

LANDWISE

LAND INTELLIGENCE SERVICES

LAND ANALYSIS

Zoning · Terrain · Slope · Drainage · Solar · Buildability

▲ HIGHEST
+34 m

Koh Phangan

SURVEY METHOD Drone Photogrammetry
DATE 19 June 2026
SCOPE 9-part land analysis

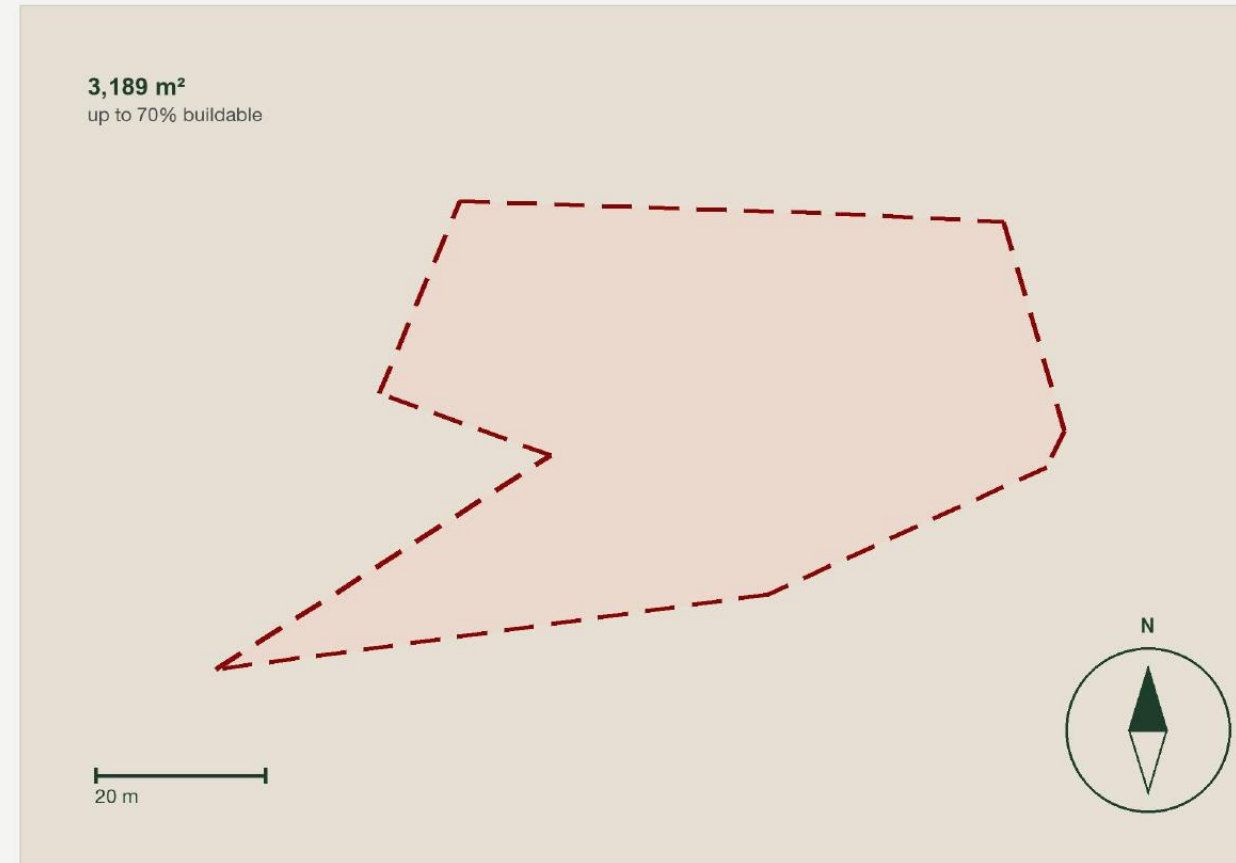
ZONE CLASSIFICATION

- Koh Pha-ngan Community Town Plan (B.E. 2558 / 2015)
- Permitted use: Residential
- Terrain relief ~34 m across the plot (drone survey — relative)

PLANNING NOTES

- Low-density residential development encouraged
- Buildings should follow the natural terrain
- One larger or several smaller structures permitted within the per-unit cap
- Setbacks, access, drainage and landscaping set at site-plan stage

PLOT BOUNDARY



KOH PHA-NGAN ZONING — WHERE THIS PLOT SITS



GREEN
Conservation
300 m² · 70%



YELLOW
Low density
1,000 m² · 70%
● THIS PLOT



ORANGE
Medium density
2,000 m² · 70%



RED
High density
2,000 m² · 70%

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BUILDING REGULATIONS

YELLOW ZONE
Low-Density Residential

PROJECT DETAILS

Survey	Drone photogrammetry
Land size	3,189 m ²
Terrain relief	~34 m
Town plan	B.E. 2558

BUILDING ENVELOPE

Max height	12 m
Footprint / unit	1,000 m ²
Max coverage	70%
Max dev area	2,232 m ²

PERMITTED USES

- Residential dwellings

Indicative summary of the Koh Pha-ngan Community Town Plan (B.E. 2558). Confirm the final envelope and any beach / river overlays with the local authority (Or Bor Tor) before design.



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DEM ELEVATION ANALYSIS

LARAS

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
 Survey: Drone Photogrammetry
 CRS: EPSG:32647
 Resolution: 0.02m

Relief: 34.2 m
 Datum: plot's lowest point
 (heights relative — no RTK)
 Std Deviation: 8.5m

Analysis: Elevation + Terrain
 Slope/Aspect: ~1 m terrain scale

LEGEND



Site Boundary



0 10 20 30 m



TERRAIN
 Relief 34.2 m
 Range 0 → +34 m
 Datum plot's lowest point



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TOPOGRAPHIC CONTOUR MAP

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
 Survey: Drone Photogrammetry
 CRS: EPSG:32647
 Contour Interval: 0.5m
 Index Interval: 5.0m
 Relief: 34.2m
 Datum: plot's lowest point (0 m)
 (heights relative — no RTK)
 Total Contours: 67
 Index: 6 | Intermediate: 61

LEGEND

- Contours
- Index Contours
- Intermediate Contours
- Land Boundary



Coordinate System: EPSG:32647
 Grid Interval: 20 units

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SLOPE ANALYSIS

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
Survey: Drone Photogrammetry
CRS: EPSG:32647
Relief: 34.2m
Datum: plot's lowest point (0 m)
(heights relative — no RTK)
Median Slope: 29.3° (~56%)
Mean Slope: 28.8° (~55%)
Gentle ground (0-15°): 26%

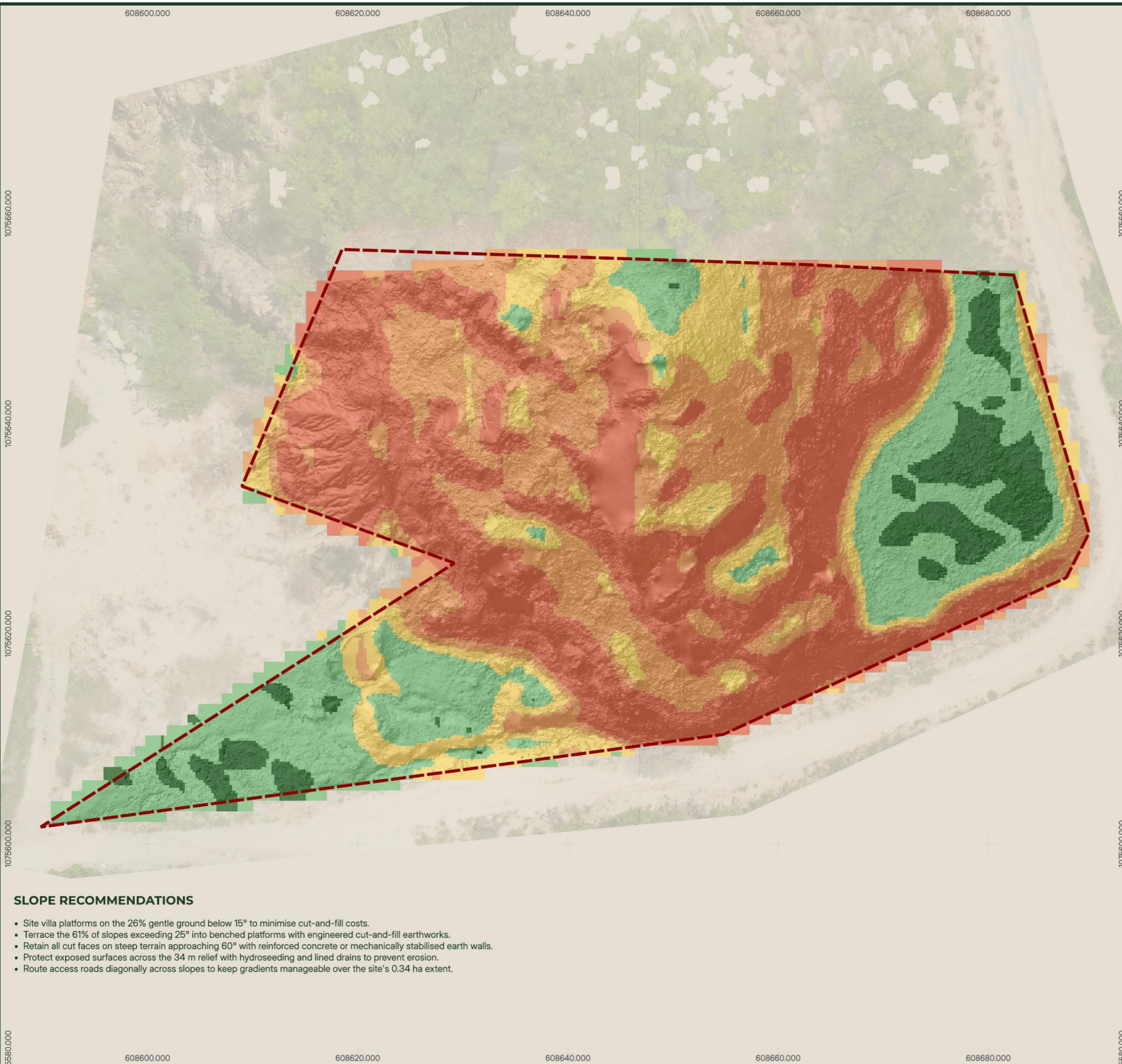
LEGEND

- Flat (0-5°)
- Gentle Slope (5-15°)
- Moderate Slope (15-25°)
- Steep (25-35°)
- Very Steep (35°+)

0 10 20 30 m



Coordinate System: EPSG:32647
Grid Interval: 20 units



SLOPE RECOMMENDATIONS

- Site villa platforms on the 26% gentle ground below 15° to minimise cut-and-fill costs.
- Terrace the 61% of slopes exceeding 25° into benched platforms with engineered cut-and-fill earthworks.
- Retain all cut faces on steep terrain approaching 60° with reinforced concrete or mechanically stabilised earth walls.
- Protect exposed surfaces across the 34 m relief with hydroseeding and lined drains to prevent erosion.
- Route access roads diagonally across slopes to keep gradients manageable over the site's 0.34 ha extent.

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SLOPE PROFILE ANALYSIS

Koh Phangan, Thailand

SITE CLASSIFICATION

Classification: STEEP
Elevation: 0 → +34m (rel.)
Total Relief: 34.1m
Fall-line Grade: 32.1°
Fall-line Run: 45.3m

CORRIDOR ANALYSIS

Best Building Zone:
Section C (34.2°)

Best Access Route:
Section D (18.0°)

Steepest Zone:
Section B (37.1°)

SECTION SUMMARY

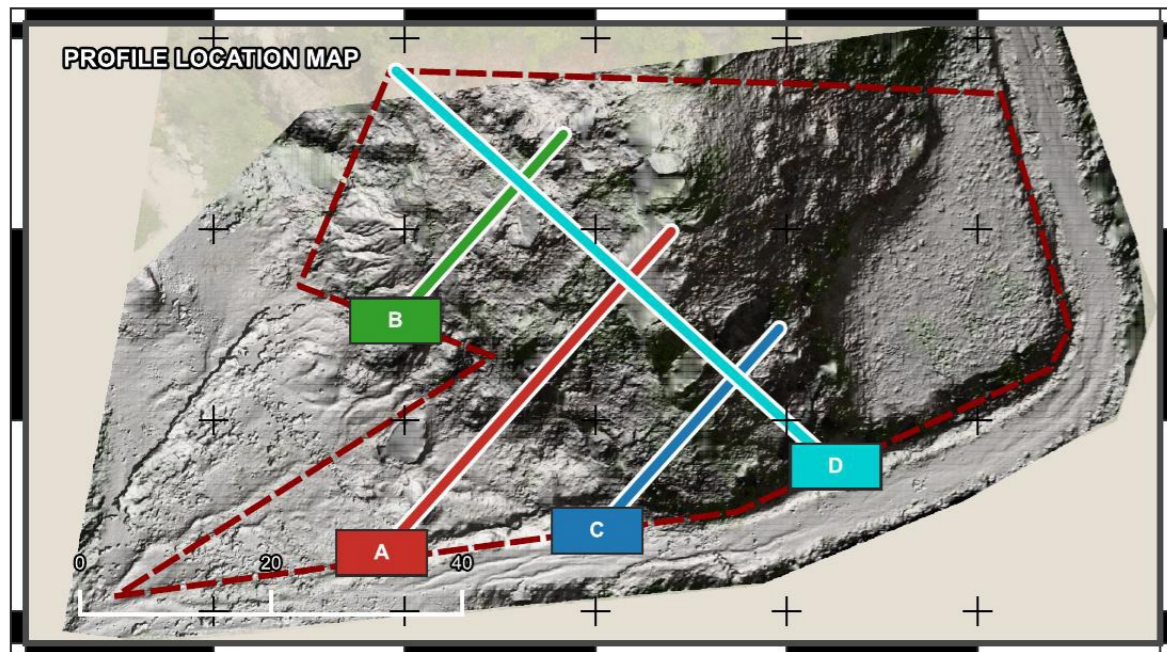
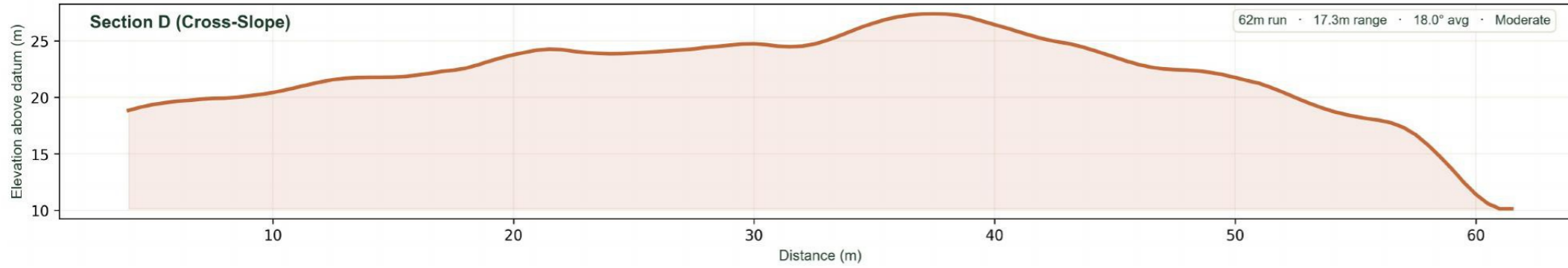
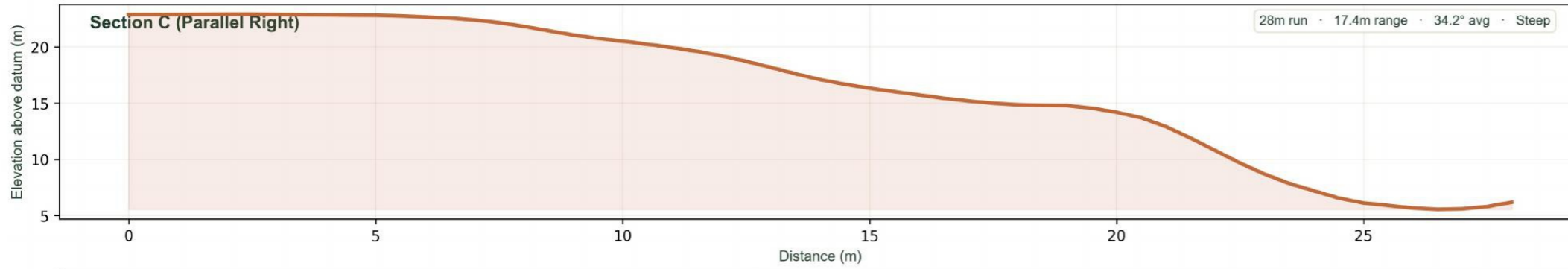
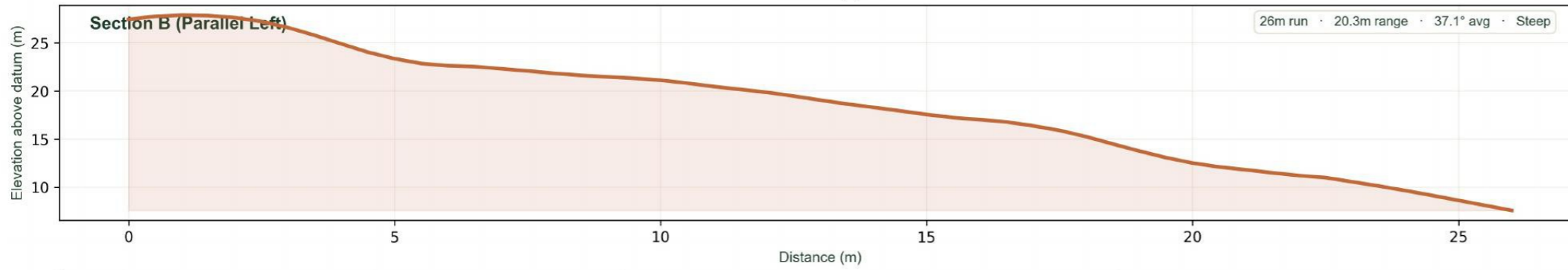
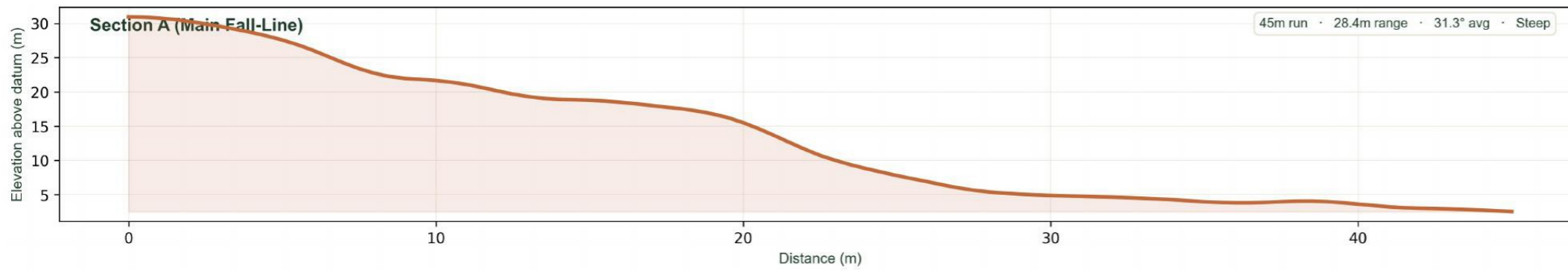
A: 31.3° (Steep)
B: 37.1° (Steep)
C: 34.2° (Steep)
D: 18.0° (Moderate)

DATA SOURCE

DTM: Drone photogrammetry
(Bare earth elevation)

Elevations for planning
analysis only.

Professional survey required
for final design.



CROSS-SECTIONS

- A Main Fall-Line
- B Parallel Left
- C Parallel Right
- D Cross-Slope

Coloured lines mark where each cross-section was cut across the parcel. The charts above plot the ground profile along each line.



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DRAINAGE ANALYSIS

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
Survey: Drone Photogrammetry
CRS: EPSG:32647
Relief: 34.2m
Datum: plot's lowest point (0 m)
(heights relative — no RTK)
Mean Slope: 65.9% (median 56.7%)
Major Channels: 4
Tributaries: 13
Total Segments: 54

LEGEND

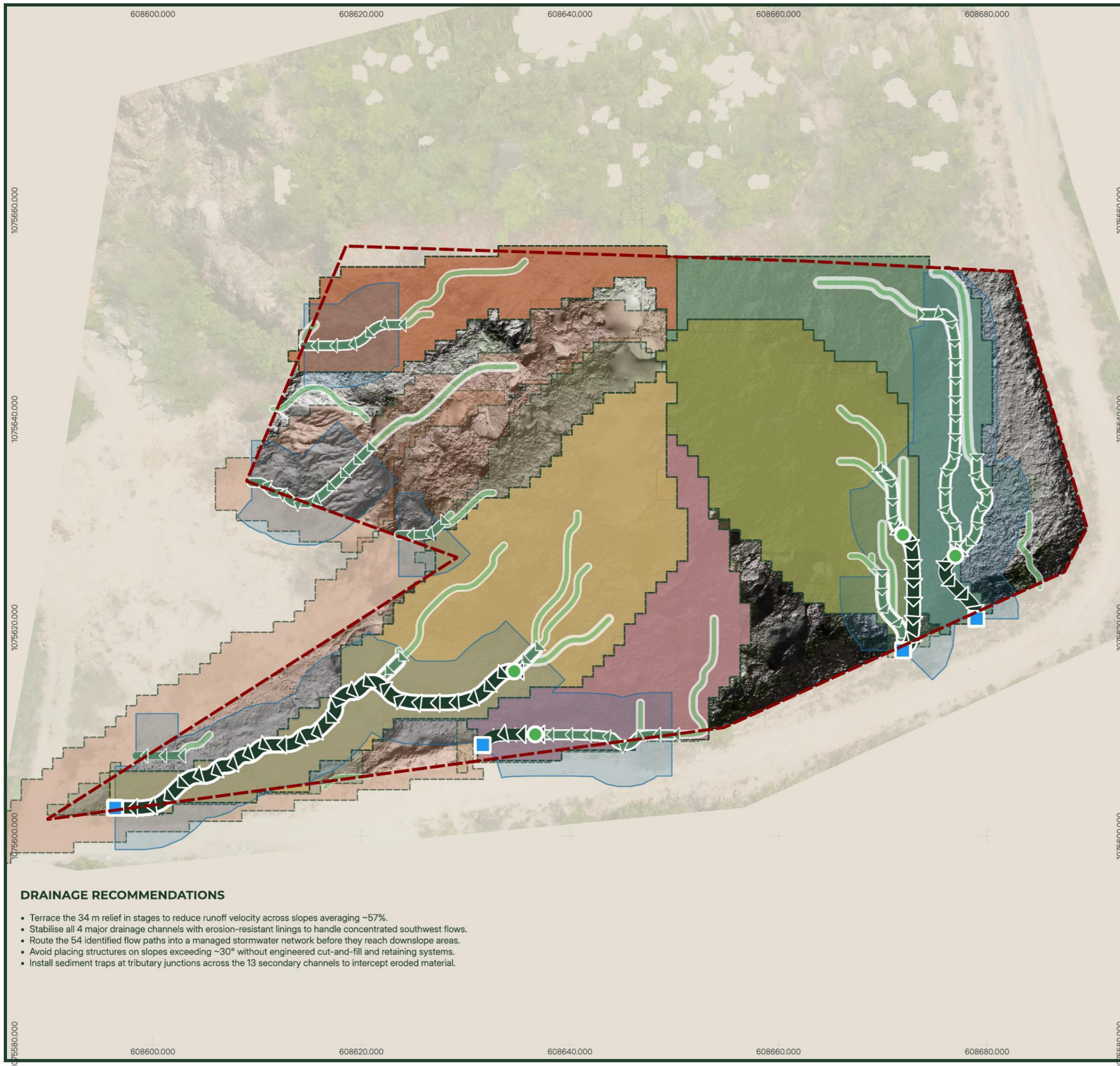
- Major Channels
- Tributaries
- Detail Drainage
- Concentration Zone (keep clear)
- Sub-Basins (drainage areas)
 - Basin 1
 - Basin 2
 - Basin 3
 - Basin 4
 - Basin 5

Each colour-coded sub-basin drains to one outlet — plan drainage per area.

0 10 20 30 m



Coordinate System: EPSG:32647
Grid Interval: 20 units



DRAINAGE RECOMMENDATIONS

- Terrace the 34 m relief in stages to reduce runoff velocity across slopes averaging ~57%.
- Stabilise all 4 major drainage channels with erosion-resistant linings to handle concentrated southwest flows.
- Route the 54 identified flow paths into a managed stormwater network before they reach downslope areas.
- Avoid placing structures on slopes exceeding ~30° without engineered cut-and-fill and retaining systems.
- Install sediment traps at tributary junctions across the 13 secondary channels to intercept eroded material.

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SOLAR ORIENTATION & EXPOSURE

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
Survey: Drone Photogrammetry
CRS: EPSG:32647 · ~1 m grid
Relief: 34.2m
Datum: plot's lowest point (0 m)
(heights relative — no RTK)

SUN PATH

Sunrise: 06:05 UTC+7
66° (ENE)
Sunset: 18:45 UTC+7
294° (WNN)
Daylight: 12.7 hours

(Summer Solstice data)

SOLAR INTERPRETATION

Colours show which way the land faces relative to the sun's path — morning, afternoon or full-sun exposure. Open-terrain basis (excludes tree-canopy shading).

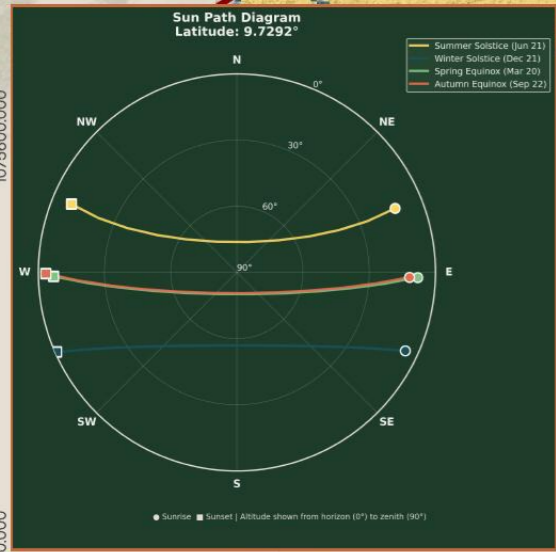
LEGEND

- Neutral Terrain
- Cooler Slopes
- Morning Sun
- Full Sun
- Afternoon Heat

0 10 20 30 m



Coordinate System: EPSG:32647
Grid Interval: 20 units



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BUILDABILITY ANALYSIS

Koh Phangan, Thailand

PROJECT DETAILS

Date: 19 June 2026
Survey: Drone Photogrammetry
CRS: EPSG:32647
Relief: 34.2m
Datum: plot's lowest point (0 m)
(heights relative — no RTK)
Median Slope: 29.3° (~56%)
Mean Slope: 28.8° (~55%)
Simple ground (0-15°): 26%
Needs engineering (25°+): 61%

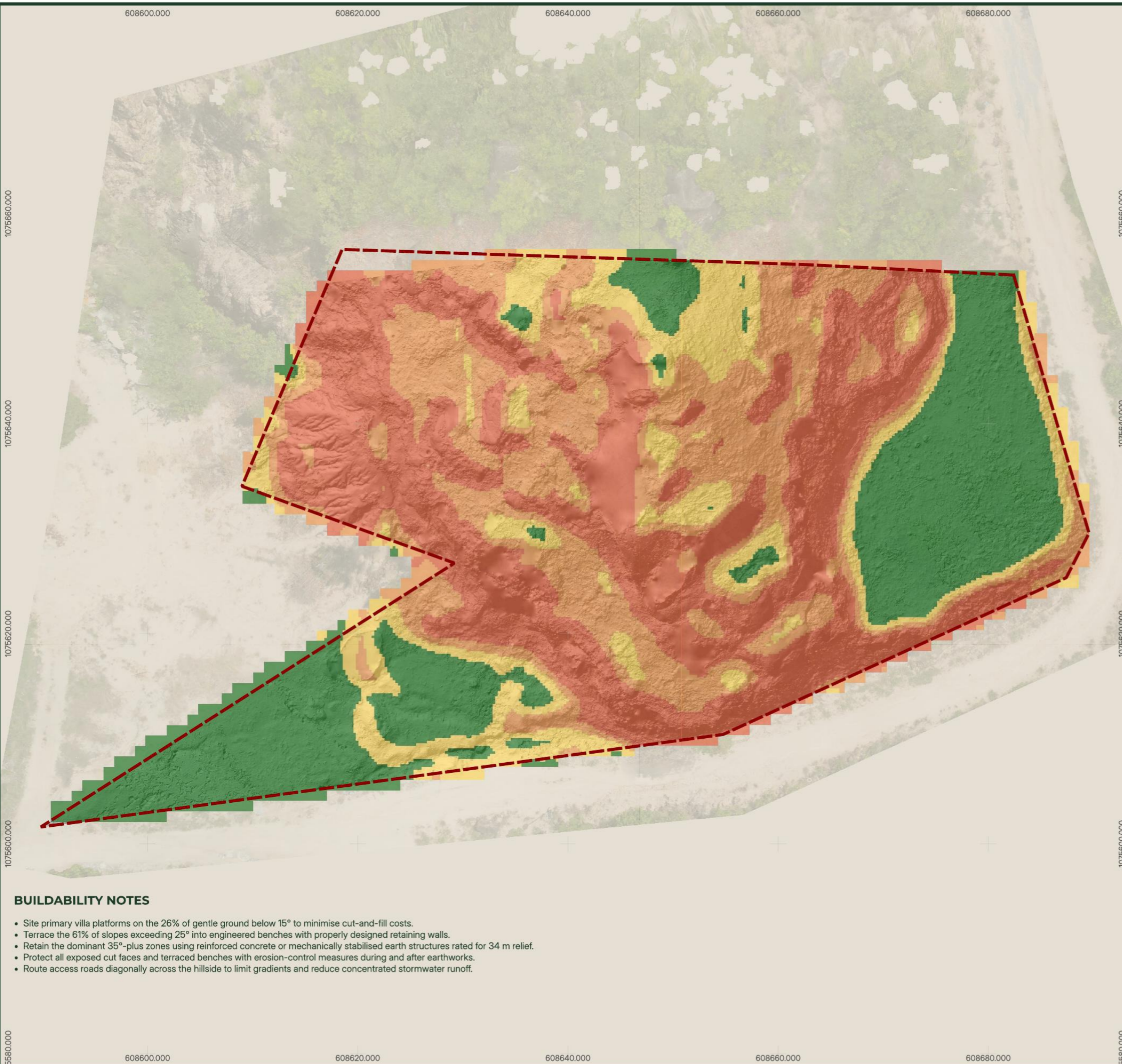
LEGEND

- Simple platforms (0-15°)
- Standard terracing (15-25°)
- Engineered terracing (25-35°)
- Heavy retaining (35°+)

0 10 20 30 m



Coordinate System: EPSG:32647
Grid Interval: 20 units



BUILDABILITY NOTES

- Site primary villa platforms on the 26% of gentle ground below 15° to minimise cut-and-fill costs.
- Terrace the 61% of slopes exceeding 25° into engineered benches with properly designed retaining walls.
- Retain the dominant 35°-plus zones using reinforced concrete or mechanically stabilised earth structures rated for 34 m relief.
- Protect all exposed cut faces and terraced benches with erosion-control measures during and after earthworks.
- Route access roads diagonally across the hillside to limit gradients and reduce concentrated stormwater runoff.

THE VERDICT

Steep 34 m relief with only 26% gentle ground makes this a challenging hillside site requiring engineered platform design.

01 **Terrain**
Roughly 34 m of relative relief across 2 rai, forming a steep hillside draining to the west-southwest.

02 **Buildability**
Only 26% of the plot sits below 15°; over 60% exceeds 25°, severely limiting conventional pad-style construction.

03 **Drainage**
Four major channels funnel stormwater WSW at 253°, demanding robust cross-slope drainage infrastructure.

04 **Solar**
Full sun covers 44% of the site with 33% afternoon heat exposure, favouring west-facing living spaces.

05 **Zoning**
Yellow low-density residential allows up to 2,232 m² coverage at 70%, with a 12 m height cap suiting stepped villa forms.

RECOMMENDED NEXT STEP

Commission a geotechnical investigation of the steep zones to confirm cut-and-fill feasibility before any design commitment.

KEY FINDINGS

Land Feasibility Summary

Koh Phangan, Thailand

SURVEY SNAPSHOT

Survey	Drone photogrammetry
Land size	3,189 m ²
Title size	2.0 rai
Terrain relief	~34 m
Median slope	29°
Buildable (0–15°)	26%
Zone	Yellow

ANALYSES IN THIS DECK

- Building regulations
- Elevation & contours
- Slope & buildability
- Drainage
- Solar & aspect