

MACARTHUR STREET BIKE PATH

(Wendouree Parade to Creswick Road)

Landscape Plan

DRAWING INDEX

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GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH OTHER DRAWINGS OF THE SET.
2. THIS DRAWING IS NOT TO BE SCALED
3. ALL MATERIALS CONSTRUCTIONS ETC. ARE TO COMPLY WITH ALL RELEVANT CODES, BY-LAWS, BUILDING CODE OF AUSTRALIA ETC.
4. NO VARIATION IS TO BE MADE TO THIS DRAWING WITHOUT THE PRIOR APPROVAL OF THE PROPRIETOR AND/OR LANDSCAPE ARCHITECT.
5. CONTRACTOR TO NOTE THAT THE REQUIRED LOCATION AND DIMENSIONS OF WORKS MAY NOT CORRESPOND EXACTLY WITH EXISTING CONDITIONS.
6. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LEVELS PRIOR TO THE COMMENCEMENT OF WORKS.
7. CONTRACTOR TO VERIFY THE LOCATIONS OF ALL SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.
9. STORMWATER/AGRICULTURAL DRAINAGE TO BE CONSTRUCTED IN AN APPROVED MANNER AND CONNECTED TO THE EXISTING SYSTEM IN A MANNER APPROVED BY THE RELEVANT AUTHORITY.
10. ALL LANDSCAPE AREAS TO HAVE MINIMUM CROSSFALLS TO ALLOW DRAINAGE TOWARDS PITS, GUTTERS OR NOMINATED DRAINAGE POINTS IN ACCORDANCE WITH ARCHITECTS SPECIFICATION.
11. NEW SURFACES ARE TO MATCH EXISTING WHERE APPLICABLE.
12. FOUNDATIONS, EXCAVATIONS, REINFORCEMENT PLACEMENT ETC. TO BE INSPECTED AND APPROVED BY THE BUILDING SURVEYOR PRIOR TO ANY CONCRETE PLACEMENT.

NOTE:

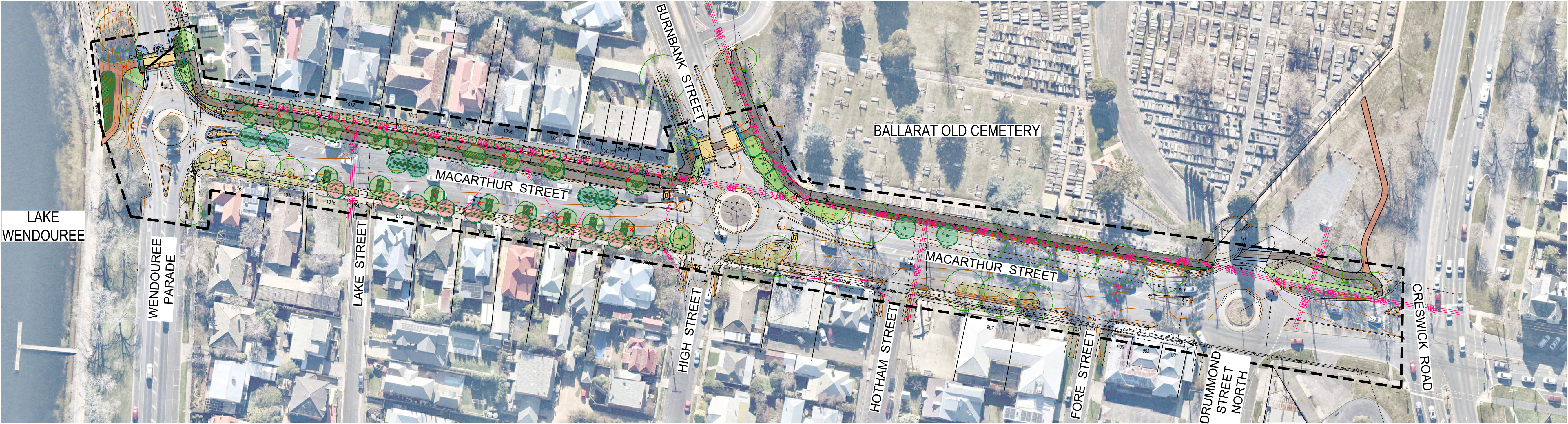
These plans are to be read in conjunction with Stantec drawings (REF. No. 1017RD-02). Any discrepancy between these plans & other consultant's specification should be discussed with the project manager.

1. Unless otherwise specified on the drawings all measurements, lengths, heights and distances to be determined from dimensions and NOT scaled off the drawings.
2. Before commencement of any works it is the responsibility of the Landscape Contractor to contact Before You Dig Australia (byda.com.au) for information on services in the area shown on the plan
3. The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown. The Contractor shall verify and clearly mark the location and depth of all services by an underground services locator prior to commencing on site.
4. The Contractor must have a copy of BYDA information and plans on site at all times.
5. The Contractor shall be liable for any damage to services during the landscape works contract.
6. All planting shall be planted in locations shown on this plan.

7. Any change in plant species and locations must have the approval of the Superintendent.
8. Trees shall not be planted less than the following distances from existing elements, unless approved in writing by the City of Ballarat:
 - Footpaths - 1.2m
 - Driveways and crossovers - 3.0m
 - Stormwater and sewerage pits - 2.0m
 - Intersections - 10.0m
 - Service crossings - 2.0m
 - Kerb and channel - 2.0m
 - Street lights - 4.0m
9. The Superintendent is to inspect and approve the plants supplied by the Contractor prior to planting.

NOTE:

All tree stock to be used within this development is to meet the Australian Standard, AS2303 2018 Tree Stock for Landscape Use.



SITE PLAN

1:750 @ A1

TREE PROTECTION ZONE NOTES:

All trees unless nominated for removal on site are to be retained & protected from works - refer to plans for locations. The trees have had their Tree Protection Zone (TPZ) calculated by an arborist. These trees should be protected to the canopy dripline this space is to be treated as a TPZ.

The TPZ is to be delineated on site by a physical barrier of protective fencing that is a minimum of 1.8m high. The fencing is to be installed around retained trees prior to site establishment and retained intact until completion of the works. The TPZ fencing should be located by a qualified arborist & erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval by the project arborist. The TPZ fencing should be secured to restrict all access to the tree.

TPZ fencing is to consist of chainwire / mesh / galvanised steel post panels with shade cloth (if required), held in place with concrete feet as per the AS4970 Section 4.3 Protective Fencing. This fencing is to be maintained in good condition and as a physical barrier for the extent of the development period.

Signs identifying the TPZ should be placed on the TPZ / fence and be visible from within the development site and be maintained on the fencing for the extent of the development period. A typical example of a TPZ sign is shown below.



Activities restricted within the TPZ or the drip line of trees to be retained include but are not limited to:

- vehicular or pedestrian access
- machine excavation including trenching
- excavation for silt fencing
- cultivation and landscaping
- trenching or soil excavation
- storage or dumping of materials
- storage / preparation / dumping of chemicals, including preparation of cement products

- parking of vehicles and plant
- refuelling
- dumping of waste
- wash down and cleaning of equipment
- placement of fill
- lighting of fires
- soil level changes
- temporary or permanent installation of utilities and signs
- construction of entry or exit pits for underground services
- Any other actions or activities that may cause physical damage to the tree.

All contractors working on this project to be made aware of the importance of protecting the root zone, canopy & trunk.

TPZ Maintenance

The fenced TPZ / dripline area should be mulched to retain soil moisture throughout the period of the contract. The mulch must be maintained to a depth of 75-100mm. Where the existing landscape within the TPZ is to remain unaltered (e.g. garden beds or turf) mulch may not be required. Soil moisture levels should be regularly monitored by the Project Arborist. Temporary irrigation or watering may be required within the TPZ. An above-ground irrigation system should be installed and maintained by a competent individual. All weeds should be removed by hand without major soil disturbance or should be controlled with use of appropriate knockdown herbicide.

Working within the TPZ

Some works and activities within the TPZ may be permitted by the determining authority. These must be directly supervised on site by the Project Arborist. Any additional encroachment that becomes necessary as the site works progress must be reviewed by the Project Arborist and be acceptable to the determining authority before being carried out.

Excavation for planting holes, fence posts, garden edging, etc. should be undertaken manually within the TPZ of trees to be retained. If significant roots (greater than 30mm diameter) are encountered these are to be retained unscathed and the project arborist contacted for advice before proceeding with future work within the TPZ. Any small roots are to be cleanly pruned by the Project Arborist, at right angles, using sharp, clean tools appropriate for the application.

Ground Protection

If temporary access for machinery is required within the TPZ, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Examples of ground protection include track mats and rumble boards strapped over mulch or crushed rock. Depending on weather conditions, geotextile fabric may be required to prevent mulch and crushed rock mixing into the site soils. Contact the project arborist to advise.

Trunk and Branch Protection

Where trees cannot be isolated from vehicles or machinery by TPZ fencing, trunk and branch protection may be required to prevent mechanical damage. Protection may consist of installation of padding surrounding the trunk or branch, held in place with batons strapped together, or similar. Boards are to be strapped to trees, not nailed or screwed. Crown protection may also include pruning, tying-back of branches or other measures. If pruning is required, it must be undertaken by a qualified arborist and as per the specifications of AS 4373-2007 Pruning of Amenity Trees and should be undertaken before the establishment of the TPZ.

Base information derived from the following sources:

- Nemap Aerial Photo, dated July 06, 2024
- Macarthur Street Bike Path Engineering Plans, prepared by Stantec, dated December, 2024
- Site visit

Due to possible distortions associated with the aerial photograph, the location of existing and proposed features are approximate only and should be verified on site prior to commencement of works. All dimensions / areas shown are approximate only and should be confirmed on site.

REVISIONS

3.04.25 - REV A Updated as per Council comments and revised Civil drawings
19.08.25 - REV B Updated as per revised Civil drawings
27.08.25 - REV C Updated as per Council comments

LEGEND

	Extent of work
	Cadaste
	Existing overhead powerlines & pole - refer to civil plan
	Existing / proposed kerb - refer to civil plan
	Concrete edge strip (by civil)
	Contours at 200mm intervals
	Item to be demolished & removed
	Tree to be removed / relocated
	Tree to be protected and retained
	Existing grass naturestrip
	Proposed grass
	Existing concrete footpath to be retained
	Concrete bike path pavement (By civil)
	Proposed road pavement (By civil)
	Gravel path (By civil)
	Tuscan Stone mulch
	Tuscan Toppings surface
	Raised pedestrian crossing (By civil)
	Proposed small / medium trees in naturestrip
	Proposed medium / large street trees within tree pit
	Proposed large trees in median strip
	Proposed mulched garden bed
	Proposed bladed plants
	Proposed groundcovers
	Proposed WPC bollards (by civil)
	Proposed steel edging

Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

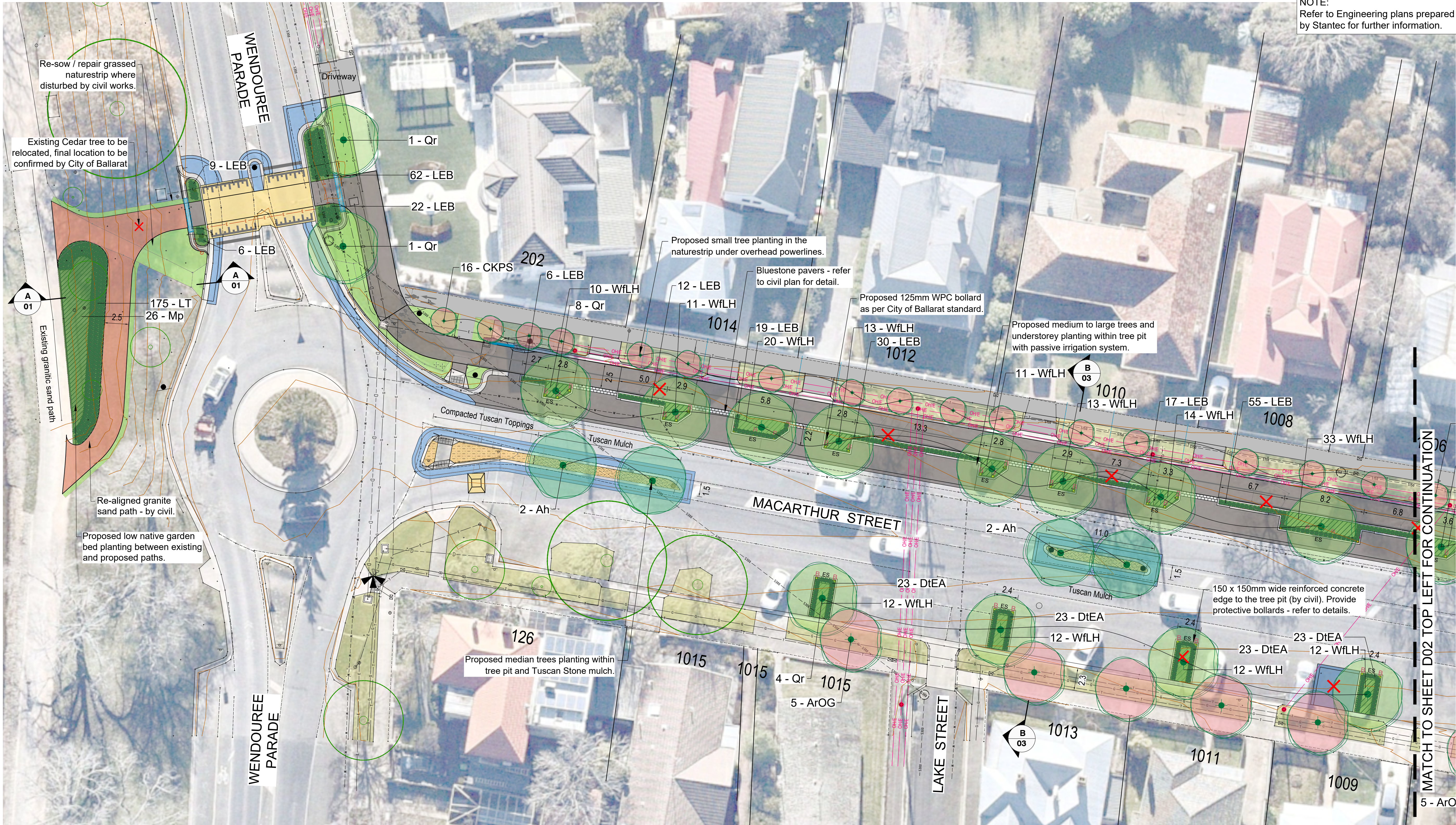
Drawing Title:
Cover Page & Drawing
Index

Client:
City of Ballarat

Date: August 28, 2025
Scale: 1:750 @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D00
Revision: C

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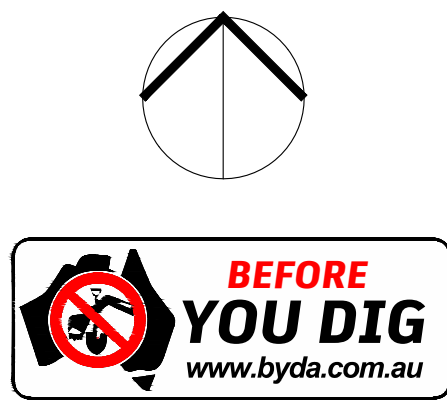


NOTE:
Refer to Engineering plans prepared
by Stantec for further information.

REVISIONS	
3.04.25 - REV A	Updated as per Council comments and revised Civil drawings
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- Proposed bladed plants
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- Proposed WPC bollards (by civil)



Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Detailed Landscape Plan #1

Client:
City of Ballarat

Date: August 28, 2025
Scale: 1:200 @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D01
Revision: C

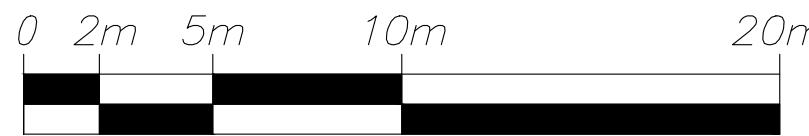
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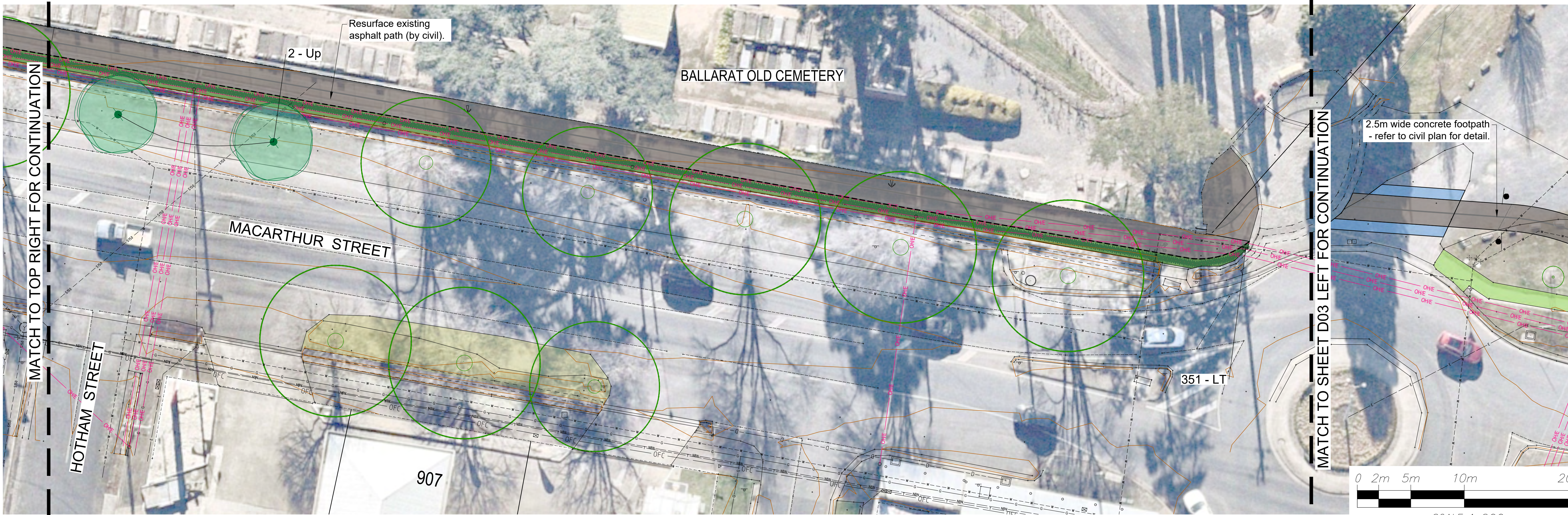
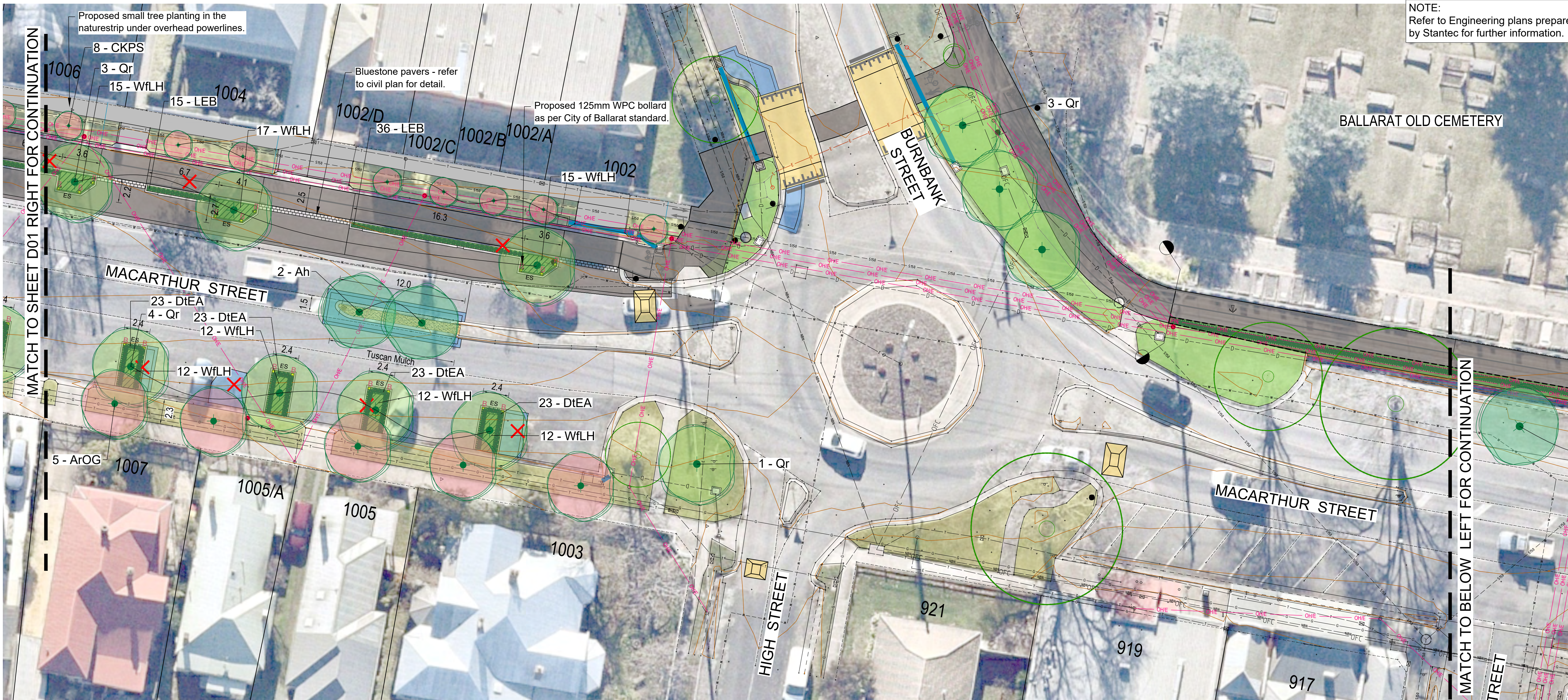
PLANT SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	MATURE SIZE (HXW)	INSTALL SIZE	DENSITY	QTY
TREES						
ArOG	Acer rubrum 'October Glory'	October Glory Maple	12 x 9m	45L, 1.5m high, 30mm Cal.	As shown	10
Ah	Araucaria heterophylla	Norfolk Island Pine	25 x 10m	45L, 1.5m high, 30mm Cal.	As shown	6
CKPS	Callistemon x 'Kings Park Special'	Bottlebrush ctv.	4 x 3m	45L, 1.5m high, 30mm Cal.	As shown	24
Qr	Quercus robur	English Oak	11 x 11m	45L, 1.5m high, 30mm Cal.	As shown	25
Up	Ulmus parvifolia	Chinese Elm	10 x 11m	45L, 1.5m high, 30mm Cal.	As shown	2
BLADED PLANTS						
DtEA	Dianella tasmanica 'Emerald Arch'	Flax Lily ctv.	0.5 x 0.5m	140mm pot	0.4m cts.	184
LEB	Lomandra 'Evergreen Baby'	Mat Rush ctv	0.45 x 0.45m	140mm pot	0.4m cts.	289
LT	Lomandra 'Tanika'	Mat Rush	0.6 x 0.6m	140mm pot	0.4m cts.	526
GROUND COVERS						
Mp	Myoporum parvifolium	Creeping Boobialla	0.2 x 1.5m	140mm pot	1.2m cts.	26
WfLH	Westringia fruticosa 'Low Horizon'	Coast Rosemary ctv.	0.3 x 0.7m	140mm pot	0.6m cts.	268

NOTE:
All tree stock to be used within this development is to meet the
Australian Standard, AS2303 2018 Tree Stock for Landscape Use.



SCALE: 1:200

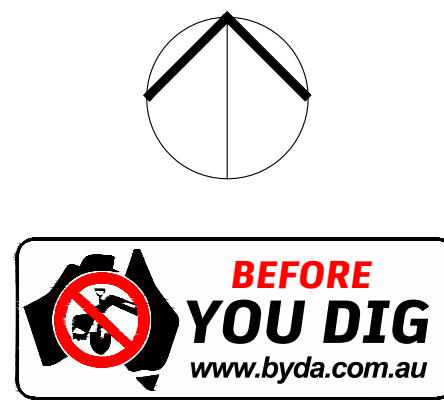


NOTE:
Refer to Engineering plans prepared
by Stantec for further information.

REVISIONS	
3.04.25 - REV A	Updated as per Council comments and revised Civil drawings
19.08.25 - REV B	Updated as per revised Civil drawings
27.08.25 - REV C	Updated as per Council comments

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Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

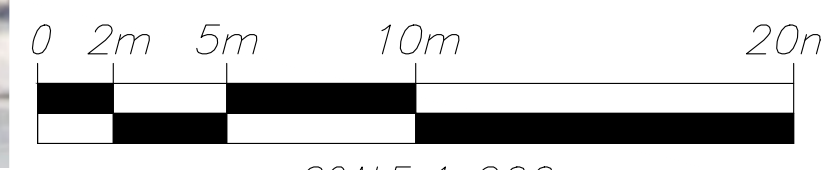
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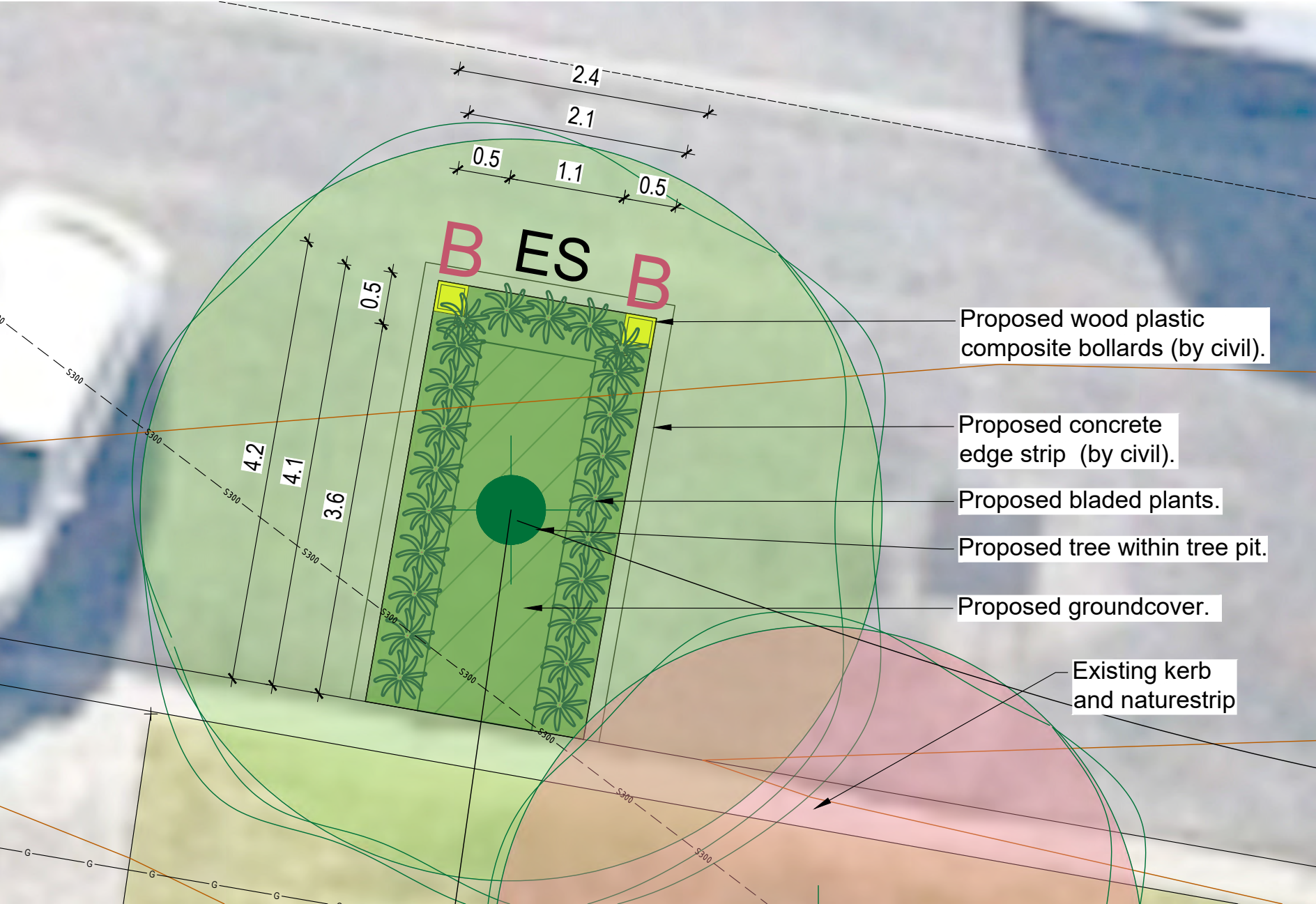
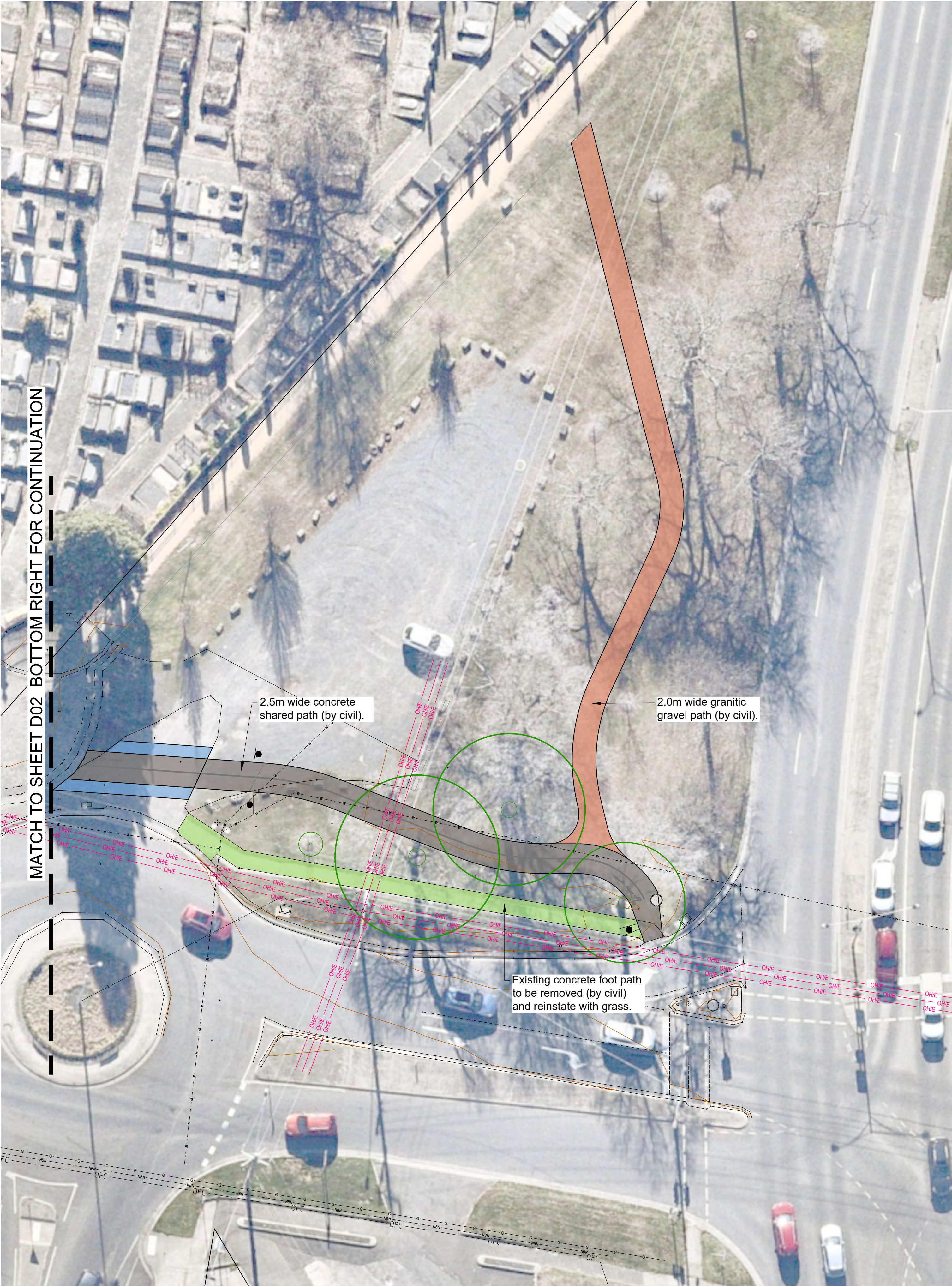
Client:
City of Ballarat

Date: August 28, 2025
Scale: 1:200 @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D02
Revision: C

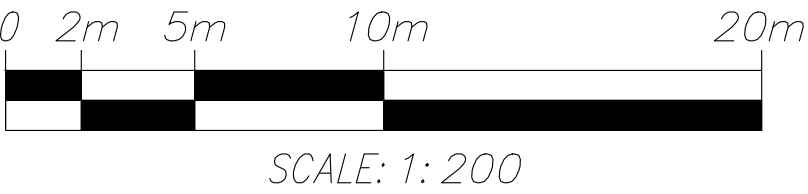
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TYPICAL DETAIL OF TREE PIT PLANTING
Scale 1:50 @ A1

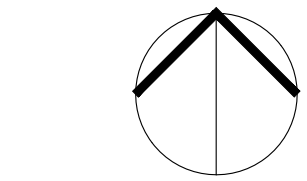


NOTE:
Refer to Engineering plans prepared
by Stantec for further information.

REVISIONS	
3.04.25 - REV A	Updated as per Council comments and revised Civil drawings
19.08.25 - REV B	Updated as per revised Civil drawings
27.08.25 - REV C	Updated as per Council comments

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- Proposed steel edging



Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Detailed Landscape Plan #3

Client:
City of Ballarat

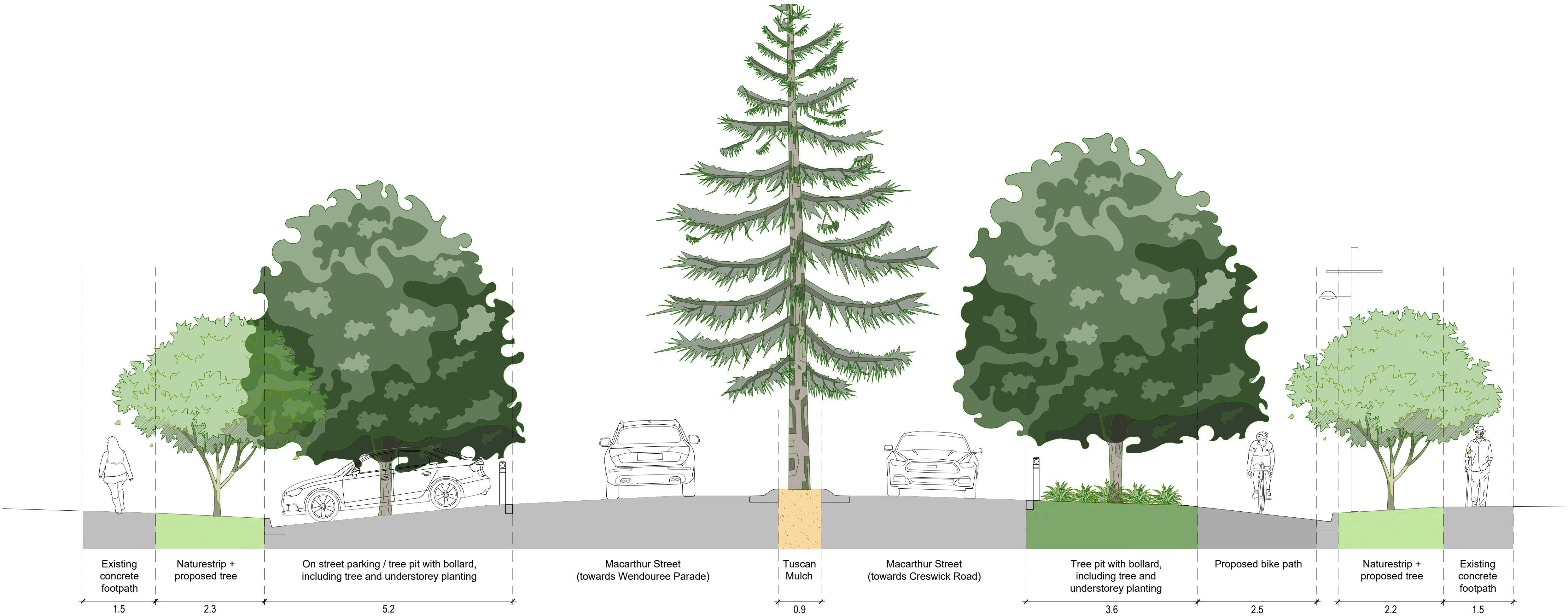
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Scale: 1:200 @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D03
Revision: C

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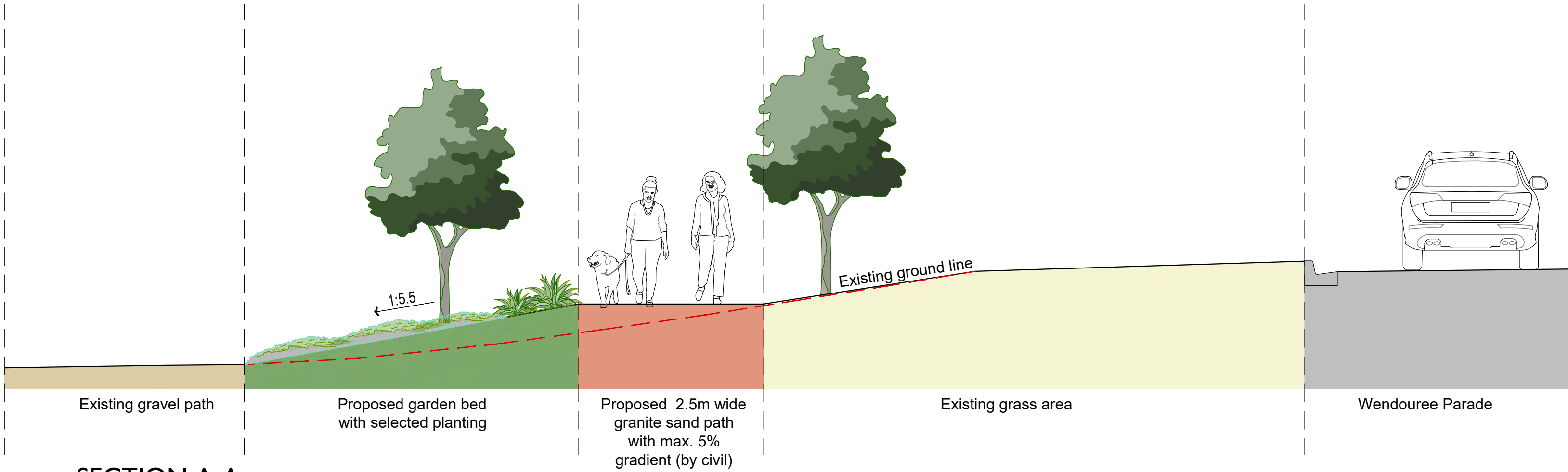


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REVISIONS
3.04.25 - REV A Updated as per Council comments and revised Civil drawings
19.08.25 - REV B Updated as per revised Civil drawings
27.08.25 - REV C Updated as per Council comments



MACARTHUR STREET - TYPICAL ROAD CROSS SECTION B-B
Scale 1:50 @ A1



SECTION A-A
Scale 1:50 @ A1



Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Typical Road Cross
Sections

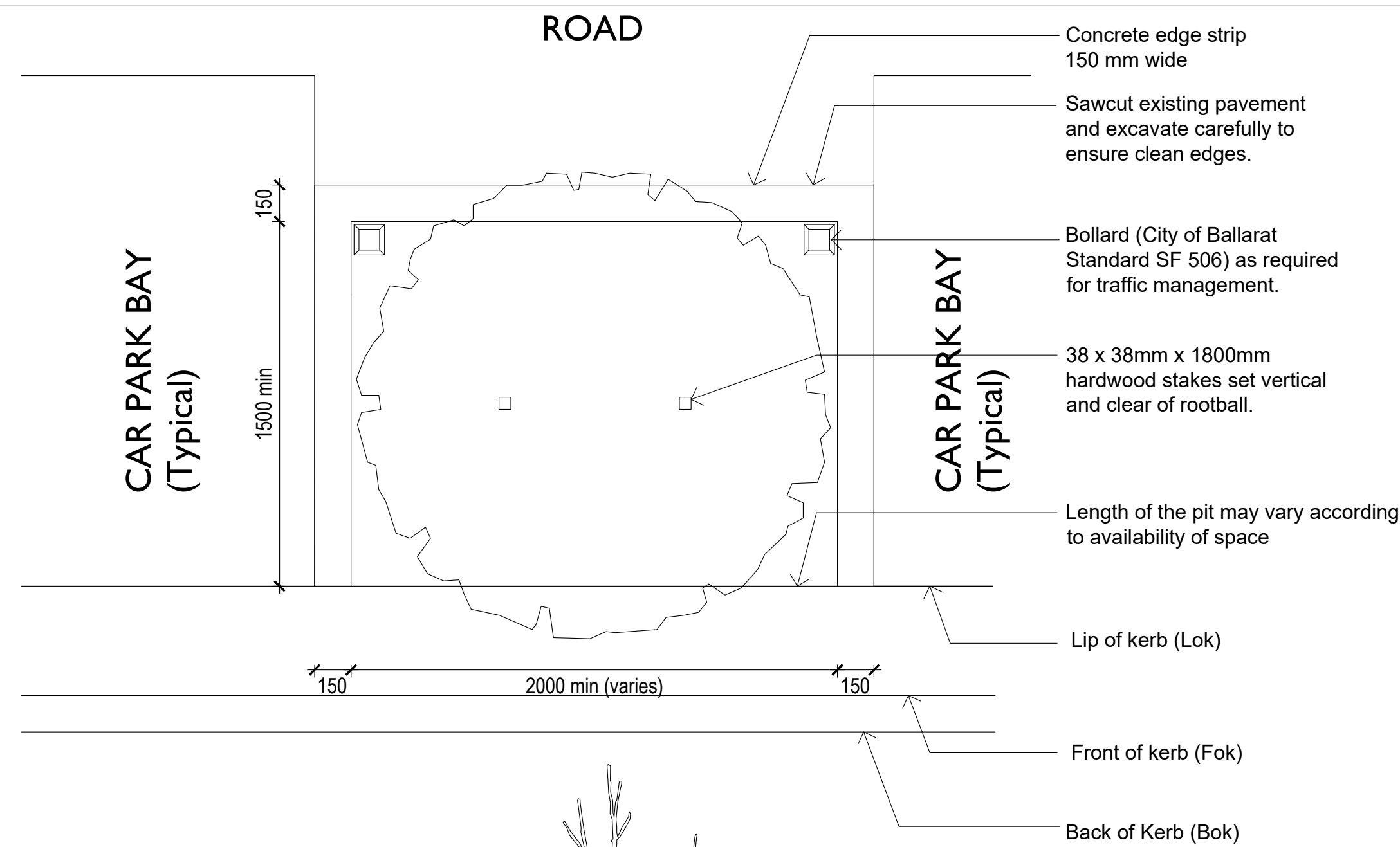
Client:
City of Ballarat

Date: August 28, 2025
Scale: As Shown @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D04
Revision: C

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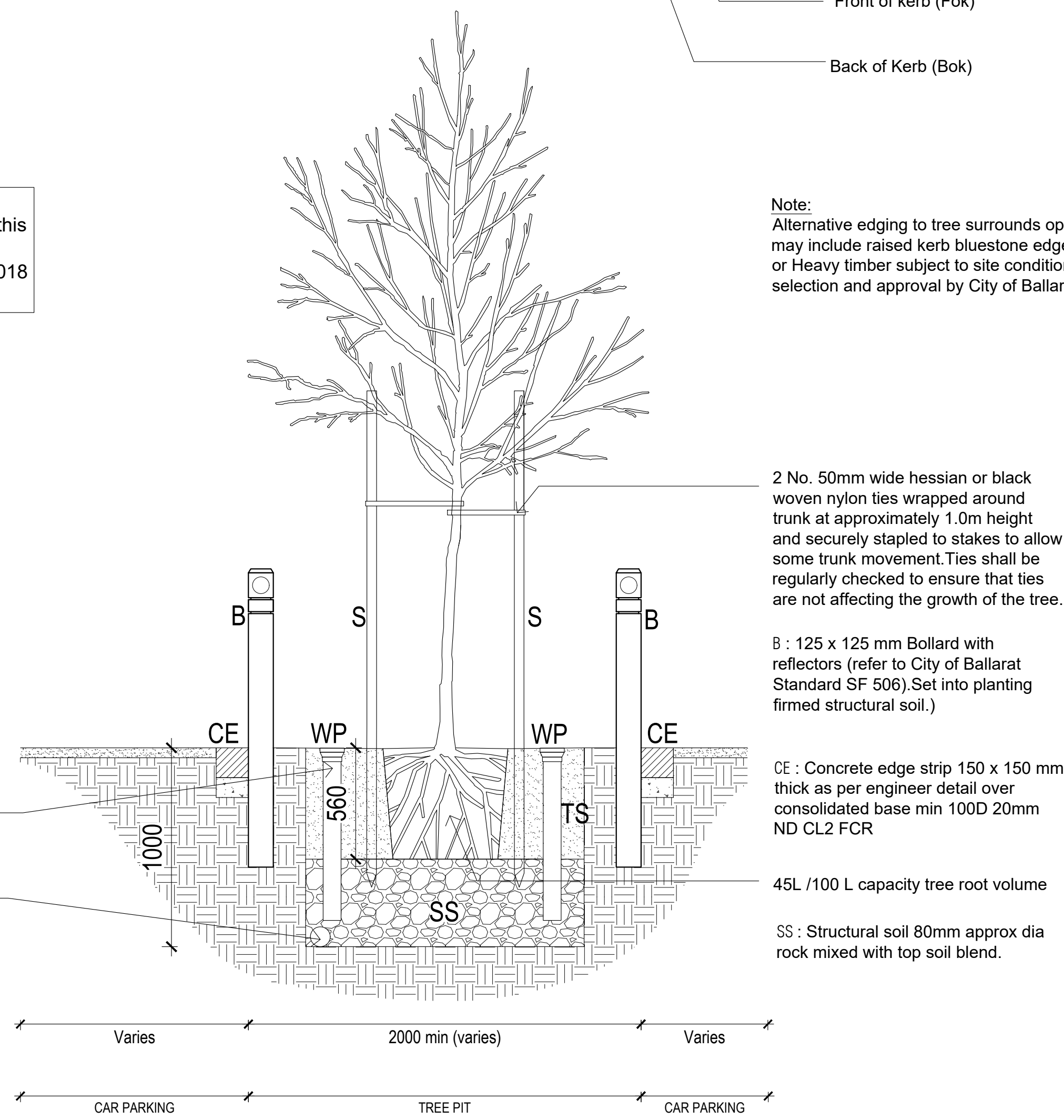


NOTE:
All tree stock to be used within this development is to meet the Australian Standard, AS2303 2018 Tree Stock for Landscape Use.

S : 2 No. 38 x 38mm x 1800mm hardwood stakes (unless otherwise specified by City of Ballarat), set vertical and clear of rootball. Stakes shall be driven a minimum depth of 300mm into ground. Avoid damage to rootball and ensure no damage is caused to underground services.

TS : Top soil blend should consist of the following or similar approved. 60% sandy loam, 20% aged sawdust, 20% composted pine bark fines.

The pH value of imported topsoil should be between 5.5 - 6.5. Ensure soil mix complies with AS 4419-1998 soils for landscaping and garden use.



Note:
Alternative edging to tree surrounds options may include raised kerb bluestone edge and or Heavy timber subject to site condition and selection and approval by City of Ballarat

2 No. 50mm wide hessian or black woven nylon ties wrapped around trunk at approximately 1.0m height and securely stapled to stakes to allow some trunk movement. Ties shall be regularly checked to ensure that ties are not affecting the growth of the tree.

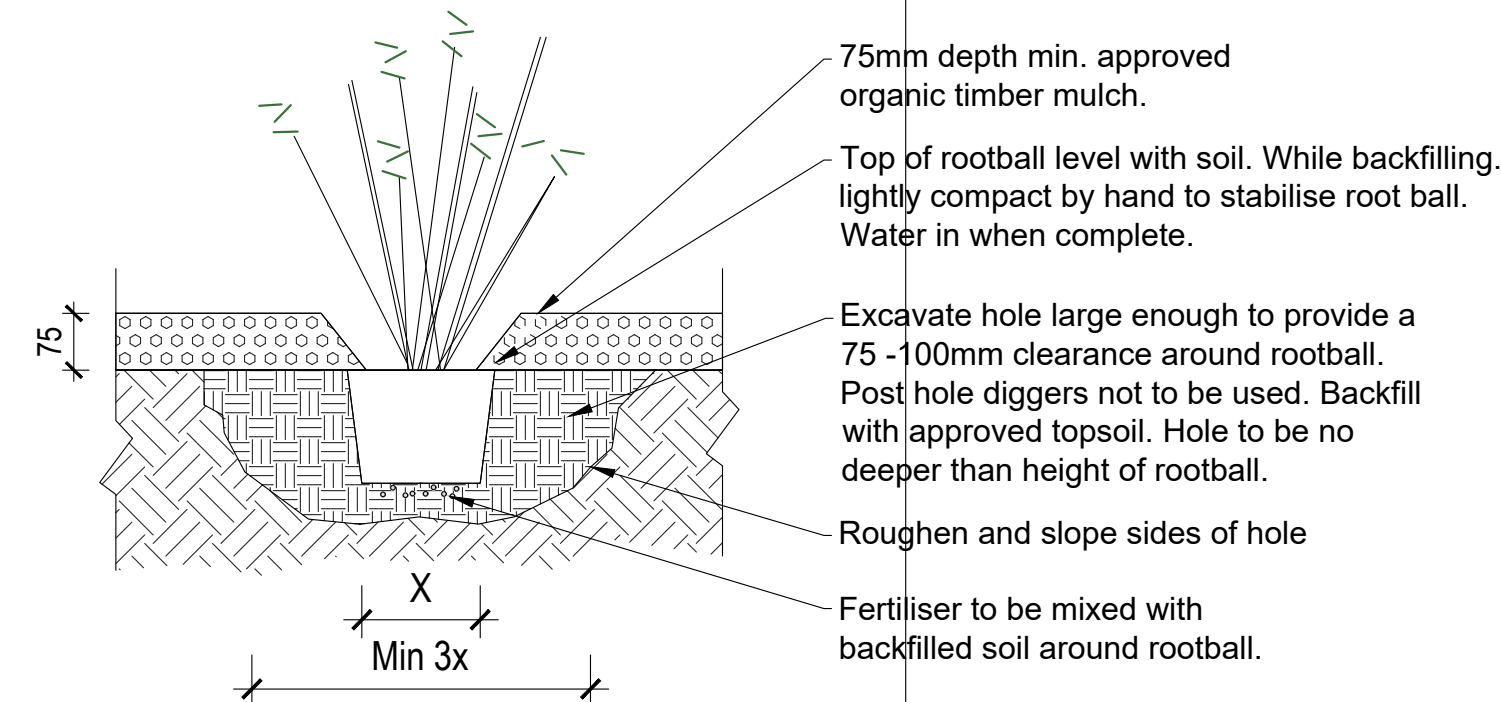
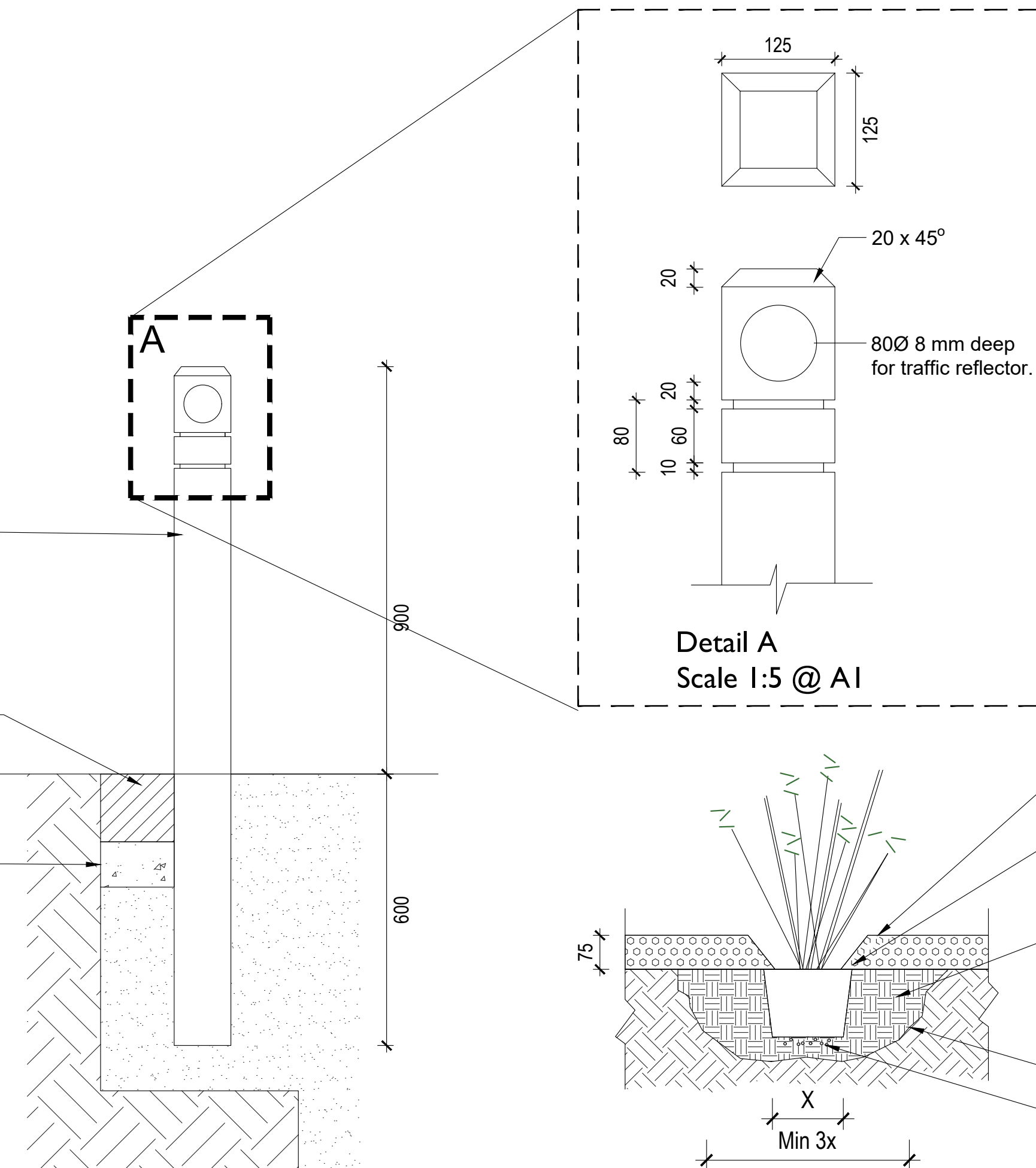
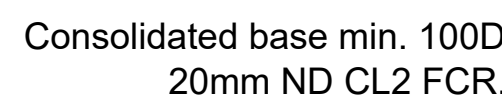
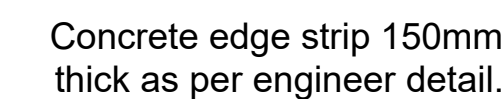
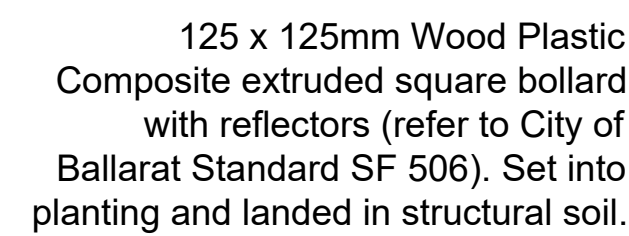
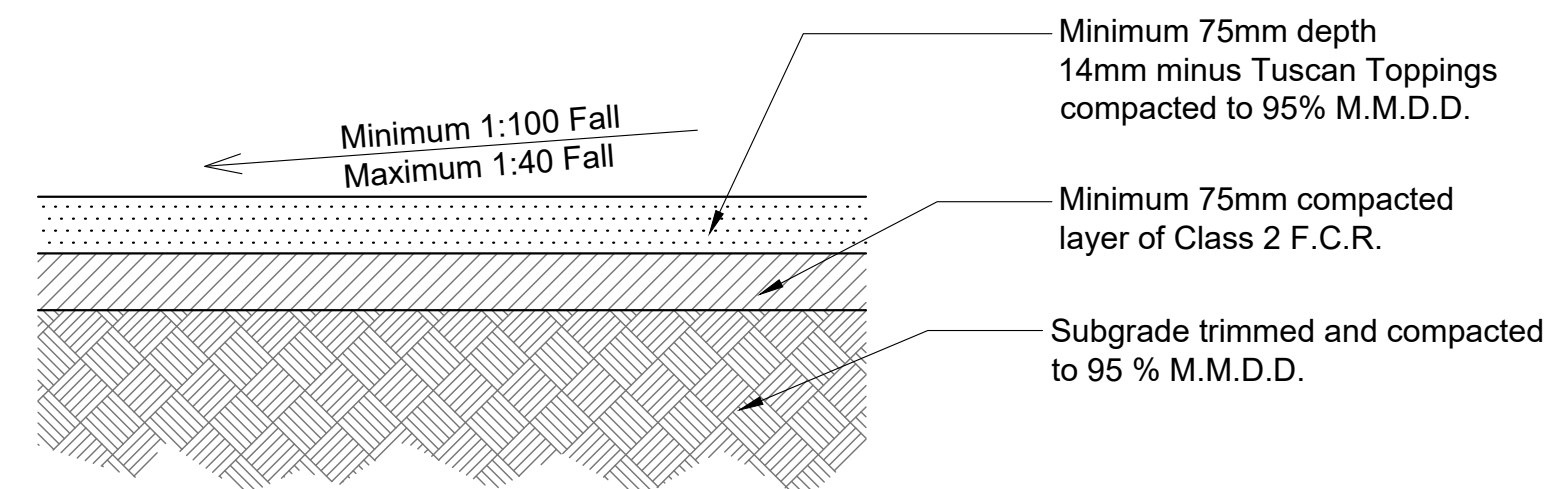
B : 125 x 125 mm Bollard with reflectors (refer to City of Ballarat Standard SF 506).Set into planting (firmed structural soil.)

CE : Concrete edge strip 150 x 150 mm
thick as per engineer detail over
consolidated base min 100D 20mm
ND CL2 FCR

45L /100 L capacity tree root volume

SS : Structural soil 80mm approx dia
rock mixed with top soil blend.

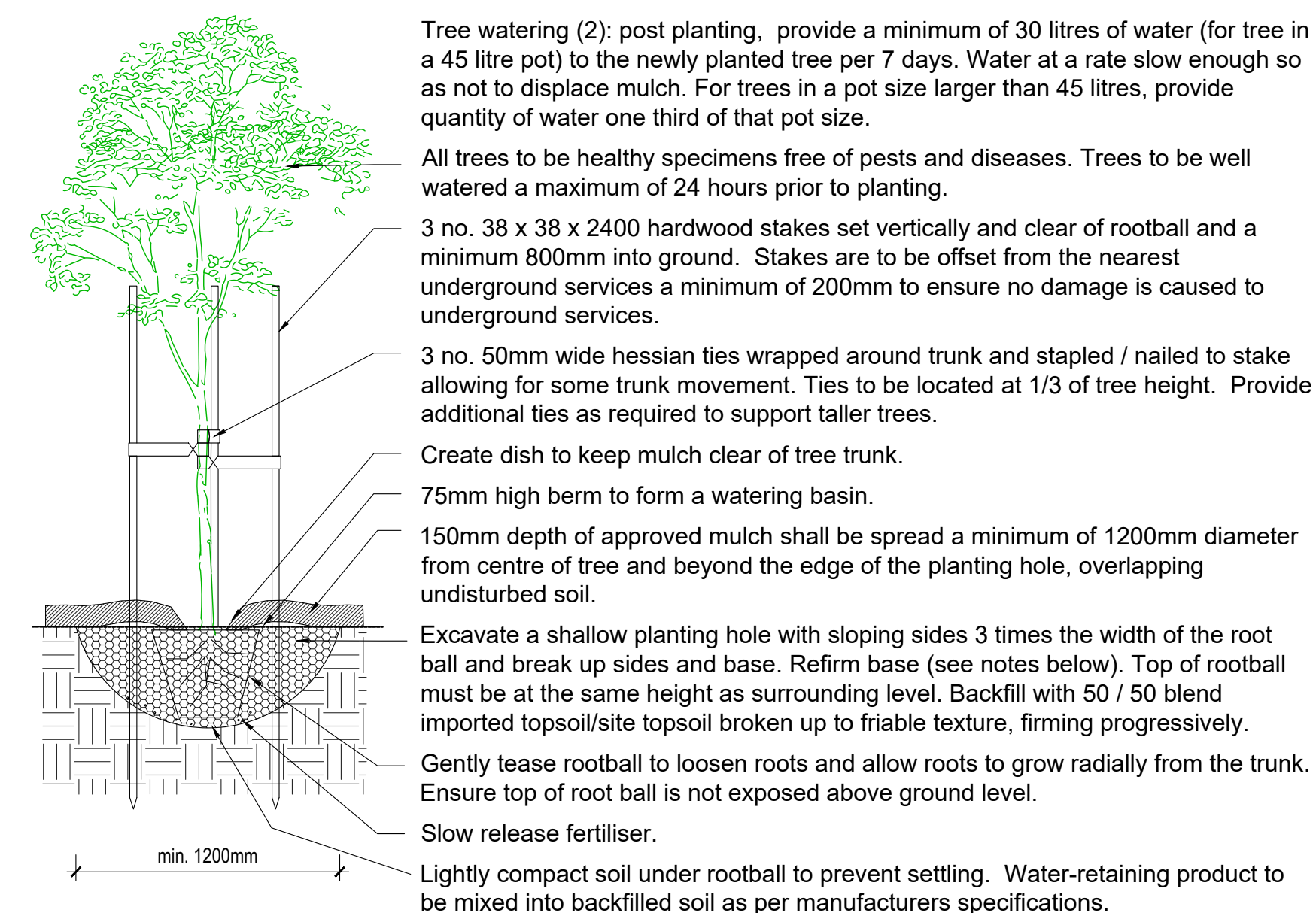
Note:
75mm depth 20mm Tuscan Stone uncompacted mulch to be used in the vicinity of
proposed trees -refer to specification



FURNITURE SCHEDULE

ITEM	DESCRIPTION	QTY
BOLLARD	Supply and install 125 x 125mm Wood Plastic Composite (WPC) Cossets Evertuff Square bollard with chamfered top as per City of Ballarat Street and Park Furniture Guidelines (code SF 506). Bollard available from Integrated Recycling. Ph: 1300 729 253. Web: www.integratedrecycling.com.au	49

Note: All proposed furniture and bollards should be in accordance with City of Ballarat Street and Park Furniture Guidelines or approved by Council.



Note: It is the responsibility of the contractor to confirm the location of all underground services prior to commencement of any excavation or staking works.

REVISIONS
3.04.25 - REV A Updated as per Council comments and revised Civil drawings
19.08.25 - REV B Updated as per revised Civil drawings
27.08.25 - REV C Updated as per Council comments



Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Landscape Details

Client:
City of Ballarat

Date: August 28, 2025
Scale: As Shown @ A1 Sheet Size
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Drawing No: 2430 - D05
Revision: C

THOMSON HAY
LANDSCAPE ARCHITECTS

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GENERAL LANDSCAPE NOTES

4.8. Mulch
4.8.1 Timber Mulch

Where specified spread hardwood chippings / mulch (maximum particle size 30mm) at a minimum depth of 75mm throughout all planting areas, including around the base of each individual tree.

The Contractor shall ensure the mulch is free of soil, weeds, vermin, deleterious material and toxins. Mulch shall be placed to a minimum depth of 75mm and maximum depth of 100mm on planting bed areas and around individual specimen trees. Mulch shall extend at least 600mm beyond plant centres at the outer edges of planting beds. Mulch shall be kept clear of plant stems to avoid collar rot.

The Contractor is to submit a 5kg bag sample of mulch to the Project Manager for approval, prior to delivery to site. All mulch used shall comply with the approved sample.
NB. Mulch found to contain any recycled building materials (i.e. chipboard, pine pallet etc.) will be rejected.

4.8.2 Tuscan Stone Mulch

Where specified spread 20mm Tuscan Stone mulch at a minimum depth of 75mm. Refer to plan.

The Contractor is to submit a 5kg bag sample of mulch to the Project Manager for approval, prior to delivery to site. All mulch used shall comply with the approved sample.

4.8.2 Tuscan Stone Mulch

Supply and install compacted Tuscan Toppings surface in accordance with details and City of Ballarat Landscape Design Manual. Supply and compact 75mm depth 14mm minus Tuscan Toppings over 75mm compacted depth of 20mm non dimensional fine crushed rock (NDFCR).

4.9. Steel Edging

Contractor to supply and install steel garden edging as nominated on the drawings. Steel garden edging to be fabricated and installed as indicated on the landscape detail sheets. Ensure that curved sections use flat steel that has not been rolled. Due to warping, rolled flat will not be accepted unless approved by the Project Manager.
Ensure all joints are secure and will be long-lasting.
The edging is to be set flush with finished adjoining surface levels.

5. Trees

5.1. Excavation

The planting soil should be prepared in accordance with the Tree Planting Detail and this specification.
Excavate (by hand or hydro-excavation) to an equivalent depth of the new tree rootball and a width as shown on the detail drawing. The installer shall determine the rootball depth of each tree to determine the individual planting hole depth. Trim & de-compact the base of the planting hole to allow for good root establishment / development into the natural soils.
Remove stones exceeding 20mm diameter and any rubbish or deleterious material uncovered during excavation.

NOTE: There may be a layer of asphalt and / or road base / unsuitable soil material in proposed garden beds. The Contractor to make an allowance to excavate and remove the asphalt / road base / soil back to natural ground level for the extent of the planting area and backfill with approved topsoil. Subject to services, the sub base is to be de-compacted to 300mm depth.

Minimum offsets for trees

- × 1.2m from pedestrian pathways;
- × 2.0m from pedestrian pathways in reserves;
- × 3m from driveways;
- × 4m from power poles;
- × 4m from light poles;
- × 2m from service assets, including junction boxes, pits etc.
- × 2.5m from Powercor assets, including electrical pits, joints, conduit ends and paralleling pillar.
- × 2m from service conduit crossing;
- × 3m from fire plugs;
- × 2m from domestic service tapping points;
- × 2m from stormwater outlet points; and
- × 2m from NBN pit.

Where these distances are not attainable, root barriers may be appropriate in some instances and on the advice of council's arborist.

5.2. Excavation under Existing Trees

The contractor should allow to use non invasive soil excavation techniques (i.e. hydro excavation including the use of pressurised water and vacuum technology) to remove the soil / earth material from the base of the existing trees - without damage to the tree roots. The existing material shall be excavated to the depth

indicated on the details and fresh garden soils (as specified) installed as soon as possible after excavation to avoid the tree root system from drying out.

5.3. Structural Soils

The contractor is to supply and install structural soil to areas as detailed on the Drawings.

Structural soil is planting soil mixed with 80mm rock (basalt) spalls at a ration of 50:50.

Placement

Ensure the structural soil mix is well moistened but not overly wet prior to transport and placement. Dry material will separate and will fail compliance. Maintain moisture during placement if material has dried during transport with a light hosing taking care not to over-water and wash soil off fines.

Spread the structural soil mix on the prepared subsoil and grade evenly, making the necessary allowances to permit the required finished levels to be achieved after compaction.

Consolidation

Compact to the specified levels and uniformly in 150mm layers. Avoid differential subsidence and excess compaction and produce a finished surface that has the following characteristics:

- × Finished to design levels.
- × Smooth and free from stones or lumps of soil.
- × Graded evenly into adjoining ground surfaces.
- × Prepared ready for planting.

Note 1: surrounding soil (base and walls of tree pits) should be tested to assess the potential for healthy root growth out of the structural soil. Prior to placement of structural soil, the base and walls of the tree pit shall be de-compacted or otherwise roughened to remove the glaze caused by excavation - therefore allowing tree roots to easily grow / transition from the structural soils to the adjoining existing soils.

5.4. Planting

Prior to planting, the rootball of trees may be managed by pruning or slicing away the outer 10-25mm of the external rootball using only sharp and clean secateurs or a spade. Avoid excess disturbance to the remaining rootball during root trimming and discontinue if excessive rootball soil begins to fall away. Do not leave the rootball exposed for an extended period. Cover the rootball with moist hessian if planting / backfilling cannot occur immediately. Prevent the rootball from drying out during the planting phase. Thoroughly water the rootball before planting and then immediately after planting. Apply water so as to not disturb the soil. Under no circumstances shall any plant be planted into a dry planting hole (soil moisture at wilting point or drier). If the soil is dry, the planting hole shall be saturated with water prior to planting.

When the planting hole is excavated, and the hole is the correct size, place the rootball in its final position. Ensure the tree is centred and plumb and the top of the rootball is level with the finished surrounding surface. Ensure the trunk is set vertically and aligned with other new trees (where relevant). Do not use the trunk of the tree as a lever in positioning or moving the tree in the planting hole.

Fertiliser

Refer to section 4.3 Plants / Fertilising. Place approved slow-release fertiliser in base of advanced tree holes and mix thoroughly with decompacted soil. The Contractor is to ensure that no contact is made between roots and fertiliser.

Hydrocell Flakes

Supply and incorporate Hydrocell flakes (or similar approved soil conditioner) into the planting hole / entire volume of planting soil of new trees in accordance with Fytogreen Hydrocell Tree Planting Guide. Refer to:

Web:
http://fytogreen.com.au/wp-content/uploads/2016/11/Hydrocell-2016-email.pdf
Telephone: 1300 182 341.

Use the Hydrocell volume table in the Tree Planting Guide to determine the exact quantity of Hydrocell flakes for each tree pot size - typically between 4.0 litres for a 20cm pot to 45 litres for a 40cm pot.

Backfill with the prepared backfill / topsoil mix and in accordance with the detail drawing. Lightly compact the soil to ensure all voids around the rootball are filled and no air pockets are retained. Ensure that the backfill soil is not placed over the top of the potted rootball. The top of the rootball and plant stem must be kept level with the top of the backfill / planting soil.

Backfilling

Backfill hole using prepared backfill mix of equal volumes of soil from the hole (where compliant with the required topsoil characteristics), compacted organic matter and sand. Care is to be taken to mix the fill thoroughly. The Contractor is to ensure a pH level of 6.0 to 7.5 is maintained in the fill mix. Gently cover the roots with backfill material in layers of 150mm and gently compact around the perimeter of the hole with the foot to ensure there are no air pockets and that all root ends bend downwards. Ensure roots are not pressed against the bottom of the hole by backfilling too quickly or using lumpy soil. The Contractor is to firm

the soil edge gently with the foot to a level of approximately 30mm above the surrounding soil surface level to create a 'watering bowl'.

Watering

- × The rootball to be thoroughly saturated on the day prior to planting.
- × Immediately after planting, the tree shall be watered thoroughly regardless of weather conditions. Quantity of water will be adequate to saturate the root ball and surrounding 600mm radius of soil to 400mm min. depth.
- × Post planting, provide a minimum of 30 litres of water (for tree in a 45-litre pot) to the newly planted tree per 7 days. Water at a rate slow enough so as not to displace mulch or lose water to run off. For trees in a pot size larger than 45 litres, provide a quantity of water one-third of that pot size.
- × Provide sufficient ongoing water to saturate surrounding 600mm soil radius to 400mm minimum depth to maintain growth, free from water stress. Any signs of water stress (leaf drop or yellowing) should be reported to the Project Manager for further investigation.

No variations will be considered for additional watering.

Mulch

After topsoil placement and planting-out of the plant material in all garden beds, supply and spread mulch to an average compacted depth of 75mm. The mulch shall be free from soil clods, rocks and all other non-organic matter. Mulch is to finish level with surrounding pavement levels after settlement allowances of the topsoil and mulch. The Contractor is to keep mulch away from the trunks to avoid rotting at ground level.

In lawn areas the mulch shall be placed after the formation of the 'water bowl', to an area of min. 1200mm diameter from the centre of the tree.

Staking & Tying

Hardwood stakes, as per details are to be installed immediately after planting. Stakes are to be driven 600mm into the ground or deep enough to ensure that the stake will remain stable and vertical. Tie the tree to stakes using 3 "figure eight" of hessian ties or approved equivalent. The Contractor is to provide a sample of the tree tie to be used prior to ordering. The ties are to be no further than one-third the height of the tree, from the base of the trunk or as detailed. The nursery stake that is supplied with the tree (i.e. a bamboo stake) is to be removed at the time of planting and replaced with hardwood stakes as specified. If the nursery stake needs to be retained to support the tree it should be removed no later than 3 months after planting. Stakes and ties are to be inspected by the Project Manager on completion of these works.

Pruning

Trees and shrubs shall be pruned as directed by the Project Manager. Pruning will be required for remedial pruning / formative pruning / crown management and maintenance of dense foliage or miscellaneous pruning as beneficial to the condition of the plants. Any damaged growth shall be pruned with clean and sharp secateurs and be completed in accordance with AS 4373 Pruning of Amenity Trees.

5.5. Tree Supply Specification

General Conditions and Quality

All trees are to conform to the NATSPEC guide "Specifying Trees: A Guide to Assessment of Tree Quality" by Ross Clark 2003 and AS 2303:2018 "Tree Stock for Landscape Use". The following specification details the general requirements for the supply and transportation of trees to the site.

Definitions:

Definitions for the terms used within this specification shall be in accordance with the AS2303:2018 "Tree Stock for Landscape Use".

- Batch: Quantity of tree stock of the same species, container size, type, age from the same origin.
- Caliper: Trunk diameter measured at 300mm above the root crown, or 50% of the overall height, whichever is the lower height, expressed in millimetres.
- Central Leader: Clearly defined single, relatively straight, trunk.
- Clean Stem Height: Distance between the uppermost surface of the root ball and the first order branches of the trunk that is free from branches.
- Self-Supporting: Tree stock supporting its above ground parts in an upright position without movement of ≤30° from vertical, stem breakage, injury or loosening of roots in the growing media.
- Size Index: Numerical expression of the size of the tree above ground. It is the product of the height of the tree (in metres) and the caliper (in mm) (i.e. height x caliper).
- Destructive Root ball Inspection: The washing away or removal of all soil from a root ball to allow for detailed inspection and assessment of root development.
- Partial Investigative Root-ball Inspection: A method of exposing a section of a root system to enable inspection of root development by washing away a wedge-shaped section from the stem to the extremity of the root ball. This soil can be gently replaced so the tree is not significantly damaged.

Labelling of Stock

At the nursery ensure that individual trees and batches are clearly labelled with the species name and cultivar / variety / provenance where appropriate. The label is to withstand transit without erasure or misplacement. NOTE: labels to be removed from all plants at the time of planting.

True to Type

The trees supplied and planted shall be the species, and variety or cultivar that the Municipality has approved.

Health and Vigour

The trees supplied shall be healthy and vigorous at the time of delivery and planting. Supply trees with foliage size, texture and colour at the time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species. Supply trees with extension growth consistent with that exhibited by vigorous specimens of the nominated species.

When selecting trees to be planted, it is the responsibility of the Contractor to ensure that the tree height and caliper ratio falls within the parameters of the

Size Index table below. To calculate the size index the following formula must be used: Size Index: Product of tree height (m) x tree caliper (mm).

Options available for tree planting:

Pot Size in Litres	Size Index (mm)
45	57-74
60	77-99
75	83-107
100	111-143
150	154-200
200	194-251

Crown Symmetry

The symmetry of the crown is an important aspect of the presentation and appearance of the tree in the landscape. The difference in crown distribution on opposite sides of the stem axis must not exceed 20%.

Injury

Supply only trees free from injury and wounds, except properly made pruning cuts made in accordance with AS4373: Pruning of Amenity Trees.
Stem Taper and Structure:
Supply trees where the caliper at any given point on the stem is greater than the caliper at any point higher on the stem, excluding species with atypical stem tapers.

Species with an apical dominant (excurrent) form: Supply trees with a defined central leader and the apical bud intact. Trees that have had their leaders cut or damaged will not be accepted. Supply trees with a single stem roughly in the centre of the tree with any deviation from vertical ≤150.

Species with branch dominant (decurent) form: Terminal buds shall be intact. Supply trees where the central stem is not divided at any point lower than the nominated clean stem height, and that the stem junction at the point of division is sound.

All species: Ensure that branch diameters are less than or equal to one-half of the caliper immediately above the branch junction.

Self-Supporting

Supply only trees that are self-supporting.

Formative Pruning

All formative pruning shall be a clean-cut at the branch collar that complies with AS4373: Pruning of Amenity Trees. The diameter of any wound shall not exceed 50% of the caliper immediately above the point of pruning. No lopping or topping of trees is to be carried out.

Trees shall be typically supplied with a clean stem height of 35-40% of the total tree height. For example a 5m tree is to be pruned to a 2m maximum (clean stem height must not exceed 40% of total tree height).

Trees are not to be pruned into shape just prior to dispatch. Restrict any fresh cuts (i.e. recent, non-calloused wounds) to ≤20% of the total tree height.

Included Bark

Supply trees where the branch / stem bark ridges at junctions between stems and branches and between co-dominant stems are convex, except for species prone to include bark that are known to remain strong (as approved by the Council).

Trunk Position

Trunks shall typically be located in the centre of the container. The distance from the centre of the trunk to any extremity of the root ball shall not vary by >10%. This may be varied if the tree is grown in an irregular shaped container, as approved, or specifically directed by the Council.

REVISIONS
3.04.25 - REV A Updated as per Council comments and revised Civil drawings
19.08.25 - REV B Updated as per revised Civil drawings
27.08.25 - REV C Updated as per Council comments

Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Landscape Specification
#2

Client:
City of Ballarat

Date: August 28, 2025
Scale: N/A @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D07
Revision: C

GENERAL LANDSCAPE NOTES

Compatibility of Graft Unions

When purchasing named cultivars propagated by grafting, it is critical that the graft union is sound and that the scion and root stock are compatible. The union between the scion and the root stock must be sound for the entire perimeter of the graft. The diameter of the scion immediately above the graft must be within +/-20% of the diameter of the rootstock immediately below the graft, excluding bark and cleft grafts.

Indication of North

Trees supplied in containers ≥100 litres shall indicate the northerly aspect during growth in the nursery and ensure it is marked so as to withstand transit without erasure or misplacement.

Pest and Disease

Trees shall not be diseased or show evidence of pest attack that could affect the long term health of the tree or adjoining plantings. Supply trees with foliage and soil free from attack by pests and diseases. For Australian native trees with a history of attack by native pests (e.g. *Ficus macrophylla* & *Eucalypts*), evidence of previous attack must be restricted to less than 15% of the foliage and there must be no actively feeding insects or evidence of fungal infections.

Root Ball Diameter

Trees grown in containers ≥45L and ex-ground trees shall have a diameter greater than or equal to their depth. The nominal root ball diameters expected for different tree sizes are shown in the table in AS 2303-2015 Appendix D Trees for Landscape Use - Tree Stock Height and Calliper.

Bare-rooted tree stock with a size index ≤57 shall have an intact root mass diameter ≥10 x their caliper.

Root Ball Depth

Root ball depth for containerised trees shall not exceed 660mm.

Ex-ground trees with a size index ≤1144 shall have root ball depths ≤850mm. Ex-ground trees with size index larger than 1144 shall have root ball depths that not exceed 1200mm.

Height of Root Crown

Ensure that the trees root crown is at the upper-most surface of the root ball.

Non-Suckering Rootstock

At the time of dispatch there shall be no evidence of suckers or water shoots. Grafted cultivars and varieties shall be grafted onto non-suckering species of rootstock.

Please note: Locations of existing utility networks must be obtained from Dial Before You Dig Ph: 1100 prior to any excavation taking place on public land. Any damage to utilities will be the responsibility of the Contractor.

The Contractor shall supply and install all trees as detailed on the Drawings, including preparation of tree holes, backfilling and topsoiling, mulch, stakes and ties.

Weeds

At the time of dispatch there shall be no weeds evident that may compromise the health of the tree stock or pose and unacceptable burden for ongoing landscape maintenance in the trees planted position.

Root Ball Occupancy

On removal and shaking or handling of the unsupported root ball at least 90% of the soil volume shall remain intact in or around the root ball.

All trees to be supplied are to be free of pests and pathogens, free of scarring, damaged leaders, abrasions of the bark, disfigured knots or fresh cuts of limbs that have not been calloused. Trees to show a vigorous central leader, be self-supporting at planting, open branching framework and well-formed open 'V' limb crotches. All limbs and trunks to be well-formed, sturdy, well-rooted and free from root circling and 'J' roots. All dead wood is to be removed.

5.6. Tree Staking Nature Strips

Please note: Locations of existing utility networks must be obtained from Dial Before You Dig Ph: 1100 prior to any excavation on public land.

Wooden stakes only are to be used. The maximum depth of stake embedment in the ground is 600mm. No metal stakes are permitted in any circumstances. Tree ties are to be hessian ties, secured to each of the stakes. No 'shoestring' or nylon ties are permitted.

5.6.1. Tree Staking

Contractor to supply and install staking as detailed on the Drawings.

6. Lawn Areas

Following tree planting and garden bed preparation / edging, the naturestrips /

grassed areas are to be repaired / reshaped as required to match adjoining ground surface levels to the satisfaction of the Responsible Authority. Where naturestrips are to be remediated the existing grass is to be treated with an approved herbicide (in accordance with Clause 3.7), the soil cultivated to 150mm depth and topdressed with 50mm min. of topsoil. Evenly spread an approved Starter Fertiliser (recommended N.P.K. ratio 10:4:6 + Trace Elements) at the recommended rate.

Areas shall be seeded with:

Oasis Lawn Mix (or similar approved) by DLF Seeds with a species composition of.

Tall Fescue 78%, Rye 18%, Red Fescue 8%

Seed and fertiliser available from local rural merchandise stores.

An alternative to sowing grass seed is to lay instant turf. Instant turf to be:

Tall Fescue - available from HG Turf Group. Telephone: 1800 622 340.

Watering

Water seeded area / turf immediately after sowing / laying until the topsoil is moistened to its full depth. Continue watering to maintain moisture to this depth. Maintain the germinating grass / turf in a healthy condition with correct applications of water, fertiliser etc. to sustain a healthy, vigorous growing grass sward.

Mowing and Edge Trimming

During the maintenance period mow to maintain the grass height within the 50 - 100mm height range. Remove all grass clippings from the site after each mowing. At the time of mowing all grass edges to be trimmed with a mechanical edger. All grass clippings to be removed from the footpaths / site.

Slope

NB. The maximum slope for grassing is generally 1:6 to cater for mowing requirements. The maximum slope may increase to 1:4 in localised areas to achieve required grades subject to Superintendent approval.

Ensure all grass areas are free draining with no ponding.

Prior to grassing, all soil preparation and weed eradication work shall be completed in accordance with approved project specification clauses.

Maintenance

Maintain the seeded grass areas / turf until the attainment of a dense continuous sward of healthy and evenly green grass over the entire area. Where required, topdress failed seed / turf and re-seed / turf with fresh seed of the same blend. Cultivate and re-seed areas of seeded lawn where germination / survival is poor.

Top Dressing

Top dress subsided areas as required and re-sow. Ensure the junction between kerbs / pits / footpaths / garden edges and grass areas is finished to form a firm, flush, even, uniform and safe joint.

Protection

The Contractor shall protect the newly grassed areas against trespass and traffic for minimum period of 6 weeks - particularly during wet conditions, or as long as required to ensure the proper establishment of the grass which will not be damaged by normal / day to day activities.

7. Water Tapping Point, and Irrigation

7.1. Irrigation

No irrigation system has been specified for this project. The contractor should allow for manual watering of all trees, shrubs and grasses with potable or suitable recycled water to ensure successful plant establishment during the construction and maintenance phases of the contract.

8. Surfaces

8.1. Concrete Pavement

Concrete Paths

Refer to Stantec for concrete pavement details.

Concrete pavement to shared path:

125mm thick 25MPa concrete over 100mm compacted depth Class 3 FCR bedding to 97% MMDD.

Concrete pavement to shared pavement along vehicle crossover:

150mm thick 32MPa concrete over 100mm compacted depth Class 3 20mm FCR bedding to 97% MMDD.

9. Furniture

Refer to furniture schedule for all details. Furniture to be installed in accordance with the manufacturer's specifications.

Bollards

Cossets Evertuff 125 x 125mm wood plastic composite bollard with chamfered top (City of Ballarat code: SF506)

Available from: Integrated Recycling

Ph: 1300 729 253

Web: www.integratedrecycling.com.au

10. Construction

10.1.Construction Inspections and Hold Points

During construction of all hard and soft landscape works Council's Project Manager must attend the site and sign off on all construction Hold Points. This signed and dated document that provides documentary evidence of approvals at all hold points, including photo evidence, must then be presented to Council prior to Practical Completion. Hold points to be at the following times:

- a. Pre-commencement meeting with Council
- ii. Site preparation and set out
- iii. Hard infrastructure preparation
 - × footings excavation
 - × reinforcement for pavement / footings

Soil preparation for:

- × lawns areas
- × garden beds
- × nature strips
- vi. Inspection of plant stock for:
 - × trees
 - × garden bed plants
- vii. Mulching planting and watering-in

11. Practical Completion, Maintenance and Handover

Council's Project Manager must be present for all Pre-commencement, Practical Completion and Handover inspections.

11.1.Practical Completion Obligations

The Contractor must contact Council's Project Manager and Council Representative when all works have been completed in accordance with the approved plans to arrange for an inspection by the nominated Council Representative.

A minimum of 5 working days notice must be allowed, unless advised otherwise by Council's Project Manager.

No partial Practical Completion Certificates will be issued except in special circumstances and as previously agreed by the Council.

No Practical Completion inspections will be accepted during the period, between 15 December and 15 January.

Construction documentation must be provided to Council prior to Practical Completion. This documentation must include:

- The required Construction Inspection checklists signed off and dated by the Project Manager.

The Contractor must also submit a maintenance schedule to Council's Project Manager prior to the Practical Inspection date. The maintenance plan should cover all landscape maintenance issues that will need to be addressed during the maintenance period.

A Certificate of Practical Completion will only be issued when all works have been completed to the satisfaction of the Superintendent.

The Maintenance Schedule will include the expected date of final handover which will be at such time when the site has been maintained for a period of 12 months from the date of Practical Completion (or as specified by Council's Project Manager.

Dated photos of the daily maintenance works and a maintenance diary outlining maintenance works for the project must be available for inspection.

11.2. Maintenance Obligations

The Contractor shall maintain the whole of the landscape work performed under this Contract until the completion of the 12 month Maintenance Period (or as advised by Council's Project Manager). The Maintenance Period shall commence from the Date of Practical Completion for 12 months as specified in the contract conditions. Maintenance of the landscape work shall include:

- replanting / replacement of dead trees, shrubs and groundcovers
- maintenance of timber tree stakes and ties for advanced trees
- weed control within lawns and garden beds
- watering of lawns, trees, garden beds and planter boxes to ensure strong plant growth including maintenance of any irrigation system
- mowing and edging of grass areas including removal of clippings
- topdressing and re-seeding of grass areas
- pest and disease control
- re-mulching to maintain specified mulch depths
- pruning of trees and shrubs as required in accordance with AS 4373-1996 Pruning of Amenity Trees

- maintaining the site in a neat and tidy condition including removal of silt from drains
- removal of tree guards and stakes (where installed / where the tree is suitably established for removal)
- maintenance of all furniture / fittings including graffiti removal / re-application of timber preservative / paint, general maintenance etc.
- maintenance of pavements (by civil contractor)
- monitoring of pre-existing trees within the streetscape and undertake any required remedial works.
- maintenance of furniture as required to ensure it is maintained in a safe and useable condition at all times.

11.3.Malicious Unlawful Damage

In the case of all items supplied and/or installed within the Contract that are damaged or destroyed unlawfully by others, the following clauses shall apply to replacement, rectification, and responsibility for all associated costs.

Prior to Practical Completion:

Prior to the issuing of a Practical Completion Certificate, all damage is to be rectified by the Contractor and will include replacement of stolen or severely damaged the material.

The Contractor shall make allowance for these circumstances within their contract lump sum.

Post Practical Completion

The works will be maintained by the Contractor for the length of time shown in the Contract.

Upon issue of a Practical Completion Certificate, the Contractor is not liable for the works except for the warranty of items.

Malicious and unlawful damage is not required to be rectified by the Contractor under the Defects and Liability Period.

REVISIONS
3.04.25 - REV A Updated as per Council comments and revised Civil drawings
19.08.25 - REV B Updated as per revised Civil drawings
27.08.25 - REV C Updated as per Council comments

Project Name & Address:
Macarthur Street Bike Path,
Lake Wendouree

Drawing Title:
Landscape Specification
#3

Client:
City of Ballarat

Date: August 28, 2025
Scale: N/A @ A1 Sheet Size
Drawn: YL / PP
Checked: HM
Planning Ref: N/A
Drawing No: 2430 - D08
Revision: C

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