SOP

Standard Operating Procedures for Pilots

- Construction Progression SOP
- Photogrammetry Mapping SOP
- Stockpile Mapping SOP
- LIDAR Workflow SOP

Construction Progression SOP

Texas Drone Company · DJI Mavic 3E · v1.1

Section 1 — On-site arrival & setup

Site arrival protocol

1. Go to the site trailer first. Introduce yourself and tell them you will be flying. This lets them notify heavy machinery operators in the area.
2. Format the SD card before flying — unless you have enough space. Advanced Camera Settings → Format Memory Card.
3. Walk the site. Identify hazards, active machinery, cranes, flag poles, and obstructions before arming the aircraft.
4. Set gimbal to **-23°** and leave it there for the entire job. Gimbal pitch does not change between photo and video modes.

Camera settings — photo baselines (Auto mode)

Camera is set to auto for construction progression. Use these as starting points and adjust on the fly. Always review your first shot before committing to the full sequence.

Condition	ISO	Shutter	Notes
Bright sun	100	1/1500s	Most Texas days — watch for blown highlights on concrete
Partly cloudy	200	1/800s	Good balanced light
Overcast	400	1/500s	Flat shadows — watch exposure on dirt and concrete
Golden hour	400–800	1/400s	Bracket shots — light changes fast

Camera settings — video orbit baselines (4K 30fps)

Condition	ISO	Shutter	ND Filter
Bright sun	100	1/60s	ND64 recommended
Partly cloudy	100	1/60s	ND16
Overcast	200	1/60s	ND8 or none

> No ND filters? Use 1/1000s shutter — less cinematic motion blur but acceptable for deliverables.

Shot sequence overview

Shot type	Altitude	Gimbal	Count
Context photos (red)	300–400 ft AGL	-23°	4 sides + 4 corners
Building photos (blue)	100–150 ft AGL	-23°	4 sides + 4 corners
Video orbit	CCW · 4K 30fps	-23°	1 per building
360 pano	Aerial: Mavic 3E · Ground: Insta 360	—	When requested

---

Section 2 — Context photos (red arrows)

Altitude: 300–400 ft AGL · **Gimbal:** -23° · **Camera:** Auto

Purpose

- High altitude shots showing the full site in context of surroundings — roads, neighboring properties, surrounding area.
- These are NOT building shots. Align your frame to the property lines, not the structure itself.

Shot count & coverage

- 4 corners + 4 sides for a rectangular site.
- Odd number of images per side. If site is too large for one shot, use 3.
- Adjust altitude up or down until the frame is completely filled with the subject.

Framing rules

- Fly parallel to the silt fence or property line — use it as your alignment guide.
- Rule of thirds: property edge = edge of your frame.
- Leave room at the bottom for the watermark added in post.
- Pull back far enough that you could go slightly farther — do not push in tight.
- Do not frame to the building. Frame to the property lines.
- Do not push in so far the watermark area gets cropped.
- Do not leave excessive empty space beyond the property — too far back forces a re-fly.

> A couple of seconds to readjust framing can save hours of re-flying. Review your first context shot before shooting the full sequence.

Section 3 — Building photos (blue arrows)

Altitude: 100–150 ft AGL · **Gimbal:** -23° · **Camera:** Auto

Purpose

- Low altitude shots with the building as the primary subject.
- Lets clients see construction progress, manage activity, and use for marketing.
- Same 4 corners + 4 sides pattern as context photos, but tight to the structure.

Framing rules

- □ Building dead center in the frame.
- □ Fill the frame with the building — minimize empty space around the structure.
- □ Leave room at the bottom for the watermark added in post.
- □ Odd number of images per side — use 3 if building is too large for one shot.
- □ If restricted airspace limits altitude below 100 ft, adjust framing and note it in your flight log.
- □ Do not push too far back — building should fill the frame, not float in the middle.
- □ Do not leave the subject off-center.

> LAANC ceiling may limit altitude in controlled airspace. Under 100 ft due to restrictions — adjust framing and log it.

Section 4 — Video orbits

Resolution: 4K 30fps · **Gimbal:** -23° · **Direction:** CCW always

Execution standards

- Always fly counter-clockwise unless client specifically instructs otherwise.
- Low, slow, and smooth — constant motion throughout the entire orbit.
- Fill the frame with the building from start to finish.
- Scout obstructions before rolling — flag poles, cranes, signage.
- Video watermark differs from photos — you can push in slightly more than building photos.
- No choppy yawing or hard breaks — any jerkiness ruins the clip.
- Do not start recording until you are in position and already moving smoothly.

> Review your orbit clip on site before packing up. Shaky orbit = re-fly.

360 panos — when requested

- Aerial 360: Mavic 3E — Pano mode. Aircraft spins 360° automatically.
- Ground 360: Insta 360 — still images and video walkthroughs.

Section 5 — Deliverables & file naming

File naming convention

```
YYYY_MM_DD - Client Name - Job Site
```

e.g. `2025_06_14 - Hensley Construction - Fort Worth Logistics Park`

Deliverable summary

Deliverable	Format
Context photos	RAW + JPEG
Building photos	RAW + JPEG
Video orbit	MP4 · 4K 30fps
360 aerial pano	When requested
360 ground pano	When requested

Pre-handoff checklist

- ☐ All 4 corners and 4 sides captured for both context and building photos.
- ☐ Framing reviewed — watermark space left at bottom, subject properly centered.
- ☐ Video orbit is smooth, CCW, full building in frame throughout.
- ☐ RAW + JPEG both present for all photo deliverables.
- ☐ Files named: YYYY_MM_DD - Client Name - Job Site.
- ☐ All data backed up before leaving the site.
- ☐ Do not leave the site without reviewing your orbit footage on-site.

> Questions on site? Call your lead pilot before improvising. A quick call is faster than a re-fly.

Photogrammetry Mapping SOP

Texas Drone Company · DJI Mavic 3E · v1.0

Section 1 — Pre-flight prep

SD card & connectivity

1. Format SD card or verify storage. Camera settings → "..." → Format Memory Card. Storage visible top-right of screen.
2. Turn on hotspot before opening DJI app. Leave the hotspot menu open — the controller connects to internet faster this way.

Camera settings

Setting	Value
Photo format	JPEG
Dewarping	OFF — must be disabled
Camera mode	Auto

> Confirm dewarping is OFF before every mapping mission.

Section 2 — Map creation in DJI

1. Tap the Library button (bottom-left of DJI screen). Shows all saved maps sorted by distance from current location.
2. Tap "+" to create a new map → select "Area Route."
3. Use your finger to place boundary points around the full property. Push the boundary slightly beyond the property edges — ensures complete site capture.
4. Tap the checkmark. The app generates the flight plan and calculates path, photo count, and estimated flight time.
5. Select your aircraft.

> Always push boundary slightly past the property edges. It is far better to capture slightly too much than to miss the edge and need a re-fly.

Section 3 — Flight parameters

Parameter	Value
Altitude	300–400 ft AGL
Front overlap	80% (same flight line)
Side overlap	70% (between lines)
Speed (normal)	30–33 mph
Speed (low light)	20–25 mph (shutter < 1/500s)
Photo mode	Timed interval — always

Speed rule

- Default speed is 30–33 mph. Only reduce if shutter speed drops below 1/500s.
- In low light: reduce to 20–25 mph or slower.

Course angle

- Course angle sets the direction of flight lines. The green lines in the app simulate the full flight path.
- Adjust to align flight lines with the longest axis of the site — reduces total flight time.
- Top-left of screen shows area size, estimated flight time, and photo count. Review before launching.

Crosshatch pattern — when to use

- A second pass flown at 90° to the original course angle.
- Use for complex sites with tight corridors between buildings or areas where a single pass may miss vertical faces.
- Duplicate the map in the app, change course angle by 90°, fly as a separate second mission.

> Always use Timed interval photo mode — this is the Texas Drone Company standard for all mapping missions.

Section 4 — RTK setup

> Do not launch until RTK confirms "RTK data in use" and std dev has settled.

1. Confirm controller is connected to hotspot with internet. Leave hotspot menu open — it connects faster that way.
2. Open the RTK tab in DJI. Enable "RTK Positioning" and "Maintain positioning accuracy mode" — both sliders ON.
3. Select mount point: choose the closest RTKUSA base station to your site. Reference: rtkusa.com.
4. Watch the standard deviation drop toward 0. Wait for it to settle before proceeding.
5. Confirm status reads: **"RTK Connected. RTK data in use."**
6. Verify satellite count is adequate. Low satellite count = poor geolocation hold. Do not launch.

>

> Bookmark rtkusa.com — knowing your nearest base station ahead of time saves significant setup time on site.

Section 5 — Launch & in-flight

1. Take off manually. Do not press play from the ground — fly to the start point by hand.
2. Climb to mission altitude manually. Once at altitude and clear of all obstructions, press play to begin the automated mission.
3. Monitor telemetry throughout: battery %, signal strength, GPS/RTK quality.
4. Plan battery swaps before 30%. For battery swap procedures, refer to Section 5.
5. Maintain VLOS and scan for manned aircraft. Yield right of way at all times.
6. After landing, verify image count matches the expected count shown in the app before packing up.

> “ Battery swap mid-mission: pause the mission, swap the battery, then resume from the last point.

Section 6 — Deliverables & file naming

File naming convention

```
YYYY_MM_DD - Client Name - Job Site
```

e.g. `2025_06_14 - Hensley Construction - Fort Worth Logistics Park`

Deliverable summary

Deliverable	Format
Unprocessed imagery (all mission photos)	Full resolution
QGIS data check	No gaps · RTK confirmed

Pre-handoff checklist

- ☐ Image count matches expected count from app.
- ☐ RTK was confirmed active ("RTK data in use") for the entire mission.
- ☐ Boundary was pushed past property edges — full site captured.
- ☐ QGIS verification complete — no gaps in coverage, RTK positioning confirmed throughout flight.
- ☐ Imagery reviewed for gaps or blurring before handoff.
- ☐ Files named: YYYY_MM_DD - Client Name - Job Site.
- ☐ Data backed up before leaving site.
- ☐ Do not deliver without first verifying in QGIS — no gaps in coverage and RTK positioning confirmed throughout flight.

> Questions on site? Call your lead pilot before improvising. A quick call is faster than a re-fly.

Stockpile Mapping SOP

Texas Drone Company · DJI Mavic 3E · v1.0

Section 1 — Pre-flight prep

SD card, site check & connectivity

1. Format SD card or verify storage. Stockpile crosshatch = two full mapping passes — roughly 2x the images of a standard map. Plan storage accordingly.
2. Note the approximate height of the tallest pile on site. Flight altitude is 200 ft AGL (above ground). Confirm adequate clearance above pile tops.
3. Turn on hotspot for RTK before opening DJI app. Leave hotspot menu open.
4. Confirm with site contact that all loaders and equipment will remain clear of the flight area for the duration of both passes.

> Active loaders or equipment moving material during the mission — even between Pass 1 and Pass 2 — will corrupt your volume data. All piles must

> remain static throughout both crosshatch passes.

Camera settings

Setting	Value
Photo format	JPEG
Dewarping	OFF — must be disabled
Camera mode	Auto

> Confirm dewarping is OFF before every mapping mission.

Section 2 — Map creation in DJI

1. Library → "+" → Area Route.
2. Draw boundary around all stockpiles. Push boundary past the base of the outermost piles. Partial pile capture = unusable volume data.
3. Tap checkmark → select aircraft → configure parameters (see Section 3).
4. Crosshatch setup: duplicate the completed map, change course angle by exactly 90°. This becomes Pass 2. You will fly both maps as separate missions.

>

> Crosshatch is not optional for stockpile mapping. A single-direction pass will miss the sides of piles and produce inaccurate or unusable volume measurements.

Section 3 — Flight parameters

Parameter	Value
Altitude	200 ft AGL
Front overlap	80% (same flight line)
Side overlap	70% (between lines)
Speed (normal)	30–33 mph
Speed (low light)	20–25 mph (shutter < 1/500s)
Photo mode	Timed interval — always

Crosshatch — required

- **Pass 1:** fly at your chosen course angle — 80% front / 70% side overlap, 200 ft AGL, timed interval mode.
- **Pass 2:** load the duplicate map with course angle rotated 90°. Same parameters as Pass 1. The two passes create a perpendicular grid pattern.
- □ Crosshatch captures the sides of piles that a single-direction pass misses — essential for accurate volumetrics.
- □ Critical for piles stored in bins or containers.
- □ Single-pass only is never acceptable for stockpile volume measurement deliverables.

> Lower altitude (200 ft vs 300–400 ft for standard mapping) means shorter battery range per pass. Count your batteries before the job — you need enough for both full crosshatch passes.

Section 4 — RTK setup

> Do not launch until RTK confirms "RTK data in use" and std dev has settled. RTK positional accuracy is especially critical for stockpile volume calculations.

1. Confirm controller is connected to hotspot with internet. Leave hotspot menu open.
2. Open the RTK tab in DJI. Enable "RTK Positioning" and "Maintain positioning accuracy mode" — both sliders ON.
3. Select mount point: choose the closest RTKUSA base station. Reference: rtkusa.com.
4. Watch the standard deviation drop toward 0. Wait for it to settle.
5. Confirm status reads: **"RTK Connected. RTK data in use."**
6. Verify satellite count is adequate before launching.

Section 5 — Launch & in-flight

Pass 1

1. Take off manually. Fly to start point by hand. Climb to 200 ft — clear of all pile heights — before pressing play.
2. Monitor telemetry: battery %, signal strength, RTK status.
3. Plan battery swaps before 30%. For battery swap procedures, refer to Section 5.
4. After Pass 1 lands, do not touch any piles. Swap batteries and prepare Pass 2.

Pass 2 (crosshatch)

1. Load the 90° rotated duplicate map.
2. Confirm RTK is still active and status shows "RTK data in use."
3. Take off manually, fly to start point, climb to 200 ft, press play.
4. After Pass 2 lands, verify both image counts match expected totals before packing up.

> Do not allow any equipment to move material between Pass 1 and Pass 2. Both passes must represent the same pile state to produce valid volumetric outputs.

Section 6 — Deliverables & file naming

File naming convention

```
YYYY_MM_DD - Client Name - Job Site
```

e.g. `2025_08_03 - Vulcan Materials - Lewisville Quarry`

Deliverable summary

Deliverable	Format
Unprocessed imagery — Pass 1 and Pass 2	Full resolution
QGIS data check	No gaps · RTK confirmed

Pre-handoff checklist

- ☐ Both crosshatch passes completed — image counts match expected for each.
- ☐ No equipment movement between Pass 1 and Pass 2.
- ☐ RTK confirmed active for both passes.
- ☐ All piles captured — boundary extended past base of outermost piles.
- ☐ QGIS verification complete — no gaps in coverage, RTK positioning confirmed throughout both passes.
- ☐ Coverage reviewed — full base of every pile is captured.
- ☐ Volume measurements verified per pile.
- ☐ Files named: YYYY_MM_DD - Client Name - Job Site.
- ☐ Data backed up before leaving site.
- ☐ Do not deliver without verifying in QGIS — no gaps in coverage, RTK confirmed throughout both passes.

> Questions on site? Call your lead pilot before improvising. A quick call is faster than a re-fly.

LIDAR Workflow SOP

Texas Drone Company · DJI M300 RTK · Mavic 3E · Emlid · v1.0 *Revised 04/08/2026*

Section 1 — Equipment checklist

Case / Bag	Contents
Laptop bag	Laptop, Charger, SD Cards, SD Card Reader
Mavic 3E case	Drone, Batteries, Controller, Portable charger
M300 case	Drone, Batteries, Controller, Charger, Cord
LiDAR case	LiDAR Unit, Antenna, Antenna Mount, LAN Cable, LiDAR Base, Base Collector (Silver Box), Base-to-collector cable, Mavic 2 Battery, Mavic 2 battery-to-collector cable, USB-A Cable, Twist tie
Survey equipment	Emlid base and rover, Three sets of survey poles, Reflective GCPs, Nails, Hammer, Marking paint / ribbon
Vehicle + PPE	Ranger and keys, Hard hat, Hi-vis vest, Boots

Section 2 — Office preparation

Complete before leaving the office.

1. Charge all batteries the day before: M300, two Mavic 2 batteries, Emlid base and rover, M3E batteries and controller, and laptop.
2. Plan GCP placement across the mapping area. Ensure enough reflective tape targets and nails.
3. Verify licenses are activated on your laptop: UGCS and LiGeoreference.
4. Build the LiDAR mission in UGCS. Import the client-provided .KML boundary: linear segments as Waypoint, polygons as Lidar area.
5. Select drone: DJI Matrice 300 RTK. Configure all mapping settings per Section 3.
6. Export route to DJI Pilot 2 (.KMZ). Transfer via micro SD or email the file to yourself for download via Firefox on the M300 controller.
7. Create the survey on Emlid Flow app. Confirm correct state plane datum before saving.
8. Pack all equipment from the checklist into the Ranger.
9. Deactivate the UGCS license when done — this allows other users to access the account.

Section 3 — UGCS mission settings

Basic mapping settings

Parameter	Value	Notes
FOV	38.4°	
Flight height	50–70m	Wind + foliage dependent
Flight speed	5–7 m/s	Wind + foliage dependent
Side overlap	50%	
Forward overlap	80%	
Corner radius	6m	
Turn type	Adaptive Bank Turn	

Parameter	Value	Notes
Altitude mode	Smart AGL	
Action execution	Every Point	

Advanced mapping settings

Parameter	Value	Notes
AGL tolerance	1.5–2m	Determines number of waypoints
Direction angle	Parallel to wind	
Straight flight after turn	10m	
Avoid obstacles	Enabled	

Export settings

- Export format: DJI Pilot 2 (.KMZ)
- Export parameters — Altitude: "Relative to the ground under 1st waypoint"
- Save with the correct flight route name. Transfer to controller via micro SD or Firefox / Gmail download.

Section 4 — DJI Pilot 2 route configuration

1. Open flight route in library. Verify accuracy: dropdown arrow → edit (pencil) → Add Point on Map.
2. Home Menu: confirm correct aircraft selected and altitude mode.
3. Route Menu: Safe Takeoff Altitude — 150 ft minimum, or enough to clear all surrounding obstacles.
4. Enable "Climb to Start Point."
5. Verify speed in mph is equivalent to speed set in UGCS (m/s).

> **IMPORTANT:** Relative Altitude must match the UGCS mission altitude exactly (e.g. 60m = 200 ft). This setting is used as a failsafe. Never set it to 0.

6. Aircraft Yaw: Along the Route.
7. Gimbal Control: Manual.
8. Waypoint Type (all middle waypoints): Coordinated Turn, Skips Waypoint.
9. Waypoint 1: Straight Route, Aircraft Stops.
10. Final waypoint: Straight Route, Aircraft Stops.
11. Upon Completion: Exit Route Mode.
12. Cycle through all waypoints — verify speeds match and relative altitudes are close in value.
13. Save the mission (disc icon).

Section 5 — On-site arrival & base station setup

Site arrival

1. Find a central location to unload the Ranger — ideally where you will set up both bases and fly from.
2. Set up the Emlid rover. Connect your iPad. Enable RTK corrections.
3. Place reflective GCPs in the preplanned locations across the mapping area.

Base station setup

1. Tie marking ribbon around two separate nails.
2. Hammer nails approximately 5 feet apart. Shoot one as "LiDAR base" and the other as "Emlid base" in the Emlid software.
3. Mark with spray paint: **triangle = LiDAR base, square = Emlid base.**
4. Set up LiDAR base and Emlid base over their respective nail points. Turn both on.
5. Wait for the blinking yellow satellite light on the LiDAR base collector to turn **solid yellow.**
6. Hold the LiDAR base collector power button for approximately 1 second — record button turns **solid blue.**

> **START 15-MINUTE BASE COLLECTION TIMER.** The LiDAR base must collect data for a minimum of 15 minutes before flight. Use this time to set up the M300 and LiDAR unit.

Section 6 — M300 & LiDAR unit setup

1. Attach legs and arms to M300. Ensure all arm and leg sleeves are in the locked position.
2. Attach LiDAR unit to M300. Ensure the connection port is threaded and seated correctly.

3. Connect antenna mount to M300. Screw antenna onto the mount.
4. Thread antenna cables through the inside of the payload housing. Use the twist-tie to secure cables — they must not be able to reach the props.
5. Connect the right cable to the right hole on the LiDAR unit, left cable to the left hole.
6. Insert batteries and lock in place. Power on the drone. Wait for full boot. Place over landing pad.
7. Power on the LiDAR unit. Wait for IMU light to turn **solid blue.**

> If IMU light turns solid red — power the LiDAR unit off and back on. Do not proceed until IMU light is solid blue.

8. Hold the LiDAR power button for approximately 1 second to start recording — the record light will turn on after you release the button.

> **START 3-MINUTE STABILIZATION TIMER.** Let the drone and LiDAR unit sit completely undisturbed. This timer should end after the 15-minute base collection timer. Do not touch or move the drone or LiDAR unit during this period.

Section 7 — Flying the mission

Pre-launch checks

- 15-minute base collection timer has expired

- □ 3-minute stabilization timer has expired
- □ IMU light: solid blue
- □ Record light: solid blue
- □ Flight speed and altitude confirmed appropriate for site foliage conditions

Takeoff

1. Take off. Fly **two figure-8 patterns** over the site before beginning the mission.
2. Upload mission in DJI Pilot 2 and begin mapping.

Battery swap procedure

1. Fly two figure-8 patterns before returning to land.
2. Land. Do not touch the drone or LiDAR unit.
3. Let sit untouched for **3 minutes.**
4. Perform hot battery swap.
5. Let sit untouched for **3 more minutes.**
6. Take off, fly two figure-8 patterns, then resume mission.

> □ **3 minutes before swap + 3 minutes after.** Both rest periods are required. Skipping either will corrupt the IMU trajectory data.

Mission completion

1. Fly two figure-8 patterns before final landing.
2. Land. Let drone sit completely untouched for 3 minutes.

3. Hold LiDAR power button for approximately 1 second to stop recording.

> ⚠ **Figure-8 patterns are required before every takeoff and before every landing — including battery swaps.** Never skip them.

Section 8 — Orthomosaic (Mavic 3E)

- Using the Mavic 3E, fly a photogrammetry map of the entire site.
- Altitude: **400 ft AGL.**
- Follow the standard Photogrammetry Mapping SOP for all other parameters.
- The orthomosaic provides visual context for the LiDAR point cloud and is part of the final deliverable.

> The Mavic 3E orthomosaic flight can be flown while M300 LiDAR data is being collected, or after mission completion.

Section 9 — Data retrieval

LiDAR data must be retrieved while the drone and LiDAR unit are still powered on.

1. Connect LiDAR unit to laptop using the LAN cable.
2. In File Explorer, type: `\\192.168.1.88` to access the LiDAR data.
3. Open the Tfcard folder.
4. Copy the LiDAR data from the folder named with today's date. Make a backup copy. You will have two folders: **LiDAR** and **LiDAR Copy.**
5. End the record on the silver LiDAR base collector box.
6. Connect the LiDAR base collector to your laptop via USB-A to A cable.
7. Retrieve the base log via connected device "D."
8. Copy the base log into the folder named "base" inside both the LiDAR and LiDAR Copy folders.
9. Download photogrammetry photos from the Mavic 3E to the desktop.

Section 10 — Field data processing (LiGeoreference)

> ⚠ Confirm you have enough storage on your laptop before starting. Insufficient storage will prevent the trajectory file from loading.

LiGeoreference license key

```
USUKTXNB5HCE4LEXSU
```

Activate in Ligeo License Manager before opening LiGeoreference.

Processing steps

1. Open LiGeoreference. Select "Browse" to choose your project.
2. Open the LiDAR folder copied to the desktop. **Do NOT open or use the LiDAR Copy folder.**
3. Open the "live" file. Flight lines may look incorrect initially — this is normal and will be corrected in the next step.
4. Open Settings (top left). Enter base coordinates from the Emlid software: Northing, Easting, and ellipsoidal height.
5. Height conversion: **Height (ft) ÷ 3.28084 = Height (m).** Antenna height: **2.05m.** Select OK.
6. Check "Pos Process" and "Georeference." Press Start.
7. Wait — even when processing appears finished. Complete when a visible point cloud appears beneath the flight trajectory.
8. Use the profile tool to check ground surface density under high tree and foliage areas.

If data looks good

- Reopen Ligeo License Manager and deactivate the LiGeoreference license on your laptop.
- Return to UGCS and deactivate the UGCS license.

If data looks wrong

- Flight trajectory not fixing in Pos Process or point cloud not appearing: most likely a storage issue. Verify sufficient storage.
- Confirm the base log from the LiDAR base collector is placed inside the LiDAR base folder.

Section 11 — Deliverables & file naming

File naming convention

```
YYYY_MM_DD - Client Name - Job Site
```

e.g. `2025_09_18 - Trinity Land Survey - Lake Dallas`

Deliverable summary

Deliverable	Notes
Unprocessed imagery (Mavic 3E)	Photogrammetry photos
LiDAR data files	From LiDAR unit
Base log	From base collector
LiGeoreference point cloud	Processed on site

Pre-handoff checklist

- ☐ 15-minute base collection completed before flight.
- ☐ Figure-8 patterns flown before every takeoff and before every landing (including battery swaps).
- ☐ 3-minute rest periods observed before and after every battery swap.
- ☐ LiDAR data retrieved while drone and LiDAR unit were still powered on.
- ☐ Base log copied into both LiDAR and LiDAR Copy folders.
- ☐ LiGeoreference point cloud processed and verified on site.
- ☐ UGCS and LiGeoreference licenses deactivated.
- ☐ Files named: YYYY_MM_DD - Client Name - Job Site.
- ☐ Data backed up before leaving site.
- ☐ Do not pack up before verifying point cloud quality in LiGeoreference.

> Questions on site? Call your lead pilot before improvising.
