20'x28' Wood A-Frame Pavilion

Drawing Index

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 2018
   Risk Category II
2. Dead Loads:
   A. Roof 10 psf
   B. Floor n/a psf
   C. Other n/a psf
3. Live Loads:
   A. Roof (See also note #4) 38 psf
   B. Floor n/a psf
   C. Other n/a psf
4. Snow Loads:
   A. Ground Snow (Pg) 45 psf
   B. Flat Roof Snow (Pf) 38 psf
   C. Snow Exposure Factor (Ce) 1.0
   D. Snow Load Risk Factor (I) 1.0
   E. Unbalanced Snow
      i. Windward Roof 0 psf
      ii. Leeward Roof 45 psf
5. Wind Load (ASCE 7-10)
   A. Ultimate Wind Speed (V ult) 130 mph
   B. Wind Exposure Category C
   C. Enclosure Category Open
6. Earthquake Design Data:
   (Analysis based on equivalent lateral force procedure)
   A. Spectral Response Acceleration at 1 sec, S 0.11
   B. Spectral Response Acceleration at short periods, S 0.22
   C. Seismic Importance Factor, I 1.0
   D. Site Class D
   E. Seismic Design Category C
   F. Basic Structural System
      Cantilevered Column: Timber Frame
   G. Response Modification Factor (R) 1.5
   H. Deflection Amplification Factor (Cd) 1.5

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), and its "Supplement" by the American Wood Council (AWC).
   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. Heavy Timbers
   A. Structural solid sawn timbers shall be designed, fabricated and installed in accordance with the NDS by AWC.
   B Structural glued laminated soft wood timbers shall conform with the "American National Standard or Structural Glued Laminated Timber", (ANSI/AITC 190.1).
   C. Structural decking shall conform to the NDS.
   D. Glued laminated columns shall be manufactured with laminating combinations that will provide a minimum design value of 1,850 psi for compressive stress (Fc), and 2,200 psi for bending stress (Fb).
3. Dimension Lumber
   A. All lumber species, graded visually or mechanically, shall comply with the NDS by AWC, and the "American Softwood Lumber Standard" (PS 20) 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. Mechanically laminated columns shall conform with ANSI/ASAE EP 559.
4. 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.
5. Connections shall be designed and constructed according to the NDS by AWC and shall conform to the following:
   A. The minimum connection shall be two #10x3 $\frac{1}{2}$" wood screws, 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 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. uplift at column base	3000 lb
Max. downward force at column base	7500 lb
Max. shear at column base	1000 lb

TTE DRAWING NUMBER: E060-19

20'x28' Wood A-Frame Pavilion

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DESIGN REQUIREMENTS

1. Governing Code:
   Including, not limited to: IBC 2018
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2. Dead Loads:
   A. Roof 10 psf
   B. Floor n/a psf
   C. Other n/a psf
3. Live Loads:
   A. Roof (See also note #4) 20 psf
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   C. Other n/a psf
4. Snow Loads:
   A. Ground Snow (Pg) 20 psf
   B. Flat Roof Snow (Pf) 17 psf
   C. Snow Exposure Factor (Ce) 1.0
   D. Snow Load Risk Factor (I) 1.0
   E. Unbalanced Snow
      i. Windward Roof 0 psf
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5. Wind Load (ASCE 7-10)
   A. Ultimate Wind Speed (V ult) 170 mph
   B. Wind Exposure Category C
   C. Enclosure Category Open
6. Earthquake Design Data:
   (Analysis based on equivalent lateral force procedure)
   A. Spectral Response Acceleration at 1 sec, S 0.30
   B. Spectral Response Acceleration at short periods, S 0.41
   C. Seismic Importance Factor, I 1.0
   D. Site Class D
   E. Seismic Design Category D
   F. Basic Structural System
      Cantilevered Column: Timber Frame
   G. Response Modification Factor (R) 1.5
   H. Deflection Amplification Factor (Cd) 1.5

WOOD

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   D. Glued laminated columns shall be manufactured with laminating combinations that will provide a minimum design value of 1,850 psi for compressive stress (Fc), and 2,200 psi for bending stress (Fb).
3. Dimension Lumber
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   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.
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Design Reaction Chart	
Max. uplift at column base	3000 lb
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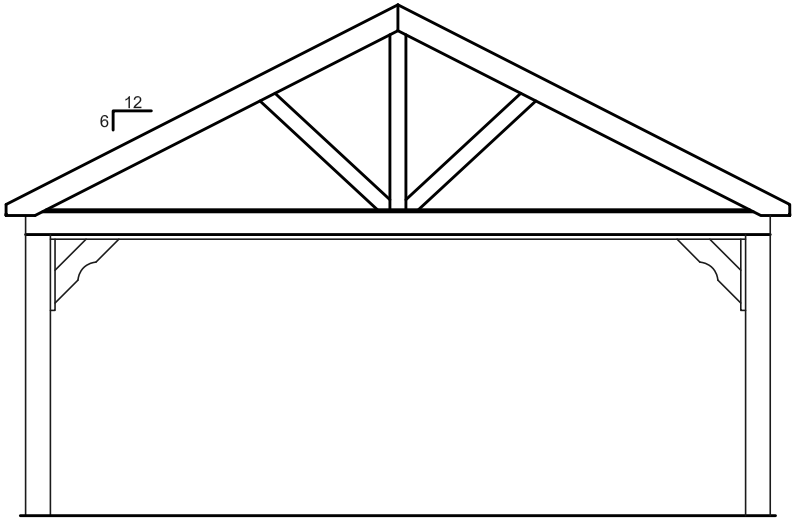
Max. shear at column base	1000 lb

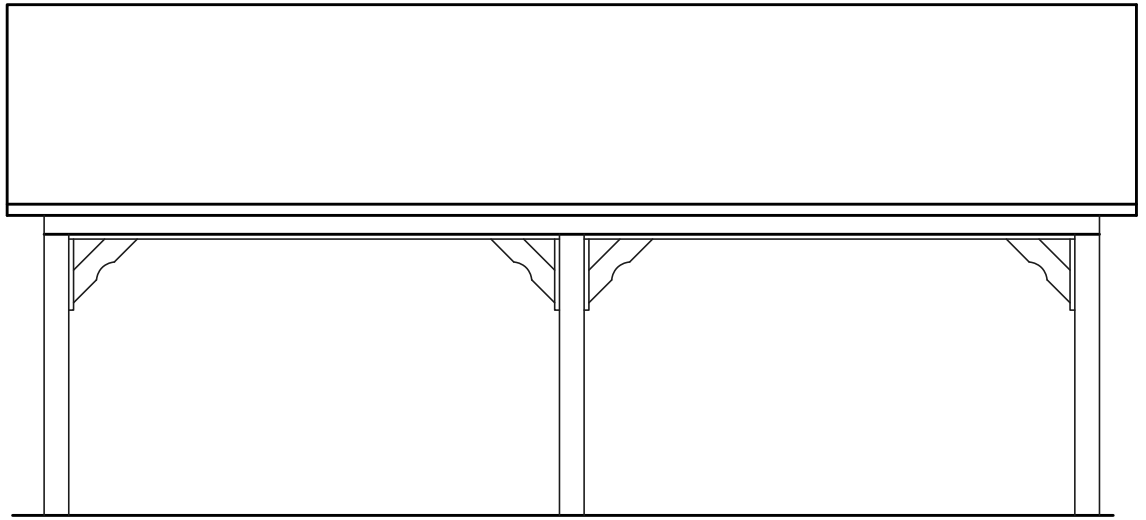
TTE DRAWING NUMBER: E060-19

PROJECT: STANDARD PLANS FOR 20'x28' WOOD A FRAME PAVILION



End Elevation

NTS



Side Elevation

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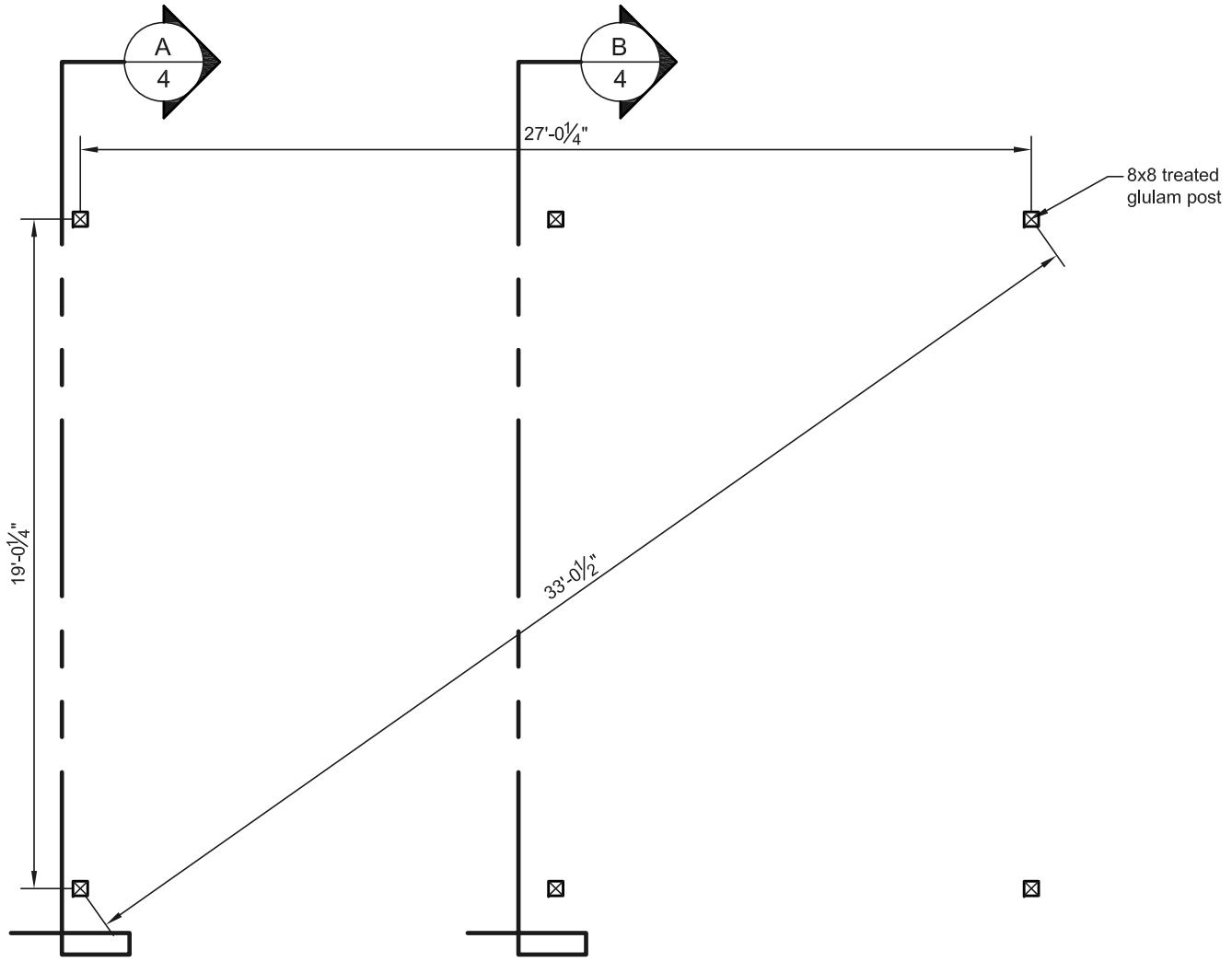
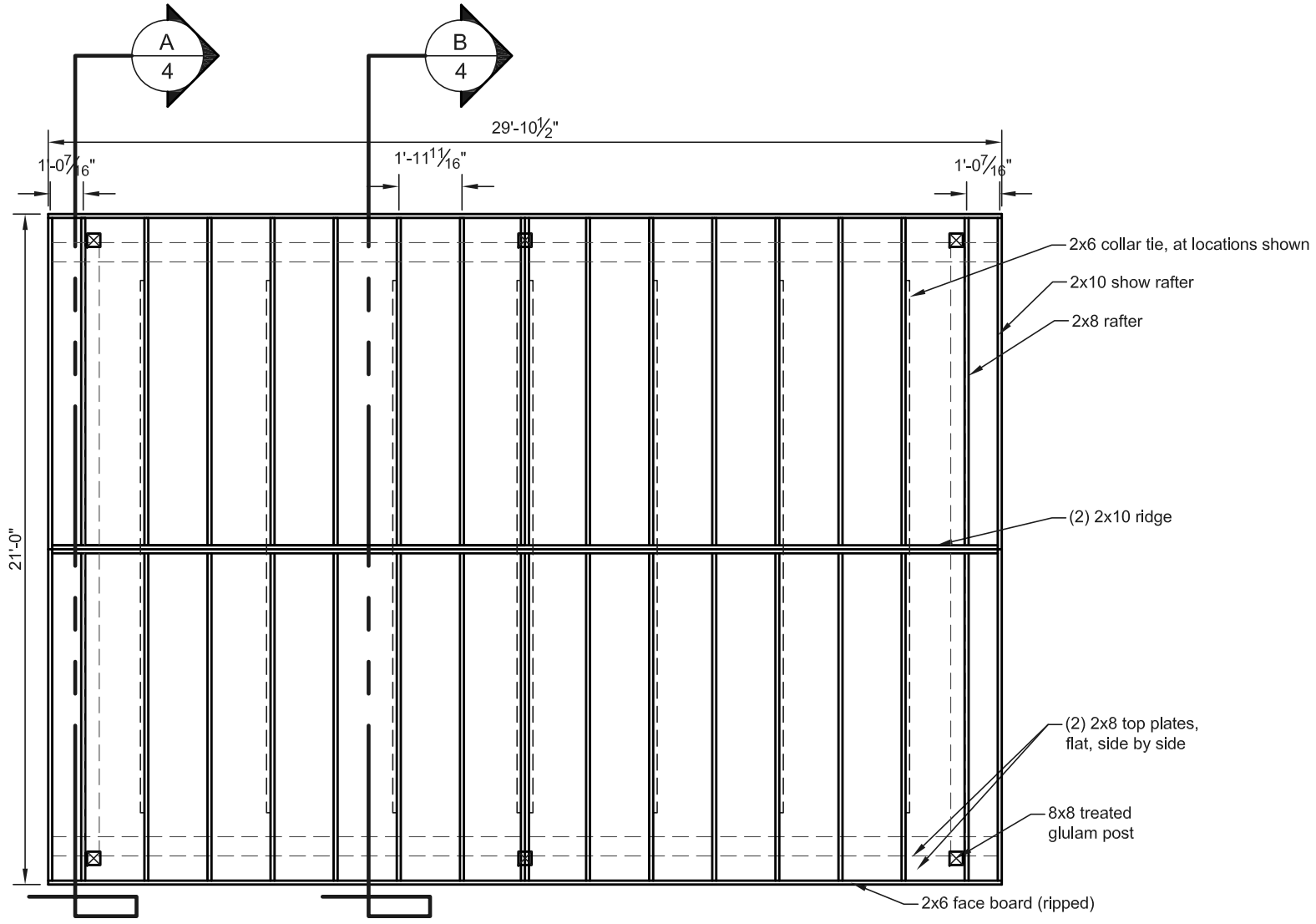
PROJECT: STANDARD PLANS FOR 20'x28' WOOD A FRAME PAVILION



Post Layout Plan

NTS

PROJECT: STANDARD PLANS FOR 20'x28' WOOD A FRAME PAVILION



Roof Framing Plan

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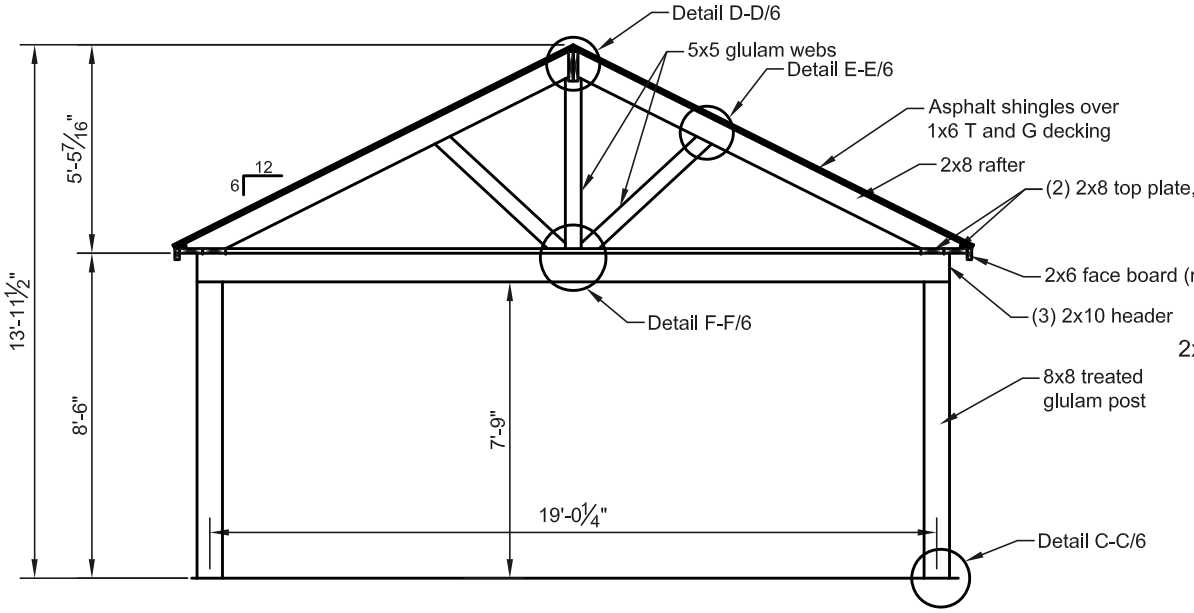
PROJECT: STANDARD PLANS FOR 20'x28' WOOD A FRAME PAVILION



Cross Section A/4

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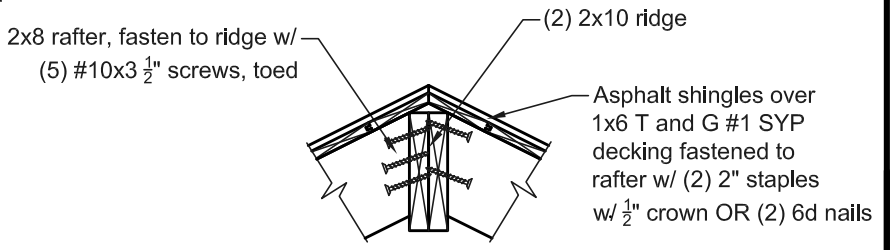

Detail A-A/4

Single Rafter

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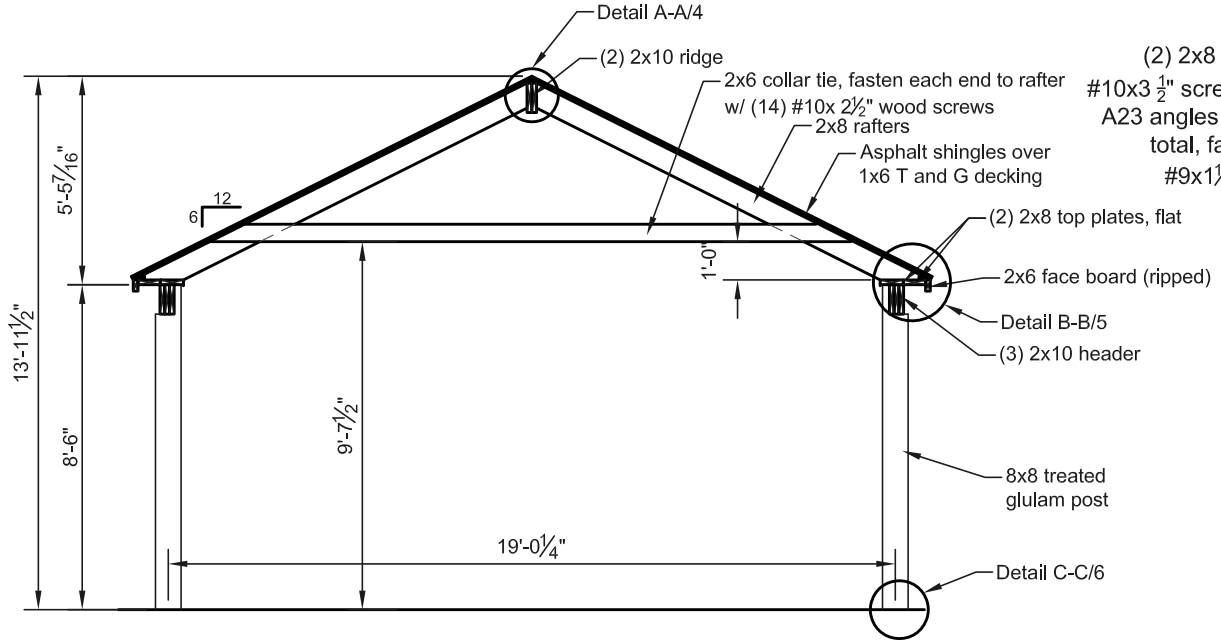

Cross Section B/4

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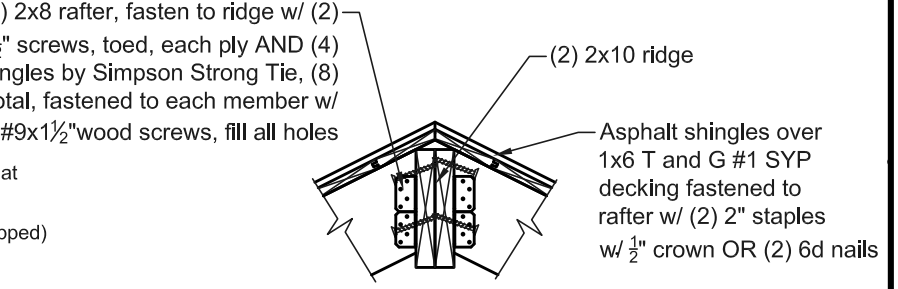
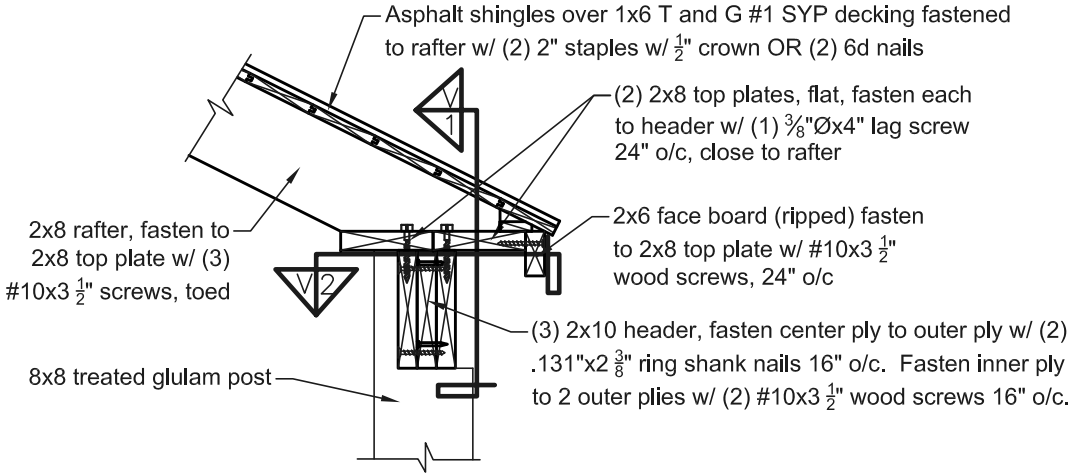


Detail A-A/4

Center Double Rafter

NTS



Detail B-B/5

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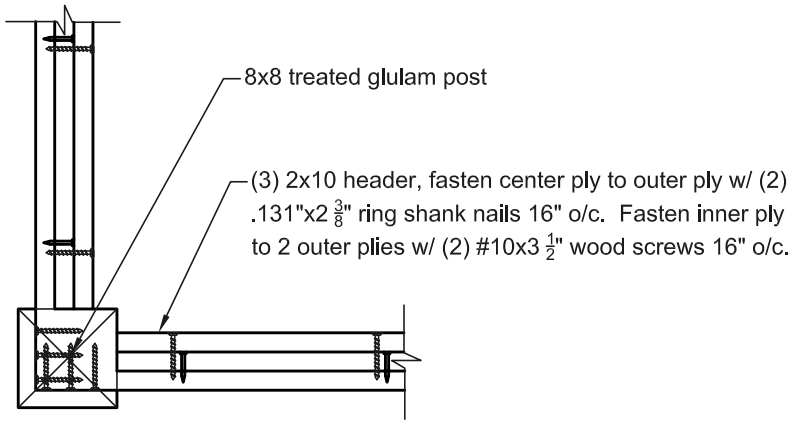

View 2 Detail B-B/5

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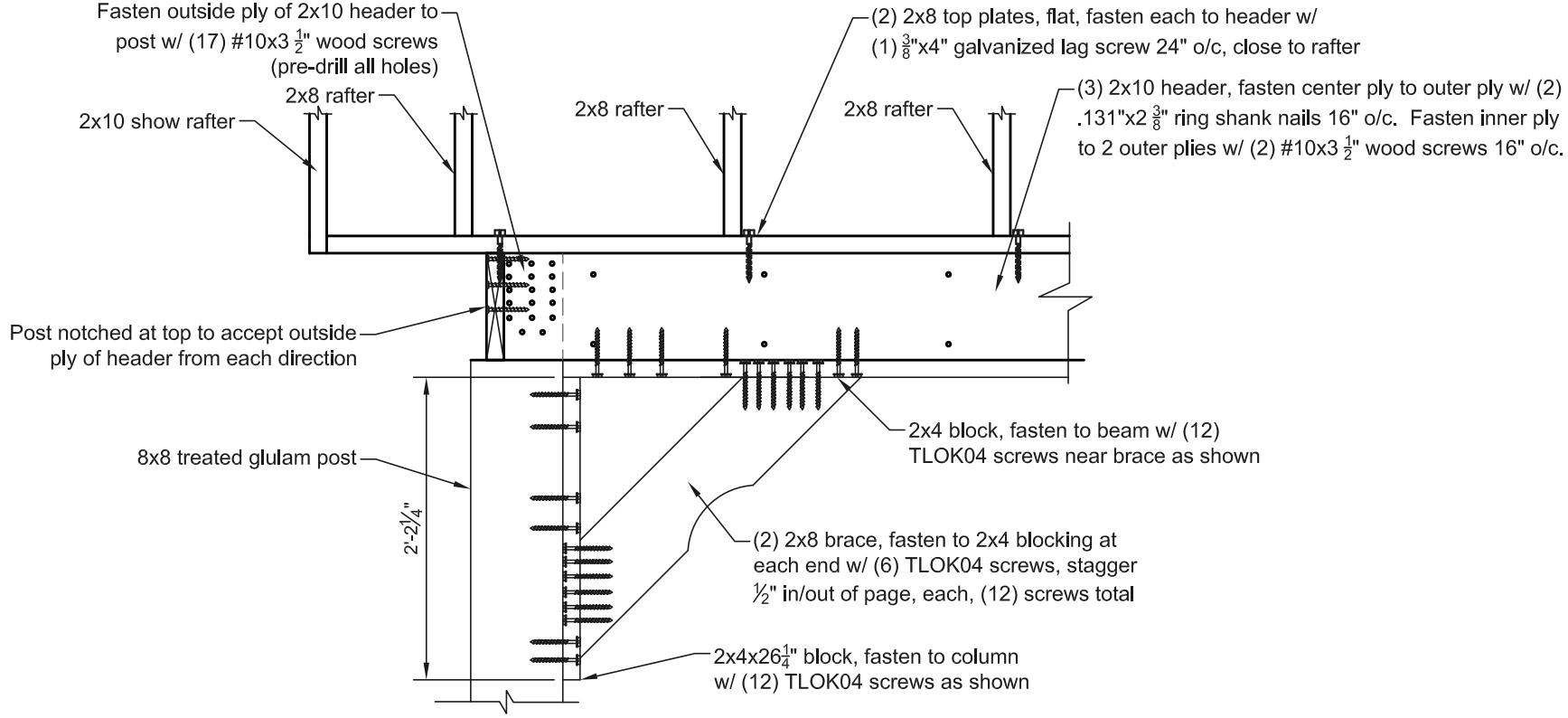
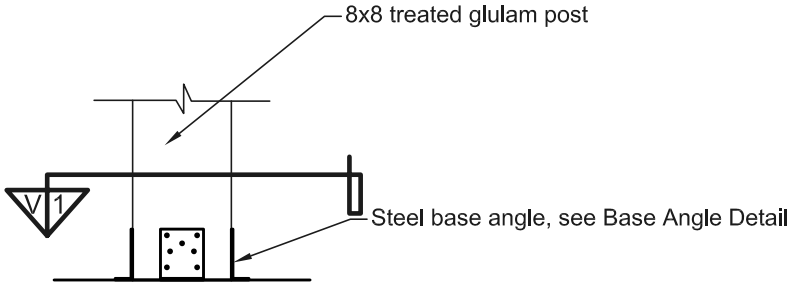
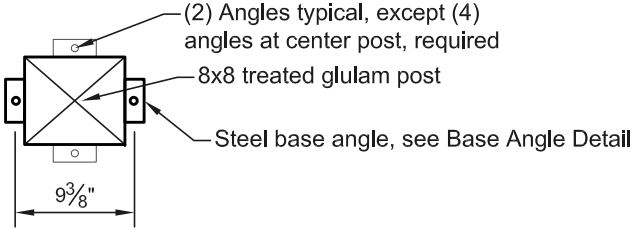


View 1 Detail B-B/5

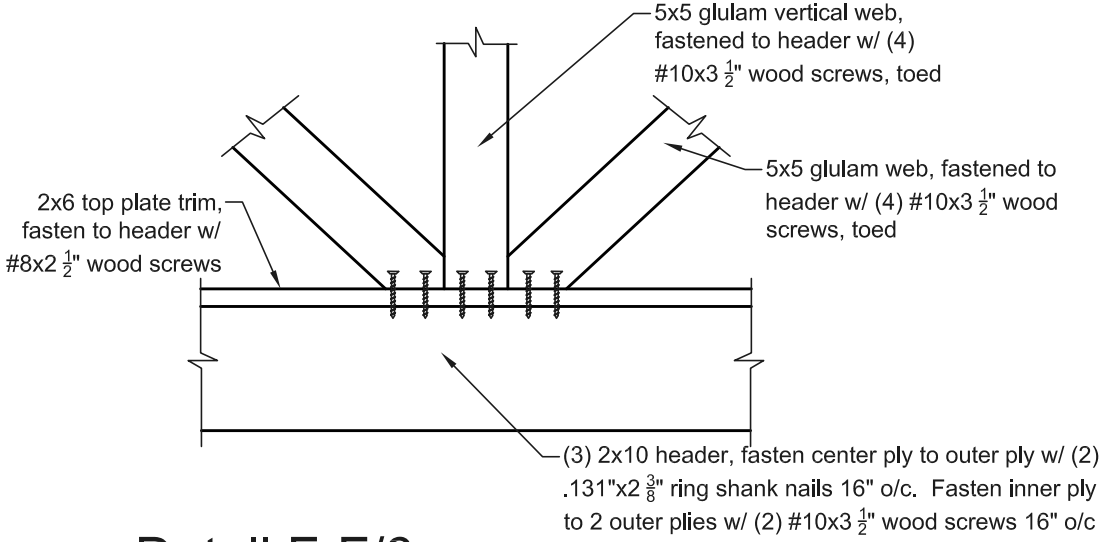
NTS



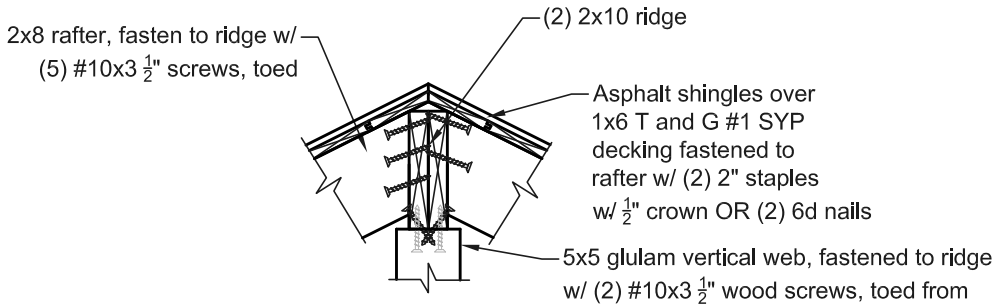
Detail C-C/6 NTS



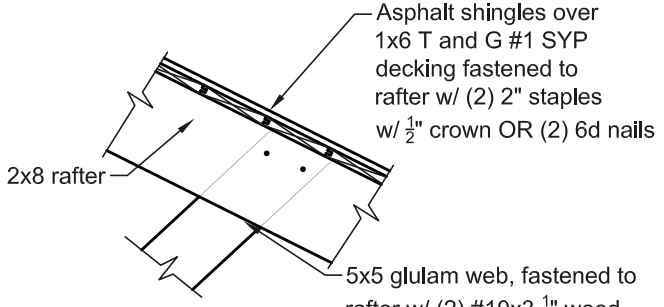
View 1 Detail C-C/6 NTS



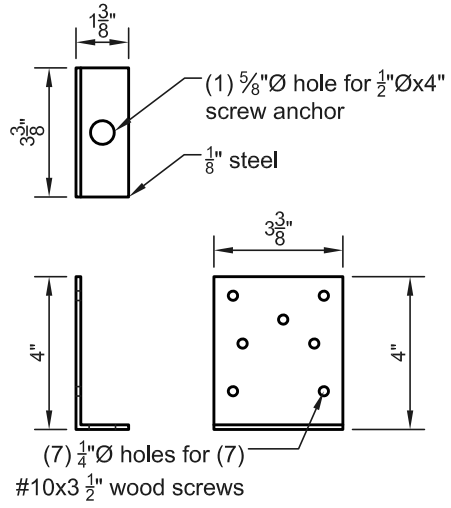
Detail F-F/6 NTS



Detail D-D/6 NTS

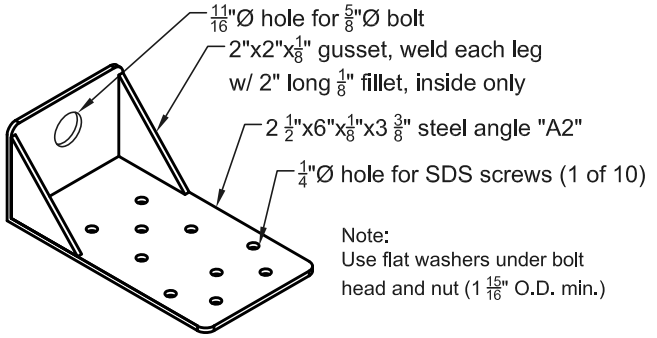


Detail E-E/6 NTS



Base Angle Detail NTS

PROJECT: STANDARD PLANS FOR 20'x28' WOOD A FRAME PAVILION



Angle "A2"

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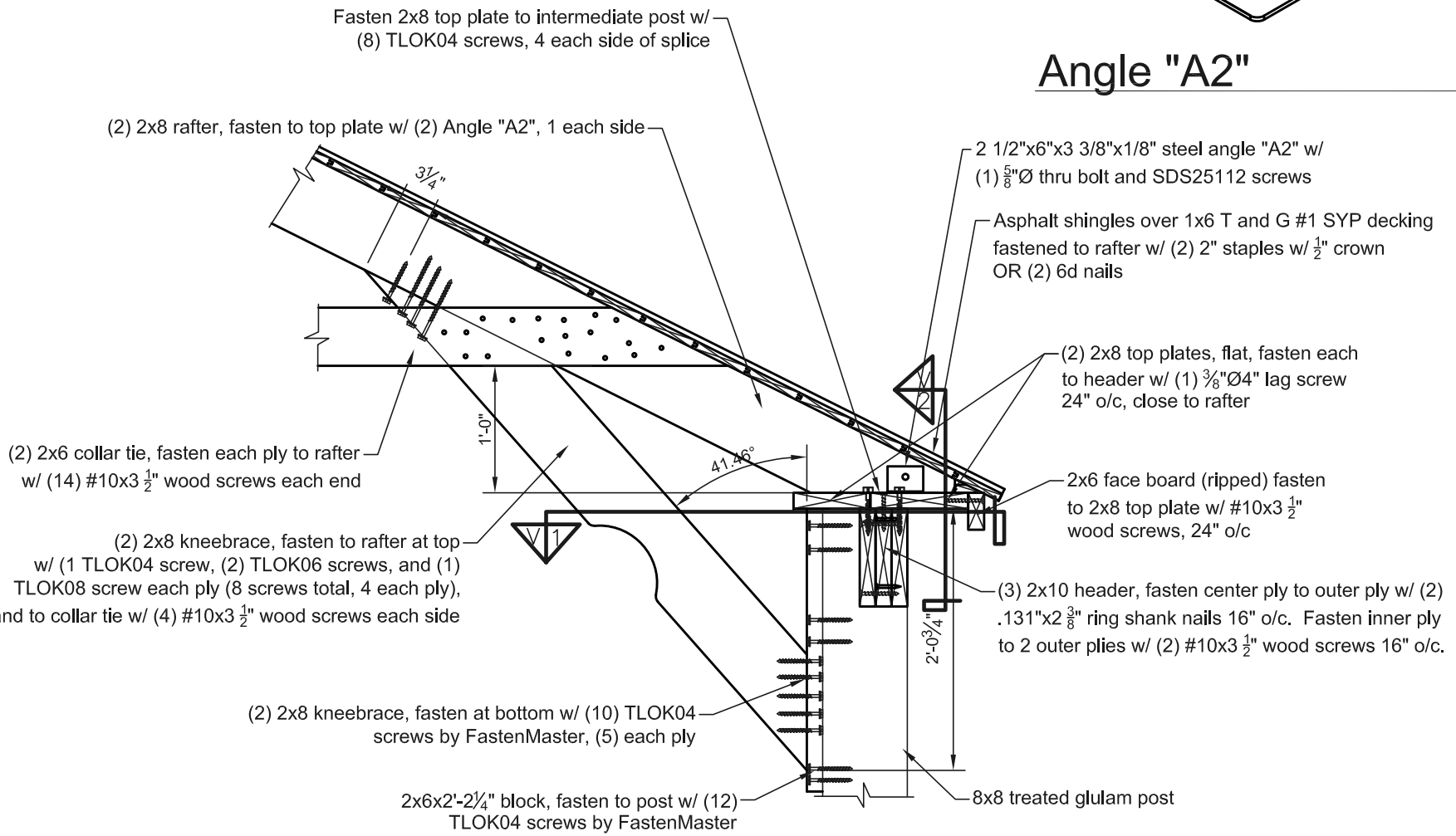

Detail G-G/7

NTS

Center Double Rafter

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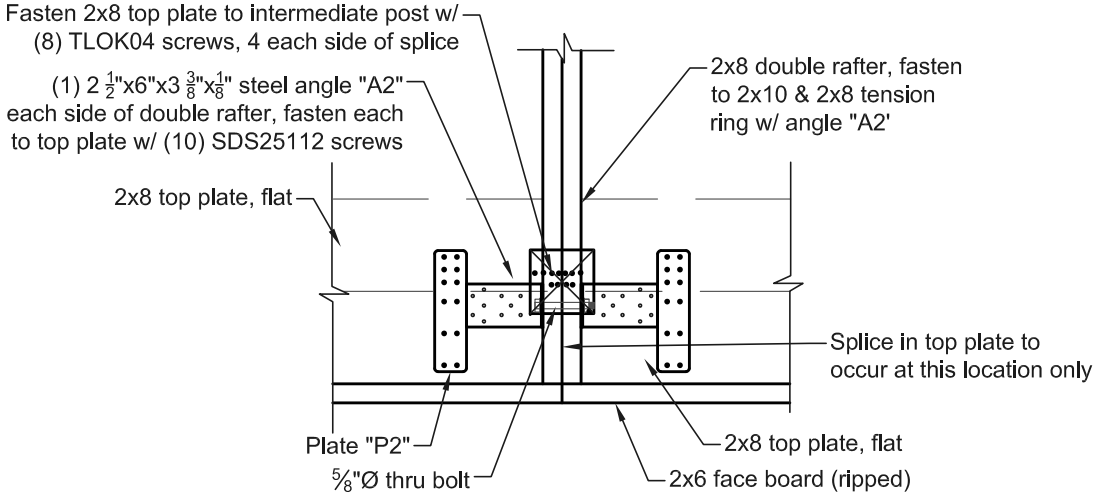


View 1 Detail G-G/7

NTS

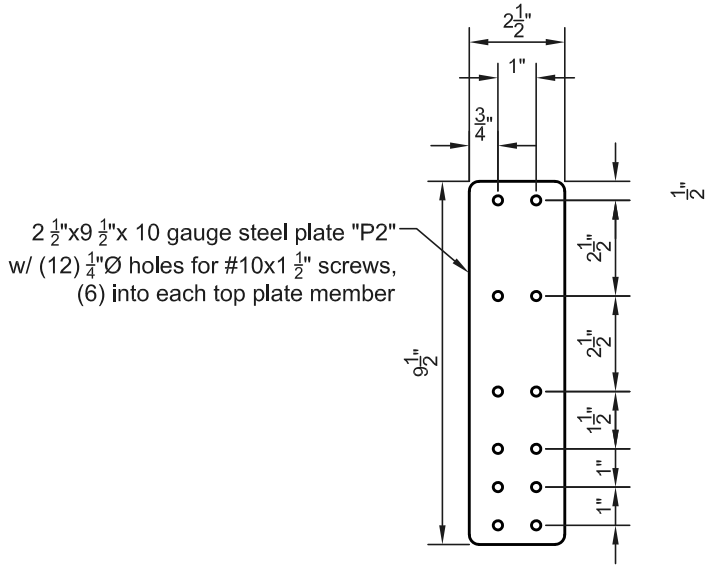
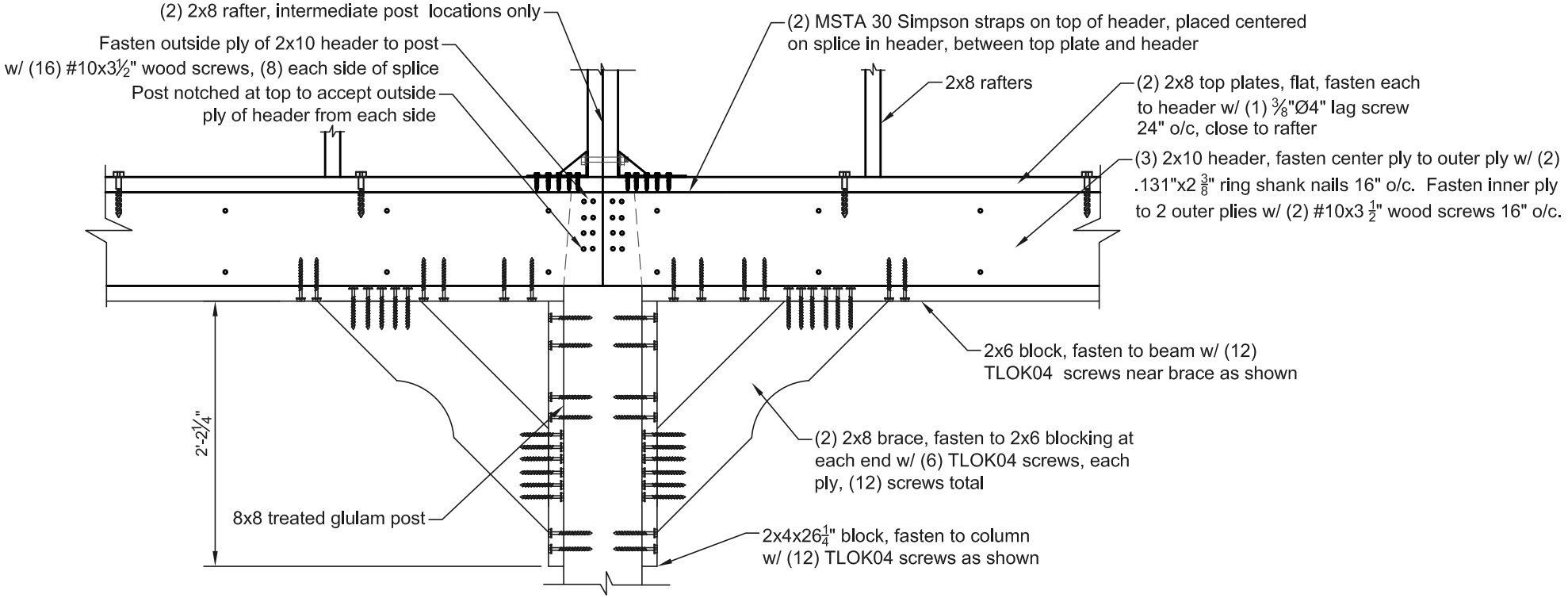


Plate "P2"

NTS



View 2 Detail G-G/7

NTS