Project 10307EZ:
Country Bench

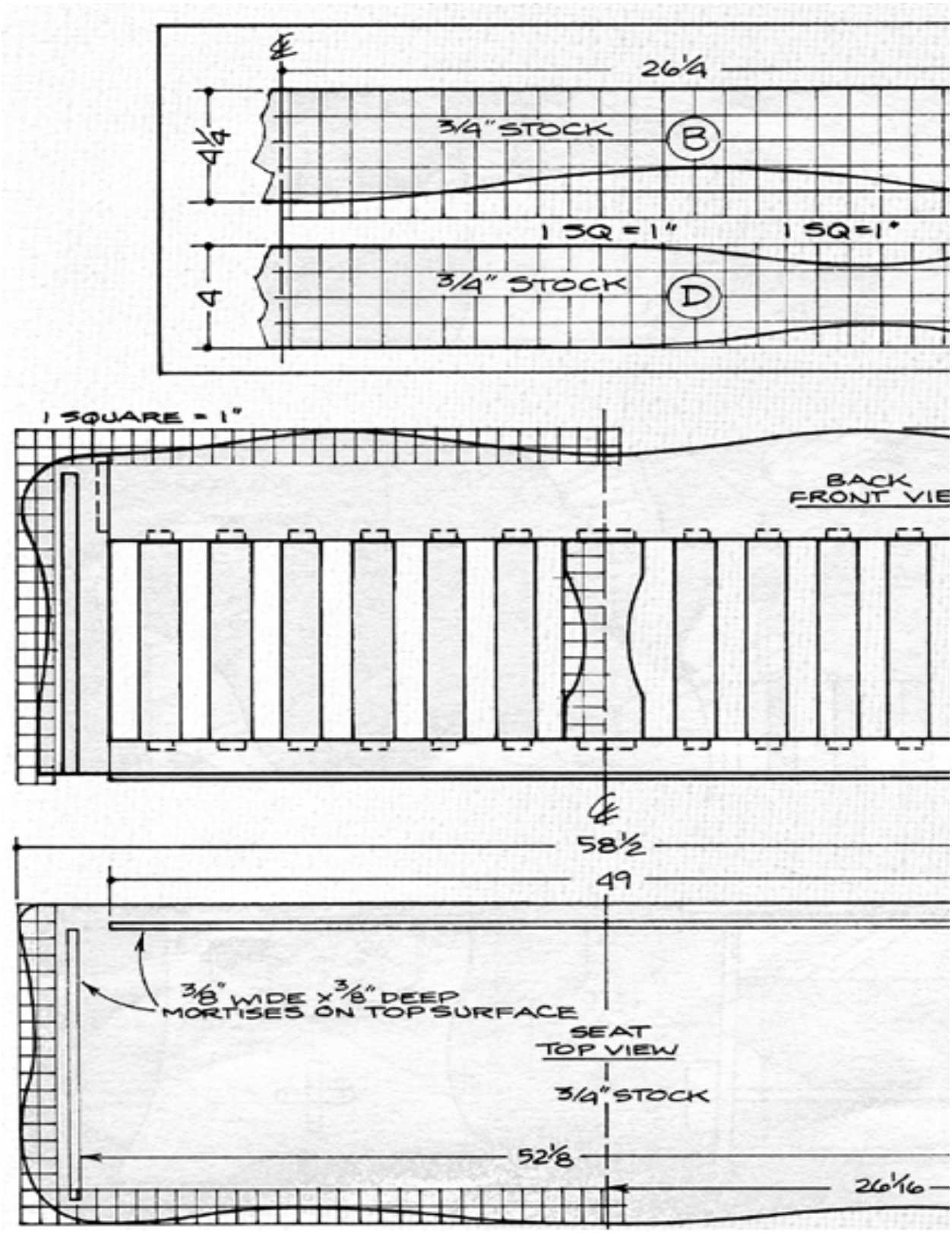
Crafted in red oak, this country style bench is an attractive reminder of a time when careful joinery, sturdy construction, and sensible design were the hallmarks of fine furniture. Although several angles must be taken into account when building the bench (the splay in the legs, and the tilt in the seat and back) the overall construction is relatively simple and straightforward. You will note that all parts are 3/4" thick except the slats (L and M), which are planed down to 5/8" thickness.

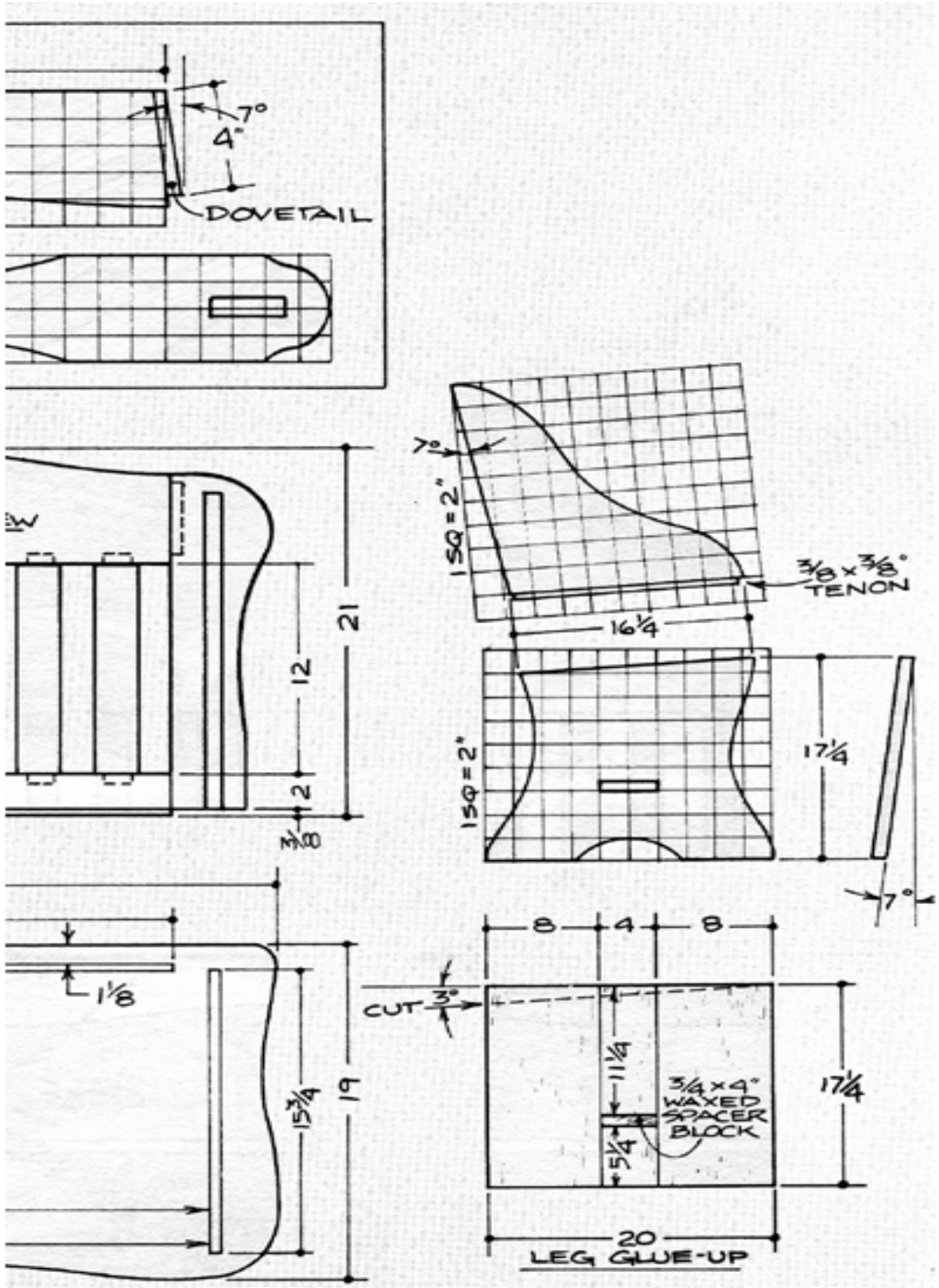
Country Bench Materials List

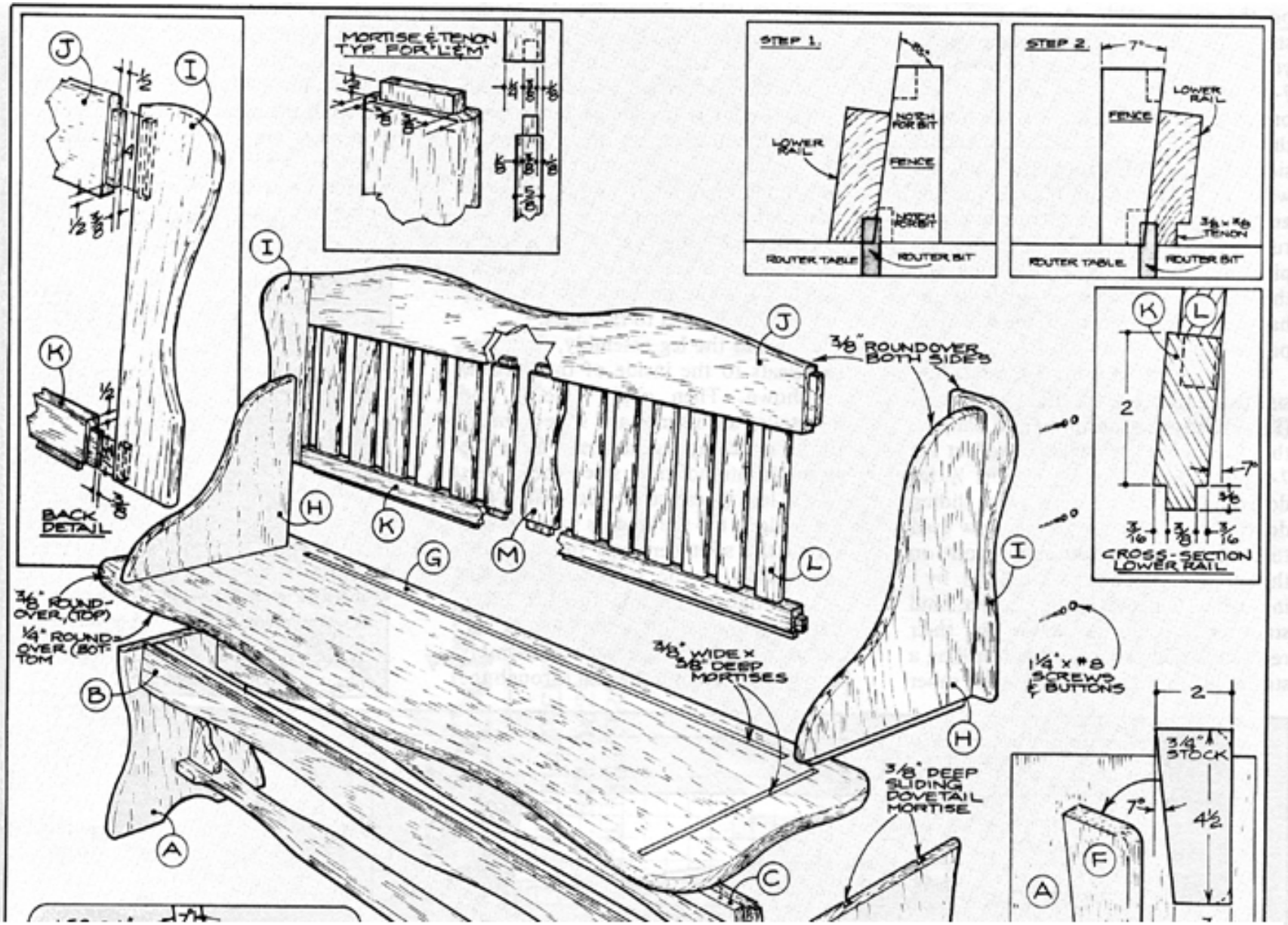
Part	Description	Size	No. Req'd
A	Leg	3/4" x 20" x 17-1/4"	2
B	Front and Back Apron	3/4" x 4-1/4" x 54" (approx.)*	1 ea.
C	Cleat	3/4" x 1" x 51-3/4"	2
D	Stretcher	3/4" x 4" x 62-1/2"	1
E	Gusset	3/4" x 4" x 3"	2
F	Wedge	3/4" x 2" x 4-1/2"	2
G	Seat	3/4" x 19" x 58-1/2"	1
H	Side	3/4" x 16-1/4" x 18-3/8"*	2
I	End	3/4" x 4-3/4" x 19-1/4"	2
J	Top Rail	3/4" x 2-3/8" x 50"*	1
K	Lower Rail	3/4" x	
L	Slat	5/8" x 2" x 13"	12
M	Center Slat	5/8" x 4" x 13"	1

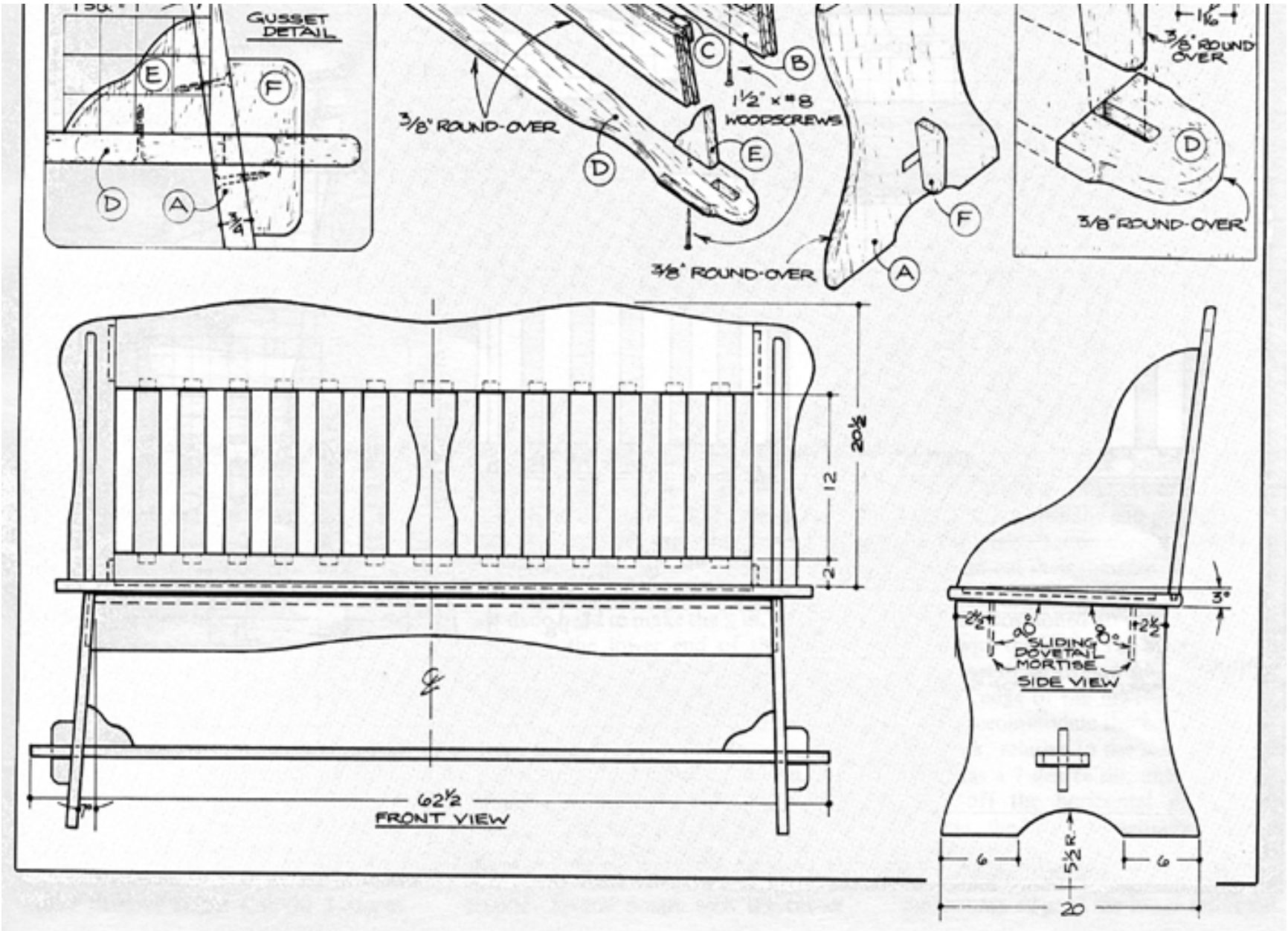
*Includes tenons (dovetails on aprons).
All dimensions shown are final. Parts A, B, D, E, F, G, H, I, J, and M should allow extra as needed for band sawing or jigsawing to final profile.

Country Bench Complete Schematic




7°
4"
DOVETAIL
7°
1SQ=2"
3/8 x 3/8"
TENON
16 1/4
1SQ=2"
17 1/4
7°
21
12
2
3/8
1 1/8
15 3/4
19
8
4
8
CUT 3"
11 1/4
3/4 x 4"
WAXED
SPACER
BLOCK
5/4
17 1/4
20
LEG GLUE-UP


MORTISE & TENON TYP FOR 'L' & 'M'
STEP 1
LOWER RAIL
NOTCH FOR BIT
FENCE
NOTCH FOR BIT
ROUTER TABLE
ROUTER BIT
STEP 2
7"
FENCE
LOWER RAIL
3/8" x "8 TENON
ROUTER TABLE
ROUTER BIT
BACK DETAIL
3/8" ROUNDOVER BOTH SIDES
3/8" ROUND-OVER, (TOP)
1/4" ROUND-OVER (BOTTOM
3/8" WIDE x 3/8" DEEP MORTISES
3/8" DEEP SLIDING DOVETAIL MORTISE
1 1/4" x #8 SCREWS & BUTTONS
CROSS-SECTION LOWER RAIL
3/4" STOCK
7"
4 1/2
2


GUSSET DETAIL
E
F
D
A
3/4
C
B
1½" x #8 WOODSCREWS
3/8" ROUND-OVER
D
E
3/8" ROUND-OVER
F
A
1/16
3/8" ROUND OVER
D
3/8" ROUND-OVER
20½
12
2
62½
FRONT VIEW
3"
2½
20°
8°
12½
SLIDING DOVETAIL MORTISE
SIDE VIEW
6
5½ R.
6
20

Country Bench Step-by-Step Instructions

1. Edge-glue 8" wide boards on either side of several 4" wide boards to achieve sufficient width for the legs (A), seat (G), and sides (H), being sure to put a 3/4" thick, waxed spacer block between the 4" boards. **NOTE: Because of the 7-degree splay in the legs, the ends of the 4" wide boards that form the upper and lower faces of the slot must reflect this same 7-degree angle**.
2. Cut the 3-degree angle along the top end of the legs as shown.
3. Make the cut at the bottom of the legs.
4. Set the table saw blade to angle 7 degrees to establish the 7-degree splay in the legs.
5. Lay out the illustrated grid pattern
6. Use a band saw or jigsaw to achieve the final profile.
7. Mark for the 1/2" wide x 3/8" deep x 4" long sliding dovetail mortises.
8. Use the router equipped with a 2" dovetail bit to cut these mortises. **NOTE: As indicated, these mortises are at 90 degrees to the top end of the legs.**
9. Use the table saw dado head to make the 3/8" x 3/8" tenon on the lower end of the sides.
10. Lay out the illustrated grid pattern and profile.
11. Cut the 7-degree angle along the back edge.
12. Use the band saw or jigsaw to cut the curved side profile.
13. Refer to the jig patter to cut the seat profile.
14. Use the router equipped with a 3/8" straight bit to cut the 3/8" wide x 3/8"deep mortises that will accept the side and lower rail tenons. **NOTE: Several passes with the router may be necessary to achieve the 3/8" mortise depth.**
15. Make the back. **NOTE: The upper rail (J) should have extra width at the top, and the ends (I) should be longer at the top and wider on their outside edges, since the back profile is cut after the back has been assembled.**
16. Refer to the appropriate back joinery details to tenon the ends of the upper and lower rails.
17. Mortise the end pieces (I) correspondingly.
18. Tenon the slat (L and M) ends and cut their matching mortises in the rails (see slat detail).
19. Position the slat mortises so the slats will be flush with the back.

20. Cut the ends (I) where they meet the seat, as well as the tenon on the bottom edge of the lower rail, to accommodate the 7-degree tilt of the back, relative to the seat. **NOTE: Since the back has a 7-degree tilt, and the seat is tilted off the horizontal plane at 3 degrees, the back will actually tilt at 10 degrees relative to the floor, when the bench has been assembled**.
21. Make a fence on the router table with a 7-degree face along one side to begin making the tenon on the bottom edge of the lower rail (see Steps 1 and 2).
22. Cut one side of the 3/8" x 3/8" tenon (Step 1).
23. Flip the fence over and cut the other side (Step 2). **NOTE: This procedure keeps the workpiece outside the bit, eliminating any chance of the piece catching and running, as it might be liable to do if the piece were located between the bit and the fence.**
24. Glue up and assemble the back.
25. Refer to the hack grid pattern to cut the back profile.
26. Make the aprons (B), cleats (C), stretchers (D), gussets (E), and wedges (F). **NOTE: The cleats are 3/4" x 1" strips**.
27. Angle the apron ends to reflect the 7-degree leg splay, as shown in the apron grid pattern.
28. Use the same 1/2" dovetail bit you used to cut the sliding dovetail mortises in the legs to cut the matching dovetail tenons on the apron ends.
29. Cut the apron, gusset, and stretcher profiles as shown in their respective grid patterns.
30. Drill a starter hole for the blade on the stretchers.
31. Use the saber saw to rough in the wedge slot in the stretcher ends.
32. Use the router equipped with a 1/2" straight bit to clean the slot edges.
33. Use the router equipped with the appropriate round-over bit to make the 3/8" roundover on the wedge, stretcher, and apron.
34. Use the router equipped with the appropriate round-over bit to make the 3/8" and 1/4" roundover on the seat.
35. Use the router equipped with the appropriate round-over bit to make the 3/8" roundover on the sides and back assembly.
36. Begin assembly by first gluing the two sides to the seat.
37. Add the back by gluing it to the seat, and then screwing, plugging, and gluing it to the sides.
38. Begin making the leg assembly by first gluing the cleats to the inside of the aprons, as shown.
39. Apply glue to the dovetailed apron ends and slide them into the matching leg mortises.

40. Slide the stretcher into position.
41. Screw the gussets to the legs (these screws are hidden by the wedge).
42. Tap the wedges into place to center the stretcher.
43. Screw the gussets to the stretcher.
44. Seat the wedges tightly, locking them in place with screws.
45. Mount the seat, side, and back assembly by screwing up into the seat through the cleats, as illustrated.
46. Finish as desired, applying polyurethane if you intend to place the bench outside.

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