

20'x24' 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 psf
 - B. Floor n/a psf
 - C. Other n/a psf
3. Live Loads:
 - A. Roof (See also note #4) 30 psf
 - B. Floor n/a psf
 - C. Other n/a psf
4. Snow Loads:
 - A. Ground Snow (Pg) 45 psf
 - B. Flat Roof Snow (Pt) 38 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
5. 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/-94 psf
6. Earthquake Design Data:
(Analysis based on equivalent lateral force procedure)
 - A. Spectral Response Acceleration at 1 sec, S 0.50
 - B. Spectral Response Acceleration at short periods, S 1.0
 - C. Seismic Use Group 1
 - D. Occupancy Importance Factor, I 1.0
 - E. Site Class D
 - F. Basic Structural System
Cantilevered Column: Timber Frame
 - G. Response Modification Factor (R) 1.5
 - H. Deflection Amplification Factor (Cd) 1.5

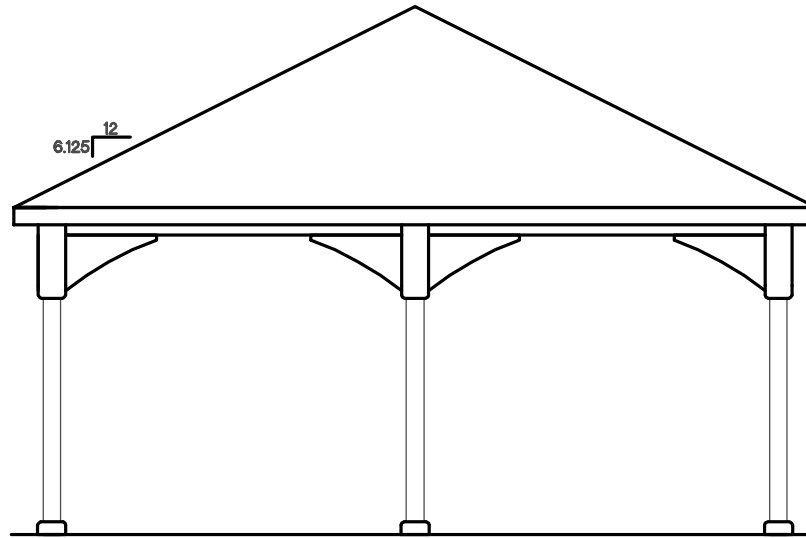
ABBREVIATIONS:

at	mil.	millimeter
beam	min.	minimum
concr.	nts	not to scale
cont.	o/c	on center
dia.	pcf	pounds per cubic foot
exist.	pl	plywood
flr.	psf	pounds per square foot
ft.	psf	pounds per square inch
ga.	req'd.	required
hdw.	s.s.	stainless steel
hdr.	st.	steel
jst.	thk.	thick
kai	trd.	treated
lbs.	typ.	typical
max.	w/	with
	mfr.	manufacturer

WOOD

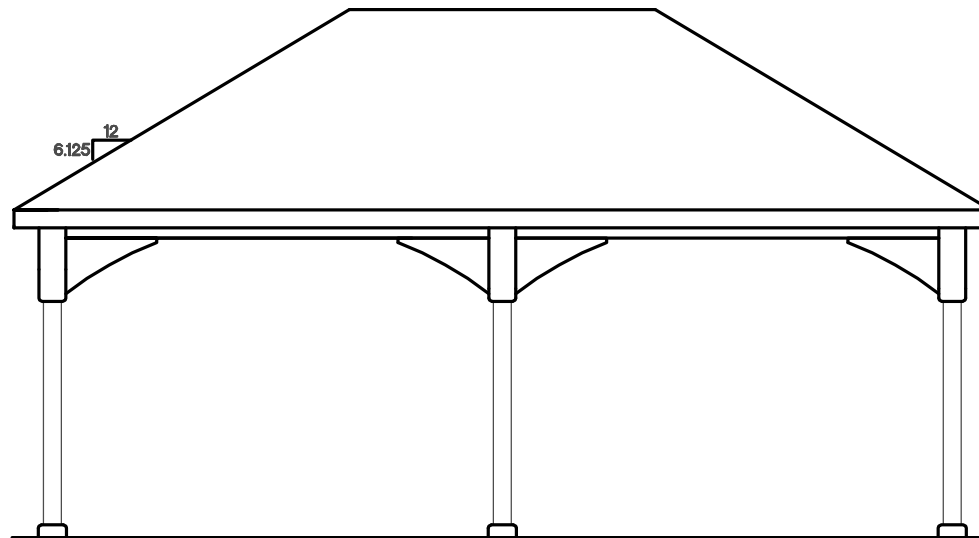
1. General Requirements
 - A. Structural wood members and connections shall be of sufficient size or capacity to carry all design loads without exceeding the allowable design values specified in 'The National Design specification for Wood Construction' (NDS), 2005 edition, and its 'Supplement' by the 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 (>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+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)
1. General Requirements
 - A. PVC sleeve material used to wrap wood members to be supplied according to Certified corporation specifications or equivalent.
 - B. 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



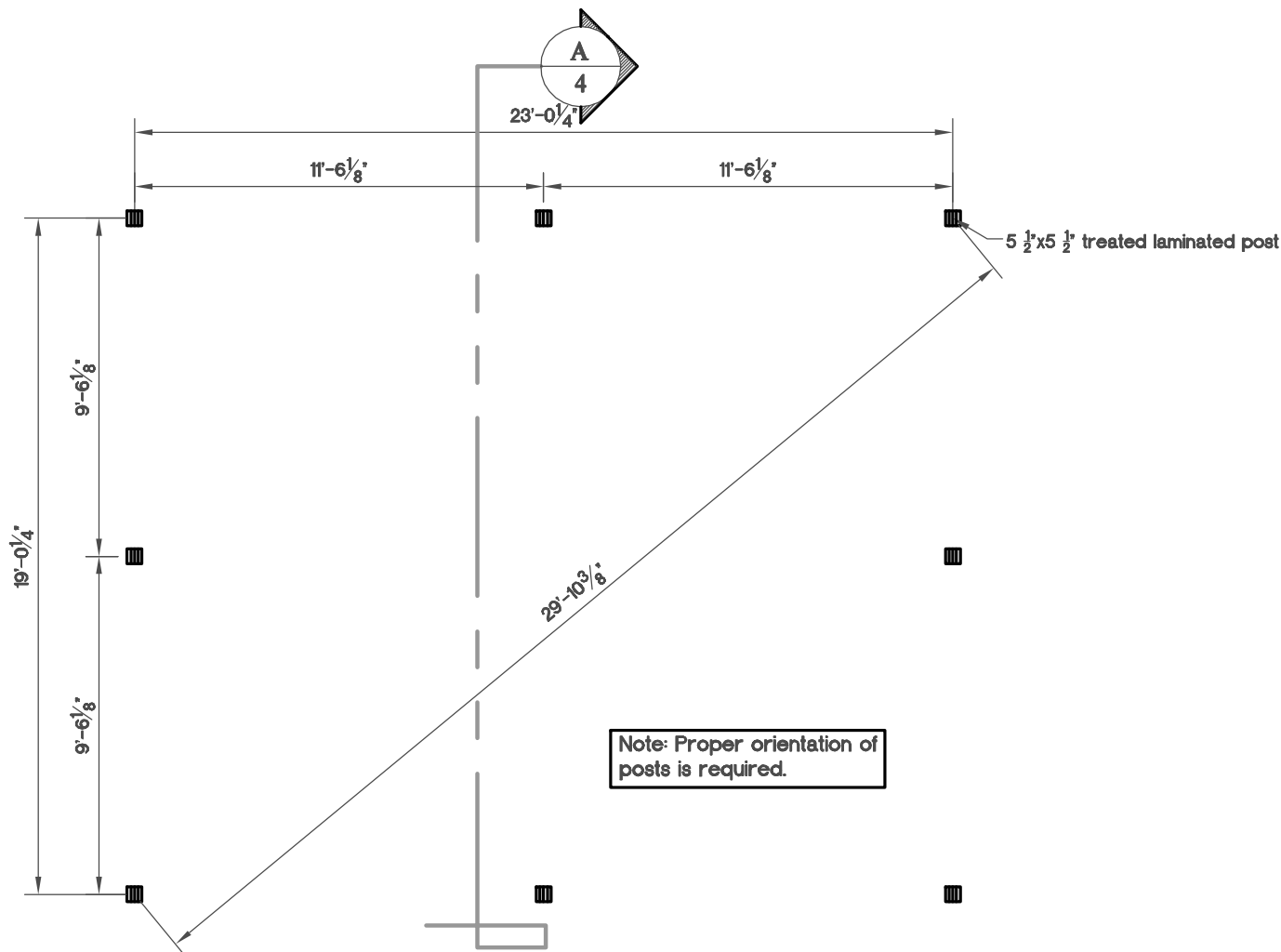
End Elevation

NTS



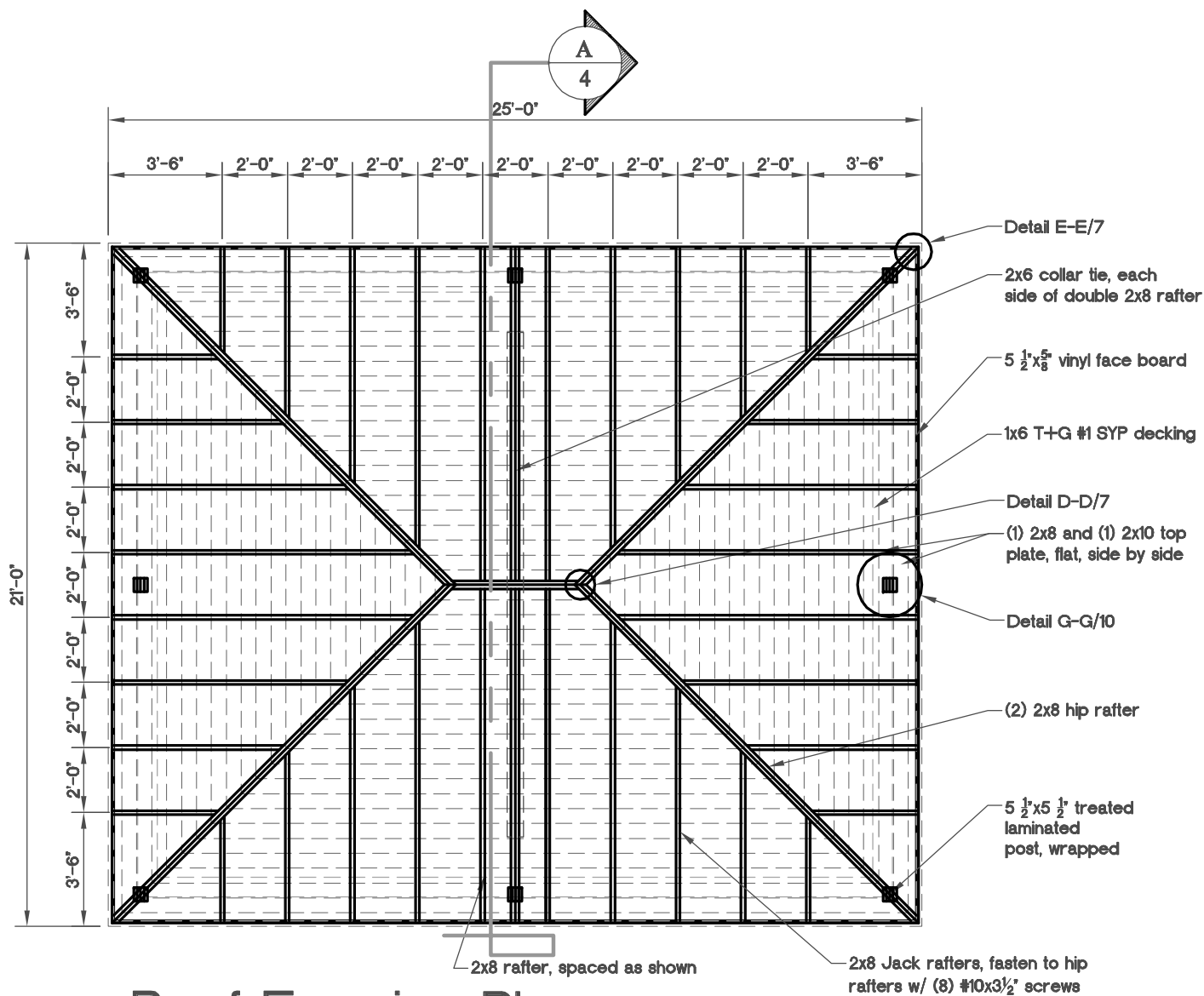
Side Elevation

NTS



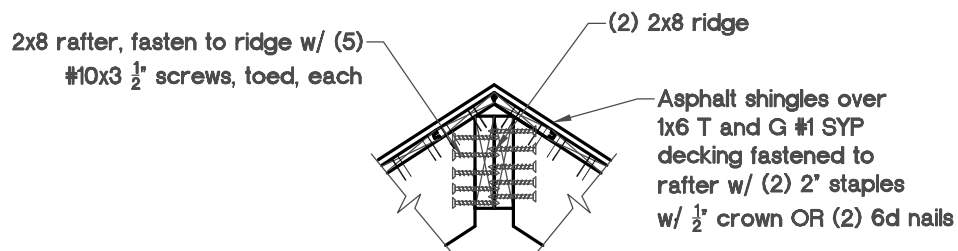
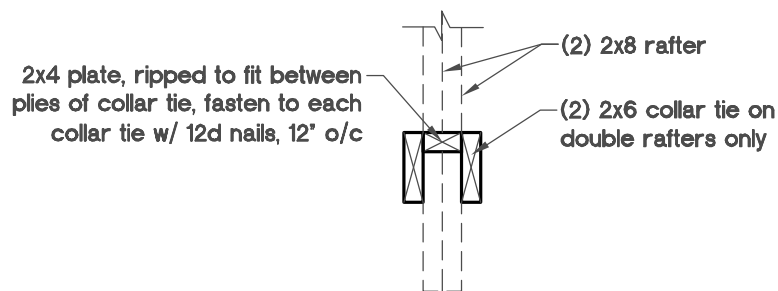
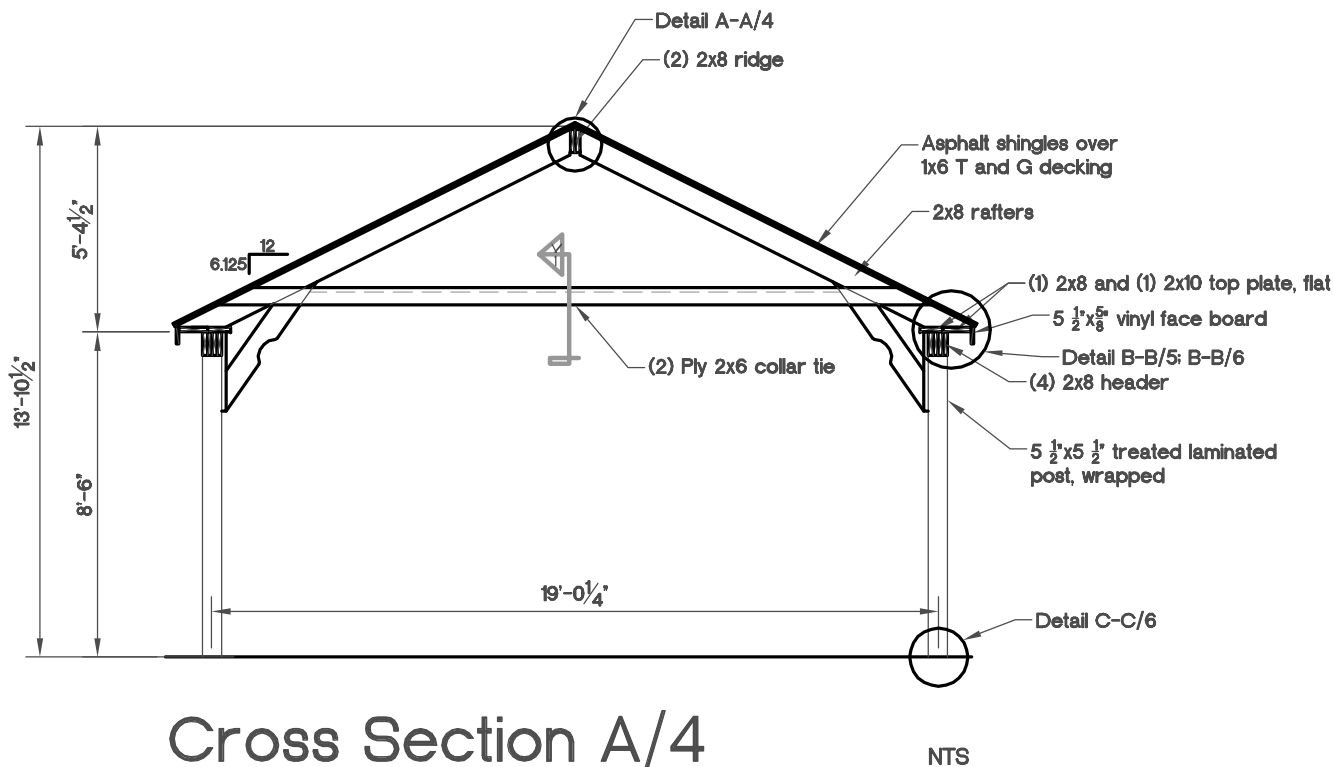
Post Layout Plan

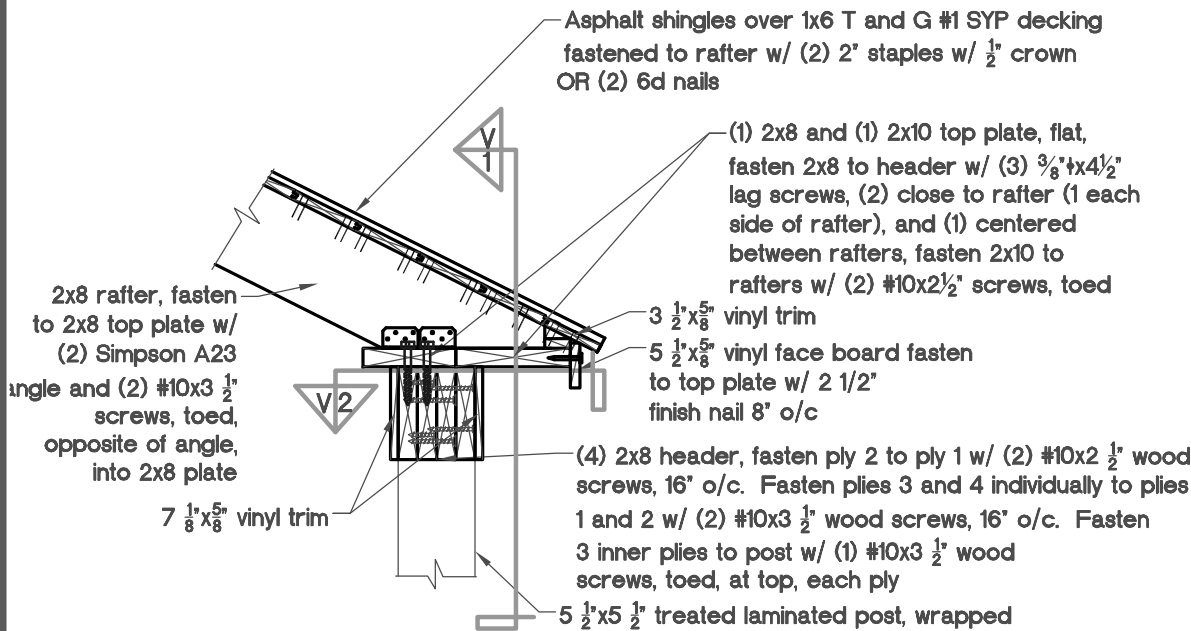
NTS



Roof Framing Plan

NTS

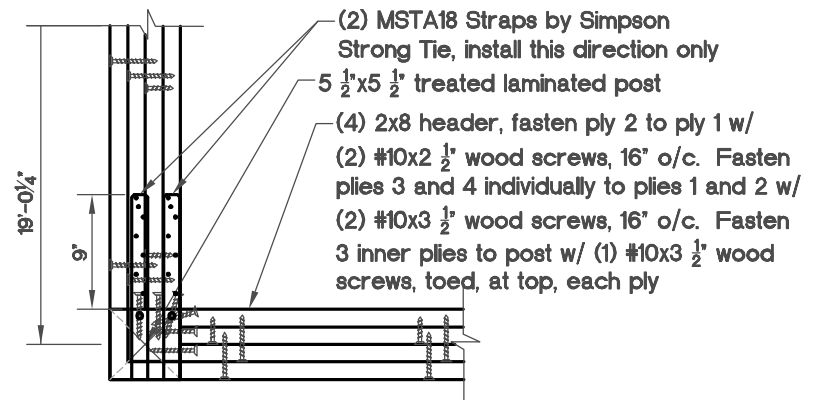




Detail B-B/5

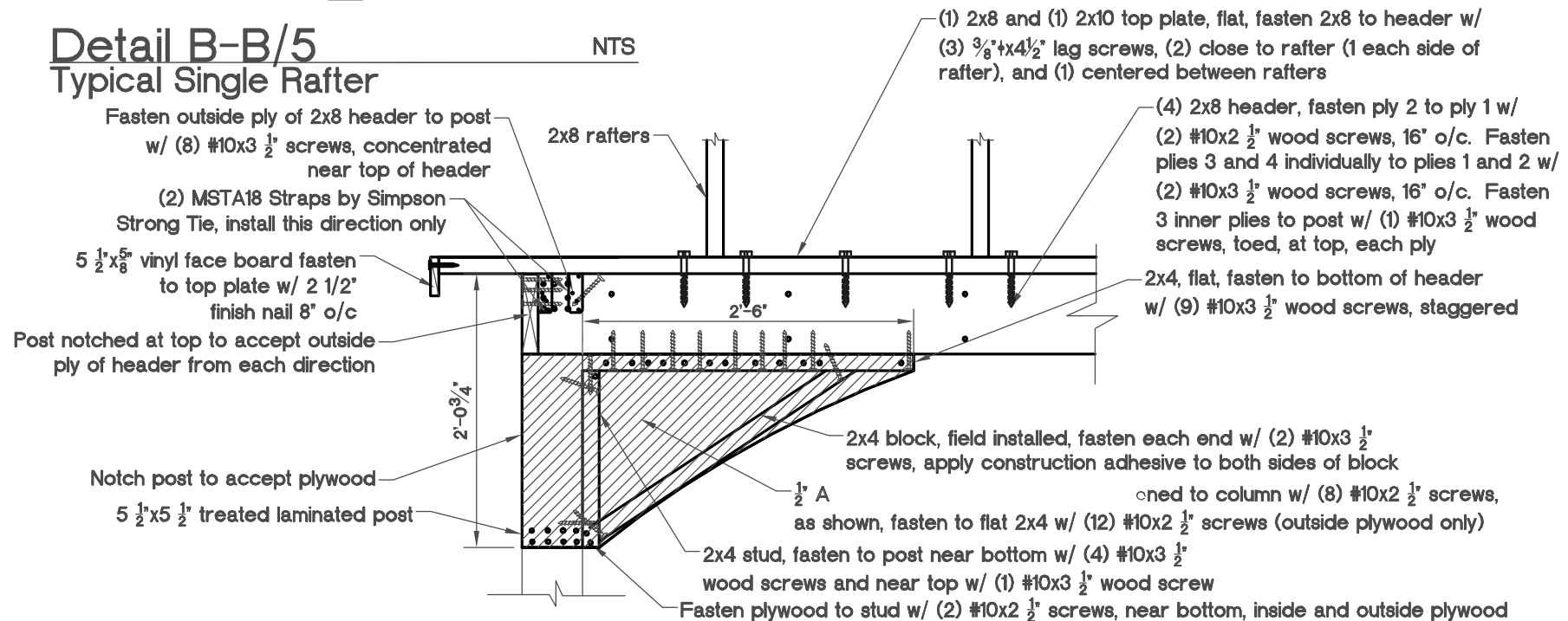
Typical Single Rafter

NTS



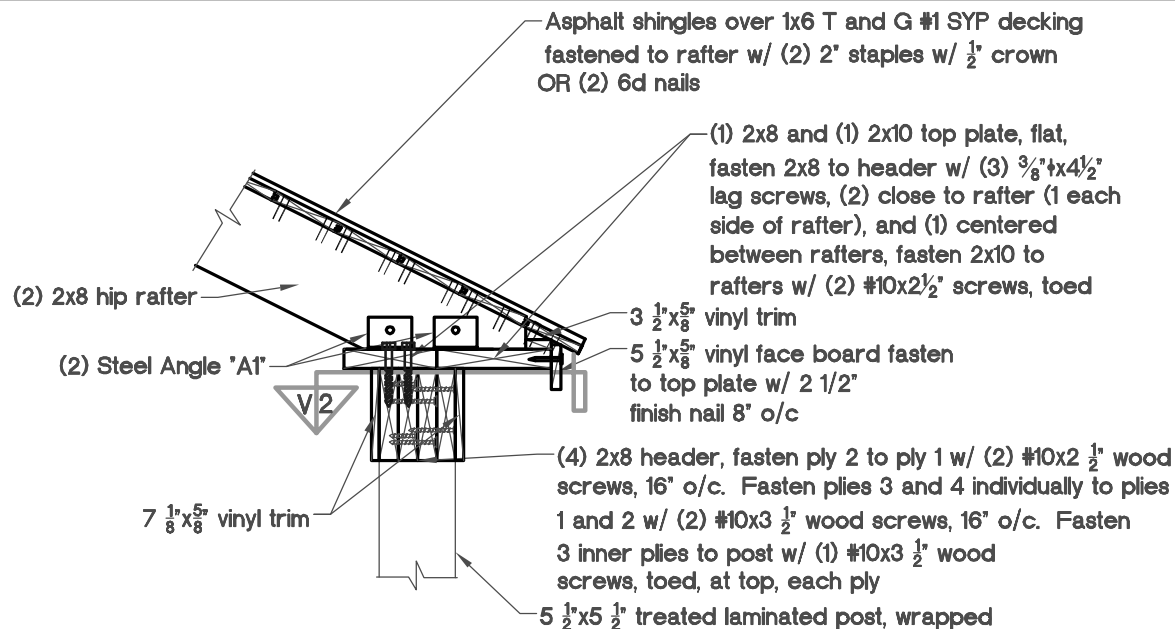
View 2 Detail B-B/5

NTS



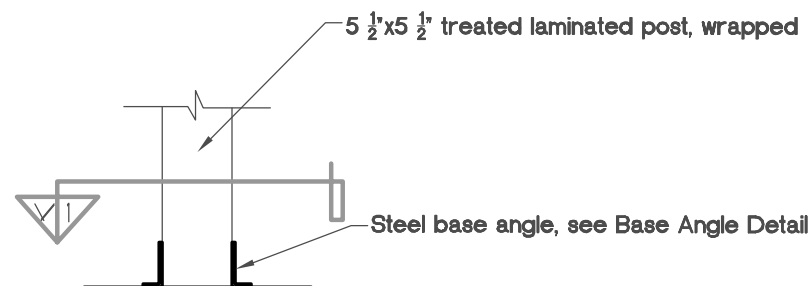
View 1 Detail B-B/5

NTS

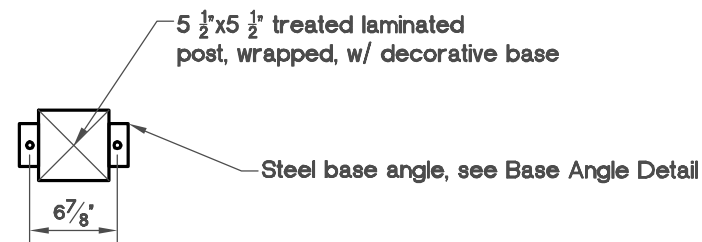


NTS

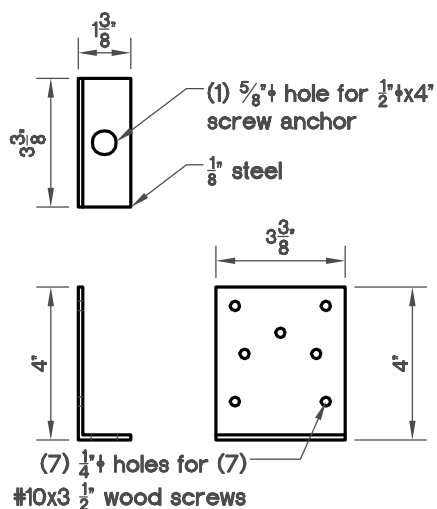
Hip Rafter Connection



NTS

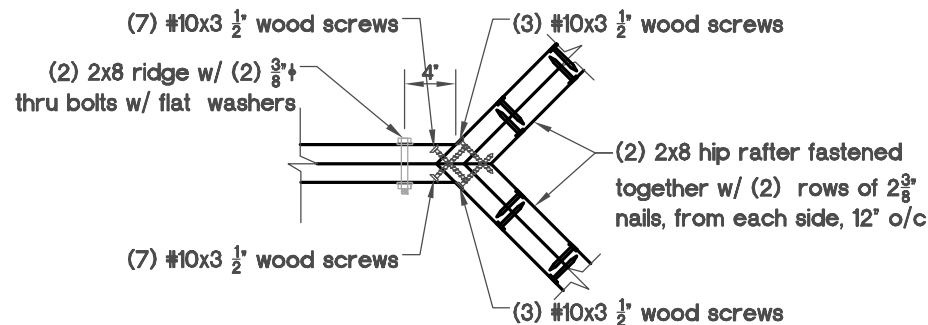


NTS



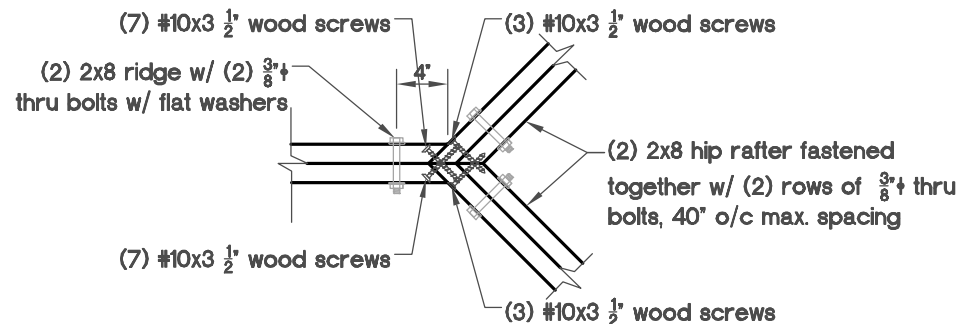
Base Angle Detail

NTS



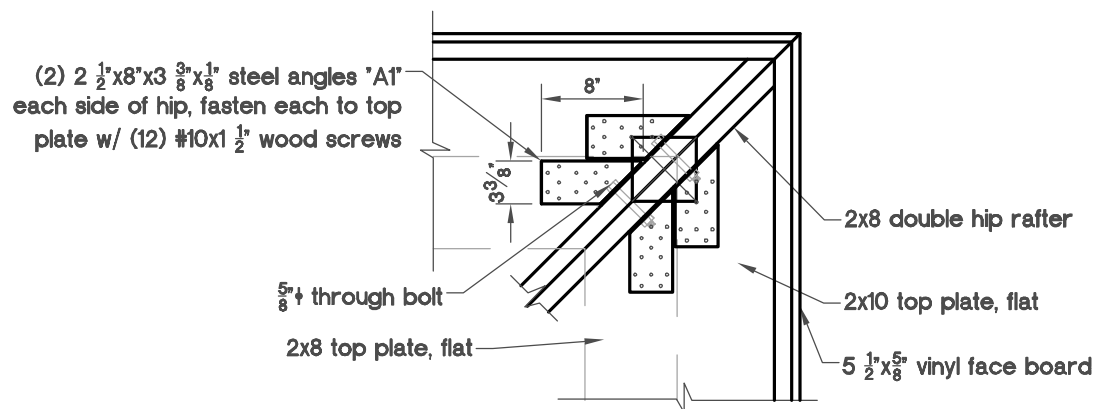
Detail D-D/7
Option 1

NTS



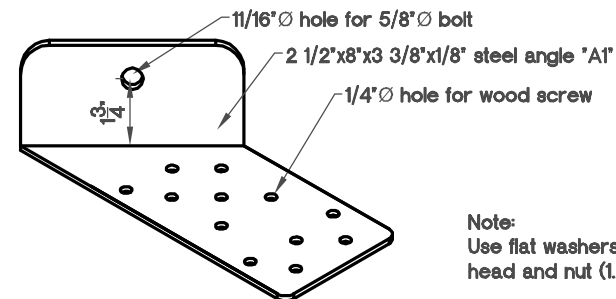
Detail D-D/7
Option 2

NTS



Detail E-E/7

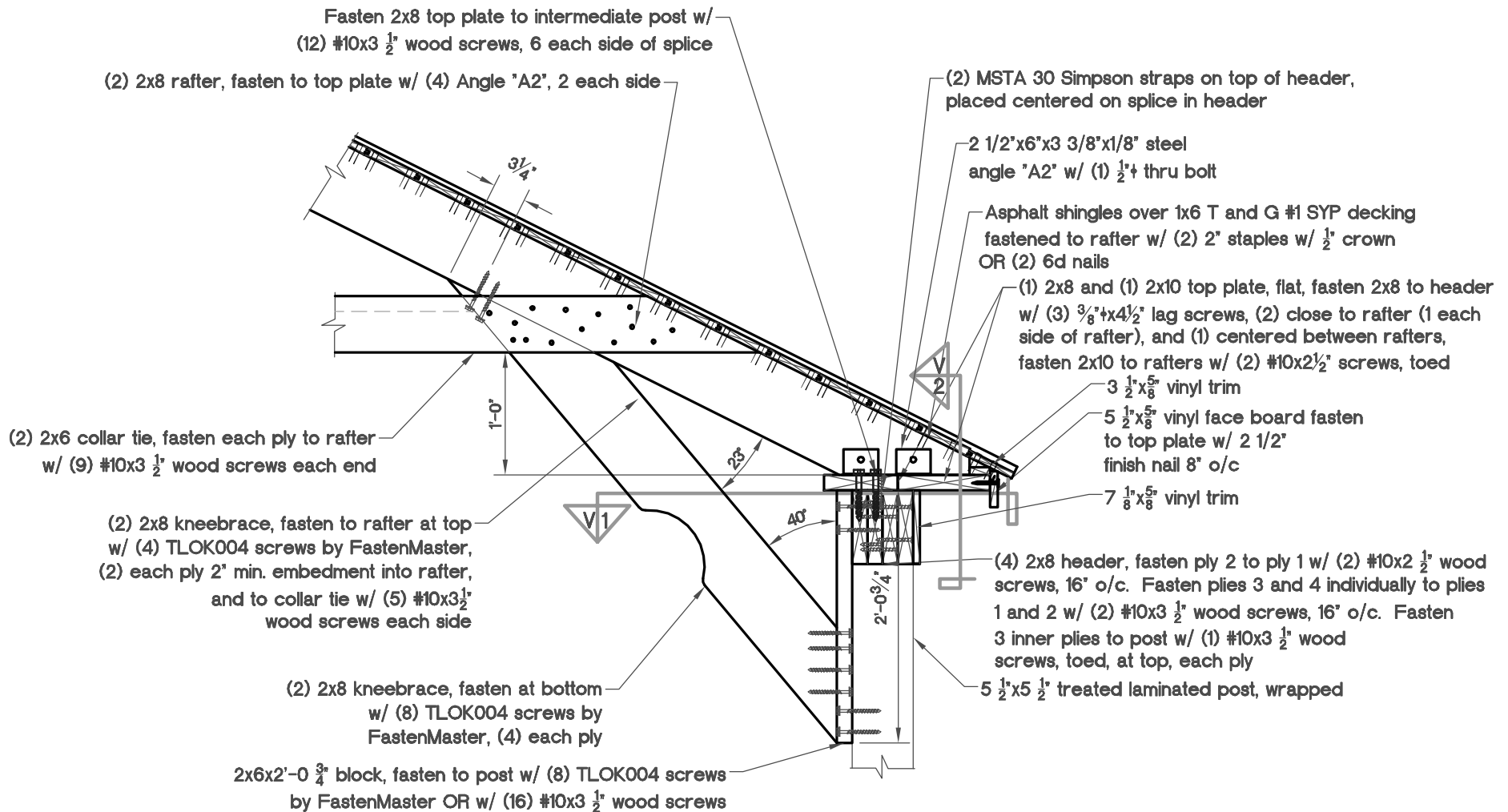
NTS



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

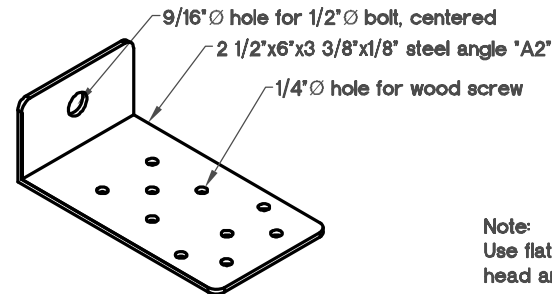
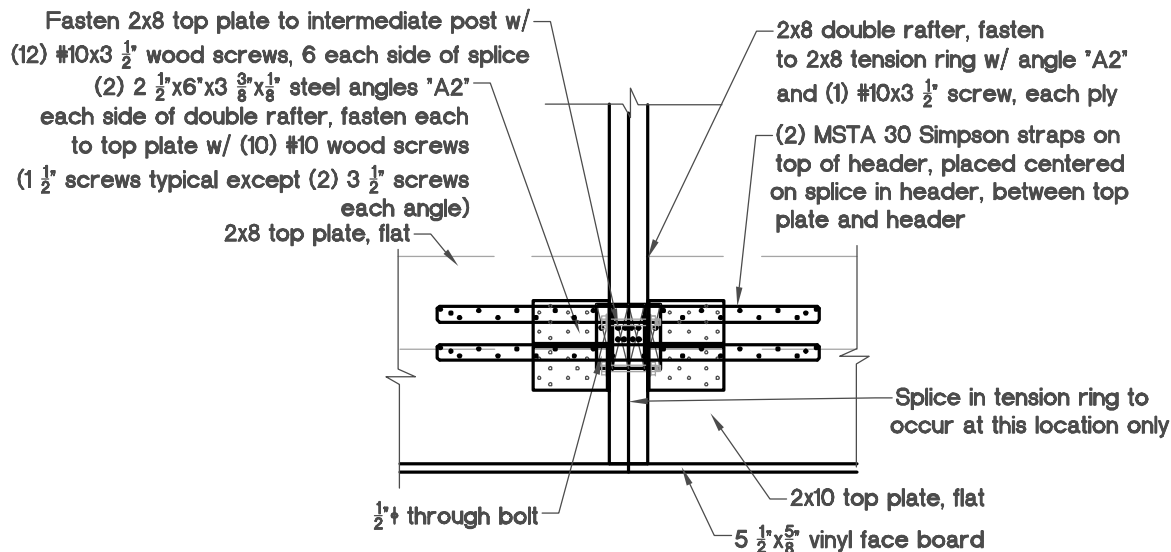
Angle "A1"

NTS



Detail F-F/8
Center Double Rafter

NTS



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

Angle "A2"

NTS

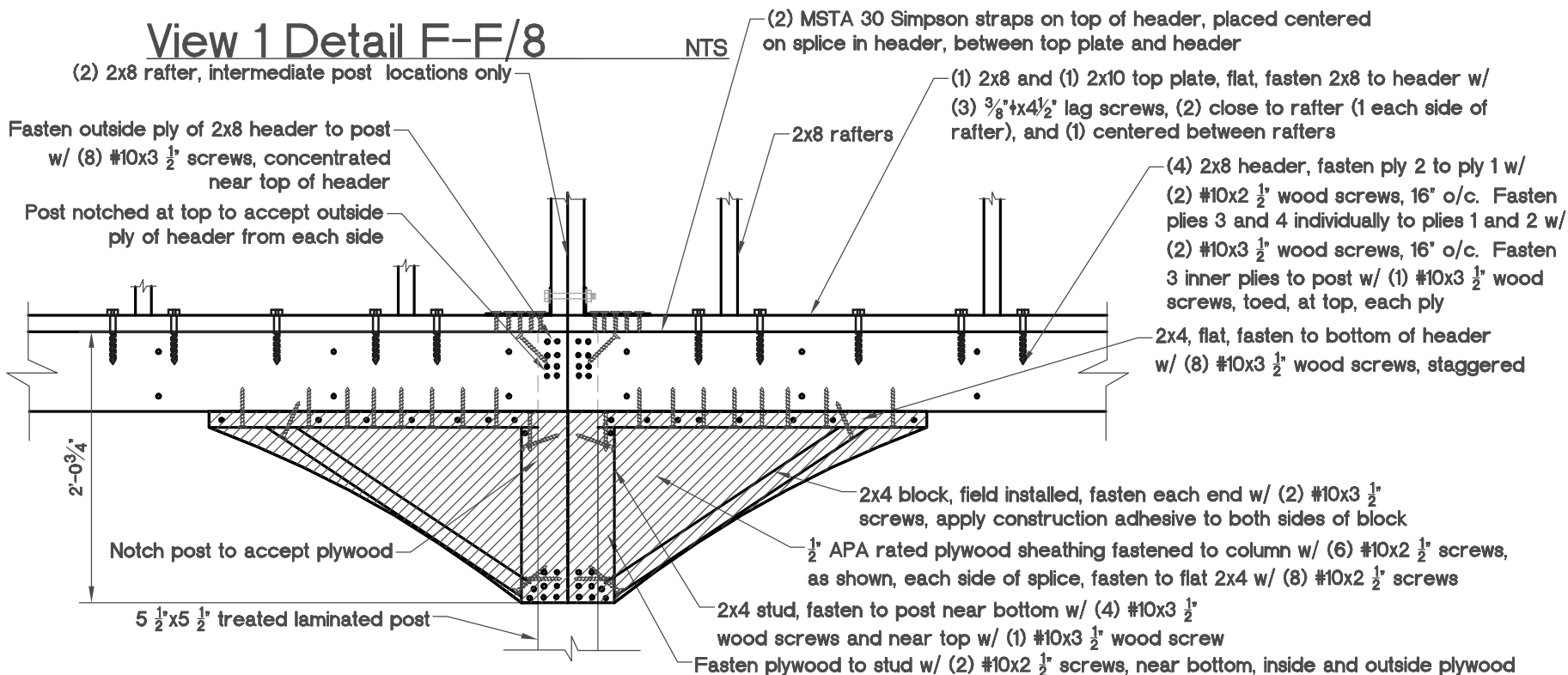
View 1 Detail F-F/8

(2) 2x8 rafter, intermediate post locations only

NTS

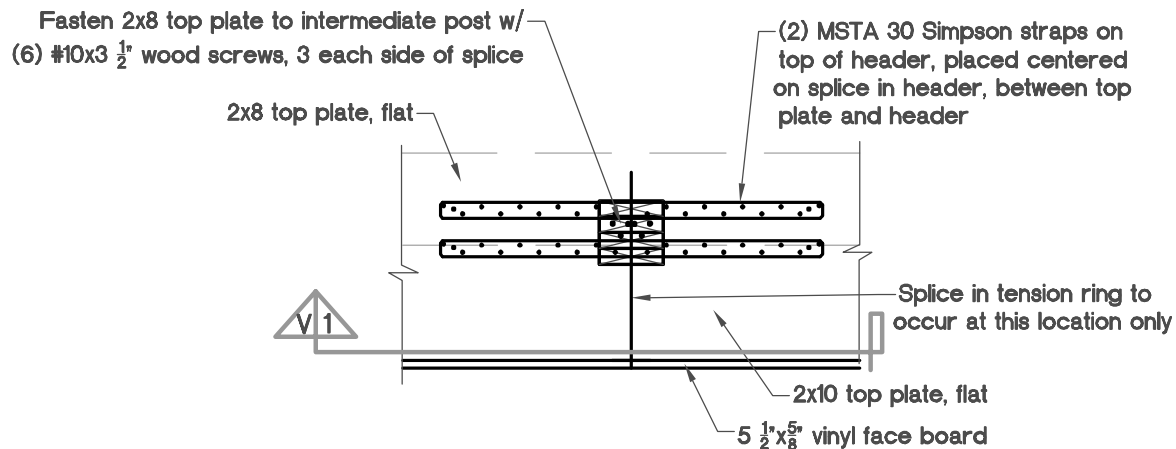
Fasten outside ply of 2x8 header to post w/ (8) #10x3 1/2" screws, concentrated near top of header

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



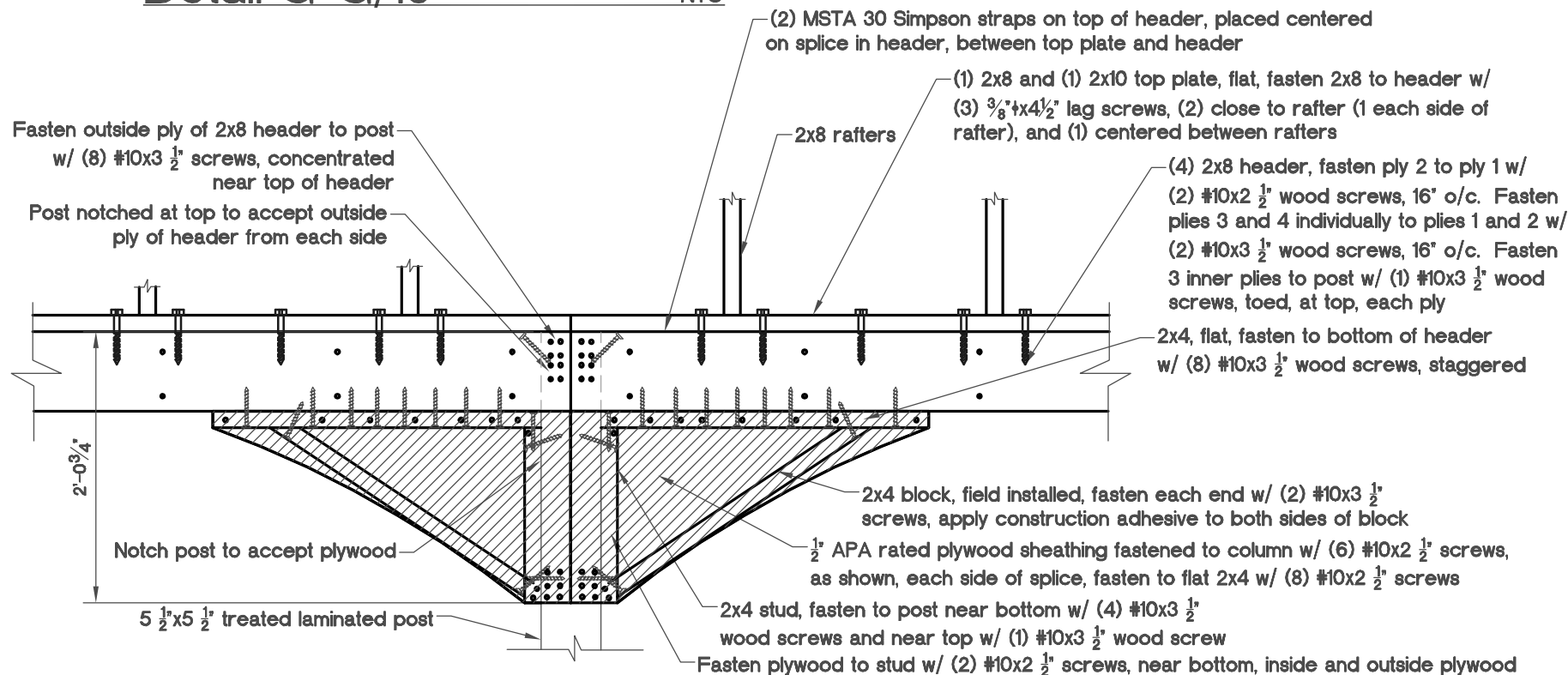
View 2 Detail F-F/8

NTS



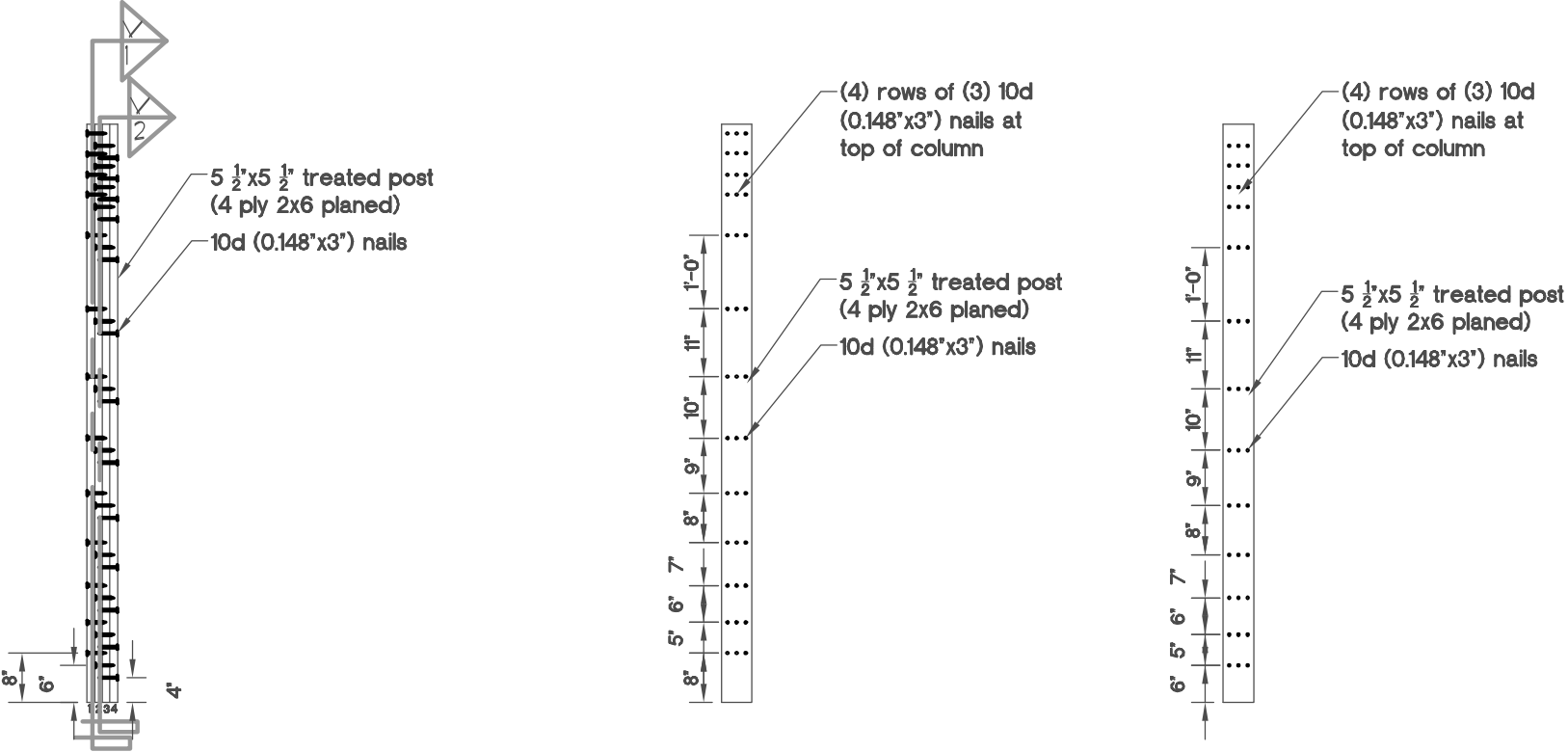
Detail G-G/10

NTS



View 1 Detail G-G/10

NTS



Nail-Laminated Post

NTS

View 1

NTS

View 2

NTS

Nailing Detail

Nailing Detail for Ply 2 to Ply 3

Nailing Detail for Ply 1 to Ply 2