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PROJECT: STANDARD PLANS FOR 12x24 RECTANGLE WOOD PAVILION

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### **GENERAL NOTES**

All notes do not necessarily apply due to different requirements on each project. This plan is intended to reflect only the structural design of this building. The contractor shall review all applicable local, state, and federal building codes prior to the start of construction to ensure building conformance. Timber Tech Engineering, Inc. is not responsible for information pertaining to this project if not shown on drawings or listed below. Revisions to the plans shall be approved by engineer of record.

# DESIGN REQUIREMENTS

1. Governing Code:

Including, not limited to: IBC 2009

2.	Dead Loads:		
	A. Roof	5	pef
	B. Floor	n/a	psf
	C. Other	n/a	psf
3.	Live Loads:		
	A. Roof (See also note #4)	30	pef
	B. Floor	n/a	psf
	C. Other	n/a	psf
4.	Snow Loads:		
	A. Ground Snow (Pg)	45	psf
	B. Flat Roof Snow (Pf)	30	psf
	C. Snow Exposure Factor (Ce)	1.0	
	D. Snow Load Importance Factor (I)	0.8	
	E. Unbalanced Snow		
	i. Windward Roof	0 p	ef
	ii. Leeward Roof	36	pef
5.	Wind Load		
	A. Basic Wind Speed (V)	140	mph
	B. Wind Load Importance Factor (I)	.77	
	C. Wind Exposure Category	C	

D. Enclosure Category Open +56 psf/-72 psf E. Components and Cladding: 6. Earthquake Design Data:

(Analysis based on equivalent lateral force procedure)

A. Spectral Response Acceleration at 1 sec, S 0.45

B. Spectral Response Acceleration at short 0.95 periods, S

Seismic Occupancy Category

D. Occupancy Importance Factor, I

Site Class D

Seismic Design Category G. Basic Structural System

Cantilevered Column: Timber Frame

H. Response Modification Factor (R)

I. Deflection Amplification Factor (Cd) 1.5

# ABBREVIATIONS:

•	at	mil.	millimeter
bm.	beam	min.	minimum
conc.	concrete	nts	not to scale
cont.	continuous	o/c	on center
dia.	diameter	pcf	pounds per cubic foot
exist.	existing	pl.	plywood
fir.	floor	paf	pounds per square foot
ft.	foot/feet	psi	pounds per square inch
ga.	gauge	req'd.	required
hdw.	hardware	8.8	stainless steel
hdr.	header	etl.	steel
jst.	joist	thk.	thick
ksi	kips per square inch	trd.	treated
lbs.	pounds	typ.	typical
max.	maximum	w/	with
		mfr.	manufacturer

#### WOOD

# 1. General Requirements

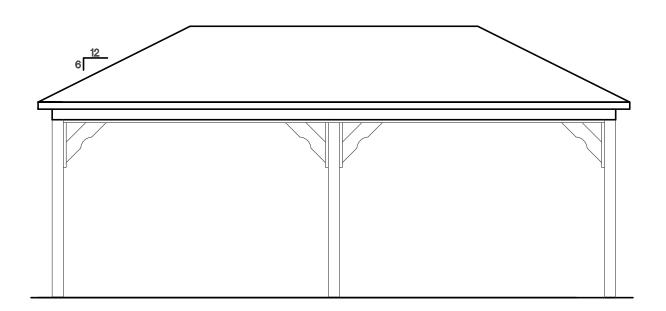
- A. Structural wood members and connections shall be of sufficient size or capacity to carry all design loads without exceeding the allowable design values specified in "The National Design specification for Wood Construction' (NDS), 2005 edition, and its 'Supplement' by the American Forest and Paper Association (AF+PA).
- B. Wood members used for load supporting purposes shall have the grade mark of a lumber grading agency certified by the American Lumber Standards Committee.
- 2. Dimension Lumber
- A. All lumber species, graded visually or mechanically, shall comply with the NDS by AF+PA, and the "American Softwood Lumber Standard" (PS 20-94) by the U.S. Department of Commerce.
- B. The minimum grade and species for posts, beams, headers, and other primary structural members shall be Dense Select Structural Southern Pine, unless specified otherwise.
- C. Lumber used for secondary framing shall be #1 Southern Yellow Pine (SYP) or better.
- D. Post frame headers shall be two-span continuous beams with all multiple ply headers overlapping so that the butt joints for each ply do not occur at the same post. E. Mechanically laminated columns shall conform with ANSI/ASAE EP 559.
- 3. Pressure Preservative Treatment (PPT)
  - A. Pressure treatment to be performed according to the American Wood Preservers' Association (AWPA) standards.
- B. Pressure treated members shall have the inspection mark of an agency accredited by the American Lumber Standards Committee
- C. Preservative: Ammonia Copper Quaternary ammonia (ACQ) or Copper Boron Azole (CBA)
- D. Minimum waterborne treatment retention shall be 0.4 pcf for members above ground, and 0.6 pcf for members in contact with earth.
- E. Treat indicated items and the following:
- 1. Wood members exposed to weather or insect infestation.
- 2. Wood members in direct contact with earth or concrete.
- 3. Wood members exposed to high moisture content (219% for dimension lumber, 216% for glued laminated timber).
- 4. Wood members less than 12 inches above grade.
- F. Field treat newly exposed wood where cutting, drilling or notching pressure treated lumber. G. Metal connectors used in treated wood shall be hot-dip galvanized as per ASTM A153-01a.
- 4. Connections shall be designed and constructed according to the NDS by AF+PA and shall conform to the following:
- A. The minimum connection shall be two 12 penny nails, or as detailed on the drawings.
- B. Other connections as per standard construction practice.

Design Reaction Chart				
Max. Moment in column	1925 lb-ft.			
Max. uplift at column base	1050 lb			
Max. downward force at column base	2600 lb			
Max. shear at column base	300 lb			

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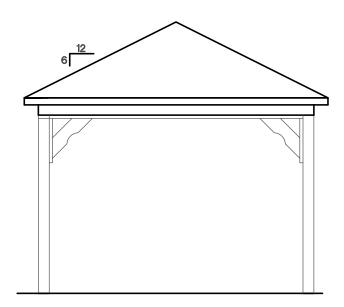
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# Side Elevation

Scale 1/4" = 1'-0"

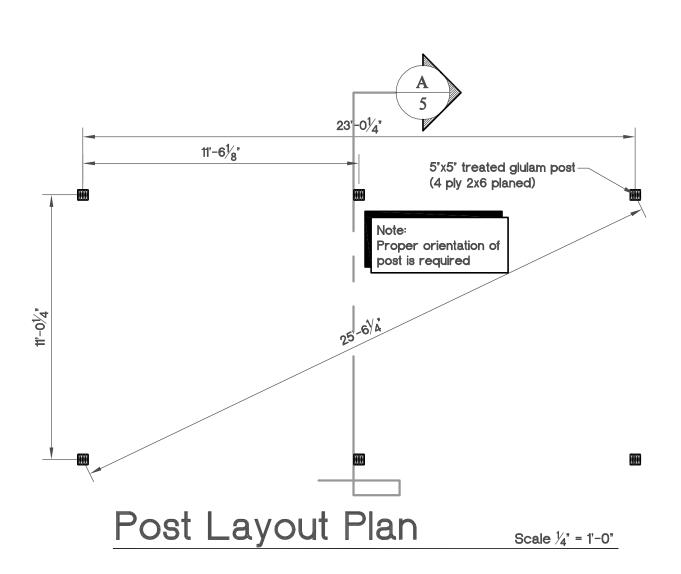


**End Elevation** 

Scale  $\frac{1}{4}$ " = 1'-0"

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PROJECT: STANDARD PLANS FOR 14x28 RECTANGLE WOOD PAVILION

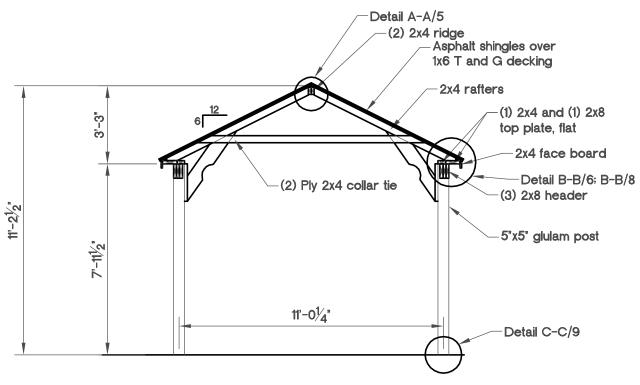


JOB NUMBER: E281-10 PROJECT: STANDARD PLANS FOR 12x24 RECTANGLE WOOD PAVILION PAGE 4 OF 16 This drawing is the property of Country Lane Woodworking, LLC, provided by Timber Tech Engineering, Inc. and reproduction, alteration or use of this drawing without the written consent of Country Lane Woodworking, LLC is prohibited. Drawings shall not be scaled to obtain dimensions. The contractors and builders involved on this project shall verify all dimensions and conditions before starting work and any discrepancy shall be reported to the engineer in writing before starting work. 1x6 T+G #1 SYP decking (1) 2x4 and (1) 2x8 top plate, flat, side by side Detail D-D/10 (2) 2x4 hip rafter 5"x5" glulam post 2x4 face board Detail E-E/11 3'-4" Scale 1/4" = 1'-0" 2'-0" | 2'-0" | 2'-0" | 2'-0" -2x4 rafter, spaced as shown 24'-8" 2'-0" | 2'-0" | 2'-0" 2'-0" 3'-4" Z,-0" Z.-0<u>.</u> 2,-0" 3,-4" 15,-8"

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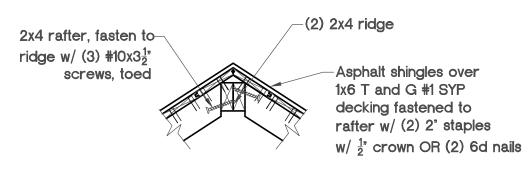
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Cross Section A/2

Scale 1/4" = 1'-0"

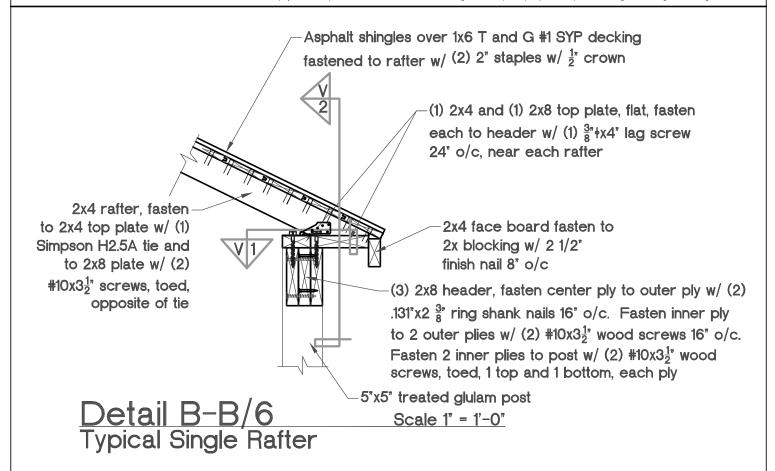


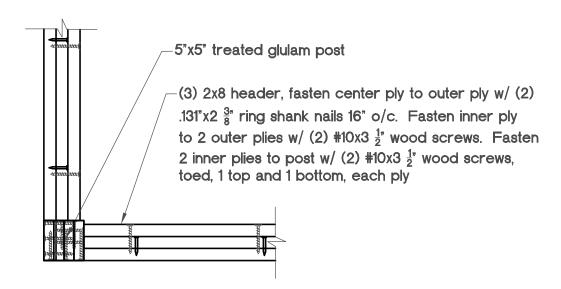
Detail A-A/5
Typical Single Rafter

Scale 1" = 1'-0"

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View 1 Detail B-B/6

Scale 1" = 1'-0"

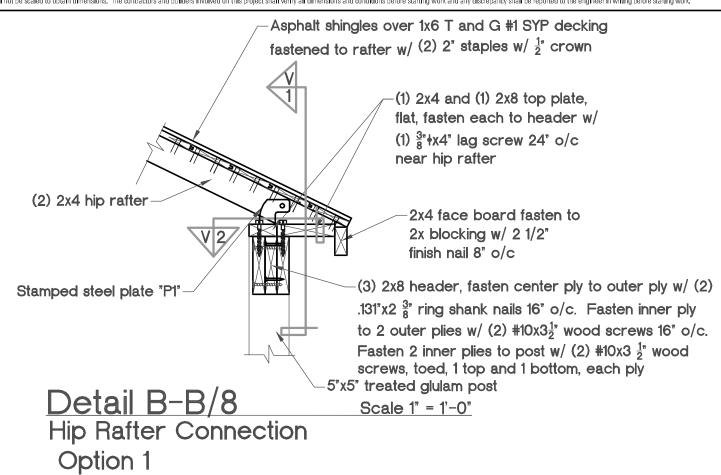
PAGE 7 OF 16 This drawing is the property of Country Lane Woodworking, LLC, provided by Timber Tech Engineering, Inc. and reproduction, alteration or use of this drawing without the written consent of Country Lane Woodworking, LLC is prohibited. Drawings shall not be scaled to obtain dimensions. The contractors and builders involved on this project shall verify all dimensions and conditions before starting work and any discrepancy shall be reported to the engineer in writing before starting work. (3) 2x8 header, fasten center ply to outer ply Fasten inner ply to 2 outer plies w/ (2) #10x3  $\frac{1}{2}$  wood screws 16" o/c. Fasten 2 inner plies to post w/ (2) #10x3  $\frac{1}{2}$  wood screws, toed, 1 w/ (2) .131"x2  $\frac{3\pi}{8}$  ring shank nails 16" o/c. (1) 2x4 and (1) 2x8 top plate, flat, fasten each top plate to header w/ (1)  $\frac{3}{8}x4^{\circ}$  galvanized lag screws top and 1 bottom, each ply 2x4 block, fasten to beam w/ (8) #10x3 $\frac{1}{2}$ 2x8 brace, fasten to 2x4 blocking at each end w/ (8) wood screws near brace as shown #10x3½ wood screws, stagger ½ in/out of page 24" o/c, near each rafter w/ (8) #10x3 $\frac{1}{2}$ \* wood screws as shown 2x4x201/4" block, fasten to column View 2 Detail B-B/3 2x4 rafters 0 0 Fasten outside ply of 2x8 header to post  $w/(8) #10x3\frac{1}{2}$  wood screws, typical 1°-8<sup>1</sup>/4" 2x4 face board fasten to finish nail 8" o/c Post notched at top to each direction ply of header from accept outside top plate w/ 2 1/2" 5"x5" treatedglulam post

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Hip Rafter Connection

Option 2

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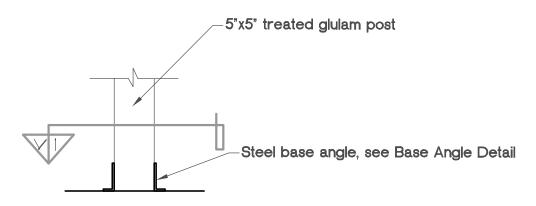


Asphalt shingles over 1x6 T and G #1 SYP decking fastened to rafter w/ (2) 2" staples w/  $\frac{1}{2}$ " crown (1) 2x4 and (1) 2x8 top plate, flat, fasten each to header w/ (1)  $\frac{3}{8}$  + x4" lag screw 24" o/c near hip rafter (2) 2x4 hip rafter 2x4 face board fasten to 2x blocking w/ 2 1/2" finish nail 8" o/c (3) 2x8 header, fasten center ply to outer ply w/ (2) Steel Angle "A1" .131"x2  $\frac{3}{8}$ " ring shank nails 16" o/c. Fasten inner ply to 2 outer plies w/ (2)  $\#10x3 \frac{1}{2}$  wood screws 16" o/c. Fasten 2 inner plies to post w/ (2) #10x3  $\frac{1}{2}$  wood screws, toed, 1 top and 1 bottom, each ply 5"x5" treated glulam post Detail B-B/8 Scale 1" = 1'-0"

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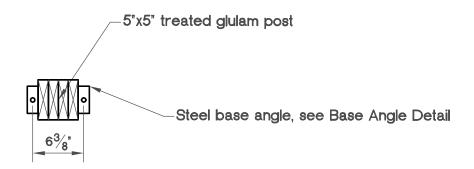
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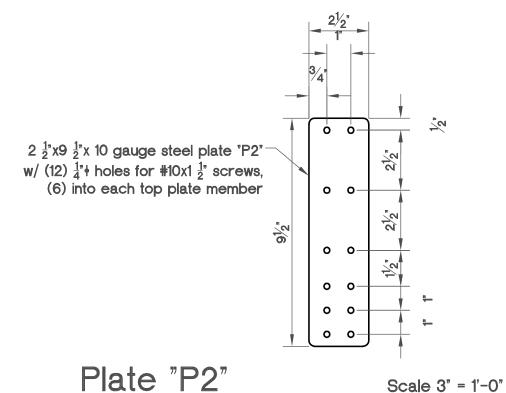


Detail C-C/9

Scale 1" = 1'-0"



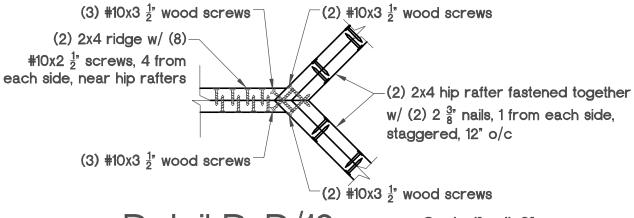
View 1 Detail C-C/9 Scale 1" = 1'-0"



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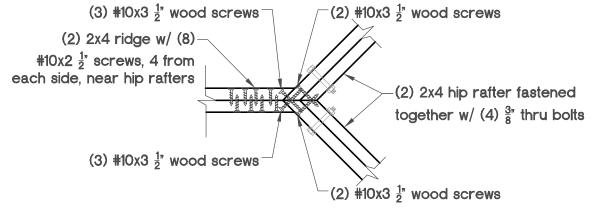
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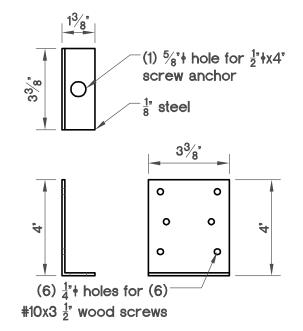


Detail D-D/10
Option 1

Scale 1" = 1'-0"



Detail D-D/10 Option 2 Scale 1" = 1'-0"



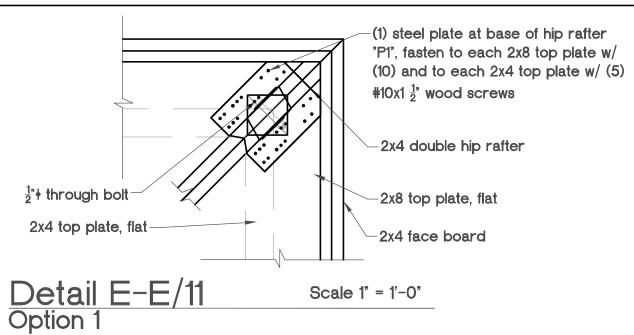
Base Angle Detail

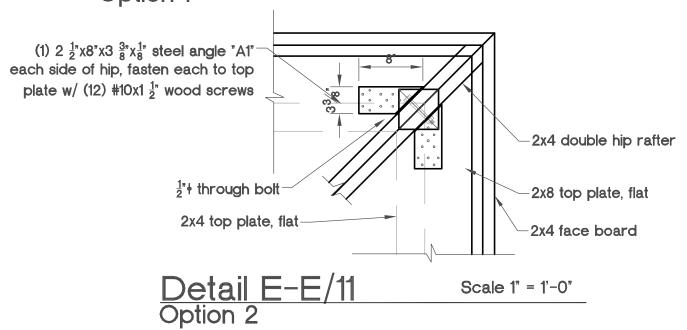
Scale 3" = 1'-0"

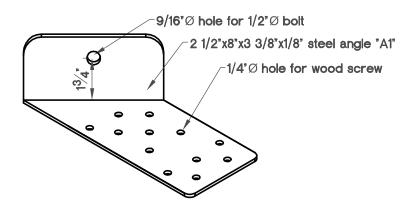
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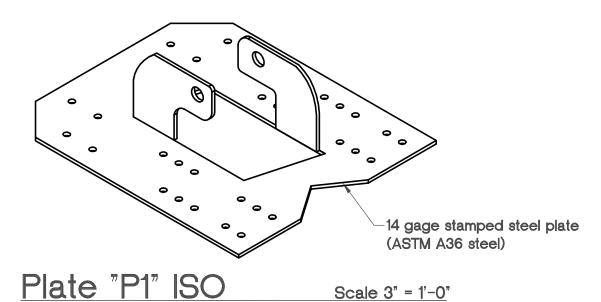


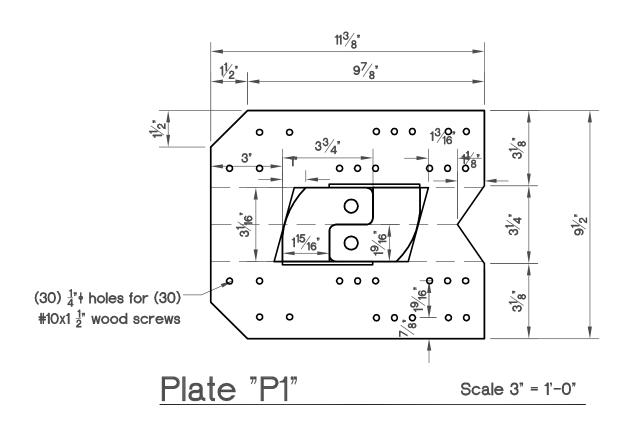




Angle "A1"

Scale 3" = 1'-0"



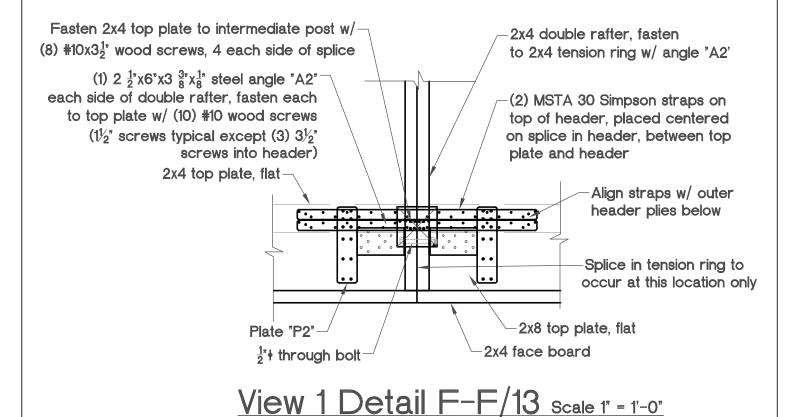


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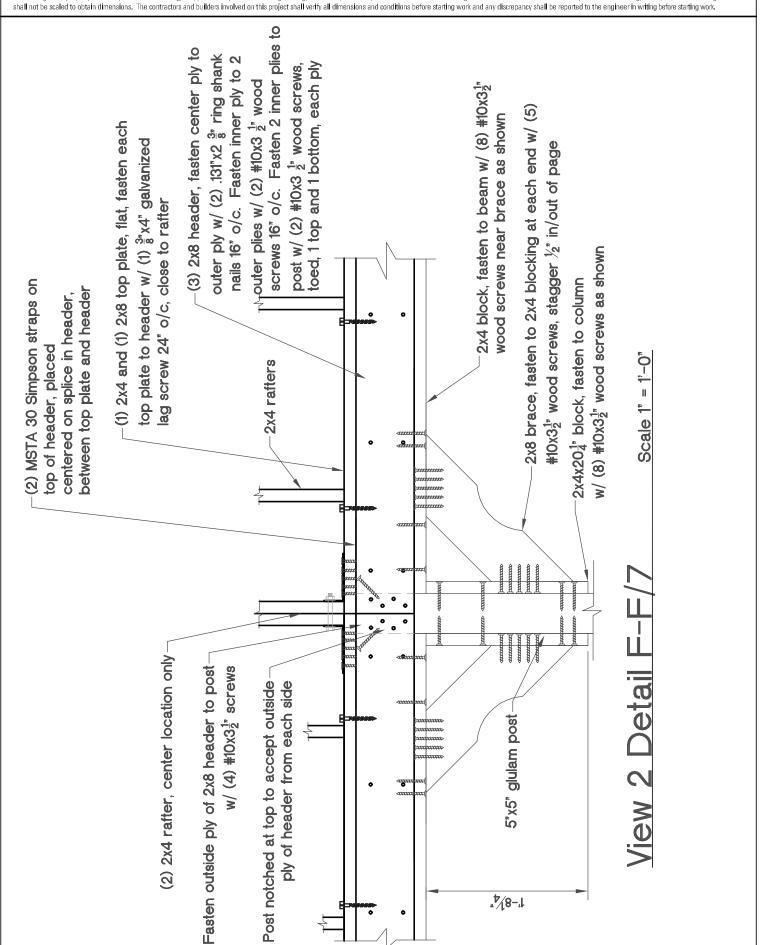
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shall not be scaled to obtain dimensions. The contractors and builders involved on this project shall verify all dimensions and conditions before starting work and any discrepancy shall be reported to the engineer in writing before starting work to 2 outer plies w/ (2) #10x3  $\frac{1}{2}$  wood screws 16" o/c. (3) 2x8 header, fasten center ply to outer ply w/ (2).131'x2  $\frac{3}{8}$  ring shank nails 16" o/c. Fasten inner ply fasten each to header w/ (1)  $\frac{3}{8}$  44" -Asphalt shingles over 1x6 T and G #1 SYP decking Fasten 2 inner plies to post w/ (2) #10x3  $\frac{1}{2}$  wood screws, toed, 1 top and 1 bottom, each ply lag screw 24" o/c, close to rafter fastened to rafter w/ (2) 2" staples w/  $\frac{1}{2}$  crown (1) 2x4 and (1) 2x8 top plate, flat, (2) MSTA 30 Simpson straps on top of header, 2x4 face board fasten to placed centered on splice in header 2x blocking w/ 2 1/2' angle "A2" w/ (1)  $\frac{1}{2}$  thru bolt finish nail 8" o/c ·2 1/2"x6"x3 3/8"x1/8" steel 5"x5" glulam post OR (2) 6d nails Center Double Rafter **Jetail F-F/13** (8) #10x3  $\frac{1}{2}$  wood screws, 4 each side of splice, fasten 2x8 top plate to intermediate post w/ (4) #10x3% screws, (2) each side of splice Fasten 2x4 top plate to intermediate post w/  $2x6x1'-8\frac{1}{4}$  block, fasten to post w/ (6) TLOK004 screws by FastenMaster OR w/ (10) #10x3  $\frac{1}{2}$  wood screws (2) Angle "A2", 1 each side 2x4 rafter, fasten to top plate w/ (2) 2x8 kneebrace, fasten at bottom w/ (6) TLOK004 screws by FastenMaster, (3) each ply OR w/ (10) #10x3  $\frac{1}{2}$  wood screws, (5) each ply FastenMaster, (1) each ply, and to collar tie w/ (5)  $\#10x3\frac{1}{2}$ wood screws each side (2) 2x8 kneebrace, fasten to rafter at top w/ (2) TLOK004 screws by (2) 2x4 collar tie, fasten w/ (5) #10x3  $\frac{1}{2}$  wood screws each end each ply to rafter

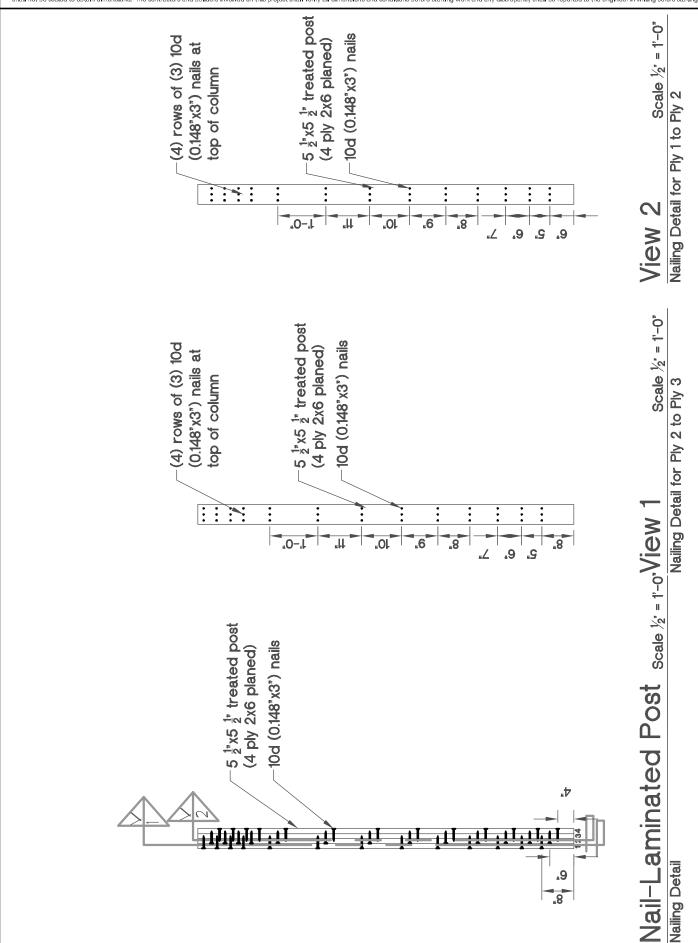
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**49** <u>"8</u>