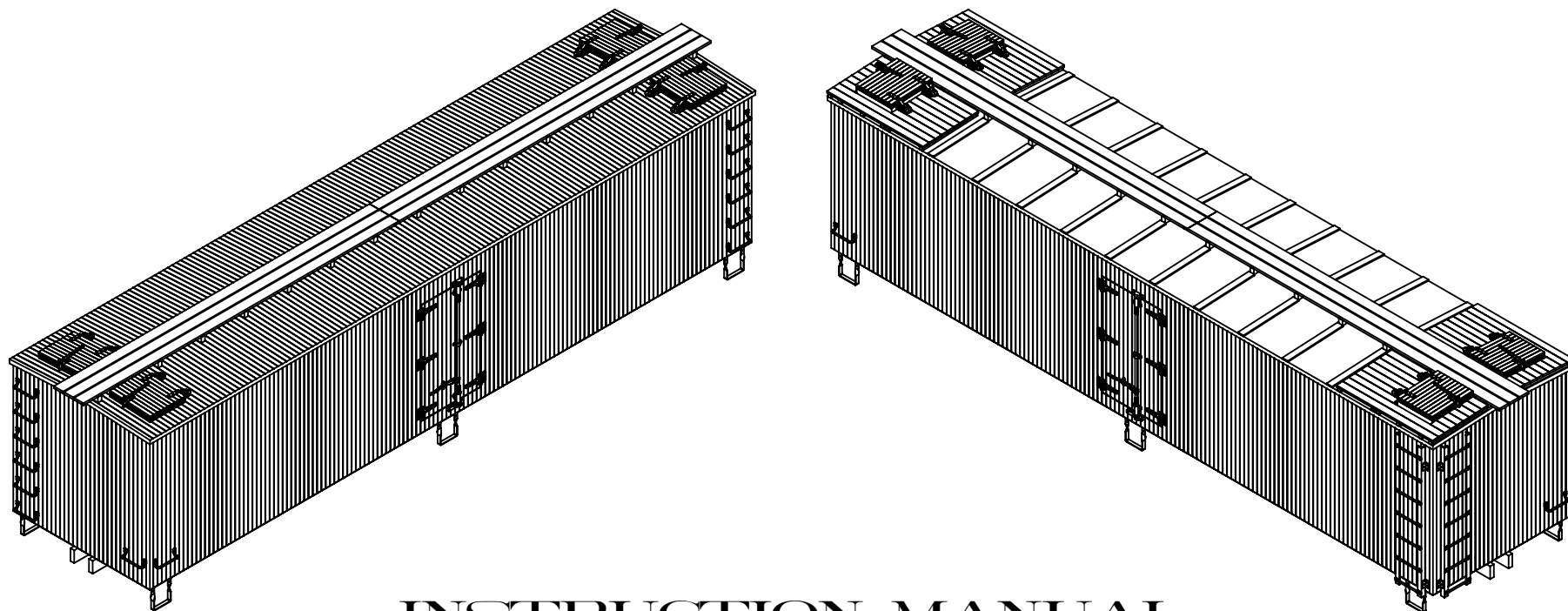


PACIFIC FRUIT EXPRESS REEFERS FOR 1/12 SCALE



INSTRUCTION MANUAL

PACIFIC DESIGN SHOPS

REVISION: B
REVISION DATE: 1/23/20

KIT OVERVIEW

THE INFORMATION CONTAINED IN THIS INSTRUCTION MANUAL IS THE SOLE PROPERTY OF PACIFIC DESIGN SHOPS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PACIFIC DESIGN SHOPS IS PROHIBITED.

Tools you may need to assemble the kit:

- Clamps (Bar clamps and Spring clamps)
- Drill and drill bits
- Brad Nailer (not necessary but really speeds up the gluing process)
- 6" & 12" Combination Square
- Weights (paver bricks work great)
- Sand paper (80 grit & 120 grit) & sander
- Paint brush

Extra materials you may need:

- **Water resistance** wood glue (Titebond II) (See tip below)
- #6 x 3/4" Wood Screws
- 18ga x 1" Brad Nails
- Steel for Frame
- Trucks & Couplers
- Mounting hardware
- Wood filler
- Wood primer
- Paint (good exterior paint)
- Decals/Lettering
- Detail part hardware

Helpful Tips

- **Waterproof** glue is not completed needed for this car because the surfaces will be painted after gluing. There is nothing wrong with using waterproof glue (such as Titebond III), but it does cost more and you likely won't see the benefit from it.
- Dry fit the parts together before gluing. This will assist in making sure everything lines up and give you an idea of what needs to fit where.
- Before applying the MDF skin, sand the mating surfaces with 120 grit sandpaper to ensure good glue bonding and to remove excess glue.
- When applying the MDF skin, add a small brad nail at each corner to keep the piece from sliding around while clamping.

See the FAQ page for more helpful tips and answers to commom questions.

We want your feedback! If you see an area to improve either on the kit or the instructions, please let us know. Send your feedback to info@pacificdesignshops.com.

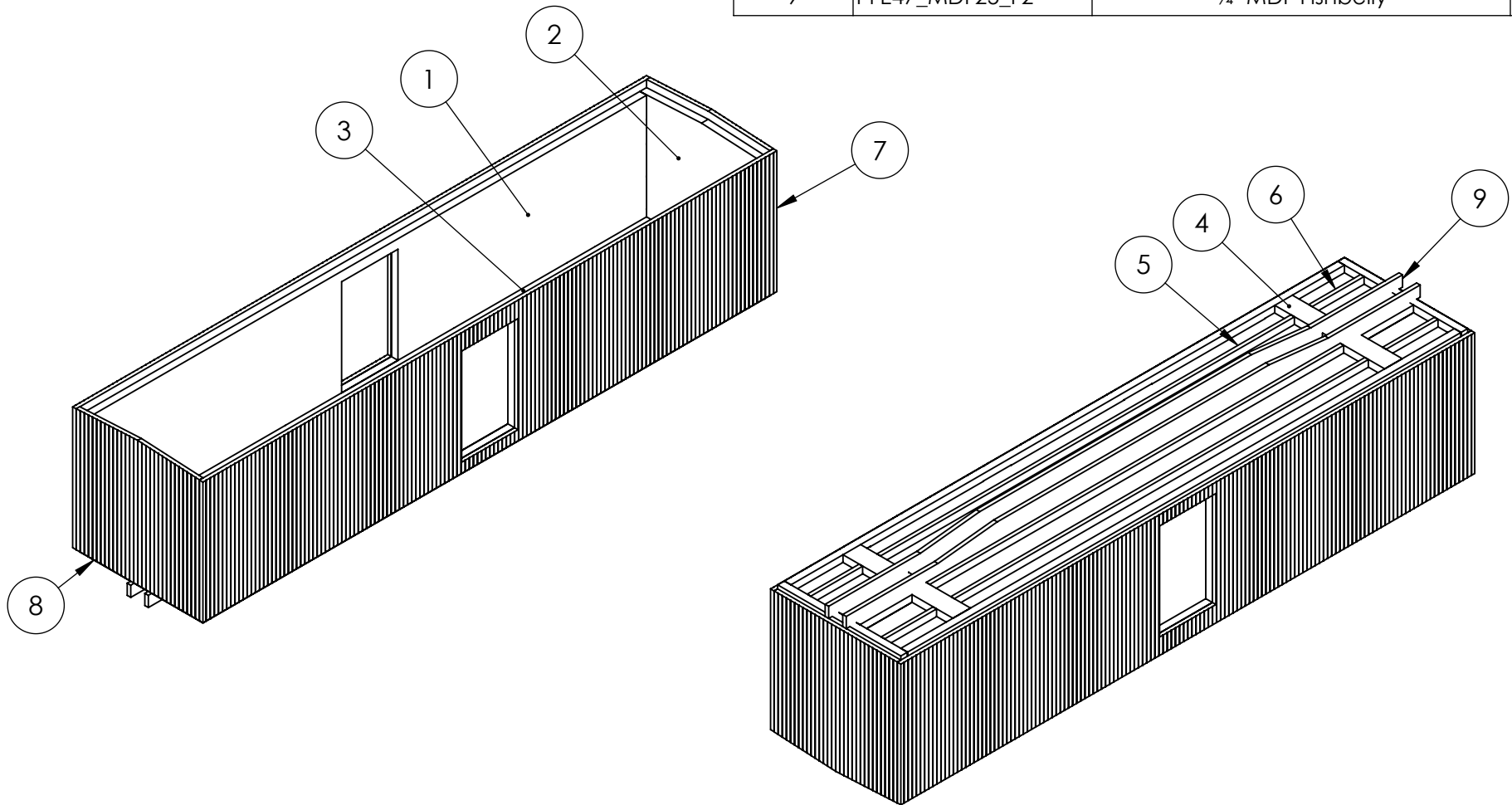
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BODY: OVERVIEW

- Use the Bill of Materials (BOM) on the right for pages 1-5

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_BB12MM_A2	12mm Baltic Birch Side	2
2	PFE47_BB12MM_B2	12mm Baltic Birch End	2
3	PFE47_BB12MM_C1	12mm Baltic Birch Floor	1
4	PFE47_BB12MM_D2	12mm Baltic Birch Bolster Base	2
5	PFE47_BB6MM_A4	6mm Baltic Birch Frame Stringer	4
6	PFE47_BB6MM_B4	6mm Baltic Birch Frame Short	4
7	PFE47_MDF25_A2	1/4" MDF Side	2
8	PFE47_MDF25_B2	1/4" MDF End	2
9	PFE47_MDF25_F2	1/4" MDF Fishbelly	2

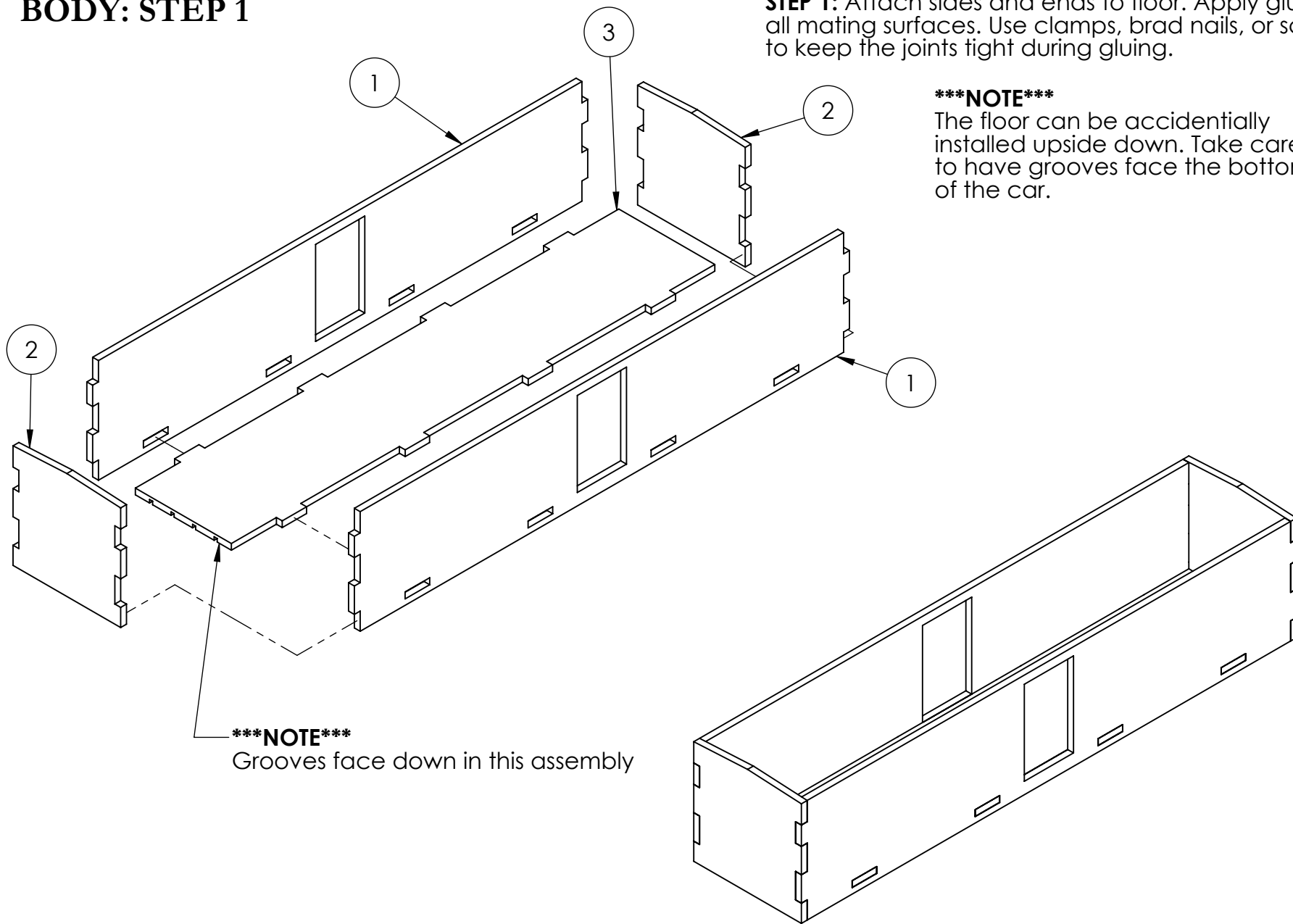


BODY: STEP 1

STEP 1: Attach sides and ends to floor. Apply glue at all mating surfaces. Use clamps, brad nails, or screws to keep the joints tight during gluing.

*****NOTE*****

The floor can be accidentally installed upside down. Take care to have grooves face the bottom of the car.

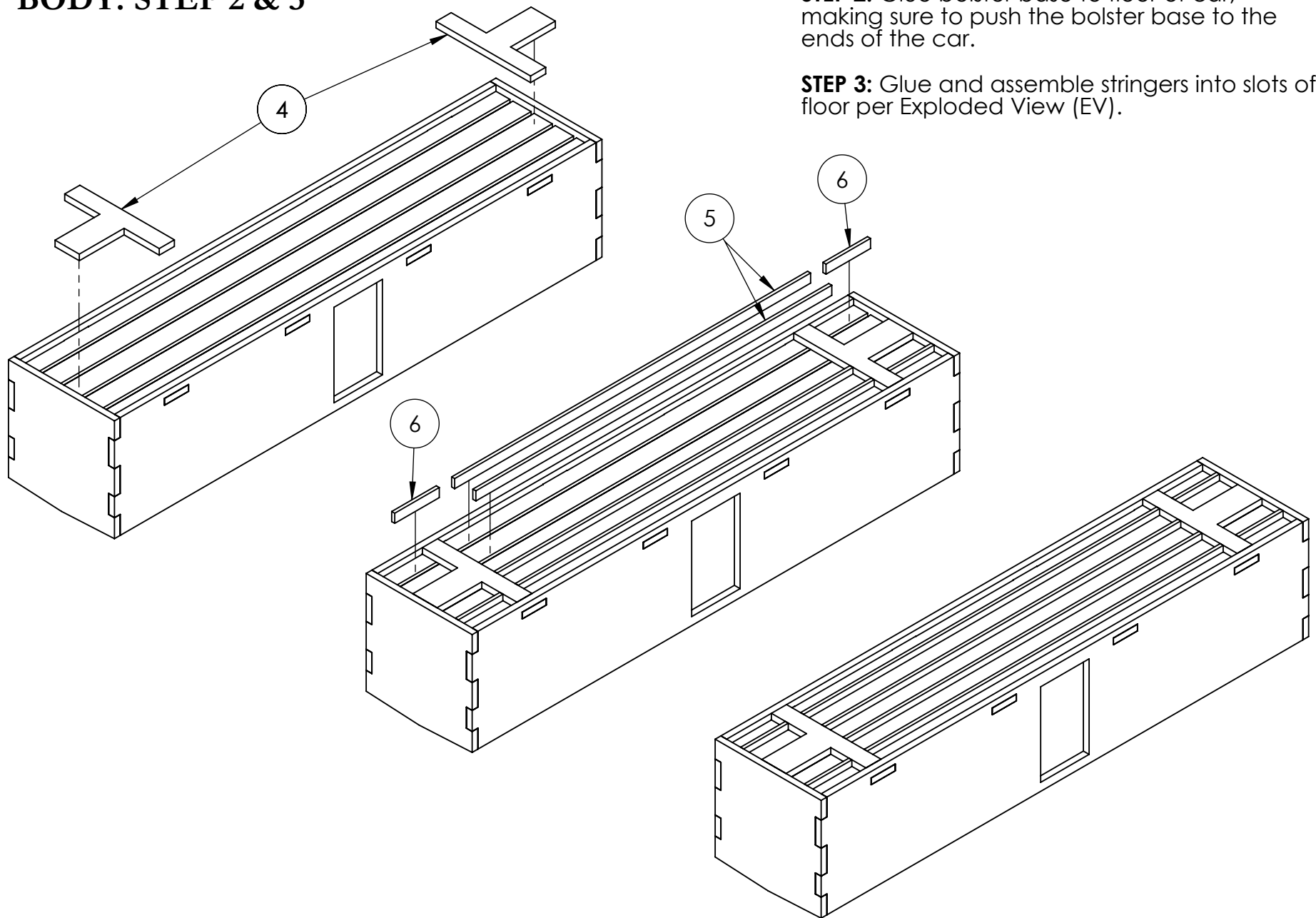


*****NOTE*****
Grooves face down in this assembly

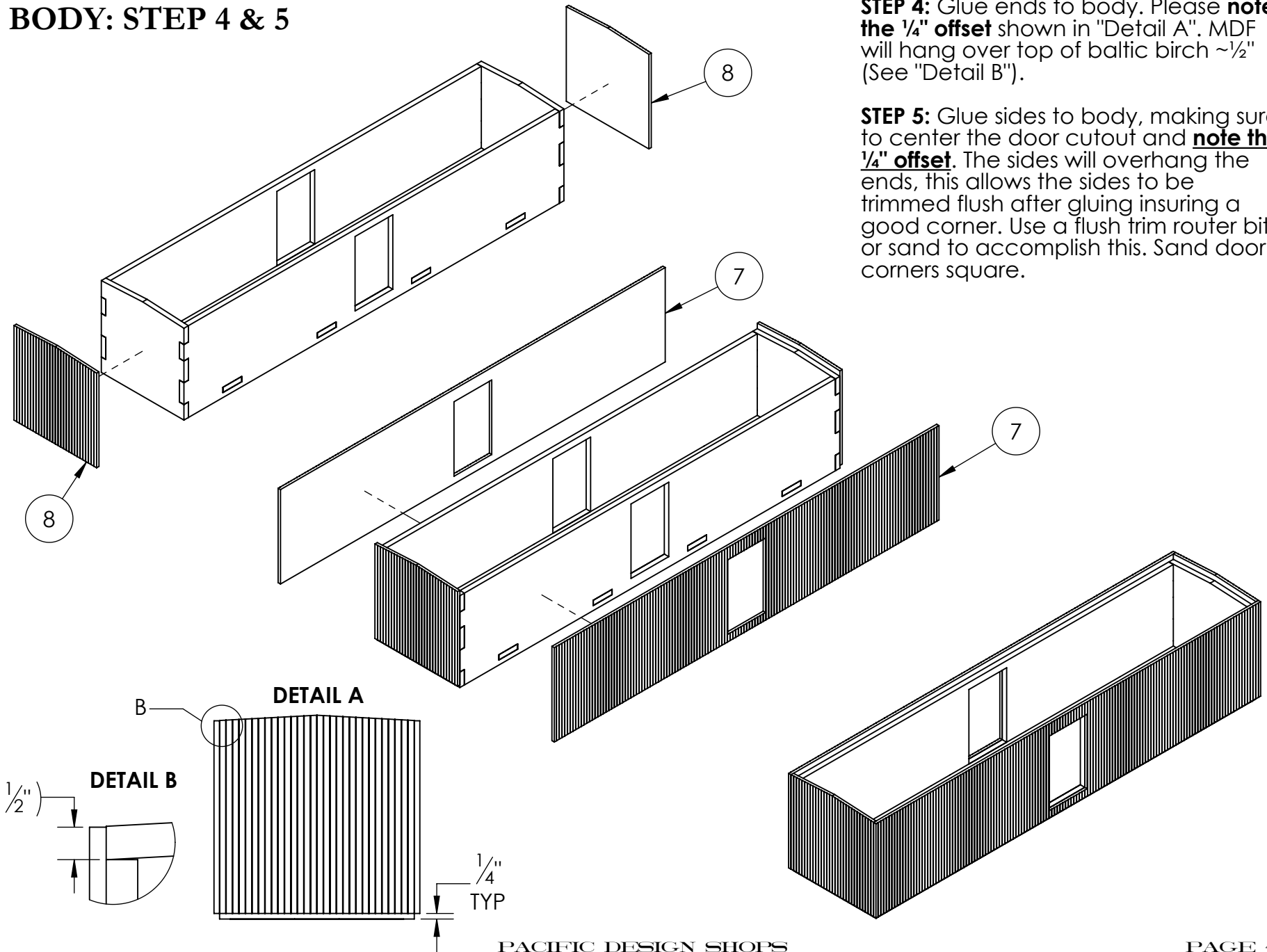
BODY: STEP 2 & 3

STEP 2: Glue bolster base to floor of car, making sure to push the bolster base to the ends of the car.

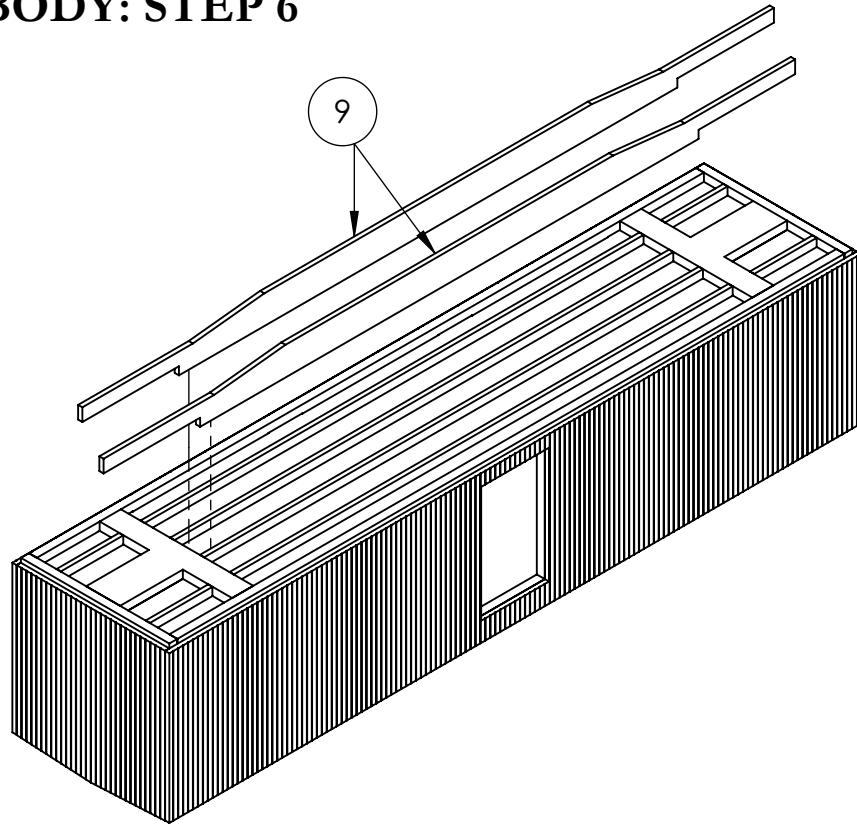
STEP 3: Glue and assemble stringers into slots of floor per Exploded View (EV).



BODY: STEP 4 & 5



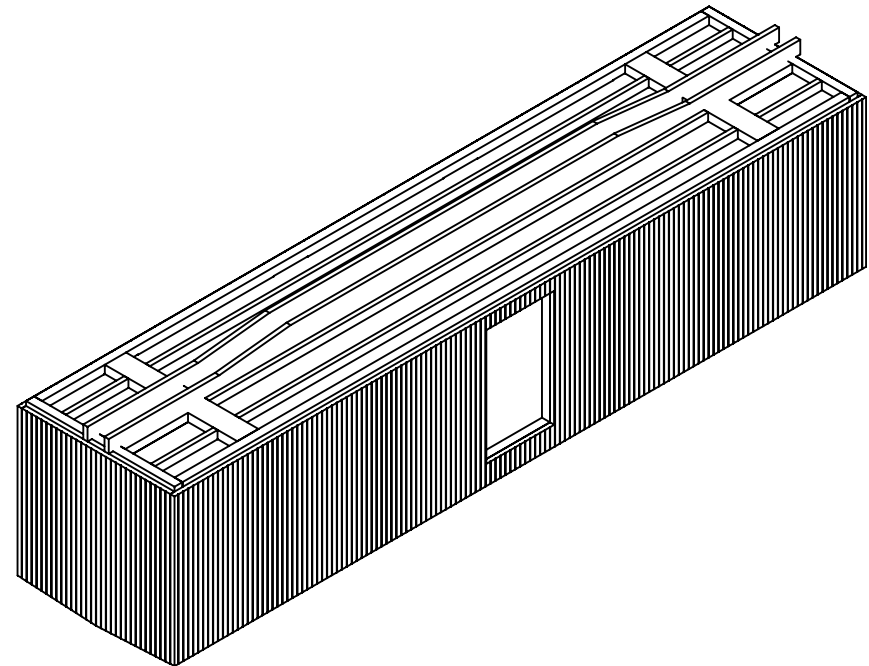
BODY: STEP 6



STEP 6: Attach fishbelly profiles to bottom of car.
Either glue to frame stringers or screw to steel frame.

*****NOTE*****

It is recommended waiting to attach fishbelly profile until the car is painted and detail parts are added. That way, you still have flat surface to rest the car on.

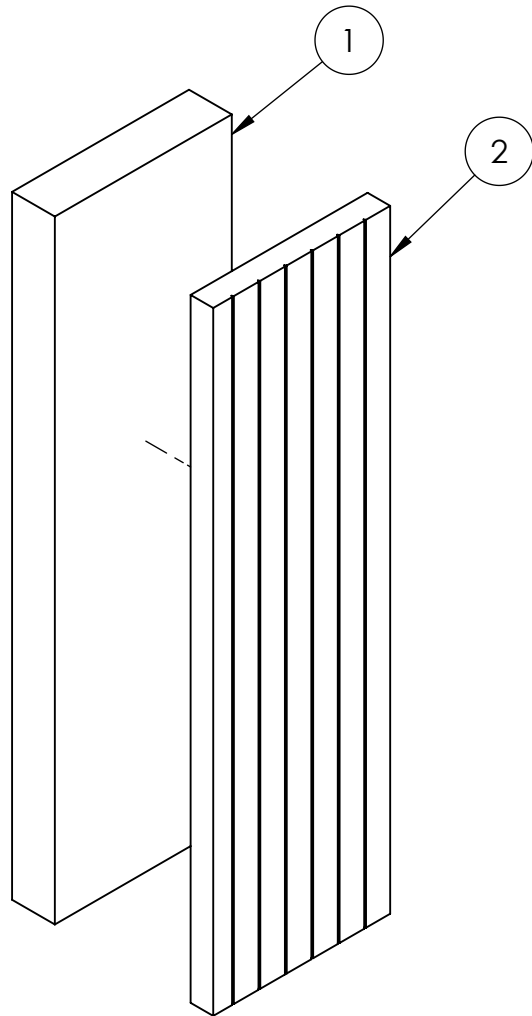


DOOR OVERVIEW

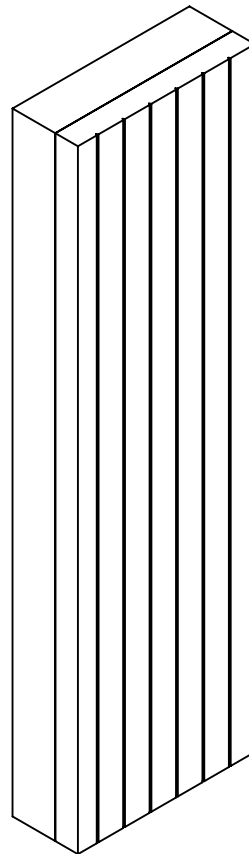
- Glue parts together per EV
- Modify right door assembly
(This can be skipped if non-working doors are desired)
- Prime & paint doors after glue dries

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_BB12MM_H4	12mm Baltic Birch Door	1
2	PFE47_MDF25_E4	1/4" MDF Door	1

QUANTITY REQUIRED PER CAR:
(2) LEFT
(2) RIGHT

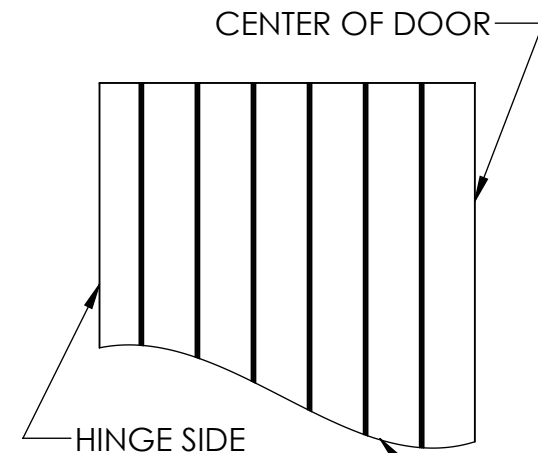
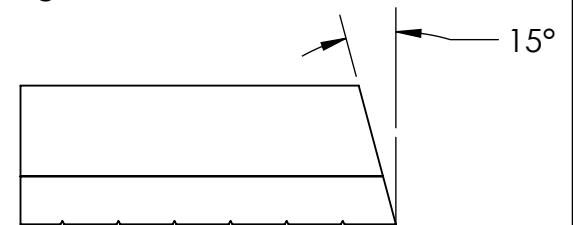


COMPLETED DOOR



LEFT DOOR ASSEMBLY
 No additional modifications.

RIGHT DOOR ASSEMBLY
 Cut angle on center side of door.



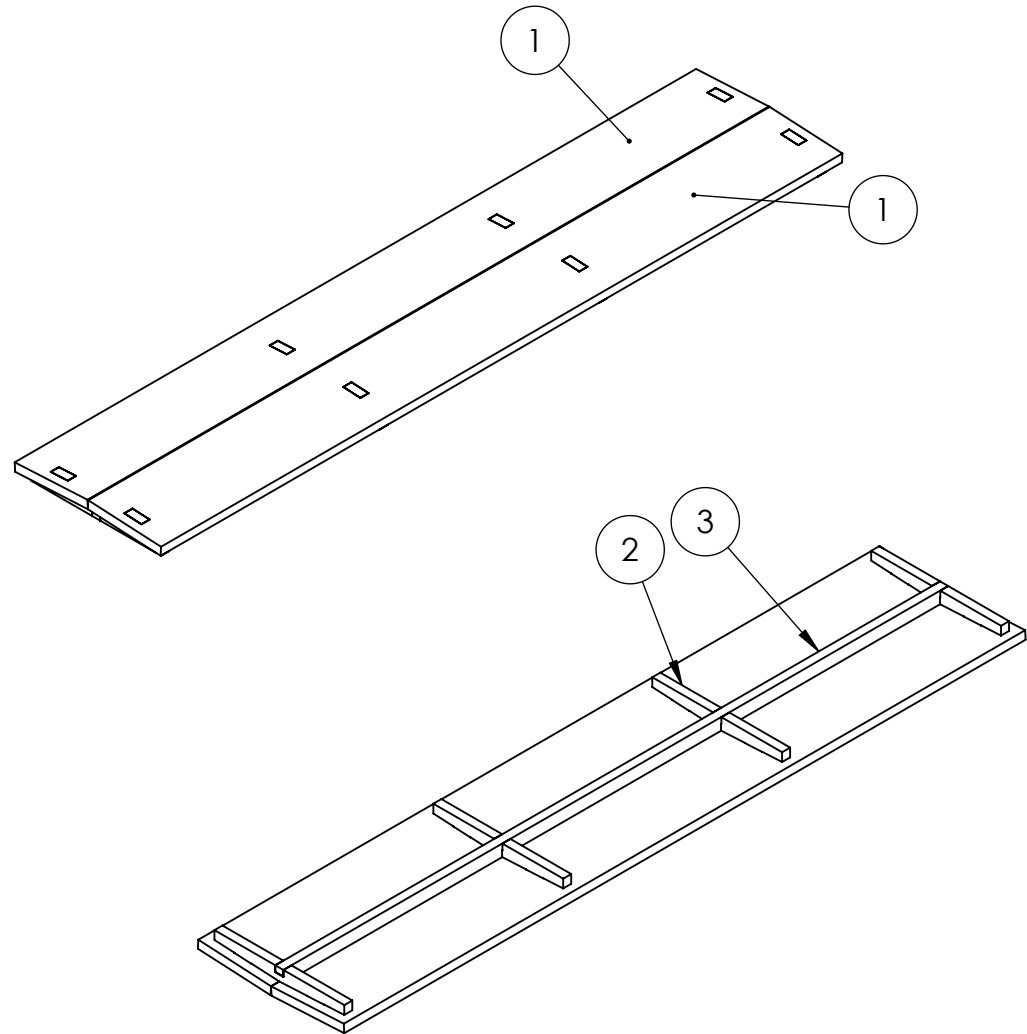
Place door in door opening to determine best groove alignment (Door grooves are not symmetrical)

SECTION: STEP

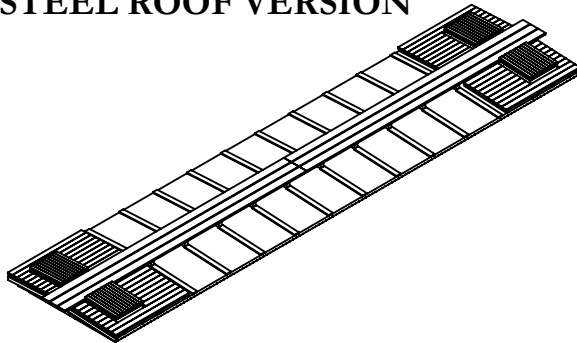
- Use the BOM on the right for pages 7-8
- Use pages 11-14 for Wood Roof Version
- Use pages 15-18 for Steel Roof Version

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_BB12MM_E2	12mm Baltic Birch Roof	2
2	PFE47_BB12MM_F4	12mm Baltic Birch Roof Cross Beam	4
3	PFE47_BB12MM_G1	12mm Baltic Birch Roof Stringer	1

WOOD ROOF VERSION



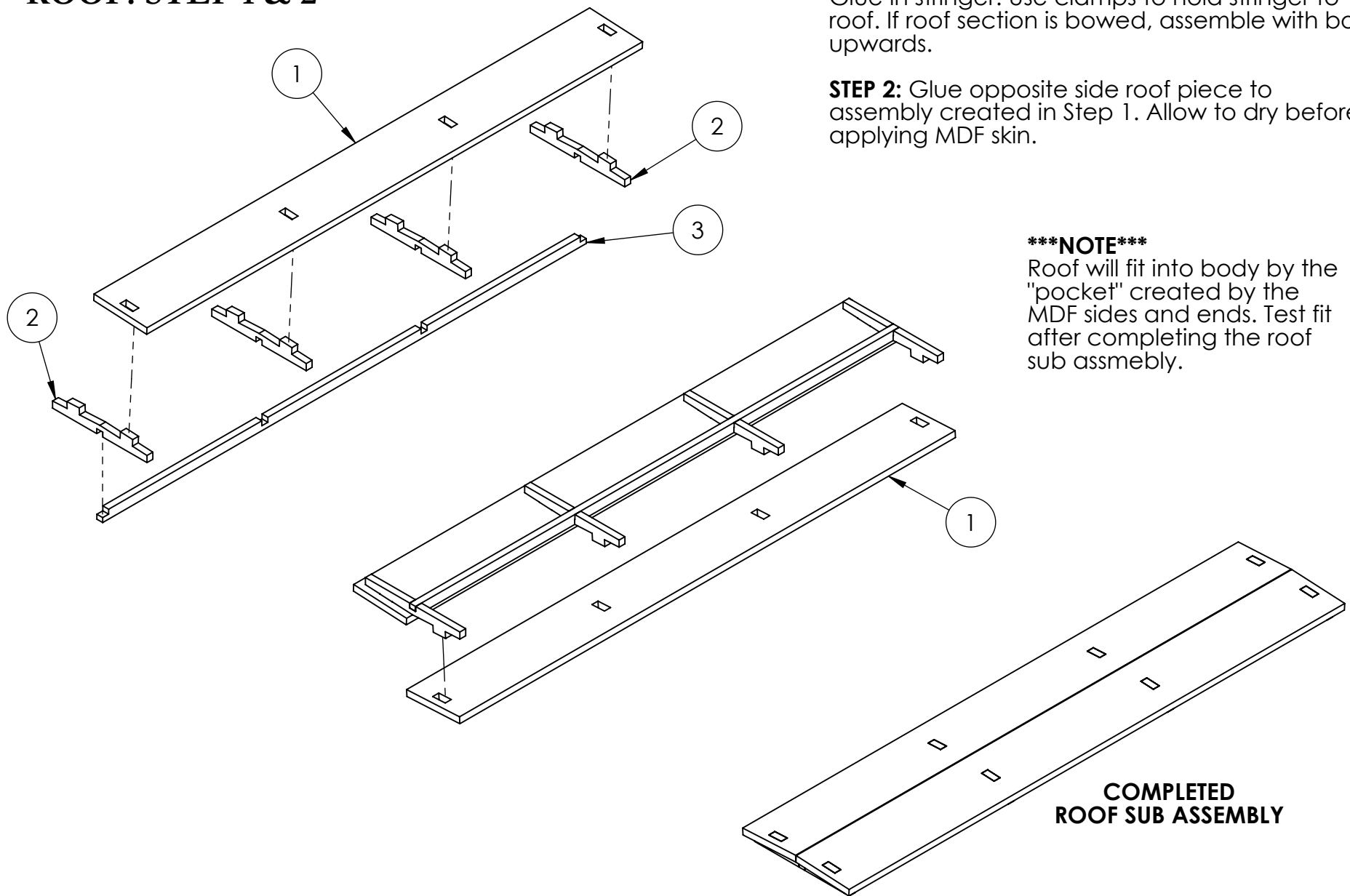
STEEL ROOF VERSION



ROOF: STEP 1 & 2

STEP 1: Glue roof cross beams to one roof piece. Glue in stringer. Use clamps to hold stringer to roof. If roof section is bowed, assemble with bow upwards.

STEP 2: Glue opposite side roof piece to assembly created in Step 1. Allow to dry before applying MDF skin.



*****NOTE*****

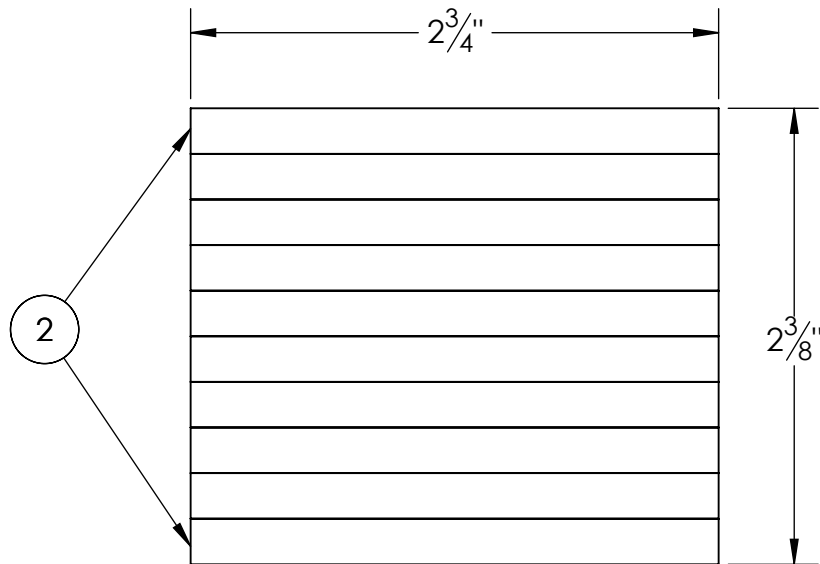
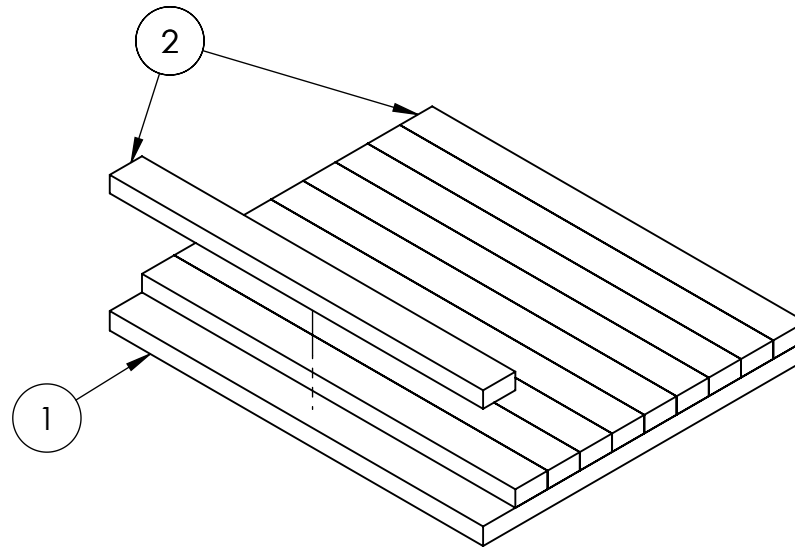
Roof will fit into body by the "pocket" created by the MDF sides and ends. Test fit after completing the roof sub assembly.

HATCH OVERVIEW

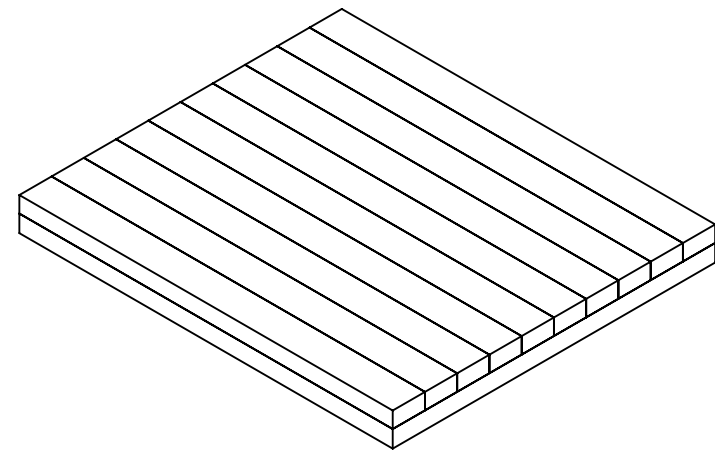
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_MDF13_A4	1/8" MDF Hatch Base	1
2	PFE47_BB3MM_A40	3mm Baltic Birch Hatch Board	10

- Use the BOM on the right for this page only
- Glue hatch boards to hatch base per EV
- Prime & paint hatches after glue dries

QUANTITY OF HATCHES REQUIRED PER CAR: (4)



COMPLETED HATCH

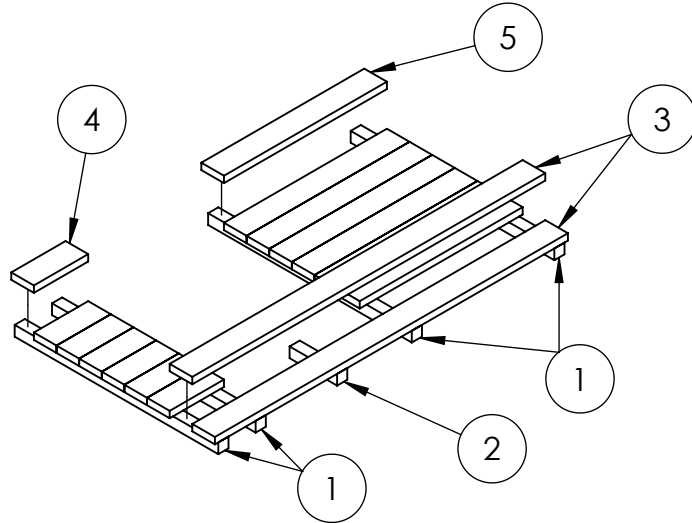


PLATFORM OVERVIEW

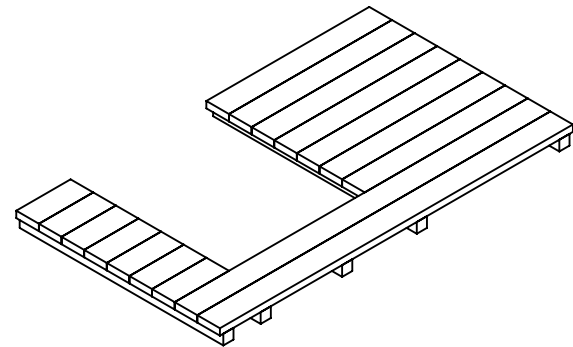
- Use the BOM on the right for this page only
- Platforms not required on Wood Roof Versions
- Glue platforms together per EV
- Note left vs. right assembly
- Prime & paint platforms after glue dries

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_BA316S_A16	3/16" SQ Basswood Platform Stringer LONG	4
2	PFE47_BA316S_B4	3/16" SQ Basswood Platform Stringer Short	1
3	PFE47_BB3MM_C8	3mm Baltic Birch Platform Board LONG	2
4	PFE47_BB3MM_D28	3mm Baltic Birch Platform Board SHORT	7
5	PFE47_BB3MM_E28	3mm Baltic Birch Platform Board	7

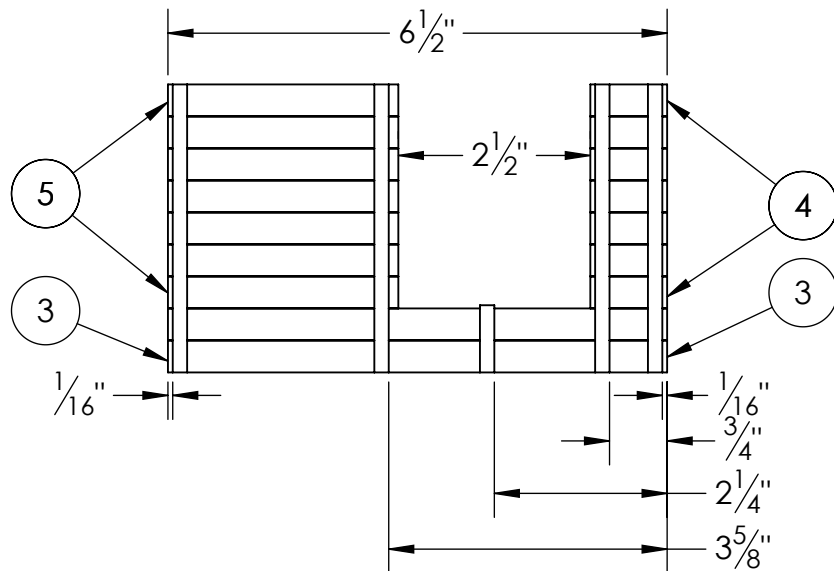
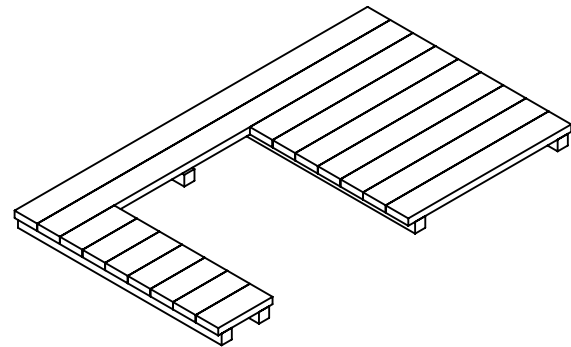
QUANTITY OF PLATFORMS REQUIRED PER CAR:
(2) LEFT
(2) RIGHT



LEFT PLATFORM COMPLETED ASSEMBLY



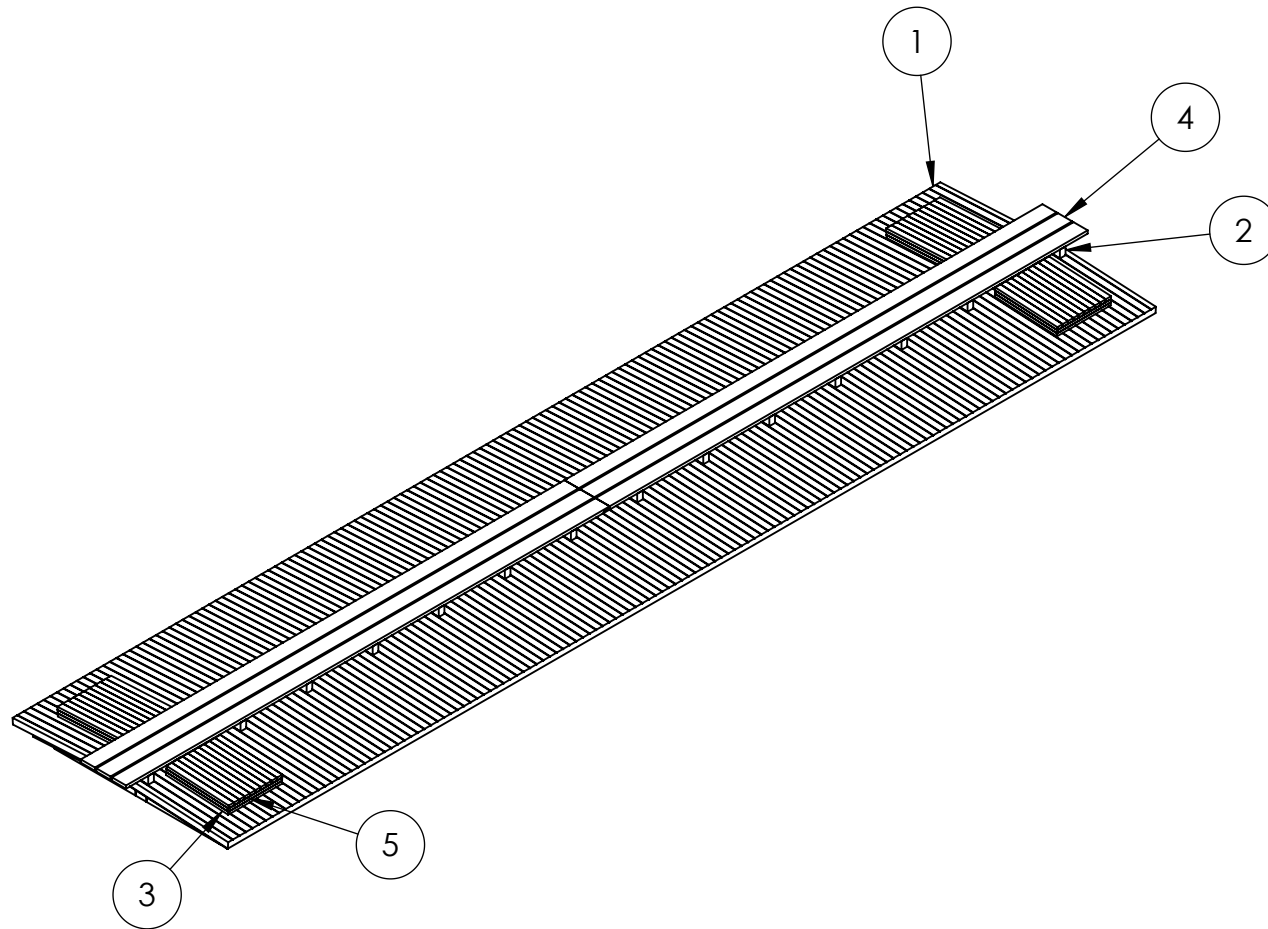
RIGHT PLATFORM COMPLETED ASSEMBLY



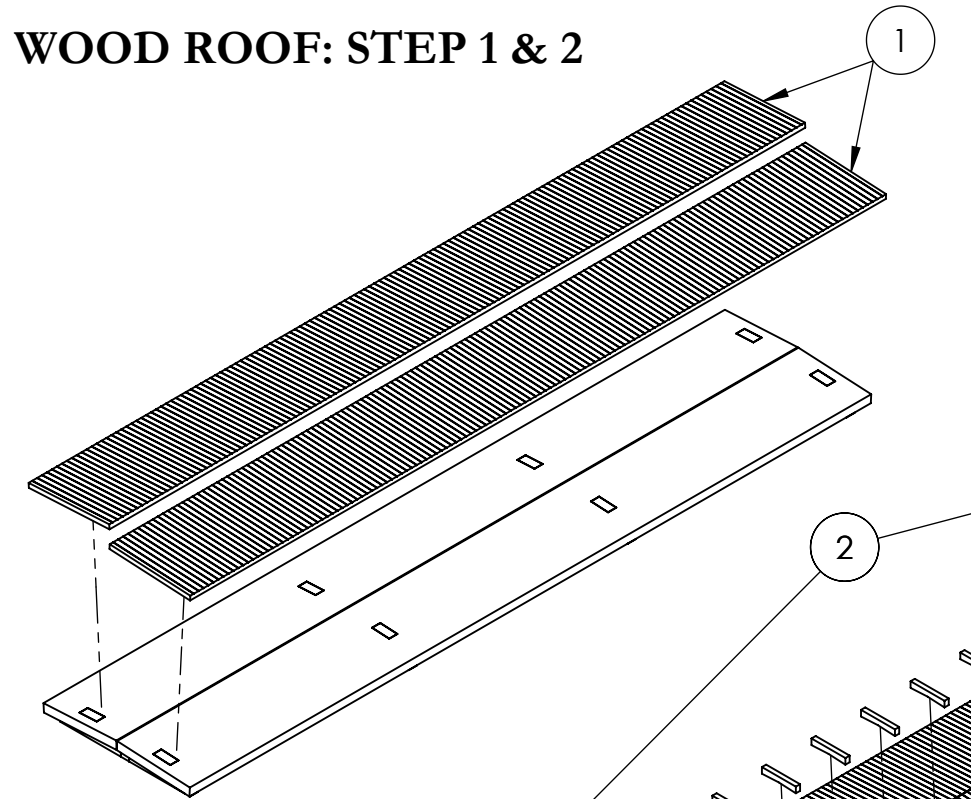
WOOD ROOF OVERVIEW

- Use the BOM on the right for pages 11-14

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_MDF25_C2	1/4" MDF Roof	2
2	PFE47_MDF25_D16	1/4" MDF Walkway Supports	16
3	PFE47_BB3MM_F4	3mm Baltic Birch Hatch Hole	4
4	PFE47_BB3MM_B6	3mm Baltic Birch Walkways	6
5	PFE47_HATCH	Hatch Assembly	4



WOOD ROOF: STEP 1 & 2

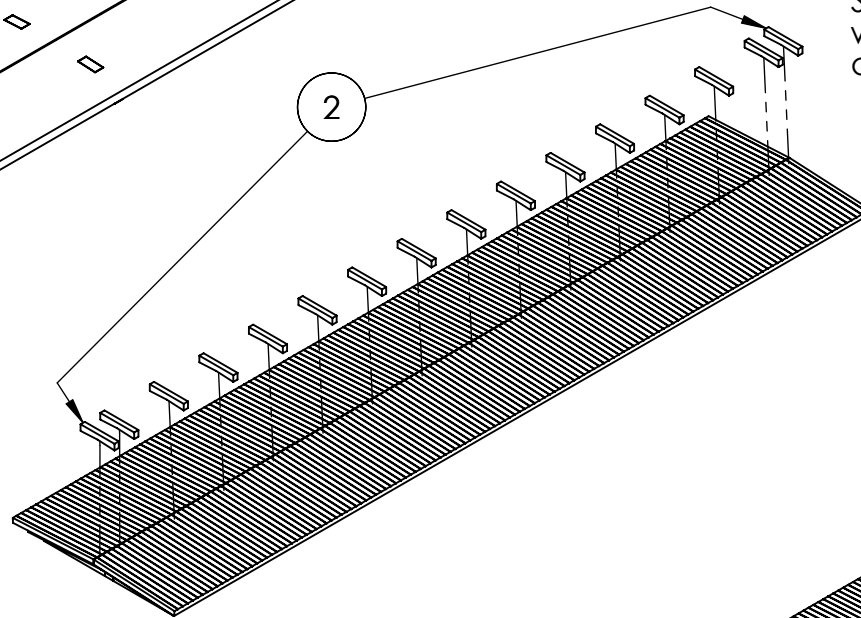


STEP 1: Attach the MDF roof pieces to the roof sub assembly. Line up and center both pieces before gluing. Clamp one side and use it to align the other side while gluing. Glue opposite side.

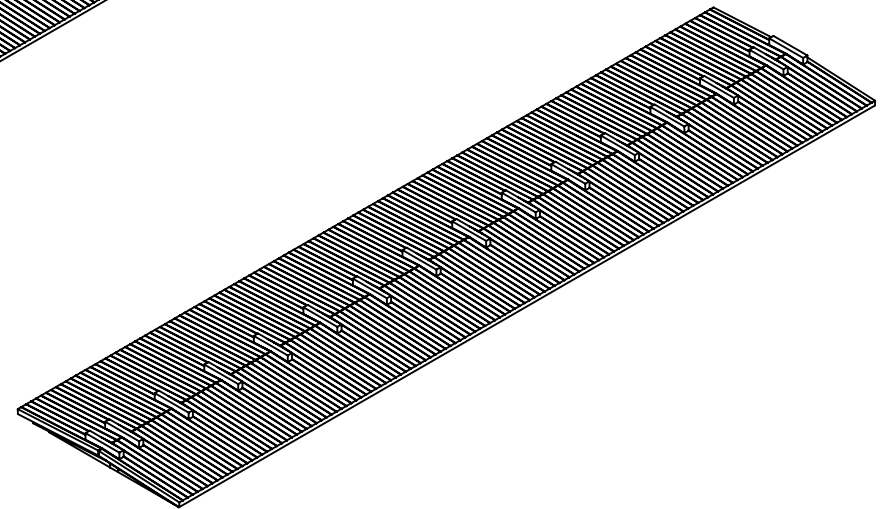
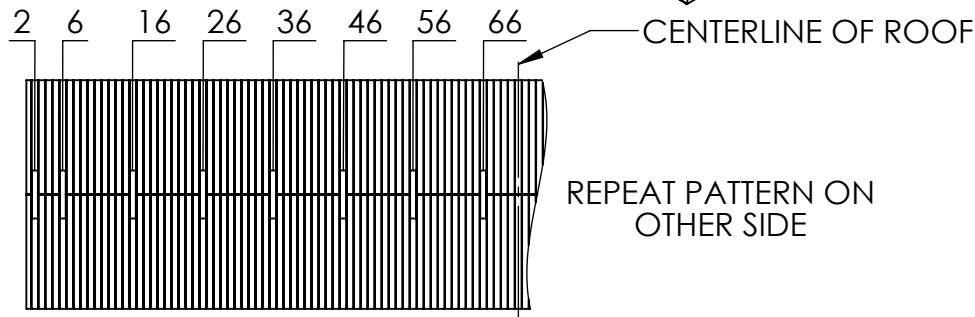
SIDE 2: Use "Detail C" to locate walkway supports by counting the spaces between the grooves from roof ends. Center between grooves and sides of roof, glue in place.

*****NOTE*****

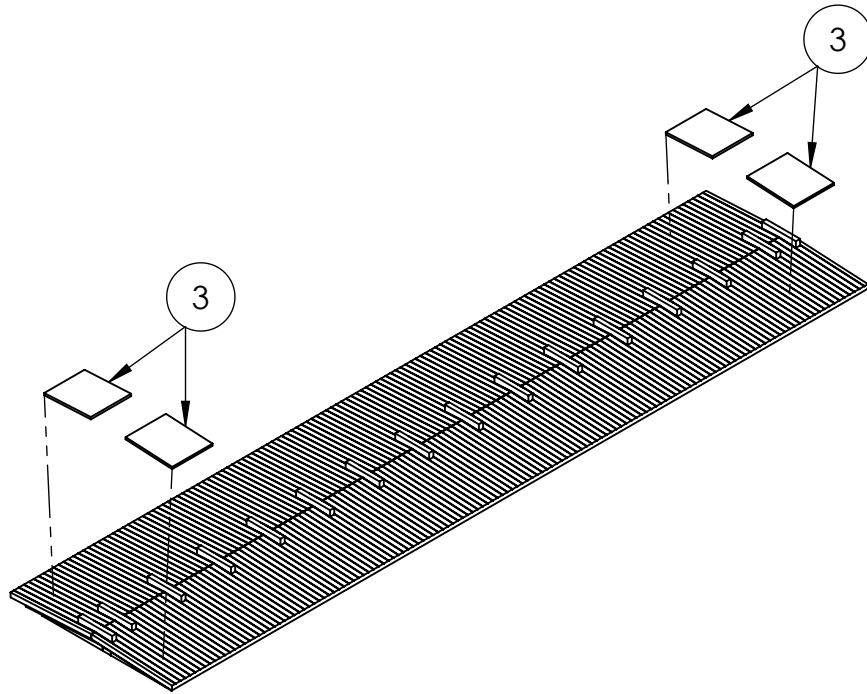
Sand off roof peak where walkway supports attach to allow supports to sit flush on roof.



DETAIL C



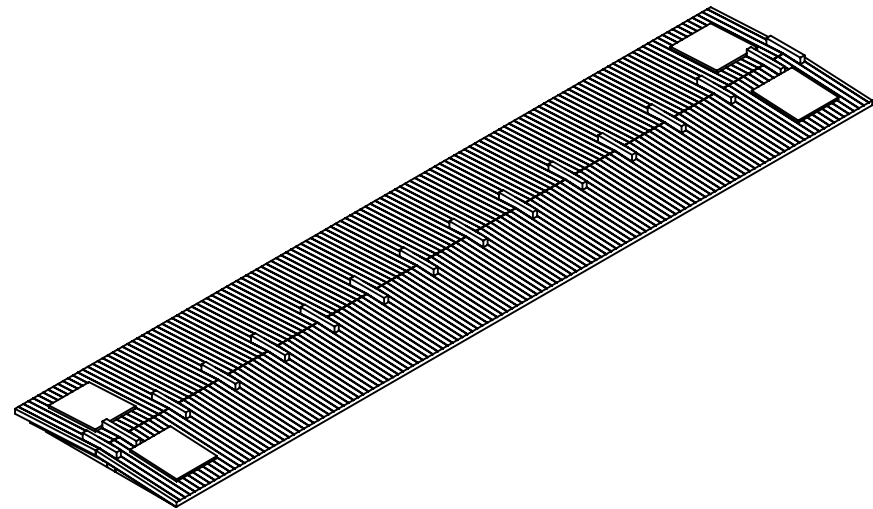
WOOD ROOF: STEP 3



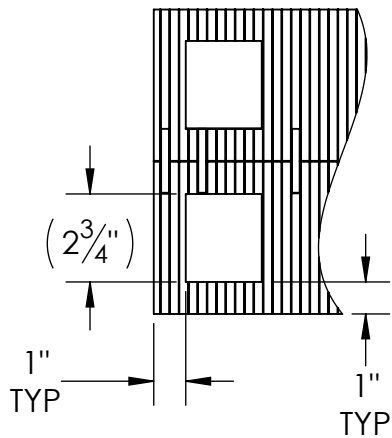
STEP 3: Locate hatch bases per "Detail D", glue in place.

*****NOTE*****

Prime & paint this assembly before continuing.



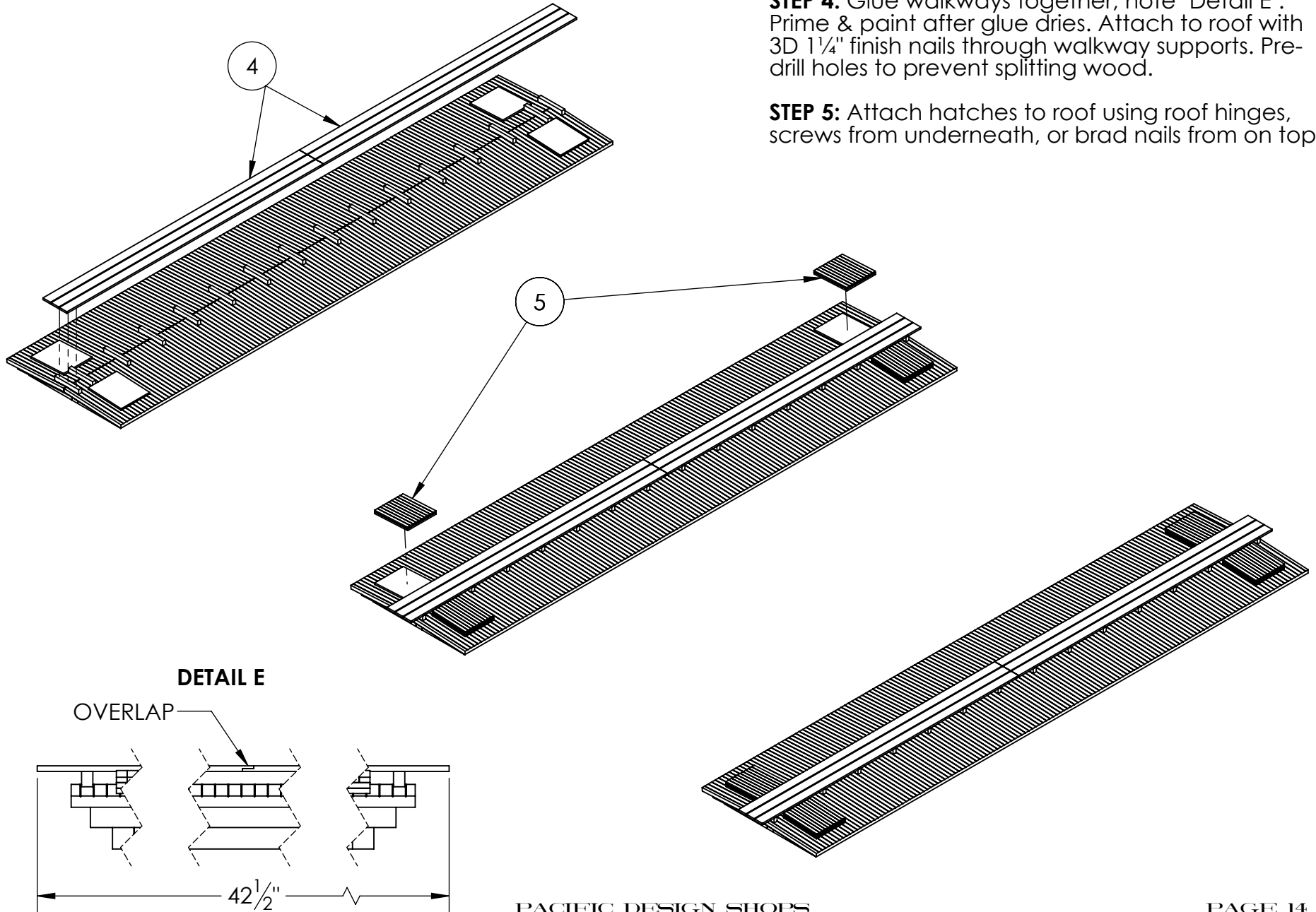
DETAIL D



WOOD ROOF: STEP 4 & 5

STEP 4: Glue walkways together, note "Detail E". Prime & paint after glue dries. Attach to roof with 3D 1 1/4" finish nails through walkway supports. Pre-drill holes to prevent splitting wood.

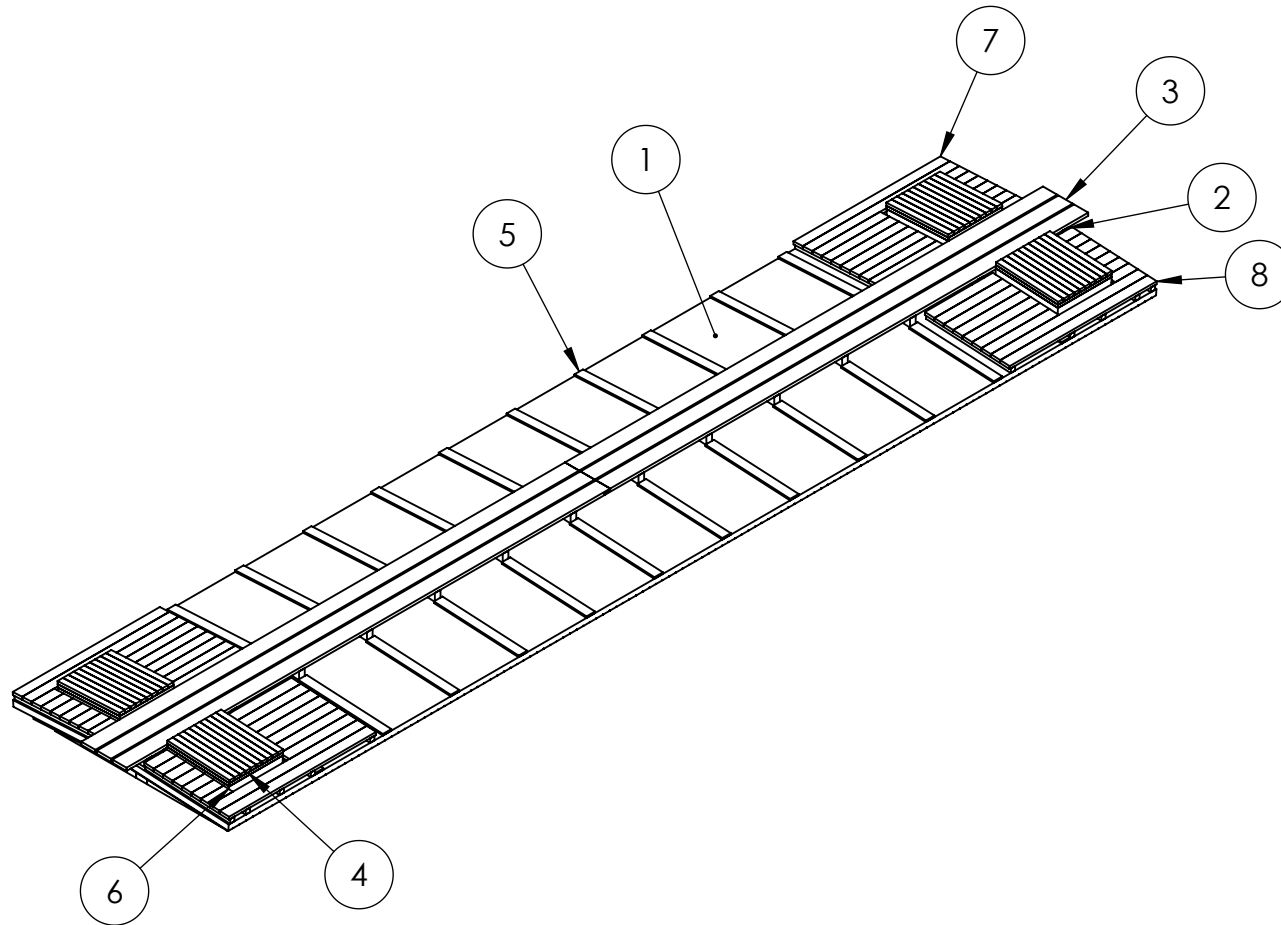
STEP 5: Attach hatches to roof using roof hinges, screws from underneath, or brad nails from on top.



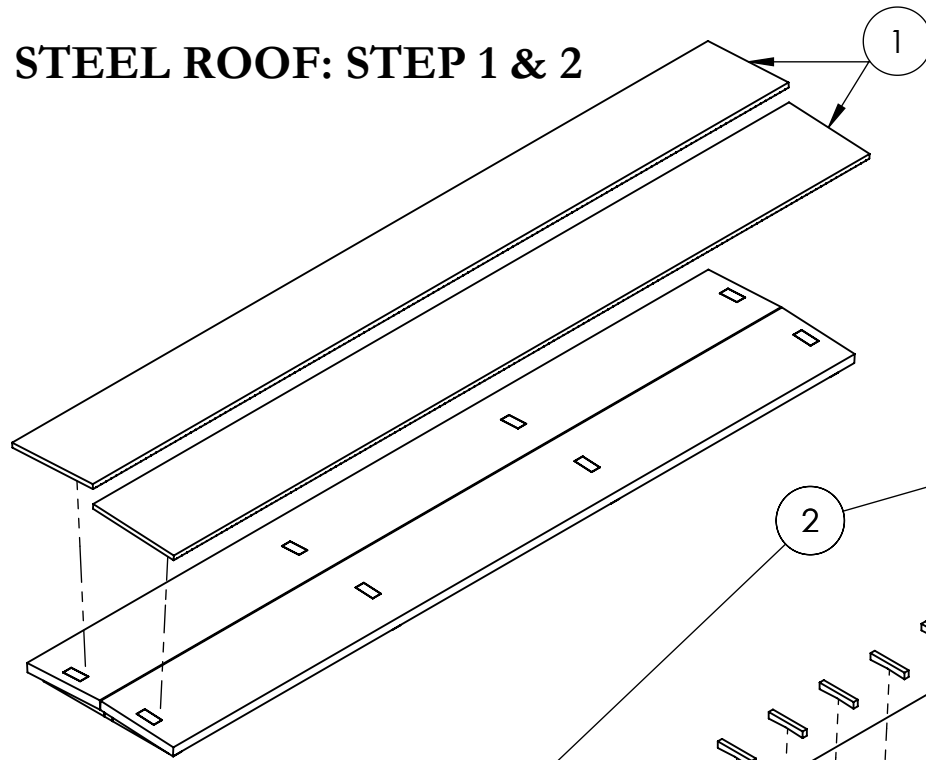
STEEL ROOF OVERVIEW

- Use the BOM on the right for pages 15-18

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PFE47_MDF25_C2	1/4" MDF Roof	2
2	PFE47_MDF25_D16	1/4" MDF Walkway Supports	16
3	PFE47_BB3MM_B6	3mm Baltic Birch Walkways	6
4	PFE47_HATCH	Hatch Assembly	4
5	PFE47_BA116F_A24	1/16" Flat Basswood Steel Stringers	24
6	PFE47_BB9MM_A4	9mm Baltic Birch Hatch Hole	4
7	PFE47_PLATFORM	Platform Assembly Left	2
8	PFE47_PLATFORM	Platform Assembly Right	2

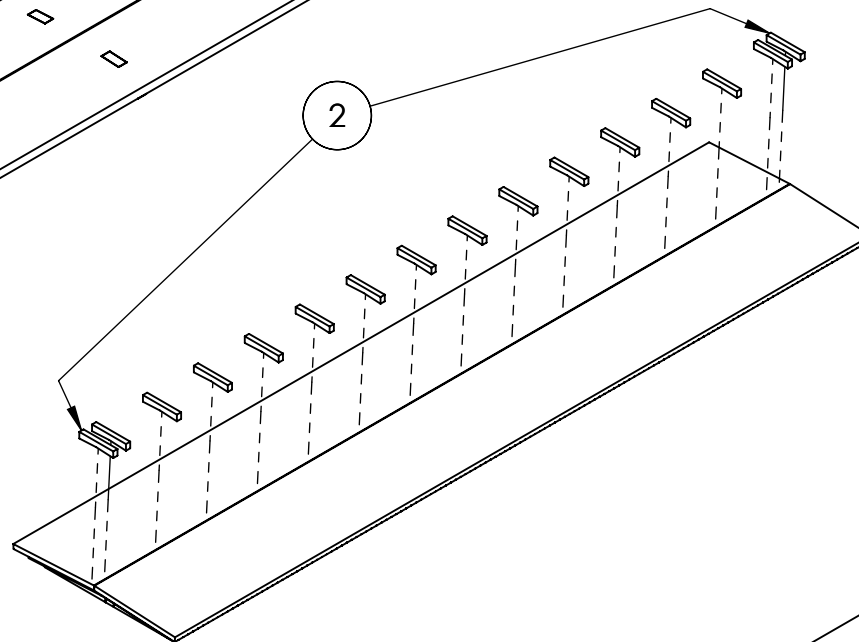


STEEL ROOF: STEP 1 & 2



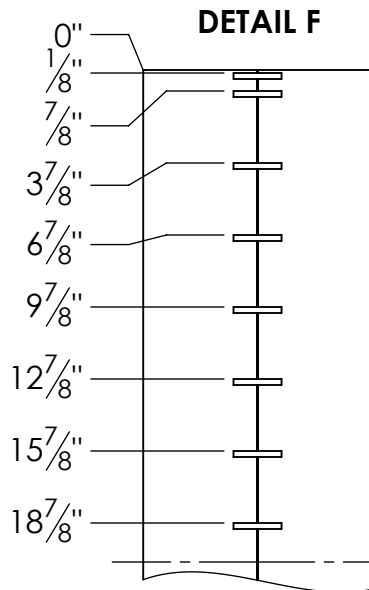
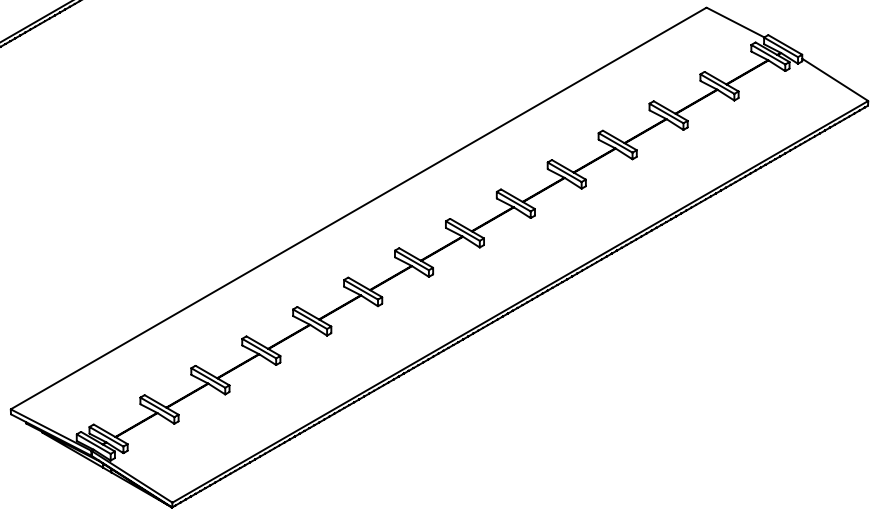
STEP 1: Attach the MDF roof pieces (grooves side down) to the roof sub assembly. Line up and center both pieces before gluing. Clamp one side and use it to align the other side while gluing. Glue opposite side.

SIDE 2: Use "Detail F" to locate walkway supports by measuring from roof ends. Center between sides of roof, glue in place.



*****NOTE*****

Sand off roof peak where walkway supports attach to allow supports to sit flush on roof.



REPEAT PATTERN ON OTHER SIDE
CENTERLINE OF ROOF

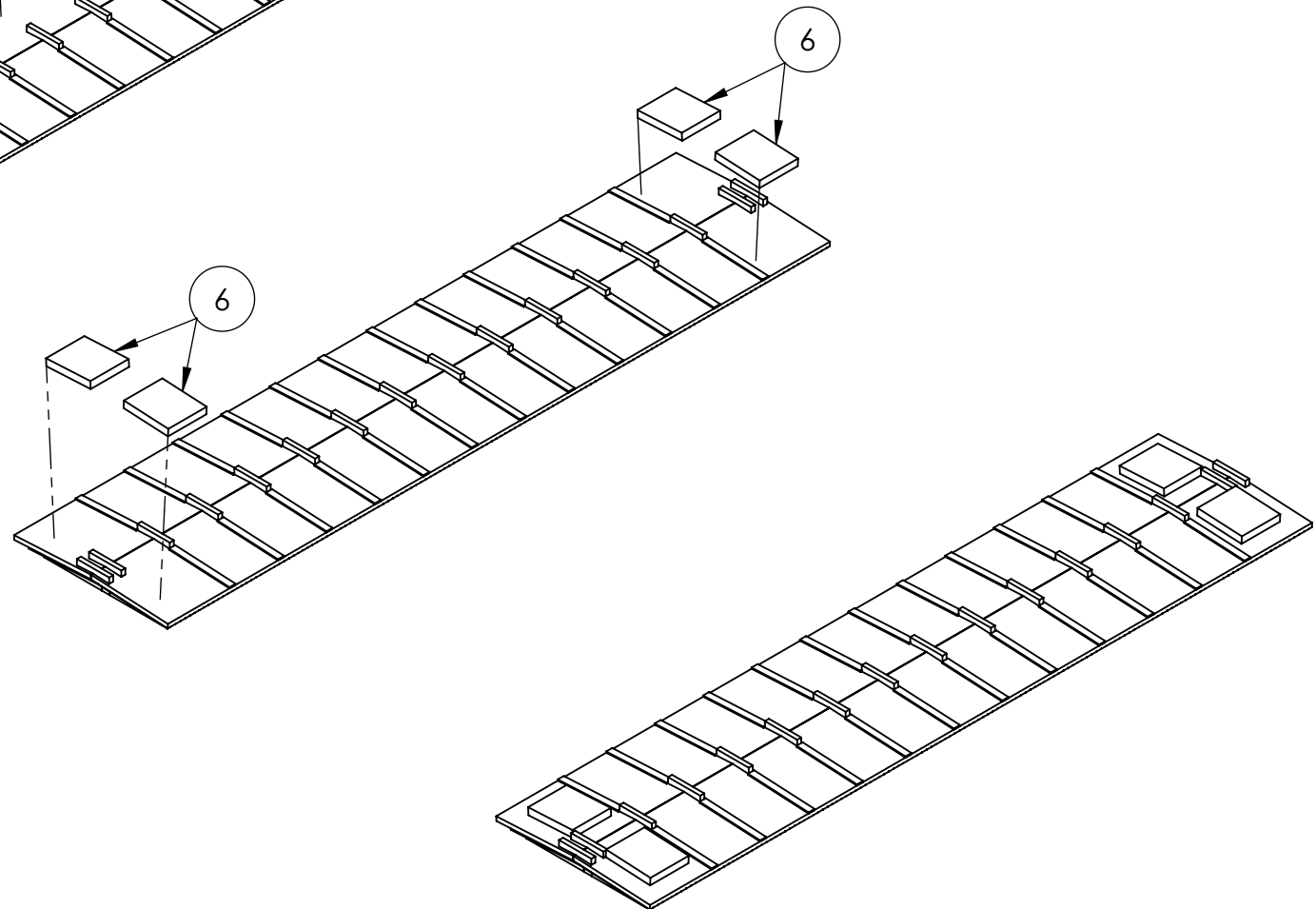
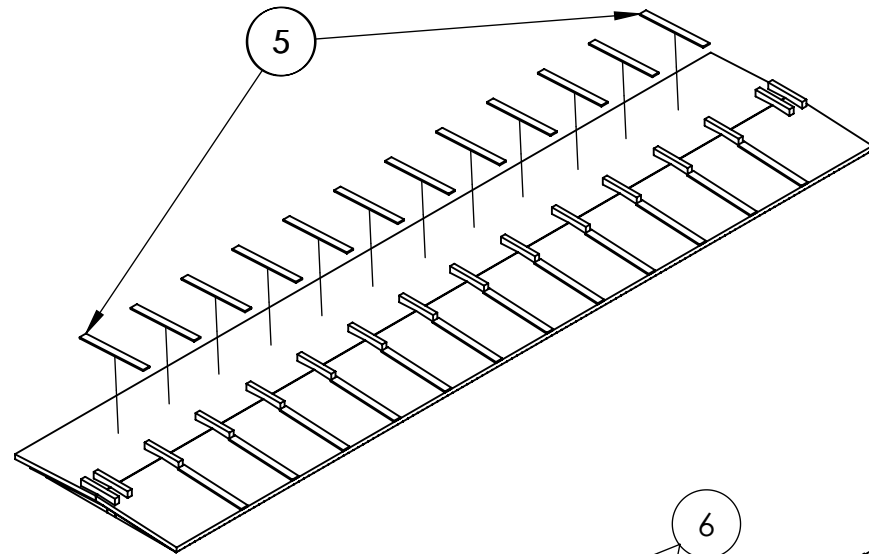
STEEL ROOF: STEP 3 & 4

STEP 3: Glue MDF steel stringers to roof top (note locations using EV). Center their left/right placement over the previously placed walkway supports.

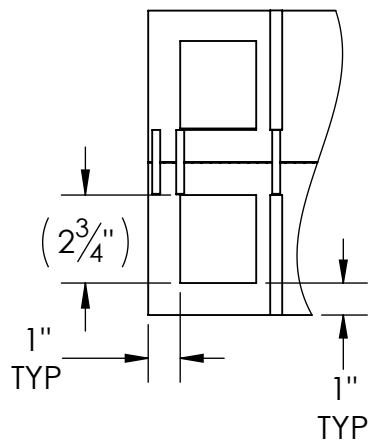
STEP 4: Locate hatch bases per "Detail G", glue in place.

*****NOTE*****

Prime & paint this assembly before continuing.



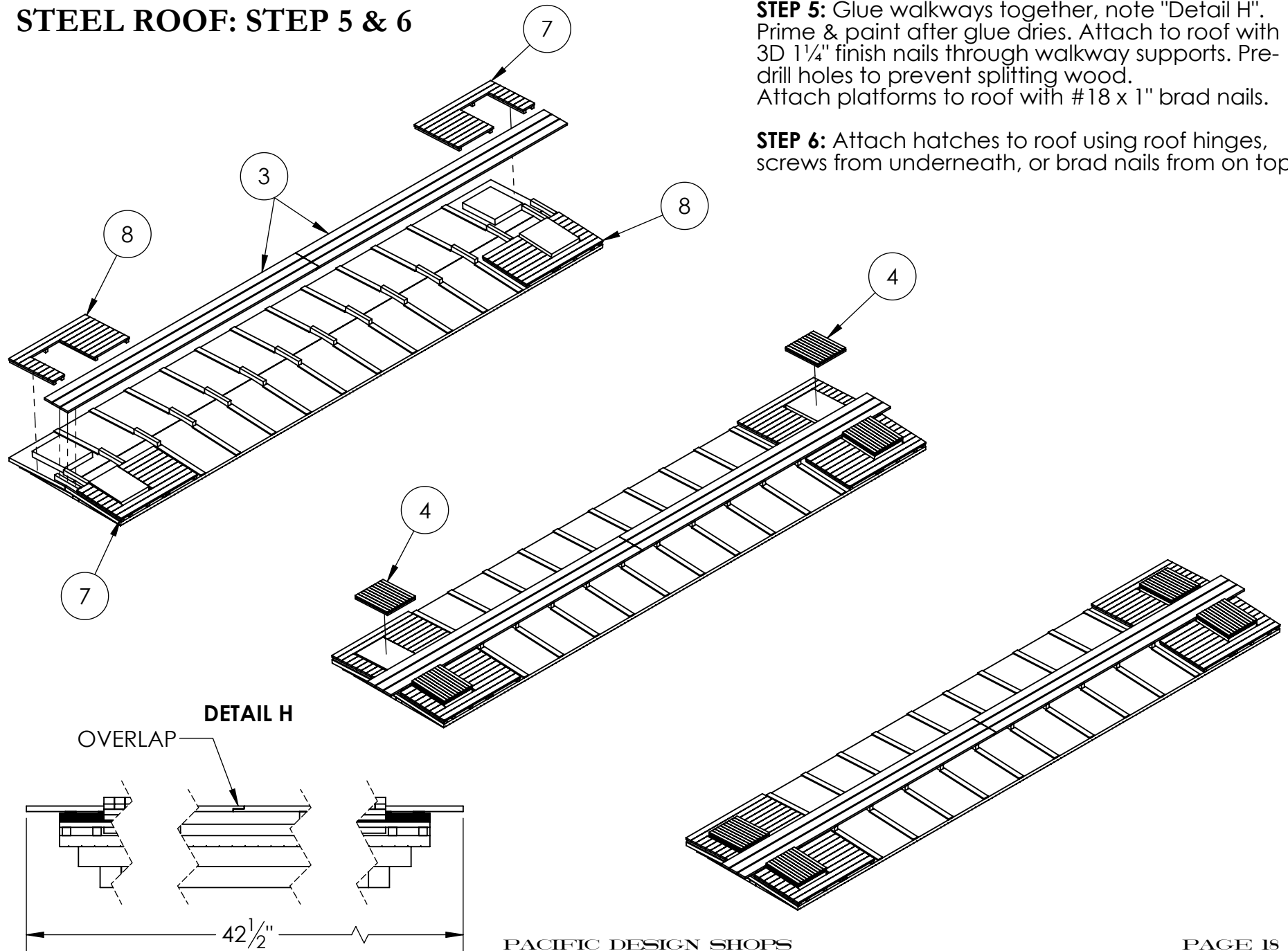
DETAIL G



STEEL ROOF: STEP 5 & 6

STEP 5: Glue walkways together, note "Detail H". Prime & paint after glue dries. Attach to roof with 3D 1 1/4" finish nails through walkway supports. Pre-drill holes to prevent splitting wood. Attach platforms to roof with #18 x 1" brad nails.

STEP 6: Attach hatches to roof using roof hinges, screws from underneath, or brad nails from on top.



DETAIL PARTS OVERVIEW GRABIRONS

- Use the BOM on the right for this page only
- Roof can be either a Steel or Wood Version (Wood Version shown)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	N/A	PFE Door Hardware Parts	1
2	N/A	PFE Roof Hardware Parts	1
3	RRS_8265	Single Drop Grabiron 1½"	28
4	DRP_745	Stirrup Step	6
5	PFE47_DOOR	Left Door Assembly	2
6	PFE47_DOOR	Right Door Assembly	2

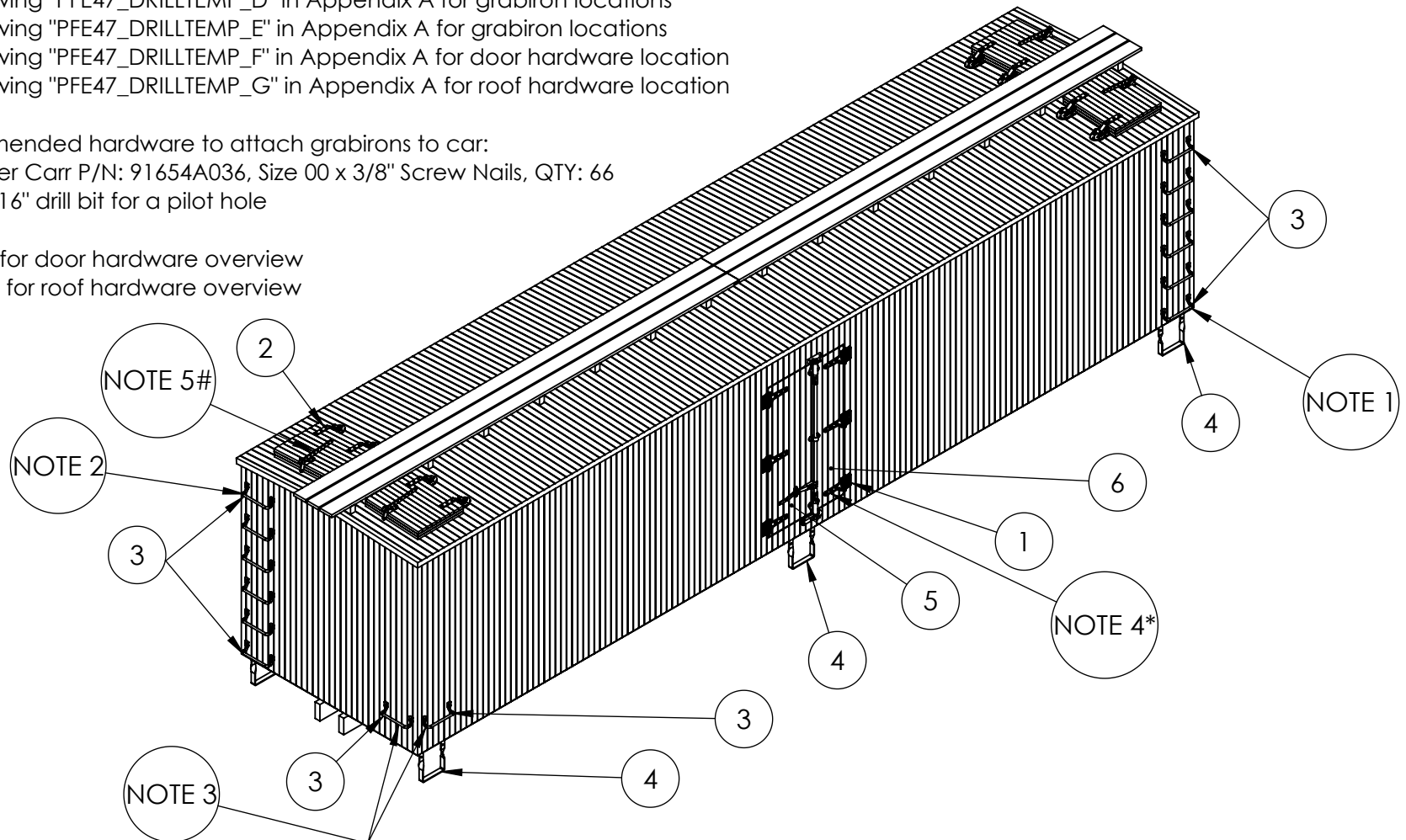
NOTES:

1. Use drawing "PFE47_DRILLTEMP_C" in Appendix A for grabiron locations
2. Use drawing "PFE47_DRILLTEMP_D" in Appendix A for grabiron locations
3. Use drawing "PFE47_DRILLTEMP_E" in Appendix A for grabiron locations
4. Use drawing "PFE47_DRILLTEMP_F" in Appendix A for door hardware location
5. Use drawing "PFE47_DRILLTEMP_G" in Appendix A for roof hardware location

- Recommended hardware to attach grabirons to car:
McMaster Carr P/N: 91654A036, Size 00 x 3/8" Screw Nails, QTY: 66
Use a 1/16" drill bit for a pilot hole

*See page 22 for door hardware overview

#See page 23 for roof hardware overview



DETAIL PARTS OVERVIEW

LADDERS

- Use the BOM on the right for this page only
- Roof can be either a Steel or Wood Version (Steel Version shown)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	N/A	PFE Door Hardware Parts	1
2	N/A	PFE Roof Hardware Parts	1
3	PFE47_LADDER	PFE Ladder Kit	4
4	RRS_8265	Single Drop Grabiron 1½"	4
5	DRP_745	Stirrup Step	6
6	PFE47_DOOR	Left Door Assembly	2
7	PFE47_DOOR	Right Door Assembly	2

NOTES:

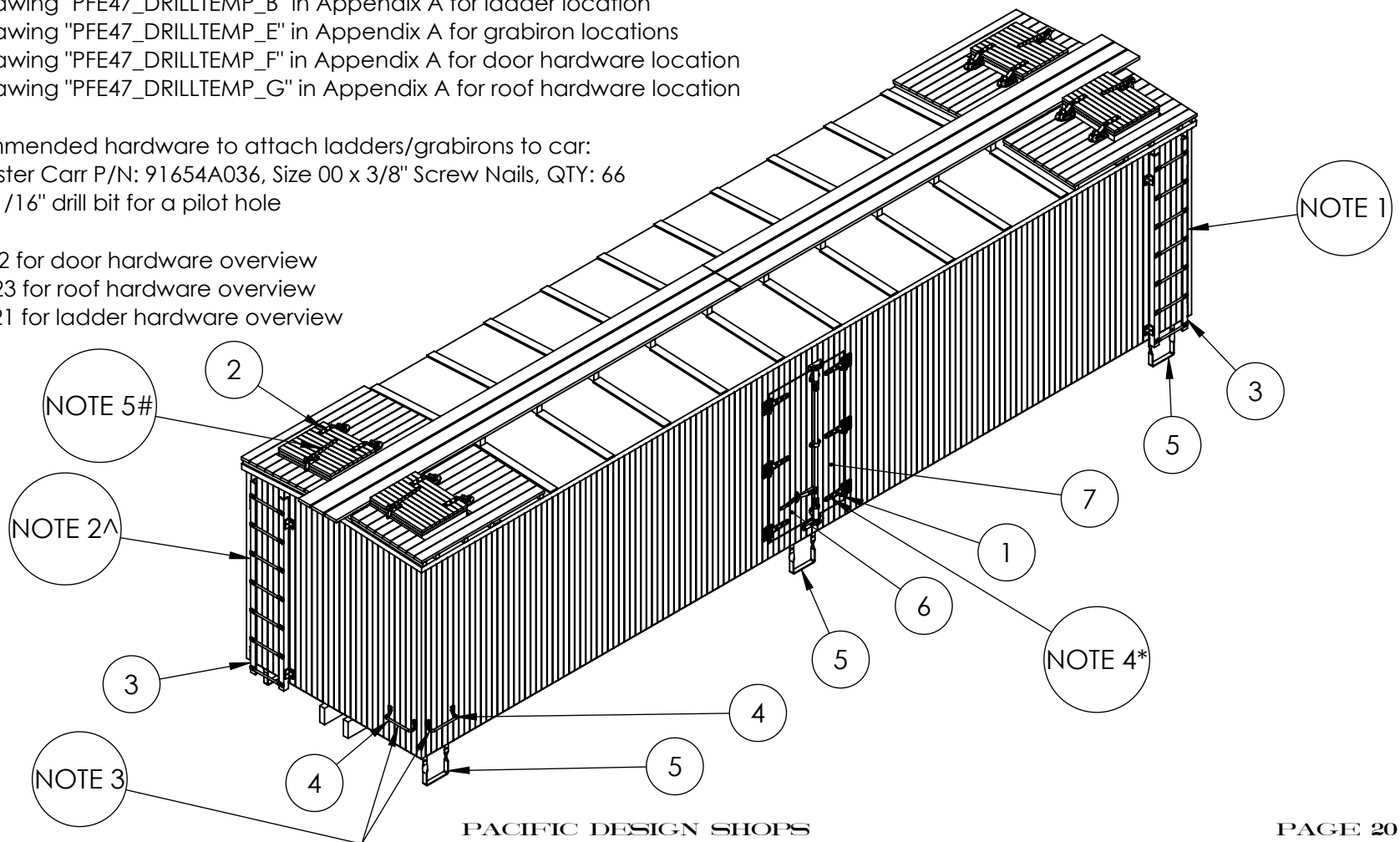
1. Use drawing "PFE47_DRILLTEMP_A" in Appendix A for ladder location
2. Use drawing "PFE47_DRILLTEMP_B" in Appendix A for ladder location
3. Use drawing "PFE47_DRILLTEMP_E" in Appendix A for grabiron locations
4. Use drawing "PFE47_DRILLTEMP_F" in Appendix A for door hardware location
5. Use drawing "PFE47_DRILLTEMP_G" in Appendix A for roof hardware location

- Recommended hardware to attach ladders/grabirons to car:
McMaster Carr P/N: 91654A036, Size 00 x 3/8" Screw Nails, QTY: 66
Use a 1/16" drill bit for a pilot hole

*See page 22 for door hardware overview

#See page 23 for roof hardware overview

^See page 21 for ladder hardware overview



LADDER OVERVIEW

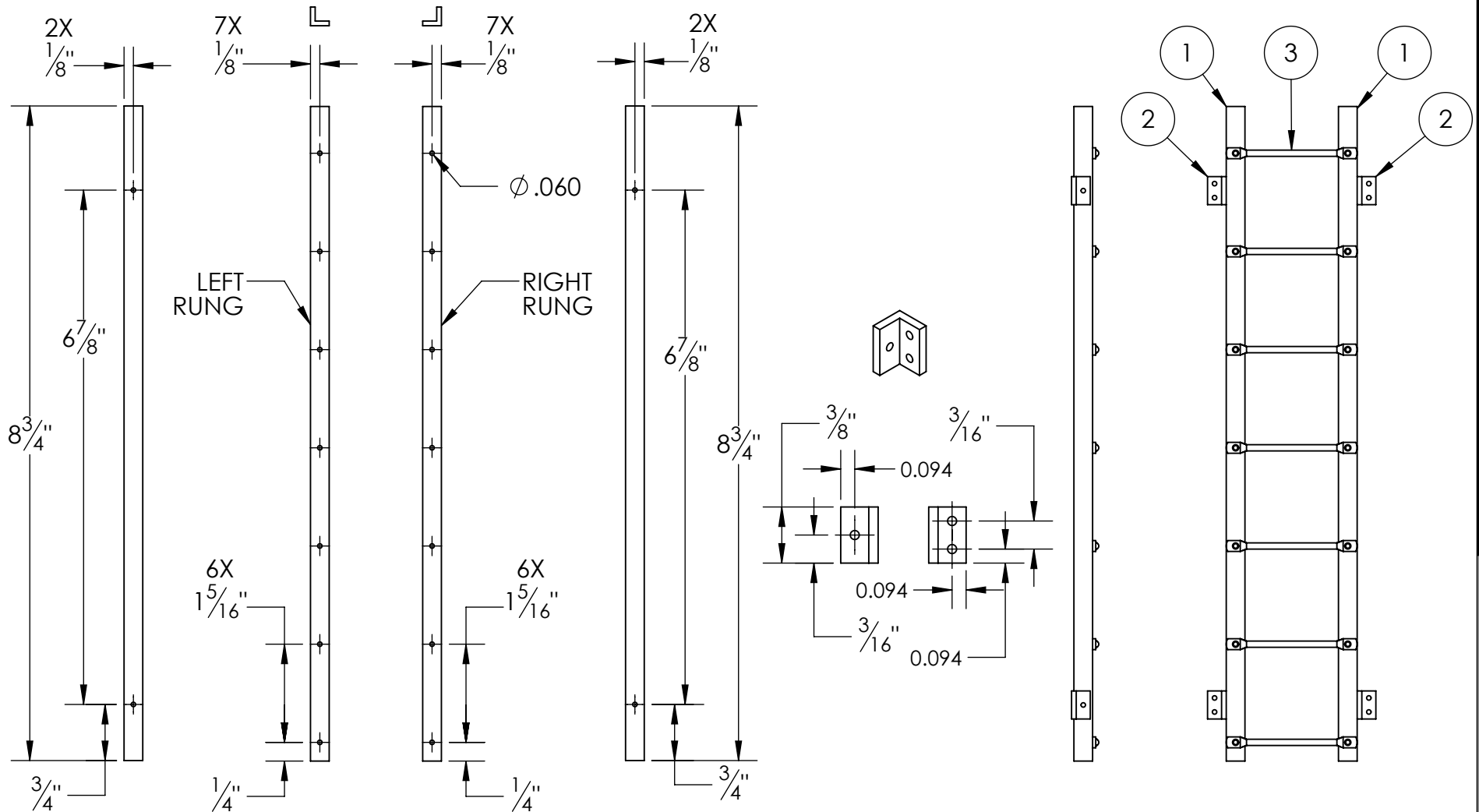
- Cut angles to length per drawing
- Drill holes and tap (or use nuts) if using screws to assemble ladder
- Recommended hardware to assemble ladders:

McMaster Carr P/N: 92949A052, 0-80 x 3/16" Button Head Screw, QTY: 18 per ladder, 72 total

McMaster Carr P/N: 92736A001, 0-80 Narrow Brass Hex Nut, QTY: 18 per ladder, 72 total

ITEM NO.	DESCRIPTION	QTY.
1	Brass Angle Sides	1
2	Brass Angle Bracket	4
3	Flat Grabiron 1 1/2"	7

QUANTITY OF LADDERS REQUIRED PER CAR: (4)

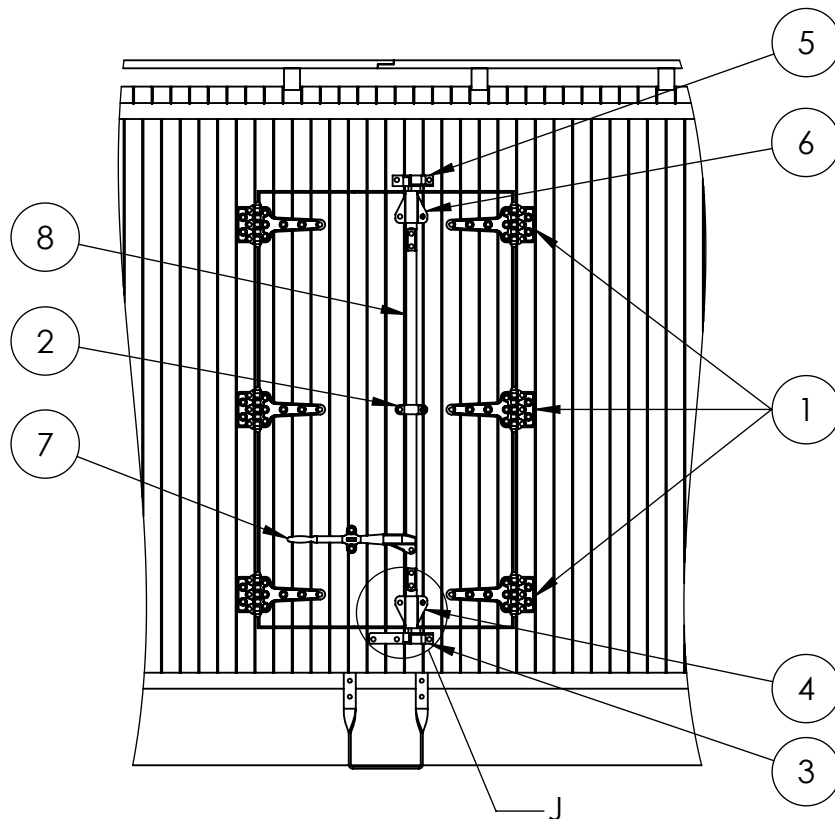


DETAIL PARTS OVERVIEW DOOR HARDWARE

- Use the BOM on the right for this page only

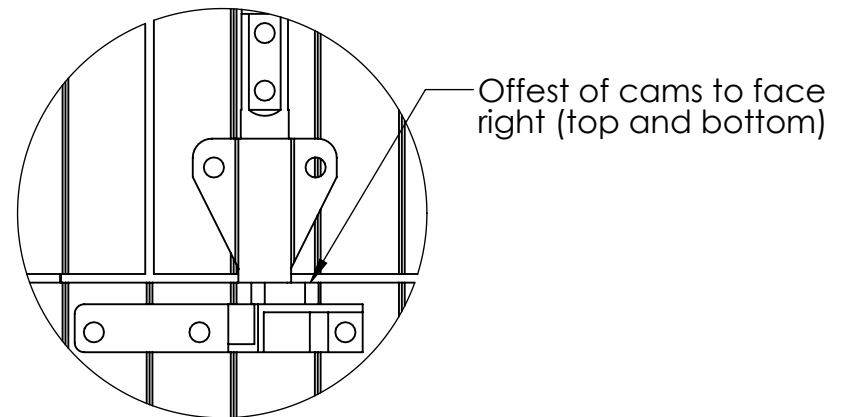
ITEM NO.	DESCRIPTION	QTY.
1	PFE Door Hinge	12
2	Bar Mid Bearing	2
3	Receiver Bottom	2
4	Bar End Bottom	2
5	Receiver Top	2
6	Bar End Top	2
7	Handle and Lock Hasp	2
8	1/32" x 0.16" Flat Bar, ~5-5/8" Long	2

ALL QUANTITIES SHOWN ARE FOR ONE CAR



- Recommended hardware to attach door hardware to car:
McMaster Carr P/N: 91654A036, Size 00 x 3/8" Screw Nails, QTY: 158
Use a 1/16" drill bit for a pilot hole

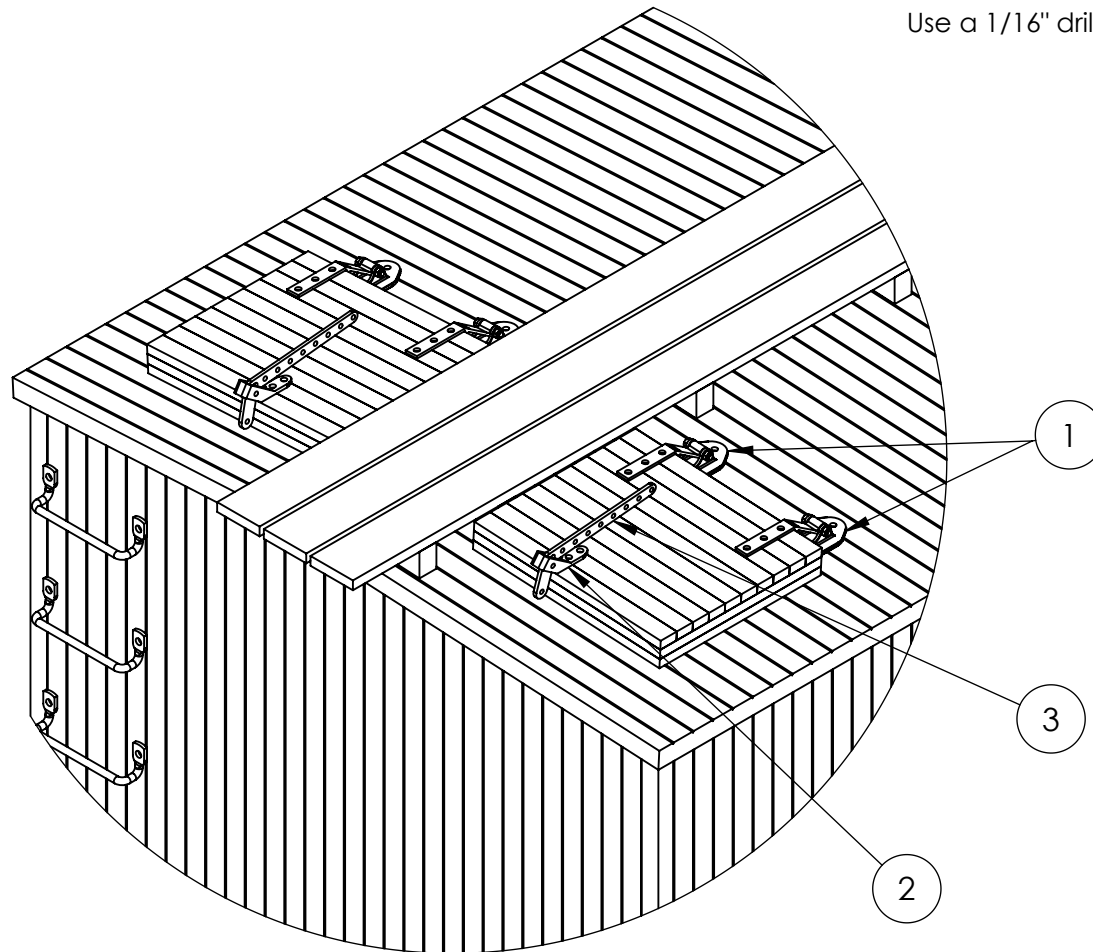
DETAIL J



DETAIL PARTS OVERVIEW

ROOF HARDWARE

- Use the BOM on the right for this page only
- Roof can be either a Steel or Wood Version (Wood Version shown)



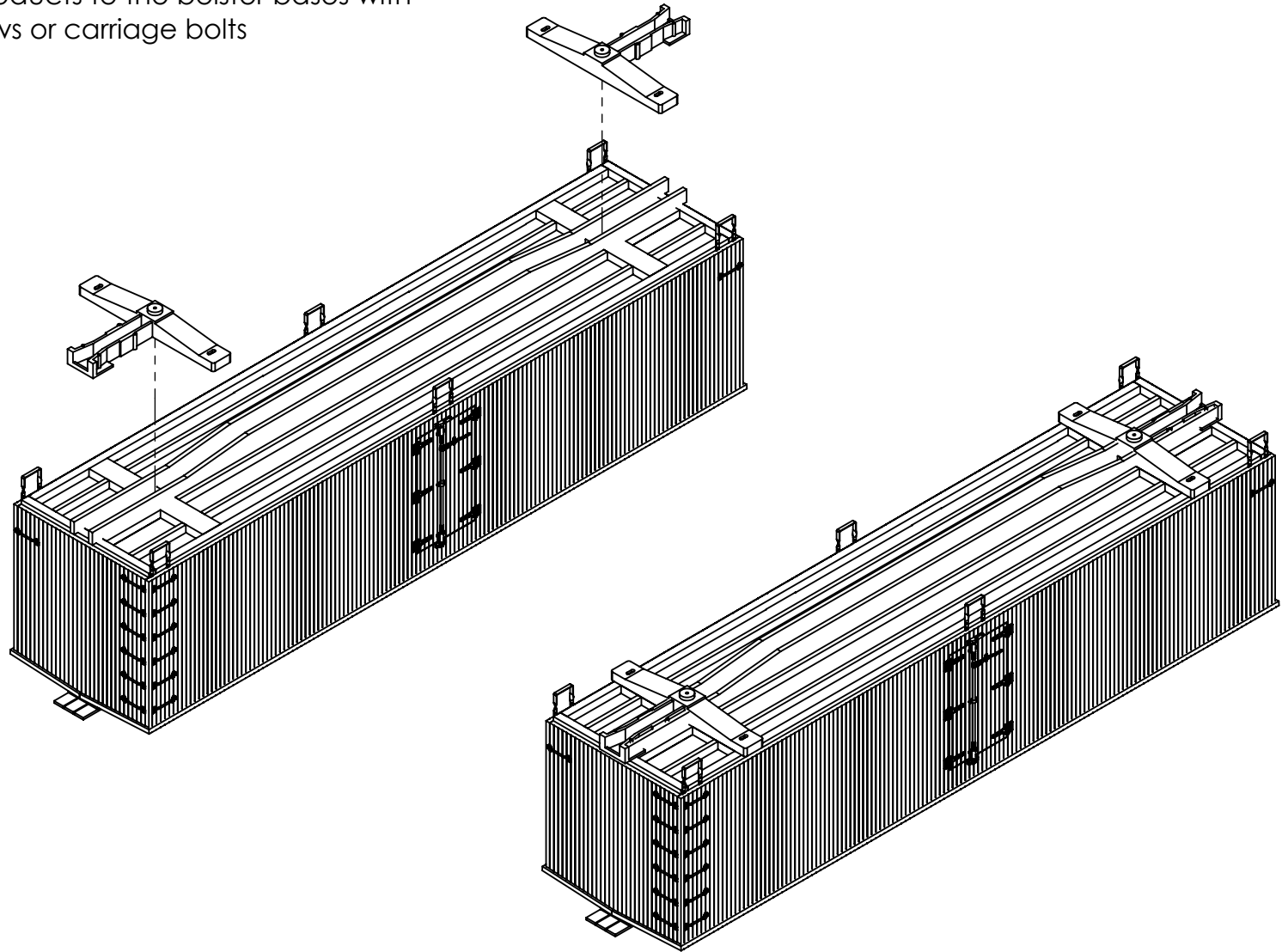
ITEM NO.	DESCRIPTION	QTY.
1	PFE Roof Hinge	8
2	PFE Hatch Latch	4
3	PFE Hatch Arm	4

ALL QUANTITIES SHOWN ARE FOR ONE CAR

- Recommended hardware to attach door hardware to car:
McMaster Carr P/N: 91654A036, Size 00 x 3/8" Screw Nails, QTY: 56
Use a 1/16" drill bit for a pilot hole

FRAME OVERVIEW

- Attach 1" Railroad Supply bolsters or Despatch Railroad Products to the bolster bases with wood screws or carriage bolts



FREQUENTLY ASKED QUESTIONS

Q: My Baltic Birch pieces have a gap in the corner when gluing together, is that normal?

A: Yes. Those circular cut outs are there so the edges fit to each other. Because the parts are cut on a CNC machine, the cutter is round and would round over the inside corner without the cutout. The cutout eliminated hours of sanding the corners out and all those corners will be hidden in the final product.

Q: My Baltic Birch sides and roofs are bowing, what can I do?

A: Although plywood is generally very straight, it is still unstable. The bow can be fixed by placing weights on it to flatten it out. Raise the ends of the piece by ½" and place enough weights for the middle of the part to touch the ground. You should always assemble the car with the bow outwards so the roof can fit on the body. The bow can also be fixed by attaching steel angle or tubing to that section of wood. Do this before gluing the MDF pieces on so the screw holes can be hidden.

Q: I dropped my MDF and now the corners are broken, what can I do?

A: MDF has some great properties, but strength is not one. If a corner is only slightly damaged, removed the loose pieces and fill back in with wood filler. If a larger portion is broken, cut out the damaged section and replace with a wood patch. File or cut the grooves back into the patch to match the surrounding area.

For questions about painting and lettering, please see the paint appendix for FAQ's regarding painting and lettering.