

Drone Mapping Startup Kit (2025)

A one-page quickstart for launching a mapping service in the U.S. • Updated 2025-09-03

Gear Tiers (pick by use-case & budget)

- Tier 1 — Lean Visual/Progress Mapping (\$1.5k–\$3.5k)

Drone: DJI Air 3 or Mavic 3 Classic (rolling-shutter; visual/progress only)

Extras: 3 batteries, ND set, 128–256 GB U3/V30 cards, landing pad

Use-cases: marketing maps, roof visuals, site progress (non-survey)

- Tier 2 — Construction & Survey-Adjacent (\$6k–\$12k)

Drone: DJI Mavic 3 Enterprise + RTK module

Positioning: NTRIP RTK subscription OR GNSS base (e.g., Emlid RS3) + GCP targets

Essentials: 5 batteries, GCP targets, folding tape, safety kit

Use-cases: as-builts, stockpile volumes, cut/fill, progress with accuracy targets

- Tier 3 — Enterprise/AEC (\$18k–\$35k+)

Platforms: DJI M350 RTK + P1, or Freefly Astro + Sony ILX-LR1

Add-ons: PPK workflow, survey-grade base/rover, redundant comms

Use-cases: large sites/corridors; sub-2 cm targets with licensed survey oversight

Software Stack (start simple, grow as needed)

- Flight: DJI Pilot 2 (grid/terrain follow), robust mission logs
- Processing: Agisoft Metashape, Pix4Dmatic/mapper (macOS/Windows options exist)
- QC & CAD handoff: QGIS (RMSE checks), CloudCompare, (client-side) Civil 3D
- Delivery: Web map tiles, GeoTIFF, LAS/LAZ, DXF/DWG, PDF report

Business-Ready Proposal (must-have components)

- Scope & site limits (acres), coordinate system, control plan (RTK/PPK + #GCPs)
- Deliverables: ortho, DSM/DTM, contours (1-ft/2-ft), volumes, web viewer link, PDF

- Accuracy targets & check-shots plan (RMSE), acceptance criteria
- Assumptions/constraints (access, vegetation, weather, traffic control)
- Timeline & milestones; data retention; licensing/usage rights
- Pricing model: base fee (mobilization + first 10 acres) + per-acre tiers + add-ons
- Payment terms and change-order pathway

Client Onboarding Checklist (before you fly)

- ☐ Intake form + main POC
- ☐ Site boundary file (KML/SHP) & preferred coordinate system
- ☐ Airspace & safety: LAANC/waiver if needed; utility notifications
- ☐ Ground state: mow/no-mow, stockpiles undisturbed, traffic plan if active site
- ☐ Deliverable formats & naming conventions
- ☐ Target schedule window; invoicing details; review meeting date

Compliance Note

Surveying products used for design, boundary, or legal purposes must be produced or signed by a licensed land surveyor as required by your state. When in doubt, partner with a surveyor.

Mac/Windows Note (short)

Most mapping apps are Windows-first. On Apple Silicon (M1–M4), use Parallels to run Windows 11 ARM for Windows-only tools; on Intel Macs you can use Boot Camp. Or choose cross-platform apps that run natively on macOS. Allocate 16–32 GB RAM and fast SSD scratch.