



SAMPLE DELIVERABLES • DELAWARE VALLEY AERIAL

# 4 Granite Road

Everything one flight produced over a single residential property.  
Every figure and image in this document comes from that capture —  
nothing is illustrative.

CAPTURED

10 Jun 2026

PHOTOS

1,494

GROUND SAMPLE

0.147 in/px

PARCEL

0.26 acres

## 01 — THE CAPTURE

# One flight, one afternoon

A single mapping mission over a 0.26-acre residential lot. Everything in the rest of this document was derived from that one dataset — no second visit, no separate survey, no stock imagery.

The aircraft flew a structured grid with overlapping oblique passes, capturing 1,494 photos at an average of 25 ft above ground. Positions were recorded with RTK correction on every frame.

Processing solved all 1,494 images into a single connected block — 411,145 tie points across 3.5 million projections — which is the result you want: it means the imagery had enough overlap that nothing had to be stitched across a gap.

From that one solve come the orthomosaic, the surface model, the contours, the point cloud, the facade elevations and the 3D mesh. They are not separate products; they are different views of the same measured reality.

Total processing time was 6 hours 43 minutes, unattended. Turnaround on a capture this size is typically next-day.

|                                       |                                                 |                                        |
|---------------------------------------|-------------------------------------------------|----------------------------------------|
| PHOTOS SOLVED<br><b>1,494 / 1,494</b> | REPROJECTION ERROR<br><b>1.13 px</b>            | GEOREFERENCING RMSE<br><b>0.075 ft</b> |
| TIE POINTS<br><b>411,145</b>          | COORDINATE SYSTEM<br><b>WGS 84 / UTM 18N</b>    | CONNECTED COMPONENTS<br><b>1</b>       |
| FLIGHT ALTITUDE<br><b>25 ft AGL</b>   | AEROTRIANGULATION COVERAGE<br><b>3.49 acres</b> | PROCESSING TIME<br><b>6h 43min</b>     |

## What these numbers are, and are not.

Georeferencing RMSE of 0.075 ft describes the internal consistency of the RTK solution — how well the camera positions agree with each other. It is not the same as accuracy verified against independent ground checkpoints, which this flight did not carry. Where a project needs checkpoint-verified accuracy, we set ground control targets and report against them. That is a different flight and a different number, and we will say so up front.

## 02 — MEASURABLE SITE MAP

# Orthomosaic

A single top-down image of the whole site, geometrically corrected so that scale is uniform across the frame. Unlike an aerial photograph, distances measured on it are real distances.



Orthomosaic at 0.11 in/px output resolution. Rotated to the property axis — the house sits square to the frame because the grid was solved from the roof planes, not eyeballed.

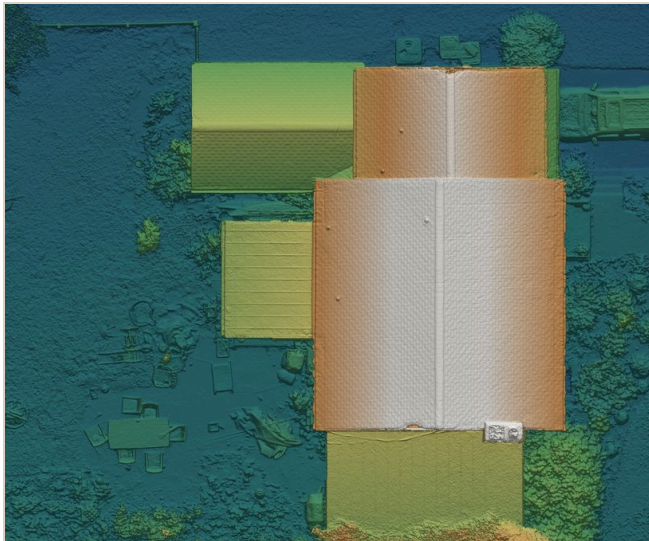
|                                        |                                      |                                          |
|----------------------------------------|--------------------------------------|------------------------------------------|
| OUTPUT RESOLUTION<br><b>0.11 in/px</b> | DELIVERED AS<br><b>GeoTIFF • PDF</b> | GEOREFERENCED<br><b>WGS 84 / UTM 18N</b> |
|----------------------------------------|--------------------------------------|------------------------------------------|

Because the file carries its coordinate system, it drops into CAD or GIS already in the right place — no manual scaling or rubber-sheeting. Roof areas, hardstanding, setbacks and access routes can all be measured directly off it.

03 — TERRAIN

# Surface model and contours

The same capture, expressed as elevation. One as a continuous raster, one as linework a civil engineer can draw against.



Digital surface model, hillshaded. Every roof plane, the driveway grade and the fall across the rear lawn are all present as measured height.



Contour linework at 0.30 m intervals, generated from the same surface and overlaid here on the orthomosaic for reference.

|                                                         |                                          |                                       |
|---------------------------------------------------------|------------------------------------------|---------------------------------------|
| <div>SURFACE MODEL</div> <div>GeoTIFF (DSM / DEM)</div> | <div>CONTOURS</div> <div>DXF · SHP</div> | <div>INTERVAL</div> <div>0.30 m</div> |
|---------------------------------------------------------|------------------------------------------|---------------------------------------|

Contours come out as DXF and SHP, so they open directly in AutoCAD, Civil 3D and QGIS. Grid-of-points and TIN surfaces are available from the same dataset where a surface model is wanted rather than linework.

04 — POINT CLOUD

# Dense measurable 3D

The underlying geometry, as millions of individually positioned points carrying real colour.  
This is the source the elevations and surfaces are derived from.



RGB point cloud, oblique view. Roof planes, chimney, fence line, retaining wall and canopy are all resolved as measurable geometry.

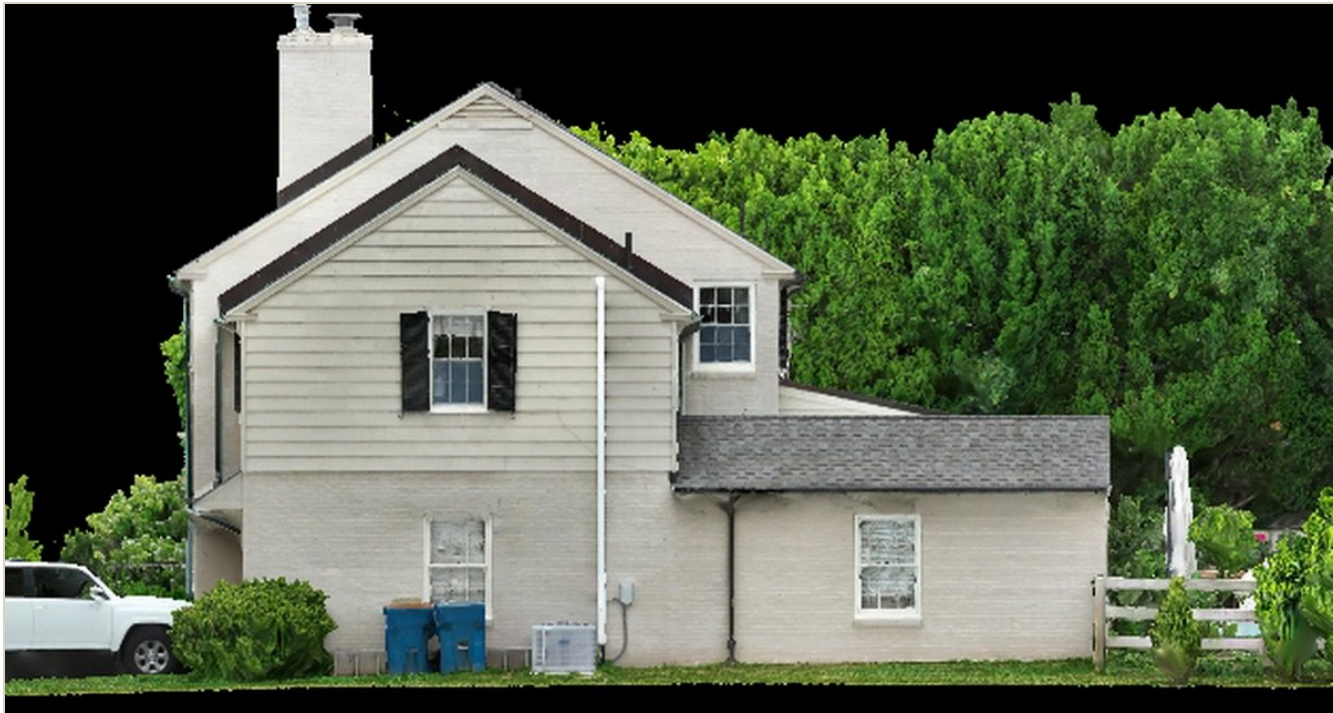
|                      |               |                   |
|----------------------|---------------|-------------------|
| FORMAT               | PROCESSING    | GROUND CLASSIFIED |
| LAS 1.4 · PTX · PNTS | Noise-reduced | Yes               |

Ground points are classified separately, so a bare-earth surface can be produced with vegetation and structures removed. LAS 1.4 imports directly to Revit, AutoCAD, Civil 3D and Carlson.

05 — EXISTING CONDITIONS

# Orthographic facade elevation

A true-to-scale elevation of the building as it stands, projected orthographically from the 3D capture. Not a photograph — a measured drawing base.



Side elevation at uniform scale. Because perspective is removed, window heads, sill heights, eaves and the chimney can be measured directly off the image.

| PROJECTION             | DELIVERED AS                 | ACCESS NEEDED      |
|------------------------|------------------------------|--------------------|
| Orthographic, to scale | GeoTIFF · PDF · DWG underlay | None — no scaffold |

For renovation, addition and restoration work this replaces a ladder and a tape measure. Roof detail, flashing, chimney condition and upper-storey fabric are captured at the same time, from angles that are otherwise difficult or unsafe to reach.

## 06 — DERIVED EXHIBITS

## Boundary context and roof planes

Two examples of what gets built on top of the base data once it exists.



Parcel lines from the New Castle County GIS record, reprojected and overlaid on the orthomosaic. The line falls on the visible fence and driveway, which is a useful independent check on both datasets. County parcel mapping is a tax product, not a boundary survey.



Panel layout placed on the measured roof facet —  $31.7^\circ$  pitch, measured from the capture rather than assumed, with a fire-code perimeter setback.

## 07 — DELIVERY

## What arrives, and in what format

Everything below came out of this one capture. A typical engagement takes a subset — you pay for what you need, not the whole list.

| DELIVERABLE                    | FORMAT                    | OPENS IN                                     |
|--------------------------------|---------------------------|----------------------------------------------|
| <b>Orthomosaic</b>             | GeoTIFF, PDF              | QGIS, ArcGIS, AutoCAD, Civil 3D              |
| <b>Surface model (DSM/DEM)</b> | GeoTIFF                   | QGIS, Civil 3D, Carlson                      |
| <b>Contour linework</b>        | DXF, SHP                  | AutoCAD, Civil 3D, QGIS                      |
| <b>Point cloud</b>             | LAS 1.4, PTX, PNTS        | Revit, AutoCAD, Civil 3D, Carlson            |
| <b>Grid of points</b>          | SHP, DXF, CSV, GeoJSON    | Civil 3D, Excel, QGIS                        |
| <b>TIN surface</b>             | LandXML, SHP, DXF         | Civil 3D, Carlson                            |
| <b>Textured 3D mesh</b>        | OBJ, FBX, PLY, OSGB, B3DM | SketchUp, Rhino, Blender, Twinmotion, Lumion |
| <b>Facade elevations</b>       | GeoTIFF, PDF              | Revit, AutoCAD, any viewer                   |
| <b>Web 3D model</b>            | Hosted link (GLB)         | Any browser, any device                      |
| <b>Processing report</b>       | PDF                       | Any viewer                                   |

### Coordinate system.

Delivered in WGS 84 / UTM zone 18N by default. If your project runs on a state plane grid or a site-specific datum, say so before the flight and everything ships in your coordinate system instead — converting afterwards is avoidable rework.

## 08 — HONEST LIMITS

# What this does not do

The useful half of any capability conversation. If one of these matters on your project, it is better known now than discovered later.

| LIMITATION                                      | WHAT IT MEANS FOR YOU                                                                                                                                                                       |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No ground control on this flight</b>         | Positions come from RTK alone. Internally consistent to 0.075 ft RMSE, but not verified against independent checkpoints. Where that matters we set control targets and report against them. |
| <b>Photogrammetry cannot see through canopy</b> | Ground under dense tree cover is interpolated, not measured. On heavily wooded sites, LiDAR or a ground crew is the right answer for bare earth.                                            |
| <b>Not a boundary survey</b>                    | We produce measurements, not boundary opinions. Property lines shown anywhere in this document come from county GIS records. A licensed surveyor sets boundaries.                           |
| <b>Weather and season dependent</b>             | Steady wind above roughly 20 mph, rain, or heavy overcast will move a flight. Leaf-off gives markedly better ground coverage on wooded sites.                                               |
| <b>Airspace</b>                                 | Controlled airspace needs LAANC authorization, usually same-day. Some locations require more notice; we check before quoting a date.                                                        |
| <b>Interiors</b>                                | This is exterior capture. Interior scanning is a different instrument and not something we currently offer.                                                                                 |

**The first flight is free.**

For a new client we will capture one site at no cost and deliver the full output, so the work can be judged on your own project rather than on someone else's sample. No obligation either way.

**Sam David** · Delaware Valley Aerial

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