

BIKE RACK MATERIAL LIST

PART NAME	Quantity	Material	Dimension, actual, inches	ASSEMBLY	Usage
Top/bottom rail	2	2x4 douglas fir	1 ½ x 3 ½ x 120	Backbone	
Leg	3	ditto	1 ½ x 3 ½ x 27	ditto	
Outrigger	2	ditto	1 ½ x 3 ½ x 120	Base	
Toe	6	ditto	1 ½ x 3 ½ x 11 7/8	ditto	
Rail cladding long	2	3/8" plywood	3/8 (11/32) x 3 3/8 x 96	Backbone	
Rail cladding short	2	ditto	3/8 (11/32) x 3 3/8 x 24	ditto	
Toe cleat	2	½" plywood, 5 ply	½ (15/32)x 3 3/8 x 30 ½	Base	
Upright bar	26	½" conduit (emt)	¾ D x 29 ¾	Backbone	
Screw	24		#8 x 3 inch	Base, backbone	attach 2x4 to 2x4
Screw	12		#6 x 2 inch	Base	attach toe cleat, bridge to 2x4
Staple; or screw	150		¼ or 7/16 x 1 ¼; or 1 ¼ screw	Base, backbone	attach 3/8 ply to 2x4
Construction adhesive	1	10 oz tube 'Liquid Nails' or similar		Base, backbone	attach ply to 2x4
Middle toe bridge	1	16 gauge steel strap	16ga x 1 ¼ x 9	Base	bridge across middle toes
Stake	2	Steel concrete stake	¾ D x 42 or 48	Final	stake backbone to playa

BIKE RACK ASSEMBLY PROCEDURE

Cut 4, 10' 2x4. Even if they're nominally 10' from the lumberyard, trim to 10' +/-1/16.

This is a crucial dimension for having base assembly fit backbone assembly. Cut 3, 27" 2x4 for legs; 6, 11 7/8" 2x4 for toes.

Drill 26, 3/4" holes in 2, 10' 2x4. Pattern from drawing, BIKE RACK TOP/BOTTOM RAIL. Outermost hole at each end is 7/8" to clear 3/4" cement stake; drill at final assembly since these holes go through the plywood cladding on the top and bottom.

Staple/screw 3 3/8"x 8', 3 3/8"x 2', 3/8 plywood cladding to bottom 2x4 rail after applying construction adhesive. Apply adhesive in serpentine pattern around 3/4" holes so strength is transferred plywood-to-adhesive-to-2x4-to-upright-bars; prevents 2x4 from splitting along centerline of holes. Plywood also traps upright bars.

Attach 3 legs to bottom rail 2x4/plywood assembly with 2, 3" screws each. Set top rail 2x4 on. Insert 26 pieces conduit through top rail holes into bottom rail holes. Apply construction adhesive to top of top rail.

Staple/screw 2 pieces 3/8" plywood. Attach top rail/plywood assembly to legs with 2, 3" screws each.

Assemble two base half sections using 2, 3" screws per toe to connect toes to outriggers.

Connect two base sections with 1/2" X 3 3/8"x 30 1/2" plywood cleat at each end, using construction adhesive and staples/screws, and 2, 2" screws through plywood into each end of 10' 2x4. Leave 3 5/8" gap between toes.

Attach middle toe bridge using 4, 2" screws and leaving 3 5/8" gap between middle toes.

Playa installation (deinstallation):

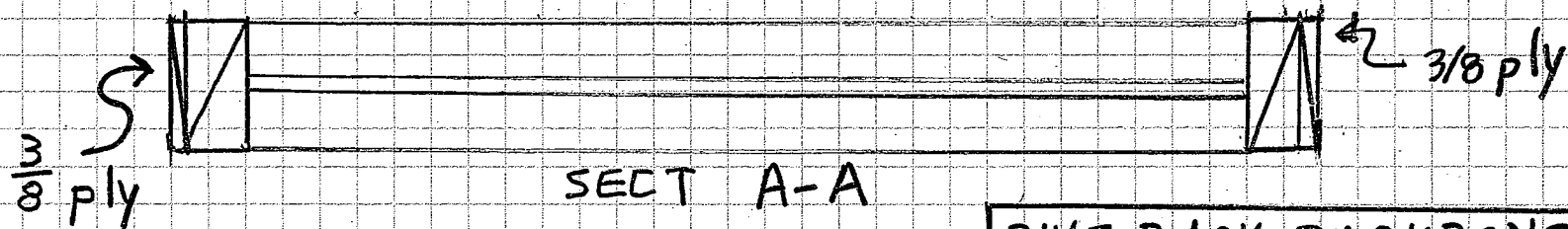
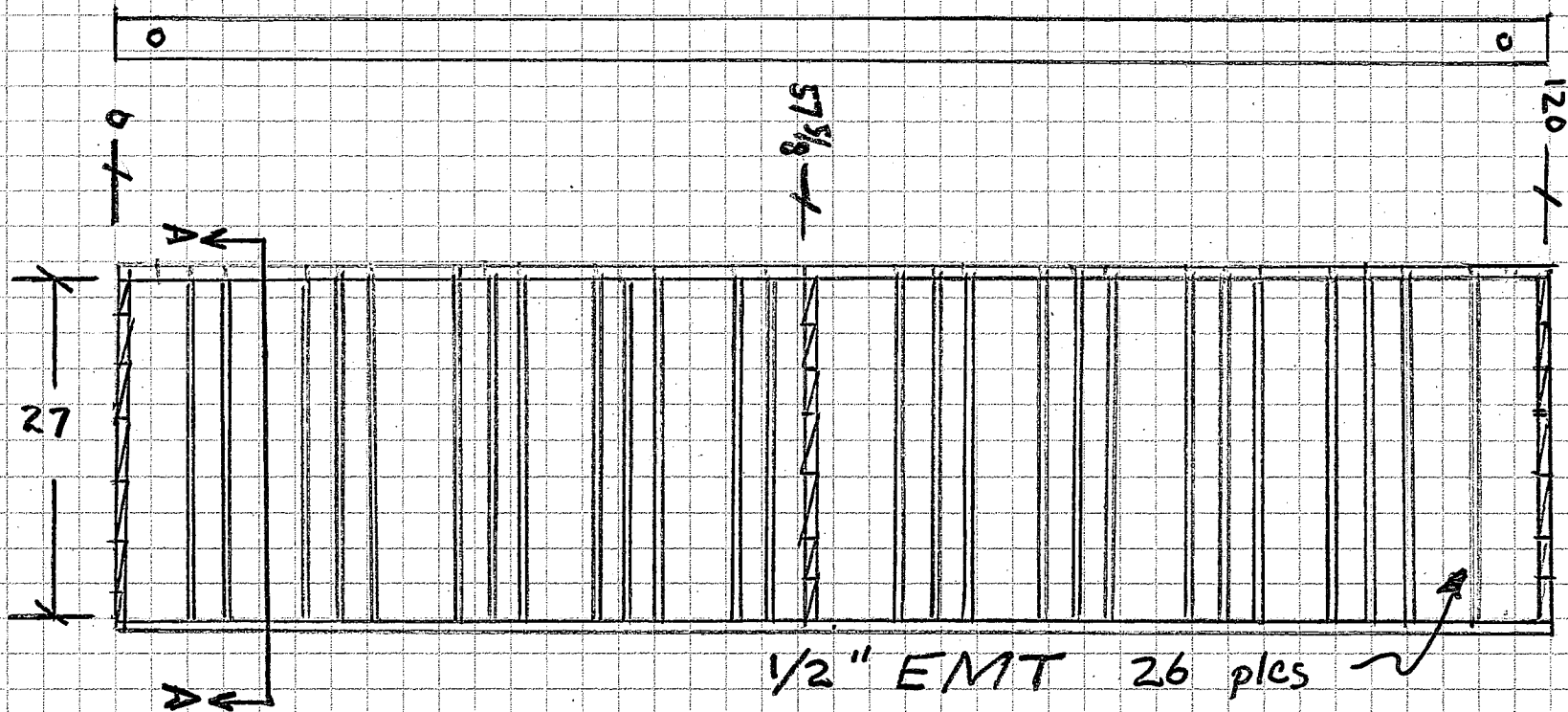
1. Set base on ground. (2. Remove base.)
2. Insert backbone, noting asymmetry. (1. Lift backbone off stakes.)
3. Drive two concrete stakes down through 7/8" holes into playa. (3. Twist/pull stakes out with vise-grips).

Caveats:

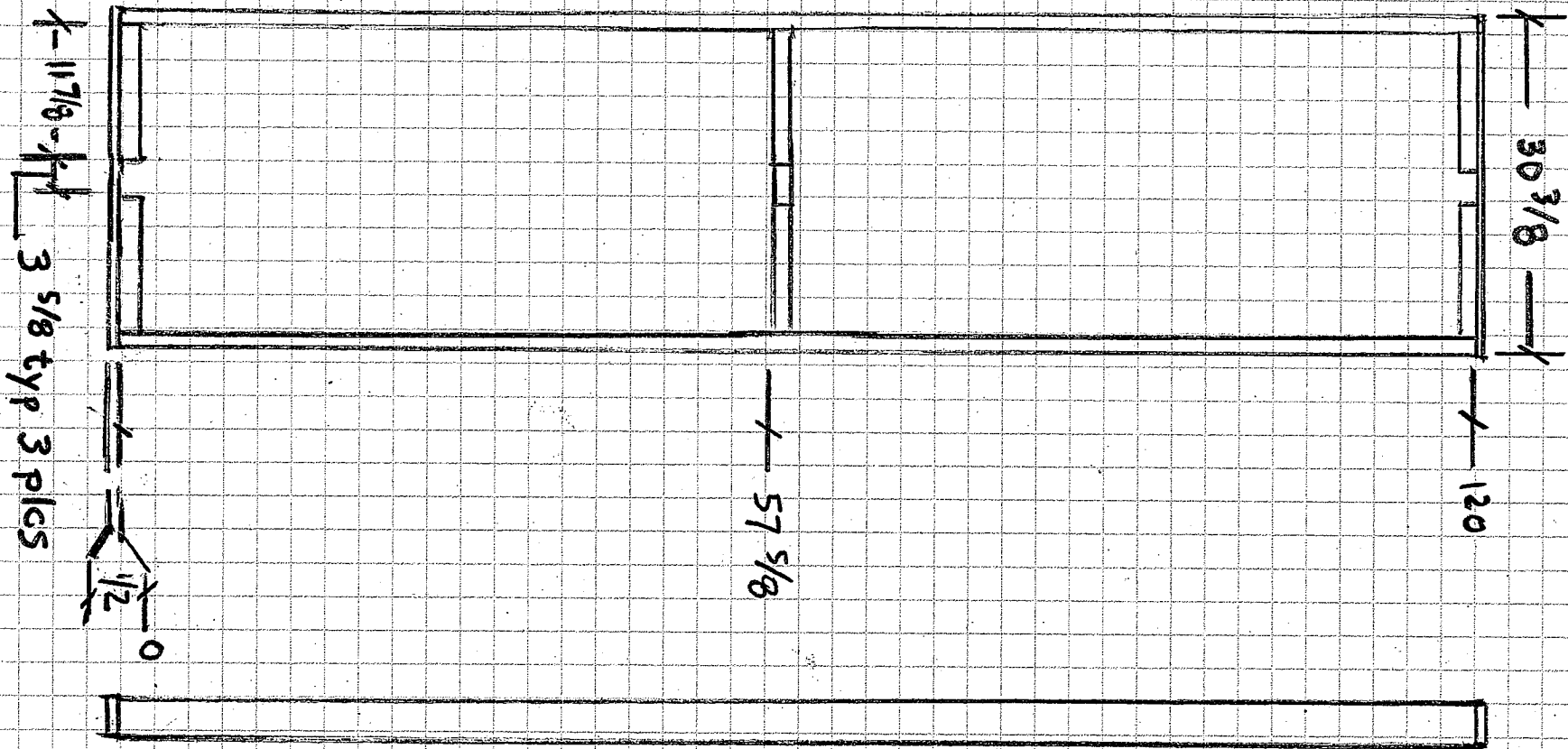
1. Be careful to keep 3/4" holes perpendicular to surface when drilling.
2. Keep an eye on perpendicular 2x4 intersections and maintain same.
3. Be careful during backbone assembly that it doesn't come all apart between inserting of bars step, gluing plywood cladding step, and screwing top rail onto legs step.
4. Keep base flat when attaching cleats to connect two halves.

Troubleshooting:

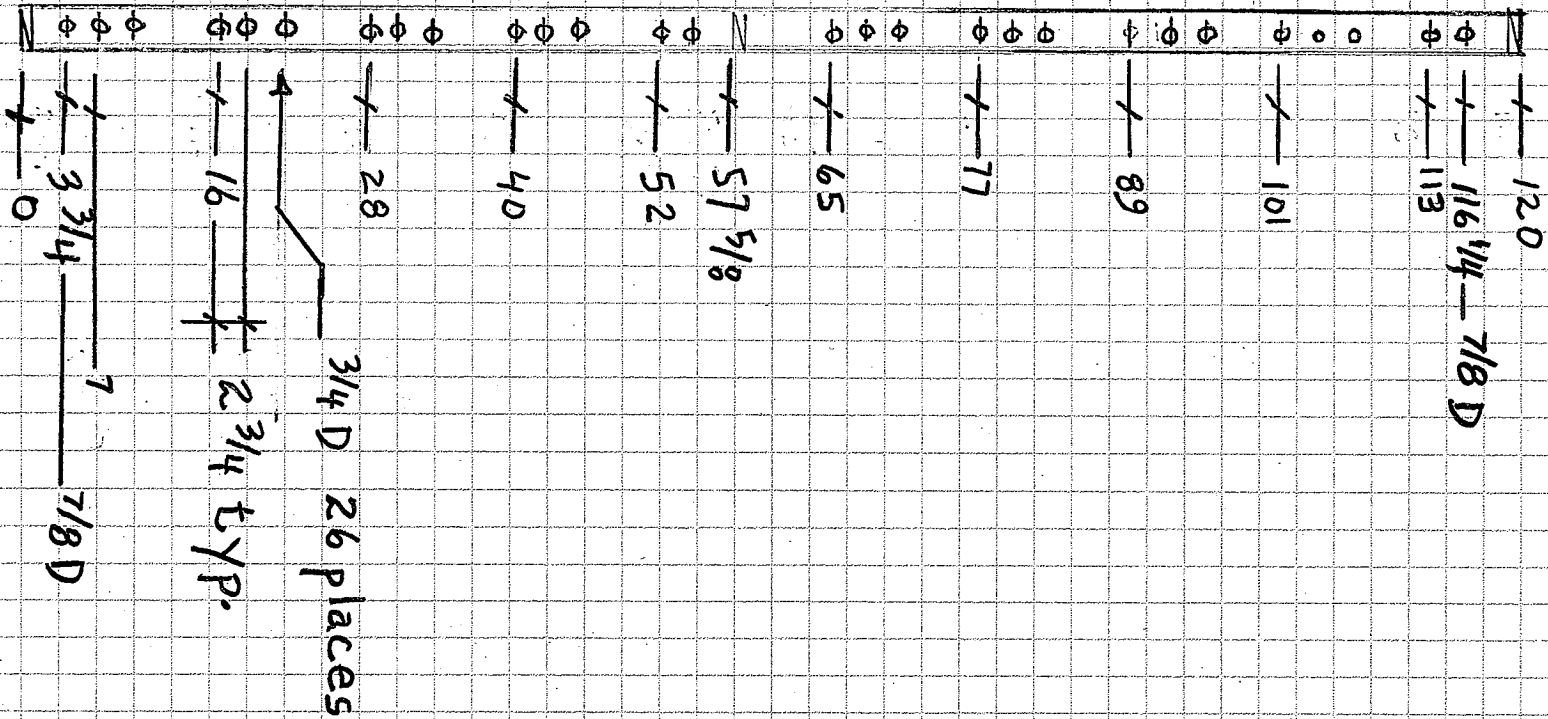
1. Big burrs on surface of rail from drilling holes. Likely reason: wet green wood. Debride with a piece of plywood as a scraper; assemble cladding to that surface of 2x4 where drilling started.
2. Upright bars don't fit easily through top rail into bottom rail. Likely reason: holes in rail not perpendicular to rail surface. Straighten out by reaming hole, or deform upright bar slightly. Don't overstress 2x4 by forcing bars into place.
3. Holes grossly don't line up. Likely reason: top rail rotated relative to bottom; they aren't quite symmetrical. Rotate top rail 180 degrees.
4. Missing hole. Likely reason: see 3. above, or if it really got missed, drill at any point during assembly. Can drill through plywood to add late, then pin upright bar with a 3" screw crossways.
5. Bars all fell out after top rail cladding attached, before screwing top rail into legs. No good recovery from here- I've never succeeded at fitting bars into top and bottom rails with cladding on them. Remove cladding on top rail, back assembly procedure up to that point.



BIKE RACK BACKBONE ASS'Y	
7/6/08	DIMS IN INCHES
Drawn: Monkey Boy	



BIKE RACK BASE ASSY	
7/6/08	DIMS IN INCHES
Drawn: Monkey Boy	



BIKE RACK TOP/BOTTOM RAIL	
7/6/08	DIMS IN INCHES
Drawn: Monkey Boy	

