

UTILITY SHED PLANS

STATE OF VIRGINIA (160 MPH) WINDS

GENERAL NOTES:

1. THIS STRUCTURE WAS DESIGNED IN ACCORDANCE WITH THE 2021 IRC & 2021 IBC.
2. ALL MATERIALS AND LABOR SHALL BE IN ACCORDANCE WITH THE ABOVE CODE AND ALL OTHER APPLICABLE LOCAL CODES AT THE TIME OF MANUFACTURE.
3. WRITTEN DIMENSIONS SHALL TAKE PRIORITY OVER SCALED DIMENSIONS.
4. THE FOUNDATION PLAN IS A SEPARATE SET OF PLANS FOR APPROVAL BY LOCAL MUNICIPALITIES.
5. EXTERIOR DIMENSIONS CAN VARY BETWEEN LIMITS SHOWN @ 2'-0" o/c BUT MEMBER SPACING SHALL NOT EXCEED LIMITS AS INDICATED.
6. ALL THE FOLLOWING LUMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWWA USE CATEGORY UC4B (GROUND CONTACT, HEAVY DUTY) SKIDS.
7. ALL THE FOLLOWING LUMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AWWA USE CATEGORY UC3B (EXTERIOR ABOVE GROUND, UNCOATED OR POOR WATER RUNOFF), FLOORS JOISTS, PLYWOOD FLOOR DECKING, AND EXTERIOR RATED WOOD STRUCTURAL PANEL SIDING.
8. LP PROSTRUCT SUB-FLOORING $\frac{1}{2}$ " MAY BE USED IN LIEU OF PRESSURE TREATED PLYWOOD FLOORING.
9. P.T. PLYWOOD FLOORING NOT REQUIRED WHERE THE BOTTOM OF THE FLOORING IS OVER 18" ABOVE GROUND SECTION 2304.11.2.1 VABC 2021 ICCIRC.
10. ALL FASTENERS AND CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED (G185) OR STAINLESS STEEL.
11. ALL WINDOWS WITHIN 24" OF DOORS, AND ALL GLASS IN DOORS SHALL BE SAFETY, TEMPERED, OR ACRYLIC PLASTIC SHEET.
12. FOR ROOFS WITH ASPHALT SHINGLES AND A SLOPE BETWEEN 2 TO 12 AND 4 TO 12 SHALL HAVE A DOUBLE UNDERLAYMENT APPLICATION AS REQUIRED IN ACCORDANCE WITH SECTION 1507.2.8 OF THE 2021 ICCIRC VABC.
13. UNDERLAYMENT SHALL CONFORM WITH SECTION 1507.2.3 (ASPHALT SHINGLES) AND 1507.4.5 (METAL ROOF PANEL) OF THE 2021 ICCIRC VABC.
14. ASPHALT SHINGLES SHALL CONFORM WITH SECTION 1507.2.5 OF THE 2021 ICCIRC VABC ATTACHMENT OF ASPHALT SHINGLES SHALL CONFORM WITH 1507.2.7 OF THE 2021 ICCIRC VABC.
15. FASTENERS FOR ASPHALT SHINGLES SHALL CONFORM TO SECTION 1507.2.6 OF THE 2021 ICCIRC VABC.
16. TIE-DOWNS SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES.
17. THESE PLANS HAVE NOT BEEN DESIGNED FOR HVHZ REQUIREMENTS AS SET FORTH IN THE 2021 ICCIRC VABC OR FOR USE AS A COMMERCIAL BUILDING.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY AND PLACEMENT OF LAWN STORAGE UNIT TO INSURE THE INTEGRITY OF THE BUILDING AND ITS COMPONENT PARTS.
20. NO FIELD REVISIONS TO ANY STRUCTURAL COMPONENT OR DEVIATION FROM THESE DRAWINGS SHALL BE MADE.
21. THE OWNER AND THE CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER FROM AND AGAINST ALL LIABILITY CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING LEGAL FEES ARISING OUT OF OR RESULTING FROM ERROR OR OMISSIONS IN THE PERFORMANCE OF THE WORK BY THE CONTRACTOR.
22. SECTIONS AND DETAILS ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY AT ALL SIMILAR LOCATIONS, UNLESS OTHER SECTIONS AND DETAILS ARE SPECIALLY REFERENCED.
23. REFER TO SUPPLIED FASTENING SCHEDULE FOR FASTENING BASE ON CONNECTION AND LOCATION OF MEMBERS AS PER 2021 ICCIRC CODE TABLE 2304.9.1 UNLESS NOTED OTHERWISE.
24. BUILDINGS HAVE BEEN DESIGNED FOR LP SMARTSIDE PRECISION PANEL SIDING, LP SMARTSIDE PRECISION LAP SIDING SHALL NOT BE USED.
25. FASTENERS IN LP SMARTSIDE PRECISION PANEL SIDING MUST NOT BE INSTALLED IN PANEL SIDING GROOVES IN THE FIELD OF THE PANEL SIDING OR WHEN THE PANEL SIDING GROOVES OCCUR AT CUT EDGES OF THE PANEL SIDING.
26. REFER TO THE ICC-ES EVALUATION REPORT ESR-1301 FOR ADDITIONAL DATA AND SPECIFICATIONS OF LP SMARTSIDE PRECISION PANEL SIDING. VIRGINIA PRODUCT APPROVAL 9190.5 & 9190.6.
27. MAX OPENING WIDTHS MUST COMPLY WITH DESIGN RATIOS AS PER ANSI/AF&PA SDPWS-2008. BUILDING HAVE DESIGNED TO HAVE ONLY OPENINGS WITH MAX WIDTHS EQUAL TO THOSE IN THE ENDWALL SHEAR WALL CHART.
28. AS PER SECTION 553.72(10)(b), VIRGINIA STATUTES, STORAGE SHEDS THAT ARE NOT DESIGNED FOR HUMAN HABITATION AND THAT HAVE A FLOOR AREA OF 720 SQUARE FEET OR LESS ARE NOT REQUIRED TO COMPLY WITH THE MANDATORY WIND-BORNE-DEBRIS-IMPACT STANDARDS OF THE VIRGINIA BUILDING CODE. IN ADDITION, SUCH BUILDINGS THAT ARE 400 SQUARE FEET OR LESS AND THAT ARE INTENDED FOR USE IN CONJUNCTION WITH ONE-AND-TWO FAMILY RESIDENCES ARE NOT SUBJECT TO THE DOOR HEIGHT AND WIDTH REQUIREMENTS OF THE VIRGINIA BUILDING CODE. SEE VABC 1008.1.1 EXCEPTION (b).
29. BUILDINGS HAVE BEEN DESIGNED TO HAVE ANCHORS DIRECTLY ATTACHED TO ALL FOUR CORNERS OR THE BUILDING TO RESIST TENSION FORCES FROM LATERAL WIND LOADS. THIS DESIGN CONSIDERATION MUST BE MADE BY INSTALLER WHEN ATTACHING ANCHORING SYSTEM TO BUILDING.
30. UNLESS NOTED OTHERWISE, ATTACH ALL MANUFACTURED PRODUCTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

NOTE:

THIS BUILDING IS NOT DESIGNED FOR HUMAN HABITATION AND DOES NOT HAVE RUNNING WATER OR SANITATION SERVICES. THIS BUILDING IS DESIGNED AS A UTILITY SHED TO STORE LAWN EQUIPMENT SUCH AS WHEEL BARROWS, GARDENING SUPPLIES, FLOWER POTS, AND CARDBOARD BOXES WITH VARIOUS SMALL ITEMS.

SITE INSTALLED ITEMS:

NOTE THAT THIS LIST DOES NOT NECESSARILY LIMIT THE ITEMS OF WORK AND MATERIALS THAT MAY BE REQUIRED FOR A COMPLETE INSTALLATION. ALL SITE RELATED ITEMS ARE SUBJECT TO LOCAL JURISDICTIONAL APPROVAL.

1. THE COMPLETE FOUNDATION SUPPORT AND TIE-DOWN SYSTEM.
2. RAMPS, STAIRS, AND GENERAL ACCESS TO THE BUILDING IF NECESSARY.
3. GUTTERS AND DOWNSPOUTS ON ALL BUILDINGS WITH EAVES OF LESS THAN 6 INCHES HORIZONTAL PROJECTION EXCEPT FOR GABLE END RAKES.

SHED MANUFACTURER SHALL HAVE A LIST OF ALL REQUIRED PRODUCTS THAT NEED VIRGINIA STATE APPROVAL AVAILABLE FOR 3RD PARTY INSPECTOR AND REVIEW BY E.O.R. FOR COMPLIANCE WITH WIND LOADS



DESIGN CRITERIA:

1. WIND VELOCITY 170 MPH.
2. BUILDING CATEGORY I
3. WIND EXPOSURE C
4. INT. PRESSURE COEFFICIENT ± 0.18
5. ENCLOSURE CLASSIFICATION ENCLOSED
6. BASED ON HEIGHT 15 FEET
7. OVERHANG NO
8. FLOOR DESIGN LIVE LOAD 50 PSF
FLOOR DESIGN DEAD LOAD 4 PSF
9. ROOF DESIGN LIVE LOAD 20 PSF
ROOF DESIGN DEAD LOAD 7 PSF
10. WALL DESIGN DEAD LOAD 3 PSF
11. SNOW LOAD 60 PSF
(FOR 61-90 PSF SNOW, TRUSSES @ 16" SPECIAL ORDER)
12. CONSTRUCTION TYPE V B
13. BUILDING OCCUPANCY = U
14. FIRE RATING EXT. WALLS 0
15. ALLOWABLE NUMBER OF FLOORS 1
16. THE CONTRACTOR / MANUFACTURER MUST COMPLY WITH THE FOLLOWING CODES AND ALL OF THEIR AMENDMENTS / SUPPLEMENTS.

VIRGINIA CODE SUMMARY

LATEST BUILDING CODE
2021 VIRGINIA CONSTRUCTION CODE
ADOPTS THE IBC 2021 W/ AMENDMENTS

SHEET LIST

SHEET NUMBER	SHEET TITLE
C-1	COVER SHEET
C-2	FASTENING SCHEDULE / WIND LOADING / SHEARWALL CHART
A-1	FRAMING PLANS & DETAILS
A-2	FRAMING PLANS & DETAILS
A-3	SECTIONS
A-4	PLANS & DETAILS
A-5	TYPICAL DETAILS
A-6	TYPICAL DETAILS
A-7	OPTIONAL PORCH DETAILS
A-8	ANCHORING DETAILS & SCHEDULES
A-9	ANCHORING SPEC SHEETS
A-10	TRUSS DETAILS

PROJECT:
UTILITY SHED

COVER SHEET & GENERAL NOTES

DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



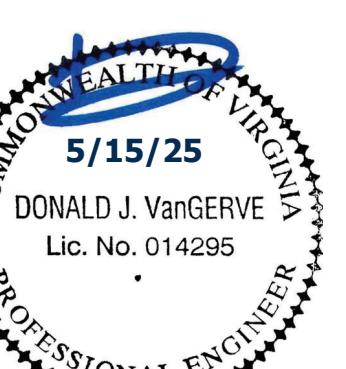
ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
317 EAST STATE LINE ROAD
SOUTH FULTON, TN 38257
WWW.PREMIERBUILDINGS.US

REVISION	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

DATE: 5.15.25	C-1
PROJECT NO.: 19227	
DRAWING BY: JH	
CHK BY: DVG	

DWG NO.:

5/15/25



2304.10.2 Fastener Requirements

Connections for wood members shall be designed in accordance with the appropriate methodology in Section 2302.1. The number and size of fasteners connecting wood members shall be not less than that set forth in Table 2304.10.2.

TABLE 2304.10.2

FASTENING SCHEDULE		
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ⁶	SPACING AND LOCATION
Roof		
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	4-8d box (2 $\frac{1}{2}$ " x 0.113"); or 3-8d common (2 $\frac{1}{2}$ " x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 $\frac{1}{2}$ " x 0.131"); 2-3" x 0.131" nails; 2-3" 14 gage staples	Each end, toenail
Flat blocking to truss and web filler	16d common (3 $\frac{1}{2}$ " x 0.162") @ 6" o.c. 3" x 0.131" nails @ 6" o.c. 3" x 14 gage staples @ 6" o.c.	Face nail
2. Ceiling joists to top plate	4-8d box (2 $\frac{1}{2}$ " x 0.113"); or 3-8d common (2 $\frac{1}{2}$ " x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d common (3 $\frac{1}{2}$ " x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	Per Table 2308.7.3.1	Face nail
5. Collar tie to rafter	3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6. Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)	3-10 common (3" x 0.148"); or 3-16d box (3 $\frac{1}{2}$ " x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	2 toenails on one side and 1 toenail on opposite side of rafter or truss ⁷
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 $\frac{1}{2}$ " x 0.162"); or 3-16d box (3 $\frac{1}{2}$ " x 0.135"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
	3-10d common (3 $\frac{1}{2}$ " x 0.148"); or 4-16d box (3 $\frac{1}{2}$ " x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
	3-10d common (3 $\frac{1}{2}$ " x 0.148"); or 4-16d box (3 $\frac{1}{2}$ " x 0.135"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
Wall		
8. Stud to stud (not at braced wall panels)	16d common (3 $\frac{1}{2}$ " x 0.162"); 10d box (3" x 0.128"); or 3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	24" o.c. face nail
9. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 $\frac{1}{2}$ " x 0.162")	16" o.c. face nail
10. Built-up header (2" x 2" header)	16d common (3 $\frac{1}{2}$ " x 0.162")	16" o.c. each edge, face nail
	16d box (3 $\frac{1}{2}$ " x 0.135")	12" o.c. each edge, face nail
11. Continuous header to stud	4-8d common (2 $\frac{1}{2}$ " x 0.131"); or 4-10d box (3" x 0.128"); or 5-8d box (2 $\frac{1}{2}$ " x 0.113")	Toenail
	16d common (3 $\frac{1}{2}$ " x 0.162")	16" o.c. face nail
12. Top plate to top plate	10d box (3" x 0.128"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13. Top plate to top plate, at end joints	8-16d common (3 $\frac{1}{2}$ " x 0.162"); or 12-16d box (3 $\frac{1}{2}$ " x 0.135"); or 12-10d box (3" x 0.128"); or 12-3" x 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 $\frac{1}{2}$ " x 0.162")	16" o.c. face nail
	16d box (3 $\frac{1}{2}$ " x 0.135"); or 3" x 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 $\frac{1}{2}$ " x 0.162"); or 3-16d box (3 $\frac{1}{2}$ " x 0.135"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16. Stud to top or bottom plate	3-16d box (3 $\frac{1}{2}$ " x 0.135"); or 4-8d common (2 $\frac{1}{2}$ " x 0.131"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-8d box (2 $\frac{1}{2}$ " x 0.113"); or 4-3" 14 gage staples, 7/16" crown	Toenail
	2-16d common (3 $\frac{1}{2}$ " x 0.162"); or 3-16d box (3 $\frac{1}{2}$ " x 0.135"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17. Top plates, laps at corners and intersections	2-16d common (3 $\frac{1}{2}$ " x 0.162"); or 3-10d box (3" x 0.128"); or 3-3" x 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
18. 1" brace to each stud and plate	3-8d box (2 $\frac{1}{2}$ " x 0.113"); or 2-8d common (2 $\frac{1}{2}$ " x 0.131"); or 2-10d box (3" x 0.128"); or 2-3" x 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail

SHEARWALL CHART			
BUILDING WIDTH	OPENING WIDTHS IN END WALL	MAX. LENGTH OF BUILDING	
		19 $\frac{1}{2}$ " T1-111	3/8" LP SMARTSIDE PANEL ²
8'-0"	3'-0" MAX.	40'-0"	20'-0" 40'-0"
10'-0"	3'-0" MAX.	60'-0"	30'-0" 60'-0"
	6'-0"	60'-0"	16'-0" 60'-0"
11'-2"	3'-0" MAX.	60'-0"	36'-0" 60'-0"
	6'-0"	60'-0"	24'-0" 60'-0"
14'-0"	10'-0"	60'-0"	12'-0" 60'-0"
	3'-0" MAX.	60'-0"	40'-0" 60'-0"
16'-0"	6'-0"	60'-0"	34'-0" 60'-0"
	12'-0"	60'-0"	20'-0" 60'-0"

a. COMMON OR BOX NAIL ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.

b. NAILED SPACED @ 6" o/c AT EDGES, 12" AT INTERMEDIATE SUPPORTS EXCEPT 6" AT SUPPORTS WHERE SPANS ARE 48" OR MORE, FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305 FBC. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.

c. COMMON OR DEFORMED SHANK (6d - 2" x 0.113"; 8d - 2 $\frac{1}{2}$ " x 0.131"; 10d 3" x 0.148").

d. COMMON (6d - 2" x 0.113"; 8d - 2 $\frac{1}{2}$ " x 0.131"; 10d 3" x 0.148").

e. DEFORMED SHANK (6d - 2" x 0.113"; 8d 2 $\frac{1}{2}$ " x 0.131"; 10d 3" x 0.148").

f. CORROSION-RESISTANT SIDING (6d - 1 $\frac{1}{2}$ " x 0.106"; 8d - 2 $\frac{1}{2}$ " x 0.128") OR CASING (6d 2" x 0.099"; 8d 2 $\frac{1}{2}$ " x 0.113") NAIL.

g. FASTENERS SPACED 3" o/c AT EXTERIOR EDGES AND 6" o/c AT INTERMEDIATE SUPPORTS WHEN USED AS STRUCTURAL SHEATHING.

h. CORROSION-RESISTANT ROOFING NAILS w/ 1/8" DIAMETER HEAD AND 1 1/2" LENGTH FOR 1/2" SHEATHING AND 1 3/4" LENGTH FOR 5/8" SHEATHING.

i. CORROSION-RESISTANT STAPLES WITH NOMINAL 1/8" CROWN OR 1" CROWN AND 1 1/4" LENGTH FOR 1/2" SHEATHING AND 1 1/2" LENGTH FOR 5/8" SHEATHING. PANEL SUPPORTS @ 16" o/c (20" IF STRENGTH AXIS IS THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED.)

j. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (2 $\frac{1}{2}$ " x 0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 1/8".

k. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4" o/c AT EDGES, 8" o/c AT INTERMEDIATE SUPPORTS.

l. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4" o/c AT EDGES, 8" o/c AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3" o/c AT EDGES, 6" AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.

m. FASTENERS SPACED 4" o/c AT EDGES, 8" o/c AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3" o/c AT EDGES, 6" AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.

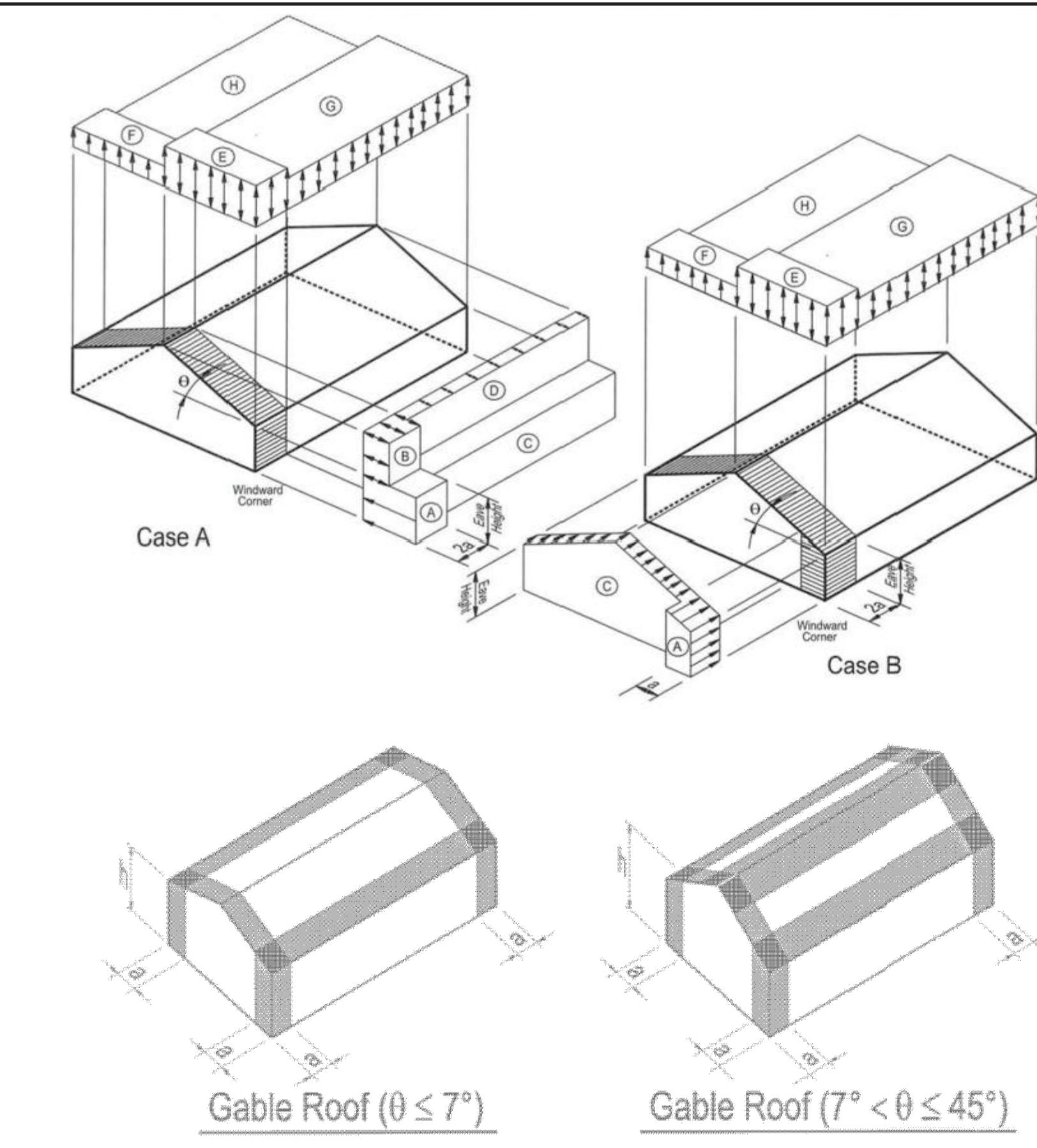
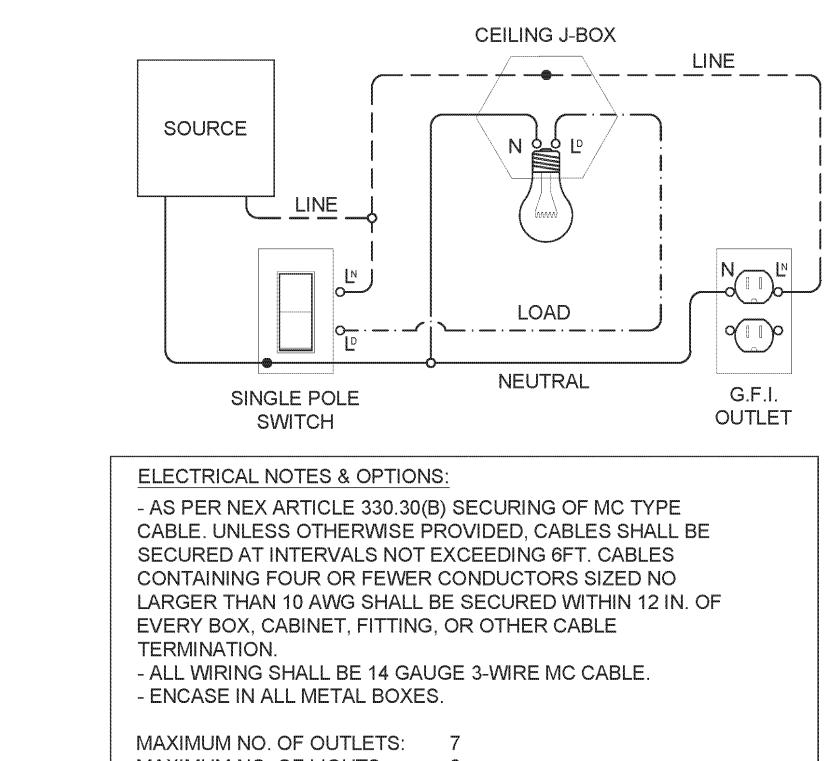
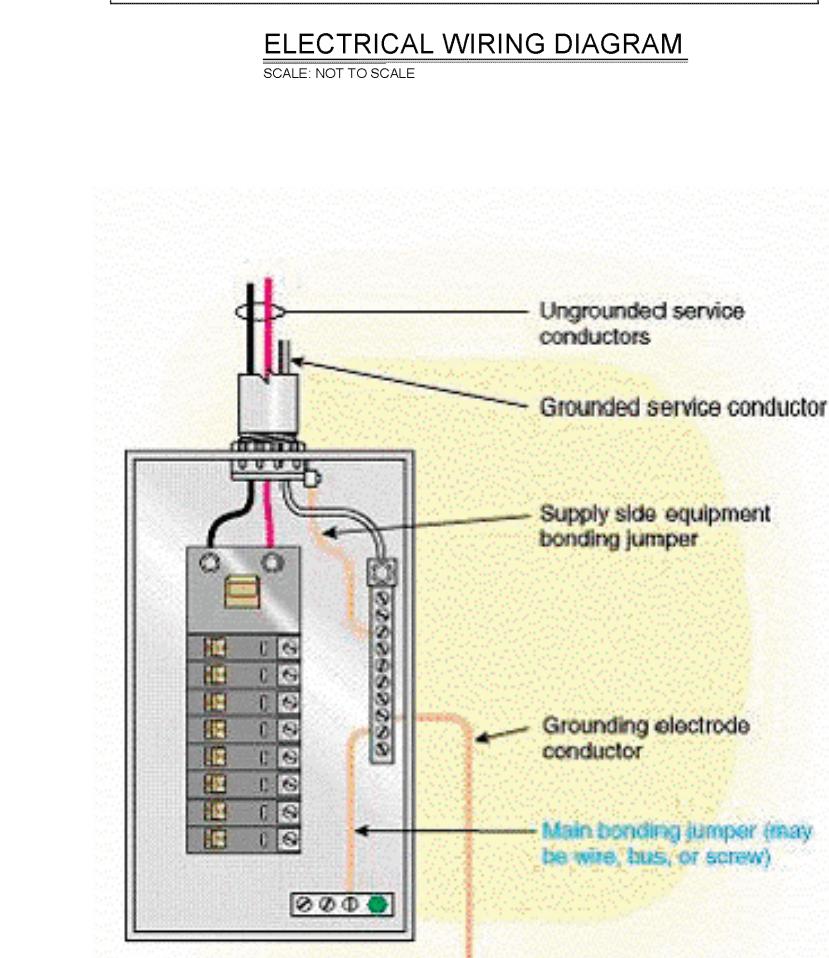


FIGURE 1609.6.2.2
COMPONENT AND CLADDING PRESSURE



ELECTRICAL NOTES & OPTIONS:
- AS PER NEX ARTICLE 330.3(B) SECURING OF MC TYPE CABLE. UNLESS OTHERWISE PROVIDED, CABLES SHALL BE SECURED AT 12" SPACES EXCEPT 16" SPACES CONTAINING FOUR OR FEWER CONDUCTORS SIZED NO LARGER THAN 10 AWG. SHALL BE SECURED WITHIN 12 IN. OF EVERY BOX, CABINET, FITTING, OR OTHER CABLE TERMINATION.
- ALL WIRING SHALL BE 14 GAUGE 3-WIRE MC CABLE.
- ENCASE IN ALL METAL BOXES.
MAXIMUM NO. OF OUTLETS: 7
MAXIMUM NO. OF LIGHTS: 8



NOTES-OPTIONAL ELECTRIC
- ALL WIRING SHALL BE 14 GAUGE 3-WIRE MC CABLE.
- ENCASE IN ALL METAL BOXES.

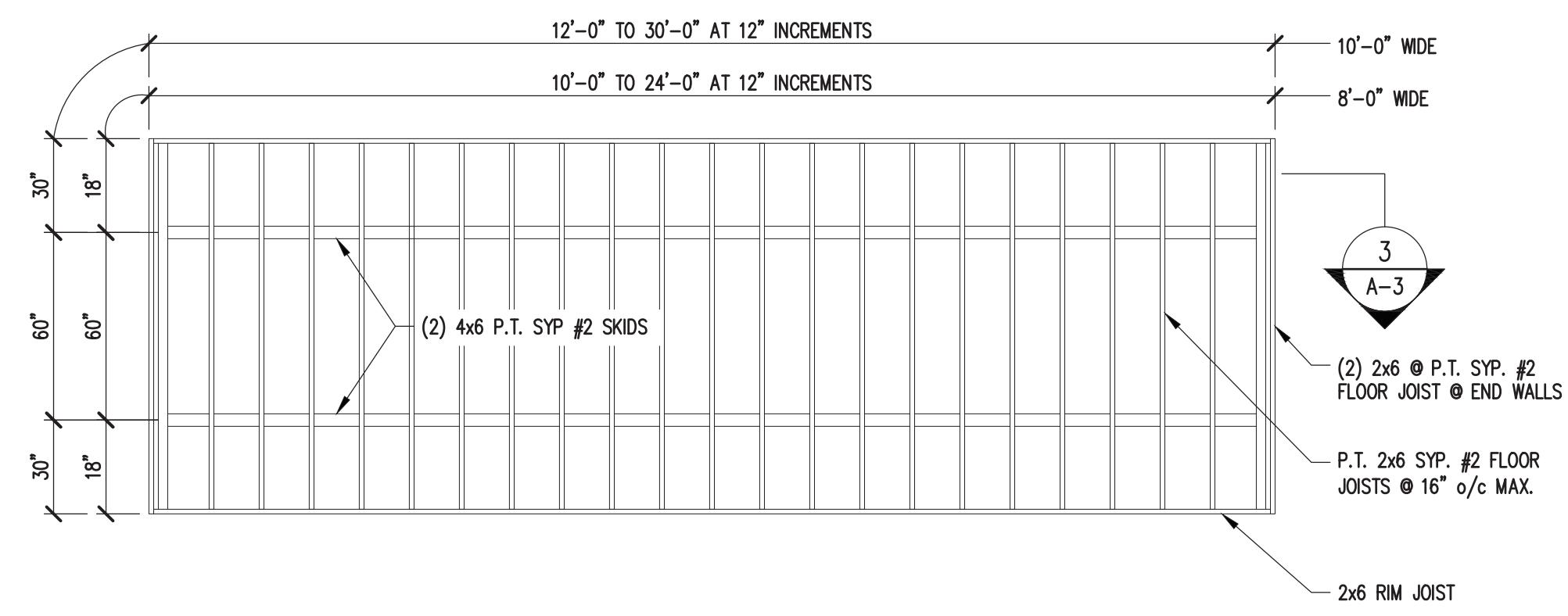
WIRING DIAGRAM (OPTIONAL)

PROJECT:
UTILITY SHED
FASTENING SCHEDULE / WIND LOADING
DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER

ALTERNATE DESIGN SOLUTIONS
STRUCTURAL ENGINEERING & CONSTRUCTION SERVICES
PHONE: 215.355.4684
WWW.ALTERNATEDESIGNSOLUTIONS.COM

ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
317 EAST STATE LINE ROAD
SOUTH FULTON, TN 38257
WWW.PREMIERBUILDINGS.US

REVISION: 5.15.25
PROJECT NO.: 19227
DRAWING BY: JH
CHK BY: DVG
DWG NO.: C-2
DATE: 5.15.25
PROJECT NO.: 19227
DRAWING BY: JH
CHK BY: DVG
DWG NO.: C-2
C-2
5/15/25
DONALD J. VanGERVE
Lic. No. 014295
COMMERCIAL ELECTRICAL CONTRACTOR
PROFESSIONAL ENGINEER



8'-0" & 10'-0" WIDE FLOOR FRAMING PLAN

(DO NOT SCALE DRAWING)

1 A-1

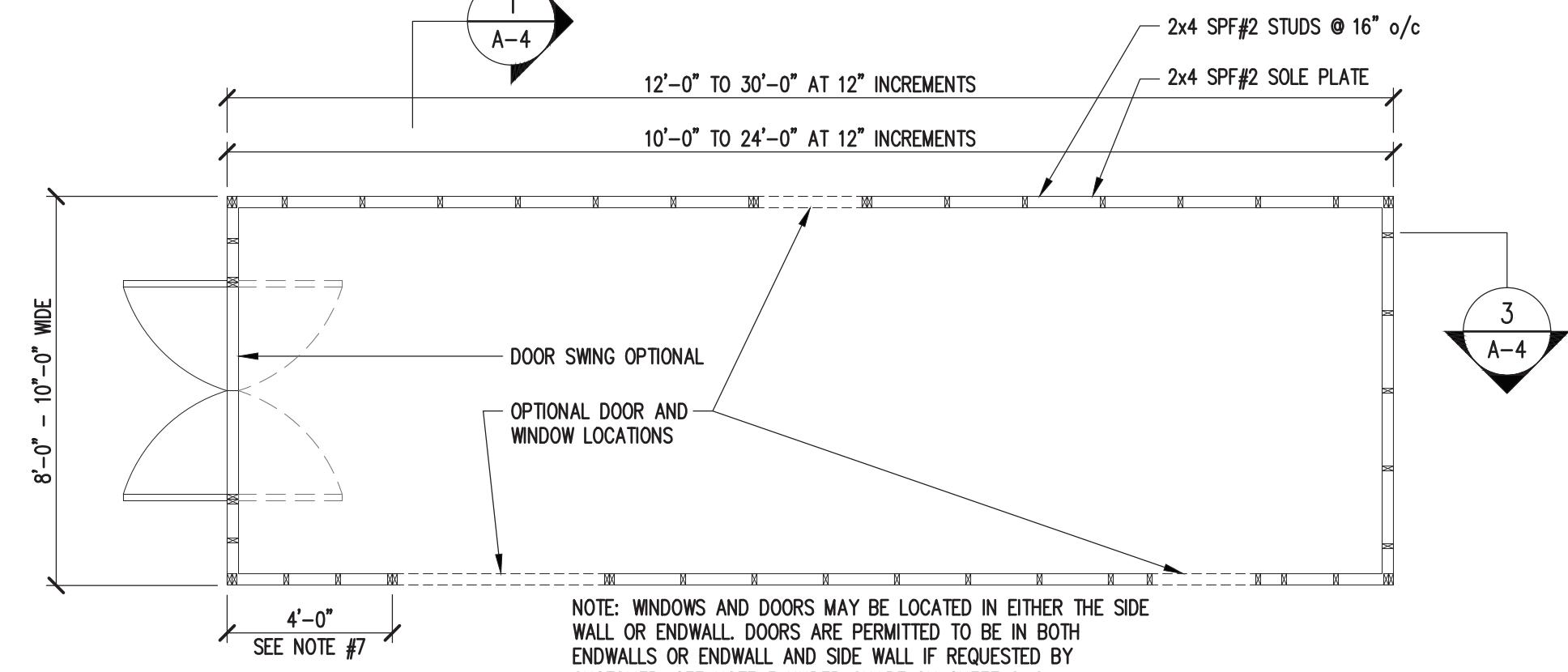
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1 A-4

2 A-1

3 A-4

4 A-3



FLOOR DECK PLAN

3 A-1

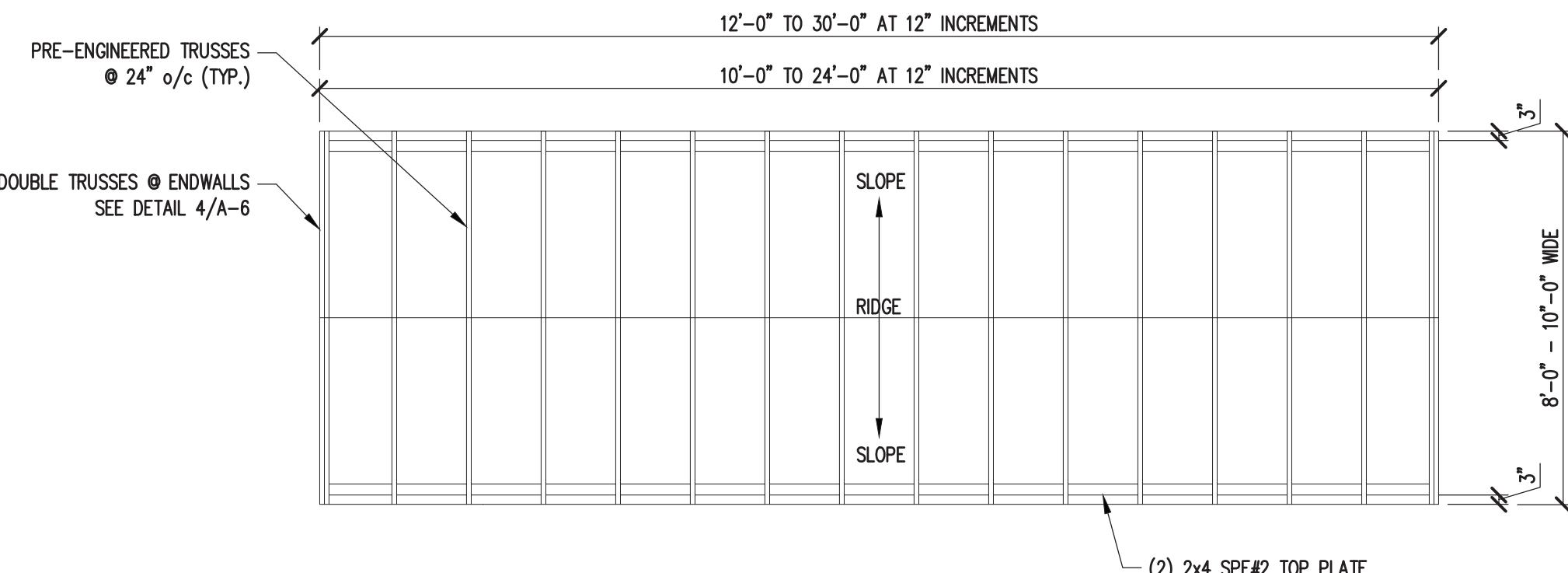
SCALE: 1/4"=1'-0"

1 A-4

2 A-1

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4 A-3



11'-2", 12'-0", 14'-0" & 16'-0" WIDE FLOOR FRAMING PLAN

(DO NOT SCALE DRAWING)

2 A-1

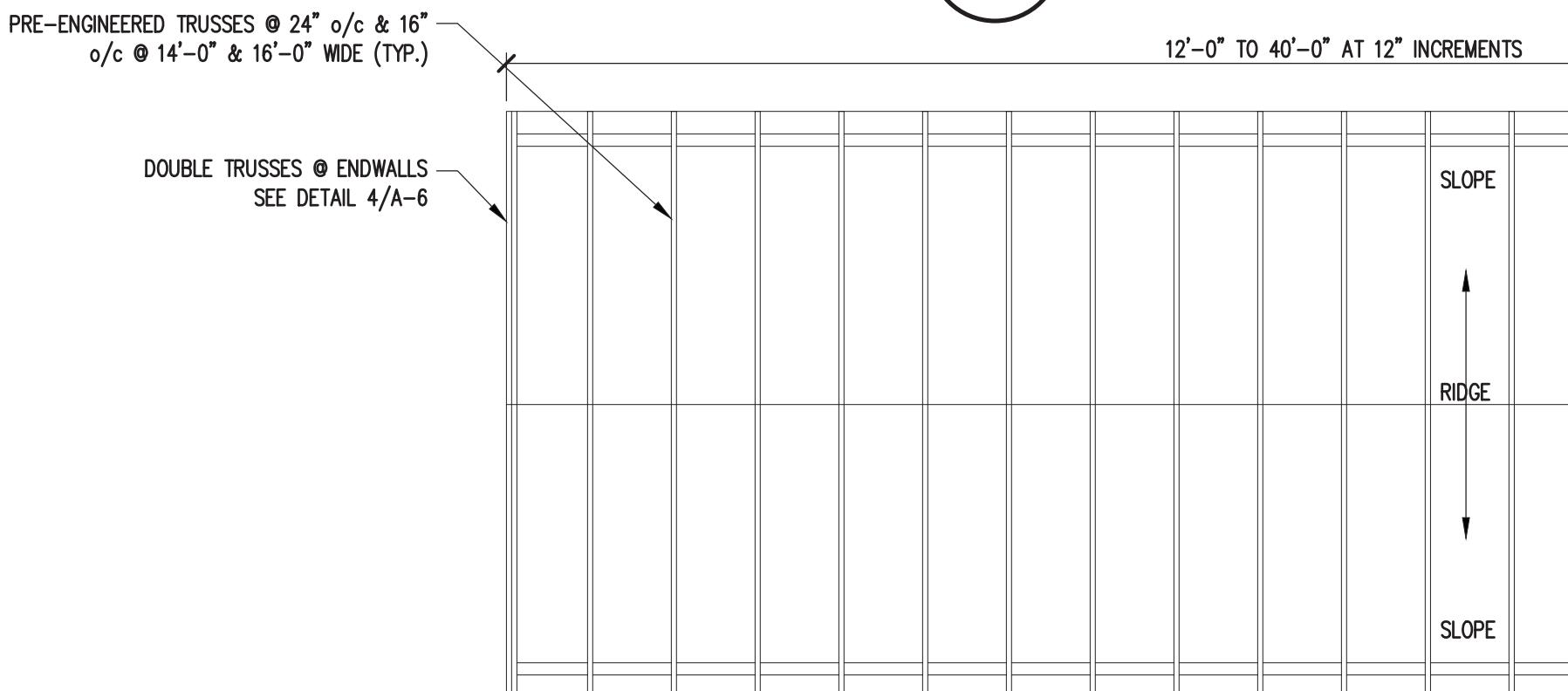
SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3



FLOOR DECK PLAN

4 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3



ROOF PLAN

5 A-1

SCALE: 1/4"=1'-0"

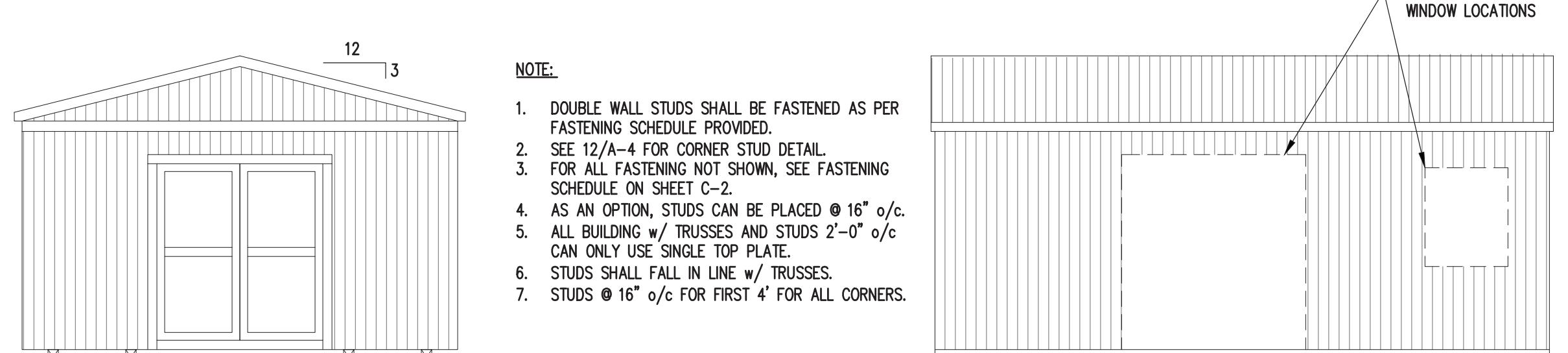
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5 A-2



6 A-1

SCALE: 1/4"=1'-0"

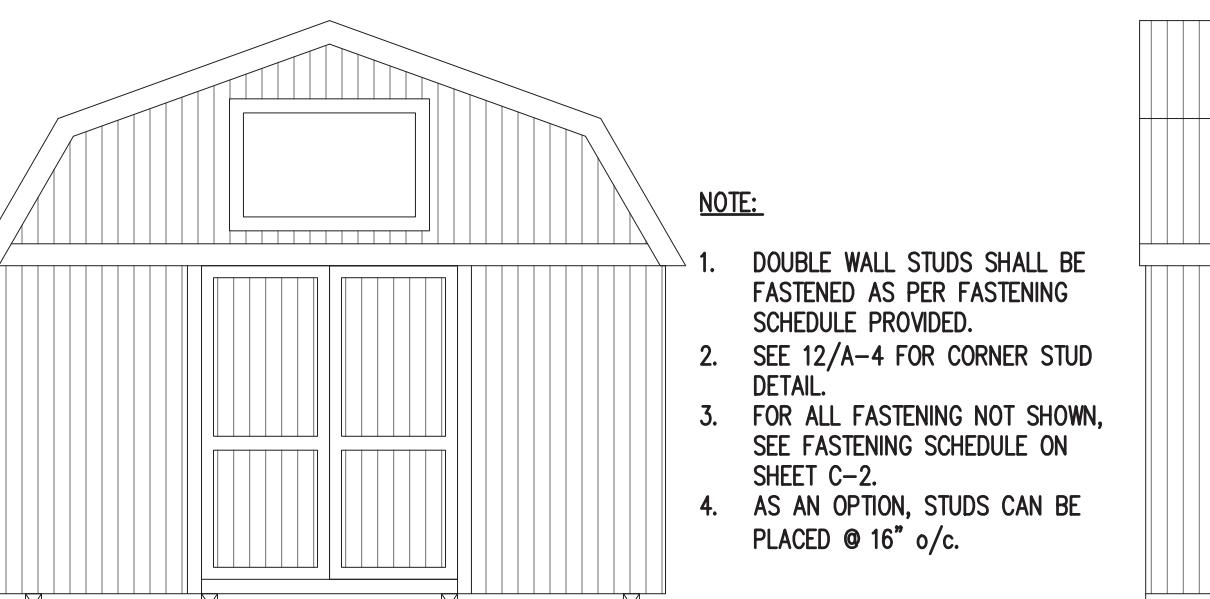
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5 A-2



ROOF PLAN

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

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SCALE: 1/4"=1'-0"

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SCALE: 1/4"=1'-0"

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6 A-1

SCALE: 1/4"=1'-0"

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3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

5 A-2

6 A-1

SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

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SCALE: 1/4"=1'-0"

1 A-4

2 A-1

3 A-4

4 A-3

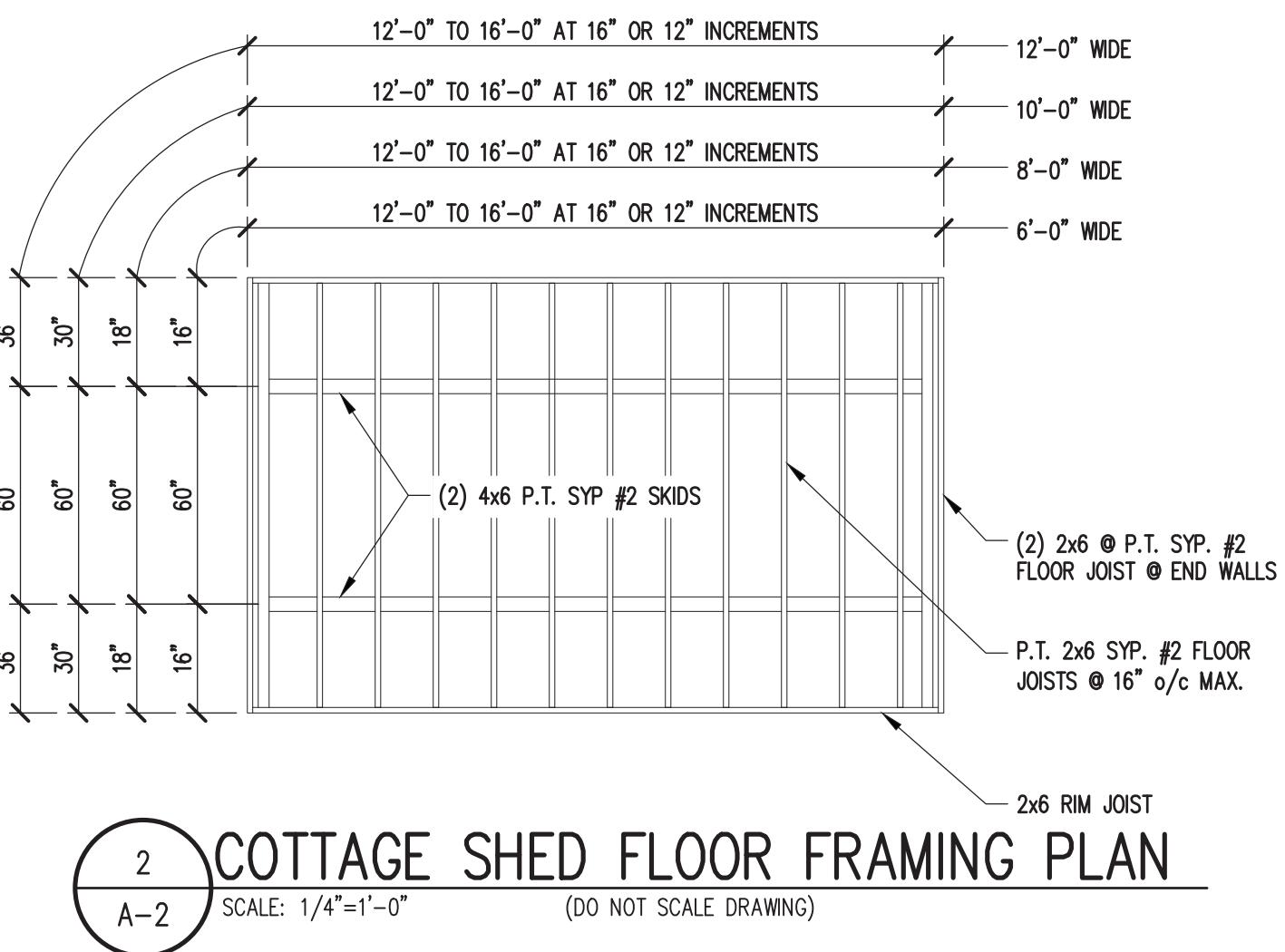
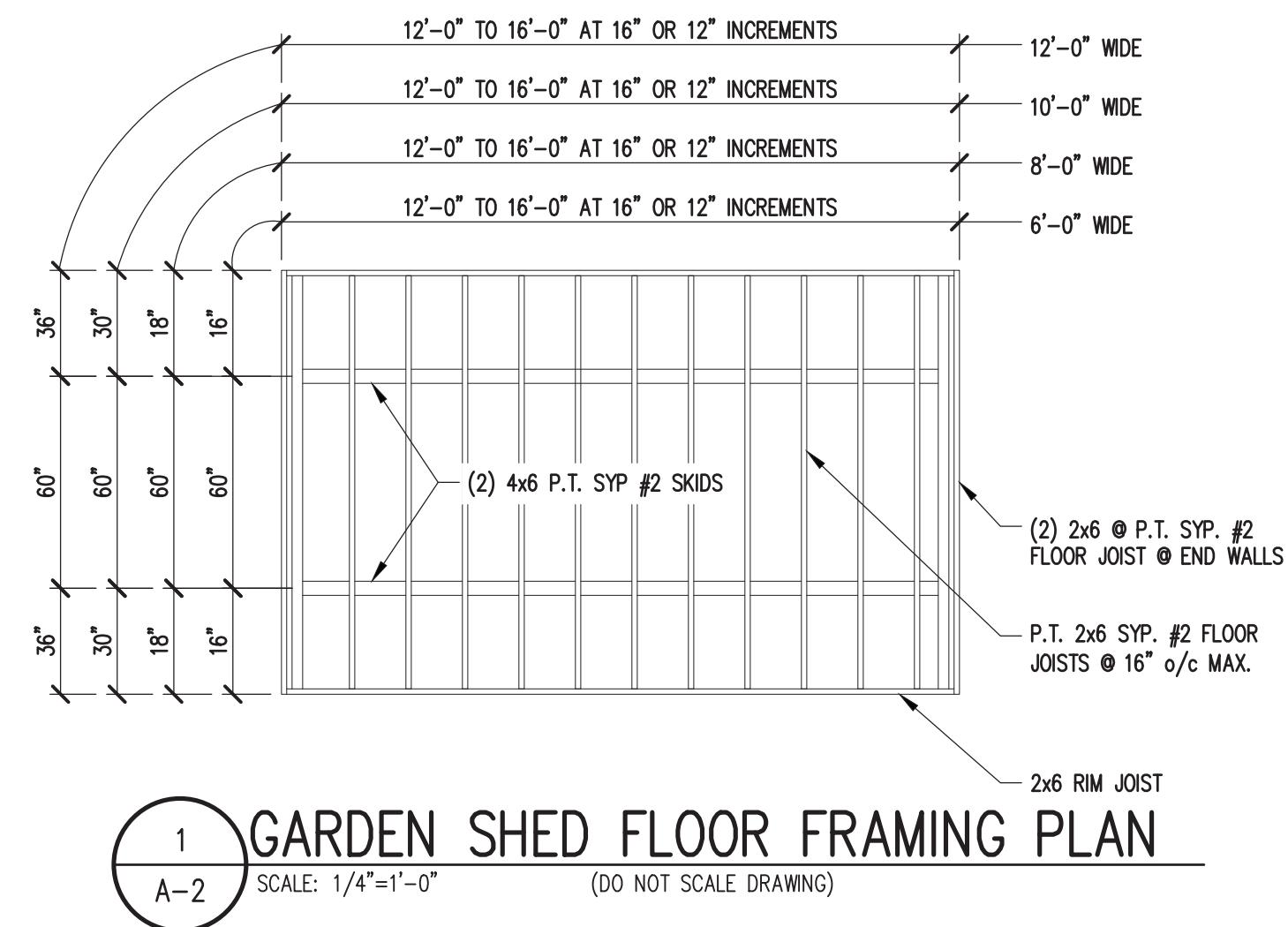
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6 A-1

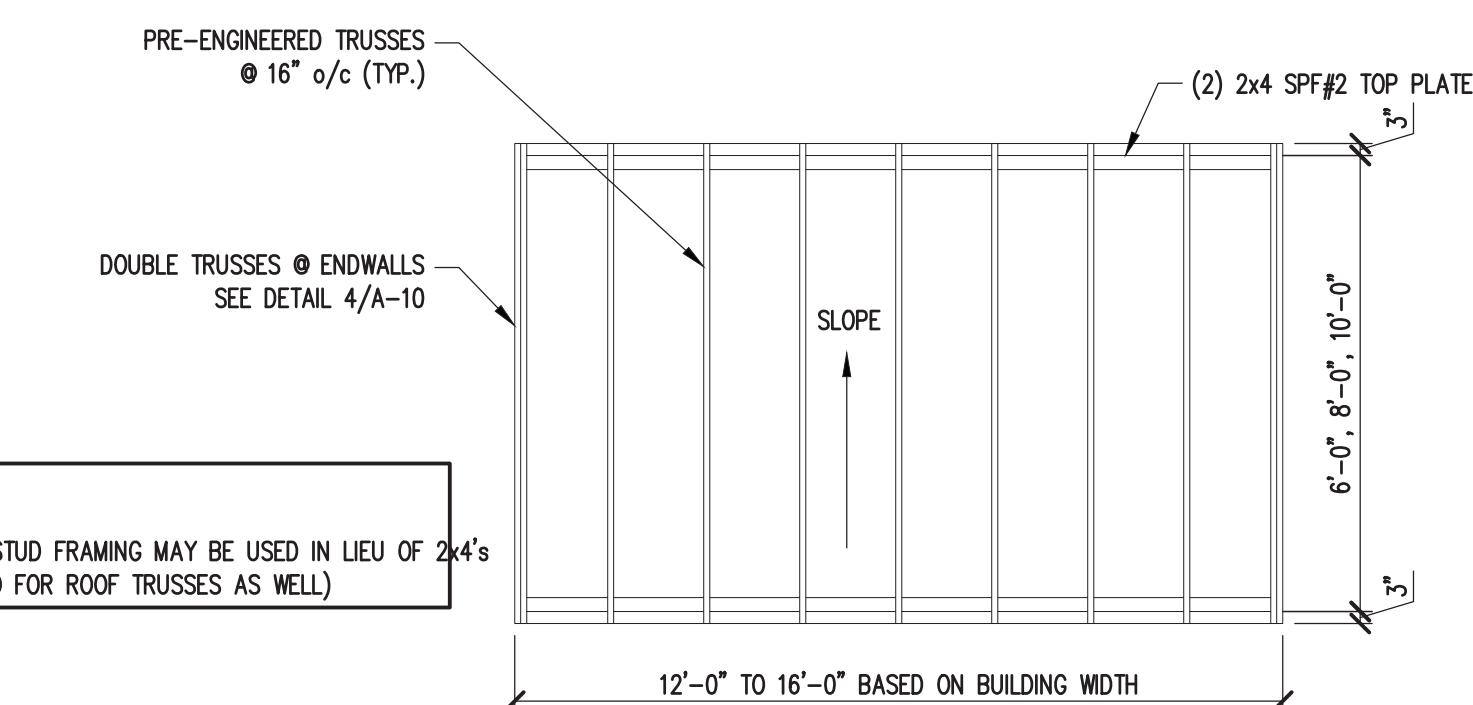
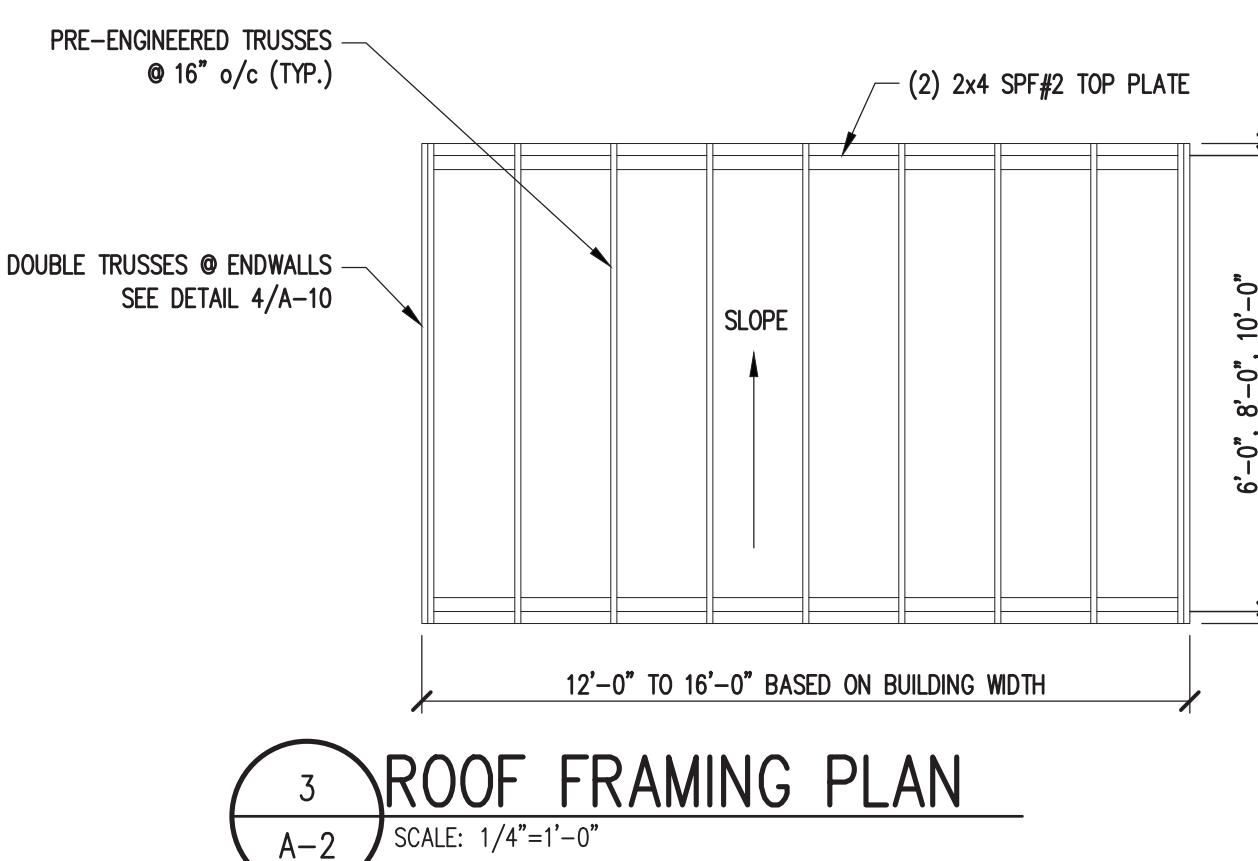
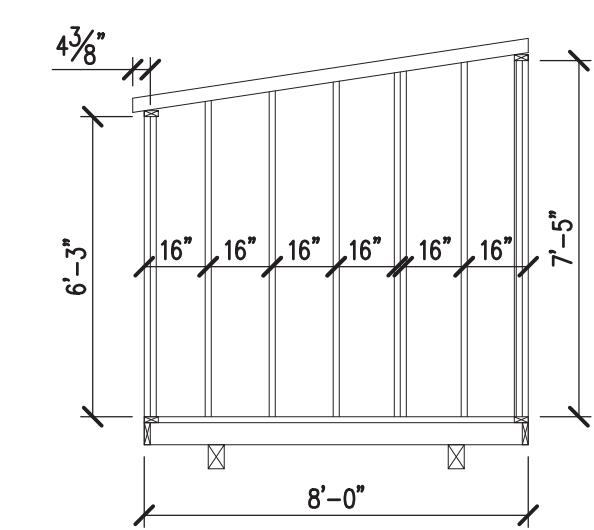
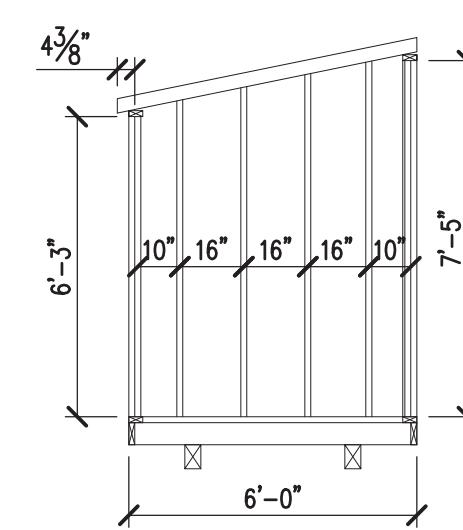
SCALE: 1/4"=1'-0"

1 A-4

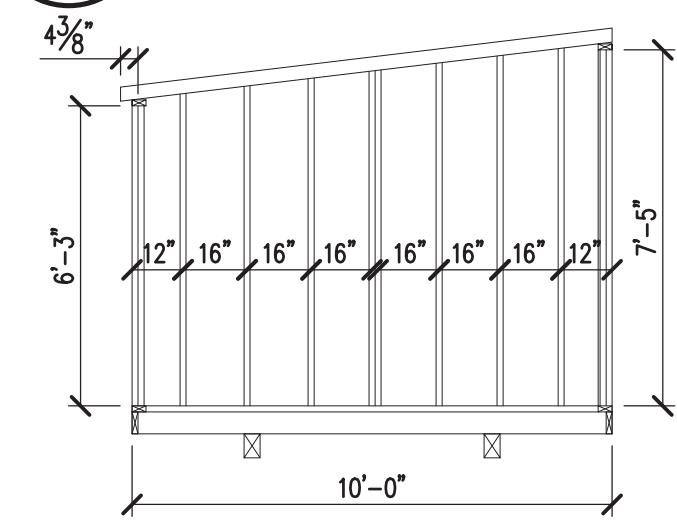
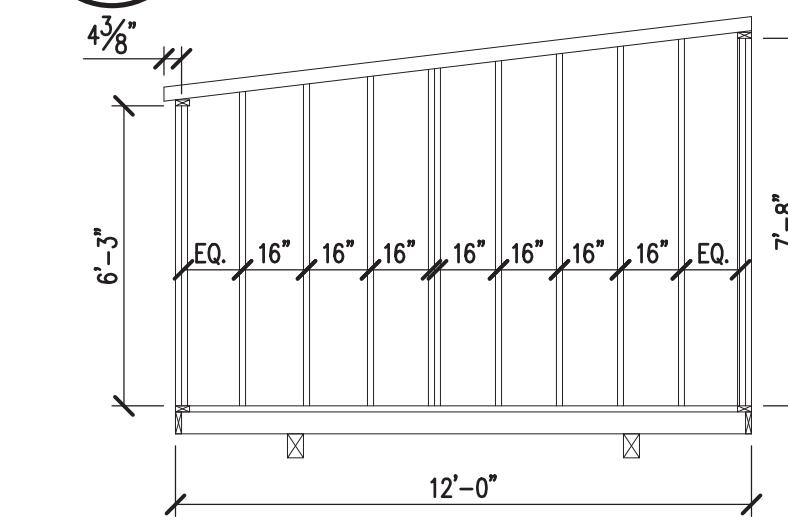
2 A-1



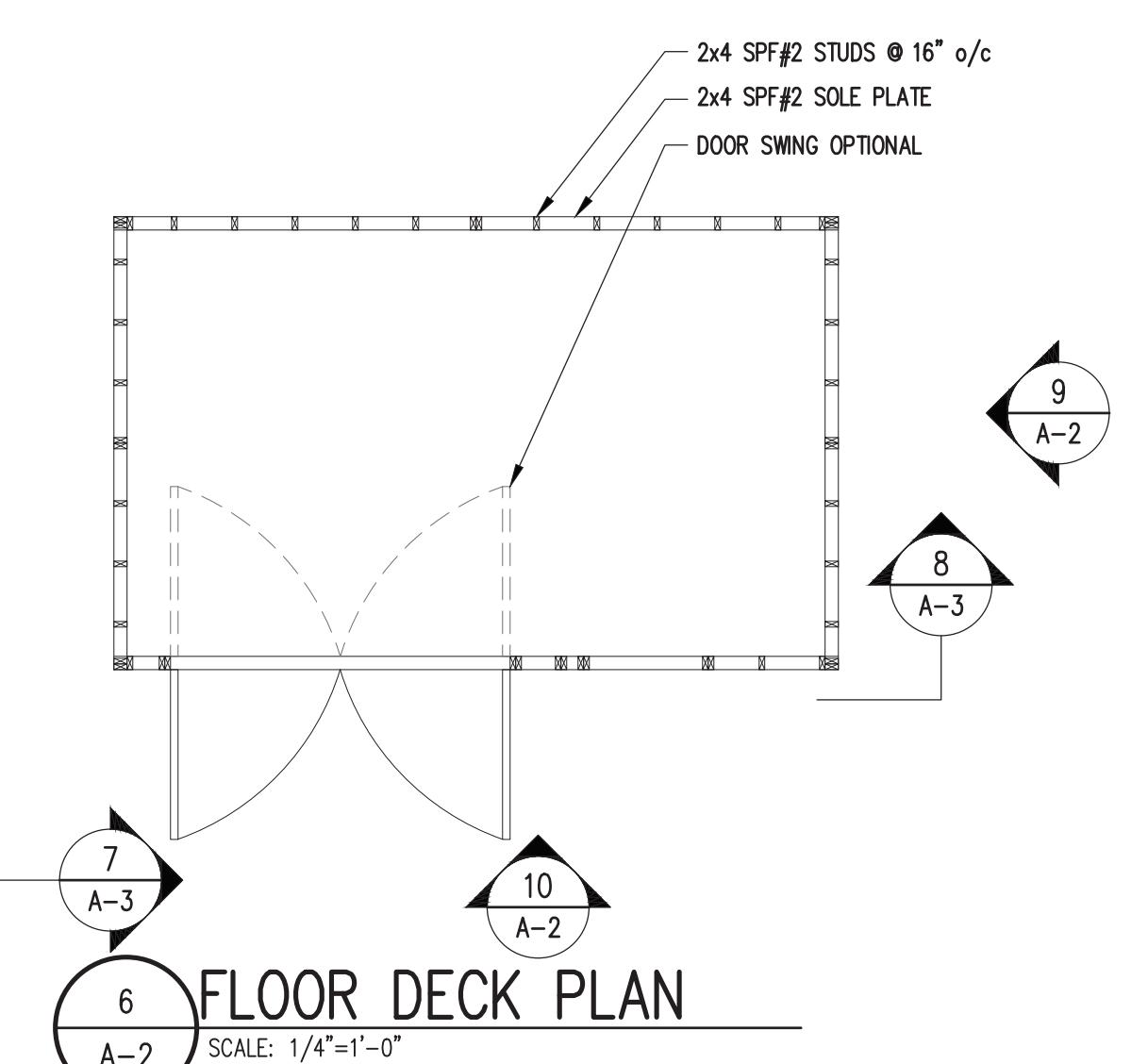
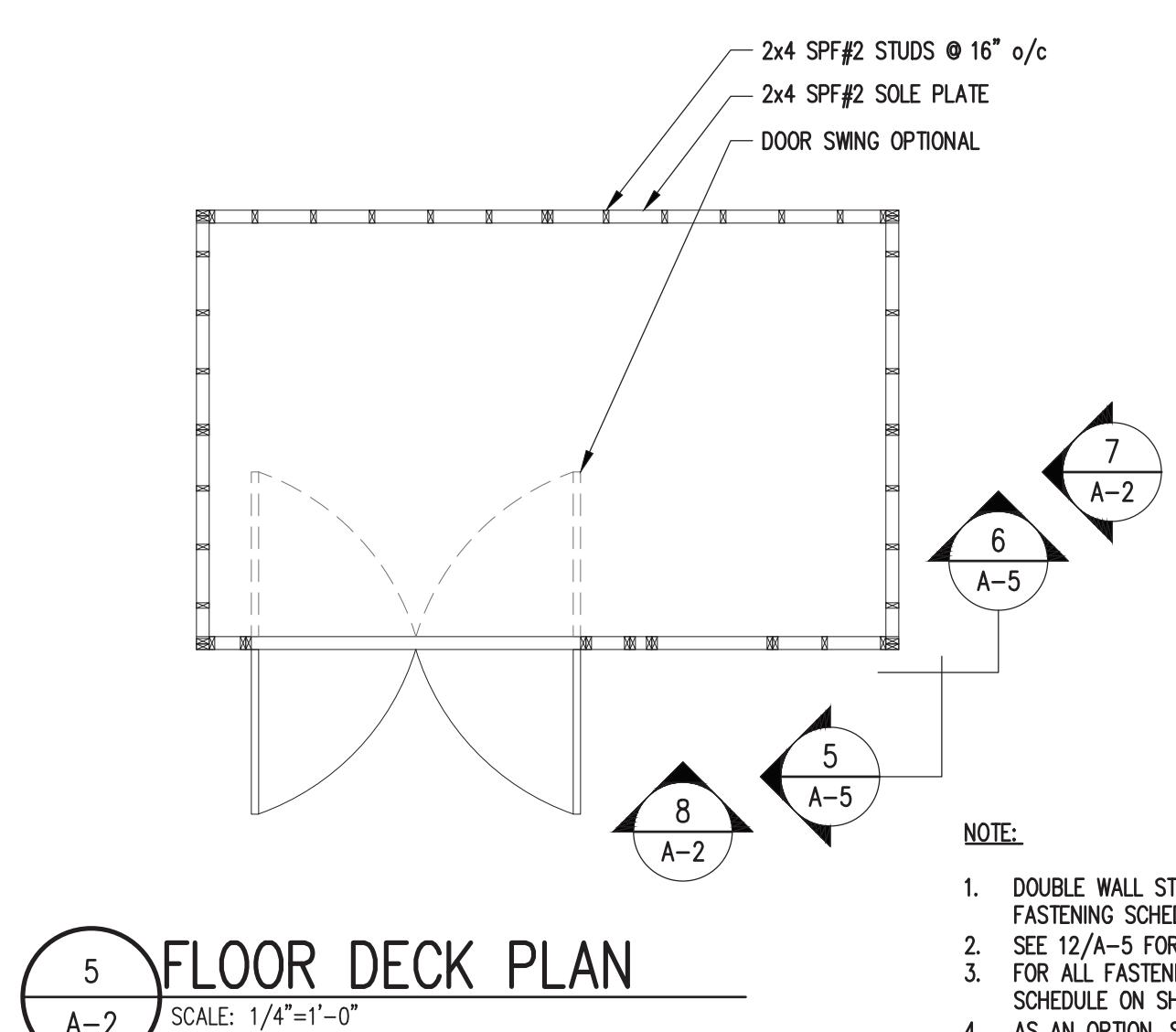
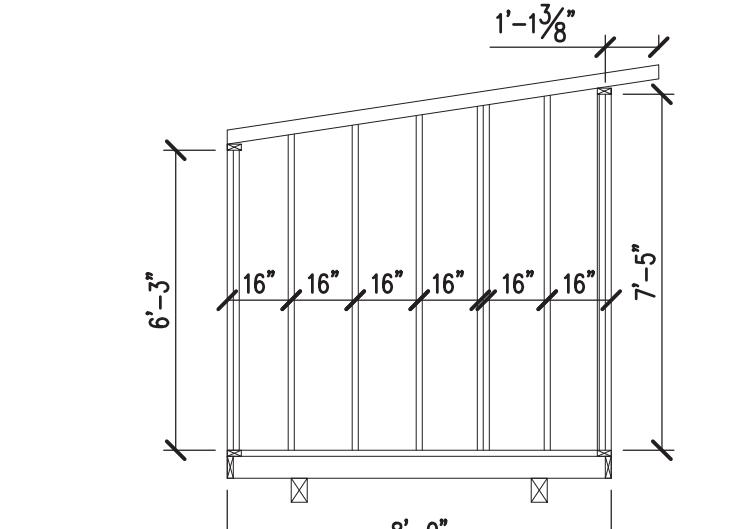
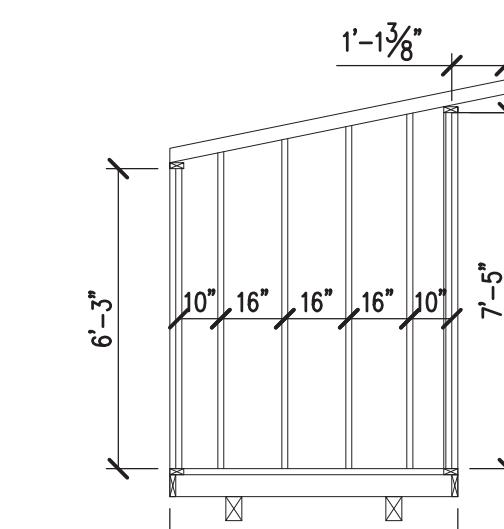
GARDEN SHED



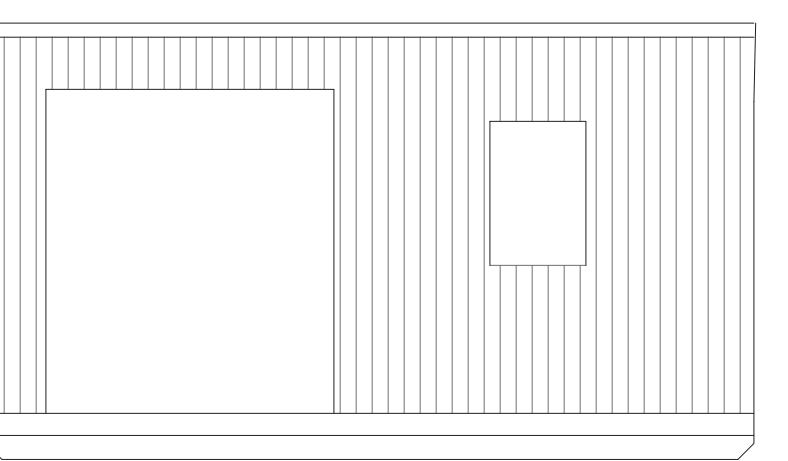
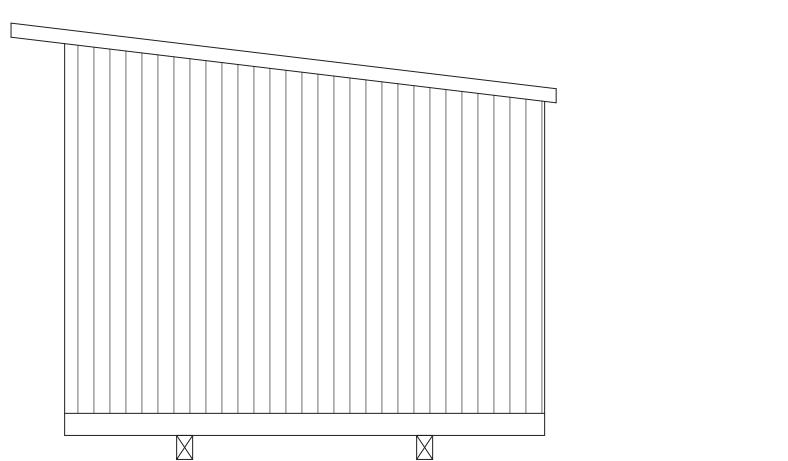
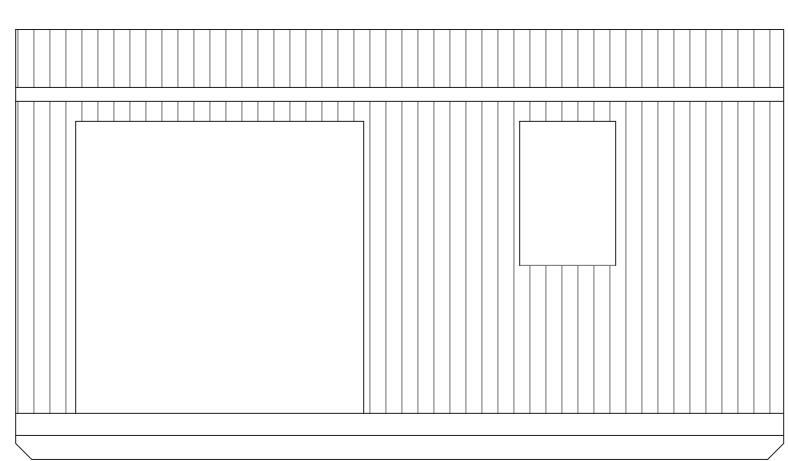
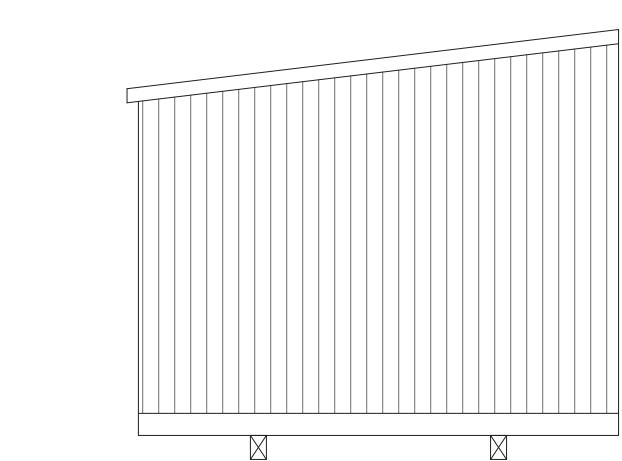
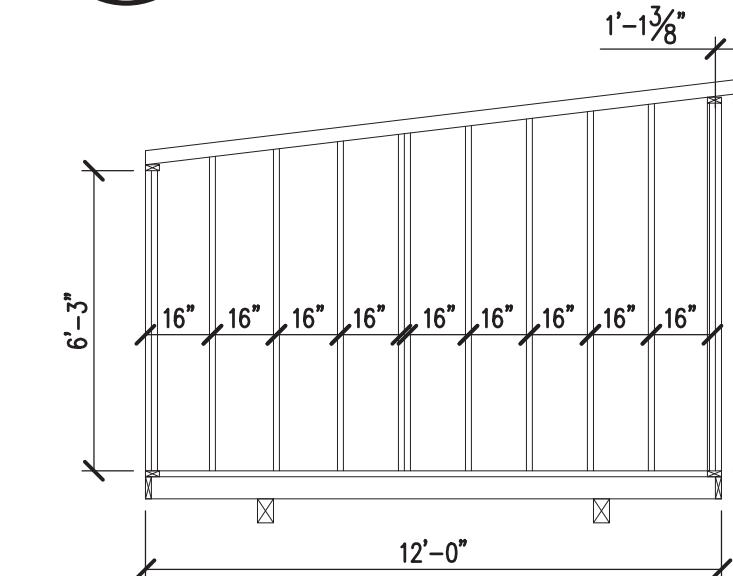
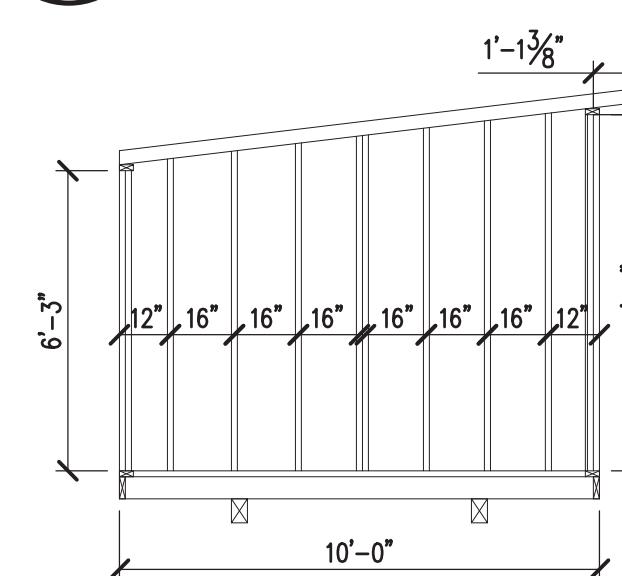
ROOF FRAMING PLAN

6'-0" WIDE
ENDWALL ELEVATION8'-0" WIDE
ENDWALL ELEVATION

COTTAGE SHED



FLOOR DECK PLAN



PROJECT:
UTILITY SHED

GARDEN & COTTAGE SHEDS
FLOOR DECK FRAMING PLANS & DETAILS

DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
317 EAST STATE LINE ROAD
SOUTH FULTON, TN 38257
WWW.PREMIERBUILDINGS.US

REVISION	DESCRIPTION	DATE	BY
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DATE: 5.15.25

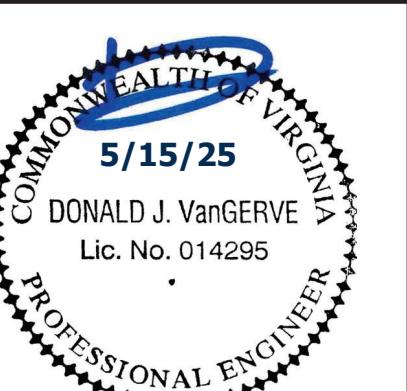
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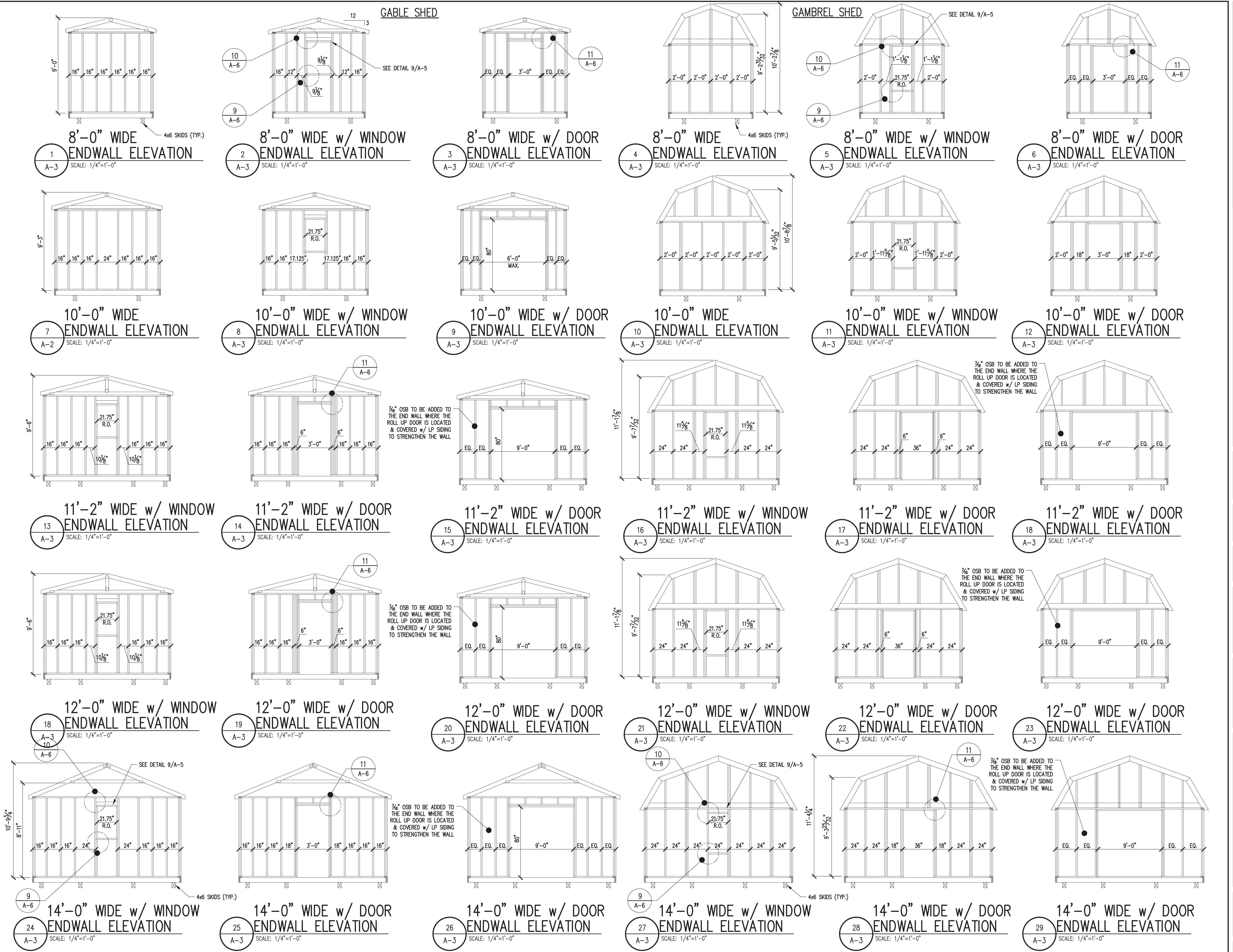
DRAWING BY: JH

CHK BY: DVG

DWG NO.:

A-2





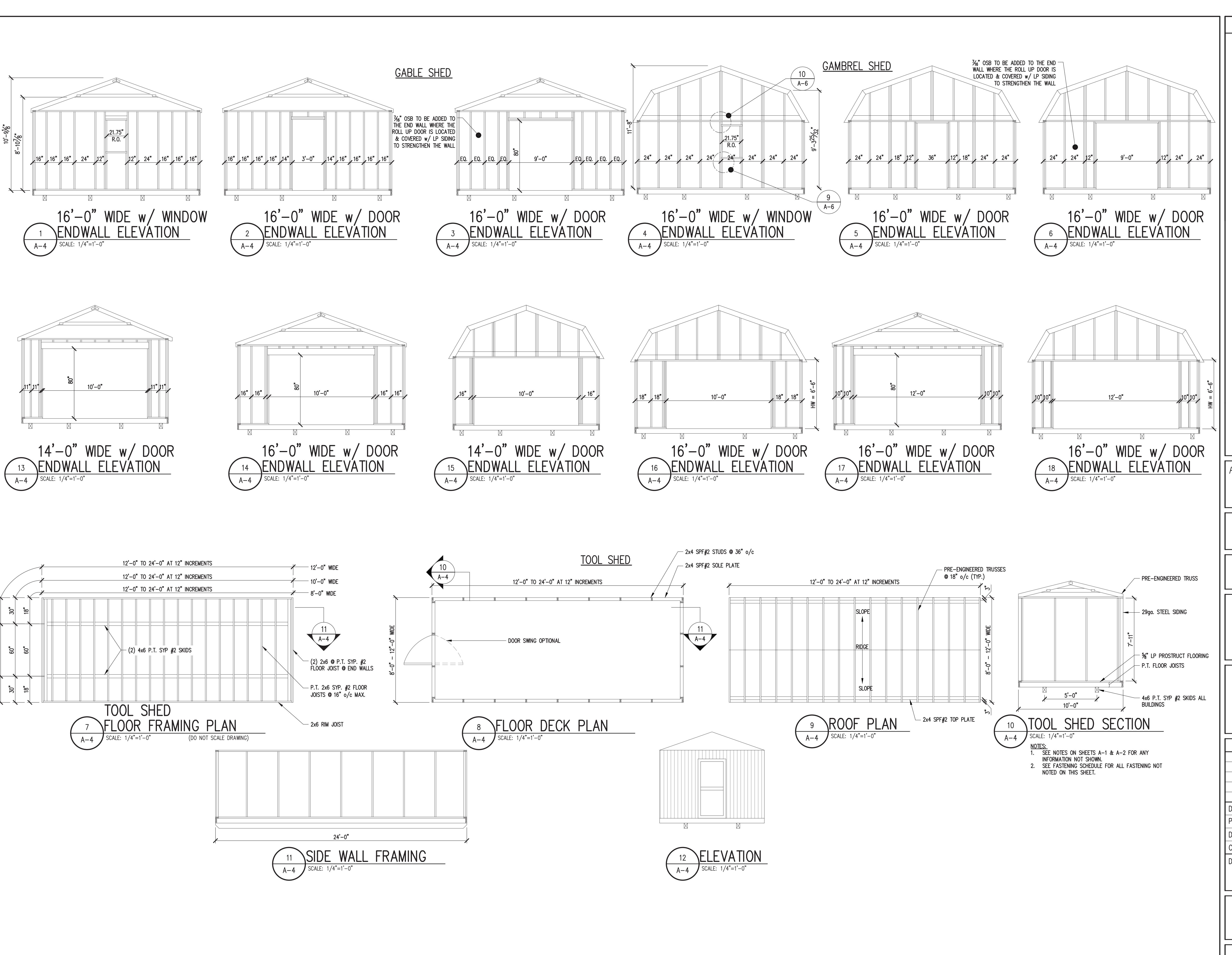
PROJECT: UTILITY SHED

SECTIONS

DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER

ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
317 EAST STATE LINE ROAD
SOUTH FULTON, TN 38257
WWW.PREMIERBUILDINGS.US

REVISION	DESCRIPTION	DATE	BY
1			
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DATE:	5.15.25		
PROJECT NO.:	19227		
DRAWING BY:	JH		
CHK BY:	DVG		
DWG NO.:	A-3		
DONALD J. VanGERVE Lic. No. 014295			
COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER 5/15/25			



PROJECT:
UTILITY SHED

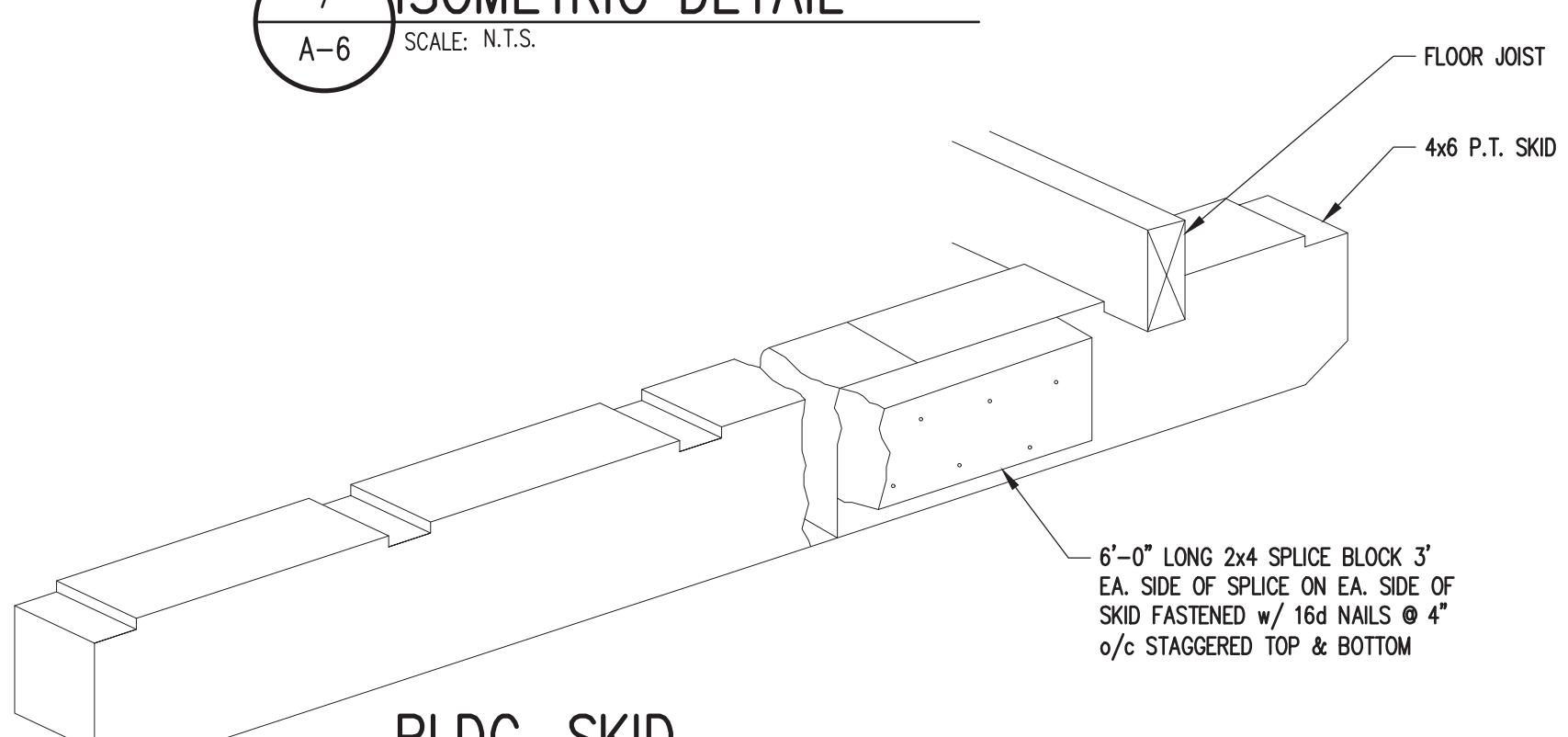
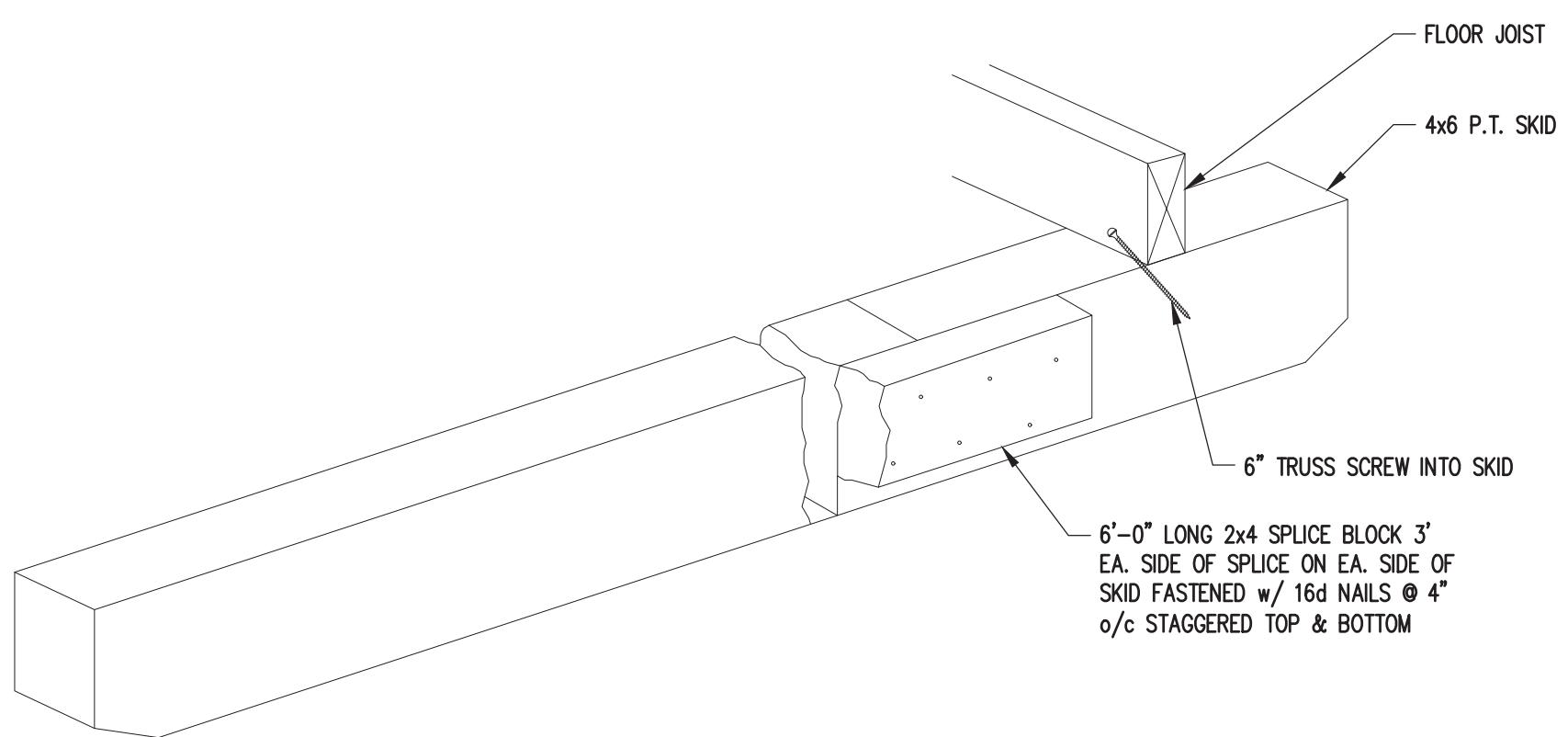
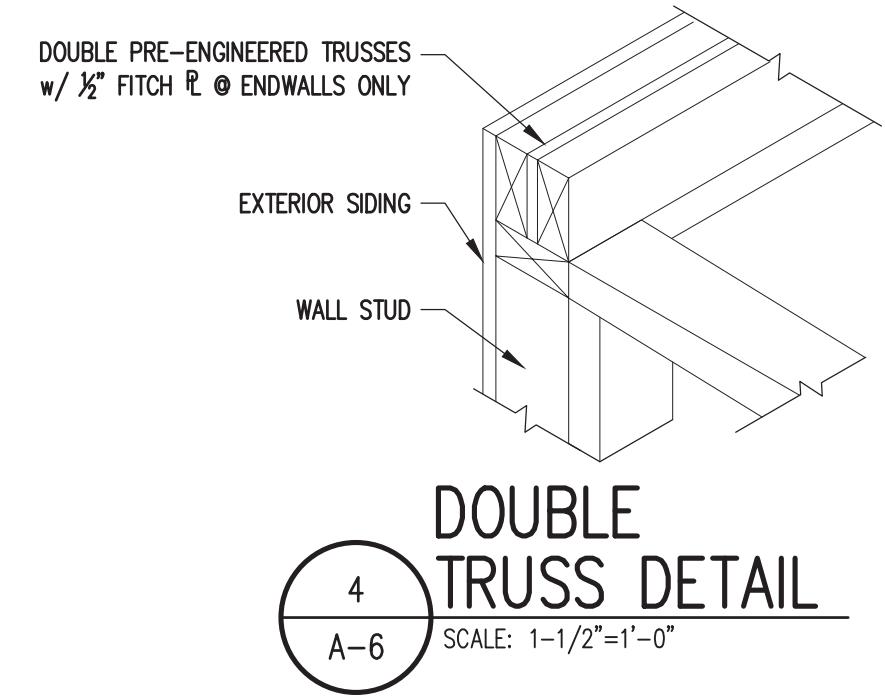
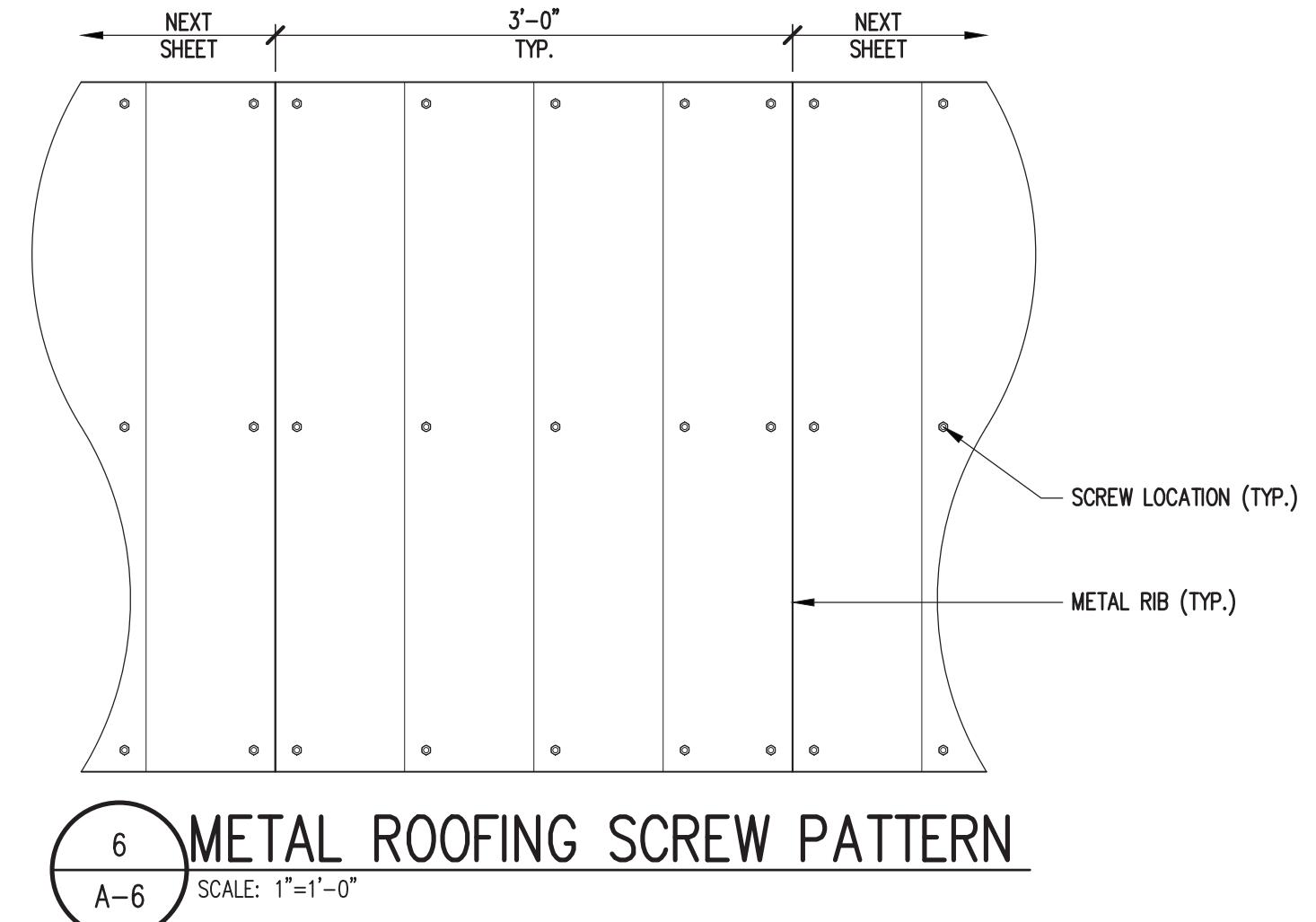
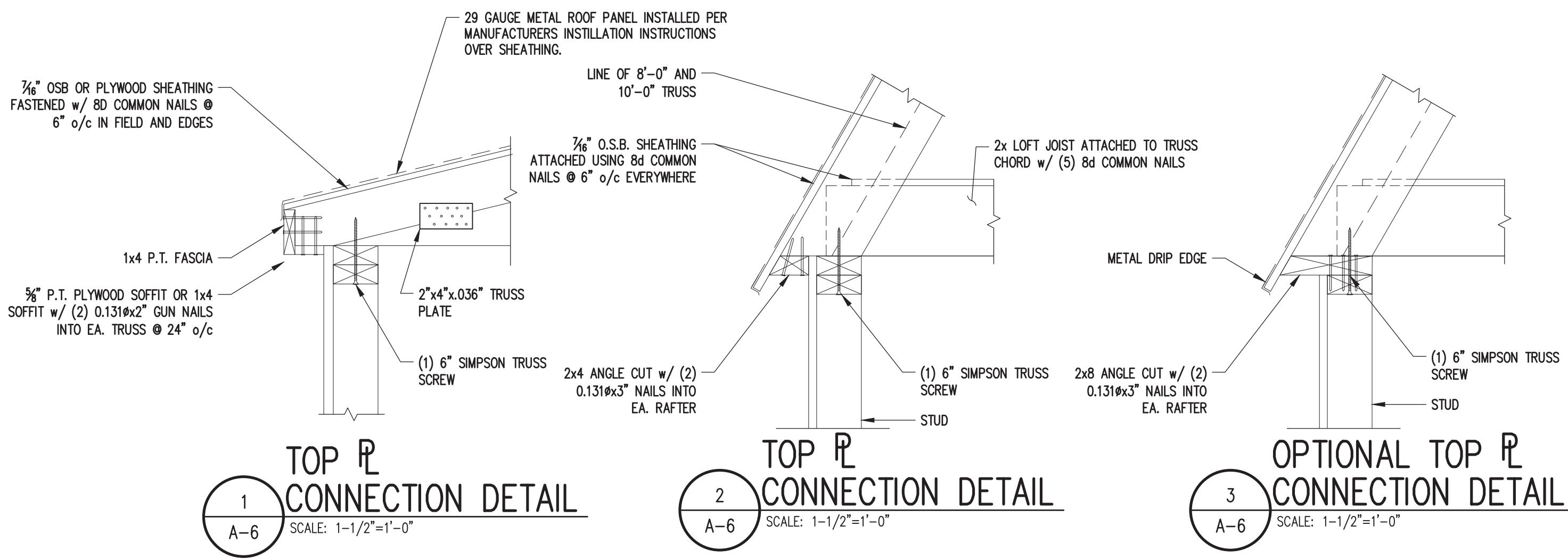
SECTION CUTS
CRAFTSMAN & TOOL SHED

DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



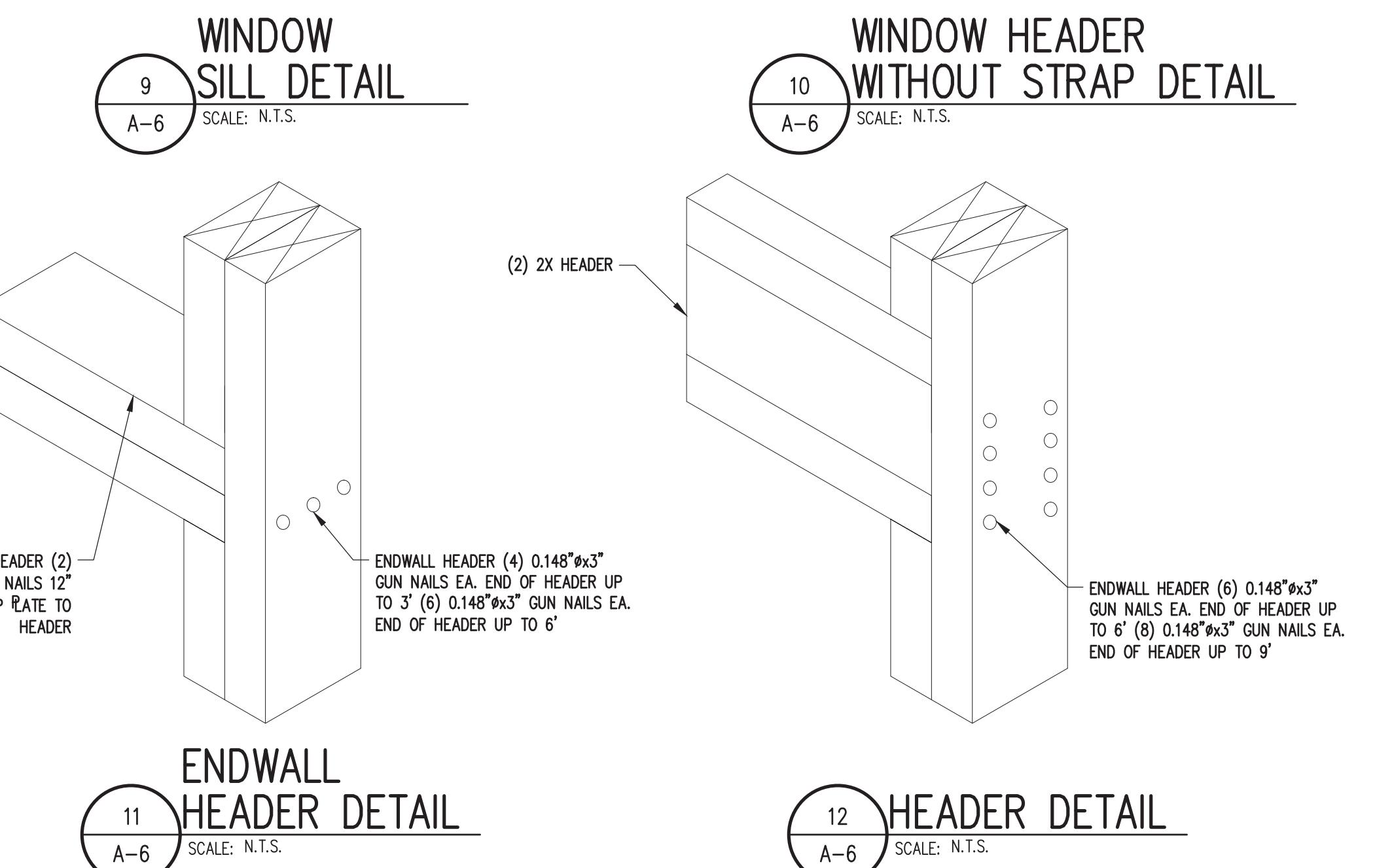
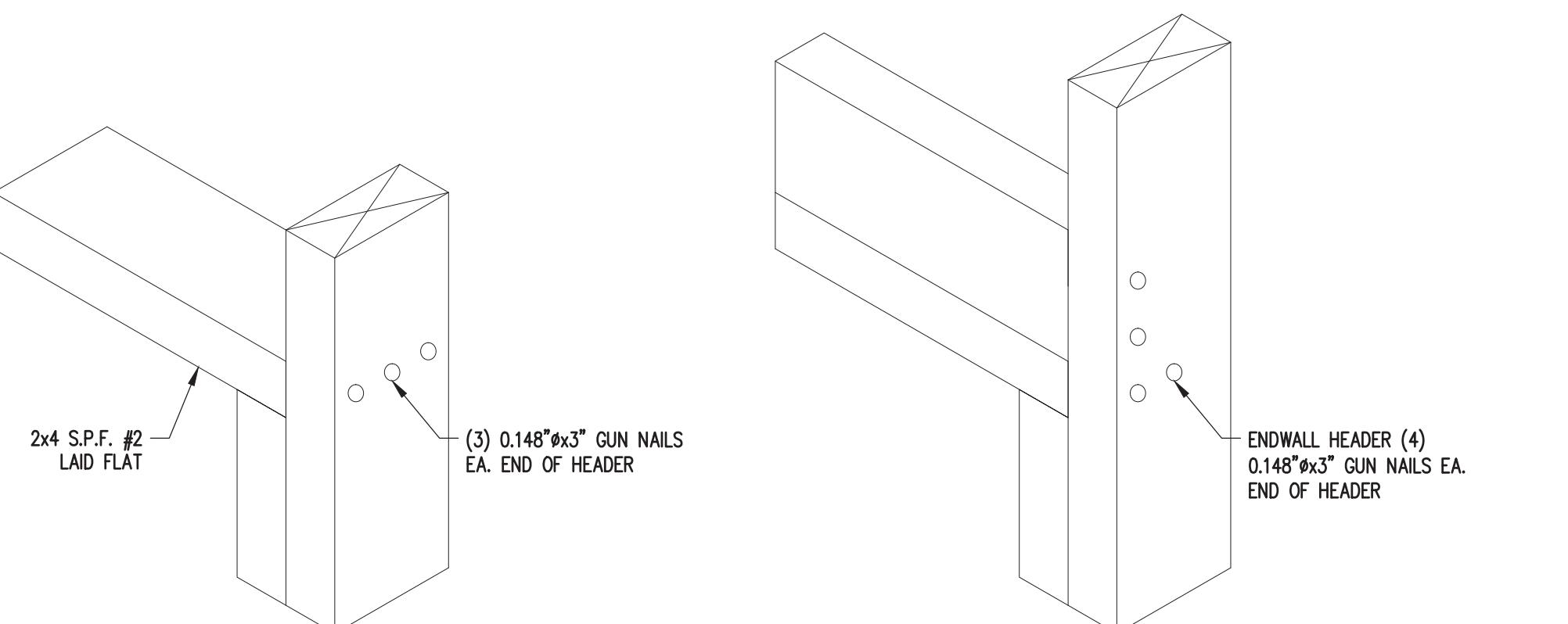
ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
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SOUTH FULTON, TN 38257
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REVISION	DESCRIPTION	DATE	BY
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DATE:	5.15.25		
PROJECT NO.:	19227		
DRAWING BY:	JH		
CHK BY:	DVG		
DWG NO.:	A-4		
COMMONWEALTH OF VIRGINIA 5/15/25 DONALD J. VanGERVE Lic. No. 014295 PROFESSIONAL ENGINEER			



NOTES:

1. SEE NOTES ON SHEETS A-1 & A-2 FOR ANY INFORMATION NOT SHOWN HERE.
2. SEE FASTENING SCHEDULE FOR ALL FASTENING NOT NOTED ON THIS SHEET.



PROJECT:
UTILITY SHED

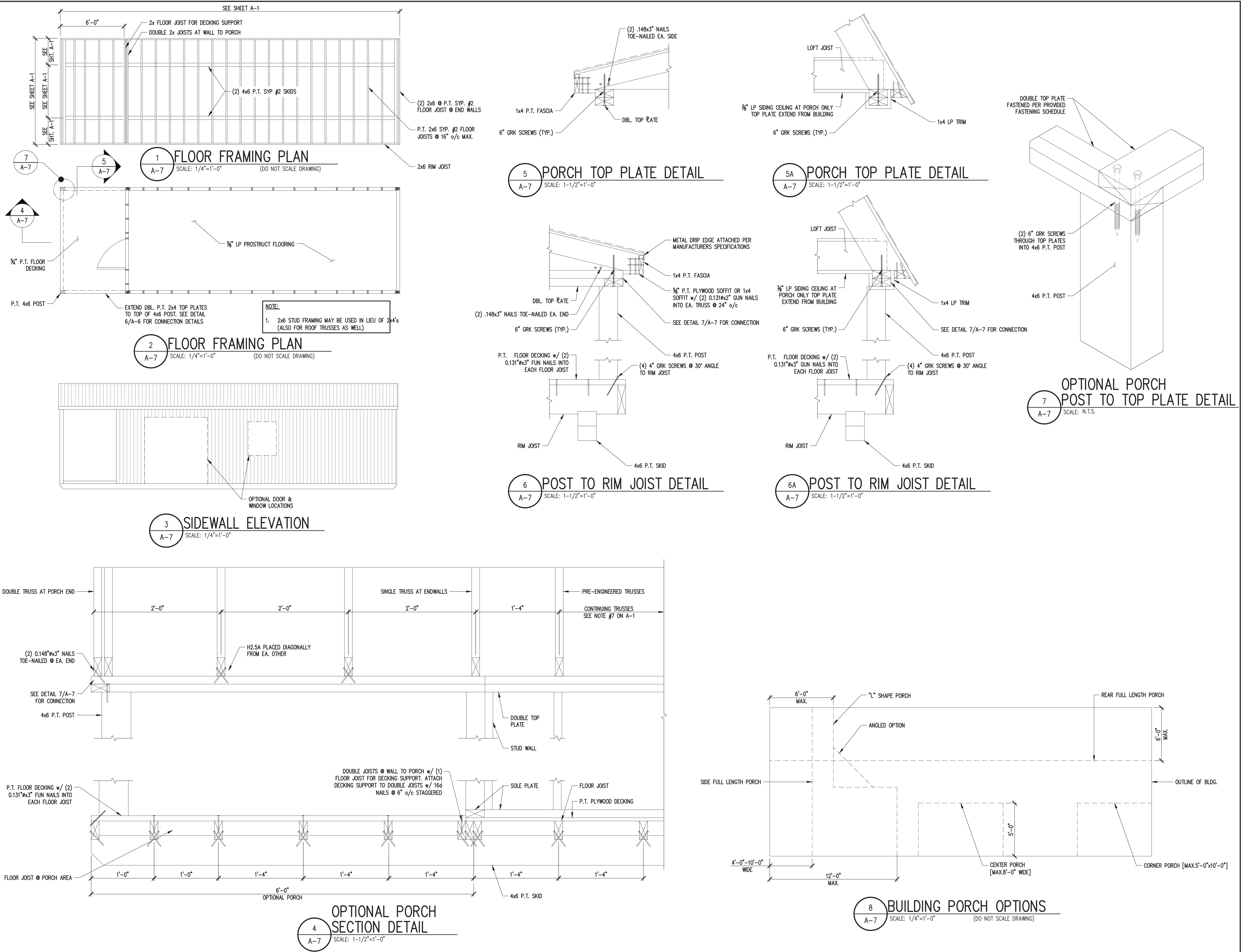
TYPICAL DETAILS

DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
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REVISION	DESCRIPTION	DATE	BY
1			
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5			
DATE: 5.15.25			
PROJECT NO.: 19227			
DRAWING BY: JH			
CHK BY: DVG			
DWG NO.: A-6			
5/15/25 DONALD J. VanGERVE Lic. No. 014295 PROFESSIONAL ENGINEER COMMONWEALTH OF VIRGINIA			



AREA FOR APPROVAL STAMPS

PROJECT: **UTILITY SHED**

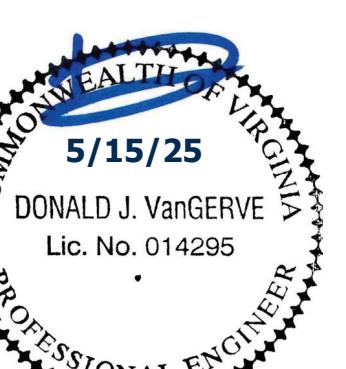
OPTIONAL PORCH PLANS, SECTIONS & DETAILS

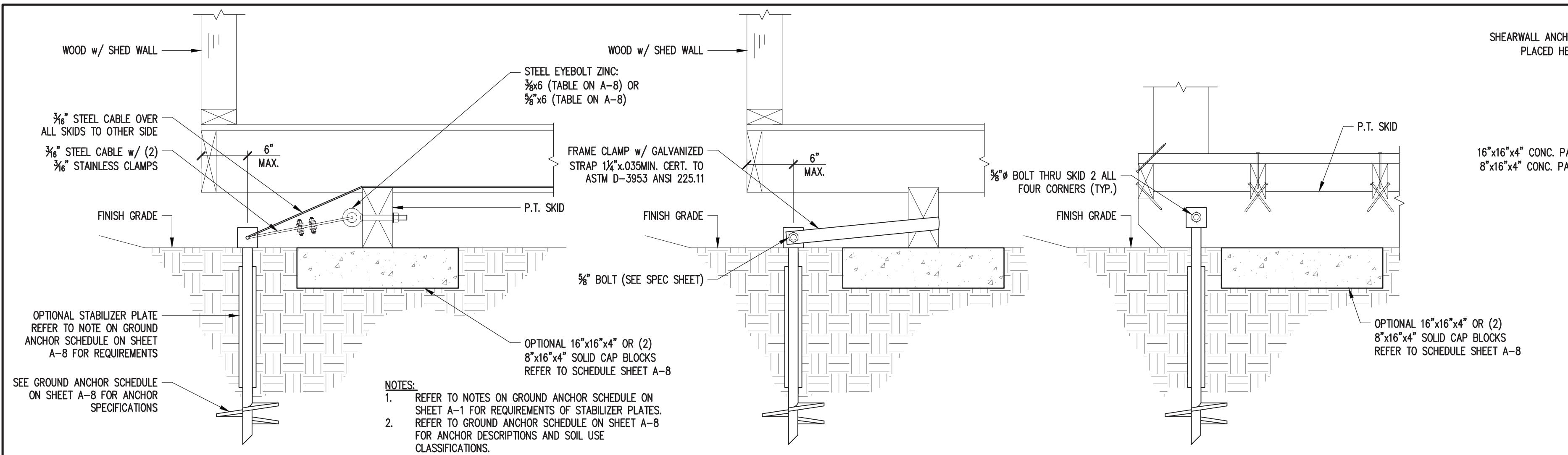
DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
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DATE:	5.15.25		
PROJECT NO.:	19227		
DRAWING BY:	JH		
CHK BY:	DVG		
WG NO.:			
A-7			







1 HELIX ANCHOR DETAIL

A-8 SCALE: 1-1/2"=1'-0"

REFER TO SCHEDULE SHEET A-8

NOTES:

1. REFER TO NOTES ON GROUND ANCHOR SCHEDULE ON SHEET A-1 FOR REQUIREMENTS OF STABILIZER PLATES.
2. REFER TO GROUND ANCHOR SCHEDULE ON SHEET A-8 FOR ANCHOR DESCRIPTIONS AND SOIL USE CLASSIFICATIONS.
3. ANCHOR MUST BE PLACED AT EACH CORNER A MAXIMUM OF 6" FROM THE CORNER.

2
A-8 OPTIONAL ANCHOR DETAIL
SCALE: 1-1/2"=1'-0"

SEE 1/A-8 FOR ADD'L INFORMATION

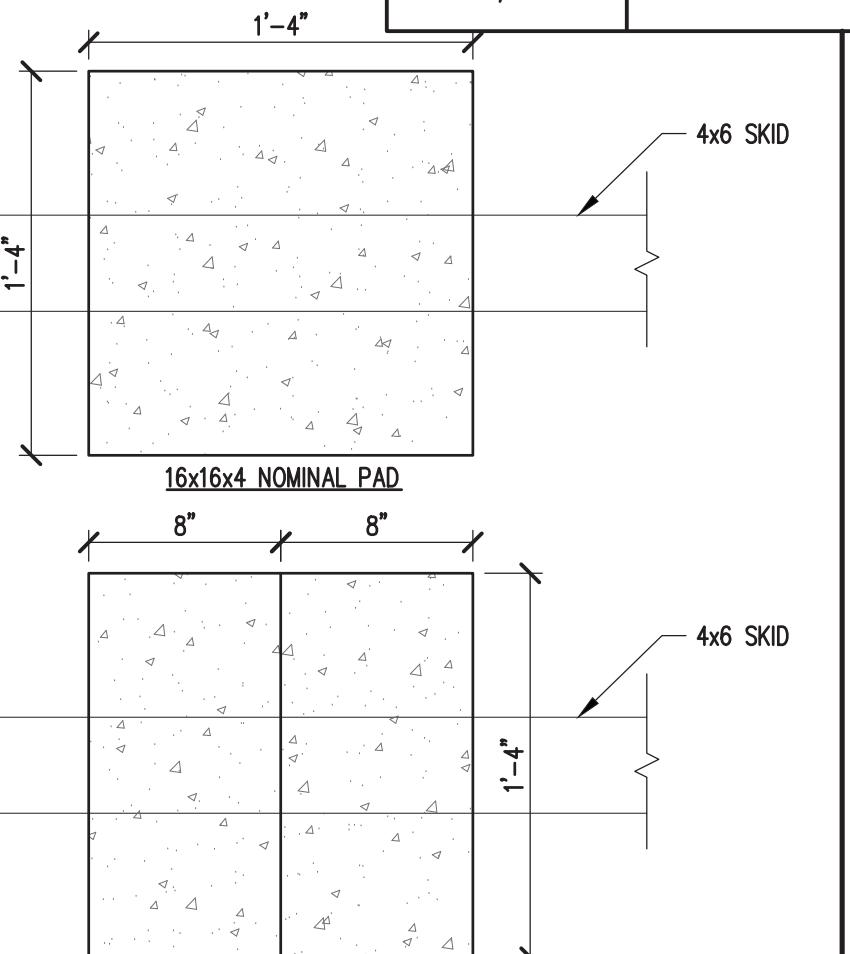
ANCHOR DETAIL

The figure shows a floor plan with a horizontal dimension of 20'-0" shown, indicated by a leader line with arrows at the top. The vertical axis is labeled with 14'-0" SHOWN and 10'. The plan features a central rectangular opening. The room is divided into sections by vertical and horizontal lines, with some sections having varying widths. Arrows point to specific features: one arrow points to the left side of the room, and another points to the right side. The overall layout is a complex grid system.

4 FLOOR FRAMING PLAN

NOTES:
1. CONCRETE BARS ARE OPTIONAL.

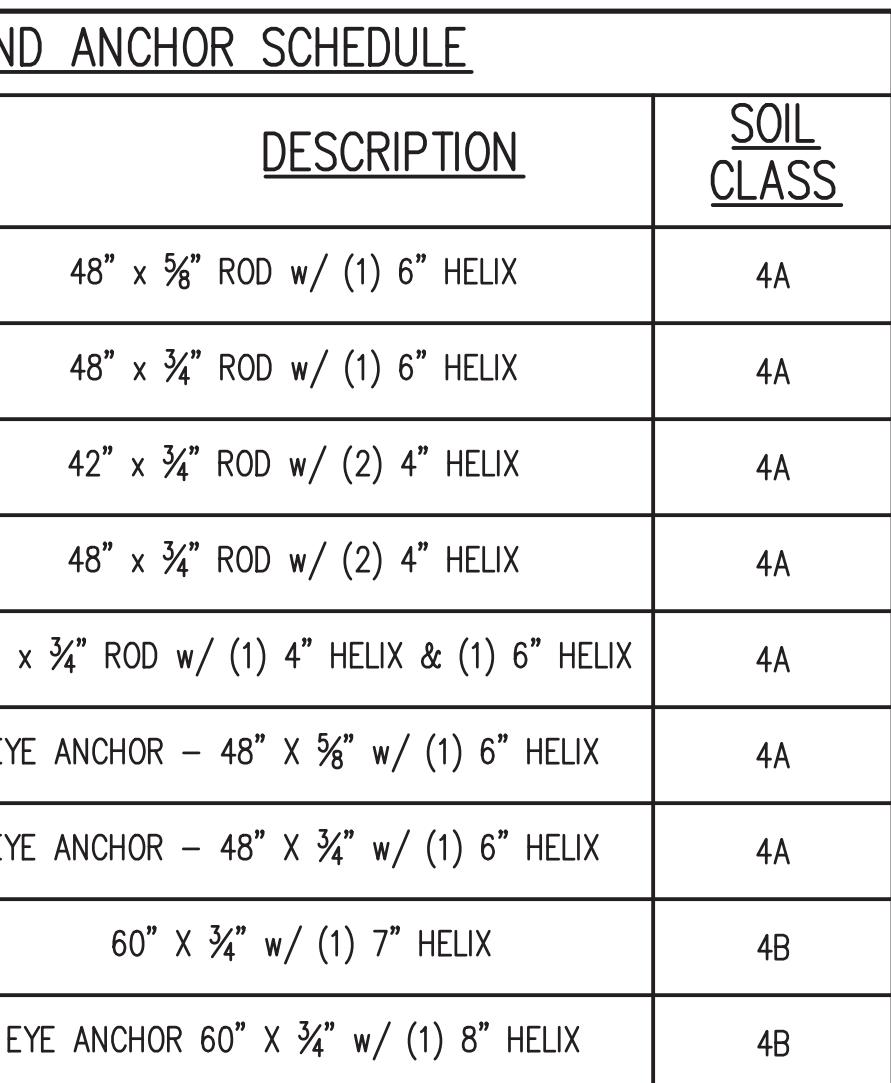
1. CONCRETE PADS ARE OPTIONAL.
2. DIMENSIONS SHOWN ARE NOMINAL.
3. ANCHORS ARE REQUIRED MIN. (4) PER
BUILDING, (1) @ EACH CORNER SHEARWALL
(SW-#).
4. REFER TO SCHEDULES ON SHEET A-8 FOR
ANCHOR SPACING & OPTIONAL PAD
LOCATION.
5. SPACE OPTIONAL PADS EQUALLY.



5 PAD DETAILS

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DETAIL AND DIMENSIONS. ANY DISCREPANCIES BETWEEN SUCH DETAILS AND DIMENSIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION PROCEDURE AND SEQUENCE TO INSURE THE INTEGRITY OF THE BUILDING AND ITS COMPONENT PARTS DURING CONSTRUCTION.
4. THESE PLANS HAVE BEEN PREPARED PER REGULATIONS OF THE 2018 VCC IRC CODE. THE WORK OF ALL CONTRACTORS SHALL COMPLY WITH THE REQUIREMENTS SET FORTH IN THE AFOREMENTIONED CODE. NO DEVIATIONS FROM THE WORK SHOWN OR REASONABLY IMPLIED SHALL BE UNDERTAKEN WITHOUT THE ENGINEERS WRITTEN CONSENT – A COPY OF WHICH WILL BE FILLED WITH THE CONSTRUCTION OFFICIAL.
5. ANY CHANGES TO OR DEVIATIONS FROM THESE DRAWINGS SHALL NOT BE MADE WITHOUT WRITTEN CONSENT FROM THE ENGINEER.
6. THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER AND SHALL NOT BE USED WITHOUT HIS CONSENT. DRAWINGS SHALL NOT BE USED FOR ISSUE OF BUILDING PERMIT UNLESS SIGNED AND SEALED BY THE ENGINEER.
7. THE OWNER AND CONTRACTOR SHALL HOLD HARMLESS THE ENGINEER FROM AND AGAINST ALL LIABILITY CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING LEGAL FEES ARISING OUT OF OR RESULTING FROM ERRORS OR OMISSIONS IN THE PERFORMANCE OF THE WORK BY THE CONTRACTOR. ALL WORK AND MATERIAL SHALL MEET THE REQUIREMENTS OF ALL LOCAL AND STATE BUILDING CODES. THE DRAWING SHOW THE GENERAL ARRANGEMENTS AND EXTENT OF THE WORK. AS THE WORK PROGRESSES , THE OWNER AND THE CONTRACTOR, AT NO EXTRA COSTS, SHALL MAKE MODIFICATIONS TO MAKE THE PARTS ALIGN.
8. CONTRACTORS SHALL CHECK AND VERIFY ALL PLAN DIMENSIONS AND CONDITIONS BEFORE PROCEEDING CONSTRUCTION. HE SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER FOR CORRECTION PRIOR TO BEGINNING ANY WORK. THE DISCOVERY OF DISCREPANCIES AFTER THE BEGINNING OF WORK WILL BE EVIDENCE OF FAULTY WORK AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DO NOT SCALE DRAWINGS. ALL WRITTEN DIMENSIONS GOVERN.



PROJECT: **UTILITY SHED**

FASTENING SCHEDULE / WIND LOADING



ENGINEERING SERVICES PROVIDED FOR:
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<u>BUILDING WIDTH</u>	<u>NUMBER OF PADS BY LENGTH UNDER EACH SKID</u>																	
	<u>10'-0"</u>	<u>12'-0"</u>	<u>14'-0"</u>	<u>16'-0"</u>	<u>18'-0"</u>	<u>20'-0"</u>	<u>22'-0"</u>	<u>24'-0"</u>	<u>26'-0"</u>	<u>28'-0"</u>	<u>30'-0"</u>	<u>32'-0"</u>	<u>34'-0"</u>	<u>36'-0"</u>	<u>38'-0"</u>	<u>40'-0"</u>	<u>50'-0"</u>	<u>60'-0"</u>
8'-0"	3	3	3	3	3	4	4	N/A										
10'-0"	3	3	3	4	4	4	5	5	5	N/A								
11'-2"	2	2	3	3	3	3	3	3	4	4	N/A							
12'-0"	2	2	3	3	3	3	3	4	4	4	4	4	4	N/A	N/A	N/A	N/A	
14'-0"	2	3	3	3	3	3	4	4	4	4	4	4	5	5	5	6	7	
16'-0"	2	3	3	3	3	3	4	4	4	4	4	5	5	5	5	6	7	

ANCHORING FOR 170 M.P.H. WIND SPEED. EXPOSURE "C" - 3/8" ANCHOR BOLT

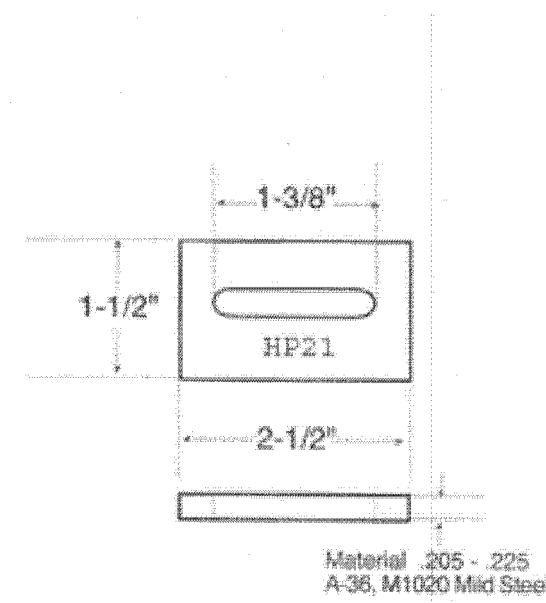
BUILDING WIDTH	NUMBER OF ANCHORS EACH SIDE WALL																		
	MAX. SPACING OVERTURN	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"	32'-0"	34'-0"	36'-0"	38'-0"	40'-0"	50'-0"	60'-0"
8'-0"	3.15	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	17	20	
10'-0"	3	5	6	6	7	8	8	9	10	10	11	12	12	13	14	14	15	17	20
11'-2"	3.98	4	5	5	6	6	7	8	8	9	9	10	10	11	11	12	16	19	
12'-0"	4.01	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	15	18
14'-0"	4.10	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	14	16
16'-0"	4.18	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	14	16

ANCHORING FOR 170 M.P.H. WIND SPEED, EXPOSURE "C" - 5/8" ANCHOR BOLT

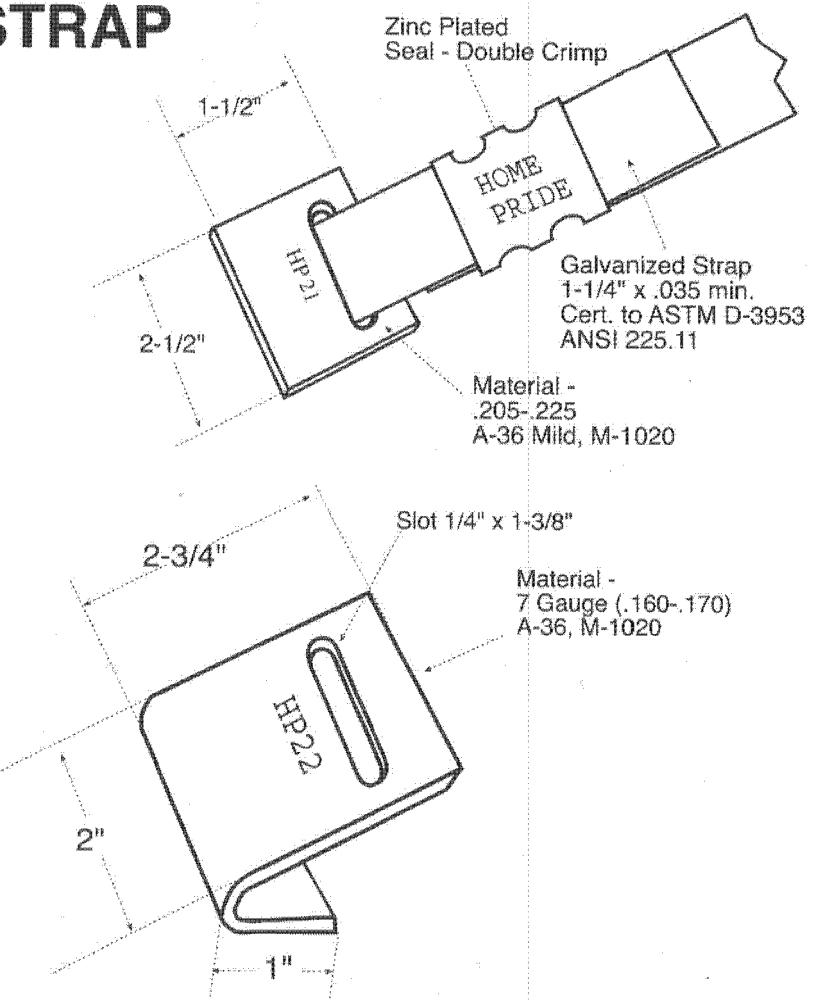
BUILDING WIDTH	NUMBER OF ANCHORS EACH SIDE WALL																			
	MAX. SPACING OVERTURN	10'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"	22'-0"	24'-0"	26'-0"	28'-0"	30'-0"	32'-0"	34'-0"	36'-0"	38'-0"	40'-0"	50'-0"	60'-0"	
8'-0"	4.61	4	4	5	5	5	6	6	7	7	8	8	8	9	9	10	10	12	14	
10'-0"	4.30	4	4	5	5	6	6	7	7	8	8	8	9	9	10	10	11	12	14	
11'-2"	5.84	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	11	13		
12'-0"	5.88	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	11	13		
14'-0"	6.01	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	11	13	
16'-0"	6.13	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	1	13	

SECTION	DESCRIPTION	DATE	BY
1			
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5.15.25			
CT NO.: 19227			
NG BY: JH			
BY: DVG			
NO.:			
A-8			
			
10 of 12			

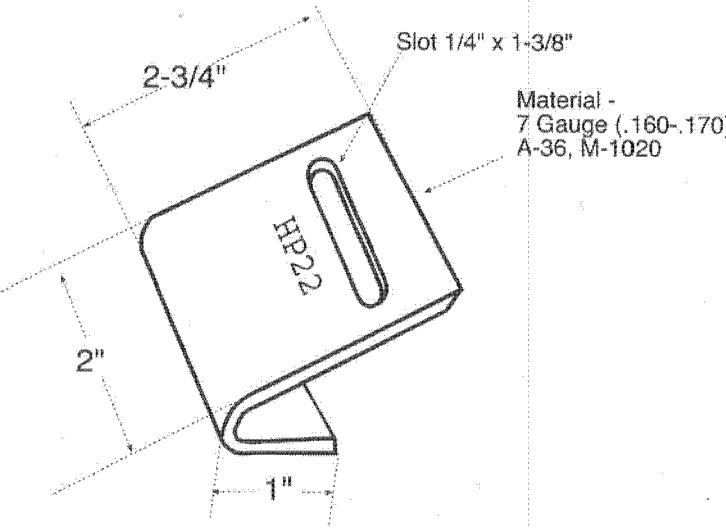
HP21
SINGLE SLOT
BUCKLE



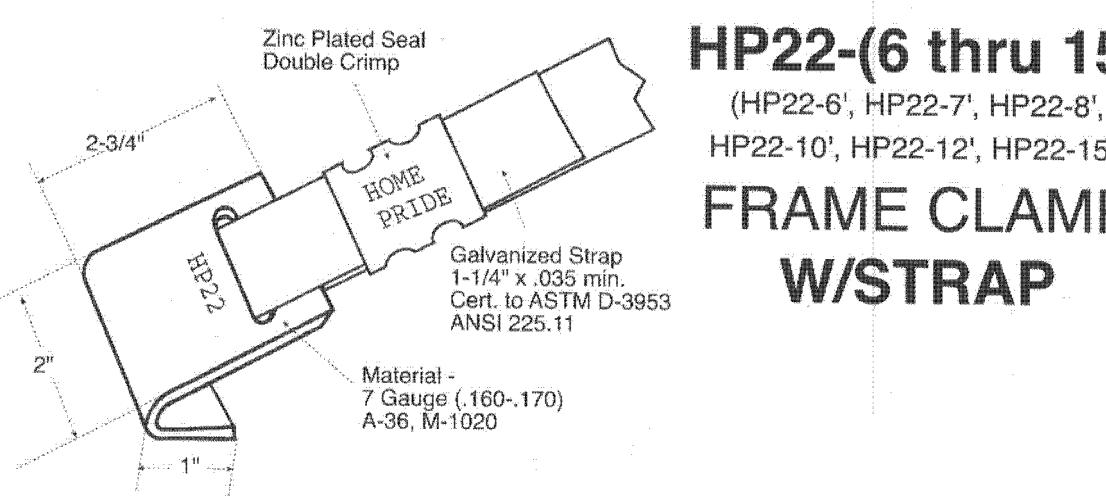
HP21-(6 thru 15)
(HP21-6', HP21-7', HP21-8', HP21-10', HP21-12', HP21-15')
SINGLE BUCKLE
W/STRAP



HP22
FRAME
CLAMP

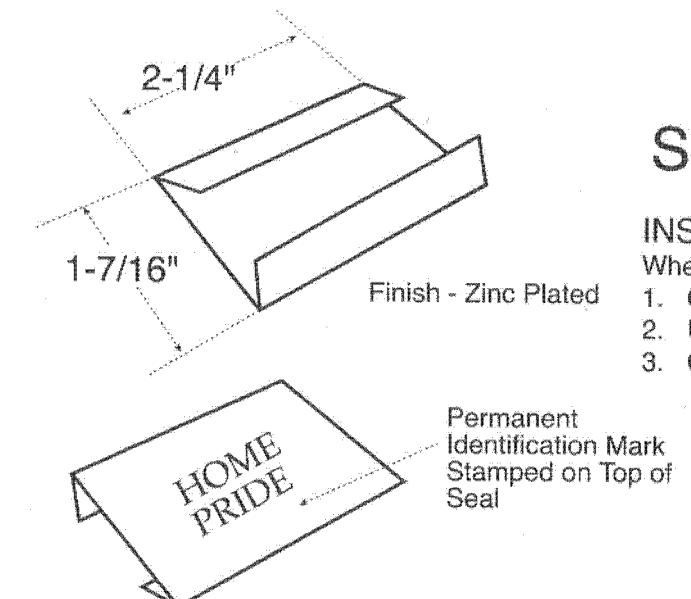
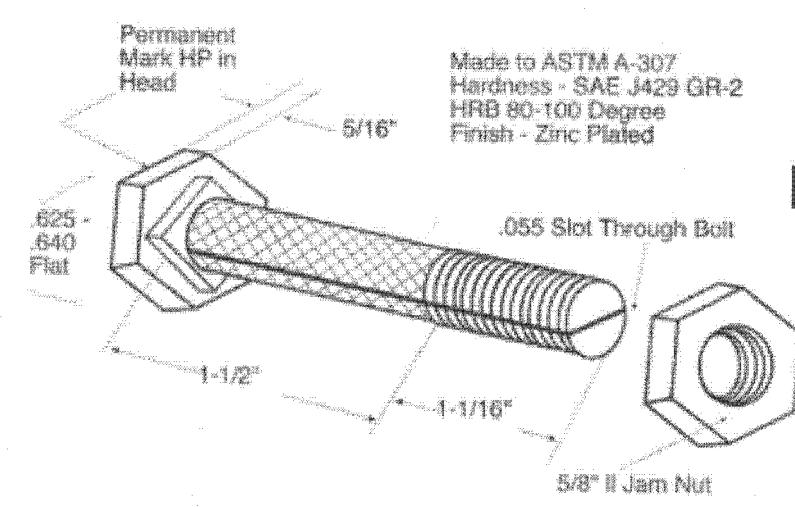


8



HP22-(6 thru 15)
(HP22-6', HP22-7', HP22-8',
HP22-10', HP22-12', HP22-15')
FRAME CLAMP
W/STRAP

HPAB
ANCHOR
BOLT & NUT



HPSS
STRAP SEAL

INSTALLATION INSTRUCTIONS:
When using seals to extend the strap:
1. Overlap a minimum of 8".
2. Use two seals placed together.
3. Crimp each seal twice.

9

PROJECT:
UTILITY SHED

PRODUCT CUT SHEETS

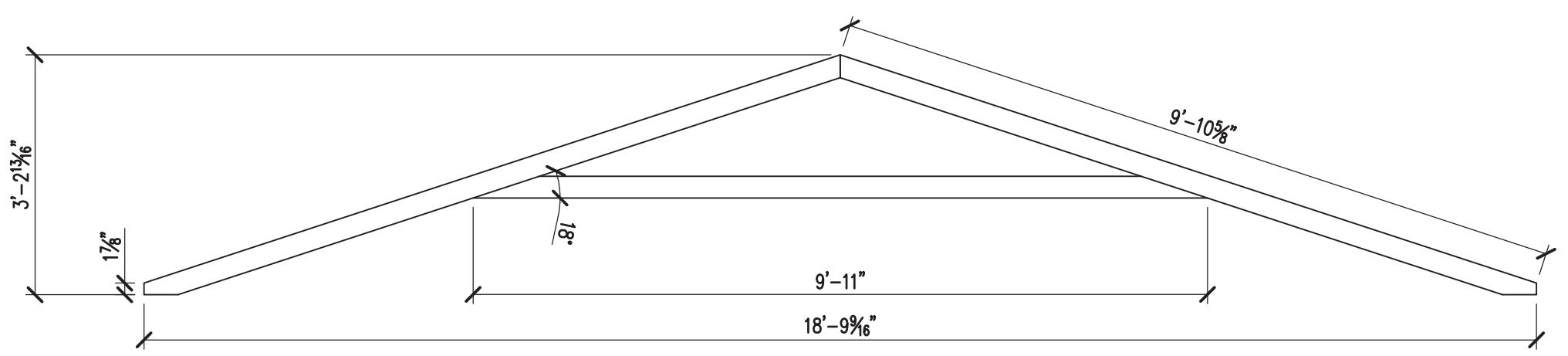
DON VAN GERVE, P.E.
SPECIALTY STRUCTURAL ENGINEER



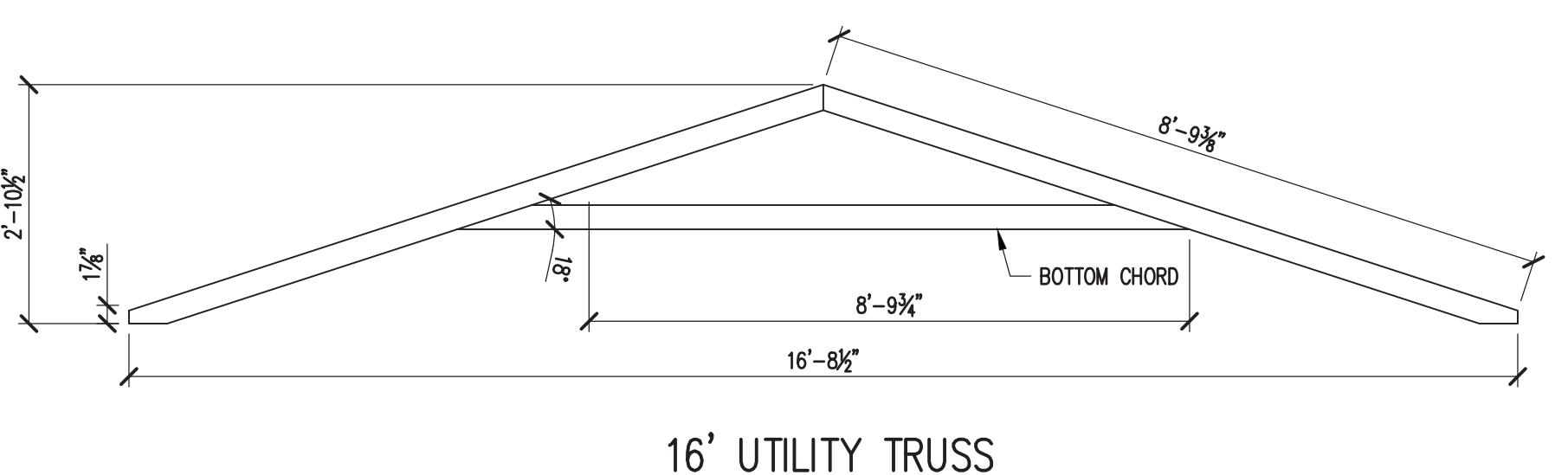
ENGINEERING SERVICES PROVIDED FOR:
PREMIER PORTABLE BUILDINGS
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SOUTH FULTON, TN 38257
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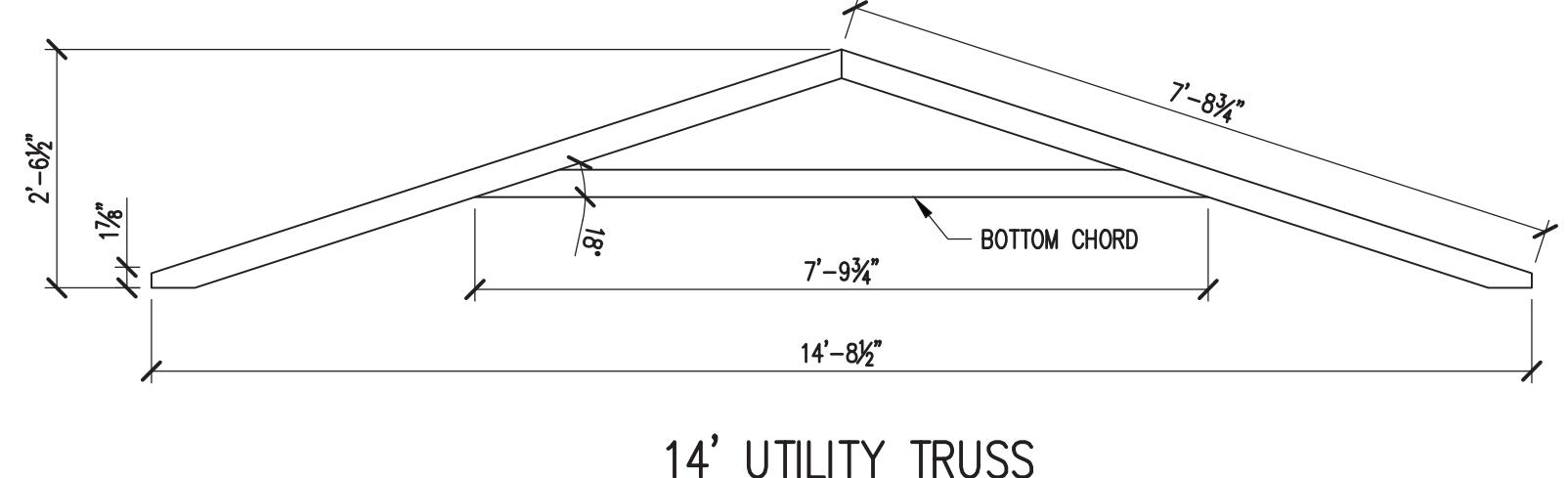
DATE:	5.15.25
PROJECT NO.:	19227
DRAWING BY:	JH
CHK BY:	DVG
DWG NO.:	
A-9	
COMMONWEALTH OF VIRGINIA DONALD J. VanGERVE Lic. No. 014295 PROFESSIONAL ENGINEER 5/15/25	



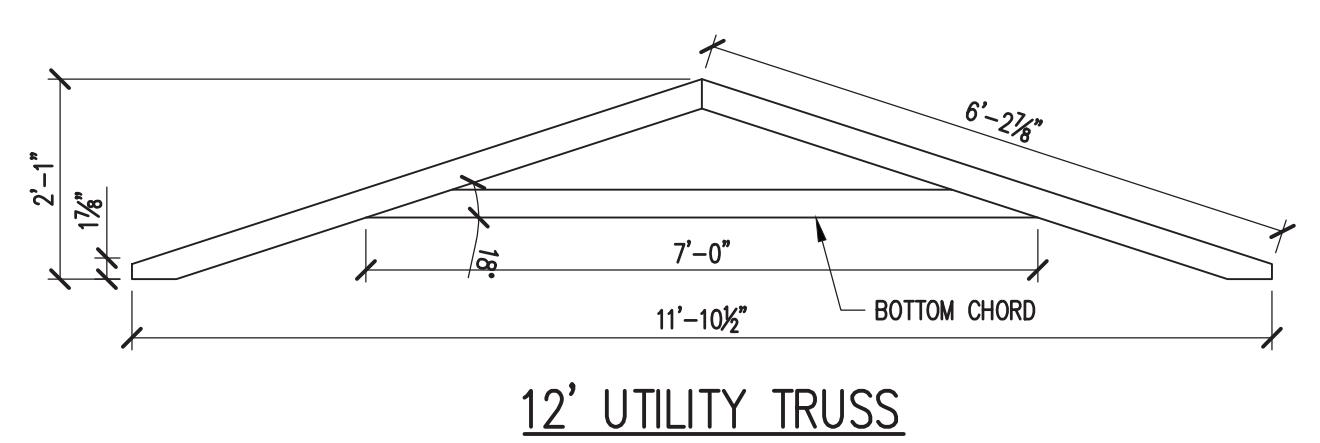
18' UTILITY TRUSS



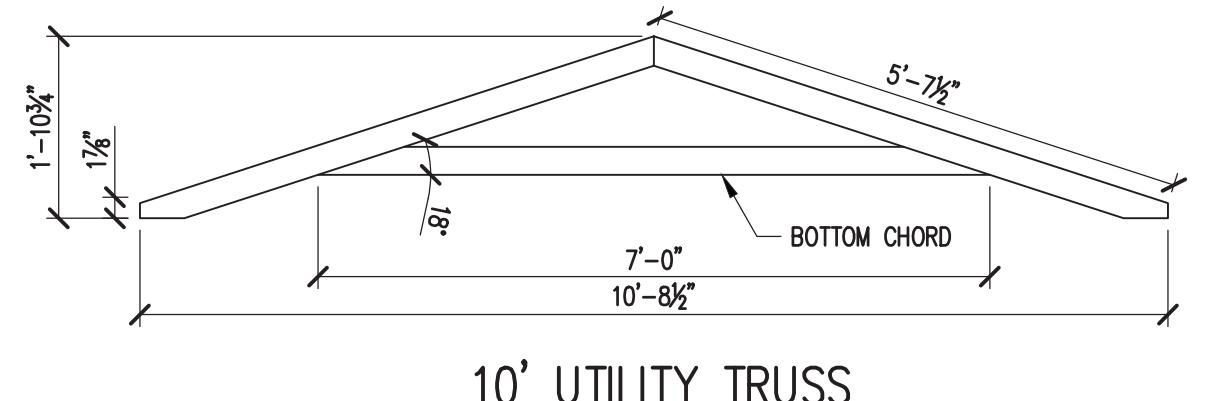
16' UTILITY TRUSS



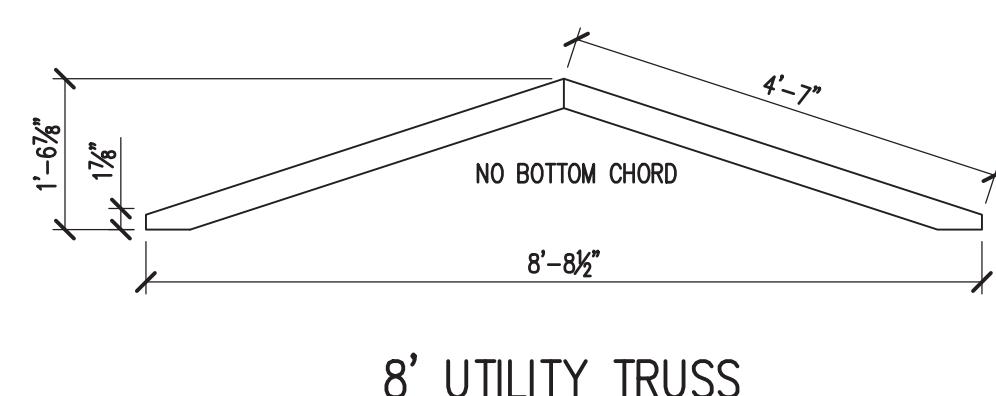
14' UTILITY TRUSS



12' UTILITY TRUSS



10' UTILITY TRUSS



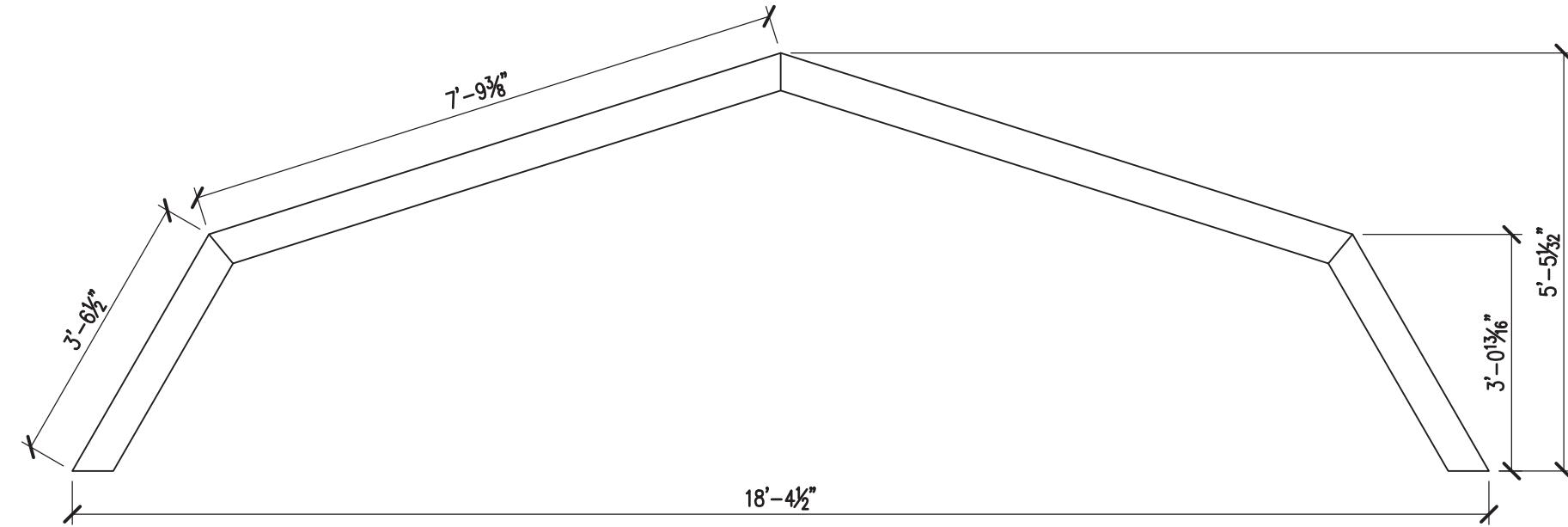
8' UTILITY TRUSS

TRUSS DESIGN: LRFD V=180mph
 ASCE 7-22 83 psf uplift x 0.85(Kd) x 0.85(Kh expC) = 60 psf uplift.
 add internal pressure 18% = 71 psf design (LRFD)
 Utility: Lmax=5.25 ft. 2x4@24"; w=142 plf
 $M=wL^2/8x12=5871$ in-lbs; $s=3.06\text{in}^3$; $fb=1919\text{psi}$
 $Fb(\text{LRFD})=3000$ psi - this value is met by lumber.

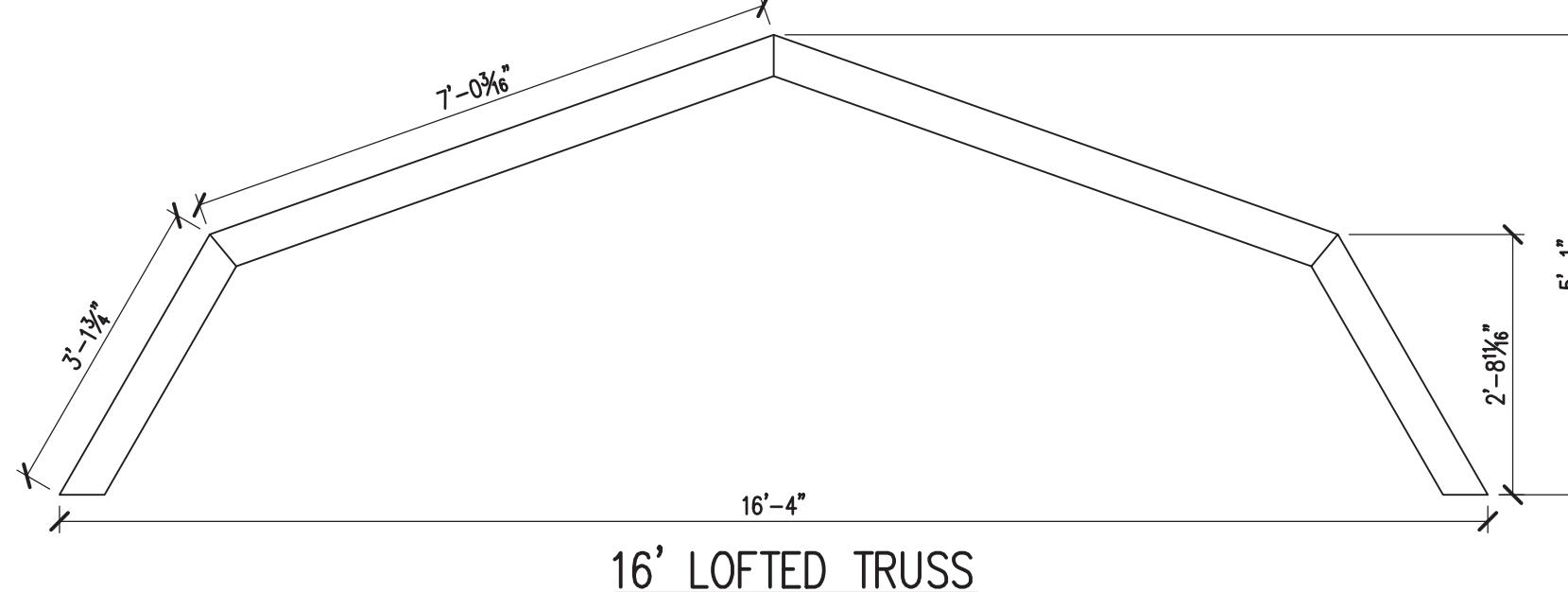
Lofted: Lmax=7.01 ft; 16' truss@16" o/c; w= 95 plf;
 $M=7002$ in-lbs; $fb= 2288$ psi < 3000 psi LRFD

Wall Calculations: 5/8" LP nailed 6" edges, 10" interior, 2x4x7ft@16"o/c;
 Pressure= 58.1 psfExternal= 10.5 psfInternal Total p= 68.6
 $I=18.74\text{ in}^4$ per 16" o/c; $S=6.03\text{ in}^3$.

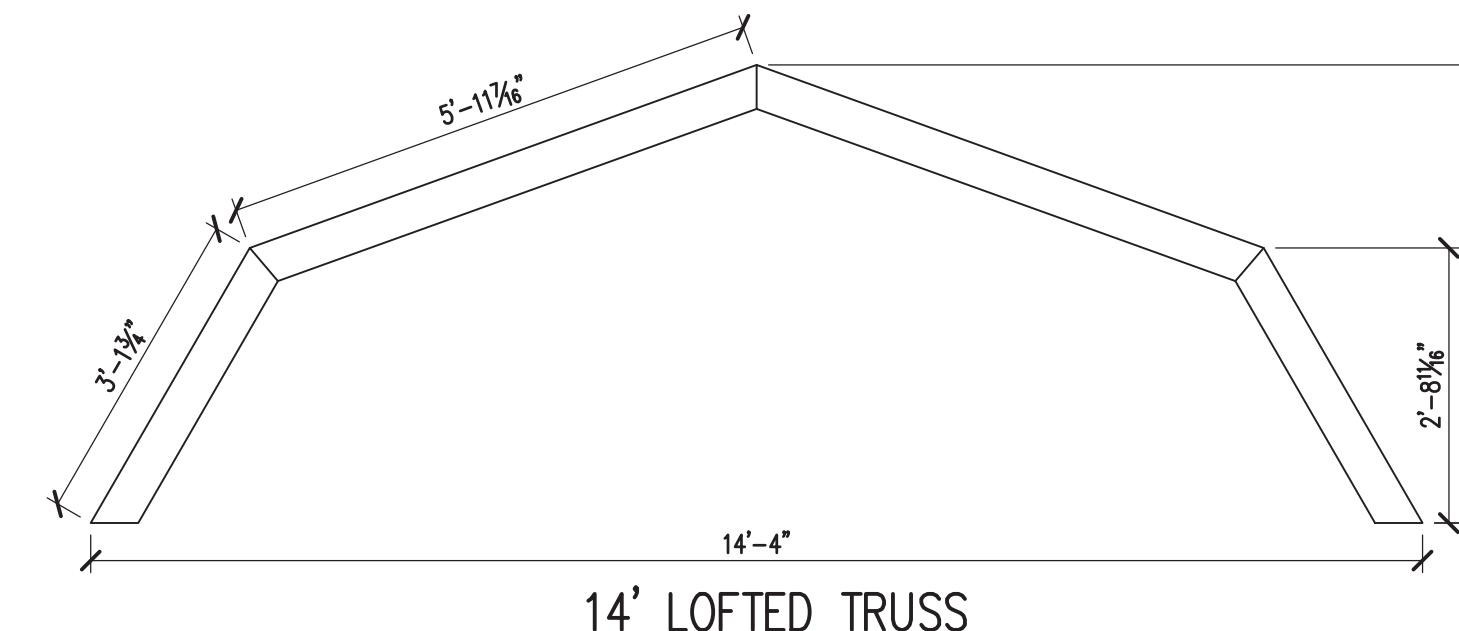
$M=68.6(1.33)(7^2)/8 x(12) = 6657.1$ in-lbs;
 $fb= 1104$ psi < 3000 psi LRFD OK



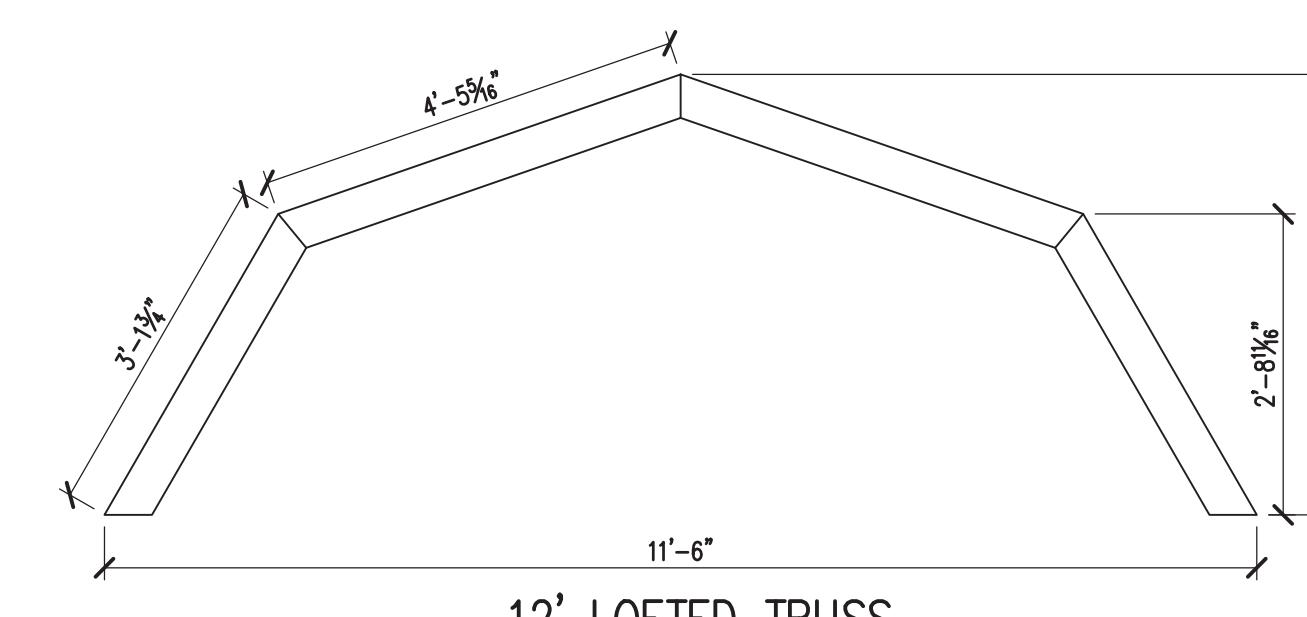
18' LOFTED TRUSS



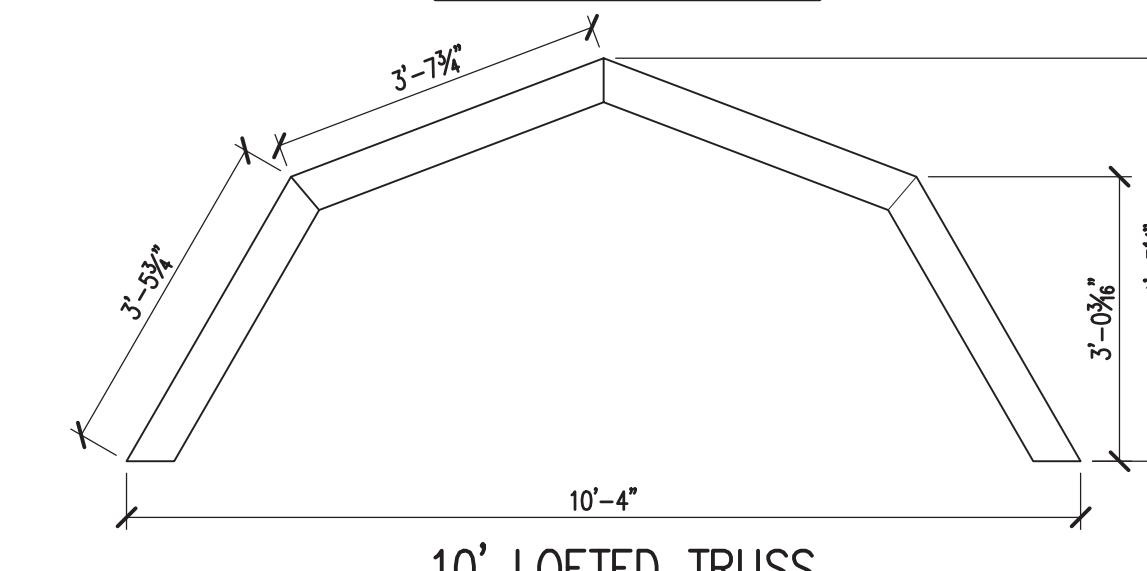
16' LOFTED TRUSS



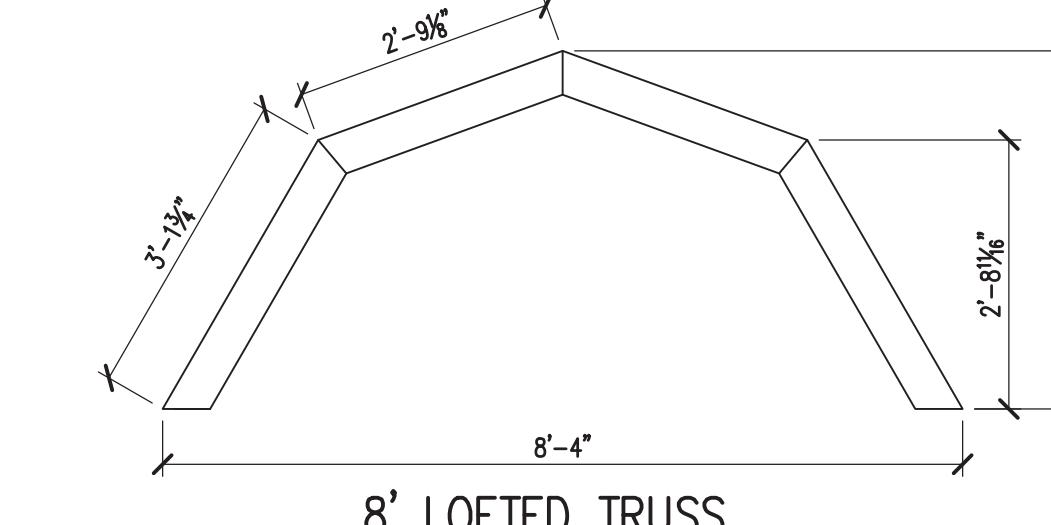
14' LOFTED TRUSS



12' LOFTED TRUSS



10' LOFTED TRUSS



8' LOFTED TRUSS

PROJECT:
 UTILITY SHED

PRODUCT CUT SHEETS

DON VAN GERVE, P.E.
 SPECIALTY STRUCTURAL ENGINEER



ENGINEERING SERVICES PROVIDED FOR:
 PREMIER PORTABLE BUILDINGS
 317 EAST STATE LINE ROAD
 SOUTH FULTON, TN 38257
 WWW.PREMIERBUILDINGS.US

REVISION	DESCRIPTION	DATE	BY
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5			

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