WADANDI TRACK

TRAIL DESIGN, CONSTRUCTION AND MAINTENANCE SPECIFICATION

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1 PROJECT OVERVIEW

1.1 PROJECT DESCRIPTION

The Wadandi Track in the Margaret River Region is currently 46 km long across two separate sections. Once complete, it will form a continuous 109 km route from the Busselton Jetty to Flinders Bay in Augusta, making it one of the longest rail trails in Australia with potential to become one of the nation's most iconic rail trail experiences.

The Department of Transport and Major Infrastructure (DTMI) is working with the City of Busselton (CoB) and Shire of Augusta Margaret River (SoAMR) to complete the trail, including new and refurbished bridges, several smaller water crossings, new track, fencing, and wayfinding, interpretation and activation. The project will be delivered over the next four years, with expected completion by 2028.

The Wadandi Track will be delivered as a series of staged Design and Construct packages over approximately four years. Each package is to clearly define its limits (by chainage and/or mapped extents) and deliver a complete, safe outcome within those limits. Works at package boundaries are to be detailed and constructed to tie smoothly into previously completed sections and to allow future stages to connect without rework, including continuity of surface levels, drainage function and wayfinding logic. Where the trail does not yet continue at the completion of a package, the Contractor is to provide a stable temporary termination, including a safe finish to the surface, drainage continuity through the work limit, and temporary wayfinding as required. Each package handover is to include as-constructed information and an asset inventory relevant to the package works to support long-term maintenance and future stage integration.

The vision for the Wadandi Track is to create a world-class trail that showcases the Capes Region's unparalleled beauty and inspires awe and respect for its natural and cultural treasures. By blending heritage, adventure and sustainability, the Wadandi Track has the potential to offer a transformative journey that leaves visitors with lasting memories and a profound connection to this remarkable corner of Western Australia.

2 SCHEDULE OF DOCUMENTS

2.1 DOCUMENT HIERARCHY AND INTERFACE

This document forms part of a broader suite of documents (refer: Table 1) that define the design and construction parameters for the Wadandi Track and associated infrastructure and provides guidance for ongoing maintenance and future upgrades. In the event of any inconsistency between documents, the order of precedence is as follows; Contract Documents, Approved Detailed Design, this Specification, Typical Details, and referenced external standards, unless stated otherwise.

2.1.1.1 Table 1: Wadandi Track Document Suite

Document	Intent
Wadandi Track Design Principles	Establishes agreed design principles for the delivery of the Wadandi Track
Wayfinding and interpretation plan (in preparation)	Establishes guidelines for signage style and content
Detailed design documentation	For each section of the Wadandi Track, this document defines: • The trail alignment (including digital alignment data). • Defined chainage along the alignment that define the nature of the works required for each segment. • The quantities of works required (presented as a Bill of Quantities, referencing the chainage).
Construction specification (this document)	Supplements detailed design documents, defining the requirements regarding: • Materials • Typical construction details • Quality standards, and • Other relevant specifications.
Typical details	Provides a set of details applicable to 70-80% of trail conditions, ensuring a consistent construction approach. **Note:** Detailed design supersedes typical details where relevant, ensuring consistency across all sections.
Request for Tender and Contract documents	Refer to these for: • Tender requirements • Requirements regarding the insurance related to the works, including Public Liability Insurance and Workcover. • Occupational Health & Safety (OH&S) Plan requirements • Processes and timeframes for Practical Completion and Final Completion of the works. To be read in conjunction with this construction specification.
Environmental and heritage approvals	Outlines conditions and requirements regarding protection of environmental and heritage values
Construction Environmental Management Plan	Aims to minimise and manage the environmental impacts of construction, ensuring compliance with all relevant environmental legislation and approvals.
Cultural Heritage Management Plan	Aims to minimise and manage the potential impacts to cultural heritage values during construction, ensuring compliance with all relevant heritage legislation and approvals.
Occupation Health and Safety Plan	Aims to ensure all works are carried out in a safe manner

3 PRELIMINARIES

3.1 DEFINITONS

Defined expressions in the Contract shall have the same meaning in the Specification, and the following expressions shall have the associated meanings:

3.1.1 PRINCIPAL AND LOCAL GOVERNMENT CONTEXT

Principal: Means the City of Busselton or the Shire of Augusta–Margaret River, as applicable to the section of the Wadandi Track delivered under the relevant Contract.

City of Busselton (CoB) / Shire of Augusta–Margaret River (SoAMR): Means these entities are referenced only where specific standards, specifications or policies of those entities are identified.

Applicable Local Government Specifications: Means the specifications, standards, guidelines, asset management plans and policies adopted by the Principal that apply to the Works.

3.1.2 Terminology

approved / approval:	By the Principal.
as directed / directed:	By the Principal.
as required / required:	As required by the Contract Documents, law, Statutory Authority requirements, or to complete the Works.
as shown / indicated:	Shown on, or reasonably inferred from, the Contract Documents.
Authority:	Unless stated otherwise, any approval, acceptance, direction, inspection, certification or sign-off required by this Specification is by the Principal.
construct:	Carry out the Works including set-out, protection, temporary works, QA and testing required for a conforming outcome.
Contract Documents:	The Contract, Specification, Drawings, schedules, annexures, referenced standards and approved variations.
fit for purpose:	Suitable for intended use and meeting Contract performance requirements.
hold point:	Do not proceed beyond this point without the Principal's written release.
Including:	Including, without limitation.
inspect / inspected:	By the Principal.
provide:	Supply, deliver and install, including (as applicable) manufacture, fabricate, finish, test, commission.
rejected:	Nonconforming; replace or repair at the Contractor's cost unless approved otherwise.
repair:	Reinstate to conforming condition, including making good adjacent work.
replace:	Remove and provide new conforming work/material.
Statutory Authority:	Any government agency/regulator with jurisdiction over the Works (e.g. road, environmental, utilities, rail), excluding the Principal unless stated.
submit:	Submit to the Principal for approval unless stated "for information only".
supply:	Procure and deliver to site (installation excluded unless stated).
tolerance:	Permitted departure from the Contract Documents or applicable standard.
witness point:	Give notice for the Principal to attend; proceed if not attended after due notice (unless stated otherwise).
Workfront:	A discrete active construction area within a package, managed under one set of environmental, public access and quality controls.

"Contractor" includes the Contractor's employees, agents and subcontractors.

3.2 SCOPE OF WORK

The scope of work includes the design and construction of works associated with delivery of the Wadandi Track, comprising the provision of design, materials, plant and labour necessary to complete the works to a high standard. Works covered by this document include (but are not limited to):

- Trail surfaces
- New trail construction
- Upgrades to existing roads, trails, and paths
- Works required to deliver a stable, compacted, all-weather surface meeting:
- Australian Walking Track Grading System (AWTS) – Grade 2
- WA MTB Guidelines / International Mountain Bicycle Association (IMBA) Trail Difficult Rating System – Green Circle (Easy)
- Trailheads
- Signage – regulatory and warning
- Fencing and gates
- Road and driveway crossings
- Drainage structures
- Bridges and boardwalks

Each staged Design and Construct package is to include the design development necessary to construct the works, coordinate approvals and interfaces, and deliver a complete outcome within package limits. This includes coordination of road and driveway interfaces, landholder and property access where encountered, and protection of existing services. Construction access, laydown and temporary works are to be planned to minimise disturbance and reinstate areas affected by the works.

Unless noted otherwise in the Contract or drawings, each package includes works to complete formation, surfacing, drainage, crossings, signage and ancillary items within the package limits, including testing and documentation. Items outside the package limits, upgrades beyond the defined works, and works not shown or directed are not included. Road works and reinstatement are subject to the requirements of the relevant road authority.

4 GENERAL REQUIREMENTS

4.1 GENERAL

4.1.1 Section Scope

This section covers general requirements relating to the construction of the Track and the performance of the Contract. It shall be read in conjunction with all other sections of this document.

This section applies to all staged Design and Construct packages delivered for the Wadandi Track. Requirements in this section are to be applied consistently across packages, including at package boundaries, temporary terminations and future tie-in points, to ensure continuity of performance, safety and maintainability.

The Contractor shall provide everything which is necessary for the execution and completion of the works, in accordance with the Contract Documents and supporting documents, and/ or instructions given by the Principal and deliver the works complete in every respect to the satisfaction of the Principal.

This document contains a section covering General Requirements and a section covering requirements for individual Trail Infrastructure components. The General Requirements section includes sections related to general contract items and work quality and addresses overall requirements applicable to all aspects of the work. The Trail Infrastructure section details specific aspects of material, construction and work quality that relate to specific elements.

All Works shall comply with this Specification, the Contract, approved Detailed Design documentation, statutory approvals, and the applicable Local Government Specifications.

For the purposes of this Specification, the Principal shall mean the CoB or the SoAMR, as applicable to the section of the Wadandi Track being delivered under the relevant Contract.

The Principal is the sole approving authority under this Specification and may delegate inspection, review and verification functions internally or to authorised representatives. Any such delegation does not relieve the Contractor of its obligations under the Contract.

4.1.2 Pre-Commencement Documentation And Planning

The following documentation and planning is required to be prepared to the satisfaction of the Principal prior to the commencement of any site works. Pre-commencement documents are to be prepared, submitted and accepted prior to any site works commencing. Where works are staged, these requirements apply per package and per workfront, and documents are to be updated where site conditions or methods change.

4.1.2.1 Occupation Health and Safety (OH&S) Plan

It is important that the work be carried out safely to ensure the safety of the Contractor's work force, the Principal's staff or agents who have access to the site, as well as the general public. The Contractor shall be responsible for ensuring that the requirements of the Occupational Health & Safety Act 2020 are adhered to. A project-specific OH&S Plan shall be prepared and submitted to the Principal prior to the commencement of works and shall be acted upon and reported upon throughout the construction and Defects Liability periods.

The project presents a range of project-specific OH&S risks that need to be addressed as part of the OH&S Plan, including but not limited to: Fire risk, working in remote and/or difficult to access locations, and dust generation.

The OH&S Plan is also to address emergency response arrangements for remote locations, including communications coverage, first aid, evacuation access, and bushfire readiness appropriate to the season and workfront.

4.1.2.2 Construction Environmental Management Plan (CEMP)

A draft Construction Environmental Management Plan (CEMP) will be prepared for the Wadandi Track alignment. This will outline a suitable CEMP format and minimum environmental requirements. The draft will be provided to the Contractor prior to construction. The Contractor will be responsible for completing the sections specific to their field of expertise. These will include how the contractor will undertake certain activities to ensure compliance with the CEMP rather the Principal burdening the Contractor with unrealistic requirements. The final CEMP will be completed to the satisfaction of the Principal.

A second round of CEMP updates may be required to address specific environmental constraints in some areas if they are realised following the spring 2026 surveys or following review of the clearing permit application by the Department of Water and Environmental Regulation.

4.1.2.3 Phytophthora Management

Limited Phytophthora Dieback surveys have been undertaken along the Wadandi Track alignment, with the most recent being Phytophthora Dieback Assessment and Associated Management Plan for the Rails to Trails Alignment from Busselton to Flinders Bay 2012 Assessment will be undertaken prior to construction. It is expected that the following operational hygiene protocols will be applied:

- All machinery, vehicles, equipment and materials must arrive on site clean and free from soil and vegetative material.
- Access to uninfested, protectable areas should be restricted to a minimal number of access points. Access locations and associated cleandown locations should be clearly sign posted.
- Uninfested areas must not be accessed during moist soil conditions to minimise the risk of disease spread via infested soil adhered to machinery, vehicles, equipment and footwear.
- Project works may be undertaken in areas classified as unmappable, uninterpretable and infested during moist soil conditions however hygienic cleandown must be strictly applied to all machinery, vehicles, equipment and footwear prior to leaving each area.
- All machinery, vehicles, equipment and footwear must be effectively cleaned down before moving from an area classified as infested into either uninterpretable or uninfested areas. Clean down should be performed inside the infested category as close to the category boundary as possible. All soil and water wastes produced from the clean down are to remain in the infested area and not be allowed to drain across the category boundary.
- All machinery, vehicles, equipment and footwear must be effectively cleaned down before moving from an area classified as uninterpretable into any areas classified as uninfested. Clean down should be performed inside the uninterpretable category as close to the category boundary as possible. All soil and water wastes produced from the clean down are to remain in the uninterpretable area and not be allowed to drain across the category boundary.
- All machinery, vehicles, equipment and construction staff on foot must be restricted from entering areas of unsealed ground outside the prescribed alignment. Should this occur all machinery, vehicles, equipment and footwear will require effective clean down before re-entering uninfested or uninterpretable areas of the alignment.
- A site specific hygiene induction should be provided to all staff and/or contractors who are involved in the project.

4.1.2.4 Flora and Fauna Protection

Detailed flora and fauna surveys have been undertaken for the entire Wadandi Track alignment and will inform the final trail alignment design. Conditions of the approved clearing permit will be supplied to the Contractor by the Principal prior to commencement of works. It will be the responsibility of the Contractor to fully comply with the requirements of the clearing permit conditions throughout all aspects and stages of the works.

At this stage, it is expected that requirements will include:

- Fauna spotters during vegetation clearing activity
- Protocols regarding the protection of specific flora species and/or vegetation or other environmental aspects
- Dieback management may be required

The Contractor is to ensure that no damage occurs to any vegetation or landforms, which:

- Are specified to be retained
- Are beyond the extent of works
- Need not be removed or damaged during the course of the works.
- Corrective actions may be required if breached.

The Contractor is to clearly delineate the approved clearing limits and retained vegetation prior to clearing and maintain protections throughout construction, including at stockpile areas, access tracks and turning areas.

4.1.2.5 Cultural Heritage Management Plan (CHMP)

An approved Cultural Heritage Management Plan (CHMP) complying with the Aboriginal Heritage Act 1972 will be supplied to the Contractor by the Principal before the commencement of works. It will be the responsibility of the Contractor to fully comply with the requirements of the CHMP throughout all aspects and stages of the works.

At this stage, it is expected that requirements will include:

- Activity notice triggers including stop work procedures should anything be discovered
- Requirements to remain on the original rail formation wherever possible
- Requirement for Aboriginal heritage monitors when undertaking works within registered Aboriginal heritage sites.

Any unexpected finds or potential heritage material encountered during works are to trigger immediate cessation of works in the immediate area, protection of the find, and notification in accordance with the approved CHMP.

4.1.2.6 Construction Management Plan (CMP)

An approved project-specific Construction Management Plan (CMP) will be required to be prepared by the Contractor prior to the commencement of any works. It will be the responsibility of the Contractor to fully comply with the approved CMP throughout all aspects and stages of the works.

The CMP is a project-specific plan to manage construction-related issues and is in addition to the *Construction Environmental Management Plan (CEMP)* covered previously, which addresses environmental protection measures associated with construction period activities.

At a minimum, the CMP must address the following:

- Risks
- Works programming
- Working hours and noise
- Traffic and pedestrian management
- Construction access
- Materials storage and stockpiling
- Site office and associated storage areas for plant and equipment
- Public access
- Site amenities
- Asset protection
- Dust generation
- Sediment and erosion control
- Waste
- Bushfire risk and vehicle movement bans
- Package boundary and tie-in management
- As-constructed data capture and handover requirements per workfront/package

4.1.2.7 Survey Control and Set-Out Plan

A survey control and set-out plan is to be prepared prior to commencement of works. The plan is to describe survey control establishment, set-out methodology, verification checks and as-constructed pickup requirements. Where works tie into existing completed stages, the plan is to confirm how continuity of levels, alignment and drainage will be achieved at tie-ins and package boundaries.

4.1.2.8 Public Access and Interface Management

A public access and interface management plan is to be prepared prior to commencement of works. The plan is to address the management of users, landholder access (where encountered), and any temporary restrictions required to safely construct the works, including controls and signage at trailheads, crossings, and package boundaries. Where works occur adjacent to roads (sealed or unsealed), the plan is to confirm traffic management requirements and approval pathways with the relevant road authority.

4.1.3 Standards, Codes And References

4.1.3.1 Australian Standards

The works must comply with the current editions of all relevant codes and Australian Standards. Australian Standards shall be the governing standards for the works unless otherwise specified. Only where expressly stated in the Specification shall other standards apply to the works.

Where there is any conflict between referenced standards, codes, guidelines or drawings, the more stringent requirement shall apply unless stated otherwise in the Contract Documents. Where an Australian Standard exists that is directly applicable to any aspect of the works, it shall be adopted as the baseline requirement unless otherwise specified.

All references to Australian and other standards, regulations and requirements of statutory bodies shall mean the latest published editions at the time of Contract award. Where such standards, regulations and requirements are amended after Contract award and affect the Contractor's responsibilities during the course of the works, immediately inform the Principal in writing.

Where there is in existence a relevant Australian Standard applicable to the design, execution or performance of the works or any part thereof, then the recommendations and requirements of such documents shall be considered a minimum standard for the work described and shall be complied with. Should the requirements of a standard conflict with any other requirements of this document, the Contractor shall draw this to the attention of the Principal and state the proposed course of action, before implementing any related work.

The list below is not exhaustive and does not relieve the Contractor of the obligation to comply with all other standards that are relevant to the design, execution and performance of the works.

Standards of particular relevance to this Contract may include:

AS2156.1-2001 Walking Tracks Part 1: Classification & Signage
AS2156.2-2001 Walking Tracks Part 2: Infrastructure Design
AS1170.1-2002 Structural design actions, Part 1: Permanent, imposed and other actions

4.1.3.2 Statutory Authority Codes & Regulations

All materials, components, equipment and work quality shall comply with all Statutory Authority codes and regulations, and any other regulations, rules or by-laws applicable to both the design and execution of the Works.

Where approvals, permits or authority sign-off are required, the Contractor is to identify these requirements early and coordinate the approval pathway as part of the construction program and methodology. The Contractor remains responsible for ensuring works are carried out in accordance with approval conditions and any direction provided by the relevant authority.

The CoB and the SoAMR will secure all relevant Statutory approvals for trail construction works. Contractors are to obtain and supply any other approvals, certificates, or documents required by Statutory Authorities to permit use/and or occupation of works, including compliance with permit conditions outlined in this document and/or as amended.

Notwithstanding the above, the Contractor is to obtain and provide any permits, certificates, notifications, traffic management approvals and service authority clearances that are required to undertake the works in accordance with the Contract and the approved methodology.

The Contractor shall ensure that design work required to be undertaken as a part of the contract comply with all Statutory Requirements and relevant codes, and that they receive the necessary approvals in good time to ensure that there is no program delay caused by delay of such approvals.

4.1.3.3 Non-compliance

If the Contractor is unable to comply with the governing standards or regulations and proposes to substitute other standards, they must inform the Principal within the summary of deviations. Provide fully detailed reasons for being unable to comply, together with any design and/ or technical implications. Failure to provide such notification prior to Contract award is deemed to be acceptance of the governing standards or regulations.

Where a departure from a governing standard, regulation or contract requirement is proposed, the Contractor is to submit a summary of deviations and supporting technical justification, including impacts on safety, durability, maintenance and whole-of-life performance. No substituted standard, product or method shall be adopted without written acceptance by the Principal's Representative / Superintendent and, where relevant, the governing authority.

4.1.4 Services

Known services within the project area include power, fibre optics and water corporation infrastructure above and below ground, it is the Contractor's responsibility:

Services information is indicative only. The Contractor is to confirm the location, depth and status of all services within and adjacent to the work area prior to disturbance, including where works interface with roads, crossings and unsealed road shoulders.

- To locate or confirm the exact location of all underground and overhead services affected by the works or within the work area.
- Undertake Dial Before You Dig enquiries and use non-destructive excavation (potholing/vacuum) where required to confirm service location prior to excavation in the vicinity of services.
- Liaise with the various appropriate authorities and other contractors, and where necessary, have each authority accurately locate the services in the area of work.
- Services in close proximity to proposed works shall be exposed by hand before work is to commence.
- Exposure is to be sufficient to confirm service alignment, depth and separation to the proposed works, and is to be maintained until the risk of damage has passed.
- In the event that the Contractor damages any existing service lines that are not shown, or the locations of which have not been made known to the Contractor, report immediately to the Principal.
- Where works occur within or along unsealed/gravel road shoulders, the Contractor is to coordinate service protection and reinstatement with the relevant authority and ensure the works do not compromise existing service access, cover requirements, or the function and drainage of the shoulder.

4.1.5 Site Amenities

Site amenities are to be appropriate to the remoteness of each workfront and the size/duration of the works. Amenities and servicing arrangements are to be planned to avoid unnecessary disturbance, avoid contamination risks, and maintain a tidy work area, particularly at trailheads, road interfaces and any publicly visible locations.

4.1.6 Protection Of Existing Assets

Prior to commencing works, the Contractor is to identify existing assets that may be affected by construction activities, including but not limited to fences, gates, drainage structures, roads/shoulders, driveways, signage, and any services markers or access points. Asset protection measures are to be maintained for the duration of the works and any damage is to be repaired or replaced to an equivalent or better standard.

Where works interface with previously completed trail sections, the Contractor is to protect existing finished surfaces and avoid introducing lips, uneven transitions or drainage issues at tie-ins. Any temporary protection measures are to be removed on completion and affected areas reinstated.

4.1.7 Dust Generation

Dust management is to be proactive and appropriate to seasonal conditions and work activities, particularly where works occur near trailheads, road crossings, landholder access points and adjacent residences. The Contractor is to apply dust suppression measures as required to prevent nuisance and to maintain safe working and public conditions, without creating ponding, softening of the formation, or contamination of drainage lines.

4.1.8 Waste

Waste is to be minimised at source and managed to maintain a clean and safe workfront at all times. Spoil, surplus material and demolition waste are to be handled and disposed of lawfully, and stockpiles are to be located to avoid impacts to drainage lines, retained vegetation and public movement areas.

On completion of each workfront and at package handover, all temporary materials, waste and redundant controls are to be removed, and disturbed areas reinstated in accordance with the approved methodology.

4.1.9 As Constructed Drawings

As constructed drawings are to be prepared by the Contractor, providing accurate information regarding the completed constructed works. The Contractor is to provide an accurate recording of the final alignment of the built trail and associated infrastructure. This information is to be delivered in a GIS-compatible digital file format (eg. Shape files, __.SHP) to be added to the CoB and SoAMR asset management system and provided as a standalone map in PDF format.

As-constructed documentation is to be provided for each staged Design and Construct package and is to reflect the works as installed, including any approved changes made during construction. As-constructed information is to be suitable for long-term asset management and for integration with future packages, including clear definition of package limits, tie-in points and temporary terminations.

As-constructed drawings are to be prepared from survey pickup of the completed works and are to include sufficient information to locate, inspect and maintain the trail and associated infrastructure. As a minimum, the as-constructed set is to record trail alignment and chainage, surface extents, crossings, drainage assets, fencing/gates (where provided), signage/wayfinding, and any structures delivered as part of the package.

As-constructed drawings and data are to be provided in formats and coordinate reference consistent with the project base information. Where the coordinate system/datum is not nominated within the tender documents, the Contractor is to confirm requirements with the Principal’s Representative / Superintendent prior to commencing survey pickup. All files are to be clearly named, include revision/date, and reference the relevant package.

Deliverables (minimum)

- As-constructed drawing set in PDF (and native CAD where applicable).
- Spatial data suitable for GIS (alignment, assets and extents), in formats compatible with the Principal’s system.
- An asset inventory/schedule that matches the as-constructed drawings (IDs, location/chainage, type, and key attributes).

Where works include road interfaces and crossings, as-constructed information is to record the installed interface treatment and any sealed pavement reinstatement extents. Where works terminate temporarily at a package boundary, the as-constructed set is to clearly document the termination arrangement and what is required for the future tie-in.

4.1.10 Site Restoration

On completion of the works, restore the ground surfaces of the Site to the condition existing at the commencement or as required by this contract or as required for subsequent construction as directed. Generally, disturbed surfaces will be required to be smoothed, stabilised, protected from erosion, and revegetated with relevant local indigenous species to the satisfaction of the Principal.

Restoration is to be undertaken progressively as works advance, not deferred until the end of the package, to minimise erosion risk and reduce the disturbed footprint. Temporary access tracks, laydown areas and stockpile locations are to be rehabilitated on completion of the relevant workfront unless otherwise directed. Where works terminate at a package boundary, the restoration works are to include stabilisation and rehabilitation appropriate to a temporary termination condition until future stages are delivered.

The site shall be left in a neat and tidy condition at the end of each day's work. The Contractor shall remove all equipment and debris from the site at the completion of the works of the contract. The site shall be left tidy and ready for immediate use. At any stage, the Principal may instruct the Contractor to remove any unsightly stockpiles of rubbish.

Stockpiles are to be located and managed so they do not obstruct drainage paths, affect retained vegetation, or create safety risks for site users and adjacent landholders. Any stockpile directed to be removed is to be removed promptly and the affected area reinstated.

4.1.11 Practical Completion

A Certificate of Practical Completion will be issued in accordance with the contract, upon satisfactory completion of the works. Practical Completion will apply to each staged Design and Construct package. Works are to be complete, safe, and functional within the package limits, including at tie-ins and temporary terminations, with all required documentation submitted.

Prior to the issue of a Certificate of Practical Completion, the contractor will be required to:

- Complete the defects list as issued by the Principal.
- Provide material warranty data for components used during construction.
- Provide as-constructed (ASCON) drawings and associated digital data relevant to the package works.
- Remove temporary works, surplus materials and debris, and complete site restoration as required under this contract.
- Ensure package boundaries and temporary terminations are stable, safe and clearly delineated where the trail does not yet continue.

4.1.12 Defects And Maintenance Period

The Tenderer shall warrant their workmanship for a period of 12 months from the issuance of the Certificate of Practical Completion.

The defects and maintenance obligations apply to each package from the date of the Certificate of Practical Completion for that package. During the defects period, the contractor is to respond promptly to notified defects and is to reinstate affected areas so that safety, drainage performance and surface continuity are maintained.

Should the constructed Works become defective in a manner not considered to be normal wear and tear, the contractor will be required to make good any unsatisfactory items at their own cost, including all labour and materials.

Where defects arise at interfaces, tie-ins, crossings or drainage outlets (including ponding or edge ravelling), rectification is to restore intended function and a predictable riding surface consistent with this Specification

4.2 QUALITY

4.2.1 Section Scope

This section outlines the quality assurance and quality management requirements applicable to the construction of the Wadandi Track. These requirements must be read in conjunction with the relevant Individual Trail Infrastructure specifications (Section 6 of this document) and all associated design documentation.

4.2.2 Quality Management

The Contractor shall develop and implement a Quality Management System that demonstrates clear processes, controls, and evidence of conformance with all contract requirements. This includes, but is not limited to, adherence to the project specification, CHMP, CEMP, CMP, permits, and all other mandatory approvals.

The Quality Management System must detail how quality will be planned, monitored, recorded, and verified prior to, during, and upon completion of construction. All documentation must be made available to the Principal upon request.

Quality requirements apply to each staged Design and Construct package and to each workfront within a package. The Quality Management System is to include an Inspection and Test Plan (ITP) that identifies the inspections, tests, hold points and acceptance criteria required to demonstrate compliance for each construction activity, including how records will be captured, stored and submitted at package handover.

The Contractor is to maintain a simple register of quality records for the works (for example: test results, survey pickups, delivery dockets, material certifications, photos and inspection checklists) so that compliance can be readily verified and traced to chainage/workfront and to the relevant package.

4.2.3 Safety In Design

A Safety-in-Design review shall be undertaken during the detailed design process. The review must identify and minimise hazards, reduce foreseeable risks to construction personnel, maintenance teams, and trail users, and ensure the design supports safe construction, operation, and long-term asset management.

The Safety-in-Design process is to consider construction, operation and maintenance risks relevant to a rural rail trail, including public interfaces during staged delivery, remote access for emergency and maintenance response, and safe, predictable user movement at crossings, trailheads and interface zones. Safety-in-Design outcomes that affect construction methodology or permanent works are to be documented and incorporated into the detailed design and construction planning.

4.2.4 Hold Points

The Contractor shall adhere to all project hold points specified in this document, as well as any additional hold points issued by the Principal. Hold points ensure key elements of the works are inspected, tested, or confirmed prior to progressing to subsequent stages.

Hold points may relate to test results, inspection outcomes, clarification of levels, or other required approvals. No work shall proceed beyond a hold point without written approval from the Principal.

Hold points shall include but not limited to:

HOLD POINT	APPROVAL REQUIREMENT
Pre-construction / mobilisation	Approval of all pre-construction documentation and compliance with specifications
Final alignment and set-out	Acceptance of surveyed alignment and resolution of encroachments
Clearing and environmental controls	Clearing limits flagged, environmental controls installed
Bulk earthworks and formation	Formation levels and compaction compliant
Drainage works	Drainage installed and inspected prior to covering
Structural elements	IFC drawings, certifications and inspections accepted
Pavement layers and surfacing	Materials, compaction and tolerances verified
Fencing and ancillary works	Compliance with approved details
Signage and wayfinding	Layouts approved prior to installation
Practical Completion	Completion of works and submission of required records
Final Acceptance	Defects rectified and asset suitability confirmed

Hold Points apply **in addition to**, and do not replace, any mandatory Hold Points contained within the applicable Local Government Specifications

5 TRAIL DETAILS

5.1 TRAIL CLASSIFICATION

The Wadandi Track is to be designed and constructed as a shared use trail in accordance with Grade 2 for walk trails and Easy within Mountain bike classification. Refer to Table 1 and 2 for short descriptions of each classification. Further detailed descriptions can be found in AS 2156 Walk Track Classification and the WA MTB Management Guidelines.

5.1.1.1 Table 1 Trail difficulty rating short descriptors for Grade 2 Walk Trails (Source: AS 2156)

 Grade 2	**Grade 2** Generally, a modified or formed track. Width: 900mm or more. Well maintained with minimal intrusions (AS 2165.1).

5.1.1.2 Table 2 Trail difficulty rating short descriptors for Easy Mountain Bike Trails (Source: WA MTB Management Guidelines)

	**Easy** Wide trail with a gentle gradient smooth surface. Some obstacles such as roots, logs and rocks. Suitable for beginner cyclists with basic mountain bike skills, and off-road bikes

5.2 TRAIL WIDTH

The Wadandi Track shall be constructed with a consistent, safe shared-use geometry across all staged packages. The typical clear tread width shall be 2.5 m, with narrowing to 2.0 m permitted only where unavoidable due to site constraints and only where approved by the Wadandi Track Project Steering Group. Crossfall and surface shaping shall maintain positive drainage and prevent ponding on the tread and at interfaces. Sealed pavement interfaces at crossings shall be provided in accordance with Section 6.10.1 and the sealed/unsealed interface tolerances in Section 4.2. Where horse access is nominated, provide a separate sandy line adjacent to the primary tread and integrate this with crossings, trailheads, and wayfinding so user movements remain predictable. The section between Buller Road and Stockdill Road is proposed to be horse-accessible and shall include a 0.5-1.0 m wide sandy track adjacent to the main tread, unless otherwise shown in the approved Detailed Design.

5.2.1 ACCESSIBILITY

The Wadandi Track shall be designed and constructed to support a wide range of users and abilities, with the intent of improving participation and providing a safe experience for all users. The Track shall generally achieve outcomes consistent with a Grade 2 trail, noting this is generally considered universally accessible with assistance. Particular emphasis shall be placed on providing adequate space and clear widths at trailheads and key infrastructure (including bridges) to accommodate mobility devices and adaptive equipment, and on delivering smooth, predictable transitions at interfaces and crossings as shown in the approved Detailed Design.

6 TRAIL INFRASTRUCTURE

6.1 GENERAL

6.1.1 Section Scope

This section details specific aspects of material, construction and work quality that relate to specific elements of trail construction. It shall be read in conjunction with all other sections of this document and reference the Typical Details. A register of available typical details is provided below.

Typical Details are to be treated as contract referenced construction details. Where a Typical Detail is referenced in this Specification or the approved Detailed Design, the Contractor is to construct in accordance with that Typical Detail unless expressly varied by the approved Detailed Design. Where a Typical Detail is listed in the register but not referenced in the drawings or Specification for a given workfront, it does not apply.

In addition to the requirements set out in this Section, all civil, pavement, drainage, structural and associated works shall comply with the Applicable Local Government Specifications, except where expressly varied by this Specification or the approved Detailed Design documentation.

6.1.1.1 Table 2. Typical Details Register

Drawing number	Detail	Revision
DD-000	COVER SHEET	
DD-100	GENERAL NOTES	A
DD-201	TRAIL CORRIDOR	A
DD-300	TYPICAL TRAIL PROFILES	
DD-301	OUTSLOPED TRAIL PROFILE	A
DD-302	CROWNED TO SHOULDER	A
DD-303	CROWNED TO GUTTER	A
DD-304	EXISTING ROAD/VEHICLE TRACK	A
DD-401	BRIDGE INTERFACE	A
DD-500	DRAINAGE & EDGE TREATMENTS	
DD-501	FREE DRAINING SHOULDER	A
DD-502	GUTTER TO OUTLET	A
DD-503	CULVERT (PLAN)	A
DD-504	CULVERT (SECTION)	A
DD-505	SUBSURFACE HARDENING	A
DD-600	NARROW TRAIL	
DD-601	RAILWAY CUTTING (PLAN)	A
DD-602	RAILWAY CUTTING (SECTION)	A
DD-603	MINIMAL GUTTER	A
DD-604	RAILWAY EMBANKMENT	A
DD-700	CROSSINGS & INTERSECTIONS	
DD-701	BOLLARD	A
DD-702	GATE	A
DD-703	CHICANE	A
DD-704	ROAD CROSSING	A
DD-705	TRAIL CROSSING	A
DD-706	PASSING BAY	A
DD-707	SHARED VEHICLE TRACK	A
DD-708	STOCK CROSSING	A

The Typical Details Register is subject to refinement through detailed design. The Contractor is to use the latest issued revision of each Typical Detail applicable to the works.

6.2 SET OUT

- The alignment of the Wadandi Track is determined in the detailed design. The Contractor is required to rigorously conform with this alignment at all times.
- All works are to be set out from an approved digital (GPX) track alignment file and any additional survey set-out data issued by the Principal (for example: project coordinate points/strings), which will be issued to the Contractor for construction. Do not set out any works from information other than this supplied information and the on-ground flagging tape.
- Do not set out any works from information other than this supplied information and the on-ground flagging tape.
- Where clearing beyond pruning is required, the Contractor shall set out the clearing limits with flagging tape and/or markers at sufficient centres to fully indicate the proposed extent of clearing required, prior to any excavation or other construction-related activities.
- Where major amendment to the trail alignment is required for any reason including practical or constructability issues, the Contractor shall alert the Principal prior to undertaking any works and await approval to proceed.
- The Contractor shall organise for the provision of alignment and flagging tape at own expense. Any additional setting out or the replacement of any tape or level marks destroyed by the Contractor will be carried out at the Contractor's own expense.
- The Contractor shall notify the Principal two working days prior to enable an inspection of the completed set out.
- The Contractor shall make amendments to the set out as required by the Principal and shall seek approvals of such amendments prior to site preparation and earthworks phase.
- Final set-out of alignment, clearing limits and formation extents shall be verified prior to commencement of clearing or earthworks. Set-out verification is to include alignment, clearing limits and formation extents at tie-ins and package boundaries, including any temporary terminations.

6.3 SITE PREPARATION AND EARTHWORKS

This section sets out requirements for clearing, corridor preparation, excavation, and management of legacy rail infrastructure to enable construction of the trail to the lines, levels, and profiles shown in the approved Detailed Design, while protecting retained vegetation, existing formation stability, and heritage/land manager values.

6.3.1 Clearing Limits

- Trail corridor limits shall be as outlined in Typical Detail DD-201.
- Provide a corridor width free from vegetation of 3500–4000 mm and a vertical clearance of 2400 mm, unless otherwise shown in the Detailed Design.
- Where horse trails are nominated, provide a minimum vertical clearance of 3000 mm.
- Measure clearing limits to the required operational envelope and include allowance for long-term vegetation management so that regrowth does not encroach into the corridor between routine maintenance cycles.

6.3.2 Trail Corridor Clearing

Where vegetation is to be cleared, undertake clearing and pruning to achieve the corridor envelope while minimising weed spread, protecting retained trees, and rehabilitating disturbed areas in accordance with DD-201 and this Specification.

- Stage works from weed-free (clean) areas toward weed-infested areas to minimise weed spread and contamination of clean sites.
- Fully uproot and remove all vegetation within the trail tread; do not cut vegetation off at ground level.
- Undertake pruning to minimise wounding and support appropriate callus formation on trees to be retained, in accordance with AS 4373–2007.
- Prune branches greater than 75 mm diameter in accordance with AS 4373–2007.
- Remove trail-side hazards within the fall zone, including sharp branches or stumps that may pose a risk to users (ref. DD-201).

- Trim overhanging branches encroaching into the trail corridor flush with the trunk in accordance with AS 4373–2007 (ref. DD-201).
- Transport all weed material off site and dispose of it lawfully.
- Reuse non-weed vegetation/material for naturalisation of constructed trail edges, with excess stockpiled on site at a location to be determined for rehabilitation works by others.
- Nominate stockpile locations in the Construction Management Plan and obtain approval prior to clearing.
- Blend and dress material within the trail corridor to rehabilitate all disturbed construction footprint areas and construction access points.

6.3.3 Excavation

- Excavate existing site material to conform to the finished levels and profiles shown in the Detailed Design and make allowance for compaction, settlement, or heave.
- Excavate for footings, pits, and drainage to the sizes and depths required by the Detailed Design and relevant standards and confirm subgrade conditions meet the required design bearing capacity.
- Use all available clean site fill before importing clean fill to site.
- Excavate for drains, sumps, service line conduits and associated works as required to complete the Works, and form excavations to provide falls to points of discharge where required.
- Do not modify intact existing rail formation (embankment and cutting) unless signs of deterioration are evident; where deterioration is evident, develop a localised stabilisation solution through the Detailed Design.
- Any proposed modification to intact rail formation shall be submitted to the Principal with supporting justification and shall not proceed without written approval.
- Where unsuitable material, soft ground, or unstable existing formation is encountered, implement remediation measures in accordance with the approved Detailed Design.

6.3.4 Legacy Rail Infrastructure

Legacy rail infrastructure remnants may be present along the Wadandi Track alignment, including isolated fragments (e.g., timber culverts, sleepers, rail) and more substantial elements (e.g., siding platforms, bridges, tank stands), and shall be managed to protect heritage and land manager values while enabling safe construction.

- Incorporate isolated fragments identified during Detailed Design into the trail design where practicable.
- Where isolated fragments are uncovered during construction that were not identified in the Detailed Design, notify the relevant land manager and determine retention or removal on a case-by-case basis in consultation with the Principal and land manager.
- Where substantial remnants are uncovered that were not identified in the Detailed Design, pause works in the immediate area until the Principal and relevant land manager confirm whether the item is to be retained in place, relocated, or removed.
- Preserve substantial remnants such as bridges and tank stands and, where practicable, incorporate them into the design solution.

6.4 TRAIL SUBGRADE

6.4.1 Typical Conditions

Trail subgrade shall be prepared in accordance with Typical Details DD-300 to DD-500 and the approved Detailed Design to provide a stable, free-draining formation and uniform support for surfacing layers.

a) Grub and remove all vegetation and topsoil to expose mineral earth across the full specified trail width. Carefully clean and gently reprofile existing drains within rail cuttings back to mineral earth. Where pre-existing drainage infrastructure is encountered, assess functionality and repair or replace as required.
b) Stockpile or windrow surplus topsoil and vegetation for reuse on batters on completion. Place reused topsoil/organic material only on batters below tread height. Cart any excess material off site at the Contractor's expense.
c) Cut the subgrade to form required drainage low points and use fill where practicable to achieve the specified outsloped or crowned profile. Water and compact subgrade to a minimum of 95% of maximum dry density when tested in accordance with AS 1289.
d) Use surplus cut elsewhere on site as general fill where practicable. Cart any excess material off site at the Contractor's expense.
e) Prepare subgrade to achieve uniform support to pavement layers and obtain acceptance prior to placing overlying materials.
f) Subgrade acceptance shall include confirmation that the formation is free-draining and that any required low points and drainage features are formed prior to placing surfacing.
g) Where required by profile works, lift adjacent ground to match the trail tread edge using spoil from trail construction, compact as required, and broadcast excess spoil on site at approved locations (ref. DD-301, DD-302, DD-303, DD-304).

6.4.2 Wet Conditions

Where prevailing conditions are soft, wet, or waterlogged, prepare the trail subgrade in accordance with Typical Detail DD-505 and the approved Detailed Design to achieve a stable, free-draining formation suitable for surfacing.

a) Grub and remove all vegetation and topsoil to expose mineral earth across the full specified trail width.
b) Stockpile or windrow surplus topsoil and vegetation for reuse on site on completion and cart any excess material off site at the Contractor's expense.
c) Cut the subgrade to the required depth, line with geotextile where required (as determined on site), and place ballast material. Water and compact to a minimum of 95% of maximum dry density when tested in accordance with AS 1289.
d) Use surplus cut elsewhere on site as general fill where practicable and cart any excess off site at the Contractor's expense.
e) Prepare the subgrade to achieve uniform support to pavement layers and obtain acceptance prior to placing overlying materials.
f) Subgrade acceptance shall include confirmation that the formation is free-draining and that any required drainage low points are formed prior to placing surfacing.

6.5 TRAIL SURFACING

The Wadandi Track shall be surfaced with imported material to provide a durable, safe and maintainable riding/walking surface. The majority of the Track shall be constructed as an unsealed gravel trail, with asphalt surfacing provided in higher-traffic sections around towns where nominated in the Detailed Design. Where alternative materials or construction methods are proposed, they shall demonstrate equivalent performance in durability, trail quality, and maintenance outcomes to those specified.

6.5.1 Unsealed Gravel

Unsealed gravel surfacing shall be constructed to the lines, levels, and thicknesses shown in the Detailed Design and shall provide a smooth, stable, and free-draining finished tread. Where thicknesses are not shown, the Contractor shall seek clarification from the Principal prior to construction.

a) Prepare subgrade in accordance with Section 6.4.
b) Provide the gravel surface course using material meeting the specified blend proportions and, where required, utilise material assessed as “low risk” for hosting Phytophthora Dieback.
c) Provide the following nominal grading blend (unless otherwise approved):
    - 20mm aggregate 14.7%
    - 14mm aggregate 26.05%
    - 10mm aggregate 17.47%
    - 7mm aggregate 7.76%
    - Crusher fines 26.26%
    - Clay 7.76%
    - Water and compact the full width of imported material to a minimum of 95% MDD or equivalent agreed specification to form a smooth, stable compacted surface.
d) Re-spread topsoil to low-side batters and cut edges to create a naturalised trail edge.
e) Construct the finished trail tread and shoulders to be free-draining with no ponding or pooling on the completed surface.

6.5.2 Asphalt Surfacing

Asphalt surfacing shall be constructed where nominated in the Detailed Design to provide a regular and consistent hardened surface suitable for higher-traffic areas and universal access outcomes, and shall comply with relevant applicable standards including AS 2156.1 and AS 1428 where applicable.

a) Prepare subgrade in accordance with Section 6.4.
b) Supply, place and compact basecourse to a minimum compacted thickness of 150 mm (±25 mm), using material meeting the specified blend proportions and, where required, utilising material assessed as “low risk” for hosting Phytophthora Dieback.
c) Provide the following nominal basecourse blend (unless otherwise approved):
    - 20mm aggregate 14.7%
    - 14mm aggregate 26.05%
    - 10mm aggregate 17.47%
    - 7mm aggregate 7.76%
    - Crusher fines 26.26%
    - Clay 7.76%
d) Construct the asphalt surface course to the following requirements unless otherwise shown in the Detailed Design:
    - Provide crossfall not exceeding 5% and generally matching natural surface slope unless otherwise indicated.
    - Provide longitudinal gradients not exceeding 5% and compliant with AS 1428 where applicable.
    - Provide test results for compacted basecourse to the Principal prior to asphalt placement.
    - Apply a bitumen emulsion primer to the prepared basecourse under suitable weather conditions at a rate of 1 L/m².
    - Apply 3 mm blinding aggregate immediately after priming at a rate of 80 m² per 1 m³ of material and roll until screenings are firmly embedded.
    - Place hot mix asphalt comprising clean, dry graded coarse and fine aggregates, laterite mix, mineral filler, and Class 170 bitumen to match existing site asphalt or as otherwise approved.
    - Place asphalt to achieve a compacted thickness of 25 mm, at industry standard placement temperatures and under experienced supervision. Cease work if asphalt shoves or cracks, identify the cause, and implement corrective measures prior to recommencing.
e) Re-spread topsoil to batters and cut edges to create a naturalised trail edge.
f) Construct the finished asphalt surface and interfaces to be free-draining with no ponding or pooling on the completed surface.

6.5.3 Upgrade Existing

- Where the trail alignment follows existing management vehicle tracks / firebreaks / clearings, achieve an upgraded trail tread width of 2.5 m (or the width specified in the Detailed Design), and do not assume the full existing track width is to be upgraded. Refer Sections 6.4 and 6.5.1.

- Where upgrading existing vehicle tracks with rutting or a depressed formation, rework the formation as required to achieve a free-draining tread and avoid a depressed “channel” condition relative to adjoining shoulders (ref. DD-304).
- Where the existing track width exceeds the nominated tread width, the Detailed Design shall nominate the construction methodology and limits of works required to achieve the specified tread width while avoiding widening or unintentional disturbance to the remainder of the track formation.

Hold Point: Prior to commencement in these areas, confirm with DBCA / Principal whether a partial upgrade (tread only) is acceptable for each location, having regard to construction plant movements, access requirements, and likely disturbance outside the nominated tread.

- Where a partial upgrade is not practicable, increase the limits of upgrade to the full existing track width (or other width as approved in the Detailed Design).
- Where the alignment traverses operational public minor roads, resolve site-specific treatments in the Detailed Design.
- Where alternative materials or construction methods are proposed, demonstrate equivalent performance in durability, trail quality, and maintenance outcomes to those specified.

6.5.4 Sealed / Unsealed Interfaces – Riding Line And Lip Tolerance

Unless explicitly stated otherwise within this Specification or the drawings, all sealed/unsealed interfaces (including gravel trail to asphalt road, asphalt apron, bridge approaches where sealed pavement exists, and any other sealed pavement interface) are to be constructed so the riding line is effectively flush and does not present a wheel-catching edge.

Acceptable “lip” (vertical step) at the interface:

a) Target (design intent): 0–5 mm.
b) Upper limit if vertical: ≤ 5 mm.
c) If > 5 mm is unavoidable: the transition is not to be left vertical. Provide a bevel / wedge transition.
d) Bevel benchmark: where steps fall within 6–13 mm, provide a bevel transition at maximum 1:2.

The interface must be consistent across the full width of the riding line (no isolated high points/steps).

Maintenance trigger: Where differential settlement, ravelling, or erosion results in a lip > 5 mm at any sealed/unsealed interface, reinstate to flush (0–5 mm) or provide a bevel transition as above.

6.6 DRAINAGE

Drainage works shall be constructed to maintain long-term functionality and prevent deterioration of the trail structure.

6.6.1 Cross Slope

The finished trail profile should be crowned as specified in typical details and detailed design, maximum 5% fall unless otherwise noted.

6.6.2 Drainage Profiles

6.6.2.1 Free Draining Shoulder

Clear ground cover within the hazard zone where required to maintain a free-draining shoulder and prevent obstruction of water shed from the tread. (ref: DD-501)

Reprofile shoulders to utilise natural low points and divert overland flows around established trees, preventing oversaturation. Blend smoothly into existing topography and ensure drainage paths do not adversely affect trees or assets. (ref: DD-501)

Retain and protect established trees; prune encroaching limbs in accordance with DD-201/as 4373. (ref: DD-501, DD-201)

6.6.2.2 Bench Back Cut

Refer to typical detail DD-301 Bench back cut profile requires an outsloped tread and appropriate drainage profile on opposite side (either free draining shoulder or gutter to outlet) to allow water to flow off the trail.

6.6.2.3 Gutter To Outlet / Table Drain

Refer to typical detail DD-502 Gutter to outlet profile applies in cases of railway cutting or built up outer edge. Water flow is directed off tread to gutter (catch drain) and directed to outlet. Where railway cutting extends for greater than 100m in length gutter depth to increase to 500mm to allow for greater water holding capacity.

Table drain / catch drain to be formed in mineral earth (remove organic material). Batters 3h:1v preferred (min 2h:1v where constrained). Nominal drain depth 150–300 mm (at 3h:1v) or 300–500 mm (at 2h:1v). Provide positive fall to stable outlets and erosion control as required. (ref: DD-502)

Provide outlets at 50-100m centres (or as shown), subject to grades and catchment, in accordance with DD-601.

6.6.2.4 Rail Formation Drainage

Maintain or reinstate consistent longitudinal fall along the existing rail formation. Protect existing embankments to retain the character of the railway cutting; do not over-steppen or over-excavate batters. Divert trail-side overland flow to soakaway drains / outlets where shown. (ref: dd-601, dd-602)

6.6.3 Culverts

Culverts to be installed as specified in detailed design. Refer to typical detail DD-503-504, general requirements outlined below

Culvert installation requirements (ref. DD-503 and DD-504):

- Provide minimum 2% longitudinal fall to culvert pipes unless otherwise shown.
- Where longitudinal grade exceeds 3%, skew culvert orientation relative to the road/track centreline by 3° for each 1% that grade exceeds 3%, to a maximum skew of 45°.
- Provide erosion protection at outlets using riprap rock armour or an approved vegetated treatment, and protect outlets with a rock headwall/retaining treatment where shown.
- Provide minimum outlet width equal to 1.5 x pipe diameter.
- Provide minimum 300 mm compacted tread material cover above the pipe (or as required by manufacturer/authority where greater).
- Pipe bedding: provide minimum 150 mm bedding material where specified in the Detailed Design/Typical Details (or as directed).

6.6.3.1 Dimensions:

As documented in detailed design which should be informed by catchment analysis

6.6.3.2 Bedding

Bedding depth to be minumum1.5 x diameter of pipe with absolute minimum depth 150mm. Pipes must be covered to a depth consistent with the pipe manufacturer’s specifications, noting that required cover varies with pipe material and pipe class.

6.6.3.3 Headwall

Headwalls and soil-stabilisation treatments should be used to protect the upstream and downstream fill batters adjacent to the culvert pipe(s).

6.6.3.4 Scour protection

Pipe outlets must discharge onto stable surfaces. Scouring at the outlet must not undermine the crossing structure or initiate gully erosion. Armouring and/or energy dissipators should be installed where necessary to stabilise the outlet.

6.7 BRIDGES

This section sets out general requirements for bridge works and interfaces along the Wadandi Track. Bridge type, location-specific constraints, and detailed dimensions shall be resolved in the approved Detailed Design. Refer also Typical Detail DD-401.

6.7.1 Functional Requirements

All bridges along the Wadandi Track shall be designed and constructed to safely accommodate:

- Bicycles (including adaptive and off-road bikes)
- Pedestrians
- Runners
- Mobility-assistance users (prams, wheelchairs, trishaws etc., where gradients allow)
- Routine maintenance access
- Occasional emergency/service vehicle access where nominated in the design brief

Bridges shall provide a safe, durable, and universally accessible crossing that supports the overall user experience of the rail trail, and bridge approaches shall be integrated with the trail alignment to provide smooth, safe, and accessible transitions for all users.

6.7.2 Division of Works

This clause defines responsibilities and interface requirements where trail works connect to bridge works. Works shall be undertaken in accordance with Typical Detail DD-401 to manage trade interfaces, protect completed trail works, and maintain continuity of profile and drainage.

- Division of works at bridge interfaces shall be as shown on DD-401.
- Trail Contractor works shall terminate at the extent shown on DD-401.
- Bridge Contractor shall tie into the adjoining trail surface and make good to achieve a continuous, safe, and durable interface.
- Provide a nominal 8–10 m trail-to-bridge transition zone on each side of the bridge interface (or as shown on DD-401) to allow unencumbered bridge construction and prevent damage to finished trail works.
- Maintain the existing trail profile and drainage through the transition zone with no alteration unless approved in the Detailed Design (ref. DD-401).
- Do not undertake regrading, reshaping, excavation, filling, compaction changes, or drainage alterations within the transition zone unless specifically directed and documented in the approved Detailed Design.
- The Trail Contractor and Bridge Contractor shall coordinate programming, set-out, protection measures, and handover to ensure works comply with DD-401 and do not introduce steps, lips, depressions, ponding, or altered flow paths at the transition.

6.7.3 Design Requirements

Bridges must be designed in accordance with the following (as applicable):

- AS 5100 Bridge Design Series
- Austroads Guide to Road Design – Shared Path and Pedestrian Bridge Provisions
- Australian Walking Track Grading System (Grade 2)
- Easy Mountain Bike Classification / IMBA Green Circle (Easy)
- Local authority requirements (load ratings, handrails, barriers, safety requirements)

6.7.3.1 Minimum design parameters:

- Nominal bridge clear width is to match the nominated adjacent trail tread width (typically 2.5 m) unless otherwise shown in the approved Detailed Design.
- Provide a kerb-to-kerb minimum clear width of 1.5 m with appropriate railings.
- Where heritage or environmental values require a reduced footprint, an absolute minimum width of 1.0 m may be considered, subject to approval by the Wadandi Track Project Steering Group.

- Where bridge clear width is less than the adjacent trail clear tread width, provide widened approaches, predictable sightlines, and any required passing/signage treatments as shown in the approved Detailed Design to manage shared use.
- Design load rating to AS 5100 pedestrian and cyclist loading, with additional emergency/service vehicle loading where nominated in the design brief or Detailed Design.
- Provide a slip-resistant, durable, all-weather surface suitable for smooth, efficient riding on bicycle and MTB tyres.
- Provide approach alignment that delivers smooth, accessible transitions with no sudden grade changes or sharp turns onto or off the bridge.
- Provide barriers/railings in accordance with AS 5100 and relevant fall-protection standards.
- Integrate drainage to prevent ponding and manage runoff so that natural-surface approaches do not scour or expose the bridge deck interface.
- Select materials suitable for site conditions and the expected service life.

6.7.3.2 Construction Requirements

The Contractor shall:

- Construct bridges in accordance with certified design drawings and engineer specifications.
- Install and fix all structural components in accordance with manufacturer requirements and engineering documentation.
- Provide testing, inspections, and certifications at nominated hold points.
- Form approach works to tie seamlessly into the bridge deck without steps, lips, irregularities, or wheel-catching edges.
- Protect environmental values during construction, including waterways, embankments, and vegetation.
- Provide as-constructed information and material certifications at completion.
- Form bridge approaches and deck interfaces to provide a safe, predictable transition consistent with the sealed/unsealed interface requirements in Section 4.2 where applicable.

6.8 SIGNAGE WAYFINDING AND INTERPRETATION

Signage, wayfinding and interpretation shall be designed, located, and installed in accordance with the approved Wadandi Track Wayfinding and Interpretation Plan and coordinated with the trail alignment, sightlines, and user safety requirements. Sign locations, types, and messaging shall be consistent with the approved Plan, and any proposed changes during construction shall be submitted for approval prior to fabrication and installation.

6.8.1 Functional Requirements

- Provide a clear sign hierarchy including trailhead, directional/wayfinding, interpretive, and regulatory signs to support safe navigation and appropriate trail use.
- Locate signs so they do not interfere with, or create a hazard to, cyclists or pedestrians.
- Offset signs a minimum of 0.6 m from the edge of the path and mount signs with a minimum clearance of 2.0 m from ground level to the underside of the sign, in accordance with Main Roads Sign Specification 601 and Main Roads Standard Contract Drawing No. 9548-0106.

6.8.2 Design Requirements

- Use durable materials suited to site conditions and the expected service life, including consideration of anti-graffiti measures and UV resistance.
- Ensure sign design is consistent with, and considerate of, existing sign styles adopted by the relevant land managers.

6.9 FENCING AND GATES

6.9.1 Fencing

Fencing shall be installed where shown in the Detailed Design to maintain continuity, durability, and functionality over the design life of the trail and to clearly define boundaries and access conditions along the corridor.

- Install fencing in the locations identified in the Detailed Design to manage interfaces between the trail, adjoining land uses, and tenure boundaries.
- Provide fencing where required to prevent unauthorised access onto the reserve/trail and to discourage access off-trail into private property.
- Provide fencing where required to delineate freehold (private property) from Crown land, and to delineate the rail reserve from conservation estate.
- Provide fencing where required to exclude stock from the reserve and reduce interaction risk between stock and trail users.
- Provide fencing where required to deter trespassing and minimise disturbance of stock by people and dogs.
- Design and construct fencing to comply with Applicable Local Government requirements and relevant DBCA policies.
- Provide access points and gates where identified in the Detailed Design.
- Confirm fence and gate interfaces at private property boundaries with the relevant land manager/owner prior to installation.

6.9.2 Gates

Gates shall be provided to support maintenance and management access while maintaining fencing integrity and controlling vehicle access, in accordance with the Detailed Design and Typical Detail DD-702.

- Install management access gates where vehicle access is required for track maintenance or to access adjoining vehicle tracks.
- Construct and install gates in accordance with DD-702, including welded mesh infill, locking mechanism, reflective tape, and footing/strainer post/strainer details to manufacturer specification (ref. DD-702).

6.10 CROSSINGS

Crossings shall be designed and constructed to provide clear, legible, and safe interfaces between the trail and adjoining networks and to manage interactions between trail users, vehicles, and land uses. This section sets out general requirements for road, driveway, and stock crossings; location-specific layouts, treatments, and signage shall be resolved and documented in the approved Detailed Design. Where crossings intersect sealed pavement, interface treatments and any sealed pavement reinstatement shall comply with Section 4.2 sealed/unsealed interface tolerances and the approved Detailed Design, and shall maintain positive drainage and avoid ponding at the interface.

6.10.1 Sealed Pavement Interfaces (Where Encountered)

Where the trail meets, crosses, or ties into an existing sealed pavement, provide a safe, predictable riding transition and reinstate any disturbed sealed surface in accordance with the requirements of this clause and Typical Detail DD-700.

- Reinstate disturbed sealed pavement by patch works only, with neat sawcuts to define patch boundaries (ref. DD-700).
- Determine patch extents on a case-by-case basis and extend beyond the immediate disturbance where required to remove inconsistent interfaces and deliver a safe transition across the full width of the riding line.
- Comply with the sealed/unsealed interface tolerances in Section 4.2.
- Trim and grade interface works to avoid ponding and maintain positive drainage across and along the riding line.

6.10.2 Road Crossings

Road crossings shall be designed and constructed to provide clear warning to trail users and road users, maintain safe sightlines, and provide appropriate access control and speed management, in accordance with the Typical Details referenced below.

6.10.2.1 General Requirements / All Road Crossings:

- Install warning signage on the rail trail on both approaches to each road crossing, advising of the upcoming road crossing.
- Install warning signage on the road on both approaches to the trail crossing, warning road users of the upcoming trail crossing.
- Clear vegetation on both sides of the trail and both sides of the road to provide clear visibility of approaching vehicular traffic (ref. DD-705).

6.10.2.2 Minor Roads/ Rural Roads:

- Provide removable bollards and rocks to allow movement of trail users, emergency vehicles, and management access while restricting public vehicle access onto the trail (ref. DD-701).
- Set bollard spacing to allow safe movement of all trail users, including adaptive bikes and mobility assistance equipment.
- Where road speed and/or traffic volume requires trail users to slow on approach, install chicanes (ref. DD-703).
- Where a speed-reduction treatment is required, provide a staggered 1200 × 1000 mm U-rail chicane as shown on DD-703, including pipe sizes, sleeves/footings, powder-coated finish, and Class 2 reflective tape (ref. DD-703).
- Use the DD-704 road crossing treatment only where road-side batter grades are ≤ 1V:4H and no existing culvert/headwall/drainage structure is present; where batters are > 1V:4H or constrained road drainage occurs, develop a project-specific treatment in the Detailed Design (ref. DD-704).
- Provide 1300 mm clear width between bollards to accommodate adaptive bikes and install approved galvanised steel ground sleeves with hinged lids, tight tolerances, 25 MPa concrete footings, reflectors at 800 mm above trail level, and a tag/eyelet for padlock compatible with the Council system (ref. DD-701).

6.10.2.3 Major Roads/ Urban Setting:

- Install grab rail in accordance with DD-700.
- Provide painted “GIVE WAY” markings and centrelines on the pavement where shown in the Detailed Design.

6.10.3 Driveway Crossings

Driveway crossings shall be designed to provide clear warning to trail users and a safe, predictable interface with vehicular movements, in accordance with Typical Detail DD-705.

- Install warning signage on the rail trail on both approaches to each driveway crossing, advising of the upcoming driveway crossing.
- Flare the trail surface to provide a smooth transition for riders entering/exiting via intersecting trails, with a minimum internal radius of 2.0 m.
- Provide setback/warning distances appropriate to the traffic type, with a minimum 120 m warning distance where active vehicular traffic is present (ref. DD-705).

6.10.4 Passing Bays

Passing bays shall be provided to improve user safety and manage two-way movement on constrained shared trail sections, in accordance with Typical Detail DD-706.

- Provide passing bays as shown on DD-706, typically 6–8 m in length, as informal widenings off the primary alignment (ref. DD-706).
- Locate passing bays preferentially within pre-existing degraded areas to minimise additional disturbance.
- Provide passing bays on shared sections exceeding approximately 200 m and/or where sightlines are limited.

- Where practicable, improve visibility by pruning foliage only up to 2.5 m above natural ground; do not remove trees unless approved in the Detailed Design.

6.10.5 Stock Crossings

Stock crossing locations, treatments, and landowner requirements shall be confirmed with relevant landowners and documented in the Detailed Design.

- Where stock gates are required, provide a typical 4.8 m wide galvanised steel stock gate with welded mesh infill (or approved equivalent), and match/make good to existing stock fencing as required (ref. 708).
- Provide a crossing arrangement that prioritises trail user safety and continuity of travel.
- Avoid cattle grids unless specifically approved in the Detailed Design and by the landowner.
- Where practicable, provide a gate system that enables trail users to pass without needing to open and close gates, in accordance with Typical Detail 708.

7 MAINTENANCE

7.1 ASSET OWNERSHIP AND RESPONSIBILITY

Following completion of the Defects Liability Period and achievement of Final Acceptance, the Wadandi Track and all associated assets shall become operational assets of the relevant Local Government and be managed in accordance with the Principal's adopted Asset Management Plans (AMPs), asset policies, and service delivery frameworks.

Ongoing maintenance shall be undertaken by the Principal, either through internal resources or externally engaged service providers, consistent with adopted asset management practices.

As works are delivered in staged packages, asset ownership and operational responsibility will progressively transfer in accordance with package Practical Completion and Final Acceptance for the relevant package. Where temporary terminations exist between packages, interim operational controls and maintenance responsibilities are to be managed in accordance with the Contract and the Principal's operational requirements until the adjoining package is delivered.

7.1.1 Asset Management Objectives

Ongoing maintenance activities shall be planned and delivered to achieve the following asset management objectives:

- Maintain agreed levels of service for safety, accessibility and user experience;
- Preserve asset condition and functionality over the asset lifecycle;
- Optimise whole-of-life cost and value for money outcomes;
- Manage risk associated with asset failure, environmental exposure and public use;
- Protect environmental, cultural and community values associated with the trail corridor.

Maintenance planning is to recognise the trail's shared-use function and rural operating context, including seasonal weather impacts, remote access constraints and the need for predictable surface conditions at crossings, trailheads and interfaces.

7.1.2 Asset Classes And Maintenance Scope

For the purposes of asset management, the Wadandi Track is comprised of the following asset classes, each subject to routine inspection, maintenance and renewal activities in accordance with the relevant AMP:

7.1.2.1 Trail and Pavement Assets

- Trail surfaces, shoulders and formation;
- Surface condition, deformation, settlement and edge stability;
- Localised repairs associated with wear from normal usage.

7.1.2.2 Drainage Assets

- Subsoil drainage systems, pits, grates and culverts;
- Management of sediment, debris and vegetation affecting drainage performance;
- Erosion and scour control at drainage interfaces.

7.1.2.3 Structural Assets

- Bridges, boardwalks, retaining structures and footings;
- Decking, handrails, fixings and load-bearing components;
- Inspection and maintenance consistent with structural risk profiles.

7.1.2.4 Street and Trail Furniture Assets

- Bollards, fencing, gates, barriers and access controls;
- Seating, shelters, bike rails and ancillary trail furniture.

7.1.2.5 Wayfinding and Signage Assets

- Directional, regulatory and interpretive signage;
- Pavement markings and trail identifiers.

7.1.2.6 Environmental and Interface Assets

- Cleared envelopes required for trail operation;
- Vegetation interfaces impacting safety, sightlines and asset performance;
- Erosion-prone areas adjacent to the trail corridor.

Asset class boundaries are to be interpreted in a practical manner to support efficient inspection and maintenance response. Where an issue spans multiple asset classes (for example, drainage performance affecting trail surface condition), maintenance is to address the underlying cause to restore serviceability and reduce recurrence.

7.1.3 Levels Of Service And Inspection Regimes

Maintenance activities shall be prioritised and delivered based on:

- Adopted Levels of Service for the relevant asset class;
- Risk-based inspection regimes;
- Asset condition assessments;
- Usage intensity and environmental exposure;
- Available budgets and programmed renewal priorities.

Inspection frequencies and intervention thresholds shall be determined by the Principal in accordance with its AMP and operational policies.

Notwithstanding the above, maintenance intervention may be triggered outside routine inspection cycles where conditions change or hazards are identified. This includes the occurrence of ponding, erosion, edge ravelling, surface deformation or any condition that reduces safety or accessibility, particularly at crossings and interfaces.

7.1.4 Asset Information And Data Management

Asset information prepared at handover shall be incorporated into the Local Government's asset management systems to support lifecycle planning, maintenance scheduling and renewal forecasting.

Asset information is to be provided progressively at package handover and is to be consistent with the Principal's data requirements and systems. Information is to clearly identify package limits, tie-in points and any temporary terminations, and include sufficient spatial accuracy to support future maintenance and renewal planning.

This information may include:

- Asset registers and asset hierarchies;
- As-constructed drawings and spatial data;
- Condition and inspection records;
- Operations and maintenance information for non-standard assets.

Where non-standard assets or bespoke treatments are delivered, the handover is to include operations and maintenance guidance sufficient to support safe inspection, servicing and replacement.