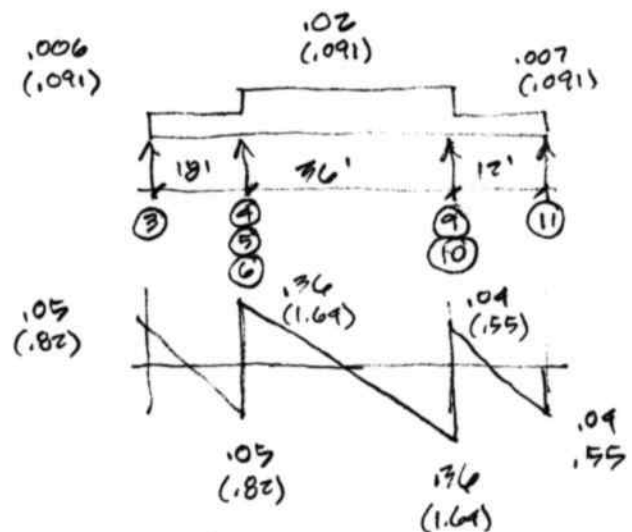
[D2]



ROOF (CONT)



FLOOR



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sheet: PP-1

SHEAR WALLS

① $V_{ROOF} = 2.31k$ $ELW = 6'$
(1.97k)

$v = 385plf$ SW3
 $F_{HD} = 4.29 - DL$ HOU5-SDS2.5
(GIRAP OVER DOOR FOR STRENGTH)

③ $V_{ROOF} = .95k$ $ELW = 9'$
(1.29k)
 $v = 143plf$ SW1
 $F_{HD} = 1.36 - DL$ HOU2-SDS2.5

$V_{FLOOR} = 1.10k$ $ELW = 15.5'$
(2.11k)
 $v = 136plf$ 2x-W/58"PC48"o.c.

④ $V_{FLOOR} = .27k$ $ELW = 20'$
(1.64k)
 $v = 82plf$ 2x-W/58"PC48"o.c.

⑥ $V_{ROOF} = 3.63k$ $ELW = 10.5'$
(4.76k)
 $v = 953plf$ USE SW4
 $F_{HD} = 4.99 - DL$ HOU8-SDS2.5

$V_{FLOOR} = 3.77k$ $ELW = 11'$
(5.58k)
 $v = 507plf$ 2x-W/58"PC16"o.c.

⑦ $V_{ROOF} = 2.84k$ $ELW = 13'$
(3.61k)
 $v = 277plf$ SW2
 $F_{HD} = 3.05 - DL$ HOU5-SDS2.5

⑧ $V_{ROOF} = 1.08k$ $ELW = 9'$
(1.23k)

$v = 1058plf$ SW6
 $F_{HD} = 11.63k$ HOU11-SDS2.5
ON CxG

⑨ $V_{FLOOR} = .40k$ $ELW = 26.5'$
(2.19k)

$v = 83plf$ 2x-W/58"PC48"o.c.

⑪ $V_{ROOF} = 2.54k$ $ELW = 6'$
(2.44k)
 $v = 423plf$ SW3
 $F_{HD} = 4.23 - DL$ HOU5-SDS2.5

⑫ $V_{ROOF} = 1.26k$ $ELW = 28.5'$
(1.26k)
 $v = 44plf$ SW1
NO NET UPLIFT

⑬ $V_{ROOF} = 3.61k$ $ELW = 19'$
(3.11k)
 $v = 190plf$ SW1
 $F_{HD} = 1.9 - DL$ HOU2-SDS2.5

$V_{FLOOR} = 3.74k$ $ELW = 25.5'$
(3.82k)
 $v = 150plf$ 2x-W/58"PC48"o.c.

⑭ $V_{FLOOR} = .13k$ $ELW = 15'$
(1.71k)
 $v = 47plf$ 2x-W/58"PC48"o.c.

⑮ $V_{ROOF} = 4.19k$ $ELW = 15'$
(3.42k)
 $v = 279plf$ SW2
 $F_{HD} = 3.07 - DL$ HOU5-SDS2.5

CONT →

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sheet: SW-1

Ⓕ $V_{ROOF} = 4.32k$ $ELW = 17.5'$
(3.53k)
 $v = 247 \text{ plf}$ SWZ
 $FHD = 2.72 \text{ DL}$ HAUZ. 5058.5

$V_{FLOOR} = 4.79k$ $ELW = 31'$
(5.74k)
 $v = 185 \text{ plf}$ 2x PLATE W/
5/8" X 0.048"...

Ⓖ $V_{ROOF} = 2.60k$ $ELW = 44.5'$
Ⓕ (2.27k)
 $v = 58 \text{ plf}$ SW1
NO NET UPLIFT

$V_{FLOOR} = 2.82k$ $ELW = 67.5'$
(3.07k)
 $v = 49 \text{ plf}$ 2x PLATE W/ 5/8" X 0.048"

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client: LAMONT DESIGN

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sheet: SW-2