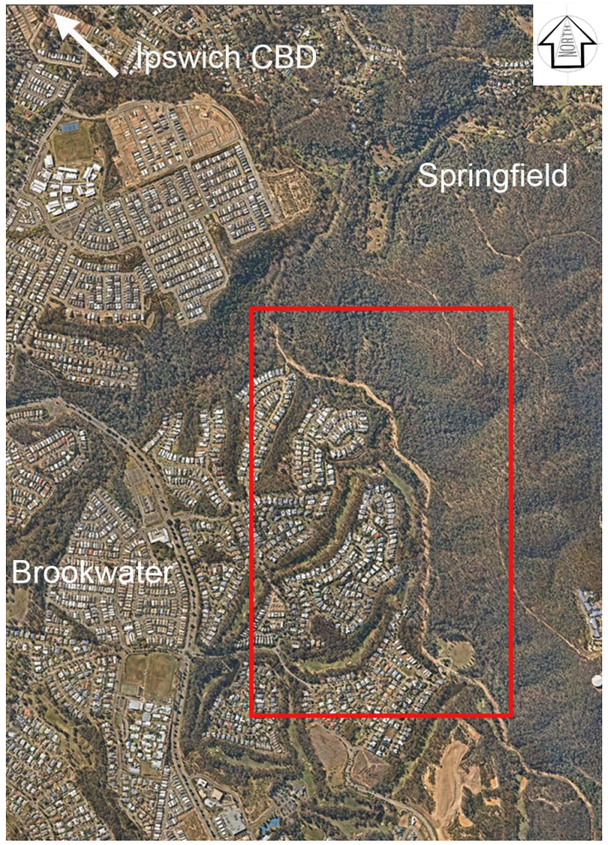


Key Map

Project Scope

Opossum Creek Corridor was retained as an integral habitat corridor in the Springfield Infrastructure Agreement in light of the extensive clearing of the original native dry vine scrub in the development footprint. The remaining vegetation along the creek is of significant ecological importance due to its floral diversity, its function as a corridor for wildlife movement and the critical ecosystem services it provides such as protecting and stabilising the erosive soils in and around the Opossum Creek. During the construction and upgrade of a second sewer pipeline along the site, additional vegetation was cleared and soils were extensively disturbed throughout the corridor.

As part of the Springfield Infrastructure Agreement disturbed areas were to be rehabilitated through revegetation and effective erosion and sediment controls. At the project hand over ICC representatives were not satisfied with the condition of the sites rehabilitation and identified a number of areas where it required improvements and or additional treatments.

The scope of this project is to identify the areas where original rehabilitation measures have been unsuccessful and or additional works are required, specify the mitigation measures needed to return the site to its former functionality and prioritise these works in terms of their impact on the site's long term sustainability.

The following Opossum Creek Rehabilitation Plan highlights these areas where further rectification works are required, places these in their order of priority and provides further detail on the mitigation measures required to return these to an acceptable condition.

Rehabilitation Works Priority List

Priority 1 Waterway Crossings x 7 and adjoining revegetation	Dense planting from edge of waterway to the sediment fence at the top of the bank with species (to be determined) at 4 per sqm. Soil ameliorant and mulching to 100mm in adjoining revegetated buffer zone.
Priority 2 Access Track and Removal of Builder's Waste	Access Track - Remove large rocks; blade to a suitable grade; repair erosion; Install Whoa-Boys for water diversion; Check dams to be installed in table drains. Remove builder's waste material such as iron bars, logs and large rocks, witches hat etc.
Priority 3 Batter Stabilisation and Sediment Control	Batter stabilisation - mulch a 2m band and plant out with Lomandra species along the toe of batter to large Blue Gum.
Priority 4 Weed Treatment	Revegetate Re spray with native seed mix.
Priority 5 Rehabilitation	Weed treatment to disturbed areas of the Opossum Creek Wildlife Corridor extent.

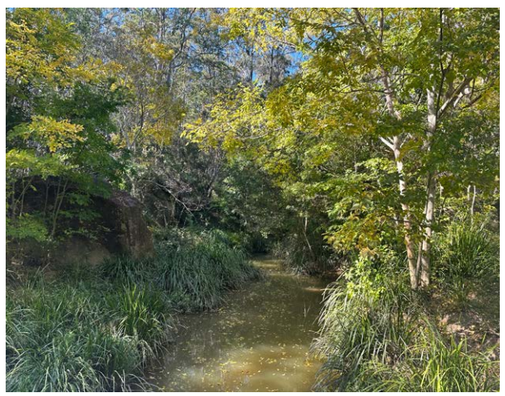


Image shows a healthy section of Opossum Creek riparian area.


Image shows a section of Opossum Creek that requires rehabilitation to the riparian area so that it can reach a healthy maturity as show in opposite image.

Opossum Creek Overall Site Plan

PRIORITY 1 - WATERWAY CROSSINGS AND ADJOINING REVEGETATION

Legend

Waterway Crossing and adjoining revegetation areas

PROJECT SCOPE

- Remove all rubbish, builders waste for the site, retain natural rocks and logs within revegetation areas
- Treat weeds form the edge of the waterway to the sediment fence above rock walls. Plant entire area with suitable mix of native grasses and sedges at 4 per sqm, mulch and plant a 2m band of Lomandra hystrix above the rock wall
- Treat weeds within the revegetated area adjoining the waterway, apply gypsum to the soil surface. Mulch entire area with 100mm depth forest mulch
- Reinstate sediment fence to functionality.

Weed treatment and apply gypsum to soil surface prior to mulching.

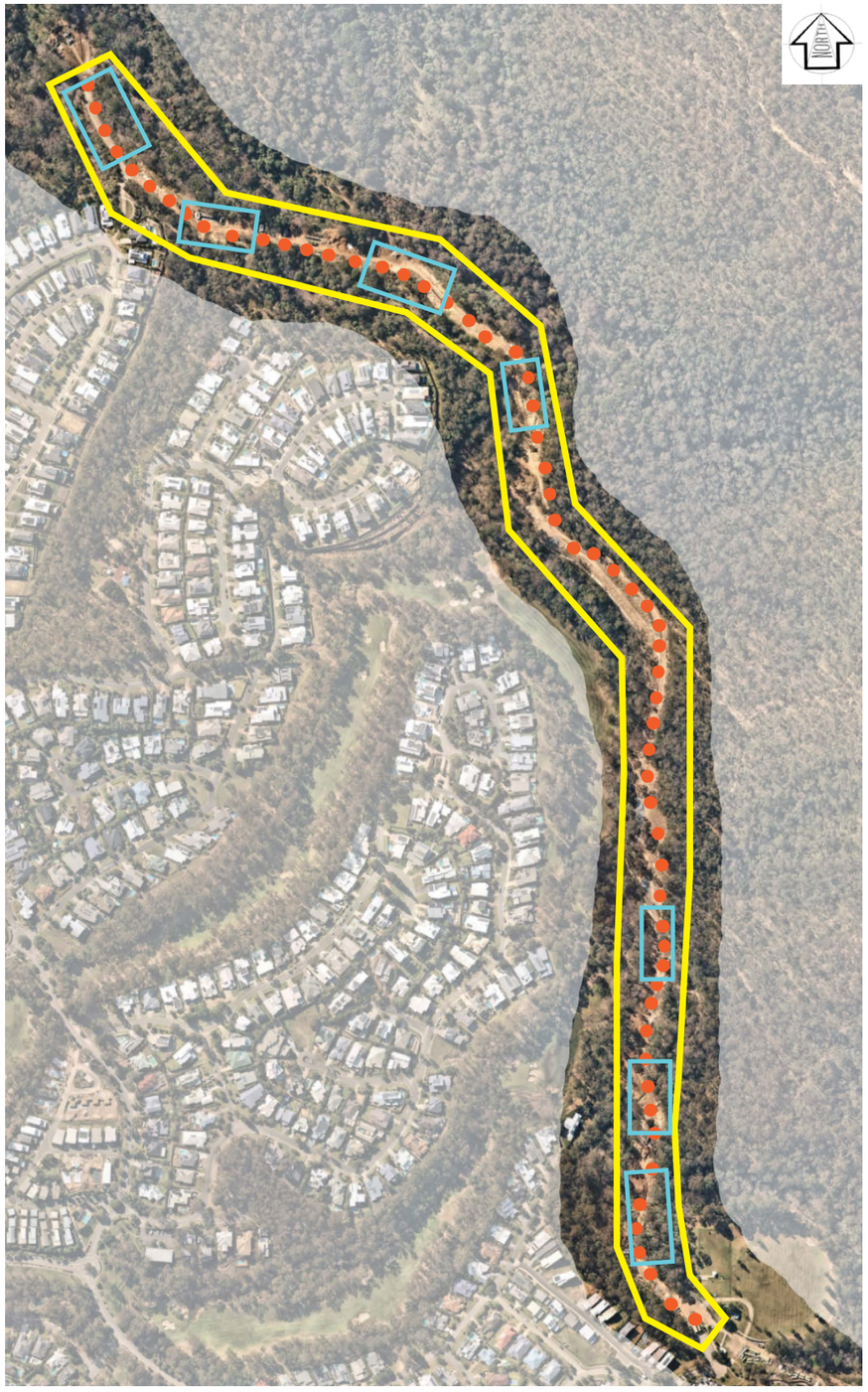
Reinstate sediment fence to functionality.

Area to be mulched and planted out with Lomandra species to edge of rock work.

Reinstate sediment fence to functionality.

Area to be mulched and planted out with Lomandra species to edge of rock work.

Banks to be mulched and planted out with Lomandra species.



Opossum Creek Overall Site Plan

PRIORITY 2 - ACCESS TRACK AND BUILDER'S WASTE

Legend

Builder's waster removed from entire disturbed area.

Indicative location of access track to be bladed and water diversions to be installed.

- Access Track - Remove large rocks from track structure; blade to a suitable grade to divert the water off the track and into the table drains; repair erosion; install Whoa-Boys to assist water diversion
- Remove builder's waste material such as iron bars, logs and large rocks, witches hat, hessian etc from entire disturbed area
- Install rock check drains into eroded rills
- Install check drains into table drains at 5m intervals. (Rocks and logs can be retained in revegetation areas).

Builder's waste to be removed prior to mulching rehabilitation areas in the waterway crossings.

Install rock check drains into eroded rills.

Access track requires rock removal, blading and water diversions installed.

Access track requires rock removal, blading and water diversions installed.

Rocks to be removed from rehabilitation site.

Witches Hat to be removed from rehabilitation site.

Logs, timber, steel bars to be removed from rehabilitation site.

Building waste to be removed from site.

Metal objects such as reinforcing steel to be removed from site.

Excess concrete slurry to be removed from site.

PRIORITY 3 - BATTER STABILISATION

Legend

Indicative location for batter stabilisation

PROJECT SCOPE

- 2m wide band of mulch to be installed and planted out with Lomandra hystix at 500mm centres, from the top of boulder wall along the length of the batter
- Install 4m wide mulched band tapered to 2m at the batter, planted with Lomandra at 500mm spacings from large blue gum to start of rock wall below the batter to prevent sediment from the disturbed site washing on to path
- Repair eroded rills along the batter.

Repair eroded rills along the batter.

Repair eroded rills along the batter.

2m wide band of mulch to be installed and planted out with Lomandra hystrix.

2m wide band of mulch to be installed and planted out with Lomandra hystrix.

Install 4m wide mulched band tapered to 2m planted with Lomandra at 500mm spacings from large blue gum to start of rock wall.

Install 4m wide mulched band tapered to 2m planted with Lomandra at 500mm spacings from large blue gum to start of rock wall.

Opossum Creek Overall Site Plan

PRIORITY 4 - WEED MANAGEMENT AND ASSISTED REGENERATION

Legend

12 months of weed management and assisted regeneration through entire corridor

- Conduct weed management through entire corridor focusing on the disturbed fringes with existing vegetation and broad leaf weeds within the hydroseeded areas
- Retain and assist natural regeneration throughout the site.

Lantana (lantana montevidensis) to be treated

Weed management to disturbed fringes.

Fireweed (Senecio madagascariensis) to be treated .

Weed management required along corridor.

Weed management of Wild Tobacco required.

Weed management of Devil's Fig required.

PRIORITY 5 - REHABILITATION

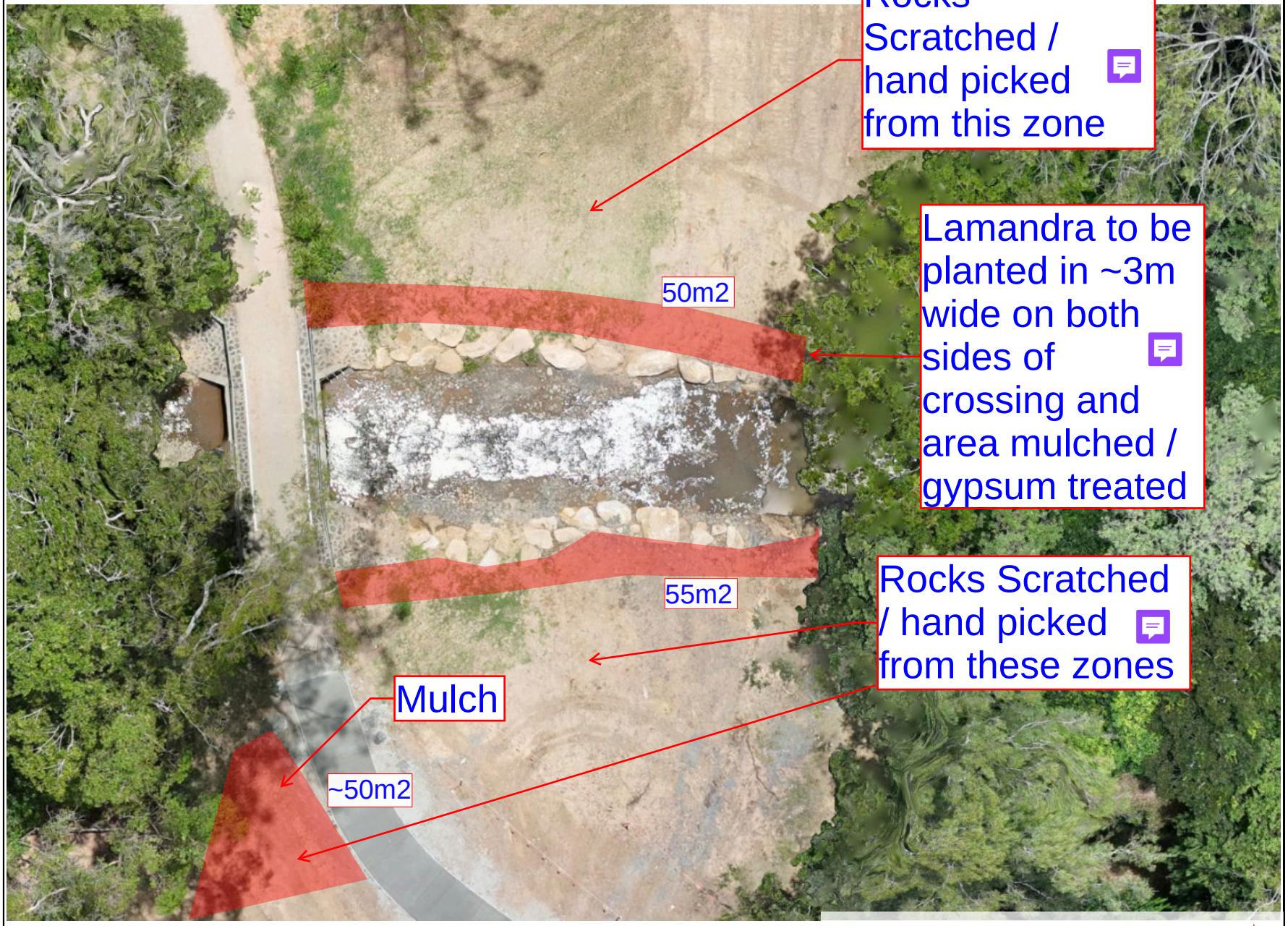
Legend

Indicative areas to be rehabilitated.

- Rehabilitate area where hydroseeding has failed by re spraying with native seed mix. Species of seed mix to be specified by ICC.

Areas to be rehabilitated where hydroseeding has failed.

Areas to be rehabilitated where hydroseeding has failed.



LEGEND

BMD

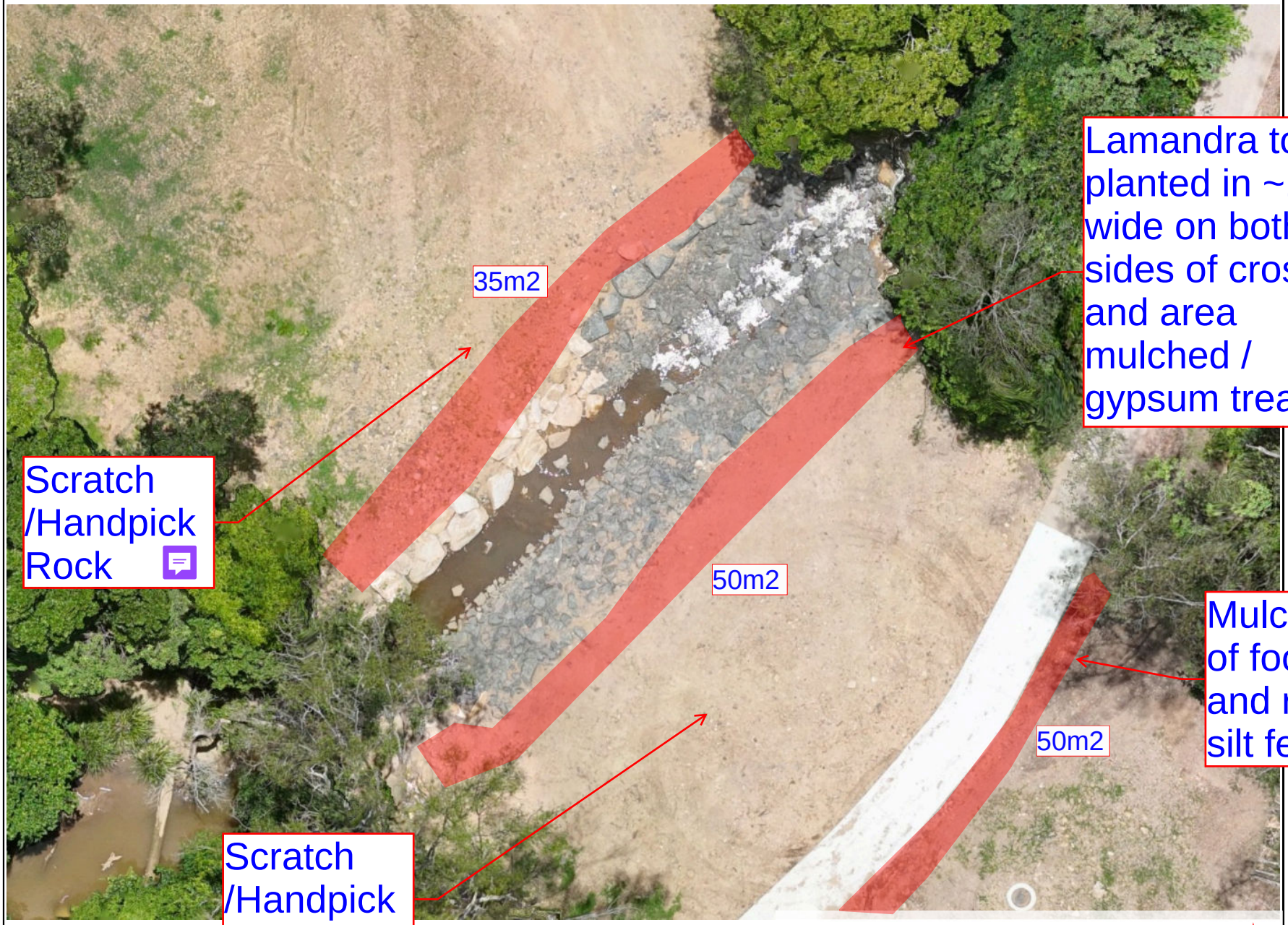
Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller

LEGEND



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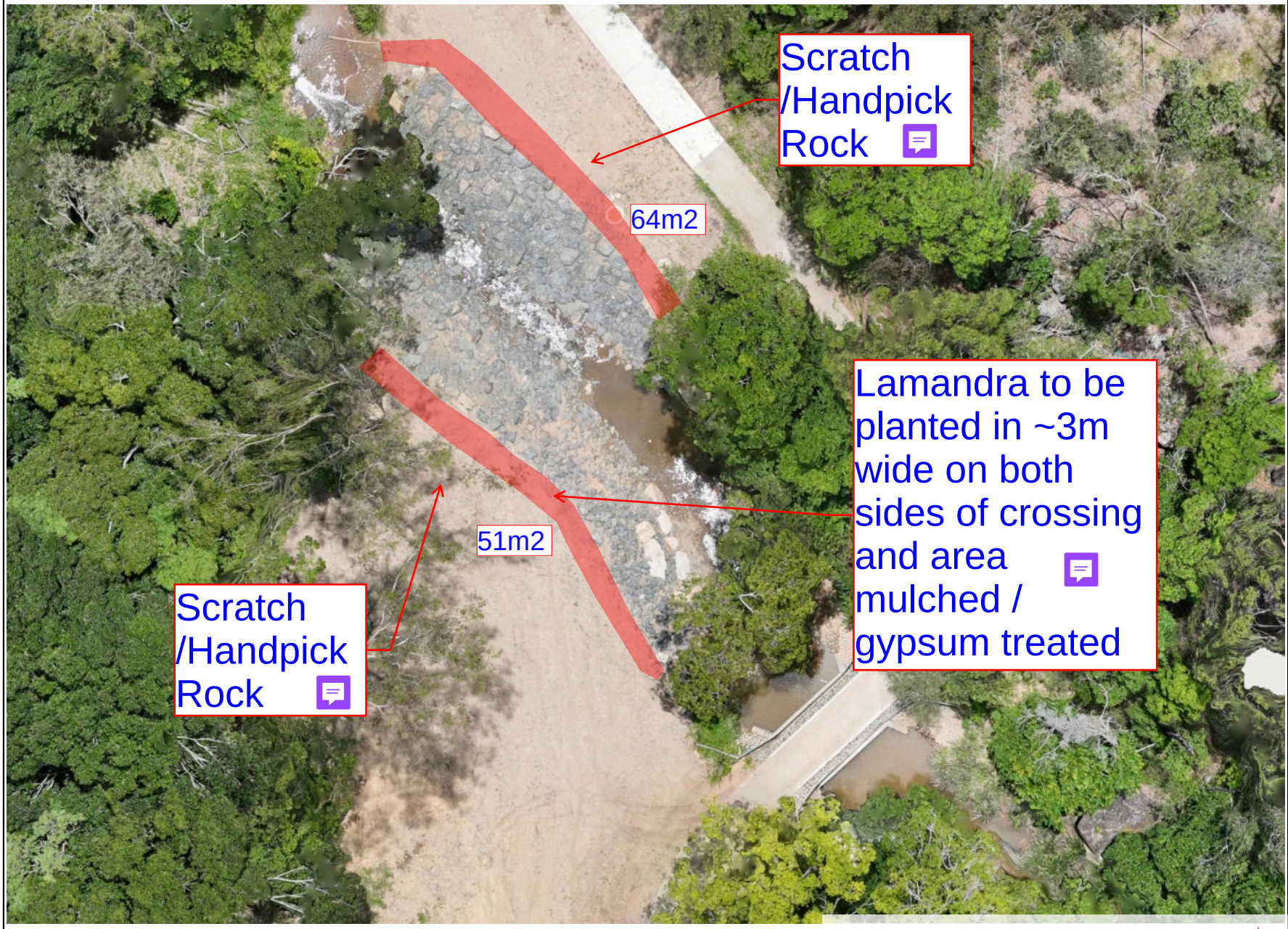

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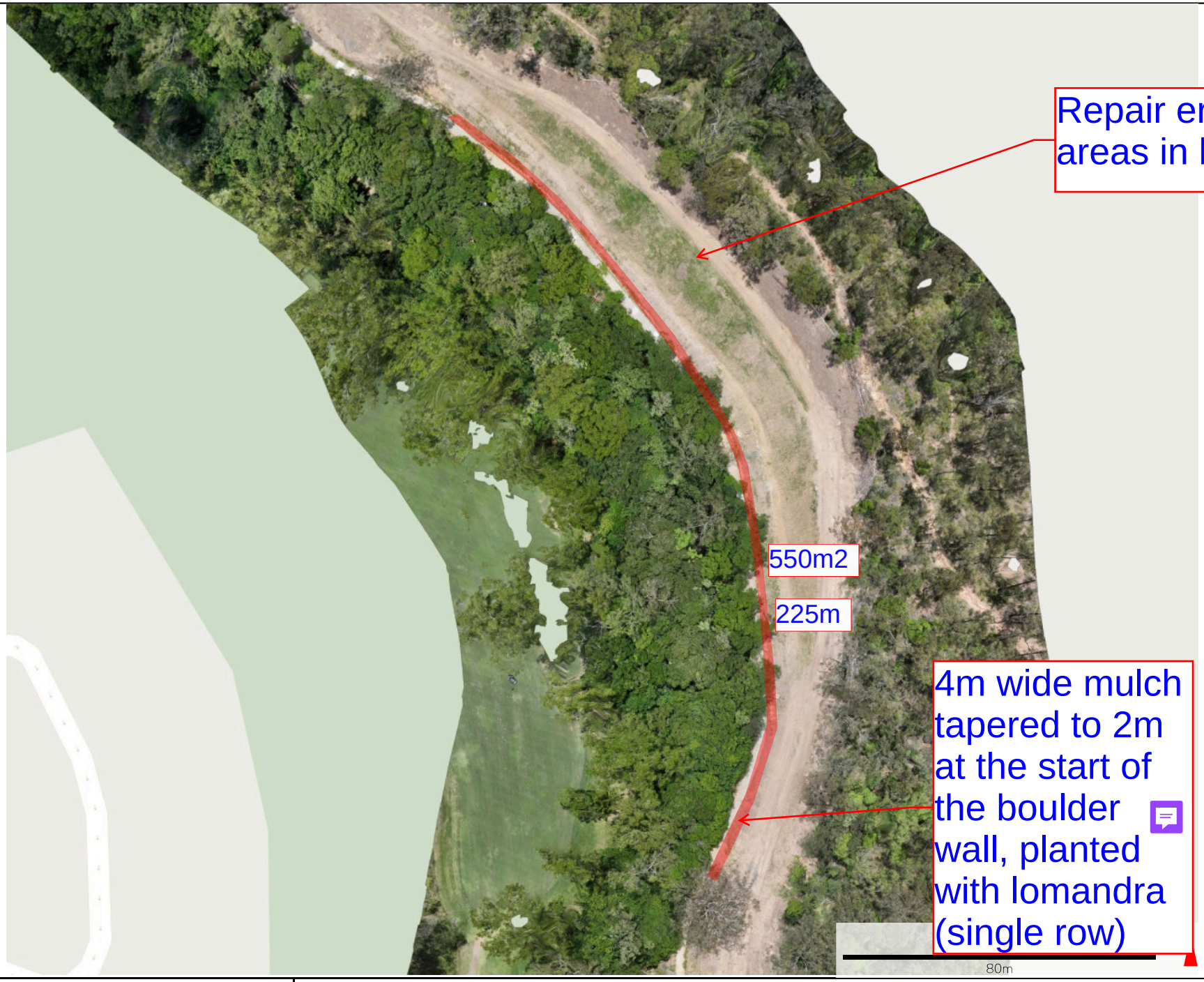

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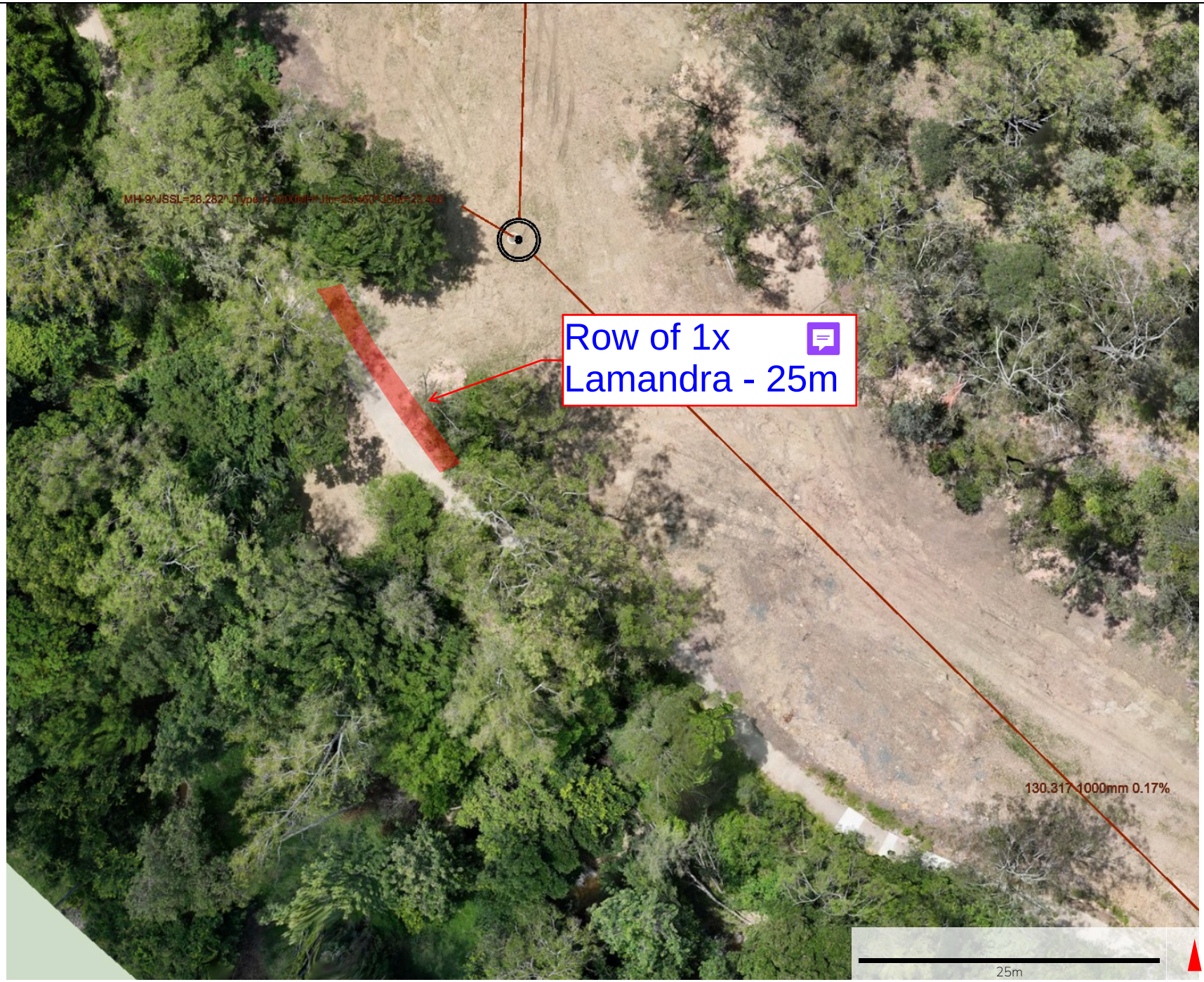

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sv-Bdy Reg

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dgn-Sewer Symbol

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dgn-Sewer Text

OPCS2-MGA_Sewer_IFC_Design.dxf dgn-Sewer Pipe

dgn-Sewer Pipe

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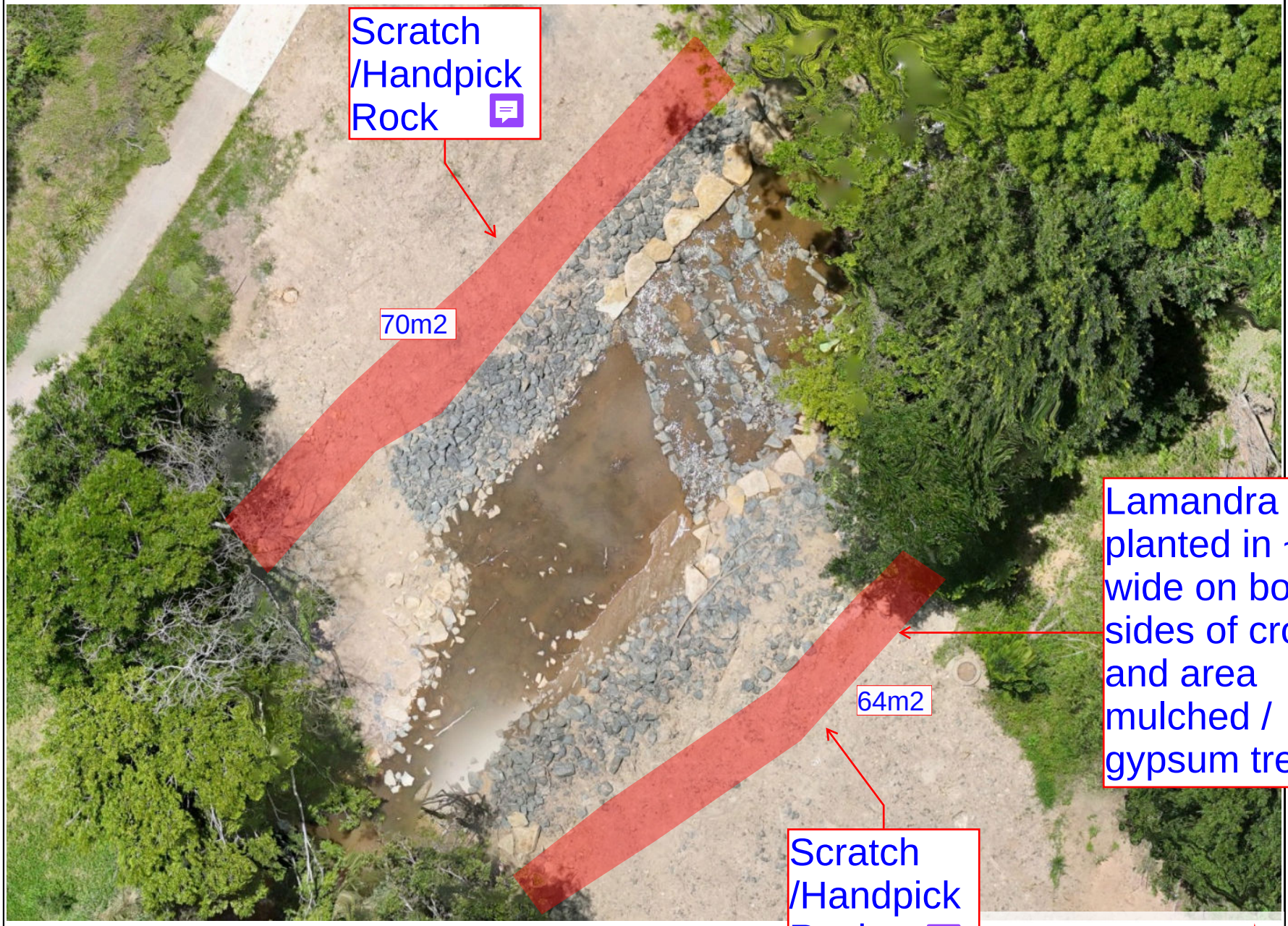

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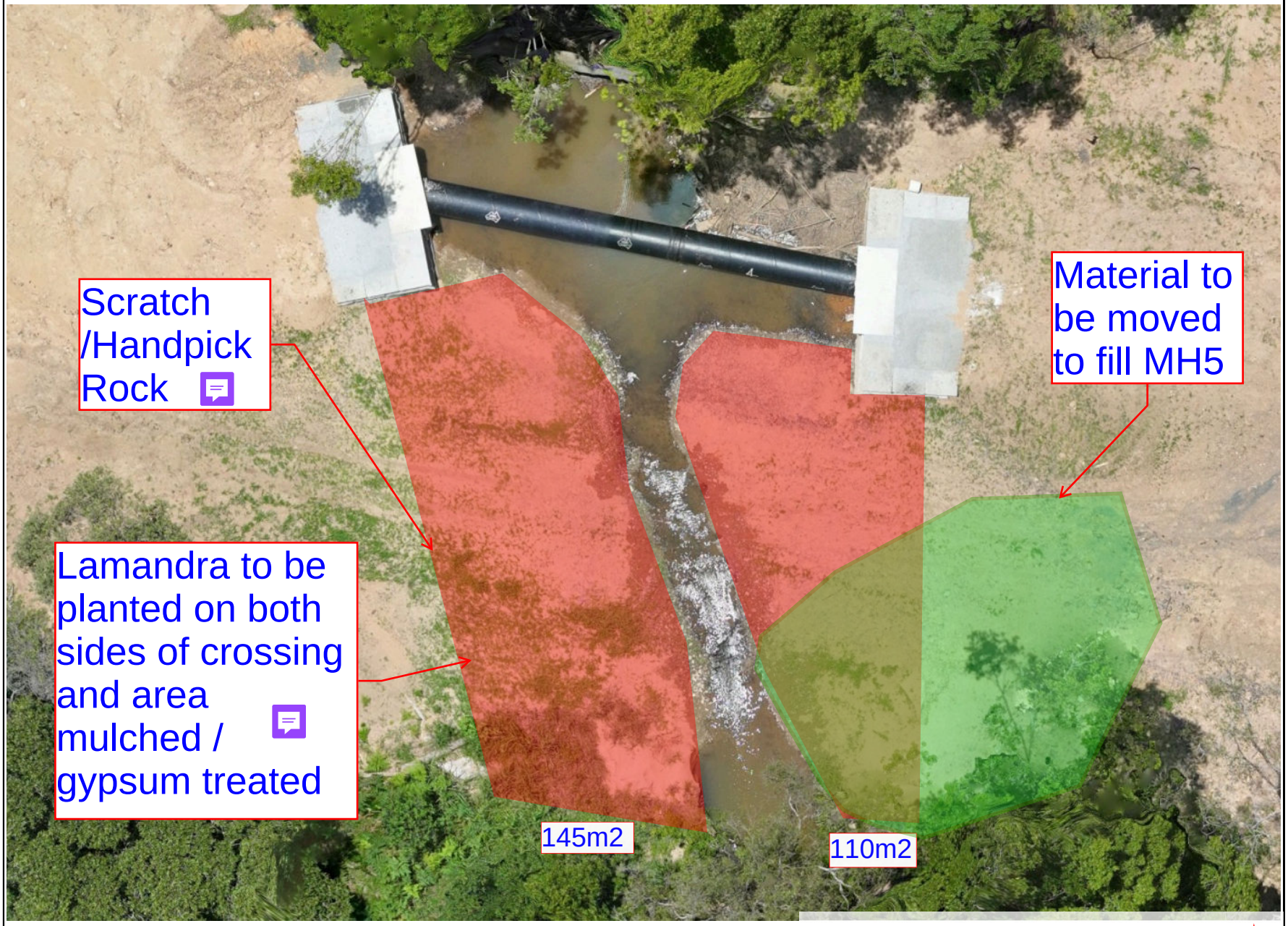

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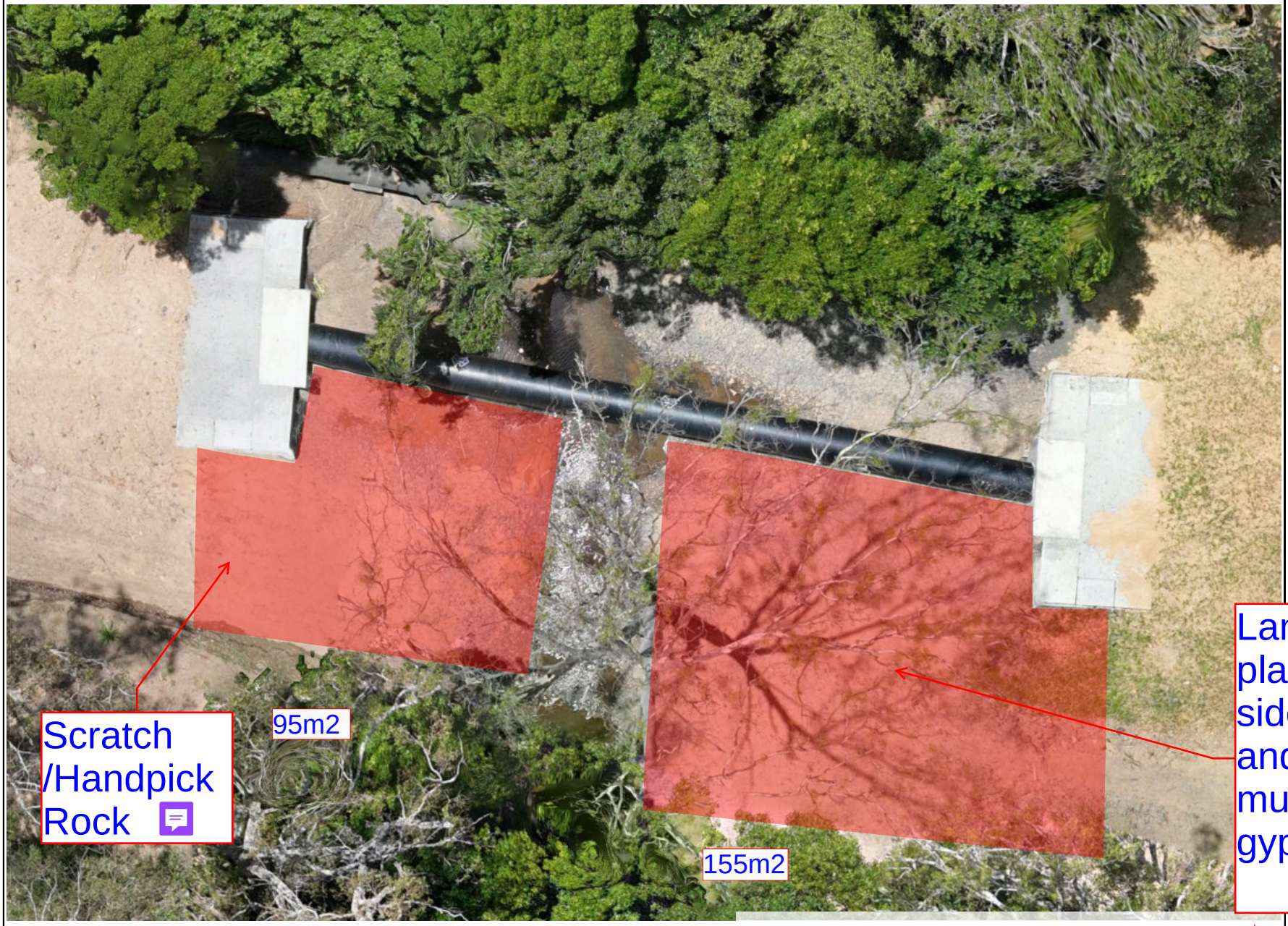

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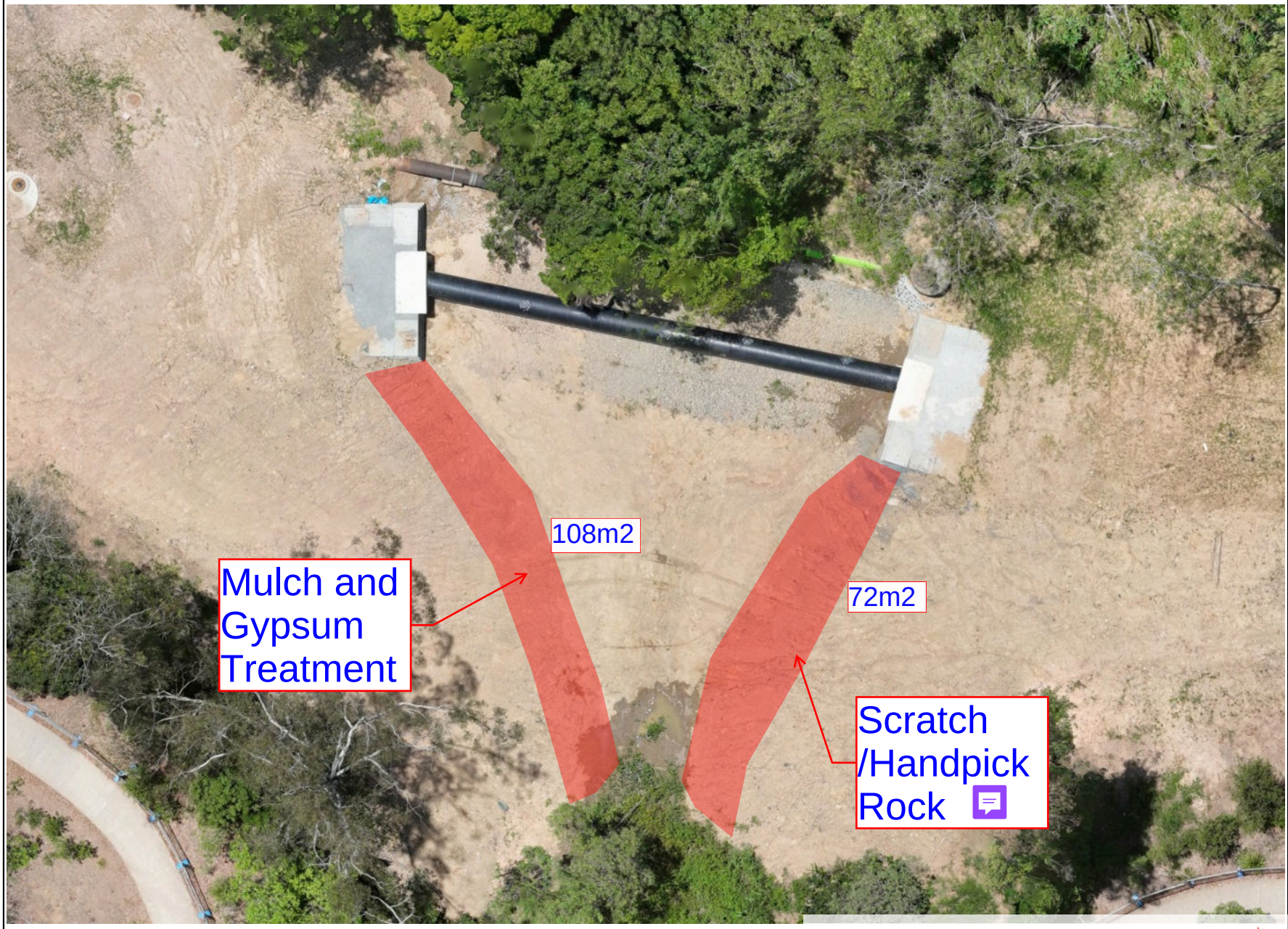

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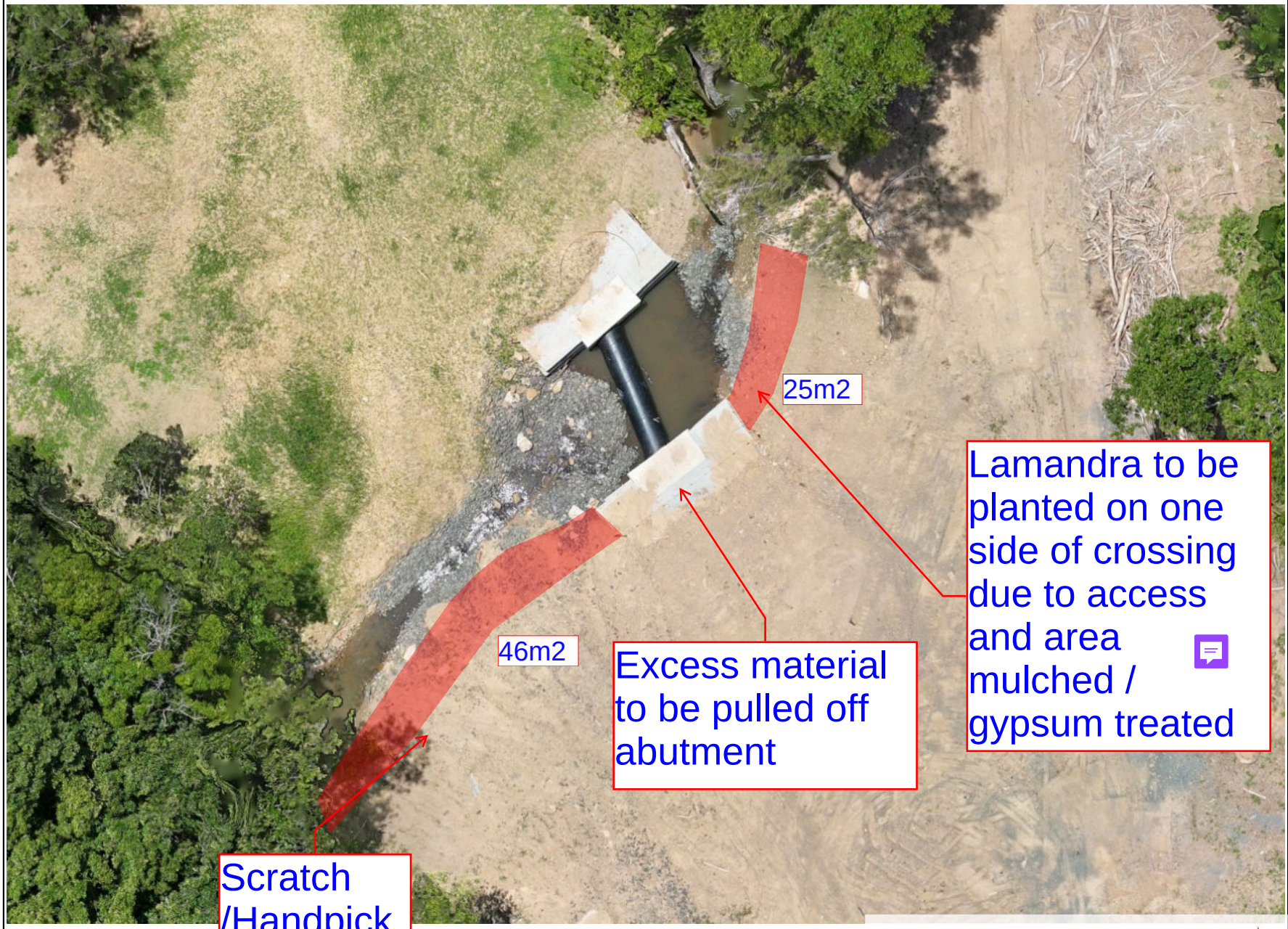

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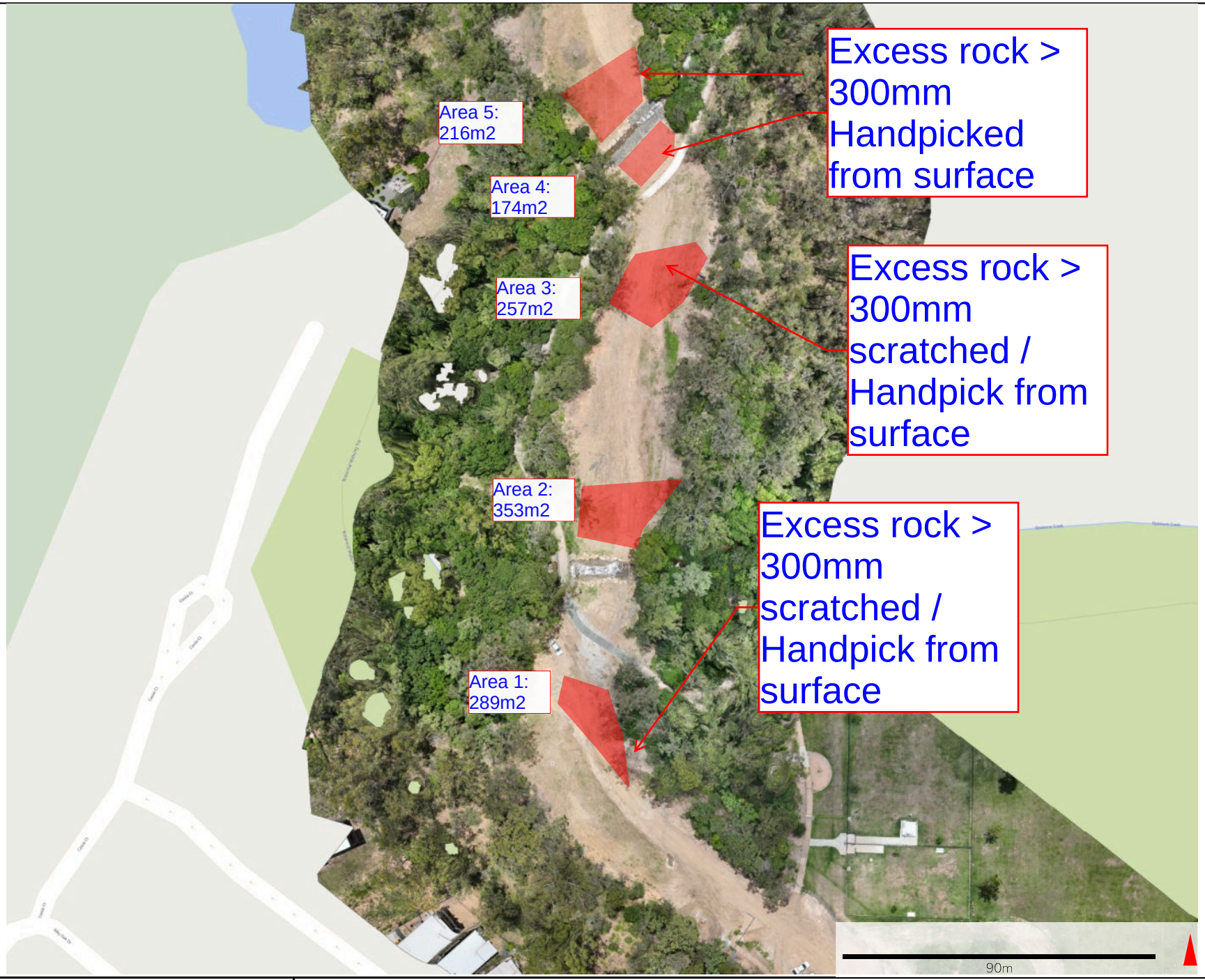

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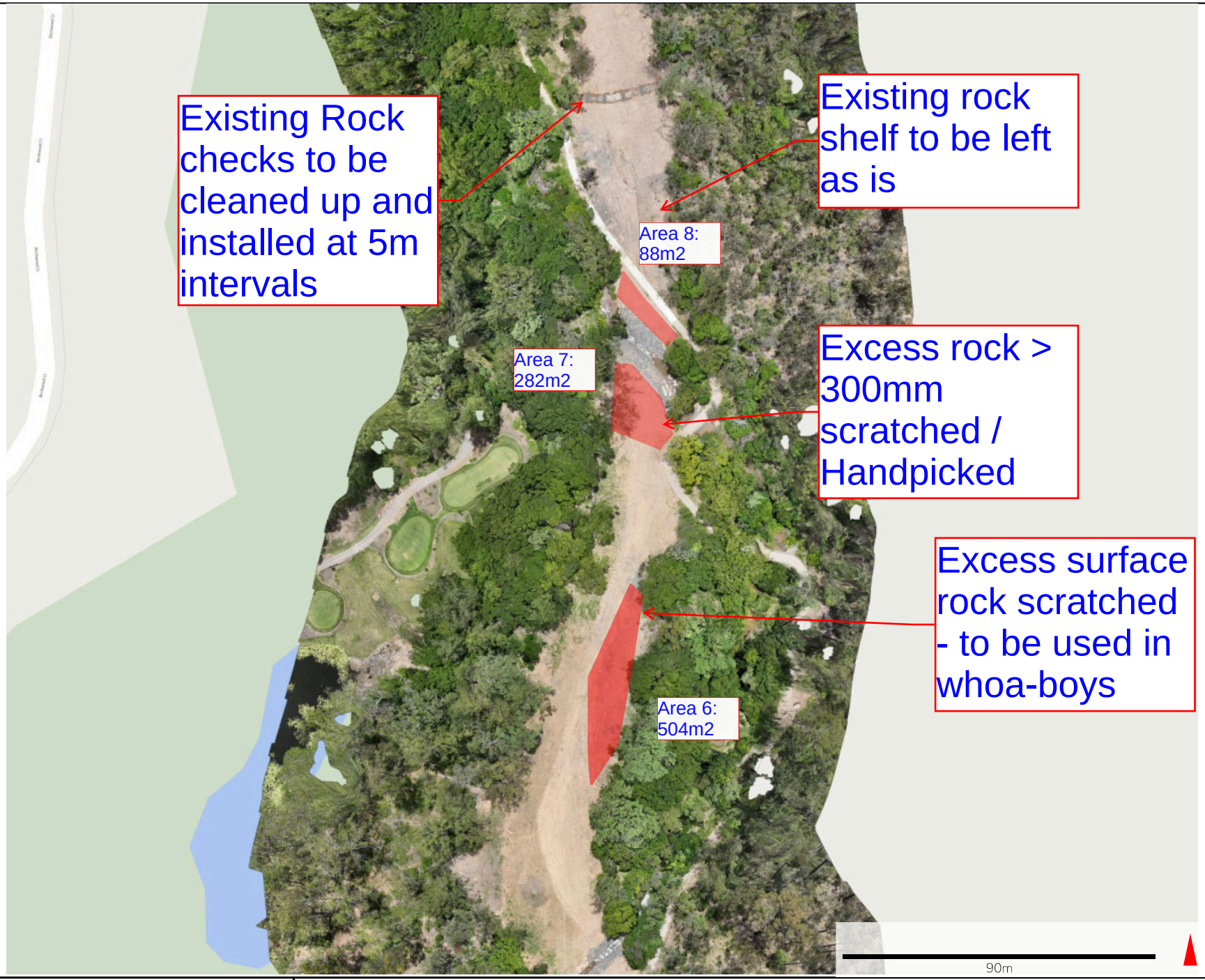

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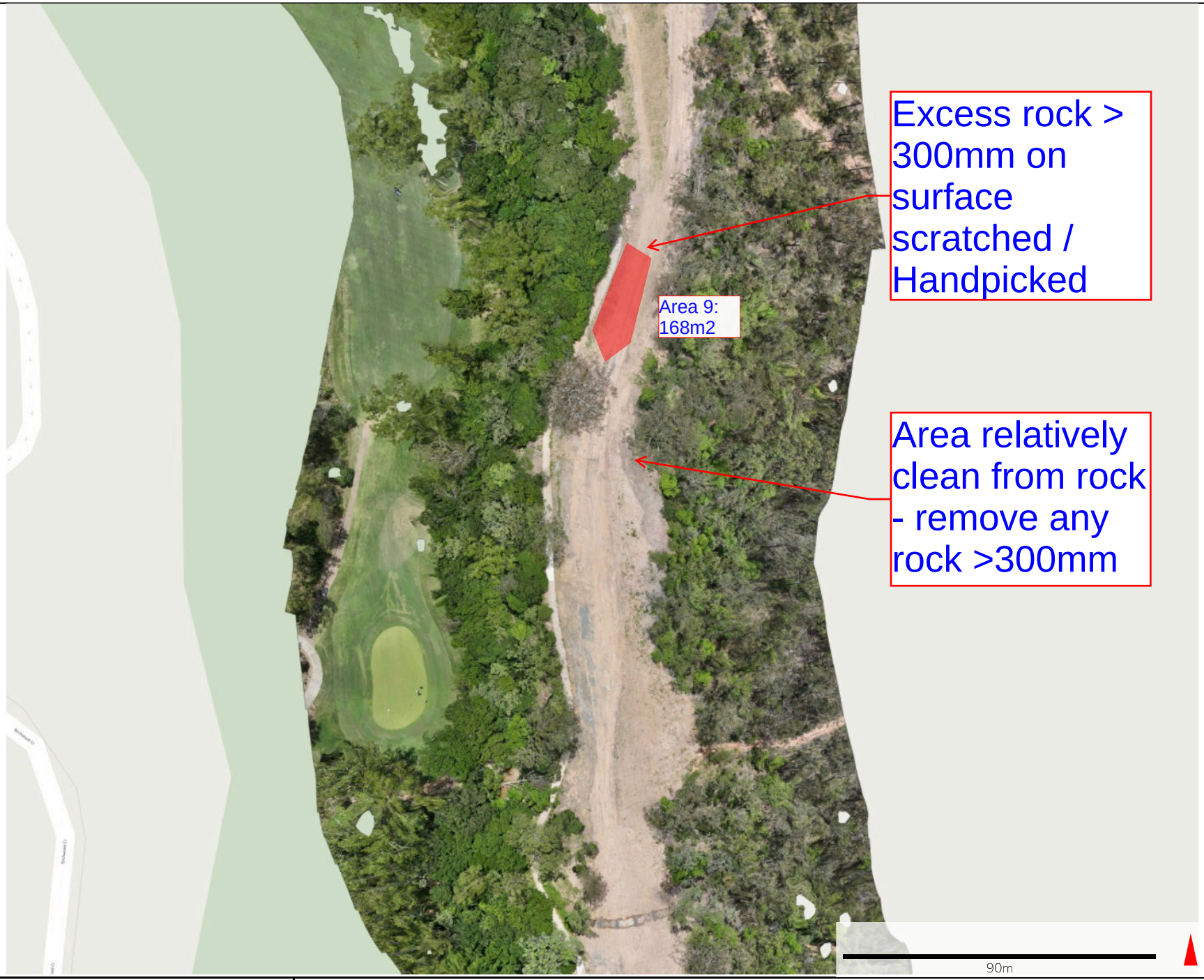

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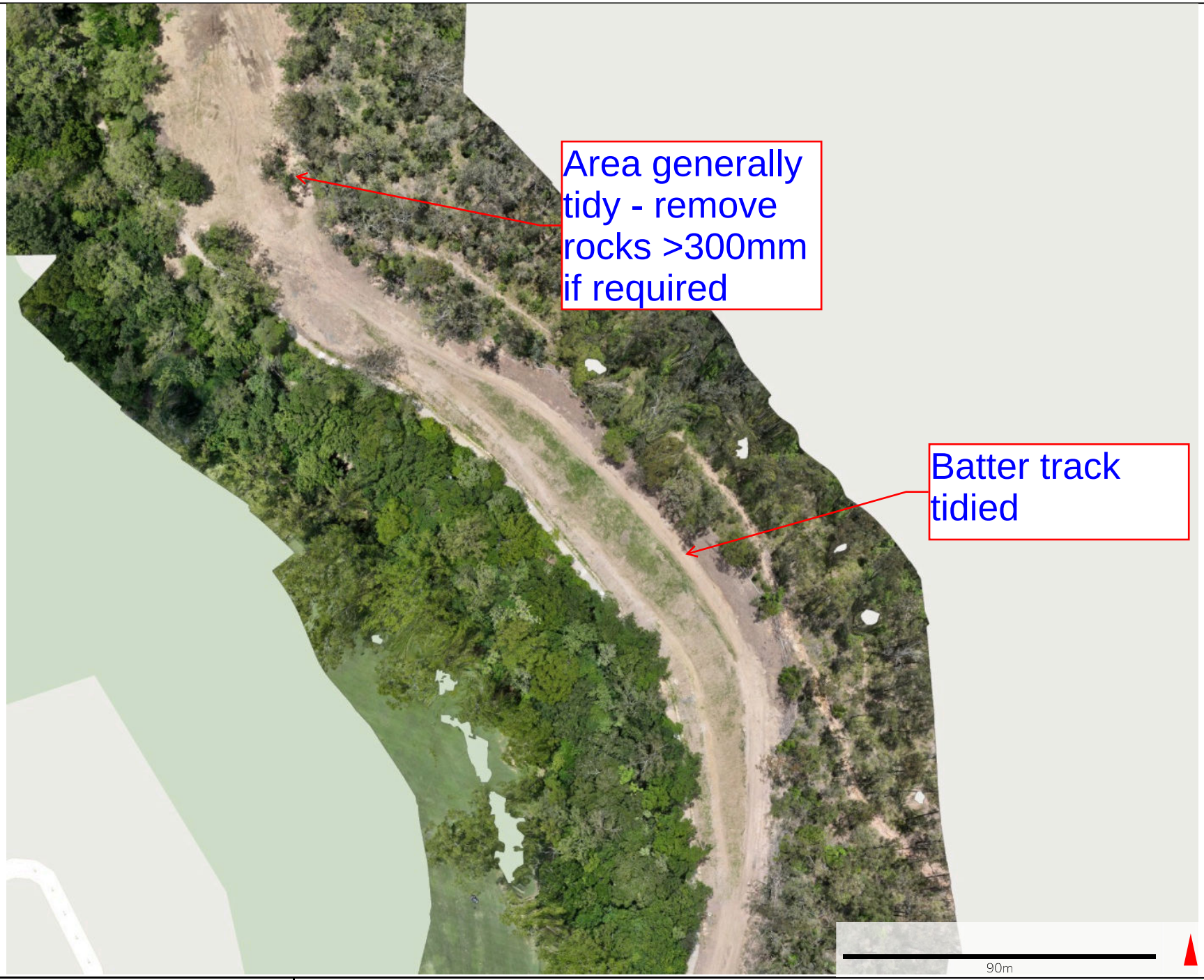

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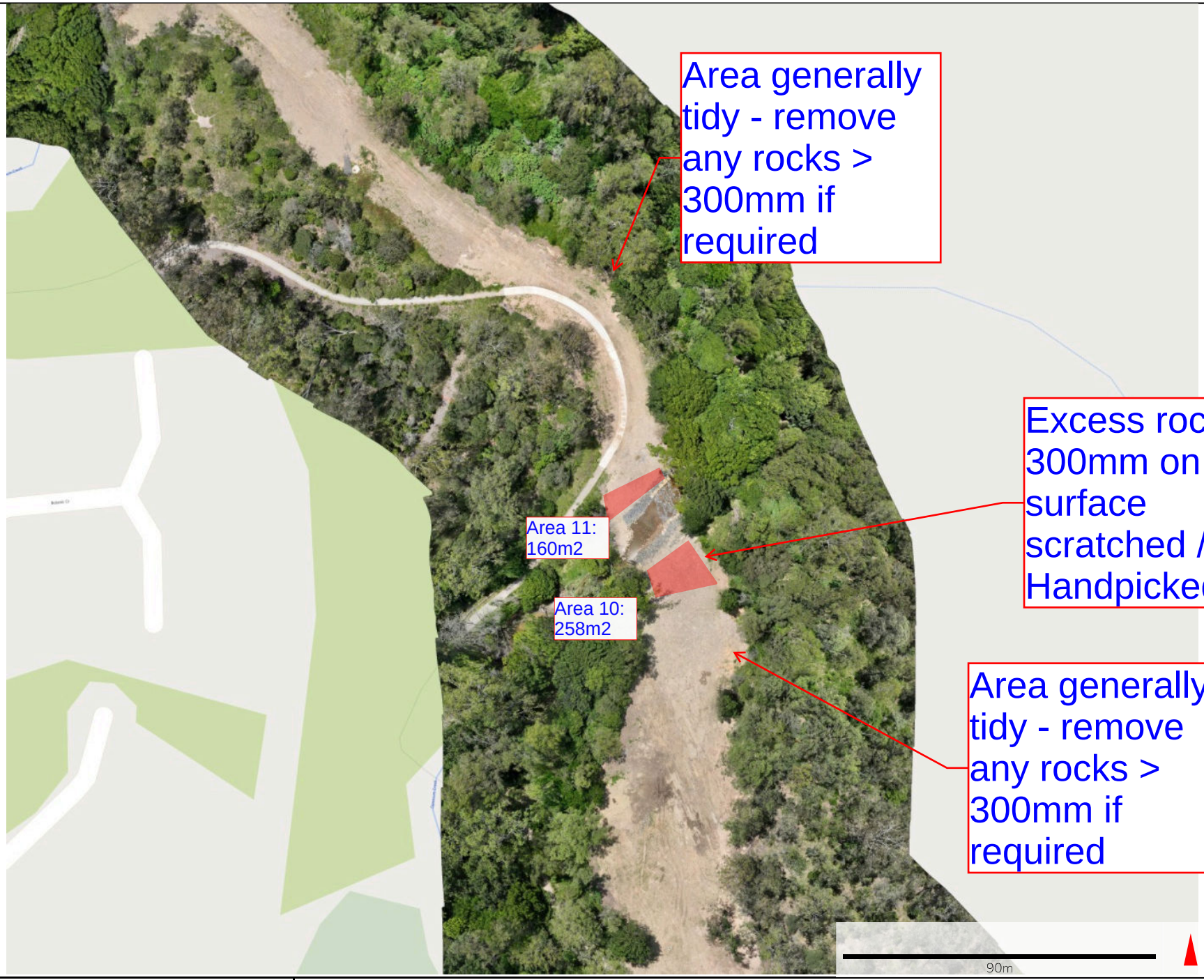

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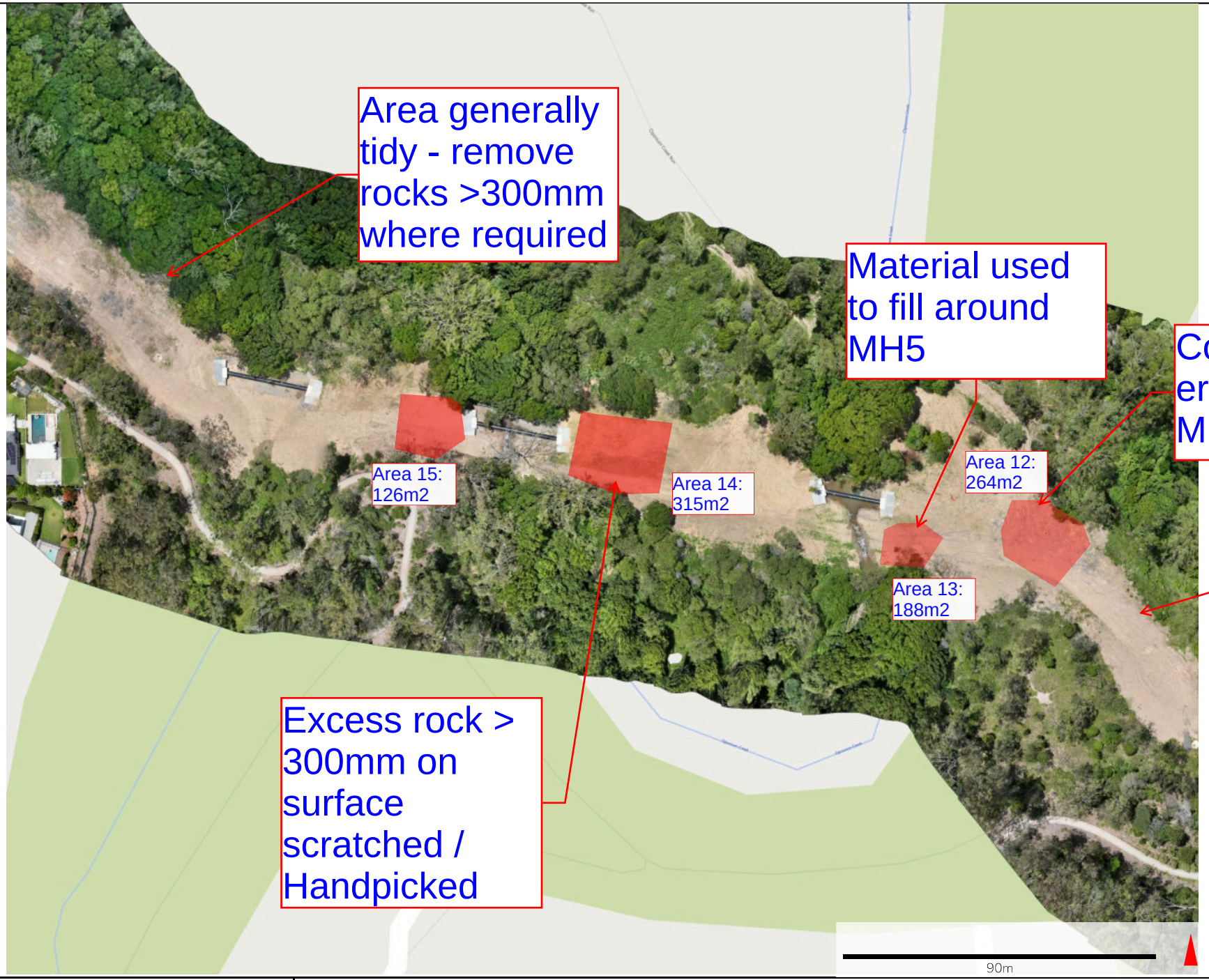

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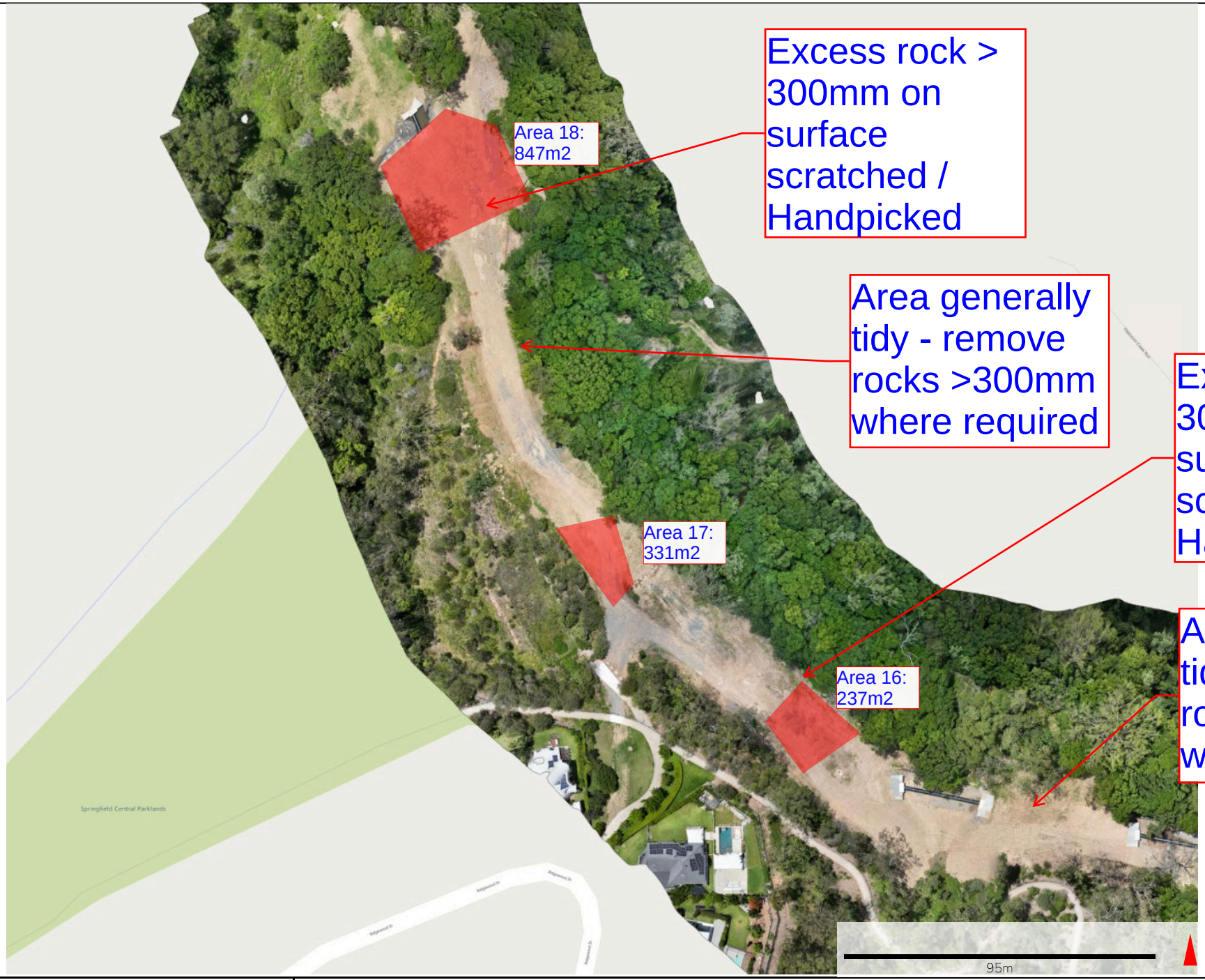

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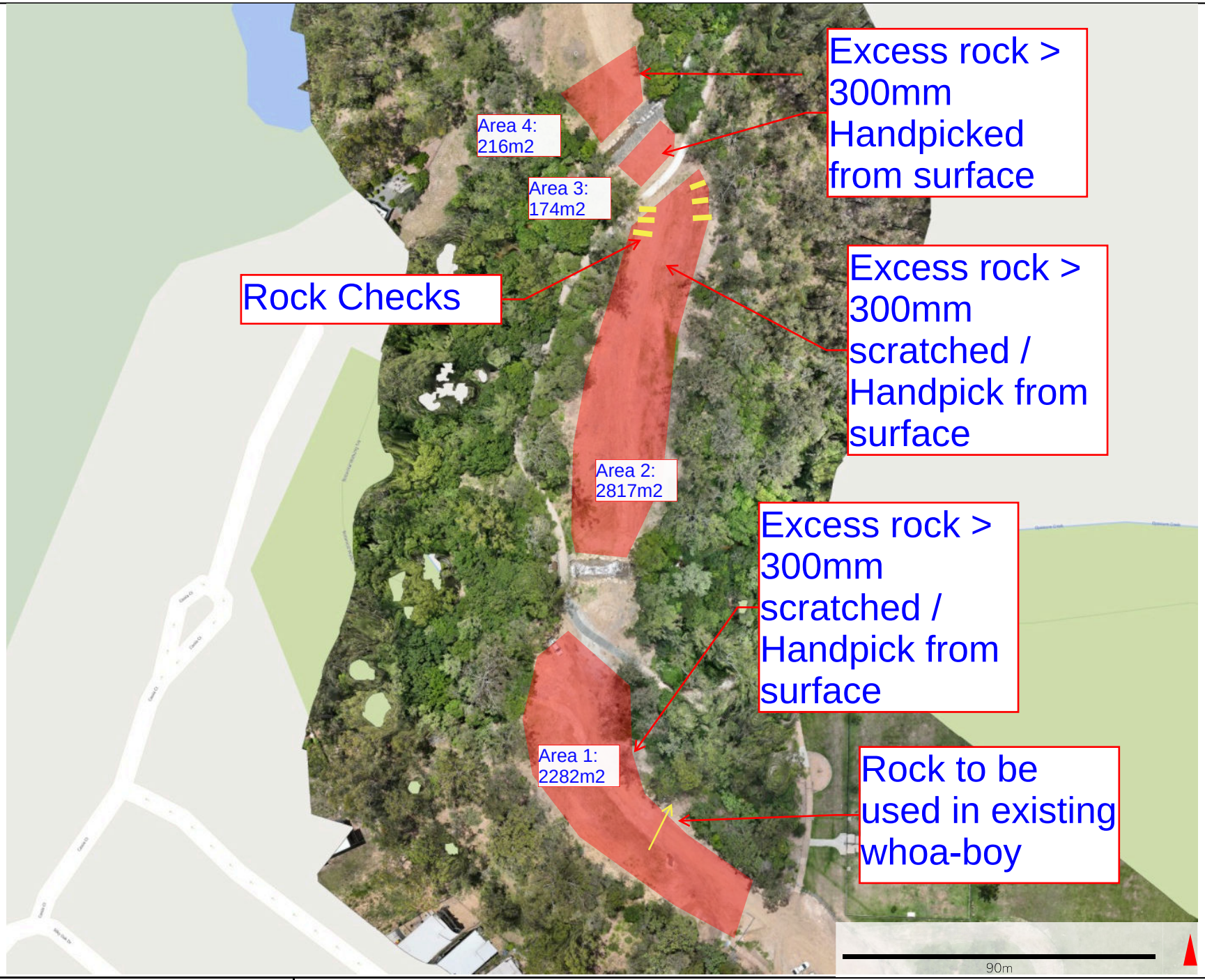

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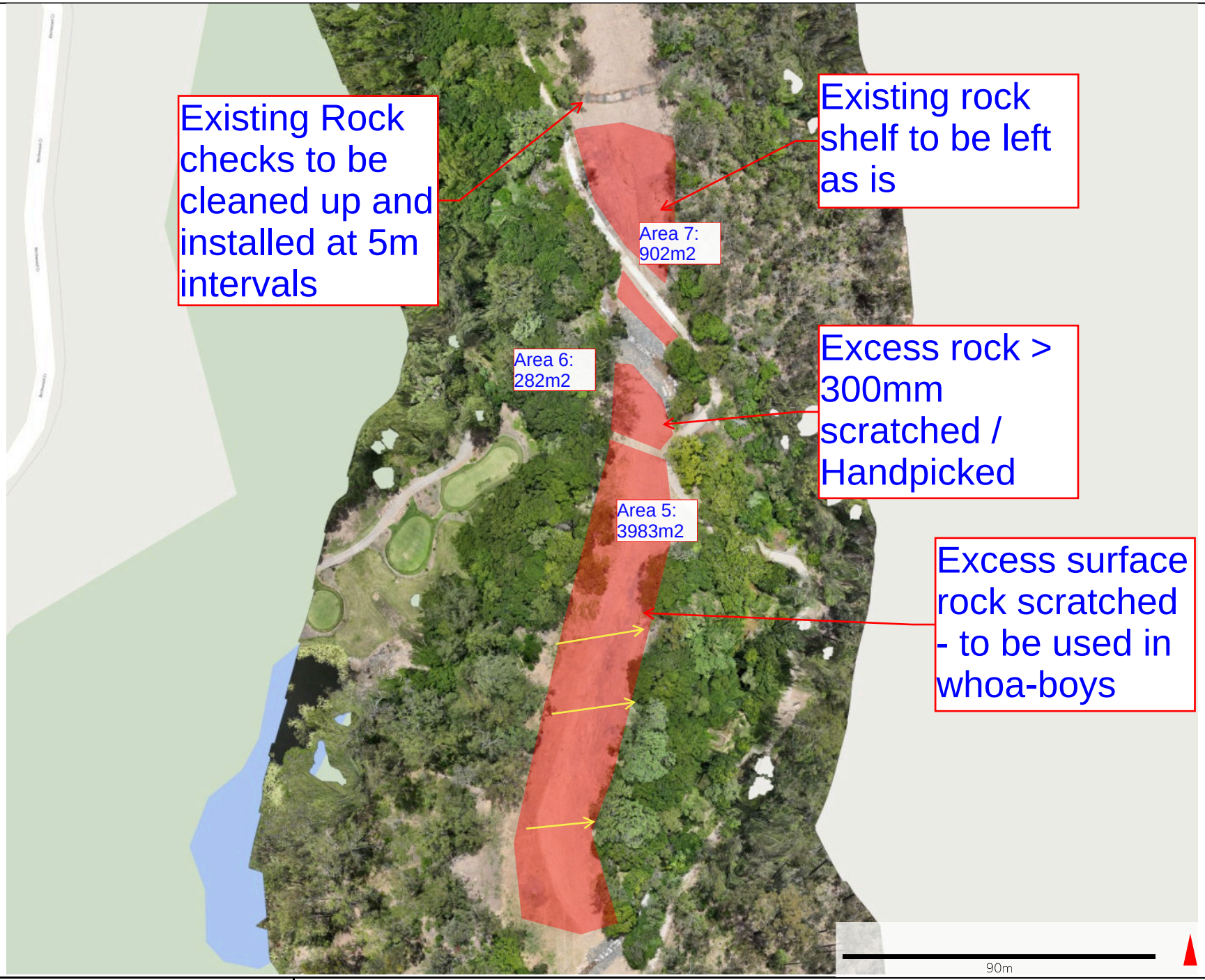

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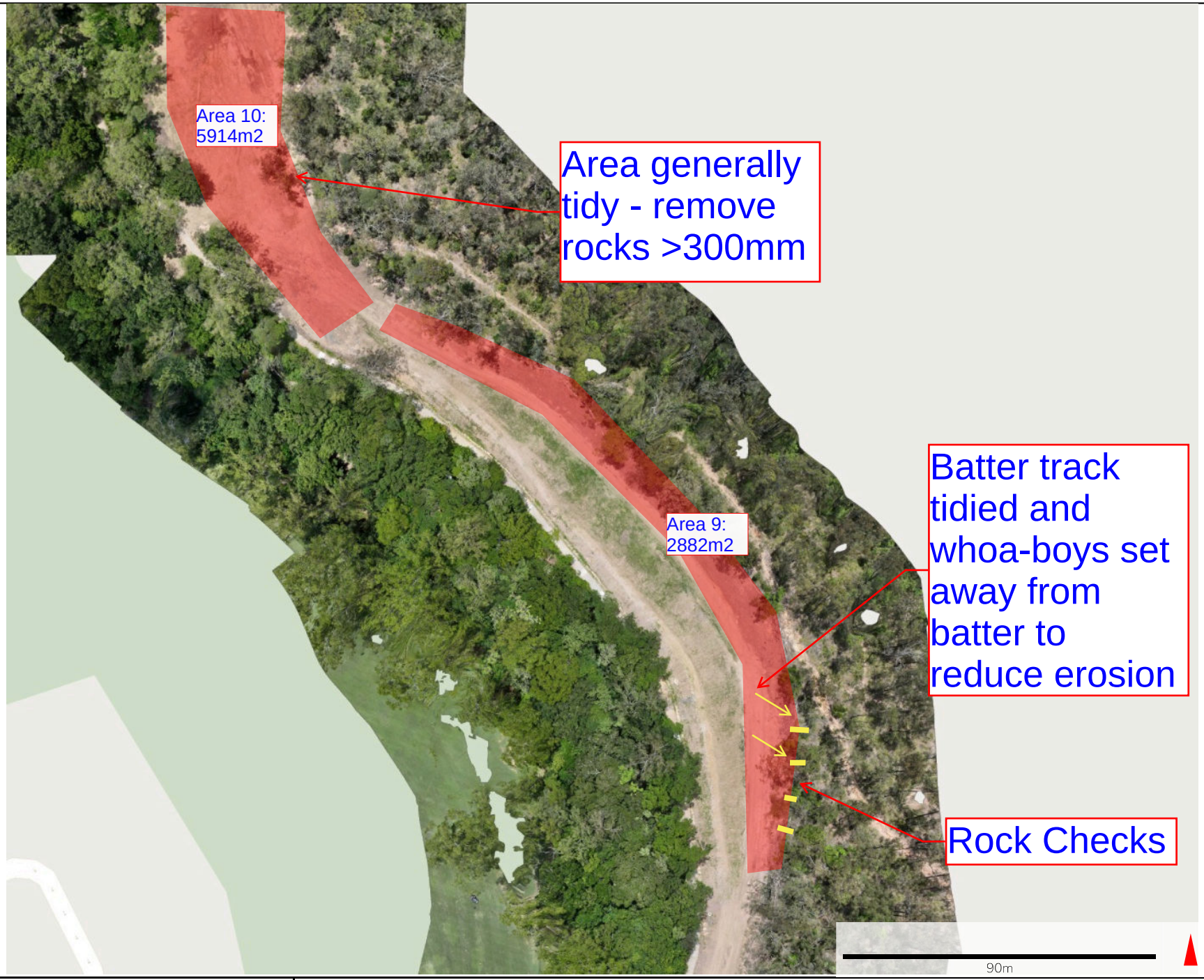

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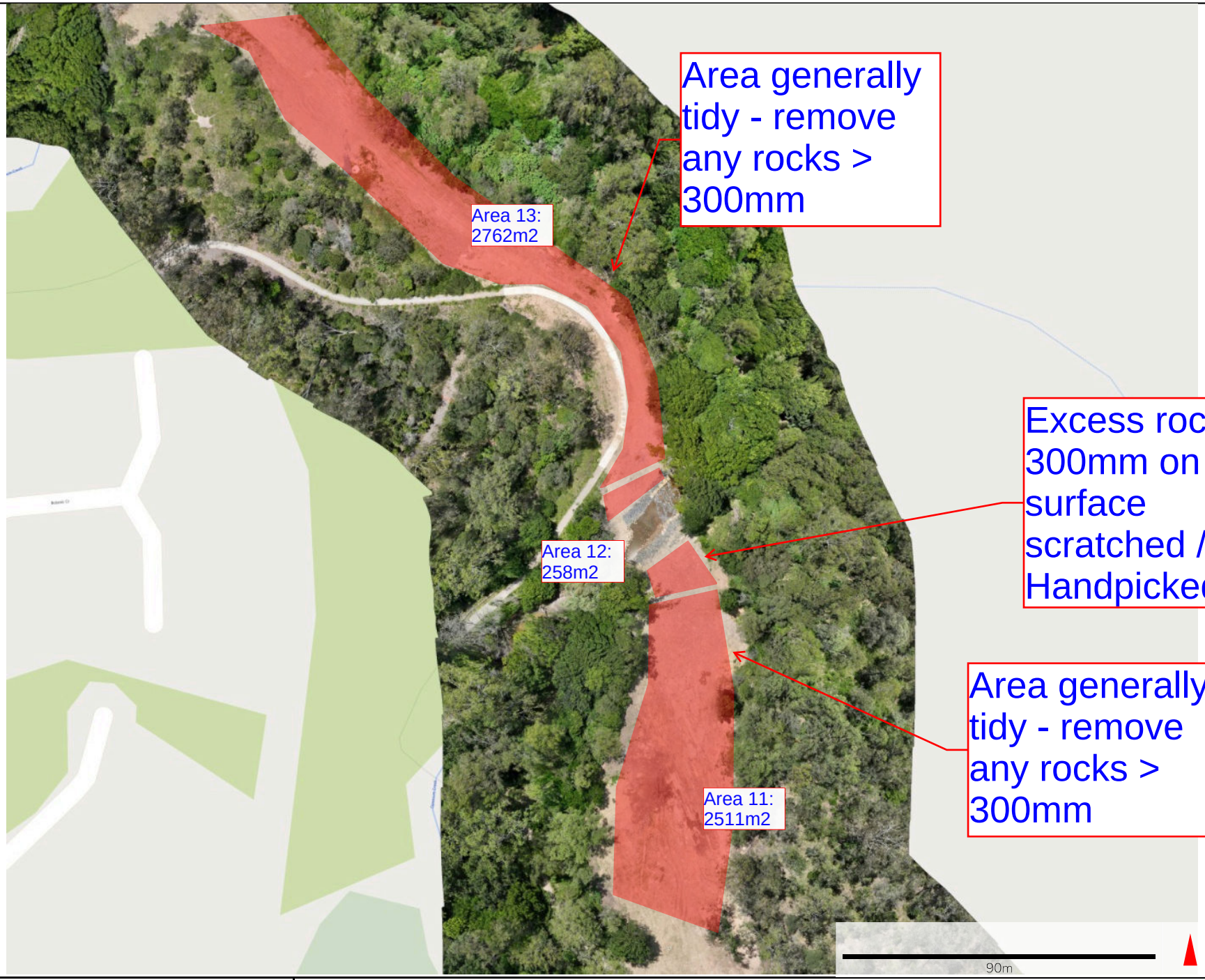

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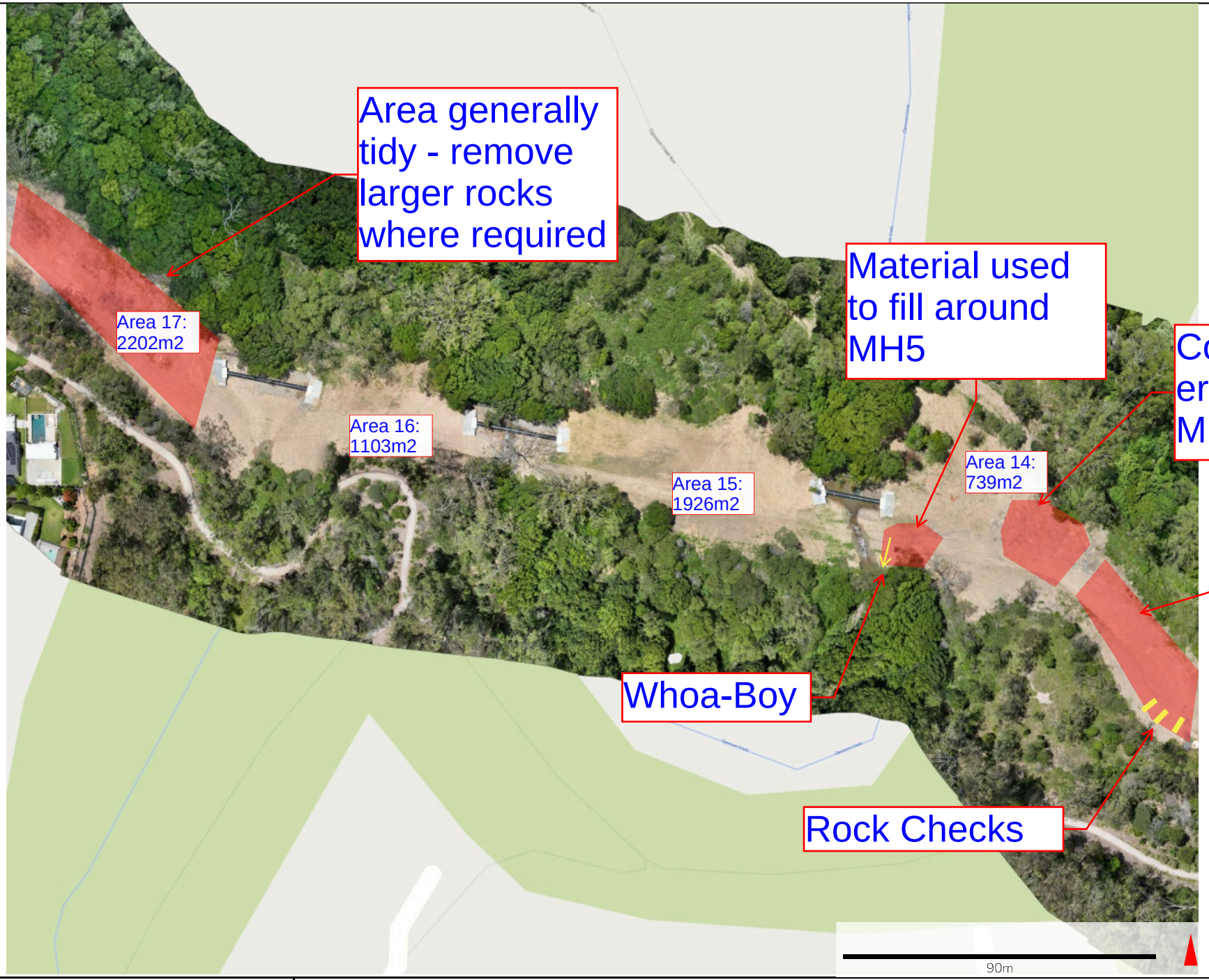

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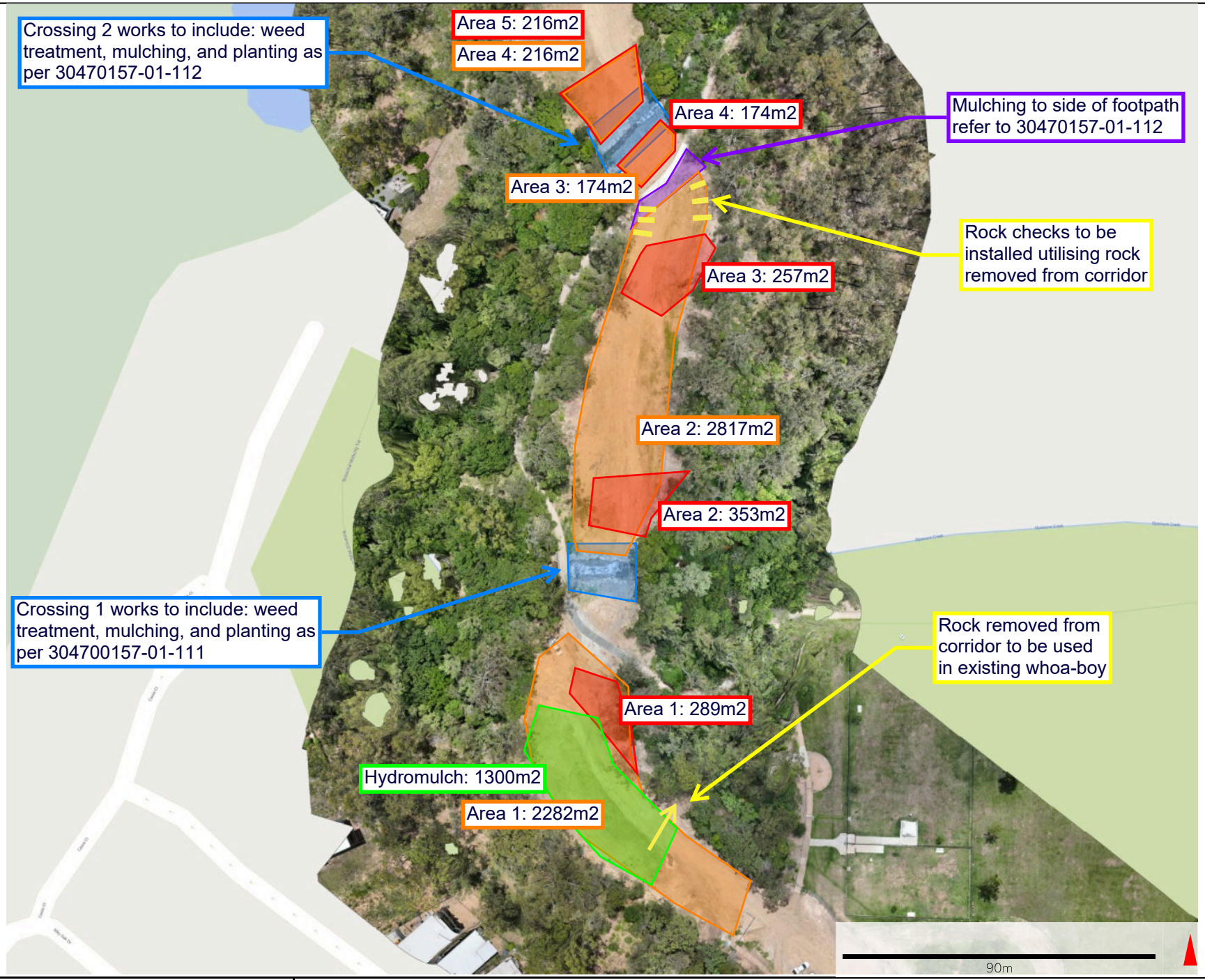

LEGEND

- Scratching / Hand picking of excess Rock > 300mm
- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-101
Layout 1 of 7

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

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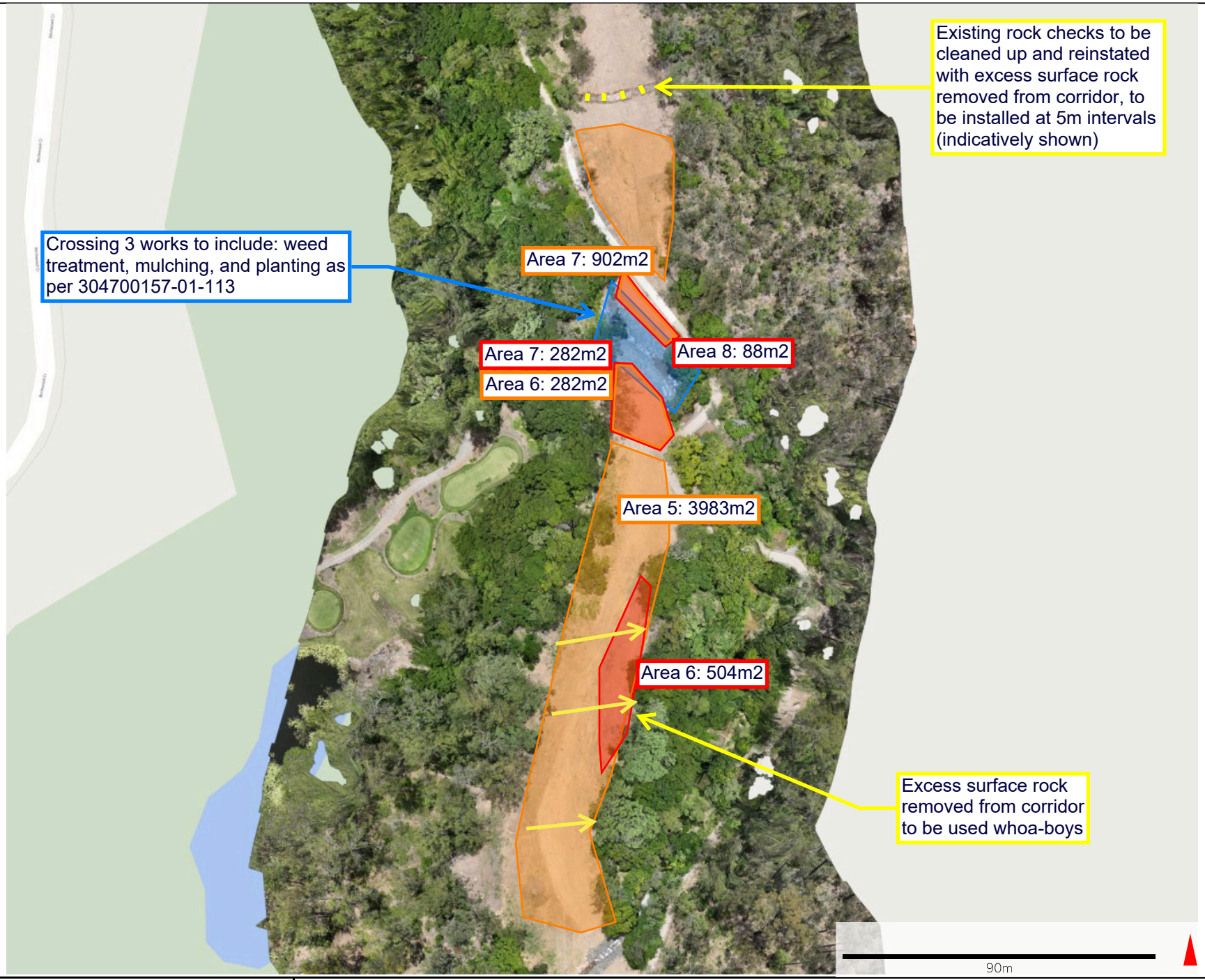
propeller



LEGEND

- Scratching / Hand picking of excess Rock > 300mm
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- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-102
Layout 2 of 7

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 14, 2024

propeller

LEGEND

- Scratching / Hand picking of excess Rock > 300mm
- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-103
Layout 3 of 7

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

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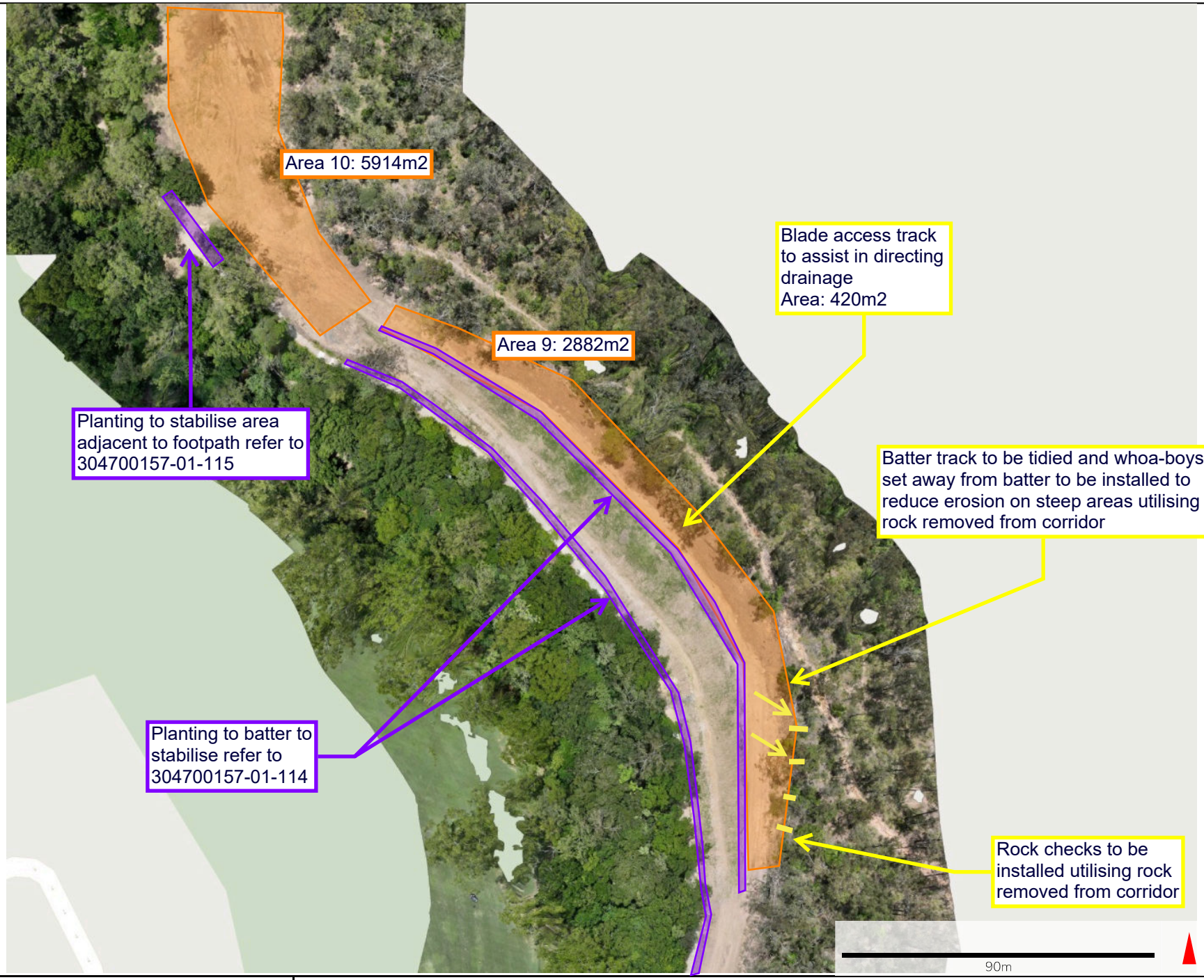

LEGEND

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- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-104
Layout 4 of 7

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

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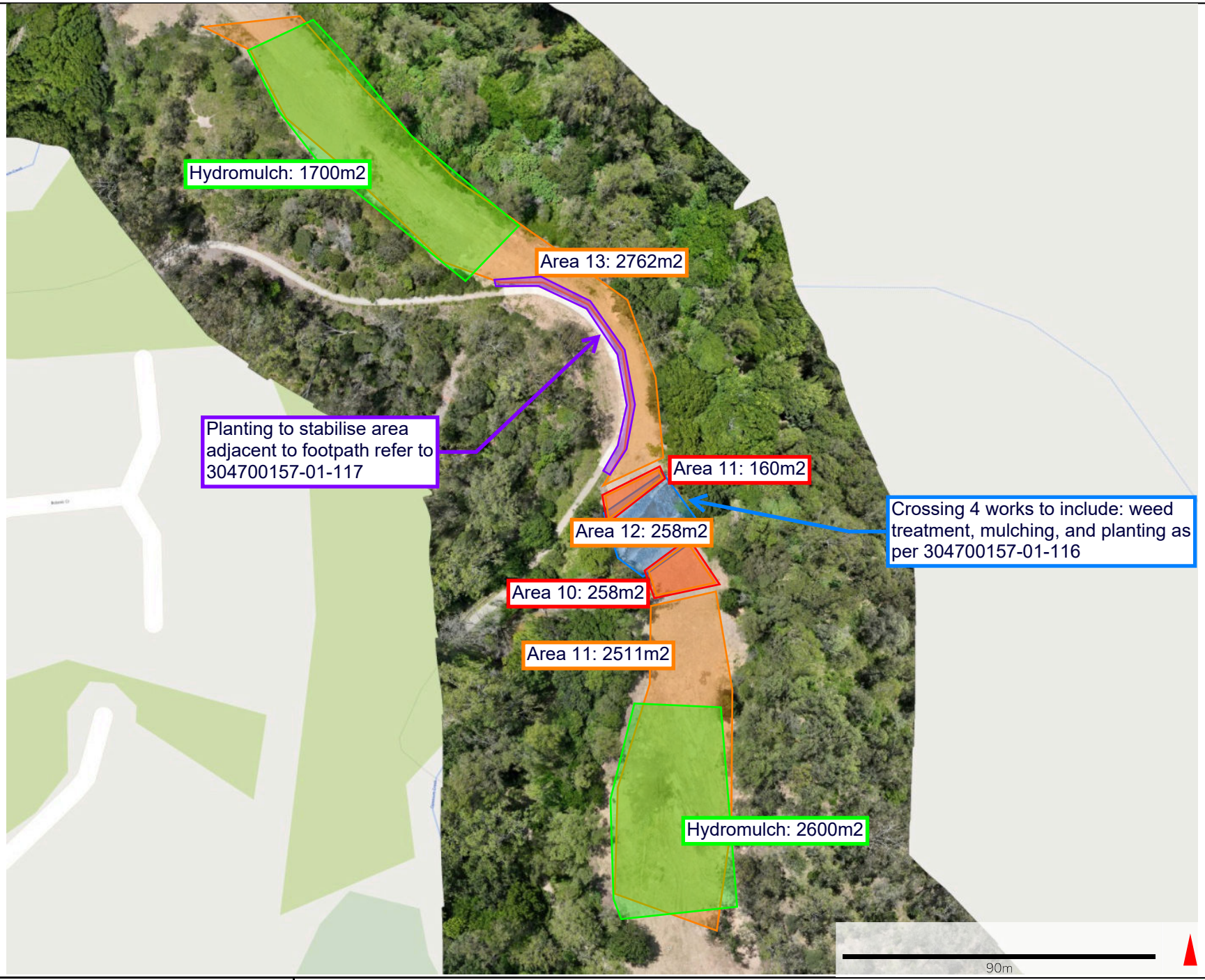


LEGEND

- Scratching / Hand picking of excess Rock > 300mm
- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-105
Layout 5 of 7

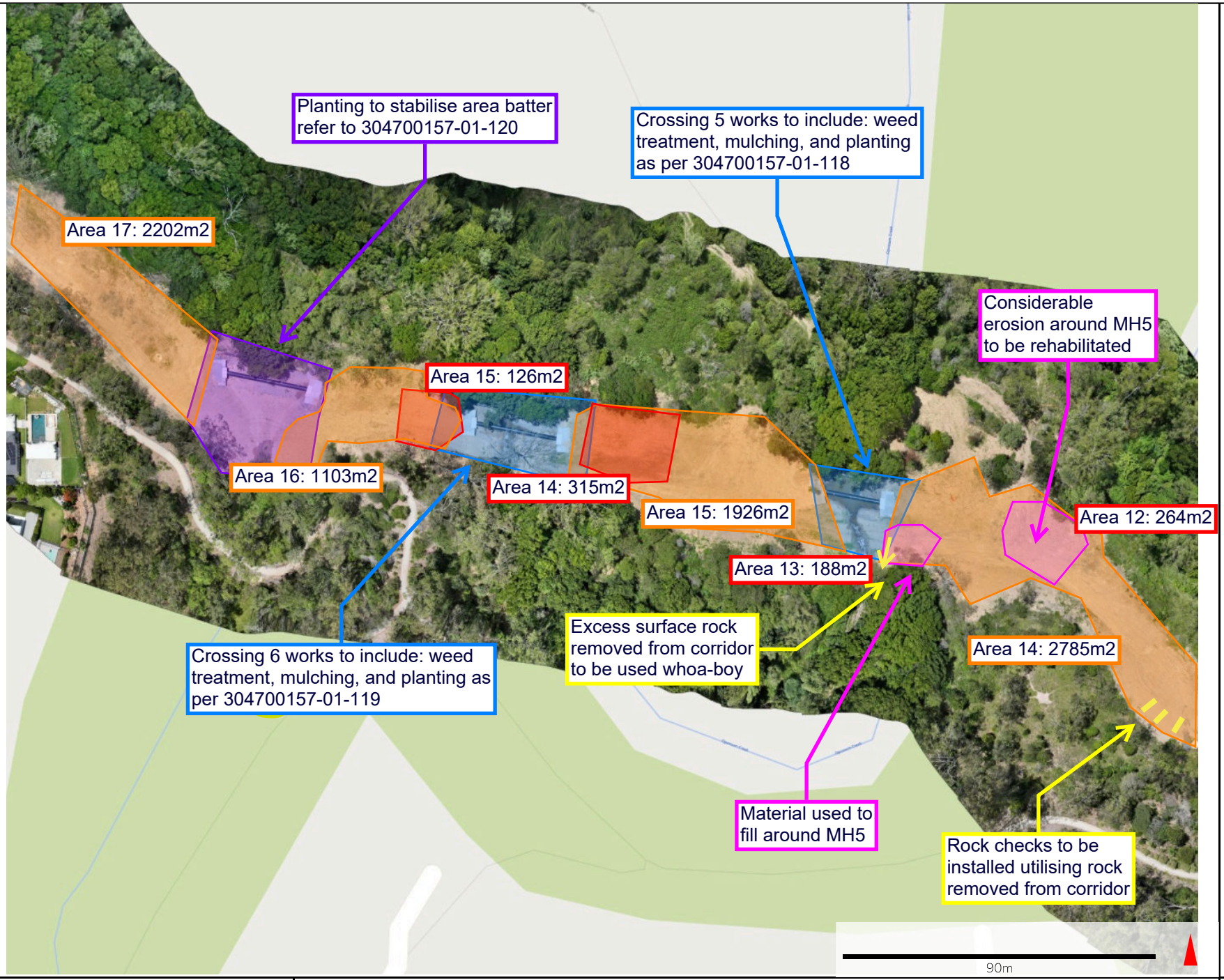
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 14, 2024

propeller



LEGEND

- Scratching / Hand picking of excess Rock > 300mm
- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-106
Layout 6 of 7

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 14, 2024

propeller

LEGEND

- Scratching / Hand picking of excess Rock > 300mm
- Removal of Builders Waste
- Check dams, whoa-boys, diversion drains
- Hydromulch / hand seeding
- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 2, 4, & 5
Access Track Rehab, Builders Waste Removal, & Hydromulch / Hydroseeding

304700157-01-107
Layout 7 of 7

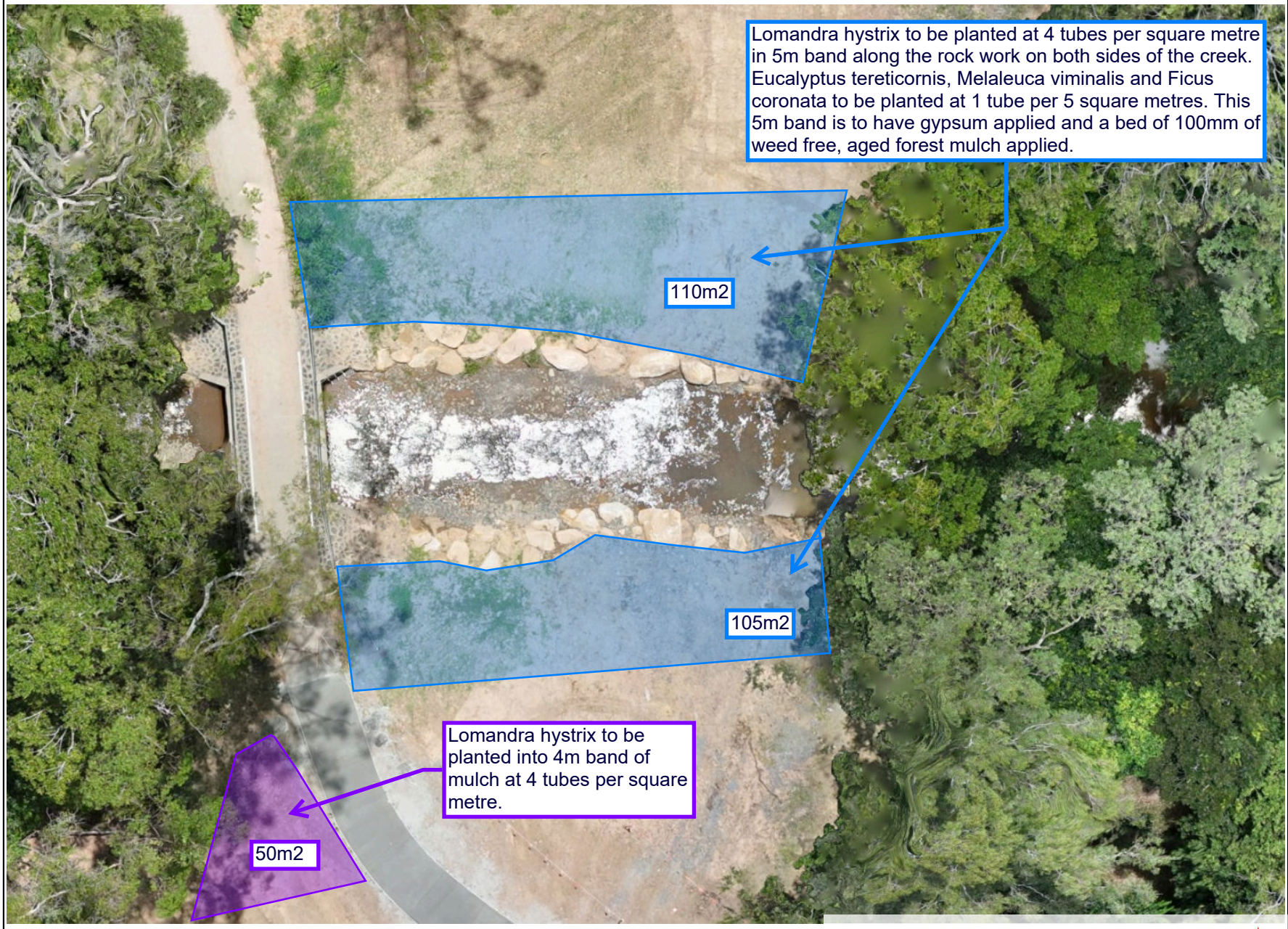
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 14, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 1

304700157-01-111
Layout 1 of 11

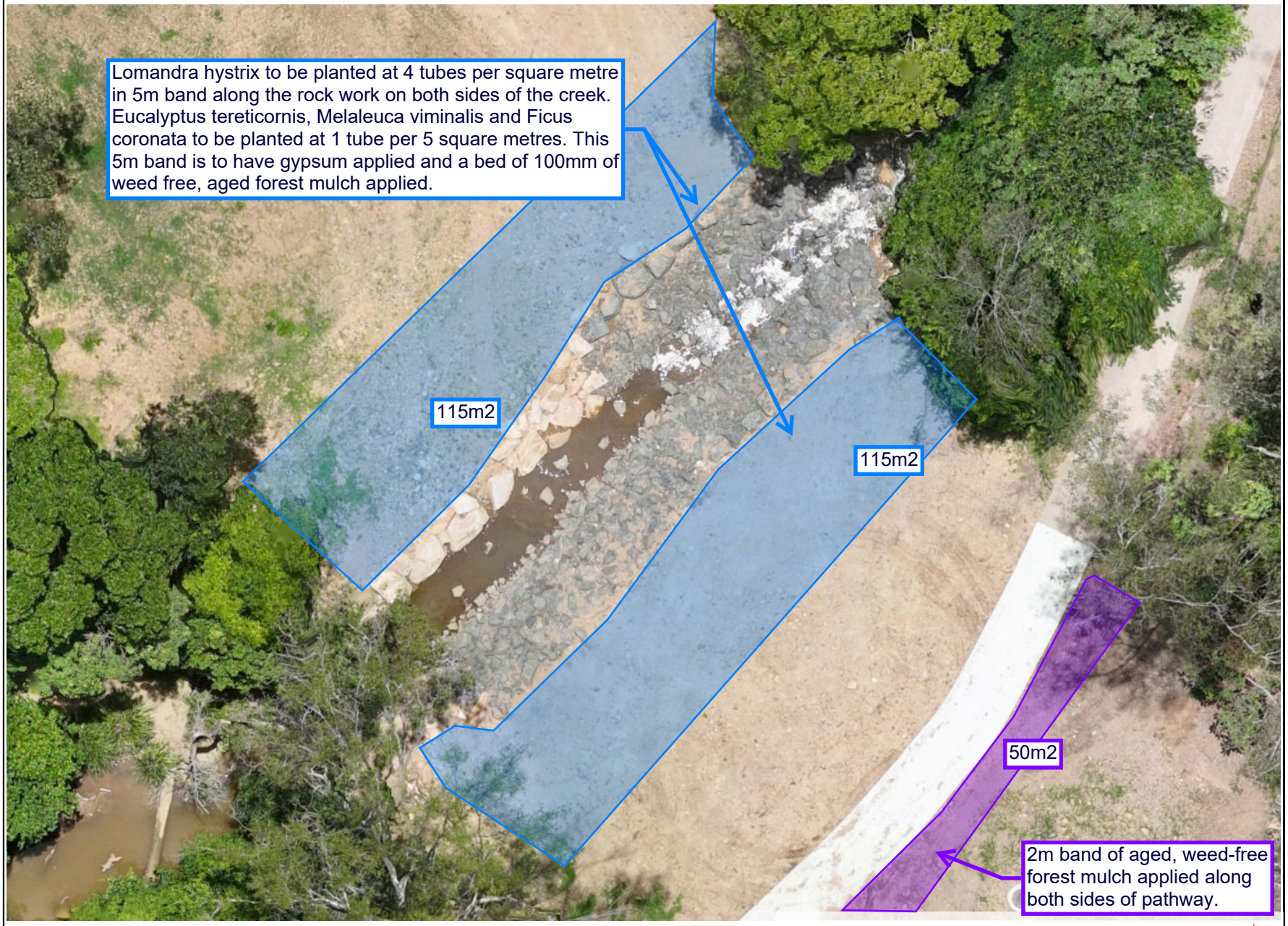
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 2

304700157-01-112
Layout 2 of 11

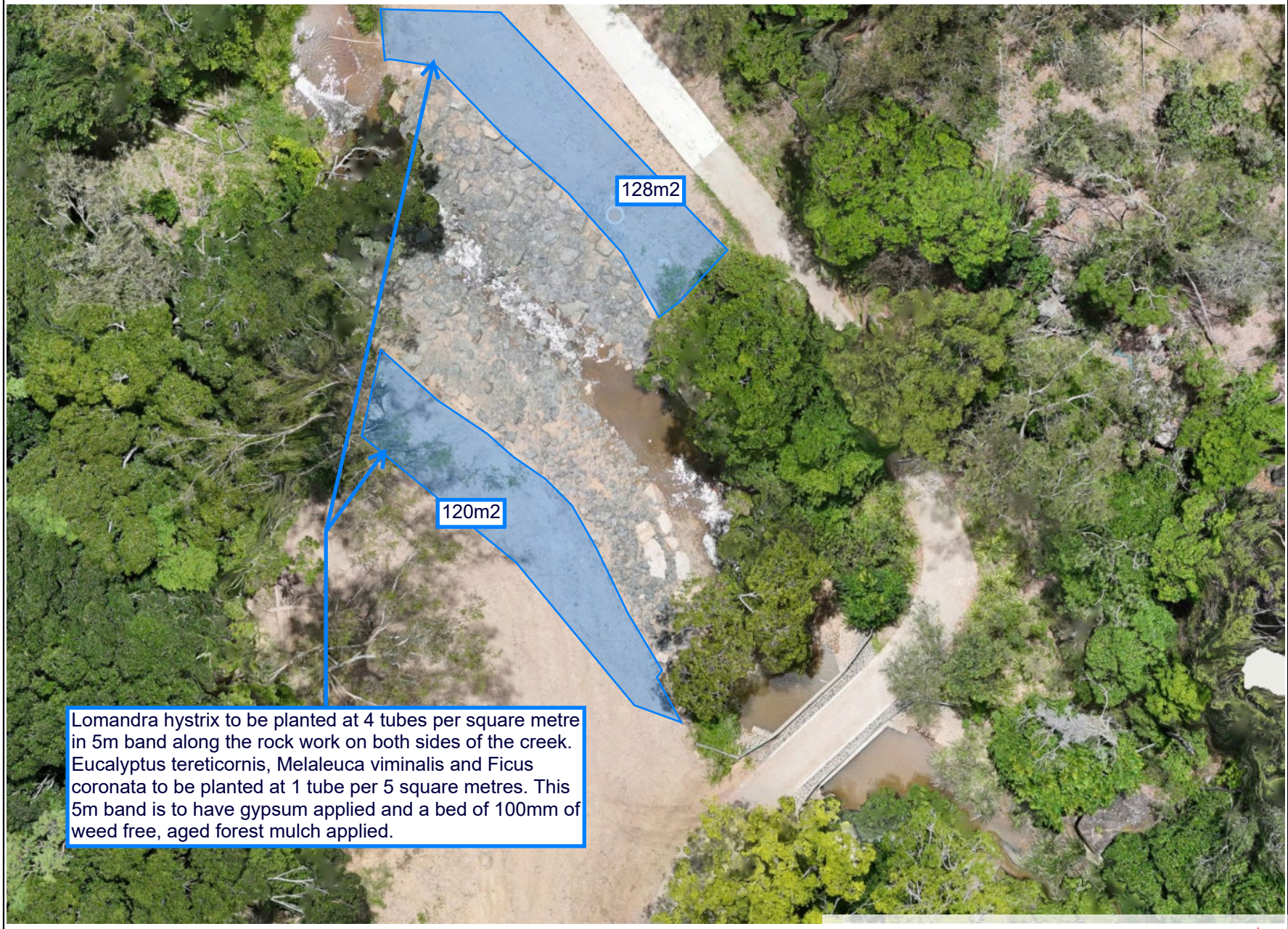
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 3

304700157-01-113
Layout 3 of 11

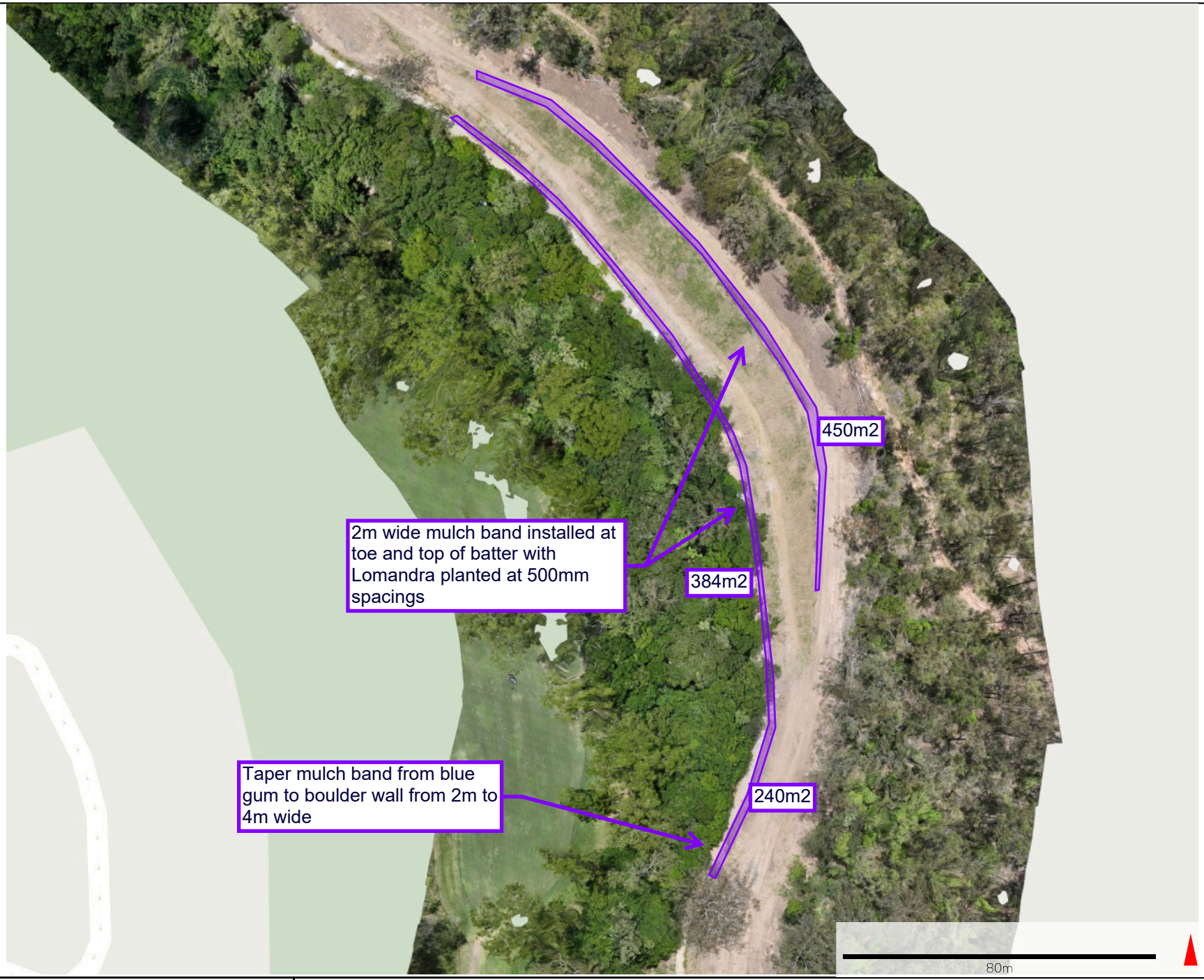
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Large Batter Works

304700157-01-114
Layout 4 of 11

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 14, 2024

propeller

LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation Vegetation Work

304700157-01-115
Layout 5 of 11

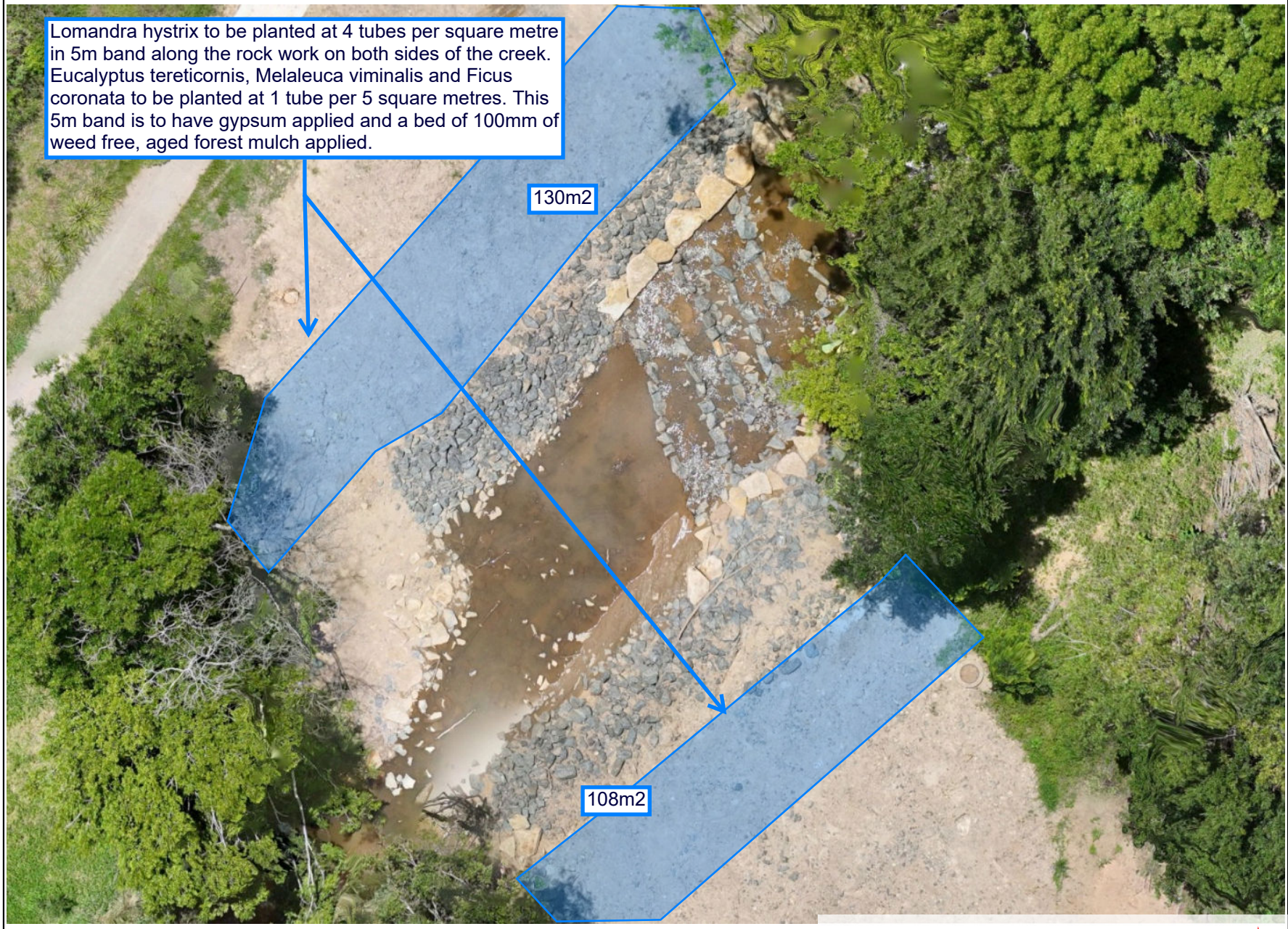
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 4

304700157-01-116
Layout 6 of 11

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller

LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Vegetation

304700157-01-117
Layout 7 of 11

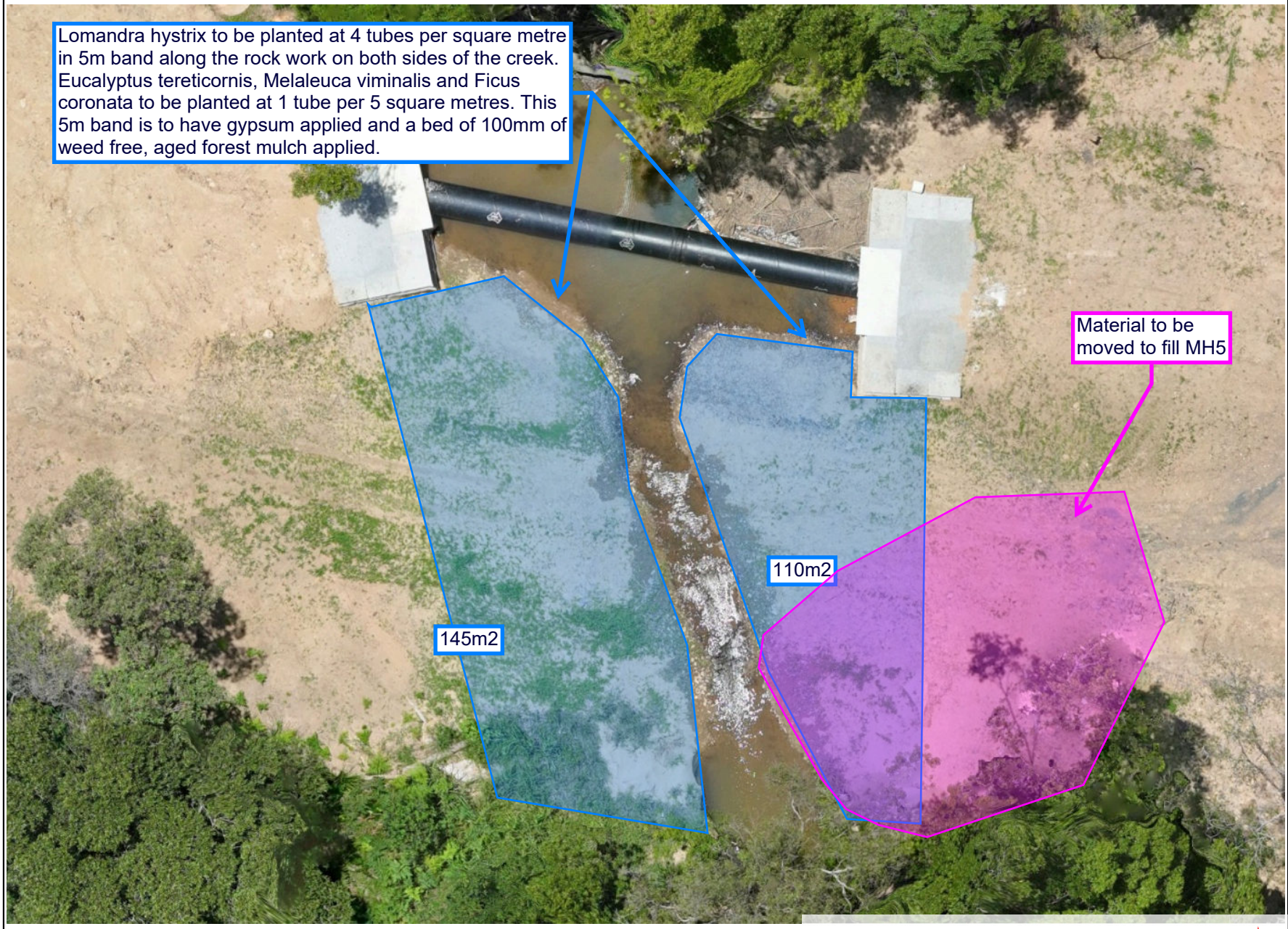
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation
- Rehabilitation to Manhole Structures

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 5

304700157-01-118
Layout 8 of 11

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller

LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 6

304700157-01-119
Layout 9 of 11

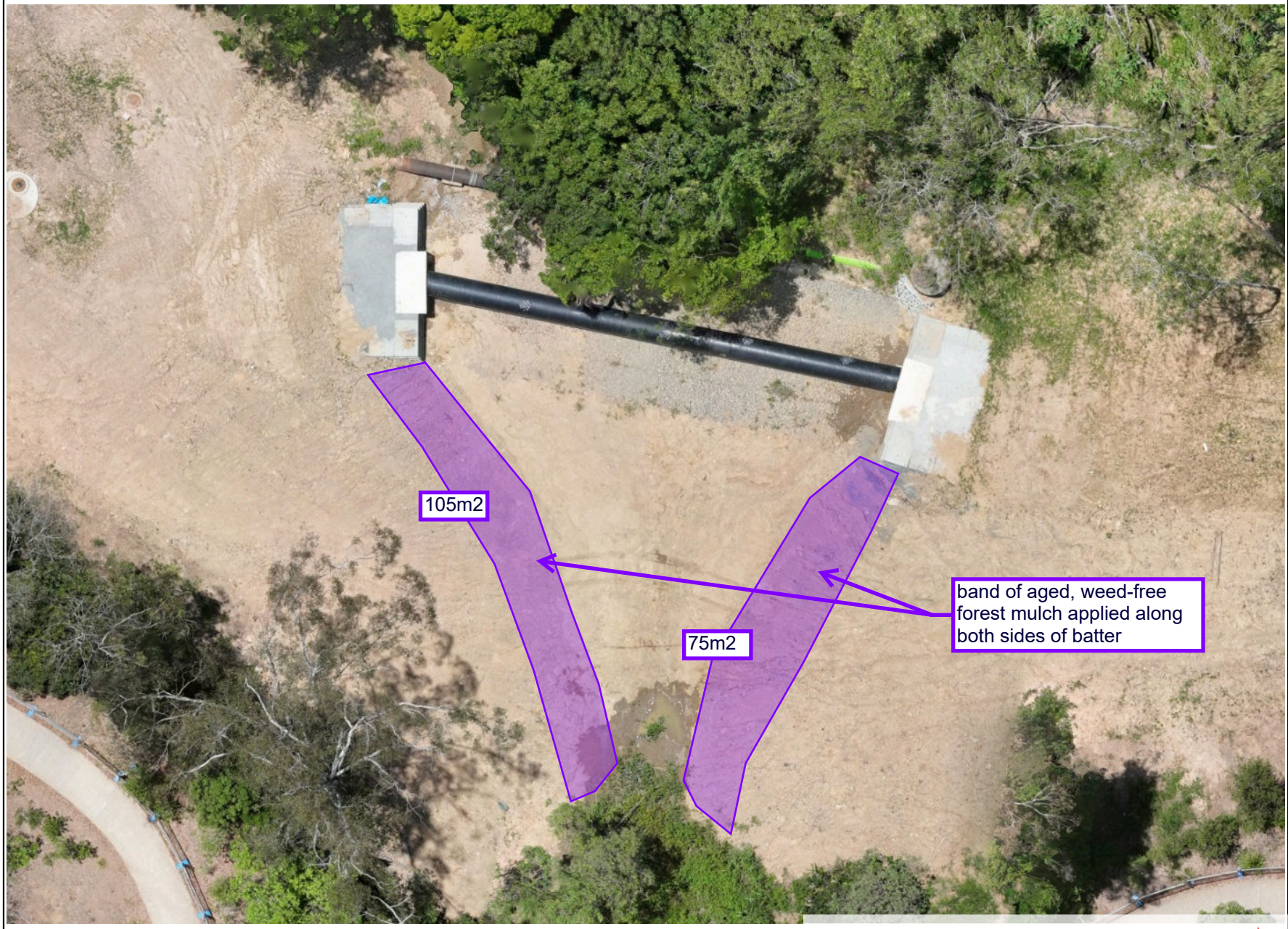
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Vegetated Crossing

304700157-01-120
Layout 10 of 11

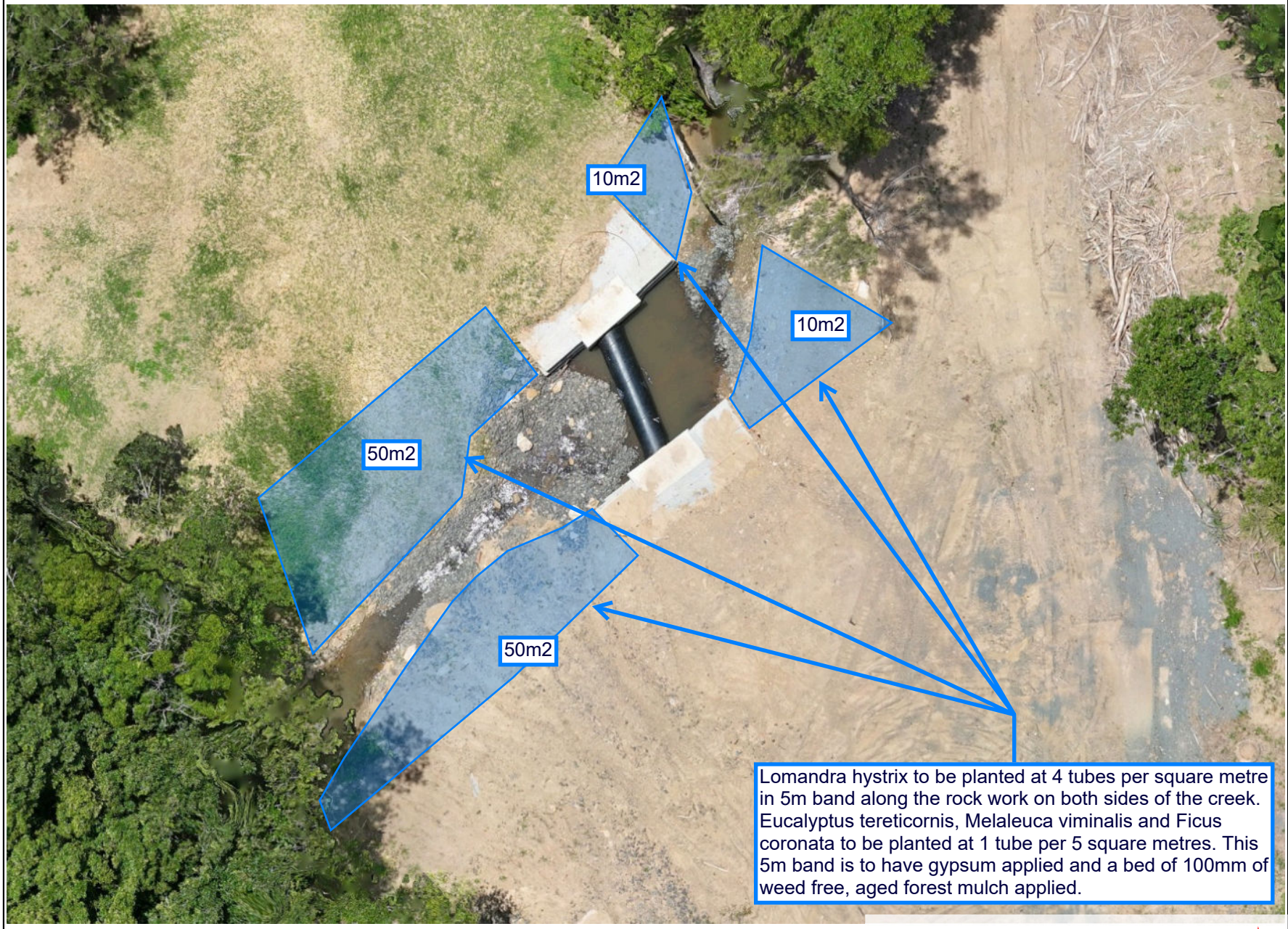
BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller



LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Priority 1 & 3
Waterway Crossings & Batter Stabilisation
Crossing 7

304700157-01-121
Layout 11 of 11

BMD

Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024

propeller

MH5

Phase 1 - Remove any large rocks and debris

Phase 2 - Lay bedding sand around pipe

Phase 3 - Backfill Area with existing material available in area. Surface stabilisation to avoid future erosion

Phase 1: Remove overhanging concrete and any debris around pipe

Phase 2: Place bedding sand around pipe

Phase 3: Place clay backfill in eroded area and apply surface stabilisation to avoid future erosion