

GENERAL NOTES

TIMBER FRAME SYSTEM (HEAVY TIMBERS) TIMBER SYSTEM:

THIS IS A LOAD BEARING TIMBER FRAME SYSTEM.
SEE DESIGN ASSUMPTIONS BELOW.

APPLICABLE STRUCTURAL CODES: ASCE 7-05, AF&PA NDS 2005, TREC 1-2010

DESIGN CRITERIA:
WIND LOADS: (SEE DESIGN ASSUMPTIONS BELOW)
DESIGN WIND SPEED: 90 MPH, 3 SECOND GUST
EXPOSURE CATEGORY: B
BUILDING CLASSIFICATION: II
WIND IMPORTANCE FACTOR: 1
ENCLOSURE CLASSIFICATION: ENCLOSED WITH PROTECTED OPENINGS
SEISMIC LOADS:
NOT APPLICABLE. NOT CONTROLLING.
ROOF SNOW LOAD:
GROUND SNOW LOAD: 30 PSF (CONTROLS DESIGN)
EXPOSURE FACTOR, CE: 1.15
THERMAL FACTOR, CT: 1.0
ROOF SLOPE FACTOR, CS: 0.8
IMPORTANCE FACTOR, I: 1.0
ROOF LIVE LOAD: 20 PSF ADJUSTED FOR SLOPE BUT NOT CONTROLLING
ROOF DEAD LOAD: 20 PSF HORIZONTAL PROJECTION PLUS WEIGHT OF TIMBER
FLOOR LIVE LOAD: 40 PSF ADJUSTED FOR TRIBUTARY AREA
FLOOR DEAD LOAD: 20 PSF PLUS WEIGHT OF TIMBER

NOTE: CONCENTRATED LOADS AND CONSTRUCTION LOADS MUST NOT EXCEED DESIGN LOADS ABOVE.

DESIGN ASSUMPTIONS:

THE LOAD BEARING TIMBER SYSTEM AS DESCRIBED IN THESE DOCUMENTS AND BEING SUPPLIED BY THIS MANUFACTURER IS DESIGNED TO RESIST VERTICAL, IN-PLANE LOADS ONLY, AS SPECIFIED ABOVE. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO DESIGN ALL SUPPORTING ELEMENTS INCLUDING BUT NOT LIMITED TO THE FOUNDATION, THE PERMANENT LATERAL FORCE RESISTING SYSTEM, PERMANENT BRIDGING AND CONNECTIONS THERETO. NOTHING CONTAINED HEREIN OR INDICATED HEREON SHALL INFER OR IMPLY ANY RESPONSIBILITY ON THE PART OF THE TIMBER FRAME MANUFACTURER OR SUPPLIER OR THEIR COMPONENT/SYSTEM ENGINEER FOR SUCH DESIGN OR FOR THE ANALYSIS OF THOSE SUPPORTING ELEMENTS WHICH HAVE BEEN PREPARED BY OTHERS.

LATERAL DESIGN NOTES:

THE TIMBER KNEE BRACE SYSTEM IS DESIGNED TO PROVIDE SUFFICIENT *TEMPORARY* LATERAL STABILITY DURING ERECTION ONCE THEY ARE ALL INCORPORATED INTO THE STRUCTURE. THEY ARE NOT CAPABLE OF RESISTING LATERAL WIND LOAD AFTER THE STRUCTURE IS ENCLOSED.

THE EXTERIOR WALL AND ROOF FRAMING AND SHEATHING SYSTEMS AND CONNECTIONS BETWEEN THEM AND THE TIMBER FRAME SYSTEM SHALL BE DESIGNED BY THE ENGINEER OF RECORD TO TRANSFER LATERAL LOADS DUE TO WIND OR SEISMIC FORCES THRU THE ROOF AND TIMBER FRAME SYSTEM TO THE WALL SYSTEM AND THE FOUNDATION. IN THIS INSTANCE, STRUCTURAL INSULATED PANELS ARE TO BE USED FOR THE LATERAL FORCE RESISTING SYSTEM, THE ENGINEERING DESIGN OF WHICH IS THE RESPONSIBILITY OF OTHERS.

ANY REQUIRED SPACERS BETWEEN THE TIMBER FRAME AND THE WALL SYSTEM TO TUCK DRY WALL SHEATHING BEHIND THE TIMBER FRAME MUST BE STRUCTURAL PLYWOOD OR ORIENTED STRAND BOARD. DRYWALL/GYPSUM BOARD SPACERS ARE NOT PERMITTED FOR THE TRANSFER OF LATERAL LOADING BETWEEN THE TIMBER FRAME AND STUD FRAMED OR SIP WALL SYSTEMS.

TIMBER:
DOUGLAS FIR, NO. 1 AND BETTER, WCLIB, KILN-DRIED 19% MAX. MOISTURE CONTENT, DRESSED S4S. EDGES MAY BE "EASED" OR CHAMFERED AS DESIRED. RECOMMEND COATING TIMBER WITH LANDARK™ OR SIMILAR SEALER/FINISH COAT OR AS OTHERWISE AGREED BETWEEN FABRICATOR AND CLIENT. RECOMMEND EXPOSED ENDS OF TIMBERS BE TREATED WITH ANCHORSEAL™

NOTE: SOME WARPING, TWISTING, CHECKING, AND SPLITTING OF TIMBERS AS THEY REACH EQUILIBRIUM MOISTURE CONTENT CAN BE EXPECTED.

SIZES:
AS NOTED ON THE FOLLOWING SHEETS AND DRESSED DOWN 1/8" +/- ON EACH FACE.

JOINERY: AS NOTED BELOW AND ON THE DRAWINGS AND DETAILS

CONNECTORS:
1. SCREWS:
"RSS" (RUGGED STRUCTURAL SCREWS) HIGH TENSILE/BENDING YIELD STRENGTH BY GRK FASTENERS, OR EQUAL. SCREWS SHALL BE WASHER-HEADED. SHAFT DIAMETERS SHALL BE 5/16" DIAMETER UP TO 7 1/2" LONG AND 3/8" DIAMETER FROM 8" LONG AND ABOVE. SCREWS SHALL PENETRATE A MINIMUM OF 3" IN RECEIVING TIMBER. WHERE HEADS WOULD BE VISIBLE, SCREWS SHALL BE INSTALLED IN COUNTER-BORED HOLES TO CLEAR THE HEAD AND ALLOW APPROXIMATELY 5/8" FOR PLUGGING. SEE WWW.GRKFASTENERS.COM FOR ADDITIONAL INFORMATION. PROVIDE FASTENMASTER LOGHOG SCREWS WHERE INDICATED FOR ANCHORAGE OF PURLINS AND JOIST.

CONNECTORS (CONT.):

2. PEGS: 1" THICK DIAMETER, STRUCTURAL, STRAIGHT GRAINED, OAK TREATED WITH PARAFFIN, LINSEED OIL OR SIMILAR SEALING SUBSTANCE.
3. TENONS:
STUB TENONS: 2" THICK BY 3/4" LONG
FULL TENONS: 2" THICK BY 4-1/2" LONG (UNLESS OTHERWISE NOTED OR SHORTENED TO ACCOMMODATE TIMBER SIZE)
SPACING: END DISTANCE: 2 1/2", EDGE DISTANCE: 2";
SPACING: 2 1/2"
4. BOLTS: ASTM GRADE A307
5. DOWELS AND THREADED ROD: ASTM GRADE A36
6. STEEL ANGLES, PLATES AND FABRICATED CONNECTIONS: ASTM GRADE A36
7. METAL SIDE PLATES:
A-36 STEEL, 1/2" THICK SIDE PLATES, 1/2" THICK SHOE/STIRRUP PLATES WITH FULL PENETRATION WELD ASSEMBLY. HOLES SHALL BE DRILLED NO MORE THAN 1/16" LARGER IN THE KNIFE PLATE AND THE ACTUAL SIZE OF THE BOLT IN THE TIMBER.
8. REINFORCING STEEL USED FOR PIN CONNECTIONS:
ASTM GR 40 OR 60, 7/8" DIAMETER AND SET WITH SIMPSON EPOXY-TIE™ OR EQUAL AS INDICATED ON THE DETAILS.
9. FINISHES:
ALL EXPOSED STEEL PLATES TO BE ELECTROSTATICALLY POWDER COATED. ALL CONNECTION HARDWARE TO BE ZINC PLATED UNLESS OTHERWISE NOTED.

TEMPORARY SUPPORT OF THE HEAVY TIMBER SYSTEMS

IT IS THE RESPONSIBILITY OF THE ERECTOR OF THE TIMBER SYSTEM TO PROVIDE AND MAINTAIN ANY REQUIRED TEMPORARY SUPPORT OF THE HEAVY TIMBER SYSTEMS INCLUDING BUT NOT LIMITED TO LATERAL BRACING, BRIDGING, BLOCKING, STRONG-BACKS ON FRAMES AND TRUSSES TO PREVENT HINGING OF THE TIMBER SYSTEM, AND OR OTHER DEVICES AS REQUIRED UNTIL ERECTION IS COMPLETED.

IT IS THE RESPONSIBILITY OF TO PROVIDE AND MAINTAIN ANY REQUIRED TEMPORARY SUPPORT WHILE THE REMAINDER OF CONSTRUCTION IS COMPLETED AND THE PERMANENT CONNECTIONS FROM THE TIMBER FRAME SYSTEM TO THE LATERAL FORCE RESISTING SYSTEM (STRUCTURAL INSULATED PANELS) HAVE BEEN COMPLETED. ONCE ALL CONSTRUCTION IS COMPLETED, THE TEMPORARY SUPPORT MAY BE REMOVED AND SHALL BE RETURNED TO THE SUPPLIER OF THAT MATERIAL.

RESPONSIBILITY FOR DIMENSIONS

THE ENGINEERING DESIGN IS BASED ON DRAWINGS PROVIDED BY OTHERS. THESE DRAWINGS ARE FOR DESIGN REVIEW AND PERMITTING ONLY AND NOT FOR CONSTRUCTION UNTIL DIMENSIONS HAVE ALL BEEN VERIFIED. IT IS THE RESPONSIBILITY OF THE TIMBER FRAME SYSTEM PURCHASER (OWNER AND/OR CONTRACTOR) TO VERIFY ALL DIMENSIONS INDICATED ON THE TIMBER FRAME SYSTEM DRAWINGS UNLESS OTHERWISE NOTED (OR PROVIDED FOR IN THE ORIGINAL AGREEMENT)

GENERAL PROVISIONS

THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.

DO NOT SCALE THE DRAWINGS. IF A REQUIRED DIMENSION IS NOT INDICATED, PLEASE REQUEST THE MISSING INFORMATION.

FOR TIMBERS THAT HAVE MORE THAN 15% AVERAGE MOISTURE CONTENT BY VOLUME, SHRINKAGE OF TIMBERS MAY RESULT IN THE LOOSENING OF BOLTS AND ALL-THREAD CONNECTORS. PERIODIC TIGHTENING OF THESE CONNECTIONS DURING THE FIRST SEVERAL YEARS OF THE STRUCTURE'S SERVICE LIFE IS REQUIRED.

NORMAL CONSTRUCTION TOLERANCES/DIMENSIONAL VARIATIONS CAN BE EXPECTED IN THE COMPLETED STRUCTURE AS WELL AS DIMENSIONAL CHANGES DUE TO SHRINKAGE AND SWELLING THROUGHOUT THE LIFE OF THE STRUCTURE. FOR THESE REASONS, DETAILS OF ADJOINING SURFACES AND MATERIALS MUST BE ABLE TO ACCOMMODATE THESE VARIATIONS AND CHANGES.
THE KEY TO THE LONG TERM SURVIVABILITY OF THE STRUCTURE DEPENDS ON KEEPING THE TIMBERS DRY AND WELL VENTILATED. THESE DESIGN DETAILS ARE THE RESPONSIBILITY OF OTHERS.

SIP SYSTEM REQUIREMENTS:

1. PREPARE ENGINEERING DRAWINGS UNDER THE SUPERVISION OF AND SEALED BY A QUALIFIED SIP SYSTEM ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA.
2. SUBMIT ENGINEERED SIP DRAWINGS TO HEAVY TIMBER FRAME ENGINEER (DAVID HOURDEQUIN.PE) FOR REVIEW INCLUDING NTA AND OR ICC REPORTS WITH PANEL/SPLINE CAPACITIES.
3. DESIGN SIP WALL SYSTEM TO TAKE FULL WIND LOADS THROUGH FRAME TO SIP ROOF DIAPHRAGM AND CONCRETE FLOOR SYSTEM AND TO SERVE AS SHEAR WALLS. POSTS MAY BE USED TO TAKE SHEAR PANEL SEGMENT REACTIONS.
4. DESIGN SIP ROOF AS DIAPHRAGM FOR WIND LOADS ON WALLS USING TOP CONNECTING GIRTS TO TAKE DIAPHRAGM BOUNDARY LOADS.



P.O. Box 1399, Hayesville, NC 28904
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Heavy Timber Frame engineering only
David R. Hourdequin, PA P.E. #050032E

TIMBER FRAMED GARAGE

DELAWARE COUNTY, PA



NOTE:

THESE DOCUMENTS BEARING THE DATE 06-05-12 SUPERCEDE AND SHALL REPLACE ALL PREVIOUSLY SUBMITTED DOCUMENTS FOR THIS PROJECT

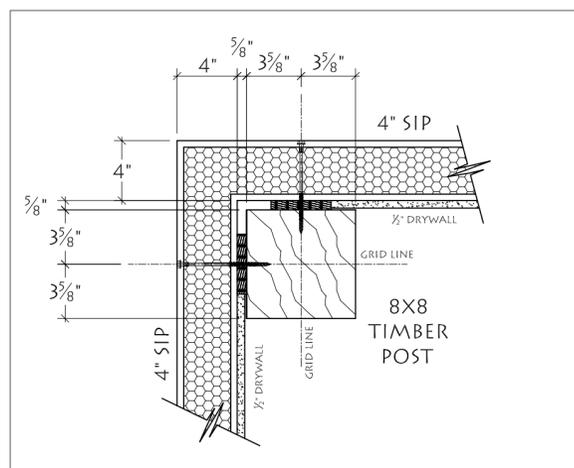
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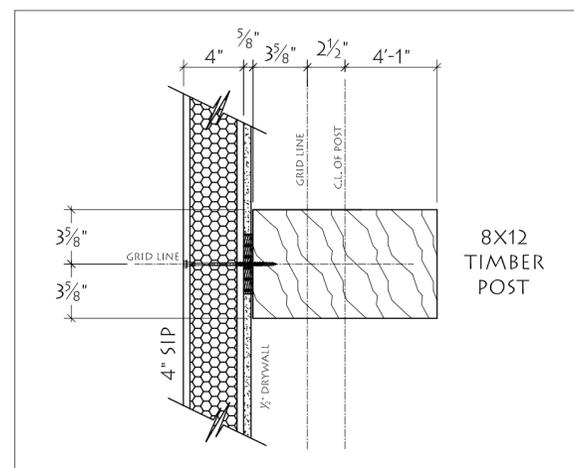
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TF-O

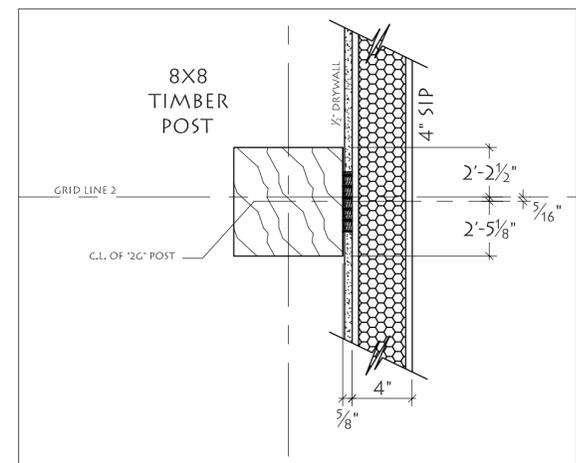
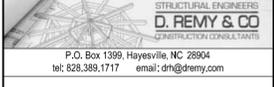


A TYPICAL 8X8 POST ALIGNMENT
1 1/2" = 1'-0"

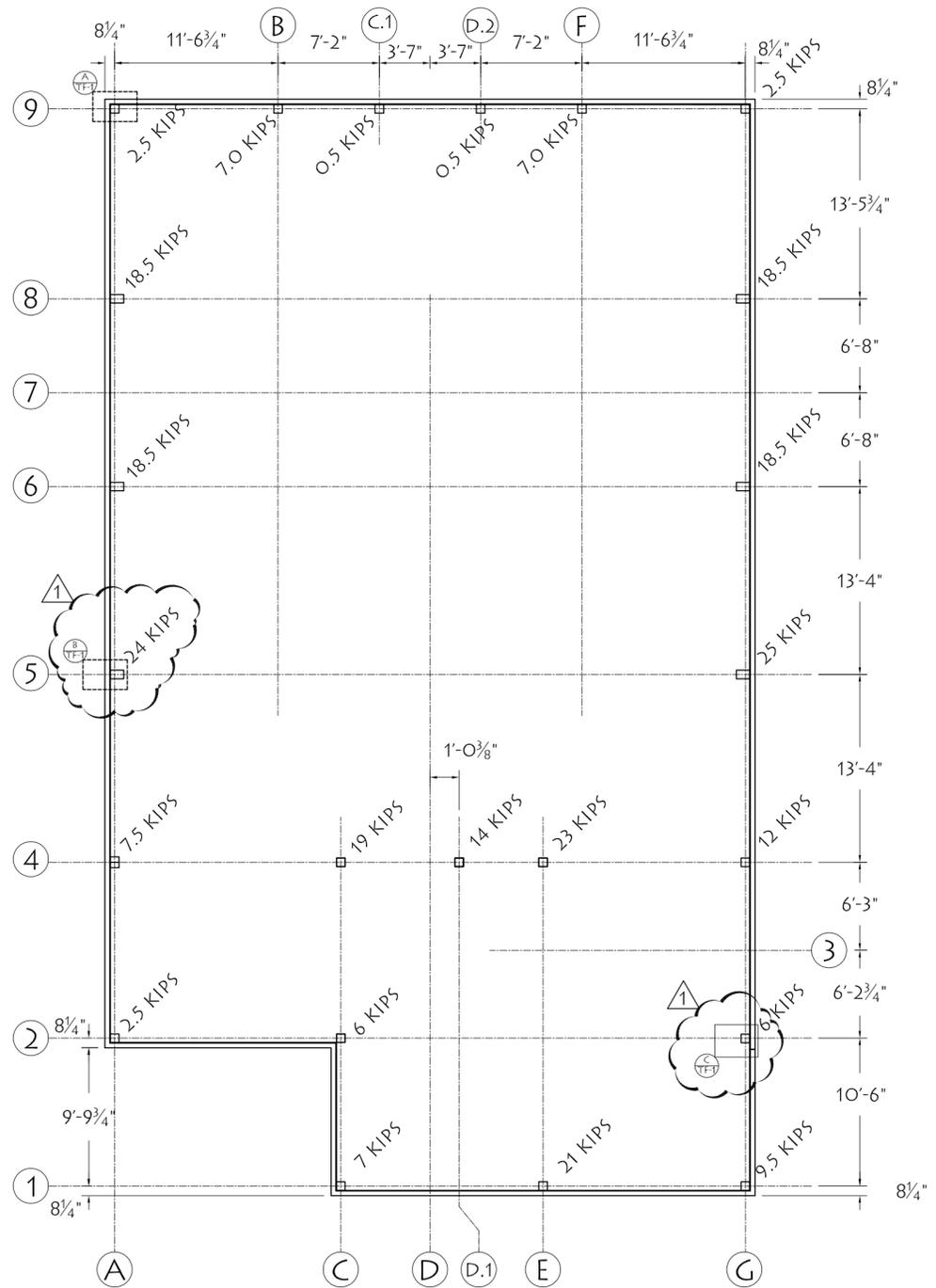


B TYPICAL 8X12 POST ALIGNMENT
1 1/2" = 1'-0"

NOTE TO S.E.R.
APPROXIMATELY ONE-HALF OF THE INDICATED POST LOAD IS "DEAD LOAD" FOR THE PURPOSES OF PROPORTIONING FOOTINGS FOR DIFFERENTIAL SETTLEMENT. LOADS WERE DETERMINED BASED ON THE APPROPRIATE (AND APPROXIMATE) TRIBUTARY AREA OF THE FLOOR AND ROOF TIMES AN AVERAGE UNIT LOAD OF 60PSF. PLEASE VERIFY ALL LOADS BEFORE INCORPORATING THEIR VALUES IN THE DESIGN OF THE FOUNDATION OR SUPPORTING STRUCTURE.



C POST "2G" ALIGNMENT
1 1/2" = 1'-0"



POST LOCATION PLAN WITH POST LOADS
1/8" = 1'-0"

FRAME PLAN NOTATIONS	
LP -LONG POINT OF TIMBER	LP-LP -MEASUREMENT TAKEN LONG POINT TO LONG POINT
SP -SHORT POINT OF TIMBER	LP-INT -MEASUREMENT TAKEN LONG POINT TO INTERSECTION
TOG -TOP OF GIRT	☒ -TIMBER GOING AWAY FROM YOU
SH -SHOULDER OF TIMBER	☐ -TIMBER COMING TOWARD YOU
END -END OF TIMBER	☒ -TIMBER GOING IN EACH DIRECTION
EXT -EXTENSION LINE OF TIMBER TO FACE OF MATING TIMBER	
TYP. -TYPICAL	
INT. -INTERSECTION POINT OF TWO OR MORE TIMBER	
SH-SH -MEASUREMENT TAKEN SHOULDER TO SHOULDER	◀1/2 1/2▶ TIMBER HOUSED 1/2"
SH-END -MEASUREMENT TAKEN SHOULDER TO END	◀1 1▶ TIMBER HOUSED 1"
SH-INT -MEASUREMENT TAKEN SHOULDER TO INTERSECTION	◀3/4 3/4▶ TIMBER HOUSED 3/4"
	◀1/2 1/2▶ TIMBER HOUSED 1/2"
	◀3/4 3/4▶ TIMBER NOT HOUSED

TIMBER FRAMED GARAGE
DELAWARE COUNTY, PA

REVISIONS
1 06-05-12

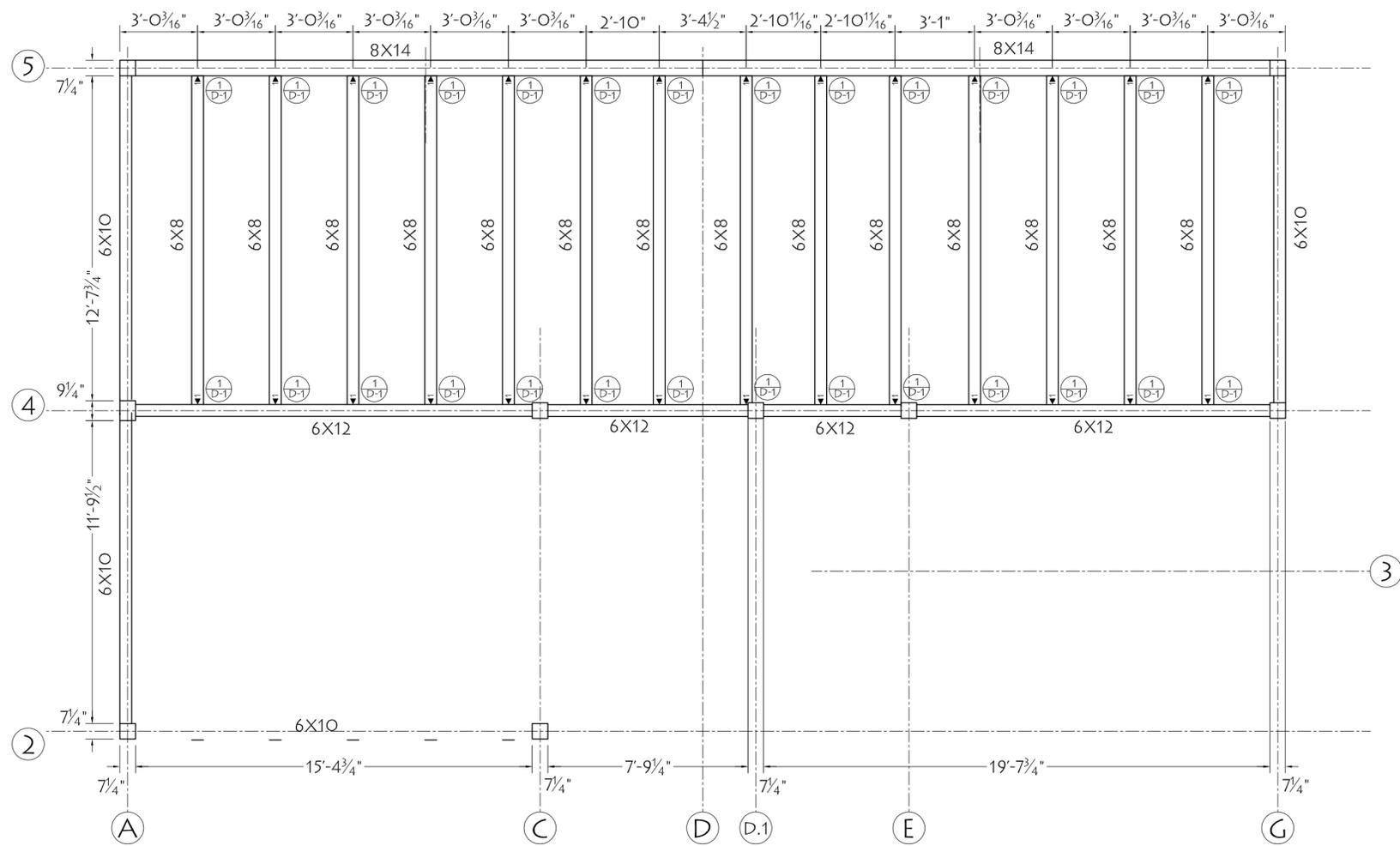
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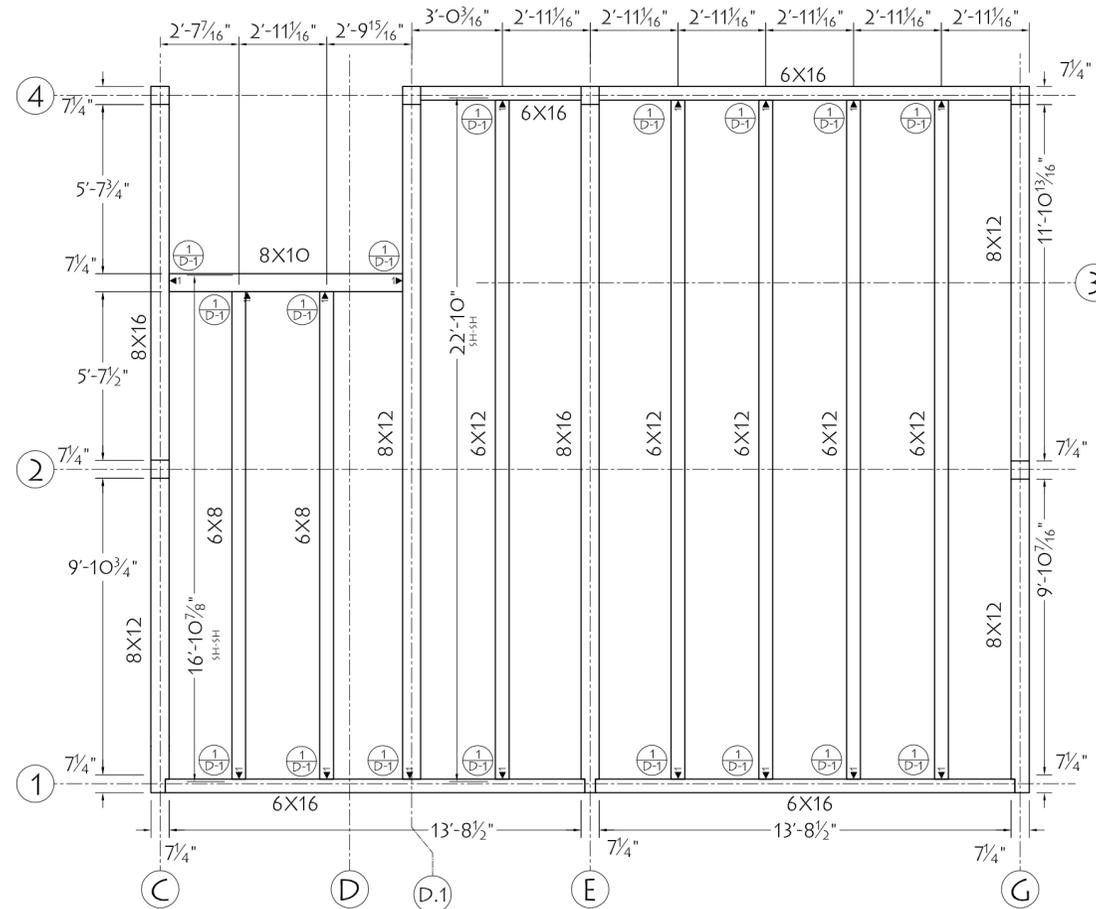
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SHEET TITLE:
POST PLAN AND LOADS

SHEET NUMBER:
TF-1



LOWER LOFT FRAMING PLAN
 $\frac{1}{4}'' = 1'-0''$



UPPER LOFT FRAMING PLAN
 $\frac{1}{4}'' = 1'-0''$

TIMBER FRAMED GARAGE
 DELAWARE COUNTY, PA

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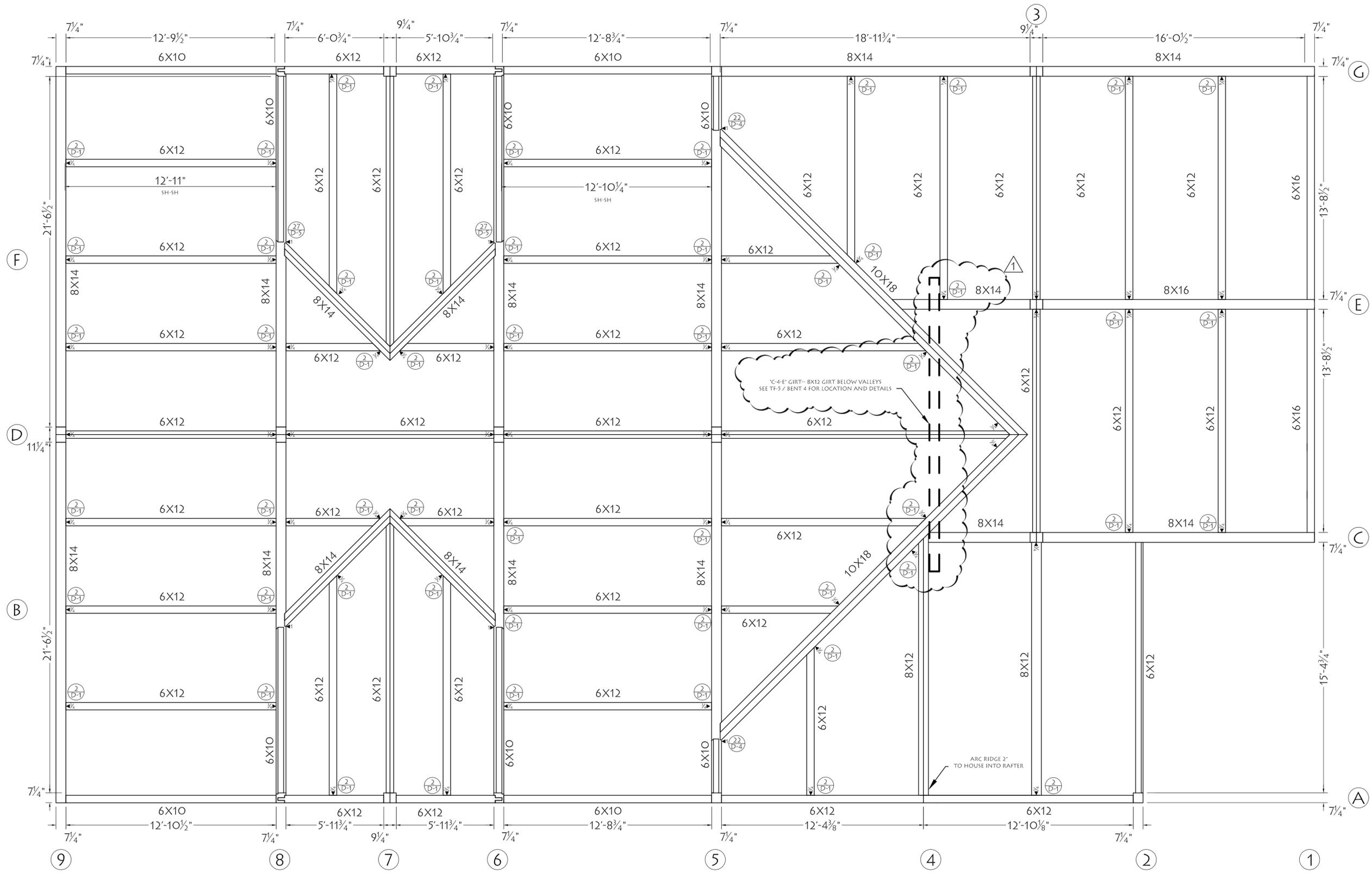
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SHEET TITLE:
 LOFT
 FRAMING
 PLANS

SHEET NUMBER:

TF-2



ROOF FRAMING PLAN
1/4" = 1'-0"

TIMBER FRAMED GARAGE

DELAWARE COUNTY, PA

REVISIONS

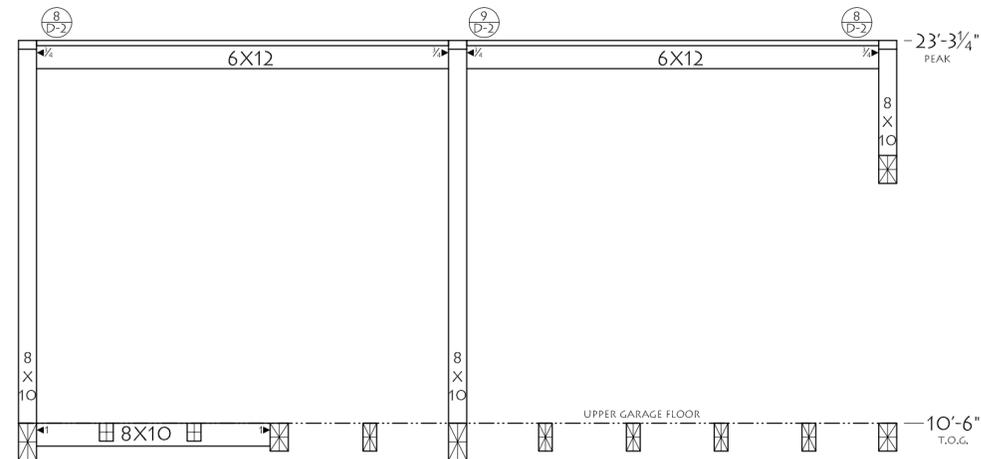
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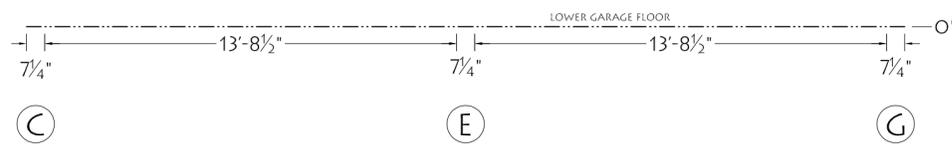
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FRAME
SECTIONS

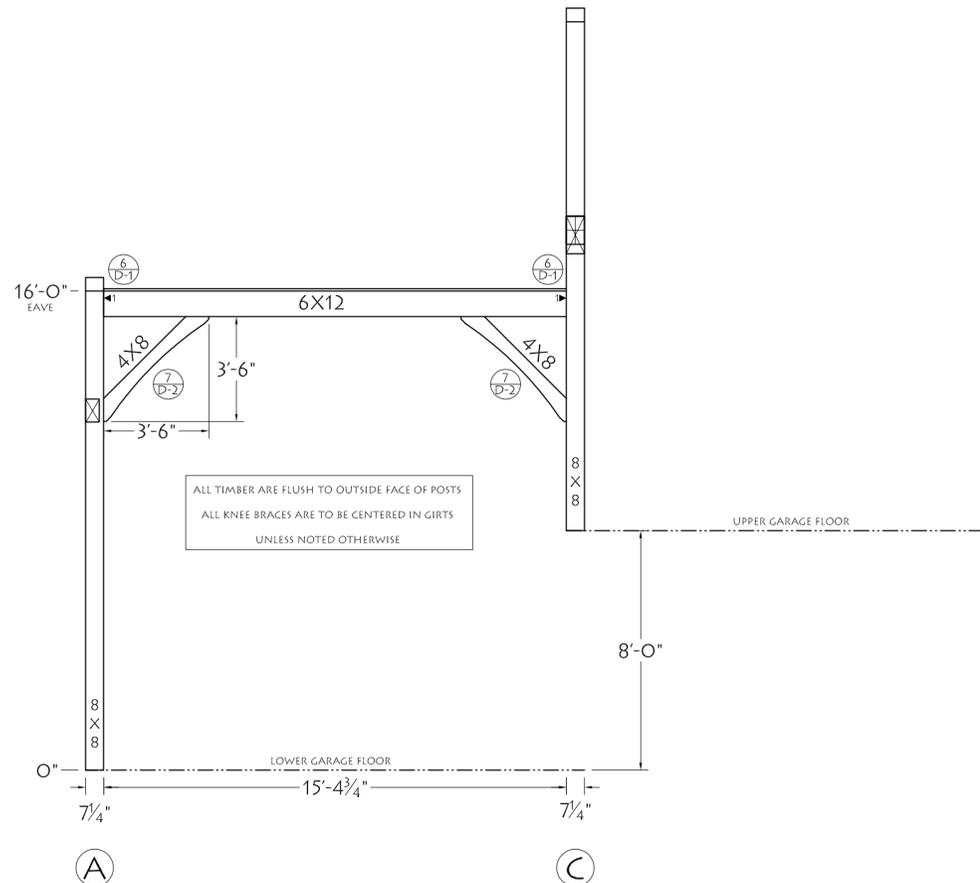
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ALL TIMBER ARE CENTERED IN POSTS
ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
UNLESS NOTED OTHERWISE

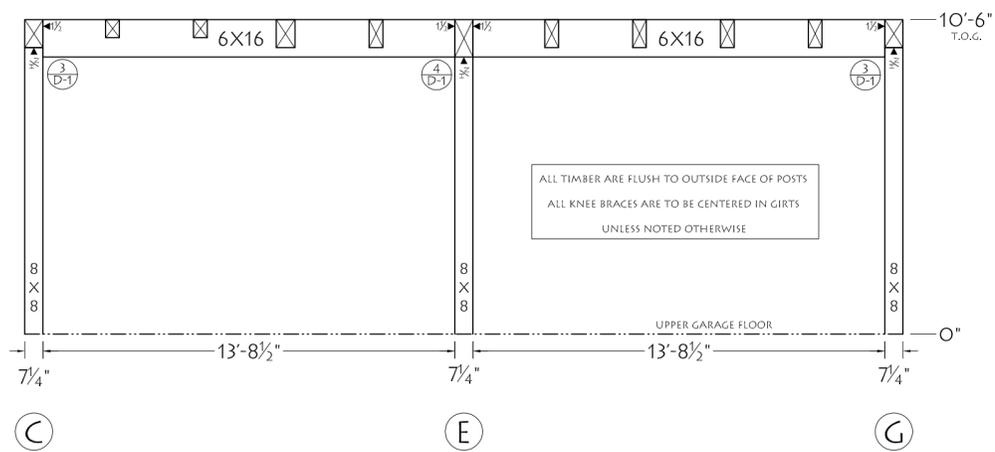


BENT 3
1/4" = 1'-0"



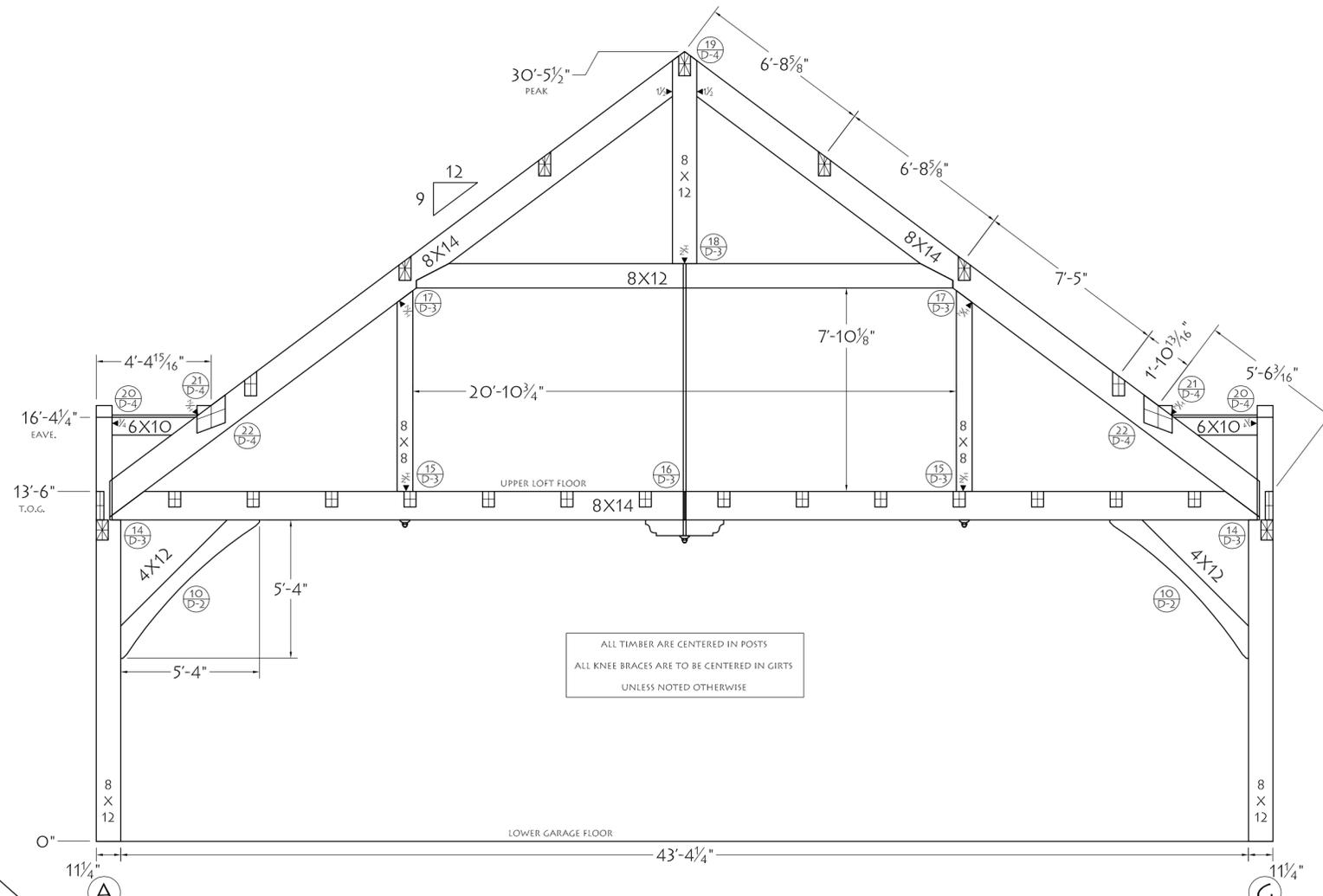
ALL TIMBER ARE FLUSH TO OUTSIDE FACE OF POSTS
ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
UNLESS NOTED OTHERWISE

BENT 2
1/4" = 1'-0"

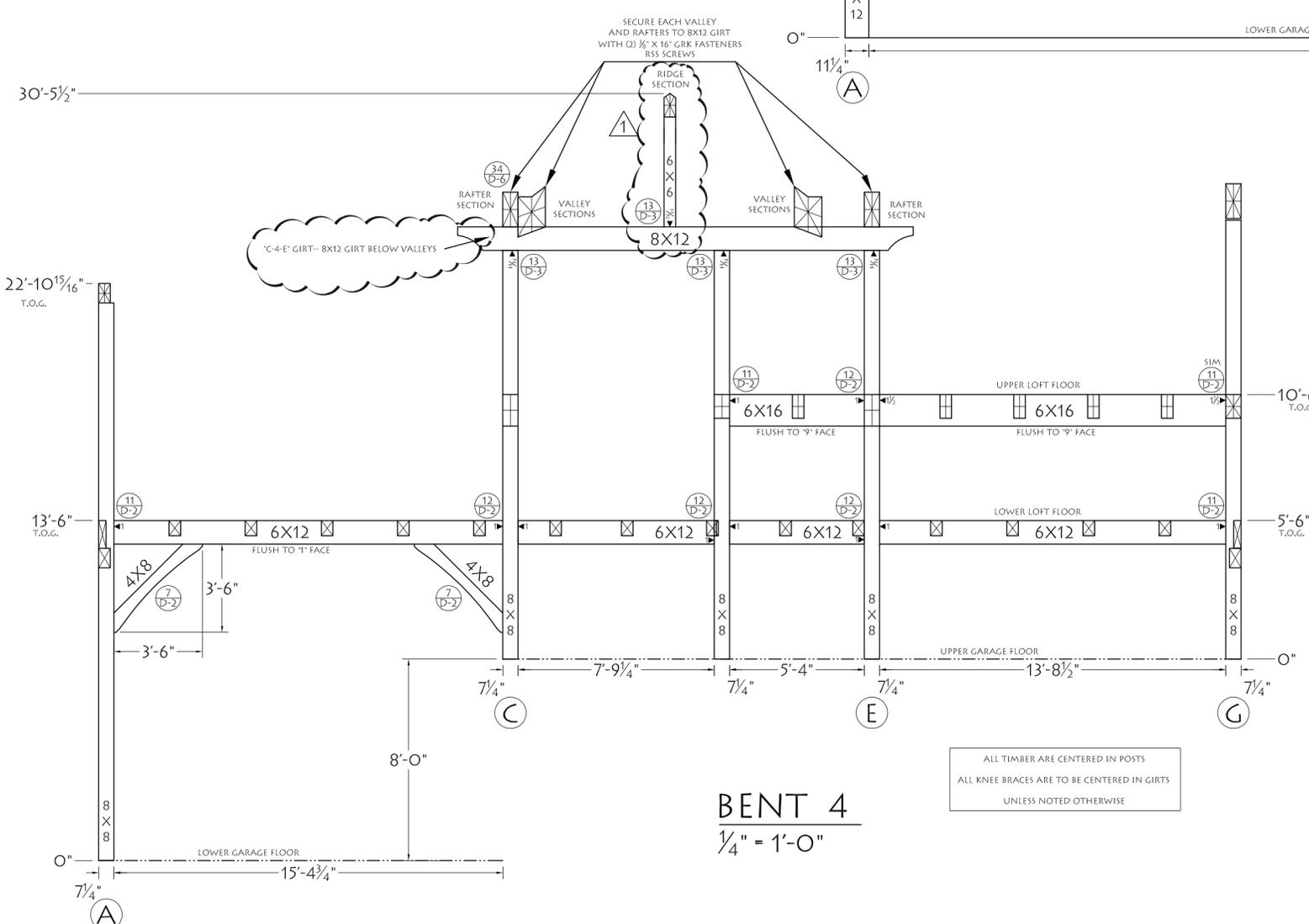


ALL TIMBER ARE FLUSH TO OUTSIDE FACE OF POSTS
ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
UNLESS NOTED OTHERWISE

BENT 1
1/4" = 1'-0"



BENT 5
1/8" = 1'-0"



BENT 4
1/4" = 1'-0"

TIMBER FRAMED GARAGE
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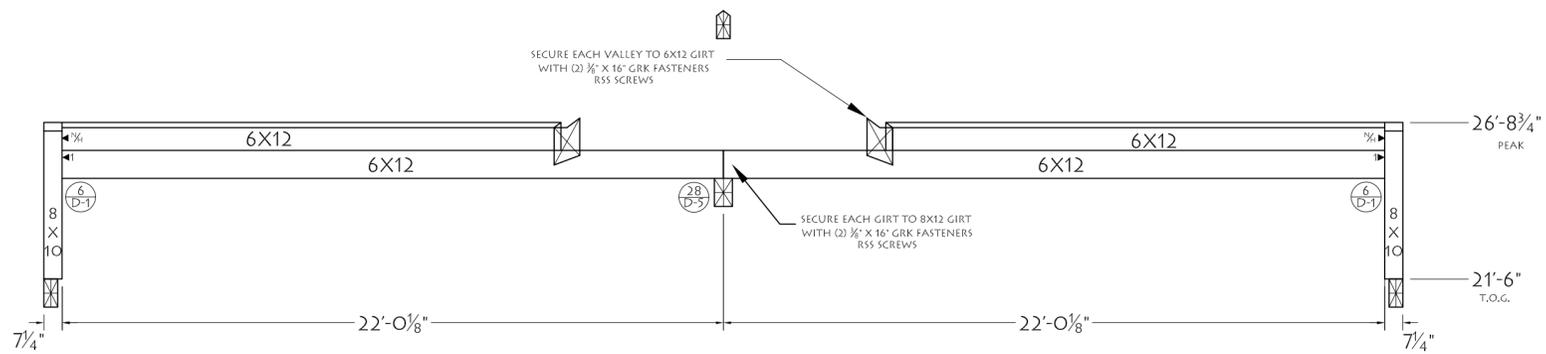
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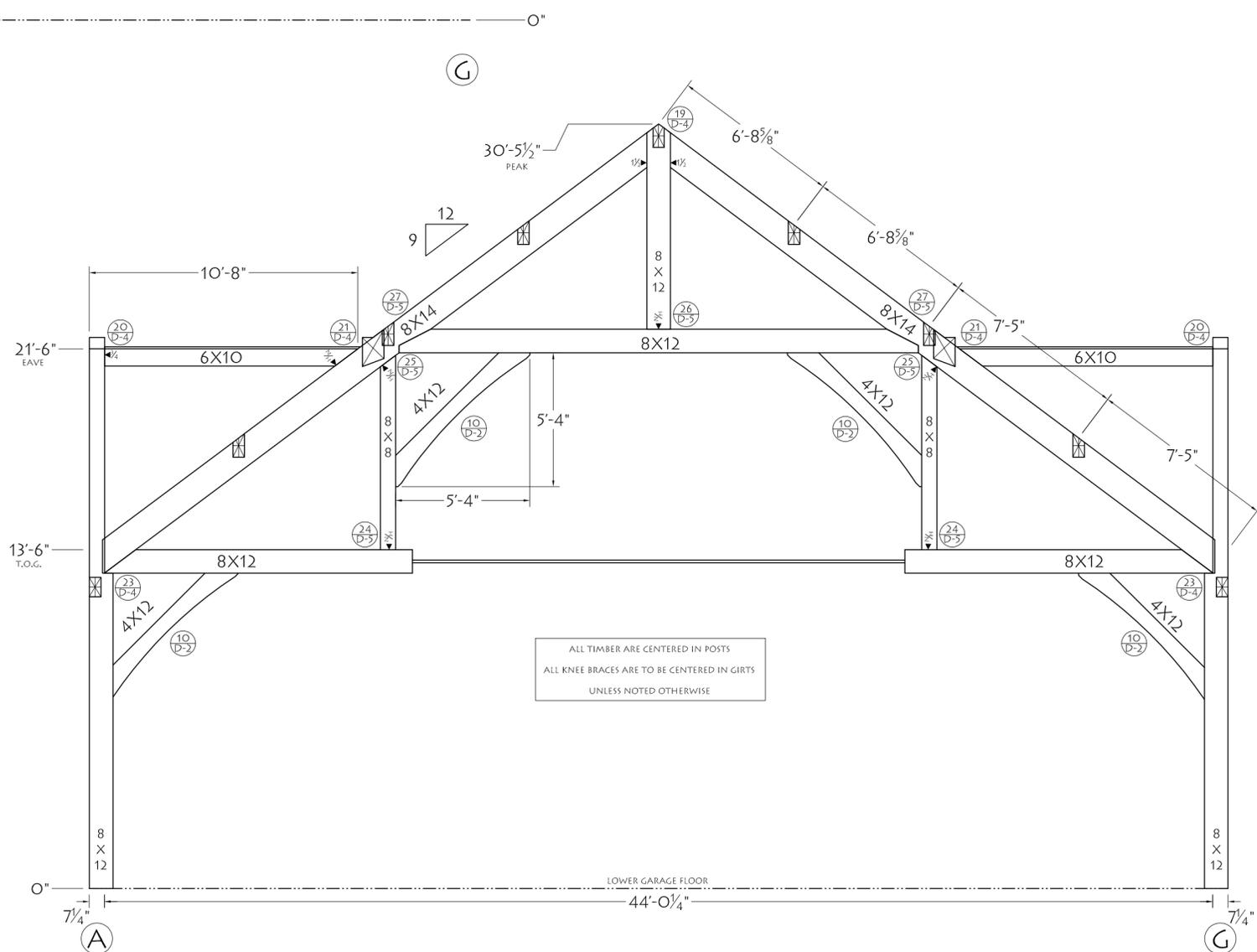
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TF-5



ALL TIMBER ARE CENTERED IN POSTS
 ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
 UNLESS NOTED OTHERWISE

BENT 7
 $\frac{1}{4}'' = 1'-0''$

BENT 6 & 8
 $\frac{1}{4}'' = 1'-0''$



ALL TIMBER ARE CENTERED IN POSTS
 ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
 UNLESS NOTED OTHERWISE

TIMBER FRAMED GARAGE

DELAWARE COUNTY, PA

REVISIONS

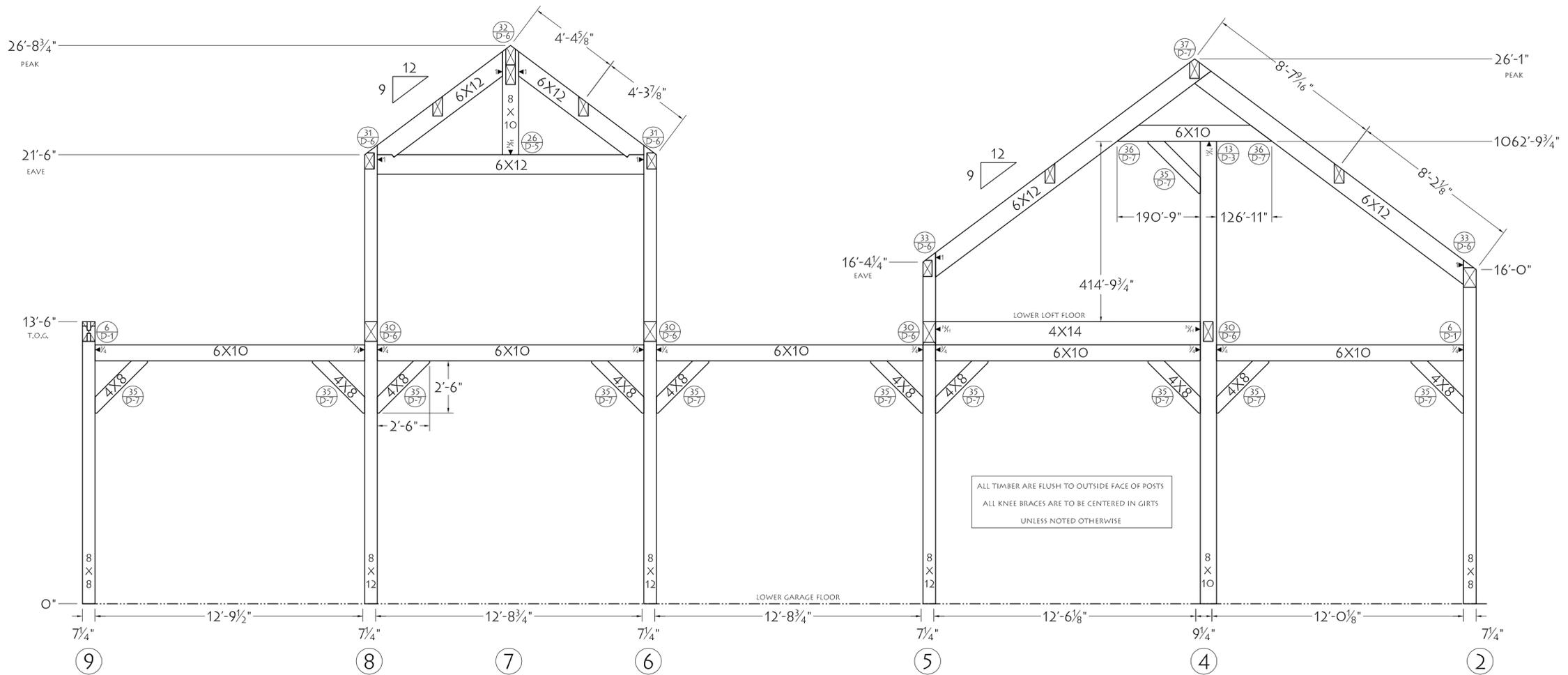
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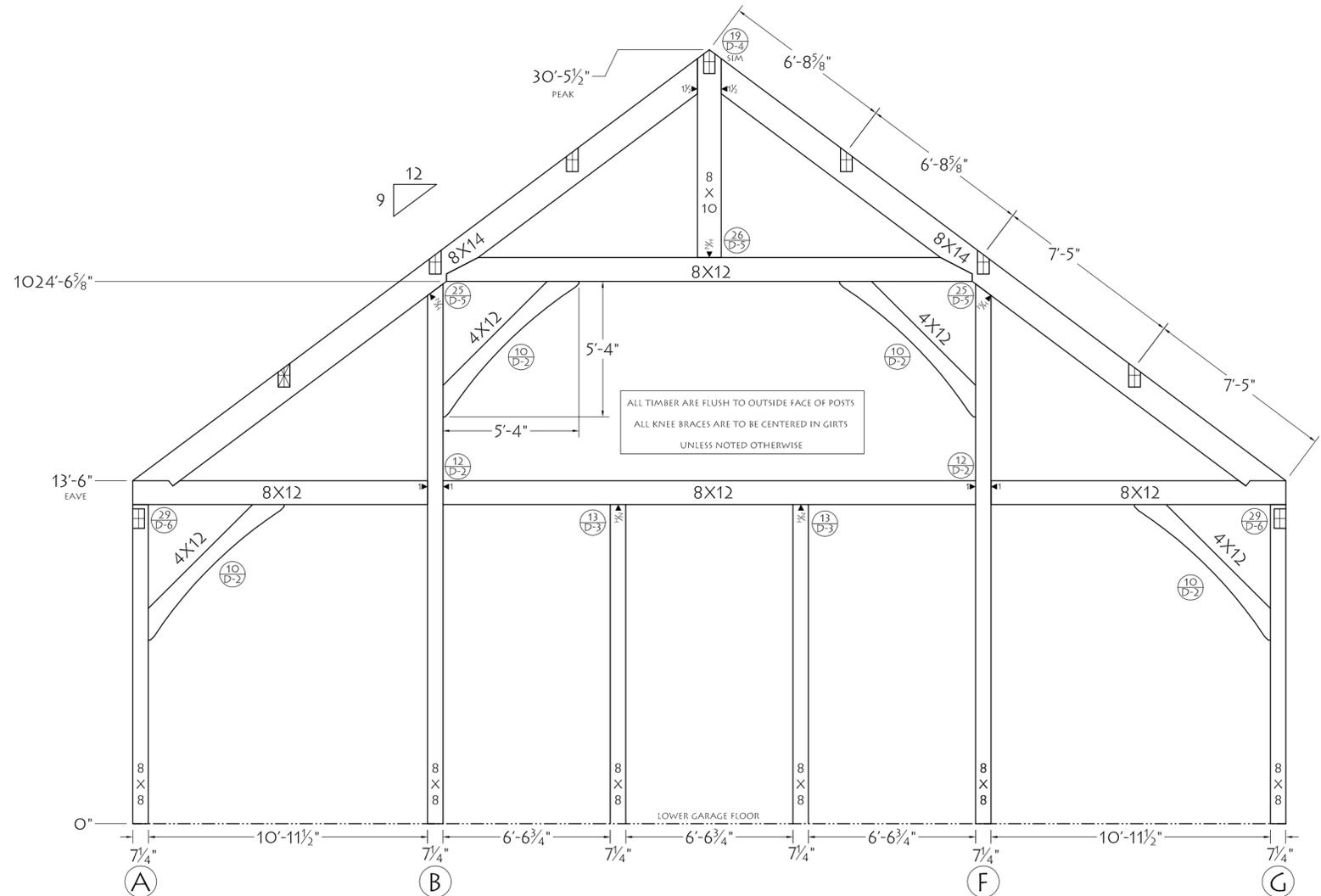
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 FRAME
 SECTIONS

SHEET NUMBER:
TF-6



ALL TIMBER ARE FLUSH TO OUTSIDE FACE OF POSTS
 ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
 UNLESS NOTED OTHERWISE

WALL A
 $\frac{1}{4}'' = 1'-0''$



ALL TIMBER ARE FLUSH TO OUTSIDE FACE OF POSTS
 ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
 UNLESS NOTED OTHERWISE

BENT 9
 $\frac{1}{4}'' = 1'-0''$

TIMBER FRAMED GARAGE

DELAWARE COUNTY, PA

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SHEET TITLE:

FRAME
 SECTIONS

SHEET NUMBER:

TF-7

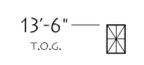
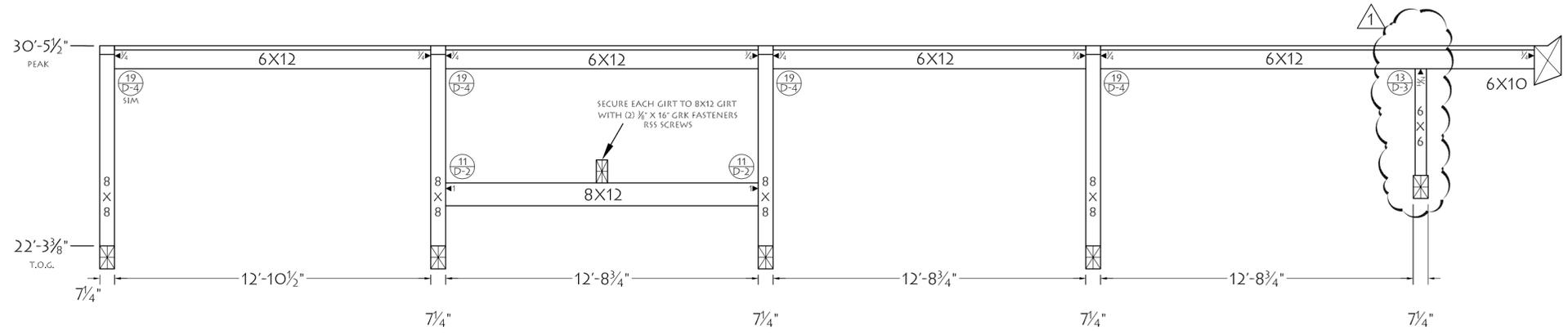
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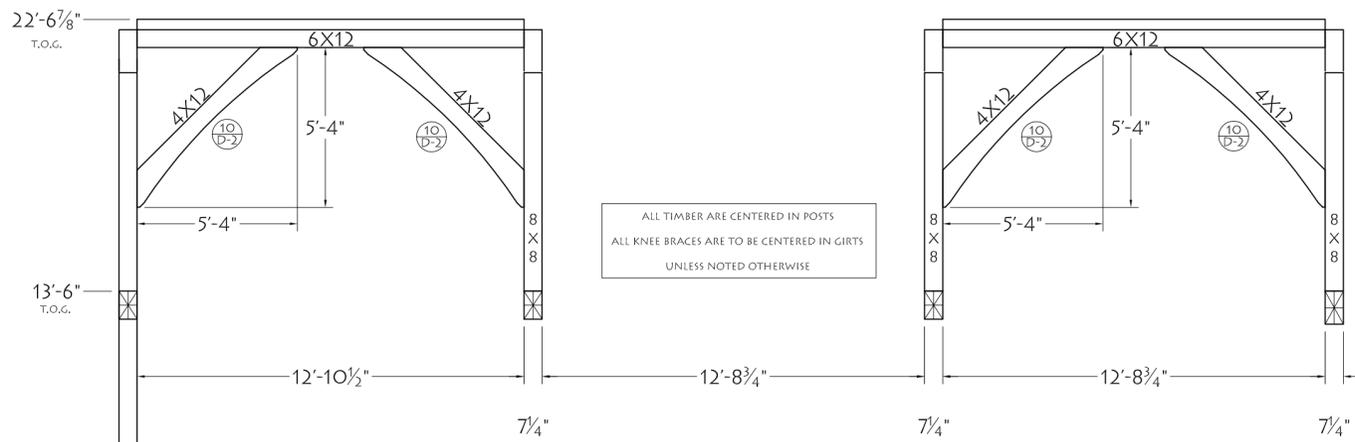
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FRAME SECTIONS

SHEET NUMBER:
TF-8



ALL TIMBER ARE CENTERED IN POSTS
ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
UNLESS NOTED OTHERWISE



ALL TIMBER ARE CENTERED IN POSTS
ALL KNEE BRACES ARE TO BE CENTERED IN GIRTS
UNLESS NOTED OTHERWISE



