



AUS-SPEC

Infrastructure Specifications

0221 Site preparation

0221 SITE PREPARATION

IMPORTANT: This document has been adapted from the NATSPEC suite of specification templates for use in the Cessnock City Council area by both Council and industry. NATSPEC regularly updates the base templates (currently in April and October each year), and Council may incorporate changes into its version of AUS-SPEC from time to time. To assist in highlighting any changes made by Council to the NATSPEC templates, the following conventions are used.

- See ANNEXURE M at the end of this document which contains (where practical) Cessnock City Council customisations (also known as 'office master' text). References to the Annexure are to also be inserted at relevant clauses in the main body of the document.
- Where content is added to the main body of the document, it is to be shown **in brown text like this**.
- Where content is deleted or excluded from the main body of the document, it is to be shown ~~struck through like this~~. Such clauses are to have no effect.

Where there is a conflict between main body text and Cessnock City Council specific clauses, Council's specific clauses shall prevail.

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide site preparation, as documented.

Note: Documented is defined in 0171 General requirements as meaning contained in the contract documents.

Performance

Areas for protection: As required by any DA consent conditions.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- 0136 General requirements (Construction).
- ~~—0171 General requirements.~~
- 0172 Environmental management.

Limitations

Exclusion: This worksection is not intended to apply to works within the scope of the following:

- 0257 Landscape – road reserve and street trees
- 1111 Clearing and grubbing.

The above worksections apply to site preparation within road reserves and future public road reserves, for example as part of subdivision works.

1.3 INTERPRETATION

Definitions

General: For the purposes of this worksection, the following definitions apply:

- Authority: Any organisation with statutory authority relating to the project, including clearances.
- Clearances: A formal certificate, approval or condition issued by a statutory authority allowing work in a particular area.
- Plant establishment period: The period between the date of practical completion and the end of the defects liability period.
- Utility service provider: Includes organisations providing power, water, sewerage, gas and telecommunications services.

- **Dripline:** The dripline is the area directly located under the outer circumference of the tree branches. Submissions

Certification

Vermin: Submit pest exterminator's certification as evidence that the completed site works are free from vermin.

Execution details

Requirement: Submit details of methods and equipment proposed for the following:

- Clearing and grubbing.
- Tree removal and transplanting.
- Protecting ground within and adjacent to tree driplines from compaction by proposed earthworks machinery.

1.4 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following **as Hold Points**:

- Enclosures around trees requiring protection.
- Trees requiring removal.
- Trees for transplanting to determine final orientation.

2 EXECUTION

2.1 COMMUNITY LIAISON

Notification

Refer to **Cessnock City Council Community Engagement Strategy (Projects Managed by Cessnock City Council)**

General: Notify residents about construction activities that will affect access to, or disrupt the use of, their properties.

Notice: Minimum 5 working days, unless the work is of an urgent nature with safety implications.

Notification content:

- Description of the work.
- The reason for the work.
- The expected duration.
- Changes to traffic arrangements and property access.
- The 24-hour contact number of the representative responsible.

2.2 EXISTING SERVICES

General

Requirement: Before starting earthworks, locate and mark existing underground services in the areas affected by the earthworks operations including clearing, excavating and trenching.

Utility services: Contact **BEFORE YOU DIG AUSTRALIA** to identify location of underground utility services pipes and cables.

Reference **BEFORE YOU DIG AUSTRALIA** is a free service, from anywhere in Australia, for identifying underground pipe and cables. See www.byda.com.au. It only provides information on utility services (power, water, gas and telecommunications) and not all utility service operators are part of the scheme. The plans provide information about the presence of a service, not the exact location.

Excavation: Do not machine excavate within 1000 mm of existing services.

Existing service lines: If required, divert services detected during excavation, clear of the building, and reconnect to the utility service provider requirements.

2.3 SITE CLEARING

Extent

Requirement: Clear only areas occupied by works such as structures, paving, excavation, regrading and landscaping or other areas documented for clearing.

Contractor's site areas: If not included within the areas documented above, clear only to the extent necessary for the performance of the works.

Clearing and grubbing

Clearing: Remove everything on or above the site surface, including rubbish, scrap, grass, vegetable matter and organic debris, scrub, trees, timber, stumps, boulders and rubble.

Grubbing: Grub out stumps and roots over 75 mm diameter to a minimum depth as follows:

- Below subgrade under buildings, embankments or paving: 500 mm.
- Below finished surface in unpaved areas: 300 mm.

Backfilling: Fill holes remaining after grubbing with sand material to prevent ponding of water. Compact the material to the relative density of the existing adjacent ground material.

Note: Clearing and grubbing will apply to most areas.

Reuse of land clearing debris: Mulch trees, stumps and other woody vegetation for reuse on site.

Redundant/decommissioned works: Remove works no longer required, including slabs, foundations, paving, drain, and access chambers and covers within the works zone.

Fire hazard reduction

Requirement: Not Used

Batters

Temporary protection: ~~If the change in level between crest and toe is more than 1500 mm, protect from erosion with geofabric, hessian and tar or heavy duty black polyethylene sheet cover. Securely fix down at crest and toe.~~ **As specified by DA consent conditions and any approved Soil and Water Management Plan.**

Surplus material

Note: Coordinate with 0222 Earthwork for stripping, removal, stockpiling and disposal of topsoil.

Topsoil and excavated material: **As documented**, remove unwanted stripped soil and other material from the site as the work proceeds, including any material dropped on footpaths or roadways.

2.4 STORMWATER AND SEDIMENT CONTROL

General

Erosion and sediment control measures: To ~~0172~~ 0173 *Environmental management*.

Waterways and drains

Note: Coordinate with 0222 Earthwork and 0224 Stormwater – site.

Waterways: If required, temporarily divert ditches, field drains and other waterways affected by excavation and reinstate on completion.

Stormwater drains: Divert drains detected during excavation, clear of the building, and reconnect as documented or obtain approval.

2.5 EXISTING WORKS TO REMAIN

Marking

Requirement: Identify existing works to remain with 1000 mm high, 50 x 50 mm timber stakes connected by yellow plastic tape to prevent accidental damage.

Note: Existing works include fences, landscaping features and retaining walls. For works to be recovered for re-use, see 0201 Demolition.

2.6 TREE REMOVAL

Designation

Marking: Identify trees and shrubs for removal by tagging 1000 mm above ground level.

Extent: As required by any DA consent conditions.

Tags: As required by any DA consent conditions and approved Vegetation Management Plan (or equivalent document).

2.7 TREE PROTECTION

General

Warning signs: In a prominent position at each entrance to the site, display warnings that trees and plantings require protection during the contract. Remove on completion.

Lettering: Road sign type sans serif letters, 100 mm high to AS 4970 (2009) Appendix C.

Protection measures: Provide before starting the earthworks.

Trees to remain

Extent: Trees not marked for removal.

Tree protection

Tree protection zone (TPZ): To AS 4970 (2009) Section 3.

Tree protective measures: To AS 4970 (2009) Section 4.

Monitoring and certification: To AS 4970 (2009) Section 5.

Work near trees

Materials placement: Conform to the following:

- Keep the area within the dripline of trees free of sheds and paths, construction material and debris.
- Do not place bulk materials and harmful materials within the dripline of trees.
- Do not place spoil from excavations against tree trunks.
- Prevent wind-blown materials such as cement from harming trees and plants.

Damage: Prevent damage to tree bark. Do not attach stays, guys and similar material to trees.

Work under trees: Do not remove topsoil from, or add topsoil to, the area within the dripline of the trees.

Excavation: If excavation is required near trees, give notice. Minimise period and extent of excavation within the dripline.

Hand methods: Use hand methods to locate, expose and cleanly remove the roots on the line of excavation. If excavation is required within the dripline, use hand methods so that root systems remain intact and undamaged.

Roots: Do not cut tree roots exceeding 50 mm diameter. If required to cut tree roots, use cutting methods that do not excessively disturb the remaining root system. Immediately after cutting, water the tree and apply a liquid rooting hormone to stimulate the growth of new roots.

Backfilling: Backfill excavations around tree roots. Place the backfill in layers of 300 mm maximum depth and compact to a dry density similar to that of the original or surrounding soil. Do not backfill around tree trunks to a height greater than 200 mm above the original ground surface. Immediately after backfilling, thoroughly water the root zone surrounding the tree.

Backfill material:

- Mix proportions (topsoil: well-rotted composts) by volume: 3:1.
- Neutral pH value.
- Free from weed growth and harmful materials.

Compacted ground: Do not compact the ground or use skid-steer vehicles under the tree dripline. If compaction occurs, give notice.

Compaction protection: Protect ground adjacent to the tree dripline.

Watering: Water trees as necessary, including where roots are exposed at ambient temperature more than 35°C.

Mulching: Spread 100 mm thick organic mulch to the whole of the area within the dripline of all existing trees to remain.

2.8 TEMPORARY LANDSCAPE FENCING

Fence dimensions

Height: 1200 mm.

Maximum post spacing: 5000 mm.

Component sizes

Corner and gate posts: Hardwood or preservative-treated softwood, 250 mm diameter.

Intermediate posts: Star picket.

Gate: Provide a suitable hinged gate with a gate latch.

Wire: Top, intermediate and bottom rows of 3.2 mm plain galvanized steel wire. Thread the top wire through pieces of plastic tube and through corner posts.

Removal

Completion: Remove the fence at the end of the planting establishment period.

2.9 TREE TRANSPLANTING

General

Notice: Give notice before:

- Watering: Witness Point
- Fertilising: Witness Point
- Root cutting: Witness Point

Conditions: Select a time for transplanting based on the following criteria:

- Seasonal conditions.
- Length of operation.
- Rootball diameter and depth.
- Lifting methods.
- Weather conditions.

Preparation

Watering: Establish a temporary drip irrigation system, or manually water the identified trees for two weeks before ball excavation work.

Fertilising: Apply one application of liquid fertiliser mix, appropriate to the species, to the foliage and roots. Apply sufficient fertiliser to allow the spray to drip from foliage and soak into the rootball. Do not apply fertiliser on excessively hot, dry or windy days.

Rootball

General: Minimise the cutting of roots. Use only sharp tools, water blasting or water cutting.

Initial cut: Conform to the following:

- Cut manually or using chain trenching machine. Do not excavate using a backhoe or an excavator.
- Cut 250 mm beyond the required finished rootball dimension to allow trimming of damaged roots to final dimensions before sealing.

Hand trimming: To 100 mm less than the required finished rootball dimension. Cut back all roots greater than 25 mm diameter.

Rootball cutting: Conform to the following:

- Symmetrical about the trunk and in proportion to the overall size of the tree except where the limitations of individual tree planter openings require specific tailoring of the rootball dimension.
- Cut the rootball to a size that maximises the rootball for each specimen.

Trench: Backfill and lightly compact with clean sand, free of any foreign matter, pathogens or any substances that may be harmful to future root growth. Apply root inducing formulation to the manufacturer's recommended concentration, to saturate the backfill in the trench.

Maintenance of on-site plant material

Watering: Maintain a temporary drip irrigation system around each tree, located within the trenched rootball perimeter. Program the system to supply water at an optimum rate to encourage growth and avoid drying out through excessive transpiration following the cutting of the roots. Monitor the system continuously until the tree is lifted and transplanted.

Pruning: If pruning of branches is required to balance root loss, obtain approval. Prune only as directed and as documented in **TREE MAINTENANCE**.

Fertilising: Apply fertiliser at regular intervals during this period to maintain healthy growth.

Responsibility: Safeguard the health and well-being of all on-site plant material as required, before lifting and transplanting.

Execution

Lifting: Two days before transplanting each specimen, thoroughly irrigate to the full depth of the rootball. Do not disturb the soil around the root system. Maintain rootball in firm condition during transplanting by wrapping in hessian or other appropriate open weave material, securely tied.

Storage: Transport trees to a designated nursery site. Store and maintain until ready for planting.

Planting: Avoid disturbing the rootball during moving and planting. After placement, remove the rootball wrapping and ties by cutting.

Watering: After transplanting, water the rootball thoroughly and continue to water until established.

Transplanting schedule

Species	Method	Pruning

2.10 SITE NURSERY

Temporary works

Size: As documented.

Location: As documented.

Perimeter: Provide a bund wall of compacted fill as follows:

- Height: 400 mm.
- Batter grade (horizontal:vertical): 2:1.

2.11 TREE MAINTENANCE

General

Notice: Give notice before starting tree maintenance.

Pruning: To AS 4373 (2007) using a fully qualified and experienced arborist. Carry out all required works in a safe manner.

Execution

Requirement: Rectify any damage to existing trees to remain.

Operations: Remove dead and decayed wood or damaged limbs. Make all cuts at branch collars. If trees show signs of deterioration after the work is completed, ameliorate the soil by soil aeration, irrigation or incorporation of organic material. Continue this program until the end of the plant establishment period.

Root pruning: Do not excessively disturb the remaining root system. Cut off damaged roots cleanly inside the exposed or damaged area. Cover exposed root area with soil immediately after pruning, do not leave roots exposed.

Wetting and new root stimulation: Form a water collecting basin and apply a rooting hormone and wetting agent to the rootball.

Precautions: Avoid damage to trees being treated and to nearby trees and surroundings. Do not use trees as anchors for winching operations or bracing. Provide bracing as necessary before cutting to prevent uncontrolled breakages and damage to surroundings.

Failure: If repair work is impracticable, or is attempted and is rejected, remove the tree and root system and make restitution.

Restitution by replacement tree: As required by any DA consent conditions and approved Vegetation Management Plan (or equivalent document).

Restitution specification: As required by any DA consent conditions and approved Vegetation Management Plan (or equivalent document).

Restitution fee: Not Used

Tree maintenance schedule

Tree species	Description of work
To be completed if required under the Contract.	

2.12 COMPLETION

Temporary works

Remove at completion: Not Used

Site restoration

Requirement: Reinstate undeveloped ground surfaces to the condition existing at the commencement of the contract.

Clean up

Progressive cleaning: Keep the works clean and tidy, and regularly remove from the site, waste and surplus material arising from execution of the work.

Waste disposal: To 0172 *Environmental management*.

Vermin management

Requirement: Employ a suitably qualified pest exterminator to remove vermin found during site preparation.

3 ANNEXURE A – REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 4373	2007	Pruning of amenity trees
AS 4970	2009	Protection of trees on development sites
Cessnock City Council		Development Engineering Handbook

4 ANNEXURE M – CESSNOCK CITY COUNCIL SPECIFIC CLAUSES

M1.	Variations to or non-conformances with Council's AUS-SPEC are to be evaluated with reference to the procedure in Council's <i>Development Engineering Handbook</i> . Acceptance is to be obtained in writing from: a) an authorised representative of Council's Director of Infrastructure and Engineering Services.	Variation procedure
M2.	This specification applies in addition to any development consent (DA) conditions. If there is any inconsistency, the conditions of consent shall prevail.	DA Conditions
M3.	Refer to the Cessnock City Council Development Engineering Handbook for final inspection, works-as-executed and handover requirements.	Completion

5 AMENDMENT HISTORY

0	15/01/2024	First Published
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