

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

<b>Priority 1</b> 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.
<b>Priority 2</b> 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.
<b>Priority 3</b> 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.
<b>Priority 4</b> Weed Treatment	Revegetate Re spray with native seed mix.
<b>Priority 5</b> Rehabilitation	Weed treatment to disturbed areas of the Opossum Creek Wildlife Corridor extent.

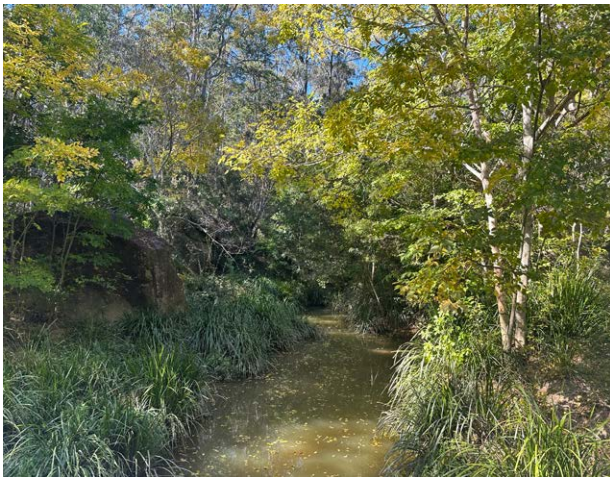


Image shows a healthy section of Opossum Creek riparian area.



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 hystrix 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

Rocks  
Scratched /  
hand picked  
from this zone

Lamandra to be  
planted in ~3m  
wide on both  
sides of  
crossing and  
area mulched /  
gypsum treated

Rocks Scratched  
/ hand picked  
from these zones

Mulch

50m2

55m2

~50m2

15m



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## LEGEND

Scratch  
/Handpick  
Rock

Scratch  
/Handpick  
Rock

35m<sup>2</sup>

50m<sup>2</sup>

50m<sup>2</sup>

Lamandra to be  
planted in ~1m  
wide on both  
sides of crossing  
and area  
mulched /  
gypsum treated

Mulch to side  
of footpath  
and remove  
silt fence

15m



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## LEGEND

Scratch  
/Handpick  
Rock

Scratch  
/Handpick  
Rock

64m2

51m2

Lamandra to be  
planted in ~3m  
wide on both  
sides of crossing  
and area  
mulched /  
gypsum treated

20m



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LEGEND

Repair erosion  
areas in batter

550m<sup>2</sup>

225m

4m wide mulch  
tapered to 2m  
at the start of  
the boulder  
wall, planted  
with lomandra  
(single row)

80m



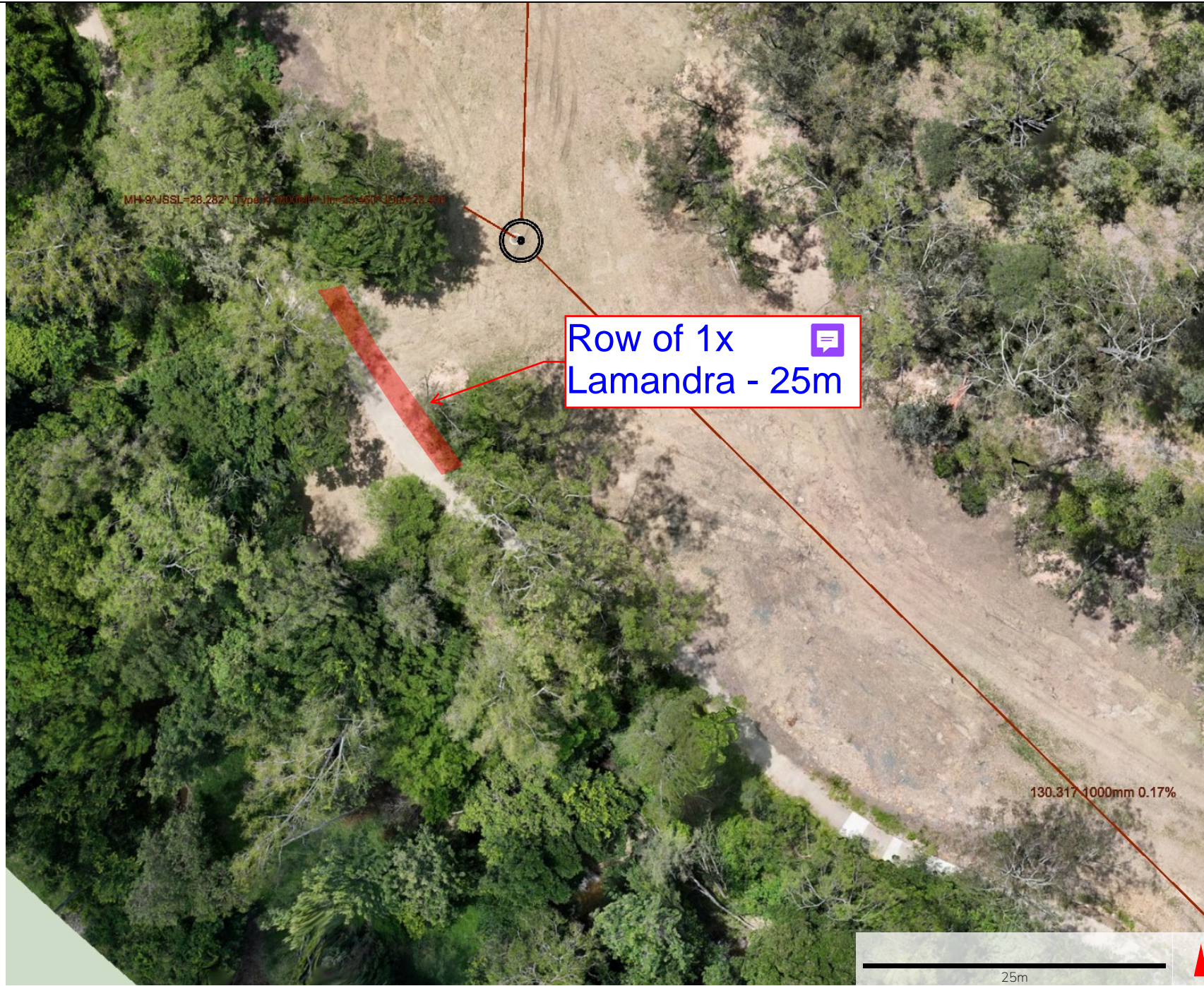
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LEGEND	
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0	0
OPCS2-MGA_Sewer_IFC_Design.dxf	
sv-Bdy Reg	
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dgn-Sewer Pipe	
<div></div>	dgn-Sewer Pipe



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LEGEND

Scratch  
/Handpick  
Rock

70m<sup>2</sup>

Lamandra to be  
planted in ~3m  
wide on both  
sides of crossing  
and area  
mulched /  
gypsum treated

64m<sup>2</sup>

Scratch  
/Handpick  
Rock

15m



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## LEGEND

Row of 1x  
Lamandra - 73m



30m



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## LEGEND

Scratch  
/Handpick  
Rock

Material to  
be moved  
to fill MH5

Lamandra to be  
planted on both  
sides of crossing  
and area  
mulched /  
gypsum treated

145m<sup>2</sup>

110m<sup>2</sup>

15m



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## LEGEND

Scratch  
/Handpick  
Rock

95m<sup>2</sup>

155m<sup>2</sup>

Lamandra to be  
planted on both  
sides of crossing  
and area  
mulched /  
gypsum treated

15m



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## LEGEND

Mulch and  
Gypsum  
Treatment

108m<sup>2</sup>

72m<sup>2</sup>

Scratch  
/Handpick  
Rock

20m



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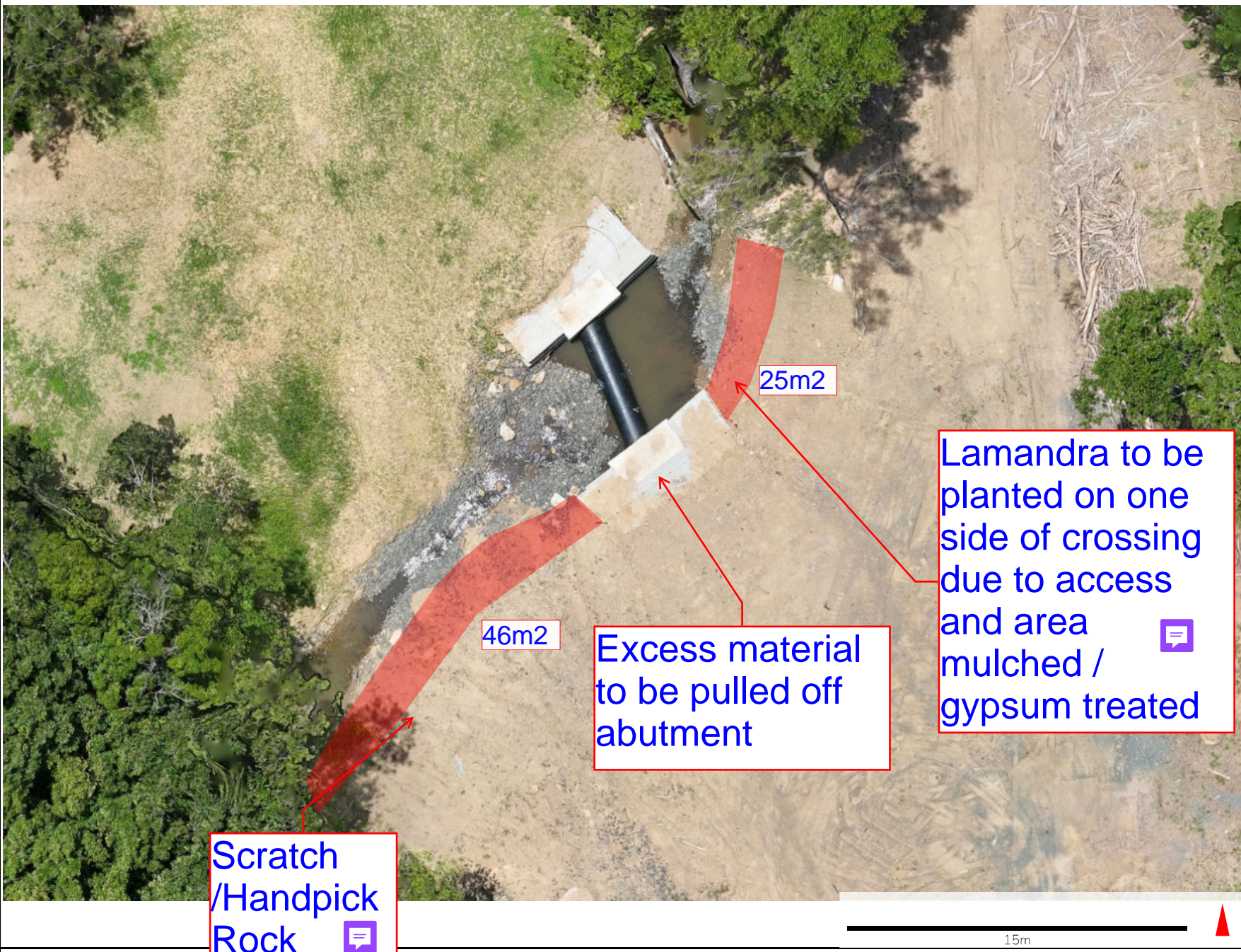
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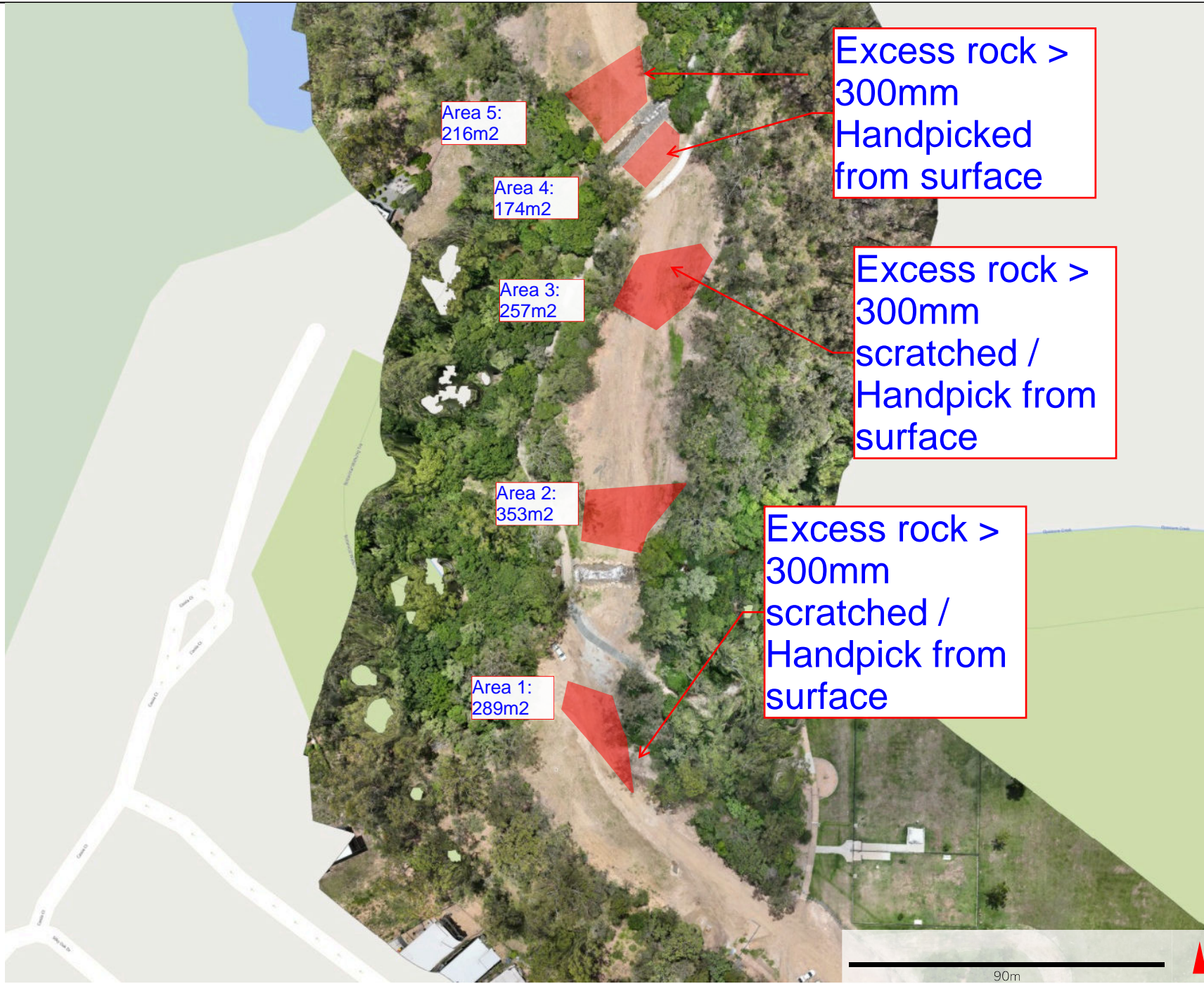




## LEGEND







LEGEND



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94  
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Existing Rock checks to be cleaned up and installed at 5m intervals

Existing rock shelf to be left as is

Area 8:  
88m<sup>2</sup>

Area 7:  
282m<sup>2</sup>

Excess rock > 300mm  
scratched /  
Handpicked

Excess surface  
rock scratched  
- to be used in  
whoa-boys

Area 6:  
504m<sup>2</sup>

LEGEND

90m



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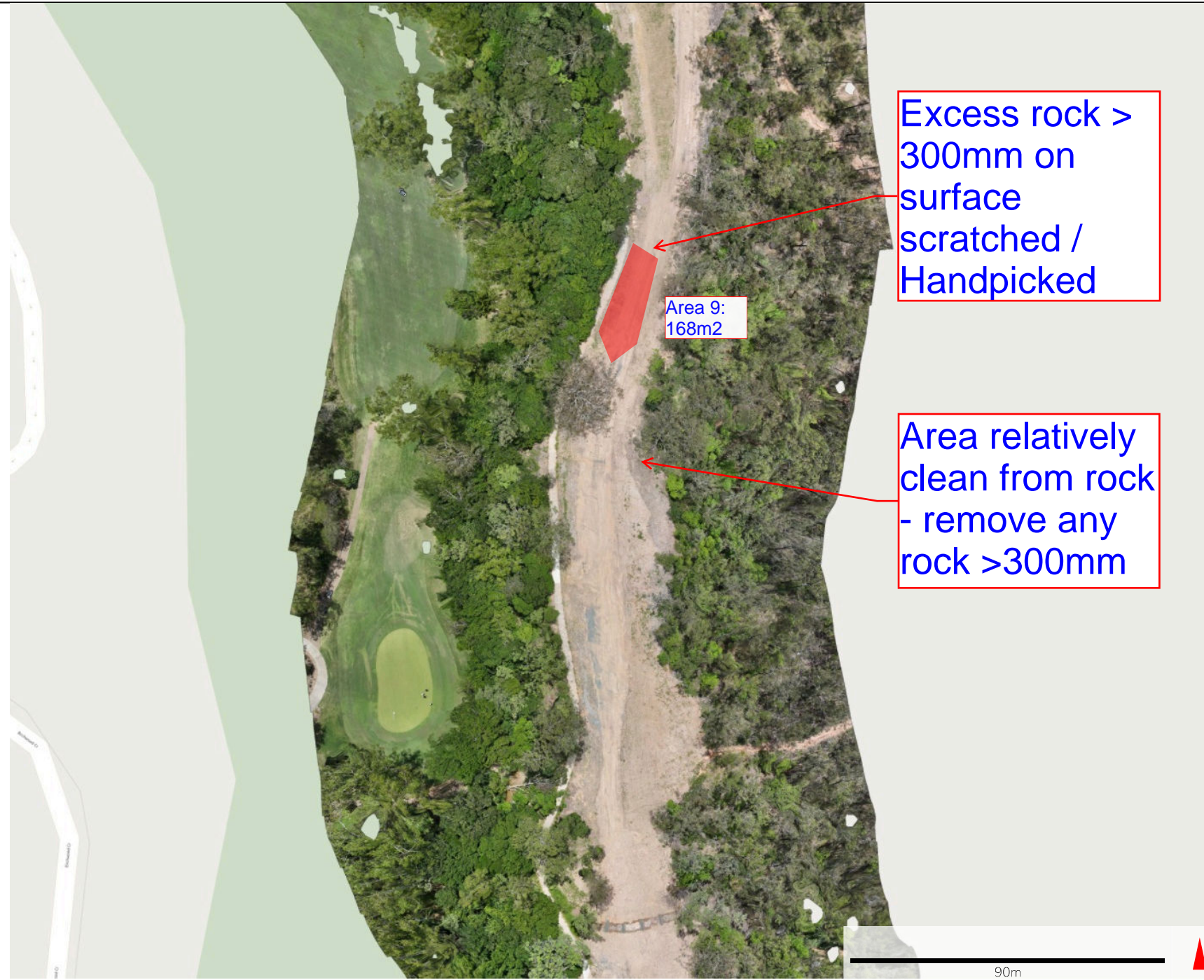
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## LEGEND

Excess rock >  
300mm on  
surface  
scratched /  
Handpicked

Area 9:  
168m2

Area relatively  
clean from rock  
- remove any  
rock >300mm

90m



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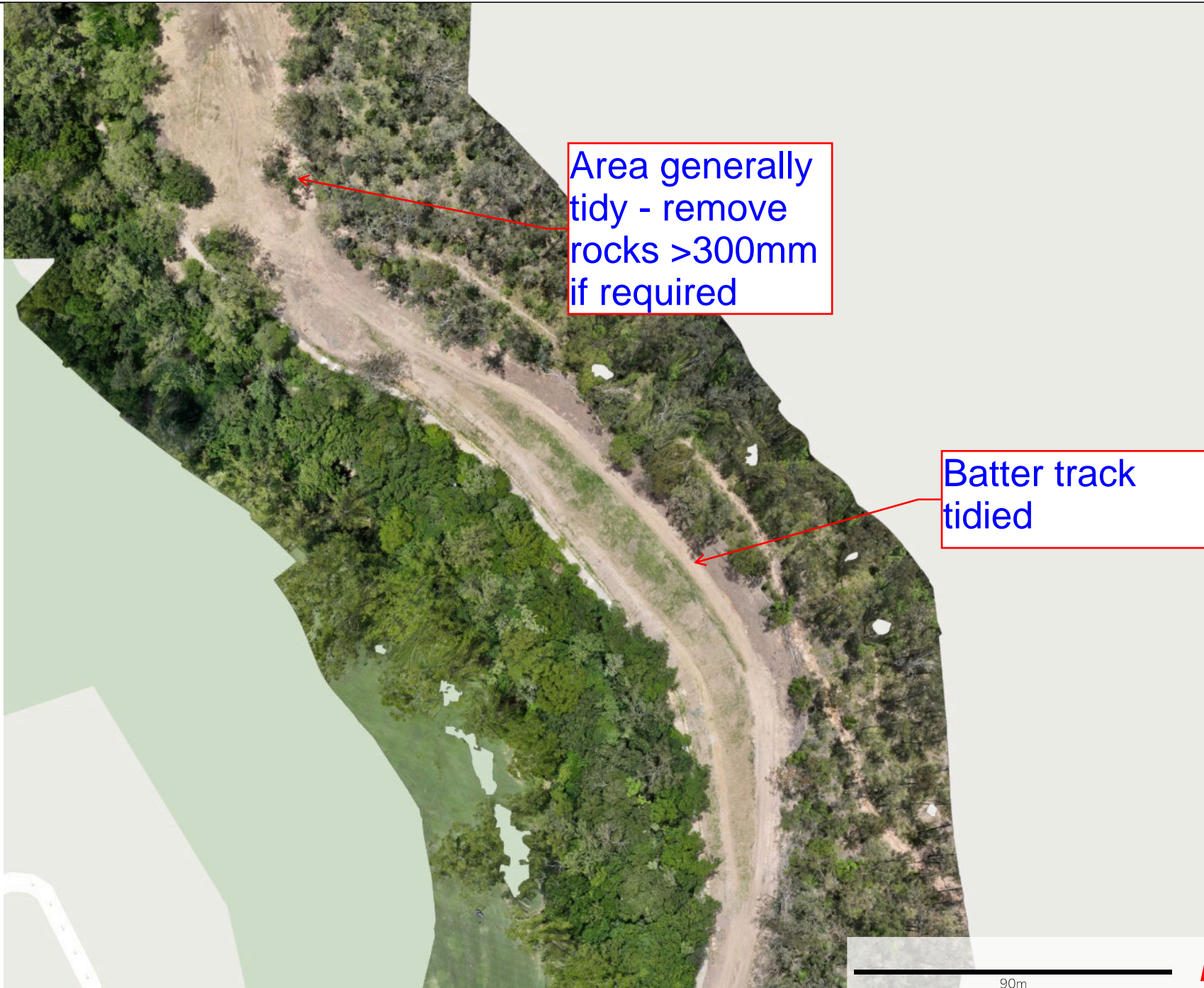
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## LEGEND



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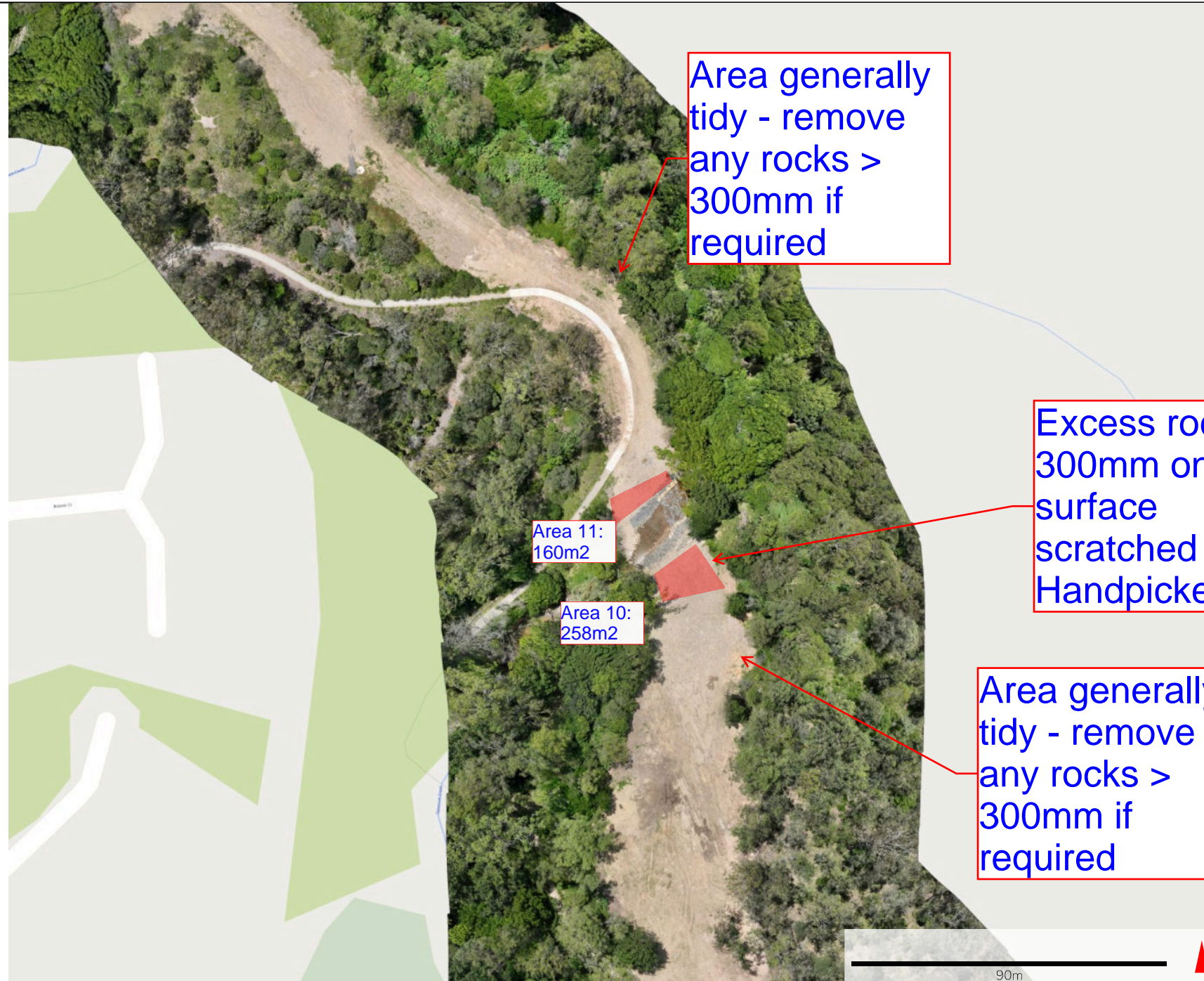
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## LEGEND



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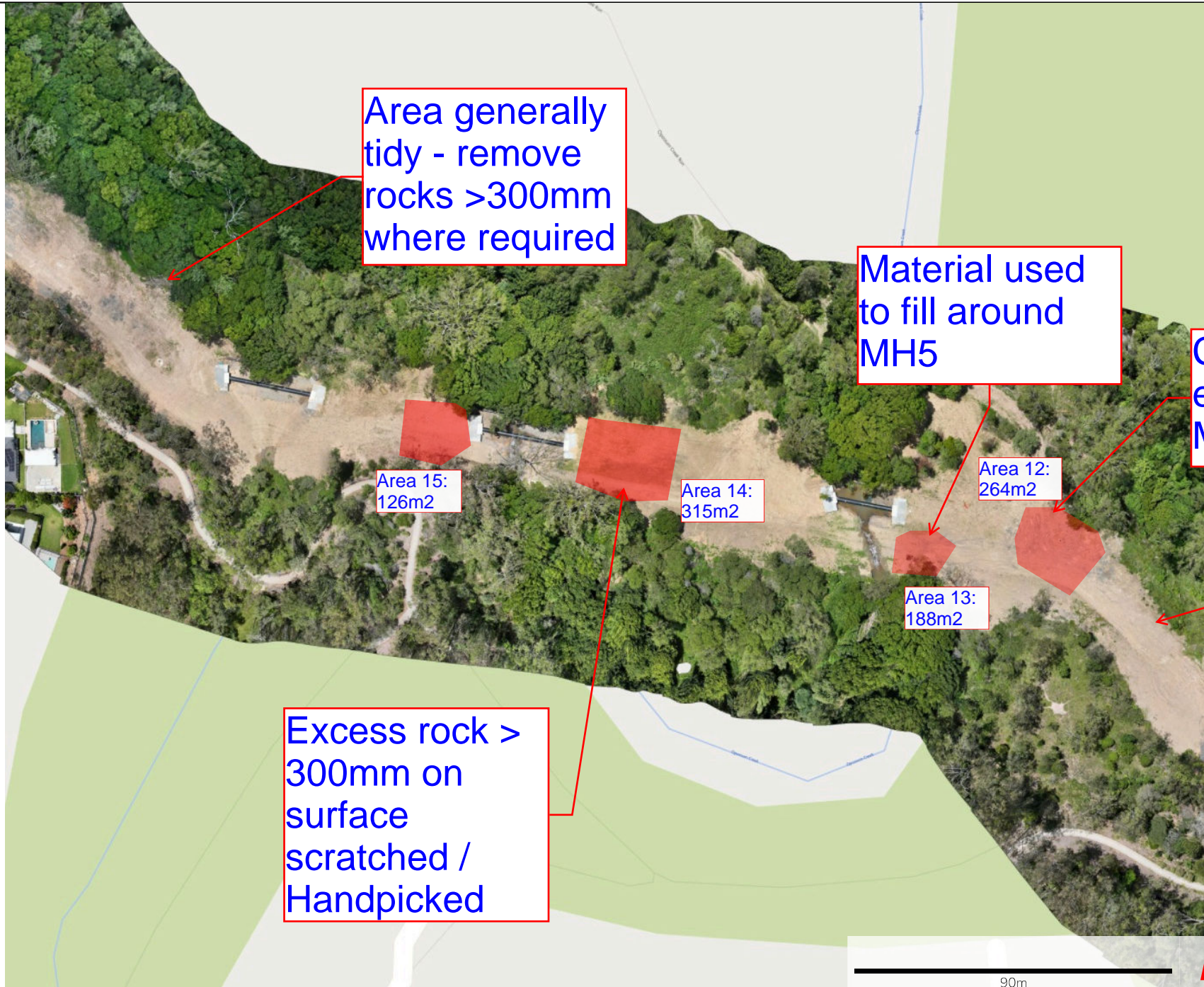
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LEGEND







LEGEND

Excess rock > 300mm on surface scratched / Handpicked

Area generally tidy - remove rocks >300mm where required

Excess rock > 300mm on surface scratched / Handpicked

Area generally tidy - remove rocks >300mm where required

Area 18:  
847m2

Area 17:  
331m2

Area 16:  
237m2

95m



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Existing Rock checks to be cleaned up and installed at 5m intervals

Existing rock shelf to be left as is

Area 7:  
902m<sup>2</sup>

Area 6:  
282m<sup>2</sup>

Excess rock > 300mm  
scratched /  
Handpicked

Area 5:  
3983m<sup>2</sup>

Excess surface  
rock scratched  
- to be used in  
whoa-boys

90m

LEGEND



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## LEGEND



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## LEGEND

Area 10:  
5914m<sup>2</sup>

Area generally  
tidy - remove  
rocks >300mm

Area 9:  
2882m<sup>2</sup>

Batter track  
tidied and  
whoa-boys set  
away from  
batter to  
reduce erosion

Rock Checks

90m



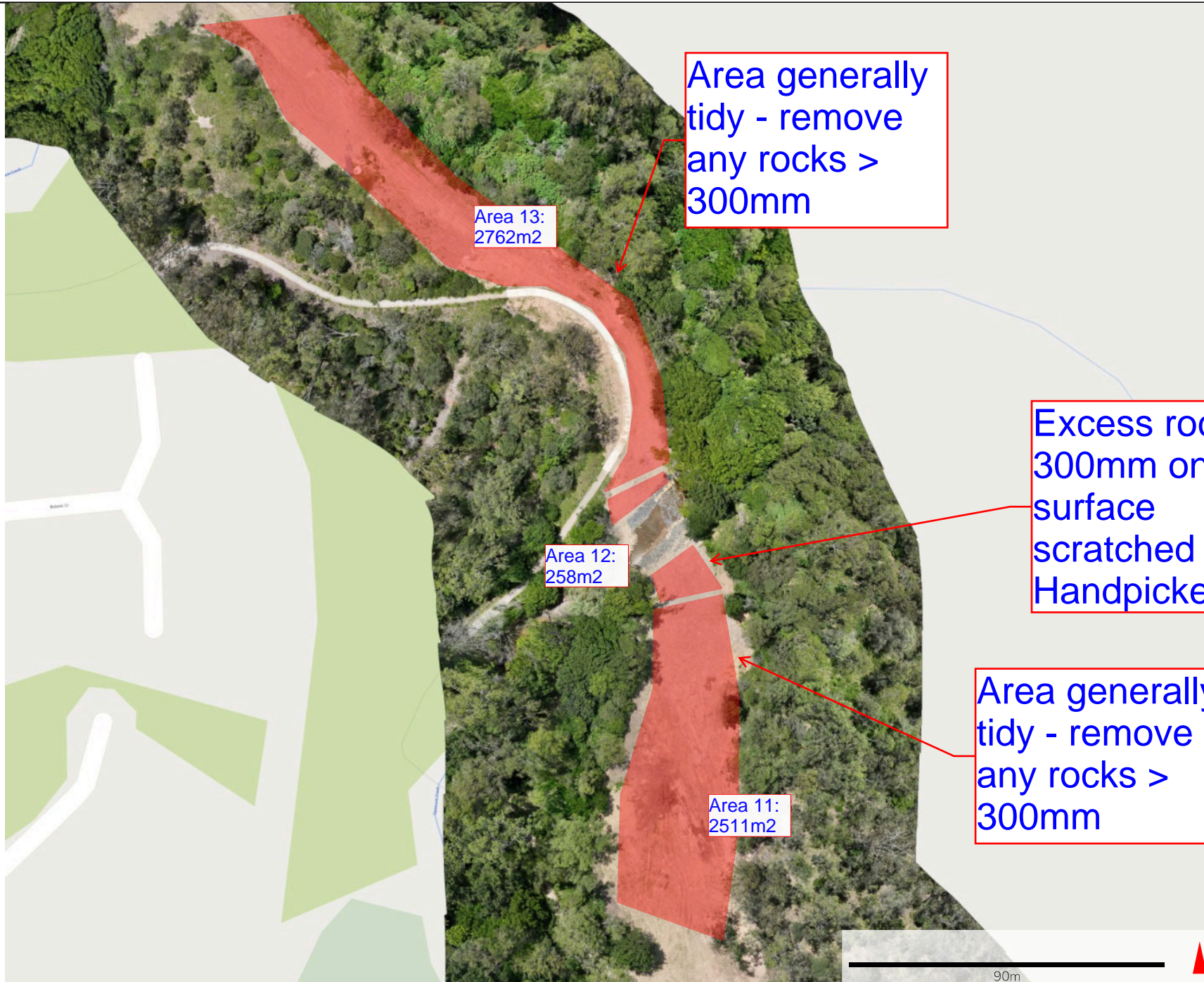
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Area generally tidy - remove any rocks > 300mm

Area 13:  
2762m2

Excess rock > 300mm on surface scratched / Handpicked

Area 12:  
258m2

Area generally tidy - remove any rocks > 300mm

Area 11:  
2511m2

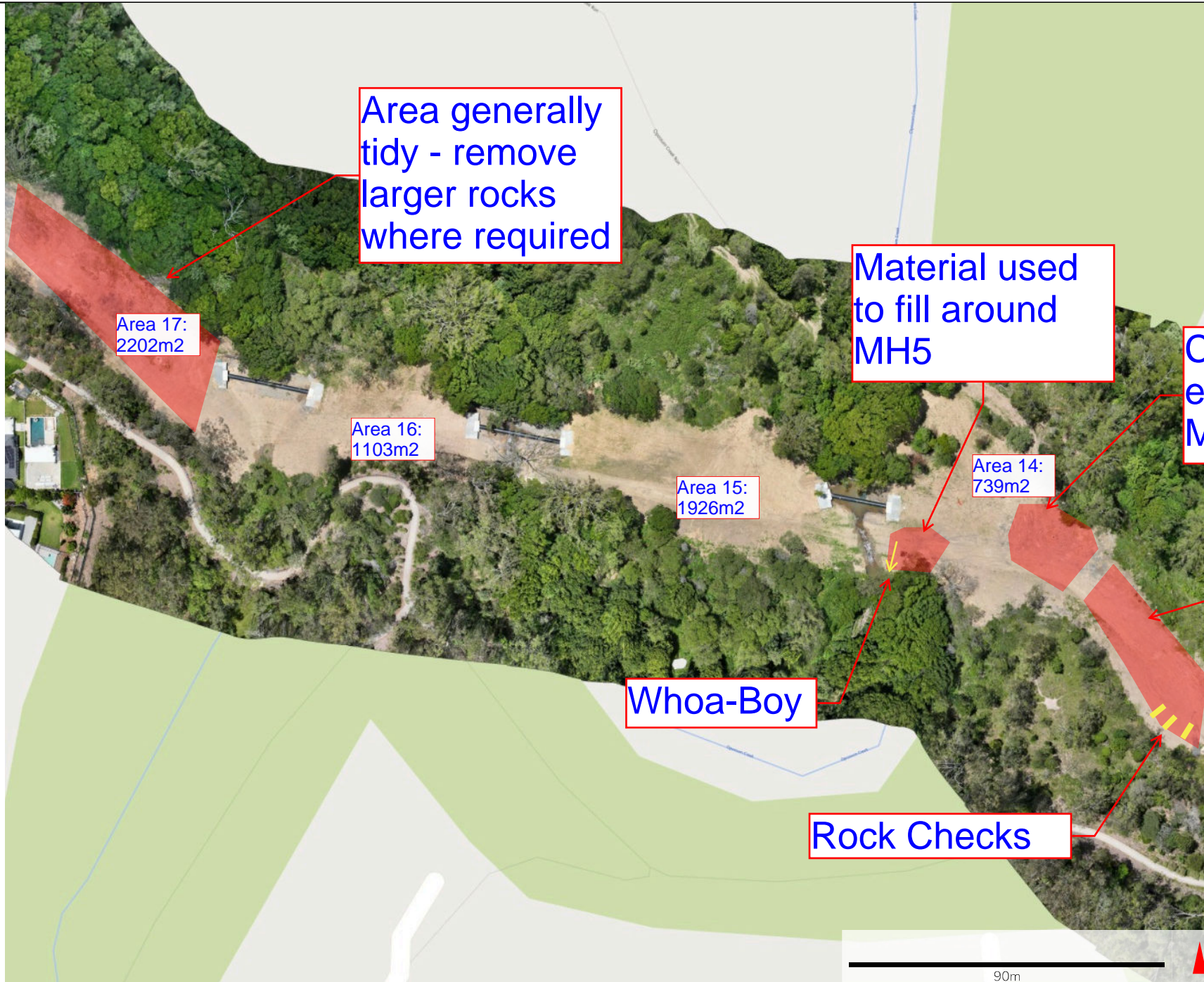
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LEGEND



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## LEGEND



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## LEGEND



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Crossing 2 works to include: weed treatment, mulching, and planting as per 30470157-01-112

Area 5: 216m<sup>2</sup>

Area 4: 216m<sup>2</sup>

Area 4: 174m<sup>2</sup>

Mulching to side of footpath refer to 30470157-01-112

Area 3: 174m<sup>2</sup>

Rock checks to be installed utilising rock removed from corridor

Area 3: 257m<sup>2</sup>

Area 2: 2817m<sup>2</sup>

Area 2: 353m<sup>2</sup>

Crossing 1 works to include: weed treatment, mulching, and planting as per 304700157-01-111

Rock removed from corridor to be used in existing whoa-boy

Area 1: 289m<sup>2</sup>

Hydromulch: 1300m<sup>2</sup>

Area 1: 2282m<sup>2</sup>

## 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

90m



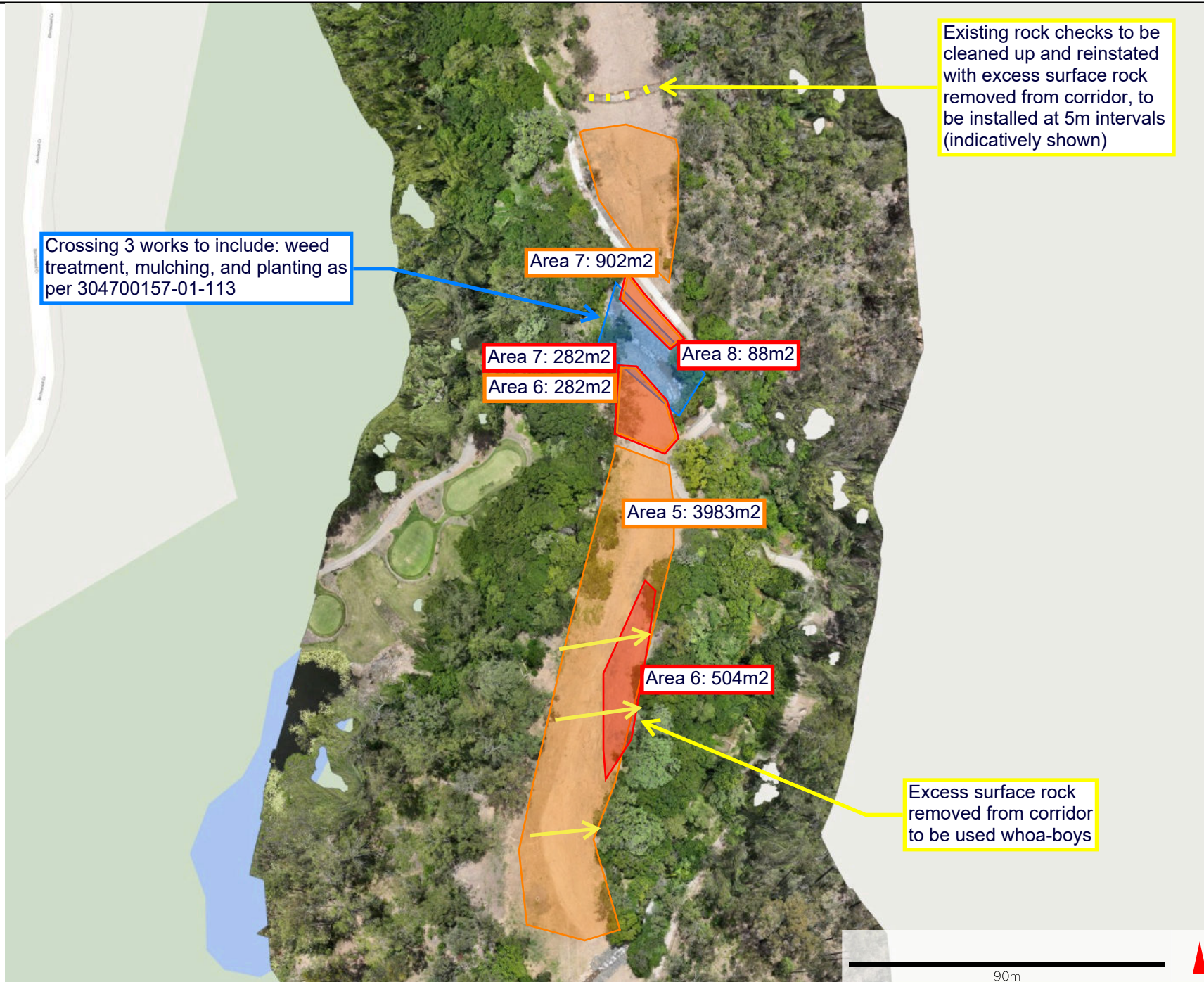
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## LEGEND

- 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

304700157-01-102  
Layout 2 of 7



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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

304700157-01-103  
Layout 3 of 7



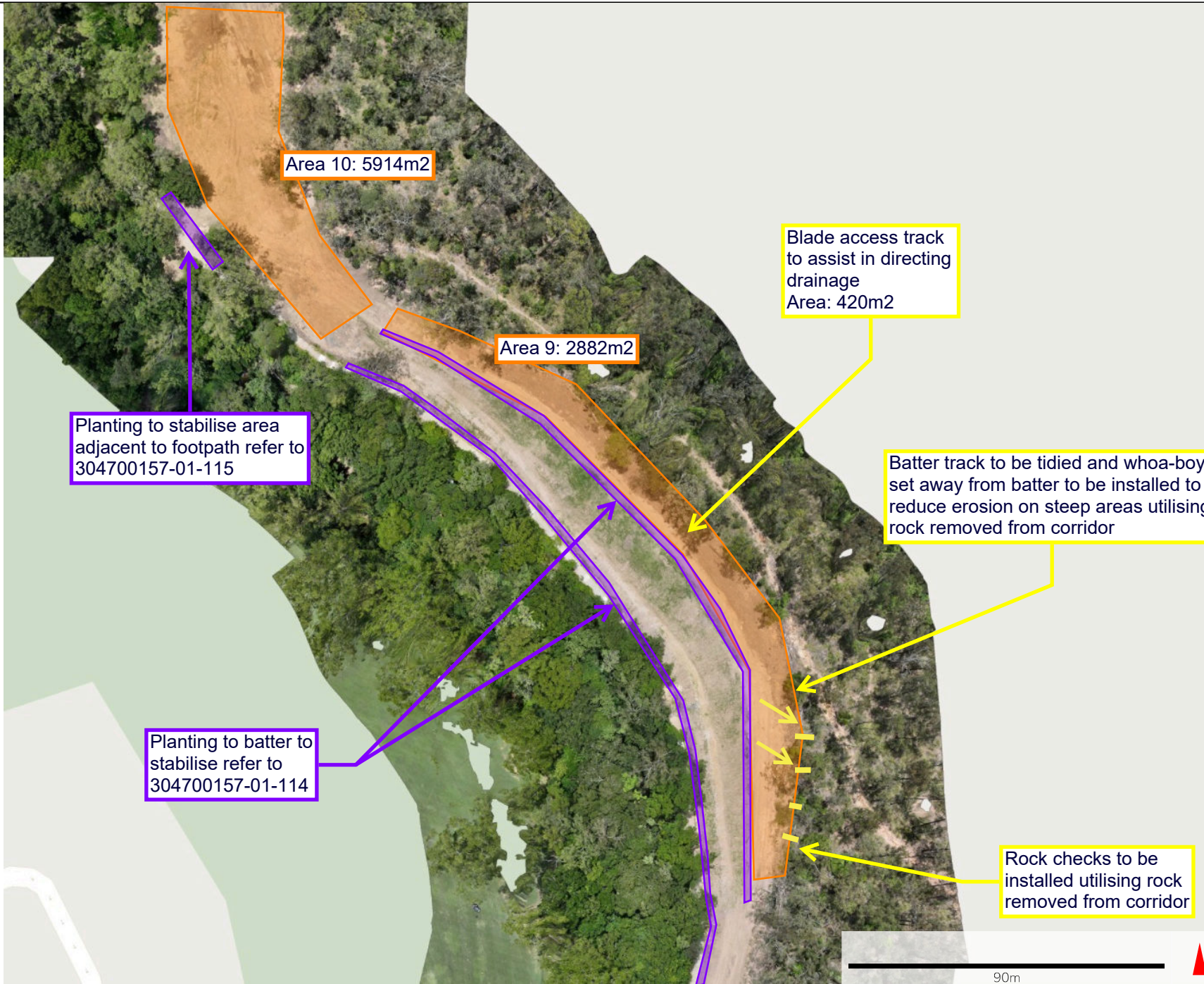
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## LEGEND

- 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

304700157-01-104  
Layout 4 of 7



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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



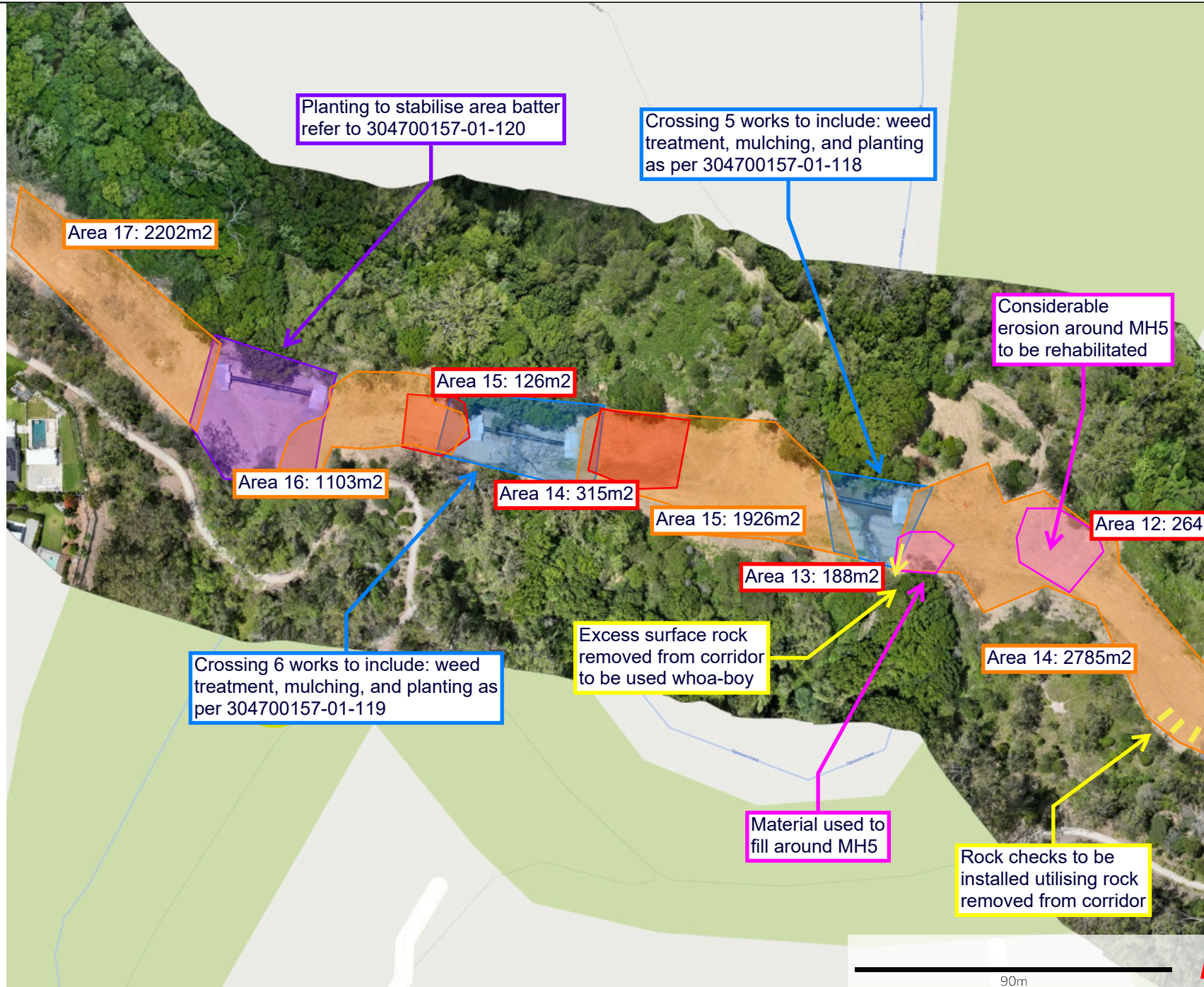
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## LEGEND

- 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

304700157-01-106  
Layout 6 of 7



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Crossing 7 works to include: weed treatment, mulching, and planting as per 304700157-01-121



## 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



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## LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

Lomandra hystrix to be planted at 4 tubes per square metre in 5m band along the rock work on both sides of the creek. Eucalyptus tereticornis, Melaleuca viminalis and Ficus coronata to be planted at 1 tube per 5 square metres. This 5m band is to have gypsum applied and a bed of 100mm of weed free, aged forest mulch applied.

110m<sup>2</sup>

105m<sup>2</sup>

Lomandra hystrix to be planted into 4m band of mulch at 4 tubes per square metre.

50m<sup>2</sup>

15m

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 1

304700157-01-111  
Layout 1 of 11



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## LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

*Lomandra hystrix* to be planted at 4 tubes per square metre in 5m band along the rock work on both sides of the creek. *Eucalyptus tereticornis*, *Melaleuca viminalis* and *Ficus coronata* to be planted at 1 tube per 5 square metres. This 5m band is to have gypsum applied and a bed of 100mm of weed free, aged forest mulch applied.

115m<sup>2</sup>

115m<sup>2</sup>

50m<sup>2</sup>

2m band of aged, weed-free forest mulch applied along both sides of pathway.

1.5m

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 2

304700157-01-112  
Layout 2 of 11



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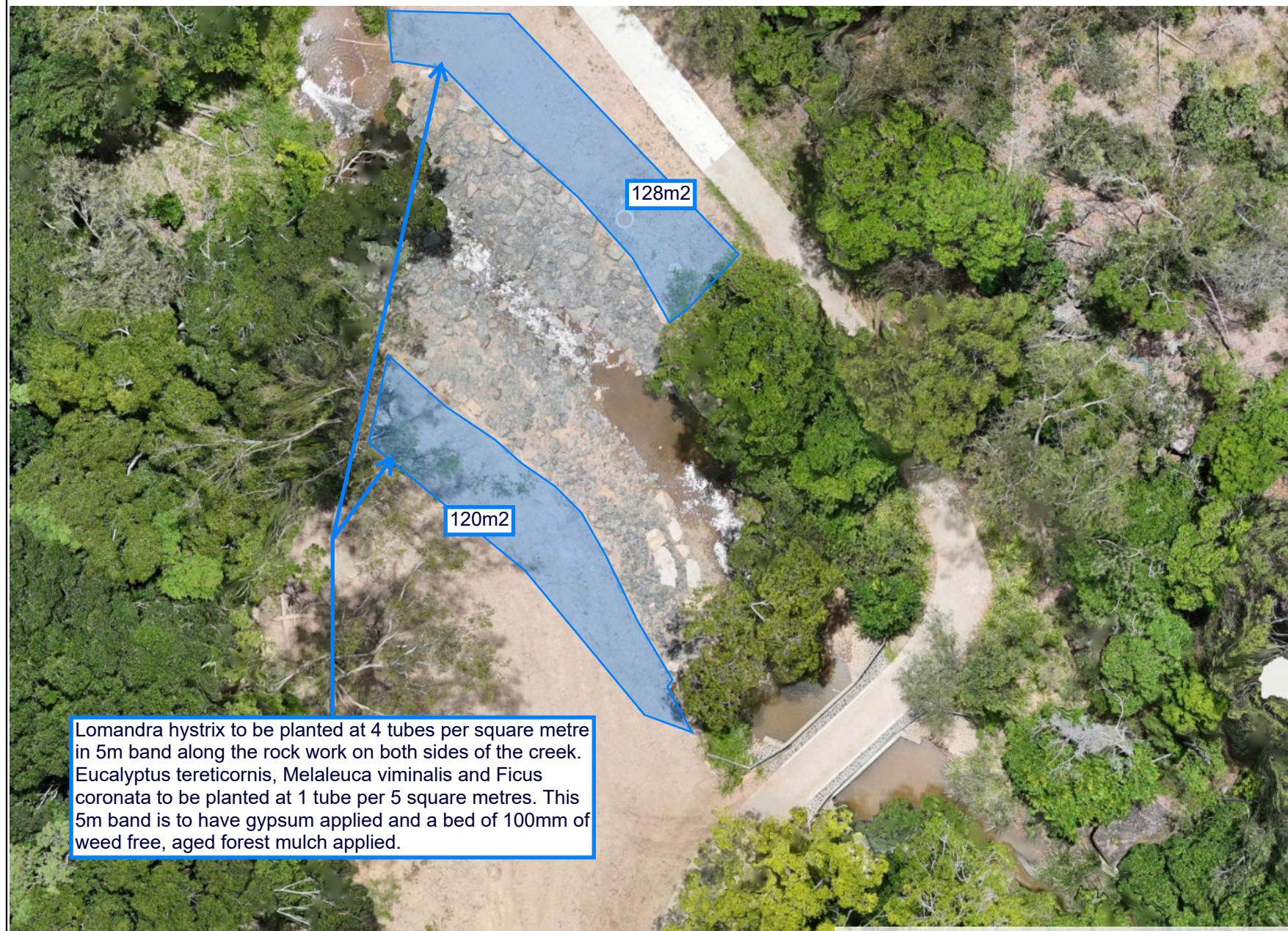
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## LEGEND

-  Waterway crossing landscape work
-  Vegetation batter stabilisation



Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 3

304700157-01-113  
Layout 3 of 11



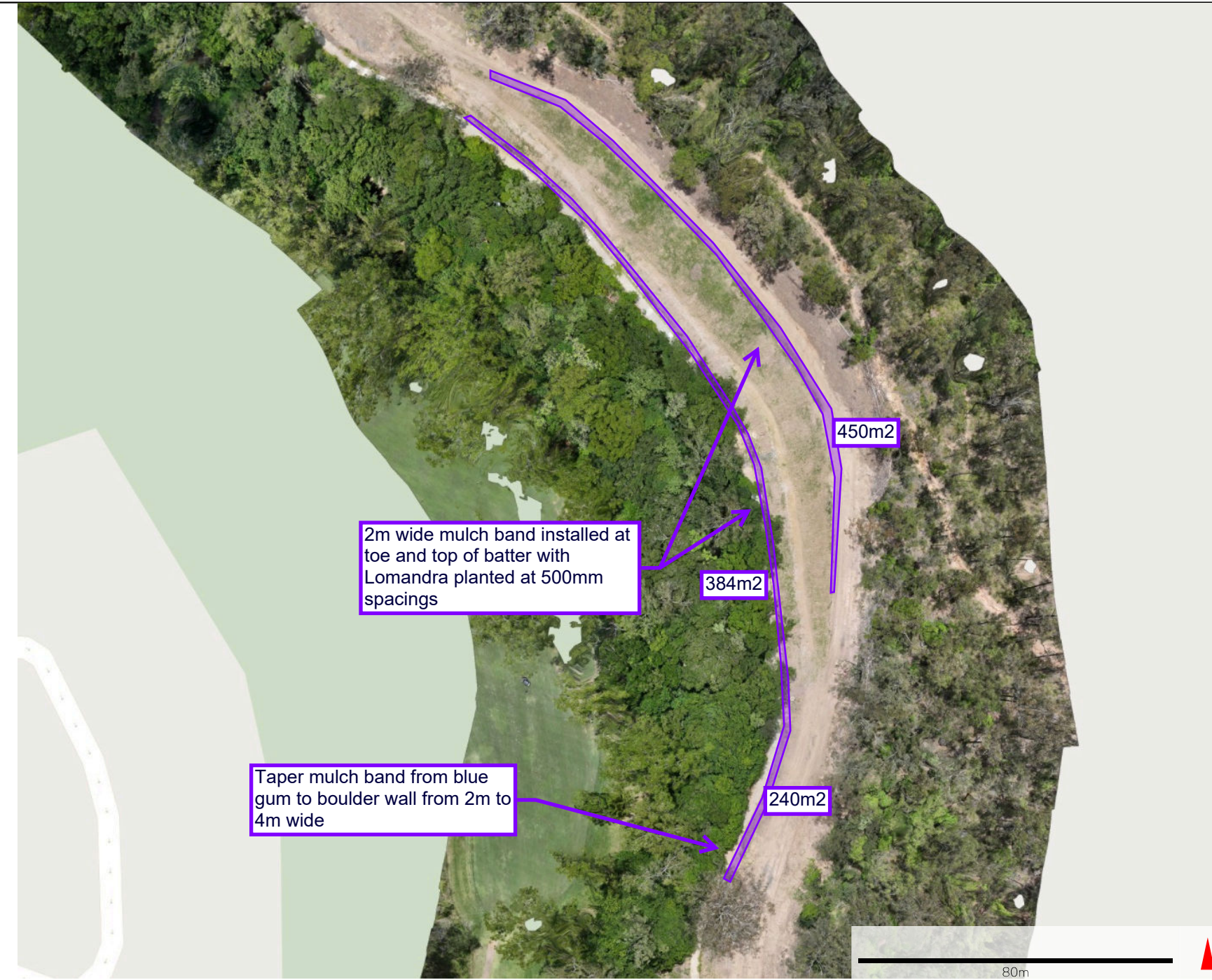
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## LEGEND

-  Waterway crossing landscape work
-  Vegetation batter stabilisation

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

304700157-01-114  
Layout 4 of 11



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## LEGEND

-  Waterway crossing landscape work
-  Vegetation batter stabilisation

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Vegetation Work

304700157-01-115  
Layout 5 of 11



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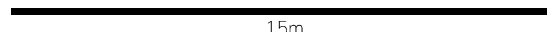
 propeller



Lomandra hystrix to be planted at 4 tubes per square metre in 5m band along the rock work on both sides of the creek. Eucalyptus tereticornis, Melaleuca viminalis and Ficus coronata to be planted at 1 tube per 5 square metres. This 5m band is to have gypsum applied and a bed of 100mm of weed free, aged forest mulch applied.

130m<sup>2</sup>

108m<sup>2</sup>



15m



## LEGEND



Waterway crossing  
landscape work



Vegetation batter  
stabilisation

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 4

304700157-01-116  
Layout 6 of 11



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94



Survey: 10 Jan 2023

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## LEGEND

-  Waterway crossing landscape work
-  Vegetation batter stabilisation

300m<sup>2</sup>

Lomandra hystrix to be planted into 4m band of mulch at 4 tubes per square metre.

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Vegetation

304700157-01-117  
Layout 7 of 11

30m



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

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Lomandra hystrix to be planted at 4 tubes per square metre in 5m band along the rock work on both sides of the creek. Eucalyptus tereticornis, Melaleuca viminalis and Ficus coronata to be planted at 1 tube per 5 square metres. This 5m band is to have gypsum applied and a bed of 100mm of weed free, aged forest mulch applied.

## LEGEND

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

Material to be moved to fill MH5

110m<sup>2</sup>

145m<sup>2</sup>

15m

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 5

304700157-01-118  
Layout 8 of 11



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

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## LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation

*Lomandra hystrix* to be planted at 4 tubes per square metre in 5m band along the rock work on both sides of the creek. *Eucalyptus tereticornis*, *Melaleuca viminalis* and *Ficus coronata* to be planted at 1 tube per 5 square metres. This 5m band is to have gypsum applied and a bed of 100mm of weed free, aged forest mulch applied.

95m<sup>2</sup>

155m<sup>2</sup>

15m

Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 6

304700157-01-119  
Layout 9 of 11



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94



Survey: 10 Jan 2023

File created: May 13, 2024





## LEGEND

-  Waterway crossing landscape work
-  Vegetation batter stabilisation

105m<sup>2</sup>

75m<sup>2</sup>

band of aged, weed-free forest mulch applied along both sides of batter

20m



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

File created: May 13, 2024



 **propeller**

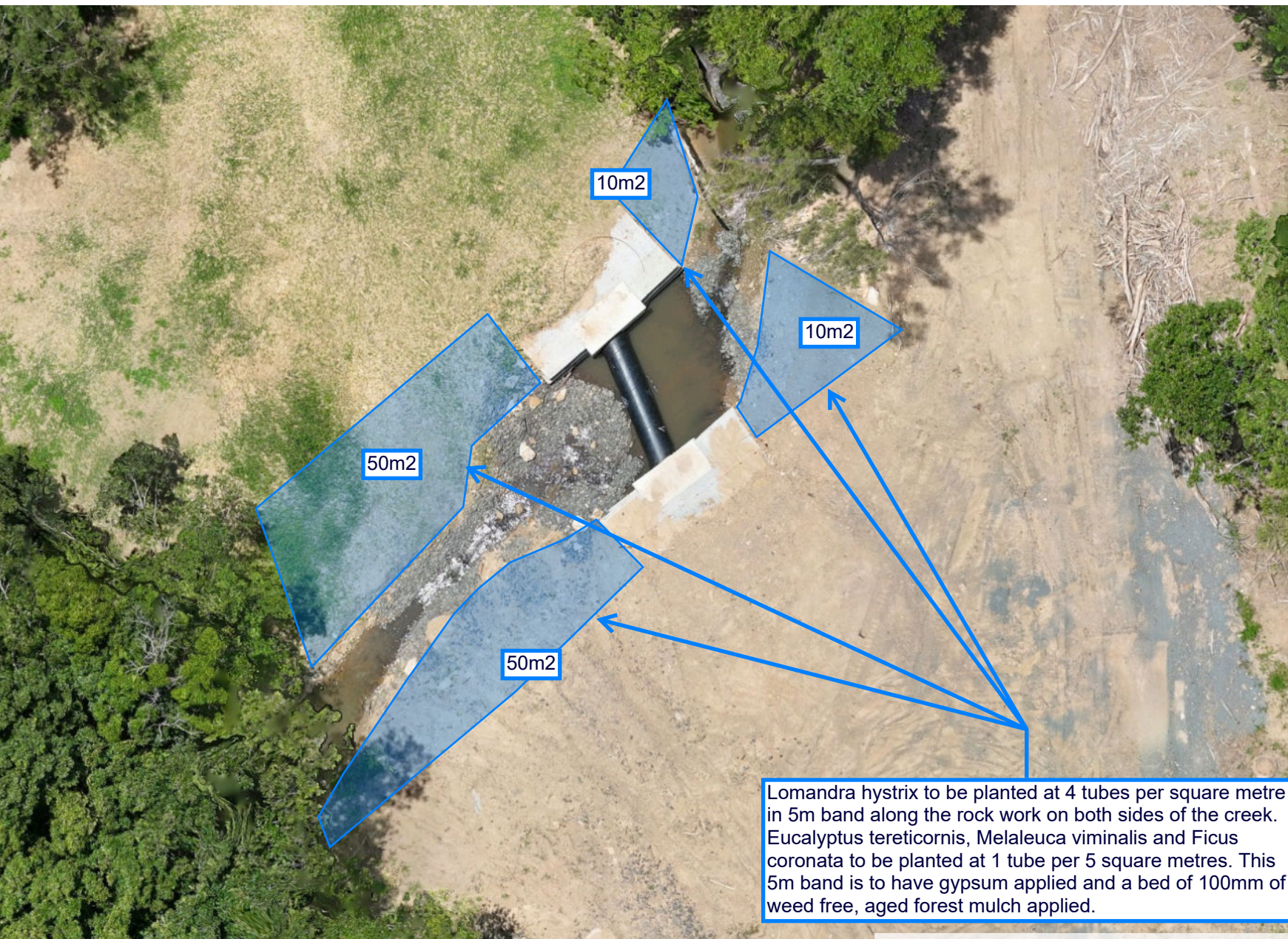
Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Vegetated Crossing

304700157-01-120  
Layout 10 of 11



## LEGEND

- Waterway crossing landscape work
- Vegetation batter stabilisation



Priority 1 & 3  
Waterway Crossings & Batter Stabilisation  
Crossing 7

304700157-01-121  
Layout 11 of 11



Site: 4858 Opossum Creek Trunk Sewer - MGA/GDA94

Survey: 10 Jan 2023

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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