

# 12'x16' Rectangle Vinyl Gazebo

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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 psf   |
| B. Floor | 10 psf  |
| C. Other | n/a psf |
3. Live Loads:
 

|                            |          |
|----------------------------|----------|
| A. Roof (See also note #4) | 40.3 psf |
| B. Floor                   | 40 psf   |
| C. Other                   | n/a psf  |
4. Snow Loads:
 

|                                    |          |
|------------------------------------|----------|
| A. Ground Snow (Pg)                | 60 psf   |
| B. Flat Roof Snow (Pf)             | 40.3 psf |
| C. Snow Exposure Factor (Ce)       | 10       |
| D. Snow Load Importance Factor (I) | 0.8      |
| E. Unbalanced Snow                 |          |
| I. Windward Roof                   | 0 psf    |
| II. Leeward Roof                   | 48 psf   |
5. Wind Load
 

|                                    |                 |
|------------------------------------|-----------------|
| A. Basic Wind Speed (V)            | 146 mph (H-MHZ) |
| B. Wind Load Importance Factor (I) | .77             |
| C. Wind Exposure Category          | C               |
| D. Enclosure Category              | Open            |
| E. Components and Cladding:        | +60 psf/-80 psf |
6. Earthquake Design Data:  
(Analysis based on equivalent lateral force procedure)
 

|   |                                  |
|---|----------------------------------|
| A. Spectral Response Acceleration at 1 sec, S         | 0.355                            |
| B. Spectral Response Acceleration at short periods, S | 0.547                            |
| C. Seismic Use Group                                  | 1                                |
| D. Occupancy Importance Factor, I                     | 1.0                              |
| E. Site Class   | D                                |
| F. Seismic Design Category                            | D                                |
| G. Basic Structural System                            | Canilevered Column: Timber Frame |
| H. Response Modification Factor (R)                   | 1.5                              |
| I. Deflection Amplification Factor (Cd)               | 1.5                              |

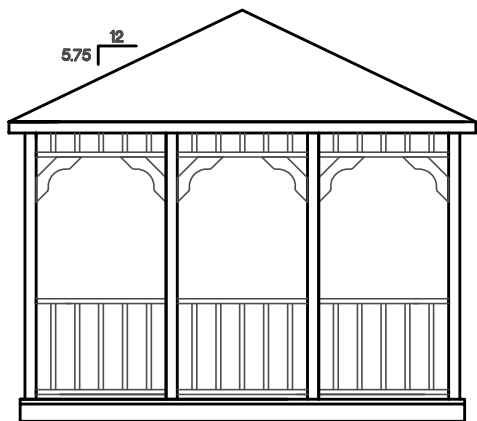
### ALTERNATIVE ROOFING:

The 1x6 T and G #1 SYP decking and asphalt shingles may be replaced by 1x4 purlins @ 8" o/c and 24" long cedar shakes in areas of up to 60 psf ground snow load and 120 mph wind (wind speed subject to local jurisdiction approval).

### WOOD

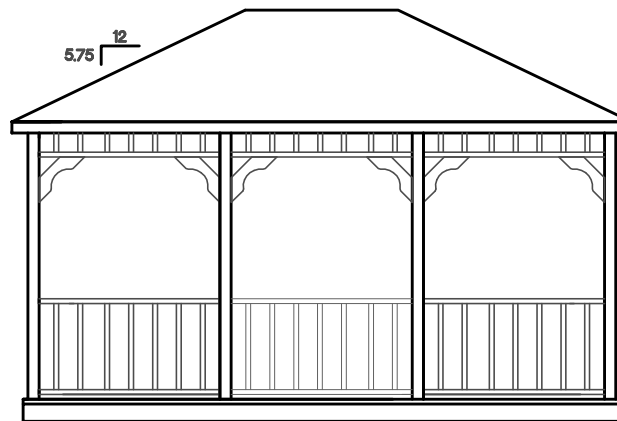
1. General Requirements
    - A. Structural wood members and connections shall be of sufficient size or capacity to carry all design loads without exceeding the allowable design values specified in "The National Design specification for Wood Construction" (NDS), 2005 edition, and its "Supplement" by 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. Structural glued laminated timber shall conform with the "American National Standard Specification for Structural Glued Laminated Timber ANSI/AITC 117-2004.
    - 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 Protection Association (AWPA) standards for use category 3B (above ground exposed).
    - 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. 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.
    - E. Field treat newly exposed wood where cutting, drilling or notching pressure treated lumber.
    - F. All bolts used in double rafters shall be stainless steel or hot-dipped galvanized as per ASTM A153-01a. All other metal fasteners used in treated wood shall be stainless steel, hot-dip galvanized as per ASTM A153-01a, or other coating approved by fastener manufacturer for use in treated wood.
  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.
    - C. Angles, plates, and other miscellaneous connection material to be ASTM A-36 with a minimum yield strength of 36,000 psi, unless noted otherwise.
- ### Vinyl
1. General Requirements
    - A. Vinyl sleeve material used to wrap wood members to be supplied according to Certainteed corporation specifications or equivalent.
    - B. Vinyl sleeve material to be 0.160" thick for posts and 0.105" thick for other structural members
    - C. Plastic lumber to be Perma-Poly by Renew Plastics or equivalent.

| Design Reaction Chart   |           |
|---|-----------|
| Max. uplift at column base  | 700 lbs   |
| Max. downward force at column base  | 1600lbs * |
| Max. shear at column base   | 150 lbs   |
| * Reactions from floor loading not included. Floor framing members are assumed to be continuously supported by a concrete or gravel pad or other support structure. |           |



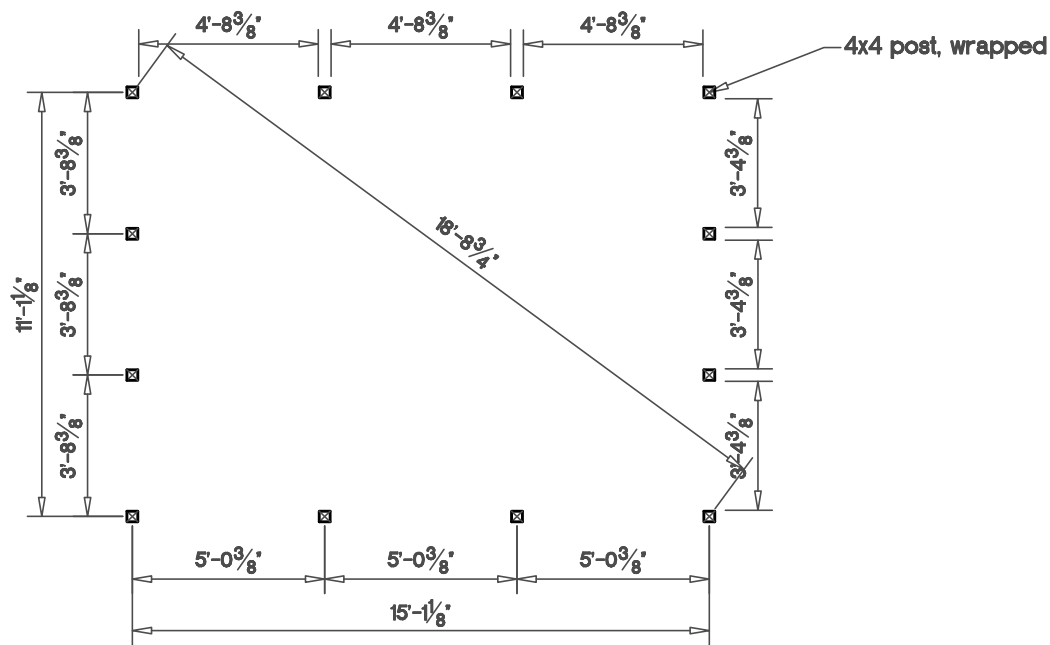
Side Elevation

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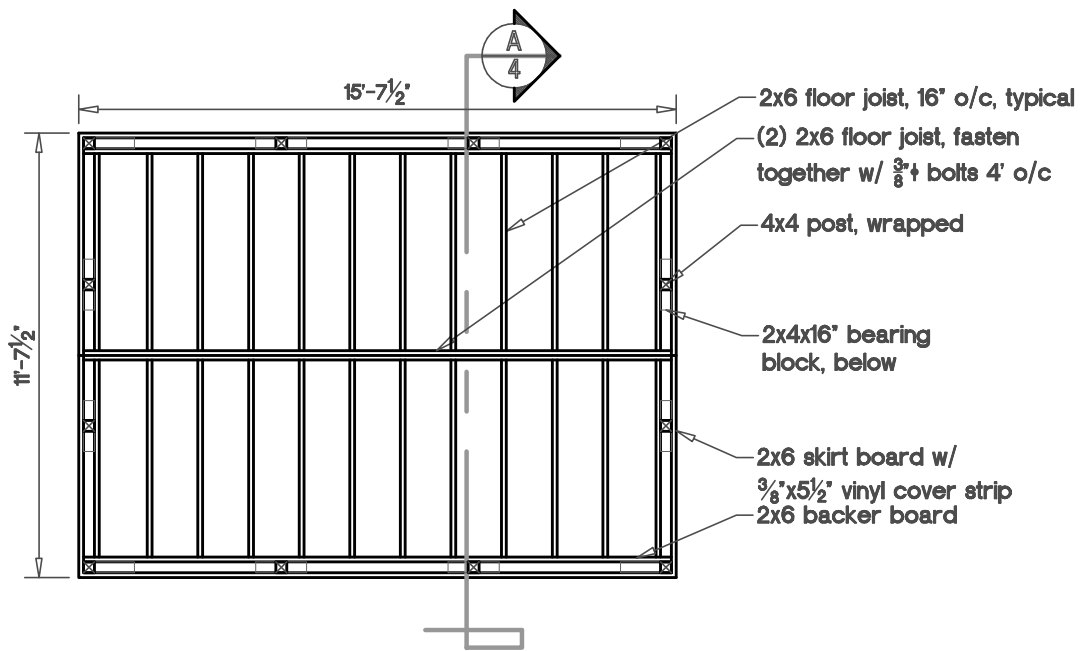
Front Elevation

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Post Layout Plan

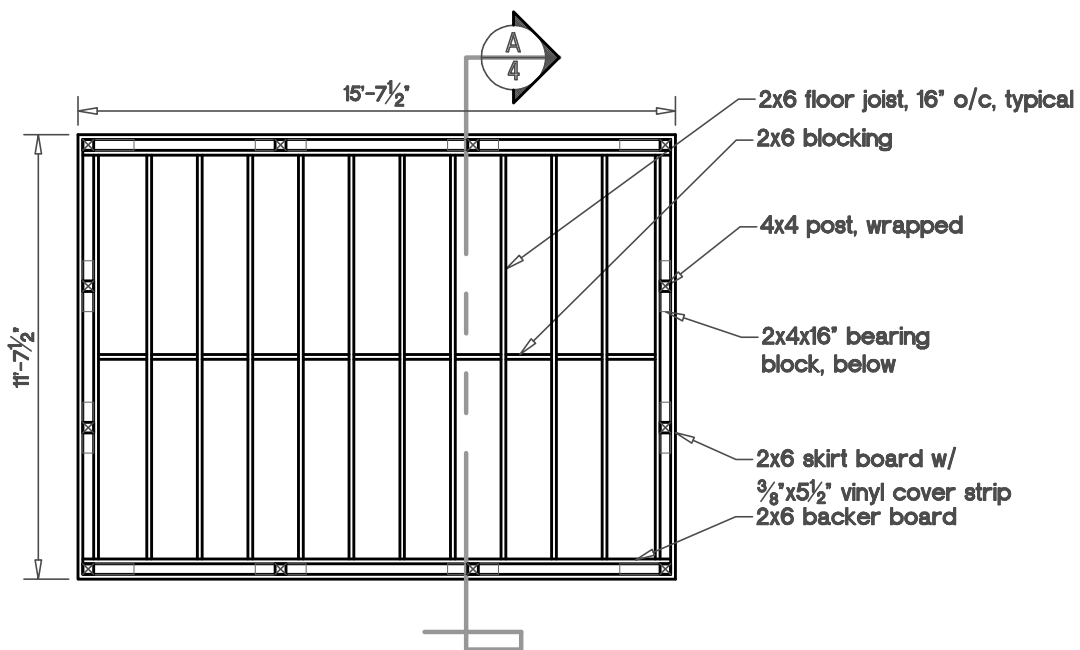
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# Floor Framing Plan

Kit Unit

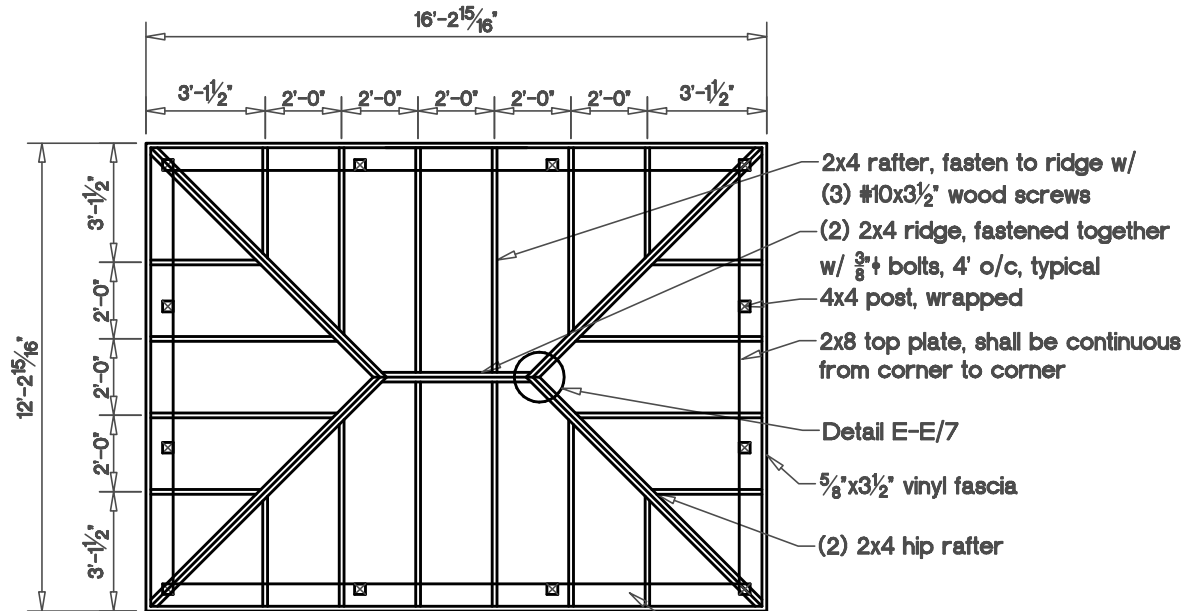
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# Floor Framing Plan

Fully Assembled Unit

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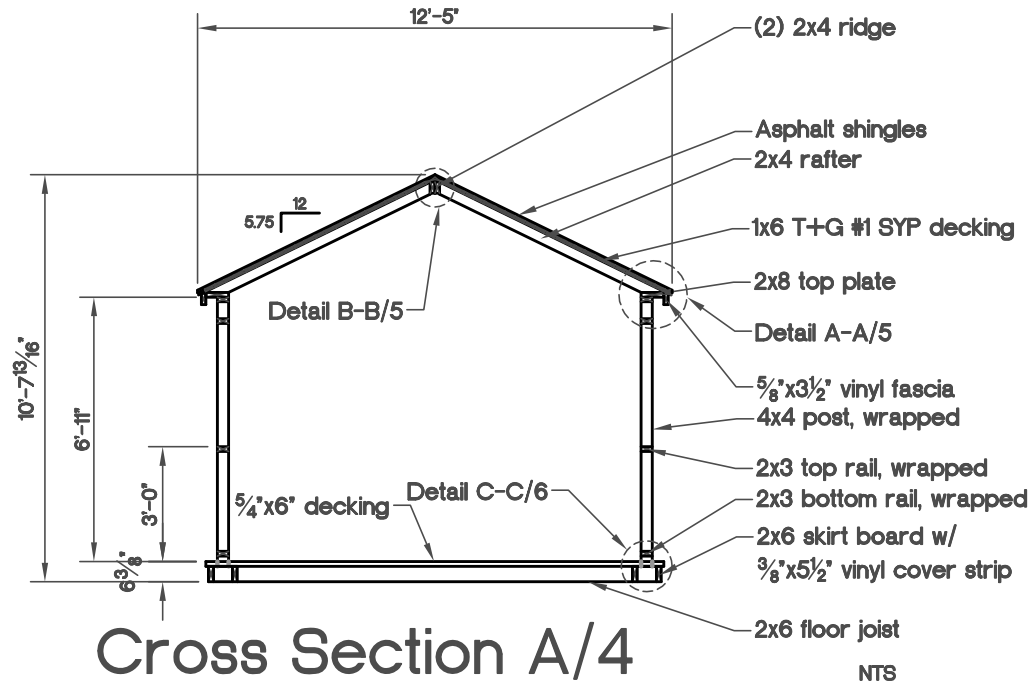


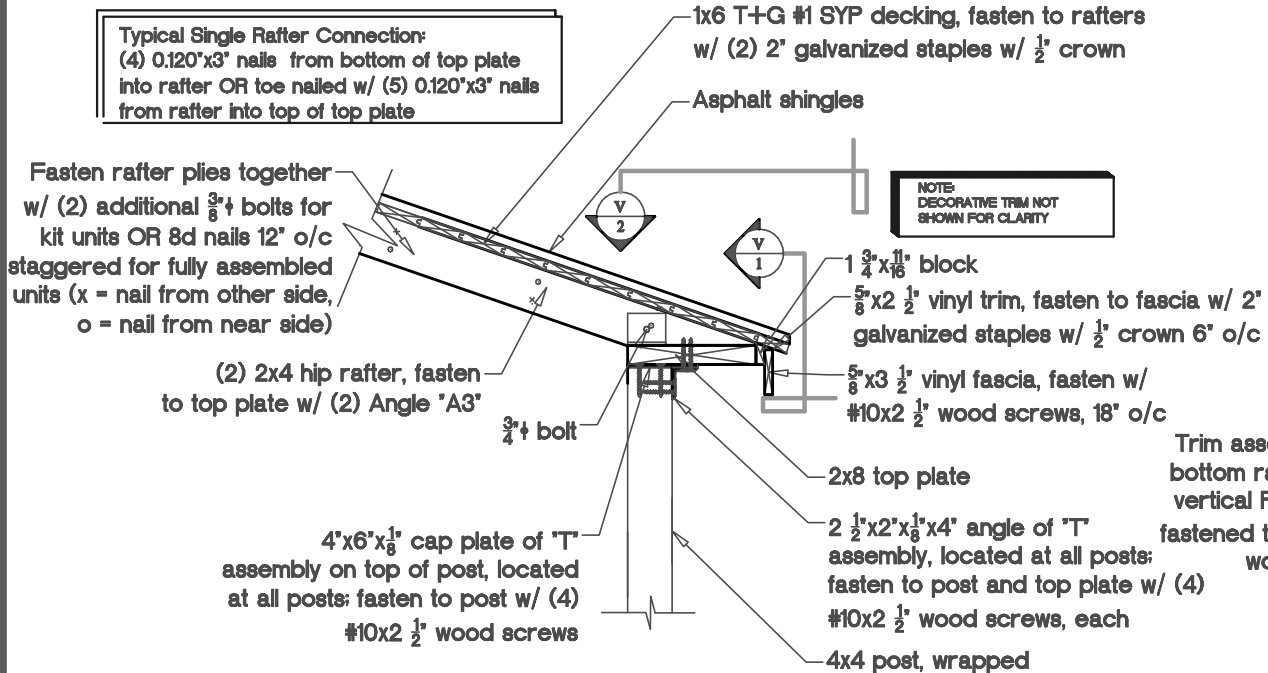
- 2x4 rafter, fasten to ridge w/  
(3) #10x3 1/2" wood screws
- (2) 2x4 ridge, fastened together  
w/ 3/8" + bolts, 4' o/c, typical
- 4x4 post, wrapped
- 2x8 top plate, shall be continuous  
from corner to corner
- Detail E-E/7
- 5/8" x 3 1/2" vinyl fascia
- (2) 2x4 hip rafter

2x8 Top plate shall be  
spliced only at corners

# Roof Framing Plan

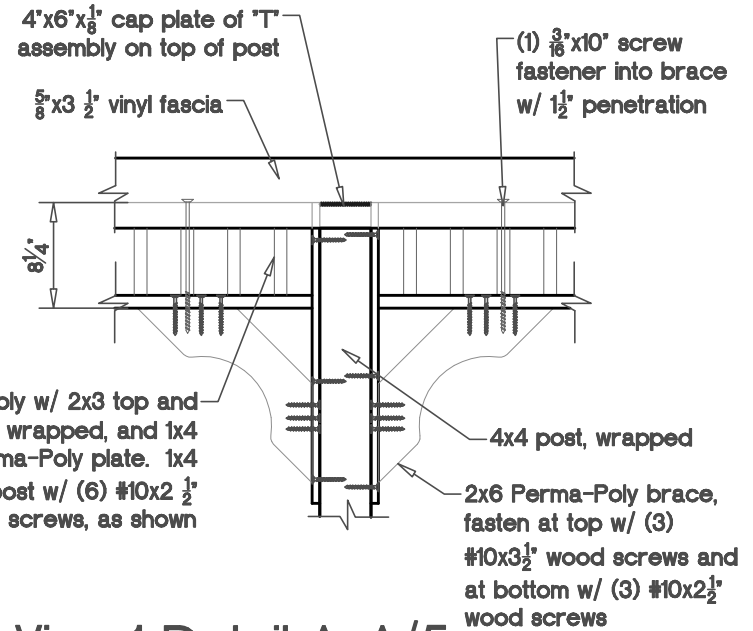
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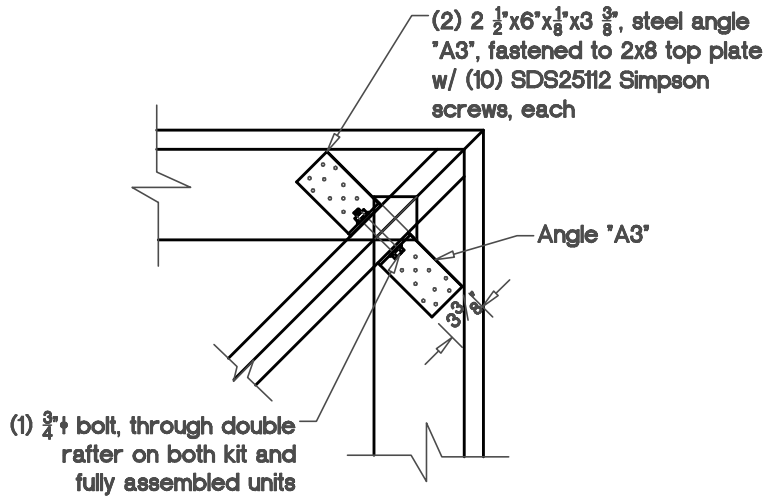
**Detail A-A/5**  
Typical Hip Rafter

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**View 1 Detail A-A/5**

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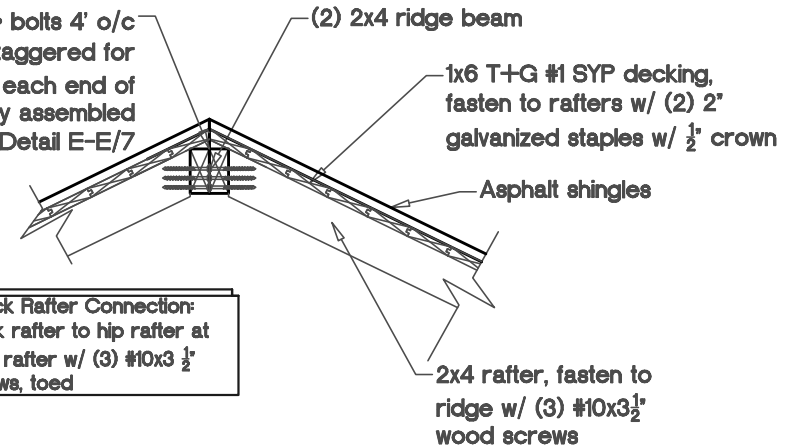


**View 2 Detail A-A/5**

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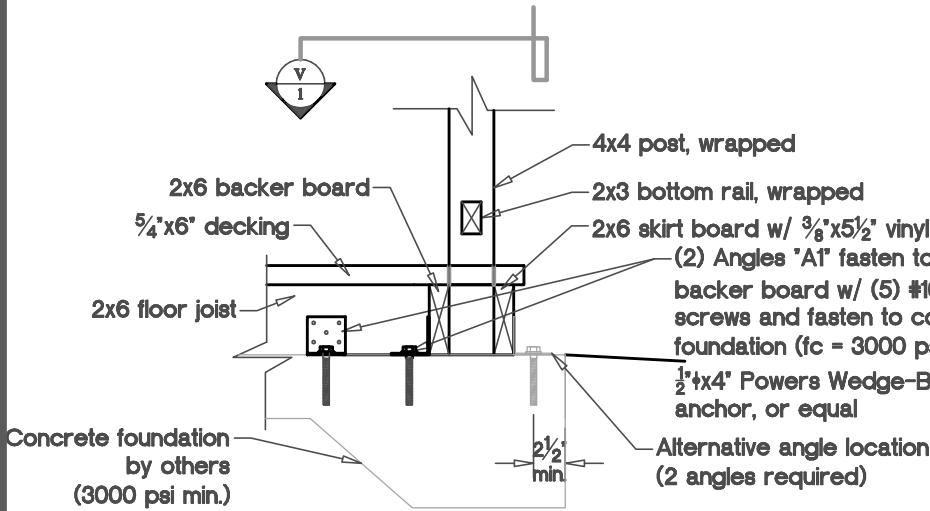
Fasten ridge plies together w/  $\frac{3}{8}$ " bolts 4" o/c for kit units OR 8d nails 12" o/c staggered for fully assembled units; (1)  $\frac{3}{8}$ " bolt each end of ridge beam on both kit and fully assembled units, see Detail E-E/7

**Typical Jack Rafter Connection:**  
Fasten jack rafter to hip rafter at top of jack rafter w/ (3) #10x3  $\frac{1}{2}$ " wood screws, toed



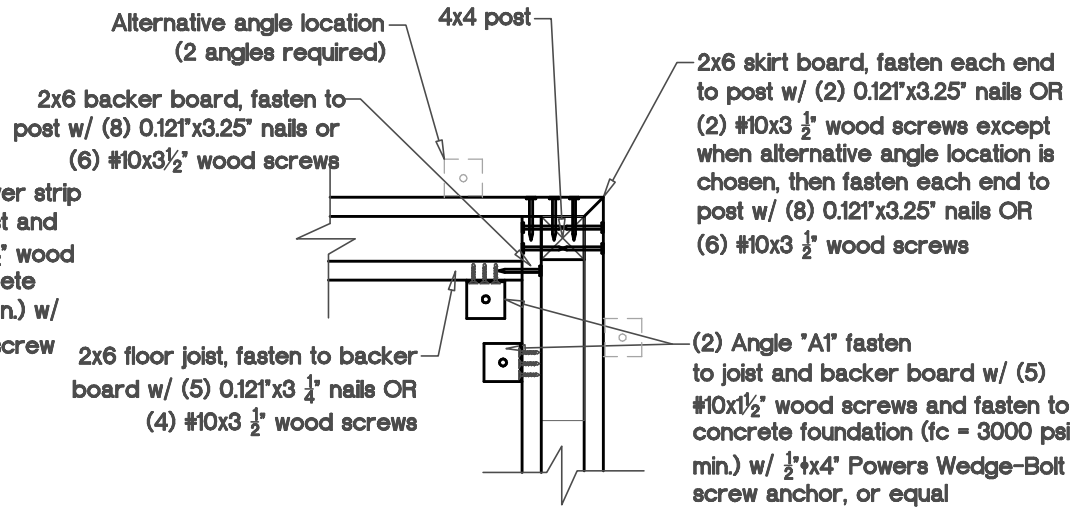
**Detail B-B/5**

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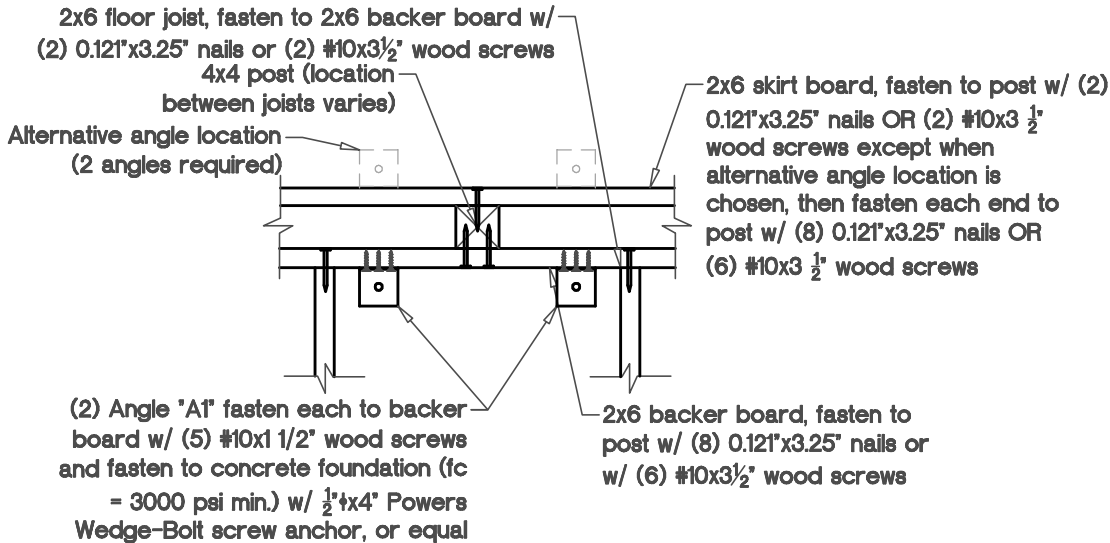
**Detail C-C/6**  
Corner Posts

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**View 1 Detail C-C/6**  
Corner Posts

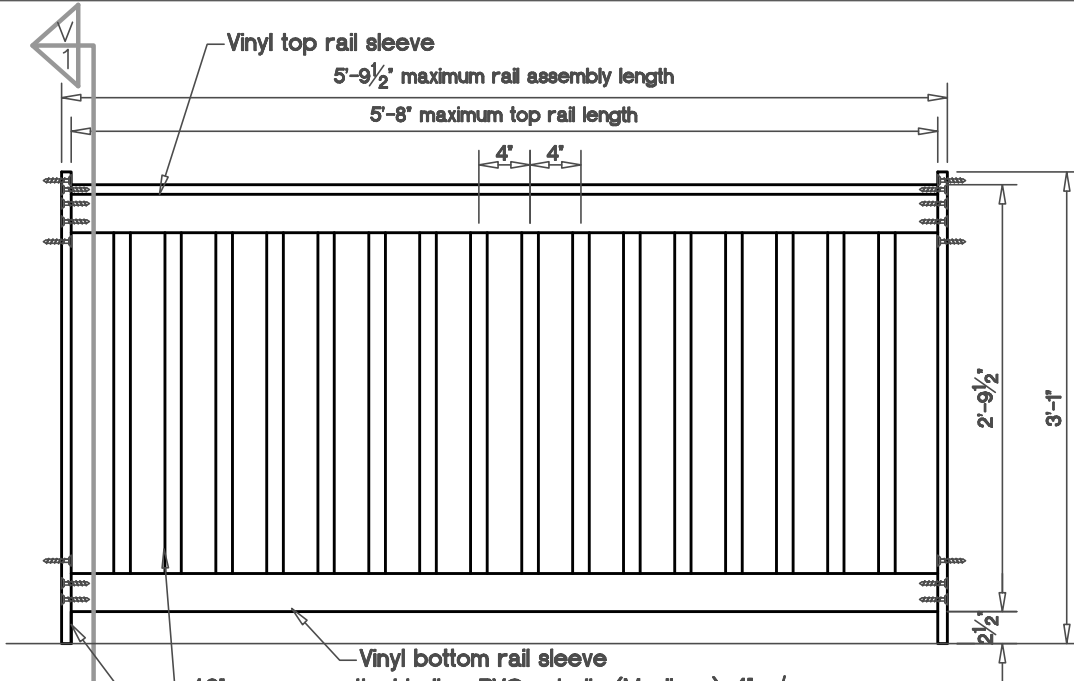
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**Detail D-D/6**  
Sidewall Posts

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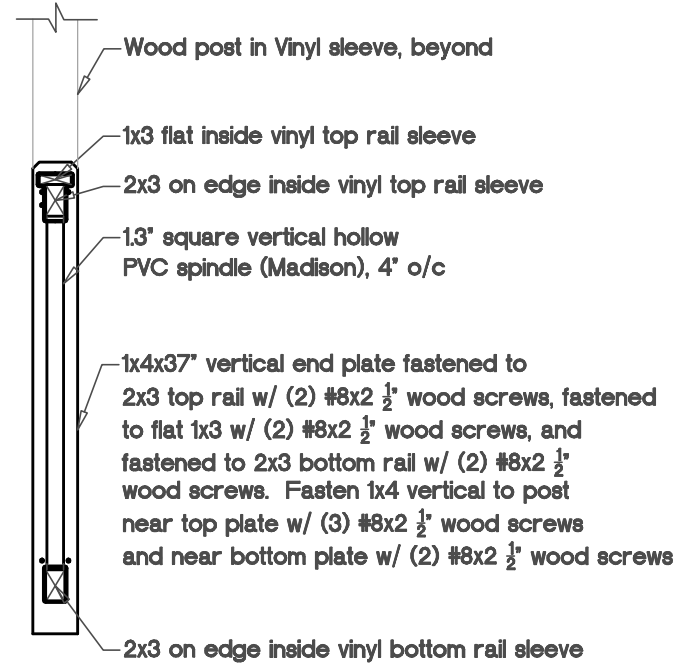




Vinyl top rail sleeve  
5'-9 $\frac{1}{2}$ ' maximum rail assembly length  
5'-8" maximum top rail length  
4" 4"  
2'-9 $\frac{1}{2}$ "  
3'-1"  
2 $\frac{1}{2}$ "  
Vinyl bottom rail sleeve  
1.3" square vertical hollow PVC spindle (Madison), 4" o/c  
1x4x37" vertical end plate fastened to 2x3 top rail w/ (2) #8x2  $\frac{1}{2}$ " wood screws, fastened to flat 1x3 w/ (2) #8x2  $\frac{1}{2}$ " wood screws, and fastened to 2x3 bottom rail w/ (2) #8x2  $\frac{1}{2}$ " wood screws. Fasten 1x4 vertical to post near top plate w/ (3) #8x2  $\frac{1}{2}$ " wood screws and near bottom plate w/ (2) #8x2  $\frac{1}{2}$ " wood screws

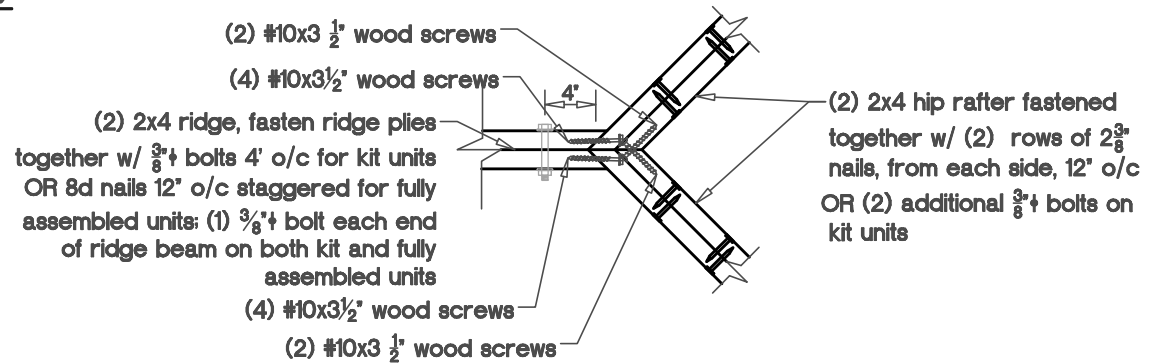
## Hand Rail Elevation

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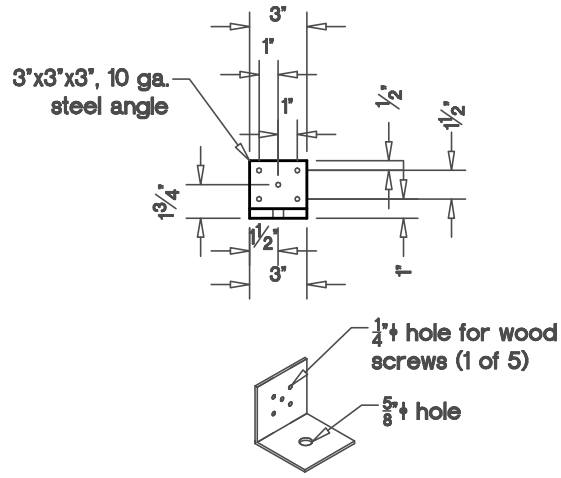
## View 1 Hand Rail Elevation

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## Detail E-E/7

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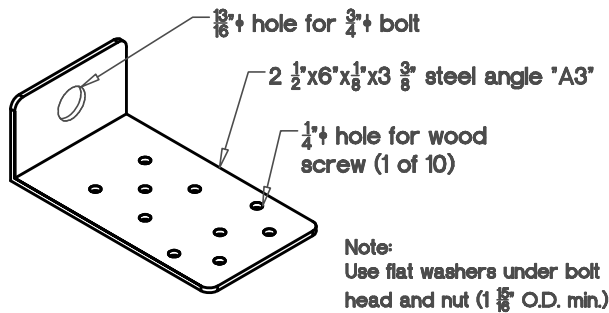
THIS DETAIL  
NUMBER IS  
NOT USED

Angle "A2"

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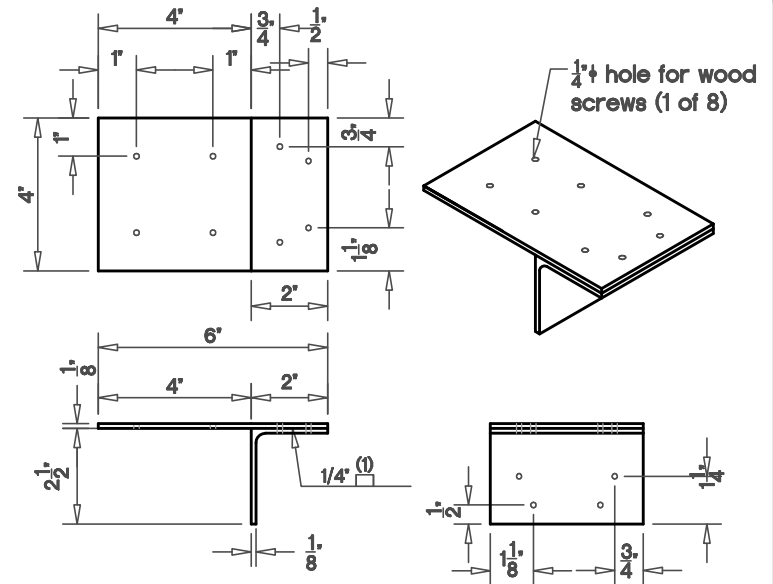
Angle "A1"

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Angle "A3"

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"T" Assembly

NTS