Date: 09/06/2024 - 2:24 PM
Design Name: Post Frame Design
Design ID: 312554729397

Estimated price: $24,071.82 *

*Today's estimated price, future pricing may go up or down. Tax, labor, and delivery not included.

MENARDS® Design & Buy™ POST FRAME

How to recall and purchase a saved design at home

OR

1. On Menards.com, enter "Design & Buy" in the search bar
2. Select the Buildings Designer
3. Recall your design by entering Design ID: 312554729397
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How to purchase at the store

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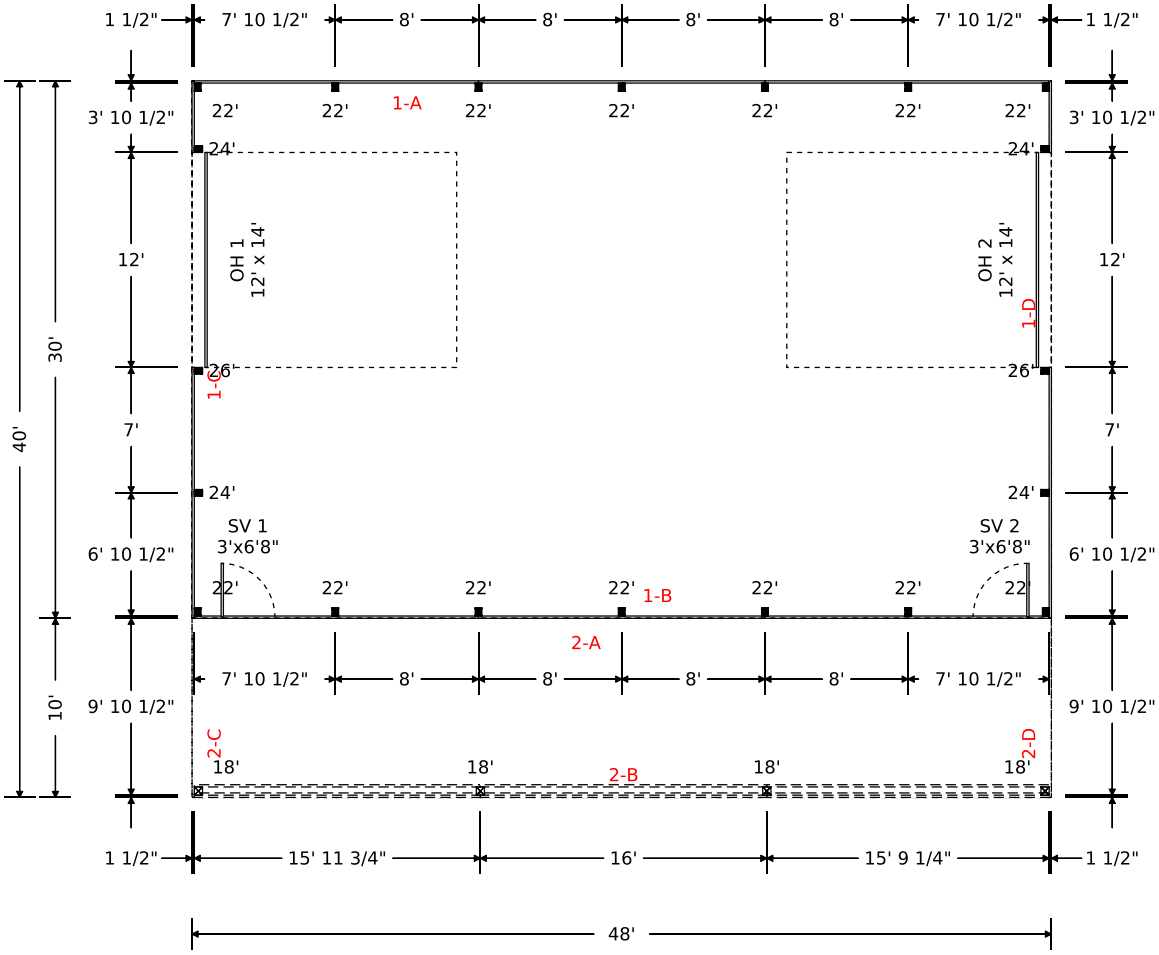
2. Follow the on-screen purchasing instructions.

FLOOR PLAN



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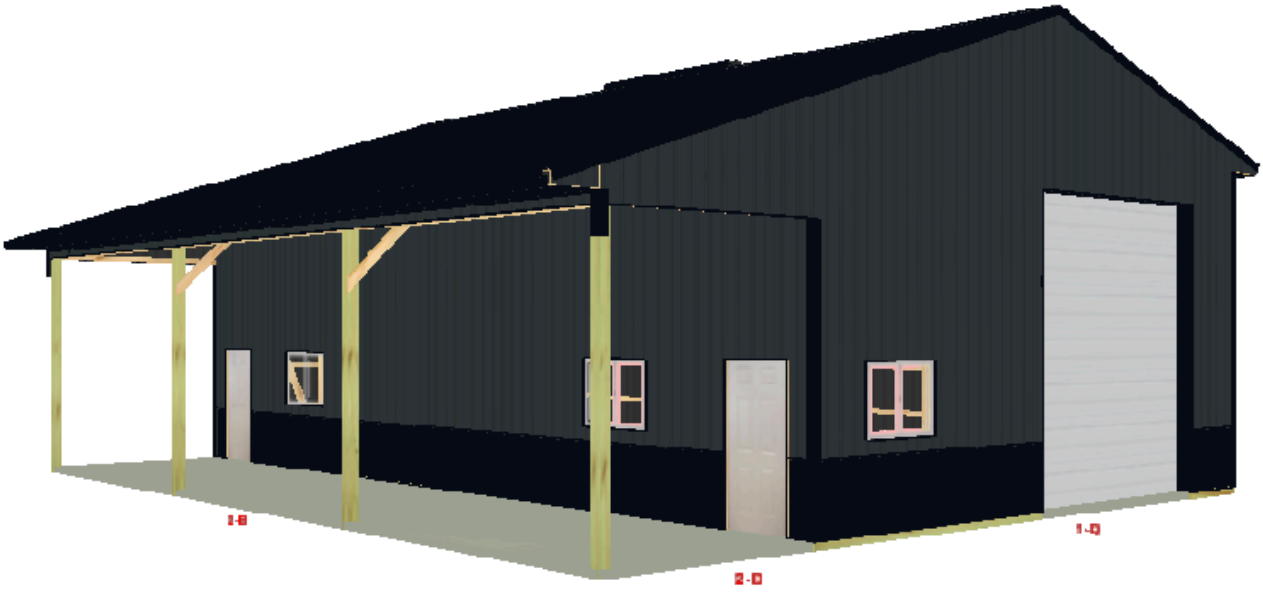
Store: ELK RIVER

Post Frame Building Estimate
Date: Sep 6, 2024, 2:24:09 PM

Elevation Views



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Design #: 312554729397
Store: ELK RIVER

Post Frame Building Estimate
Date: Sep 6, 2024, 2:24:09 PM

Congratulations, you have taken the first step towards making your new post frame building a reality!

- You have selected Menards to provide you with superior products produced by Midwest Manufacturing that will meet your needs. For a more detailed look at these premium products visit us on the web at www.midwestmanufacturing.com.

*Delivery charge is not included in price. Items ordered to complete your building from vendors other than Midwest Manufacturing are not available for pickup from the plant.

Design #: 312554729397
Store: ELK RIVER

Post Frame Building Estimate
Date: Sep 6, 2024, 2:24:09 PM

Building Information

1. Building Use:	Code Exempt
2. Width:	30 ft
3. Length:	48 ft
4. Inside Clear Height:	16 ft
5. Floor Finish:	Concrete
6. Floor Thickness:	4 in
7. Post Foundation:	Post Embedded
8. Post Embedment Depth:	4 ft
9. Footing Pad Size:	14 in x 4 in

Wall Information

1. Post Spacing:	8 ft
2. Post Type:	Columns
3. Girt Type:	Flat
4. Exterior Wall Panel:	Pro-Rib
5. Exterior Wall Color:	Midnight Gray
6. Trim Color:	Midnight Black
7. Wainscot Size:	36 in
8. Wainscot Color:	Midnight Black
9. Sidewall A Wainscot:	No
10. Sidewall B Wainscot:	Yes
11. Endwall D Wainscot:	Yes
12. Endwall C Wainscot:	Yes
13. Gable Accent:	No
14. Sidewall A Eave Light:	None
15. Sidewall B Eave Light:	None
16. Wall Fastener Location:	In the Flat
17. Bottom Trim:	Yes
18. Gradeboard Type:	2x8 Treated Gradeboard

Interior Finish

1. Wall Insulation Type:	None
2. Wall Liner Type:	None
3. Roof Condensation Control:	None

Roof Information

1. Pitch:	4/12
2. Truss Spacing:	8 ft
3. Roof Type:	Pro-Rib
4. Roof Color:	Midnight Black
5. Ridge Options:	Universal Ridge Cap
6. Roof Fastener Location:	In the Flat
7. Endwall Overhangs:	0 ft
8. Sidewall Overhangs:	2 ft
9. Fascia Size:	6 in Fascia
10. Soffit Color:	Midnight Black
11. Skylight Size:	None
12. Ridge Vent Quantity:	1
13. Ridge Vent Color:	Midnight Black
14. Ceiling Liner Type:	None
15. Purlin Placement:	On Edge
16. Ceiling Insulation Type:	None

Accessories

1. Outside Closure Strip:	Economy Vented
2. Inside Closure Strip:	Standard
3. Gable Vent Type:	None
4. Cupola Size:	None
5. Gutters:	Yes
6. Gutters Color:	Midnight Black
7. End Cap:	No
8. Snow Guard:	No
9. Mini Print:	Hardcopy and E-mail

Design #: 312554729397
Store: ELK RIVER

Post Frame Building Estimate
Date: Sep 6, 2024, 2:24:09 PM

Leans

Building 2	
Attaching wall:	B
Endwall overhang length:	0 ft
Sidewall overhang length:	2 ft
Add snow guards:	No
Remove every other post:	Yes
Length:	48 ft
Depth:	10 ft
Drop Distance From Roof:	0 ft
Position From Left:	0 ft
Approximate Clear Height:	11 ft 8 in
Open interior wall:	No
Open exterior walls:	Side And End Walls
Remove every other interior wall post:	No

Doors & Windows

Name	Size	Wall
Service Door	36"x80"	1-B
Service Door	36"x80"	1-B
Window	48"x36"	1-B
Window	48"x36"	1-B
Overhead Door	12' x 14'	1-C
Window	48"x36"	1-C
Overhead Door	12' x 14'	1-D
Window	48"x36"	1-D

Lean Open Walls

Wall	Every Other Post Removed
2-B	Yes
2-C	Yes

Design #: 312554729397
Store: ELK RIVER

Post Frame Building Estimate
Date: Sep 6, 2024, 2:24:09 PM

Lean Open Walls

Wall	Every Other Post Removed
2-D	Yes

Job	Truss	Truss Type	Qty	Ply	
QTREC0784200	P30E	GABLE	1	1	Job Reference (optional)

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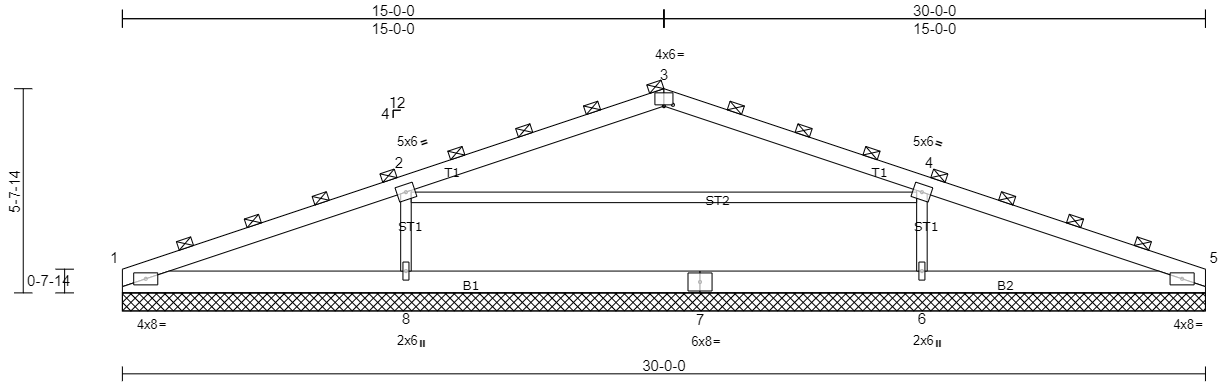


Scale = 1:50

Plate Offsets (X, Y): [3:0-3-0,0-0-7]

Loading	(psf)	Spacing	4-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	35.0	Plate Grip DOL	1.15	TC	0.88	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Ps/Pg)	28.4/50.0	Lumber DOL	1.15	BC	0.52	Vert(TL)	n/a	-	n/a	999		
TCDL	4.0	Rep Stress Incr	NO	WB	0.36	Horiz(TL)	0.03	5	n/a	n/a		
BCLL	0.0	Code	IBC2018/TPI2014	Matrix-S								
BCDL	5.0										Weight: 167 lb	FT = 15%

LUMBER
TOP CHORD 2x6 SP No.1
BOT CHORD 2x8 SPF No.2
OTHERS 2x4 SPF Stud *Except* ST2:2x4 SPF No.2

BRACING
TOP CHORD 2-0-0 oc purlins (5-1-5 max.).
BOT CHORD Structural wood sheathing directly applied or 10-0-0 oc bracing.

REACTIONS All bearings 30-0-0.
(lb) - Max Horiz 1=89 (LC 12)
Max Uplift All uplift 100 (lb) or less at joint(s) except 1=-155 (LC 8), 5=-156 (LC 9), 6=-360 (LC 13), 8=-361 (LC 12)
Max Grav All reactions 250 (lb) or less at joint(s) except 1=980 (LC 2), 5=980 (LC 2), 6=1745 (LC 17), 8=1745 (LC 16)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-1575/202, 2-3=-1612/306, 3-4=-1612/305, 4-5=-1575/201
BOT CHORD 1-8=-136/1328, 7-8=-136/1328, 6-7=-136/1328, 5-6=-136/1328
WEBS 2-8=-1457/379, 4-6=-1457/378

JOINT STRESS INDEX
1 = 0.75, 2 = 0.25, 2 = 0.59, 3 = 0.43, 4 = 0.25, 4 = 0.59, 5 = 0.75, 6 = 0.42, 7 = 0.69, 8 = 0.42, 9 = 0.59 and 10 = 0.59

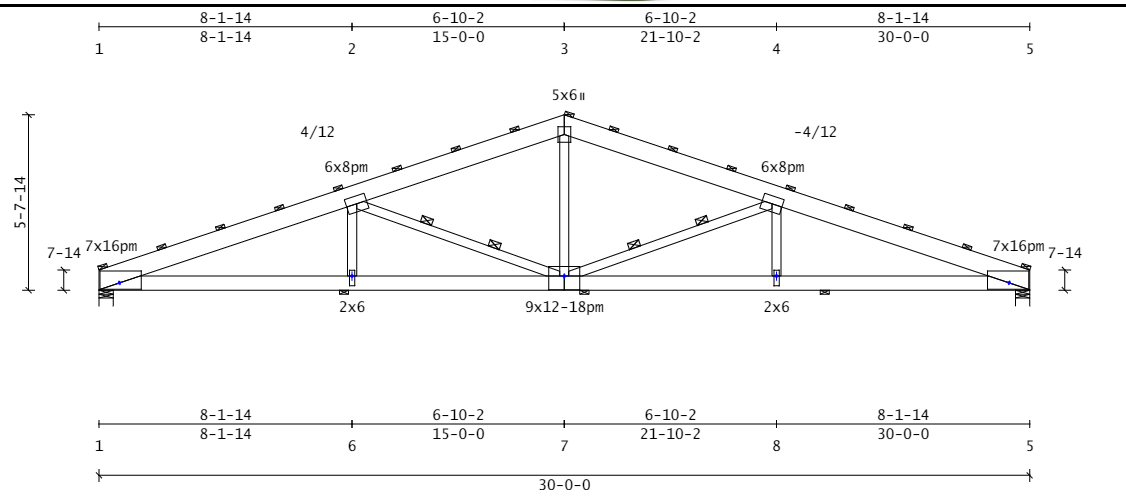
NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=105mph (3-second gust) Vasd=83mph; TCDL=2.4psf; BCDL=0.6psf; h=25ft; Cat. I; Exp C; Enclosed; MWFRS (envelope); cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=35.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=50.0 psf; Ps=28.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=0.8; Rough Cat C; Fully Exp.; Ce=0.9; Cs=0.94; Ct=1.20; Unobstructed slippery surface
5) Roof design snow load has been reduced to account for slope.
6) Unbalanced snow loads have been considered for this design.
7) Dead loads shown include weight of truss. Top chord dead load of 5.0 psf (or less) is not adequate for a shingle roof. Architect to verify adequacy of top chord dead load.
8) Gable requires continuous bottom chord bearing.
9) Vertical gable studs spaced at 7-10-4 oc and horizontal gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 154 lb uplift at joint 1, 155 lb uplift at joint 5, 360 lb uplift at joint 8 and 359 lb uplift at joint 6.
12) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

LOAD CASE(S) Standard

Project Name: QTREC0864570 **Qty: 4** **Truss: P1**

Customer: NEW JOB

SID:
TID: QTREC086...
Date: 08 / 12 / 24
Page: 1 of 1



Truss Weight = 210.0 lb

```
Code/Design: IBC-2018/TPI-2014
PSF  Live  Dead       Dur Factors
TC   20.0   4.0       Live  Wind  Snow
BC    0.0   5.0  Lum 1.15  1.60  1.15
Total      29.0  Plt 1.15  1.60  1.15
Spacing:  8-00-00 o.c.    Plies: 1
Repetitive Member Increase:  No
Green Lumber:  No  Wet Service:  No
Fab Tolerance:  15% Creep (Kcr) = 2.0
```

```
----------Snow Load Specs----------
ASCE7-16 Ground Snow(Pg) =  50.0 psf
Risk Cat: I  Terrain Cat: C
Roof Exposure: Fully Exposed
Thermal Condition: Unheated(1.2)
Unobstructed Slippery Roof: Yes
Low-Slope Minimums(Pfmin):  No
Unbalanced Snow Loads:      Yes
Rain Surcharge: No Ice Dam Chk: No
Lu(max) = 20-00-00
```

```
----------Wind Load Specs----------
ASCE7-16  Wind Speed(V) = 105 mph
Risk Cat: I  Exposure Cat: C
Bldg Dims: L =   0.0 ft  B =   0.0 ft
M.R.H(h)=  15.0ft Kzt = 1.0 Ke = 1.00
Bldg Enclosure: Enclosed
Wind DL(psf): TC =  2.4 BC =  3.0
End Vertical Exposed: L = Yes R = Yes
Wind Uplift Reporting: MWFRS
C&C End Zone: N/A
```

```
-------Additional Design Checks------
10 psf Non-Concurrent BCLL:       Yes
20 psf BC Limited Storage:        No
200 lb BC Accessible Ceiling:     No
300 lb TC Maintenance Load:       No
2000 lb TC Safe Load:             No
Unbalanced TCLL:                  Yes
```

Material Summary

```
TC      2x8   SP  2400/2.0
BC      2x6   SPF  2100/1.8
Webs    2x4   SPF  #2
        2x4   SPF  Stud  6-2  8-4
```

Member Forces Summary

```
Max CSI in TC PANEL   2 -  3   0.75
Max CSI in BC PANEL   1 -  6   0.97
Max CSI in Web        2 -  7   0.95

...Mem...   Ten     Comp     .CSI.
TC   1- 2   1754    11279     0.68
     2- 3   1314     7310     0.75
     3- 4   1312     7310     0.75
     4- 5   1747    11279     0.68
BC   1- 6  10462     1494     0.97
     5- 8  10462     1494     0.97
     6- 7  10462     1494     0.96
     7- 8  10462     1494     0.96
Web  2- 6    845        0     0.33
     2- 7    712     4478     0.95
     3- 7   2884      403     0.70
     4- 7    713     4478     0.95
     4- 8    845        0     0.33
```

Reaction Summary

```
----------Reaction Summary(Lbs)----------
Jnt  --X-Loc- React -Up- --Width- -Reqd   -Mat  PSI
  1         0  4735  726    05-08 06-00**  DFL  781
  5  30-00-00  4735  723    05-08 06-00**  DFL  781
Max Horiz =   -220 /   +213 at Joint   1
(**) indicates Reqd Width > actual Width; enhancement may be required.
Building Designer to provide adequate bearing size or enhancement.
```

Loads Summary

This truss has been designed for the effects of an unbalanced top chord live load occurring at [15-00-00] using a 1.00 Full and 0.00 Reduced load factor.

See Loadcase Report for load combinations and additional details.

Notes

Plates designed for Cq at 0.85 and Rotational Tolerance of 10.0 degrees.
A "pm" next to the plate size indicates that the plate has been user modified; see Plate Offsets for any special positioning requirements.
Continuous Lateral Restraint (CLR) rows require diagonal bracing per D-WEBCLRBRACE. Alternatively, see D-WEBREINFORCE.
C&C wind pressure has not been considered in the design of this truss.
Lumber and plating have been applied symmetrically.

Deflection Summary

```
TrussSpan Limit   Actual(in)    Location
Vert LL   L/240   L/766(-0.47)   6- 7
Vert DL   L/120   L/999(-0.16)   6- 7
Vert CR   L/180   L/573(-0.63)   6- 7
Horz LL   0.75in       ( 0.18) @Jt 5
Horz CR   1.25in       ( 0.23) @Jt 5
```

Bracing Data Summary

```
-----------Bracing Data-----------
Chords; Sheathing required or bracing indicated:
-------------Purlins-------------
     ---oc---  --From--  ---To---  #Bays
TC    2-00-00         0  30-00-00   16
BC    7-09-00         0  30-00-00    4
------- Web Bracing -- CLR ----------
Double:    2- 7  7- 4
Continuous Restraint Bracing Req'd
See BCSI-B3 3.0
```

Plate offsets (X, Y):

(None unless indicated below)
Jnt1(00-07,01-01), Jnt5(-00-07,01-01), Jnt6(0,-00-12), Jnt7(0,-00-12), Jnt8(0,-00-12)

Joint Stress Index (JSI):

Jnt1(0.97), Jnt2(0.87), Jnt3(0.87), Jnt4(0.87), Jnt5(0.97), Jnt6(0.59), Jnt7(0.99), Jnt8(0.59)

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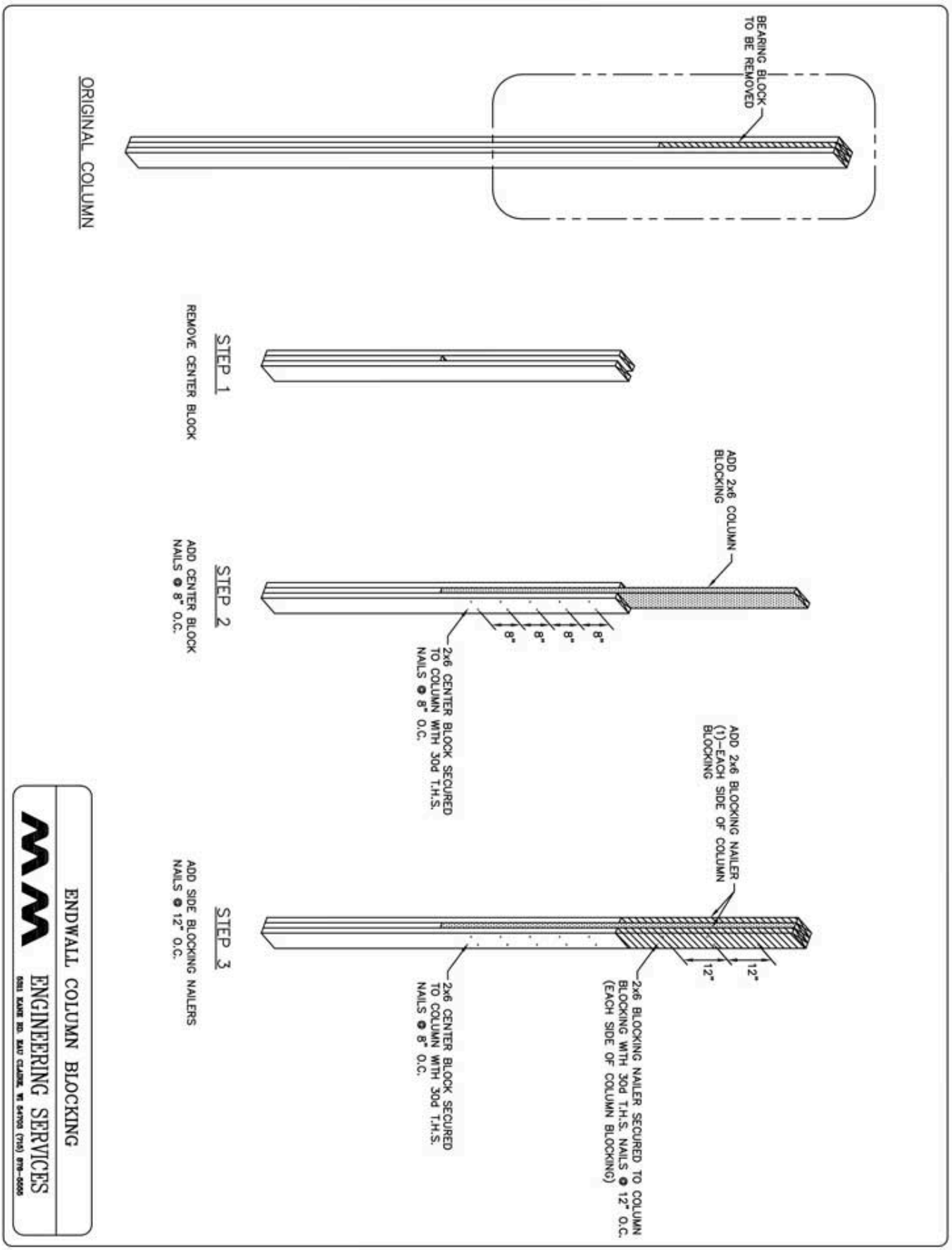
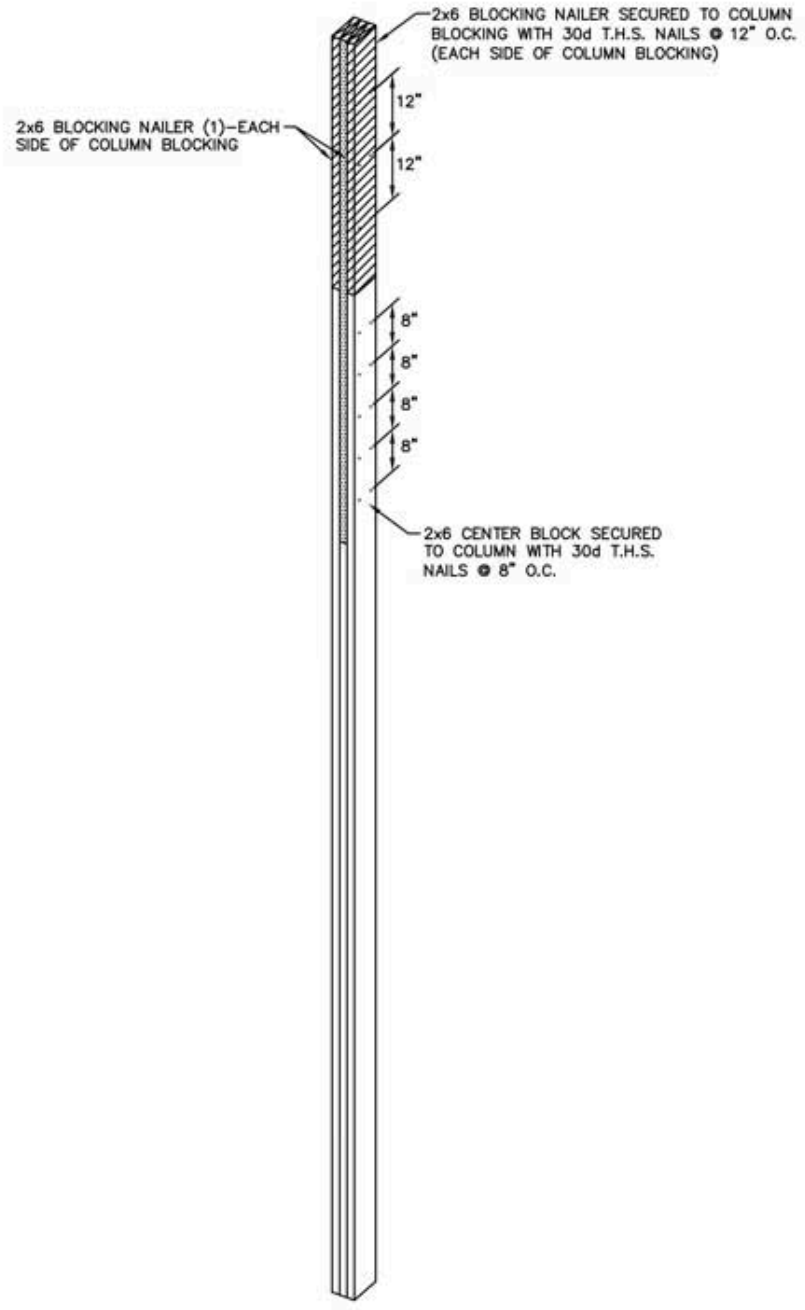

ORIGINAL COLUMN
BEARING BLOCK TO BE REMOVED
STEP 1
REMOVE CENTER BLOCK
STEP 2
ADD CENTER BLOCK NAILS @ 8" O.C.
ADD 2x6 COLUMN BLOCKING
2x6 CENTER BLOCK SECURED TO COLUMN WITH 30d T.H.S. NAILS @ 8" O.C.
8"
8"
8"
8"
STEP 3
ADD SIDE BLOCKING NAILERS NAILS @ 12" O.C.
ADD 2x6 BLOCKING NAILER (1)-EACH SIDE OF COLUMN BLOCKING
2x6 CENTER BLOCK SECURED TO COLUMN WITH 30d T.H.S. NAILS @ 8" O.C.
2x6 BLOCKING NAILER SECURED TO COLUMN BLOCKING WITH 30d T.H.S. NAILS @ 12" O.C. (EACH SIDE OF COLUMN BLOCKING)
12"
12"
ENDWALL COLUMN BLOCKING
ENGINEERING SERVICES



ENDWALL COLUMN BLOCKING DETAIL

ENDWALL COLUMN BLOCKING DETAIL

ENGINEERING SERVICES

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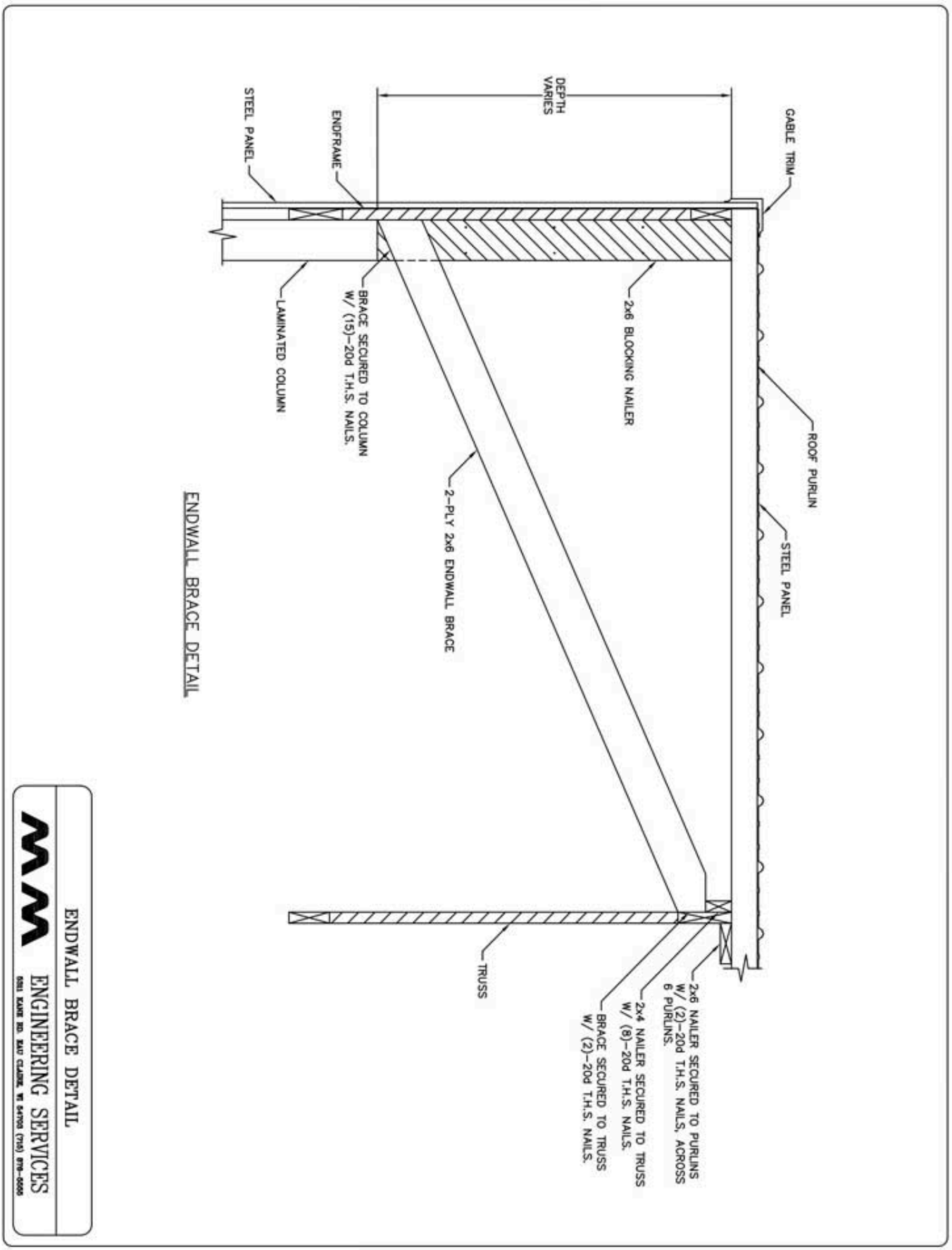

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