

PART D CONSTRUCTION

17. CONSTRUCTION FRAMEWORK

17.1 INTRODUCTION

Part D of this manual provides the context within which the construction process is implemented.

17.2 CONSTRUCTION OF WORKS- PLANNING FRAMEWORK

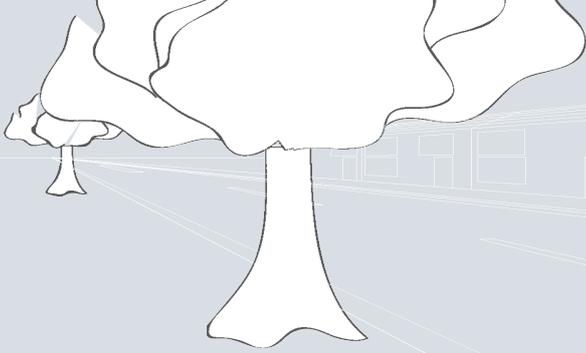
The Subdivision Act 1988 (Clause 17) requires that works shall not be commenced until:

- > The plan of subdivision has been certified;
- > The engineering plans and specifications have been approved;
- > All applicable planning permit conditions have been satisfied; and
- > All agreements required by other authorities have been made.

Clause 16 of the Subdivision Act 1988 requires works to comply with:

- > The certified plan;
- > The approved engineering plan(s); and
- > The standards specified in the planning scheme or the permit.

All works shall also comply with any other documentation required by Council.



17.3 ORDER OF PRECEDENCE

Unless otherwise specified the following hierarchy of documents shall be used. If there is conflict between any referenced documents and the specification, the higher listed documents shall take precedence over lower listed documents.

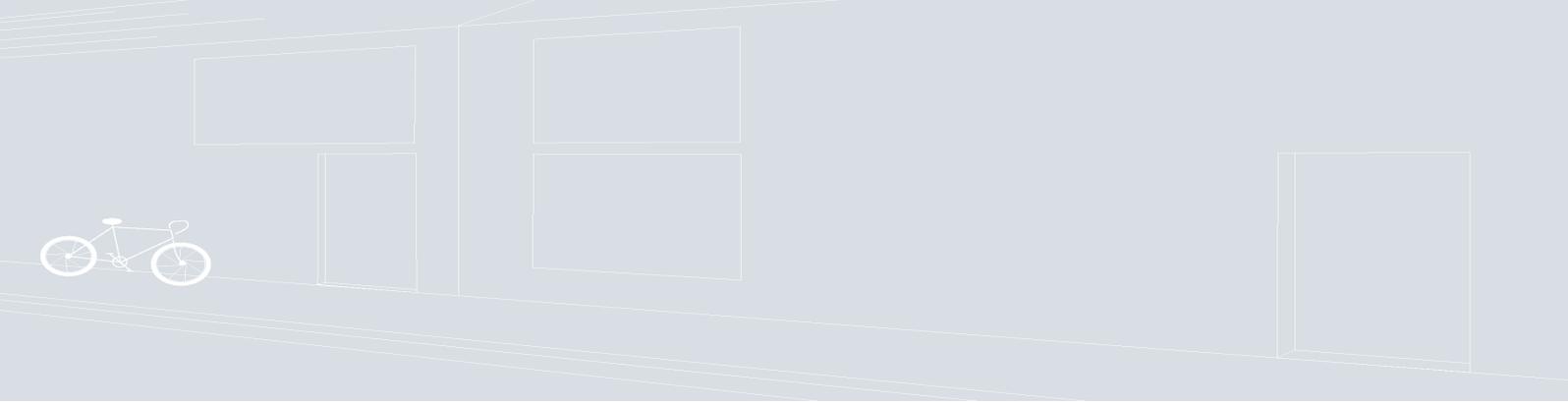
- > Acts of Parliament and Regulations (Federal / Victorian);
- > Growth Areas Authority Engineering Design and Construction Manual;
- > Growth Areas Authority Standard Drawings;
- > Contract Specific Clauses;
- > Approved Drawings;
- > Standard Section 175;
- > All other Standard Specification Sections;
- > VicRoads Codes of Practice and Bridge Technical Notes;
- > Australian Standards (except test methods);
- > VicRoads Test Methods;
- > Australian Standards Test Methods;
- > Austroads Test Methods;
- > Other Standards and Test Methods;
- > VicRoads Technical Bulletins;
- > Austroads Guideline Documents; and
- > Other Publications

17.4 ROLES OF THE PARTIES

The roles of the developer, council and the contractor are distinct, sharing a common focus on the delivery of engineering infrastructure for our new suburbs.

These roles overlap and can sometimes be at odds with each other unless there is a common and shared vision with clear accountabilities and responsibilities.

Adoption of a Construction Agreement between Developer, Contractor and Council to clarify respective roles is supported in principle and will be considered in future reviews of this manual and will also be referred to a proposed state wide standardisation process.



18. PRE-COMMENCEMENT PROCEDURES

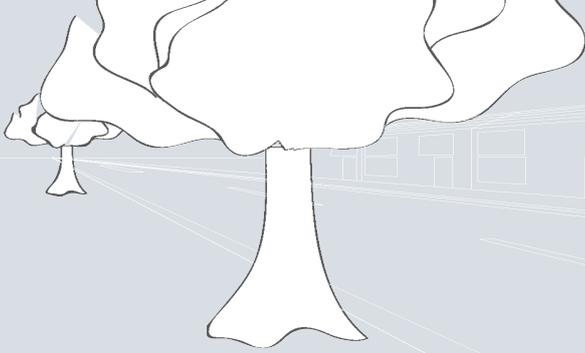
18.1 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

A Construction Environmental Management Plan must be prepared by the Contractor and submitted to Council prior to any works commencing on site.

The plan shall aim at minimising the impact of construction works, particularly erosion and sediment control.

The Construction Environmental Management Plan shall be based on the current EPA publication 960, 2004 – **“Doing It Right on Subdivisions, Temporary Environmental Protection Measures for Subdivision Construction Sites”**.

Council will respond to the submitted construction environment management plan within **5 working days** of receipt.



18.2 TRAFFIC MANAGEMENT PLAN

A Traffic Management Plan in accordance with the **Road Management Act 2004**, **Worksite Safety-Traffic Management Code of Practice** must be prepared by the Contractor and submitted to Council prior to any works commencing on site.

The Traffic Management Plan shall include (but not be limited to) site access, safe travel through the site and appropriate signing strategies.

A **“Memorandum of Authorisation”** from VicRoads must be submitted with the Plan in instances where a reduction in speed limit is required through a worksite or for any other Major Traffic Control Devices that require authorisation as specified by the Road Safety (Traffic Management) Regulations 2009.

Major Traffic Control Devices are listed in **Schedule 1** of the Regulations.

Where required by the Planning Permit, all truck routes associated with the development shall be submitted to Council for approval. A plan clearly showing the estate name, stage of development, planning permit number and intended routes for all trucks accessing the development site shall be submitted to Council for approval, prior to works commencing.

Council will respond to the submitted Traffic Management Plan:

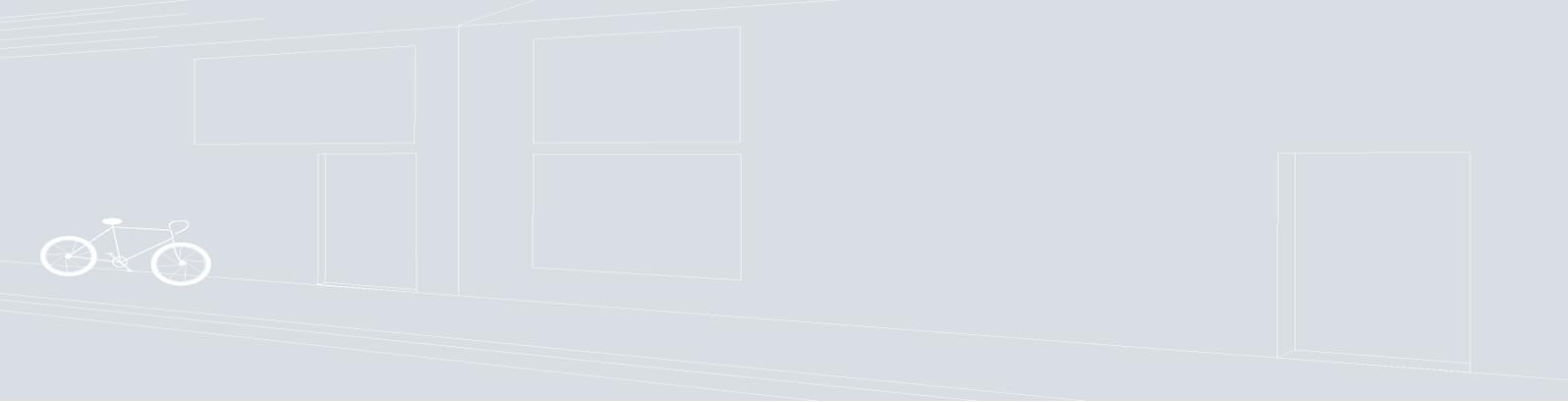
- > Within **5 working days** of receipt of the documentation.

18.3 PRE-COMMENCEMENT MEETING

The Consulting Engineer is to arrange a pre-commencement site meeting with Council's Construction Supervisor, the contractor and the consultants. At this meeting, the documentation required under clauses 18.1 and 18.2 and other relevant items will be considered.

While all documentation does not need to be completed for the pre-commencement site meeting, these must be submitted by the Contractor and approved by Council, prior to works commencing.

Pre-commencement meetings should be held no greater than 3 weeks prior to the commencement date of construction.



19. CONSTRUCTION PROCEDURES

19.1 CONTRACTOR INTEGRATED MANAGEMENT SYSTEM

All works must be executed in compliance with the approved **Contractor Integrated Management System** comprising environmental, quality and safety components. Contractors shall be accredited under the Civil Contractors Federation IMS system or other approved system.

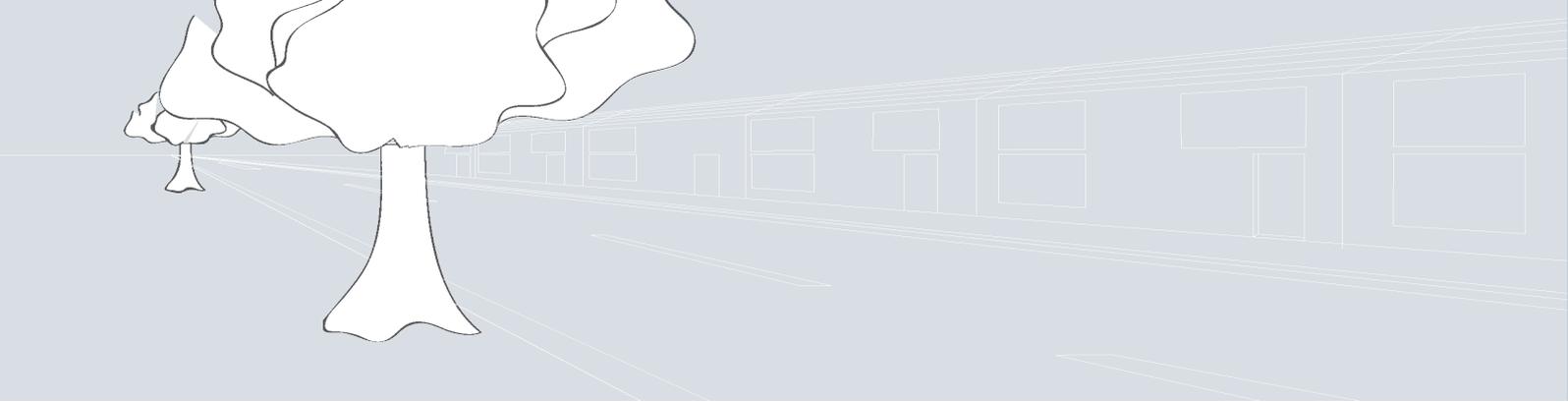
19.2 OCCUPATIONAL HEALTH AND SAFETY

For the purpose of the **Occupational Health and Safety Act and Regulations**, the developer is the Principle Contractor and entirely responsible for all occupational health and safety matters on site, unless the developer has nominated a person to undertake this role (i.e. Contractor) in accordance with the requirements of the Act and Regulations.

It is important that all work is carried out in a safe manner to ensure the safety of the Contractors work force, the Principal's staff or agents who have access to the site as well as the general public.

All personnel attending the site, including representatives from Council, the Developer and the Consultant shall be required to undergo induction arranged by the Contractor.

In accordance with the **OH&S Regulations**, any person undertaking "construction work" must hold a current construction induction card or other recognised qualification.



19.3 COUNCIL INSPECTIONS

During the construction of the works, Council representative(s) will undertake inspections at nominated Council hold points or at other times as may be necessary. Nominated Council Hold Points (CHP) and Council Witness Points (CWP) are outlined in **Appendix G**.

The Contractor shall allow Council representative(s) to inspect and measure any part of the development works. Works must not proceed beyond any nominated hold point without inspection and approval by the council representative(s).

The Contractor shall give **24 hours** notice to the Council representative(s) when an inspection at a nominated hold point is required.

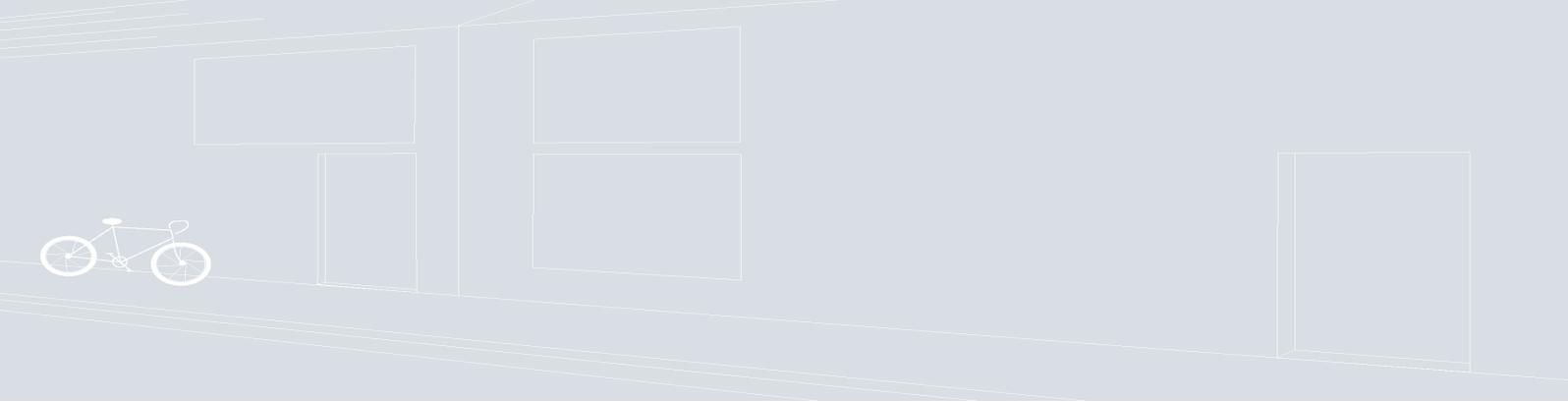
Any extraordinary inspection outside of nominated hold points desired by the Contractor shall be arranged directly with the council representative(s).

When construction works are undertaken outside normal working hours it will be necessary for the Contractor/Consulting Engineer to provide Council with 24 hours notice of its intention to work.

Payment of fees associated with extraordinary inspections by Council representative(s) outside of normal working hours shall apply and shall be borne directly by the Contractor or Developer.

19.4 HOURS OF WORK

The Contractor shall comply with the regulations of the **Environmental Protection Authority, Local Laws and other Statutory Regulations**, which may prevail in respect of working hours.



19.5 SITE ACCESS

Site access shall be restricted to that shown on the **Site Management Plan** or as otherwise authorised in writing by Council.

19.6 PROTECTION OF PROPERTY AND SERVICES

The Contractor shall in preparing a Site Management Plan take into account protection of all property and services, whether internal or external to the site.

19.7 SANITARY ACCOMMODATION

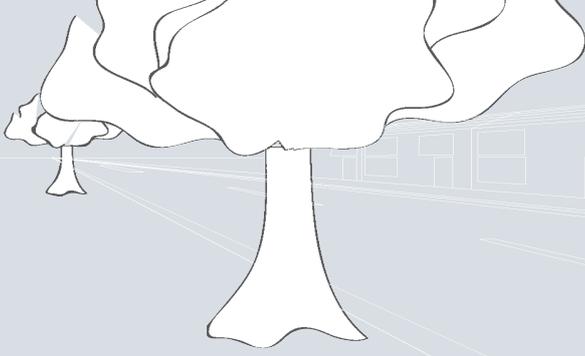
The Contractor shall provide approved sanitary accommodation for all employees on the Works, in accordance with the requirements of the **Council, Workcover and O.H. & S. Act.**

19.8 PROTECTION OF ROADS

The Contractor will be held responsible for any vehicle engaged on the works depositing material or rubbish on road pavements, road reserves, or other improvements.

19.9 MANAGEMENT OF TRAFFIC

Traffic shall be managed in accordance with the **Road Management Act 2004, Worksite Safety-Traffic Management Code of Practice** which includes requirements in relation to the preparation of Traffic Management Plans.



20. SITE MANAGEMENT

20.1 TREE AND VEGETATION PRESERVATION

The PSP for the area and the Planning Permit for the development will usually outline tree and vegetation preservation and protection requirements, including their location, the need to mark on site any trees or vegetation earmarked for removal and the need to erect appropriate protective fencing or other measures for trees and vegetation to be retained.

All trees and vegetation nominated in the PSP or planning permit to be preserved cannot be removed or otherwise disturbed or damaged during construction.

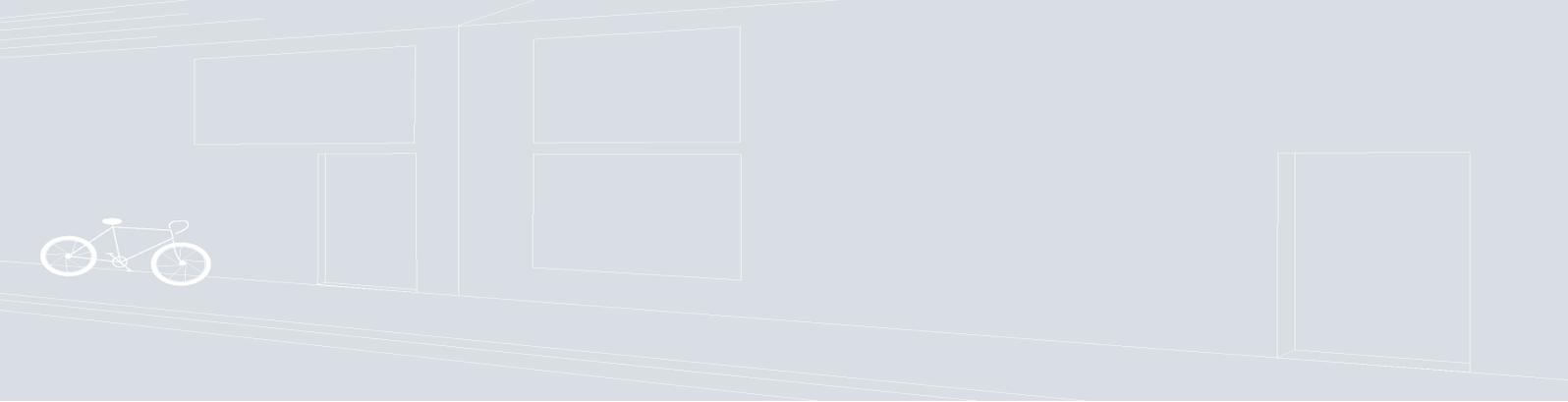
Disturbance or damage to trees shall be construed to mean any action which endangers the survival of a tree and may include any or all of the following:

- > Breaking of substantial limbs (being limbs of size greater than 20% of the trunk diameter);
- > Removal of any portion of the bark of the tree trunk;
- > Cutting of major root systems of the tree (being roots of size greater than 20% of the trunk diameter);
- > Filling around a tree trunk without the precautions prescribed by the Superintendent being observed;
- > Compacting soil above the root zone (area within the spread of the tree canopy) by repeated passage or parking of equipment; and
- > Spillage of toxic substances within the spread of the tree canopy.

The Contractor shall ensure that all workers and sub-contractors on the site are appropriately inducted to ensure that trees or vegetation which are required to be preserved are not lopped, disturbed or damaged. Where any tree is so located that it may conflict with the works, Council's advice as to its treatment shall be obtained prior to those works being commenced.

Some services will require installation by tunnelling under, boring or hand excavation in the vicinity of trees and vegetation to avoid damage to root systems. In such instances boring will be the preferred method and the depth of the bore must be at least 0.7 metres below the ground surface at the base of the tree or vegetation.

Where disturbance or damage does occur, the Contractor shall arrange for a qualified tree surgeon to inspect the damaged tree or vegetation and with the prior approval of the Superintendent, have the necessary repairs effected.



20.2 WEED IMPORTATION AND TRANSPORTATION

It is the contractor's responsibility to ensure that earthwork activities do not deposit noxious weeds or the seeds of a noxious weed onto land.

The key legislation relating to weed spread in Victoria is the **Catchment and Land Protection Act 1994**. Many of the provisions relating to weed spread can be found in Section 70A and 71. Among these provisions, the Act prescribes offences relating to precautions that must be taken when moving machinery and equipment, transporting noxious weeds and moving soil, sand, gravel or stone which may be infested with noxious weeds.

Appropriate measures should be undertaken to ensure that noxious weeds are not transported on earthworks equipment or in soil or material leaving or entering the worksite.

20.3 CONTAINMENT

The contractor must erect and maintain all necessary fences and barricades required to suitably contain the worksite to ensure the safety of the public and protection of the works.

Appropriate signage is to be placed where exclusion zones apply warning persons of the said exclusion zone.

Where specific site requirements in relation to OH & S have been identified, these requirements are to be clearly displayed via appropriate signage situated at all worksite entrance points.

Where fences or barricades are situated within an existing road reserves, or are impacting on existing traffic conditions, a detailed traffic management plan must be submitted to the road authority.

20.4 LIVESTOCK

Before entering the Site of the Works to commence work or effect delivery of plant, materials or equipment, the Contractor shall make proper provision to ensure that any livestock on or near the Site of the Works are adequately restrained from straying.

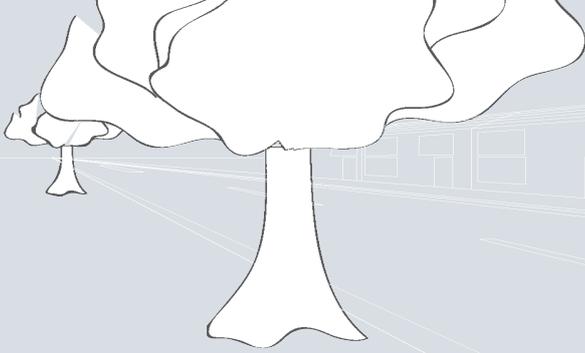
20.5 UNAUTHORISED DISPOSAL

The Contractor is to ensure that the Site is properly signed and barricaded to prevent unauthorised disposal of waste material on the Site by others.

Any rubbish or waste deposited is to be cleared from the Site immediately.

20.6 FIRES

No fires shall be lit on the Site of the Works for any purpose.



21. GENERAL TECHNICAL CONDITIONS RELATING TO WORKS

21.1 GENERAL

This section of the Manual covers general technical requirements relating to the construction of the works.

21.2 SURVEY MARKS AND SET-OUT WORKS

The Bench Marks for this Work shall be shown on a Drawing prepared by the Principal's Licensed Surveyors.

A minimum of three (3) bench marks will be shown on the plans and must be maintained by the Contractor during the course of the works and until the commencement of the defect liability period.

All allotment title dimensions and numbers shall be obtained from the latest version of the certified Plan of Subdivision.

21.3 TOPSOIL AND ALLOTMENT FILLING

21.3.1 Stripping and Stockpiling of Topsoil

Approval for the removal and disposal of any excavated material or topsoil from the subject land is required from the Council.

Should construction methods and/or weather conditions prevent the winning of topsoil or should there be insufficient suitable topsoil to be obtained from the stripping operation the Contractor shall either:

- > Import approved topsoil; or
- > Win topsoil from other areas within the site;

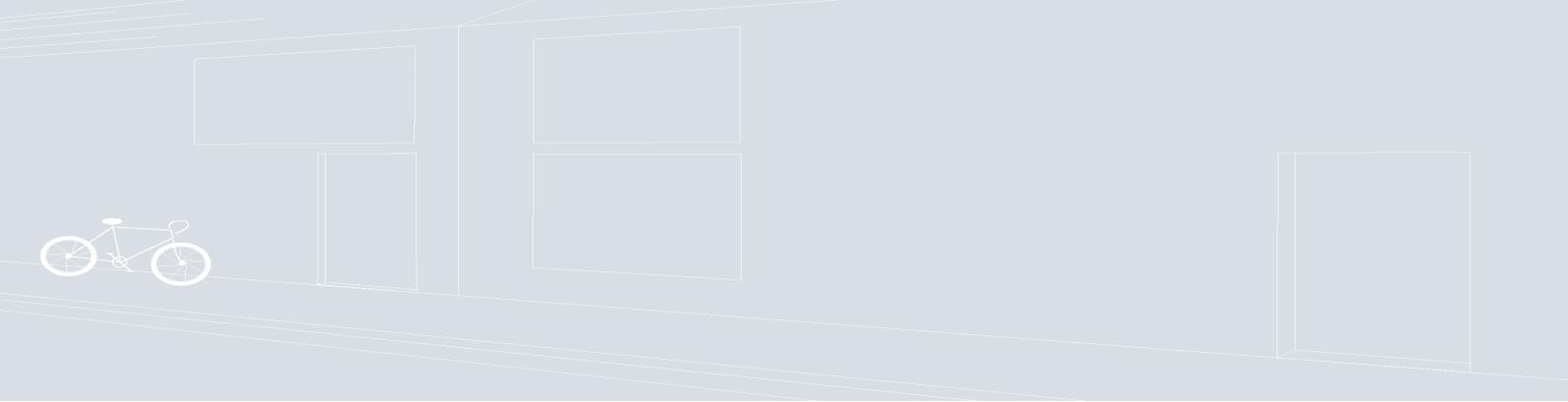
As directed by the Superintendent.

If topsoil is to be imported, consideration should be given as to whether this material has the potential to introduce noxious weeds, seeds or propagules.

21.3.2 Grading of Allotments and Reserves

Other than filled areas, which are to be treated in accordance with the following, all the allotments shall be graded to form a uniform slope to the drainage point.

Disturbed areas shall be topsoiled as for filled areas to a minimum depth of 100mm.



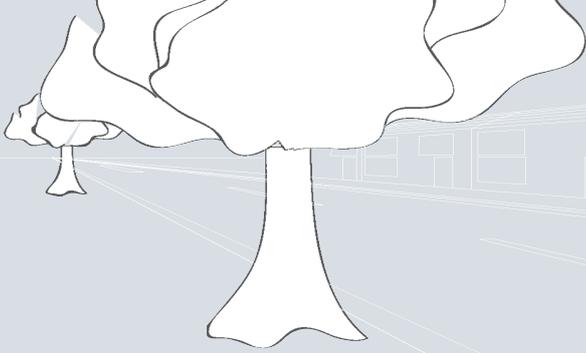
21.3.3 Filling on Allotments and Reserves

- > All filling work shall be undertaken in accordance with **AS 3798 “Guidelines on earthworks for commercial and residential developments”**; where filling greater than 200mm compacted depth is introduced onto site, control of filling shall be to level 1 as described in AS 3798.
- > All filling introduced onto site must be fully supported by clean fill certificates complying with the relevant requirements of the EPA.
- > Where the depth of fill is greater than 200 mm all filling within the lot must be compacted to the requirements of this manual and trimmed and shaped to match existing site levels.
- > All works constructed within a floodway shall have all spoil removed to an area that is above the 1% AEP flood level.
- > A minimum of one compaction test per allotment shall be conducted at a distance of greater than 6 metres from the road reserve boundary. Lot filling testing shall be included in the Contractor’s Inspection and Test Plans submitted for Council’s consideration.
- > All areas that are to involve earthworks shall have the topsoil stripped, stockpiled and reinstated.
- > Topsoil or fill which contains or is likely to contain any part of a noxious weed, must not be transported wither to or from the worksite.
- > Before completing the site works the depth of topsoil replicating predevelopment depths shall be placed and rehabilitated over all areas where there have been earth works.

21.3.4 Early Completion of Allotment Grading

Where practicable, the Contractor shall programme the works of this Contract in such a manner that the final grading and/or topsoiling of allotments is completed as soon as practicable after drains, sewers and earthworks are carried out.

It shall then be the Contractor’s responsibility to limit the passage of construction equipment over the allotments to the minimum necessary for completion of other works.



21.3.5 Acceptable Materials

Material to be used for fill construction shall satisfy the requirements of **AS 3798 “Guidelines on earthworks for commercial and residential developments”**.

Material to be used for fill construction shall satisfy the requirements of the Catchment and Land Protection Act 1994 and be free from declared noxious weeds or parts thereof.

21.3.6 Naturestrips and Batters

The Contractor shall remove a sufficient quantity of the best of the topsoil available from the site before commencing excavation. This topsoil shall be stockpiled on the site and used as topsoil for the naturestrips and batters.

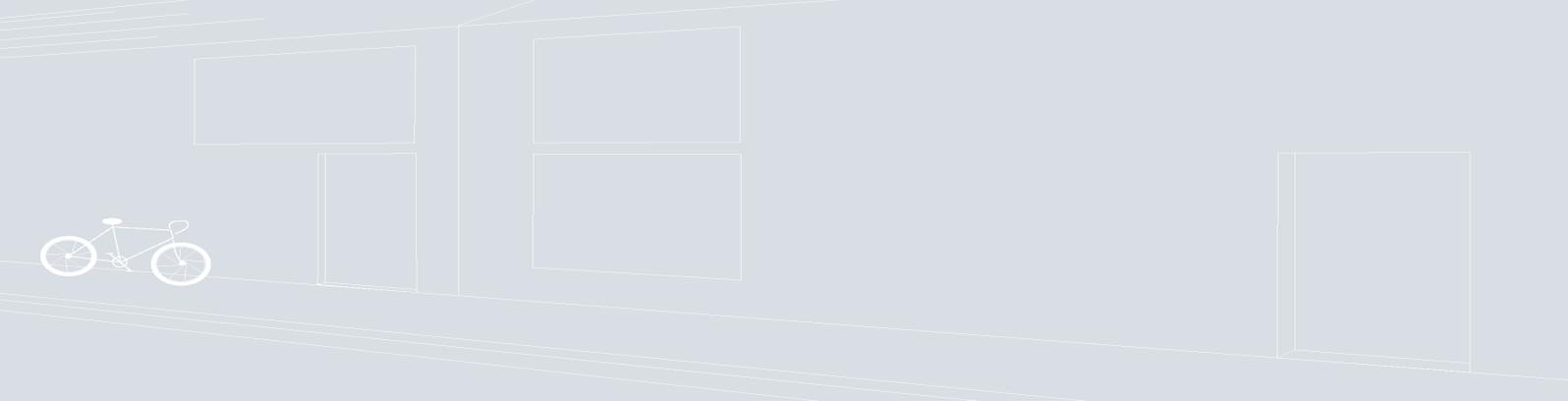
Fill batters and naturestrips between the edge of path and the back of kerb shall be surfaced with a 100mm minimum depth of this topsoil free from clay, stones, logs, weeds or other perishable material which is not suitable for the planting of lawns.

Naturestrips and batters shall be neatly raked and trimmed on an even grade from edge of path to back of kerb in the case of naturestrips and to the lines and grades shown on the Contract Drawings or as specified for fill or cut batters.

The Contractor shall complete allotment grading except for areas adjacent to footpath, prior to placement of base course asphalt.

21.3.7 Overbreak of Excavation in Easements

Overbreak is defined as excavation which is a departure from drawings and specification and shall be recorded as a non-conformance on the ‘as constructed’ drawings.



22. SUBDIVISION WORKS SPECIFICATIONS

22.1 BASIS FOR STANDARD SPECIFICATION

The specification for subdivision works is based on and modifies for Council use the current VicRoads' STANDARD SPECIFICATIONS FOR ROADWORKS AND BRIDGEWORKS and referred to in **Appendix F**.

All modifications for Council use are indicated as strike throughs in the appendix.

22.2 LIST OF STANDARD SPECIFICATIONS

Table 21 below provides a list of the standard VicRoads specifications utilised for this manual

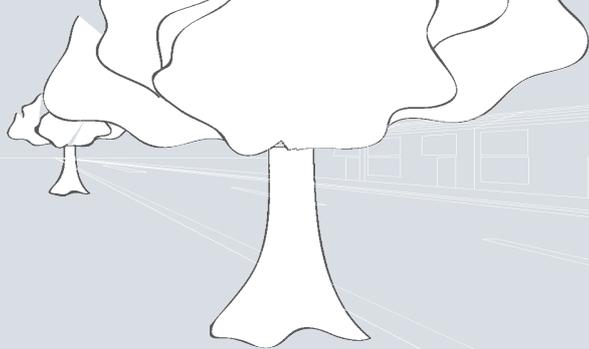


Table 21: Vic Roads Specification – Standard Clauses

	SECT	TITLE	LAST AMEND
GENERAL			
Section	160	Construction - General	Jul-09
	161	Bituminous Surfacing and Cold Planing - General	Jan-09
	162	Supply General	Jan-09
	163	Maintenance - General	Jan-09
	165	Procurement of Roadmaking Materials	Jul-96
	166	Traffic Management	Jun-09
	167	Environmental Management – Construction	Nov-08
	168	Occupational Health and Safety Management	May-09
	169	Bridgework Carried Out Over, On or Adjacent to Railway Property	Jul-93
	170	Examination and Testing of Materials (Supply Contracts Only)	Jul-06
	173	Examination and Testing of Materials and Work (Roadworks)	Oct-08
	175	Referenced Documents for Standard Specifications for Roadworks and Bridgeworks	Jul-09
	180	Ride Quality for Pavements	Jul-03
	190	Supply and Transport of Roadmaking Materials	Feb-95
	199	Provision for Adjustment of Contract Sum	Oct-07
FORMATION			
Section	201	Site Clearing	Jul-00
	204	Earthworks	Jun-08
	205	Rock Fill	Jul-06
	210	Geotextiles in Earthworks	May-09
	290	Lime Stabilisation of Earthworks Materials	Dec-08
FLEXIBLE PAVEMENTS			
Section	304	Unbound Flexible Pavement Construction	Jun-08
	306	Cement Treated Subbase Pavement	Jul-09
	307	Insitu Stabilisation of Pavements with Cementitious Binders	Dec-08
	310	Preparation of Granular Pavements for Bituminous Surfacing	Jul-09
ASPHALT AND SURFACE TREATMENTS			
Section	402	Removal of Pavement by Cold Planing	Mar-07
	404	Stone Mastic Asphalt	Nov-07
	405	Regulation Gap Graded Asphalt	Nov-07
	407	Hot Mix Asphalt	Dec-08
	408	Sprayed Bituminous Surfacing	Apr-08
	410	Ultra Thin Asphalt	Dec-06
	417	Open Graded Asphalt	Jun-07
	421	Bitumen Crumb Rubber Asphalt	Sep-05
	423	Lean Mix Asphalt	Jun-07
	427	Bituminous Slurry Surfacing	May-09
	428	Surface Retexturing using High Pressure Water	Jun-09
	430	High Friction Surface Treatment	Oct-08

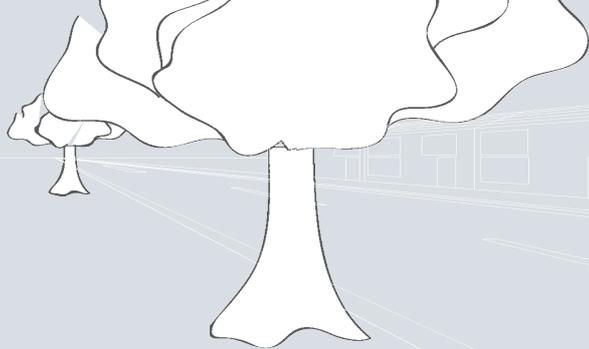


CONCRETE PAVEMENTS

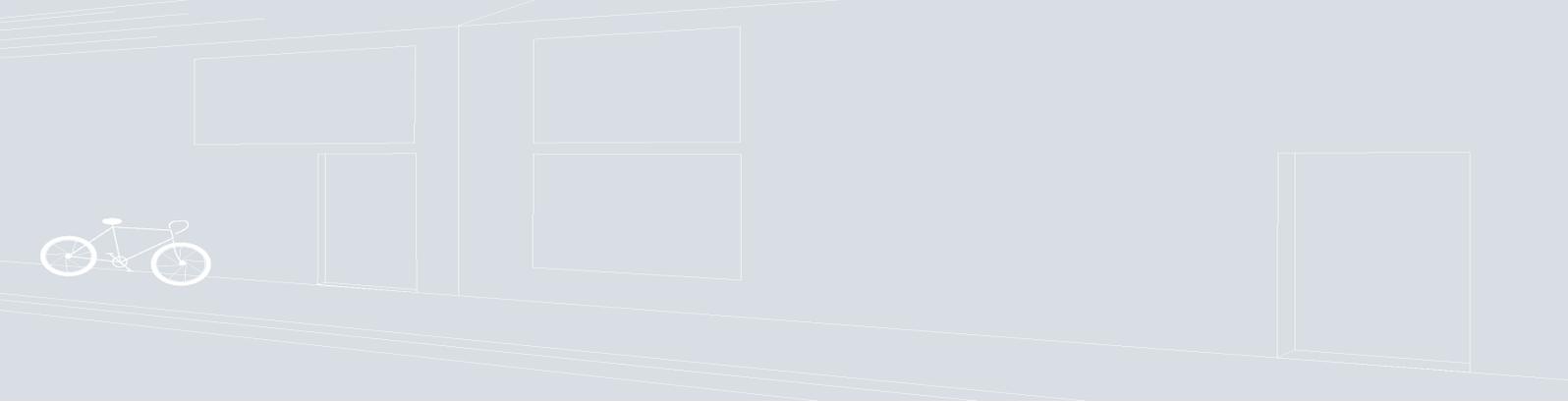
Section	503	Concrete Base and Lean Mix Concrete Subbase	Jul-09
	520	Materials and Construction Plant for Roller Compacted Concrete Pavement Courses	Jul-09
	521	Construction of Roller Compacted Concrete Base Courses	Jul-93
			Last Updated

BRIDGEWORKS

Section	602	Excavations	Oct-07
	603	Cofferdams	Jul-09
	604	Cylinders	Jul-09
	605	Driven Piles	Oct-04
	606	Bored Cast In Place Piles (without Permanent Casing)	Apr-09
	607	Continuous Flight Auger Piles	Jul-09
	608	Cast In Place Socketed Piles (with Permanent Casing)	Apr-07
	610	Structural Concrete	Apr-09
	611	Steel Reinforcement	Jan-09
	612	Post Tensioning	Jan-07
	613	Falsework	Mar-08
	614	Formwork	Jan-09
	619	Manufacture, Testing and Delivery of Precast Reinforced Concrete Box Culverts	Apr-09
	620	Precast Concrete Units	May-09
	622	Pre Tensioning of Concrete Units	Jan-07
	626	Installation of Precast Concrete Crown Unit Culverts	Jul-09
	630	Fabrication of Steelwork	Jul-09
	631	Protective Treatment of Steelwork	Feb-09
	632	Buried Corrugated Metal (Steel) Structures	Jul-09
	641	Zinc In Silicate Coating	Jul-06
	652	Supply of Elastomeric Bearings	Oct-04
	653	Pot Type Confined Elastomeric Bearings	Oct-07
	656	Installation of Elastomeric Bearings and Pads	Jul-93
	660	Deck Expansion Joints	Oct-04
	670	Steel Bridge Barriers	Jul-99
	671	Concrete and Combined Concrete and Steel Bridge Barriers	Jul-99
	675	Cast Steel Railing Posts and Sleeves	Jul-99
	682	Reinforced Soil Structures	Oct-07
	683	Soil Nail Walls	May-09
	684	Sprayed Concrete	Sep-01
	685	Anti Graffiti Protection and Graffiti Removal	May-07
	686	Coating of Concrete	Apr-09
	687	Repair of Concrete Cracks	Feb-09
	688	Fibre Reinforced Polymer Composite Strengthening of Concrete Structures	Apr-07
	689	Cementitious Patch Repair of Concrete	May-07
	690	Materials to be Supplied by VicRoads	Jul-93



INCIDENTAL CONSTRUCTION			
Section	701	Underground Stormwater Drains	Jun-09
	702	Subsurface Drainage	Jul-09
	703	General Concrete Paving	Jun-09
	704	Precast Concrete Kerb	Feb-98
	705	Drainage Pits	Jun-09
	706	Installation or Replacement of Utility Infrastructure within Road Reserves	Dec-08
	707	Fencing	May-09
	708	Steel Beam Guard Fence	Oct-07
	709	Guide Posts	Apr-09
	710	Fixing Raised Pavement Markers	Jul-98
	711	Wire Rope Safety Barrier	Oct-07
	712	Block Paving	Jul-93
	713	Beaching	Jul-09
	714	Erection of Signs	Jul-03
	720	Landscape Works	Jun-09
	721	Pavement Markings General	Apr-08
	722	Pavement Markings – New Surfacing	Apr-08
	733	Conduits and Pits for Underground Wiring and Cabling	Oct-08
	750	Routine Maintenance	Jun-07
	752	Routine Roadside and Reserve Maintenance	Feb-95
MATERIALS			
Section	801	Source Rock for the production of crushed rock and aggregates	Mar-09
	802	Bituminous Cold and Warm Mixes	Sep-06
	811	Gravel, Sand and Soft or Ripped Rock for Base and Subbase Pavement	Jan-07
	812	Crushed Rock for Base and Subbase Pavement	Jul-09
	815	Cementitiously Treated Crushed Rock for Subbase Pavement	Dec-07
	818	Crushed Scoria for Base and Subbase Pavement	Mar-07
	820	Crushed Concrete for Pavement Subbase and Light Duty Base	Mar-09
	821	Cementitiously Treated Crushed Concrete for Pavement Subbase	Sep-07
	831	Aggregate for Sprayed Bituminous Surfacing	Jul-02
	832	Sands for Sprayed Bituminous Surfacing	Jul-93
	853	Hot Melt Bitumen Adhesive for Raised Pavement Marker Installation	Feb-94
	860	Manufacture of Road Signs	Sep-05



23. CONSTRUCTION GENERAL

This section covers general items relating to construction and is a modified version of **Clause 160** of Vic Roads STANDARD SPECIFICATIONS FOR ROADWORKS AND BRIDGEWORKS.

Sections 166, 167 and 168 must be included in the specification, however sections 714, 750 and 860 are only included in the specification if they are relevant.

If any of the above sections are not included in the specification, all references to those sections should be struck out, ensuring that the remaining text is still coherent.

23.1 QUALITY MANAGEMENT

23.1.1 Quality Management Systems Standards

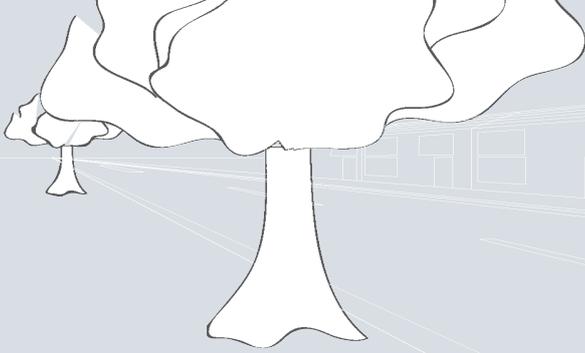
The Works shall be undertaken in accordance with a Quality Management System that meets the requirements of relevant AS/NZS ISO Standards and Clause 24.2.

23.2 SITE

23.2.1 Commencement of Work

HP	The Contractor shall not commence work on site before the following documents have been submitted to the Superintendent and the Superintendent has authorised release of the Hold Point:
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- > Environmental Management Plan for initial works;
- > Traffic Management Strategy and worksite Traffic Management Plans for the initial works.



23.2.2 Contractor's Site Compound

The Contractor shall erect, maintain, secure and subsequently remove such buildings, compounds, toilet / washroom accommodation, and associated services as are required by the Contractor for the supervision and construction of the Works. The Contractor shall obtain all necessary local municipal permits and approvals associated with the site establishment and access arrangements associated with its site compound.

The location and form of such buildings and compounds shall be selected by the Contractor so as to:

- > minimise noise, disturbance and inconvenience to all abutting properties;
- > maintain a minimum clearance of 30 m to the closest boundary of all abutting properties;
- > be consistent with, and complement the Environmental Management Plan and Health and Safety Co-ordination Plan;
- > provide suitable hard stand areas for storage of materials and equipment and parking vehicles;
- > allow for all pedestrian traffic.

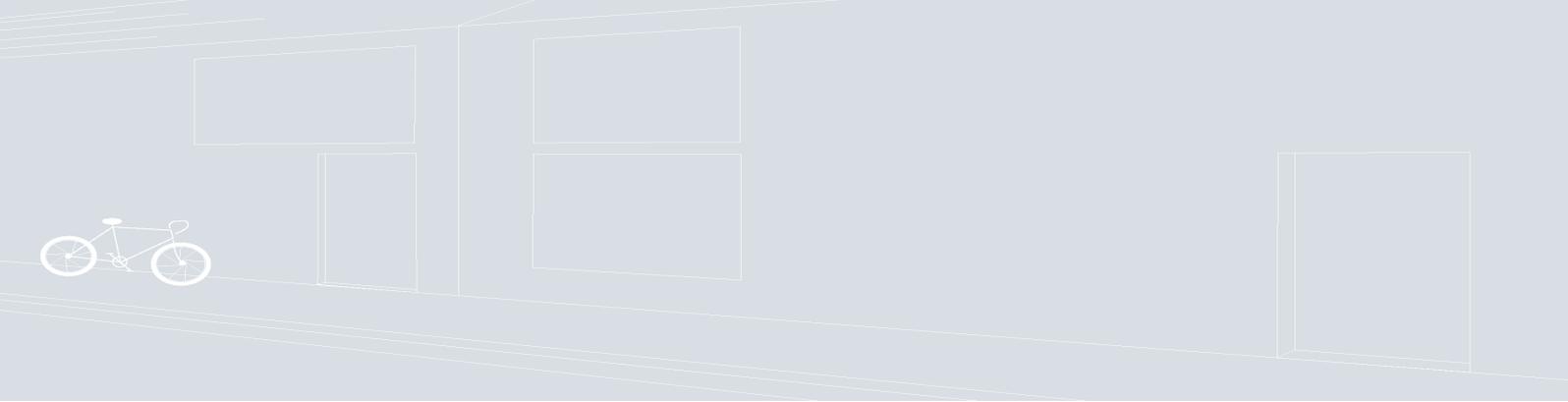
The Contractor, subject to the agreement of the Superintendent and the local municipal authority, may be permitted to use portions of the site, for establishment of buildings and compounds.

At the completion of the Works, these facilities will remain the property of the Contractor and shall be removed from the Site and the area left to the satisfaction of the Superintendent.

23.2.3 Contractor's Representatives

On commencement of work, the Contractor shall advise the Superintendent in writing of the names, addresses and telephone numbers of employees who can be contacted in an emergency and out of hours under the Contract. Any proposed changes of representatives, addresses or telephone numbers shall be notified promptly to the Superintendent and confirmed in writing to the Superintendent.

The Superintendent shall advise the Council Supervisor of the contact details.



23.2.4 Procurement of Water for Construction Purposes

The Contractor shall make its own arrangements for water supply to provide the quantity and quality required to complete the work. For any chosen source of water supply, the Contractor shall obtain the necessary approvals from the appropriate authorities and shall act in accordance with any conditions stipulated.

23.2.5 Major Traffic Control Devices

The Contractor shall ensure that a **Memorandum of Authorisation** is obtained prior to the erection, removal or modification of major traffic control devices as defined in **Schedule 1** of the Road Safety (Traffic Management) Regulations 2009.

Details of the times and dates of erection and removal of major control items and of any changes to such items shall be forwarded to the Superintendent within five business days after the erection and removal of or changes to the major traffic control items.

23.3 PROGRAM AND PROGRESS

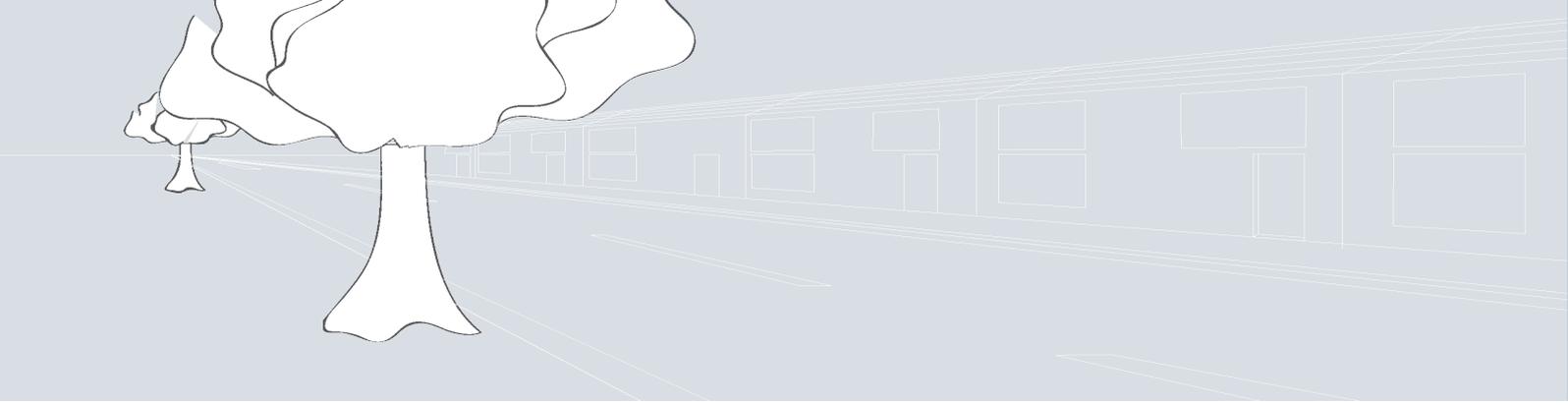
23.3.1 Working Hours

Before commencing work, the Superintendent shall advise the Council Supervisor in writing, the working hours proposed for the execution of the work.

- > no work shall be carried out between Good Friday and Easter Monday inclusive, on any Sunday, public holiday, or during the Christmas to New Year periods;
- > no work shall be carried out on the site outside the period between 7.00 a.m. or sunrise, whichever is the later, and 6.00 p.m. or sunset, whichever is the earlier;
 - unless otherwise specified or approved by the Council Supervisor.

Work outside the proposed working hours without written approval of the Council Supervisor or Superintendent may proceed only in the following situations:

- > in cases of emergency;
- > where situations would create significant traffic disruption and/or hazardous conditions unless rectified; or
- > when plant breakdown or extenuating circumstances have delayed an activity that cannot be stopped.



23.4 PROSECUTION OF WORK

23.4.1 Site Management and Supervision

Site Supervision

The Contractor's site management, programming and program control, quality assurance and methods of work shall be supervised daily by an experienced and qualified engineer. This engineer shall possess the experience and qualifications which would be acceptable to the Institution of Engineers Australia as satisfying the requirements for Corporate Membership, including at least five years' experience in the relevant construction field.

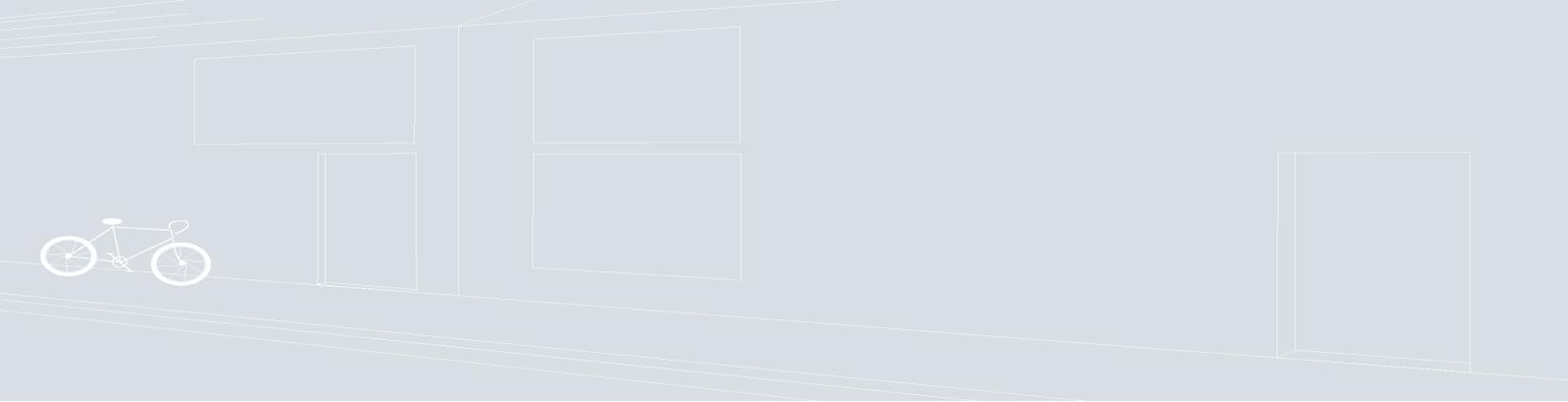
Site Survey

For the purposes of setting out the Works in conformity with the specification and drawings, the Contractor shall engage an experienced and qualified surveyor. This surveyor shall possess the experience and qualifications which would be acceptable to the Institution of Surveyors, Australia as satisfying the requirements for Corporate or Associate Membership or alternatively, possess the experience and qualifications which would be acceptable for Membership to the Institution of Engineering and Mining Surveyors, Australia.

Landscape Supervisor

The Contractor shall nominate a Landscape Supervisor to be on site for the duration of all landscape work. This person shall have a Landscape Trade Certificate (TAFE), equivalent qualification or at least 2 years horticultural expertise on work of a similar size and scope.

Should the Contractor's site supervisory staff prove unsatisfactory with respect to progress, quality of work and methods of work, the Superintendent may direct the Contractor to provide such additional competent and experienced staff as may be necessary to ensure satisfactory progress of the Works and that the quality and the methods of work are acceptable.



23.4.2 Co Operation

The Contractor shall co operate with all other contractors and other work forces so as to avoid delay or hindrance to their work and to ensure that all work is performed expeditiously.

23.4.3 Maintenance of Site

The Contractor shall maintain the roads and all other road reservation areas within the Limits of Works for the period between the date of possession of site and Practical Completion of the whole of the Works including periods of suspension.

The Contractor shall respond to an emergency with an “Initial Emergency Response Unit” consisting of the following:

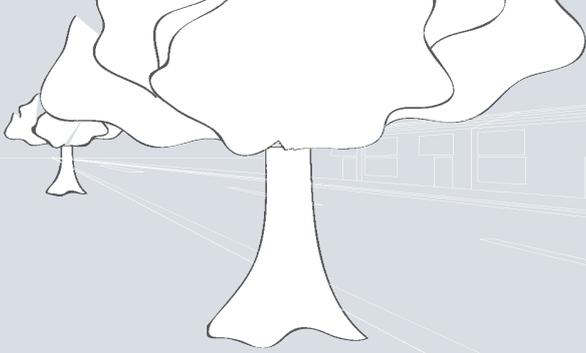
- > a minimum of 2 personnel with appropriate traffic management qualifications and vehicle,
- > an emergency kit of temporary warning signs, flashing lights, barriers, safety clothing, shovels, brooms, chainsaw and a mobile telephone.

In addition the Contractor shall maintain on site one (1) cubic metre of sand or other absorptive product and one half (1/2) a cubic metre of premix asphalt exclusively for use in the event of an emergency.

Immediately following achievement of Practical Completion of the Contract the Contractor and the Superintendent’s Representative shall conduct a Routine Maintenance Condition Survey of the whole of the maintenance area to record those maintenance elements outside the specified intervention standard. Where a maintenance feature is identified outside the specified intervention standard the Superintendent may:

- > direct the Contractor to bring the deficient asset feature elements to within the specified intervention standard within a period to be determined by the Superintendent; or
- > arrange for the rectification of those features by others and in this event a deduction will be made to the Contract Sum for the full cost of such works.

The Superintendent will provide a written record of the Contract Completion Condition Survey to the Contractor.



23.4.4 Examination and Testing of Materials and Work

General

The Contractor shall be responsible for carrying out all examination and testing of materials and work under the Contract in accordance with the requirements of the specification.

Unless otherwise specified, materials and workmanship shall comply with the relevant standard as defined in Section 175 of the Vic Roads Specification.

Allowance for Testing in Construction Program

The Contractor shall make allowance in the construction program for the time necessary to arrange for and to carry out examination and testing of materials and work.

Notification

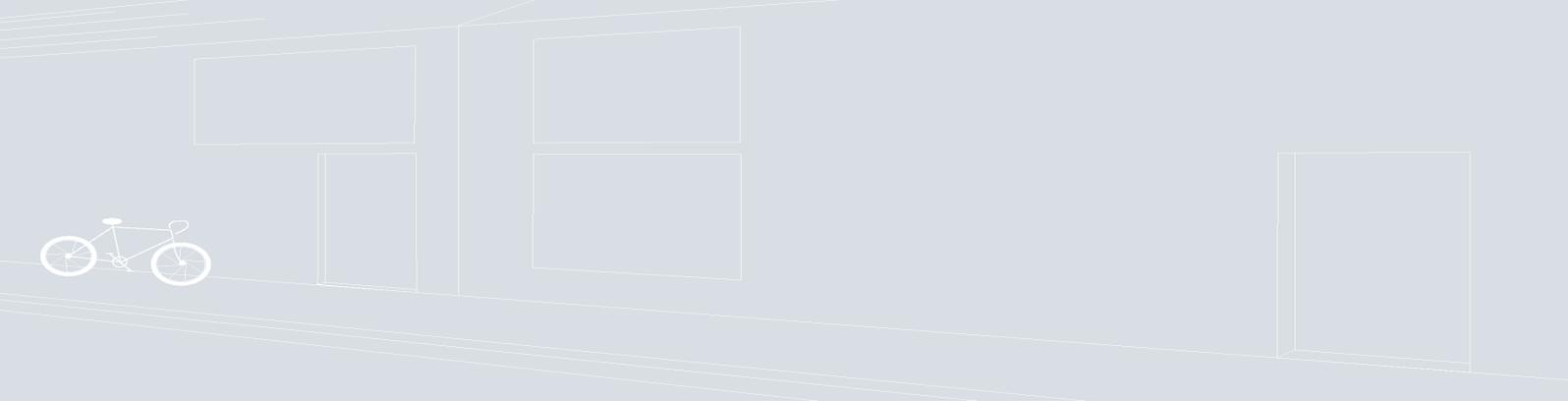
Where inspection of materials or work by the Superintendent or his representative is specified as a hold point, or where a hold point is created by a non-conformance, at least 24 hours notice of testing and/or inspection shall be given to the Superintendent.

Tests

Unless otherwise specified, all tests and sampling shall be undertaken in accordance with the appropriate VicRoads codes of practice and applicable test methods as current at the time of performance of the tests. Unless otherwise specified, all tests shall be conducted by experienced testing officers in a laboratory accredited by the National Association of Testing Authorities (NATA) for the test methods used under the Contract and all tests shall be endorsed in accordance with the NATA registration for that laboratory.

Lists of current VicRoads codes of practice are available either online at the VicRoads website (Publications and Forms) or by subscription to the update service by VicRoads Bookshop.

All construction materials sampling shall be undertaken by personnel from a NATA laboratory accredited for the appropriate sampling methods.



Test Results

The Contractor shall submit to the Superintendent a monthly summary, or if requested by the Superintendent a weekly summary, of testing undertaken. The summary shall include details of all tests undertaken, the result of each test and sufficient additional information to demonstrate that the specified minimum frequency of testing is being complied with.

The summary of test results shall be submitted to the Superintendent by the second day of the week following the relevant period.

Calibration

All test equipment used for tests, carried out in accordance with Clause 23.4.4(d) above, shall be calibrated by a laboratory accredited by NATA for the particular calibration method.

23.4.5 Drainage of Work Site

The Contractor shall at all times provide for the safe discharge of seepage, drainage and stormwater during the execution of the works under the Contract. The Contractor shall be responsible to obtain all approvals from the local authorities and accept all costs associated with the discharge of any water into an existing outfall on a temporary or permanent basis.

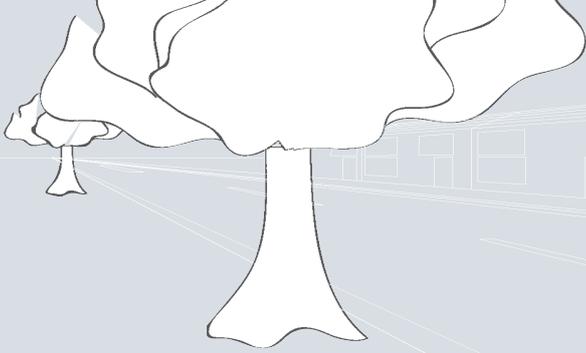
23.4.6 Clean Up of Site

Unless otherwise specified, the Contractor shall remove from site, before the cessation of work each day, all temporary or surplus material not forming part of the specified works. The Contractor shall be responsible for the proper disposal of the temporary or surplus material and no additional payment will be made for this work.

23.4.7 Instructions by Other Government Departments and Authorities

Other government departments and authorities and their representatives, whether federal, state or local, often have responsibilities that impact on the works.

The Contractor shall co-operate with an authorised representative who is requesting access to the site under powers conferred by legislation and follow any instructions given by the authorised representative in the format nominated by the legislation.



23.5 OFF SITE

23.5.1 Inspection of Property

Prior to commencing operations, the Contractor shall engage a suitably qualified and experienced architectural consultant to undertake inspections on all buildings and structures (including heritage structures) within a minimum distance of 100 m of the site. Two copies of the written existing conditions report for each property, including any photographs, shall be prepared and signed by the property owner and the architectural consultant.

The condition of the buildings, structures and the property shall be detailed in the existing conditions reports which shall form the basis of assessment of any structural damage to buildings and structures arising out of the Contractor's operations in the event of a claim by the owner/occupier. The Contractor shall be responsible for the repair of any damage caused to property due to the Contractor's operations.

The Contractor shall submit to the Superintendent a copy of all existing condition reports of property and buildings prior to commencing work adjacent to such property or building. The copy of this report will be returned to the Contractor within 10 business days of submission.

For the purposes of this clause the Site is defined as the nearest point of the work adjacent to any building or structure.

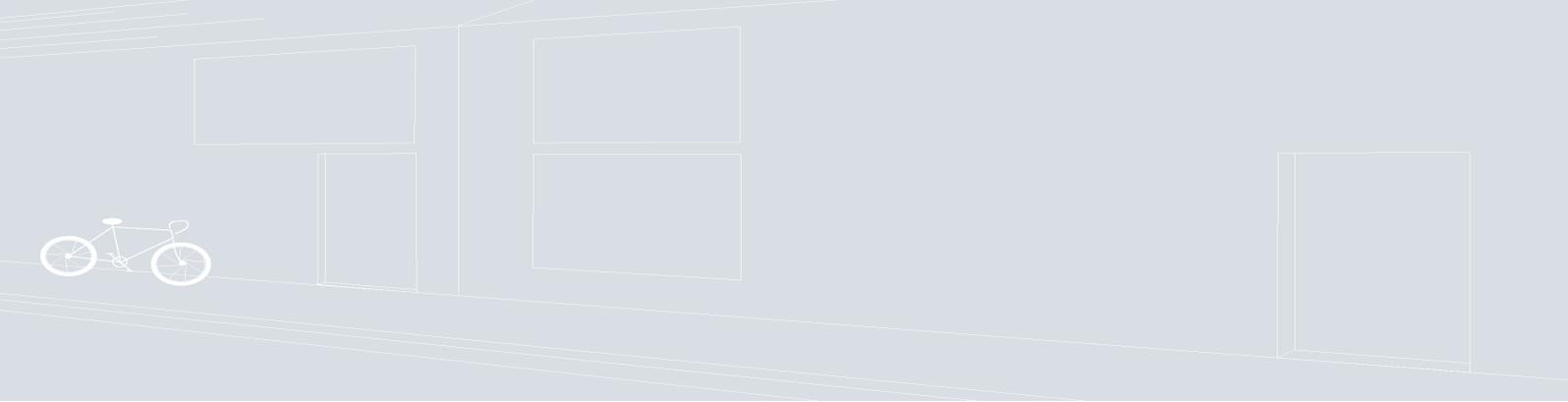
The Contractor shall bear all costs associated with any claim for damages resulting from the effects of the Contractor's operations, including ground vibration, directly caused by the Contractor's construction methods. The cost of such damage shall be in addition to damage caused by other action attributed to the Contractor's work.

Before final payment is made, the Contractor shall obtain written clearance from all landowners and occupiers affected by the provision of this clause, to certify that the landowner and occupier have no claim for any loss or damage due to the Contractor's operation. A copy of all written clearances shall be forwarded to the Superintendent prior to the Contractor's Final Claim.

23.5.2 Work in Private Property

Where the Contractor is authorised by the Superintendent to enter private property to carry out work under the Contract, the Contractor shall give the occupier of the land a minimum of five business days notice of intention to enter or to remove any fence and shall also erect any temporary fencing that may be necessary.

Entry shall be by a gate, or gates to be erected by the Contractor which shall be kept securely locked when not in use. Where fences are rabbit proof, the gates erected shall also be made and kept rabbit proof, and the Contractor shall be responsible and liable for the trespass of vermin.



23.5.3 Clearances from Landowners and Occupiers

Before final payment is made, the Contractor shall produce written clearances from all landowners and occupiers whose properties have been entered by the Contractor or the Contractor's employees or agents, for the purpose of carrying out work under the Contract, to certify that the landowner and occupier have no claim for any loss or damage due to the Contractor's operations and that the land and improvements have been left in a satisfactory condition.

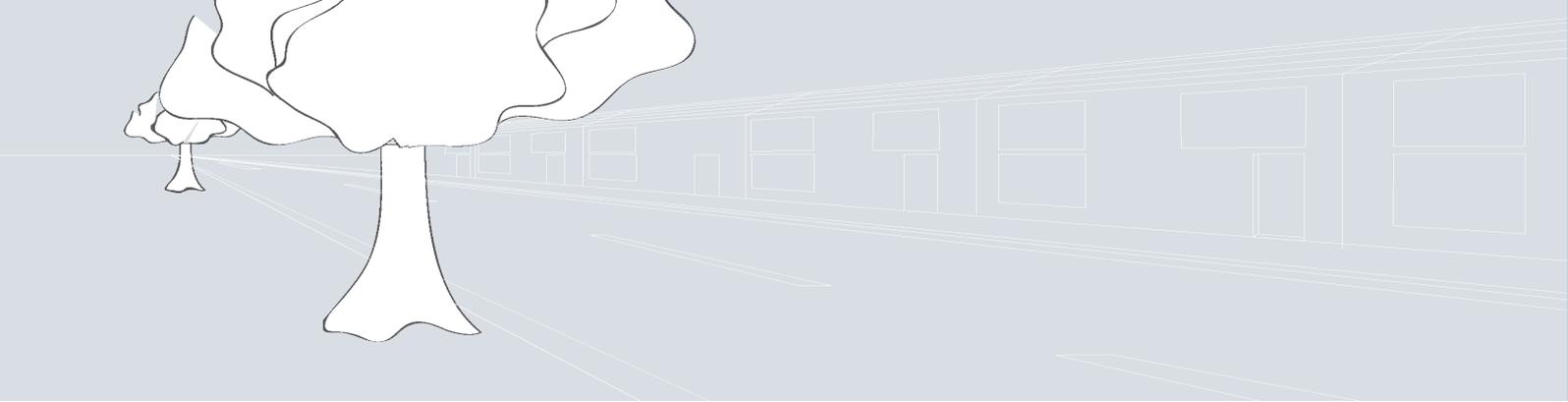
23.5.4 Community Liaison

Where the work under the Contract may cause disruption, annoyance or inconvenience to the public, the Contractor shall be responsible for all aspects of community consultation and advice to the public. Such advice shall include early notice to provide a high level of public awareness prior to particular events/activities, responding to any queries and resolution of issues during particular events/activities, and post-implementation advice to respond to any queries and resolve difficulties.

23.5.5 Use and Care of Roads

The Contractor shall be responsible for repair of damage caused to any roads, bridges or other structures by transporting material under the Contract. The Contractor is advised that VicRoads and municipal councils have power under their respective Acts to recover the cost of repair of damage to roads. If requested by the Superintendent, the Contractor shall submit clearances from municipal and other authorities concerned before the Final Certificate is issued. In respect of repair of damage to roads, the Contractor will be deemed when tendering:

- > to have inspected the roads used for transport;
- > to have acquired, by consultation with the municipal or other authorities concerned, knowledge of the roads and any existing or likely restrictions upon their use which could affect the transport proposals;
- > to have assessed the possibility and extent of any damage to the roads which may be caused by transport under the Contract;
- > to have made due allowance for the effects of such restrictions and for the cost of rectification of such damage in accordance with the requirements of the authorities concerned.



23.5.6 Defects Liability

Further to the provisions of the General Conditions of Contract, any omissions and defects which existed at the commencement date of the Defects Liability Period shall be corrected by the Contractor within the time nominated by the Superintendent in writing. Where the Superintendent has not nominated the time for correction of omissions and defects the Contractor shall undertake any required work within 20 business days of the commencement date of the Defects Liability Period.

23.6 INSURANCE AND INCIDENT REPORTING

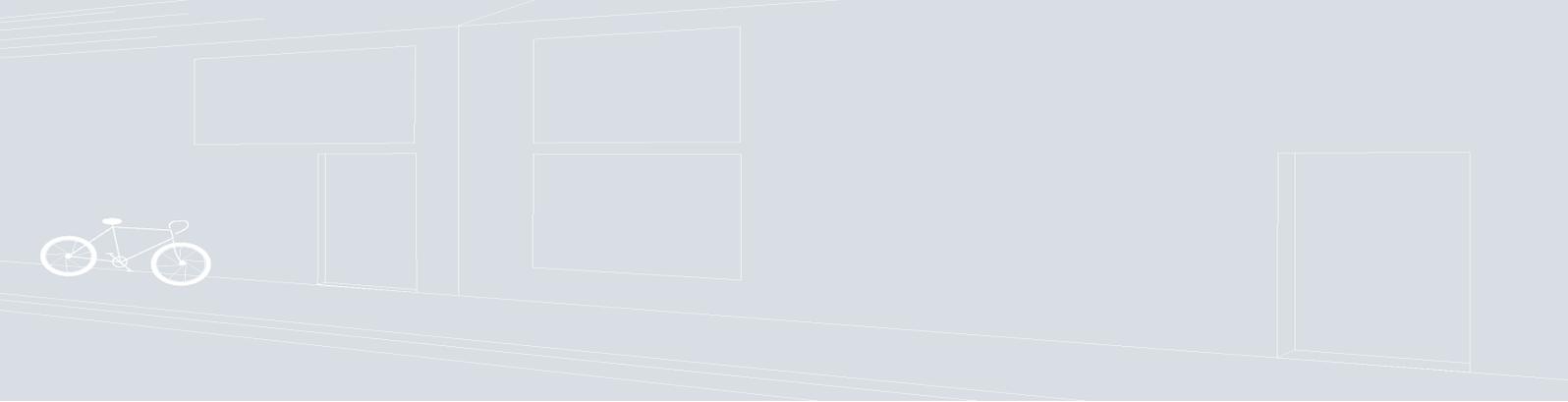
23.6.1 Work Over Railway Property

Where the work includes work on, or in the vicinity of, property owned by or under the control of the Director of Public Transport or the Victorian Rail Track Corporation or any other rail service or rolling stock provider established from time to time or its successor(s), the Contractor shall notify the Victorian Managed Insurance Authority (VMIA):

- > that such work will occur ; and
- > to include the names of the Director of Public Transport, the Victorian Rail Track Corporation and/or other rail service or rolling stock provider as additional named insureds on the policy.

23.6.2 General

The effecting of insurance as required by the insurance clauses in this contract shall not in any way limit or derogate from the liabilities or obligations of the Contractor in performing its work under the Contract.



24. QUALITY SYSTEMS

24.1 QUALITY ASSURANCE SPECIFICATION - GENERAL

This section specifies those parts of the works, which are subject to specific Quality Assurance requirements.

24.2 QUALITY ASSURANCE REQUIREMENTS

The required Quality System Standard is **AS9002/NZS 9002 -1994** or the **Civil Contractors Federation IMS**.

All works are to be constructed in accordance with the current Specifications, Standard Drawings and Certification Lists. The Contractor is expected to maintain up to date copies of these documents.

24.3 CONSTRUCTION HOLD POINTS

Hold Points shall be recorded on the Construction Program and Inspection and Test Plan. Hold Points and Witness points required by Council are listed in Appendix G. Hold Points required by the VicRoads Specification for release by the Superintendent are summarised below.

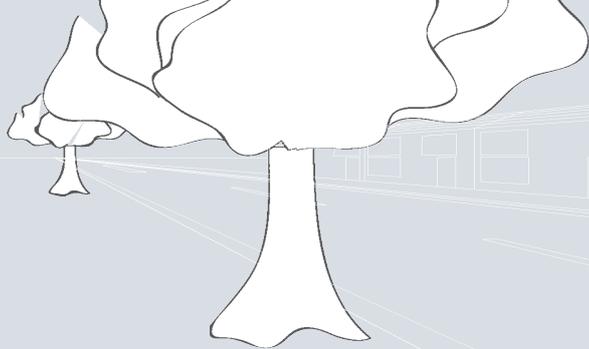
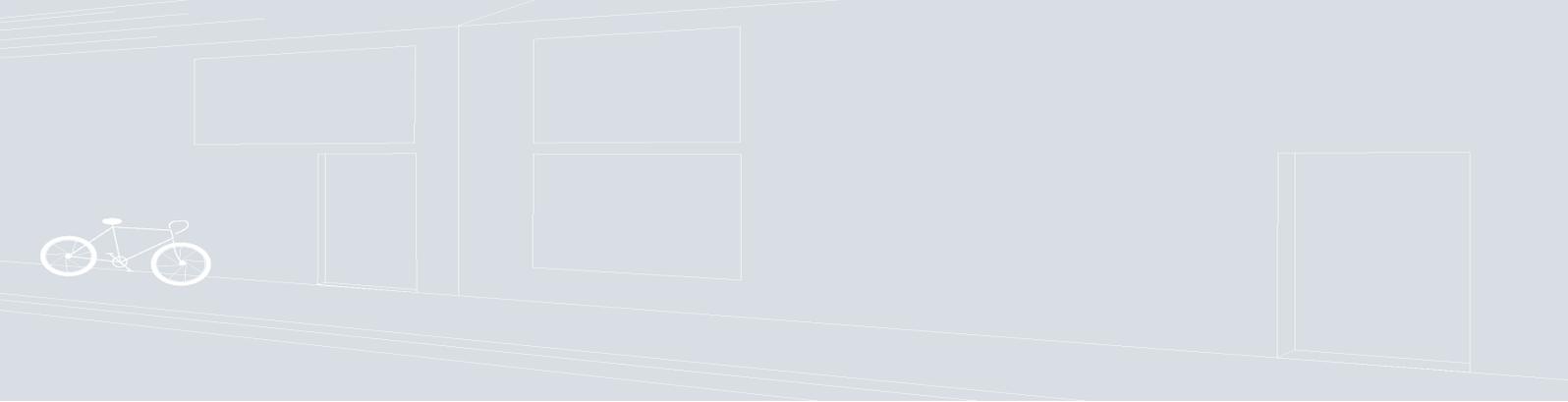
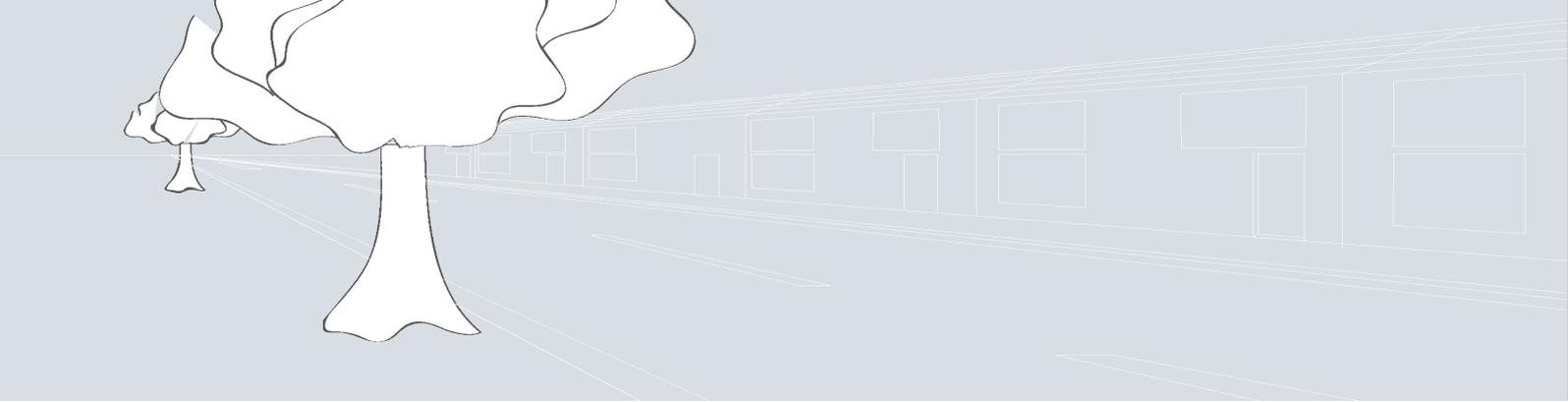


Table 22: Hold Points

HOLD POINT VICROADS REFERENCE	DETAILS
160.C1 HP	The Contractor shall not commence work on site before the following documents have been submitted to the Superintendent and the Superintendent has authorised release of the hold point: Traffic Management Plan and Environmental Management Strategy.
166.08 HP	The Traffic Management Plan shall not be implemented as a Traffic Guidance Scheme until the Superintendent has completed the review of the final Traffic Management Plan and released this Hold Point.
166.17 HP	Traffic shall not be diverted on to any side track until permission to use such side track has been given by the Superintendent.
204.04 HP	Material classified as silt, either before or after compaction, is not acceptable as Type A material without stabilisation to the satisfaction of the Superintendent.
204.06 HP	Prior to commencing excavation in any area and during excavation work, the Superintendent and the Contractor shall inspect each type of material encountered and subject to verification by appropriate laboratory testing, agree on the category of the material in accordance with Clause 204.04.
204.06 HP	Prior to construction of the regulating layer, the areas of rock subgrade shall be presented to the Superintendent for acceptance. The Contractor shall submit details of any necessary amendments to the subsurface drainage design including transverse subsurface drainage at the interfaces to the Superintendent for review.
204.06 HP	Where groundwater or seepage is encountered the Contractor shall notify the Superintendent and submit the proposed action to be taken to the Superintendent for review. The Contractor shall submit any necessary approvals from relevant authorities for the treatment and disposal of this groundwater.
204.07 HP	Where unsuitable material is encountered the Contractor shall submit the proposed in situ treatment or extent of excavation to the Superintendent for review.
204.10 HP	The Contractor shall not commence placing any fill on the prepared areas until the area has been reviewed by the Superintendent.
204.11 HP	No fill shall be placed against or within 3 m of a structure until the foundation for the fill has been reviewed by the Superintendent.
204.12 HP	The Contractor's quality plans and procedures shall include test rolling as a hold point.
205.04 HP	Prior to the use of excavated rock material as rock fill, the Superintendent and the Contractor shall inspect the material encountered and subject to verification by appropriate testing, agree on the suitability of the material for rock fill as described in Clause 205.03.
210.05 HP	The placement of geotextile is not permitted without the written approval of the Superintendent.
290.06 HP	The Contractor shall not commence work until the Lime Spreading Rates have been presented to the Superintendent for review. If the Contractor is required to determine the Design Distribution Rate of Available Lime, evidence shall be produced to show that the material properties specified in Clause 290.15(a) have been met.
290.09 HP	Lime stabilisation shall not proceed outside the trial section until the Superintendent has reviewed all aspects of the work. The outcome of the Superintendent's review will be provided to the Contractor within three working days after completion of the trial. If the Specification requirements are not met for the trial, the Superintendent may direct that another trial be undertaken or that the work be re stabilised and presented for re assessment.



306.09 HP	If the Contractor proposes to use an alternative cementitious binder to those included in Table 306.091, laboratory test results shall be produced to the Superintendent showing that the binder satisfies the required working time determined in accordance with the VicRoads Test Method. In addition, the cementitiously treated material using the alternative binder shall meet specified strength requirements.
306.11 HP	Requests by the Contractor to vary the rates of application shall be submitted in writing to the Superintendent for review.
306.11 HP	The Contractor's Environmental Management Plan shall include procedures to minimise all risks of damage to the environment associated with priming and primersealing.
307.04 HP	If Type GP is proposed, the Superintendent shall be first notified and evidence provided to show that the in situ stabilised material can be mixed and compacted to the specified density within the Maximum Allowable Working Time for Type GP Cement.
307.04 HP	The use of any additive to the cement to change its properties shall be subject to prior approval by the Superintendent.
307.05 HP	If the Contractor proposes to use an alternative cementitious binder to those included in Table 307.052, laboratory test results shall be produced to the Superintendent showing that the maximum allowable working time for the cementitious binder as determined in accordance with the VicRoads Test Method satisfies the required working time and the cement stabilised material using the alternative binder meets specified strength requirements.
307.06 HP	The Contractor shall not commence work until all mix design details have been presented to the Superintendent showing compliance with the requirements of Clause 307.05 and approval has been given for stabilisation work to proceed.
307.12 HP	Stabilisation work shall not proceed outside the trial section until the Superintendent has reviewed all aspects of the stabilising operation. The Superintendent's review of the stabilising plant and procedures will be provided to the Contractor by the end of the next working week day after the trial's completion. If the Specification requirements are not met for this trial section, the Superintendent may direct that another trial section be stabilised or the rejected section be re stabilised and presented for re assessment.
407.06 HP	No asphalt shall be supplied until the mix has been registered and the Superintendent approves the mix for use. The Contractor shall only use asphalt mixes that are registered by VicRoads as 'General' mixes unless approved by the Superintendent.
407.06 HP	No asphalt shall be supplied until the mix has been registered and the Superintendent approves the mix for use. The Contractor shall only use asphalt mixes that are registered by VicRoads as 'General' mixes unless approved by the Superintendent.
407.18 HP	The placement of asphalt on the sub-base or granular base for a new pavement or for an overlay of an existing bituminous surfaced pavement shall not commence until approval to proceed is obtained from the Superintendent.
701.05 HP	Prior to commencement of excavation for the culverts the Contractor shall confirm the position of all culverts with the Superintendent.
702.09 HP	The method of compaction shall be in accordance with the Contractor's procedures and reviewed by the Superintendent.
711.05 HP	The installation of the WRSB shall not proceed until the signed statement and certificates of compliance have been reviewed and accepted by the Superintendent.
711.07 HP	Anchor Blocks and Post Foundation shall not be cast until inspected by the Superintendent's Representative.



24.4 DRAINAGE WITNESS POINTS

Contractor shall give the Superintendent 24 hours notice of Witness Points.

Table 23: Drainage Witness Points

WITNESS POINT No.	PROCESS STAGE
DW 1	Notification of works near existing live utility services
DW 2	Notification of interference with traffic flow of any type
DW 3	Notification of re-commencement of trenching
DW 4	Notification of pouring of first drainage pit

24.5 ACCESS

The Superintendent, representatives of Council and the Principal's Surveyor shall require access to the Contractor's and subcontractor's workplaces for the purpose of quality monitoring, auditing and asset recording.

24.6 AUDITS

Council may carry out random audits and any non-conformance's will be explained to the Contractor at the time and a written non-conformance sent to the Superintendent.

The Superintendent or an agent of the Superintendent shall carry out external audits as he sees fit and as determined by the level of conformance.

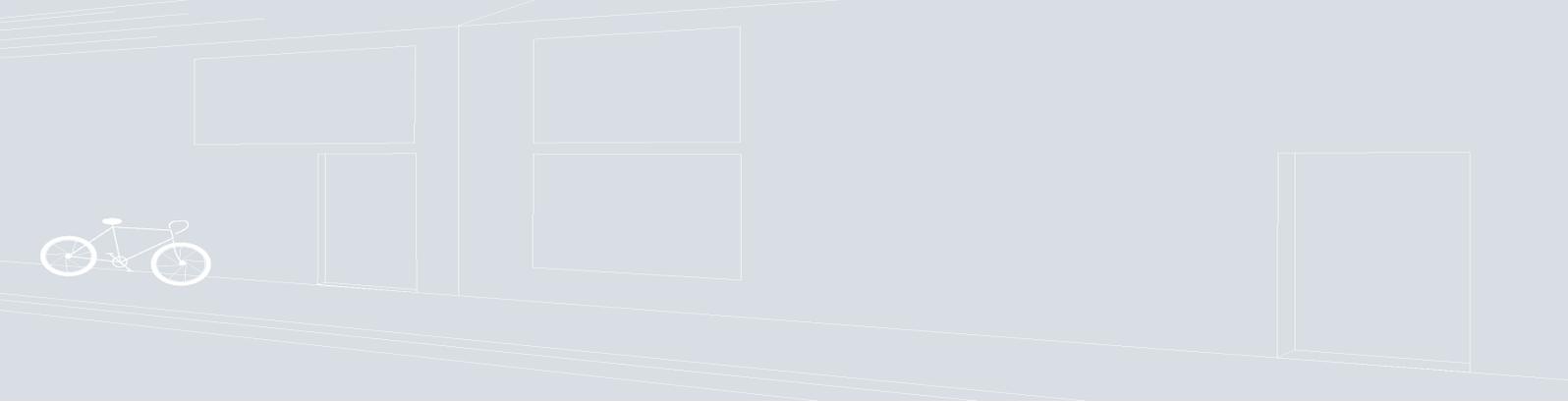
Random external audits of technical procedures and work instructions may be carried out on the site.

Official external audits of the quality system if required shall be held at the Contractor's office and 48 hours notice shall be given.

24.7 INSPECTION AND TEST PLANS (ITP'S)

All inspection and test plans developed shall be subject to review and acceptance by the Superintendent prior to awarding the contract.

ITP'S shall be in a format to suit the Contractor's quality system but must include contract requirements for hold and witness points



24.8 TRACEABILITY

24.8.1 Drainage

Traceability shall only apply to deliveries of concrete. The Contractor shall ensure that the location of the placed concrete is traceable at all times.

24.8.2 Asset Recording

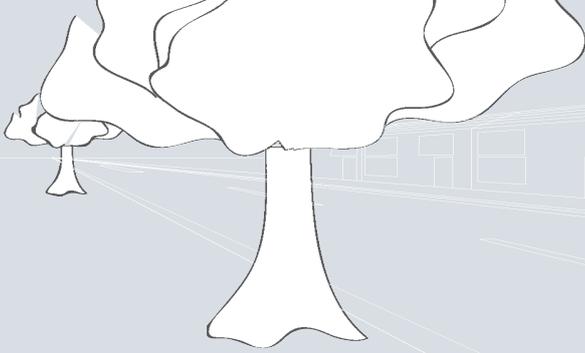
The Contractor shall undertake and complete all asset recording requirements as required to the stage of acceptance of the data in digital form. These works will be subject to full Quality Assurance requirements.

The Contractor shall be responsible for liaising with the Principal's Surveyor during the progress of the works to ensure that:-

- > adequate notice is given to the Principal's Surveyor of intention to commence work and notice of when mains and services are ready for survey.
- > assistance is given to the Principal's Surveyor in recording the location of services including providing safe access to the site, excavations and the works.
- > sufficient information relating to excavations, bedding, backfilling, pipe materials etc., is provided to the works surveyor to enable the completion of as-constructed service information to meet AUTHORITY requirements.
- > liaise with the Works Surveyor where non-conformance's are encountered in relation to works being constructed outside the specified tolerances.
- > backfilling of services is not commenced until all relevant as-constructed details have been recorded and verified.(Partial Backfilling)

24.8.3 Certification Lists

The Contractor is required to complete AUTHORITY Construction Certification Lists.



25. FINALISING THE WORKS

25.1 AS CONSTRUCTED INFORMATION

Prior to Councils' consent to "Practical Completion", as constructed" details shall be prepared and issued to Council – refer to **section 9 "Certification and Compliance"**.

25.2 CERTIFICATION OF FINAL LEVELS

Upon Completion of topsoiling and allotment grading, "as constructed" details certified by a licensed surveyor showing levels of allotments at corners and ridge lines shall be provided to Council.

25.3 CLEANING UP OF WORKS

The Contractor shall clean up and leave tidy the work as it proceeds and before the end of the Defects Liability Period shall remove all temporary structures, which may have been constructed for the Contractor's convenience while carrying out the work, and remove all equipment and surplus materials from the site.

It is the contractor's responsibility to ensure machinery, implements or other equipment used for the purposes of earthworks are not moved from land to a road without first taking reasonable precaution to ensure it is free from the seeds of any noxious weed and any other part of a noxious weed that is capable of growing.

The Contractor will be held responsible for any vehicle engaged on the works depositing material or rubbish on road pavements.

25.4 CLEANING OF ASPHALT PAVEMENT AND DRAINS

At the end of the defects liability period, the Contractor shall ensure that the road pavement and drains are sufficiently clean to enable a visual inspection for the purpose of checking for faults.

25.5 FINAL RE-PEG

Final pegging by the Principal's Surveyor is required to be carried out prior to the release of title and/or Practical Completion.