

# 16'x24' Rectangle PVC 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

- 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) 30 psf
  - B. Floor n/a psf
  - C. Other n/a psf
- 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
- 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
- Earthquake Design Data:  
(Analysis based on equivalent lateral force procedure)
  - A. Spectral Response Acceleration at 1 sec, S 0.15
  - B. Spectral Response Acceleration at short periods, S 0.30
  - 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

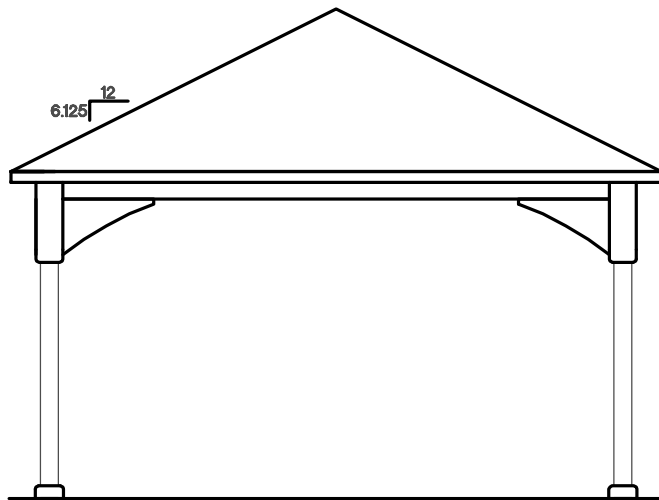
### ABBREVIATIONS:

|        |        |                        |
|--------|--------|------------------------|
| 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.    | psl    | pounds per square inch |
| ga.    | req'd. | required               |
| hdw.   | s.s.   | stainless steel        |
| hdr.   | stl.   | steel                  |
| jst.   | thk.   | thick                  |
| kai    | trd.   | treated                |
| lbs.   | typ.   | typical                |
| max.   | w/     | with                   |
|        | mfr.   | manufacturer           |

### WOOD

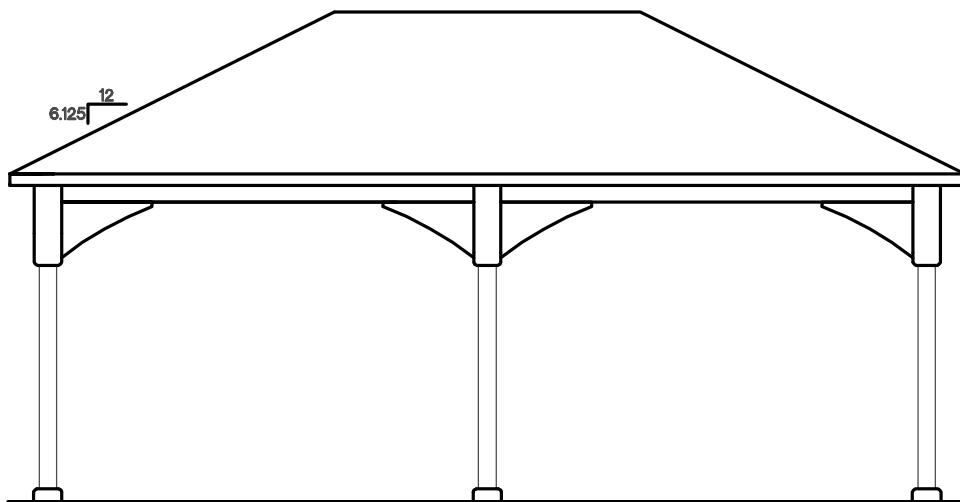
- General Requirements
    - A. Structural wood members and connections shall be of sufficient size or capacity to carry all design loads without exceeding the allowable design values specified in 'The National Design specification for Wood Construction' (NDS), 2005 edition, and its 'Supplement' by the 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.
      - Field treat newly exposed wood where cutting, drilling or notching pressure treated lumber.
      - 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.
- Polyvinyl Chloride Compound (PVC)**
- General Requirements
    - A. PVC sleeve material used to wrap wood members to be supplied according to CertainTeed 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              | 4400 lb-ft. |
| Max. uplift at column base         | 2200 lb     |
| Max. downward force at column base | 4625 lb     |
| Max. shear at column base          | 575 lb      |



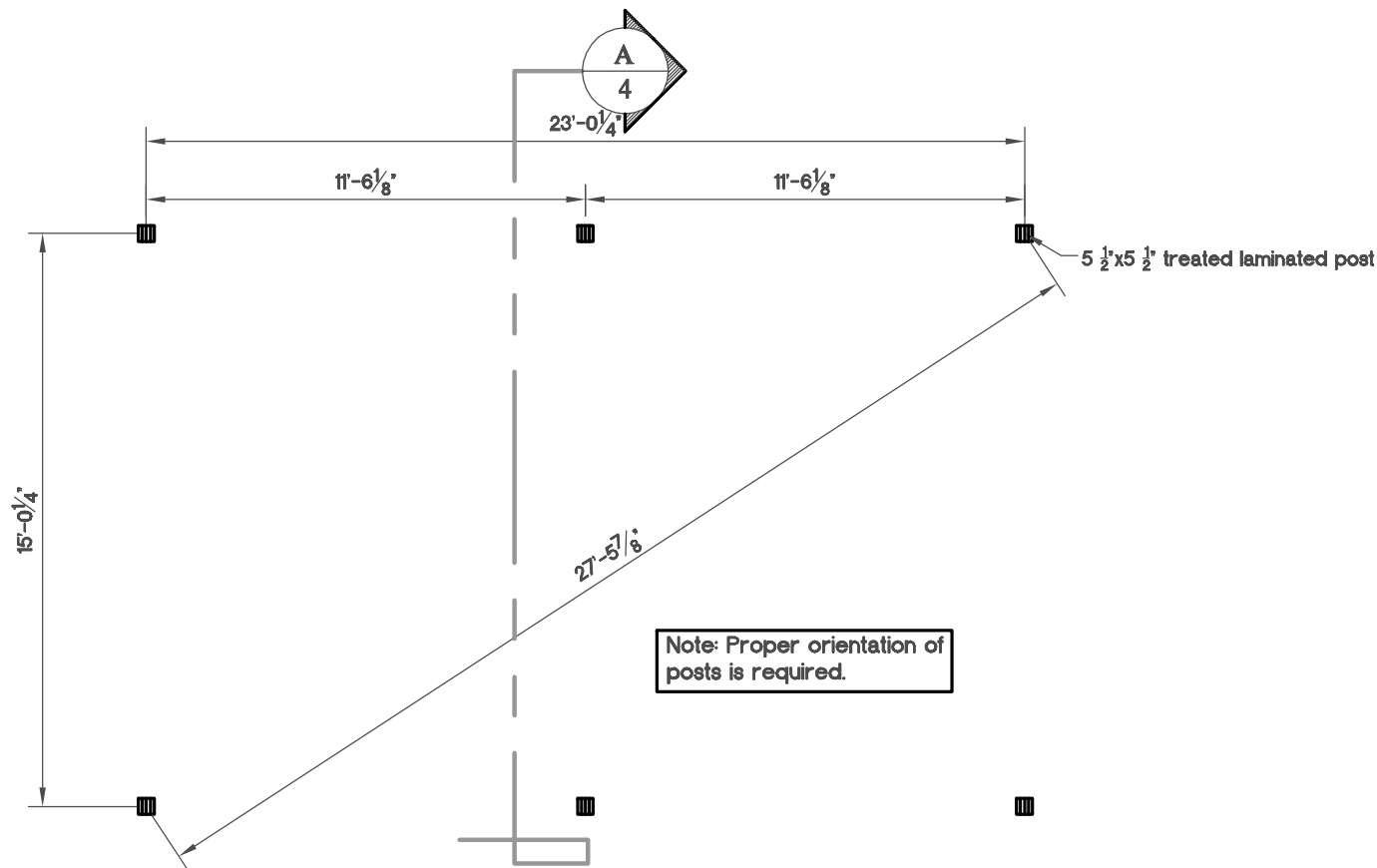
End Elevation

NTS



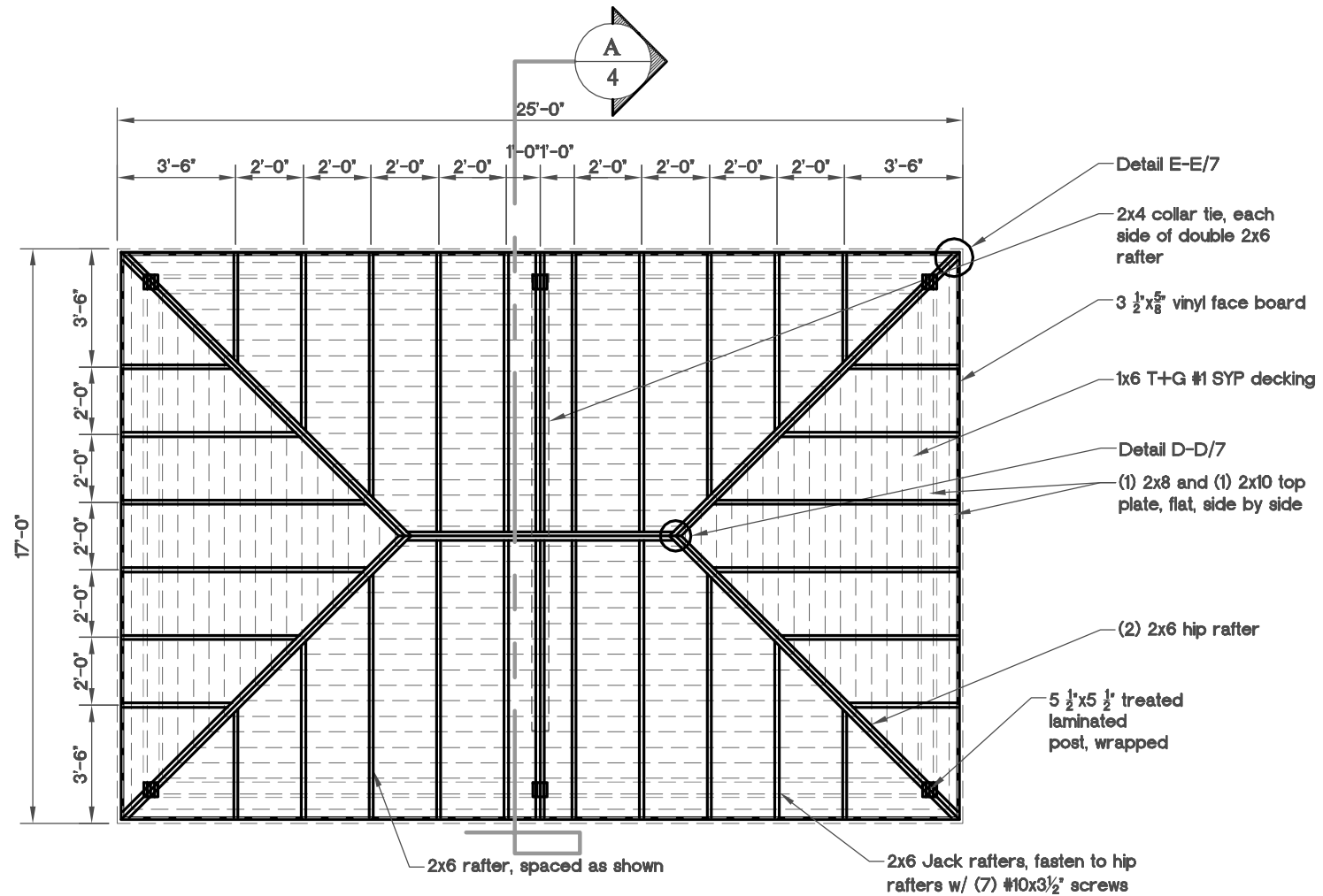
Side Elevation

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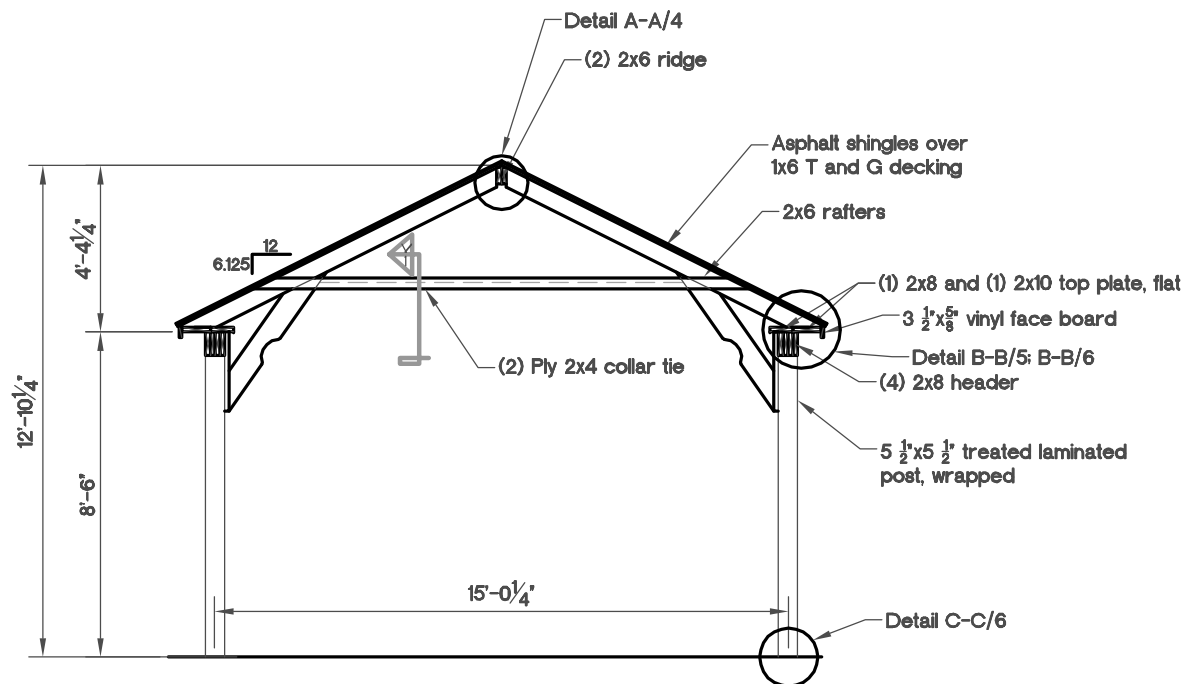
Post Layout Plan

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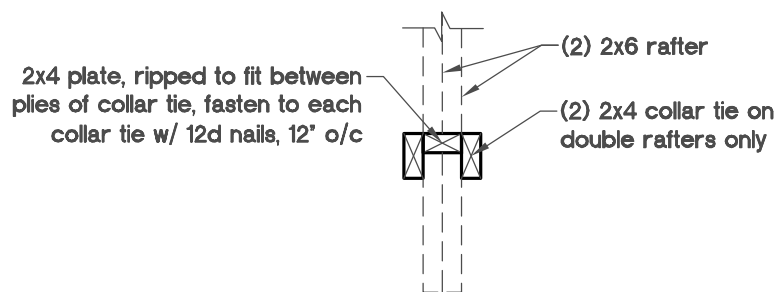
## Roof Framing Plan

NTS



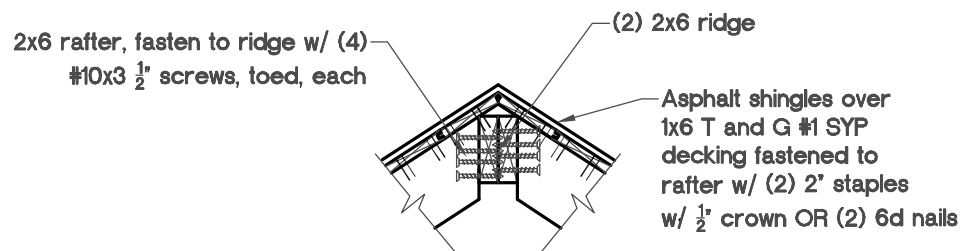
Cross Section A/4

NTS

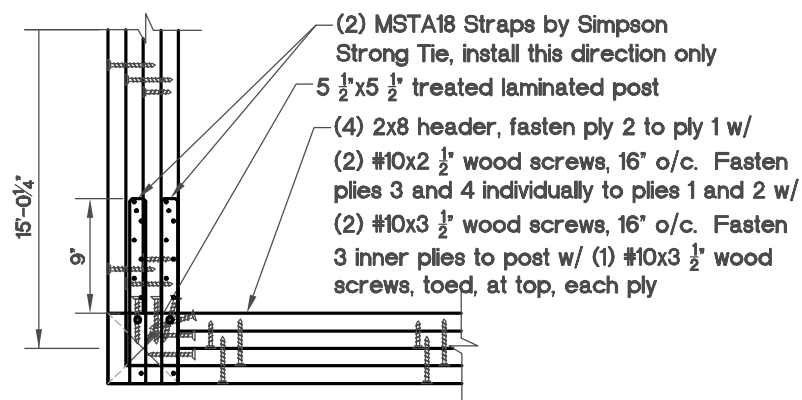
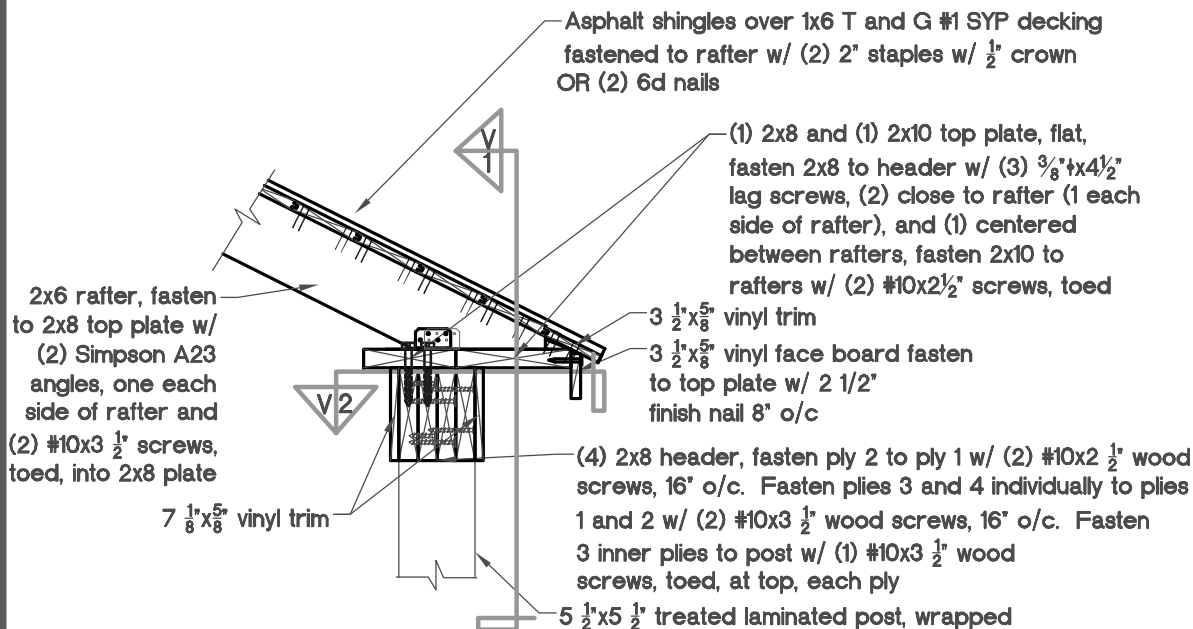


View 1 Cross Section A/4

NTS

Detail A-A/4  
Typical Single Rafter

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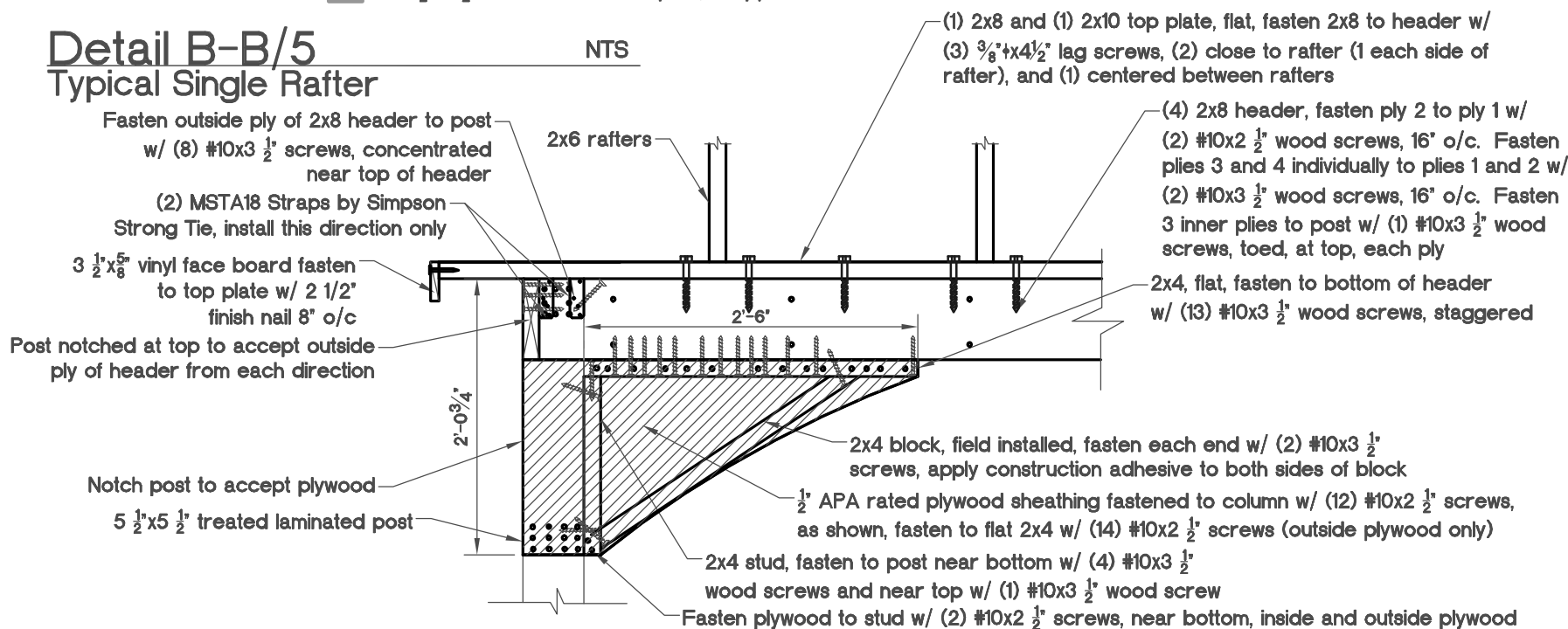


View 2 Detail B-B/5

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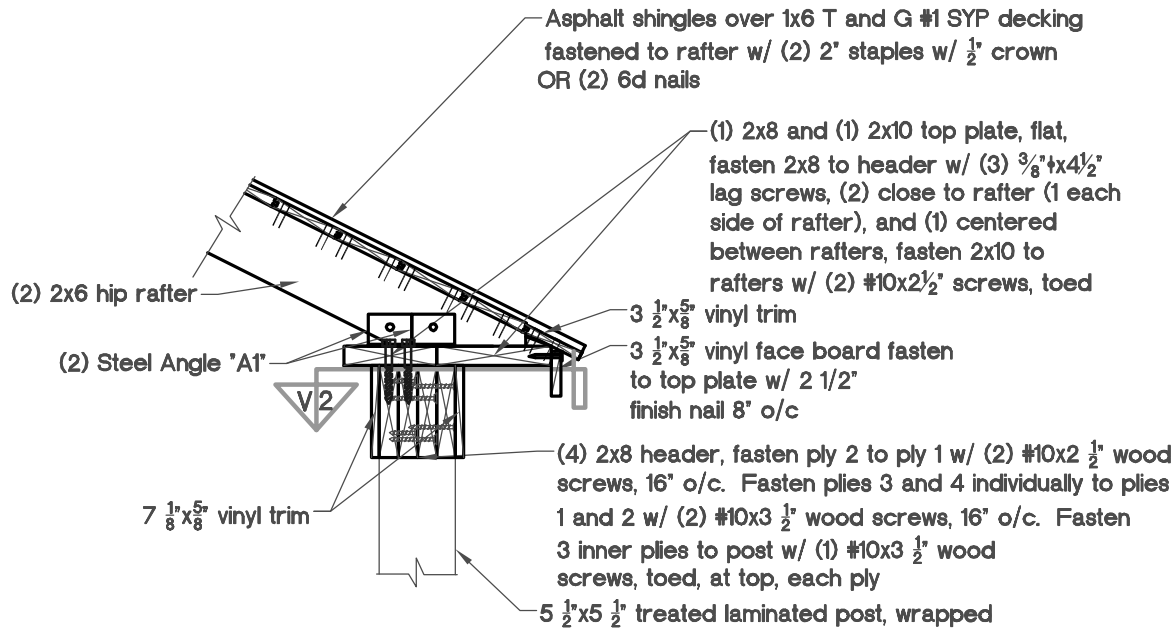
Detail B-B/5  
Typical Single Rafter

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View 1 Detail B-B/5

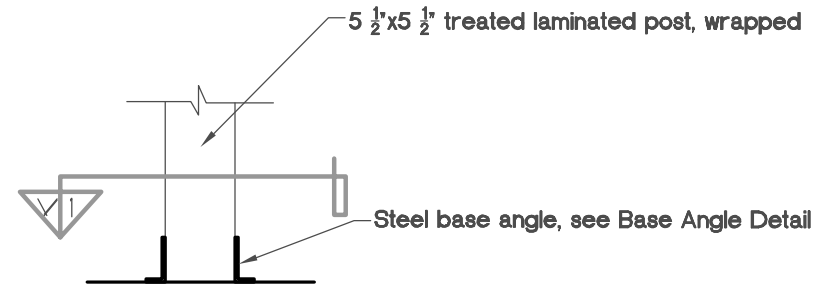
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Detail B-B/6

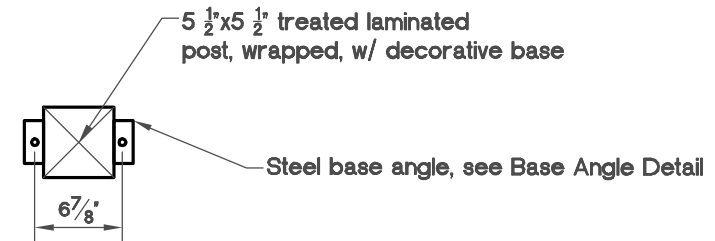
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Hip Rafter Connection



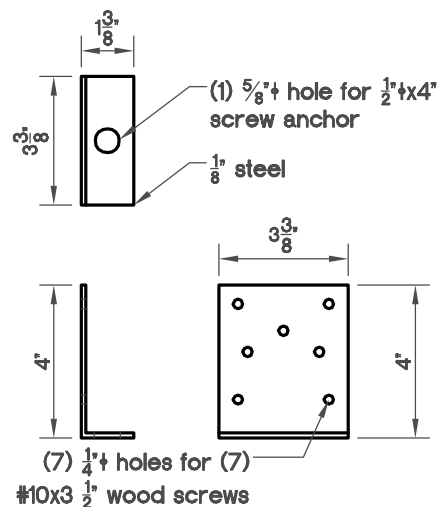
Detail C-C/6

NTS



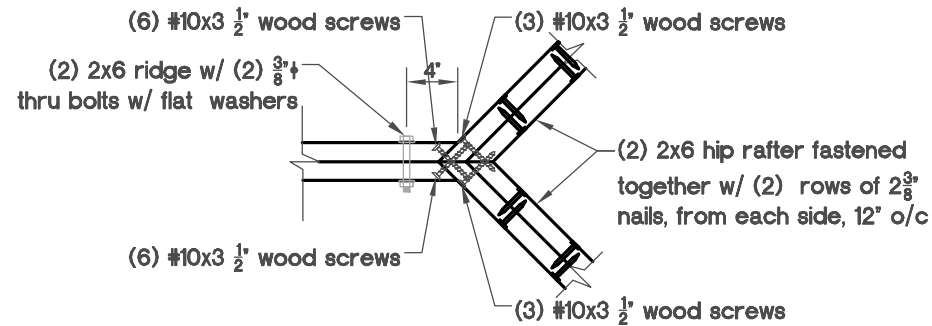
View 1 Detail C-C/6

NTS



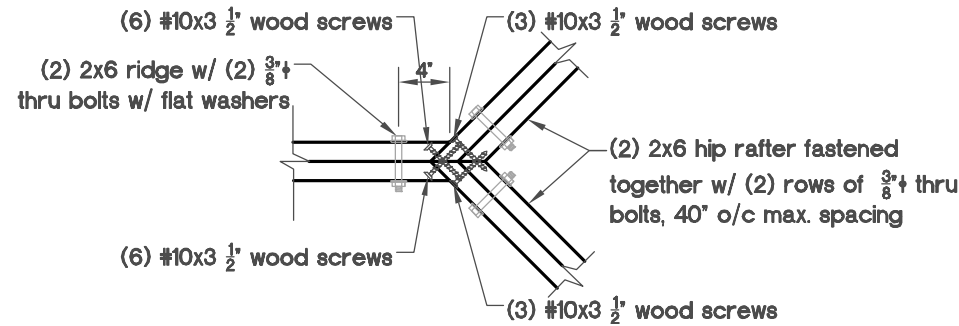
Base Angle Detail

NTS



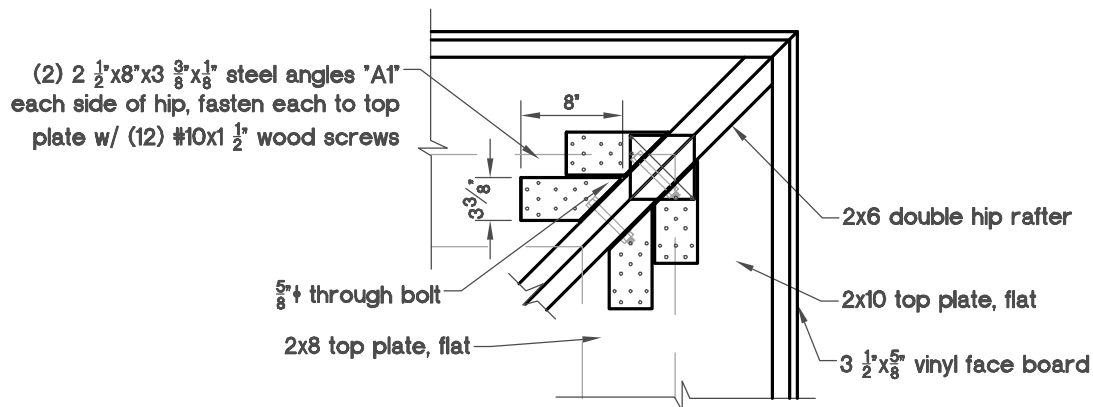
**Detail D-D/7**  
Option 1

NTS



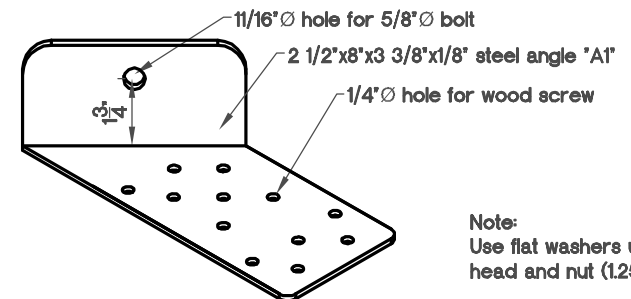
**Detail D-D/7**  
Option 2

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**Detail E-E/7**

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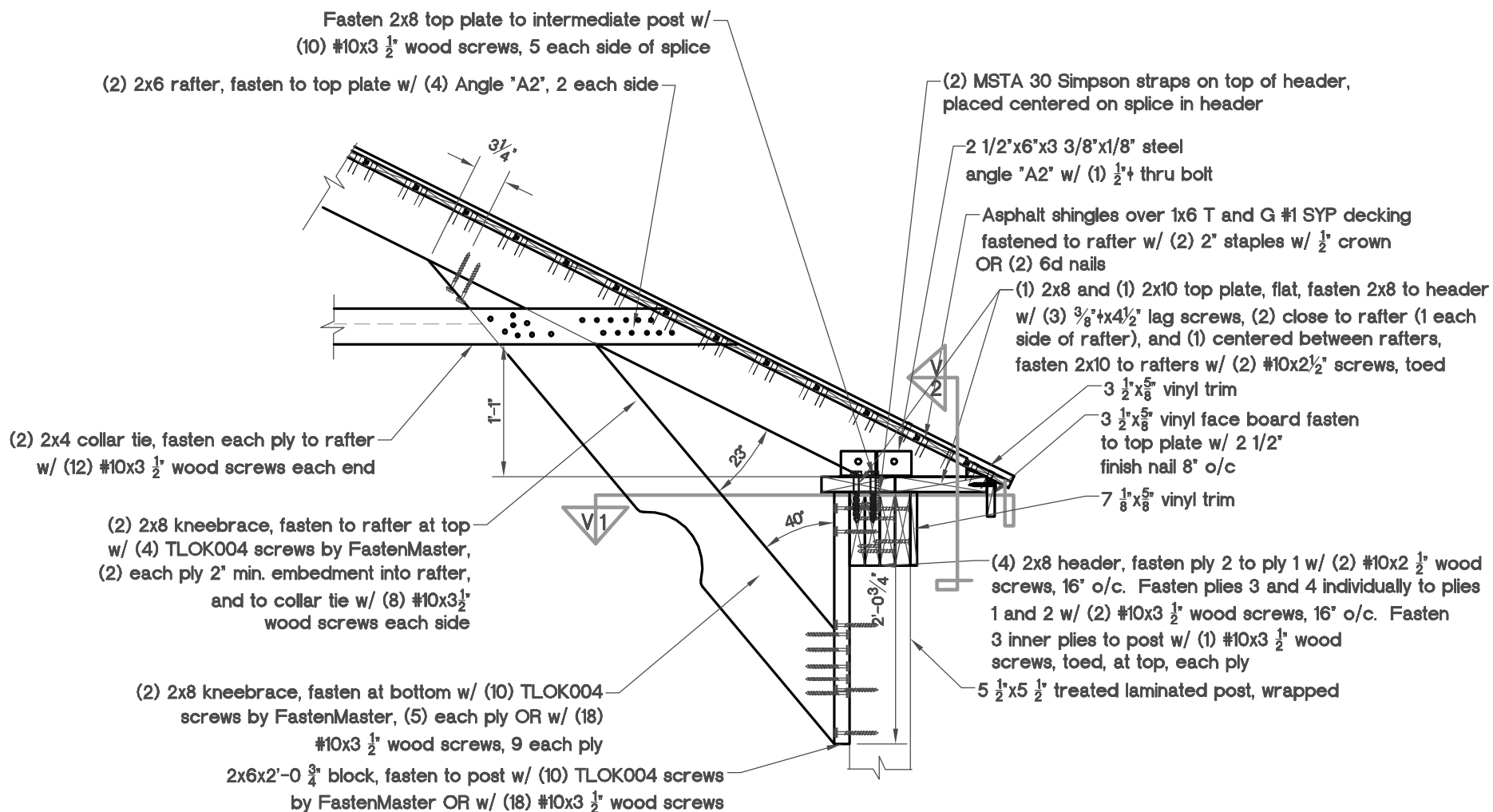


Note:  
Use flat washers under bolt head and nut (1.25" O.D. min.)

**Angle "A1"**

NTS





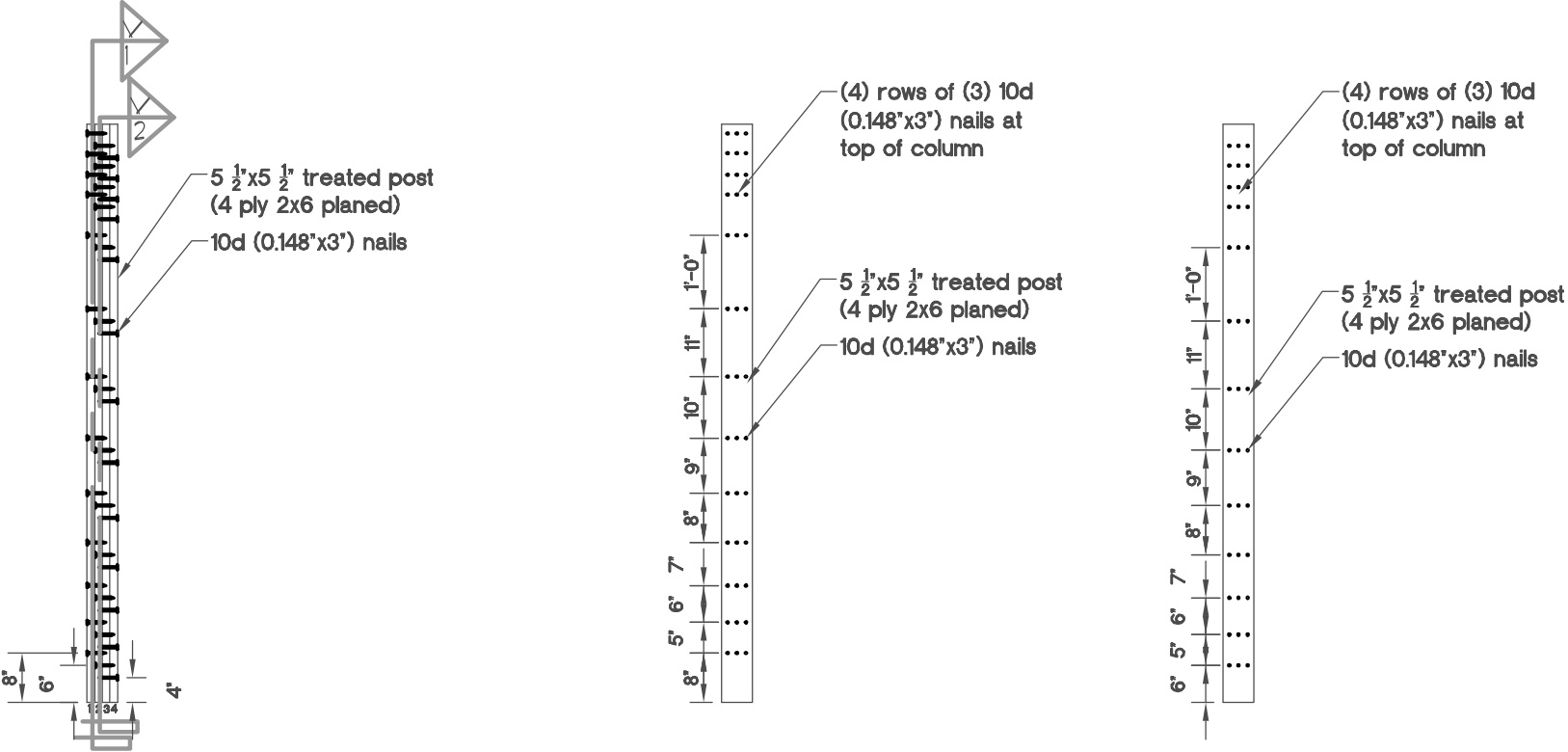
**Detail F-F/8**  
Center Double Rafter

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NTS

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