## 20'x28' Rectangle PVC Pavilion

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.

# Drawing Index

Page 1 - Elevations

Page 2 - Post Layout Plan

Page 3 - Roof Framing

Page 4 - Cross Section, Details

Page 5 - Page 10 - Details

Page 11 - Column Nail Schedule

## **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 B. Floor n/a paf C. Other n/a psf 3. Live Loads:

A. Roof (See also note #4) 30 B. Floor n/a paf C. Other n/a pef 4. Snow Loads:

A. Ground Snow (Pa) 45 B. Flat Roof Snow (Pf) 38 C. Snow Exposure Factor (Ce) 1.0 D. Snow Load Importance Factor (I) 1.0

E. Unbalanced Snow i. Windward Roof 0 ii. Leeward Roof 45 psf

5. Wind Load A. Basic Wind Speed (V) 140 B. Wind Load Importance Factor (I)

C. Wind Exposure Category D. Enclosure Category Open E. Components and Cladding: +72 psf/-94 psf

6. Earthquake Design Data:

(Analysis based on equivalent lateral force procedure)

A. Spectral Response Acceleration at 1 sec. S

B. Spectral Response Acceleration at short 1.0 periods S

C. Seismic Use Group D. Occupancy importance Factor, I 1.0

E. Site Class

F. Basic Structural System

Cantilevered Column: Timber Frame

G. Response Modification Factor (R) H. Deflection Amplification Factor (Cd) 1.5

mex. meximum

ABBREVIATIONS:	
a st bm. beam conc. concrete cont. continuous dia. diameter exist. existing fir. floor ft. foot/feet ga. gauge hdw. hardware hdr. header jst. joist kis kips per square inch lbs. pounds	mil. millimeter minimum rits not to scale o/c on certain per point per

### 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

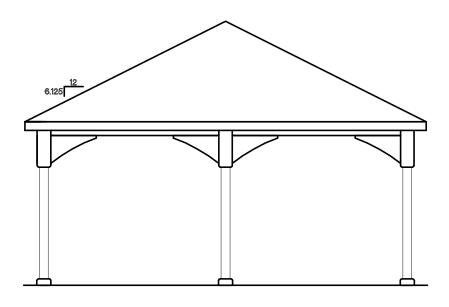
- A. All lumber species, graded visually or mechanically, shall comply with the NDS by AF+PA, and the "American Softwood Lumber Standard" (PS 20-94) by the U.S. Department of Commerce
- B. The minimum grade and species for posts, beams, headers, and other primary structural members shall be Dense Select 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 (>19% for dimension lumber, >16% 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-I-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.

## Polyvinyl Chloride Compound (PVC)

- General Requirements
  - PVC sleeve material used to wrap wood members to be supplied according to Certainteed corporation specifications or equivalent.
  - PVC sleeve material to be 0.160" thick for posts, and 0.105" thick for other structural members

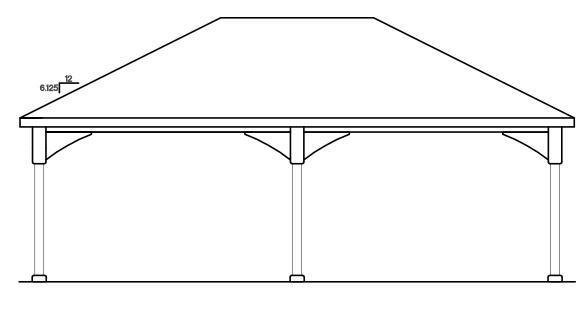
Design Reaction Chart		
Max. Moment in column	4005 lb-ft.	
Max. uplift at column base	2700 lb	
Max. downward force at column base	5325 lb	
Max. shear at column base	525 lb	

TTE DRAWING NUMBER: E269-10

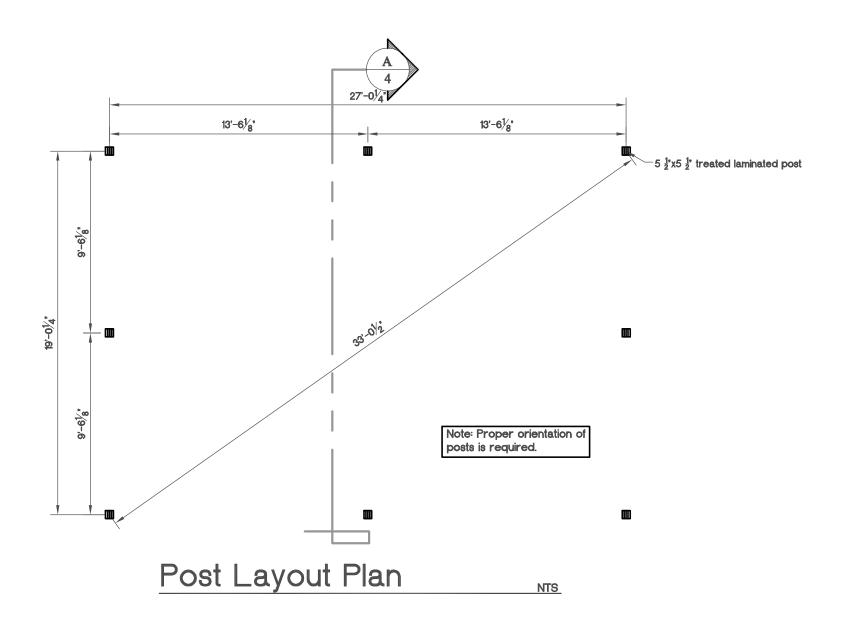


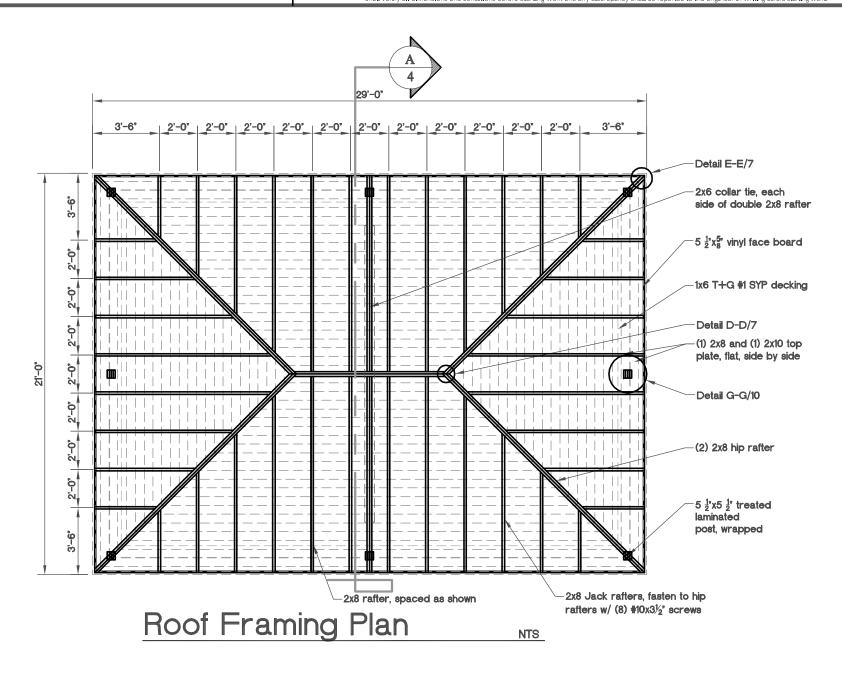
# **End Elevation**

NTS

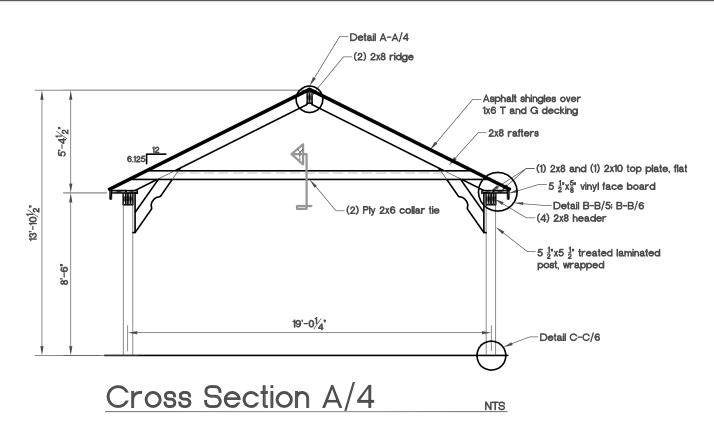


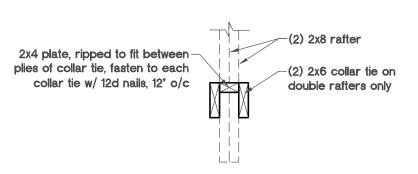
Side Elevation

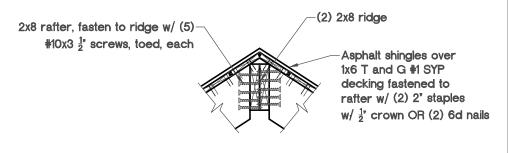




PAGE: 4 OF 11







View 1 Cross Section A/4 NTS Detail A-A/4
Typical Single Rafter

NTS

2x8 rafter, fasten

(2) Simpson A23

screws, toed opposite of angle.

into 2x8 plate

 $7\frac{1}{8}$ "  $x\frac{5}{8}$ " vinyl trim

to 2x8 top plate w/

and (2) #10x3 1/3"

Asphalt shingles over 1x6 T and G #1 SYP decking fastened to rafter w/ (2) 2" staples w/  $\frac{1}{2}$ " crown OR (2) 6d nails

> (1) 2x8 and (1) 2x10 top plate, flat, fasten 2x8 to header w/ (3)  $\frac{3}{8}$ \*+x4 $\frac{1}{2}$ \* lag screws, (2) close to rafter (1 each side of rafter), and (1) centered between rafters, fasten 2x10 to rafters w/ (2) #10x2½" screws, toed

3 1 x 5 vinvl trim

5 ½ x vinyl face board fasten to top plate w/ 2 1/2" finish nail 8" o/c

NTS

2x8 rafters

(4) 2x8 header, fasten ply 2 to ply 1 w/ (2) #10x2  $\frac{1}{2}$  wood screws, 16" o/c. Fasten plies 3 and 4 individually to plies 1 and 2 w/ (2) #10x3  $\frac{1}{2}$  wood screws, 16' o/c. Fasten 3 inner plies to post w/ (1)  $\#10x3 \frac{1}{2}$  wood screws, toed, at top, each ply  $5\frac{1}{2}$ " x5 $\frac{1}{2}$ " treated laminated post, wrapped

(2) MSTA18 Straps by Simpson Strong Tie, install this direction only  $5\frac{1}{2}$ x5  $\frac{1}{2}$  treated laminated post -(4) 2x8 header, fasten ply 2 to ply 1 w/ (2) #10x2 ½" wood screws. 16" o/c. Fasten 19'-0/4" plies 3 and 4 individually to plies 1 and 2 w/ (2) #10x3 ½" wood screws, 16" o/c. Fasten 3 inner plies to post w/ (1) #10x3 ½" wood screws, toed, at top, each ply

View 2 Detail B-B/5

NTS

Detail B-B/5
Typical Single Rafter

Fasten outside ply of 2x8 header to postw/ (8) #10x3 ½" screws, concentrated near top of header

(2) MSTA18 Straps by Simpson Strong Tie, install this direction only

 $5\frac{1}{2}x_{2}^{5}$  vinyl face board fasten to top plate w/ 2 1/2" finish nail 8" o/c

Post notched at top to accept outside ply of header from each direction

> Notch post to accept plywood 5 ½ x5 ½ treated laminated post

(1) 2x8 and (1) 2x10 top plate, flat, fasten 2x8 to header w/ (3)  $\frac{3}{8}$   $4\times4\frac{1}{2}$  lag screws, (2) close to rafter (1 each side of rafter), and (1) centered between rafters

> (4) 2x8 header, fasten ply 2 to ply 1 w/ (2) #10x2 1/2 wood screws, 16' o/c. Fasten plies 3 and 4 individually to plies 1 and 2 w/ (2) #10x3 ½ wood screws, 16 o/c. Fasten 3 inner plies to post w/ (1) #10x3  $\frac{1}{2}$  wood screws, toed, at top, each ply

2x4. flat, fasten to bottom of header w/ (9) #10x3 ½" wood screws, staggered

2x4 block, field installed, fasten each end w/(2) #10x3  $\frac{1}{2}$ screws, apply construction adhesive to both sides of block

 $\frac{1}{2}$  APA rated plywood sheathing fastened to column w/ (8) #10x2  $\frac{1}{2}$  screws, as shown, fasten to flat  $2x4 \text{ w}/(12) \#10x2 \frac{1}{2}$  screws (outside plywood only)

2x4 stud, fasten to post near bottom w/ (4) #10x3 ½ wood screws and near top w/ (1) #10x3 ½" wood screw

Fasten plywood to stud w/ (2) #10x2  $\frac{1}{2}$ " screws, near bottom, inside and outside plywood

View 1 Detail B-B/5

2'-034"



(2) 2x8 hip rafter

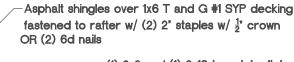
(2) Steel Angle 'A1'

7 1 x vinyl trim

PAGE: 6 OF 11

PROJECT: STANDARD PLANS FOR 20'x28' RECTANGLE PVC PAVILION

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.



-(1) 2x8 and (1) 2x10 top plate, flat, fasten 2x8 to header w/ (3)  $\frac{3}{8}$ " †x4 $\frac{1}{2}$ " lag screws, (2) close to rafter (1 each side of rafter), and (1) centered between rafters, fasten 2x10 to rafters w/ (2) #10x2 $\frac{1}{2}$ " screws, toed  $\frac{1}{3}$ " x $\frac{1}{8}$ " vinyl trim

 $-5\frac{1}{2}$ "x $\frac{8}{8}$ " vinyl face board fasten to top plate w/ 2 1/2" finish nail 8" o/c

—(4) 2x8 header, fasten ply 2 to ply 1 w/ (2) #10x2 ½" wood screws, 16" o/c. Fasten plies 3 and 4 individually to plies 1 and 2 w/ (2) #10x3 ½" wood screws, 16" o/c. Fasten 3 inner plies to post w/ (1) #10x3 ½" wood screws, toed, at top, each ply
5 ½"x5 ½" treated laminated post, wrapped

Detail B-B/6

NTS

Hip Rafter Connection

(1) 5/8"+ hole for ½"+x4" screw anchor

18" steel

33"

0 0

0 0

17 4 holes for (7)

#10x3 ½" wood screws

NTS

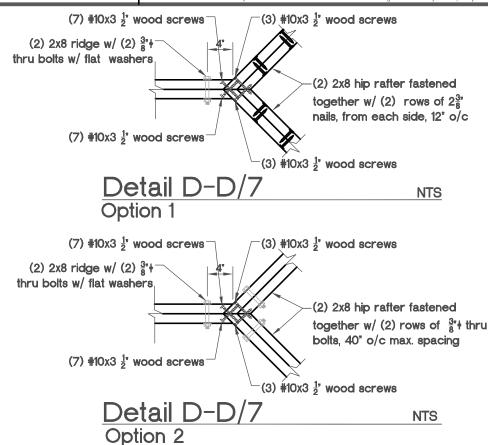
Base Angle Detail

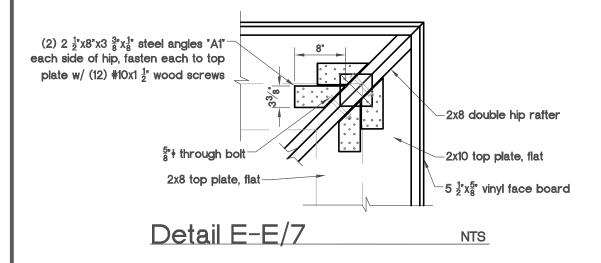
View 1 Detail C-C/6

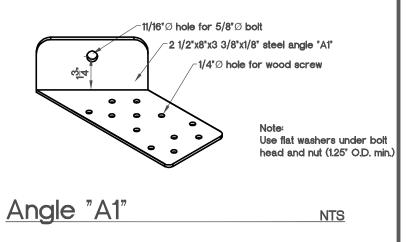
NTS

PAGE: 7 OF 11

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.





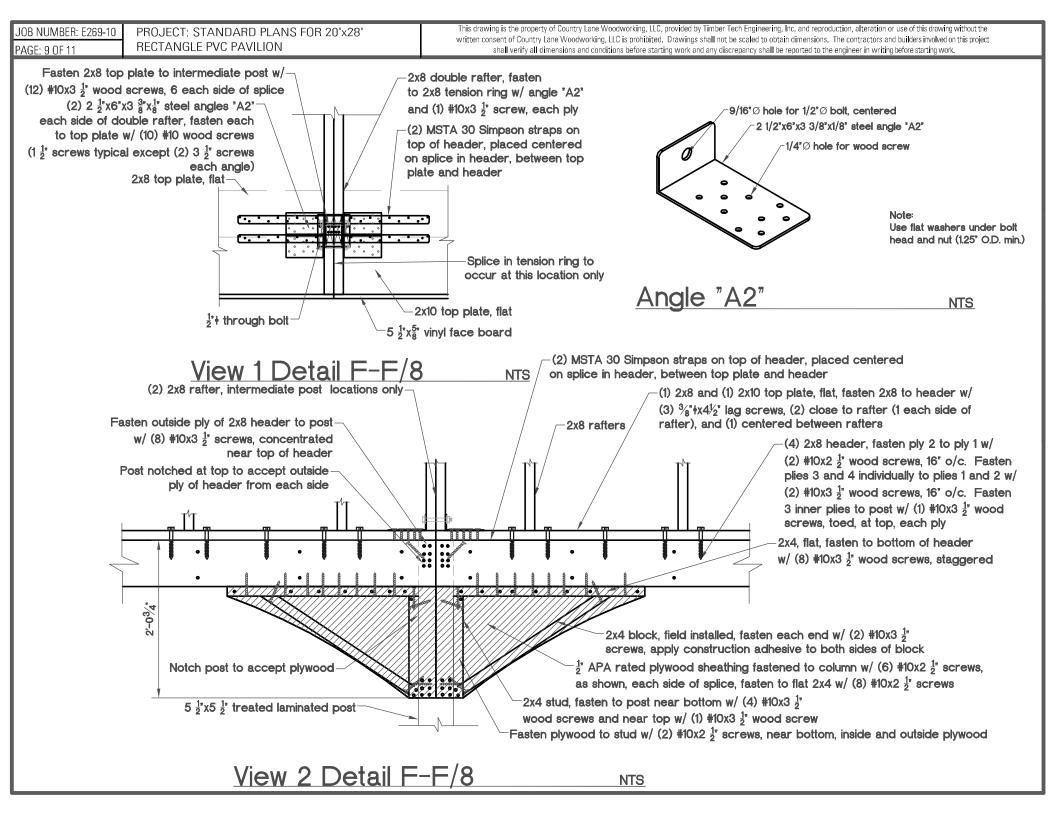


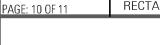
PAGE: 8 OF 11

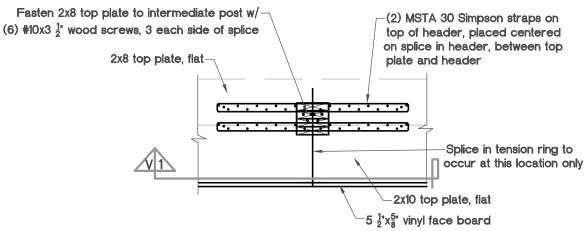
NTS

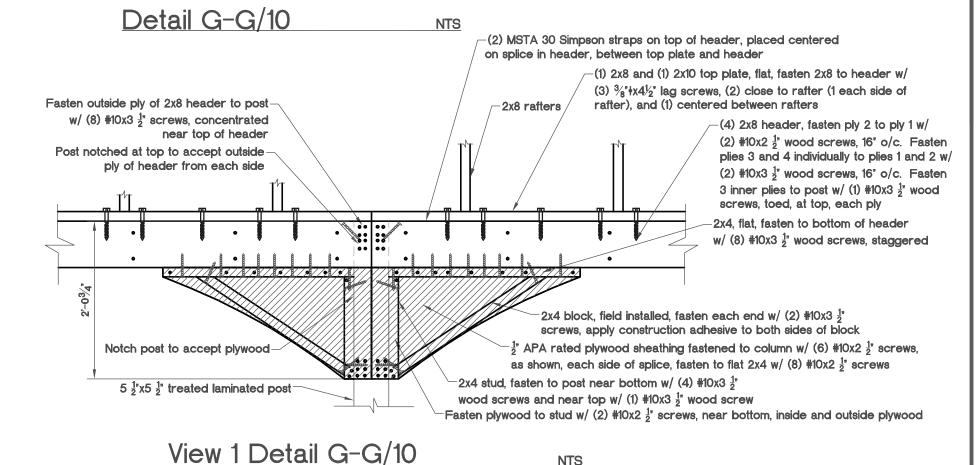
Fasten 2x8 top plate to intermediate post w/-(12) #10x3  $\frac{1}{2}$  wood screws, 6 each side of splice (2) MSTA 30 Simpson straps on top of header, (2) 2x8 rafter, fasten to top plate w/ (4) Angle "A2", 2 each side placed centered on splice in header -2 1/2"x6"x3 3/8"x1/8" steel angle "A2" w/ (1) 1/2" thru bolt Asphalt shingles over 1x6 T and G #1 SYP decking fastened to rafter w/ (2) 2" staples w/  $\frac{1}{2}$ " crown OR (2) 6d nails -(1) 2x8 and (1) 2x10 top plate, flat, fasten 2x8 to header w/ (3)  $\frac{3}{8}$ \* +x4 $\frac{1}{2}$ \* lag screws, (2) close to rafter (1 each side of rafter), and (1) centered between rafters, fasten 2x10 to rafters w/ (2) #10x21/2" screws, toed -3 ½"x5" vinyl trim  $^{-}5\frac{1}{2}$ " $x_8^{5}$ " vinyl face board fasten (2) 2x6 collar tie, fasten each ply to rafter to top plate w/ 2 1/2" finish nail 8" o/c  $w/(9) #10x3 \frac{1}{2}$  wood screws each end 7 1 x 5 vinyl trim (2) 2x8 kneebrace, fasten to rafter at top w/ (4) TLOK004 screws by FastenMaster. (4) 2x8 header, fasten ply 2 to ply 1 w/ (2)  $\pm 10x2 \frac{1}{2}$  wood (2) each ply 2" min. embedment into rafter, screws, 16" o/c. Fasten plies 3 and 4 individually to plies and to collar tie  $w/(5) #10x3\frac{1}{2}$ 1 and 2 w/ (2) #10x3 ½" wood screws, 16" o/c. Fasten wood screws each side 3 inner plies to post w/ (1) #10x3  $\frac{1}{2}$ " wood screws, toed, at top, each ply 5 ½ x5 ½ treated laminated post, wrapped (2) 2x8 kneebrace, fasten at bottom w/ (8) TLOK004 screws by FastenMaster, (4) each ply  $2x6x2'-0\frac{3}{4}$  block, fasten to post w/ (8) TLOK004 screws by FastenMaster OR w/ (16) #10x3 1/2 wood screws

Detail F-F/8
Center Double Rafter



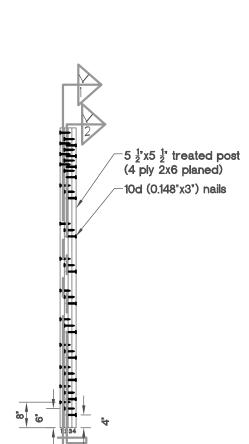


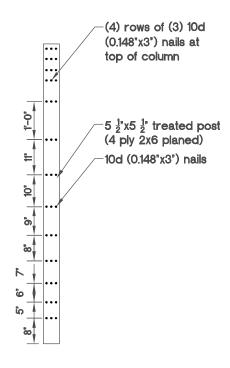


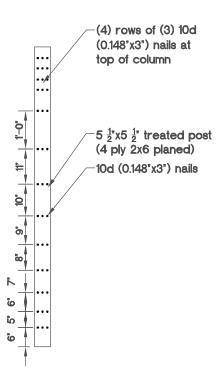


NTS

PAGE: 11 OF 11







Nail-Laminated Post Nailing Detail

View 1 Nailing Detail for Ply 2 to Ply 3 View 2 Nailing Detail for Ply 1 to Ply 2 Nailing Detail for Ply 1 to Ply 2