# Hauler Body Design Considerations

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# Introduction

- The scope of this presentation is focused on to how to create a Hauler Bed *design and build process*.
- The process is not unlike how RVH Lifestyles creates a new bed design.
- Given the time we have today, we will not get into deep discussion about all the specific details but rather provide an overview and directional guidance for design considerations and where to start.

# Simple Bed

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# Moderately Complex Bed

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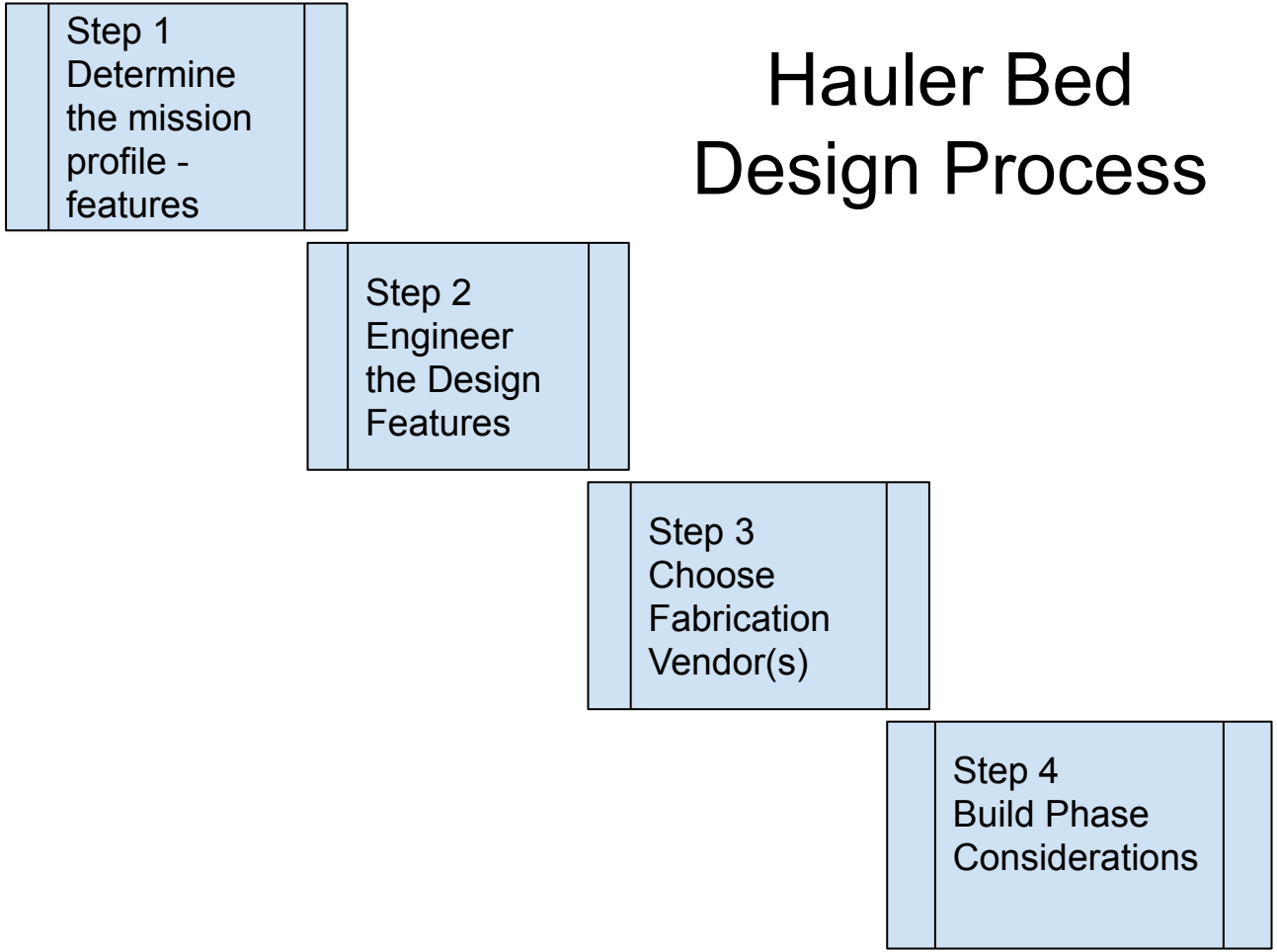
# Hauler Bed Design Process



# Step 1: Mission Profile - Design Features

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## The First smart Bed - circa 2005

# Step 1: Mission Profile - Design Features

# Step 1: Design Considerations

## Practical usage requirements

- What type of trailer will you pull? Bumper, 5th, semi
- Configuration: Multi mission profile, bumper vs pin vs ball, etc.
- Carrying a car or quad, motorcycle, Stacked equipment, etc.
- Storage considerations; Dry, Wet. Size, Door opening
- DROM Mounting, Bed Access, Tie Down placements, etc
- Systems & Utilities to include; Gen/APU, AC, Air, tanks, accessories, etc.

## Other Considerations

- Road protection; wheel wells, mud flap mounting systems, ground clearances
- Overall aesthetics and proportions; integration with the RV Hauler, Fairings transitions, overall goals for looks
- Final finish; primer & paint, powder coated, color matching requirements
- Lighting; accent lighting, utility lighting
- Hitch type and design; Between the rails, above the rails. Tunnel or plate.
- Legal Requirements; width, length, lighting.

# Step 2: Engineering the Design Features

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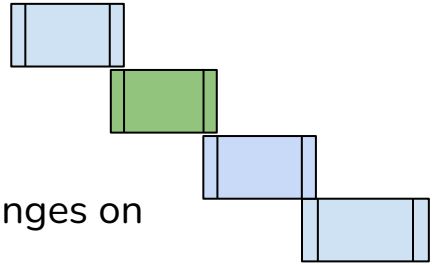
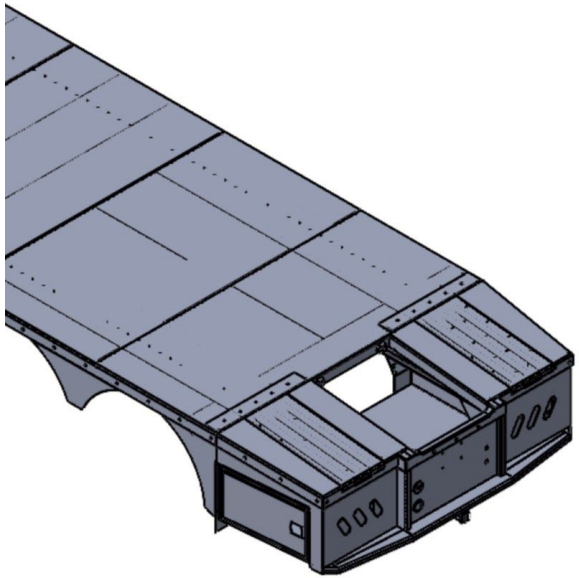


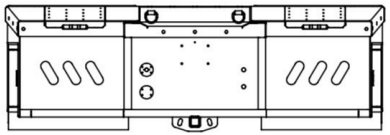
## Better to start with a plan than no plan at all

- Draw out the idea (CAD, Paper, mock up). Tackle Engineering challenges on paper
- Trailer articulation above and behind the deck. Pay attention to the little things that could conflict
- Weight and Balance - overloading axles, pin position, deck cargo
- Electrical: wiring harness design and connections housing, integrated wire runs
- Consider material thicknesses requirements and weight
- Carcass or Skeleton design of the hauler body understructure
- Door design; open down, left, right, up? Or, slide out?
- Door jamb design, how will it seal and keep inside dry?
- Hardware type: hinges (strap or hidden), latches, Rust proof
- How will parts and openings be cut, Plasma, Laser, Water Jet, by hand/grinder
- Gap tolerances: Will finished products be powder coated and/or liquid painted
- Manufacturing engineering; how will it go together and where will welds or mechanical fasteners be placed.

# CAD or Paper

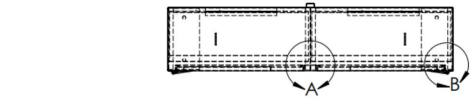
# Document Your Design

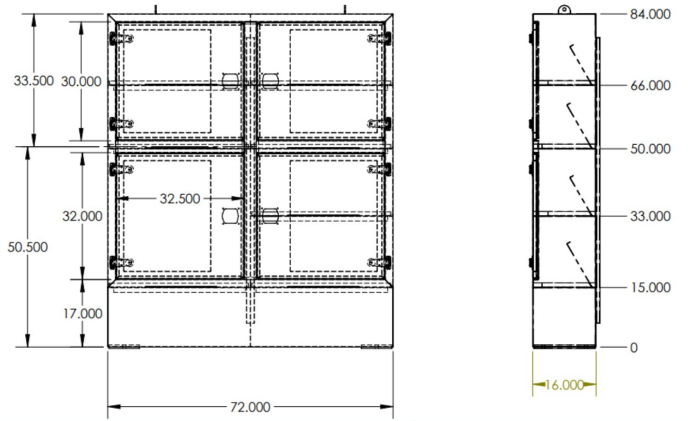




MATERIALS:

| | |
|---|---|
| DOOR PANEL: | STEEL, 14 GA |
| DOOR REINF: | STEEL, 16 GA |
| BODY: | STEEL, 12 GA |
| SHELF: | STEEL, 12 GA |
| HINGE: | STAINLESS STEEL, 1/4" PIN |
| LATCH: | BC, LL9000 |



# Weight and Balance

# Articulation

TIGHT, but WORKS

# Articulation

FAIL - TOO TIGHT

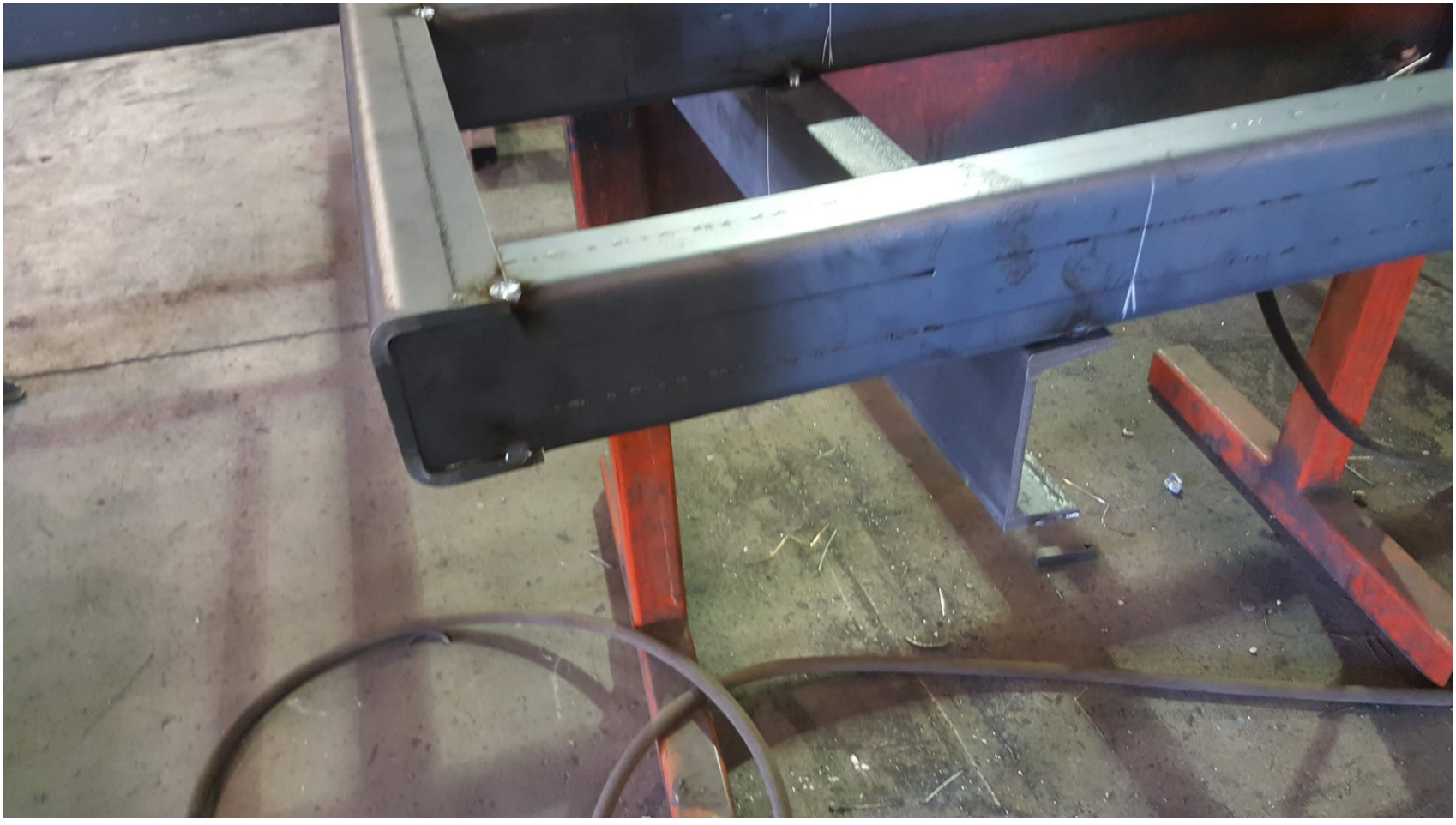
# The Mock Up

# The Carcass Design

# Design Complexity

# Design Simplicity

# Utilize the Tools at Your Disposal



# Assembly Sequence


# Step 3: Where to Fabricate?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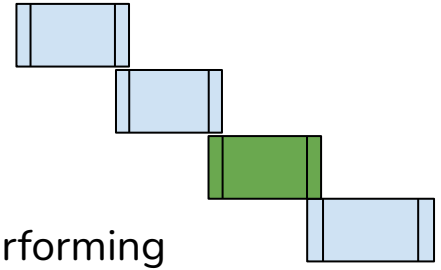
# What Equipment is Available?

# Step 3: Fabrication



- Choose a shop with  a demonstrated track record of performing creative fabrication and that is willing to stick with you to the end.
- Does the facility have the capability to safely handle the hauler bed?
- Do they have paint or powder coat capability on site? Where is the finishing facility and how will you transport the bed?
- The most value is not always the cheapest bid or estimate.
- Check references and look at their previous work, not only newly completed but also units that have been in use for a while.

***Problems with the design, engineering and quality show up over time***

# Step 4:

# The Build Phase

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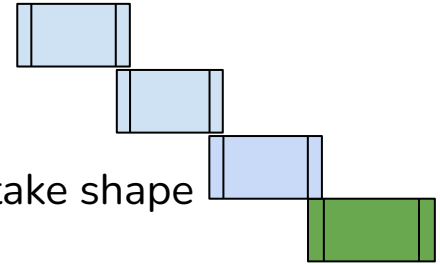

- The build phase should be exciting, your ideas begin to take shape and your planning begins to show results
- Allow for better ideas to creep in as you encounter unexpected fabrication challenges, which will occur.
- Agree with your fabricator on how you will stay involved during the build. It is best to have regular progress updates, either in person if allowed or at a minimum via photos or videos.
- Plan for a final “punch list” to take care of some minor things at the end.
- Be prepared for timeline creep

# Questions