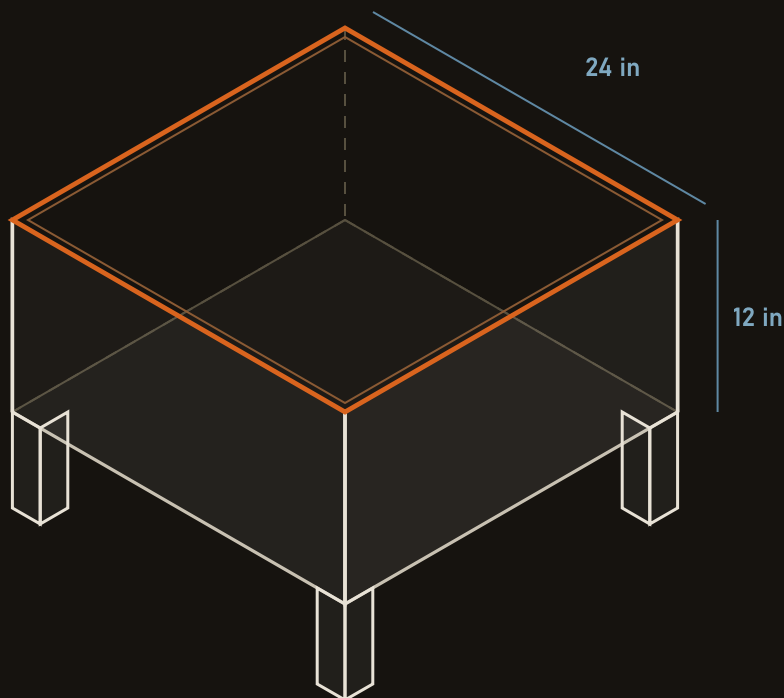


PLAN MF-FP-024 · REV B

SQUARE STEEL FIRE PIT

24" × 24" × 12" · welded ¼ in A36 plate · open-top box on angle-iron legs



DIFFICULTY

Beginner+

first-weld friendly

BUILD TIME

4-6 h

with pre-cut plate

MATERIAL COST

\$150-210

typical retail, varies

FINISHED WEIGHT

≈128 lb

[58 kg], stays put

TOOLS

REQUIRED / OPTIONAL

TOOL	NOTES
Welder	¼ in plate wants 180–250 A MIG (ER70S-6) or stick (6011 root / 7018). A 110 V machine works only with beveled edges + multiple passes.
Angle grinder	cut-off wheels + flap disc (80 grit) for deburr & blending
Drill	½ in bit or step bit, center punch, cutting oil
Layout	framing square, tape, soapstone or paint marker
Clamping	2+ welding clamps or magnets, flat welding surface
PPE	auto-dark helmet, welding gloves & jacket, safety glasses, respirator when grinding
Optional	chop saw / plasma (faster cuts), corner magnets, anti-spatter spray

Skill check: can you run a basic fillet bead?

That is the only weld in this build: straight fillets on ¼ in plate, all in easy positions. If it is your first project, run 15 minutes of practice beads on scrap from the same plate and you are ready. Nothing here needs to be pretty: it needs to be fused.

MATERIALS & COST

BILL OF MATERIALS

ITEM	SPEC	QTY	EST.
Plate, Side A	¼ in A36 · 24 × 12 in	2	\$135–185
Plate, Side B	¼ in A36 · 23½ × 12 in	2	(≈122 lb plate)
Plate, Base	¼ in A36 · 24 × 24 in	1	
Angle iron, legs	2 × 2 × ¼ in · 4 pcs @ 6 in (24 in total)	4	\$8–15
Consumables	wire/rod, cut-off discs, flap disc	—	\$10–20
High-heat paint	1200 °F [650 °C] stove paint (optional)	1	\$8–12
Typical total (fasteners: none · fully welded)			\$150–210

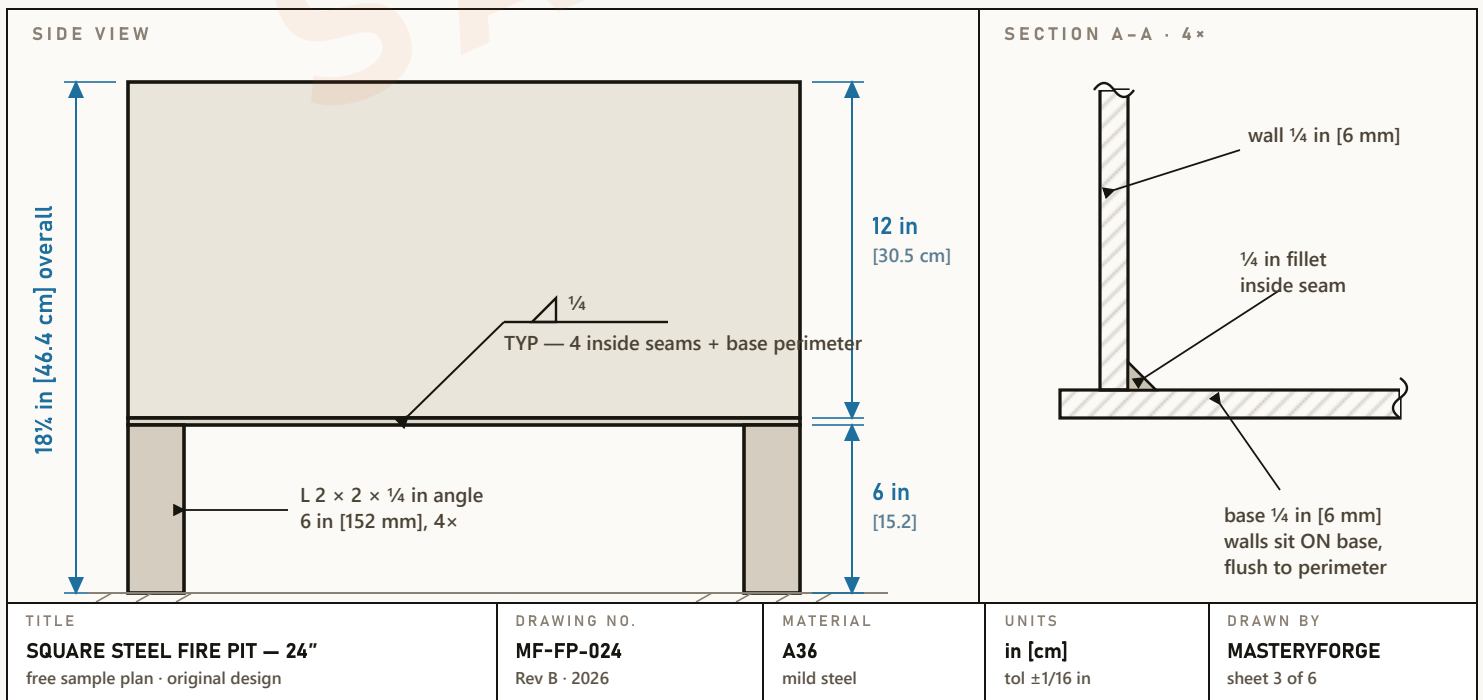
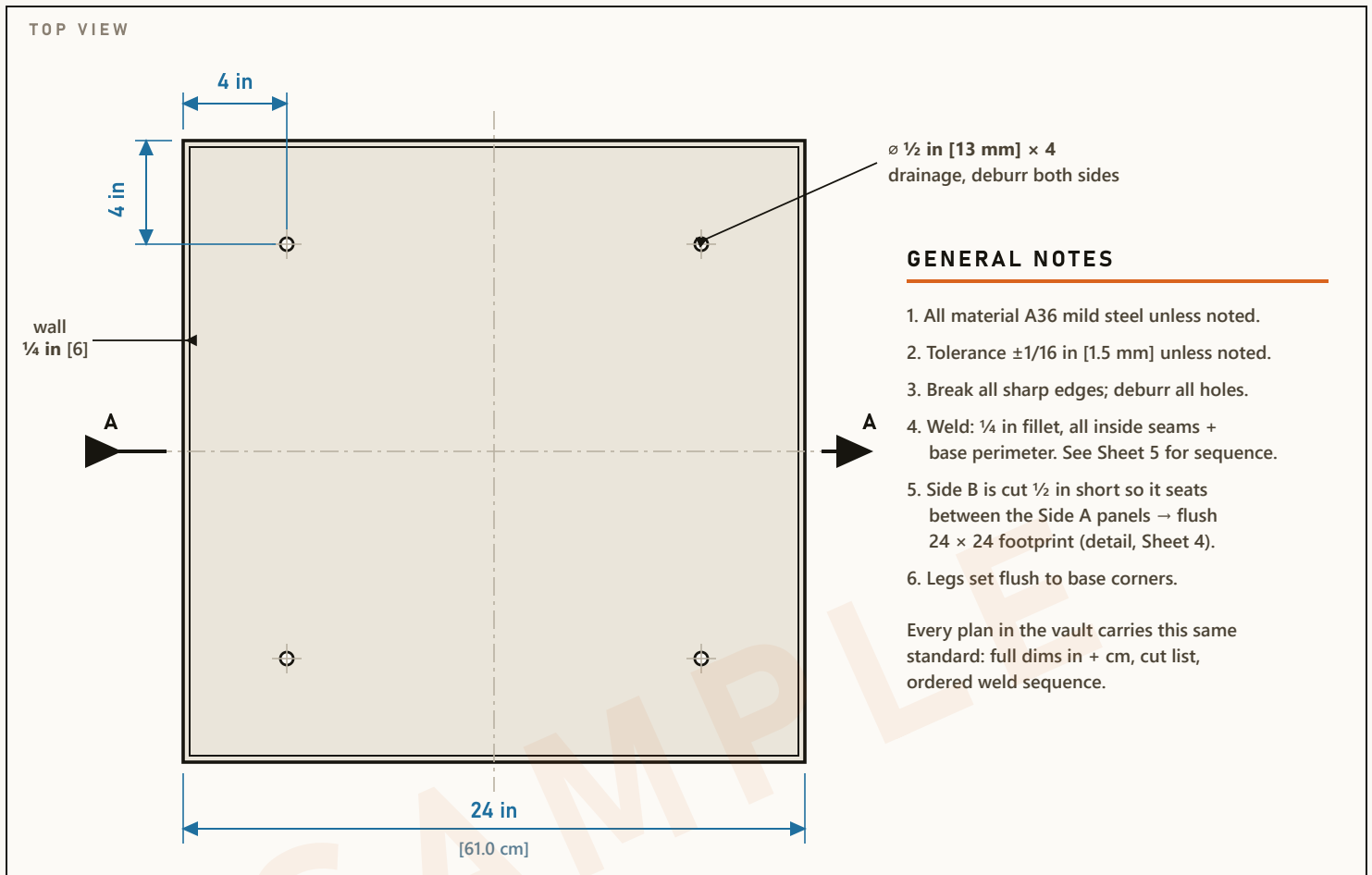
Money-saving tip: almost every steel yard will **shear plate to size for a few dollars**. Hand them the cut list above and skip an hour of grinding. Ask for "drops" (offcuts) too: this build fits comfortably in most scrap racks.

TIME BUDGET

FIRST BUILD

CUT & PREP 1.5 H	FIT & TACK 1 H	WELD 1.5 H	LEGS & FINISH 1–2 H
---------------------	-------------------	---------------	------------------------

Cutting your own plate with a grinder? Add 1–2 h.





EXPLODED ASSEMBLY

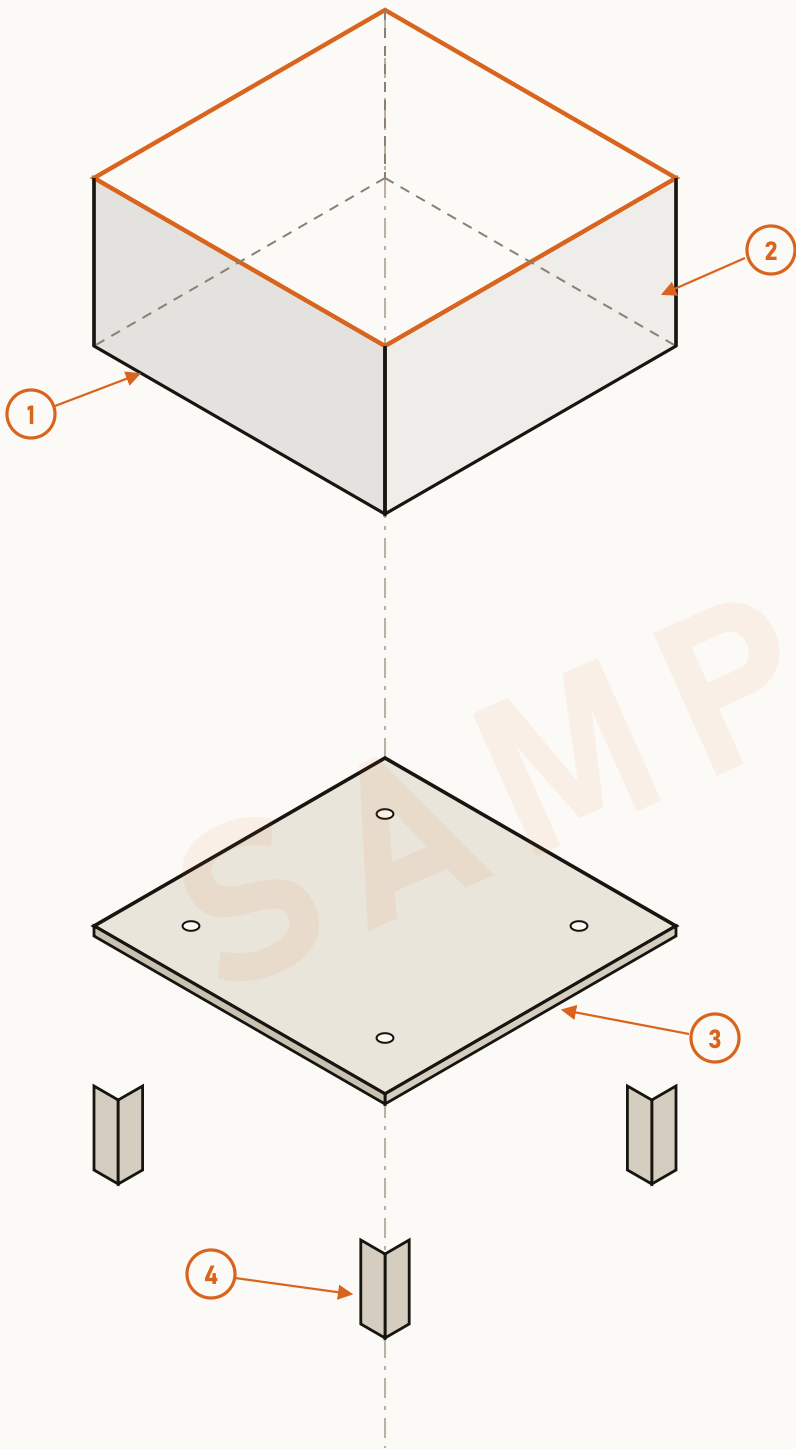


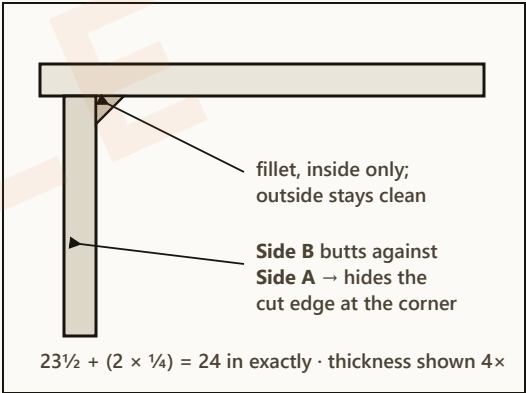
Plate thickness omitted for clarity · parts assemble along the dashed axis

PARTS KEY

#	PART	SIZE	QTY
1	Side A ¼ in A36 plate	24 × 12 in [61.0 × 30.5]	2
2	Side B ¼ in A36 plate	23½ × 12 in [59.7 × 30.5]	2
3	Base ¼ in A36 plate	24 × 24 in [61.0 × 61.0]	1
4	Leg L 2×2×¼ angle	6 in [152 mm]	4

Fasteners: **none** (fully welded construction).

CORNER JOINT · WHY 23½





BUILD ORDER

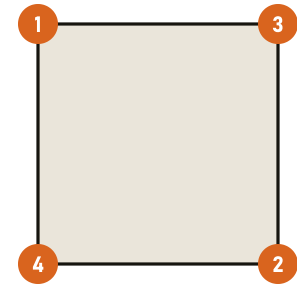
DO NOT SKIP AHEAD

- 1** **Cut all parts to the cut list.** Or have the steel yard shear them (page 2). Deburr every edge with the flap disc: clean steel welds clean.
- 2** **Drill the 4 drainage holes in the base.** Center-punch at 4 in from each corner, pilot $\frac{1}{8}$ in, then $\frac{1}{2}$ in. Deburr both faces.
- 3** **Tack the 4 walls into a box,** Side B between the Side A panels (detail, page 4). Two tacks per corner, outside face. Use the square or corner magnets. **Tack only.**
- 4** **Check the diagonals** (diagram →). Measure corner-to-corner both ways: equal = square. Off by more than $\frac{1}{16}$ in? Break the worst tack, rack the box by hand, re-tack.
- 5** **Tack the box onto the base,** flush to the perimeter on all four sides. Re-check diagonals one last time: after the next step there is no going back.
- 6** **Weld all inside seams** with a $\frac{1}{4}$ in fillet: 4 vertical corners, then the base perimeter. Stitch 3–4 in, alternate opposite seams, let it cool between passes (diagram →). Continuous beads in one go = warped box.
- 7** **Weld the 4 legs to the base corners,** angle wrapping each corner flush to the edges (diagram →). Weld both inner faces of the angle. Flip upright, check it sits flat; grind one leg face if it rocks.
- 8** **Grind the top rim smooth** and blend any spatter. Finish per page 6, or leave it raw and let it patina.

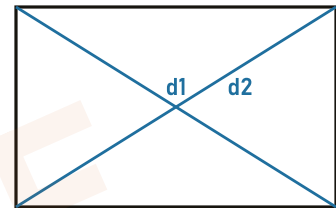
Warp control: heat is the enemy on a plate box. Short stitches, opposite seams, patience. If a seam pulls, a few hammer taps while hot will bring it back.

COMMON MISTAKES

- Fully welding a seam before squaring ·
- Skipping the diagonal check · Welding outside corners (looks worse, adds nothing)
- Painting the inside: it burns off the first fire.



TACK SEQUENCE · OPPOSITE CORNERS FIRST (1→2→3→4), TWO TACKS EACH

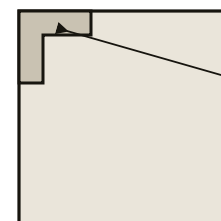


SQUARE CHECK · D1 = D2 BEFORE ANY FULL WELD



3–4 in stitches, staggered order, cool between

STITCH PATTERN · ONE SEAM, WELD ORDER 1-2-3



leg wraps the corner, flush to both edges; weld inner faces

LEG PLACEMENT · ANGLE IRON AT EACH BASE CORNER (TOP VIEW)

FINISH OPTIONS

A · HIGH-HEAT PAINT

Outside surfaces only. Degrease, scuff, then 2 thin coats of 1200 °F [650 °C] stove/grill paint. Cure per the can; most brands cure fully on the first fire. Never paint the inside.

B · RAW + OIL PATINA

Wipe the bare steel with a thin coat of boiled linseed or flax oil and let the first fires season it like a skillet. Honest, ages beautifully, easy to renew. Expect surface rust in wet climates; a fresh wipe fixes it.

FIRST BURN

1. Set the pit on stone, gravel, concrete or bare earth, never a wood deck.
2. Keep 10 ft [3 m] clearance from structures and anything that burns.
3. First fire small, 30–45 min: it cures the paint (some smoke and smell is normal) and stress-relieves the welds.
4. Let it cool on its own. From the second fire, run it as hot as you like.

SAFETY. Metal fabrication and welding carry injury risk: wear proper PPE and work ventilated. Fire risk: burn only with safe clearances, never leave a fire unattended, keep water or an extinguisher nearby, and check local burn rules. The steel stays hot long after the flames die. Verify all dimensions and welds before use. This sample is for evaluation — build at your own risk.

READING THE WELD SYMBOL

USED ON SHEET 3

▷ + number

Fillet weld; the number is the leg size in inches (here ¼ in).

Flag above the line

Weld the far ("other") side of the joint the arrow touches; our beads go inside.

TYP

"Typical": the same weld repeats at every identical joint.

Print & shop use: this plan prints true at 100% scale on US Letter or A4. In the shop you only need two sheets at the bench: page 3 at the saw and drill, page 5 at the welding table. Keep the PDF on your phone for the rest.

YOU JUST READ THE STANDARD

Every plan in the vault is drawn like this one.

- 500+ metalworking project plans
- Complete cut list on every plan
- One-time \$37 · lifetime updates
- Every part dimensioned in inches + cm
- Ordered weld sequence on every plan
- 30-day money-back guarantee

GET THE VAULT · \$37

masteryforgecrafts.com
SEE BEFORE YOU BUY