



Architectural Drafting

June 22, 2017

Competition - Part 1

Hand Drafting and Architectural Lettering Exercise

Using the information provided below, develop a hand sketch of a wall section through a masonry fireplace on an exterior wall at a scale of $1/2" = 1'-0"$ on the provided graph paper. Provide additional components as necessary, as well as notes, dimensions and material designations. Include the entire section from foundation to the top of the chimney above the roof. Break lines may be used as required to allow the sketch to fit on the sheet. Utilize neat, legible and uniform architectural lettering for all required notes on your hand drawing. You may use drafting tools if you have them.

- 12' x 20' Living Room with fireplace located in the center of the short wall
- 2-story, 8'-0" ceiling height on both levels, no basement
- 6:12 roof pitch
- Concrete footing and foundation; frost line 36"
- Cleanout and ash chute
- Hearth slab thickness
- Inner and outer hearth
- Firebox wall thickness
- Fireplace Lintel
- Smoke Chamber
- Wall thickness
- Flue lining
- Flashing
- Required clearance from roof

Draw a square in the bottom right corner of your drawing sheet and put your contestant number in this square. This is the only identification that should be included on this sheet. Do not put your name on any of your sheets.

When you have completed your hand sketch, raise your hand. Someone will retrieve your sketch from you and will provide the remaining portion of the competition for you to begin.

Your hand sketch is to be turned-in as soon as you are finished, but no later than when we break for lunch.

Competition - Part 2

Congratulations! You graduated from one of the best architectural programs in the country in May. You had the opportunity to take a few weeks off before starting work at the same firm as your favorite Uncle, who inspired you to become an architect. During your vacation, you decided you wanted to own a home rather than pay rent to someone else. Plus, it is difficult to find decent rental properties when you live with your best friend, an 80-pound yellow lab named Jack. Landlords prefer small dogs.

You have decent credit, but you don't have much for a down payment for a house. You have not acquired many material possessions at this point, so you know you can live in a small home. In fact, you are enticed with the idea of living in a tiny home. You decide to pursue this idea and are anxious to get started with the design.

You learned of a new neighborhood on the edge of town where several tiny homes have been constructed. You have spoken with the owner of one of the vacant lots in this neighborhood, and you are pursuing the purchase of the lot. The lot is a relatively flat lot with mature trees at the back property line and some younger trees between you and the lot to the north. It is perfect for your tiny house.

You know most tiny houses are built on trailers so that they can be relocated if needed. You will build yours on a trailer because when you sell in the future, it will be easy to move to another location if needed. Building on a trailer has limitations, however. To comply with Department of Transportation regulations, the trailer cannot be wider than 8'-6" and no longer than 53'-0". Once construction is complete, your tiny home cannot be more than 13'-6" tall. You have found a manufacturer of trailers built specifically for tiny homes. All their trailers are 8'-5" wide (including the wheel wells), but the longest buildable length is 26'-5" feet long. You decide this will be an acceptable trailer size for your new tiny home. (A cutsheet of the trailer is included in this packet for reference.)

Specific details and design features you want in your tiny home:

Note: These are the minimum requirements. Any other features or components are allowed.

- A decent sized kitchen – not one tucked in a leftover corner space. The kitchen shall have a 2-burner cooktop, a small 7.4 cubic foot refrigerator, a dishwasher and a sink.
- A living area where you can watch TV with space for a couple friends to join you
- A bathroom that is approximately 20 square feet in size with a shower (no tub) and a small sink
- A closet
- A combination washer/dryer
- A sleeping loft for your queen-sized mattress with a wood railing along the open side
- A stair to the sleeping loft
- A storage loft/office space, approximately 28 square feet, with a wood railing along the open side
- A ladder to the storage loft/office space
- Built-in furniture where possible

- Storage spaces tucked into logical locations throughout your home
- A box-bay window with a window seat (This element is to be designed such that it can be temporarily removed when the trailer is transported. Thus, the bay can protrude beyond the maximum width/length of the trailer allowed by the DOT if necessary.)
- Stained cedar lap siding on the exterior
- Exterior walls to be insulated, 2 x 4 construction
- Interior walls to be 2 x 4 construction sheathed with 1/2" gypsum board
- A gable roof with a 12:12 slope finished with standing seam metal panels
- Roof framing to be 2 x 6 with batt insulation
- The floor structure shall be 2 x 4 with 3/4" plywood, as indicated on the utility trailer elevation included in this packet
- As many windows as practical. Windows to have wood frames.
- A pair of doors with full glass for the entry. All doors to be wood with wood frames.

General Information

- Use quality CAD production techniques.
- You are allowed only one, final plotted sheet.
- The size of your finished, plotted sheet will be 24" x 36".
- Construct a simple line border of a plotted size of 22" x 34". Place a 1" x 1" square (plotted size) in the bottom, right-hand corner of your sheet. Place your contestant number in this square.
- The scale of all required drawings will vary. Utilize wise and logical sheet layout.
- Dimensioning, general text, and notes shall have a plotted height of 1/8" or 3/32".
- Other text (i.e. titles, room names) may be a height of your choice, but must be legible and appropriately sized using architectural conventions.
- Include a title and scale for each drawing on the sheet. Include a North arrow where applicable.
- Provide full and complete drawings. Do not compromise quality and completeness on required drawings in order to provide drawings that are not required.
- Read all handouts carefully to gather all information to produce all required drawings.

Required drawings

- Floor Plan with dimensions and all applicable notes, 1/4" = 1'-0"
- Loft Floor Plan with dimensions and all applicable notes, 1/4" = 1'-0"
- All four exterior elevations, 1/4" = 1'-0"
- A full building section along the long length of the home, to include the loft, 1/4" = 1'-0"
- Roof plan, 1/4" = 1'-0"
- A detail section of the roof eave, 1-1/2" = 1'-0"
- Interior elevation of the kitchen indicating all applicable cabinets and appliances in the view, 1/2" = 1'-0"
- Openings Schedule(s) for doors and windows. Each opening shall have a unique identifier.

Floor Plan – Drawing/Design Requirements

- Show casework, appliances and plumbing fixtures.
- Show furniture as appropriate.
- Provide necessary interior and exterior dimensions for construction.
- Dimension all exterior windows and doors to their centers.
- Indicate door and window sizes for each door and window in an opening schedule(s). Make sure each door and window is scheduled with a unique door number and window letter.
- The entry door cannot be located at the wheel wells due to the top of the wheel well being 5 1/2" above the finished floor.

Exterior Elevations – Drawing/Design Requirements

- Include all four exterior elevations. Label each elevation appropriately.
- Provide annotation, dimensioning, materials, etc. as are appropriate for exterior elevations.

Building Section – Drawing/Design Requirements

- Cut a section through your tiny home along the long length.
- Show all elements, including finishes as appropriate that are visible in the section.
- Indicate materials cut by the section with appropriate drafting technique.
- Include dimensions and notations, including material designations as required.

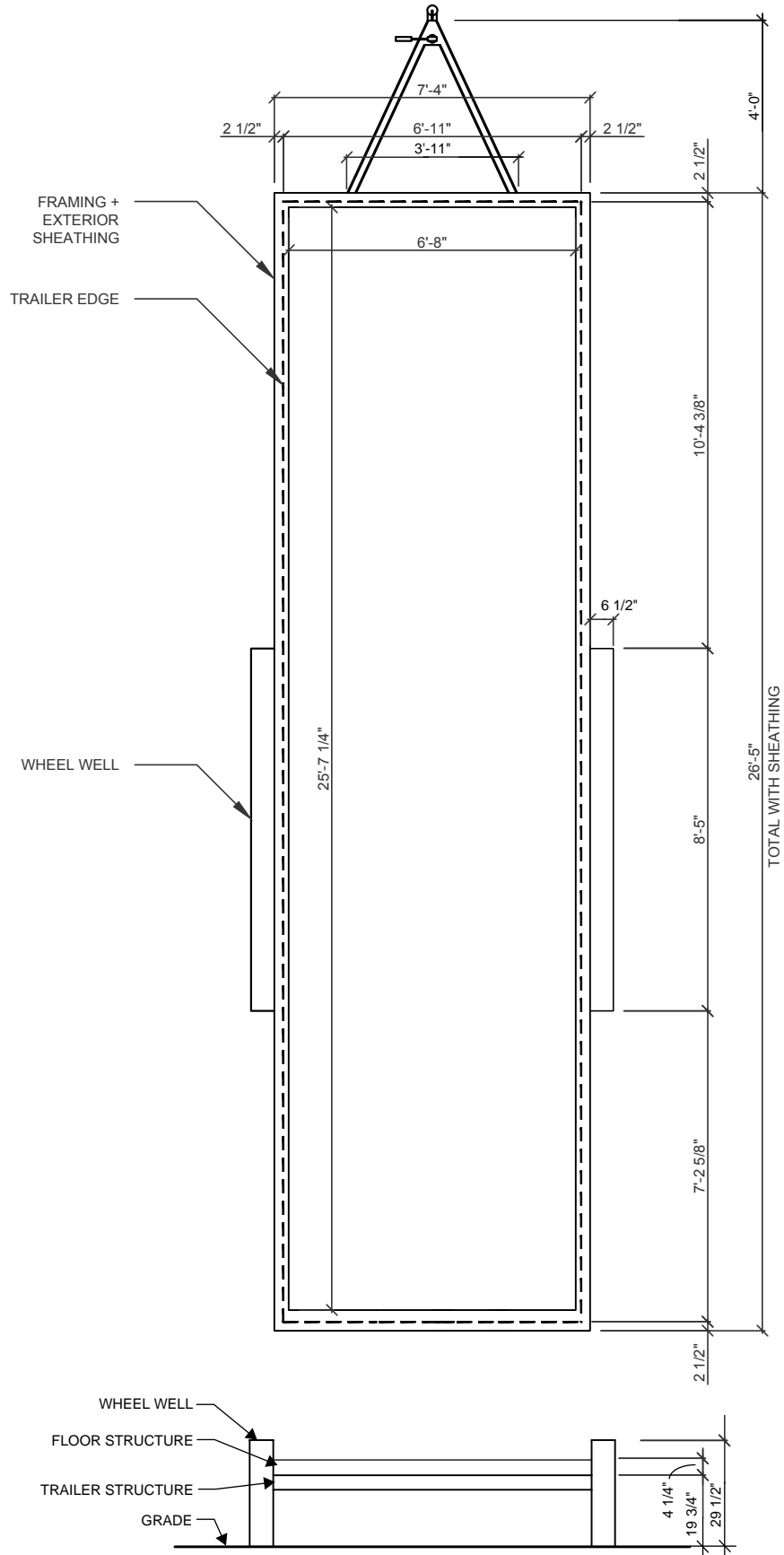
All required drawings are to be plotted on a single plotted sheet. Remember to put your contestant number in the 1" square box on your plotted sheet as directed. This shall be the only identifying factor on any of your sheets.

Please name your electronic file with your contestant number, i.e. 321.pdf

You must create your .pdf file no later than 4:00 p.m.

Tumbleweed Utility Trailer | 26 FT

GVW Rating 15,000lbs	Dry Weight 2,235lbs	Cost \$6,100	Trailer Bed Height 24"	Tongue Weight 375 lbs
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Competition - Part 3 - Addendum

You have decided that downsizing to a single tiny home is probably too extreme, even for your lean lifestyle. Therefore, you have contacted the trailer company to purchase a second trailer that is 8'-5" wide x 20'-5" long. You plan to align the shorter tiny home parallel to the longer home with 12'-0" between the two. You want a wood deck with an overhead pergola between the two houses. You have also decided to add a dormer on the outside roof slopes on each of the trailers. The roof of the dormers shall be a simple shed style.

The second tiny home should have a main living area, a bathroom (with a shower) and a second sleeping area that will fit a queen-size bed.

Drawing/Design Requirements

- Include a second building section cut through both homes, the deck and pergola, 1/4" = 1'-0".
 - Alter the main floor plan of the larger home to show the deck between and the second tiny home floor plan, 1/4" = 1'-0"
 - Alter any other required drawing as noted in Part 2 due to the addition of a second trailer.
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All required drawings are to be plotted on a single plotted sheet. Remember to put your contestant number in the 1" square box on your plotted sheet as directed. This shall be the only identifying factor on any of your sheets.

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