SECTION 2

DESIGN DATA AND CALCULATIONS

SOILS INFO

POST AND GIRDER DESIGN

FASTENER DESIGN

WALL DESIGN

ROOF RUNOFF

DESIGN PROPERTIES

Soil Map—Wayne County, Pennsylvania

Map Scale: 1:1,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Wayne County, Pennsylvania
Survey Area Data: Version 17, Sep 1, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 21, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bh	Basher silt loam	4.4	70.8%
Ho	Holly silt loam	1.7	27.8%
WoD	Wellsboro channery loam, 8 to 25 percent slopes, rubbly	0.1	1.4%
Totals for Area of Interest		**6.2**	**100.0%**

Wayne County, Pennsylvania

Bh—Basher silt loam

Map Unit Setting

National map unit symbol: 9ymh
Elevation: 400 to 840 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 120 to 187 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Basher and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basher

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Reddish alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 40 inches: fine sandy loam
H3 - 40 to 56 inches: gravelly loam
H4 - 56 to 69 inches: very gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F140XY014NY - Low Floodplain
Hydric soil rating: No

Minor Components

Basher, frequently flooded

Percent of map unit: 8 percent
Hydric soil rating: No

Holly

Percent of map unit: 5 percent
Landform: Depressions on flood plains, backswamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Wayne County, Pennsylvania
Survey Area Data: Version 17, Sep 1, 2021

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

RGD

State		Project		
By: RGD	Date: 8-30-22	Checked by:	Date:	Job No.:
Subject: Sweighoffer calcs				Sheet 1 of

Post #1: 16' clearance − 4" cuma = 15.67' post HT (open side)

$L_{1\ wye}$ = 12.17'

$L_{2\ knee}$ = 18.67'

K_e = 2.0

M needs to be interpolated due to extra post HT & tributary width.

(A) Interpolated M due to post HT:

4110 Ft·lbs @ 14.75' post HT

÷ 14.75'

278.64 Ft·lbs per foot of post HT

278.64 × 15.67' HT = **4366.4 Ft·lbs**

(B) Interpolated M due to trib. width

4110 Ft·lbs @ 28' trib width

÷ 28

146.8 Ft·lbs per foot width

146.8

× 29' trib width

4256.8 Ft·lbs.

4256.8

− 4110

146.8 Ft·lbs increase

Total Moment = 4366.4 + 146.8

= **4513.2 Ft·lbs** ✓

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

RBD

State		Project		
By: RBD	Date: 8-30-22	Checked by:	Date:	Job No.:

Subject: Surcharge Calcs

Sheet 2 of

Post #2

Post on outside WALL w/ 8' O.H. (open side)
12' Post HT - open side

$L_{1\,wire} = 12 - 3.5 = 8.5'$

$L_{2\,knee} = 12 - 3 = 9'$

$K_e = 2.0$

M needs to be interpolated due to extra post HT & tributary width

(A) Interpolated M due to post HT.

M @ 10.75' post HT = 4962
M @ 14.75' post HT = 4110
852 Ft-lbs / 4' HT difference
= 213 Ft-lbs / 1' difference

∴ 12' actual - 10.75' = 1.25' difference
× 213
266.25 Ft-lbs less
∴ 4962 - 266.25 = **4695.8 Ft-lbs**

(B) Interpolated M due to width (trib. width)
146.8 Ft-lbs per Ft width

TOTAL M = 4695.8 + 146.8 = **4842.6 Ft-lbs** ✓

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

RGD

State		Project		
By: RGD	Date: 8-30-22	Checked by:	Date:	Job No.:
Subject: SWEIGHOFFER CALCS				Sheet 3 of

POST #3

16' clearance - 4' wall = 12' post HT (Enclosed side)

TRIB WIDTH = $\frac{41.33}{2}$ + 2.34' OH = 23'

L_1 = 1.5 ← 6 BARS

L_2 = 12 - 3 = 9'

K_e = 1.0

M NEEDS INTERPOLATED DUE TO TRIB WIDTH

FROM POST SIZING SHEET M = 5022 FT-LBS

(A) INTERPOLATED FOR 23' TRIB WIDTH COMPARED TO 22' ON POST SIZING SHEET.

$\frac{5022 \text{ FT-LBS}}{22'}$ = 228.3 FT-LBS per 1' Bid width

∴ 23' × 228.3 = **5250.3 FT-LBS TOTAL** ✓

RLD

Column Design for Glu-Lam Posts

Calculations based on NDS 2005

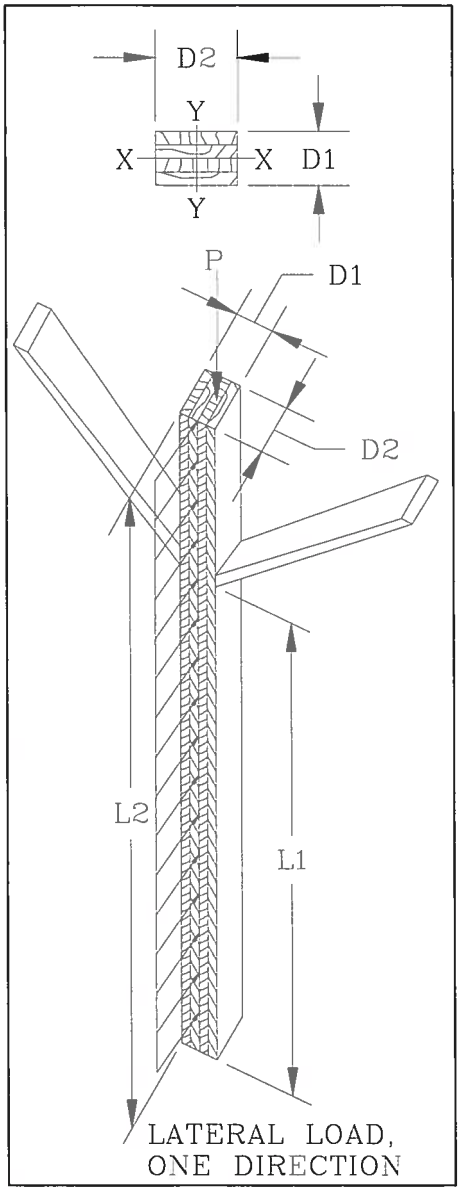
Landowner:	Cassiyln Schweighofor	Preparer:	
County:	Wayne	Date:	30-Aug-22
Component Description:	p1		

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

Column Dimensions

Post Spacing =	8.00	Ft.
Actual PostHeight =	15.67	Ft.
(See Tab "Effective Length Values") Height, L1 =	12.17	Ft.
(See Tab "Effective Length Values") Height, L2 =	12.67	Ft.

Dimension D1 =	6.688	In.
Dimension D2 =	7.000	In.



Column Species, Grade, Base Values

Species =	SYP	
Grade =		
Number of Laminations =	5	PLY
Compression Parallel to Grain, F_{cll} =	2150	PSI
Y Axis Bending, $F_{by\text{-}y}$ =	2350	PSI
Modulus of Elasticity Min, E_{min} =	880,000	PSI

Adjustment Factors for Glu-Lam Lumber

Wet Service Factor, C_m =	1.00	Table 4D, NDS Supplement
Temperature Factor, C_t =	1.00	Table 2.3.3, NDS
Beam Stability Factor, C_L =	1.00	3.3.3, NDS
*Size Factor, C_V =	1	Table 4D, NDS Supplement
Flat Use Factor, C_{fu} =	1.00	Table 4D, NDS Supplement
Form Factor, C_f =	1.00	3.3.4, NDS

* Cv not conisdered in this spreadsheet.

Load is assumed to be in one direction, perpendicular to narrow face of laminations.

Column Design for Glu-lam Posts

Calculations based on NDS 2005

Landowner:	Cassiyln Schweighofor	Preparer:		0	
County:	Wayne	Date:	30-Aug-22		
Component Description:	p1				

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

open side

Compression Design

Axial Load =	9280.00	Pounds				
Buckling Mode, K_e =	2.00	Table G1, NDS				
Compression Load Duration, C_d =	1.15	Table 2.3.2, NDS				
Column Stability Factor, c =	0.90	0.8- sawn lumber, 0.85- round poles, 0.90- glu-lam posts				
F^*_c =	2472.50	PSI				
l_{e1} =	292.08	In.	l_{e1}/d_1 =	43.68		
l_{e2} =	304.08	In.	l_{e2}/d_2 =	43.44		
Controlling Le/d =	43.68					
Critical Buckling Design Value, F_{cE} =	379.21	PSI				
Column Stability Factor, C_p =	0.1507			0.64076145	0.4105752	0.17041179
Allowable Compression Stress, F'_c =	372.60	PSI				
Actual Compression Stress, f_c =	198.24	PSI	PASS			

Single Axis Bending Design - NOTE: Load applied to Length L1

Bending Moment =	4513.20	Ft*LB	
Bending Load Duration, C_d =	1.60	Table 2.3.2, NDS	
Section Modulus, M =	54.6146	In^3	
Allowable Bending Stress, F'_b =	3760.00	PSI	
Actual Bending Stress, f_b =	991.65	PSI	PASS

Combined Bending and Single Axis Compression Computation

		{(fC/F'C)^2}	{fb1/(Fb1*1-(fc/FcE1))}	{1-(fc/FcE1)}
Check Formula (3.9-3) < 1.0				
Formula (3.9-3), NDS =	0.836	0.28306889	0.55263499	0.47723356
Result =	PASS			

CONCLUSION

Use 7 In. X 6.6875 In. SYP, Grade , 5 PLY Post at 8 Ft. Spacing

DESIGN STATUS PASS

LRGD

Column Design for Glu-Lam Posts

Calculations based on NDS 2005

Landowner: Cassiyln Schweighofor Preparer:

County: Wayne Date: 30-Aug-22

Component Description: p2

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

Column Dimensions

open side

Post Spacing = 8.00 Ft.

Actual PostHeight = 12.00 Ft.

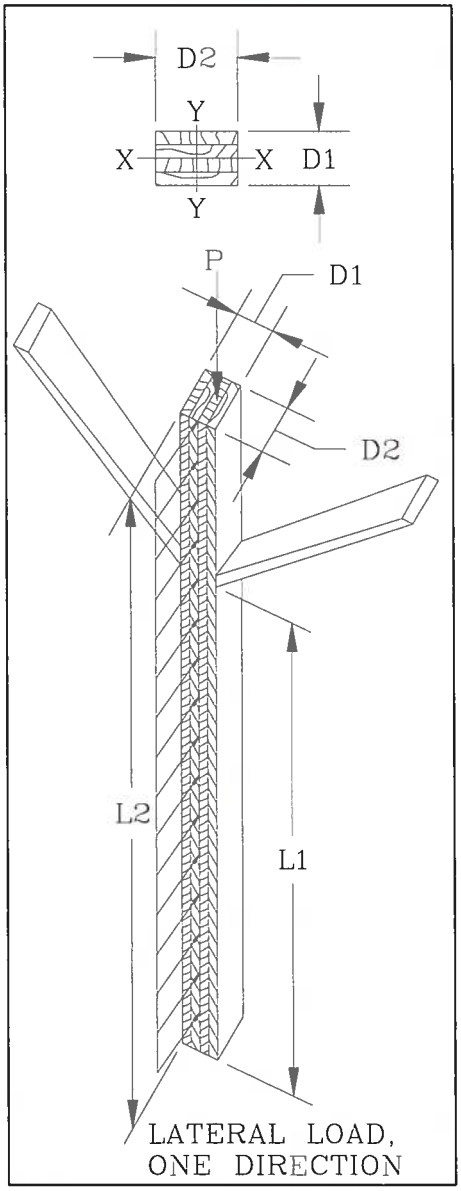
(See Tab "Effective Length Values") Height, L1 = 8.50 Ft. ✓

(See Tab "Effective Length Values") Height, L2 = 9.00 Ft.

5 ply

Dimension D1 = 6.688 In.

Dimension D2 = 7.000 In.



Column Species, Grade, Base Values

Species = SYP

Grade =

Number of Laminations = 5 PLY

Compression Parallel to Grain, F_{cll} = 2150 PSI

Y Axis Bending, $F_{by\text{-}y}$ = 2350 PSI

Modulus of Elasticity Min, E_{min} = 880,000 PSI

Adjustment Factors for Glu-Lam Lumber

Wet Service Factor, C_m =	1.00	Table 4D, NDS Supplement
Temperature Factor, C_t =	1.00	Table 2.3.3, NDS
Beam Stability Factor, C_L =	1.00	3.3.3, NDS
*Size Factor, C_V =	1	Table 4D, NDS Supplement
Flat Use Factor, C_{fu} =	1.00	Table 4D, NDS Supplement
Form Factor, C_f =	1.00	3.3.4, NDS

* Cv not conisdered in this spreadsheet.

Load is assumed to be in one direction, perpendicular to narrow face of laminations.

RGD

Column Design for Glu-lam Posts

Calculations based on NDS 2005

Landowner:	Cassiyln Schweighofor	Preparer:		0	
County:	Wayne	Date:	30-Aug-22		
Component Description:	p2				

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

Compression Design

Axial Load =	9280.00	Pounds				
Buckling Mode, K_e =	2.40	Table G1, NDS				
Compression Load Duration, C_d =	1.15	Table 2.3.2, NDS				
Column Stability Factor, c =	0.90	0.8- sawn lumber, 0.85- round poles, 0.90- glu-lam posts				
F^*_c =	2472.50	PSI				
l_{e1} =	244.80	In.	l_{e1}/d_1 =	36.61		
l_{e2} =	259.20	In.	l_{e2}/d_2 =	37.03		
Controlling Le/d =	37.03					
Critical Buckling Design Value, F_{cE} =	527.57	PSI				
Column Stability Factor, C_p =	0.2079			0.67409742	0.4544073	0.23708374
Allowable Compression Stress, F'_c =	514.08	PSI				
Actual Compression Stress, f_c =	198.24	PSI	PASS			

Single Axis Bending Design - NOTE: Load applied to Length L1

Bending Moment =	4843.00	Ft*LB	
Bending Load Duration, C_d =	1.60	Table 2.3.2, NDS	
Section Modulus, M =	54.6146	In^3	
Allowable Bending Stress, F'_b =	3760.00	PSI	
Actual Bending Stress, f_b =	1064.11	PSI	PASS

Combined Bending and Single Axis Compression Computation

		{(fC/F'C)^2}	{fb1/(Fb1*1-(fc/FcE1))}	{1-(fc/FcE1)}
Check Formula (3.9-3) < 1.0				
Formula (3.9-3), NDS =	0.602	0.14870208	0.45336152	0.62424431
Result =	PASS			

CONCLUSION

Use 7 In. X 6.6875 In. SYP, Grade , 5 PLY Post at 8 Ft. Spacing

DESIGN STATUS PASS

RGD

Column Design for Glu-Lam Posts

Calculations based on NDS 2005

Landowner: Cassiyln Schweighofor Preparer:

County: Wayne Date: 30-Aug-22

Component Description: p3

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

CLOSED SIDE

Column Dimensions

4 ply

Post Spacing = 8.00 Ft.

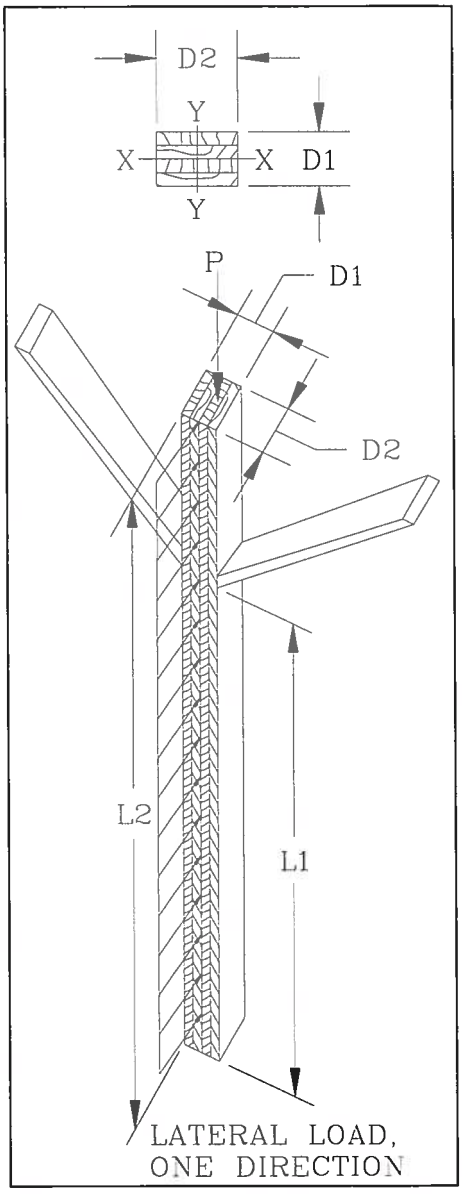
Actual PostHeight = 12.00 Ft.

(See Tab "Effective Length Values") Height, L1 = 1.50 Ft. ✓

(See Tab "Effective Length Values") Height, L2 = 9.00 Ft.

Dimension D1 = 5.375 In.

Dimension D2 = 7.000 In.



Column Species, Grade, Base Values

Species = SYP

Grade =

Number of Laminations = 4 PLY

Compression Parallel to Grain, F_{cII} = 2150 PSI

Y Axis Bending, $F_{by\text{-}y}$ = 2350 PSI

Modulus of Elasticity Min, E_{min} = 880,000 PSI

Adjustment Factors for Glu-Lam Lumber

Wet Service Factor, C_m =	1.00	Table 4D, NDS Supplement
Temperature Factor, C_t =	1.00	Table 2.3.3, NDS
Beam Stability Factor, C_L =	1.00	3.3.3, NDS
*Size Factor, C_V =	1	Table 4D, NDS Supplement
Flat Use Factor, C_{fu} =	1.00	Table 4D, NDS Supplement
Form Factor, C_f =	1.00	3.3.4, NDS

* Cv not conisdered in this spreadsheet.

Load is assumed to be in one direction, perpendicular to narrow face of laminations.

RGD

Column Design for Glu-lam Posts

Calculations based on NDS 2005

Landowner:	Cassiyln Schweighofor	Preparer:		0	
County:	Wayne	Date:	30-Aug-22		
Component Description:	p3				

Version:	3.00
Date:	9/14/2010
Author:	A. Hibbs

Compression Design

Axial Load =	7360.00	Pounds				
Buckling Mode, K_e =	1.00	Table G1, NDS				
Compression Load Duration, C_d =	1.15	Table 2.3.2, NDS				
Column Stability Factor, c =	0.90	0.8- sawn lumber, 0.85- round poles, 0.90- glu-lam posts				
F*c =	2472.50	PSI				
l_{e1} =	18.00	In.	l_{e1}/d_1 =	3.35		
l_{e2} =	108.00	In.	l_{e2}/d_2 =	15.43		
Controlling Le/d =	15.43					
Critical Buckling Design Value, F_{cE} =	3038.81	PSI				
Column Stability Factor, C_p =	0.8286			1.23835672	1.5335274	1.36560233
Allowable Compression Stress, F'c =	2048.64	PSI				
Actual Compression Stress, f_c =	195.61	PSI	PASS			

Single Axis Bending Design - NOTE: Load applied to Length L1

Bending Moment =	5250.30	Ft*LB	
Bending Load Duration, C_d =	1.60	Table 2.3.2, NDS	
Section Modulus, M =	43.8958	In^3	
Allowable Bending Stress, F'b =	3760.00	PSI	
Actual Bending Stress, f_b =	1435.30	PSI	PASS

Combined Bending and Single Axis Compression Computation

		{(fC/F'C)^2}	{fb1/(Fb1*1-(fc/FcE1))}	{1-(fc/FcE1)}
Check Formula (3.9-3) < 1.0				
Formula (3.9-3), NDS =	0.417	0.00911741	0.40799148	0.93562782
Result =	PASS			

CONCLUSION

Use 7 In. X 5.375 In. SYP, Grade , 4 PLY Post at 8 Ft. Spacing

DESIGN STATUS PASS

.75
12.1

15" = 1.25'
16" = 1.33'

POST SIZING

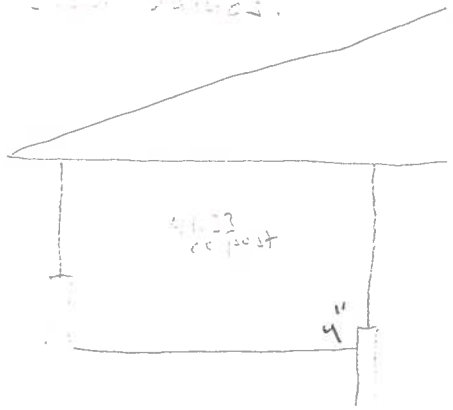
(40 PSF COMBINED LOAD-NO DRIFT LOADS)
(POSTS & TRUSSES ON 8' CENTERS)

woodworks may reduce this by .75 again

4 v.s

SPAN (FT)	OVERHANG (FT)	ENCLOSED OR OPEN	CLEARANCE (FT)	WALL HT ABOVE GROUND (FT)	RESULTANT POST HT (FT)	COMBINED MOMENT ON POST DUE TO KNEE BRACE & WIND AGAINST POST (FT-LBS)	.6 WIND REDUCTION (FT-LBS)	POST LOAD	COMBINED VALUE ©	KE VALUE	POST SIZE		TIMBERTECH POST SIZE	
40	8	OPEN	12	1.25	10.75	8270	4962	8960	0.975	2.4	4-PLY 2X8		4-PLY 2X8	
40	8	OPEN	16	1.25	14.75	6850	4110	8960	0.616	2.0	5-PLY 2X8		4-PLY 2X8	4' Post Spacing
40	2	OPEN	12	4	8	5960	3576	7040	0.7	2.4	4-Ply 2x6	USE 4-PLY 2X8 PER TT	4-Ply 2x8	
40	2	OPEN	16	4	12	5380	3228	7040	0.804	2.4	4-PLY 2X8		4-Ply 2x8	4' Post Spacing
40	2	CLOSED	12	4	8	4710	2826	7040	0.394	1.0	4-PLY 2X6		3-Ply 2x6	
40	2	CLOSED	16	4	12	8370	5022	7040	0.788	1.0	4-PLY 2X6	USE 4-PLY 2X8 PER TT	4-Ply 2x8	
50	8	OPEN	12	1.25	10.75	10120	6072	10560	0.922	2.0	4-PLY 2X8		4-PLY 2X8	
50	8	OPEN	16	1.25	14.75	8290	4974	10560	0.839	2.0	5-PLY 2X8		4-PLY 2X8	4' Post Spacing
50	2	OPEN	12	4	8	6900	4140	8640	0.899	2.4	4-Ply 2x6	USE 4-PLY 2X8 PER TT	4-PLY 2X8	
50	2	OPEN	16	4	12	6170	3702	8640	0.716	2.0	4-PLY 2X8		4-PLY 2X8	4' Post Spacing
50	2	CLOSED	12	4	8	5930	3558	8640	0.504	1.0	4-Ply 2x6		3-PLY 2X8	
50	2	CLOSED	16	4	12	9040	5424	8640	0.897	1.0	4-PLY 2X6	USE 4-PLY 2X8 PER TT	4-PLY 2X8	
60	8	OPEN	12	1.25	10.75	11660	6996	12160	0.788	2.4	5-PLY 2X8		NA	
60	8	OPEN	16	1.25	14.75	9520	5712	12160	0.902	2.0	5-PLY 2X8	15' clearance max.	NA	
60	2	OPEN	12	4	8	8490	5094	10240	0.531	2.4	4-PLY 2X8		4-PLY 2X8	
60	2	OPEN	16	4	12	7520	4512	10240	0.758	2.0	4-PLY 2X8	15' clearance max.	4-PLY 2X8	4' Post Spacing
60	2	CLOSED	12	4	8	6960	4176	10240	0.602	1.0	4-PLY 2X6		3-PLY 2X8	
60	2	CLOSED	16	4	12	7240	4344	10240	0.772	1.0	4-PLY 2X6	USE 4-PLY 2X8	3-PLY 2X8	4' Post Spacing

Span = 41.33' c.c. of post.
use 50' [illegible]



1701 #/Lnft
8' wall concrete

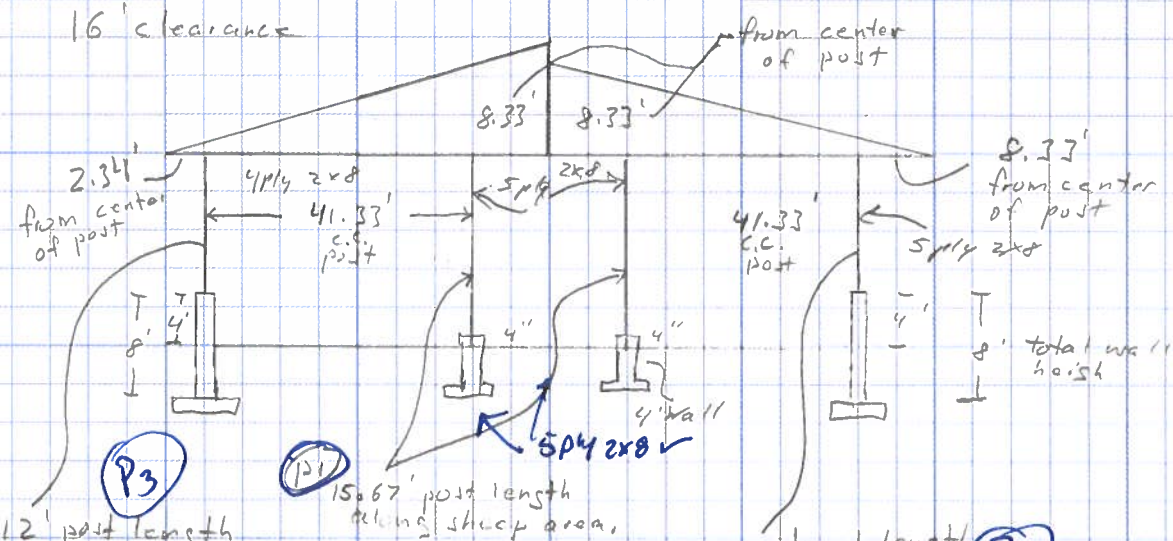
Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

RGL

State		Project		
		Schweighofer		
By	Date	Checked by	Date	Job No.
Subject			Sheet 1 of	
Roof Calcs				



(open)

P1) Worst case post length 15.67', trib area (41.33'÷2)+8.33' = 28.995'
post on buried 4' wall, wye and knee bracing, use 29'
clearance from finished floor to bottom chord of truss = 16', Post Load: 40×29×8 = 9280 ✓

Try: 5ply, 2x8 Glulam, 8' on center max spacing. (5 1/16 × 7") 6.625

L1 wye 15.67 - (42/12) = 12.17'
L2 knee 15.67 - (36/12) = 12.67'

Kc = 2.4, Cd = 1.6 Total bending M = 4513.2 ft-#

Fails: le2/d2 > 50 @ 52.41
Fails: le2/d2 > 50 @ 52.13
Fails: C = 1.647

Try Ke = 2.0 Glulam 5ply 2x8 ✓

Passes C = 0.836 use: 5ply 2x8 max 8' o.c. post 8.33

P2) Post on outside wall w/ 8' overhang, on 8' wall with 4' above finished floor, open side, 12' post length.
29' trib area, 16' clearance

Fails → Ke 2.4 Cd 1.6 Total bending M = 4513.2 Post load 40×29×8 = 9280 ✓
use Ke=2.0
L1 12 - (42/12) = 8.5
L2 12 - (36/12) = 9 C = 0.945 94.5% is to close to failing. Try: 5ply 2x8 @ Ke 2.4 Pass 0.602
use: 5ply 2x8 @ max 8' o.c. Glulam

5ply 2x8 ✓

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

R&D

State		Project		
By	Date	Checked by	Date	Job No.
Subject				Sheet 2 of

P3) Post on outside wall with 2.34' overhang
$T.L = (41.33 \div 2) + 2.34 = 23$'; post on 8' wall with 4' above finished floor, 12' post length

Post load $40 \times 23 \times 8 = 7360$ #

$L_1 = 1.5$ enclosed structure with grid.

$L_2 = 12 - (36/12) = 9$

$Ke = 1.0$

$m = 5250.3$ ~~#~~

4 ply - 2x8 posts

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State	Project			
Lancaster Co Pa	Schmeisher			
By	Date	Checked by	Date	Job No.
AW				
Subject			Sheet 6 of 6	
Roof design				

Fasteners 32' with area (worst case)

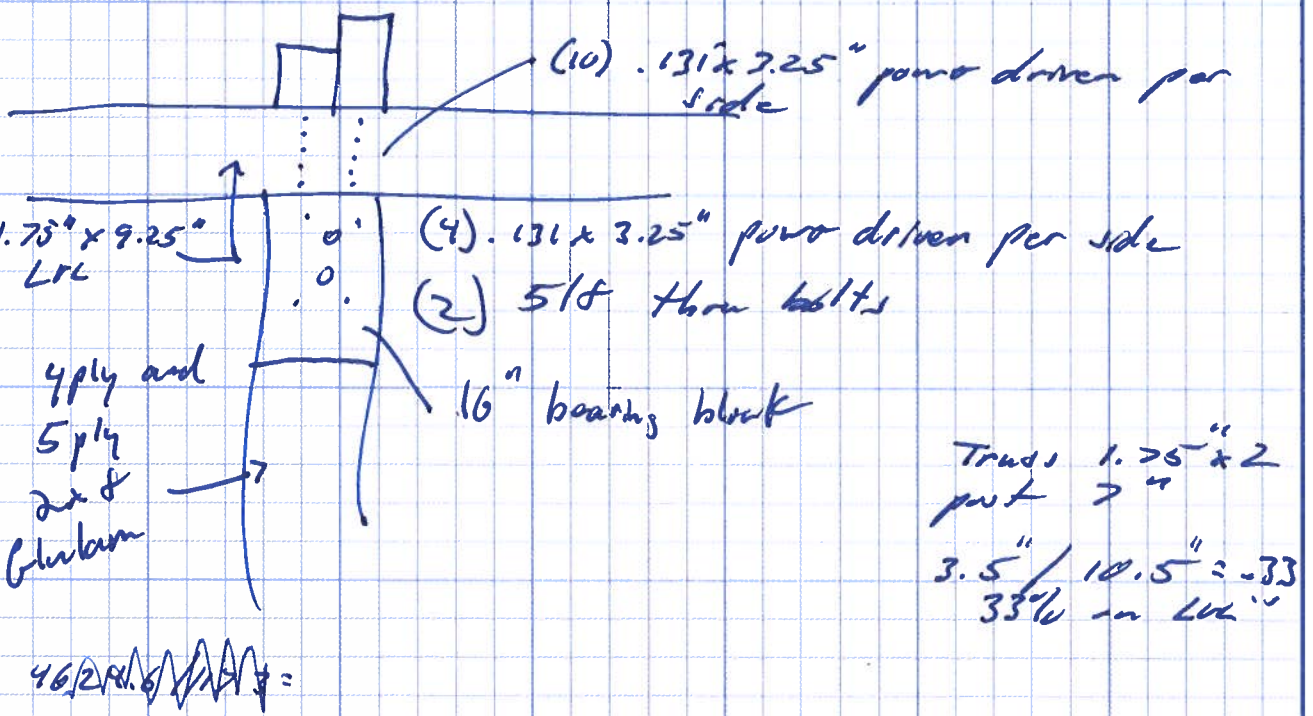
uplift 32' x (16-7) x 4 = 2304#
2304 / 152# load = 15 use 20 total
10 per side ✓

Gravity

.5P + .5P x (.33P)
P + (.33P)

Truss load 40 x 32 x 4 = 5120#

5120 + (.33 x 5120) = 6809.6# ✓
6809.6 - (20 x 109.25) = 4624.6#
Try (2) 5/8 Φ bolts @ 2024# each
4624.6 - (2 x 2024) = 576.6#
576.6 ÷ 117.3 = 5 use 4 total 4 per side



Truss 1.75" x 2 post > 4"

3.5" / 10.5" = .33
33% in LVL ✓

4624.6 / 4 =

RGS

Landowner: SCHWEIGHOFER Preparer: AW Version 1.2.1
County: WAYNE Date: 27-Dec-21 6/21/20102
Component Description: ALL FASTENERS UPLIFT By: ASH

LATERAL DESIGN VALUE OF SPECIALITY NAILS

Reference 11.3.1, NDS 2001 Edition.

Nail Length =		3.25	In.	
Nail Diameter =		0.131	In.	
Main Member Thickness	t(m) =	7.000	In	
Side Member Thickness	t(s) =	1.750	In	
Dowel Bearing Strength Main Member	F(em) =	5550	psi	(See Table 11.3.2)
Dowel Bearing Strength Side Member	F(es) =	3650	psi	(See Table 11.3.2)

Nail Length	L=	3.25	In		
Bending Yield Strength of Nail	F(yb) =	100000	psi		
Nail Diameter	D =	0.131	In		
	K(D) =	2.2			
Penetration of nail in main member	p=	1.5	in	=	11.5 D

Lateral Design Value Z = 95 lbs/Nail
Based on Yield Mode, Not Adjusted for Main Member Penetration

Lateral Design Value Z = 95 lbs/Nail
Adjusted for Main Member Penetration, See Footnote 2, Table 11N, NDS

ADJUSTED LATERAL DESIGN VALUE OF SPECIALITY NAILS

$Z' = Z * C_D * C_M * C_t * C_{eg} * C_{di} * C_{tn}$

Load Duration Factor (Table 2.3.2)	C_D =	1.6	Wind/Earthquake Load
Wet Service Factor	C_m =	1	(See Table 10.3.3)
Temperature Factor	C_t =	1	(See Table 10.3.4)
End Grain Factor	C_{eg} =	1	(0.67 if applies)
Diaphragm Factor	C_{di} =	1	(1.1 if applies)
Toe-Nail Factor	C_{tn} =	1	(0.83 if applies)

Adjusted Lateral Design Value Z' = 152 lbs/Nail

REQUIRED NUMBER OF NAILS

$$\#\ Nails = \frac{P}{Z'}$$

Required Lateral Load	P =	2304	lbs
Required Number of Nails	# =	15.2	Nails

CONCLUSION

Use 16 3.25 In. Long x 0.131 In. Diameter Nails

Landowner: SCHWEIGHOFER Preparer: AW Version 1.2.1
County: WAYNE Date: 27-Dec-21 6/21/20102
Component Description: GRAVITY 1 ALL FASTENERS By: ASH

LATERAL DESIGN VALUE OF SPECIALITY NAILS

Reference 11.3.1, NDS 2001 Edition.

Nail Length =		3.25	In.	
Nail Diameter =		0.131	In.	
Main Member Thickness	t(m) =	7.000	In	
Side Member Thickness	t(s) =	1.750	In	
Dowel Bearing Strength Main Member	F(em) =	5550	psi	(See Table 11.3.2)
Dowel Bearing Strength Side Member	F(es) =	3650	psi	(See Table 11.3.2)

Nail Length	L=	3.25	In		
Bending Yield Strength of Nail	F(yb) =	100000	psi		
Nail Diameter	D =	0.131	In		
	K(D) =	2.2			
Penetration of nail in main member	p=	1.5	in	=	11.5 D

Lateral Design Value Z = 95 lbs/Nail
Based on Yield Mode, Not Adjusted for Main Member Penetration

Lateral Design Value Z = 95 lbs/Nail
Adjusted for Main Member Penetration, See Footnote 2, Table 11N, NDS

ADJUSTED LATERAL DESIGN VALUE OF SPECIALITY NAILS

$Z' = Z * C_D * C_M * C_t * C_{eg} * C_{di} * C_{tn}$

Load Duration Factor (Table 2.3.2)	C_D =	1.15	Snow Load
Wet Service Factor	C_m =	1	(See Table 10.3.3)
Temperature Factor	C_t =	1	(See Table 10.3.4)
End Grain Factor	C_{eg} =	1	(0.67 if applies)
Diaphragm Factor	C_{di} =	1	(1.1 if applies)
Toe-Nail Factor	C_{tn} =	1	(0.83 if applies)

Adjusted Lateral Design Value Z' = 109.25 lbs/Nail

REQUIRED NUMBER OF NAILS

$$\#\ Nails = \frac{P}{Z'}$$

Required Lateral Load	P =	4624.6	lbs
Required Number of Nails	# =	42.3	Nails

CONCLUSION

Use 43 3.25 In. Long x 0.131 In. Diameter Nails

LRCD

Landowner: SCHWEIGHOFER Preparer: AW Version 1.2.1
County: WAYNE Date: 27-Dec-21 6/21/20102
Component Description: GRAVITY 2 ALL FASTNERS By: ASH

LATERAL DESIGN VALUE OF SPECIALITY NAILS

Reference 11.3.1, NDS 2001 Edition.

Nail Length =		3.25	In.	
Nail Diameter =		0.131	In.	
Main Member Thickness	t(m) =	7.000	In	
Side Member Thickness	t(s) =	1.500	In	
Dowel Bearing Strength Main Member	F(em) =	5550	psi	(See Table 11.3.2)
Dowel Bearing Strength Side Member	F(es) =	4650	psi	(See Table 11.3.2)

Nail Length	L=	3.25	In		
Bending Yield Strength of Nail	F(yb) =	100000	psi		
Nail Diameter	D =	0.131	In		
	K(D) =	2.2			
Penetration of nail in main member	p=	1.75	in	=	13.4 D

Lateral Design Value Z = 102 lbs/Nail
Based on Yield Mode, Not Adjusted for Main Member Penetration

Lateral Design Value Z = 102 lbs/Nail
Adjusted for Main Member Penetration, See Footnote 2, Table 11N, NDS

ADJUSTED LATERAL DESIGN VALUE OF SPECIALITY NAILS

$Z' = Z * C_D * C_M * C_t * C_{eg} * C_{di} * C_{tn}$

Load Duration Factor (Table 2.3.2)	C_D =	1.15	Snow Load
Wet Service Factor	C_m =	1	(See Table 10.3.3)
Temperature Factor	C_t =	1	(See Table 10.3.4)
End Grain Factor	C_{eg} =	1	(0.67 if applies)
Diaphragm Factor	C_{di} =	1	(1.1 if applies)
Toe-Nail Factor	C_{tn} =	1	(0.83 if applies)

Adjusted Lateral Design Value Z' = 117.3 lbs/Nail

REQUIRED NUMBER OF NAILS

$$\#\ \text{Nails} = \frac{P}{Z'}$$

Required Lateral Load	P =	576.6	lbs
Required Number of Nails	# =	4.9	Nails

CONCLUSION

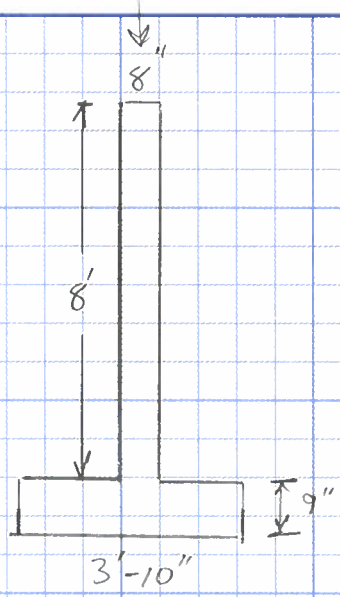
Use 5 3.25 In. Long x 0.131 In. Diameter Nails

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State		Project		
By	Date	Checked by	Date	Job No.
Subject				Sheet 1 of



WEIGHT OF CONC: WALL = (.67 x 8' x 1') = 5.36 CUFT

5.36 CUFT x 150 #/CUFT = 804 # WALL (A)

FOOTING: (.75 x 3.83 x 1') = 2.87

2.87 x 150 #/CUFT = 431 # FOOTING (B)

SOIL WT. ON FOOTING: BACKFILL SIDE:

(1.58' x 4 x 1' (length)) = 6.32 CUFT

6.32 x 105 #/CUFT = 664 # SOIL (C)

ANIMAL SIDE:

(1.58 x 3.33' x 1' (long)) = 5.26 CUFT

5.26 x 105 #/CUFT = 553 # SOIL (D)

INSIDE STONE = (1.58 x .25 x 1') = .395 CUFT
UNDER FLOOR

.395 x 164 = 65 # GRAVEL (E)

INSIDE CONC WT = (1.58 x .42 x 1) = .664 CUFT

.664 x 150 = 100 # CONC (F)

MWPS-36: COWS (MATURE) = 100 #/SF x 1.58' x 1'

= 158 # (G)

ROOF LOAD: 7360 # / 8' = 920 # (H)

DISTRIBUTED OVER 8' OF FOOTING

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State		Project		
[illegible]		Schenck		
By	Date	Checked by	Date	Job No.
RCL				
Subject				Sheet 2 of

TOTAL LOAD = (A) + (H) = 3695#

SOIL BEARING CAPACITY = 1500 #/SF

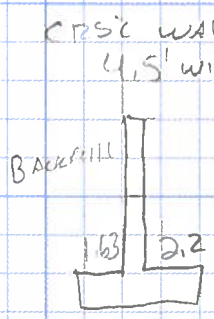
FOOTING AREA REQ = 3695#/1500#/SF = 2.463 SF ok

FOOTING AREA AVAIL = 3.83 x 1' = 3.83 SF

PA-020 D : MAX FOOTING CONTACT PRESSURE = 900 PSF/FT

3695#/3.83 SF = 964.8 PSF/FT

TRY 4.5' FOOTER WIDTH ;



A = 804#
B = (1' x 4.5' x 1) x 150 = 675#
C = (1.63 x 4 x 1) x 105 = 685
D = (2.2 x 3.33 x 1) x 105 = 769
E = (2.2 x .25 x 1) x 164 = 90
F = (2.2 x .42 x 1) x 150 = 139
G = 100 x 2.2 x 1 = 222
H = = 920
4304#

4304#/4.5 SF = 956 PSF/FT

Computation Sheet

NRCS–ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State		Project		
By	Date	Checked by	Date	Job No.
Subject				Sheet _____ of _____

GPO U.S. GOVERNMENT PRINTING OFFICE: 2009—353–490

Computation Sheet

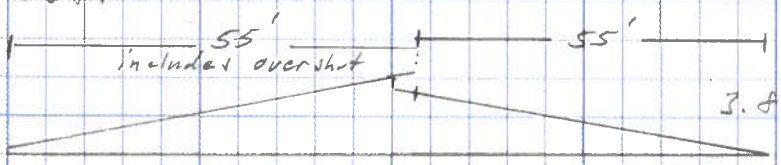
NRCS-ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State		Project		
		Schweighofer		
By	Date	Checked by	Date	Job No.
Subject				Sheet 4 of 6

131 lds. overall 110' x 250' = 27500 ft²

120 sf run off



Now 24 sf
110 x 24 sf = 2720 sf²
2720 sf x .00014 = 3.8 cfs
3.8 ÷ 2 =

Q per side
27500/2 = 13750 ft² x 0.00014 = 1.9 cfs 10 YR STORM ✓
1.9 cfs / 250' = 0.0076 cfs per foot of gutter.
Try: 2" x 4" plain rectangular downspouts. Capacity = 0.26 cfs
Try: 40' downspout spacing
40' x 0.0076 = 0.3 cfs 0.3 cfs > 0.26 cfs = fail
Try: 32' downspout spacing
32 x 0.0076 = 0.24 cfs = ok ✓
use: 6" Box Ogee Aluminum gutter on 1/16" per foot slope.
Allowable roof area PA-1 = 218 sf p = 0.5"
(final grade slopes away from bldg.)
Actual roof area 32' x 55' = 1750 ft² OK
use: 3" x 4" downspouts w/ 6" gutter.

underground outlets. use 2 separate outlets. One for each side of bldg
Try 6" PVC or SDR35 @ min 1% slope
Capacity = 0.78 cfs
Find length that exceeds capacity
0.78 cfs / 0.0076 cfs per foot = 102.6'
Next available post location is at 96.16' ok.
use 6" PVC from 0+32 to 0+96 to capture first 2 downspouts. At the 3rd downspout location adapt from 6" @ 1% slope to 4" @ 1.5% slope
4" @ 1.5% slope capacity = 2.02 cfs req = 1.9 cfs ok
use 4" @ min 1.5% to capture all remaining downspouts.
Note: due to the post layout the spacing between the 3rd and 4th downspout = 33.56'
33.56' x 0.0076 cfs per ft = 0.255 cfs < 0.26 cfs ok
Opposite side of bldg to mirror this layout.
Additionally, 4" pipe can be used for the entire side of bldg for both sides.

USDA United States Department of Agriculture
Natural Resources Conservation Service

Report Generated 12/27/2021
EFT Version 4.0.6.1r1

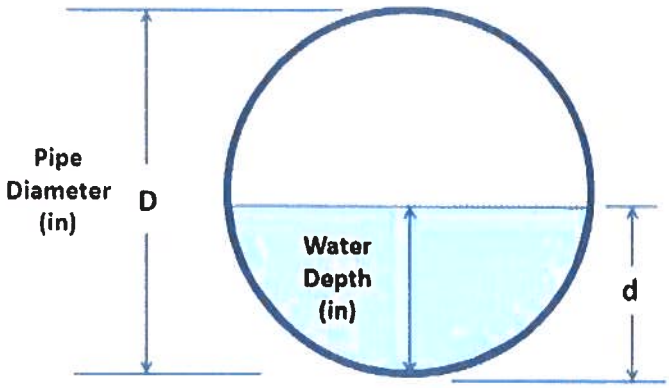
Gravity Flow

Project Name: SCHWEIGHOFER
Project Description: 6 INCH PVC SCH 40 ON 1% SLOPE

Location: _____
Practice: 620

Designed by: aw
Checked by: _____
Approved by: _____

Date: _____
Date: _____
Date: _____



$$Q = \frac{1.486}{n} A r^{2/3} s^{1/2}$$

Inputs

Pipe Diameter : 6.00 in
Water Depth : 5.50 in
Pipe Slope : 0.0100 ft/ft
Manning's n : 0.010

.011 typically

Outputs

Hydraulic Radius : 0.15 ft
Flow Area : 0.19 sq ft
Capacity : 0.78 cfs .667
Velocity : 4.15 ft/sec 4.5
Critical Depth : 5.3 in .71

Req capacity = 0.49 cfs

.49 < .667

USDA United States Department of Agriculture
Natural Resources Conservation Service

Report Generated 09/26/2022
EFT Version 4.0.8.0

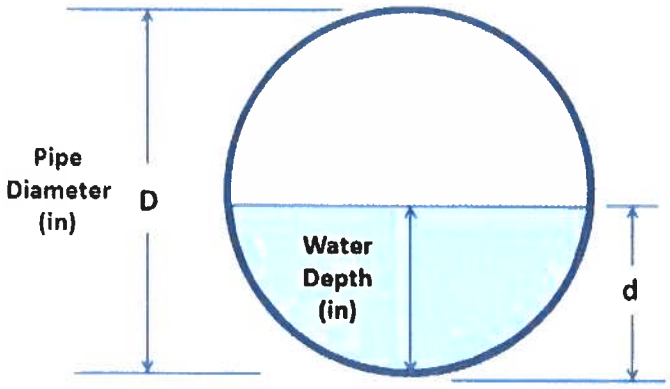
Gravity Flow

Project Name: SCHWEIGHOFOR
Project Description: _____

Location: _____
Practice: 620 8" UNDERGROUND OUTLET

Designed by: aw
Checked by: _____
Approved by: _____

Date: _____
Date: _____
Date: _____



$$Q = \frac{1.486}{n} A r^{2/3} s^{1/2}$$

Inputs

Pipe Diameter : 8.00 in
Water Depth : 7.50 in
Pipe Slope : 0.0160 ft/ft
Manning's n : 0.011

Outputs

Hydraulic Radius : 0.19 ft
Flow Area : 0.34 sq ft
Capacity : 1.94 cfs
Velocity : 5.72 ft/sec
Critical Depth : 7.5 in

$= \frac{.000614}{.011} d_i^{8/3} s^{1/2}$

$= \frac{.000614}{.011} (8)^{2.67} (.016)^{1/2}$

$= 1.82$ cfs.

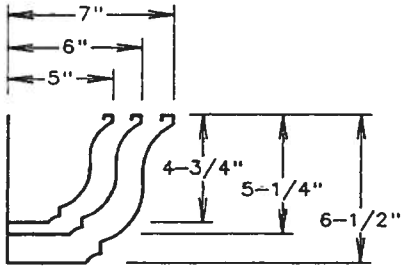
$A = \frac{\pi (8)^2}{4} = 50.27 \text{ in}^2 \times \frac{1}{12} \times \frac{1}{12} = .349$ SF

DESIGN GUIDE NO. PA-1: ROOF GUTTERS & DOWNSPOUTS

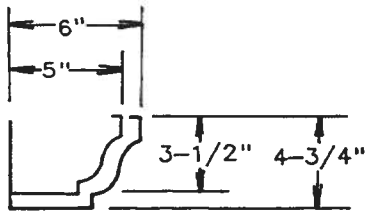
Gutter Style	Gutter Size (inches)	Gutter Slope (in/ft)	Max Roof Areas for [1] P = 0.5" [2]	Max Roof Areas for [1] P = 0.6" [3]	Max Gutter Capacity (CFS) [4]	Compatible Downspouts - size / cfs [5] Plain Rectangular		Corrugated Round		Octagonal		Corrugated Square		Plain Rectangular	
BOX OGEE GALVANIZED	5	1/16	1580	1320	0.22	3" 0.15		3" 0.13		3" 0.13		3" 0.17		2"x3" 0.13	3"x4" 0.26
		1/8	2230	1860	0.31										
		1/4	3170	2640	0.44										
	6	1/16	2450	2040	0.34	3" 0.16	4" 0.29	3" 0.14	4" 0.25	3" 0.14	4" 0.26	3" 0.18	4" 0.27	3"x4" 0.27	4"x5" 0.46
		1/8	3460	2880	0.48										
		1/4	4900	4080	0.68										
	7	1/16	4250	3540	0.59	4" 0.32	5" 0.5	4" 0.28	5" 0.45	4" 0.28	5" 0.45	4" 0.3	5" 0.48	4"x5" 0.51	5"x6" 0.74
		1/8	5980	4980	0.83										
		1/4	8420	7020	1.17										
BOX OGEE ALUMINUM	5 [6]	*1/64*	*633*	*528*	*0.09*	3" 0.13		3" 0.11		3" 0.13		3" 0.14		2"x3" 0.11	3"x4" 0.22
		1/32	*892*	*744*	*0.13*										
		1/16	*1260*	*1050*	*0.18*										
		1/8	*1785*	*1488*	*0.25*										
		1/4	*2527*	*2106*	*0.35*										
	6 [6]	*1/64*	*1094*	*912*	*0.15*	3" 0.15	4" 0.28	3" 0.13	4" 0.24	3" 0.13	4" 0.23	3" 0.17	4" 0.26	2"x3" 0.13	3"x4" 0.26
		1/32	*1548*	*1290*	*0.21*										
		1/16	*2188*	*1824*	*0.30*										
		1/8	*3096*	*2580*	*0.43*										
		1/4	*4377*	*3648*	*0.61*										
SEMI-CIRCLE	6	1/16	1150	960	0.16	3" 0.12	4" 0.21	3" 0.10	4" 0.18	3" 0.11	4" 0.19	3" 0.13	4" 0.19	3"x4" 0.20	4"x5" 0.33
		1/8	1660	1380	0.23										
		1/4	2300	1920	0.32										

[1] Square feet (max gutter capacity controls)
[2] 10-year, 5-minute rainfall
[3] 25-year, 5-minute rainfall
[4] with 1/2" freeboard. For roof area less than maximum, actual gutter discharge is this value times (actual roof area/maximum roof area)
[5] Sizes that fit the gutter bottom width and their respective orifice discharge. Select size and number of downspouts that provide discharge equal to or greater than gutter capacity.
[6] Designers should use caution when planning 1/32 and 1/64 in/ft slopes. Flatter slopes can present additional installation challenges.

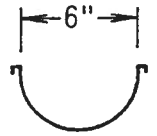
Box Ogee Galvanized



Box Ogee Aluminum



SEMI-CIRCLE



ALLOWABLE UNIFORM LOAD TABLE NOTES

KERTO® LVL S-BEAM
DESIGN PROPERTIES FOR WIDTH AND DEPTHS USED IN THIS PRODUCT GUIDE

Width	Design Property	Depth (inches)												
		3-½"	5-½"	7-¼"	9-¼"	9-½"	11-¼"	11-⅞"	14"	16"	18"	20"	22"	24"
1-½"	Moment (ft-lbs)	890	2054	3425	5375	5647	7721	8533	11571	14813	18420	22384	26700	31364
	Shear (lbs)	1120	1760	2320	2960	3040	3600	3800	4480	5120	5760	6400	7040	7680
	Moment of Inertia (in⁴)	5.36	20.80	47.6	99	107	178	209	343	512	729	1000	1331	1728
	Weight (lbs/ft)	1.2	1.9	2.5	3.2	3.2	3.8	4.1	4.8	5.5	6	6.7	7.3	8
1-¾"	Moment (ft-lbs)	1039	2397	3996	6271	6588	9008	9955	13499	17282	21490	26115	31150	36591
	Shear (lbs)	1307	2053	2707	3453	3547	4200	4433	5227	5973	6720	7467	8213	8960
	Moment of Inertia (in⁴)	6.25	24.26	56	115	125	208	244	400	597	851	1167	1553	2016
	Weight (lbs/ft)	1.4	2.1	2.8	3.6	3.7	4.4	4.6	5.4	6.2	7.0	7.8	8.6	9.3

KERTO® LVL S-BEAM DESIGN PROPERTIES

Flexural Stress (Beam)	Flexural Stress (Plank)	Tension Parallel to Grain	Compression Parallel to Grain	Compression Perpendicular to Grain F_{c} [3] (psi)		Horizontal Shear F_{v} (psi)		True MOE[3,6] (psi)	
F_{b} [2,4] (psi)	F_{b} (psi	F_{t} [5] (psi)	F_{c} (psi)	Directions:		Directions:		Directions:	
				Beam	Plank	Beam	Plank	Beam	Plank
2900	3200	2300	2700	870	435	320	200	$2.0x10^{6}$	$2.0x10^{6}$

NOTES

1. Allowable design stresses are based on covered dry conditions of use.
2. The tabulated flexural stresses are based on loads of a normal duration and a referenced depth of 12 inches. For other depths, the tabulated flexural stress must be adjusted by a depth factor adjustment of $(12/d)^{0.15}$. For depths less than 3-½" inches, use the value for 3-½" inches.
3. The tabulated design stresses provided in this table are based on a normal duration. Loads of longer or shorter duration must be adjusted in accordance with the 2012, 2009, 2006 International Building Code, the 2012 2009, 2006 International Residential Building Code, as applicable. Duration of load factors must not be applied to Fc⊥and MOE.
4. The allowable bending stress increase for repetitive members must not exceed 4 percent.
5. The tabulated tension stress is based on a length of 55 inches (1397 mm). For lengths longer than 55 inches, tabulated tension stress must be adjustred by a factor of $(55/L)^{0.125}$. The tabulated values for lengths shorter than 55 inches must not be increased.
6. The values in this column reflect the true MOE which is the shear-free modulus of elasticity. When calculating deflection, both bending and shear deformations must be included. Equations for various span and load conditions are available in engineering references. For example, the equation for a simple-supported beam under uniform load is:

   $\Delta = 270wL^{4}/Ebd^{3} + 28.8wL^{2}/Ebd$

   where: Δ = Deflection in inches (in), w = Uniform load in pounds per lineal foot (plf), L = Design span in feet (ft), b = Beam width in inches (in), d = Beam depth in inches (in), and E = Shear free modulus of elasticity in pounds per square inch (psi)

Refer to ICC-ES Evaluation Report ESR-3633 For additional information regarding Kerto® LVL S-beam Laminated Veneer Lumber (LVL).

HANDLING, STORAGE AND INSTALLATION GUIDELINES:

- **Warning:** Failure to apply good building practices regarding application, handling, storage and installation of this product can result in poor performance and/or unsafe structures.
- Kerto® LVL S-beam must be properly installed and braced before any loads are applied to the structure.
- Kerto® LVL S-beam is to be used in a dry, well ventilated environment.
- Kerto® LVL S-beam is not to be used for unintended purposes such as ramps or planks.
- Handle Kerto® LVL S-beam carefully to avoid damage. Store the product on stickers on a clean, level surface and keep it dry.
- Use appropriate personal protection equipment for handling and working with wood products; including but not limited to eye protection and gloves.

GLU-LAM POST ALLOWABLE DESIGN VALUES & SECTION PROPERTY

3 PLY 2 x 6:
Actual Size = 5.25" x
Area = 21.328 sq. in..
S_y = 18.66 in.^{3}.....
I_y = 48.99 in.^{4}

NOT APPROVED

3 PLY 2 x 8:
Actual Size = 7.0" x 4
Area = 28.438 sq. in...
S_y = 33.18 in.^{3}.....
I_y = 116.12 in.^{4}

NOT APPROVED

4 PLY 2 x 6:
Actual Size = 5.25" x 5.375" .....$F_{b\,y\text{-}y}$ = 2350 psi
Area = 28.219 sq. in.....F_c = 2150 psi
S_y = 24.691 in.^{3}.....$E_{y\text{-}y}$ = 1700000 psi
I_y = 64.815 in.^{4}

4 PLY 2 x 8:
Actual Size = 7.0" x 5.375" .....$F_{b\,y\text{-}y}$ = 2350 psi
Area = 37.625 sq. in.....F_c = 2150 psi
S_y = 43.90 in.^{3}.....$E_{y\text{-}y}$ = 1700000 psi
I_y = 153.64 in.^{4}

HOME | ABOUT US | CONTACT US | SUPPLIERS & BUILDERS | Toll Free 888-699-8875

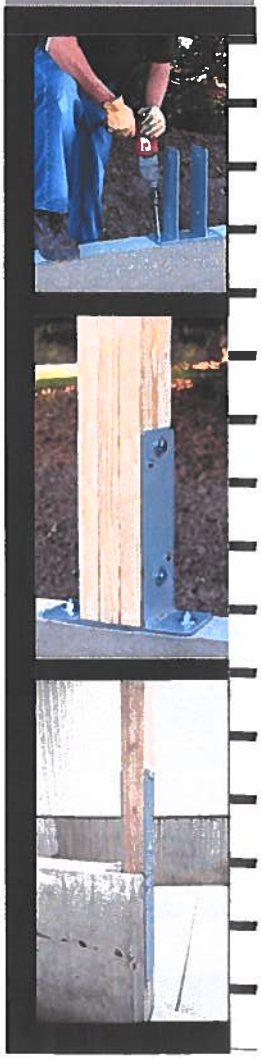
PERMA COLUMN EAST LLC

PERMA COLUMN

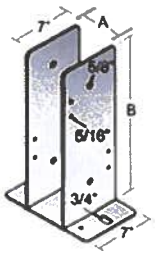
PERMANENT FOUNDATION SYSTEMS FOR POST FRAME STRUCTURES

PERMA COLUMN EAST LLC
STURDI-WALL DRILL SET

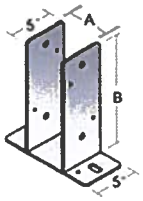
- Models
- Accessories
- Design Info
- FAQs
- How Are They Made?
- How Are They Installed?
- Post Replacement



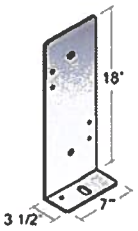
STURDI-WALL DRILL SET MODELS



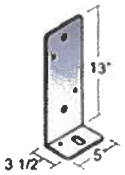
SW 8000 SERIES



SW 6000 SERIES



SW 80 UNIVERSAL

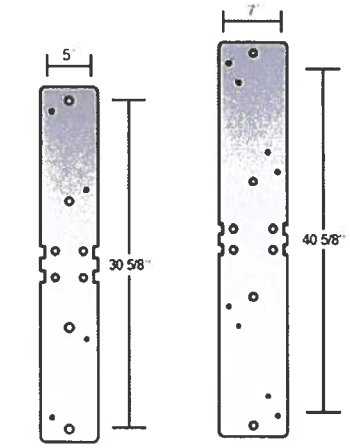


SW 60 UNIVERSAL

SW 60C UNIVERSAL

MODELS FOR STANDARD SOLID WOOD POST			
MODEL	DESCRIPTION	DIM "A"	DIM "B"
SW46	STD 4" X 6" POST	3-5/8"	13"
SW66	STD 6" X 6" POST	5-5/8"	13"
MODELS FOR NAIL LAMINATED WOOD POST			
MODEL	DESCRIPTION	DIM "A"	DIM "B"
SW63	3 PLY 2"X 6" NAIL LAM	4-5/8"	13"
SW64	4 PLY 2"X 6" NAIL LAM	6-1/8"	13"
SW83	3 PLY 2"X 8" NAIL LAM	4-5/8"	18"
SW84	4 PLY 2"X 8" NAIL LAM	6-1/8"	18"
SW85	5 PLY 2"X 8" NAIL LAM	7-5/8"	18"

Optional 5/8" Titen Heavy Duty Screw Anchor



SW60 FLAT SW80 FLAT

MODELS FOR GLUE LAMINATED WOOD POST				MODELS OF UNIVERSAL "L" BRACKETS			
MODEL	DESCRIPTION	DIM "A"	DIM "B"	MODEL	DESCRIPTION	DIM "A"	DIM "B"
SW63GL	3 PLY X 6" GLUE LAM	4 3/16"	13"	SW60C	4" UNIVERSAL "L"	N/A	13"
SW64GL	4 PLY X 6" GLUE LAM	5 9/16"	13"	SW60	5" UNIVERSAL "L"	N/A	13"
SW83GL	3 PLY X 8" GLUE LAM	4 3/16"	18"	SW80	7" UNIVERSAL "L"	N/A	18"
SW84GL	4 PLY X 8" GLUE LAM	5 9/16"	18"	SW60FLAT	5" FLAT BRACKET	N/A	N/A
SW85GL	5 PLY X 8" GLUE LAM	6 15/16"	18"	SW80FLAT	7" FLAT BRACKET	N/A	N/A

Universal brackets can be paired to accommodate custom sized wood posts or utilized at corners.

Click here for all additional accessories.

Click here for Sturdi-Wall Design Manual Download