

# 16'x16' Rectangle Hampton 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
- Page 3 - Roof Framing
- Page 4 - Cross Section, Details
- Page 5 - 7 - Details
- Page 8 - 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

- Governing Code:  
Including, not limited to: IBC 2009
- Dead Loads:
  - A. Roof 5 psf
  - B. Floor n/a psf
  - C. Other n/a psf
- Live Loads:
  - A. Roof (See also note #4) 37.8 psf
  - B. Floor n/a psf
  - C. Other n/a psf
- Snow Loads:
  - A. Ground Snow (Pg) 45 psf
  - B. Flat Roof Snow (Pt) 37.8 psf
  - C. Snow Exposure Factor (Ce) 1.0
  - D. Snow Load Importance Factor (I) 1.0
  - E. Unbalanced Snow
    - i. Windward Roof 0 psf
    - ii. Leeward Roof 45 psf
- Wind Load
  - A. Basic Wind Speed (V) 140 mph
  - B. Wind Load Importance Factor (I) 1.0
  - C. Wind Exposure Category C
  - D. Enclosure Category Open
  - E. Components and Cladding: +72 psf/-87 psf
- Earthquake Design Data:  
(Analysis based on equivalent lateral force procedure)
  - A. Spectral Response Acceleration at 1 sec, S 0.3
  - B. Spectral Response Acceleration at short periods, S 0.5
  - C. Seismic Occupancy Category 1
  - D. Occupancy Importance Factor, I 1.0
  - E. Site Class D
  - F. Seismic Design Category D
  - G. Basic Structural System  
Cantilevered Column: Timber Frame
  - H. Response Modification Factor (R) 1.5
  - I. Deflection Amplification Factor (Cd) 1.5

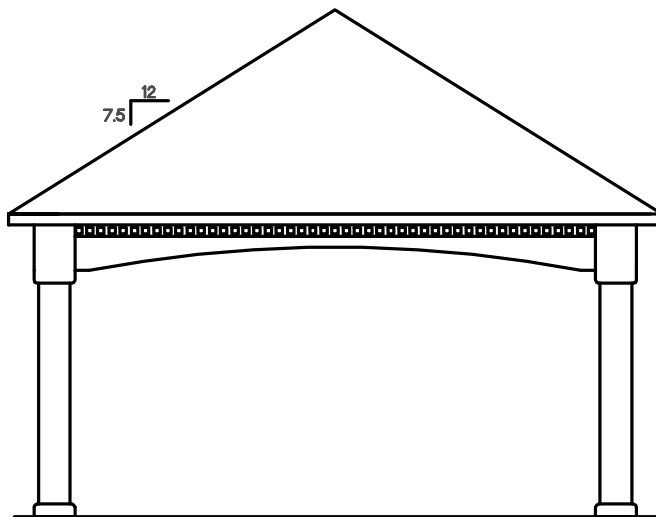
### ABBREVIATIONS

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

### WOOD

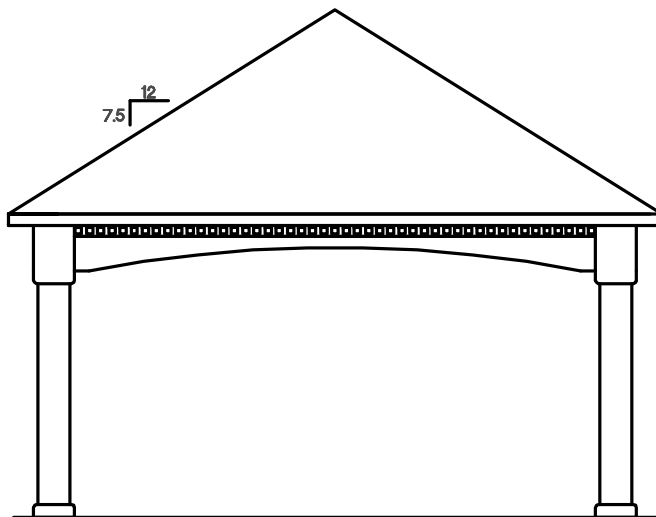
- General Requirements
  - A. Structural wood members and connections shall be of sufficient size or capacity to carry all design loads without exceeding the allowable design values specified in 'The National Design specification for Wood Construction' (NDS), 2005 edition, and its 'Supplement' by the 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.
- 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.
- 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:
    - Wood members exposed to weather or insect infestation.
    - Wood members in direct contact with earth or concrete.
    - Wood members exposed to high moisture content (>19% for dimension lumber, >16% for glued laminated timber).
    - 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.
- 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	3400 lb-ft.
Max. uplift at column base	925 lb
Max. downward force at column base	3150 lb
Max. shear at column base	425 lb



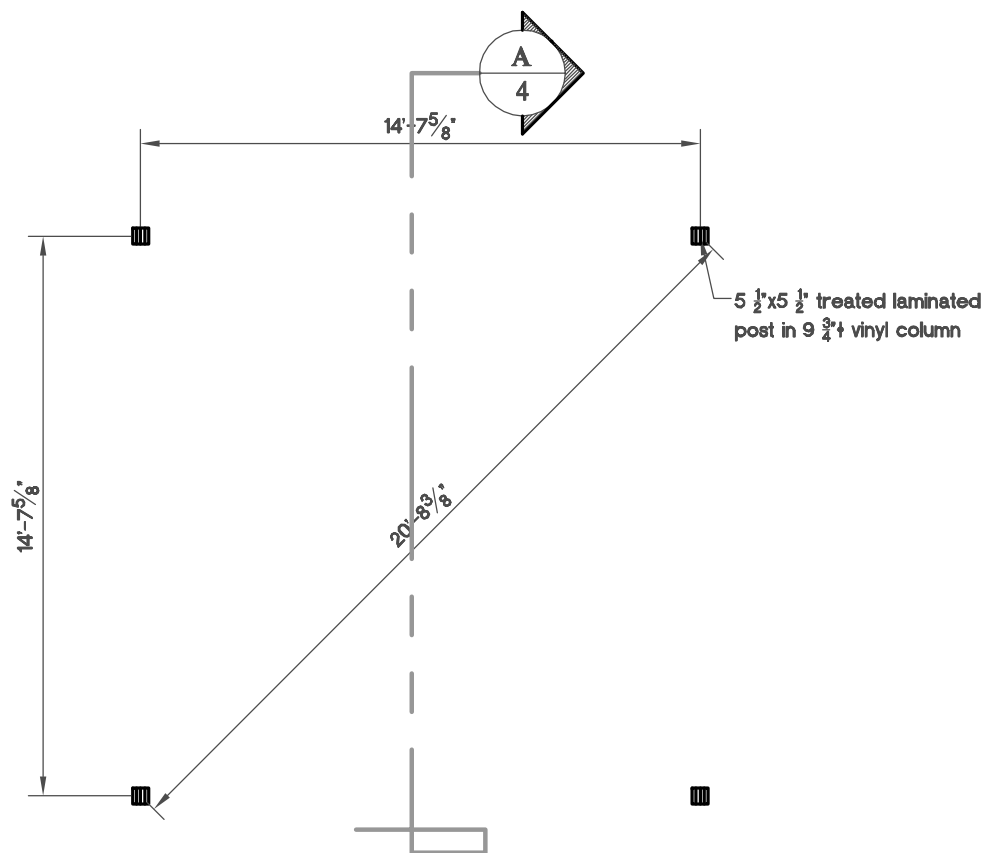
End Elevation

NTS



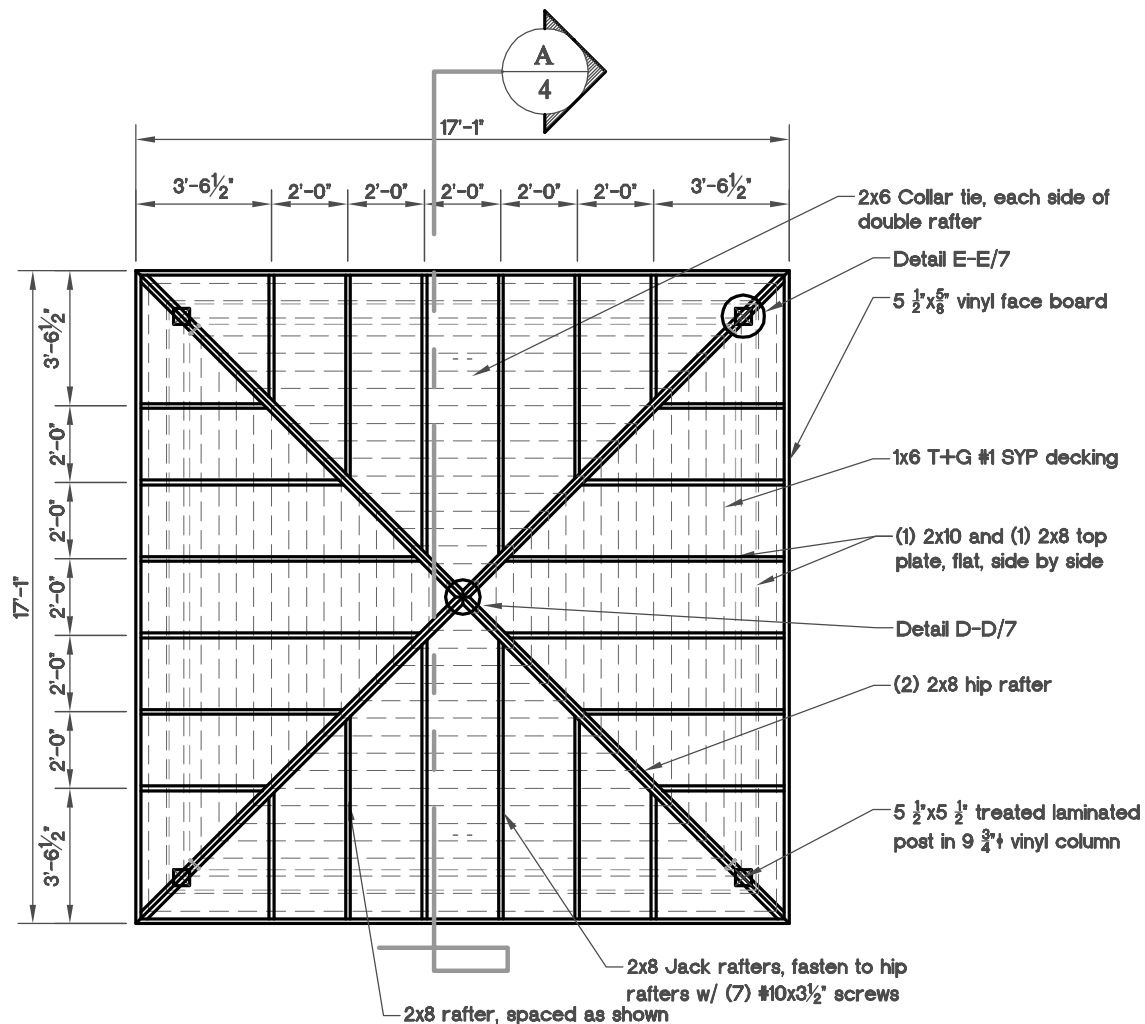
Side Elevation

NTS



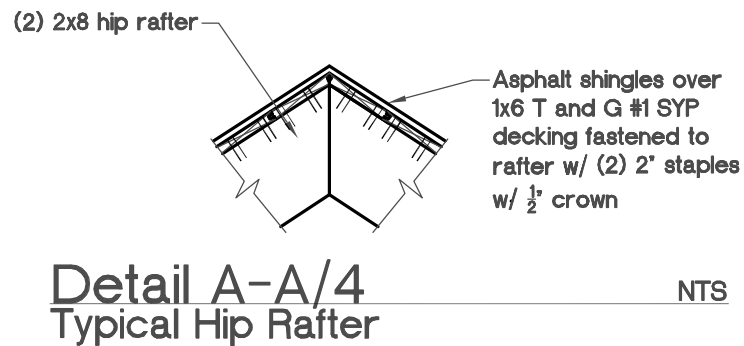
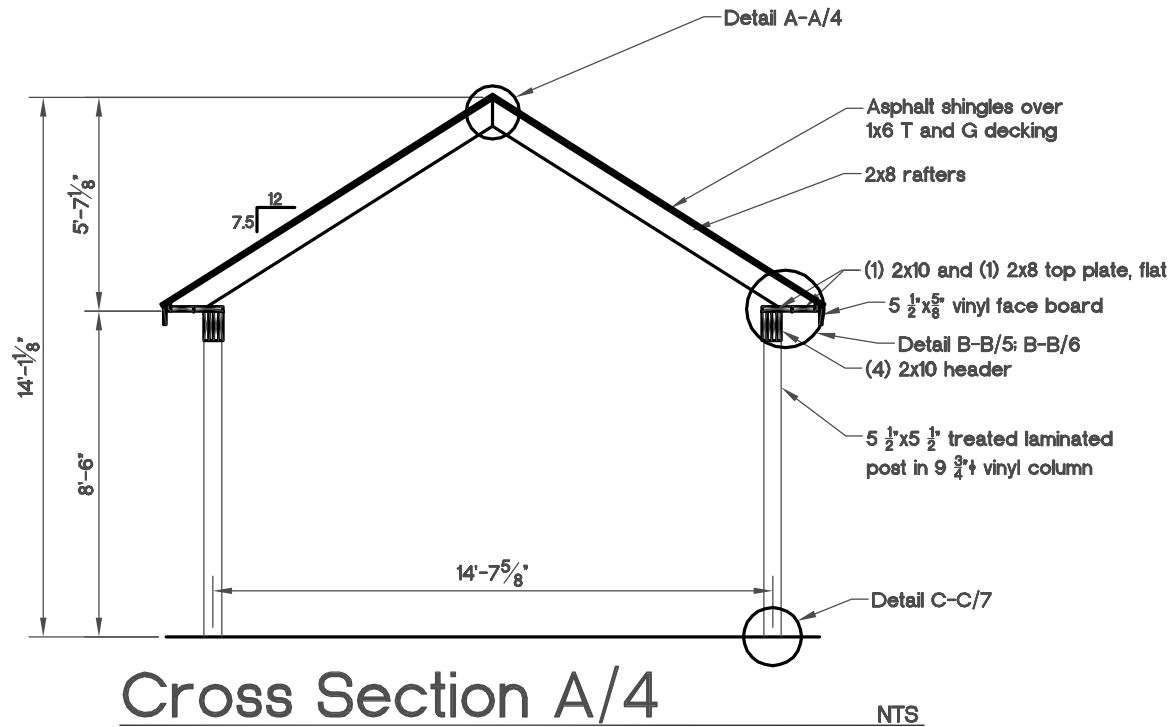
Post Layout Plan

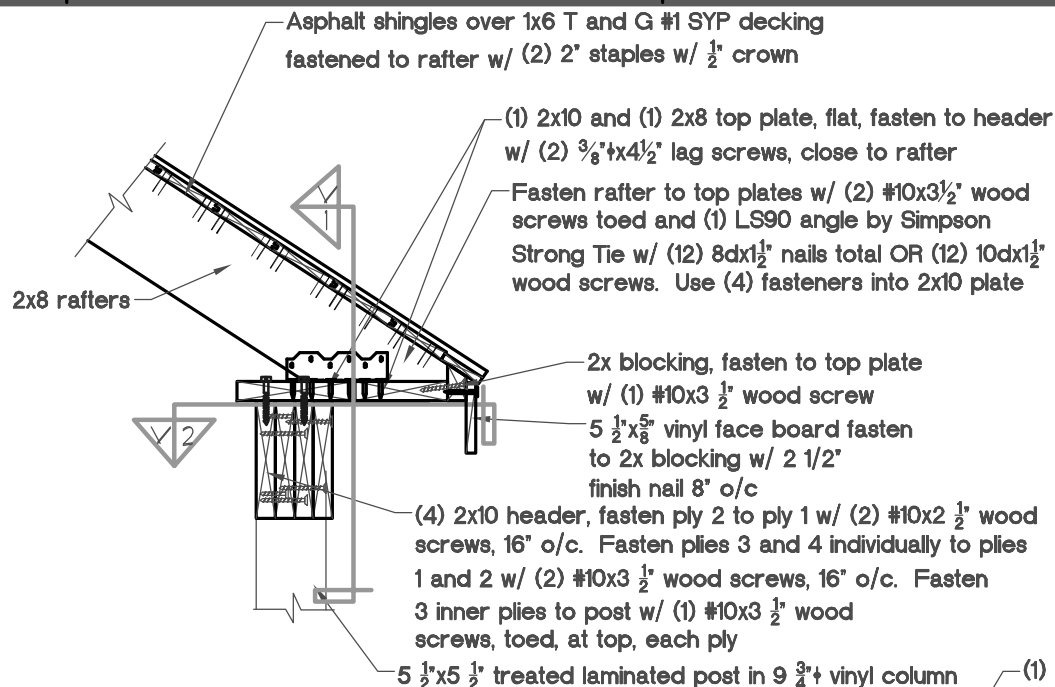
NTS



Roof Framing Plan

NTS





### Detail B-B/5

Typical Single Rafter

NTS

Fasten outside ply of 2x10 header to post w/ (9) #10x3 1/2" screws, concentrated near top o

5 1/2"x5 1/2" vinyl face board fasten to 2x blocking w/ 2 1/2" finish nail 8" o/c

except outside ply of header from each direction

Vinyl trim

Notch post to accept plywood

5 1/2"x5 1/2" treated laminated post in 9 3/4" vinyl column

1x4x8 1/2" long on each face of post, fasten to post w/ 2" staples w/ 1/2" crown

2x8 rafters

(1) 2x10 and (1) 2x8 top plate, flat, fasten 2x10 to header w/ (2) 3/8"x4 1/2" galvanized lag screws, close to rafter

(4) 2x10 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 1/2" wood screws, 16" o/c. Fasten 3 inner plies to post w/ (1) #10x3 1/2" wood screws, toed, at top, each ply

2x4, flat, fasten to bottom of header w/ (7) #10x3 1/2" wood screws in first 2 stud bays and w/ (2) #10x3 1/2" screws 12" o/c everywhere else

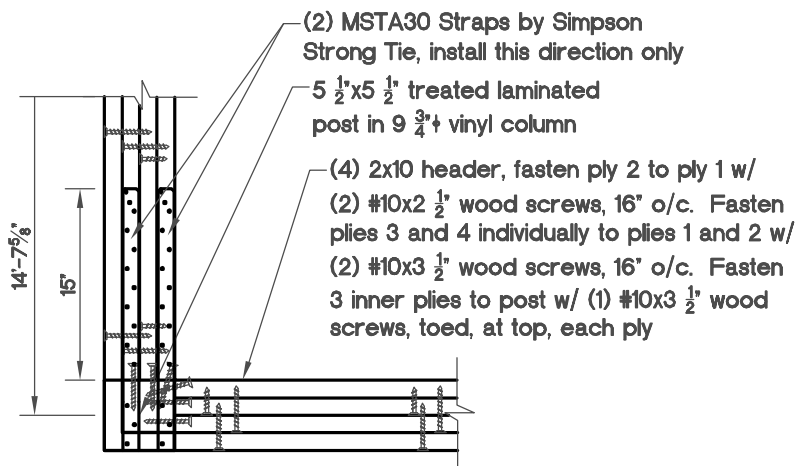
2x4 stud, 16" o/c typical, fasten to flat 2x4 w/ (2) #10x3 1/2" wood screws typical

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

1/2" APA rated plywood sheathing fastened to column w/ (12) #10x2 1/2" screws, as shown, fasten to flat 2x4 plate w/ (7) #10x2 1/2" screws in first 2 stud bays (outside plywood only), fasten to studs w/ 2" staples w/ 1/2" crown 6" o/c, and covered w/ vinyl exterior trim

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

Fasten plywood to last stud w/ (3) #10x2 1/2" screws, near bottom, inside and outside plywood

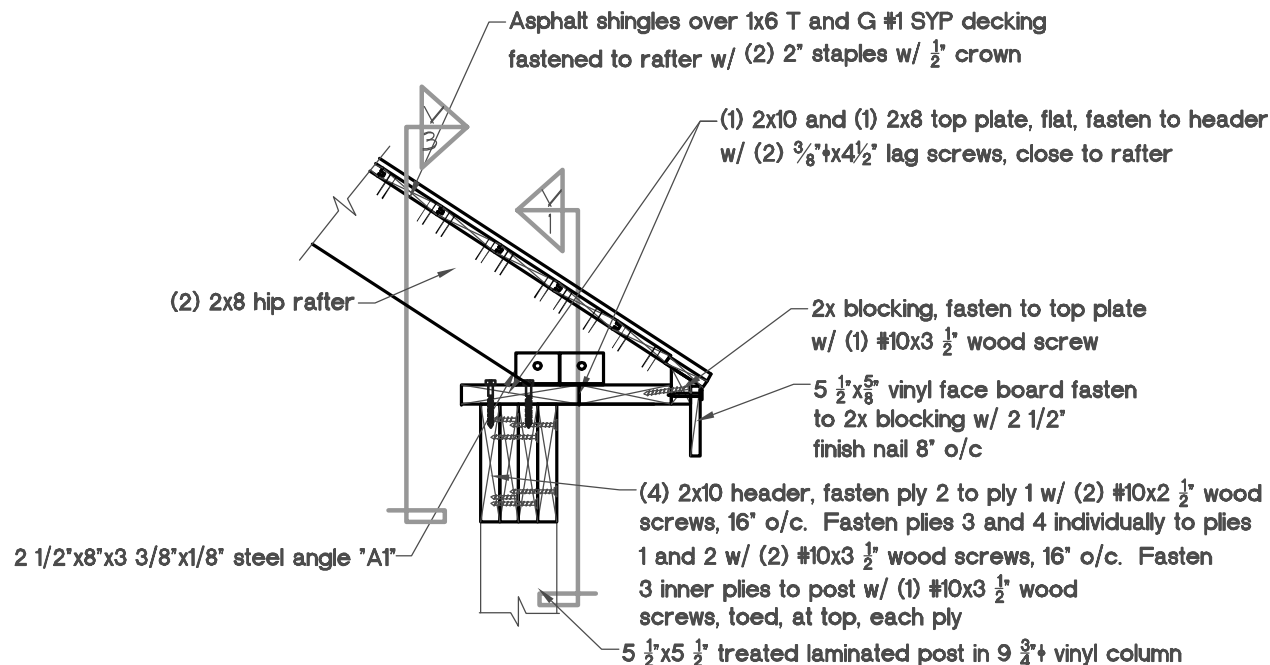


### View 2 Detail B-B/5

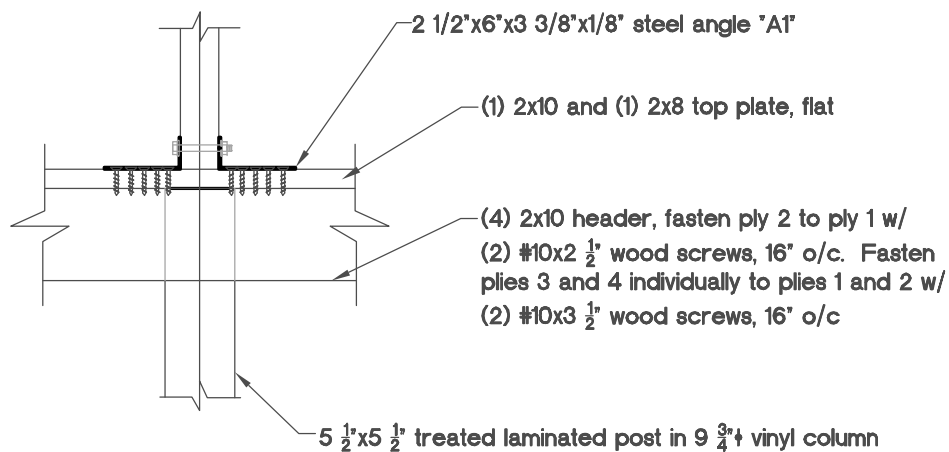
NTS

### View 1 Detail B-B/5

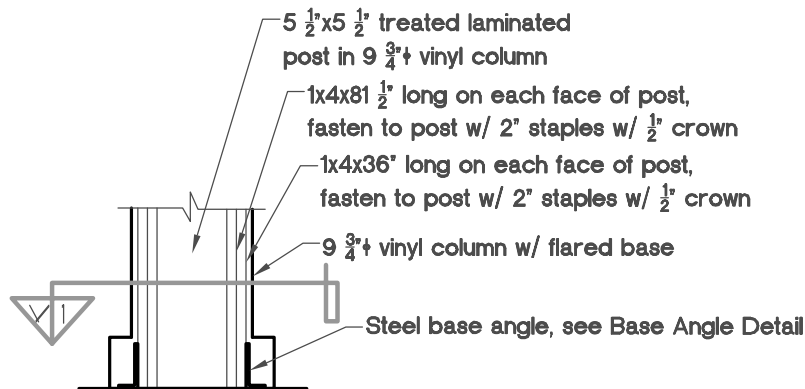
NTS

**Detail B-B/6**  
**Hip Rafter**

NTS

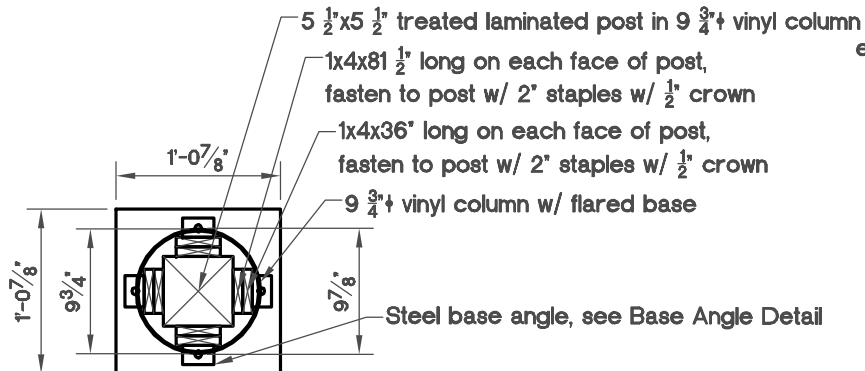
**View 3 Detail B-B/6**  
**Hip Rafter**

NTS



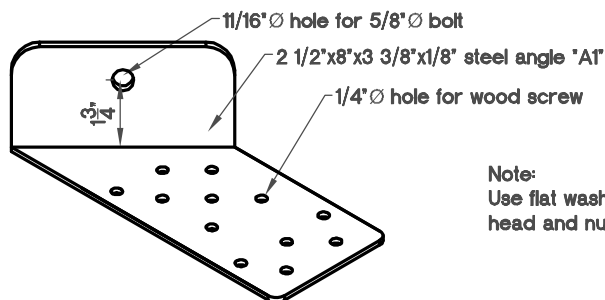
Detail C-C/7

NTS



View 1 Detail C-C/7

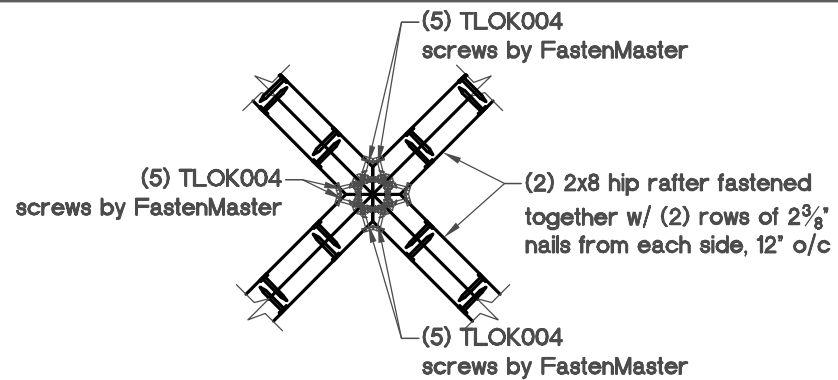
NTS



Note:  
Use flat washers under bolt head and nut (1.25" O.D. min)

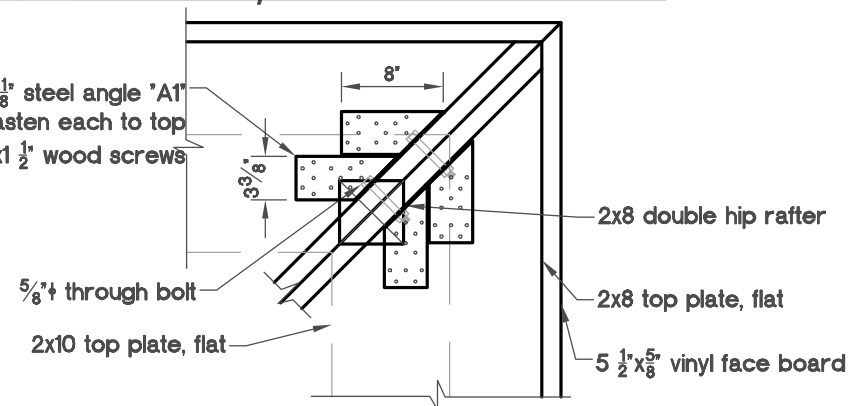
Angle "A1"

NTS



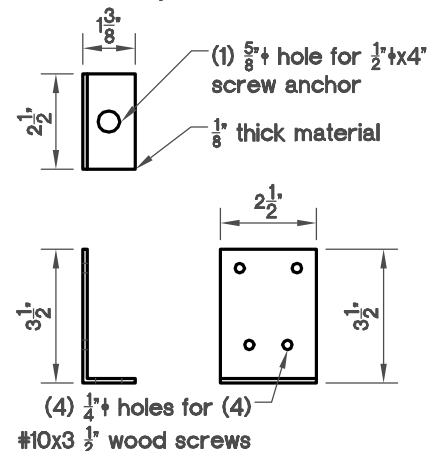
Detail D-D/7

NTS



Detail E-E/7

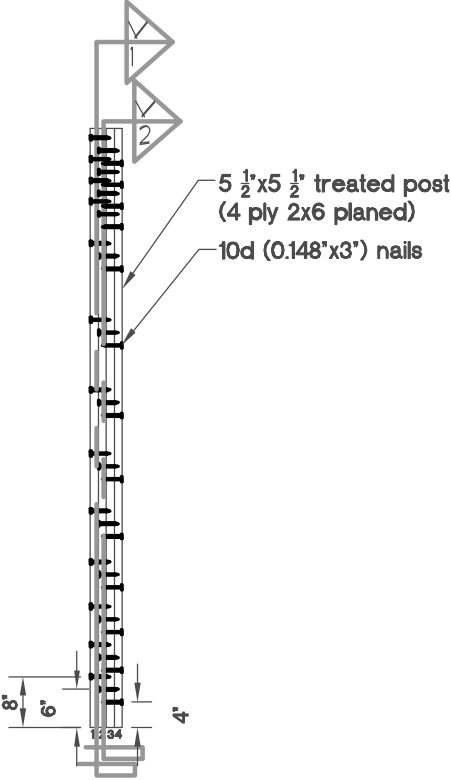
NTS



Base Angle Detail

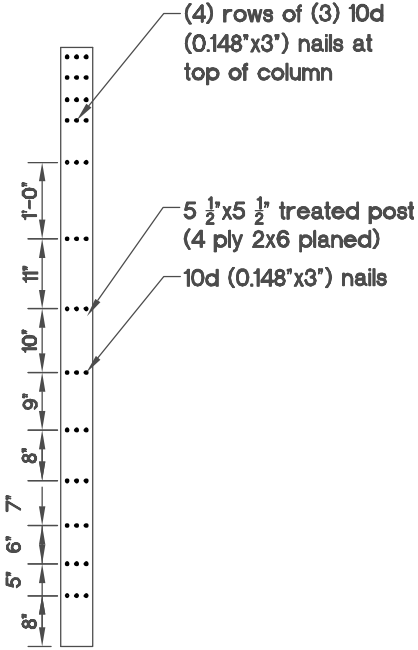
NTS





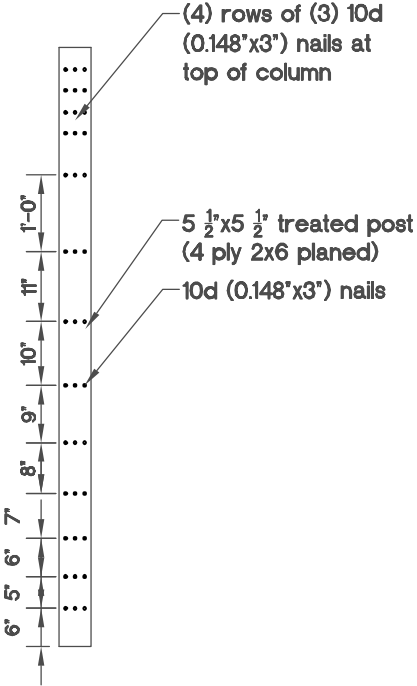
Nail-Laminated Post  
Nailing Detail

NTS



View 1  
Nailing Detail for Ply 2 to Ply 3

NTS



View 2  
Nailing Detail for Ply 1 to Ply 2

NTS