

Ski Grooming Sled Design Plans

Ben Peterson

48" wide with classic track setters and central box for holding 50-gallon barrel

Materials (Raw)

- 1"x10"x8' (2)
- 1"x6"x4' (1)
- 1"x3"x4' (1)
- 2"x4"x8' (3)
- 2"x2"x8' (1)
- Plastic bottom: 1/8" HDPE sheeting in 48"x48"
- Angle Iron: 12-gauge slotted L-shape, 5' (2)
- 1/4" load-bearing caribiner (or spring snap) (2)
- Load-bearing "swivel eye and eye"; 5/16" (1)
- Lag Screw Eye, 5/16"x4" (4)
- Bolts: 1/4"-20 thread x3" machine screw (2)
- Washers: 1/4"x1" fender washer (4)
- Nuts: 1/4"-20 thread hex nut (2)
- Threadlocker adhesive (Loctite or jb weld)

Tools

- Construction Screws
 - 2.5" (25)
 - 1.25" (25)
- Screwdriver
- Cutting tool / grinder
- Utility knife

Materials (sized/cut)

- 2x4
 - 42in (2)
 - 40.5in (2)
 - 23in (2)
 - 45in (1)
- 1x10
 - 48" (3)
 - Trim to 7.5" width x 48" length
- 1x6
 - 48" (1)
- 1x3
 - 48" (1)
- 2x2
 - 48" (2)
- 1/2"x1x1 with 1/4" hole center-drilled (these are the "spacers"; make from scraps)

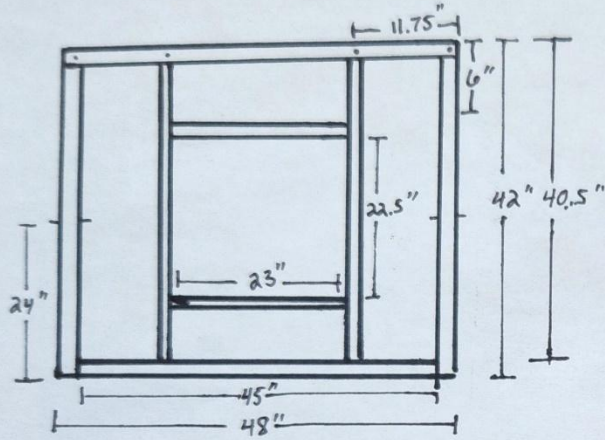
Construction

- Overall:
 - sled is 48" wide, and 42" long. Designed to attach to vehicle with a pintle hitch.
 - ski track setters are 2.75" wide, 9" long, cut to be angle and beveled, and are set so that the center of the left track is 9" from the edge of the sled, and the center of the right track is 9" from the center of the left track. The tracks should have about 6.25" space between them.
 - interior of "box" is 23" wide and 22.5" long

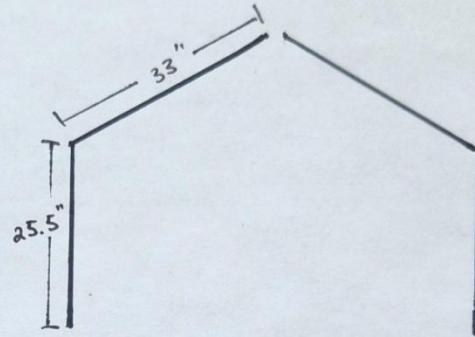
- Instructions:
 1. Cut runners
 - See "Runner Shaping" diagram for measurements on cuts to shape the front of each runner (two 42" exterior and two 40.5" interior)
 2. Cut track setters
 - See "Track Setters" diagram for measurements and shaping concept. Use angled circular saw to cut front bevels, then cut to length.
 3. Assemble frame
 - Set runners on flat surface, and use 2.5" construction screws to attach
 - Rear 45" back frame
 - Two 23" interior box frame crosspieces
 - Leave front 48" 2"x2" top frame for later
 4. Attach bottom (wood base, then plastic surface)
 - Work from front, to back (use 1.25" construction screws)
 - 3" crosspiece
 - 6" crosspiece
 - 10" crosspiece x 3
 - 7.5" crosspiece
 - Overlay plastic HDPE sheeting, from back-to-front (use 1.25" construction screws)
 - Use utility knife to cut away excess from front of sled
 - Flip over, and attach 2"x2"x48" frontframe to the top of the runners, using 2.5" construction screws.
 5. Attach track setters
 - Using 2.5" construction screws, attach track setters at measured locations.
 6. Attach hitch harness
 - Drill ¼" holes in the two outside runners for harness attachment point: drill holes through middle of runner 2x4 at point 24" from rear of sled
 - Angle Iron
 - Cut angle iron to a total length of 58.5"
 - Lay angle iron out alongside sled for orientation purposes (vertical flat side against sled side)
 - Use cutting wheel/grinder to cut angle iron at 25.5" from the back, cutting halfway into the horizontal arm of the iron, which will allow the angle iron to bend inward towards the middle of the sled (front).
 - Attach two spring clip and swivel assembly to connect the two front ends of the angle iron.
 - Using 1" spacers, attach harness arms to sled using bolts with nuts and washers. Secure nuts with threadlocker.
 7. Eyehooks and handles

- Attach the 4 eyescrews to the top of the frame, centered on each side of the center box
- Attach the handles to the top of the backframe, centered: about 24" apart.

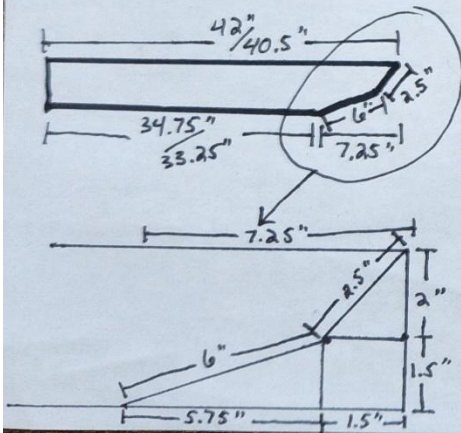
FRAMING



ANGLE IRON



"RUNNER" SHAPING



TRACK SETTERS

